E VTAM LISTINGS

92L1105-004E

RELEASED 9/13/74

VOLUME 1

VORTEX

E VTAM LISTINGS
ALPHABETICAL INDEX

PROGRAM	PAGE	
CCSSCW	377	V2
CCSSCW	377	V2
CLOSE	98	
CLOSE	97	V2
CTMXOA	494	
CTTCOA	1	
DUMMYT	97	
NCM	211	
NCM	206	V2
NUM	564	
OPEN	104	
OPEN	103	V2
TCSCEX	3	
TCSCEX	1	V2
TTYTCM	169	
TTYTCM	168	V2
TYREAD	39	
TYREAD	37	V2
VTSBMT	156	
VTSBMT	155	V2
VTSCLS	203	
VTSCLS	202	V2
VTSGTM	143	
VTSGTM	142	V2
VTSIOC	522	
VTSIOC	392	V2

E VTAM LISTINGS
ALPHABETICAL INDEX

PROGRAM	PAGE	
BITSET	207	
C52CIH	250	
C52CIH	245	V2
C52FUN	263	
C52FUN	258	V2
C52IWP	285	
C52IWP	280	V2
C52LIP	300	
C52LIP	295	V2
C52RCR	319	
C52RCV	331	
C52RCV	315	V2
C52RCW	347	
C52SST	359	
C52XMT	372	
C52XMT	331	V2
CCSACE	387	
CCSCBS	399	
CCSCEX	412	
CCSCEX	346	V2
CCSCRQ	428	
CCSCRQ	362	V2
CCSFCW	443	
CCSFRR	455	
CCSOCL	467	
CCSSCW	479	

E VTAM LISTINGS
ALPHABETICAL INDEX

PROGRAM	PAGE	
VISOCL	111	
VTSOCL	110	V2
VTSOCT	183	
VTSOCT	182	V2
VTSOPN	205	
VISOPN	204	V2
VISPTM	130	
VTSPTM	129	V2
VTSTCQ	80	
VISTCQ	79	V2
VTPOP	540	
VTPUSH	552	

```
                                1 *   THIS IS A COPYRIGHTED PROGRAM. COPYRIGHT 1973 BY VARIAN DATA MACHINES02 00001
                                2 *                                                                       02 00002
                                3 *      V.D.M. PART NO.          92L1105-006A                            02 00003
                                4 *                                                                       02 00004
                                5 *                                                RELEASED    03-26-73   02 00005
                                6 *                                                                       02 00006
                                7 *                                                                       02 00007
                                8 *                 CTTC0A                                                02 00008
                                9 *                                                                       02 00009
                               10 *                                                                       02 00010
                               11           TITLE   CTTC0A                                               02 00011
                               12           EJEC                                                         02 00012
                               13 SPACE     MAC                                                          02 00013
                               14           IFT     P(1),,0                                              02 00014
                               15           SPAC                                                         02 00015
                               16           IFT     P(1),,0                                              02 00016
                               17           SPACE   P(1)-1                                               02 00017
                               18           EMAC                                                         02 00018
                               19           TITLE   CTTC0A                                               02 00019
                               20           NAME    CTTC0A                                               02 00020
000015 A                       21 TPRPA     EQU     13                                                   02 00021
000016 A                       22 TPWPA     EQU     14                                                   02 00022
000017 A                       23 TPFPA     EQU     15                                                   02 00023
                               24 ************************************************************************02 00024
                               25 *                                                                     *02 00025
                               26 *       CONTROLLER TABLE      CTTC0A                                 *02 00026
                               27 *                                                                     *02 00027
                               28 *       FOR TTY TERMINAL CONTROL MODULE (TCM)                         *02 00028
                               29 *                                                                     *02 00029
                               30 *                                                                     *02 00030
                               31 ************************************************************************02 00031
000000                         32 CTTC0A    BSS     0                                                    02 00032
                               33           SPACE   3                                                    02 00033
000000 R                       34 VTCTBL    EQU     *                                                    02 00034
000001 A                       35 VRD       EQU     1               READ (VALUES USED TO BUILD OP-CODE MASK TO 02 00035
000002 A                       36 VWT       EQU     2               WRITE SET PERMISSIBLE REQUEST TYPES FOR  02 00036
000004 A                       37 VWE       EQU     4               WEOF  V$IOC.EXCLUDED REQUEST TYPES ARE NOT 02 00037
000040 A                       38 VFU       EQU     32              FUNC  PROCESSED.)                        02 00038
000100 A                       39 VOP       EQU     64              OPEN                                     02 00039
000200 A                       40 VCL       EQU     128             CLOSE                                    02 00040
                               41           SPACE   5                                                    02 00041
                               42 *                 SET EXT AND DATA STATEMENT TO THE TIDB SYMBOLIC NAME 02 00042
                               43 *                 USED TO DEFINE THE TIDB IN THE SYSGEN 'TDF' CARD FOR 02 00043
                               44 *                 THE DRIVER  TC$TCQ                                   02 00044
                               45           EXT     TBTC0A                                               02 00045
000000 000000 E                46           DATA    TBTC0A          CTACT/CTIDB-CONTROLLER ACTIVE/TIDB ADDR 02 00046
000001 000020 R                47           DATA    VTCTED          CTADNC - CTBL END PLUS ONE           02 00047
                               48 *                 SET DATA STMT TO SUM OF EQUATE VALUES FOR VALID OP-CODES 02 00048
000002 000347 A                49           DATA    VRD+VWT+VWE+VFU+VOP+VCL    CTOPM - OP-CODE MASK      02 00049
000003 000000 A                50           DATA    0               CTDST                                02 00050
000004 000000 A                51           DATA    0               CTRQBK                               02 00051
000005 000000 A                52           DATA    0               CTRTRY                               02 00052
                               53           EXT     #ATC0A                                               02 00053
000006 000000 E                54           DATA    #ATC0A          CTDVAD                               02 00054
000007 000000 A                55           DATA    0               CTIOA                                02 00055
000010 000000 A                56           DATA    0               CTSTAT                               02 00056
000011 000000 A                57           DATA    0               CTBICB                               02 00057
000012 000000 A                58           DATA    0               CTFCB                                02 00058
000013 000000 A                59           DATA    0               CTWDS                                02 00059
000014 000000 A                60           DATA    0               CTFRCT/CTFREQ                        02 00060
                               61 ************** END OF STANDARD CONTROLLER TABLE ***************************02 00061
                               62           EJEC                                                         02 00062
                               63 ************************************************************************02 00063
                               64 *                                                                     *02 00064
                               65 *       TERMINAL CONTROL MODULE (TCM) PROCESSOR TABLE -  (TPT)        *02 00065
                               66 *                                                                     *02 00066
                               67 ************************************************************************02 00067
                               68           SPACE   3                                                    02 00068
                               69 *                 READ PROCESSOR ADDRESS FOR TTY TCM                   02 00069
000015                         70           ORG     VTCTBL+TPRPA    DO NOT CHANGE                        02 00070
                               71           EXT     TYREAD                                               02 00071
000015 000000 E                72           DATA    TYREAD          TTY TCM READ REQUEST PROCESSOR PROGRAM 02 00072
                               73           SPACE   2                                                    02 00073
                               74 *                 WRITE PROCESSOR ADDRESS FOR TTY TCM                  02 00074
000016                         75           ORG     VTCTBL+TPWPA    DO NOT CHANGE                        02 00075
                               76           EXT     TYWRIT                                               02 00076
000016 000000 E                77           DATA    TYWRIT          TTY TCM WRITE REQUEST PROCESSOR PROGRAM 02 00077
                               78           SPACE   2                                                    02 00078
                               79 *                 FUNCTION PROCESSOR ADDRESS FOR TTY TCM               02 00079
000017                         80           ORG     VTCTBL+TPFPA    DO NOT CHANGE                        02 00080
                               81           EXT     TYFUNC                                               02 00081
000017 000000 E                82           DATA    TYFUNC                                               02 00082
                               83           SPACE   3                                                    02 00083
                               84 *                 END OF TCM PROCESSOR TABLE, TCM CONTROLLER TABLE     02 00084
000020 R                       85 VTCTED    EQU     *                                                    02 00085
                               86           EJEC                                                         02 00086
                               87 *                                                                      02 00087
                               88 *                 TERMINAL CONTROLLER DESCRIPTOR THREAD CELL           02 00088
                               89 *                                                                      02 00089
                               90           NAME    TC$TCD                                               02 00090
000020 000000 A                91 TC$TCD    DATA    0                                                    02 00091
                               92 *                                                                      02 00092
                               93 *                 VTAM LOGICAL TERMINAL TABLE                          02 00093
                               94 *                                                                      02 00094
                               95           NAME    VT$LTT                                               02 00095
```

```
                IFF     P(4),,16
                GOTO    B
                IFT     P(3),,0
                LRLA    P(3)
                ERA     P(2),P(1)
                IFT     P(3),,0
                LSRA    P(3)
                ANAM    P(4)
                IFT     P(3),,0
                LRLA    P(3)
                ERA     P(2),P(1)
B               CONT
                STA     P(2),P(1)
                EMAC
SETB            MAC
                IFF     P(1),,2
                **ERROR**
                IFF     P(4),,16
                STB     P(2),P(1)
                IFF     P(4),,16
                GOTO    B
                LDA     P(2),P(1)
                IFT     P(3),,0
                LRLA    16-P(3)
                ANAN    P(4),0
                MERGE   031
                IFT     P(3),,0
                LRLA    P(3)
                STA     P(2),P(1)
B               CONT
                EMAC
FETCHA          MAC
                LDA     P(2),P(1)
                IFT     P(3),,0
                LSRA    P(3)
                IFT     0,P(3)+P(4),15
                ANAM    P(4),0
                EMAC
SUBAT           MAC
                IFF     P(1),11,11
                SUBI    P(1)
                IFT     9,P(1),10
                SUB     TEN
                IFT     8,P(1),9
                SUB     NINE
                IFT     7,P(1),8
                SUB     EIGHT
                IFT     6,P(1),7
                SUB     SEVEN
                IFT     5,P(1),6
                SUB     SIX
                IFT     4,P(1),5
                SUB     FIVE
                IFT     3,P(1),4
                SUB     FOUR
                IFT     2,P(1),3
                SUB     THREE
                IFT     1,P(1),2
                SUB     TWO
                IFT     0,P(1),1
                SUB     ONE
                EMAC
ADAT            MAC                 ADD ATTRIBUTE DESCRIBED BY P(1), AND P(2)
                IFF     P(1),11,11
                ADDI    P(1)
                IFT     9,P(1),10
                ADD     TEN
                IFT     8,P(1),9
                ADD     NINE
                IFT     7,P(1),8
                ADD     EIGHT
                IFT     6,P(1),7
                ADD     SEVEN
                IFT     5,P(1),6
                ADD     SIX
                IFT     4,P(1),5
                ADD     FIVE
                IFT     3,P(1),4
                ADD     FOUR
                IFT     2,P(1),3
                ADD     THREE
                IFT     1,P(1),2
                ADD     TWO
                IFT     0,P(1),1
                ADD     ONE
                EMAC
EINTS           MAC
                EXC     ENAPIM
                EXC     ENACLK
                EMAC
DINTS           MAC
                EXC     DISPIM
                EXC     DISCLK
                EMAC
SETF            MAC
```

```
                191          IFT     P(4),,1          ERROR IF NOT ONE BIT FLAG
                192          **ERROR**
                193          LDA     P(2),P(1)
                194          ORA     BS0+P(3)
                195          STA     P(2),P(1)
                196          EMAC
                197 CLEARF   MAC
                198          IFT     P(4),,1
                199          **ERROR**          ERROR IF NOT ONE BIT FLAG
                200          LDA     P(2),P(1)
                201          ANA     BR0+P(3)
                202          STA     P(2),P(1)
                203          EMAC
                204 TESTF    MAC                TEST FLAG MACRO
                205          IFT     P(4),,1
                206          **ERROR**
                207          LDA     P(2),P(1)  PICK UP WORD CONTAINING FLAG
                208          ANA     BS0+P(3)
                209          EMAC
                210          EJEC
                211 **                PUTQ ADDS AN ITEM TO A FIFO TYPE QUEUE.
                212 *                 THE QUEUE HEADER CONTAINS TWO ENTRIES:
                213 *                 1. A FRONT POINTER
                214 *                 2. A REAR POINTER
                215 *
                216 *                 ENTRY:CONDITIONS:
                217 *                                    X REG CONTAINS ITEM ADDRESS
                218 *                                    B REG CONTAINS QUEUE HEADER ADDR.
                219 *
                220 *                 CALL: PUTQ
                221 *
                222 *                 RETURN CONDITIONS:
                223 *                                    A REG CONTAINS ZERO
                224 *                                    X REG NO CHANGE
                225 *                                    B REG NO CHANGE
                226 *
                227 PUTQ     MAC
                228          STXE*     1,B
                229          STX       1,B
                230          TZA
                231          STA       0,X
                232          EMAC
                233 *
                234 *
                235 **       TITLE     GETQ
                236 *                 GETQ USES THE SAME QUEUE BUILT BY PUTQ.
                237 *                 IT REMOVES THE FIRST ITEM FROM THE QUEUE.
                238 *
                239 *                 ENTRY CONDITIONS:
                240 *                                    B REG CONTAINS QUEUE HEADER ADDRESS
                241 *
                242 *                 CALL: GETQ
                243 *
                244 *                 EXIT CONDITIONS:
                245 *                                    A REG DESTROYED
                246 *                                    B REG NOT CHANGED
                247 *                                    X REG IS ZERO IF QUEUE WAS EMPTY ELSE
                248 *                                          ADDRESS OF ITEM REMOVED
                249 *
                250 GETQ     MAC
                251          LDX       0,B
                252          JXZ       *+7
                253          LDA       0,X
                254          STA       0,B
                255          JANZ      *+3
                256          STB       1,B
                257          EMAC
                258 *
                259 ********************************************************************************
                260 ****     TIDB SETUP                                                     *******
                261 *                                                                      *******
                262 ********************************************************************************
000000  A       264 TBTRD    EQU       0      TASK THREAD
000001  A       265 TBST     EQU       1      TASK STATUS
000002  A       266 TBPL     EQU       2      STATUS CONT. (BITS15-6),PRIORITY LEVEL(5-0)
000003  A       267 TBEVNT   EQU       3      INTERRUPT EVENT
000004  A       268 TBRSA    EQU       4      A           REENTRANT AND SUSPEND STACK
000005  A       269 TBRSB    EQU       5      B           REENTRANT AND SUSPEND STACK
000006  A       270 TBRSX    EQU       6      X           REENTRANT AND SUSPEND STACK
000007  A       271 TBRSP    EQU       7      OF/P        REENTRANT AND SUSPEND STACK
000010  A       272 TBRSTS   EQU       8      TEMP. STG.  REENTRANT AND SUSPEND STACK
000011  A       273 TBENTY   EQU       9      TASK ENTRY LOCATION
000012  A       274 TBTMS    EQU       10     TIME COUNTER - CLOCK RESOLUTION IN 5MS INCR
000013  A       275 TBTMIN   EQU       11     TIME COUNTER - CLOCK MINUTE INCREMENTS
000014  A       276 TBISA    EQU       12     A             INTERRUPT STACK
000015  A       277 TBISB    EQU       13     B             INTERRUPT STACK
000016  A       278 TBISX    EQU       14     X             INTERRUPT STACK
000017  A       279 TBISP    EQU       15     OF/P          INTERRUPT STACK
000020  A       280 TBISRS   EQU       16     REENT. STACK  INTERRUPT STACK
000021  A       281 TBIO     EQU       17     BLK ALLOC(15-10),I/O THR(9-5),I/O ACT(4-0)
000022  A       282 TBKN1    EQU       18     TASK NAME
000023  A       283 TBKN2    EQU       19     TASK NAME
000024  A       284 TBKN3    EQU       20     TASK NAME
000025  A       285 TBTLC    EQU       21     1ST LOC. OF TASK ALLOCATABLE
000026  A       286 TBCPTH   EQU       22     BACKGROUND TASK QUEUE
```

```
000027 A   287 TBATSK EQU     23              TIDB LOC. OF ACTIVATING TASK                  ********
000030 A   288 TBRSE  EQU     24              TASK ERROR CODE                               ********
000031 A   289 TBSIZ  SET     25              TASK SIZE                              V2     ********
000032 A   290 TBNUCL SET     26              TASK NUCLEUS FLAGS                     V2     ********
000032 A   291 TBKEY  SET     26              TASK MAP KEY                           V2     ********
000033 A   292 TBMIMG SET     27              TASK MAP IMAGE ADDRESS                 V2     ********
000034 A   293 TBIST  SET     28              TASK INTERRUPT STATUS                  V2     ********
           294         EJEC                                                                ********
           295 ********************************************************************************
           296 *                                                                            ********
           297 ****    TASK STATUS DESCRIPTION  (BIT SET WORD 1)                          ********
           298 *                                                                            ********
           299 ********************************************************************************
000017 A   301 TBS15  EQU     15              INTERRUPT SUSPEND                             ********
000016 A   303 TBS14  EQU     14              TASK SUSPEND                                  ********
000015 A   304 TBS13  EQU     13              TASK ABORT                                    ********
000014 A   305 TBS12  EQU     12              TASK EXIT                                     ********
000013 A   307 TBS11  EQU     11              TIDB CORE RESIDENT                            ********
000012 A   308 TBS10  EQU     10              CORE RESIDENT TASK                            ********
000011 A   309 TBS9   EQU     9               FOREGROUND TASK                               ********
000010 A   311 TBS8   EQU     8               TASK PROTECTED                                ********
000007 A   312 TBS7   EQU     7               TASK SCHEDULED BY TIME DELAY                  ********
000006 A   313 TBS6   EQU     6               TIME DELAY ACTIVE                             ********
000005 A   315 TBS5   EQU     5               TASK WAITING TO BE LOADED                     ********
000004 A   316 TBS4   EQU     4               TASK ERROR                                    ********
000003 A   317 TBS3   EQU     3               TASK INTERRUPT EXPECTED                       ********
000002 A   319 TBS2   EQU     2               OVERLAY TASK                                  ********
000001 A   320 TBS1   EQU     1               UPON TERMINATION ACTIVATE TASK SCHED TASK     ********
000000 A   321 TBS0   EQU     0               TASK SEARCH-ALLOCATED-LOADED                  ********
           322         EJEC                                                                ********
           323 ********************************************************************************
           324 *                                                                            ********
           325 ***     TASK STATUS DESCRIPTION  (BIT SET WORD 2)                          ********
           326 *                                                                            ********
           327 ********************************************************************************
           329 *       BIT 15  -  TASK OPENED                                               ********
           331 *       BIT 14  -  UNUSED                                                    ********
           332 *       BIT 13  -  OVERLAY LOAD                                              ********
           333 *       BIT 12  -  TASK WAITING FOR BACKGROUND TASK I/O TO COMPLETE          ********
           334 *                  TASK LOCKED-OUT UNTIL BG I/O COMPLETE OR BIT 11           ********
           335 *                  IS SET  (ALLOCATABLE SPACE AVAILABLE)                     ********
           337 *       BIT 11  -  DEFINES THAT ALLOCATABLE SPACE IS AVAILABLE, TRY          ********
           338 *                  ALLOCATING TASK AGAIN.  OVERRIDES BIT 12 SET OR           ********
           339 *                  BIT 5 IN STATUS WORD.                                     ********
           340 *       BIT 10  -  BACKGROUND TASK BEING WRITTEN ON CHECKPOINT FILE.         ********
           341 *       BIT  9  -  TASK WAITING FOR A TIDB TO COME AVAILABLE FOR             ********
           342 *                  SCHEDULING.                                               ********
           344 *       BIT  8 TO 6  - UNUSED                                                ********
           345         EJEC                                                                ********
           346 ********************************************************************************
           347 *                                                                            ********
           348 ***     JOB PROCESSOR LOW CORE EQUATES                                     ********
           349 *                                                                            ********
           350 ********************************************************************************
000050 A   352 LCJP   EQU     050                                                         ********
000050 A   353 V$JNAM EQU     LCJP            JCP NAME                                    ********
000054 A   354 V$LCNT EQU     LCJP+4          LINE COUNT                                  ********
000055 A   355 V$JCFG EQU     LCJP+5          JCP FLAGS                                   ********
           356 *                             BIT 2-0    = LOAD AND GO FLAGS              ********
           357 *                             BIT  3     = DUMP FLAG  1=DUMP, 0=NO DUMP   ********
           358 *                             BIT  4     = DUMP FLAG IF LOAD AND GO       ********
           359 *                             BIT 9-5    = UNUSED                         ********
           360 *                             BIT 15-10  = BG EXTRA CORE BLOCKS TO ALLOC  ********
000056 A   362 V$BIC1 EQU     LCJP+6          BIC INTERRUPT ADDRESS TABLE  (10 WORDS)     ********
000070 A   363 V$DATE EQU     LCJP+16         JCP DATE RECORD                             ********
000074 A   364 V$PLCT EQU     LCJP+20         PERMINATE LINE COUNT                        ********
000075 A   365 V$BGLB EQU     LCJP+21         JCP LIB KEY AND LU NO. (BACKGROUND LIB)     ********
000076 A   366 V$CRDM EQU     LCJP+22         CARD KEYPUNCH TYPE, 0=026, 1=029            ********
           367 *                             BIT 0 = SYSTEM NOMINAL KEYPUNCH MODE.       ********
           368 *                             BIT 9 = CURRENT JOB KEYPUNCH MODE.          ********
000077 A   369 V$JCTM EQU     LCJP+23         TEMP. STORAGE FOR /MEM BLOCK                ********
           370         EJEC                                                                ********
           371 ********************************************************************************
           372 *                                                                            ********
           373 ****    LOW CORE DESCRIPTION                                               ********
           374 *                                                                            ********
           375 ********************************************************************************
000300 A   377 LC     EQU     0300                                                        ********
000300 A   378 V$CTL  EQU     LC              CURRENT TASK TIDB LOCATION                  ********
000301 A   379 V$CPL  EQU     LC+1            CURRENT PRIORITY LEVEL                      ********
000302 A   380 V$CRS  EQU     LC+2            CURRENT REENTRANT STACK POINTER             ********
000303 A   381 V$TB   EQU     LC+3            POINTER TO HIGHEST PRIORITY TIDB            ********
000304 A   382 V$UTB  EQU     LC+4            POINTER TO UNUSED TASK TIDB                 ********
000305 A   383 V$PTVB EQU     LC+5            POINTER TO NEXT ENTRY IN REENTRANT STACK    ********
000306 A   384 V$FLRS EQU     LC+6            FIRST LOC. OF REENTRANT STACK               ********
000307 A   385 V$LRSK EQU     LC+7            LAST LOC. OF REENTRANT STACK+1              ********
000310 A   386 V$CKPT EQU     LC+8            CHECKPOINT FLAG 1=ON, 0=OFF                 ********
000311 A   387 V$OPCL EQU     LC+9            LOC. OF TIDB FOR OPCOM TASK                 ********
000312 A   388 V$LSAL EQU     LC+10           LOC. OF TIDB FOR SYSTEM SAL TASK            ********
000313 A   389 V$LER  EQU     LC+11           LOC. OF TIDB FOR SYSTEM ERROR TASK          ********
000314 A   390 V$TJCP EQU     LC+12           LOC. OF TIDB FOR JOB CONTROL PROCESSOR TASK ********
000315 A   391 V$BTB  EQU     LC+13           LOC. OF CURRENT ACTIVE BACKGROUND TSK TIDB  ********
000316 A   392 V$NPAG SET     LC+14           NO OF AVAILABLE PAGES IN V$PAGE             ********
000316 A   393 V$LUP  EQU     LC+14           LOC. OF 1ST UNPROTECTED WORD                ********
000317 A   394 V$LLUP EQU     LC+15           LOC. OF LAST UNPROTECTED WORD               ********
```

```
000317 A  395 V$LPP   SET      LC+15    LAST TESTED WORD IN V$PAGE                    V2  *********
000320 A  396 V$IM    EQU      LC+16    INTERRUPT MASK  (8 WORDS)                        *********
000330 A  397 V$MPM   EQU      LC+24    MEMORY PROTECT MASK  (4 WORDS)                  *********
000330 A  398 V$MAP   SET      LC+24    MAP KEY AVAILABILITY MASK                  V2   *********
000331 A  399 V$BTBM  SET      LC+25    BOTTOM PAGE NUMBER OF VORTEX II            V2   *********
000332 A  400 V$GFCB  SET      LC+26    GLOBAL FCB PAGE NUMBER                     V2   *********
000333 A  401 V$MIMG  SET      LC+27    MAP 0 IMAGE ADDRESS                        V2   *********
000334 A  402 V$ST0   SET      LC+28    MAP CONTROL WORDS                          V2   *********
000335 A  403 V$ST1   SET      LC+29                                               V2   *********
000336 A  404 V$ST2   SET      LC+30                                               V2   *********
000337 A  405 V$ST3   SET      LC+31                                               V2   *********
000340 A  406 V$KEY   SET      LC+32    CURRENT MAP KEY                            V2   *********
000334 A  407 V$CAM   EQU      LC+28    CORE ALLOCATION MASK  (4 WORDS)                 *********
          408 *       EQU      LC+32    UNUSED                                          *********
000341 A  409 V$CRDR  EQU      LC+33    CORE RESIDENT DIRECTORY LOCATION                *********
000342 A  410 V$TBGT  EQU      LC+34    TOP OF THREAD OF BG TSK WAITING TO BE ALLOC     *********
000343 A  411 V$TMS   EQU      LC+35    TIME OF DAY IN 5 MILLISECOND INCREMENTS         *********
000344 A  412 V$TMN   EQU      LC+36    TIME OF DAY IN MINUTE INCREMENTS                *********
000345 A  413 V$LUNT  EQU      LC+37    ADDR. OF LOGICAL UNIT NAME TABLE                *********
000346 A  414 V$OPCF  EQU      LC+38    OPCOM LOCKOUT FLAG                              *********
000347 A  415 V$FGLB  EQU      LC+39    KEY AND LU NO. FOR FOREGROUND LIB               *********
000350 A  416 V$FREE  EQU      LC+40    FREE RUNNING COUNTER INCR. IN MICROSECONDS      *********
000351 A  417 V$CTMS  EQU      LC+41    CLOCK RESOLUTION IN 5 MILLISECOND INCR.         *********
000352 A  418 V$SCV   EQU      LC+42    CLOCK SELECTED COUNT VALUE (1 TO 4095)          *********
000353 A  419 V$CKB   EQU      LC+43    BASIC CLOCK INTERRUPT RATE IN MICROSECONDS      *********
000354 A  420 V$CRM   EQU      LC+44    CLOCK RESOLUTION INCR. FOR 1 MINUTE.            *********
000355 A  421 V$DSTB  EQU      LC+45    BASE ADDR. FOR DST BLOCK                        *********
000356 A  422 V$LIT   EQU      LC+46    LAST LOCATION OF BACKGROUND LITERAL TABLE       *********
000357 A  423 V$PGT   SET      LC+47    ADDRESS OF V$PAGE                          V2   *********
          424 *       EQU      LC+47    UNUSED                                          *********
000360 A  425 V$CTAD  EQU      LC+48    BASE ADDR. FOR CONTROLLER ADDR. TABLE           *********
000361 A  426 V$SCTL  EQU      LC+49    CURRENT CONTROLLER IN SCAN                      *********
000362 A  427 V$NCTR  EQU      LC+50    NO. OF CONTROLLERS                              *********
000363 A  428 V$PIMN  EQU      LC+51    EXTERNAL DEVICE ADDRESS TABLE FOR PIMS          *********
          429 *                             (8 WORDS DEFINED IN PIM NO ORDER)          *********
          430 *  JMP V$IOST EQU LC+59  STAT ENTRY                                 V2   *********
          431 *       EQU      LC+59    UNUSED                                          *********
          432 *       EQU      LC+60    UNUSED                                          *********
000375 A  433 V$SLFG  EQU      LC+61    SAL TASK BUSY FLAG      1=BUSY, 0=NOT BUSY      *********
000376 A  434 V$ERFG  EQU      LC+62    ERROR TASK BUSY FLAG    1=BUSY, 0=NOT BUSY      *********
000377 A  435 V$JOP   EQU      LC+63    JCP OPERATING FLAG                              *********
000400 A  436 V$LUT1  EQU      LC+64    START LUN ADDR FOR JCP/OPCOM ASSIGNABLE         *********
000401 A  437 V$LUT2  EQU      LC+65    START LUN ADDR FOR UNASSIGNABLE                 *********
000402 A  438 V$LUT3  EQU      LC+66    START LUN ADDR FOR OPCOM ASSIGNABLE             *********
000403 A  439 V$1MIN  EQU      LC+67    32767 - (60000/(5*V$CTMS)) + 1                  *********
          440 *  JMP V$IOC  EQU LC+52  IOC ENTRY                                  V2   *********
          441 *  JMP V$EXEC EQU LC+53  V$EXEC ENTRY                               V2   *********
          442 *       EQU      LC+68    UNUSED                                          *********
          443 *       EQU      LC+69    UNUSED                                          *********
          444 *       EQU      LC+70    UNUSED                                          *********
          445 *       EQU      LC+71    UNUSED                                          *********
000410 A  446 V$IOA   EQU      LC+72    I/O ALGORITHM                                   *********
000411 A  447 V$CKIT  EQU      LC+73    CLOCK INT. IN PIM BEFORE LOCKOUT FLAG.          *********
000412 A  448 V$JCB   EQU      LC+74    ALL SYSTEM BACKGROUND PROGRAMS AND JCP USE      *********
          449 *                           THIS SYSTEM BUFFER TO READ DIRECTIVES AND    *********
          450 *                           SOURCE RECORDS IN.                           *********
000413 A  451 V$OCB   EQU      LC+75    OPCOM WILL READ OPERATOR KEY-IN REQUESTS        *********
          452 *                           IN THIS BUFFER.  IF JCP IS SET NOT ACTIVE    *********
          453 *                           AND A 1 DIRECTIVE IS INPUTED, OPCOM          *********
          454 *                           WILL MOVE THE DIRECTIVE TO V$JCB BEFORE      *********
          455 *                           SCHEDULING JCP.                              *********
000414 A  456 V$BVN   EQU      LC+76    BOTTOM OF VORTEX NUCLEUS                        *********
000415 A  457 V$BFC   EQU      LC+77    TOP OF FG RES. AREA/BOTTOM OF FG BLK COMM.      *********
000416 A  458 V$TFC   EQU      LC+78    TOP OF FG BLK COMMON/TOP OF VORTEX CORE.        *********
          459 *       EQU      LC+79    UNUSED                                          *********
          460         EJEC
          461 ********************************************************************************
          462 *
          463 ****     MASK TABLE DESCRIPTION                                          *********
          464 *
          465 ********************************************************************************
000420 A  467 MT      SET      0420
000420 A  468 ZERO    EQU      MT              ZERO WORD
000421 A  469 BS0     EQU      MT+1            BIT MASK CONTENTS  000001
000422 A  470 BS1     EQU      MT+2                               000002
000423 A  471 BS2     EQU      MT+3                               000004
000424 A  472 BS3     EQU      MT+4                               000010
000425 A  473 BS4     EQU      MT+5                               000020
000426 A  474 BS5     EQU      MT+6                               000040
000427 A  475 BS6     EQU      MT+7                               000100
000430 A  476 BS7     EQU      MT+8                               000200
000431 A  477 BS8     EQU      MT+9                               000400
000432 A  478 BS9     EQU      MT+10                              001000
000433 A  479 BS10    EQU      MT+11                              002000
000434 A  480 BS11    EQU      MT+12                              004000
000435 A  481 BS12    EQU      MT+13                              010000
000436 A  482 BS13    EQU      MT+14                              020000
000437 A  483 BS14    EQU      MT+15                              040000
000440 A  484 BS15    EQU      MT+16                             0100000
000441 A  485 BR0     EQU      MT+17           BIT MASK CONTENTS  0177776
000442 A  486 BR1     EQU      MT+18                              0177775
000443 A  487 BR2     EQU      MT+19                              0177773
000444 A  488 BR3     EQU      MT+20                              0177767
000445 A  489 BR4     EQU      MT+21                              0177757
000446 A  490 BR5     EQU      MT+22                              0177737
```

```
000001 A  687 DCBUFF EQU     1                 USER BUFFER AREA                                    ********
000002 A  688 DCCNT  EQU     2                 NO. OF COUNTS,USE FOR FUNC REQUESTS.                ********
          689 **         CHR     3              15-0  CHR ADDRESS                                   ********
000003 A  690 DCCHR  EQU     3                                                                     ********
000000 A  691 DCCHRB EQU     0                                                                     ********
000020 A  692 DCCHRZ EQU     16                                                                    ********
          693 *                                                                                    ********
          694 *                                                                                    ********
          695 *                                                                                    ********
000001 A  696 X      EQU     1                                                                     ********
000002 A  697 B      EQU     2                                                                     ********
000200 A  698 POST   EQU     0200              POST INDEXING FLAG                                  ********
          699        EJEC                                                                         ********
          700 ************************************************************************************
          701 **       TABLE NAME IS CTB     (CONTROLLER TABLE          )                         ********
          702 ************************************************************************************
          703 **     FIELD          WORD            BIT              DESCRIPTION                  **********
          704 **                                                                                  **********
          705 **         ACT        0              15-15   CONTROLLER ACTIVE FLAG                **********
000000 A  706 CTACT  EQU     0                                                                     ********
000017 A  707 CTACTB EQU     15                                                                    ********
000001 A  708 CTACTZ EQU     1                                                                     ********
          709 **         IDB        0               0-14   DRIVER TIDB ADDR                      **********
000000 A  710 CTIDB  EQU     0                                                                     ********
000000 A  711 CTIDBB EQU     0                                                                     ********
000017 A  712 CTIDBZ EQU     15                                                                    ********
          713 **         ADN        1               0-15   CTBL THREAD                           **********
000001 A  714 CTADN  EQU     1                                                                     ********
000000 A  715 CTADNB EQU     0                                                                     ********
000020 A  716 CTADNZ EQU     16                                                                    ********
          717 **         OPM        2               0-15   OP CODE MASK                          **********
000002 A  718 CTOPM  EQU     2                                                                     ********
000000 A  719 CTOPMB EQU     0                                                                     ********
000020 A  720 CTOPMZ EQU     16                                                                    ********
          721 **         DST        3               0-15   ADDRESS OF DST                        **********
000003 A  722 CTDST  EQU     3                                                                     ********
000000 A  723 CTDSTB EQU     0                                                                     ********
000020 A  724 CTDSTZ EQU     16                                                                    ********
          725 **         RQB        4               0-15   CURRENT REQUEST BLOCK                 **********
000004 A  726 CTRQB  EQU     4                                                                     ********
000000 A  727 CTRQBB EQU     0                                                                     ********
000020 A  728 CTRQBZ EQU     16                                                                    ********
          729 **         RTR        5               8-15   RETRY CONSTANT                        **********
000005 A  730 CTRTR  EQU     5                                                                     ********
000010 A  731 CTRTRB EQU     8                                                                     ********
000010 A  732 CTRTRZ EQU     8                                                                     ********
          733 **         RCN        5               0- 7   V$ERR RETRY COUNTER                   **********
000005 A  734 CTRCN  EQU     5                                                                     ********
000000 A  735 CTRCNB EQU     0                                                                     ********
000010 A  736 CTRCNZ EQU     8                                                                     ********
          737 **         DVA        6               0-15   DEVICE ADDRESS                        **********
000006 A  738 CTDVA  EQU     6                                                                     ********
000000 A  739 CTDVAB EQU     0                                                                     ********
000020 A  740 CTDVAZ EQU     16                                                                    ********
          741 **         IOA        7               0-15   I/O ALGORITHM VALUE                   **********
000007 A  742 CTIOA  EQU     7                                                                     ********
000000 A  743 CTIOAB EQU     0                                                                     ********
000020 A  744 CTIOAZ EQU     16                                                                    ********
          745 **         STA        8               0-15   DRIVER STATUS                         **********
000010 A  746 CTSTA  EQU     8                                                                     ********
000000 A  747 CTSTAB EQU     0                                                                     ********
000020 A  748 CTSTAZ EQU     16                                                                    ********
          749 **         BIC        9               0-15   BIC FLAG TABLE ADDRESS                **********
000011 A  750 CTBIC  EQU     9                                                                     ********
000000 A  751 CTBICB EQU     0                                                                     ********
000020 A  752 CTBICZ EQU     16                                                                    ********
          753 **         FCB        10              0-15   FCB/DCB ADDRESS                       **********
000012 A  754 CTFCB  EQU     10                                                                    ********
000000 A  755 CTFCBB EQU     0                                                                     ********
000020 A  756 CTFCBZ EQU     16                                                                    ********
          757 **         WDS        11              0-15   NO. WDS. TRANSFERRED                  **********
000013 A  758 CTWDS  EQU     11                                                                    ********
000000 A  759 CTWDSB EQU     0                                                                     ********
000020 A  760 CTWDSZ EQU     16                                                                    ********
          761 **         FRC        12              8-15   FREQUENCY CONSTANT                    **********
000014 A  762 CTFRC  EQU     12                                                                    ********
000010 A  763 CTFRCB EQU     8                                                                     ********
000010 A  764 CTFRCZ EQU     8                                                                     ********
          765 **         FRE        12              0- 7   FREQUENCY COUNT                       **********
000014 A  766 CTFRE  EQU     12                                                                    ********
000000 A  767 CTFREB EQU     0                                                                     ********
000010 A  768 CTFREZ EQU     8                                                                     ********
          769        EJEC                                                                         ********
          770 ************************************************************************************
          771 **       TABLE NAME IS DMT     (DEVICE MANAGEMENT TABLE   )                         ********
          772 ************************************************************************************
          773 **     FIELD          WORD            BIT              DESCRIPTION                  **********
          774 **                                                                                  **********
          775 **         TPA        13              0-15   TRANSMIT PRIMITIVE ADDRESS            **********
000015 A  776 DMTPA  EQU     13                                                                    ********
000000 A  777 DMTPAB EQU     0                                                                     ********
000020 A  778 DMTPAZ EQU     16                                                                    ********
          779 **         RPA        14              0-15   RECEIVE PRIMITIVE ADDRESS             **********
000016 A  780 DMRPA  EQU     14                                                                    ********
000000 A  781 DMRPAB EQU     0                                                                     ********
```

```
000020 A  782 DMRPAZ EQU     16
          783 **        FPA          15      0-15  FUNCTION PRIMITIVE ADDRESS**********
000017 A  784 DMFPA  EQU     15                                                *********
000000 A  785 DMFPAB EQU     0                                                 *********
000020 A  786 DMFPAZ EQU     16                                                *********
          787 **        STA          16      0-15  STATUS PRIMITIVE ADDRESS   **********
000020 A  788 DMSTA  EQU     16                                                *********
000000 A  789 DMSTAB EQU     0                                                 *********
000020 A  790 DMSTAZ EQU     16                                                *********
          791 **        LCA          17      0-15  LCW BASE ADDRESS           **********
000021 A  792 DMLCA  EQU     17                                                *********
000000 A  793 DMLCAB EQU     0                                                 *********
000020 A  794 DMLCAZ EQU     16                                                *********
          795 **        LTA          18      0-15  LOGICALLINE TABLE BASE ADD**********
000022 A  796 DMLTA  EQU     18                                                *********
000000 A  797 DMLTAB EQU     0                                                 *********
000020 A  798 DMLTAZ EQU     16                                                *********
          799 **        PTA          19      0-15  PHYSICAL LINE TABLE BASE A**********
000023 A  800 DMPTA  EQU     19                                                *********
000000 A  801 DMPTAB EQU     0                                                 *********
000020 A  802 DMPTAZ EQU     16                                                *********
          803 **        CWA          20      0-15  CONTROL WORD ADDR           **********
000024 A  804 DMCWA  EQU     20                                                *********
000000 A  805 DMCWAB EQU     0                                                 *********
000020 A  806 DMCWAZ EQU     16                                                *********
          807 **        SWA          21      0-15  STATUS WORD ADDR            **********
000025 A  808 DMSWA  EQU     21                                                *********
000000 A  809 DMSWAB EQU     0                                                 *********
000020 A  810 DMSWAZ EQU     16                                                *********
          811 **        BCA          22      0-15  BUFFER CHAIN TABLE ADDRESS  **********
000026 A  812 DMBCA  EQU     22                                                *********
000000 A  813 DMBCAB EQU     0                                                 *********
000020 A  814 DMBCAZ EQU     16                                                *********
          815         EJEC                                                   ***********
          816 ***********************************************************************
          817 **       TABLE NAME IS LCW     (LINE CONTROL WORDS          )
          818 ***********************************************************************
          819 **    FIELD            WORD          BIT          DESCRIPTION
          820 **
          821 **        IBF          0           15-15   INPUT BLOCK FLAG          **********
000000 A  822 LCIBF  EQU     0                                                 *********
000017 A  823 LCIBFB EQU     15                                                *********
000001 A  824 LCIBFZ EQU     1                                                 *********
          825 **        SMB          0           14-14   SET 2**7 ON             **********
000000 A  826 LCSMB  EQU     0                                                 *********
000016 A  827 LCSMBB EQU     14                                                *********
000001 A  828 LCSMBZ EQU     1                                                 *********
          829 **        IBL          0            0-11   INPUT BUFFER LENG.      *******
000000 A  830 LCIBL  EQU     0                                                 *********
000000 A  831 LCIBLB EQU     0                                                 *********
000014 A  832 LCIBLZ EQU     12                                                *********
          833 **        IBA          1            0-14   INPUT BUFFER ADDR       *******
000001 A  834 LCIBA  EQU     1                                                 *********
000000 A  835 LCIBAB EQU     0                                                 *********
000017 A  836 LCIBAZ EQU     15                                                *********
          837 **        IC1          2            8-15   INPUT CONTROL CH 1      *******
000002 A  838 LCIC1  EQU     2                                                 *********
000010 A  839 LCIC1B EQU     8                                                 *********
000010 A  840 LCIC1Z EQU     8                                                 *********
          841 **        IC2          2            0- 7   INPUT CONTROL CH 2      *******
000002 A  842 LCIC2  EQU     2                                                 *********
000000 A  843 LCIC2B EQU     0                                                 *********
000010 A  844 LCIC2Z EQU     8                                                 *********
          845 **        RCC          3           15-15   TERM ON CONT CHAR        *******
000003 A  846 LCRCC  EQU     3                                                 *********
000017 A  847 LCRCCB EQU     15                                                *********
000001 A  848 LCRCCZ EQU     1                                                 *********
          849 **        CRC          3           12-14   NO BYTES IN CRC          *******
000003 A  850 LCCRC  EQU     3                                                 *********
000014 A  851 LCCRCB EQU     12                                                *********
000003 A  852 LCCRCZ EQU     3                                                 *********
          853 **        ABN          3           11-11   TERM ON ABN COND         *******
000003 A  854 LCABN  EQU     3                                                 *********
000013 A  855 LCABNB EQU     11                                                *********
000001 A  856 LCABNZ EQU     1                                                 *********
          857 **        ASY          3           10-10   SYNC/ASYNC FLAG          *******
000003 A  858 LCASY  EQU     3                                                 *********
000012 A  859 LCASYB EQU     10                                                *********
000001 A  860 LCASYZ EQU     1                                                 *********
          861 **        IKE          3            0- 3   INPUT MAP BITS           *******
000003 A  862 LCIKE  EQU     3                                                 *********
000000 A  863 LCIKEB EQU     0                                                 *********
000004 A  864 LCIKEZ EQU     4                                                 *********
          865 **        OBF          4           15-15   OUTPUT BLOCK FLAG        *******
000004 A  866 LCOBF  EQU     4                                                 *********
000017 A  867 LCOBFB EQU     15                                                *********
000001 A  868 LCOBFZ EQU     1                                                 *********
          869 **        OBL          4            0-11   OUTPUT BUFFER LENG.      *******
000004 A  870 LCOBL  EQU     4                                                 *********
000000 A  871 LCOBLB EQU     0                                                 *********
000014 A  872 LCOBLZ EQU     12                                                *********
          873 **        OBA          5            0-14   OUTPUT BUFFER ADDR       *******
000005 A  874 LCOBA  EQU     5                                                 *********
000000 A  875 LCOBAB EQU     0                                                 *********
000017 A  876 LCOBAZ EQU     15                                                *********
```

```
                    877 **          LCB          6          0-15   LINE CONTROL BYTE
000006 A            878 LCLCB   EQU      6
000000 A            879 LCLCBB  EQU      0
000020 A            880 LCLCBZ  EQU      16
                    881 **          CWS          6         15-15   PCW S BIT
000006 A            882 LCCWS   EQU      6
000017 A            883 LCCWSB  EQU      15
000001 A            884 LCCWSZ  EQU      1
                    885 **          CWI          6         14-14   PCW I BIT
000006 A            886 LCCWI   EQU      6
000016 A            887 LCCWIB  EQU      14
000001 A            888 LCCWIZ  EQU      1
                    889 **          CWC          6         13-13   PCW C BIT
000006 A            890 LCCWC   EQU      6
000015 A            891 LCCWCB  EQU      13
000001 A            892 LCCWCZ  EQU      1
                    893 **          CWB          6         12-12   PCW AR/B BIT
000006 A            894 LCCWB   EQU      6
000014 A            895 LCCWBB  EQU      12
000001 A            896 LCCWBZ  EQU      1
                    897 **          CWD          6         11-11   PCW DTR BIT
000006 A            898 LCCWD   EQU      6
000013 A            899 LCCWDB  EQU      11
000001 A            900 LCCWDZ  EQU      1
                    901 **          CWP          6         10-10   PCW E/P BIT
000006 A            902 LCCWP   EQU      6
000012 A            903 LCCWPB  EQU      10
000001 A            904 LCCWPZ  EQU      1
                    905 **          CWR          6          9- 9   PCW R BIT
000006 A            906 LCCWR   EQU      6
000011 A            907 LCCWRB  EQU      9
000001 A            908 LCCWRZ  EQU      1
                    909 **          CWT          6          8- 8   PCW T BIT
000006 A            910 LCCWT   EQU      6
000010 A            911 LCCWTB  EQU      8
000001 A            912 LCCWTZ  EQU      1
                    913 **          LTB          7         15-15   OUTPUT BREAKS FLAG
000007 A            914 LCLTB   EQU      7
000017 A            915 LCLTBB  EQU      15
000001 A            916 LCLTBZ  EQU      1
                    917 **          CHN      7        14-14   CHAIN FLAG
000007 A            918 LCCHN   EQU      7
000016 A            919 LCCHNB  EQU      14
000001 A            920 LCCHNZ  EQU      1
                    921 **          BSC      7        13-13   BSC FLAG
000007 A            922 LCBSC   EQU      7
000015 A            923 LCBSCB  EQU      13
000001 A            924 LCBSCZ  EQU      1
                    925 **           LDB         7          12-12 LAST DATA BLOCK  FLAG ,CHN
000007 A            926 LCLDB   EQU      7
000014 A            927 LCLDBB  EQU      12
000001 A            928 LCLDBZ  EQU      1
                    929 **          ITB      7        11-11   ITB WAS SENT FLAG          BSC
000007 A            930 LCITB   EQU      7
000013 A            931 LCITBB  EQU      11
000001 A            932 LCITBZ  EQU      1
                    933 **          OKE          7          0- 3   OUTPUT MAP BITS
000007 A            934 LCOKE   EQU      7
000000 A            935 LCOKEB  EQU      0
000004 A            936 LCOKEZ  EQU      4
                    937         EJEC
                    938 ********************************************************************************
                    939 **       TABLE NAME IS LSD      (LINE SERVICE DESCRIPTOR    )
                    940 ********************************************************************************
                    941 **     FIELD              WORD                BIT                DESCRIPTION
                    942 **
                    943 **          THD          0          0-15   LSD THREAD CELL
000000 A            944 LSTHD   EQU      0
000000 A            945 LSTHDB  EQU      0
000020 A            946 LSTHDZ  EQU      16
                    947 **          RRT          1          0-15   REQUEST THREAD
000001 A            948 LSRRT   EQU      1
000000 A            949 LSRRTB  EQU      0
000020 A            950 LSRRTZ  EQU      16
                    951 **          RCA          2          0-15   READ COMPLETION ADDRESS
000002 A            952 LSRCA   EQU      2
000000 A            953 LSRCAB  EQU      0
000020 A            954 LSRCAZ  EQU      16
                    955 **          REM          3          0-15   READ EVENT MASK
000003 A            956 LSREM   EQU      3
000000 A            957 LSREMB  EQU      0
000020 A            958 LSREMZ  EQU      16
                    959 **          RTO          4          0-15   READ TIME OUT
000004 A            960 LSRTO   EQU      4
000000 A            961 LSRTOB  EQU      0
000020 A            962 LSRTOZ  EQU      16
                    963 **          SRS          5          0-15   STATIC RECEIVE STATUS
000005 A            964 LSSRS   EQU      5
000000 A            965 LSSRSB  EQU      0
000020 A            966 LSSRSZ  EQU      16
                    967 **          WCA          6          0-15   WRITE COMPLETION ADDRESS
000006 A            968 LSWCA   EQU      6
000000 A            969 LSWCAB  EQU      0
000020 A            970 LSWCAZ  EQU      16
                    971 **          WEM          7          0-15   WRITE EVENT MASK
```

```
000007 A  972 LSWEM   EQU      7
000000 A  973 LSWEMB  EQU      0
000020 A  974 LSWEMZ  EQU      16
          975 **           WTO          8          0-15   WRITE TIMEOUT
000010 A  976 LSWTO   EQU      8
000000 A  977 LSWTOB  EQU      0
000020 A  978 LSWTOZ  EQU      16
          979 **           SWS          9          0-15   STATIC WRITE STATUS
000011 A  980 LSSWS   EQU      9
000000 A  981 LSSWSB  EQU      0
000020 A  982 LSSWSZ  EQU      16
          983 **           CTA          10         0-15   CCM CONTROLLER TABLE ADDRE
000012 A  984 LSCTA   EQU      10
000000 A  985 LSCTAB  EQU      0
000020 A  986 LSCTAZ  EQU      16
          987 **           DST          11         0-15   DYNAMIC STATUS
000013 A  988 LSDST   EQU      11
000000 A  989 LSDSTB  EQU      0
000020 A  990 LSDSTZ  EQU      16
          991 **           MOD          12         14-15  MODEM TYPE
000014 A  992 LSMOD   EQU      12
000016 A  993 LSMODB  EQU      14
000002 A  994 LSMODZ  EQU      2
          995 **           PAR          12         12-13  PARITY MODE
000014 A  996 LSPAR   EQU      12
000014 A  997 LSPARB  EQU      12
000002 A  998 LSPARZ  EQU      2
          999 **           ASY          12         11-11  ASYNC/SYNC FLAG
000014 A 1000 LSASY   EQU      12
000013 A 1001 LSASYB  EQU      11
000001 A 1002 LSASYZ  EQU      1
         1003 **           XMM          12          9-10  TRANSMISSION MODE
000014 A 1004 LSXMM   EQU      12
000011 A 1005 LSXMMB  EQU      9
000002 A 1006 LSXMMZ  EQU      2
         1007 **           LSP          12          0- 8  LINE SPEED
000014 A 1008 LSLSP   EQU      12
000000 A 1009 LSLSPB  EQU      0
000011 A 1010 LSLSPZ  EQU      9
         1011 **           CC1          13         8-15   CONTROL CHARACTER 1
000015 A 1012 LSCC1   EQU      13
000010 A 1013 LSCC1B  EQU      8
000010 A 1014 LSCC1Z  EQU      8
         1015 **           CC2          13         0- 7   CONTROL CHARACTER 2
000015 A 1016 LSCC2   EQU      13
000000 A 1017 LSCC2B  EQU      0
000010 A 1018 LSCC2Z  EQU      8
         1019 **           TER          14         15-15  TERMINATE ON CONTROL CHARA
000016 A 1020 LSTER   EQU      14
000017 A 1021 LSTERB  EQU      15
000001 A 1022 LSTERZ  EQU      1
         1023 **           EPF          14         14-14  E/P FLAG
000016 A 1024 LSEPF   EQU      14
000016 A 1025 LSEPFB  EQU      14
000001 A 1026 LSEPFZ  EQU      1
         1027 **           WRS          14         11-13  WRITE REQUEST STATUS
000016 A 1028 LSWRS   EQU      14
000013 A 1029 LSWRSB  EQU      11
000003 A 1030 LSWRSZ  EQU      3
         1031 **           RRS          14          8-10  READ REQUEST STATUS
000016 A 1032 LSRRS   EQU      14
000010 A 1033 LSRRSB  EQU      8
000003 A 1034 LSRRSZ  EQU      3
         1035 **           PLA          14          0- 7  PHYSICAL LINE ADDRESS
000016 A 1036 LSPLA   EQU      14
000000 A 1037 LSPLAB  EQU      0
000010 A 1038 LSPLAZ  EQU      8
         1039 **           DSF          15         15-15  D/S FLAG
000017 A 1040 LSDSF   EQU      15
000017 A 1041 LSDSFB  EQU      15
000001 A 1042 LSDSFZ  EQU      1
         1043 **           YNC          15         14-14  INPUT SYNC CONTROL
000017 A 1044 LSYNC   EQU      15
000016 A 1045 LSYNCB  EQU      14
000001 A 1046 LSYNCZ  EQU      1
         1047 **           ABN          15         13-13  STOP RQST ON ABN STATUS
000017 A 1048 LSABN   EQU      15
000015 A 1049 LSABNB  EQU      13
000001 A 1050 LSABNZ  EQU      1
         1051 **           CRC          15         10-12  NO. OF CRC BYTES
000017 A 1052 LSCRC   EQU      15
000012 A 1053 LSCRCB  EQU      10
000003 A 1054 LSCRCZ  EQU      3
         1055 **           ASC          15          9- 9  7-BIT ASCII MODE FLAG
000017 A 1056 LSASC   EQU      15
000011 A 1057 LSASCB  EQU      9
000001 A 1058 LSASCZ  EQU      1
         1059 **           CHN      15          8-8    SET IF CHAIN MODE
000017 A 1060 LSCHN   EQU      15
000010 A 1061 LSCHNB  EQU      8
000001 A 1062 LSCHNZ  EQU      1
         1063 **           YNT          15          0- 7  XMIT SYNC CHAR
000017 A 1064 LSYNT   EQU      15
000000 A 1065 LSYNTB  EQU      0
000010 A 1066 LSYNTZ  EQU      8
```

```
                1067 **          BSC      16          14-14  SET IF BSC ADAPTER
000020  A       1068 LSBSC   EQU      16
000016  A       1069 LSBSCB  EQU      14
000001  A       1070 LSBSCZ  EQU      1
                1071 **          NTD              16          8-13   NO. TERM. OPEN ON LINE
000020  A       1072 LSNTD   EQU      16
000010  A       1073 LSNTDB  EQU      8
000006  A       1074 LSNTDZ  EQU      6
                1075 **          YNR              16          0- 7   RECV SYNC CHAR
000020  A       1076 LSYNR   EQU      16
000000  A       1077 LSYNRB  EQU      0
000010  A       1078 LSYNRZ  EQU      8
                1079         EJEC
                1080 ********************************************************************************
                1081 **        TABLE NAME IS TCD     (TERMINAL CNTRLR DESCRIPTOR)
                1082 ********************************************************************************
                1083 **     FIELD               WORD              BIT              DESCRIPTION
                1084 **
                1085 **          TCD              0           0-15   ADRS OF NEXT TCD IN QUEUE
000000  A       1086 TCTCD   EQU      0
000000  A       1087 TCTCDB  EQU      0
000020  A       1088 TCTCDZ  EQU      16
                1089 **          RQH              1           0-15   HEAD OF REQUEST QUEUE
000001  A       1090 TCRQH   EQU      1
000000  A       1091 TCRQHB  EQU      0
000020  A       1092 TCRQHZ  EQU      16
                1093 **          CTA              2           0-15   ADRS OF CONTRLR TBL FOR TC
000002  A       1094 TCCTA   EQU      2
000000  A       1095 TCCTAB  EQU      0
000020  A       1096 TCCTAZ  EQU      16
                1097 **          CLN              3           0- 7   LUN FOR THE CCM
000003  A       1098 TCCLN   EQU      3
000000  A       1099 TCCLNB  EQU      0
000010  A       1100 TCCLNZ  EQU      8
                1101 **          LLN              3           8-15   LOGICAL LINE NUMBER
000003  A       1102 TCLLN   EQU      3
000010  A       1103 TCLLNB  EQU      8
000010  A       1104 TCLLNZ  EQU      8
                1105 **          PCH              4           0- 7   PROMPTING CHAR FOR TERMINL
000004  A       1106 TCPCH   EQU      4
000000  A       1107 TCPCHB  EQU      0
000010  A       1108 TCPCHZ  EQU      8
                1109 **          SWL              4           8- 8   1 SWITCHED LN, 0 NOT SWITC
000004  A       1110 TCSWL   EQU      4
000010  A       1111 TCSWLB  EQU      8
000001  A       1112 TCSWLZ  EQU      1
                1113 **          BSL              4           9- 9   1 BIN SYNC LN, 0 ASYNC
000004  A       1114 TCBSL   EQU      4
000011  A       1115 TCBSLB  EQU      9
000001  A       1116 TCBSLZ  EQU      1
                1117 **          XMM              4          10-11   TRANSMISSION MODE
000004  A       1118 TCXMM   EQU      4
000012  A       1119 TCXMMB  EQU      10
000002  A       1120 TCXMMZ  EQU      2
                1121 **          ECH              4          12-12   1 NO ECHO, 0 ECHO FULL DUP
000004  A       1122 TCECH   EQU      4
000014  A       1123 TCECHB  EQU      12
000001  A       1124 TCECHZ  EQU      1
                1125 **          CON              4          13-13   1 PHYS CON MADE, 0 NOT MAD
000004  A       1126 TCCON   EQU      4
000015  A       1127 TCCONB  EQU      13
000001  A       1128 TCCONZ  EQU      1
                1129 **          WBC              4          14-14   0 WD COUNT FOR WRITE, 1 BY
000004  A       1130 TCWBC   EQU      4
000016  A       1131 TCWBCB  EQU      14
000001  A       1132 TCWBCZ  EQU      1
                1133 **          RBC              4          15-15   0 WORD COUNT FOR READ, 1 B
000004  A       1134 TCRBC   EQU      4
000017  A       1135 TCRBCB  EQU      15
000001  A       1136 TCRBCZ  EQU      1
                1137 **          NTD              5           0- 3   NO. DEVICES THIS TERMINAL
000005  A       1138 TCNTD   EQU      5
000000  A       1139 TCNTDB  EQU      0
000004  A       1140 TCNTDZ  EQU      4
                1141 **          NOD              5           4- 7   NO. DEVICES OPEN THIS TERM
000005  A       1142 TCNOD   EQU      5
000004  A       1143 TCNODB  EQU      4
000004  A       1144 TCNODZ  EQU      4
                1145 **          TYP              5           8-11   TSD/TCM TYPE
000005  A       1146 TCTYP   EQU      5
000010  A       1147 TCTYPB  EQU      8
000004  A       1148 TCTYPZ  EQU      4
                1149 **          CTP              5          12-15   TRANSMISSION CODE TYPE
000005  A       1150 TCCTP   EQU      5
000014  A       1151 TCCTPB  EQU      12
000004  A       1152 TCCTPZ  EQU      4
                1153 **          RMD              6           0- 2   MODE OF READ OPERATION
000006  A       1154 TCRMD   EQU      6
000000  A       1155 TCRMDB  EQU      0
000003  A       1156 TCRMDZ  EQU      3
                1157 **          WMD              6           3- 5   MODE OF WRITE OPERATION
000006  A       1158 TCWMD   EQU      6
000003  A       1159 TCWMDB  EQU      3
000003  A       1160 TCWMDZ  EQU      3
                1161 **          RRS              6           6- 8   READ REQUEST STATUS
```

```
000006 A 1162 TCRRS   EQU      6
000006 A 1163 TCRRSB  EQU      6
000003 A 1164 TCRRSZ  EQU      3
         1165 **           WRS          6        9-11   WRITE REQUEST STATUS
000006 A 1166 TCWRS   EQU      6
000011 A 1167 TCWRSB  EQU      9
000003 A 1168 TCWRSZ  EQU      3
         1169 **           LDF          6       12-12   LINE DISCONNECT FLAG
000006 A 1170 TCLDF   EQU      6
000014 A 1171 TCLDFB  EQU      12
000001 A 1172 TCLDFZ  EQU      1
         1173 **           RCA          7        0-15   CCM READ RQST BLOCK ADRS
000007 A 1174 TCRCA   EQU      7
000000 A 1175 TCRCAB  EQU      0
000020 A 1176 TCRCAZ  EQU      16
         1177 **           STD          8        0-15   READ TIMEOUT VALUE
000010 A 1178 TCSTD   EQU      8
000000 A 1179 TCSTDB  EQU      0
000020 A 1180 TCSTDZ  EQU      16
         1181 **           WCA          9        0-15   CCM WRITE RQST BLOCK ADRS
000011 A 1182 TCWCA   EQU      9
000000 A 1183 TCWCAB  EQU      0
000020 A 1184 TCWCAZ  EQU      16
         1185 **           DCC         10        0-15   DYNAMIC CHAR COUNT FOR REA
000012 A 1186 TCDCC   EQU      10
000000 A 1187 TCDCCB  EQU      0
000020 A 1188 TCDCCZ  EQU      16
         1189 **           RBF         11        0-15   DYNAMIC READ BUFR ADRS
000013 A 1190 TCRBF   EQU      11
000000 A 1191 TCRBFB  EQU      0
000020 A 1192 TCRBFZ  EQU      16
         1193 **           DTO         12        0-15   DYNAMIC READ TIMEOUT VALUE
000014 A 1194 TCDTO   EQU      12
000000 A 1195 TCDTOB  EQU      0
000020 A 1196 TCDTOZ  EQU      16
         1197 **           ID1         13        0-15   1ST 2 CHAR OF TUID
000015 A 1198 TCID1   EQU      13
000000 A 1199 TCID1B  EQU      0
000020 A 1200 TCID1Z  EQU      16
         1201 **           ID2         14        0-15   2ND 2 CHAR OF TUID
000016 A 1202 TCID2   EQU      14
000000 A 1203 TCID2B  EQU      0
000020 A 1204 TCID2Z  EQU      16
         1205          EJEC
         1206 **********************************************************************
         1207 **       TABLE NAME IS TPT     (TCM PROCESSOR TABLE       )
         1208 **********************************************************************
         1209 **    FIELD              WORD              BIT              DESCRIPTION
         1210 **
         1211 **           RPA         13        0-15   READ PROCESSOR ADDRESS
000015 A 1212 TPRPA   EQU      13
000000 A 1213 TPRPAB  EQU      0
000020 A 1214 TPRPAZ  EQU      16
         1215 **           WPA         14        0-15   WRITE PROCESSOR ADDRESS
000016 A 1216 TPWPA   EQU      14
000000 A 1217 TPWPAB  EQU      0
000020 A 1218 TPWPAZ  EQU      16
         1219 **           FPA         15        0-15   FUNC PROCESSOR ADDRESS
000017 A 1220 TPFPA   EQU      15
000000 A 1221 TPFPAB  EQU      0
000020 A 1222 TPFPAZ  EQU      16
         1223          EJEC
         1224 **********************************************************************
         1225 **       TABLE NAME IS PSD     (PROTOTYPE LSD             )
         1226 **********************************************************************
         1227 **    FIELD              WORD              BIT              DESCRIPTION
         1228 **
         1229 **           MOD          0       14-15   MODEM TYPE
000000 A 1230 PSMOD   EQU      0
000016 A 1231 PSMODB  EQU      14
000002 A 1232 PSMODZ  EQU      2
         1233 **           PAR          0       12-13   PARITY MODE
000000 A 1234 PSPAR   EQU      0
000014 A 1235 PSPARB  EQU      12
000002 A 1236 PSPARZ  EQU      2
         1237 **           ASY          0       11-11   SYNC/ASYNC FLAG
000000 A 1238 PSASY   EQU      0
000013 A 1239 PSASYB  EQU      11
000001 A 1240 PSASYZ  EQU      1
         1241 **           XMM          0        9-10   TRANSMISSION MODE
000000 A 1242 PSXMM   EQU      0
000011 A 1243 PSXMMB  EQU      9
000002 A 1244 PSXMMZ  EQU      2
         1245 **           LSP          0        0- 8   LINE SPEED
000000 A 1246 PSLSP   EQU      0
000000 A 1247 PSLSPB  EQU      0
000011 A 1248 PSLSPZ  EQU      9
         1249 **           CC1          1        8-15   CONTROL CHARACTER 1
000001 A 1250 PSCC1   EQU      1
000010 A 1251 PSCC1B  EQU      8
000010 A 1252 PSCC1Z  EQU      8
         1253 **           CC2          1        0- 7   CONTROL CHARACTER 2
000001 A 1254 PSCC2   EQU      1
000000 A 1255 PSCC2B  EQU      0
000010 A 1256 PSCC2Z  EQU      8
```

```
                  1257 **          TER          2          15-15   READ TERMINATION CONTROL
000002 A          1258 PSTER   EQU      2
000017 A          1259 PSTERB  EQU      15
000001 A          1260 PSTERZ  EQU      1
                  1261 **          EPF          2          14-14   E/P BIT IN DCM
000002 A          1262 PSEPF   EQU      2
000016 A          1263 PSEPFB  EQU      14
000001 A          1264 PSEPFZ  EQU      1
                  1265 **          DWN          2           9- 9   LINE DOWN FLAG
000002 A          1266 PSDWN   EQU      2
000011 A          1267 PSDWNB  EQU      9
000001 A          1268 PSDWNZ  EQU      1
                  1269 **          DEF          2           8- 8   LINE DEFINED FLAG
000002 A          1270 PSDEF   EQU      2
000010 A          1271 PSDEFB  EQU      8
000001 A          1272 PSDEFZ  EQU      1
                  1273 **          PLA          2           0- 7   PHYSICAL LINE ADDRESS
000002 A          1274 PSPLA   EQU      2
000000 A          1275 PSPLAB  EQU      0
000010 A          1276 PSPLAZ  EQU      8
                  1277 **          DSF          3          15-15   DS/S BIT IN DCM
000003 A          1278 PSDSF   EQU      3
000017 A          1279 PSDSFB  EQU      15
000001 A          1280 PSDSFZ  EQU      1
                  1281 **          YNC          3          14-14   RESYNC ON READ
000003 A          1282 PSYNC   EQU      3
000016 A          1283 PSYNCB  EQU      14
000001 A          1284 PSYNCZ  EQU      1
                  1285 **          ABN          3          13-13   ERROR STOP FLAG
000003 A          1286 PSABN   EQU      3
000015 A          1287 PSABNB  EQU      13
000001 A          1288 PSABNZ  EQU      1
                  1289 **          CRC          3          10-12   INPUT CRC COUNT
000003 A          1290 PSCRC   EQU      3
000012 A          1291 PSCRCB  EQU      10
000003 A          1292 PSCRCZ  EQU      3
                  1293 **          YNT          3           0- 7   SYNC XMIT BYTE
000003 A          1294 PSYNT   EQU      3
000000 A          1295 PSYNTB  EQU      0
000010 A          1296 PSYNTZ  EQU      8
                  1297 **          BSC                      14-14 BSC ADAPTER USED
000004 A          1298 PSBSC   EQU      4
000016 A          1299 PSBSCB  EQU      14
000016 A          1300 PSBSCZ  EQU      14
                  1301 **          YNR          4           0- 7   SYNC RECV BYTE
000004 A          1302 PSYNR   EQU      4
000000 A          1303 PSYNRB  EQU      0
000010 A          1304 PSYNRZ  EQU      8
                  1305          EJEC
                  1306 ********************************************************************************
                  1307 **       TABLE NAME IS PCD     (PROTOTYPE TCD               )                  *
                  1308 ********************************************************************************
                  1309 **     FIELD            WORD              BIT              DESCRIPTION
                  1310 **
                  1311 **          LLN          0           8-15   LOGICAL LINE NUMBER
000000 A          1312 PCLLN   EQU      0
000010 A          1313 PCLLNB  EQU      8
000010 A          1314 PCLLNZ  EQU      8
                  1315 **          CLN          0           0- 7   LOGICAL UNIT OF CCM
000000 A          1316 PCCLN   EQU      0
000000 A          1317 PCCLNB  EQU      0
000010 A          1318 PCCLNZ  EQU      8
                  1319 **          ECH          1          12-12   ECHO ON FULL DUPLEX
000001 A          1320 PCECH   EQU      1
000014 A          1321 PCECHB  EQU      12
000001 A          1322 PCECHZ  EQU      1
                  1323 **          XMM          1          10-11   TRANSMISSION MODE
000001 A          1324 PCXMM   EQU      1
000012 A          1325 PCXMMB  EQU      10
000002 A          1326 PCXMMZ  EQU      2
                  1327 **          BSL          1           9- 9   BISYNC FLAG
000001 A          1328 PCBSL   EQU      1
000011 A          1329 PCBSLB  EQU      9
000001 A          1330 PCBSLZ  EQU      1
                  1331 **          SWL          1           8- 8   SWITCHED LINE FLAG
000001 A          1332 PCSWL   EQU      1
000010 A          1333 PCSWLB  EQU      8
000001 A          1334 PCSWLZ  EQU      1
                  1335 **          PCH          1           0- 7   TERMINAL PROMPT BYTE
000001 A          1336 PCPCH   EQU      1
000000 A          1337 PCPCHB  EQU      0
000010 A          1338 PCPCHZ  EQU      8
                  1339 **          CTP          2          12-15   CODE TYPE
000002 A          1340 PCCTP   EQU      2
000014 A          1341 PCCTPB  EQU      12
000004 A          1342 PCCTPZ  EQU      4
                  1343 **          TYP          2           8-11   TCD/TCM TYPE
000002 A          1344 PCTYP   EQU      2
000010 A          1345 PCTYPB  EQU      8
000004 A          1346 PCTYPZ  EQU      4
                  1347 **          NTD          2           0- 3   NUMBER OF DEVICES
000002 A          1348 PCNTD   EQU      2
000000 A          1349 PCNTDB  EQU      0
000004 A          1350 PCNTDZ  EQU      4
                  1351          EJEC
```

```
                    1352 ********************************************************************************
                    1353 **       TABLE NAME IS TIB     (TERMINAL INDEX BLOCK       )                  ********
                    1354 ********************************************************************************
                    1355 **     FIELD              WORD              BIT              DESCRIPTION      **********
                    1356 **                                                                           **********
                    1357 **           TU1           0               0-15    FIRST TWO CHARS OF TUID   **********
000000 A            1358 TITU1   EQU      0                                                           ********
000000 A            1359 TITU1B  EQU      0                                                           ********
000020 A            1360 TITU1Z  EQU      16                                                          ********
                    1361 **           TU2           1               0-15    SECOND TWO CHARACS OF TUID**********
000001 A            1362 TITU2   EQU      1                                                           ********
000000 A            1363 TITU2B  EQU      0                                                           ********
000020 A            1364 TITU2Z  EQU      16                                                          ********
                    1365 **           DWN           2              15-15    TERMINAL DOWN FLAG        **********
000002 A            1366 TIDWN   EQU      2                                                           ********
000017 A            1367 TIDWNB  EQU      15                                                          ********
000001 A            1368 TIDWNZ  EQU      1                                                           ********
                    1369 **           SEC           2               7-14    SECTOR POINTER            **********
000002 A            1370 TISEC   EQU      2                                                           ********
000007 A            1371 TISECB  EQU      7                                                           ********
000010 A            1372 TISECZ  EQU      8                                                           ********
                    1373 **           DSP           2               0- 6    DISPLACEMENT              **********
000002 A            1374 TIDSP   EQU      2                                                           ********
000000 A            1375 TIDSPB  EQU      0                                                           ********
000007 A            1376 TIDSPZ  EQU      7                                                           ********
                    1377 **           ODN           3              15-15    LOD DOWN FLAG             **********
000003 A            1378 TIODN   EQU      3                                                           ********
000017 A            1379 TIODNB  EQU      15                                                          ********
000001 A            1380 TIODNZ  EQU      1                                                           ********
                    1381 **           OSC           3               7-14    OLD SECTOR POINTER        **********
000003 A            1382 TIOSC   EQU      3                                                           ********
000007 A            1383 TIOSCB  EQU      7                                                           ********
000010 A            1384 TIOSCZ  EQU      8                                                           ********
                    1385 **           ODP           3               0- 6    OLD DISPLACEMENT          **********
000003 A            1386 TIODP   EQU      3                                                           ********
000000 A            1387 TIODPB  EQU      0                                                           ********
000007 A            1388 TIODPZ  EQU      7                                                           ********
                    1389 **           NET           0               0-15    NUMBER OF ENTRIES         **********
000000 A            1390 TINET   EQU      0                                                           ********
000000 A            1391 TINETB  EQU      0                                                           ********
000020 A            1392 TINETZ  EQU      16                                                          ********
                    1393 *                                                                            ********
                    1394 ** CHAIN HEADER   CHR                                                        ********
                    1395 **           AFP           0              15-0     ACTIVE CHAIN FRONT POINTER **********
000000 A            1396 CHAFP   EQU      0                                                           ********
000000 A            1397 CHAFPB  EQU      0                                                           ********
000020 A            1398 CHAFPZ  EQU      16                                                          ********
                    1399 **           ARP           1              15-0     ACTIVE CHAIN REAR  POINTER ********
000001 A            1400 CHARP   EQU      1                                                           ********
000000 A            1401 CHARPB  EQU      0                                                           ********
000020 A            1402 CHARPZ  EQU      16                                                          ********
                    1403 **           CFP           2              15-0     COMPLETE CHAIN FRONT POINTER ********
000002 A            1404 CHCFP   EQU      2                                                           ********
000000 A            1405 CHCFPB  EQU      0                                                           ********
000020 A            1406 CHCFPZ  EQU      16                                                          ********
                    1407 **           CRP           3              15-0     COMPLETE CHAIN REAR  POINTER ********
000003 A            1408 CHCRP   EQU      3                                                           ********
000000 A            1409 CHCRPB  EQU      0                                                           ********
000020 A            1410 CHCRPZ  EQU      16                                                          ********
                    1411 **           RBL           4             15-0     REQUEST BLOCK ADDRESS      ********
000004 A            1412 CHRBL   EQU      4                                                           ********
000000 A            1413 CHRBLB  EQU      0                                                           ********
000020 A            1414 CHRBLZ  EQU      16                                                          ********
                    1415 ************************************                                        ********
                    1416 **      IBH -INTERFACE BLOCK HEADER                                          ********
                    1417 ************************************                                        ********
                    1418 **           LNK           0              15-0     LINK TO NEXT IBH          ********
000000 A            1419 IBLNK   EQU      0                                                           ********
000000 A            1420 IBLNKB  EQU      0                                                           ********
000020 A            1421 IBLNKZ  EQU      16                                                          ********
                    1422 **           LEN           1              15-0     DATA BLOK LENGTH IN BYTES  ********
000001 A            1423 IBLEN   EQU      1                                                           ********
000000 A            1424 IBLENB  EQU      0                                                           ********
000020 A            1425 IBLENZ  EQU      16                                                          ********
                    1426 **           STA           2              15-0     DATA STARTING ADDRESS      ********
000002 A            1427 IBSTA   EQU      2                                                           ********
000000 A            1428 IBSTAB  EQU      0                                                           ********
000020 A            1429 IBSTAZ  EQU      16                                                          ********
                    1430 **           IBF           3              15-15    INPUT BUF FLAG 0=LEFT BYTE ********
000003 A            1431 IBIBF   EQU      3                                                           ********
000017 A            1432 IBIBFB  EQU      15                                                          ********
000001 A            1433 IBIBFZ  EQU      1                                                           ********
                    1434 **           LAS           3              14-0     NEXT WORD TO BE FILLED     ********
000003 A            1435 IBLAS   EQU      3                                                           ********
000000 A            1436 IBLASB  EQU      00                                                          ********
000017 A            1437 IBLASZ  EQU      15                                                          ********
                    1438 **           STS           4              15-0     STATUS  WORD               ********
000004 A            1439 IBSTS   EQU      4                                                           ********
000000 A            1440 IBSTSB  EQU      0                                                           ********
000017 A            1441 IBSTSZ  EQU      15                                                          ********
                    1442                  LIST                                                        ********
                    1443 *                                                                            ********
                    1444 GETMEM  MAC                                                                  ********
                    1445                  LDAI    P(2)                                                ********
                    1446                  LDBI    P(1)                                                ********
05 00014
05 00015
05 00016
05 00017
```

```
                1447           STX      *+6                                                                  05 00018
                1448           IFF      VORTEX-2                                                      V2     05 00019
                1449           JSR      0406,1                                                        V2     05 00020
                1450           IFF      VORTEX-1                                                      V2     05 00021
                1451           JSR      V$EXEC,1                                                             05 00022
                1452           DATA     0600                                                                 05 00023
                1453           DATA     VT$GTM                                                               05 00024
                1454           LDXI     *                                                                    05 00025
                1455           EMAC                                                                          05 00026
                1456 PUTMEM    MAC                                                                           05 00027
                1457           LDAI     P(1)                                                                 05 00028
                1458           LDB      P(2)                                                                 05 00029
                1459           STX      *+6                                                                  05 00030
                1460           IFF      VORTEX-2                                                      V2     05 00031
                1461           JSR      0406,1                                                        V2     05 00032
                1462           IFF      VORTEX-1                                                      V2     05 00033
                1463           JSR      V$EXEC,1                                                             05 00034
                1464           DATA     0600                                                                 05 00035
                1465           DATA     VT$PTM                                                               05 00036
                1466           LDXI     *                                                                    05 00037
                1467           EMAC                                                                          05 00038
                1468           EJEC                                                                          05 00039
                1469           TITLE    TC$BRQ                                                               05 00040
                1470 ********************************************************************************05 00041
                1471 ********************************************************************************05 00042
                1472 **        PROGRAM NAME -                                                        **05 00043
                1473 **                 TC$BRQ - SETS UP SKELETON CCM RQST BLK                       **05 00044
                1474 **                                                                               **05 00045
                1475 **        ENTRY CONDITIONS -                                                    **05 00046
                1476 **                 (X) = TCD ADDRESS                                            **05 00047
                1477 **                 (B) = ADDRESS OF ALLOCATED MEMORY FOR RQST BLK               **05 00048
                1478 **                       (CCM RQBLK SIZE MUST BE 12 WORDS OR MORE)              **05 00049
                1479 **                                                                               **05 00050
                1480 **        EXIT CONDITIONS -                                                     **05 00051
                1481 **                 (X) UNCHANGED                                                **05 00052
                1482 **                 (B) UNCHANGED                                                **05 00053
                1483 **                 (A) DESTROYED                                                **05 00054
                1484 **                                                                               **05 00055
                1485 **        CALLING SEQUENCE -                                                    **05 00056
                1486 **                 JMPM TC$BRQ                                                  **05 00057
                1487 **                 (RETURN)                                                     **05 00058
                1488 **                                                                               **05 00059
                1489 ********************************************************************************05 00060
                1490 ********************************************************************************05 00061
                1491           NAME     TC$BRQ                                                               05 00062
000000 000000 A 1492 TC$BRQ    ENTR                                                                          05 00063
       000001 A 1493 TCD       SET      X                                                                    05 00064
       000002 A 1494 RQBLK     SET      B                                                                    05 00065
000001 014023 A 1495           LDA      JSRWD           SET UP V$IOC CALL                                    05 00066
000002 056000 A 1496           STA      0,RQBLK                                                              05 00067
000003 014023 A 1497           LDA      IOCA                                                                 05 00068
000004 056001 A 1498           STA      1,RQBLK                                                              05 00069
000005 010440 A 1499           LDA      BS15            CLEAR STATUS WORD, SET COMPLETE BIT                  05 00070
000006 056002 A 1500           STA      2,RQBLK                                                              05 00071
                1501           FETCHA   TCD,TCCLN,TCCLNB,TCCLNZ                                              05 00072
000007 015003 A
000010 150463 A
000011 110440 A 1502           ORA      BS15            IMMEDIATE RETURN                                     05 00073
000012 056003 A 1503           STA      3,RQBLK         STORE CCM LOGICAL UNIT                               05 00074
000013 005021 A 1504           TBA                      BUILD AN LCB                                         05 00075
000014 120470 A 1505           ADD      NINE                                                                 05 00076
000015 056004 A 1506           STA      4,RQBLK                                                              05 00077
                1507           FETCHA   TCD,TCLLN,TCLLNB,TCLLNZ                                              05 00078
000016 015003 A
000017 004350 A
000020 056013 A 1508           STA      11,RQBLK        STORE LOGICAL LINE NUMBER                            05 00079
000021 014004 A 1509           LDA      JMPWD                                                                05 00080
000022 056007 A 1510           STA      7,RQBLK         STORE JMP INSTRUCTION                                05 00081
                1511           IFT      VORTEX-2                                                      V2     05 00082
                1512           GOTO     1                                                             V2     05 00083
                1513           TZA                                                                    V2     05 00084
                1514           STA      13,RQBLK        SET MAP KEY = 0                               V2     05 00085
                1515 1         CONT                                                                   V2     05 00086
000023 001000 A 1516           JMP*     TC$BRQ                                                               05 00087
000024 100000 R
                1517 *                                  CONSTANTS                                            05 00088
000025 006505 A 1518 JSRWD     DATA     006505          JUMP AND SET RETURN IN X REG INST.                   05 00089
000026 001000 A 1519 JMPWD     DATA     001000          JUMP UNCONDITIONAL INST.                             05 00090
                1520           IFF      VORTEX-2                                                      V2     05 00091
                1521           GOTO     1                                                             V2     05 00092
                1522           EXT      V$IOC                                                                05 00093
000027 000000 E 1523 IOCA      DATA     V$IOC                                                                05 00094
                1524 1         CONT                                                                   V2     05 00095
                1525           IFF      VORTEX-2                                                      V2     05 00096
                1526 IOCA      DATA     0404                                                          V2     05 00097
                1527           EJEC                                                                          05 00098
                1528           TITLE    TC$FRR                                                               05 00099
                1529 ********************************************************************************05 00100
                1530 ********************************************************************************05 00101
                1531 **        PROGRAM NAME -                                                        **05 00102
                1532 **                 TC$FRR - TC$FWR - FIND NEXT READ OR WRITE RQST ON            **05 00103
                1533 **                                  TCD REQUEST QUEUE                            **05 00104
                1534 **        ENTRY CONDITIONS -                                                    **05 00105
                1535 **                 (X) = TCD ADDRESS                                            **05 00106
                1536 **                                                                               **05 00107
```

```
                    1537 **      EXIT CONDITIONS -                                                  **05 00108
                    1538 **           (X) UNCHANGED                                                 **05 00109
                    1539 **           (B) DESTROYED                                                 **05 00110
                    1540 **           (A) .GT. 0, (A) = ADDRESS OF NEXT REQUEST OF TYPE             **05 00111
                    1541 **           (A) .EQ. 0, NO REQUEST OF TYPE DESIRED AVAILABLE              **05 00112
                    1542 **                                                                         **05 00113
                    1543 **      CALLING SEQUENCE -                                                 **05 00114
                    1544 **           JMPM    TC$FRR                                               **05 00115
                    1545 **              OR                                                         **05 00116
                    1546 **           JMPM    TC$FWR                                               **05 00117
                    1547 **                                                                         **05 00118
                    1548 **           (RETURN)                                                      **05 00119
                    1549 **                                                                         **05 00120
                    1550 ***************************************************************************05 00121
                    1551 ***************************************************************************05 00122
                    1552          SPACE   5                                                          05 00123
                    1553          NAME    TC$FRR,TC$FWR                                              05 00124
000030 000000 A     1554 TC$FRR   ENTR                    READ RQST ENTRY                            05 00125
000031 006017 A     1555          LDAE    TC$FRR          EXIT SETUP                                 05 00126
000032 000030 R
000033 054045 A     1556          STA     FRXIT+1
000034 005001 A     1557          TZA                     SET RQST TYPE TO READ                      05 00127
000035 001000 A     1558          JMP     FR01                                                       05 00128
000036 000044 R                                                                                      05 00129
                    1559          SPACE   5                                                          05 00130
000037 000000 A     1560 TC$FWR   ENTR                    WRITE RQST ENTRY                           05 00131
000040 006017 A     1561          LDAE    TC$FWR                                                     05 00132
000041 000037 R
000042 054036 A     1562          STA     FRXIT+1                                                    05 00133
000043 010421 A     1563          LDA     ONE             SET RQST TYPE TO WRITE                     05 00134
                    1564          SPACE   2                                                          05 00135
000044 054035 A     1565 FR01     STA     FROPCD                                                     05 00136
                    1566 *                FORM THE ADDRESS OF TCD REQUEST QUEUE POINTER              05 00137
000045 005041 A     1567          TXA                                                                05 00138
                    1568          ADAT    TCRQH           ADD DISPLACEMENT OF RQST QUEUE HEAD PTR    05 00139
000046 120421 A
000047 054033 A     1569          STA     FRRQST                                                     05 00140
                    1570          SPACE   2                                                          05 00141
000050 006017 A     1571 FR05     LDAE*   FRRQST          (A) = ADDR OF NEXT RQST IN QUEUE           05 00142
000051 100103 R
000052 001010 A     1572          JAZ     FRXIT           END OF THRD,NONE FOUND.                    05 00143
000053 000100 R
000054 005012 A     1573          TAB                                                                05 00144
       000002 A     1574 RQST     SET     B                                                          05 00145
                    1575          FETCHA  RQST,RQPWD,8,4                                             05 00146
000055 016001 A
000056 004350 A
000057 150472 A
000060 140422 A     1576          SUB     TWO                                                        05 00147
000061 001010 A     1577          JAZ     FRXIT           WEOF RQST FOUND FIRST, NO FIND             05 00148
000062 000100 R
000063 140464 A     1578          SUB     THREE                                                      05 00149
000064 001010 A     1579          JAZ     FRXIT           FUNC RQST FOUND FIRST, NO FIND             05 00150
000065 000100 R
000066 120465 A     1580          ADD     FIVE                                                       05 00151
000067 144012 A     1581          SUB     FROPCD                                                     05 00152
000070 001010 A     1582          JAZ     FR10                                                       05 00153
000071 000077 R
000072 005021 A     1583          TBA                     NOT REQUESTED TYPE, CHECK NEXT RQST        05 00154
                    1584          ADAT    RADNR                                                      05 00155
000073 120423 A
000074 054006 A     1585          STA     FRRQST                                                     05 00156
000075 001000 A     1586          JMP     FR05                                                       05 00157
000076 000050 R
                    1587          SPACE   2                                                          05 00158
       000077 R     1588 FR10     EQU     *                                                      V2  05 00159
                    1589          IFT     VORTEX-2                                               V2  05 00160
                    1590          GOTO    1                                                      V2  05 00161
                    1591          STB     FROPCD          SAVE B                                 V2  05 00162
                    1592          LDB     RTIDB,RQST                                             V2  05 00163
                    1593 TIDB     SET     B                                                      V2  05 00164
                    1594          LDA     TBKEY,TIDB                                             V2  05 00165
                    1595          CALL    VT$TMP          SET UP MAP                             V2  05 00166
                    1596          LDB     FROPCD          RESTORE B                              V2  05 00167
                    1597 1        CONT                                                           V2  05 00168
000077 005021 A     1598          TBA                                                            V2  05 00169
000100 001000 A     1599 FRXIT    JMP     *               RETURN                                     05 00170
000101 000100 R
                    1600          SPACE   5                                                          05 00171
000102 000000 A     1601 FROPCD   DATA    0               OP-CODE OF REQUESTED TYPE                  05 00172
000103 000000 A     1602 FRRQST   DATA    0               ADDR OF NEXT RQST IN TCD RQST QUEUE        05 00173
                    1603          EJEC                                                               05 00174
                    1604          TITLE   TC$CRQ                                                     05 00175
                    1605 ***************************************************************************05 00176
                    1606 ***************************************************************************05 00177
                    1607 **      PROGRAM NAME -                                                     **05 00178
                    1608 **           TC$CRQ - VTAM TCM REQUEST COMPLETION PROGRAM                   **05 00179
                    1609 **           TC$FRQ - ALTERNATE ENTRY POINT WHEN CCM STATUS NOT USED       **05 00180
                    1610 **      ENTRY CONDITIONS -                                                 **05 00181
                    1611 **           (A) = REQUEST STATUS, BITS 14-9 HOLDS ERROR CODE              **05 00182
                    1612 **           (B) = ADDRESS OF REQUEST                                      **05 00183
                    1613 **           (X) = ADDRESS OF TCD                                          **05 00184
                    1614 **           INTERRUPTS DISABLED                                           **05 00185
                    1615 **      EXIT CONDITIONS -                                                  **05 00186
                    1616 **           REQUEST IS DETHREADED FROM TCD REQUEST QUEUE AND PROPER       **05 00187
```

```
                    1617 **              STATUS AND COMPLETION BITS ARE SET IN RQST BLK. AND     **05 00188
                    1618 **              REQUESTOR'S TIDB.                                       **05 00189
                    1619 **                                                                      **05 00190
                    1620 **              (A) DESTROYED                                           **05 00191
                    1621 **              (B) DESTROYED                                           **05 00192
                    1622 **              (X) UNCHANGED                                           **05 00193
                    1623 **              INTERRUPTS DISABLED                                     **05 00194
                    1624 **                                                                      **05 00195
                    1625 **        CALLING SEQUENCE -                                            **05 00196
                    1626 **              JMPM TC$CRQ OR JMPM TC$FRQ                              **05 00197
                    1627 **              (RETURN)                                                **05 00198
                    1628 **                                                                      **05 00199
                    1629 ****************************************************************************05 00200
                    1630 ****************************************************************************05 00201
                    1631        NAME    TC$CRQ,TC$FRQ                                             05 00202
000104 000000 A     1632 TC$FRQ ENTR                                                              05 00203
000105 007400 A     1633        ROF                         FLAG FOR ALTERNATE ENTRY              05 00204
000106 001000 A     1634        JMP     TC$CRQ+2                                                  05 00205
000107 000112 R
000110 000000 A     1635 TC$CRQ ENTR                                                              05 00206
000111 007401 A     1636        SOF                         FLAG FOR NORMAL ENTRY                 05 00207
                    1637        SPACE   5                                                         05 00208
000112 054213 A     1638        STA     CRSTAT              SAVE RQST STATUS                      05 00209
                    1639        IFT     VORTEX-2                                              V2  05 00210
                    1640        GOTO    1                                                     V2  05 00211
                    1641        TZA                                                           V2  05 00212
                    1642        ADFA                                                          V2  05 00213
                    1643        STA     CRFL                STORE ENTRY FLAG                  V2  05 00214
                    1644 1      CONT                                                          V2  05 00215
000113 064207 A     1645        STB     CRQST               SAVE RQST ADDR                        05 00216
                    1646 *              PERFORM HOUSEKEEPING FOR DETHREADING OF RQST              05 00217
000114 005041 A     1647        TXA                                                               05 00218
                    1648        ADAT    TCRQH               CALCULATE ADDR OF TCD RQST QUEUE THREAD05 00219
000115 120421 A
000116 054206 A     1649        STA     CRPREV              POINTER AND SAVE IN PREVIOUS RQST CELL05 00220
                    1650        SPACE   3                                                         05 00221
                    1651 *              FIND THE REQUEST ON THREAD                                05 00222
000117 006027 A     1652 CR10   LDBE*   CRPREV              (B) = ADDR OF NEXT RQST ON THREAD     05 00223
000120 100325 R
000121 001020 A     1653        JBZ     CR15A               NO RQSTS, NOT QUEUED ON TCD, IMMED. FUNC05 00224
000122 000137 R
000123 005021 A     1654        TBA                                                               05 00225
000124 134176 A     1655        ERA     CRQST               CHECK IF NEXT RQST IS COMPLETED ONE   05 00226
000125 001010 A     1656        JAZ     CR15                YES, FOUND                            05 00227
000126 000134 R
000127 005021 A     1657        TBA                         NOT FOUND,SET UP TO CHECK NEXT RQST   05 00228
                    1658        ADAT    RADNR                                                     05 00229
000130 120423 A
000131 054173 A     1659        STA     CRPREV                                                    05 00230
000132 001000 A     1660        JMP     CR10                                                      05 00231
000133 000117 R
                    1661        SPACE   3                                                         05 00232
                    1662 *              REMOVE OBJECT RQST FROM QUEUE AND CLOSE THREAD            05 00233
000134 026004 A     1663 CR15   LDB     RADNR,B                                                   05 00234
000135 006067 A     1664        STBE*   CRPREV                                                    05 00235
000136 100325 R
                    1665        SPACE   5                                                         05 00236
000137 074164 A     1666 CR15A  STX     CRTCD               SAVE TCD ADDR TO BE RESTORED ON EXIT  05 00237
                    1667 *              DECREMENT NO. OF I/O REQUESTS ACTIVE AND QUEUED IN TBIO   05 00238
                    1668 *              ENTRY OF REQUESTOR'S TIDB.                                05 00239
                    1669 *              CLEAR SUSPEND BIT IF WAIT SELECTED IN REQUEST             05 00240
000140 024162 A     1670        LDB     CRQST               GET TIDB ADDR FROM RQST               05 00241
       000002 A     1671 RQST   SET     B                                                         05 00242
                    1672        FETCHA  RQST,RTIDB,0,16                                           05 00243
000141 016003 A
000142 005014 A     1673        TAX                         (X) = ADDR OF TIDB                    05 00244
       000001 A     1674 TIDB   SET     X                                                         05 00245
                    1675 *              DECREMENT NO. OF I/O ACTIVE AND QUEUED                    05 00246
000143 015021 A     1676        LDA     TBIO,TIDB                                             V2  05 00247
000144 006140 A     1677        SUBI    0401                                                  V2  05 00248
000145 000401 A
000146 055021 A     1678        STA     TBIO,TIDB                                             V2  05 00249
                    1679        SPACE   2                                                         05 00250
                    1680 *              CLEAR SUSPEND BIT IF WAIT SELECTED                        05 00251
000147 024153 A     1681        LDB     CRQST                                                     05 00252
                    1682        FETCHA  RQST,ROPWD,15,1                                           05 00253
000150 016001 A
000151 004357 A
000152 001016 A     1683        JANZ    CR19                WAIT NOT SELECTED, DO NOT CLEAR SUSPEND BIT05 00254
000153 000163 R
                    1684        SETA    TIDB,TBST,TBS14,1   WAIT SELECTED, CLEAR TBS14 IN TBST    05 00255
000154 004256 A
000155 135001 A
000156 004356 A
000157 150421 A
000160 004256 A
000161 135001 A
000162 055001 A
                    1685        SPACE   2                                                         05 00256
                    1686 *              NOW SET I/O COMPLETE BIT IN REQUEST,                      05 00257
                    1687 *              AND SET APPROPIATE STATUS BITS IN                         05 00258
                    1688 *              RSTPR ENTRY OF USER REQUEST BLOCK.                        05 00259
000163 034137 A     1689 CR19   LDX     CRQST               (X) = RQST ADDR                       05 00260
       000001 A     1690 RQST   SET     X                                                         05 00261
000164 015000 A     1691        LDA     RSTPR,RQST          SET I/O COMPLETE BIT IN RQST          05 00262
```

```
000165 110440 A 1692          DRA     BS15                                                    05 00263
000166 055000 A 1693          STA     RSTPR,RQST                                              05 00264
000167 014136 A 1694          LDA     CRSTAT                                                  05 00265
000170 001007 A 1695          JOFN    CR20B                                                   05 00266
000171 000244 R
000172 001004 A 1696          JAN     CR30            TIMED-OUT                               05 00267
000173 000254 R
000174 006407 A 1697          BT      RA1+7,CR19A     I/O CLEAR                               05 00268
000175 000212 R
000176 006441 A 1698          BT      RA0+1,CR20      DATA-SET-READY OFF/END-OF-FILE(EOF)     05 00269
000177 000215 R
000200 006150 A 1699          ANAI    0440            MASK OFF IRRECOVERABLE ERRORS           05 00270
000201 000440 A
000202 001010 A 1700          JAZ     CR50            NO ERRORS IN DETAIL STATUS FROM CCM     05 00271
000203 000255 R
000204 006405 A 1701          BT      RA1+5,CR20A     PARITY ERROR, ELSE BREAK                05 00272
000205 000240 R
000206 006010 A 1702          LDAI    01035           BREAK DETECTED                          05 00273
000207 001035 A
000210 001000 A 1703          JMP     CR50            CODE = 041,ERR FLG, COMP CODE = 5(ERROR) 05 00274
000211 000255 R
000212 005001 A 1704 CR19A    TZA                                                             05 00275
000213 001000 A 1705          JMP     CR20C                                                   05 00276
000214 000250 R
000215 001016 A 1706 CR20     JANZ    CR20X           REAL CCM STATUS, DSR OFF                05 00277
000216 000222 R
000217 010466 A 1707          LDA     SIX             DETAIL STATUS=0, SET EOF COMP. CODE     05 00278
000220 001000 A 1708          JMP     CR50            CODE=0, ERR FLG RESET, COMP CODE=6(EOF) 05 00279
000221 000255 R
000222 005101 A 1709 CR20X    INCR    01              CODE=0,ERR FLG SET, COMP CODE=6(DSR OFF) 05 00280
000223 034100 A 1710          LDX     CRTCD           SET LINE DISCONNECT FLAG                05 00281
       000001 A 1711 TCD      SET     X                                                       05 00282
                1712          SETA    TCD,TCLDF,TCLDFB,TCLDFZ                                 05 00283
000224 004254 A
000225 135006 A
000226 004354 A
000227 150421 A
000230 004254 A
000231 135006 A
000232 055006 A
000233 034067 A 1713          LDX     CRQST                                                   05 00284
000234 006010 A 1714          LDAI    016                                                     05 00285
000235 000016 A
000236 001000 A 1715          JMP     CR50            SET STATUS                              05 00286
000237 000255 R
000240 006010 A 1716 CR20A    LDAI    0615            CODE = 030, ERR FLG, COMP CODE = 5      05 00287
000241 000615 A
000242 001000 A 1717          JMP     CR50                                                    05 00288
000243 000255 R
                1718 *                                CHECK FOR ERROR CODE BEING PASSED       05 00289
000244 006150 A 1719 CR20B    ANAI    0177000         CODE IN BITS 9-14                       05 00290
000245 177000 A
000246 001010 A 1720          JAZ     CR50            NO ERROR                                05 00291
000247 000255 R
000250 004345 A 1721 CR20C    LSRA    5               SET ERR FLG. AND COMP. CODE(5)          05 00292
000251 006110 A 1722          ORAI    015                                                     05 00293
000252 000015 A
000253 001004 A 1723          DATA    01004                                                   05 00294
000254 010467 A 1724 CR30     LDA     SEVEN           READ TIMEOUT, COMP CODE = 7 (EOD)       05 00295
                1725 *                                SET COMPLETION STATUS IN RSTPR          05 00296
                1726 CR50     SETA    RQST,RSTPR,5,10                                         05 00297
000255 004245 A
000256 135000 A
000257 004345 A
000260 150477 A
000261 004245 A
000262 135000 A
000263 055000 A
                1727          SPACE   2                                                       05 00298
                1728 *                                SET NO. OF BYTES/WORDS TRANSFERED       05 00299
000264 024037 A 1729          LDB     CRTCD                                                   05 00300
       000002 A 1730 TCD      SET     B                                                       05 00301
                1731          FETCHA  TCD,TCCTA,TCCTAB,TCCTAZ                                 05 00302
000265 016002 A
000266 005012 A 1732          TAB                     (B) = TCM CONTROLLER TABLE ADDR         05 00303
       000002 A 1733 CTB      SET     B               GET NO. OF BYTES/WORDS TRANSFERED       05 00304
                1734          FETCHA  CTB,CTWDS,CTWDSB,CTWDSZ                                 05 00305
000267 016013 A
000270 025003 A 1735          LDB     RTIDB,RQST      SAVE TIDB ADDR IS B REG.                05 00306
000271 055003 A 1736          STA     RTIDB,RQST      STORE IN RTIDB OF RQST                  05 00307
                1737          SPACE   5                                                       05 00308
                1738 *                                                                        05 00309
                1739 *        IF THE REQUESTING TASK IS BACKGROUND AND THE REQUEST    05 00310
                1740 *        IS IN THE FOREGROUND SAVE AREA, MOVE THE COMPLETED      05 00311
                1741 *        REQUEST TO THE BACKGROUND TASK AREA AND RETURN SAVE AREA.05 00312
                1742 *                                                                        05 00313
                1743          SPACE   2                                                       05 00314
000272 005101 A 1744          INCR    01                                                      05 00315
000273 056003 A 1745          STA     TBEVNT,B        SET EVENT WORD IN TIDB NON-ZERO         05 00316
000274 016001 A 1746          LDA     TBST,B                                                  05 00317
                1747          IFF     VORTEX-1                                        V2      05 00318
000275 006411 A 1748          BT      RA1+9,CR60      EXIT, NOT A BACKGROUND REQUEST          05 00319
000276 000314 R
                1749          IFT     VORTEX-2                                        V2      05 00320
                1750          GOTO    1                                               V2      05 00321
```

```
                    1751           EXT     V$MDAL                                                          V2  05 00322
                    1752           ROF                                                                     V2  05 00323
                    1753           BT      RA0+10,CR55     RESIDENT TASK ?                                 V2  05 00324
                    1754           LDA     TBKEY,B         YES                                             V2  05 00325
                    1755           ANA     BM17                                                            V2  05 00326
                    1756           JAZ     CR60            TEST FOR MAP 0                                  V2  05 00327
                    1757  CR55     OME     MAP,V$ST1       SET EXEC STATE TO ON                            V2  05 00328
                    1758  1        CONT                                                                    V2  05 00329
000277 005001  A    1759           TZA                                                                         05 00330
                    1760  *                PRIORITY 0 OR 1, MOVE RQST TO BACKGROUND TASK AREA                  05 00331
000300 025005  A    1761           LDB     RADNR+1,RQST    (B) = ADDR OF RQST IN BACKGROUND AREA               05 00332
                    1762           IFF     VORTEX-1                                                        V2  05 00333
000301 055005  A    1763           STA     RADNR+1,RQST    RELEASE FOREGROUND SAVE AREA                        05 00334
000302 015000  A    1764           LDA     0,X                                                                 05 00335
000303 056000  A    1765           STA     0,B                                                                 05 00336
000304 015001  A    1766           LDA     1,X                                                                 05 00337
000305 056001  A    1767           STA     1,B                                                                 05 00338
000306 015002  A    1768           LDA     2,X                                                                 05 00339
000307 056002  A    1769           STA     2,B                                                                 05 00340
000310 015003  A    1770           LDA     3,X                                                                 05 00341
000311 056003  A    1771           STA     3,B                                                                 05 00342
000312 015004  A    1772           LDA     4,X                                                                 05 00343
000313 056004  A    1773           STA     4,B                                                                 05 00344
                    1774           IFT     VORTEX-2                                                        V2  05 00345
                    1775           GOTO    1                                                               V2  05 00346
                    1776           OME     MAP,V$ST0       SET EXEC STATE TO 00                            V2  05 00347
                    1777           SOF     FLAG DEALLOCATE                                                 V2  05 00348
                    1778           TXB     SET B = RQBLK                                                   V2  05 00349
                    1779  1        CONT                                                                    V2  05 00350
                    1780           SPACE   5                                                                   05 00351
                    1781  *                EXIT TO CALLER                                                      05 00352
000314 034007  A    1782  CR60     LDX     CRTCD           RESTORE TCD ADDRESS TO X REGISTER                   05 00353
                    1783           IFT     VORTEX-2                                                        V2  05 00354
                    1784           GOTO    1                                                               V2  05 00355
                    1785           LDA     CRFL                                                            V2  05 00356
                    1786           JANZ    CR60A                                                           V2  05 00357
                    1787  1        CONT                                                                    V2  05 00358
                    1788           IFF     VORTEX-1                                                        V2  05 00359
000315 001001  A    1789           JOF     CR60A                                                               05 00360
000316 000321  R
000317 001000  A    1790           JMP*    TC$FRQ          EXIT FOR ALT. ENTRY                                 05 00361
000320 100104  R
000321 001000  A    1791  CR60A    JMP*    TC$CRQ          EXIT(RETURN)                                        05 00362
000322 100110  R
                    1792           EJEC                                                                        05 00363
                    1793  *                LOCAL STORAGE                                                       05 00364
000323 000000  A    1794  CRQST    DATA    0               ADDRESS OF REQUEST                                  05 00365
000324 000000  A    1795  CRTCD    DATA    0               ADDRESS OF TCD                                      05 00366
000325 000000  A    1796  CRPREV   DATA    0               TEMPORARY FOR DETHREADING REQUEST                   05 00367
000326 000000  A    1797  CRSTAT   DATA    0               (A) UPON ENTRY, REQUEST STATUS                      05 00368
                    1798           IFT     VORTEX-2                                                        V2  05 00369
                    1799           GOTO    1                                                               V2  05 00370
                    1800  CRFL     DATA    0               ENTRY FLAG                                      V2  05 00371
                    1801           EXT     V$MDAL          DEALLOCATE MEMORY                               V2  05 00372
                    1802           NAME    V2$CRT                                                          V2  05 00373
                    1803  V2$CRT   DATA    6                                                               V2  05 00374
                    1804           LDX     V$CRS                                                           V2  05 00375
                    1805           INR     3,X             BUMP EXIT                                       V2  05 00376
                    1806           LDB     2,X             POINT B AT CALL SEQ                             V2  05 00377
                    1807           OME     MAP,V$ST2       SET EXEC STATE TO N0                            V2  05 00378
                    1808           LDB     2,B                                                             V2  05 00379
                    1809           LDA     0,B             POINT B AT LCB                                  V2  05 00380
                    1810           OME     MAP,V$ST0       SET EXEC STATE TO 00                            V2  05 00381
                    1811           STA     5,X             SAVE LCB ADDRESS IN STACK                       V2  05 00382
                    1812           LDB     1,X             B = RQBLK                                       V2  05 00383
                    1813           LDB     RTIDB,B         B = TIDB                                        V2  05 00384
                    1814           LDA     TBKEY,B                                                         V2  05 00385
                    1815           DINTS                                                                   V2  05 00386
                    1816           CALL    VT$TMP          USER MAP                                        V2  05 00387
                    1817           LDA     0,X             A=STATUS                                        V2  05 00388
                    1818           LDB     1,X             B=RQBLK                                         V2  05 00389
                    1819           TZX                                                                     V2  05 00390
                    1820           STX     RADNR,B         ZERO THREAD                                     V2  05 00391
                    1821           STB     DUMLSD+LSRRT                                                    V2  05 00392
                    1822           LDXI    DUMLSD                                                          V2  05 00393
                    1823           CALL    TC$FRQ          COMPLETE REQUEST                                V2  05 00394
                    1824           LDX     V$CTL                                                           V2  05 00395
                    1825           LDA     TBKEY,X         GET OPEN/CLOSE TASK KEY                         V2  05 00396
                    1826           CALL    VT$TMP          SET MAP TO OPEN/CLOSE TASK                      V2  05 00397
                    1827           JOFN    V2$1            DEALLOCATE RQBLK ?                              V2  05 00398
                    1828           STB     *+4             YES                                             V2  05 00399
                    1829           JSR     V$MDAL,X                                                        V2  05 00400
                    1830           DATA    6                                                               V2  05 00401
                    1831           BSS     1                                                               V2  05 00402
                    1832  V2$1     LDX     V$CRS                                                           V2  05 00403
                    1833           LDX     5,X             GET LCB ADDRESS                                 V2  05 00404
                    1834           STX     *+4                                                             V2  05 00405
                    1835           JSR     V$MDAL,X        DEALLOCATE LCB                                  V2  05 00406
                    1836           DATA    5                                                               V2  05 00407
                    1837           BSS     1                                                               V2  05 00408
                    1838           DEALOC                                                                  V2  05 00409
                    1839  DUMLSD   BSS     LSRRT+1                                                         V2  05 00410
                    1840  **********************                                                          V2  05 00411
                    1841  * SET UP MAP - A = KEY *                                                        V2  05 00412
                    1842  **********************                                                          V2  05 00413
```

```
                    1843           NAME    VT$TMP                                                          V2  05 00414
                    1844 VT$TMP    ENTR                                                                    V2  05 00415
                    1845           ANA     BM17                                                            V2  05 00416
                    1846           ORAI    040040                                                          V2  05 00417
                    1847           OAR     MAP                                                             V2  05 00418
                    1848           STB     VT$B            SAVE B                                          V2  05 00419
                    1849           LDB     V$CTL                                                           V2  05 00420
                    1850           STA     TBIST,B                                                         V2  05 00421
                    1851           LDB     VT$B            RESTORE B                                       V2  05 00422
                    1852           STA     V$ST0                                                           V2  05 00423
                    1853           ADD     BS5                                                             V2  05 00424
                    1854           STA     V$ST1                                                           V2  05 00425
                    1855           ADD     BS6                                                             V2  05 00426
                    1856           STA     V$ST2                                                           V2  05 00427
                    1857           ADD     BS7                                                             V2  05 00428
                    1858           STA     V$ST3                                                           V2  05 00429
                    1859           JMP*    VT$TMP                                                          V2  05 00430
                    1860 VT$B      DATA    0               SAVE B                                          V2  05 00431
                    1861 1         CONT                                                                    V2  05 00432
                    1862           EJEC                                                                        05 00433
                    1863           TITLE   TC$CEX                                                              05 00434
                    1864 **********************************************************************************05 00435
                    1865 **********************************************************************************05 00436
                    1866 **        PROGRAM NAME -                                                        **05 00437
                    1867 **                TC$CEX - VTAM TCM COMMUNICATIONS EXECUTIVE                    **05 00438
                    1868 **                                                                              **05 00439
                    1869 **        ENTRY CONDITIONS -                                                    **05 00440
                    1870 **                TC$CEX IS SCHEDULED BY VT$TCQ, THE TCM REQUEST QUEUEING**05 00441
                    1871 **                PROGRAM AND CC$CRQ, THE CCM REQUEST COMPLETION PROGRAM.**05 00442
                    1872 **                ENTRY IS ALWAYS VIA PRIMARY ENTRY POINT, TC$CEX.      **05 00443
                    1873 **                                                                              **05 00444
                    1874 **********************************************************************************05 00445
                    1875 **********************************************************************************05 00446
                    1876           NAME    TC$CEX                                                          05 00447
000327              1877 TC$CEX    BSS     0                                                               05 00448
000327 030300 A     1878           LDX     V$CTL           (X) = TCMEXEC TIDB ADDR                         05 00449
000330 005001 A     1879           TZA                                                                     05 00450
000331 055003 A     1880           STA     TBEVNT,X        SET TBEVNT IN TIDB TO ZERO                      05 00451
                    1881           EXT     TC$TCD                                                          05 00452
000332 006030 A     1882           LDXI    TC$TCD          (X) = TCD ADDRESS POINTER                       05 00453
000333 000000 E
       000001 A     1883 TCD       SET     X                                                               05 00454
000334 035000 A     1884 CE10      LDX     0,X             (X) = ADDR OF NEXT(FIRST) TCD IN THREAD         05 00455
000335 001040 A     1885           JXZ     CE50            THREAD = 0, NO MORE TCDS IN THREAD              05 00456
000336 000420 R
000337 074312 A     1886           STX     CETCD           SAVE TCD ADDR FOR LATER REFERENCE               05 00457
                    1887 *                                                                                  05 00458
                    1888 *                 CHECK FOR READ ACTIVE. IF CCM READ RQST BLOCK ADDR NON-   05 00459
                    1889 *                 ZERO, TCD IS A CANDIDATE FOR SERVICING. READ REQUESTS ARE05 00460
                    1890 *                 CHECKED FIRST, BEFORE WRITE REQUESTS BECAUSE THEY HAVE A 05 00461
                    1891 *                 HIGHER PRIORITY. IF TCD IS A CANDIDATE FOR SERVICING, CCM05 00462
                    1892 *                 REQUEST COMPLETION OR READ TIMEOUTS EVENTS WILL CAUSE     05 00463
                    1893 *                 CONTROL TO BE TRANSFERED TO COMP. ADDR. IN RQST BLOCK.    05 00464
                    1894 *                                                                                  05 00465
                    1895 *                                 GET CCM RQST BLK ADDR                           05 00466
                    1896           FETCHA  TCD,TCRCA,TCRCAB,TCRCAZ                                         05 00467
000340 015007 A
000341 001010 A     1897           JAZ     CE30            CCM RQST BLK ADDR = 0, GO CHECK WRITE           05 00468
000342 000377 R
000343 054304 A     1898           STA     CERBA           READ ACTIVE, SAVE RQST ADDR.                    05 00469
                    1899           SPACE   3                                                               05 00470
                    1900           FETCHA  TCD,TCDTO,TCDTOB,TCDTOZ                                         05 00471
000344 015014 A
000345 001010 A     1901           JAZ     CE20                                                            05 00472
000346 000355 R
000347 144305 A     1902           SUB     CEDELT                                                          05 00473
000350 001010 A     1903           JAZ     CE20B           IF (A) LEQ 0, TIMEOUT OCCURRED                  05 00474
000351 000372 R
000352 001004 A     1904           JAN     CE20B                                                           05 00475
000353 000372 R
                    1905           SETA    TCD,TCDTO,TCDTOB,TCDTOZ                                         05 00476
000354 055014 A
                    1906 *                                 CHECK FOR COMPLETION EVENTS                     05 00477
000355 024272 A     1907 CE20      LDB     CERBA                                                           05 00478
       000002 A     1908 RQST      SET     B                                                               05 00479
000356 016002 A     1909           LDA     RSTPR+2,RQST                                                    05 00480
000357 001004 A     1910           JAN     CE20A           CCM RQST COMPLETE                               05 00481
000360 000363 R
000361 001000 A     1911           JMP     CE30            NOT COMPLETE, CHECK WRITE                       05 00482
000362 000377 R
000363 016010 A     1912 CE20A     LDA     RADNR+4,RQST    RQST COMPLETION ADDRESS FOR READ                05 00483
000364 054264 A     1913           STA     CEPEX                                                           05 00484
000365 002000 A     1914           JMPM*   CEPEX                                                           05 00485
000366 100651 R
000367 034262 A     1915           LDX     CETCD                                                           05 00486
000370 001000 A     1916           JMP     CE30                                                            05 00487
000371 000377 R
000372 010461 A     1917 CE20B     LDA     NEG             TIMEOUT, SET TCDTO = -1.                        05 00488
                    1918           SETA    TCD,TCDTO,TCDTOB,TCDTOZ                                         05 00489
000373 055014 A
000374 024253 A     1919           LDB     CERBA                                                           05 00490
000375 001000 A     1920           JMP     CE20A           GO TO RQST COMPLETION ADDR.                     05 00491
000376 000363 R
                    1921           SPACE   2                                                               05 00492
                    1922 CE30      FETCHA  TCD,TCWCA,TCWCAB,TCWCAZ                                         05 00493
```

```
000377 015011 A
000400 001010 A 1923          JAZ     CE10            CCM RQST BLK ADDR = 0, CHECK NEXT TCD          05 00494
000401 000334 R
000402 054245 A 1924          STA     CERBA           WRITE ACTIVE, SAVE RQST ADDR                   05 00495
                1925          SPACE   3                                                              05 00496
                1926 *                                CHECK FOR COMPLETION EVENTS                    05 00497
000403 005012 A 1927          TAB                                                                    05 00498
       000002 A 1928 RQST     SET     B                                                              05 00499
000404 016002 A 1929          LDA     RSTPR+2,RQST                                                   05 00500
000405 001004 A 1930          JAN     CE30A           CCM RQST COMPLETE                              05 00501
000406 000411 R
000407 001000 A 1931          JMP     CE10            NOT COMPLETE, CHECK NEXT TCD                   05 00502
000410 000334 R
000411 016010 A 1932 CE30A    LDA     RADNR+4,RQST    RQST COMPLETION ADDRESS FOR WRITE              05 00503
000412 054236 A 1933          STA     CEPEX                                                          05 00504
000413 002000 A 1934          JMPM*   CEPEX                                                          05 00505
000414 100651 R
000415 034234 A 1935          LDX     CETCD                                                          05 00506
000416 001000 A 1936          JMP     CE10                                                           05 00507
000417 000334 R
                1937          EJEC                                                                   05 00508
                1938 *        NOW SCAN TCD THREAD AND LOOK FOR REQUESTS TO START.            05 00509
                1939 *        A FUNC REQUEST ON TOP OF THE REQUEST QUEUE AND CCM RQST        05 00510
                1940 *        BLOCK ADDRESS FOR READ EQUAL ZERO MEANS THAT THE FUNC          05 00511
                1941 *        MUST BE PERFORMED BEFORE ANY I/O REQUESTS MAY BE               05 00512
                1942 *        INITIATED. A FUNC REQUESTS EFFECTIVELY BLOCKS THE              05 00513
                1943 *        INITIATION OF ANY READ OR WRITE REQUESTS UNTIL IT IS           05 00514
                1944 *        COMPLETED                                                      05 00515
                1945          SPACE   5                                                              05 00516
000420 006030 A 1946 CE50     LDXI    TC$TCD          (X) = ADDR OF TCD POINTER                      05 00517
000421 000333 E
000422 035000 A 1947 CE50A    LDX     0,X             (X) = TCD ADDR                                 05 00518
000423 001040 A 1948          JXZ     CE60            NO MORE TCDS IN QUEUE                          05 00519
000424 000501 R
000425 074224 A 1949          STX     CETCD                                                          05 00520
                1950 *                                CHECK FOR QUEUED REQUEST                       05 00521
                1951 CE50B    FETCHA  TCD,TCRQH,TCRQHB,TCRQHZ                                        05 00522
000426 015001 A
000427 001010 A 1952          JAZ     CE50A           NO REQUESTS QUEUED, CHECK NEXT TCD             05 00523
000430 000422 R
000431 005012 A 1953          TAB                     (B) = RQST ADDR                                05 00524
                1954 *                                                                               05 00525
                1955 *                                CHECK IF TCD READ ACTIVE                       05 00526
                1956          FETCHA  TCD,TCRCA,TCRCAB,TCRCAZ                                        05 00527
000432 015007 A
000433 001016 A 1957          JANZ    CE50D           READ BUSY, CHECK IF WRITE BUSY                 05 00528
000434 000465 R
                1958 *                                TCD NOT READ ACTIVE, TCD MAY BE A              05 00529
                1959 *                                CANDIDATE FOR A FUNC OR READ RQST INITIATE     05 00530
       000002 A 1960 RQST     SET     B                                                              05 00531
                1961          FETCHA  RQST,RQPWD,8,4                                                 05 00532
000435 016001 A
000436 004350 A
000437 150472 A
000440 140422 A 1962          SUB     TWO             FUNC OP CODE = 05, WEOF = 02                   05 00533
000441 001004 A 1963          JAN     CE50C           TOP RQST NOT A FUNC OR WEOF RQST.              05 00534
000442 000456 R
                1964 *                                READ NOT BUSY AND TOP RQST IS A FUNC/WEOF      05 00535
                1965 *                                IMPLIES TCD IS NOT READ OR WRITE ACTIVE        05 00536
                1966 *                                AND FUNC RQST MUST BE INITIATED.               05 00537
                1967          FETCHA  TCD,TCCTA,TCCTAB,TCCTAZ                                        05 00538
000443 015002 A
000444 005012 A 1968          TAB                                                                    05 00539
       000002 A 1969 CTB      SET     B                                                              05 00540
                1970          FETCHA  CTB,TPFPA,TPFPAB,TPFPAZ                                        05 00541
000445 016017 A
000446 054202 A 1971          STA     CEPEX           SAVE FUNC PROCESSOR ROUTINE ADDR               05 00542
000447 002000 A 1972          JMPM*   CEPEX           PROCESS FUNC RQST                              05 00543
000450 100651 R
000451 034200 A 1973          LDX     CETCD                                                          05 00544
000452 001004 A 1974          JAN     CE50A                                                          05 00545
000453 000422 R
000454 001000 A 1975          JMP     CE50B           GO BACK AND CHECK IF READ CAN BE INITIATED      05 00546
000455 000426 R
                1976 *                                NOT READ ACTIVE, NOT FUNC RQST                 05 00547
                1977 *                                TRY TO INITIATE READ RQST                      05 00548
                1978 CE50C    FETCHA  TCD,TCCTA,TCCTAB,TCCTAZ                                        05 00549
000456 015002 A
000457 005012 A 1979          TAB                     (B) = CTBL ADDRESS                             05 00550
       000002 A 1980 CTB      SET     B                                                              05 00551
                1981          FETCHA  CTB,TPRPA,TPRPAB,TPRPAZ                                        05 00552
000460 016015 A
000461 054167 A 1982          STA     CEPEX           SAVE READ PROCESSOR ROUTINE ADDR               05 00553
000462 002000 A 1983          JMPM*   CEPEX           PROCESS READ RQST                              05 00554
000463 100651 R
000464 034165 A 1984          LDX     CETCD                                                          05 00555
                1985          EJEC                                                                   05 00556
                1986 *                                CHECK IF WRITE ACTIVE. IF NOT,TCD IS A         05 00557
                1987 *                                CANDIDATE FOR WRITE REQUEST INITIATION         05 00558
                1988 *                                AND CONTROL IS TRANSFERED TO WRITE             05 00559
                1989 *                                PROCESSOR.                                     05 00560
                1990 CE50D    FETCHA  TCD,TCWCA,TCWCAB,TCWCAZ                                        05 00561
000465 015011 A
000466 001016 A 1991          JANZ    CE50A           WRITE ACTIVE, CHECK NEXT TCD                   05 00562
000467 000422 R
```

```
                    1992          FETCHA  TCD,TCCTA,TCCTAB,TCCTAZ                                  05 00563
000470  015002  A
000471  005012  A 1993          TAB                     (B) = CTBL ADDR                          05 00564
        000002  A 1994  CTB     SET     B                                                        05 00565
                    1995          FETCHA  CTB,TPWPA,TPWPAB,TPWPAZ                                  05 00566
000472  016016  A
000473  054155  A 1996          STA     CEPEX           SAVE WRITE PROCESSOR ROUTINE ADDR        05 00567
000474  002000  A 1997          JMPM*   CEPEX           PROCESS WRITE RQST                       05 00568
000475  100651  R
000476  034153  A 1998          LDX     CETCD                                                    05 00569
000477  001000  A 1999          JMP     CE50A           CHECK NEXT TCD IN THREAD                 05 00570
000500  000422  R
                    2000          EJEC                                                             05 00571
                    2001  *                                                                      05 00572
                    2002  *                                                                      05 00573
                    2003  *                                                                      05 00574
                    2004  *                                                                      05 00575
                    2005  *                                                                      05 00576
                    2006  *                                                                      05 00577
                    2007  *                                                                      05 00578
                    2008  *                                                                      05 00579
                    2009  *                                                                      05 00580
                    2010  *       SPACE   5                                                      05 00581
                    2011  CE60    DINTS                   DISABLE INTERRUPTS                       05 00582
000501  100444  A
000502  100747  A
000503  030300  A 2012          LDX     V$CTL                                                    05 00583
        000001  A 2013  TIDB    SET     X                                                        05 00584
000504  015003  A 2014          LDA     TBEVNT,TIDB                                              05 00585
000505  001010  A 2015          JAZ     CE70            NO REQUESTS COMPLETED OR QUEUED          05 00586
000506  000515  R
                    2016          EINTS                                                            05 00587
000507  100244  A
000510  100147  A
000511  005001  A 2017          TZA                     RESET DELTA TIME                         05 00588
000512  054142  A 2018          STA     CEDELT                                                   05 00589
000513  001000  A 2019          JMP     TC$CEX          TBEVNT NON-ZERO, GO BACK AND SCAN TCD THRD 05 00590
000514  000327  R
                    2020          EJEC                                                             05 00591
                    2021  *               SCAN ALL TCDS TO FIND THE SMALLEST TIMEOUT VALUE(READ)  05 00592
                    2022  *               (IN 1 SECOND INTERVALS) AND USE THIS VALUE FOR THE      05 00593
                    2023  *               INTERVAL OF TYPE 2 DELAY.                              05 00594
                    2024  *               BEFORE EXECUTING TYPE 2 DELAY, RECORD THE VALUE OF THE  05 00595
                    2025  *               CURRENT 5 MS & MINS CLOCK FOR CALCULATION OF ELAPSED    05 00596
                    2026  *               TIME WHEN TCMEXEC REGAINS CONTROL.                      05 00597
                    2027  *                                                                      05 00598
000515  010460  A 2028  CE70    LDA     BR15                                                     05 00599
000516  054134  A 2029          STA     CESTO           SET SMALLEST TIME OUT VALUE TO 32767 SECS. 05 00600
000517  006030  A 2030          LDXI    TC$TCD          (X) = ADDR OF TCD POINTER                05 00601
000520  000421  E
000521  035000  A 2031  CE70A   LDX     0,X             (X) = TCD ADDR                           05 00602
000522  001040  A 2032          JXZ     CE70C           NO MORE TCDS                             05 00603
000523  000540  R
        000001  A 2033  TCD     SET     X                                                        05 00604
                    2034          FETCHA  TCD,TCDTO,TCDTOB,TCDTOZ                                  05 00605
000524  015014  A
000525  001010  A 2035          JAZ     CE70A           NOT TIMEOUT ACTIVE                       05 00606
000526  000521  R
000527  144123  A 2036          SUB     CESTO                                                    05 00607
000530  001004  A 2037          JAN     CE70B           TCDTO .LT. CESTO                         05 00608
000531  000534  R
000532  001000  A 2038          JMP     CE70A           NOT SMALLER, CHECK NEXT TCD              05 00609
000533  000521  R
000534  124116  A 2039  CE70B   ADD     CESTO           RESTORE (A)                              05 00610
000535  054115  A 2040          STA     CESTO           UPDATE SHORTEST TIMEOUT VALUE            05 00611
000536  001000  A 2041          JMP     CE70A           CHECK NEXT TCD                           05 00612
000537  000521  R
                    2042          SPACE   5                                                        05 00613
000540  010343  A 2043  CE70C   LDA     V$TMS           GET AND SAVE CURRENT TIME(5 MS AND 1 MIN. 05 00614
000541  054114  A 2044          STA     TC$TMS          INTERVALS).                              05 00615
000542  010344  A 2045          LDA     V$TMN                                                    05 00616
000543  054113  A 2046          STA     TC$TMN                                                   05 00617
                    2047  *                                                                      05 00618
                    2048  *               PERFORM TYPE 2 DELAY USING VALUE IN CESTO               05 00619
                    2049  *                                                                      05 00620
000544  024106  A 2050          LDB     CESTO                                                    05 00621
000545  005001  A 2051          TZA                                                              05 00622
000546  006170  A 2052          DIVI    60                                                       05 00623
000547  000074  A
000550  064011  A 2053          STB     CE90+4          STORE NO. OF MINS. DELAY                 05 00624
000551  005012  A 2054          TAB                                                              05 00625
000552  005001  A 2055          TZA                     CONVERT SECS TO 5 MS INCREMENTS          05 00626
000553  006160  A 2056          MULI    200                                                      05 00627
000554  000310  A
000555  064003  A 2057          STB     CE90+3          STORE NO. OF 5MS. DELAY                  05 00628
                    2058  CE90    DELAY   0,0,2                                                    05 00629
000556  006505  A
000557  000000  E
000560  001102  A
000561  000000  A
000562  000000  A
                    2059  *                                                                      05 00630
                    2060  *               RETURN AFTER DELAY OR ACTIVATION BEFORE DELAY EXPIRED   05 00631
                    2061  *                                                                      05 00632
000563  030300  A 2062          LDX     V$CTL                                                    05 00633
```

```
                000001 A 2063 TIDB    SET     X                                                          05 00634
000564 015001 A 2064          LDA     TBST,TIDB     RESET SUSPEND,INT EXP,TIME-DELAY ACTIVE      05 00635
000565 006150 A 2065          ANAI    0137667       BITS 3,6,14                                  05 00636
000566 137667 A
000567 055001 A 2066          STA     TBST,TIDB                                                  05 00637
                2067 *                                                                           05 00638
                2068 *        CALCULATE DELTA TIME FOR TIMEOUT ACTIVE READ REQUESTS            05 00639
000570 014062 A 2069          LDA     CESTO                                                      05 00640
000571 130460 A 2070          ERA     BR15                                                       05 00641
000572 001010 A 2071          JAZ     CE90F         NO TIMEOUTS ACTIVE                           05 00642
000573 000644 R
000574 005001 A 2072          TZA                                                                05 00643
000575 054057 A 2073          STA     CEDELT        CLEAR DELTA TIME                             05 00644
000576 010344 A 2074          LDA     V$TMN         CHECK MINS CLOCK                             05 00645
000577 144057 A 2075          SUB     TC$TMN                                                     05 00646
000600 001004 A 2076          JAN     CE90D         WRAP AROUND                                  05 00647
000601 000634 R
000602 001010 A 2077          JAZ     CE90B         LESS 1 MIN                                   05 00648
000603 000615 R
000604 005012 A 2078 CE90A    TAB                                                                05 00649
000605 010343 A 2079          LDA     V$TMS                                                      05 00650
000606 144047 A 2080          SUB     TC$TMS                                                     05 00651
000607 003004 A 2081          XAN     DBRINS        IF WRAP AROUND AND LESS 1 MIN, DECR. B REG.  05 00652
000610 000660 R
000611 005001 A 2082          TZA                                                                05 00653
000612 006160 A 2083          MULI    60            CONVERT TO SECS                              05 00654
000613 000074 A
000614 064040 A 2084          STB     CEDELT                                                     05 00655
000615 010343 A 2085 CE90B    LDA     V$TMS         CHECK 5 MS CLOCK                             05 00656
000616 144037 A 2086          SUB     TC$TMS                                                     05 00657
000617 001004 A 2087          JAN     CE90E                                                      05 00658
000620 000640 R
000621 124032 A 2088 CE90C    ADD     CETMS         ADD RUNNING 5 MS COUNTER                     05 00659
000622 005012 A 2089          TAB                                                                05 00660
000623 005001 A 2090          TZA                                                                05 00661
000624 006170 A 2091          DIVI    200           CONVERT TO SECS                              05 00662
000625 000310 A
000626 054025 A 2092          STA     CETMS         SAVE RUNNING 5 MS COUNTER                    05 00663
000627 005021 A 2093          TBA                                                                05 00664
000630 124024 A 2094          ADD     CEDELT                                                     05 00665
000631 054023 A 2095          STA     CEDELT        GET DELTA TIME FROM 5 MS CLOCKS              05 00666
000632 001000 A 2096          JMP     TC$CEX        START TCMEXEC                                05 00667
000633 000327 R
000634 006120 A 2097 CE90D    ADDI    1441          ADJUST FOR WRAP AROUNDS                      05 00668
000635 002641 A
000636 001000 A 2098          JMP     CE90A                                                      05 00669
000637 000604 R
000640 006120 A 2099 CE90E    ADDI    12001                                                      05 00670
000641 027341 A
000642 001000 A 2100          JMP     CE90C                                                      05 00671
000643 000621 R
000644 054007 A 2101 CE90F    STA     CETMS         ZERO 5 MS RUNNING COUNTER                    05 00672
000645 054007 A 2102          STA     CEDELT                                                     05 00673
000646 001000 A 2103          JMP     TC$CEX        START TCMEXEC                                05 00674
000647 000327 R
                2104          EJEC                                                               05 00675
                2105 *        DATA STORAGE                                                     05 00676
000650 000000 A 2106 CERBA    DATA    0             CCM RQST BLK ADDR                            05 00677
000651 000000 A 2107 CEPEX    DATA    0             TEMP USED FOR SUBROUTINE ENTRY               05 00678
000652 000000 A 2108 CETCD    DATA    0             TCD ADDRESS                                  05 00679
000653 000000 A 2109 CESTO    DATA    0             SHORTEST TIMEOUT VALUE                       05 00680
000654 000000 A 2110 CETMS    DATA    0             RUNNING 5 MS(FRACTION OF A SEC) COUNTER      05 00681
000655 000000 A 2111 CEDELT   DATA    0             DELTA TIME IN SECOND INTERVALS               05 00682
000656 000000 A 2112 TC$TMS   DATA    0             5 MS COUNTER WHEN TC$CEX EXITS               05 00683
000657 000000 A 2113 TC$TMN   DATA    0             MINS COUNTER ON EXIT                         05 00684
000660 005322 A 2114 DBRINS   DATA    05322         DECR. B REG. INSTRUCTION                     05 00685
                2115          END                                                                05 00686
ENTRY NAMES
000000 R TC$BRQ  000327 R TC$CEX  000110 R TC$CRQ  000104 R TC$FRQ
000030 R TC$FRR  000037 R TC$FWR
EXTERNAL NAMES
000520 E TC$TCD  000557 E V$EXEC  000027 E V$IOC
SYMBOLS
000044 A APIM    000002 A B       000000 A B0      000001 A B1
000012 A B10     000013 A B11     000014 A B12     000015 A B13
000016 A B14     000017 A B15     000002 A B2      000003 A B3
000004 A B4      000005 A B5      000006 A B6      000007 A B7
000010 A B8      000011 A B9      000000 A BICNUM  000421 A BM1
000472 A BM17    000475 A BM177   000477 A BM1777  000464 A BM3
000473 A BM37    000463 A BM377   000467 A BM7     000474 A BM77
000476 A BM777   000441 A BR0     000442 A BR1     000453 A BR10
000454 A BR11    000455 A BR12    000456 A BR13    000457 A BR14
000460 A BR15    000443 A BR2     000444 A BR3     000445 A BR4
000446 A BR5     000447 A BR6     000450 A BR7     000451 A BR8
000452 A BR9     000421 A BS0     000422 A BS1     000433 A BS10
000434 A BS11    000435 A BS12    000436 A BS13    000437 A BS14
000440 A BS15    000423 A BS2     000424 A BS3     000425 A BS4
000426 A BS5     000427 A BS6     000430 A BS7     000431 A BS8
000432 A BS9     000334 R CE10    000355 R CE20    000363 R CE20A
000372 R CE20B   000377 R CE30    000411 R CE30A   000420 R CE50
000422 R CE50A   000426 R CE50B   000456 R CE50C   000465 R CE50D
000501 R CE60    000515 R CE70    000521 R CE70A   000534 R CE70B
000540 R CE70C   000556 R CE90    000604 R CE90A   000615 R CE90B
000621 R CE90C   000634 R CE90D   000640 R CE90E   000644 R CE90F
000655 R CEDELT  000651 R CEPEX   000650 R CERBA   000653 R CESTO
```

```
000652 R CETCD  000654 R CETMS  000000 A CHAFP  000000 A CHAFPB
000020 A CHAFPZ 000001 A CHARP  000000 A CHARPB 000020 A CHARPZ
000002 A CHCFP  000000 A CHCFPB 000020 A CHCFPZ 000003 A CHCRP
000000 A CHCRPB 000020 A CHCRPZ 000004 A CHRBL  000000 A CHRBLB
000020 A CHRBLZ 000047 A CLOCK  000000 A COTAD1 000117 R CR10
000134 R CR15   000137 R CR15A  000163 R CR19   000212 R CR19A
000215 R CR20   000240 R CR20A  000244 R CR20B  000250 R CR20C
000222 R CR20X  000254 R CR30   000255 R CR50   000314 R CR60
000321 R CR60A  000325 R CRPREV 000323 R CRQST  000326 R CRSTAT
000324 R CRTCD  000000 A CTACT  000017 A CTACTB 000001 A CTACTZ
000001 A CTADN  000000 A CTADNB 000020 A CTADNZ 000002 A CTB
000011 A CTBIC  000000 A CTBICB 000020 A CTBICZ 000003 A CTDST
000000 A CTDSTB 000020 A CTDSTZ 000006 A CTDVA  000000 A CTDVAB
000020 A CTDVAZ 000012 A CTFCB  000000 A CTFCBB 000020 A CTFCBZ
000014 A CTFRC  000010 A CTFRCB 000010 A CTFRCZ 000014 A CTFRE
000000 A CTFREB 000010 A CTFREZ 000000 A CTIDB  000000 A CTIDBB
000017 A CTIDBZ 000007 A CTIOA  000000 A CTIOAB 000020 A CTIOAZ
000002 A CTOPM  000000 A CTOPMB 000020 A CTOPMZ 000005 A CTRCN
000000 A CTRCNB 000010 A CTRCNZ 000004 A CTRQB  000000 A CTRQBB
000020 A CTRQBZ 000005 A CTRTR  000010 A CTRTRB 000010 A CTRTRZ
000010 A CTSTA  000000 A CTSTAB 000020 A CTSTAZ 000013 A CTWDS
000000 A CTWDSB 000020 A CTWDSZ 000660 R DBRINS 000001 A DCBUFF
000003 A DCCHR  000000 A DCCHRB 000020 A DCCHRZ 000002 A DCCNT
000000 A DCRECL 000747 A DISCLK 000745 A DISMP  000444 A DISPIM
000026 A DMBCA  000000 A DMBCAB 000020 A DMBCAZ 000024 A DMCWA
000000 A DMCWAB 000020 A DMCWAZ 000017 A DMFPA  000000 A DMFPAB
000020 A DMFPAZ 000021 A DMLCA  000000 A DMLCAB 000020 A DMLCAZ
000022 A DMLTA  000000 A DMLTAB 000020 A DMLTAZ 000023 A DMPTA
000000 A DMPTAB 000020 A DMPTAZ 000016 A DMRPA  000000 A DMRPAB
000020 A DMRPAZ 000020 A DMSTA  000000 A DMSTAB 000020 A DMSTAZ
000025 A DMSWA  000000 A DMSWAB 000020 A DMSWAZ 000015 A DMTPA
000000 A DMTPAB 000020 A DMTPAZ 000002 A DSCTAD 000000 A DSDASS
000000 A DSDVDN 000002 A DSLCKD 000001 A DSNAME 000000 A DSNORQ
000002 A DSOPCM 000002 A DSPSTI 000002 A DSREWD 000000 A DSUNAM
000002 A DSUNTN 000424 A EIGHT  000147 A ENACLK 000645 A ENAMP
000244 A ENAPIM 000465 A FIVE   000423 A FOUR   000044 R FR01
000050 R FR05   000077 R FR10   000102 R FROPCD 000103 R FRRQST
000100 R FRXIT  000003 A IBIBF  000017 A IBIBFB 000001 A IBIBFZ
000003 A IBLAS  000000 A IBLASB 000017 A IBLASZ 000001 A IBLEN
000000 A IBLENB 000020 A IBLENZ 000000 A IBLNK  000000 A IBLNKB
000020 A IBLNKZ 000002 A IBSTA  000000 A IBSTAB 000020 A IBSTAZ
000004 A IBSTS  000000 A IBSTSB 000017 A IBSTSZ 000027 R IOCA
000026 R JMPWD  000025 R JSRWD  000300 A LC     000003 A LCABN
000013 A LCABNB 000001 A LCABNZ 000003 A LCASY  000012 A LCASYB
000001 A LCASYZ 000007 A LCBSC  000015 A LCBSCB 000001 A LCBSCZ
000007 A LCCHN  000016 A LCCHNB 000001 A LCCHNZ 000003 A LCCRC
000014 A LCCRCB 000003 A LCCRCZ 000006 A LCCWB  000014 A LCCWBB
000001 A LCCWBZ 000006 A LCCWC  000015 A LCCWCB 000001 A LCCWCZ
000006 A LCCWD  000013 A LCCWDB 000001 A LCCWDZ 000006 A LCCWI
000016 A LCCWIB 000001 A LCCWIZ 000006 A LCCWP  000012 A LCCWPB
000001 A LCCWPZ 000006 A LCCWR  000011 A LCCWRB 000001 A LCCWRZ
000006 A LCCWS  000017 A LCCWSB 000001 A LCCWSZ 000006 A LCCWT
000010 A LCCWTB 000001 A LCCWTZ 000001 A LCIBA  000000 A LCIBAB
000017 A LCIBAZ 000000 A LCIBF  000017 A LCIBFB 000001 A LCIBFZ
000000 A LCIBL  000000 A LCIBLB 000014 A LCIBLZ 000002 A LCIC1
000010 A LCIC1B 000010 A LCIC1Z 000002 A LCIC2  000000 A LCIC2B
000010 A LCIC2Z 000003 A LCIKE  000000 A LCIKEB 000004 A LCIKEZ
000007 A LCITB  000013 A LCITBB 000001 A LCITBZ 000050 A LCJP
000006 A LCLCB  000000 A LCLCBB 000020 A LCLCBZ 000007 A LCLDB
000014 A LCLDBB 000001 A LCLDBZ 000007 A LCLTB  000017 A LCLTBB
000001 A LCLTBZ 000005 A LCOBA  000000 A LCOBAB 000017 A LCOBAZ
000004 A LCOBF  000017 A LCOBFB 000001 A LCOBFZ 000004 A LCOBL
000000 A LCOBLB 000014 A LCOBLZ 000007 A LCOKE  000000 A LCOKEB
000004 A LCOKEZ 000003 A LCRCC  000017 A LCRCCB 000001 A LCRCCZ
000000 A LCSMB  000016 A LCSMBB 000001 A LCSMBZ 000462 A LHW
000017 A LSABN  000015 A LSABNB 000001 A LSABNZ 000017 A LSASC
000011 A LSASCB 000001 A LSASCZ 000014 A LSASY  000013 A LSASYB
000001 A LSASYZ 000020 A LSBSC  000016 A LSBSCB 000001 A LSBSCZ
000015 A LSCC1  000010 A LSCC1B 000010 A LSCC1Z 000015 A LSCC2
000000 A LSCC2B 000010 A LSCC2Z 000017 A LSCHN  000010 A LSCHNB
000001 A LSCHNZ 000017 A LSCRC  000012 A LSCRCB 000003 A LSCRCZ
000012 A LSCTA  000000 A LSCTAB 000020 A LSCTAZ 000017 A LSDSF
000017 A LSDSFB 000001 A LSDSFZ 000013 A LSDST  000000 A LSDSTB
000020 A LSDSTZ 000016 A LSEPF  000016 A LSEPFB 000001 A LSEPFZ
000014 A LSLSP  000000 A LSLSPB 000011 A LSLSPZ 000014 A LSMOD
000016 A LSMODB 000002 A LSMODZ 000020 A LSNTO  000010 A LSNTOB
000006 A LSNTOZ 000014 A LSPAR  000014 A LSPARB 000002 A LSPARZ
000016 A LSPLA  000000 A LSPLAB 000010 A LSPLAZ 000002 A LSRCA
000000 A LSRCAB 000020 A LSRCAZ 000003 A LSREM  000000 A LSREMB
000020 A LSREMZ 000016 A LSRRS  000010 A LSRRSB 000003 A LSRRSZ
000001 A LSRRT  000000 A LSRRTB 000020 A LSRRTZ 000004 A LSRTO
000000 A LSRTOB 000020 A LSRTOZ 000005 A LSSRS  000000 A LSSRSB
000020 A LSSRSZ 000011 A LSSWS  000000 A LSSWSB 000020 A LSSWSZ
000016 A LSTER  000017 A LSTERB 000001 A LSTERZ 000000 A LSTHD
000000 A LSTHDB 000020 A LSTHDZ 000006 A LSWCA  000000 A LSWCAB
000020 A LSWCAZ 000007 A LSWEM  000000 A LSWEMB 000020 A LSWEMZ
000016 A LSWRS  000013 A LSWRSB 000003 A LSWRSZ 000010 A LSWTO
000000 A LSWTOB 000020 A LSWTOZ 000014 A LSXMN  000011 A LSXMMB
000002 A LSXMMZ 000017 A LSYNC  000016 A LSYNCB 000001 A LSYNCZ
000020 A LSYNR  000000 A LSYNRB 000010 A LSYNRZ 000017 A LSYNT
000000 A LSYNTB 000010 A LSYNTZ 000046 A MAP    000045 A MP
000045 A MPMR0  000145 A MPMR1  000245 A MPMR2  000345 A MPMR3
000420 A MT     000461 A NEG    000470 A NINE   000421 A ONE
000001 A PCBSL  000011 A PCBSLB 000001 A PCBSLZ 000000 A PCCLN
000000 A PCCLNB 000010 A PCCLNZ 000002 A PCCTP  000014 A PCCTPB
```

```
000004 A PCCTPZ 000001 A PCECH  000014 A PCECHB 000001 A PCECHZ
000000 A PCLLN  000010 A PCLLNB 000010 A PCLLNZ 000002 A PCNTD
000000 A PCNTDB 000004 A PCNTDZ 000001 A PCPCH  000000 A PCPCHB
000010 A PCPCHZ 000001 A PCSWL  000010 A PCSWLB 000001 A PCSWLZ
000002 A PCTYP  000010 A PCTYPB 000004 A PCTYPZ 000001 A PCXMM
000012 A PCXMMB 000002 A PCXMMZ 000040 A PIM1   000041 A PIM2
000042 A PIM3   000043 A PIM4   000040 A PIM5   000040 A PIM6
000040 A PIM7   000040 A PIM8   000200 A POST   000003 A PSABN
000015 A PSABNB 000001 A PSABNZ 000000 A PSASY  000013 A PSASYB
000001 A PSASYZ 000002 A PSBADT 000000 A PSBEG  000004 A PSBSC
000016 A PSBSCB 000016 A PSBSCZ 000001 A PSCC1  000010 A PSCC1B
000010 A PSCC1Z 000001 A PSCC2  000000 A PSCC2B 000010 A PSCC2Z
000003 A PSCRC  000012 A PSCRCB 000003 A PSCRCZ 000002 A PSDEF
000010 A PSDEFB 000001 A PSDEFZ 000003 A PSDSF  000017 A PSDSFB
000001 A PSDSFZ 000002 A PSDWN  000011 A PSDWNB 000001 A PSDWNZ
000004 A PSEND  000002 A PSEPF  000016 A PSEPFB 000001 A PSEPFZ
000000 A PSLSP  000000 A PSLSPB 000011 A PSLSPZ 000000 A PSMOD
000016 A PSMODB 000002 A PSMODZ 000003 A PSNSEC 000000 A PSPAR
000014 A PSPARB 000002 A PSPARZ 000002 A PSPLA  000000 A PSPLAB
000010 A PSPLAZ 000001 A PSPROT 000002 A PSTER  000017 A PSTERB
000001 A PSTERZ 000000 A PSXMM  000011 A PSXMMB 000002 A PSXMMZ
000003 A PSYNC  000016 A PSYNCB 000001 A PSYNCZ 000004 A PSYNR
000000 A PSYNRB 000010 A PSYNRZ 000003 A PSYNT  000000 A PSYNTB
000010 A PSYNTZ 000040 A RA0    000000 A RA1    000004 A RADNR
000060 A RB0    000020 A RB1    000002 A RFCB   000463 A RHW
000001 A ROPWD  000002 A RQBLK  000002 A RQST   000000 A RSTPR
000003 A RTIDB  000467 A SEVEN  000466 A SIX    000027 A TBATSK
000026 A TBCPTH 000011 A TBENTY 000003 A TBEVNT 000021 A TBIO
000014 A TBISA  000015 A TBISB  000017 A TBISP  000020 A TBISRS
000034 A TBIST  000016 A TBISX  000032 A TBKEY  000022 A TBKN1
000023 A TBKN2  000024 A TBKN3  000033 A TBMIMG 000032 A TBNUCL
000002 A TBPL   000004 A TBRSA  000005 A TBRSB  000030 A TBRSE
000007 A TBRSP  000010 A TBRSTS 000006 A TBRSX  000000 A TBS0
000001 A TBS1   000012 A TBS10  000013 A TBS11  000014 A TBS12
000015 A TBS13  000016 A TBS14  000017 A TBS15  000002 A TBS2
000003 A TBS3   000004 A TBS4   000005 A TBS5   000006 A TBS6
000007 A TBS7   000010 A TBS8   000011 A TBS9   000031 A TBSIZ
000001 A TBST   000025 A TBTLC  000013 A TBTMIN 000012 A TBTMS
000000 A TBTRD  000000 R TC$BRQ 000327 R TC$CEX 000110 R TC$CRQ
000104 R TC$FRQ 000030 R TC$FRR 000037 R TC$FWR 000520 E TC$TCD
000657 R TC$TMN 000656 R TC$TMS 000004 A TCBSL  000011 A TCBSLB
000001 A TCBSLZ 000003 A TCCLN  000000 A TCCLNB 000010 A TCCLNZ
000004 A TCCON  000015 A TCCONB 000001 A TCCONZ 000002 A TCCTA
000000 A TCCTAB 000020 A TCCTAZ 000005 A TCCTP  000014 A TCCTPB
000004 A TCCTPZ 000001 A TCD    000012 A TCDCC  000000 A TCDCCB
000020 A TCDCCZ 000014 A TCDTO  000000 A TCDTOB 000020 A TCDTOZ
000004 A TCECH  000014 A TCECHB 000001 A TCECHZ 000015 A TCID1
000000 A TCID1B 000020 A TCID1Z 000016 A TCID2  000000 A TCID2B
000020 A TCID2Z 000006 A TCLDF  000014 A TCLDFB 000001 A TCLDFZ
000003 A TCLLN  000010 A TCLLNB 000010 A TCLLNZ 000005 A TCNOD
000004 A TCNODB 000004 A TCNODZ 000005 A TCNTD  000000 A TCNTDB
000004 A TCNTDZ 000004 A TCPCH  000000 A TCPCHB 000010 A TCPCHZ
000004 A TCRBC  000017 A TCRBCB 000001 A TCRBCZ 000013 A TCRBF
000000 A TCRBFB 000020 A TCRBFZ 000007 A TCRCA  000000 A TCRCAB
000020 A TCRCAZ 000006 A TCRMD  000000 A TCRMDB 000003 A TCRMDZ
000001 A TCRQH  000000 A TCRQHB 000020 A TCRQHZ 000006 A TCRRS
000006 A TCRRSB 000003 A TCRRSZ 000010 A TCSTO  000000 A TCSTOB
000020 A TCSTOZ 000004 A TCSWL  000010 A TCSWLB 000001 A TCSWLZ
000000 A TCTCD  000000 A TCTCDB 000020 A TCTCDZ 000005 A TCTYP
000010 A TCTYPB 000004 A TCTYPZ 000004 A TCWBC  000016 A TCWBCB
000001 A TCWBCZ 000011 A TCWCA  000000 A TCWCAB 000020 A TCWCAZ
000006 A TCWMD  000003 A TCWMDB 000003 A TCWMDZ 000006 A TCWRS
000011 A TCWRSB 000003 A TCWRSZ 000004 A TCXMM  000012 A TCXMMB
000002 A TCXMMZ 000471 A TEN    000464 A THREE  000001 A TIDB
000002 A TIDSP  000000 A TIDSPB 000007 A TIDSPZ 000002 A TIDWN
000017 A TIDWNB 000001 A TIDWNZ 000000 A TINET  000000 A TINETB
000020 A TINETZ 000003 A TIODN  000017 A TIODNB 000001 A TIODNZ
000003 A TIODP  000000 A TIODPB 000007 A TIODPZ 000003 A TIOSC
000007 A TIOSCB 000010 A TIOSCZ 000002 A TISEC  000007 A TISECB
000010 A TISECZ 000000 A TITU1  000000 A TITU1B 000020 A TITU1Z
000001 A TITU2  000000 A TITU2B 000020 A TITU2Z 000017 A TPFPA
000000 A TPFPAB 000020 A TPFPAZ 000015 A TPRPA  000000 A TPRPAB
000020 A TPRPAZ 000016 A TPWPA  000000 A TPWPAB 000020 A TPWPAZ
000422 A TWO    000403 A V$1MIN 000415 A V$BFC  000075 A V$BGLB
000056 A V$BIC1 000315 A V$BTB  000331 A V$BTBM 000414 A V$BVN
000334 A V$CAM  000353 A V$CKB  000411 A V$CKIT 000310 A V$CKPT
000301 A V$CPL  000076 A V$CRDM 000341 A V$CRDR 000354 A V$CRM
000302 A V$CRS  000360 A V$CTAD 000300 A V$CTL  000351 A V$CTMS
000070 A V$DATE 000355 A V$DSTB 000376 A V$ERFG 000557 E V$EXEC
000347 A V$FGLB 000306 A V$FLRS 000350 A V$FREE 000332 A V$GFCB
000320 A V$IM   000410 A V$IOA  000027 E V$IOC  000412 A V$JCB
000055 A V$JCFG 000077 A V$JCTM 000050 A V$JNAM 000377 A V$JOP
000340 A V$KEY  000054 A V$LCNT 000313 A V$LER  000356 A V$LIT
000317 A V$LLUP 000317 A V$LPP  000307 A V$LRSK 000312 A V$LSAL
000345 A V$LUNT 000316 A V$LUP  000400 A V$LUT1 000401 A V$LUT2
000402 A V$LUT3 000330 A V$MAP  000333 A V$MIMG 000330 A V$MPM
000362 A V$NCTR 000316 A V$NPAG 000413 A V$OCB  000346 A V$OPCF
000311 A V$OPCL 000357 A V$PGT  000363 A V$PIMN 000074 A V$PLCT
000305 A V$PTVB 000361 A V$SCTL 000352 A V$SCV  000375 A V$SLFG
000334 A V$ST0  000335 A V$ST1  000336 A V$ST2  000337 A V$ST3
000303 A V$TB   000342 A V$TBGT 000416 A V$TFC  000314 A V$TJCP
000344 A V$TMN  000343 A V$TMS  000304 A V$UTB  000001 A VORTEX
000001 A X      000420 A ZERO
   0 ERRORS ASSEMBLY COMPLETE
```

