

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

TITLE FIELD /INSTALLATION & ACCEPTANCE PROCEDURE FOR KM8-A

DATE 11/19/74

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG *James Harkin* 11/19/74 APPD *Pa. J. Harkin*

DEC 14-10221-1022-N370

DRA 108

ENGINEERING SPECIFICATION & ACCEPTANCE PROCEDURE FOR KM8-A

SIZE CODE SP A

NUMBER KM8-A-1

REV

SHEET 1 OF 3

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ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE FIELD INSTALLATION & ACCEPTANCE PROCEDURE FOR KM8-A

1 GENERAL

This procedure defines the performance standards required of the KM8A*, option board #2. This procedure refers to both system and add-on acceptance.

NOTE: If KM8A was shipped as part of a PDP-8A system, then proceed to installation procedure.

* Memory Extension & Time Share Bootstrap Loaders
Power Fail/Auto Restart

II INSPECTION

After removing the KM8A from the packing material, inspect the module for the following:

- Inventory hardware against shipping list.
- Inventory software against software list, if ordered.
- Inventory prints against shipping list, if ordered.
- Check module for loose or broken components.

III INSTALLATION PROCEDURE

Install the equipment using the following procedure:

- Set the switches as indicated by the diagnostic write up.

NOTE: Refer to Operator's Handbook for switch setting descriptions.

- Insure that the PDP-8A power is removed from the Omnibus™.
- Insert the KM8A into the second or third slot of the Omnibus™.
- Turn the power back "ON".

IV ACCEPTANCE PROCEDURE

Perform the acceptance procedure defined in Table A. If abnormal indications are encountered, refer to the diagnostic listing for the type of error. Reference the diagnostic write ups and Operator's Manual for instructions for loading diagnostics.

SIZE CODE SP A

NUMBER KM8-A-1

REV

DEC FORM NO DEC 14-10221-1022-N370

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SHEET 2 OF 3

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE FIELD INSTALLATION & ACCEPTANCE PROCEDURE FOR KM8-A

IV ACCEPTANCE PROCEDURE (continued)

Equipment required:

- PDP-8A with 1K min. R/W Memory
- Paper Tape Input Device
- Diagnostic and Listings
- Programmer's Console (KC8-A & DMC8-A)
- M987 Quad Extender

NOTE: If the programmer's console and paper tape input device are not available as part of the system being used, they must be supplied in good working order by the customer.

TABLE A

Acceptance of KM8A with 4K of R/W Memory

Program Name	Maindec #	Accept Time	Restrictions
KM8A Option Test #2	08-DJKMA-PB	30 min	4K R/W Memory Min
Acceptance of KM8A with Less than 4K R/W Memory			
KM8A Option Test #2 Segment #1 (RIM)	08-DJKMA -PM1	10 min	1K R/W memory min
KM8A Option Test #2 Segment #2 (RIM)	08-DJKMA -PM2	10 min	1K R/W Memory Min
KM8A Option Test #2 Segment #4 (RIM)	08-DJKMA -PM4	10 min	1K R/W Memory Min

SIZE CODE SP A

NUMBER KM8-A-1

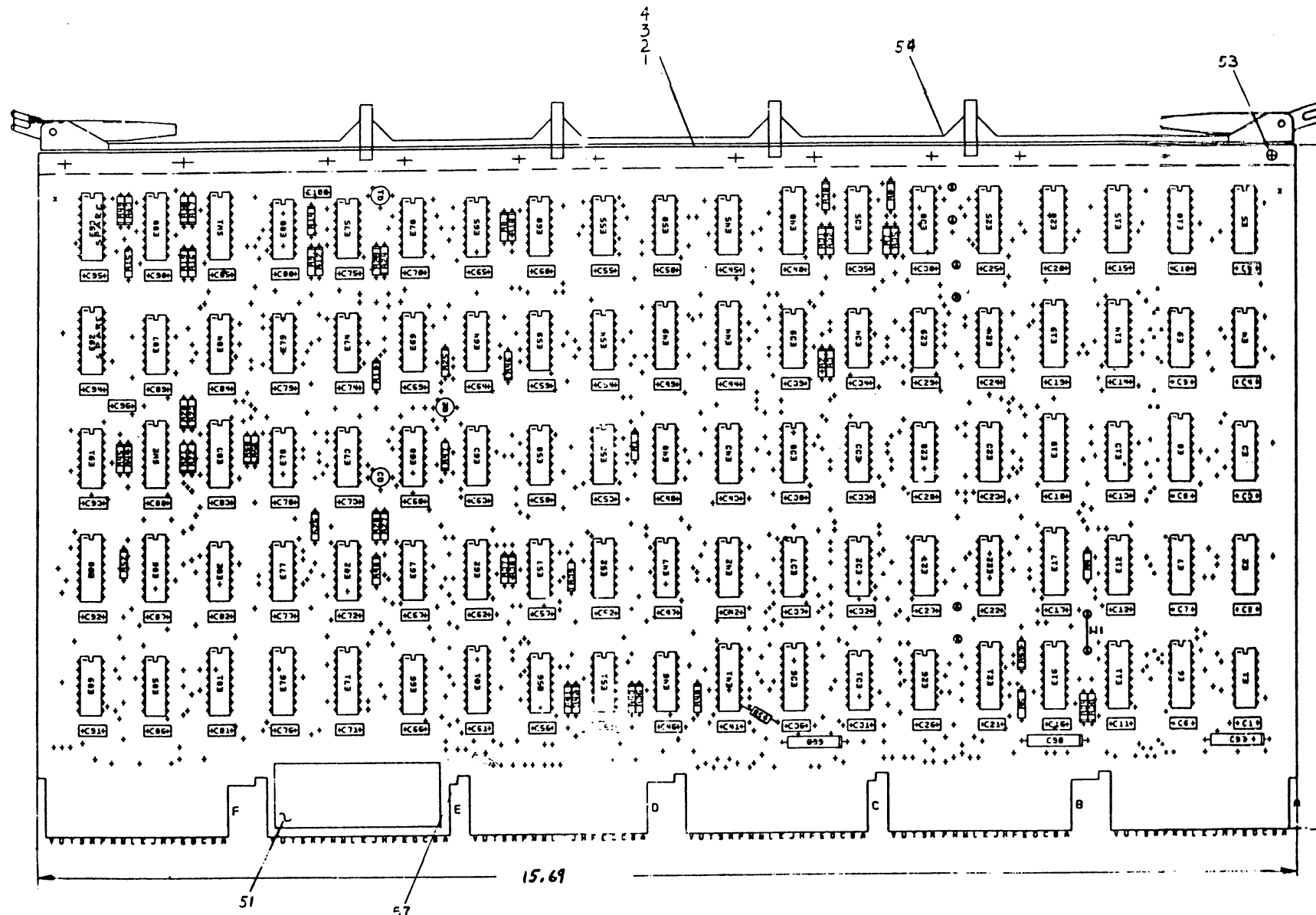
REV

DEC FORM NO DEC 14-10221-1022-N370

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SHEET 3 OF 3

ECO 4-4-1. THIN WALL TUBING TO BE USED ON CAPACITOR
LEAD GOING TO DV2.



