MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS: PDP8/E-AA	PDP8/E-AB	PDP8/E-EA	-BB	-CA	-CB	-DA	-DB	-EA	-EB	-FA	-FB	-GA	-GB	-HA	-HB	-JA	-JB	-KA	-KB	-LA	-LB	-MA	PDP8/E-MB
PDP8/E-0	BASIC 8/E	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

USED ON OPTIONS							

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
K	6/71	& RETYPED H724-12	JD
L	7/71	8E-35	AS
M	7/71	8E-36	AS
N	7/71	8E-37	AS
B	8/71	8E-39	RV
R	9/71	8E-41	RV

DRN. FERGUSON	DATE 11/70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. GULICK	DATE 11/70	
ENG. PROVIDENT	DATE 12/70	TITLE PDP8/E
PROJ. ENG. VOGELSANG	DATE 12/70	
PROD. L. SAYLOR	DATE 12/70	
FIRST USED ON		SIZE A / CODE ML / NUMBER PDP8/E-0 / REV. R
SCALE		
SHEET 1 OF 3		DIST.

DRA 131

Dec 16-(325)-1048-N471

PRINT SET PDP8/E+Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	E-UA-PDP8/E-0-0	D	2	PDP8/E ASSEMBLY	
X	C-PL-PDP8/E-0-0	D	2	PDP8/E ASSEMBLY	
X	D-DI-PDP8/E-0-1	F	2	PDP8/E DRAWING INDEX	
X	E-AR-PDP8/E-0-2		1	OPTION CONFIGURATION	
X	A-SP-PDP8/E-0-4	B	2	RECOMMENDED OMNIBUS MODULE ASSIGN	
X	D-TD-PDP8/E-0-5	A	2	TIMING DIAGRAM	
X	E-FD-PDP8/E-0-6		1	FLOW DIAGRAM	
X	D-IC-PDP8/E-0-10		1	POWER WIRING	
X	A-ML-KC8-E	#	2	CONSOLE (PDP8/E)	KC8-E
X	E-CS-5409057-0-1	#	1	CONTROL BOARD	KC8-E
X	E-IA-5409057-0-0	#	1	CONTROL BOARD FRONT PANEL	KC8-E
X	A-ML-MM8-E	#	2	MEMORY MM8-E	MM8-E
X	E-CS-G227-0-1	#	2	XY DRIVER	MM8-E
X	E-CS-G619-0-1	#	2	STACK BOARD	MM8-E
X	E-CS-G104-0-1	#	2	SENCE/INHIBIT	MM8-E
X	E-BD-MM8-E-1	#	1	BLOCK DIAGRAM	MM8-E
X	A-ML-KK8-E	#	2	CENTRAL PROCESS KK8-E	KK8-E
X	E-CS-M8300-0-1	#	5	MAJOR REGISTER	KK8-E
X	E-CS-M8310-0-1	#	4	MAJOR REGISTER CONTROL	KK8-E
X	E-CS-M8320-0-1	#	2	BUS LOADS	KK8-E
X	E-CS-M833-0-1	#	2	TIMING GENERATOR	KK8-E
X	B-CS-M849-0-1	#	1	RFI SHIELD	KK8-E
X	A-ML-KL8-E	#	2	ASYNC. DATA CONTROL	KL8-E
X	E-CS-M8650-0-1	#	3	ASYNC. DATA CONTROL	KL8-E
X	D-IA-7007055-0-0	#	1	CABLE ASSEMBLY	KL8-E
X	E-CS-M8650-YA-1	#	2	ASYNC. DATA CONTROL	KL8-E
X	D-UA-BC01V-25-0	#	1	CABLE ASSEMBLY	KL8-E

TITLE		SIZE	CODE	NUMBER	REV
PDP8/E	SHEET 2 OF 3	A	ML	PDP8/E-Ø	R

DRA 132

DEC 16-(325)-1048-1-N471

PRINT SET						DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X						A-SP-KL8-E-1	#	16	ENGINEERING SPECIFICATION	KL8-E
C						A-ML-H724-0	#	2	MASTER LIST	H724
X						A-SL-PDP8/E-0-3	A	1	SOFTWARE LIST (PDP8/E)	
X						A-PL-SP8-EA-0	A	1	RECOMMENDED 1ST LEVEL SPARES	
X						A-PL-SP8-EB-0		5	RECOMMENDED 2ND LEVEL SPARES	
X						A-AL-LT33-0-12	#	1	TELETYPE ASR-33 ACCESSORY LIST	LT33
X						D-MD-7605994-0-0	A	2	FLIP CHIP PANEL DATA (CUSTOMER)	

TITLE		SIZE	CODE	NUMBER	REV.
PDP8/E	SHEET 3 OF 3	A	ML	PDP8/E-0	R

DRA 132
DEC 16-(325)-1048-1-N471

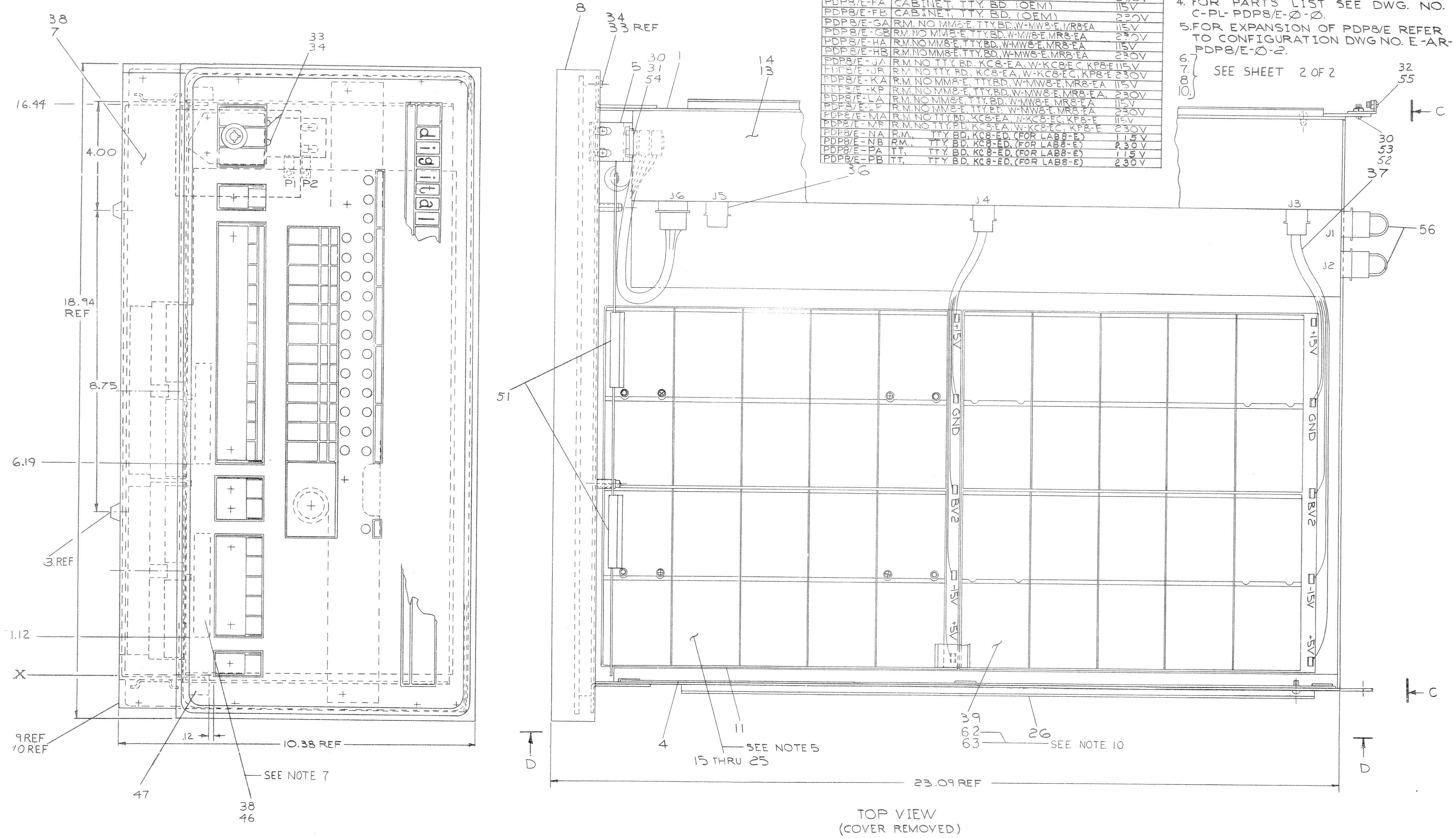
LEGEND

NUMBER	VARIATION	
PDP8/E-AA	RACK MOUNTED, TTY. BD.	115V
PDP8/E-AB	RACK MOUNTED, TTY. BD.	230V
PDP8/E-BA	TABLE TOP, TTY. BD.	115V
PDP8/E-BB	TABLE TOP, TTY. BD.	230V
PDP8/E-CA	CABINET MOUNTED, TTY. BD	115V
PDP8/E-CB	CABINET MOUNTED, TTY. BD	230V
PDP8/E-DA	RACK MOUNTED, TTY. BD. (OEM)	115V
PDP8/E-DB	RACK MOUNTED, TTY. BD. (OEM)	230V
PDP8/E-EA	TABLE TOP, TTY. BD. (OEM)	115V
PDP8/E-EB	TABLE TOP, TTY. BD. (OEM)	230V
PDP8/E-FA	CABINET, TTY. BD. (OEM)	115V
PDP8/E-FB	CABINET, TTY. BD. (OEM)	230V
PDP8/E-GA	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA	115V
PDP8/E-GB	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA	230V
PDP8/E-HA	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA	115V
PDP8/E-HB	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA	230V
PDP8/E-JA	R.M. NO TTY. BD., KC8-EA, W-KC8-EC, KP8-E	115V
PDP8/E-JB	R.M. NO TTY. BD., KC8-EA, W-KC8-EC, KP8-E	230V
PDP8/E-KA	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA	115V
PDP8/E-KB	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA.	230V
PDP8/E-LA	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA	115V
PDP8/E-LB	R.M. NO MM8-E, TTY. BD., W-MW8-E, MR8-EA	230V
PDP8/E-MA	R.M. NO TTY. BD., KC8-EA, W-KC8-EC, KP8-E	115V
PDP8/E-MB	R.M. NO TTY. BD., KC8-EA, W-KC8-EC, KP8-E	230V
PDP8/E-NA	R.M., TTY. BD., KC8-ED, (FOR LAB8-E)	115V
PDP8/E-NB	R.M., TTY. BD., KC8-ED, (FOR LAB8-E)	230V
PDP8/E-PA	TT., TTY. BD., KC8-ED, (FOR LAB8-E)	115V
PDP8/E-PB	TT., TTY. BD., KC8-ED, (FOR LAB8-E)	230V

NOTES

1. FOR DWG INDEX LIST REFER TO D-DI-PDP8/E-Ø-1.
2. HOLES A41 AND A42 ARE USED TO MOUNT CHASSIS SLIDE, ITEM NO. 26 FOR CAB MODELS. ITEM NO. 27 (H960B CAB) NOT SHOWN.
3. DIMPLE LOCATED .38 FROM REAR OF CENTER CHASSIS TRACK SLIDE TO BE DRILLED OUT BY USING .09 DRILL.
4. FOR PARTS LIST SEE DWG. NO. C-PL-PDP8/E-Ø-Ø.
5. FOR EXPANSION OF PDP8/E REFER TO CONFIGURATION DWG NO. E-AR-PDP8/E-Ø-2.

6., 7., 8., 10. SEE SHEET 2 OF 2



TOP VIEW
(COVER REMOVED)

TOLERANCES	
DECIMALS	
XXX =	± .005
XX =	± .02
X =	± 1

FIRST USED ON OPTION/MODEL: PDP8/E

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES: ~~DECIMALS ±.005 FRACTIONS ±1/64~~ ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: —
FINISH: —

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

		DATE
DRN.	J. Ferguson	9-12-70
CHK'D.	[illegible]	9-29-70
ENG.	[illegible]	10/30/70
PROJ. ENG.	[illegible]	10/30/70
PROD.	[illegible]	11/2/70

NEXT HIGHER ASSY: —

SCALE: NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

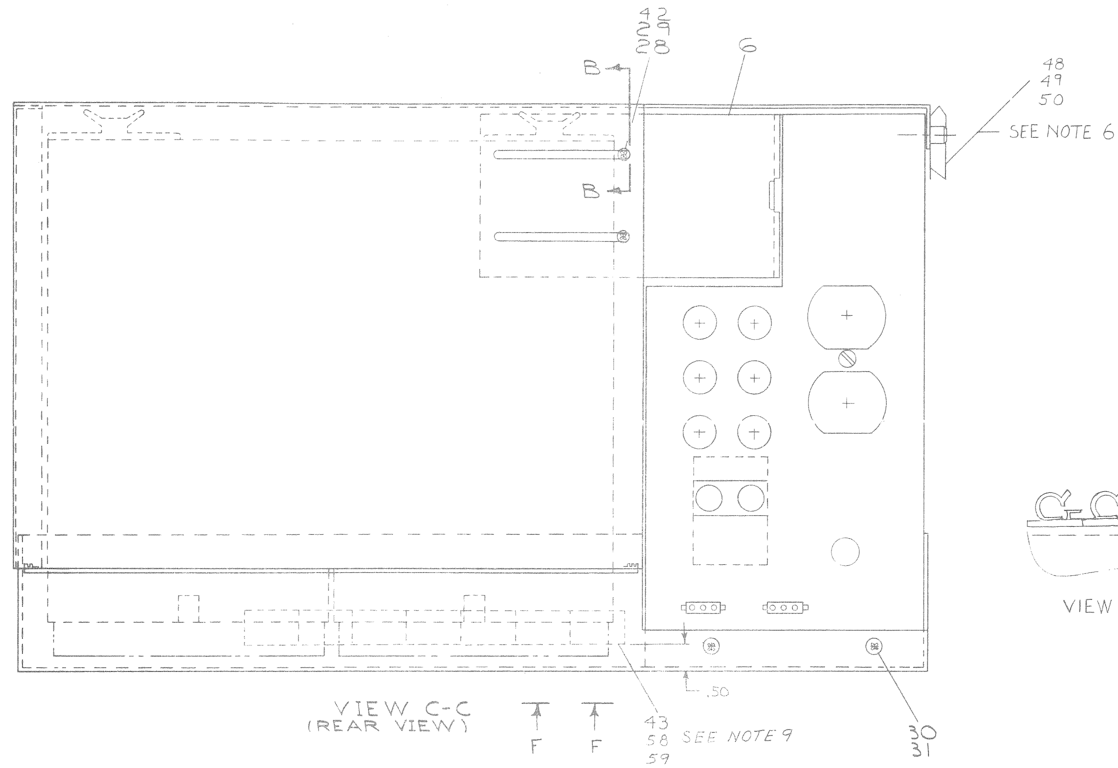
TITLE: UNIT ASSY. (PDP8/E)

SIZE	CODE	NUMBER	REV.
E	UA	PDP8/E-Ø-Ø	D

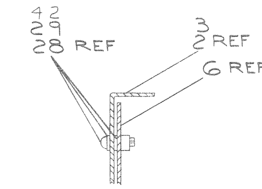
DIST. G

E UA PDP8/E-Ø-Ø D

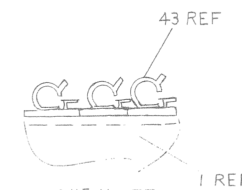
REVISIONS: A, B, C, D (J. PROVIDENT; R. VOGELSANG)



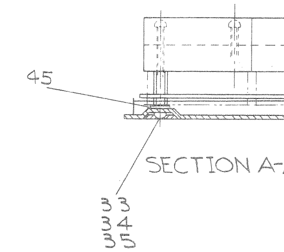
VIEW C-C
(REAR VIEW)



SECTION B-B



VIEW FF

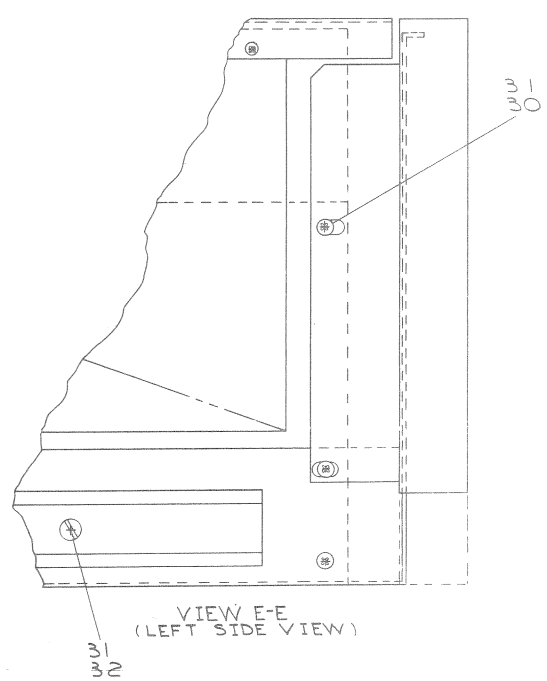


SECTION A-A

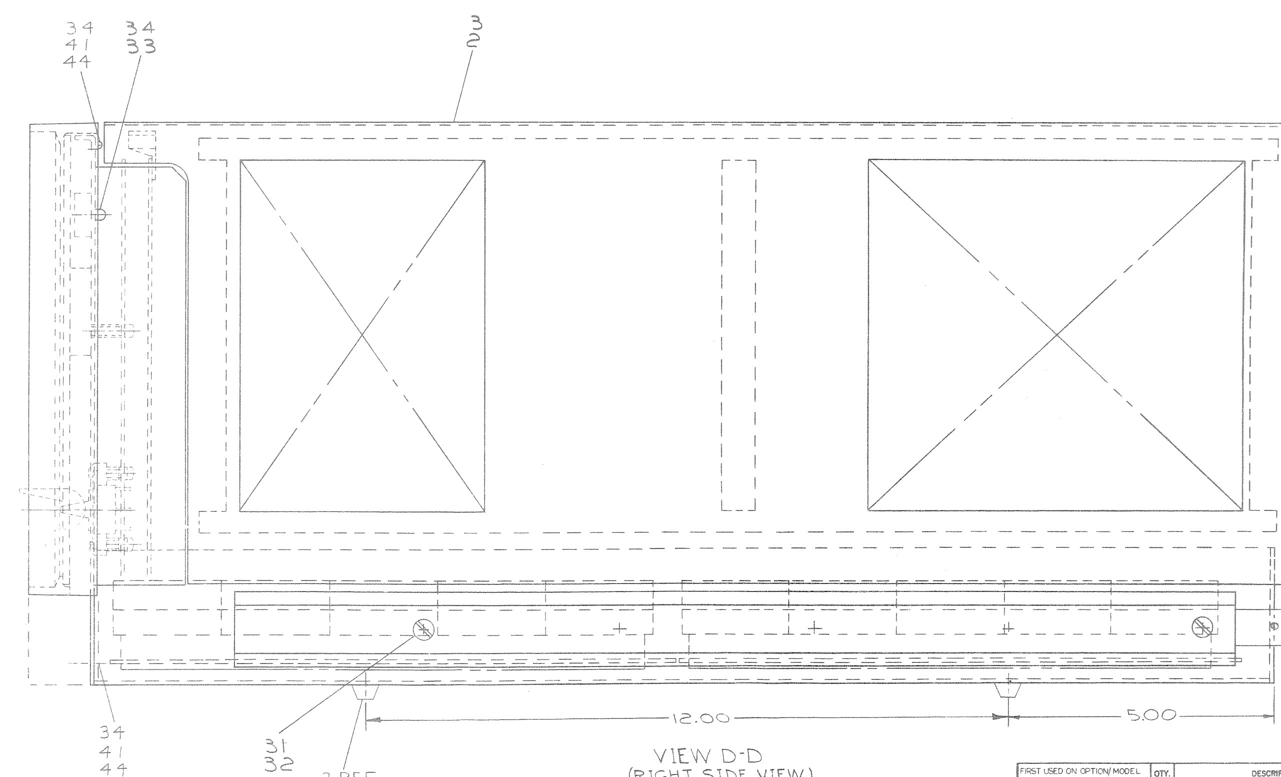
MAIN WIRING & HARNESSES				
PART NO	COLOR	FROM/HARNESS LEAD NO.	TO SYSTEM LOCATION	REMARKS
7006994	-//-	P1	H724 P/S.-J6	
7006994	YEL	PT-11	C.SL. BD. P2	
7006994	BLU	PT-12	C.SL. BD. P1	
7006993	-//-	P1	H724 P/S.-J4	
↑	ORN	PT-7	OMNIBUS +15V	
	BLK	PT-8	OMNIBUS GND	
	BLK	PT-9	OMNIBUS GND	
	GRY	PT-10	OMNIBUS BV2	
	BLU	PT-11	OMNIBUS -15V	
7006993	RED	PT-12	OMNIBUS +5V	
	-//-	P1	H724 P/S.-J3	OPTIONAL. SUPPLIED WITH OMNIBUS EXPANDER BE8-A
	ORN	PT-7	OMNIBUS +15V	
	BLK	PT-8	OMNIBUS GND	
	BLK	PT-9	OMNIBUS GND	
	GRY	PT-10	OMNIBUS BV2	
↓	BLU	PT-11	OMNIBUS -15V	
7006993	RED	PT-12	OMNIBUS +5V	

NOTES (CONT.)

