```
000.000                 1  H84IO   EQU     0                       ASSEMBLE FOR 8250 INTERFACE
                        3  ***     DBDVD   -  DIABLO DEVICE DRIVER
                        4  *
                        5  *       G. C.,                                  /79.07.17/
                        6  *
                        7  *       COPYRIGHT JULY 17, 1979 FOR:
                        8  *
                        9  *               HEATH CO.
                       10  *               BENTON HARBOR, MI
                       11  *               49022
                       12  *
                       13  *
                       14  *       Copyright November 1979                 /79.11.sc/
                       15  *


                       17  **      DBDVD IS THE DEVICE DRIVER FOR DEVICE
                       18  *
                       19  *               DB:
                       20  *
                       21  *       DB: IS A DIABLO PRINTER INTERFACED VIA AN H88-3, H-8-4
                       22  *


000.000                24          XTEXT   FILDEF


                       26X **      FILDEF - FILE TYPE DEFINITIONS.
                       27X *
                       28X *       DB      377Q,FT.XXX
                       29X
                       30X
000.000                31X FT.ABS  EQU     0               ABSOLUTE BINARY
000.001                32X FT.PIC  EQU     1               POSITION INDEPENDANT CODE
000.002                33X FT.REL  EQU     2               RELOCATABLE CODE
000.003                34X FT.BAC  EQU     3               COMPILED BASIC CODE
000.000                35          XTEXT   PICDEF


                       37X **      PIC FORMAT EQUIVALENCES.
                       38X
000.000                39X         ORG     0
                       40X
000.000                41X PIC.ID  DS      1               377Q = BINARY FILE FLAG
000.001                42X         DS      1               FILE TYPE (FT.PIC)
000.002                43X PIC.LEN DS      2               LENGTH OF ENTIRE RECORD
000.004                44X PIC.PTR DS      2               INDEX OF START OF PIC TABLE
                       45X
000.006                46X PIC.COD DS      0               CODE STARTS HERE
```

```
000.006                 47          XTEXT   DIRDEF

                        49X **      DIRECTORY ENTRY FORMAT.
                        50X
000.000                 51X         ORG     0
                        52X
                        53X
000.377                 54X DF.EMP  EQU     377Q        FLAGS ENTRY EMPTY
000.376                 55X DF.CLR  EQU     376Q        FLAGS ENTRY EMPTY, REST OF DIR ALSO CLEAR
                        56X
000.000                 57X DIR.NAM DS      8           NAME
000.010                 58X DIR.EXT DS      3           EXTENSION
000.013                 59X DIR.PRO DS      1           PROJECT
000.014                 60X DIR.VER DS      1           VERSION
000.015                 61X DIRIDL  EQU     *           FILE IDENTIFICATION LENGTH
                        62X
000.015                 63X DIR.CLU DS      1           CLUSTER FACTOR
000.016                 64X DIR.FLG DS      1           FLAGS
000.017                 65X         DS      1           RESERVED
000.020                 66X DIR.FGN DS      1           FIRST GROUP NUMBER
000.021                 67X DIR.LGN DS      1           LAST GROUP NUMBER
000.022                 68X DIR.LSI DS      1           LAST SECTOR INDEX (IN LAST GROUP)
000.023                 69X DIR.CRD DS      2           CREATION DATE
000.025                 70X DIR.ALD DS      2           LAST ALTERATION DATE
                        71X
000.027                 72X DIRELEN EQU     *           DIRECTORY ENTRY LENGTH
000.027                 73          XTEXT   HOSEQU

                        75X **      HDOS SYSTEM EQUIVALENCES.
                        76X *
                        77X
024.000                 78X S.GRT0  EQU     24000A      SYSTEM AREA FOR  GRT0
025.000                 79X S.GRT1  EQU     25000A      SYSTEM AREA FOR  GRT1
026.000                 80X S.GRT2  EQU     26000A      SYSTEM AREA FOR  GRT2
                        81X
030.000                 82X ROMBOOT EQU     30000A      ROM BOOT ENTRY
                        83X
040.100                 84X         ORG     40100A      FREE SPACE FROM PAM-8
                        85X
040.100                 86X         DS      8           JUMP TO SYSTEM EXIT
040.110                 87X D.CON   DS      16          DISK CONSTANTS
040.130                 88X SYDD    EQU     *           SYSTEM DISK ENTRY POINT
040.130                 89X D.VEC   DS      24*3        SYSTEM ROM ENTRY VECTORS
040.240                 90X D.RAM   DS      31          SYSTEM ROM WORK AREA
040.277                 91X S.VAL   DS      34          SYSTEM VALUES
040.343                 92X S.INT   DS      115         SYSTEM INTERNAL WORK AREAS
041.126                 93X         DS      16
041.146                 94X S.SOVR  DS      2           STACK OVERFLOW WARNING
041.150                 95X         DS      42200A-*    SYSTEM STACK
001.032                 96X STACKL  EQU     *-S.SOVR    STACK SIZE
                        97X
```

```
042.200                98X STACK   EQU     *               LWA+1 SYSTEM STACK
042.200                99X USERFWA EQU     *               USER FWA
042.200               100          XTEXT   ESINT


                      102X **       S.INT - SYSTEM INTERNAL WORKAREA DEFINITIONS.
                      103X *
                      104X *        THESE CELLS ARE REFERENCED BY OVERLAYS AND MAIN CODE, AND
                      105X *        MUST THEREFORE RESIDE IN FIXED LOW MEMORY.
                      106X
                      107X
040.343               108X          ORG     S.INT
                      109X
                      110X **       CONSOLE STATUS FLAGS
                      111X
040.343               112X S.CDB    DS      1               CONSOLE DESCRIPTOR BYTE
000.000               113X CDB.H85  EQU     00000000B
000.001               114X CDB.H84  EQU     00000001B       =0 IF H8-5, =1 IF H8-4
040.344               115X S.BAUD   DS      2               [0-14]  H8-4 BAUD RATE, =0 IF H8-5
                      116X *                                [15]    =1 IF BAUD RATE => 2 STOP BITS
                      117X
                      118X **       TABLE ADDRESS WORDS
                      119X
040.346               120X S.DLINK  DS      2               ADDRESS OF DATA IN HDOS CODE
040.350               121X S.OFWA   DS      2               FWA  OVERLAY  TABLE
040.352               122X S.CFWA   DS      2               FWA  CHANNEL  TABLE
040.354               123X S.DFWA   DS      2               FWA  DEVICE   TABLE
040.356               124X S.RFWA   DS      2               FWA  RESIDENT HDOS CODE
                      125X
                      126X **       DEVICE DRIVER DELAYED LOAD FLAGS
                      127X
040.360               128X S.DDLDA  DS      2               DRIVER LOAD ADDRESS (HIGH BYTE=0 IF NO LOAD PENDING)
040.362               129X S.DDLEN  DS      2               CODE LENGTH IN BYTES
040.364               130X S.DDGRP  DS      1               GROUP NUMBER FOR DRIVER
040.365               131X          DS      1               HOLD PLACE
                      132X *S.DDSEC         DS      2               SECTOR NUMBER FOR DRIVER ( * OBSOLETE ! * )
040.366               133X S.DDDTA  DS      2               DEVICE'S ADDRESS IN DEVLST +DEV.RES
040.370               134X S.DDOPC  DS      1               OPEN OPCODE PENDEDING
                      135X
                      136X **       OVERLAY MANAGEMENT FLAGS
                      137X
000.001               138X OVL.IN   EQU     00000001B       IN MEMORY
000.002               139X OVL.RES  EQU     00000010B       PERMINANTLY RESIDENT
000.014               140X OVL.NUM  EQU     00001100B       OVERLAY NUMBER MASK
000.200               141X OVL.UCS  EQU     10000000B       USER CODE SWAPPED FOR OVERLAY
                      142X
040.371               143X S.OVLFL  DS      1               OVERLAY FLAG
040.372               144X S.UCSF   DS      2               FWA SWAPPED USER CODE
040.374               145X S.UCSL   DS      2               LENGTH SWAPPED USER CODE
040.376               146X S.OVLS   DS      2               SIZE OF OVERLAY CODE
041.000               147X S.OVLE   DS      2               ENTRY POINT OF OVERLAY CODE
                      148X
041.002               149X S.SSN    DS      2               SWAP AREA SECTOR NUMBER
041.004               150X S.OSN    DS      2               OVERLAY SECTOR NUMBER
```

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                    151X
                    152X *      SYSCALL PROCESSING WORK AREAS
                    153X
041.006             154X S.CACC DS      1           (ACC) UPON SYSCALL
041.007             155X S.CODE DS      1           SYSCALL INDEX IN PROGRESS
                    156X
                    157X *      JUMPS TO ROUTINES IN RESIDENT HDOS CODE
                    158X
041.010             159X S.JUMPS DS     0           START OF DUMP VECTORS
041.010             160X S.SDD  DS      3           JUMP TO STAND-IN DEVICE DRIVER
041.013             161X S.FASER DS     3           JUMP TO FATSERR (FATAL SYSTEM ERROR)
041.016             162X S.DIREA DS     3           JUMP TO DIREAD (DISK FILE READ)
041.021             163X S.FCI  DS      3           JUMP TO FCI (FETCH CHANNEL INFO)
041.024             164X S.SCI  DS      3           JUMP TO SCI (STORE CHANNEL INFO)
041.027             165X S.GUP  DS      3           JUMP TO GUP (GET UNIT POINTER)
                    166X
041.032             167X S.MOUNT DS     1           <>0 IF THE SYSTEM DISK IS MOUNTED
041.033             168X S.DCS  DS      1           DEFAULT CLUSTER SIZE-1
                    169X
041.034             170X S.BOOTF DS     1           BOOT FLAGS
000.001             171X BOOT.F EQU     00000001B   EXECUTE PROLOGUE UPON BOOTUP
                    172X
                    173X *      STACK VALUE SAVED FOR OVERLAY SYSCALLS
                    174X
041.035             175X S.OVSTK DS     2           VALUE OF SP UPON SYSCALLS USING OVERLAY
                    176X
041.037             177X        DS      1           RESERVED


                    179X **     ACTIVE I/O AREA.
                    180X *
                    181X *      THE AIO.XXX AREA CONTAINS INFORMATION ABOUT THE I/O OPERATION
                    182X *      CURRENTLY BEING PERFORMED.  THE INFORMATION IS OBTAINED FROM
                    183X *      THE CHANNEL TABLE, AND WILL BE RESTORED THERE WHEN DONE.
                    184X *
                    185X *      NORMALLY, THE AIO.XXX INFORMATION WOULD BE OBTAINED DIRECTLY
                    186X *      FROM VARIOUS SYSTEM TABLES VIA POINTER REGISTERS.  SINCE THE
                    187X *      8080 HAS NO GOOD INDEXED ADDRESSING, THE DATA IS MANUALLY
                    188X *      COPIED INTO THE AIO.XXX CELLS BEFORE PROCESSING, AND
                    189X *      BACKDATED AFTER PROCESSING.
                    190X
041.040             191X AIO.VEC DS     3           JUMP INSTRUCTION
041.041             192X AIO.DDA EQU    *-2         DEVICE DRIVER ADDRESS
041.043             193X AIO.FLG DS     1           FLAG BYTE
041.044             194X AIO.GRT DS     2           ADDRESS OF GROUP RESERV TABLE
041.046             195X AIO.SPG DS     1           SECTORS PER GROUP
041.047             196X AIO.CGN DS     1           CURRENT GROUP NUMBER
041.050             197X AIO.CSI DS     1           CURRENT SECTOR INDEX
041.051             198X AIO.LGN DS     1           LAST GROUP NUMBER
041.052             199X AIO.LSI DS     1           LAST SECTOR INDEX
041.053             200X AIO.DTA DS     2           DEVICE TABLE ADDRESS
041.055             201X AIO.DES DS     2           DIRECTORY SECTOR
041.057             202X AIO.DEV DS     2           DEVICE CODE
041.061             203X AIO.UNI DS     1           UNIT NUMBER (0-9)
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                        204X
041.062                 205X AIO.DIR DS      DIRELEN        DIRECTORY ENTRY
                        206X
041.111                 207X AIO.CNT DS      1              SECTOR COUNT
041.112                 208X AIO.EOM DS      1              END OF MEDIA FLAG
041.113                 209X AIO.EOF DS      1              END OF FILE FLAG
041.114                 210X AIO.TFP DS      2              TEMP FILE POINTERS
041.116                 211X AIO.CHA DS      2              ADDRESS OF CHANNEL BLOCK (IOC.DDA)


041.120                 213X S.BDA   DS      1              Boot Device Address (Setup by ROM) /80.09.sc/
041.121                 214X S.SCR   DS      2              SYSTEM SCRATCH AREA ADDRESS
041.123                 215          XTEXT   ESVAL


