```
                    IDENT    BOOTST                                                    ASM 5T
          *
          *
          *         P852M BOOTSTRAP FOR MIOS CASSETTE RECORDER MODULE
          *         AND P800 SERIES PROGRAMMED CHANNEL DEVICES
          *
          *
          *         DISPLAY THE KEYS AS FOLLOWS:
          *
          *  A.      INPUT FROM MIOS CASSETTE MODULE:
          *          ALL BITS SHOULD BE ZERO.
          *
          *  B.      OTHER INPUT DEVICES ON PROGRAMMED
          *          CHANNEL:
          *
          * BITS     MEANING
          *
          * 0      = 1  IF 4*4 FORMAT IPL LOADED FROM ASR
          *             OTHERWISE 0
          * 1,2    = 0
          * 3      = 1 (PROGRAMMED CHANNEL)
          * 4-7    = BOU LINES (4 RIGHTMOST BITS)
          *          CONTROL INFORMATION FOR CONTROL UNIT
          *          DURING EXECUTION OF CIO START SENT BY
          *          THE BOOTSTRAP.
          *          0001 = ASR INPUT
          * 8,9    = 0
          * 10-15 = DEVICE ADDRESS OF DEVICE FROM WHICH IPL
          *          IS LOADED.
          *
          *
          *         THIS BOOTSTRAP CANNOT HANDLE INPUT
          *         DEVICES WITH I/O PROCESSOR
          *
          *
          *         THE DEVICE ADDRESS OF THE MIOS
          *         CONTROL UNIT SHOULD BE /3E
          *
          *         THE MIOS CASSETTE MODULE SHOULD
          *         HAVE MODULE ADDRESS /D.
          *
          *         CASSETTE RECORDER 1 MUST BE USED
          *         AS INPUT DEVICE.
          *
          *
```

```
00045                               EJECT
00046                               AORG    0
00047          003E         MIOSDA  EQU     /3E
00048                               *
00049          0000         BOOT    EQU     *
00050  0000    0680                 LDK     A6,/80          FIRST LOCATION TO BE LOADED
00051  0002    0550                 LDK     A5,80           NUMBER OF CHARACTERS(NOT FOR CASS.)
00052  0004    871E                 LDR     A7,A15
00053  0006    5432                 RF(4)   STBOOT
00054                               *
00055                               ************************************************************
00056                               *
00057                               *       MIOS CASSETTE RECORDER MODULE BOOTSTRAP
00058                               *
00059          0008         CRBOOT  EQU     *
00060                               *
00061                               *       SELECT UNIT 1 AND REWIND
00062                               *
00063  0008    049D                 LDK     A4,/9D          MODULE ADDRESS /D
00064  000A    443E                 OTR     A4,0,MIOSDA
00065  000C    0314                 LDK     A3,/14          SELECT +LOCK + REWIND COMMAND
00066  000E    437E                 OTR     A3,1,MIOSDA
00067                               *
00068                               *       START READING THE FIRST RECORD
00069                               *
00070  0010    8220                 LDKL    A2,/1AD
       0012    01AD
00071  0014    443E                 OTR     A4,0,MIOSDA
00072  0016    8320                 LDKL    A3,/400
       0018    0400
00073  001A    437E                 OTR     A3,1,MIOSDA
00074                               *
00075                               *       INPUT OF THE STATUS
00076                               *
00077  001C    AD08                 ORR     A5,A2           (A5)= /1FD
00078  001E    453E         STAT    OTR     A5,0,MIOSDA
00079  0020    4F3E                 INR     A7,0,MIOSDA
00080  0022    3FC1                 SLC     A7,1
00081  0024    520A                 RF(2)   DATTRN          BRANCH IF READY FOR DATA TRANSFER
00082  0026    3FC1                 SLC     A7,1
00083  0028    5A0C                 RB(2)   STAT            BRANCH IF UNIT BUSY
00084  002A    3FC2                 SLC     A7,2
00085  002C    5A1A                 RB(2)   /14             BRANCH IF REWINDING
00086  002E    0F84                 AB      /84
00087                               *
```

```
00088                    *        DATA TRANSFER
00089                    *