6. USE ITEMS 48, 49, 50 ONLY WITH E-IA-7408233-0-0, REV. B.
7. USE ITEMS 46, ONLY WITH E-IA-7408233-0-0 BLANK REV. OR REV. A.
8. ITEMS 52, 53 FOR SHIPPING PURPOSES ONLY. REMOVE AT INSTALLATION.
9. USE ITEMS 58, 59 IN SYSTEMS WITH 8 OR MORE ROUND CABLES. (4 CABLES PER WRAP.)
10. ITEM 62 OR 63 TO BE INSTALLED IN TABLE TOP SYSTEMS WITH VC8-E, AD8-EA, OR AD8-ES OPTIONS. FOR INSTALLATION DETAIL REFER TO DWG. D-UA-H945-0-0. OPTIONALLY ITEM 62 OR 63 MAY BE INSTALLED IN THE H945 FOR BOTH TABLE TOP AND RACK MOUNTABLE SYSTEMS.



VIEW E-E
(LEFT SIDE VIEW)



VIEW D-D
(RIGHT SIDE VIEW)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

DRN. J. Ferguson	DATE 9-14-70	
CHK'D.	DATE 9-29-70	
ENG.	DATE 10/30/70	
PROJ. ENG.	DATE 10/30/70	
PROD.	DATE 11/2/70	
NEXT HIGHER ASSY. —		
SCALE NONE		
SHEET 2 OF 2		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
UNIT ASSY
(PDP8/E)

SIZE	CODE	NUMBER	REV.
E	UA	PDP8/E-Ø-Ø	D

DIST. G

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QUANTITY/VARIATION

ITEM NO	DWG NO./PART NO.	DESCRIPTION	AA-0	AB-0	BA-0	BB-0	CA-0	CB-0	DA-0	DB-0	EA-0	EB-0	FA-0	FB-0	GA-0	GB-0	HA-0	HB-0	JA-0	JB-0	KA-0	KB-0	LA-0	LB-0	MA-0	MB-0	NA-0	NB-0	PA-0	PB-0
1	E-IA-7408233-0-0	CHASSIS (PDP-E)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	E-IA-7408235-0-0	COVER (PDP8-E)	1	1	–	–	1	1	1	1	–	–	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	–	–
3	D-AD-7007074-0-0	SUPER COVER (PDP8-E)	–	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
4	C-IA-7408250-0-0	FILTER, SIDE	1	1	–	–	1	1	1	1	–	–	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	–	–
5	C-MD-7408249-0-0	BRACKET, SUPPORT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	C-IA-7408247-0-0	STRAIN RELIEF, CABLE	1	1	–	–	1	1	1	1	–	–	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	–	–
7	C-MD-7407449-0-0	COVER STRIP	1	1	1	1	1	1	1	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	1
8	D-UA-KC8-EA-0	CONSOLE ASSY KC8-EA	1	1	1	1	1	1	1	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9	D-UA-KC8-EB-0	CONSOLE ASSY KC8-EB	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10	D-UA-KC8-EC-0	CONSOLE ASSY KC8-EC	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	1	1	1	1	1	1	1	1	1	–	–	–	–
11	D-UA-H919-0-0	OMNIBUS ASSY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
~~12~~	~~1209750-0~~	~~RUBBER BUMPER~~	~~–~~	~~–~~	~~4~~	~~4~~	~~–~~	~~–~~	~~–~~	~~–~~	~~4~~	~~4~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	–	–	–	–
13	D-UA-H724-0-0	POWER SUPPLY H724	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–
14	D-UA-H724A-0-0	POWER SUPPLY H724A	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1
15	A-ML-KK8-E	CENTRAL PROCESSOR **KK8-E**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	A-ML-KP8-E	PWR FAIL DETECTOR & AUTO RESTART	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	1	1	1	1	1	1	1	1	1	–	–	–	–
17	A-ML-KH8-E	PUSH DOWN LIST CONTROL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18	A-ML-KF8-E	AUTOMATIC PRIORITY INTERRUPT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
19	A-ML-MM8-E	MM8-E 4K CORE MEMORY	1	1	1	1	1	1	1	1	1	1	1	1	–	–	–	–	1	1	–	–	–	–	1	1	1	1	1	1
20	A-ML-MR8-EA	256 WORD READ ONLY MEMORY MR8-EA	–	–	–	–	–	–	–	–	–	–				1	–	–	–	–	1	1	–	–	–	–	–	–	–	–
21	A-ML-MW8-E	256 WORD READ/WRITE MEMORY	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	1	–	–	1	1	1	1	–	–	–	–	–	–
22	A-ML-MR8-EB	1024 WORD READ ONLY MEMORY	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–
23	A-ML-M18-E	HARDWARE BOOTSTRAP LOADER	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
24	A-ML-MP8-E	MEMORY PARITY CONTROL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
25	A-ML-KL8-E	KL8E CONSOLE TTY **CONTROL**	1	1	1	1	1	1	1	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	1
26	D-IA 7408861-0-0	SLIDE CHASSIS 22″ TRAVEL	1	1	–	–	1	1	1	1	–	–	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	–	–
27	D-AD-H960-BA 0	CABINET ASSY	–	–	–	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
28	9006022-1	SCR PHL HD PAN #6-32 X .38 SST	2	2	–	–	2	2	2	2	–	–	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	–	–
29	9006653	**WASHER** FLAT #6	2	2	–	–	2	2	2	2	–	–	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	–	–
30	9006071-1	SCR PHL HD PAN #10-32 X .38	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
31	9007651	WASHER EXT TOOTH #10	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
32	9006071-3	SCR PHL HD TRUSS 10-32 UNF X .38	10	10	–	–	12	12	10	10	–	–	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	–	–
33	9006037-1	SCR PHL HD PAN #8-32 X .38	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	A/R	A/R	A/R	A/R
34	9008072	WASHER EXT TOOTH #8	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	A/R	A/R	A/R	A/R
35	9005931	LOCTITE SCR LOCK LOCTITE CORP	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
36	1209351-03	SOC HOUSING **MATE-N-LOK** 1-480304-0 AMP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37	D-IA-7006993-0-0	POWER WIRING HARNESS (PDP8/E)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
38	9008907	SCOTCH GRIP #77 3M	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
39	D-UA-BE8-A-0	OMNIBUS EXPANDER	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
~~40~~	~~9008367~~	~~"0" RING SCOTCH #33 ELECT. TAPE~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	–	–	–	–

REVISIONS

CHK	CHANGE NO.	REV.
	8E-00014 S. Wilson 2-26-71 J. PROVIDENT 3-3-71	A
	8E-00020 5-20-71 J. PROVIDENT 5-24-71	B
	8E-00035 7-26-71 PROVIDENT Vogelsang 7/27/71	C
	8E-00039 8-26-71 R. VOGELSANG 31 Aug 1971	D

FIRST USED ON OPTION/MODEL
PDP8/E

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005
FRACTIONS ± 1/64
ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE [illegible]-23-70
CHK'D.		DATE 10/20/70
ENG.		DATE 10/30/70
PROJ. ENG.		DATE 10/30/70
PROD.		DATE 11/2/70

NEXT HIGHER ASSY.

SCALE

SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
UNIT ASSY
(PDP8/E)

SIZE C
CODE PL
NUMBER PDP8/E-0-0
REV. D
DIST.

SIZE C CODE PL NUMBER PDP8/E-0-0 REV. D

DEC FORM NO. [illegible]C 100

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QUANTITY/VARIATION

ITEM NO	DWG NO/PART NO.	DESCRIPTION	AA-0	AB-0	BA-0	BB-0	CA-0	CB-0	DA-0	DB-0	EA-0	EB-0	FA-0	FB-0	GA-0	GB-0	HA-0	HB-0	JA-0	JB-0	KA-0	KB-0	LA-0	LB-0	MA-0	MB-0	NA-0	NB-0	PA-0	PB-0
41	9006120	SCR PHL HD FIL, SELF TAPPING	—	—	—	—	—	—	—	—	—	—	—	—	4	4	4	4	4	4	4	4	4	4	4	4	—	—	—	—
42	906633	WASHER INT TOOTH #6	2	2	—	—	2	2	2	2	—	—	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	—	—
43	9008442	STRAIN RELIEF	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
44	9007603	SPACER 1/4 AF X 7/16 LG #8	—	—	—	—	—	—	—	—	—	—	—	—	4	4	4	4	4	4	4	4	4	4	4	4	—	—	—	—
45	1210302	FOAM, PAD	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
46	7408611-1-0	BUMPER FRONT PANEL	2	2	2	2	2	2	2	2	2	2	2	2	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	2
47	9008525	BUMPER FRONT PANEL	2	2	2	2	2	2	2	2	2	2	2	2	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	2
48	B-MD-7408629-0-0	SPACER, LATCH	2	2	—	—	2	2	2	2	—	—	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	—	—
49	A-PS-1210264-2	LATCH, DRAW CATCH FASTENER	2	2	—	—	2	2	2	2	—	—	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	—	—
50	9006024-2	SCREW #6-32 X 1/2 LG, FLAT HD	2	2	—	—	2	2	2	2	—	—	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	—	—
51	1210303	SPACER-PROTECTOR, PC BOARD	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
52	C-MD-7408867-0-0	SHIPPING BRACKET	—	—	—	—	1	1	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
53	9006565	NUT, KEPS #10-32 SST.	—	—	—	—	1	1	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
54	9006795	SPACER 1/4 AF X 1/8 LG	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	2	2	2	2	2	2	2	2	2	—	—	—	—
55	9007786	NUT, CAPTIVE #10-32	—	—	—	—	1	1	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
~~56~~	~~D-IA-7008288-3F-0~~	~~CABLE INTERCONNECTING, 3 1/2' LG~~	AR	AR	—	—	AR	AR	AR	AR	—	—	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	—	—
57	D-UA-KC8-ED-0	CONSOLE ASSY KC8-ED (LAB8-E)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1	1
58	9008264	TIE WRAP BACK MOUNT	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
59	9007031	CABLE TIE WRAP	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
60	D-AD-7008477-1-0	DOOR MTG. PRECISION P.S. ASSY 115V	*	—	—	—	*	—	*	—	—	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	—	—
61	D-AD-7008477-2-0	DOOR MTG. PRECISION P.S. ASSY 230V	—	*	—	—	—	*	—	*	—	—	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	—
62	D-AD-7008370-1-0	PRECISION ANALOG P.S. ASSY 115V	—	—	*	—	—	—	—	—	*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	—
63	D-AD-7008370-2-0	PRECISION ANALOG P.S. ASSY 230V	—	—	—	*	—	—	—	—	—	*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*

NOTE: ASSEMBLIES 7008477 AND 7008370 MAYBE USED INTERCHANGEABLY AS REQUIRED

REVISIONS

REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL
PDP8/E

* REQUIRED FOR SYSTEMS WITH VC8-E, AD8-EA, OR AD8-ES OPTIONS

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES

DECIMALS	FRACTIONS	ANGLES
± .005	± 1/64	± 0°30'

FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

DRN.	J. FERGUSON	DATE 9-23-70
CHK'D.	K. GULICK	DATE 10-20-70
ENG.	J. PPOVIDENT	DATE 10-30-70
PROJ. ENG.	V. VOGELSANG	DATE 10-30-70
PROD.	L. SAYLOR	DATE 11-2-70

NEXT HIGHER ASSY. —

SCALE —

SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
UNIT ASSY
(PDP8/E)

SIZE	CODE	NUMBER	REV.
C	PL	PDP8/E-0-0	D

DIST.

SIZE	CODE	NUMBER	REV.
C	PL	PDP8/E-0-0	D

DEC FORM NO. DRC 110

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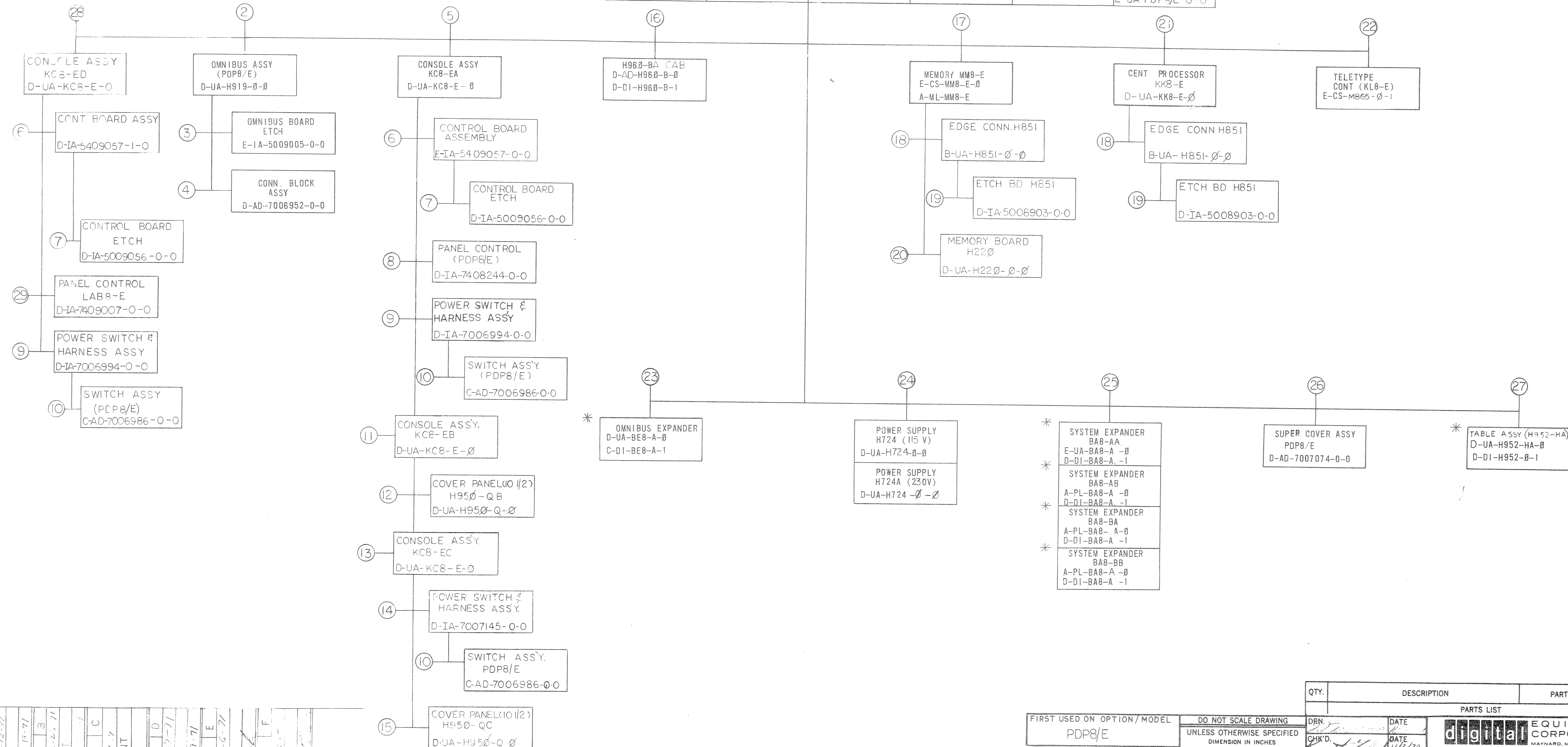
NOTES:
1. * (ASTERISK) INDICATES OPTIONAL EQUIPMENT.
2. FOR TEST EQUIPMENT REFER TO DRAWING E-AR-9305293-0-0.

(1)

PDP8/E-AA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-AB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-BA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-BB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-CA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-CB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-NA ASSEMBLY E-UA-PDP8/E-0-0
PDP8/E-DA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-DB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-EA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-EB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-FA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-FB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-NB ASSEMBLY E-UA-PDP8/E-0-0
PDP8/E-GA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-GB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-HA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-HB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-JA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-JB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-PA ASSEMBLY E-UA-PDP8/E-0-0
PDP8/E-KA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-KB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-LA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-LB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-MA ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-MB ASSEMBLY E-UA-PDP8/E-Ø-Ø	PDP8/E-PB ASSEMBLY E-UA-PDP8/E-0-0



REVISIONS CHANGE NO.	CHK	REV
FE-00012 LAWRENCE		A
8I-OCC4		B
8E-00020 J. PROVIDENT		C
8E-00025 LAWRENCE		D
H724-00012 DI MACK		E
8E-00028 M. ARSENAULT		F

FIRST USED ON OPTION/MODEL: PDP8/E

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ±.005 FRACTIONS ±1/64 ANGLES ±0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. DATE 11/2/70
CHK'D. DATE 11/3/70
ENG. DATE 11/3/70
PROJ. ENG. DATE 10/5/70
PROD. DATE 11/5/70

NEXT HIGHER ASSY: A ML PDP8/E-Ø

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP8/E)

SIZE: D CODE: DI NUMBER: PDP8/E-Ø-1 REV: F

SCALE

SHEET OF

DIST.

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

REV. F | NUMBER PDP8/E-Ø-1 | CODE DI | SIZE D

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MECHANICAL

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
1.	PDP8E-ASSY	E-UA-PDP8E-Ø-Ø			
	PDP8E-ASSY (PL)	C-PL-PDP8E-Ø-Ø			
	CHASSIS (PDP8-E)	E-IA-7408233-0-0			
	COVER (PDP8-E)	E-IA-7408235-0-0			
	FILTER, SIDF	C-IA-7408250-0-0			
	BRACKET SUPPORT	C-MD-7408249-0-0			
	STRAIN RELIEF, CABLE	C-IA-7408247-0-0			
	COVER STRIP	C-MD-7407449-0-0			
	SLIDE, CHASSIS 22'' TRAVEL	D-IA-7408861-0-0			
	PACKAGE INSTRUCTION PDP/8E	A-PI-3700028-0-0			
	BASIC ASSY CONF.	E-AR-PDP8/E-Ø-2			
	PAD, FOAM	A-SC-1210302-0-0			
	BUMPER, FRONT PANEL	A-MD-7408611-1-0			
	BUMPER, FRONT PANEL	A-MD-7408612-2-0			
	SPACER, LATCH	B-MD-7408629-0-0			
	SHIPPING BRACKET	C-MD-7408867-0-0			
	CABLE, INTERCONNECTING	D-IA-7008288-3F-0			
	~~CUSTOMER VARIATIONS~~	~~A-CV-PDP8E-0-7~~			
	~~SOFTWARE LIST~~	~~A-SL-PDP8E-0-3~~			
	RECOMMENDED 1ST LEVEL SPARES	A-PL-SP8-EA-Ø			
	RECOMMENDED 2ND LEVEL SPARES	A-PL-SP8-EB-Ø			
	TELETYPE ASR-33 ACCESSORY LIST	A-AL-LT33-Ø-12			
	PANEL DATA CUST (REF)	D-MD-7605994-0-0			
	LT33 TTY MAIN TOOL KIT	A-PL-LT33-ST-Ø			
	LT33-B TTY RECOM SPARE PARTS	A-PL-LT33-SB-Ø			
2.	OMNIBUS ASSY (PDP8-E)	D-UA-H919-Ø-Ø			
	OMNIBUS ASSY (PL)	A-PL-H919-Ø-Ø			
	USES FOR. SPECIAL COMPRESS-O-GARTON	A-PI-3700039-0-0			
3.	OMNIBUS BOARD ETCH	E-IA-5009005-0-0			
	ASSY & DRILLING HOLE LAYOUT	J-AH-EØ19-Ø-5			
	PRINTED CIRCUIT LAYOUT	PC-5009005			
4.	CONN BLOCK ASSY	D-AD-7006952-0-0			
	288 PIN CONN BLOCK	D-MD-7408514-0-0			
	MTG BAR CONN BLOCK	C-MD-7408242-0-0			
5.	CONSOLE ASSY (KC8-EA)	D-UA-KC8-E-Ø			
	CONSOLE ASSY (PL)	A-PL-KC8-E-Ø			
	BEZEL	E-SC-1210065-0-0			
6.	CONTROL BD ASSY	E-IA-5409057-0-0			
	ROCKER HANDLE	D-SC-1205849-12-0			
	ROCKER HANDLE	D-SC-1205849-13-Ø			
	SUPPORT GLASS	D-IA-7408245-0-0			
	KNOB CONTROL PANEL	C-SC-1210114-0-0			
	SWITCH MTG BAR	C-MD-7408246-0-0			
	ROCKER HANDLE	D-SC-1205849-14-0			
	ROCKER HANDLE	D-SC-1205849-15-0			
7.	CONTROL BOARD (ETCH)	D-IA-5009056-0-0			
	ASSY & DRILLING HOLE LAYOUT	AH-5009056-5			
	PRINTED CIRCUIT LAYOUT	PC-5009056			
8.	PANEL CONTROL	D-IA-7408244-0-0			
	PANEL CONTROL (PDP8-E)	C-SS-7408244-0-1			
	PANEL CONTROL (PDP8-E)	C-SS-7408244-0-2			
	PANEL CONTROL (PDP8-E)	C-SS-7408244-0-3			
	PANEL CONTROL (PDP8-E)	C-SS-7408244-0-4			