                        217X **      S.VAL - SYSTEM VALUE DEFINTIONS,
                        218X *
                        219X *       THESE VALUES ARE SET AND MAINTAINED BY THE SYSTEM.
                        220X *
                        221X *       THE DECK HDSEQU MUST BE MODIFIED WHEN THIS IS MODIFIED.
                        222X
                        223X
040.277                 224X         ORG     S.VAL
                        225X
040.277                 226X S.DATE  DS      9              SYSTEM DATE (IN ASCII)
040.310                 227X S.DATC  DS      2              CODED DATE
040.312                 228X S.TIME  DS      4              TIME FROM MIDNIGHT (IN TICS)
040.316                 229X S.HIMEM DS      2              HARDWARE HIGH MEMORY ADRESS+1
                        230X
040.320                 231X S.SYSM  DS      2              FWA RESIDENT SYSTEM
                        232X
040.322                 233X S.USRM  DS      2              LWA USER MEMORY
                        234X
040.324                 235X S.OMAX  DS      2              MAX OVERLAY SIZE FOR SYSTEM
                        236X
                        237X
                        238X **      THE FOLLOWING FIVE CELLS SHOULD BE MODIFIED/READ ONLY VIA THE .CONSL SYSCALL
                        239X
000.200                 240X CSL.ECH EQU     10000000B      SUPPRESS ECHO
000.004                 241X CSL.RAW EQU     00000100B      Raw Mode I/O                    /80.09.sc/
000.002                 242X CSL.WRP EQU     00000010B      WRAP LINES AT WIDTH
000.001                 243X CSL.CHR EQU     00000001B      OPERATE IN CHARACTER MODE
                        244X
000.000                 245X I.CSLMD EQU     0              S.CSLMD IS FIRST BYTE
040.326                 246X S.CSLMD DS      1              CONSOLE MODE
                        247X
000.200                 248X CTP.BKS EQU     10000000B      TERMINAL PROCESSES BACKSPACES
000.100                 249X CTP.FF  EQU     01000000B      Terminal Processes Form-Feed    /80.09.sc/
000.040                 250X CTP.MLI EQU     00100000B      MAP LOWER CASE TO UPPER ON INPUT
000.020                 251X CTP.MLO EQU     00010000B      MAP LOWER CASE TO UPPER ON OUTPUT
000.010                 252X CTP.2SB EQU     00001000B      TERMINAL NEEDS TWO STOP BITS
000.002                 253X CTP.BKM EQU     00000010B      MAP BKSP (UPON INPUT) TO RUBOUT
```

```
000.001                 254X CTP.TAB EQU     00000001B       TERMINAL SUPPORTS TAB CHARACTERS
                        255X
000.001                 256X I.CONTY EQU     1               S.CONTY IS 2ND BYTE
000,000                 257X         ERRNZ   *-S.CSLMD-I.CONTY
040.327                 258X S.CONTY DS      1               CONSOLE TYPE FLAGS
000,002                 259X I.CUSOR EQU     2               S.CUSOR IS 3RD BYTE
000.000                 260X         ERRNZ   *-S.CSLMD-I.CUSOR
040,330                 261X S.CUSOR DS      1               CURRENT CURSOR POSITION
000.003                 262X I.CONWI EQU     3               S.CONWI IS 4TH BYTE
000.000                 263X         ERRNZ   *-S.CSLMD-I.CONWI
040.331                 264X S.CONWI DS      1               CONSOLE WIDTH
                        265X
000.001                 266X CO.FLG  EQU     00000001B       CTL-O FLAG
000.200                 267X CS.FLG  EQU     10000000B       CTL-S FLAG
                        268X
000.004                 269X I.CONFL EQU     4               S.CONFL IS 5TH BYTE
000.000                 270X         ERRNZ   *-S.CSLMD-I.CONFL
040.332                 271X S.CONFL DS      1               CONSOLE FLAGS
                        272X
040.333                 273X S.CAADR DS      2               ADDRESS FOR ABORT PROCESSING (>256 IF VALID)
040.335                 274X S.CCTAB DS      6               ADDR FOR CTL-A, CTL-B, CTL-C PROCESSING
                        275
040.343                 276          XTEXT   ASCII

                        278X **      ASCII CHARACTER EQUIVALENCES.
                        279X
000.015                 280X CR      EQU     13              CARRIAGE RETURN
000.012                 281X LF      EQU     10              LINE FEED
000.200                 282X NULL    EQU     200Q            PAD CHARACTER
000.000                 283X NUL2    EQU     0
000.007                 284X BELL    EQU     7               BELL CHARACTER
000.177                 285X RUBOUT  EQU     177Q
000.010                 286X BKSP    EQU     10Q             CTL-H
000.026                 287X C.SYN   EQU     26Q             SYNC
000.002                 288X C.STX   EQU     2               STX
000.047                 289X QUOTE   EQU     47Q
000.011                 290X TAB     EQU     11Q
000.033                 291X ESC     EQU     33Q
000.012                 292X NL      EQU     12Q             NEW LINE (HDOS SYSTEMS)
000.212                 293X ENL     EQU     NL+200Q         NL + END-OF-LINE-FLAG
000.014                 294X FF      EQU     14Q             FORM FEED
000.001                 295X CTLA    EQU     01Q             CTL-A
000.002                 296X CTLB    EQU     02Q             CTL-B
000.003                 297X CTLC    EQU     03Q             CTL-C
000.004                 298X CTLD    EQU     04Q             CTL-D
000.017                 299X CTLO    EQU     17Q             CTL-O
000.020                 300X CTLP    EQU     20Q             CTL-P
000.021                 301X CTLQ    EQU     21Q             CTL-Q
000.023                 302X CTLS    EQU     23Q             CTL-S
000.032                 303X CTLZ    EQU     32Q             CTL-Z
040.343                 304          XTEXT   DDDEF
```

```
                        306X **     DEVICE DRIVER COMMUNICATION FLAGS.
                        307X *
                        308X
000.000                 309X        ORG     0
                        310X
000.000                 311X DC.REA DS      1           READ
000.001                 312X DC.WRI DS      1           WRITE
000.002                 313X DC.RER DS      1           READ REGARDLESS
000.003                 314X DC.OPR DS      1           OPEN FOR READ
000.004                 315X DC.OPW DS      1           OPEN FOR WRITE
000.005                 316X DC.OPU DS      1           OPEN FOR UPDATE
000.006                 317X DC.CLO DS      1           CLOSE
000.007                 318X DC.ABT DS      1           ABORT
000.010                 319X DC.MOU DS      1           MOUNT DEVICE
000.011                 320X DC.LOD DS      1           LOAD DEVICE DRIVER
000.012                 321X DC.RDY DS      1           Device Ready                /80.04.GC/
000.013                 322X DC.MAX DS      1           MAXIMUM ENTRY INDEX
000.014                 323         XTEXT   DEVDEF


                        325X **     DEVICE TABLE ENTRYS.
                        326X
000.000                 327X        ORG     0
                        328X
000.000                 329X DEV.NAM DS     2           DEVICE NAME
000.000                 330X DV.EL  EQU     00000000B   END OF DEVICE LIST FLAG
000.001                 331X DV.NU  EQU     00000001B   DEVICE ENTRY NOT IN USE
                        332X
000.002                 333X DEV.RES DS     1           DRIVER RESIDENSE CODE
000.001                 334X DR.IM  EQU     00000001B   DRIVER IN MEMORY
000.002                 335X DR.PR  EQU     00000010B   DRIVER PERMINANTLY RESIDENT
                        336X
000.003                 337X DEV.JMP DS     1           JMP TO PROCESSOR
000.004                 338X DEV.DDA DS     2           DRIVER ADDRESS
000.006                 339X DEV.FLG DS     1           FLAG BYTE
000.001                 340X DT.DD  EQU     00000001B   DIRECTORY DEVICE
000.002                 341X DT.CR  EQU     00000010B   CAPABLE OF READ OPERATION
000.004                 342X DT.CW  EQU     00000100B   CAPABLE OF WRITE OPERATION
000.010                 343X DT.RN  EQU     00001000B   Capable of random access    /80.02.sc/
000.020                 344X DT.CH  EQU     00010000B   Capable of Character mode   /80.02.sc/
                        345X
000.007                 346X DEV.MUM DS     1           MOUNTED UNIT MASK
000.010                 347X DEV.MNU DS     1           MAXIMUM NUMBER OF UNITS
000.011                 348X DEV.UNT DS     2           ADDRESS OF UNIT SPECIFIC DATA TABLE
                        349X
000.013                 350X DEV.DVL DS     2           DRIVER BYTE LENGTH
000.015                 351X DEV.DVG DS     1           DRIVER ROUTINE GROUP ADDRESS
                        352X
000.016                 353X DEVELEN EQU    *           DEVICE TABLE ENTRY LENGTH
```

```
                        355X **     UNIT SPECIFIC DEVICE DATA TABLE ENTRIES
                        356X
000.000                 357X        ORG     0
                        358X
000.000                 359X UNT.FLG DS     1           UNIT SPECIFIC  *DEV.FLG*
000.001                 360X UNT.SPG DS     1           Sectors Per Group              /80.04.GC/
000.002                 361X UNT.GRT DS     2           ADDRESS OF GROUP RESERVATION TABLE (IF DT.DD)
000.004                 362X UNT.GTS DS     2           GRT SECTOR NUMBER
000.006                 363X UNT.DIS DS     2           DIRECTORY FIRST SECTOR NUMBER
                        364X
000.010                 365X UNT.SIZ EQU    *           SIZE OF UNIT SPECIFIC DATA TABLE PER UNIT
000.010                 366          XTEXT  DVDDEF


                        368X **     DEVICE DRIVER EQUIVALENCES.
                        369X
000.307                 370X DVDFLV  EQU    307Q        DEVICE DRIVER FLAG VALUE
                        371X
000.006                 372X         ORG    PIC.COD     STARTS AT PIC CODE AREA
                        373X
000.006                 374X DVD.DVD DS     1           MUST BE DVDFLV, FLAGS TO HDOS AS DRIVER
000.007                 375X DVD.CAP DS     1           DEVICE CAPABILITY FLAG
000.010                 376X DVD.MUM DS     1           MOUNTED UNIT MASK
000.011                 377X DVD.MNU DS     1           MAXIMUM NUMBER OF UNITS
000.012                 378X DVD.UFL DS     8           UNIT SUB-CAPABILITY FLAGS FOR UNITS 0-7
000.022                 379X DVD.SET DS     1           = DVDFLV IFF DRIVER WILL TAKE SET OPTIONS
000.023                 380X DVD.INP DS     2           Pointer to Init Code           /80.07.sc/
000.025                 381X         DS     22          RESERVED, MUST BE 0            /80.07.sc/
000.053                 382X DVD.STE EQU    *           ENTRY FOR 'SET' INVOCATION
                        383X
002.000                 384X DVD.ENT EQU    2000A       DRIVER ENTRY POINT (MUST BE MULT OF 256)
000.053                 385          XTEXT  ECDEF


                        387X **     ERROR CODE DEFINITIONS.
                        388X
000.000                 389X         ORG    0
000.000                 390X         DS     1           NO ERROR #0
000.001                 391X EC.EOF  DS     1           END OF FILE
000.002                 392X EC.EOM  DS     1           END OF MEDIA
000.003                 393X EC.ILC  DS     1           ILLEGAL SYSCALL CODE
000.004                 394X EC.CNA  DS     1           CHANNEL NOT AVAILABLE
000.005                 395X EC.DNS  DS     1           DEVICE NOT SUITABLE
000.006                 396X EC.IDN  DS     1           ILLEGAL DEVICE NAME
000.007                 397X EC.IFN  DS     1           ILLEGAL FILE NAME
000.010                 398X EC.NRD  DS     1           NO ROOM FOR DEVICE DRIVER
000.011                 399X EC.FNO  DS     1           CHANNEL NOT OPEN
000.012                 400X EC.ILR  DS     1           ILLEGAL REQUEST
000.013                 401X EC.FUC  DS     1           FILE USAGE CONFLICT
000.014                 402X EC.FNF  DS     1           FILE NAME NOT FOUND
000.015                 403X EC.UND  DS     1           UNKNOWN DEVICE
000.016                 404X EC.ICN  DS     1           ILLEGAL CHANNEL NUMBER
000.017                 405X EC.DIF  DS     1           DIRECTORY FULL
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000.020                406X EC.IFC  DS      1               ILLEGAL FILE CONTENTS
000.021                407X EC.NEM  DS      1               NOT ENOUGH MEMORY
000.022                408X EC.RF   DS      1               READ FAILURE
000.023                409X EC.WF   DS      1               WRITE FAILURE
000.024                410X EC.WPV  DS      1               WRITE PROTECTION VIOLATION
000.025                411X EC.WP   DS      1               DISK WRITE PROTECTED
000.026                412X EC.FAP  DS      1               FILE ALREADY PRESENT
000.027                413X EC.DDA  DS      1               DEVICE DRIVER ABORT
000.030                414X EC.FL   DS      1               FILE LOCKED
000.031                415X EC.FAO  DS      1               FILE ALREADY OPEN
000.032                416X EC.IS   DS      1               ILLEGAL SWITCH
000.033                417X EC.UUN  DS      1               UNKNOWN UNIT NUMBER
000.034                418X EC.FNR  DS      1               FILE NAME REQUIRED
000.035                419X EC.DIW  DS      1               DEVICE IS NOT WRITABLE (OR WRITE LOCKED)
000.036                420X EC.UNA  DS      1               UNIT NOT AVAILABLE
000.037                421X EC.ILV  DS      1               ILLEGAL VALUE
000.040                422X EC.ILO  DS      1               ILLEGAL OPTION
000.041                423X EC.VPM  DS      1               VOLUME PRESENTLY MOUNTED ON DEVICE
000.042                424X EC.NVM  DS      1               NO VOLUME PRESENTLY MOUNTED
000.043                425X EC.FOD  DS      1               FILE OPEN ON DEVICE
000.044                426X EC.NPM  DS      1               NO PROVISIONS MADE FOR REMOUNTING MORE DISKS
000.045                427X EC.DNI  DS      1               DISK NOT INITIALIZED
000.046                428X EC.DNR  DS      1               DISK IS NOT READABLE
000.047                429X EC.DSC  DS      1               DISK STRUCTURE IS CORRUPT
000.050                430X EC.NCV  DS      1               NOT CORRECT VERSION OF HDOS
000.051                431X EC.NOS  DS      1               NO OPERATING SYSTEM MOUNTED
000.052                432X EC.IOI  DS      1               ILLEGAL OVERLAY INDEX
000.053                433X EC.OTL  DS      1               OVERLAY TO LARGE
000.054                434          XTEXT   HOSDEF


