EXIT CODE=0000

DRIVER DISC

DIGI

X1210 DRIVER for D.Ø.S

16-06-72

```
#$JOB VOTER0-245                                    *ICP#6
```

```
#**** CLOCK=    /   /   AT   H=  M=  S=
#$SAS
```



```
00000                    IDENT   D$RDKM
```

```
00001                       ENTRY   D:RDKM      DRIVER STARTING ADDRESS
00002                       ENTRY   I:DKQ       INTERRUPT PROCESSING ROUTINE
00003                *
00004                *
00005                       EXTRN   C:WAIT
00006                       EXTRN   L:VCH
00007                       EXTRN   M:DKER
00008                       EXTRN   R:TUR4
00009                       EXTRN   R:TURN
00010                       EXTRN   T:DCT       = Addr of DCTHD?
00011                       EXTRN   T:JPT
00012                *
00013                *                                                       CVE00000
00014                *                                                       CVE00010
00015                *       SUPERVISOR COMMUNICATION VECTOR EQUIVALENCE     CVE00020
00016                *                                                       CVE00030
00017                *                                                       CVE00040
00018                *                                                       CVE00050
00019                *                                                       CVE00060
00020                *                                                       CVE00070
00021                *                                                       3VE00080
00022                CVEADR  EQU     /82         ADDR OF SUPERVISOR CVT      CVE00090
00023                *                                                       CVE00100
00024                CVEMSZ  EQU     0           MEMORY SIZE                 CVE00110
00025                CVESTB  EQU     CVEMSZ+2  2 STACK BASE                  CVE00120
00026                CVESBA  EQU     CVESTB+2  4 SMALLEST BUFFER ADDR        CVE00130
00027                CVEBBA  EQU     CVESBA+2  6 BIGGEST BUFFER ADDR         CVE00140
00028                CVEBKA  EQU     CVEBBA+2  8 BACKGROUND ADDR             CVE00150
00029                CVEDSP  EQU     CVEBKA+2 10 START ADDR OF DISPATCHER    CVE00153
00030                CVEFCT  EQU     CVEDSP+6 16 FILE CODE TABLE             CVE00160
00031                CVEDWT  EQU     CVEFCT+2 18 DEVICE WORK TABLE           CVE00170
00032                CVEDCT  EQU     CVEDWT+2 20 DISK CONTROL TABLE          CVE00180
00033                CVEJPT  EQU     CVEDCT+2 22 JOB PARAMETER TABLE         CVE00190
00034                CVEBPL  EQU     CVEJPT+2 24 BUFFER POOL                 CVE00200
00035                CVELFT  EQU     CVEBPL+2 26 LOGICAL FILE DESCRIPTION TABLE CVE00210
00036                CVEYAR  EQU     CVELFT+2 28 CURRENT YEAR, 2 ASCIL CHAR  CVE00220
00037                CVEMON  EQU     CVEYAR+2 30 CURRENT MONTH,2 ASCIL*CHAR  CVE00230
00038                CVEDAY  EQU     CVEMON+2 32 CURRENT DAY, 2 ASCIL CHAR   CVE00240
00039                CVEHOR  EQU     CVEDAY+2 34 HOURS           &"          &3E5 0250
00040                CVEMIN  EQU     CVEHOR+2 36 MINUTES          "29N1RY E  & &0&00  02
00041                CVESEC  EQU     CVEMIN+2 38 SECONDS          |           CVE00270
00042                CVEFIT  EQU     CVESEC+2 40 FIFTETHS OF SEC  |          CVE00280
00043                CVEBTB  EQU     CVEFIT+2 42 ALLOCATION TABLE            CVE00290
00044                *                                                       CVE00300
00045                *                                                       CVE00310
00046                *                                                       CVE00320
00047                *                                                       FCT00000
00048                *       FCT     FILE CODE TABLE                         FCT00010
00049                *                                                       FCT00020
00050                FCTFC   EQU     0           FILE CODE                   FCT00030
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00051                FCTDWT  EQU     2           ADDR OF DWT ASSIGNED TO THE FILE CODE   FCT00040
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00052                   FCTLFT  EQU     2           ADDR OF LFI ASSIGNED TO THE FILE CODE     FCT00050
00053                   *                                                                     FCT00060
00054                   *                                                                     DCT00000
00055                   *       DCT     DISK CONTROL TABLE                                    DCT00010
00056                   DCTLG   EQU     -14     -74 ENTRY LENGTH                              DCT00020
00057                   DCTEB0  EQU     DCTLG+2 -72 EVENT BYTE / LOGICAL DISK FILE CODE       DCT00030
00058                   DCTEB1  EQU     DCTEB0+2 -70 BUFFER (205 WORDS) ADDR                  DCT00040
00059                   DCTEB2  EQU     DCTEB1+2 -8 REQUESTED LENGTH,410 CHARACTERS           DCT00050
00060                   DCTEB3  EQU     DCTEB2+2 -6 EFFECTIVE LENGTH,410 CHARACTERS           DCT00060
00061                   DCTEB4  EQU     DCTEB3+2 -4 RETURNED STATUS                           DCT00070
00062                   DCTEB5  EQU     DCTEB4+2 -2 ABSOLUTE SECTOR NUMBER                    DCT00080
00063                   DCTHD   EQU     DCTEB5+2  0 CURRENT POSITION OF THE HEAD              DCT00090
00064                   DCTDWT  EQU     DCTHD+2  +2 DWT ADDRESS                               DCT00095
00065                   DCTCUR  EQU     DCTDWT+2 +4 OPERATION TO BE PERFORMED                 DCT00100
00066                   DCTSK   EQU     DCTCUR+2 +6 BOU LINES FOR DIFFERENTIAL SEEK           DCT00110
00067                   DCTRD   EQU     DCTSK+2  +8 BOU LINES FOR READ                        DCT00120
00068                   DCTRM1  EQU     DCTRD+2 +10 MULTIPLEX/SIMPLEX DOUBLEWORD FOR READ CMNDDCT00130
00069                   DCTRM2  EQU     DCTRM1+2 +12                                          DCT00140
00070                   DCTW    EQU     DCTRM2+2 +14 BOU LINES FOR WRITE                      DCT00150
00071                   DCTWM1  EQU     DCTW+2   +16 MULTIPLEX/SIMPLEX DOUBLEWORD FOR WRITE CMDDCT00160
00072                   DCTWM2  EQU     DCTWM1+2 +18                                          DCT00170
00073                   DCTQEN  EQU     DCTWM2+2 +20 END OF QUEUE 1R51  2 '3123&55398&95 8 '  43T00180
00074                   DCTQRR  EQU     DCTQEN+2 +22 NEXT FREE ENTRY IN THE QUEUE             DCT00190
00075                   DCTQFR  EQU     DCTQRR+2 +24 1ST ELEMENT IN Q (FRONT OF Q)            DCT00200
00076                   DCTQNR  EQU     DCTQFR+2 +26 2ND ELEMENT IN Q                         DCT00210
00077                   DCTQBR  EQU     DCTQNR+2 +28 1ST WORD OF Q AREA                       DCT00220
00078                   *                                                                     DCT00230
00079                   *                                                                     DCT00240
00080                   *                                                                     DCT00250
00081                   *                                                                     DCT00260
00082                   *                                                                     DCT00270
00083                   *                                                                     DCT00280
00084                   *                                                                     LFT00000
00085                   *       LFT     LOGICAL FILE DESCRIPTION TABLE                        LFT00010
00086                   *                                                                     LFT00020
00087                   *                                                                     LFT00030
00088                   LFTORD  EQU     0           USER REQUEST ORDER                        LFT00040
00089                   LFTEAD  EQU     LFTORD+2  2 USER ECB ADDRESS                          LFT00050
00090                   LFTREC  EQU     LFTEAD+2  4 USER RECORD AREA ADDRESS                  LFT00060
00091                   LFTLGT  EQU     LFTREC+2  6 USER REQUEST LENGTH                       LFT00070
00092                   LFTPCT  EQU     LFTLGT+2  8 A5,PCT61 ADDR                             LFT00080
00093                   LFTLAB  EQU     LFTPCT+2 10 A6,SCHED. LAB                             LFT00090