00090  0030  423E       DATTRN   CTR      A2,0,MIOSDA
00091  0032  4F3E                INR      A7,0,MIOSDA
00092  0034  8739                STR      A7,A6
00093  0036  1602                ADK      A6,2                ADDRESS NEXT WORD
00094  0038  5F1C                RB       STAT
00095                    *
00096                    ************************************************************
00097                    *
00098                    *        STANDARD P852 IPL NOT LOADED
00099                    *        VIA THE MIOS CASSETTE MODULE
00100                    *
00101         003A       STBOOT   EQU      *
00102                    *
00103                    *        LOAD A1 WITH BOU LINES DATA
00104                    *
00105  003A  E11E                ECR      A1,A15
00106                    *
00107                    *        INITIALIZE REGISTERS
00108                    *
00109  003C  0254                LDK      A2,INR              ADDR. OF INR INSTRUCTION
00110  003E  034E                LDK      A3,CIO              ADDR. OF CIO INSTRUCTION
00111  0040  047A                LDK      A4,SST              ADDR. OF SST INSTRUCTION
00112                    *
00113                    *        INITIALIZE I/O INSTRUCTIONS
00114                    *
00115                    *        THIS IS ALSO USED AS AN ENTRY POINT FROM THE
00116                    *        FIRST LOADED RECORD OF THE IPL.
00117                    *
00118  0042  273F                ANK      A7,/3F              MASK DEVICE ADDRESS
00119  0044  AF29                ORRS     A7,A2
00120  0046  AF2D                ORRS     A7,A3
00121  0048  AF31                ORRS     A7,A4
00122  004A  AF41                ORS      A7,HIO
       004C  0078
00123                    *
00124                    *        START LOADING
00125                    *
00126  004E  41C0       CIO      CIO      A1,1,0
00127  0050  5C04                RB(4)    *-2
00128  0052  8194                LDR      A9,A5               IF (A9)=(A5) IGNORE LEADING BLANKS
00129         0054       INR      EQU      *
00130  0054  4F00                INR      A7,0,0              READ 1 CHARACTER
00131  0056  5C04                RB(4)    *-2
```

```
0058  E994                CWR     A9,A5                LEADING CHARACTER?
                  *
                  *       THE NEXT INSTRUCTION WILL BE CHANGED IN
                  *       RF INR10 BY THE FIRST LOADED RECORD OF THE IPL
                  *
005A  5404                RF(4)   INR10
005C  27FF                ANK     A7,/FF               YES, CHECK IF 0
005E  580C                RB(0)   INR                  YES, IGNORE
                  *
      0060        INR10   EQU     *
0060  879E                LDR     A15,A15              4*4 ?
0062  560C                RF(6)   STORE                NO, 8+8
0064  3F44                SLL     A7,4                 YES
0066  809C                LDR     A8,A7                SAVE LEFT BITS
0068  F029                EXR*    A2                   READ NEXT CHARACTER
006A  5C04                RB(4)   *-2
006C  270F                ANK     A7,/F                MASK 4 RIGHTMOST BITS
006E  9702                ADR     A7,A8
      0070        STORE   EQU     *
0070  E739                SCR     A7,A6                STORE CHARACTER
0072  1601                ADK     A6,1                 ADDRESS NEXT CHARACTER
0074  1D01                SUK     A5,1
0076  5924                RB(1)   INR                  BRANCH IF NOT FINISHED
                  *
0078  4180        HIO     CIO     A1,0,0
                  *
      007A        STATUS  EQU     *
007A  4FC0        SST     SST     A7,0
007C  5C04                RB(4)   *-2
007E  0F84                AB      /84
                  *
                  ************************************************************
                  *
                          END     BOOT
```

SYMBOL TABLE

```
BOOT    0000  A   CIO     004E  A   CRBOOT  0008  A   DATTRN  0030  A
HIO     0078  A   INR     0054  A   INR10   0060  A   MIOSDA  003E  A
SST     007A  A   STAT    001E  A   STATUS  007A  A   STBOOT  003A  A
STORE   0070  A
```

ASS.ERR. 00000

:EOF

PROG ELAPSED TIME: 00H-00M-40S-780MS-