1515	1	*								
158	ADAT	*								
37	ANAM	*								
89	ANAN	*								
573	APIM	583	584							
107	B	97	116	228	229	251	254	256	1494	1574
		1593	1663	1671	1730	1733	1745	1746	1754	1765
		1767	1769	1771	1773	1808	1809	1813	1814	1820
		1850	1908	1928	1960	1969	1980	1994		
87	B&	81								
82	B&0	39								
79	B&1	77								
43	B&10	41								
75	B&2	73								
71	B&3	69								
67	B&4	65								
63	B&5	61								
59	B&6	57								
55	B&7	53								
51	B&8	49								
47	B&9	45								
542	B0	*								
543	B1	*								
552	B10	*								
553	B11	*								
554	B12	*								
555	B13	*								
556	B14	*								
557	B15	*								
544	B2	*								
545	B3	*								
546	B4	*								
547	B5	*								
548	B6	*								
549	B7	*								
550	B8	*								
551	B9	*								
629	BICNUM	*								
514	BM1	78								
517	BM17	66	1755	1845						
520	BM177	54								
523	BM1777	42								
515	BM3	74								
518	BM37	62								
521	BM377	50								
516	BM7	70								
519	BM77	58								
522	BM777	46								
485	BR0	201								
486	BR1	*								
495	BR10	*								
496	BR11	*								
497	BR12	*								
498	BR13	*								
499	BR14	*								
500	BR15	2028	2070							
487	BR2	*								
488	BR3	*								
489	BR4	*								
490	BR5	*								
491	BR6	*								
492	BR7	*								
493	BR8	*								
494	BR9	*								
469	BS0	194	208							
470	BS1	*								
479	BS10	*								
480	BS11	*								
481	BS12	*								
482	BS13	*								
483	BS14	*								
484	BS15	1499	1502	1692						
471	BS2	*								
472	BS3	*								
473	BS4	*								
474	BS5	1853								
475	BS6	1855								
476	BS7	1857								
477	BS8	*								
478	BS9	*								
1884	CE10	1923	1931	1936						
1907	CE20	1901								
1912	CE20A	1910	1920							
1917	CE20B	1903	1904							
1922	CE30	1897	1911	1916						
1932	CE30A	1930								
1946	CE50	1885								
1947	CE50A	1952	1974	1991	1999					
1951	CE50B	1975								
1978	CE50C	1963								
1990	CE50D	1957								
2011	CE60	1948								
2028	CE70	2015								
2031	CE70A	2035	2038	2041						
2039	CE70B	2037								

```
2043   CE70C    2032
2058   CE90     2053   2057
2078   CE90A    2098
2085   CE90B    2077
2088   CE90C    2100
2097   CE90D    2076
2099   CE90E    2087
2101   CE90F    2071
2111   CEDELT   1902   2018   2073   2084   2094   2095   2102
2107   CEPEX    1913   1914   1933   1934   1971   1972   1982   1983   1996
                1997
2106   CERBA    1898   1907   1919   1924
2109   CESTO    2029   2036   2039   2040   2050   2069
2108   CETCD    1886   1915   1935   1949   1973   1984   1998
2110   CETMS    2088   2092   2101
1396   CHAFP    *
1397   CHAFPB   *
1398   CHAFPZ   *
1400   CHARP    *
1401   CHARPB   *
1402   CHARPZ   *
1404   CHCFP    *
1405   CHCFPB   *
1406   CHCFPZ   *
1408   CHCRP    *
1409   CHCRPB   *
1410   CHCRPZ   *
1412   CHRBL    *
1413   CHRBLB   *
1414   CHRBLZ   *
 197   CLEARF   *
 566   CLOCK     568    569
 621   COTAD1   *
1652   CR10     1660
1663   CR15     1656
1666   CR15A    1653
1689   CR19     1683
1704   CR19A    1697
1706   CR20     1698
1716   CR20A    1701
1719   CR20B    1695
1721   CR20C    1705
1709   CR20X    1706
1724   CR30     1696
1726   CR50     1700   1703   1708   1715   1717   1720
1757   CR55     1753
1782   CR60     1748   1756
1791   CR60A    1786   1789
1800   CRFL     1643   1785
1796   CRPREV   1649   1652   1659   1664
1794   CRQST    1645   1655   1670   1681   1689   1713
1797   CRSTAT   1638   1694
1795   CRTCD    1666   1710   1729   1782
 706   CTACT    *
 707   CTACTB   *
 708   CTACTZ   *
 714   CTADN    *
 715   CTADNB   *
 716   CTADNZ   *
1733   CTB      1734   1970   1981   1995
 750   CTBIC    *
 751   CTBICB   *
 752   CTBICZ   *
 722   CTDST    *
 723   CTDSTB   *
 724   CTDSTZ   *
 738   CTDVA    *
 739   CTDVAB   *
 740   CTDVAZ   *
 754   CTFCB    *
 755   CTFCBB   *
 756   CTFCBZ   *
 762   CTFRC    *
 763   CTFRCB   *
 764   CTFRCZ   *
 766   CTFRE    *
 767   CTFREB   *
 768   CTFREZ   *
 710   CTIDB    *
 711   CTIDBB   *
 712   CTIDBZ   *
 742   CTIOA    *
 743   CTIOAB   *
 744   CTIOAZ   *
 718   CTOPM    *
 719   CTOPMB   *
 720   CTOPMZ   *
 734   CTRCN    *
 735   CTRCNB   *
 736   CTRCNZ   *
 726   CTRQB    *
 727   CTRQBB   *
 728   CTRQBZ   *
 730   CTRTR    *
 731   CTRTRB   *
```

```
 732   CTRTRZ   *
 746   CTSTA    *
 747   CTSTAB   *
 748   CTSTAZ   *
 758   CTWDS    1734
 759   CTWDSB   1734
 760   CTWDSZ   1734
2114   DBRINS   2081
 687   DCBUFF   *
 690   DCCHR    *
 691   DCCHRB   *
 692   DCCHRZ   *
 688   DCCNT    *
 686   DCRECL   *
 186   DINTS    *
 568   DISCLK    188
 588   DISMP    *
 583   DISPIM    187
 812   DMBCA    *
 813   DMBCAB   *
 814   DMBCAZ   *
 804   DMCWA    *
 805   DMCWAB   *
 806   DMCWAZ   *
 784   DMFPA    *
 785   DMFPAB   *
 786   DMFPAZ   *
 792   DMLCA    *
 793   DMLCAB   *
 794   DMLCAZ   *
 796   DMLTA    *
 797   DMLTAB   *
 798   DMLTAZ   *
 800   DMPTA    *
 801   DMPTAB   *
 802   DMPTAZ   *
 780   DMRPA    *
 781   DMRPAB   *
 782   DMRPAZ   *
 788   DMSTA    *
 789   DMSTAB   *
 790   DMSTAZ   *
 808   DMSWA    *
 809   DMSWAB   *
 810   DMSWAZ   *
 776   DMTPA    *
 777   DMTPAB   *
 778   DMTPAZ   *
 614   DSCTAD   *
 600   DSDASS   *
 599   DSDVDN   *
 611   DSLCKD   *
 608   DSNAME   *
 607   DSNORQ   *
 612   DSOPCM   *
 613   DSPSTI   *
 609   DSREWD   *
 605   DSUNAM   *
 610   DSUNTN   *
1839   DUMLSD   1821   1822
 511   EIGHT     142    166
 182   EINTS    *
 569   ENACLK    184
 589   ENAMP    *
 584   ENAPIM    183
   0   ERROR     112    192    199    206
 127   FETCHA   *
 508   FIVE      148    172   1580
 507   FOUR      150    174
1565   FR01     1558
1571   FR05     1586
1588   FR10     1582
1601   FROPCD   1565   1581   1591   1596
1602   FRRQST   1569   1571   1585
1599   FRXIT    1556   1562   1572   1577   1579
1444   GETMEM   *
 250   GETQ     *
1431   IBIBF    *
1432   IBIBFB   *
1433   IBIBFZ   *
1435   IBLAS    *
1436   IBLASB   *
1437   IBLASZ   *
1423   IBLEN    *
1424   IBLENB   *
1425   IBLENZ   *
1419   IBLNK    *
1420   IBLNKB   *
1421   IBLNKZ   *
1427   IBSTA    *
1428   IBSTAB   *
1429   IBSTAZ   *
1439   IBSTS    *
1440   IBSTSB   *
1441   IBSTSZ   *
```

```
1523   IDCA     1497
1519   JMPWD    1509
1518   JSRWD    1495
 277   LC        378   379   380   381   382   383   384   385   386
                 387   388   389   390   391   392   393   394   395
                 396   397   398   399   400   401   402   403   404
                 405   406   407   409   410   411   412   413   414
                 415   416   417   418   419   420   421   422   423
                 425   426   427   428   433   434   435   436   437
                 438   439   446   447   448   451   456   457   458
 854   LCABN     *
 855   LCABNB    *
 856   LCABNZ    *
 858   LCASY     *
 859   LCASYB    *
 860   LCASYZ    *
 922   LCBSC     *
 923   LCBSCB    *
 924   LCBSCZ    *
 918   LCCHN     *
 919   LCCHNB    *
 920   LCCHNZ    *
 850   LCCRC     *
 851   LCCRCB    *
 852   LCCRCZ    *
 894   LCCWB     *
 895   LCCWBB    *
 896   LCCWBZ    *
 890   LCCWC     *
 891   LCCWCB    *
 892   LCCWCZ    *
 898   LCCWD     *
 899   LCCWDB    *
 900   LCCWDZ    *
 886   LCCWI     *
 887   LCCWIB    *
 888   LCCWIZ    *
 902   LCCWP     *
 903   LCCWPB    *
 904   LCCWPZ    *
 906   LCCWR     *
 907   LCCWRB    *
 908   LCCWRZ    *
 882   LCCWS     *
 883   LCCWSB    *
 884   LCCWSZ    *
 910   LCCWT     *
 911   LCCWTB    *
 912   LCCWTZ    *
 834   LCIBA     *
 835   LCIBAB    *
 836   LCIBAZ    *
 822   LCIBF     *
 823   LCIBFB    *
 824   LCIBFZ    *
 830   LCIBL     *
 831   LCIBLB    *
 832   LCIBLZ    *
 838   LCIC1     *
 839   LCIC1B    *
 840   LCIC1Z    *
 842   LCIC2     *
 843   LCIC2B    *
 844   LCIC2Z    *
 862   LCIKE     *
 863   LCIKEB    *
 864   LCIKEZ    *
 930   LCITB     *
 931   LCITBB    *
 932   LCITBZ    *
 352   LCJP      353   354   355   362   363   364   365   366   369
 878   LCLCB     *
 879   LCLCBB    *
 880   LCLCBZ    *
 926   LCLDB     *
 927   LCLDBB    *
 928   LCLDBZ    *
 914   LCLTB     *
 915   LCLTBB    *
 916   LCLTBZ    *
 874   LCOBA     *
 875   LCOBAB    *
 876   LCOBAZ    *
 866   LCOBF     *
 867   LCOBFB    *
 868   LCOBFZ    *
 870   LCOBL     *
 871   LCOBLB    *
 872   LCOBLZ    *
 934   LCOKE     *
 935   LCOKEB    *
 936   LCOKEZ    *
 846   LCRCC     *
 847   LCRCCB    *
 848   LCRCCZ    *
```

```
 826   LCSMB    *
 827   LCSMBB   *
 828   LCSMBZ   *
 502   LHW      *
1048   LSABN    *
1049   LSABNB   *
1050   LSABNZ   *
1056   LSASC    *
1057   LSASCB   *
1058   LSASCZ   *
1000   LSASY    *
1001   LSASYB   *
1002   LSASYZ   *
1068   LSBSC    *
1069   LSBSCB   *
1070   LSBSCZ   *
1012   LSCC1    *
1013   LSCC1B   *
1014   LSCC1Z   *
1016   LSCC2    *
1017   LSCC2B   *
1018   LSCC2Z   *
1060   LSCHN    *
1061   LSCHNB   *
1062   LSCHNZ   *
1052   LSCRC    *
1053   LSCRCB   *
1054   LSCRCZ   *
 984   LSCTA    *
 985   LSCTAB   *
 986   LSCTAZ   *
1040   LSDSF    *
1041   LSDSFB   *
1042   LSDSFZ   *
 988   LSDST    *
 989   LSDSTB   *
 990   LSDSTZ   *
1024   LSEPF    *
1025   LSEPFB   *
1026   LSEPFZ   *
1008   LSLSP    *
1009   LSLSPB   *
1010   LSLSPZ   *
 992   LSMOD    *
 993   LSMODB   *
 994   LSMODZ   *
1072   LSNTO    *
1073   LSNTOB   *
1074   LSNTOZ   *
 996   LSPAR    *
 997   LSPARB   *
 998   LSPARZ   *
1036   LSPLA    *
1037   LSPLAB   *
1038   LSPLAZ   *
 952   LSRCA    *
 953   LSRCAB   *
 954   LSRCAZ   *
 956   LSREM    *
 957   LSREMB   *
 958   LSREMZ   *
1032   LSRRS    *
1033   LSRRSB   *
1034   LSRRSZ   *
 948   LSRRT    1821   1839
 949   LSRRTB   *
 950   LSRRTZ   *
 960   LSRTO    *
 961   LSRTOB   *
 962   LSRTOZ   *
 964   LSSRS    *
 965   LSSRSB   *
 966   LSSRSZ   *
 980   LSSWS    *
 981   LSSWSB   *
 982   LSSWSZ   *
1020   LSTER    *
1021   LSTERB   *
1022   LSTERZ   *
 944   LSTHD    *
 945   LSTHDB   *
 946   LSTHDZ   *
 968   LSWCA    *
 969   LSWCAB   *
 970   LSWCAZ   *
 972   LSWEM    *
 973   LSWEMB   *
 974   LSWEMZ   *
1028   LSWRS    *
1029   LSWRSB   *
1030   LSWRSZ   *
 976   LSWTO    *
 977   LSWTOB   *
 978   LSWTOZ   *
1004   LSXMM    *
```

```
1005   LSXMMB   *
1006   LSXMMZ   *
1044   LSYNC    *
1045   LSYNCB   *
1046   LSYNCZ   *
1076   LSYNR    *
1077   LSYNRB   *
1078   LSYNRZ   *
1064   LSYNT    *
1065   LSYNTB   *
1066   LSYNTZ   *
 590   MAP      1757  1776  1807  1810  1847
 587   MP        588   589   591   592   593   594
 591   MPMR0    *
 592   MPMR1    *
 593   MPMR2    *
 594   MPMR3    *
 467   MT        468   469   470   471   472   473   474   475   476
                 477   478   479   480   481   482   483   484   485
                 486   487   488   489   490   491   492   493   494
                 495   496   497   498   499   500   501   502   503
                 504   505   506   507   508   509   510   511   512
                 513   514   515   516   517   518   519   520   521
                 522   523
 501   NEG      1917
 512   NINE      140   164  1505
 504   ONE       156   180  1563
   0   P          26    28    29    35    38    40    44    48    52
                  56    60    64    68    72    76    80    83    84
                  84    85    86    90    91    91    92    93    96
                  98    99   100   100   101   102   103   104   105
                 106   106   108   108   111   113   114   114   115
                 117   117   118   119   120   122   123   124   124
                 128   128   129   130   131   131   132   135   136
                 137   139   141   143   145   147   149   151   153
                 155   159   160   161   163   165   167   169   171
                 173   175   177   179   191   193   193   194   195
                 195   198   200   200   201   202   202   205   207
                 207   208  1445  1446  1457  1458
1328   PCBSL    *
1329   PCBSLB   *
1330   PCBSLZ   *
1316   PCCLN    *
1317   PCCLNB   *
1318   PCCLNZ   *
1340   PCCTP    *
1341   PCCTPB   *
1342   PCCTPZ   *
1320   PCECH    *
1321   PCECHB   *
1322   PCECHZ   *
1312   PCLLN    *
1313   PCLLNB   *
1314   PCLLNZ   *
1348   PCNTD    *
1349   PCNTDB   *
1350   PCNTDZ   *
1336   PCPCH    *
1337   PCPCHB   *
1338   PCPCHZ   *
1332   PCSWL    *
1333   PCSWLB   *
1334   PCSWLZ   *
1344   PCTYP    *
1345   PCTYPB   *
1346   PCTYPZ   *
1324   PCXMM    *
1325   PCXMMB   *
1326   PCXMMZ   *
 574   PIM1     *
 575   PIM2     *
 576   PIM3     *
 577   PIM4     *
 578   PIM5     *
 579   PIM6     *
 580   PIM7     *
 581   PIM8     *
 698   POST     *
1286   PSABN    *
1287   PSABNB   *
1288   PSABNZ   *
1238   PSASY    *
1239   PSASYB   *
1240   PSASYZ   *
 669   PSBADT   *
 665   PSBEG    *
1298   PSBSC    *
1299   PSBSCB   *
1300   PSBSCZ   *
1250   PSCC1    *
1251   PSCC1B   *
1252   PSCC1Z   *
1254   PSCC2    *
1255   PSCC2B   *
1256   PSCC2Z   *
```

```
1290   PSCRC    *
1291   PSCRCB   *
1292   PSCRCZ   *
1270   PSDEF    *
1271   PSDEFB   *
1272   PSDEFZ   *
1278   PSDSF    *
1279   PSDSFB   *
1280   PSDSFZ   *
1266   PSDWN    *
1267   PSDWNB   *
1268   PSDWNZ   *
 671   PSEND    *
1262   PSEPF    *
1263   PSEPFB   *
1264   PSEPFZ   *
1246   PSLSP    *
1247   PSLSPB   *
1248   PSLSPZ   *
1230   PSMOD    *
1231   PSMODB   *
1232   PSMODZ   *
 670   PSNSEC   *
1234   PSPAR    *
1235   PSPARB   *
1236   PSPARZ   *
1274   PSPLA    *
1275   PSPLAB   *
1276   PSPLAZ   *
 666   PSPROT   *
1258   PSTER    *
1259   PSTERB   *
1260   PSTERZ   *
1242   PSXMM    *
1243   PSXMMB   *
1244   PSXMMZ   *
1282   PSYNC    *
1283   PSYNCB   *
1284   PSYNCZ   *
1302   PSYNR    *
1303   PSYNRB   *
1304   PSYNRZ   *
1294   PSYNT    *
1295   PSYNTB   *
1296   PSYNTZ   *
  31   PUSH     *
1456   PUTMEM   *
 227   PUTQ     *
 531   RA0      1698  1753
 532   RA1      1697  1701  1748
 650   RADNR    1584  1658  1663  1761  1763  1820  1912  1932
 533   RB0      *
 534   RB1      *
 648   RFCB     *
 503   RHW      *
 644   RQPWD    1575  1682  1961
1494   RQBLK    1496  1498  1500  1503  1506  1508  1510  1514
1574   RQST     1575  1592  1672  1682  1691  1693  1726  1735  1736
                1761  1763  1909  1912  1929  1932  1961
 641   RSTPR    1691  1693  1726  1909  1929
 649   RTIDB    1592  1672  1735  1736  1813
  95   SETA     *
 110   SETB     *
 190   SETF     *
 510   SEVEN     144   168  1724
 509   SIX       146   170  1707
  25   SPACE    *
 134   SUBAT    *
 287   TBATSK   *
 286   TBCPTH   *
 273   TBENTY   *
 267   TBEVNT   1745  1880  2014
 281   TBID     1676  1678
 276   TBISA    *
 277   TBISB    *
 279   TBISP    *
 280   TBISRS   *
 293   TBIST    1850
 278   TBISX    *
 291   TBKEY    1594  1754  1814  1825
 282   TBKN1    *
 283   TBKN2    *
 284   TBKN3    *
 292   TBMIMG   *
 290   TBNUCL   *
 266   TBPL     *
 268   TBRSA    *
 269   TBRSB    *
 288   TBRSE    *
 271   TBRSP    *
 272   TBRSTS   *
 270   TBRSX    *
 321   TBS0     *
 320   TBS1     *
 308   TBS10    *
```

```
 307   TBS11    *
 305   TBS12    *
 304   TBS13    *
 303   TBS14    1684
 301   TBS15    *
 319   TBS2     *
 317   TBS3     *
 316   TBS4     *
 315   TBS5     *
 313   TBS6     *
 312   TBS7     *
 311   TBS8     *
 309   TBS9     *
 289   TBSIZ    *
 265   TBST     1684  1746  2064  2066
 285   TBTLC    *
 275   TBTMIN   *
 274   TBTMS    *
 264   TBTRD    *
1492   TC$BRQ   1469  1491  1516
1877   TC$CEX     12  1863  1876  2019  2096  2103
1635   TC$CRQ   1604  1631  1634  1791
1632   TC$FRQ   1631  1790  1823
1554   TC$FRR   1528  1553  1555
1560   TC$FWR   1553  1561
   0   TC$TCD   1881  1882  1946  2030
2113   TC$TMN   2046  2075
2112   TC$TMS   2044  2080  2086
1114   TCBSL    *
1115   TCBSLB   *
1116   TCBSLZ   *
1098   TCCLN    1501
1099   TCCLNB   1501
1100   TCCLNZ   1501
1126   TCCON    *
1127   TCCONB   *
1128   TCCONZ   *
1094   TCCTA    1731  1967  1978  1992
1095   TCCTAB   1731  1967  1978  1992
1096   TCCTAZ   1731  1967  1978  1992
1150   TCCTP    *
1151   TCCTPB   *
1152   TCCTPZ   *
1493   TCD      1501  1507  1712  1731  1896  1900  1905  1918  1922
                1951  1956  1967  1978  1990  1992  2034
1186   TCDCC    *
1187   TCDCCB   *
1188   TCDCCZ   *
1194   TCDTO    1900  1905  1918  2034
1195   TCDTOB   1900  1905  1918  2034
1196   TCDTOZ   1900  1905  1918  2034
1122   TCECH    *
1123   TCECHB   *
1124   TCECHZ   *
1198   TCID1    *
1199   TCID1B   *
1200   TCID1Z   *
1202   TCID2    *
1203   TCID2B   *
1204   TCID2Z   *
1170   TCLDF    1712
1171   TCLDFB   1712
1172   TCLDFZ   1712
1102   TCLLN    1507
1103   TCLLNB   1507
1104   TCLLNZ   1507
1142   TCNOD    *
1143   TCNODB   *
1144   TCNODZ   *
1138   TCNTD    *
1139   TCNTDB   *
1140   TCNTDZ   *
1106   TCPCH    *
1107   TCPCHB   *
1108   TCPCHZ   *
1134   TCRBC    *
1135   TCRBCB   *
1136   TCRBCZ   *
1190   TCRBF    *
1191   TCRBFB   *
1192   TCRBFZ   *
1174   TCRCA    1896  1956
1175   TCRCAB   1896  1956
1176   TCRCAZ   1896  1956
1154   TCRMD    *
1155   TCRMDB   *
1156   TCRMDZ   *
1090   TCRQH    1568  1648  1951
1091   TCRQHB   1951
1092   TCRQHZ   1951
1162   TCRRS    *
1163   TCRRSB   *
1164   TCRRSZ   *
1178   TCSTO    *
1179   TCSTOB   *
```

```
1180   TCSTOZ   *
1110   TCSWL    *
1111   TCSWLB   *
1112   TCSWLZ   *
1086   TCTCD    *
1087   TCTCDB   *
1088   TCTCDZ   *
1146   TCTYP    *
1147   TCTYPB   *
1148   TCTYPZ   *
1130   TCWBC    *
1131   TCWBCB   *
1132   TCWBCZ   *
1182   TCWCA    1922   1990
1183   TCWCAB   1922   1990
1184   TCWCAZ   1922   1990
1158   TCWMD    *
1159   TCWMDB   *
1160   TCWMDZ   *
1166   TCWRS    *
1167   TCWRSB   *
1168   TCWRSZ   *
1118   TCXMM    *
1119   TCXMMB   *
1120   TCXMMZ   *
 513   TEN       138    162
 204   TESTF    *
 506   THREE     152    176   1578
1593   TIDB     1594   1676   1678   1684   2014   2064   2066
1374   TIDSP    *
1375   TIDSPB   *
1376   TIDSPZ   *
1366   TIDWN    *
1367   TIDWNB   *
1368   TIDWNZ   *
1390   TINET    *
1391   TINETB   *
1392   TINETZ   *
1378   TIODN    *
1379   TIODNB   *
1380   TIODNZ   *
1386   TIODP    *
1387   TIODPB   *
1388   TIODPZ   *
1382   TIOSC    *
1383   TIOSCB   *
1384   TIOSCZ   *
1370   TISEC    *
1371   TISECB   *
1372   TISECZ   *
1358   TITU1    *
1359   TITU1B   *
1360   TITU1Z   *
1362   TITU2    *
1363   TITU2B   *
1364   TITU2Z   *
1220   TPFPA    1970
1221   TPFPAB   1970
1222   TPFPAZ   1970
1212   TPRPA    1981
1213   TPRPAB   1981
1214   TPRPAZ   1981
1216   TPWPA    1995
1217   TPWPAB   1995
1218   TPWPAZ   1995
 505   TWO       154    178   1576   1962
 439   V$1MIN   *
 457   V$BFC    *
 365   V$BGLB   *
 362   V$BIC1   *
 391   V$BTB    *
 399   V$BTBM   *
 456   V$BVN    *
 407   V$CAM    *
 419   V$CKB    *
 447   V$CKIT   *
 386   V$CKPT   *
 379   V$CPL    *
 366   V$CRDM   *
 409   V$CRDR   *
 420   V$CRM    *
 380   V$CRS    1804   1832
 425   V$CTAD   *
 378   V$CTL    1824   1849   1878   2012   2062
 417   V$CTMS   *
 363   V$DATE   *
 421   V$DSTB   *
 434   V$ERFG   *
   0   V$EXEC   1451   1463
 415   V$FGLB   *
 384   V$FLRS   *
 416   V$FREE   *
 400   V$GFCB   *
 396   V$IM     *
 446   V$IOA    *
```

```
  0   V$IDC    1522  1523
448   V$JCB    *
355   V$JCFG   *
369   V$JCTM   *
353   V$JNAM   *
435   V$JOP    *
406   V$KEY    *
354   V$LCNT   *
389   V$LER    *
422   V$LIT    *
394   V$LLUP   *
395   V$LPP    *
385   V$LRSK   *
388   V$LSAL   *
413   V$LUNT   *
393   V$LUP    *
436   V$LUT1   *
437   V$LUT2   *
438   V$LUT3   *
398   V$MAP    *
  0   V$MDAL   1751  1801  1829  1835
401   V$MIMG   *
397   V$MPM    *
427   V$NCTR   *
392   V$NPAG   *
451   V$OCB    *
414   V$OPCF   *
387   V$OPCL   *
423   V$PGT    *
428   V$PIMN   *
364   V$PLCT   *
383   V$PTVB   *
426   V$SCTL   *
418   V$SCV    *
433   V$SLFG   *
402   V$ST0    1776  1810  1852
403   V$ST1    1757  1854
404   V$ST2    1807  1856
405   V$ST3    1858
381   V$TB     *
410   V$TBGT   *
458   V$TFC    *
390   V$TJCP   *
412   V$TMN    2045  2074
411   V$TMS    2043  2079  2085
382   V$UTB    *
1832  V2$1     1827
1803  V2$CRT   1802
  1   VORTEX   1448  1450  1460  1462  1511  1520  1525  1589  1639
               1747  1749  1762  1774  1783  1788  1798
1860  VT$B     1848  1851
  0   VT$GTM   1453
  0   VT$PTM   1465
1844  VT$TMP   1595  1816  1826  1843  1859
  0   VTPUSH     32    34
696   X         231   253  1493  1674  1690  1711  1764  1766  1768
               1770  1772  1805  1806  1811  1812  1817  1818  1825
               1829  1833  1835  1880  1883  1884  1947  2013  2031
               2033  2063
468   ZERO     *
```

```
000001 A     1 VORTEX SET     1              PUT LAST FOR VORTEX                    V2  05 00001
             2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES05 00002
             3 *                                                                      05 00003
             4 *        V.D.M.    PART NO.     92L1105-008B                          05 00004
             5 *                                                                      05 00005
             6 *                               RELEASED     3-1-74                   05 00006
             7 *                                                                      05 00007
             8 *                                                                      05 00008
             9 *                TYREAD                                                05 00009
            10 *                                                                      05 00010
            11 *                                                                      05 00011
            12          TITLE   TYREAD                                                05 00012
            13          NLIS                                                          05 00013
          1443          LIST                                                          ********
          1444 *                                                                      05 00014
          1445 GETMEM   MAC                                                         05 00015
          1446          LDAI    P(2)                                                05 00016
          1447          LDBI    P(1)                                                05 00017
          1448          STX     *+6                                                 05 00018
          1449          IFF     VORTEX-2                                      V2    05 00019
          1450          JSR     0406,1                                        V2    05 00020
          1451          IFF     VORTEX-1                                      V2    05 00021
          1452          JSR     V$EXEC,1                                            05 00022
          1453          DATA    0600                                                05 00023
          1454          DATA    VT$GTM                                              05 00024
          1455          LDXI    *                                                   05 00025
          1456          EMAC                                                        05 00026
          1457 PUTMEM   MAC                                                         05 00027
          1458          LDAI    P(1)                                                05 00028
          1459          LDBE    P(2)                                                05 00029
          1460          STX     *+6                                                 05 00030
          1461          IFF     VORTEX-2                                      V2    05 00031
          1462          JSR     0406,1                                        V2    05 00032
          1463          IFF     VORTEX-1                                      V2    05 00033
          1464          JSR     V$EXEC,1                                            05 00034
          1465          DATA    0600                                                05 00035
          1466          DATA    VT$PTM                                              05 00036
          1467          LDXI    *                                                   05 00037
          1468          EMAC                                                        05 00038
          1469          EJEC                                                        05 00039
          1470 ************************************************************************05 00040
          1471 ************************************************************************05 00041
          1472 **       PROGRAM NAME -                                          **05 00042
          1473 **                TYRDCC - OUTPUT   TTY CONTROL CHARACTER(S) SUBROUTINE **05 00043
          1474 **                                                                **05 00044
          1475 **       ENTRY CONDITIONS -                                      **05 00045
          1476 **                (X) = TCD ADDRESS                              **05 00046
          1477 **                (B) = CHARACTERS TO OUTPUT                     **05 00047
          1478 **                (A) = BUFFER LENGTH(BYTES)                     **05 00048
          1479 **                                                               **05 00049
          1480 **       EXIT CONDITIONS -                                       **05 00050
          1481 **                (X) DESTROYED                                  **05 00051
          1482 **                (B) DESTROYED                                  **05 00052
          1483 **                (A) DESTROYED                                  **05 00053
          1484 **                                                               **05 00054
          1485 ************************************************************************05 00055
          1486 ************************************************************************05 00056
000000 000000 A 1487 TYRDCC   ENTR                                                  05 00057
000001 054030 A 1488          STA     SAVA                                          05 00058
000002 064030 A 1489          STB     SAVB                                          05 00059
000003 006027 A 1490          LDBE    RDMEM           GET CCM RQST BLK ADDR         05 00060
000004 001505 R
       000002 A 1491 RQBLK    SET     B                                             05 00061
000005 006010 A 1492          LDAI    CC1             RETURN ADDR                   05 00062
000006 000030 R
000007 056010 A 1493          STA     8,RQBLK                                       05 00063
000010 016003 A 1494          LDA     3,RQBLK         SET OP-CODE TO WRITE          05 00064
000011 150463 A 1495          ANA     RHW                                           05 00065
000012 006110 A 1496          ORAI    0100400                                       05 00066
000013 100400 A
000014 056003 A 1497          STA     3,RQBLK                                       05 00067
000015 014014 A 1498          LDA     SAVA            SET BUFFER LENGTH             05 00068
000016 056011 A 1499          STA     9,RQBLK                                       05 00069
000017 005021 A 1500          TBA                     SET BUFFER ADDR, BYTE COUNT FLAG 05 00070
000020 006120 A 1501          ADDI    12                                            05 00071
000021 000014 A
000022 110440 A 1502          ORA     BS15                                          05 00072
000023 056012 A 1503          STA     10,RQBLK                                      05 00073
000024 014006 A 1504          LDA     SAVB            MOVE CHRS TO BUFFER           05 00074
000025 056014 A 1505          STA     12,RQBLK                                      05 00075
000026 001000 A 1506          JMP*    RDMEM           QUEUE CCM REQUEST             05 00076
000027 101505 R
000030 001000 A 1507 CC1      JMP*    TYRDCC          RETURN                        05 00077
000031 100000 R
000032 000000 A 1508 SAVA     DATA    0               SAVE A REG.                   05 00078
000033 000000 A 1509 SAVB     DATA    0               SAVE B REG.                   05 00079
          1510                EJEC                                                05 00080
          1511 ************************************************************************05 00081
          1512 ************************************************************************05 00082
          1513 **       PROGRAM NAME -                                          **05 00083
          1514 **                TYSTCB - STORE CHARACTER IN BUFFER SUBROUTINE  **05 00084
          1515 **       ENTRY CONDITIONS -                                      **05 00085
          1516 **                (X) = TCD ADDRESS                              **05 00086
          1517 **                (B) = BUFFER ADDRESS                           **05 00087
          1518 **                (A) = CHAR IN BITS 7-0                         **05 00088
```

```
                    1519 **      EXIT CONDITIONS -                                                    **05 00089
                    1520 **                (X) UNCHANGED                                              **05 00090
                    1521 **                (B) = UPDATED  BUFFER ADDRESS                              **05 00091
                    1522 **                (A) DESTROYED                                              **05 00092
                    1523 **      CALLING  SEQUENCE -                                                  **05 00093
                    1524 **                JMPM TYSTCB                                                **05 00094
                    1525 **                (RETURN)                                                   **05 00095
                    1526 **                                                                           **05 00096
                    1527 ***************************************************************************** 05 00097
                    1528 ***************************************************************************** 05 00098
000034 000000 A     1529 TYSTCB ENTR                                                                     05 00099
000035 006437 A     1530        BT      RB1+15,ST1     TEST SIGN BIT OF B REG.                           05 00100
000036 000044 R
000037 004250 A     1531        LRLA    8              POSITION CHAR TO LHW                              05 00101
                    1532        IFF     VORTEX-2                                                 V2       05 00102
                    1533        OME     MAP,V$ST3      SET EXEC STATE TO NN                      V2       05 00103
000040 056000 A     1534        STA     0,B            STORE CHAR                                        05 00104
000041 005222 A     1535        CPB                    COMPLEMENT BUFFER ADDR FOR RHW                    05 00105
000042 001000 A     1536        JMP     ST2                                                              05 00106
000043 000054 R
000044 005222 A     1537 ST1    CPB                    RHW CHAR                                          05 00107
000045 054003 A     1538        STA     ST1A                                                     V2       05 00108
                    1539        IFF     VORTEX-2                                                 V2       05 00109
                    1540        OME     MAP,V$ST3      SET EXEC STATE TO NN                      V2       05 00110
000046 016000 A     1541        LDA     0,B            GET PRIOR CHAR IN LHW                             05 00111
000047 150462 A     1542        ANA     LHW                                                              05 00112
000050 006110 A     1543        ORAI    *                                                                05 00113
000051 000050 R
000051              1544 ST1A   BES     0                                                        V2       05 00114
000052 056000 A     1545        STA     0,B            STORE CHAR                                        05 00115
000053 005122 A     1546        IBR                    INCREMENT TO NEXT BUFFER LOCATION                 05 00116
       000054 R     1547 ST2    EQU     *                                                        V2       05 00117
                    1548        IFF     VORTEX-2                                                 V2       05 00118
                    1549        OME     MAP,V$ST0      SET EXEC STATE TO 00                      V2       05 00119
000054 001000 A     1550        JMP*    TYSTCB         B = NEXT BUFFER LOCATION                  V2       05 00120
000055 100034 R
                    1551        EJEC                                                                     05 00121
                    1552 ***************************************************************************** 05 00122
                    1553 ***************************************************************************** 05 00123
                    1554 **      PROGRAM NAME -                                                       **05 00124
                    1555 **                TYBKBF - BLANK UNUSED PORTION OF USERS BUFFER               **05 00125
                    1556 **                                                                           **05 00126
                    1557 **      ENTRY CONDITIONS -                                                     05 00127
                    1558 **                (X) = TCD ADDRESS                                          **05 00128
                    1559 **                (B) = ADDRESS OF LAST CHAR INPUT PLUS ONE                  **05 00129
                    1560 **                (A) = NO  OF BLANK CHARS TO MOVE                           **05 00130
                    1561 **                                                                           **05 00131
                    1562 **      EXIT CONDITIONS -                                                    **05 00132
                    1563 **                (X) = UNCHANGED                                            **05 00133
                    1564 **                (B) = DESTROYED                                            **05 00134
                    1565 **                (A) = DESTROYED                                            **05 00135
                    1566 **                                                                           **05 00136
                    1567 **      CALLING SEQUENCE -                                                   **05 00137
                    1568 **                 JMPM TYBKBF                                               **05 00138
                    1569 **                 (RETURN)                                                  **05 00139
                    1570 ***************************************************************************** 05 00140
                    1571 ***************************************************************************** 05 00141
000056 000000 A     1572 TYBKBF ENTR                                                                     05 00142
       000001 A     1573 TCD    SET     X                                                                05 00143
000057 054040 A     1574        STA     SAVR                                                             05 00144
000060 005021 A     1575        TBA                                                                      05 00145
000061 001002 A     1576        JAP     BKBF1          START AT LHW                                      05 00146
000062 000077 R
000063 005211 A     1577        CPA                    BLANK RHW                                         05 00147
                    1578        IFF     VORTEX-2                                                 V2       05 00148
                    1579        OME     MAP,V$ST3      SET EXEC STATE TO NN                      V2       05 00149
000064 005012 A     1580        TAB                                                                      05 00150
000065 016000 A     1581        LDA     0,B                                                              05 00151
000066 150462 A     1582        ANA     LHW                                                              05 00152
                    1583        IFF     VORTEX-2                                                 V2       05 00153
                    1584        ORAI    0240                                                     V2       05 00154
                    1585        IFF     VORTEX-1                                                 V2       05 00155
000067 006117 A     1586        ORAE    TYBLK                                                            05 00156
000070 001520 R
000071 056000 A     1587        STA     0,B                                                              05 00157
                    1588        IFF     VORTEX-2                                                 V2       05 00158
                    1589        OME     MAP,V$ST0      SET EXEC STATE TO 00                      V2       05 00159
000072 014025 A     1590        LDA     SAVR                                                             05 00160
000073 005311 A     1591        DAR                                                                      05 00161
000074 005122 A     1592        IBR                                                                      05 00162
000075 001000 A     1593        JMP     BKBF1+1                                                          05 00163
000076 000100 R
000077 014020 A     1594 BKBF1  LDA     SAVR                                                             05 00164
000100 004341 A     1595        LSRA    1              CONVERT TO NO. OF WORDS                           05 00165
000101 074016 A     1596        STX     SAVR                                                             05 00166
000102 005024 A     1597        TBX                    (X) = BUFFER POINTER                              05 00167
000103 005012 A     1598        TAB                    (B) = COUNT                                       05 00168
000104 006017 A     1599        LDAE    TYBKBK                                                           05 00169
000105 001521 R
                    1600        IFF     VORTEX-2                                                 V2       05 00170
                    1601        OME     MAP,V$ST3      SET EXEC STATE TO NN                      V2       05 00171
000106 001020 A     1602 BKBF2  JBZ     BKBF3                                                            05 00172
000107 000115 R
000110 055000 A     1603        STA     0,X                                                              05 00173
000111 005144 A     1604        IXR                    INCREMENT BUFFER POINTER                          05 00174
```

```
000112 005322 A 1605           DBR                      DECREMENT COUNT                                    05 00175
000113 001000 A 1606           JMP      BKBF2                                                               05 00176
000114 000106 R
       000115 R 1607 BKBF3     EQU      *                                                          V2      05 00177
                1608           IFF      VORTEX-2                                                   V2      05 00178
                1609           DME      MAP,V$ST0        SET EXEC STATE TO 00                      V2      05 00179
000115 034002 A 1610           LDX      SAVR             X = TCD ADDRESS                           V2      05 00180
000116 001000 A 1611           JMP*     TYBKBF                                                             05 00181
000117 100056 R
                1612 *                                   DATA STORAGE                                       05 00182
000120 000000 A 1613 SAVR      DATA     0                SAVE REGISTER CELL                                05 00183
                1614           EJEC                                                                        05 00184
                1615 ********************************************************************************05 00185
                1616 ********************************************************************************05 00186
                1617 **        PROGRAM NAME -                                                      **05 00187
                1618 **                 TYREAD - PROCESSES READ REQUESTS FOR TTY TCM                **05 00188
                1619 **                                                                             **05 00189
                1620 **        ENTRY CONDITIONS -                                                   **05 00190
                1621 **                 (X) = ADDRESS OF TCD                                        **05 00191
                1622 **                                                                             **05 00192
                1623 **        EXIT CONDITIONS -                                                    **05 00193
                1624 **                 (X) DESTROYED.                                              **05 00194
                1625 **                 (A) AND (B) DESTROYED                                       **05 00195
                1626 **                                                                             **05 00196
                1627 **        CALLING SEQUENCE -                                                   **05 00197
                1628 **                 JMPM TYREAD                                                 **05 00198
                1629 **                 (RETURN)                                                    **05 00199
                1630 **                                                                             **05 00200
                1631 ********************************************************************************05 00201
                1632 ********************************************************************************05 00202
                1633           EXT      V$EXEC                                                              05 00203
                1634           EXT      VT$MP1                                                              05 00204
                1635           EXT      VT$GTM                                                              05 00205
                1636           EXT      VT$PTM                                                              05 00206
                1637           EXT      TC$FRR                                                              05 00207
                1638           EXT      TC$BRQ           BUILD CCM RQST                                     05 00208
                1639           IFT      VORTEX-2                                                   V2      05 00209
                1640           GOTO     1                                                          V2      05 00210
                1641           EXT      V$MDAL           DEALLOCATE MEMORY                         V2      05 00211
                1642           EXT      VT$TMP           SET UP MAP                                V2      05 00212
                1643 1         CONT                                                               V2      05 00213
                1644           NAME     TYREAD                                                              05 00214
000121 000000 A 1645 TYREAD    ENTR                                                                         05 00215
       000001 A 1646 TCD       SET      X                                                                   05 00216
000122 006077 A 1647           STXE     RDTCD                                                               05 00217
000123 001503 R
000124 002000 A 1648           JMPM     TC$FRR           FIND READ REQUEST                                  05 00218
000125 000000 E
000126 001010 A 1649           JAZ*     TYREAD           NONE, EXIT                                         05 00219
000127 100121 R
000130 006057 A 1650           STAE     RDRQST                                                              05 00220
000131 001504 R
000132 005001 A 1651           TZA                                                                          05 00221
000133 006057 A 1652           STAE     RDMEM                                                               05 00222
000134 001505 R
                1653           FETCHA   TCD,TCSWL,TCSWLB,TCSWLZ                                             05 00223
000135 015004 A
000136 004350 A
000137 150421 A
000140 001010 A 1654           JAZ      RD20             DIRECT CONNECT                                     05 00224
000141 000310 R
                1655 *                                   DIAL-UP, CHECK PHYSICAL CONNECTION                 05 00225
                1656           FETCHA   TCD,TCCON,TCCONB,TCCONZ                                             05 00226
000142 015004 A
000143 004355 A
000144 150421 A
000145 001010 A 1657           JAZ      RD09             NOT CONNECTED                                      05 00227
000146 000167 R
                1658           FETCHA   TCD,TCLDF,TCLDFB,TCLDFZ                                             05 00228
000147 015006 A
000150 004354 A
000151 150421 A
000152 001010 A 1659           JAZ      RD20             CONNECTED                                          05 00229
000153 000310 R
000154 005101 A 1660           INCR     01               LINE DISC., SIMULATE DSR OFF, COMP. RQST.          05 00230
000155 006027 A 1661           LDBE     RDRQST                                                              05 00231
000156 001504 R
                1662           DINTS                                                                        05 00232
000157 100444 A
000160 100747 A
000161 002000 A 1663           JMPM     TC$CRQ                                                              05 00233
000162 000000 E
                1664           IFT      VORTEX-2                                                   V2      05 00234
                1665           GOTO     1                                                          V2      05 00235
                1666           JOFN     RD04             DEALLOCATE ?                              V2      05 00236
                1667           STX      RD04-1           YES                                       V2      05 00237
                1668           STB      *+4                                                        V2      05 00238
                1669           JSR      V$MDAL,X                                                   V2      05 00239
                1670           DATA     6                                                          V2      05 00240
                1671           BSS      1                                                          V2      05 00241
                1672           LDXI     0                RESTORE X                                 V2      05 00242
                1673 RD04      EQU      *                                                          V2      05 00243
                1674 1         CONT                                                               V2      05 00244
                1675           EINTS                                                                        05 00245
000163 100244 A
```

```
000164 100147 A
000165 001000 A 1676          JMP*    TYREAD                                                    05 00246
000166 100121 R
                1677          IFT     VORTEX-2                                            V2    05 00247
                1678          GOTO    1                                                   V2    05 00248
                1679 RD09     TZA                                                         V2    05 00249
                1680          CALL    VT$TMP        SET MAP TO ZERO                       V2    05 00250
                1681          GETMEM  VT$MP1,14                                           V2    05 00251
                1682 1        CONT                                                        V2    05 00252
                1683          IFF     VORTEX-1                                            V2    05 00253
                1684 RD09     GETMEM  VT$MP1,13                                                 05 00254
000167 006010 A
000170 000015 A
000171 006020 A
000172 000000 E
000173 074005 A
000174 006505 A
000175 000000 E
000176 000600 A
000177 000000 E
000200 006030 A
000201 000200 R
000202 001010 A 1685          JAZ*    TYREAD        NO MEM, EXIT                                05 00255
000203 100121 R
000204 006057 A 1686          STAE    RDMEM                                                     05 00256
000205 001505 R
000206 005012 A 1687          TAB                                                               05 00257
000207 002000 A 1688          JMPM    TC$BRQ                                                    05 00258
000210 000000 E
000211 006010 A 1689          LDAI    RD10          SET UP RETURN ADDR                          05 00259
000212 000223 R
       000002 A 1690 RQBLK    SET     B                                                         05 00260
000213 056010 A 1691          STA     8,RQBLK                                                   05 00261
000214 010465 A 1692          LDA     FIVE          SET OP-CODE TO FUNCTION, FUNC CODE = 0      05 00262
000215 004250 A 1693          LRLA    8                                                         05 00263
000216 116003 A 1694          ORA     3,RQBLK                                                   05 00264
000217 150460 A 1695          ANA     BR15          USE WAIT OPTION                             05 00265
000220 056003 A 1696          STA     3,RQBLK                                                   05 00266
000221 001000 A 1697          JMP*    RDMEM                                                     05 00267
000222 101505 R
000223 006027 A 1698 RD10     LDBE    RDMEM                                                     05 00268
000224 001505 R
000225 006037 A 1699          LDXE    RDTCD                                                     05 00269
000226 001503 R
000227 016006 A 1700          LDA     6,RQBLK       GET DETAIL STATUS                           05 00270
000230 150422 A 1701          ANA     BS1           CHECK FOR DATA-SET-READY                    05 00271
000231 001016 A 1702          JANZ    RD15A         ON                                          05 00272
000232 000274 R
                1703 *                              OFF, SENSE DATA-SET-READY ON EVENT          05 00273
000233 016003 A 1704          LDA     3,RQBLK       IMMEDIATE RETURN                            05 00274
000234 110440 A 1705          ORA     BS15                                                      05 00275
000235 056003 A 1706          STA     3,RQBLK                                                   05 00276
000236 016013 A 1707          LDA     11,RQBLK      FUNC CODE = 3                               05 00277
000237 150463 A 1708          ANA     RHW                                                       05 00278
000240 006110 A 1709          ORAI    01400                                                     05 00279
000241 001400 A
000242 056013 A 1710          STA     11,RQBLK                                                  05 00280
000243 010422 A 1711          LDA     BS1           MASK FOR DSR ON                             05 00281
000244 056014 A 1712          STA     12,RQBLK      STORE IN LCB EXT WORD                       05 00282
000245 006010 A 1713          LDAI    RD10A         SET UP RETURN ADDR                          05 00283
000246 000253 R
000247 056010 A 1714          STA     8,RQBLK                                                   05 00284
000250 065007 A 1715          STB     TCRCA,TCD     SET READ ACTIVE                             05 00285
000251 001000 A 1716          JMP*    RDMEM                                                     05 00286
000252 101505 R
                1717 *                              CCM RQST QUEUED                             05 00287
000253 006027 A 1718 RD10A    LDBE    RDMEM                                                     05 00288
000254 001505 R
000255 006010 A 1719          LDAI    RD15                                                      05 00289
000256 000262 R
000257 056010 A 1720          STA     8,RQBLK                                                   05 00290
000260 001000 A 1721          JMP*    TYREAD        RETURN                                      05 00291
000261 100121 R
                1722 *                              ON RETURN, DSR IS ON                        05 00292
000262 000000 A 1723 RD15     ENTR                                                              05 00293
000263 006017 A 1724          LDAE    *-1           MOVE RETURN ADDRESS TO MAIN RETURN CELL.    05 00294
000264 000262 R
000265 006057 A 1725          STAE    TYREAD                                                    05 00295
000266 000121 R
000267 015007 A 1726          LDA     TCRCA,TCD                                                 05 00296
000270 006057 A 1727          STAE    RDMEM                                                     05 00297
000271 001505 R
000272 005001 A 1728          TZA                                                               05 00298
000273 055007 A 1729          STA     TCRCA,TCD                                                 05 00299
000274 005101 A 1730 RD15A    INCR    01            SET PHYSICAL CONNECTION BIT, DSR ON         05 00300
                1731          SETA    TCD,TCCON,TCCONB,TCCONZ                                   05 00301
000275 004255 A
000276 135004 A
000277 004355 A
000300 150421 A
000301 004255 A
000302 135004 A
000303 055004 A
000304 002000 A 1732          JMPM    TC$FRR                                                    05 00302
000305 000125 E
```

```
000306 006057 A 1733          STAE    RDRQST                                                    05 00303
000307 001504 R
                1734 *                                                                          05 00304
                1735 *                        IF FULL-DUPLEX, CHECK IF READ CAN BE              05 00305
                1736 *                        INITIATED                                         05 00306
                1737 *                                                                          05 00307
                1738          SPACE   2                                                         05 00308
                1739 *                        GET TRANSMISSION MODE                             05 00309
                1740 RD20     FETCHA  TCD,TCXMM,TCXMMB,TCXMMZ                                   05 00310
000310 015004 A
000311 004352 A
000312 150464 A
000313 140464 A 1741          SUB     THREE                                                     05 00311
000314 001016 A 1742          JANZ    RD30            NOT FULL-DUPLEX                           05 00312
000315 000330 R
                1743 *                        FDX,CHECK FOR WRITE ACTIVE AND ECHO MODE          05 00313
                1744          FETCHA  TCD,TCWCA,TCWCAB,TCWCAZ                                   05 00314
000316 015011 A
000317 001010 A 1745          JAZ     RD30A           NOT WRITE ACTIVE                          05 00315
000320 000337 R
                1746 *                        WRITE ACTIVE, CHECK IF READ WITH ECHO             05 00316
                1747          FETCHA  TCD,TCECH,TCECHB,TCECHZ                                   05 00317
000321 015004 A
000322 004354 A
000323 150421 A
000324 001010 A 1748          JAZ     RD40B           ECHO, CANNOT INITIATE READ, EXIT          05 00318
000325 000454 R
                1749 *                        OTHERWISE INITIATE READ                           05 00319
000326 001000 A 1750          JMP     RD30A                                                     05 00320
000327 000337 R
                1751          SPACE   2                                                         05 00321
                1752 *                        LINE IS HALF-DUPLEX OR SIMPLEX.                   05 00322
                1753 *                        READ CAN BE INITIATED IF RQST IS ON TOP           05 00323
                1754 *                        OF TCD RQST QUEUE.                                05 00324
                1755 *                                                                          05 00325
                1756 RD30     FETCHA  TCD,TCRQH,TCRQHB,TCRQHZ                                   05 00326
000330 015001 A
000331 005012 A 1757          TAB                                                               05 00327
        000002 A 1758 RQST    SET     B                                                         05 00328
                1759          FETCHA  RQST,RQPWD,8,4      GET OP-CODE OF TOP RQST               05 00329
000332 016001 A
000333 004350 A
000334 150472 A
000335 001016 A 1760          JANZ    RD40B           READ RQST NOT ON TOP, EXIT                05 00330
000336 000454 R
                1761 *                                                                          05 00331
                1762 *                        INITIATE READ REQUEST                             05 00332
                1763 *                                                                          05 00333
000337 006027 A 1764 RD30A    LDBE    RDRQST                                                    05 00334
000340 001504 R
        000002 A 1765 RQST    SET     B                                                         05 00335
                1766          FETCHA  RQST,RQPWD,12,3                                           05 00336
000341 016001 A
000342 004354 A
000343 150467 A
000344 140423 A 1767          SUB     FOUR          IS MODE = 4                                 05 00337
000345 001010 A 1768          JAZ     RD30B          YES                                        05 00338
000346 000351 R
000347 005001 A 1769          TZA                    NO, SET MODE = 1(DEFAULT)                  05 00339
000350 001004 A 1770          DATA    01004                                                     05 00340
000351 120464 A 1771 RD30B    ADD     THREE                                                     05 00341
000352 006057 A 1772          STAE    RDMODE         SAVE MODE OF RQST                          05 00342
000353 001506 R
                1773          SETA    TCD,TCRMD,TCRMDB,TCRMDZ                                   05 00343
000354 135006 A
000355 150467 A
000356 135006 A
000357 055006 A
000360 006027 A 1774          LDBE    RDRQST                                                    05 00344
000361 001504 R
000362 026002 A 1775          LDB     RFCB,RQST                                                 05 00345
        000002 A 1776 DCB     SET     B                                                         05 00346
                1777          IFF     VORTEX-2                                          V2      05 00347
                1778          DME     MAP,V$ST2     SET EXEC STATE TO N0                V2      05 00348
000363 016000 A 1779          LDA     DCRECL,DCB    SAVE RECORD LENGTH (BYTES/WORDS)            05 00349
000364 006057 A 1780          STAE    RDBLEN                                                    05 00350
000365 001507 R
000366 016001 A 1781          LDA     DCBUFF,DCB    SAVE BUFFER ADDRESS, BYTE/WORD CNT FLAG     05 00351
                1782          IFF     VORTEX-2                                          V2      05 00352
                1783          DME     MAP,V$ST0     SET EXEC STATE TO 00                V2      05 00353
000367 006057 A 1784          STAE    RDBUFF                                                    05 00354
000370 001510 R
                1785          IFT     VORTEX-2                                          V2      05 00355
                1786          GOTO    1                                                 V2      05 00356
                1787          TZA                                                       V2      05 00357
                1788          CALL    VT$TMP        SET MAP TO ZERO                     V2      05 00358
                1789 1        CONT                                                      V2      05 00359
000371 006017 A 1790          LDAE    RDMODE        GET MODE                                    05 00360
000372 001506 R
000373 001010 A 1791          JAZ     RD50          MODE = 1, STANDARD                          05 00361
000374 000500 R
                1792 *                                                                          05 00362
                1793 *                        MODE = 4, TRANSPARENT                             05 00363
                1794 *                        BUILD CCM RQST BLK TO READ INTO USER BUFFER       05 00364
                1795 *                                                                          05 00365
```

```
                    1796          SPACE   2                                                                  05 00366
000375 006017 A     1797          LDAE    RDMEM                                                              05 00367
000376 001505 R
000377 001016 A     1798          JANZ    RD40            MEMORY ALLOCATED                                   05 00368
000400 000423 R
                    1799          IFF     VORTEX-2                                                   V2      05 00369
                    1800          GETMEM  VT$MP1,14                                                  V2      05 00370
                    1801          IFF     VORTEX-1                                                   V2      05 00371
                    1802          GETMEM  VT$MP1,13                                                          05 00372
000401 006010 A
000402 000015 A
000403 006020 A
000404 000172 E
000405 074005 A
000406 006505 A
000407 000175 E
000410 000600 A
000411 000177 E
000412 006030 A
000413 000412 R
000414 001010 A     1803          JAZ*    TYREAD          NO MEM, EXIT                                       05 00373
000415 100121 R
000416 006057 A     1804          STAE    RDMEM                                                              05 00374
000417 001505 R
000420 005012 A     1805          TAB                                                                        05 00375
000421 002000 A     1806          JMPM    TC$BRQ          BUILD CCM RQST                                     05 00376
000422 000210 E
       000423 R     1807 RD40     EQU     *                                                          V2      05 00377
                    1808          IFT     VORTEX-2                                                   V2      05 00378
                    1809          GOTO    1                                                          V2      05 00379
                    1810          LDBE    RDRQST                                                     V2      05 00380
                    1811          LDB     RTIDB,B                                                    V2      05 00381
                    1812          LDA     TBKEY,B                                                    V2      05 00382
                    1813 1        CONT                                                               V2      05 00383
000423 006027 A     1814          LDBE    RDMEM           V2                                                 05 00384
000424 001505 R
       000002 A     1815 RQBLK    SET     B                                                                  05 00385
                    1816          IFF     VORTEX-2                                                   V2      05 00386
                    1817          STA     13,RQBLK                                                   V2      05 00387
000425 006010 A     1818          LDAI    RD40A           SET UP RETURN ADDR                                 05 00388
000426 000445 R
000427 056010 A     1819          STA     8,RQBLK                                                            05 00389
000430 016003 A     1820          LDA     3,RQBLK         SET OP-CODE TO READ, IMMEDIATE RETURN              05 00390
000431 150463 A     1821          ANA     RHW                                                                05 00391
000432 110440 A     1822          ORA     BS15            USE IMMEDIATE RETURN                               05 00392
000433 056003 A     1823          STA     3,RQBLK                                                            05 00393
000434 006017 A     1824          LDAE    RDBLEN          SET BUFFER LENGTH                                  05 00394
000435 001507 R
000436 056011 A     1825          STA     9,RQBLK                                                            05 00395
000437 006017 A     1826          LDAE    RDBUFF          SET BUFFER ADDRESS, BYTE/WORD FLAG                 05 00396
000440 001510 R
000441 056012 A     1827          STA     10,RQBLK                                                           05 00397
000442 065007 A     1828          STB     TCRCA,TCD       SET READ ACTIVE                                    05 00398
000443 001000 A     1829          JMP*    RDMEM                                                              05 00399
000444 101505 R
                    1830 *                                AT THIS POINT CCM RQST HAS BEEN QUEUED             05 00400
000445 006027 A     1831 RD40A    LDBE    RDMEM                                                              05 00401
000446 001505 R
       000002 A     1832 RQBLK    SET     B                                                                  05 00402
000447 006010 A     1833          LDAI    RD400           SET UP RETURN COMPLETION ADDRESS                   05 00403
000450 001365 R
000451 056010 A     1834          STA     8,RQBLK                                                            05 00404
000452 001000 A     1835          JMP*    TYREAD          EXIT                                               05 00405
000453 100121 R
000454 006027 A     1836 RD40B    LDBE    RDMEM           IF TCM TQST CANNOT BE INITIATED WE EXIT            05 00406
000455 001505 R
000456 001020 A     1837          JBZ*    TYREAD          HERE, AFTER RETURNING ALLOC. MEMORY.               05 00407
000457 100121 R
                    1838          IFF     VORTEX-2                                                   V2      05 00408
                    1839          LDAI    14                                                         V2      05 00409
                    1840          IFF     VORTEX-1                                                   V2      05 00410
000460 006010 A     1841          LDAI    13                                                                 05 00411
000461 000015 A
000462 056000 A     1842          STA     0,B                                                                05 00412
                    1843          PUTMEM  VT$MP1,RDMEM                                                       05 00413
000463 006010 A
000464 000404 E
000465 006027 A
000466 001505 R
000467 074005 A
000470 006505 A
000471 000407 E
000472 000600 A
000473 000000 E
000474 006030 A
000475 000474 R
000476 001000 A     1844          JMP*    TYREAD                                                             05 00414
000477 100121 R
                    1845 *                                MODE = 1, STANDARD                                 05 00415
                    1846 *                                BUILD CCM RQST TO OUTPUT PROMPT CHARACTER.         05 00416
                    1847 *                                INPUT CHRS INTO BUFFER UNTIL FULL OR CR CHR        05 00417
                    1848 *                                IS INPUT.                                          05 00418
                    1849 *                                                                                   05 00419
                    1850          SPACE   2                                                                  05 00420
000500 006017 A     1851 RD50     LDAE    RDMEM                                                              05 00421
```

```
000501 001505 R
000502 001016 A 1852          JANZ    RD50A           MEMORY ALLOCATED                                  05 00422
000503 000526 R
                1853          IFF     VORTEX-2                                                    V2    05 00423
                1854          GETMEM  VT$MP1,14                                                   V2    05 00424
                1855          IFF     VORTEX-1                                                    V2    05 00425
                1856          GETMEM  VT$MP1,13                                                         05 00426
000504 006010 A
000505 000015 A
000506 006020 A
000507 000464 E
000510 074005 A
000511 006505 A
000512 000471 E
000513 000600 A
000514 000411 E
000515 006030 A
000516 000515 R
000517 001010 A 1857          JAZ*    TYREAD          NO MEM, EXIT                                      05 00427
000520 100121 R
000521 006057 A 1858          STAE    RDMEM                                                             05 00428
000522 001505 R
000523 005012 A 1859          TAB                                                                       05 00429
000524 002000 A 1860          JMPM    TC$BRQ          BUILD CCM RQST                                    05 00430
000525 000422 E
000526 065007 A 1861 RD50A    STB     TCRCA,TCD       SET READ ACTIVE                                   05 00431
                1862 *                                GET PROMPT CHARACTER                              05 00432
                1863          FETCHA  TCD,TCPCH,TCPCHB,TCPCHZ                                           05 00433
000527 015004 A
000530 150463 A
000531 004250 A 1864          LRLA    8                                                                 05 00434
000532 005012 A 1865          TAB                     (B) = USER PROMPT CHARACTER                       05 00435
000533 005101 A 1866          INCR    01              (A) = 1                                           05 00436
000534 002000 A 1867          JMPM    TYRDCC          OUTPUT CONTROL CHARACTER                          05 00437
000535 000000 R
                1868 *                                CCM REQUEST QUEUED, EXIT                          05 00438
000536 006027 A 1869          LDBE    RDMEM                                                             05 00439
000537 001505 R
        000002 A 1870 RQBLK   SET     B                                                                 05 00440
000540 006010 A 1871          LDAI    RD100           SET UP RETURN COMPLETION ADDRESS                  05 00441
000541 000545 R
000542 056010 A 1872          STA     8,RQBLK                                                           05 00442
000543 001000 A 1873          JMP*    TYREAD          EXIT                                              05 00443
000544 100121 R
                1874          EJEC                                                                      05 00444
                1875 *                                USER PROMPT CHARACTER OUTPUT. IF LINE ERROR       05 00445
                1876 *                                COMPLETE RQST AND EXIT. OTHERWISE, BUILD          05 00446
                1877 *                                CCM RQST TO INPUT A CHARACTER.                    05 00447
                1878 *                                                                                  05 00448
                1879          SPACE   2                                                                 05 00449
000545 000000 A 1880 RD100    ENTR                                                                      05 00450
                1881          FETCHA  TCD,TCRCA,TCRCAB,TCRCAZ                                           05 00451
000546 015007 A
000547 006057 A 1882          STAE    RDMEM                                                       V2    05 00452
000550 001505 R
000551 005012 A 1883          TAB                                                                       05 00453
        000002 A 1884 RQBLK   SET     B                                                                 05 00454
000552 016006 A 1885          LDA     6,RQBLK         GET DETAIL STATUS                                 05 00455
000553 006441 A 1886          BT      RA0+1,RD401     DATA-SET-READY- OFF                               05 00456
000554 001463 R
000555 006410 A 1887          BT      RA1+8,RD401     BREAK                                             05 00457
000556 001463 R
000557 002000 A 1888          JMPM    TC$FRR          GET READ RQST ADDR                                05 00458
000560 000305 E
000561 006057 A 1889          STAE    RDRQST                                                      V2    05 00459
000562 001504 R
000563 005012 A 1890          TAB                                                                       05 00460
000564 026002 A 1891          LDB     RFCB,B                                                            05 00461
        000002 A 1892 DCB     SET     B                                                                 05 00462
                1893          IFF     VORTEX-2                                                    V2    05 00463
                1894          DME     MAP,V$ST2       SET EXEC STATE TO NO                        V2    05 00464
000565 016000 A 1895          LDA     DCRECL,DCB      GET BUFFER LENGTH                                 05 00465
000566 006057 A 1896          STAE    RDBLEN                                                      V2    05 00466
000567 001507 R
000570 016001 A 1897          LDA     DCBUFF,DCB      GET BUFFER ADDR, BYTE/WORD FLAG                   05 00467
                1898          IFF     VORTEX-2                                                    V2    05 00468
                1899          DME     MAP,V$ST0       SET EXEC STATE TO 00                        V2    05 00469
000571 054716 A 1900          STA     RDBUFF                                                            05 00470
                1901 *                                SET UP DYNAMIC COUNT, BUFFER ADDR IN TCD          05 00471
000572 150460 A 1902          ANA     BR15            TURN SIGN BIT OFF TO POINT AT LHW                 05 00472
                1903          SETA    TCD,TCRBF,TCRBFB,TCRBFZ                                           05 00473
000573 055013 A
000574 024712 A 1904          LDB     RDBLEN          SET CHARACTER COUNT(80 MAX.)                      05 00474
000575 014712 A 1905          LDA     RDBUFF                                                            05 00475
000576 001004 A 1906          JAN     RD100X                                                            05 00476
000577 000601 R
000600 004041 A 1907          LRLB    1               *2                                                05 00477
000601 005021 A 1908 RD100X   TBA                                                                       05 00478
000602 006140 A 1909          SUBI    81              CHRCNT GTR 80                                     05 00479
000603 000121 A
000604 001004 A 1910          JAN     RD100Y          NO                                                05 00480
000605 000612 R
000606 006010 A 1911          LDAI    80              YES, SET TO 80                                    05 00481
000607 000120 A
000610 001000 A 1912          JMP     RD100Y+2                                                          05 00482
```

```
000611 000614 R
000612 006120 A 1913 RD100Y ADDI     81                                                    05 00483
000613 000121 A
                1914        SETA     TCD,TCDCC,TCDCCB,TCDCCZ                               05 00484
000614 055012 A
                1915 *                                 SET READ TIMEOUT VALUE IF SPECIFIED  05 00485
                1916        FETCHA   TCD,TCSTO,TCSTOB,TCSTOZ                               05 00486
000615 015010 A
                1917        SETA     TCD,TCDTO,TCDTOB,TCDTOZ                               05 00487
000616 055014 A
                1918 *                                 BUILD CCM RQST TO INPUT CHARACTER    05 00488
000617 024665 A 1919        LDB      RDMEM                                                 05 00489
       000002 A 1920 RQBLK  SET      B                                                     05 00490
000620 006010 A 1921        LDAI     RD100A           SET UP RETURN ADDRESS                05 00491
000621 000662 R
000622 056010 A 1922        STA      8,RQBLK                                               05 00492
000623 016003 A 1923        LDA      3,RQBLK          SET OP-CODE TO READ                  05 00493
000624 150463 A 1924        ANA      RHW                                                   05 00494
000625 110440 A 1925        ORA      BS15             IMMEDIATE RETURN                     05 00495
000626 056003 A 1926        STA      3,RQBLK                                               05 00496
000627 005101 A 1927        INCR     01               SET BUFFER LENGTH TO 1               05 00497
000630 056011 A 1928        STA      9,RQBLK                                               05 00498
000631 005021 A 1929        TBA                       SET BUFFER ADDR TO LAST WORD OF RQBLK 05 00499
000632 006120 A 1930        ADDI     12               ADD OFFSET                           05 00500
000633 000014 A
000634 110440 A 1931        ORA      BS15             BYTE COUNT                           05 00501
000635 056012 A 1932        STA      10,RQBLK                                              05 00502
000636 014651 A 1933        LDA      RDBUFF           SET WORD/BYTE COUNT FLAG IN TCD      05 00503
000637 150440 A 1934        ANA      BS15                                                  05 00504
000640 004241 A 1935        LRLA     1                                                     05 00505
                1936        SETA     TCD,TCRBC,TCRBCB,TCRBCZ                               05 00506
000641 004257 A
000642 135004 A
000643 004357 A
000644 150421 A
000645 004257 A
000646 135004 A
000647 055004 A
000650 005101 A 1937        INCR     01               SET 1ST CHAR. INPUT FLAG             05 00507
                1938        SETA     TCD,TCRRS,TCRRSB,TCRRSZ                               05 00508
000651 004246 A
000652 135006 A
000653 004346 A
000654 150467 A
000655 004246 A
000656 135006 A
000657 055006 A
                1939        IFT      VORTEX-2                                         V2   05 00509
                1940        GOTO     1                                                V2   05 00510
                1941        TZA                                                       V2   05 00511
                1942        CALL     VT$TMP           SET MAP TO ZERO                 V2   05 00512
                1943 I      CONT                                                      V2   05 00513
000660 001000 A 1944        JMP*     RDMEM                                                 05 00514
000661 101505 R
                1945 *                                 CCM REQUEST QUEUED, EXIT             05 00515
000662 024622 A 1946 RD100A LDB      RDMEM                                                 05 00516
       000002 A 1947 RQBLK  SET      B                                                     05 00517
000663 006010 A 1948        LDAI     RD200            SET UP RQST COMPLETION ADDRESS       05 00518
000664 000670 R
000665 056010 A 1949        STA      8,RQBLK                                               05 00519
000666 001000 A 1950        JMP*     RD100                                                 05 00520
000667 100545 R
                1951        EJEC                                                          05 00521
                1952 *                                                                    05 00522
                1953 *                                 AT THIS POINT CHARACTER HAS BEEN INPUT. 05 00523
                1954 *                                 TERMINATE READ IF LINE ERROR. CHECK FOR 05 00524
                1955 *                                 CONTROL CHARACTER. MOVE CHR TO USER BUFFER 05 00525
                1956 *                                                                    05 00526
                1957        SPACE    3                                                    05 00527
000670 000000 A 1958 RD200   ENTR                                                        05 00528
                1959        IFT      VORTEX-2                                         V2   05 00529
                1960        GOTO     1                                                V2   05 00530
                1961        TZA                                                       V2   05 00531
                1962        CALL     VT$TMP           SET MAP TO ZERO                 V2   05 00532
                1963 1      CONT                                                      V2   05 00533
                1964        FETCHA   TCD,TCRCA,TCRCAB,TCRCAZ                               05 00534
000671 015007 A
000672 054612 A 1965        STA      RDMEM                                                 05 00535
000673 005012 A 1966        TAB                                                           05 00536
       000002 A 1967 RQBLK  SET      B                                                     05 00537
                1968 *                                 CHECK FOR TIMEOUT                  05 00538
                1969        FETCHA   TCD,TCDTO,TCDTOB,TCDTOZ                               05 00539
000674 015014 A
000675 001004 A 1970        JAN      RD200Z                                               05 00540
000676 000710 R
000677 016006 A 1971        LDA      6,RQBLK          GET DETAIL STATUS                    05 00541
000700 006441 A 1972        BT       RA0+1,RD402A     DATA-SET-READY OFF                   05 00542
000701 001467 R
000702 006150 A 1973        ANAI     0440             MASK FOR PARITY, BREAK               05 00543
000703 000440 A
000704 001016 A 1974        JANZ     RD402A           LINE ERROR                           05 00544
000705 001467 R
000706 001000 A 1975        JMP      RD200Y                                                05 00545
000707 001007 R
                1976        IFF      VORTEX-2                                         V2   05 00546
```

```
                    1977 RD200Z GETMEM  VT$MP1,14                                          V2  05 00547
                    1978        IFF     VORTEX-1                                           V2  05 00548
                    1979 RD200Z GETMEM  VT$MP1,12      ALLOCATE MEM FOR CCM RQBLK              05 00549
000710 006010 A
000711 000014 A
000712 006020 A
000713 000507 E
000714 074005 A
000715 006505 A
000716 000512 E
000717 000600 A
000720 000514 E
000721 006030 A
000722 000721 R
000723 001010 A 1980        JAZ*    RD200                                                  05 00550
000724 100670 R
000725 054563 A 1981        STA     TEMP                                                   05 00551
000726 005012 A 1982        TAB                                                            05 00552
000727 002000 A 1983        JMPM    TC$BRQ         BUILD CCM RQBLK                         05 00553
000730 000525 E
000731 006010 A 1984        LDAI    RD200X         SET UP RETURN ADDRESS                   05 00554
000732 000747 R
000733 056010 A 1985        STA     8,RQBLK                                                05 00555
000734 010465 A 1986        LDA     FIVE                                                   05 00556
000735 004250 A 1987        LRLA    8                                                      05 00557
000736 116003 A 1988        ORA     3,RQBLK                                                05 00558
000737 150460 A 1989        ANA     BR15           USE WAIT OPTION                         05 00559
000740 056003 A 1990        STA     3,RQBLK                                                05 00560
000741 016013 A 1991        LDA     11,RQBLK       FUNC CODE = 1, CLEAR READ RQST          05 00561
000742 110431 A 1992        ORA     BS8                                                    05 00562
000743 056013 A 1993        STA     11,RQBLK                                               05 00563
000744 074536 A 1994        STX     RDTCD          SAVE X REG.                             05 00564
000745 001000 A 1995        JMP*    TEMP                                                   05 00565
000746 101511 R
                    1996 *                         READ I/O CLEAR DONE                     05 00566
000747 034533 A 1997 RD200X LDX     RDTCD          RESTORE X REG.                          05 00567
000750 024540 A 1998        LDB     TEMP                                                   05 00568
                    1999        IFF     VORTEX-2                                           V2  05 00569
                    2000        LDAI    14                                                 V2  05 00570
                    2001        IFF     VORTEX-1                                           V2  05 00571
000751 006010 A 2002        LDAI    12             RETURN MEM FOR CCM RQBLK                05 00572
000752 000014 A
000753 056000 A 2003        STA     0,B                                                    05 00573
                    2004        PUTMEM  VT$MP1,TEMP                                        05 00574
000754 006010 A
000755 000713 E
000756 006027 A
000757 001511 R
000760 074005 A
000761 006505 A
000762 000716 E
000763 000600 A
000764 000473 E
000765 006030 A
000766 000765 R
000767 006010 A 2005        LDAI    RD400          CHANGE CCM RQST COMPLETION ADDR.        05 00575
000770 001365 R
000771 024513 A 2006        LDB     RDMEM                                                  05 00576
000772 056010 A 2007        STA     8,RQBLK                                                05 00577
000773 005001 A 2008        TZA                                                            05 00578
000774 055014 A 2009        STA     TCDTO,TCD                                              05 00579
000775 005111 A 2010        IAR                    SET READ RQST STATUS TO 1(TIMEOUT)      05 00580
                    2011        SETA    TCD,TCRRS,TCRRSB,TCRRSZ                            05 00581
000776 004246 A
000777 135006 A
001000 004346 A
001001 150467 A
001002 004246 A
001003 135006 A
001004 055006 A
001005 001000 A 2012        JMP*    RD200          RETURN TO TCMEXEC                       05 00582
001006 100670 R
                    2013 *                                                                 05 00583
                    2014 *                         CHECK IF INPUT CHR IS CARRIAGE RETURN,  05 00584
                    2015 *                         BACKSLASH, BACKARROW.                   05 00585
                    2016 *                                                                 05 00586
001007 055014 A 2017 RD200Y STA     TCDTO,TCD                                              05 00587
001010 016014 A 2018        LDA     12,RQBLK       GET INPUT CHAR.                         05 00588
001011 004350 A 2019        LSRA    8                                                      05 00589
001012 054477 A 2020        STA     INPTCR                                                 05 00590
001013 134477 A 2021        ERA     TYCR                                                   05 00591
001014 001010 A 2022        JAZ     RD201          CARRIAGE RETURN, TERMINATE INPUT        05 00592
001015 001106 R
001016 134474 A 2023        ERA     TYCR           RESTORE                                 05 00593
001017 134474 A 2024        ERA     TYBSLH                                                 05 00594
001020 001010 A 2025        JAZ     RD202          BACKSLASH, RESTART INPUT SEQUENCE       05 00595
001021 001157 R
001022 134471 A 2026        ERA     TYBSLH         RESTORE                                 05 00596
001023 134471 A 2027        ERA     TYBKAR                                                 05 00597
001024 001010 A 2028        JAZ     RD203          BACKARROW, BACKUP CHR PTR,BLANK PREV. CHAR 05 00598
001025 001225 R
                    2029        FETCHA  TCD,TCRRS,TCRRSB,TCRRSZ                            05 00599
001026 015006 A
001027 004346 A
001030 150467 A
```

```
001031 001010 A 2030          JAZ     RD200A          NOT 1ST CHAR. INPUT                                  05 00600
001032 001052 R
001033 005001 A 2031          TZA                     CLEAR 1ST CHAR. INPUT FLAG                           05 00601
               2032          SETA    TCD,TCRRS,TCRRSB,TCRRSZ                                              05 00602
001034 004246 A
001035 135006 A
001036 004346 A
001037 150467 A
001040 004246 A
001041 135006 A
001042 055006 A
001043 014446 A 2033          LDA     INPTCR          1ST CHAR. INPUT                                      05 00603
001044 134451 A 2034          ERA     TYBELL          IS IT A BELL CHAR.                                   05 00604
001045 001016 A 2035          JANZ    RD200A          NO                                                   05 00605
001046 001052 R
001047 056006 A 2036          STA     6,RQBLK         YES, CLEAR DETAIL STATUS TO RETURN EOF.              05 00606
001050 001000 A 2037          JMP     RD402A          COMPLETE REQUEST                                     05 00607
001051 001467 R
               2038 *                                 NOT A CNTRL CHR, STORE IN USER BUFFER                05 00608
001052 014437 A 2039 RD200A   LDA     INPTCR                                                               05 00609
               2040          IFT     VORTEX-2                                                     V2      05 00610
               2041          GOTO    1                                                            V2      05 00611
               2042          STA     RD200D          SAVE A                                       V2      05 00612
               2043          LDB     RDRQST                                                       V2      05 00613
               2044          LDB     RTIDB,B                                                      V2      05 00614
               2045          LDA     TBKEY,B         GET USER KEY                                 V2      05 00615
               2046          CALL    VT$TMP          SET MAP TO USER                              V2      05 00616
               2047          LDA     RD200D          RESTORE A                                    V2      05 00617
               2048 1        CONT                                                                 V2      05 00618
001053 025013 A 2049          LDB     TCRBF,TCD                                                            05 00619
001054 002000 A 2050          JMPM    TYSTCB          STORE CHARACTER                                      05 00620
001055 000034 R
               2051          IFT     VORTEX-2                                                     V2      05 00621
               2052          GOTO    1                                                            V2      05 00622
               2053          TZA                                                                  V2      05 00623
               2054          CALL    VT$TMP          SET MAP TO ZERO                              V2      05 00624
               2055 1        CONT                                                                 V2      05 00625
001056 014433 A 2056          LDA     INPTCR                                                               05 00626
001057 134435 A 2057          ERA     TYBKAR                                                               05 00627
001060 001010 A 2058          JAZ     RD200B          BACKARROW, DO NOT UPDATE BUFF ADDR, COUNT            05 00628
001061 001070 R
001062 065013 A 2059          STB     TCRBF,TCD       UPDATE DYNAMIC BUFFER ADDRESS                        05 00629
               2060 *                                 RESET READ TIMEOUT VALUE                             05 00630
001063 015012 A 2061          LDA     TCDCC,TCD       DECREMENT DYNAMIC CHAR COUNT                         05 00631
001064 005311 A 2062          DAR                                                                          05 00632
001065 055012 A 2063          STA     TCDCC,TCD                                                            05 00633
001066 001010 A 2064          JAZ     RD201           BUFFER FULL,COMPLETE REQUEST                         05 00634
001067 001106 R
               2065 *                                                                                     05 00635
               2066 *                                 INPUT NEXT CHARACTER                                 05 00636
               2067 *                                                                                     05 00637
               2068 RD200B   FETCHA  TCD,TCSTO,TCSTOB,TCSTOZ                                              05 00638
001070 015010 A
               2069          SETA    TCD,TCDTO,TCDTOB,TCDTOZ                                              05 00639
001071 055014 A
001072 024412 A 2070          LDB     RDMEM                                                                05 00640
        000002 A 2071 RQBLK   SET     B                                                                    05 00641
001073 006010 A 2072          LDAI    RD200C          SET UP RETURN ADDRESS                                05 00642
001074 001100 R
001075 056010 A 2073          STA     8,RQBLK                                                              05 00643
001076 001000 A 2074          JMP*    RDMEM                                                                05 00644
001077 101505 R
               2075 *                                 CCM REQUEST QUEUED, EXIT                             05 00645
001100 024404 A 2076 RD200C   LDB     RDMEM                                                                05 00646
        000002 A 2077 RQBLK   SET     B                                                                    05 00647
001101 006010 A 2078          LDAI    RD200           SET UP REQUEST COMPLETION ADDRESS                    05 00648
001102 000670 R
001103 056010 A 2079          STA     8,RQRLK                                                              05 00649
001104 001000 A 2080          JMP*    RD200           EXIT                                                 05 00650
001105 100670 R
               2081          IFF     VORTEX-2                                                     V2      05 00651
               2082 RD200D   DATA    0               TEMP                                         V2      05 00652
               2083 *                                                                                     05 00653
               2084 *                                 COMPLETE REQUEST, CONVERT CHAR CNT TO WORD           05 00654
               2085 *                                 COUNT IF WORD COUNT IS TO BE RETURNED.               05 00655
               2086 *                                                                                     05 00656
               2087          SPACE   2                                                                    05 00657
001106 002000 A 2088 RD201    JMPM    TC$FRR          GET CHARACTER COUNT                                  05 00658
001107 000560 E
001110 005012 A 2089          TAB                                                                          05 00659
001111 026002 A 2090          LDB     RFCB,B                                                               05 00660
               2091          IFF     VORTEX-2                                                     V2      05 00661
               2092          OME     MAP,V$ST2       SET EXEC STATE TO N0                         V2      05 00662
001112 016001 A 2093          LDA     DCBUFF,B                                                             05 00663
001113 026000 A 2094          LDB     DCRECL,B                                                             05 00664
               2095          IFF     VORTEX-2                                                     V2      05 00665
               2096          OME     MAP,V$ST0       SET EXEC STATE TO 00                         V2      05 00666
001114 001004 A 2097          JAN     RD201X                                                               05 00667
001115 001117 R
001116 004041 A 2098          LRLB    1                                                                    05 00668
001117 005021 A 2099 RD201X   TBA                                                                          05 00669
001120 006140 A 2100          SUBI    81                                                                   05 00670
001121 000121 A
001122 001004 A 2101          JAN     RD201Y                                                               05 00671
001123 001130 R
```

```
001124 006010 A 2102          LDAI    80                                                    05 00672
001125 000120 A
001126 001000 A 2103          JMP     RD201Y+2                                              05 00673
001127 001132 R
001130 006120 A 2104 RD201Y   ADDI    81                                                    05 00674
001131 000121 A
001132 145012 A 2105          SUB     TCDCC,TCD                                             05 00675
001133 055012 A 2106          STA     TCDCC,TCD     SAVE NO. OF CHRS. INPUT                 05 00676
               2107           IFT     VORTEX-2                                        V2    05 00677
               2108           GOTO    1                                               V2    05 00678
               2109           TZA                                                     V2    05 00679
               2110           CALL    VT$TMP        SET MAP TO ZERO                   V2    05 00680
               2111 1         CONT                                                    V2    05 00681
001134 014355 A 2112          LDA     INPTCR                                                05 00682
001135 134355 A 2113          ERA     TYCR                                                  05 00683
001136 001010 A 2114          JAZ     RD201B        CR, OUTPUT LF                           05 00684
001137 001144 R
001140 010422 A 2115          LDA     TWO           BUFFER FULL, OUTPUT CR/LF               05 00685
001141 024355 A 2116          LDB     TYCRLF                                                05 00686
001142 001000 A 2117          JMP     RD201C                                                05 00687
001143 001147 R
001144 005111 A 2118 RD201B   IAR                                                           05 00688
001145 006027 A 2119          LDBE    TYLF                                                  05 00689
001146 002533 R
001147 002000 A 2120 RD201C   JMPM    TYRDCC        OUTPUT CONTROL CHAR(S), LF OR CR/LF     05 00690
001150 000000 R
               2121 *                               CCM REQUEST QUEUED EXIT                 05 00691
001151 024333 A 2122          LDB     RDMEM                                                 05 00692
        000002 A 2123 RQBLK   SET     B                                                     05 00693
001152 006010 A 2124          LDAI    RD300                                                 05 00694
001153 001305 R
001154 056010 A 2125          STA     8,RQBLK                                               05 00695
001155 001000 A 2126          JMP*    RD200                                                 05 00696
001156 100670 R
               2127 *                                                                       05 00697
               2128 *                               RESET COUNT, BUFFER POINTER, OUTPUT CR/LF 05 00698
               2129 *                                                                       05 00699
               2130           SPACE   2                                                     05 00700
001157 002000 A 2131 RD202    JMPM    TC$FRR                                                05 00701
001160 001107 E
001161 054322 A 2132          STA     RDRQST                                                05 00702
001162 005012 A 2133          TAB                                                           05 00703
001163 026002 A 2134          LDB     RFCB,B                                                05 00704
        000002 A 2135 DCB     SET     B                                                     05 00705
               2136           IFF     VORTEX-2                                        V2    05 00706
               2137           OME     MAP,V$ST2     SET EXEC STATE TO N0              V2    05 00707
001164 016001 A 2138          LDA     DCBUFF,DCB    RESET BUFFER POINTER                    05 00708
001165 150460 A 2139          ANA     BR15                                                  05 00709
001166 055013 A 2140          STA     TCRBF,TCD                                             05 00710
001167 016001 A 2141          LDA     DCBUFF,B                                              05 00711
001170 026000 A 2142          LDB     DCRECL,B                                              05 00712
               2143           IFF     VORTEX-2                                        V2    05 00713
               2144           OME     MAP,V$ST0     SET EXEC STATE TO 00              V2    05 00714
001171 001004 A 2145          JAN     RD202A                                                05 00715
001172 001174 R
001173 004041 A 2146          LRLB    1                                                     05 00716
001174 005021 A 2147 RD202A   TBA                                                           05 00717
001175 006140 A 2148          SUBI    81                                                    05 00718
001176 000121 A
001177 001004 A 2149          JAN     RD202B                                                05 00719
001200 001205 R
001201 006010 A 2150          LDAI    80                                                    05 00720
001202 000120 A
001203 001000 A 2151          JMP     RD202B+2                                              05 00721
001204 001207 R
001205 006120 A 2152 RD202B   ADDI    81                                                    05 00722
001206 000121 A
001207 055012 A 2153          STA     TCDCC,TCD                                             05 00723
001210 015007 A 2154          LDA     TCRCA,TCD     GET CCM RQBLK ADDR                      05 00724
001211 054273 A 2155          STA     RDMEM                                                 05 00725
               2156           IFT     VORTEX-2                                        V2    05 00726
               2157           GOTO    1                                               V2    05 00727
               2158           TZA                                                     V2    05 00728
               2159           CALL    VT$TMP        SET MAP TO ZERO                   V2    05 00729
               2160 1         CONT                                                    V2    05 00730
001212 010422 A 2161          LDA     TWO                                                   05 00731
001213 006027 A 2162          LDBE    TYCRLF                                                05 00732
001214 001517 R
001215 002000 A 2163          JMPM    TYRDCC        OUTPUT CR/LF                            05 00733
001216 000000 R
               2164 *                               CCM REQUEST QUEUED, EXIT                05 00734
001217 024265 A 2165          LDB     RDMEM                                                 05 00735
        000002 A 2166 RQBLK   SET     B                                                     05 00736
001220 006010 A 2167          LDAI    RD100         SET UP RQST COMPLETION ADDRESS TO RESTART 05 00737
001221 000545 R
001222 056010 A 2168          STA     8,RQBLK                                               05 00738
001223 001000 A 2169          JMP*    RD200                                                 05 00739
001224 100670 R
               2170 *                                                                       05 00740
               2171 *                               DECREMENT CHAR CNT, BUFFER PTR, BLANK   05 00741
               2172 *                               PREVIOUS CHAR                           05 00742
               2173 *                                                                       05 00743
001225 002000 A 2174 RD203    JMPM    TC$FRR                                                05 00744
001226 001160 E
001227 005012 A 2175          TAB                                                           05 00745
```

```
001230 026002 A 2176          LDB     RFCB,B                                          05 00746
               2177          IFF     VORTEX-2                                  V2    05 00747
               2178          OME     MAP,V$ST2     SET EXEC STATE TO N0        V2    05 00748
001231 016001 A 2179          LDA     DCBUFF,B                                        05 00749
001232 026000 A 2180          LDB     DCRECL,B                                        05 00750
               2181          IFF     VORTEX-2                                  V2    05 00751
               2182          OME     MAP,V$ST0     SET EXEC STATE TO 00        V2    05 00752
001233 001004 A 2183          JAN     RD203X                                          05 00753
001234 001236 R
001235 004041 A 2184          LRLB    1                                               05 00754
001236 005021 A 2185 RD203X   TBA                                                     05 00755
001237 006140 A 2186          SUBI    81                                              05 00756
001240 000121 A
001241 001004 A 2187          JAN     RD203Y                                          05 00757
001242 001247 R
001243 006010 A 2188          LDAI    80                                              05 00758
001244 000120 A
001245 001000 A 2189          JMP     RD203Y+2                                        05 00759
001246 001251 R
001247 006120 A 2190 RD203Y   ADDI    81                                              05 00760
001250 000121 A
001251 054237 A 2191          STA     TEMP                                            05 00761
001252 015012 A 2192          LDA     TCDCC,TCD                                       05 00762
001253 144235 A 2193          SUB     TEMP                                            05 00763
001254 001010 A 2194          JAZ     RD200B        NO INPUT CHARS, INPUT NEXT        05 00764
001255 001070 R
001256 124232 A 2195          ADD     TEMP          DECREMENT COUNT OF CHARS. INPUT   05 00765
001257 005111 A 2196          IAR                                                     05 00766
001260 055012 A 2197          STA     TCDCC,TCD                                       05 00767
001261 144227 A 2198          SUB     TEMP                                            05 00768
001262 001016 A 2199          JANZ    RD203Z                                          05 00769
001263 001274 R
001264 005111 A 2200          IAR                   SET 1ST INPUT CHAR. FLAG          05 00770
               2201          SETA    TCD,TCRRS,TCRRSB,TCRRSZ                         05 00771
001265 004246 A
001266 135006 A
001267 004346 A
001270 150467 A
001271 004246 A
001272 135006 A
001273 055006 A
001274 015013 A 2202 RD203Z   LDA     TCRBF,TCD     BLANK PREVIOUS CHAR               05 00772
001275 001004 A 2203          JAN     RD203A        BACK UP TO LHW OF SAME WORD       05 00773
001276 001300 R
               2204 *                                     BACK UP TO RHW OF PREVIOUS WORD 05 00774
001277 005311 A 2205          DAR                                                     05 00775
001300 005211 A 2206 RD203A   CPA                                                     05 00776
001301 055013 A 2207          STA     TCRBF,TCD                                       05 00777
001302 014215 A 2208          LDA     TYBLK         STORE BLANK CHAR                  05 00778
001303 001000 A 2209          JMP     RD200A+1                                        05 00779
001304 001053 R
               2210          EJEC                                                    05 00780
               2211 *                                                                05 00781
               2212 *                CR/LF OR LF OUTPUT, CLEAR UNUSED PORTION OF     05 00782
               2213 *                BUFFER TO BLANKS FOR MODE = 1 READ.             05 00783
               2214 *                                                                05 00784
001305 000000 A 2215 RD300    ENTR                                                    05 00785
001306 015007 A 2216          LDA     TCRCA,TCD                                       05 00786
001307 054175 A 2217          STA     RDMEM                                           05 00787
001310 005012 A 2218          TAB                                                     05 00788
       000002 A 2219 RQBLK    SET     B                                               05 00789
001311 016006 A 2220          LDA     6,RQBLK       GET DETAIL STATUS                 05 00790
001312 006441 A 2221          BT      RA0+1,RD403   DATA-SET-READY OFF                05 00791
001313 001473 R
001314 006410 A 2222          BT      RA1+8,RD403   BREAK                             05 00792
001315 001473 R
001316 002000 A 2223          JMPM    TC$FRR        GET CHARACTER COUNT               05 00793
001317 001226 E
001320 005012 A 2224          TAB                                                     05 00794
001321 026002 A 2225          LDB     RFCB,B                                          05 00795
               2226          IFF     VORTEX-2                                  V2    05 00796
               2227          OME     MAP,V$ST2     SET EXEC STATE TO N0        V2    05 00797
001322 016001 A 2228          LDA     DCBUFF,B                                        05 00798
001323 026000 A 2229          LDB     DCRECL,B                                        05 00799
               2230          IFF     VORTEX-2                                  V2    05 00800
               2231          OME     MAP,V$ST0     SET EXEC STATE TO 00        V2    05 00801
001324 001004 A 2232          JAN     RD300X                                          05 00802
001325 001327 R
001326 004041 A 2233          LRLB    1                                               05 00803
001327 005021 A 2234 RD300X   TBA                                                     05 00804
001330 006140 A 2235          SUBI    81                                              05 00805
001331 000121 A
001332 001004 A 2236          JAN     RD300Y                                          05 00806
001333 001340 R
001334 006010 A 2237          LDAI    80                                              05 00807
001335 000120 A
001336 001000 A 2238          JMP     RD300Y+2                                        05 00808
001337 001342 R
001340 006120 A 2239 RD300Y   ADDI    81                                              05 00809
001341 000121 A
001342 145012 A 2240          SUB     TCDCC,TCD                                       05 00810
001343 025013 A 2241          LDB     TCRBF,TCD                                       05 00811
001344 001010 A 2242          JAZ     RD300Z        BUFFER FULL, NO DEBLANKING        05 00812
001345 001350 R
001346 002000 A 2243          JMPM    TYBKBF        CLEAR REMAINING PORTION OF BUFFER TO BLANKS05 00813
```

```
001347 000056 R
                    2244 RD300Z FETCHA  TCD,TCRBC,TCRBCB,TCRBCZ                                  05 00814
001350 015004 A
001351 004357 A
001352 001016 A     2245        JANZ    RD300A          BYTE COUNT                               05 00815
001353 001360 R
001354 015012 A     2246        LDA     TCDCC,TCD       CONVERT TO WORD COUNT                    05 00816
001355 005111 A     2247        IAR                                                              05 00817
001356 004341 A     2248        LSRA    1                                                        05 00818
001357 055012 A     2249        STA     TCDCC,TCD                                                05 00819
001360 006017 A     2250 RD300A LDAE    RD300           MOVE RETURN ADDRESS TO RD400             05 00820
001361 001305 P
001362 054002 A     2251        STA     RD400                                                    05 00821
001363 001000 A     2252        JMP     RD400+1         COMPLETE TCM REQUEST                     05 00822
001364 001366 R
                    2253        EJEC                                                             05 00823
                    2254 *                                                                       05 00824
                    2255 *                          TCM REQUEST COMPLETED, RETURN NORMAL/ERROR   05 00825
                    2256 *                          STATUS AND RETURN MEMORY FOR CCM RQBLK       05 00826
                    2257 *                                                                       05 00827
                    2258        SPACE   3                                                        05 00828
001365 000000 A     2259 RD400  ENTR                                                             05 00829
001366 015007 A     2260        LDA     TCRCA,TCD                                                05 00830
001367 054115 A     2261        STA     RDMEM                                                    05 00831
001370 002000 A     2262        JMPM    TC$FRR          GET TCM REQUEST ADDR                     05 00832
001371 001317 E
001372 054111 A     2263        STA     RDRQST                                                   05 00833
                    2264        FETCHA  TCD,TCRMD,TCRMDB,TCRMDZ                                  05 00834
001373 015006 A
001374 150467 A
001375 001016 A     2265        JANZ    RD400A          MODE = 4, COUNT IN CCM RQST BLK          05 00835
001376 001402 R
001377 015012 A     2266        LDA     TCDCC,TCD       MODE = 1, COUNT IN TCD                   05 00836
001400 001000 A     2267        JMP     RD400A+2                                                 05 00837
001401 001404 R
001402 024102 A     2268 RD400A LDB     RDMEM                                                    05 00838
001403 016005 A     2269        LDA     5,RQBLK                                                  05 00839
001404 025002 A     2270        LDB     TCCTA,TCD       (B) = TCM CTBL ADDRESS                   05 00840
001405 056013 A     2271        STA     CTWDS,B         PUT NO. WDS/BYTES TRANFERED IN TCM CTBL  05 00841
001406 024076 A     2272        LDB     RDMEM                                                    05 00842
                    2273        FETCHA  TCD,TCRRS,TCRRSB,TCRRSZ                                  05 00843
001407 015006 A
001410 004346 A
001411 150467 A
001412 001016 A     2274        JANZ    RD400B          TIMEOUT(TCRRS=1)                         05 00844
001413 001417 R
001414 016006 A     2275        LDA     6,RQBLK         CCM DETAIL STATUS                        05 00845
001415 001000 A     2276        JMP     RD400C                                                   05 00846
001416 001430 R
001417 005001 A     2277 RD400B TZA                                                              05 00847
                    2278        SETA    TCD,TCRRS,TCRRSB,TCRRSZ                                  05 00848
001420 004246 A
001421 135006 A
001422 004346 A
001423 150467 A
001424 004246 A
001425 135006 A
001426 055006 A
001427 010440 A     2279        LDA     BS15            TIMEOUT, SET STATUS NEG.                 05 00849
001430 024053 A     2280 RD400C LDB     RDRQST          RQST ADDR                                05 00850
                    2281        EXT     TC$CRQ                                                   05 00851
                    2282        DINTS                                                            05 00852
001431 100444 A
001432 100747 A
001433 002000 A     2283        JMPM    TC$CRQ          COMPLETE REQUEST                         05 00853
001434 000162 E
                    2284        IFT     VORTEX-2                                                 V2 05 00854
                    2285        GOTO    1                                                        V2 05 00855
                    2286        JOFN    RD400D          DEALLOCATE ?                             V2 05 00856
                    2287        STX     RD400D-1        YES                                      V2 05 00857
                    2288        STB     *+4                                                      V2 05 00858
                    2289        JSR     V$MDAL,X                                                 V2 05 00859
                    2290        DATA    6                                                        V2 05 00860
                    2291        BSS     1                                                        V2 05 00861
                    2292        LDXI    0               RESTORE X                                V2 05 00862
                    2293 RD400D EQU     *                                                        V2 05 00863
                    2294 1      CONT                                                             V2 05 00864
                    2295        EINTS                                                            05 00865
001435 100244 A
001436 100147 A
                    2296 *                          RETURN MEMORY FOR CCM RQST BLOCK             05 00866
001437 024045 A     2297        LDB     RDMEM                                                    05 00867
                    2298        IFF     VORTEX-2                                                 V2 05 00868
                    2299        LDAI    14                                                       V2 05 00869
                    2300        IFF     VORTEX-1                                                 V2 05 00870
001440 006010 A     2301        LDAI    13                                                       05 00871
001441 000015 A
001442 056000 A     2302        STA     0,B             SET SIZE OF CCM RQST BLK                 05 00872
                    2303        EXT     VT$MP1                                                   05 00873
                    2304        PUTMEM  VT$MP1,RDMEM    DEALLOCATE MEMORY                        05 00874
001443 006010 A
001444 000755 E
001445 006027 A
001446 001505 R
001447 074005 A
```

```
001450 006505 A
001451 000762 E
001452 000600 A
001453 000764 E
001454 006030 A
001455 001454 R
001456 005001 A 2305          TZA                                CLEAR CCM RQBLK ADDR(SET TCD NOT READ ACTIV05 00875
001457 055007 A 2306          STA       TCRCA,TCD                                                          05 00876
001460 055014 A 2307          STA       TCDTD,TCD                                                          05 00877
001461 001000 A 2308          JMP*      RD400              EXIT TO TCMEXEC                                 05 00878
001462 101365 R
                2309          EJEC                                                                         05 00879
                2310  *                                                                                    05 00880
001463 006017 A 2311  RD401   LDAE      RD100              PATCH RETURN ADDR AT RD400                      05 00881
001464 000545 R
001465 001000 A 2312          JMP       RD404                                                              05 00882
001466 001475 R
                2313  *                                                                                    05 00883
                2314  *                                                                                    05 00884
001467 006017 A 2315  RD402A  LDAE      RD200                                                              05 00885
001470 000670 R
001471 001000 A 2316          JMP       RD404                                                              05 00886
001472 001475 R
                2317  *                                                                                    05 00887
001473 006017 A 2318  RD403   LDAE      RD300                                                              05 00888
001474 001305 R
001475 006057 A 2319  RD404   STAE      RD400                                                              05 00889
001476 001365 R
001477 005001 A 2320          TZA                                                                          05 00890
001500 055012 A 2321          STA       TCDCC,TCD          CLEAR NO. OF CHARS INPUT                        05 00891
001501 001000 A 2322          JMP       RD400+1                                                            05 00892
001502 001366 R
                2323          EJEC                                                                         05 00893
                2324  *                                                                                    05 00894
                2325  *                                    CONSTANTS AND DATA STORAGE                      05 00895
                2326  *                                                                                    05 00896
001503 000000 A 2327  RDTCD   DATA      0                  TCD ADDRESS                                     05 00897
001504 000000 A 2328  RDRQST  DATA      0                  READ REQUEST ADDRESS                            05 00898
001505 000000 A 2329  RDMEM   DATA      0                  CCM REQUEST BLOCK ADDR                          05 00899
001506 000000 A 2330  RDMODE  DATA      0                  MODE OF READ REQUEST                            05 00900
001507 000000 A 2331  RDBLEN  DATA      0                  BUFFER LENGTH                                   05 00901
001510 000000 A 2332  RDBUFF  DATA      0                  BUFFER ADDRESS                                  05 00902
001511 000000 A 2333  TEMP    DATA      0                  TEMPORARY                                       05 00903
001512 000000 A 2334  INPTCR  DATA      0                  SAVE CELL FOR INPUT CHAR.                       05 00904
001513 000215 A 2335  TYCR    DATA      0215               CARRIAGE RETURN CHARACTER                       05 00905
001514 000334 A 2336  TYBSLH  DATA      0334               BACKSLASH CHARACTER                             05 00906
001515 000337 A 2337  TYBKAR  DATA      0337               BACKARROW CHARACTER                             05 00907
001516 000207 A 2338  TYBELL  DATA      0207               BELL CHARACTER(EOF)                             05 00908
001517 106612 A 2339  TYCRLF  DATA      0106612                                                            05 00909
001520 000240 A 2340  TYBLK   DATA      0240               BLANK CHR(ASCII)                                05 00910
001521 120240 A 2341  TYBKBK  DATA      0120240                                                            05 00911
                2342          EJEC                                                                         05 00912
                2343  ********************************************************************************05 00913
                2344  ********************************************************************************05 00914
                2345  **      PROGRAM NAME -                                                        **05 00915
                2346  **              TYWRIT - PROCESSES WRITE REQUESTS FOR TTY TCM                  **05 00916
                2347  **                                                                            **05 00917
                2348  **      ENTRY CONDITIONS -                                                    **05 00918
                2349  **              (X) = ADDRESS OF TCD                                          **05 00919
                2350  **                                                                            **05 00920
                2351  **      EXIT CONDITIONS -                                                     **05 00921
                2352  **              (X) DESTROYED                                                 **05 00922
                2353  **              (A) AND (B) DESTROYED                                         **05 00923
                2354  **                                                                            **05 00924
                2355  **      CALLING SEQUENCE -                                                    **05 00925
                2356  **              JMPM TYWRIT                                                   **05 00926
                2357  **              (RETURN)                                                      **05 00927
                2358  **                                                                            **05 00928
                2359  ********************************************************************************05 00929
                2360  ********************************************************************************05 00930
                2361          EXT       V$EXEC                                                             05 00931
                2362          EXT       VT$GTM                                                             05 00932
                2363          EXT       VT$PTM                                                             05 00933
                2364          EXT       VT$MP1                                                             05 00934
                2365          EXT       TC$FWR                                                             05 00935
                2366          NAME      TYWRIT                                                             05 00936
001522 000000 A 2367  TYWRIT  ENTR                                                                         05 00937
        000001 A 2368  TCD     SET       X                                                                  05 00938
001523 002100 A 2369          JMPM      TC$FWR             FIND WRITE REQUEST                              05 00939
001524 000000 E
001525 001010 A 2370          JAZ*      TYWRIT             NO RQST, EXIT                                   05 00940
001526 101512 R
                2371          IFT       VORTEX-2                                                   V2      05 00941
                2372          GOTO      1                                                          V2      05 00942
                2373          STAE      WRQSTA                                                     V2      05 00943
                2374          GETMEM    VT$MP1,14                                                  V2      05 00944
                2375  1       CONT                                                                 V2      05 00945
                2376          IFT       VORTEX-1                                                   V2      05 00946
                2377          GOTO      1                                                          V2      05 00947
001527 054767 A 2378          STA       WRQSTA             SAVE RQST ADDR                                  05 00948
                2379          GETMEM    VT$MP1,13                                                          05 00949
001530 006010 A
001531 000015 A
001532 006020 A
001533 001444 E
```

```
001534 074005 A
001535 006505 A
001536 001451 E
001537 000600 A
001540 000720 E
001541 006030 A
001542 001541 R
                    2380  1       CONT                                                    V2  05 00950
001543 001010 A     2381          JAZ*    TYWRIT          NO MEM EXIT                         05 00951
001544 101522 R
                    2382          IFF     VORTEX-2                                        V2  05 00952
                    2383          STAE    WRMEM                                           V2  05 00953
                    2384          IFF     VORTEX-1                                        V2  05 00954
001545 054745 A     2385          STA     WRMEM                                               05 00955
001546 005012 A     2386          TAB                                                         05 00956
001547 002000 A     2387          JMPM    TC$BRQ          BUILD CCM RQST                      05 00957
001550 000730 E
                    2388          FETCHA  TCD,TCSWL,TCSWLB,TCSWLZ                             05 00958
001551 015004 A
001552 004350 A
001553 150421 A
001554 001010 A     2389          JAZ     WR20            DIRECT CONNECT                      05 00959
001555 001700 R
                    2390  *                               DIAL-UP LINE, CHECK PHYSICAL CONNECTION 05 00960
                    2391          FETCHA  TCD,TCCON,TCCONB,TCCONZ                             05 00961
001556 015004 A
001557 004355 A
001560 150421 A
001561 001010 A     2392          JAZ     WR09            NOT CONNECTED                       05 00962
001562 001603 R
                    2393          FETCHA  TCD,TCLDF,TCLDFB,TCLDFZ                             05 00963
001563 015006 A
001564 004354 A
001565 150421 A
001566 001010 A     2394          JAZ     WR20            CONNECTED                           05 00964
001567 001700 R
001570 005101 A     2395          INCR    01              LINE DISC., SIMULATE DSR OFF, COMP. RQST. 05 00965
001571 006027 A     2396          LDBE    WRQSTA                                          T.  05 00966
001572 002517 R
                    2397          DINTS                                                       05 00967
001573 100444 A
001574 100747 A
001575 002000 A     2398          JMPM    TC$CRQ                                              05 00968
001576 001434 E
                    2399          IFT     VORTEX-2                                        V2  05 00969
                    2400          GOTO    1                                               V2  05 00970
                    2401          JOFN    WR04            DEALLOCATE ?                    V2  05 00971
                    2402          STX     WR04-1          YES                             V2  05 00972
                    2403          STB     *+4                                             V2  05 00973
                    2404          JSR     V$MDAL,X                                        V2  05 00974
                    2405          DATA    6                                               V2  05 00975
                    2406          BSS     1                                               V2  05 00976
                    2407          LDXI    0               RESTORE X                       V2  05 00977
                    2408  WR04    EQU     *                                               V2  05 00978
                    2409  1       CONT                                                    V2  05 00979
                    2410          EINTS                                                       05 00980
001577 100244 A
001600 100147 A
001601 001000 A     2411          JMP*    TYWRIT          RETURN                              05 00981
001602 101522 R
                    2412  *                               CHECK FOR PHYSICAL CONNECTION       05 00982
001603 006010 A     2413  WR09    LDAI    WR10            SET UP RETURN ADDRESS               05 00983
001604 001617 R
001605 024705 A     2414          LDB     WRMEM                                               05 00984
       000002 A     2415  RQBLK   SET     B                                                   05 00985
001606 056010 A     2416          STA     8,RQBLK                                             05 00986
001607 010465 A     2417          LDA     FIVE            SET OP-CODE TO FUNCTION             05 00987
001610 004250 A     2418          LRLA    8                                                   05 00988
001611 116003 A     2419          ORA     3,RQBLK                                             05 00989
001612 150460 A     2420          ANA     BR15            USE WAIT OPTION                     05 00990
001613 056003 A     2421          STA     3,RQBLK                                             05 00991
001614 074703 A     2422          STX     WRTCD           SAVE X REG.                         05 00992
                    2423          IFT     VORTEX-2                                        V2  05 00993
                    2424          GOTO    1                                               V2  05 00994
                    2425          TZA                                                     V2  05 00995
                    2426          CALL    VT$TMP          SET MAP TO ZERO                 V2  05 00996
                    2427  1       CONT                                                    V2  05 00997
001615 001000 A     2428          JMP*    WRMEM                                               05 00998
001616 102513 R
001617 024673 A     2429  WR10    LDB     WRMEM                                               05 00999
001620 034677 A     2430          LDX     WRTCD                                               05 01000
001621 016006 A     2431          LDA     6,RQBLK         GET DETAIL STATUS                   05 01001
001622 150422 A     2432          ANA     BS1             CHECK FOR DATA-SET-READY            05 01002
001623 001016 A     2433          JANZ    WR15A           ON                                  05 01003
001624 001665 R
                    2434  *                               OFF, SENSE DATA-SET-READY ON EVENT  05 01004
001625 016003 A     2435          LDA     3,RQBLK         IMMEDIATE RETURN                    05 01005
001626 110440 A     2436          ORA     BS15                                                05 01006
001627 056003 A     2437          STA     3,RQBLK                                             05 01007
001630 016013 A     2438          LDA     11,RQBLK        FUNC CODE = 3                       05 01008
001631 150463 A     2439          ANA     RHW                                                 05 01009
001632 006110 A     2440          ORAI    01400                                               05 01010
001633 001400 A
001634 056013 A     2441          STA     11,RQBLK                                            05 01011
001635 010422 A     2442          LDA     BS1             MASK FOR DSR ON                     05 01012
```

```
001636 056014 A 2443          STA     12,RQBLK      STORE IN LCB EXT WORD                          05 01013
001637 006010 A 2444          LDAI    WR10A         SET UP RETURN                                  05 01014
001640 001645 R
001641 056010 A 2445          STA     8,RQBLK                                                      05 01015
001642 065011 A 2446          STB     TCWCA,TCD     SET WRITE ACTIVE                               05 01016
001643 001000 A 2447          JMP*    WRMEM                                                        05 01017
001644 102513 R
                2448 *                              CCM RQST QUEUED                                05 01018
001645 006027 A 2449 WR10A    LDBE    WRMEM                                                        05 01019
001646 002513 R
001647 006010 A 2450          LDAI    WR15                                                         05 01020
001650 001654 R
001651 056010 A 2451          STA     8,RQBLK                                                      05 01021
001652 001000 A 2452          JMP*    TYWRIT        RETURN                                         05 01022
001653 101522 R
                2453 *                              ON RETURN, DSR IS ON                           05 01023
001654 000000 A 2454 WR15     ENTR                                                                 05 01024
001655 006017 A 2455          LDAE    *-1           MOVE RETURN ADDRESS TO MAIN RETURN CELL.       05 01025
001656 001654 R
001657 006057 A 2456          STAE    TYWRIT                                                       05 01026
001660 001522 R
001661 015011 A 2457          LDA     TCWCA,TCD                                                    05 01027
001662 054630 A 2458          STA     WRMEM                                                        05 01028
001663 005001 A 2459          TZA                                                                  05 01029
001664 055011 A 2460          STA     TCWCA,TCD                                                    05 01030
001665 005101 A 2461 WR15A    INCR    01            SET PHYSICAL CONNECTION BIT, DSR ON            05 01031
                2462          SETA    TCD,TCCON,TCCONB,TCCONZ                                      05 01032
001666 004255 A
001667 135004 A
001670 004355 A
001671 150421 A
001672 004255 A
001673 135004 A
001674 055004 A
001675 002000 A 2463          JMPM    TC$FWR                                                       05 01033
001676 001524 E
001677 054617 A 2464          STA     WRQSTA                                                       05 01034
                2465 *                                                                             05 01035
                2466 *                              IF FULL-DUPLEX, CHECK IF WRITE CAN BE          05 01036
                2467 *                              INITIATED.                                     05 01037
                2468 *                              GET TRANSMISSION MODE                          05 01038
                2469 WR20     FETCHA  TCD,TCXMM,TCXMMB,TCXMMZ                                      05 01039
001700 015004 A
001701 004352 A
001702 150464 A
001703 140464 A 2470          SUB     THREE                                                        05 01040
001704 001016 A 2471          JANZ    WR30          NOT FULL-DUPLEX                                05 01041
001705 001720 R
                2472 *                              FDX,CHECK FOR READ ACTIVE WITH ECHO            05 01042
                2473          FETCHA  TCD,TCRCA,TCRCAB,TCRCAZ                                      05 01043
001706 015007 A
001707 001010 A 2474          JAZ     WR30A         NOT READ ACTIVE                                05 01044
001710 001730 R
                2475 *                              READ ACTIVE, CHECK IF ECHO MODE                05 01045
                2476          FETCHA  TCD,TCECH,TCECHB,TCECHZ                                      05 01046
001711 015004 A
001712 004354 A
001713 150421 A
001714 001010 A 2477          JAZ     WR300C        ECHO MODE, CANNOT INITIATE WRITE               05 01047
001715 002505 R
001716 001000 A 2478          JMP     WR30A         INITIATE WRITE                                 05 01048
001717 001730 R
                2479 *                                                                             05 01049
                2480 *                              LINE IS HALF-DUPLEX OR SIMPLEX.                05 01050
                2481 *                              WRITE CAN BE INITIATED IF RQST IS ON TOP       05 01051
                2482 *                              OF TCD RQST QUEUE.                             05 01052
                2483 *                                                                             05 01053
                2484 WR30     FETCHA  TCD,TCRQH,TCRQHB,TCRQHZ                                      05 01054
001720 015001 A
001721 005012 A 2485          TAB                                                                  05 01055
       000002 A 2486 RQST     SET     B                                                            05 01056
                2487          FETCHA  RQST,RQPWD,8,4      GET OP-CODE OF TOP RQST                  05 01057
001722 016001 A
001723 004350 A
001724 150472 A
001725 005311 A 2488          DAR                                                                  05 01058
001726 001016 A 2489          JANZ    WR300C        WRITE RQST NOT ON TOP, EXIT                    05 01059
001727 002505 R
                2490 *                                                                             05 01060
                2491 *                              INITIATE WRITE REQUEST                         05 01061
                2492 *                                                                             05 01062
001730 024566 A 2493 WR30A    LDB     WRQSTA        GET RQST ADDR                                  05 01063
       000002 A 2494 RQST     SET     B                                                            05 01064
                2495          FETCHA  RQST,RQPWD,12,3                                              05 01065
001731 016001 A
001732 004354 A
001733 150467 A
001734 140423 A 2496          SUB     FOUR          IS MODE = 4                                    05 01066
001735 001010 A 2497          JAZ     WR30B         YES                                            05 01067
001736 001741 R
001737 005001 A 2498          TZA                   NO, SET MODE = 1(DEFAULT)                      05 01068
001740 001004 A 2499          DATA    01004                                                        05 01069
001741 120464 A 2500 WR30B    ADD     THREE                                                        05 01070
001742 054551 A 2501          STA     WRMODE        SAVE MODE                                      05 01071
                2502          SETA    TCD,TCWMD,TCWMDB,TCWMDZ                                      05 01072
```

```
001743 004243 A
001744 135006 A
001745 004343 A
001746 150467 A
001747 004243 A
001750 135006 A
001751 055006 A
001752 014541 A 2503          LDA     WRMODE                                                  05 01073
001753 001010 A 2504          JAZ     WR50            MODE = 1 OR NEQ 4                       05 01074
001754 002011 R
001755 024541 A 2505          LDB     WRQSTA                                                  05 01075
001756 026002 A 2506          LDB     RFCB,RQST                                               05 01076
       000002 A 2507  DCB     SET     B                                                       05 01077
                2508          IFF     VORTEX-2                                        V2      05 01078
                2509          OME     MAP,V$ST2       SET EXEC STATE TO N0            V2      05 01079
001757 016000 A 2510          LDA     DCRECL,DCB                                              05 01080
001760 054534 A 2511          STA     WRBLEN          SAVE RECORD LENGTH (BYTES/WORDS)        05 01081
001761 016001 A 2512          LDA     DCBUFF,DCB                                              05 01082
                2513          IFF     VORTEX-2                                        V2      05 01083
                2514          OME     MAP,V$ST0       SET EXEC STATE TO 00            V2      05 01084
001762 054533 A 2515          STA     WRBUFF          SAVE BUFFER ADDRESS, BYTE/WORD CMT FLAG 05 01085
                2516  *                                                                       05 01086
                2517  *                               MODE = 4 , TRANSPARENT                  05 01087
                2518  *                               BUILD CCM RQST BLK TO OUTPUT USER BUFFER 05 01088
                2519  *                                                                       05 01089
                2520          SPACE   2                                                       05 01090
       001763 R 2521  WR40    EQU     *                                               V2      05 01091
                2522          IFT     VORTEX-2                                        V2      05 01092
                2523          GOTO    1                                               V2      05 01093
                2524          LDB     WRQSTA                                          V2      05 01094
                2525          LDB     RTIDB,B                                         V2      05 01095
                2526          LDA     TBKEY,B         GET USER KEY                    V2      05 01096
                2527  1       CONT                                                    V2      05 01097
001763 024527 A 2528          LDB     WRMEM                                           V2      05 01098
       000002 A 2529  RQBLK    SET     B                                                       05 01099
                2530          IFF     VORTEX-2                                        V2      05 01100
                2531          STA     13,RQBLK        STORE USER MAP KEY              V2      05 01101
001764 006010 A 2532          LDAI    WR40A           SET UP RETURN ADDR                      05 01102
001765 002003 R
001766 056010 A 2533          STA     8,RQBLK                                                 05 01103
001767 016003 A 2534          LDA     3,RQBLK         SET OP-CODE TO WRITE, IMMEDIATE RETURN  05 01104
001770 150463 A 2535          ANA     RHW                                                     05 01105
001771 006110 A 2536          ORAI    0100400                                                 05 01106
001772 100400 A
001773 056003 A 2537          STA     3,RQBLK                                                 05 01107
001774 014520 A 2538          LDA     WRBLEN          SET BUFFER LENGTH                       05 01108
001775 056011 A 2539          STA     9,RQBLK                                                 05 01109
001776 014517 A 2540          LDA     WRBUFF          SET BUFFER ADDRESS, BYTE/WORD FLAG      05 01110
001777 056012 A 2541          STA     10,RQBLK                                                05 01111
002000 065011 A 2542          STB     TCWCA,TCD       SET WRITE ACTIVE                        05 01112
                2543          IFT     VORTEX-2                                        V2      05 01113
                2544          GOTO    1                                               V2      05 01114
                2545          TZA                                                     V2      05 01115
                2546          CALL    VT$TMP          SET MAP TO ZERO                 V2      05 01116
                2547  1       CONT                                                    V2      05 01117
002001 001000 A 2548          JMP*    WRMEM                                                   05 01118
002002 102513 R
                2549  *                               CCM RQST QUEUED, EXIT                   05 01119
002003 024507 A 2550  WR40A    LDB     WRMEM                                                   05 01120
       000002 A 2551  RQBLK    SET     B                                                       05 01121
002004 006010 A 2552          LDAI    WR200           SET UP RETURN COMPLETION ADDRESS        05 01122
002005 002326 R
002006 056010 A 2553          STA     8,RQBLK                                                 05 01123
002007 001000 A 2554          JMP*    TYWRIT          EXIT                                    05 01124
002010 101522 R
                2555          EJEC                                                            05 01125
                2556  *                               MODE = 1 , STANDARD                     05 01126
                2557  *                               BUILD CCM RQST TO OUTPUT FORMS CONTROL  05 01127
                2558  *                                                                       05 01128
002011 024505 A 2559  WR50     LDB     WRQSTA          GET BUFFER ADDRESS                      05 01129
002012 026002 A 2560          LDB     RFCB,B                                                  05 01130
                2561          IFF     VORTEX-2                                        V2      05 01131
                2562          OME     MAP,V$ST2       SET EXEC STATET TO N0            V2     05 01132
002013 016001 A 2563          LDA     DCBUFF,B                                                05 01133
002014 054501 A 2564          STA     WRBUFF                                                  05 01134
002015 150460 A 2565          ANA     BR15                                                    05 01135
002016 005012 A 2566          TAB                                                             05 01136
002017 016000 A 2567          LDA     0,B             GET 1ST CHR IN BUFFER                   05 01137
                2568          IFF     VORTEX-2                                        V2      05 01138
                2569          OME     MAP,V$ST0       SET EXEC STATE TO 00            V2      05 01139
002020 004350 A 2570          LSRA    8                                                       05 01140
002021 006137 A 2571          ERAE    TYBLK                                                   05 01141
002022 001520 R
002023 001010 A 2572          JAZ     WR50A           BLANK, NO LF CHAR.                      05 01142
002024 002044 R
002025 006137 A 2573          ERAE    TYBLK           RESTORE                                 05 01143
002026 001520 R
002027 134476 A 2574          ERA     TYZER                                                   05 01144
002030 001010 A 2575          JAZ     WR50B           ZERO, ONE LF CHAR.                      05 01145
002031 002053 R
002032 134473 A 2576          ERA     TYZER                                                   05 01146
002033 134471 A 2577          ERA     TYONE                                                   05 01147
002034 001016 A 2578          JANZ    WR50A           INVALID FORMS CNTRL CHAR, BLANK DEFAULT CHR05 01148
002035 002044 R
002036 010423 A 2579          LDA     FOUR            ONE, FORMS CHR                          05 01149
```

```
002037 054463 A 2580          STA     CHRCNT                                                    05 01150
002040 006010 A 2581          LDAI    TYFORM                                                    05 01151
002041 002530 R
002042 001000 A 2582          JMP     WR60                                                      05 01152
002043 002057 R
002044 014446 A 2583 WR50A    LDA     WRMEM       SET TCD WRITE ACTIVE                          05 01153
002045 055011 A 2584          STA     TCWCA,TCD                                                 05 01154
002046 006017 A 2585          LDAE    TYWRIT      MOVE RETURN ADDRESS TO WR100                  05 01155
002047 001522 R
002050 054034 A 2586          STA     WR100                                                     05 01156
002051 001000 A 2587          JMP     WR100A      OUTPUT USER BUFFER                            05 01157
002052 002116 R
002053 005111 A 2588 WR50B    IAR                 ONE LINE FEED CHAR.                           05 01158
002054 054446 A 2589          STA     CHRCNT                                                    05 01159
002055 006010 A 2590          LDAI    TYLFLF                                                    05 01160
002056 002527 R
002057 024433 A 2591 WR60     LDB     WRMEM                                                     05 01161
       000002 A 2592 RQBLK    SET     B                                                         05 01162
002060 110440 A 2593          ORA     BS15        SET TO BYTE COUNT                             05 01163
002061 056012 A 2594          STA     10,RQBLK    SET BUFFER ADDR OF FORMS CONTROL CHR          05 01164
002062 014440 A 2595          LDA     CHRCNT                                                    05 01165
002063 056011 A 2596          STA     9,RQBLK     SET BUFFER LENGTH                             05 01166
002064 006010 A 2597          LDAI    WR70        SET UP RETURN ADDRESS                         05 01167
002065 002077 R
002066 056010 A 2598          STA     8,RQBLK                                                   05 01168
002067 016003 A 2599          LDA     3,RQBLK     SET OP-CODE TO WRITE, IMMEDIATE RETURN        05 01169
002070 150463 A 2600          ANA     RHW                                                       05 01170
002071 006110 A 2601          ORAI    0100400                                                   05 01171
002072 100400 A
002073 056003 A 2602          STA     3,RQBLK                                                   05 01172
002074 065011 A 2603          STB     TCWCA,TCD   SET WRITE ACTIVE                              05 01173
               2604           IFT     VORTEX-2                                              V2  05 01174
               2605           GOTO    1                                                     V2  05 01175
               2606           TZA                                                           V2  05 01176
               2607           CALL    VT$TMP      SET MAP TO ZERO                           V2  05 01177
               2608 1         CONT                                                          V2  05 01178
002075 001000 A 2609          JMP*    WRMEM                                                     05 01179
002076 102513 R
002077 006010 A 2610 WR70     LDAI    WR100                                                     05 01180
002100 002105 R
002101 024411 A 2611          LDB     WRMEM                                                     05 01181
002102 056010 A 2612          STA     8,RQBLK                                                   05 01182
002103 001000 A 2613          JMP*    TYWRIT                                                    05 01183
002104 101522 R
               2614           EJEC                                                              05 01184
               2615 *                                                                           05 01185
               2616 *                     CHECK FOR LINE ERRORS ON RETURN FROM                  05 01186
               2617 *                     FORMS CONTROL CHR OUTPUT                              05 01187
               2618           SPACE   3                                                         05 01188
002105 000000 A 2619 WR100    ENTR                                                              05 01189
               2620           FETCHA  TCD,TCWCA,TCWCAB,TCWCAZ                                   05 01190
002106 015011 A
002107 054403 A 2621          STA     WRMEM                                                     05 01191
002110 005012 A 2622          TAB                                                               05 01192
       000002 A 2623 RQBLK    SET     B                                                         05 01193
002111 016006 A 2624          LDA     6,RQBLK     GET DETAIL STATUS                             05 01194
002112 006441 A 2625          BT      RA0+1,WR106 DATA-SET-READY OFF                            05 01195
002113 002302 R
002114 006410 A 2626          BT      RA1+8,WR106 BREAK                                         05 01196
002115 002302 R
002116 002000 A 2627 WR100A   JMPM    TC$FWR      GET WRITE RQST ADDR                           05 01197
002117 001676 E
002120 054376 A 2628          STA     WRQSTA      SAVE RQST ADDR                                05 01198
002121 005012 A 2629          TAB                                                               05 01199
002122 026002 A 2630          LDB     RFCB,B                                                    05 01200
       000002 A 2631 DCB      SET     B                                                         05 01201
               2632           IFF     VORTEX-2                                              V2  05 01202
               2633           OME     MAP,V$ST2   SET EXEC STATE TO N0                      V2  05 01203
002123 016000 A 2634          LDA     DCRECL,DCB  GET BUFFER LENGTH                             05 01204
002124 054370 A 2635          STA     WRBLEN                                                    05 01205
002125 016001 A 2636          LDA     DCBUFF,DCB  GET BUFFER ADDR, BYTE/WORD FLAG               05 01206
002126 054367 A 2637          STA     WRBUFF                                                    05 01207
002127 150460 A 2638          ANA     BR15                                                      05 01208
002130 005012 A 2639          TAB                                                               05 01209
002131 016000 A 2640          LDA     0,B         SET 1ST CHR IN BUFFER TO BLANK CHR            05 01210
002132 054367 A 2641          STA     WRFMCC      SAVE FORMS CONTROL CHAR.                      05 01211
002133 150463 A 2642          ANA     RHW                                                       05 01212
002134 006110 A 2643          ORAI    0120000                                                   05 01213
002135 120000 A
               2644           IFF     VORTEX-2                                              V2  05 01214
               2645           OME     MAP,V$ST3   SET EXEC STATE TO NN                      V2  05 01215
002136 056000 A 2646          STA     0,B                                                       05 01216
               2647           IFF     VORTEX-2                                              V2  05 01217
               2648           OME     MAP,V$ST0   SET EXEC STATE TO 00                      V2  05 01218
002137 014362 A 2649          LDA     WRFMCC                                                    05 01219
002140 024352 A 2650          LDB     WRMEM                                                     05 01220
002141 056014 A 2651          STA     12,RQBLK    SAVE IN CCM RQBLK                             05 01221
               2652 *                     CALCULATE NUMBER OF TRAILING BLANKS                   05 01222
002142 005001 A 2653          TZA                                                               05 01223
002143 054360 A 2654          STA     BLKCNT                                                    05 01224
002144 014351 A 2655          LDA     WRBUFF                                                    05 01225
002145 001004 A 2656          JAN     WR101       COUNT IN BYTES                                05 01226
002146 002152 R
002147 014345 A 2657          LDA     WRBLEN                                                    05 01227
002150 001000 A 2658          JMP     WR102                                                     05 01228
```

```
002151 002167 R
002152 014342 A 2659 WR101   LDA     WRBLEN                                                  05 01229
002153 054347 A 2660         STA     CHRCNT                                                  05 01230
002154 005111 A 2661         IAR                                                             05 01231
002155 004341 A 2662         LSRA    1               CONVERT TO WORD COUNT(UP ROUNDED)       05 01232
002156 054342 A 2663         STA     WDCNT           SAVE WORD COUNT                         05 01233
002157 124336 A 2664         ADD     WRBUFF                                                  05 01234
002160 005012 A 2665         TAB                                                             05 01235
002161 005322 A 2666         DBR                                                             05 01236
002162 014332 A 2667         LDA     WRBLEN          IF ODD, CHECK STARTS AT LHW             05 01237
002163 006400 A 2668         BT      RA1+0,WR104                                             05 01238
002164 002212 R
002165 001000 A 2669         JMP     WR103+1                                                 05 01239
002166 002177 R
002167 054331 A 2670 WR102   STA     WDCNT                                                   05 01240
002170 005012 A 2671         TAB                                                             05 01241
002171 004241 A 2672         LRLA    1               *2                                      05 01242
002172 054330 A 2673         STA     CHRCNT                                                  05 01243
002173 005021 A 2674         TBA                                                             05 01244
002174 124321 A 2675         ADD     WRBUFF                                                  05 01245
002175 005012 A 2676         TAB                                                             05 01246
002176 005322 A 2677 WR103   DBR                                                             05 01247
               2678          IFF     VORTEX-2                                        V2      05 01248
               2679          OME     MAP,V$ST2       SET EXEC STATE TO N0             V2     05 01249
002177 016000 A 2680         LDA     0,B             CHECK RHW FOR BLANK                     05 01250
               2681          IFF     VORTEX-2                                        V2      05 01251
               2682          OME     MAP,V$ST0                                        V2     05 01252
002200 150463 A 2683         ANA     RHW                                                     05 01253
002201 006137 A 2684         ERAE    TYBLK                                                   05 01254
002202 001520 R
002203 001016 A 2685         JANZ    WR105           NON-BLANK                               05 01255
002204 002227 R
002205 044316 A 2686         INR     BLKCNT                                                  05 01256
002206 014314 A 2687         LDA     CHRCNT          CHECK FOR ALL BLANKS IN BUFFER          05 01257
002207 144314 A 2688         SUB     BLKCNT                                                  05 01258
002210 001010 A 2689         JAZ     WR105           YES                                     05 01259
002211 002227 R
        002212 R 2690 WR104  EQU     *                                               V2      05 01260
               2691          IFF     VORTEX-2                                        V2      05 01261
               2692          OME     MAP,V$ST2                                       V2      05 01262
002212 016000 A 2693         LDA     0,B             CHECK LHW FOR BLANK             V2      05 01263
               2694          IFF     VORTEX-2                                        V2      05 01264
               2695          OME     MAP,V$ST0       SET EXEC STATE TO 00            V2      05 01265
002213 004350 A 2696         LSRA    8                                                       05 01266
002214 006137 A 2697         ERAE    TYBLK                                                   05 01267
002215 001520 R
002216 001016 A 2698         JANZ    WR105           NON-BLANK                               05 01268
002217 002227 R
002220 044303 A 2699         INR     BLKCNT          INCREMENT BLANK COUNTER                 05 01269
002221 014301 A 2700         LDA     CHRCNT          CHECK FOR ALL BLANKS IN BUFFER          05 01270
002222 144301 A 2701         SUB     BLKCNT                                                  05 01271
002223 001010 A 2702         JAZ     WR105           YES                                     05 01272
002224 002227 R
002225 001000 A 2703         JMP     WR103           CONTINUE SCAN                           05 01273
002226 002176 R
               2704 *                                                                       05 01274
               2705 *                               WE NOW HAVE COUNT OF TRAILING BLANKS.   05 01275
               2706 *                               SET NUMBER OF WORDS/CHRS TO OUTPUT.     05 01276
002227 014266 A 2707 WR105   LDA     WRBUFF                                                  05 01277
002230 001004 A 2708         JAN     WR105A          BYTE COUNT                              05 01278
002231 002255 R
002232 014271 A 2709         LDA     BLKCNT          WORD COUNT                              05 01279
002233 004341 A 2710         LSRA    1               DIV BY 2                                05 01280
002234 054267 A 2711         STA     BLKCNT                                                  05 01281
002235 014263 A 2712         LDA     WDCNT                                                   05 01282
002236 144265 A 2713         SUB     BLKCNT          (A) = NO. OF WORDS TO OUTPUT            05 01283
               2714 *                               TRUNCATE TO 36 WDS IF GTR 36            05 01284
002237 006140 A 2715         SUBI    37                                                      05 01285
002240 000045 A
002241 001004 A 2716         JAN     WR105X                                                  05 01286
002242 002247 R
002243 006010 A 2717         LDAI    36              TRUNCATE                                05 01287
002244 000044 A
002245 001000 A 2718         JMP     WR105B                                                  05 01288
002246 002273 R
002247 006120 A 2719 WR105X  ADDI    37                                                      05 01289
002250 000045 A
002251 001010 A 2720         JAZ     WR107                                                   05 01290
002252 002311 R
002253 001000 A 2721         JMP     WR105B                                                  05 01291
002254 002273 R
002255 014245 A 2722 WR105A  LDA     CHRCNT                                                  05 01292
002256 144245 A 2723         SUB     BLKCNT                                                  05 01293
               2724 *                               TRUNCATE TO 72 CHRS IF GTR 72           05 01294
002257 006140 A 2725         SUBI    73                                                      05 01295
002260 000111 A
002261 001004 A 2726         JAN     WR105Y                                                  05 01296
002262 002267 R
002263 006010 A 2727         LDAI    72              TRUNCATE                                05 01297
002264 000110 A
002265 001000 A 2728         JMP     WR105B                                                  05 01298
002266 002273 R
002267 006120 A 2729 WR105Y  ADDI    73              RESTORE                                 05 01299
002270 000111 A
002271 001010 A 2730         JAZ     WR107                                                   05 01300
```

```
002472 074005 A
002473 006505 A
002474 001536 E
002475 000600 A
002476 001453 E
002477 006030 A
002500 002477 R
002501 005001 A 2877          TZA                                                  05 01447
                2878          SETA    TCD,TCWCA,TCWCAB,TCWCAZ                      05 01448
002502 055011 A
002503 001000 A 2879          JMP*    WR300           EXIT                         05 01449
002504 102406 R
                2880 *                                                             05 01450
002505 006017 A 2881 WR300C   LDAE    TYWRIT                                       05 01451
002506 001522 R
002507 006057 A 2882          STAE    WR300                                        05 01452
002510 002406 R
002511 001000 A 2883          JMP     WR300B                                       05 01453
002512 002462 R
                2884          EJEC                                                 05 01454
                2885 *                                                             05 01455
                2886 *                          CONSTANTS AND TEMPORARY STORAGE    05 01456
                2887 *                                                             05 01457
002513 000000 A 2888 WRMEM    DATA    0         ADDR OF CCM RQBLK                  05 01458
002514 000000 A 2889 WRMODE   DATA    0         MODE OF TCM RQST                   05 01459
002515 000000 A 2890 WRBLEN   DATA    0         BUFFER LENGTH (WDS/BYTES)          05 01460
002516 000000 A 2891 WRBUFF   DATA    0         BUFFER ADDRESS, BYTE COUNT FLAG    05 01461
002517 000000 A 2892 WRQSTA   DATA    0         TCM WRITE RQST ADDR                05 01462
002520 000000 A 2893 WRTCD    DATA    0         TCD ADDRESS                        05 01463
002521 000000 A 2894 WDCNT    DATA    0         WORD COUNT                         05 01464
002522 000000 A 2895 WRFMCC   DATA    0         SAVE CELL FOR FORMS CHAR.          05 01465
002523 000000 A 2896 CHRCNT   DATA    0         CHAR COUNT                         05 01466
002524 000000 A 2897 BLKCNT   DATA    0         BLANK COUNT                        05 01467
002525 000261 A 2898 TYONE    DATA    0261      ONE                                05 01468
002526 000260 A 2899 TYZER    DATA    0260      ZERO                               05 01469
002527 105212 A 2900 TYLFLF   DATA    0105212   LINE FEED, LINE FEED               05 01470
002530 106200 A 2901 TYFORM   DATA    0106200   FORM,NUL                           05 01471
002531 100200 A 2902          DATA    0100200   NUL,NUL                            05 01472
002532 106600 A 2903 TYCNL    DATA    0106600   CARRIAGE RETURN,NULL,LF            05 01473
002533 105000 A 2904 TYLF     DATA    0105000   LINE FEED                          05 01474
                2905          EJEC                                               05 01475
                2906 ********************************************************************05 01476
                2907 ********************************************************************05 01477
                2908 **       PROGRAM NAME -                                       **05 01478
                2909 **             TYFUNC - PROCESSES FUNC/WEOF REQUESTS FOR TTY TCM**05 01479
                2910 **                                                            **05 01480
                2911 **       ENTRY CONDITIONS -                                   **05 01481
                2912 **             (X) = TCD ADDRESS                              **05 01482
                2913 **                                                            **05 01483
                2914 **       EXIT CONDITIONS -                                    **05 01484
                2915 **             (A) AND (B) DESTROYED                          **05 01485
                2916 **             (X) UNCHANGED                                  **05 01486
                2917 **                                                            **05 01487
                2918 **       CALLING  SEQUENCE -                                  **05 01488
                2919 **             JMPM TYFUNC                                    **05 01489
                2920 **             (RETURN)                                       **05 01490
                2921 **                                                            **05 01491
                2922 ********************************************************************05 01492
                2923 ********************************************************************05 01493
                2924          EXT     V$EXEC                                       05 01494
                2925          EXT     VT$GTM                                       05 01495
                2926          EXT     VT$PTM                                       05 01496
                2927          EXT     VT$MP1                                       05 01497
                2928          NAME    TYFUNC                                       05 01498
002534 000000 A 2929 TYFUNC   ENTR                                                 05 01499
                2930          IFT     VORTEX-2                                  V2 05 01500
                2931          GOTO    1                                         V2 05 01501
                2932          LDB     TCRQH,X                                   V2 05 01502
                2933          LDB     RTIDB,B                                   V2 05 01503
                2934          LDA     TBKEY,B         GET USER MAP KEY          V2 05 01504
                2935          CALL    VT$TMP          SET MAP TO USER           V2 05 01505
                2936 1        CONT                                              V2 05 01506
       000001 A 2937 TCD      SET     X               (X) = TCD ADDRESS            05 01507
002535 025001 A 2938          LDB     TCRQH,X         GET RQST ADDR FROM TOP OF TCD RQST QUEUE 05 01508
       000002 A 2939 RQST     SET     B                                            05 01509
                2940          FETCHA  TCD,TCSWL,TCSWLB,TCSWLZ                      05 01510
002536 015004 A
002537 004350 A
002540 150421 A
002541 001010 A 2941          JAZ     FC01            DIRECT CONNECT               05 01511
002542 002716 R
                2942          FETCHA  TCD,TCCON,TCCONB,TCCONZ                      05 01512
002543 015004 A
002544 004355 A
002545 150421 A
002546 001010 A 2943          JAZ     FC0             NO PHYSICAL CONNECTION       05 01513
002547 002566 R
                2944          FETCHA  TCD,TCLDF,TCLDFB,TCLDFZ                      05 01514
002550 015006 A
002551 004354 A
002552 150421 A
002553 001010 A 2945          JAZ     FC01            CONNECTED                    05 01515
002554 002716 R
002555 005101 A 2946          INCR    01              LINE DISC., SIMULATE DSR OFF, COMP. RQST. 05 01516
                2947          DINTS                                                05 01517
```

```
002556 100444 A
002557 100747 A
002560 002000 A 2948          JMPM    TC$CRQ                                    05 01518
002561 002457 E
                2949          IFT     VORTEX-2                            V2    05 01519
                2950          GOTO    1                                   V2    05 01520
                2951          JOFN    FC1             DEALLOCATE ?        V2    05 01521
                2952          STX     FC1-1           YES                 V2    05 01522
                2953          STB     *+4                                 V2    05 01523
                2954          JSR     V$MDAL,X                            V2    05 01524
                2955          DATA    6                                   V2    05 01525
                2956          BSS     1                                   V2    05 01526
                2957          LDXI    0               RESTORE X           V2    05 01527
                2958 FC1      EQU     *                                   V2    05 01528
                2959 1        CONT                                        V2    05 01529
                2960          EINTS                                             05 01530
002562 100244 A
002563 100147 A
002564 001000 A 2961          JMP*    TYFUNC                                    05 01531
002565 102534 R
                2962          IFT     VORTEX-2                            V2    05 01532
                2963          GOTO    1                                   V2    05 01533
                2964 FC0      TZA                                         V2    05 01534
                2965          CALL    VT$TMP          SET MAP TO ZERO     V2    05 01535
                2966          GETMEM  VT$MP1,14                           V2    05 01536
                2967 1        CONT                                        V2    05 01537
                2968          IFF     VORTEX-1                            V2    05 01538
                2969 FC0      GETMEM  VT$MP1,13                                 05 01539
002566 006010 A
002567 000015 A
002570 006020 A
002571 002467 E
002572 074005 A
002573 006505 A
002574 002474 E
002575 000600 A
002576 001540 E
002577 006030 A
002600 002577 R
002601 001010 A 2970          JAZ     FCEXIT                                    05 01540
002602 003211 R
002603 054416 A 2971          STA     FUMEM                                     05 01541
002604 005012 A 2972          TAB                                               05 01542
       000002 A 2973 RQBLK    SET     B                                         05 01543
002605 002000 A 2974          JMPM    TC$BRQ          BUILD CCM RQST            05 01544
002606 001550 E
002607 006010 A 2975          LDAI    FC0A            SET UP RETURN ADDRESS     05 01545
002610 002622 R
002611 056010 A 2976          STA     8,RQBLK                                   05 01546
002612 010465 A 2977          LDA     FIVE            SET OP-CODE TO FUNCTION   05 01547
002613 004250 A 2978          LRLA    8                                         05 01548
002614 116003 A 2979          ORA     3,RQBLK                                   05 01549
002615 150460 A 2980          ANA     BR15            USE WAIT OPTION           05 01550
002616 056003 A 2981          STA     3,RQBLK                                   05 01551
002617 074406 A 2982          STX     FUTCD           SAVE X REG.               05 01552
002620 001000 A 2983          JMP*    FUMEM                                     05 01553
002621 103222 R
002622 024377 A 2984 FC0A     LDB     FUMEM                                     05 01554
002623 034402 A 2985          LDX     FUTCD                                     05 01555
002624 016006 A 2986          LDA     6,RQBLK                                   05 01556
002625 006401 A 2987          BT      RA1+1,FC0D      ON                        05 01557
002626 002666 R
                2988 *                                OFF, SENSE DATA-SET-READY ON EVENT  05 01558
002627 016003 A 2989          LDA     3,RQBLK         IMMEDIATE RETURN          05 01559
002630 110440 A 2990          ORA     BS15                                      05 01560
002631 056003 A 2991          STA     3,RQBLK                                   05 01561
002632 016013 A 2992          LDA     11,RQBLK        FUNC CODE = 3             05 01562
002633 150463 A 2993          ANA     RHW                                       05 01563
002634 006110 A 2994          ORAI    01400                                     05 01564
002635 001400 A
002636 056013 A 2995          STA     11,RQBLK                                  05 01565
002637 010422 A 2996          LDA     BS1             MASK FOR DSR ON           05 01566
002640 056014 A 2997          STA     12,RQBLK        STORE IN LCB EXT WORD     05 01567
002641 006010 A 2998          LDAI    FC0B            SET UP RETURN             05 01568
002642 002647 R
002643 056010 A 2999          STA     8,RQBLK                                   05 01569
002644 065007 A 3000          STB     TCRCA,TCD       SET FUNC ACTIVE           05 01570
002645 001000 A 3001          JMP*    FUMEM                                     05 01571
002646 103222 R
                3002 *                                CCM RQST QUEUED           05 01572
002647 024352 A 3003 FC0B     LDB     FUMEM                                     05 01573
002650 006010 A 3004          LDAI    FC0C                                      05 01574
002651 002655 R
002652 056010 A 3005          STA     8,RQBLK                                   05 01575
002653 001000 A 3006          JMP*    TYFUNC          RETURN                    05 01576
002654 102534 R
                3007 *                                ON RETURN, DSR IS ON      05 01577
002655 000000 A 3008 FC0C     ENTR                                              05 01578
002656 006017 A 3009          LDAE    *-1             MOVE RETURN ADDRESS TO MAIN RETURN CELL.  05 01579
002657 002655 R
002660 006057 A 3010          STAE    TYFUNC                                    05 01580
002661 002534 R
002662 015007 A 3011          LDA     TCRCA,TCD                                 05 01581
002663 054336 A 3012          STA     FUMEM                                     05 01582
002664 005001 A 3013          TZA                                               05 01583
```

```
002665 055007 A 3014          STA     TCRCA,TCD                                                  05 01584
002666 005101 A 3015 FC0D     INCR    01                                                         05 01585
                3016          SETA    TCD,TCCON,TCCONB,TCCONZ                                    05 01586
002667 004255 A
002670 135004 A
002671 004355 A
002672 150421 A
002673 004255 A
002674 135004 A
002675 055004 A
                3017          IFT     VORTEX-2                                           V2      05 01587
                3018          GOTO    1                                                  V2      05 01588
                3019          LDB     TCRQH,X                                            V2      05 01589
                3020          LDB     RTIDB,B                                            V2      05 01590
                3021          LDA     TBKEY,B                                            V2      05 01591
                3022          CALL    VT$TMP          SET MAP TO USER KEY                V2      05 01592
                3023          LDAI    14                                                 V2      05 01593
                3024 1        CONT                                                       V2      05 01594
                3025          IFF     VORTEX-1                                           V2      05 01595
002676 006010 A 3026          LDAI    13              RETURN MEM USED FOR CCM RQST.              05 01596
002677 000015 A
002700 024321 A 3027          LDB     FUMEM                                                      05 01597
002701 056000 A 3028          STA     0,B                                                        05 01598
                3029          PUTMEM  VT$MP1,FUMEM                                               05 01599
002702 006010 A
002703 002571 E
002704 006027 A
002705 003222 R
002706 074005 A
002707 006505 A
002710 002574 E
002711 000600 A
002712 002476 E
002713 006030 A
002714 002713 R
002715 025001 A 3030          LDB     TCRQH,TCD                                                  05 01600
                3031 *                                INITIATE FUNC RQST                         05 01601
                3032 FC01     FETCHA  RQST,RQPWD,8,4                                             05 01602
002716 016001 A
002717 004350 A
002720 150472 A
002721 140422 A 3033          SUB     TWO                                                        05 01603
002722 001010 A 3034          JAZ     FC10            WEOF OP CODE, GO TO WEOF PROCESSOR         05 01604
002723 002743 R
002724 026002 A 3035          LDB     RFCB,RQST       FUNC RQST                                  05 01605
       000002 A 3036 DCB      SET     B                                                          05 01606
                3037          IFF     VORTEX-2                                           V2      05 01607
                3038          OME     MAP,V$ST2                                          V2      05 01608
                3039          FETCHA  DCB,DCCNT,0,8 GET FUNC CODE FROM DCB                       05 01609
002725 016002 A
002726 150463 A
                3040          IFF     VORTEX-2                                           V2      05 01610
                3041          OME     MAP,V$ST0                                          V2      05 01611
002727 054273 A 3042          STA     FUNC            SAVE                                       05 01612
002730 006140 A 3043          SUBI    FUVEN-FUVST     VALIDATE FUNC CODE                         05 01613
002731 000005 A
002732 001002 A 3044          JAP     FC81            ERROR, CODE NOT VALID                      05 01614
002733 003204 R
002734 014266 A 3045          LDA     FUNC            CALCULATE ADDRESS IN JUMP VECTOR TBL       05 01615
002735 006120 A 3046          ADDI    FUVST                                                      05 01616
002736 003214 R
002737 110440 A 3047          ORA     BS15            SET INDIRECT BIT                           05 01617
002740 054260 A 3048          STA     FUPEX                                                      05 01618
002741 001000 A 3049          JMP*    FUPEX           JUMP TO PARTICULAR PROCESSOR               05 01619
002742 103221 R
                3050          EJEC                                                               05 01620
                3051 *                                PROCESS WEOF RQST                          05 01621
                3052          IFT     VORTEX-2                                           V2      05 01622
                3053          GOTO    1                                                  V2      05 01623
                3054 FC10     TZA                                                        V2      05 01624
                3055          CALL    VT$TMP          SET MAP TO ZERO                    V2      05 01625
                3056          GETMEM  VT$MP1,14                                          V2      05 01626
                3057 1        CONT                                                       V2      05 01627
                3058          IFF     VORTEX-1                                           V2      05 01628
                3059 FC10     GETMEM  VT$MP1,13       GET 13 WDS FOR CCM RQST BLK                05 01629
002743 006010 A
002744 000015 A
002745 006020 A
002746 002703 E
002747 074005 A
002750 006505 A
002751 002710 E
002752 000600 A
002753 002576 E
002754 006030 A
002755 002754 R
002756 001010 A 3060          JAZ     FCEXIT          NO MEM,DO NOT PROCESS RQST                 05 01630
002757 003211 R
002760 054241 A 3061          STA     FUMEM                                                      05 01631
002761 005012 A 3062          TAB                                                                05 01632
       000002 A 3063 RQBLK    SET     B                                                          05 01633
002762 002000 A 3064          JMPM    TC$BRQ          BUILD CCM RQST BLK                         05 01634
002763 002606 E
002764 010421 A 3065          LDA     ONE             STORE BYTE COUNT, BUFFER ADDRESS           05 01635
002765 056011 A 3066          STA     9,RQBLK                                                    05 01636
```

```
002766 014233 A 3067          LDA     FUMEM                                                    05 01637
002767 006120 A 3068          ADDI    12                                                       05 01638
002770 000014 A
002771 110440 A 3069          ORA     BS15                                                     05 01639
002772 056012 A 3070          STA     10,RQBLK                                                 05 01640
               3071           FETCHA  TCD,TCPCH,TCPCHB,TCPCHZ                                  05 01641
002773 015004 A
002774 150463 A
002775 004250 A 3072          LRLA    8                                                        05 01642
002776 056014 A 3073          STA     12,RQBLK                                                 05 01643
002777 006010 A 3074          LDAI    FC20                                                     05 01644
003000 003010 R
003001 056010 A 3075          STA     8,RQBLK                                                  05 01645
003002 016003 A 3076          LDA     3,RQBLK         SET OP-CODE TO WRITE(1)                  05 01646
003003 110431 A 3077          ORA     BS8                                                      05 01647
003004 056003 A 3078          STA     3,RQBLK                                                  05 01648
003005 065007 A 3079          STB     TCRCA,TCD       SET FUNC ACTIVE                          05 01649
003006 001000 A 3080          JMP*    FUMEM           INITIATE CCM RQST VIA IOC                05 01650
003007 103222 R
003010 024211 A 3081 FC20     LDB     FUMEM                                                    05 01651
003011 006010 A 3082          LDAI    FC100                                                    05 01652
003012 003143 R
003013 056010 A 3083          STA     8,RQBLK                                                  05 01653
003014 001000 A 3084          JMP*    TYFUNC                                                   05 01654
003015 102534 R
               3085           EJEC                                                             05 01655
               3086 *                                 PROCESS FUNC CODE = 0                    05 01656
               3087           IFT     VORTEX-2                                              V2 05 01657
               3088           GOTO    1                                                     V2 05 01658
               3089 FC30      TZA                                                           V2 05 01659
               3090           CALL    VT$TMP          SET MAP TO ZERO                       V2 05 01660
               3091           GETMEM  VT$MP1,14                                             V2 05 01661
               3092 1         CONT                                                          V2 05 01662
               3093           IFF     VORTEX-1                                              V2 05 01663
               3094 FC30      GETMEM  VT$MP1,13                                                05 01664
003016 006010 A
003017 000015 A
003020 006020 A
003021 002746 E
003022 074005 A
003023 006505 A
003024 002751 E
003025 000600 A
003026 002753 E
003027 006030 A
003030 003027 R
003031 001010 A 3095          JAZ     FCEXIT                                                   05 01665
003032 003211 R
003033 054166 A 3096          STA     FUMEM                                                    05 01666
003034 005012 A 3097          TAB                                                              05 01667
       000002 A 3098 RQBLK    SET     B                                                        05 01668
003035 002000 A 3099          JMPM    TC$BRQ          BUILD CCM RQST BLK                       05 01669
003036 002763 E
003037 010464 A 3100          LDA     THREE           STORE BYTE COUNT, BUFFER ADDRESS         05 01670
003040 024161 A 3101          LDB     FUMEM                                                    05 01671
003041 056011 A 3102          STA     9,RQBLK                                                  05 01672
003042 006010 A 3103          LDAI    FUCRLF          SET UP BUFFER ADDR FOR CR & 3 LF CHRS    05 01673
003043 003224 R
003044 110440 A 3104          ORA     BS15            BYTE COUNT                               05 01674
003045 056012 A 3105          STA     10,RQBLK                                                 05 01675
003046 006010 A 3106          LDAI    FC20            SET UP RETURN ADDR                       05 01676
003047 003010 R
003050 056010 A 3107          STA     8,RQBLK                                                  05 01677
003051 016003 A 3108          LDA     3,RQBLK                                                  05 01678
003052 110431 A 3109          ORA     BS8             SET OP-CODE TO WRITE                     05 01679
003053 056003 A 3110          STA     3,RQBLK                                                  05 01680
003054 065007 A 3111          STB     TCRCA,TCD       SET FUNC ACTIVE                          05 01681
003055 001000 A 3112          JMP*    FUMEM           INITIATE CCM RQST                        05 01682
003056 103222 R
               3113           EJEC                                                             05 01683
               3114 *                                 PROCESS FUNC CODE = 1,2                  05 01684
003057 010421 A 3115 FC40     LDA     ONE             SET NO-ECHO FLAG                         05 01685
003060 001000 A 3116          JMP     FC50+1                                                   05 01686
003061 003063 R
003062 005001 A 3117 FC50     TZA                     RESET NO-ECHO FLAG                       05 01687
               3118           SETA    TCD,TCECH,TCECHB,TCECHZ                                  05 01688
003063 004254 A
003064 135004 A
003065 004354 A
003066 150421 A
003067 004254 A
003070 135004 A
003071 055004 A
               3119           IFT     VORTEX-2                                              V2 05 01689
               3120           GOTO    1                                                     V2 05 01690
               3121           TZA                                                           V2 05 01691
               3122           CALL    VT$TMP          SET MAP TO ZERO                       V2 05 01692
               3123 1         CONT                                                          V2 05 01693
               3124           IFF     VORTEX-1                                              V2 05 01694
               3125           GETMEM  VT$MP1,13                                                05 01695
003072 006010 A
003073 000015 A
003074 006020 A
003075 003021 E
003076 074005 A
```

```
003077 006505 A
003100 003024 E
003101 000600 A
003102 003026 E
003103 006030 A
003104 003103 R
003105 001010 A 3126          JAZ     FCEXIT                                                    05 01696
003106 003211 R
003107 054112 A 3127          STA     FUMEM                                                     05 01697
003110 005012 A 3128          TAB                                                               05 01698
       000002 A 3129 RQBLK    SET     B                                                         05 01699
003111 002000 A 3130          JMPM    TC$BRQ          BUILD CCM RQST                            05 01700
003112 003036 E
               3131           FETCHA  TCD,TCECH,TCECHB,TCECHZ                                   05 01701
003113 015004 A
003114 004354 A
003115 150421 A
003116 006120 A 3132          ADDI    11              SET FUNC CODE, 11(ECHO),12(NO-ECHO)       05 01702
003117 000013 A
003120 004250 A 3133          LRLA    8                                                         05 01703
003121 116013 A 3134          ORA     11,RQBLK                                                  05 01704
003122 056013 A 3135          STA     11,RQBLK                                                  05 01705
003123 006010 A 3136          LDAI    FC20            SET UP RETURN ADDR                        05 01706
003124 003010 R
003125 056010 A 3137          STA     8,RQBLK                                                   05 01707
003126 010465 A 3138          LDA     FIVE            SET OP-CODE TO FUNCTION                   05 01708
003127 004250 A 3139          LRLA    8                                                         05 01709
003130 116003 A 3140          ORA     3,RQBLK                                                   05 01710
003131 056003 A 3141          STA     3,RQBLK                                                   05 01711
003132 065007 A 3142          STB     TCRCA,TCD       SET FUNC ACTIVE                           05 01712
003133 001000 A 3143          JMP*    FUMEM                                                     05 01713
003134 103222 R
               3144           EJEC                                                              05 01714
               3145 *                 PROCESS FUNC CODE = 3                                     05 01715
       003135 R 3146 FC60      EQU     *                                                 V2      05 01716
               3147           IFF     VORTEX-2                                          V2      05 01717
               3148           OME     MAP,V$ST3                                         V2      05 01718
003135 016002 A 3149          LDA     DCCNT,DCB       SET READ TIMEOUT VALUE IN TCD     V2      05 01719
               3150           IFF     VORTEX-2                                          V2      05 01720
               3151           OME     MAP,V$ST0                                         V2      05 01721
003136 004350 A 3152          LSRA    8                                                         05 01722
               3153           SETA    TCD,TCSTO,TCSTOB,TCSTOZ                                   05 01723
003137 055010 A
003140 010422 A 3154          LDA     BS1             RETURN WITH DATA-SET-READY ON.            05 01724
003141 001000 A 3155          JMP     FC100A          COMPLETE REQUEST                          05 01725
003142 003147 R
               3156           EJEC                                                              05 01726
               3157 *                                                                           05 01727
               3158 *                 ON RETURN FROM CCM RQST COMPLETION, LINE                  05 01728
               3159 *                 ERRORS ARE CHECKED FOR BY TC$CRQ .                        05 01729
               3160 *                 TC$CRQ IS CALLED TO COMPLETE RQST. AFTER                  05 01730
               3161 *                 THE RQST IS COMPLETED, MEMORY USED FOR                    05 01731
               3162 *                 CCM RQST IS DEALLOCATED                                   05 01732
               3163 *                                                                           05 01733
003143 000000 A 3164 FC100    ENTR                                                              05 01734
               3165           IFT     VORTEX-2                                          V2      05 01735
               3166           GOTO    1                                                 V2      05 01736
               3167           LDB     TCRQH,TCD                                         V2      05 01737
               3168           LDB     RTIDB,B                                           V2      05 01738
               3169           LDA     TBKEY,B         GET USER KEY                      V2      05 01739
               3170           CALL    VT$TMP          SET MAP TO USER                   V2      05 01740
               3171 1         CONT                                                      V2      05 01741
003144 025007 A 3172          LDB     TCRCA,TCD       (B) = CCM RQST BLK ADDR                   05 01742
003145 064054 A 3173          STB     FUMEM                                                     05 01743
       000002 A 3174 RQBLK    SET     B                                                         05 01744
003146 016006 A 3175          LDA     6,RQBLK         GET DETAIL STATUS IN A REG.               05 01745
003147 025001 A 3176 FC100A   LDB     TCRQH,TCD                                                 05 01746
               3177           EXT     TC$CRQ                                                    05 01747
               3178           DINTS                                                             05 01748
003150 100444 A
003151 100747 A
003152 002000 A 3179          JMPM    TC$CRQ          COMPLETE RQST                             05 01749
003153 002561 E
               3180           IFT     VORTEX-2                                          V2      05 01750
               3181           GOTO    1                                                 V2      05 01751
               3182           JOFN    FC100B          DEALLOCATE ?                      V2      05 01752
               3183           STX     FC100B-1        YES                               V2      05 01753
               3184           STB     *+4                                               V2      05 01754
               3185           JSR     V$MDAL,X                                          V2      05 01755
               3186           DATA    6                                                 V2      05 01756
               3187           BSS     1                                                 V2      05 01757
               3188           LDXI    0                                                 V2      05 01758
               3189 FC100B    EQU     *                                                 V2      05 01759
               3190 1         CONT                                                      V2      05 01760
               3191           EINTS                                                             05 01761
003154 100244 A
003155 100147 A
003156 015007 A 3192          LDA     TCRCA,TCD                                                 05 01762
003157 001010 A 3193          JAZ*    TYFUNC          RETURN FOR FUNC CODE = 3 TO TCMEXEC       05 01763
003160 102534 R
003161 005012 A 3194          TAB                                                               05 01764
               3195           IFF     VORTEX-2                                          V2      05 01765
               3196           LDAI    14                                                V2      05 01766
               3197           IFF     VORTEX-1                                          V2      05 01767
003162 006010 A 3198          LDAI    13                                                        05 01768
```

```
003163 000015 A
003164 056000 A 3199          STA     0,B
                3200          PUTMEM  VT$MP1,FUMEM  DEALLOCATE MEMORY FOR CCM RQST BLK      05 01769
003165 006010 A                                                                              05 01770
003166 003075 E
003167 006027 A
003170 003222 R
003171 074005 A
003172 006505 A
003173 003100 E
003174 000600 A
003175 002712 E
003176 006030 A
003177 003176 R
003200 005001 A 3201          TZA                                                            05 01771
003201 055007 A 3202          STA     TCRCA,TCD                                              05 01772
003202 001000 A 3203          JMP*    FC100         RETURN TO TCMEXEC                        05 01773
003203 103143 R
                3204 *                              INVALID FUNC CODE ERROR                  05 01774
003204 006010 A 3205 FC81     LDAI    075                                                    05 01775
003205 000075 A
003206 004245 A 3206          LRLA    5             SET ERROR CODE 03,ERR FLG, COMP. CODE 05 05 01776
003207 001000 A 3207          JMP     FC100A                                                 05 01777
003210 003147 R
003211 010461 A 3208 FCEXIT   LDA     NEG           SET NO MEMORY FLAG                       05 01778
003212 001000 A 3209          JMP*    TYFUNC        EXIT TO TCMEXEC                          05 01779
003213 102534 R
                3210          EJEC                                                           05 01780
                3211 *                              CONSTANTS AND TEMPORARY STORAGE          05 01781
003214                3212 FUVST    BSS     0       JUMP VECTOR TABLE                        05 01782
003214 003016 R 3213          DATA    FC30          0                                        05 01783
003215 003057 R 3214          DATA    FC40          1                                        05 01784
003216 003062 R 3215          DATA    FC50          2                                        05 01785
003217 003135 R 3216          DATA    FC60          3                                        05 01786
003220 000000 A 3217          DATA    0             4(I/O CLEAR,IMMEDIATE, DONE IN VT$TCQ)   05 01787
003221                3218 FUVEN    BSS     0       MUST BE LAST ENTRY IN JUMP VECTOR TABLE  05 01788
003221 000000 A 3219 FUPEX    DATA    0                                                      05 01789
003222 000000 A 3220 FUMEM    DATA    0                                                      05 01790
003223 000000 A 3221 FUNC     DATA    0                                                      05 01791
003224 106612 A 3222 FUCRLF   DATA    0106612       CR,LF  (CARRIAGE RETURN,3 LINE FEED BUFFER)05 01792
003225 105212 A 3223          DATA    0105212       LF,LF                                    05 01793
003226 000000 A 3224 FUTCD    DATA    0             TCD ADDRESS                              05 01794
                3225          END                                                            05 01795
ENTRY NAMES
002534 R TYFUNC 000121 R TYREAD 001522 R TYWRIT
EXTERNAL NAMES
003112 E TC$BRQ 003153 E TC$CRQ 001371 E TC$FRR 002412 E TC$FWR
003173 E V$EXEC 003102 E VT$GTM 003166 E VT$MP1 003175 E VT$PTM
SYMBOLS
000044 A APIM   000002 A B      000000 A B0     000001 A B1
000012 A B10    000013 A B11    000014 A B12    000015 A B13
000016 A B14    000017 A B15    000002 A B2     000003 A B3
000004 A B4     000005 A B5     000006 A B6     000007 A B7
000010 A B8     000011 A B9     000000 A BICNUM 000077 R BKBF1
000106 R BKBF2  000115 R BKBF3  002524 R BLKCNT 000421 A BM1
000472 A BM17   000475 A BM177  000477 A BM1777 000464 A BM3
000473 A BM37   000463 A BM377  000467 A BM7    000474 A BM77
000476 A BM777  000441 A BR0    000442 A BR1    000453 A BR10
000454 A BR11   000455 A BR12   000456 A BR13   000457 A BR14
000460 A BR15   000443 A BR2    000444 A BR3    000445 A BR4
000446 A BR5    000447 A BR6    000450 A BR7    000451 A BR8
000452 A BR9    000421 A BS0    000422 A BS1    000433 A BS10
000434 A BS11   000435 A BS12   000436 A BS13   000437 A BS14
000440 A BS15   000423 A BS2    000424 A BS3    000425 A BS4
000426 A BS5    000427 A BS6    000430 A BS7    000431 A BS8
000432 A BS9    000030 R CC1    000000 A CHAFP  000000 A CHAFPB
000020 A CHAFPZ 000001 A CHARP  000000 A CHARPB 000020 A CHARPZ
000002 A CHCFP  000000 A CHCFPB 000020 A CHCFPZ 000003 A CHCRP
000000 A CHCRPB 000020 A CHCRPZ 000004 A CHRBL  000000 A CHRBLB
000020 A CHRBLZ 002523 R CHRCNT 000047 A CLOCK  000000 A COTAD1
000000 A CTACT  000017 A CTACTB 000001 A CTACTZ 000001 A CTADN
000000 A CTADNB 000020 A CTADNZ 000011 A CTBIC  000000 A CTBICB
000020 A CTBICZ 000003 A CTDST  000000 A CTDSTB 000020 A CTDSTZ
000006 A CTDVA  000000 A CTDVAB 000020 A CTDVAZ 000012 A CTFCB
000000 A CTFCBB 000020 A CTFCBZ 000014 A CTFRC  000010 A CTFRCB
000010 A CTFRCZ 000014 A CTFRE  000000 A CTFREB 000010 A CTFREZ
000000 A CTIDB  000000 A CTIDBB 000017 A CTIDBZ 000007 A CTIOA
000000 A CTIOAB 000020 A CTIOAZ 000002 A CTOPM  000000 A CTOPMB
000020 A CTOPMZ 000005 A CTRCN  000000 A CTRCNB 000010 A CTRCNZ
000004 A CTRQB  000000 A CTRQBB 000020 A CTRQBZ 000005 A CTRTR
000010 A CTRTRB 000010 A CTRTRZ 000010 A CTSTA  000000 A CTSTAB
000020 A CTSTAZ 000013 A CTWDS  000000 A CTWDSB 000020 A CTWDSZ
000002 A DCB    000001 A DCBUFF 000003 A DCCHR  000000 A DCCHRB
000020 A DCCHRZ 000002 A DCCNT  000000 A DCRECL 000747 A DISCLK
000745 A DISMP  000444 A DISPIM 000026 A DMBCA  000000 A DMBCAB
000020 A DMBCAZ 000024 A DMCWA  000000 A DMCWAB 000020 A DMCWAZ
000017 A DMFPA  000000 A DMFPAB 000020 A DMFPAZ 000021 A DMLCA
000000 A DMLCAB 000020 A DMLCAZ 000022 A DMLTA  000000 A DMLTAB
000020 A DMLTAZ 000023 A DMPTA  000000 A DMPTAB 000020 A DMPTAZ
000016 A DMRPA  000000 A DMRPAB 000020 A DMRPAZ 000020 A DMSTA
000000 A DMSTAB 000020 A DMSTAZ 000025 A DMSWA  000000 A DMSWAB
000020 A DMSWAZ 000015 A DMTPA  000000 A DMTPAB 000020 A DMTPAZ
000002 A DSCTAD 000000 A DSDASS 000000 A DSDVDN 000002 A DSLCKD
000001 A DSNAME 000000 A DSNORQ 000002 A DSOPCM 000002 A DSPSTI
000002 A DSREWD 000000 A DSUNAM 000002 A DSUNTN 000424 A EIGHT
```

```
000147 A ENACLK 000645 A ENAMP  000244 A ENAPIM 002566 R FC0
002716 R FC01   002622 R FC0A   002647 R FC0B   002655 R FC0C
002666 R FC0D   002743 R FC10   003143 R FC100  003147 R FC100A
003010 R FC20   003016 R FC30   003057 R FC40   003062 R FC50
003135 R FC60   003204 R FC81   003211 R FCEXIT 000465 A FIVE
000423 A FOUR   003224 R FUCRLF 003222 R FUMEM  003223 R FUNC
003221 R FUPEX  003226 R FUTCD  003221 R FUVEN  003214 R FUVST
000003 A IBIBF  000017 A IBIBFB 000001 A IBIBFZ 000003 A IBLAS
000000 A IBLASB 000017 A IBLASZ 000001 A IBLEN  000000 A IBLENB
000020 A IBLENZ 000000 A IBLNK  000000 A IBLNKB 000020 A IBLNKZ
000002 A IBSTA  000000 A IBSTAB 000020 A IBSTAZ 000004 A IBSTS
000000 A IBSTSB 000017 A IBSTSZ 001512 R INPTCR 000300 A LC
000003 A LCABN  000013 A LCABNB 000001 A LCABNZ 000003 A LCASY
000012 A LCASYB 000001 A LCASYZ 000007 A LCBSC  000015 A LCBSCB
000001 A LCBSCZ 000007 A LCCHN  000016 A LCCHNB 000001 A LCCHNZ
000003 A LCCRC  000014 A LCCRCB 000003 A LCCRCZ 000006 A LCCWB
000014 A LCCWBB 000001 A LCCWBZ 000006 A LCCWC  000015 A LCCWCB
000001 A LCCWCZ 000006 A LCCWD  000013 A LCCWDB 000001 A LCCWDZ
000006 A LCCWI  000016 A LCCWIB 000001 A LCCWIZ 000006 A LCCWP
000012 A LCCWPB 000001 A LCCWPZ 000006 A LCCWR  000011 A LCCWRB
000001 A LCCWRZ 000006 A LCCWS  000017 A LCCWSB 000001 A LCCWSZ
000006 A LCCWT  000010 A LCCWTB 000001 A LCCWTZ 000001 A LCIBA
000000 A LCIBAB 000017 A LCIBAZ 000000 A LCIBF  000017 A LCIBFB
000001 A LCIBFZ 000000 A LCIBL  000000 A LCIBLB 000014 A LCIBLZ
000002 A LCIC1  000010 A LCIC1B 000010 A LCIC1Z 000002 A LCIC2
000000 A LCIC2B 000010 A LCIC2Z 000003 A LCIKE  000000 A LCIKEB
000004 A LCIKEZ 000007 A LCITB  000013 A LCITBB 000001 A LCITBZ
000050 A LCJP   000006 A LCLCB  000000 A LCLCBB 000020 A LCLCBZ
000007 A LCLDB  000014 A LCLDBB 000001 A LCLDBZ 000007 A LCLTB
000017 A LCLTBB 000001 A LCLTBZ 000005 A LCOBA  000000 A LCOBAB
000017 A LCOBAZ 000004 A LCOBF  000017 A LCOBFB 000001 A LCOBFZ
000004 A LCOBL  000000 A LCOBLB 000014 A LCOBLZ 000007 A LCOKE
000000 A LCOKEB 000004 A LCOKEZ 000003 A LCRCC  000017 A LCRCCB
000001 A LCRCCZ 000000 A LCSMB  000016 A LCSMBB 000001 A LCSMBZ
000462 A LHW    000017 A LSABN  000015 A LSABNB 000001 A LSABNZ
000017 A LSASC  000011 A LSASCB 000001 A LSASCZ 000014 A LSASY
000013 A LSASYB 000001 A LSASYZ 000020 A LSBSC  000016 A LSBSCB
000001 A LSBSCZ 000015 A LSCC1  000010 A LSCC1B 000010 A LSCC1Z
000015 A LSCC2  000000 A LSCC2B 000010 A LSCC2Z 000017 A LSCHN
000010 A LSCHNB 000001 A LSCHNZ 000017 A LSCRC  000012 A LSCRCB
000003 A LSCRCZ 000012 A LSCTA  000000 A LSCTAB 000020 A LSCTAZ
000017 A LSDSF  000017 A LSDSFB 000001 A LSDSFZ 000013 A LSDST
000000 A LSDSTB 000020 A LSDSTZ 000016 A LSEPF  000016 A LSEPFB
000001 A LSEPFZ 000014 A LSLSP  000000 A LSLSPB 000011 A LSLSPZ
000014 A LSMOD  000016 A LSMODB 000002 A LSMODZ 000020 A LSNTO
000010 A LSNTOB 000006 A LSNTOZ 000014 A LSPAR  000014 A LSPARB
000002 A LSPARZ 000016 A LSPLA  000000 A LSPLAB 000010 A LSPLAZ
000002 A LSRCA  000000 A LSRCAB 000020 A LSRCAZ 000003 A LSREM
000000 A LSREMB 000020 A LSREMZ 000016 A LSRRS  000010 A LSRRSB
000003 A LSRRSZ 000001 A LSRRT  000000 A LSRRTB 000020 A LSRRTZ
000004 A LSRTO  000000 A LSRTOB 000020 A LSRTOZ 000005 A LSSRS
000000 A LSSRSB 000020 A LSSRSZ 000011 A LSSWS  000000 A LSSWSB
000020 A LSSWSZ 000016 A LSTER  000017 A LSTERB 000001 A LSTERZ
000000 A LSTHD  000000 A LSTHDB 000020 A LSTHDZ 000006 A LSWCA
000000 A LSWCAB 000020 A LSWCAZ 000007 A LSWEM  000000 A LSWEMB
000020 A LSWEMZ 000016 A LSWRS  000013 A LSWRSB 000003 A LSWRSZ
000010 A LSWTO  000000 A LSWTOB 000020 A LSWTOZ 000014 A LSXMM
000011 A LSXMMB 000002 A LSXMMZ 000017 A LSYNC  000016 A LSYNCB
000001 A LSYNCZ 000020 A LSYNR  000000 A LSYNRB 000010 A LSYNRZ
000017 A LSYNT  000000 A LSYNTB 000010 A LSYNTZ 000046 A MAP
000045 A MP     000045 A MPMR0  000145 A MPMR1  000245 A MPMR2
000345 A MPMR3  000420 A MT     000461 A NEG    000470 A NINE
000421 A ONE    000001 A PCBSL  000011 A PCBSLB 000001 A PCBSLZ
000000 A PCCLN  000000 A PCCLNB 000010 A PCCLNZ 000002 A PCCTP
000014 A PCCTPB 000004 A PCCTPZ 000001 A PCECH  000014 A PCECHB
000001 A PCECHZ 000000 A PCLLN  000010 A PCLLNB 000010 A PCLLNZ
000002 A PCNTD  000000 A PCNTDB 000004 A PCNTDZ 000001 A PCPCH
000000 A PCPCHB 000010 A PCPCHZ 000001 A PCSWL  000010 A PCSWLB
000001 A PCSWLZ 000002 A PCTYP  000010 A PCTYPB 000004 A PCTYPZ
000001 A PCXMM  000012 A PCXMMB 000002 A PCXMMZ 000040 A PIM1
000041 A PIM2   000042 A PIM3   000043 A PIM4   000040 A PIM5
000040 A PIM6   000040 A PIM7   000040 A PIM8   000200 A POST
000003 A PSABN  000015 A PSABNB 000001 A PSABNZ 000000 A PSASY
000013 A PSASYB 000001 A PSASYZ 000002 A PSBADT 000000 A PSBEG
000004 A PSBSC  000016 A PSBSCB 000016 A PSBSCZ 000001 A PSCC1
000010 A PSCC1B 000010 A PSCC1Z 000001 A PSCC2  000000 A PSCC2B
000010 A PSCC2Z 000003 A PSCRC  000012 A PSCRCB 000003 A PSCRCZ
000002 A PSDEF  000010 A PSDEFB 000001 A PSDEFZ 000003 A PSDSF
000017 A PSDSFB 000001 A PSDSFZ 000002 A PSDWN  000011 A PSDWNB
000001 A PSDWNZ 000004 A PSEND  000002 A PSEPF  000016 A PSEPFB
000001 A PSEPFZ 000000 A PSLSP  000000 A PSLSPB 000011 A PSLSPZ
000000 A PSMOD  000016 A PSMODB 000002 A PSMODZ 000003 A PSNSEC
000000 A PSPAR  000014 A PSPARB 000002 A PSPARZ 000002 A PSPLA
000000 A PSPLAB 000010 A PSPLAZ 000001 A PSPROT 000002 A PSTER
000017 A PSTERB 000001 A PSTERZ 000000 A PSXMM  000011 A PSXMMB
000002 A PSXMMZ 000003 A PSYNC  000016 A PSYNCB 000001 A PSYNCZ
000004 A PSYNR  000000 A PSYNRB 000010 A PSYNRZ 000003 A PSYNT
000000 A PSYNTB 000010 A PSYNTZ 000040 A RA0    000000 A RA1
000004 A RADNR  000060 A RB0    000020 A RB1    000167 R RD09
000223 R RD10   000545 R RD100  000662 R RD100A 000601 R RD100X
000612 R RD100Y 000253 R RD10A  000262 R RD15   000274 R RD15A
000310 R RD20   000670 R RD200  001052 R RD200A 001070 R RD200B
001100 R RD200C 000747 R RD200X 001007 R RD200Y 000710 R RD200Z
001106 R RD201  001144 R RD201B 001147 R RD201C 001117 R RD201X
001130 R RD201Y 001157 R RD202  001174 R RD202A 001205 R RD202B
```

```
001225 R RD203   001300 R RD203A 001236 R RD203X 001247 R RD203Y
001274 R RD203Z  000330 R RD30    001305 R RD300  001360 R RD300A
001327 R RD300X  001340 R RD300Y  001350 R RD300Z 000337 R RD30A
000351 R RD30B   000423 R RD40    001365 R RD400  001402 R RD400A
001417 R RD400B  001430 R RD400C  001463 R RD401  001467 R RD402A
001473 R RD403   001475 R RD404   000445 R RD40A  000454 R RD40B
000500 R RD50    000526 R RD50A   001507 R RDBLEN 001510 R RDBUFF
001505 R RDMEM   001506 R RDMODE  001504 R RDRQST 001503 R RDTCD
000002 A RFCB    000463 A RHW     000001 A RQPWD  000002 A RQBLK
000002 A RQST    000000 A RSTPR   000003 A RTIDB  000032 R SAVA
000033 R SAVB    000120 R SAVR    000467 A SEVEN  000466 A SIX
000044 R ST1     000051 R ST1A    000054 R ST2    000027 A TBATSK
000026 A TBCPTH  000011 A TBENTY  000003 A TBEVNT 000021 A TBIO
000014 A TBISA   000015 A TBISB   000017 A TBISP  000020 A TBISRS
000034 A TBIST   000016 A TBISX   000032 A TBKEY  000022 A TBKN1
000023 A TBKN2   000024 A TBKN3   000033 A TBMIMG 000032 A TBNUCL
000002 A TBPL    000004 A TBRSA   000005 A TBRSB  000030 A TBRSE
000007 A TBRSP   000010 A TBRSTS  000006 A TBRSX  000000 A TBS0
000001 A TBS1    000012 A TBS10   000013 A TBS11  000014 A TBS12
000015 A TBS13   000016 A TBS14   000017 A TBS15  000002 A TBS2
000003 A TBS3    000004 A TBS4    000005 A TBS5   000006 A TBS6
000007 A TBS7    000010 A TBS8    000011 A TBS9   000031 A TBSIZ
000001 A TBST    000025 A TBTLC   000013 A TBTMIN 000012 A TBTMS
000000 A TBTRD   003112 E TC$BRQ  003153 E TC$CRQ 001371 E TC$FRR
002412 E TC$FWR  000004 A TCBSL   000011 A TCBSLB 000001 A TCBSLZ
000003 A TCCLN   000000 A TCCLNB  000010 A TCCLNZ 000004 A TCCON
000015 A TCCONB  000001 A TCCONZ  000002 A TCCTA  000000 A TCCTAB
000020 A TCCTAZ  000005 A TCCTP   000014 A TCCTPB 000004 A TCCTPZ
000001 A TCD     000012 A TCDCC   000000 A TCDCCB 000020 A TCDCCZ
000014 A TCDTO   000000 A TCDTOB  000020 A TCDTOZ 000004 A TCECH
000014 A TCECHB  000001 A TCECHZ  000015 A TCID1  000000 A TCID1B
000020 A TCID1Z  000016 A TCID2   000000 A TCID2B 000020 A TCID2Z
000006 A TCLDF   000014 A TCLDFB  000001 A TCLDFZ 000003 A TCLLN
000010 A TCLLNB  000010 A TCLLNZ  000005 A TCNOD  000004 A TCNODB
000004 A TCNODZ  000005 A TCNTD   000000 A TCNTDB 000004 A TCNTDZ
000004 A TCPCH   000000 A TCPCHB  000010 A TCPCHZ 000004 A TCRBC
000017 A TCRBCB  000001 A TCRBCZ  000013 A TCRBF  000000 A TCRBFB
000020 A TCRBFZ  000007 A TCRCA   000000 A TCRCAB 000020 A TCRCAZ
000006 A TCRMD   000000 A TCRMDB  000003 A TCRMDZ 000001 A TCRQH
000000 A TCRQHB  000020 A TCRQHZ  000006 A TCRRS  000006 A TCRRSB
000003 A TCRRSZ  000010 A TCSTO   000000 A TCSTOB 000020 A TCSTOZ
000004 A TCSWL   000010 A TCSWLB  000001 A TCSWLZ 000000 A TCTCD
000000 A TCTCDB  000020 A TCTCDZ  000005 A TCTYP  000010 A TCTYPB
000004 A TCTYPZ  000004 A TCWBC   000016 A TCWBCB 000001 A TCWBCZ
000011 A TCWCA   000000 A TCWCAB  000020 A TCWCAZ 000006 A TCWMD
000003 A TCWMDB  000003 A TCWMDZ  000006 A TCWRS  000011 A TCWRSB
000003 A TCWRSZ  000004 A TCXMM   000012 A TCXMMB 000002 A TCXMMZ
001511 R TEMP    000471 A TEN     000464 A THREE  000002 A TIDSP
000000 A TIDSPB  000007 A TIDSPZ  000002 A TIDWN  000017 A TIDWNB
000001 A TIDWNZ  000000 A TINET   000000 A TINETB 000020 A TINETZ
000003 A TIODN   000017 A TIODNB  000001 A TIODNZ 000003 A TIODP
000000 A TIODPB  000007 A TIODPZ  000003 A TIOSC  000007 A TIOSCB
000010 A TIOSCZ  000002 A TISEC   000007 A TISECB 000010 A TISECZ
000000 A TITU1   000000 A TITU1B  000020 A TITU1Z 000001 A TITU2
000000 A TITU2B  000020 A TITU2Z  000017 A TPFPA  000000 A TPFPAB
000020 A TPFPAZ  000015 A TPRPA   000000 A TPRPAB 000020 A TPRPAZ
000016 A TPWPA   000000 A TPWPAB  000020 A TPWPAZ 000422 A TWO
001516 R TYBELL  001515 R TYBKAR  000056 R TYBKBF 001521 R TYBKBK
001520 R TYBLK   001514 R TYBSLH  002532 R TYCNL  001513 R TYCR
001517 R TYCRLF  002530 R TYFORM  002534 R TYFUNC 002533 R TYLF
002527 R TYLFLF  002525 R TYONE   000000 R TYRDCC 000121 R TYREAD
000034 R TYSTCB  001522 R TYWRIT  002526 R TYZER  000403 A V$1MIN
000415 A V$BFC   000075 A V$BGLB  000056 A V$BIC1 000315 A V$BTB
000331 A V$BTBM  000414 A V$BVN   000334 A V$CAM  000353 A V$CKB
000411 A V$CKIT  000310 A V$CKPT  000301 A V$CPL  000076 A V$CRDM
000341 A V$CRDR  000354 A V$CRM   000302 A V$CRS  000360 A V$CTAD
000300 A V$CTL   000351 A V$CTMS  000070 A V$DATE 000355 A V$DSTB
000376 A V$ERFG  003173 E V$EXEC  000347 A V$FGLB 000306 A V$FLRS
000350 A V$FREE  000332 A V$GFCB  000320 A V$IM   000410 A V$IOA
000412 A V$JCB   000055 A V$JCFG  000077 A V$JCTM 000050 A V$JNAM
000377 A V$JOP   000340 A V$KEY   000054 A V$LCNT 000313 A V$LER
000356 A V$LIT   000317 A V$LLUP  000317 A V$LPP  000307 A V$LRSK
000312 A V$LSAL  000345 A V$LUNT  000316 A V$LUP  000400 A V$LUT1
000401 A V$LUT2  000402 A V$LUT3  000330 A V$MAP  000333 A V$MIMG
000330 A V$MPM   000362 A V$NCTR  000316 A V$NPAG 000413 A V$OCB
000346 A V$OPCF  000311 A V$OPCL  000357 A V$PGT  000363 A V$PIMN
000074 A V$PLCT  000305 A V$PTVB  000361 A V$SCTL 000352 A V$SCV
000375 A V$SLFG  000334 A V$ST0   000335 A V$ST1  000336 A V$ST2
000337 A V$ST3   000303 A V$TB    000342 A V$TBGT 000416 A V$TFC
000314 A V$TJCP  000344 A V$TMN   000343 A V$TMS  000304 A V$UTB
000001 A VORTEX  003102 E VT$GTM  003166 E VT$MP1 003175 E VT$PTM
002521 R WDCNT   001603 R WR09    001617 R WR10   002105 R WR100
002116 R WR100A  002152 R WR101   002167 R WR102  002176 R WR103
002212 R WR104   002227 R WR105   002255 R WR105A 002273 R WR105B
002247 R WR105X  002267 R WR105Y  002302 R WR106  002311 R WR107
001645 R WR10A   001654 R WR15    001665 R WR15A  001700 R WR20
002326 R WR200   002341 R WR200A  002373 R WR200B 002401 R WR201
001720 R WR30    002406 R WR300   002442 R WR300A 002462 R WR300B
002505 R WR300C  001730 R WR30A   001741 R WR30B  001763 R WR40
002003 R WR40A   002011 R WR50    002044 R WR50A  002053 R WR50B
002057 R WR60    002077 R WR70    002515 R WRBLEN 002516 R WRBUFF
002522 R WRFMCC  002513 R WRMEM   002514 R WRMODE 002517 R WRQSTA
002520 R WRTCD   000001 A X       000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE
```

```
1643   1        *
 159   ADAT     *
  38   ANAM     *
  90   ANAN     *
 574   APIM      584   585
 108   B          98   117   229   230   252   255   257  1491  1534
                1541  1545  1581  1587  1690  1758  1765  1776  1811
                1812  1815  1832  1842  1870  1884  1891  1892  1920
                1947  1967  2003  2044  2045  2071  2077  2090  2093
                2094  2123  2134  2135  2141  2142  2166  2176  2179
                2180  2219  2225  2228  2229  2271  2302  2415  2486
                2494  2507  2525  2526  2529  2551  2560  2563  2567
                2592  2623  2630  2631  2640  2646  2680  2693  2746
                2747  2750  2772  2794  2827  2830  2833  2838  2842
                2844  2851  2875  2933  2934  2939  2973  3020  3021
                3028  3036  3063  3098  3129  3168  3169  3174  3199
  88   B&         82
  83   B&0        40
  80   B&1        78
  44   B&10       42
  76   B&2        74
  72   B&3        70
  68   B&4        66
  64   B&5        62
  60   B&6        58
  56   B&7        54
  52   B&8        50
  48   B&9        46
 543   B0       *
 544   B1       *
 553   B10      *
 554   B11      *
 555   B12      *
 556   B13      *
 557   B14      *
 558   B15      *
 545   B2       *
 546   B3       *
 547   B4       *
 548   B5       *
 549   B6       *
 550   B7       *
 551   B8       *
 552   B9       *
 630   BICNUM   *
1594   BKBF1     1576  1593
1602   BKBF2     1606
1607   BKBF3     1602
2897   BLKCNT    2654  2686  2688  2699  2701  2709  2711  2713  2723
 515   BM1        79
 518   BM17       67
 521   BM177      55
 524   BM1777     43
 516   BM3        75
 519   BM37       63
 522   BM377      51
 517   BM7        71
 520   BM77       59
 523   BM777      47
 486   BR0       202
 487   BR1      *
 496   BR10     *
 497   BR11     *
 498   BR12     *
 499   BR13     *
 500   BR14     *
 501   BR15      1695  1902  1989  2139  2420  2565  2638  2831  2980
 488   BR2      *
 489   BR3      *
 490   BR4      *
 491   BR5      *
 492   BR6      *
 493   BR7      *
 494   BR8      *
 495   BR9      *
 470   BS0        195   209
 471   BS1       1701  1711  2432  2442  2996  3154
 480   BS10     *
 481   BS11     *
 482   BS12     *
 483   BS13     *
 484   BS14     *
 485   BS15      1502  1705  1822  1925  1931  1934  2279  2436  2593
                2780  2990  3047  3069  3104
 472   BS2      *
 473   BS3      *
 474   BS4      *
 475   BS5      *
 476   BS6      *
 477   BS7      *
 478   BS8       1992  3077  3109
 479   BS9      *
1507   CC1       1492
1397   CHAFP    *
1398   CHAFPB   *
```

```
1399   CHAFPZ  *
1401   CHARP   *
1402   CHARPB  *
1403   CHARPZ  *
1405   CHCFP   *
1406   CHCFPB  *
1407   CHCFPZ  *
1409   CHCRP   *
1410   CHCRPB  *
1411   CHCRPZ  *
1413   CHRBL   *
1414   CHRBLB  *
1415   CHRBLZ  *
2896   CHRCNT  2580  2589  2595  2660  2673  2687  2700  2722
 198   CLEARF  *
 567   CLOCK    569   570
 622   CDTAD1  *
 707   CTACT   *
 708   CTACTB  *
 709   CTACTZ  *
 715   CTADN   *
 716   CTADNB  *
 717   CTADNZ  *
 751   CTBIC   *
 752   CTBICB  *
 753   CTBICZ  *
 723   CTDST   *
 724   CTDSTB  *
 725   CTDSTZ  *
 739   CTDVA   *
 740   CTDVAB  *
 741   CTDVAZ  *
 755   CTFCB   *
 756   CTFCBB  *
 757   CTFCBZ  *
 763   CTFRC   *
 764   CTFRCB  *
 765   CTFRCZ  *
 767   CTFRE   *
 768   CTFREB  *
 769   CTFREZ  *
 711   CTIDB   *
 712   CTIDBB  *
 713   CTIDBZ  *
 743   CTIOA   *
 744   CTIOAB  *
 745   CTIOAZ  *
 719   CTOPM   *
 720   CTOPMB  *
 721   CTOPMZ  *
 735   CTRCN   *
 736   CTRCNB  *
 737   CTRCNZ  *
 727   CTRQB   *
 728   CTRQBB  *
 729   CTRQBZ  *
 731   CTRTR   *
 732   CTRTRB  *
 733   CTRTRZ  *
 747   CTSTA   *
 748   CTSTAB  *
 749   CTSTAZ  *
 759   CTWDS   2271  2851
 760   CTWDSB  *
 761   CTWDSZ  *
1776   DCB     1779  1781  1895  1897  2138  2510  2512  2634  2636
               3039  3149
 688   DCBUFF  1781  1897  2093  2138  2141  2179  2228  2512  2563
               2636  2830
 691   DCCHR   *
 692   DCCHRB  *
 693   DCCHRZ  *
 689   DCCNT   3039  3149
 687   DCRECL  1779  1895  2094  2142  2180  2229  2510  2634
 187   DINTS   *
 569   DISCLK   189
 589   DISMP   *
 584   DISPIM   188
 813   DMBCA   *
 814   DMBCAB  *
 815   DMBCAZ  *
 805   DMCWA   *
 806   DMCWAB  *
 807   DMCWAZ  *
 785   DMFPA   *
 786   DMFPAB  *
 787   DMFPAZ  *
 793   DMLCA   *
 794   DMLCAB  *
 795   DMLCAZ  *
 797   DMLTA   *
 798   DMLTAB  *
 799   DMLTAZ  *
 801   DMPTA   *
 802   DMPTAB  *
```

```
803   DMPTAZ   *
781   DMRPA    *
782   DMRPAB   *
783   DMRPAZ   *
789   DMSTA    *
790   DMSTAB   *
791   DMSTAZ   *
809   DMSWA    *
810   DMSWAB   *
811   DMSWAZ   *
777   DMTPA    *
778   DMTPAB   *
779   DMTPAZ   *
615   DSCTAD   *
601   DSDASS   *
600   DSDVDN   *
612   DSLCKD   *
609   DSNAME   *
608   DSNORQ   *
613   DSOPCM   *
614   DSPSTI   *
610   DSREWD   *
606   DSUNAM   *
611   DSUNTN   *
512   EIGHT     143    167
183   EINTS    *
570   ENACLK    185
590   ENAMP    *
585   ENAPIM    184
  0   ERROR     113    193    200    207
2964  FC0       2943
3032  FC01      2941   2945
2984  FC0A      2975
3003  FC0B      2998
3008  FC0C      3004
3015  FC0D      2987
2958  FC1       2951   2952
3054  FC10      3034
3164  FC100     3082   3203
3176  FC100A    3155   3207
3189  FC100B    3182   3183
3081  FC20      3074   3106   3136
3089  FC30      3213
3115  FC40      3214
3117  FC50      3116   3215
3146  FC60      3216
3205  FC81      3044
3208  FCEXIT    2970   3060   3095   3126
 128  FETCHA   *
 509  FIVE       149    173   1692   1986   2417   2977   3138
 508  FOUR       151    175   1767   2496   2579
3222  FUCRLF    3103
3220  FUMEM     2971   2983   2984   3001   3003   3012   3027   3029   3061
                3067   3080   3081   3096   3101   3112   3127   3143   3173
                3200
3221  FUNC      3042   3045
3219  FUPEX     3048   3049
3224  FUTCD     2982   2985
3218  FUVEN     3043
3212  FUVST     3043   3046
1445  GETMEM   *
 251  GETQ     *
1432  IBIBF    *
1433  IBIBFB   *
1434  IBIBFZ   *
1436  IBLAS    *
1437  IBLASB   *
1438  IBLASZ   *
1424  IBLEN    *
1425  IBLENB   *
1426  IBLENZ   *
1420  IBLNK    *
1421  IBLNKB   *
1422  IBLNKZ   *
1428  IBSTA    *
1429  IBSTAB   *
1430  IBSTAZ   *
1440  IBSTS    *
1441  IBSTSB   *
1442  IBSTSZ   *
2334  INPTCR    2020   2033   2039   2056   2112
 378  LC         379    380    381    382    383    384    385    386    387
                 388    389    390    391    392    393    394    395    396
                 397    398    399    400    401    402    403    404    405
                 406    407    408    410    411    412    413    414    415
                 416    417    418    419    420    421    422    423    424
                 426    427    428    429    434    435    436    437    438
                 439    440    447    448    449    452    457    458    459
 855  LCABN    *
 856  LCABNB   *
 857  LCABNZ   *
 859  LCASY    *
 860  LCASYB   *
 861  LCASYZ   *
 923  LCBSC    *
```

```
924   LCBSCB   *
925   LCBSCZ   *
919   LCCHN    *
920   LCCHNB   *
921   LCCHNZ   *
851   LCCRC    *
852   LCCRCB   *
853   LCCRCZ   *
895   LCCWB    *
896   LCCWBB   *
897   LCCWBZ   *
891   LCCWC    *
892   LCCWCB   *
893   LCCWCZ   *
899   LCCWD    *
900   LCCWDB   *
901   LCCWDZ   *
887   LCCWI    *
888   LCCWIB   *
889   LCCWIZ   *
903   LCCWP    *
904   LCCWPB   *
905   LCCWPZ   *
907   LCCWR    *
908   LCCWRB   *
909   LCCWRZ   *
883   LCCWS    *
884   LCCWSB   *
885   LCCWSZ   *
911   LCCWT    *
912   LCCWTB   *
913   LCCWTZ   *
835   LCIBA    *
836   LCIBAB   *
837   LCIBAZ   *
823   LCIBF    *
824   LCIBFB   *
825   LCIBFZ   *
831   LCIBL    *
832   LCIBLB   *
833   LCIBLZ   *
839   LCIC1    *
840   LCIC1B   *
841   LCIC1Z   *
843   LCIC2    *
844   LCIC2B   *
845   LCIC2Z   *
863   LCIKE    *
864   LCIKEB   *
865   LCIKEZ   *
931   LCITB    *
932   LCITBB   *
933   LCITBZ   *
353   LCJP      354   355   356   363   364   365   366   367   370
879   LCLCB    *
880   LCLCBB   *
881   LCLCBZ   *
927   LCLDB    *
928   LCLDBB   *
929   LCLDBZ   *
915   LCLTB    *
916   LCLTBB   *
917   LCLTBZ   *
875   LCOBA    *
876   LCOBAB   *
877   LCOBAZ   *
867   LCOBF    *
868   LCOBFB   *
869   LCOBFZ   *
871   LCOBL    *
872   LCOBLB   *
873   LCOBLZ   *
935   LCOKE    *
936   LCOKEB   *
937   LCOKEZ   *
847   LCRCC    *
848   LCRCCB   *
849   LCRCCZ   *
827   LCSMB    *
828   LCSMBB   *
829   LCSMBZ   *
503   LHW       1542  1582  2824
1049  LSABN    *
1050  LSABNB   *
1051  LSABNZ   *
1057  LSASC    *
1058  LSASCB   *
1059  LSASCZ   *
1001  LSASY    *
1002  LSASYB   *
1003  LSASYZ   *
1069  LSBSC    *
1070  LSBSCB   *
1071  LSBSCZ   *
1013  LSCC1    *
```

```
1014   LSCC1B   *
1015   LSCC1Z   *
1017   LSCC2    *
1018   LSCC2B   *
1019   LSCC2Z   *
1061   LSCHN    *
1062   LSCHNB   *
1063   LSCHNZ   *
1053   LSCRC    *
1054   LSCRCB   *
1055   LSCRCZ   *
 985   LSCTA    *
 986   LSCTAB   *
 987   LSCTAZ   *
1041   LSDSF    *
1042   LSDSFB   *
1043   LSDSFZ   *
 989   LSDST    *
 990   LSDSTB   *
 991   LSDSTZ   *
1025   LSEPF    *
1026   LSEPFB   *
1027   LSEPFZ   *
1009   LSLSP    *
1010   LSLSPB   *
1011   LSLSPZ   *
 993   LSMOD    *
 994   LSMODB   *
 995   LSMODZ   *
1073   LSNTO    *
1074   LSNTOB   *
1075   LSNTOZ   *
 997   LSPAR    *
 998   LSPARB   *
 999   LSPARZ   *
1037   LSPLA    *
1038   LSPLAB   *
1039   LSPLAZ   *
 953   LSRCA    *
 954   LSRCAB   *
 955   LSRCAZ   *
 957   LSREM    *
 958   LSREMB   *
 959   LSREMZ   *
1033   LSRRS    *
1034   LSRRSB   *
1035   LSRRSZ   *
 949   LSRRT    *
 950   LSRRTB   *
 951   LSRRTZ   *
 961   LSRTO    *
 962   LSRTOB   *
 963   LSRTOZ   *
 965   LSSRS    *
 966   LSSRSB   *
 967   LSSRSZ   *
 981   LSSWS    *
 982   LSSWSB   *
 983   LSSWSZ   *
1021   LSTER    *
1022   LSTERB   *
1023   LSTERZ   *
 945   LSTHD    *
 946   LSTHDB   *
 947   LSTHDZ   *
 969   LSWCA    *
 970   LSWCAB   *
 971   LSWCAZ   *
 973   LSWEM    *
 974   LSWEMB   *
 975   LSWEMZ   *
1029   LSWRS    *
1030   LSWRSB   *
1031   LSWRSZ   *
 977   LSWTO    *
 978   LSWTOB   *
 979   LSWTOZ   *
1005   LSXMM    *
1006   LSXMMB   *
1007   LSXMMZ   *
1045   LSYNC    *
1046   LSYNCB   *
1047   LSYNCZ   *
1077   LSYNR    *
1078   LSYNRB   *
1079   LSYNRZ   *
1065   LSYNT    *
1066   LSYNTB   *
1067   LSYNTZ   *
 591   MAP      1533  1540  1549  1579  1589  1601  1609  1778  1783
                1894  1899  2092  2096  2137  2144  2178  2182  2227
                2231  2509  2514  2562  2569  2633  2645  2648  2679
                2682  2692  2695  2829  2836  2840  3038  3041  3148
                3151
 588   MP        589   590   592   593   594   595
```

```
592   MPMR0    *
593   MPMR1    *
594   MPMR2    *
595   MPMR3    *
468   MT        469   470   471   472   473   474   475   476   477
                478   479   480   481   482   483   484   485   486
                487   488   489   490   491   492   493   494   495
                496   497   498   499   500   501   502   503   504
                505   506   507   508   509   510   511   512   513
                514   515   516   517   518   519   520   521   522
                523   524
502   NEG      3208
513   NINE      141   165
505   ONE       157   181  3065  3115
  0   P          27    29    30    36    39    41    45    49    53
                 57    61    65    69    73    77    81    84    85
                 85    86    87    91    92    92    93    94    97
                 99   100   101   101   102   103   104   105   106
                107   107   109   109   112   114   115   115   116
                118   118   119   120   121   123   124   125   125
                129   129   130   131   132   132   133   136   137
                138   140   142   144   146   148   150   152   154
                156   160   161   162   164   166   168   170   172
                174   176   178   180   192   194   194   195   196
                196   199   201   201   202   203   203   206   208
                208   209  1446  1447  1458  1459
1329  PCBSL    *
1330  PCBSLB   *
1331  PCBSLZ   *
1317  PCCLN    *
1318  PCCLNB   *
1319  PCCLNZ   *
1341  PCCTP    *
1342  PCCTPB   *
1343  PCCTPZ   *
1321  PCECH    *
1322  PCECHB   *
1323  PCECHZ   *
1313  PCLLN    *
1314  PCLLNB   *
1315  PCLLNZ   *
1349  PCNTD    *
1350  PCNTDB   *
1351  PCNTDZ   *
1337  PCPCH    *
1338  PCPCHB   *
1339  PCPCHZ   *
1333  PCSWL    *
1334  PCSWLB   *
1335  PCSWLZ   *
1345  PCTYP    *
1346  PCTYPB   *
1347  PCTYPZ   *
1325  PCXMM    *
1326  PCXMMB   *
1327  PCXMMZ   *
 575  PIM1     *
 576  PIM2     *
 577  PIM3     *
 578  PIM4     *
 579  PIM5     *
 580  PIM6     *
 581  PIM7     *
 582  PIM8     *
 699  POST     *
1287  PSABN    *
1288  PSABNB   *
1289  PSABNZ   *
1239  PSASY    *
1240  PSASYB   *
1241  PSASYZ   *
 670  PSBADT   *
 666  PSBEG    *
1299  PSBSC    *
1300  PSBSCB   *
1301  PSBSCZ   *
1251  PSCC1    *
1252  PSCC1B   *
1253  PSCC1Z   *
1255  PSCC2    *
1256  PSCC2B   *
1257  PSCC2Z   *
1291  PSCRC    *
1292  PSCRCB   *
1293  PSCRCZ   *
1271  PSDEF    *
1272  PSDEFB   *
1273  PSDEFZ   *
1279  PSDSF    *
1280  PSDSFB   *
1281  PSDSFZ   *
1267  PSDWN    *
1268  PSDWNB   *
1269  PSDWNZ   *
 672  PSEND    *
```

```
1263   PSEPF    *
1264   PSEPFB   *
1265   PSEPFZ   *
1247   PSLSP    *
1248   PSLSPB   *
1249   PSLSPZ   *
1231   PSMOD    *
1232   PSMODB   *
1233   PSMODZ   *
 671   PSNSEC   *
1235   PSPAR    *
1236   PSPARB   *
1237   PSPARZ   *
1275   PSPLA    *
1276   PSPLAB   *
1277   PSPLAZ   *
 667   PSPROT   *
1259   PSTER    *
1260   PSTERB   *
1261   PSTERZ   *
1243   PSXMM    *
1244   PSXMMB   *
1245   PSXMMZ   *
1283   PSYNC    *
1284   PSYNCB   *
1285   PSYNCZ   *
1303   PSYNR    *
1304   PSYNRB   *
1305   PSYNRZ   *
1295   PSYNT    *
1296   PSYNTB   *
1297   PSYNTZ   *
  32   PUSH     *
1457   PUTMEM   *
 228   PUTQ     *
 532   RA0      1886  1972  2221  2625  2775
 533   RA1      1887  2222  2626  2668  2776  2987
 651   RADNR    *
 534   RB0      *
 535   RB1      1530
1673   RD04     1666  1667
1679   RD09     1657
1698   RD10     1689
1880   RD100    1871  1950  2167  2311
1946   RD100A   1921
1908   RD100X   1906
1913   RD100Y   1910  1912
1718   RD10A    1713
1723   RD15     1719
1730   RD15A    1702
1740   RD20     1654  1659
1958   RD200    1948  1980  2012  2078  2080  2126  2169  2315
2039   RD200A   2030  2035  2209
2068   RD200B   2058  2194
2076   RD200C   2072
2082   RD200D   2042  2047
1997   RD200X   1984
2017   RD200Y   1975
1977   RD200Z   1970
2088   RD201    2022  2064
2118   RD201B   2114
2120   RD201C   2117
2099   RD201X   2097
2104   RD201Y   2101  2103
2131   RD202    2025
2147   RD202A   2145
2152   RD202B   2149  2151
2174   RD203    2028
2206   RD203A   2203
2185   RD203X   2183
2190   RD203Y   2187  2189
2202   RD203Z   2199
1756   RD30     1742
2215   RD300    2124  2250  2318
2250   RD300A   2245
2234   RD300X   2232
2239   RD300Y   2236  2238
2244   RD300Z   2242
1764   RD30A    1745  1750
1771   RD30B    1768
1807   RD40     1798
2259   RD400    1833  2005  2251  2252  2308  2319  2322
2268   RD400A   2265  2267
2277   RD400B   2274
2280   RD400C   2276
2293   RD400D   2286  2287
2311   RD401    1886  1887
2315   RD402A   1972  1974  2037
2318   RD403    2221  2222
2319   RD404    2312  2316
1831   RD40A    1818
1836   RD40B    1748  1760
1851   RD50     1791
1861   RD50A    1852
2331   RDBLEN   1780  1824  1896  1904
```

```
2332   RDBUFF   1784  1826  1900  1905  1933
2329   RDMEM    1490  1506  1652  1686  1697  1698  1716  1718  1727
                1797  1804  1814  1829  1831  1836  1843  1851  1858
                1869  1882  1919  1944  1946  1965  2006  2070  2074
                2076  2122  2155  2165  2217  2261  2268  2272  2297
                2304
2330   RDMODE   1772  1790
2328   RDRQST   1650  1661  1733  1764  1774  1810  1889  2043  2132
                2263  2280
2327   RDTCD    1647  1699  1994  1997
 649   RFCB     1775  1891  2090  2134  2176  2225  2506  2560  2630
                2827  3035
 504   RHW      1495  1708  1821  1924  2439  2535  2600  2642  2683
                2748  2834  2993
 645   RDPWD    1759  1766  2487  2495  3032
1491   RQBLK    1493  1494  1497  1499  1503  1505  1691  1694  1696
                1700  1704  1706  1707  1710  1712  1714  1720  1817
                1819  1820  1823  1825  1827  1834  1872  1885  1922
                1923  1926  1928  1932  1949  1971  1985  1988  1990
                1991  1993  2007  2018  2036  2073  2079  2125  2168
                2220  2269  2275  2416  2419  2421  2431  2435  2437
                2438  2441  2443  2445  2451  2531  2533  2534  2537
                2539  2541  2553  2594  2596  2598  2599  2602  2612
                2624  2651  2774  2778  2781  2785  2788  2789  2804
                2823  2846  2853  2976  2979  2981  2986  2989  2991
                2992  2995  2997  2999  3005  3066  3070  3073  3075
                3076  3078  3083  3102  3105  3107  3108  3110  3134
                3135  3137  3140  3141  3175
1758   RQST     1759  1766  1775  2487  2495  2506  3032  3035
 642   RSTPR    2794  2842
 650   RTIDB    1811  2044  2525  2933  3020  3168
1508   SAVA     1488  1498
1509   SAVB     1489  1504
1613   SAVR     1574  1590  1594  1596  1610
  96   SETA     *
 111   SETB     *
 191   SETF     *
 511   SEVEN     145   169
 510   SIX       147   171
  26   SPACE    *
1537   ST1      1530
1544   ST1A     1538
1547   ST2      1536
 135   SUBAT    *
 288   TBATSK   *
 287   TBCPTH   *
 274   TBENTY   *
 268   TBEVNT   *
 282   TBID     *
 277   TBISA    *
 278   TBISB    *
 280   TBISP    *
 281   TBISRS   *
 294   TBIST    *
 279   TBISX    *
 292   TBKEY    1812  2045  2526  2934  3021  3169
 283   TBKN1    *
 284   TBKN2    *
 285   TBKN3    *
 293   TBMIMG   *
 291   TBNUCL   *
 267   TBPL     *
 269   TBRSA    *
 270   TBRSB    *
 289   TBRSE    *
 272   TBRSP    *
 273   TBRSTS   *
 271   TBRSX    *
 322   TBS0     *
 321   TBS1     *
 309   TBS10    *
 308   TBS11    *
 306   TBS12    *
 305   TBS13    *
 304   TBS14    *
 302   TBS15    *
 320   TBS2     *
 318   TBS3     *
 317   TBS4     *
 316   TBS5     *
 314   TBS6     *
 313   TBS7     *
 312   TBS8     *
 310   TBS9     *
 290   TBSIZ    *
 266   TBST     *
 286   TBTLC    *
 276   TBTMIN   *
 275   TBTMS    *
 265   TBTRD    *
   0   TC$BRQ   1638  1688  1806  1860  1983  2387  2974  3064  3099
                3130
   0   TC$CRQ   1663  2281  2283  2398  2855  2857  2948  3177  3179
   0   TC$FRR   1637  1648  1732  1888  2088  2131  2174  2223  2262
   0   TC$FWR   2365  2369  2463  2627  2791  2818
```

```
1115   TCBSL    *
1116   TCBSLB   *
1117   TCBSLZ   *
1099   TCCLN    *
1100   TCCLNB   *
1101   TCCLNZ   *
1127   TCCON    1656  1731  2391  2462  2942  3016
1128   TCCONB   1656  1731  2391  2462  2942  3016
1129   TCCONZ   1656  1731  2391  2462  2942  3016
1095   TCCTA    2270  2848
1096   TCCTAB   2848
1097   TCCTAZ   2848
1151   TCCTP    *
1152   TCCTPB   *
1153   TCCTPZ   *
1573   TCD      1653  1656  1658  1715  1726  1729  1731  1740  1744
                1747  1756  1773  1828  1861  1863  1881  1903  1914
                1916  1917  1936  1938  1964  1969  2009  2011  2017
                2029  2032  2049  2059  2061  2063  2068  2069  2105
                2106  2140  2153  2154  2192  2197  2201  2202  2207
                2216  2240  2241  2244  2246  2249  2260  2264  2266
                2270  2273  2278  2306  2307  2321  2388  2391  2393
                2446  2457  2460  2462  2469  2473  2476  2484  2502
                2542  2584  2603  2620  2762  2770  2816  2820  2848
                2878  2940  2942  2944  3000  3011  3014  3016  3030
                3071  3079  3111  3118  3131  3142  3153  3167  3172
                3176  3192  3202
1187   TCDCC    1914  2061  2063  2105  2106  2153  2192  2197  2240
                2246  2249  2266  2321
1188   TCDCCB   1914
1189   TCDCCZ   1914
1195   TCDTO    1917  1969  2009  2017  2069  2307
1196   TCDTOB   1917  1969  2069
1197   TCDTOZ   1917  1969  2069
1123   TCECH    1747  2476  3118  3131
1124   TCECHB   1747  2476  3118  3131
1125   TCECHZ   1747  2476  3118  3131
1199   TCID1    *
1200   TCID1B   *
1201   TCID1Z   *
1203   TCID2    *
1204   TCID2B   *
1205   TCID2Z   *
1171   TCLDF    1658  2393  2944
1172   TCLDFB   1658  2393  2944
1173   TCLDFZ   1658  2393  2944
1103   TCLLN    *
1104   TCLLNB   *
1105   TCLLNZ   *
1143   TCNOD    *
1144   TCNODB   *
1145   TCNODZ   *
1139   TCNTD    *
1140   TCNTDB   *
1141   TCNTDZ   *
1107   TCPCH    1863  3071
1108   TCPCHB   1863  3071
1109   TCPCHZ   1863  3071
1135   TCRBC    1936  2244
1136   TCRBCB   1936  2244
1137   TCRBCZ   1936  2244
1191   TCRBF    1903  2049  2059  2140  2202  2207  2241
1192   TCRBFB   1903
1193   TCRBFZ   1903
1175   TCRCA    1715  1726  1729  1828  1861  1881  1964  2154  2216
                2260  2306  2473  3000  3011  3014  3079  3111  3142
                3172  3192  3202
1176   TCRCAB   1881  1964  2473
1177   TCRCAZ   1881  1964  2473
1155   TCRMD    1773  2264
1156   TCRMDB   1773  2264
1157   TCRMDZ   1773  2264
1091   TCRQH    1756  2484  2932  2938  3019  3030  3167  3176
1092   TCRQHB   1756  2484
1093   TCRQHZ   1756  2484
1163   TCRRS    1938  2011  2029  2032  2201  2273  2278
1164   TCRRSB   1938  2011  2029  2032  2201  2273  2278
1165   TCRRSZ   1938  2011  2029  2032  2201  2273  2278
1179   TCSTO    1916  2068  3153
1180   TCSTOB   1916  2068  3153
1181   TCSTOZ   1916  2068  3153
1111   TCSWL    1653  2388  2940
1112   TCSWLB   1653  2388  2940
1113   TCSWLZ   1653  2388  2940
1087   TCTCD    *
1088   TCTCDB   *
1089   TCTCDZ   *
1147   TCTYP    *
1148   TCTYPB   *
1149   TCTYPZ   *
1131   TCWBC    *
1132   TCWBCB   *
1133   TCWBCZ   *
1183   TCWCA    1744  2446  2457  2460  2542  2584  2603  2620  2770
                2816  2878
```

```
1184   TCWCAB   1744   2620   2770   2816   2878
1185   TCWCAZ   1744   2620   2770   2816   2878
1159   TCWMD    2502   2762   2820
1160   TCWMDB   2502   2762   2820
1161   TCWMDZ   2502   2762   2820
1167   TCWRS    *
1168   TCWRSB   *
1169   TCWRSZ   *
1119   TCXMM    1740   2469
1120   TCXMMB   1740   2469
1121   TCXMMZ   1740   2469
2333   TEMP     1981   1995   1998   2004   2191   2193   2195   2198
 514   TEN       139    163
 205   TESTF    *
 507   THREE     153    177   1741   1771   2470   2500   2777   3100
1375   TIDSP    *
1376   TIDSPB   *
1377   TIDSPZ   *
1367   TIDWN    *
1368   TIDWNB   *
1369   TIDWNZ   *
1391   TINET    *
1392   TINETB   *
1393   TINETZ   *
1379   TIODN    *
1380   TIODNB   *
1381   TIODNZ   *
1387   TIODP    *
1388   TIODPB   *
1389   TIODPZ   *
1383   TIOSC    *
1384   TIOSCB   *
1385   TIOSCZ   *
1371   TISEC    *
1372   TISECB   *
1373   TISECZ   *
1359   TITU1    *
1360   TITU1B   *
1361   TITU1Z   *
1363   TITU2    *
1364   TITU2B   *
1365   TITU2Z   *
1221   TPFPA    *
1222   TPFPAB   *
1223   TPFPAZ   *
1213   TPRPA    *
1214   TPRPAB   *
1215   TPRPAZ   *
1217   TPWPA    *
1218   TPWPAB   *
1219   TPWPAZ   *
 506   TWO       155    179   2115   2161   3033
2338   TYBELL   2034
2337   TYBKAR   2027   2057
1572   TYBKBF   1611   2243
2341   TYBKBK   1599
2340   TYBLK    1586   2208   2571   2573   2684   2697
2336   TYBSLH   2024   2026
2903   TYCNL    2779
2335   TYCR     2021   2023   2113
2339   TYCRLF   2116   2162
2901   TYFORM   2581
2929   TYFUNC   2928   2961   3006   3010   3084   3193   3209
2904   TYLF     2119
2900   TYLFLF   2590
2898   TYONE    2577
1487   TYRDCC   1507   1867   2120   2163
1645   TYREAD     12   1644   1649   1676   1685   1721   1725   1803   1835
                1837   1844   1857   1873
1529   TYSTCB   1550   2050
2367   TYWRIT   2366   2370   2381   2411   2452   2456   2554   2585   2613
                2733   2881
2899   TYZER    2574   2576
 440   V$1MIN   *
 458   V$BFC    *
 366   V$BGLB   *
 363   V$BIC1   *
 392   V$BTB    *
 400   V$BTBM   *
 457   V$BVN    *
 408   V$CAM    *
 420   V$CKB    *
 448   V$CKIT   *
 387   V$CKPT   *
 380   V$CPL    *
 367   V$CRDM   *
 410   V$CRDR   *
 421   V$CRM    *
 381   V$CRS    *
 426   V$CTAD   *
 379   V$CTL    *
 418   V$CTMS   *
 364   V$DATE   *
 422   V$DSTB   *
 435   V$ERFG   *
```

```
  0   V$EXEC   1452  1464  1633  2361  2924
416   V$FGLB   *
385   V$FLRS   *
417   V$FREE   *
401   V$GFCB   *
397   V$IM     *
447   V$IOA    *
449   V$JCB    *
356   V$JCFG   *
370   V$JCTM   *
354   V$JNAM   *
436   V$JOP    *
407   V$KEY    *
355   V$LCNT   *
390   V$LER    *
423   V$LIT    *
395   V$LLUP   *
396   V$LPP    *
386   V$LRSK   *
389   V$LSAL   *
414   V$LUNT   *
394   V$LUP    *
437   V$LUT1   *
438   V$LUT2   *
439   V$LUT3   *
399   V$MAP    *
  0   V$MDAL   1641  1669  2289  2404  2863  2954  3185
402   V$MIMG   *
398   V$MPM    *
428   V$NCTR   *
393   V$NPAG   *
452   V$OCB    *
415   V$OPCF   *
388   V$OPCL   *
424   V$PGT    *
429   V$PIMN   *
365   V$PLCT   *
384   V$PTVB   *
427   V$SCTL   *
419   V$SCV    *
434   V$SLFG   *
403   V$ST0    1549  1589  1609  1783  1899  2096  2144  2182  2231
               2514  2569  2648  2682  2695  2840  3041  3151
404   V$ST1    2836
405   V$ST2    1778  1894  2092  2137  2178  2227  2509  2562  2633
               2679  2692  2829  3038
406   V$ST3    1533  1540  1579  1601  2645  3148
382   V$TB     *
411   V$TBGT   *
459   V$TFC    *
391   V$TJCP   *
413   V$TMN    *
412   V$TMS    *
383   V$UTB    *
  1   VORTEX   1449  1451  1461  1463  1532  1539  1548  1578  1583
               1585  1588  1600  1608  1639  1664  1677  1683  1777
               1782  1785  1799  1801  1808  1816  1838  1840  1853
               1855  1893  1898  1939  1959  1976  1978  1999  2001
               2040  2051  2081  2091  2095  2107  2136  2143  2156
               2177  2181  2226  2230  2284  2298  2300  2371  2376
               2382  2384  2399  2423  2508  2513  2522  2530  2543
               2561  2568  2604  2632  2644  2647  2678  2681  2691
               2694  2782  2795  2828  2835  2839  2858  2871  2873
               2930  2949  2962  2968  3017  3025  3037  3040  3052
               3058  3087  3093  3119  3124  3147  3150  3165  3180
               3195  3197
  0   VT$GTM   1454  1635  2362  2925
  0   VT$MP1   1634  1681  1684  1800  1802  1843  1854  1856  1977
               1979  2004  2303  2304  2364  2374  2379  2876  2927
               2966  2969  3029  3056  3059  3091  3094  3125  3200
  0   VT$PTM   1466  1636  2363  2926
  0   VT$TMP   1642  1680  1788  1942  1962  2046  2054  2110  2159
               2426  2546  2607  2798  2935  2965  3022  3055  3090
               3122  3170
  0   VTPUSH     33    35
2894  WDCNT    2663  2670  2712
2408  WR04     2401  2402
2413  WR09     2392
2429  WR10     2413
2619  WR100    2586  2610  2732  2736  2742
2627  WR100A   2587
2659  WR101    2656
2670  WR102    2658
2677  WR103    2669  2703
2690  WR104    2668
2707  WR105    2685  2689  2698  2702
2722  WR105A   2708
2731  WR105B   2718  2721  2728
2719  WR105X   2716
2729  WR105Y   2726
2736  WR106    2625  2626
2742  WR107    2720  2730
2449  WR10A    2444
2454  WR15     2450
2461  WR15A    2433
```

```
2469   WR20     2389   2394
2761   WR200    2552   2743   2751   2764   2805   2807
2770   WR200A   2763
2802   WR200B   2787
2807   WR201    2775   2776
2484   WR30     2471
2815   WR300    2737   2740   2765   2766   2803   2808   2809   2879   2882
2845   WR300A   2821   2843
2870   WR300B   2883
2881   WR300C   2477   2489
2867   WR300D   2860   2861
2493   WR30A    2474   2478
2500   WR30B    2497
2521   WR40     2734
2550   WR40A    2532
2559   WR50     2504
2583   WR50A    2572   2578
2588   WR50B    2575
2591   WR60     2582
2610   WR70     2597
2890   WRBLEN   2511   2538   2635   2657   2659   2667   2731   2739   2790
                2793   2847   2850
2891   WRBUFF   2515   2540   2564   2637   2655   2664   2675   2707
2895   WRFMCC   2641   2649   2825   2837
2888   WRMEM    2383   2385   2414   2428   2429   2447   2449   2458   2528
                2548   2550   2583   2591   2609   2611   2621   2650   2744
                2773   2800   2802   2817   2822   2845   2852   2870   2876
2889   WRMODE   2501   2503
2892   WRQSTA   2373   2378   2396   2464   2493   2505   2524   2559   2628
                2819   2826   2841   2854
2893   WRTCD    2422   2430
 697   X         232    254   1573   1603   1646   1669   2289   2368   2404
                2863   2932   2937   2938   2954   3019   3185
 469   ZERO     *
```

```
000001 A      1 VORTEX SET     1                PUT LAST FOR VORTEX                                  V2  05 00001
               2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES          05 00002
               3 *                                                                                   05 00003
               4 *        V.D.M.    PART NO.     92L1105-009B                                       05 00004
               5 *                                                                                   05 00005
               6 *                                RELEASED     3-1-74                                05 00006
               7 *                                                                                   05 00007
               8 *                                                                                   05 00008
               9 *                VT$TCQ                                                             05 00009
              10 *                                                                                   05 00010
              11 *                                                                                   05 00011
              12          TITLE   VT$TCQ                                                           05 00012
              13          NLIS                                                                     05 00013
            1443          LIST                                                                     ********
            1444 *                                                                                 05 00014
            1445 GETMEM   MAC                                                                      05 00015
            1446          LDAI    P(2)                                                             05 00016
            1447          LDBI    P(1)                                                             05 00017
            1448          STX     *+6                                                              05 00018
            1449          IFF     VORTEX-2                                                   V2    05 00019
            1450          JSR     0406,1                                                     V2    05 00020
            1451          IFF     VORTEX-1                                                   V2    05 00021
            1452          JSR     V$EXEC,1                                                         05 00022
            1453          DATA    0600                                                             05 00023
            1454          DATA    VT$GTM                                                           05 00024
            1455          LDXI    *                                                                05 00025
            1456          EMAC                                                                     05 00026
            1457 PUTMEM   MAC                                                                      05 00027
            1458          LDAI    P(1)                                                             05 00028
            1459          LDB     P(2)                                                             05 00029
            1460          STX     *+6                                                              05 00030
            1461          IFF     VORTEX-2                                                   V2    05 00031
            1462          JSR     0406,1                                                     V2    05 00032
            1463          IFF     VORTEX-1                                                   V2    05 00033
            1464          JSR     V$EXEC,1                                                         05 00034
            1465          DATA    0600                                                             05 00035
            1466          DATA    VT$PTM                                                           05 00036
            1467          LDXI    *                                                                05 00037
            1468          EMAC                                                                     05 00038
            1469          EJEC                                                                     05 00039
            1470 ************************************************************************************05 00040
            1471 ************************************************************************************05 00041
            1472 **       PROGRAM NAME -                                                       **    05 00042
            1473 **             VT$TCQ - VTAM TCM REQUEST QUEUING PROGRAM                      **    05 00043
            1474 **             TC$OCT - CORE-RESIDENT TASK TO SCHED VT$OCT FROM VT$TCQ        **    05 00044
            1475 **                                                                            **    05 00045
            1476 **       ENTRY CONDITIONS -                                                   **    05 00046
            1477 **             (V$CTL) = ADDRESS OF VT$TCQ TIDB                               **    05 00047
            1478 **             ((V$CTL)+TBRSTS) = TCM CONTROLLER TABLE ADDRESS                **    05 00048
            1479 **                                                                            **    05 00049
            1480 **       EXIT CONDITIONS -                                                    **    05 00050
            1481 **             REQUEST IS QUEUED TO APPROPIATE TERMINAL CONTROLLER            **    05 00051
            1482 **             QUEUE ON APPROPIATE TCM                                        **    05 00052
            1483 **                                                                            **    05 00053
            1484 **       CALLING SEQUENCE -                                                   **    05 00054
            1485 **             BY V$IOC                                                       **    05 00055
            1486 **                                                                            **    05 00056
            1487 ************************************************************************************05 00057
            1488 ************************************************************************************05 00058
            1489          EXT     V$FNRM                                                           05 00059
            1490          EXT     V$ERR                                                            05 00060
            1491          EXT     TC$BRQ                                                           05 00061
            1492          EXT     TC$CRQ                                                           05 00062
            1493          EXT     VT$MP1                                                           05 00063
            1494          EXT     VT$GTM                                                           05 00064
            1495          EXT     VT$PTM                                                           05 00065
            1496          EXT     TIDTEX                                                           05 00066
            1497          EXT     VT$LTT           ENTRY POINT  TO LOG. TERM. TBL.                 05 00067
            1498          EXT     TC$OCM                                                           05 00068
            1499          EXT     TC$FRQ                                                           05 00069
            1500          EXT     TIDOCT                                                           05 00070
            1501          NAME    VT$TCQ,TC$OCT                                                    05 00071
000000      1502 VT$TCQ   BSS     0                                                                05 00072
000000 030300 A 1503      LDX     V$CTL                                                            05 00073
000001 035010 A 1504      LDX     TBRSTS,X                                                         05 00074
000002 074326 A 1505      STX     TQCTBA           SAVE CTBL ADDR                                  05 00075
       000001 A 1506 CTB  SET     X                                                                05 00076
            1507          IFF     VORTEX-2                                                   V2    05 00077
            1508          DINTS                                                              V2    05 00078
000003 025004 A 1509 TQ01 LDB     CTRQB,CTB        CHECK IF NO MORE REQUESTS                       05 00079
000004 001020 A 1510      JBZ     TQ102                                                            05 00080
000005 000151 R
            1511 *                                                                                 05 00081
            1512 *                GET LOGICAL TERMINAL TABLE ENTRY                                 05 00082
            1513 *                                                                                 05 00083
       000002 A 1514 RQST SET     B                                                                05 00084
            1515          IFT     VORTEX-2                                                   V2    05 00085
            1516          GOTO    1                                                          V2    05 00086
            1517          LDB     RTIDB,B          SET B=RQBLK TIDB                          V2    05 00087
            1518          LDA     TBKEY,B          GET MAP KEY                               V2    05 00088
            1519          ANA     BM17                                                       V2    05 00089
            1520          LDB     V$CTL                                                      V2    05 00090
            1521          STA     TBIST,B                                                    V2    05 00091
            1522          ORAI    040040                                                     V2    05 00092
            1523          OAR     MAP                                                        V2    05 00093
```

```
                                1524           STA     V$ST0                                                                V2  05 00094
                                1525           ADD     BS5                                                                  V2  05 00095
                                1526           STA     V$ST1                                                                V2  05 00096
                                1527           ADD     BS6                                                                  V2  05 00097
                                1528           STA     V$ST2                                                                V2  05 00098
                                1529           ADD     BS7                                                                  V2  05 00099
                                1530           STA     V$ST3                                                                V2  05 00100
                                1531           LDB     CTRQB,CTB       RESTORE B                                            V2  05 00101
                                1532 1         CONT                                                                         V2  05 00102
000006 016001 A                 1533           LDA     RQPWD,RQST                                                               05 00103
000007 150463 A                 1534           ANA     RHW                                                                      05 00104
000010 005311 A                 1535           DAR                                                                              05 00105
000011 006127 A                 1536           ADDE    VT$LTT                                                                   05 00106
000012 000000 E
000013 054320 A                 1537           STA     TQTCDA          IOC VALIDATED LUN, GET LOG. TERM. TBL ENTRY              05 00107
000014 006017 A                 1538           LDAE*   TQTCDA                                                                   05 00108
000015 100334 R
                                1539 *                                 SAVE TCD ADDR                                            05 00109
000016 054315 A                 1540           STA     TQTCDA                                                                   05 00110
                                1541 *                                                                                          05 00111
                                1542 *         GET OP-CODE AND CHECK FOR OPEN/CLOSE                                             05 00112
                                1543 *                                                                                          05 00113
                                1544 TQ10      FETCHA  RQST,RQPWD,8,4                                                           05 00114
000017 016001 A
000020 004350 A
000021 150472 A
000022 140466 A                 1545           SUB     SIX                                                                      05 00115
                                1546           DINTS                                                                            05 00116
000023 100444 A
000024 100747 A
000025 001002 A                 1547           JAP     TQ20            OPEN/CLOSE                                               05 00117
000026 000037 R
                                1548 *                                                                                          05 00118
                                1549 *         READ/WRITE/FUNC, CHECK FOR TERMINAL OPEN                                         05 00119
                                1550 *                                                                                          05 00120
000027 006017 A                 1551           LDAE    TQTCDA                                                                   05 00121
000030 000334 R
                                1552 *                                                                                          05 00122
                                1553 *         CHECK FIRST FOR TERMINAL DOWN                                                    05 00123
                                1554 *                                                                                          05 00124
000031 001004 A                 1555           JAN     TQ81            IO01 ERROR, TERMINAL DOWN                                05 00125
000032 000076 R
000033 001010 A                 1556           JAZ     TQ82            IO40 ERROR,TERMINAL NOT OPEN                             05 00126
000034 000102 R
000035 001000 A                 1557           JMP     TQ100           OK, QUEUE REQUEST                                        05 00127
000036 000113 R
                                1558           EJEC                                                                             05 00128
                                1559 *         PROCESS OPEN/CLOSE REQUEST                                                       05 00129
                                1560 *         REQUEST IS PLACED ON OPEN/CLOSE THREAD                                           05 00130
                                1561 *         OPEN/CLOSE PROCESSOR IS SCHEDULED IF NOT IN EXECUTION                            05 00131
000037 R                        1562 TQ20      EQU     *                                                                    V2  05 00132
                                1563           IFT     VORTEX-2                                                             V2  05 00133
                                1564           GOTO    1                                                                    V2  05 00134
                                1565           EXT     V$MALC          ALLOCATE MEMORY                                      V2  05 00135
                                1566           JSR     V$MALC,X        GET 5 WORDS                                          V2  05 00136
                                1567           DATA    5                                                                    V2  05 00137
                                1568           JAP     TQ20F           SPACE AVAILABLE ?                                    V2  05 00138
                                1569           DELAY   1               NO. DELAY 1 COUNT                                    V2  05 00139
                                1570           JMP     TQ20                                                                 V2  05 00140
                                1571 TQ20F     DINTS                                                                        V2  05 00141
                                1572           TAB                                                                          V2  05 00142
                                1573           LDX     V$CTL                                                                V2  05 00143
                                1574           LDX     TBRSTS,X        X=CTBL                                               V2  05 00144
                                1575           STX     4,B             SET LCB(4) = CTBL                                    V2  05 00145
                                1576           LDX     CTRQB,X         SET X=RQBLK                                          V2  05 00146
                                1577           STB     0,X             SET RQBLK(0) = LCB                                   V2  05 00147
                                1578           LDX     RFCB,X          SET X = LCB                                          V2  05 00148
                                1579           OME     MAP,V$ST2       SET EXEC STATE TO N0                                 V2  05 00149
                                1580           LDA     0,X             MOVE LCB                                             V2  05 00150
                                1581           STA     0,B                                                                  V2  05 00151
                                1582           LDA     1,X                                                                  V2  05 00152
                                1583           STA     1,B                                                                  V2  05 00153
                                1584           LDA     2,X                                                                  V2  05 00154
                                1585           STA     2,B                                                                  V2  05 00155
                                1586           LDA     3,X                                                                  V2  05 00156
                                1587           STA     3,B                                                                  V2  05 00157
                                1588           OME     MAP,V$ST0       SET EXEC STATE TO 00                                 V2  05 00158
                                1589           LDX     V$CTL           RESTORE X                                            V2  05 00159
                                1590           LDX     TBRSTS,X                                                             V2  05 00160
                                1591 1         CONT                                                                         V2  05 00161
000037 025004 A                 1592           LDB     CTRQB,CTB       DETHREAD                                             V2  05 00162
       000002 A                 1593 RQST      SET     B                                                                        05 00163
000040 016004 A                 1594           LDA     RADNR,RQST                                                               05 00164
000041 055004 A                 1595           STA     CTRQB,CTB       CLOSE CTBL RQST THRD                                     05 00165
000042 006010 A                 1596           LDAI    TC$DCM                                                                   05 00166
000043 000000 E
000044 005014 A                 1597 TQ20A     TAX                     (X) = PTR TO THRD CELL                                   05 00167
000045 015000 A                 1598           LDA     0,X                                                                      05 00168
000046 001010 A                 1599           JAZ     TQ20B           THRD CELL = 0                                            05 00169
000047 000053 R
                                1600           ADAT    RADNR                                                                    05 00170
000050 120423 A
000051 001000 A                 1601           JMP     TQ20A                                                                    05 00171
000052 000044 R
000053 065000 A                 1602 TQ20B     STB     0,X             END OF THRD, ADD NEW RQST                                05 00172
```

```
000054 056004 A 1603          STA     RADNR,RQST    ZERO TERMINAL THRD CELL                                  05 00173
                1604 *                                                                                       05 00174
                1605 *                PUT CONTROLLER TABLE ADDR IN RQST                                      05 00175
                1606 *                                                                                       05 00176
                1607          IFT     VORTEX-1                                                         V2    05 00177
                1608          GOTO    1                                                                V2    05 00178
000055 030300 A 1609          LDX     V$CTL                                                                  05 00179
       000001 A 1610 CTB      SET     X                                                                      05 00180
000056 015010 A 1611          LDA     TBRSTS,CTB                                                             05 00181
000057 056000 A 1612          STA     RSTPR,RQST                                                             05 00182
                1613          SPACE   5                                                                      05 00183
                1614 1        CONT                                                                     V2    05 00184
                1615 *                SCHEDULE OPEN/CLOSE PROCESSOR FROM FOREGROUN LIB.                      05 00185
000060 005021 A 1616          TBA                   CHECK IF TC$OCM WAS 0                                    05 00186
000061 006137 A 1617          ERAE    TC$OCM                                                                 05 00187
000062 000043 E
000063 001016 A 1618          JANZ    TQ30          DO NOT SCHED                                             05 00188
000064 000072 R
000065 006020 A 1619          LDBI    TIDOCT        ACTIVATE TASK WHICH SCHEDULES                            05 00189
000066 000000 E
000067 016001 A 1620          LDA     TBST,B        OPEN/CLOSE PROCESSOR                                     05 00190
000070 150457 A 1621          ANA     BR14          RESET SUSPEND BIT                                        05 00191
000071 056001 A 1622          STA     TBST,B                                                                 05 00192
                1623 *                                                                                       05 00193
                1624 *                EXIT DIRECTLY TO VT$TCQ WITH INTERRUPTS ON                             05 00194
                1625 *                                                                                       05 00195
                1626 TQ30     EINTS                                                                          05 00196
000072 100244 A
000073 100147 A
000074 001000 A 1627          JMP     VT$TCQ                                                                 05 00197
000075 000000 R
                1628          EJEC                                                                           05 00198
                1629 *                                                                                       05 00199
                1630 *                SET ERROR CODE IN RQST                                                 05 00200
                1631 *                EXIT TO V$ERR                                                          05 00201
                1632 *                                                                                       05 00202
       000001 A 1633 CTB      SET     X                                                                      05 00203
                1634 *                TQ81, PHYSICAL TERMINAL DOWN                                           05 00204
000076 006020 A 1635 TQ81     LDBI    01640                                                                  05 00205
000077 001640 A
000100 001000 A 1636          JMP     TQ89                                                                   05 00206
000101 000104 R
                1637 *                TQ82, TERMINAL NOT OPEN                                                05 00207
000102 006020 A 1638 TQ82     LDBI    040240                                                                 05 00208
000103 040240 A
000104 035004 A 1639 TQ89     LDX     CTRQB,CTB                                                              05 00209
       000001 A 1640 RQST     SET     X                                                                      05 00210
000105 015000 A 1641          LDA     RSTPR,RQST                                                             05 00211
000106 150472 A 1642          ANA     BM17                                                                   05 00212
000107 005031 A 1643          MERGE   031           (A)=(A).OR-(B)                                           05 00213
000110 055000 A 1644          STA     RSTPR,RQST                                                             05 00214
000111 001000 A 1645          JMP     V$ERR                                                                  05 00215
000112 000000 E
                1646          EJEC                                                                           05 00216
                1647 *                                                                                       05 00217
                1648 *                QUEUE RQST ON TCD, ACTIVATE TCMEXEC                                    05 00218
                1649 *                                                                                       05 00219
000113 025004 A 1650 TQ100    LDB     CTRQB,CTB     DETHREAD AND SAVE RQST ADDR                              05 00220
       000002 A 1651 RQST     SET     B                                                                      05 00221
000114 064220 A 1652          STB     TQRQST                                                                 05 00222
000115 016004 A 1653          LDA     RADNR,RQST                                                             05 00223
000116 055004 A 1654          STA     CTRQB,CTB     CLOSE CTBL RQST THRD                                     05 00224
                1655 *                                                                                       05 00225
                1656 *                              CHECK IF FUNCTION REQUEST                                05 00226
                1657          FETCHA  RQST,ROPWD,8,4                                                         05 00227
000117 016001 A
000120 004350 A
000121 150472 A
000122 140465 A 1658          SUB     FIVE                                                                   05 00228
000123 001010 A 1659          JAZ     TQ110                                                                  05 00229
000124 000165 R
                1660 *                                                                                       05 00230
000125 006017 A 1661 TQ100A   LDAE    TQTCDA                                                                 05 00231
000126 000334 R
                1662          ADAT    TCRQH         ADD DISPL.                                               05 00232
000127 120421 A
000130 005014 A 1663 TQ100B   TAX                                                                            05 00233
000131 015000 A 1664          LDA     0,X           (X) POINTS TO THRD CELL IN TCD                           05 00234
000132 001010 A 1665          JAZ     TQ100C                                                                 05 00235
000133 000137 R
                1666          ADAT    RADNR         ADD DISPL.                                               05 00236
000134 120423 A
000135 001000 A 1667          JMP     TQ100B                                                                 05 00237
000136 000130 R
000137 065000 A 1668 TQ100C   STB     0,X           STORE RQST ADDR IN ZERO THRD CELL                        05 00238
000140 056004 A 1669          STA     RADNR,RQST    ZERO TERMINAL THRD CELL                                  05 00239
000141 006020 A 1670          LDBI    TIDTEX        GET TCMEXEC TIDB ADDR                                    05 00240
000142 000000 E
000143 005101 A 1671          INCR    01                                                                     05 00241
000144 056003 A 1672          STA     TBEVNT,B      SET TIDB EVENT WORD NONZERO                              05 00242
                1673          EINTS                                                                          05 00243
000145 100244 A
000146 100147 A
000147 001000 A 1674          JMP     VT$TCQ        PROCESS NEXT REQUEST                                     05 00244
000150 000000 R
```

```
                    1675          EJEC                                                                  05 00245
                    1676  *                                                                             05 00246
                    1677  *               SET CTBL INACTIVE                                             05 00247
                    1678  *               SUSPEND VT$TCQ TIDB                                           05 00248
                    1679  *               JMP TO V$FNRM                                                 05 00249
                    1680  *                                                                             05 00250
                    1681          SPACE   3                                                             05 00251
                    1682  TQ102   DINTS                                                                 05 00252
000151 100444 A
000152 100747 A
000153 030300 A     1683          LDX     V$CTL                                                         05 00253
       000001 A     1684  TIDB    SET     X                                                             05 00254
000154 025010 A     1685          LDB     TBRSTS,TIDB                                                   05 00255
       000002 A     1686  CTB     SET     B                                                             05 00256
000155 016000 A     1687          LDA     CTACT,CTB       SET CTBL INACTIVE                             05 00257
000156 150460 A     1688          ANA     BR15                                                          05 00258
000157 056000 A     1689          STA     CTACT,CTB                                                     05 00259
000160 015001 A     1690          LDA     TBST,TIDB                                                     05 00260
000161 110437 A     1691          ORA     BS14                                                          05 00261
000162 055001 A     1692          STA     TBST,TIDB                                                     05 00262
000163 001000 A     1693          JMP     V$FNRM                                                        05 00263
000164 000000 E
                    1694          EJEC                                                                  05 00264
                    1695  *                                                                             05 00265
                    1696  *                       THIS CODE HANDLES IMMEDIATE FUNCTION RQSTS            05 00266
                    1697  *                                                                             05 00267
                    1698          SPACE   3                                                             05 00268
000165 026002 A     1699  TQ110   LDB     RFCB,RQST       CHECK IF FUNC CODE IS IMMEDIATE               05 00269
       000002 A     1700  DCB     SET     B                                                             05 00270
                    1701          IFF     VORTEX-2                                              V2      05 00271
                    1702          OME     MAP,V$ST3       SET EXEC STATE TO NN                  V2      05 00272
                    1703          FETCHA  DCB,DCCNT,0,8   GET FUNC CODE                                 05 00273
000166 016002 A
000167 150463 A
                    1704          IFF     VORTEX-2                                              V2      05 00274
                    1705          OME     MAP,V$ST0                                             V2      05 00275
000170 140423 A     1706          SUB     FOUR            FUNC CODE = 4, DOWN TERMINAL                  05 00276
000171 001016 A     1707          JANZ    TQ130           QUEUED FUNCTION                               05 00277
000172 000326 R
                    1708  *                                                                             05 00278
                    1709  *                       FUNC CODE = 4. SET TERMINAL DOWN.                     05 00279
                    1710  *                       CLEAR ANY ACTIVE CCM I/O REQUESTS AND                 05 00280
                    1711  *                       COMPLETE ALL ACTIVE OR PENDING TCM REQUESTS           05 00281
                    1712  *                                                                             05 00282
                    1713          SPACE   2                                                             05 00283
                    1714  *                       SET TERMINAL DOWN                                     05 00284
000173 024141 A     1715          LDB     TQRQST          GET LOGICAL UNIT NO. FOR TERMINAL             05 00285
       000002 A     1716  RQST    SET     B                                                             05 00286
000174 016001 A     1717          LDA     RQPWD,RQST                                                    05 00287
000175 150463 A     1718          ANA     RHW                                                           05 00288
000176 005311 A     1719          DAR                                                                   05 00289
000177 006127 A     1720          ADDE    VT$LTT                                                        05 00290
000200 000012 E
000201 005012 A     1721          TAB                     (B) = ADDR OF LTT ENTRY                       05 00291
000202 016000 A     1722          LDA     0,B                                                           05 00292
000203 110440 A     1723          ORA     BS15            SET TERMINAL DOWN FLAG                        05 00293
000204 056000 A     1724          STA     0,B                                                           05 00294
                    1725  *                                                                             05 00295
                    1726  *                       CLEAR ALL ACTIVE REQUESTS ON LINE                     05 00296
                    1727  *                                                                             05 00297
000205 034126 A     1728          LDX     TQTCDA                                                        05 00298
       000001 A     1729  TCD     SET     X                                                             05 00299
000206 015007 A     1730          LDA     TCRCA,TCD       SAVE ADDR OF ACTIVE CCM RQSTS                 05 00300
000207 054122 A     1731          STA     TQRCA                                                         05 00301
000210 015011 A     1732          LDA     TCWCA,TCD                                                     05 00302
000211 054121 A     1733          STA     TQWCA                                                         05 00303
000212 005001 A     1734          TZA                     CLEAR CCM RQBLK ADDR                          05 00304
000213 055007 A     1735          STA     TCRCA,TCD                                                     05 00305
000214 055011 A     1736          STA     TCWCA,TCD                                                     05 00306
000215 006020 A     1737          LDBI    TQMEM                                                         05 00307
000216 000336 R
000217 002000 A     1738          JMPM    TC$BRQ          BUILD CCM RQST                                05 00308
000220 000000 E
000221 006010 A     1739          LDAI    TQ110A          SET UP RETURN ADDR                            05 00309
000222 000240 R
       000002 A     1740  RQBLK   SET     B                                                             05 00310
000223 056010 A     1741          STA     8,RQBLK                                                       05 00311
000224 010465 A     1742          LDA     FIVE            SET OP-CODE TO FUNCTION                       05 00312
000225 004250 A     1743          LRLA    8                                                             05 00313
000226 116003 A     1744          ORA     3,RQBLK                                                       05 00314
000227 150460 A     1745          ANA     BR15            USE WAIT OPTION                               05 00315
000230 056003 A     1746          STA     3,RQBLK                                                       05 00316
000231 006010 A     1747          LDAI    21              FUNC CODE = 21 FOR I/O CLEAR                  05 00317
000232 000025 A
000233 004250 A     1748          LRLA    8                                                             05 00318
000234 116013 A     1749          ORA     11,RQBLK                                                      05 00319
000235 056013 A     1750          STA     11,RQBLK                                                      05 00320
000236 001000 A     1751          JMP     TQMEM                                                         05 00321
000237 000336 R
                    1752  *                       I/O CLEAR DONE, RETURN MEMORY FOR CCM RQBLK            05 00322
000240 034073 A     1753  TQ110A  LDX     TQTCDA          RESTORE X REG. TO TCD ADDR.                   05 00323
       000001 A     1754  TCD     SET     X                                                             05 00324
000241 014070 A     1755          LDA     TQRCA           CHECK IF READ ACTIVE                          05 00325
000242 001010 A     1756          JAZ     TQ110B                                                        05 00326
000243 000262 R
```

```
000244 005012 A 1757          TAB                                                          05 00327
000245 006010 A 1758          LDAI    13              SET BLK SIZE TO 13                   05 00328
000246 000015 A
000247 056000 A 1759          STA     0,RQBLK                                              05 00329
               1760          PUTMEM  VT$MP1,TQRCA                                         05 00330
000250 006010 A
000251 000000 E
000252 024057 A
000253 074005 A
000254 006505 A
000255 000000 E
000256 000600 A
000257 000000 E
000260 006030 A
000261 000260 R
000262 014050 A 1761 TQ110B   LDA     TQWCA           CHECK IF WRITE ACTIVE                05 00331
000263 001010 A 1762          JAZ     TQ120                                                05 00332
000264 000303 R
000265 005012 A 1763          TAB                                                          05 00333
000266 006010 A 1764          LDAI    12              SET BLK SIZE TO 12                   05 00334
000267 000014 A
000270 056000 A 1765          STA     0,RQBLK                                              05 00335
               1766          PUTMEM  VT$MP1,TQWCA                                         05 00336
000271 006010 A
000272 000251 E
000273 024037 A
000274 074005 A
000275 006505 A
000276 000255 E
000277 000600 A
000300 000257 E
000301 006030 A
000302 000301 R
               1767 *                                 COMPLETE REQUESTS RETURNING TERMINAL DOWN  05 00337
000303 025001 A 1768 TQ120    LDB     TCRQH,TCD                                            05 00338
000304 001020 A 1769          JBZ     TQ120A          NO MORE REQUESTS                     05 00339
000305 000313 R
000306 010432 A 1770          LDA     BS9             SET ERROR CODE TO 01, BITS 14-9, TERM. DOWN05 00340
000307 002000 A 1771          JMPM    TC$FRQ          COMPLETE REQUEST                     05 00341
000310 000000 E
               1772          IFT     VORTEX-2                                          V2 05 00342
               1773          GOTO    1                                                 V2 05 00343
               1774          EXT     V$MDAL          DEALLOCATE MEMORY                 V2 05 00344
               1775          JOFN    TQ120           DEALLOCATE ?                      V2 05 00345
               1776          STX     TQX             YES. SAVE X                       V2 05 00346
               1777          STB     *+4                                               V2 05 00347
               1778          JSR     V$MDAL,X        DEALLOCATE                        V2 05 00348
               1779          DATA    6                                                 V2 05 00349
               1780          BSS     1                                                 V2 05 00350
               1781          LDX     TQX                                               V2 05 00351
               1782          DINTS                                                     V2 05 00352
               1783 1        CONT                                                      V2 05 00353
000311 001000 A 1784          JMP     TQ120                                                05 00354
000312 000303 R
               1785 *                                 COMPLETE FUNCTION REQUEST             05 00355
000313 024021 A 1786 TQ120A   LDB     TQRQST          GET REQUEST ADDRESS                  05 00356
000314 005001 A 1787          TZA                     RETURN NORMAL COMPLETION STATUS      05 00357
000315 002000 A 1788          JMPM    TC$FRQ          COMPLETE REQUEST                     05 00358
000316 000310 E
               1789          IFT     VORTEX-2                                          V2 05 00359
               1790          GOTO    1                                                 V2 05 00360
               1791          JOFN    TQ120B          DEALLOCATE ?                      V2 05 00361
               1792          STB     *+4             YES                               V2 05 00362
               1793          JSR     V$MDAL,X                                          V2 05 00363
               1794          DATA    6                                                 V2 05 00364
               1795          BSS     1                                                 V2 05 00365
               1796 1        CONT                                                      V2 05 00366
        000317 R 1797 TQ120B  EQU     *                                                 V2 05 00367
               1798          EINTS                                                        05 00368
000317 100244 A
000320 100147 A
000321 034007 A 1799          LDX     TQCTBA          RESTORE X TO CTBL ADDR               05 00369
000322 020300 A 1800          LDB     V$CTL                                                05 00370
000323 076010 A 1801          STX     TBRSTS,B        MOVE CTBL ADDR TO TBRSTS ENTRY IN TIDB 05 00371
000324 001000 A 1802          JMP     TQ01                                                 05 00372
000325 000003 R
               1803 *                                 QUEUE FUNCTION REQUEST                05 00373
000326 024006 A 1804 TQ130    LDB     TQRQST                                               05 00374
000327 001000 A 1805          JMP     TQ100A                                               05 00375
000330 000125 R
               1806          IFF     VORTEX-2                                          V2 05 00376
               1807 TQX      DATA    0               SAVE X                            V2 05 00377
               1808          EJEC                                                         05 00378
               1809 *                                                                     05 00379
               1810 *                 CONSTANTS AND TEMPORARY STORAGE                     05 00380
               1811 *                                                                     05 00381
000331 000000 A 1812 TQCTBA   DATA    0               CONTROLLER TABLE ADDR                05 00382
000332 000000 A 1813 TQRCA    DATA    0               SAVE CELL FOR TCRCA ENTRY IN TCD     05 00383
000333 000000 A 1814 TQWCA    DATA    0               SAVE CELL FOR TCWCA ENTRY IN TCD     05 00384
000334 000000 A 1815 TQTCDA   DATA    0               ADDR OF TERMINAL CONTROLLER DESC(TCD) 05 00385
000335 000000 A 1816 TQRQST   DATA    0               TCM REQUEST ADDRESS                  05 00386
000336          1817 TQMEM    BSS     12              MEMORY FOR CCM RQST BLOCK            05 00387
               1818          EJEC                                                         05 00388
               1819 *                                                                     05 00389
               1820 *                 CODE FOR TASK WHICH SCHEDS OPEN/CLOSE PROC          05 00390
```

```
                        1821 *
000352                  1822 TC$DCT BSS     0                                                    05 00391
                        1823 DCPR   EQU     2                                                    05 00392
                        1824        SCHED   DCPR,,106,0306,'VT','$D','CT'                        05 00393
000352 006505 A                                                                                  05 00394
000353 000276 E
000354 000102 A
000355 143152 A
000356 153324 A
000357 122317 A
000360 141724 A
                        1825        SUSPND  1                                                    05 00395
000361 006505 A
000362 000353 E
000363 000301 A
000364 001000 A         1826        JMP     TC$DCT                                               05 00396
000365 000352 R
                        1827        END                                                          05 00397
ENTRY NAMES
000352 R TC$DCT 000000 R VT$TCQ
EXTERNAL NAMES
000220 E TC$BRQ 000000 E TC$CRQ 000316 E TC$FRQ 000062 E TC$DCM
000066 E TIDDCT 000142 E TIDTEX 000112 E V$ERR  000362 E V$EXEC
000164 E V$FNRM 000000 E VT$GTM 000200 E VT$LTT 000272 E VT$MP1
000300 E VT$PTM
SYMBOLS
000044 A APIM   000002 A B      000000 A B0     000001 A B1
000012 A B10    000013 A B11    000014 A B12    000015 A B13
000016 A B14    000017 A B15    000002 A B2     000003 A B3
000004 A B4     000005 A B5     000006 A B6     000007 A B7
000010 A B8     000011 A B9     000000 A BICNUM 000421 A BM1
000472 A BM17   000475 A BM177  000477 A BM1777 000464 A BM3
000473 A BM37   000463 A BM377  000467 A BM7    000474 A BM77
000476 A BM777  000441 A BR0    000442 A BR1    000453 A BR10
000454 A BR11   000455 A BR12   000456 A BR13   000457 A BR14
000460 A BR15   000443 A BR2    000444 A BR3    000445 A BR4
000446 A BR5    000447 A BR6    000450 A BR7    000451 A BR8
000452 A BR9    000421 A BS0    000422 A BS1    000433 A BS10
000434 A BS11   000435 A BS12   000436 A BS13   000437 A BS14
000440 A BS15   000423 A BS2    000424 A BS3    000425 A BS4
000426 A BS5    000427 A BS6    000430 A BS7    000431 A BS8
000432 A BS9    000000 A CHAFP  000000 A CHAFPB 000020 A CHAFPZ
000001 A CHARP  000000 A CHARPB 000020 A CHARPZ 000002 A CHCFP
000000 A CHCFPB 000020 A CHCFPZ 000003 A CHCRP  000000 A CHCRPB
000020 A CHCRPZ 000004 A CHRBL  000000 A CHRBLB 000020 A CHRBLZ
000047 A CLOCK  000000 A CDTAD1 000000 A CTACT  000017 A CTACTB
000001 A CTACTZ 000001 A CTADN  000000 A CTADNB 000020 A CTADNZ
000002 A CTB    000011 A CTBIC  000000 A CTBICB 000020 A CTBICZ
000003 A CTDST  000000 A CTDSTB 000020 A CTDSTZ 000006 A CTDVA
000000 A CTDVAB 000020 A CTDVAZ 000012 A CTFCB  000000 A CTFCBB
000020 A CTFCBZ 000014 A CTFRC  000010 A CTFRCB 000010 A CTFRCZ
000014 A CTFRE  000000 A CTFREB 000010 A CTFREZ 000000 A CTIDB
000000 A CTIDBB 000017 A CTIDBZ 000007 A CTIDA  000000 A CTIDAB
000020 A CTIDAZ 000002 A CTDPM  000000 A CTDPMB 000020 A CTDPMZ
000005 A CTRCN  000000 A CTRCNB 000010 A CTRCNZ 000004 A CTRQB
000000 A CTRQBB 000020 A CTRQBZ 000005 A CTRTR  000010 A CTRTRB
000010 A CTRTRZ 000010 A CTSTA  000000 A CTSTAB 000020 A CTSTAZ
000013 A CTWDS  000000 A CTWDSB 000020 A CTWDSZ 000002 A DCB
000001 A DCBUFF 000003 A DCCHR  000000 A DCCHRB 000020 A DCCHRZ
000002 A DCCNT  000000 A DCRECL 000747 A DISCLK 000745 A DISMP
000444 A DISPIM 000026 A DMBCA  000000 A DMBCAB 000020 A DMBCAZ
000024 A DMCWA  000000 A DMCWAB 000020 A DMCWAZ 000017 A DMFPA
000000 A DMFPAB 000020 A DMFPAZ 000021 A DMLCA  000000 A DMLCAB
000020 A DMLCAZ 000022 A DMLTA  000000 A DMLTAB 000020 A DMLTAZ
000023 A DMPTA  000000 A DMPTAB 000020 A DMPTAZ 000016 A DMRPA
000000 A DMRPAB 000020 A DMRPAZ 000020 A DMSTA  000000 A DMSTAB
000020 A DMSTAZ 000025 A DMSWA  000000 A DMSWAB 000020 A DMSWAZ
000015 A DMTPA  000000 A DMTPAB 000020 A DMTPAZ 000002 A DSCTAD
000000 A DSDASS 000000 A DSDVDN 000002 A DSLCKD 000001 A DSNAME
000000 A DSNDRQ 000002 A DSDPCM 000002 A DSPSTI 000002 A DSREWD
000000 A DSUNAM 000002 A DSUNTN 000424 A EIGHT  000147 A ENACLK
000645 A ENAMP  000244 A ENAPIM 000465 A FIVE   000423 A FOUR
000003 A IBIBF  000017 A IBIBFB 000001 A IBIBFZ 000003 A IBLAS
000000 A IBLASB 000017 A IBLASZ 000001 A IBLEN  000000 A IBLENB
000020 A IBLENZ 000000 A IBLNK  000000 A IBLNKB 000020 A IBLNKZ
000002 A IBSTA  000000 A IBSTAB 000020 A IBSTAZ 000004 A IBSTS
000000 A IBSTSB 000017 A IBSTSZ 000300 A LC     000003 A LCABN
000013 A LCABNB 000001 A LCABNZ 000003 A LCASY  000012 A LCASYB
000001 A LCASYZ 000007 A LCBSC  000015 A LCBSCB 000001 A LCBSCZ
000007 A LCCHN  000016 A LCCHNB 000001 A LCCHNZ 000003 A LCCRC
000014 A LCCRCB 000003 A LCCRCZ 000006 A LCCWB  000014 A LCCWBB
000001 A LCCWBZ 000006 A LCCWC  000015 A LCCWCB 000001 A LCCWCZ
000006 A LCCWD  000013 A LCCWDB 000001 A LCCWDZ 000006 A LCCWI
000016 A LCCWIB 000001 A LCCWIZ 000006 A LCCWP  000012 A LCCWPB
000001 A LCCWPZ 000006 A LCCWR  000011 A LCCWRB 000001 A LCCWRZ
000006 A LCCWS  000017 A LCCWSB 000001 A LCCWSZ 000006 A LCCWT
000010 A LCCWTB 000001 A LCCWTZ 000001 A LCIBA  000000 A LCIBAB
000017 A LCIBAZ 000000 A LCIBF  000017 A LCIBFB 000001 A LCIBFZ
000000 A LCIBL  000000 A LCIBLB 000014 A LCIBLZ 000002 A LCIC1
000010 A LCIC1B 000010 A LCIC1Z 000002 A LCIC2  000000 A LCIC2B
000010 A LCIC2Z 000003 A LCIKE  000000 A LCIKEB 000004 A LCIKEZ
000007 A LCITB  000013 A LCITBB 000001 A LCITBZ 000050 A LCJP
000006 A LCLCB  000000 A LCLCBB 000020 A LCLCBZ 000007 A LCLDB
000014 A LCLDBB 000001 A LCLDBZ 000007 A LCLTB  000017 A LCLTBB
000001 A LCLTBZ 000005 A LCDBA  000000 A LCDBAB 000017 A LCDBAZ
```

```
000004 A LCOBF  000017 A LCOBFB 000001 A LCOBFZ 000004 A LCOBL
000000 A LCOBLB 000014 A LCOBLZ 000007 A LCOKE  000000 A LCOKEB
000004 A LCOKEZ 000003 A LCRCC  000017 A LCRCCB 000001 A LCRCCZ
000000 A LCSMB  000016 A LCSMBB 000001 A LCSMBZ 000462 A LHW
000017 A LSABN  000015 A LSABNB 000001 A LSABNZ 000017 A LSASC
000011 A LSASCB 000001 A LSASCZ 000014 A LSASY  000013 A LSASYB
000001 A LSASYZ 000020 A LSBSC  000016 A LSBSCB 000001 A LSBSCZ
000015 A LSCC1  000010 A LSCC1B 000010 A LSCC1Z 000015 A LSCC2
000000 A LSCC2B 000010 A LSCC2Z 000017 A LSCHN  000010 A LSCHNB
000001 A LSCHNZ 000017 A LSCRC  000012 A LSCRCB 000003 A LSCRCZ
000012 A LSCTA  000000 A LSCTAB 000020 A LSCTAZ 000017 A LSDSF
000017 A LSDSFB 000001 A LSDSFZ 000013 A LSDST  000000 A LSDSTB
000020 A LSDSTZ 000016 A LSEPF  000016 A LSEPFB 000001 A LSEPFZ
000014 A LSLSP  000000 A LSLSPB 000011 A LSLSPZ 000014 A LSMOD
000016 A LSMODB 000002 A LSMODZ 000020 A LSNTO  000010 A LSNTOB
000006 A LSNTOZ 000014 A LSPAR  000014 A LSPARB 000002 A LSPARZ
000016 A LSPLA  000000 A LSPLAB 000010 A LSPLAZ 000002 A LSRCA
000000 A LSRCAB 000020 A LSRCAZ 000003 A LSREM  000000 A LSREMB
000020 A LSREMZ 000016 A LSRRS  000010 A LSRRSB 000003 A LSRRSZ
000001 A LSRRT  000000 A LSRRTB 000020 A LSRRTZ 000004 A LSRTO
000000 A LSRTOB 000020 A LSRTOZ 000005 A LSSRS  000000 A LSSRSB
000020 A LSSRSZ 000011 A LSSWS  000000 A LSSWSB 000020 A LSSWSZ
000016 A LSTER  000017 A LSTERB 000001 A LSTERZ 000000 A LSTHD
000000 A LSTHDB 000020 A LSTHDZ 000006 A LSWCA  000000 A LSWCAB
000020 A LSWCAZ 000007 A LSWEM  000000 A LSWEMB 000020 A LSWEMZ
000016 A LSWRS  000013 A LSWRSB 000003 A LSWRSZ 000010 A LSWTO
000000 A LSWTOB 000020 A LSWTOZ 000014 A LSXMM  000011 A LSXMMB
000002 A LSXMMZ 000017 A LSYNC  000016 A LSYNCB 000001 A LSYNCZ
000020 A LSYNR  000000 A LSYNRB 000010 A LSYNRZ 000017 A LSYNT
000000 A LSYNTB 000010 A LSYNTZ 000046 A MAP    000045 A MP
000045 A MPMR0  000145 A MPMR1  000245 A MPMR2  000345 A MPMR3
000420 A MT     000461 A NEG    000470 A NINE   000002 A OCPR
000421 A ONE    000001 A PCBSL  000011 A PCBSLB 000001 A PCBSLZ
000000 A PCCLN  000000 A PCCLNB 000010 A PCCLNZ 000002 A PCCTP
000014 A PCCTPB 000004 A PCCTPZ 000001 A PCECH  000014 A PCECHB
000001 A PCECHZ 000000 A PCLLN  000010 A PCLLNB 000010 A PCLLNZ
000002 A PCNTD  000000 A PCNTDB 000004 A PCNTDZ 000001 A PCPCH
000000 A PCPCHB 000010 A PCPCHZ 000001 A PCSWL  000010 A PCSWLB
000001 A PCSWLZ 000002 A PCTYP  000010 A PCTYPB 000004 A PCTYPZ
000001 A PCXMM  000012 A PCXMMB 000002 A PCXMMZ 000040 A PIM1
000041 A PIM2   000042 A PIM3   000043 A PIM4   000040 A PIM5
000040 A PIM6   000040 A PIM7   000040 A PIM8   000200 A POST
000003 A PSABN  000015 A PSABNB 000001 A PSABNZ 000000 A PSASY
000013 A PSASYB 000001 A PSASYZ 000002 A PSBADT 000000 A PSBEG
000004 A PSBSC  000016 A PSBSCB 000016 A PSBSCZ 000001 A PSCC1
000010 A PSCC1B 000010 A PSCC1Z 000001 A PSCC2  000000 A PSCC2B
000010 A PSCC2Z 000003 A PSCRC  000012 A PSCRCB 000003 A PSCRCZ
000002 A PSDEF  000010 A PSDEFB 000001 A PSDEFZ 000003 A PSDSF
000017 A PSDSFB 000001 A PSDSFZ 000002 A PSDWN  000011 A PSDWNB
000001 A PSDWNZ 000004 A PSEND  000002 A PSEPF  000016 A PSEPFB
000001 A PSEPFZ 000000 A PSLSP  000000 A PSLSPB 000011 A PSLSPZ
000000 A PSMOD  000016 A PSMODB 000002 A PSMODZ 000003 A PSNSEC
000000 A PSPAR  000014 A PSPARB 000002 A PSPARZ 000002 A PSPLA
000000 A PSPLAB 000010 A PSPLAZ 000001 A PSPROT 000002 A PSTER
000017 A PSTERB 000001 A PSTERZ 000000 A PSXMM  000011 A PSXMMB
000002 A PSXMMZ 000003 A PSYNC  000016 A PSYNCB 000001 A PSYNCZ
000004 A PSYNR  000000 A PSYNRB 000010 A PSYNRZ 000003 A PSYNT
000000 A PSYNTB 000010 A PSYNTZ 000040 A RA0    000000 A RA1
000004 A RADNR  000060 A RB0    000020 A RB1    000002 A RFCB
000463 A RHW    000001 A ROPWD  000002 A RQBLK  000002 A RQST
000000 A RSTPR  000003 A RTIDB  000467 A SEVEN  000466 A SIX
000027 A TBATSK 000026 A TBCPTH 000011 A TBENTY 000003 A TBEVNT
000021 A TBIO   000014 A TBISA  000015 A TBISB  000017 A TBISP
000020 A TBISRS 000034 A TBIST  000016 A TBISX  000032 A TBKEY
000022 A TBKN1  000023 A TBKN2  000024 A TBKN3  000033 A TBMIMG
000032 A TBNUCL 000002 A TBPL   000004 A TBRSA  000005 A TBRSB
000030 A TBRSE  000007 A TBRSP  000010 A TBRSTS 000006 A TBRSX
000000 A TBS0   000001 A TBS1   000012 A TBS10  000013 A TBS11
000014 A TBS12  000015 A TBS13  000016 A TBS14  000017 A TBS15
000002 A TBS2   000003 A TBS3   000004 A TBS4   000005 A TBS5
000006 A TBS6   000007 A TBS7   000010 A TBS8   000011 A TBS9
000031 A TBSIZ  000001 A TBST   000025 A TBTLC  000013 A TBTMIN
000012 A TBTMS  000000 A TBTRD  000220 E TC$BRQ 000000 E TC$CRQ
000316 E TC$FRQ 000062 E TC$OCM 000352 R TC$OCT 000004 A TCBSL
000011 A TCBSLB 000001 A TCBSLZ 000003 A TCCLN  000000 A TCCLNB
000010 A TCCLNZ 000004 A TCCON  000015 A TCCONB 000001 A TCCONZ
000002 A TCCTA  000000 A TCCTAB 000020 A TCCTAZ 000005 A TCCTP
000014 A TCCTPB 000004 A TCCTPZ 000001 A TCD    000012 A TCDCC
000000 A TCDCCB 000020 A TCDCCZ 000014 A TCDTO  000000 A TCDTOB
000020 A TCDTOZ 000004 A TCECH  000014 A TCECHB 000001 A TCECHZ
000015 A TCID1  000000 A TCID1B 000020 A TCID1Z 000016 A TCID2
000000 A TCID2B 000020 A TCID2Z 000006 A TCLDF  000014 A TCLDFB
000001 A TCLDFZ 000003 A TCLLN  000010 A TCLLNB 000010 A TCLLNZ
000005 A TCNOD  000004 A TCNODB 000004 A TCNODZ 000005 A TCNTD
000000 A TCNTDB 000004 A TCNTDZ 000004 A TCPCH  000000 A TCPCHB
000010 A TCPCHZ 000004 A TCRBC  000017 A TCRBCB 000001 A TCRBCZ
000013 A TCRBF  000000 A TCRBFB 000020 A TCRBFZ 000007 A TCRCA
000000 A TCRCAB 000020 A TCRCAZ 000006 A TCRMD  000000 A TCRMDB
000003 A TCRMDZ 000001 A TCRQH  000000 A TCRQHB 000020 A TCRQHZ
000006 A TCRRS  000006 A TCRRSB 000003 A TCRRSZ 000010 A TCSTO
000000 A TCSTOB 000020 A TCSTOZ 000004 A TCSWL  000010 A TCSWLB
000001 A TCSWLZ 000000 A TCTCD  000000 A TCTCDB 000020 A TCTCDZ
000005 A TCTYP  000010 A TCTYPB 000004 A TCTYPZ 000004 A TCWBC
000016 A TCWBCB 000001 A TCWBCZ 000011 A TCWCA  000000 A TCWCAB
000020 A TCWCAZ 000006 A TCWMD  000003 A TCWMDB 000003 A TCWMDZ
```

```
000006 A TCWRS   000011 A TCWRSB 000003 A TCWRSZ 000004 A TCXMM
000012 A TCXMMB  000002 A TCXMMZ 000471 A TEN    000464 A THREE
000001 A TIDB    000066 E TIDOCT 000002 A TIDSP  000000 A TIDSPB
000007 A TIDSPZ  000142 E TIDTEX 000002 A TIDWN  000017 A TIDWNB
000001 A TIDWNZ  000000 A TINET  000000 A TINETB 000020 A TINETZ
000003 A TIODN   000017 A TIODNB 000001 A TIODNZ 000003 A TIODP
000000 A TIODPB  000007 A TIODPZ 000003 A TIOSC  000007 A TIOSCB
000010 A TIOSCZ  000002 A TISEC  000007 A TISECB 000010 A TISECZ
000000 A TITU1   000000 A TITU1B 000020 A TITU1Z 000001 A TITU2
000000 A TITU2B  000020 A TITU2Z 000017 A TPFPA  000000 A TPFPAB
000020 A TPFPAZ  000015 A TPRPA  000000 A TPRPAB 000020 A TPRPAZ
000016 A TPWPA   000000 A TPWPAB 000020 A TPWPAZ 000003 R TQ01
000017 R TQ10    000113 R TQ100  000125 R TQ100A 000130 R TQ100B
000137 R TQ100C  000151 R TQ102  000165 R TQ110  000240 R TQ110A
000262 R TQ110B  000303 R TQ120  000313 R TQ120A 000317 R TQ120B
000326 R TQ130   000037 R TQ20   000044 R TQ20A  000053 R TQ20B
000072 R TQ30    000076 R TQ81   000102 R TQ82   000104 R TQ89
000331 R TQCTBA  000336 R TQMEM  000332 R TQRCA  000335 R TQRQST
000334 R TQTCDA  000333 R TQWCA  000422 A TWO    000403 A V$1MIN
000415 A V$BFC   000075 A V$BGLB 000056 A V$BIC1 000315 A V$BTB
000331 A V$BTBM  000414 A V$BVN  000334 A V$CAM  000353 A V$CKB
000411 A V$CKIT  000310 A V$CKPT 000301 A V$CPL  000076 A V$CRDM
000341 A V$CRDR  000354 A V$CRM  000302 A V$CRS  000360 A V$CTAD
000300 A V$CTL   000351 A V$CTMS 000070 A V$DATE 000355 A V$DSTB
000376 A V$ERFG  000112 E V$ERR  000362 E V$EXEC 000347 A V$FGLB
000306 A V$FLRS  000164 E V$FNRM 000350 A V$FREE 000332 A V$GFCB
000320 A V$IM    000410 A V$IOA  000412 A V$JCB  000055 A V$JCFG
000077 A V$JCTM  000050 A V$JNAM 000377 A V$JOP  000340 A V$KEY
000054 A V$LCNT  000313 A V$LER  000356 A V$LIT  000317 A V$LLUP
000317 A V$LPP   000307 A V$LRSK 000312 A V$LSAL 000345 A V$LUNT
000316 A V$LUP   000400 A V$LUT1 000401 A V$LUT2 000402 A V$LUT3
000330 A V$MAP   000333 A V$MIMG 000330 A V$MPM  000362 A V$NCTR
000316 A V$NPAG  000413 A V$OCB  000346 A V$OPCF 000311 A V$OPCL
000357 A V$PGT   000363 A V$PIMN 000074 A V$PLCT 000305 A V$PTVB
000361 A V$SCTL  000352 A V$SCV  000375 A V$SLFG 000334 A V$ST0
000335 A V$ST1   000336 A V$ST2  000337 A V$ST3  000303 A V$TB
000342 A V$TBGT  000416 A V$TFC  000314 A V$TJCP 000344 A V$TMN
000343 A V$TMS   000304 A V$UTB  000001 A VORTEX 000000 E VT$GTM
000200 E VT$LTT  000272 E VT$MP1 000300 E VT$PTM 000000 R VT$TCQ
000001 A X       000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE
```

```
1532  1        *
 159  ADAT     *
  38  ANAM     *
  90  ANAN     *
 574  APIM      584   585
 108  B          98   117   229   230   252   255   257  1514  1517
                1518  1521  1575  1581  1583  1585  1587  1593  1620
                1622  1651  1672  1686  1700  1716  1722  1724  1740
                1801
  88  B&          82
  83  B&0         40
  80  B&1         78
  44  B&10        42
  76  B&2         74
  72  B&3         70
  68  B&4         66
  64  B&5         62
  60  B&6         58
  56  B&7         54
  52  B&8         50
  48  B&9         46
 543  B0       *
 544  B1       *
 553  B10      *
 554  B11      *
 555  B12      *
 556  B13      *
 557  B14      *
 558  B15      *
 545  B2       *
 546  B3       *
 547  B4       *
 548  B5       *
 549  B6       *
 550  B7       *
 551  B8       *
 552  B9       *
 630  BICNUM   *
 515  BM1         79
 518  BM17        67  1519  1642
 521  BM177       55
 524  BM1777      43
 516  BM3         75
 519  BM37        63
 522  BM377       51
 517  BM7         71
 520  BM77        59
 523  BM777       47
 486  BR0        202
 487  BR1      *
 496  BR10     *
 497  BR11     *
```

```
498   BR12     *
499   BR13     *
500   BR14     1621
501   BR15     1688   1745
488   BR2      *
489   BR3      *
490   BR4      *
491   BR5      *
492   BR6      *
493   BR7      *
494   BR8      *
495   BR9      *
470   BS0       195    209
471   BS1      *
480   BS10     *
481   BS11     *
482   BS12     *
483   BS13     *
484   BS14     1691
485   BS15     1723
472   BS2      *
473   BS3      *
474   BS4      *
475   BS5      1525
476   BS6      1527
477   BS7      1529
478   BS8      *
 479  BS9      1770
1397  CHAFP    *
1398  CHAFPB   *
1399  CHAFPZ   *
1401  CHARP    *
1402  CHARPB   *
1403  CHARPZ   *
1405  CHCFP    *
1406  CHCFPB   *
1407  CHCFPZ   *
1409  CHCRP    *
1410  CHCRPB   *
1411  CHCRPZ   *
1413  CHRBL    *
1414  CHRBLB   *
1415  CHRBLZ   *
 198  CLEARF   *
 567  CLOCK     569    570
 622  COTAD1   *
 707  CTACT    1687   1689
 708  CTACTB   *
 709  CTACTZ   *
 715  CTADN    *
 716  CTADNB   *
 717  CTADNZ   *
1506  CTB      1509   1531   1592   1595   1611   1639   1650   1654   1687
                1689
 751  CTBIC    *
 752  CTBICB   *
 753  CTBICZ   *
 723  CTDST    *
 724  CTDSTB   *
 725  CTDSTZ   *
 739  CTDVA    *
 740  CTDVAB   *
 741  CTDVAZ   *
 755  CTFCB    *
 756  CTFCBB   *
 757  CTFCBZ   *
 763  CTFRC    *
 764  CTFRCB   *
 765  CTFRCZ   *
 767  CTFRE    *
 768  CTFREB   *
 769  CTFREZ   *
 711  CTIDB    *
 712  CTIDBB   *
 713  CTIDBZ   *
 743  CTIOA    *
 744  CTIOAB   *
 745  CTIOAZ   *
 719  CTOPM    *
 720  CTOPMB   *
 721  CTOPMZ   *
 735  CTRCN    *
 736  CTRCNB   *
 737  CTRCNZ   *
 727  CTRQB    1509   1531   1576   1592   1595   1639   1650   1654
 728  CTRQBB   *
 729  CTRQBZ   *
 731  CTRTR    *
 732  CTRTRB   *
 733  CTRTRZ   *
 747  CTSTA    *
 748  CTSTAB   *
 749  CTSTAZ   *
 759  CTWDS    *
 760  CTWDSB   *
```

```
 761   CTWDSZ   *
1700   DCB      1703
 688   DCBUFF   *
 691   DCCHR    *
 692   DCCHRB   *
 693   DCCHRZ   *
 689   DCCNT    1703
 687   DCRECL   *
 187   DINTS    *
 569   DISCLK    189
 589   DISMP    *
 584   DISPIM    188
 813   DMBCA    *
 814   DMBCAB   *
 815   DMBCAZ   *
 805   DMCWA    *
 806   DMCWAB   *
 807   DMCWAZ   *
 785   DMFPA    *
 786   DMFPAB   *
 787   DMFPAZ   *
 793   DMLCA    *
 794   DMLCAB   *
 795   DMLCAZ   *
 797   DMLTA    *
 798   DMLTAB   *
 799   DMLTAZ   *
 801   DMPTA    *
 802   DMPTAB   *
 803   DMPTAZ   *
 781   DMRPA    *
 782   DMRPAB   *
 783   DMRPAZ   *
 789   DMSTA    *
 790   DMSTAB   *
 791   DMSTAZ   *
 809   DMSWA    *
 810   DMSWAB   *
 811   DMSWAZ   *
 777   DMTPA    *
 778   DMTPAB   *
 779   DMTPAZ   *
 615   DSCTAD   *
 601   DSDASS   *
 600   DSDVDN   *
 612   DSLCKD   *
 609   DSNAME   *
 608   DSNORQ   *
 613   DSOPCM   *
 614   DSPSTI   *
 610   DSREWD   *
 606   DSUNAM   *
 611   DSUNTN   *
 512   EIGHT     143    167
 183   EINTS    *
 570   ENACLK    185
 590   ENAMP    *
 585   ENAPIM    184
   0   ERROR     113    193    200    207
 128   FETCHA   *
 509   FIVE      149    173   1658   1742
 508   FOUR      151    175   1706
1445   GETMEM   *
 251   GETQ     *
1432   IBIBF    *
1433   IBIBFB   *
1434   IBIBFZ   *
1436   IBLAS    *
1437   IBLASB   *
1438   IBLASZ   *
1424   IBLEN    *
1425   IBLENB   *
1426   IBLENZ   *
1420   IBLNK    *
1421   IBLNKB   *
1422   IBLNKZ   *
1428   IBSTA    *
1429   IBSTAB   *
1430   IBSTAZ   *
1440   IBSTS    *
1441   IBSTSB   *
1442   IBSTSZ   *
 378   LC        379    380    381    382    383    384    385    386    387
                 388    389    390    391    392    393    394    395    396
                 397    398    399    400    401    402    403    404    405
                 406    407    408    410    411    412    413    414    415
                 416    417    418    419    420    421    422    423    424
                 426    427    428    429    434    435    436    437    438
                 439    440    447    448    449    452    457    458    459
 855   LCABN    *
 856   LCABNB   *
 857   LCABNZ   *
 859   LCASY    *
 860   LCASYB   *
 861   LCASYZ   *
```

```
923   LCBSC    *
924   LCBSCB   *
925   LCBSCZ   *
919   LCCHN    *
920   LCCHNB   *
921   LCCHNZ   *
851   LCCRC    *
852   LCCRCB   *
853   LCCRCZ   *
895   LCCWB    *
896   LCCWBB   *
897   LCCWBZ   *
891   LCCWC    *
892   LCCWCB   *
893   LCCWCZ   *
899   LCCWD    *
900   LCCWDB   *
901   LCCWDZ   *
887   LCCWI    *
888   LCCWIB   *
889   LCCWIZ   *
903   LCCWP    *
904   LCCWPB   *
905   LCCWPZ   *
907   LCCWR    *
908   LCCWRB   *
909   LCCWRZ   *
883   LCCWS    *
884   LCCWSB   *
885   LCCWSZ   *
911   LCCWT    *
912   LCCWTB   *
913   LCCWTZ   *
835   LCIBA    *
836   LCIBAB   *
837   LCIBAZ   *
823   LCIBF    *
824   LCIBFB   *
825   LCIBFZ   *
831   LCIBL    *
832   LCIBLB   *
833   LCIBLZ   *
839   LCIC1    *
840   LCIC1B   *
841   LCIC1Z   *
843   LCIC2    *
844   LCIC2B   *
845   LCIC2Z   *
863   LCIKE    *
864   LCIKEB   *
865   LCIKEZ   *
931   LCITB    *
932   LCITBB   *
933   LCITBZ   *
353   LCJP      354   355   356   363   364   365   366   367   370
879   LCLCB    *
880   LCLCBB   *
881   LCLCBZ   *
927   LCLDB    *
928   LCLDBB   *
929   LCLDBZ   *
915   LCLTB    *
916   LCLTBB   *
917   LCLTBZ   *
875   LCOBA    *
876   LCOBAB   *
877   LCOBAZ   *
867   LCOBF    *
868   LCOBFB   *
869   LCOBFZ   *
871   LCOBL    *
872   LCOBLB   *
873   LCOBLZ   *
935   LCOKE    *
936   LCOKEB   *
937   LCOKEZ   *
847   LCRCC    *
848   LCRCCB   *
849   LCRCCZ   *
827   LCSMB    *
828   LCSMBB   *
829   LCSMBZ   *
503   LHW      *
1049  LSABN    *
1050  LSABNB   *
1051  LSABNZ   *
1057  LSASC    *
1058  LSASCB   *
1059  LSASCZ   *
1001  LSASY    *
1002  LSASYB   *
1003  LSASYZ   *
1069  LSBSC    *
1070  LSBSCB   *
1071  LSBSCZ   *
```

```
1013  LSCC1    *
1014  LSCC1B   *
1015  LSCC1Z   *
1017  LSCC2    *
1018  LSCC2B   *
1019  LSCC2Z   *
1061  LSCHN    *
1062  LSCHNB   *
1063  LSCHNZ   *
1053  LSCRC    *
1054  LSCRCB   *
1055  LSCRCZ   *
 985  LSCTA    *
 986  LSCTAB   *
 987  LSCTAZ   *
1041  LSDSF    *
1042  LSDSFB   *
1043  LSDSFZ   *
 989  LSDST    *
 990  LSDSTB   *
 991  LSDSTZ   *
1025  LSEPF    *
1026  LSEPFB   *
1027  LSEPFZ   *
1009  LSLSP    *
1010  LSLSPB   *
1011  LSLSPZ   *
 993  LSMOD    *
 994  LSMODB   *
 995  LSMODZ   *
1073  LSNTO    *
1074  LSNTOB   *
1075  LSNTOZ   *
 997  LSPAR    *
 998  LSPARB   *
 999  LSPARZ   *
1037  LSPLA    *
1038  LSPLAB   *
1039  LSPLAZ   *
 953  LSRCA    *
 954  LSRCAB   *
 955  LSRCAZ   *
 957  LSREM    *
 958  LSREMB   *
 959  LSREMZ   *
1033  LSRRS    *
1034  LSRRSB   *
1035  LSRRSZ   *
 949  LSRRT    *
 950  LSRRTB   *
 951  LSRRTZ   *
 961  LSRTO    *
 962  LSRTOB   *
 963  LSRTOZ   *
 965  LSSRS    *
 966  LSSRSB   *
 967  LSSRSZ   *
 981  LSSWS    *
 982  LSSWSB   *
 983  LSSWSZ   *
1021  LSTER    *
1022  LSTERB   *
1023  LSTERZ   *
 945  LSTHD    *
 946  LSTHDB   *
 947  LSTHDZ   *
 969  LSWCA    *
 970  LSWCAB   *
 971  LSWCAZ   *
 973  LSWEM    *
 974  LSWEMB   *
 975  LSWEMZ   *
1029  LSWRS    *
1030  LSWRSB   *
1031  LSWRSZ   *
 977  LSWTO    *
 978  LSWTOB   *
 979  LSWTOZ   *
1005  LSXMM    *
1006  LSXMMB   *
1007  LSXMMZ   *
1045  LSYNC    *
1046  LSYNCB   *
1047  LSYNCZ   *
1077  LSYNR    *
1078  LSYNRB   *
1079  LSYNRZ   *
1065  LSYNT    *
1066  LSYNTB   *
1067  LSYNTZ   *
 591  MAP      1523  1579  1588  1702  1705
 588  MP        589   590   592   593   594   595
 592  MPMR0    *
 593  MPMR1    *
 594  MPMR2    *
```

```
 595   MPMR3    *
 468   MT         469    470    471    472    473    474    475    476    477
                  478    479    480    481    482    483    484    485    486
                  487    488    489    490    491    492    493    494    495
                  496    497    498    499    500    501    502    503    504
                  505    506    507    508    509    510    511    512    513
                  514    515    516    517    518    519    520    521    522
                  523    524
 502   NEG      *
 513   NINE       141    165
1823   OCPR      1824
 505   ONE        157    181
   0   P           27     29     30     36     39     41     45     49     53
                   57     61     65     69     73     77     81     84     85
                   85     86     87     91     92     92     93     94     97
                   99    100    101    101    102    103    104    105    106
                  107    107    109    109    112    114    115    115    116
                  118    118    119    120    121    123    124    125    125
                  129    129    130    131    132    132    133    136    137
                  138    140    142    144    146    148    150    152    154
                  156    160    161    162    164    166    168    170    172
                  174    176    178    180    192    194    194    195    196
                  196    199    201    201    202    203    203    206    208
                  208    209   1446   1447   1458   1459
1329   PCBSL    *
1330   PCBSLB   *
1331   PCBSLZ   *
1317   PCCLN    *
1318   PCCLNB   *
1319   PCCLNZ   *
1341   PCCTP    *
1342   PCCTPB   *
1343   PCCTPZ   *
1321   PCECH    *
1322   PCECHB   *
1323   PCECHZ   *
1313   PCLLN    *
1314   PCLLNB   *
1315   PCLLNZ   *
1349   PCNTD    *
1350   PCNTDB   *
1351   PCNTDZ   *
1337   PCPCH    *
1338   PCPCHB   *
1339   PCPCHZ   *
1333   PCSWL    *
1334   PCSWLB   *
1335   PCSWLZ   *
1345   PCTYP    *
1346   PCTYPB   *
1347   PCTYPZ   *
1325   PCXMM    *
1326   PCXMMB   *
1327   PCXMMZ   *
 575   PIM1     *
 576   PIM2     *
 577   PIM3     *
 578   PIM4     *
 579   PIM5     *
 580   PIM6     *
 581   PIM7     *
 582   PIM8     *
 699   POST     *
1287   PSABN    *
1288   PSABNB   *
1289   PSABNZ   *
1239   PSASY    *
1240   PSASYB   *
1241   PSASYZ   *
 670   PSBADT   *
 666   PSBEG    *
1299   PSBSC    *
1300   PSBSCB   *
1301   PSBSCZ   *
1251   PSCC1    *
1252   PSCC1B   *
1253   PSCC1Z   *
1255   PSCC2    *
1256   PSCC2B   *
1257   PSCC2Z   *
1291   PSCRC    *
1292   PSCRCB   *
1293   PSCRCZ   *
1271   PSDEF    *
1272   PSDEFB   *
1273   PSDEFZ   *
1279   PSDSF    *
1280   PSDSFB   *
1281   PSDSFZ   *
1267   PSDWN    *
1268   PSDWNB   *
1269   PSDWNZ   *
 672   PSEND    *
1263   PSEPF    *
1264   PSEPFB   *
```