00094                   LFTMD1  EQU     LFTLAB+2 12 FILE STATUS,TYPE                          LFT00100
00095                   LFTMD2  EQU     LFTMD1+2 14 ASSIGN COUNT                              LFT00110
00096                   LFTDCT  EQU     LFTMD2+2 16 DCT ADDR                                  LFT00120
00097                   LFTBOT  EQU     LFTDCT+2 18 BEGINNING ADDR OF FILE = ADDR OF GRANTB   LFT00130
00098                   LFTSRC  EQU     LFTBOT+2 20 CURRENT RELATIVE SECTOR NUMBER             LFT00140
00099                   LFTSAC  EQU     LFTSRC+2 22 CURRENT ABSOLUTE SECTOR NUMBER             LFT00150
00100                   LFTBAD  EQU     LFTSAC+2 24 BLOCKING BUFFER ADDRESS                   LFT00160
00101                   LFTBDS  EQU     LFTBAD+2 26 DISPLACEMENT OF NEXT REC IN BLOCK BUFFER  LFT00170
00103                   LFTBUF  EQU     LFTBDS+2 28 CURRENT BUFFER ADDR                       LFT00180
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00103                    LFTSEC   EQU      LFTBUF+2  30  CURRENT SECTOR ADDR                    LFT00190
00104                    LFTORC   EQU      LFTSEC+2  32  CURRENT ORDER                          LFT00200
00105                    LFTSTC   EQU      LFTORC+2  34  CURRENT STATUS                         LFT00210
00106                    LFTSVD   EQU      LFTSTC+2  36                                         LFT00220
00107                    LFTSVS   EQU      LFTSVD+2  38                                         LFT00230
00108                    LFTSLU   EQU      LFTSVS+2  40                                         LFT00240
00109                    LFTSLB   EQU      LFTSLU+2  42                                         LFT00250
00110                    LFTSLC   EQU      LFTSLB+2  44                                         LFT00260
00111                    LFTSLT   EQU      LFTSLC+2  46                                         LFT00270
00112                    LFTSLR   EQU      LFTSLT+2  48                                         LFT00280
00113                    LFTLK1   EQU      LFTSLR+2  50                                         LFT00290
00114                    LFTLK2   EQU      LFTLK1+2  52                                         LFT00300
00115                    *                                                                      LFT00310
00116                    *                                                                      LFT00320
00117                    *                                                                      LFT00330
00118                    *                                                                      LFT00340
00119                    *                                                                      LFT00350
00120                    *                                                                      LFT00360
00121                    *                                                                      LFT00370
00122                    *                                                                      BFP00000
00123                    *        BUFFER POOL                                                   BFP00010
00124                    *                                                                      BFP00020
00125                    *                                                                      BFP00030
00126                    BUFFST   EQU      0         ADDR OF 1ST ALLOCATED BUFFER (BEG.OF CHAINBFP00040
00127                    BUFREE   EQU      2         ADDR OF 1ST FREED BUFF (BEG. OF CHAIN)     BFP00050
00128                    *                                                                      BFP00060
00129                    *                                                                      BFP00070
00130                    *                                                                      BFP00080
00131                    *                                                                      BFP00090
00132                    BUFLFT   EQU      2         2ND WORD OF BUF : ADDR OF LFT TO WHICH THEBFP00100
00133                    *                          BUFFER IS ALLOCATED                        BFP00110
00134                    BUFNXT   EQU      0         1ST WORD : NEXT BUFFER IN THE CHAIN        BFP00120
00135                    *                          NEXT 205 WORDS ARE THE BUFFER AREA         BFP00130
00136                    *                                                                      BFP00140
00137                    *                                                                      BFP00150
00138                    *        ECB                                                           ECB00000
00139                    *                                                                      ECB00010
00140                    ECBFC    EQU      0         FILE CODE                                  ECB00020
00141                    ECBBF    EQU      2         BUFFER ADDR                                ECB00030
00142                    ECBRL    EQU      4         REQUESTED LENGTH                           ECB00040
00143                    ECBEL    EQU      6         EFF LENGTH                                 ECB00050
00144                    ECBST    EQU      8         STATUS                                     ECB00060
00145                    ECBSC    EQU      10        SECTOR ADDR →                              ECB00070
00146                    *                                                                      JPT00000
00147                    *                                                                      JPT00010
00148                    *        JPT      JOB PARAMETER TABLE                                  JPT00020
00149                    *                                                                      JPT00030
00150                    *                                                                      JPT00040
00151                    JPTCA1   EQU      0         COMMUNICATION AREA                         JPT00050
00152                    JPTCA2   EQU      JPTCA1+2  2                                          JPT00060
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00153                    JPTCA3   EQU      JPTCA2+2                                             JPT00070
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00154                    JPTCA4   EQU      JPTCA3+2                                                    JPT00080
00155                    JPTCA5   EQU      JPTCA4+2                                                    JPT00090
00156                    JPTDSK   EQU      JPTCA5+2    DISK ADDR OF CURRENT PROG/USER DISK ADDR        JPT00100
00157                    JPTDIR   EQU      JPTDSK+2    USER DIRECTORY ADDR                             JPT00110
00158                    JPTMOD   EQU      JPTDIR+2    CONTROL WORD                                    JPT00120
00159                    JPTCOD   EQU      JPTMOD+2    ABORT CODE /EXIT CODE                           JPT00130
00160                    JPTCMD   EQU      JPTCOD+2    CURRENT COMMAND NUMBER                          JPT00140
00161                    JPTCCI   EQU      JPTCMD+2    ADDR OF CCI ON DISK (GRANTB SECTOR)             JPT00150
00162                    JPTSEG   EQU      JPTCCI+2    NUMBER OF SEGMENTS                              JPT00160
00163                    JPTROT   EQU      JPTSEG+2    ADDR OF ROOT SEGMENT                            JPT00170
00164                    *                                                                             JPT00180
00165                    *                                                                             JPT00190
00166                    *                                                                             JPT00200
00167                    *                                                                             JPT00210
00168                    DWTECB   EQU      10
```



```
00168                    EJECT
```

```
00171                   *
00172                   *
00173                   *
00174                   *
00175                   *
00176                   *********   DRIVER FOR  MOVING HEAD DISK
00177                   *
00178                   *
00179                   *         A8 = ECB   ADDRESS
00180                   *         A4 = ORDER
00181                   *         A6 = DWT ADDRESS
```