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
9.	POWER SWITCH & HARNESS ASSY	D-IA-7006994-0-0			
10	SWITCH ASSEMBLY	C-AD-7006986-0-0			
	SWITCH ASSEMBLY (PL)	A-PL-7006986-0-0			
11.	CONSOLE ASSY KC8-EB	D-UA-KC8-E-Ø			
	CONSOLE ASSY KC8-EB (PL)	A-PL-KC8-E-Ø			
	JUMPER	B-IA-7007146-0-0			
12.	COVER PANEL (10-½)	D-UA-H950-Q-Ø			
	COVER PANEL (10-½) (PL)	A-PL-H95Ø-Q-Ø			
	10-½ SNAP-ON BEZEL	E-SC-1209225-0-0			
	INLAY	C-CS-1209176-2-0			
13.	CONSOLE ASSY (KC8-EC)	D-UA-KC8-E-Ø			
	CONSOLE ASSY (PL)	A-PL-KC8-E-Ø			
14.	POWER SWITCH & HARNESS ASSY	D-IA-7007145-0-0			
15.	COVER PANEL (10-½)	D-UA-H95Ø-Q-Ø			
	COVER PANEL (10-½) (PL)	A-PL-H95Ø-Q-Ø			
	10-½ SNAP-ON BEZEL	E-SC-1209225-0-0			
	INLAY	C-MD-7408855-0-0			
16.	H96Ø-BA CAB	D-UA-H96Ø-B-Ø			
	H96Ø-BA CAB (PL)	A-PL-H96Ø-B-Ø			
	DRAWING INDEX LIST	D-DI-H96Ø-B-1			
17.	MEMORY MM8-E	D-UA-MM8-E-Ø			
	MEMORY MM8-E (PL)	A-PL-MM8-E-Ø			
	XY DRIVER	E-CS-G227-Ø-1			
	ETCH BOARD	5008832-0-0			
	SENSE INHIBIT G1Ø4	E-CS-G1Ø4-Ø-1			
	ETCH BOARD	5008847-Ø-Ø			
18.	EDGE CONNECTOR H851	B-UA-H851-Ø-Ø			
	EDGE CONNECTOR H851 (PL)	A-PL-H851-Ø-Ø			
	RECEP 36 PIN NETWORK	B-MD-5509071-0-0			
19.	ETCH BOARD	D-IA-5008903-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5008903-0-5			
	PC ETCH PATTEN	PC-5008903			

MECHANICAL

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
2Ø.	MEMORY BOARD H22Ø	D-UA-H22Ø-Ø-Ø			
	MEMORY BOARD H22Ø (PL)	A-PL-H22Ø-Ø-Ø			
	COVER PLATE	C-MD-5509025-0-0			
	PLANAR STACK BD	E-CS-G619-Ø-1			
	ETCH BD	5009037-0-0			
21.	CENT PROCESSOR KK8-E	D-UA-KK8-E-Ø			
	CENT PROCESSOR KK8-E (PL)	A-PL-KK8-E-Ø			
	MAJOR REGISTERS 0 & 1	E-CS-M83ØØ-Ø-Ø			
	ETCH BOARD	5009250-0-0			
	BUS LOADS LOADS M832	E-CS-M832-Ø-Ø			
	ETCH BOARD	5009104-0-0			
	TIMING GENERATOR	D-CS-M833-Ø-Ø			
	ETCH BOARD	5009105-0-0			
	MAJOR REG. CONT.	E-CS-M831Ø-Ø-Ø			
	ETCH BOARD	5009278-0-0			
22.	TELETYPE CONT. (KL8-E)	E-CS-M865-Ø-1			
	ETCH BOARD KL8-E	5008891-0-0			
23	OMNIBUS EXPANDER	D-UA-BE8-A-Ø			
	OMNIBUS EXPANDER (PL)	A-PL-BE8-A-Ø			
	DRAWING INDEX LIST	C-DI-BE8-A-1			
24.	POWER SUPPLY H724	D-UA-H724-Ø-Ø			
	POWER SUPPLY H724 (PL)	A-PL-H724-Ø-Ø			
	DRAWING INDEX	D-DI-H724-Ø-2			
25.	SYSTEM EXPANDER BA8	E-UA-BA8-A-Ø			
	SYSTEM EXPANDER BA8 (PL)	A-PL-BA8-A-Ø			
	DRAWING INDEX LIST	D-DI-BA8-A-1			
26.	SUPER COVER ASSY	D-AD-7007074-0-0			
	SUPER COVER ASSY	A-PL-7007074-0-0			
	COVER SUPER	E-IA-7408343-0-0			
	SCREEN BEZEL	D-IA-7407863-0-0			
	BEZEL (5-1/4)	D-SC-1209226-0-0			
	FILTER BEZEL	B-MD-7407866-0-0			
	RETAINER FILTER	C-MD-7407869-0-0			
	LATCH MOLDING	C-SC-1209224-0-0			
	RELIEF STRAIN	D-MD-7408419-0-0			
27.	TABLE ASSY H952-HA	E-UA-H952-H-Ø			
	TABLE ASSY H952-HA	A-PL-H952-H-Ø			
	DRAWING INDEX LIST	D-DI-H952-Ø-1			
28.	CONSOLE ASSY (KC8-ED)	D-UA-KC8-E-Ø			
	CONSOLE ASSY (PL)	A-PL-KC8-E-Ø			
	BEZEL	E-SC-1210065-0-0			
29.	PANEL CONTROL (LAB8-E)	D-IA-7409007-0-0			
	PANEL CONTROL (LAB8-E)	C-SS-7409007-0-1			
	PANEL CONTROL (LAB8-E)	C-SS-7409007-0-2			
	PANEL CONTROL (LAB8-E)	C-SS-7409007-0-3			
	PANEL CONTROL (LAB8-E)	C-SS-7409007-0-4			

ELECTRICAL

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
1	PDP8E ASSY	A-ML-PDP8E-Ø			
	BASIC ASSY CONFIG	E-AR-PDP8/E-Ø-2			
	SOFTWARE LIST	A-SL-PDP8/E-Ø-3			
	RECOMMENDED OMNI MOD ASSIGN	A-SP-PDP8/E-Ø-4			
	TIMING DIAGRAM	D-TD-PDP8/E-Ø-5			
	FLOW DIAGRAM	E-FD-PDP8/E-Ø-6			
	CUSTOMER VARIATIONS	A-CV-PDP8/E-Ø-7			
	BASIC 8E MFG TEST PROC	A-SI-PDP8/E-Ø-8			
	FIELD INSTALL & ACCEPT PROC	A-SP-PDP8/E-Ø-9			
	POWER WIRING	D-IC-PDP8/E-Ø-10			
2.	OMNIBUS ASSY (PDP8-E)	A-ML-H919-Ø-Ø			
3.	OMNIBUS BOARD ETCH	E-IA-5009005-0-0			
	ASSY & DRILLING HOLE LAYOUT	AH-5009005-5			
	PRINTED CIRCUIT LAYOUT	PC-5009005			
6.	CONTROL BOARD ASSY	D-IA-5409057-0-0			
7.	CONTROL BOARD (ETCH)	E-IA-5009056-0-0			
	ASSY & DRILLING HOLE LAYOUT	AH-5009056-5			
	PRINTED CIRCUIT LAYOUT	PC-5009056			
17.	MEMORY MM8-E ASSY	A-ML-MM8-E			
21.	CENTRAL PROCESSOR KK8-E	A-ML-KK8-E			
22.	TELETYPE CONT (KL8-E)	A-ML-KL8-E			
23.	OMNIBUS EXPANDER	A-ML-BE8-A			
24.	H724 POWER SUPPLY	A-ML-H724-Ø			
25.	SYSTEM EXPANDER BA8-AA	A-ML-BA8-Ø			

REVISIONS	
REV.	
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL	
PDP8/E	

DRN. G. FLANDERS	DATE 7-20-70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. GULICK	DATE 11-4-70	TITLE DRAWING INDEX LIST
ENG. J. PROVIDENT	DATE 11-15-70	
PROJ. ENG. R. VOGELSANG	DATE 11-5-70	
PROD. L. SAYLOR	DATE 11-5-70	
NEXT HIGHER ASSY A-ML-PDP8/E-Ø		SIZE D · CODE DI · NUMBER PDP8/E-Ø-1 · REV. F
SCALE —		
SHEET 2 OF 2		DIST.

DEC FORM NO DRD 100

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

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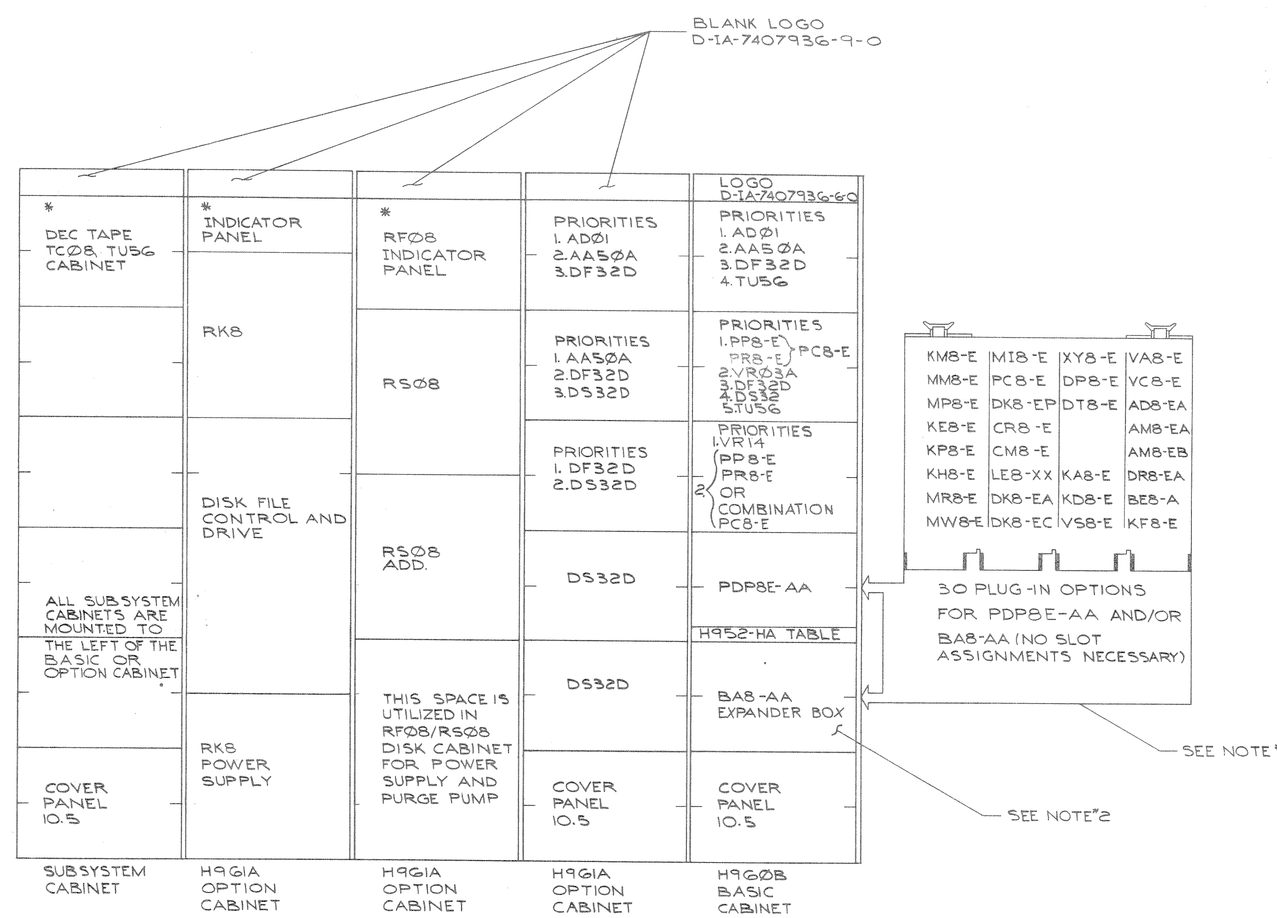
CABLES

OPTION NO.	LENGTH	MODULE TYPE FROM	MODULE TYPE TO	QTY	CABLE ASSY. NO
AD8-EA	SEE NOTE 3	A841	CUST. UNIT	1	CUST. UNIT
AM8-EA		A232	CUST. UNIT		CUST. UNIT
DK8-EP		M86Ø, M518	CUST. UNIT		CUST. UNIT
DR8-EA		M863	CUST. UNIT		BCØ8-K, L
KP8-E		M848	724, 724A P.S.		7007128
LE-8		M841	CUST. UNIT	1	7006964
PC8-E		M84Ø	PCØ4-BM, BL	2	BCØ8-K
PP8-E			PCØ4-PL, PM	1	BCØ8-K
PR8-E			PCØ4-RB		BCØ8-K
PR8-ES		M84Ø	PR8-ES		7007022
XY8-E		M842	CUST. UNIT		7006965
KV8-E		A316	VTØ1-A		7006947-0-0
DK8-EA		M882	724, 724A P.S.		
DR8-EA		M863	DR8-EB		7007035
AM8-EA		A232	AM8-EC, AM8-ED		7007035
DK8-EP	SEE NOTE 3	M518	DK8-EF	1	7007035

NOTES:

1. TIMING BOARD (M833) MUST BE THE FIRST BOARD AFTER THE CONSOLE BOARD. BUS LOAD (M832) MUST BE IN THE LAST MODULE SLOT USED EVEN IF AN OMNIBUS EXPANDER IS USED.
2. IF AN EXPANDER BOX (BA8-AA) IS USED A BCØ8H CABLE MUST RUN FROM THE LAST SLOT OF THE PDP8E-AA OMNIBUS TO THE LAST SLOT OF THE BA8-AA OMNIBUS.
3. LENGTHS OF CABLES TO BE SPECIFIED AT TIME OF SYSTEM INSTALLATION.



* THE RK8, DEC TAPE, AND RFØ8/RSØ8 DISK SYSTEMS REQUIRE A DEDICATED CABINET

FIRST USED ON OPTION/MODEL	PDP8-E
QTY. / DESCRIPTION / PART NO. / ITEM NO.	PARTS LIST
UNLESS OTHERWISE SPECIFIED	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL	—
FINISH	—
DRN.	D. Ferguson — DATE 9-25-70
CHK'D.	DATE 10-14-70
ENG.	James R. Prov... — DATE 10/30/70
PROJ. ENG.	DATE 10/30/70
PROD.	DATE 11/2/70
NEXT HIGHER ASSY.	A-ML-PDP8-E
SCALE	—
SHEET	1 OF 1
	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE	OPTION CONFIGURATION (PDP8/E)
SIZE / CODE / NUMBER / REV.	B AR PDP8/E-Ø-2
DIST.	G

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 11/24/70

TITLE RECOMMENDED OMNIBUS MODULE ASSIGNMENTS

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	REORDERED ASSIGNMENTS	KK8E-00001	[illegible]	1/15/71	[illegible]	1/15/71
B	REORDERED ASSIGNMENTS	8E-00037	TEICHER	7-30-71	SNT	8-3-71

ENG	APPD	SIZE	CODE	NUMBER	REV
Dave Chertkow	Dave Chertkow	A	SP	PDP8/E-0-4	B

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE RECOMMENDED OMNIBUS MODULE ASSIGNMENTS

The following ordering of modules on the OMNIBUS will result in best case timing and permit widest margins:

	MODULE
	Control Panel
M833	Timing Board
M8340	EAE
M8341	EAE
M8310	C.P. Major Register Control
M8300	C.P. Major Registers
M837	Extended Memory & Time Share Control
	.
	.
	.
	Other Non-Memory Options
	.
	.
	.
M835	External I/O Bus Interface
M849	R.F.I. Shield
G104	Memory Sense/Inhibit (0)
H220	Memory Stack (0)
G227	Memory X/Y Drivers (0)
	.
	.
	.
G104	Memory Sense/Inhibit (n)
H220	Memory Stack (n)
G227	Memory X/Y Drivers (n)
	.
	.
	.
	Other Memories
	.
	.
	.
G105	Memory Sense/Inhibit (Parity)
H220	Memory Stack (Parity)
G227	Memory X/Y Drivers (Parity)
M832	Bus Loads (Always in last slot)

	SIZE	CODE	NUMBER	REV
	A	SP	PDP8/E-0-4	B

DEC FORM NO 16-1022 DRA 108

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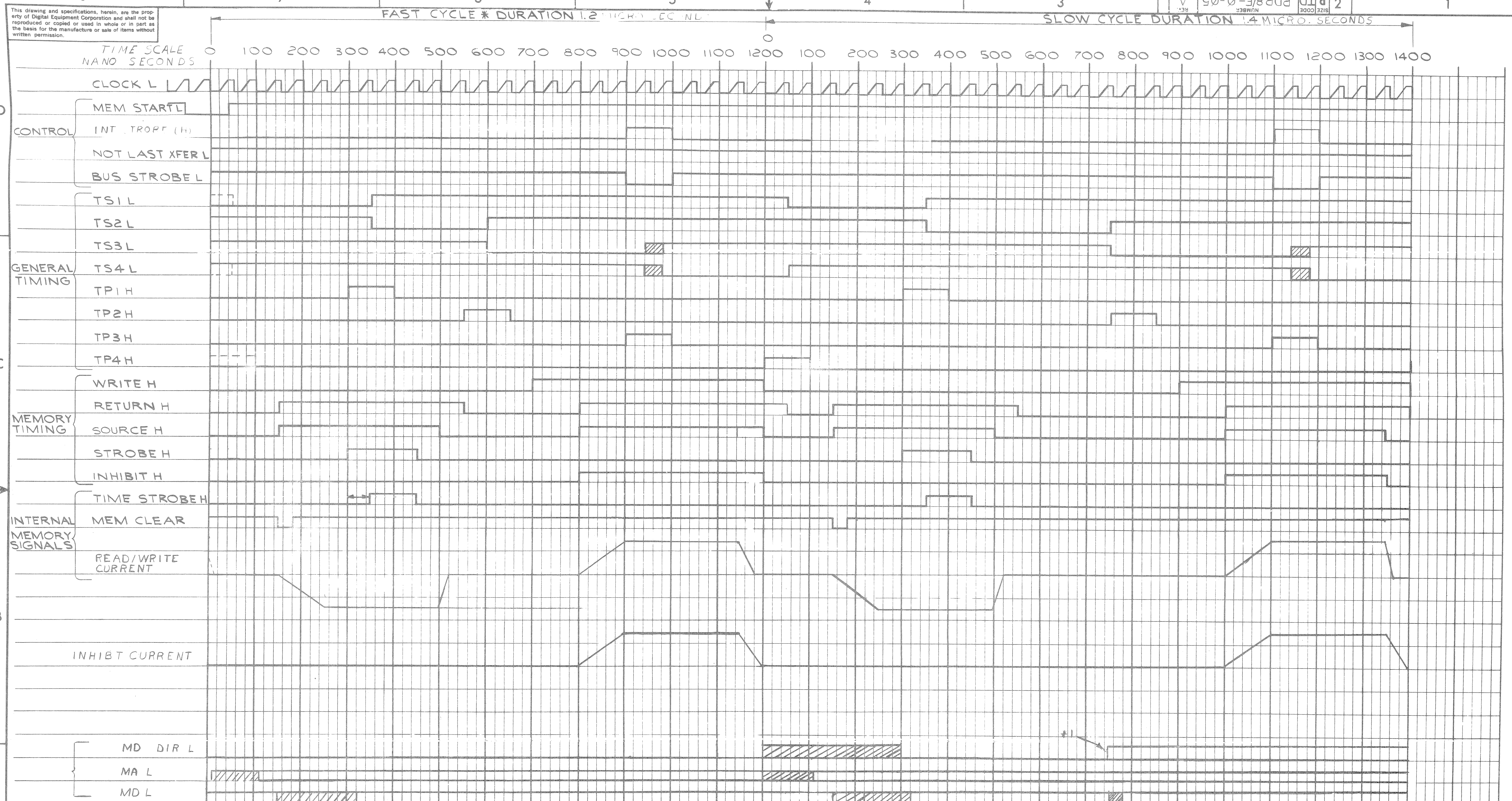

*THIS PLOT SHOWS AN INITIAL FAST CYCLE
THE DOTTED LINES INDICATE A REGULAR CYCLE

#1:MD DIR GOES LOW ONLY IF F* [D-AUTO INDEX]

CIRCUIT DELAYS ARE NEGLECTED IN THIS TIMING DIAGRAM

REV.	CHANGE NO.	CHK
A	8E-00019	NARHI

FIRST USED ON OPT/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL
FINISH

		DATE
DRN.	J. Ferguson	1-9-71
CHK'D.		1/11/71
ENG.	Larry Narhi	1/12/71
PROJ. ENG.		1/12/71
PROD.		1/13/71

NEXT HIGHER ASSY A-ML-PDP8/E-Ø
SCALE NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TIMING (PDP8/E)

SIZE	CODE	NUMBER	REV.
D	TD	PDP8/E-Ø-Ø5	A

DIST.

