

**digital**

**MM8-EJ**  
**Engineering Drawings**  
**Digital Equipment Corporation**

The material herein is for information purposes only and is subject to change without notice. Digital Equipment Corporation assumes no responsibility for any errors which may appear herein.

These drawings and specifications herein are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.  
Copyright © 1975, Digital Equipment Corporation

## CUSTOMER PRINT SET INDEX

SEQUENCE	PRINT SET
MM8-1	PRINT SET
	E-BD-MM8-E-1
	E-CS-G227-0-1
	E-CS-G619-0-1
	E-CS-G104-0-1
	D-UA-MM8-E-0
	A-PL-MM8-E-0
	D-UA-H220-0-0
	A-AL-MM8-E-3
	A-SP-7665139-0-0

BLOCK DIAGRAM  
4K XY DRIVER  
STACK BOARD  
SENSE INHIBIT (4K)  
MEMORY ASSY (4K)  
MEMORY ASSY (PL)  
STACK 4K 12 BIT  
ACCESSORY LIST  
MM8-E ACCEPTANCE PROCEDURE

SEQUENCE	PRINT SET
MM8-2	PRINT SET
	E-BD-MM8-EJ-5
	E-CS-G233-0-1
	E-CS-G111-0-1
	E-CS-H212-0-1
	D-UA-MM8-EJ-0
	A-AL-MM8-E-3
	D-CS-G640-0-1
	A-SP-MM8-EJ-1

BLOCK DIAGRAM  
8K XY DRIVER  
8K SENSE INHIBIT  
8K STACK SCHEMATIC  
MEMORY (8K)  
ACCESSORY LIST  
12 BIT STACK BOARD  
MM8-EJ & MM8-EH ACCEPTANCE  
PROCEDURE (F.S.)

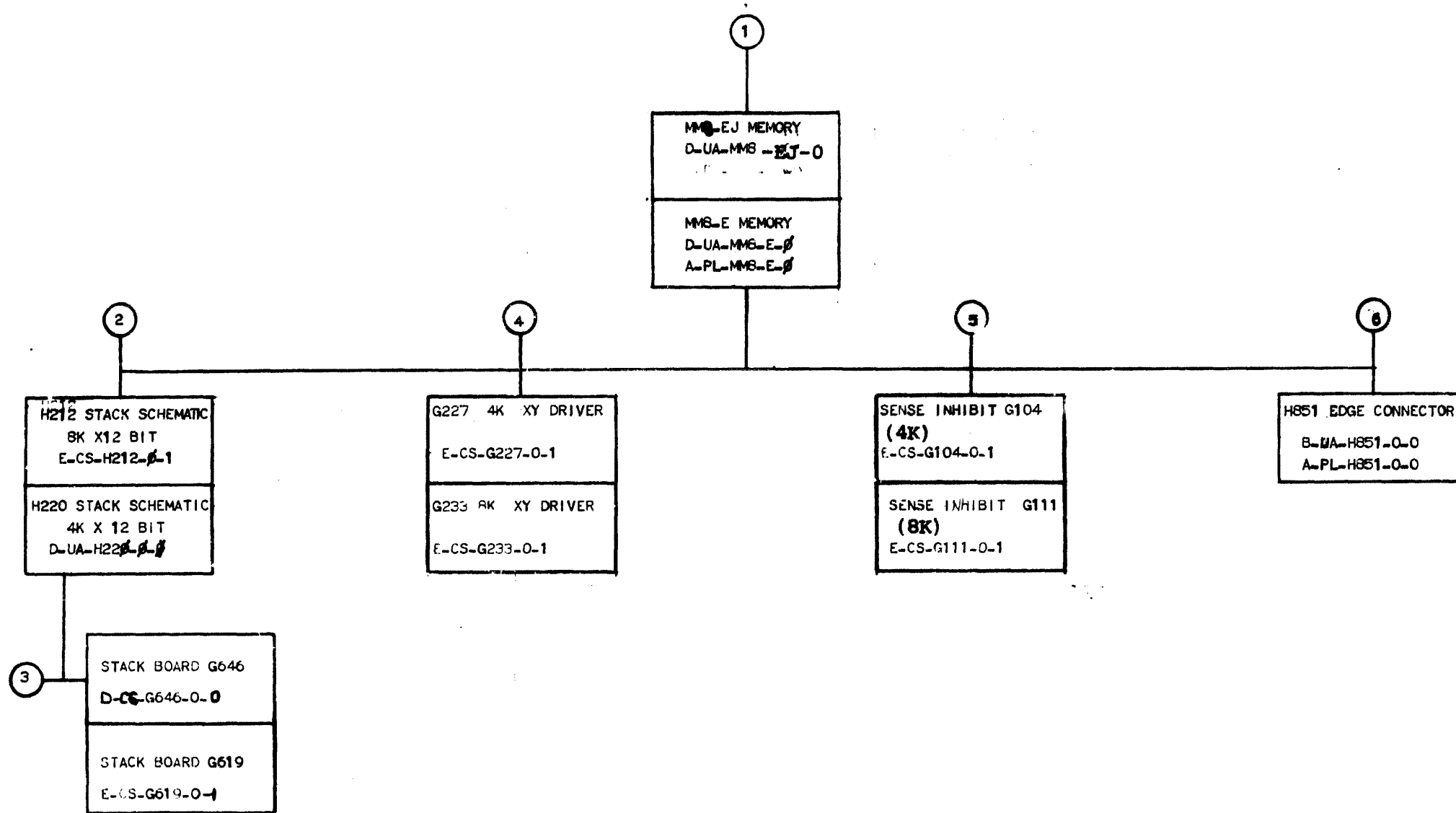
SEQUENCE	MANUFACTURING PROC.
	MM8-EJ & MM8-EH MANUFACTURING PROCEDURE (ON LINE)
	MM8-EJ & MM8-EH TEST PROCEDURE (OFF LINE)
	PURCHASE SPEC.
	PURCHASE SPEC.
	ENGINEERING SPEC.

MANUFACTURING PROC. A-SP-MM8-E-2  
MM8-EJ & MM8-EH MANUFACTURING PROCEDURE (ON LINE) A-SP-MM8-EJ-2  
MM8-EJ & MM8-EH TEST PROCEDURE (OFF LINE) A-SP-MM8-EJ-3  
PURCHASE SPEC. A-PS-3010654-0-0  
PURCHASE SPEC. A-PS-8009834-0-0  
ENGINEERING SPEC. A-SP-MM8-EJ-4