Addr of DCTHD?

```
00182                   EJECT
```

```
00183                                  *
00184                                  S       EQU     1
00185  0000  8358                      D:RDKM  LD      A3,32,A6                                        D:DK0000
       0002  0020
00186  0004  8459                              ST      A4,24,A6        SAVE ORDER                      D:DK0020
       0006  0018
00187  0008  A520                              ANK.L   A5,/C000        TEST N AND RD OF DCTCUR         D:DK0050
       000A  C000
00188  000C  5000    000C                      RF(0)   D:DK1                                           D:DK0060
00189  000E  8220                              LDK.L   A2,/8000        SET ERROR IN STATUS             D:DK0070
       0010  8000
00190  0012  8F20    0014                      AB.L    ERROR                                           D:DK0080
       0014  0000 R  0012
00191                                  *
00192  0016  0505                      D:DK1   LDK     A5,5                                            D:DK0070
00193  0018  854D                              ST      A5,DCTCUR,A3 INITIALIZE DCTCUR ( CURRY = 5 )    D:DK0080
       001A  0004
00194  001C  8120                              LDK.L   A1,D:DK12                                       D:DK0090
       001E  0000 R  001C
00195                                  *
00196                                  *       THIS SEQUENCE COMPUTES THE PHYSICAL SECTOR NUMBER
00197                                  *
00198  0020  8542                      D:DK11  LD      A5,10,A8                                        D:DK0100
       0022  000A
00199  0024  251F                              ANK     A5,/1F          SECTOR NUMBER                   D:DK0110
00200  0026  8714                              LDR     A7,A5           *       COMPUTE                 D:DK0120
00201  0028  3F41                              SLL1    A7              *         THE                   D:DK0130
00202  002A  9714                              ADR     A7,A5           *       PHYSICAL                D:DK0140
00203  002C  EF20                              CWK     A7,16           *       SECTOR                  D:DK0150
       002E  0010
00204  0030  5200    0030                      RF(2)   D:DK9+2        *       NUMBER                  D:DK0160
00205  0032  EF20                              CWK     A7,32           *       IN                      D:DK0170
       0034  0020
00206  0036  5100    0030                      RF(1)   D:DK9           *       REGISTER                D:DK0180
00207  0038  1710                              ADK     A7,16           *         A7                    D:DK0190
00208  003A  1F20    D:DK9                     SUK     A7,32           *                               D:DK0200
00209  003C  8F04                              ABR     A1              RETURN AFTER SOUS PROG          D:DK0210
00210  003E  20BF    D:DK12                    INH                                                     D:DK0220
00211  0040  8542                              LD      A5,10,A8        SECTOR NUMBER (ECB)             D:DK0225
       0042  000A
00212  0044  3D65                              SRL     A5,5                                            D:DK0230
00213  0046  E24C                              LC      A2,DCTHD+1,A3   CURRENT POSITION OF THE HEAD    D:DK0240
       0048  0001
00214  004A  22FF                              ANK     A2,/FF          CYLINDER NUMBER                 D:DK0245
00215  004C  E54D                              SC      A5,DCTHD+1,A3   UPDATE CURRENT POSITION OF THE HEAD  D::DK0250
       004E  0001
00216  0050  9D08                              SUR     A5,A2           IS IT THE GOOD CYLINDER ?       D:DK0255
00217  0052  5400    0052                      RF(4)   D:DK10          NO                              D:DK0260
00218  0054  8510                              LDR     A5,A4           ORDER                           D:DK0270
00219  0056  2504                              ANK     A5,4            IS IT A READ ORDER              D:DK0280
```

```
00220  0058  5400    0058                      RF(4)   D:DK3           NO                              D:DK0290
```

```
00221  005A  8520                        LDK.L   A5,/200 ← read order                    D:DK0300
       005C  0200
00222  005E  AD4D                        OR.S    A5,DCTCUR,A3  SET BIT READ IN DCTCUR    D:DK0310
       0060  0004
00223  0062  5700    0062 009A           RF      D:DK4 → line 249                        D:DK0320
00224                        *
00225  0064  8520              D:DK3     LDK.L   A5,/100 ← write order                   D:DK0330
       0066  0100
00226  0068  AD4D                        OR.S    A5,DCTCUR,A3  SET BIT WRITE IN DCTCUR   D:DK0340
       006A  0004
00227  006C  5700    006C 00E0           RF      D:DK5 → line 276                        D:DK0350
00228                        *
00229  006E  1500              D:DK10    ADK     A5,0          DIFFERENCE BETWEEN CYLINDER D:DK0360
00230  0070  5200    0070                RF(2)   D:DK6         NUMBERS < 0  ?    YES     D:DK0370
00231  0072  3D43                        SLL     A5,3          COMPUTE  CONTENTS OF REGISTER ← pos seek D:DK0380
00232  0074  2D02                        ORK     A5,/2         FOR A SEEK DIFFERENTIAL pos D:DK0390
00233  0076  854D              D:DK7     ST      A5,DCTSK,A3   AND STORE IT IN THE DCT    D:DK0400
       0078  0006
00234  007A  5700    007A                RF(7)   D:DK2                                   D:DK0410
00235                        *
00236  007C  854D              D:DK6     ST      A5,DCTSK,A3   COMPUTE CONTENTS OF ← neg seek D:DK0420
       007E  0006
00237  0080  984D                        C2      DCTSK,A3      REGISTER FOR A            D:DK0430
       0082  0006
00238  0084  854C                        LD      A5,DCTSK,A3   SEEK DIFFERENTIAL WITH    D:DK0440
       0086  0006
00239  0088  3D43                        SLL     A5,3          REVERSE MOTION AND        D:DK0450
00240  008A  2D06                        ORK     A5,/6         STORE IT IN THE DCT       D:DK0460
00241  008C  5F18                        RB      D:DK7 → neg diff seek                   D:DK0470
00242  008E  2404              D:DK2     ANK     A4,4          IS IT A READ ORDER ?      D:DK0480
00243  0090  5400    0090                RF(4)   D:DK8         NO                        D:DK0490
00244                        *                                  → line 267
00245                        *         READ  ORDER
00246                        *
00247  0092  8520                        LDK.L   A5,/600 ← read + seek                   D:DK0500
       0094  0600
00248  0096  AD4D                        OR.S    A5,DCTCUR,A3  SET BITS SEEK AND READ IN DCTCUR D:DK0510
       0098  0004
00249  009A  851C              D:DK4     LDR     A5,A7         PHYSICAL SECTOR NUMBER    D:DK0520
00250  009C  3D42                        SLL     A5,2          CONTENTS OF REGISTER      &D:DK0530
00251  009E  1501                        ADK     A5,1          FOR THE READ COMMAND      D:DK0540
00252  00A0  854D                        ST      A5,DCTRD,A3   IN THE DCT TABLE          D:DK0550
       00A2  0008
00253  00A4  8520                        LDK.L   A5,/CE66      MULTIPLEX CONTROL WORD1 FOR D:DK0560
       00A6  CE66
00254  00A8  854D                        ST      A5,DCTRM1,A3  READ COMMAND  IN DCT  (410 CHR) D:DK0570
       00AA  000A
00255  00AC  8542                        LD      A5,2,A8       BUFFER ADDRESS            D:DK0580
       00AE  0002
00256  00B0  9520                        ADK.L   A5,409        ENDING ADDRESS BUFFER     D:DK0590
```