DEC FORM NO. DRD 102A

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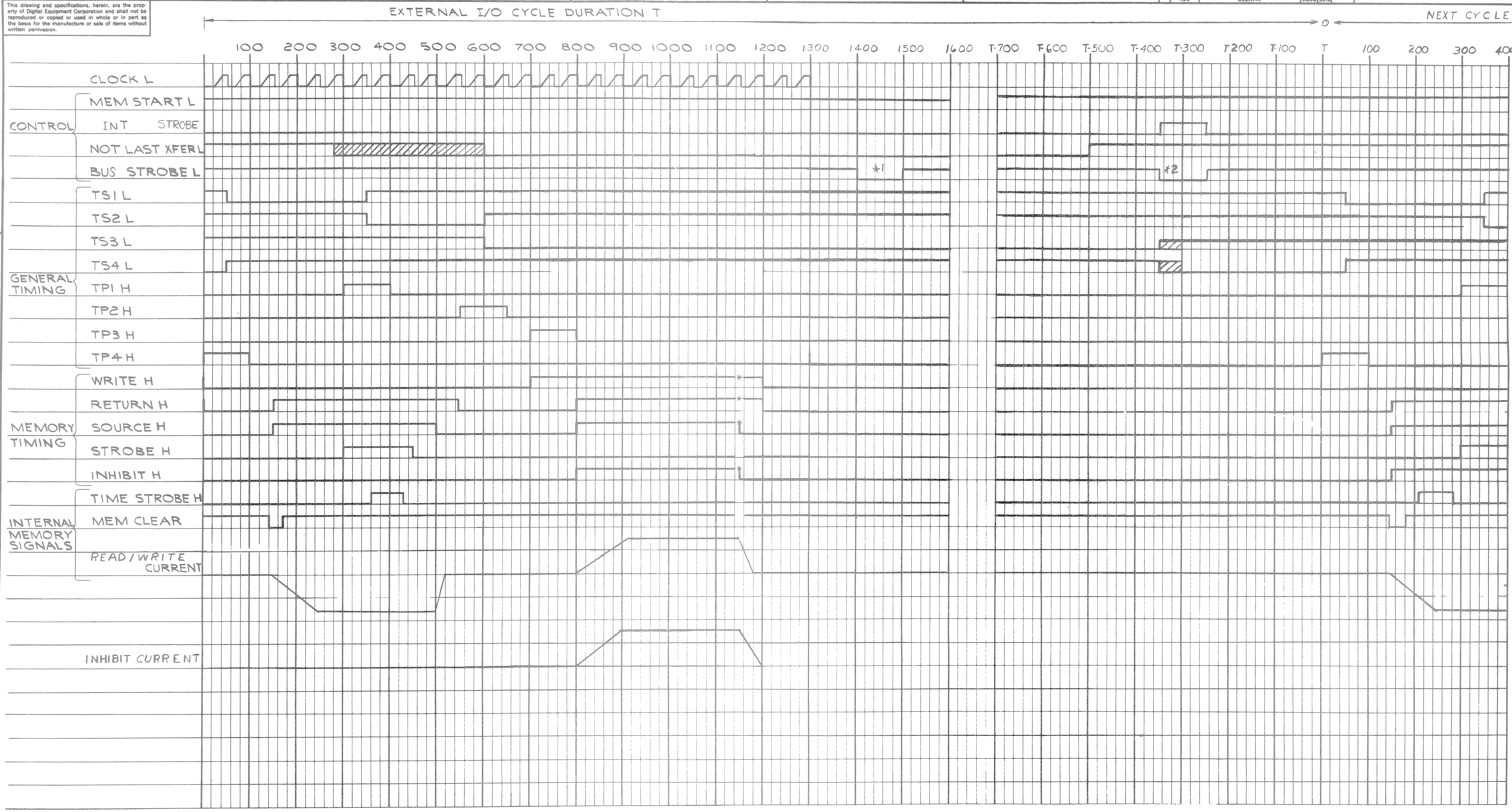


NOTE: * MEMORY SIGNALS TIME OUT, AS IN A FAST CYCLE

*1 GENERATED BY PERIPHERAL TO STROBE DATA

*2 GENERATED BY PERIPHERAL TO TERMINATE EXT. I/O CYCLE AND RESUME NORMAL OPERATION.

FIRST USED ON OPT/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY √ REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. / DATE 1-9-71
CHK'D. / DATE 1/11/71
ENG. / DATE 1/12/71
PROJ. ENG. / DATE 1/12/71
PROD. / DATE 1/13/71

NEXT HIGHER ASSY A-ML-PDP8/E-Ø

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

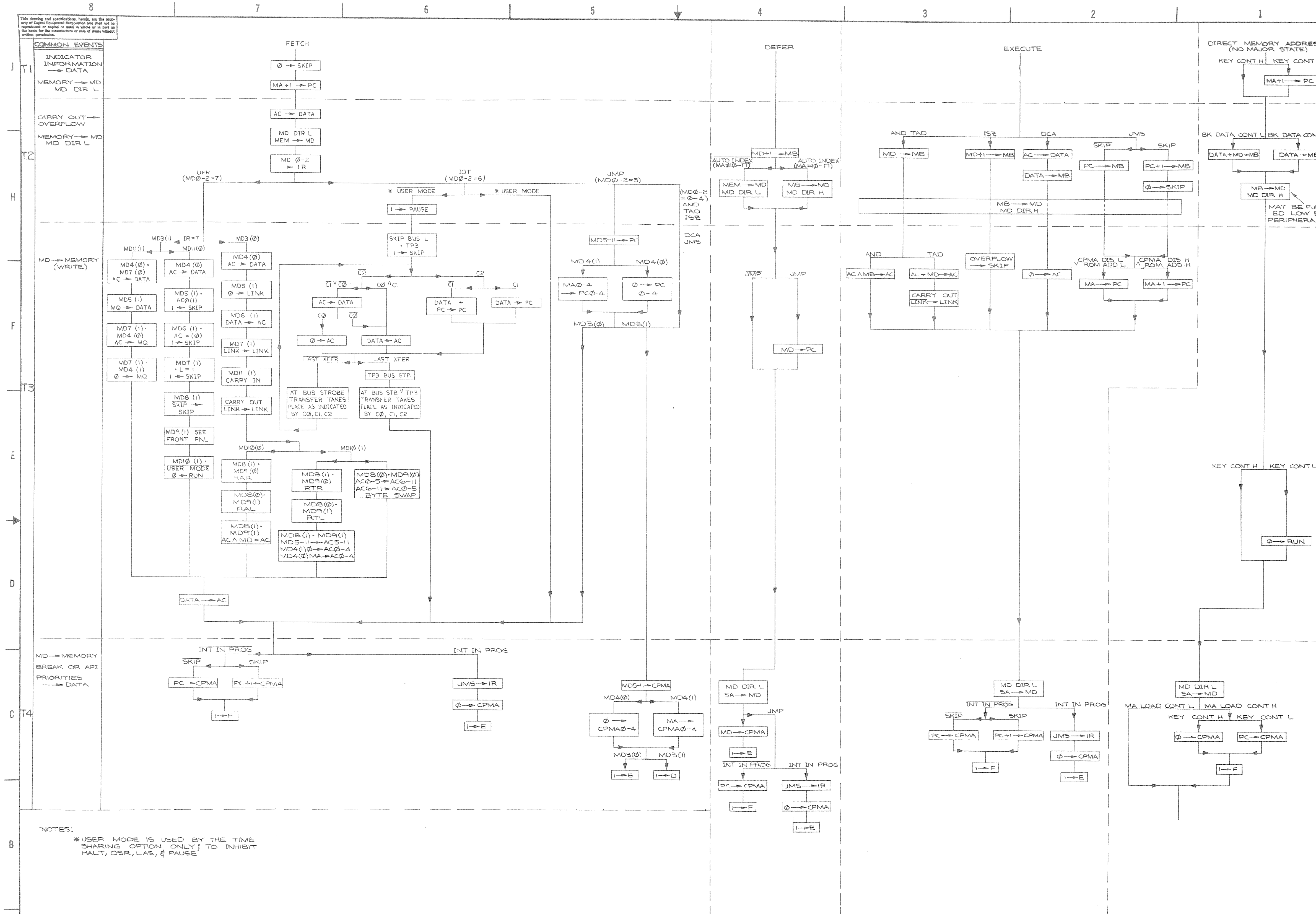
TITLE TIMING (PDP8/E)

SIZE D CODE TD NUMBER PDP8/E-Ø-Ø5 REV. A

DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 102A



COMMON EVENTS
INDICATOR INFORMATION → DATA
MEMORY → MD
MD DIR L
CARRY OUT → OVERFLOW
MEMORY → MD
MD DIR L
MD → MEMORY (WRITE)
MD → MEMORY
BREAK OR API
PRIORITIES → DATA
T1
T2
T3
T4
FETCH
Ø → SKIP
MA + 1 → PC
AC → DATA
MD DIR L
MEM → MD
MD Ø-2 → IR
OPR (MDØ-2 = 7)
IOT (MDØ-2 = 6)
JMP (MDØ-2 = 5)
* USER MODE
I → PAUSE
SKIP BUS L • TP3
I → SKIP
MD3(1)
IR = 7
MD3(Ø)
MD11 (1)
MD11(Ø)
MD4(Ø) • MD7 (Ø) • AC → DATA
MD4 (Ø) AC → DATA
MD5 (1) MQ → DATA
MD5 (1) • ACØ(1) I → SKIP
MD7 (1) • MD4 (Ø) AC → MQ
MD6 (1) • AC = (Ø) I → SKIP
MD7 (1) • MD4 (1) Ø → MQ
MD7 (1) • L = 1 I → SKIP
MD8 (1) SKIP → SKIP
MD9(1) SEE FRONT PNL
MD1Ø (1) • USER MODE Ø → RUN
MD4(Ø) AC → DATA
MD5 (1) Ø → LINK
MD6 (1) DATA → AC
MD7 (1) LINK → LINK
MD11 (1) CARRY IN
CARRY OUT LINK → LINK
MDIØ(Ø)
MDIØ (1)
MD8 (1) • MD9 (Ø) RAR
MD8(Ø) • MD9(1) RAL
MD8(1) • MD9(1) AC ∧ MD → AC
MD8 (1) • MD9(Ø) RTR
MD8(Ø) • MD9(1) RTL
MD8(Ø) • MD9(Ø) ACØ-5 → AC6-11 AC6-11 → ACØ-5 BYTE SWAP
MD8 (1) • MD9(1) MD5-11 → AC5-11 MD4(1)Ø → ACØ-4 MD4(Ø)MA → ACØ-4
DATA → AC
C1 ∨ CØ
C2
CØ ∧ C1
C2
C1
AC → DATA
CØ
CØ
DATA + PC → PC
DATA → PC
Ø → AC
DATA → AC
LAST XFER
LAST XFER
TP3 BUS STB
AT BUS STROBE TRANSFER TAKES PLACE AS INDICATED BY CØ, C1, C2
AT BUS STB ∨ TP3 TRANSFER TAKES PLACE AS INDICATED BY CØ, C1, C2
MD5-11 → PC
MD4 (1)
MD4 (Ø)
MAØ-4 → PCØ-4
Ø → PC Ø-4
MD3(Ø)
MD3(1)
(MDØ-2 = Ø-4) AND TAD ISZ DCA JMS
INT IN PROG
SKIP
SKIP
PC → CPMA
PC+1 → CPMA
I → F
INT IN PROG
JMS → IR
Ø → CPMA
I → E
MD5-11 → CPMA
MD4(Ø)
MD4(1)
Ø → CPMAØ-4
MA → CPMAØ-4
MD3(Ø)
MD3(1)
I → E
I → D
DEFER
MD+1 → MB
AUTO INDEX (MA≠1Ø-17)
AUTO INDEX (MA=1Ø-17)
MEM → MD
MD DIR L
MB → MD
MD DIR H
JMP
JMP
MD → PC
MD DIR L
SA → MD
JMP
MD → CPMA
I → E
INT IN PROG
INT IN PROG
PC → CPMA
JMS → IR
I → F
Ø → CPMA
I → E
EXECUTE
AND TAD
ISZ
DCA
JMS
SKIP
SKIP
MD → MB
MD+1 → MB
AC → DATA
DATA → MB
PC → MB
PC+1 → MB
Ø → SKIP
MB → MD
MD DIR H
AND
TAD
AC ∧ MB → AC
AC + MD → AC
CARRY OUT LINK → LINK
OVERFLOW → SKIP
Ø → AC
CPMA DIS L ∨ ROM ADD L
CPMA DIS H ∧ ROM ADD H
MA → PC
MA+1 → PC
MD DIR L
SA → MD
INT IN PROG
INT IN PROG
SKIP
SKIP
PC → CPMA
PC+1 → CPMA
JMS → IR
Ø → CPMA
I → F
I → E
DIRECT MEMORY ADDRESS (NO MAJOR STATE)
KEY CONT H
KEY CONT L
MA+1 → PC
BK DATA CONT L
BK DATA CONT H
DATA+MD → MB
DATA → MB
MB → MD
MD DIR H
MAY BE PULLED LOW BY PERIPHERAL
KEY CONT H
KEY CONT L
Ø → RUN
MD DIR L
SA → MD
MA LOAD CONT L
MA LOAD CONT H
KEY CONT H
KEY CONT L
Ø → CPMA
PC → CPMA
I → F

NOTES:

* USER MODE IS USED BY THE TIME SHARING OPTION ONLY; TO INHIBIT HALT, OSR, LAS, & PAUSE

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FIRST USED ON OPTION/MODEL: PDP8/E

UNLESS OTHERWISE SPECIFIED — DIMENSION IN INCHES — TOLERANCES: DECIMALS ±.005, FRACTIONS ±1/64, ANGLES ±0°30'

NEXT HIGHER ASSY: A-ML-PDP8/E-Ø

MATERIAL: —//—

FINISH: —//—

SCALE: —//— SHEET 1 OF 1

DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: PROCESSOR FLOW CHART

SIZE E CODE FD NUMBER PDP8/E-Ø-Ø6

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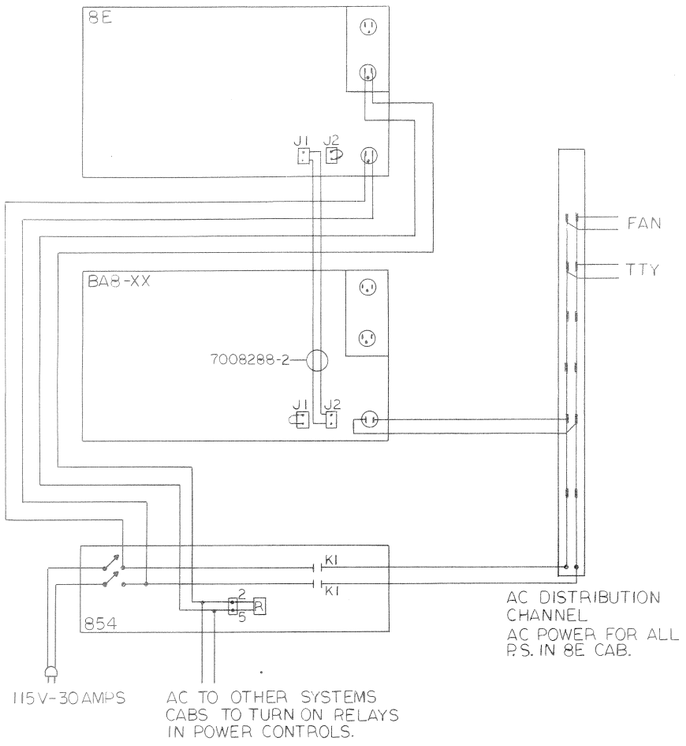
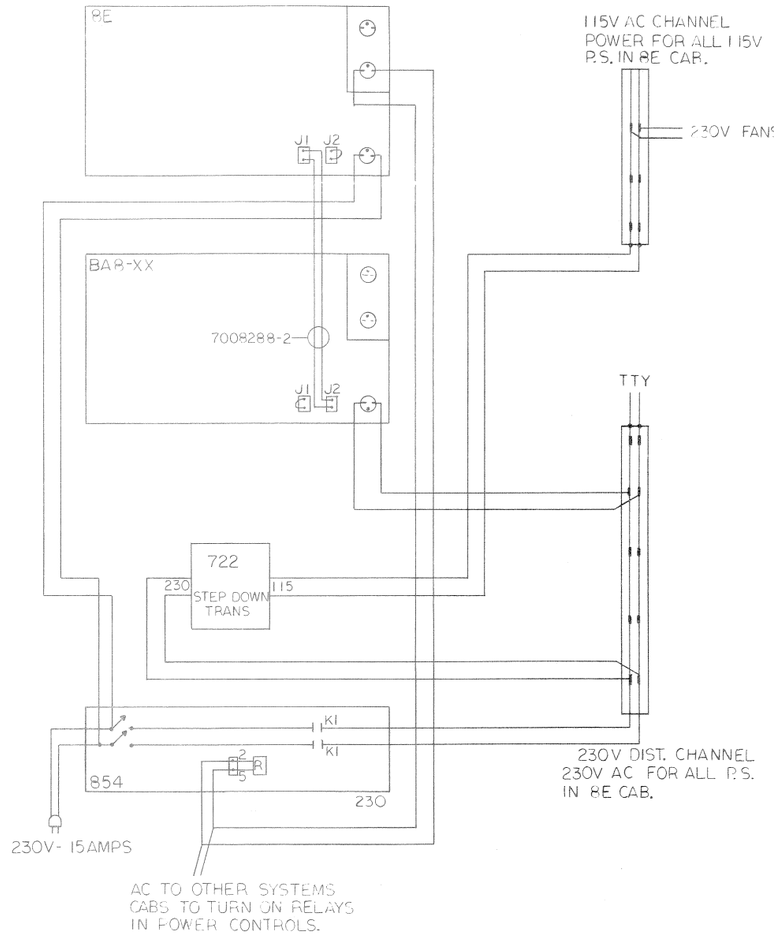


8E SYSTEM POWER WIRING FOR 115 VOLTS



8E SYSTEM POWER WIRING FOR 230 VOLTS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. Norm Dignan	DATE 14 Jul 71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D Ken Olsen	DATE 12/6/71	
ENG.	DATE 12/6/71	TITLE: POWER WIRING DIAGRAM
PROJ. ENG.	DATE 12/6/71	
PROD.	DATE 12-7-71	
NEXT HIGHER ASSY. A-ML-PDP8/E-0		SIZE D · CODE IC · NUMBER PDP-8/E-0-10 · REV.
SCALE NONE		
SHEET 1 OF 1		DIST.

REVISIONS	REV	CHANGE NO	CHK

DEC FORM NO DRD 100-A

SIZE D · CODE IC · NUMBER PDP8/E-0-10 · REV

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KC8-EA	KC8-EB	KC8-EC	KC8-ED
KC8-E	CONSOLE	X	X	X	X

USED ON OPTIONS
PDP8/E

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
ORIG	8/71	MISC-86	—

DRN. K. GULICK	DATE 12/3/70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. GULICK	DATE 12/3/70	
ENG. PROVIDENT	DATE 12/7/70	TITLE CONSOLE (PDP8/E)
PROJ. ENG. VOGELSANG	DATE 12/7/70	
PROD. L. SAYLOR	DATE 12/8/70	
FIRST USED ON A-ML- PDP8/E-Ø		SIZE A / CODE ML / NUMBER KC8-E / REV.
SCALE #		
SHEET 1 OF 2		DIST.

DRA 131

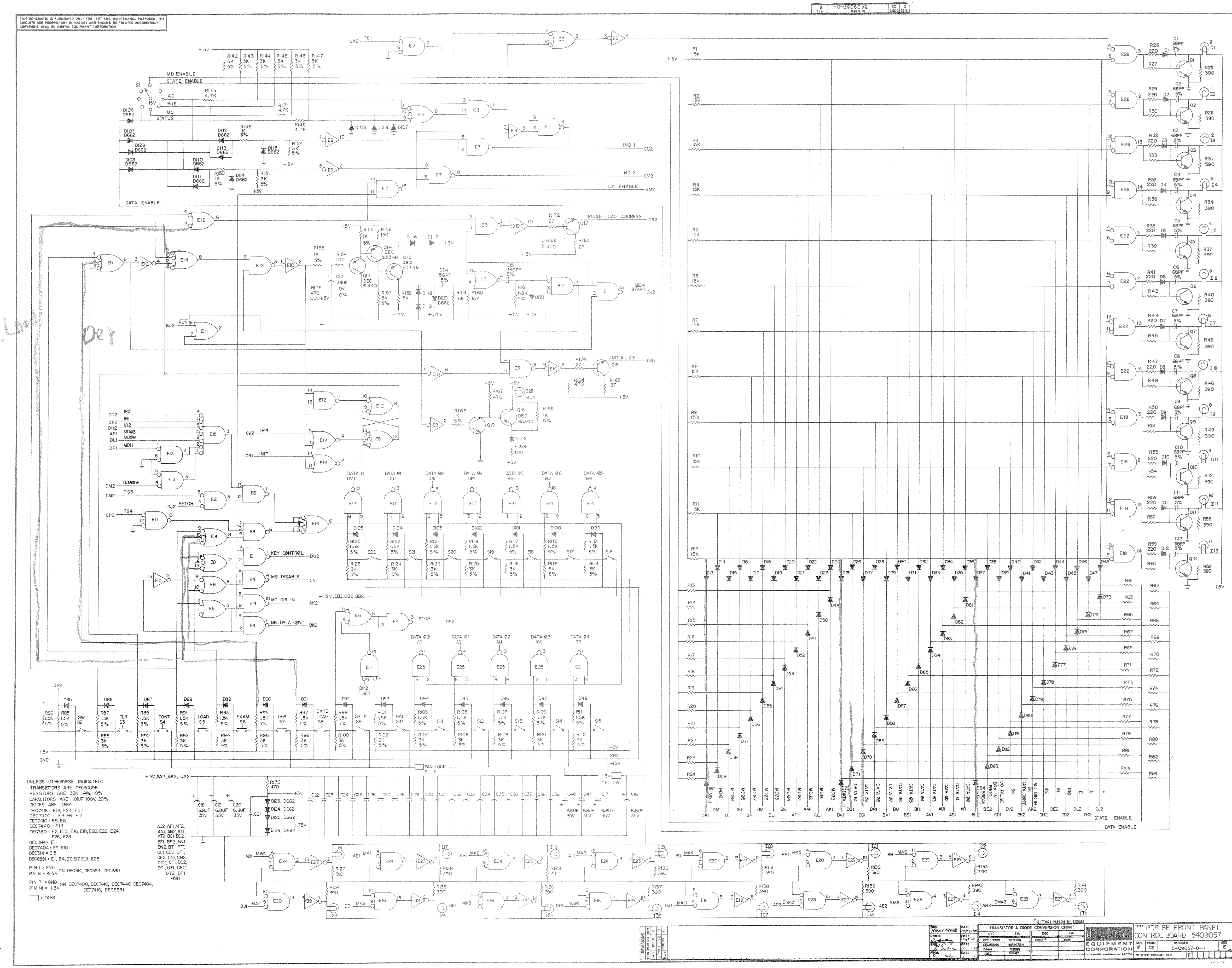
Dec 16-(325)-1048-N471

PRINT SET KC8-E	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	E-IA-5409057-0-0	F	1	FRONT PANEL CONTROL BOARD	
X	E-CS-5409057-0-1	E	1	CIRCUIT SCHEMATIC	
X	D-UA-KC8-E-Ø	E	1	CONSOLE ASSY	
X	A-PL-KC8-E-Ø	E	1	CONSOLE ASSY	