THIS IS PRINT SET            

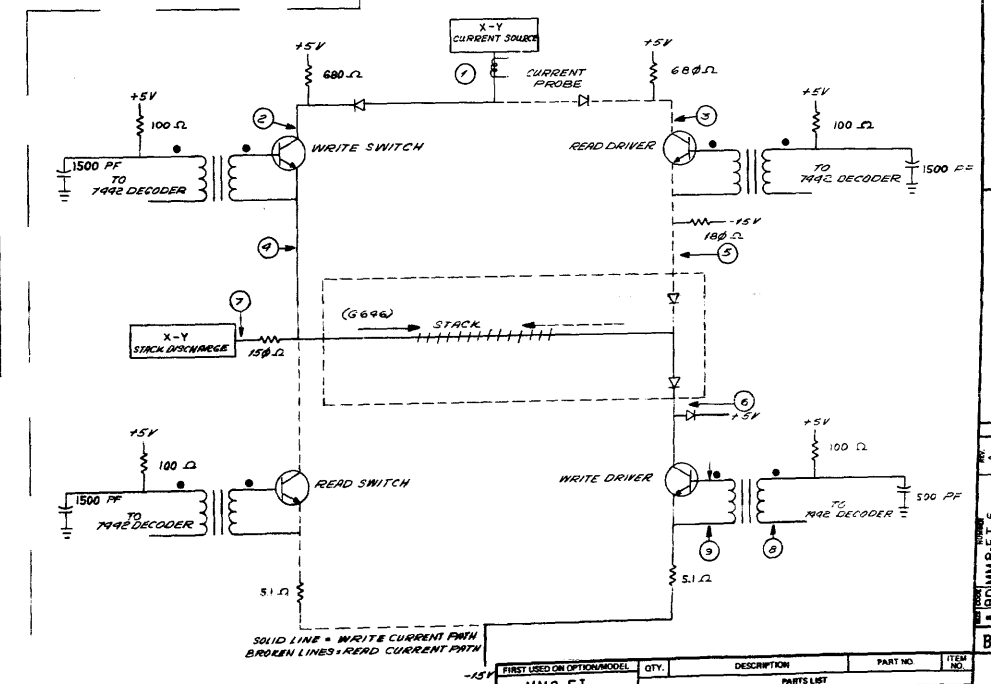
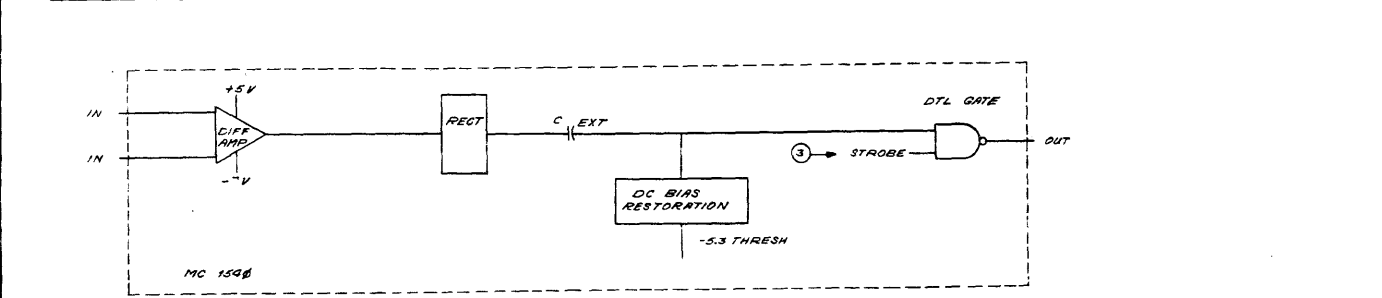
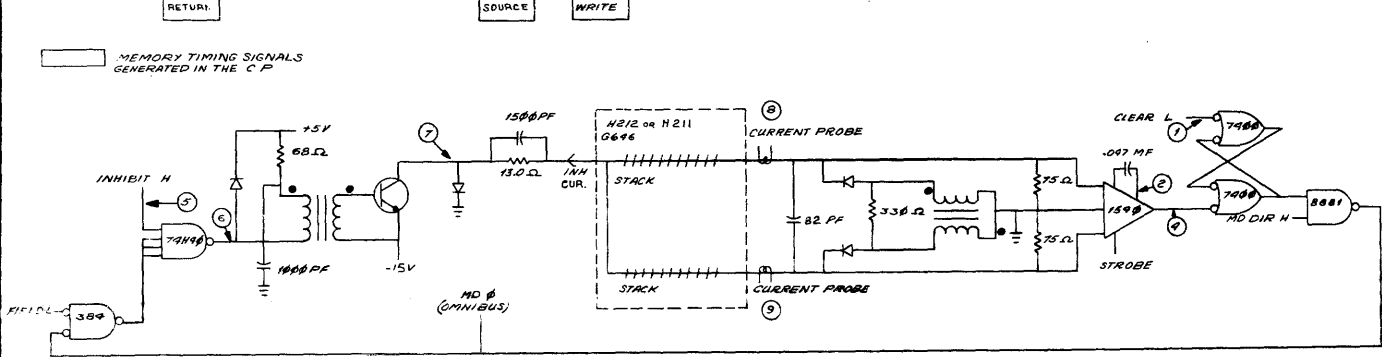
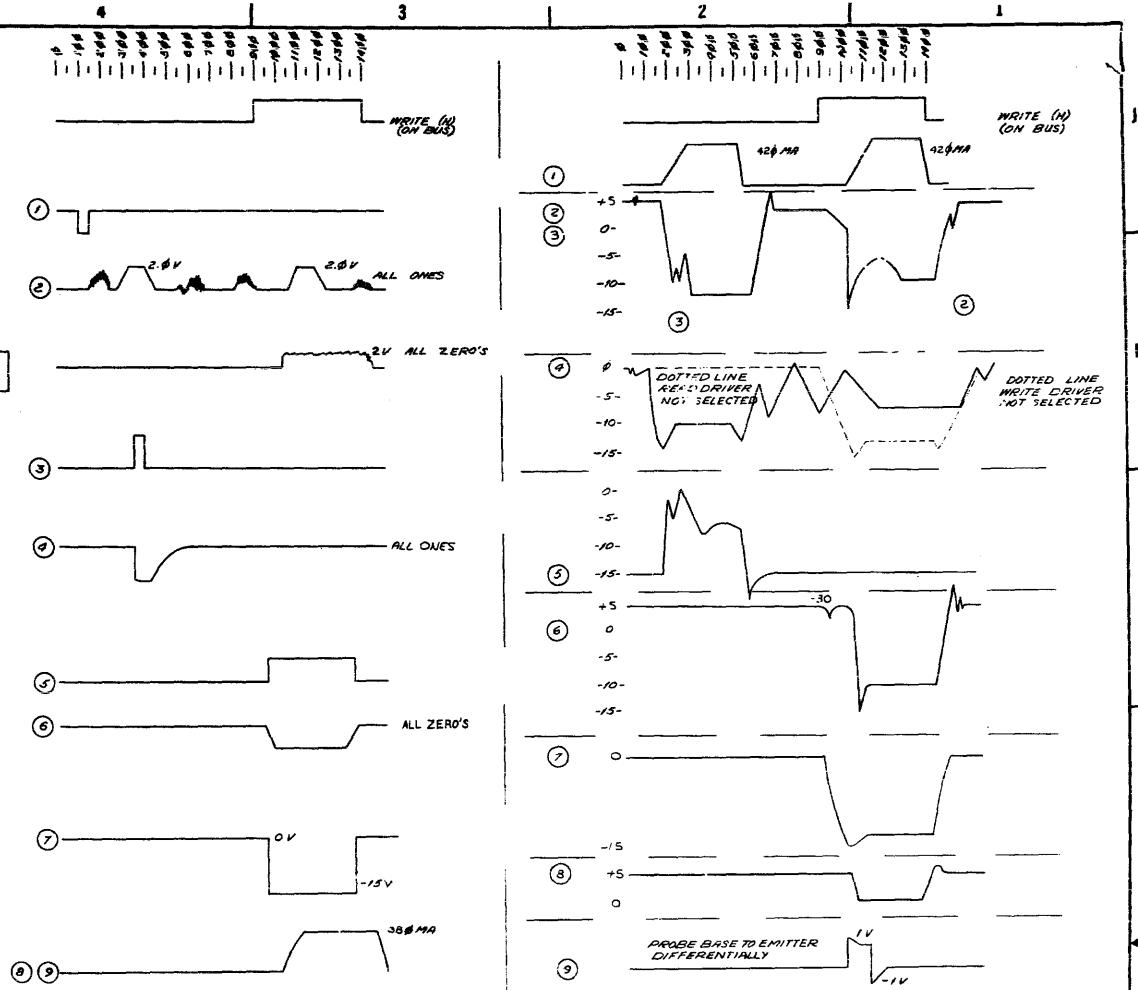
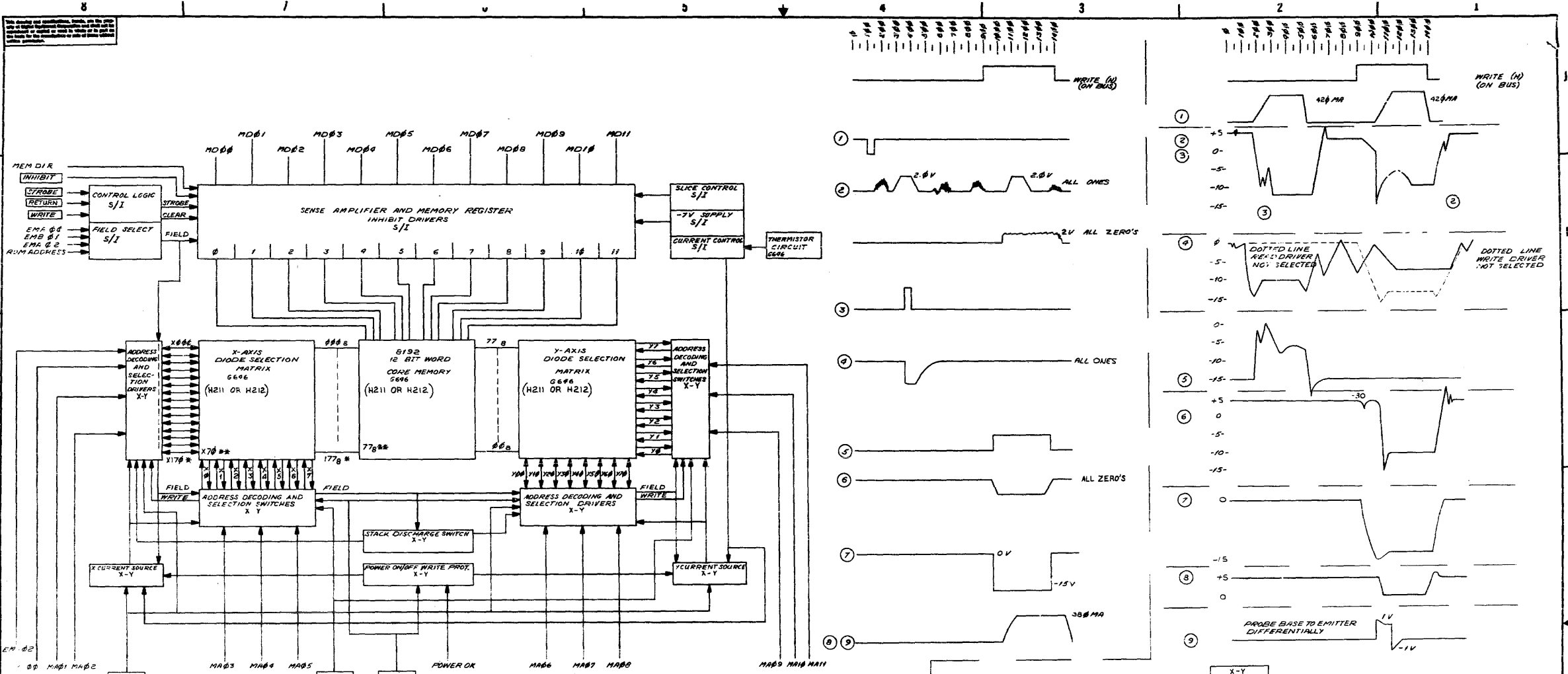
UNIT VARIATIONS		PRINT SET	
VAR	TITLE	MM8-1	MM8-2
MM8-E	4K 12 BIT MEMORY	X	
MM8-EJ	8K 12 BIT MEMORY		X

REVISIONS			USED ON OPTION/MODEL	DRN.	DATE	TITLE				
DATE	CHG. NO.	REV				MEMORY DRAWING DIRECTORY				
		A B C				SIZE	CODE	NUMBER		REV
						B	DD	MM8-E		C
						DIST	G			
WJC	MM8E-J-1			F. CARBERRY	2-17-72					
L.G.	MM8E-5			J. KALAGHER	6-6-72					
EL	MM8E-6			W. COATES	6-21-72					
				W. COATES	6-21-72					
				W. COATES	6-21-72					



TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
MEMORY	SHEET 2	OF 3	B	DD	MMS-E	C