CIF# = 77700

00B2 0199

```
00257   00B4  854D                    ST      A5,DCTRM2,A3  IN SECOND MULTIPLEX WORD FOR READ   D:DK0600
        00B6  000C
00258   00B8  5700  00B8              RF      D:DK13                                            D:DK0605
00259                      *
00260                      *           WRITE ORDER
00261   00BA  8520          D:DK8      LDK.L   A5,/700                                           D:DK0610
        00BC  0700
00262   00BE  AD4D                     OR.S    A5,DCTCUR,A3 SET BITS SEEK -READ AND WRITE        D:DK0620
        00C0  0004
00263   00C2  8520                     LDK.L   A5,/CFFE     COMPUTE MULTIPLEX CONTROL WORD1      D:DK0630
        00C4  CFFE
00264   00C6  854D                     ST      A5,DCTRM1,A3 FOR READ CYLINDER NUMBER             D:DK0640
        00C8  000A
00265   00CA  851C                     LDR     A5,A7        COMPUTE THE CONTENTS                 D:DK0650
00266   00CC  1D01                     SUK     A5,1         OF REGISTER FOR                      D:DK0660
00267   00CE  3D42                     SLL     A5,2         A READ COMMAND ON THE                D:DK0670
00268   00D0  1501                     ADK     A5,1         PREVIOUS SECTOR                      D:DK0680
00269   00D2  854D                     ST      A5,DCTRD,A3                                       D:DK0690
        00D4  0008
00270                      *
00271   00D6  8542                     LD      A5,2,A8      BUFFER ADDRESS                       D:DK0700
        00D8  0002
00272   00DA  1501                     ADK     A5,1         ENDING ADDRESS BUFFER                D:DK0710
00273   00DC  854D                     ST      A5,DCTRM2,A3 IN SECOND MULTIPLEX WORD FOR READ    D:DK0720
        00DE  000C
00274                      *
00275                      *
00276   00E0  851C          D:DK5      LDR     A5,A7        COMPUTE THE CONTENTS                 D:DK0730
00277   00E2  3D42                     SLL     A5,2         OF REGISTER FOR A                    D:DK0740
00278   00E4  854D                     ST      A5,DCTW,A3   WRITE COMMAND                        D:DK0750
        00E6  000E
00279   00E8  8542                     LD      A5,2,A8      BUFFER ADDRESS                       D:DK0760
        00EA  0002
00280   00EC  9520                     ADK.L   A5,409       ENDING ADDRESS BUFFER                D:DK0770
        00EE  0199
00281   00F0  854D                     ST      A5,DCTWM2,A3 IN SECOND MULTIPLEX WORD FOR WRITE   D:DK0780
        00F2  0012
00282   00F4  8F20          D:DK13     AB.L    EXEC                                              D:DK0790
        00F6  0000 R  00F4
```

```
00284                                  *
00285                                  *********  THIS SEQUENCE TREATS INPUT /OUTPUT ORDER
00286                                  *
00287  00F8  20BF                      EXEC    INH                                                    EXEC0000
00288  00FA  E54C                              LC      A5,DCTHD,A3 COMPUTE MHD ADDRESS                EXEC0005
       00FC  0000
00289  00FE  2DC0                              ORK     A5,/C0      AND STORE IT ON THE                EXEC0010
00290  0100  E541                              SC      A5,CIORT1+1 I/O INSTRUCTIONS                   EXEC0020
       0102  0000 R  0100
00291  0104  E541                              SC      A5,CIORT+1                                     EXEC0030
       0106  0000 R  0104
00292  0108  E24C                              LC      A2,DCTCUR,A3                                   EXEC0040
       010A  0004
00293  010C  221F                              ANK     A2,/1F                                         EXEC0045
00294  010E  EA21                              CCK     A2,/200     IS A READ OR WRITE ORDER WITHOUT SEEK ?  EXEC0050
       0110  0200
00295  0112  5500     0112                     RF(5)   EXEC2       YES                                EXEC0060
00296  0114  EA21                              CCK     A2,/1000    IS A SEEK TO ZERO ORDER ?          EXEC0065
       0116  1000
00297  0118  5000     0118                     RF(0)   EXEC1       YES                                EXEC0070
00298                                  *
00299                                  *       SEEK ORDER
00300                                  *
00301  011A  814C                      seek    LD      A1,DCTSK,A3 CONTENTS OF REGISTER FOR SEEK ORDER  EXEC0080
       011C  0006
00302  011E  5700     0118                     RF      EXEC1+2                                        EXEC0090
00303                                  *
00304                                  *       SEEK TO ZERO ORDER
00305                                  *
00306  0120  0103                      EXEC1   LDK     A1,3        CONTENTS OF REGISTER FOR SEEK TO ZERO  EXEC0100
00307  0122  8420                              LDK.L   A4,*+6      RETURN ADDRESS AFTER  'CIORT'      EXEC0110
       0124  0128 R
00308  0126  5700     0104                     RF      CIORT                                          EXEC0120
00309  0128  2840                      EXEC5   ENB                                                    EXEC0145
00310  012A  8758                              LD      A7,24,A6    RESTORE SAVE ORDER                 EXEC0148
       012C  0018
00311  012E  8F20                              AB.L    C:WAIT      extern                             EXEC0150
       0130  0000 X
00312                                  *
00313                                  *
00314  0132  E54C                      EXEC2   LC      A5,DCTHD,A3 COMPUTE THE                        EXEC0180
       0134  0000
00315  0136  250F                              ANK     A5,/F       MULTIPLEX DOUBLE                   EXEC0190
00316  0138  3D42                              SLL     A5,2        WORD                               EXEC0200
00317  013A  1580                              ADK     A5,128      ADDRESS                            EXEC0210
00318                                  *
00319                                  *
00320  013C  EA21                              CCK     A2,/200     IS A READ ORDER ?                  EXEC0220
       013E  0200
00321  0140  5200     0140                     RF(2)   EXEC3       IT IS A WRITE ORDER                EXEC0230
```

DCTCUR { bit 5 : suk
bit 6 : read
bit 7 : write

load den Adds.

line 347
line 343

LHW

seek

seek to zero

Adds of EXEC5

line 343

extern

no seek

LHW

Address of location of the 2 Mse words

=/80

```
00323                          *        READ ORDER
00324                          *
00325  0142  814C                       LD       A1,DCTRM1,A3 INFORM read order                EXEC0240
       0144  000A
00326  0146  824C                       LD       A2,DCTRM2,A3 MULTIPLEX                        EXEC0245
       0148  000C
00327  014A  B935                       MSR      2,A5         DOUBLE WORD                      EXEC0250
00328  014C  814C                       LD       A1,DCTRD,A3 CONTENTS OF REGISTER FOR THE READ COMMAND EXEC0260
       014E  0008
00329  0150  5700    0150               RF       EXEC4                                         EXEC0270
00330                          *
00331                          *        WRITE ORDER
00332                          *
00333  0152  814C              EXEC3    LD       A1,DCTWM1,A3 INFORM    write order            EXEC0280
       0154  0010
00334  0156  824C                       LD       A2,DCTWM2,A3 MULTIPLEX                        EXEC0285
       0158  0012
00335  015A  B935                       MSR      2,A5         DOUBLE WORD                      EXEC0290
00336  015C  814C                       LD       A1,DCTW,A3  CONTENTS OF REGISTER FOR THE WRITE ORDER EXEC0300
       015E  000E
00337                          *
00338  0160  8420              EXEC4    LDK,L    A4,EXEC5    RETURN ADDRESS AFTER 'CIORT'      EXEC0310
       0162  0128 R
00339  0164  5700    0126               RF       CIORT                                         EXEC0320
00340                          *
00341                          *        INPUT / OUTPUT  ORDER
00342                          *
00343  0166  4A80              CIORT    TST      A2,0        IS CONTROL UNIT BUSY ?            EXEC0330
00344  0168  5000    0100               RF(0)    CIORT1      NO command accepted               EXEC0340
00345  016A  8F10                       ABR      A4           RETURN                           EXEC0370
00346                          *
00347  016C  41C0              CIORT1   CIO      A1,S,0                                        EXEC0380
00348  016E  5C04                       RB(4)    *-2                                           EXEC0390
00349  0170  8520                       LDK,L    A5,/2000                                      EXEC0400
       0172  2000
00350  0174  AD4D                       OR,S     A5,DCTCUR,A3 SET BIT 1 OF DCTCUR              EXEC0410
       0176  0004
00351  0178  8F10                       ABR      A4           RETURN                           EXEC0420
```

becomes SST with instr at 10104 !