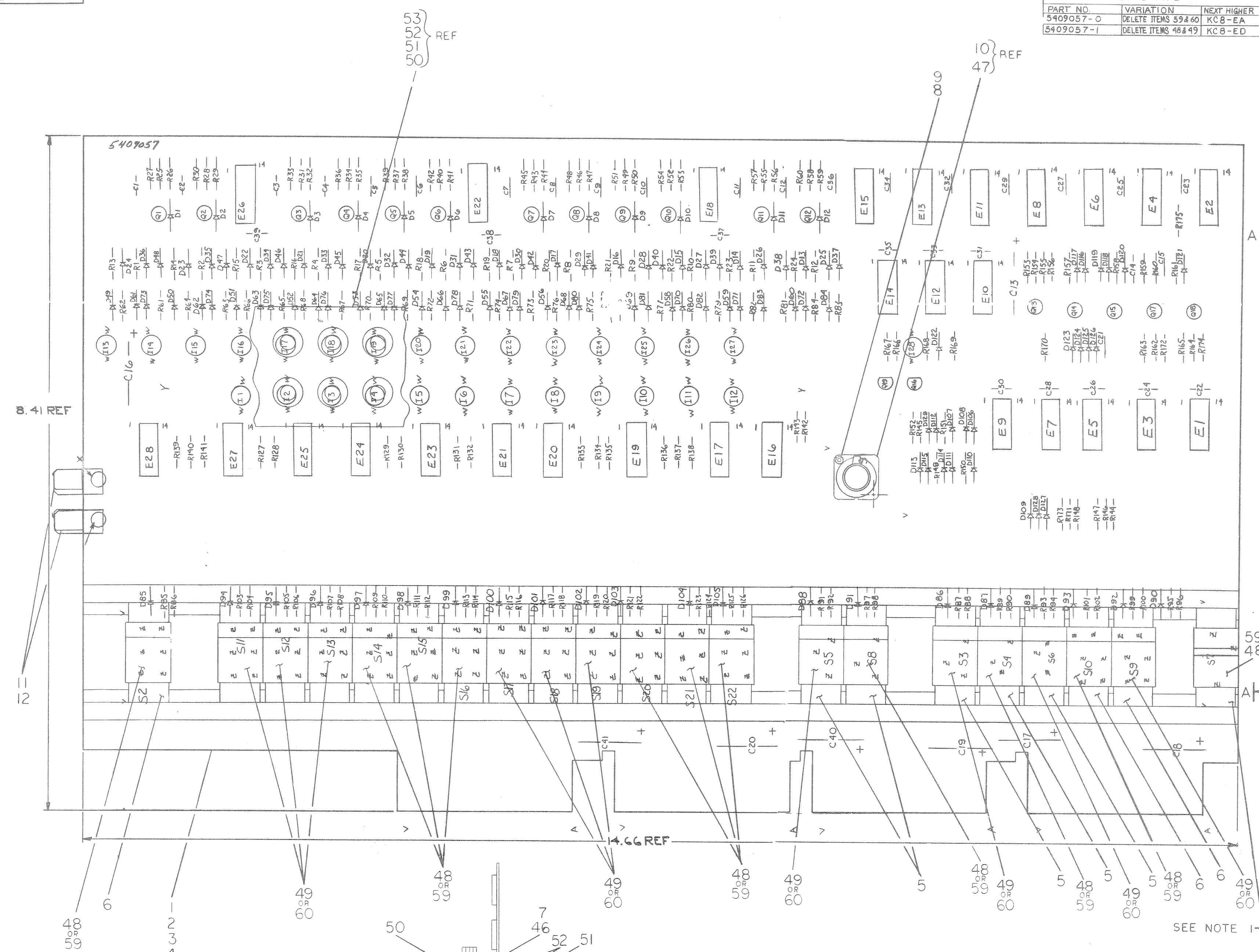
TITLE				NUMBER	REV.
CONSOLE	SHEET 2 OF 2	A	ML	KC8-E	

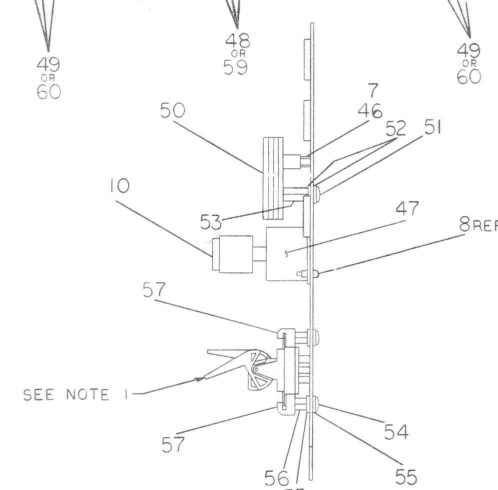
DRA 132

DEC 16-(325)-1048-1-N471



THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY
COPYRIGHT 1970 BY DIGITAL EQUIPMENT CORPORATION
UNLESS OTHERWISE INDICATED:
TRANSISTORS ARE DEC3009B
RESISTORS ARE 33K, 1/4W, 10%
CAPACITORS ARE .01UF, 100V, 20%
DIODES ARE D664
DEC7416 = E19, E23, E27
DEC7400 = E3, E6, E12
DEC7410 = E5, E8
DEC7440 = E14
DEC380 = E2, E13, E16, E18, E20, E22, E24, E26, E28
DEC384 = E11
DEC7404 = E9, E10
DEC314 = E15
DEC8881 = E1, E4, E7, E17, E21, E25
PIN 1 = GND
PIN 8 = +5V
ON DEC314, DEC384, DEC380
PIN 7 = GND
PIN 14 = +5V
ON DEC7400, DEC7410, DEC7440, DEC7404, DEC7416, DEC8881
= TABS
2 (TWO) IN3606 IN SERIES
TRANSISTOR & DIODE CONVERSION CHART
DEC | EIA | DEC | EIA
DEC3009B | 2N3009 | D668 # | [illegible]
DEC6534D | [illegible]
D664 | 1N3206
D662 | 1N645
EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE PDP 8E FRONT PANEL CONTROL BOARD 5409057
SIZE E
CODE CS
NUMBER 5409057-0-1
REV. E
PRINTED CIRCUIT REV. F





VIEW A-A
SCALE 1/1

LEGEND

PART NO.	VARIATION	NEXT HIGHER ASSY.
5409057-0	DELETE ITEMS 59 & 60	KC8-EA
5409057-1	DELETE ITEMS 48 & 49	KC8-ED

NOTES

1. ITEM NO. 5 (MOMENTARY SWITCH) TO BE INSTALLED SO THAT ROCKER HANDLE IS DOWN WHEN IN "OFF" POSITION. THIS LOCATION ONLY.

PARTS LIST

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
10		ROCKER HANDLE, LIME	1205849-15	60
11		ROCKER HANDLE, CHARTREUSE	1205849-14	59
~~2~~		~~WASH INT TOOTH #4 HOLE~~	~~9006632~~	~~58~~
2		SWITCH MTG BAR	C-MD-7408246-0-0	57
4		SPACER 1/4 AF × 1/4 LG × #6 HOLE	9006800	56
8		WASH, WHT NYLON #6 × .032 THK	9006707	55
4		SCR SLT HD PAN #6-32 × .44 NYLON	9008212	54
2		SPACER 1/4 AF × 1/2 LG × #8 HOLE	9007977	53
4		WASH, WHT NYLON #8 × .032 THK	9006713	52
2		SCR PHL HD PAN 8-32 × .88 NYLON	9008381	51
1		SUPPORT, GLASS	D-IA-7408245-0-0	50
10		ROCKER HANDLE, TERRA COTTA	1205849-13	49
11		ROCKER HANDLE, AMBER	1205849-12	48
1	S1	ROTARY SWITCH	1210129	47
28	I1-I28	INDICATOR BULBS	1209219	46
3	E19, E23, E27	I.C. DEC 7416	1909928	45
6	E1, E4, E7, E17, E21, E25	I.C. DEC 8881	1909705	44
1	E15	I.C. DEC 314	1909704	43
2	E9, E10	I.C. DEC 7404	1909686	42
1	E11	I.C. DEC 384	1909486	41
9	E2, E13, E16, E18, E20, E22, E24, E26, E28	I.C. DEC 380	1909485	40
1	E14	I.C. DEC 7440	1905579	39
2	E5, E8	I.C. DEC 7410	1905576	38
3	E3, E6, E12	I.C. DEC 7400	1905575	37
4	Q13-Q16	TRANSISTOR DEC 6534D	1503409-00	36
15	Q1-Q12, Q17-Q19	TRANSISTOR DEC 3009B	1503100	35
3	R148, R171, R173	RES. 4.7K, 1/4W, 10%	1300448	34
2	R154, R169	RES. 100, 1/4W, 10%	1300231	33
4	R163, R165, R172, R174	RES. 27, 1/4W, 10%	1301420	32
12	R26, R29, R32, R35, R38, R41, R44, R47, R50, R53, R56, R59	RES. 220, 1/4W, 10%	1300275	31
48	R13-R24, R27, R30, R33, R36, R39, R42, R45, R48, R51, R54, R57, R60-R84	RES. 33K, 1/4W, 10%	1300510	30
15	R1-R12, R158-160	RES. 15K, 1/4W, 10%	1300494	29
29	R88, R90, R92, R94, R96, R98, R100, R102, R104, R106, R108, R110, R112, R114, R116, R118, R120, R122, R124, R126, R142-R147, R151, R152, R157	RES. 3K, 1/4W, 5%	1300432	28
1	R161	RES. 1.8K, 1/4W, 5%	1300398	27
22	R85-R87, R89, R91, R93, R95, R97, R99, R101, R103, R105, R107, R109, R111, R113, R115, R117, R119, R121, R123, R125	RES. 1.5K, 1/4W, 5%	1300391	26
6	R149, R150, R153, R155, R166, R168	RES. 1K, 1/4W, 5%	1300365	25
5	R162, R164, R167, R170, R175	RES. 470, 1/4W, 10%	1300317	24
27	R25, R28, R31, R34, R37, R40, R43, R46, R49, R52, R55, R58, R127-R141	RES. 390, 1/4W, 10%	1300310	23
1	R156	RES. 150, 1/4W, 10%	1300252	22
1	D120	DIODE D668	1102161	21
114	D1-D105, D109, D116-D119, D121, D122, D127, D128	DIODE D664	1100114	20
14	D106-D108, D110-D115, D123-D126, D129	DIODE D662	1100113	19
19	C21-C39	CAP. .01UF, 100V, 20% DISC	1001610	18
1	C13	CAP. 39UF, 10V, 10% S. TANT	1000076	17
7	C16-C20, C40, C41	CAP. 6.8UF, 35V, 20% S. TANT	1000067	16
1	C15	CAP. 330PF, 100V, 5% D.M.	1000023	15
12	C1-C12	CAP. 68PF, 100V, 5% D.M.	1000014	14
1	C14	CAP. 56PF, 100V, 5% D.M.	1000012	13
2		EYELET	9007827	12
2		TAB	9007112	11
1		KNOB CONTROL PANEL	1204747	10
2		NUT, NYLON #4-40	9007992	9
2		SCREW, NYLON #4-40 × 3/8 LG.	9006401-5	8
56		TERMINALS, SOLDERLESS	9007812	7
15		SWITCH, ROCKER R5-50-FB-PC	1205941	6
6		SWITCH, ROCKER R5-9-3-FB	1205375	5
1		ETCHED CIRCUIT BOARD	E-IA-5009056-0-0	4
REF		MODULE ECO HISTORY	B-MH-5409057-0-6	3
REF		CIRCUIT SCHEMATIC	E-CS-5409057-0-1	2
REF		X-Y COORDINATE HOLE	K-CO-5409057-0-4	1

IC PIN LOCATIONS

IC TYPE	GND	+5V
DEC 314	1	8
DEC 384	1	8
DEC 380	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

JUMPER LIST

ITEM NO	AWG	FROM PT	TO PT

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV COLUMN

PRINTED CIRCUIT BOARD REVISION

CIRCUIT SCH. REVISION

REVISIONS: 5409057-00002 ORIGINATED — REV. D; CHK

DRN. R. E. Hallen — DATE 1/11/71
CHK'D — DATE 1-12-71, 1-11-71
ENG. James R Provident — DATE 1-12-71
PROJ. ENG. — DATE 1/12/71
PROD. — DATE

FIRST USED ON D-UA-KC8-EA-Ø

SCALE 2/1 — SHEET 1 OF 1

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: PDP 8/E FRONT PNL CONT BOARD

SIZE	CODE	NUMBER	REV.
E	IA	5409057-0-0	F

DIST. G

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MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS MM8-E
MM8-E	MEMORY	X

USED ON OPTIONS
PDP8/E

REVISIONS REV.	DATE	CHG. NO.	APP'D.
A	2/71	00001	R.V.
B	5/71	G227-4	R.V.
C	7/71	MISC-86	A.V.
D	7/71	00002	AV.
E	7/71	00003	

DRN. K. GULICK	DATE 12/28/70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. GULICK	DATE 12/29/70	
ENG. VOGELSANG	DATE 1/12/71	TITLE MEMORY MM8-E
PROJ. ENG. VOGELSANG	DATE 1/12/71	
PROD. L. SAYLOR	DATE 1/13/71	
FIRST USED ON A-ML-PDP8/E-Ø		SIZE A · CODE ML · NUMBER MM8-E · REV. E
SCALE #		
SHEET 1 OF 2		DIST.

DRA 131

Dec 16-(325)-1048-N471

PRINT SET MM8-E	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	E-CS-G227-Ø-1	#	2	XY DRIVER	
X	B-CS-G619-Ø-1	#	2	STACK BOARD (G619)	
X	E-CS-G1Ø4-Ø-1	#	2	SENSE/INHIBIT	
X	D-UA-MM8-E-Ø		1	MEMORY MM8-E	
X	A-PL-MM8- E-Ø		1	MEMORY MM8-E	
X	A-SP-MM8-E-2		3	MANUFACTURING PROCEDURE	
X	E-BD-MM8-E-1		1	BLOCK DIAGRAM	
X	A-SP-7665139-0-0		4	ACCEPTANCE PROCEDURE	
—	LIBKIT-8E-KM8E	REF		PROGRAM LIBRARY KIT	

TITLE	MEMORY MM8-E	SHEET 2 OF 2	SIZE A · CODE ML · NUMBER MM8-E · REV. E

DRA 132

DEC 16-(325)-1048-1-N471

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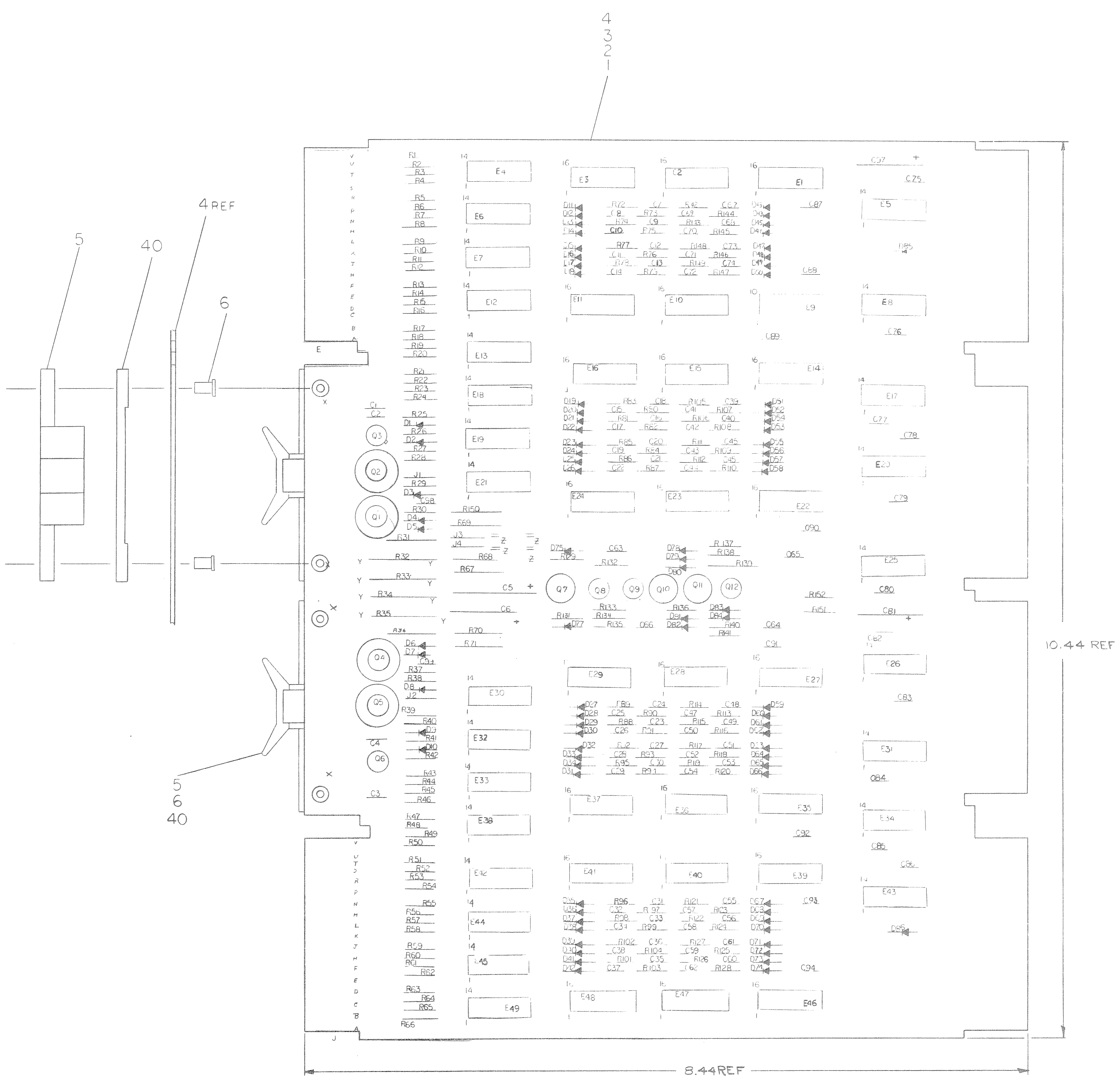
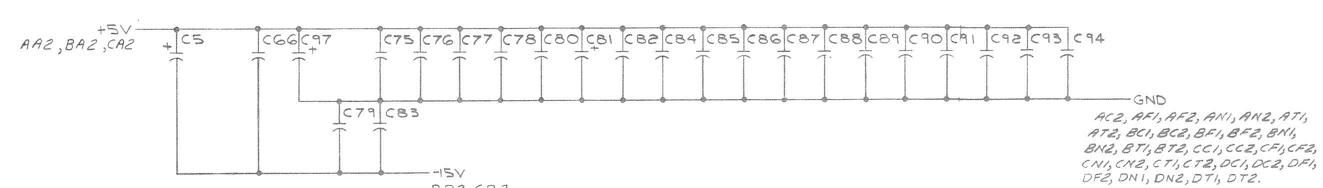
NOTES





PARTS LIST

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
16	R1, R3, R5, R7, R9, R12, R14, R15, R52, R54, R56, R58, R60, R61, R64, R66	RES. 180 1/4W 5%	1301322	47
20	R2, R4, R6, R8, R10, R11, R13, R16, R51, R53, R55, R57, R59, R62, R63, R65, R132, R137, R138, R141	RES. 330 1/4W 5%	1300295	46
66	C2, C3, C7-C62, C67-C74	CAP. 680 PF, 100V, 5% MICA	1000026	45
4		HEAT SINK	1210001	44
1	R140	RES 68 1/4W, 5%	1300219	43
1	R139	RES 470 1/2W, 5%	1300315	42
4	R25, R28, R39, R42	RES 680 1/4W, 5%	1301424	41
2		SPACER (CABLE CLAMP)	1202704	40
A/R		WIRE #22AWG STRD TEF. INS	0735055	39
8	E1, E9, E14, E22, E27, E35, E39, E46	I.C. DEC 8251	1909594	38
4	E5, E20, E26, E43	I.C. DEC 380	1909485	37
1	E25	I.C. DEC 74H11	1909267	36
4	E8, E17, E31, E34	I.C. DEC 74H10	1909057	35
16	E2, E3, E10, E11, E15, E16, E23, E24, E28, E29, E36, E37, E40, E41, E47, E48	PULSE TRANSFORMER	1609651	34
16	E4, E6, E7, E12, E13, E18, E19, E21, E30, E32, E33, E38, E42, E44, E45, E49	TRANSISTOR DEC4008	1510015	33
4	Q1, Q2, Q4, Q5	TRANSISTOR DEC 3762	1509649	32
2	Q3, Q6	TRANSISTOR DEC 4258	1505321	31
2	Q8, Q12	TRANSISTOR DEC 6534 B	1503409-01	30
1	Q9	TRANSISTOR DEC 3009B	1503100	29
3	Q7, Q10, Q11	TRANSISTOR DEC 1008	1502155	28
4	R32-R35	RES. 16.9, 6W, 1% BERYLLIUM	1310032	27
1	R67	RES. 34.8K, 1/8W, 1% MF	1303156	26
1	R68	RES. 14.7K, 1/8W, 1% MF	1302941	25
2	R134, R135	RES. 4.7K, 1/4W, 5%	1300447	24
4	R26, R27, R40, R41	RES. 3.9K, 1/4W, 5%	1300444	23
5	R29, R30, R37, R38, R131	RES. 1.5K, 1/4W, 5%	1300391	22
2	R31, R36	RES. 750, 1/2W, 5%	1300354	21
~~37~~	~~R1-R16, R51-R66, R132, R137, R138, R141~~	~~RES. 330, 1/4W, 5%~~	~~1300295~~	~~20~~
1	R151	RES. 220, 1/4W, 5%	1300271	19
81	R17-R24, R43-R50, R72-R99, R101-R129, R142-R149	RES. 150, 1/4W, 5%	1300250	18
3	R133, R136, R152	RES. 100, 1/4W, 5%	1300229	17
4	R69-R71, R150	RES. 10, 1/2W, 5%	1300168	16
9	D1-D3, D8-D10, D75, D77, D81	DIODE D672	1105275	15
76	D4-D7, D11-D74, D78-D80, D82-D86	DIODE D664	1100114	14
1	C5	CAP. 20UF, 50V, -10+75% ELECT	1002839	13
22	C64-C66, C75-C80, C82-C94,	CAP. .01UF, 100V, 20% DISC	1001610	12
3	C6, C81, C97	CAP. 39UF, 10V, 10% S.TANT	1000076	11
3	C63, C98, C99	CAP. .047UF, 16V, 10% DISC	1009678	10
~~2~~	~~C2, C3~~	~~CAP. 560PF, 100V, 5% D.M.~~	~~1000025~~	~~9~~
~~66~~	~~C2, C3, C7-C62, C67-C74~~	~~CAP. 680 PF, 100V, 5% DISC~~	~~1010812~~	~~8~~
2	C1, C4	CAP. 39PF, 100V, 5% D.M.	1000010	7
4		EYELET #G54-11 STIMPSON	9006750	6
2		HANDLE FLIP CHIP GREEN	908337-01	5
1		ETCHED CIRCUIT BOARD	5008832	4
REF		MODULE HISTORY LIST	B-MH-G227-Ø-6	3
REF		ASSY./DRILLING HOLE LAYOUT	E-AH-G227-Ø-5	2
REF		X-Y COORDINATE HOLE LOC	K-CO-G227-Ø-4	1