IC 7442	8	16
IC 314	1	8
IC 8234	8	16
IC 74173	8	16
IC 74153	8	16
IC 745257	8	16
IC 8837	8	16
IC 7473	11	4
IC 8266	8	16
IC 74175	8	16

IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

$+5V$
 AA2, BA2, CA2
 CA2
 GND

C1-C95
 01MF
 C97-C99
 6.8MF

AC1, AC2, AF1, AF2, AN1, AN2, AT1, AT2
BC1, BC2, BF1, BF2, BN1, BN2, BT1, BT2
CC1, CC2, CF1, CF2, CN1, CN2, CT1, CT2
DC1, DC2, DF1, DF2, DN1, DN2, DT1, DT2

REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8J17-YB-4	1
REF	REF		ASSY/DIMMING HOLE LAYOUT	D-AH-M8J17-YB-5	2
REF	REF		MODULE ECO HISTORY (INACTIVE)	B-MH-M8J17-YB-6	3
1	1		ETCHED CIRCUIT BOARD	5010938	4
1	1	C96	CAP 5000 PF 100 V DISC	1001765	5
96	96	C1-C95,C100	CAP .01 MF 100 V 20%	1001610-01	6
3	3	C97-C99	CAP 6.8 MF 35V 10%	1005306	7
2	2	SW1,SW2	DIP SWITCH	1211164-04	8
47	47	R1-R24,R26,R28-R43 R49-R53,R46,	RES. 1K 1/4 5%	1300365	9
1	1	R44	RES. 100 OHM 1/4 W 5%	1300229	10
4	4	R25,R27,R47,R48	RES. 27 OHM 1/4 W 5%	1301522	11
3	3	Q1,Q2,Q3	TRANSISTOR DEC 3009B	1503100	12
6	6	E80,63,65,87,79,84	I.C. 7474	1905547	13
6	6	E23,45,37,70,69,91	I.C. 7400	1905575	14
1	1	E31	I.C. 7410	1905576	15
2	2	E39,50	I.C. 7420	1905577	16
1	1	E7	I.C. 7430	1905578	17
1	1	E82	I.C. 7473	1905587	18
3	3	E38,60,62	I.C. 7402	1909004	19
6	6	E12,26,33,34,53,77	I.C. 74S11	1910537	20
2	2	E19,20	I.C. 74S257	1911641	21
1	1	E13	I.C. 74S74	1910544	22
6	6	E58,47,56,51,46,57	I.C. 8881	1909705	23
2	2	E52,48	I.C. 7417	1909929	24
2	2	E86,90	I.C. 8266	1909934	25
1	1	E30	I.C. 74153	1909937	26
1	1	E28	I.C. 74S00	1910532	27
2	2	E85,89	I.C. 74197	1910035	28
1	1	E78	I.C. 74164	1910041	29
2	2	E17,40	I.C. 7442	1910046	30
3	3	E64,67,74	I.C. 7437	1910091	31
4	4	E24,55,75,72	I.C. 7408	1910155	32
1	1	E22	I.C. 314	1909704	33
2	2	E61,71	I.C. 74175	1910651	34
1	1	E9	I.C. 8093	1910837	35
2	2	E29,73	I.C. 7427	1910878	36
2	2	E8,14	I.C. 8234	1911315	37
6	6	E5,10,15,25,44,49	I.C. 74173	1911330	38
6	6	E32,43,54,59,66,68	I.C. 7404	1909686	39
-	1	E76,	I.C. MIKP ROM#1 (256x4)	2346A2	40
-	1	E81	I.C. MIKP ROM#2 (256x4)	23469A2	41
1	1	E35	I.C. MIKP ROM#3 (32x8)	23-084A1	42
1	1	E16	I.C. KMTS ROM#1(256x4)	23-086A2	43
4	4	E1,2,3,4	I.C. 7412	1909955	44
6	6	E6,11,18,21,36,41	I.C. 8837	1911116	45
1	1	E42	I.C. 74S04	1910534	46
1	1	E27	I.C. 74S10	1910536	47
4	4	E76,81,83,88	SOCKET, 16 PIN	1211813	48
1	1	R45	RES. 220 1/4 W 5%	1300271	49
8	8		SPLIT LUG	9006735	50
.05	.05		DECAL	7415856	51

FIRST USED ON OPTION MODEL				PARTS LIST																
OPTION MODULE KMBA				ETCH BOARD REV.				E												
								DRN.	DATE	digital										
								CHK'D	DATE											
								ENG.	DATE											
								PROJ. ENG.	DATE											
								PROD.	DATE											
								NEXT HIGHER ASSY												
								B-DD-M8317-YB		SIZE	COUNT	NUMBER	REV.							
DEC NO.	EIA NO.	M8317-YC	M8317-YB	DEC NO.	EIA NO.			SCALE NAME		D	CS	M8317-YB-1	Σ							
SEMICONDUCTOR CONVERSION CHART																				
SHEET 1 OF 7										DIST.										

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BOOTSTRAP/AUTO RESTART FUNCTIONAL SWITCH SETTINGS

DESIRED FUNCTION	ACTIVATING SIGNAL	S1-4	S1-5	S1-6	S17	S1-8	S2-1
BOOTSTRAP ENABLED	"BOOT" SW	*	↑	OFF	OFF	ON	N/A
AUTO-RESTART DISABLED	N/A						
BOOTSTRAP ENABLED	"BOOT" SW	*	↑	ON	ON	ON	N/A
AUTO-RESTART ENABLED	"AC LOW"						
BOOTSTRAP DISABLED	N/A	*	↓	ON	ON	OFF	N/A
AUTO-RESTART ENABLED	"AC LOW"						
BOOTSTRAP ENABLED	"AC LOW"	*	↓	ON	OFF	OFF	N/A
AUTO-RESTART DISABLED	N/A						
BOOTSTRAP ENABLED	"AC LOW" OR "BOOT" SW	*	↓	ON	OFF	ON	N/A
AUTO-RESTART DISABLED	N/A						
TIME SHARE DISABLED	N/A	N/A	N/A	N/A	N/A	N/A	ON
TIME SHARE ENABLED	N/A	N/A	N/A	N/A	N/A	N/A	OFF

NOTES:

- * S1-4 "OFF" - BOOTSTRAP CAN BE ACTIVATED BY "BOOT" SW EITHER IN THE "RUN" OR "RUN" STATE
 - S1-4 "ON" - BOOTSTRAP CAN ONLY BE ACTIVATED BY "BOOT" SW IN THE "RUN" STATE
1. "AC LOW" WILL CAUSE AUTO-RESTART OR BOOTSTRAP, DEPENDING ON SWITCH SETTINGS, TO OCCUR ONLY IN THE "RUN" OR STOPPED STATE S1-6,7,8 "OFF" - BOOTSTRAP & AUTO-RESTART DISABLED
 2. ET6 & EBI ARE NOT ON THE YC VARIATION KMB-AD. ALL OTHER PARTS REMAIN THE SAME
 3. IF AUTO-RESTART IS ENABLED, THE AUTO-START FEATURE OF THE CPU (M8315) MUST BE DISABLED

BOOTSTRAP SELECT SWITCH SETTINGS FOR 158A2/159A2 ROMS

PROGRAM	S2-5	S2-6	S2-7	S2-8	S1-1	S1-2	S1-3	ROM ST ADD	MEM ADD START
HI-LO PT RDR	ON	ON	ON	OFF	ON	ON	ON	20	7734
RK8E	ON	OFF	ON	OFF	ON	OFF	ON	124	24
RX8E	ON	OFF	OFF	ON	OFF	ON	ON	150	33
RF08/DF32P	OFF	ON	OFF	ON	OFF	ON	OFF	252	7750
TABE	OFF	ON	OFF	OFF	OFF	ON	OFF	272	4000

3. BOOTSTRAP SELECT SWITCHES ARE DEFINED AS FOLLOWS:
- (a) ROM ADDRESS RANGE: 0-377
 - (b) ON = LOGIC 0 OR LOW; OFF = LOGIC 1 OR HIGH
 - (c) ORDER OF SIGNIFICANCE
 - $S_2 5 = 2^7 = 200$ (MSB)
 - $S_2 6 = 2^6 = 100$
 - $S_2 7 = 2^5 = 40$
 - $S_2 8 = 2^4 = 20$
 - $S_1 1 = 2^3 = 10$
 - $S_1 2 = 2^2 = 4$
 - $S_1 3 = 2^1 = 2$

THE LSB OF ADDRESS IS CONTROLLED BY
THE BOOTSTRAP/AUTO-RESTART LOGIC

BOOTSTRAP SELECT SWITCH SETTINGS FOR 465A2/469A2 ROMS

PROGRAM	S2-5	S2-6	S2-7	S2-8	S1-1	S1-2	S1-3	ROM ST ADD	MEM ST ADD
H1LOPTR	ON	ON	ON	OFF	ON	ON	ON	20	7739
RK8E	ON	OFF	ON	OFF	ON	OFF	ON	124	24
RX8E	ON	OFF	OFF	ON	OFF	ON	ON	150	33
RL2A	OFF	ON	OFF	OFF	OFF	ON	OFF	272	1

* RXEE BOOT FOR BOTH RX01 AND RX02

FOR BOTH 158A2/159A2 & 465A2/469A2 ROMS

AUTO-RESTART SELECT
SWITCH SETTINGS

RESTART ADDRESS	52.2	52.3	52.4
Ø	OFF	OFF	OFF
2000	OFF	ON	OFF
20000	ON	OFF	OFF
42000	ON	ON	OFF

4. AUTO-RESTART SELECT SWITCHES ARE DEFINED AS FOLLOWS:
- (a) ROM ADDRESS RANGE ; 0-16
 - (b) ON = LOGIC 1 OR LOW; OFF = LOGIC 0 OR HIGH
 - (c) CODED OF SIGNIFICANCE
- $$S_2 2 = 2^3 = 10$$
- $$S_2 3 = 2^2 = 4$$
- $$S_2 4 = 2^1 = 2$$

5. TO CONFIGURE MODULE FOR USE
WITH KT8-A OPTION, INSTALL
JUMPERS AS SHOWN BELOW

	W1	W2	W3	W4
NORMAL	IN	OUT	OUT	OUT
WITH KTRA	OUT	IN	IN	IN

COMPONENT SUBSTITUTION CHART

PART CALLED FOR			SUBSTITUTE PART		
QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
96	1001610-01	01 MFD DISC	96	1001610-00	01 MFD GLASS
3	15C31C0	DEC 80098	3	1509338	DEC 6531
6	1911330	78173	6	1911711	8T10
1	1909704	314	1	1910391	5314
			1	1909972	6314
			1	1910389	7314
6	1909705	8881	6	1909973	97401
1	23158A2	ROM 1 (E6)	1	23465A2	ROM 1 (E76)
1	23159A2	ROM 2 (E81)	1	23469A2	ROM 2 (E81)

- PARTS	LIS
---------	-----

QTY	QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
4377-AC	BA-21E/8B	TITLE OPTION BOARD #2	SIZE CODE D CS	NUMBER M8317-YB-1	REV. SA
		SCALE NONE	SHEET 2 OF 7	DIST.	