!

```
00353                                *
00354                                *
00355                                *       ERROR BITS IN STATUS COMING FROM D:RDKM
00356                                *
00357  017A  8220                   ERROR   LDK.L   A2,/8000                                  ERR00000
       017C  8000
00358  017E  8542                   ERROR8  LD      A5,10,A8    SECTOR NUMBER (ABSOLUTE)     ERR00010
       0180  000A
00359  0182  A520                           ANK.L   A5,/FFE0    KEEP ONLY THE CYLINDER NUMBER ERR00020
       0184  FFE0
00360  0186  951C                           ADR     A5,A7       IN A5=AT LEFT= CYLINDER NUMBER ERR00030
00361                                *                           AT RIGHT = SECTOR NUMBER
00362  0188  8F20                           AB.L    M:DKER                                   ERR00040
       018A  0000 X
00363                                *
00364                                *
00365                                *       ERROR BITS IN STATUS COMING FROM  I:DK0
00366                                *
00367  018C  80D8                   ERROR2  LD      A8,10,A6    ECB ADDRESS                  ERR00060
       018E  000A
00368  0190  0101                           LDK     A1,1                                     ERR00070
00369  0192  A109                           TM      A1,A2       IS IT NOT OPERABLE ?         ERR00080
00370  0194  5000     0194                  RF(0)   ERROR6      NO                           ERR00090
00371  0196  8120                           LDK.L   A1,ERROR5   I/O NOT POSSIBLE             ERR00100
       0198  0000 R  0196
00372  019A  5700     019A                  RF      ERROR7                                   ERR00110
00373  019C  8120                   ERROR6  LDK.L   A1,ERROR1                                ERR00120
       019E  0000 R  019C
00374  01A0  8F20                   ERROR7  AB.L    D:DK11      ROUTINE WHO COMPUTES PHYSIC SECTOR NUMBER ERR00130
       01A2  0020 R
00375                                *
00376                                *
00377  01A4  050F                   ERROR1  LDK     A5,/F                                    ERR00140
00378  01A6  A54C                           AN      A5,DCTCUR,A3 CURRY = 0 ?                 ERR00150
       01A8  0004
00379  01AA  5400     01AA                  RF(4)   ERROR3      NO                           ERR00160
00380  01AC  8520                   ERROR5  LDK.L   A5,/8000                                 ERR00170
       01AE  8000
00381  01B0  AA14                           ORR     A2,A5       SET BIT 0 OF HARDWARE STATUS ERR00180
00382  01B2  5F36                           RB      ERROR8                                   ERR00190
00383                                *
00384  01B4  1D01                   ERROR3  SUK     A5,1        CURRY = CURRY -1             ERR00200
00385  01B6  8420                           LDK.L   A4,/FFF0                                 ERR00210
       01B8  FFF0
00386  01BA  A44D                           AN.S    A4,DCTCUR,A3 UPDATE CURRY                ERR00220
       01BC  0004
00387  01BE  AD4D                           OR.S    A5,DCTCUR,A3 IN DCTCUR                   ERR00230
       01C0  0004
00388                                *
00389  01C2  8520                           LDK.L   A5,/200                                  ERR00240
```

```
       01C4  0300
```

```
00390  01C6  A215                    TM       A2,A5      IS A SEEK ERROR ?                    ERR00250
00391  01C8  5000    01C8           RF(0)    ERROR4     NO                                   ERR00255
00392  01CA  8442                    LD       A4,10,A8                                        ERR00260
       01CC  000A
00393  01CE  3C65                    SRL      A4,5       CYLINDER = 0 ?                       ERR00264
00394  01D0  5000    01D0           RF(0)    ERROR9     YES                                  ERR00268
00395  01D2  1580                    ADK      A5,/80     FOR SEEK IN DCTCUR                   ERR00272
00396  01D4  3D43           ERROR9   SLL      A5,3                                            ERR00275
00397  01D6  AD4D                    OR.S     A5,DCTCUR,A3 SET BIT SEEK TO ZERO OF DCTCUR     ERR00280
       01D8  0004
00398  01DA  8F20           ERROR4   AB.L     EXEC       EXECUTE ROUTINE                      ERR00290
       01DC  00F8 R
```