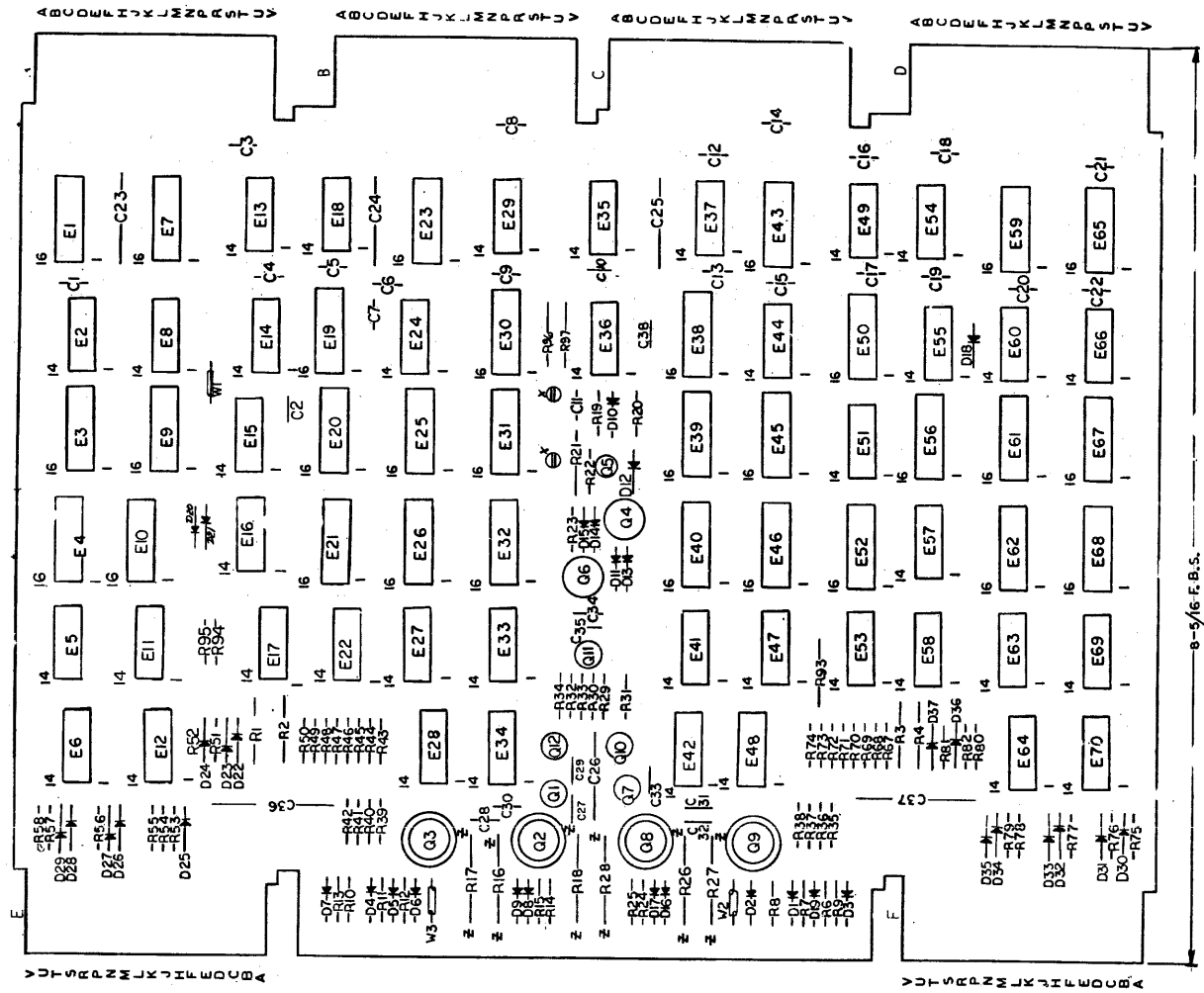


# MMBEJ (8X12) SYSTEM  
 #MMBEH (4X12) SYSTEM

REV.	DATE	DESCRIPTION	PART NO.	ITEM NO.
1	11-27-72	digital EQUIPMENT CORPORATION		
2	12-1-72	BLOCK DIAGRAM		
3	12-1-72	TIMING		
4	12-1-72	MMB-EJ+MMB-EH		
5	12-1-72			

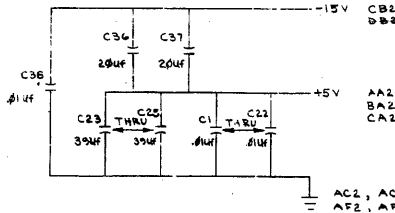
SCALE NONE  
 SHEET 5 OF 5

NOTES:  
 1. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS TO BE 150Ω  
 2. 4008-X (PN 15-10015-01) MAY BE USED IN CASE OF A SHORTAGE OF 4011 ITEM # 34  
 3. ALLOWABLE MEMORY SYSTEM



8-5/16 F.B.S.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
3	W1, W2, W3	MACH. INSER. JUMPER	9009185	46
1	C32	CAP 390 PF 100V 5%	1001631	45
1	C26	CAP 150UF 35V 20% S.TANT	1002180	44
1	R95	RES 56K 1/4W 5%	1301874	43
1	R97	RES 34-BK 1/8W 1%	1303156	42
2		SPLIT LUG	0006735	41
				40
10	E1, E7, E19, E30, E38, E43, E59, E66, E65, E23	IC DEC 7442	19-10046	39
1	E38	IC MC 3801L	19-08514	38
5	E13, E28, E37, E54, E35	IC DEC 7441B	19-08057	37
10	E2, E8, E15, E24, E34, E42, E44, E51, E60, E66	RES 100Ω ; CAP 1500 PF	1911200	36
				35
20	E3, E4, E9, E18, E20, E21, E25, E26, E31, E32, E39, E40, E45, E46, E52, E56, E61, E62, E67, E68	IC TRANSFORMER	18-09996	34
		SEE NOTE 2		
20	E70, E47, E53, E57, E58	IC XSTR DEC 4011	15-11102	34
4	R2, R3, R6, R9	XSTR R 28782	15-08843	33
2	R1, R7	XSTR R 28428	15-08321	32
2	R11, R5	XSTR R DEC 6534-B	15-03408-01	31
1	R18	XSTR R DEC 3098-B	15-01101	30
3	R4, R5, R12	XSTR R DEC 1008-B	15-02155	29
2	R32, R33	RES 4.7K 1/4W 5%	13-08447	28
4	R16, R17, R26, R27	RES 16.9Ω 1/8 WERTILLUM	13-10022	27
2	R18, R28	RES 750Ω 1/8 W	13-02295	26
4	R6, R9, R10, R13	RES 680Ω 1/4W 5%	13-01424	25
16	R51, R50, R56, R55, R58, R59	RES 100Ω 1/4W 5%	13-01322	24
4	R7, R8, R11, R12	RES 3.3K 1/4W 5%	13-08444	23
5	R14, R15, R24, R25, R34	RES 1.5K 1/4W 5%	13-00781	22
1	R21	RES 470Ω 1/2W 5%	13-08315	21
3	R20, R22, R31	RES 330Ω 1/4W 5%	13-00295	20
1	R36	RES 14.7K 1/8W 1%	1302224	19
26	R29, R35, R38, R39, R47, R48, R49, R52	RES 150Ω 1/4W 5%	13-00295	18
2	R23, R30	RES 100Ω 1/4W 5%	13-00228	17
1	R19	RES 56Ω 1/4W 5%	13-00118	16
5	R1, R2, R3, R4, R5	RES 51Ω 1/2W 5%	13-11220	15
4		HEAT SINK	12-10001	14
2,5	R1 THRU R11, R13 THRU R16, R22-137	DIODE 1N72	11-05215	13
12	R8 THRU R11, R13 THRU R16, R22-137	DIODE 1N94	11-00114	12
1	C28	CAP 200PF 100V 5% TM	10-00084	11
3	C27, C24, C31	CAP 0.01UF 10V 15-20V	10-08678	10
2	C38, C37	CAP 200F 50V -10 7% C1 THRU C22, C38	10-02838	9
24	C35, C36	CAP 0.01UF 100V 20% TANT	10-01818	8
3	C21, C20, C25	CAP 500F 10V 10% STANT	10-00078	7
2	C29, C33	CAP 500F 10V 5% TM	10-00018	6
4	E14, E18, E66, E68	IC DEC 8380	15-08671	5
1	5009837	ETHER CIRCUIT BOARD	5009837	4
REF		MODULE FTD HISTORY	B-M-6233-0-4	3
REF		ASSY/DRILLING HOLE LAYOUT	B-M-6233-0-5	2
REF		Z-Y COORDINATE HOLE LOCATION	B-C-6233-0-4	1



AA2  
 BA2  
 CA2

IC PIN LOCATIONS	JUMPER LIST
IC DEC 6380	
IC DEC 7442	
IC TYPE	
QND	±BV
4.0	24
2A	W3-A
W2-A	W2-B
TO PT	

DESIGNATION	QTY	DESCRIPTION
W. COATES		
D. G. COATES		
W. COATES		
D. G. COATES		
W. COATES		
D. G. COATES		
W. COATES		
D. G. COATES		
W. COATES		
D. G. COATES		
W. COATES		
D. G. COATES		
W. COATES		
D. G. COATES		
W. COATES		
D. G. COATES		

FIRST USED ON PDP-8/E

ETCH BOARD REV E

8K X-Y

SEMICONDUCTOR CONVERSION CHART

DATE: 8-5/16 F.B.S.

SCALE: NONE

SHEET 1 OF 5

ITEM NO. 6233-0-1

EQUIPMENT CORPORATION

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied in whole or in part or the basis for the manufacture or sale of items without written permission.