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KMTS 2 USER MODE H

DM2 USER MODEL

BBUF MD0 H

BBUF MD1 H

BBUF MD3 H

BBUF MD4 H

BBUF MD5 H

BBUF MD6 H

BBUF MD7 H

BBUF MD8 H

BBUF MD9 H

BBUF MD10 H

BBUF MD11 H

BBUF MD12 H

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BBUF MD288 H

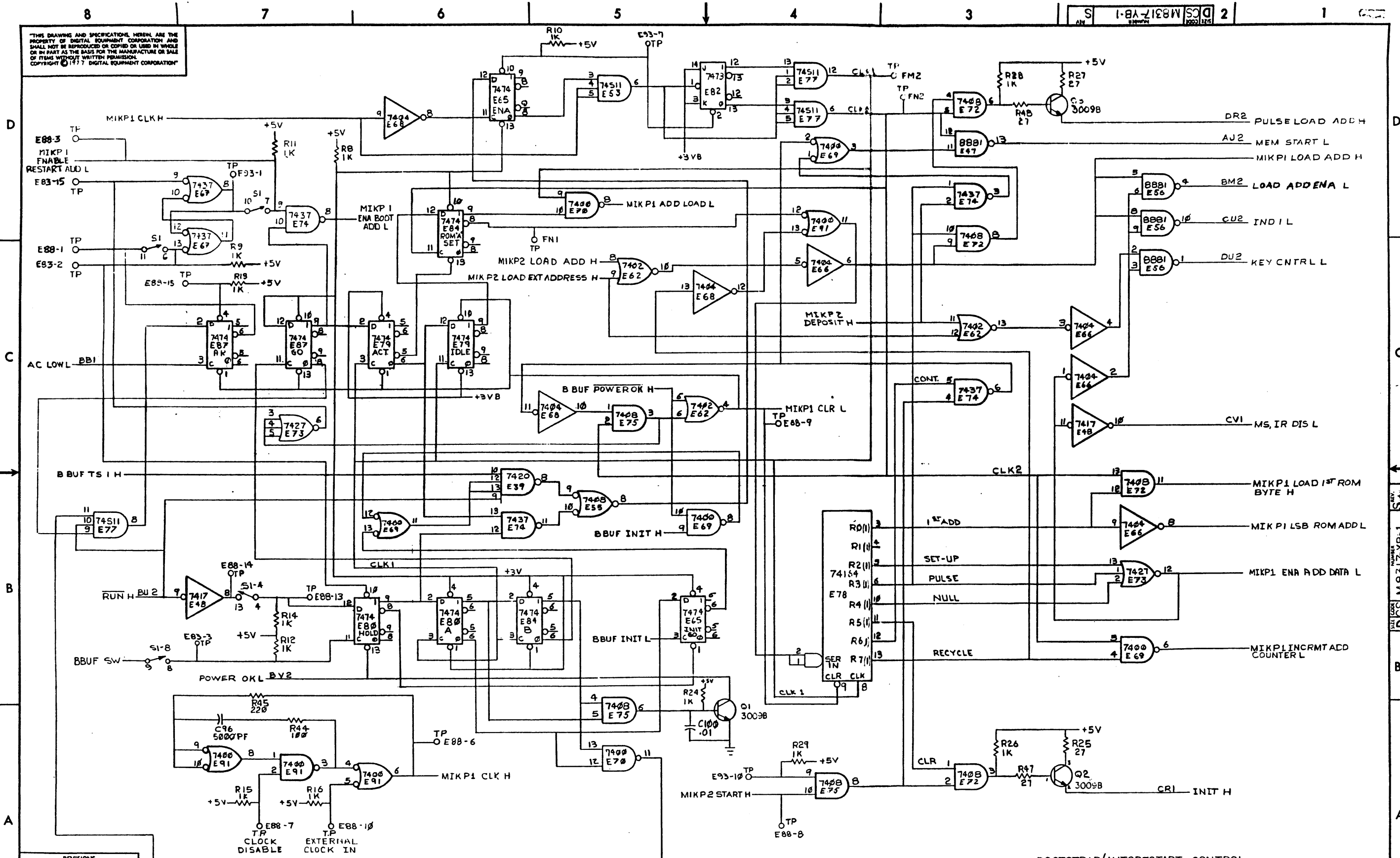
BBUF MD289 H

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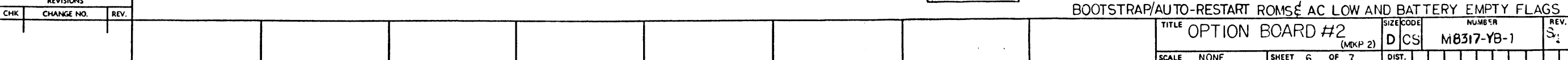
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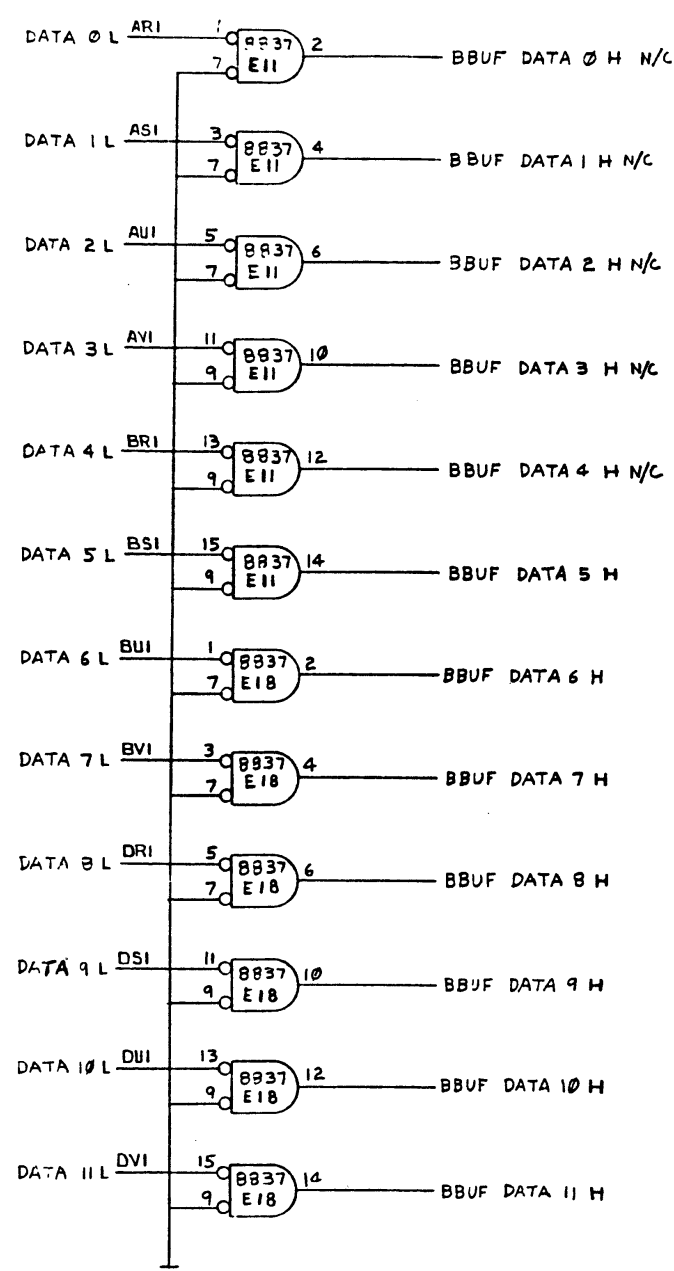
REVISIONS		
CHK	CHANGE NO.	REV.

BOOTSTRAP/AUTORESTART CONTROL			
TITLE		SIZE CODE	NUMBER
OPTION BOARD # 2 (MIKP1)		D CS	M8317-YB-1
SCALE	SHEET 5 OF 7	DIST.	REV.

