Table 2-10 List of Bootstrap Loaded in Memory

PROM 1821
P843 - 052 (P851-021)
Service Code : 5322 209 54101

Disk (HC)
Floppy (HC)
MT (HC+PC)
TK (HC+PC)
PTR (PC)
ASR 33 : 4x4 (PC)

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Step  P Reg.  Mem. Cont.   Instruct.
000                        IDENT   BEBOOT
001                   *
002                   *
003                   *    DISPLAY THE KEYS AS FOLLOWS:
004                   *
005                   *    BITS     MEANING
006                   *    0=1      IPL LOADED FROM ASR, FORMAT 4*4
007                   *    1=1      DISK, THEN
008                   *    2=1      MOVING HEADS
009                   *    2=0      FIXED HEADS
010                   *    3=1      I/O  BUS
011                   *    3=0      MULTIPLEX
012                   *    4 to 7   BOU LINE (4 RIGHTMOST BITS)
013                   *    8=1      MULTI DEVICE CONTROLLER
014                   *    8=0      SINGLE DEVICE CONTROLLER
015                   *    9=1      CDD DISK
016                   *    10 to 15 DEVICE ADDRESS
017                   *
018                   *
019                   *
020                   *    DESCRIPTION
021                   *
022                   *    BEBOOT LOADS ONE RECORD ONTO LOCATION /80 THEN START AT /84
023                   *    THE RECORD IS THE SECTOR # 1 IF DISK, OR 254 CHARACTERS OF THE
024                   *    INPUT DEVICE, LEADING NULL CHARACTERS IGNORED
025                   *
026                   *
027                   *
028                   *    USED REGISTERS :
029                   *
030                   *    A1 BOU LINES, NOT TO BE DESTROYED IF BOOT IS CALLED AGAIN
031                   *    A2 ADDR OF INR INSTRUCTION
032                   *    A3 ADDR OF CIO INSTRUCTION(WHICH IS DESTROYED AND NEEDS TO BE
033                   *                RESTORED IF BOOT IS CALLED AGAIN)
034                   *    A4 ADDR OF SST INSTRUCTION
035                   *    A5 MULTIPLEX: CONTENTS OF 1ST WORD TO BE SENT TO EXT REGISTER
036                   *       IO BUS : CHARACTER COUNT, INITIALIZED AT 254 AND DECREMENTED
037                   *    A6 MULTIPLEX: CONTENTS OF 2ND WORD TO BE SENT TO EXT REGISTER
038                   *                (LOADING ADDR)
039                   *       IO BUS: ADDR OF NEXT CHAR TO BE LOADED, INIT  AT /80 AND
040                   *                INCREMENTED
041                   *    A7, A8 WORK REGISTERS
042                   *    A9 WORK REGISTER
043                   *    A10 TO A14 NOT USED
044                   *    A15 CONTAINS THE KEYS'VALUE
045                   *
046                   *
047                   *
048                   *
049                   *
050                   *
051                   *    28/8/73 ARE FIXED:
052                   *    MULTIPLEX DLBLE WORD INITIALIZATION
053                   *    SST INST FOR MULTIPLE DEVICE CONTROLLER
054                   *
055                        EJECT
056                        ADRG   0
057                   *
058                   *
059                   BOOT EQU    *
060                   *    INITIALIZE REGISTERS
061  0000  0200      F     LDK    A2,INR     ADDR OF INR INSTRUCTION
062  0002  0300      F     LDK    A3,CIO     ADDR OF CIO INSTRUCTION
063  0004  0400      F     LDK    A4,SST     ADDR OF SST INSTRUCTION