→ line 287

00398 EJECT

```
00400                          *
00401                          *
00402                          *       PROCESSING AN INTERRUPT FROM A DIC UNIT
00403                          *
00404                    entry → I:DK0  EQU     *                                    I:DK0000
00405  01DE  BC3F               MSR     8,A15       SAVE REGISTERS                  I:DK0010
00406  01E0  4AC2               SST     A2,2                                        I:DK0020
00407  01E2  5000  01E2         RF(0)   INTK0       ← command not accepted          I:DK0025
00408  01E4  207F               HLT                                                 I:DK0030
00409  01E6  8520           INTK0 LDK.L   A5,/DFFF                                  I:DK0033
       01E8  DFFF
00410  01EA  A54D               AN.S    A5,DCTCUR,A3 RESET BIT 1 OF DCTCUR          I:DK0036
       01EC  0004
00411  01EE  8508               LDR     A5,A2       KEEP ORIGINAL STATUS IN A2      I:DK0040
00412  01F0  3D62               SRL     A5,2        SEARCH OF                       I:DK0050
00413  01F2  257F               ANK     A5,/7F      DISK DEVICE                     I:DK0060
00414  01F4  1502               ADK     A5,2        ADDRESS                         I:DK0070
00415  01F6  8320               LDK.L   A3,T:DCT    → address of DCTHD ?            I:DK0080
       01F8  0000 X
00416  01FA  844C           INTK LD      A4,DCTHD,A3                                I:DK0090
       01FC  0000
00417  01FE  3C41               SLL1    A4                                          I:DK0095
00418  0200  3C69               SRL     A4,9                                        I:DK0100
00419  0202  9C14               SUR     A4,A5       IS THE DCT TABLE ADDRESS SEARCHED ?  I:DK0110
00420  0204  5000  0204         RF(0)   INTK1       YES                             I:DK0120
00421  0206  844C               LD      A4,0,A3                                     I:DK0130
       0208  0000
00422  020A  8A20               AB.L(2) R:TURN      THE DCT TABLE HASN'T BEEN FOUND I:DK0140
       020C  0000 X
00423  020E  9310               ADR     A3,A4       COMPUTE THE NEW DCT TABLE ADDRESS  I:DK0150
00424  0210  5F18               RB      INTK                                        I:DK0160
00425                          *
00426  0212  864C           INTK1 LD     A6,DCTDWT,A3  DWT ADDRESS                  I:DK0170
       0214  0002
00427  0216  E54C               LC      A5,DCTCUR,A3  IS A PARASITE                 I:DK0172
       0218  0004
00428  021A  25C0               ANK     A5,/C0      INTERRUPT  ?                    I:DK0175
00429  021C  8C20               AB.L(4) R:TURN      YES                             I:DK0178
       021E  0000 X
00430  0220  854C               LD      A5,DCTCUR,A3  IS A                          I:DK0180
       0222  0004
00431  0224  8420               LDK.L   A4,/3F00      PARASITE                      I:DK0182
       0226  3F00
00432  0228  A414               ANR     A4,A5         INTERRUPT ?                   I:DK0185
00433  022A  8820               AB.L(0) R:TURN        YES                           I:DK0188
       022C  0000 X
00434  022E  8508               LDR     A5,A2       KEEP ORIGINAL STATUS IN A2      I:DK0190
00435  0230  A520               ANK.L   A5,/20F     ERRORS IN STATUS                &I:DK0195
       0232  020F
00436  0234  8C20               AB.L(4) ERROR2      YES                             I:DK0200

       0236  018C R
```

```
00437  0238  8120                    LDK.L    A1,*+8       PREPARE RETURN ADDRESS FROM                I:DK0205
       023A  0240 R
00438  023C  8F20                    AB.L     L:VCH        THE 'CHANGE TO LEVEL 48' ROUTINE           I:DK0210
       023E  0000 X                                        and set int. enable
00439  0240  8508                    LDR      A5,A2        STATUS                                     I:DK0220
00440  0242  5600    0242            RF(6)    INTK2                                                   I:DK0230
00441                         *
00442                         *      PROCESS THE READY STATUS
00443                         *
00444  0244  8420                    LDK.L    A4,/1000                                                I:DK0240
       0246  1000
00445  0248  AC41                    OR.S     A4,T:JPT+JPTMOD  SET BIT 'D' OF JPTMOD                  I:DK0250
       024A  000E X
00446  024C  3C42                    SLL      A4,2                                                    I:DK0260
00447  024E  AC4D                    OR.S     A4,DCTCUR,A3   SET RD OF DCTCUR                         I:DK0270
       0250  0004
00448  0252  8F20                    AB.L     R:TURN                                                  I:DK0280
       0254  0000 X
00449                         *
00450  0256  E44C              INTK2 LC       A4,DCTCUR,A3                                           I:DK0300
       0258  0004
00451  025A  EC21                    CCK      A4,/300      IS it A READ or write ORDER ?              I:DK0310
       025C  0300
00452  025E  5100    025E            RF(1)    INTK7        NO                                         I:DK0320
00453  0260  2402                    ANK      A4,2         IS it A READ ORDER ?                       I:DK0324