A

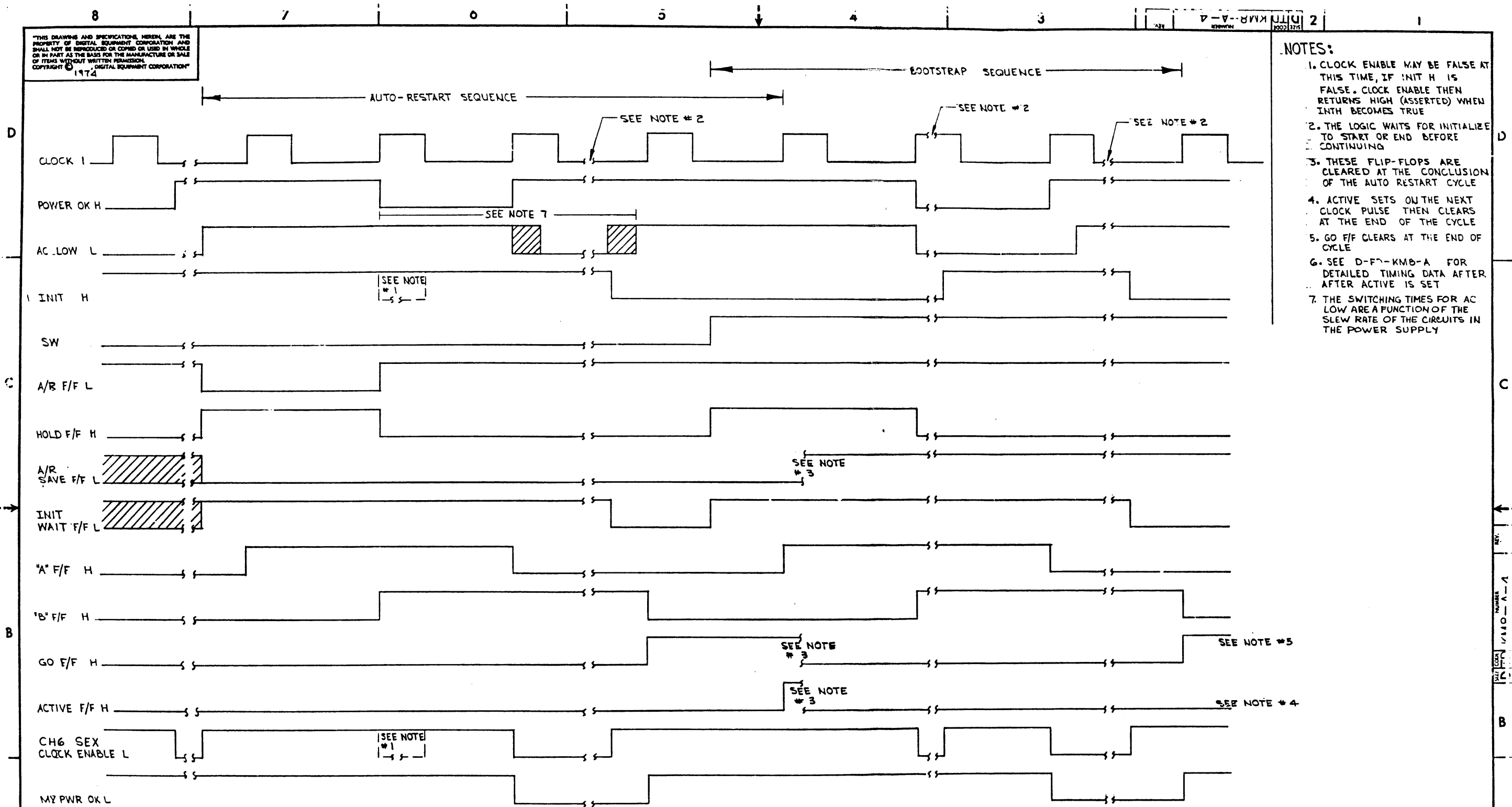


REVISIONS													BOOTSTRAP/AUTO-RESTART ROMS & AC LOW AND BATTERY EMPTY FLAGS									
CHK	CHANGE NO.	REV.											TITLE		SIZE CODE		NUMBER		REV.			
													OPTION BOARD #2 (MXP 2)		D CS		M8317-YB-1		3			
													SCALE NONE		SHEET 6 OF 7		DIST.					



TITLE 8/A INTERNAL OPTION #2 (BBUF)		SIZE D	CODE CS	NUMBER M8317-YR-1		REV S
SCALE NONE	SHEET 7 OF 7	DIST.				

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NOTES:

1. CLOCK ENABLE MAY BE FALSE AT THIS TIME, IF INIT H IS FALSE. CLOCK ENABLE THEN RETURNS HIGH (ASSERTED) WHEN INTH BECOMES TRUE
2. THE LOGIC WAITS FOR INITIALIZATION TO START OR END BEFORE CONTINUING
3. THESE FLIP-FLOPS ARE CLEARED AT THE CONCLUSION OF THE AUTO RESTART CYCLE
4. ACTIVE SETS ON THE NEXT CLOCK PULSE THEN CLEARS AT THE END OF THE CYCLE
5. GO F/F CLEARS AT THE END OF CYCLE
6. SEE D-F-KM8-A FOR DETAILED TIMING DATA AFTER ACTIVE IS SET
7. THE SWITCHING TIMES FOR AC LOW ARE A FUNCTION OF THE SLEW RATE OF THE CIRCUITS IN THE POWER SUPPLY