                       436X **      HOSDEF - DEFINE HOS PARAMETER.
                       437X *
                       438X
                       439X
000.040                440X VERS    EQU     2*16+0          VERSION 2.0
                       441X
000.377                442X SYSCALL EQU     377Q            SYSCALL INSTRUCTION
                       443X
                       444X
000.000                445X         ORG     0
                       446X
                       447X *       RESIDENT FUNCTIONS
                       448X
000.000                449X .EXIT   DS      1               EXIT (MUST BE FIRST)
000.001                450X .SCIN   DS      1               SCIN
000.002                451X .SCOUT  DS      1               SCOUT
000.003                452X .PRINT  DS      1               PRINT
000.004                453X .READ   DS      1               READ
000.005                454X .WRITE  DS      1               WRITE
000.006                455X .CONSL  DS      1               SET/CLEAR CONSOLE OPTIONS
000.007                456X .CLRCO  DS      1               CLEAR CONSOLE BUFFER
000.010                457X .LOADO  DS      1               LOAD AN OVERLAY
000.011                458X .VERS   DS      1               RETURN HDOS VERSION NUMBER
000.012                459X .SYSRES DS      1               PRECEDING FUNCTIONS ARE RESIDENT
```

```
                        460X
                        461X
                        462X *      *HDOSOVL0.SYS*  FUNCTIONS
                        463X
        000.040         464X        ORG     40A
                        465X
        000.040         466X .LINK  DS      1           LINK  (MUST BE FIRST)
        000.041         467X .CTLC  DS      1           CTL-C
        000.042         468X .OPENR DS      1           OPENR
        000.043         469X .OPENW DS      1           OPENW
        000.044         470X .OPENU DS      1           OPENU
        000.045         471X .OPENC DS      1           OPENC
        000.046         472X .CLOSE DS      1           CLOSE
        000.047         473X .POSIT DS      1           POSITION
        000.050         474X .DELET DS      1           DELETE
        000.051         475X .RENAM DS      1           RENAME
        000.052         476X .SETTP DS      1           SETTOP
        000.053         477X .DECODE DS     1           NAME DECODE
        000.054         478X .NAME  DS      1           GET FILE NAME FROM CHANNEL
        000.055         479X .CLEAR DS      1           CLEAR CHAN
        000.056         480X .CLEARA DS     1           CLEAR ALL CHANS
        000.057         481X .ERROR DS      1           LOOKUP ERROR
        000.060         482X .CHFLG DS      1           CHANGE FLAGS
        000.061         483X .DISMT DS      1           FLAG SYSTEM DISK DISMOUNTED
        000.062         484X .LOADD DS      1           LOAD DEVICE DRIVER
        000.063         485X .OPEN  DS      1           Parametrized Open
                        486X
                        487X
                        488X *      *HDOSOVL1.SYS*  FUNCTIONS
                        489X
        000.200         490X        ORG     200Q
                        491X
        000.200         492X .MOUNT DS      1           MOUNT  (MUST BE FIRST)
        000.201         493X .DMOUN DS      1           DISMOUNT
        000.202         494X .MONMS DS      1           MOUNT/NO MESSAGE
        000.203         495X .DMNMS DS      1           DISMOUNT/NO MESSAGE
        000.204         496X .RESET DS      1           RESET = DISMOUNT/MOUNT OF UNIT
        000.205         497X .CLEAN DS      1           Clean device
        000.206         498X .DAD   DS      1           Dismount All Disks          /80.08.sc/
        000.207         499         XTEXT   MTR
```

```
                        502X **      MTR - PAM/8 EQUIVALENCES.
                        503X *
                        504X *       THIS DECK CONTAINS SYMBOLIC DEFINITIONS USED TO
                        505X *       MAKE USE OF THE PAM/8 CODE AND CONTROL BYTES.


                        507X **      IO PORTS
                        508X
    000.360             509X IP.PAD  EQU    360Q          PAD INPUT PORT
    000.360             510X OP.CTL  EQU    360Q          CONTROL OUTPUT PORT
    000.360             511X OP.DIG  EQU    360Q          DIGIT SELECT OUTPUT PORT
    000.361             512X OP.SEG  EQU    361Q          SEGMENT SELECT OUTPUT PORT
    000.362             513X IP.CON  EQU    362Q          H-88/H-89/HA-8-8 Confisuration  /80.07.sc/
    000.362             514X OP2.CTL EQU    362Q          H-88/H-89/HA-8-8 Control Port   /80.07.sc/


                        516X **      FRONT PANEL CONTROL BITS.                          /80.07.sc/
                        517X *
                        518X *       CB.*  set in OP.CTL
                        519X *       CB2.* set in OP2.CTL
                        520X *
                        521X
    000.020             522X CB.SSI  EQU    00010000B     SINGLE STEP INTERRUPT
    000.040             523X CB.MTL  EQU    00100000B     MONITOR LIGHT
    000.100             524X CB.CLI  EQU    01000000B     CLOCK INTERRUPT ENABLE
    000.200             525X CB.SPK  EQU    10000000B     SPEAKER ENABLE
                        526X
    000.001             527X CB2.SSI EQU    00000001B     Single Step Interrupt
    000.002             528X CB2.CLI EQU    00000010B     Clock Interrupt Enable
    000.040             529X CB2.ORG EQU    00100000B     ORG 0 Select
    000.100             530X CB2.SID EQU    01000000B     Side 1 Select


                        532X **      Secondary Control Bits
                        533X


                        535X **      MONITOR MODE FLAGS.
                        536X
    000.000             537X DM.MR   EQU    0             MEMORY READ
    000.001             538X DM.MW   EQU    1             MEMORY WRITE
    000.002             539X DM.RR   EQU    2             REGISTER READ
    000.003             540X DM.RW   EQU    3             REGISTER WRITE
```

```
                        542X **      USER OPTION BITS.
                        543X *
                        544X *       THESE BITS ARE SET IN CELL .MFLAG.
                        545X
    000.200             546X UO.HLT  EQU   10000000B   DISABLE HALT PROCESSING
    000.100             547X UO.NFR  EQU   CB.CLI      NO REFRESH OF FRONT PANEL
    000.002             548X UO.DDU  EQU   00000010B   DISABLE DISPLAY UPDATE
    000.001             549X UO.CLK  EQU   00000001B   ALLOW PRIVATE INTERRUPT PROCESSING


                        551X **      MONITOR IDENTIFICATION FLAGS
                        552X *
                        553X *       THESE BYTES IDENTIFY THE ROM MONITOR.
                        554X *       THEY ARE THE VARIOUS VALUES OF LOCATION .IDENT
                        555X
    000.021             556X M.PAM8  EQU   021Q        'LXI' INSTRUCTION AT 000.000 IN PAM-8
    000.303             557X M.FOX   EQU   303Q        'JMP' INSTRUCTION AT 000,000 IN FOX ROM


                        559X **      Confisuration Flags                          /80.07.sc/
                        560X *
                        561X *       These bits are read in IP.CON.
                        562X *
                        563X
    000.003             564X CN.174M EQU   00000011B   Port 174Q Device-Type Mask
    000.014             565X CN.170M EQU   00001100B   Port 170Q Device-Type Mask
    000.020             566X CN.PRI  EQU   00010000B   Primary/Secondary:  1=>Primary == 170Q
    000.040             567X CN.MEM  EQU   00100000B   Memory Test/Normal Switch:  0=>Test; 1=>Normal
    000.100             568X CN.BAU  EQU   01000000B   Baud Rate:  0=>9600; 1=>19,200
    000.200             569X CN.ABO  EQU   10000000B   Auto-Boot:  1=>Auto-Boot
                        570X
    000.000             571X CND.H17 EQU   00B         H-17 Disk,                   Valid only in CN.174M
    000.000             572X CND.NDI EQU   00B         No Device Installed,         Valid only in CN.170M
    000.001             573X CND.H47 EQU   01B         H-47 Disk


                        575X **      ROUTINE ENTRY POINTS.
                        576X *
                        577X
    000.000             578X .IDENT  EQU   0000A       IDENTIFICATION LOCATION
    000.053             579X .DLY    EQU   0053A       DELAY
    001.267             580X .LOAD   EQU   1267A       TAPE LOAD
    001.374             581X .DUMP   EQU   1374A       TAPE DUMP
    002.136             582X .ALARM  EQU   2136A       ALARM ROUTINE
    002.140             583X .HORN   EQU   2140A       HORN
    002.172             584X .CTC    EQU   2172A       CHECK TAPE CHECKSUM
    002.205             585X .TPERR  EQU   2205A       TAPE ERROR ROUTINE
    002.264             586X .PCHL   EQU   2264A       PCHL INSTRUCTION
    002.265             587X .SRS    EQU   2265A       SCAN RECORD START
    002.325             588X .RNP    EQU   2325A       READ NEXT PAIR
    002.331             589X .RNB    EQU   2331A       READ NEXT BYTE
```

```
                    590X .CRC    EQU     2347A           CRC-16 CALCULATOR
003.017             591X .WNP    EQU     3017A           WRITE NEXT PAIR
003.024             592X .WNB    EQU     3024A           WRITE NEXT BYTE
003.122             593X .DOD    EQU     3122A           DECODE FOR OCTAL DISPLAY
003.260             594X .RCK    EQU     3260A           READ CONSOLE KEYSET
003.356             595X .DODA   EQU     3356A           SEGMENT CODE TABLE


                    597X **      RAM CELLS USED BY H8MTR.
                    598X *
                    599X
040.000             600X .START  EQU     40000A          START DUMP ADDRESS
040.002             601X ,IOWRK  EQU     40002A          IN OR OUT INSTRUCTION
040.005             602X .REGI   EQU     40005A          DISPLAYED REGISTER INDEX
040.006             603X .DSPROT EQU     40006A          PERIOD FLAG BYTE
040.007             604X .DSPMOD EQU     40007A          DISPLAY MODE
040.010             605X .MFLAG  EQU     40010A          USER OPTION BYTE
040.011             606X .CTLFLG EQU     40011A          PANEL CONTROL BYTE
040.013             607X .ALEDS  EQU     40013A          ABUSS LEDS
040.021             608X .DLEDS  EQU     40021A          DBUSS LEDS
040.024             609X .ABUSS  EQU     40024A          ABUSS REGISTER
040.027             610X .CRCSUM EQU     40027A          CRCSUM WORD
040.031             611X .TPERRX EQU     40031A          TAPE ERROR EXIT VECTOR
040.033             612X .TICCNT EQU     40033A          CLOCK TICK COUNTER
040.035             613X .REGPTR EQU     40035A          REGISTER POINTER
040.037             614X .UIVEC  EQU     40037A          USER INTERRUPT VECTORS
040.064             615X .NMIRET EQU     40064A          H88/H89 NMI Return Address      /80.07.sc/
040.066             616X .CTL2FL EQU     40066A          OP2.CTL Control Byte            /80.07.sc/
000.207             617          XTEXT   SETCAL


                    619X **      SETCAL - FIXED ADDRESS ROUTINES IN SET
                    620X *
                    621X *       THESE VECTORS ARE FIXED ENTRY POINTS INTO THE
                    622X *       SET PROGRAM TO UTILIZED BY DEVICE DRIVERS IN
                    623X *       PROCESSING SET COMMANDS.
                    624X *
                    625X
042.201             626X         ORG     USERFWA+1
                    627X
042.201             628X $SNA    DS      3
                    629X
042.204             630X $DCS    DS      3
                    631X
042.207             632X $CNA    DS      3
                    633X
042.212             634X $FST    DS      3
                    635X
042.215             636X $TBLS   DS      3
                    637X
042.220             638X $WTBLS  DS      3
                    639X
042.223             640X $LBD    DS      3
```

```
                    641X
042,226             642X $SOP    DS      3
                    643X
042,231             644X $PBF    DS      3
                    645X
042,234             646X $PBV    DS      3
                    647X
042,237             648X         DS      60      RESERVED
042,333             649          XTEXT   U8250


                    651X **      8250 UART CONTROL AND BIT DEFINITIONS.
                    652X
000,350             653X SC.ACE  EQU     350Q            SYSTEM CONSOLE PORT IF 8250 ACE
000,156             654X AC.DLY  EQU     110             220 MIL. SEC. DELAY FOR 8250
                    655X
000,000             656X UR.RBR  EQU     0               RECEIVER BUFFER REGISTER (READ ONLY)
                    657X
000,000             658X UR.THR  EQU     0               TRANSMITTER HOLDING REGISTER (WRITE ONLY)
                    659X
000,000             660X UR.DLL  EQU     0               DIVISOR LATCH (LEAST SIGNIFICANT)
                    661X
000,001             662X UR.DLM  EQU     1               DIVISOR LATCH (MOST SIGNIFICANT)
                    663X
000,001             664X UR.IER  EQU     1               INTERRUPT ENABLE REGISTER
000,001             665X UC.EDA  EQU     00000001B        ENABLE RECEIVED DATA AVAILABLE INTERRUPT
000,002             666X UC.TRE  EQU     00000010B        ENABLE TRANSMIT HOLD REGISTER EMPTY INTERRUPT
000,004             667X UC.RSI  EQU     00000100B        ENABLE RECEIVE STATUS INTERRUPT
000,010             668X UC.MSI  EQU     00001000B        ENABLE MODEM STATUS INTERRUPT
                    669X
000,002             670X UR.IIR  EQU     2               INTERRUPT IDENTIFICATION REGISTER
000,001             671X UC.IIP  EQU     00000001B        INVERTED INTERRUPT PENDING (0 MEANS PENDING)
000,006             672X UC.IID  EQU     00000110B        INTERRUPT ID
                    673X
000,003             674X UR.LCR  EQU     3               LINE CONTROL REGISTER
000,000             675X UC.5BW  EQU     00000000B        5 BIT WORDS
000,001             676X UC.6BW  EQU     00000001B        6 BIT WORDS
000,002             677X UC.7BW  EQU     00000010B        7 BIT WORDS
000,003             678X UC.8BW  EQU     00000011B        8 BIT WORDS
000,004             679X UC.2SB  EQU     00000100B        TWO STOP BITS SELECTED
000,010             680X UC.PEN  EQU     00001000B        PARITY COMPUTATION ENABLED
000,020             681X UC.EPS  EQU     00010000B        EVEN PARITY SELECT
000,040             682X UC.SKP  EQU     00100000B        STICK PARITY
000,100             683X UC.SB   EQU     01000000B        SET BREAK
000,200             684X UC.DLA  EQU     10000000B        DIVISOR LATCH ACCESS
                    685X
000,004             686X UR.MCR  EQU     4               MODEM CONTROL REGISTER
000,001             687X UC.DTR  EQU     00000001B        DATA TERMINAL READY
000,002             688X UC.RTS  EQU     00000010B        REQUEST TO SEND
000,004             689X UC.OU1  EQU     00000100B        OUT 1
000,010             690X UC.OU2  EQU     00001000B        OUT 2
000,020             691X UC.LOO  EQU     00010000B        LOOP
                    692X
000,005             693X UR.LSR. EQU     5               LINE STATUS REGISTER
```