1265	PSEPFZ	*								
1247	PSLSP	*								
1248	PSLSPB	*								
1249	PSLSPZ	*								
1231	PSMOD	*								
1232	PSMODB	*								
1233	PSMODZ	*								
671	PSNSEC	*								
1235	PSPAR	*								
1236	PSPARB	*								
1237	PSPARZ	*								
1275	PSPLA	*								
1276	PSPLAB	*								
1277	PSPLAZ	*								
667	PSPROT	*								
1259	PSTER	*								
1260	PSTERB	*								
1261	PSTERZ	*								
1243	PSXMM	*								
1244	PSXMMB	*								
1245	PSXMMZ	*								
1283	PSYNC	*								
1284	PSYNCB	*								
1285	PSYNCZ	*								
1303	PSYNR	*								
1304	PSYNRB	*								
1305	PSYNRZ	*								
1295	PSYNT	*								
1296	PSYNTB	*								
1297	PSYNTZ	*								
32	PUSH	*								
1457	PUTMEM	*								
228	PUTQ	*								
532	RA0	*								
533	RA1	*								
651	RADNR	1594	1600	1603	1653	1666	1669			
534	RB0	*								
535	RB1	*								
649	RFCB	1578	1699							
504	RHW	1534	1718							
645	ROPWD	1533	1544	1657	1717					
1740	RQBLK	1741	1744	1746	1749	1750	1759	1765		
1514	RQST	1533	1544	1594	1603	1612	1641	1644	1653	1657
		1669	1699	1717						
642	RSTPR	1612	1641	1644						
650	RTIDB	1517								
96	SETA	*								
111	SETB	*								
191	SETF	*								
511	SEVEN	145	169							
510	SIX	147	171	1545						
26	SPACE	*								
135	SUBAT	*								
288	TBATSK	*								
287	TBCPTH	*								
274	TBENTY	*								
268	TBEVNT	1672								
282	TBID	*								
277	TBISA	*								
278	TBISB	*								
280	TBISP	*								
281	TBISRS	*								
294	TBIST	1521								
279	TBISX	*								
292	TBKEY	1518								
283	TBKN1	*								
284	TBKN2	*								
285	TBKN3	*								
293	TBMIMG	*								
291	TBNUCL	*								
267	TBPL	*								
269	TBRSA	*								
270	TBRSB	*								
289	TBRSE	*								
272	TBRSP	*								
273	TBRSTS	1504	1574	1590	1611	1685	1801			
271	TBRSX	*								
322	TBS0	*								
321	TBS1	*								
309	TBS10	*								
308	TBS11	*								
306	TBS12	*								
305	TBS13	*								
304	TBS14	*								
302	TBS15	*								
320	TBS2	*								
318	TBS3	*								
317	TBS4	*								
316	TBS5	*								
314	TBS6	*								
313	TBS7	*								
312	TBS8	*								
310	TBS9	*								
290	TBSIZ	*								
266	TBST	1620	1622	1690	1692					

```
 286   TBTLC    *
 276   TBTMIN   *
 275   TBTMS    *
 265   TBTRD    *
   0   TC$BRQ   1491   1738
   0   TC$CRQ   1492
   0   TC$FRQ   1499   1771   1788
   0   TC$DCM   1498   1596   1617
1822   TC$DCT   1501   1826
1115   TCBSL    *
1116   TCBSLB   *
1117   TCBSLZ   *
1099   TCCLN    *
1100   TCCLNB   *
1101   TCCLNZ   *
1127   TCCON    *
1128   TCCONB   *
1129   TCCONZ   *
1095   TCCTA    *
1096   TCCTAB   *
1097   TCCTAZ   *
1151   TCCTP    *
1152   TCCTPB   *
1153   TCCTPZ   *
1729   TCD      1730   1732   1735   1736   1768
1187   TCDCC    *
1188   TCDCCB   *
1189   TCDCCZ   *
1195   TCDTD    *
1196   TCDTDB   *
1197   TCDTDZ   *
1123   TCECH    *
1124   TCECHB   *
1125   TCECHZ   *
1199   TCID1    *
1200   TCID1B   *
1201   TCID1Z   *
1203   TCID2    *
1204   TCID2B   *
1205   TCID2Z   *
1171   TCLDF    *
1172   TCLDFB   *
1173   TCLDFZ   *
1103   TCLLN    *
1104   TCLLNB   *
1105   TCLLNZ   *
1143   TCNOD    *
1144   TCNODB   *
1145   TCNODZ   *
1139   TCNTD    *
1140   TCNTDB   *
1141   TCNTDZ   *
1107   TCPCH    *
1108   TCPCHB   *
1109   TCPCHZ   *
1135   TCRBC    *
1136   TCRBCB   *
1137   TCRBCZ   *
1191   TCRBF    *
1192   TCRBFB   *
1193   TCRBFZ   *
1175   TCRCA    1730   1735
1176   TCRCAB   *
1177   TCRCAZ   *
1155   TCRMD    *
1156   TCRMDB   *
1157   TCRMDZ   *
1091   TCRQH    1662   1768
1092   TCRQHB   *
1093   TCRQHZ   *
1163   TCRRS    *
1164   TCRRSB   *
1165   TCRRSZ   *
1179   TCSTD    *
1180   TCSTDB   *
1181   TCSTDZ   *
1111   TCSWL    *
1112   TCSWLB   *
1113   TCSWLZ   *
1087   TCTCD    *
1088   TCTCDB   *
1089   TCTCDZ   *
1147   TCTYP    *
1148   TCTYPB   *
1149   TCTYPZ   *
1131   TCWBC    *
1132   TCWBCB   *
1133   TCWBCZ   *
1183   TCWCA    1732   1736
1184   TCWCAB   *
1185   TCWCAZ   *
1159   TCWMD    *
1160   TCWMDB   *
1161   TCWMDZ   *
1167   TCWRS    *
```

```
1168   TCWRSB   *
1169   TCWRSZ   *
1119   TCXMM    *
1120   TCXMMB   *
1121   TCXMMZ   *
 514   TEN       139   163
 205   TESTF    *
 507   THREE     153   177
1684   TIDB      1685  1690  1692
   0   TIDOCT    1500  1619
1375   TIDSP    *
1376   TIDSPB   *
1377   TIDSPZ   *
   0   TIDTEX    1496  1670
1367   TIDWN    *
1368   TIDWNB   *
1369   TIDWNZ   *
1391   TINET    *
1392   TINETB   *
1393   TINETZ   *
1379   TIODN    *
1380   TIODNB   *
1381   TIODNZ   *
1387   TIODP    *
1388   TIODPB   *
1389   TIODPZ   *
1383   TIOSC    *
1384   TIOSCB   *
1385   TIOSCZ   *
1371   TISEC    *
1372   TISECB   *
1373   TISECZ   *
1359   TITU1    *
1360   TITU1B   *
1361   TITU1Z   *
1363   TITU2    *
1364   TITU2B   *
1365   TITU2Z   *
1221   TPFPA    *
1222   TPFPAB   *
1223   TPFPAZ   *
1213   TPRPA    *
1214   TPRPAB   *
1215   TPRPAZ   *
1217   TPWPA    *
1218   TPWPAB   *
1219   TPWPAZ   *
1509   TQ01      1802
1544   TQ10     *
1650   TQ100     1557
1661   TQ100A    1805
1663   TQ100B    1667
1668   TQ100C    1665
1682   TQ102     1510
1699   TQ110     1659
1753   TQ110A    1739
1761   TQ110B    1756
1768   TQ120     1762  1775  1784
1786   TQ120A    1769
1797   TQ120B    1791
1804   TQ130     1707
1562   TQ20      1547  1570
1597   TQ20A     1601
1602   TQ20B     1599
1571   TQ20F     1568
1626   TQ30      1618
1635   TQ81      1555
1638   TQ82      1556
1639   TQ89      1636
1812   TQCTBA    1505  1799
1817   TQMEM     1737  1751
1813   TQRCA     1731  1755  1760
1816   TQRQST    1652  1715  1786  1804
1815   TQTCDA    1537  1538  1540  1551  1661  1728  1753
1814   TQWCA     1733  1761  1766
1807   TQX       1776  1781
 506   TWO        155   179
 440   V$1MIN   *
 458   V$BFC    *
 366   V$BGLB   *
 363   V$BIC1   *
 392   V$BTB    *
 400   V$BTBM   *
 457   V$BVN    *
 408   V$CAM    *
 420   V$CKB    *
 448   V$CKIT   *
 387   V$CKPT   *
 380   V$CPL    *
 367   V$CRDM   *
 410   V$CRDR   *
 421   V$CRM    *
 381   V$CRS    *
 426   V$CTAD   *
 379   V$CTL     1503  1520  1573  1589  1609  1683  1800
```

```
418   V$CTMS   *
364   V$DATE   *
422   V$DSTB   *
435   V$ERFG   *
  0   V$ERR    1490  1645
  0   V$EXEC   1452  1464
416   V$FGLB   *
385   V$FLRS   *
  0   V$FNRM   1489  1693
417   V$FREE   *
401   V$GFCB   *
397   V$IM     *
447   V$IOA    *
449   V$JCB    *
356   V$JCFG   *
370   V$JCTM   *
354   V$JNAM   *
436   V$JOP    *
407   V$KEY    *
355   V$LCNT   *
390   V$LER    *
423   V$LIT    *
395   V$LLUP   *
396   V$LPP    *
386   V$LRSK   *
389   V$LSAL   *
414   V$LUNT   *
394   V$LUP    *
437   V$LUT1   *
438   V$LUT2   *
439   V$LUT3   *
  0   V$MALC   1565  1566
399   V$MAP    *
  0   V$MDAL   1774  1778  1793
402   V$MIMG   *
398   V$MPM    *
428   V$NCTR   *
393   V$NPAG   *
452   V$OCB    *
415   V$OPCF   *
388   V$OPCL   *
424   V$PGT    *
429   V$PIMN   *
365   V$PLCT   *
384   V$PTVB   *
427   V$SCTL   *
419   V$SCV    *
434   V$SLFG   *
403   V$ST0    1524  1588  1705
404   V$ST1    1526
405   V$ST2    1528  1579
406   V$ST3    1530  1702
382   V$TB     *
411   V$TBGT   *
459   V$TFC    *
391   V$TJCP   *
413   V$TMN    *
412   V$TMS    *
383   V$UTB    *
  1   VORTEX   1449  1451  1461  1463  1507  1515  1563  1607  1701
                 1704  1772  1789  1806
  0   VT$GTM   1454  1494
  0   VT$LTT   1497  1536  1720
  0   VT$MP1   1493  1760  1766
  0   VT$PTM   1466  1495
1502  VT$TCQ     12  1501  1627  1674
  0   VTPUSH     33    35
697   X         232   254  1504  1506  1566  1574  1576  1577  1578
               1580  1582  1584  1586  1590  1598  1602  1610  1633
               1640  1664  1668  1684  1729  1754  1778  1793
469   ZERO     *
```

```
                                                                                                                                01 00001
                                                                                                                                01 00002
                                                                                                                                01 00003
                                                                                                                                01 00004
                                                                                                                                01 00005
                                                                                                                                01 00006
                                                                                                                                01 00007
                                                                                                                                01 00008
                                                                                                                                01 00009
                                                                                                                                01 00010
                                                                                                                                01 00011
                                                                                                                                01 00012
                                                                                                                                01 00013
                                                                                                                                01 00014
                                                                                                                                01 00015
                                                                                                                                01 00016
                                                                                                                                01 00017
                                                                                                                                01 00018
000000 000000 A                                                                                                                 01 00019
000001 000000 A                                                                                                                 01 00020
       000000 R                                                                                                                 01 00021
ENTRY NAMES
000000 R DUMMYT
EXTERNAL NAMES
SYMBOLS
000000 R DUMMYT
  0 ERRORS ASSEMBLY COMPLETE
```