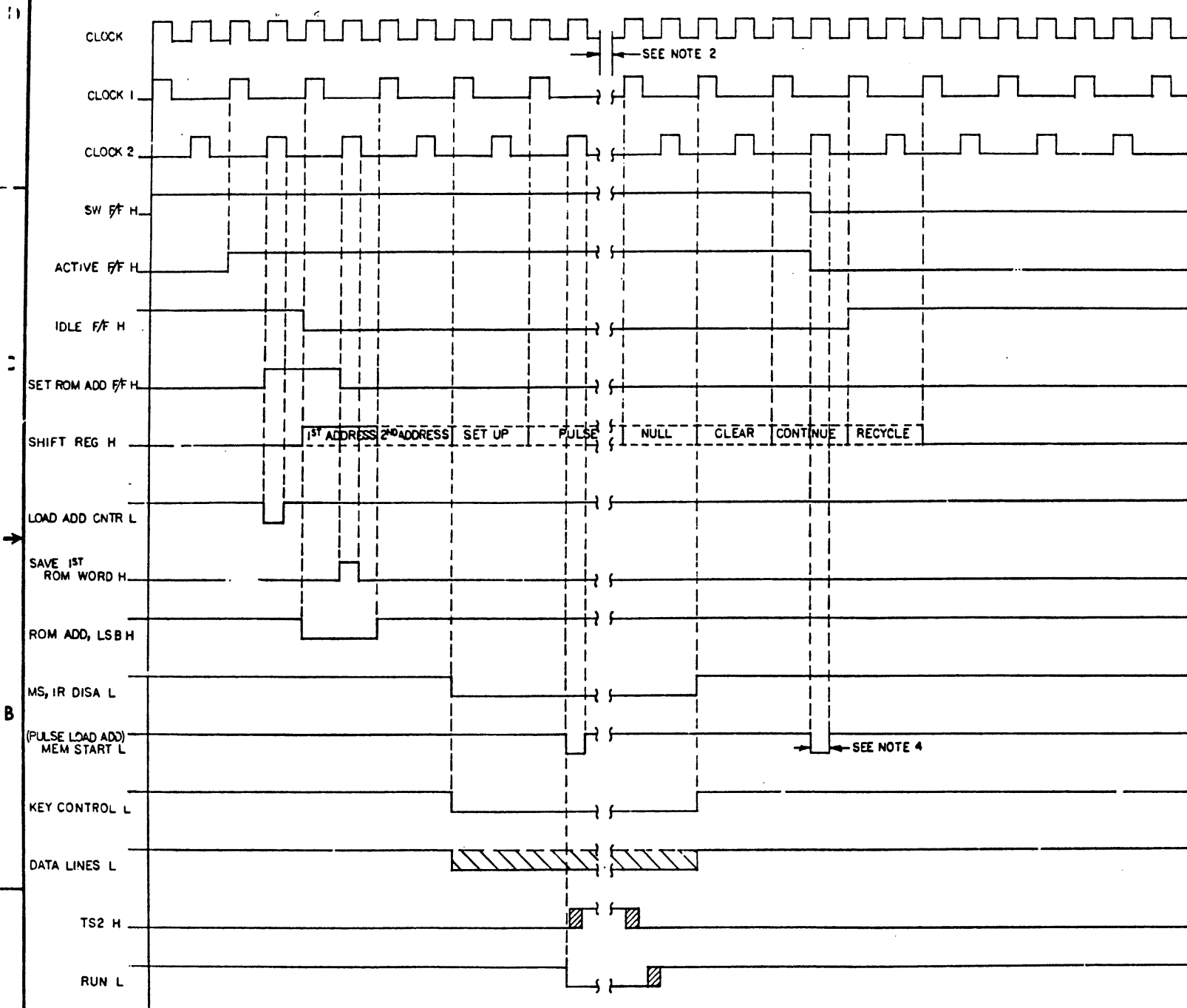
REV.	CHANGE NO.
OK	

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8-A					
DIMENSIONAL TOLERANCE		DRND	DATE	PARTS LIST	
DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED		DATE	DATE		
THIRD ANGLE PROJECTION		DATE	DATE		
MATERIAL		DATE	DATE		
FINISH		DATE	DATE		
NEXT HIGHER ASSY.		TITLE			
B-DD-KM8-A		AUTO RESTART/BOOTSTRAP START-UP SEQUENCE			
SCALE		SIZE/CODE		NUMBER	REV.
SHEET 1 OF 1		DTD		KM8-A-4	

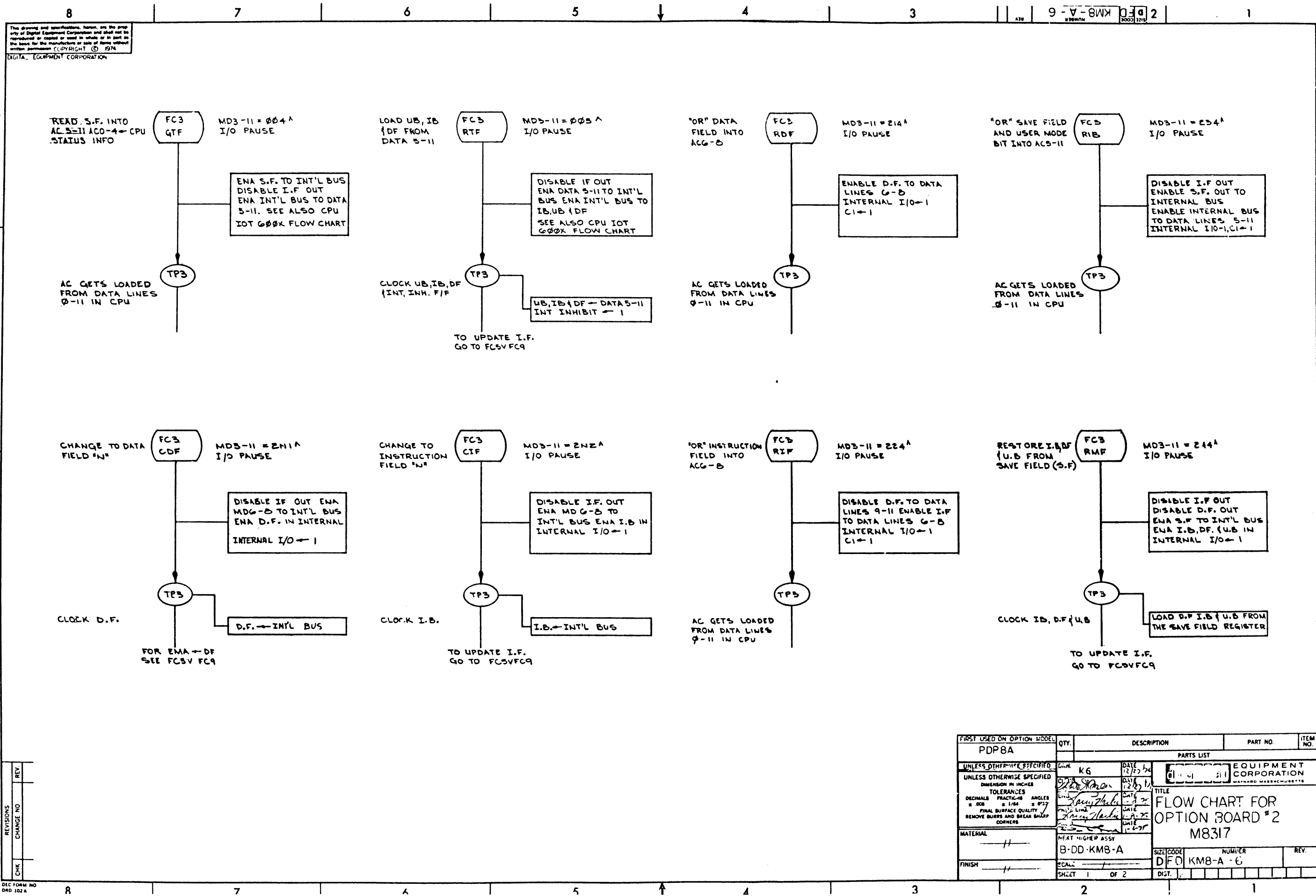
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NOTES:

- ONE "DEPOSIT" CYCLE IS SHOWN IN
: DIAGRAM.
- WHEN "RUN" IS TRUE (LOW) ALL TIMING
IS HELD OFF UNTIL THE NEXT CLOCK
PULSE AFTER "RUN" GOES FALSE (HIGH).
- FOR THE "LOAD ADD" CYCLE SIGNALS
REMAIN THE SAME AS SHOWN EXCEPT
THAT "PULSE LOAD ADD" REPLACES "MEM
START" AND "KEY CONTROL" IS NEGATED.
FOR "EXT. LOAD ADD" KEY CONTROL IS
TRUE.
- MEM START APPEARS HERE ONLY FOR
THE "START" FUNCTION. THE EARLIER
MEM START IS FOR "DEPOSITS" ONLY.