```
000.001                 694X UC.DR    EQU     00000001B       DATA READY
000.002                 695X UC.OR    EQU     00000010B       OVERRUN
000.004                 696X UC.PE    EQU     00000100B       PARITY ERROR
000.010                 697X UC.FE    EQU     00001000B       FRAMING ERROR
000.020                 698X UC.BI    EQU     00010000B       BREAK INTERRUPT
000.040                 699X UC.THE   EQU     00100000B       TRANSMITTER HOLDING REGISTER EMPTY
000.100                 700X UC.TSE   EQU     01000000B       TRANSMITTER SHIFT REGISTER EMPTY
                        701X
000.006                 702X UR.MSR   EQU     6               MODEM STATUS REGISTER
000.001                 703X UC.DCS   EQU     00000001B       DELTA CLEAR TO SEND
000.002                 704X UC.DDR   EQU     00000010B       DELTA DATA SET READY
000.004                 705X UC.TER   EQU     00000100B       TRAILING EDGE OF RING
000.010                 706X UC.DRL   EQU     00001000B       DELTA RECEIVE LINE SIGNAL DETECT
000.020                 707X UC.CTS   EQU     00010000B       CLEAR TO SEND
000.040                 708X UC.DSR   EQU     00100000B       DATA SET READY
000.100                 709X UC.RI    EQU     01000000B       RING INDICATOR
000.200                 710X UC.RLS   EQU     10000000B       RECEIVED LINE SIGNAL DETECT
                        711           CODE    PIC
                        712
                        713 *         CODE HEADER
                        714
000.006  307           715           DB      DVDFLV
000.007  004           716           DB      DT.CW                   DEVICE CAPABILITY:  WRITE
000.010  001           717           DB      00000001B               MOUNTED UNIT MASK
000.011  001           718           DB      1                       MAXIMUM OF ONE UNIT
000.012  004           719           DB      DT.CW                   0:    CAPABLE OF WRITE
000.013                 720           DS      7                       1-7:  IGNORED
000.022  307           721           DB      DVDFLV
000.023  000 000       722           DW      0                                               /80.09.sc/
                        723
000.025                 724 .         SET     025Q                                            /80.09.sc/
000.000                 725           ERRNZ   *-.                                             /80.09.sc/
000.025                 726           DS      DVD.STE-.       RESERVED AREAS                  /80.09.sc/
```

```
                        729  ***     ASSEMBLY CONSTANTS
                        730  *
                        731  *
                        732
000.303                 733  MI.JMP  EQU     303Q            JUMP
000.302                 734  MI.JNZ  EQU     302Q            JUMP-NON-ZERO
000.315                 735  MI.CALL EQU     315Q            UNCONDITIONAL CALL
000.314                 736  MI.CZ   EQU     314Q            CALL-ZERO


                        738  **      FLAG DEFINITIONS
                        739  *
                        740
000.001                 741  F.FORM  EQU     00000001B       FORM-FEED UPON CLOSE


                        743  **      DEFAULT DEVICE DEFINITIONS
                        744  *
                        745
000.340                 746  DFLT.PN EQU     340Q            DEFAULT DBO: ADDRESS
000.140                 747  DFLT.BD EQU     000140A         1200 BAUD
                        748
000.001                 749  DFLT.FG EQU     F.FORM          DEFAULT FLAG:  FORM
000.006                 750  DFLT.LI EQU     6               LINES/INCH
000.120                 751  DFLT.WD EQU     80              WIDTH
000.074                 752  DFLT.LP EQU     60              LINES/PAGE


                        754  **      SPECIAL CHARACTERS
                        755  *
                        756
000.003                 757  ETX     EQU     3               DIABLO END-OF-TEXT HANDSHAKE
000.006                 758  ACK     EQU     6               DIABLO ACKNOWLEDGE HANDSHAKE
000.040                 759  BURST   EQU     32              DIABLO BURST COUNT
```

```
                                762  ***     SET ENTRY
                                763  *
                                764  *       SET COMMANDS ENTER HERE
                                765  *
                                766  *       ENTRY:  (DE)    = LINE POINTER
                                767  *               (A)     = UNIT NUMBER
                                768  *
                                769  *       EXIT:   (PSW)   = 'C' CLEAR IF NO ERROR
                                770  *                       = 'C' SET   IF    ERROR
                                771  *                         (A) = ERROR CODE
                                772  *
                                773  *       USES:   ALL
                                774  *
                                775
000.053                         776  SETNTR  EQU     *
000.000                         777          ERRNZ   *-DVD.STE
000.053  247                    778          ANA     A
000.054  302 103 000           779          JNZ     SET1            ALLOW ONLY UNIT 0
                                780
000.057  102                    781          MOV     B,D
000.060  113                    782          MOV     C,E
000.061  021 367 001           783          LXI     D,PRCTAB
000.064  041 170 001           784          LXI     H,OPTTAB
000.067  315 226 042           785          CALL    $SOP
000.072  330                   786          RC                      ERROR
000.073  315 201 042           787          CALL    $SNA
000.076  310                   788          RZ                      AT THE END OF THE LINE
                                789
000.077  076 040               790          MVI     A,EC.ILO        ILLEGAL OPTION
000.101  067                   791          STC
000.102  311                   792          RET
                                793
000.103  076 033               794  SET1    MVI     A,EC.UUN
000.105  067                   795          STC
000.106  311                   796          RET
```

```
                                  800  **      FLAG    -  PROCESS FLAG OPTIONS
                                  801  *
                                  802  *       PROCESS FLAG TYPE OPTION SPECIFICATIONS
                                  803  *
                                  804  *
                                  805  *       ENTRY, EXIT, AND USE SAME AS PBF
                                  806  *
                                  807
        042.231                   808  FLAG    EQU     $PBF


                                  810  **      VAL     -  PROCESS VALUE OPTIONS
                                  811  *
                                  812  *       PROCESS BYTE VALUE OPTIONS
                                  813  *
                                  814  *
                                  815  *       ENTRY, EXIT, AND USE SAME AS PBV
                                  816  *
                                  817
        042.234                   818  VAL     EQU     $PBV


                                  820  **      BAUD    -  PROCESS BAUD RATE OPTION
                                  821  *
                                  822  *       PROCESS BAUD RATE OPTION SPECIFICATION
                                  823  *
                                  824  *       ENTRY:  (BC)    = TEXT ADDRESS
                                  825  *               (PSW)   = 'C' CLEAR IF NO ERROR
                                  826  *                         'C' SET IF ERROR
                                  827  *                         (A) = ERROR CODE
                                  828  *
                                  829  *       EXIT:   (BC)    = UPDATED TEXT ADDRESS
                                  830  *
                                  831  *       USES:   ALL
                                  832  *
                                  833
        000.107  076 012          834  BAUD    MVI     A,10            DEFAULT RADIX IS 10
        000.111  315 207 042      835          CALL    $CNA            GET BAUD RATE
        000.114  076 037          836          MVI     A,EC.ILV        ASSUME ILLEGAL VALUE
        000.116  330              837          RC                      THERE WAS AN ERROR GETTING VALUE
                                  838
        000.117  353              839          XCHG                    (DE) = BAUD RATE
        000.120  315 223 042      840          CALL    $LBD            (HL) = BAUD RATE DIVISOR
        000.123  076 037          841          MVI     A,EC.ILV        ASSUME ILLEGAL VALUE
        000.125  067              842          STC
        000.126  300              843          RNZ                     THE BAUD RATE WAS NOT FOUND IN THE TABLE
                                  844
        000.127  042 052 004      845          SHLD    D.BAUD          SET UP THE BAUD RATE IN THE TABLE
        000.132  257              846          XRA     A               CLEAR THE CARRY, ETC.
        000.133  311              847          RET
```

```
                                  849  **      HELP    -  PROCESS HELP SET OPTION
                                  850  *
                                  851  *       LIST THE VALID SET OPTIONS FOR THIS DEVICE ON THE
                                  852  *       SYSTEM CONSOLE.
                                  853  *
                                  854  *       ENTRY:  NONE
                                  855  *
                                  856  *       EXIT:   NONE
                                  857  *
                                  858  *       USES:   (PSW)
                                  859  *
                                  860
000.134                           861  HELP    EQU     *
000.134  315 136 031              862           CALL    $TYPTX
000.137  012 012 123              863           DB      NL,NL,'Set Options:',NL,NL
000.157  101 125 124              864           DB      'AUTO-CR          Map Newline Character to <CR><LF>',NL
000.232  106 117 122              865           DB      'FORM             Form-Feed at Close',NL
000.263  124 101 102              866           DB      'TABX             Expand Tabs',NL
000.305  012 116 157              867           DB      NL,'Note:         The above options may be preceded',NL
000.356  011 142 171              868           DB      '       by NO to cancel their effect.',NL,NL
001.016  102 101 125              869           DB      'BAUD   n         Baud Rate',NL
001.037  110 105 114              870           DB      'HELP             Type this Text',NL
001.064  120 101 107              871           DB      'PAGE   n         Lines/Page',NL
001.106  120 117 122              872           DB      'PORT   n         Port Number',NL
001.131  127 111 104              873           DB      'WIDTH  n         Chars/Line [0-158]',NL
001.164  012 212                  874           DB      NL,ENL
001.166  257                      875           XRA     A                 CLEAR CARRY
001.167  311                      876           RET
```

```
                                879  ***     TABLES
                                880  *
                                881  *


                                883  **      OPTTAB  -  OPTION TABLE
                                884  *
                                885
001.170  366 001                886  OPTTAB  DW      OPTTABE
001.172  006                    887          DB      6
                                888
001.173  101 125 124            889          DB      'AUTO-C','R'+200Q,FLAGI
001.203  377 302                890          DB      377Q,MI,JNZ
001.205  027 003                891          DW      DBOA
001.207  000                    892          DB      0
                                893
001.210  116 117 101            894          DB      'NOAUTO-C','R'+200Q,FLAGI
001.222  377 303                895          DB      377Q,MI,JMP
001.224  027 003                896          DW      DBOA
001.226  000                    897          DB      0
                                898
001.227  106 117 122            899          DB      'FOR','M'+200Q,FLAGI,F.FORM,F.FORM
001.236  051 004                900          DW      D.FLAG
001.240  000                    901          DB      0
                                902
001.241  116 117 106            903          DB      'NOFOR','M'+200Q,FLAGI,F.FORM,0
001.252  051 004                904          DW      D.FLAG
001.254  000                    905          DB      0
                                906
001.255  124 101 102            907          DB      'TAB','X'+200Q,FLAGI,377Q,MI,JNZ
001.264  376 002                908          DW      DBOB
001.266  000                    909          DB      0
                                910
001.267  116 117 124            911          DB      'NOTAB','X'+200Q,FLAGI,377Q,MI,JMP
001.300  376 002                912          DW      DBOB
001.302  000                    913          DB      0
                                914
001.303  120 101 107            915          DB      'PAG','E'+200Q,VALI,10,0,255
001.313  060 004                916          DW      D.LNPG
                                917
001.315  120 117 122            918          DB      'POR','T'+200Q,VALI,8,0,377Q
001.325  055 004                919          DW      D.PORT
                                920
001.327  127 111 104            921          DB      'WIDT','H'+200Q,VALI,10,0,158
001.340  057 004                922          DW      D.WID
                                923
001.342  102 101 125            924          DB      'BAU','D'+200Q,BAUDI
001.347  000 000 000            925          DB      0,0,0,0,0
                                926
001.354  110 105 114            927          DB      'HEL','P'+200Q,HELPI
001.361  000 000 000            928          DB      0,0,0,0,0
                                929
001.366  000                    930  OPTTABE DB      0
```

```
                                932  **      PRCTAB  -  PROCESSOR TABLE
                                933  *
                                934
001.367                         935  PRCTAB  DS      0
                                936
000.000                         937  BAUDI   EQU     *-PRCTAB/2
001.367  107 000               938          DW      BAUD
                                939
000.001                         940  FLAGI   EQU     *-PRCTAB/2
001.371  231 042               941          DW      FLAG
                                942
000.002                         943  HELPI   EQU     *-PRCTAB/2
001.373  134 000               944          DW      HELP
                                945
000.003                         946  VALI    EQU     *-PRCTAB/2
001.375  234 042               947          DW      VAL