19	DUMMYT	11	17	18	21

```
000001 A      1 VORTEX SET     1              PUT LAST FOR VORTEX                    V2  02 00001
              2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES02 00002
              3 *                                                                      02 00003
              4 *       V.D.M.    PART NO.     92L1105-011B                          02 00004
              5 *                                                                      02 00005
              6 *                            RELEASED     3-1-74                     02 00006
              7 *                                                                      02 00007
              8 *                                                                      02 00008
              9 *             CLOSE                                                    02 00009
             10 *                                                                      02 00010
             11 *                                                                      02 00011
             12       TITLE   CLOSE                                                   02 00012
             13 *                                                                      02 00013
             14 *                                                                      02 00014
             15 *       CLOSE - ROUTINE TO SERVICE JCP CLOSE REQUESTS. SCHEDULED THROUGH 02 00015
             16 *       THE RTE AS A RESULT OF A                                       02 00016
             17 *                                                                      02 00017
             18 *             /CLOSE                                                   02 00018
             19 *                                                                      02 00019
             20 *       DIRECTIVE TO THE JCP.                                          02 00020
             21 *                                                                      02 00021
             22 *                                                                      02 00022
             23       NAME    CLOSE                                                   02 00023
             24 *                                                                      02 00024
             25       EXT     V$DSTB,V$JPBF                                      V2   02 00025
000412 A     26 V$JCB  EQU     0412                                                   02 00026
000055 A     27 V$JCFG EQU     055                                                    02 00027
000345 A     28 V$LUNT EQU     0345                                                   02 00028
000400 A     29 V$LUT1 EQU     0400                                                   02 00029
000431 A     30 BS8    EQU     0431                                                   02 00030
000462 A     31 LHW    EQU     0462                                                   02 00031
000463 A     32 RHW    EQU     0463                                                   02 00032
000471 A     33 TEN    EQU     0471                                                   02 00033
000001 A     34 X      EQU     1                                                      02 00034
000002 A     35 B      EQU     2                                                      02 00035
000000 010412 A  36 CLOSE  LDA     V$JCB                                             02 00036
000001 004241 A  37        LRLA    1              INITIALIZE CHARACTER               02 00037
000002 054463 A  38        STA     CHPTR          POINTER                            02 00038
000003 014143 A  39        LDA     CLSCAL+3                                          02 00039
000004 150462 A  40        ANA     LHW            CLEAR OLD LUN                      02 00040
000005 054141 A  41        STA     CLSCAL+3       FROM CLOSE REQUEST                 02 00041
000006 005001 A  42        TZA                    SET DELIMITER FLAG                 02 00042
000007 054461 A  43        STA     DELIMF         FOR COMMA OR EQUALS                02 00043
000010 002000 A  44        JMPM    CKLUN          SCAN, CHECK, AND CONVERT LUN       02 00044
000011 000362 R
000012 001004 A  45        JAN     CLSX           JUMP IF INVALID NUMBER             02 00045
000013 000161 R
000014 006140 A  46        SUBI    256                                               02 00046
000015 000400 A
000016 001002 A  47        JAP     CLSX           JUMP IF NUMBER TOO LARGE           02 00047
000017 000161 R
000020 006120 A  48        ADDI    256                                               02 00048
000021 000400 A
000022 114124 A  49        ORA     CLSCAL+3       OR LOG. UNIT NO.                   02 00049
000023 054123 A  50        STA     CLSCAL+3       INTO CLOSE CALL                    02 00050
000024 044437 A  51        INR     IGBLK                                             02 00051
000025 002000 A  52        JMPM    GETCHR         GET NEXT CHARACTER                 02 00052
000026 000213 R
000027 144446 A  53        SUB     N260           CHAR A NUMBER ?                    02 00053
000030 001004 A  54        JAN     CLSX           NO - ILLEGAL                       02 00054
000031 000161 R
000032 144441 A  55        SUB     N12            CHAR A NUMBER ?                    02 00055
000033 001002 A  56        JAP     CLSG           NO - MUST BE A LETTER              02 00056
000034 000057 R
000035 014430 A  57        LDA     CHPTR                                             02 00057
000036 005311 A  58        DAR                    BACK UP CHARACTER                  02 00058
000037 054426 A  59        STA     CHPTR          POINTER                            02 00059
000040 005101 A  60        INCR    01             SET DELIMITER FLAG                 02 00060
000041 054427 A  61        STA     DELIMF         FOR PERIOD OR END OF BUFFER        02 00061
000042 002000 A  62        JMPM    CNVRT          SCAN OFF AND CONVERT LOG. LINE NO. 02 00062
000043 000254 R
000044 001004 A  63        JAN     CLSX           JUMP IF INVALID NUMBER             02 00063
000045 000161 R
000046 006140 A  64        SUBI    255                                               02 00064
000047 000377 A
000050 001002 A  65        JAP     CLSX           JUMP IF NUMBER TOO LARGE           02 00065
000051 000161 R
000052 006120 A  66        ADDI    255                                               02 00066
000053 000377 A
000054 054406 A  67        STA     CLSDCB+2       SET LOG. LINE NO. IN DCB           02 00067
000055 001000 A  68        JMP     CLSK           GO TO DO CLOSE                     02 00068
000056 000144 R
000057 014407 A  69 CLSG   LDA     SVCHAR         SET 1ST CHAR                       02 00069
000060 004250 A  70        LRLA    8              OF TUID                            02 00070
000061 054377 A  71        STA     CLSDCB         IN DCB                             02 00071
000062 002000 A  72        JMPM    GETCHR         GET NEXT CHARACTER                 02 00072
000063 000213 R
000064 144415 A  73        SUB     PERIOD         END OF BUFFER ?                    02 00073
000065 001016 A  74        JANZ    CLSH           NO                                 02 00074
000066 000076 R
000067 014371 A  75        LDA     CLSDCB         YES -                              02 00075
000070 114412 A  76        ORA     BLANK          BLANK FILL                         02 00076
000071 054367 A  77        STA     CLSDCB         REST OF                            02 00077
000072 014411 A  78        LDA     DBLBLK         TUID IN DCB                        02 00078
000073 054366 A  79        STA     CLSDCB+1                                          02 00079
```

```
000074 001000 A    80          JMP     CLSK        GO TO DO CLOSE                          02 00080
000075 000144 R
000076 014370 A    81 CLSH     LDA     SVCHAR                                              02 00081
000077 114361 A    82          ORA     CLSDCB      OR 2ND CHARACTER                        02 00082
000100 054360 A    83          STA     CLSDCB      OF TUID INTO DCB                        02 00083
000101 002000 A    84          JMPM    GETCHR      GET NEXT CHARACTER                      02 00084
000102 000213 R
000103 144376 A    85          SUB     PERIOD      END OF BUFFER ?                         02 00085
000104 001016 A    86          JANZ    CLSI        NO                                      02 00086
000105 000112 R
000106 014375 A    87          LDA     DBLBLK      YES -                                   02 00087
000107 054352 A    88          STA     CLSDCB+1    FILL OUT TUID WITH BLANKS               02 00088
000110 001000 A    89          JMP     CLSK        GO TO DO CLOSE                          02 00089
000111 000144 R
000112 014354 A    90 CLSI     LDA     SVCHAR                                              02 00090
000113 004250 A    91          LRLA    8           OR 3RD CHARACTER                        02 00091
000114 054345 A    92          STA     CLSDCB+1    OF TUID INTO DCB                        02 00092
000115 002000 A    93          JMPM    GETCHR      GET NEXT CHARACTER                      02 00093
000116 000213 R
000117 144362 A    94          SUB     PERIOD      END OF BUFFER ?                         02 00094
000120 001016 A    95          JANZ    CLSJ        NO                                      02 00095
000121 000127 R
000122 014337 A    96          LDA     CLSDCB+1    YES -                                   02 00096
000123 114357 A    97          ORA     BLANK       BLANK FILL                              02 00097
000124 054335 A    98          STA     CLSDCB+1    TUID IN DCB                             02 00098
000125 001000 A    99          JMP     CLSK                                                02 00099
000126 000144 R
000127 014337 A   100 CLSJ     LDA     SVCHAR                                              02 00100
000130 114331 A   101          ORA     CLSDCB+1    OR 4TH CHARACTER                        02 00101
000131 054330 A   102          STA     CLSDCB+1    OF TUID INTO DCB                        02 00102
000132 044331 A   103          INR     IGBLK                                               02 00103
000133 002000 A   104          JMPM    GETCHR      REST OF BUFFER EMPTY ?                  02 00104
000134 000213 R
000135 001010 A   105          JAZ     CLSK        YES                                     02 00105
000136 000144 R
000137 144342 A   106          SUB     PERIOD                                              02 00106
000140 001010 A   107          JAZ     CLSK        YES                                     02 00107
000141 000144 R
000142 001000 A   108          JMP     CLSX        NO - ERROR                              02 00108
000143 000161 R
000144            109 CLSCAL   BSS     0                                                   02 00109
                  110 CLSK     CLOSE   CLSDCB,0    PERFORM CLOSE                           02 00110
000144 006505 A
000145 000000 E
000146 100000 A
000147 003400 A
000150 000461 R
000151 000000 A
000152 000000 A
000153 006017 A   111          LDAE    CLSK+2      GET STATUS FROM CLOSE REQUEST           02 00111
000154 000146 R
000155 006150 A   112          ANAI    077740      ERRORS ?                                02 00112
000156 077740 A
000157 001010 A   113          JAZ     CLSY        NO                                      02 00113
000160 000166 R
000161 006010 A   114 CLSX     LDAI    4           YES - SET ERROR                         02 00114
000162 000004 A
000163 050055 A   115          STA     V$JCFG      FLAG FOR JCP                            02 00115
000164 001000 A   116          JMP     CLSZ                                                02 00116
000165 000210 R
000166 017000 I   117 CLSY     LDA     CLSCAL+3    GET TCM/CCM LUN                         02 00117
000167 150463 A   118          ANA     RHW         CHECK IF JCP ASSIGNABLE                 02 00118
000170 054314 A   119          STA     TEMP                                                02 00119
000171 005311 A   120          DAR                                                         02 00120
000172 006147 A   121          SUBE*   V$LUT1                                             02 00121
000173 100400 A
000174 001002 A   122          JAP     CLSZ        NO                                      02 00122
000175 000210 R
000176 010400 A   123          LDA     V$LUT1      MAKE CURRENT ASSIGNMENT EQ PERMANENT    02 00123
000177 124305 A   124          ADD     TEMP                                                02 00124
000200 005012 A   125          TAB                                                         02 00125
000201 016000 A   126          LDA     0,B                                                 02 00126
000202 004350 A   127          LSRA    8                                                   02 00127
000203 054002 A   128          STA     CLSY1+1                                             02 00128
000204 004250 A   129          LRLA    8                                                   02 00129
000205 006110 A   130 CLSY1    ORAI    0                                                   02 00130
000206 000000 A
000207 056000 A   131          STA     0,B                                                 02 00131
                  132 CLSZ     EXIT                EXIT TO JCP                             02 00132
000210 006505 A
000211 000000 E
000212 000200 A
                  133          EJEC                                                        02 00133
                  134 *                                                                    02 00134
                  135 *        SUBROUTINE TO GET NEXT CHARACTER FROM JCP BUFFER.  USES     02 00135
                  136 *        CHPTR AS CHARACTER POINTER.  CHPTR/2 IS WORD ADDRESS.       02 00136
                  137 *        CHPTR(0) = 0 GIVES BITS 15-8, CHPTR(0) = 1 GIVES BITS 7-09  02 00137
                  138 *        ALSO USES IGBLK AS FLAG FOR SKIPPING RECORDS.               02 00138
                  139 *        IGBLK = 1 CAUSES BLANKS TO BE IGNORED.  IGBLK = 0 ALWAYS    02 00139
                  140 *        GIVES NEXT CHARACTER.                                       02 00140
                  141 *                                                                    02 00141
                  142 *        THE CALLING SEQUENCE IS....                                 02 00142
                  143 *                                                                    02 00143
                  144 *        JMPM    GETCHR                                              02 00144
                  145 *                                                                    02 00145
```

```
000213 000000 A   146 GETCHR DATA     0                                                    02 00146
000214 064250 A   147        STB      GTSAVB     SAVE B                                    02 00147
000215 024250 A   148 GTCHA  LDB      CHPTR                                                02 00148
000216 005021 A   149        TBA                 INCRENENT POINTER                         02 00149
000217 005111 A   150        IAR                 TO NEXT CHARACTER                         02 00150
000220 054245 A   151        STA      CHPTR                                                02 00151
000221 004141 A   152        LSRB     1                                                    02 00152
000222 006400 A   153        BT       0,GTCHC    JUMP IF LEFT BYTE                         02 00153
000223 000231 R
000224 016000 A   154        LDA      0,B                                                  02 00154
000225 006150 A   155        ANAI     0377       GET RIGHT BYTE                            02 00155
000226 000377 A
000227 001000 A   156        JMP      GTCHD                                                02 00156
000230 000233 R
000231 016000 A   157 GTCHC  LDA      0,B                                                  02 00157
000232 004350 A   158        LSRA     8          GET LEFT BYTE                             02 00158
000233 024230 A   159 GTCHD  LDB      IGBLK      IGNORE BLANKS ?                           02 00159
000234 001020 A   160        JBZ      GTCHF      NO                                        02 00160
000235 000244 R
000236 144231 A   161        SUB      N240       YES - BLANK CHAR ?                        02 00161
000237 001010 A   162        JAZ      GTCHA      YES                                       02 00162
000240 000215 R
000241 124226 A   163        ADD      N240                                                 02 00163
000242 005002 A   164        TZB                                                           02 00164
000243 064220 A   165        STB      IGBLK      RESET IGNORE BLANKS FLAG                  02 00165
000244 024220 A   166 GTCHF  LDB      GTSAVB                                               02 00166
000245 054221 A   167        STA      SVCHAR                                               02 00167
000246 001016 A   168        JANZ*    GETCHR     RETURN IF NOT END OF BUFFER               02 00168
000247 100213 R
000250 014231 A   169        LDA      PERIOD                                               02 00169
000251 054215 A   170        STA      SVCHAR                                               02 00170
000252 001000 A   171        JMP*     GETCHR     RETURN                                    02 00171
000253 100213 R
                  172        EJEC                                                          02 00172
                  173 *                                                                    02 00173
                  174 *      SUBROUTINE TO CONVERT ASCII TO BINARY.  RETURNS RESULT IN     02 00174
                  175 *      A REGISTER, OR SETS A NEGATIVE IF NON NUMERIC CHARACTERS      02 00175
                  176 *      ARE ENCOUNTERED.  ASSUMES DECIMAL UNLESS THERE IS A LEADING   02 00176
                  177 *      ZERO.                                                         02 00177
                  178 *                                                                    02 00178
                  179 *      THE CALLING SEQUENCE IS...                                    02 00179
                  180 *                                                                    02 00180
                  181 *      JMPM    CNVRT                                                 02 00181
                  182 *                                                                    02 00182
                  183 *      CHPTR POINTS TO THE FIRST CHARACTER OF THE NUMBER.            02 00183
                  184 *                                                                    02 00184
                  185 *                                                                    02 00185
000254 000000 A   186 CNVRT  DATA     0                                                    02 00186
000255 064214 A   187        STB      CNSAVB     SAVE B                                    02 00187
000256 005001 A   188        TZA                                                           02 00188
000257 054213 A   189        STA      NUM        INITIALIZE NUMBER TO ZERO                 02 00189
000260 014213 A   190        LDA      N12                                                  02 00190
000261 054213 A   191        STA      BASE       INITIALIZE BASE TO TEN                    02 00191
000262 044201 A   192        INR      IGBLK                                                02 00192
000263 002000 A   193        JMPM     GETCHR     GET 1ST CHARACTER                         02 00193
000264 000213 R
000265 006617 A   194        SRE      N260,7,010 CHAR EQUAL ZERO                           02 00194
000266 000476 R
000267 001000 A   195        JMP      CNVRTC     NO                                        02 00195
000270 000273 R
000271 001000 A   196        JMP      CNVRTD     YES                                       02 00196
000272 000303 R
000273 144202 A   197 CNVRTC SUB      N260       CHAR GEQ 260 ?                            02 00197
000274 001004 A   198        JAN      CNVRTK     NO - NOT A  NUMBER                        02 00198
000275 000320 R
000276 144175 A   199        SUB      N12        CHAR LT 272 ?                             02 00199
000277 001002 A   200        JAP      CNVRTK     NO - NOT A NUMBER                         02 00200
000300 000320 R
000301 001000 A   201        JMP      CNVRTF                                               02 00201
000302 000311 R
000303 014173 A   202 CNVRTD LDA      N10        1ST CHARACTER A ZERO -                    02 00202
000304 054170 A   203        STA      BASE       CHANGE BASE TO EIGHT                      02 00203
000305 002000 A   204 CNVRTE JMPM     GETCHR     GET NEXT CHARACTER                        02 00204
000306 000213 R
000307 001000 A   205        JMP      CNVRTC                                               02 00205
000310 000273 R
000311 024161 A   206 CNVRTF LDB      NUM        COMPUTE.....                              02 00206
000312 014154 A   207        LDA      SVCHAR                                               02 00207
000313 144162 A   208        SUB      N260       NUM = NUM*BASE + CHAR - 260               02 00208
000314 164160 A   209        MUL      BASE                                                 02 00209
000315 064155 A   210        STB      NUM                                                  02 00210
000316 001000 A   211        JMP      CNVRTE                                               02 00211
000317 000305 R
000320 014146 A   212 CNVRTK LDA      SVCHAR     NON - NUMERIC CHAR                        02 00212
000321 144161 A   213        SUB      BLANK      BLANK CHARACTER ?                         02 00213
000322 001016 A   214        JANZ     CNVRTL     NO                                        02 00214
000323 000327 R
000324 044137 A   215        INR      IGBLK      YES -                                     02 00215
000325 002000 A   216        JMPM     GETCHR     ADVANCE SCAN TO DELIMITER                 02 00216
000326 000213 R
000327 014141 A   217 CNVRTL LDA      DELIMF     TERMINATE AT END OF BUFFER ?              02 00217
000330 001016 A   218        JANZ     CNVRTN     YES                                       02 00218
000331 000345 R
000332 014134 A   219        LDA      SVCHAR     NO, MUST BE COMMA OR EQUALS               02 00219
000333 144144 A   220        SUB      COMMA      COMMA ?                                   02 00220
```

```
000334 001010 A  221          JAZ     CNVRTW          YES                                  02 00221
000335 000356 R
000336 124141 A  222          ADD     COMMA           NO -                                 02 00222
000337 144141 A  223          SUB     EQUALS          EQUALS ?                             02 00223
000340 001010 A  224          JAZ     CNVRTW          YES                                  02 00224
000341 000356 R
000342 005301 A  225          DECR    01              NO - SET ERROR FLAG                  02 00225
000343 001000 A  226          JMP     CNVRTX                                               02 00226
000344 000357 R
000345 014121 A  227 CNVRTN   LDA     SVCHAR          END OF BUFFER ?                      02 00227
000346 001010 A  228          JAZ     CNVRTW          YES                                  02 00228
000347 000356 R
000350 144131 A  229          SUB     PERIOD          NO - PERIOD ?                        02 00229
000351 001010 A  230          JAZ     CNVRTW          YES                                  02 00230
000352 000356 R
000353 005301 A  231          DECR    01              NO - SET ERROR FLAG                  02 00231
000354 001000 A  232          JMP     CNVRTX                                               02 00232
000355 000357 R
000356 014114 A  233 CNVRTW   LDA     NUM                                                  02 00233
000357 024112 A  234 CNVRTX   LDB     CNSAVB                                               02 00234
000360 001000 A  235          JMP*    CNVRT           RETURN                               02 00235
000361 100254 R
                 236          EJEC                                                         02 00236
                 237 *                                                                     02 00237
                 238 *        SUBROUTINE TO CHECK LOGICAL UNITS.                           02 00238
                 239 *        CONVERTS LOGICAL UNIT NAMES TO LOGICAL UNIT NU-              02 00239
                 240 *        RETURNS WITH A REG. NEG. IF LUN IS IN ERROR.                 02 00240
                 241 *        CALLS SUBROUTINES GETCHR AND CNVRT.                          02 00241
                 242 *                                                                     02 00242
000362 000000 A  243 CKLUN    DATA    0                                                    02 00243
000363 064122 A  244          STB     CKSAVB                                               02 00244
000364 044077 A  245          INR     IGBLK                                                02 00245
000365 002000 A  246          JMPM    GETCHR                                               02 00246
000366 000213 R
000367 054117 A  247          STA     CKLN1                                                02 00247
000370 006140 A  248          SUBI    0260            IS IT A NUMBER                       02 00248
000371 000260 A
000372 001004 A  249          JAN     CK10            NO                                   02 00249
000373 000410 R
000374 140471 A  250          SUB     TEN                                                  02 00250
000375 001002 A  251          JAP     CK10            NO                                   02 00251
000376 000410 R
000377 006017 A  252          LDAE    CHPTR           YES, BACK UP CHR. PTR.               02 00252
000400 000466 R
000401 005311 A  253          DAR                                                          02 00253
000402 006057 A  254          STAE    CHPTR                                                02 00254
000403 000466 R
000404 002000 A  255          JMPM    CNVRT           GET AND CONVERT NUMBER               02 00255
000405 000254 R
000406 001000 A  256          JMP     CK30                                                 02 00256
000407 000445 R
000410 014076 A  257 CK10     LDA     CKLN1                                                02 00257
000411 004250 A  258          LRLA    8                                                    02 00258
000412 054074 A  259          STA     CKLN1                                                02 00259
000413 002000 A  260          JMPM    GETCHR          GET 2ND CHR.                         02 00260
000414 000213 R
000415 114071 A  261          ORA     CKLN1           COMBINE WITH FIRST                   02 00261
000416 054070 A  262          STA     CKLN1                                                02 00262
000417 044044 A  263          INR     IGBLK                                                02 00263
000420 002000 A  264          JMPM    GETCHR                                               02 00264
000421 000213 R
000422 144055 A  265          SUB     COMMA                                                02 00265
000423 001010 A  266          JAZ     CK15                                                 02 00266
000424 000431 R
000425 124052 A  267          ADD     COMMA                                                02 00267
000426 144052 A  268          SUB     EQUALS                                               02 00268
000427 001016 A  269          JANZ    CKERR                                                02 00269
000430 000456 R
000431 030345 A  270 CK15     LDX     V$LUNT                                               02 00270
000432 015000 A  271 CK20     LDA     0,X             GET LOG. UNIT NAME                   02 00271
000433 001010 A  272          JAZ     CKERR           END OF TABLE - NOT FOUND             02 00272
000434 000456 R
000435 005144 A  273          IXR                                                          02 00273
000436 005144 A  274          IXR                                                          02 00274
000437 006617 A  275          SRE     CKLN1,7,010     ENTRY FOUND                          02 00275
000440 000507 R
000441 001000 A  276          JMP     CK20            NO                                   02 00276
000442 000432 R
000443 005344 A  277          DXR                     YES                                  02 00277
000444 015000 A  278          LDA     0,X             GET LOG. UNIT NUMBER                 02 00278
000445 001004 A  279 CK30     JAN     CKERR                                                02 00279
000446 000456 R
000447 140431 A  280          SUB     BS8             0 LEQ LUN LEQ 255                    02 00280
000450 001002 A  281          JAP     CKERR           NO                                   02 00281
000451 000456 R
000452 120431 A  282          ADD     BS8             YES                                  02 00282
000453 024032 A  283 CK40     LDB     CKSAVB                                               02 00283
000454 001000 A  284          JMP*    CKLUN           RETURN                               02 00284
000455 100362 R
000456 005301 A  285 CKERR    DECR    01                                                   02 00285
000457 001000 A  286          JMP     CK40                                                 02 00286
000460 000453 R
                 287 CLSDCB   DCB     0,0                                                  02 00287
000461 000000 A
000462 000000 A
```

```
000463 000000 A
000464 000000 A   288 IGBLK   DATA     0                                                    02 00288
000465 000000 A   289 GTSAVB  DATA     0                                                    02 00289
000466 000000 A   290 CHPTR   DATA     0                                                    02 00290
000467 000000 A   291 SVCHAR  DATA     0                                                    02 00291
000470 000240 A   292 N240    DATA     0240                                                 02 00292
000471 000000 A   293 DELIMF  DATA     0                                                    02 00293
000472 000000 A   294 CNSAVB  DATA     0                                                    02 00294
000473 000000 A   295 NUM     DATA     0                                                    02 00295
000474 000012 A   296 N12     DATA     012                                                  02 00296
000475 000000 A   297 BASE    DATA     0                                                    02 00297
000476 000260 A   298 N260    DATA     0260                                                 02 00298
000477 000010 A   299 N10     DATA     010                                                  02 00299
000500 000254 A   300 COMMA   DATA     0254                                                 02 00300
000501 000275 A   301 EQUALS  DATA     0275                                                 02 00301
000502 000256 A   302 PERIOD  DATA     0256                                                 02 00302
000503 000240 A   303 BLANK   DATA     0240                                                 02 00303
000504 120240 A   304 DBLBLK  DATA     0120240                                              02 00304
000505 000000 A   305 TEMP    DATA     0                                                    02 00305
000506 000000 A   306 CKSAVB  DATA     0                                                    02 00306
000507 000000 A   307 CKLN1   DATA     0                                                    02 00307
       000000 R   308         END      CLOSE                                                02 00308
ENTRY NAMES
000000 R CLOSE
EXTERNAL NAMES
000000 E V$DSTB 000211 E V$EXEC 000145 E V$IOC  000000 E V$JPBF
SYMBOLS
000002 A B      000475 R BASE   000503 R BLANK  000431 A BS8
000466 R CHPTR  000410 R CK10   000431 R CK15   000432 R CK20
000445 R CK30   000453 R CK40   000456 R CKERR  000507 R CKLN1
000362 R CKLUN  000506 R CKSAVB 000000 R CLOSE  000144 R CLSCAL
000461 R CLSDCB 000057 R CLSG   000076 R CLSH   000112 R CLSI
000127 R CLSJ   000144 R CLSK   000161 R CLSX   000166 R CLSY
000205 R CLSY1  000210 R CLSZ   000472 R CNSAVB 000254 R CNVRT
000273 R CNVRTC 000303 R CNVRTD 000305 R CNVRTE 000311 R CNVRTF
000320 R CNVRTK 000327 R CNVRTL 000345 R CNVRTN 000356 R CNVRTW
000357 R CNVRTX 000500 R COMMA  000504 R DBLBLK 000471 R DELIMF
000501 R EQUALS 000213 R GETCHR 000215 R GTCHA  000231 R GTCHC
000233 R GTCHD  000244 R GTCHF  000465 R GTSAVB 000464 R IGBLK
000462 A LHW    000477 R N10    000474 R N12    000470 R N240
000476 R N260   000473 R NUM    000502 R PERIOD 000463 A RHW
000467 R SVCHAR 000505 R TEMP   000471 A TEN    000000 E V$DSTB
000211 E V$EXEC 000145 E V$IOC  000412 A V$JCB  000055 A V$JCFG
000000 E V$JPBF 000345 A V$LUNT 000400 A V$LUT1 000001 A VORTEX
000001 A X
  0 ERRORS ASSEMBLY COMPLETE

 35  B        126  131  154  157
297  BASE     191  203  209
303  BLANK     76   97  213
 30  BS8      280  282
290  CHPTR     38   57   59  148  151  252  254
257  CK10     249  251
270  CK15     266
271  CK20     276
279  CK30     256
283  CK40     286
285  CKERR    269  272  279  281
307  CKLN1    247  257  259  261  262  275
243  CKLUN     44  284
306  CKSAVB   244  283
 36  CLOSE     12   23  308
109  CLSCAL    39   41   49   50  117
287  CLSDCB    67   71   75   77   79   82   83   88   92
               96   98  101  102  110
 69  CLSG      56
 81  CLSH      74
 90  CLSI      86
100  CLSJ      95
110  CLSK      68   80   89   99  105  107  111
114  CLSX      45   47   54   63   65  108
117  CLSY     113
130  CLSY1    128
132  CLSZ     116  122
294  CNSAVB   187  234
186  CNVRT     62  235  255
197  CNVRTC   195  205
202  CNVRTD   196
204  CNVRTE   211
206  CNVRTF   201
212  CNVRTK   198  200
217  CNVRTL   214
227  CNVRTN   218
233  CNVRTW   221  224  228  230
234  CNVRTX   226  232
300  COMMA    220  222  265  267
304  DBLBLK    78   87
293  DELIMF    43   61  217
301  EQUALS   223  268
146  GETCHR    52   72   84   93  104  168  171  193  204
              216  246  260  264
148  GTCHA    162
157  GTCHC    153
159  GTCHD    156
```

166	GTCHF	160								
289	GTSAVB	147	166							
288	IGBLK	51	103	159	165	192	215	245	263	
31	LHW	40								
299	N10	202								
296	N12	55	190	199						
292	N240	161	163							
298	N260	53	194	197	208					
295	NUM	189	206	210	233					
302	PERIOD	73	85	94	106	169	229			
32	RHW	118								
291	SVCHAR	69	81	90	100	167	170	207	212	219
		227								
305	TEMP	119	124							
33	TEN	250								
0	V$DSTB	25								
26	V$JCB	36								
27	V$JCFG	115								
0	V$JPBF	25								
28	V$LUNT	270								
29	V$LUT1	121	123							
1	VORTEX	■								
34	X	271	278							

```
000001 A     1 VORTEX SET     1                PUT LAST FOR VORTEX                                  V2  02 00001
             2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES           02 00002
             3 *                                                                                    02 00003
             4 *       V.D.M.    PART NO.      92L1105-012B                                         02 00004
             5 *                                                                                    02 00005
             6 *                                 RELEASED      3-1-74                               02 00006
             7 *                                                                                    02 00007
             8 *                                                                                    02 00008
             9 *                 OPEN                                                               02 00009
            10 *                                                                                    02 00010
            11 *                                                                                    02 00011
            12                   TITLE   OPEN                                                       02 00012
            13 *                                                                                    02 00013
            14 *                                                                                    02 00014
            15 *       OPEN - ROUTINE TO SERVICE JCP OPEN REQUESTS. SCHEDULED THROUGH               02 00015
            16 *       JCP AS THE RESULT OF A                                                       02 00016
            17 *                                                                                    02 00017
            18 *                 /OPEN                                                              02 00018
            19 *                                                                                    02 00019
            20 *       DIRECTIVE TO THE JCP.                                                        02 00020
            21 *                                                                                    02 00021
            22 *                                                                                    02 00022
            23 *                                                                                    02 00023
            24                   NAME    OPEN                                                       02 00024
            25                   EXT     V$DSTB,V$JPBF                                        V2    02 00025
            26 *                                                                                    02 00026
000412 A    27 V$JCB   EQU       0412                                                               02 00027
000055 A    28 V$JCFG  EQU       055                                                                02 00028
000345 A    29 V$LUNT  EQU       0345                                                               02 00029
000400 A    30 V$LUT1  EQU       0400                                                               02 00030
000401 A    31 V$LUT2  EQU       0401                                                               02 00031
000402 A    32 V$LUT3  EQU       0402                                                               02 00032
000431 A    33 BS8     EQU       0431                                                               02 00033
000462 A    34 LHW     EQU       0462                                                               02 00034
000463 A    35 RHW     EQU       0463                                                               02 00035
000471 A    36 TEN     EQU       0471                                                               02 00036
000001 A    37 X       EQU       1                                                                  02 00037
000002 A    38 B       EQU       2                                                                  02 00038
000000 010412 A 39 OPEN LDA       V$JCB                                                              02 00039
000001 004241 A 40      LRLA      1              INITIALIZE                                          02 00040
000002 054562 A 41      STA       CHPTR          CHARACTER POINTEE                                   02 00041
000003 014160 A 42      LDA       OPNCAL+3                                                           02 00042
000004 150462 A 43      ANA       LHW            CLEAR OLD LUN                                       02 00043
000005 054156 A 44      STA       OPNCAL+3       FROM OPEN REQUEST                                   02 00044
000006 005001 A 45      TZA                      SET DELIMITER FLAG                                  02 00045
000007 054554 A 46      STA       DELIMF         FOR COMMA OR EQUALS                                 02 00046
000010 054575 A 47      STA       OPTFLG         CLEAR OPTIONAL PARAMETER FLAG                       02 00047
000011 002000 A 48      JMPM      CKLUN          SCAN, CHECK, AND CONVERT LUN                        02 00048
000012 000441 R
000013 001004 A 49      JAN       OPNX           JUMP IF INVALID NUMBER                              02 00049
000014 000176 R
000015 006140 A 50      SUBI      256                                                                02 00050
000016 000400 A
000017 001002 A 51      JAP       OPNX           JUMP IF NUMBER TOO LARG                             02 00051
000020 000176 R
000021 006120 A 52      ADDI      256                                                                02 00052
000022 000400 A
000023 054563 A 53      STA       LUN1                                                               02 00053
000024 114137 A 54      ORA       OPNCAL+3       OR LOG UNIT NUMBER INTO                             02 00054
000025 054136 A 55      STA       OPNCAL+3       OPEN REQUEST                                        02 00055
000026 044533 A 56      INR       IGBLK                                                              02 00056
000027 002000 A 57      JMPM      GETCHR         GO GET NEXT CHARACTER                               02 00057
000030 000272 R
000031 144542 A 58      SUB       N260           CHAR A NUMBER ?                                     02 00058
000032 001004 A 59      JAN       OPNX           NO - ILLEGAL                                        02 00059
000033 000176 R
000034 144535 A 60      SUB       N12            CHAR A NUMBER ?                                     02 00060
000035 001002 A 61      JAP       OPNG           NO MUST BE LETTER                                   02 00061
000036 000061 R
000037 014525 A 62      LDA       CHPTR          YES -                                               02 00062
000040 005311 A 63      DAR                      BACK UP CHARACTER                                   02 00063
000041 054523 A 64      STA       CHPTR          POINTER                                             02 00064
000042 005101 A 65      INCR      01             SET DELIMITER FLAG                                  02 00065
000043 054520 A 66      STA       DELIMF         FOR PERIOD OR END OF BUFFER                         02 00066
000044 002000 A 67      JMPM      CNVRT          SCAN OFF AND CONVERT LOG. LINE NO.                  02 00067
000045 000333 R
000046 001004 A 68      JAN       OPNX           JUMP IF INVALID NUMBER                              02 00068
000047 000176 R
000050 006140 A 69      SUBI      255                                                                02 00069
000051 000377 A
000052 001002 A 70      JAP       OPNX           JUMP IF NUMBER TOO LARGE                            02 00070
000053 000176 R
000054 006120 A 71      ADDI      255                                                                02 00071
000055 000377 A
000056 054502 A 72      STA       OPNDCB+2       SET LOG. LINE NO. IN DCB                            02 00072
000057 001000 A 73      JMP       OPNK           GO TO DO OPEN                                       02 00073
000060 000161 R
000061 014520 A 74 OPNG LDA       DBLBLK         CLEAR DCB                                           02 00074
000062 054474 A 75      STA       OPNDCB                                                             02 00075
000063 054474 A 76      STA       OPNDCB+1                                                           02 00076
000064 014501 A 77      LDA       SVCHAR         SET 1ST CHARACTER                                   02 00077
000065 004250 A 78      LRLA      8              OF TUID                                             02 00078
000066 114512 A 79      ORA       BLANK          IN DCB                                              02 00079
000067 054467 A 80      STA       OPNDCB                                                             02 00080
000070 002000 A 81      JMPM      GETCHR         GET NEXT CHARACTER                                  02 00081
```

```
000071 000272 R
000072 002000 A    82          JMPM    DLMCHK          CHECK FOR DELIMITER                          02 00082
000073 000535 R
000074 001004 A    83          JAN     OPNH            YES                                          02 00083
000075 000134 R
000076 014460 A    84          LDA     OPNDCB          NO                                           02 00084
000077 150462 A    85          ANA     LHW                                                          02 00085
000100 114465 A    86          ORA     SVCHAR          2ND CHAR.                                    02 00086
000101 054455 A    87          STA     OPNDCB          OF TUID INTO DCB                             02 00087
000102 002000 A    88          JMPM    GETCHR          GET NEXT CHARACTER                           02 00088
000103 000272 R
000104 002000 A    89          JMPM    DLMCHK          CHECK FOR DELIMITER                          02 00089
000105 000535 R
000106 001004 A    90          JAN     OPNH            YES                                          02 00090
000107 000134 R
000110 004250 A    91          LRLA    8               SET 3RD CHARACTER                            02 00091
000111 114467 A    92          ORA     BLANK           OF TUID IN DCB                               02 00092
000112 054445 A    93          STA     OPNDCB+1                                                     02 00093
000113 002000 A    94          JMPM    GETCHR          GO GET NEXT CHARACTER                        02 00094
000114 000272 R
000115 002000 A    95          JMPM    DLMCHK          CHECK FOR DELIMITER                          02 00095
000116 000535 R
000117 001004 A    96          JAN     OPNH            YES                                          02 00096
000120 000134 R
000121 014436 A    97          LDA     OPNDCB+1        NO                                           02 00097
000122 150462 A    98          ANA     LHW                                                          02 00098
000123 114442 A    99          ORA     SVCHAR                                                       02 00099
000124 054433 A   100          STA     OPNDCB+1                                                     02 00100
000125 044434 A   101          INR     IGBLK                                                        02 00101
000126 002000 A   102          JMPM    GETCHR                                                       02 00102
000127 000272 R
000130 002000 A   103          JMPM    DLMCHK          MUST BE A DELIMITER                          02 00103
000131 000535 R
000132 001002 A   104          JAP     OPNX            NO, ERROR                                    02 00104
000133 000176 R
000134 014431 A   105 OPNH     LDA     SVCHAR                                                       02 00105
000135 144442 A   106          SUB     PERIOD          END OF BUFFER ?                              02 00106
000136 001010 A   107          JAZ     OPNK            YES                                          02 00107
000137 000161 R
000140 044445 A   108          INR     OPTFLG          SET OPTION FLAG                              02 00108
000141 044422 A   109          INR     DELIMF                                                       02 00109
000142 002000 A   110          JMPM    CKLUN           SCAN, CHECK, AND CONVERT LUN                 02 00110
000143 000441 R
000144 001004 A   111          JAN     OPNX                                                         02 00111
000145 000176 R
000146 054441 A   112          STA     LUN2                                                         02 00112
000147 014437 A   113          LDA     LUN1            CHECK IF 1ST LUN IS JCP ASSIGNABLE           02 00113
000150 005311 A   114          DAR                                                                  02 00114
000151 006147 A   115          SUBE*   V$LUT1                                                       02 00115
000152 100400 A
000153 001002 A   116          JAP     OPNX            NO                                           02 00116
000154 000176 R
000155 014006 A   117          LDA     OPNCAL+3                                                     02 00117
000156 150462 A   118          ANA     LHW                                                          02 00118
000157 114430 A   119          ORA     LUN2                                                         02 00119
000160 054003 A   120          STA     OPNCAL+3                                                     02 00120
000161            121 OPNCAL   BSS     0                                                            02 00121
                  122 OPNK     OPEN    OPNDCB,0        PERFORM OPEN                                 02 00122
000161 006505 A
000162 000000 E
000163 100000 A
000164 003000 A
000165 000557 R
000166 000000 A
000167 000000 A
000170 006017 A   123          LDAE    OPNK+2          GET STATUS FROM OPEN REQUEST                 02 00123
000171 000163 R
000172 006150 A   124          ANAI    077740          ERRORS ?                                     02 00124
000173 077740 A
000174 001010 A   125          JAZ     OPNY            NO                                           02 00125
000175 000203 R
000176 006010 A   126 OPNX     LDAI    4               YES -                                        02 00126
000177 000004 A
000200 050055 A   127          STA     V$JCFG          SET ERROR FLAG FOR JCP                       02 00127
000201 001000 A   128          JMP     OPNZ                                                         02 00128
000202 000267 R
000203 014402 A   129 OPNY     LDA     OPTFLG                                                       02 00129
000204 001010 A   130          JAZ     OPNZ                                                         02 00130
000205 000267 R
000206 010400 A   131          LDA     V$LUT1          ADDR OF JCP ASSIG. LUT                       02 00131
000207 124377 A   132          ADD     LUN1                                                         02 00132
000210 005012 A   133          TAB                                                                  02 00133
000211 014376 A   134          LDA     LUN2            GET DST ORDINAL FOR TCM/CCM LOGICAL UNIT     02 00134
000212 144370 A   135          SUB     ONE01                                                        02 00135
000213 001002 A   136          JAP     OPNY1                                                        02 00136
000214 000222 R
000215 124365 A   137          ADD     ONE01                                                        02 00137
000216 006127 A   138          ADDE    V$LUT1                                                       02 00138
000217 000400 A
000220 001000 A   139          JMP     OPNY3                                                        02 00139
000221 000237 R
000222 124360 A   140 OPNY1    ADD     ONE01                                                        02 00140
000223 144360 A   141          SUB     ONE80                                                        02 00141
000224 001002 A   142          JAP     OPNY2                                                        02 00142
000225 000234 R
```

```
000226 006120 A   143          ADDI    80                                                    02 00143
000227 000120 A
000230 006127 A   144          ADDE    V$LUT2                                                02 00144
000231 000401 A
000232 001000 A   145          JMP     OPNY3                                                 02 00145
000233 000237 R
000234 005111 A   146 OPNY2    IAR                                                           02 00146
000235 006127 A   147          ADDE    V$LUT3                                                02 00147
000236 000402 A
000237 005014 A   148 OPNY3    TAX                                                           02 00148
000240 015000 A   149          LDA     0,X                                                   02 00149
000241 150463 A   150          ANA     RHW                                                   02 00150
000242 054342 A   151          STA     TEMP                                                  02 00151
000243 016000 A   152          LDA     0,B       CHANGE CURRENT ASSIGNMENT TO TCM/CCM LUN    02 00152
000244 150462 A   153          ANA     LHW                                                   02 00153
000245 114337 A   154          ORA     TEMP                                                  02 00154
000246 056000 A   155          STA     0,B                                                   02 00155
                  156          EXT     VT$LTT                                                02 00156
000247 006017 A   157          LDAE    VT$LTT                                                02 00157
000250 000000 E
000251 124336 A   158          ADD     LUN2                                                  02 00158
000252 005311 A   159          DAR                                                           02 00159
000253 005012 A   160          TAB                                                           02 00160
000254 016000 A   161          LDA     0,B                                                   02 00161
000255 054332 A   162          STA     LUN2                                                  02 00162
000256 005001 A   163          TZA                                                           02 00163
000257 056000 A   164          STA     0,B                                                   02 00164
000260 006017 A   165          LDAE    VT$LTT                                                02 00165
000261 000250 E
000262 124324 A   166          ADD     LUN1                                                  02 00166
000263 005311 A   167          DAR                                                           02 00167
000264 005012 A   168          TAB                                                           02 00168
000265 014322 A   169          LDA     LUN2                                                  02 00169
000266 056000 A   170          STA     0,B                                                   02 00170
                  171 OPNZ     EXIT                  EXIT                                    02 00171
000267 006505 A
000270 000000 E
000271 000200 A
                  172          EJEC                                                          02 00172
                  173 *                                                                      02 00173
                  174 *        SUBROUTINE TO GET NEXT CHARACTER FROM JCP BUFFER.  USES       02 00174
                  175 *        CHPTR AS CHARACTER POINTER.  CHPTR/2 IS WORD ADDRESS.         02 00175
                  176 *        CHPTR(0) = 0 GIVES BITS 15-8, CHPTR(0) = 1 GIVES BITS 7-09    02 00176
                  177 *        ALSO USES IGBLK AS FLAG FOR SKIPPING RECORDS.                 02 00177
                  178 *        IGBLK = 1 CAUSES BLANKS TO BE IGNORED.  IGBLK = 0 ALWAYS      02 00178
                  179 *        GIVES NEXT CHARACTER.                                         02 00179
                  180 *                                                                      02 00180
                  181 *        THE CALLING SEQUENCE IS....                                   02 00181
                  182 *                                                                      02 00182
                  183 *        JMPM    GETCHR                                                02 00183
                  184 *                                                                      02 00184
000272 000000 A   185 GETCHR  DATA    0                                                     02 00185
000273 064267 A   186          STB     GTSAVB        SAVE B                                  02 00186
000274 024270 A   187 GTCHA    LDB     CHPTR                                                 02 00187
000275 005021 A   188          TBA                   INCREMENT POINTER                       02 00188
000276 005111 A   189          IAR                   TO NEXT CHARACTER                       02 00189
000277 054265 A   190          STA     CHPTR                                                 02 00190
000300 004141 A   191          LSRB    1                                                     02 00191
000301 006400 A   192          BT      0,GTCHC       JUMP IF LEFT BYTE                       02 00192
000302 000310 R
000303 016000 A   193          LDA     0,B                                                   02 00193
000304 006150 A   194          ANAI    0377          GET RIGHT BYTE                          02 00194
000305 000377 A
000306 001000 A   195          JMP     GTCHD                                                 02 00195
000307 000312 R
000310 016000 A   196 GTCHC    LDA     0,B                                                   02 00196
000311 004350 A   197          LSRA    8             GET LEFT BYTE                           02 00197
000312 024247 A   198 GTCHD    LDB     IGBLK         IGNORE BLANKS ?                         02 00198
000313 001020 A   199          JBZ     GTCHF         NO                                      02 00199
000314 000323 R
000315 144251 A   200          SUB     N240          YES - BLANK CHAR ?                      02 00200
000316 001010 A   201          JAZ     GTCHA         YES                                     02 00201
000317 000274 R
000320 124246 A   202          ADD     N240                                                  02 00202
000321 005002 A   203          TZB                                                           02 00203
000322 064237 A   204          STB     IGBLK         RESET IGNORE BLANKS FLAG                02 00204
000323 024237 A   205 GTCHF    LDB     GTSAVB                                                02 00205
000324 054241 A   206          STA     SVCHAR                                                02 00206
000325 001016 A   207          JANZ*   GETCHR         RETURN IF NOT END OF BUFFER             02 00207
000326 100272 R
000327 014250 A   208          LDA     PERIOD                                                02 00208
000330 054235 A   209          STA     SVCHAR                                                02 00209
000331 001000 A   210          JMP*    GETCHR        RETURN                                  02 00210
000332 100272 R
                  211          EJEC                                                          02 00211
                  212 *                                                                      02 00212
                  213 *        SUBROUTINE TO CONVERT ASCII TO BINARY.  RETURNS RESULT IN     02 00213
                  214 *        A REGISTER, OR SETS A NEGATIVE IF NON NUMERIC CHARACTERS      02 00214
                  215 *        ARE ENCOUNTERED.  ASSUMES DECIMAL UNLESS THERE IS A LEADING   02 00215
                  216 *        ZERO.                                                         02 00216
                  217 *                                                                      02 00217
                  218 *        THE CALLING SEQUENCE IS...                                    02 00218
                  219 *                                                                      02 00219
                  220 *        JMPM    CNVRT                                                 02 00220
                  221 *                                                                      02 00221
```

```
                        222 *       CHPTR POINTS TO THE FIRST CHARACTER OF THE NUMBER.                    02 00222
                        223 *                                                                             02 00223
                        224 *                                                                             02 00224
000333 000000 A   225 CNVRT   DATA    0                                                                   02 00225
000334 064233 A   226         STB     CNSAVB          SAVE B                                              02 00226
000335 005001 A   227         TZA                                                                         02 00227
000336 054232 A   228         STA     NUM             INITIALIZE NUMBER TO ZERO                           02 00228
000337 014232 A   229         LDA     N12                                                                 02 00229
000340 054232 A   230         STA     BASE            INITIALIZE BASE TO TEN                              02 00230
000341 044220 A   231         INR     IGBLK                                                               02 00231
000342 002000 A   232         JMPM    GETCHR          GET 1ST CHARACTER                                   02 00232
000343 000272 R
000344 006617 A   233         SRE     N260,7,010      CHAR EQUAL ZERO                                     02 00233
000345 000574 R
000346 001000 A   234         JMP     CNVRTC          NO                                                  02 00234
000347 000352 R
000350 001000 A   235         JMP     CNVRTD          YES                                                 02 00235
000351 000362 R
000352 144221 A   236 CNVRTC  SUB     N260            CHAR GEQ 260 ?                                      02 00236
000353 001004 A   237         JAN     CNVRTK          NO - NOT A  NUMBER                                  02 00237
000354 000377 R
000355 144214 A   238         SUB     N12             CHAR LT 272 ?                                       02 00238
000356 001002 A   239         JAP     CNVRTK          NO - NOT A NUMBER                                   02 00239
000357 000377 R
000360 001000 A   240         JMP     CNVRTF                                                              02 00240
000361 000370 R
000362 014212 A   241 CNVRTD  LDA     N10             1ST CHARACTER A ZERO -                              02 00241
000363 054207 A   242         STA     BASE            CHANGE BASE TO EIGHT                                02 00242
000364 002000 A   243 CNVRTE  JMPM    GETCHR          GET NEXT CHARACTER                                  02 00243
000365 000272 R
000366 001000 A   244         JMP     CNVRTC                                                              02 00244
000367 000352 R
000370 024200 A   245 CNVRTF  LDB     NUM             COMPUTE.....                                        02 00245
000371 014174 A   246         LDA     SVCHAR                                                              02 00246
000372 144201 A   247         SUB     N260            NUM = NUM*BASE + CHAR - 260                         02 00247
000373 164177 A   248         MUL     BASE                                                                02 00248
000374 064174 A   249         STB     NUM                                                                 02 00249
000375 001000 A   250         JMP     CNVRTE                                                              02 00250
000376 000364 R
000377 014166 A   251 CNVRTK  LDA     SVCHAR          NON-NUMERIC CHAR,                                   02 00251
000400 144200 A   252         SUB     BLANK           BLANK CHAR ?                                        02 00252
000401 001016 A   253         JANZ    CNVRTL          NO                                                  02 00253
000402 000406 R
000403 044156 A   254         INR     IGBLK           YES -                                               02 00254
000404 002000 A   255         JMPM    GETCHR          ADVANCE SCAN TO DELIMITER                           02 00255
000405 000272 R
000406 014155 A   256 CNVRTL  LDA     DELIMF          TERMINATE AT END OF BURFER ?                        02 00256
000407 001016 A   257         JANZ    CNVRTN          YES                                                 02 00257
000410 000424 R
000411 014154 A   258         LDA     SVCHAR          NO, MUST BE COMMA OR EQUALS                         02 00258
000412 144163 A   259         SUB     COMMA           COMMA ?                                             02 00259
000413 001010 A   260         JAZ     CNVRTW          YES                                                 02 00260
000414 000435 R
000415 124160 A   261         ADD     COMMA           NO -                                                02 00261
000416 144160 A   262         SUB     EQUALS          EQUALS ?                                            02 00262
000417 001010 A   263         JAZ     CNVRTW          YES                                                 02 00263
000420 000435 R
000421 005301 A   264         DECR    01              NO - SET ERROR FLAG                                 02 00264
000422 001000 A   265         JMP     CNVRTX                                                              02 00265
000423 000436 R
000424 014141 A   266 CNVRTN  LDA     SVCHAR          END OF BUFFER ?                                     02 00266
000425 001010 A   267         JAZ     CNVRTW          YES                                                 02 00267
000426 000435 R
000427 144150 A   268         SUB     PERIOD          NO - PERIOD ?                                       02 00268
000430 001010 A   269         JAZ     CNVRTW          YES                                                 02 00269
000431 000435 R
000432 005301 A   270         DECR    01              NO - SET ERROR FLAG                                 02 00270
000433 001000 A   271         JMP     CNVRTX                                                              02 00271
000434 000436 R
000435 014133 A   272 CNVRTW  LDA     NUM                                                                 02 00272
000436 024131 A   273 CNVRTX  LDB     CNSAVB                                                              02 00273
000437 001000 A   274         JMP*    CNVRT           RETURN                                              02 00274
000440 100333 R
                        275         EJEC                                                                  02 00275
                        276 *                                                                             02 00276
                        277 *       SUBROUTINE TO CHECK LOGICAL UNITS.                                    02 00277
                        278 *       CONVERTS LOGICAL UNIT NAMES TO LOGICAL UNIT NUMBERS.                  02 00278
                        279 *       RETURNS WITH A REG. NEG. IF LUN IS IN ERROR.                          02 00279
                        280 *       CALLS SUBROUTINES GETCHR AND CNVRT.                                   02 00280
                        281 *                                                                             02 00281
000441 000000 A   282 CKLUN   DATA    0                                                                   02 00282
000442 064146 A   283         STB     CKSAVB                                                              02 00283
000443 044116 A   284         INR     IGBLK                                                               02 00284
000444 002000 A   285         JMPM    GETCHR                                                              02 00285
000445 000272 R
000446 054143 A   286         STA     CKLN1                                                               02 00286
000447 006140 A   287         SUBI    0260            IS IT A NUMBER                                      02 00287
000450 000260 A
000451 001004 A   288         JAN     CK10            NO                                                  02 00288
000452 000467 R
000453 140471 A   289         SUB     TEN                                                                 02 00289
000454 001002 A   290         JAP     CK10            NO                                                  02 00290
000455 000467 R
000456 006017 A   291         LDAE    CHPTR           YES, BACK UP CHR. PTR.                              02 00291
000457 000565 R
```

```
000460 005311 A  292          DAR                                                  02 00292
000461 006057 A  293          STAE     CHPTR                                       02 00293
000462 000565 R
000463 002000 A  294          JMPM     CNVRT      GET AND CONVERT NUMBER           02 00294
000464 000333 R
000465 001000 A  295          JMP      CK30                                        02 00295
000466 000521 R
000467 014122 A  296 CK10     LDA      CKLN1                                       02 00296
000470 004250 A  297          LRLA     8                                           02 00297
000471 054120 A  298          STA      CKLN1                                       02 00298
000472 002000 A  299          JMPM     GETCHR     GET 2ND CHR.                     02 00299
000473 000272 R
000474 114115 A  300          ORA      CKLN1      COMBINE WITH FIRST               02 00300
000475 054114 A  301          STA      CKLN1                                       02 00301
000476 044063 A  302          INR      IGBLK                                       02 00302
000477 002000 A  303          JMPM     GETCHR                                      02 00303
000500 000272 R
000501 002000 A  304          JMPM     DLMCHK                                      02 00304
000502 000535 R
000503 001002 A  305          JAP      CKERR                                       02 00305
000504 000532 R
000505 030345 A  306 CK15     LDX      V$LUNT                                      02 00306
000506 015000 A  307 CK20     LDA      0,X        GET LOG. UNIT NAME               02 00307
000507 001010 A  308          JAZ      CKERR      END OF TABLE - NOT FOUND         02 00308
000510 000532 R
000511 005144 A  309          IXR                                                  02 00309
000512 005144 A  310          IXR                                                  02 00310
000513 006617 A  311          SRE      CKLN1,7,010  ENTRY FOUND                    02 00311
000514 000612 R
000515 001000 A  312          JMP      CK20       NO                            02 00312
000516 000506 R
000517 005344 A  313          DXR                 YES                           02 00313
000520 015000 A  314          LDA      0,X        GET LOG. UNIT NUMBER             02 00314
000521 001004 A  315 CK30     JAN      CKERR                                       02 00315
000522 000532 R
000523 140431 A  316          SUB      BS8        0 LEQ LUN LEQ 255                02 00316
000524 001002 A  317          JAP      CKERR      NO                               02 00317
000525 000532 R
000526 120431 A  318          ADD      BS8        YES                              02 00318
000527 024061 A  319 CK40     LDB      CKSAVB                                      02 00319
000530 001000 A  320          JMP*     CKLUN      RETURN                           02 00320
000531 100441 R
000532 005301 A  321 CKERR    DECR     01                                          02 00321
000533 001000 A  322          JMP      CK40                                        02 00322
000534 000527 R
               323            EJEC                                                 02 00323
               324 *                                                               02 00324
               325 *     SUBROUTINE TO CHECK FOR DELIMITING CHARACTERS.            02 00325
               326 *     A REG. MUST CONTAIN CHAR. ON ENTRY.                       02 00326
               327 *     IF CHAR. IS A DELIMITER, A -1 IS RETURNED IN THE A REG.   02 00327
               328 *     OTHERWISE, IT RETURNS WITH A REG. UNCHANGED               02 00328
               329 *                                                               02 00329
               330 *     THE CALLING SEQUENCE IS:                                  02 00330
               331 *                                                               02 00331
               332 *     JMPM DLMCHK                                               02 00332
               333 *                                                               02 00333
000535 000000 A  334 DLMCHK   DATA     0                                           02 00334
000536 144037 A  335          SUB      COMMA      A COMMA                          02 00335
000537 001010 A  336          JAZ      DLMTR      YES                              02 00336
000540 000554 R
000541 124034 A  337          ADD      COMMA                                       02 00337
000542 144034 A  338          SUB      EQUALS     EQUAL SIGN                       02 00338
000543 001010 A  339          JAZ      DLMTR      YES                              02 00339
000544 000554 R
000545 124031 A  340          ADD      EQUALS                                      02 00340
000546 144031 A  341          SUB      PERIOD     A PERIOD                         02 00341
000547 001010 A  342          JAZ      DLMTR      YES                              02 00342
000550 000554 R
000551 124026 A  343          ADD      PERIOD                                      02 00343
000552 001000 A  344          JMP*     DLMCHK                                      02 00344
000553 100535 R
000554 005301 A  345 DLMTR    DECR     01                                          02 00345
000555 001000 A  346          JMP*     DLMCHK                                      02 00346
000556 100535 R
               347 DPNDCB     DCB      0,0                                         02 00347
000557 000000 A
000560 000000 A
000561 000000 A
000562 000000 A  348 IGBLK    DATA     0                                           02 00348
000563 000000 A  349 GTSAVB   DATA     0                                           02 00349
000564 000000 A  350 DELIMF   DATA     0                                           02 00350
000565 000000 A  351 CHPTR    DATA     0                                           02 00351
000566 000000 A  352 SVCHAR   DATA     0                                           02 00352
000567 000240 A  353 N240     DATA     0240                                        02 00353
000570 000000 A  354 CNSAVB   DATA     0                                           02 00354
000571 000000 A  355 NUM      DATA     0                                           02 00355
000572 000012 A  356 N12      DATA     012                                         02 00356
000573 000000 A  357 BASE     DATA     0                                           02 00357
000574 000260 A  358 N260     DATA     0260                                        02 00358
000575 000010 A  359 N10      DATA     010                                         02 00359
000576 000254 A  360 COMMA    DATA     0254                                        02 00360
000577 000275 A  361 EQUALS   DATA     0275                                        02 00361
000600 000256 A  362 PERIOD   DATA     0256                                        02 00362
000601 000240 A  363 BLANK    DATA     0240                                        02 00363
000602 120240 A  364 DBLBLK   DATA     0120240                                     02 00364
```

```
000603 000145 A   365 ONE01   DATA     101                                  02 00365
000604 000264 A   366 ONE80   DATA     180                                  02 00366
000605 000000 A   367 TEMP    DATA     0                                    02 00367
000606 000000 A   368 OPTFLG  DATA     0                                    02 00368
000607 000000 A   369 LUN1    DATA     0                                    02 00369
000610 000000 A   370 LUN2    DATA     0                                    02 00370
000611 000000 A   371 CKSAVB  DATA     0                                    02 00371
000612 000000 A   372 CKLN1   DATA     0                                    02 00372
       000000 R   373         END      OPEN                                 02 00373
ENTRY NAMES
000000 R OPEN
EXTERNAL NAMES
000000 E V$DSTB 000270 E V$EXEC 000162 E V$IOC  000000 E V$JPBF
000261 E VT$LTT
SYMBOLS
000002 A B      000573 R BASE   000601 R BLANK  000431 A BS8
000565 R CHPTR  000467 R CK10   000505 R CK15   000506 R CK20
000521 R CK30   000527 R CK40   000532 R CKERR  000612 R CKLN1
000441 R CKLUN  000611 R CKSAVB 000570 R CNSAVB 000333 R CNVRT
000352 R CNVRTC 000362 R CNVRTD 000364 R CNVRTE 000370 R CNVRTF
000377 R CNVRTK 000406 R CNVRTL 000424 R CNVRTN 000435 R CNVRTW
000436 R CNVRTX 000576 R COMMA  000602 R DBLBLK 000564 R DELIMF
000535 R DLMCHK 000554 R DLMTR  000577 R EQUALS 000272 R GETCHR
000274 R GTCHA  000310 R GTCHC  000312 R GTCHD  000323 R GTCHF
000563 R GTSAVB 000562 R IGBLK  000462 A LHW    000607 R LUN1
000610 R LUN2   000575 R N10    000572 R N12    000567 R N240
000574 R N260   000571 R NUM    000603 R ONE01  000604 R ONE80
000000 R OPEN   000161 R OPNCAL 000557 R OPNDCB 000061 R OPNG
000134 R OPNH   000161 R OPNK   000176 R OPNX   000203 R OPNY
000222 R OPNY1  000234 R OPNY2  000237 R OPNY3  000267 R OPNZ
000606 R OPTFLG 000600 R PERIOD 000463 A RHW    000566 R SYCHAR
000605 R TEMP   000471 A TEN    000000 E V$DSTB 000270 E V$EXEC
000162 E V$IOC  000412 A V$JCB  000055 A V$JCFG 000000 E V$JPBF
000345 A V$LUNT 000400 A V$LUT1 000401 A V$LUT2 000402 A V$LUT3
000001 A VORTEX 000261 E VT$LTT 000001 A X
  0 ERRORS ASSEMBLY COMPLETE

 38  B        152  155  161  164  170  193  196
357  BASE     230  242  248
363  BLANK     79   92  252
 33  BS8      316  318
351  CHPTR     41   62   64  187  190  291  293
296  CK10     288  290
306  CK15     *
307  CK20     312
315  CK30     295
319  CK40     322
321  CKERR    305  308  315  317
372  CKLN1    286  296  298  300  301  311
282  CKLUN     48  110  320
371  CKSAVB   283  319
354  CNSAVB   226  273
225  CNVRT     67  274  294
236  CNVRTC   234  244
241  CNVRTD   235
243  CNVRTE   250
245  CNVRTF   240
251  CNVRTK   237  239
256  CNVRTL   253
266  CNVRTN   257
272  CNVRTW   260  263  267  269
273  CNVRTX   265  271
360  COMMA    259  261  335  337
364  DBLBLK    74
350  DELIMF    46   66  109  256
334  DLMCHK    82   89   95  103  304  344  346
345  DLMTR    336  339  342
361  EQUALS   262  338  340
185  GETCHR    57   81   88   94  102  207  210  232  243
              255  285  299  303
187  GTCHA    201
196  GTCHC    192
198  GTCHD    195
205  GTCHF    199
349  GTSAVB   186  205
348  IGBLK     56  101  198  204  231  254  284  302
 34  LHW       43   85   98  118  153
369  LUN1      53  113  132  166
370  LUN2     112  119  134  158  162  169
359  N10      241
356  N12       60  229  238
353  N240     200  202
358  N260      58  233  236  247
355  NUM      228  245  249  272
365  ONE01    135  137  140
366  ONE80    141
 39  OPEN      12   24  373
121  OPNCAL    42   44   54   55  117  120
347  OPNDCB    72   75   76   80   84   87   93   97  100
              122
 74  OPNG      61
105  OPNH      83   90   96
122  OPNK      73  107  123
126  OPNX      49   51   59   68   70  104  111  116
```

129	OPNY	125								
140	OPNY1	136								
146	OPNY2	142								
148	OPNY3	139	145							
171	OPNZ	128	130							
368	OPTFLG	47	108	129						
362	PERIOD	106	208	268	341	343				
35	RHW	150								
352	SVCHAR	77	86	99	105	206	209	246	251	258
		266								
367	TEMP	151	154							
36	TEN	289								
0	V$DSTB	25								
27	V$JCB	39								
28	V$JCFG	127								
0	V$JPBF	25								
29	V$LUNT	306								
30	V$LUT1	115	131	138						
31	V$LUT2	144								
32	V$LUT3	147								
1	VORTEX	*								
0	VT$LTT	156	157	165						
37	X	149	307	314						

```
000001 A     1 VORTEX SET     1                PUT LAST FOR VORTEX                                  V2  02 00001
             2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES           02 00002
             3 *                                                                                    02 00003
             4 *       V.D.M.    PART NO.      92L1105-013B                                         02 00004
             5 *                                                                                    02 00005
             6 *                               RELEASED      3-1-74                                 02 00006
             7 *                                                                                    02 00007
             8 *                                                                                    02 00008
             9 *                 VT$OCL                                                             02 00009
            10 *                                                                                    02 00010
            11 *                                                                                    02 00011
            12           TITLE   VT$OCL                                                             02 00012
            13           NLIS                                                                       02 00013
          1443           LIST                                                                       ********
          1444 *                                                                                    02 00014
          1445 *                                                                                    02 00015
          1446           EJEC                                                                       02 00016
          1447 *                                                                                    02 00017
          1448 *       VT$OCL - VTAM LINE OPEN/CLOSE MODULE                                         02 00018
          1449 *       THIS MODULE IS CALLED                                                        02 00019
          1450 *       BY MEANS OF A SCHED CALL TO THE REAL-TIME EXEC.  IT                          02 00020
          1451 *       PROCESSES LINE OPEN/CLOSE REQUESTS THREADED FROM                             02 00021
          1452 *       CC$OCM, AND EXITS TO THE RTE WHEN ALL REQUESTS HAVE                          02 00022
          1453 *       BEEN PROCESSED.                                                              02 00023
          1454 *                                                                                    02 00024
          1455 *                                                                                    02 00025
          1456 *                                                                                    02 00026
          1457 *                                                                                    02 00027
          1458           NAME    VT$OCL                                                            02 00028
          1459           EXT     CC$OCM,CC$LSD,VT$MP1                                              02 00029
          1460           EXT     CC$CRQ                                                            02 00030
          1461           EXT     CC$ORQ                                                            02 00031
          1462           EXT     CC$MET                                                            02 00032
          1463           IFF     VORTEX-2                                                   V2     02 00033
          1464           EXT     V2$CRL                                                     V2     02 00034
          1465 *                                                                                    02 00035
000005 A  1466 LPSIZ  EQU     5               SIZE OF LSD PROTOTYPE                                02 00036
          1467 *                                                                                    02 00037
000021 A  1468 LSDSIZ EQU     17              SIZE OF LSD                                          02 00038
          1469 *                                                                                    02 00039
000152 A  1470 TRMLUN EQU     106             LOGICAL UNIT NUMBER FOR                              02 00040
          1471 *                              PROTOTYPE LSD FILE, VT$DFL.                          02 00041
          1472 *                                                                                    02 00042
          1473 GETMEM MAC                                                                           02 00043
          1474        M2                                                                            02 00044
          1475        EXT     VT$GTM                                                                02 00045
          1476        DATA    0600,VT$GTM                                                           02 00046
          1477        EMAC                                                                          02 00047
          1478 PUTMEM MAC                                                                           02 00048
          1479        M2                                                                            02 00049
          1480        EXT     VT$PTM                                                                02 00050
          1481        DATA    0600,VT$PTM                                                           02 00051
          1482        EMAC                                                                          02 00052
          1483 BLDMAT MAC                                                                           02 00053
          1484        M2                                                                            02 00054
          1485        EXT     VT$BMT                                                                02 00055
          1486        DATA    0600,VT$BMT                                                           02 00056
          1487        EMAC                                                                          02 00057
          1488 *                                                                                    02 00058
          1489 *       EQUATES FOR LSD PROTOTYPE                                                    02 00059
          1490 *                                                                                    02 00060
000002 A  1491 LPDEF  EQU     2                                                                     02 00061
000010 A  1492 LPDEFB EQU     8                                                                     02 00062
000001 A  1493 LPDEFZ EQU     1                                                                     02 00063
          1494 *                                                                                    02 00064
000002 A  1495 LPDWN  EQU     2                                                                     02 00065
000011 A  1496 LPDWNB EQU     9                                                                     02 00066
000001 A  1497 LPDWNZ EQU     1                                                                     02 00067
          1498 *                                                                                    02 00068
000002 A  1499 LPPLA  EQU     2                                                                     02 00069
          1500 *                                                                                    02 00070
          1501           EJEC                                                                       02 00071
          1502 *                                                                                    02 00072
          1503 *       ENTRY POINT TO LINE OPEN/CLOSE MODULE.                                       02 00073
          1504 *                                                                                    02 00074
          1505 VT$OCL DINTS                                                                         02 00075
000000 100444 A
000001 100747 A
000002 006027 A 1506 OCL1A  LDBE    CC$OCM                                                        02 00076
000003 000000 E
000004 001026 A 1507        JBNZ    OCL1A1                                                        02 00077
000005 000011 R
                1508        EXIT                    EXIT TO RTE IF QUEUE IS EMPTY                 02 00078
000006 006505 A
000007 000000 E
000010 000200 A
                1509        IFT     VORTEX-2                                           V2         02 00079
                1510        GOTO    1                                                  V2         02 00080
                1511 OCL1A1 EQU     *                                                  V2         02 00081
                1512        STB     *+5                                                V2         02 00082
                1513        PASS    5,0,OCRQB+1     GET RQBLK                          V2         02 00083
                1514        LDA     OCLCB                                              V2         02 00084
                1515        STA     OCRQB+3         STORE LCB ADDRESS                  V2         02 00085
                1516        LDA     OCRQB+1                                            V2         02 00086
                1517 OCLALC EQU     *+5                                                V2         02 00087
```

```
                    1518           STA     *+5                                                          V2  02 00088
                    1519           PASS    5,0,DCLCB+1    GET LCB                                       V2  02 00089
                    1520           LDA     DCLCB+5                                                      V2  02 00090
                    1521           STA     DCRQB+1        MOVE CONTROLLER TABLE                         V2  02 00091
                    1522 1         CONT                                                                 V2  02 00092
                    1523           IFF     VORTEX-1                                                     V2  02 00093
                    1524 DCL1A1    EINTS                                                                    02 00094
000011 100244 A
000012 100147 A
                    1525 DCL1B1    OPEN    DCLFCB,TRMLUN                                                    02 00095
000013 006505 A
000014 000000 E
000015 100000 A
000016 003152 A
000017 000624 R
000020 000000 A
000021 000000 A
000022 006017 A     1526           LDAE    DCL1B1+2   -   DO STATUS CHECK                                 02 00096
000023 000015 R
                    1527           STAT    DCL1B1,DCL4A1,DCL1C1,DCL4A1,DCL4A1                               02 00097
000024 006505 A
000025 000000 E
000026 000013 R
000027 000526 R
000030 000033 R
000031 000526 R
000032 000526 R
000033 006027 A     1528 DCL1C1    EQU     *                                                            V2  02 00098
                    1529           IFF     VORTEX-2                                                     V2  02 00099
                    1530           LDB     DCRQB                                                        V2  02 00100
                    1531           IFF     VORTEX-1                                                     V2  02 00101
000033 006027 A     1532           LDBE    CC$DCM                                                       V2  02 00102
000034 000003 E
000035 016001 A     1533           LDA     RDPWD,B        GET LUN FOR CCM                                   02 00103
000036 150463 A     1534           ANA     RHW                                                              02 00104
000037 054600 A     1535           STA     CCMLUN         SAVE CCM LUN                                      02 00105
000040 036000 A     1536           LDX     RSTPR,B        CONTRLR TBL ADRS FOR CCM                          02 00106
000041 015022 A     1537           LDA     DMLTA,X                                                          02 00107
000042 054577 A     1538           STA     LLTBAS         FIND BASE ADRS FOR LLT                            02 00108
000043 015023 A     1539           LDA     DMPTA,X                                                          02 00109
000044 054576 A     1540           STA     PLTBAS         FIND BASE ADRS FOR PLT                            02 00110
000045 036002 A     1541           LDX     RFCB,B         ADRS OF LCB IN X                                  02 00111
000046 015002 A     1542           LDA     2,X            GET LOGICAL LINE NO. FROM LCB                     02 00112
000047 150463 A     1543           ANA     RHW                                                              02 00113
000050 054566 A     1544           STA     LOGLN          SAVE LOG. LINE NO.                                02 00114
000051 005002 A     1545           TZB                                                                      02 00115
000052 004541 A     1546           LLSR    1              CONVERT TO DISPLACEMENT IN LLT                    02 00116
000053 005111 A     1547           IAR                                                                      02 00117
000054 124565 A     1548           ADD     LLTBAS         ADD LLT BASE ADRS                                 02 00118
000055 005014 A     1549           TAX                                                                      02 00119
000056 015000 A     1550           LDA     0,X            PICK UP LLT ENTRY                                 02 00120
000057 001026 A     1551           JBNZ    DCL1D1         RIGHT BYTE ?                                      02 00121
000060 000062 R
000061 004350 A     1552           LSRA    8              NO - LEFT                                         02 00122
000062 150463 A     1553 DCL1D1    ANA     RHW                                                              02 00123
000063 054555 A     1554           STA     PHYSLN         SAVE PHYS LINE NO.                                02 00124
                    1555           IFF     VORTEX-2                                                     V2  02 00125
                    1556           LDX     DCRQB                                                        V2  02 00126
                    1557           IFF     VORTEX-1                                                     V2  02 00127
000064 006037 A     1558           LDXE    CC$DCM                                                           02 00128
000065 000034 E
000066 015001 A     1559           LDA     RDPWD,X                                                          02 00129
000067 004350 A     1560           LSRA    8              GET OP CODE                                       02 00130
000070 150472 A     1561           ANA     BM17                                                             02 00131
000071 130466 A     1562           ERA     SIX            OPEN REQUEST ?                                    02 00132
000072 054557 A     1563           STA     DCFLG          SAVE OPEN/CLOSE FLAG                              02 00133
000073 001016 A     1564           JANZ    DCL3A1         NO                                                02 00134
000074 000342 R
000075 014543 A     1565           LDA     PHYSLN         YES -                                             02 00135
000076 130463 A     1566           ERA     RHW            HAS LOG LINE BEEN ASSIGNED TO PHYS LINE ?         02 00136
000077 001010 A     1567           JAZ     DCL2A1         NO                                                02 00137
000100 000120 R
000101 130463 A     1568           ERA     RHW            YES -                                             02 00138
000102 005111 A     1569           IAR                                                                      02 00139
000103 124537 A     1570           ADD     PLTBAS         COMPUTE ENTRY IN PLT                              02 00140
000104 005014 A     1571           TAX                                                                      02 00141
000105 015000 A     1572           LDA     0,X            GET PLT ENTRY - LINE UP ?                         02 00142
000106 001002 A     1573           JAP     DCL1F1         YES                                               02 00143
000107 000113 R
000110 014546 A     1574           LDA     ERRORB         NO - SET ERROR CODE                               02 00144
000111 001000 A     1575           JMP     DCL4A1         GO TO END                                         02 00145
000112 000526 R
000113 001010 A     1576 DCL1F1    JAZ     DCL2A1         JUMP IF LINE NOT OPEN                             02 00146
000114 000120 R
000115 014542 A     1577           LDA     ERRORC         LINE ALREADY OPEN - SET                           02 00147
000116 001000 A     1578           JMP     DCL4A1           ERROR CODE AND GO TO END                        02 00148
000117 000526 R
000120 024516 A     1579 DCL2A1    LDB     LOGLN          COMPUTE                                           02 00149
000121 005001 A     1580           TZA                      SECTOR NO.                                      02 00150
000122 006170 A     1581           DIVI    24               FOR LSD PROTOTYPE                               02 00151
000123 000030 A
000124 005122 A     1582           IBR                                                                      02 00152
000125 064501 A     1583           STB     DCLFCB+3                                                         02 00153
000126 054526 A     1584           STA     TEM1           SAVE REMAINDER TO COMPUTE DISPLACEMENT            02 00154
                    1585 DCL2A2    READ    DCLFCB,TRMLUN   READ LSD PROTOTYPE                               02 00155
```

```
000127 006505 A
000130 000014 E
000131 100000 A
000132 000152 A
000133 000624 R
000134 000000 A
000135 000000 A
000136 006017 A 1586          LDAE    DCL2A2+2        DD STATUS CHECK                                  02 00156
000137 000131 R
                1587          STAT    DCL2A2,DCL4A1,DCL2A3,DCL4A1,DCL4A1                               02 00157
000140 006505 A
000141 000025 E
000142 000127 R
000143 000526 R
000144 000147 R
000145 000526 R
000146 000526 R
000147 014505 A 1588 DCL2A3   LDA     TEM1
000150 004242 A 1589          LRLA    2               COMPUTE DISPLACEMENT                             02 00158
000151 124503 A 1590          ADD     TEM1            INTO SECTOR FOR LSD PROT                         02 00159
000152 124463 A 1591          ADD     INBFAD          ADD BASE ADRS FOR SECTOR                         02 00160
000153 054477 A 1592          STA     LSPRAD          SAVE LSD PROT. ADRS                              02 00161
000154 005014 A 1593          TAX                                                                      02 00162
                1594          FETCHA  X,LPDEF,LPDEFB,LPDEFZ   IS LINE DEFINED ?                       02 00163
000155 015002 A                                                                                        02 00164
000156 004350 A
000157 150421 A
000160 001016 A 1595          JANZ    DCL2B1          YES                                              02 00165
000161 000165 R
000162 014473 A 1596          LDA     ERRORA          NO - SET ERROR CODE                              02 00166
000163 001000 A 1597          JMP     DCL4A1          GO TO END                                        02 00167
000164 000526 R
                1598 DCL2B1   FETCHA  X,LPDWN,LPDWNB,LPDWNZ   IS LINE DOWN ?                           02 00168
000165 015002 A
000166 004351 A
000167 150421 A
000170 001010 A 1599          JAZ     DCL2C1          NO                                               02 00169
000171 000175 R
000172 014464 A 1600          LDA     ERRORB          YES - SET ERROR CODE                             02 00170
000173 001000 A 1601          JMP     DCL4A1          GO TO END                                        02 00171
000174 000526 R
                1602 DCL2C1   FETCHA  X,LPPLA,LSPLAB,LSPLAZ   GET PHYS LINE NO. FROM PROT. LSD        02 00172
000175 015002 A
000176 150463 A
000177 005012 A 1603          TAB                                                                      02 00173
000200 150474 A 1604          ANA     BM77            MASK OFF DCM NUMBER                              02 00174
000201 054437 A 1605          STA     PHYSLN          SAVE PHYS LINE NO.                               02 00175
000202 005021 A 1606          TBA                     RESTORE PHYS LINE NO                             02 00176
000203 004346 A 1607          LSRA    6               CHECK IF PHYS LNE ADDR AND LUN AGREE             02 00177
000204 005111 A 1608          IAR                     CALCULATE MUX EQP TABL INDEX                     02 00178
000205 006120 A 1609          ADDI    CC$MET          ADD BASE ADDR OF TALE                            02 00179
000206 000000 E
000207 005012 A 1610          TAB                                                                      02 00180
000210 016000 A 1611          LDA     0,B             CTABL ADDR FROM MUX EQP TABL                     02 00181
                1612          IFF     VORTEX-2                                          V2             02 00182
                1613          LDB     DCRQB                                             V2             02 00183
                1614          IFF     VORTEX-1                                          V2             02 00184
000211 006027 A 1615          LDBE    CC$DCM          GET ADDR OF RQST                                 02 00185
000212 000065 E
000213 136000 A 1616          ERA     RSTPR,B         CTABL ADDR EQUAL?                                02 00186
000214 001016 A 1617          JANZ    DCL2C2          NO, ILLEGAL PHYS LNE ADDR                        02 00187
000215 000223 R
000216 014422 A 1618          LDA     PHYSLN          RESTORE PHYS LNE NO.                             02 00188
000217 024423 A 1619          LDB     PLTBAS                                                           02 00189
000220 146000 A 1620          SUB     0,B             IS PHYS LINE NO VALID ?                          02 00190
000221 001004 A 1621          JAN     DCL2D1          YES                                              02 00191
000222 000226 R
000223 014435 A 1622 DCL2C2   LDA     ERRORD          NO - SET ERROR CODE                              02 00192
000224 001000 A 1623          JMP     DCL4A1          GO TO END                                        02 00193
000225 000526 R
000226 006010 A 1624 DCL2D1   LDAI    LSDSIZ                                                           02 00194
000227 000021 A
000230 006020 A 1625          LDBI    VT$MP1          ADRS OF MEM POOL                                 02 00195
000231 000000 E
                1626          GETMEM                  GET TSB FOR LSD                                  02 00196
000232 006505 A
000233 000007 E
000234 000600 A
000235 000000 E
000236 001016 A 1627          JANZ    DCL2D2                                                           02 00197
000237 000243 R
000240 014423 A 1628          LDA     ERRORG          NO TEMPORARY STORAGE AVAILABLE,                  02 00198
000241 001000 A 1629          JMP     DCL4A1          SET ERROR CODE AND GO TO END                     02 00199
000242 000526 R
000243 054400 A 1630 DCL2D2   STA     LSDADR          SAVE ADRS OF TSB FOR LSD                         02 00200
000244 005014 A 1631          TAX                                                                      02 00201
000245 006020 A 1632          LDBI    LSDSIZ          SIZE OF LSD                                      02 00202
000246 000021 A
000247 005001 A 1633          TZA                                                                      02 00203
000250 055000 A 1634 DCL2DA   STA     0,X             CLEAR OUT                                        02 00204
000251 005144 A 1635          IXR                       TSB FOR                                        02 00205
000252 005322 A 1636          DBR                       NEW LSD                                        02 00206
000253 001026 A 1637          JBNZ    DCL2DA                                                           02 00207
000254 000250 R
000255 034375 A 1638          LDX     LSPRAD          ADRS OF LSD PROTOTYPE                            02 00208
```

```
000256 024365 A 1639          LDB     LSDADR          ADRS OF NEW LSD                                  02 00209
000257 006010 A 1640          LDAI    LPSIZ           SIZE OF LSD PROT.                                02 00210
000260 000005 A
000261 054372 A 1641 DCL2DE   STA     LPSHLD                                                           02 00211
000262 015000 A 1642          LDA     0,X             TRANSFER LSD PROTOTYPE                           02 00212
000263 056014 A 1643          STA     LSLSP,B         TO NEW LSD                                       02 00213
000264 005122 A 1644          IBR                                                                      02 00214
000265 005144 A 1645          IXR                                                                      02 00215
000266 014365 A 1646          LDA     LPSHLD                                                           02 00216
000267 005311 A 1647          DAR                                                                      02 00217
000270 001016 A 1648          JANZ    DCL2DE                                                           02 00218
000271 000261 R
                 1649          IFF     VORTEX-2                                          V2             02 00219
                 1650          LDB     DCRQB                                             V2             02 00220
                 1651          IFF     VORTEX-1                                          V2             02 00221
000272 006027 A 1652          LDBE    CC$DCM                                                           02 00222
000273 000212 E
000274 016000 A 1653          LDA     RSTPR,B         GET CONTRLR TBL ADRS                             02 00223
000275 034346 A 1654          LDX     LSDADR                                                           02 00224
000276 055012 A 1655          STA     LSCTA,X         STORE IN NEW LSD                                 02 00225
000277 014341 A 1656          LDA     PHYSLN                                                           02 00226
000300 124342 A 1657          ADD     PLTBAS          COMPUTE                                          02 00227
000301 005111 A 1658          IAR                     PLT ENTRY                                        02 00228
                 1659          DINTS                                                                    02 00229
000302 100444 A
000303 100747 A
000304 006027 A 1660          LDBE    CC$LSD                                                           02 00230
000305 000000 E
000306 006077 A 1661          STXE    CC$LSD          THREAD NEW LSD                                   02 00231
000307 000305 E
000310 065000 A 1662          STB     0,X             DNTO QUEUE                                       02 00232
000311 005012 A 1663          TAB                     PLT ENTRY ADRS IN B REG                          02 00233
000312 076000 A 1664          STX     0,B             LINK LSD TO PLT                                  02 00234
000313 014323 A 1665          LDA     LOGLN                                                            02 00235
000314 005002 A 1666          TZB                     COMPUTE                                          02 00236
000315 004541 A 1667          LLSR    1                 LLT                                            02 00237
000316 005111 A 1668          IAR                       ENTRY                                          02 00238
000317 124322 A 1669          ADD     LLTBAS            ADRS                                           02 00239
000320 005014 A 1670          TAX                                                                      02 00240
000321 015000 A 1671          LDA     0,X             GET LLT ENTRY                                    02 00241
000322 001020 A 1672          JBZ     DCL2E3          LEFT BYTE ?                                      02 00242
000323 000332 R
000324 150462 A 1673          ANA     LHW             NO - RIGHT                                       02 00243
000325 114313 A 1674          ORA     PHYSLN          OR PHYS LINE                                     02 00244
000326 055000 A 1675          STA     0,X               NO. INTO LLT ENTRY                             02 00245
000327 005001 A 1676          TZA                                                                      02 00246
000330 001000 A 1677          JMP     DCL4B1                                                           02 00247
000331 000524 R
000332 150463 A 1678 DCL2E3   ANA     RHW             PLN GOES INTO LEFT BYTE                          02 00248
000333 004250 A 1679          LRLA    8                                                                02 00249
000334 114304 A 1680          ORA     PHYSLN            OR PHYS LINE                                   02 00250
000335 004250 A 1681          LRLA    8                 NO. INTO ROTATED LLT ENTRY                     02 00251
000336 055000 A 1682          STA     0,X               AND ROTATE BACK                                02 00252
000337 005001 A 1683          TZA                                                                      02 00253
000340 001000 A 1684          JMP     DCL4B1                                                           02 00254
000341 000524 R
                 1685 *                                                                                02 00255
                 1686 *    PROCESS CLOSE REQUESTS HERE                                                 02 00256
                 1687 *                                                                                02 00257
000342 014276 A 1688 DCL3A1   LDA     PHYSLN                                                           02 00258
000343 130463 A 1689          ERA     RHW             HAS LOG. LINE BEEN ASSIGNED TO PHYS. LINE?       02 00259
000344 001016 A 1690          JANZ    DCL3AB          YES                                              02 00260
000345 000351 R
000346 014307 A 1691          LDA     ERRORA          NO - SET ERROR CODE                              02 00261
000347 001000 A 1692          JMP     DCL4A1          GO TO END                                        02 00262
000350 000526 R
000351 130463 A 1693 DCL3AB   ERA     RHW                                                              02 00263
000352 005111 A 1694          IAR                     COMPUTE ENTRY                                    02 00264
000353 124267 A 1695          ADD     PLTBAS            IN PLT                                         02 00265
000354 005014 A 1696          TAX                                                                      02 00266
000355 015000 A 1697          LDA     0,X             GET PLT ENTRY                                    02 00267
000356 150460 A 1698          ANA     BR15            IS LINE OPEN ?                                   02 00268
000357 001016 A 1699          JANZ    DCL3B1          YES                                              02 00269
000360 000364 R
000361 014300 A 1700          LDA     ERRORE          NO - SET ERROR CODE                              02 00270
000362 001000 A 1701          JMP     DCL4A1          GO TO END                                        02 00271
000363 000526 R
000364 005014 A 1702 DCL3B1   TAX                                                                      02 00272
       000001 A 1703 LSD      SET     X                                                                02 00273
                 1704          FETCHA  LSD,LSMOD,LSMODB,LSMODZ     GET MODEM TYPE                     02 00274
000365 015014 A
000366 004356 A
000367 140422 A 1705          SUB     TWO             DIALUP LINE ?                                    02 00275
000370 001004 A 1706          JAN     DCL3D1          NO                                               02 00276
000371 000416 R
000372 074262 A 1707          STX     TEM1            YES -                                            02 00277
000373 006037 A 1708          LDXE    CC$DCM                                                           02 00278
000374 000273 E
000375 014013 A 1709          LDA     DCL3C1+3        CLEAR OLD                                        02 00279
000376 150462 A 1710          ANA     LHW             LUN FROM FUNC REQUEST                            02 00280
000377 054011 A 1711          STA     DCL3C1+3                                                         02 00281
000400 014237 A 1712          LDA     CCMLUN          GET LUN FOR CCM                                  02 00282
000401 114007 A 1713          ORA     DCL3C1+3                                                         02 00283
000402 054006 A 1714          STA     DCL3C1+3        STORE LUN IN FUNC REQUEST                        02 00284
000403 014233 A 1715          LDA     LOGLN           GET LOG LINE NO,                                 02 00285
```

```
000404 114241 A 1716          DRA     DTROFF          ADD FUNC CODE - DTR OFF                    02 00286
000405 054213 A 1717          STA     FNCLCB+2        SET IN LCB                                 02 00287
               1718 DCL3C1    FUNC    FNCLCB,0        ISSUE FUNC TO TURN DTR OFF                 02 00288
000406 006505 A
000407 000130 E
000410 100000 A
000411 002400 A
000412 000617 R
000413 000000 A
000414 000000 A
000415 034237 A 1719          LDX     TEM1                                                       02 00289
               1720 DCL3D1    DINTS                                                              02 00290
000416 100444 A
000417 100747 A
               1721           FETCHA  LSD,LSRRT,LSRRTB,LSRRTZ   IS REQUEST QUEUE EMPTY ?         02 00291
000420 015001 A
000421 001010 A 1722          JAZ     DCL3E1          YES                                        02 00292
000422 000430 R
               1723           EINTS                   NO -                                       02 00293
000423 100244 A
000424 100147 A
000425 014235 A 1724          LDA     ERRORF          SET ERROR CODE                             02 00294
000426 001000 A 1725          JMP     DCL4A1          GO TO END                                  02 00295
000427 000526 R
000430 014212 A 1726 DCL3E1   LDA     PLTBAS                                                     02 00296
000431 124207 A 1727          ADD     PHYSLN          COMPUTE                                    02 00297
000432 005111 A 1728          IAR                       PLT ENTRY ADRS                           02 00298
000433 005012 A 1729          TAB                                                                02 00299
000434 016000 A 1730          LDA     0,B             GET PLT ENTRY                              02 00300
000435 150440 A 1731          ANA     BS15            CLEAR ADRS FIELD                           02 00301
000436 056000 A 1732          STA     0,B             (DELETE LSD FROM PLT)                      02 00302
               1733 *         CLEAR LOGICAL LINE TABLE ENTRY                                     02 00303
000437 014177 A 1734          LDA     LOGLN           COMPUTE LLT ENTRY ADDRESS                  02 00304
000440 005002 A 1735          TZB                                                                02 00305
000441 004541 A 1736          LLSR    1                                                          02 00306
000442 005111 A 1737          IAR                                                                02 00307
000443 124176 A 1738          ADD     LLTBAS                                                     02 00308
000444 074210 A 1739          STX     TEM1            SAVE X REG.                                02 00309
000445 005014 A 1740          TAX                                                                02 00310
000446 015000 A 1741          LDA     0,X             GET LLT ENTRY                              02 00311
000447 001020 A 1742          JBZ     DCL3E2          LEFT BYT                                   02 00312
000450 000454 R
000451 110463 A 1743          DRA     RHW             NO, RIGHT                                  02 00313
000452 001000 A 1744          JMP     DCL3E3                                                     02 00314
000453 000455 R
000454 110462 A 1745 DCL3E2   DRA     LHW                                                        02 00315
000455 055000 A 1746 DCL3E3   STA     0,X                                                        02 00316
000456 034176 A 1747          LDX     TEM1            RESTORE X REG.                             02 00317
               1748 *                                                                            02 00318
               1749           EINTS                                                              02 00319
000457 100244 A
000460 100147 A
000461 005041 A 1750          TXA                                                                02 00320
000462 006030 A 1751          LDXI    CC$LSD          SCAN LSD QUEUE FOR THIS LSD                02 00321
000463 000307 E
000464 001040 A 1752 DCL3F1   JXZ     DCL3F4          ERROR - NOT FOUND                          02 00322
000465 000521 R
000466 135000 A 1753          ERA     LSTHD,X                                                    02 00323
000467 001010 A 1754          JAZ     DCL3F2          JUMP IF FOUND                              02 00324
000470 000475 R
000471 135000 A 1755          ERA     LSTHD,X                                                    02 00325
000472 035000 A 1756          LDX     LSTHD,X         LOOK AT NEXT                               02 00326
000473 001000 A 1757          JMP     DCL3F1                                                     02 00327
000474 000464 R
               1758 DCL3F2    DINTS                                                              02 00328
000475 100444 A
000476 100747 A
000477 135000 A 1759          ERA     LSTHD,X                                                    02 00329
000500 005012 A 1760          TAB                                                                02 00330
000501 016000 A 1761          LDA     0,B             DELETE LSD FROM                            02 00331
000502 055000 A 1762          STA     0,X             LSD QUEUE                                  02 00332
               1763           EINTS                                                              02 00333
000503 100244 A
000504 100147 A
000505 006010 A 1764          LDAI    LSDSIZ                                                     02 00334
000506 000021 A
000507 056000 A 1765          STA     0,B             PUT LSD SIZE IN TSB                        02 00335
000510 006010 A 1766          LDAI    VT$MP1          ADRS OF MEM POOL                           02 00336
000511 000231 E
               1767           PUTMEM                  RETURN TSB (LSD) TO MEM POOL               02 00337
000512 006505 A
000513 000233 E
000514 000600 A
000515 000000 E
000516 005001 A 1768          TZA                                                                02 00338
000517 001000 A 1769          JMP     DCL4A1          GO TO END                                  02 00339
000520 000526 R
000521 014134 A 1770 DCL3F4   LDA     ERRORA          ERROR - LSD NOT IN QUEUE                   02 00340
000522 001000 A 1771          JMP     DCL4A1                                                     02 00341
000523 000526 R
               1772 DCL4B1    EINTS                   ENABLE INTERRUPTS                          02 00342
000524 100244 A
000525 100147 A
000526 054121 A 1773 DCL4A1   STA     STATSV          SAVE REQUEST STATUS                        02 00343
000527 001016 A 1774          JANZ    DCL4E1          JUMP IF THERE WERE ERRORS                  02 00344
```

```
000530 000576 R
000531 014120 A 1775          LDA     DCFLG           OPEN REQUEST ?                                  02 00345
000532 001016 A 1776          JANZ    DCL4E1          NO                                              02 00346
000533 000576 R
                1777 *                                                                                02 00347
                1778 *        ISSUE FUNC 24 TO INITIALIZE LINE                                        02 00348
                1779 *                                                                                02 00349
000534 014011 A 1780          LDA     DCL4C1+3                                                        02 00350
000535 150462 A 1781          ANA     LHW                                                             02 00351
000536 114101 A 1782          ORA     CCMLUN          SET LUN FOR CCM                                 02 00352
000537 054006 A 1783          STA     DCL4C1+3        IN FUNC REQUEST                                 02 00353
000540 014076 A 1784          LDA     LOGLN           GET LOG. LINE NUMBER,                           02 00354
000541 114103 A 1785          ORA     FUNC24          OR WITH FUNC CODE                               02 00355
000542 054056 A 1786          STA     FNCLCB+2        FOR FUNC  24                                    02 00356
                1787 DCL4C1   FUNC    FNCLCB,0        ISSUE FUNC TO INITIALIZE LINE                   02 00357
000543 006505 A
000544 000407 E
000545 100000 A
000546 002400 A
000547 000617 R
000550 000000 A
000551 000000 A
000552 034071 A 1788          LDX     LSDADR                                                          02 00358
       000001 A 1789 LSD      SET     X                                                               02 00359
                1790          FETCHA  LSD,LSMOD,LSMODB,LSMODZ     GET MODEM TYPE                      02 00360
000553 015014 A
000554 004356 A
000555 140422 A 1791          SUB     TWO             DIALUP LINE ?                                   02 00361
000556 001004 A 1792          JAN     DCL4E1          NO                                              02 00362
000557 000576 R
000560 014011 A 1793          LDA     DCL4D3+3        YES -                                           02 00363
000561 150462 A 1794          ANA     LHW                                                             02 00364
000562 114055 A 1795          ORA     CCMLUN          SET CCM LUN IN FUNC RQST                        02 00365
000563 054006 A 1796          STA     DCL4D3+3                                                        02 00366
000564 014052 A 1797          LDA     LOGLN           GET LOG. LINE NO.                               02 00367
000565 114061 A 1798          ORA     DTRON           OR IN FUNC CODE FOR TURN DTR ON                 02 00368
000566 054032 A 1799          STA     FNCLCB+2        SET IN LCB                                      02 00369
                1800 DCL4D3   FUNC    FNCLCB,0        TURN DATA TERM. READY ON                        02 00370
000567 006505 A
000570 000544 E
000571 100000 A
000572 002400 A
000573 000617 R
000574 000000 A
000575 000000 A
                1801 *                                                                                02 00371
                1802 *    PERFORM REQUEST COMPLETION PROCESSING HERE                                  02 00372
                1803 *                                                                                02 00373
                1804 DCL4E1   DINTS                                                                   02 00374
000576 100444 A
000577 100747 A
                1805          IFT     VORTEX-2                                              V2        02 00375
                1806          GOTO    1                                                     V2        02 00376
                1807          LDB     DCRQB                                                 V2        02 00377
                1808          LDAE    CC$DCM                                                V2        02 00378
                1809 1        CONT                                                          V2        02 00379
                1810          IFT     VORTEX-1                                              V2        02 00380
                1811          GOTO    1                                                     V2        02 00381
000600 006027 A 1812          LDBE    CC$DCM          [B] > REQUEST ADDRESS                           02 00382
000601 000374 E
                1813 1        CONT                                                          V2        02 00383
000602 036004 A 1814          LDX     RADNR,B                                                         02 00384
000603 006077 A 1815          STXE    CC$DCM          DETHREAD REQUEST                                02 00385
000604 000601 E
                1816          IFT     VORTEX-2                                              V2        02 00386
                1817          GOTO    1                                                     V2        02 00387
                1818          TAB                                                           V2        02 00388
                1819 1        CONT                                                          V2        02 00389
                1820          IFT     VORTEX-1                                              V2        02 00390
                1821          GOTO    1                                                     V2        02 00391
000605 005004 A 1822          TZX                                                                     02 00392
000606 076004 A 1823          STX     RADNR,B         ZERO THREAD IN REQUEST                          02 00393
000607 064013 A 1824          STB     DUMLSD+LSRRT    LINK RQST TO DUMMY LSD                          02 00394
000610 006030 A 1825          LDXI    DUMLSD                                                          02 00395
000611 000622 R
                1826 1        CONT                                                          V2        02 00396
000612 014035 A 1827          LDA     STATSV          ERRORS ON REQUEST ?                             02 00397
                1828          IFT     VORTEX-2                                              V2        02 00398
                1829          GOTO    1                                                     V2        02 00399
                1830          ALOC    V2$CRL          COMPLETE REQUEST                      V2        02 00400
                1831          DATA    DCLALC                                                V2        02 00401
                1832          JMP     VT$DCL                                                V2        02 00402
                1833 1        CONT                                                          V2        02 00403
                1834          IFT     VORTEX-1                                              V2        02 00404
                1835          GOTO    1                                                     V2        02 00405
000613 002000 A 1836          CALL    CC$DRQ          USE SPECIAL ENTRY POINT TO CC$CRQ               02 00406
000614 000000 E
000615 001000 A 1837          JMP     DCL1A           GO BACK FOR NEXT REQUEST                        02 00407
000616 000002 R
                1838 1        CONT                                                          V2        02 00408
                1839 *                                                                                02 00409
                1840 *                                                                                02 00410
                1841 FNCLCB   DCB     0,0                                                             02 00411
000617 000000 A
000620 000000 A
```

```
000621 000000 A
000622                1842 DUMLSD BSS     LSRRT+1                                                    02 00412
                      1843 DCLFCB FCB     120,INBUF,0,'F','VT','$D','FL'                             02 00413
000624 000170 A
000625 000665 R
000626 000306 A
000627 000000 A
000630 000000 A
000631 000000 A
000632 000000 A
000633 153324 A
000634 122304 A
000635 143314 A
000636 000665 R 1844 INBFAD DATA    INBUF                                                      02 00414
000637 000000 A 1845 LOGLN  DATA    0                                                          02 00415
000640 000000 A 1846 CCMLUN DATA    0                                                          02 00416
000641 000000 A 1847 PHYSLN DATA    0                                                          02 00417
000642 000000 A 1848 LLTBAS DATA    0                                                          02 00418
000643 000000 A 1849 PLTBAS DATA    0                                                          02 00419
000644 000000 A 1850 LSDADR DATA    0                                                          02 00420
000645 014000 A 1851 FUNC24 DATA    014000                                                     02 00421
000646 004400 A 1852 DTROFF DATA    04400                                                      02 00422
000647 004000 A 1853 DTRON  DATA    04000                                                      02 00423
000650 000000 A 1854 STATSY DATA    0                                                          02 00424
000651 000000 A 1855 LCBADR DATA    0                                                          02 00425
000652 000000 A 1856 DCFLG  DATA    0                                                          02 00426
000653 000000 A 1857 LSPRAD DATA    0                                                          02 00427
000654 000000 A 1858 LPSHLD DATA    0                                                          02 00428
000655 000000 A 1859 TEM1   DATA    0                                                          02 00429
                      1860          IFT     VORTEX-2                                      V2 02 00430
                      1861          GOTO    1                                             V2 02 00431
                      1862 DCRQB    PZE     *+1                                           V2 02 00432
                      1863          BSS     5               REQUEST BLOCK                 V2 02 00433
                      1864 DCLCB    PZE     *+1             LCB                           V2 02 00434
                      1865          BSS     5                                             V2 02 00435
                      1866 1        CONT                                                  V2 02 00436
                      1867 *                                                                  02 00437
                      1868 *        ERROR CODES FOR OPEN/CLOSE LINE                           02 00438
                      1869 *                                                                  02 00439
000656 033640 A 1870 ERRORA DATA    033640          INVALID LOGICAL LINE NO.(ERR FLG,CC=5)    02 00440
000657 035640 A 1871 ERRORB DATA    035640          LINE DOWN(OPEN)                           02 00441
000660 036640 A 1872 ERRORC DATA    036640          LINE ALREADY OPEN(OPEN)                   02 00442
000661 042640 A 1873 ERRORD DATA    042640          INVALID PHYS LINE ADDRS                   02 00443
000662 034640 A 1874 ERRORE DATA    034640          LINE NOT OPEN(CLOSE)                      02 00444
000663 037640 A 1875 ERRORF DATA    037640          REQUESTS STILL PENDING ON LSD(CLOSE)      02 00445
000664 044640 A 1876 ERRORG DATA    044640          NO TEMPORARY STORAGE AVAILABLE            02 00446
000665          1877 INBUF  BSS     120                                                       02 00447
                      1878 *                                                                  02 00448
                      1879          END                                                       02 00449
ENTRY NAMES
000000 R VT$DCL
EXTERNAL NAMES
000000 E CC$CRQ 000463 E CC$LSD 000206 E CC$MET 000604 E CC$DCM
000614 E CC$DRQ 000513 E V$EXEC 000570 E V$IOC  000141 E V$IOST
000235 E VT$GTM 000511 E VT$MP1 000515 E VT$PTM
SYMBOLS
000044 A APIM   000002 A B      000000 A B0     000001 A B1
000012 A B10    000013 A B11    000014 A B12    000015 A B13
000016 A B14    000017 A B15    000002 A B2     000003 A B3
000004 A B4     000005 A B5     000006 A B6     000007 A B7
000010 A B8     000011 A B9     000000 A BICNUM 000421 A BM1
000472 A BM17   000475 A BM177  000477 A BM1777 000464 A BM3
000473 A BM37   000463 A BM377  000467 A BM7    000474 A BM77
000476 A BM777  000441 A BR0    000442 A BR1    000453 A BR10
000454 A BR11   000455 A BR12   000456 A BR13   000457 A BR14
000460 A BR15   000443 A BR2    000444 A BR3    000445 A BR4
000446 A BR5    000447 A BR6    000450 A BR7    000451 A BR8
000452 A BR9    000421 A BS0    000422 A BS1    000433 A BS10
000434 A BS11   000435 A BS12   000436 A BS13   000437 A BS14
000440 A BS15   000423 A BS2    000424 A BS3    000425 A BS4
000426 A BS5    000427 A BS6    000430 A BS7    000431 A BS8
000432 A BS9    000000 E CC$CRQ 000463 E CC$LSD 000206 E CC$MET
000604 E CC$DCM 000614 E CC$DRQ 000640 R CCMLUN 000000 A CHAFP
000000 A CHAFPB 000020 A CHAFPZ 000001 A CHARP  000000 A CHARPB
000020 A CHARPZ 000002 A CHCFP  000000 A CHCFPB 000020 A CHCFPZ
000003 A CHCRP  000000 A CHCRPB 000020 A CHCRPZ 000004 A CHRBL
000000 A CHRBLB 000020 A CHRBLZ 000047 A CLOCK  000000 A COTAD1
000000 A CTACT  000017 A CTACTB 000001 A CTACTZ 000001 A CTADN
000000 A CTADNB 000020 A CTADNZ 000011 A CTBIC  000000 A CTBICB
000020 A CTBICZ 000003 A CTDST  000000 A CTDSTB 000020 A CTDSTZ
000006 A CTDVA  000000 A CTDVAB 000020 A CTDVAZ 000012 A CTFCB
000000 A CTFCBB 000020 A CTFCBZ 000014 A CTFRC  000010 A CTFRCB
000010 A CTFRCZ 000014 A CTFRE  000000 A CTFREB 000010 A CTFREZ
000000 A CTIDB  000000 A CTIDBB 000017 A CTIDBZ 000007 A CTIOA
000000 A CTIOAB 000020 A CTIOAZ 000002 A CTOPM  000000 A CTOPMB
000020 A CTOPMZ 000005 A CTRCN  000000 A CTRCNB 000010 A CTRCNZ
000004 A CTRQB  000000 A CTRQBB 000020 A CTRQBZ 000005 A CTRTR
000010 A CTRTRB 000010 A CTRTRZ 000010 A CTSTA  000000 A CTSTAB
000020 A CTSTAZ 000013 A CTWDS  000000 A CTWDSB 000020 A CTWDSZ
000001 A DCBUFF 000003 A DCCHR  000000 A DCCHRB 000020 A DCCHRZ
000002 A DCCNT  000000 A DCRECL 000747 A DISCLK 000745 A DISMP
000444 A DISPIM 000026 A DMBCA  000000 A DMBCAB 000020 A DMBCAZ
000024 A DMCWA  000000 A DMCWAB 000020 A DMCWAZ 000017 A DMFPA
000000 A DMFPAB 000020 A DMFPAZ 000021 A DMLCA  000000 A DMLCAB
000020 A DMLCAZ 000022 A DMLTA  000000 A DMLTAB 000020 A DMLTAZ
```

```
000023 A DMPTA  000000 A DMPTAB 000020 A DMPTAZ 000016 A DMRPA
000000 A DMRPAB 000020 A DMRPAZ 000020 A DMSTA  000000 A DMSTAB
000020 A DMSTAZ 000025 A DMSWA  000000 A DMSWAB 000020 A DMSWAZ
000015 A DMTPA  000000 A DMTPAB 000020 A DMTPAZ 000002 A DSCTAD
000000 A DSDASS 000000 A DSDVDN 000002 A DSLCKD 000001 A DSNAME
000000 A DSNORQ 000002 A DSOPCM 000002 A DSPSTI 000002 A DSREWD
000000 A DSUNAM 000002 A DSUNTN 000646 R DTROFF 000647 R DTRON
000622 R DUMLSD 000424 A EIGHT  000147 A ENACLK 000645 A ENAMP
000244 A ENAPIM 000656 R ERRORA 000657 R ERRORB 000660 R ERRORC
000661 R ERRORD 000662 R ERRORE 000663 R ERRORF 000664 R ERRORG
000465 A FIVE   000617 R FNCLCB 000423 A FOUR   000645 R FUNC24
000003 A IBIBF  000017 A IBIBFB 000001 A IBIBFZ 000003 A IBLAS
000000 A IBLASB 000017 A IBLASZ 000001 A IBLEN  000000 A IBLENB
000020 A IBLENZ 000000 A IBLNK  000000 A IBLNKB 000020 A IBLNKZ
000002 A IBSTA  000000 A IBSTAB 000020 A IBSTAZ 000004 A IBSTS
000000 A IBSTSB 000017 A IBSTSZ 000636 R INBFAD 000665 R INBUF
000300 A LC     000003 A LCABN  000013 A LCABNB 000001 A LCABNZ
000003 A LCASY  000012 A LCASYB 000001 A LCASYZ 000651 R LCBADR
000007 A LCBSC  000015 A LCBSCB 000001 A LCBSCZ 000007 A LCCHN
000016 A LCCHNB 000001 A LCCHNZ 000003 A LCCRC  000014 A LCCRCB
000003 A LCCRCZ 000006 A LCCWB  000014 A LCCWBB 000001 A LCCWBZ
000006 A LCCWC  000015 A LCCWCB 000001 A LCCWCZ 000006 A LCCWD
000013 A LCCWDB 000001 A LCCWDZ 000006 A LCCWI  000016 A LCCWIB
000001 A LCCWIZ 000006 A LCCWP  000012 A LCCWPB 000001 A LCCWPZ
000006 A LCCWR  000011 A LCCWRB 000001 A LCCWRZ 000006 A LCCWS
000017 A LCCWSB 000001 A LCCWSZ 000006 A LCCWT  000010 A LCCWTB
000001 A LCCWTZ 000001 A LCIBA  000000 A LCIBAB 000017 A LCIBAZ
000000 A LCIBF  000017 A LCIBFB 000001 A LCIBFZ 000000 A LCIBL
000000 A LCIBLB 000014 A LCIBLZ 000002 A LCIC1  000010 A LCIC1B
000010 A LCIC1Z 000002 A LCIC2  000000 A LCIC2B 000010 A LCIC2Z
000003 A LCIKE  000000 A LCIKEB 000004 A LCIKEZ 000007 A LCITB
000013 A LCITBB 000001 A LCITBZ 000050 A LCJP   000006 A LCLCB
000000 A LCLCBB 000020 A LCLCBZ 000007 A LCLDB  000014 A LCLDBB
000001 A LCLDBZ 000007 A LCLTB  000017 A LCLTBB 000001 A LCLTBZ
000005 A LCOBA  000000 A LCOBAB 000017 A LCOBAZ 000004 A LCOBF
000017 A LCOBFB 000001 A LCOBFZ 000004 A LCOBL  000000 A LCOBLB
000014 A LCOBLZ 000007 A LCOKE  000000 A LCOKEB 000004 A LCOKEZ
000003 A LCRCC  000017 A LCRCCB 000001 A LCRCCZ 000000 A LCSMB
000016 A LCSMBB 000001 A LCSMBZ 000462 A LHW    000642 R LLTBAS
000637 R LOGLN  000002 A LPDEF  000010 A LPDEFB 000001 A LPDEFZ
000002 A LPDWN  000011 A LPDWNB 000001 A LPDWNZ 000002 A LPPLA
000654 R LPSHLD 000005 A LPSIZ  000017 A LSABN  000015 A LSABNB
000001 A LSABNZ 000017 A LSASC  000011 A LSASCB 000001 A LSASCZ
000014 A LSASY  000013 A LSASYB 000001 A LSASYZ 000020 A LSBSC
000016 A LSBSCB 000001 A LSBSCZ 000015 A LSCC1  000010 A LSCC1B
000010 A LSCC1Z 000015 A LSCC2  000000 A LSCC2B 000010 A LSCC2Z
000017 A LSCHN  000010 A LSCHNB 000001 A LSCHNZ 000017 A LSCRC
000012 A LSCRCB 000003 A LSCRCZ 000012 A LSCTA  000000 A LSCTAB
000020 A LSCTAZ 000001 A LSD    000644 R LSDADR 000017 A LSDSF
000017 A LSDSFB 000001 A LSDSFZ 000021 A LSDSIZ 000013 A LSDST
000000 A LSDSTB 000020 A LSDSTZ 000016 A LSEPF  000016 A LSEPFB
000001 A LSEPFZ 000014 A LSLSP  000000 A LSLSPB 000011 A LSLSPZ
000014 A LSMOD  000016 A LSMODB 000002 A LSMODZ 000020 A LSNTO
000010 A LSNTOB 000006 A LSNTOZ 000014 A LSPAR  000014 A LSPARB
000002 A LSPARZ 000016 A LSPLA  000000 A LSPLAB 000010 A LSPLAZ
000653 R LSPRAD 000002 A LSRCA  000000 A LSRCAB 000020 A LSRCAZ
000003 A LSREM  000000 A LSREMB 000020 A LSREMZ 000016 A LSRRS
000010 A LSRRSB 000003 A LSRRSZ 000001 A LSRRT  000000 A LSRRTB
000020 A LSRRTZ 000004 A LSRTO  000000 A LSRTOB 000020 A LSRTOZ
000005 A LSSRS  000000 A LSSRSB 000020 A LSSRSZ 000011 A LSSWS
000000 A LSSWSB 000020 A LSSWSZ 000016 A LSTER  000017 A LSTERB
000001 A LSTERZ 000000 A LSTHD  000000 A LSTHDB 000020 A LSTHDZ
000006 A LSWCA  000000 A LSWCAB 000020 A LSWCAZ 000007 A LSWEM
000000 A LSWEMB 000020 A LSWEMZ 000016 A LSWRS  000013 A LSWRSB
000003 A LSWRSZ 000010 A LSWTO  000000 A LSWTOB 000020 A LSWTOZ
000014 A LSXMM  000011 A LSXMMB 000002 A LSXMMZ 000017 A LSYNC
000016 A LSYNCB 000001 A LSYNCZ 000020 A LSYNR  000000 A LSYNRB
000010 A LSYNRZ 000017 A LSYNT  000000 A LSYNTB 000010 A LSYNTZ
000046 A MAP    000045 A MP     000045 A MPMR0  000145 A MPMR1
000245 A MPMR2  000345 A MPMR3  000420 A MT     000461 A NEG
000470 A NINE   000652 R OCFLG  000002 R OCL1A  000011 R OCL1A1
000013 R OCL1B1 000033 R OCL1C1 000062 R OCL1D1 000113 R OCL1F1
000120 R OCL2A1 000127 R OCL2A2 000147 R OCL2A3 000165 R OCL2B1
000175 R OCL2C1 000223 R OCL2C2 000226 R OCL2D1 000243 R OCL2D2
000250 R OCL2DA 000261 R OCL2DE 000332 R OCL2E3 000342 R OCL3A1
000351 R OCL3AB 000364 R OCL3B1 000406 R OCL3C1 000416 R OCL3D1
000430 R OCL3E1 000454 R OCL3E2 000455 R OCL3E3 000464 R OCL3F1
000475 R OCL3F2 000521 R OCL3F4 000526 R OCL4A1 000524 R OCL4B1
000543 R OCL4C1 000567 R OCL4D3 000576 R OCL4E1 000624 R OCLFCB
000421 A ONE    000001 A PCBSL  000011 A PCBSLB 000001 A PCBSLZ
000000 A PCCLN  000000 A PCCLNB 000010 A PCCLNZ 000002 A PCCTP
000014 A PCCTPB 000004 A PCCTPZ 000001 A PCECH  000014 A PCECHB
000001 A PCECHZ 000000 A PCLLN  000010 A PCLLNB 000010 A PCLLNZ
000002 A PCNTD  000000 A PCNTDB 000004 A PCNTDZ 000001 A PCPCH
000000 A PCPCHB 000010 A PCPCHZ 000001 A PCSWL  000010 A PCSWLB
000001 A PCSWLZ 000002 A PCTYP  000010 A PCTYPB 000004 A PCTYPZ
000001 A PCXMM  000012 A PCXMMB 000002 A PCXMMZ 000641 R PHYSLN
000040 A PIM1   000041 A PIM2   000042 A PIM3   000043 A PIM4
000040 A PIM5   000040 A PIM6   000040 A PIM7   000040 A PIM8
000643 R PLTBAS 000200 A POST   000003 A PSABN  000015 A PSABNB
000001 A PSABNZ 000000 A PSASY  000013 A PSASYB 000001 A PSASYZ
000002 A PSBADT 000000 A PSBEG  000004 A PSBSC  000016 A PSBSCB
000016 A PSBSCZ 000001 A PSCC1  000010 A PSCC1B 000010 A PSCC1Z
000001 A PSCC2  000000 A PSCC2B 000010 A PSCC2Z 000003 A PSCRC
000012 A PSCRCB 000003 A PSCRCZ 000002 A PSDEF  000010 A PSDEFB
```

```
000001 A PSDEFZ 000003 A PSDSF  000017 A PSDSFB 000001 A PSDSFZ
000002 A PSDWN  000011 A PSDWNB 000001 A PSDWNZ 000004 A PSEND
000002 A PSEPF  000016 A PSEPFB 000001 A PSEPFZ 000000 A PSLSP
000000 A PSLSPB 000011 A PSLSPZ 000000 A PSMOD  000016 A PSMODB
000002 A PSMODZ 000003 A PSNSEC 000000 A PSPAR  000014 A PSPARB
000002 A PSPARZ 000002 A PSPLA  000000 A PSPLAB 000010 A PSPLAZ
000001 A PSPROT 000002 A PSTER  000017 A PSTERB 000001 A PSTERZ
000000 A PSXMM  000011 A PSXMMB 000002 A PSXMMZ 000003 A PSYNC
000016 A PSYNCB 000001 A PSYNCZ 000004 A PSYNR  000000 A PSYNRB
000010 A PSYNRZ 000003 A PSYNT  000000 A PSYNTB 000010 A PSYNTZ
000040 A RA0    000000 A RA1    000004 A RADNR  000060 A RB0
000020 A RB1    000002 A RFCB   000463 A RHW    000001 A ROPWD
000000 A RSTPR  000003 A RTIDB  000467 A SEVEN  000466 A SIX
000650 R STATSV 000027 A TBATSK 000026 A TBCPTH 000011 A TBENTY
000003 A TBEVNT 000021 A TBIO   000014 A TBISA  000015 A TBISB
000017 A TBISP  000020 A TBISRS 000034 A TBIST  000016 A TBISX
000032 A TBKEY  000022 A TBKN1  000023 A TBKN2  000024 A TBKN3
000033 A TBMIMG 000032 A TBNUCL 000002 A TBPL   000004 A TBRSA
000005 A TBRSB  000030 A TBRSE  000007 A TBRSP  000010 A TBRSTS
000006 A TBRSX  000000 A TBS0   000001 A TBS1   000012 A TBS10
000013 A TBS11  000014 A TBS12  000015 A TBS13  000016 A TBS14
000017 A TBS15  000002 A TBS2   000003 A TBS3   000004 A TBS4
000005 A TBS5   000006 A TBS6   000007 A TBS7   000010 A TBS8
000011 A TBS9   000031 A TBSIZ  000001 A TBST   000025 A TBTLC
000013 A TBTMIN 000012 A TBTMS  000000 A TBTRD  000004 A TCBSL
000011 A TCBSLB 000001 A TCBSLZ 000003 A TCCLN  000000 A TCCLNB
000010 A TCCLNZ 000004 A TCCON  000015 A TCCONB 000001 A TCCONZ
000002 A TCCTA  000000 A TCCTAB 000020 A TCCTAZ 000005 A TCCTP
000014 A TCCTPB 000004 A TCCTPZ 000012 A TCDCC  000000 A TCDCCB
000020 A TCDCCZ 000014 A TCDTO  000000 A TCDTOB 000020 A TCDTOZ
000004 A TCECH  000014 A TCECHB 000001 A TCECHZ 000015 A TCID1
000000 A TCID1B 000020 A TCID1Z 000016 A TCID2  000000 A TCID2B
000020 A TCID2Z 000006 A TCLDF  000014 A TCLDFB 000001 A TCLDFZ
000003 A TCLLN  000010 A TCLLNB 000010 A TCLLNZ 000005 A TCNOD
000004 A TCNODB 000004 A TCNODZ 000005 A TCNTD  000000 A TCNTDB
000004 A TCNTDZ 000004 A TCPCH  000000 A TCPCHB 000010 A TCPCHZ
000004 A TCRBC  000017 A TCRBCB 000001 A TCRBCZ 000013 A TCRBF
000000 A TCRBFB 000020 A TCRBFZ 000007 A TCRCA  000000 A TCRCAB
000020 A TCRCAZ 000006 A TCRMD  000000 A TCRMDB 000003 A TCRMDZ
000001 A TCRQH  000000 A TCRQHB 000020 A TCRQHZ 000006 A TCRRS
000006 A TCRRSB 000003 A TCRRSZ 000010 A TCSTO  000000 A TCSTOB
000020 A TCSTOZ 000004 A TCSWL  000010 A TCSWLB 000001 A TCSWLZ
000000 A TCTCD  000000 A TCTCDB 000020 A TCTCDZ 000005 A TCTYP
000010 A TCTYPB 000004 A TCTYPZ 000004 A TCWBC  000016 A TCWBCB
000001 A TCWBCZ 000011 A TCWCA  000000 A TCWCAB 000020 A TCWCAZ
000006 A TCWMD  000003 A TCWMDB 000003 A TCWMDZ 000006 A TCWRS
000011 A TCWRSB 000003 A TCWRSZ 000004 A TCXMM  000012 A TCXMMB
000002 A TCXMMZ 000655 R TEM1   000471 A TEN    000464 A THREE
000002 A TIDSP  000000 A TIDSPB 000007 A TIDSPZ 000002 A TIDWN
000017 A TIDWNB 000001 A TIDWNZ 000000 A TINET  000000 A TINETB
000020 A TINETZ 000003 A TIODN  000017 A TIODNB 000001 A TIODNZ
000003 A TIODP  000000 A TIODPB 000007 A TIODPZ 000003 A TIOSC
000007 A TIOSCB 000010 A TIOSCZ 000002 A TISEC  000007 A TISECB
000010 A TISECZ 000000 A TITU1  000000 A TITU1B 000020 A TITU1Z
000001 A TITU2  000000 A TITU2B 000020 A TITU2Z 000017 A TPFPA
000000 A TPFPAB 000020 A TPFPAZ 000015 A TPRPA  000000 A TPRPAB
000020 A TPRPAZ 000016 A TPWPA  000000 A TPWPAB 000020 A TPWPAZ
000152 A TRMLUN 000422 A TWO    000403 A V$1MIN 000415 A V$BFC
000075 A V$BGLB 000056 A V$BIC1 000315 A V$BTB  000331 A V$BTBM
000414 A V$BVN  000334 A V$CAM  000353 A V$CKB  000411 A V$CKIT
000310 A V$CKPT 000301 A V$CPL  000076 A V$CRDM 000341 A V$CRDR
000354 A V$CRM  000302 A V$CRS  000360 A V$CTAD 000300 A V$CTL
000351 A V$CTMS 000070 A V$DATE 000355 A V$DSTB 000376 A V$ERFG
000513 E V$EXEC 000347 A V$FGLB 000306 A V$FLRS 000350 A V$FREE
000332 A V$GFCB 000320 A V$IM   000410 A V$IOA  000570 E V$IOC
000141 E V$IOST 000412 A V$JCB  000055 A V$JCFG 000077 A V$JCTM
000050 A V$JNAM 000377 A V$JOP  000340 A V$KEY  000054 A V$LCNT
000313 A V$LER  000356 A V$LIT  000317 A V$LLUP 000317 A V$LPP
000307 A V$LRSK 000312 A V$LSAL 000345 A V$LUNT 000316 A V$LUP
000400 A V$LUT1 000401 A V$LUT2 000402 A V$LUT3 000330 A V$MAP
000333 A V$MIMG 000330 A V$MPM  000362 A V$NCTR 000316 A V$NPAG
000413 A V$OCB  000346 A V$OPCF 000311 A V$OPCL 000357 A V$PGT
000363 A V$PIMN 000074 A V$PLCT 000305 A V$PTVB 000361 A V$SCTL
000352 A V$SCV  000375 A V$SLFG 000334 A V$ST0  000335 A V$ST1
000336 A V$ST2  000337 A V$ST3  000303 A V$TB   000342 A V$TBGT
000416 A V$TFC  000314 A V$TJCP 000344 A V$TMN  000343 A V$TMS
000304 A V$UTB  000001 A VORTEX 000235 E VT$GTM 000511 E VT$MP1
000000 R VT$OCL 000515 E VT$PTM 000001 A X      000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE

 1522  1        *
  159  ADAT     *
   38  ANAM     *
   90  ANAN     *
  574  APIM      584   585
  108  B          98   117   229   230   252   255   257  1533  1536
                1541  1611  1616  1620  1643  1653  1664  1730  1732
                1761  1765  1814  1823
   88  B&         82
   83  B&0        40
   80  B&1        78
   44  B&10       42
   76  B&2        74
   72  B&3        70
```

```
  68   B&4          66
  64   B&5          62
  60   B&6          58
  56   B&7          54
  52   B&8          50
  48   B&9          46
 543   B0       *
 544   B1       *
 553   B10      *
 554   B11      *
 555   B12      *
 556   B13      *
 557   B14      *
 558   B15      *
 545   B2       *
 546   B3       *
 547   B4       *
 548   B5       *
 549   B6       *
 550   B7       *
 551   B8       *
 552   B9       *
 630   BICNUM   *
1483   BLDMAT   *
 515   BM1          79
 518   BM17         67   1561
 521   BM177        55
 524   BM1777       43
 516   BM3          75
 519   BM37         63
 522   BM377        51
 517   BM7          71
 520   BM77         59   1604
 523   BM777        47
 486   BR0        202
 487   BR1      *
 496   BR10     *
 497   BR11     *
 498   BR12     *
 499   BR13     *
 500   BR14     *
 501   BR15     1698
 488   BR2      *
 489   BR3      *
 490   BR4      *
 491   BR5      *
 492   BR6      *
 493   BR7      *
 494   BR8      *
 495   BR9      *
 470   BS0        195    209
 471   BS1      *
 480   BS10     *
 481   BS11     *
 482   BS12     *
 483   BS13     *
 484   BS14     *
 485   BS15     1731
 472   BS2      *
 473   BS3      *
 474   BS4      *
 475   BS5      *
 476   BS6      *
 477   BS7      *
 478   BS8      *
 479   BS9      *
   0   CC$CRQ   1460
   0   CC$LSD   1459   1660   1661   1751
   0   CC$MET   1462   1609
   0   CC$OCM   1459   1506   1532   1558   1615   1652   1708   1808   1812
                1815
   0   CC$ORQ   1461   1836
1846   CCMLUN   1535   1712   1782   1795
1397   CHAFP    *
1398   CHAFPB   *
1399   CHAFPZ   *
1401   CHARP    *
1402   CHARPB   *
1403   CHARPZ   *
1405   CHCFP    *
1406   CHCFPB   *
1407   CHCFPZ   *
1409   CHCRP    *
1410   CHCRPB   *
1411   CHCRPZ   *
1413   CHRBL    *
1414   CHRBLB   *
1415   CHRBLZ   *
 198   CLEARF   *
 567   CLOCK      569    570
 622   COTAD1   *
 707   CTACT    *
 708   CTACTB   *
 709   CTACTZ   *
 715   CTADN    *
```

```
716   CTADNB   *
717   CTADNZ   *
751   CTBIC    *
752   CTBICB   *
753   CTBICZ   *
723   CTDST    *
724   CTDSTB   *
725   CTDSTZ   *
739   CTDVA    *
740   CTDVAB   *
741   CTDVAZ   *
755   CTFCB    *
756   CTFCBB   *
757   CTFCBZ   *
763   CTFRC    *
764   CTFRCB   *
765   CTFRCZ   *
767   CTFRE    *
768   CTFREB   *
769   CTFREZ   *
711   CTIDB    *
712   CTIDBB   *
713   CTIDBZ   *
743   CTIOA    *
744   CTIOAB   *
745   CTIOAZ   *
719   CTOPM    *
720   CTOPMB   *
721   CTOPMZ   *
735   CTRCN    *
736   CTRCNB   *
737   CTRCNZ   *
727   CTRQB    *
728   CTRQBB   *
729   CTRQBZ   *
731   CTRTR    *
732   CTRTRB   *
733   CTRTRZ   *
747   CTSTA    *
748   CTSTAB   *
749   CTSTAZ   *
759   CTWDS    *
760   CTWDSB   *
761   CTWDSZ   *
688   DCBUFF   *
691   DCCHR    *
692   DCCHRB   *
693   DCCHRZ   *
689   DCCNT    *
687   DCRECL   *
187   DINTS    *
569   DISCLK    189
589   DISMP    *
584   DISPIM    188
813   DMBCA    *
814   DMBCAB   *
815   DMBCAZ   *
805   DMCWA    *
806   DMCWAB   *
807   DMCWAZ   *
785   DMFPA    *
786   DMFPAB   *
787   DMFPAZ   *
793   DMLCA    *
794   DMLCAB   *
795   DMLCAZ   *
797   DMLTA     1537
798   DMLTAB   *
799   DMLTAZ   *
801   DMPTA     1539
802   DMPTAB   *
803   DMPTAZ   *
781   DMRPA    *
782   DMRPAB   *
783   DMRPAZ   *
789   DMSTA    *
790   DMSTAB   *
791   DMSTAZ   *
809   DMSWA    *
810   DMSWAB   *
811   DMSWAZ   *
777   DMTPA    *
778   DMTPAB   *
779   DMTPAZ   *
615   DSCTAD   *
601   DSDASS   *
600   DSDVDN   *
612   DSLCKD   *
609   DSNAME   *
608   DSNORQ   *
613   DSOPCM   *
614   DSPSTI   *
610   DSREWD   *
606   DSUNAM   *
611   DSUNTN   *
```

1852 DTROFF 1716
1853 DTRON 1798
1842 DUMLSD 1824 1825
512 EIGHT 143 167
183 EINTS *
570 ENACLK 185
590 ENAMP *
585 ENAPIM 184
0 ERROR 113 193 200 207
1870 ERRORA 1596 1691 1770
1871 ERRORB 1574 1600
1872 ERRORC 1577
1873 ERRORD 1622
1874 ERRORE 1700
1875 ERRORF 1724
1876 ERRORG 1628
128 FETCHA *
509 FIVE 149 173
1841 FNCLCB 1717 1718 1786 1787 1799 1800
508 FOUR 151 175
1851 FUNC24 1785
1473 GETMEM *
251 GETQ *
1432 IBIBF *
1433 IBIBFB *
1434 IBIBFZ *
1436 IBLAS *
1437 IBLASB *
1438 IBLASZ *
1424 IBLEN *
1425 IBLENB *
1426 IBLENZ *
1420 IBLNK *
1421 IBLNKB *
1422 IBLNKZ *
1428 IBSTA *
1429 IBSTAB *
1430 IBSTAZ *
1440 IBSTS *
1441 IBSTSB *
1442 IBSTSZ *
1844 INBFAD 1591
1877 INBUF 1843 1844
378 LC 379 380 381 382 383 384 385 386 387
388 389 390 391 392 393 394 395 396
397 398 399 400 401 402 403 404 405
406 407 408 410 411 412 413 414 415
416 417 418 419 420 421 422 423 424
426 427 428 429 434 435 436 437 438
439 440 447 448 449 452 457 458 459
855 LCABN *
856 LCABNB *
857 LCABNZ *
859 LCASY *
860 LCASYB *
861 LCASYZ *
1855 LCBADR *
923 LCBSC *
924 LCBSCB *
925 LCBSCZ *
919 LCCHN *
920 LCCHNB *
921 LCCHNZ *
851 LCCRC *
852 LCCRCB *
853 LCCRCZ *
895 LCCWB *
896 LCCWBB *
897 LCCWBZ *
891 LCCWC *
892 LCCWCB *
893 LCCWCZ *
899 LCCWD *
900 LCCWDB *
901 LCCWDZ *
887 LCCWI *
888 LCCWIB *
889 LCCWIZ *
903 LCCWP *
904 LCCWPB *
905 LCCWPZ *
907 LCCWR *
908 LCCWRB *
909 LCCWRZ *
883 LCCWS *
884 LCCWSB *
885 LCCWSZ *
911 LCCWT *
912 LCCWTB *
913 LCCWTZ *
835 LCIBA *
836 LCIBAB *
837 LCIBAZ *
823 LCIBF *
824 LCIBFB *

825	LCIBFZ	*							
831	LCIBL	*							
832	LCIBLB	*							
833	LCIBLZ	*							
839	LCIC1	*							
840	LCIC1B	*							
841	LCIC1Z	*							
843	LCIC2	*							
844	LCIC2B	*							
845	LCIC2Z	*							
863	LCIKE	*							
864	LCIKEB	*							
865	LCIKEZ	*							
931	LCITB	*							
932	LCITBB	*							
933	LCITBZ	*							
353	LCJP	354	355	356	363	364	365	366	367	370
879	LCLCB	*							
880	LCLCBB	*							
881	LCLCBZ	*							
927	LCLDB	*							
928	LCLDBB	*							
929	LCLDBZ	*							
915	LCLTB	*							
916	LCLTBB	*							
917	LCLTBZ	*							
875	LCOBA	*							
876	LCOBAB	*							
877	LCOBAZ	*							
867	LCOBF	*							
868	LCOBFB	*							
869	LCOBFZ	*							
871	LCOBL	*							
872	LCOBLB	*							
873	LCOBLZ	*							
935	LCOKE	*							
936	LCOKEB	*							
937	LCOKEZ	*							
847	LCRCC	*							
848	LCRCCB	*							
849	LCRCCZ	*							
827	LCSMB	*							
828	LCSMBB	*							
829	LCSMBZ	*							
503	LHW	1673	1710	1745	1781	1794			
1848	LLTBAS	1538	1548	1669	1738				
1845	LOGLN	1544	1579	1665	1715	1734	1784	1797	
1491	LPDEF	1594							
1492	LPDEFB	1594							
1493	LPDEFZ	1594							
1495	LPDWN	1598							
1496	LPDWNB	1598							
1497	LPDWNZ	1598							
1499	LPPLA	1602							
1858	LPSHLD	1641	1646						
1466	LPSIZ	1640							
1049	LSABN	*							
1050	LSABNB	*							
1051	LSABNZ	*							
1057	LSASC	*							
1058	LSASCB	*							
1059	LSASCZ	*							
1001	LSASY	*							
1002	LSASYB	*							
1003	LSASYZ	*							
1069	LSBSC	*							
1070	LSBSCB	*							
1071	LSBSCZ	*							
1013	LSCC1	*							
1014	LSCC1B	*							
1015	LSCC1Z	*							
1017	LSCC2	*							
1018	LSCC2B	*							
1019	LSCC2Z	*							
1061	LSCHN	*							
1062	LSCHNB	*							
1063	LSCHNZ	*							
1053	LSCRC	*							
1054	LSCRCB	*							
1055	LSCRCZ	*							
985	LSCTA	1655							
986	LSCTAB	*							
987	LSCTAZ	*							
1703	LSD	1704	1721	1790					
1850	LSDADR	1630	1639	1654	1788				
1041	LSDSF	*							
1042	LSDSFB	*							
1043	LSDSFZ	*							
1468	LSDSIZ	1624	1632	1764					
989	LSDST	*							
990	LSDSTB	*							
991	LSDSTZ	*							
1025	LSEPF	*							
1026	LSEPFB	*							
1027	LSEPFZ	*							