D

C

B

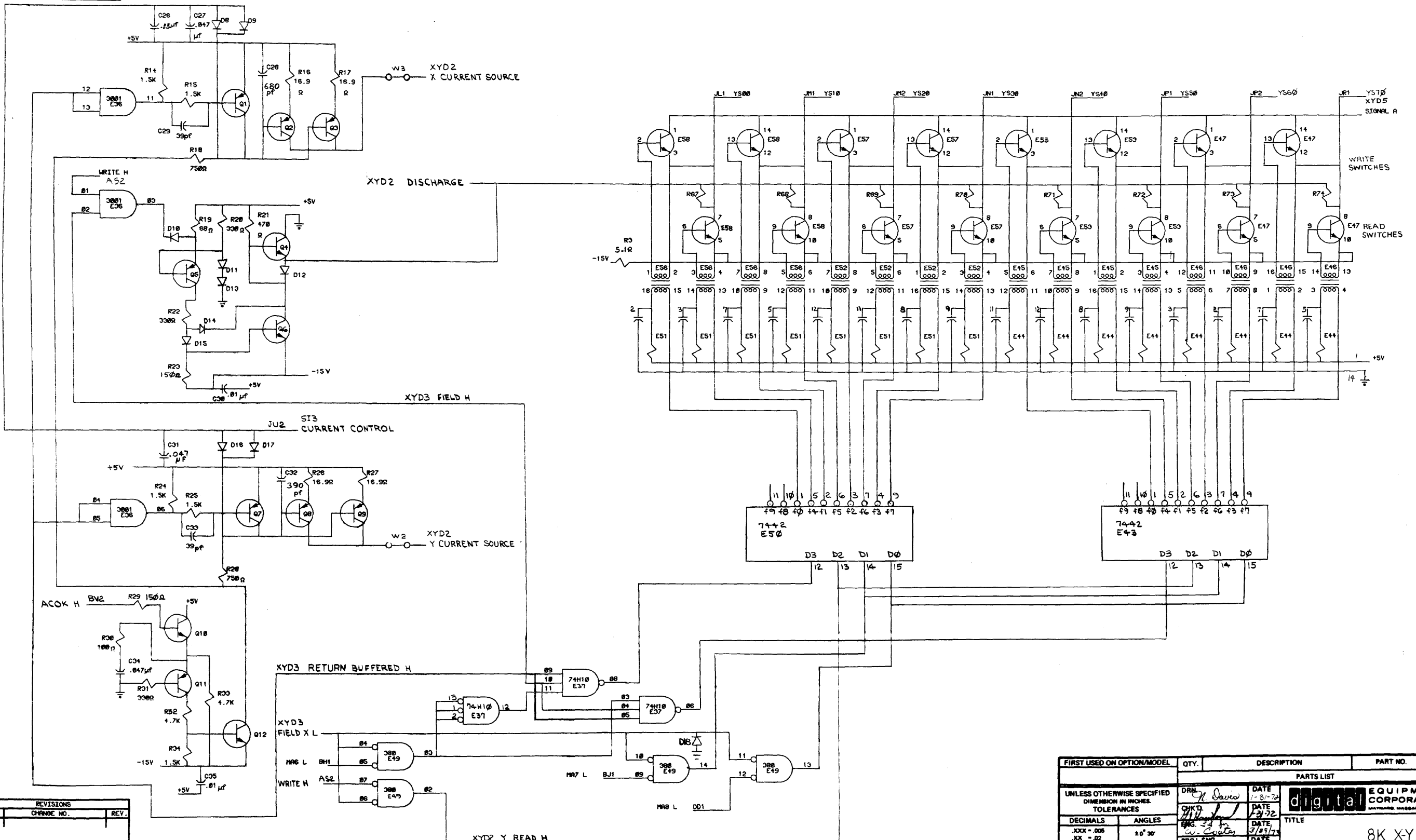
A

D

C

B

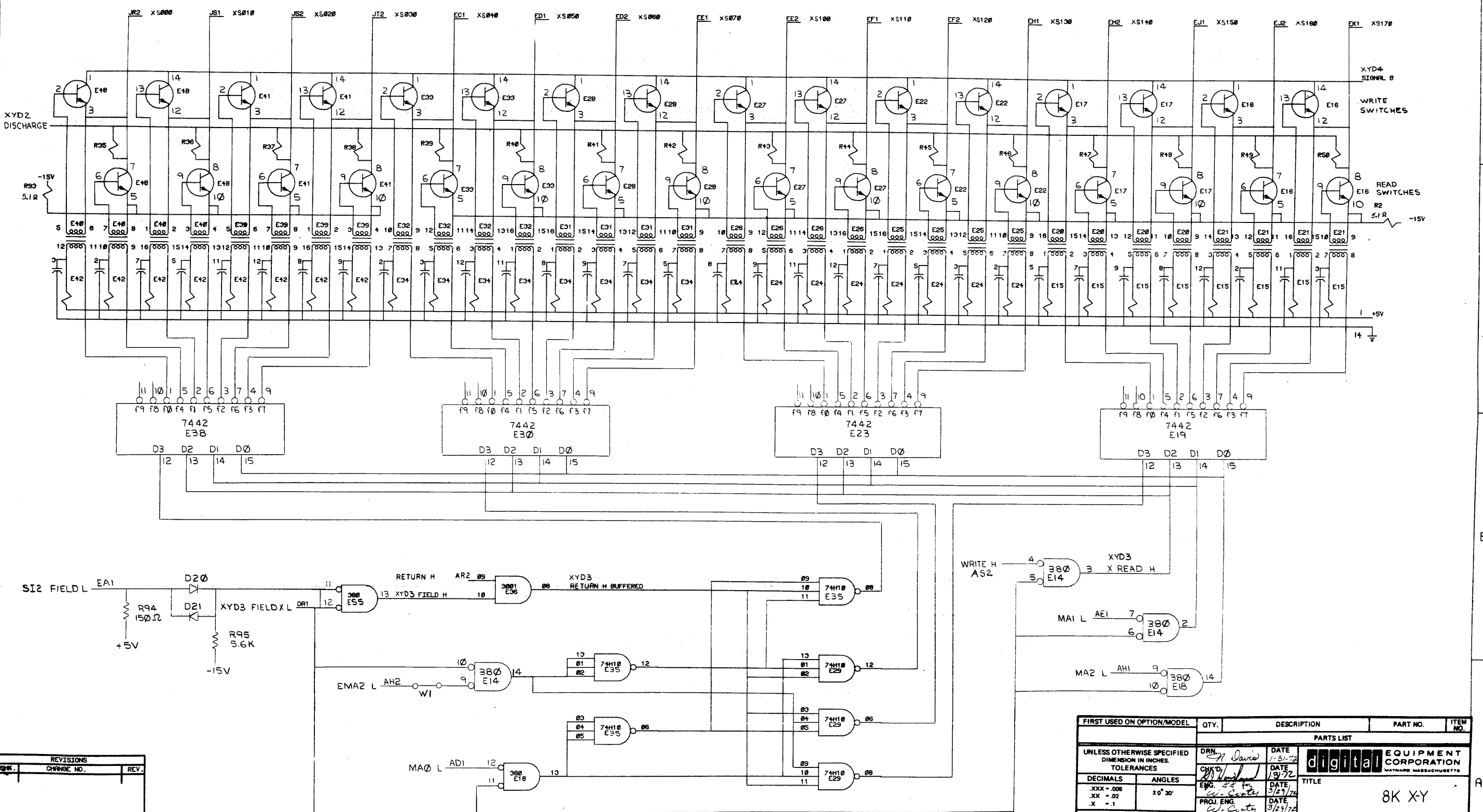
A



REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN: <i>H. Davis</i> DATE: 2-3-73	<b>digital</b> EQUIPMENT CORPORATION MAYFIELD, MASSACHUSETTS	
DECIMALS .XXX - .005	ANGLES ±0° 30'	CHK'D: <i>W. G. Carter</i> DATE: 3/23/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG. <i>W. G. Carter</i> DATE: 3/23/72	TITLE <b>8K XY</b>	
MATERIAL		PROJ. ENG. <i>W. G. Carter</i> DATE: 3/23/72		
FINISH		PROD. <i>R. F. Carter</i> DATE: 3-23-72	NUMBER #230-8-1	
NEXT HIGHER ASBY.		SCALE NONE		
SHEET 2 OF 3		DIST.	REV. L	

This drawing and specifications herein are the property of Digital Equipment Corporation and shall not be reproduced or used in whole or in part as the basis for the manufacture or sale of items without written permission.

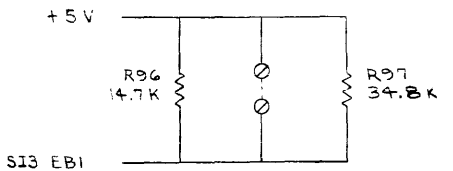
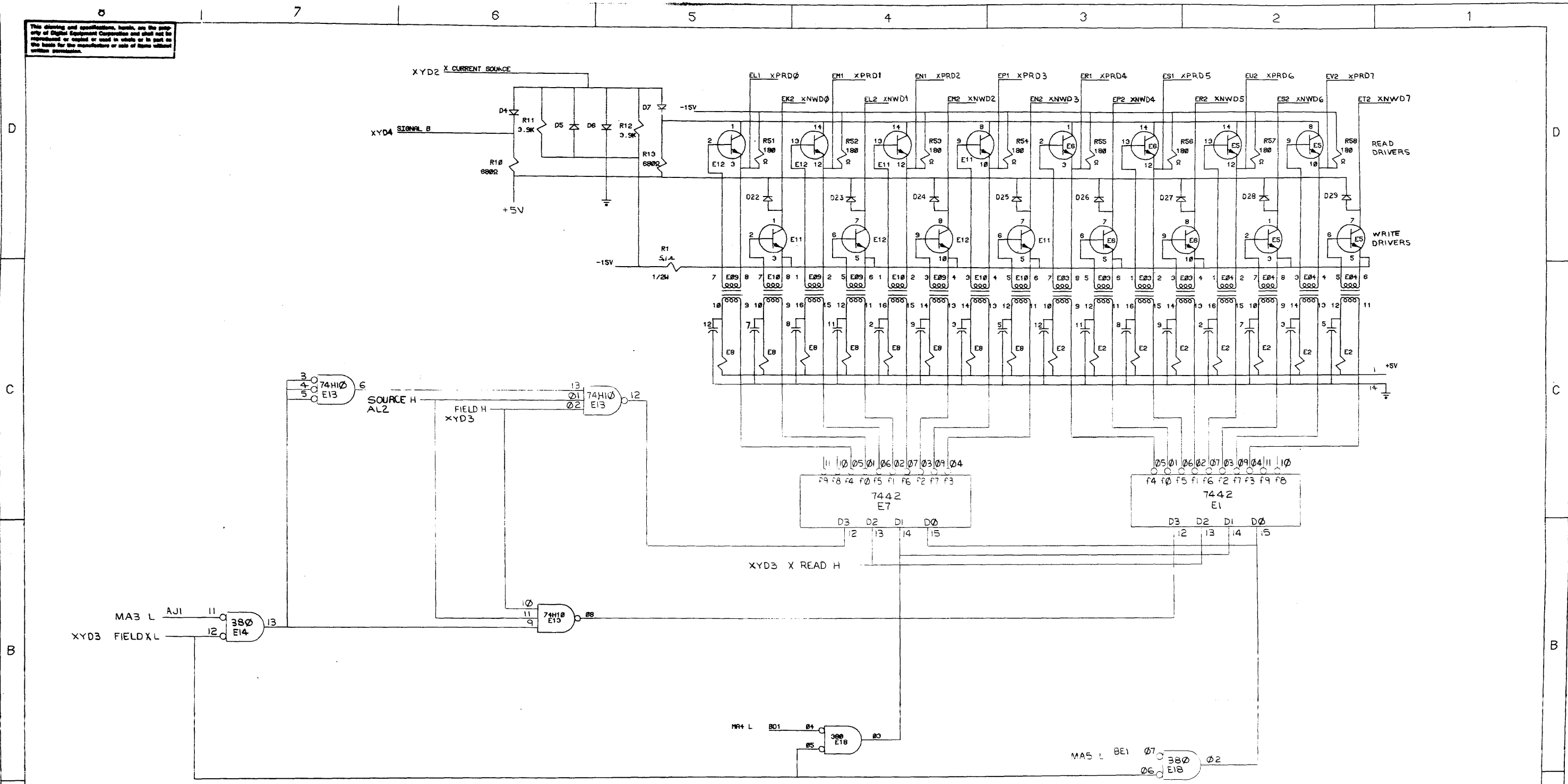


REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>W. Davis</i>	DATE 1-31-72	<b>digital</b> EQUIPMENT CORPORATION <small>WATUARD MASSACHUSETTS</small>  <b>8K XY</b>	
DECIMALS .XXX - .006	CHK'D <i>W. Davis</i>	DATE 1/31/72		
ANGLES ±0° 30'	ENG. <i>W. Davis</i>	DATE 3/27/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. <i>W. Davis</i>	DATE 3/27/72		
MATERIAL	PROD. <i>R.K. O'Neil</i>	DATE 3/31/72		
FINISH	NEXT HIGHER ASSY.	SCALE NONE	SIZE CODE	NUMBER
		SHEET 3 OF 5	D CS	6233-B-1
			DIST.	REV. L