001.377                         949  .       SET     1377A
000.000                         950          ERRNZ   *-.
001.377                         951          DS      DVD.ENT-.
```

```
                                954  ***     DBDVD ENTRY POINT
                                955  *
                                956  *       ENTRY:  (A)     = PROCESS CODE
                                957  *               (BC)    = BYTE COUNT
                                958  *               (DE)    = BUFFER ADDRESS
                                959  *
                                960  *       EXIT:   (PSW)   = 'C' CLEAR IF NO ERROR
                                961  *                         = 'C' SET IF ERROR
                                962  *                           (A) = ERROR CODE
                                963  *
                                964  *       USES:   ALL
                                965  *
                                966
002.000                         967  DBDVD   EQU     *
000.000                         968          ERRNZ   *-DVD.ENT
002.000  376 011                969          CPI     9
002.002  322 022 002            970          JNC     DBD1            ILLEGAL PROCESS CODE
                                971
002.005  315 076 031            972          CALL    $TBRA           ENTRY PROCESSOR
002.010  016                    973          DB      NSUIT-*         READ
002.011  154                    974          DB      WRITE-*         WRITE
002.012  014                    975          DB      NSUIT-*         READR
002.013  013                    976          DB      NSUIT-*         OPENR
002.014  023                    977          DB      OPENW-*         OPENW
002.015  011                    978          DB      NSUIT-*         OPENU
002.016  113                    979          DB      CLOSE-*         CLOSE
002.017  013                    980          DB      ABORT-*         ABORT
002.020  006                    981          DB      NSUIT-*         MOUNT
002.021  014                    982          DB      LOADD-*         LOADD
                                983
002.022  076 012                984  DBD1    MVI     A,EC.ILR        ILLEGAL REQUEST
002.024  067                    985          STC
002.025  311                    986          RET
```

```
                                989  ***     NSUIT   -  NOT SUITABLE
                                990  *
                                991  *       ROUTINE TO HANDLE UNSUITABLE DEVICE DRIVER REQUESTS.
                                992  *
                                993  *       ENTRY:  NONE
                                994  *
                                995  *       EXIT:   (PSW)   = 'C' SET TO FLAG ERROR
                                996  *                         (A) = ILLEGAL REQUEST ERROR CODE
                                997  *
                                998  *       USES:   (PSW)
                                999  *
                               1000
002.026                        1001  NSUIT   EQU     *
002,026  076 005               1002          MVI     A,EC.DNS        DEVICE NOT SUITABLE
002.030  067                   1003          STC
002,031  311                   1004          RET


                               1006  ***     ABORT   -  ABORT DEVICE
                               1007  *
                               1008  *       ROUTINE TO HANDLE ABORT DEVICE DRIVER REQUESTS.
                               1009  *
                               1010  *       ENTRY:  NONE
                               1011  *
                               1012  *       EXIT:   NONE
                               1013  *
                               1014  *       USES:   (PSW)
                               1015  *
                               1016
002,032                        1017  ABORT   EQU     *
002.032  303 131 002           1018          JMP     CLOSE


                               1020  ***     LOADD   -  LOAD DEVICE DRIVER
                               1021  *
                               1022  *       LOADD PROCESSES THE DEVICE DRIVER LOAD
                               1023  *
                               1024  *       ENTRY:  NONE
                               1025  *
                               1026  *       EXIT:   NONE
                               1027  *
                               1028  *       USES:   (PSW)
                               1029  *
                               1030
002.035  247                   1031  LOADD   ANA     A
002,036  311                   1032          RET
```

```
                                1035  ***     OPENW   -  OPEN DEVICE FOR WRITE
                                1036  *
                                1037  *       SET UP DEVICE AND NECESSARY FLAGS FOR WRITE, THIS INCLUDES
                                1038  *       INITIALIZING THE 8250/8251.
                                1039  *
                                1040  *       ENTRY:  NONE
                                1041  *
                                1042  *       EXIT:   NONE
                                1043  *
                                1044  *       USES:   ALL
                                1045
002.037                         1046  OPENW   EQU     *
002.037  315 042 004            1047          CALL    UAS
002.042  076 036                1048          MVI     A,EC.UNA        UNIT NOT AVAILABLE
002.044  067                    1049          STC
002.045  300                    1050          RNZ                     UNIT ALREADY ASSIGNED
                                1051
                                1052  *       FLAG ASSIGNED, INITIALIZE INDICES, ETC.
                                1053
002.046  072 050 004            1054          LDA     D.ASGN
002.051  366 200                1055          ORI     10000000B
002.053  062 050 004            1056          STA     D.ASGN          FLAG DEVICE ASSIGNED
                                1057
002.056  257                    1058          XRA     A
002.057  062 064 004            1059          STA     D.NOC           ZERO NEED ONE ESC. SEQ. CHAR. FLAG
002.062  062 063 004            1060          STA     D.LWE           ZERO LAST CHAR. WAS ESCAPE FLAG
                                1061
002.065  076 040                1062          MVI     A,BURST
002.067  062 065 004            1063          STA     D.BURC          INITIALIZE BURST COUNTER
                                1064
                                1065  *       INITIALIZE UART
                                1066
002.072  072 055 004            1067          LDA     D.PORT
002.075  052 052 004            1068          LHLD    D.BAUD
                                1069
002.100  315 310 003            1070          CALL    I8250
002.103  072 055 004            1071          LDA     D.PORT
002.106  147                    1072          MOV     H,A
002.107  056 004                1073          MVI     L,UR.MCR
002.111  076 013                1074          MVI     A,UC.DTR+UC.RTS+UC.OU2  SET DATA TERM. READY, REQ. SEND, RSLD
002.113  315 030 004            1075          CALL    OUT
                                1076
                                1077  *       INITIALIZE CARRIAGE INDICES
                                1078
002.116  076 001                1079          MVI     A,1
002.120  062 061 004            1080          STA     D.LINX          INITIALIZE LINE INDEX
002.123  076 015                1081          MVI     A,CR
002.125  315 355 002            1082          CALL    DBOUT           RETURN HEAD, AND INITIALIZE COLUMN COUNTER
                                1083
002.130  311                    1084          RET
```

```
                                1087  ***     CLOSE   -  CLOSE THE OUTPUT DEVICE
                                1088  *
                                1089  *       UNASSIGN THE DEVICE
                                1090  *
                                1091  *       ENTRY:  NONE
                                1092  *
                                1093  *       EXIT:   (PSW)   = 'C' CLEAR IF NO ERROR
                                1094  *                       = 'C' SET   IF   ERROR
                                1095  *                         (A) = ERROR CODE
                                1096  *
                                1097  *       USES:   ALL
                                1098  *
                                1099
002.131                         1100  CLOSE   EQU     *
002.131  315 042 004            1101          CALL    UAS
002.134  076 036                1102          MVI     A,EC.UNA        UNIT NOT AVAILABLE
002.136  067                    1103          STC
002.137  310                    1104          RZ                      UNIT WAS NOT ASSIGNED
                                1105
002.140  072 050 004            1106          LDA     D.ASGN
002.143  346 177                1107          ANI     01111111B
002.145  062 050 004            1108          STA     D.ASGN          FLAG UNIT AVAILABLE
                                1109
002.150  072 051 004            1110          LDA     D.FLAG
002.153  346 001                1111          ANI     F.FORM
002.155  310                    1112          RZ                      NO FORM-FEED AT CLOSE
                                1113
002.156  076 014                1114          MVI     A,FF
002.160  315 355 002            1115          CALL    DBOUT
002.163  247                    1116          ANA     A               CLEAR ERROR FLAG
002.164  311                    1117          RET
```

```
                                1120  ***     WRITE   -  WRITE TO DEVICE
                                1121  *
                                1122  *       WRITE A BUFFER FULL OF CHARACTERS TO THE OUTPUT DEVICE
                                1123  *
                                1124  *       ENTRY:  (BC)    = BYTE COUNT
                                1125  *               (DE)    = ADDRESS OF DATA BUFFER
                                1126  *
                                1127  *       EXIT:   (PSW)   = 'C' CLEAR IF NO ERROR
                                1128  *                         'C' SET   IF    ERROR
                                1129  *                          (A)  = ERROR CODE
                                1130  *                          (BC) = UNUSED BYTE COUNT
                                1131  *                          (DE) = ADDRESS OF NEXT BYTE TO BE WRITTEN
                                1132  *
                                1133  *       USES:   ALL
                                1134  *
                                1135
002.165                         1136  WRITE   EQU     *
002.165  315 042 004            1137          CALL    UAS
002.170  076 036                1138          MVI     A,EC.UNA        UNIT NOT AVAILABLE
002.172  067                    1139          STC
002.173  310                    1140          RZ                      UNIT WAS NOT ASSIGNED
                                1141
002.174  170                    1142  WRI1    MOV     A,B
002.175  261                    1143          ORA     C
002.176  310                    1144          RZ                      THE LAST BYTE HAS BEEN WRITTEN
                                1145
002.177  315 202 003            1146          CALL    CFA
002.202  302 032 002            1147          JNZ     ABORT           AN ABORT WAS HIT ON THE CONSOLE
                                1148
002.205  315 213 002            1149          CALL    WRI2
002.210  303 174 002            1150          JMP     WRI1


                                1152  **      WRI2
                                1153  *
                                1154  *       (DE) = BUFFER
                                1155  *       (BC) = COUNT
                                1156
002.213  315 230 002            1157  WRI2    CALL    CES             CHECK ESCAPE SEQUENCE FLAGS AND CHARS.
002.216  032                    1158          LDAX    D               (A) = CHARACTER TO OUTPUT
002.217  315 355 002            1159          CALL    DBOUT
002.222  013                    1160          DCX     B               *** THIS RETURNING COUNT MAY NOT BE GOOD ***
002.223  023                    1161          INX     D               *** IF AN ABORT CHARACTER IS HIT AT  THE ***
002.224  315 302 002            1162          CALL    CHP             *** CORRECT TIME.                       ***
002.227  311                    1163          RET
```

```
                                1165  **      CES     -  CHECK ESCAPE SEQUENCES
                                1166  *
                                1167  *       SET THE ESCAPE SEQUENCE MONITORING FLAGS
                                1168  *
                                1169  *       ENTRY:  (DE)    = BUFFER POINTER
                                1170  *
                                1171  *       EXIT:   NONE
                                1172  *
                                1173  *       USES:   PSW
                                1174  *
                                1175
002,230  072 063 004            1176  CES     LDA     D.LWE
002.233  247                    1177          ANA     A
002,234  302 263 002            1178          JNZ     CES2            LAST CHARACTER WAS ESCAPE
                                1179
002,237  072 064 004            1180          LDA     D.NOC
002.242  247                    1181          ANA     A
002,243  302 256 002            1182          JNZ     CES1            NEED ONE CHARACTER
                                1183
002,246  032                    1184          LDAX    D
002.247  376 033                1185          CPI     ESC
002.251  300                    1186          RNZ                     LET A NORMAL CHARACTER SLIP THROUGH
                                1187
002,252  062 063 004            1188          STA     D.LWE           FLAG LAST CHARACTER AS ESCAPE
002.255  311                    1189          RET
                                1190
002.256  257                    1191  CES1    XRA     A
002,257  062 064 004            1192          STA     D.NOC           ZERO NEED ONE CHARACTER FLAG
002.262  311                    1193          RET
                                1194
002.263  032                    1195  CES2    LDAX    D
002.264  376 040                1196          CPI     ' '
002.266  332 272 002            1197          JC      CES3
002.271  257                    1198          XRA     A
002.272  062 064 004            1199  CES3    STA     D.NOC           SET NOC FLAG, TRUE FOR ESC. SEQ. < ' '
002.275  257                    1200          XRA     A
002.276  062 063 004            1201          STA     D.LWE           ZERO LAST CHARACTER WAS ESCAPE FLAG
002.301  311                    1202          RET


                                1204  **      CHP     -  CHECK HANDSHAKE PROTOCOL
                                1205  *
                                1206  *       WAIT ON THE HANDSHAKE PROTOCOL IF TIME TO TRY, AND NOT IN ESCAPE
                                1207  *       SEQUENCE.
                                1208  *
                                1209  *       ENTRY:  NONE
                                1210  *
                                1211  *       EXIT:   (PSW)   = 'Z' CLEAR IF EXITED VIA AN ABORT
                                1212  *                         'Z' SET   IF HANDSHAKE RECEIVED
                                1213  *
                                1214  *       USES:   (PSW)
                                1215  *
                                1216
002.302  072 065 004            1217  CHP     LDA     D.BURC
```

```
002.305  247          1218          ANA     A                                       /79.12.GC/
                       1219  *       DCR     A
                       1220  *       STA     D.BURC          UPDATE THE NUMBER OF CHARACTERS OUTPUT
002.306  360          1221          RP      NOT TIME TO SEND ETX                    /JWT 06SEP79/
000.142                1222          ERRMI   130-BURST       BURST MUST BE <= 130 TO INSURE IT IS POSITIVE
                       1223
002.307  072 064 004  1224          LDA     D.NOC
002.312  247          1225          ANA     A
002.313  300          1226          RNZ                     NEED ONE MORE CHAR. FOR ESC. SEQ.
                       1227
002.314  072 063 004  1228          LDA     D.LWE
002.317  247          1229          ANA     A
002.320  300          1230          RNZ                     LAST CHAR. WAS START OF ESC. SEQ.
                       1231
002.321  076 003      1232          MVI     A,ETX
002.323  315 355 002  1233          CALL    DBOUT
                       1234
002.326  315 202 003  1235  CHP1    CALL    CFA
002.331  300          1236          RNZ                     RETURN IF ABORT CHARACTER WAS HIT
                       1237
002.332  315 210 003  1238          CALL    INCHAR
002.335  312 326 002  1239          JZ      CHP1            NO CHARACTER HAS BEEN RECEIVED YET
                       1240
002.340  346 177      1241          ANI     7FH             STRIP PARITY
002.342  376 006      1242          CPI     ACK
002.344  302 326 002  1243          JNZ     CHP1            WAIT FOR AN  *ACK*  CHARACTER
                       1244
002.347  076 037      1245          MVI     A,BURST-1                               /JWT 06SEP79/
002.351  062 065 004  1246          STA     D.BURC          RESET BURST COUNTER
002.354  311          1247          RET