1009 LSLSP 1643
1010 LSLSPB *
1011 LSLSPZ *
993 LSMOD 1704 1790
994 LSMODB 1704 1790
995 LSMODZ 1704 1790
1073 LSNTO *
1074 LSNTOB *
1075 LSNTOZ *
997 LSPAR *
998 LSPARB *
999 LSPARZ *
1037 LSPLA *
1038 LSPLAB 1602
1039 LSPLAZ 1602
1857 LSPRAD 1592 1638
953 LSRCA *
954 LSRCAB *
955 LSRCAZ *
957 LSREM *
958 LSREMB *
959 LSREMZ *
1033 LSRRS *
1034 LSRRSB *
1035 LSRRSZ *
949 LSRRT 1721 1824 1842
950 LSRRTB 1721
951 LSRRTZ 1721
961 LSRTO *
962 LSRTOB *
963 LSRTOZ *
965 LSSRS *
966 LSSRSB *
967 LSSRSZ *
981 LSSWS *
982 LSSWSB *
983 LSSWSZ *
1021 LSTER *
1022 LSTERB *
1023 LSTERZ *
945 LSTHD 1753 1755 1756 1759
946 LSTHDB *
947 LSTHDZ *
969 LSWCA *
970 LSWCAB *
971 LSWCAZ *
973 LSWEM *
974 LSWEMB *
975 LSWEMZ *
1029 LSWRS *
1030 LSWRSB *
1031 LSWRSZ *
977 LSWTO *
978 LSWTOB *
979 LSWTOZ *
1005 LSXMM *
1006 LSXMMB *
1007 LSXMMZ *
1045 LSYNC *
1046 LSYNCB *
1047 LSYNCZ *
1077 LSYNR *
1078 LSYNRB *
1079 LSYNRZ *
1065 LSYNT *
1066 LSYNTB *
1067 LSYNTZ *
591 MAP *
588 MP 589 590 592 593 594 595
592 MPMR0 *
593 MPMR1 *
594 MPMR2 *
595 MPMR3 *
468 MT 469 470 471 472 473 474 475 476 477
478 479 480 481 482 483 484 485 486
487 488 489 490 491 492 493 494 495
496 497 498 499 500 501 502 503 504
505 506 507 508 509 510 511 512 513
514 515 516 517 518 519 520 521 522
523 524
502 NEG *
513 NINE 141 165
1856 OCFLG 1563 1775
1506 OCL1A 1837
1511 OCL1A1 1507
1525 OCL1B1 1526 1527
1528 OCL1C1 1527
1553 OCL1D1 1551
1576 OCL1F1 1573
1579 OCL2A1 1567 1576
1585 OCL2A2 1586 1587
1588 OCL2A3 1587
1598 OCL2B1 1595
1602 OCL2C1 1599
1622 OCL2C2 1617

```
1624   DCL2D1   1621
1630   DCL2D2   1627
1634   DCL2DA   1637
1641   DCL2DE   1648
1678   DCL2E3   1672
1688   DCL3A1   1564
1693   DCL3AB   1690
1702   DCL3B1   1699
1718   DCL3C1   1709  1711  1713  1714
1720   DCL3D1   1706
1726   DCL3E1   1722
1745   DCL3E2   1742
1746   DCL3E3   1744
1752   DCL3F1   1757
1758   DCL3F2   1754
1770   DCL3F4   1752
1773   DCL4A1   1527  1527  1527  1575  1578  1587  1587  1587  1597
                1601  1623  1629  1692  1701  1725  1769  1771
1772   DCL4B1   1677  1684
1787   DCL4C1   1780  1783
1800   DCL4D3   1793  1796
1804   DCL4E1   1774  1776  1792
1517   DCLALC   1831
1864   DCLCB    1514  1519  1520
1843   DCLFCB   1525  1583  1585
1862   DCRQB    1513  1515  1516  1521  1530  1556  1613  1650  1807
 505   DNE       157   181
   0   P          27    29    30    36    39    41    45    49    53
              57    61    65    69    73    77    81    84    85
              85    86    87    91    92    92    93    94    97
              99   100   101   101   102   103   104   105   106
             107   107   109   109   112   114   115   115   116
             118   118   119   120   121   123   124   125   125
             129   129   130   131   132   132   133   136   137
             138   140   142   144   146   148   150   152   154
             156   160   161   162   164   166   168   170   172
             174   176   178   180   192   194   194   195   196
             196   199   201   201   202   203   203   206   208
             208   209
1329   PCBSL    *
1330   PCBSLB   *
1331   PCBSLZ   *
1317   PCCLN    *
1318   PCCLNB   *
1319   PCCLNZ   *
1341   PCCTP    *
1342   PCCTPB   *
1343   PCCTPZ   *
1321   PCECH    *
1322   PCECHB   *
1323   PCECHZ   *
1313   PCLLN    *
1314   PCLLNB   *
1315   PCLLNZ   *
1349   PCNTD    *
1350   PCNTDB   *
1351   PCNTDZ   *
1337   PCPCH    *
1338   PCPCHB   *
1339   PCPCHZ   *
1333   PCSWL    *
1334   PCSWLB   *
1335   PCSWLZ   *
1345   PCTYP    *
1346   PCTYPB   *
1347   PCTYPZ   *
1325   PCXMM    *
1326   PCXMMB   *
1327   PCXMMZ   *
1847   PHYSLN   1554  1565  1605  1618  1656  1674  1680  1688  1727
 575   PIM1     *
 576   PIM2     *
 577   PIM3     *
 578   PIM4     *
 579   PIM5     *
 580   PIM6     *
 581   PIM7     *
 582   PIM8     *
1849   PLTBAS   1540  1570  1619  1657  1695  1726
 699   POST     *
1287   PSABN    *
1288   PSABNB   *
1289   PSABNZ   *
1239   PSASY    *
1240   PSASYB   *
1241   PSASYZ   *
 670   PSBADT   *
 666   PSBEG    *
1299   PSBSC    *
1300   PSBSCB   *
1301   PSBSCZ   *
1251   PSCC1    *
1252   PSCC1B   *
1253   PSCC1Z   *
1255   PSCC2    *
```

```
1256   PSCC2B   *
1257   PSCC2Z   *
1291   PSCRC    *
1292   PSCRCB   *
1293   PSCRCZ   *
1271   PSDEF    *
1272   PSDEFB   *
1273   PSDEFZ   *
1279   PSDSF    *
1280   PSDSFB   *
1281   PSDSFZ   *
1267   PSDWN    *
1268   PSDWNB   *
1269   PSDWNZ   *
 672   PSEND    *
1263   PSEPF    *
1264   PSEPFB   *
1265   PSEPFZ   *
1247   PSLSP    *
1248   PSLSPB   *
1249   PSLSPZ   *
1231   PSMOD    *
1232   PSMODB   *
1233   PSMODZ   *
 671   PSNSEC   *
1235   PSPAR    *
1236   PSPARB   *
1237   PSPARZ   *
1275   PSPLA    *
1276   PSPLAB   *
1277   PSPLAZ   *
 667   PSPROT   *
1259   PSTER    *
1260   PSTERB   *
1261   PSTERZ   *
1243   PSXMM    *
1244   PSXMMB   *
1245   PSXMMZ   *
1283   PSYNC    *
1284   PSYNCB   *
1285   PSYNCZ   *
1303   PSYNR    *
1304   PSYNRB   *
1305   PSYNRZ   *
1295   PSYNT    *
1296   PSYNTB   *
1297   PSYNTZ   *
  32   PUSH     *
1478   PUTMEM   *
 228   PUTQ     *
 532   RA0      *
 533   RA1      *
 651   RADNR    1814   1823
 534   RB0      *
 535   RB1      *
 649   RFCB     1541
 504   RHW      1534   1543   1553   1566   1568   1678   1689   1693   1743
 645   ROPWD    1533   1559
 642   RSTPR    1536   1616   1653
 650   RTIDB    *
  96   SETA     *
 111   SETB     *
 191   SETF     *
 511   SEVEN     145    169
 510   SIX       147    171   1562
  26   SPACE    *
1854   STATSV   1773   1827
 135   SUBAT    *
 288   TBATSK   *
 287   TBCPTH   *
 274   TBENTY   *
 268   TBEVNT   *
 282   TBIO     *
 277   TBISA    *
 278   TBISB    *
 280   TBISP    *
 281   TBISRS   *
 294   TBIST    *
 279   TBISX    *
 292   TBKEY    *
 283   TBKN1    *
 284   TBKN2    *
 285   TBKN3    *
 293   TBMIMG   *
 291   TBNUCL   *
 267   TBPL     *
 269   TBRSA    *
 270   TBRSB    *
 289   TBRSE    *
 272   TBRSP    *
 273   TBRSTS   *
 271   TBRSX    *
 322   TBS0     *
 321   TBS1     *
 309   TBS10    *
```

```
 308   TBS11    *
 306   TBS12    *
 305   TBS13    *
 304   TBS14    *
 302   TBS15    *
 320   TBS2     *
 318   TBS3     *
 317   TBS4     *
 316   TBS5     *
 314   TBS6     *
 313   TBS7     *
 312   TBS8     *
 310   TBS9     *
 290   TBSIZ    *
 266   TBST     *
 286   TBTLC    *
 276   TBTMIN   *
 275   TBTMS    *
 265   TBTRD    *
1115   TCBSL    *
1116   TCBSLB   *
1117   TCBSLZ   *
1099   TCCLN    *
1100   TCCLNB   *
1101   TCCLNZ   *
1127   TCCON    *
1128   TCCONB   *
1129   TCCONZ   *
1095   TCCTA    *
1096   TCCTAB   *
1097   TCCTAZ   *
1151   TCCTP    *
1152   TCCTPB   *
1153   TCCTPZ   *
1187   TCDCC    *
1188   TCDCCB   *
1189   TCDCCZ   *
1195   TCDTO    *
1196   TCDTOB   *
1197   TCDTOZ   *
1123   TCECH    *
1124   TCECHB   *
1125   TCECHZ   *
1199   TCID1    *
1200   TCID1B   *
1201   TCID1Z   *
1203   TCID2    *
1204   TCID2B   *
1205   TCID2Z   *
1171   TCLDF    *
1172   TCLDFB   *
1173   TCLDFZ   *
1103   TCLLN    *
1104   TCLLNB   *
1105   TCLLNZ   *
1143   TCNOD    *
1144   TCNODB   *
1145   TCNODZ   *
1139   TCNTD    *
1140   TCNTDB   *
1141   TCNTDZ   *
1107   TCPCH    *
1108   TCPCHB   *
1109   TCPCHZ   *
1135   TCRBC    *
1136   TCRBCB   *
1137   TCRBCZ   *
1191   TCRBF    *
1192   TCRBFB   *
1193   TCRBFZ   *
1175   TCRCA    *
1176   TCRCAB   *
1177   TCRCAZ   *
1155   TCRMD    *
1156   TCRMDB   *
1157   TCRMDZ   *
1091   TCRQH    *
1092   TCRQHB   *
1093   TCRQHZ   *
1163   TCRRS    *
1164   TCRRSB   *
1165   TCRRSZ   *
1179   TCSTO    *
1180   TCSTOB   *
1181   TCSTOZ   *
1111   TCSWL    *
1112   TCSWLB   *
1113   TCSWLZ   *
1087   TCTCD    *
1088   TCTCDB   *
1089   TCTCDZ   *
1147   TCTYP    *
1148   TCTYPB   *
1149   TCTYPZ   *
1131   TCWBC    *
```

```
1132   TCWBCB   *
1133   TCWBCZ   *
1183   TCWCA    *
1184   TCWCAB   *
1185   TCWCAZ   *
1159   TCWMD    *
1160   TCWMDB   *
1161   TCWMDZ   *
1167   TCWRS    *
1168   TCWRSB   *
1169   TCWRSZ   *
1119   TCXMM    *
1120   TCXMMB   *
1121   TCXMMZ   *
1859   TEM1      1584   1588   1590   1707   1719   1739   1747
 514   TEN        139    163
 205   TESTF    *
 507   THREE      153    177
1375   TIDSP    *
1376   TIDSPB   *
1377   TIDSPZ   *
1367   TIDWN    *
1368   TIDWNB   *
1369   TIDWNZ   *
1391   TINET    *
1392   TINETB   *
1393   TINETZ   *
1379   TIODN    *
1380   TIODNB   *
1381   TIODNZ   *
1387   TIODP    *
1388   TIODPB   *
1389   TIODPZ   *
1383   TIOSC    *
1384   TIOSCB   *
1385   TIOSCZ   *
1371   TISEC    *
1372   TISECB   *
1373   TISECZ   *
1359   TITU1    *
1360   TITU1B   *
1361   TITU1Z   *
1363   TITU2    *
1364   TITU2B   *
1365   TITU2Z   *
1221   TPFPA    *
1222   TPFPAB   *
1223   TPFPAZ   *
1213   TPRPA    *
1214   TPRPAB   *
1215   TPRPAZ   *
1217   TPWPA    *
1218   TPWPAB   *
1219   TPWPAZ   *
1470   TRMLUN    1525   1585
 506   TWO        155    179   1705   1791
 440   V$1MIN   *
 458   V$BFC    *
 366   V$BGLB   *
 363   V$BIC1   *
 392   V$BTB    *
 400   V$BTBM   *
 457   V$BVN    *
 408   V$CAM    *
 420   V$CKB    *
 448   V$CKIT   *
 387   V$CKPT   *
 380   V$CPL    *
 367   V$CRDM   *
 410   V$CRDR   *
 421   V$CRM    *
 381   V$CRS    *
 426   V$CTAD   *
 379   V$CTL    *
 418   V$CTMS   *
 364   V$DATE   *
 422   V$DSTB   *
 435   V$ERFG   *
 416   V$FGLB   *
 385   V$FLRS   *
 417   V$FREE   *
 401   V$GFCB   *
 397   V$IM     *
 447   V$IOA    *
 449   V$JCB    *
 356   V$JCFG   *
 370   V$JCTM   *
 354   V$JNAM   *
 436   V$JOP    *
 407   V$KEY    *
 355   V$LCNT   *
 390   V$LER    *
 423   V$LIT    *
 395   V$LLUP   *
 396   V$LPP    *
```

```
386   V$LRSK   *
389   V$LSAL   *
414   V$LUNT   *
394   V$LUP    *
437   V$LUT1   *
438   V$LUT2   *
439   V$LUT3   *
399   V$MAP    *
402   V$MIMG   *
398   V$MPM    *
428   V$NCTR   *
393   V$NPAG   *
452   V$OCB    *
415   V$OPCF   *
388   V$OPCL   *
424   V$PGT    *
429   V$PIMN   *
365   V$PLCT   *
384   V$PTVB   *
427   V$SCTL   *
419   V$SCV    *
434   V$SLFG   *
403   V$ST0    *
404   V$ST1    *
405   V$ST2    *
406   V$ST3    *
382   V$TB     *
411   V$TBGT   *
459   V$TFC    *
391   V$TJCP   *
413   V$TMN    *
412   V$TMS    *
383   V$UTB    *
  0   V2$CRL   1464  1830
  1   VORTEX   1463  1509  1523  1529  1531  1555  1557  1612  1614
               1649  1651  1805  1810  1816  1820  1828  1834  1860
  0   VT$BMT   1485  1486
  0   VT$GTM   1475  1476
  0   VT$MP1   1459  1625  1766
1505  VT$OCL     12  1458  1832
  0   VT$PTM   1480  1481
  0   VTPUSH     33    35
697   X         232   254  1537  1539  1542  1550  1559  1572  1594
               1598  1602  1634  1642  1655  1662  1671  1675  1682
               1697  1703  1741  1746  1753  1755  1756  1759  1762
               1789
469   ZERO     *
```

```
000001 A     1 VORTEX SET     1                  PUT LAST FOR VORTEX                                  V2  01  00001
             2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES              01  00002
             3 *                                                                                      01  00003
             4 *       V.D.M.    PART NO.      92L1105-014B                                           01  00004
             5 *                                                                                      01  00005
             6 *                                 RELEASED      3-1-74                                 01  00006
             7 *                                                                                      01  00007
             8 *                                                                                      01  00008
             9 *               VT$PTM                                                                 01  00009
            10 *                                                                                      01  00010
            11 *                                                                                      01  00011
            12         TITLE   VT$PTM                                                                 01  00012
            13         NLIS                                                                   V2      01  00013
          1443         LIST                                                                           ********
          1444 *                                                                                      01  00014
          1445 *                                                                                      01  00015
          1446 *                                                                                      01  00016
          1447 *       VT$PTM - MEMORY DEALLOCATION SUBROUTINE                                        01  00017
          1448 *                                                                                      01  00018
          1449 *       CALLING SEQUENCE...                                                            01  00019
          1450 *                                                                                      01  00020
          1451 *               LDB             ADDRESS OF TEMPORARY STORAGE BLOCK                     01  00021
          1452 *               LDA             ADDRESS OF MEMORY ALLOCATION TABLE                     01  00022
          1453 *               PUTMEM                                                                 01  00023
          1454 *                                                                                      01  00024
          1455 *       IN ADDITION, THE BLOCK SIZE MUST BE IN THE FIRST CELL OF                       01  00025
          1456 *       THE BLOCK.  THE PUTMEM MACRO GENERATES A CALL TO THE REAL-                     01  00026
          1457 *       TIME EXEC, WHICH THEN CALLS THIS SUBROUTINE, USING THE                         01  00027
          1458 *       VORTEX REENTRANT STACK.                                                        01  00028
          1459 *                                                                                      01  00029
000001 A  1460 X       EQU     1                                                                      01  00030
000002 A  1461 B       EQU     2                                                                      01  00031
000444 A  1462 DISPIM  EQU     0444                                                                   01  00032
000747 A  1463 DISCLK  EQU     0747                                                                   01  00033
000244 A  1464 ENAPIM  EQU     0244                                                                   01  00034
000147 A  1465 ENACLK  EQU     0147                                                                   01  00035
          1466         NAME    VT$PTM                                                                 01  00036
000302 A  1467 V$CRS   EQU     0302                                                                   01  00037
          1468         IFT     VORTEX-2                                                       V2      01  00038
          1469         GOTO    1                                                              V2      01  00039
          1470 VT$PTM  DATA    0                                                              V2      01  00040
          1471         LDX     V$CTL                                                          V2      01  00041
          1472         LDA     TBKEY,X                                                        V2      01  00042
          1473         ANA     BM17                                                           V2      01  00043
          1474         SOF                     SET OVFL IF USER CALL                          V2      01  00044
          1475         XAZ     ROF                                                            V2      01  00045
          1476 1       CONT                                                                   V2      01  00046
          1477         IFF     VORTEX-1                                                       V2      01  00047
000000 000006 A 1478 VT$PTM  DATA    6                                                                 01  00048
000001 030302 A 1479         LDX     V$CRS           ADRS OF REENTRANT STACK                           01  00049
          1480         IFT     VORTEX-1                                                       V2      01  00050
          1481         GOTO    1                                                              V2      01  00051
000002 025001 A 1482         LDB     1,X             GET ADRS OF TSB                                   01  00052
000003 016000 A 1483         LDA     0,B             GET BLOCK SIZE                                    01  00053
000004 055005 A 1484         STA     5,X                                                               01  00054
000005 025000 A 1485         LDB     0,X             ADRS OF MAT                                       01  00055
000006 016000 A 1486 PTMB    LDA     0,B             GET BLOCK SIZE FROM MAT                           01  00056
000007 001010 A 1487         JAZ     PTMX            END OF TABLE - EXIT                               01  00057
000010 000034 R
000011 145005 A 1488         SUB     5,X             COMPARE TO RET BLOCK SIZE                         01  00058
000012 001002 A 1489         JAP     PTMD                                                              01  00059
000013 000020 R
          1490 1       CONT                                                                   V2      01  00060
          1491         IFT     VORTEX-2                                                       V2      01  00061
          1492         GOTO    1                                                              V2      01  00062
          1493         LDB     0,X             ADDRESS OF MATS                                V2      01  00063
          1494         LDX     1,X             ADDRESS OF TSB                                 V2      01  00064
          1495         JOFN    *+5             TEST FOR USER MAP                              V2      01  00065
          1496         OME     MAP,V$ST3       SET EXEC STATE TO NN                           V2      01  00066
          1497         SOF                     RESTORE OVFL                                   V2      01  00067
          1498         LDA     0,X             GET BLOCK SIZE                                 V2      01  00068
          1499 PTMB    LDX     0,B             GET BLOCK SIZE FROM MAT                        V2      01  00069
          1500         JXZ     PTMX            END OF TABLE - EXIT                            V2      01  00070
          1501         SUB     0,B                                                            V2      01  00071
          1502         JAN     PTMD                                                           V2      01  00072
          1503         JAZ     PTMD                                                           V2      01  00073
          1504         ADD     0,B             RESTORE A                                      V2      01  00074
          1505 1       CONT                                                                   V2      01  00075
000014 005122 A 1506         IBR                     TOO SMALL -                                       01  00076
000015 005122 A 1507         IBR                                                                       01  00077
000016 001000 A 1508         JMP     PTMB            GO BACK FOR NEXT                                  01  00078
000017 000006 R
          1509 *                                                                                      01  00079
          1510 *                                                                                      01  00080
000020 005122 A 1511 PTMD    IBR                     BLOCK SIZE FOUND -                                01  00081
          1512         IFT     VORTEX-2                                                       V2      01  00082
          1513         GOTO    1                                                              V2      01  00083
          1514         LDX     V$CRS                                                          V2      01  00084
          1515         OME     MAP,V$ST0       SET EXEC STATE TO 00                           V2      01  00085
          1516         TZA                                                                    V2      01  00086
          1517         STA     0,X             A = 0 FOR OK                                   V2      01  00087
          1518 1       CONT                                                                   V2      01  00088
000021 035001 A 1519         LDX     1,X             ADRS OF BLOCK BEING RETURNED                      01  00089
          1520         IFT     VORTEX-2                                                       V2      01  00090
          1521         GOTO    1                                                              V2      01  00091
```

```
                    1522          JOFN    *+4                 TEST FOR USER MAP                    V2 01 00092
                    1523          DME     MAP,V$ST3           SET EXEC STATE TO NN                 V2 01 00093
                    1524 1        CONT                                                             V2 01 00094
000022 100444 A     1525          EXC     DISPIM              DISABLE                                 01 00095
000023 100747 A     1526          EXC     DISCLK              INTERRUPTS                              01 00096
000024 016000 A     1527          LDA     0,B                 QUEUE HEAD ADRS                         01 00097
000025 055000 A     1528          STA     0,X                 PUT IN TSB                              01 00098
000026 076000 A     1529          STX     0,B                 PUT TSB ADRS IN QUEUE HEAD              01 00099
                    1530          IFT     VORTEX-1                                                 V2 01 00100
                    1531          GOTO    1                                                        V2 01 00101
000027 100244 A     1532          EXC     ENAPIM              ENABLE                                  01 00102
000030 100147 A     1533          EXC     ENACLK              INTERRUPTS                              01 00103
000031 030302 A     1534          LDX     V$CRS                                                       01 00104
000032 005001 A     1535          TZA                         SET SUCCESFUL                           01 00105
000033 055000 A     1536          STA     0,X                 COMPLETION FLAG                         01 00106
                    1537 1        CONT                                                             V2 01 00107
       000034 R     1538 PTMX     EQU     *                                                           01 00108
                    1539          IFF     VORTEX-2                                                    01 00109
                    1540          DME     MAP,V$ST0                                                   01 00110
                    1541          DEALOC                      EXIT                                    01 00111
000034 006505 A
000035 000000 E
000036 000700 A
                    1542          IFF     VORTEX-2                                                 V2 01 00112
                    1543 ROF      ROF                                                              V2 01 00113
                    1544          END                                                                 01 00114
ENTRY NAMES
000000 R VT$PTM
EXTERNAL NAMES
000035 E V$EXEC
SYMBOLS
000044 A APIM    000002 A B       000000 A B0      000001 A B1
000012 A B10     000013 A B11     000014 A B12     000015 A B13
000016 A B14     000017 A B15     000002 A B2      000003 A B3
000004 A B4      000005 A B5      000006 A B6      000007 A B7
000010 A B8      000011 A B9      000000 A BICNUM  000421 A BM1
000472 A BM17    000475 A BM177   000477 A BM1777  000464 A BM3
000473 A BM37    000463 A BM377   000467 A BM7     000474 A BM77
000476 A BM777   000441 A BR0     000442 A BR1     000453 A BR10
000454 A BR11    000455 A BR12    000456 A BR13    000457 A BR14
000460 A BR15    000443 A BR2     000444 A BR3     000445 A BR4
000446 A BR5     000447 A BR6     000450 A BR7     000451 A BR8
000452 A BR9     000421 A BS0     000422 A BS1     000433 A BS10
000434 A BS11    000435 A BS12    000436 A BS13    000437 A BS14
000440 A BS15    000423 A BS2     000424 A BS3     000425 A BS4
000426 A BS5     000427 A BS6     000430 A BS7     000431 A BS8
000432 A BS9     000000 A CHAFP   000000 A CHAFPB  000020 A CHAFPZ
000001 A CHARP   000000 A CHARPB  000020 A CHARPZ  000002 A CHCFP
000000 A CHCFPB  000020 A CHCFPZ  000003 A CHCRP   000000 A CHCRPB
000020 A CHCRPZ  000004 A CHRBL   000000 A CHRBLB  000020 A CHRBLZ
000047 A CLOCK   000000 A COTAD1  000000 A CTACT   000017 A CTACTB
000001 A CTACTZ  000001 A CTADN   000000 A CTADNB  000020 A CTADNZ
000011 A CTBIC   000000 A CTBICB  000020 A CTBICZ  000003 A CTDST
000000 A CTDSTB  000020 A CTDSTZ  000006 A CTDVA   000000 A CTDVAB
000020 A CTDVAZ  000012 A CTFCB   000000 A CTFCBB  000020 A CTFCBZ
000014 A CTFRC   000010 A CTFRCB  000010 A CTFRCZ  000014 A CTFRE
000000 A CTFREB  000010 A CTFREZ  000000 A CTIDB   000000 A CTIDBB
000017 A CTIDBZ  000007 A CTIDA   000000 A CTIDAB  000020 A CTIDAZ
000002 A CTOPM   000000 A CTOPMB  000020 A CTOPMZ  000005 A CTRCN
000000 A CTRCNB  000010 A CTRCNZ  000004 A CTRQB   000000 A CTRQBB
000020 A CTRQBZ  000005 A CTRTR   000010 A CTRTRB  000010 A CTRTRZ
000010 A CTSTA   000000 A CTSTAB  000020 A CTSTAZ  000013 A CTWDS
000000 A CTWDSB  000020 A CTWDSZ  000001 A DCBUFF  000003 A DCCHR
000000 A DCCHRB  000020 A DCCHRZ  000002 A DCCNT   000000 A DCRECL
000747 A DISCLK  000745 A DISMP   000444 A DISPIM  000026 A DMBCA
000000 A DMBCAB  000020 A DMBCAZ  000024 A DMCWA   000000 A DMCWAB
000020 A DMCWAZ  000017 A DMFPA   000000 A DMFPAB  000020 A DMFPAZ
000021 A DMLCA   000000 A DMLCAB  000020 A DMLCAZ  000022 A DMLTA
000000 A DMLTAB  000020 A DMLTAZ  000023 A DMPTA   000000 A DMPTAB
000020 A DMPTAZ  000016 A DMRPA   000000 A DMRPAB  000020 A DMRPAZ
000020 A DMSTA   000000 A DMSTAB  000020 A DMSTAZ  000025 A DMSWA
000000 A DMSWAB  000020 A DMSWAZ  000015 A DMTPA   000000 A DMTPAB
000020 A DMTPAZ  000002 A DSCTAD  000000 A DSDASS  000000 A DSDVDN
000002 A DSLCKO  000001 A DSNAME  000000 A DSNORQ  000002 A DSOPCM
000002 A DSPSTI  000002 A DSREWD  000000 A DSUNAM  000002 A DSUNTN
000424 A EIGHT   000147 A ENACLK  000645 A ENAMP   000244 A ENAPIM
000465 A FIVE    000423 A FOUR    000003 A IBIBF   000017 A IBIBFB
000001 A IBIBFZ  000003 A IBLAS   000000 A IBLASB  000017 A IBLASZ
000001 A IBLEN   000000 A IBLENB  000020 A IBLENZ  000000 A IBLNK
000000 A IBLNKB  000020 A IBLNKZ  000002 A IBSTA   000000 A IBSTAB
000020 A IBSTAZ  000004 A IBSTS   000000 A IBSTSB  000017 A IBSTSZ
000300 A LC      000003 A LCABN   000013 A LCABNB  000001 A LCABNZ
000003 A LCASY   000012 A LCASYB  000001 A LCASYZ  000007 A LCBSC
000015 A LCBSCB  000001 A LCBSCZ  000007 A LCCHN   000016 A LCCHNB
000001 A LCCHNZ  000003 A LCCRC   000014 A LCCRCB  000003 A LCCRCZ
000006 A LCCWB   000014 A LCCWBB  000001 A LCCWBZ  000006 A LCCWC
000015 A LCCWCB  000001 A LCCWCZ  000006 A LCCWD   000013 A LCCWDB
000001 A LCCWDZ  000006 A LCCWI   000016 A LCCWIB  000001 A LCCWIZ
000006 A LCCWP   000012 A LCCWPB  000001 A LCCWPZ  000006 A LCCWR
000011 A LCCWRB  000001 A LCCWRZ  000006 A LCCWS   000017 A LCCWSB
000001 A LCCWSZ  000006 A LCCWT   000010 A LCCWTB  000001 A LCCWTZ
000001 A LCIBA   000000 A LCIBAB  000017 A LCIBAZ  000000 A LCIBF
000017 A LCIBFB  000001 A LCIBFZ  000000 A LCIBL   000000 A LCIBLB
000014 A LCIBLZ  000002 A LCIC1   000010 A LCIC1B  000010 A LCIC1Z
000002 A LCIC2   000000 A LCIC2B  000010 A LCIC2Z  000003 A LCIKE
```

```
000000 A LCIKEB  000004 A LCIKEZ  000007 A LCITB   000013 A LCITBB
000001 A LCITBZ  000050 A LCJP    000006 A LCLCB   000000 A LCLCBB
000020 A LCLCBZ  000007 A LCLDB   000014 A LCLDBB  000001 A LCLDBZ
000007 A LCLTB   000017 A LCLTBB  000001 A LCLTBZ  000005 A LCOBA
000000 A LCOBAB  000017 A LCOBAZ  000004 A LCOBF   000017 A LCOBFB
000001 A LCOBFZ  000004 A LCOBL   000000 A LCOBLB  000014 A LCOBLZ
000007 A LCOKE   000000 A LCOKEB  000004 A LCOKEZ  000003 A LCRCC
000017 A LCRCCB  000001 A LCRCCZ  000000 A LCSMB   000016 A LCSMBB
000001 A LCSMBZ  000462 A LHW     000017 A LSABN   000015 A LSABNB
000001 A LSABNZ  000017 A LSASC   000011 A LSASCB  000001 A LSASCZ
000014 A LSASY   000013 A LSASYB  000001 A LSASYZ  000020 A LSBSC
000016 A LSBSCB  000001 A LSBSCZ  000015 A LSCC1   000010 A LSCC1B
000010 A LSCC1Z  000015 A LSCC2   000000 A LSCC2B  000010 A LSCC2Z
000017 A LSCHN   000010 A LSCHNB  000001 A LSCHNZ  000017 A LSCRC
000012 A LSCRCB  000003 A LSCRCZ  000012 A LSCTA   000000 A LSCTAB
000020 A LSCTAZ  000017 A LSDSF   000017 A LSDSFB  000001 A LSDSFZ
000013 A LSDST   000000 A LSDSTB  000020 A LSDSTZ  000016 A LSEPF
000016 A LSEPFB  000001 A LSEPFZ  000014 A LSLSP   000000 A LSLSPB
000011 A LSLSPZ  000014 A LSMOD   000016 A LSMODB  000002 A LSMODZ
000020 A LSNTO   000010 A LSNTOB  000006 A LSNTOZ  000014 A LSPAR
000014 A LSPARB  000002 A LSPARZ  000016 A LSPLA   000000 A LSPLAB
000010 A LSPLAZ  000002 A LSRCA   000000 A LSRCAB  000020 A LSRCAZ
000003 A LSREM   000000 A LSREMB  000020 A LSREMZ  000016 A LSRRS
000010 A LSRRSB  000003 A LSRRSZ  000001 A LSRRT   000000 A LSRRTB
000020 A LSRRTZ  000004 A LSRTO   000000 A LSRTOB  000020 A LSRTOZ
000005 A LSSRS   000000 A LSSRSB  000020 A LSSRSZ  000011 A LSSWS
000000 A LSSWSB  000020 A LSSWSZ  000016 A LSTER   000017 A LSTERB
000001 A LSTERZ  000000 A LSTHD   000000 A LSTHDB  000020 A LSTHDZ
000006 A LSWCA   000000 A LSWCAB  000020 A LSWCAZ  000007 A LSWEM
000000 A LSWEMB  000020 A LSWEMZ  000016 A LSWRS   000013 A LSWRSB
000003 A LSWRSZ  000010 A LSWTO   000000 A LSWTOB  000020 A LSWTOZ
000014 A LSXMM   000011 A LSXMMB  000002 A LSXMMZ  000017 A LSYNC
000016 A LSYNCB  000001 A LSYNCZ  000020 A LSYNR   000000 A LSYNRB
000010 A LSYNRZ  000017 A LSYNT   000000 A LSYNTB  000010 A LSYNTZ
000046 A MAP     000045 A MP      000045 A MPMR0   000145 A MPMR1
000245 A MPMR2   000345 A MPMR3   000420 A MT      000461 A NEG
000470 A NINE    000421 A ONE     000001 A PCBSL   000011 A PCBSLB
000001 A PCBSLZ  000000 A PCCLN   000000 A PCCLNB  000010 A PCCLNZ
000002 A PCCTP   000014 A PCCTPB  000004 A PCCTPZ  000001 A PCECH
000014 A PCECHB  000001 A PCECHZ  000000 A PCLLN   000010 A PCLLNB
000010 A PCLLNZ  000002 A PCNTO   000000 A PCNTOB  000004 A PCNTOZ
000001 A PCPCH   000000 A PCPCHB  000010 A PCPCHZ  000001 A PCSWL
000010 A PCSWLB  000001 A PCSWLZ  000002 A PCTYP   000010 A PCTYPB
000004 A PCTYPZ  000001 A PCXMM   000012 A PCXMMB  000002 A PCXMMZ
000040 A PIM1    000041 A PIM2    000042 A PIM3    000043 A PIM4
000040 A PIM5    000040 A PIM6    000040 A PIM7    000040 A PIM8
000200 A POST    000003 A PSABN   000015 A PSABNB  000001 A PSABNZ
000000 A PSASY   000013 A PSASYB  000001 A PSASYZ  000002 A PSBADT
000000 A PSBEG   000004 A PSBSC   000016 A PSBSCB  000016 A PSBSCZ
000001 A PSCC1   000010 A PSCC1B  000010 A PSCC1Z  000001 A PSCC2
000000 A PSCC2B  000010 A PSCC2Z  000003 A PSCRC   000012 A PSCRCB
000003 A PSCRCZ  000002 A PSDEF   000010 A PSDEFB  000001 A PSDEFZ
000003 A PSDSF   000017 A PSDSFB  000001 A PSDSFZ  000002 A PSDWN
000011 A PSDWNB  000001 A PSDWNZ  000004 A PSEND   000002 A PSEPF
000016 A PSEPFB  000001 A PSEPFZ  000000 A PSLSP   000000 A PSLSPB
000011 A PSLSPZ  000000 A PSMOD   000016 A PSMODB  000002 A PSMODZ
000003 A PSNSEC  000000 A PSPAR   000014 A PSPARB  000002 A PSPARZ
000002 A PSPLA   000000 A PSPLAB  000010 A PSPLAZ  000001 A PSPROT
000002 A PSTER   000017 A PSTERB  000001 A PSTERZ  000000 A PSXMM
000011 A PSXMMB  000002 A PSXMMZ  000003 A PSYNC   000016 A PSYNCB
000001 A PSYNCZ  000004 A PSYNR   000000 A PSYNRB  000010 A PSYNRZ
000003 A PSYNT   000000 A PSYNTB  000010 A PSYNTZ  000006 R PTMB
000020 R PTMD    000034 R PTMX    000040 A RA0     000000 A RA1
000004 A RADNR   000060 A RB0     000020 A RB1     000002 A RFCB
000463 A RHW     000001 A ROPWD   000000 A RSTPR   000003 A RTIDB
000467 A SEVEN   000466 A SIX     000027 A TBATSK  000026 A TBCPTH
000011 A TBENTY  000003 A TBEVNT  000021 A TBIO    000014 A TBISA
000015 A TBISB   000017 A TBISP   000020 A TBISRS  000034 A TBIST
000016 A TBISX   000032 A TBKEY   000022 A TBKN1   000023 A TBKN2
000024 A TBKN3   000033 A TBMIMG  000032 A TBNUCL  000002 A TBPL
000004 A TBRSA   000005 A TBRSB   000030 A TBRSE   000007 A TBRSP
000010 A TBRSTS  000006 A TBRSX   000000 A TBS0    000001 A TBS1
000012 A TBS10   000013 A TBS11   000014 A TBS12   000015 A TBS13
000016 A TBS14   000017 A TBS15   000002 A TBS2    000003 A TBS3
000004 A TBS4    000005 A TBS5    000006 A TBS6    000007 A TBS7
000010 A TBS8    000011 A TBS9    000031 A TBSIZ   000001 A TBST
000025 A TBTLC   000013 A TBTMIN  000012 A TBTMS   000000 A TBTRD
000004 A TCBSL   000011 A TCBSLB  000001 A TCBSLZ  000003 A TCCLN
000000 A TCCLNB  000010 A TCCLNZ  000004 A TCCON   000015 A TCCONB
000001 A TCCONZ  000002 A TCCTA   000000 A TCCTAB  000020 A TCCTAZ
000005 A TCCTP   000014 A TCCTPB  000004 A TCCTPZ  000012 A TCDCC
000000 A TCDCCB  000020 A TCDCCZ  000014 A TCDTO   000000 A TCDTOB
000020 A TCDTOZ  000004 A TCECH   000014 A TCECHB  000001 A TCECHZ
000015 A TCID1   000000 A TCID1B  000020 A TCID1Z  000016 A TCID2
000000 A TCID2B  000020 A TCID2Z  000006 A TCLDF   000014 A TCLDFB
000001 A TCLDFZ  000003 A TCLLN   000010 A TCLLNB  000010 A TCLLNZ
000005 A TCNOD   000004 A TCNODB  000004 A TCNODZ  000005 A TCNTD
000000 A TCNTDB  000004 A TCNTDZ  000004 A TCPCH   000000 A TCPCHB
000010 A TCPCHZ  000004 A TCRBC   000017 A TCRBCB  000001 A TCRBCZ
000013 A TCRBF   000000 A TCRBFB  000020 A TCRBFZ  000007 A TCRCA
000000 A TCRCAB  000020 A TCRCAZ  000006 A TCRMD   000000 A TCRMDB
000003 A TCRMDZ  000001 A TCRQH   000000 A TCRQHB  000020 A TCRQHZ
000006 A TCRRS   000006 A TCRRSB  000003 A TCRRSZ  000010 A TCSTO
000000 A TCSTOB  000020 A TCSTOZ  000004 A TCSWL   000010 A TCSWLB
000001 A TCSWLZ  000000 A TCTCD   000000 A TCTCDB  000020 A TCTCDZ
```

```
000005 A TCTYP   000010 A TCTYPB 000004 A TCTYPZ 000004 A TCWBC
000016 A TCWBCB  000001 A TCWBCZ 000011 A TCWCA  000000 A TCWCAB
000020 A TCWCAZ  000006 A TCWMD  000003 A TCWMDB 000003 A TCWMDZ
000006 A TCWRS   000011 A TCWRSB 000003 A TCWRSZ 000004 A TCXMM
000012 A TCXMMB  000002 A TCXMMZ 000471 A TEN    000464 A THREE
000002 A TIDSP   000000 A TIDSPB 000007 A TIDSPZ 000002 A TIDWN
000017 A TIDWNB  000001 A TIDWNZ 000000 A TINET  000000 A TINETB
000020 A TINETZ  000003 A TIODN  000017 A TIODNB 000001 A TIODNZ
000003 A TIODP   000000 A TIODPB 000007 A TIODPZ 000003 A TIOSC
000007 A TIOSCB  000010 A TIOSCZ 000002 A TISEC  000007 A TISECB
000010 A TISECZ  000000 A TITU1  000000 A TITU1B 000020 A TITU1Z
000001 A TITU2   000000 A TITU2B 000020 A TITU2Z 000017 A TPFPA
000000 A TPFPAB  000020 A TPFPAZ 000015 A TPRPA  000000 A TPRPAB
000020 A TPRPAZ  000016 A TPWPA  000000 A TPWPAB 000020 A TPWPAZ
000422 A TWO     000403 A V$1MIN 000415 A V$BFC  000075 A V$BGLB
000056 A V$BIC1  000315 A V$BTB  000331 A V$BTBM 000414 A V$BVN
000334 A V$CAM   000353 A V$CKB  000411 A V$CKIT 000310 A V$CKPT
000301 A V$CPL   000076 A V$CRDM 000341 A V$CRDR 000354 A V$CRM
000302 A V$CRS   000360 A V$CTAD 000300 A-V$CTL  000351 A V$CTMS
000070 A V$DATE  000355 A V$DSTB 000376 A V$ERFG 000035 E V$EXEC
000347 A V$FGLB  000306 A V$FLRS 000350 A V$FREE 000332 A V$GFCB
000320 A V$IM    000410 A V$IOA  000412 A V$JCB  000055 A V$JCFG
000077 A V$JCTM  000050 A V$JNAM 000377 A V$JOP  000340 A V$KEY
000054 A V$LCNT  000313 A V$LER  000356 A V$LIT  000317 A V$LLUP
000317 A V$LPP   000307 A V$LRSK 000312 A V$LSAL 000345 A V$LUNT
000316 A V$LUP   000400 A V$LUT1 000401 A V$LUT2 000402 A V$LUT3
000330 A V$MAP   000333 A V$MIMG 000330 A V$MPM  000362 A V$NCTR
000316 A V$NPAG  000413 A V$OCB  000346 A V$OPCF 000311 A V$OPCL
000357 A V$PGT   000363 A V$PIMN 000074 A V$PLCT 000305 A V$PTVB
000361 A V$SCTL  000352 A V$SCV  000375 A V$SLFG 000334 A V$ST0
000335 A V$ST1   000336 A V$ST2  000337 A V$ST3  000303 A V$TB
000342 A V$TBGT  000416 A V$TFC  000314 A V$TJCP 000344 A V$TMN
000343 A V$TMS   000304 A V$UTB  000001 A VORTEX 000000 R VT$PTM
000001 A X       000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE

1476  1        *
 159  ADAT     *
  38  ANAM     *
  90  ANAN     *
 574  APIM      584   585
 108  B          98   117   229   230   252   255   257  1483  1486
                1499  1501  1504  1527  1529
  88  B&         82
  83  B&0        40
  80  B&1        78
  44  B&10       42
  76  B&2        74
  72  B&3        70
  68  B&4        66
  64  B&5        62
  60  B&6        58
  56  B&7        54
  52  B&8        50
  48  B&9        46
 543  B0       *
 544  B1       *
 553  B10      *
 554  B11      *
 555  B12      *
 556  B13      *
 557  B14      *
 558  B15      *
 545  B2       *
 546  B3       *
 547  B4       *
 548  B5       *
 549  B6       *
 550  B7       *
 551  B8       *
 552  B9       *
 630  BICNUM   *
 515  BM1        79
 518  BM17       67  1473
 521  BM177      55
 524  BM1777     43
 516  BM3        75
 519  BM37       63
 522  BM377      51
 517  BM7        71
 520  BM77       59
 523  BM777      47
 486  BR0       202
 487  BR1      *
 496  BR10     *
 497  BR11     *
 498  BR12     *
 499  BR13     *
 500  BR14     *
 501  BR15     *
 488  BR2      *
 489  BR3      *
 490  BR4      *
 491  BR5      *
```

```
 492   BR6      *
 493   BR7      *
 494   BR8      *
 495   BR9      *
 470   BS0       195   209
 471   BS1      *
 480   BS10     *
 481   BS11     *
 482   BS12     *
 483   BS13     *
 484   BS14     *
 485   BS15     *
 472   BS2      *
 473   BS3      *
 474   BS4      *
 475   BS5      *
 476   BS6      *
 477   BS7      *
 478   BS8      *
 479   BS9      *
1397   CHAFP    *
1398   CHAFPB   *
1399   CHAFPZ   *
1401   CHARP    *
1402   CHARPB   *
1403   CHARPZ   *
1405   CHCFP    *
1406   CHCFPB   *
1407   CHCFPZ   *
1409   CHCRP    *
1410   CHCRPB   *
1411   CHCRPZ   *
1413   CHRBL    *
1414   CHRBLB   *
1415   CHRBLZ   *
 198   CLEARF   *
 567   CLOCK     569   570
 622   COTAD1   *
 707   CTACT    *
 708   CTACTB   *
 709   CTACTZ   *
 715   CTADN    *
 716   CTADNB   *
 717   CTADNZ   *
 751   CTBIC    *
 752   CTBICB   *
 753   CTBICZ   *
 723   CTDST    *
 724   CTDSTB   *
 725   CTDSTZ   *
 739   CTDVA    *
 740   CTDVAB   *
 741   CTDVAZ   *
 755   CTFCB    *
 756   CTFCBB   *
 757   CTFCBZ   *
 763   CTFRC    *
 764   CTFRCB   *
 765   CTFRCZ   *
 767   CTFRE    *
 768   CTFREB   *
 769   CTFREZ   *
 711   CTIDB    *
 712   CTIDBB   *
 713   CTIDBZ   *
 743   CTIOA    *
 744   CTIOAB   *
 745   CTIOAZ   *
 719   CTOPM    *
 720   CTOPMB   *
 721   CTOPMZ   *
 735   CTRCN    *
 736   CTRCNB   *
 737   CTRCNZ   *
 727   CTRQB    *
 728   CTRQBB   *
 729   CTRQBZ   *
 731   CTRTR    *
 732   CTRTRB   *
 733   CTRTRZ   *
 747   CTSTA    *
 748   CTSTAB   *
 749   CTSTAZ   *
 759   CTWDS    *
 760   CTWDSB   *
 761   CTWDSZ   *
 688   DCBUFF   *
 691   DCCHR    *
 692   DCCHRB   *
 693   DCCHRZ   *
 689   DCCNT    *
 687   DCRECL   *
 187   DINTS    *
 569   DISCLK    189  1526
 589   DISMP    *
```

```
584   DISPIM    188   1525
813   DMBCA     *
814   DMBCAB    *
815   DMBCAZ    *
805   DMCWA     *
806   DMCWAB    *
807   DMCWAZ    *
785   DMFPA     *
786   DMFPAB    *
787   DMFPAZ    *
793   DMLCA     *
794   DMLCAB    *
795   DMLCAZ    *
797   DMLTA     *
798   DMLTAB    *
799   DMLTAZ    *
801   DMPTA     *
802   DMPTAB    *
803   DMPTAZ    *
781   DMRPA     *
782   DMRPAB    *
783   DMRPAZ    *
789   DMSTA     *
790   DMSTAB    *
791   DMSTAZ    *
809   DMSWA     *
810   DMSWAB    *
811   DMSWAZ    *
777   DMTPA     *
778   DMTPAB    *
779   DMTPAZ    *
615   DSCTAD    *
601   DSDASS    *
600   DSDVDN    *
612   DSLCKO    *
609   DSNAME    *
608   DSNORQ    *
613   DSOPCM    *
614   DSPSTI    *
610   DSREWD    *
606   DSUNAM    *
611   DSUNTN    *
512   EIGHT     143    167
183   EINTS     *
570   ENACLK    185   1533
590   ENAMP     *
585   ENAPIM    184   1532
  0   ERROR     113    193    200    207
128   FETCHA    *
509   FIVE      149    173
506   FOUR      151    175
251   GETQ      *
1432  IBIBF     *
1433  IBIBFB    *
1434  IBIBFZ    *
1436  IBLAS     *
1437  IBLASB    *
1438  IBLASZ    *
1424  IBLEN     *
1425  IBLENB    *
1426  IBLENZ    *
1420  IBLNK     *
1421  IBLNKB    *
1422  IBLNKZ    *
1428  IBSTA     *
1429  IBSTAB    *
1430  IBSTAZ    *
1440  IBSTS     *
1441  IBSTSB    *
1442  IBSTSZ    *
 378  LC        379    380    381    382    383    384    385    386    387
                388    389    390    391    392    393    394    395    396
                397    398    399    400    401    402    403    404    405
                406    407    408    410    411    412    413    414    415
                416    417    418    419    420    421    422    423    424
                426    427    428    429    434    435    436    437    438
                439    440    447    448    449    452    457    458    459
855   LCABN     *
856   LCABNB    *
857   LCABNZ    *
859   LCASY     *
860   LCASYB    *
861   LCASYZ    *
923   LCBSC     *
924   LCBSCB    *
925   LCBSCZ    *
919   LCCHN     *
920   LCCHNB    *
921   LCCHNZ    *
851   LCCRC     *
852   LCCRCB    *
853   LCCRCZ    *
895   LCCWB     *
896   LCCWBB    *
897   LCCWBZ    *
```

```
891   LCCWC    *
892   LCCWCB   *
893   LCCWCZ   *
899   LCCWD    *
900   LCCWDB   *
901   LCCWDZ   *
887   LCCWI    *
888   LCCWIB   *
889   LCCWIZ   *
903   LCCWP    *
904   LCCWPB   *
905   LCCWPZ   *
907   LCCWR    *
908   LCCWRB   *
909   LCCWRZ   *
883   LCCWS    *
884   LCCWSB   *
885   LCCWSZ   *
911   LCCWT    *
912   LCCWTB   *
913   LCCWTZ   *
835   LCIBA    *
836   LCIBAB   *
837   LCIBAZ   *
823   LCIBF    *
824   LCIBFB   *
825   LCIBFZ   *
831   LCIBL    *
832   LCIBLB   *
833   LCIBLZ   *
839   LCIC1    *
840   LCIC1B   *
841   LCIC1Z   *
843   LCIC2    *
844   LCIC2B   *
845   LCIC2Z   *
863   LCIKE    *
864   LCIKEB   *
865   LCIKEZ   *
931   LCITB    *
932   LCITBB   *
933   LCITBZ   *
353   LCJP      354   355   356   363   364   365   366   367   370
879   LCLCB    *
880   LCLCBB   *
881   LCLCBZ   *
927   LCLDB    *
928   LCLDBB   *
929   LCLDBZ   *
915   LCLTB    *
916   LCLTBB   *
917   LCLTBZ   *
875   LCOBA    *
876   LCOBAB   *
877   LCOBAZ   *
867   LCOBF    *
868   LCOBFB   *
869   LCOBFZ   *
871   LCOBL    *
872   LCOBLB   *
873   LCOBLZ   *
935   LCOKE    *
936   LCOKEB   *
937   LCOKEZ   *
847   LCRCC    *
848   LCRCCB   *
849   LCRCCZ   *
827   LCSMB    *
828   LCSMBB   *
829   LCSMBZ   *
503   LHW      *
1049  LSABN    *
1050  LSABNB   *
1051  LSABNZ   *
1057  LSASC    *
1058  LSASCB   *
1059  LSASCZ   *
1001  LSASY    *
1002  LSASYB   *
1003  LSASYZ   *
1069  LSBSC    *
1070  LSBSCB   *
1071  LSBSCZ   *
1013  LSCC1    *
1014  LSCC1B   *
1015  LSCC1Z   *
1017  LSCC2    *
1018  LSCC2B   *
1019  LSCC2Z   *
1061  LSCHN    *
1062  LSCHNB   *
1063  LSCHNZ   *
1053  LSCRC    *
1054  LSCRCB   *
1055  LSCRCZ   *
```

```
 985  LSCTA    *
 986  LSCTAB   *
 987  LSCTAZ   *
1041  LSDSF    *
1042  LSDSFB   *
1043  LSDSFZ   *
 989  LSDST    *
 990  LSDSTB   *
 991  LSDSTZ   *
1025  LSEPF    *
1026  LSEPFB   *
1027  LSEPFZ   *
1009  LSLSP    *
1010  LSLSPB   *
1011  LSLSPZ   *
 993  LSMOD    *
 994  LSMODB   *
 995  LSMODZ   *
1073  LSNTO    *
1074  LSNTOB   *
1075  LSNTOZ   *
 997  LSPAR    *
 998  LSPARB   *
 999  LSPARZ   *
1037  LSPLA    *
1038  LSPLAB   *
1039  LSPLAZ   *
 953  LSRCA    *
 954  LSRCAB   *
 955  LSRCAZ   *
 957  LSREM    *
 958  LSREMB   *
 959  LSREMZ   *
1033  LSRRS    *
1034  LSRRSB   *
1035  LSRRSZ   *
 949  LSRRT    *
 950  LSRRTB   *
 951  LSRRTZ   *
 961  LSRTO    *
 962  LSRTOB   *
 963  LSRTOZ   *
 965  LSSRS    *
 966  LSSRSB   *
 967  LSSRSZ   *
 981  LSSWS    *
 982  LSSWSB   *
 983  LSSWSZ   *
1021  LSTER    *
1022  LSTERB   *
1023  LSTERZ   *
 945  LSTHD    *
 946  LSTHDB   *
 947  LSTHDZ   *
 969  LSWCA    *
 970  LSWCAB   *
 971  LSWCAZ   *
 973  LSWEM    *
 974  LSWEMB   *
 975  LSWEMZ   *
1029  LSWRS    *
1030  LSWRSB   *
1031  LSWRSZ   *
 977  LSWTO    *
 978  LSWTOB   *
 979  LSWTOZ   *
1005  LSXMM    *
1006  LSXMMB   *
1007  LSXMMZ   *
1045  LSYNC    *
1046  LSYNCB   *
1047  LSYNCZ   *
1077  LSYNR    *
1078  LSYNRB   *
1079  LSYNRZ   *
1065  LSYNT    *
1066  LSYNTB   *
1067  LSYNTZ   *
 591  MAP      1496  1515  1523  1540
 588  MP        589   590   592   593   594   595
 592  MPMR0    *
 593  MPMR1    *
 594  MPMR2    *
 595  MPMR3    *
 468  MT        469   470   471   472   473   474   475   476   477
                478   479   480   481   482   483   484   485   486
                487   488   489   490   491   492   493   494   495
                496   497   498   499   500   501   502   503   504
                505   506   507   508   509   510   511   512   513
                514   515   516   517   518   519   520   521   522
                523   524
 502  NEG      *
 513  NINE      141   165
 505  ONE       157   181
   0  P          27    29    30    36    39    41    45    49    53
```

```
                57     61     65     69     73     77     81     84     85
                85     86     87     91     92     92     93     94     97
                99    100    101    101    102    103    104    105    106
               107    107    109    109    112    114    115    115    116
               118    118    119    120    121    123    124    125    125
               129    129    130    131    132    132    133    136    137
               138    140    142    144    146    148    150    152    154
               156    160    161    162    164    166    168    170    172
               174    176    178    180    192    194    194    195    196
               196    199    201    201    202    203    203    206    208
               208    209
1329   PCBSL    *
1330   PCBSLB   *
1331   PCBSLZ   *
1317   PCCLN    *
1318   PCCLNB   *
1319   PCCLNZ   *
1341   PCCTP    *
1342   PCCTPB   *
1343   PCCTPZ   *
1321   PCECH    *
1322   PCECHB   *
1323   PCECHZ   *
1313   PCLLN    *
1314   PCLLNB   *
1315   PCLLNZ   *
1349   PCNTD    *
1350   PCNTDB   *
1351   PCNTDZ   *
1337   PCPCH    *
1338   PCPCHB   *
1339   PCPCHZ   *
1333   PCSWL    *
1334   PCSWLB   *
1335   PCSWLZ   *
1345   PCTYP    *
1346   PCTYPB   *
1347   PCTYPZ   *
1325   PCXMM    *
1326   PCXMMB   *
1327   PCXMMZ   *
 575   PIM1     *
 576   PIM2     *
 577   PIM3     *
 578   PIM4     *
 579   PIM5     *
 580   PIM6     *
 581   PIM7     *
 582   PIM8     *
 699   POST     *
1287   PSABN    *
1288   PSABNB   *
1289   PSABNZ   *
1239   PSASY    *
1240   PSASYB   *
1241   PSASYZ   *
 670   PSBADT   *
 666   PSBEG    *
1299   PSBSC    *
1300   PSBSCB   *
1301   PSBSCZ   *
1251   PSCC1    *
1252   PSCC1B   *
1253   PSCC1Z   *
1255   PSCC2    *
1256   PSCC2B   *
1257   PSCC2Z   *
1291   PSCRC    *
1292   PSCRCB   *
1293   PSCRCZ   *
1271   PSDEF    *
1272   PSDEFB   *
1273   PSDEFZ   *
1279   PSDSF    *
1280   PSDSFB   *
1281   PSDSFZ   *
1267   PSDWN    *
1268   PSDWNB   *
1269   PSDWNZ   *
 672   PSEND    *
1263   PSEPF    *
1264   PSEPFB   *
1265   PSEPFZ   *
1247   PSLSP    *
1248   PSLSPB   *
1249   PSLSPZ   *
1231   PSMOD    *
1232   PSMODB   *
1233   PSMODZ   *
 671   PSNSEC   *
1235   PSPAR    *
1236   PSPARB   *
1237   PSPARZ   *
1275   PSPLA    *
1276   PSPLAB   *
```

```
1277   PSPLAZ   *
 667   PSPROT   *
1259   PSTER    *
1260   PSTERB   *
1261   PSTERZ   *
1243   PSXMM    *
1244   PSXMMB   *
1245   PSXMMZ   *
1283   PSYNC    *
1284   PSYNCB   *
1285   PSYNCZ   *
1303   PSYNR    *
1304   PSYNRB   *
1305   PSYNRZ   *
1295   PSYNT    *
1296   PSYNTB   *
1297   PSYNTZ   *
1486   PTMB     1508
1511   PTMD     1489   1502   1503
1538   PTMX     1487   1500
  32   PUSH     *
 228   PUTQ     *
 532   RA0      *
 533   RA1      *
 651   RADNR    *
 534   RB0      *
 535   RB1      *
 649   RFCB     *
 504   RHW      *
1543   RDF      1475
 645   RDPWD    *
 642   RSTPR    *
 650   RTIDB    *
  96   SETA     *
 111   SETB     *
 191   SETF     *
 511   SEVEN     145    169
 510   SIX       147    171
  26   SPACE    *
 135   SUBAT    *
 288   TBATSK   *
 287   TBCPTH   *
 274   TBENTY   *
 268   TBEVNT   *
 282   TBIO     *
 277   TBISA    *
 278   TBISB    *
 280   TBISP    *
 281   TBISRS   *
 294   TBIST    *
 279   TBISX    *
 292   TBKEY    1472
 283   TBKN1    *
 284   TBKN2    *
 285   TBKN3    *
 293   TBMIMG   *
 291   TBNUCL   *
 267   TBPL     *
 269   TBRSA    *
 270   TBRSB    *
 289   TBRSE    *
 272   TBRSP    *
 273   TBRSTS   *
 271   TBRSX    *
 322   TBS0     *
 321   TBS1     *
 309   TBS10    *
 308   TBS11    *
 306   TBS12    *
 305   TBS13    *
 304   TBS14    *
 302   TBS15    *
 320   TBS2     *
 318   TBS3     *
 317   TBS4     *
 316   TBS5     *
 314   TBS6     *
 313   TBS7     *
 312   TBS8     *
 310   TBS9     *
 290   TBSIZ    *
 266   TBST     *
 286   TBTLC    *
 276   TBTMIN   *
 275   TBTMS    *
 265   TBTRD    *
1115   TCBSL    *
1116   TCBSLB   *
1117   TCBSLZ   *
1099   TCCLN    *
1100   TCCLNB   *
1101   TCCLNZ   *
1127   TCCON    *
1128   TCCONB   *
1129   TCCONZ   *
```

```
1095   TCCTA    *
1096   TCCTAB   *
1097   TCCTAZ   *
1151   TCCTP    *
1152   TCCTPB   *
1153   TCCTPZ   *
1187   TCDCC    *
1188   TCDCCB   *
1189   TCDCCZ   *
1195   TCDTD    *
1196   TCDTDB   *
1197   TCDTDZ   *
1123   TCECH    *
1124   TCECHB   *
1125   TCECHZ   *
1199   TCID1    *
1200   TCID1B   *
1201   TCID1Z   *
1203   TCID2    *
1204   TCID2B   *
1205   TCID2Z   *
1171   TCLDF    *
1172   TCLDFB   *
1173   TCLDFZ   *
1103   TCLLN    *
1104   TCLLNB   *
1105   TCLLNZ   *
1143   TCNDD    *
1144   TCNDDB   *
1145   TCNDDZ   *
1139   TCNTD    *
1140   TCNTDB   *
1141   TCNTDZ   *
1107   TCPCH    *
1108   TCPCHB   *
1109   TCPCHZ   *
1135   TCRBC    *
1136   TCRBCB   *
1137   TCRBCZ   *
1191   TCRBF    *
1192   TCRBFB   *
1193   TCRBFZ   *
1175   TCRCA    *
1176   TCRCAB   *
1177   TCRCAZ   *
1155   TCRMD    *
1156   TCRMDB   *
1157   TCRMDZ   *
1091   TCRQH    *
1092   TCRQHB   *
1093   TCRQHZ   *
1163   TCRRS    *
1164   TCRRSB   *
1165   TCRRSZ   *
1179   TCSTD    *
1180   TCSTDB   *
1181   TCSTDZ   *
1111   TCSWL    *
1112   TCSWLB   *
1113   TCSWLZ   *
1087   TCTCD    *
1088   TCTCDB   *
1089   TCTCDZ   *
1147   TCTYP    *
1148   TCTYPB   *
1149   TCTYPZ   *
1131   TCWBC    *
1132   TCWBCB   *
1133   TCWBCZ   *
1183   TCWCA    *
1184   TCWCAB   *
1185   TCWCAZ   *
1159   TCWMD    *
1160   TCWMDB   *
1161   TCWMDZ   *
1167   TCWRS    *
1168   TCWRSB   *
1169   TCWRSZ   *
1119   TCXMM    *
1120   TCXMMB   *
1121   TCXMMZ   *
 514   TEN       139    163
 205   TESTF    *
 507   THREE     153    177
1375   TIDSP    *
1376   TIDSPB   *
1377   TIDSPZ   *
1367   TIDWN    *
1368   TIDWNB   *
1369   TIDWNZ   *
1391   TINET    *
1392   TINETB   *
1393   TINETZ   *
1379   TIODN    *
1380   TIODNB   *
```

```
1381   TIODNZ   *
1387   TIODP    *
1388   TIODPB   *
1389   TIODPZ   *
1383   TIOSC    *
1384   TIOSCB   *
1385   TIOSCZ   *
1371   TISEC    *
1372   TISECB   *
1373   TISECZ   *
1359   TITU1    *
1360   TITU1B   *
1361   TITU1Z   *
1363   TITU2    *
1364   TITU2B   *
1365   TITU2Z   *
1221   TPFPA    *
1222   TPFPAB   *
1223   TPFPAZ   *
1213   TPRPA    *
1214   TPRPAB   *
1215   TPRPAZ   *
1217   TPWPA    *
1218   TPWPAB   *
1219   TPWPAZ   *
 506   TWO       155    179
 440   V$1MIN   *
 458   V$BFC    *
 366   V$BGLB   *
 363   V$BIC1   *
 392   V$BTB    *
 400   V$BTBM   *
 457   V$BVN    *
 408   V$CAM    *
 420   V$CKB    *
 448   V$CKIT   *
 387   V$CKPT   *
 380   V$CPL    *
 367   V$CRDM   *
 410   V$CRDR   *
 421   V$CRM    *
 381   V$CRS     1479   1514   1534
 426   V$CTAD   *
 379   V$CTL     1471
 418   V$CTMS   *
 364   V$DATE   *
 422   V$DSTB   *
 435   V$ERFG   *
 416   V$FGLB   *
 385   V$FLRS   *
 417   V$FREE   *
 401   V$GFCB   *
 397   V$IM     *
 447   V$IOA    *
 449   V$JCB    *
 356   V$JCFG   *
 370   V$JCTM   *
 354   V$JNAM   *
 436   V$JOP    *
 407   V$KEY    *
 355   V$LCNT   *
 390   V$LER    *
 423   V$LIT    *
 395   V$LLUP   *
 396   V$LPP    *
 386   V$LRSK   *
 389   V$LSAL   *
 414   V$LUNT   *
 394   V$LUP    *
 437   V$LUT1   *
 438   V$LUT2   *
 439   V$LUT3   *
 399   V$MAP    *
 402   V$MIMG   *
 398   V$MPM    *
 428   V$NCTR   *
 393   V$NPAG   *
 452   V$OCB    *
 415   V$OPCF   *
 388   V$OPCL   *
 424   V$PGT    *
 429   V$PIMN   *
 365   V$PLCT   *
 384   V$PTVB   *
 427   V$SCTL   *
 419   V$SCV    *
 434   V$SLFG   *
 403   V$ST0     1515   1540
 404   V$ST1    *
 405   V$ST2    *
 406   V$ST3     1496   1523
 382   V$TB     *
 411   V$TBGT   *
 459   V$TFC    *
 391   V$TJCP   *
```

```
413   V$TMN    *
412   V$TMS    *
383   V$UTB    *
  1   VORTEX   1468  1477  1480  1491  1512  1520  1530  1539  1542
1470  VT$PTM     12  1466
  0   VTPUSH     33    35
697   X         232   254  1472  1482  1484  1485  1488  1493  1494
                1498  1517  1519  1528  1536
469   ZERO     *
```

```
000001 A     1 VORTEX SET     1                PUT LAST FOR VORTEX                                    V2  01  00001
             2 *  THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES                01  00002
             3 *                                                                                      01  00003
             4 *       V.D.M.    PART NO.      92L1105-014B                                           01  00004
             5 *                                                                                      01  00005
             6 *                               RELEASED      3-1-74                                   01  00006
             7 *                                                                                      01  00007
             8 *                                                                                      01  00008
             9 *                 VT$GTM                                                               01  00009
            10 *                                                                                      01  00010
            11 *                                                                                      01  00011
            12                   TITLE   VT$GTM                                                       01  00012
            13                   NLIS                                                           V2    01  00013
          1443                   LIST                                                                 ********
          1444 *                                                                                      01  00014
          1445 *                                                                                      01  00015
          1446 *                                                                                      01  00016
          1447 *       VT$GTM - MEMORY ALLOCATION SUBROUTINE                                          01  00017
          1448 *                                                                                      01  00018
          1449 *       CALLING SEQUENCE...                                                            01  00019
          1450 *                                                                                      01  00020
          1451 *                 LDB             ADRS OF MEMORY ALLOCATION TABLE                      01  00021
          1452 *                 LDA             BLOCK SIZE                                           01  00022
          1453 *                 GETMEM                                                               01  00023
          1454 *                                                                                      01  00024
          1455 *       THIS GENERATES A CALL TO THE REAL-TIME EXECUTIVE,                              01  00025
          1456 *       WHICH THEN CALLS THIS SUBROUTINE, USING THE VORTEX                             01  00026
          1457 *       REENTRANT STACK.  UPON RETURN, (A)=ADDRESS OF TEMP                             01  00027
          1458 *       STORAGE BLOCK OR ZERO IN NONE AVAILABLE.                                       01  00028
000001 A  1459 X       EQU     1                                                                      01  00029
000002 A  1460 B       EQU     2                                                                      01  00030
000444 A  1461 DISPIM  EQU     0444                                                                   01  00031
000747 A  1462 DISCLK  EQU     0747                                                                   01  00032
000244 A  1463 ENAPIM  EQU     0244                                                                   01  00033
000147 A  1464 ENACLK  EQU     0147                                                                   01  00034
          1465         NAME    VT$GTM                                                               01  00035
000302 A  1466 V$CRS   EQU     0302                                                                   01  00036
          1467         IFT     VORTEX-2                                                       V2    01  00037
          1468         GOTO    1                                                              V2    01  00038
          1469 VT$GTM  DATA    0                                                              V2    01  00039
          1470         LDX     V$CTL                                                          V2    01  00040
          1471         LDA     TBKEY,X                                                        V2    01  00041
          1472         ANA     BM17                                                           V2    01  00042
          1473         SOF                     SET OVFL FOR USER TASK                         V2    01  00043
          1474         XAZ     ROF                                                            V2    01  00044
          1475 1       CONT                                                                   V2    01  00045
          1476         IFF     VORTEX-1                                                       V2    01  00046
000000 000006 A 1477 VT$GTM  DATA    6                                                              01  00047
000001 030302 A 1478         LDX     V$CRS           GET POINTER TO REENTRANT STACK                 01  00048
          1479         IFF     VORTEX-2                                                       V2    01  00049
          1480         LDA     0,X             GET A=BLOCK SIZE                               V2    01  00050
000002 025001 A 1481         LDB     1,X             ADRS OF MAT                                    01  00051
          1482         IFT     VORTEX-2                                                       V2    01  00052
          1483         GOTO    1                                                              V2    01  00053
          1484         JOFN    *+5             TEST USER MAP                                  V2    01  00054
          1485         OME     MAP,V$ST3       SET EXEC STATE TO NN                           V2    01  00055
          1486         SOF                     RESTORE OVFL                                   V2    01  00056
          1487 GTMB    LDX     0,B             GET BLOCK ADDRESS                              V2    01  00057
          1488         JXZ     GTMU            END OF TABLE - EXIT                            V2    01  00058
          1489         SUB     0,B                                                            V2    01  00059
          1490         JAN     GTMD                                                           V2    01  00060
          1491         JAZ     GTMD                                                           V2    01  00061
          1492         ADD     0,B             RESTORE A                                      V2    01  00062
          1493 1       CONT                                                                   V2    01  00063
          1494         IFT     VORTEX-1                                                       V2    01  00064
          1495         GOTO    1                                                              V2    01  00065
000003 016000 A 1496 GTMB    LDA     0,B             BLOCK SIZE FROM MAT                            01  00066
000004 001010 A 1497         JAZ     GTMX            END OF TABLE - EXIT                            01  00067
000005 000043 R
000006 145000 A 1498         SUB     0,X                                                            01  00068
000007 001002 A 1499         JAP     GTMD            COMPARE TO REQ BLOCK SIZE                      01  00069
000010 000015 R
          1500 1       CONT                                                                   V2    01  00070
000011 005122 A 1501         IBR                     NOT BIG ENOUGH -                               01  00071
000012 005122 A 1502         IBR                                                                    01  00072
000013 001000 A 1503         JMP     GTMB            GO BACK FOR NEXT                               01  00073
000014 000003 R
          1504 *                                                                                      01  00074
          1505 *                                                                                      01  00075
          1506 *                                                                                      01  00076
000015 005122 A 1507 GTMD    IBR                     FOUND CORRECT SIZE -                           01  00077
000016 100444 A 1508         EXC     DISPIM          DISABLE                                        01  00078
000017 100747 A 1509         EXC     DISCLK            INTERRUPTS                                   01  00079
000020 016000 A 1510         LDA     0,B             GET ADRS OF BLOCK                              01  00080
          1511         IFT     VORTEX-2                                                       V2    01  00081
          1512         GOTO    1                                                              V2    01  00082
          1513         OME     MAP,V$ST0       SET EXEC STATE TO 00                           V2    01  00083
          1514         LDX     V$CRS                                                          V2    01  00084
          1515 1       CONT                                                                   V2    01  00085
000021 001010 A 1516         JAZ     GTMW            LIST EMPTY, EXIT                               01  00086
000022 000041 R
000023 055000 A 1517         STA     0,X             ADRS OF BLOCK INTO REENTRANT STACK             01  00087
          1518         IFF     VORTEX-2                                                       V2    01  00088
          1519         TBX                                                                    V2    01  00089
          1520         IFF     VORTEX-1                                                       V2    01  00090
```

```
000024 065005 A 1521          STB     5,X             SAVE B IN STACK                                  01 00091
000025 005012 A 1522          TAB                                                                      01 00092
000026 001007 A 1523          JOFN    *+4             TEST USER MAP                             V2     01 00093
000027 000032 R
000030 103046 A 1524          OME     MAP,V$ST3       SET EXEC STATE TO NN                      V2     01 00094
000031 000337 A
000032 016000 A 1525          LDA     0,B             ADRS OF NEXT BLOCK                               01 00095
               1526           IFF     VORTEX-2                                                  V2     01 00096
               1527           TXB                                                               V2     01 00097
               1528           IFF     VORTEX-1                                                  V2     01 00098
000033 025005 A 1529          LDB     5,X                                                              01 00099
000034 056000 A 1530          STA     0,B             MOVE NEXT BLOCK TO HEAD OF QUEUE                 01 00100
000035 100244 A 1531          EXC     ENAPIM          ENABLE                                           01 00101
000036 100147 A 1532          EXC     ENACLK          INTERRUPTS                                       01 00102
000037 001000 A 1533          JMP     GTMY                                                             01 00103
000040 000044 R
               1534           IFT     VORTEX-2                                                  V2     01 00104
               1535           GOTO    1                                                         V2     01 00105
               1536 GTMU      LDX     V$CRS           RESTORE X                                 V2     01 00106
               1537           TZA                                                               V2     01 00107
               1538           OME     MAP,V$ST0       SET EXEC STATE TO 00                      V2     01 00108
               1539 1         CONT                                                              V2     01 00109
000041 100244 A 1540 GTMW      EXC     ENAPIM          ENABLE                                           01 00110
000042 100147 A 1541           EXC     ENACLK           INTERRUPTS                                      01 00111
000043 055000 A 1542 GTMX      STA     0,X             SET FLAG IN REENTRANT STACK                      01 00112
               1543 GTMY      DEALOC                  EXIT                                             01 00113
000044 006505 A
000045 000000 E
000046 000700 A
               1544           IFF     VORTEX-2                                                  V2     01 00114
               1545 ROF       ROF                                                               V2     01 00115
               1546           END                                                                      01 00116
ENTRY NAMES
000000 R VT$GTM
EXTERNAL NAMES
000045 E V$EXEC
SYMBOLS
000044 A APIM    000002 A B       000000 A B0      000001 A B1
000012 A B10     000013 A B11     000014 A B12     000015 A B13
000016 A B14     000017 A B15     000002 A B2      000003 A B3
000004 A B4      000005 A B5      000006 A B6      000007 A B7
000010 A B8      000011 A B9      000000 A BICNUM  000421 A BM1
000472 A BM17    000475 A BM177   000477 A BM1777  000464 A BM3
000473 A BM37    000463 A BM377   000467 A BM7     000474 A BM77
000476 A BM777   000441 A BR0     000442 A BR1     000453 A BR10
000454 A BR11    000455 A BR12    000456 A BR13    000457 A BR14
000460 A BR15    000443 A BR2     000444 A BR3     000445 A BR4
000446 A BR5     000447 A BR6     000450 A BR7     000451 A BR8
000452 A BR9     000421 A BS0     000422 A BS1     000433 A BS10
000434 A BS11    000435 A BS12    000436 A BS13    000437 A BS14
000440 A BS15    000423 A BS2     000424 A BS3     000425 A BS4
000426 A BS5     000427 A BS6     000430 A BS7     000431 A BS8
000432 A BS9     000000 A CHAFP   000000 A CHAFPB  000020 A CHAFPZ
000001 A CHARP   000000 A CHARPB  000020 A CHARPZ  000002 A CHCFP
000000 A CHCFPB  000020 A CHCFPZ  000003 A CHCRP   000000 A CHCRPB
000020 A CHCRPZ  000004 A CHRBL   000000 A CHRBLB  000020 A CHRBLZ
000047 A CLOCK   000000 A COTAD1  000000 A CTACT   000017 A CTACTB
000001 A CTACTZ  000001 A CTADN   000000 A CTADNB  000020 A CTADNZ
000011 A CTBIC   000000 A CTBICB  000020 A CTBICZ  000003 A CTDST
000000 A CTDSTB  000020 A CTDSTZ  000006 A CTDVA   000000 A CTDVAB
000020 A CTDVAZ  000012 A CTFCB   000000 A CTFCBB  000020 A CTFCBZ
000014 A CTFRC   000010 A CTFRCB  000010 A CTFRCZ  000014 A CTFRE
000000 A CTFREB  000010 A CTFREZ  000000 A CTIDB   000000 A CTIDBB
000017 A CTIDBZ  000007 A CTIOA   000000 A CTIOAB  000020 A CTIOAZ
000002 A CTOPM   000000 A CTOPMB  000020 A CTOPMZ  000005 A CTRCN
000000 A CTRCNB  000010 A CTRCNZ  000004 A CTRQB   000000 A CTRQBB
000020 A CTRQBZ  000005 A CTRTR   000010 A CTRTRB  000010 A CTRTRZ
000010 A CTSTA   000000 A CTSTAB  000020 A CTSTAZ  000013 A CTWDS
000000 A CTWDSB  000020 A CTWDSZ  000001 A DCBUFF  000003 A DCCHR
000000 A DCCHRB  000020 A DCCHRZ  000002 A DCCNT   000000 A DCRECL
000747 A DISCLK  000745 A DISMP   000444 A DISPIM  000026 A DMBCA
000000 A DMBCAB  000020 A DMBCAZ  000024 A DMCWA   000000 A DMCWAB
000020 A DMCWAZ  000017 A DMFPA   000000 A DMFPAB  000020 A DMFPAZ
000021 A DMLCA   000000 A DMLCAB  000020 A DMLCAZ  000022 A DMLTA
000000 A DMLTAB  000020 A DMLTAZ  000023 A DMPTA   000000 A DMPTAB
000020 A DMPTAZ  000016 A DMRPA   000000 A DMRPAB  000020 A DMRPAZ
000020 A DMSTA   000000 A DMSTAB  000020 A DMSTAZ  000025 A DMSWA
000000 A DMSWAB  000020 A DMSWAZ  000015 A DMTPA   000000 A DMTPAB
000020 A DMTPAZ  000002 A DSCTAD  000000 A DSDASS  000000 A DSDVDN
000002 A DSLCKD  000001 A DSNAME  000000 A DSNORQ  000002 A DSOPCM
000002 A DSPSTI  000002 A DSREWD  000000 A DSUNAM  000002 A DSUNTN
000424 A EIGHT   000147 A ENACLK  000645 A ENAMP   000244 A ENAPIM
000465 A FIVE    000423 A FOUR    000003 R GTMB    000015 R GTMD
000041 R GTMW    000043 R GTMX    000044 R GTMY    000003 A IBIBF
000017 A IBIBFB  000001 A IBIBFZ  000003 A IBLAS   000000 A IBLASB
000017 A IBLASZ  000001 A IBLEN   000000 A IBLENB  000020 A IBLENZ
000000 A IBLNK   000000 A IBLNKB  000020 A IBLNKZ  000002 A IBSTA
000000 A IBSTAB  000020 A IBSTAZ  000004 A IBSTS   000000 A IBSTSB
000017 A IBSTSZ  000300 A LC      000003 A LCABN   000013 A LCABNB
000001 A LCABNZ  000003 A LCASY   000012 A LCASYB  000001 A LCASYZ
000007 A LCBSC   000015 A LCBSCB  000001 A LCBSCZ  000007 A LCCHN
000016 A LCCHNB  000001 A LCCHNZ  000003 A LCCRC   000014 A LCCRCB
000003 A LCCRCZ  000006 A LCCWB   000014 A LCCWBB  000001 A LCCWBZ
000006 A LCCWC   000015 A LCCWCB  000001 A LCCWCZ  000006 A LCCWD
000013 A LCCWDB  000001 A LCCWDZ  000006 A LCCWI   000016 A LCCWIB
```

```
000001 A LCCWIZ  000006 A LCCWP   000012 A LCCWPB  000001 A LCCWPZ
000006 A LCCWR   000011 A LCCWRB  000001 A LCCWRZ  000006 A LCCWS
000017 A LCCWSB  000001 A LCCWSZ  000006 A LCCWT   000010 A LCCWTB
000001 A LCCWTZ  000001 A LCIBA   000000 A LCIBAB  000017 A LCIBAZ
000000 A LCIBF   000017 A LCIBFB  000001 A LCIBFZ  000000 A LCIBL
000000 A LCIBLB  000014 A LCIBLZ  000002 A LCIC1   000010 A LCIC1B
000010 A LCIC1Z  000002 A LCIC2   000000 A LCIC2B  000010 A LCIC2Z
000003 A LCIKE   000000 A LCIKEB  000004 A LCIKEZ  000007 A LCITB
000013 A LCITBB  000001 A LCITBZ  000050 A LCJP    000006 A LCLCB
000000 A LCLCBB  000020 A LCLCBZ  000007 A LCLDB   000014 A LCLDBB
000001 A LCLDBZ  000007 A LCLTB   000017 A LCLTBB  000001 A LCLTBZ
000005 A LCOBA   000000 A LCOBAB  000017 A LCOBAZ  000004 A LCOBF
000017 A LCOBFB  000001 A LCOBFZ  000004 A LCOBL   000000 A LCOBLB
000014 A LCOBLZ  000007 A LCOKE   000000 A LCOKEB  000004 A LCOKEZ
000003 A LCRCC   000017 A LCRCCB  000001 A LCRCCZ  000000 A LCSMB
000016 A LCSMBB  000001 A LCSMBZ  000462 A LHW     000017 A LSABN
000015 A LSABNB  000001 A LSABNZ  000017 A LSASC   000011 A LSASCB
000001 A LSASCZ  000014 A LSASY   000013 A LSASYB  000001 A LSASYZ
000020 A LSBSC   000016 A LSBSCB  000001 A LSBSCZ  000015 A LSCC1
000010 A LSCC1B  000010 A LSCC1Z  000015 A LSCC2   000000 A LSCC2B
000010 A LSCC2Z  000017 A LSCHN   000010 A LSCHNB  000001 A LSCHNZ
000017 A LSCRC   000012 A LSCRCB  000003 A LSCRCZ  000012 A LSCTA
000000 A LSCTAB  000020 A LSCTAZ  000017 A LSDSF   000017 A LSDSFB
000001 A LSDSFZ  000013 A LSDST   000000 A LSDSTB  000020 A LSDSTZ
000016 A LSEPF   000016 A LSEPFB  000001 A LSEPFZ  000014 A LSLSP
000000 A LSLSPB  000011 A LSLSPZ  000014 A LSMOD   000016 A LSMODB
000002 A LSMODZ  000020 A LSNTO   000010 A LSNTOB  000006 A LSNTOZ
000014 A LSPAR   000014 A LSPARB  000002 A LSPARZ  000016 A LSPLA
000000 A LSPLAB  000010 A LSPLAZ  000002 A LSRCA   000000 A LSRCAB
000020 A LSRCAZ  000003 A LSREM   000000 A LSREMB  000020 A LSREMZ
000016 A LSRRS   000010 A LSRRSB  000003 A LSRRSZ  000001 A LSRRT
000000 A LSRRTB  000020 A LSRRTZ  000004 A LSRTO   000000 A LSRTOB
000020 A LSRTOZ  000005 A LSSRS   000000 A LSSRSB  000020 A LSSRSZ
000011 A LSSWS   000000 A LSSWSB  000020 A LSSWSZ  000016 A LSTER
000017 A LSTERB  000001 A LSTERZ  000000 A LSTHD   000000 A LSTHDB
000020 A LSTHDZ  000006 A LSWCA   000000 A LSWCAB  000020 A LSWCAZ
000007 A LSWEM   000000 A LSWEMB  000020 A LSWEMZ  000016 A LSWRS
000013 A LSWRSB  000003 A LSWRSZ  000010 A LSWTO   000000 A LSWTOB
000020 A LSWTOZ  000014 A LSXMM   000011 A LSXMMB  000002 A LSXMMZ
000017 A LSYNC   000016 A LSYNCB  000001 A LSYNCZ  000020 A LSYNR
000000 A LSYNRB  000010 A LSYNRZ  000017 A LSYNT   000000 A LSYNTB
000010 A LSYNTZ  000046 A MAP     000045 A MP      000045 A MPMR0
000145 A MPMR1   000245 A MPMR2   000345 A MPMR3   000420 A MT
000461 A NEG     000470 A NINE    000421 A ONE     000001 A PCBSL
000011 A PCBSLB  000001 A PCBSLZ  000000 A PCCLN   000000 A PCCLNB
000010 A PCCLNZ  000002 A PCCTP   000014 A PCCTPB  000004 A PCCTPZ
000001 A PCECH   000014 A PCECHB  000001 A PCECHZ  000000 A PCLLN
000010 A PCLLNB  000010 A PCLLNZ  000002 A PCNTO   000000 A PCNTOB
000004 A PCNTOZ  000001 A PCPCH   000000 A PCPCHB  000010 A PCPCHZ
000001 A PCSWL   000010 A PCSWLB  000001 A PCSWLZ  000002 A PCTYP
000010 A PCTYPB  000004 A PCTYPZ  000001 A PCXMM   000012 A PCXMMB
000002 A PCXMMZ  000040 A PIM1    000041 A PIM2    000042 A PIM3
000043 A PIM4    000040 A PIM5    000040 A PIM6    000040 A PIM7
000040 A PIM8    000200 A POST    000003 A PSABN   000015 A PSABNB
000001 A PSABNZ  000000 A PSASY   000013 A PSASYB  000001 A PSASYZ
000002 A PSBADT  000000 A PSBEG   000004 A PSBSC   000016 A PSBSCB
000016 A PSBSCZ  000001 A PSCC1   000010 A PSCC1B  000010 A PSCC1Z
000001 A PSCC2   000000 A PSCC2B  000010 A PSCC2Z  000003 A PSCRC
000012 A PSCRCB  000003 A PSCRCZ  000002 A PSDEF   000010 A PSDEFB
000001 A PSDEFZ  000003 A PSDSF   000017 A PSDSFB  000001 A PSDSFZ
000002 A PSDWN   000011 A PSDWNB  000001 A PSDWNZ  000004 A PSEND
000002 A PSEPF   000016 A PSEPFB  000001 A PSEPFZ  000000 A PSLSP
000000 A PSLSPB  000011 A PSLSPZ  000000 A PSMOD   000016 A PSMODB
000002 A PSMODZ  000003 A PSNSEC  000000 A PSPAR   000014 A PSPARB
000002 A PSPARZ  000002 A PSPLA   000000 A PSPLAB  000010 A PSPLAZ
000001 A PSPROT  000002 A PSTER   000017 A PSTERB  000001 A PSTERZ
000000 A PSXMM   000011 A PSXMMB  000002 A PSXMMZ  000003 A PSYNC
000016 A PSYNCB  000001 A PSYNCZ  000004 A PSYNR   000000 A PSYNRB
000010 A PSYNRZ  000003 A PSYNT   000000 A PSYNTB  000010 A PSYNTZ
000040 A RA0     000000 A RA1     000004 A RADNR   000060 A RB0
000020 A RB1     000002 A RFCB    000463 A RHW     000001 A ROPWD
000000 A RSTPR   000003 A RTIDB   000467 A SEVEN   000466 A SIX
000027 A TBATSK  000026 A TBCPTH  000011 A TBENTY  000003 A TBEVNT
000021 A TBIO    000014 A TBISA   000015 A TBISB   000017 A TBISP
000020 A TBISRS  000034 A TBIST   000016 A TBISX   000032 A TBKEY
000022 A TBKN1   000023 A TBKN2   000024 A TBKN3   000033 A TBMIMG
000032 A TBNUCL  000002 A TBPL    000004 A TBRSA   000005 A TBRSB
000030 A TBRSE   000007 A TBRSP   000010 A TBRSTS  000006 A TBRSX
000000 A TBS0    000001 A TBS1    000012 A TBS10   000013 A TBS11
000014 A TBS12   000015 A TBS13   000016 A TBS14   000017 A TBS15
000002 A TBS2    000003 A TBS3    000004 A TBS4    000005 A TBS5
000006 A TBS6    000007 A TBS7    000010 A TBS8    000011 A TBS9
000031 A TBSIZ   000001 A TBST    000025 A TBTLC   000013 A TBTMIN
000012 A TBTMS   000000 A TBTRD   000004 A TCBSL   000011 A TCBSLB
000001 A TCBSLZ  000003 A TCCLN   000000 A TCCLNB  000010 A TCCLNZ
000004 A TCCON   000015 A TCCONB  000001 A TCCONZ  000002 A TCCTA
000000 A TCCTAB  000020 A TCCTAZ  000005 A TCCTP   000014 A TCCTPB
000004 A TCCTPZ  000012 A TCDCC   000000 A TCDCCB  000020 A TCDCCZ
000014 A TCDTO   000000 A TCDTOB  000020 A TCDTOZ  000004 A TCECH
000014 A TCECHB  000001 A TCECHZ  000015 A TCID1   000000 A TCID1B
000020 A TCID1Z  000016 A TCID2   000000 A TCID2B  000020 A TCID2Z
000006 A TCLDF   000014 A TCLDFB  000001 A TCLDFZ  000003 A TCLLN
000010 A TCLLNB  000010 A TCLLNZ  000005 A TCNOD   000004 A TCNODB
000004 A TCNODZ  000005 A TCNTD   000000 A TCNTDB  000004 A TCNTDZ
000004 A TCPCH   000000 A TCPCHB  000010 A TCPCHZ  000004 A TCRBC
```

```
000017 A TCRBCB 000001 A TCRBCZ 000013 A TCRBF  000000 A TCRBFB
000020 A TCRBFZ 000007 A TCRCA  000000 A TCRCAB 000020 A TCRCAZ
000006 A TCRMD  000000 A TCRMDB 000003 A TCRMDZ 000001 A TCRQH
000000 A TCRQHB 000020 A TCRQHZ 000006 A TCRRS  000006 A TCRRSB
000003 A TCRRSZ 000010 A TCSTO  000000 A TCSTOB 000020 A TCSTOZ
000004 A TCSWL  000010 A TCSWLB 000001 A TCSWLZ 000000 A TCTCD
000000 A TCTCDB 000020 A TCTCDZ 000005 A TCTYP  000010 A TCTYPB
000004 A TCTYPZ 000004 A TCWBC  000016 A TCWBCB 000001 A TCWBCZ
000011 A TCWCA  000000 A TCWCAB 000020 A TCWCAZ 000006 A TCWMD
000003 A TCWMDB 000003 A TCWMDZ 000006 A TCWRS  000011 A TCWRSB
000003 A TCWRSZ 000004 A TCXMM  000012 A TCXMMB 000002 A TCXMMZ
000471 A TEN    000464 A THREE  000002 A TIDSP  000000 A TIDSPB
000007 A TIDSPZ 000002 A TIDWN  000017 A TIDWNB 000001 A TIDWNZ
000000 A TINET  000000 A TINETB 000020 A TINETZ 000003 A TIODN
000017 A TIODNB 000001 A TIODNZ 000003 A TIODP  000000 A TIODPB
000007 A TIODPZ 000003 A TIOSC  000007 A TIOSCB 000010 A TIOSCZ
000002 A TISEC  000007 A TISECB 000010 A TISECZ 000000 A TITU1
000000 A TITU1B 000020 A TITU1Z 000001 A TITU2  000000 A TITU2B
000020 A TITU2Z 000017 A TPFPA  000000 A TPFPAB 000020 A TPFPAZ
000015 A TPRPA  000000 A TPRPAB 000020 A TPRPAZ 000016 A TPWPA
000000 A TPWPAB 000020 A TPWPAZ 000422 A TWO    000403 A V$1MIN
000415 A V$BFC  000075 A V$BGLB 000056 A V$BIC1 000315 A V$BTB
000331 A V$BTBM 000414 A V$BVN  000334 A V$CAM  000353 A V$CKB
000411 A V$CKIT 000310 A V$CKPT 000301 A V$CPL  000076 A V$CRDM
000341 A V$CRDR 000354 A V$CRM  000302 A V$CRS  000360 A V$CTAD
000300 A V$CTL  000351 A V$CTMS 000070 A V$DATE 000355 A V$DSTB
000376 A V$ERFG 000045 E V$EXEC 000347 A V$FGLB 000306 A V$FLRS
000350 A V$FREE 000332 A V$GFCB 000320 A V$IM   000410 A V$IOA
000412 A V$JCB  000055 A V$JCFG 000077 A V$JCTM 000050 A V$JNAM
000377 A V$JOP  000340 A V$KEY  000054 A V$LCNT 000313 A V$LER
000356 A V$LIT  000317 A V$LLUP 000317 A V$LPP  000307 A V$LRSK
000312 A V$LSAL 000345 A V$LUNT 000316 A V$LUP  000400 A V$LUT1
000401 A V$LUT2 000402 A V$LUT3 000330 A V$MAP  000333 A V$MIMG
000330 A V$MPM  000362 A V$NCTR 000316 A V$NPAG 000413 A V$OCB
000346 A V$OPCF 000311 A V$OPCL 000357 A V$PGT  000363 A V$PIMN
000074 A V$PLCT 000305 A V$PTVB 000361 A V$SCTL 000352 A V$SCV
000375 A V$SLFG 000334 A V$ST0  000335 A V$ST1  000336 A V$ST2
000337 A V$ST3  000303 A V$TB   000342 A V$TBGT 000416 A V$TFC
000314 A V$TJCP 000344 A V$TMN  000343 A V$TMS  000304 A V$UTB
000001 A VORTEX 000000 R VT$GTM 000001 A X      000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE

 1475  1        *
  159  ADAT     *
   38  ANAM     *
   90  ANAN     *
  574  APIM      584    585
  108  B          98    117    229    230    252    255    257   1487   1489
                1492   1496   1510   1525   1530
   88  B&         82
   83  B&0        40
   80  B&1        78
   44  B&10       42
   76  B&2        74
   72  B&3        70
   68  B&4        66
   64  B&5        62
   60  B&6        58
   56  B&7        54
   52  B&8        50
   48  B&9        46
  543  B0       *
  544  B1       *
  553  B10      *
  554  B11      *
  555  B12      *
  556  B13      *
  557  B14      *
  558  B15      *
  545  B2       *
  546  B3       *
  547  B4       *
  548  B5       *
  549  B6       *
  550  B7       *
  551  B8       *
  552  B9       *
  630  BICNUM   *
  515  BM1         79
  518  BM17        67   1472
  521  BM177       55
  524  BM1777      43
  516  BM3         75
  519  BM37        63
  522  BM377       51
  517  BM7         71
  520  BM77        59
  523  BM777       47
  486  BR0        202
  487  BR1      *
  496  BR10     *
  497  BR11     *
  498  BR12     *
  499  BR13     *
```

```
 500   BR14     *
 501   BR15     *
 488   BR2      *
 489   BR3      *
 490   BR4      *
 491   BR5      *
 492   BR6      *
 493   BR7      *
 494   BR8      *
 495   BR9      *
 470   BS0       195    209
 471   BS1      *
 480   BS10     *
 481   BS11     *
 482   BS12     *
 483   BS13     *
 484   BS14     *
 485   BS15     *
 472   BS2      *
 473   BS3      *
 474   BS4      *
 475   BS5      *
 476   BS6      *
 477   BS7      *
 478   BS8      *
 479   BS9      *
1397   CHAFP    *
1398   CHAFPB   *
1399   CHAFPZ   *
1401   CHARP    *
1402   CHARPB   *
1403   CHARPZ   *
1405   CHCFP    *
1406   CHCFPB   *
1407   CHCFPZ   *
1409   CHCRP    *
1410   CHCRPB   *
1411   CHCRPZ   *
1413   CHRBL    *
1414   CHRBLB   *
1415   CHRBLZ   *
 198   CLEARF   *
 567   CLOCK     569    570
 622   COTAD1   *
 707   CTACT    *
 708   CTACTB   *
 709   CTACTZ   *
 715   CTADN    *
 716   CTADNB   *
 717   CTADNZ   *
 751   CTBIC    *
 752   CTBICB   *
 753   CTBICZ   *
 723   CTDST    *
 724   CTDSTB   *
 725   CTDSTZ   *
 739   CTDVA    *
 740   CTDVAB   *
 741   CTDVAZ   *
 755   CTFCB    *
 756   CTFCBB   *
 757   CTFCBZ   *
 763   CTFRC    *
 764   CTFRCB   *
 765   CTFRCZ   *
 767   CTFRE    *
 768   CTFREB   *
 769   CTFREZ   *
 711   CTIDB    *
 712   CTIDBB   *
 713   CTIDBZ   *
 743   CTIDA    *
 744   CTIDAB   *
 745   CTIDAZ   *
 719   CTOPM    *
 720   CTOPMB   *
 721   CTOPMZ   *
 735   CTRCN    *
 736   CTRCNB   *
 737   CTRCNZ   *
 727   CTRQB    *
 728   CTRQBB   *
 729   CTRQBZ   *
 731   CTRTR    *
 732   CTRTRB   *
 733   CTRTRZ   *
 747   CTSTA    *
 748   CTSTAB   *
 749   CTSTAZ   *
 759   CTWDS    *
 760   CTWDSB   *
 761   CTWDSZ   *
 688   DCBUFF   *
 691   DCCHR    *
 692   DCCHRB   *
```

```
693   DCCHRZ   *
689   DCCNT    *
687   DCRECL   *
187   DINTS    *
569   DISCLK    189   1509
589   DISMP    *
584   DISPIM    188   1508
813   DMBCA    *
814   DMBCAB   *
815   DMBCAZ   *
805   DMCWA    *
806   DMCWAB   *
807   DMCWAZ   *
785   DMFPA    *
786   DMFPAB   *
787   DMFPAZ   *
793   DMLCA    *
794   DMLCAB   *
795   DMLCAZ   *
797   DMLTA    *
798   DMLTAB   *
799   DMLTAZ   *
801   DMPTA    *
802   DMPTAB   *
803   DMPTAZ   *
781   DMRPA    *
782   DMRPAB   *
783   DMRPAZ   *
789   DMSTA    *
790   DMSTAB   *
791   DMSTAZ   *
809   DMSWA    *
810   DMSWAB   *
811   DMSWAZ   *
777   DMTPA    *
778   DMTPAB   *
779   DMTPAZ   *
615   DSCTAD   *
601   DSDASS   *
600   DSDVDN   *
612   DSLCKD   *
609   DSNAME   *
608   DSNORQ   *
613   DSOPCM   *
614   DSPSTI   *
610   DSREWD   *
606   DSUNAM   *
611   DSUNTN   *
512   EIGHT     143    167
183   EINTS    *
570   ENACLK    185   1532   1541
590   ENAMP    *
585   ENAPIM    184   1531   1540
  0   ERROR     113    193    200    207
128   FETCHA   *
509   FIVE      149    173
508   FOUR      151    175
251   GETQ     *
1487  GTMB      1503
1507  GTMD      1490   1491   1499
1536  GTMU      1488
1540  GTMW      1516
1542  GTMX      1497
1543  GTMY      1533
1432  IBIBF    *
1433  IBIBFB   *
1434  IBIBFZ   *
1436  IBLAS    *
1437  IBLASB   *
1438  IBLASZ   *
1424  IBLEN    *
1425  IBLENB   *
1426  IBLENZ   *
1420  IBLNK    *
1421  IBLNKB   *
1422  IBLNKZ   *
1428  IBSTA    *
1429  IBSTAB   *
1430  IBSTAZ   *
1440  IBSTS    *
1441  IBSTSB   *
1442  IBSTSZ   *
 378  LC        379    380    381    382    383    384    385    386    387
                388    389    390    391    392    393    394    395    396
                397    398    399    400    401    402    403    404    405
                406    407    408    410    411    412    413    414    415
                416    417    418    419    420    421    422    423    424
                426    427    428    429    434    435    436    437    438
                439    440    447    448    449    452    457    458    459
 855  LCABN    *
 856  LCABNB   *
 857  LCABNZ   *
 859  LCASY    *
 860  LCASYB   *
 861  LCASYZ   *
```

```
923   LCBSC    *
924   LCBSCB   *
925   LCBSCZ   *
919   LCCHN    *
920   LCCHNB   *
921   LCCHNZ   *
851   LCCRC    *
852   LCCRCB   *
853   LCCRCZ   *
895   LCCWB    *
896   LCCWBB   *
897   LCCWBZ   *
891   LCCWC    *
892   LCCWCB   *
893   LCCWCZ   *
899   LCCWD    *
900   LCCWDB   *
901   LCCWDZ   *
887   LCCWI    *
888   LCCWIB   *
889   LCCWIZ   *
903   LCCWP    *
904   LCCWPB   *
905   LCCWPZ   *
907   LCCWR    *
908   LCCWRB   *
909   LCCWRZ   *
883   LCCWS    *
884   LCCWSB   *
885   LCCWSZ   *
911   LCCWT    *
912   LCCWTB   *
913   LCCWTZ   *
835   LCIBA    *
836   LCIBAB   *
837   LCIBAZ   *
823   LCIBF    *
824   LCIBFB   *
825   LCIBFZ   *
831   LCIBL    *
832   LCIBLB   *
833   LCIBLZ   *
839   LCIC1    *
840   LCIC1B   *
841   LCIC1Z   *
843   LCIC2    *
844   LCIC2B   *
845   LCIC2Z   *
863   LCIKE    *
864   LCIKEB   *
865   LCIKEZ   *
931   LCITB    *
932   LCITBB   *
933   LCITBZ   *
353   LCJP      354    355    356    363    364    365    366    367    370
879   LCLCB    *
880   LCLCBB   *
881   LCLCBZ   *
927   LCLDB    *
928   LCLDBB   *
929   LCLDBZ   *
915   LCLTB    *
916   LCLTBB   *
917   LCLTBZ   *
875   LCOBA    *
876   LCOBAB   *
877   LCOBAZ   *
867   LCOBF    *
868   LCOBFB   *
869   LCOBFZ   *
871   LCOBL    *
872   LCOBLB   *
873   LCOBLZ   *
935   LCOKE    *
936   LCOKEB   *
937   LCOKEZ   *
847   LCRCC    *
848   LCRCCB   *
849   LCRCCZ   *
827   LCSMB    *
828   LCSMBB   *
829   LCSMBZ   *
503   LHW      *
1049  LSABN    *
1050  LSABNB   *
1051  LSABNZ   *
1057  LSASC    *
1058  LSASCB   *
1059  LSASCZ   *
1001  LSASY    *
1002  LSASYB   *
1003  LSASYZ   *
1069  LSBSC    *
1070  LSBSCB   *
1071  LSBSCZ   *
```

```
1013   LSCC1    *
1014   LSCC1B   *
1015   LSCC1Z   *
1017   LSCC2    *
1018   LSCC2B   *
1019   LSCC2Z   *
1061   LSCHN    *
1062   LSCHNB   *
1063   LSCHNZ   *
1053   LSCRC    *
1054   LSCRCB   *
1055   LSCRCZ   *
 985   LSCTA    *
 986   LSCTAB   *
 987   LSCTAZ   *
1041   LSDSF    *
1042   LSDSFB   *
1043   LSDSFZ   *
 989   LSDST    *
 990   LSDSTB   *
 991   LSDSTZ   *
1025   LSEPF    *
1026   LSEPFB   *
1027   LSEPFZ   *
1009   LSLSP    *
1010   LSLSPB   *
1011   LSLSPZ   *
 993   LSMOD    *
 994   LSMODB   *
 995   LSMODZ   *
1073   LSNTO    *
1074   LSNTOB   *
1075   LSNTOZ   *
 997   LSPAR    *
 998   LSPARB   *
 999   LSPARZ   *
1037   LSPLA    *
1038   LSPLAB   *
1039   LSPLAZ   *
 953   LSRCA    *
 954   LSRCAB   *
 955   LSRCAZ   *
 957   LSREM    *
 958   LSREMB   *
 959   LSREMZ   *
1033   LSRRS    *
1034   LSRRSB   *
1035   LSRRSZ   *
 949   LSRRT    *
 950   LSRRTB   *
 951   LSRRTZ   *
 961   LSRTO    *
 962   LSRTOB   *
 963   LSRTOZ   *
 965   LSSRS    *
 966   LSSRSB   *
 967   LSSRSZ   *
 981   LSSWS    *
 982   LSSWSB   *
 983   LSSWSZ   *
1021   LSTER    *
1022   LSTERB   *
1023   LSTERZ   *
 945   LSTHD    *
 946   LSTHDB   *
 947   LSTHDZ   *
 969   LSWCA    *
 970   LSWCAB   *
 971   LSWCAZ   *
 973   LSWEM    *
 974   LSWEMB   *
 975   LSWEMZ   *
1029   LSWRS    *
1030   LSWRSB   *
1031   LSWRSZ   *
 977   LSWTO    *
 978   LSWTOB   *
 979   LSWTOZ   *
1005   LSXMM    *
1006   LSXMMB   *
1007   LSXMMZ   *
1045   LSYNC    *
1046   LSYNCB   *
1047   LSYNCZ   *
1077   LSYNR    *
1078   LSYNRB   *
1079   LSYNRZ   *
1065   LSYNT    *
1066   LSYNTB   *
1067   LSYNTZ   *
 591   MAP      1485  1513  1524  1538
 588   MP        589   590   592   593   594   595
 592   MPMR0    *
 593   MPMR1    *
 594   MPMR2    *
```

595 MPMR3 *
468 MT 469 470 471 472 473 474 475 476 477
478 479 480 481 482 483 484 485 486
487 488 489 490 491 492 493 494 495
496 497 498 499 500 501 502 503 504
505 506 507 508 509 510 511 512 513
514 515 516 517 518 519 520 521 522
523 524
502 NEG *
513 NINE 141 165
505 ONE 157 181
0 P 27 29 30 36 39 41 45 49 53
57 61 65 69 73 77 81 84 85
85 86 87 91 92 92 93 94 97
99 100 101 101 102 103 104 105 106
107 107 109 109 112 114 115 115 116
118 118 119 120 121 123 124 125 125
129 129 130 131 132 132 133 136 137
138 140 142 144 146 148 150 152 154
156 160 161 162 164 166 168 170 172
174 176 178 180 192 194 194 195 196
196 199 201 201 202 203 203 206 208
208 209
1329 PCBSL *
1330 PCBSLB *
1331 PCBSLZ *
1317 PCCLN *
1318 PCCLNB *
1319 PCCLNZ *
1341 PCCTP *
1342 PCCTPB *
1343 PCCTPZ *
1321 PCECH *
1322 PCECHB *
1323 PCECHZ *
1313 PCLLN *
1314 PCLLNB *
1315 PCLLNZ *
1349 PCNTD *
1350 PCNTDB *
1351 PCNTDZ *
1337 PCPCH *
1338 PCPCHB *
1339 PCPCHZ *
1333 PCSWL *
1334 PCSWLB *
1335 PCSWLZ *
1345 PCTYP *
1346 PCTYPB *
1347 PCTYPZ *
1325 PCXMM *
1326 PCXMMB *
1327 PCXMMZ *
575 PIM1 *
576 PIM2 *
577 PIM3 *
578 PIM4 *
579 PIM5 *
580 PIM6 *
581 PIM7 *
582 PIM8 *
699 POST *
1287 PSABN *
1288 PSABNB *
1289 PSABNZ *
1239 PSASY *
1240 PSASYB *
1241 PSASYZ *
670 PSBADT *
666 PSBEG *
1299 PSBSC *
1300 PSBSCB *
1301 PSBSCZ *
1251 PSCC1 *
1252 PSCC1B *
1253 PSCC1Z *
1255 PSCC2 *
1256 PSCC2B *
1257 PSCC2Z *
1291 PSCRC *
1292 PSCRCB *
1293 PSCRCZ *
1271 PSDEF *
1272 PSDEFB *
1273 PSDEFZ *
1279 PSDSF *
1280 PSDSFB *
1281 PSDSFZ *
1267 PSDWN *
1268 PSDWNB *
1269 PSDWNZ *
672 PSEND *
1263 PSEPF *
1264 PSEPFB *
1265 PSEPFZ *

```
1247  PSLSP    *
1248  PSLSPB   *
1249  PSLSPZ   *
1231  PSMOD    *
1232  PSMODB   *
1233  PSMODZ   *
 671  PSNSEC   *
1235  PSPAR    *
1236  PSPARB   *
1237  PSPARZ   *
1275  PSPLA    *
1276  PSPLAB   *
1277  PSPLAZ   *
 667  PSPROT   *
1259  PSTER    *
1260  PSTERB   *
1261  PSTERZ   *
1243  PSXMM    *
1244  PSXMMB   *
1245  PSXMMZ   *
1283  PSYNC    *
1284  PSYNCB   *
1285  PSYNCZ   *
1303  PSYNR    *
1304  PSYNRB   *
1305  PSYNRZ   *
1295  PSYNT    *
1296  PSYNTB   *
1297  PSYNTZ   *
  32  PUSH     *
 228  PUTQ     *
 532  RA0      *
 533  RA1      *
 651  RADNR    *
 534  RB0      *
 535  RB1      *
 649  RFCB     *
 504  RHW      *
1545  ROF      1474
 645  ROPWD    *
 642  RSTPR    *
 650  RTIDB    *
  96  SETA     *
 111  SETB     *
 191  SETF     *
 511  SEVEN      145    169
 510  SIX        147    171
  26  SPACE    *
 135  SUBAT    *
 288  TBATSK   *
 287  TBCPTH   *
 274  TBENTY   *
 268  TBEVNT   *
 282  TBIO     *
 277  TBISA    *
 278  TBISB    *
 280  TBISP    *
 281  TBISRS   *
 294  TBIST    *
 279  TBISX    *
 292  TBKEY    1471
 283  TBKN1    *
 284  TBKN2    *
 285  TBKN3    *
 293  TBMIMG   *
 291  TBNUCL   *
 267  TBPL     *
 269  TBRSA    *
 270  TBRSB    *
 289  TBRSE    *
 272  TBRSP    *
 273  TBRSTS   *
 271  TBRSX    *
 322  TBS0     *
 321  TBS1     *
 309  TBS10    *
 308  TBS11    *
 306  TBS12    *
 305  TBS13    *
 304  TBS14    *
 302  TBS15    *
 320  TBS2     *
 318  TBS3     *
 317  TBS4     *
 316  TBS5     *
 314  TBS6     *
 313  TBS7     *
 312  TBS8     *
 310  TBS9     *
 290  TBSIZ    *
 266  TBST     *
 286  TBTLC    *
 276  TBTMIN   *
 275  TBTMS    *
 265  TBTRD    *
```

```
1115  TCBSL    *
1116  TCBSLB   *
1117  TCBSLZ   *
1099  TCCLN    *
1100  TCCLNB   *
1101  TCCLNZ   *
1127  TCCON    *
1128  TCCONB   *
1129  TCCONZ   *
1095  TCCTA    *
1096  TCCTAB   *
1097  TCCTAZ   *
1151  TCCTP    *
1152  TCCTPB   *
1153  TCCTPZ   *
1187  TCDCC    *
1188  TCDCCB   *
1189  TCDCCZ   *
1195  TCDTO    *
1196  TCDTOB   *
1197  TCDTOZ   *
1123  TCECH    *
1124  TCECHB   *
1125  TCECHZ   *
1199  TCID1    *
1200  TCID1B   *
1201  TCID1Z   *
1203  TCID2    *
1204  TCID2B   *
1205  TCID2Z   *
1171  TCLDF    *
1172  TCLDFB   *
1173  TCLDFZ   *
1103  TCLLN    *
1104  TCLLNB   *
1105  TCLLNZ   *
1143  TCNOD    *
1144  TCNODB   *
1145  TCNODZ   *
1139  TCNTD    *
1140  TCNTDB   *
1141  TCNTDZ   *
1107  TCPCH    *
1108  TCPCHB   *
1109  TCPCHZ   *
1135  TCRBC    *
1136  TCRBCB   *
1137  TCRBCZ   *
1191  TCRBF    *
1192  TCRBFB   *
1193  TCRBFZ   *
1175  TCRCA    *
1176  TCRCAB   *
1177  TCRCAZ   *
1155  TCRMD    *
1156  TCRMDB   *
1157  TCRMDZ   *
1091  TCRQH    *
1092  TCRQHB   *
1093  TCRQHZ   *
1163  TCRRS    *
1164  TCRRSB   *
1165  TCRRSZ   *
1179  TCSTO    *
1180  TCSTOB   *
1181  TCSTOZ   *
1111  TCSWL    *
1112  TCSWLB   *
1113  TCSWLZ   *
1087  TCTCD    *
1088  TCTCDB   *
1089  TCTCDZ   *
1147  TCTYP    *
1148  TCTYPB   *
1149  TCTYPZ   *
1131  TCWBC    *
1132  TCWBCB   *
1133  TCWBCZ   *
1183  TCWCA    *
1184  TCWCAB   *
1185  TCWCAZ   *
1159  TCWMD    *
1160  TCWMDB   *
1161  TCWMDZ   *
1167  TCWRS    *
1168  TCWRSB   *
1169  TCWRSZ   *
1119  TCXMM    *
1120  TCXMMB   *
1121  TCXMMZ   *
 514  TEN        139    163
 205  TESTF    *
 507  THREE      153    177
1375  TIDSP    *
1376  TIDSPB   *
```

```
1377  TIDSPZ  *
1367  TIDWN   *
1368  TIDWNB  *
1369  TIDWNZ  *
1391  TINET   *
1392  TINETB  *
1393  TINETZ  *
1379  TIODN   *
1380  TIODNB  *
1381  TIODNZ  *
1387  TIODP   *
1388  TIODPB  *
1389  TIODPZ  *
1383  TIOSC   *
1384  TIOSCB  *
1385  TIOSCZ  *
1371  TISEC   *
1372  TISECB  *
1373  TISECZ  *
1359  TITU1   *
1360  TITU1B  *
1361  TITU1Z  *
1363  TITU2   *
1364  TITU2B  *
1365  TITU2Z  *
1221  TPFPA   *
1222  TPFPAB  *
1223  TPFPAZ  *
1213  TPRPA   *
1214  TPRPAB  *
1215  TPRPAZ  *
1217  TPWPA   *
1218  TPWPAB  *
1219  TPWPAZ  *
 506  TWO      155   179
 440  V$1MIN  *
 458  V$BFC   *
 366  V$BGLB  *
 363  V$BIC1  *
 392  V$BTB   *
 400  V$BTBM  *
 457  V$BVN   *
 408  V$CAM   *
 420  V$CKB   *
 448  V$CKIT  *
 387  V$CKPT  *
 380  V$CPL   *
 367  V$CRDM  *
 410  V$CRDR  *
 421  V$CRM   *
 381  V$CRS    1478  1514  1536
 426  V$CTAD  *
 379  V$CTL    1470
 418  V$CTMS  *
 364  V$DATE  *
 422  V$DSTB  *
 435  V$ERFG  *
 416  V$FGLB  *
 385  V$FLRS  *
 417  V$FREE  *
 401  V$GFCB  *
 397  V$IM    *
 447  V$IOA   *
 449  V$JCB   *
 356  V$JCFG  *
 370  V$JCTM  *
 354  V$JNAM  *
 436  V$JOP   *
 407  V$KEY   *
 355  V$LCNT  *
 390  V$LER   *
 423  V$LIT   *
 395  V$LLUP  *
 396  V$LPP   *
 386  V$LRSK  *
 389  V$LSAL  *
 414  V$LUNT  *
 394  V$LUP   *
 437  V$LUT1  *
 438  V$LUT2  *
 439  V$LUT3  *
 399  V$MAP   *
 402  V$MIMG  *
 398  V$MPM   *
 428  V$NCTR  *
 393  V$NPAG  *
 452  V$OCB   *
 415  V$OPCF  *
 388  V$OPCL  *
 424  V$PGT   *
 429  V$PIMN  *
 365  V$PLCT  *
 384  V$PTVB  *
 427  V$SCTL  *
 419  V$SCV   *
```

```
434   V$SLFG   *
403   V$ST0    1513   1538
404   V$ST1    *
405   V$ST2    *
406   V$ST3    1485   1524
382   V$TB     *
411   V$TBGT   *
459   V$TFC    *
391   V$TJCP   *
413   V$TMN    *
412   V$TMS    *
383   V$UTB    *
  1   VORTEX   1467   1476   1479   1482   1494   1511   1518   1520   1526
               1528   1534   1544
1469  VT$GTM     12   1465
   0  VTPUSH     33     35
 697  X         232    254   1471   1480   1481   1498   1517   1521   1529
               1542
 469  ZERO     *
```

```
000001 A     1 VORTEX SET     1              PUT LAST FOR VORTEX                              V2  01  00001
             2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES01  00002
             3 *                                                                              01  00003
             4 *       V.D.M.    PART NO.     92L1105-014B                                    01  00004
             5 *                                                                              01  00005
             6 *                              RELEASED     3-1-74                             01  00006
             7 *                                                                              01  00007
             8 *                                                                              01  00008
             9 *                VT$BMT                                                        01  00009
            10 *                                                                              01  00010
            11 *                                                                              01  00011
            12         TITLE   VT$BMT                                                        01  00012
            13         NLIS                                                                  01  00013
          1443         LIST                                                                  ********
          1444 *                                                                              01  00014
          1445 *                                                                              01  00015
          1446 *                                                                              01  00016
          1447 *       VT$BMT - SUBROUTINE TO BUILD MEMORY ALLOCATION TABLES                  01  00017
          1448 *                                                                              01  00018
          1449 *       CALLING SEQUENCE...                                                    01  00019
          1450 *                                                                              01  00020
          1451 *                LDA            MEMORY POOL SIZE                              01  00021
          1452 *                LDB            MEMORY POOL ADDRESS                           01  00022
          1453 *                BLDMAT                                                       01  00023
          1454 *                                                                             01  00024
          1455 *       THE BLDMAT MACRO GENERATES A CALL TO THE REAL-TIM EXEC,               01  00025
          1456 *       WHICH THEN CALLS THIS SUBROUTINE, USING THE VORTEX RE-                01  00026
          1457 *       ENTRANT STACK.  BEFORE MAKING THIS CALL, THE FIRST LOCATIONS          01  00027
          1458 *       OF THE MEMORY POOL MUST BE SET AS FOLLOWS:                            01  00028
          1459 *                                                                             01  00029
          1460 *                WORD 0         1ST BLOCK SIZE                               01  00030
          1461 *                WORD 1         NO. OF BLOCKS                                01  00031
          1462 *                WORD 2         2ND BLOCK SIZE                               01  00032
          1463 *                WORD 3         NO. OF BLOCKS                                01  00033
          1464 *                 **   *           *****                                     01  00034
          1465 *                 **   *           *****                                     01  00035
          1466 *                WORD 2N-2      NTH BLOCK SIZE                               01  00036
          1467 *                WORD 2N-1      NO. OF BLOCKS                                01  00037
          1468 *                WORD 2N        0 (ZERO)                                     01  00038
          1469 *                                                                             01  00039
          1470 *                                                                             01  00040
  000001  A 1471 X         EQU    1                                                         01  00041
  000002  A 1472 B         EQU    2                                                         01  00042
             1473          NAME   VT$BMT                                                    01  00043
  000302  A 1474 V$CRS     EQU    0302                                                      01  00044
000000 000011  A 1475 VT$BMT  DATA   9                                                      01  00045
             1476          IFT    VORTEX-2                                          V2    01  00046
             1477          GOTO   1                                                 V2    01  00047
             1478          LDX    V$CTL                                             V2    01  00048
             1479          LDA    TBKEY,X                                                 01  00049
             1480          ANA    BM17           GET KEY                            V2    01  00050
             1481          SOF                   SET OVFL ON USER TASK              V2    01  00051
             1482          XAZ    ROF                                               V2    01  00052
             1483 1        CONT                                                     V2    01  00053
000001 030302  A 1484          LDX    V$CRS          ADRS OF REENTRANT STACK              01  00054
000002 025001  A 1485          LDB    1,X            BEGIN ADRS OF MEM POOL               01  00055
000003 065010  A 1486          STB    8,X                                                 01  00056
000004 005021  A 1487          TBA                                                        01  00057
000005 125000  A 1488          ADD    0,X            END ADRS OF MEM POOL                 01  00058
000006 001020  A 1489          JBZ    BMT2D3                                              01  00059
000007 000065  R
000010 055007  A 1490          STA    7,X                                                 01  00060
  000011  R 1491 BMT1C1   EQU    *                                                 V2    01  00061
             1492          IFT    VORTEX-2                                          V2    01  00062
             1493          GOTO   1                                                 V2    01  00063
             1494          JOFN   *+5            TEST IF USER MAP                   V2    01  00064
             1495          OME    MAP,V$ST3      SET EXEC STATE TO NN               V2    01  00065
             1496          SOF                   RESTORE OVFL                       V2    01  00066
             1497 1        CONT                                                     V2    01  00067
000011 016001  A 1498          LDA    1,B                                               V2  01  00068
             1499          IFF    VORTEX-2                                          V2    01  00069
             1500          OME    MAP,V$ST0      SET EXEC STATE TO 00               V2    01  00070
000012 055005  A 1501          STA    5,X            NO. OF BLOCKS IN TEMP                01  00071
000013 005121  A 1502          INCR   021                                                 01  00072
000014 055006  A 1503          STA    6,X            CUR. Q-ADRS                         01  00073
000015 015005  A 1504 BMT1D1   LDA    5,X                                                 01  00074
000016 001010  A 1505          JAZ    BMT2A1         JUMP IF LAST BLOCK THIS SIZE         01  00075
000017 000042  R
000020 015007  A 1506          LDA    7,X                                                 01  00076
             1507          IFT    VORTEX-2                                          V2    01  00077
             1508          GOTO   1                                                 V2    01  00078
             1509          JOFN   *+5            TEST USER MAP                      V2    01  00079
             1510          OME    MAP,V$ST3      SET EXEC STATE TO NN               V2    01  00080
             1511          SOF                   RESTORE OVFL                       V2    01  00081
             1512 1        CONT                                                     V2    01  00082
000021 146000  A 1513          SUB    0,B            COMPUTE NEXT BLOCK ADRS              01  00083
             1514          IFF    VORTEX-2                                          V2    01  00084
             1515          OME    MAP,V$ST0      SET EXEC STATE TO 00               V2    01  00085
000022 055007  A 1516          STA    7,X                                                 01  00086
000023 005121  A 1517          INCR   021                                                 01  00087
000024 005111  A 1518          IAR                                                        01  00088
000025 145007  A 1519          SUB    7,X            BLOCK ADRS VALID ?                  01  00089
000026 001002  A 1520          JAP    BMT2B3         NO - ERROR                          01  00090
000027 000061  R
000030 015007  A 1521          LDA    7,X                                                 01  00091
```

```
000031 025006 A 1522          LDB     6,X                 PUT ADRS OF NEXT                          01 00092
               1523          IFT     VORTEX-2                                                  V2  01 00093
               1524          GOTO    1                                                         V2  01 00094
               1525          JOFN    *+5                 TEST USER MAP                         V2  01 00095
               1526          OME     MAP,V$ST3           SET EXEC STATE TO NN                  V2  01 00096
               1527          SOF                         RESTORE OVFL                          V2  01 00097
               1528 1        CONT                                                              V2  01 00098
000032 056000 A 1529          STA     0,B                 BLOCK INTO PNTR CELL OF PREVIOUS          01 00099
               1530          IFF     VORTEX-2                                                  V2  01 00100
               1531          OME     MAP,V$ST0           SET EXEC STATE TO 00                  V2  01 00101
000033 055006 A 1532          STA     6,X                 POINT TO NEXT BLOCK                       01 00102
000034 025005 A 1533          LDB     5,X                                                           01 00103
000035 005322 A 1534          DBR                         DECREMENT BLOCK COUNT                     01 00104
000036 065005 A 1535          STB     5,X                                                           01 00105
000037 025001 A 1536          LDB     1,X                                                           01 00106
000040 001000 A 1537          JMP     BMT1D1              GO BACK FOR NEXT                          01 00107
000041 000015 R
               1538 *                                                                              01 00108
               1539 *                                                                              01 00109
000042 025006 A 1540 BMT2A1   LDB     6,X                                                           01 00110
               1541          IFT     VORTEX-2                                                  V2  01 00111
               1542          GOTO    1                                                         V2  01 00112
               1543          JOFN    *+5                 TEST USER MAP                         V2  01 00113
               1544          OME     MAP,V$ST3           SET EXEC STATE TO NN                  V2  01 00114
               1545          SOF                         RESTORE OVFL                          V2  01 00115
               1546 1        CONT                                                              V2  01 00116
000043 056000 A 1547          STA     0,B                 ZERO POINTER CELL OF LAST BLOCK           01 00117
               1548          IFF     VORTEX-2                                                  V2  01 00118
               1549          OME     MAP,V$ST0               SET EXEC STATE TO 00                  01 00119
000044 025001 A 1550          LDB     1,X                                                           01 00120
               1551          IFT     VORTEX-2                                                  V2  01 00121
               1552          GOTO    1                                                         V2  01 00122
               1553          JOFN    *+5                 TEST USER MAP                         V2  01 00123
               1554          OME     MAP,V$ST3           SET EXEC STATE TO NN                  V2  01 00124
               1555          SOF                         RESTORE OVFL                          V2  01 00125
               1556 1        CONT                                                              V2  01 00126
000045 016002 A 1557          LDA     2,B                 NEXT BLOCK SIZE                           01 00127
000046 146000 A 1558          SUB     0,B                 LARGER THAN CURRENT                       01 00128
000047 001004 A 1559          JAN     BMT2B2              NO - ERROR                                01 00129
000050 000056 R
000051 005122 A 1560          IBR                         YES -                                     01 00130
000052 005122 A 1561          IBR                         INCREMENT POINTER IN MAT                  01 00131
               1562          IFF     VORTEX-2                                                  V2  01 00132
               1563          OME     MAP,V$ST0           SET EXEC STATE TO 00                  V2  01 00133
000053 065001 A 1564          STB     1,X                                                           01 00134
000054 001000 A 1565          JMP     BMT1C1              GO BACK FOR NEXT BLOCK SIZE               01 00135
000055 000011 R
               1566 *                                                                              01 00136
               1567 *                                                                              01 00137
000056 026002 A 1568 BMT2B2   LDB     2,B                 END OF TABLE ?                            01 00138
000057 001020 A 1569          JBZ     BMT2D3              YES                                       01 00139
000060 000065 R
       000061 R 1570 BMT2B3   EQU     *                                                         V2  01 00140
               1571          IFF     VORTEX-2                                                  V2  01 00141
               1572          OME     MAP,V$ST0           SET EXEC STATE TO 00                  V2  01 00142
000061 005001 A 1573          TZA                         NO - ERROR                            V2  01 00143
000062 055000 A 1574          STA     0,X                 SET ERROR FLAG, A = 0                     01 00144
000063 035010 A 1575          LDX     8,X                 ZERO FIRST ENTRY                          01 00145
               1576          IFT     VORTEX-2                                                      01 00146
               1577          GOTO    1                                                             01 00147
               1578          JOFN    *+4                                                           01 00148
               1579          OME     MAP,V$ST3                                                     01 00149
               1580 1        CONT                                                                  01 00150
000064 055000 A 1581          STA     0,X                     IN MAT                            01 00151
               1582 BMT2D3   DEALOC                      EXIT                                      01 00152
000065 006505 A
000066 000000 E
000067 000700 A
               1583          IFF     VORTEX-2                                                  V2  01 00153
               1584 ROF      ROF                                                               V2  01 00154
               1585          END                                                                   01 00155

ENTRY NAMES
000000 R VT$BMT
EXTERNAL NAMES
000066 E V$EXEC
SYMBOLS
000044 A APIM    000002 A B       000000 A B0      000001 A B1
000012 A B10     000013 A B11     000014 A B12     000015 A B13
000016 A B14     000017 A B15     000002 A B2      000003 A B3
000004 A B4      000005 A B5      000006 A B6      000007 A B7
000010 A B8      000011 A B9      000000 A BICNUM  000421 A BM1
000472 A BM17    000475 A BM177   000477 A BM1777  000464 A BM3
000473 A BM37    000463 A BM377   000467 A BM7     000474 A BM77
000476 A BM777   000011 R BMT1C1  000015 R BMT1D1  000042 R BMT2A1
000056 R BMT2B2  000061 R BMT2B3  000065 R BMT2D3  000441 A BR0
000442 A BR1     000453 A BR10    000454 A BR11    000455 A BR12
000456 A BR13    000457 A BR14    000460 A BR15    000443 A BR2
000444 A BR3     000445 A BR4     000446 A BR5     000447 A BR6
000450 A BR7     000451 A BR8     000452 A BR9     000421 A BS0
000422 A BS1     000433 A BS10    000434 A BS11    000435 A BS12
000436 A BS13    000437 A BS14    000440 A BS15    000423 A BS2
000424 A BS3     000425 A BS4     000426 A BS5     000427 A BS6
000430 A BS7     000431 A BS8     000432 A BS9     000000 A CHAFP
000000 A CHAFPB  000020 A CHAFPZ  000001 A CHARP   000000 A CHARPB
000020 A CHARPZ  000002 A CHCFP   000000 A CHCFPB  000020 A CHCFPZ
```

```
000003 A CHCRP  000000 A CHCRPB 000020 A CHCRPZ 000004 A CHRBL
000000 A CHRBLB 000020 A CHRBLZ 000047 A CLOCK  000000 A COTAD1
000000 A CTACT  000017 A CTACTB 000001 A CTACTZ 000001 A CTADN
000000 A CTADNB 000020 A CTADNZ 000011 A CTBIC  000000 A CTBICB
000020 A CTBICZ 000003 A CTDST  000000 A CTDSTB 000020 A CTDSTZ
000006 A CTDVA  000000 A CTDVAB 000020 A CTDVAZ 000012 A CTFCB
000000 A CTFCBB 000020 A CTFCBZ 000014 A CTFRC  000010 A CTFRCB
000010 A CTFRCZ 000014 A CTFRE  000000 A CTFREB 000010 A CTFREZ
000000 A CTIDB  000000 A CTIDBB 000017 A CTIDBZ 000007 A CTIDA
000000 A CTIDAB 000020 A CTIDAZ 000002 A CTOPM  000000 A CTOPMB
000020 A CTOPMZ 000005 A CTRCN  000000 A CTRCNB 000010 A CTRCNZ
000004 A CTRQB  000000 A CTRQBB 000020 A CTRQBZ 000005 A CTRTR
000010 A CTRTRB 000010 A CTRTRZ 000010 A CTSTA  000000 A CTSTAB
000020 A CTSTAZ 000013 A CTWDS  000000 A CTWDSB 000020 A CTWDSZ
000001 A DCBUFF 000003 A DCCHR  000000 A DCCHRB 000020 A DCCHRZ
000002 A DCCNT  000000 A DCRECL 000747 A DISCLK 000745 A DISMP
000444 A DISPIM 000026 A DMBCA  000000 A DMBCAB 000020 A DMBCAZ
000024 A DMCWA  000000 A DMCWAB 000020 A DMCWAZ 000017 A DMFPA
000000 A DMFPAB 000020 A DMFPAZ 000021 A DMLCA  000000 A DMLCAB
000020 A DMLCAZ 000022 A DMLTA  000000 A DMLTAB 000020 A DMLTAZ
000023 A DMPTA  000000 A DMPTAB 000020 A DMPTAZ 000016 A DMRPA
000000 A DMRPAB 000020 A DMRPAZ 000020 A DMSTA  000000 A DMSTAB
000020 A DMSTAZ 000025 A DMSWA  000000 A DMSWAB 000020 A DMSWAZ
000015 A DMTPA  000000 A DMTPAB 000020 A DMTPAZ 000002 A DSCTAD
000000 A DSDASS 000000 A DSDVDN 000002 A DSLCKO 000001 A DSNAME
000000 A DSNORQ 000002 A DSOPCM 000002 A DSPSTI 000002 A DSREWD
000000 A DSUNAM 000002 A DSUNTN 000424 A EIGHT  000147 A ENACLK
000645 A ENAMP  000244 A ENAPIM 000465 A FIVE   000423 A FOUR
000003 A IBIBF  000017 A IBIBFB 000001 A IBIBFZ 000003 A IBLAS
000000 A IBLASB 000017 A IBLASZ 000001 A IBLEN  000000 A IBLENB
000020 A IBLENZ 000000 A IBLNK  000000 A IBLNKB 000020 A IBLNKZ
000002 A IBSTA  000000 A IBSTAB 000020 A IBSTAZ 000004 A IBSTS
000000 A IBSTSB 000017 A IBSTSZ 000300 A LC     000003 A LCABN
000013 A LCABNB 000001 A LCABNZ 000003 A LCASY  000012 A LCASYB
000001 A LCASYZ 000007 A LCBSC  000015 A LCBSCB 000001 A LCBSCZ
000007 A LCCHN  000016 A LCCHNB 000001 A LCCHNZ 000003 A LCCRC
000014 A LCCRCB 000003 A LCCRCZ 000006 A LCCWB  000014 A LCCWBB
000001 A LCCWBZ 000006 A LCCWC  000015 A LCCWCB 000001 A LCCWCZ
000006 A LCCWD  000013 A LCCWDB 000001 A LCCWDZ 000006 A LCCWI
000016 A LCCWIB 000001 A LCCWIZ 000006 A LCCWP  000012 A LCCWPB
000001 A LCCWPZ 000006 A LCCWR  000011 A LCCWRB 000001 A LCCWRZ
000006 A LCCWS  000017 A LCCWSB 000001 A LCCWSZ 000006 A LCCWT
000010 A LCCWTB 000001 A LCCWTZ 000001 A LCIBA  000000 A LCIBAB
000017 A LCIBAZ 000000 A LCIBF  000017 A LCIBFB 000001 A LCIBFZ
000000 A LCIBL  000000 A LCIBLB 000014 A LCIBLZ 000002 A LCIC1
000010 A LCIC1B 000010 A LCIC1Z 000002 A LCIC2  000000 A LCIC2B
000010 A LCIC2Z 000003 A LCIKE  000000 A LCIKEB 000004 A LCIKEZ
000007 A LCITB  000013 A LCITBB 000001 A LCITBZ 000050 A LCJP
000006 A LCLCB  000000 A LCLCBB 000020 A LCLCBZ 000007 A LCLDB
000014 A LCLDBB 000001 A LCLDBZ 000007 A LCLTB  000017 A LCLTBB
000001 A LCLTBZ 000005 A LCOBA  000000 A LCOBAB 000017 A LCOBAZ
000004 A LCOBF  000017 A LCOBFB 000001 A LCOBFZ 000004 A LCOBL
000000 A LCOBLB 000014 A LCOBLZ 000007 A LCOKE  000000 A LCOKEB
000004 A LCOKEZ 000003 A LCRCC  000017 A LCRCCB 000001 A LCRCCZ
000000 A LCSMB  000016 A LCSMBB 000001 A LCSMBZ 000462 A LHW
000017 A LSABN  000015 A LSABNB 000001 A LSABNZ 000017 A LSASC
000011 A LSASCB 000001 A LSASCZ 000014 A LSASY  000013 A LSASYB
000001 A LSASYZ 000020 A LSBSC  000016 A LSBSCB 000001 A LSBSCZ
000015 A LSCC1  000010 A LSCC1B 000010 A LSCC1Z 000015 A LSCC2
000000 A LSCC2B 000010 A LSCC2Z 000017 A LSCHN  000010 A LSCHNB
000001 A LSCHNZ 000017 A LSCRC  000012 A LSCRCB 000003 A LSCRCZ
000012 A LSCTA  000000 A LSCTAB 000020 A LSCTAZ 000017 A LSDSF
000017 A LSDSFB 000001 A LSDSFZ 000013 A LSDST  000000 A LSDSTB
000020 A LSDSTZ 000016 A LSEPF  000016 A LSEPFB 000001 A LSEPFZ
000014 A LSLSP  000000 A LSLSPB 000011 A LSLSPZ 000014 A LSMOD
000016 A LSMODB 000002 A LSMODZ 000020 A LSNTO  000010 A LSNTOB
000006 A LSNTOZ 000014 A LSPAR  000014 A LSPARB 000002 A LSPARZ
000016 A LSPLA  000000 A LSPLAB 000010 A LSPLAZ 000002 A LSRCA
000000 A LSRCAB 000020 A LSRCAZ 000003 A LSREM  000000 A LSREMB
000020 A LSREMZ 000016 A LSRRS  000010 A LSRRSB 000003 A LSRRSZ
000001 A LSRRT  000000 A LSRRTB 000020 A LSRRTZ 000004 A LSRTO
000000 A LSRTOB 000020 A LSRTOZ 000005 A LSSRS  000000 A LSSRSB
000020 A LSSRSZ 000011 A LSSWS  000000 A LSSWSB 000020 A LSSWSZ
000016 A LSTER  000017 A LSTERB 000001 A LSTERZ 000000 A LSTHD
000000 A LSTHDB 000020 A LSTHDZ 000006 A LSWCA  000000 A LSWCAB
000020 A LSWCAZ 000007 A LSWEM  000000 A LSWEMB 000020 A LSWEMZ
000016 A LSWRS  000013 A LSWRSB 000003 A LSWRSZ 000010 A LSWTO
000000 A LSWTOB 000020 A LSWTOZ 000014 A LSXMM  000011 A LSXMMB
000002 A LSXMMZ 000017 A LSYNC  000016 A LSYNCB 000001 A LSYNCZ
000020 A LSYNR  000000 A LSYNRB 000010 A LSYNRZ 000017 A LSYNT
000000 A LSYNTB 000010 A LSYNTZ 000046 A MAP    000045 A MP
000045 A MPMR0  000145 A MPMR1  000245 A MPMR2  000345 A MPMR3
000420 A MT     000461 A NEG    000470 A NINE   000421 A ONE
000001 A PCBSL  000011 A PCBSLB 000001 A PCBSLZ 000000 A PCCLN
000000 A PCCLNB 000010 A PCCLNZ 000002 A PCCTP  000014 A PCCTPB
000004 A PCCTPZ 000001 A PCECH  000014 A PCECHB 000001 A PCECHZ
000000 A PCLLN  000010 A PCLLNB 000010 A PCLLNZ 000002 A PCNTD
000000 A PCNTDB 000004 A PCNTDZ 000001 A PCPCH  000000 A PCPCHB
000010 A PCPCHZ 000001 A PCSWL  000010 A PCSWLB 000001 A PCSWLZ
000002 A PCTYP  000010 A PCTYPB 000004 A PCTYPZ 000001 A PCXMM
000012 A PCXMMB 000002 A PCXMMZ 000040 A PIM1   000041 A PIM2
000042 A PIM3   000043 A PIM4   000040 A PIM5   000040 A PIM6
000040 A PIM7   000040 A PIM8   000200 A POST   000003 A PSABN
000015 A PSABNB 000001 A PSABNZ 000000 A PSASY  000013 A PSASYB
000001 A PSASYZ 000002 A PSBADT 000000 A PSBEG  000004 A PSBSC
```

```
000016 A PSBSCB 000016 A PSBSCZ 000001 A PSCC1  000010 A PSCC1B
000010 A PSCC1Z 000001 A PSCC2  000000 A PSCC2B 000010 A PSCC2Z
000003 A PSCRC  000012 A PSCRCB 000003 A PSCRCZ 000002 A PSDEF
000010 A PSDEFB 000001 A PSDEFZ 000003 A PSDSF  000017 A PSDSFB
000001 A PSDSFZ 000002 A PSDWN  000011 A PSDWNB 000001 A PSDWNZ
000004 A PSEND  000002 A PSEPF  000016 A PSEPFB 000001 A PSEPFZ
000000 A PSLSP  000000 A PSLSPB 000011 A PSLSPZ 000000 A PSMOD
000016 A PSMODB 000002 A PSMODZ 000003 A PSNSEC 000000 A PSPAR
000014 A PSPARB 000002 A PSPARZ 000002 A PSPLA  000000 A PSPLAB
000010 A PSPLAZ 000001 A PSPROT 000002 A PSTER  000017 A PSTERB
000001 A PSTERZ 000000 A PSXMM  000011 A PSXMMB 000002 A PSXMMZ
000003 A PSYNC  000016 A PSYNCB 000001 A PSYNCZ 000004 A PSYNR
000000 A PSYNRB 000010 A PSYNRZ 000003 A PSYNT  000000 A PSYNTB
000010 A PSYNTZ 000040 A RA0    000000 A RA1    000004 A RADNR
000060 A RB0    000020 A RB1    000002 A RFCB   000463 A RHW
000001 A ROPWD  000000 A RSTPR  000003 A RTIDB  000467 A SEVEN
000466 A SIX    000027 A TBATSK 000026 A TBCPTH 000011 A TBENTY
000003 A TBEVNT 000021 A TBID   000014 A TBISA  000015 A TBISB
000017 A TBISP  000020 A TBISRS 000034 A TBIST  000016 A TBISX
000032 A TBKEY  000022 A TBKN1  000023 A TBKN2  000024 A TBKN3
000033 A TBMIMG 000032 A TBNUCL 000002 A TBPL   000004 A TBRSA
000005 A TBRSB  000030 A TBRSE  000007 A TBRSP  000010 A TBRSTS
000006 A TBRSX  000000 A TBS0   000001 A TBS1   000012 A TBS10
000013 A TBS11  000014 A TBS12  000015 A TBS13  000016 A TBS14
000017 A TBS15  000002 A TBS2   000003 A TBS3   000004 A TBS4
000005 A TBS5   000006 A TBS6   000007 A TBS7   000010 A TBS8
000011 A TBS9   000031 A TBSIZ  000001 A TBST   000025 A TBTLC
000013 A TBTMIN 000012 A TBTMS  000000 A TBTRD  000004 A TCBSL
000011 A TCBSLB 000001 A TCBSLZ 000003 A TCCLN  000000 A TCCLNB
000010 A TCCLNZ 000004 A TCCON  000015 A TCCONB 000001 A TCCONZ
000002 A TCCTA  000000 A TCCTAB 000020 A TCCTAZ 000005 A TCCTP
000014 A TCCTPB 000004 A TCCTPZ 000012 A TCDCC  000000 A TCDCCB
000020 A TCDCCZ 000014 A TCDTO  000000 A TCDTOB 000020 A TCDTOZ
000004 A TCECH  000014 A TCECHB 000001 A TCECHZ 000015 A TCID1
000000 A TCID1B 000020 A TCID1Z 000016 A TCID2  000000 A TCID2B
000020 A TCID2Z 000006 A TCLDF  000014 A TCLDFB 000001 A TCLDFZ
000003 A TCLLN  000010 A TCLLNB 000010 A TCLLNZ 000005 A TCNOD
000004 A TCNODB 000004 A TCNODZ 000005 A TCNTD  000000 A TCNTDB
000004 A TCNTDZ 000004 A TCPCH  000000 A TCPCHB 000010 A TCPCHZ
000004 A TCRBC  000017 A TCRBCB 000001 A TCRBCZ 000013 A TCRBF
000000 A TCRBFB 000020 A TCRBFZ 000007 A TCRCA  000000 A TCRCAB
000020 A TCRCAZ 000006 A TCRMD  000000 A TCRMDB 000003 A TCRMDZ
000001 A TCRQH  000000 A TCRQHB 000020 A TCRQHZ 000006 A TCRRS
000006 A TCRRSB 000003 A TCRRSZ 000010 A TCSTO  000000 A TCSTOB
000020 A TCSTOZ 000004 A TCSWL  000010 A TCSWLB 000001 A TCSWLZ
000000 A TCTCD  000000 A TCTCDB 000020 A TCTCDZ 000005 A TCTYP
000010 A TCTYPB 000004 A TCTYPZ 000004 A TCWBC  000016 A TCWBCB
000001 A TCWBCZ 000011 A TCWCA  000000 A TCWCAB 000020 A TCWCAZ
000006 A TCWMD  000003 A TCWMDB 000003 A TCWMDZ 000006 A TCWRS
000011 A TCWRSB 000003 A TCWRSZ 000004 A TCXMM  000012 A TCXMMB
000002 A TCXMMZ 000471 A TEN    000464 A THREE  000002 A TIDSP
000000 A TIDSPB 000007 A TIDSPZ 000002 A TIDWN  000017 A TIDWNB
000001 A TIDWNZ 000000 A TINET  000000 A TINETB 000020 A TINETZ
000003 A TIODN  000017 A TIODNB 000001 A TIODNZ 000003 A TIODP
000000 A TIODPB 000007 A TIODPZ 000003 A TIOSC  000007 A TIOSCB
000010 A TIOSCZ 000002 A TISEC  000007 A TISECB 000010 A TISECZ
000000 A TITU1  000000 A TITU1B 000020 A TITU1Z 000001 A TITU2
000000 A TITU2B 000020 A TITU2Z 000017 A TPFPA  000000 A TPFPAB
000020 A TPFPAZ 000015 A TPRPA  000000 A TPRPAB 000020 A TPRPAZ
000016 A TPWPA  000000 A TPWPAB 000020 A TPWPAZ 000422 A TWO
000403 A V$1MIN 000415 A V$BFC  000075 A V$BGLB 000056 A V$BIC1
000315 A V$BTB  000331 A V$BTBM 000414 A V$BVN  000334 A V$CAM
000353 A V$CKB  000411 A V$CKIT 000310 A V$CKPT 000301 A V$CPL
000076 A V$CRDM 000341 A V$CRDR 000354 A V$CRM  000302 A V$CRS
000360 A V$CTAD 000300 A V$CTL  000351 A V$CTMS 000070 A V$DATE
000355 A V$DSTB 000376 A V$ERFG 000066 E V$EXEC 000347 A V$FGLB
000306 A V$FLRS 000350 A V$FREE 000332 A V$GFCB 000320 A V$IM
000410 A V$IOA  000412 A V$JCB  000055 A V$JCFG 000077 A V$JCTM
000050 A V$JNAM 000377 A V$JOP  000340 A V$KEY  000054 A V$LCNT
000313 A V$LER  000356 A V$LIT  000317 A V$LLUP 000317 A V$LPP
000307 A V$LRSK 000312 A V$LSAL 000345 A V$LUNT 000316 A V$LUP
000400 A V$LUT1 000401 A V$LUT2 000402 A V$LUT3 000330 A V$MAP
000333 A V$MIMG 000330 A V$MPM  000362 A V$NCTR 000316 A V$NPAG
000413 A V$OCB  000346 A V$OPCF 000311 A V$OPCL 000357 A V$PGT
000363 A V$PIMN 000074 A V$PLCT 000305 A V$PTVB 000361 A V$SCTL
000352 A V$SCV  000375 A V$SLFG 000334 A V$ST0  000335 A V$ST1
000336 A V$ST2  000337 A V$ST3  000303 A V$TB   000342 A V$TBGT
000416 A V$TFC  000314 A V$TJCP 000344 A V$TMN  000343 A V$TMS
000304 A V$UTB  000001 A VORTEX 000000 R VT$BMT 000001 A X
000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE

 1483   1          *
  159   ADAT       *
   38   ANAM       *
   90   ANAN       *
  574   APIM        584    585
  108   B            98    117    229    230    252    255    257   1498   1513
                    1529   1547   1557   1558   1568
   88   B&           82
   83   B&0          40
   80   B&1          78
   44   B&10         42
   76   B&2          74
```

```
  72   B&3          70
  68   B&4          66
  64   B&5          62
  60   B&6          58
  56   B&7          54
  52   B&8          50
  48   B&9          46
 543   B0       *
 544   B1       *
 553   B10      *
 554   B11      *
 555   B12      *
 556   B13      *
 557   B14      *
 558   B15      *
 545   B2       *
 546   B3       *
 547   B4       *
 548   B5       *
 549   B6       *
 550   B7       *
 551   B8       *
 552   B9       *
 630   BICNUM   *
 515   BM1          79
 518   BM17         67   1480
 521   BM177        55
 524   BM1777       43
 516   BM3          75
 519   BM37         63
 522   BM377        51
 517   BM7          71
 520   BM77         59
 523   BM777        47
1491   BMT1C1   1565
1504   BMT1D1   1537
1540   BMT2A1   1505
1568   BMT2B2   1559
1570   BMT2B3   1520
1582   BMT2D3   1489   1569
 486   BR0          202
 487   BR1      *
 496   BR10     *
 497   BR11     *
 498   BR12     *
 499   BR13     *
 500   BR14     *
 501   BR15     *
 488   BR2      *
 489   BR3      *
 490   BR4      *
 491   BR5      *
 492   BR6      *
 493   BR7      *
 494   BR8      *
 495   BR9      *
 470   BS0          195    209
 471   BS1      *
 480   BS10     *
 481   BS11     *
 482   BS12     *
 483   BS13     *
 484   BS14     *
 485   BS15     *
 472   BS2      *
 473   BS3      *
 474   BS4      *
 475   BS5      *
 476   BS6      *
 477   BS7      *
 478   BS8      *
 479   BS9      *
1397   CHAFP    *
1398   CHAFPB   *
1399   CHAFPZ   *
1401   CHARP    *
1402   CHARPB   *
1403   CHARPZ   *
1405   CHCFP    *
1406   CHCFPB   *
1407   CHCFPZ   *
1409   CHCRP    *
1410   CHCRPB   *
1411   CHCRPZ   *
1413   CHRBL    *
1414   CHRBLB   *
1415   CHRBLZ   *
 198   CLEARF   *
 567   CLOCK        569    570
 622   CDTAD1   *
 707   CTACT    *
 708   CTACTB   *
 709   CTACTZ   *
 715   CTADN    *
 716   CTADNB   *
```

```
717   CTADNZ   *
751   CTBIC    *
752   CTBICB   *
753   CTBICZ   *
723   CTDST    *
724   CTDSTB   *
725   CTDSTZ   *
739   CTDVA    *
740   CTDVAB   *
741   CTDVAZ   *
755   CTFCB    *
756   CTFCBB   *
757   CTFCBZ   *
763   CTFRC    *
764   CTFRCB   *
765   CTFRCZ   *
767   CTFRE    *
768   CTFREB   *
769   CTFREZ   *
711   CTIDB    *
712   CTIDBB   *
713   CTIDBZ   *
743   CTIOA    *
744   CTIOAB   *
745   CTIOAZ   *
719   CTOPM    *
720   CTOPMB   *
721   CTOPMZ   *
735   CTRCN    *
736   CTRCNB   *
737   CTRCNZ   *
727   CTRQB    *
728   CTRQBB   *
729   CTRQBZ   *
731   CTRTR    *
732   CTRTRB   *
733   CTRTRZ   *
747   CTSTA    *
748   CTSTAB   *
749   CTSTAZ   *
759   CTWDS    *
760   CTWDSB   *
761   CTWDSZ   *
688   DCBUFF   *
691   DCCHR    *
692   DCCHRB   *
693   DCCHRZ   *
689   DCCNT    *
687   DCRECL   *
187   DINTS    *
569   DISCLK    189
589   DISMP    *
584   DISPIM    188
813   DMBCA    *
814   DMBCAB   *
815   DMBCAZ   *
805   DMCWA    *
806   DMCWAB   *
807   DMCWAZ   *
785   DMFPA    *
786   DMFPAB   *
787   DMFPAZ   *
793   DMLCA    *
794   DMLCAB   *
795   DMLCAZ   *
797   DMLTA    *
798   DMLTAB   *
799   DMLTAZ   *
801   DMPTA    *
802   DMPTAB   *
803   DMPTAZ   *
781   DMRPA    *
782   DMRPAB   *
783   DMRPAZ   *
789   DMSTA    *
790   DMSTAB   *
791   DMSTAZ   *
809   DMSWA    *
810   DMSWAB   *
811   DMSWAZ   *
777   DMTPA    *
778   DMTPAB   *
779   DMTPAZ   *
615   DSCTAD   *
601   DSDASS   *
600   DSDVDN   *
612   DSLCKD   *
609   DSNAME   *
608   DSNORQ   *
613   DSOPCM   *
614   DSPSTI   *
610   DSREWD   *
606   DSUNAM   *
611   DSUNTN   *
512   EIGHT     143    167
```

```
 183   EINTS    *
 570   ENACLK    185
 590   ENAMP    *
 585   ENAPIM    184
   0   ERROR     113    193    200    207
 128   FETCHA   *
 509   FIVE      149    173
 508   FOUR      151    175
 251   GETQ     *
1432   IBIBF    *
1433   IBIBFB   *
1434   IBIBFZ   *
1436   IBLAS    *
1437   IBLASB   *
1438   IBLASZ   *
1424   IBLEN    *
1425   IBLENB   *
1426   IBLENZ   *
1420   IBLNK    *
1421   IBLNKB   *
1422   IBLNKZ   *
1428   IBSTA    *
1429   IBSTAB   *
1430   IBSTAZ   *
1440   IBSTS    *
1441   IBSTSB   *
1442   IBSTSZ   *
 378   LC        379    380    381    382    383    384    385    386    387
                 388    389    390    391    392    393    394    395    396
                 397    398    399    400    401    402    403    404    405
                 406    407    408    410    411    412    413    414    415
                 416    417    418    419    420    421    422    423    424
                 426    427    428    429    434    435    436    437    438
                 439    440    447    448    449    452    457    458    459
 855   LCABN    *
 856   LCABNB   *
 857   LCABNZ   *
 859   LCASY    *
 860   LCASYB   *
 861   LCASYZ   *
 923   LCBSC    *
 924   LCBSCB   *
 925   LCBSCZ   *
 919   LCCHN    *
 920   LCCHNB   *
 921   LCCHNZ   *
 851   LCCRC    *
 852   LCCRCB   *
 853   LCCRCZ   *
 895   LCCWB    *
 896   LCCWBB   *
 897   LCCWBZ   *
 891   LCCWC    *
 892   LCCWCB   *
 893   LCCWCZ   *
 899   LCCWD    *
 900   LCCWDB   *
 901   LCCWDZ   *
 887   LCCWI    *
 888   LCCWIB   *
 889   LCCWIZ   *
 903   LCCWP    *
 904   LCCWPB   *
 905   LCCWPZ   *
 907   LCCWR    *
 908   LCCWRB   *
 909   LCCWRZ   *
 883   LCCWS    *
 884   LCCWSB   *
 885   LCCWSZ   *
 911   LCCWT    *
 912   LCCWTB   *
 913   LCCWTZ   *
 835   LCIBA    *
 836   LCIBAB   *
 837   LCIBAZ   *
 823   LCIBF    *
 824   LCIBFB   *
 825   LCIBFZ   *
 831   LCIBL    *
 832   LCIBLB   *
 833   LCIBLZ   *
 839   LCIC1    *
 840   LCIC1B   *
 841   LCIC1Z   *
 843   LCIC2    *
 844   LCIC2B   *
 845   LCIC2Z   *
 863   LCIKE    *
 864   LCIKEB   *
 865   LCIKEZ   *
 931   LCITB    *
 932   LCITBB   *
 933   LCITBZ   *
 353   LCJP      354    355    356    363    364    365    366    367    370
```

```
879   LCLCB    *
880   LCLCBB   *
881   LCLCBZ   *
927   LCLDB    *
928   LCLDBB   *
929   LCLDBZ   *
915   LCLTB    *
916   LCLTBB   *
917   LCLTBZ   *
875   LCOBA    *
876   LCOBAB   *
877   LCOBAZ   *
867   LCOBF    *
868   LCOBFB   *
869   LCOBFZ   *
871   LCOBL    *
872   LCOBLB   *
873   LCOBLZ   *
935   LCOKE    *
936   LCOKEB   *
937   LCOKEZ   *
847   LCRCC    *
848   LCRCCB   *
849   LCRCCZ   *
827   LCSMB    *
828   LCSMBB   *
829   LCSMBZ   *
503   LHW      *
1049  LSABN    *
1050  LSABNB   *
1051  LSABNZ   *
1057  LSASC    *
1058  LSASCB   *
1059  LSASCZ   *
1001  LSASY    *
1002  LSASYB   *
1003  LSASYZ   *
1069  LSBSC    *
1070  LSBSCB   *
1071  LSBSCZ   *
1013  LSCC1    *
1014  LSCC1B   *
1015  LSCC1Z   *
1017  LSCC2    *
1018  LSCC2B   *
1019  LSCC2Z   *
1061  LSCHN    *
1062  LSCHNB   *
1063  LSCHNZ   *
1053  LSCRC    *
1054  LSCRCB   *
1055  LSCRCZ   *
 985  LSCTA    *
 986  LSCTAB   *
 987  LSCTAZ   *
1041  LSDSF    *
1042  LSDSFB   *
1043  LSDSFZ   *
 989  LSDST    *
 990  LSDSTB   *
 991  LSDSTZ   *
1025  LSEPF    *
1026  LSEPFB   *
1027  LSEPFZ   *
1009  LSLSP    *
1010  LSLSPB   *
1011  LSLSPZ   *
 993  LSMOD    *
 994  LSMODB   *
 995  LSMODZ   *
1073  LSNTO    *
1074  LSNTOB   *
1075  LSNTOZ   *
 997  LSPAR    *
 998  LSPARB   *
 999  LSPARZ   *
1037  LSPLA    *
1038  LSPLAB   *
1039  LSPLAZ   *
 953  LSRCA    *
 954  LSRCAB   *
 955  LSRCAZ   *
 957  LSREM    *
 958  LSREMB   *
 959  LSREMZ   *
1033  LSRRS    *
1034  LSRRSB   *
1035  LSRRSZ   *
 949  LSRRT    *
 950  LSRRTB   *
 951  LSRRTZ   *
 961  LSRTO    *
 962  LSRTOB   *
 963  LSRTOZ   *
 965  LSSRS    *
```

```
 966   LSSRSB   *
 967   LSSRSZ   *
 981   LSSWS    *
 982   LSSWSB   *
 983   LSSWSZ   *
1021   LSTER    *
1022   LSTERB   *
1023   LSTERZ   *
 945   LSTHD    *
 946   LSTHDB   *
 947   LSTHDZ   *
 969   LSWCA    *
 970   LSWCAB   *
 971   LSWCAZ   *
 973   LSWEM    *
 974   LSWEMB   *
 975   LSWEMZ   *
1029   LSWRS    *
1030   LSWRSB   *
1031   LSWRSZ   *
 977   LSWTO    *
 978   LSWTOB   *
 979   LSWTOZ   *
1005   LSXMM    *
1006   LSXMMB   *
1007   LSXMMZ   *
1045   LSYNC    *
1046   LSYNCB   *
1047   LSYNCZ   *
1077   LSYNR    *
1078   LSYNRB   *
1079   LSYNRZ   *
1065   LSYNT    *
1066   LSYNTB   *
1067   LSYNTZ   *
 591   MAP      1495  1500  1510  1515  1526  1531  1544  1549  1554
                1563  1572  1579
 588   MP        589   590   592   593   594   595
 592   MPMR0    *
 593   MPMR1    *
 594   MPMR2    *
 595   MPMR3    *
 468   MT        469   470   471   472   473   474   475   476   477
                 478   479   480   481   482   483   484   485   486
                 487   488   489   490   491   492   493   494   495
                 496   497   498   499   500   501   502   503   504
                 505   506   507   508   509   510   511   512   513
                 514   515   516   517   518   519   520   521   522
                 523   524
 502   NEG      *
 513   NINE      141   165
 505   ONE       157   181
   0   P          27    29    30    36    39    41    45    49    53
                  57    61    65    69    73    77    81    84    85
                  85    86    87    91    92    92    93    94    97
                  99   100   101   101   102   103   104   105   106
                 107   107   109   109   112   114   115   115   116
                 118   118   119   120   121   123   124   125   125
                 129   129   130   131   132   132   133   136   137
                 138   140   142   144   146   148   150   152   154
                 156   160   161   162   164   166   168   170   172
                 174   176   178   180   192   194   194   195   196
                 196   199   201   201   202   203   203   206   208
                 208   209
1329   PCBSL    *
1330   PCBSLB   *
1331   PCBSLZ   *
1317   PCCLN    *
1318   PCCLNB   *
1319   PCCLNZ   *
1341   PCCTP    *
1342   PCCTPB   *
1343   PCCTPZ   *
1321   PCECH    *
1322   PCECHB   *
1323   PCECHZ   *
1313   PCLLN    *
1314   PCLLNB   *
1315   PCLLNZ   *
1349   PCNTD    *
1350   PCNTDB   *
1351   PCNTDZ   *
1337   PCPCH    *
1338   PCPCHB   *
1339   PCPCHZ   *
1333   PCSWL    *
1334   PCSWLB   *
1335   PCSWLZ   *
1345   PCTYP    *
1346   PCTYPB   *
1347   PCTYPZ   *
1325   PCXMM    *
1326   PCXMMB   *
1327   PCXMMZ   *
 575   PIM1     *
```

```
 576   PIM2     *
 577   PIM3     *
 578   PIM4     *
 579   PIM5     *
 580   PIM6     *
 581   PIM7     *
 582   PIM8     *
 699   POST     *
1287   PSABN    *
1288   PSABNB   *
1289   PSABNZ   *
1239   PSASY    *
1240   PSASYB   *
1241   PSASYZ   *
 670   PSBADT   *
 666   PSBEG    *
1299   PSBSC    *
1300   PSBSCB   *
1301   PSBSCZ   *
1251   PSCC1    *
1252   PSCC1B   *
1253   PSCC1Z   *
1255   PSCC2    *
1256   PSCC2B   *
1257   PSCC2Z   *
1291   PSCRC    *
1292   PSCRCB   *
1293   PSCRCZ   *
1271   PSDEF    *
1272   PSDEFB   *
1273   PSDEFZ   *
1279   PSDSF    *
1280   PSDSFB   *
1281   PSDSFZ   *
1267   PSDWN    *
1268   PSDWNB   *
1269   PSDWNZ   *
 672   PSEND    *
1263   PSEPF    *
1264   PSEPFB   *
1265   PSEPFZ   *
1247   PSLSP    *
1248   PSLSPB   *
1249   PSLSPZ   *
1231   PSMOD    *
1232   PSMODB   *
1233   PSMODZ   *
 671   PSNSEC   *
1235   PSPAR    *
1236   PSPARB   *
1237   PSPARZ   *
1275   PSPLA    *
1276   PSPLAB   *
1277   PSPLAZ   *
 667   PSPROT   *
1259   PSTER    *
1260   PSTERB   *
1261   PSTERZ   *
1243   PSXMM    *
1244   PSXMMB   *
1245   PSXMMZ   *
1283   PSYNC    *
1284   PSYNCB   *
1285   PSYNCZ   *
1303   PSYNR    *
1304   PSYNRB   *
1305   PSYNRZ   *
1295   PSYNT    *
1296   PSYNTB   *
1297   PSYNTZ   *
  32   PUSH     *
 228   PUTQ     *
 532   RA0      *
 533   RA1      *
 651   RADNR    *
 534   RB0      *
 535   RB1      *
 649   RFCB     *
 504   RHW      *
1584   ROF      1482
 645   ROPWD    *
 642   RSTPR    *
 650   RTIDB    *
  96   SETA     *
 111   SETB     *
 191   SETF     *
 511   SEVEN      145    169
 510   SIX        147    171
  26   SPACE    *
 135   SUBAT    *
 288   TBATSK   *
 287   TBCPTH   *
 274   TBENTY   *
 268   TBEVNT   *
 282   TBIO     *
```

```
277   TBI$A    *
278   TBISB    *
280   TBISP    *
281   TBISRS   *
294   TBIST    *
279   TBISX    *
292   TBKEY    1479
283   TBKN1    *
284   TBKN2    *
285   TBKN3    *
293   TBMIMG   *
291   TBNUCL   *
267   TBPL     *
269   TBRSA    *
270   TBRSB    *
289   TBRSE    *
272   TBRSP    *
273   TBRSTS   *
271   TBRSX    *
322   TBS0     *
321   TBS1     *
309   TBS10    *
308   TBS11    *
306   TBS12    *
305   TBS13    *
304   TBS14    *
302   TBS15    *
320   TBS2     *
318   TBS3     *
317   TBS4     *
316   TBS5     *
314   TBS6     *
313   TBS7     *
312   TBS8     *
310   TBS9     *
290   TBSIZ    *
266   TBST     *
286   TBTLC    *
276   TBTMIN   *
275   TBTMS    *
265   TBTRD    *
1115  TCBSL    *
1116  TCBSLB   *
1117  TCBSLZ   *
1099  TCCLN    *
1100  TCCLNB   *
1101  TCCLNZ   *
1127  TCCON    *
1128  TCCONB   *
1129  TCCONZ   *
1095  TCCTA    *
1096  TCCTAB   *
1097  TCCTAZ   *
1151  TCCTP    *
1152  TCCTPB   *
1153  TCCTPZ   *
1187  TCDCC    *
1188  TCDCCB   *
1189  TCDCCZ   *
1195  TCDTO    *
1196  TCDTOB   *
1197  TCDTOZ   *
1123  TCECH    *
1124  TCECHB   *
1125  TCECHZ   *
1199  TCID1    *
1200  TCID1B   *
1201  TCID1Z   *
1203  TCID2    *
1204  TCID2B   *
1205  TCID2Z   *
1171  TCLDF    *
1172  TCLDFB   *
1173  TCLDFZ   *
1103  TCLLN    *
1104  TCLLNB   *
1105  TCLLNZ   *
1143  TCNDD    *
1144  TCNDDB   *
1145  TCNDDZ   *
1139  TCNTD    *
1140  TCNTDB   *
1141  TCNTDZ   *
1107  TCPCH    *
1108  TCPCHB   *
1109  TCPCHZ   *
1135  TCRBC    *
1136  TCRBCB   *
1137  TCRBCZ   *
1191  TCRBF    *
1192  TCRBFB   *
1193  TCRBFZ   *
1175  TCRCA    *
1176  TCRCAB   *
1177  TCRCAZ   *
```

```
1155  TCRMD    *
1156  TCRMDB   *
1157  TCRMDZ   *
1091  TCRQH    *
1092  TCRQHB   *
1093  TCRQHZ   *
1163  TCRRS    *
1164  TCRRSB   *
1165  TCRRSZ   *
1179  TCSTO    *
1180  TCSTOB   *
1181  TCSTOZ   *
1111  TCSWL    *
1112  TCSWLB   *
1113  TCSWLZ   *
1087  TCTCD    *
1088  TCTCDB   *
1089  TCTCDZ   *
1147  TCTYP    *
1148  TCTYPB   *
1149  TCTYPZ   *
1131  TCWBC    *
1132  TCWBCB   *
1133  TCWBCZ   *
1183  TCWCA    *
1184  TCWCAB   *
1185  TCWCAZ   *
1159  TCWMD    *
1160  TCWMDB   *
1161  TCWMDZ   *
1167  TCWRS    *
1168  TCWRSB   *
1169  TCWRSZ   *
1119  TCXMM    *
1120  TCXMMB   *
1121  TCXMMZ   *
 514  TEN       139    163
 205  TESTF    *
 507  THREE     153    177
1375  TIDSP    *
1376  TIDSPB   *
1377  TIDSPZ   *
1367  TIDWN    *
1368  TIDWNB   *
1369  TIDWNZ   *
1391  TINET    *
1392  TINETB   *
1393  TINETZ   *
1379  TIODN    *
1380  TIODNB   *
1381  TIODNZ   *
1387  TIODP    *
1388  TIODPB   *
1389  TIODPZ   *
1383  TIOSC    *
1384  TIOSCB   *
1385  TIOSCZ   *
1371  TISEC    *
1372  TISECB   *
1373  TISECZ   *
1359  TITU1    *
1360  TITU1B   *
1361  TITU1Z   *
1363  TITU2    *
1364  TITU2B   *
1365  TITU2Z   *
1221  TPFPA    *
1222  TPFPAB   *
1223  TPFPAZ   *
1213  TPRPA    *
1214  TPRPAB   *
1215  TPRPAZ   *
1217  TPWPA    *
1218  TPWPAB   *
1219  TPWPAZ   *
 506  TWO       155    179
 440  V$1MIN   *
 458  V$BFC    *
 366  V$BGLB   *
 363  V$BIC1   *
 392  V$BTB    *
 400  V$BTBM   *
 457  V$BVN    *
 408  V$CAM    *
 420  V$CKB    *
 448  V$CKIT   *
 387  V$CKPT   *
 380  V$CPL    *
 367  V$CRDM   *
 410  V$CRDR   *
 421  V$CRM    *
 381  V$CRS    1484
 426  V$CTAD   *
 379  V$CTL    1478
 418  V$CTMS   *
```