REV COLUMN: D — PRINTED CIRCUIT BOARD REVISION — CIRCUIT SCH. REVISION

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.
DEC 3762	—
DEC 4258	2N4258
DEC 6534B	MPS6534
DEC 3009B	2N 3646
DEC 1008	NONE
DEC D672	IN 3653
DEC D664	IN 3606

REVISIONS

REV	CHANGE NO				
B	ORIGINATED				
C	G227-00001+2			2/4/71	
D	G227-00003	K PIERCE	Vogelsang	3/30/71	
E	G227-00004	VOGELSANG	Vogelsang	5-12-71	4-9-71

IC PIN LOCATIONS

IC TYPE	GND	+5V
DEC380	1	8
DEC8251	8	16

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

JUMPER LIST

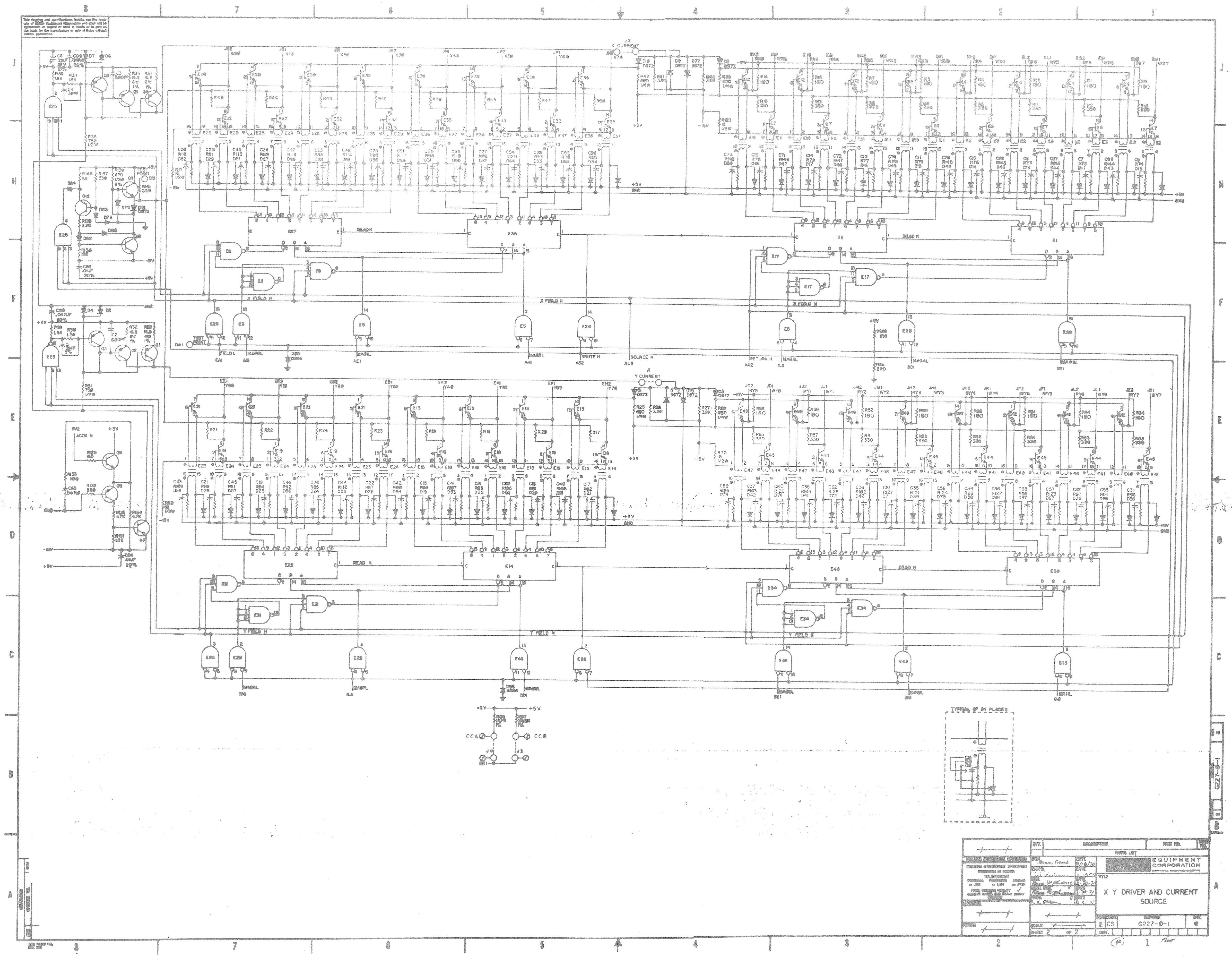
ITEM NO	AWG	FROM PT	TO PT
39	22	J4-A	J4-B
39	22	J3-A	J3-B
39	22	J2-A	J2-B
39	22	J1-A	J1-B

DRN. J Ferguson DATE 1-11-71
CHKD. DATE 1/11/71
ENG. Vogelsang DATE 1/12/71
PROJ. ENG. Vogelsang DATE 1/12/71
PROD. DATE 3-31-71
FIRST USED ON D-UA-MM8-E-Ø
SCALE 2/1
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
XY DRIVER & CURRENT SOURCE

SIZE E CODE CS NUMBER G227-Ø-1 REV. E
DIST. 324 434 435



X CURRENT
Y CURRENT
READ H
X FIELD H
Y FIELD H
SOURCE H
RETURN H
WRITE H
TEST POINT
TYPICAL OF 64 PLACES
CCA
CCB
PARTS LIST
QTY.
EQUIPMENT CORPORATION
TITLE
X Y DRIVER AND CURRENT SOURCE
E CS G227-Ø-1
SHEET 2 OF 2
DIST.

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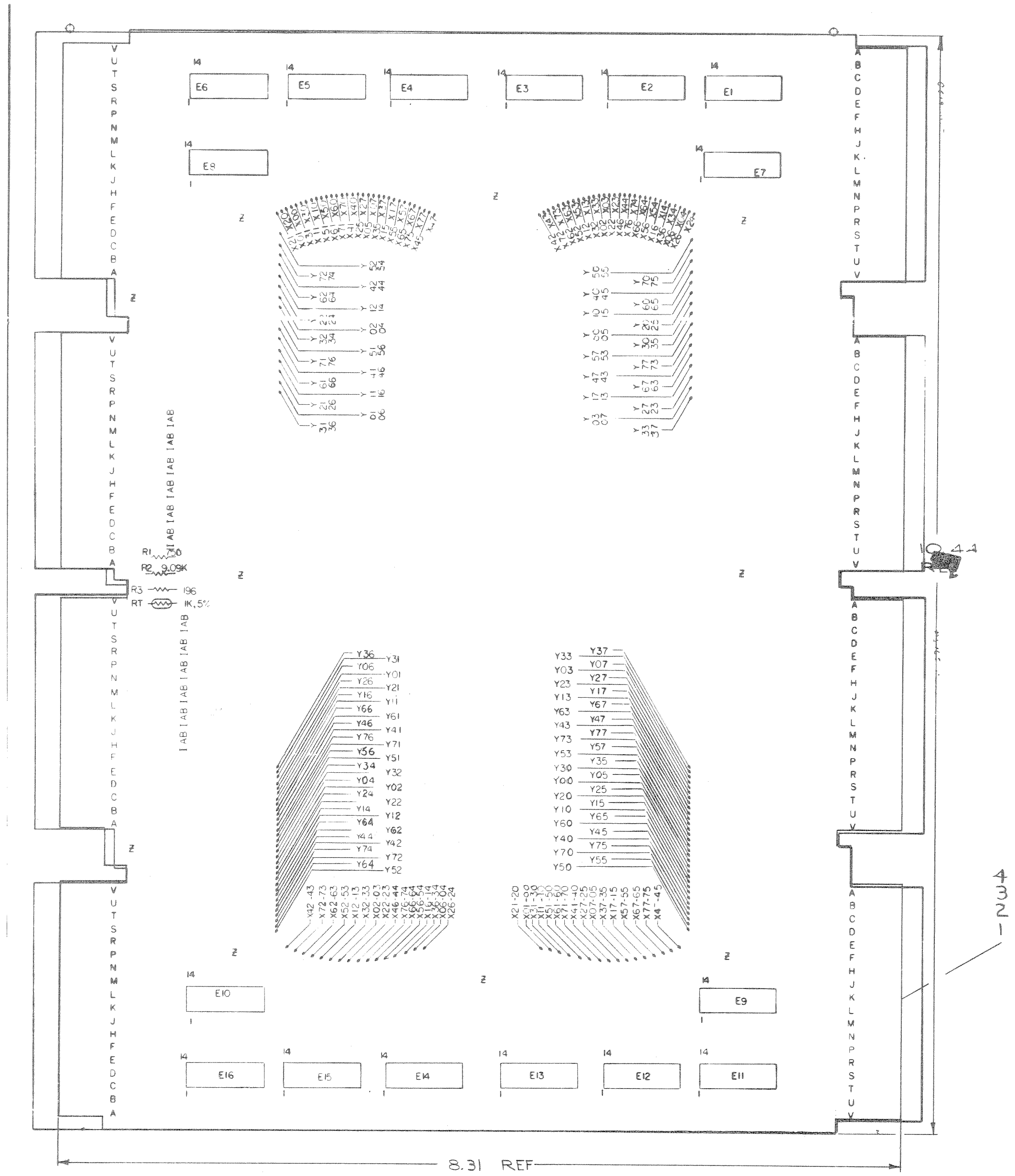

NOTES:

1. UNLESS OTHERWISE INDICATED:
   GND=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
2. DIODE ARRAYS WILL BE MOUNTED BY STACK VENDOR. DIODE ARRAYS ARE DEC25Ø1
3. THERMISTOR (RT) 1.ØK, 1% AT 25°C

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
16	E1-E16	I.C. DEC 2501	1910010	9
1	RT	RES. 1K THERMISTOR 1%	1310071	8
1	R2	RES. 9.09 1/8W 1% MF	1304885	7
1	R3	RES. 196 1/8W 1% MF	1302956	6
1	R1	RES. 750 1/8W 1% MF	1302955	5
1		ETCHED CIRCUIT BOARD	5009037	4
REF		MODULE HISTORY LIST	B-MH G619-Ø-6	3
REF		ASSY./DRILLING HOLE LAYOUT	E-AH-G619-Ø5	2
REF		X-Y COORDINATE HOLE LOC	K-CO-G619Ø4	1

PARTS LIST

IC TYPE	GND	+5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

REV COLUMN | PRINTED CIRCUIT BOARD REVISION | CIRCUIT SCH. REVISION

CHANGE NO. | REV. | CHK | REVISIONS

DEC NO. | EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. D Ferguson	DATE 1-4-71
CHK'D.	DATE 1-12-71 / 1-8-71
ENG.	DATE 1/12/71
PROJ. ENG.	DATE 1/12/71
PROD. R K	DATE 8-3

FIRST USED ON D-UA-H22Ø-Ø-Ø

SCALE 2/1

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

PLANAR STACK BOARD G619

SIZE	CODE	NUMBER	REV.
E	CS	G619-Ø-1	

DIST.

E CS G619-Ø-1

DEC FORM NO. DRE 100

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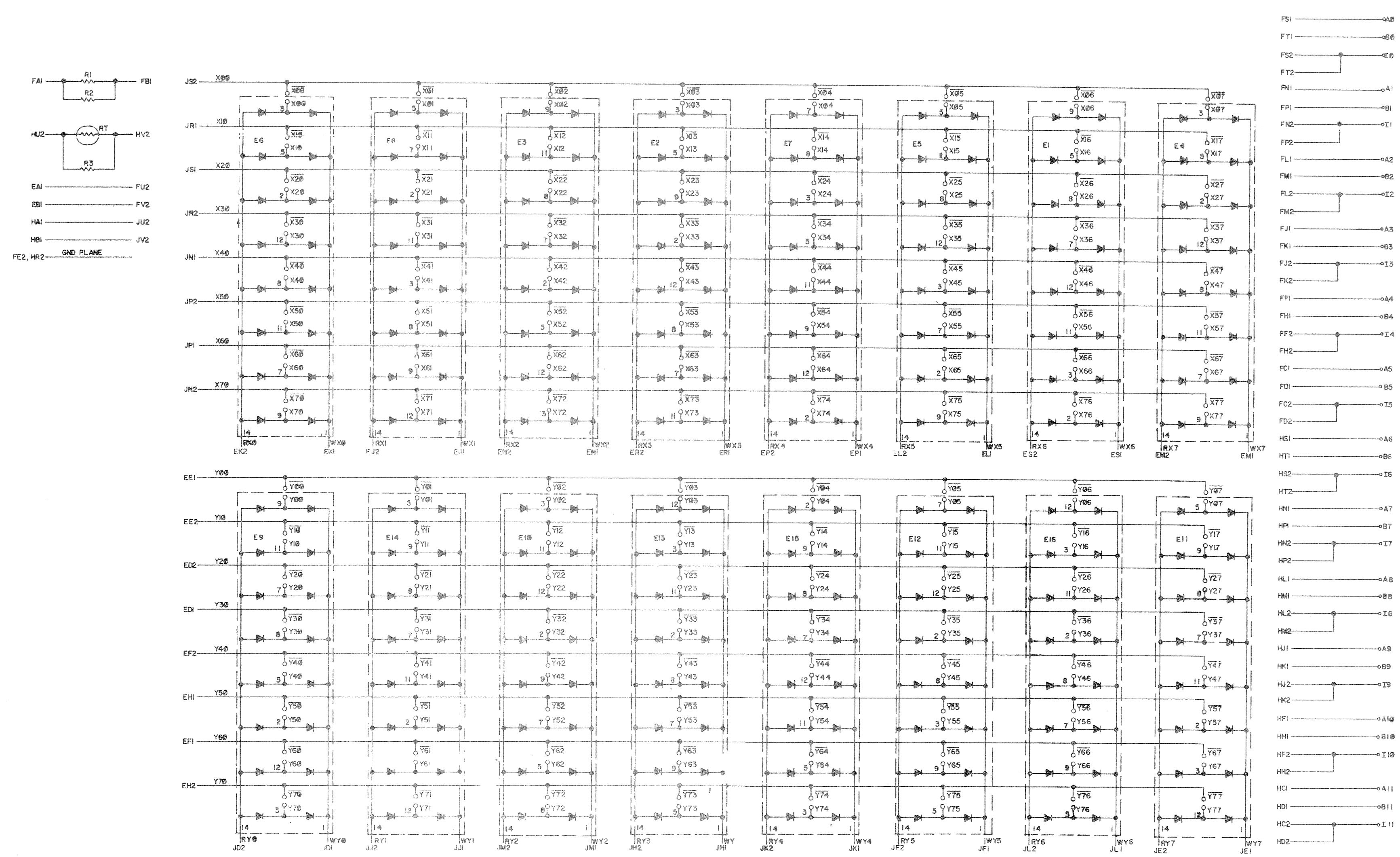

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. JEANNE FRENCH	DATE 7/13/70
CHK'D. R. VOGELSANG	DATE 7/28/70
ENG. R. VOGELSANG	DATE 7/28/70
PROJ. ENG.	DATE
PROD. R K Allen	DATE 8-31

SCALE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PLANAR STACK BOARD

SIZE	CODE	NUMBER	REV.
E	CS	G619-0-1	

DIST. A

DIST. 324, 434, 435

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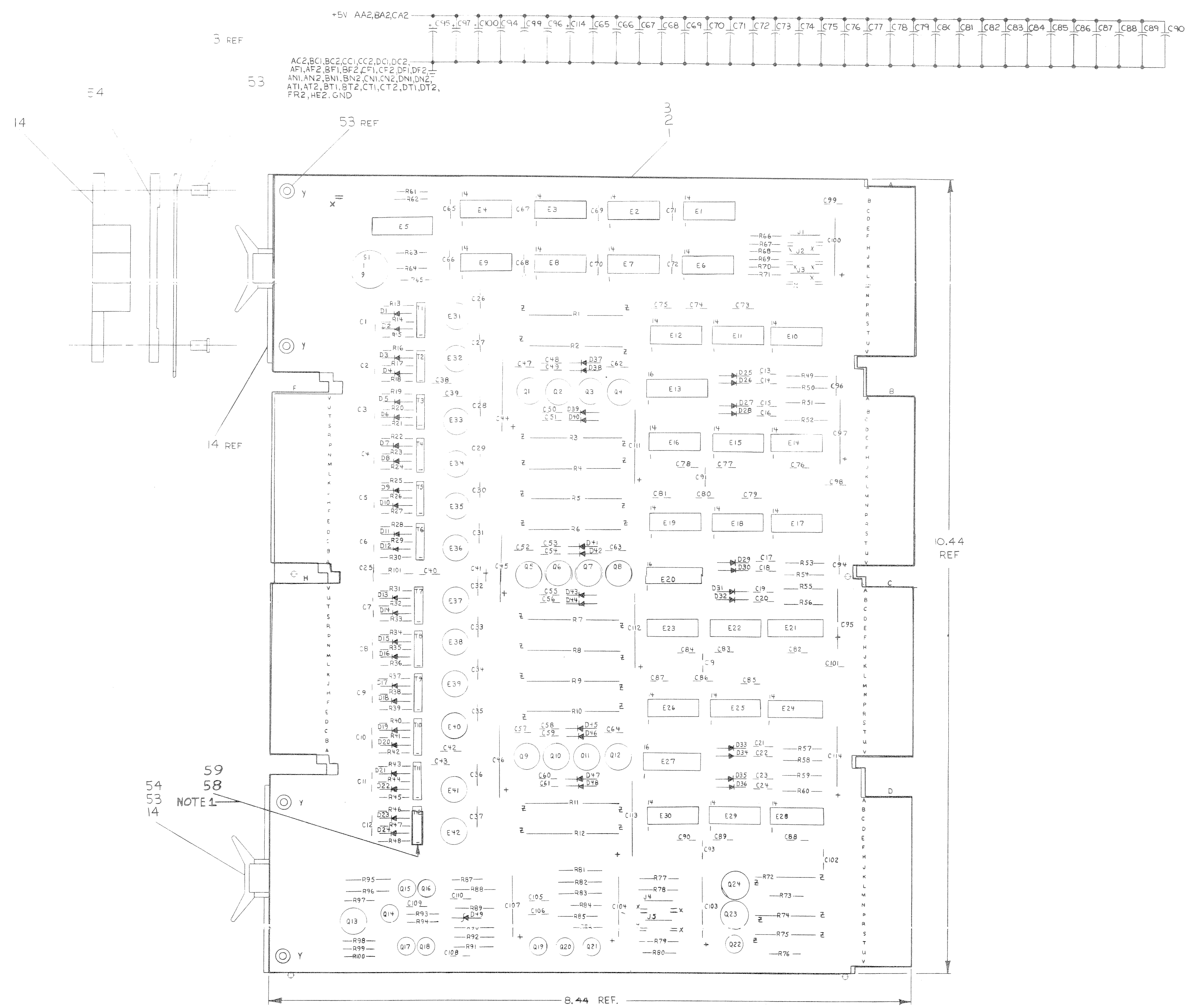

NOTES:

1. CUT CATERPILLER GROMMET (DEC 9007622) 7-1/8" LONG. ON ONE SIDE CUT TOOTH OUT 3-5/8" 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 17Z5 TRANSFORMERS WITH CUTOUT TOOTH OVER CAPACITOR C40.