                       1249  **      DBOUT   -  DIABLO OUTPUT ROUTINE
                       1250  *
                       1251  *       MAP HDOS FORMAT TO DIABLO FORMAT IN OUTPUTING CHARACTERS TO THE
                       1252  *       DIABLO.
                       1253  *
                       1254  *       ENTRY:  (A)     = CHARACTER
                       1255  *
                       1256  *       EXIT:   NONE
                       1257  *
                       1258  *       USES:   (PSW)
                       1259  *
                       1260
002.355                1261  DBOUT   EQU     *
                       1262
002.355  376 015      1263          CPI     CR
002.357  302 374 002  1264          JNZ     DBO1
002.362  076 001      1265          MVI     A,1
002.364  062 062 004  1266          STA     D.COLX          SET COLUMN INDEX TO 1
002.367  076 015      1267          MVI     A,CR
002.371  303 075 003  1268          JMP     DBO.
                       1269
002.374  376 011      1270  DBO1    CPI     TAB
```

```
003.376  302 025 003  1271          JNZ     DB03
002.376               1272  DB0B    EQU     *-3             MODIFIED TO CHANGE 'TAB' PROCESSING
003.001  076 040      1273          MVI     A,' '
003.003  315 355 002  1274          CALL    DBOUT
003.006  072 062 004  1275  DB02    LDA     D.COLX
003.011  075          1276          DCR     A
003.012  346 007      1277          ANI     7
003.014  310          1278          RZ
                      1279
003.015  076 040      1280          MVI     A,' '
003.017  315 355 002  1281          CALL    DBOUT           OUTPUT ANOTHER SPACE
003.022  303 006 003  1282          JMP     DB02
                      1283
                      1284
003.025  376 012      1285  DB03    CPI     NL
003.027  302 053 003  1286          JNZ     DB04
003.027               1287  DB0A    EQU     *-3             TO CHANGE 'NL' PROC., (CHANGE TO JMP)
003.032  076 015      1288          MVI     A,CR
003.034  315 355 002  1289          CALL    DBOUT
003.037  072 061 004  1290          LDA     D.LINX
003.042  074          1291          INR     A
003.043  062 061 004  1292          STA     D.LINX          NOTE:   IF NOAUTO-CR IS SET, THE LINE COUNT
003.046  076 012      1293          MVI     A,NL                    WILL BE MESSED UP.
003.050  303 075 003  1294          JMP     DB0,
                      1295
003.053  376 014      1296  DB04    CPI     FF
003.055  302 075 003  1297          JNZ     DB05
003.060  076 001      1298          MVI     A,1
003.062  062 062 004  1299          STA     D.COLX
003.065  062 061 004  1300          STA     D.LINX
003.070  076 014      1301          MVI     A,FF
003.072  303 075 003  1302          JMP     DB0,
                      1303
003.075               1304  DB05    EQU     *
                      1305
003.075  376 040      1306  DB0,    CPI     ' '
003.077  332 142 003  1307          JC      DB09            NON-PRINTING CHARACTER
003.102  376 177      1308          CPI     RUBOUT
003.104  322 142 003  1309          JNC     DB09            NON-PRINTING CHARACTER
                      1310
003.107  365          1311          PUSH    PSW
003.110  345          1312          PUSH    H
                      1313
003.111  072 057 004  1314          LDA     D.WID
003.114  247          1315          ANA     A
003.115  312 131 003  1316          JZ      DB08            DON'T WRAP AT ALL
                      1317
003.120  041 062 004  1318          LXI     H,D.COLX
003.123  276          1319          CMP     M
003.124  076 012      1320          MVI     A,NL
003.126  334 355 002  1321          CC      DBOUT           OUTPUT NEWLINE IF  WIDTH < INDEX
                      1322
003.131  041 062 004  1323  DB08    LXI     H,D.COLX
003.134  064          1324          INR     M
                      1325
003.135  315 157 003  1326          CALL    DB010           CHECK FOR PAGE WRAP (ONLY IF NON-PRINTING)
```

```
                                1327
003.140  341                   1328            POP     H
003.141  361                   1329            POP     PSW
                                1330
003.142  346 177               1331    DBO9    ANI     177Q            MAP OUT HIGH ORDER BIT, POSSIBLY SET FOR QUOTE
003.144  315 242 003           1332            CALL    OUTCHAR
                                1333
003.147  072 065 004           1334            LDA     D.BURC
003.152  075                   1335            DCR     A
003.153  062 065 004           1336            STA     D.BURC          DECREMENT BURST COUNT (HERE FOR ALL CHARS.!)
                                1337
003.156  311                   1338            RET
                                1339
003.157  345                   1340    DBO10   PUSH    H
003.160  072 060 004           1341            LDA     D.LNPG
003.163  247                   1342            ANA     A
003.164  312 200 003           1343            JZ      DBO11           DON'T DO ANY FORM-FEED STUFF
003.167  041 061 004           1344            LXI     H,D.LINX
003.172  276                   1345            CMP     M
003.173  076 014               1346            MVI     A,FF
003.175  334 355 002           1347            CC      DBOUT           OUTPUT FORM-FEED IF  LINES/PAGE < INDEX
003.200  341                   1348    DBO11   POP     H
003.201  311                   1349            RET
```

```
                                1353  **      CFA     -  CHECK FOR ABORT
                                1354  *
                                1355  *       CHECK FOR AN ABORT CHARACTER STRUCK UPON THE CONSOLE
                                1356  *
                                1357  *       ENTRY:  NONE
                                1358  *
                                1359  *       EXIT:   (PSW)   = 'Z' SET   IF ABORT NOT STRUCK
                                1360  *                         'Z' CLEAR IF ABORT     STRUCK
                                1361  *
                                1362  *       USES:   (PSW)
                                1363  *
                                1364
003.202  072 334 040           1365  CFA     LDA     S.CAADR+1
003.205  247                   1366          ANA     A               SET/RESET THE ZERO FLAG
003.206  311                   1367          RET


                                1369  **      WAIT    -  WAIT FOR HANDSHAKE
                                1370  *
                                1371  *       DUMMY WAIT FOR HANDSHAKE ROUTINE.
                                1372  *
                                1373
003.207                         1374  WAIT    EQU     *
003.207  311                   1375          RET
003.210                         1376          XTEXT   DVDIO


                                1378X **      INCHAR - INPUT CHARACTER
                                1379X *
                                1380X *       INPUT CHARACTER FROM SPECIFIED DEVICE
                                1381X *
                                1382X *       ENTRY   NONE
                                1383X *
                                1384X *       EXIT    (PSW) = 'Z' CLEAR IF THERE IS A CHARACTER
                                1385X *                       (A) = CHARACTER
                                1386X *                     = 'Z' SET   IF THERE IS NOT A CHARACTER
                                1387X *
                                1388X *       USES    (PSW)
                                1389X *
                                1390X
003.210                         1391X INCHAR  EQU     *
003.210  345                    1392X         PUSH    H
003.211  072 055 004           1393X         LDA     D.PORT
003.214  147                    1394X         MOV     H,A
                                1395X
                                1396X *       CHECK FOR DATA
                                1397X
000.000                         1398X         IF      H84IO
                                1399X
003.215  056 005                1400X         MVI     L,UR.LSR
003.217  315 020 004           1401X         CALL    IN
003.222  346 001               1402X         ANI     UC.DR                   'Z' SET IF THERE IS DATA
```

```
003.224  312 237 003  1403X          JZ    INC1                        NO DATA
003.227  056 000      1404X          MVI   L,UR.RBR
003.231  315 020 004  1405X          CALL  IN
003.234  303 240 003  1406X          JMP   INC2
                      1407X
                      1408X          ELSE
                      1409X
                      1410X          MVI   L,USR
                      1411X          CALL  IN
                      1412X          ANI   USR.RXR                     'Z' SET IF THERE IS NO DATA
                      1413X          JZ    INC1                        NO DATA
                      1414X          MVI   L,UDR
                      1415X          CALL  IN
                      1416X          ANA   A                           IGNORE NULL CHARACTERS
                      1417X          JMP   INC2
                      1418X
                      1419X          ENDIF
                      1420X
003.237  067          1421X INC1     STC
                      1422X
003.240  341          1423X INC2     POP   H
003.241  311          1424X          RET


                      1426X **       OUTCHAR - OUTPUT CHARACTER
                      1427X *
                      1428X *        OUTPUT CHARACTER TO SPECIFIED DEVICE
                      1429X *
                      1430X *        ENTRY   (A)   = CHARACTER
                      1431X *
                      1432X *        EXIT    NONE
                      1433X *
                      1434X *        USES    (PSW)
                      1435X *
                      1436X
003.242               1437X OUTCHAR  EQU   *
003.242  345          1438X          PUSH  H
                      1439X
003.243  365          1440X          PUSH  PSW
003.244  072 055 004  1441X          LDA   D.PORT
003.247  147          1442X          MOV   H,A
                      1443X
000.000               1444X          IF      H84IO
                      1445X
003.250  056 005      1446X          MVI   L,UR.LSR
003.252  315 207 003  1447X          CALL  WAIT                        WAIT FOR THE HAND-SHAKE!/79.11.GC/
003.255  072 334 040  1448X OUTC0    LDA   S.CAADR+1
003.260  247          1449X          ANA   A
003.261  302 305 003  1450X          JNZ   OUTC1                       IF  CTL-Z,-A,-B,-C HIT
003.264  315 020 004  1451X          CALL  IN
003.267  346 040      1452X          ANI   UC.THE
003.271  312 255 003  1453X          JZ    OUTC0                       IF  NOT READY FOR TRANSMIT
003.274  361          1454X          POP   PSW
003.275  056 000      1455X          MVI   L,UR.THR
```

```
003.277  315 030 004  1456X          CALL   OUT
003.302  303 306 003  1457X          JMP    OUTC2
                      1458X
                      1459X          ELSE
                      1460X
                      1461X          MVI    L,USR
                      1462X          CALL   WAIT                    WAIT FOR THE HAND-SHAKE /79.11.GC/
                      1463X OUTC0    LDA    S.CAADR+1
                      1464X          ANA    A
                      1465X          JNZ    OUTC1                   IF  CTL-Z,-A,-B,-C HIT
                      1466X          CALL   IN
                      1467X          ANI    USR.TXR
                      1468X          JZ     OUTC0                   IF  NOT READY FOR TRANSMIT
                      1469X          POP    PSW
                      1470X          MVI    L,UDR
                      1471X          CALL   OUT
                      1472X          JMP    OUTC2
                      1473X
                      1474X          ENDIF
                      1475X
003.305  361          1476X OUTC1    POP    PSW
                      1477X
003.306  341          1478X OUTC2    POP    H
003.307  311          1479X          RET
000.000               1480X          IF     H84IO


                      1482X **       I8250 - INITIALIZE 8250
                      1483X *
                      1484X *        INITIALIZE AN 8250 PORT.  STOLEN AS CAP FROM CONSL. DRIVER.
                      1485X *
                      1486X *        ENTRY   (A)          =  PORT ADDRESS
                      1487X *                (HL)[0-14]   =  NEW BAUD RATE
                      1488X *                (HL)[15]     =  1 IF TWO STOP BITS
                      1489X *
                      1490X *        EXIT    NONE
                      1491X *
                      1492X *        USES    (A)
                      1493X *
                      1494X
003.310               1495X I8250    EQU    *
003.310  325          1496X          PUSH   D
                      1497X
003.311  353          1498X          XCHG
003.312  147          1499X          MOV    H,A
003.313  056 001      1500X          MVI    L,UR.IER                                          /79.02.GC/
003.315  257          1501X          XRA    A                                                 /79.02.GC/
003.316  315 030 004  1502X          CALL   OUT                                               /79.02.GC/
003.321  056 004      1503X          MVI    L,UR.MCR                                          /79.01.GC/
003.323  076 020      1504X          MVI    A,UC.LOO                                          /79.01.GC/
003.325  315 030 004  1505X          CALL   OUT                    SET LOOP-BACK             /79.01.GC/
003.330  056 003      1506X          MVI    L,UR.LCR
003.332  076 200      1507X          MVI    A,UC.DLA
003.334  315 030 004  1508X          CALL   OUT
```