364	V$DATE	*								
422	V$DSTB	*								
435	V$ERFG	*								
416	V$FGLB	*								
385	V$FLRS	*								
417	V$FREE	*								
401	V$GFCB	*								
397	V$IM	*								
447	V$IOA	*								
449	V$JCB	*								
356	V$JCFG	*								
370	V$JCTM	*								
354	V$JNAM	*								
436	V$JOP	*								
407	V$KEY	*								
355	V$LCNT	*								
390	V$LER	*								
423	V$LIT	*								
395	V$LLUP	*								
396	V$LPP	*								
386	V$LRSK	*								
389	V$LSAL	*								
414	V$LUNT	*								
394	V$LUP	*								
437	V$LUT1	*								
438	V$LUT2	*								
439	V$LUT3	*								
399	V$MAP	*								
402	V$MIMG	*								
398	V$MPM	*								
428	V$NCTR	*								
393	V$NPAG	*								
452	V$OCB	*								
415	V$OPCF	*								
388	V$OPCL	*								
424	V$PGT	*								
429	V$PIMN	*								
365	V$PLCT	*								
384	V$PTVB	*								
427	V$SCTL	*								
419	V$SCV	*								
434	V$SLFG	*								
403	V$ST0	1500	1515	1531	1549	1563	1572			
404	V$ST1	*								
405	V$ST2	*								
406	V$ST3	1495	1510	1526	1544	1554	1579			
382	V$TB	*								
411	V$TBGT	*								
459	V$TFC	*								
391	V$TJCP	*								
413	V$TMN	*								
412	V$TMS	*								
383	V$UTB	*								
1	VORTEX	1476	1492	1499	1507	1514	1523	1530	1541	1548
		1551	1562	1571	1576	1583				
1475	VT$BMT	12	1473							
0	VTPUSH	33	35							
697	X	232	254	1479	1485	1486	1488	1490	1501	1503
		1504	1506	1516	1519	1521	1522	1532	1533	1535
		1536	1540	1550	1564	1574	1575	1581		
469	ZERO	*								

```
                    1          EJEC                                                                  02 00001
                    2  *  THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES    02 00002
                    3  *                                                                             02 00003
                    4  *     V.D.M. PART NO.          92L1105-015A                                   02 00004
                    5  *                                                                             02 00005
                    6  *                                                 RELEASED    03-26-73       02 00006
                    7  *                                                                             02 00007
                    8  *                                                                             02 00008
                    9  *              TTYTCM                                                         02 00009
                   10  *                                                                             02 00010
                   11  *                                                                             02 00011
                   12          TITLE   TTYTCM                                                        02 00012
                   13          NLIS                                                                  02 00013
                 1443          LIST                                                                  ********
                 1444  *                                                                             02 00014
                 1445  *                                                                             02 00015
                 1446          EJEC                                                                  02 00016
                 1447  *                                                                             02 00017
                 1448  *       TTYTCM - OVERLAY FOR VT$OCT FOR TTY TCM FOR TERMINAL UNIT             02 00018
                 1449  *                OPEN/CLOSE.                                                  02 00019
                 1450  *       SCHEDULED THROUGH THE RTE AS A RESULT OF OVERLAY REQUEST              02 00020
                 1451  *       BY VT$OCT.                                                            02 00021
                 1452  *                                                                             02 00022
                 1453  *                                                                             02 00023
                 1454  *                                                                             02 00024
                 1455            NAME    TTYTCM                                                      02 00025
 000010  A       1456  ROPWDB    EQU     8                                                           02 00026
 000004  A       1457  ROPWDZ    EQU     4                                                           02 00027
                 1458            EXT     TC$TCD,VT$LTT                                               02 00028
 000005  A       1459  TCPSIZ    EQU     5                                                           02 00029
 000017  A       1460  TCDSIZ    EQU     15                                                          02 00030
                 1461            EXT     VT$MP1,VT$OCY,VT$OCZ                                        02 00031
                 1462  GETMEM    MAC                                                                 02 00032
                 1463            M2                                                                  02 00033
                 1464            EXT     VT$GTM                                                      02 00034
                 1465            DATA    0600,VT$GTM                                                 02 00035
                 1466            EMAC                                                                02 00036
                 1467  PUTMEM    MAC                                                                 02 00037
                 1468            M2                                                                  02 00038
                 1469            EXT     VT$PTM                                                      02 00039
                 1470            DATA    0600,VT$PTM                                                 02 00040
                 1471            EMAC                                                                02 00041
000000 054236  A 1472  TTYTCM    STA     RQADR           SAVE RQBLK ADRS                             02 00042
000001 064236  A 1473            STB     TCPADR          SAVE TCD PROTOTYPE ADRS                     02 00043
000002 005014  A 1474            TAX                                                                 02 00044
                 1475            FETCHA  X,ROPWD,ROPWDB,ROPWDZ       GET OP CODE                     02 00045
000003 015001  A
000004 004350  A
000005 150472  A
000006 130466  A 1476            ERA     SIX             OPEN REQUEST ?                              02 00046
000007 001016  A 1477            JANZ    OCT4A2          NO                                          02 00047
000010 000145  R
000011 006010  A 1478            LDAI    TCDSIZ          YES - GET BLOCK SIZE IN A                   02 00048
000012 000017  A
000013 006020  A 1479            LDBI    VT$MP1          GET MEM POOL ADRS IN B                      02 00049
000014 000000  E
                 1480            GETMEM                  GO GET TEMP. STORAGE BLOCK FOR TSD          02 00050
000015 006505  A
000016 000000  E
000017 000600  A
000020 000000  E
000021 001016  A 1481            JANZ    OCT4C1                                                      02 00051
000022 000026  R
000023 014212  A 1482            LDA     ERRI            SET ERROR CODE                              02 00052
000024 001000  A 1483            JMP     VT$OCY          GO BACK TO ROOT SEG TO PROCESS ERROR        02 00053
000025 000000  E
000026 005012  A 1484  OCT4C1    TAB                                                                 02 00054
000027 054211  A 1485            STA     TCDADR          SAVE TCD ADRS                               02 00055
000030 005001  A 1486            TZA                                                                 02 00056
000031 006030  A 1487            LDXI    TCDSIZ                                                      02 00057
000032 000017  A
000033 056000  A 1488  OCT4CB    STA     0,B             CLEAR BLOCK                                 02 00058
000034 005122  A 1489            IBR                     FOR TCD                                     02 00059
000035 005344  A 1490            DXR                                                                 02 00060
000036 001046  A 1491            JXNZ    OCT4CB                                                      02 00061
000037 000033  R
000040 034177  A 1492            LDX     TCPADR          ADRS OF TCD PROTOTYPE                       02 00062
000041 024177  A 1493            LDB     TCDADR          ADRS OF NEW TCD                             02 00063
000042 006010  A 1494            LDAI    TCPSIZ          SIZE OF TCD PROTOTYPE                       02 00064
000043 000005  A
000044 054175  A 1495  OCT4CD    STA     TCZHLD                                                      02 00065
000045 015000  A 1496            LDA     0,X                                                         02 00066
000046 056003  A 1497            STA     TCCLN,B         TRANSFER TCD                                02 00067
000047 005144  A 1498            IXR                     PROTOTYPE                                   02 00068
000050 005122  A 1499            IBR                     TO NEW TCD                                  02 00069
000051 014170  A 1500            LDA     TCZHLD                                                      02 00070
000052 005311  A 1501            DAR                                                                 02 00071
000053 001016  A 1502            JANZ    OCT4CD                                                      02 00072
000054 000044  R
000055 034161  A 1503            LDX     RQADR                                                       02 00073
000056 015000  A 1504            LDA     RSTPR,X         GET ADRS OF TCM CONTRLR TABLE               02 00074
000057 024161  A 1505            LDB     TCDADR                                                      02 00075
000060 056002  A 1506            STA     TCCTA,B         STORE C. T. ADRS IN TCD                     02 00076
000061 035002  A 1507            LDX     RFCB,X                                                      02 00077
000062 015000  A 1508            LDA     0,X             GET 1ST WORD OF TUID                        02 00078
```

```
000063 056015 A 1509          STA     TCID1,B     STORE IN TCD                                  02 00079
000064 015001 A 1510          LDA     1,X         GET 2ND WORD OF TUID                          02 00080
000065 056016 A 1511          STA     TCID2,B     STORE IN TCD                                  02 00081
               1512           DINTS                                                             02 00082
000066 100444 A
000067 100747 A
000070 006017 A 1513          LDAE    TC$TCD      THREAD NEW                                    02 00083
000071 000000 E
000072 034146 A 1514          LDX     TCDADR      TCD ONTO QUEUE                                02 00084
000073 055000 A 1515          STA     TCTCD,X     AT HEAD                                       02 00085
000074 006077 A 1516          STXE    TC$TCD      O F QUEUE                                     02 00086
000075 000071 E
000076 016005 A 1517          LDA     TCCTP,B     GET TRANSMISSION CODE TYPE                    02 00087
000077 004354 A 1518          LSRA    12                                                        02 00088
000100 001016 A 1519          JANZ    OCT4CF      NOT ASCII                                     02 00089
000101 000132 R
000102 016003 A 1520          LDA     TCCLN,B     ASCII MODE, SET LINE TO ASCII                 02 00090
000103 150463 A 1521          ANA     RHW         GET CCM LUN                                   02 00091
000104 054136 A 1522          STA     CCMLUN                                                    02 00092
000105 016003 A 1523          LDA     TCLLN,B     GET LOG. LINE NO.                             02 00093
000106 004350 A 1524          LSRA    8                                                         02 00094
000107 054134 A 1525          STA     LOGLN                                                     02 00095
000110 014012 A 1526          LDA     OCT4CE+3                                                  02 00096
000111 150462 A 1527          ANA     LHW                                                       02 00097
000112 114130 A 1528          ORA     CCMLUN      SET LUN FOR CCM                               02 00098
000113 054007 A 1529          STA     OCT4CE+3    IN FUNC REQUEST                               02 00099
000114 014127 A 1530          LDA     LOGLN       GET LOG. LINE NO.                             02 00100
000115 114127 A 1531          ORA     FUNC22      OR WITH FUNC CODE                             02 00101
000116 054131 A 1532          STA     FNCLCB+2    FOR FUNC 22                                   02 00102
000117 074131 A 1533          STX     SAVX        SAVE X REG.                                   02 00103
               1534 OCT4CE    FUNC    FNCLCB,0    ISSUE FUNC TO SET LINE TO ASCII MODE          02 00104
000120 006505 A
000121 000000 E
000122 100000 A
000123 002400 A
000124 000246 R
000125 000000 A
000126 000000 A
               1535           DINTS                                                             02 00105
000127 100444 A
000130 100747 A
000131 034117 A 1536          LDX     SAVX        RESTORE X REG.                                02 00106
000132 024104 A 1537 OCT4CF   LDB     RQADR       GET RQST ADDR                                 02 00107
000133 016001 A 1538          LDA     ROPWD,B                                                   02 00108
000134 150463 A 1539          ANA     RHW         GET LUN FROM OPEN REQUEST                     02 00109
000135 006127 A 1540          ADDE    VT$LTT      ADD BASE ADRS OF LOG. TERM. TBL               02 00110
000136 000000 E
000137 005311 A 1541          DAR                  MINUS ONE                                    02 00111
000140 005012 A 1542          TAB                                                               02 00112
000141 076000 A 1543          STX     0,B         PUT TCD ADRS IN LTT                           02 00113
000142 005001 A 1544          TZA                                                               02 00114
000143 001000 A 1545          JMP     VT$OCZ      GO BACK TO ROOT SEGMENT                       02 00115
000144 000000 E
               1546 *                                                                           02 00116
               1547 *         CLOSE PROCESSING FOR TTY TCM                                      02 00117
               1548 *                                                                           02 00118
000145 024071 A 1549 OCT4A2   LDB     RQADR       GET RQBLK ADRS                                02 00119
000146 016001 A 1550          LDA     ROPWD,B                                                   02 00120
000147 150463 A 1551          ANA     RHW         GET LUN FOR TERM.                             02 00121
000150 006127 A 1552          ADDE    VT$LTT      ADD BASE ADRS FOR LTT                         02 00122
000151 000136 E
000152 005311 A 1553          DAR                  MINUS ONE                                    02 00123
000153 005012 A 1554          TAB                                                               02 00124
000154 016000 A 1555          LDA     0,B         GET ADRS OF TCD IN X                          02 00125
000155 150460 A 1556          ANA     BR15                                                      02 00126
000156 005014 A 1557          TAX                                                               02 00127
               1558           DINTS                                                             02 00128
000157 100444 A
000160 100747 A
000161 015001 A 1559          LDA     TCRQH,X                                                   02 00129
000162 001010 A 1560          JAZ     OCT4B3                                                    02 00130
000163 000167 R
000164 014050 A 1561          LDA     ERRF        QUEUE NOT EMPTY - SET ERROR                   02 00131
000165 001000 A 1562          JMP     VT$OCZ        CODE AND RETURN TO ROOT SEG                 02 00132
000166 000144 E
               1563 *                                                                           02 00133
               1564 *                                                                           02 00134
000167 056000 A 1565 OCT4B3   STA     0,B         DELETE TCD FROM LTT                           02 00135
               1566           EINTS               ENABLE INTERRUPTS                             02 00136
000170 100244 A
000171 100147 A
000172 005041 A 1567          TXA                                                               02 00137
000173 006030 A 1568          LDXI    TC$TCD      FIND TCD IN QUEUE                             02 00138
000174 000075 E
000175 001040 A 1569 OCT4C3   JXZ     OCT4D4      ERROR - NOT FOUND                             02 00139
000176 000231 R
000177 135000 A 1570          ERA     TCTCD,X     IS NEXT TCD THE ONE ?                         02 00140
000200 001010 A 1571          JAZ     OCT4D3      YES                                           02 00141
000201 000206 R
000202 135000 A 1572          ERA     TCTCD,X     NO -                                          02 00142
000203 035000 A 1573          LDX     TCTCD,X     ADVANCE TO NEXT                               02 00143
000204 001000 A 1574          JMP     OCT4C3                                                    02 00144
000205 000175 R
               1575 OCT4D3    DINTS                                                             02 00145
000206 100444 A
```

```
000207 100747 A
000210 025000 A 1576          LDB     TCTCD,X         DELETE                                  02 00146
000211 016000 A 1577          LDA     TCTCD,B         TCD FROM                                02 00147
000212 055000 A 1578          STA     TCTCD,X         QUEUE                                   02 00148
                1579          EINTS                                                           02 00149
000213 100244 A
000214 100147 A
000215 006010 A 1580          LDAI    TCDSIZ          SET TCD SIZE                            02 00150
000216 000017 A
000217 056000 A 1581          STA     0,B             IN TSB                                  02 00151
000220 006010 A 1582          LDAI    VT$MP1          ADRS OF MEMORY POOL                     02 00152
000221 000014 E
                1583          PUTMEM                  GIVE TSB BACK                           02 00153
000222 006505 A
000223 000016 E
000224 000600 A
000225 000000 E
000226 005001 A 1584          TZA                                                             02 00154
000227 001000 A 1585          JMP     VT$OCY          RETURN TO ROOT SEGMENT                  02 00155
000230 000025 E
000231 014002 A 1586 OCT4D4   LDA     ERRE            SET ERROR CODE                          02 00156
000232 001000 A 1587          JMP     VT$OCY          RETURN TO ROOT SEG.                     02 00157
000233 000230 E
                1588 *                                                                        02 00158
                1589 *        ERROR CODES FOR TERMINAL OPEN/CLOSE                             02 00159
                1590 *                                                                        02 00160
000234 034000 A 1591 ERRE     DATA    034000          TERMINAL NOT OPEN (CLOSE)               02 00161
000235 037000 A 1592 ERRF     DATA    037000          REQUESTS STILL PENDING (COLSE)          02 00162
000236 044000 A 1593 ERRI     DATA    044000          NO TEMPORARY STORAGE AVAILABLE          02 00163
000237 000000 A 1594 RQADR    DATA    0                                                       02 00164
000240 000000 A 1595 TCPADR   DATA    0                                                       02 00165
000241 000000 A 1596 TCDADR   DATA    0                                                       02 00166
000242 000000 A 1597 TCZHLD   DATA    0                                                       02 00167
000243 000000 A 1598 CCMLUN   DATA    0               SAVE CELL FOR CCM LUN                   02 00168
000244 000000 A 1599 LOGLN    DATA    0               SAVE CELL FOR LOG. LINE NO.             02 00169
000245 013000 A 1600 FUNC22   DATA    013000          FUNC CODE + 22                          02 00170
                1601 FNCLCB   DCB     0,0             LCB FOR FUNC RQST                       02 00171
000246 000000 A
000247 000000 A
000250 000000 A
000251 000000 A 1602 SAVX     DATA    0               X REG. SAVE CELL                        02 00172
       000000 R 1603          END     TTYTCM                                                  02 00173
ENTRY NAMES
000000 R TTYTCM
EXTERNAL NAMES
000174 E TC$TCD 000223 E V$EXEC 000121 E V$IOC  000020 E VT$GTM
000151 E VT$LTT 000221 E VT$MP1 000233 E VT$OCY 000166 E VT$OCZ
000225 E VT$PTM
SYMBOLS
000044 A APIM   000002 A B      000000 A B0     000001 A B1
000012 A B10    000013 A B11    000014 A B12    000015 A B13
000016 A B14    000017 A B15    000002 A B2     000003 A B3
000004 A B4     000005 A B5     000006 A B6     000007 A B7
000010 A B8     000011 A B9     000000 A BICNUM 000421 A BM1
000472 A BM17   000475 A BM177  000477 A BM1777 000464 A BM3
000473 A BM37   000463 A BM377  000467 A BM7    000474 A BM77
000476 A BM777  000441 A BR0    000442 A BR1    000453 A BR10
000454 A BR11   000455 A BR12   000456 A BR13   000457 A BR14
000460 A BR15   000443 A BR2    000444 A BR3    000445 A BR4
000446 A BR5    000447 A BR6    000450 A BR7    000451 A BR8
000452 A BR9    000421 A BS0    000422 A BS1    000433 A BS10
000434 A BS11   000435 A BS12   000436 A BS13   000437 A BS14
000440 A BS15   000423 A BS2    000424 A BS3    000425 A BS4
000426 A BS5    000427 A BS6    000430 A BS7    000431 A BS8
000432 A BS9    000243 R CCMLUN 000000 A CHAFP  000000 A CHAFPB
000020 A CHAFPZ 000001 A CHARP  000000 A CHARPB 000020 A CHARPZ
000002 A CHCFP  000000 A CHCFPB 000020 A CHCFPZ 000003 A CHCRP
000000 A CHCRPB 000020 A CHCRPZ 000004 A CHRBL  000000 A CHRBLB
000020 A CHRBLZ 000047 A CLOCK  000000 A COTAD1 000000 A CTACT
000017 A CTACTB 000001 A CTACTZ 000001 A CTADN  000000 A CTADNB
000020 A CTADNZ 000011 A CTBIC  000000 A CTBICB 000020 A CTBICZ
000003 A CTDST  000000 A CTDSTB 000020 A CTDSTZ 000006 A CTDVA
000000 A CTDVAB 000020 A CTDVAZ 000012 A CTFCB  000000 A CTFCBB
000020 A CTFCBZ 000014 A CTFRC  000010 A CTFRCB 000010 A CTFRCZ
000014 A CTFRE  000000 A CTFREB 000010 A CTFREZ 000000 A CTIDB
000000 A CTIDBB 000017 A CTIDBZ 000007 A CTIOA  000000 A CTIOAB
000020 A CTIOAZ 000002 A CTOPM  000000 A CTOPMB 000020 A CTOPMZ
000005 A CTRCN  000000 A CTRCNB 000010 A CTRCNZ 000004 A CTRQB
000000 A CTRQBB 000020 A CTRQBZ 000005 A CTRTR  000010 A CTRTRB
000010 A CTRTRZ 000010 A CTSTA  000000 A CTSTAB 000020 A CTSTAZ
000013 A CTWDS  000000 A CTWDSB 000020 A CTWDSZ 000001 A DCBUFF
000003 A DCCHR  000000 A DCCHRB 000020 A DCCHRZ 000002 A DCCNT
000000 A DCRECL 000747 A DISCLK 000745 A DISMP  000444 A DISPIM
000026 A DMBCA  000000 A DMBCAB 000020 A DMBCAZ 000024 A DMCWA
000000 A DMCWAB 000020 A DMCWAZ 000017 A DMFPA  000000 A DMFPAB
000020 A DMFPAZ 000021 A DMLCA  000000 A DMLCAB 000020 A DMLCAZ
000022 A DMLTA  000000 A DMLTAB 000020 A DMLTAZ 000023 A DMPTA
000000 A DMPTAB 000020 A DMPTAZ 000016 A DMRPA  000000 A DMRPAB
000020 A DMRPAZ 000020 A DMSTA  000000 A DMSTAB 000020 A DMSTAZ
000025 A DMSWA  000000 A DMSWAB 000020 A DMSWAZ 000015 A DMTPA
000000 A DMTPAB 000020 A DMTPAZ 000002 A DSCTAD 000000 A DSDASS
000000 A DSDVDN 000002 A DSLCKO 000001 A DSNAME 000000 A DSNORQ
000002 A DSOPCM 000002 A DSPSTI 000002 A DSREWD 000000 A DSUNAM
000002 A DSUNTN 000424 A EIGHT  000147 A ENACLK 000645 A ENAMP
000244 A ENAPIM 000234 R ERRE   000235 R ERRF   000236 R ERRI
```

```
000465 A FIVE   000246 R FNCLCB 000423 A FOUR   000245 R FUNC22
000003 A IBIBF  000017 A IBIBFB 000001 A IBIBFZ 000003 A IBLAS
000000 A IBLASB 000017 A IBLASZ 000001 A IBLEN  000000 A IBLENB
000020 A IBLENZ 000000 A IBLNK  000000 A IBLNKB 000020 A IBLNKZ
000002 A IBSTA  000000 A IBSTAB 000020 A IBSTAZ 000004 A IBSTS
000000 A IBSTSB 000017 A IBSTSZ 000300 A LC     000003 A LCABN
000013 A LCABNB 000001 A LCABNZ 000003 A LCASY  000012 A LCASYB
000001 A LCASYZ 000007 A LCBSC  000015 A LCBSCB 000001 A LCBSCZ
000007 A LCCHN  000016 A LCCHNB 000001 A LCCHNZ 000003 A LCCRC
000014 A LCCRCB 000003 A LCCRCZ 000006 A LCCWB  000014 A LCCWBB
000001 A LCCWBZ 000006 A LCCWC  000015 A LCCWCB 000001 A LCCWCZ
000006 A LCCWD  000013 A LCCWDB 000001 A LCCWDZ 000006 A LCCWI
000016 A LCCWIB 000001 A LCCWIZ 000006 A LCCWP  000012 A LCCWPB
000001 A LCCWPZ 000006 A LCCWR  000011 A LCCWRB 000001 A LCCWRZ
000006 A LCCWS  000017 A LCCWSB 000001 A LCCWSZ 000006 A LCCWT
000010 A LCCWTB 000001 A LCCWTZ 000001 A LCIBA  000000 A LCIBAB
000017 A LCIBAZ 000000 A LCIBF  000017 A LCIBFB 000001 A LCIBFZ
000000 A LCIBL  000000 A LCIBLB 000014 A LCIBLZ 000002 A LCIC1
000010 A LCIC1B 000010 A LCIC1Z 000002 A LCIC2  000000 A LCIC2B
000010 A LCIC2Z 000003 A LCIKE  000000 A LCIKEB 000004 A LCIKEZ
000007 A LCITB  000013 A LCITBB 000001 A LCITBZ 000050 A LCJP
000006 A LCLCB  000000 A LCLCBB 000020 A LCLCBZ 000007 A LCLDB
000014 A LCLDBB 000001 A LCLDBZ 000007 A LCLTB  000017 A LCLTBB
000001 A LCLTBZ 000005 A LCOBA  000000 A LCOBAB 000017 A LCOBAZ
000004 A LCOBF  000017 A LCOBFB 000001 A LCOBFZ 000004 A LCOBL
000000 A LCOBLB 000014 A LCOBLZ 000007 A LCOKE  000000 A LCOKEB
000004 A LCOKEZ 000003 A LCRCC  000017 A LCRCCB 000001 A LCRCCZ
000000 A LCSMB  000016 A LCSMBB 000001 A LCSMBZ 000462 A LHW
000244 R LOGLN  000017 A LSABN  000015 A LSABNB 000001 A LSABNZ
000017 A LSASC  000011 A LSASCB 000001 A LSASCZ 000014 A LSASY
000013 A LSASYB 000001 A LSASYZ 000020 A LSBSC  000016 A LSBSCB
000001 A LSBSCZ 000015 A LSCC1  000010 A LSCC1B 000010 A LSCC1Z
000015 A LSCC2  000000 A LSCC2B 000010 A LSCC2Z 000017 A LSCHN
000010 A LSCHNB 000001 A LSCHNZ 000017 A LSCRC  000012 A LSCRCB
000003 A LSCRCZ 000012 A LSCTA  000000 A LSCTAB 000020 A LSCTAZ
000017 A LSDSF  000017 A LSDSFB 000001 A LSDSFZ 000013 A LSDST
000000 A LSDSTB 000020 A LSDSTZ 000016 A LSEPF  000016 A LSEPFB
000001 A LSEPFZ 000014 A LSLSP  000000 A LSLSPB 000011 A LSLSPZ
000014 A LSMOD  000016 A LSMODB 000002 A LSMODZ 000020 A LSNTO
000010 A LSNTOB 000006 A LSNTOZ 000014 A LSPAR  000014 A LSPARB
000002 A LSPARZ 000016 A LSPLA  000000 A LSPLAB 000010 A LSPLAZ
000002 A LSRCA  000000 A LSRCAB 000020 A LSRCAZ 000003 A LSREM
000000 A LSREMB 000020 A LSREMZ 000016 A LSRRS  000010 A LSRRSB
000003 A LSRRSZ 000001 A LSRRT  000000 A LSRRTB 000020 A LSRRTZ
000004 A LSRTO  000000 A LSRTOB 000020 A LSRTOZ 000005 A LSSRS
000000 A LSSRSB 000020 A LSSRSZ 000011 A LSSWS  000000 A LSSWSB
000020 A LSSWSZ 000016 A LSTER  000017 A LSTERB 000001 A LSTERZ
000000 A LSTHD  000000 A LSTHDB 000020 A LSTHDZ 000006 A LSWCA
000000 A LSWCAB 000020 A LSWCAZ 000007 A LSWEM  000000 A LSWEMB
000020 A LSWEMZ 000016 A LSWRS  000013 A LSWRSB 000003 A LSWRSZ
000010 A LSWTO  000000 A LSWTOB 000020 A LSWTOZ 000014 A LSXMM
000011 A LSXMMB 000002 A LSXMMZ 000017 A LSYNC  000016 A LSYNCB
000001 A LSYNCZ 000020 A LSYNR  000000 A LSYNRB 000010 A LSYNRZ
000017 A LSYNT  000000 A LSYNTB 000010 A LSYNTZ 000046 A MAP
000045 A MP     000045 A MPMR0  000145 A MPMR1  000245 A MPMR2
000345 A MPMR3  000420 A MT     000461 A NEG    000470 A NINE
000145 R OCT4A2 000167 R OCT4B3 000026 R OCT4C1 000175 R OCT4C3
000033 R OCT4CB 000044 R OCT4CD 000120 R OCT4CE 000132 R OCT4CF
000206 R OCT4D3 000231 R OCT4D4 000421 A ONE    000001 A PCBSL
000011 A PCBSLB 000001 A PCBSLZ 000000 A PCCLN  000000 A PCCLNB
000010 A PCCLNZ 000002 A PCCTP  000014 A PCCTPB 000004 A PCCTPZ
000001 A PCECH  000014 A PCECHB 000001 A PCECHZ 000000 A PCLLN
000010 A PCLLNB 000010 A PCLLNZ 000002 A PCNTD  000000 A PCNTDB
000004 A PCNTDZ 000001 A PCPCH  000000 A PCPCHB 000010 A PCPCHZ
000001 A PCSWL  000010 A PCSWLB 000001 A PCSWLZ 000002 A PCTYP
000010 A PCTYPB 000004 A PCTYPZ 000001 A PCXMM  000012 A PCXMMB
000002 A PCXMMZ 000040 A PIM1   000041 A PIM2   000042 A PIM3
000043 A PIM4   000040 A PIM5   000040 A PIM6   000040 A PIM7
000040 A PIM8   000200 A POST   000003 A PSABN  000015 A PSABNB
000001 A PSABNZ 000000 A PSASY  000013 A PSASYB 000001 A PSASYZ
000002 A PSBADT 000000 A PSBEG  000004 A PSBSC  000016 A PSBSCB
000016 A PSBSCZ 000001 A PSCC1  000010 A PSCC1B 000010 A PSCC1Z
000001 A PSCC2  000000 A PSCC2B 000010 A PSCC2Z 000003 A PSCRC
000012 A PSCRCB 000003 A PSCRCZ 000002 A PSDEF  000010 A PSDEFB
000001 A PSDEFZ 000003 A PSDSF  000017 A PSDSFB 000001 A PSDSFZ
000002 A PSDWN  000011 A PSDWNB 000001 A PSDWNZ 000004 A PSEND
000002 A PSEPF  000016 A PSEPFB 000001 A PSEPFZ 000000 A PSLSP
000000 A PSLSPB 000011 A PSLSPZ 000000 A PSMOD  000016 A PSMODB
000002 A PSMODZ 000003 A PSNSEC 000000 A PSPAR  000014 A PSPARB
000002 A PSPARZ 000002 A PSPLA  000000 A PSPLAB 000010 A PSPLAZ
000001 A PSPROT 000002 A PSTER  000017 A PSTERB 000001 A PSTERZ
000000 A PSXMM  000011 A PSXMMB 000002 A PSXMMZ 000003 A PSYNC
000016 A PSYNCB 000001 A PSYNCZ 000004 A PSYNR  000000 A PSYNRB
000010 A PSYNRZ 000003 A PSYNT  000000 A PSYNTB 000010 A PSYNTZ
000040 A RA0    000000 A RA1    000004 A RADNR  000060 A RB0
000020 A RB1    000002 A RFCB   000463 A RHW    000001 A ROPWD
000010 A ROPWDB 000004 A ROPWDZ 000237 R RQADR  000000 A RSTPR
000003 A RTIDB  000251 R SAVX   000467 A SEVEN  000466 A SIX
000027 A TBATSK 000026 A TBCPTH 000011 A TBENTY 000003 A TBEVNT
000021 A TBIO   000014 A TBISA  000015 A TBISB  000017 A TBISP
000020 A TBISRS 000034 A TBIST  000016 A TBISX  000032 A TBKEY
000022 A TBKN1  000023 A TBKN2  000024 A TBKN3  000033 A TBMIMG
000032 A TBNUCL 000002 A TBPL   000004 A TBRSA  000005 A TBRSB
000030 A TBRSE  000007 A TBRSP  000010 A TBRSTS 000006 A TBRSX
000000 A TBS0   000001 A TBS1   000012 A TBS10  000013 A TBS11
```

```
000014 A TBS12  000015 A TBS13  000016 A TBS14  000017 A TBS15
000002 A TBS2   000003 A TBS3   000004 A TBS4   000005 A TBS5
000006 A TBS6   000007 A TBS7   000010 A TBS8   000011 A TBS9
000031 A TBSIZ  000001 A TBST   000025 A TBTLC  000013 A TBTMIN
000012 A TBTMS  000000 A TBTRD  000174 E TC$TCD 000004 A TCBSL
000011 A TCBSLB 000001 A TCBSLZ 000003 A TCCLN  000000 A TCCLNB
000010 A TCCLNZ 000004 A TCCON  000015 A TCCONB 000001 A TCCONZ
000002 A TCCTA  000000 A TCCTAB 000020 A TCCTAZ 000005 A TCCTP
000014 A TCCTPB 000004 A TCCTPZ 000241 R TCDADR 000012 A TCDCC
000000 A TCDCCB 000020 A TCDCCZ 000017 A TCDSIZ 000014 A TCDTO
000000 A TCDTOB 000020 A TCDTOZ 000004 A TCECH  000014 A TCECHB
000001 A TCECHZ 000015 A TCID1  000000 A TCID1B 000020 A TCID1Z
000016 A TCID2  000000 A TCID2B 000020 A TCID2Z 000006 A TCLDF
000014 A TCLDFB 000001 A TCLDFZ 000003 A TCLLN  000010 A TCLLNB
000010 A TCLLNZ 000005 A TCNOD  000004 A TCNODB 000004 A TCNODZ
000005 A TCNTO  000000 A TCNTOB 000004 A TCNTOZ 000240 R TCPADR
000004 A TCPCH  000000 A TCPCHB 000010 A TCPCHZ 000005 A TCPSIZ
000004 A TCRBC  000017 A TCRBCB 000001 A TCRBCZ 000013 A TCRBF
000000 A TCRBFB 000020 A TCRBFZ 000007 A TCRCA  000000 A TCRCAB
000020 A TCRCAZ 000006 A TCRMD  000000 A TCRMDB 000003 A TCRMDZ
000001 A TCRQH  000000 A TCRQHB 000020 A TCRQHZ 000006 A TCRRS
000006 A TCRRSB 000003 A TCRRSZ 000010 A TCSTO  000000 A TCSTOB
000020 A TCSTOZ 000004 A TCSWL  000010 A TCSWLB 000001 A TCSWLZ
000000 A TCTCD  000000 A TCTCDB 000020 A TCTCDZ 000005 A TCTYP
000010 A TCTYPB 000004 A TCTYPZ 000004 A TCWBC  000016 A TCWBCB
000001 A TCWBCZ 000011 A TCWCA  000000 A TCWCAB 000020 A TCWCAZ
000006 A TCWMD  000003 A TCWMDB 000003 A TCWMDZ 000006 A TCWRS
000011 A TCWRSB 000003 A TCWRSZ 000004 A TCXMM  000012 A TCXMMB
000002 A TCXMMZ 000242 R TCZHLD 000471 A TEN    000464 A THREE
000002 A TIDSP  000000 A TIDSPB 000007 A TIDSPZ 000002 A TIDWN
000017 A TIDWNB 000001 A TIDWNZ 000000 A TINET  000000 A TINETB
000020 A TINETZ 000003 A TIODN  000017 A TIODNB 000001 A TIODNZ
000003 A TIODP  000000 A TIODPB 000007 A TIODPZ 000003 A TIOSC
000007 A TIOSCB 000010 A TIOSCZ 000002 A TISEC  000007 A TISECB
000010 A TISECZ 000000 A TITU1  000000 A TITU1B 000020 A TITU1Z
000001 A TITU2  000000 A TITU2B 000020 A TITU2Z 000017 A TPFPA
000000 A TPFPAB 000020 A TPFPAZ 000015 A TPRPA  000000 A TPRPAB
000020 A TPRPAZ 000016 A TPWPA  000000 A TPWPAB 000020 A TPWPAZ
000000 R TTYTCM 000422 A TWO    000403 A V$1MIN 000415 A V$BFC
000075 A V$BGLB 000056 A V$BIC1 000315 A V$BTB  000331 A V$BTBM
000414 A V$BVN  000334 A V$CAM  000353 A V$CKB  000411 A V$CKIT
000310 A V$CKPT 000301 A V$CPL  000076 A V$CRDM 000341 A V$CRDR
000354 A V$CRM  000302 A V$CRS  000360 A V$CTAD 000300 A V$CTL
000351 A V$CTMS 000070 A V$DATE 000355 A V$DSTB 000376 A V$ERFG
000223 E V$EXEC 000347 A V$FGLB 000306 A V$FLRS 000350 A V$FREE
000332 A V$GFCB 000320 A V$IM   000410 A V$IOA  000121 E V$IOC
000412 A V$JCB  000055 A V$JCFG 000077 A V$JCTM 000050 A V$JNAM
000377 A V$JOP  000340 A V$KEY  000054 A V$LCNT 000313 A V$LER
000356 A V$LIT  000317 A V$LLUP 000317 A V$LPP  000307 A V$LRSK
000312 A V$LSAL 000345 A V$LUNT 000316 A V$LUP  000400 A V$LUT1
000401 A V$LUT2 000402 A V$LUT3 000330 A V$MAP  000333 A V$MIMG
000330 A V$MPM  000362 A V$NCTR 000316 A V$NPAG 000413 A V$OCB
000346 A V$OPCF 000311 A V$OPCL 000357 A V$PGT  000363 A V$PIMN
000074 A V$PLCT 000305 A V$PTVB 000361 A V$SCTL 000352 A V$SCV
000375 A V$SLFG 000334 A V$ST0  000335 A V$ST1  000336 A V$ST2
000337 A V$ST3  000303 A V$TB   000342 A V$TBGT 000416 A V$TFC
000314 A V$TJCP 000344 A V$TMN  000343 A V$TMS  000304 A V$UTB
000020 E VT$GTM 000151 E VT$LTT 000221 E VT$MP1 000233 E VT$OCY
000166 E VT$OCZ 000225 E VT$PTM 000001 A X      000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE

 159  ADAT     *
  38  ANAM     *
  90  ANAN     *
 574  APIM      584   585
 108  B          98   117   229   230   252   255   257  1488  1497
                1506  1509  1511  1517  1520  1523  1538  1543  1550
                1555  1565  1577  1581
  88  B&         82
  83  B&0        40
  80  B&1        78
  44  B&10       42
  76  B&2        74
  72  B&3        70
  68  B&4        66
  64  B&5        62
  60  B&6        58
  56  B&7        54
  52  B&8        50
  48  B&9        46
 543  B0       *
 544  B1       *
 553  B10      *
 554  B11      *
 555  B12      *
 556  B13      *
 557  B14      *
 558  B15      *
 545  B2       *
 546  B3       *
 547  B4       *
 548  B5       *
 549  B6       *
 550  B7       *
```

```
551   B8        *
552   B9        *
630   BICNUM    *
515   BM1         79
518   BM17        67
521   BM177       55
524   BM1777      43
516   BM3         75
519   BM37        63
522   BM377       51
517   BM7         71
520   BM77        59
523   BM777       47
486   BR0        202
487   BR1       *
496   BR10      *
497   BR11      *
498   BR12      *
499   BR13      *
500   BR14      *
501   BR15      1556
488   BR2       *
489   BR3       *
490   BR4       *
491   BR5       *
492   BR6       *
493   BR7       *
494   BR8       *
495   BR9       *
470   BS0        195    209
471   BS1       *
480   BS10      *
481   BS11      *
482   BS12      *
483   BS13      *
484   BS14      *
485   BS15      *
472   BS2       *
473   BS3       *
474   BS4       *
475   BS5       *
476   BS6       *
477   BS7       *
478   BS8       *
479   BS9       *
1598  CCMLUN    1522   1528
1397  CHAFP     *
1398  CHAFPB    *
1399  CHAFPZ    *
1401  CHARP     *
1402  CHARPB    *
1403  CHARPZ    *
1405  CHCFP     *
1406  CHCFPB    *
1407  CHCFPZ    *
1409  CHCRP     *
1410  CHCRPB    *
1411  CHCRPZ    *
1413  CHRBL     *
1414  CHRBLB    *
1415  CHRBLZ    *
198   CLEARF    *
567   CLOCK      569    570
622   CDTAD1    *
707   CTACT     *
708   CTACTB    *
709   CTACTZ    *
715   CTADN     *
716   CTADNB    *
717   CTADNZ    *
751   CTBIC     *
752   CTBICB    *
753   CTBICZ    *
723   CTDST     *
724   CTDSTB    *
725   CTDSTZ    *
739   CTDVA     *
740   CTDVAB    *
741   CTDVAZ    *
755   CTFCB     *
756   CTFCBB    *
757   CTFCBZ    *
763   CTFRC     *
764   CTFRCB    *
765   CTFRCZ    *
767   CTFRE     *
768   CTFREB    *
769   CTFREZ    *
711   CTIDB     *
712   CTIDBB    *
713   CTIDBZ    *
743   CTIOA     *
744   CTIOAB    *
745   CTIOAZ    *
719   CTOPM     *
```

```
720   CTOPMB   *
721   CTOPMZ   *
735   CTRCN    *
736   CTRCNB   *
737   CTRCNZ   *
727   CTRQB    *
728   CTRQBB   *
729   CTRQBZ   *
731   CTRTR    *
732   CTRTRB   *
733   CTRTRZ   *
747   CTSTA    *
748   CTSTAB   *
749   CTSTAZ   *
759   CTWDS    *
760   CTWDSB   *
761   CTWDSZ   *
688   DCBUFF   *
691   DCCHR    *
692   DCCHRB   *
693   DCCHRZ   *
689   DCCNT    *
687   DCRECL   *
187   DINTS    *
569   DISCLK    189
589   DISMP    *
584   DISPIM    188
813   DMBCA    *
814   DMBCAB   *
815   DMBCAZ   *
805   DMCWA    *
806   DMCWAB   *
807   DMCWAZ   *
785   DMFPA    *
786   DMFPAB   *
787   DMFPAZ   *
793   DMLCA    *
794   DMLCAB   *
795   DMLCAZ   *
797   DMLTA    *
798   DMLTAB   *
799   DMLTAZ   *
801   DMPTA    *
802   DMPTAB   *
803   DMPTAZ   *
781   DMRPA    *
782   DMRPAB   *
783   DMRPAZ   *
789   DMSTA    *
790   DMSTAB   *
791   DMSTAZ   *
809   DMSWA    *
810   DMSWAB   *
811   DMSWAZ   *
777   DMTPA    *
778   DMTPAB   *
779   DMTPAZ   *
615   DSCTAD   *
601   DSDASS   *
600   DSDVDN   *
612   DSLCKD   *
609   DSNAME   *
608   DSNORQ   *
613   DSOPCM   *
614   DSPSTI   *
610   DSREWD   *
606   DSUNAM   *
611   DSUNTN   *
512   EIGHT     143    167
183   EINTS    *
570   ENACLK    185
590   ENAMP    *
585   ENAPIM    184
1591  ERRE     1586
1592  ERRF     1561
1593  ERRI     1482
   0  ERROR     113    193    200    207
128   FETCHA   *
509   FIVE      149    173
1601  FNCLCB   1532   1534
508   FOUR      151    175
1600  FUNC22   1531
1462  GETMEM   *
251   GETQ     *
1432  IBIBF    *
1433  IBIBFB   *
1434  IBIBFZ   *
1436  IBLAS    *
1437  IBLASB   *
1438  IBLASZ   *
1424  IBLEN    *
1425  IBLENB   *
1426  IBLENZ   *
1420  IBLNK    *
1421  IBLNKB   *
```

```
1422   IBLNKZ   *
1428   IBSTA    *
1429   IBSTAB   *
1430   IBSTAZ   *
1440   IBSTS    *
1441   IBSTSB   *
1442   IBSTSZ   *
 378   LC         379    380    381    382    383    384    385    386    387
                  388    389    390    391    392    393    394    395    396
                  397    398    399    400    401    402    403    404    405
                  406    407    408    410    411    412    413    414    415
                  416    417    418    419    420    421    422    423    424
                  426    427    428    429    434    435    436    437    438
                  439    440    447    448    449    452    457    458    459
 855   LCABN    *
 856   LCABNB   *
 857   LCABNZ   *
 859   LCASY    *
 860   LCASYB   *
 861   LCASYZ   *
 923   LCBSC    *
 924   LCBSCB   *
 925   LCBSCZ   *
 919   LCCHN    *
 920   LCCHNB   *
 921   LCCHNZ   *
 851   LCCRC    *
 852   LCCRCB   *
 853   LCCRCZ   *
 895   LCCWB    *
 896   LCCWBB   *
 897   LCCWBZ   *
 891   LCCWC    *
 892   LCCWCB   *
 893   LCCWCZ   *
 899   LCCWD    *
 900   LCCWDB   *
 901   LCCWDZ   *
 887   LCCWI    *
 888   LCCWIB   *
 889   LCCWIZ   *
 903   LCCWP    *
 904   LCCWPB   *
 905   LCCWPZ   *
 907   LCCWR    *
 908   LCCWRB   *
 909   LCCWRZ   *
 883   LCCWS    *
 884   LCCWSB   *
 885   LCCWSZ   *
 911   LCCWT    *
 912   LCCWTB   *
 913   LCCWTZ   *
 835   LCIBA    *
 836   LCIBAB   *
 837   LCIBAZ   *
 823   LCIBF    *
 824   LCIBFB   *
 825   LCIBFZ   *
 831   LCIBL    *
 832   LCIBLB   *
 833   LCIBLZ   *
 839   LCIC1    *
 840   LCIC1B   *
 841   LCIC1Z   *
 843   LCIC2    *
 844   LCIC2B   *
 845   LCIC2Z   *
 863   LCIKE    *
 864   LCIKEB   *
 865   LCIKEZ   *
 931   LCITB    *
 932   LCITBB   *
 933   LCITBZ   *
 353   LCJP       354    355    356    363    364    365    366    367    370
 879   LCLCB    *
 880   LCLCBB   *
 881   LCLCBZ   *
 927   LCLDB    *
 928   LCLDBB   *
 929   LCLDBZ   *
 915   LCLTB    *
 916   LCLTBB   *
 917   LCLTBZ   *
 875   LCOBA    *
 876   LCOBAB   *
 877   LCOBAZ   *
 867   LCOBF    *
 868   LCOBFB   *
 869   LCOBFZ   *
 871   LCOBL    *
 872   LCOBLB   *
 873   LCOBLZ   *
 935   LCOKE    *
 936   LCOKEB   *
```

```
 937   LCOKEZ   *
 847   LCRCC    *
 848   LCRCCB   *
 849   LCRCCZ   *
 827   LCSMB    *
 828   LCSMBB   *
 829   LCSMBZ   *
 503   LHW      1527
1599   LOGLN    1525   1530
1049   LSABN    *
1050   LSABNB   *
1051   LSABNZ   *
1057   LSASC    *
1058   LSASCB   *
1059   LSASCZ   *
1001   LSASY    *
1002   LSASYB   *
1003   LSASYZ   *
1069   LSBSC    *
1070   LSBSCB   *
1071   LSBSCZ   *
1013   LSCC1    *
1014   LSCC1B   *
1015   LSCC1Z   *
1017   LSCC2    *
1018   LSCC2B   *
1019   LSCC2Z   *
1061   LSCHN    *
1062   LSCHNB   *
1063   LSCHNZ   *
1053   LSCRC    *
1054   LSCRCB   *
1055   LSCRCZ   *
 985   LSCTA    *
 986   LSCTAB   *
 987   LSCTAZ   *
1041   LSDSF    *
1042   LSDSFB   *
1043   LSDSFZ   *
 989   LSDST    *
 990   LSDSTB   *
 991   LSDSTZ   *
1025   LSEPF    *
1026   LSEPFB   *
1027   LSEPFZ   *
1009   LSLSP    *
1010   LSLSPB   *
1011   LSLSPZ   *
 993   LSMOD    *
 994   LSMODB   *
 995   LSMODZ   *
1073   LSNTO    *
1074   LSNTOB   *
1075   LSNTOZ   *
 997   LSPAR    *
 998   LSPARB   *
 999   LSPARZ   *
1037   LSPLA    *
1038   LSPLAB   *
1039   LSPLAZ   *
 953   LSRCA    *
 954   LSRCAB   *
 955   LSRCAZ   *
 957   LSREM    *
 958   LSREMB   *
 959   LSREMZ   *
1033   LSRRS    *
1034   LSRRSB   *
1035   LSRRSZ   *
 949   LSRRT    *
 950   LSRRTB   *
 951   LSRRTZ   *
 961   LSRTO    *
 962   LSRTOB   *
 963   LSRTOZ   *
 965   LSSRS    *
 966   LSSRSB   *
 967   LSSRSZ   *
 981   LSSWS    *
 982   LSSWSB   *
 983   LSSWSZ   *
1021   LSTER    *
1022   LSTERB   *
1023   LSTERZ   *
 945   LSTHD    *
 946   LSTHDB   *
 947   LSTHDZ   *
 969   LSWCA    *
 970   LSWCAB   *
 971   LSWCAZ   *
 973   LSWEM    *
 974   LSWEMB   *
 975   LSWEMZ   *
1029   LSWRS    *
1030   LSWRSB   *
```

```
1031   LSWRSZ   *
 977   LSWTO    *
 978   LSWTOB   *
 979   LSWTOZ   *
1005   LSXMM    *
1006   LSXMMB   *
1007   LSXMMZ   *
1045   LSYNC    *
1046   LSYNCB   *
1047   LSYNCZ   *
1077   LSYNR    *
1078   LSYNRB   *
1079   LSYNRZ   *
1065   LSYNT    *
1066   LSYNTB   *
1067   LSYNTZ   *
 591   MAP      *
 588   MP        589   590   592   593   594   595
 592   MPMR0    *
 593   MPMR1    *
 594   MPMR2    *
 595   MPMR3    *
 468   MT        469   470   471   472   473   474   475   476   477
                 478   479   480   481   482   483   484   485   486
                 487   488   489   490   491   492   493   494   495
                 496   497   498   499   500   501   502   503   504
                 505   506   507   508   509   510   511   512   513
                 514   515   516   517   518   519   520   521   522
                 523   524
 502   NEG      *
 513   NINE      141   165
1549   OCT4A2   1477
1565   OCT4B3   1560
1484   OCT4C1   1481
1569   OCT4C3   1574
1488   OCT4CB   1491
1495   OCT4CD   1502
1534   OCT4CE   1526  1529
1537   OCT4CF   1519
1575   OCT4D3   1571
1586   OCT4D4   1569
 505   ONE       157   181
   0   P          27    29    30    36    39    41    45    49    53
                  57    61    65    69    73    77    81    84    85
                  85    86    87    91    92    92    93    94    97
                  99   100   101   101   102   103   104   105   106
                 107   107   109   109   112   114   115   115   116
                 118   118   119   120   121   123   124   125   125
                 129   129   130   131   132   132   133   136   137
                 138   140   142   144   146   148   150   152   154
                 156   160   161   162   164   166   168   170   172
                 174   176   178   180   192   194   194   195   196
                 196   199   201   201   202   203   203   206   208
                 208   209
1329   PCBSL    *
1330   PCBSLB   *
1331   PCBSLZ   *
1317   PCCLN    *
1318   PCCLNB   *
1319   PCCLNZ   *
1341   PCCTP    *
1342   PCCTPB   *
1343   PCCTPZ   *
1321   PCECH    *
1322   PCECHB   *
1323   PCECHZ   *
1313   PCLLN    *
1314   PCLLNB   *
1315   PCLLNZ   *
1349   PCNTD    *
1350   PCNTDB   *
1351   PCNTDZ   *
1337   PCPCH    *
1338   PCPCHB   *
1339   PCPCHZ   *
1333   PCSWL    *
1334   PCSWLB   *
1335   PCSWLZ   *
1345   PCTYP    *
1346   PCTYPB   *
1347   PCTYPZ   *
1325   PCXMM    *
1326   PCXMMB   *
1327   PCXMMZ   *
 575   PIM1     *
 576   PIM2     *
 577   PIM3     *
 578   PIM4     *
 579   PIM5     *
 580   PIM6     *
 581   PIM7     *
 582   PIM8     *
 699   POST     *
1287   PSABN    *
1288   PSABNB   *
```

```
1289   PSABNZ   *
1239   PSASY    *
1240   PSASYB   *
1241   PSASYZ   *
 670   PSBADT   *
 666   PSBEG    *
1299   PSBSC    *
1300   PSBSCB   *
1301   PSBSCZ   *
1251   PSCC1    *
1252   PSCC1B   *
1253   PSCC1Z   *
1255   PSCC2    *
1256   PSCC2B   *
1257   PSCC2Z   *
1291   PSCRC    *
1292   PSCRCB   *
1293   PSCRCZ   *
1271   PSDEF    *
1272   PSDEFB   *
1273   PSDEFZ   *
1279   PSDSF    *
1280   PSDSFB   *
1281   PSDSFZ   *
1267   PSDWN    *
1268   PSDWNB   *
1269   PSDWNZ   *
 672   PSEND    *
1263   PSEPF    *
1264   PSEPFB   *
1265   PSEPFZ   *
1247   PSLSP    *
1248   PSLSPB   *
1249   PSLSPZ   *
1231   PSMOD    *
1232   PSMODB   *
1233   PSMODZ   *
 671   PSNSEC   *
1235   PSPAR    *
1236   PSPARB   *
1237   PSPARZ   *
1275   PSPLA    *
1276   PSPLAB   *
1277   PSPLAZ   *
 667   PSPROT   *
1259   PSTER    *
1260   PSTERB   *
1261   PSTERZ   *
1243   PSXMM    *
1244   PSXMMB   *
1245   PSXMMZ   *
1283   PSYNC    *
1284   PSYNCB   *
1285   PSYNCZ   *
1303   PSYNR    *
1304   PSYNRB   *
1305   PSYNRZ   *
1295   PSYNT    *
1296   PSYNTB   *
1297   PSYNTZ   *
  32   PUSH     *
1467   PUTMEM   *
 228   PUTQ     *
 532   RA0      *
 533   RA1      *
 651   RADNR    *
 534   RB0      *
 535   RB1      *
 649   RFCB     1507
 504   RHW      1521   1539   1551
 645   ROPWD    1475   1538   1550
1456   ROPWDB   1475
1457   ROPWDZ   1475
1594   RQADR    1472   1503   1537   1549
 642   RSTPR    1504
 650   RTIDB    *
1602   SAVX     1533   1536
  96   SETA     *
 111   SETB     *
 191   SETF     *
 511   SEVEN     145    169
 510   SIX       147    171   1476
  26   SPACE    *
 135   SUBAT    *
 288   TBATSK   *
 287   TBCPTH   *
 274   TBENTY   *
 268   TBEVNT   *
 282   TBIO     *
 277   TBISA    *
 278   TBISB    *
 280   TBISP    *
 281   TBISRS   *
 294   TBIST    *
 279   TBISX    *
```

```
292   TBKEY    *
283   TBKN1    *
284   TBKN2    *
285   TBKN3    *
293   TBMIMG   *
291   TBNUCL   *
267   TBPL     *
269   TBRSA    *
270   TBRSB    *
289   TBRSE    *
272   TBRSP    *
273   TBRSTS   *
271   TBRSX    *
322   TBS0     *
321   TBS1     *
309   TBS10    *
308   TBS11    *
306   TBS12    *
305   TBS13    *
304   TBS14    *
302   TBS15    *
320   TBS2     *
318   TBS3     *
317   TBS4     *
316   TBS5     *
314   TBS6     *
313   TBS7     *
312   TBS8     *
310   TBS9     *
290   TBSIZ    *
266   TBST     *
286   TBTLC    *
276   TBTMIN   *
275   TBTMS    *
265   TBTRD    *
  0   TC$TCD   1458  1513  1516  1568
1115  TCBSL    *
1116  TCBSLB   *
1117  TCBSLZ   *
1099  TCCLN    1497  1520
1100  TCCLNB   *
1101  TCCLNZ   *
1127  TCCON    *
1128  TCCONB   *
1129  TCCONZ   *
1095  TCCTA    1506
1096  TCCTAB   *
1097  TCCTAZ   *
1151  TCCTP    1517
1152  TCCTPB   *
1153  TCCTPZ   *
1596  TCDADR   1485  1493  1505  1514
1187  TCDCC    *
1188  TCDCCB   *
1189  TCDCCZ   *
1460  TCDSIZ   1478  1487  1580
1195  TCDTO    *
1196  TCDTOB   *
1197  TCDTOZ   *
1123  TCECH    *
1124  TCECHB   *
1125  TCECHZ   *
1199  TCID1    1509
1200  TCID1B   *
1201  TCID1Z   *
1203  TCID2    1511
1204  TCID2B   *
1205  TCID2Z   *
1171  TCLDF    *
1172  TCLDFB   *
1173  TCLDFZ   *
1103  TCLLN    1523
1104  TCLLNB   *
1105  TCLLNZ   *
1143  TCNOD    *
1144  TCNODB   *
1145  TCNODZ   *
1139  TCNTD    *
1140  TCNTDB   *
1141  TCNTDZ   *
1595  TCPADR   1473  1492
1107  TCPCH    *
1108  TCPCHB   *
1109  TCPCHZ   *
1459  TCPSIZ   1494
1135  TCRBC    *
1136  TCRBCB   *
1137  TCRBCZ   *
1191  TCRBF    *
1192  TCRBFB   *
1193  TCRBFZ   *
1175  TCRCA    *
1176  TCRCAB   *
1177  TCRCAZ   *
1155  TCRMD    *
```

```
1156   TCRMDB   *
1157   TCRMDZ   *
1091   TCRQH    1559
1092   TCRQHB   *
1093   TCRQHZ   *
1163   TCRRS    *
1164   TCRRSB   *
1165   TCRRSZ   *
1179   TCSTO    *
1180   TCSTOB   *
1181   TCSTOZ   *
1111   TCSWL    *
1112   TCSWLB   *
1113   TCSWLZ   *
1087   TCTCD    1515  1570  1572  1573  1576  1577  1578
1088   TCTCDB   *
1089   TCTCDZ   *
1147   TCTYP    *
1148   TCTYPB   *
1149   TCTYPZ   *
1131   TCWBC    *
1132   TCWBCB   *
1133   TCWBCZ   *
1183   TCWCA    *
1184   TCWCAB   *
1185   TCWCAZ   *
1159   TCWMD    *
1160   TCWMDB   *
1161   TCWMDZ   *
1167   TCWRS    *
1168   TCWRSB   *
1169   TCWRSZ   *
1119   TCXMM    *
1120   TCXMMB   *
1121   TCXMMZ   *
1597   TCZHLD   1495  1500
 514   TEN       139   163
 205   TESTF    *
 507   THREE     153   177
1375   TIDSP    *
1376   TIDSPB   *
1377   TIDSPZ   *
1367   TIDWN    *
1368   TIDWNB   *
1369   TIDWNZ   *
1391   TINET    *
1392   TINETB   *
1393   TINETZ   *
1379   TIODN    *
1380   TIODNB   *
1381   TIODNZ   *
1387   TIODP    *
1388   TIODPB   *
1389   TIODPZ   *
1383   TIOSC    *
1384   TIOSCB   *
1385   TIOSCZ   *
1371   TISEC    *
1372   TISECB   *
1373   TISECZ   *
1359   TITU1    *
1360   TITU1B   *
1361   TITU1Z   *
1363   TITU2    *
1364   TITU2B   *
1365   TITU2Z   *
1221   TPFPA    *
1222   TPFPAB   *
1223   TPFPAZ   *
1213   TPRPA    *
1214   TPRPAB   *
1215   TPRPAZ   *
1217   TPWPA    *
1218   TPWPAB   *
1219   TPWPAZ   *
1472   TTYTCM     12  1455  1603
 506   TWO       155   179
 440   V$1MIN   *
 458   V$BFC    *
 366   V$BGLB   *
 363   V$BIC1   *
 392   V$BTB    *
 400   V$BTBM   *
 457   V$BVN    *
 408   V$CAM    *
 420   V$CKB    *
 448   V$CKIT   *
 387   V$CKPT   *
 380   V$CPL    *
 367   V$CRDM   *
 410   V$CRDR   *
 421   V$CRM    *
 381   V$CRS    *
 426   V$CTAD   *
 379   V$CTL    *
```

```
418   V$CTMS   *
364   V$DATE   *
422   V$DSTB   *
435   V$ERFG   *
416   V$FGLB   *
385   V$FLRS   *
417   V$FREE   *
401   V$GFCB   *
397   V$IM     *
447   V$IOA    *
449   V$JCB    *
356   V$JCFG   *
370   V$JCTM   *
354   V$JNAM   *
436   V$JOP    *
407   V$KEY    *
355   V$LCNT   *
390   V$LER    *
423   V$LIT    *
395   V$LLUP   *
396   V$LPP    *
386   V$LRSK   *
389   V$LSAL   *
414   V$LUNT   *
394   V$LUP    *
437   V$LUT1   *
438   V$LUT2   *
439   V$LUT3   *
399   V$MAP    *
402   V$MIMG   *
398   V$MPM    *
428   V$NCTR   *
393   V$NPAG   *
452   V$OCB    *
415   V$OPCF   *
388   V$OPCL   *
424   V$PGT    *
429   V$PIMN   *
365   V$PLCT   *
384   V$PTVB   *
427   V$SCTL   *
419   V$SCV    *
434   V$SLFG   *
403   V$ST0    *
404   V$ST1    *
405   V$ST2    *
406   V$ST3    *
382   V$TB     *
411   V$TBGT   *
459   V$TFC    *
391   V$TJCP   *
413   V$TMN    *
412   V$TMS    *
383   V$UTB    *
  0   VT$GTM   1464   1465
  0   VT$LTT   1458   1540   1552
  0   VT$MP1   1461   1479   1582
  0   VT$OCY   1461   1483   1585   1587
  0   VT$OCZ   1461   1545   1562
  0   VT$PTM   1469   1470
  0   VTPUSH     33     35
697   X         232    254   1475   1496   1504   1507   1508   1510   1515
                1559   1570   1572   1573   1576   1578
469   ZERO     *
```

```
000001 A     1 VORTEX SET     1                PUT LAST FOR VORTEX                                  V2  02  00001
             2 *  THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES              02  00002
             3 *                                                                                    02  00003
             4 *       V.D.M.    PART NO.      92L1105-016B                                         02  00004
             5 *                                                                                    02  00005
             6 *                               RELEASED      3-1-74                                 02  00006
             7 *                                                                                    02  00007
             8 *                                                                                    02  00008
             9 *              VT$DCT                                                                02  00009
            10 *                                                                                    02  00010
            11 *                                                                                    02  00011
            12               TITLE    VT$DCT                                                       02  00012
            13               NLIS                                                                  02  00013
          1443               LIST                                                                  ********
          1444 *                                                                                    02  00014
          1445               EJEC                                                                  02  00015
          1446 *                                                                                    02  00016
          1447 *                                                                                    02  00017
          1448 *                                                                                    02  00018
          1449 *           VT$DCT - TERMINAL UNIT OPEN/CLOSE MODULE                                 02  00019
          1450 *                                                                                    02  00020
          1451 *                    THIS PROGRAM IS CALLED BY MEANS OF A                            02  00021
          1452 *                    SCHED CALL TO THE REAL-TIME EXEC.  UPON                         02  00022
          1453 *                    BEING ACTIVATED, IT PROCESSES TERMINAL                          02  00023
          1454 *                    OPEN AND CLOSE REQUESTS FROM A QUEUE                            02  00024
          1455 *                    HEADED BY TC$DCM.                                               02  00025
          1456 *                                                                                    02  00026
          1457 *                                                                                    02  00027
          1458 *                                                                                    02  00028
          1459 *                                                                                    02  00029
          1460               NAME     VT$DCT,VT$DCY,VT$DCZ                                         02  00030
          1461 *                                                                                    02  00031
          1462 *                                                                                    02  00032
000152 A  1463  TRMLUN  EQU      106              LUN FOR FILE VT$DFT                                02  00033
000306 A  1464  TRMFKY  EQU      'F'              PROTECTION KEY FOR TRMLUN                          02  00034
000001 A  1465  NTCTYP  EQU      1                NUMBER OF TCM TYPES                                02  00035
000017 A  1466  TCDSIZ  EQU      15               SIZE OF TCD                                        02  00036
000004 A  1467  TIBSIZ  EQU      4                SIZE OF TERMINAL INDEX BLOCK                       02  00037
          1468 *                                                                                    02  00038
          1469 *                                                                                    02  00039
000001 A  1470  X       EQU      1                                                                  02  00040
000002 A  1471  B       EQU      2                                                                  02  00041
          1472            EXT    V$EXEC,TC$DCM,TC$TCD                                             02  00042
          1473            EXT    TC$FRQ                                                           02  00043
          1474            EXT    VT$LTT                                                           02  00044
          1475  VT$DCT    DINTS                                                                   02  00045
000000 100444 A
000001 100747 A
000002 006017 A  1476           LDAE     TC$DCM           QUEUE EMPTY ?                           02  00046
000003 000000 E
000004 001016 A  1477           JANZ     DCT1B1           NO                                      02  00047
000005 000011 R
          1478                  EXIT                      YES - EXIT                              02  00048
000006 006505 A
000007 000000 E
000010 000200 A
          1479  DCT1B1  OPEN     TRMFCB,TRMLUN        OPEN TCD FILE                               02  00049
000011 006505 A
000012 000000 E
000013 100000 A
000014 003152 A
000015 000635 R
000016 000000 A
000017 000000 A
000020 006017 A  1480           LDAE     DCT1B1+2                                                02  00050
000021 000013 R
          1481                  STAT     DCT1B1,DCT3A1,DCT1C1,DCT1C1,DCT3A1                      02  00051
000022 006505 A
000023 000000 E
000024 000011 R
000025 000450 R
000026 000031 R
000027 000031 R
000030 000450 R
000031 006037 A  1482  DCT1C1  LDXE     TC$DCM           ADRS OF REQUEST BLOCK                   02  00052
000032 000003 E
          1483                  IFT      VORTEX-2                                          V2  02  00053
          1484                  GOTO     1                                                 V2  02  00054
          1485                  STX      *+5                                               V2  02  00055
          1486                  PASS     5,0,DCRQB+1      GET RQBLK                        V2  02  00056
          1487                  LDA      DCLCB                                             V2  02  00057
          1488                  STA      DCRQB+3                                           V2  02  00058
          1489                  LDA      DCRQB+1                                           V2  02  00059
          1490  DCTALC  EQU      *+5                                                       V2  02  00060
          1491                  STA      *+5                                               V2  02  00061
          1492                  PASS     5,0,DCLCB+1      GET LCB                          V2  02  00062
          1493                  LDA      DCLCB+5                                           V2  02  00063
          1494                  STA      DCRQB+1          MOVE CTBL                        V2  02  00064
          1495                  LDX      DCRQB                                             V2  02  00065
          1496  1               CONT                                                       V2  02  00066
000033 015001 A  1497           LDA      RQPWD,X          SET OPEN/CLOSE FLAG,                 02  00067
000034 006150 A  1498           ANAI     07400            ZERO FOR OPEN REQUESTS,              02  00068
000035 007400 A
000036 006130 A  1499           ERAI     03000            NOT ZERO FOR CLOSE REQUESTS          02  00069
000037 003000 A
```

```
000040 054607 A 1500          STA     DCFLG                                                    02 00070
000041 001016 A 1501          JANZ    DCT1X2      CLOSE, DO NOT CHECK IF OPEN HERE             02 00071
000042 000064 R
000043 015001 A 1502          LDA     RQPWD,X     GET LUN                                      02 00072
000044 150463 A 1503          ANA     RHW         ISOLATE IT                                   02 00073
000045 006127 A 1504          ADDE    VT$LTT      ADD BASE OF LOGICAL TERMINAL TABLE           02 00074
000046 000000 E
000047 005311 A 1505          DAR                 ADJUST IT                                    02 00075
000050 005014 A 1506          TAX                 ENTRY ADDRESS                                02 00076
000051 015000 A 1507          LDA     0,X         FETCH ENTRY                                  02 00077
000052 001010 A 1508          JAZ     DCT1X1      NOT OPEN                                     02 00078
000053 000062 R
000054 001004 A 1509          JAN     DCT1X1      DOWN                                         02 00079
000055 000062 R
000056 005001 A 1510          TZA                 ALREADY OPEN                                 02 00080
000057 054573 A 1511          STA     ERRCOD      SET FOR NORMAL COMPLETION                    02 00081
000060 001000 A 1512          JMP     DCTM1          COMPLETE REQUEST                          02 00082
000061 000576 R
               1513           IFF     VORTEX-2                                             V2  02 00083
               1514 DCT1X1    LDX     DCRQB                                                V2  02 00084
               1515           IFF     VORTEX-1                                             V2  02 00085
000062 006037 A 1516 DCT1X1    LDXE    TC$DCM      ADDRESS OF REQUEST                           02 00086
000063 000032 E
000064 025002 A 1517 DCT1X2    LDB     RFCB,X      ADDRESS OF DCB                               02 00087
000065 016000 A 1518          LDA     0,B                                                      02 00088
000066 054601 A 1519          STA     TEM1        MOVE TUID                                    02 00089
000067 016001 A 1520          LDA     1,B         TO TEMP LOCS.                                02 00090
000070 054600 A 1521          STA     TEM2                                                     02 00091
000071 005101 A 1522          INCR    01          SET FCB FOR 1ST RECORD                       02 00092
000072 054545 A 1523          STA     TRMFCB+3    OF TERMINAL PROT. FILE                       02 00093
               1524 DCT1C2    READ    TRMFCB,TRMLUN    READ INDEX RECORD                       02 00094
000073 006505 A
000074 000012 E
000075 100000 A
000076 000152 A
000077 000635 R
000100 000000 A
000101 000000 A
000102 006017 A 1525          LDAE    DCT1C2+2                                                 02 00095
000103 000075 R
               1526           STAT    DCT1C2,DCT3A1,DCT3A1,DCT3A1,DCT3A1                       02 00096
000104 006505 A
000105 000023 E
000106 000073 R
000107 000450 R
000110 000450 R
000111 000450 R
000112 000450 R
000113 034557 A 1527          LDX     INBUF       NO. OF INDICES IN THIS RECORD                02 00097
000114 006020 A 1528          LDBI    TIBSIZ                                                   02 00098
000115 000004 A
000116 006016 A 1529 DCT1D1    LDAE    INBUF,B     COMPARE 1ST WORD                             02 00099
000117 000673 R
000120 144547 A 1530          SUB     TEM1        OF TUID                                      02 00100
000121 001016 A 1531          JANZ    DCT1D2      NO MATCH                                     02 00101
000122 000130 R
000123 006016 A 1532          LDAE    INBUF+1,B   COMPARE 2ND WORD                            02 00102
000124 000674 R
000125 144543 A 1533          SUB     TEM2        OF TUID                                      02 00103
000126 001010 A 1534          JAZ     DCT1F1      JUMP IF MATCH                                02 00104
000127 000153 R
000130 005344 A 1535 DCT1D2    DXR                 DECREMENT COUNT                              02 00105
000131 001040 A 1536          JXZ     DCT1E1      JUMP IF END OF RECORD                        02 00106
000132 000141 R
000133 005021 A 1537          TBA                 POINT TO                                     02 00107
000134 006120 A 1538          ADDI    TIBSIZ      NEXT INDEX BLOCK                             02 00108
000135 000004 A
000136 005012 A 1539          TAB                                                              02 00109
000137 001000 A 1540          JMP     DCT1D1                                                   02 00110
000140 000116 R
000141 014533 A 1541 DCT1E1    LDA     INBUF+2     END OF RECORD -                              02 00111
000142 001010 A 1542          JAZ     DCT1E2      JUMP IF LAST RECORD                          02 00112
000143 000150 R
000144 004347 A 1543          LSRA    7           PUT NEXT RECORD                              02 00113
000145 054472 A 1544          STA     TRMFCB+3       NO. IN FCB                                02 00114
000146 001000 A 1545          JMP     DCT1C2      GO BACK TO READ NEXT RECORD                  02 00115
000147 000073 R
000150 014507 A 1546 DCT1E2    LDA     ERRA        TUID NOT FOUND -                             02 00116
000151 001000 A 1547          JMP     DCT3A1      SET ERROR CODE - GO TO END                   02 00117
000152 000450 R
000153 006016 A 1548 DCT1F1    LDAE    INBUF+2,B   DEVICE DECLARED DOWN ?                      02 00118
000154 000675 R
000155 001002 A 1549          JAP     DCT2A1      NO                                           02 00119
000156 000165 R
000157 014470 A 1550          LDA     DCFLG       YES - OPEN REQUEST                           02 00120
000160 001016 A 1551          JANZ    DCT2A1      NO                                           02 00121
000161 000165 R
000162 014476 A 1552          LDA     ERRB        YES - SET ERROR CODE                         02 00122
000163 001000 A 1553          JMP     DCT3A1      GO TO END                                    02 00123
000164 000450 R
000165 006016 A 1554 DCT2A1    LDAE    INBUF+2,B                                                02 00124
000166 000675 R
000167 150460 A 1555          ANA     BR15                                                     02 00125
000170 004347 A 1556          LSRA    7           PUT SECTOR ADRS FOR TUID                     02 00126
000171 054446 A 1557          STA     TRMFCB+3       IN FCB                                    02 00127
```

```
000172 006016 A 1558          LDAE    INBUF+2,B       GET DISPLACEMENT OF TCD                          02 00128
000173 000675 R
000174 150475 A 1559          ANA     BM177           IN RECORD                                        02 00129
000175 054453 A 1560          STA     DSPSAV                                                           02 00130
               1561 DCT2A2    READ    TRMFCB,TRMLUN READ IN TCD PROTOTYPE                              02 00131
000176 006505 A
000177 000074 E
000200 100000 A
000201 000152 A
000202 000635 R
000203 000000 A
000204 000000 A
000205 006017 A 1562          LDAE    DCT2A2+2                                                         02 00132
000206 000200 R
               1563           STAT    DCT2A2,DCT3A1,DCT3A1,DCT3A1,DCT3A1                               02 00133
000207 006505 A
000210 000105 E
000211 000176 R
000212 000450 R
000213 000450 R
000214 000450 R
000215 000450 R
000216 006037 A 1564          LDXE    TC$TCD          SCAN TCD QUEUE FOR TUID                          02 00134
000217 000000 E
000220 001040 A 1565 DCT2B1   JXZ     DCT2D1          JUMP IF END OF QUEUE                             02 00135
000221 000243 R
               1566           FETCHA  X,TCID1,TCID1B,TCID1Z                                            02 00136
000222 015015 A
000223 134444 A 1567          ERA     TEM1            1ST WDS OF TUID MATCH ?                          02 00137
000224 001016 A 1568          JANZ    DCT2C1          NO                                               02 00138
000225 000232 R
               1569           FETCHA  X,TCID2,TCID2B,TCID2Z   YES -                                    02 00139
000226 015016 A
000227 134441 A 1570          ERA     TEM2            2ND WDS OF TUID MATCH ?                          02 00140
000230 001010 A 1571          JAZ     DCT2C2          YES                                              02 00141
000231 000235 R
000232 035000 A 1572 DCT2C1   LDX     TCTCD,X         NO - GET NEXT TCD                                02 00142
000233 001000 A 1573          JMP     DCT2B1          GO BACK TO CHECK IT                              02 00143
000234 000220 R
               1574 *                                                                                  02 00144
               1575 *                                                                                  02 00145
000235 014412 A 1576 DCT2C2   LDA     DCFLG           TUID FOUND - OPEN REQUEST ?                      02 00146
000236 001016 A 1577          JANZ    DCT2E1          NO                                               02 00147
000237 000267 R
000240 014421 A 1578          LDA     ERRC            YES - SET ERROR CODE                             02 00148
000241 001000 A 1579          JMP     DCT3A1          GO TO END                                        02 00149
000242 000450 R
               1580 *                                                                                  02 00150
               1581 *                                                                                  02 00151
000243 014404 A 1582 DCT2D1   LDA     DCFLG           TUID NOT FOUND - CLOSE REQUEST ?                 02 00152
000244 001010 A 1583          JAZ     DCT2D2          NO                                               02 00153
000245 000251 R
000246 014414 A 1584          LDA     ERRE            YES - SET ERROR CODE                             02 00154
000247 001000 A 1585          JMP     DCT3A1          GO TO END                                        02 00155
000250 000450 R
               1586 *                                                                                  02 00156
       000251 R 1587 DCT2D2   EQU     *                                                        V2      02 00157
               1588           IFF     VORTEX-2                                                 V2      02 00158
               1589           LDX     DCRQB                                                    V2      02 00159
               1590           IFF     VORTEX-1                                                 V2      02 00160
000251 006037 A 1591          LDXE    TC$DCM                                                   V2      02 00161
000252 000063 E
000253 015001 A 1592          LDA     RDPWD,X         GET LUN FOR CCM                                  02 00162
000254 150463 A 1593          ANA     RHW                                                              02 00163
000255 006127 A 1594          ADDE    VT$LTT          GET LTT ENTRY                                    02 00164
000256 000046 E
000257 005311 A 1595          DAR                                                                      02 00165
000260 005014 A 1596          TAX                                                                      02 00166
000261 015000 A 1597          LDA     0,X             TERMINAL CLOSED ?                                02 00167
000262 001010 A 1598          JAZ     DCT2E1          YES                                              02 00168
000263 000267 R
000264 014374 A 1599          LDA     ERRB            TERMINAL DOWN - SET ERROR CODE                   02 00169
000265 001000 A 1600          JMP     DCT3A1          GO TO END                                        02 00170
000266 000450 R
               1601 *                                                                                  02 00171
000267 014402 A 1602 DCT2E1   LDA     INBFAD                                                           02 00172
000270 124360 A 1603          ADD     DSPSAV          COMPUTE BASE OF TCD PROTOTYPE                    02 00173
000271 054362 A 1604          STA     TCDADR                                                           02 00174
000272 006140 A 1605          SUBI    TCCLN           DEFFERENCE BETWEEN PROTOTYPE AND ACT TCD         02 00175
000273 000003 A
000274 005014 A 1606          TAX                                                                      02 00176
       000001 A 1607 TCPROT   SET     X                                                                02 00177
               1608           FETCHA  TCPROT,TCTYP,TCTYPB,TCTYPZ      GET TCM TYPE                     02 00178
000275 015005 A
000276 004350 A
000277 150472 A
000300 054354 A 1609          STA     TCMTYP                                                           02 00179
000301 006140 A 1610          SUBI    NTCTYP          VALID TCM TYPE?                                  02 00180
000302 000001 A
000303 001004 A 1611          JAN     DCT2EA          YES                                              02 00181
000304 000310 R
000305 014360 A 1612          LDA     ERRH            NO - SET ERROR CODE                              02 00182
000306 001000 A 1613          JMP     DCT3A1          GO TO END                                        02 00183
000307 000450 R
               1614 DCT2EA    FETCHA  TCPROT,TCCLN,TCCLNB,TCCLNZ   GET LUN FOR CCM                    02 00184
```

```
000310 015003 A
000311 150463 A
000312 002000 A 1615          JMPM    LNCTAD                          GET CONTRLR TBL ADRS FOR CCM02 00185
000313 001102 R
000314 001002 A 1616          JAP     OCT2EB          VALID LUN ?                                    02 00186
000315 000321 R
000316 014346 A 1617          LDA     ERRG            NO - SET ERROR CODE                            02 00187
000317 001000 A 1618          JMP     OCT3A1                                                         02 00188
000320 000450 R
000321 054330 A 1619 OCT2EB   STA     CCMCAD          SAVE CONTRLR TBL ADRS                          02 00189
000322 005012 A 1620          TAB                                                                    02 00190
000323 026022 A 1621          LDB     DMLTA,B         GET BASE ADRS FOR                              02 00191
000324 064332 A 1622          STB     LLTBAS          LLT AND SAVE                                   02 00192
               1623          FETCHA  TCPROT,TCLLN,TCLLNB,TCLLNZ  GET LOGICAL LINE NO.               02 00193
000325 015003 A
000326 004350 A
000327 054317 A 1624          STA     LLNUM           SAVE LOG. LINE NUMBER                          02 00194
000330 146000 A 1625          SUB     0,B             VALID LOG. LINE NO. ?                          02 00195
000331 001004 A 1626          JAN     OCT2EC          YES                                            02 00196
000332 000336 R
000333 014324 A 1627          LDA     ERRA            NO - SET ERRROR CODE                           02 00197
000334 001000 A 1628          JMP     OCT3A1          GO TO END                                      02 00198
000335 000450 R
000336 014311 A 1629 OCT2EC   LDA     OCFLG                                                          02 00199
000337 001016 A 1630          JANZ    OCT2F1          CLOSE REQUEST                                  02 00200
000340 000426 R
000341 014305 A 1631          LDA     LLNUM                                                          02 00201
000342 005002 A 1632          TZB                                                                    02 00202
000343 004541 A 1633          LLSR    1               CONVERT TO DISPLACEMENT                        02 00203
000344 124312 A 1634          ADD     LLTBAS          ADD BASE OF LLT                                02 00204
000345 005111 A 1635          IAR                     PLUS ONE                                       02 00205
000346 004460 A 1636          LLRL    16                                                             02 00206
000347 026000 A 1637          LDB     0,B             FIND ENTRY IN LLT                              02 00207
000350 004460 A 1638          LLRL    16                                                             02 00208
000351 001026 A 1639          JBNZ    OCT2ED          RIGHT BYTE ?                                   02 00209
000352 000354 R
000353 004350 A 1640          LSRA    8               NO - LEFT                                      02 00210
000354 150463 A 1641 OCT2ED   ANA     RHW             HAS LOG LINE BEEN                              02 00211
000355 130463 A 1642          ERA     RHW             ASSIGNED TO PHYS LINE ?                        02 00212
000356 001010 A 1643          JAZ     OCT2EK          NO, SO CANNOT BE OPEN                          02 00213
000357 000375 R
000360 130463 A 1644          ERA     RHW             YES -                                          02 00214
000361 024270 A 1645          LDB     CCMCAD                                                         02 00215
000362 126023 A 1646          ADD     DMPTA,B         GET ENTRY IN PLT                               02 00216
000363 005111 A 1647          IAR                                                                    02 00217
000364 005012 A 1648          TAB                                                                    02 00218
000365 016000 A 1649          LDA     0,B             HAS LINE BEEN OPENED ?                         02 00219
000366 001010 A 1650          JAZ     OCT2EK          NO                                             02 00220
000367 000375 R
000370 001002 A 1651          JAP     OCT2F1          YES                                            02 00221
000371 000426 R
000372 014266 A 1652          LDA     ERRB            LINE HAS BEEN DECLARED DOWN -                  02 00222
000373 001000 A 1653          JMP     OCT3A1          SET ERROR CODE AND GO TO END                   02 00223
000374 000450 R
000375 014251 A 1654 OCT2EK   LDA     LLNUM                                                          02 00224
000376 054235 A 1655          STA     OCTLCB+2        SET LLN IN LCB                                 02 00225
000377 014011 A 1656          LDA     OCT2E3+3                                                       02 00226
000400 150462 A 1657          ANA     LHW             CLEAR OLD LUN FROM OPEN CALL                   02 00227
000401 054007 A 1658          STA     OCT2E3+3                                                       02 00228
               1659          FETCHA  TCPROT,TCCLN,TCCLNB,TCCLNZ  GET LUN FOR CCM                    02 00229
000402 015003 A
000403 150463 A
000404 114004 A 1660          ORA     OCT2E3+3                                                       02 00230
000405 054003 A 1661          STA     OCT2E3+3        SET LUN FOR CCM IN OPEN CALL                   02 00231
               1662 OCT2E3   OPEN    OCTLCB,0        OPEN LINE WITH WAIT                            02 00232
000406 006505 A
000407 000177 E
000410 100000 A
000411 003000 A
000412 000632 R
000413 000000 A
000414 000000 A
000415 006017 A 1663          LDAE    OCT2E3+2                                                       02 00233
000416 000410 R
               1664          STAT    OCT2E3,OCT3A1,OCT3A1,OCT3A1,OCT3A1  CHECK STATUS               02 00234
000417 006505 A
000420 000210 E
000421 000406 R
000422 000450 R
000423 000450 R
000424 000450 R
000425 000450 R
000426 014226 A 1665 OCT2F1   LDA     TCMTYP                                                         02 00235
000427 004241 A 1666          LRLA    1               COMPUTE DISPLACEMENT IN                        02 00236
000430 005014 A 1667          TAX                     JUMP TABLE FOR THIS TCM TYPE                   02 00237
000431 005001 A 1668          TZA                     SET FLAG -                                     02 00238
000432 054220 A 1669          STA     ERRCOD          NO ERRORS IN ROOT SEGMENT                      02 00239
               1670          IFF     VORTEX-2                                              V2       02 00240
               1671          LDA     OCRQB                                                 V2       02 00241
               1672          IFF     VORTEX-1                                              V2       02 00242
000433 006017 A 1673          LDAE    TC$OCM          GET RQBLK ADRS                                 02 00243
000434 000252 E
000435 024216 A 1674          LDB     TCDADR          ADRS OF TCD PROTOTYPE IN B                     02 00244
000436 006705 A 1675          IJMP    OCT2F3,1        GO TO GET OVERLAY                              02 00245
000437 000440 R
```

```
                    1676 *
                    1677 *   JUMP TABLE FOR TCM OVERLAYS - POSITION IN TABLE IS DETERMINED                02 00246
                    1678 *   BY TCM TYPE (FROM PROTOTYPE TCD).                                            02 00247
                    1679 *                                                                                02 00248
                                                                                                          02 00249
000440 001000 A     1680 DCT2F3 JMP      OVLAY1          OVERLAY FOR TTY TCM                              02 00250
000441 000442 R
                    1681 *
                    1682 *   END OF TABLE                                                                 02 00251
                    1683 *                                                                                02 00252
                                                                                                          02 00253
                    1684 OVLAY1 OVLAY    0,'TT','YT','CM'     CALL IN TTY TCM                             02 00254
000442 006505 A
000443 000007 E
000444 001300 A
000445 152324 A
000446 154724 A
000447 141715 A
                    1685 *
                    1686 *                                                                                02 00255
                                                                                                          02 00256
000450 005002 A     1687 DCT3A1 TZB                      RETURN HERE IF ERRORS IN                         02 00257
000451 064204 A     1688        STB      ERDVLY          ROOT SEGMENT, CLEAR OVERLAY ERROR FLAG           02 00258
000452 001000 A     1689        JMP      DCT3B1                                                           02 00259
000453 000463 R
000454              1690 VT$DCY BSS      0               RETURN HERE FROM OVERLAY IF INT. ENABLED         02 00260
000454 001000 A     1691        JMP      VT$DCZ+2                                                         02 00261
000455 000460 R
000456              1692 VT$DCZ BSS      0               RETURN HERE TO ENABLE INT.                       02 00262
                    1693        EINTS                    ENABLE INTERRUPTS                               02 00263
000456 100244 A
000457 100147 A
000460 054175 A     1694        STA      ERDVLY                                                           02 00264
000461 001000 A     1695        JMP      DCTGA                                                            02 00265
000462 000466 R
000463 054167 A     1696 DCT3B1 STA      ERRCOD          SAVE ERROR CODE                                  02 00266
                    1697 *                                                                                02 00267
                    1698 *      DO CHECKING HERE FOR INCREMENTING OF DECREMENTING THE                     02 00268
                    1699 *      NUMBER OF TERMINALS OPEN ON A LINE, AND IF NECESSARY                      02 00269
                    1700 *      ISSUE A CLOSE ON THE LINE.                                                02 00270
                    1701 *                                                                                02 00271
000464 001016 A     1702        JANZ     DCTM1           YES - GO TO END                                  02 00272
000465 000576 R
                    1703 *                                                                                02 00273
                    1704 *      FIND LSD FOR LINE                                                         02 00274
                    1705 *                                                                                02 00275
000466 014160 A     1706 DCTGA  LDA      LLNUM           GET LOG. LINE NO.                                02 00276
000467 005002 A     1707        TZB                                                                       02 00277
000470 004541 A     1708        LLSR     1               CONVERT TO DISPLACEMNT                           02 00278
000471 124165 A     1709        ADD      LLTBAS          ADD BASE ADRS FOR LLT                            02 00279
000472 005111 A     1710        IAR                      PLUS ONE                                         02 00280
000473 004460 A     1711        LLRL     16                                                               02 00281
000474 026000 A     1712        LDB      0,B             FIND ENTRY IN LLT                                02 00282
000475 004460 A     1713        LLRL     16                                                               02 00283
000476 001026 A     1714        JBNZ     DCTGC           RIGHT BYTE ?                                     02 00284
000477 000501 R
000500 004350 A     1715        LSRA     8               NO, LEFT                                         02 00285
000501 150463 A     1716 DCTGC  ANA      RHW             GET PHYS. LINE NO.                               02 00286
000502 024147 A     1717        LDB      CCMCAD                                                           02 00287
000503 126023 A     1718        ADD      DMPTA,B         ADD BASE ADRS OF PHYS LINE TABLE                 02 00288
000504 005111 A     1719        IAR                      PLUS ONE                                         02 00289
000505 005012 A     1720        TAB                                                                       02 00290
000506 036000 A     1721        LDX      0,B             LSD ADRS IN X REGISTER                           02 00291
000507 014140 A     1722        LDA      DCFLG           CLOSE REQUEST ?                                  02 00292
000510 001016 A     1723        JANZ     DCTGH           YES                                              02 00293
000511 000532 R
000512 014143 A     1724        LDA      ERDVLY          NO, ERRORS ON OPEN ?                             02 00294
000513 001016 A     1725        JANZ     DCTGK           YES                                              02 00295
000514 000545 R
                    1726        FETCHA   X,LSNTO,LSNTOB,LSNTOZ      NO, INCREMENT                       02 00296
000515 015020 A
000516 004350 A
000517 150474 A
000520 005111 A     1727        IAR                                  NO. OF OPEN                          02 00297
                    1728        SETA     X,LSNTO,LSNTOB,LSNTOZ  TERMINALS ON LINE                         02 00298
000521 004250 A
000522 135020 A
000523 004350 A
000524 150474 A
000525 004250 A
000526 135020 A
000527 055020 A
000530 001000 A     1729        JMP      DCTM1          GO TO END                                         02 00299
000531 000576 R
                    1730 DCTGH  FETCHA   X,LSNTO,LSNTOB,LSNTOZ   CLOSE REQUEST -                          02 00300
000532 015020 A
000533 004350 A
000534 150474 A
000535 005311 A     1731        DAR                          DECREMENT NO. OF OPEN TERMINALS              02 00301
                    1732        SETA     X,LSNTO,LSNTOB,LSNTOZ       ON THE  LINE                     02 00302
000536 004250 A
000537 135020 A
000540 004350 A
000541 150474 A
000542 004250 A
000543 135020 A
000544 055020 A
                    1733 DCTGK  FETCHA   X,LSNTO,LSNTOB,LSNTOZ  NO. OF OPEN TERMS = 0 ?                   02 00303
```

```
000545 015020 A
000546 004350 A
000547 150474 A
000550 001016 A 1734          JANZ    DCTM1           NO                                          02 00304
000551 000576 R
000552 014074 A 1735          LDA     LLNUM           YES -                                       02 00305
000553 054060 A 1736          STA     DCTLCB+2        SET LLN IN LCB                              02 00306
000554 014077 A 1737          LDA     TCDADR                                                      02 00307
000555 006140 A 1738          SUBI    TCCLN                                                       02 00308
000556 000003 A
000557 005014 A 1739          TAX                                                                 02 00309
                1740          FETCHA  X,TCCLN,TCCLNB,TCCLNZ   GET LUN FOR CCM                     02 00310
000560 015003 A
000561 150463 A
000562 004550 A 1741          LLSR    8                                                           02 00311
000563 014006 A 1742          LDA     DCTL3+3         ADD LUN FOR                                 02 00312
000564 004350 A 1743          LSRA    8                CCM TO                                     02 00313
000565 004450 A 1744          LLRL    8                CLOSE MACRO                                02 00314
000566 054003 A 1745          STA     DCTL3+3                                                     02 00315
                1746 DCTL3    CLOSE   DCTLCB,0        CLOSE LINE FOR TERMINAL                     02 00316
000567 006505 A
000570 000407 E
000571 100000 A
000572 003400 A
000573 000632 R
000574 000000 A
000575 000000 A
                1747 DCTM1    DINTS                                                               02 00317
000576 100444 A
000577 100747 A
                1748          IFT     VORTEX-2                                        V2          02 00318
                1749          GOTO    1                                               V2          02 00319
                1750          LDAE    TC$DCM                                          V2          02 00320
                1751          LDB     DCRQB                                           V2          02 00321
                1752 1        CONT                                                    V2          02 00322
                1753          IFF     VORTEX-1                                        V2          02 00323
000600 006027 A 1754          LDBE    TC$DCM          GET HEAD OF REQUEST QUEUE                   02 00324
000601 000434 E
000602 036004 A 1755          LDX     RADNR,B         GET ADRS OF NEXT ENTRY                      02 00325
000603 006077 A 1756          STXE    TC$DCM          PUT INTO QUEUE HEAD                         02 00326
000604 000601 E
                1757          IFT     VORTEX-1                                        V2          02 00327
                1758          GOTO    1                                               V2          02 00328
000605 005004 A 1759          TZX                                                                 02 00329
000606 076004 A 1760          STX     RADNR,B         ZERO THREAD PNTR ON CUR RQBLK               02 00330
000607 064254 A 1761          STB     DUMTCD+TCRQH    PUT CUR. RQBLK IN DUMMY TCD                 02 00331
000610 006030 A 1762          LDXI    DUMTCD          GET ADRS OF DUMMY TCD                       02 00332
000611 001063 R
                1763 1        CONT                                                    V2          02 00333
                1764          IFF     VORTEX-2                                        V2          02 00334
                1765          TAB                     B=RQBLK                         V2          02 00335
000612 014040 A 1766          LDA     ERRCOD          ERRORS IN ROOT SEGMENT ?                    02 00336
                1767          IFT     VORTEX-2                                        V2          02 00337
                1768          GOTO    1                                               V2          02 00338
                1769          EXT     V2$CRT                                          V2          02 00339
                1770          ALOC    V2$CRT          COMPLETE REQUEST                V2          02 00340
                1771          PZE     DCTALC                                          V2          02 00341
                1772 1        CONT                                                    V2          02 00342
                1773          IFF     VORTEX-1                                        V2          02 00343
000613 002000 A 1774          CALL    TC$FRQ          GO TO COMPLETION REQUEST PROCESSING         02 00344
000614 000000 E
000615 006017 A 1775          LDAE    TC$DCM          MORE OPEN/CLOSE REQS ON QUEUE               02 00345
000616 000604 E
000617 001010 A 1776          JAZ     DCTM2           NO                                          02 00346
000620 000625 R
                1777          EINTS                   YES -                                       02 00347
000621 100244 A
000622 100147 A
000623 001000 A 1778          JMP     DCT1C1          GO BACK                                     02 00348
000624 000031 R
                1779 DCTM2    EINTS                                                               02 00349
000625 100244 A
000626 100147 A
                1780          EXIT                    QUEUE EMPTY, EXIT                           02 00350
000627 006505 A
000630 000443 E
000631 000200 A
                1781 DCTLCB   DCB     0,0                                                         02 00351
000632 000000 A
000633 000000 A
000634 000000 A
                1782 TRMFCB   FCB     120,INBUF,0,TRMFKY,'VT','$D','FT'                           02 00352
000635 000170 A
000636 000673 R
000637 000306 A
000640 000000 A
000641 000000 A
000642 000000 A
000643 000000 A
000644 153324 A
000645 122304 A
000646 143324 A
000647 000000 A 1783 LLNUM    DATA    0                                                           02 00353
000650 000000 A 1784 DCFLG    DATA    0                                                           02 00354
000651 000000 A 1785 DSPSAV   DATA    0                                                           02 00355
```

```
000652 000000 A 1786 CCMCAD DATA     0                                                                  02 00356
000653 000000 A 1787 ERRCOD DATA     0                                                                  02 00357
000654 000000 A 1788 TCDADR DATA     0                                                                  02 00358
000655 000000 A 1789 TCMTYP DATA     0                                                                  02 00359
000656 000000 A 1790 EROVLY DATA     0                                                                  02 00360
000657 000000 A 1791 LLTBAS DATA     0                                                                  02 00361
                1792         IFT     VORTEX-2                                                       V2  02 00362
                1793         GOTO    1                                                              V2  02 00363
                1794 QCRQB   PZE     *+1                                                            V2  02 00364
                1795         BSS     5               RQBLK                                          V2  02 00365
                1796 QCLCB   PZE     *+1                                                            V2  02 00366
                1797         BSS     5               LCB                                            V2  02 00367
                1798 1       CONT                                                                   V2  02 00368
                1799 *                                                                                  02 00369
                1800 *       ERROR CODES FOR TERMINAL OPEN/CLOSE                                        02 00370
                1801 *                                                                                  02 00371
000660 033000 A 1802 ERRA    DATA    033000          INVALID TERMINAL ID                                02 00372
000661 035000 A 1803 ERRB    DATA    035000          TERMINAL DOWN (OPEN)                               02 00373
000662 036000 A 1804 ERRC    DATA    036000          TERMINAL ALREADY OPEN (OPEN)                       02 00374
000663 034000 A 1805 ERRE    DATA    034000          TERMINAL NOT OPEN (CLOSE)                          02 00375
000664 037000 A 1806 ERRF    DATA    037000          REQUESTS STILL PENDING (CLOSE)                     02 00376
000665 002000 A 1807 ERRG    DATA    02000           INVALID LUN FOR CCM                                02 00377
000666 043000 A 1808 ERRH    DATA    043000          INVALID TCM TYPE                                   02 00378
000667 044000 A 1809 ERRI    DATA    044000          NO TEMP STORAGE AVAILABLE                          02 00379
000670 000000 A 1810 TEM1    DATA    0                                                                  02 00380
000671 000000 A 1811 TEM2    DATA    0                                                                  02 00381
000672 000673 R 1812 INBFAD  DATA    INBUF                                                              02 00382
000673          1813 INBUF   BSS     120                                                                02 00383
001063          1814 DUMTCD  BSS     TCDSIZ                                                             02 00384
                1815         EJEC                                                                       02 00385
                1816 *                                                                                  02 00386
                1817 *                                                                                  02 00387
                1818 *               SUBROUTINE TO FIND CONTROLLER                                      02 00388
                1819 *               TABLE ENTRY, GIVEN THE LOGICAL                                     02 00389
                1820 *               UNIT NUMBER.                                                       02 00390
                1821 *                                                                                  02 00391
                1822 *               CALLING SEQUENCE...                                                02 00392
                1823 *                                                                                  02 00393
                1824 *               LDA             LUN                                                02 00394
                1825 *               JMPM            LNCTAD                                             02 00395
                1826 *                                                                                  02 00396
                1827 *               RETURN WITH CONTROLLER TABLE                                       02 00397
                1828 *               ADDRESS IN A, B AND X ARE SAVED                                    02 00398
                1829 *               RETURNS WITH A NEGATIVE IF INVALID LUN                             02 00399
001102 000000 A 1830 LNCTAD  DATA    0                                                                  02 00400
001103 054066 A 1831         STA     LNCT1           SAVE REGISTERS                                     02 00401
001104 064066 A 1832         STB     LNCT2                                                              02 00402
001105 144066 A 1833         SUB     NBKLNS          LUN BACKGROUND ASSIGNABLE ?                        02 00403
001106 001002 A 1834         JAP     LNCTB           NO                                                 02 00404
001107 001121 R
001110 020400 A 1835         LDB     V$LUT1          YES -                                              02 00405
001111 016000 A 1836         LDA     0,B             CHECK LUN                                          02 00406
001112 144057 A 1837         SUB     LNCT1                                                              02 00407
001113 001004 A 1838         JAN     LNCTZ           JUMP IF INVALID                                    02 00408
001114 001167 R
001115 010400 A 1839         LDA     V$LUT1                                                             02 00409
001116 124053 A 1840         ADD     LNCT1           COMPUTE LUT ENTRY ADDRESS                          02 00410
001117 001000 A 1841         JMP     LNCTG                                                              02 00411
001120 001150 R
001121 054050 A 1842 LNCTB   STA     LNCT1                                                              02 00412
001122 144052 A 1843         SUB     NFGLNS          LUN UNASSIGNABLE ?                                 02 00413
001123 001002 A 1844         JAP     LNCTD           NO                                                 02 00414
001124 001137 R
001125 020401 A 1845         LDB     V$LUT2          YES -                                              02 00415
001126 016000 A 1846         LDA     0,B             CHECK LUN                                          02 00416
001127 144042 A 1847         SUB     LNCT1                                                              02 00417
001130 001004 A 1848         JAN     LNCTZ           JUMP IF INVALID                                    02 00418
001131 001167 R
001132 010401 A 1849         LDA     V$LUT2                                                             02 00419
001133 124036 A 1850         ADD     LNCT1           COMPUTE LUT ENTRY ADDRESS                          02 00420
001134 005111 A 1851         IAR                                                                        02 00421
001135 001000 A 1852         JMP     LNCTG                                                              02 00422
001136 001150 R
001137 054032 A 1853 LNCTD   STA     LNCT1                                                              02 00423
001140 020402 A 1854         LDB     V$LUT3          LUN OPCOM ASSIGNABLE                               02 00424
001141 016000 A 1855         LDA     0,B                                                                02 00425
001142 144027 A 1856         SUB     LNCT1           CHECK LUN                                          02 00426
001143 001004 A 1857         JAN     LNCTZ           JUMP IF INVALID                                    02 00427
001144 001167 R
001145 010402 A 1858         LDA     V$LUT3                                                             02 00428
001146 124023 A 1859         ADD     LNCT1           COMPUTE LUT ENTRY ADRS                             02 00429
001147 005111 A 1860         IAR                                                                        02 00430
001150 005012 A 1861 LNCTG   TAB                                                                        02 00431
001151 016000 A 1862         LDA     0,B             GET DST NUMBER                                     02 00432
001152 150463 A 1863         ANA     RHW                                                                02 00433
001153 005311 A 1864         DAR                                                                        02 00434
001154 054015 A 1865         STA     LNCT1           COMPUTE DST                                        02 00435
001155 004201 A 1866         ASLA    1                 DISPLACEMENT                                     02 00436
001156 124013 A 1867         ADD     LNCT1                                                              02 00437
001157 120355 A 1868         ADD     V$DSTB          ADD DST BASE                                       02 00438
001160 005012 A 1869         TAB                                                                        02 00439
001161 016002 A 1870         LDA     DSCTAD,B        GET CONTROLLER TABLE DISPLACEMENT                  02 00440
001162 006150 A 1871         ANAI    077                                                                02 00441
001163 000077 A
001164 120360 A 1872         ADD     V$CTAD          ADD BASE ADRS FOR CONTRLR                          02 00442
```

```
001165 005012 A 1873           TAB                    TABLE ADRS TABLE                          02 00443
001166 016000 A 1874           LDA      0,B           GET ADRS OF CONTRLR TABLE                 02 00444
001167 024003 A 1875 LNCTZ     LDB      LNCT2         RESTORE B                                 02 00445
001170 001000 A 1876           JMP*     LNCTAD        RETURN                                    02 00446
001171 101102 R
001172 000000 A 1877 LNCT1     DATA     0                                                       02 00447
001173 000000 A 1878 LNCT2     DATA     0                                                       02 00448
001174 000145 A 1879 NBKLNS    DATA     101                                                     02 00449
001175 000117 A 1880 NFGLNS    DATA     79                                                      02 00450
       000002 A 1881 DSCTAD    EQU      2                                                       02 00451
       000000 R 1882           END      VT$DCT                                                  02 00452
ENTRY NAMES
000000 R VT$DCT 000454 R VT$DCY 000456 R VT$DCZ
EXTERNAL NAMES
000614 E TC$FRQ 000616 E TC$DCM 000217 E TC$TCD 000630 E V$EXEC
000570 E V$IDC  000420 E V$IOST 000256 E VT$LTT
SYMBOLS
000044 A APIM   000002 A B      000000 A B0     000001 A B1
000012 A B10    000013 A B11    000014 A B12    000015 A B13
000016 A B14    000017 A B15    000002 A B2     000003 A B3
000004 A B4     000005 A B5     000006 A B6     000007 A B7
000010 A B8     000011 A B9     000000 A BICNUM 000421 A BM1
000472 A BM17   000475 A BM177  000477 A BM1777 000464 A BM3
000473 A BM37   000463 A BM377  000467 A BM7    000474 A BM77
000476 A BM777  000441 A BR0    000442 A BR1    000453 A BR10
000454 A BR11   000455 A BR12   000456 A BR13   000457 A BR14
000460 A BR15   000443 A BR2    000444 A BR3    000445 A BR4
000446 A BR5    000447 A BR6    000450 A BR7    000451 A BR8
000452 A BR9    000421 A BS0    000422 A BS1    000433 A BS10
000434 A BS11   000435 A BS12   000436 A BS13   000437 A BS14
000440 A BS15   000423 A BS2    000424 A BS3    000425 A BS4
000426 A BS5    000427 A BS6    000430 A BS7    000431 A BS8
000432 A BS9    000652 R CCMCAD 000000 A CHAFP  000000 A CHAFPB
000020 A CHAFPZ 000001 A CHARP  000000 A CHARPB 000020 A CHARPZ
000002 A CHCFP  000000 A CHCFPB 000020 A CHCFPZ 000003 A CHCRP
000000 A CHCRPB 000020 A CHCRPZ 000004 A CHRBL  000000 A CHRBLB
000020 A CHRBLZ 000047 A CLOCK  000000 A COTAD1 000000 A CTACT
000017 A CTACTB 000001 A CTACTZ 000001 A CTADN  000000 A CTADNB
000020 A CTADNZ 000011 A CTBIC  000000 A CTBICB 000020 A CTBICZ
000003 A CTDST  000000 A CTDSTB 000020 A CTDSTZ 000006 A CTDVA
000000 A CTDVAB 000020 A CTDVAZ 000012 A CTFCB  000000 A CTFCBB
000020 A CTFCBZ 000014 A CTFRC  000010 A CTFRCB 000010 A CTFRCZ
000014 A CTFRE  000000 A CTFREB 000010 A CTFREZ 000000 A CTIDB
000000 A CTIDBB 000017 A CTIDBZ 000007 A CTIOA  000000 A CTIOAB
000020 A CTIOAZ 000002 A CTOPM  000000 A CTOPMB 000020 A CTOPMZ
000005 A CTRCN  000000 A CTRCNB 000010 A CTRCNZ 000004 A CTRQB
000000 A CTRQBB 000020 A CTRQBZ 000005 A CTRTR  000010 A CTRTRB
000010 A CTRTRZ 000010 A CTSTA  000000 A CTSTAB 000020 A CTSTAZ
000013 A CTWDS  000000 A CTWDSB 000020 A CTWDSZ 000001 A DCBUFF
000003 A DCCHR  000000 A DCCHRB 000020 A DCCHRZ 000002 A DCCNT
000000 A DCRECL 000747 A DISCLK 000745 A DISMP  000444 A DISPIM
000026 A DMBCA  000000 A DMBCAB 000020 A DMBCAZ 000024 A DMCWA
000000 A DMCWAB 000020 A DMCWAZ 000017 A DMFPA  000000 A DMFPAB
000020 A DMFPAZ 000021 A DMLCA  000000 A DMLCAB 000020 A DMLCAZ
000022 A DMLTA  000000 A DMLTAB 000020 A DMLTAZ 000023 A DMPTA
000000 A DMPTAB 000020 A DMPTAZ 000016 A DMRPA  000000 A DMRPAB
000020 A DMRPAZ 000020 A DMSTA  000000 A DMSTAB 000020 A DMSTAZ
000025 A DMSWA  000000 A DMSWAB 000020 A DMSWAZ 000015 A DMTPA
000000 A DMTPAB 000020 A DMTPAZ 000002 A DSCTAD 000000 A DSDASS
000000 A DSDVDN 000002 A DSLCKO 000001 A DSNAME 000000 A DSNORQ
000002 A DSOPCM 000651 R DSPSAV 000002 A DSPSTI 000002 A DSREWD
000000 A DSUNAM 000002 A DSUNTN 001063 R DUMTCD 000424 A EIGHT
000147 A ENACLK 000645 A ENAMP  000244 A ENAPIM 000656 R EROVLY
000660 R ERRA   000661 R ERRB   000662 R ERRC   000653 R ERRCOD
000663 R ERRE   000664 R ERRF   000665 R ERRG   000666 R ERRH
000667 R ERRI   000465 A FIVE   000423 A FOUR   000003 A IBIBF
000017 A IBIBFB 000001 A IBIBFZ 000003 A IBLAS  000000 A IBLASB
000017 A IBLASZ 000001 A IBLEN  000000 A IBLENB 000020 A IBLENZ
000000 A IBLNK  000000 A IBLNKB 000020 A IBLNKZ 000002 A IBSTA
000000 A IBSTAB 000020 A IBSTAZ 000004 A IBSTS  000000 A IBSTSB
000017 A IBSTSZ 000672 R INBFAD 000673 R INBUF  000300 A LC
000003 A LCABN  000013 A LCABNB 000001 A LCABNZ 000003 A LCASY
000012 A LCASYB 000001 A LCASYZ 000007 A LCBSC  000015 A LCBSCB
000001 A LCBSCZ 000007 A LCCHN  000016 A LCCHNB 000001 A LCCHNZ
000003 A LCCRC  000014 A LCCRCB 000003 A LCCRCZ 000006 A LCCWB
000014 A LCCWBB 000001 A LCCWBZ 000006 A LCCWC  000015 A LCCWCB
000001 A LCCWCZ 000006 A LCCWD  000013 A LCCWDB 000001 A LCCWDZ
000006 A LCCWI  000016 A LCCWIB 000001 A LCCWIZ 000006 A LCCWP
000012 A LCCWPB 000001 A LCCWPZ 000006 A LCCWR  000011 A LCCWRB
000001 A LCCWRZ 000006 A LCCWS  000017 A LCCWSB 000001 A LCCWSZ
000006 A LCCWT  000010 A LCCWTB 000001 A LCCWTZ 000001 A LCIBA
000000 A LCIBAB 000017 A LCIBAZ 000000 A LCIBF  000017 A LCIBFB
000001 A LCIBFZ 000000 A LCIBL  000000 A LCIBLB 000014 A LCIBLZ
000002 A LCIC1  000010 A LCIC1B 000010 A LCIC1Z 000002 A LCIC2
000000 A LCIC2B 000010 A LCIC2Z 000003 A LCIKE  000000 A LCIKEB
000004 A LCIKEZ 000007 A LCITB  000013 A LCITBB 000001 A LCITBZ
000050 A LCJP   000006 A LCLCB  000000 A LCLCBB 000020 A LCLCBZ
000007 A LCLDB  000014 A LCLDBB 000001 A LCLDBZ 000007 A LCLTB
000017 A LCLTBB 000001 A LCLTBZ 000005 A LCOBA  000000 A LCOBAB
000017 A LCOBAZ 000004 A LCOBF  000017 A LCOBFB 000001 A LCOBFZ
000004 A LCOBL  000000 A LCOBLB 000014 A LCOBLZ 000007 A LCOKE
000000 A LCOKEB 000004 A LCOKEZ 000003 A LCRCC  000017 A LCRCCB
000001 A LCRCCZ 000000 A LCSMB  000016 A LCSMBB 000001 A LCSMBZ
000462 A LHW    000647 R LLNUM  000657 R LLTBAS 001172 R LNCT1
001173 R LNCT2  001102 R LNCTAD 001121 R LNCTB  001137 R LNCTD
```

```
001150 R LNCTG  001167 R LNCTZ  000017 A LSABN  000015 A LSABNB
000001 A LSABNZ 000017 A LSASC  000011 A LSASCB 000001 A LSASCZ
000014 A LSASY  000013 A LSASYB 000001 A LSASYZ 000020 A LSBSC
000016 A LSBSCB 000001 A LSBSCZ 000015 A LSCC1  000010 A LSCC1B
000010 A LSCC1Z 000015 A LSCC2  000000 A LSCC2B 000010 A LSCC2Z
000017 A LSCHN  000010 A LSCHNB 000001 A LSCHNZ 000017 A LSCRC
000012 A LSCRCB 000003 A LSCRCZ 000012 A LSCTA  000000 A LSCTAB
000020 A LSCTAZ 000017 A LSDSF  000017 A LSDSFB 000001 A LSDSFZ
000013 A LSDST  000000 A LSDSTB 000020 A LSDSTZ 000016 A LSEPF
000016 A LSEPFB 000001 A LSEPFZ 000014 A LSLSP  000000 A LSLSPB
000011 A LSLSPZ 000014 A LSMOD  000016 A LSMODB 000002 A LSMODZ
000020 A LSNTO  000010 A LSNTOB 000006 A LSNTOZ 000014 A LSPAR
000014 A LSPARB 000002 A LSPARZ 000016 A LSPLA  000000 A LSPLAB
000010 A LSPLAZ 000002 A LSRCA  000000 A LSRCAB 000020 A LSRCAZ
000003 A LSREM  000000 A LSREMB 000020 A LSREMZ 000016 A LSRRS
000010 A LSRRSB 000003 A LSRRSZ 000001 A LSRRT  000000 A LSRRTB
000020 A LSRRTZ 000004 A LSRTO  000000 A LSRTOB 000020 A LSRTOZ
000005 A LSSRS  000000 A LSSRSB 000020 A LSSRSZ 000011 A LSSWS
000000 A LSSWSB 000020 A LSSWSZ 000016 A LSTER  000017 A LSTERB
000001 A LSTERZ 000000 A LSTHD  000000 A LSTHDB 000020 A LSTHDZ
000006 A LSWCA  000000 A LSWCAB 000020 A LSWCAZ 000007 A LSWEM
000000 A LSWEMB 000020 A LSWEMZ 000016 A LSWRS  000013 A LSWRSB
000003 A LSWRSZ 000010 A LSWTO  000000 A LSWTOB 000020 A LSWTOZ
000014 A LSXMM  000011 A LSXMMB 000002 A LSXMMZ 000017 A LSYNC
000016 A LSYNCB 000001 A LSYNCZ 000020 A LSYNR  000000 A LSYNRB
000010 A LSYNRZ 000017 A LSYNT  000000 A LSYNTB 000010 A LSYNTZ
000046 A MAP    000045 A MP     000045 A MPMR0  000145 A MPMR1
000245 A MPMR2  000345 A MPMR3  000420 A MT     001174 R NBKLNS
000461 A NEG    001175 R NFGLNS 000470 A NINE   000001 A NTCTYP
000650 R OCFLG  000011 R OCT1B1 000031 R OCT1C1 000073 R OCT1C2
000116 R OCT1D1 000130 R OCT1D2 000141 R OCT1E1 000150 R OCT1E2
000153 R OCT1F1 000062 R OCT1X1 000064 R OCT1X2 000165 R OCT2A1
000176 R OCT2A2 000220 R OCT2B1 000232 R OCT2C1 000235 R OCT2C2
000243 R OCT2D1 000251 R OCT2D2 000267 R OCT2E1 000406 R OCT2E3
000310 R OCT2EA 000321 R OCT2EB 000336 R OCT2EC 000354 R OCT2ED
000375 R OCT2EK 000426 R OCT2F1 000440 R OCT2F3 000450 R OCT3A1
000463 R OCT3B1 000466 R OCTGA  000501 R OCTGC  000532 R OCTGH
000545 R OCTGK  000567 R OCTL3  000632 R OCTLCB 000576 R OCTM1
000625 R OCTM2  000421 A ONE    000442 R OVLAY1 000001 A PCBSL
000011 A PCBSLB 000001 A PCBSLZ 000000 A PCCLN  000000 A PCCLNB
000010 A PCCLNZ 000002 A PCCTP  000014 A PCCTPB 000004 A PCCTPZ
000001 A PCECH  000014 A PCECHB 000001 A PCECHZ 000000 A PCLLN
000010 A PCLLNB 000010 A PCLLNZ 000002 A PCNTD  000000 A PCNTDB
000004 A PCNTDZ 000001 A PCPCH  000000 A PCPCHB 000010 A PCPCHZ
000001 A PCSWL  000010 A PCSWLB 000001 A PCSWLZ 000002 A PCTYP
000010 A PCTYPB 000004 A PCTYPZ 000001 A PCXMM  000012 A PCXMMB
000002 A PCXMMZ 000040 A PIM1   000041 A PIM2   000042 A PIM3
000043 A PIM4   000040 A PIM5   000040 A PIM6   000040 A PIM7
000040 A PIM8   000200 A POST   000003 A PSABN  000015 A PSABNB
000001 A PSABNZ 000000 A PSASY  000013 A PSASYB 000001 A PSASYZ
000002 A PSBADT 000000 A PSBEG  000004 A PSBSC  000016 A PSBSCB
000016 A PSBSCZ 000001 A PSCC1  000010 A PSCC1B 000010 A PSCC1Z
000001 A PSCC2  000000 A PSCC2B 000010 A PSCC2Z 000003 A PSCRC
000012 A PSCRCB 000003 A PSCRCZ 000002 A PSDEF  000010 A PSDEFB
000001 A PSDEFZ 000003 A PSDSF  000017 A PSDSFB 000001 A PSDSFZ
000002 A PSDWN  000011 A PSDWNB 000001 A PSDWNZ 000004 A PSEND
000002 A PSEPF  000016 A PSEPFB 000001 A PSEPFZ 000000 A PSLSP
000000 A PSLSPB 000011 A PSLSPZ 000000 A PSMOD  000016 A PSMODB
000002 A PSMODZ 000003 A PSNSEC 000000 A PSPAR  000014 A PSPARB
000002 A PSPARZ 000002 A PSPLA  000000 A PSPLAB 000010 A PSPLAZ
000001 A PSPROT 000002 A PSTER  000017 A PSTERB 000001 A PSTERZ
000000 A PSXMM  000011 A PSXMMB 000002 A PSXMMZ 000003 A PSYNC
000016 A PSYNCB 000001 A PSYNCZ 000004 A PSYNR  000000 A PSYNRB
000010 A PSYNRZ 000003 A PSYNT  000000 A PSYNTB 000010 A PSYNTZ
000040 A RA0    000000 A RA1    000004 A RADNR  000060 A RB0
000020 A RB1    000002 A RFCB   000463 A RHW    000001 A ROPWD
000000 A RSTPR  000003 A RTIDB  000467 A SEVEN  000466 A SIX
000027 A TBATSK 000026 A TBCPTH 000011 A TBENTY 000003 A TBEVNT
000021 A TBIO   000014 A TBISA  000015 A TBISB  000017 A TBISP
000020 A TBISRS 000034 A TBIST  000016 A TBISX  000032 A TBKEY
000022 A TBKN1  000023 A TBKN2  000024 A TBKN3  000033 A TBMIMG
000032 A TBNUCL 000002 A TBPL   000004 A TBRSA  000005 A TBRSB
000030 A TBRSE  000007 A TBRSP  000010 A TBRSTS 000006 A TBRSX
000000 A TBS0   000001 A TBS1   000012 A TBS10  000013 A TBS11
000014 A TBS12  000015 A TBS13  000016 A TBS14  000017 A TBS15
000002 A TBS2   000003 A TBS3   000004 A TBS4   000005 A TBS5
000006 A TBS6   000007 A TBS7   000010 A TBS8   000011 A TBS9
000031 A TBSIZ  000001 A TBST   000025 A TBTLC  000013 A TBTMIN
000012 A TBTMS  000000 A TBTRD  000614 E TC$FRQ 000616 E TC$OCM
000217 E TC$TCD 000004 A TCBSL  000011 A TCBSLB 000001 A TCBSLZ
000003 A TCCLN  000000 A TCCLNB 000010 A TCCLNZ 000004 A TCCON
000015 A TCCONB 000001 A TCCONZ 000002 A TCCTA  000000 A TCCTAB
000020 A TCCTAZ 000005 A TCCTP  000014 A TCCTPB 000004 A TCCTPZ
000654 R TCDADR 000012 A TCDCC  000000 A TCDCCB 000020 A TCDCCZ
000017 A TCDSIZ 000014 A TCDTO  000000 A TCDTOB 000020 A TCDTOZ
000004 A TCECH  000014 A TCECHB 000001 A TCECHZ 000015 A TCID1
000000 A TCID1B 000020 A TCID1Z 000016 A TCID2  000000 A TCID2B
000020 A TCID2Z 000006 A TCLDF  000014 A TCLDFB 000001 A TCLDFZ
000003 A TCLLN  000010 A TCLLNB 000010 A TCLLNZ 000655 R TCMTYP
000005 A TCNOD  000004 A TCNODB 000004 A TCNODZ 000005 A TCNTD
000000 A TCNTDB 000004 A TCNTDZ 000004 A TCPCH  000000 A TCPCHB
000010 A TCPCHZ 000001 A TCPROT 000004 A TCRBC  000017 A TCRBCB
000001 A TCRBCZ 000013 A TCRBF  000000 A TCRBFB 000020 A TCRBFZ
000007 A TCRCA  000000 A TCRCAB 000020 A TCRCAZ 000006 A TCRMD
000000 A TCRMDB 000003 A TCRMDZ 000001 A TCRQH  000000 A TCRQHB
```

```
000020 A TCRQHZ 000006 A TCRRS  000006 A TCRRSB 000003 A TCRRSZ
000010 A TCSTO  000000 A TCSTOB 000020 A TCSTOZ 000004 A TCSWL
000010 A TCSWLB 000001 A TCSWLZ 000000 A TCTCD  000000 A TCTCDB
000020 A TCTCDZ 000005 A TCTYP  000010 A TCTYPB 000004 A TCTYPZ
000004 A TCWBC  000016 A TCWBCB 000001 A TCWBCZ 000011 A TCWCA
000000 A TCWCAB 000020 A TCWCAZ 000006 A TCWMD  000003 A TCWMDB
000003 A TCWMDZ 000006 A TCWRS  000011 A TCWRSB 000003 A TCWRSZ
000004 A TCXMM  000012 A TCXMMB 000002 A TCXMMZ 000670 R TEM1
000671 R TEM2   000471 A TEN    000464 A THREE  000004 A TIBSIZ
000002 A TIDSP  000000 A TIDSPB 000007 A TIDSPZ 000002 A TIDWN
000017 A TIDWNB 000001 A TIDWNZ 000000 A TINET  000000 A TINETB
000020 A TINETZ 000003 A TIODN  000017 A TIODNB 000001 A TIODNZ
000003 A TIODP  000000 A TIODPB 000007 A TIODPZ 000003 A TIOSC
000007 A TIOSCB 000010 A TIOSCZ 000002 A TISEC  000007 A TISECB
000010 A TISECZ 000000 A TITU1  000000 A TITU1B 000020 A TITU1Z
000001 A TITU2  000000 A TITU2B 000020 A TITU2Z 000017 A TPFPA
000000 A TPFPAB 000020 A TPFPAZ 000015 A TPRPA  000000 A TPRPAB
000020 A TPRPAZ 000016 A TPWPA  000000 A TPWPAB 000020 A TPWPAZ
000635 R TRMFCB 000306 A TRMFKY 000152 A TRMLUN 000422 A TWO
000403 A V$1MIN 000415 A V$BFC  000075 A V$BGLB 000056 A V$BIC1
000315 A V$BTB  000331 A V$BTBM 000414 A V$BVN  000334 A V$CAM
000353 A V$CKB  000411 A V$CKIT 000310 A V$CKPT 000301 A V$CPL
000076 A V$CRDM 000341 A V$CRDR 000354 A V$CRM  000302 A V$CRS
000360 A V$CTAD 000300 A V$CTL  000351 A V$CTMS 000070 A V$DATE
000355 A V$DSTB 000376 A V$ERFG 000630 E V$EXEC 000347 A V$FGLB
000306 A V$FLRS 000350 A V$FREE 000332 A V$GFCB 000320 A V$IM
000410 A V$IOA  000570 E V$IOC  000420 E V$IOST 000412 A V$JCB
000055 A V$JCFG 000077 A V$JCTM 000050 A V$JNAM 000377 A V$JOP
000340 A V$KEY  000054 A V$LCNT 000313 A V$LER  000356 A V$LIT
000317 A V$LLUP 000317 A V$LPP  000307 A V$LRSK 000312 A V$LSAL
000345 A V$LUNT 000316 A V$LUP  000400 A V$LUT1 000401 A V$LUT2
000402 A V$LUT3 000330 A V$MAP  000333 A V$MIMG 000330 A V$MPM
000362 A V$NCTR 000316 A V$NPAG 000413 A V$OCB  000346 A V$OPCF
000311 A V$OPCL 000357 A V$PGT  000363 A V$PIMN 000074 A V$PLCT
000305 A V$PTVB 000361 A V$SCTL 000352 A V$SCV  000375 A V$SLFG
000334 A V$ST0  000335 A V$ST1  000336 A V$ST2  000337 A V$ST3
000303 A V$TB   000342 A V$TBGT 000416 A V$TFC  000314 A V$TJCP
000344 A V$TMN  000343 A V$TMS  000304 A V$UTB  000001 A VORTEX
000256 E VT$LTT 000000 R VT$OCT 000454 R VT$OCY 000456 R VT$OCZ
000001 A X      000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE


1496  1        *
 159  ADAT     *
  38  ANAM     *
  90  ANAN     *
 574  APIM      584   585
 108  B          98   117   229   230   252   255   257  1518  1520
                1529  1532  1548  1554  1558  1621  1625  1637  1646
                1649  1712  1718  1721  1755  1760  1836  1846  1855
                1862  1870  1874
  88  B&          82
  83  B&0         40
  80  B&1         78
  44  B&10        42
  76  B&2         74
  72  B&3         70
  68  B&4         66
  64  B&5         62
  60  B&6         58
  56  B&7         54
  52  B&8         50
  48  B&9         46
 543  B0       *
 544  B1       *
 553  B10      *
 554  B11      *
 555  B12      *
 556  B13      *
 557  B14      *
 558  B15      *
 545  B2       *
 546  B3       *
 547  B4       *
 548  B5       *
 549  B6       *
 550  B7       *
 551  B8       *
 552  B9       *
 630  BICNUM   *
 515  BM1         79
 518  BM17        67
 521  BM177       55  1559
 524  BM1777      43
 516  BM3         75
 519  BM37        63
 522  BM377       51
 517  BM7         71
 520  BM77        59
 523  BM777       47
 486  BR0       202
 487  BR1      *
 496  BR10     *
 497  BR11     *
```

```
498   BR12     *
499   BR13     *
500   BR14     *
501   BR15     1555
488   BR2      *
489   BR3      *
490   BR4      *
491   BR5      *
492   BR6      *
493   BR7      *
494   BR8      *
495   BR9      *
470   BS0       195   209
471   BS1      *
480   BS10     *
481   BS11     *
482   BS12     *
483   BS13     *
484   BS14     *
485   BS15     *
472   BS2      *
473   BS3      *
474   BS4      *
475   BS5      *
476   BS6      *
477   BS7      *
478   BS8      *
479   BS9      *
1786  CCMCAD   1619  1645  1717
1397  CHAFP    *
1398  CHAFPB   *
1399  CHAFPZ   *
1401  CHARP    *
1402  CHARPB   *
1403  CHARPZ   *
1405  CHCFP    *
1406  CHCFPB   *
1407  CHCFPZ   *
1409  CHCRP    *
1410  CHCRPB   *
1411  CHCRPZ   *
1413  CHRBL    *
1414  CHRBLB   *
1415  CHRBLZ   *
 198  CLEARF   *
 567  CLOCK     569   570
 622  COTAD1   *
 707  CTACT    *
 708  CTACTB   *
 709  CTACTZ   *
 715  CTADN    *
 716  CTADNB   *
 717  CTADNZ   *
 751  CTBIC    *
 752  CTBICB   *
 753  CTBICZ   *
 723  CTDST    *
 724  CTDSTB   *
 725  CTDSTZ   *
 739  CTDVA    *
 740  CTDVAB   *
 741  CTDVAZ   *
 755  CTFCB    *
 756  CTFCBB   *
 757  CTFCBZ   *
 763  CTFRC    *
 764  CTFRCB   *
 765  CTFRCZ   *
 767  CTFRE    *
 768  CTFREB   *
 769  CTFREZ   *
 711  CTIDB    *
 712  CTIDBB   *
 713  CTIDBZ   *
 743  CTIOA    *
 744  CTIOAB   *
 745  CTIOAZ   *
 719  CTOPM    *
 720  CTOPMB   *
 721  CTOPMZ   *
 735  CTRCN    *
 736  CTRCNB   *
 737  CTRCNZ   *
 727  CTRQB    *
 728  CTRQBB   *
 729  CTRQBZ   *
 731  CTRTR    *
 732  CTRTRB   *
 733  CTRTRZ   *
 747  CTSTA    *
 748  CTSTAB   *
 749  CTSTAZ   *
 759  CTWDS    *
 760  CTWDSB   *
 761  CTWDSZ   *
```

```
688   DCBUFF   *
691   DCCHR    *
692   DCCHRB   *
693   DCCHRZ   *
689   DCCNT    *
687   DCRECL   *
187   DINTS    *
569   DISCLK    189
589   DISMP    *
584   DISPIM    188
813   DMBCA    *
814   DMBCAB   *
815   DMBCAZ   *
805   DMCWA    *
806   DMCWAB   *
807   DMCWAZ   *
785   DMFPA    *
786   DMFPAB   *
787   DMFPAZ   *
793   DMLCA    *
794   DMLCAB   *
795   DMLCAZ   *
797   DMLTA    1621
798   DMLTAB   *
799   DMLTAZ   *
801   DMPTA    1646  1718
802   DMPTAB   *
803   DMPTAZ   *
781   DMRPA    *
782   DMRPAB   *
783   DMRPAZ   *
789   DMSTA    *
790   DMSTAB   *
791   DMSTAZ   *
809   DMSWA    *
810   DMSWAB   *
811   DMSWAZ   *
777   DMTPA    *
778   DMTPAB   *
779   DMTPAZ   *
615   DSCTAD   1870
601   DSDASS   *
600   DSDVDN   *
612   DSLCKD   *
609   DSNAME   *
608   DSNDRQ   *
613   DSOPCM   *
1785  DSPSAV   1560  1603
614   DSPSTI   *
610   DSREWD   *
606   DSUNAM   *
611   DSUNTN   *
1814  DUMTCD   1761  1762
512   EIGHT     143   167
183   EINTS    *
570   ENACLK    185
590   ENAMP    *
585   ENAPIM    184
1790  EROVLY   1688  1694  1724
1802  ERRA     1546  1627
1803  ERRB     1552  1599  1652
1804  ERRC     1578
1787  ERRCOD   1511  1669  1696  1766
1805  ERRE     1584
1806  ERRF     *
1807  ERRG     1617
1808  ERRH     1612
1809  ERRI     *
   0  ERROR     113   193   200   207
 128  FETCHA   *
 509  FIVE      149   173
 508  FOUR      151   175
 251  GETQ     *
1432  IBIBF    *
1433  IBIBFB   *
1434  IBIBFZ   *
1436  IBLAS    *
1437  IBLASB   *
1438  IBLASZ   *
1424  IBLEN    *
1425  IBLENB   *
1426  IBLENZ   *
1420  IBLNK    *
1421  IBLNKB   *
1422  IBLNKZ   *
1428  IBSTA    *
1429  IBSTAB   *
1430  IBSTAZ   *
1440  IBSTS    *
1441  IBSTSB   *
1442  IBSTSZ   *
1812  INBFAD   1602
1813  INBUF    1527  1529  1532  1541  1548  1554  1558  1782  1812
 378  LC        379   380   381   382   383   384   385   386   387
                388   389   390   391   392   393   394   395   396
```

		397	398	399	400	401	402	403	404	405
		406	407	408	410	411	412	413	414	415
		416	417	418	419	420	421	422	423	424
		426	427	428	429	434	435	436	437	438
		439	440	447	448	449	452	457	458	459
855	LCABN	*								
856	LCABNB	*								
857	LCABNZ	*								
859	LCASY	*								
860	LCASYB	*								
861	LCASYZ	*								
923	LCBSC	*								
924	LCBSCB	*								
925	LCBSCZ	*								
919	LCCHN	*								
920	LCCHNB	*								
921	LCCHNZ	*								
851	LCCRC	*								
852	LCCRCB	*								
853	LCCRCZ	*								
895	LCCWB	*								
896	LCCWBB	*								
897	LCCWBZ	*								
891	LCCWC	*								
892	LCCWCB	*								
893	LCCWCZ	*								
899	LCCWD	*								
900	LCCWDB	*								
901	LCCWDZ	*								
887	LCCWI	*								
888	LCCWIB	*								
889	LCCWIZ	*								
903	LCCWP	*								
904	LCCWPB	*								
905	LCCWPZ	*								
907	LCCWR	*								
908	LCCWRB	*								
909	LCCWRZ	*								
883	LCCWS	*								
884	LCCWSB	*								
885	LCCWSZ	*								
911	LCCWT	*								
912	LCCWTB	*								
913	LCCWTZ	*								
835	LCIBA	*								
836	LCIBAB	*								
837	LCIBAZ	*								
823	LCIBF	*								
824	LCIBFB	*								
825	LCIBFZ	*								
831	LCIBL	*								
832	LCIBLB	*								
833	LCIBLZ	*								
839	LCIC1	*								
840	LCIC1B	*								
841	LCIC1Z	*								
843	LCIC2	*								
844	LCIC2B	*								
845	LCIC2Z	*								
863	LCIKE	*								
864	LCIKEB	*								
865	LCIKEZ	*								
931	LCITB	*								
932	LCITBB	*								
933	LCITBZ	*								
353	LCJP		354	355	356	363	364	365	366	367	370
879	LCLCB	*								
880	LCLCBB	*								
881	LCLCBZ	*								
927	LCLDB	*								
928	LCLDBB	*								
929	LCLDBZ	*								
915	LCLTB	*								
916	LCLTBB	*								
917	LCLTBZ	*								
875	LCOBA	*								
876	LCOBAB	*								
877	LCOBAZ	*								
867	LCOBF	*								
868	LCOBFB	*								
869	LCOBFZ	*								
871	LCOBL	*								
872	LCOBLB	*								
873	LCOBLZ	*								
935	LCOKE	*								
936	LCOKEB	*								
937	LCOKEZ	*								
847	LCRCC	*								
848	LCRCCB	*								
849	LCRCCZ	*								
827	LCSMB	*								
828	LCSMBB	*								
829	LCSMBZ	*								
503	LHW		1657							
1783	LLNUM		1624	1631	1654	1706	1735			

1791	LLTBAS	1622	1634	1709						
1877	LNCT1	1831	1837	1840	1842	1847	1850	1853	1856	1859
		1865	1867							
1878	LNCT2	1832	1875							
1830	LNCTAD	1615	1876							
1842	LNCTB	1834								
1853	LNCTD	1844								
1861	LNCTG	1841	1852							
1875	LNCTZ	1838	1848	1857						
1049	LSABN	*								
1050	LSABNB	*								
1051	LSABNZ	*								
1057	LSASC	*								
1058	LSASCB	*								
1059	LSASCZ	*								
1001	LSASY	*								
1002	LSASYB	*								
1003	LSASYZ	*								
1069	LSBSC	*								
1070	LSBSCB	*								
1071	LSBSCZ	*								
1013	LSCC1	*								
1014	LSCC1B	*								
1015	LSCC1Z	*								
1017	LSCC2	*								
1018	LSCC2B	*								
1019	LSCC2Z	*								
1061	LSCHN	*								
1062	LSCHNB	*								
1063	LSCHNZ	*								
1053	LSCRC	*								
1054	LSCRCB	*								
1055	LSCRCZ	*								
985	LSCTA	*								
986	LSCTAB	*								
987	LSCTAZ	*								
1041	LSDSF	*								
1042	LSDSFB	*								
1043	LSDSFZ	*								
989	LSDST	*								
990	LSDSTB	*								
991	LSDSTZ	*								
1025	LSEPF	*								
1026	LSEPFB	*								
1027	LSEPFZ	*								
1009	LSLSP	*								
1010	LSLSPB	*								
1011	LSLSPZ	*								
993	LSMOD	*								
994	LSMODB	*								
995	LSMODZ	*								
1073	LSNTO	1726	1728	1730	1732	1733				
1074	LSNTOB	1726	1728	1730	1732	1733				
1075	LSNTOZ	1726	1728	1730	1732	1733				
997	LSPAR	*								
998	LSPARB	*								
999	LSPARZ	*								
1037	LSPLA	*								
1038	LSPLAB	*								
1039	LSPLAZ	*								
953	LSRCA	*								
954	LSRCAB	*								
955	LSRCAZ	*								
957	LSREM	*								
958	LSREMB	*								
959	LSREMZ	*								
1033	LSRRS	*								
1034	LSRRSB	*								
1035	LSRRSZ	*								
949	LSRRT	*								
950	LSRRTB	*								
951	LSRRTZ	*								
961	LSRTO	*								
962	LSRTOB	*								
963	LSRTOZ	*								
965	LSSRS	*								
966	LSSRSB	*								
967	LSSRSZ	*								
981	LSSWS	*								
982	LSSWSB	*								
983	LSSWSZ	*								
1021	LSTER	*								
1022	LSTERB	*								
1023	LSTERZ	*								
945	LSTHD	*								
946	LSTHDB	*								
947	LSTHDZ	*								
969	LSWCA	*								
970	LSWCAB	*								
971	LSWCAZ	*								
973	LSWEM	*								
974	LSWEMB	*								
975	LSWEMZ	*								
1029	LSWRS	*								
1030	LSWRSB	*								

1031 LSWRSZ *
977 LSWTO *
978 LSWTOB *
979 LSWTOZ *
1005 LSXMM *
1006 LSXMMB *
1007 LSXMMZ *
1045 LSYNC *
1046 LSYNCB *
1047 LSYNCZ *
1077 LSYNR *
1078 LSYNRB *
1079 LSYNRZ *
1065 LSYNT *
1066 LSYNTB *
1067 LSYNTZ *
591 MAP *
588 MP 589 590 592 593 594 595
592 MPMR0 *
593 MPMR1 *
594 MPMR2 *
595 MPMR3 *
468 MT 469 470 471 472 473 474 475 476 477
478 479 480 481 482 483 484 485 486
487 488 489 490 491 492 493 494 495
496 497 498 499 500 501 502 503 504
505 506 507 508 509 510 511 512 513
514 515 516 517 518 519 520 521 522
523 524
1879 NBKLNS 1833
502 NEG *
1880 NFGLNS 1843
513 NINE 141 165
1465 NTCTYP 1610
1784 OCFLG 1500 1550 1576 1582 1629 1722
1796 OCLCB 1487 1492 1493
1794 OCRQB 1486 1488 1489 1494 1495 1514 1589 1671 1751
1479 OCT1B1 1477 1480 1481
1482 OCT1C1 1481 1481 1778
1524 OCT1C2 1525 1526 1545
1529 OCT1D1 1540
1535 OCT1D2 1531
1541 OCT1E1 1536
1546 OCT1E2 1542
1548 OCT1F1 1534
1514 OCT1X1 1508 1509
1517 OCT1X2 1501
1554 OCT2A1 1549 1551
1561 OCT2A2 1562 1563
1565 OCT2B1 1573
1572 OCT2C1 1568
1576 OCT2C2 1571
1582 OCT2D1 1565
1587 OCT2D2 1583
1602 OCT2E1 1577 1598
1662 OCT2E3 1656 1658 1660 1661 1663 1664
1614 OCT2EA 1611
1619 OCT2EB 1616
1629 OCT2EC 1626
1641 OCT2ED 1639
1654 OCT2EK 1643 1650
1665 OCT2F1 1630 1651
1680 OCT2F3 1675
1687 OCT3A1 1481 1481 1526 1526 1526 1526 1547 1553 1563
1563 1563 1563 1579 1585 1600 1613 1618 1628
1653 1664 1664 1664 1664
1696 OCT3B1 1689
1490 OCTALC 1771
1706 OCTGA 1695
1716 OCTGC 1714
1730 OCTGH 1723
1733 OCTGK 1725
1746 OCTL3 1742 1745
1781 OCTLCB 1655 1662 1736 1746
1747 OCTM1 1512 1702 1729 1734
1779 OCTM2 1776
505 ONE 157 181
1684 OVLAY1 1680
0 P 27 29 30 36 39 41 45 49 53
57 61 65 69 73 77 81 84 85
85 86 87 91 92 92 93 94 97
99 100 101 101 102 103 104 105 106
107 107 109 109 112 114 115 115 116
118 118 119 120 121 123 124 125 125
129 129 130 131 132 132 133 136 137
138 140 142 144 146 148 150 152 154
156 160 161 162 164 166 168 170 172
174 176 178 180 192 194 194 195 196
196 199 201 201 202 203 203 206 208
208 209
1329 PCBSL *
1330 PCBSLB *
1331 PCBSLZ *
1317 PCCLN *
1318 PCCLNB *

```
1319   PCCLNZ   *
1341   PCCTP    *
1342   PCCTPB   *
1343   PCCTPZ   *
1321   PCECH    *
1322   PCECHB   *
1323   PCECHZ   *
1313   PCLLN    *
1314   PCLLNB   *
1315   PCLLNZ   *
1349   PCNTD    *
1350   PCNTDB   *
1351   PCNTDZ   *
1337   PCPCH    *
1338   PCPCHB   *
1339   PCPCHZ   *
1333   PCSWL    *
1334   PCSWLB   *
1335   PCSWLZ   *
1345   PCTYP    *
1346   PCTYPB   *
1347   PCTYPZ   *
1325   PCXMM    *
1326   PCXMMB   *
1327   PCXMMZ   *
 575   PIM1     *
 576   PIM2     *
 577   PIM3     *
 578   PIM4     *
 579   PIM5     *
 580   PIM6     *
 581   PIM7     *
 582   PIM8     *
 699   POST     *
1287   PSABN    *
1288   PSABNB   *
1289   PSABNZ   *
1239   PSASY    *
1240   PSASYB   *
1241   PSASYZ   *
 670   PSBADT   *
 666   PSBEG    *
1299   PSBSC    *
1300   PSBSCB   *
1301   PSBSCZ   *
1251   PSCC1    *
1252   PSCC1B   *
1253   PSCC1Z   *
1255   PSCC2    *
1256   PSCC2B   *
1257   PSCC2Z   *
1291   PSCRC    *
1292   PSCRCB   *
1293   PSCRCZ   *
1271   PSDEF    *
1272   PSDEFB   *
1273   PSDEFZ   *
1279   PSDSF    *
1280   PSDSFB   *
1281   PSDSFZ   *
1267   PSDWN    *
1268   PSDWNB   *
1269   PSDWNZ   *
 672   PSEND    *
1263   PSEPF    *
1264   PSEPFB   *
1265   PSEPFZ   *
1247   PSLSP    *
1248   PSLSPB   *
1249   PSLSPZ   *
1231   PSMOD    *
1232   PSMODB   *
1233   PSMODZ   *
 671   PSNSEC   *
1235   PSPAR    *
1236   PSPARB   *
1237   PSPARZ   *
1275   PSPLA    *
1276   PSPLAB   *
1277   PSPLAZ   *
 667   PSPROT   *
1259   PSTER    *
1260   PSTERB   *
1261   PSTERZ   *
1243   PSXMM    *
1244   PSXMMB   *
1245   PSXMMZ   *
1283   PSYNC    *
1284   PSYNCB   *
1285   PSYNCZ   *
1303   PSYNR    *
1304   PSYNRB   *
1305   PSYNRZ   *
1295   PSYNT    *
1296   PSYNTB   *
```

```
1297   PSYNTZ   *
  32   PUSH     *
 228   PUTQ     *
 532   RA0      *
 533   RA1      *
 651   RADNR    1755   1760
 534   RB0      *
 535   RB1      *
 649   RFCB     1517
 504   RHW      1503   1593   1641   1642   1644   1716   1863
 645   RDPWD    1497   1502   1592
 642   RSTPR    *
 650   RTIDB    *
  96   SETA     *
 111   SETB     *
 191   SETF     *
 511   SEVEN    145    169
 510   SIX      147    171
  26   SPACE    *
 135   SUBAT    *
 288   TBATSK   *
 287   TBCPTH   *
 274   TBENTY   *
 268   TBEVNT   *
 282   TBID     *
 277   TBISA    *
 278   TBISB    *
 280   TBISP    *
 281   TBISRS   *
 294   TBIST    *
 279   TBISX    *
 292   TBKEY    *
 283   TBKN1    *
 284   TBKN2    *
 285   TBKN3    *
 293   TBMIMG   *
 291   TBNUCL   *
 267   TBPL     *
 269   TBRSA    *
 270   TBRSB    *
 289   TBRSE    *
 272   TBRSP    *
 273   TBRSTS   *
 271   TBRSX    *
 322   TBS0     *
 321   TBS1     *
 309   TBS10    *
 308   TBS11    *
 306   TBS12    *
 305   TBS13    *
 304   TBS14    *
 302   TBS15    *
 320   TBS2     *
 318   TBS3     *
 317   TBS4     *
 316   TBS5     *
 314   TBS6     *
 313   TBS7     *
 312   TBS8     *
 310   TBS9     *
 290   TBSIZ    *
 266   TBST     *
 286   TBTLC    *
 276   TBTMIN   *
 275   TBTMS    *
 265   TBTRD    *
   0   TC$FRQ   1473   1774
   0   TC$OCM   1472   1476   1482   1516   1591   1673   1750   1754   1756
                1775
   0   TC$TCD   1472   1564
1115   TCBSL    *
1116   TCBSLB   *
1117   TCBSLZ   *
1099   TCCLN    1605   1614   1659   1738   1740
1100   TCCLNB   1614   1659   1740
1101   TCCLNZ   1614   1659   1740
1127   TCCON    *
1128   TCCONB   *
1129   TCCONZ   *
1095   TCCTA    *
1096   TCCTAB   *
1097   TCCTAZ   *
1151   TCCTP    *
1152   TCCTPB   *
1153   TCCTPZ   *
1788   TCDADR   1604   1674   1737
1187   TCDCC    *
1188   TCDCCB   *
1189   TCDCCZ   *
1466   TCDSIZ   1814
1195   TCDTO    *
1196   TCDTOB   *
1197   TCDTOZ   *
1123   TCECH    *
1124   TCECHB   *
```

```
1125   TCECHZ   *
1199   TCID1    1566
1200   TCID1B   1566
1201   TCID1Z   1566
1203   TCID2    1569
1204   TCID2B   1569
1205   TCID2Z   1569
1171   TCLDF    *
1172   TCLDFB   *
1173   TCLDFZ   *
1103   TCLLN    1623
1104   TCLLNB   1623
1105   TCLLNZ   1623
1789   TCMTYP   1609   1665
1143   TCNOD    *
1144   TCNODB   *
1145   TCNODZ   *
1139   TCNTD    *
1140   TCNTDB   *
1141   TCNTDZ   *
1107   TCPCH    *
1108   TCPCHB   *
1109   TCPCHZ   *
1607   TCPROT   1608   1614   1623   1659
1135   TCRBC    *
1136   TCRBCB   *
1137   TCRBCZ   *
1191   TCRBF    *
1192   TCRBFB   *
1193   TCRBFZ   *
1175   TCRCA    *
1176   TCRCAB   *
1177   TCRCAZ   *
1155   TCRMD    *
1156   TCRMDB   *
1157   TCRMDZ   *
1091   TCRQH    1761
1092   TCRQHB   *
1093   TCRQHZ   *
1163   TCRRS    *
1164   TCRRSB   *
1165   TCRRSZ   *
1179   TCSTO    *
1180   TCSTOB   *
1181   TCSTOZ   *
1111   TCSWL    *
1112   TCSWLB   *
1113   TCSWLZ   *
1087   TCTCD    1572
1088   TCTCDB   *
1089   TCTCDZ   *
1147   TCTYP    1608
1148   TCTYPB   1608
1149   TCTYPZ   1608
1131   TCWBC    *
1132   TCWBCB   *
1133   TCWBCZ   *
1183   TCWCA    *
1184   TCWCAB   *
1185   TCWCAZ   *
1159   TCWMD    *
1160   TCWMDB   *
1161   TCWMDZ   *
1167   TCWRS    *
1168   TCWRSB   *
1169   TCWRSZ   *
1119   TCXMM    *
1120   TCXMMB   *
1121   TCXMMZ   *
1810   TEM1     1519   1530   1567
1811   TEM2     1521   1533   1570
 514   TEN       139    163
 205   TESTF    *
 507   THREE     153    177
1467   TIBSIZ   1528   1538
1375   TIDSP    *
1376   TIDSPB   *
1377   TIDSPZ   *
1367   TIDWN    *
1368   TIDWNB   *
1369   TIDWNZ   *
1391   TINET    *
1392   TINETB   *
1393   TINETZ   *
1379   TIODN    *
1380   TIODNB   *
1381   TIODNZ   *
1387   TIODP    *
1388   TIODPB   *
1389   TIODPZ   *
1383   TIOSC    *
1384   TIOSCB   *
1385   TIOSCZ   *
1371   TISEC    *
1372   TISECB   *
```