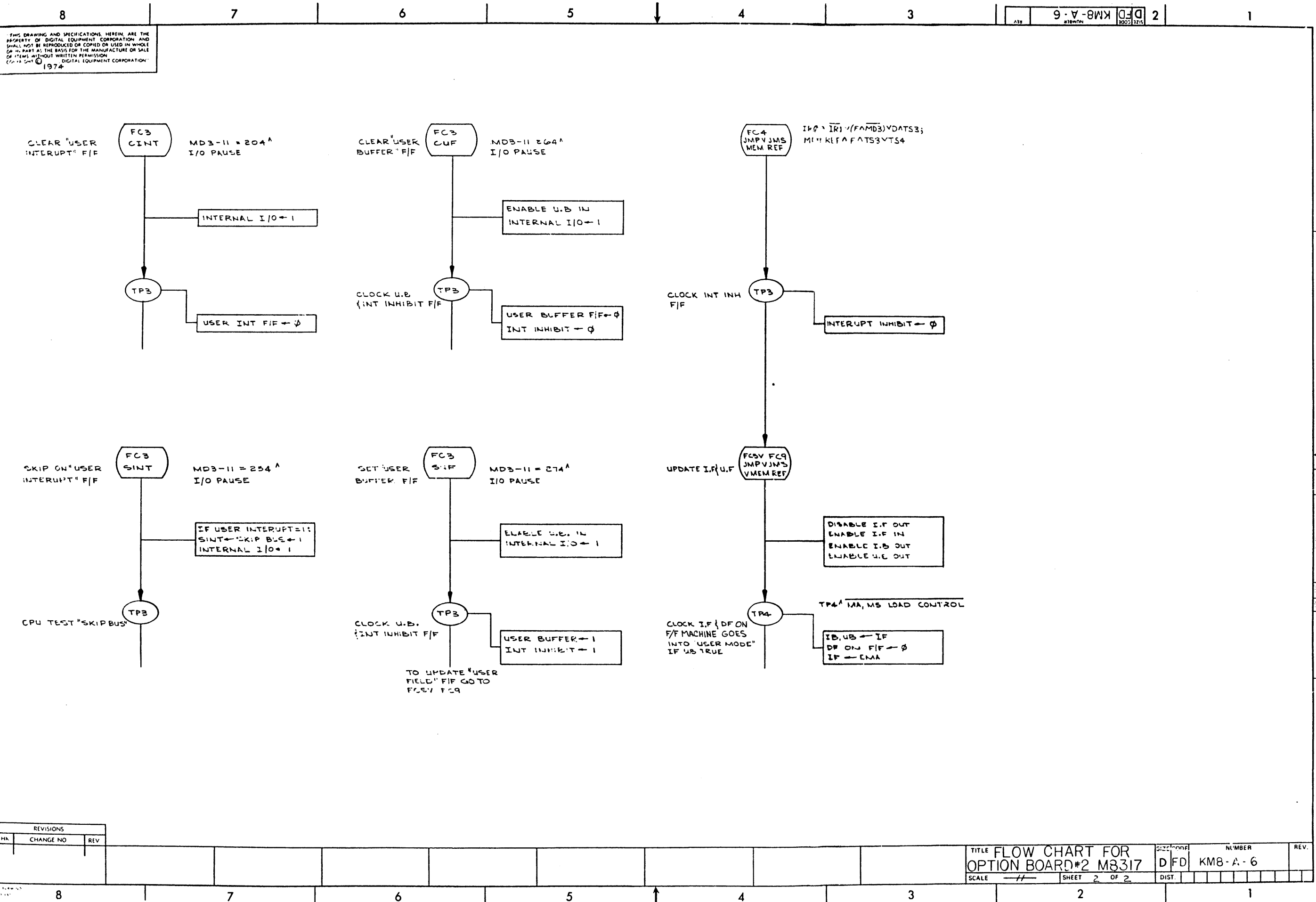
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8-A					
DIMENSIONAL TOLERANCE		DR. 4	DATE	PARTS LIST	
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		DATE	DATE	DATE	
MILLIMETERS		INCHES	ANGLES	TITLE	
XX - ±0.10	JXX - ±0.05	XX - ±0.02	XX - ±0.1	BOOTSTRAP TIMING DIAGRAM	
XX - ±0.05	JX - ±0.02	X - ±0.1		DATE	
X - ±0.2				DATE	
THIRD ANGLE PROJECTION		NEXT HIGHER ASSY.		REV.	
MATERIAL		B-DD-KM8-A		NUMBER	
FINISH		SCALE NONE		REV.	
		SHEET OF 1		DIST.	



REV.	NO.
CHG.	NO.
CHK.	NO.

DEC FORM NO 000 102A

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8A				
UNLESS OTHERWISE SPECIFIED	QTY.	DATE	EQUIPMENT CORPORATION	
UNLESS OTHERWISE SPECIFIED	QTY.	DATE	MAYNARD, MASSACHUSETTS	
DIMENSION IN INCHES	QTY.	DATE	TITLE	
TOLERANCES	QTY.	DATE	FLOW CHART FOR	
DECIMALS ± 0.005	QTY.	DATE	OPTION BOARD #2	
FRACTIONS ± 1/64	QTY.	DATE	M8317	
ANGLES ± 0°27'	QTY.	DATE	SIZE CODE NUMBER	
FINAL SURFACE QUALITY	QTY.	DATE	DFO KMB-A-6	
REMOVE BURRS AND BREAK SHARP CORNERS	QTY.	DATE	REV.	
MATERIAL	QTY.	DATE		
FINISH	QTY.	DATE		
NEXT HIGHER ASSY		SCALE		
B-DD-KMB-A		SHEET 1 OF 2		



REVISIONS		
CHK	CHANGE NO	REV

TITLE		FLOW CHART FOR	SIZE	CODE	NUMBER	REV.
OPTION BOARD #2 M8317		D	FD	KM8-A-6		
SCALE	1/1	SHEET	2	OF	2	DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

ENGINEERING SPECIFICATION		DATE	5/8/74
TITLE		ROM PROGRAMMING DIRECTIONS FOR 8A OPTION BOARD #2 KMB-AD (MB317-YC)	

REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	E.C.O. CHANGE	00001	L. NARHI	14 MAY 76	<i>L. Narhi</i>	21 MAY
B	E.C.O. CHANGE	00002	L. NARHI	12-14-77	<i>L. Narhi</i>	5 JUN 78

ENG Larry Nathi	APPD 12/20/74	SIZE A	CODE SP	NUMBER KMB-A-7	REV B
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DEC FORM NO. 107
1 of 6

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE	ROM PROGRAMMING DIRECTIONS FOR 8A OPTION BOARD #2 KM8-AD (M8317-YC)

1. Introduction

This document describes the organization of the two 256 x 4 ROMs, hereafter called ROM #1 and ROM #2, that control and supply data for the Auto-Restart and Bootstrap portions of Option Board #2.