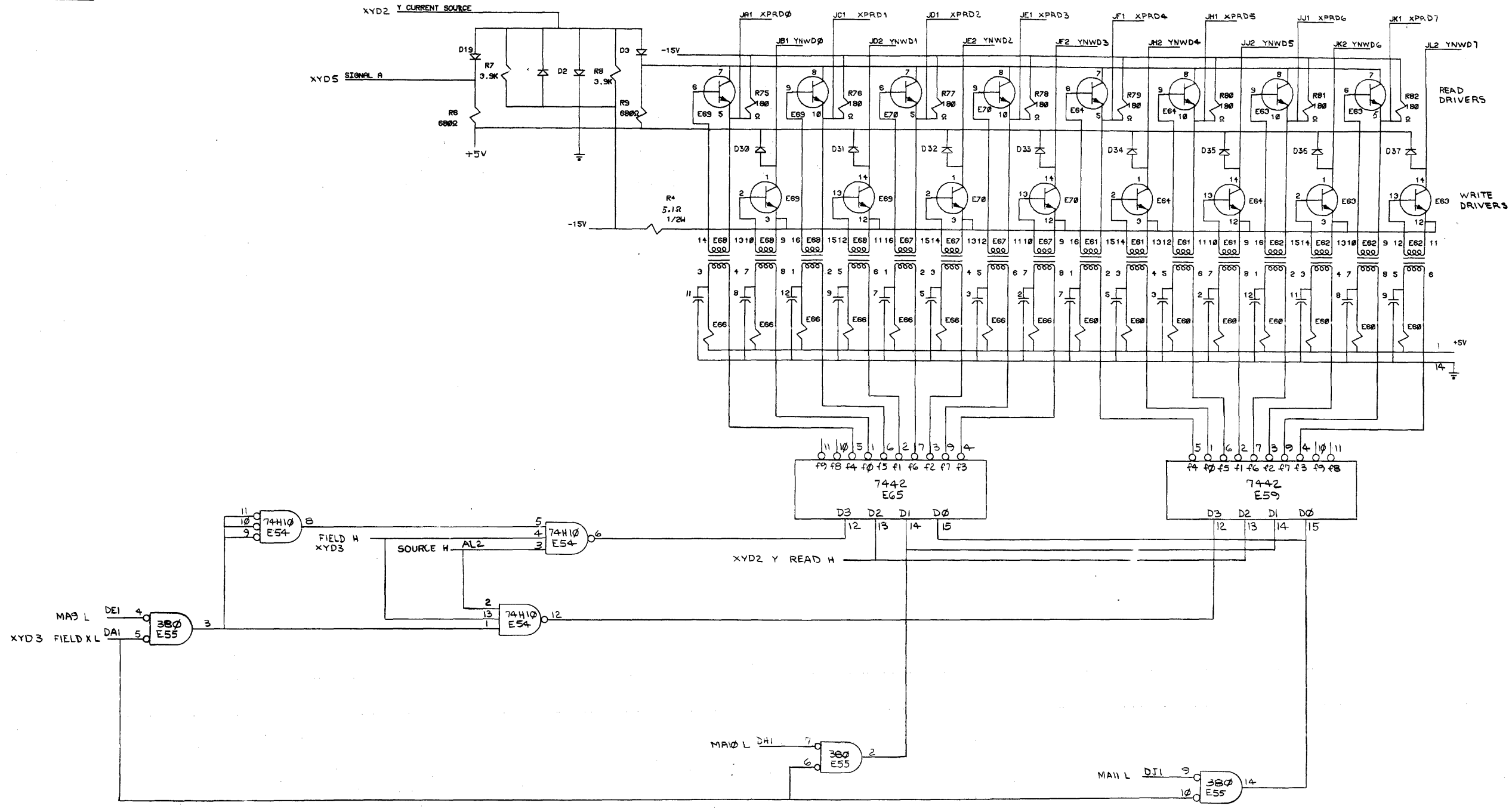
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.



REVISIONS		
CHK.	CHANGE NO.	REV.

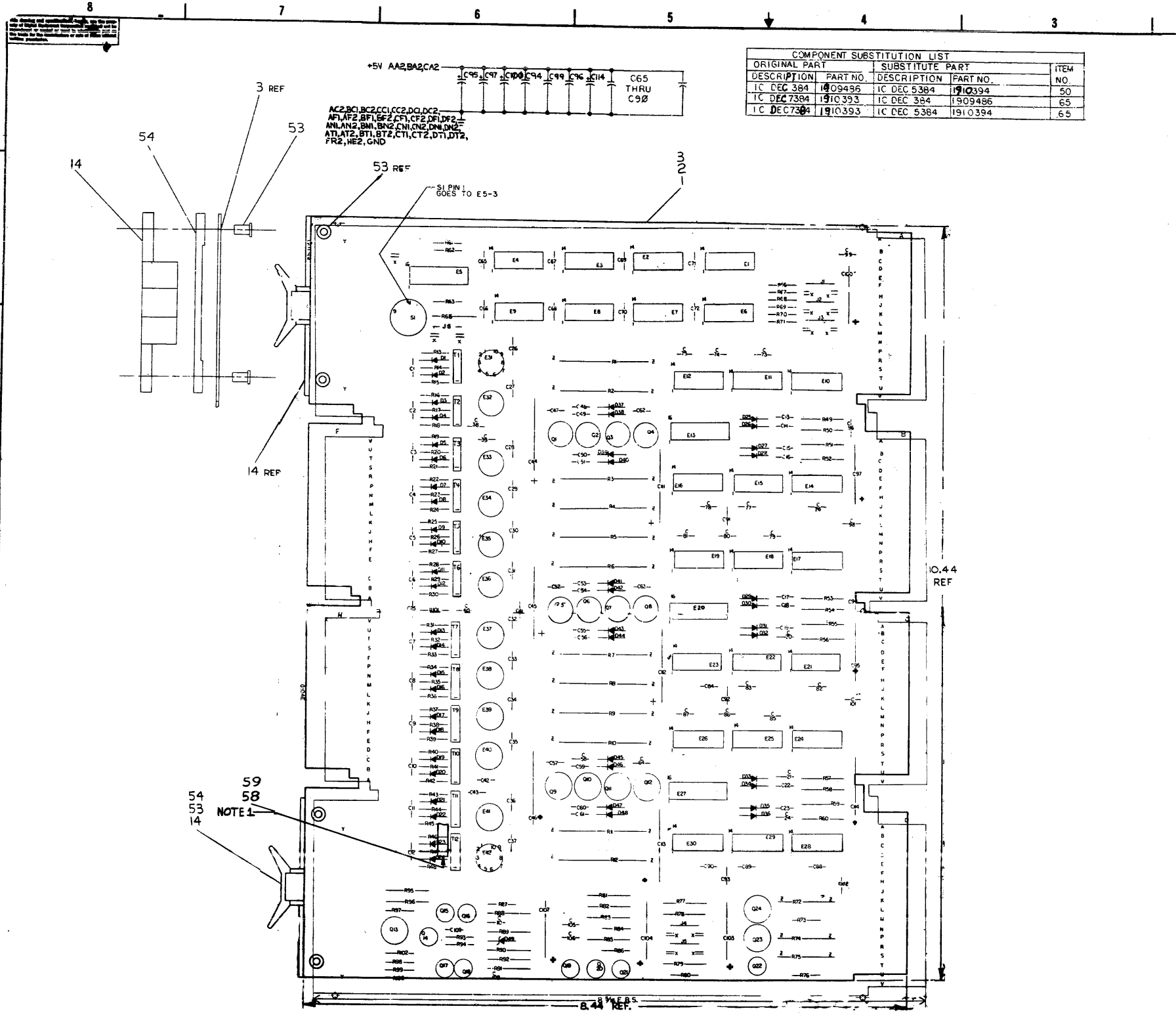
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. <i>J. Davis</i> DATE 1-31-72	<b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD MASSACHUSETTS</small>  <b>8K XY</b>  XYD4	
DECIMALS .XXX - .005	ANGLES 10° 30'	CHK'D. <i>M. Ward</i> DATE 1-31-72		
.XX - .02		ENG. <i>J. S. In</i> DATE 3/29/72		
.X - .1		PROJ. ENG. <i>C. Carter</i> DATE 5/21/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD. <i>R. K. ...</i> DATE 3-72		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE NONE	D CS	8230-1	L
SHEET 4 OF 5		DIST.		

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.



REVISIONS		
CHK	CHANGE NO.	REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN - <i>7 Dave</i>	DATE 1-31-72	<b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD MASSACHUSETTS</small>  <b>8K XY</b>  XYD5	
DECIMALS .XXX - .008	<i>W. Coates</i>	DATE 3/29/72		
ANGLES 20° 30'	PROJ. ENG. <i>W. Coates</i>	DATE 3/29/72		
.XX - .02	PROD. <i>R. L. Coates</i>	DATE 3-31-72		
.X - .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE NONE	D CS	0200-8-1	L
	SHEET 5 OF 5	DIST.		



COMPONENT SUBSTITUTION LIST			
ORIGINAL PART		SUBSTITUTE PART	
DESCRIPTION	PART NO.	DESCRIPTION	PART NO.
IC DEC 384	1909486	IC DEC 5384	1910394
IC DEC 7384	1910393	IC DEC 384	1909486
IC DEC 7384	1910393	IC DEC 5384	1910394

- NOTES:
- CUT CATERPILLAR GROMMET (DEC 9007622) 7/8" LONG, ON ONE SIDE CUT TOOTH OUT 3/8" FROM ONE END, ON EACH END SPRAY WITH SCOTCH-GRIP ADHESIVE NO. 77 (DEC 9008907). FOLLOW DIRECTIONS FOR NON-PERMANENT BONDS ON BACK OF CAN. PLACE THE GROMMET OVER 1725 TRANSFORMERS WITH CUTOUT TOOTH OVER CAPACITOR C40.
  - IN PLACE OF DEC 6380 (ITEM #49), DEC 380 (1909486) MAY BE USED.
  - R65 IS DETERMINED BY THE VOLTAGE AT PIN HA1 WITH RESPECT TO 3.5V.
  - ALLOWABLE MEMORY SYSTEM CONFIGURATIONS:  
MMS-EJ  
H212 OR H212A STACK  
G111 OR G115 S/I  
G233 OR G234 X-Y