1373	TISECZ	*							
1359	TITU1	*							
1360	TITU1B	*							
1361	TITU1Z	*							
1363	TITU2	*							
1364	TITU2B	*							
1365	TITU2Z	*							
1221	TPFPA	*							
1222	TPFPAB	*							
1223	TPFPAZ	*							
1213	TPRPA	*							
1214	TPRPAB	*							
1215	TPRPAZ	*							
1217	TPWPA	*							
1218	TPWPAB	*							
1219	TPWPAZ	*							
1782	TRMFCB	1479	1523	1524	1544	1557	1561		
1464	TRMFKY	1782							
1463	TRMLUN	1479	1524	1561					
506	TWO	155	179						
440	V$1MIN	*							
458	V$BFC	*							
366	V$BGLB	*							
363	V$BIC1	*							
392	V$BTB	*							
400	V$BTBM	*							
457	V$BVN	*							
408	V$CAM	*							
420	V$CKB	*							
448	V$CKIT	*							
387	V$CKPT	*							
380	V$CPL	*							
367	V$CRDM	*							
410	V$CRDR	*							
421	V$CRM	*							
381	V$CRS	*							
426	V$CTAD	1872							
379	V$CTL	*							
418	V$CTMS	*							
364	V$DATE	*							
422	V$DSTB	1868							
435	V$ERFG	*							
0	V$EXEC	1472							
416	V$FGLB	*							
385	V$FLRS	*							
417	V$FREE	*							
401	V$GFCB	*							
397	V$IM	*							
447	V$IOA	*							
449	V$JCB	*							
356	V$JCFG	*							
370	V$JCTM	*							
354	V$JNAM	*							
436	V$JOP	*							
407	V$KEY	*							
355	V$LCNT	*							
390	V$LER	*							
423	V$LIT	*							
395	V$LLUP	*							
396	V$LPP	*							
386	V$LRSK	*							
389	V$LSAL	*							
414	V$LUNT	*							
394	V$LUP	*							
437	V$LUT1	1835	1839						
438	V$LUT2	1845	1849						
439	V$LUT3	1854	1858						
399	V$MAP	*							
402	V$MIMG	*							
398	V$MPM	*							
428	V$NCTR	*							
393	V$NPAG	*							
452	V$OCB	*							
415	V$OPCF	*							
388	V$OPCL	*							
424	V$PGT	*							
429	V$PIMN	*							
365	V$PLCT	*							
384	V$PTVB	*							
427	V$SCTL	*							
419	V$SCV	*							
434	V$SLFG	*							
403	V$ST0	*							
404	V$ST1	*							
405	V$ST2	*							
406	V$ST3	*							
382	V$TB	*							
411	V$TBGT	*							
459	V$TFC	*							
391	V$TJCP	*							
413	V$TMN	*							
412	V$TMS	*							
383	V$UTB	*							
0	V2$CRT	1769	1770						
1	VORTEX	1483	1513	1515	1588	1590	1670	1672	1748	1753

```
                1757  1764  1767  1773  1792
   0  VT$LTT     1474  1504  1594
1475  VT$DCT       12  1460  1882
1690  VT$DCY     1460
1692  VT$DCZ     1460  1691
   0  VTPUSH       33    35
 697  X           232   254  1497  1502  1507  1517  1566  1569  1572
               1592  1597  1607  1726  1728  1730  1732  1733  1740
 469  ZERO        *
```

```
000001 A     1 VORTEX SET     1                PUT LAST FOR VORTEX                    V2  02 00001
             2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES02 00002
             3 *                                                                        02 00003
             4 *      V.D.M. PART NO.          92L1105-017A                             02 00004
             5 *                                                                        02 00005
             6 *                                                RELEASED    03-26-73    02 00006
             7 *                                                                        02 00007
             8 *                                                                        02 00008
             9 *           VT$CLS                                                       02 00009
            10 *                                                                        02 00010
            11 *                                                                        02 00011
            12           TITLE   VT$CLS                                                02 00012
            13 *                                                                        02 00013
            14 *         VT$CLS -                                                       02 00014
            15 *                                                                        02 00015
            16 *         SUBROUTINE FOR VTAM TO PERMIT FORTRAN                          02 00016
            17 *         PROGRAMS TO CLOSE A LINE OR TERMINAL.                          02 00017
            18 *                                                                        02 00018
            19 *         THE CALLING SEQUENCE IS...                                     02 00019
            20 *                                                                        02 00020
            21 *         CALL    VT$CLS                                                 02 00021
            22 *         DATA    DCBAD           ADRS OF DCB/LCB                        02 00022
            23 *         DATA    LUNAD           ADRS OF LUN FOR CCM OR TCM             02 00023
            24 *         DATA    STATAD          ADRS TO RETURN STATUS                  02 00024
            25 *                                                                        02 00025
            26 *                                                                        02 00026
            27 *                                                                        02 00027
            28 *                                                                        02 00028
000001 A    29 X        EQU     1                                                      02 00029
000002 A    30 B        EQU     2                                                      02 00030
            31          NAME    VT$CLS                                                 02 00031
000000 000000 A 32 VT$CLS DATA  0                                                      02 00032
000001 054112 A 33          STA     ASAV        SAVE                                   02 00033
000002 064112 A 34          STB     BSAV        REGISTERS                              02 00034
000003 074112 A 35          STX     XSAV                                               02 00035
000004 006037 A 36          LDXE*   VT$CLS                                            02 00036
000005 100000 R
000006 005041 A 37          TXA                 GET ADRS OF DCB/LCB                    02 00037
000007 001002 A 38          JAP     VTCLB                                              02 00038
000010 000015 R
000011 015000 A 39 VTCLA    LDA     0,X         INDIRECT - REPEAT                      02 00039
000012 005014 A 40          TAX                                                        02 00040
000013 001004 A 41          JAN     VTCLA                                              02 00041
000014 000011 R
000015 054024 A 42 VTCLB    STA     CLSCAL+4    PUT LCB/DCB ADRS IN CLOSE REQUEST      02 00042
000016 006047 A 43          INRE    VT$CLS                                             02 00043
000017 000000 R
000020 006037 A 44          LDXE*   VT$CLS                                            02 00044
000021 100000 R
000022 005041 A 45          TXA                 GET ADRS OF LUN FOR TCM/CCM            02 00045
000023 001002 A 46          JAP     VTCLD                                              02 00046
000024 000031 R
000025 015000 A 47 VTCLC    LDA     0,X         INDIRECT - REPAET                      02 00047
000026 005014 A 48          TAX                                                        02 00048
000027 001004 A 49          JAN     VTCLC                                              02 00049
000030 000025 R
000031 014007 A 50 VTCLD    LDA     CLSCAL+3    CLEAR OLD LUN                          02 00050
000032 006150 A 51          ANAI    0177400     FROM CLOSE REQUEST                     02 00051
000033 177400 A
000034 115000 A 52          ORA     0,X         OR NEW LUN                             02 00052
000035 054003 A 53          STA     CLSCAL+3    INTO CLOSE REQUEST                     02 00053
            54 CLSCAL   CLOSE   0,0             PERFORM CLOSE                          02 00054
000036 006505 A
000037 000000 E
000040 100000 A
000041 003400 A
000042 000000 A
000043 000000 A
000044 000000 A
000045 005002 A 55          TZB                                                        02 00055
000046 006017 A 56          LDAE    CLSCAL+2    GET STATUS                             02 00056
000047 000040 R
000050 006150 A 57          ANAI    077000      FROM CLOSE REQUEST                     02 00057
000051 077000 A
000052 001010 A 58          JAZ     VTCLF       JUMP IF NO ERRORS                      02 00058
000053 000071 R
000054 006020 A 59          LDBI    5                                                  02 00059
000055 000005 A
000056 006136 A 60 VTCLE    ERAE    ERRTAB,B    FIND ERROR                             02 00060
000057 000117 R
000060 001010 A 61          JAZ     VTCLF       IN ERROR CODE TABLE                    02 00061
000061 000071 R
000062 006136 A 62          ERAE    ERRTAB,B                                           02 00062
000063 000117 R
000064 005322 A 63          DBR                                                        02 00063
000065 001026 A 64          JBNZ    VTCLE                                              02 00064
000066 000056 R
000067 006020 A 65          LDBI    6           NOT FOUND - MUST BE I/O ERROR          02 00065
000070 000006 A
000071 006047 A 66 VTCLF    INRE    VT$CLS                                             02 00066
000072 000000 R
000073 006037 A 67          LDXE*   VT$CLS                                            02 00067
000074 100000 R
000075 005041 A 68          TXA                 GET ADRS TO RETURN STATUS              02 00068
000076 001002 A 69          JAP     VTCLH                                              02 00069
```

```
000077 000104 R
000100 015000 A    70 VTCLG   LDA      0,X          INDIRECT - REPEAT                    02 00070
000101 005014 A    71         TAX                                                        02 00071
000102 001004 A    72         JAN      VTCLG                                             02 00072
000103 000100 R
000104 065000 A    73 VTCLH   STB      0,X          SET STATUS INTO CALLING SEWQUENCE    02 00073
000105 014006 A    74         LDA      ASAV                                              02 00074
000106 024006 A    75         LDB      BSAV         RESTORE                              02 00075
000107 034006 A    76         LDX      XSAV         REGISTERS                            02 00076
000110 006047 A    77         INRE     VT$CLS                                            02 00077
000111 000000 R
000112 001000 A    78         JMP*     VT$CLS       RETURN TO CALLER                     02 00078
000113 100000 R
000114 000000 A    79 ASAV    DATA     0                                                 02 00079
000115 000000 A    80 BSAV    DATA     0                                                 02 00080
000116 000000 A    81 XSAV    DATA     0                                                 02 00081
                   82 *                                                                  02 00082
                   83 *       TABLE FOR CONVERTING DASMR STATUS CODES                    02 00083
                   84 *       TO FORTRAN STATUS CODES.                                   02 00084
                   85 *                                                                  02 00085
000117 000000 A    86 ERRTAB  DATA     0                                                 02 00086
000120 002000 A    87         DATA     02000                                             02 00087
000121 033000 A    88         DATA     033000                                            02 00088
000122 034000 A    89         DATA     034000                                            02 00089
000123 037000 A    90         DATA     037000                                            02 00090
000124 043000 A    91         DATA     043000                                            02 00091
                   92         END                                                        02 00092
ENTRY NAMES
000000 R VT$CLS
EXTERNAL NAMES
000037 E V$IOC
SYMBOLS
000114 R ASAV    000002 A B       000115 R BSAV    000036 R CLSCAL
000117 R ERRTAB  000037 E V$IOC   000001 A VORTEX  000000 R VT$CLS
000011 R VTCLA   000015 R VTCLB   000025 R VTCLC   000031 R VTCLD
000056 R VTCLE   000071 R VTCLF   000100 R VTCLG   000104 R VTCLH
000001 A X       000116 R XSAV
  0 ERRORS ASSEMBLY COMPLETE

 79  ASAV       33    74
 30  B          60    62
 80  BSAV       34    75
 54  CLSCAL     42    50    53    56
 86  ERRTAB     60    62
  1  VORTEX  *
 32  VT$CLS     12    31    36    43    44    66    67    77    78
 39  VTCLA      41
 42  VTCLB      38
 47  VTCLC      49
 50  VTCLD      46
 60  VTCLE      64
 66  VTCLF      58    61
 70  VTCLG      72
 73  VTCLH      69
 29  X          39    47    52    70    73
 81  XSAV       35    76
```

```
000001 A     1 VORTEX SET     1                PUT LAST FOR VORTEX                    V2  02 00001
             2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES02 00002
             3 *                                                                        02 00003
             4 *     V.D.M. PART NO.         92L1105-018A                               02 00004
             5 *                                                                        02 00005
             6 *                                          RELEASED    03-26-73          02 00006
             7 *                                                                        02 00007
             8 *                                                                        02 00008
             9 *              VT$OPN                                                    02 00009
            10 *                                                                        02 00010
            11 *                                                                        02 00011
            12          TITLE   VT$OPN                                                  02 00012
            13 *                                                                        02 00013
            14 *        VT$OPN -                                                        02 00014
            15 *                                                                        02 00015
            16 *        SUBROUTINE FOR VTAM TO PERMIT FORTRAN PROGRAMS                  02 00016
            17 *        TO OPEN A LINE OR TERMINAL.                                     02 00017
            18 *                                                                        02 00018
            19 *        THE CALLING SEQUENCE IS...                                      02 00019
            20 *                                                                        02 00020
            21 *        CALL    VT$OPN                                                  02 00021
            22 *        DATA    DCBAD           ADRS OF DCB/LCB                         02 00022
            23 *        DATA    LUNAD           ADRS OF LUN FOR TCM OR CCM              02 00023
            24 *        DATA    STATAD          ADRS TO RETURN STATUS                   02 00024
            25 *                                                                        02 00025
            26 *                                                                        02 00026
            27 *                                                                        02 00027
            28 *                                                                        02 00028
     000001 A   29 X        EQU     1                                                   02 00029
     000002 A   30 B        EQU     2                                                   02 00030
                31          NAME    VT$OPN                                              02 00031
000000 000000 A   32 VT$OPN  DATA    0                                                   02 00032
000001 054112 A   33         STA     ASAV            SAVE REGISTERS                      02 00033
000002 064112 A   34         STB     BSAV                                                02 00034
000003 074112 A   35         STX     XSAV                                                02 00035
000004 006037 A   36         LDXE*   VT$OPN                                            02 00036
000005 100000 R
000006 005041 A   37         TXA                     GET ADRS OF DCB/LCB                 02 00037
000007 001002 A   38         JAP     VTOPB                                               02 00038
000010 000015 R
000011 015000 A   39 VTOPA   LDA     0,X             INDIRECT - REPEAT                   02 00039
000012 005014 A   40         TAX                                                         02 00040
000013 001004 A   41         JAN     VTOPA                                               02 00041
000014 000011 R
000015 054024 A   42 VTOPB   STA     OPNCAL+4        PUT ADRS OF DCB/LCB IN OPEN REQUEST 02 00042
000016 006047 A   43         INRE    VT$OPN                                              02 00043
000017 000000 R
000020 006037 A   44         LDXE*   VT$OPN                                            02 00044
000021 100000 R
000022 005041 A   45         TXA                     GET ADRS OF LUN FOR TCM/CCM         02 00045
000023 001002 A   46         JAP     VTOPD                                               02 00046
000024 000031 R
000025 015000 A   47 VTOPC   LDA     0,X             INDIRECT - REPEAT                   02 00047
000026 005014 A   48         TAX                                                         02 00048
000027 001004 A   49         JAN     VTOPC                                               02 00049
000030 000025 R
000031 014007 A   50 VTOPD   LDA     OPNCAL+3        CLEAR OLD LUN                       02 00050
000032 006150 A   51         ANAI    0177400         FROM OPEN REQUEST                   02 00051
000033 177400 A
000034 115000 A   52         ORA     0,X             OR NEW LUN                          02 00052
000035 054003 A   53         STA     OPNCAL+3        INTO OPEN REQUEST                   02 00053
                  54 OPNCAL  OPEN    0,0             PERFORM OPEN                        02 00054
000036 006505 A
000037 000000 E
000040 100000 A
000041 003000 A
000042 000000 A
000043 000000 A
000044 000000 A
000045 005002 A   55         TZB                                                         02 00055
000046 006017 A   56         LDAE    OPNCAL+2        GET STATUS                          02 00056
000047 000040 R
000050 006150 A   57         ANAI    077000          FROM OPEN REQUEST                   02 00057
000051 077000 A
000052 001010 A   58         JAZ     VTOPF           JUMP IF NO ERRORS                   02 00058
000053 000071 R
000054 006020 A   59         LDBI    7                                                   02 00059
000055 000007 A
000056 006136 A   60 VTOPE   ERAE    ERRTAB,B        FIND ERROR                          02 00060
000057 000117 R
000060 001010 A   61         JAZ     VTOPF           IN ERROR CODE TABLE                 02 00061
000061 000071 R
000062 006136 A   62         ERAE    ERRTAB,B                                            02 00062
000063 000117 R
000064 005322 A   63         DBR                                                         02 00063
000065 001026 A   64         JBNZ    VTOPE                                               02 00064
000066 000056 R
000067 006020 A   65         LDBI    8               NOT FOUND - MUST BE I/O ERROR       02 00065
000070 000010 A
000071 006047 A   66 VTOPF   INRE    VT$OPN                                              02 00066
000072 000000 R
000073 006037 A   67         LDXE*   VT$OPN         GET ADRS                            02 00067
000074 100000 R
000075 005041 A   68         TXA                     OF STATUS WORD                      02 00068
000076 001002 A   69         JAP     VTOPH                                               02 00069
```

```
000077 000104 R
000100 015000 A    70 VTOPG   LDA      0,X          INDIRECT - REPEAT                    02 00070
000101 005014 A    71         TAX                                                        02 00071
000102 001004 A    72         JAN      VTOPG                                             02 00072
000103 000100 R
000104 065000 A    73 VTOPH   STB      0,X          SET STATUS IN CALLING SEQUENCE       02 00073
000105 014006 A    74         LDA      ASAV                                              02 00074
000106 024006 A    75         LDB      BSAV         RESTORE REGISTERS                    02 00075
000107 034006 A    76         LDX      XSAV                                              02 00076
000110 006047 A    77         INRE     VT$OPN                                            02 00077
000111 000000 R
000112 001000 A    78         JMP*     VT$OPN       RETURN TO CALLER                     02 00078
000113 100000 R
000114 000000 A    79 ASAV    DATA     0                                                 02 00079
000115 000000 A    80 BSAV    DATA     0                                                 02 00080
000116 000000 A    81 XSAV    DATA     0                                                 02 00081
                   82 *                                                                  02 00082
                   83 *       TABLE TO CONVERT DASMR ERROR CODES                         02 00083
                   84 *       TO FORTRAN ERROR CODES.                                    02 00084
                   85 *                                                                  02 00085
000117 000000 A    86 ERRTAB  DATA     0                                                 02 00086
000120 002000 A    87         DATA     02000                                             02 00087
000121 033000 A    88         DATA     033000                                            02 00088
000122 035000 A    89         DATA     035000                                            02 00089
000123 036000 A    90         DATA     036000                                            02 00090
000124 042000 A    91         DATA     042000                                            02 00091
000125 043000 A    92         DATA     043000                                            02 00092
000126 044000 A    93         DATA     044000                                            02 00093
                   94         END                                                        02 00094
ENTRY NAMES
000000 R VT$OPN
EXTERNAL NAMES
000037 E V$IOC
SYMBOLS
000114 R ASAV    000002 A B       000115 R BSAV    000117 R ERRTAB
000036 R OPNCAL  000037 E V$IOC   000001 A VORTEX  000000 R VT$OPN
000011 R VTOPA   000015 R VTOPB   000025 R VTOPC   000031 R VTOPD
000056 R VTOPE   000071 R VTOPF   000100 R VTOPG   000104 R VTOPH
000001 A X       000116 R XSAV
  0 ERRORS ASSEMBLY COMPLETE

 79  ASAV       33    74
 30  B          60    62
 80  BSAV       34    75
 86  ERRTAB     60    62
 54  OPNCAL     42    50    53    56
  1  VORTEX  *
 32  VT$OPN     12    31    36    43    44    66    67    77    78
 39  VTOPA      41
 42  VTOPB      38
 47  VTOPC      49
 50  VTOPD      46
 60  VTOPE      64
 66  VTOPF      58    61
 70  VTOPG      72
 73  VTOPH      69
 29  X          39    47    52    70    73
 81  XSAV       35    76
```

```
                                 1          EJEC                                                                  03 00001
                                 2  *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES  03 00002
                                 3  *                                                                          03 00003
                                 4  *                              V.D.M.      PART  NO   92L1105-021B        03 00004
                                 5  *                                                                          03 00005
                                 6  *                                 RELEASE  3-1-74                         03 00006
                                 7  *                                                                          03 00007
                                 8  *                                                                          03 00008
                                 9  *                    BITSET                                                03 00009
                                10  *                                                                          03 00010
                                11  *                                                                          03 00011
                                12          TITLE   BITSET                                                    03 00012
                                13  ************************************************************************* 03 00013
                                14  *                                                                       * 03 00014
                                15  * TITLE - BITSET SUBROUTINE                                             * 03 00015
                                16  *                                                                       * 03 00016
                                17  * FUNCTION -                                                            * 03 00017
                                18  *    ENTRY POINT 'BITSET' SETS BITS IN A DATA WORD.                     * 03 00018
                                19  *    ENTRY POINT 'BITGET' GETS BITS IN A DATA WORD.                     * 03 00019
                                20  *                                                                       * 03 00020
                                21  * CALLING SEQUENCE -                                                    * 03 00021
                                22  *    CALL BITSET(WORD, LBIT, RBIT, VALUE)                               * 03 00022
                                23  *  SETS THE FIELD SPECIFIED BY LBIT-RBIT IN WORD TO VALUE               * 03 00023
                                24  *                                                                       * 03 00024
                                25  *    EXAMPLE - CALL BITSET(I, 5, 3, 4) SET I TO OCTAL XXXX4X            * 03 00025
                                26  *                                                                       * 03 00026
                                27  *    CALL BITGET(VALUE, LBIT, RBIT, WORD)                               * 03 00027
                                28  *  RETRIEVES CONTENTS OF FIELD AND PLACES IN VALUE.                      * 03 00028
                                29  *                                                                       * 03 00029
                                30  *    EXAMPLE - CALL BITGET(I, 5, 3, 20) SETS I=2                        * 03 00030
                                31  *                                                                       * 03 00031
                                32  * ENTRY POINTS - BITSET(ALIAS BITPUT) AND BITGET                        * 03 00032
                                33  *                                                                       * 03 00033
                                34  ************************************************************************* 03 00034
                                35          EJEC                                                              03 00035
                                36  ************************************************************************* 03 00036
                                37  *       DECLARE EXTERNAL NAMES                                          * 03 00037
                                38  ************************************************************************* 03 00038
                                39          NAME    BITSET          STORE BIT ENTRY POINT                     03 00039
                                40          NAME    BITGET          FETCH BIT ENTRY POINT                     03 00040
                                41          EXT     $SE             CHAIN FOLLOWING ROUTINE                   03 00041
                                43  ************************************************************************* 03 00043
                                44  *       ENTRY POINT BITSET, SET ENTRY TYPE FLAG AND GO TO SETUP ROUTINE* 03 00044
                                45  ************************************************************************* 03 00045
000000 000000 A                 46  BITSET ENTR                     ENTRY CELL                                03 00046
000001 006017 A                 47          LDAE    BITSET          PICK UP ENTRY CELL                        03 00047
000002 000000 R
000003 005012 A                 48          TAB                     SET TYPE ENTRY FLAG TO STOW               03 00048
000004 001000 A                 49          JMP     SETUP           GO TO SETUP ROUTINE                       03 00049
000005 000103 R
                                51  ************************************************************************* 03 00051
                                52  *       ENTRY POINT BITGET, SET ENTRY TYPE AND GO TO SETUP ROUTINE    * 03 00052
                                53  ************************************************************************* 03 00053
000006 000000 A                 54  BITGET ENTR                     ENTRY CELL                                03 00054
000007 005002 A                 55          TZB                     SET TYPE ENTRY FLAG TO FETCH              03 00055
000010 006017 A                 56          LDAE    BITGET          PICK UP ENTRY CELL                        03 00056
000011 000006 R
000012 001000 A                 57          JMP     SETUP           GO TO SETUP                               03 00057
000013 000103 R
                                58          EJEC                                                              03 00058
                                59  ************************************************************************* 03 00059
                                60  *       MAINLINE CODE - COMMON TO BOTH ENTRIES                          * 03 00060
                                61  ************************************************************************* 03 00061
000014 000014 R                 62  MAIN    EQU     *               TOP OF COMMON CODE                        03 00062
000014 034076 A                 63          LDX     LBIT            LOAD PARAMETER ADDRESS                    03 00063
000015 015000 A                 64          LDA     0,X             LOAD LEFT BIT NUMBER                      03 00064
000016 150472 A                 65          ANA     C15             TAKE MODULOUS WORD SIZE                   03 00065
000017 054073 A                 66          STA     LBIT            SAVE IN LOCAL CELL                        03 00066
000020 034073 A                 67          LDX     RBIT            LOAD PARAMETER ADDRESS                    03 00067
000021 015000 A                 68          LDA     0,X             LOAD RIGHT BIT NUMBER                     03 00068
000022 150472 A                 69          ANA     C15             TAKE MODULOUS WORD SIZE                   03 00069
000023 054070 A                 70          STA     RBIT            SAVE IN LOCAL CELL                        03 00070
000024 034070 A                 71          LDX     SRC             LOAD SOURCE ADDRESS                       03 00071
000025 015000 A                 72          LDA     0,X             LOAD SOURCE WORD                          03 00072
000026 054066 A                 73          STA     SRC             SAVE IN LOCAL CELL                        03 00073
                                75  ************************************************************************* 03 00075
                                76  *       COMPUTE FIELD WIDTH (LBIT-RBIT+1                                * 03 00076
                                77  ************************************************************************* 03 00077
000027 014063 A                 78          LDA     LBIT            LOAD LEFT BIT NUMBER                      03 00078
000030 144063 A                 79          SUB     RBIT            MINUS RIGHT BIT NUMBER                    03 00079
000031 120421 A                 80          ADD     C1              PLUS ONE                                  03 00080
000032 150472 A                 81          ANA     C15             MODULOUS WORD SIZE                        03 00081
000033 054057 A                 82          STA     SIZE            SAVE                                      03 00082
                                84  ************************************************************************* 03 00084
                                85  *       SETUP SHIFT INSTRUCTIONS                                        * 03 00085
                                86  ************************************************************************* 03 00086
000034 014057 A                 87          LDA     RBIT            LOAD RIGHT BIT LOCATION                   03 00087
000035 114066 A                 88          ORA     LSCON           OR IN OP CODE                             03 00088
000036 054067 A                 89          STA     LSHIFT          AND USE AS EXECUTE OPERAND                03 00089
000037 014054 A                 90          LDA     RBIT            LOAD RIGHT BIT LOCATION                   03 00090
000040 114064 A                 91          ORA     RSCON           OR IN OP CODE                             03 00091
000041 054065 A                 92          STA     RSHIFT          AND USE AS EXECUTE OPERAND                03 00092
000042 014050 A                 93          LDA     SIZE            RELOAD FIELD SIZE                         03 00093
000043 114060 A                 94          ORA     LSCON           OR IN OP CODE                             03 00094
000044 054001 A                 95          STA     MSHIFT          USE AS MASK SHIFT                         03 00095
```

```
                    96          EJEC                                                                    03 00096
                    97 ********************************************************************************** 03 00097
                    98 *       SETUP BIT MASK, RIGHT JUSTIFIED (2**SIZE)-1                            * 03 00098
                    99 ********************************************************************************** 03 00099
000045 010421  A   100          LDA     C1              LOAD SINGLE BIT                                    03 00100
000046 000000  A   101 MSHIFT   DATA    0               SHIFT LEFT BY WIDTH                                03 00101
000047 005311  A   102          DECR    011             MINUS ONE                                          03 00102
000050 001016  A   103          JANZ    STMASK          SKIP IF MASK IS NOT NULL                           03 00103
000051 000053  R
000052 010461  A   104          LDA     ONES            ELSE PICK UP SPECIAL ALL ONES MASK                 03 00104
000053 054054  A   105 STMASK   STA     MASK            SAVE AS MASK                                       03 00105
                   107 ********************************************************************************** 03 00107
                   108 *       ORIENT SOURCE WORD TO PROPER FORM                                      * 03 00108
                   109 ********************************************************************************** 03 00109
000054 014040  A   110          LDA     SRC             PICK UP SOURCE WORD                                03 00110
000055 003020  A   111          XBZ     RSHIFT          IF FETCH, SHIFT RIGHT                              03 00111
000056 000127  R
000057 154050  A   112          ANA     MASK            MASK OUT EXTRA BITS                                03 00112
000060 054034  A   113          STA     SRC             SAVE RESULT                                        03 00113
000061 001020  A   114          JBZ     MAI010          SKIP IF FETCH CASE                                 03 00114
000062 000074  R
000063 003000  A   115          XEC     LSHIFT          SHIFT SOURCE INTO PLACE                            03 00115
000064 000126  R
000065 054027  A   116          STA     SRC             SAVE SHIFTED RESULT                                03 00116
                   118 ********************************************************************************** 03 00118
                   119 *       SETUP INVERSE MASK ON STORE CASE                                       * 03 00119
                   120 ********************************************************************************** 03 00120
000066 014041  A   121          LDA     MASK            PICK UP MASK                                       03 00121
000067 003000  A   122          XEC     LSHIFT          SHIFT LEFT INTO PLACE                              03 00122
000070 000126  R
000071 005211  A   123          COMPL   011             INVERT ALL BITS                                    03 00123
000072 001000  A   124          JMP     MAI020          SKIP TO MASK DATA WORD                             03 00124
000073 000075  R
                   125          EJEC                                                                    03 00125
                   126 ********************************************************************************** 03 00126
                   127 *       ON FETCH CASE, INVERSE MASK IS ALL ZERO                                * 03 00127
                   128 ********************************************************************************** 03 00128
000074 005001  A   129 MAI010  ZERO    A               SET MASK TO NULL                                   03 00129
                   131 ********************************************************************************** 03 00131
                   132 *       NOW MASK OUT DESTINATION AND OR IN SOURCE                              * 03 00132
                   133 ********************************************************************************** 03 00133
000075 034014  A   134 MAI020  LDX     DEST            LOAD DESTINATION ADDRESS                           03 00134
000076 155000  A   135          ANA     0,X             MASK OFF PREVIOUS FIELD CONTENTS                   03 00135
000077 114015  A   136          ORA     SRC             OR IN NEW DATA                                     03 00136
000100 055000  A   137          STA     0,1             AND RESTORE                                        03 00137
                   139 ********************************************************************************** 03 00139
                   140 *       ALL DONE, RETURN TO CALLER                                             * 03 00140
                   141 ********************************************************************************** 03 00141
000101 001000  A   142          JMP     0               RESTORE REG P                                      03 00142
000102 000000  A
       000102  R   143 SAVEP    EQU     *-1                                                             03 00143
                   144          EJEC                                                                    03 00144
                   145 ********************************************************************************** 03 00145
                   146 *       THIS CODE SETS UP FOR EXECUTION BY CALLING $SE                         * 03 00146
                   147 ********************************************************************************** 03 00147
000103 054002  A   148 SETUP    STA     SET010          SAVE PARAMETER ADDRESS                             03 00148
000104 001000  A   149          JMP     SET020          SKIP OVER CONSTANT                                 03 00149
000105 000107  R
000106 000000  A   150 SET010   DATA    0               PARAMETER LIST ADDRESS                             03 00150
000107 002000  A   151 SET020   JMPM    $SE             RESOLVE INDIRECT ADDRESSES                         03 00151
000110 000000  E
000111 000004  A   152          DATA    4               FOUR PARAMETERS                                    03 00152
000112 000000  A   153 DEST     DATA    0               DESTINATION ADDRESS                                03 00153
000113 000000  A   154 LBIT     DATA    0               LEFT BIT IN FIELD                                  03 00154
000114 000000  A   155 RBIT     DATA    0               RIGHT BIT IN FIELD                                 03 00155
000115 000000  A   156 SRC      DATA    0               SOURCE WORD ADDRESS                                03 00156
       000113  R   157 SIZE     EQU     LBIT                                                            03 00157
000116 006017  A   158          LDAE    SET010          LOAD ADJUSTED RETURN ADDRESS                       03 00158
000117 000106  R
000120 006057  A   159          STAE    SAVEP           AND SAVE IN RETURN CELL                            03 00159
000121 000102  R
000122 001000  A   160          JMP     MAIN            BRANCH TO MAINLINE                                 03 00160
000123 000014  R
                   161          EJEC                                                                    03 00161
                   162 ********************************************************************************** 03 00162
                   163 *       CONSTANTS AND WORK AREAS                                               * 03 00163
                   164 ********************************************************************************** 03 00164
       000001  A   165 A        EQU     1               EQUATE FOR A REGISTER                              03 00165
       000002  A   166 B        EQU     2               EQUATE FOR B REGISTER                              03 00166
       000001  A   167 X        EQU     1               EQUATE FOR X REGISTER                              03 00167
000124 004240  A   168 LSCON    LRLA    0               SHIFT LEFT OP CODE CONSTANT                        03 00168
000125 004300  A   169 RSCON    ASRA    0               SHIFT RIGHT OP CODE CONSTANT                       03 00169
000126 000000  A   170 LSHIFT   DATA    0               GENERAL SHIFT LEFT                                 03 00170
000127 000000  A   171 RSHIFT   DATA    0               GENERAL SHIFT RIGHT                                03 00171
000130 000000  A   172 MASK     DATA    0               MASK CELL                                          03 00172
       000421  A   173 C1       EQU     0421            LOW-CORE CONSTANT ONE                              03 00173
       000472  A   174 C15      EQU     0472            LOW-CORE CONSTANT 017                              03 00174
       000461  A   175 ONES     EQU     0461            LOW-CORE CONSTANT 0177777                          03 00175
                   176          EJEC                                                                    03 00176
                   177          NAME    SYSGET          SET NAME OF ENTRY POINT                            03 00177
                   179 ********************************************************************************** 03 00179
                   180 *                                                                                  * 03 00180
                   181 * TITLE - ROUTINE TO FETCH LOW-CORE JOB INFORMATION                               * 03 00181
                   182 *                                                                                  * 03 00182
                   183 * PURPOSE - TO ALLOW ACCESS TO LOW-CORE LINE COUNT, JOB NAME,                     * 03 00183
```

```
                        184 *       AND CURRENT DATE.                                                    *  03  00184
                        185 *                                                                            *  03  00185
                        186 *  CALLING SEQUENCE -                                                        *  03  00186
                        187 *       INTEGER WORK(9)                                                      *  03  00187
                        188 *       CALL SYSGET(WORK)                                                    *  03  00188
                        189 *                                                                            *  03  00189
                        190 *  ENTRANCE PARAMETERS -                                                     *  03  00190
                        191 *       NAME OF NINE-WORD VECTOR IN FOLLOWING FORMAT -                       *  03  00191
                        192 *         1 V$DATE        4 V$DATE+3      7 V$JNAM+2                         *  03  00192
                        193 *         2 V$DATE+1      5 V$JNAM        8 V$JNAM+3                         *  03  00193
                        194 *         3 V$DATE+2      6 V$JNAM+1      9 V$LCNT                           *  03  00194
                        195 *                                                                            *  03  00195
                        196 *  ERROR CONDITIONS - NONE.                                                  *  03  00196
                        197 *                                                                            *  03  00197
                        198 ********************************************************************************  03  00198
                        200 ********************************************************************************  03  00200
                        201 *       SETUP FOR LOOP                                                       *  03  00201
                        202 ********************************************************************************  03  00202
000131  014020  A     203 SYS10   LDA     SYSVCT          PICK UP OUTPUT VECTOR ADDRESS                    03  00203
000132  120423  A     204         ADD     FOUR            POINT TO FIFTH WORD                              03  00204
000133  005012  A     205         TAB                     PLACE IN B REGISTER                              03  00205
000134  030423  A     206         LDX     FOUR            PICK UP COUNT                                    03  00206
                        208 ********************************************************************************  03  00208
                        209 *       ENTER WORD MOVE LOOP FOR FIVE ITERATIONS                             *  03  00209
                        210 ********************************************************************************  03  00210
000135  015070  A     211 SYS20   LDA     V$DATE,X        LOAD ELEMENT OF DATE                             03  00211
000136  056000  A     212         STA     0,B             STOW IN OUTPUT VECTOR                            03  00212
000137  015050  A     213         LDA     V$JNAM,X        LOAD ELEMENT OF NAME                             03  00213
000140  056004  A     214         STA     4,B             STOW IN OUTPUT VECTOR                            03  00214
000141  005322  A     215         DBR                     BACK UP OUTPUT POINTER                           03  00215
000142  005345  A     216         DECR    045             DECREMENT COUNT AND COPY TO A REGISTER           03  00216
000143  001002  A     217         JAP     SYS20           CONTINUE WHILE REG A IS NON-NEGATIVE             03  00217
000144  000135  R
000145  001000  A     218         JMP     0               ELSE RETURN TO CALLER                            03  00218
000146  000000  A
                        220 ********************************************************************************  03  00220
                        221 *       MAJOR ENTRY POINT IS HERE                                            *  03  00221
                        222 ********************************************************************************  03  00222
        000146  R       223 SYSGET  EQU     *-1             CALL ENTRY POINT                                 03  00223
000147  002000  A     224         CALL    $SE,1           RESOLVE INDIRECT THREAD                          03  00224
000150  000110  E
000151  000001  A
000152                  225 SYSVCT  BSS     1               ADDRESS OF OUTPUT VECTOR                         03  00225
000153  001000  A     226         JMP     SYS10           JUMP TO SETUP LOOP                               03  00226
000154  000131  R
                        228 ********************************************************************************  03  00228
                        229 *       LOW-CORE EQUATES                                                     *  03  00229
                        230 ********************************************************************************  03  00230
        000070  A       231 V$DATE  EQU     070             LOCATION OF DATE VECTOR                          03  00231
        000050  A       232 V$JNAM  EQU     050             LOCATION OF JOB NAME VECTOR                      03  00232
        000054  A       233 V$LCNT  EQU     054             LOCATION OF LINE COUNT                           03  00233
        000423  A       234 FOUR    EQU     0423            LOCATION OF CONSTANT FOUR                        03  00234
                        236         END                                                                      03  00236
ENTRY NAMES
000006 R BITGET 000000 R BITSET 000146 R SYSGET
EXTERNAL NAMES
000150 E $SE
SYMBOLS
000150 E $SE     000001 A A       000002 A B       000006 R BITGET
000000 R BITSET  000421 A C1      000472 A C15     000116 R DEST
000423 A FOUR    000113 R LBIT    000124 R LSCON   000126 R LSHIFT
000074 R MAI010  000075 R MAI020  000014 R MAIN    000130 R MASK
000046 R MSHIFT  000461 A ONES    000114 R RBIT    000125 R RSCON
000127 R RSHIFT  000102 R SAVEP   000106 R SET010  000107 R SET020
000103 R SETUP   000113 R SIZE    000115 R SRC     000053 R STMASK
000131 R SYS10   000135 R SYS20   000146 R SYSGET  000152 R SYSVCT
000070 A V$DATE  000050 A V$JNAM  000054 A V$LCNT  000001 A X
0 ERRORS ASSEMBLY COMPLETE

  0   $SE        41   151   224
165   A         129
166   B         212   214
 54   BITGET     40    56
 46   BITSET     12    39    47
173   C1         80   100
174   C15        65    69    81
153   DEST      134
234   FOUR      204   206
154   LBIT       63    66    78   157
168   LSCON      88    94
170   LSHIFT     89   115   122
129   MAI010    114
134   MAI020    124
 62   MAIN      160
172   MASK      105   112   121
101   MSHIFT     95
175   ONES      104
155   RBIT       67    70    79    87    90
169   RSCON      91
171   RSHIFT     92   111
143   SAVEP     159
150   SET010    148   158
151   SET020    149
148   SETUP      49    57
```

157	SIZE	82	93				
156	SRC	71	73	110	113	116	136
105	STMASK	103					
203	SYS10	226					
211	SYS20	217					
223	SYSGET	177					
225	SYSVCT	203					
231	V$DATE	211					
232	V$JNAM	213					
233	V$LCNT	*					
167	X	64	68	72	135	211	213

```
000001 A     1 VORTEX SET     1              PUT LAST FOR VORTEX                    V2  17 00001
             2 *  THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES17 00002
             3 *                                                                      17 00003
             4 *       V.D.M.   PART NO.     92L1105-037B                           17 00004
             5 *                                                                      17 00005
             6 *                             RELEASED     3-1-74                    17 00006
             7 *                                                                      17 00007
             8 *                                                                      17 00008
             9 *              NCM                                                     17 00009
            10 *                                                                      17 00010
            11 *                                                                      17 00011
            12       TITLE   NCM                                                     17 00012
            13       NLIS                                                            17 00013
          1443       LIST                                                            ********
          1444 *                                                                     17 00014
          1445       TITLE   NCM            MAJOR ENTRY POINT                       17 00015
          1446 ********************************************************************* 17 00016
          1447 *                                                                   * 17 00017
          1448 * TITLE - NETWORK CONTROL MODULE                                    * 17 00018
          1449 *                                                                   * 17 00019
          1450 * PURPOSE -                                                         * 17 00020
          1451 *   THIS IS THE MAIN ENTRY POINT FOR NCM.                           * 17 00021
          1452 *                                                                   * 17 00022
          1453 * CALLING SEQUENCE -                                                * 17 00023
          1454 *       JMP     NETCON         IN RESPONSE TO RTE SCHED             * 17 00024
          1455 *                                                                   * 17 00025
          1456 * ENTRANCE PARAMETERS -                                             * 17 00026
          1457 *   NONE                                                            * 17 00027
          1458 *                                                                   * 17 00028
          1459 ********************************************************************* 17 00029
000000 R  1460 NETCON EQU     *              TOP OF PARSING LOOP                     17 00030
000000 R  1461 NCM    EQU     NETCON         EQUATE FOR ENTRY POINT                  17 00031
          1462 IOMAC  FORM    1,3,4,8        FORMAT FOR I/O MACROS, WORD 3           17 00032
          1464 ********************************************************************* 17 00034
          1465 *       SETUP AND ISSUE INITIAL MESSAGE                           * 17 00035
          1466 ********************************************************************* 17 00036
000000 002000 A 1467       CALL    MOVER,CNET,FLD1,LNET                            17 00037
000001 002237 R
000002 002467 R
000003 002527 R
000004 000003 A
000005 002000 A 1468       CALL    TYPE           ISSUE INITIAL MESSAGE            17 00038
000006 002150 R
000007 002000 A 1469       CALL    KEY            READ INPUT DIRECTIVE             17 00039
000010 002162 R
000011 010421 A 1470       LDA     BADSYN         PICK UP SYNTAX ERROR CODE        17 00040
000012 006057 A 1471       STAE    ERRTYP         STOW AS INITIAL ERROR CODE       17 00041
000013 002455 R
          1472       EJEC                                                          17 00042
          1473 ********************************************************************* 17 00043
          1474 *       NOW BLANK OUT VERB HOLDER AND RESET BUFFER POINTER         * 17 00044
          1475 ********************************************************************* 17 00045
000014 034154 A 1476       LDX     NC0602         PICK UP POINTER TO HOLDER        17 00046
000015 074155 A 1477       STX     NC0620         STOW AS INITIAL HOLDER POINTER   17 00047
000016 006017 A 1478 NC0410 LDAE    BLANK          PICK UP AN UNPACKED BLANK        17 00048
000017 002463 R
000020 055000 A 1479       STA     0,X            STOW IN HOLDER                   17 00049
000021 005145 A 1480       INCR    045            BUMP X REG AND COPY TO A REG     17 00050
000022 144147 A 1481       SUB     NC0604         COMPARE TO END OF HOLDER         17 00051
000023 001004 A 1482       JAN     NC0410         IF INSIDE, CONTINUE LOOP         17 00052
000024 000016 R
000025 006010 A 1483       LDAI    BUF            POINT TO INPUT BUFFER            17 00053
000026 002766 R
000027 004241 A 1484       LRLA    1              CONVERT TO BYTE ADDRESS          17 00054
000030 006057 A 1485       STAE    COLPTR         STOW AS INITIAL FETCH POINTER    17 00055
000031 002453 R
          1487 ********************************************************************* 17 00057
          1488 *       FETCH NEXT CHARACTER AND CHECK IF ALPHABETIC                * 17 00058
          1489 ********************************************************************* 17 00059
000032 002000 A 1490 NC0420 CALL    FETCH,NC0500   FETCH NEXT NON-BLANK             17 00060
000033 001737 R
000034 000060 R
000035 006147 A 1491       SUBE    CA             COMPARE AGAINST LOWEST ALPHABETIC 17 00061
000036 002462 R
000037 001004 A 1492       JAN     NC0500         IF LOWER, CANNOT BE IN ALPHABET  17 00062
000040 000060 R
000041 006147 A 1493       SUBE    CZMA           SUBTRACT RANGE OF ALPHABET       17 00063
000042 002464 R
000043 001002 A 1494       JAP     NC0500         IF HIGHER, CANNOT BE IN ALPHABET 17 00064
000044 000060 R
          1496 ********************************************************************* 17 00066
          1497 *       CHARACTER IS ALPHABETIC, STORE IN HOLDER                    * 17 00067
          1498 ********************************************************************* 17 00068
000045 014125 A 1499       LDA     NC0620         PICK UP CURRENT POINTER          17 00069
000046 144123 A 1500       SUB     NC0604         COMPARE AGAINST HOLDER END       17 00070
000047 001002 A 1501       JAP     SYNERR         IF TOO LARGE, SIGNAL SYNTAX ERROR 17 00071
000050 000133 R
000051 034121 A 1502       LDX     NC0620         PICK UP HOLDER POINTER           17 00072
000052 006017 A 1503       LDAE    CHAR           PICK UP THE CHARACTER            17 00073
000053 002454 R
000054 055000 A 1504       STA     0,X            STOW IN VERB HOLDER              17 00074
000055 044115 A 1505       INR     NC0620         BUMP HOLDER INDEX                17 00075
000056 001000 A 1506       JMP     NC0420         CONTINUE BUILDING THE VERB       17 00076
000057 000032 R
          1508 ********************************************************************* 17 00078
```

```
                        1509 *       END OF VERB HAS BEEN FOUND. PACK, IN PLACE, THE VERB                *  17 00079
                        1510 ************************************************************************** 17 00080
000060 034110  A        1511 NC0500  LDX      NC0602          PICK UP START OF VERB                       17 00081
000061 005042  A        1512         TXB                      COPY TO B REG                              17 00082
000062 015000  A        1513 NC0510  LDA      0,X             PICK UP A CHARACTER                        17 00083
000063 004250  A        1514         LRLA     8               SHIFT TO LEFT-SIDE                         17 00084
000064 115001  A        1515         ORA      1,X             OR IN RIGHT-SIDE                           17 00085
000065 056000  A        1516         STA      0,B             STOW BACK IN HOLDER                        17 00086
000066 005122  A        1517         IBR                      BUMP DESTINATION POINTER                   17 00087
000067 005144  A        1518         IXR                      BUMP SOURCE POINTER                        17 00088
000070 005145  A        1519         INCR     045             BUMP SOURCE POINTER AND COPY TO A REG      17 00089
000071 144100  A        1520         SUB      NC0604          COMPARE AGAINST END OF HOLDER              17 00090
000072 001004  A        1521         JAN      NC0510          IF INSIDE, CONTINUE PACKING                17 00091
000073 000062  R
                        1523 ************************************************************************** 17 00093
                        1524 *       NOW LOOK UP PACKED VERB IN TABLE                                   *  17 00094
                        1525 ************************************************************************** 17 00095
000074 006030  A        1526         LDXI     NC0630          POINT TO FIRST ROW IN TABLE                17 00096
000075 000174  R
000076 014062  A        1527 NC0520  LDA      NC0600          PICK UP WORD 1 OF VERB                     17 00097
000077 145000  A        1528         SUB      0,X             COMPARE WORD 1                             17 00098
000100 001016  A        1529         JANZ     NC0530          IF NOT EQUAL, TRY NEXT ROW                 17 00099
000101 000116  R
000102 014057  A        1530         LDA      NC0600+1        PICK UP WORD 2 OF VERB                     17 00100
000103 145001  A        1531         SUB      1,X             COMPARE WORD 2                             17 00101
000104 001016  A        1532         JANZ     NC0530          IF NOT EQUAL, TRY NEXT ROW                 17 00102
000105 000116  R
000106 014054  A        1533         LDA      NC0600+2        PICK UP WORD 3 OF VERB                     17 00103
000107 145002  A        1534         SUB      2,X             COMPARE WORD 3                             17 00104
000110 001016  A        1535         JANZ     NC0530          IF NOT EQUAL, TRY NEXT ROW                 17 00105
000111 000116  R
000112 014051  A        1536         LDA      NC0600+3        PICK UP WORD 4 OF VERB                     17 00106
000113 145003  A        1537         SUB      3,X             COMPARE WORD 4                             17 00107
000114 001010  A        1538         JAZ      NC0540          IF EQUAL, VERB IS FOUND                    17 00108
000115 000127  R
                        1540 ************************************************************************** 17 00110
                        1541 *       ROW DID NOT MATCH, TRY NEXT ROW                                    *  17 00111
                        1542 ************************************************************************** 17 00112
000116 005041  A        1543 NC0530  TXA                      COPY ROW POINTER TO A REG                  17 00113
000117 120465  A        1544         ADD      FIVE            BUMP TO NEXT ROW                           17 00114
000120 005014  A        1545         TAX                      COPY BACK TO X REG                         17 00115
000121 006140  A        1546         SUBI     NC0634          COMPARE TO END OF TABLE                    17 00116
000122 000232  R
000123 001004  A        1547         JAN      NC0520          IF INSIDE, CHECK NEXT ROW                  17 00117
000124 000076  R
000125 001000  A        1548         JMP      SYNERR          ELSE FAILED TO MATCH ANY, SIGNAL ERROR     17 00118
000126 000133  R
                        1550 ************************************************************************** 17 00120
                        1551 *       DIRECTIVE HAS BEEN RECOGNIZED, (X) POINTS TO MATCHING ROW          *  17 00121
                        1552 ************************************************************************** 17 00122
000127 015004  A        1553 NC0540  LDA      4,X             PICK UP ADDRESS OF PROCESSOR               17 00123
000130 054001  A        1554         STA      NC0542          STOW IN JUMP                               17 00124
000131 001000  A        1555         JMP      0               JUMP TO PROPER DIRECTIVE PROCESSOR         17 00125
000132 000000  A
       000132  R        1556 NC0542  EQU      *-1             POINT TO ADDRESS PORTION OF JUMP           17 00126
                        1558 ************************************************************************** 17 00128
                        1559 *       SYNTAX ERROR HAS BEEN DETECTED, BLANK LINE AND ISSUE MESSAGE       *  17 00129
                        1560 *       THEN RETURN TO THE TOP OF THE MODULE.                              *  17 00130
                        1561 ************************************************************************** 17 00131
000133 014042  A        1562 SYNERR  LDA      NC0640          PICK UP A DOUBLE BLANK                     17 00132
000134 006057  A        1563         STAE     LINE            STORE IN THE START OF THE LINE             17 00133
000135 002526  R
000136 002000  A        1564         CALL     MOVER,LINE,LINE+1,LNEND-LINE-1                             17 00134
000137 002237  R
000140 002526  R
000141 002527  R
000142 000047  A
000143 006017  A        1565         LDAE     ERRTYP          PICK UP ERROR CODE                         17 00135
000144 002455  R
000145 006030  A        1566         LDXI     FLD1            POINT TO MESSAGE LOCATION                  17 00136
000146 002527  R
000147 002000  A        1567         CALL     LSTCVT          CONVERT TO ASCII                           17 00137
000150 001331  R
000151 006017  A        1568         LDAE     CNC             PICK UP 'NC'                               17 00138
000152 002523  R
000153 006057  A        1569         STAE     FLD1            STOW AS HEADER                             17 00139
000154 002527  R
000155 002000  A        1570         CALL     TYPE            ISSUE ERROR MESSAGE                        17 00140
000156 002150  R
000157 001000  A        1571         JMP      NETCON          RETURN TO THE TOP OF MODULE                17 00141
000160 000000  R
                        1572         EJEC                                                                17 00142
                        1573 ************************************************************************** 17 00143
                        1574 *       CONSTANTS AND WORK AREAS                                           *  17 00144
                        1575 ************************************************************************** 17 00145
000161                  1576 NC0600  BSS      8               VERB HOLDER                                17 00146
000171  000161  R       1577 NC0602  DATA     NC0600          ADDRESS CONSTANT, VERB HOLDER START        17 00147
000172  000171  R       1578 NC0604  DATA     NC0602          ADDRESS CONSTANT, VERB HOLDER END          17 00148
000173  000000  A       1579 NC0620  DATA     0               POINTER TO NEXT SLOT IN HOLDER             17 00149
000174  142716  A       1580 NC0630  DATA     'END     ',END                                             17 00150
000175  142240  A
000176  120240  A
000177  120240  A
000200  000232  R
000201  152720  A       1581         DATA     'UP      ',UP                                              17 00151
```

```
000202 120240 A
000203 120240 A
000204 120240 A
000205 000243 R
000206 151305 A 1582          DATA    'REDIRECT',REDIR                                  17 00152
000207 142311 A
000210 151305 A
000211 141724 A
000212 000347 R
000213 151305 A 1583          DATA    'RESTORE ',RESTOR                                 17 00153
000214 151724 A
000215 147722 A
000216 142640 A
000217 000473 R
000220 142317 A 1584          DATA    'DOWN    ',DOWN                                   17 00154
000221 153716 A
000222 120240 A
000223 120240 A
000224 000546 R
000225 146311 A 1585          DATA    'LIST    ',LIST                                   17 00155
000226 151724 A
000227 120240 A
000230 120240 A
000231 000761 R
       000232 R 1586 NC0634   EQU     *               END OF VERB TABLE                 17 00156
       000176 R 1587 NC0640   EQU     NC0630+2        POINT TO A DOUBLE BLANK           17 00157
                1588          EJEC                                                      17 00158
                1589 ********************************************************************* 17 00159
                1590 *                                                                   * 17 00160
                1591 * TITLE - END DIRECTIVE PROCESSOR                                  * 17 00161
                1592 *                                                                   * 17 00162
                1593 * PURPOSE -                                                         * 17 00163
                1594 *   THIS CODE SCANS THE END DIRECTIVE.                              * 17 00164
                1595 *                                                                   * 17 00165
                1596 * CALLING SEQUENCE -                                               * 17 00166
                1597 *       JMP     END                                                 * 17 00167
                1598 *                                                                   * 17 00168
                1599 * ENTRANCE PARAMETERS -                                            * 17 00169
                1600 *   NONE                                                            * 17 00170
                1601 *                                                                   * 17 00171
                1602 ********************************************************************* 17 00172
000232 006017 A 1603 END    LDAE    CHAR            PICK UP THE CURRENT CHARACTER     17 00173
000233 002454 R
000234 006147 A 1604          SUBE    PERIOD          COMPARE AGAINST A PERIOD          17 00174
000235 002456 R
000236 001016 A 1605          JANZ    SYNERR          IF NOT PERIOD, SIGNAL ERROR       17 00175
000237 000133 R
                1607 ********************************************************************* 17 00177
                1608 *       NOW REQUEST RTE EXIT                                        * 17 00178
                1609 ********************************************************************* 17 00179
                1610 EXIT   EXIT                    REQUEST RTE EXIT                  17 00180
000240 006505 A
000241 000000 E
000242 000200 A
                1611          EJEC                                                      17 00181
                1612 ********************************************************************* 17 00182
                1613 *                                                                   * 17 00183
                1614 * TITLE - UP DIRECTIVE PROCESSOR                                   * 17 00184
                1615 *                                                                   * 17 00185
                1616 * PURPOSE -                                                         * 17 00186
                1617 *   THIS ROUTINE SCANS AND PROCESSES THE UP DIRECTIVE.              * 17 00187
                1618 *                                                                   * 17 00188
                1619 * CALLING SEQUENCE -                                               * 17 00189
                1620 *       JMP     UP                                                  * 17 00190
                1621 *                                                                   * 17 00191
                1622 * ENTRANCE PARAMETERS -                                            * 17 00192
                1623 *   NONE.                                                           * 17 00193
                1624 *                                                                   * 17 00194
                1625 ********************************************************************* 17 00195
       000243 R 1626 UP       EQU     *               ENTRY POINT                       17 00196
000243 002000 A 1627 NC1210   CALL    CHKCOM          CHECK FOR DELIMITING COMMA        17 00197
000244 002416 R
000245 002000 A 1628          CALL    MOVER,CUP,FLD3,LUP                                17 00198
000246 002237 R
000247 002476 R
000250 002535 R
000251 000002 A
                1630 ********************************************************************* 17 00200
                1631 *       SETUP CONSTANT PORTION OF MESSAGE AND CALL FOR UNIT PARSE   * 17 00201
                1632 ********************************************************************* 17 00202
000252 002000 A 1633          CALL    UNIT,NC1600,NC2000                                17 00203
000253 001353 R
000254 000262 R
000255 000315 R
                1635 ********************************************************************* 17 00205
                1636 *       IF CHARACTER IS A PERIOD, EXIT TO THE CALLER, ELSE TRY AGAIN * 17 00206
                1637 ********************************************************************* 17 00207
000256 002000 A 1638 NC1220   CALL    CHKPER          CHECK FOR TERMINATING PERIOD      17 00208
000257 002425 R
000260 001000 A 1639          JMP     NC1210          IF MORE, CONTINUE SCAN            17 00209
000261 000243 R
                1640          EJEC                                                      17 00210
                1641 ********************************************************************* 17 00211
                1642 *       ENTRY POINT TO VARY A LINE ON-LINE                          * 17 00212
                1643 ********************************************************************* 17 00213
```

```
000262 006037 A 1644 NC1600 LDXE    BLKPTR          POINT TO THE LSD                                  17 00214
000263 002451 R
000264 005001 A 1645         TZA                    ZERO A REG                                        17 00215
                1646         SETA    X,PSDWN,PSDWNB,PSDWNZ                                            17 00216
000265 004251 A
000266 135002 A
000267 004351 A
000270 150421 A
000271 004251 A
000272 135002 A
000273 055002 A
000274 002000 A 1647         CALL    WRITE             AND ASK FOR THE SECTOR TO BE REWRITTEN          17 00217
000275 002043 R
                1649 ********************************************************************************* 17 00219
                1650 *       FORMAT AND ISSUE LINE 'UP' MESSAGE                                      * 17 00220
                1651 ********************************************************************************* 17 00221
000276 006017 A 1652 NC1640 LDAE    LSDN            PICK UP THE CURRENT LSD NUMBER                    17 00222
000277 002434 R
000300 006030 A 1653         LDXI    FLD2            POINT TO THE MESSAGE AREA                         17 00223
000301 002532 R
000302 002000 A 1654         CALL    LSTCVT          CONVERT TO ASCII                                  17 00224
000303 001331 R
000304 002000 A 1655         CALL    MOVER,CLNE,FLD1,LLNE                                              17 00225
000305 002237 R
000306 002472 R
000307 002527 R
000310 000002 A
000311 002000 A 1656         CALL    TYPE            OUTPUT THE 'UP' MESSAGE                           17 00226
000312 002150 R
000313 001000 A 1657         JMP     NC1220          GO TO TRY FOR ANOTHER UNIT                        17 00227
000314 000256 R
                1658         EJEC                                                                      17 00228
                1659 ********************************************************************************* 17 00229
                1660 *       ROUTINE TO VARY A TUID ON-LINE                                          * 17 00230
                1661 ********************************************************************************* 17 00231
000315 006037 A 1662 NC2000 LDXE    BLKPTR          POINT TO TIB                                      17 00232
000316 002451 R
000317 005001 A 1663         TZA                    ZERO A REG                                        17 00233
                1664         SETA    X,TIDWN,TIDWNB,TIDWNZ                                            17 00234
000320 004257 A
000321 135002 A
000322 004357 A
000323 150421 A
000324 004257 A
000325 135002 A
000326 055002 A
000327 002000 A 1665         CALL    WRITE             REWRITE THE TIB                                 17 00235
000330 002043 R
000331 002000 A 1666         CALL    MOVER,CTID,FLD1,LTID                                              17 00236
000332 002237 R
000333 002474 R
000334 002527 R
000335 000002 A
000336 002000 A 1667         CALL    MOVER,PTUID,FLD2,2                                                17 00237
000337 002237 R
000340 002444 R
000341 002532 R
000342 000002 A
000343 002000 A 1668         CALL    TYPE              ISSUE MESSAGE                                   17 00238
000344 002150 R
000345 001000 A 1669         JMP     NC1220          GO BACK AND TRY THE NEXT UNIT FIELD               17 00239
000346 000256 R
                1670         EJEC                                                                      17 00240
                1671 ********************************************************************************* 17 00241
                1672 *                                                                                 * 17 00242
                1673 * TITLE - REDIRECT DIRECTIVE PROCESSOR                                            * 17 00243
                1674 *                                                                                 * 17 00244
                1675 * PURPOSE -                                                                       * 17 00245
                1676 *   THIS ROUTINE SCANS AND PROCESSES THE REDIRECT DIRECTIVE                       * 17 00246
                1677 *                                                                                 * 17 00247
                1678 * CALLING SEQUENCE -                                                              * 17 00248
                1679 *       JMP     REDIR                                                             * 17 00249
                1680 *                                                                                 * 17 00250
                1681 * ENTRANCE PARAMETERS -                                                           * 17 00251
                1682 *   NONE                                                                          * 17 00252
                1683 *                                                                                 * 17 00253
                1684 ********************************************************************************* 17 00254
000347          1685 REDIR  EQU     *               ROUTINE ENTRY POINT                               17 00255
000347 002000 A 1686 NC2410 CALL    CHKCOM          CHECK FOR DELIMITING COMMA                        17 00256
000350 002416 R
000351 002000 A 1687         CALL    UNIT,SYNERR,NC2430                                                17 00257
000352 001353 R
000353 000133 R
000354 000361 R
                1689 ********************************************************************************* 17 00259
                1690 *       IF NOT TERMINATED BY A PERIOD, CONTINUE SCANNING THE DIRECTIVE           * 17 00260
                1691 ********************************************************************************* 17 00261
000355 002000 A 1692 NC2420 CALL    CHKPER          CHECK FOR TERMINATING PERIOD                      17 00262
000356 002425 R
000357 001000 A 1693         JMP     NC2410          IF MORE, CONTINUE SCAN                            17 00263
000360 000347 R
                1695 ********************************************************************************* 17 00265
                1696 *       CHECK FOR A TRAILING COMMA, AND SET UP MESSAGE                          * 17 00266
                1697 ********************************************************************************* 17 00267
000361 002000 A 1698 NC2430 CALL    CHKCOM          CHECK FOR DELIMITING COMMA                        17 00268
```

```
000362 002416 R
000363 002000 A 1699          CALL     MOVER,PTUID,FLD2,2                                                    17 00269
000364 002237 R
000365 002444 R
000366 002532 R
000367 000002 A
000370 002000 A 1700          CALL     MOVER,CTID,FLD1,LTID                                                  17 00270
000371 002237 R
000372 002474 R
000373 002527 R
000374 000002 A
000375 002000 A 1701          CALL     MOVER,CRED,FLD3,LRED                                                  17 00271
000376 002237 R
000377 002510 R
000400 002535 R
000401 000007 A
000402 006017 A 1702          LDAE     SECTN           PICK UP SECTOR NUMBER OF TIB1                         17 00272
000403 002447 R
000404 054064 A 1703          STA      NC2500          AND SAVE IN TEMPORARY CELL                            17 00273
000405 006017 A 1704          LDAE     DISP            PICK UP DISPLACEMENT OF TIB1                          17 00274
000406 002450 R
000407 054062 A 1705          STA      NC2510          AND SAVE IN TEMPORARY CELL                            17 00275
000410 002000 A 1706          CALL     UNIT,SYNERR,NC2440                                                    17 00276
000411 001353 R
000412 000133 R
000413 000416 R
000414 001000 A 1707          JMP      SYNERR          SIGNAL ERROR IF WE RETURN NORMALLY                    17 00277
000415 000133 R
                1709 ********************************************************************************      17 00279
                1710 *       SAVE TUID OF SECOND TIB IN MESSAGE AND REREAD TIB1                     *      17 00280
                1711 ********************************************************************************      17 00281
000416 002000 A 1712 NC2440   CALL     MOVER,PTUID,FLD7,2                                                    17 00282
000417 002237 R
000420 002444 R
000421 002544 R
000422 000002 A
000423 006037 A 1713          LDXE     BLKPTR          POINT TO TIB2                                         17 00283
000424 002451 R
                1714          FETCHA   X,TIDSP,TIDSPB,TIDSPZ+TISECZ                                          17 00284
000425 015002 A
000426 006150 A
000427 077777 A
000430 005012 A 1715          TAB                      AND COPY TO B REG                                     17 00285
000431 014037 A 1716          LDA      NC2500          PICK UP SECTOR NUMBER OF TIB1                         17 00286
000432 006057 A 1717          STAE     SECTN           PLACE IN SECTOR NUMBER CELL                           17 00287
000433 002447 R
000434 014035 A 1718          LDA      NC2510          PICK UP TIB1 DISPLACEMENT                             17 00288
000435 006057 A 1719          STAE     DISP            PLACE IN DISPLACEMENT CELL                            17 00289
000436 002450 R
000437 064031 A 1720          STB      NC2500          SAVE SECOND PCD POINTER                               17 00290
000440 002000 A 1721          CALL     READ            REREAD FIRST TIB                                      17 00291
000441 002020 R
000442 002000 A 1722          CALL     CALC            POINT TO FIRST TIB                                    17 00292
000443 001727 R
                1723          FETCHA   X,TIODP,TIODPB,TIODPZ+TIOSCZ                                          17 00293
000444 015003 A
000445 006150 A
000446 077777 A
000447 001016 A 1724          JAMZ     NC2442          JUMP IF PREVIOUSLY REDIRECTED                         17 00294
000450 000455 R
                1725          FETCHA   X,TIDSP,TIDSPB,TIDSPZ+TISECZ                                          17 00295
000451 015002 A
000452 006150 A
000453 077777 A
000454 055003 A 1726          STA      TIODP,X         STOW INTO LAST WORD                                   17 00296
000455 014013 A 1727 NC2442   LDA      NC2500          PICK UP SECOND PCD POINTER                            17 00297
                1728          SETA     X,TIDSP,TIDSPB,TIDSPZ+TISECZ                                          17 00298
000456 135002 A
000457 006150 A
000460 077777 A
000461 135002 A
000462 055002 A
000463 002000 A 1729          CALL     WRITE           AND REWRITE THE FIRST SECTOR                          17 00299
000464 002043 R
000465 002000 A 1730          CALL     TYPE            AND ISSUE REDIRECTED MESSAGE                          17 00300
000466 002150 R
000467 001000 A 1731          JMP      NC2420          AND CONTINUE TO LOOK FOR MORE TUID PAIRS               17 00301
000470 000355 R
                1733 ********************************************************************************      17 00303
                1734 *       DATA AND WORK AREAS FOR REDIRECT PROCESSOR                             *      17 00304
                1735 ********************************************************************************      17 00305
000471 000000 A 1736 NC2500   DATA     0               SAVE SECTOR OF TIB1                                   17 00306
000472 000000 A 1737 NC2510   DATA     0               SAVE DISPLACEMENT OF TIB1                             17 00307
                1738          EJEC                                                                           17 00308
                1739 ********************************************************************************      17 00309
                1740 *                                                                              *      17 00310
                1741 * TITLE - RESTORE DIRECTIVE PROCESSOR                                          *      17 00311
                1742 *                                                                              *      17 00312
                1743 * PURPOSE -                                                                    *      17 00313
                1744 *   THIS ROUTINE SCANS AND PROCESSES THE RESTORE DIRECTIVE.                    *      17 00314
                1745 *                                                                              *      17 00315
                1746 * CALLING SEQUENCE -                                                           *      17 00316
                1747 *       JMP      RESTOR                                                        *      17 00317
                1748 *                                                                              *      17 00318
                1749 * ENTRANCE PARAMETERS -                                                        *      17 00319
```

```
                                1750 *    NONE.                                                                 * 17 00320
                                1751 *                                                                          * 17 00321
                                1752 ************************************************************************** 17 00322
           000473 R             1753 RESTOR EQU     *                 ROUTINE ENTRY POINT                       17 00323
                                1755 ************************************************************************** 17 00325
                                1756 *       CHECK FOR A DELIMITING COMMA AND SETUP MESSAGE                    * 17 00326
                                1757 ************************************************************************** 17 00327
000473 002000 A                 1758 NC2810 CALL    CHKCOM          CHECK FOR DELIMITING COMMA                  17 00328
000474 002416 R
000475 002000 A                 1759         CALL    MOVER,CTID,FLD1,LTID                                       17 00329
000476 002237 R
000477 002474 R
000500 002527 R
000501 000002 A
000502 002000 A                 1760         CALL    MOVER,CRES,FLD3,LRES                                       17 00330
000503 002237 R
000504 002517 R
000505 002535 R
000506 000004 A
000507 002000 A                 1761         CALL    UNIT,SYNERR,NC2830                                         17 00331
000510 001353 R
000511 000133 R
000512 000517 R
                                1763 ************************************************************************** 17 00333
                                1764 *       IF NOT TERMINATED BY A PERIOD, CONTINUE SCANNING                  * 17 00334
                                1765 ************************************************************************** 17 00335
000513 002000 A                 1766 NC2820 CALL    CHKPER          CHECK FOR TERMINATING PERIOD                17 00336
000514 002425 R
000515 001000 A                 1767         JMP     NC2810          IF MORE, CONTINUE SCAN                     17 00337
000516 000473 R
                                1769 ************************************************************************** 17 00339
                                1770 *       THE TUID HAS BEEN PARSED, NOW DO THE RESTORE ACTION               * 17 00340
                                1771 ************************************************************************** 17 00341
000517 002000 A                 1772 NC2830 CALL    MOVER,PTUID,FLD2,2                                         17 00342
000520 002237 R
000521 002444 R
000522 002532 R
000523 000002 A
000524 006037 A                 1773         LDXE    BLKPTR          POINT TO THE TID                           17 00343
000525 002451 R
000526 015003 A                 1774         LDA     TIODP,X         PICK UP ALTERED TCD POINTER                17 00344
000527 001010 A                 1775         JAZ     NC2840          SKIP IF NEVER REDIRECTED                   17 00345
000530 000542 R
                                1776         SETA    X,TIDSP,TIDSPB,TIDSPZ+TISECZ                               17 00346
000531 135002 A
000532 006150 A
000533 077777 A
000534 135002 A
000535 055002 A
000536 005001 A                 1777         TZA                     PICK UP A ZERO                             17 00347
000537 055003 A                 1778         STA     TIODP,X         AND CLEAR ALTERNATE POINTER                17 00348
000540 002000 A                 1779         CALL    WRITE           REWRITE THE TIB TO RMD                     17 00349
000541 002043 R
                                1781 ************************************************************************** 17 00351
                                1782 *       NOW ISSUE THE REDIRECT MESSAGE AND CONTINUE SCAN                  * 17 00352
                                1783 ************************************************************************** 17 00353
000542 002000 A                 1784 NC2840 CALL    TYPE            TYPE REDIRECT MESSAGE                      17 00354
000543 002150 R
000544 001000 A                 1785         JMP     NC2820          GO BACK TO TRY FOR ANOTHER UNIT            17 00355
000545 000513 R
                                1786         EJEC                                                               17 00356
                                1787 ************************************************************************** 17 00357
                                1788 *                                                                          * 17 00358
                                1789 * TITLE - DOWN DIRECTIVE PROCESSOR                                        * 17 00359
                                1790 *                                                                          * 17 00360
                                1791 * PURPOSE -                                                               * 17 00361
                                1792 *    THIS ROUTINE PROCESSES THE DOWN DIRECTIVE, FOR BOTH                   * 17 00362
                                1793 *    LINES AND TERMINALS.                                                  * 17 00363
                                1794 *                                                                          * 17 00364
                                1795 * CALLING SEQUENCE -                                                      * 17 00365
                                1796 *         JMP     DOWN                                                    * 17 00366
                                1797 *                                                                          * 17 00367
                                1798 * ENTRANCE PARAMETERS -                                                   * 17 00368
                                1799 *    NONE.                                                                 * 17 00369
                                1800 *                                                                          * 17 00370
                                1801 ************************************************************************** 17 00371
           000546 R             1802 DOWN   EQU     *                 ROUTINE ENTRY POINT                       17 00372
000546 002000 A                 1803 NC3210 CALL    CHKCOM          CHECK FOR DELIMITING COMMA                  17 00373
000547 002416 R
                                1805 ************************************************************************** 17 00375
                                1806 *       SET UP COMMON MESSAGE SECTION                                     * 17 00376
                                1807 ************************************************************************** 17 00377
000550 002000 A                 1808         CALL    MOVER,CDWN,FLD1,DWN                                        17 00378
000551 002237 R
000552 002500 R
000553 002535 R
000554 000002 A
000555 002000 A                 1809         CALL    UNIT,NC3600,NC4000                                         17 00379
000556 001353 R
000557 000565 R
000560 000711 R
                                1811 ************************************************************************** 17 00381
                                1812 *       IF NOT TERMINATED BY A PERIOD, CONTINUE SCANNING                  * 17 00382
                                1813 ************************************************************************** 17 00383
000561 002000 A                 1814 NC3220 CALL    CHKPER          CHECK FOR TERMINATING PERIOD                17 00384
```

```
000562 002425 R
000563 001000 A 1815          JMP     NC3210          IF MORE, CONTINUE SCAN                                  17 00385
000564 000546 R
                1816          EJEC                                                                            17 00386
                1817 ********************************************************************************        17 00387
                1818 *       AT THIS POINT, A LINE IS TO BE DOWNED, FIRST SETUP MESSAGE     *                17 00388
                1819 ********************************************************************************        17 00389
000565 002000 A 1820 NC3600   CALL    MOVER,CLNE,FLD1,LLNE                                                    17 00390
000566 002237 R
000567 002472 R
000570 002527 R
000571 000002 A
000572 006030 A 1821          LDXI    FLD2            POINT TO LINE NUMBER FIELD                              17 00391
000573 002532 R
000574 006017 A 1822          LDAE    LSDN            PICK UP THE CURRENT CHARACTER                           17 00392
000575 002434 R
000576 002000 A 1823          CALL    LSTCVT          CONVERT TO ASCII                                        17 00393
000577 001331 R
                1825 ********************************************************************************        17 00395
                1826 *       NOW TURN ON DOWNED BIT IN PSD AND REWRITE TO RMD               *                17 00396
                1827 ********************************************************************************        17 00397
000600 006037 A 1828          LDXE    BLKPTR          POINT TO THE LSD                                        17 00398
000601 002451 R
000602 010421 A 1829          LDA     ONE             PICK UP A CONSTANT ONE                                  17 00399
                1830          SETA    X,PSDWN,PSDWNB,PSDWN2                                                   17 00400
000603 004251 A
000604 135002 A
000605 004351 A
000606 150421 A
000607 004251 A
000610 135002 A
000611 055002 A
000612 002000 A 1831          CALL    WRITE           REWRITE LSD SECTOR                                      17 00401
000613 002043 R
                1832          EJEC                                                                            17 00402
                1833 ********************************************************************************        17 00403
                1834 *       NOW ISSUE I/O CLEAR FUNCTION FOR THE LINE                      *                17 00404
                1835 ********************************************************************************        17 00405
000614 006017 A 1836          LDAE    LSDN            PICK UP LINE NUMBER                                     17 00406
000615 002434 R
000616 114065 A 1837          ORA     NC3740          OR IN FUNCTION CODE                                     17 00407
000617 054067 A 1838          STA     NC3750+2        STOW IN LINE CONTROL BLOCK                              17 00408
000620 006017 A 1839          LDAE    CCMN            PICK UP CCM NUMBER                                      17 00409
000621 002436 R
000622 114060 A 1840          ORA     NC3720          OR INTO FUNC OP-CODE                                    17 00410
000623 054003 A 1841          STA     NC3610+3        STOW IN MACRO EXPANSION                                 17 00411
                1842 NC3610   FUNC    NC3750,255,WAIT                                                         17 00412
000624 006505 A
000625 000000 E
000626 100000 A
000627 002777 A
000630 000705 R
000631 000000 A
000632 000000 A
                1844 ********************************************************************************        17 00414
                1845 *       NOW SEARCH THREAD OF ALL CURRENT TCDS FOR TERMINAL OPEN         *               17 00415
                1846 *       TO THIS LOGICAL LINE NUMBER AND CCM NUMBER.                     *               17 00416
                1847 *       WHEN A MATCH IS FOUND, ISSUE I/O CLEAR FOR THAT TUID.           *               17 00417
                1848 ********************************************************************************        17 00418
                1849          EXT     TC$TCD          EXTERNAL NAME OF TCD THREAD ORIGIN                      17 00419
000633 006017 A 1850          LDAE    LSDN            PICK UP THE CURRENT LINE NUMBER                         17 00420
000634 002434 R
000635 004250 A 1851          LRLA    8               SHIFT TO THE HIGH-ORDER BYTE                            17 00421
000636 006117 A 1852          ORAE    CCMN            OR IN THE CCM NUMBER                                    17 00422
000637 002436 R
000640 054047 A 1853          STA     NC3760          STOW IN TEMPORARY CELL                                  17 00423
000641 006027 A 1854          LDBE    TC$TCD          POINT TO FIRST TCD ON THREAD                            17 00424
000642 000000 E
000643 001020 A 1855 NC3620   JBZ     NC3650          IF NULL, STOP FOLLOWING THREAD                          17 00425
000644 000677 R
000645 014042 A 1856          LDA     NC3760          PICK UP TEMPORARY CELL                                  17 00426
000646 146003 A 1857          SUB     TCLLN,B         COMPARE TO THE CURRENT TCD                              17 00427
000647 001016 A 1858          JANZ    NC3640          IF NOT SAME, DO NOT DOWN                                17 00428
000650 000674 R
000651 016015 A 1859          LDA     TCID1,B         PICK UP FIRST TWO CHARS OF TUID                         17 00429
000652 006057 A 1860          STAE    PTUID           STOW IN DCB                                             17 00430
000653 002444 R
000654 016016 A 1861          LDA     TCID2,B         PICK UP SECOND TWO CHARS OF TUID                        17 00431
000655 006057 A 1862          STAE    PTUID+1         STOW IN DCB                                             17 00432
000656 002445 R
000657 002000 A 1863          CALL    GETLTN          MAP TO LOGICAL TERMINAL NUMBER                          17 00433
000660 002272 R
000661 001010 A 1864          JAZ     NC3640          IF NULL, CANNOT CLOSE                                   17 00434
000662 000674 R
000663 114074 A 1865          ORA     NC4120          OR IN FUNC OP-CODE                                      17 00435
000664 054003 A 1866          STA     NC3630+3        STOW INTO MACRO EXPANSION                               17 00436
                1867 NC3630   FUNC    PTUID,255,WAIT                                                          17 00437
000665 006505 A
000666 000625 E
000667 100000 A
000670 002777 A
000671 002444 R
000672 000000 A
000673 000000 A
000674 026000 A 1868 NC3640   LDB     TCTCD,B         PICK UP NEXT TCD THREAD                                 17 00438
```

```
000675 001000 A 1869          JMP     NC3620          AND CONTINUE SEARCH                                    17 00439
000676 000643 R
                1870 ********************************************************************************** 17 00440
                1871 *      LINE IS CLOSED AND DOWN, ALL TERMINALS TO THAT LINE                       * 17 00441
                1872 *      ARE FLUSHED, NOW ISSUE THE DOWN MESSAGE AND GO TO TRY NEXT                * 17 00442
                1873 *      FIELD.                                                                    * 17 00443
                1874 ********************************************************************************** 17 00444
000677 002000 A 1875 NC3650 CALL    TYPE            ISSUE DOWN MESSAGE                                     17 00445
000700 002150 R
000701 001000 A 1876          JMP     NC3220          JUMP TO TRY NEXT UNIT                                  17 00446
000702 000561 R
                1877 ********************************************************************************** 17 00447
                1878 *      DATA AND WORK AREAS FOR DOWN-LINE DIRECTIVE PROCESSOR                     * 17 00448
                1879 ********************************************************************************** 17 00449
000703 002400 A 1880 NC3720 IOMAC   WAIT,0,FUNCOP,0                                                        17 00450
                1881 NC3730 FORM    8,8             FORMAT FOR LCB MACRO                                   17 00451
000704 012400 A 1882 NC3740 NC3730  21,0            FUNCTION CODE FOR LCB                                  17 00452
000705 000000 A 1883 NC3750 DATA    0,0,0           LINE CONTROL BLOCK                                     17 00453
000706 000000 A
000707 000000 A
000710 000000 A 1884 NC3760 DATA    0               TEMPORARY STORAGE                                      17 00454
                1885          EJEC                                                                       17 00455
                1886 ********************************************************************************** 17 00456
                1887 *      AT THIS POINT, A TUID IS TO BE DOWNED, FIRST SETUP MESSAGE                * 17 00457
                1888 ********************************************************************************** 17 00458
000711 002000 A 1889 NC4000 CALL    MOVER,CTID,FLD1,LTID                                                   17 00459
000712 002237 R
000713 002474 R
000714 002527 R
000715 000002 A
000716 002000 A 1890          CALL    MOVER,PTUID,FLD2,2                                                 17 00460
000717 002237 R
000720 002444 R
000721 002532 R
000722 000002 A
                1892 ********************************************************************************** 17 00461
                1893 *      TURN ON DOWN SWITCH IN TIB AND REWRITE TO RMD                             * 17 00462
                1894 ********************************************************************************** 17 00463
000723 006037 A 1895          LDXE    BLKPTR          POINT TO THE TIB                                   17 00464
000724 002451 R
000725 010421 A 1896          LDA     ONE             PICK UP A CONSTANT ONE                             17 00465
                1897          SETA    X,TIDWN,TIDWNB,TIDWNZ                                             17 00466
000726 004257 A
000727 135002 A
000730 004357 A
000731 150421 A
000732 004257 A
000733 135002 A
000734 055002 A
000735 002000 A 1898          CALL    WRITE           REWRITE TIB SECTOR TO RMD                          17 00467
000736 002043 R
                1900 ********************************************************************************** 17 00468
                1901 *      NOW LOOK UP LOGICAL TERMINAL NUMBER AND ISSUE I/O CLEAR                   * 17 00469
                1902 ********************************************************************************** 17 00470
000737 002000 A 1903          CALL    GETLTN          FIND LOGICAL TERMINAL NUMBER                       17 00471
000740 002272 R
000741 001010 A 1904          JAZ     NC4040          SKIP FUNC IF NOT CURRENTLY OPEN                    17 00472
000742 000754 R
000743 114014 A 1905          ORA     NC4120          OR INTO OP-CODE                                    17 00473
000744 054003 A 1906          STA     NC4110+3        STOW INTO I/O MACRO                                17 00474
                1907 NC4110 FUNC    PTUID,255,WAIT                                                     17 00475
000745 006505 A
000746 000666 E
000747 100000 A
000750 002777 A
000751 002444 R
000752 000000 A
000753 000000 A
                1909 ********************************************************************************** 17 00476
                1910 *      TERMINAL IS NOW DOWN AND ALL I/O IS PURGED, ISSUE MESSAGE                 * 17 00477
                1911 ********************************************************************************** 17 00478
000754 002000 A 1912 NC4040 CALL    TYPE            ISSUE DOWN MESSAGE                                     17 00479
000755 002150 R
000756 001000 A 1913          JMP     NC3220          JUMP TO TRY NEXT UNIT                              17 00480
000757 000561 R
                1915 ********************************************************************************** 17 00481
                1916 *      CONSTANTS AND WORK AREAS FOR DOWN TERMINAL PROCESSOR                      * 17 00482
                1917 ********************************************************************************** 17 00483
000760 002400 A 1918 NC4120 IOMAC   WAIT,0,FUNCOP,0                                                        17 00484
                1919          EJEC                                                                       17 00485
                1920 ********************************************************************************** 17 00486
                1921 *                                                                                  * 17 00487
                1922 * TITLE - LIST DIRECTIVE PROCESSOR                                                 * 17 00488
                1923 *                                                                                  * 17 00489
                1924 * PURPOSE -                                                                        * 17 00490
                1925 *   THIS ROUTINE SCANS THE LIST DIRECTIVE                                          * 17 00491
                1926 *                                                                                  * 17 00492
                1927 * CALLING SEQUENCE -                                                               * 17 00493
                1928 *       JMP     LIST                                                              * 17 00494
                1929 *                                                                                  * 17 00495
                1930 * ENTRANCE PARAMETERS -                                                            * 17 00496
                1931 *   NONE                                                                           * 17 00497
                1932 *                                                                                  * 17 00498
                1933 ********************************************************************************** 17 00499
000761 R        1934 LIST   EQU     *               ENTRY POINT                                            17 00500
```

```
000761 006017 A 1935          LDAE    CHAR          PICK UP THE CURRENT CHARACTER                    17 00505
000762 002454 R
000763 006147 A 1936          SUBE    PERIOD        COMPARE FOR A PERIOD                             17 00506
000764 002456 R
000765 001010 A 1937          JAZ     NC4600        IF PERIOD, PROCESS 'LIST ALL'                    17 00507
000766 001011 R
                1939 ************************************************************************** 17 00509
                1940 *       AT THIS POINT THE DIRECTIVE HAS AN OPERAND LIST                   * 17 00510
                1941 ************************************************************************** 17 00511
000767 002000 A 1942 NC4410 CALL      CHKCOM        CHECK FOR DELIMITING COMMA                       17 00512
000770 002416 R
000771 002000 A 1943          CALL    UNIT,NC4420,NC4430                                           17 00513
000772 001353 R
000773 000777 R
000774 001003 R
000775 001000 A 1944          JMP     NC4440        ON 'OTHER', SKIP TO CHECK FOR PERIOD             17 00514
000776 001005 R
                1945          EJEC                                                                 17 00515
                1946 ************************************************************************** 17 00516
                1947 *       AT THIS POINT A LINE WAS SENSED, CALL THE LINE LISTER             * 17 00517
                1948 ************************************************************************** 17 00518
000777 002000 A 1949 NC4420 CALL      LSTLN         IF 'LINE', CALL LINE LISTER                      17 00519
001000 001125 R
001001 001000 A 1950          JMP     NC4440        AND SKIP TO COMMON CODE                          17 00520
001002 001005 R
                1952 ************************************************************************** 17 00522
                1953 *       AT THIS POINT, A TUID WAS SENSED, CALL THE TERMINAL LISTER         * 17 00523
                1954 ************************************************************************** 17 00524
001003 002000 A 1955 NC4430 CALL      LSTTU         IF 'TUID', CALL TUID LISTER                      17 00525
001004 001243 R
                1957 ************************************************************************** 17 00527
                1958 *       IF NOT TERMINATED BY A PERIOD, CONTINUE SCANNING                  * 17 00528
                1959 ************************************************************************** 17 00529
001005 002000 A 1960 NC4440 CALL      CHKPER        CHECK FOR TERMINATING PERIOD                     17 00530
001006 002425 R
001007 001000 A 1961          JMP     NC4410        IF MORE, CONTINUE SCAN                           17 00531
001010 000767 R
                1962          EJEC                                                                 17 00532
                1963 ************************************************************************** 17 00533
                1964 *       LIST ALL IS ISSUED HERE, PREPARE FOR READING LSD'S                * 17 00534
                1965 ************************************************************************** 17 00535
001011 005001 A 1966 NC4600 TZA                     PLACE ZERO IN A REG                              17 00536
001012 006057 A 1967          STAE    LSDN          TAKE AS INITIAL LSD NUMBER                       17 00537
001013 002434 R
001014 006017 A 1968          LDAE    DFLPTR        PICK UP ADDRESS OF FCB                           17 00538
001015 002465 R
001016 006057 A 1969          STAE    FCBPTR        STOW AS CURRENT FCB                              17 00539
001017 002452 R
                1971 ************************************************************************** 17 00541
                1972 *       COMPUTE SECTOR NUMBER AND READ IN THE LSD                         * 17 00542
                1973 ************************************************************************** 17 00543
001020 005001 A 1974 NC4610 TZA                     ZERO A REG FOR DIVISION                          17 00544
001021 006027 A 1975          LDBE    LSDN          PICK UP THE CURRENT LSD NUMBER                   17 00545
001022 002434 R
001023 174100 A 1976          DIV     NC4700        COMPUTE SECTOR AND DISPLACEMENT                  17 00546
001024 005122 A 1977          IBR                   MAKE SECTOR NUMBER ONE'S ORIGIN                  17 00547
001025 006067 A 1978          STBE    SECTN         STOW AS THE CURRENT SECTOR                       17 00548
001026 002447 R
001027 005012 A 1979          TAB                   COPY REMAINDER TO B REG                          17 00549
001030 005001 A 1980          TZA                   ZERO A REG FOR MULTIPLY                          17 00550
001031 160465 A 1981          MUL     NC4710        COMPUTE LSD DISPLACEMENT IN WORDS                17 00551
001032 006067 A 1982          STBE    DISP          STOW AS THE CURRENT DISPLACEMENT                 17 00552
001033 002450 R
001034 002000 A 1983          CALL    READ          READ IN THE SECTOR                               17 00553
001035 002020 R
001036 002000 A 1984          CALL    CALC          CALCULATE ADDRESS OF LSD                         17 00554
001037 001727 R
001040 002000 A 1985          CALL    LSTLN         PASS CONTROL TO LIST THE LINE                    17 00555
001041 001125 R
                1987 ************************************************************************** 17 00557
                1988 *       INCREMENT LSD NUMBER AND CONTINUE IF .LE. 255                     * 17 00558
                1989 ************************************************************************** 17 00559
001042 006017 A 1990          LDAE    LSDN          PICK UP THE CURRENT LSD NUMBER                   17 00560
001043 002434 R
001044 005111 A 1991          IAR                   INCREMENT IT                                     17 00561
001045 006057 A 1992          STAE    LSDN          SAVE IT                                          17 00562
001046 002434 R
001047 140431 A 1993          SUB     NC4720        COMPARE FOR MAX + 1                              17 00563
001050 001004 A 1994          JAN     NC4610        CONTINUE IF .LE. MAX                             17 00564
001051 001020 R
                1995          EJEC                                                                 17 00565
                1996 ************************************************************************** 17 00566
                1997 *       NOW PASS THROUGH THE INDEX AND LIST ALL TUIDS                     * 17 00567
                1998 ************************************************************************** 17 00568
001052 006017 A 1999          LDAE    DFTPTR        PICK ADDRESS OF FCB                              17 00569
001053 002466 R
001054 006057 A 2000          STAE    FCBPTR        STOW AS CURRENT FCB                              17 00570
001055 002452 R
001056 010421 A 2001          LDA     ONE           PICK UP A CONSTANT ONE                           17 00571
001057 006057 A 2002 NC4620 STAE      SECTN         STOW AS THE CURRENT SECTOR NUMBER                17 00572
001060 002447 R
001061 005001 A 2003          TZA                   PICK UP A ZERO VALUE                             17 00573
001062 006057 A 2004          STAE    DISP          USE AS THE CURRENT DISPLACEMENT                  17 00574
001063 002450 R
001064 002000 A 2005          CALL    READ          READ THE REQUESTED SECTOR                        17 00575
```

```
001065 002020 R
001066 006017 A 2006 NC4630 LDAE    DISP          PICK UP THE CURRENT DISPLACEMENT                17 00576
001067 002450 R
001070 120423 A 2007         ADD     FOUR          INCREMENT TO THE NEXT TIB                       17 00577
001071 006057 A 2008         STAE    DISP          STOW AS THE CURRENT DISPLACEMENT                17 00578
001072 002450 R
001073 004342 A 2009         LSRA    2             DIVIDE BY FOUR                                  17 00579
001074 006147 A 2010         SUBE    SECTOR        MINUS NUMBER OF TIBS IN THIS SECTOR             17 00580
001075 002576 R
001076 005311 A 2011         DAR                   ADJUST BEFORE JUMP TEST                         17 00581
001077 001002 A 2012         JAP     NC4640        SKIP CALL IF NO MORE ON THIS SECTOR             17 00582
001100 001115 R
001101 002000 A 2013         CALL    CALC          COMPUTE ADDRESS OF RECORD FOR ROUTINE           17 00583
001102 001727 R
001103 074002 A 2014         STX     NC4632        STOW FROM LOCATION                              17 00584
001104 002000 A 2015         CALL    MOVER         MOVE TO PTUID SLOT                              17 00585
001105 002237 R
001106 000800 A 2016 NC4632  DATA    0;PTUID,2     PARAMETER LIST                                  17 00586
001107 002444 R
001110 000002 A
001111 002000 A 2017         CALL    LSTTU         CALL TUID LISTER                                17 00587
001112 001243 R
001113 001000 A 2018         JMP     NC4630        SKIP BACK TO PROCESS ANOTHER TIB                17 00588
001114 001066 R
                2020 ********************************************************************** 17 00590
                2021 *      AT THIS POINT THE WHOLE INDEX SECTOR HAS BEEN PROCESSED        * 17 00591
                2022 ********************************************************************** 17 00592
001115 006017 A 2023 NC4640 LDAE    SECTOR+2      PICK UP THE THREAD POINTER                      17 00593
001116 002600 R
001117 004347 A 2024         LSRA    7             SHIFT INTO POSITION                             17 00594
001120 001016 A 2025         JANZ    NC4620        CONTINUE IF THREAD IS NOT NULL                  17 00595
001121 001057 R
001122 001000 A 2026         JMP     NETCON        ELSE, GO TO TOP OF MODULE                       17 00596
001123 000000 R
                2028 ********************************************************************** 17 00598
                2029 *      DATA AND WORK AREAS FOR LIST ALL PROCESSOR                     * 17 00599
                2030 ********************************************************************** 17 00600
001124 000030 A 2031 NC4700 DATA    24            NUMBER OF TIB'S/SECTOR                          17 00601
       000465 A 2032 NC4710 EQU     FIVE          SIZE OF EACH TCD                                17 00602
       000431 A 2033 NC4720 EQU     BS8           MAX LSD NUMBER PLUS ONE                         17 00603
                2034         EJEC                                                                17 00604
                2035 ********************************************************************** 17 00605
                2036 *                                                                       * 17 00606
                2037 *  TITLE - LINE LIST ROUTINE                                            * 17 00607
                2038 *                                                                       * 17 00608
                2039 *  PURPOSE -                                                            * 17 00609
                2040 *    THIS ROUTINE IS CALLED TO LIST THE CURRENT STATUS OF A SINGLE      * 17 00610
                2041 *    LINE,  WHOSE LSD IS POINTER TO BY 'BLKPTR'.                        * 17 00611
                2042 *                                                                       * 17 00612
                2043 *  CALLING SEQUENCE -                                                   * 17 00613
                2044 *       CALL    LSTLN                                                   * 17 00614
                2045 *                                                                       * 17 00615
                2046 *  ENTRANCE PARAMETERS -                                                * 17 00616
                2047 *    'BLKPTR' MUST POINT TO THE LSD OF THE LINE TO BE LISTED            * 17 00617
                2048 *    'CCMN' MUST CONTAIN THE CCM NUMBER FOR THE LINE                    * 17 00618
                2049 *                                                                       * 17 00619
                2050 ********************************************************************** 17 00620
001125 000000 A 2051 LSTLN  ENTR                  ENTRY CELL                                      17 00621
001126 006027 A 2052         LDBE    BLKPTR       POINT TO THE LSD                                17 00622
001127 002451 R
001130 016002 A 2053         LDA     PSDEF,B      PICK UP DEFINED WORD                            17 00623
001131 006450 A 2054         BT      PSDEFB+BTAOFF,NC4850                                         17 00624
001132 001241 R
                2056 ********************************************************************** 17 00626
                2057 *      NOW SETUP MESSAGE BUFFER                                       * 17 00627
                2058 ********************************************************************** 17 00628
001133 002000 A 2059         CALL    MOVER,CLNE,FLD1,LLNE                                         17 00629
001134 002237 R
001135 002472 R
001136 002527 R
001137 000002 A
001140 006017 A 2060         LDAE    CP            LOAD ' P'                                      17 00630
001141 002525 R
001142 006057 A 2061         STAE    FLD3-1        STOW ' P'                                      17 00631
001143 002534 R
001144 006030 A 2062         LDXI    FLD2          POINT TO NUMERIC FIELD                         17 00632
001145 002532 R
001146 006017 A 2063         LDAE    LSDN          PICK UP BINARY VALUE                           17 00633
001147 002434 R
001150 002000 A 2064         CALL    LSTCVT        CONVERT TO ASCII                               17 00634
001151 001831 R
001152 006027 A 2065         LDBE    BLKPTR        POINT TO THE LSD                               17 00635
001153 002451 R
001154 016002 A 2066         LDA     PSPLA,B       PICK UP WORD 0                                 17 00636
               2067         ANAM    PSPLA2        PICK OUT PHYSICAL LINE NUMBER                  17 00637
001155 150463 A
001156 006030 A 2068         LDXI    FLD3          POINT TO RESULT FIELD                          17 00638
001157 002535 R
001160 002000 A 2069         CALL    LSTCVT        CONVERT TO ASCII                               17 00639
001161 001331 R
001162 002000 A 2070         CALL    MOVER,CDWN,FLD5,LDWN                                         17 00640
001163 002237 R
001164 002500 R
001165 002540 R
001166 000002 A
```

```
001167 002000 A 2071          CALL    MOVER,CCLS,FLD6,LCLS                                    17 00641
001170 002237 R
001171 002505 R
001172 002543 R
001173 000003 A
                2073 ********************************************************************************* 17 00643
                2074 *       IF LINE IS UP, MOVE 'UP' TO MESSAGE                               * 17 00644
                2075 ********************************************************************************* 17 00645
001174 006027 A 2076          LDBE    BLKPTR          POINT TO THE LSD                        17 00646
001175 002451 R
001176 016002 A 2077          LDA     PSDWN,B         PICK UP SWITCH WORD                     17 00647
001177 006411 A 2078          BT      PSDWNB,NC4830   SKIP IF FLAGGED DOWN                    17 00648
001200 001206 R
001201 002000 A 2079          CALL    MOVER,CUP,FLD5,LUP                                      17 00649
001202 002237 R
001203 002476 R
001204 002540 R
001205 000002 A
                2081 ********************************************************************************* 17 00651
                2082 *       IF LINE IS OPEN, MOVE 'OPEN' TO MESSAGE                           * 17 00652
                2083 ********************************************************************************* 17 00653
                2084          EXT     C52LLT          EXTERNAL NAME OF LLT                    17 00654
001206 006017 A 2085 NC4830   LDAE    LSDN            PICK UP LOGICAL LINE NUMBER             17 00655
001207 002434 R
001210 006147 A 2086          SUBE    C52LLT          COMPARE AGAINST NUMBER IN TABLE         17 00656
001211 000000 E
001212 001002 A 2087          JAP     NC4840          IF TOO LARGE, MUST BE CLOSED            17 00657
001213 001237 R
001214 006017 A 2088          LDAE    LSDN            RESTORE LOGICAL LINE NUMBER             17 00658
001215 002434 R
001216 005002 A 2089          TZB                     XERO B REG TO RECEIVE BYTE FLAG         17 00659
001217 004541 A 2090          LLSR    1               SHIFT OUT BYTE FLAG TO B REG            17 00660
001220 006120 A 2091          ADDI    C52LLT          ADD IN BASE OF LLT                      17 00661
001221 001211 E
001222 005115 A 2092          INCR    015             INCREMENT OVER COUNT AND COPY TO X      17 00662
001223 015000 A 2093          LDA     0,X             PICK UP TWO BYTES                       17 00663
001224 003020 A 2094          XBZ     NC7320          SHIFT RIGHT OVER BYTE IF FLAG IS ZERO   17 00664
001225 002017 R
                2095          ANAM    8               MASK OFF HIGH-ORDER BYTE                17 00665
001226 150463 A
001227 140463 A 2096          SUB     RHW             COMPARE TO 0377                         17 00666
001230 001002 A 2097          JAP     NC4840          SKIP IS OUT OF RANGE                    17 00667
001231 001237 R
001232 002000 A 2098          CALL    MOVER,COPN,FLD6,LOPN                                    17 00668
001233 002237 R
001234 002502 R
001235 002543 R
001236 000003 A
                2100 ********************************************************************************* 17 00670
                2101 *       ISSUE THE MESSAGE AND RETURN TO THE CALLER                        * 17 00671
                2102 ********************************************************************************* 17 00672
001237 002000 A 2103 NC4840   CALL    TYPE            ISSUE THE MESSAGE                       17 00673
001240 002150 R
001241 001000 A 2104 NC4850   JMP*    LSTLN           RETURN TO THE CALLER                    17 00674
001242 101125 R
                2105          EJEC                                                            17 00675
                2106 ********************************************************************************* 17 00676
                2107 *                                                                       * 17 00677
                2108 * TITLE - TUID LISTER ROUTINE                                           * 17 00678
                2109 *                                                                       * 17 00679
                2110 * PURPOSE -                                                             * 17 00680
                2111 *   THIS ROUTINE IS CALLED TO LIST THE CURRENT STATUS OF                * 17 00681
                2112 *   A SINGLE TUID, WHOSE TIB IS POINTED TO BY 'BLKPTR'.                 * 17 00682
                2113 *                                                                       * 17 00683
                2114 * CALLING SEQUENCE -                                                    * 17 00684
                2115 *       CALL    LSTTU                                                   * 17 00685
                2116 *                                                                       * 17 00686
                2117 * ENTRANCE PARAMETERS -                                                 * 17 00687
                2118 *   'BLKPTR' MUST POINT TO THE TIB FOR THE TUID                         * 17 00688
                2119 *                                                                       * 17 00689
                2120 ********************************************************************************* 17 00690
001243 000000 A 2121 LSTTU    ENTR                    ENTRY CELL                              17 00691
                2123 ********************************************************************************* 17 00693
                2124 *       NOW SET UP MESSAGE LINE                                         * 17 00694
                2125 ********************************************************************************* 17 00695
001244 002000 A 2126          CALL    MOVER,CTID,FLD1,LTID                                    17 00696
001245 002237 R
001246 002474 R
001247 002527 R
001250 000002 A
001251 002000 A 2127          CALL    MOVER,PTUID,FLD2,2                                      17 00697
001252 002237 R
001253 002444 R
001254 002532 R
001255 000002 A
001256 006017 A 2128          LDAE    CT              ' T'                                    17 00698
001257 002524 R
001260 006057 A 2129          STAE    FLD3-1          STOW ' T'                               17 00699
001261 002534 R
001262 002000 A 2130          CALL    GETLTN          GET LOGICAL TERMINAL NUMBER             17 00700
001263 002272 R
001264 006030 A 2131          LDXI    FLD3            POINT TO MESSAGE FIELD                  17 00701
001265 002535 R
001266 002000 A 2132          CALL    LSTCVT          AND CONVERT TO ASCII                    17 00702
001267 001331 R
```

```
001270 002000 A 2133          CALL    MOVER,CDWN,FLD5,LDWN                                    17 00703
001271 002237 R
001272 002500 R
001273 002540 R
001274 000002 A
001275 002000 A 2134          CALL    MOVER,CCLS,FLD6,LCLS                                    17 00704
001276 002237 R
001277 002505 R
001300 002543 R
001301 000003 A
                2136 ************************************************************************ 17 00706
                2137 *       IF THE TUID IS UP, MOVE 'UP' TO MESSAGE                        * 17 00707
                2138 ************************************************************************ 17 00708
001302 006027 A 2139          LDBE    BLKPTR          POINT TO THE TIB                        17 00709
001303 002451 R
001304 016002 A 2140          LDA     TIDWN,B         PICK UP THE UP/DOWN SWITCH WORD         17 00710
001305 006417 A 2141          BT      TIDWNB,NC5230   SKIP IF FLAGGED DOWN                    17 00711
001306 001314 R
001307 002000 A 2142          CALL    MOVER,CUP,FLD5,LUP                                      17 00712
001310 002237 R
001311 002476 R
001312 002540 R
001313 000002 A
                2144 ************************************************************************ 17 00714
                2145 *       IF THE TUID IS OPEN, MOVE 'OPEN' TO MESSAGE                    * 17 00715
                2146 ************************************************************************ 17 00716
001314 006017 A 2147 NC5230   LDAE    LTTM            PICK UP LTT NUMBER                      17 00717
001315 002435 R
001316 001010 A 2148          JAZ     NC5240          SKIP IF NOT FOUND                       17 00718
001317 001325 R
001320 002000 A 2149          CALL    MOVER,COPN,FLD6,LOPN                                    17 00719
001321 002237 R
001322 002502 R
001323 002543 R
001324 000003 A
                2151 ************************************************************************ 17 00721
                2152 *       MESSAGE IS NOW COMPLETE, SO ISSUE IT AND RETURN TO CALLER      * 17 00722
                2153 ************************************************************************ 17 00723
001325 002000 A 2154 NC5240   CALL    TYPE            ISSUE THE MESSAGE                       17 00724
001326 002150 R
001327 001000 A 2155          JMP*    LSTTU           RETURN TO THE CALLER                    17 00725
001330 101243 R
                2156          EJEC                                                            17 00726
                2157 ************************************************************************ 17 00727
                2158 *                                                                      * 17 00728
                2159 * TITLE - BINARY TO ASCII CONVERSION ROUTINE                           * 17 00729
                2160 *                                                                      * 17 00730
                2161 * PURPOSE -                                                            * 17 00731
                2162 *   TO CONVERT A BINARY NUMBER, HELD IN THE A REG TO ASCII,            * 17 00732
                2163 *   POINTED TO BY THE X REG                                            * 17 00733
                2164 *                                                                      * 17 00734
                2165 * CALLING SEQUENCE -                                                   * 17 00735
                2166 *       CALL LSTCVT                                                    * 17 00736
                2167 *                                                                      * 17 00737
                2168 * ENTRANCE PARAMETERS -                                                * 17 00738
                2169 *   (A) CONTAINS THE INPUT BYTE                                        * 17 00739
                2170 *   (X) POINTS TO THE RESULT FIELD                                     * 17 00740
                2171 *                                                                      * 17 00741
                2172 ************************************************************************ 17 00742
001331 000000 A 2173 LSTCVT   ENTR                    ENTRY CELL                              17 00743
001332 004550 A 2174          LLSR    8               SHIFT BYTE INTO B REG                   17 00744
001333 014016 A 2175          LDA     NC5700          LOAD DOUBLE ZEROS                       17 00745
001334 055000 A 2176          STA     0,X             STORE IN RESULT                         17 00746
001335 055001 A 2177          STA     1,X             STORE IN RESULT                         17 00747
001336 005001 A 2178          TZA                     ZERO A REG                              17 00748
001337 004442 A 2179          LLRL    2               ROTATE OUT TWO BITS                     17 00749
001340 115000 A 2180          ORA     0,X             OR INTO FIRST RESULT WORD               17 00750
001341 055000 A 2181          STA     0,X             RETURN TO RESULT                        17 00751
001342 005001 A 2182          TZA                     ZERO A REG                              17 00752
001343 004443 A 2183          LLRL    3               ROTATE OUT NEXT THREE BITS              17 00753
001344 004245 A 2184          LRLA    5               ADD IN SOME SPACE                       17 00754
001345 004443 A 2185          LLRL    3               GET LAST THREE BITS                     17 00755
001346 115001 A 2186          ORA     1,X             OR INTO SECOND RESULT WORD              17 00756
001347 055001 A 2187          STA     1,X             RETURN TO RESULT FIELD                  17 00757
001350 001000 A 2188          JMP*    LSTCVT          RETURN TO THE CALLER                    17 00758
001351 101331 R
                2190 ************************************************************************ 17 00760
                2191 *       CONSTANTS FOR CONVERSION ROUTINE                               * 17 00761
                2192 ************************************************************************ 17 00762
001352 130260 A 2193 NC5700   DATA    '00'            DOUBLE ZERO CONSTANT                    17 00763
                2194          EJEC                                                            17 00764
                2195 ************************************************************************ 17 00765
                2196 *                                                                      * 17 00766
                2197 * TITLE - DECODE UNIT FIELD ROUTINE                                    * 17 00767
                2198 *                                                                      * 17 00768
                2199 * PURPOSE -                                                            * 17 00769
                2200 *   CALLED BY DIRECTIVE PROCESSORS TO DECODE THE UNIT FIELD,           * 17 00770
                2201 *   LINE OR TUID, AS SPECIFIED ON THE USER DIRECTIVE.                  * 17 00771
                2202 *   ALSO INITIAL HOUSEKEEPING IS PERFORMED FOR THE TYPE OF UNIT.       * 17 00772
                2203 *                                                                      * 17 00773
                2204 * CALLING SEQUENCE -                                                   * 17 00774
                2205 *       CALL    UNIT,LINE,TUID                                         * 17 00775
                2206 *                                                                      * 17 00776
                2207 * ENTRANCE PARAMETERS -                                                * 17 00777
                2208 *   LINE IS THE ADDRESS OF WHERE TO RETURN IF A LINE IS FOUND          * 17 00778
```

```
                        2209 *    TUID IS THE ADDRESS OF WHERE TO RETURN IF A TUID IS FOUND          * 17 00779
                        2210 *                                                                       * 17 00780
                        2211 ************************************************************************* 17 00781
001353 000000 A         2212 UNIT   ENTR                    ENTRY CELL                               17 00782
                        2214 ************************************************************************* 17 00784
                        2215 *       SAVE CALLER'S REGISTERS AND SETUP RETURN LINKAGES               * 17 00785
                        2216 ************************************************************************* 17 00786
001354 064054 A         2217         STB     NC6044         SAVE B REG                               17 00787
001355 074055 A         2218         STX     NC6046         SAVE X REG                               17 00788
001356 006037 A         2219         LDXE    UNIT           PICK UP PARM-LIST ADDRESS                17 00789
001357 001353 R
001360 015000 A         2220         LDA     0,X            PICK UP LINE HANDLER ADDRESS             17 00790
001361 054036 A         2221         STA     NC6022         SAVE IN LINE RETURN SEQUENCE             17 00791
001362 015001 A         2222         LDA     1,X            PICK UP TUID HANDLER ADDRESS             17 00792
001363 054040 A         2223         STA     NC6032         SAVE IN TUID RETURN SEQUENCE             17 00793
001364 005144 A         2224         IXR                    BUMP OVER PARM LIST                      17 00794
001365 005144 A         2225         IXR                    BUMP OVER PARM LIST                      17 00795
001366 074025 A         2226         STX     NC6012         SAVE IN OTHER RETURN SEQUENCE            17 00796
                        2227         EJEC                                                            17 00797
                        2228 ************************************************************************* 17 00798
                        2229 *       NOW FETCH FIRST CHARACTER IN UNIT FIELD AND CHECK A NUMBER      * 17 00799
                        2230 ************************************************************************* 17 00800
001367 002000 A         2231         CALL    FETCH,NC6010   FETCH NEXT CHARACTER                     17 00801
001370 001737 R
001371 001413 R
001372 006147 A         2232         SUBE    C0             COMPARE AGAINST LOWEST NUMERIC           17 00802
001373 002461 R
001374 001004 A         2233         JAN     NC6010         IF NOT ALPHANUMERIC, SKIP TO RETURN      17 00803
001375 001413 R
001376 140471 A         2234         SUB     C9M0           REMOVE RANGE OF NUMERICS                 17 00804
001377 001004 A         2235         JAN     NC6400         IF IN RANGE, SKIP TO LINE PARSER         17 00805
001400 001436 R
                        2237 ************************************************************************* 17 00807
                        2238 *       NOW CHECK THE CHARACTER FOR BEING AN ALPHABETIC                 * 17 00808
                        2239 ************************************************************************* 17 00809
001401 006017 A         2240         LDAE    CHAR             PICK UP THE CURRENT CHARACTER           17 00810
001402 002454 R
001403 006147 A         2241         SUBE    CA             COMPARE AGAINST LOWEST ALPHABETIC        17 00811
001404 002462 R
001405 001004 A         2242         JAN     NC6010         IF NOT ALPHABETIC, SKIP TO RETURN        17 00812
001406 001413 R
001407 006147 A         2243         SUBE    CZMA           REMOVE RANGE OF ALPHABETICS              17 00813
001410 002464 R
001411 001004 A         2244         JAN     NC6800         IF IN RANGE, SKIP TO TUID ROUTINE        17 00814
001412 001605 R
                        2245         EJEC                                                            17 00815
                        2246 ************************************************************************* 17 00816
                        2247 *       OTHER RETURN SEQUENCE                                          * 17 00817
                        2248 ************************************************************************* 17 00818
001413 006010 A         2249 NC6010 LDAI     0              PICK UP OTHER RETURN ADDRESS             17 00819
001414 000000 A
       001414 R         2250 NC6012 EQU      *-1            CELL FOR OTHER RETURN ADDRESS            17 00820
001415 001000 A         2251         JMP     NC6040         SKIP TO COMMON RETURN SEQUENCE           17 00821
001416 001425 R
                        2253 ************************************************************************* 17 00823
                        2254 *       LINE FOUND RETURN SEQUENCE                                     * 17 00824
                        2255 ************************************************************************* 17 00825
001417 006010 A         2256 NC6020 LDAI     0              PICK UP LINE RETURN ADDRESS              17 00826
001420 000000 A
       001420 R         2257 NC6022 EQU      *-1            CELL FOR LINE RETURN ADDRESS             17 00827
001421 001000 A         2258         JMP     NC6040         SKIP TO COMMON RETURN SEQUENCE           17 00828
001422 001425 R
                        2260 ************************************************************************* 17 00830
                        2261 *       TUID FOUND RETURN SEQUENCE                                     * 17 00831
                        2262 ************************************************************************* 17 00832
001423 006010 A         2263 NC6030 LDAI     0              PICK UP TUID RETURN ADDRESS              17 00833
001424 000000 A
       001424 R         2264 NC6032 EQU      *-1            CELL FOR TUID RETURN ADDRESS             17 00834
                        2266 ************************************************************************* 17 00836
                        2267 *       COMMON RETURN SEQUENCE                                         * 17 00837
                        2268 ************************************************************************* 17 00838
001425 054047 A         2269 NC6040 STA      NC6048         SAVE RETURN ADDRESS                      17 00839
001426 006017 A         2270         LDAE    CHAR           PICK UP THE CURRENT CHARACTER            17 00840
001427 002454 R
001430 006020 A         2271         LDXI    0              RESTORE B REG                            17 00841
001431 000000 A
       001431 R         2272 NC6044 EQU      *-1            SAVE AREA FOR B REG                      17 00842
001432 006030 A         2273         LDXI    0              RESTORE X REG                            17 00843
001433 000000 A
       001433 R         2274 NC6046 EQU      *-1            SAVE AREA FOR X REG                      17 00844
001434 001000 A         2275         JMP     0              RETURN TO PROPER ADDRESS                 17 00845
001435 000000 A
       001435 R         2276 NC6048 EQU      *-1            CELL TO HOLD RETURN ADDRESS              17 00846
                        2277         EJEC                                                            17 00847
                        2278 ************************************************************************* 17 00848
                        2279 *       A NUMERIC CHARACTER HAS FOUND. PACK THE FIRST NUMBER AND       * 17 00849
                        2280 *       THEN AT THE COMMA OR NUMBER  GET THE SECOND NUMBER             * 17 00850
                        2281 *       IS TAKEN AT THE LOGICAL LINE NUMBERS.                          * 17 00851
                        2282 ************************************************************************* 17 00852
001436 002000 A         2283 NC6400 CALL     NUMBER         EXTRACT THE FIRST NUMBER                 17 00853
001437 001546 R
001440 054775 A         2284         STA     COMN           SAVE AS THE LOW NUMBER                   17 00854
001441 140431 A         2285         SUB     NC6520         COMPARE AGAINST MAX VALUE                17 00855
001442 001002 A         2286         JAP     SYNERR         IF TOO LARGE, SIGNAL SYNTAX ERROR        17 00856
001443 000133 R
```

```
                    2288 ************************************************************************ 17 00950
                    2289 *       NOW VERIFY THAT THE CCM UNIT NUMBER IS VALID                   * 17 00959
                    2290 ************************************************************************ 17 00960
                    2291         EXT     CC$MET          EXTERNAL NAME OF EQUIPMENT TABLE        17 00961
001444 005001 A     2292         TZA                     PICK UP A ZERO                          17 00962
001445 054771 A     2293         STA     CCMCAD          STOW IN CONTROLLER TABLE POINTER        17 00963
001446 014767 A     2294         LDA     CCMN            PICK UP THE LUN OF THE CCM              17 00964
001447 002000 A     2295         CALL    GETCTA          MAP TO A CONTROLLER TABLE               17 00965
001450 002324 R
001451 001004 A     2296         JAN     NC6430          IF NOT FOUND, SIGNAL ERROR              17 00966
001452 001472 R
001453 054763 A     2297         STA     CCMCAD          ELSE TAKE AS CONTROLLER TABLE           17 00967
001454 006030 A     2298         LDXI    CC$MET          POINT TO THE EQUIPEMENT TABLE           17 00968
001455 000000 E
001456 025000 A     2299         LDB     0,X             PICK UP NUMBER OF CCMS                  17 00969
001457 005144 A     2300         IXR                     BUMP OVER COUNT                         17 00970
001460 001020 A     2301         JBZ     NC6430          IF NO CONTROLLER, SIGNAL ERROR          17 00971
001461 001472 R
001462 014754 A     2302 NC6420  LDA     CCMCAD          PICK UP THE TABLE ADDRESS               17 00972
001463 145000 A     2303         SUB     0,X             COMPARE TO CCMS IN TABLE                17 00973
001464 001010 A     2304         JAZ     NC6440          IF EQUAL, SKIP TO FURTHER PROCESSING    17 00974
001465 001476 R
001466 005144 A     2305         IXR                     ELSE BUMP TO NEXT SLOT                  17 00975
001467 005322 A     2306         DBR                     DECREMENT COUNT REGISTER                17 00976
001470 001026 A     2307         JBNZ    NC6420          CONTINUE IF STILL INSIDE OF TABLE       17 00977
001471 001462 R
                    2309 ************************************************************************ 17 00978
                    2310 *       WE WERE UNABLE TO LOCATE THE CONTROLLER TABLE ADDRESS          * 17 00979
                    2311 *       IN THE MULTIPLEXOR EQUIPEMENT TABLE, THUS SIGNAL AN ERROR.     * 17 00980
                    2312 ************************************************************************ 17 00981
001472 010466 A     2313 NC6430  LDA     UDFCCM          PICK UP ERROR CODE                      17 00982
001473 054761 A     2314         STA     ERRTYP          STORE IN CURRENT ERROR TYPE             17 00983
001474 001000 A     2315         JMP     SYNERR          JUMP TO SIGNAL ERROR                    17 00984
001475 000133 R
                    2317 ************************************************************************ 17 00985
                    2318 *       CCM NUMBER IS OKAY, CONTINUE TO PARSE THE DIRECTIVE            * 17 00986
                    2319 ************************************************************************ 17 00987
001476 002000 A     2320 NC6440  CALL    CHKCOM          CHECK FOR DELIMITING COMMA              17 00988
001477 002416 R
001500 002000 A     2321         CALL    FETCH,SYNERR    FETCH CHAR FOLLOWING COMMA              17 00989
001501 001737 R
001502 000133 R
001503 144755 A     2322         SUB     C0              REMOVE CHARACTER ZERO                   17 00990
001504 001004 A     2323         JAN     SYNERR          IF NOT NUMERIC, SIGNAL ERROR            17 00991
001505 000133 R
001506 140471 A     2324         SUB     C9M0            REMOVE RANGE OF NUMERICS                17 00992
001507 001002 A     2325         JAP     SYNERR          IF NOT NUMERIC, SIGNAL SYNTAX ERROR     17 00993
001510 000133 R
001511 002000 A     2326         CALL    NUMBER          EXTRACT THE SECOND NUMBER               17 00994
001512 001546 R
001513 054720 A     2327         STA     LSDN            STOW AS THE LOGICAL LINE NUMBER         17 00995
001514 005012 A     2328         TAB                     COPY TO B REG                           17 00996
                    2330 ************************************************************************ 17 00997
                    2331 *       NOW COMPUTE RMD ADDRESS OF PSD AND READ THE SECTOR             * 17 00998
                    2332 ************************************************************************ 17 00999
001515 140431 A     2333         SUB     NC6520          COMPARE AGAINST MAX VALUE               17 01000
001516 001002 A     2334         JAP     SYNERR          IF TOO LARGE, SIGNAL SYNTAX ERROR       17 01001
001517 000133 R
001520 005001 A     2335         TZA                     ZERO A REG FOR DIVIDE                   17 01002
001521 174023 A     2336         DIV     NC6530          COMPUTE SECTOR ADDRESS AND REMAINDER    17 01003
001522 005122 A     2337         IBR                     MAKE RMD'S ORIGIN                       17 01004
001523 064723 A     2338         STB     SECTN           STOW AS THE SECTOR NUMBER               17 01005
001524 005012 A     2339         TAB                     COPY REMAINDER TO B REG                 17 01006
001525 005001 A     2340         TZA                     ZERO A FOR MULTIPLY                     17 01007
001526 160465 A     2341         MUL     NC6540          GET DISPLACEMENT IN WORDS               17 01008
001527 064720 A     2342         STB     DISP            STOW THE CURRENT DISPLACEMENT           17 01009
001530 014734 A     2343         LDA     DFLPTR          PICK UP FCB POINTER CONSTANT            17 01010
001531 054720 A     2344         STA     FCBPTR          SET UP THE CURRENT FCB                  17 01011
001532 002000 A     2345         CALL    READ            READ THE SECTOR                         17 01012
001533 002020 R
001534 002000 A     2346         CALL    CALC            COMPUTE ADDRESS OF BLOCK                17 01013
001535 001727 R
                    2348 ************************************************************************ 17 01014
                    2349 *       NOW SEE THAT LSD IS DEFINED                                    * 17 01015
                    2350 ************************************************************************ 17 01016
001536 015002 A     2351         LDA     PSDEF,X         PICK UP SINGLE WORD                     17 01017
001537 006410 A     2352         BT      PSDEFB,NC6520   TEST IF LSD IS DEFINED                  17 01018
001540 001417 R
                    2354 ************************************************************************ 17 01019
                    2355 *       ELSE SIGNAL ERROR CODE UDFLNE                                  * 17 01020
                    2356 ************************************************************************ 17 01021
001541 010422 A     2357         LDA     UDFLNE          PICK UP ERROR CODE                      17 01022
001542 054712 A     2358         STA     ERRTYP          STOW IN ERROR HOLDER                    17 01023
001543 001000 A     2359         JMP     SYNERR          JUMP TO SIGNAL ERROR                    17 01024
001544 000133 R
                    2361 ************************************************************************ 17 01025
                    2362 *       WORK AREAS AND EQUATES FOR LOCAL USE                           * 17 01026
                    2363 ************************************************************************ 17 01027
000401 A            2364 NC6520  EQU     BS8             MAX NUM FOR (255) PLUS ONE              17 01028
001545 000030 A     2365 NC6530  DATA    24              NUMBER OF WORDS/SECTOR                  17 01029
000165 A            2366 NC6540  EQU     FIVE            SIZE OF PSD                             17 01030
                    2367         EJEC                                                            17 01031
                    2368 ************************************************************************ 17 01032
                    2369 *                                                                        * 17 01033
                    2370 * TITLE - NUMERIC EXTRACTION ROUTINE                                     * 17 01034
```

```
                    2371 *
                    2372 * PURPOSE -                                                                          * 17 00941
                    2373 *   THIS ROUTINE CONVERTS ASCII NUMERIC INPUT CHARACTERS                              * 17 00942
                    2374 *   TO INTERNAL BINARY NUMBER.  RESULT IS RETURNED                                    * 17 00943
                    2375 *   IN THE A REG.                                                                     * 17 00944
                    2376 *                                                                                     * 17 00945
                    2377 * CALLING SEQUENCE -                                                                  * 17 00946
                    2378 *       CALL    NUMBER                                                               * 17 00947
                    2379 *                                                                                     * 17 00948
                    2380 ***************************************************************************************** 17 00949
001546 000000 A     2381 NUMBER ENTR                    ENTRY CELL                                              17 00950
001547 014704 A     2382        LDA     CHAR            PICK UP THE CURRENT CHARACTER                           17 00951
001550 144710 A     2383        SUB     C0              REMOVE CHARACTER ZERO                                   17 00952
001551 054031 A     2384        STA     NC6700          TAKE AS INITIAL VALUE                                   17 00953
001552 020471 A     2385        LDB     TEN             LOAD CONSTANT TEN                                       17 00954
001553 064030 A     2386        STB     NC6710          USE AS DEFAULT RADIX                                    17 00955
001554 001016 A     2387        JANZ    NC6610          SKIP IS OTHER THAN ZERO                                 17 00956
001555 001560 R
001556 010424 A     2388        LDA     EIGHT           LOAD CONSTANT EIGHT                                     17 00957
001557 054024 A     2389        STA     NC6710          USE AS OCTAL RADIX                                      17 00958
                    2391 ***************************************************************************************** 17 00959
                    2392 *       FETCH NEXT CHARACTER AND DETERMINE IF IT'S NUMERIC                           * 17 00961
                    2393 ***************************************************************************************** 17 00962
001560 002000 A     2394 NC6610 CALL    FETCH,NC6620    OBTAIN NEXT INPUT CHARACTER                             17 00963
001561 001737 R
001562 001600 R
001563 144675 A     2395        SUB     C0              REMOVE CHARACTER ZERO                                   17 00964
001564 001004 A     2396        JAN     NC6620          IF LESS THAN ZERO, CANNOT BE NUMERIC                    17 00965
001565 001600 R
001566 144015 A     2397        SUB     NC6710          REMOVE RADIX                                            17 00966
001567 001002 A     2398        JAP     NC6620          IF STILL POSITIVE, TOO LARGE A VALUE                    17 00967
001570 001600 R
                    2399        EJEC                                                                            17 00968
                    2400 ***************************************************************************************** 17 00969
                    2401 *       THIS CHARACTER IS NUMERIC, ADD INTO RADIX                                    * 17 00970
                    2402 *                           ACC = ACC * RADIX + (CHAR - '0')                          17 00971
                    2403 ***************************************************************************************** 17 00972
001571 014662 A     2404        LDA     CHAR            PICK UP THE CHARACTER                                   17 00973
001572 144666 A     2405        SUB     C0              REMOVE CHARACTER ZERO                                   17 00974
001573 024007 A     2406        LDB     NC6700          LOAD PREVIOUS ACCUMULATOR VALUE                         17 00975
001574 164007 A     2407        MUL     NC6710          TIMES RADIX, PLUS THIS DIGIT                            17 00976
001575 064005 A     2408        STB     NC6700          STOW BACK INTO ACCUMULATOR                              17 00977
001576 001000 A     2409        JMP     NC6610          CONTINUE NUMERIC SCAN                                   17 00978
001577 001560 R
                    2411 ***************************************************************************************** 17 00979
                    2412 *       NUMBER IS NOW COMPLETE, SINCE A NON-NUMERIC WAS SENSED,                      * 17 00981
                    2413 *       LOAD THE RESULTING NUMBER INTO THE A REG AND                                 * 17 00982
                    2414 *       RETURN TO THE CALLER                                                         * 17 00983
                    2415 ***************************************************************************************** 17 00984
001600 014002 A     2416 NC6620 LDA     NC6700          PICK UP THE ACCUMULATED VALUE                           17 00985
001601 001000 A     2417        JMP*    NUMBER          RETURN TO THE CALLER                                    17 00986
001602 101546 R
                    2419 ***************************************************************************************** 17 00987
                    2420 *       DATA AND WORK AREAS FOR NUMERIC EXTRACTION ROUTINE                           * 17 00989
                    2421 ***************************************************************************************** 17 00990
001603 000000 A     2422 NC6700 DATA    0               NUMERICAL ACCUMULATOR                                   17 00991
001604 000000 A     2423 NC6710 DATA    0               RADIX STORAGE                                           17 00992
                    2424        EJEC                                                                            17 00993
                    2425 ***************************************************************************************** 17 00994
                    2426 *       A TUID WAS SENSED, INITIALIZE AND STORE THE FIRST CHARACTER                  * 17 00995
                    2427 ***************************************************************************************** 17 00996
001605 014646 A     2428 NC6800 LDA     CHAR            PICK UP THE CURRENT CHARACTER                           17 00997
001606 054631 A     2429        STA     TUID            TAKE AS FIRST CHARACTER OF TUID                         17 00998
001607 014653 A     2430        LDA     BLANK           PICK UP A BLANK                                         17 00999
001610 054630 A     2431        STA     TUID+1          CLEAR WORD 2                                            17 01000
001611 054630 A     2432        STA     TUID+2          CLEAR WORD 3                                            17 01001
001612 054630 A     2433        STA     TUID+3          CLEAR WORD 4                                            17 01002
001613 010422 A     2434        LDA     TWO             PICK UP A CONSTANT TWO                                  17 01003
001614 054111 A     2435        STA     NC6900          AND USE AS INITIAL INDEX                                17 01004
                    2437 ***************************************************************************************** 17 01005
                    2438 *       NOW FETCH NEXT CHARACTER AND CHECK FOR ALPHANUMERIC                          * 17 01007
                    2439 ***************************************************************************************** 17 01008
001615 002000 A     2440 NC6810 CALL    FETCH,NC6830    OBTAIN THE NEXT INPUT CHARACTER                         17 01009
001616 001737 R
001617 001652 R
001620 144640 A     2441        SUB     C0              COMPARE TO LOWEST NUMERIC                               17 01010
001621 001004 A     2442        JAN     NC6830          IF NOT ALPHANUMERIC, SKIP TO READ TIB                   17 01011
001622 001652 R
001623 140471 A     2443        SUB     C9M0            REMOVE RANGE OF NUMERICS                                17 01012
001624 001004 A     2444        JAN     NC6820          SKIP IF CHAR IS NUMERIC                                 17 01013
001625 001635 R
001626 014625 A     2445        LDA     CHAR            RESTORE CURRENT CHARACTER                               17 01014
001627 144632 A     2446        SUB     CA              COMPARE AGAINST LOWEST ALPHABETIC                       17 01015
001630 001004 A     2447        JAN     NC6830          IF NOT IN ALPHABET, SKIP TO READ TIB                    17 01016
001631 001652 R
001632 144631 A     2448        SUB     CZMA            REMOVE RANGE OF ALPHABET                                17 01017
001633 001002 A     2449        JAP     NC6830          IF NOT ALPHABETIC, SKIP TO READ TIB                     17 01018
001634 001652 R
                    2451 ***************************************************************************************** 17 01019
                    2452 *       CHARACTER IS ALPHANUMERIC, STORE IN TUID VECTOR                              * 17 01021
                    2453 ***************************************************************************************** 17 01022
001635 014070 A     2454 NC6820 LDA     NC6900          PICK UP CURRENT INDEX                                   17 01023
001636 140465 A     2455        SUB     FIVE            COMPARE AGAINST MAX VALUE                               17 01024
001637 001002 A     2456        JAP     SYNERR          IF TOO LARGE, SIGNAL SYNTAX ERROR                       17 01025
001640 000133 R                                                                                                 17 01026
```

```
001641 014064 A 2457          LDA     NC6900          ELSE RESTORE INDEX                                    17 01027
001642 006120 A 2458          ADDI    TUID-1          ADD IN BASE LOCATION                                  17 01028
001643 002437 R
001644 005014 A 2459          TAX                     COPY TO INDEX REGISTER                                17 01029
001645 014606 A 2460          LDA     CHAR            PICK UP THE CHARACTER                                 17 01030
001646 055000 A 2461          STA     0,X             AND STUFF INTO THE VECTOR                             17 01031
001647 044056 A 2462          INR     NC6900          THEN BUMP INDEX                                       17 01032
001650 001000 A 2463          JMP     NC6810          LOOP TO TRY THE NEXT CHARACTER                        17 01033
001651 001615 R
                2464          EJEC                                                                          17 01034
                2465 ********************************************************************************      17 01035
                2466 *       END OF TUID HAS BEEN SENSED, NOW PACK TUID INTO PTUID                  *      17 01036
                2467 ********************************************************************************      17 01037
001652 014565 A 2468 NC6830   LDA     TUID            PICK UP FIRST CHARACTER                               17 01038
001653 004250 A 2469          LRLA    8               SHIFT LEFT IN WORD                                    17 01039
001654 114564 A 2470          ORA     TUID+1          OR IN SECOND CHARACTER                                17 01040
001655 054566 A 2471          STA     PTUID           SAVE AS FIRST PACKED WORD                             17 01041
001656 014563 A 2472          LDA     TUID+2          PICK UP THIRD CHARACTER                               17 01042
001657 004250 A 2473          LRLA    8               SHIFT LEFT IN WORD                                    17 01043
001660 114562 A 2474          ORA     TUID+3          OR IN FOURTH CHARACTER                                17 01044
001661 054563 A 2475          STA     PTUID+1         SAVE AS SECOND PACKED WORD                            17 01045
                2477 ********************************************************************************      17 01046
                2478 *       NOW READ ONE INDEX SECTOR FROM FILE VT$DFT                             *      17 01047
                2479 ********************************************************************************      17 01048
001662 014603 A 2480          LDA     DFTPTR          PICK UP FCB POINTER CONSTANT                          17 01049
001663 054566 A 2481          STA     FCBPTR          USE AS CURRENT FCB                                    17 01050
001664 010421 A 2482          LDA     ONE             LOAD A CONSTANT ONE                                   17 01051
001665 054561 A 2483 NC6840   STA     SECTN           TAKE AS CURRENT SECTOR NUMBER                         17 01052
001666 005001 A 2484          TZA                     ZERO A REG                                            17 01053
001667 054560 A 2485          STA     DISP            USE AS INITIAL DISPLACEMENT                           17 01054
001670 002000 A 2486          CALL    READ            READ THE INDEX SECTOR                                 17 01055
001671 002020 R
                2488 ********************************************************************************      17 01056
                2489 *       SEARCH INDEX SECTOR FOR TUID MATCH                                     *      17 01057
                2490 ********************************************************************************      17 01058
001672 014555 A 2491 NC6850   LDA     DISP            PICK UP OLD DISPLACEMENT                              17 01059
001673 120423 A 2492          ADD     FOUR            INCREMENT BY TIB SIZE                                 17 01060
001674 054553 A 2493          STA     DISP            USE AS NEW DISPLACEMENT                               17 01061
001675 004342 A 2494          LSRA    2               CONVERT DISPLACEMENT TO ORDINAL                       17 01062
001676 144677 A 2495          SUB     SECTOR          COMPARE TO NUMBER OF TIB'S IN SECTOR                  17 01063
001677 005311 A 2496          DAR                     ADJUST BEFORE JUMP TEST                               17 01064
001700 001002 A 2497          JAP     NC6860          IF GREATER THAN, SKIP TO READ NEW SECTOR              17 01065
001701 001716 R
001702 002000 A 2498          CALL    CALC            COMPUTE BLOCK ADDRESS IN X REG                        17 01066
001703 001727 R
001704 015000 A 2499          LDA     TITU1,X         LOAD FIRST TWO CHARS OF TUID                          17 01067
001705 144536 A 2500          SUB     PTUID           COMPARE AGAINST PACKED USER TUID                      17 01070
001706 001016 A 2501          JANZ    NC6850          IF NOT EQUAL, TRY NEXT TIB                            17 01071
001707 001672 R
001710 015001 A 2502          LDA     TITU2,X         LOAD SECOND TWO CHARS OF TUID                         17 01072
001711 144533 A 2503          SUB     PTUID+1         COMPARE AGAINST PACKED USER TUID                      17 01073
001712 001010 A 2504          JAZ     NC6030          IF EQUAL, RETURN TO THE CALLER                        17 01074
001713 001423 R
001714 001000 A 2505          JMP     NC6850          ELSE, TRY THE NEXT TUID                               17 01075
001715 001672 R
                2507 ********************************************************************************      17 01076
                2508 *       THIS SECTOR HAS BEEN COMPLETELY PROCESSED, WITHOUT A MATCH.            *      17 01077
                2509 *       NOW SEE IF THERE IS ANOTHER INDEX SECTOR.                              *      17 01078
                2510 ********************************************************************************      17 01079
001716 014661 A 2511 NC6860   LDA     SECTOR+TISEC    PICK UP THE THREAD WORD                               17 01080
001717 004347 A 2512          LSRA    TISECB          SHIFT OUT THE DISPLACEMENT                            17 01081
001720 001016 A 2513          JANZ    NC6840          IF SECTOR NOT ZERO, CONTINUE LOOP                     17 01082
001721 001665 R
                2515 ********************************************************************************      17 01083
                2516 *       AT THIS POINT, THE USER'S TIB FOR THIS HAS NOT BEEN FOUND.             *      17 01084
                2517 *       SIGNAL ERROR CODE 'UDFTID'.                                            *      17 01085
                2518 ********************************************************************************      17 01086
001722 010464 A 2519          LDA     UDFTID          PICK UP ERROR CODE                                    17 01087
001723 054531 A 2520          STA     ERRTYP          STORE IN ERROR HOLDER                                 17 01088
001724 001000 A 2521          JMP     SYNERR          JUMP TO SIGNAL ERROR                                  17 01089
001725 000133 R
                2523 ********************************************************************************      17 01090
                2524 *       CONSTANTS AND WORK AREAS FOR UNIT                                      *      17 01091
                2525 ********************************************************************************      17 01092
                2526                                                                                        17 01093
001726 000000 A 2527 NC6900   DATA    0               WORKING STORAGE FOR ROUTINE                           17 01094
                2528          EJEC                                                                          17 01095
                2529 ********************************************************************************      17 01096
                2530 *                                                                                *      17 01097
                2531 * TITLE - CALCULATE ADDRESS OF BLOCK ROUTINE                                    *      17 01098
                2532 *                                                                                *      17 01099
                2533 * PURPOSE -                                                                      *      17 01100
                2534 *   CALC IS A GENERAL-PURPOSE ROUTINE TO CALCULATE THE                           *      17 01101
                2535 *   ADDRESS OF BLOCKS WITHIN THE DISK BUFFER.                                    *      17 01102
                2536 *   THE RESULTING ADDRESS IF LEFT IN THE X REG AND                               *      17 01103
                2537 *   CELL 'BLKPTR'.                                                               *      17 01104
                2538 *                                                                                *      17 01105
                2539 * CALLING SEQUENCE -                                                             *      17 01106
                2540 *       CALL    CALC                                                             *      17 01107
                2541 *                                                                                *      17 01108
                2542 * ENTRANCE PARAMETERS -                                                         *      17 01109
                2543 *   NONE                                                                         *      17 01110
                2544 *                                                                                *      17 01111
                2545 ********************************************************************************      17 01112
001727 000000 A 2546 CALC     ENTR                    ENTRY CELL                                            17 01113
```

```
001730 006010 A 2547          LDAI    SECTOR          POINT TO BUFFER START                          17 01117
001731 002576 R
001732 124515 A 2548          ADD     DISP            ADD IN DISPLACEMENT                            17 01118
001733 005014 A 2549          TAX                     TRANSFER TO X REG                              17 01119
001734 054514 A 2550          STA     BLKPTR          ALSO COPY TO 'BLKPTR'                          17 01120
001735 001000 A 2551          JMP*    CALC            RETURN TO THE CALLER                           17 01121
001736 101727 R
                2552          EJEC                                                                   17 01122
                2553 ********************************************************************************17 01123
                2554 *                                                                              * 17 01124
                2555 * TITLE - INPUT CHARACTER FETCH ROUTINE                                        * 17 01125
                2556 *                                                                              * 17 01126
                2557 * PURPOSE -                                                                    * 17 01127
                2558 *   FETCH IS CALLED WHENEVER THE NEXT INPUT CHARACTER                          * 17 01128
                2559 *   IS REQUIRED.  THE CHARACTER IS GOTTEN FROM THE DIRECTIVE                   * 17 01129
                2560 *   BUFFER AND UNPACKED.  THE RESULT IS PLACED BOTH IN THE A REG               * 17 01130
                2561 *   AND THE CELL 'CHAR'.                                                       * 17 01131
                2562 *                                                                              * 17 01132
                2563 * CALLING SEQUENCE -                                                           * 17 01133
                2564 *       CALL    FETCH,RTN                                                      * 17 01134
                2565 *                                                                              * 17 01135
                2566 * ENTRANCE PARAMETERS -                                                        * 17 01136
                2567 *   RTN IS THE ADDRESS OF A ROUTINE TO GAIN CONTROL IS                         * 17 01137
                2568 *   A PERIOD IS SENSED (END OF DIRECTIVE).                                     * 17 01138
                2569 *                                                                              * 17 01139
                2570 ********************************************************************************17 01140
001737 000000 A 2571 FETCH  ENTR                      ENTRY CELL                                     17 01141
                2573 ********************************************************************************17 01143
                2574 *       SETUP BOTH NORMAL AND EOF RETURN SEQUENCES                             * 17 01144
                2575 ********************************************************************************17 01145
001740 006037 A 2576          LDXE    FETCH           PICK UP PARM-LIST ADDRESS                      17 01146
001741 001737 R
001742 005041 A 2577          TXA                     COPY TO A REG                                  17 01147
001743 005111 A 2578          IAR                     BUMP TO SKIP OVER PARM                         17 01148
001744 054046 A 2579          STA     NC7252          SAVE IN NORMAL RETURN SEQUENCE                 17 01149
001745 015000 A 2580          LDA     0,X             GET ADDRESS OF EOF HANDLER                     17 01150
001746 054047 A 2581          STA     NC7262          SAVE IN EOF RETURN SEQUENCE                    17 01151
                2583 ********************************************************************************17 01153
                2584 *       NOW CHECK NEXT CHARACTER TO INSURE IT'S INSIDE BUFFER                  * 17 01154
                2585 ********************************************************************************17 01155
001747 014503 A 2586 NC7210 LDA       COLPTR          LOAD ADDRESS OF NEXT BYTE                      17 01156
001750 004341 A 2587          LSRA    1               SHIFT OUT LEFT-RIGHT FLAG                      17 01157
001751 006140 A 2588          SUBI    ENDBUF          COMPARE AGAINST END OF BUFFER                  17 01158
001752 003036 R
001753 001004 A 2589          JAN     NC7220          IF INSIDE, SKIP TO FETCH CHAR                  17 01159
001754 001761 R
001755 014500 A 2590          LDA     PERIOD          ELSE, PICK UP A PERIOD                         17 01160
001756 054475 A 2591          STA     CHAR            TAKE AS CURRENT CHARACTER                      17 01161
001757 001000 A 2592          JMP     NC7260          AND SKIP TO EOF RETURN SEQUENCE                17 01162
001760 002014 R
                2594 ********************************************************************************17 01164
                2595 *       COLPTR IS INSIDE BUFFER, OKAY TO GET NEXT CHARACTER                    * 17 01165
                2596 ********************************************************************************17 01166
001761 014471 A 2597 NC7220 LDA       COLPTR          PICK UP NEXT BYTE ADDRESS                      17 01167
001762 004541 A 2598          LLSR    1               SHIFT OUT LEFT-RIGHT FLAG                      17 01168
001763 004157 A 2599          LSRB    15              RIGHT-JUSTIFY IN B REG                         17 01169
001764 005014 A 2600          TAX                     COPY TO INDEX REG                              17 01170
001765 015000 A 2601          LDA     0,X             LOAD THE WHOLE WORD                            17 01171
001766 003020 A 2602          XBZ     NC7320          SHIFT IF FLAG IS OFF                           17 01172
001767 002017 R
001770 150463 A 2603          ANA     RHW             MASK OFF LEFT BYTE                             17 01173
001771 054462 A 2604          STA     CHAR            TAKE AS CURRENT CHARACTER                      17 01174
001772 044460 A 2605          INR     COLPTR          BUMP INDEX POINTER TO NEXT BYTE ADDRESS        17 01175
                2607 ********************************************************************************17 01177
                2608 *       NOW CHECK FOR A BLANK, AND IF BLANK, IGNORE CHARACTER                  * 17 01178
                2609 ********************************************************************************17 01179
001773 005012 A 2610          TAB                     COPY CURRENT CHARACTER TO B REG                17 01180
001774 144466 A 2611          SUB     BLANK           COMPARE FOR A BLANK                            17 01181
001775 001010 A 2612          JAZ     NC7210          IF EQUAL TO A BLANK, GO GET ANOTHER CHAR       17 01182
001776 001747 R
001777 005021 A 2613          TBA                     RESTORE CURRENT CHARACTER                      17 01183
002000 144455 A 2614          SUB     PERIOD          COMPARE FOR A PERIOD                           17 01184
002001 001010 A 2615          JAZ     NC7260          IF PERIOD, SKIP TO EOF SEQUENCE                17 01185
002002 002014 R
002003 005021 A 2616          TBA                     RESTORE CURRENT CHARACTER                      17 01186
002004 144453 A 2617          SUB     EQUAL           COMPARE AGAINST EQUAL SIGN                     17 01187
002005 001016 A 2618          JANZ    NC7250          IF NOT EQUAL, SKIP TO NORMAL RETURN            17 01188
002006 002011 R
002007 014447 A 2619          LDA     COMMA           IF EQUAL SIGN, REPLACE WITH A COMMA            17 01189
002010 054443 A 2620          STA     CHAR            USE AS CURRENT CHARACTER                       17 01190
                2621          EJEC                                                                   17 01191
                2622 ********************************************************************************17 01192
                2623 *       NORMAL RETURN SEQUENCE                                                 * 17 01193
                2624 ********************************************************************************17 01194
002011 014442 A 2625 NC7250 LDA       CHAR            PICK UP CURRENT CHARACTER                      17 01195
002012 001000 A 2626          JMP     0               RETURN TO THE USER                             17 01196
002013 000000 A
       002013 R 2627 NC7252 EQU     *-1             SAVE AREA FOR RETURN ADDRESS                   17 01197
                2629 ********************************************************************************17 01199
                2630 *       EOF RETURN SEQUENCE                                                    * 17 01200
                2631 ********************************************************************************17 01201
002014 014437 A 2632 NC7260 LDA       CHAR            PICK UP CURRENT CHARACTER                      17 01202
002015 001000 A 2633          JMP     0               RETURN TO THE USER                             17 01203
002016 000000 A
       002016 R 2634 NC7262 EQU     *-1             SAVE AREA FOR RETURN ADDRESS                   17 01204
```

```
                    2636 ************************************************************************ 17 01200
                    2637 *       FETCH CONSTATS AND WORK AREAS                                  * 17 01201
                    2638 ************************************************************************ 17 01202
002017 004350 A     2639 NC7320 LSRA    8               SHIFT A REG RIGHT ONE BYTE               17 01209
                    2640        EJEC                                                             17 01210
                    2641 ************************************************************************ 17 01211
                    2642 *                                                                        * 17 01212
                    2643 * TITLE - RMD READ/WRITE ROUTINE                                         * 17 01213
                    2644 *                                                                        * 17 01214
                    2645 * PURPOSE -                                                             * 17 01215
                    2646 *   THESE ROUTINES PROVIDE AN INTERFACE FOR THE CALLER TO THE TWO       * 17 01216
                    2647 *   RMD-RESIDENT VTAM FILES, VT$DFL AND VT$DFT.                         * 17 01217
                    2648 *                                                                        * 17 01218
                    2649 * CALLING SEQUENCE -                                                    * 17 01219
                    2650 *       CALL    READ                                                     * 17 01220
                    2651 *       CALL    WRITE                                                    * 17 01221
                    2652 *                                                                        * 17 01222
                    2653 * ENTRANCE PARAMETERS -                                                 * 17 01223
                    2654 *   SECTN IS THE DESIRED SECTOR NUMBER TO TRANSFER                       * 17 01224
                    2655 *   FCBPTR IS THE FCB TO BE USED FOR THE TRANSFER                        * 17 01225
                    2656 *                                                                        * 17 01226
                    2657 ************************************************************************ 17 01227
                    2659 ************************************************************************ 17 01228
                    2660 *       READ SECTOR ENTRY POINT                                        * 17 01229
                    2661 ************************************************************************ 17 01230
002020 000000 A     2662 READ   ENTR                    ENTRY CELL                               17 01231
                    2664 ************************************************************************ 17 01232
                    2665 *       FIRST CHECK TO SEE IF THE REQUESTED SECTOR IS ALREADY IN       * 17 01233
                    2666 *       IN THE SECTOR BUFFER.  TRANSFER IS SKIPPED IF THE REQUESTED    * 17 01234
                    2667 *       SECTOR IS ALREADY RESIDENT.                                    * 17 01235
                    2668 ************************************************************************ 17 01236
002021 014101 A     2669        LDA     NC7730          PICK UP LAST FCB-USED POINTER            17 01237
002022 144427 A     2670        SUB     FCBPTR          COMPARE AGAINST CURRENT FCB              17 01238
002023 001016 A     2671        JANZ    NC7610          IF NOT EQUAL, GO TO DO READ              17 01239
002024 002034 R
002025 034424 A     2672        LDX     FCBPTR          POINT TO CURRENT FCB                     17 01240
002026 015003 A     2673        LDA     3,X             PICK UP LAST SECTOR READ                 17 01241
002027 144417 A     2674        SUB     SECTN           COMPARE AGAINST CURRENT SECTOR REQUEST    17 01242
002030 001016 A     2675        JANZ    NC7610          IF NOT EQUAL, GO TO DO READ              17 01243
002031 002034 R
002032 001000 A     2676        JMP*    READ            RETURN TO THE CALLER                     17 01244
002033 102020 R
                    2678 ************************************************************************ 17 01245
                    2679 *       AT THIS POINT, A READ IS REQUIRED, DO FINAL SETUP              * 17 01246
                    2680 ************************************************************************ 17 01247
002034 014415 A     2681 NC7610 LDA     FCBPTR          PICK UP CURRENT FCB ADDRESS              17 01248
002035 054065 A     2682        STA     NC7730          AND MAKE AS LAST FCB-USED                17 01249
002036 014062 A     2683        LDA     NC7710          PICK UP READ OP-CODE                     17 01250
002037 006037 A     2684        LDXE    READ            PICK UP THE RETURN ADDRESS               17 01251
002040 002020 R
002041 001000 A     2685        JMP     NC7630          JUMP TO COMMON SEQUENCE                  17 01252
002042 002047 R
                    2687 ************************************************************************ 17 01253
                    2688 *       WRITE SECTOR ENTRY POINT                                       * 17 01254
                    2689 ************************************************************************ 17 01255
002043 000000 A     2690 WRITE  ENTR                    ENTRY CELL                               17 01256
002044 014055 A     2691        LDA     NC7720          PICK UP WRITE OP-CODE                    17 01257
002045 006037 A     2692        LDXE    WRITE           PICK UP THE RETURN ADDRESS               17 01258
002046 002043 R
                    2694 ************************************************************************ 17 01259
                    2695 *       COMMON SEQUENCE                                                * 17 01260
                    2696 ************************************************************************ 17 01261
002047 054073 A     2697 NC7630 STA     NC7654          SAVE OP CODE WITH MACRO                  17 01262
002050 074036 A     2698        STX     NC7668          SAVE RETURN ADDRESS                      17 01263
                    2700 ************************************************************************ 17 01264
                    2701 *       NOW SEE IF FCB IS OPEN                                         * 17 01265
                    2702 ************************************************************************ 17 01266
002051 024400 A     2703        LDB     FCBPTR          POINTER TO FCB                           17 01267
002052 016004 A     2704        LDA     4,B             OPEN INDICATOR                           17 01268
002053 001016 A     2705        JANZ    NC7650          IF ALREADY OPENED                        17 01269
002054 002065 R
                    2707 ************************************************************************ 17 01270
                    2708 *       OPEN IS REQUIRED FOR FCB                                       * 17 01271
                    2709 ************************************************************************ 17 01272
002055 064004 A     2710        STB     NC7642          SAVE FCB POINTER IN OPEN MACRO           17 01273
                    2711 NC7640 OPEN    0,RMDLUN,WAIT=YES
002056 006505 A
002057 000746 E
002060 100000 A
002061 013152 A
002062 000000 A
002063 000000 A
002064 000000 A
       002062 R     2712 NC7642 EQU     NC7640+4        POINTER TO THE FCB ADDRESS               17 01282
                    2714 ************************************************************************ 17 01284
                    2715 *       FILE IS NOW OPEN, COMPLETE REQUEST, ISSUE REQUEST, AND CHECK   * 17 01285
                    2716 *       RESULT.                                                        * 17 01286
                    2717 ************************************************************************ 17 01287
002065 014361 A     2718 NC7650 LDA     SECTN           PICK UP REQUESTED SECTOR                 17 01288
002066 056003 A     2719        STA     3,B             SHOW IN FCB                              17 01289
002067 064004 A     2720        STB     NC7656          SHOW FCB ADDRESS IN MACRO                17 01290
                    2721 NC7652 READ    0,RMDLUN,WAIT=YES,ASCII                                  17 01291
002070 006505 A
002071 002057 E
002072 100000 A
```

```
002073 010152 A
002074 000000 A
002075 000000 A
002076 000000 A
       002073 R 2722 NC7654 EQU     NC7652+3       EQUATE FOR OP-CODE                                          17 01292
       002074 R 2723 NC7656 EQU     NC7652+4       EQUATE FOR FCB ADDRESS                                      17 01293
                2724        STAT    NC7652,NC7670,NC7670,NC7670,NC7670                                        17 01294
002077 006505 A
002100 000000 E
002101 002070 R
002102 002110 R
002103 002110 R
002104 002110 R
002105 002110 R
                2726 ********************************************************************************      17 01296
                2727 *       TRANSFER WAS COMPLETED WITHOUT TROUBLE, RETURN TO THE CALLER   *      17 01297
                2728 ********************************************************************************      17 01298
002106 001000 A 2729        JMP     0              RETURN TO CALLER                                            17 01299
002107 000000 A
       002107 R 2730 NC7668 EQU     *-1            SAVE AREA FOR P REG                                         17 01300
                2732 ********************************************************************************      17 01302
                2733 *       SOME ERROR WAS DETECTED ON THE LAST TRANSFER, SIGNAL I/O ERROR *      17 01303
                2734 ********************************************************************************      17 01304
002110 005021 A 2735 NC7670 TBA                    COPY FCB POINTER                                            17 01305
002111 020423 A 2736        LDB     IOEDFL         PICK UP DFL INDICATOR                                       17 01306
002112 144352 A 2737        SUB     DFLPTR         COMPARE FCB ADDRESS                                         17 01307
002113 001010 A 2738        JAZ     NC7672         IF EQUAL, SKIP                                              17 01308
002114 002116 R
002115 020465 A 2739        LDB     IOEDFT         ELSE PICK UP OTHER CODE                                     17 01309
002116 064336 A 2740 NC7672 STB     ERRTYP         STOW IN ERROR HOLDER                                        17 01310
002117 001000 A 2741        JMP     SYNERR         JUMP TO SIGNAL ERROR                                        17 01311
002120 000133 R
                2743 ********************************************************************************      17 01313
                2744 *       CONSTANTS AND WORK AREAS FOR READ/WRITE ROUTINE                  *      17 01314
                2745 ********************************************************************************      17 01315
002121 000152 A 2746 NC7710 IOMAC   WAIT,BIN,READOP,RMDLUN                                                   17 01316
002122 000552 A 2747 NC7720 IOMAC   WAIT,BIN,WRITOP,RMDLUN                                                   17 01317
002123 000000 A 2748 NC7730 DATA    0                  FCB LAST USED POINTER                                   17 01318
                2749 DFLFCB FCB     120,SECTOR,DIRECT,FLKEY,'VT','$D','FL'                                  17 01319
002124 000170 A
002125 002576 R
002126 001306 A
002127 000000 A
002130 000000 A
002131 000000 A
002132 000000 A
002133 153324 A
002134 122304 A
002135 143314 A
                2750 DFTFCB FCB     120,SECTOR,DIRECT,FLKEY,'VT','$D','FT'                                  17 01320
002136 000170 A
002137 002576 R
002140 001306 A
002141 000000 A
002142 000000 A
002143 000000 A
002144 000000 A
002145 153324 A
002146 122304 A
002147 143324 A
                2751        EJEC                                                                            17 01321
                2752 ********************************************************************************      17 01322
                2753 *                                                                              *      17 01323
                2754 * TITLE - TYPE AND KEY - I/O INTERFACE FOR DC UNIT                             *      17 01324
                2755 *                                                                              *      17 01325
                2756 * PURPOSE -                                                                    *      17 01326
                2757 *    THIS ROUTINE SERVES AS AN INTERFACE BETWEEN THE CALLER                    *      17 01327
                2758 *    AND THE DC DEVICE 'OPERATOR COMMUNICATION'.                               *      17 01328
                2759 *                                                                              *      17 01329
                2760 * CALLING SEQUENCE -                                                           *      17 01330
                2761 *       CALL    TYPE                                                           *      17 01331
                2762 *       CALL    KEY                                                            *      17 01332
                2763 *                                                                              *      17 01333
                2764 * ENTRANCE PARAMETERS -                                                        *      17 01334
                2765 *    IF CALLING TYPE, OUTPUT MESSAGE MUST BE IN 'LINE' BUFFER                  *      17 01335
                2766 *    IF CALLING KEY, INPUT MESSAGE WILL BE PLACED IN 'BUF'                     *      17 01336
                2767 *                                                                              *      17 01337
                2768 ********************************************************************************      17 01338
                2770 ********************************************************************************      17 01340
                2771 *       WRITE TO KEYBOARD ENTRY POINT                                          *      17 01341
                2772 ********************************************************************************      17 01342
002150 000000 A 2773 TYPE   ENTR                   ENTRY CELL                                                  17 01343
002151 006017 A 2774        LDAE    TYPE           PICK UP THE RETURN ADDRESS                                  17 01344
002152 002150 R
002153 054054 A 2775        STA     NC8048         PLACE IN RETURN SEQUENCE                                    17 01345
002154 006010 A 2776        LDAI    LINE           POINT TO OUTPUT BUFFER                                      17 01346
002155 002526 R
002156 054055 A 2777        STA     NC8180         STOW INTO FCB                                               17 01347
002157 014052 A 2778        LIA     NC8140         PICK UP WRITE OP-CODE                                       17 01348
002160 001000 A 2779        JMP     NC8020         JUMP TO COMMON SEQUENCE                                     17 01349
002161 002172 R
                2781 ********************************************************************************      17 01351
                2782 *       READ KEYBOARD ENTRY POINT                                              *      17 01352
                2783 ********************************************************************************      17 01353
002162 000000 A 2784 KEY    ENTP                   ENTRY CELL                                                  17 01354
```

```
002163 006017 A 2785          LDAE    KEY             PICK UP THE RETURN ADDRESS                    17 01355
002164 002162 R
002165 054042 A 2786          STA     NC8048          PLACE IN RETURN SEQUENCE                      17 01356
002166 006010 A 2787          LDAI    BUF             POINT TO INPUT BUFFER                         17 01357
002167 002766 R
002170 054043 A 2788          STA     NC8180          STOW INTO DCB                                 17 01360
002171 014037 A 2789          LDA     NC8120          PICK UP READ OP-CODE                          17 01361
                    2791 ********************************************************************** 17 01362
                    2792 *       COMMON SEQUENCE                                                * 17 01363
                    2793 ********************************************************************** 17 01364
002172 054003 A 2794 NC8020   STA     NC8032          STOW OP-CODE IN MACRO                         17 01365
                    2795 NC8030   READ    NC8160,0,0,0    ISSUE REQUEST                         17 01366
002173 006505 A
002174 002071 E
002175 100000 A
002176 000000 A
002177 002233 R
002200 000000 A
002201 000000 A
       002176 R 2796 NC8032   EQU     NC8030+3        POINTER TO OP-CODE SLOT                       17 01367
                    2797          STAT    NC8030,EXIT,EXIT,EXIT,EXIT                            17 01370
002202 006505 A
002203 002100 E
002204 002173 R
002205 000240 R
002206 000240 R
002207 000240 R
002210 000240 R
                    2799 ********************************************************************** 17 01371
                    2800 *       IF OPERATION WAS 'WRITE', LINE BUFFER MUST BE CLEARED          * 17 01372
                    2801 ********************************************************************** 17 01373
002211 006017 A 2802          LDAE    NC8032          PICK UP LAST OP-CODE                          17 01374
002212 002176 R
002213 144016 A 2803          SUB     NC8140          COMPARE TO WRITE OP-CODE                      17 01375
002214 001016 A 2804          JANZ    NC8040          IF NOT WRITE, SKIP TO RETURN                  17 01376
002215 002227 R
002216 006030 A 2805          LDXI    LINE            POINT TO LINE BUFFER                          17 01377
002217 002526 R
002220 014015 A 2806 NC8038   LDA     NC8190          PICK UP A BLANK                               17 01400
002221 055000 A 2807          STA     0,X             STORE TWO BLANKS                              17 01401
002222 005145 A 2808          INCR    045             BUMP X AND COPY TO A                          17 01402
002223 006140 A 2809          SUBI    LNEND           COMPARE AGAINST END OF BUFFER                 17 01403
002224 002576 R
002225 001004 A 2810          JAN     NC8038          IF INSIDE, CONTINUE LOOP                      17 01404
002226 002220 R
                    2812 ********************************************************************** 17 01405
                    2813 *       RETURN SEQUENCE                                                * 17 01406
                    2814 ********************************************************************** 17 01407
002227 001000 A 2815 NC8040   JMP     0               RETURN TO THE CALLER                          17 01410
002230 000000 A
       002230 R 2816 NC8048   EQU     *-1             SAVE AREA FOR P REG                           17 01411
                    2818 ********************************************************************** 17 01412
                    2819 *       LOCAL CONSTANTS AND WORK AREAS FOR KEY-TYPE                    * 17 01413
                    2820 ********************************************************************** 17 01414
002231 010001 A 2821 NC8120   IOMAC   WAIT,ASCII,READOP,INLUN                                      17 01415
002232 010401 A 2822 NC8140   IOMAC   WAIT,ASCII,WRITOP,OUTLUN                                     17 01416
002233 000050 A 2823 NC8160   DATA    LNEND-LINE      FIXED-LENGTH READ                             17 01417
002234 000000 A 2824 NC8180   DATA    0               VARIABLE RECORD ADDRESS                       17 01420
002235 000000 A 2825          DATA    0                                                             17 01421
002236 120240 A 2826 NC8190   DATA    '  '            DOUBLE BLANK CONSTANT                         17 01422
                    2827          EJEC                                                          17 01423
                    2828 ********************************************************************** 17 01424
                    2829 *                                                                       * 17 01425
                    2830 * TITLE - GENERAL WORD MOVER ROUTINE                                    * 17 01426
                    2831 *                                                                       * 17 01427
                    2832 * PURPOSE -                                                            * 17 01430
                    2833 *    THIS ROUTINE IS USED TO MOVE WORDS AROUND.  IT'S                   * 17 01431
                    2834 *    PRIMARY USE IS FOR SETTING UP THE VARIOUS MESSAGE FIELDS.          * 17 01432
                    2835 *                                                                       * 17 01433
                    2836 * CALLING SEQUENCE -                                                   * 17 01434
                    2837 *         CALL    MOVER,FROM,TO,COUNT                                  * 17 01435
                    2838 *                                                                       * 17 01436
                    2839 * ENTRANCE PARAMETERS -                                                * 17 01437
                    2840 *    FROM   SOURCE ADDRESS                                              * 17 01440
                    2841 *    TO     DESTINATION ADDRESS                                         * 17 01441
                    2842 *    COUNT  NUMBER OF WORDS TO MOVE                                     * 17 01442
                    2843 *                                                                       * 17 01443
                    2844 ********************************************************************** 17 01444
                    2846 ********************************************************************** 17 01446
                    2847 *       PICK UP CALLING PARAMETERS                                     * 17 01447
                    2848 ********************************************************************** 17 01450
002237 000000 A 2849 MOVER    ENTR                    ENTRY CELL                                    17 01451
002240 006037 A 2850          LDXE    MOVER           PICK UP PARAMETER LIST ADDRESS                17 01452
002241 002237 R
002242 025000 A 2851          LDB     0,X             PICK UP FROM ADDRESS                          17 01453
002243 015001 A 2852          LDA     1,X             PICK UP TO ADDRESS                            17 01454
002244 054006 A 2853          STA     NC8410          SAVE FOR X REG                                17 01455
002245 015002 A 2854          LDA     2,X             PICK UP WORD COUNT                            17 01456
002246 054022 A 2855          STA     NC8500          SAVE IN COUNTER CELL                          17 01457
002247 005041 A 2856          TXA                     COPY PARM LIST TO A REG                       17 01460
002250 120464 A 2857          ADD     THREE           BUMP OVER PARM LIST                           17 01461
002251 054016 A 2858          STA     NC8458          SAVE AS RETURN ADDRESS                        17 01462
002252 006030 A 2859          LDXI    0               PICK UP TO ADDRESS                            17 01463
002253 000000 A
       002253 R 2860 NC8410   EQU     *-1             POINTER TO TEMPORARY CELL                     17 01464
```

```
                    2861          EJEC                                                                                  17 01431
                    2862 **********************************************************************************************  17 01432
                    2863 *       NOW MOVE THE REQUESTED NUMBER OF WORDS                                           *  17 01433
                    2864 **********************************************************************************************  17 01434
002254 014014 A     2865 NC8420   LDA     NC8500          PICK UP CURRENT COUNTER CELL                                  17 01435
002255 005311 A     2866          DAR                     DECREMENT BY ONE                                              17 01436
002256 054012 A     2867          STA     NC8500          RESTORE IN COUNTER CELL                                       17 01437
002257 001004 A     2868          JAN     NC8450          SKIP OUT IF COUNT IS SATISFIED                                17 01438
002260 002267 R
002261 016000 A     2869          LDA     0,B             LOAD A WORD                                                   17 01439
002262 055000 A     2870          STA     0,X             MOVE THE WORD                                                 17 01440
002263 005122 A     2871          IBR                     BUMP SOURCE POINTER                                           17 01441
002264 005144 A     2872          IXR                     BUMP DESTINATION POINTER                                      17 01442
002265 001000 A     2873          JMP     NC8420          CONTINUE MOVING                                               17 01443
002266 002254 R
                    2875 **********************************************************************************************  17 01445
                    2876 *       RETURN LINKAGE TO CALLER                                                         *  17 01446
                    2877 **********************************************************************************************  17 01447
002267 001000 A     2878 NC8450   JMP     0               RETURN TO THE CALLER                                          17 01448
002270 000000 A
       002270 R     2879 NC8458   EQU     *-1             SAVE AREA FOR RETURN ADDRESS                                  17 01449
                    2881 **********************************************************************************************  17 01451
                    2882 *       CONSTANTS AND WORK AREAS FOR MOVER ROUTINE                                       *  17 01452
                    2883 **********************************************************************************************  17 01453
002271 000000 A     2884 NC8500   DATA    0               AREA FOR WORD COUNTER                                         17 01454
                    2885          EJEC                                                                                  17 01455
                    2886 **********************************************************************************************  17 01456
                    2887 *                                                                                            *  17 01457
                    2888 *  TITLE - FIND LOGICAL TERMINAL NUMBER ROUTINE                                              *  17 01458
                    2889 *                                                                                            *  17 01459
                    2890 *  PURPOSE -                                                                                 *  17 01460
                    2891 *    THIS ROUTINE MAPS A TUID TO A LOGICAL TERMINAL                                          *  17 01461
                    2892 *    NUMBER.  THIS NUMBER IS REQUIRED IN ALL VT$IOC REQUESTS                                 *  17 01462
                    2893 *    FOR TERMINALS.                                                                          *  17 01463
                    2894 *                                                                                            *  17 01464
                    2895 *  FUNCTION -                                                                                *  17 01465
                    2896 *    THE LOGICAL TERMINAL TABLE, LTT, IS SEARCHED FOR A                                      *  17 01466
                    2897 *    NON-ZERO ENTRY.  THIS ENTRY POINTS TO A TCD.  IF THE                                    *  17 01467
                    2898 *    TUID IN THE TCD MATCHES THE REQUESTED TUID, CELL LTTN IS SET TO                         *  17 01468
                    2899 *    THE ORDINAL OF THE MATCHING LTT ENTRY.  IF NO MATCH IS FOUND,                           *  17 01469
                    2900 *    THEN THE TUID IS NOT CURRENTLY OPEN AND ZERO IS RETURNED IN CELL                        *  17 01470
                    2901 *    LTTN.                                                                                   *  17 01471
                    2902 *                                                                                            *  17 01472
                    2903 *  CALLING SEQUENCE -                                                                        *  17 01473
                    2904 *       CALL    GETLTN                                                                       *  17 01474
                    2905 *                                                                                            *  17 01475
                    2906 *  ENTRANCE PARAMETERS -                                                                     *  17 01476
                    2907 *    CELLS PTUID MUST CONTAIN THE TUID TO BE MAPPED.                                         *  17 01477
                    2908 *                                                                                            *  17 01478
                    2909 **********************************************************************************************  17 01479
                    2911 **********************************************************************************************  17 01481
                    2912 *       ENTRY POINT, SAVE REGS AND INITIALIZE FOR THE LOOP                               *  17 01482
                    2913 **********************************************************************************************  17 01483
                    2914          EXT     VT$LTT          ADDRESS OF LTT                                                17 01484
002272 000000 A     2915 GETLTN   ENTR                    ENTRY CELL                                                    17 01485
002273 010421 A     2916          LDH     ONE             PICK UP A ONE                                                 17 01486
002274 054140 A     2917          STA     LTTN            STORE IN RESULT CELL                                          17 01487
002275 006037 A     2918          LDXE    VT$LTT          PICK UP POINTER TO LTT                                        17 01488
002276 000000 E
                    2919          EJEC                                                                                  17 01489
                    2920 **********************************************************************************************  17 01490
                    2921 *       NOW CHECK THIS LTT ENTRY                                                         *  17 01491
                    2922 **********************************************************************************************  17 01492
002277 025000 A     2923 NC8610   LDB     0,X             PICK UP LTT ENTRY                                             17 01493
002300 001020 A     2924          JBZ     NC8630          IGNORE IF ZERO                                                17 01494
002301 002312 R
002302 016015 A     2925          LDH     TCID1,B         PICK UP FIRST TWO CHARACTERS OF TUID                          17 01495
002303 144140 A     2926          SUB     PTUID           COMPARE TO THE REQUESTED TUID                                 17 01496
002304 001016 A     2927          JANZ    NC8630          IF NOT EQUAL, IGNORE THIS ENTRY                               17 01497
002305 002312 R
002306 016016 A     2928          LDA     TCID2,B         PICK UP SECOND TWO CHARACTERS OF TUID                         17 01498
002307 144135 A     2929          SUB     PTUID+1         COMPARE TO REQUESTED TUID                                     17 01499
002310 001010 A     2930          JAZ     NC8640          IF EQUAL, WE HAVE A MATCH                                     17 01500
002311 002321 R
002312 005144 A     2931 NC8630   IXR                     ELSE BUMP LTT POINTER                                         17 01501
002313 044121 A     2932          INR     LTTN            BUMP LTT NUMBER                                               17 01502
002314 014120 A     2933          LDA     LTTN            PICK UP CURRENT VALUE                                         17 01503
002315 140463 A     2934          SUB     RHW             COMPARE TO FINAL VALUE                                        17 01504
002316 001016 A     2935          JANZ    NC8610          IF NOT EQUAL, CONTINUE SEARCH                                 17 01505
002317 002277 R
                    2937 **********************************************************************************************  17 01507
                    2938 *       HERE MATCH WAS NOT FOUND, STORE ZERO IN LTTN, THEN RETURN                        *  17 01508
                    2939 **********************************************************************************************  17 01509
002320 054114 A     2940          STA     LTTN            STOW ZERO IN RESULT CELL                                      17 01510
002321 014113 A     2941 NC8640   LDA     LTTN            PICK UP RESULT VALUE                                          17 01511
002322 001000 A     2942          JMP*    GETLTN          RETURN TO THE CALLER                                          17 01512
002323 102272 R
                    2943          EJEC                                                                                  17 01513
                    2944 **********************************************************************************************  17 01514
                    2945 *                                                                                            *  17 01515
                    2946 *  TITLE - FIND CONTROLLER TABLE ROUTINE                                                     *  17 01516
                    2947 *                                                                                            *  17 01517
                    2948 *  PURPOSE -                                                                                 *  17 01518
                    2949 *    THIS ROUTINE LOCATES THE CONTROLLER TABLE, GIVEN THE UNIT NUMBER.                       *  17 01519
                    2950 *                                                                                            *  17 01520
```

```
                    2951 * CALLING SEQUENCE -                                                    * 17 01521
                    2952 *       LDA     LUN                                                     * 17 01522
                    2953 *       CALL    GETCTA                                                  * 17 01523
                    2954 *                                                                       * 17 01524
                    2955 * ENTRANCE PARAMETERS -                                                 * 17 01525
                    2956 *   REG A CONTAINS THE VORTEX LOGICAL UNIT NUMBER                       * 17 01526
                    2957 *   REG A RETURNS NEGATIVE IF UNABLE TO LOCATE CONTROLLER TABLE         * 17 01527
                    2958 *                                                                       * 17 01528
                    2959 ***************************************************************************** 17 01529
002324 000000 A     2960 GETCTA ENTR                    ENTRY CELL                                   17 01530
002325 054065 A     2961        STA     NC9100          SAVE A REG (REQUESTED LUN)                   17 01531
002326 001010 A     2962        JAZ     NC9040          SKIP IF REG A INITIALLY ZERO                 17 01532
002327 002411 R
002330 144063 A     2963        SUB     NC9120          IS LUN IN FIRST BLOCK?                       17 01533
002331 001002 A     2964        JAP     NC9010          NO, SKIP TO TRY SECOND BLOCK                 17 01534
002332 002344 R
                    2966 ***************************************************************************** 17 01536
                    2967 *       REQUESTED LUN IS IN RANGE 1:100                                 * 17 01537
                    2968 ***************************************************************************** 17 01538
002333 020400 A     2969        LDB     V$LUT1          POINT TO THE FIRST BLOCK                     17 01539
002334 016000 A     2970        LDA     0,B             PICK UP NUMBER OF LUN'S IN THIS BLOCK        17 01540
002335 144055 A     2971        SUB     NC9100          COMPARE TO REQUESTED LUN                     17 01541
002336 001004 A     2972        JAN     NC9040          IF OUTSIDE, LUN CANNOT BE FOUND              17 01542
002337 002411 R
002340 010400 A     2973        LDA     V$LUT1          IF INSIDE, RESTORE BLOCK POINTER             17 01543
002341 124051 A     2974        ADD     NC9100          ADD IN DISPLACEMENT                          17 01544
002342 001000 A     2975        JMP     NC9030          SKIP TO LOCATE CONTROLLER TABLE              17 01545
002343 002373 R
                    2977 ***************************************************************************** 17 01547
                    2978 *       SEE IF REQUESTED LUN IS IN RANGE 101:179                        * 17 01549
                    2979 ***************************************************************************** 17 01549
002344 054046 A     2980 NC9010 STA     NC9100          SAVE PREVIOUS REMAINDER                      17 01550
002345 144047 A     2981        SUB     NC9130          REMOVE RANGE OF SECOND BLOCK                 17 01551
002346 001002 A     2982        JAP     NC9020          TOO LARGE, SKIP TO TRY LAST BLOCK            17 01552
002347 002362 R
002350 020401 A     2983        LDB     V$LUT2          POINT TO THE SECOND BLOCK                    17 01553
002351 016000 A     2984        LDA     0,B             PICK UP NUMBER OF LUN'S IN THIS BLOCK        17 01554
002352 144040 A     2985        SUB     NC9100          COMPARE TO REQUESTED LUN                     17 01555
002353 001004 A     2986        JAN     NC9040          IF OUTSIDE, LUN CANNOT BE FOUND              17 01556
002354 002411 R
002355 010401 A     2987        LDA     V$LUT2          IF INSIDE, RESTORE BLOCK POINTER             17 01557
002356 124034 A     2988        ADD     NC9100          ADD IN DISPLACEMENT                          17 01558
002357 005111 A     2989        IAR                     ADJUST DOWN ONE SLOT                         17 01559
002360 001000 A     2990        JMP     NC9030          SKIP TO LOCATE CONTROLLER TABLE              17 01560
002361 002373 R
                    2992 ***************************************************************************** 17 01562
                    2993 *       SEE IF REQUESTED LUN IS IN RANGE 180:255                        * 17 01563
                    2994 ***************************************************************************** 17 01564
002362 054030 A     2995 NC9020 STA     NC9100          SAVE PREVIOUS REMAINDER                      17 01565
002363 020402 A     2996        LDB     V$LUT3          POINT TO LAST BLOCK                          17 01566
002364 016000 A     2997        LDA     0,B             PICK UP NUMBER OF LUN'S IN THIS BLOCK        17 01567
002365 144025 A     2998        SUB     NC9100          COMPARE TO REQUESTED LUN                     17 01568
002366 001004 A     2999        JAN     NC9040          IF OUTSIDE, LUN CANNOT BE FOUND              17 01569
002367 002411 R
002370 010402 A     3000        LDA     V$LUT3          IF INSIDE, RESTORE BLOCK POINTER             17 01570
002371 124021 A     3001        ADD     NC9100          ADD IN DISPLACEMENT                          17 01571
002372 005111 A     3002        IAR                     ADJUST DOWN ONE SLOT                         17 01572
                    3004 ***************************************************************************** 17 01574
                    3005 *       NOW FIND CONTROLLER TABLE ADDRESS                               * 17 01575
                    3006 ***************************************************************************** 17 01576
002373 005012 A     3007 NC9030 TAB                     COPY UNIT SLOT POINTER TO B REG              17 01577
002374 016000 A     3008        LDA     0,B             PICK UP THE ENTRY                            17 01578
002375 150463 A     3009        ANA     RHW             AND OUT LEFT BYTE                            17 01579
002376 005311 A     3010        DAR                     DECREMENT FOR ONES ORIGIN                    17 01580
002377 054013 A     3011        STA     NC9100          STOW TEMPORARILY                             17 01581
002400 004201 A     3012        ASLA    1               TIMES TWO                                    17 01582
002401 124011 A     3013        ADD     NC9100          TIMES THREE                                  17 01583
002402 120355 A     3014        ADD     V$DSTB          ADD IN DST START POINTER                     17 01584
002403 005012 A     3015        TAB                     COPY DST ENTRY ADDRESS TO B REG              17 01585
002404 016002 A     3016        LDA     DSCTAD,B        PICK UP CONTROLLER TABLE ORDINAL             17 01586
                    3017        ANAM    6               MASK OUT ALL BUT LAST SIX BITS               17 01587
002405 150474 A
002406 120360 A     3018        ADD     V$CTAD          ADD IN START OF CONTROLLER VECTOR TABLE      17 01588
002407 005012 A     3019        TAB                     COPY SLOT ADDRESS TO B REG                   17 01589
002410 016000 A     3020        LDA     0,B             PICK UP ADDRESS OF CONTROLLER TABLE          17 01590
                    3022 ***************************************************************************** 17 01592
                    3023 *       NOW RETURN TO THE CALLER                                        * 17 01593
                    3024 ***************************************************************************** 17 01594
    002411 R        3025 NC9040 EQU     *               EXIT EQUATE                                  17 01595
002411 001000 A     3026        JMP*    GETCTA          RETURN TO THE CALLER                         17 01596
002412 102324 R
                    3028 ***************************************************************************** 17 01598
                    3029 *       CONSTANTS AND WORKING STORAGE FOR CONTROLLER FINDER              * 17 01599
                    3030 ***************************************************************************** 17 01600
002413 000000 A     3031 NC9100 DATA    0               WORK AREA FOR LUN                            17 01601
002414 000145 A     3032 NC9120 DATA    101             NUMBER OF LUN'S IN FIRST BLOCK               17 01602
002415 000117 A     3033 NC9130 DATA    79              NUMBER OF LUN'S IN SECOND BLOCK PLUS ONE     17 01603
                    3034        EJEC                                                                 17 01604
                    3035 ***************************************************************************** 17 01605
                    3036 *                                                                       * 17 01606
                    3037 * TITLE - CHECK FOR COMMA DELIMITER                                     * 17 01607
                    3038 *                                                                       * 17 01608
                    3039 * PURPOSE -                                                            * 17 01609
                    3040 *   THIS ROUTINE INSURES THAT THE CURRENT CHARACTER IS A COMMA.         * 17 01610
                    3041 *   IF IT IS NOT, CONTROL IS PASSED TO SYNERR.  IF IT IS A COMMA,       * 17 01611
```

```
                    3042 *    CONTROL IS RETURNED TO THE CALLER.                                                  *  17 01612
                    3043 *                                                                                        *  17 01613
                    3044 *  CALLING SEQUENCE -                                                                    *  17 01614
                    3045 *        CALL     CHKCOM                                                                *  17 01615
                    3046 *                                                                                        *  17 01616
                    3047 *  ENTRANCE PARAMETERS -                                                                 *  17 01617
                    3048 *    NONE                                                                                *  17 01618
                    3049 *                                                                                        *  17 01619
                    3050 ************************************************************************************** 17 01620
002416 000000 A     3051 CHKCOM ENTR                        ENTRY CELL                                            17 01621
002417 014034 A     3052        LDA      CHAR               PICK UP THE CURRENT CHARACTER                         17 01622
002420 144036 A     3053        SUB      COMMA              COMPARE AGAINST A COMMA                               17 01623
002421 001016 A     3054        JANZ     SYNERR             IF NOT EQUAL, ISSUE MESSAGE                           17 01624
002422 000133 R
002423 001000 A     3055        JMP*     CHKCOM             ELSE RETURN TO THE CALLER                             17 01625
002424 102416 R
                    3056        EJEC                                                                             17 01626
                    3057 ************************************************************************************** 17 01627
                    3058 *                                                                                        *  17 01628
                    3059 *  TITLE - CHECK FOR PERIOD DELIMITER                                                    *  17 01629
                    3060 *                                                                                        *  17 01630
                    3061 *  PURPOSE -                                                                             *  17 01631
                    3062 *    THIS ROUTINE TESTS THE CURRENT CHARACTERS FOR A PERIOD.                             *  17 01632
                    3063 *    IF ONE IS DETECTED, THE CURRENT DIRECTIVE IS TERMINATED                             *  17 01633
                    3064 *    BY RETURNING CONTROL TO NETCON.  ELSE CONTROL IS RETURNED                           *  17 01634
                    3065 *    TO THE CALLER.                                                                      *  17 01635
                    3066 *                                                                                        *  17 01636
                    3067 *  CALLING SEQUENCE -                                                                    *  17 01637
                    3068 *        CALL     CHKPER                                                                *  17 01638
                    3069 *                                                                                        *  17 01639
                    3070 *  ENTRANCE PARAMETERS -                                                                 *  17 01640
                    3071 *    NONE                                                                                *  17 01641
                    3072 *                                                                                        *  17 01642
                    3073 ************************************************************************************** 17 01643
002425 000000 A     3074 CHKPER ENTR                        ENTRY CELL                                            17 01644
002426 014025 A     3075        LDA      CHAR               PICK UP THE CURRENT CHARACTER                         17 01645
002427 144026 A     3076        SUB      PERIOD             COMPARE TO A PERIOD                                   17 01646
002430 001010 A     3077        JAZ      NETCON             IF EQUAL, RETURN TO TOP                               17 01647
002431 000000 R
002432 001000 A     3078        JMP*     CHKPER             ELSE, RETURN TO THE CALLER                            17 01648
002433 102425 R
                    3079        EJEC                                                                             17 01649
                    3080 ************************************************************************************** 17 01650
                    3081 *       EQUATES FOR NETWORK CONTROL                                                    *  17 01651
                    3082 ************************************************************************************** 17 01652
       000001 A     3083 INLUN  EQU      1                  INPUT FROM DC UNIT                                    17 01653
       000001 A     3084 OUTLUN EQU      1                  OUTPUT TO DC UNIT                                     17 01654
       000152 A     3085 RMDLUN EQU      106                UNIT FOR FOREGROUND LIBRARY                           17 01655
       000000 A     3086 READOP EQU      0                  OP-CODE FOR READ                                      17 01656
       000001 A     3087 WRITOP EQU      1                  OP-CODE FOR WRITE                                     17 01657
       000005 A     3088 FUNCOP EQU      5                  OP-CODE FOR FUNC                                      17 01658
       000007 A     3089 CLOSOP EQU      7                  OP-CODE FOR CLOSE                                     17 01659
       000025 A     3090 KILLLN EQU      21                 FUNC CODE TO FLUSH LINE                               17 01660
       000004 A     3091 KILLTU EQU      4                  FUNC CODE TO FLUSH TERMINAL                           17 01661
       000000 A     3092 WAIT   EQU      0                  WAIT OPERAND ON I/O MACROS                            17 01662
       000000 A     3093 BIN    EQU      0                  MODE OF RMD TRANSFERS                                 17 01663
       000001 A     3094 ASCII  EQU      1                  MODE OF TRANSFERS TO DC DEVICE                        17 01664
       000002 A     3095 DIRECT EQU      2                  MODE OF RMD ACCESS                                    17 01665
       000306 A     3096 FLKEY  EQU      'F'                KEY FOR FOREGROUND LIBRARY                            17 01666
       000040 A     3097 BTAOFF EQU      040                EQUATE FOR 'BT' INSTRUCTION                           17 01667
                    3098        EJEC                                                                             17 01668
                    3099 ************************************************************************************** 17 01669
                    3100 *       CONSTANTS AND WORK AREAS FOR NETWORK CONTROL                                   *  17 01670
                    3101 ************************************************************************************** 17 01671
002434 000000 A     3102 LSDN   DATA     0                  CURRENT LSD NUMBER                                    17 01672
002435 000000 A     3103 LTTN   DATA     0                  CURRENT LOGICAL TERMINAL NUMBER                       17 01673
002436 000000 A     3104 CCMN   DATA     0                  CURRENT CCM NUMBER                                    17 01674
002437 000000 A     3105 CCMCAD DATA     0                  CURRENT CCM CONTROLLER TABLE                          17 01675
002440              3106 TUID   BSS      4                  UNPACKED CURRENT TUID                                 17 01676
002444              3107 PTUID  BSS      2                    PACKED CURRENT TUID                                 17 01677
002446 000004 A     3108        DATA     KILLTU             FUNC CODE TO FLUSH A TERMINAL                         17 01678
002447 000000 A     3109 SECTN  DATA     0                  CURRENT SECTOR NUMBER                                 17 01679
002450 000000 A     3110 DISP   DATA     0                  CURRENT DISPLACEMENT INTO SECTOR BUFFER               17 01680
002451 000000 A     3111 BLKPTR DATA     0                  POINTER TO CURRENT BLOCK IN BUFFER                    17 01681
002452 000000 A     3112 FCBPTR DATA     0                  CURRENT FCB POINTER                                   17 01682
002453 000000 A     3113 COLPTR DATA     0                  ADDRESS OF NEXT BYTE IN DIRECTIVE BUFFER              17 01683
002454 000000 A     3114 CHAR   DATA     0                  CURRENT CHARACTER                                     17 01684
002455 000001 A     3115 ERRTYP DATA     1                  CURRENT ERROR CODE                                    17 01685
       000421 A     3116 BADSYN EQU      ONE                ERROR CODE EQUATE                                     17 01686
       000422 A     3117 UDFLNE EQU      TWO                ERROR CODE EQUATE                                     17 01687
       000464 A     3118 UDFTID EQU      THREE              ERROR CODE EQUATE                                     17 01688
       000423 A     3119 IOEDFL EQU      FOUR               ERROR CODE EQUATE                                     17 01689
       000465 A     3120 IOEDFT EQU      FIVE               ERROR CODE EQUATE                                     17 01690
       000466 A     3121 UDFCCM EQU      SIX                ERROR CODE EQUATE                                     17 01691
002456 000256 A     3122 PERIOD DATA     0256               CONSTANT PERIOD                                       17 01692
002457 000254 A     3123 COMMA  DATA     0254               CONSTANT COMMA                                        17 01693
002460 000275 A     3124 EQUAL  DATA     0275               CONSTANT EQUAL SIGN                                   17 01694
002461 000260 A     3125 C0     DATA     0260               CONSTANT ZERO                                         17 01695
002462 000301 A     3126 CA     DATA     0301               CONSTANT A                                            17 01696
002463 000240 A     3127 BLANK  DATA     0240               CONSTANT BLANK                                        17 01697
002464 000032 A     3128 C2MA   DATA     26                 RANGE OF ALPHABET                                     17 01698
       000471 H     3129 C9M0   EQU      TEN                RANGE OF NUMERICS                                     17 01699
002465 002124 R     3130 DFLPTR DATA     DFLFCB             POINTER CONSTANT TO FCB                               17 01700
002466 002136 R     3131 DFTPTR DATA     DFTFCB             POINTER CONSTANT TO FCB                               17 01701
                    3132        EJEC                                                                             17 01702
```

```
                        3133 ********************************************************************************** 17 01703
                        3134 *       NETWORK CONTROL MESSAGES                                                 * 17 01704
                        3135 ********************************************************************************** 17 01705
002467 147303 A         3136 CNET    DATA    'NCM** '       OPENING STATEMENT                                  17 01706
002470 146652 A
002471 125240 A
       000003 A         3137 LNET    EQU     *-CNET         LENGTH OF MESSAGE                                  17 01707
002472 146311 A         3138 CLNE    DATA    'LINE'         CONSTANT                                           17 01708
002473 147305 A
       000002 A         3139 LLNE    EQU     *-CLNE         LENGTH OF CONSTANT                                 17 01709
002474 152325 A         3140 CTID    DATA    'TUID'         CONSTANT                                           17 01710
002475 144704 A
       000002 A         3141 LTID    EQU     *-CTID         LENGTH OF CONSTANT                                 17 01711
002476 152720 A         3142 CUP     DATA    'UP  '         CONSTANT                                           17 01712
002477 120240 A
       000002 A         3143 LUP     EQU     *-CUP          LENGTH OF MESSAGE                                  17 01713
002500 142317 A         3144 CDWN    DATA    'DOWN'         CONSTANT                                           17 01714
002501 153716 A
       000002 A         3145 LDWN    EQU     *-CDWN         LENGTH OF CONSTANT                                 17 01715
002502 147720 A         3146 COPN    DATA    'OPEN  '       CONSTANT                                           17 01716
002503 142716 A
002504 120240 A
       000003 A         3147 LOPN    EQU     *-COPN         LENGTH OF CONSTANT                                 17 01717
002505 141714 A         3148 CCLS    DATA    'CLOSED'       CONSTANT                                           17 01718
002506 147723 A
002507 142704 A
       000003 A         3149 LCLS    EQU     *-CCLS         LENGTH OF CONSTANT                                 17 01719
002510 151305 A         3150 CRED    DATA    'REDIRECTED TO '                                                  17 01720
002511 142311 A
002512 151305 A
002513 141724 A
002514 142704 A
002515 120324 A
002516 147640 A
       000007 A         3151 LRED    EQU     *-CRED         LENGTH OF MESSAGE                                  17 01721
002517 151305 A         3152 CRES    DATA    'RESTORED'                                                        17 01722
002520 151724 A
002521 147722 A
002522 142704 A
       000004 A         3153 LRES    EQU     *-CRES         LENGTH OF CONSTANT                                 17 01723
002523 147303 A         3154 CNC     DATA    'NC'           MESSAGE CONSTANT                                   17 01724
002524 120324 A         3155 CT      DATA    ' T'           MESSAGE CONSTANT                                   17 01725
002525 120320 A         3156 CP      DATA    ' P'                                                              17 01726
                        3157         EJEC                                                                      17 01727
                        3158 ********************************************************************************** 17 01728
                        3159 *       NETWORK CONTROL MODULE BUFFERS                                           * 17 01729
                        3160 ********************************************************************************** 17 01730
002526 120240 A         3161 LINE    DATA    '                                                                 ' 17 01731
002527 120240 A
002530 120240 A
002531 120240 A
002532 120240 A
002533 120240 A
002534 120240 A
002535 120240 A
002536 120240 A
002537 120240 A
002540 120240 A
002541 120240 A
002542 120240 A
002543 120240 A
002544 120240 A
002545 120240 A
002546 120240 A
002547 120240 A
002550 120240 A
002551 120240 A
002552 120240 A         3162         DATA    '                                                                 ' 17 01738
002553 120240 A
002554 120240 A
002555 120240 A
002556 120240 A
002557 120240 A
002560 120240 A
002561 120240 A
002562 120240 A
002563 120240 A
002564 120240 A
002565 120240 A
002566 120240 A
002567 120240 A
002570 120240 A
002571 120240 A
002572 120240 A
002573 120240 A
002574 120240 A
002575 120240 A
       002576 R  3163 LNEND   EQU     *
       002527 R  3164 FLD1    EQU     LINE+1         MESSAGE FIELD EQUATE                                       17 01733
       002532 R  3165 FLD2    EQU     LINE+4         MESSAGE FIELD EQUATE                                       17 01734
       002535 R  3166 FLD3    EQU     LINE+7         MESSAGE FIELD EQUATE                                       17 01735
       002536 R  3167 FLD4    EQU     LINE+8         MESSAGE FIELD EQUATE                                       17 01736
       002540 R  3168 FLD5    EQU     LINE+10        MESSAGE FIELD EQUATE                                       17 01737
       002543 R  3169 FLD6    EQU     LINE+13        MESSAGE FIELD EQUATE                                       17 01738
       002544 R  3170 FLD7    EQU     LINE+14        MESSAGE FIELD EQUATE                                       17 01739
```

```
002576              3171 SECTOR BSS      120          RMD SECTOR BUFFER                                  17 01741
002766              3172 BUF    BSS      40           DIRECTIVE BUFFER                                   17 01742
        003036 R    3173 ENDBUF EQU      *            POINT TO THE END OF THE BUFFER                     17 01743
        003036 R    3174 NETEND EQU      *            LAST WORD OF NETCON                                17 01744
        000000 R    3175        END      NETCON       TERMINATE THE ASSEMBLY                             17 01745
ENTRY NAMES
EXTERNAL NAMES
001221 E C52LLT  001455 E CC$MET  000642 E TC$TCD  000241 E V$EXEC
002174 E V$IOC   002203 E V$IOST  002276 E VT$LTT
SYMBOLS
000044 A APIM    000001 A ASCII   000002 A B       000000 A B0
000001 A B1      000012 A B10     000013 A B11     000014 A B12
000015 A B13     000016 A B14     000017 A B15     000002 A B2
000003 A B3      000004 A B4      000005 A B5      000006 A B6
000007 A B7      000010 A B8      000011 A B9      000421 A BADSYN
000000 A BICNUM  000000 A BIN     002463 R BLANK   002451 R BLKPTR
000421 A BM1     000472 A BM17    000475 A BM177   000477 A BM1777
000464 A BM3     000473 A BM37    000463 A BM377   000467 A BM7
000474 A BM77    000476 A BM777   000441 A BR0     000442 A BR1
000453 A BR10    000454 A BR11    000455 A BR12    000456 A BR13
000457 A BR14    000460 A BR15    000443 A BR2     000444 A BR3
000445 A BR4     000446 A BR5     000447 A BR6     000450 A BR7
000451 A BR8     000452 A BR9     000421 A BS0     000422 A BS1
000433 A BS10    000434 A BS11    000435 A BS12    000436 A BS13
000437 A BS14    000440 A BS15    000423 A BS2     000424 A BS3
000425 A BS4     000426 A BS5     000427 A BS6     000430 A BS7
000431 A BS8     000432 A BS9     000040 A BTADFF  002766 R BUF
002461 R C0      001221 E C52LLT  000471 A C9M0    002462 R CA
001727 R CALC    001455 E CC$MET  002505 R CCLS    002437 R CCMCAD
002436 R CCMN    002500 R CDWN    000000 A CHAFP   000000 A CHAFPB
000020 A CHAFPZ  002454 R CHAR    000001 A CHARP   000000 A CHARPB
000020 A CHARPZ  000002 A CHCFP   000000 A CHCFPB  000020 A CHCFPZ
000003 A CHCRP   000000 A CHCRPB  000020 A CHCRPZ  002416 R CHKCOM
002425 R CHKPER  000004 A CHRBL   000000 A CHRBLB  000020 A CHRBLZ
002472 R CLNE    000047 A CLOCK   000007 A CLOSOP  002523 R CNC
002467 R CNET    002453 R COLPTR  002457 R COMMA   002502 R COPN
000000 A COTAD1  002525 R CP      002510 R CRED    002517 R CRES
002524 R CT      000000 A CTACT   000017 A CTACTB  000001 A CTACTZ
000001 A CTADN   000000 A CTADNB  000020 A CTADNZ  000011 A CTBIC
000000 A CTBICB  000020 A CTBICZ  000003 A CTDST   000000 A CTDSTB
000020 A CTDSTZ  000006 A CTDVA   000000 A CTDVAB  000020 A CTDVAZ
000012 A CTFCB   000000 A CTFCBB  000020 A CTFCBZ  000014 A CTFRC
000010 A CTFRCB  000010 A CTFRCZ  000014 A CTFRE   000000 A CTFREB
000010 A CTFREZ  002474 R CTID    000000 A CTIDB   000000 A CTIDBB
000017 A CTIDBZ  000007 A CTIOA   000000 A CTIOAB  000020 A CTIOAZ
000002 A CTOPM   000000 A CTOPMB  000020 A CTOPMZ  000005 A CTRCN
000000 A CTRCNB  000010 A CTRCNZ  000004 A CTRQB   000000 A CTRQBB
000020 A CTRQBZ  000005 A CTRTR   000010 A CTRTRB  000010 A CTRTRZ
000010 A CTSTA   000000 A CTSTAB  000020 A CTSTAZ  000013 A CTWDS
000000 A CTWDSB  000020 A CTWDSZ  002476 R CUP     002464 R CZMA
000001 A DCBUFF  000003 A DCCHR   000000 A DCCHRB  000020 A DCCHRZ
000002 A DCCNT   000000 A DCRECL  002124 R DFLFCB  002465 R DFLFTR
002136 R DFTFCB  002466 R DFTPTR  000002 A DIRECT  000747 A DISCLK
000745 A DISMP   002450 R DISP    000444 A DISPIM  000026 A DMBCA
000000 A DMBCAB  000020 A DMBCAZ  000024 A DMCWA   000000 A DMCWAB
000020 A DMCWAZ  000017 A DMFPA   000000 A DMFPAB  000020 A DMFPAZ
000021 A DMLCA   000000 A DMLCAB  000020 A DMLCAZ  000022 A DMLTA
000000 A DMLTAB  000020 A DMLTAZ  000023 A DMPTA   000000 A DMPTAB
000020 A DMPTAZ  000016 A DMPPA   000000 A DMPPAB  000020 A DMPPAZ
000020 A DMSTA   000000 A DMSTAB  000020 A DMSTAZ  000025 A DMSWA
000000 A DMSWAB  000020 A DMSWAZ  000015 A DMTPA   000000 A DMTPAB
000020 A DMTPAZ  000546 R DOWN    000002 A DSCTAD  000000 A DSDA
000000 A DSDVDN  000002 A DSLCKO  000001 A DSNAME  000000 A DSNDRO
000002 A DSOPCM  000002 A DSPST1  000002 A DSRCWD  000000 A DSUNAM
000002 A DSUNTN  000424 A EIGHT   000147 A ENAFLK  000645 A ENAMP
000244 A ENAPIM  000232 R END     003036 R ENDBUF  002461 R EQUAL
002455 R ERRTYP  000240 R EXIT    002452 R FCBFIP  000237 R FETCH
000465 A FIVE    002527 R FLD1    002532 R FLD2    002535 R FLD3
002536 R FLD4    002540 R FLD5    002543 R FLD6    002544 R FLD7
000306 A FLKEY   000423 A FOUR    000005 A FUNCOP  002524 R GETCTA
002272 R GETLTN  000003 A IBIDF   000017 A IBIBFB  000001 A IBIBFZ
000003 A IBLAS   000000 A IBLASB  000017 A IBLASZ  000001 A IBLEN
000000 A IBLENB  000020 A IBLENZ  000000 A IBLNK   000000 A IBLNKB
000020 A IBLNKZ  000002 A IBSTA   000000 A IBSTAB  000020 A IBSTAZ
000004 A IBSTS   000000 A IBSTSB  000017 A IBSTSZ  000001 A INLUN
000423 A IDEDFL  000465 A IDEDFT  002162 R KEY     000025 A KILLLN
000004 A KILLTU  000300 A LC      000003 A LCABN   000013 A LCABNB
000001 A LCABNZ  000003 A LCASY   000013 A LCASYB  000001 A LCASYZ
000007 A LCBSC   000015 A LCBSCB  000001 A LCBSCZ  000007 A LCCHN
000016 A LCCHNB  000001 A LCCHNZ  000003 A LCCRC   000014 A LCCRCB
000003 A LCCRCZ  000006 A LCCWB   000014 A LCCWBB  000001 A LCCWBZ
000006 A LCCWC   000015 A LCCWCB  000001 A LCCWCZ  000006 A LCCWD
000013 A LCCWDB  000001 A LCCWDZ  000006 A LCCWI   000016 A LCCWIB
000001 A LCCWIZ  000006 A LCCWP   000012 A LCCWPB  000001 A LCCWPZ
000006 A LCCWR   000011 A LCCWRB  000001 A LCCWRZ  000006 A LCCWS
000017 A LCCWSB  000001 A LCCWSZ  000006 A LCCWT   000010 A LCCWTB
000001 A LCCWTZ  000001 A LCIBA   000000 A LCIBAB  000017 A LCIBAZ
000000 A LCIBF   000017 A LCIBFB  000001 A LCIBFZ  000000 A LCIBL
000000 A LCIBLB  000014 A LCIBLZ  000002 A LCIC1   000010 A LCIC1B
000010 A LCIC1Z  000002 A LCIC2   000000 A LCIC2B  000010 A LCIC2Z
000003 A LCIKE   000000 A LCIKEB  000004 A LCIKEZ  000007 A LCITB
000013 A LCITBB  000001 A LCITBZ  000050 A LCJP    000006 A LCLCB
000000 A LCLCBB  000020 A LCLCBZ  000007 A LCLDB   000014 A LCLDBB
000001 A LCLDBZ  000003 A LCLS    000007 A LCLTB   000017 A LCLTBB
000001 A LCLTBZ  000005 A LCOBA   000000 A LCOBAB  000017 A LCOBAZ
```

```
000004 A LCOBF   000017 A LCOBFB 000001 A LCOBFZ 000004 A LCOBL
000000 A LCOBLB  000014 A LCOBLZ 000007 A LCOKE  000000 A LCOKEB
000004 A LCOKEZ  000003 A LCRCC  000017 A LCRCCB 000001 A LCRCCZ
000000 A LCSMB   000016 A LCSMBB 000001 A LCSMBZ 000002 A LDWN
000462 A LHW     002526 R LINE   000761 R LIST   000002 A LLNE
002576 R LNEND   000003 A LNET   000003 A LOPN   000007 A LRED
000004 A LRES    000017 A LSABN  000015 A LSABNB 000001 A LSABNZ
000017 A LSASC   000011 A LSASCB 000001 A LSASCZ 000014 A LSASY
000013 A LSASYB  000001 A LSASYZ 000020 A LSBSC  000016 A LSBSCB
000001 A LSBSCZ  000015 A LSCC1  000010 A LSCC1B 000010 A LSCC1Z
000015 A LSCC2   000000 A LSCC2B 000010 A LSCC2Z 000017 A LSCHN
000010 A LSCHNB  000001 A LSCHNZ 000017 A LSCRC  000012 A LSCRCB
000003 A LSCRCZ  000012 A LSCTA  000000 A LSCTAB 000020 A LSCTAZ
002434 R LSDN    000017 A LSDSF  000017 A LSDSFB 000001 A LSDSFZ
000013 A LSDST   000000 A LSDSTB 000020 A LSDSTZ 000016 A LSEPF
000016 A LSEPFB  000001 A LSEPFZ 000014 A LSLSP  000000 A LSLSPB
000011 A LSLSPZ  000014 A LSMOD  000016 A LSMODB 000002 A LSMODZ
000020 A LSNTO   000010 A LSNTOB 000006 A LSNTOZ 000014 A LSPAR
000014 A LSPARB  000002 A LSPARZ 000016 A LSPLA  000000 A LSPLAB
000010 A LSPLAZ  000002 A LSRCA  000000 A LSRCAB 000020 A LSRCAZ
000003 A LSREM   000000 A LSREMB 000020 A LSREMZ 000016 A LSRRS
000010 A LSRRSB  000003 A LSRRSZ 000001 A LSRRT  000000 A LSRRTB
000020 A LSRRTZ  000004 A LSRTO  000000 A LSRTOB 000020 A LSRTOZ
000005 A LSSRS   000000 A LSSRSB 000020 A LSSRSZ 000011 A LSSWS
000000 A LSSWSB  000020 A LSSWSZ 001331 R LSTCVT 000016 A LSTER
000017 A LSTERB  000001 A LSTERZ 000000 A LSTHD  000000 A LSTHDB
000020 A LSTHDZ  001125 R LSTLN  001243 R LSTTU  000006 A LSWCA
000000 A LSWCAB  000028 A LSWCAZ 000007 A LSWEM  000000 A LSWEMB
000020 A LSWEMZ  000016 A LSWRS  000013 A LSWRSB 000003 A LSWRSZ
000010 A LSWTO   000000 A LSWTOB 000020 A LSWTOZ 000014 A LSXMM
000011 A LSXMMB  000002 A LSXMMZ 000017 A LSYNC  000016 A LSYNCB
000001 A LSYNCZ  000020 A LSYNR  000000 A LSYNRB 000010 A LSYNRZ
000017 A LSYNT   000000 A LSYNTB 000010 A LSYNTZ 000002 A LTID
002435 R LTTN    000002 A LUP    000046 A MAP    002237 R MOVER
000045 A MP      000045 A MPMR0  000145 A MPMR1  000245 A MPMR2
000345 A MPMR3   000420 A MT     000016 R NC0410 000032 R NC0420
000060 R NC0500  000062 R NC0510 000076 R NC0520 000116 R NC0530
000127 R NC0540  000132 R NC0542 000161 R NC0600 000171 R NC0602
000172 R NC0604  000173 R NC0620 000174 R NC0630 000232 R NC0634
000176 R NC0640  000243 R NC1210 000256 R NC1220 000262 R NC1600
000276 R NC1640  000315 R NC2000 000347 R NC2410 000355 R NC2420
000361 R NC2430  000416 R NC2440 000455 R NC2442 000471 R NC2500
000472 R NC2510  000473 R NC2810 000513 R NC2820 000517 R NC2830
000542 R NC2840  000546 R NC3210 000561 R NC3220 000565 R NC3600
000624 R NC3610  000643 R NC3620 000665 R NC3630 000674 R NC3640
000677 R NC3650  000703 R NC3720 000704 R NC3740 000705 R NC3750
000710 R NC3760  000711 R NC4000 000754 R NC4040 000745 R NC4110
000760 R NC4120  000767 R NC4410 000777 R NC4420 001003 R NC4430
001005 R NC4440  001011 R NC4600 001020 R NC4610 001057 R NC4620
001066 R NC4630  001106 R NC4632 001115 R NC4640 001124 R NC4700
000465 A NC4710  000431 A NC4720 001206 R NC4830 001237 R NC4840
001241 R NC4850  001314 R NC5230 001325 R NC5240 001352 R NC5700
001413 R NC6010  001414 R NC6012 001417 R NC6020 001420 R NC6022
001423 R NC6030  001424 R NC6032 001425 R NC6040 001431 R NC6044
001433 R NC6046  001435 R NC6048 001436 R NC6400 001462 R NC6420
001472 R NC6430  001476 R NC6440 000431 A NC6520 001545 R NC6530
000465 A NC6540  001560 R NC6610 001600 R NC6620 001603 R NC6700
001604 R NC6710  001605 R NC6800 001615 R NC6810 001635 R NC6820
001652 R NC6830  001665 R NC6840 001672 R NC6850 001716 R NC6860
001726 R NC6900  001747 R NC7210 001761 R NC7220 002011 R NC7250
002013 R NC7252  002014 R NC7260 002016 R NC7262 002017 R NC7320
002034 R NC7610  002047 R NC7630 002056 R NC7640 002062 R NC7642
002065 R NC7650  002070 R NC7652 002073 R NC7654 002074 R NC7656
002107 R NC7668  002110 R NC7670 002116 R NC7672 002121 R NC7710
002122 R NC7720  002123 R NC7730 002172 R NC8020 002173 R NC8030
002176 R NC8032  002220 R NC8038 002227 R NC8040 002230 R NC8048
002231 R NC8120  002232 R NC8140 002233 R NC8160 002234 R NC8180
002236 R NC8190  002253 R NC8410 002254 R NC8420 002267 R NC8450
002270 R NC8458  002271 R NC8500 002277 R NC8610 002312 R NC8630
002321 R NC8640  002344 R NC9010 002362 R NC9020 002373 R NC9030
002411 R NC9040  002413 R NC9100 002414 R NC9120 002415 R NC9130
000000 R NCM     000461 A NEG    000000 R NETCON 003036 R NETEND
000470 A NINE    001546 R NUMBER 000421 A ONE    000001 A OUTLUN
000001 A PCBSL   000011 A PCBSLB 000001 A PCBSLZ 000000 A PCCLN
000000 A PCCLNB  000010 A PCCLNZ 000002 A PCCTP  000014 A PCCTPB
000004 A PCCTPZ  000001 A PCECH  000014 A PCECHB 000001 A PCECHZ
000000 A PCLLN   000010 A PCLLNB 000010 A PCLLNZ 000002 A PCNTD
000000 A PCNTDB  000004 A PCNTDZ 000001 A PCPCH  000000 A PCPCHB
000010 A PCPCHZ  000001 A PCSWL  000010 A PCSWLB 000001 A PCSWLZ
000002 A PCTYP   000010 A PCTYPB 000004 A PCTYPZ 000001 A PCXMM
000012 A PCXMMB  000002 A PCXMMZ 002456 R PERIOD 000040 A PIM1
000041 A PIM2    000042 A PIM3   000043 A PIM4   000040 A PIM5
000040 A PIM6    000040 A PIM7   000040 A PIMS   000200 A POST
000003 A PSABN   000015 A PSABNB 000001 A PSABNZ 000000 A PSASY
000013 A PSASYB  000001 A PSASYZ 000002 A PSBADT 000000 A PSBEG
000004 A PSBSC   000016 A PSBSCB 000016 A PSBSCZ 000001 A PSCC1
000010 A PSCC1B  000010 A PSCC1Z 000001 A PSCC2  000000 A PSCC2B
000010 A PSCC2Z  000003 A PSCRC  000012 A PSCRCB 000003 A PSCRCZ
000002 A PSDEF   000010 A PSDEFB 000001 A PSDEFZ 000003 A PSDSF
000017 A PSDSFB  000001 A PSDSFZ 000002 A PSDWN  000011 A PSDWNB
000001 A PSDWNZ  000004 A PSEND  000002 A PSEPF  000016 A PSEPFB
000001 A PSEPFZ  000000 A PSLSP  000000 A PSLSPB 000011 A PSLSPZ
000000 A PSMOD   000016 A PSMODB 000002 A PSMODZ 000003 A PSNSEC
000000 A PSPAR   000014 A PSPARB 000002 A PSPARZ 000002 A PSPLA
000000 A PSPLAB  000010 A PSPLAZ 000001 A PSPROT 000002 A PSTER
```

```
000017 A PSTERB  000001 A PSTERZ  000000 A PSXMM   000011 A PSXMMB
000002 A PSXMMZ  000003 A PSYNC   000016 A PSYNCB  000001 A PSYNCZ
000004 A PSYNR   000000 A PSYNRB  000010 A PSYNRZ  000003 A PSYNT
000000 A PSYNTB  000010 A PSYNTZ  002444 R PTUID   000040 A RA0
000000 A RA1     000004 A RADNR   000060 A RB0     000020 A RB1
002020 R READ    000000 A READOP  000347 R REDIR   000473 R RESTOR
000002 A RFCB    000463 A RHW     000152 A RMDLUN  000001 A ROPWD
000000 A RSTPR   000003 A RTIDB   002447 R SECTN   002576 R SECTOR
000467 A SEVEN   000466 A SIX     000133 R SYNERR  000027 A TBATSK
000026 A TBCPTH  000011 A TBENTY  000003 A TBEVNT  000021 A TBIO
000014 A TBISA   000015 A TBISB   000017 A TBISP   000020 A TBISRS
000034 A TBIST   000016 A TBISX   000032 A TBKEY   000022 A TBKN1
000023 A TBKN2   000024 A TBKN3   000033 A TBMIMG  000032 A TBNUCL
000002 A TBPL    000004 A TBRSA   000005 A TBRSB   000030 A TBRSE
000007 A TBRSP   000010 A TBRSTS  000006 A TBRSX   000000 A TBS0
000001 A TBS1    000012 A TBS10   000013 A TBS11   000014 A TBS12
000015 A TBS13   000016 A TBS14   000017 A TBS15   000002 A TBS2
000003 A TBS3    000004 A TBS4    000005 A TBS5    000006 A TBS6
000007 A TBS7    000010 A TBS8    000011 A TBS9    000031 A TBSIZ
000001 A TBST    000025 A TBTLC   000013 A TBTMIN  000012 A TBTMS
000000 A TBTRD   000642 E TC$TCD  000004 A TCBSL   000011 A TCBSLB
000001 A TCBSLZ  000003 A TCCLN   000000 A TCCLNB  000010 A TCCLNZ
000004 A TCCON   000015 A TCCONB  000001 A TCCONZ  000002 A TCCTA
000000 A TCCTAB  000020 A TCCTAZ  000005 A TCCTP   000014 A TCCTPB
000004 A TCCTPZ  000012 A TCDCC   000000 A TCDCCB  000020 A TCDCCZ
000014 A TCDTO   000000 A TCDTOB  000020 A TCDTOZ  000004 A TCECH
000014 A TCECHB  000001 A TCECHZ  000015 A TCID1   000000 A TCID1B
000020 A TCID1Z  000016 A TCID2   000000 A TCID2B  000020 A TCID2Z
000006 A TCLDF   000014 A TCLDFB  000001 A TCLDFZ  000003 A TCLLN
000010 A TCLLNB  000010 A TCLLNZ  000005 A TCNOD   000004 A TCNODB
000004 A TCNODZ  000005 A TCNTD   000000 A TCNTDB  000004 A TCNTDZ
000004 A TCPCH   000000 A TCPCHB  000010 A TCPCHZ  000004 A TCRBC
000017 A TCRBCB  000001 A TCRBCZ  000013 A TCRBF   000000 A TCRBFB
000020 A TCRBFZ  000007 A TCRCA   000000 A TCRCAB  000020 A TCRCAZ
000006 A TCRMD   000000 A TCRMDB  000003 A TCRMDZ  000001 A TCRQH
000000 A TCRQHB  000020 A TCRQHZ  000006 A TCRRS   000006 A TCRRSB
000003 A TCRRSZ  000010 A TCSTO   000000 A TCSTOB  000020 A TCSTOZ
000004 A TCSWL   000010 A TCSWLB  000001 A TCSWLZ  000000 A TCTCD
000000 A TCTCDB  000020 A TCTCDZ  000005 A TCTYP   000010 A TCTYPB
000004 A TCTYPZ  000004 A TCWBC   000016 A TCWBCB  000001 A TCWBCZ
000011 A TCWCA   000000 A TCWCAB  000020 A TCWCAZ  000006 A TCWMD
000003 A TCWMDB  000003 A TCWMDZ  000006 A TCWRS   000011 A TCWRSB
000003 A TCWRSZ  000004 A TCXMM   000012 A TCXMMB  000002 A TCXMMZ
000471 A TEN     000464 A THREE   000002 A TIDSP   000000 A TIDSPB
000007 A TIDSPZ  000002 A TIDWN   000017 A TIDWNB  000001 A TIDWNZ
000000 A TINET   000000 A TINETB  000020 A TINETZ  000003 A TIODN
000017 A TIODNB  000001 A TIODNZ  000003 A TIODP   000000 A TIODPB
000007 A TIODPZ  000003 A TIOSC   000007 A TIOSCB  000010 A TIOSCZ
000002 A TISEC   000007 A TISECB  000010 A TISECZ  000000 A TITU1
000000 A TITU1B  000020 A TITU1Z  000001 A TITU2   000000 A TITU2B
000020 A TITU2Z  000017 A TPFPA   000000 A TPFPAB  000020 A TPFPAZ
000015 A TPRPA   000000 A TPRPAB  000020 A TPRPAZ  000016 A TPWPA
000000 A TPWPAB  000020 A TPWPAZ  002440 R TUID    000422 A TWO
002150 R TYPE    000466 A UDFCCM  000422 A UDFLNE  000464 A UDFTID
001353 R UNIT    000243 R UP      000403 A V$1MIN  000415 A V$BFC
000075 A V$BGLB  000056 A V$BIC1  000315 A V$BTB   000331 A V$BTBM
000414 A V$BVN   000334 A V$CAM   000353 A V$CKB   000411 A V$CKIT
000310 A V$CKPT  000301 A V$CPL   000076 A V$CRDM  000341 A V$CRDR
000354 A V$CRM   000302 A V$CRS   000360 A V$CTAD  000300 A V$CTL
000351 A V$CTMS  000070 A V$DATE  000355 A V$DSTB  000376 A V$ERFG
000241 E V$EXEC  000347 A V$FGLB  000306 A V$FLRS  000350 A V$FREE
000332 A V$GFCB  000320 A V$IM    000410 A V$IOA   002174 E V$IOC
002203 E V$IOST  000412 A V$JCB   000055 A V$JCFG  000077 A V$JCTM
000050 A V$JNAM  000377 A V$JOP   000340 A V$KEY   000054 A V$LCNT
000313 A V$LER   000356 A V$LIT   000317 A V$LLUP  000317 A V$LPP
000307 A V$LRSK  000312 A V$LSAL  000345 A V$LUNT  000316 A V$LUP
000400 A V$LUT1  000401 A V$LUT2  000402 A V$LUT3  000330 A V$MAP
000333 A V$MIMG  000330 A V$MPM   000362 A V$NCTR  000316 A V$NPAG
000413 A V$OCB   000346 A V$OPCF  000311 A V$OPCL  000357 A V$PGT
000363 A V$PIMN  000074 A V$PLCT  000305 A V$PTVB  000361 A V$SCTL
000352 A V$SCV   000375 A V$SLFG  000334 A V$ST0   000335 A V$ST1
000336 A V$ST2   000337 A V$ST3   000303 A V$TB    000342 A V$TBGT
000416 A V$TFC   000314 A V$TJCP  000344 A V$TMN   000343 A V$TMS
000304 A V$UTB   000001 A VORTEX  002276 E VT$LTT  000000 A WAIT
002043 R WRITE   000001 A WRITOP  000001 A X       000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE

  159   ADAT     *
   38   ANAM     *
   90   ANAN     *
  574   APIN      584    585
 3094   ASCII    2721   2821   2822
  108   B          98    117    229    230    252    255    257   1516   1857
                 1859   1861   1868   2053   2066   2077   2140   2704   2719
                 2869   2925   2928   2970   2984   2997   3008   3016   3020
   88   B&         82
   83   B&0        40
   80   B&1        78
   44   B&10       42
   76   B&2        74
   72   B&3        70
   68   B&4        66
   64   B&5        62
   60   B&6        58
```

```
  56   B&7          54
  52   B&8          50
  48   B&9          46
 543   B0       *
 544   B1       *
 553   B10      *
 554   B11      *
 555   B12      *
 556   B13      *
 557   B14      *
 558   B15      *
 545   B2       *
 546   B3       *
 547   B4       *
 548   B5       *
 549   B6       *
 550   B7       *
 551   B8       *
 552   B9       *
3116   BADSYN   1470
 630   BICNUM   *
3093   BIN      2746   2747
3127   BLANK    1478   2430   2611
3111   BLKPTR   1644   1662   1713   1773   1828   1895   2052   2065   2076
                2139   2550
 515   BM1        79
 518   BM17       67
 521   BM177      55
 524   BM1777     43
 516   BM3        75
 519   BM37       63
 522   BM377      51
 517   BM7        71
 520   BM77       59
 523   BM777      47
 486   BR0       202
 487   BR1      *
 496   BR10     *
 497   BR11     *
 498   BR12     *
 499   BR13     *
 500   BR14     *
 501   BR15     *
 488   BR2      *
 489   BR3      *
 490   BR4      *
 491   BR5      *
 492   BR6      *
 493   BR7      *
 494   BR8      *
 495   BR9      *
 470   BS0       195    209
 471   BS1      *
 480   BS10     *
 481   BS11     *
 482   BS12     *
 483   BS13     *
 484   BS14     *
 485   BS15     *
 472   BS2      *
 473   BS3      *
 474   BS4      *
 475   BS5      *
 476   BS6      *
 477   BS7      *
 478   BS8      2033   2364
 479   BS9      *
3097   BTAOFF   2054
3172   BUF      1483   2787
3125   C0       2232   2322   2383   2395   2405   2441
   0   C52LLT   2084   2086   2091
3129   C9M0     2234   2324   2443
3126   CA       1491   2241   2446
2546   CALC     1722   1984   2013   2346   2498   2551
   0   CC$MET   2291   2298
3148   CCLS     2071   2134   3149
3105   CCMCAD   2293   2297   2302
3104   CCMN     1839   1852   2284   2294
3144   CDWN     1808   2070   2133   3145
1397   CHAFP    *
1398   CHAFPB   *
1399   CHAFPZ   *
3114   CHAR     1503   1603   1935   2240   2270   2382   2404   2428   2445
                2460   2591   2604   2620   2625   2632   3052   3075
1401   CHARP    *
1402   CHARPB   *
1403   CHARPZ   *
1405   CHCFP    *
1406   CHCFPB   *
1407   CHCFPZ   *
1409   CHCRP    *
1410   CHCRPB   *
1411   CHCRPZ   *
3051   CHKCOM   1627   1686   1698   1758   1803   1942   2320   3055
3074   CHKPER   1638   1692   1766   1814   1960   3078
```

```
1413   CHRBL    *
1414   CHRBLB   *
1415   CHRBLZ   *
 198   CLEARF   *
3138   CLNE     1655   1820   2059   3139
 567   CLOCK     569    570
3089   CLOSOP   *
3154   CNC      1568
3136   CNET     1467   3137
3113   COLPTR   1485   2586   2597   2605
3123   COMMA    2619   3053
3146   COPN     2098   2149   3147
 622   COTAD1   *
3156   CP       2060
3150   CRED     1701   3151
3152   CRES     1760   3153
3155   CT       2128
 707   CTACT    *
 708   CTACTB   *
 709   CTACTZ   *
 715   CTADN    *
 716   CTADNB   *
 717   CTADNZ   *
 751   CTBIC    *
 752   CTBICB   *
 753   CTBICZ   *
 723   CTDST    *
 724   CTDSTB   *
 725   CTDSTZ   *
 739   CTDVA    *
 740   CTDVAB   *
 741   CTDVAZ   *
 755   CTFCB    *
 756   CTFCBB   *
 757   CTFCBZ   *
 763   CTFRC    *
 764   CTFRCB   *
 765   CTFRCZ   *
 767   CTFRE    *
 768   CTFREB   *
 769   CTFREZ   *
3140   CTID     1666   1700   1759   1889   2126   3141
 711   CTIDB    *
 712   CTIDBB   *
 713   CTIDBZ   *
 743   CTIDA    *
 744   CTIDAB   *
 745   CTIDAZ   *
 719   CTOPM    *
 720   CTOPMB   *
 721   CTOPMZ   *
 735   CTRCN    *
 736   CTRCNB   *
 737   CTRCNZ   *
 727   CTRQB    *
 728   CTRQBB   *
 729   CTRQBZ   *
 731   CTRTR    *
 732   CTRTRB   *
 733   CTRTRZ   *
 747   CTSTA    *
 748   CTSTAB   *
 749   CTSTAZ   *
 759   CTWDS    *
 760   CTWDSB   *
 761   CTWDSZ   *
3142   CUP      1628   2079   2142   3143
3128   CZMA     1493   2243   2448
 688   DCBUFF   *
 691   DCCHR    *
 692   DCCHRB   *
 693   DCCHRZ   *
 689   DCCNT    *
 687   DCRECL   *
2749   DFLFCB   3130
3130   DFLPTR   1968   2343   2737
2750   DFTFCB   3131
3131   DFTPTR   1999   2480
 187   DINTS    *
3095   DIRECT   2749   2750
 569   DISCLK    189
 589   DISMP    *
3110   DISP     1704   1719   1982   2004   2006   2008   2342   2485   2491
                2493   2548
 584   DISPIM    188
 813   DMBCA    *
 814   DMBCAB   *
 815   DMBCAZ   *
 805   DMCWA    *
 806   DMCWAB   *
 807   DMCWAZ   *
 785   DMFPA    *
 786   DMFPAB   *
 787   DMFPAZ   *
 793   DMLCA    *
```

```
 794   DMLCAB   *
 795   DMLCAZ   *
 797   DMLTA    *
 798   DMLTAB   *
 799   DMLTAZ   *
 801   DMPTA    *
 802   DMPTAB   *
 803   DMPTAZ   *
 781   DMRPA    *
 782   DMRPAB   *
 783   DMRPAZ   *
 789   DMSTA    *
 790   DMSTAB   *
 791   DMSTAZ   *
 809   DMSWA    *
 810   DMSWAB   *
 811   DMSWAZ   *
 777   DMTPA    *
 778   DMTPAB   *
 779   DMTPAZ   *
1802   DOWN      1584
 615   DSCTAD    3016
 601   DSDASS   *
 600   DSDVDN   *
 612   DSLCKD   *
 609   DSNAME   *
 608   DSNORQ   *
 613   DSOPCM   *
 614   DSPSTI   *
 610   DSREWD   *
 606   DSUNAM   *
 611   DSUNTN   *
 512   EIGHT      143    167   2388
 183   EINTS    *
 570   ENACLK     185
 590   ENAMP    *
 585   ENAPIM     184
1603   END       1580
3173   ENDBUF    2588
3124   EQUAL     2617
   0   ERROR      113    193    200    207
3115   ERRTYP    1471   1565   2314   2358   2520   2740
1610   EXIT      2797   2797   2797   2797
3112   FCBPTR    1969   2000   2344   2481   2670   2672   2681   2703
2571   FETCH     1490   2231   2321   2394   2440   2576
 128   FETCHA   *
 509   FIVE       149    173   1544   2032   2366   2455   3120
3164   FLD1      1467   1566   1569   1655   1666   1700   1759   1820   1889
                 2059   2126
3165   FLD2      1653   1667   1699   1772   1821   1890   2062   2127
3166   FLD3      1628   1701   1760   1808   2061   2068   2129   2131
3167   FLD4     *
3168   FLD5      2070   2079   2133   2142
3169   FLD6      2071   2098   2134   2149
3170   FLD7      1712
3096   FLKEY     2749   2750
 508   FOUR       151    175   2007   2492   3119
3088   FUNCOP    1880   1918
2960   GETCTA    2295   3026
2915   GETLTN    1863   1903   2130   2942
 251   GETQ     *
1432   IBIBF    *
1433   IBIBFB   *
1434   IBIBFZ   *
1436   IBLAS    *
1437   IBLASB   *
1438   IBLASZ   *
1424   IBLEN    *
1425   IBLENB   *
1426   IBLENZ   *
1420   IBLNK    *
1421   IBLNKB   *
1422   IBLNKZ   *
1428   IBSTA    *
1429   IBSTAB   *
1430   IBSTAZ   *
1440   IBSTS    *
1441   IBSTSB   *
1442   IBSTSZ   *
3083   INLUN     2821
3119   IOEDFL    2736
3120   IOEDFT    2739
1462   IOMAC    *
2784   KEY       1469   2785
3090   KILLLN   *
3091   KILLTU    3108
 378   LC         379    380    381    382    383    384    385    386    387
                  388    389    390    391    392    393    394    395    396
                  397    398    399    400    401    402    403    404    405
                  406    407    408    410    411    412    413    414    415
                  416    417    418    419    420    421    422    423    424
                  426    427    428    429    434    435    436    437    438
                  439    440    447    448    449    452    457    458    459
 855   LCABN    *
 856   LCABNB   *
```

```
857   LCABNZ   *
859   LCASY    *
860   LCASYB   *
861   LCASYZ   *
923   LCBSC    *
924   LCBSCB   *
925   LCBSCZ   *
919   LCCHN    *
920   LCCHNB   *
921   LCCHNZ   *
851   LCCRC    *
852   LCCRCB   *
853   LCCRCZ   *
895   LCCWB    *
896   LCCWBB   *
897   LCCWBZ   *
891   LCCWC    *
892   LCCWCB   *
893   LCCWCZ   *
899   LCCWD    *
900   LCCWDB   *
901   LCCWDZ   *
887   LCCWI    *
888   LCCWIB   *
889   LCCWIZ   *
903   LCCWP    *
904   LCCWPB   *
905   LCCWPZ   *
907   LCCWR    *
908   LCCWRB   *
909   LCCWRZ   *
883   LCCWS    *
884   LCCWSB   *
885   LCCWSZ   *
911   LCCWT    *
912   LCCWTB   *
913   LCCWTZ   *
835   LCIBA    *
836   LCIBAB   *
837   LCIBAZ   *
823   LCIBF    *
824   LCIBFB   *
825   LCIBFZ   *
831   LCIBL    *
832   LCIBLB   *
833   LCIBLZ   *
839   LCIC1    *
840   LCIC1B   *
841   LCIC1Z   *
843   LCIC2    *
844   LCIC2B   *
845   LCIC2Z   *
863   LCIKE    *
864   LCIKEB   *
865   LCIKEZ   *
931   LCITB    *
932   LCITBB   *
933   LCITBZ   *
 353  LCJP      354   355   356   363   364   365   366   367   370
 879  LCLCB    *
 880  LCLCBB   *
 881  LCLCBZ   *
 927  LCLDB    *
 928  LCLDBB   *
 929  LCLDBZ   *
3149  LCLS      2071  2134
 915  LCLTB    *
 916  LCLTBB   *
 917  LCLTBZ   *
 875  LCOBA    *
 876  LCOBAB   *
 877  LCOBAZ   *
 867  LCOBF    *
 868  LCOBFB   *
 869  LCOBFZ   *
 871  LCOBL    *
 872  LCOBLB   *
 873  LCOBLZ   *
 935  LCOKE    *
 936  LCOKEB   *
 937  LCOKEZ   *
 847  LCRCC    *
 848  LCRCCB   *
 849  LCRCCZ   *
 827  LCSMB    *
 828  LCSMBB   *
 829  LCSMBZ   *
3145  LDWN      1808  2070  2133
 503  LHW      *
3161  LINE      1563  1564  1564  1564  2776  2805  2823  3164  3165
                3166  3167  3168  3169  3170
1934  LIST      1585
3139  LLNE      1655  1820  2059
3163  LNEND     1564  2809  2823
3137  LNET      1467
```

```
3147   LOPN     2098  2149
3151   LRED     1701
3153   LRES     1760
1049   LSABN    *
1050   LSABNB   *
1051   LSABNZ   *
1057   LSASC    *
1058   LSASCB   *
1059   LSASCZ   *
1001   LSASY    *
1002   LSASYB   *
1003   LSASYZ   *
1069   LSBSC    *
1070   LSBSCB   *
1071   LSBSCZ   *
1013   LSCC1    *
1014   LSCC1B   *
1015   LSCC1Z   *
1017   LSCC2    *
1018   LSCC2B   *
1019   LSCC2Z   *
1061   LSCHN    *
1062   LSCHNB   *
1063   LSCHNZ   *
1053   LSCRC    *
1054   LSCRCB   *
1055   LSCRCZ   *
 985   LSCTA    *
 986   LSCTAB   *
 987   LSCTAZ   *
3102   LSDN     1652  1822  1836  1850  1967  1975  1990  1992  2063
                2085  2088  2327
1041   LSDSF    *
1042   LSDSFB   *
1043   LSDSFZ   *
 989   LSDST    *
 990   LSDSTB   *
 991   LSDSTZ   *
1025   LSEPF    *
1026   LSEPFB   *
1027   LSEPFZ   *
1009   LSLSP    *
1010   LSLSPB   *
1011   LSLSPZ   *
 993   LSMOD    *
 994   LSMODB   *
 995   LSMODZ   *
1073   LSNTO    *
1074   LSNTOB   *
1075   LSNTOZ   *
 997   LSPAR    *
 998   LSPARB   *
 999   LSPARZ   *
1037   LSPLA    *
1038   LSPLAB   *
1039   LSPLAZ   *
 953   LSRCA    *
 954   LSRCAB   *
 955   LSRCAZ   *
 957   LSREM    *
 958   LSREMB   *
 959   LSREMZ   *
1033   LSRRS    *
1034   LSRRSB   *
1035   LSRRSZ   *
 949   LSRRT    *
 950   LSRRTB   *
 951   LSRRTZ   *
 961   LSRTO    *
 962   LSRTOB   *
 963   LSRTOZ   *
 965   LSSRS    *
 966   LSSRSB   *
 967   LSSRSZ   *
 981   LSSWS    *
 982   LSSWSB   *
 983   LSSWSZ   *
2173   LSTCVT   1567  1654  1823  2064  2069  2132  2188
1021   LSTER    *
1022   LSTERB   *
1023   LSTERZ   *
 945   LSTHD    *
 946   LSTHDB   *
 947   LSTHDZ   *
2051   LSTLN    1949  1985  2104
2121   LSTTU    1955  2017  2155
 969   LSWCA    *
 970   LSWCAB   *
 971   LSWCAZ   *
 973   LSWEM    *
 974   LSWEMB   *
 975   LSWEMZ   *
1029   LSWRS    *
1030   LSWRSB   *
1031   LSWRSZ   *
```