064                   *                      EXTRACT DEVICE ADDR AND INIT I/O COMMANDS
065  0006  861E            LDR    A6,A15
066  0008  263F            ANK    A6,/3F     DEVICE ADDR
067  000A  9629            ADRS   A6,A2      INITIALIZE I/O INSTRUCTIONS
068  000C  962D            ADRS   A6,A3
069  000E  9641            ADS    A6,HIO
       0010  0000      F
070                   *                      EXTRACT CONTROLLER ADDR AND INIT WER INST
071  0012  871E            LDR    A7,A15
072  0014  3FC8            SLC    A7,8       MULTI OR SINGLE DEVICE CONTROLLER
073  0016  5600      F     RF(6)  INIT20     SINGLE ONE
074  0018  260F            ANK    A6,/F      MULTIPLE ONE
075                   INIT20 EQU   *          INITIALIZE MULTIPLEX DBLE WORD:
076  001A  9631            ADRS   A6,A4      SST INSTRUCTION
077  001C  3E41            SLL    A6,1
078  001E  9641            ADS    A6,WER1    SET UP WER INSTRUCTIONS
       0020  0000      F
079  0022  9641            ADS    A6,WER2
       0024  0000      F
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Step	P Reg.	Mem. Cont.		Instruct.		
080			*			LOAD A1 WITH BOU CONTENTS
081	0026	811C		LDR	A1,A7	
082	0028	0550		LDK	A5,80	MULTIPLEX DOUBLEWORD: LOAD 80 CHAR INTO
083			*			LOCATION /80
084	002A	0680		LDK	A6,/80	
085			*			CHECK IF DISK
086	002C	3FE7		SRC	A7,7	
087	002E	5600	F	RF(6)	NODISK	NO
088			*			FIXED HEADS ?
089	0030	3FC1		SLC	A7,1	
090	0032	5600	F	RF(6)	NOSEEK	YES
091	0034	0103		LDK	A1,3	SEEK ZERO
092	0036	41C0	CIO	CIO	A1,1,0	CIO SEEK ZERO
093			NOSEEK	EQU	*	
094	0038	811E		LDR	A1,A15	
095	003A	3966		SRL	A1,6	SECTOR NUMBER
096	003C	213C		ANK	A1,/3C	
097	003E	8520		LDKL	A5,/80CD	1ST WORD OF MULTIPLEX FOR DISK DEVICE
	0040	80CD				
098			NODISK	EQU	*	
099			*			EXECUTE WER, WHATEVER THE CHANNEL IS
100			WER1	EQU	*	
101	0042	7500		WER	A5,0	
102			WER2	EQU	*	
103	0044	7601		WER	A6,1	
104	0046	F031		EXR*	A4	SST
105	0048	F02D		EXR*	A3	
106	004A	5C06		RB(4)	* -4	
107	004C	871E		LDR	A7,A15	
108	004E	3F43		SLL	A7,3	
109	0050	5600	F	RF(6)	SST	MULTIPLEX
110			*			
111			*			IO BUS
112			*			
113	0052	8194		LDR	A9,A5	IF A9=A5 IGNORE LEADING CHAR.
114			INR	EQU	*	
115	0054	4F00		INR	A7,0,0	READ ONE CHAR
116	0056	5C04		RB(4)	* -2	
117	0058	E994		CWR	A9,A5	LEADING CHAR?
118	005A	5400	F	RF(4)	INR10	NO
119	005C	27FF		ANK	A7,/FF	CHECK IF NULL
120	005E	580C		RB(0)	INR	YES, IGNORE
121			*			NO, CHECK IF 4*4
122			*			
123			INR10	EQU	*	
124	0060	879E		LDR	A15,A15	4*4
125	0062	5600	F	RF(6)	STORE	NO 8*8
126	0064	3F44		SLL	A7,4	YES, 4*4
127	0066	809C		LDR	A8,A7	SAVE LEFT BITS
128	0068	F029		EXR*	A2	READ NEXT CHARACTER
129	006A	5C04		RB(4)	* -2	
130	006C	270F		ANK	A7,/F	GET 4 RIGHT MOST BITS
131	006E	9702		ADR	A7,A8	
132			STORE	EQU	*	
133	0070	E739		SCR	A7,A6	STORE CHAR
134	0072	1601		ADK	A6,1	NEXT CHAR ADDR
135	0074	1D01		SUK	A5,1	COUNT DONE ?
136	0076	5924		RB(1)	INR	NO
137			*			YES
138			*			
139	0078	4180	HIO	CIO	A1,0,0	
140			*			
141			STATUS	EQU	*	
142	007A	4FC0	SST	SST	A7,0	
143	007C	5C04		RB(4)	* -2	
144	007E	0F84		AB	/84	
145			*			
146			*			
147			*			
148				END	BOOT	

SYMBOL TABLE

BOOT	0000	A	INR	0054	A	CIO	0036	A	SST	007A	A
HIO	0078	A	INIT20	001A	A	WER1	0042	A	WER2	0044	A
NODISK	0042	A	NOSEEK	0038	A	INR10	0060	A	STORE	0070	A
STATUS	007A	A									

ASS.ERR. 00000

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