1 R91	RES. 196.1/4W 10%	1302956	65
1 E1	IC DEC 7384	1910393	65
A/R	BLK & WHT # 30 TWP	9107720-09	64
7 R65	SEE NOTE ABOVE		63
1 R102	RES. 40.1/4W 10%	1300170	62
13	SPLIT LUGS	9006735	61
1 R81	RES. 2.74 1/8W 1% 100 MFP	1304868	60
W/R	SCOTCH GRIP ADHESIVE	9008907	59
W/R	CATERPILLAR GROMMET	9007622	58
REF	ASSY/DRILLING HOLE LAYOUT	G111-G111-05	57
2 R90, R101	RES. 100.1/8W 1% 100 MFP	1302858	56
A/R	WIRE #22 AWG SOLID BUS	9107560-01	55
2	SPACER (CABLE CLAMP)	1202704	54
4	EYELET #654-11 E.B. STIMPSON	9006750	53
1 E6	IC DEC 7486	1910011	52
3 E10, E17, E24	IC DEC 8881	1909705	51
2 E4, E21, E28	IC DEC 384	1909486	50
1 E2	IC DEC 6380	1909371	49
2 E3, E8	IC DEC 74H11	1909267	48
1 E9	IC DEC 74H00 -1	1909056-1	47
6 E11, E15, E18, E22, E25, E29	IC DEC 74H40N	1905886	46
1 E7	IC DEC 7440N	1905579	45
6 E12, E16, E19, E23, E26, E30	IC DEC 7400N	1905575	44
1 E4	IC DEC 7414N	1905547	43
12 E31-E42	IC MC 1540G	1905521	42
1 E5	100NS DELAY LINE	1610033-0	41
3 E13, E20, E27	PULSE TRANSFORMER	1609996	40
12 T1-T12	TRANSFORMER 17Z-5	1609478	39
12 Q1-Q12	TRANSISTOR DEC 3734	1500662	38
2 Q23, Q24	TRANSISTOR DEC 3762	1509649	37
9 Q14-Q22	TRANSISTOR DEC 6534-B	1503409-01	36
1 Q13	TRANSISTOR DEC 2219-S	1501881	35
12 R1-R12	RES. 13.0K 6W 1%	1310032-01	34
12 R49-R60	RES. 68.12W 5% CC	1309405	33
1 R89	RES. 68.1K 1/8W 1%	1305252	32
1 R88	RES. S. 62K 1/2W 1%	1305128	31
2 R79, R95	RES. 464K 1/8W 1%	1304856	29
1 R77	RES. 9.09K 1/8W 1%	1304855	28
2 R92, R85	RES. 1.96K 1/8W 1%	1304833	27
3 R82, R83, R96	RES. 1K 1/8W 1%	1303114	26
1 R78	RES. 1.21K 1/8W 1%	1302871	25
R13, R15, R16, R18, R19, R21, R22, R24, R25, R27, R28, R30, R31, R33, R34, R36, R37, R39, R40, R42, R43, R45, R46, R48	RES. 75 1/8W 1%	1303064	24
1 R86	RES. 680.1/4W 5% CC	1301424	23
6 R66, R68, R70, R80, R94, R99	RES. 10K 1/4W 5% CC	1300479	22
3 R73, R76, R97	RES. 4.7K 1/4W 5% CC	1300447	21
2 R61, R87	RES. 1K 1/4W 5% CC	1300365	20
19 R14, R17, R20, R23, R26, R29, R32, R35, R38, R41, R44, R47, R62, R67, R69, R71, R84, R93, R98	RES. 330.1/4W 5% CC	1300295	19
1 R63	RES. 220 1/4W 5% CC	1300271	18
1 R100	RES. 100 1/4W 5% CC	1300229	17
3 R72, R74, R75	RES. 60.1W 10% CC	1300222	16
1 S1	ROTARY SWITCH	1210043-0	15
2	HANDLE FLIP CHIP - GREEN	9008337-01	14
1 D4	DIODE 4V 6.6A	100944-1	13
36 D1-D24, D37-D48	DIODE D672	1105275	12
12 D25-D36	DIODE D664	1100114	11
32 C62-C64, C91-C93, C98, C101, C102, C110	CAP. .047 uf 16V 20% DISC	1009678	10
33 C99, C105, C106, C108, C109	CAP. .01 uf 100V 20% DISC	1006160	9
6 C44-C46, C111-C113	CAP. 47 uf 20V 20% S. TANT	1000079	8
7 C95, C97, C100, C103, C104, C107, C111	CAP. 6.8 uf 35V 20% S. TANT	1000067	7
12 C48-C51, C53-C56, C58-C61	CAP. 1500 pf 200V 10% DISC	1000054	6
12 C13-C24	CAP. 1000 pf 100V 5% MICA	1000042	5
1 C1-C12	CAP. 100 pf 100V 5% D. MICA	1000037	4
1	ETCHED CIRCUIT BOARD	5002984-4	3
REF	MODULE ECO HISTORY	S-111-24	2
REF	X-Y COORDINATE HOLE LOCATION	K-CO-G111-0-4	1

IC TYPE	QTY	REV	LOC	REV	LOC
DEC 380	1	8	J6-A	J6-B	
DEC 384	1	8	J5-A	J5-B	
IC TYPE	QTY	REV	J4-A	J4-B	
	55	22	J3-A	J3-B	
			J2-A	J2-B	
			J1-A	J1-B	

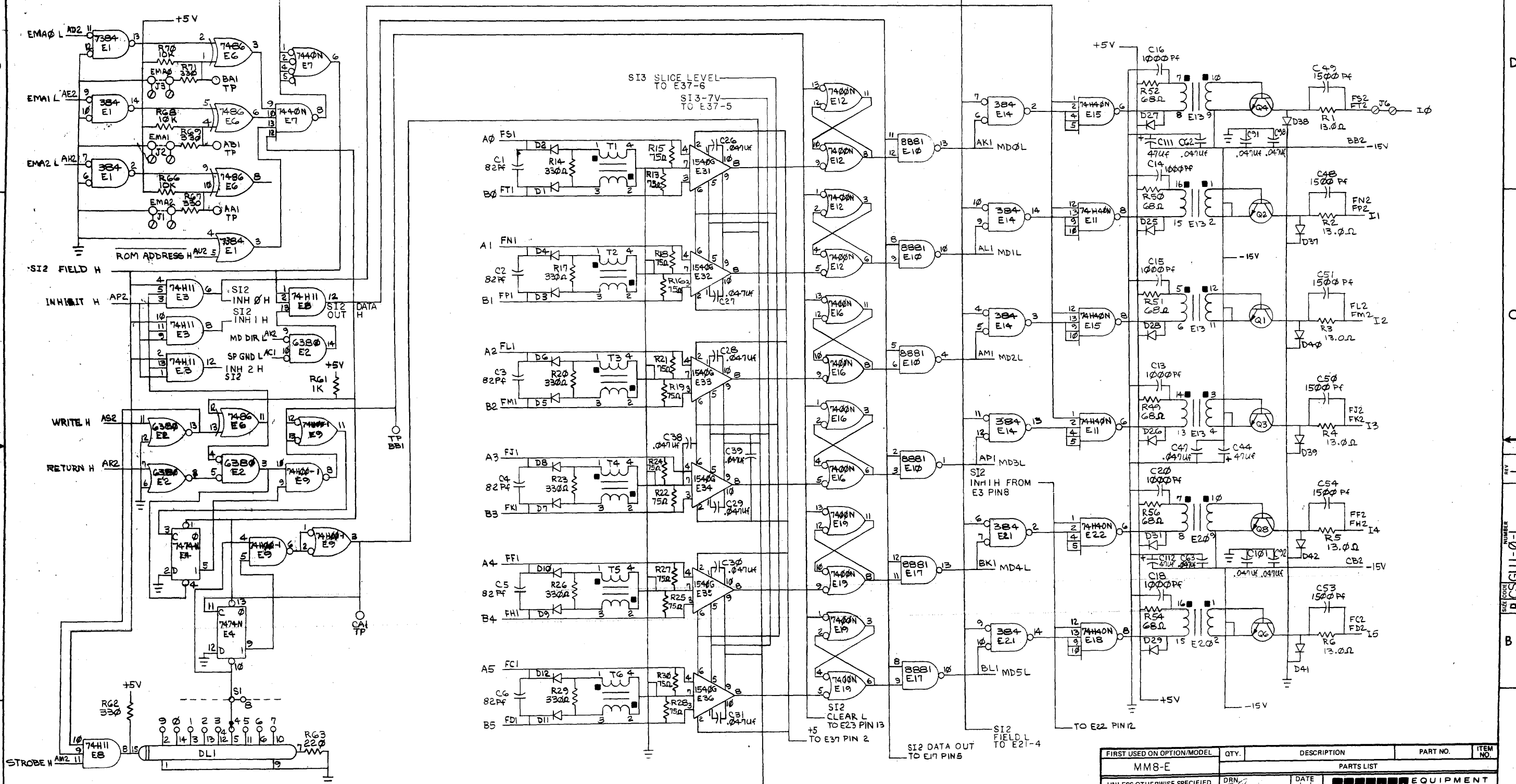
REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

REV	DATE	DESCRIPTION	PRINTED CIRCUIT BOARD REVISION
DEC 3734	SAME		
DEC 3762	SAME		
DEC 6534-B	8P36534		
DEC 2219-S	2N 2219		
4 M 6.82K	IN4097		
D672	IN3653		
D664	IN3606		
DEC NO.	EDA NO.	MMS-EJ	
SEMICONDUCTOR CORPORATION CHART			

EQUIPMENT CORPORATION  
SENSE INHIBIT (S11)  
ECS111-0-1

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied in whole or in part as the basis for the manufacture or sale of items without written permission.

SI2 FIELD L FUZ



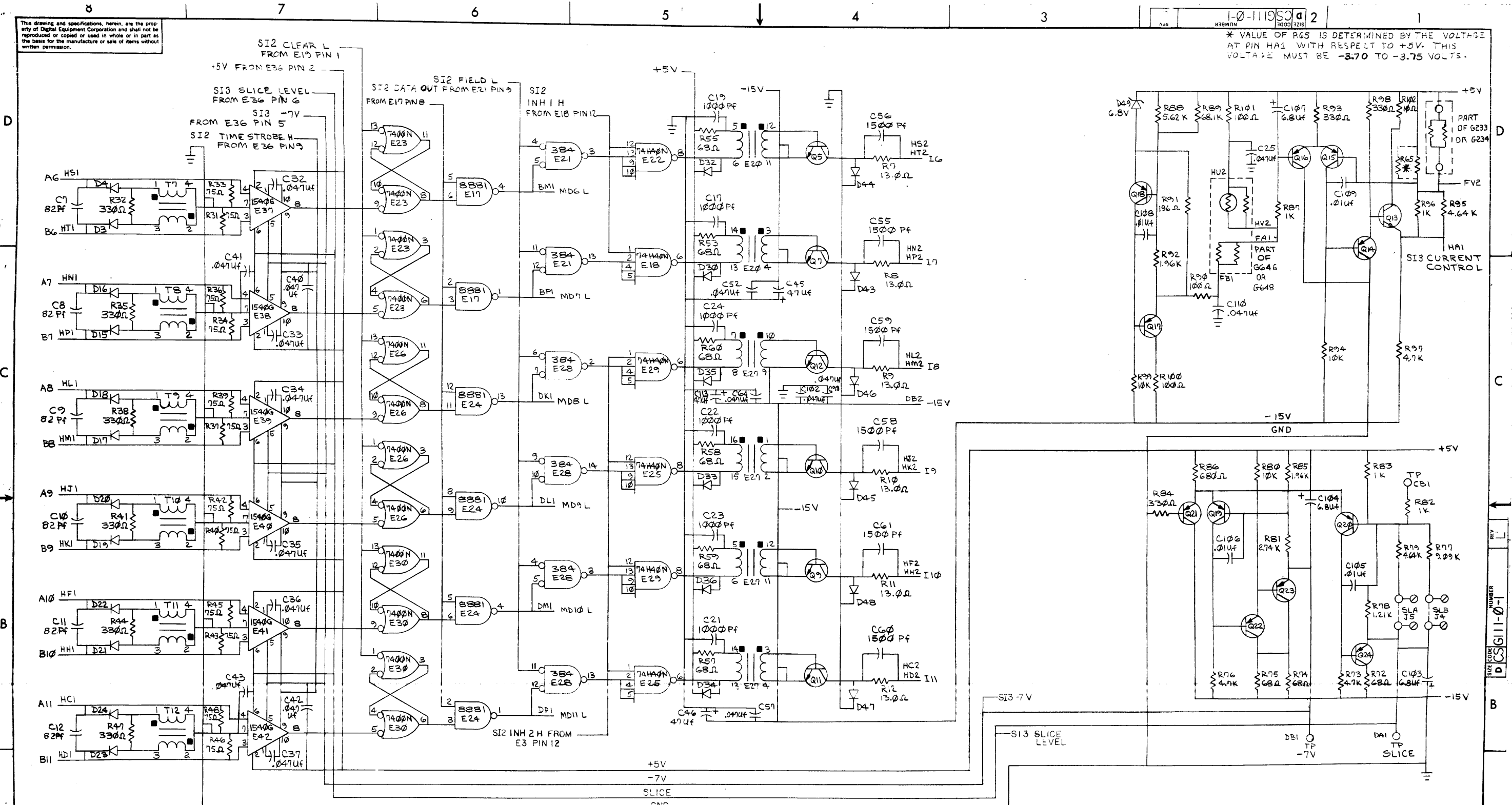
REV	CHANGE NO.	REVISIONS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM8-E		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES	DATE	TITLE	
.XXX = .005	±0° 30'	3/8/72	4K OR 8K SENSE INHIBIT BOARD (SI2)	
.XX = .02		3-23-72		
.X = .1		3/27/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		3/29/72		
MATERIAL	NEXT HIGHER ASSY.	DATE		
	A-PL-MM8-E-0	3-31-72		
FINISH	SCALE	DATE		
	2 OF 3			
	DIST.			