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
11		SPLIT LUGS	9006735	61
1	R81	RES 2.74 1/8W 1% 100 MFP	1304868	60
A/R		SCOTCH GRIP ADHESIVE	9008907	59
A/R		CATERPILLER GROMMET	9007622	58
REF		ASSY/DRILLING HOLE LAYOUT	E-AH-G104-0-5	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 #GS4-11 E.B. STIMPSON	9006750	53
1	E6	I.C. DEC 7486	1910011	52
3	E10, E17, E24	I.C. DEC 8881	1909705	51
4	E1, E14, E21, E28	I.C. DEC 384	1909486	50
1	E2	I.C. DEC 380	1909485	49
2	E3, E8	I.C. DEC 74H11	1909267	48
1	E9	I.C. DEC 74H00N	1909056	47
6	E11, E15, E18, E22, E25, E29	I.C. DEC 74H40N	1905586	46
1	E7	I.C. DEC 7440N	1905579	45
6	E12, E16, E19, E23, E26, E30	I.C. DEC 7400N	1905575	44
1	E4	I.C. DEC 7474N	1905547	43
12	E31-E42	I.C. 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	1510062	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. 16.9, 6W, 1%	1309679	34
12	R49-R60	RES. 68, 1/2W, 5% CC	1309405	33
1	R89	RES. 68.1K, 1/8W, 1% 100 MFP	1305252	32
1	R88	RES. 5.62K, 1/8W, 1% 100 MFP	1305128	31
1	R91	RES. 348, 1/8W, 1% 100 MFP	1304858	30
2	R79, R95	RES. 4.64K, 1/8W, 1% 100 MFP	1304856	29
1	R77	RES. 9.09K, 1/8W, 1% 100 MFP	1304855	28
3	R65, R92, R85	RES. 1.96K, 1/8W, 1% 100 MFP	1304833	27
3	R82, R83, R96	RES. 1K, 1/8W, 1% 100 MFP	1303114	26
1	R78	RES. 1.21K, 1/8W, 1% 100 MFP	1302871	25
24	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
2	R64, 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. 68, 1W, 10% CC	1300222	16
1	S1	ROTARY SWITCH	1210043-0	15
2		HANDLE FLIP CHIP - GREEN	9008337-01	14
1	D49	DIODE 1/4M 6.8AZ1	1109991	13
36	D1-D24, D37-D48	DIODE D672	1105275	12
12	D25-D36	DIODE D664	1100114	11
32	C25-C43, C47, C52, C57, C62-C64, C91-C93, C98, C101, C102, C110	CAP. .047MFD 16V 20% DISC	1009678	10
33	C65-C90, C94, C96, C99, C105, C106, C108, C109	CAP. .01MFD 100V 20% DISC	1001610	9
6	C44-C46, C111-C113	CAP. 47MFD 20V 20% S. TANT	1000079	8
7	C95, C97, C100, C103, C104, C107, C114	CAP. 6.8MFD 35V 20% S. TANT	1000067	7
12	C48-C51, C53-C56, C58-C61	CAP. 1500PF 200V 10% DISC	1000054	6
12	C13-C24	CAP. 1000PF 100V 5% MICA	1000042	5
12	C1-C12	CAP. 33PF 100V 5% D. MICA	1000009	4
1		ETCHED CIRCUIT BOARD	5008847	3
REF		MODULE ECO HISTORY	B-MH-G104-0-6	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-G104-0-4	1

PARTS LIST

REV COLUMN: D — PRINTED CIRCUIT BOARD REVISION — CIRCUIT SCH. REVISION

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.
DEC 3734	SAME
DEC 3762	SAME
DEC 6534-B	MPS6534
DEC 2219-S	2N 2219
1/4 M 6.8AZ1	1N4099
D672	1N3653
D664	1N3606

IC PIN LOCATIONS

IC TYPE	GND	+5V
DEC 380	1	8
DEC 384	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

JUMPER LIST

ITEM NO	AWG	FROM PT	TO PT
55	22	J5-A	J5-B
↕	↕	J4-A	J4-B
↕	↕	J3-A	J3-B
↕	↕	J2-A	J2-B
55	22	J1-A	J1-B

REVISIONS: B — ORIGINATED — G104-00002 — R. VOGELSANG

DRN. DATE 1/4/71 — CHK'D DATE 1-12-71 — ENG. DATE 1/12/71 — PROJ. ENG. DATE 1/12/71 — PROD. DATE

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: SENSE INHIBIT

FIRST USED ON: D-UA-MM8-E-Ø

SIZE: E — CODE: CS — NUMBER: GIØ4-Ø-1 — REV.: E

SCALE 2/1 — SHEET 1 OF 2

DIST.

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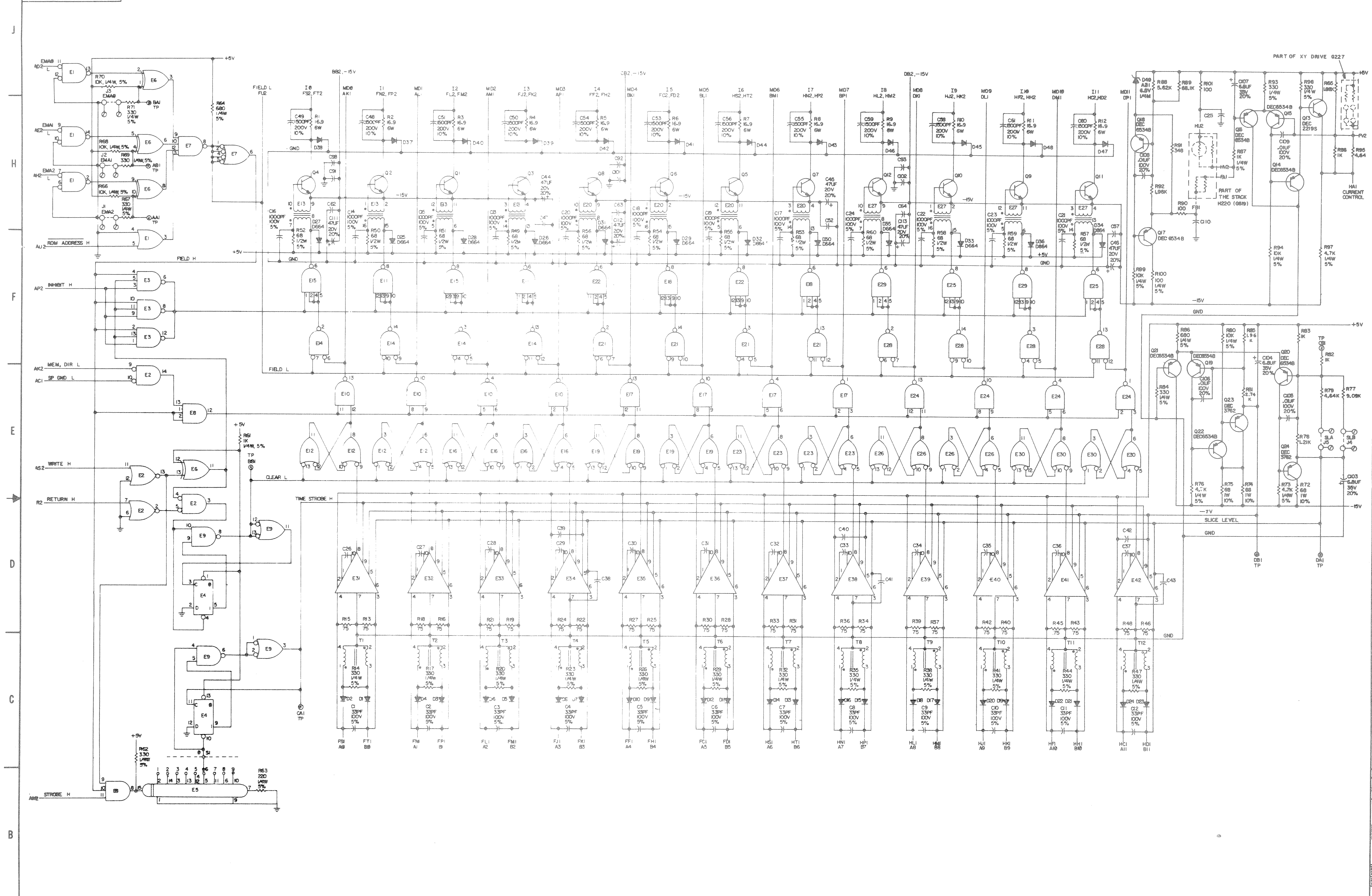


QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

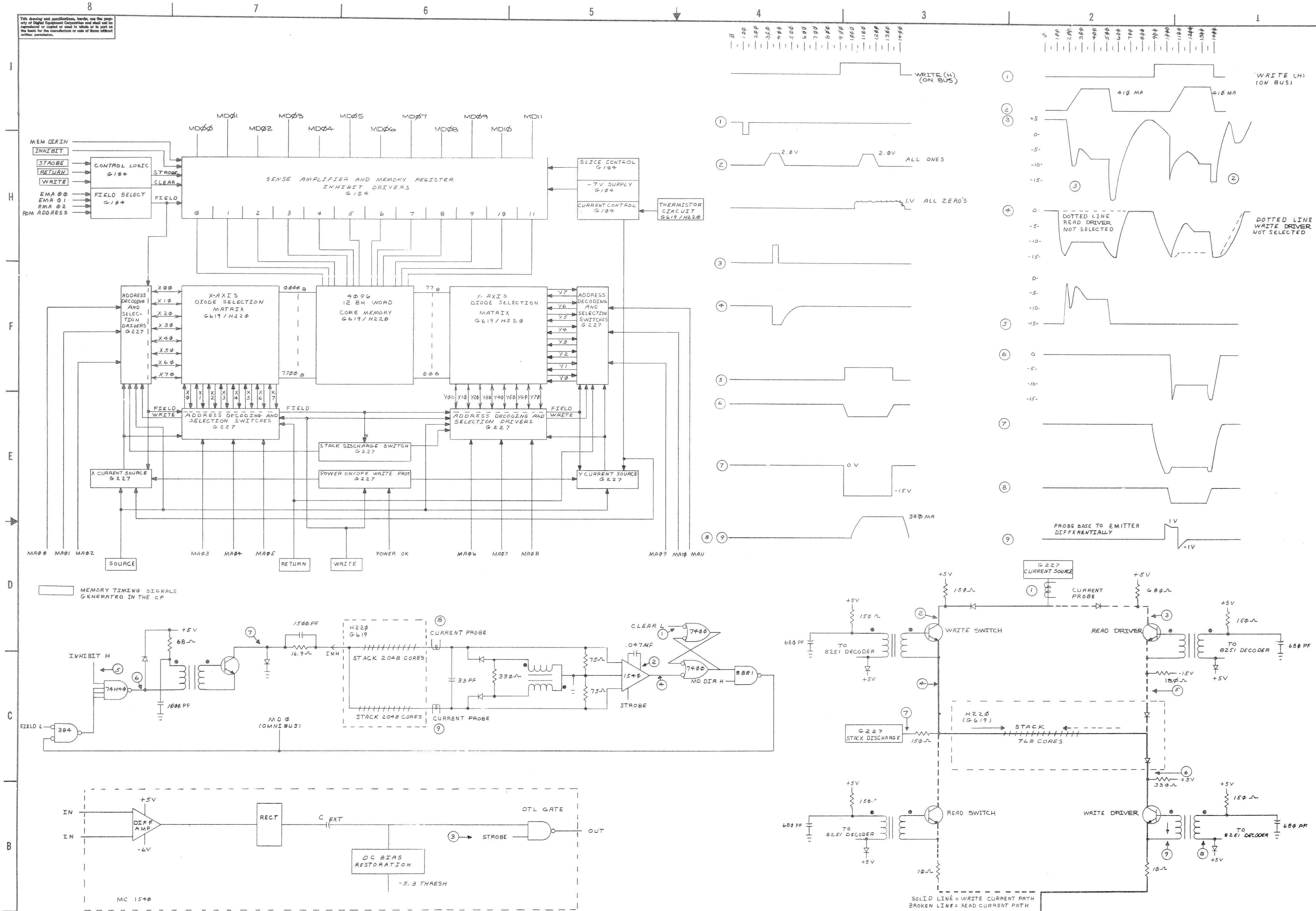
DRN. Mary Mosee DATE 9/29/70
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 8 5 71

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
SENSE INHIBIT

SIZE	CODE	NUMBER	REV.
E	CS	G104-0-1	E

SCALE
SHEET 2 OF 2
DIST. A B C D



SENSE AMPLIFIER AND MEMORY REGISTER
INHIBIT DRIVERS
G104
CONTROL LOGIC G104
FIELD SELECT G104
MEM DIR IN
INHIBIT
STROBE
RETURN
WRITE
EMA 00
EMA 01
EMA 02
FROM ADDRESS
SLICE CONTROL G104
-7V SUPPLY G104
CURRENT CONTROL G104
THERMISTOR CIRCUIT G619/H220
MD00 MD01 MD02 MD03 MD04 MD05 MD06 MD07 MD08 MD09 MD10 MD11
X-AXIS DIODE SELECTION MATRIX G619/H220
4096 12 BIT WORD CORE MEMORY G619/H220
Y-AXIS DIODE SELECTION MATRIX G619/H220
ADDRESS DECODING AND SELECTION DRIVERS G227
ADDRESS DECODING AND SELECTION SWITCHES G227
ADDRESS DECODING AND SELECTION DRIVERS G227
STACK DISCHARGE SWITCH G227
POWER ON/OFF WRITE PROT G227
X CURRENT SOURCE G227
Y CURRENT SOURCE G227
MA00 MA01 MA02 MA03 MA04 MA05 MA06 MA07 MA08 MA09 MA10 MA11
SOURCE
RETURN
WRITE
POWER OK
MEMORY TIMING SIGNALS GENERATED IN THE CP
WRITE (H) (ON BUS)
ALL ONES
ALL ZERO'S
DOTTED LINE READ DRIVER NOT SELECTED
DOTTED LINE WRITE DRIVER NOT SELECTED
PROBE BASE TO EMITTER DIFFERENTIALLY
INHIBIT H
FIELD L
CURRENT PROBE
STACK 2048 CORES
MD 0 (OMNI BUS)
CLEAR L
STROBE
MD DIR H
DIFF AMP
RECT
DC BIAS RESTORATION
-5.3 THRESH
DTL GATE
OUT
MC 1540
G227 CURRENT SOURCE
WRITE SWITCH
READ DRIVER
READ SWITCH
WRITE DRIVER
TO 8251 DECODER
G227 STACK DISCHARGE
H220 (G619)
STACK 768 CORES
SOLID LINE = WRITE CURRENT PATH
BROKEN LINE = READ CURRENT PATH

FIRST USED ON OPT/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM8-E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL
FINISH

DRN. / CHK'D. / ENG. / PROJ. ENG. / PROD. — DATE 7-7-71

NEXT HIGHER ASSY A-ML-MM8-E

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
BLOCK DIAGRAM
TIMING
MM8-E

SIZE E CODE BD NUMBER MM8-E-1 REV.

DIST.

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KK8-E
KK8-E	CENT. PROC.	X

USED ON OPTIONS
PDP8/E

REVISIONS REV.	DATE	CHG. NO.	APP'D.
A	1/71	KK8E-1	D.C.
B	3/71	KK8E-2	R.V.
C	4/71	KK8E-3	L.K.
D	5/71	M833-6	L.N.
E	7/71	MISC-86	A.V.

DRN. K. GULICK	DATE 12/28/70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. K. GULICK	DATE 12/29/70	
ENG. L. KLOTZ	DATE 1/12/71	TITLE
PROJ. ENG. VOGELSANG	DATE 1/12/71	CENTRAL PROCESSOR (KK8-E)
PROD. L. SAYLOR	DATE 1/13/71	
FIRST USED ON A-ML-PDP8/E-Ø		SIZE A / CODE ML / NUMBER KK8-E / REV. E
SCALE #		
SHEET 1 OF 2		DIST.

DRA 131

Dec 16-(325)-1048-N471

PRINT SET KIT	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	E-CS-M83ØØ-Ø-1	B	5	MAJOR REGISTERS	
X	E-CS-M831Ø-Ø-1	B	4	MAJOR REIGSTER CONTROL	
X	E-CS-M832Ø-Ø-1	A	2	BUS LOADS	
X	E-CS-M832-Ø-1	D	2	BUS LOADS	
X	E-CS-M833-Ø-1	F	2	TIMING GENERATOR	
X	B-CS-M849-Ø-1	C	1	RFI SHIELD	
X	D-UA-KK8-E-Ø	A	1	CENTRAL PROCESSOR	
X	A-PL-KK8-E-Ø	A	1	CENTRAL PROCESSOR	
-	A-SP-KK8-E-1		3	ENGINEERING SPECIFICATIONS	

TITLE		SHEET	SIZE	CODE	NUMBER	REV.
CENTRAL PROCESSOR KK8-E		SHEET 2 OF 2	A	ML	KK8-E	E

DRA 132

DEC 16-(325)-1048-1-N471

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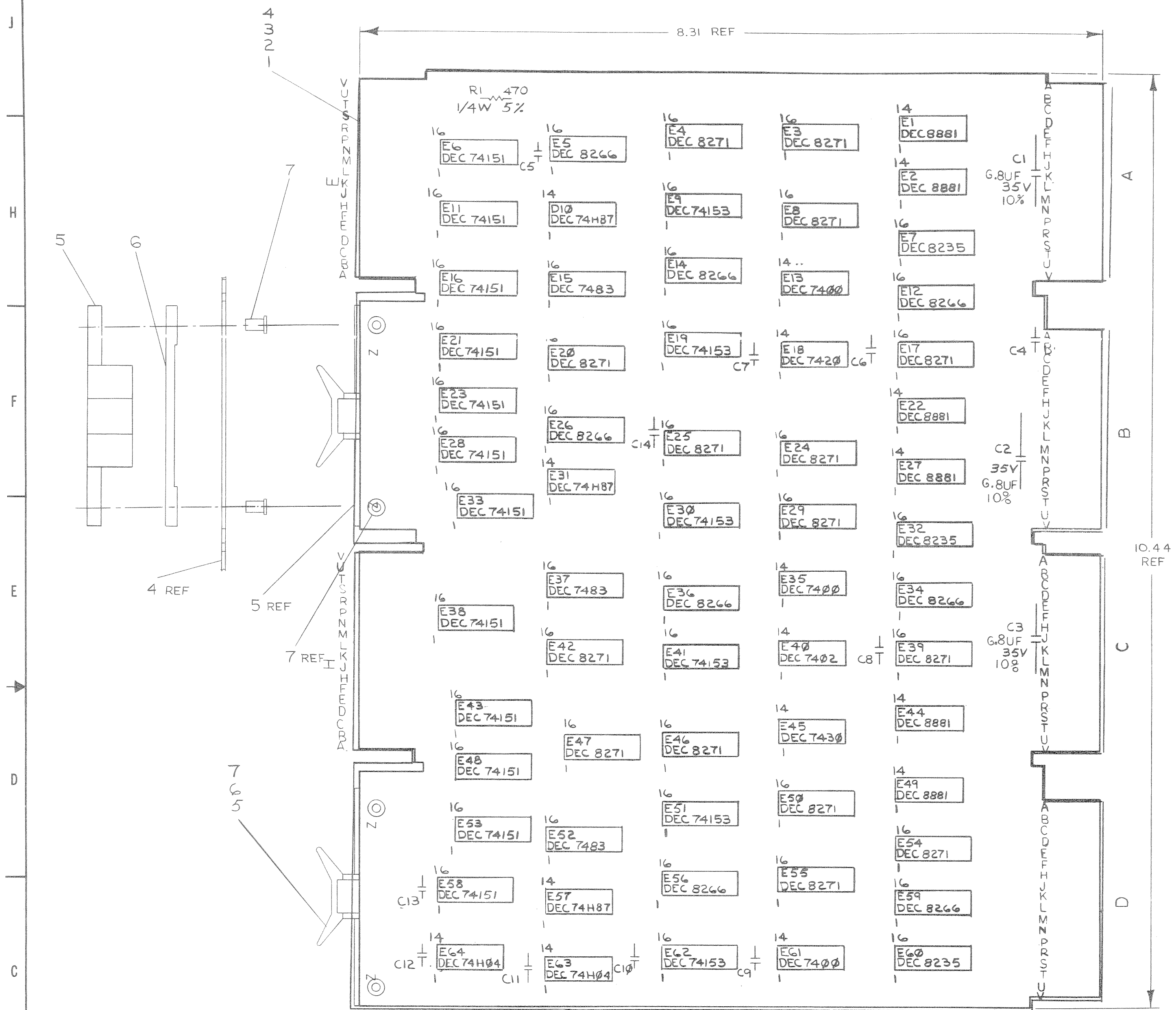
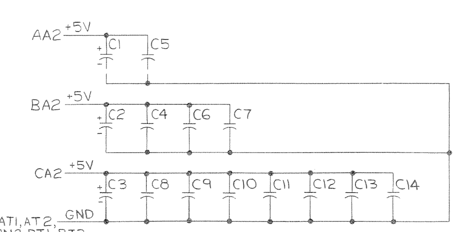
NOTES:





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 & DT2

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
A/R		WIRE #22 AWG SOLID	9107560-01	24
6	E9, E19, E30, E41, E51, E62	I.C. DEC 74153	1909937	23
12	E6, E11, E16, E21, E23, E28, E33, E38, E43, E48, E53, E58	I.C. DEC 74151	1909936	22
3	E7, E32, E60	I.C. DEC 8235	1909935	21
8	E5, E12, E14, E26, E34, E36, E56, E59	I.C. DEC 8266	1909934	20
3	E15, E37, E52	I.C. DEC 7483	1909932	19
2	E63, E64	I.C. DEC 74H04	1909931	18
3	E10, E31, E57	I.C. DEC 74H87	1909927	17
6	E1, E2, E22, E27, E44, E49	I.C. DEC 8881	1909705	16
15	E3, E4, E8, E17, E20, E24, E25, E29, E39, E42, E46, E47, E50, E54, E55	I.C. DEC 8271	1909615	15
1	E40	I.C. DEC 7402	1909004	14
1	E45	I.C. DEC 7430	1905578	13
1	E18	I.C. DEC 7420	1905577	12
3	E13, E35, E61	I.C. DEC 7400	1905575	11
1	R1	RESISTOR 470 1/4W 5%	1300316	10
11	C4 - C14	CAP. .01UF 100V 20% DISC	1001610	9
3	C1, C2, C3	CAP. 6.8UF 35V 20% S.TANT	1000067	8
4		EYELETS GS4-11 STIMPSON	9006750	7
2		SPACER (CABLE CLAMP)	1202704	6
2		HANDLE FLIP CHIP-MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	5009250	4
REF		MODULE HISTORY LIST	B-MH-M8300-0-6	3
REF		ASS'Y/DRILLING HOLE LAYOUT	D-AH-M8300-0-5	2
REF		X-Y COORDINATE HOLE LOC	K-CO-M8300-0-4	1

