GENERAL PURPOSE BOOTSTRAP

PROM 4131
P043-053
Service code: 5322 209 85967

Key position :

Bits	Value	Meaning
0	0	Not used
1	1	Disc (moving head or floppy)
	0	No disc
2	1	Moving head disc
	0	Floppy disc
3	1	Programmed channel
	0	I/O Processor
4/7	0111	Read one record (cassette)
	0010	Read one record (magnetic tape)
	0011	Read sector 3 (moving head disc)
	0000	Read sector 0 (floppy disc)
	0000	For all other devices
8	1	Multi device control unit
	0	Single device control unit
9	0	Not used
10/15		Device address

Disk (HC)
Floppy (HC+PC)
MT (HC+PC)
TK (HC+PC)
PTR (PC)

HC = hardw. channel
PC = progr. channel

Description :
The bootstrap loads 80 characters from a non-disc device or 205 words from a disc into memory starting with location /80. After loading, the program jumps to location /84.

Listing :

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 0  0254           LDK   A2,INR
 2  0336           LDK   A3,CIO
 4  0472           LDK   A4,SST
 6  861E           LDR   A6,A15     Load keys in A6
 8  263F           ANK   A6,/3F     Keep device address in A6
 A  AE29           ORRS  A6,A2      Initialize INR
 C  AE2D           ORRS  A6,A3      Initialize CIO
 E  AE41           ORS   A6,HIO     Initialize CIO halt
10  0070
12  871E           LDR   A7,A15     Load keys in A7
14  3FC8           SLC   A7,8       Multi or single device control unit
16  5602           RF(6) INIT20     Single one
18  260F           ANK   A6,/F      Multi one
1A  AE31  INIT20   ORRS  A6,A4      Initialize SST
1C  3E41           SLL   A6,1
1E  AE41           ORS   A6,WER1    Initialize WER
20  0042
22  AE41           ORS   A6,WER2
24  0044
26  811C           LDR   A1,A7
28  0550           LDK   A5,80      80 characters
2A  0680           LDK   A6,/80     Start address is /80
2C  3FE7           SRC   A7,7       Check disc
2E  5612           RF(6) WER1       Branch if no disc
30  3FC1           SLC   A7,1       Floppy disc ?
32  5604           RF(6) NOSEEK     Yes, no seek zero
34  0103           LDK   A1,3       Moving head disc, seek zero
36  41C0  CIO      CIO   A1,1,0     Seek zero
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38  811E  NOSEEK  LDR   A1,A15      Keys in A1
3A  3966          SRL   A1,6
3C  213C          ANK   A1,/3C      Sector number and read command
3E  8520          LDKL  A5,/80CD    First word for multiplex for disc
40  80CD
42  7500  WER1     WER   A5,0
44  7601  WER2     WER   A6,1
46  F031          EXR*  A4          Execute SST
48  F02D          EXR*  A3          Execute CIO
4A  5C06          RB(4) *-4         Repeat until accepted
4C  8194          LDR   A9,A5       Prepare A9 for ignoring leading char.
4E  871E  REP     LDR   A7,A15      Load keys in A7
50  3F43          SLL   A7,3        Check multiplex or programmed channel
52  561E          RF(6) SST         Branch if multiplex
54  4F00  INR     INR   A7,0,0      Read one character or word
56  541A          RF(4) SST         If not accepted try SST
58  E994          CWR   A9,A5       Leading character if equal
5A  5404          RF(4) INR10       Brach if no
5C  871C          LDR   A7,A7       Character zero?
5E  580C          RB(0) INR         Branch if yes
60  879E  INR10   LDR   A15,A15
62  5604          RF(6) CHAR        Branch if character
64  8739          STR   A7,A6       Store word in memory
66  1601          ADK   A6,1        Increment memory pointer
68  E739  CHAR    SCR   A7,A6       Store character in memory
6A  1601          ADK   A6,1        Increment memory pointer
6C  1D01          SUK   A5,1        Decrement counter
6E  5C1C          RB(4) INR         Read next character or word
70  4180  HIO     CIO   A1,0,0      Stop data transfer
72  4FC0  SST     SST   A7,0        Input status
74  5C28          RB(4) REP
76  A720          ANKL  A7,/4007    Error check
78  4007
7A  0C00          AB(4) 0           Error start again at 0
7C  0F84          AB(7) /84         Start program
7E  0000
```