```
003.337  056 000       1509X          MVI   L,UR.DLL
003.341  173           1510X          MOV   A,E
003.342  315 030 004   1511X          CALL  OUT
003.345  056 001       1512X          MVI   L,UR.DLM
003.347  172           1513X          MOV   A,D
003.350  346 177       1514X          ANI   177Q
003.352  315 030 004   1515X          CALL  OUT
003.355  056 003       1516X          MVI   L,UR.LCR
003.357  172           1517X          MOV   A,D
003.360  007           1518X          RLC
003.361  007           1519X          RLC
003.362  007           1520X          RLC
000.000                1521X          ERRNZ UC.2SB-4
003.363  346 004       1522X          ANI   UC.2SB
003.365  366 003       1523X          ORI   UC.8BW                          8 BIT WORDS
003.367  315 030 004   1524X          CALL  OUT
003.372  056 000       1525X          MVI   L,UR.RBR
003.374  315 020 004   1526X          CALL  IN                              REMOVE GARBAGE
003.377  076 156       1527X          MVI   A,AC.DLY                                    /79.01.GC/
004.001  315 053 000   1528X          CALL  .DLY                                        /79.01.GC/
004.004  056 004       1529X          MVI   L,UR.MCR                                    /79.01.GC/
004.006  315 020 004   1530X          CALL  IN                                          /79.01.GC/
004.011  346 357       1531X          ANI   377Q-UC.LOO                                 /79.01.GC/
004.013  315 030 004   1532X          CALL  OUT                TURN OFF LOOP-BACK       /79.01.GC/
                       1533X
004.016  321           1534X          POP   D
004.017  311           1535X          RET
                       1536X          ELSE
                       1537X I8251    SPACE 4,10
                       1538X **       I8251 - INITIALIZE 8251
                       1539X *
                       1540X *        INITIALIZE AN 8251 PORT
                       1541X *
                       1542X *        ENTRY   (A)      = PORT ADDRESS
                       1543X *                (HL)[15] = 1 IF TWO STOP BITS
                       1544X *
                       1545X *        EXIT    NONE
                       1546X *
                       1547X *        USES    ALL
                       1548X *
                       1549X
                       1550X I8251    EQU   *
                       1551X          XCHG
                       1552X          MOV   H,A
                       1553X          MVI   L,USR
                       1554X          MOV   A,D
                       1555X          ANI   200Q                             (A) = 200Q IF TWO STOP BITS
                       1556X          ERRNZ   200Q+UMI.1B-UMI.2B
                       1557X          ORI   UMI.1B+UMI.L8+UMI.16X
                       1558X          STA   I8251.B
                       1559X          LXI   B,I8251.A
                       1560X I8251.1  LDAX  B
                       1561X          CPI   #377Q
                       1562X          JZ    I8251.2
                       1563X          CALL  OUT
                       1564X          INX   B
```

```
                                1565X           JMP     I8251.1
                                1566X I8251.2   MVI     A,UCI.ER+UCI.TE+UCI.RE
                                1567X           CALL    OUT
                                1568X           MVI     L,UDR
                                1569X           CALL    IN
                                1570X           RET
                                1571X I8251.A   DB      0,0,0,0,0,0
                                1572X           DB      UCI.IR
                                1573X I8251.B   DB      0                       CONFIGURATION BYTE
                                1574X           DB      377Q
                                1575X           ENDIF


                                1577X **        IN - INPUT
                                1578X *
                                1579X *         INPUT BYTE FROM SPECIFIED PORT
                                1580X *
                                1581X *         ENTRY   (H)   = PORT ADDRESS
                                1582X *                 (L)   = OFFSET
                                1583X *
                                1584X *         EXIT    (A)   = BYTE READ
                                1585X *
                                1586X *         USES    (PSW)
                                1587X *
                                1588X
        004.020                 1589X IN        EQU     *
        004.020  174            1590X           MOV     A,H
        004.021  205            1591X           ADD     L
        004.022  062 026 004    1592X           STA     IN.ADD
        004.025  333 000        1593X           IN      *-*
        004.026                 1594X IN.ADD    EQU     *-1
        004.027  311            1595X           RET


                                1597X **        OUT - OUTPUT
                                1598X *
                                1599X *         OUTPUT BYTE TO SPECIFIED PORT
                                1600X *
                                1601X *         ENTRY   (A)   = BYTE TO BE WRITTEN
                                1602X *                 (H)   = PORT ADDRESS
                                1603X *                 (L)   = OFFSET
                                1604X *
                                1605X *         EXIT    NONE
                                1606X *
                                1607X *         USES    NONE
                                1608X *
                                1609X
        004.030                 1610X OUT       EQU     *
        004.030  365            1611X           PUSH    PSW
        004.031  174            1612X           MOV     A,H
        004.032  205            1613X           ADD     L
        004.033  062 040 004    1614X           STA     OUT.ADD
```

```
004.036  361            1615X          POP   PSW
004.037  323 000        1616X          OUT   *-*
004.040                 1617X OUT.ADD  EQU   *-1
004.041  311            1618X          RET


                        1620  **       UAS     -  UNIT ASSIGNED?
                        1621  *
                        1622  *        CHECK TO SEE IF THE UNIT IS ASSIGNED
                        1623  *
                        1624  *        ENTRY   NONE
                        1625  *
                        1626  *        EXIT    (PSW)   = 'Z' CLEAR IF UNIT     ASSIGNED
                        1627  *                          'Z' SET   IF UNIT NOT ASSIGNED
                        1628  *
                        1629  *        USES    (PSW)
                        1630  *
                        1631
004.042  072 050 004    1632  UAS      LDA     D.ASGN
004.045  346 200        1633           ANI     10000000B               D.AS.[7]=1  =>  ASSIGNED
004.047  311            1634           RET
```

```
004.050                 1637            XTEXT   TBRA


                        1639X **        $TBRA - BRANCH RELATIVE THOUGH TABLE.
                        1640X *
                        1641X *         $TBRA USES THE SUPPLIED INDEX TO SELECT A BYTE FROM THE
                        1642X *         JUMP TABLE. THE CONTENTS OF THIS BYTE ARE ADDED TO THE
                        1643X *         ADDRESS OF THE BYTE, YEILDING THE PROCESSOR ADDRESS.
                        1644X *
                        1645X *         CALL    $TBRA
                        1646X *         DB      LAB1-*          INDEX = 0 FOR LAB1
                        1647X *         DB      LAB2-*          INDEX = 1 FOR LAB2
                        1648X *         DB      LABN-*          INDEX = N-1 FOR LABN
                        1649X *
                        1650X *         ENTRY   (A) = INDEX
                        1651X *                 (RET) = TABLE FWA
                        1652X *         EXIT    TO COMPUTED ADDRESS
                        1653X *         USES    F,H,L
                        1654X
                        1655X
031.076                 1656X $TBRA     EQU     31076A          IN H17 ROM
004.050                 1657            XTEXT   TYPTX


                        1659X **        $TYPTX - TYPE TEXT.
                        1660X *
                        1661X *         $TYPTX IS CALLED TO TYPE A BLOCK OF TEXT ON THE SYSTEM CONSOLE.
                        1662X *
                        1663X *         IMBEDDED ZERO BYTES INDICATE A CARRIAGE RETURN LINE FEED,
                        1664X *         A BYTE WITH THE 200Q BIT SET IS THE LAST BYTE IN THE MESSAGE.
                        1665X *
                        1666X *         ENTRY   (RET) = TEXT
                        1667X *         EXIT    TO (RET+LENGTH)
                        1668X *         USES    A,F
                        1669X
                        1670X
031.136                 1671X $TYPTX    EQU     31136A          IN H17 ROM
                        1672X
031.144                 1673X $TYPTX.   EQU     31144A          IN H17 ROM
                        1675  ***       TABLE OF DEVICE AND UNIT VARIABLES
                        1676  *
                        1677
004.050  000            1678  D.UNIT    DB      0                       [6-0] ::= UNIT NUMBER
                        1679
004.050                 1680  D.ASGN    EQU     D.UNIT                  [7]   ::= UNIT ASSIGNED FLAG
                        1681
004.051  001            1682  D.FLAG    DB      DFLT.FG                 FLAGS
                        1683
004.052  140 000        1684  D.BAUD    DW      DFLT.BD                 BAUD RATE, [15] ::= TWO STOP BIT FLAG
                        1685
004.054  000            1686  D.WAIT    DB      0                       WAIT FOR I/O FLAG
                        1687
```

```
004.055  340          1688  D.PORT  DB      DFLT.PN                 PORT NUMBER
                       1689
004.056  006          1690  D.LPI   DB      DFLT.LI                 LINES/INCH
                       1691
004.057  120          1692  D.WID   DB      DFLT.WD                 CHARACTERS/LINE
                       1693
004.060  074          1694  D.LNPG  DB      DFLT.LP                 LINES/PAGE
                       1695
004.061  000          1696  D.LINX  DB      0                       LINE INDEX
                       1697
004.062  000          1698  D.COLX  DB      0                       COLUMN INDEX
                       1699
004.063  000          1700  D.LWE   DB      0                       LAST CHARACTER WAS AN ESCAPE IF != 0
                       1701
004.064  000          1702  D.NOC   DB      0                       NEED ONE MORE ESC. CHAR. IF != 0
                       1703
004.065  000          1704  D.BURC  DB      0                       BURST COUNT
```

```
                                1706            LON     G
          004.066  055 000 062  1707            END
                   000 065 000
                   130 000 170
                   001 205 001
                   224 001 236
                   001 252 001
                   264 001 300
                   001 313 001
                   325 001 340
                   001 367 001
                   373 001 003
                   002 033 002
                   040 002 047
                   002 054 002
                   060 002 063
                   002 070 002
                   073 002 076
                   002 101 002
                   104 002 114
                   002 121 002
                   126 002 132
                   002 141 002
                   146 002 151
                   002 161 002
                   166 002 200
                   002 203 002
                   206 002 211
                   002 214 002
                   220 002 225
                   002 231 002
                   235 002 240
                   002 244 002
                   253 002 260
                   002 267 002
                   273 002 277
                   002 303 002
                   310 002 315
                   002 324 002
                   327 002 333
                   002 336 002
                   345 002 352
                   002 360 002
                   365 002 372
                   002 377 002
                   004 003 007
                   003 020 003
                   023 003 030
                   003 035 003
                   040 003 044
                   003 051 003
                   056 003 063
                   003 066 003
                   073 003 100
                   003 105 003
                   112 003 116
```

```
003 121 003
127 003 132
003 136 003
145 003 150
003 154 003
161 003 165
003 170 003
176 003 212
003 220 003
225 003 232
003 235 003
245 003 253
003 262 003
265 003 272
003 300 003
303 003 317
003 326 003
335 003 343
003 353 003
370 003 375
003 007 004
014 004 023
004 034 004
043 004 000
000
ASSEMBLY COMPLETE
 1707 STATEMENTS
    0 ERRORS DETECTED
11498 BYTES FREE
```

```
$CNA    042207  632L  835
$DCS    042204  630L
$FST    042212  634L
$LBD    042223  640L  840
$PBF    042231  644L  808
$PBV    042234  646L  818
$SNA    042201  628L  787
$SOP    042226  642L  785
$TBLS   042215  636L
$TBRA   031078  972   1656E
$TYPTX  031136  862   1671E
$TYPTX. 031144 1673E
$WTBLS  042220  638L
.       001377 724S  725  726  949S  950  951
.ABUSS  040024  609E
.ALARM  002136  582E
.ALEDS  040013  607E
.CHFLG  000060  482L
.CLEAN  000205  497L
.CLEAR  000055  479L
.CLEARA 000056  480L
.CLOSE  000046  472L
.CLRCO  000007  456L
.CONSL  000008  455L
.CRC    002347  590E
.CRCSUM 040027  610E
.CTC    002172  584E
.CTL2FL 040066  616E
.CTLC   000041  467L
.CTLFLG 040011  606E
.DAD    000206  498L
.DECODE 000053  477L
.DELET  000050  474L
.DISMT  000061  483L
.DLEDS  040021  608E
.DLY    000053  579E  1528
.DMNMS  000203  495L
.DMOUN  000201  493L
.DOD    003122  593E
.DODA   003356  595E
.DSPMOD 040007  604E
.DSPROT 040006  603E
.DUMP   001374  581E
.ERROR  000057  481L
.EXIT   000000  449L
.HORN   002140  583E
.IDENT  000000  578E
.IOWRK  040002  601E
.LINK   000040  466L
.LOAD   001267  580E
.LOADD  000062  484L
.LOADO  000010  457L
.MFLAG  040010  605E
.MONMS  000202  494L
.MOUNT  000200  492L
.NAME   000054  478L
.NMIRET 040064  615E
.OPEN   000063  485L
```

```
.OPENC  000045  471L
.OPENR  000042  468L
.OPENU  000044  470L
.OPENW  000043  469L
.PCHL   002264  586E
.POSIT  000047  473L
.PRINT  000003  452L
.RCK    003260  594E
.READ   000004  453L
.REGI   040005  602E
.REGPTR 040035  613E
.RENAM  000051  475L
.RESET  000204  496L
.RNB    002331  589E
.RNP    002325  588E
.SCIN   000001  450L
.SCOUT  000002  451L
.SETTP  000052  476L
.SRS    002265  587E
.START  040000  600E
.SYSRES 000012  459L
.TICCNT 040033  612E
.TPERR  002205  585E
.TPERRX 040031  611E
.UIVEC  040037  614E
.VERS   000011  458L
.WNB    003024  592E
.WNP    003017  591E
.WRITE  000005  454L
ABORT   002032  980     1017E   1147
AC.DLY  000156  654E    1527
ACK     000006  758E    1242
AIO.CGN 041047  196L
AIO.CHA 041116  211L
AIO.CNT 041111  207L
AIO.CSI 041050  197L
AIO.DDA 041041  192E
AIO.DES 041055  201L
AIO.DEV 041057  202L
AIO.DIR 041062  205L
AIO.DTA 041053  200L
AIO.EOF 041113  209L
AIO.EOM 041112  208L
AIO.FLG 041043  193L
AIO.GRT 041044  194L
AIO.LGN 041051  198L
AIO.LSI 041052  199L
AIO.SPG 041046  195L
AIO.TFP 041114  210L
AIO.UNI 041061  203L
AIO.VEC 041040  191L
BAUD    000107  834L    938
BAUDI   000000  924     937E
BELL    000007  284E
BKSP    000010  286E
BOOT.F  000001  171E
BURST   000040  759E    1062    1222    1245
C.STX   000002  288E
```