977	LSWTO	*
978	LSWTOB	*
979	LSWTOZ	*
1005	LSXMM	*
1006	LSXMMB	*
1007	LSXMMZ	*
1045	LSYNC	*
1046	LSYNCB	*
1047	LSYNCZ	*
1077	LSYNR	*
1078	LSYNRB	*
1079	LSYNRZ	*
1065	LSYNT	*
1066	LSYNTB	*
1067	LSYNTZ	*
3141	LTID	1666 1700 1759 1889 2126
3103	LTTN	2147 2917 2932 2933 2940 2941
3143	LUP	1628 2079 2142
591	MAP	*
2849	MOVER	1467 1564 1628 1655 1666 1667 1699 1700 1701 1712 1759 1760 1772 1808 1820 1889 1890 2015 2059 2070 2071 2079 2098 2126 2127 2133 2134 2142 2149 2850
588	MP	589 590 592 593 594 595
592	MPMR0	*
593	MPMR1	*
594	MPMR2	*
595	MPMR3	*
468	MT	469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524
1478	NC0410	1482
1490	NC0420	1506
1511	NC0500	1490 1492 1494
1513	NC0510	1521
1527	NC0520	1547
1543	NC0530	1529 1532 1535
1553	NC0540	1538
1556	NC0542	1554
1576	NC0600	1527 1530 1533 1536 1577
1577	NC0602	1476 1511 1578
1578	NC0604	1481 1500 1520
1579	NC0620	1477 1499 1502 1505
1580	NC0630	1526 1587
1586	NC0634	1546
1587	NC0640	1562
1627	NC1210	1639
1638	NC1220	1657 1669
1644	NC1600	1633
1652	NC1640	*
1662	NC2000	1633
1686	NC2410	1693
1692	NC2420	1731
1698	NC2430	1687
1712	NC2440	1706
1727	NC2442	1724
1736	NC2500	1703 1716 1720 1727
1737	NC2510	1705 1718
1758	NC2810	1767
1766	NC2820	1785
1772	NC2830	1761
1784	NC2840	1775
1803	NC3210	1815
1814	NC3220	1876 1913
1820	NC3600	1809
1842	NC3610	1841
1855	NC3620	1869
1867	NC3630	1866
1868	NC3640	1858 1864
1875	NC3650	1855
1880	NC3720	1840
1881	NC3730	*
1882	NC3740	1837
1883	NC3750	1838 1842
1884	NC3760	1853 1856
1889	NC4000	1809
1912	NC4040	1904
1907	NC4110	1906
1918	NC4120	1865 1905
1942	NC4410	1961
1949	NC4420	1943
1955	NC4430	1943
1960	NC4440	1944 1950
1966	NC4600	1937
1974	NC4610	1994
2002	NC4620	2025
2006	NC4630	2018
2016	NC4632	2014
2023	NC4640	2012
2031	NC4700	1976
2032	NC4710	1981

```
2033   NC4720   1993
2085   NC4830   2078
2103   NC4840   2087  2097
2104   NC4850   2054
2147   NC5230   2141
2154   NC5240   2148
2193   NC5700   2175
2249   NC6010   2231  2233  2242
2250   NC6012   2226
2256   NC6020   2352
2257   NC6022   2221
2263   NC6030   2504
2264   NC6032   2223
2269   NC6040   2251  2258
2272   NC6044   2217
2274   NC6046   2218
2276   NC6048   2269
2283   NC6400   2235
2302   NC6420   2307
2313   NC6430   2296  2301
2320   NC6440   2304
2364   NC6520   2285  2333
2365   NC6530   2336
2366   NC6540   2341
2394   NC6610   2387  2409
2416   NC6620   2394  2396  2398
2422   NC6700   2384  2406  2408  2416
2423   NC6710   2386  2389  2397  2407
2428   NC6800   2244
2440   NC6810   2463
2454   NC6820   2444
2468   NC6830   2440  2442  2447  2449
2483   NC6840   2513
2491   NC6850   2501  2505
2511   NC6860   2497
2527   NC6900   2435  2454  2457  2462
2586   NC7210   2612
2597   NC7220   2589
2625   NC7250   2618
2627   NC7252   2579
2632   NC7260   2592  2615
2634   NC7262   2581
2639   NC7320   2094  2602
2681   NC7610   2671  2678
2697   NC7630   2685
2711   NC7640   2712
2712   NC7642   2710
2718   NC7650   2705
2721   NC7652   2722  2723  2724
2722   NC7654   2697
2723   NC7656   2720
2730   NC7668   2698
2735   NC7670   2724  2724  2724  2724
2740   NC7672   2738
2746   NC7710   2683
2747   NC7720   2691
2748   NC7730   2669  2682
2794   NC8020   2779
2795   NC8030   2796  2797
2796   NC8032   2794  2802
2806   NC8038   2810
2815   NC8040   2804
2816   NC8048   2775  2786
2821   NC8120   2789
2822   NC8140   2778  2803
2823   NC8160   2795
2824   NC8180   2777  2788
2826   NC8190   2806
2860   NC8410   2853
2865   NC8420   2873
2878   NC8450   2868
2879   NC8458   2858
2884   NC8500   2855  2865  2867
2923   NC8610   2935
2931   NC8630   2924  2927
2941   NC8640   2930
2980   NC9010   2964
2995   NC9020   2982
3007   NC9030   2975  2990
3025   NC9040   2962  2972  2986  2999
3031   NC9100   2961  2971  2974  2980  2985  2988  2995  2998  3001
                3011  3013
3032   NC9120   2963
3033   NC9130   2981
1461   NCM        12  1445
 502   NEG      *
1460   NETCON   1461  1571  2026  3077  3175
3174   NETEND   *
 513   NINE      141   165
2381   NUMBER   2283  2326  2417
 505   ONE       157   181  1829  1896  2001  2482  2916  3116
3084   OUTLUN   2822
   0   P          27    29    30    36    39    41    45    49    53
                 57    61    65    69    73    77    81    84    85
                 85    86    87    91    92    92    93    94    97
```

```
                 99   100   101   101   102   103   104   105   106
                107   107   109   109   112   114   115   115   116
                118   118   119   120   121   123   124   125   125
                129   129   130   131   132   132   133   136   137
                138   140   142   144   146   148   150   152   154
                156   160   161   162   164   166   168   170   172
                174   176   178   180   192   194   194   195   196
                196   199   201   201   202   203   203   206   208
                208   209
1329  PCBSL     *
1330  PCBSLB    *
1331  PCBSLZ    *
1317  PCCLN     *
1318  PCCLNB    *
1319  PCCLNZ    *
1341  PCCTP     *
1342  PCCTPB    *
1343  PCCTPZ    *
1321  PCECH     *
1322  PCECHB    *
1323  PCECHZ    *
1313  PCLLN     *
1314  PCLLNB    *
1315  PCLLNZ    *
1349  PCNTD     *
1350  PCNTDB    *
1351  PCNTDZ    *
1337  PCPCH     *
1338  PCPCHB    *
1339  PCPCHZ    *
1333  PCSWL     *
1334  PCSWLB    *
1335  PCSWLZ    *
1345  PCTYP     *
1346  PCTYPB    *
1347  PCTYPZ    *
1325  PCXMM     *
1326  PCXMMB    *
1327  PCXMMZ    *
3122  PERIOD    1604  1936  2590  2614  3076
 575  PIM1      *
 576  PIM2      *
 577  PIM3      *
 578  PIM4      *
 579  PIM5      *
 580  PIM6      *
 581  PIM7      *
 582  PIM8      *
 699  POST      *
1287  PSABN     *
1288  PSABNB    *
1289  PSABNZ    *
1239  PSASY     *
1240  PSASYB    *
1241  PSASYZ    *
 670  PSBADT    *
 666  PSBEG     *
1299  PSBSC     *
1300  PSBSCB    *
1301  PSBSCZ    *
1251  PSCC1     *
1252  PSCC1B    *
1253  PSCC1Z    *
1255  PSCC2     *
1256  PSCC2B    *
1257  PSCC2Z    *
1291  PSCRC     *
1292  PSCRCB    *
1293  PSCRCZ    *
1271  PSDEF     2053  2351
1272  PSDEFB    2054  2352
1273  PSDEFZ    *
1279  PSDSF     *
1280  PSDSFB    *
1281  PSDSFZ    *
1267  PSDWN     1646  1830  2077
1268  PSDWNB    1646  1830  2078
1269  PSDWNZ    1646  1830
 672  PSEND     *
1263  PSEPF     *
1264  PSEPFB    *
1265  PSEPFZ    *
1247  PSLSP     *
1248  PSLSPB    *
1249  PSLSPZ    *
1231  PSMOD     *
1232  PSMODB    *
1233  PSMODZ    *
 671  PSNSEC    *
1235  PSPAR     *
1236  PSPARB    *
1237  PSPARZ    *
1275  PSPLA     2066
1276  PSPLAB    *
1277  PSPLAZ    2067
```

```
 667   PSPROT   *
1259   PSTER    *
1260   PSTERB   *
1261   PSTERZ   *
1243   PSXMM    *
1244   PSXMMB   *
1245   PSXMMZ   *
1283   PSYNC    *
1284   PSYNCB   *
1285   PSYNCZ   *
1303   PSYNR    *
1304   PSYNRB   *
1305   PSYNRZ   *
1295   PSYNT    *
1296   PSYNTB   *
1297   PSYNTZ   *
3107   PTUID    1667  1699  1712  1772  1860  1862  1867  1890  1907
                2016  2127  2471  2475  2500  2503  2926  2929
  32   PUSH     *
 228   PUTQ     *
 532   RA0      *
 533   RA1      *
 651   RADNR    *
 534   RB0      *
 535   RB1      *
2662   READ     1721  1983  2005  2345  2486  2676  2684
3086   READOP   2746  2821
1685   REDIR    1582
1753   RESTOR   1583
 649   RFCB     *
 504   RHW      2096  2603  2934  3009
3085   RMDLUN   2711  2721  2746  2747
 645   ROPWD    *
 642   RSTPR    *
 650   RTIDB    *
3109   SECTN    1702  1717  1978  2002  2338  2483  2674  2718
3171   SECTOR   2010  2023  2495  2511  2547  2749  2750
  96   SETA     *
 111   SETB     *
 191   SETF     *
 511   SEVEN     145   169
 510   SIX       147   171  3121
  26   SPACE    *
 135   SUBAT    *
1562   SYNERR   1501  1548  1605  1687  1706  1707  1761  2286  2315
                2321  2323  2325  2334  2359  2456  2521  2741  3054
 288   TBATSK   *
 287   TBCPTH   *
 274   TBENTY   *
 268   TBEVNT   *
 282   TBID     *
 277   TBISA    *
 278   TBISB    *
 280   TBISP    *
 281   TBISRS   *
 294   TBIST    *
 279   TBISX    *
 292   TBKEY    *
 283   TBKN1    *
 284   TBKN2    *
 285   TBKN3    *
 293   TBMIMG   *
 291   TBNUCL   *
 267   TBPL     *
 269   TBRSA    *
 270   TBRSB    *
 289   TBRSE    *
 272   TBRSP    *
 273   TBRSTS   *
 271   TBRSX    *
 322   TBS0     *
 321   TBS1     *
 309   TBS10    *
 308   TBS11    *
 306   TBS12    *
 305   TBS13    *
 304   TBS14    *
 302   TBS15    *
 320   TBS2     *
 318   TBS3     *
 317   TBS4     *
 316   TBS5     *
 314   TBS6     *
 313   TBS7     *
 312   TBS8     *
 310   TBS9     *
 290   TBSIZ    *
 266   TBST     *
 286   TBTLC    *
 276   TBTMIN   *
 275   TBTMS    *
 265   TBTRD    *
   0   TC$TCD   1849  1854
1115   TCBSL    *
1116   TCBSLB   *
```

```
1117  TCBSLZ  *
1099  TCCLN   *
1100  TCCLNB  *
1101  TCCLNZ  *
1127  TCCON   *
1128  TCCONB  *
1129  TCCONZ  *
1095  TCCTA   *
1096  TCCTAB  *
1097  TCCTAZ  *
1151  TCCTP   *
1152  TCCTPB  *
1153  TCCTPZ  *
1187  TCDCC   *
1188  TCDCCB  *
1189  TCDCCZ  *
1195  TCDTO   *
1196  TCDTOB  *
1197  TCDTOZ  *
1123  TCECH   *
1124  TCECHB  *
1125  TCECHZ  *
1199  TCID1   1859  2925
1200  TCID1B  *
1201  TCID1Z  *
1203  TCID2   1861  2928
1204  TCID2B  *
1205  TCID2Z  *
1171  TCLDF   *
1172  TCLDFB  *
1173  TCLDFZ  *
1103  TCLLN   1857
1104  TCLLNB  *
1105  TCLLNZ  *
1143  TCNOD   *
1144  TCNODB  *
1145  TCNODZ  *
1139  TCNTD   *
1140  TCNTDB  *
1141  TCNTDZ  *
1107  TCPCH   *
1108  TCPCHB  *
1109  TCPCHZ  *
1135  TCRBC   *
1136  TCRBCB  *
1137  TCRBCZ  *
1191  TCRBF   *
1192  TCRBFB  *
1193  TCRBFZ  *
1175  TCRCA   *
1176  TCRCAB  *
1177  TCRCAZ  *
1155  TCRMD   *
1156  TCRMDB  *
1157  TCRMDZ  *
1091  TCRQH   *
1092  TCRQHB  *
1093  TCRQHZ  *
1163  TCRRS   *
1164  TCRRSB  *
1165  TCRRSZ  *
1179  TCSTO   *
1180  TCSTOB  *
1181  TCSTOZ  *
1111  TCSWL   *
1112  TCSWLB  *
1113  TCSWLZ  *
1087  TCTCD   1868
1088  TCTCDB  *
1089  TCTCDZ  *
1147  TCTYP   *
1148  TCTYPB  *
1149  TCTYPZ  *
1131  TCWBC   *
1132  TCWBCB  *
1133  TCWBCZ  *
1183  TCWCA   *
1184  TCWCAB  *
1185  TCWCAZ  *
1159  TCWMD   *
1160  TCWMDB  *
1161  TCWMDZ  *
1167  TCWRS   *
1168  TCWRSB  *
1169  TCWRSZ  *
1119  TCXMM   *
1120  TCXMMB  *
1121  TCXMMZ  *
 514  TEN      139   163  2385  3129
 205  TESTF   *
 507  THREE    153   177  2857  3118
1375  TIDSP   1714  1725  1728  1776
1376  TIDSPB  1714  1725  1728  1776
1377  TIDSPZ  1714  1725  1728  1776
1067  TIDWN   1664  1897  2140
```

1368	TIDWNB	1664	1897	2141					
1369	TIDWNZ	1664	1897						
1391	TINET	*							
1392	TINETB	*							
1393	TINETZ	*							
1379	TIODN	*							
1380	TIODNB	*							
1381	TIODNZ	*							
1387	TIODP	1723	1726	1774	1778				
1388	TIODPB	1723							
1389	TIODPZ	1723							
1383	TIOSC	*							
1384	TIOSCB	*							
1385	TIOSCZ	1723							
1371	TISEC	2511							
1372	TISECB	2512							
1373	TISECZ	1714	1725	1728	1776				
1359	TITU1	2499							
1360	TITU1B	*							
1361	TITU1Z	*							
1363	TITU2	2502							
1364	TITU2B	*							
1365	TITU2Z	*							
1221	TPFPA	*							
1222	TPFPAB	*							
1223	TPFPAZ	*							
1213	TPRPA	*							
1214	TPRPAB	*							
1215	TPRPAZ	*							
1217	TPWPA	*							
1218	TPWPAB	*							
1219	TPWPAZ	*							
3106	TUID	2429	2431	2432	2433	2458	2468	2470	2472	2474
506	TWO	155	179	2434	3117					
2773	TYPE	1468	1570	1656	1668	1730	1784	1875	1912	2103
		2154	2774							
3121	UDFCCM	2313								
3117	UDFLNE	2357								
3118	UDFTID	2519								
2212	UNIT	1633	1687	1706	1761	1809	1943	2219		
1626	UP	1581								
440	V$IMIN	*								
458	V$BFC	*								
366	V$BGLB	*								
363	V$BIC1	*								
392	V$BTB	*								
400	V$BTBM	*								
457	V$BVN	*								
408	V$CAM	*								
420	V$CKB	*								
448	V$CKIT	*								
387	V$CKPT	*								
380	V$CPL	*								
367	V$CRDM	*								
410	V$CRDR	*								
421	V$CRM	*								
381	V$CRS	*								
426	V$CTAD	3018								
379	V$CTL	*								
418	V$CTMS	*								
364	V$DATE	*								
422	V$DSTB	3014								
435	V$ERFG	*								
416	V$FGLB	*								
385	V$FLRS	*								
417	V$FREE	*								
401	V$GFCB	*								
397	V$IM	*								
447	V$IOA	*								
449	V$JCB	*								
356	V$JCFG	*								
370	V$JCTM	*								
354	V$JNAM	*								
436	V$JOP	*								
407	V$KEY	*								
355	V$LCNT	*								
390	V$LER	*								
423	V$LIT	*								
395	V$LLUP	*								
396	V$LPP	*								
386	V$LRSK	*								
389	V$LSAL	*								
414	V$LUNT	*								
394	V$LUP	*								
437	V$LUT1	2969	2973							
438	V$LUT2	2983	2987							
439	V$LUT3	2996	3000							
399	V$MAP	*								
402	V$MIMG	*								
398	V$MPM	*								
428	V$NCTR	*								
393	V$NPAG	*								
452	V$OCB	*								
415	V$OPCF	*								
388	V$OPCL	*								

424	V$PGT	*								
429	V$PIMN	*								
365	V$PLCT	*								
384	V$PTVB	*								
427	V$SCTL	*								
419	V$SCV	*								
434	V$SLFG	*								
403	V$ST0	*								
404	V$ST1	*								
405	V$ST2	*								
406	V$ST3	*								
382	V$TB	*								
411	V$TBGT	*								
459	V$TFC	*								
391	V$TJCP	*								
413	V$TMN	*								
412	V$TMS	*								
383	V$UTB	*								
1	VORTEX	*								
0	VT$LTT	2914	2918							
0	VTPUSH	33	35							
3092	WAIT	1842	1867	1880	1907	1918	2711	2721	2746	2747
		2821	2822							
2690	WRITE	1647	1665	1729	1779	1831	1898	2692		
3087	WRITOP	2747	2822							
697	X	232	254	1479	1504	1513	1515	1528	1531	1534
		1537	1553	1646	1664	1714	1723	1725	1726	1728
		1774	1776	1778	1830	1897	2093	2176	2177	2180
		2181	2186	2187	2220	2222	2299	2303	2351	2461
		2499	2502	2580	2601	2673	2807	2851	2852	2854
		2870	2923							
469	ZERO	*								

```
000001 A      1 VORTEX SET                    PUT LAST FOR VORTEX                                  V2  03 00001
              2 *   THIS IS A COPYRIGHTED PROGRAM, COPYRIGHT 1973 BY VARIAN DATA MACHINES          03 00002
              3 *                                                                                  03 00003
              4 *       V.D.M.   PART NO.     92L1105-038B                                         03 00004
              5 *                                                                                  03 00005
              6 *                             RELEASED     3-1-74                                  03 00006
              7 *                                                                                  03 00007
              8 *                                                                                  03 00008
              9 *             C52CIH                                                               03 00009
             10 *                                                                                  03 00010
             11 *                                                                                  03 00011
             12         TITLE   C52CIH                                                            03 00012
             13         NLIS                                                                      03 00013
           1443         LIST                                                                      ********
           1444 *                                                                                  03 00014
           1445         EJEC                                                                      03 00015
           1446 ************************************************************************************03 00016
           1447 ************************************************************************************03 00017
           1448 **      PROGRAM NAME -                                                          **03 00018
           1449 **            C52CIH - DCM CONTROL INTERRUPT HANDLER                            **03 00019
           1450 **                                                                              **03 00020
           1451 **      ENTRY CONDITIONS -                                                      **03 00021
           1452 **            C52CIH IS ENTERED AS A CONSEQUENCE OF AN INTERRUPT                **03 00022
           1453 **            GENERATED BY THE DCM.                                             **03 00023
           1454 **            THE INTERRUPT EVENT WORD CONTAINS THE ORDINAL OF                  **03 00024
           1455 **            THE APPROPRIATE CONTROLLER TABLE ADDRESS IN C52MET.               **03 00025
           1456 **            THE ADDRESS OF THE CONTROL WORD (WRITE) AND THE ADDRESS           **03 00026
           1457 **            OF THE STATUS WORD ARE CONTAINED IN CONTROLLER TABLE              **03 00027
           1458 **            CELLS DMCWA AND DMSWA RESPECTIVLY.                                **03 00028
           1459 **                                                                              **03 00029
           1460 **      EXIT CONDITIONS -                                                       **03 00030
           1461 **            CONTROLLER TABLE CELLS DMCWA AND DMSWA ARE SET TO ZERO            **03 00031
           1462 **            VOLATILE REGISTERS ARE RESTORED                                   **03 00032
           1463 **            AND CONTROL RETURNED TO THE INTERRUPTED PROGRAM WITH              **03 00033
           1464 **            INTERRUPTS ON                                                     **03 00034
           1465 **                                                                              **03 00035
           1466 ************************************************************************************03 00036
           1467 ************************************************************************************03 00037
           1468         EJEC                                                                      03 00038
           1469         NAME    C52CIH                                                            03 00039
000000 000000 A 1470 C52CIH ENTR                    ENTERED WITH ALL INTERRUPTS OFF AS A          03 00040
           1471 *                                   CONSEQUENCE OF A DCM CONTROL INTERRUPT        03 00041
           1472         IFF     VORTEX-2                                                    V2    03 00042
           1473         GOTO    1                                                           V2    03 00043
           1474         EXT     VTPUSH                                                            03 00044
000001 002000 A 1475         JMPM    VTPUSH          SAVE VOLATILE REGISTERS IN VTAM STACK         03 00045
000002 000000 E
000003 000004 R 1476         DATA    *+1,0                                                     03 00046
000004 000000 A
000005 006027 A 1477         LDBE*   C52CIH          JUMP HERE AFTER PUSH                          03 00047
000006 100000 R
           1478 1       CONT                                                                V2    03 00048
           1479         IFF     VORTEX-1                                                    V2    03 00049
           1480         GOTO    1                                                           V2    03 00050
           1481         EXT     V$DRTN                                                      V2    03 00051
           1482         TAB                     EVENT WORD IS IN A                          V2    03 00052
           1483 1       CONT                                                                V2    03 00053
000007 004143 A 1484         LSRB    3                                                             03 00054
000010 005122 A 1485         IBR                                                                   03 00055
           1486         EXT     CC$MET          USE MUX ORDINAL TO GET CONTROLLER TABLE        03 00056
000011 006036 A 1487         LDXE    CC$MET,B        ADDRESS FROM MUX EQUIPMENT TABLE              03 00057
000012 000000 E
       000001 A 1488 CTB     SET     X                                                             03 00058
       000001 A 1489 DMT     SET     X                                                             03 00059
000013 015006 A 1490         LDA     CTDVA,CTB       GET DEVICE ADDRESS FROM CTBL AND USE IT       03 00060
000014 006120 A 1491         ADDI    0102500         TO BUILD IO INSTRUCTIONS                      03 00061
000015 102500 A
000016 054035 A 1492         STA     CICIA           CIA                                           03 00062
000017 120431 A 1493         ADD     BS8                 AND                                       03 00063
000020 054034 A 1494         STA     CIOAR                   OAR                                   03 00064
           1495 *                                                                                  03 00065
           1496 *       OUTPUT CONTROL WORD                                                        03 00066
           1497 *                                                                                  03 00067
000021 025024 A 1498         LDB     DMCWA,DMT                                                     03 00068
000022 016000 A 1499         LDA     0,B                                                           03 00069
000023 003000 A 1500         XEC     CIOAR                                                         03 00070
000024 000055 R
000025 005001 A 1501         TZA                     ZERO ADDRESS TO FLAG CONTROL NOT BUSY         03 00071
000026 055024 A 1502         STA     DMCWA,DMT                                                     03 00072
           1503 *                                                                                  03 00073
           1504 *       IF READ SEQUENCE, INPUT STATUS WORD                                        03 00074
           1505 *                                                                                  03 00075
000027 025025 A 1506         LDB     DMSWA,DMT                                                     03 00076
000030 001020 A 1507         JBZ     CI01                                                          03 00077
000031 000037 R
000032 003000 A 1508         XEC     CICIA                                                         03 00078
000033 000054 R
000034 056000 A 1509         STA     0,B                                                           03 00079
000035 005001 A 1510         TZA                     ZERO STATUS WORD ADDRESS                      03 00080
000036 055025 A 1511         STA     DMSWA,DMT                                                     03 00081
           1512 *                                                                                  03 00082
           1513 *       STORE RETURN ADDRESS IN 'P' CELL OF STACK ENTRY                            03 00083
           1514 *                                                                                  03 00084
           1515         IFF     VORTEX-2                                                    V2    03 00085
           1516         GOTO    1                                                           V2    03 00086
```

```
                    1517           EXT     VTSTAK                                                    03 00087
000037 006027 A     1518 CI01      LDBE    VTSTAK                                                    03 00088
000040 000000 E
000041 006017 A     1519           LDAE    C52CIH                                                    03 00089
000042 000000 R
000043 140423 A     1520           SUB     FOUR                                                      03 00090
000044 005014 A     1521           TAX                                                               03 00091
000045 015000 A     1522           LDA     0,X                                                       03 00092
000046 136004 A     1523           ERA     4,B     STORE NEW 'R' VALUE WITHOUT CHANGING              03 00093
000047 150460 A     1524           ANA     BR15    OVERFLOW                                          03 00094
000050 136004 A     1525           ERA     4,B                                                       03 00095
000051 056004 A     1526           STA     4,B                                                       03 00096
                    1527           EXT     VTPOP   POP VOLATILE REGISTERS AND RETURN                 03 00097
000052 001000 A     1528           JMP     VTPOP                                                     03 00098
000053 000000 E
                    1529 1         CONT                                                      V2      03 00099
                    1530           IFF     VORTEX-2                                          V2      03 00100
                    1531 CI01      JMP   . V$DRTN  EXIT                                      V2      03 00101
                    1532           EJEC                                                              03 00102
                    1533 *         CONSTANTS AND TEMPORARY STORAGE                                   03 00103
                    1534 *                                                                           03 00104
                    1535 *                                                                           03 00105
000054 000000 A     1536 CICIA     DATA    0                                                         03 00106
000055 000000 A     1537 CIDAR     DATA    0                                                         03 00107
                    1538           END                                                               03 00108

ENTRY NAMES
000000 R C52CIH
EXTERNAL NAMES
000012 E CC$MET  000053 E VTPOP   000002 E VTPUSH  000040 E VTSTAK
SYMBOLS
000044 A APIM    000002 A B       000000 A B0      000001 A B1
000012 A B10     000013 A B11     000014 A B12     000015 A B13
000016 A B14     000017 A B15     000002 A B2      000003 A B3
000004 A B4      000005 A B5      000006 A B6      000007 A B7
000010 A B8      000011 A B9      000000 A BICNUM  000421 A BM1
000472 A BM17    000475 A BM177   000477 A BM1777  000464 A BM3
000473 A BM37    000463 A BM377   000467 A BM7     000474 A BM77
000476 A BM777   000441 A BR0     000442 A BR1     000453 A BR10
000454 A BR11    000455 A BR12    000456 A BR13    000457 A BR14
000460 A BR15    000443 A BR2     000444 A BR3     000445 A BR4
000446 A BR5     000447 A BR6     000450 A BR7     000451 A BR8
000452 A BR9     000421 A BS0     000422 A BS1     000433 A BS10
000434 A BS11    000435 A BS12    000436 A BS13    000437 A BS14
000440 A BS15    000423 A BS2     000424 A BS3     000425 A BS4
000426 A BS5     000427 A BS6     000430 A BS7     000431 A BS8
000432 A BS9     000000 R C52CIH  000012 E CC$MET  000000 A CHAFP
000000 A CHAFPB  000020 A CHAFPZ  000001 A CHARP   000000 A CHARPB
000020 A CHARPZ  000002 A CHCFP   000000 A CHCFPB  000020 A CHCFPZ
000003 A CHCRP   000000 A CHCRPB  000020 A CHCRPZ  000004 A CHRBL
000000 A CHRBLB  000020 A CHRBLZ  000037 R CI01    000054 R CICIA
000055 R CIDAR   000047 A CLOCK   000000 A CDTAD1  000000 A CTACT
000017 A CTACTB  000001 A CTACTZ  000001 A CTADN   000000 A CTADNB
000020 A CTADNZ  000001 A CTB     000011 A CTBIC   000000 A CTBICB
000020 A CTBICZ  000003 A CTDST   000000 A CTDSTB  000020 A CTDSTZ
000006 A CTDVA   000000 A CTDVAB  000020 A CTDVAZ  000012 A CTFCB
000000 A CTFCBB  000020 A CTFCBZ  000014 A CTFRC   000010 A CTFRCB
000010 A CTFRCZ  000014 A CTFRE   000000 A CTFREB  000010 A CTFREZ
000000 A CTIDB   000000 A CTIDBB  000017 A CTIDBZ  000007 A CTIDA
000000 A CTIDAB  000020 A CTIDAZ  000002 A CTDPM   000000 A CTDPMB
000020 A CTDPMZ  000005 A CTRCN   000000 A CTRCNB  000010 A CTRCNZ
000004 A CTRQB   000000 A CTRQBB  000020 A CTRQBZ  000005 A CTRTR
000010 A CTRTRB  000010 A CTRTRZ  000010 A CTSTA   000000 A CTSTAB
000020 A CTSTAZ  000013 A CTWDS   000000 A CTWDSB  000020 A CTWDSZ
000001 A DCBUFF  000003 A DCCHR   000000 A DCCHRB  000020 A DCCHRZ
000002 A DCCNT   000000 A DCRECL  000747 A DISCLK  000745 A DISMP
000444 A DISPIM  000026 A DMBCA   000000 A DMBCAB  000020 A DMBCAZ
000024 A DMCWA   000000 A DMCWAB  000020 A DMCWAZ  000017 A DMFPA
000000 A DMFPAB  000020 A DMFPAZ  000021 A DMLCA   000000 A DMLCAB
000020 A DMLCAZ  000022 A DMLTA   000000 A DMLTAB  000020 A DMLTAZ
000023 A DMPTA   000000 A DMPTAB  000020 A DMPTAZ  000016 A DMRPA
000000 A DMRPAB  000020 A DMRPAZ  000020 A DMSTA   000000 A DMSTAB
000020 A DMSTAZ  000025 A DMSWA   000000 A DMSWAB  000020 A DMSWAZ
000001 A DMT     000015 A DMTPA   000000 A DMTPAB  000020 A DMTPAZ
000002 A DSCTAD  000000 A DSDASS  000000 A DSDVDN  000002 A DSLCKD
000001 A DSNAME  000000 A DSNDRQ  000002 A DSOPCM  000002 A DSPSTI
000002 A DSREWD  000000 A DSUNAM  000002 A DSUNTN  000424 A EIGHT
000147 A ENACLK  000645 A ENAMF   000244 A ENAPIM  000465 A FIVE
000423 A FOUR    000003 A IBIBF   000017 A IBIBFB  000001 A IBIBFZ
000003 A IBLAS   000000 A IBLASB  000017 A IBLASZ  000001 A IBLEN
000000 A IBLENB  000020 A IBLENZ  000000 A .BLNK   000000 A IBLNKB
000020 A IBLNKZ  000002 A IBSTA   000000 A IBSTAB  000020 A IBSTAZ
000004 A IBSTS   000000 A IBSTSB  000017 A IBSTSZ  000300 A LC
000003 A LCABN   000013 A LCABNB  000001 A LCABNZ  000003 A LCASY
000012 A LCASYB  000001 A LCASYZ  000007 A LCBSC   000015 A LCBSCB
000001 A LCBSCZ  000007 A LCCHN   000016 A LCCHNB  000001 A LCCHNZ
000003 A LCCRC   000014 A LCCRCB  000003 A LCCRCZ  000006 A LCCWB
000014 A LCCWBB  000001 A LCCWBZ  000006 A LCCWC   000015 A LCCWCB
000001 A LCCWCZ  000006 A LCCWD   000010 A LCCWDB  000001 A LCCWDZ
000006 A LCCWI   000016 A LCCWIB  000001 A LCCWIZ  000006 A LCCWP
000012 A LCCWPB  000001 A LCCWPZ  000006 A LCCWR   000011 A LCCWRB
000001 A LCCWRZ  000006 A LCCWS   000017 A LCCWSB  000001 A LCCWSZ
000006 A LCCWT   000010 A LCCWTB  000001 A LCCWTZ  000001 A LCIBA
000000 A LCIBAB  000017 A LCIBAZ  000000 A LCIBF   000017 A LCIBFB
000001 A LCIBFZ  000000 A LCIBL   000000 A LCIBLB  000014 A LCIBLZ
000002 A LCIC1   000010 A LCIC1B  000010 A LCIC1Z  000002 A LCIC2
```

```
000000 A LCIC2B 000010 A LCIC2Z 000003 A LCIKE  000000 A LCIKEB
000004 A LCIKEZ 000007 A LCITB  000013 A LCITBB 000001 A LCITBZ
000050 A LCJP   000006 A LCLCB  000000 A LCLCBB 000020 A LCLCBZ
000007 A LCLDB  000014 A LCLDBB 000001 A LCLDBZ 000007 A LCLTB
000017 A LCLTBB 000001 A LCLTBZ 000005 A LCOBA  000000 A LCOBAB
000017 A LCOBAZ 000004 A LCOBF  000017 A LCOBFB 000001 A LCOBFZ
000004 A LCOBL  000000 A LCOBLB 000014 A LCOBLZ 000007 A LCOKE
000000 A LCOKEB 000004 A LCOKEZ 000003 A LCRCC  000017 A LCRCCB
000001 A LCRCCZ 000000 A LCSMB  000016 A LCSMBB 000001 A LCSMBZ
000462 A LHW    000017 A LSABN  000015 A LSABNB 000001 A LSABNZ
000017 A LSASC  000011 A LSASCB 000001 A LSASCZ 000014 A LSASY
000013 A LSASYB 000001 A LSASYZ 000020 A LSBSC  000016 A LSBSCB
000001 A LSBSCZ 000015 A LSCC1  000010 A LSCC1B 000010 A LSCC1Z
000015 A LSCC2  000000 A LSCC2B 000010 A LSCC2Z 000017 A LSCHN
000010 A LSCHNB 000001 A LSCHNZ 000017 A LSCRC  000012 A LSCRCB
000003 A LSCRCZ 000012 A LSCTA  000000 A LSCTAB 000020 A LSCTAZ
000017 A LSDSF  000017 A LSDSFB 000001 A LSDSFZ 000013 A LSDST
000000 A LSDSTB 000020 A LSDSTZ 000016 A LSEPF  000016 A LSEPFB
000001 A LSEPFZ 000014 A LSLSP  000000 A LSLSPB 000011 A LSLSPZ
000014 A LSMOD  000016 A LSMODB 000002 A LSMODZ 000020 A LSNTO
000010 A LSNTOB 000006 A LSNTOZ 000014 A LSPAR  000014 A LSPARB
000002 A LSPARZ 000016 A LSPLA  000000 A LSPLAB 000010 A LSPLAZ
000002 A LSRCA  000000 A LSRCAB 000020 A LSRCAZ 000003 A LSREM
000000 A LSREMB 000020 A LSREMZ 000016 A LSRRS  000010 A LSRRSB
000003 A LSRRSZ 000001 A LSRRT  000000 A LSRRTB 000020 A LSRRTZ
000004 A LSRTO  000000 A LSRTOB 000020 A LSRTOZ 000005 A LSSRS
000000 A LSSRSB 000020 A LSSRSZ 000011 A LSSWS  000000 A LSSWSB
000020 A LSSWSZ 000016 A LSTER  000017 A LSTERB 000001 A LSTERZ
000000 A LSTHD  000000 A LSTHDB 000020 A LSTHDZ 000006 A LSWCA
000000 A LSWCAB 000020 A LSWCAZ 000007 A LSWEM  000000 A LSWEMB
000020 A LSWEMZ 000016 A LSWRS  000013 A LSWRSB 000003 A LSWRSZ
000010 A LSWTO  000000 A LSWTOB 000020 A LSWTOZ 000014 A LSXMM
000011 A LSXMMB 000002 A LSXMMZ 000017 A LSYNC  000016 A LSYNCB
000001 A LSYNCZ 000020 A LSYNR  000000 A LSYNRB 000010 A LSYNRZ
000017 A LSYNT  000000 A LSYNTB 000010 A LSYNTZ 000046 A MAP
000045 A MP     000045 A MPMR0  000145 A MPMR1  000245 A MPMR2
000345 A MPMR3  000420 A MT     000461 A NEG    000470 A NINE
000421 A ONE    000001 A PCBSL  000011 A PCBSLB 000001 A PCBSLZ
000000 A PCCLN  000000 A PCCLNB 000010 A PCCLNZ 000002 A PCCTP
000014 A PCCTPB 000004 A PCCTPZ 000001 A PCECH  000014 A PCECHB
000001 A PCECHZ 000000 A PCLLN  000010 A PCLLNB 000010 A PCLLNZ
000002 A PCNTO  000000 A PCNTOB 000004 A PCNTOZ 000001 A PCPCH
000000 A PCPCHB 000010 A PCPCHZ 000001 A PCSWL  000010 A PCSWLB
000001 A PCSWLZ 000002 A PCTYP  000010 A PCTYPB 000004 A PCTYPZ
000001 A PCXMM  000012 A PCXMMB 000002 A PCXMMZ 000040 A PIM1
000041 A PIM2   000042 A PIM3   000043 A PIM4   000040 A PIM5
000040 A PIM6   000040 A PIM7   000040 A PIM8   000200 A POST
000003 A PSABN  000015 A PSABNB 000001 A PSABNZ 000000 A PSASY
000013 A PSASYB 000001 A PSASYZ 000002 A PSBADT 000000 A PSBEG
000004 A PSBSC  000016 A PSBSCB 000016 A PSBSCZ 000001 A PSCC1
000010 A PSCC1B 000010 A PSCC1Z 000001 A PSCC2  000000 A PSCC2B
000010 A PSCC2Z 000003 A PSCRC  000012 A PSCRCB 000003 A PSCRCZ
000002 A PSDEF  000010 A PSDEFB 000001 A PSDEFZ 000003 A PSDSF
000017 A PSDSFB 000001 A PSDSFZ 000002 A PSDWN  000011 A PSDWNB
000001 A PSDWNZ 000004 A PSEND  000002 A PSEPF  000016 A PSEPFB
000001 A PSEPFZ 000000 A PSLSP  000000 A PSLSPB 000011 A PSLSPZ
000000 A PSMOD  000016 A PSMODB 000002 A PSMODZ 000003 A PSNSEC
000000 A PSPAR  000014 A PSPARB 000002 A PSPARZ 000002 A PSPLA
000000 A PSPLAB 000010 A PSPLAZ 000001 A PSPROT 000002 A PSTER
000017 A PSTERB 000001 A PSTERZ 000000 A PSXMM  000011 A PSXMMB
000002 A PSXMMZ 000003 A PSYNC  000016 A PSYNCB 000001 A PSYNCZ
000004 A PSYNR  000000 A PSYNRB 000010 A PSYNRZ 000003 A PSYNT
000000 A PSYNTB 000010 A PSYNTZ 000040 A RA0    000000 A RA1
000004 A RADNR  000060 A RB0    000020 A RB1    000002 A RFCB
000463 A RHW    000001 A ROPWD  000000 A RSTPR  000003 A RTIDB
000467 A SEVEN  000466 A SIX    000027 A TBATSK 000026 A TBCPTH
000011 A TBENTY 000003 A TBEVNT 000021 A TBIO   000014 A TBISA
000015 A TBISB  000017 A TBISP  000020 A TBISRS 000034 A TBIST
000016 A TBISX  000032 A TBKEY  000022 A TBKN1  000023 A TBKN2
000024 A TBKN3  000033 A TBMIMG 000032 A TBNUCL 000002 A TBPL
000004 A TBRSA  000005 A TBRSB  000030 A TBRSE  000007 A TBRSP
000010 A TBRSTS 000006 A TBRSX  000000 A TBS0   000001 A TBS1
000012 A TBS10  000013 A TBS11  000014 A TBS12  000015 A TBS13
000016 A TBS14  000017 A TBS15  000002 A TBS2   000003 A TBS3
000004 A TBS4   000005 A TBS5   000006 A TBS6   000007 A TBS7
000010 A TBS8   000011 A TBS9   000031 A TBSIZ  000001 A TBST
000025 A TBTLC  000013 A TBTMIN 000012 A TBTMS  000000 A TBTRD
000004 A TCBSL  000011 A TCBSLB 000001 A TCBSLZ 000003 A TCCLN
000000 A TCCLNB 000010 A TCCLNZ 000004 A TCCON  000015 A TCCONB
000001 A TCCONZ 000002 A TCCTA  000000 A TCCTAB 000020 A TCCTAZ
000005 A TCCTP  000014 A TCCTPB 000004 A TCCTPZ 000012 A TCDCC
000000 A TCDCCB 000020 A TCDCCZ 000014 A TCDTO  000000 A TCDTOB
000020 A TCDTOZ 000004 A TCECH  000014 A TCECHB 000001 A TCECHZ
000015 A TCID1  000000 A TCID1B 000020 A TCID1Z 000016 A TCID2
000000 A TCID2B 000020 A TCID2Z 000006 A TCLDF  000014 A TCLDFB
000001 A TCLDFZ 000003 A TCLLN  000010 A TCLLNB 000010 A TCLLNZ
000005 A TCNOD  000004 A TCNODB 000004 A TCNODZ 000005 A TCNTO
000000 A TCNTOB 000004 A TCNTOZ 000004 A TCPCH  000000 A TCPCHB
000010 A TCPCHZ 000004 A TCRBC  000017 A TCRBCB 000001 A TCRBCZ
000013 A TCRBF  000000 A TCRBFB 000020 A TCRBFZ 000007 A TCRCA
000000 A TCRCAB 000020 A TCRCAZ 000006 A TCRMD  000000 A TCRMDB
000003 A TCRMDZ 000001 A TCRQH  000000 A TCRQHB 000020 A TCRQHZ
000006 A TCRRS  000006 A TCRRSB 000003 A TCRRSZ 000010 A TCSTO
000000 A TCSTOB 000020 A TCSTOZ 000004 A TCSWL  000010 A TCSWLB
000001 A TCSWLZ 000000 A TCTCD  000000 A TCTCDB 000020 A TCTCDZ
```

```
000005 A TCTYP   000010 A TCTYPB 000004 A TCTYPZ 000004 A TCWBC
000016 A TCWBCB  000001 A TCWBCZ 000011 A TCWCA  000000 A TCWCAB
000020 A TCWCAZ  000006 A TCWMD  000003 A TCWMDB 000003 A TCWMDZ
000006 A TCWRS   000011 A TCWRSB 000003 A TCWRSZ 000004 A TCXMM
000012 A TCXMMB  000002 A TCXMMZ 000471 A TEN    000464 A THREE
000002 A TIDSP   000000 A TIDSPB 000007 A TIDSPZ 000002 A TIDWN
000017 A TIDWNB  000001 A TIDWNZ 000000 A TINET  000000 A TINETB
000020 A TINETZ  000003 A TIODN  000017 A TIODNB 000001 A TIODNZ
000003 A TIODP   000000 A TIODPB 000007 A TIODPZ 000003 A TIOSC
000007 A TIOSCB  000010 A TIOSCZ 000002 A TISEC  000007 A TISECB
000010 A TISECZ  000000 A TITU1  000000 A TITU1B 000020 A TITU1Z
000001 A TITU2   000000 A TITU2B 000020 A TITU2Z 000017 A TPFPA
000000 A TPFPAB  000020 A TPFPAZ 000015 A TPRPA  000000 A TPRPAB
000020 A TPRPAZ  000016 A TPWPA  000000 A TPWPAB 000020 A TPWPAZ
000422 A TWO     000403 A V$1MIN 000415 A V$BFC  000075 A V$BGLB
000056 A V$BIC1  000315 A V$BTB  000331 A V$BTBM 000414 A V$BVN
000334 A V$CAM   000353 A V$CKB  000411 A V$CKIT 000310 A V$CKPT
000301 A V$CPL   000076 A V$CRDM 000341 A V$CRDR 000354 A V$CRM
000302 A V$CRS   000360 A V$CTAD 000300 A V$CTL  000351 A V$CTMS
000070 A V$DATE  000355 A V$DSTB 000376 A V$ERFG 000347 A V$FGLB
000306 A V$FLRS  000350 A V$FREE 000332 A V$GFCB 000320 A V$IM
000410 A V$IOA   000412 A V$JCB  000055 A V$JCFG 000077 A V$JCTM
000050 A V$JNAM  000377 A V$JOP  000340 A V$KEY  000054 A V$LCNT
000313 A V$LER   000356 A V$LIT  000317 A V$LLUP 000317 A V$LPP
000307 A V$LRSK  000312 A V$LSAL 000345 A V$LUNT 000316 A V$LUP
000400 A V$LUT1  000401 A V$LUT2 000402 A V$LUT3 000330 A V$MAP
000333 A V$MIMG  000330 A V$MPM  000362 A V$NCTR 000316 A V$NPAG
000413 A V$OCB   000346 A V$OPCF 000311 A V$OPCL 000357 A V$PGT
000363 A V$PIMN  000074 A V$PLCT 000305 A V$PTVB 000361 A V$SCTL
000352 A V$SCV   000375 A V$SLFG 000334 A V$ST0  000335 A V$ST1
000336 A V$ST2   000337 A V$ST3  000303 A V$TB   000342 A V$TBGT
000416 A V$TFC   000314 A V$TJCP 000344 A V$TMN  000343 A V$TMS
000304 A V$UTB   000001 A VORTEX 000053 E VTPOP  000002 E VTPUSH
000040 E VTSTAK  000001 A X      000420 A ZERO
  0 ERRORS ASSEMBLY COMPLETE
```

```
1478  1         *
 159  ADAT      *
  38  ANAM      *
  90  ANAN      *
 574  APIM       584    585
 108  B           98    117    229    230    252    255    257   1487   1499
                1509   1523   1525   1526
  88  B&          82
  83  B&0         40
  80  B&1         78
  44  B&10        42
  76  B&2         74
  72  B&3         70
  68  B&4         66
  64  B&5         62
  60  B&6         58
  56  B&7         54
  52  B&8         50
  48  B&9         46
 543  B0        *
 544  B1        *
 553  B10       *
 554  B11       *
 555  B12       *
 556  B13       *
 557  B14       *
 558  B15       *
 545  B2        *
 546  B3        *
 547  B4        *
 548  B5        *
 549  B6        *
 550  B7        *
 551  B8        *
 552  B9        *
 630  BICNUM    *
 515  BM1          79
 518  BM17         67
 521  BM177        55
 524  BM1777       43
 516  BM3          75
 519  BM37         63
 522  BM377        51
 517  BM7          71
 520  BM77         59
 523  BM777        47
 486  BR0         202
 487  BR1       *
 496  BR10      *
 497  BR11      *
 498  BR12      *
 499  BR13      *
 500  BR14      *
 501  BR15       1524
 488  BR2       *
 489  BR3       *
 490  BR4       *
 491  BR5       *
```

```
 492   BR6       *
 493   BR7       *
 494   BR8       *
 495   BR9       *
 470   BS0        195   209
 471   BS1       *
 480   BS10      *
 481   BS11      *
 482   BS12      *
 483   BS13      *
 484   BS14      *
 485   BS15      *
 472   BS2       *
 473   BS3       *
 474   BS4       *
 475   BS5       *
 476   BS6       *
 477   BS7       *
 478   BS8       1493
 479   BS9       *
1470   C52CIH      12   1469   1477   1519
   0   CC$MET    1486   1487
1397   CHAFP     *
1398   CHAFPB    *
1399   CHAFPZ    *
1401   CHARP     *
1402   CHARPB    *
1403   CHARPZ    *
1405   CHCFP     *
1406   CHCFPB    *
1407   CHCFPZ    *
1409   CHCRP     *
1410   CHCRPB    *
1411   CHCRPZ    *
1413   CHRBL     *
1414   CHRBLB    *
1415   CHRBLZ    *
1518   CI01      1507
1536   CICIA     1492   1508
1537   CIOAR     1494   1500
 198   CLEARF    *
 567   CLOCK      569    570
 622   COTAD1    *
 707   CTACT     *
 708   CTACTB    *
 709   CTACTZ    *
 715   CTADN     *
 716   CTADNB    *
 717   CTADNZ    *
1488   CTB       1490
 751   CTBIC     *
 752   CTBICB    *
 753   CTBICZ    *
 723   CTDST     *
 724   CTDSTB    *
 725   CTDSTZ    *
 739   CTDVA     1490
 740   CTDVAB    *
 741   CTDVAZ    *
 755   CTFCB     *
 756   CTFCBB    *
 757   CTFCBZ    *
 763   CTFRC     *
 764   CTFRCB    *
 765   CTFRCZ    *
 767   CTFRE     *
 768   CTFREB    *
 769   CTFREZ    *
 711   CTIDB     *
 712   CTIDBB    *
 713   CTIDBZ    *
 743   CTIOA     *
 744   CTIOAB    *
 745   CTIOAZ    *
 719   CTOPM     *
 720   CTOPMB    *
 721   CTOPMZ    *
 735   CTRCN     *
 736   CTRCNB    *
 737   CTRCNZ    *
 727   CTRQB     *
 728   CTRQBB    *
 729   CTRQBZ    *
 731   CTRTR     *
 732   CTRTRB    *
 733   CTRTRZ    *
 747   CTSTA     *
 748   CTSTAB    *
 749   CTSTAZ    *
 759   CTWDS     *
 760   CTWDSB    *
 761   CTWDSZ    *
 688   DCBUFF    *
 691   DCCHR     *
 692   DCCHRB    *
```

```
693   DCCHRZ   *
689   DCCNT    *
687   DCRECL   *
187   DINTS    *
569   DISCLK    189
589   DISMP    *
584   DISPIM    188
813   DMBCA    *
814   DMBCAB   *
815   DMBCAZ   *
805   DMCWA     1498   1502
806   DMCWAB   *
807   DMCWAZ   *
785   DMFPA    *
786   DMFPAB   *
787   DMFPAZ   *
793   DMLCA    *
794   DMLCAB   *
795   DMLCAZ   *
797   DMLTA    *
798   DMLTAB   *
799   DMLTAZ   *
801   DMPTA    *
802   DMPTAB   *
803   DMPTAZ   *
781   DMRPA    *
782   DMRPAB   *
783   DMRPAZ   *
789   DMSTA    *
790   DMSTAB   *
791   DMSTAZ   *
809   DMSWA     1506   1511
810   DMSWAB   *
811   DMSWAZ   *
1489  DMT       1498   1502   1506   1511
777   DMTPA    *
778   DMTPAB   *
779   DMTPAZ   *
615   DSCTAD   *
601   DSDASS   *
600   DSDVDN   *
612   DSLCKD   *
609   DSNAME   *
608   DSNDRQ   *
613   DSOPCM   *
614   DSPSTI   *
610   DSREWD   *
606   DSUNAM   *
611   DSUNTN   *
512   EIGHT      143    167
183   EINTS    *
570   ENACLK     185
590   ENAMP    *
585   ENAPIM     184
  0   ERROR      113    193    200    207
128   FETCHA   *
509   FIVE       149    173
508   FOUR       151    175   1520
251   GETQ     *
1432  IBIBF    *
1433  IBIBFB   *
1434  IBIBFZ   *
1436  IBLAS    *
1437  IBLASB   *
1438  IBLASZ   *
1424  IBLEN    *
1425  IBLENB   *
1426  IBLENZ   *
1420  IBLNK    *
1421  IBLNKB   *
1422  IBLNKZ   *
1428  IBSTA    *
1429  IBSTAB   *
1430  IBSTAZ   *
1440  IBSTS    *
1441  IBSTSB   *
1442  IBSTSZ   *
 378  LC         379    380    381    382    383    384    385    386    387
                 388    389    390    391    392    393    394    395    396
                 397    398    399    400    401    402    403    404    405
                 406    407    408    410    411    412    413    414    415
                 416    417    418    419    420    421    422    423    424
                 426    427    428    429    434    435    436    437    438
                 439    440    447    448    449    452    457    458    459
 855  LCABN    *
 856  LCABNB   *
 857  LCABNZ   *
 859  LCASY    *
 860  LCASYB   *
 861  LCASYZ   *
 923  LCBSC    *
 924  LCBSCB   *
 925  LCBSCZ   *
 919  LCCHN    *
 920  LCCHNB   *
```

```
921  LCCHNZ   *
851  LCCRC    *
852  LCCRCB   *
853  LCCRCZ   *
895  LCCWB    *
896  LCCWBB   *
897  LCCWBZ   *
891  LCCWC    *
892  LCCWCB   *
893  LCCWCZ   *
899  LCCWD    *
900  LCCWDB   *
901  LCCWDZ   *
887  LCCWI    *
888  LCCWIB   *
889  LCCWIZ   *
903  LCCWP    *
904  LCCWPB   *
905  LCCWPZ   *
907  LCCWR    *
908  LCCWRB   *
909  LCCWRZ   *
883  LCCWS    *
884  LCCWSB   *
885  LCCWSZ   *
911  LCCWT    *
912  LCCWTB   *
913  LCCWTZ   *
835  LCIBA    *
836  LCIBAB   *
837  LCIBAZ   *
823  LCIBF    *
824  LCIBFB   *
825  LCIBFZ   *
831  LCIBL    *
832  LCIBLB   *
833  LCIBLZ   *
839  LCIC1    *
840  LCIC1B   *
841  LCIC1Z   *
843  LCIC2    *
844  LCIC2B   *
845  LCIC2Z   *
863  LCIKE    *
864  LCIKEB   *
865  LCIKEZ   *
931  LCITB    *
932  LCITBB   *
933  LCITBZ   *
353  LCJP      354   355   356   363   364   365   366   367   370
879  LCLCB    *
880  LCLCBB   *
881  LCLCBZ   *
927  LCLDB    *
928  LCLDBB   *
929  LCLDBZ   *
915  LCLTB    *
916  LCLTBB   *
917  LCLTBZ   *
875  LCOBA    *
876  LCOBAB   *
877  LCOBAZ   *
867  LCOBF    *
868  LCOBFB   *
869  LCOBFZ   *
871  LCOBL    *
872  LCOBLB   *
873  LCOBLZ   *
935  LCOKE    *
936  LCOKEB   *
937  LCOKEZ   *
847  LCRCC    *
848  LCRCCB   *
849  LCRCCZ   *
827  LCSMB    *
828  LCSMBB   *
829  LCSMBZ   *
503  LHW      *
1049 LSABN    *
1050 LSABNB   *
1051 LSABNZ   *
1057 LSASC    *
1058 LSASCB   *
1059 LSASCZ   *
1001 LSASY    *
1002 LSASYB   *
1003 LSASYZ   *
1069 LSBSC    *
1070 LSBSCB   *
1071 LSBSCZ   *
1013 LSCC1    *
1014 LSCC1B   *
1015 LSCC1Z   *
1017 LSCC2    *
1018 LSCC2B   *
```

```
1019  LSCC2Z  *
1061  LSCHN   *
1062  LSCHNB  *
1063  LSCHNZ  *
1053  LSCRC   *
1054  LSCRCB  *
1055  LSCRCZ  *
 985  LSCTA   *
 986  LSCTAB  *
 987  LSCTAZ  *
1041  LSDSF   *
1042  LSDSFB  *
1043  LSDSFZ  *
 989  LSDST   *
 990  LSDSTB  *
 991  LSDSTZ  *
1025  LSEPF   *
1026  LSEPFB  *
1027  LSEPFZ  *
1009  LSLSP   *
1010  LSLSPB  *
1011  LSLSPZ  *
 993  LSMOD   *
 994  LSMODB  *
 995  LSMODZ  *
1073  LSNTO   *
1074  LSNTOB  *
1075  LSNTOZ  *
 997  LSPAR   *
 998  LSPARB  *
 999  LSPARZ  *
1037  LSPLA   *
1038  LSPLAB  *
1039  LSPLAZ  *
 953  LSRCA   *
 954  LSRCAB  *
 955  LSRCAZ  *
 957  LSREM   *
 958  LSREMB  *
 959  LSREMZ  *
1033  LSRRS   *
1034  LSRRSB  *
1035  LSRRSZ  *
 949  LSRRT   *
 950  LSRRTB  *
 951  LSRRTZ  *
 961  LSRTO   *
 962  LSRTOB  *
 963  LSRTOZ  *
 965  LSSRS   *
 966  LSSRSB  *
 967  LSSRSZ  *
 981  LSSWS   *
 982  LSSWSB  *
 983  LSSWSZ  *
1021  LSTER   *
1022  LSTERB  *
1023  LSTERZ  *
 945  LSTHD   *
 946  LSTHDB  *
 947  LSTHDZ  *
 969  LSWCA   *
 970  LSWCAB  *
 971  LSWCAZ  *
 973  LSWEM   *
 974  LSWEMB  *
 975  LSWEMZ  *
1029  LSWRS   *
1030  LSWRSB  *
1031  LSWRSZ  *
 977  LSWTO   *
 978  LSWTOB  *
 979  LSWTOZ  *
1005  LSXMM   *
1006  LSXMMB  *
1007  LSXMMZ  *
1045  LSYNC   *
1046  LSYNCB  *
1047  LSYNCZ  *
1077  LSYNR   *
1078  LSYNRB  *
1079  LSYNRZ  *
1065  LSYNT   *
1066  LSYNTB  *
1067  LSYNTZ  *
 591  MAP     *
 588  MP        589   590   592   593   594   595
 592  MPMR0   *
 593  MPMR1   *
 594  MPMR2   *
 595  MPMR3   *
 468  MT        469   470   471   472   473   474   475   476   477
                478   479   480   481   482   483   484   485   486
                487   488   489   490   491   492   493   494   495
                496   497   498   499   500   501   502   503   504
```

		505	506	507	508	509	510	511	512	513
		514	515	516	517	518	519	520	521	522
		523	524							
502	NEG	*								
513	NINE	141	165							
505	ONE	157	181							
0	P	27	29	30	36	39	41	45	49	53
		57	61	65	69	73	77	81	84	85
		85	86	87	91	98	98	93	94	97
		99	100	101	101	102	103	104	105	106
		107	107	109	109	112	114	115	115	116
		118	118	119	120	121	123	124	125	125
		129	129	130	131	132	132	133	136	137
		138	140	142	144	146	148	150	152	154
		156	160	161	162	164	166	168	170	172
		174	176	178	180	192	194	194	195	196
		196	199	201	201	202	203	203	206	208
		208	209							
1329	PCBSL	*								
1330	PCBSLB	*								
1331	PCBSLZ	*								
1317	PCCLN	*								
1318	PCCLNB	*								
1319	PCCLNZ	*								
1341	PCCTP	*								
1342	PCCTPB	*								
1343	PCCTPZ	*								
1321	PCECH	*								
1322	PCECHB	*								
1323	PCECHZ	*								
1313	PCLLN	*								
1314	PCLLNB	*								
1315	PCLLNZ	*								
1349	PCNTD	*								
1350	PCNTDB	*								
1351	PCNTDZ	*								
1337	PCPCH	*								
1338	PCPCHB	*								
1339	PCPCHZ	*								
1333	PCSWL	*								
1334	PCSWLB	*								
1335	PCSWLZ	*								
1345	PCTYP	*								
1346	PCTYPB	*								
1347	PCTYPZ	*								
1325	PCXMM	*								
1326	PCXMMB	*								
1327	PCXMMZ	*								
575	PIM1	*								
576	PIM2	*								
577	PIM3	*								
578	PIM4	*								
579	PIM5	*								
580	PIM6	*								
581	PIM7	*								
582	PIM8	*								
699	POST	*								
1287	PSABN	*								
1288	PSABNB	*								
1289	PSABNZ	*								
1239	PSASY	*								
1240	PSASYB	*								
1241	PSASYZ	*								
670	PSBADT	*								
666	PSBEG	*								
1299	PSBSC	*								
1300	PSBSCB	*								
1301	PSBSCZ	*								
1251	PSCC1	*								
1252	PSCC1B	*								
1253	PSCC1Z	*								
1255	PSCC2	*								
1256	PSCC2B	*								
1257	PSCC2Z	*								
1291	PSCRC	*								
1292	PSCRCB	*								
1293	PSCRCZ	*								
1271	PSDEF	*								
1272	PSDEFB	*								
1273	PSDEFZ	*								
1279	PSDSF	*								
1280	PSDSFB	*								
1281	PSDSFZ	*								
1267	PSDWN	*								
1268	PSDWNB	*								
1269	PSDWNZ	*								
672	PSEND	*								
1263	PSEPF	*								
1264	PSEPFB	*								
1265	PSEPFZ	*								
1247	PSLSP	*								
1248	PSLSPB	*								
1249	PSLSPZ	*								
1231	PSMOD	*								
1232	PSMODB	*								

```
1233  PSMODZ  *
 671  PSNSEC  *
1235  PSPAR   *
1236  PSPARB  *
1237  PSPARZ  *
1275  PSPLA   *
1276  PSPLAB  *
1277  PSPLAZ  *
 667  PSPROT  *
1259  PSTER   *
1260  PSTERB  *
1261  PSTERZ  *
1243  PSXMM   *
1244  PSXMMB  *
1245  PSXMMZ  *
1283  PSYNC   *
1284  PSYNCB  *
1285  PSYNCZ  *
1303  PSYNR   *
1304  PSYNRB  *
1305  PSYNRZ  *
1295  PSYNT   *
1296  PSYNTB  *
1297  PSYNTZ  *
  32  PUSH    *
 228  PUTQ    *
 532  RA0     *
 533  RA1     *
 651  RADNR   *
 534  RB0     *
 535  RB1     *
 649  RFCB    *
 504  RHW     *
 645  RDPWD   *
 642  RSTPR   *
 650  RTIDB   *
  96  SETA    *
 111  SETB    *
 191  SETF    *
 511  SEVEN     145    169
 510  SIX       147    171
  26  SPACE   *
 135  SUBAT   *
 288  TBATSK  *
 287  TBCPTH  *
 274  TBENTY  *
 268  TBEVNT  *
 282  TBID    *
 277  TBISA   *
 278  TBISB   *
 280  TBISP   *
 281  TBISRS  *
 294  TBIST   *
 279  TBISX   *
 292  TBKEY   *
 283  TBKN1   *
 284  TBKN2   *
 285  TBKN3   *
 293  TBMIMG  *
 291  TBMUCL  *
 267  TBPL    *
 269  TBRSA   *
 270  TBRSB   *
 289  TBRSF   *
 272  TBRSP   *
 271  TBRSTS  *
 322  TBS0    *
 321  TBS1    *
 309  TBS10   *
 308  TBS11   *
 306  TBS12   *
 305  TBS13   *
 304  TBS14   *
 302  TBS15   *
 320  TBS2    *
 318  TBS3    *
 317  TBS4    *
 316  TBS5    *
 314  TBS6    *
 313  TBS7    *
 312  TBS8    *
 310  TBS9    *
 290  TBSIZ   *
 266  TBSY    *
 286  TBTLC   *
 276  TBTMIN  *
 275  TBTMS   *
 265  TBTRD   *
1115  TCBSL   *
1116  TCBSLB  *
1117  TCBSLZ  *
1099  TCCLN   *
1100  TCCLNB  *
1101  TCCLNZ  *
```

```
1127   TCCON    *
1128   TCCONB   *
1129   TCCONZ   *
1095   TCCTA    *
1096   TCCTAB   *
1097   TCCTAZ   *
1151   TCCTP    *
1152   TCCTPB   *
1153   TCCTPZ   *
1187   TCDCC    *
1188   TCDCCB   *
1189   TCDCCZ   *
1195   TCDTO    *
1196   TCDTOB   *
1197   TCDTOZ   *
1123   TCECH    *
1124   TCECHB   *
1125   TCECHZ   *
1199   TCID1    *
1200   TCID1B   *
1201   TCID1Z   *
1203   TCID2    *
1204   TCID2B   *
1205   TCID2Z   *
1171   TCLDF    *
1172   TCLDFB   *
1173   TCLDFZ   *
1103   TCLLN    *
1104   TCLLNB   *
1105   TCLLNZ   *
1143   TCNOD    *
1144   TCNODB   *
1145   TCNODZ   *
1139   TCNTD    *
1140   TCNTDB   *
1141   TCNTDZ   *
1107   TCPCH    *
1108   TCPCHB   *
1109   TCPCHZ   *
1135   TCRBC    *
1136   TCRBCB   *
1137   TCRBCZ   *
1191   TCRBF    *
1192   TCRBFB   *
1193   TCRBFZ   *
1175   TCRCA    *
1176   TCRCAB   *
1177   TCRCAZ   *
1155   TCRMD    *
1156   TCRMDB   *
1157   TCRMDZ   *
1091   TCRQH    *
1092   TCRQHB   *
1093   TCRQHZ   *
1163   TCRRS    *
1164   TCRRSB   *
1165   TCRRSZ   *
1179   TCSTO    *
1180   TCSTOB   *
1181   TCSTOZ   *
1111   TCSWL    *
1112   TCSWLB   *
1113   TCSWLZ   *
1087   TCTCD    *
1088   TCTCDB   *
1089   TCTCDZ   *
1147   TCTYP    *
1148   TCTYPB   *
1149   TCTYPZ   *
1131   TCWBC    *
1132   TCWBCB   *
1133   TCWBCZ   *
1183   TCWCA    *
1184   TCWCAB   *
1185   TCWCAZ   *
1159   TCWMD    *
1160   TCWMDB   *
1161   TCWMDZ   *
1167   TCWRS    *
1168   TCWRSB   *
1169   TCWRSZ   *
1119   TCXMN    *
1120   TCXMNB   *
1121   TCXMNZ   *
 514   TLH        139    163
 205   TESTF    *
 507   THREE      153    177
1375   TIDSP    *
1376   TIDSPB   *
1377   TIDSPZ   *
1367   TIDWN    *
1368   TIDWNB   *
1369   TIDWNZ   *
1391   TINET    *
1392   TINETB   *
```

```
1393  TINETZ  *
1379  TIODN   *
1380  TIODNB  *
1381  TIODNZ  *
1387  TIODP   *
1388  TIODPB  *
1389  TIODPZ  *
1383  TIOSC   *
1384  TIOSCB  *
1385  TIOSCZ  *
1371  TISEC   *
1372  TISECB  *
1373  TISECZ  *
1359  TITU1   *
1360  TITU1B  *
1361  TITU1Z  *
1363  TITU2   *
1364  TITU2B  *
1365  TITU2Z  *
1221  TPFPA   *
1222  TPFPAB  *
1223  TPFPAZ  *
1213  TPRPA   *
1214  TPRPAB  *
1215  TPRPAZ  *
1217  TPWPA   *
1218  TPWPAB  *
1219  TPWPAZ  *
 506  TWO      155   179
 440  V$1MIN  *
 458  V$BFC   *
 366  V$BGLB  *
 363  V$BIC1  *
 392  V$BTB   *
 400  V$BTBM  *
 457  V$BVN   *
 408  V$CAM   *
 420  V$CKB   *
 448  V$CKIT  *
 387  V$CKPT  *
 380  V$CPL   *
 367  V$CRDM  *
 410  V$CRDP  *
 421  V$CRM   *
 381  V$CRS   *
 426  V$CTAD  *
 379  V$CTL   *
 418  V$CTMS  *
 364  V$DATE  *
   0  V$DRTN  1481  1531
 422  V$DSIB  *
 435  V$EPFG  *
 416  V$FGLB  *
 385  V$FLPS  *
 417  V$FREE  *
 401  V$GFCB  *
 397  V$IM    *
 447  V$IOA   *
 449  V$JCPS  *
 356  V$JCPG  *
 370  V$JCTM  *
 354  V$JHAM  *
 436  V$JOF   *
 407  V$KEY   *
 355  V$LCNT  *
 390  V$LEI   *
 423  V$LIT   *
 395  V$LLOP  *
 396  V$LPP   *
 386  V$LRTK  *
 389  V$LSAL  *
 414  V$LUNT  *
 394  V$LUP   *
 437  V$LUT1  *
 438  V$LUT2  *
 439  V$LUT3  *
 399  V$MAP   *
 402  V$MIMG  *
 398  V$MPH   *
 428  V$NETR  *
 393  V$NFMG  *
 452  V$OCB   *
 415  V$OUPUF *
 388  V$OUTL  *
 424  V$PGT   *
 429  V$PIMP  *
 400  V$PLT   *
 384  V$PTVB  *
 427  V$SCTL  *
 419  V$SCV   *
 434  V$SLFG  *
 403  V$ST0   *
 404  V$ST1   *
 405  V$ST2   *
 406  V$ST3   *
```

```
382   V$TB      *
411   V$TBGT    *
459   V$TFC     *
391   V$TJCP    *
413   V$TMN     *
412   V$TMS     *
383   V$UTB     *
  1   VORTEX   1472   1479   1515   1530
  0   VTPOP    1527   1528
  0   VTPUSH     33     35   1474   1475
  0   VTSTAK   1517   1518
697   X         232    254   1488   1489   1522
469   ZERO      *
```