00454  0262  5000    025E            RF(0)    INTK7        NO                                         I:DK0328
00455  0264  80D8                    LD       A8,DWTECB,A6  ECB ADDRESS                               I:DK0340
       0266  000A
00456  0268  8442                    LD       A4,10,A8       SECTOR NUMBER                            I:DK0350
       026A  000A
00457  026C  3C65                    SRL      A4,5           CYLINDER NUMBER                          I:DK0360
00458  026E  9C62                    SU*      A4,2,A8      IS THE IDENTIFICATOR GOOD ? -BUFFER FIRST  I:DK0370
       0270  0002
00459                         *                            WORD = CYLINDER NUMBER REQUESTED ?
00460  0272  5000    0262            RF(0)    INTK7        YES                                        I:DK0380
00461  0274  AA20                    ORK.L    A2,/200      SET BIT SEEK ERROR IN A2                   I:DK0390
       0276  0200
00462  0278  8F20                    AB.L     ERROR6       ERROR                                      I:DK0400
       027A  019C R
00463  027C  9C10              INTK7 SUR      A4,A4                                                   I:DK0410
00464  027E  854C                    LD       A5,DCTCUR,A3                                           I:DK0415
       0280  0004
00465  0282  1401              INTK3 ADK      A4,1         *  THIS                                    I:DK0420
00466  0284  3D41                    SLL1     A5           *  SEQUENCE                                I:DK0430
00467  0286  5E06                    RB(6)    INTK3        *  RESET                                   I:DK0440
00468                         *
00469  0288  A520                    ANK.L    A5,/7FFF     *  THE LEFT                                I:DK0450
       028A  7FFF
00470  028C  3460                    XRK      A4,/60       *  BIT                                     I:DK0460
00471  028E  E441                    SC       A4,*+5       *  OF                                      I:DK0470
```

```
       0290  0293 R
```

```
00472  0292  3D60                      SRL     A5,0          *  DCTCUR                    I:DK0480
00473  0294  854D                      ST      A5,DCTCUR,A3  UPDATE DCTCUR               I:DK0485
       0296  0004
00474                          *
00475  0298  3D68                      SRL     A5,8                                      I:DK0490
00476  029A  8C20                      AB.L(4) EXEC          IF DCTCUR WITHOUT CURRY =0  I:DK0500
       029C  00F8 R
00477                          *
00478  029E  840C                      LDR     A4,A3         DCT ADDRESS                 I:DK0510
00479  02A0  8320                      LDK.L   A3,T:DCT                                  I:DK0520
       02A2  0000 X
00480  02A4  E54C              INTK4   LC      A5,DCTCUR,A3                              I:DK0530
       02A6  0004
00481  02A8  2520                      ANK     A5,/20        BIT I OF NEW DCT =0 ?       I:DK0540
00482  02AA  5400    02AA              RF(4)   INTK5         NO                          I:DK0550
00483  02AC  8550                      LD      A5,DCTDWT,A4 DWT AD (FIRST DWT)           I:DK0560
       02AE  0002
00484  02B0  8754                      LD      A7,2,A5       DEVICE ADDRESS IN A7        I:DK0570
       02B2  0002
00485  02B4  854C                      LD      A5,DCTDWT,A3 DWT AD (SECOND DWT)          I:DK0580
       02B6  0002
00486  02B8  B754                      XR      A7,2,A5       IS THE SAME DCT TABLE?      I:DK0590
       02BA  0002
00487  02BC  5000    02AA              RF(0)   INTK5         YES                         I:DK0600
00488  02BE  270F                      ANK     A7,/F         IS THE SAME CONTROLLER ?    I:DK0610
00489  02C0  5400    02BC              RF(4)   INTK5         NO                          I:DK0620
00490                          *       IT IS THE SAME CONTROLLER
00491  02C2  E54C                      LC       A5,DCTCUR,A3                             I:DK0623
       02C4  0004
00492  02C6  25C0                      ANK     A5,/C0       DCTCUR = 0 ?                I:DK0625
00493  02C8  5000    02C8              RF(0)    INTK6       YES                         I:DK0627
00494  02CA  8F20                      AB.L    EXEC          EXECUTE ROUTINE           I:DK0630
       02CC  00F8 R
00495                          *
00496                          *
00497  02CE  854C              INTK5   LD       A5,DCTLG,A3  IS THE LAST ENTRY IN THE DCT ?  I:DK0640
       02D0  FFF2
00498  02D2  5200    02C8              RF(2)   INTK6         YES                         I:DK0650
00499  02D4  934C                      AD      A3,DCTLG,A3 COMPUTE THE NEXT DCT ADDRESS  I:DK0660
       02D6  FFF2
00500  02D8  5F36                      RB      INTK4                                     I:DK0670
00501                          *
00502  02DA  0200              INTK6   LDK     A2,0          STATUS OK                   I:DK0680
00503  02DC  8F20                      AB.L    R:TUR4                                    I:DK0690
       02DE  0000 X
00504                                  END
ASS.ERR. 00000
```

```
**SYMBOL**  **VALUE*        **SYMBOL**  **VALUE*        **SYMBOL**  **VALUE*
```