```
C.SYN   000026  287E
CB.CLI  000100  524E    547
CB.MTL  000040  523E
CB.SPK  000200  525E
CB.SSI  000020  522E
CB2.CLI 000002  528E
CB2.ORG 000040  529E
CB2.SID 000100  530E
CB2.SSI 000001  527E
CDB.H84 000001  114E
CDB.H85 000000  113E
CES     002230' 1157    1176L
CES1    002256' 1182    1191L
CES2    002263' 1178    1195L
CES3    002272' 1197    1199L
CFA     003202' 1146    1235    1365L
CHP     002302' 1162    1217L
CHP1    002326' 1235L   1239    1243
CLOSE   002131' 979     1018    1100E
CN.170M 000014  565E
CN.174M 000003  564E
CN.ABO  000200  569E
CN.BAU  000100  568E
CN.MEM  000040  567E
CN.PRI  000020  566E
CND.H17 000000  571E
CND.H47 000001  573E
CND.NDI 000000  572E
CO.FLG  000001  266E
CR      000015  280E    1081    1263    1267    1288
CS.FLG  000200  267E
CSL.CHR 000001  243E
CSL.ECH 000200  240E
CSL.RAW 000004  241E
CSL.WRP 000002  242E
CTLA    000001  295E
CTLB    000002  296E
CTLC    000003  297E
CTLD    000004  298E
CTLO    000017  299E
CTLP    000020  300E
CTLQ    000021  301E
CTLS    000023  302E
CTLZ    000032  303E
CTP.2SB 000010  252E
CTP.BKM 000002  253E
CTP.BKS 000200  248E
CTP.FF  000100  249E
CTP.MLI 000040  250E
CTP.MLO 000020  251E
CTP.TAB 000001  254E
D.ASGN  004050' 1054    1056    1106    1108    1632    1680E
D.BAUD  004052' 845     1068    1684L
D.BURC  004065' 1063    1217    1246    1334    1336    1704L
D.COLX  004062' 1266    1275    1299    1318    1323    1698L
D.CON   040110  87L
D.FLAG  004051' 900     904     1110    1682L
D.LINX  004061' 1080    1290    1292    1300    1344    1696L
```

```
D.LNPG  004060'   916    1341   1694L
D.LPI   004056'  1690L
D.LWE   004063'  1060    1176   1188   1201   1228   1700L
D.NOC   004064'  1059    1180   1192   1199   1224   1702L
D.PORT  004055'   919    1067   1071   1393   1441   1688L
D.RAM   040240    90L
D.UNIT  004050'  1678L   1680
D.VEC   040130    89L
D.WAIT  004054'  1686L
D.WID   004057'   922    1314   1692L
DBD1    002022'   970     984L
DBDVD   002000'   967E
DBO.    003075'  1268    1294   1302   1306L
DBO1    002374'  1264    1270L
DBO10   003157'  1326    1340L
DBO11   003200'  1343    1348L
DBO2    003006'  1275L   1282
DBO3    003025'  1271    1285L
DBO4    003053'  1286    1296L
DBO5    003075'  1297    1304E
DBO8    003131'  1316    1323L
DBO9    003142'  1307    1309   1331L
DBOA    003027'   891     896   1287E
DBOB    002376'   908     912   1272E
DBOUT   002355'  1082    1115   1159   1233   1261E  1274   1281   1289   1321   1347
DC.ABT  000007    318L
DC.CLO  000006    317L
DC.LOD  000011    320L
DC.MAX  000013    322L
DC.MOU  000010    319L
DC.OPR  000003    314L
DC.OPU  000005    316L
DC.OPW  000004    315L
DC.RDY  000012    321L
DC.REA  000000    311L
DC.RER  000002    313L
DC.WRI  000001    312L
DEV.DDA 000004    338L
DEV.DVG 000015    351L
DEV.DVL 000013    350L
DEV.FLG 000006    339L
DEV.JMP 000003    337L
DEV.MNU 000010    347L
DEV.MUM 000007    346L
DEV.NAM 000000    329L
DEV.RES 000002    333L
DEV.UNT 000011    348L
DEVELEN 000016    353E
DF.CLR  000376     55E
DF.EMP  000377     54E
DFLT.BD 000140    747E   1684
DFLT.FG 000001    749E   1682
DFLT.LI 000006    750E   1690
DFLT.LP 000074    752E   1694
DFLT.PN 000340    746E   1688
DFLT.WD 000120    751E   1692
DIR.ALD 000025     70L
DIR.CLU 000015     63L
```

```
DIR.CRD 000023        69L
DIR.EXT 000010        58L
DIR.FGN 000020        66L
DIR.FLG 000016        64L
DIR.LGN 000021        67L
DIR.LST 000022        68L
DIR.NAM 000000        57L
DIR.PRO 000013        59L
DIR.VER 000014        60L
DIRELEN 000027        72E      205
DIRIDL  000015        61E
DM.MR   000000       537E
DM.MW   000001       538E
DM.RR   000002       539E
DM.RW   000003       540E
DR.IM   000001       334E
DR.PR   000002       335E
DT.CH   000020       344E
DT.CR   000002       341E
DT.CW   000004       342E      716     719
DT.DD   000001       340E
DT.RN   000010       343E
DV.EL   000000       330E
DV.NU   000001       331E
DVD.CAP 000007       375L
DVD.DVD 000006       374L
DVD.ENT 002000       384E      951     968
DVD.INP 000023       380L
DVD.MNU 000011       377L
DVD.MUM 000010       376L
DVD.SET 000022       379L
DVD.STE 000053       382E      726     777
DVD.UFL 000012       378L
DVDFLV  000307       370E      715     721
EC.CNA  000004       394L
EC.DDA  000027       413L
EC.DIF  000017       405L
EC.DIW  000035       419L
EC.DNI  000045       427L
EC.DNR  000046       428L
EC.DNS  000005       395L     1002
EC.DSC  000047       429L
EC.EOF  000001       391L
EC.EOM  000002       392L
EC.FAO  000031       415L
EC.FAP  000026       412L
EC.FL   000030       414L
EC.FNF  000014       402L
EC.FNO  000011       399L
EC.FNR  000034       418L
EC.FOD  000043       425L
EC.FUC  000013       401L
EC.ICN  000016       404L
EC.IDN  000006       396L
EC.IFC  000020       406L
EC.IFN  000007       397L
EC.ILC  000003       393L
EC.ILO  000040       422L      790
```

```
EC.ILR  000012  400L  984
EC.ILV  000037  421L  836  841
EC.IOI  000052  432L
EC.IS   000032  416L
EC.NCV  000050  430L
EC.NEM  000021  407L
EC.NOS  000051  431L
EC.NPM  000044  426L
EC.NRD  000010  398L
EC.NVM  000042  424L
EC.OTL  000053  433L
EC.RF   000022  408L
EC.UNA  000036  420L  1048  1102  1138
EC.UND  000015  403L
EC.UUN  000033  417L  794
EC.VPM  000041  423L
EC.WF   000023  409L
EC.WP   000025  411L
EC.WPV  000024  410L
ENL     000212  293E  874
ESC     000033  291E  1185
ETX     000003  257E  1232
F.FORM  000001  741E  749  899  899  903  1111
FF      000014  294E  1114  1296  1301  1346
FLAG    042231  808E  941
FLAGI   000001  889  894  899  903  907  911  940E
FT.ABS  000000  31E
FT.BAC  000003  34E
FT.PIC  000001  32E
FT.REL  000002  33E
H84IO   000000  1E  1398  1444  1480
HELP    000134' 861E  944
HELPI   000002  927  943E
I.CONFL 000004  269E  270
I.CONTY 000001  256E  257
I.CONWI 000003  262E  263
I.CSLMD 000000  245E
I.CUSOR 000002  259E  260
I8250   003310' 1070  1495E
IN      004020' 1401  1405  1451  1526  1530  1589E
IN.ADD  004026' 1592  1594E
INC1    003237' 1403  1421L
INC2    003240' 1406  1423L
INCHAR  003210' 1238  1391E
IP.CON  000362  513E
IP.PAD  000360  509E
LF      000012  281E
LOADD   002035' 982  1031L
M.FOX   000303  557E
M.PAMB  000021  556E
MI.CALL 000315  735E
MI.CZ   000314  736E
MI.JMP  000303  733E  895  911
MI.JNZ  000302  734E  890  907
NL      000012  292E  293  863  863  863  863  864  865  866  867  867  868
                868  869  870  871  872  873  874  1285  1293  1320
NSUIT   002026' 973  975  976  978  981  1001E
NUL2    000000  283E
```

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NULL     000200      282E
OP.CTL   000360      510E
OP.DIG   000360      511E
OP.SEG   000361      512E
OP2.CTL  000362      514E
OPENW    002037'     977      1046E
OPTTAB   001170'     784       886L
OPTTABE  001366'     886       930L
OUT      004030'    1075      1456    1502    1505    1508    1511    1515    1524    1532    1610E
OUT.ADD  004040'    1614      1617E
OUTC0    003255'    1448L     1453
OUTC1    003305'    1450      1476L
OUTC2    003306'    1457      1478L
OUTCHAR  003242'    1332      1437E
OVL.IN   000001      138E
OVL.NUM  000014      140E
OVL.RES  000002      139E
OVL.UCS  000200      141E
PIC.COD  000006       46L       372
PIC.ID   000000       41L
PIC.LEN  000002       43L
PIC.PTR  000004       44L
PRCTAB   001367'     783       935L    937     940     943     946
QUOTE    000047      289E
ROMBOOT  030000       82E
RUBOUT   000177      285E      1308
S.BAUD   040344      115L
S.BDA    041120      213L
S.BOOTF  041034      170L
S.CAADR  040333      273L      1365    1448
S.CACC   041006      154L
S.CCTAB  040335      274L
S.CDB    040343      112L
S.CFWA   040352      122L
S.CODE   041007      155L
S.CONFL  040332      271L
S.CONTY  040327      258L
S.CONWI  040331      264L
S.CSLMD  040326      246L       257     260     263     270
S.CUSOR  040330      261L
S.DATC   040310      227L
S.DATE   040277      226L
S.DCS    041033      168L
S.DDDTA  040366      133L
S.DDGRP  040364      130L
S.DDLDA  040360      128L
S.DDLEN  040362      129L
S.DHOPC  040370      134L
S.DFWA   040354      123L
S.DIREA  041016      162L
S.DLINK  040346      120L
S.FASER  041013      161L
S.FCI    041021      163L
S.GRT0   024000       78E
S.GRT1   025000       79E
S.GRT2   026000       80E
S.GUP    041027      165L
S.HIMEM  040316      229L
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S.INT    040343      92L     108
S.JUMPS  041010     159L
S.MOUNT  041032     167L
S.OFWA   040350     121L
S.OMAX   040324     235L
S.OSN    041004     150L
S.OVLE   041000     147L
S.OVLFL  040371     143L
S.OVLS   040376     146L
S.OVSTK  041035     175L
S.RFWA   040356     124L
S.SCI    041024     164L
S.SCR    041121     214L
S.SDD    041010     160L
S.SOVR   041146      94L      96
S.SSN    041002     149L
S.SYSM   040320     231L
S.TIME   040312     228L
S.UCSF   040372     144L
S.UCSL   040374     145L
S.USRM   040322     233L
S.VAL    040277      91L     224
SC.ACE   000350     653E
SET1     000103'    779     794L
SETNTR   000053'    776E
STACK    042200      98E
STACKL   001032      96E
SYDD     040130      88E
SYSCALL  000377     442E
TAB      000011     290E    1270
UAS      004042'   1047     1101    1137    1632L
UC.2SB   000004     679E    1521    1522
UC.5BW   000000     675E
UC.6BW   000001     676E
UC.7BW   000002     677E
UC.8BW   000003     678E    1523
UC.BI    000020     698E
UC.CTS   000020     707E
UC.DCS   000001     703E
UC.DDR   000002     704E
UC.DLA   000200     684E    1507
UC.DR    000001     694E    1402
UC.DRL   000010     706E
UC.DSR   000040     708E
UC.DTR   000001     687E    1074
UC.EDA   000001     685E
UC.EPS   000020     681E
UC.FE    000010     697E
UC.IID   000006     672E
UC.IIP   000001     671E
UC.LOO   000020     691E    1504    1531
UC.MSI   000010     668E
UC.OR    000002     695E
UC.OU1   000004     689E
UC.OU2   000010     690E    1074
UC.PE    000004     696E
UC.PEN   000010     680E
UC.RI    000100     709E
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UC.RLS  000200  710E
UC.RSI  000004  667E
UC.RTS  000002  688E  1074
UC.SB   000100  683E
UC.SKP  000040  682E
UC.TER  000004  705E
UC.THE  000040  699E  1452
UC.TRE  000002  686E
UC.TSE  000100  700E
UNT.DIS 000006  363L
UNT.FLG 000000  359L
UNT.GRT 000002  361L
UNT.GTS 000004  362L
UNT.SIZ 000010  365E
UNT.SPG 000001  360L
UO.CLK  000001  549E
UO.DDU  000002  548E
UO.HLT  000200  546E
UO.NFR  000100  547E
UR.DLL  000000  660E  1509
UR.DLM  000001  662E  1512
UR.IER  000001  664E  1500
UR.IIR  000002  670E
UR.LCR  000003  674E  1506  1516
UR.LSR  000005  693E  1400  1446
UR.MCR  000004  686E  1073  1503  1529
UR.MSR  000006  702E
UR.RBR  000000  656E  1404  1525
UR.THR  000000  658E  1455
USERFWA 042200   99E   626
VAL     042234  818E   947
VALI    000003  915   918   921   946E
VERS    000040  440E
WAIT    003207' 1374E 1447
WRI1    002174' 1142L 1150
WRI2    002213' 1149  1157L
WRITE   002165' 974   1136E

25404 BYTES FREE
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