This information is made available to help users program their own ROMs for their specific Auto-Restart and/or Bootstrap program(s).

2. Organization

The two ROMs are connected as follows: the address lines are connected in parallel; i.e., two corresponding address lines of each ROM are connected together, the outputs are arranged in serial fashion forming an 8 bit word, 4 outputs from each ROM. Because 12 bits are required for data/address information, two sequential addresses must be accessed from the ROMs to form a 16 bit word. Where the first 8 bits are temporarily stored in a register, then the next 8 bits are accessed from the ROMs. At this point the control then decides what to do with 12 of the 16 bits. There are four possible actions that can take place at this time:

- a) Load Address
- b) Load Extended Address, IF AND DF
- c) Deposit
- d) Start

The remaining 4 bits of the 16 actually tell the control which of the four actions are to take place. So the 16 bit word would look like the word in Figure 1.

	SIZE	CODE	NUMBER	REV
	A	SP	KM8-A-7	B

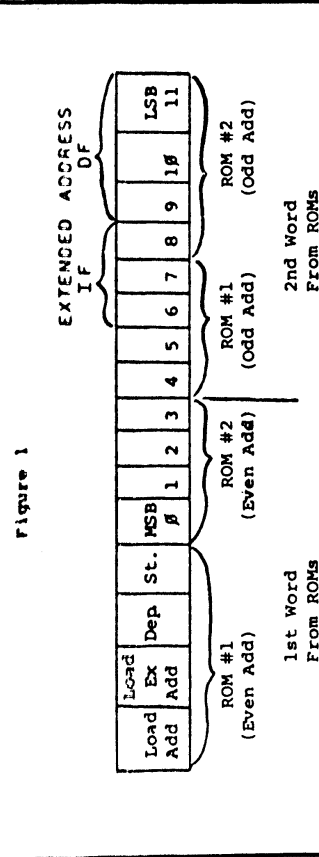
DEC FORM NO DEC 14-(381)-1022-N370
 DRA 108

SHEET 2 OF 6

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE ROM PROGRAMMING DIRECTIONS FOR 8A OPTION BOARD #2 KM8-AD (M8317-YC)



The use of ROMs that have 256 addressable locations allows up to 128 words of ROM storage. These 128 locations may be used for Bootstrap and/or Auto-restart programs. Any Auto-restart or Bootstrap program may be located anywhere in the ROMs so long as the program starts in an even address in the ROM. If it is required that both Bootstrap and Auto-restart programs be accessible at the same time, activated by different signals; of course the Auto-restart program(s) must be located in addresses 0 through 15 in the ROMs. This is due to the addressing limits of the Auto-restart select switches.

3. Auto-Restart/Bootstrap Sequence

The following events should take place when an auto-restart is initiated:

- a) Load a 12 bit address
- b) LOAD THE IF AND OF AND START.

The following events should take place when the Bootstrap is initiated:

- a) Load a 12 bit initial address.
- b) Load the IF AND DF
- c) Deposit 12 bit data words repeating as required by length of program to be deposited.
- d) Load a 12 bit starting address and start.

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DRA 108
SHEET 3 OF 6

ENGINEERING SPECIFICATION

CONTINUATION SHEET

Project No.

TITLE ROM PROGRAMMING DIRECTIONS FOR 8A OPTION BOARD #2 KM8-AD (M8317-YC)

The decision to do a Bootstrap or an auto-restart is directed by a set of switches on the module. The Bootstrap may be actuated by the transition of the signal AC LOW from a logic low to a logic high or by a similar transition of the SW line on the OMNIBUS.

AN AUTO-RESTART MAY ONLY BE INITIATED BY THE AC LOW SIGNAL. IT SHOULD BE OBVIOUS THAT BOTH THE BOOTSTRAP OR AUTO-RESTART SHOULD NOT BE ACTIVATED BY THE SAME INITIALIZING SIGNAL.

4. ROM Programming Examples

Auto-restart example:

- a) Load address 0200
b) Load field 0, start
- Starting at ROM address 004
- Bootstrap example:
- a) Load address 0023
b) Load field 7 (BOTH IF AND DF)
c) Deposit 2000
d) Deposit 6745
e) Deposit 0023
f) Deposit 7650
h) Deposit 5024
j) Deposit 5733
k) Deposit 5031
l) Load address 0024 and start

Starting at ROM address 124.

	SIZE	CODE	NUMBER	REV
	A	SP	KMB-A-7	B

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 SHEET 4 OF 6

TITLE ROM PROGRAMMING DIRECTIONS FOR 8A OPTION BOARD #2 KM8-AD (M8317-YC)

Auto-Restart example:

Bit Add	ROM #1				ROM #2			
	4	3	2	1	4	3	2	1
4	1	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0	0
6	0	1	0	1	0	0	0	0
7	0	0	0	0	0	0	0	0

Load Address

0200

Load Ext. Add 0
and Start

NOTE: Logic one (1) = +3V

Bootstrap example:

Bit Add	ROM #1				ROM #2			
	4	3	2	1	4	3	2	1
124	1	0	0	0	0	0	0	0
125	0	0	0	1	0	0	1	1
126	0	1	0	0	0	0	0	0
127	0	0	1	1	1	1	1	1
130	0	0	1	0	0	1	0	0
131	0	0	0	0	0	0	0	0
132	0	0	1	0	1	1	0	1
133	1	1	1	0	0	1	0	1
134	0	0	1	0	0	0	0	0
135	0	0	0	1	0	0	1	1
136	0	0	1	0	1	1	1	1
137	1	0	1	0	1	0	0	0
140	0	0	1	0	1	0	1	0
141	0	0	0	1	0	1	0	0
142	0	0	1	0	1	1	0	1
143	1	1	0	1	1	0	1	1
144	0	0	1	0	1	0	1	0
145	0	0	0	1	1	0	0	1
146	1	0	0	1	0	0	0	0
147	0	0	0	1	0	1	0	0

Load Add 0023

Load Ext Add 7

Dep 2000

Dep 6745

Dep 0023

Dep 7650

Dep 5024

Dep 6733

Dep 5031

Load Add 24 & Start

TITLE ROM PROGRAMMING DIRECTIONS FOR 8A OPTION BOARD #2 KM8-AD (M8317-YC)

5. ROMs

Unprogrammed ROMs should be purchased by the user from Digital Equipment Corporation. The part number for an unprogrammed 256 x 4 ROM is 23-000A2.

SIZE
ACODE
SPNUMBER
KM8-A-7REV
BSIZE
ACODE
SPNUMBER
KM8-A-7REV
B