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

1-0-1119-01 2  
 3003 3215

\* VALUE OF R65 IS DETERMINED BY THE VOLTAGE AT PIN HA1 WITH RESPECT TO +5V. THIS VOLTAGE MUST BE -3.70 TO -3.75 VOLTS.

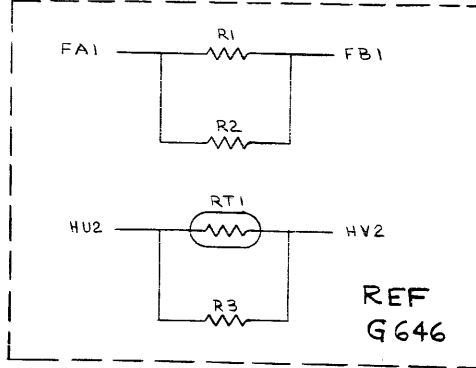


REV	CHANGE NO.	REVISIONS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>J. Carberry</i>	DATE 3/10/72	<b>digital EQUIPMENT CORPORATION</b> MAYNARD MASSACHUSETTS TITLE 4K OR 8K SENSE INHIBIT BOARD (SI3) SIZE CODE DCS G111-0-1 NUMBER L REV. L	
DECIMALS ANGLES	CHK'D <i>J. Nahg</i>	DATE 3-23-72		
.xxx = .005 xx = .02 x = .1	ENG. <i>C. Carter</i>	DATE 3/29/72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>C. Carter</i>	DATE 3/29/72		
MATERIAL	PROD. <i>K. S. G.</i>	DATE 3-31-72	NEXT HIGHER ASSY.	
FINISH	SCALE	SHEET 3 OF 3	DIST.	



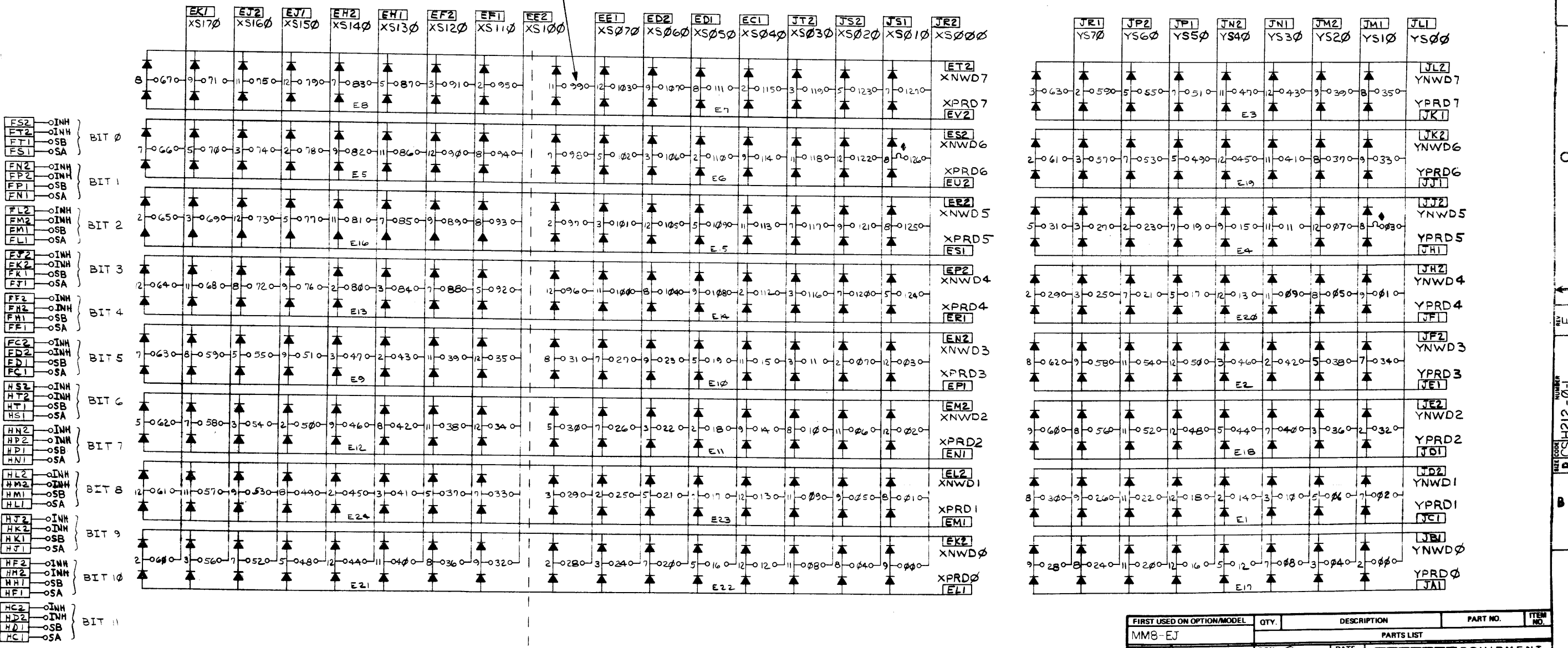
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.



ETCH JUMPERS  
 JV2-HB1  
 JU2-HA1  
 EB1-FV2  
 EA1-FU2

- NOTES:  
 1. UNLESS OTHERWISE SPECIFIED:  
 IC'S E1-E24 ARE TO BE DEC STOCK #2501.  
 2. INDICATES STACK LINE NUMBER. (TYP)  
 3. INDICATES CURRENT LOOP.  
 4. INDICATES MAGNET WIRE TERMINATION (SOLDERED TO PC PAD).  
 5. 2501-1 (DEC. PT. NO. 1910010-01)  
 MAY BE USED INTERCHANGEABLY WITH ITEM #2

SEE NOTE 4

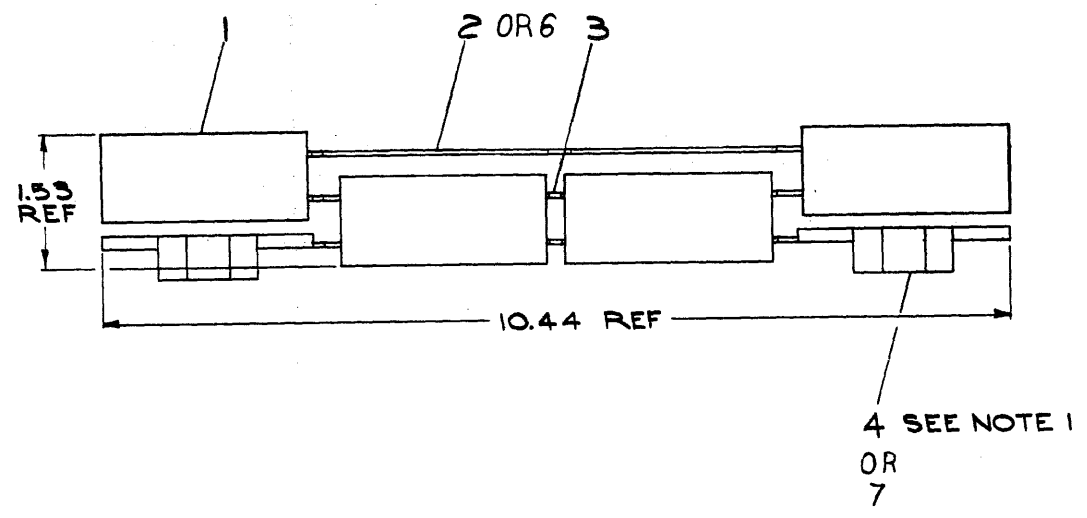


REV.	CHANGE NO.	REVISIONS

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission. 1973

NOTES:  
 1. ITEM NO. 4 (SENSE INHIBIT BOARD) MUST ALWAYS BE FACING THE FRONT OF THE MACHINE.  
 2. ALLOWABLE MEMORY SYSTEM CONFIGURATIONS.