INTK6	02DA	R	INTK5	02CE	R	INTK4	02A4	R
INTK3	0282	R	INTK7	027C	R	INTK2	0256	R
INTK1	0212	R	INTK	01FA	R	INTK0	01E6	R
ERROR9	01D4	R	ERROR4	01DA	R	ERROR3	01B4	R
ERROR1	01A4	R	ERROR7	01A0	R	ERROR5	01AC	R
ERROR6	019C	R	ERROR2	018C	R	ERROR8	017E	R
EXEC4	0160	R	EXEC3	0152	R	EXEC5	0128	R
EXEC1	0120	R	EXEC2	0132	R	CIORT	0166	R
CIORT1	016C	R	EXEC	00F8	R	D:DK13	00F4	R
D:DK8	00BA	R	D:DK2	008E	R	D:DK7	0076	R
D:DK6	007C	R	D:DK5	00E0	R	D:DK4	009A	R
D:DK3	0064	R	D:DK10	006E	R	D:DK9	003A	R
D:DK11	0020	R	D:DK12	003E	R	ERROR	017A	R
D:DK1	0016	R	S	0001	A	DWTECB	000A	A
JPTROT	0018	UNUSED	JPTSEG	0016	A	JPTCC1	0014	A
JPTCMD	0012	A	JPTCOD	0010	A	JPTMOD	000E	A
JPTDIR	000C	A	JPTDSK	000A	A	JPTCA5	0008	A
JPTCA4	0006	A	JPTCA3	0004	A	JPTCA2	0002	A
JPTCA1	0000	A	ECBSC	000A	UNUSED	ECBST	0008	UNUSED
ECBEL	0006	UNUSED	ECBRL	0004	UNUSED	ECBBF	0002	UNUSED
ECBFC	0000	UNUSED	BUFNXT	0000	UNUSED	BUFLFT	0002	UNUSED
BUFREE	0002	UNUSED	BUFFST	0000	UNUSED	LFTLK2	0034	UNUSED
LFTLK1	0032	A	LFTSLR	0030	A	LFTSLT	002E	A
LFTSLC	002C	A	LFTSLB	002A	A	LFTSLU	0028	A
LFTSVS	0026	A	LFTSVD	0024	A	LFTSTC	0022	A
LFTORC	0020	A	LFTSEC	001E	A	LFTBUF	001C	A
LFTBDS	001A	A	LFTBAD	0018	A	LFTSAC	0016	A
LFTSRC	0014	A	LFTBOT	0012	A	LFTDCT	0010	A
LFTMD2	000E	A	LFTMD1	000C	A	LFTLAB	000A	A
LFTPCT	0008	A	LFTLGT	0006	A	LFTREC	0004	A
LFTEAD	0002	A	LFTORD	0000	A	DCTQBR	001C	UNUSED
DCTQNR	001A	A	DCTQFR	0018	A	DCTQRR	0016	A
DCTQEN	0014	A	DCTWM2	0012	A	DCTWM1	0010	A
DCTW	000E	A	DCTRM2	000C	A	DCTRM1	000A	A
DCTRD	0008	A	DCTSK	0006	A	DCTCUR	0004	A
DCTDWT	0002	A	DCTHD	0000	A	DCTEB5	FFFE	A
DCTEB4	FFFC	A	DCTEB3	FFFA	A	DCTEB2	FFF8	A
DCTEB1	FFF6	A	DCTEB0	FFF4	A	DCTLG	FFF2	A
FCTLFT	0002	UNUSED	FCTDWT	0002	UNUSED	FCTFC	0000	UNUSED
CVEBTB	002A	UNUSED	CVEFIT	0028	A	CVESEC	0026	A
CVEMIN	0024	A	CVEHOR	0022	A	CVEDAY	0020	A
CVEMON	001E	A	CVEYAR	001C	A	CVELFT	001A	A
CVEBPL	0018	A	CVEJPT	0016	A	CVEDCT	0014	A
CVEDWT	0012	A	CVEFCT	0010	A	CVEDSP	000A	A
CVEBKA	0008	A	CVEBBA	0006	A	CVESBA	0004	A
CVESTB	0002	A	CVEMSZ	0000	A	CVEADR	0082	UNUSED
T:JPT	0000	X	T:DCT	0000	X	R:TURN	0000	X
R:TUR4	0000	X	M:DKER	0000	X	L:VCH	0000	X
C:WAIT	0000	X	I:DK0	01DE	UNUSED	D:RDKM	0000	UNUSED
A15	000F	A	A14	000D	UNUSED	A13	000B	UNUSED
A12	0009	UNUSED	A11	0007	UNUSED	A10	0005	UNUSED

A9	0003	UNUSED	A8	0001	A	A7	000E	A
A6	000C	A	A5	000A	A	A4	0008	A
A3	0006	A	A2	0004	A	A1	0002	A

EXIT CODE=0000