	MM8-EJ	MM8-EJ	MM8-EJ	MM8-EJ	MM8-EH
H212	X	X	X	X	
H211					X
G115	X		X		X
G111		X		X	
G234	X			X	X
G233		X	X		



1	SENSE INHABIT	G115	7
1	XY DRIVER	G234	6
REF	ACCESSORY SHIPPING LIST	A-AL-MM8-EJ-3	5
1	SENSE INHIBIT	G111 OR G115	4
1	STACK ASSY	H212	3
1	XY DRIVER	G233 OR G234	2
4	HBSI EDGE CONNECTOR	HBSI	1

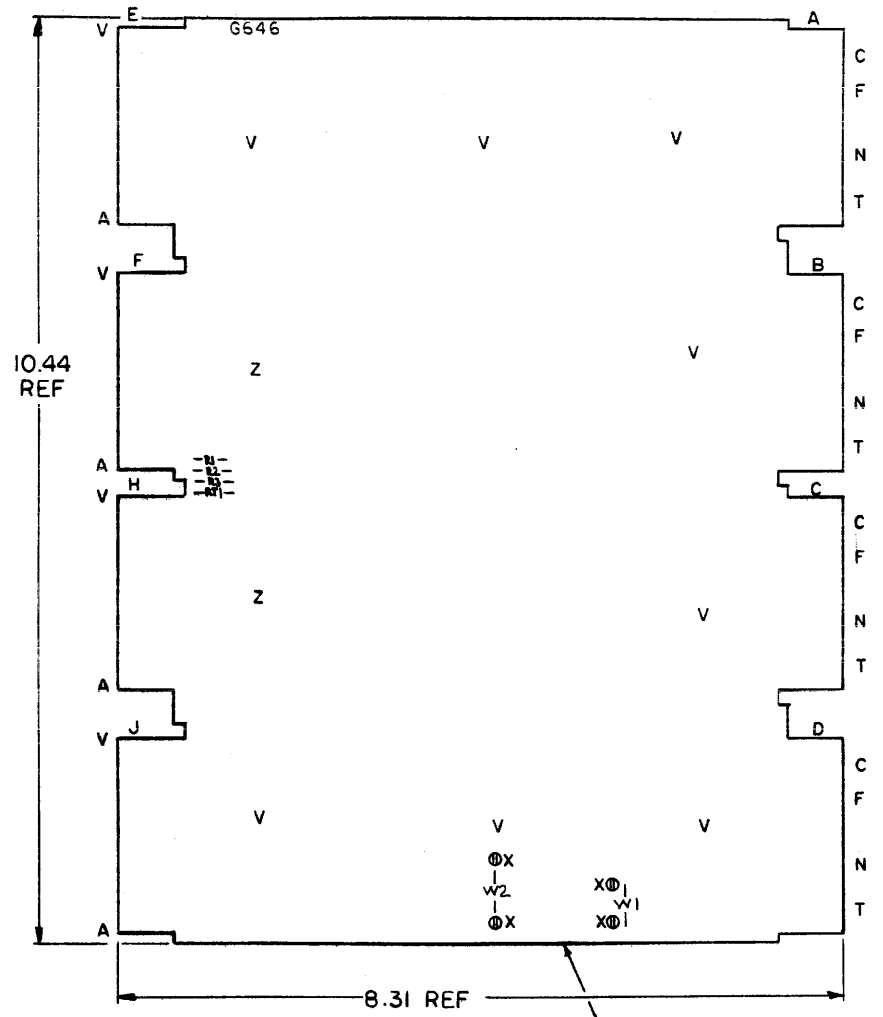
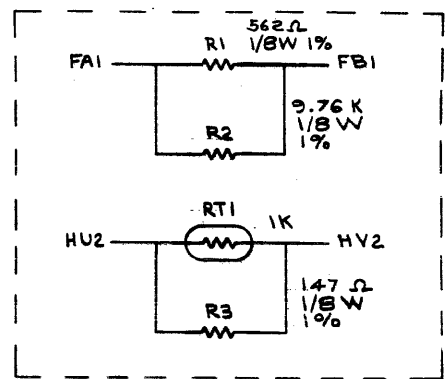
FIRST USED ON OPTION/MODEL PDP8/E	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	8K 12 BIT MEMORY	
DIMENSION IN INCHES	DATE	DATE		
TOLERANCES	DATE	DATE		
ANGLES = 0°30'	DATE	DATE		
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS	PROJ. ENG.	DATE	SCALE	1/1
MATERIAL	PROD.	DATE	SHEET	1 OF 1
NEXT HIGHER ASSY	B-DD-MM8-EH	DATE	DIST.	G
FINISH			NUMBER	DUA MM8-EJ-0
			REV.	B

REVISIONS	CHANGE NO.	REV.
CHK	MM8EJ-0001	A
	3/26/73	
	W. COATES	
	MM8E-0005	B
	E. ALLAIN	
	9-7-73	
	B. COATES	
	B. COATES	





This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R3	RES 147 $\Omega$ 1/8W 1%	1302874	10
1	R1	RES 562 $\Omega$ 1/8W 1%	1304693	9
1	R2	RES 9.76 K 1/8W 1%	1309414	8
1	RT1	THERMISTOR 1K	1310071	7
4		EYELET (M-1033)	9006735	6
A/R	W1, W2	WIRE, 24-AWG STRD IPC INS	91-07450-00	5
1		ETCHED CIRCUIT BOARD	5009842	4
REF		MODULE ECO HISTORY	B-MH-6646-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-6646-0-5	2
REF		X-Y COORDINATE HOLE LOC	K-CO-6646-0-4	1

ETCH BOARD REV		C	
DATE	1-17-72	DATE	2-17-72
CHK'D	<i>[Signature]</i>	DATE	2-17-72
ENG	<i>[Signature]</i>	DATE	2-17-72
PROJ. ENG	<i>[Signature]</i>	DATE	2-17-72
PROD.	<i>[Signature]</i>	DATE	2-18-72

TITLE: 12 BIT STACK BD  
 NUMBER: DCS 6646-0-1  
 REV: C

CHK	CHANGE NO.	REV
<input checked="" type="checkbox"/>	1	A
<input type="checkbox"/>		B

ORIGINATED A  
 G646-00001 B  
 W. COATES  
 3-2-72

DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART  
 SCALE 1/1  
 SHEET 1 OF 1

**DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS**

**ENGINEERING SPECIFICATION**

DATE 6/1/72

TITLE MM8-EJ AND MM8-EH ACCEPTANCE PROCEDURE (F.S.)

**REVISIONS**

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO Change	MM8E-00005	Caruso	5/73	<i>Dave Caruso</i>	10-1-73

ENG <i>JS for W. Coates</i>	APPD <i>[Signature]</i>	SIZE <b>A</b>	CODE SP	NUMBER MM8-EJ-1	REV A
-----------------------------	-------------------------	---------------	---------	-----------------	-------

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE MM8-EJ AND MM8-EH ACCEPTANCE PROCEDURE (F.S.)

1.0 SCOPE

1.1 This procedure defines the minimum performance standards required of an MM8-EJ & an MM8-EH option which is accepted as an integral part of a PDP8/E or accepted as an add-on option.

2.0 SET UP

2.1 Remove the four (4) edge connectors from the tops of the modules.

2.2 Inspect the modules for conformance to "Final Inspection Procedure for Flip-Chip Modules" (A-SP-7665039-0-0) and "Module Rework Standard" (A-SP-7605845-0-0).

2.3 Check the S/I and X-Y modules for a legible three character numerical date code.

2.4 Check the S/I and X-Y modules to insure the circuit and etch revisions are up to current ECO levels. Make sure all EMA jumpers on the S/I module are installed.

2.5 Ascertain that the option has been checked out in heat and vibrated by Production.

2.6 Make sure the power to the PDP8/E is turned OFF.

2.7 Insert the modules into the omnibus. Be sure you adhere to the "Recommended Omnibus Assignment List" (A-SP-PDP8-E-0-4).

SIZE <b>A</b>	CODE SP	NUMBER MM8-EJ-1	REV A
---------------	---------	-----------------	-------

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

TITLE MM8-EJ and MM8-EH ACCEPTANCE PROCEDURE (F.S.)

2.8 Connect the options together as follows:

	<u>MM8-EJ</u>		<u>MM8-EH</u>
G234 or G233	- in back-		G234
H212	- in center-		H211
G115 or G111	- in front-		G115

### 3.0 ELECTRICAL TEST

3.1 Set strobe switch to position 6.

3.2 Turn on power to PDP8/E.

3.3 MM8-EJ: Follow loading procedure for PDP8/E extended memory data and checkerboard test (Main DEC-Ø8-DHKMA).

MM8-EH: Follow loading procedure for MM8E memory checkerboard (Main DEC-8E-DLAB).

3.4 Run diagnostic following the instructions in the program write-up. This test must run error-free for a minimum of:

MM8-EJ -- 20 minutes.

MM8-EH -- 10 minutes.

3.4.1 If memory runs in position 6:

- Halt computer.
- Turn off power.
- Set strobe switch to position 4.
- Turn on power.
- Re-run diagnostic.

3.4.2 If memory runs in position 4:  
Set Strobe switch per 3.7.

3.5 If memory does not run in position 6:

- Halt the PDP8/E.
- Turn off power.
- Set strobe switch to position 5.
- Turn on power.
- Re-run diagnostic.

3.5.1 If memory runs in position 5:

TITLE MM8-EJ and MM8-EH ACCEPTANCE PROCEDURE (F.S.)

- Halt computer.
- Turn off power.
- Set strobe switch to position 3.
- Turn on power.
- Re-run diagnostic.

3.5.2 If memory runs in position 3:  
Set strobe per 3.7.

3.6 Continue this procedure until two running positions, per above procedure, have been located. Memory must run these positions without error for times shown in Para 3.4 to be acceptable.

3.7 Set strobe switch as follows:

<u>Memory Running Positions</u>	<u>Strobe Switch Setting</u>
6, -, 4	5
5, -, 3	4
4, -, 2	3
3, -, 1	2

3.8 MM8-EJ: Follow loading procedure for PDP8/E extended memory address test (Main DEC-8E-DLFB).

MM8-EH: Follow loading procedure for MM8E memory address test (Main DEC-8E-DLEA).

3.9 Run the Diagnostic following the instructions in the program write-up. This test must run error-free for a minimum of:

MM8-EJ -- 20 minutes.

MM8-EH -- 10 minutes.

3.10 If the construction requisition specifically states a particular memory field is desired, have production cut the appropriate EMA jumper or jumpers.

### 4.0 FAILURE CLASSIFICATION

4.1 Mechanical Failure:

4.1.1 Any module that does not meet the criterion outlined in 2.2, 2.3, 2.4, 2.5 will be classified as a failure.

4.2 Electrical Failure:

4.2.1 Any option which while performing electrical tests in Sec. 3, halts, generates error printouts, garble or runs other than continuous and as specified in the diagnostic write-up will be classified defective and returned to production for repair.

SIZE	CODE	NUMBER	REV
A	SP	MM8-EJ-1	A

SHEET 3 OF 5

SIZE	CODE	NUMBER	REV
A	SP	MM8-EJ-1	A

SHEET 4 OF 5

TITLE MM8-EJ and MM8-EH ACCEPTANCE PROCEDURE (F.S.)

5.0 ALLOWABLE MEMORY SYSTEM CONFIGURATIONS:

	MM8-EJ	MM8-EJ	MM8-EJ	MM8-EJ	MM8-EH
H212	X	X	X	X	
H211					X
G115	X		X		X
G111		X		X	
G234	X			X	X
G233		X	X		

SIZE  
**A**

CODE  
SP

NUMBER  
MM8-EJ-1

REV  
A