PARTS LIST

IC TYPE	GND	+5V
DEC 8235	8	16
DEC 7483	12	5
DEC 8271	8	16
DEC 8266	8	16
DEC 74153	8	16
DEC 74151	8	16

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

REV	CHANGE NO.	
A	M8300-00001	KLOTZ 2-5-71
B	M8300-0002	

REVISIONS

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV COLUMN: B

PRINTED CIRCUIT BOARD REVISION

CIRCUIT SCH. REVISION

DRN. R.E. Hellen — DATE 1/5/71
CHKD. — DATE 1-12-71, 1-8-71
ENG. Louis Klotz — DATE 1/12/71
PROJ. ENG. — DATE 1/12/71
PROD. — DATE
FIRST USED ON: D-UA-KK8-E-Ø

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

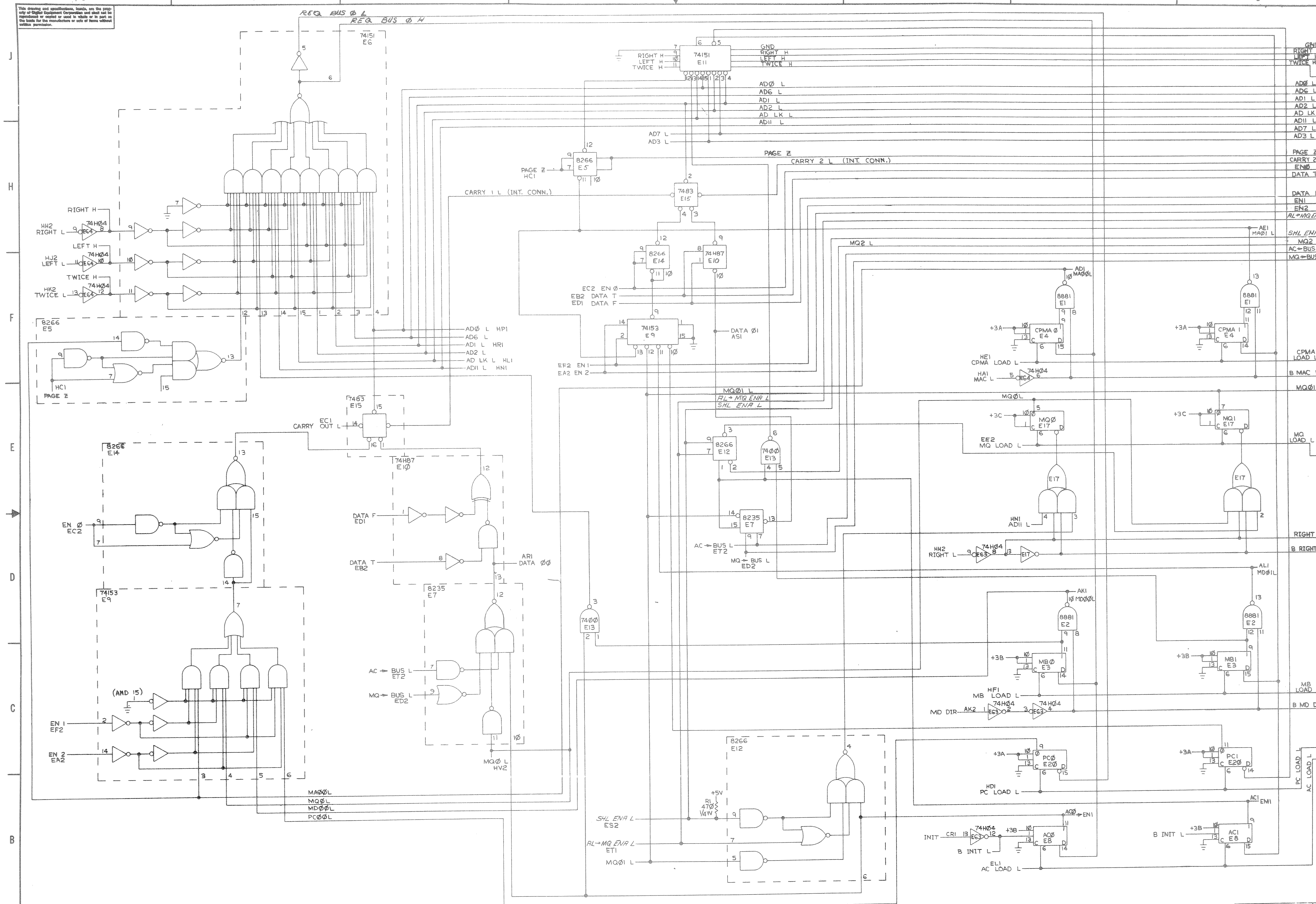
TITLE: MAJOR REGISTERS (KK8/E)

SIZE: E — CODE: CS — NUMBER: M83ØØ-Ø-1 — REV.: B

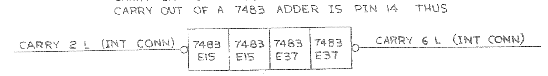
SCALE 2/1 — SHEET 1 OF 5

DIST.

DEC FORM NO. DRE 100

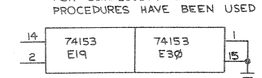


CARRY IN TO A 7483 ADDER IS PIN 13
CARRY OUT OF A 7483 ADDER IS PIN 14 THUS



DENOTES CONN. BETWEEN E37 PIN 14 & E15 PIN 13 WHILE CARRY 6 L IS INTERNAL TO E37 AND CARRY 2 L IS INTERNAL TO E15

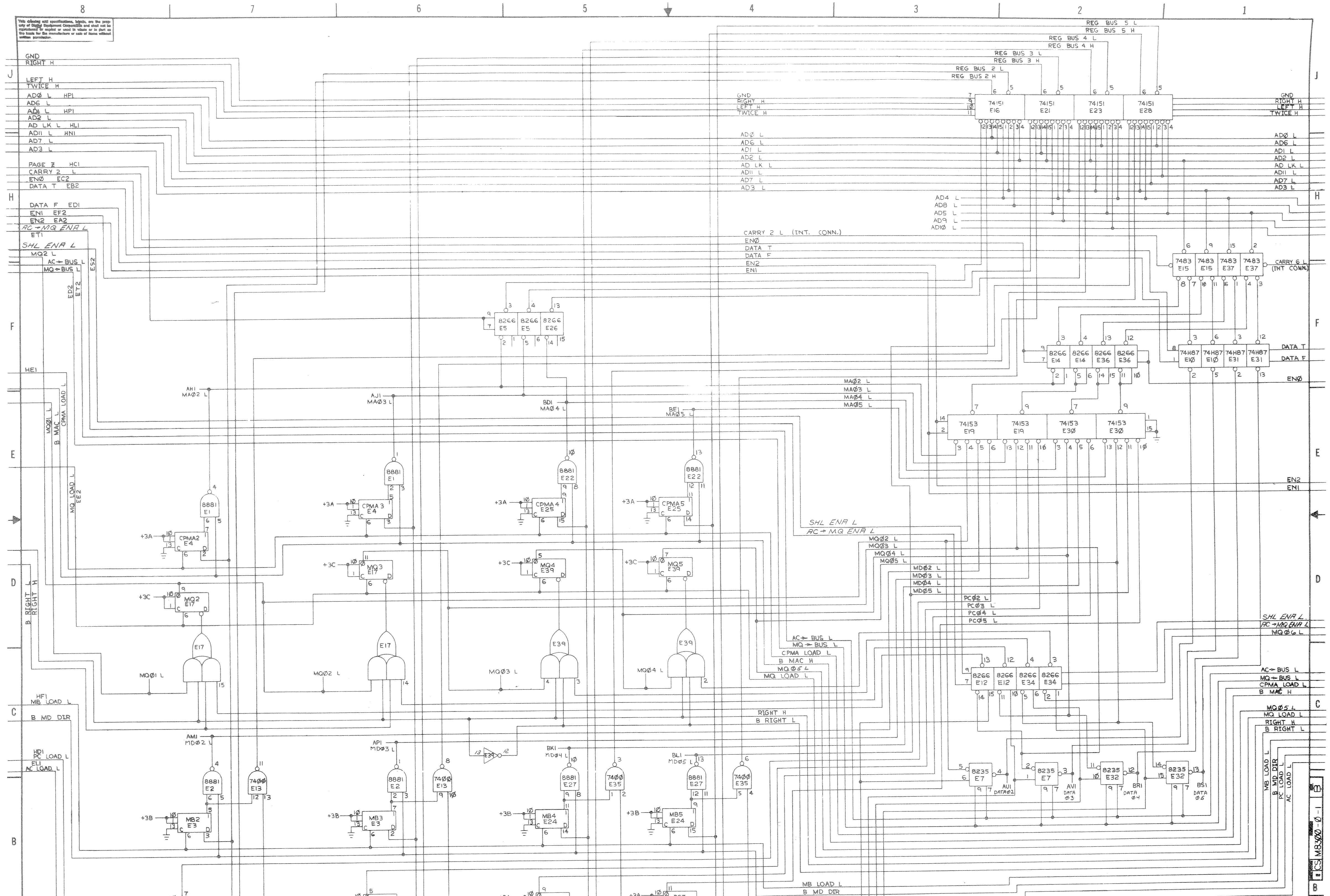
FOR SIMPLICITY OF DRAWING THE FOLLOWING PROCEDURES HAVE BEEN USED TO ELIMINATE LINES:



THIS DENOTES A CONNECTION BETWEEN E19 PIN 14 AND E3Ø PIN 14, E19 PIN 2 AND E3Ø PIN 2 (ALSO PINS 1 AND 15 ON EACH I.C.). THIS ALSO IS TRUE FOR OTHER CASES SUCH AS 8266, 74H87, AND 74151.

FIRST USED ON OPTION/MODEL	PDP 8/E
QTY. / DESCRIPTION / PART NO. / ITEM NO.	PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	
DRN / DATE	8/17/70
CHK'D / DATE	12-16-70
ENG. / DATE	12/17/70
PROJ. ENG. / DATE	12/17/70
PROD. / DATE	8-31-71
MATERIAL	—
FINISH	—
NEXT HIGHER ASSY	A-ML-KK8-E
SCALE	NONE
SHEET	2 OF 5
TITLE	MAJOR REGISTERS Ø & 1 PDP 8/E
SIZE	E
CODE	CS
NUMBER	M83ØØ-Ø-1
REV.	B

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS



FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

DR. DATE 8/31/70
CHK'D. DATE
ENG. DATE 12/17/70
PROJ. ENG. DATE 12/17/70
PROD. DATE 8-31-7
NEXT HIGHER ASSY

MATERIAL
FINISH
SCALE NONE
SHEET 3 OF 5

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MAJOR REGISTERS
2-5 PDP 8/E

SIZE E CODE CS NUMBER M8300-Ø-1 REV. B
DIST.

PINK - B

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GND
RIGHT H
LEFT H
TWICE H

AD Ø L HP1
AD 6 L
AD 1 L HR1
AD 2 L
AD LK L HL1
AD 11 L HN1
AD 7 L
AD 3 L
AD 4 L
AD 8 L
AD 5 L
AD 9 L
AD Ø L HM1

CARRY 6 L
(INT. CONN.)

DATA T
DATA F
ENØ

EB2
ED1
EC2

EN2
EN1

EF2

ES2
SHL ENA L
AC → MQ ENA L ET1

MQØ6 L

AC ← BUS L ET2
MQ ← BUS L ED2
CPMA LOAD L HE1
B MAC H

MQS L
MQ LOAD L EE2
RIGHT H
B RIGHT L
MB LOAD L
B MD DIR
PC LOAD L HD1
AC LOAD L EL1

B INIT L

BH1 MAØ6 L
BJ1 MA07 L
DD1 MAØ8 L

8881 E22
8881 E27
8881 E44
8881 E49

CPMA 6 E25
CPMA 7 E25
CPMA8 E46

MQ6 E40
MQ7 E39
MQ8 E54

MB6 E24
MB7 E24
MB8 E60

PC6 E42
PC7 E42
PC8 E47

AC6 E29
AC7 E29
AC8 E55

7400 E35
7400 E61

E39
E54

+3A
+3B
+3C

BPI MD07 L
DKJ MD08 L

REG BUS Ø L
REG BUS Ø H
REG BUS 7 L
REG BUS 7 H
REG BUS 6 L
REG BUS 6 H

74151 E33
74151 E38
74154 E43

SHL ENA L
AC → MQ ENA L
AC ← BUS L
MQ ← BUS L

CPMA LOAD L
B MAC H

MQ LOAD L
MQØ6 L
MQØ7 L
MQØ8 L

RIGHT H
B RIGHT L

MB LOAD L
B MD DIR

PC LOAD L

AC LOAD L

MDØ6 L
MDØ7 L
MDØ8 L

7483 E37
7483 E37
7483 E52

CARRY 9 L
(INT. CONN.)

8266 E36
8266 E36
8266 E56

74H87 E31
74H87 E31
74H87 E57

DATA T
DATA F
ENØ

MAØ6 L
MAØ7 L
MAØ8 L

74153 E41
74153 E41
74153 E51

EN2
EN1

MQØ6 L
MDØ6 L
MDØ7 L
MDØ8 L
PCØ6 L
PCØ7 L
PCØ8 L
MQØ7 L
MQØ8 L

SHL ENA L
AC → MQ ENA L
MQØ9 L

8266 E34
8266 E34
8266 E59

AC ← BUS L
MQ ← BUS L
CPMA LOAD L
B MAC H

MQ LOAD L
MQØ8 L
RIGHT H
B RIGHT L
MB LOAD L
B MD DIR
PC LOAD L
AC LOAD L

8235 E32
8235 E32
8235 E60

BU1 DATA Ø6 L
BV1 DATA Ø7 L
DR1 DATA Ø8 L

FIRST USED ON OPTION MODEL	PDP 8/E
UNLESS OTHERWISE SPECIFIED	
UNLESS OTHERWISE SPECIFIED	DIMENSION IN INCHES
TOLERANCES	DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'
	FINAL SURFACE QUALITY √ REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL	
FINISH	

QTY. | DESCRIPTION | PART NO. | REV.

PARTS LIST

DRN		DATE 1/4/70
CHK'D		DATE 12/21/70
ENGR		DATE 12/21/70
ENGR ENG		DATE 12/21/70
PROD		DATE
NEXT HIGHER ASSY		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

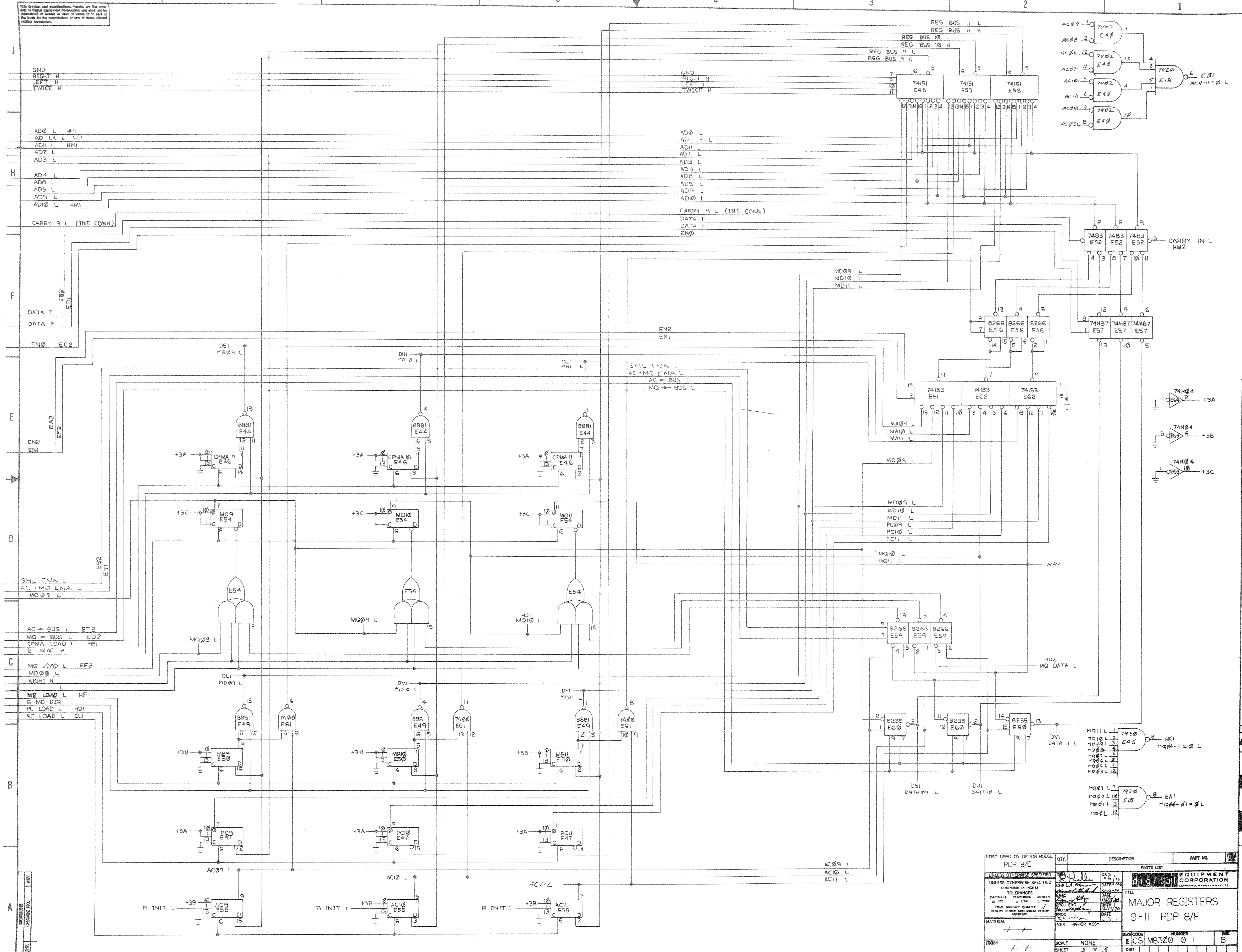
TITLE: MAJOR REGISTERS 6-8 PDP 8/E

SIZE E | CODE CS | NUMBER M8300-0-1 | REV. B

SCALE NONE | SHEET 1 OF 5 | DIST

REVISIONS	ENG.	CHANGE NO.	CHK.

DEC FORM NO. D9C 16A


REG BUS 11 L
REG BUS 11 H
REG BUS 10 L
REG BUS 10 H
REG BUS 9 L
REG BUS 9 H
GND
RIGHT H
LEFT H
TWICE H
74151 E48
74151 E53
74151 E58
AD0 L HP1
AD LK L HL1
AD11 L HN1
AD7 L
AD3 L
AD4 L
AD8 L
AD5 L
AD9 L
AD10 L HM1
CARRY 9 L (INT. CONN.)
DATA T
DATA F
EN0 EC2
EN2
EN1
7483 E52
CARRY IN L HM2
MD09 L
MD10 L
MD11 L
8266 E56
74H87 E57
74153 E51
74153 E62
74153 E62
MA09 L
MA10 L
MA11 L
MQ09 L
PC09 L
PC10 L
PC11 L
MQ10 L
MQ11 L
HH1
74H04
+3A
+3B
+3C
8881 E44
CPMA 9 E46
CPMA 10 E46
CPMA 11 E46
MQ9 E54
MQ10 E54
MQ11 E54
E54
SHL ENA L
AC→MQ ENA L
AC←BUS L ET2
MQ←BUS L ED2
CPMA LOAD L HE1
B MAC H
MQ LOAD L EE2
MQ08 L
RIGHT H
MB LOAD L HF1
B MD DIR
PC LOAD L HD1
AC LOAD L EL1
8266 E59
HU2 MQ DATA L
8235 E60
DV1 DATA 11 L
DS1 DATA 09 L
DU1 DATA 10 L
7430 E45
HK1 MQ04-11=0 L
7420 E18
EA1 MQ00-03=0 L
EB1 AC4-11=0 L
7402 E40
8881 E49
7400 E61
MB9 E50
MB10 E50
MB11 E50
PC9 E47
PC10 E47
PC11 E47
AC09 L
AC10 L
AC11 L
B INIT L
AC9 E55
AC10 E55
AC11 E55

FIRST USED ON OPTION MODEL	PDP 8/E
QTY. / DESCRIPTION / PART NO.	PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY ✓; REMOVE BURRS AND BREAK SHARP CORNERS
DRN / DATE	9/9/70
CHK'D / DATE	12-16-70
ENG / DATE	12/17/70
PROJ. ENG. / DATE	12/17/70
PROD. / DATE	8 31 71
MATERIAL	—
FINISH	—
NEXT HIGHER ASSY	
SCALE	NONE
SHEET	5 OF 5

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MAJOR REGISTERS 9-11 PDP 8/E

SIZE	CODE	NUMBER	REV.
E	CS	M8300-0-1	B

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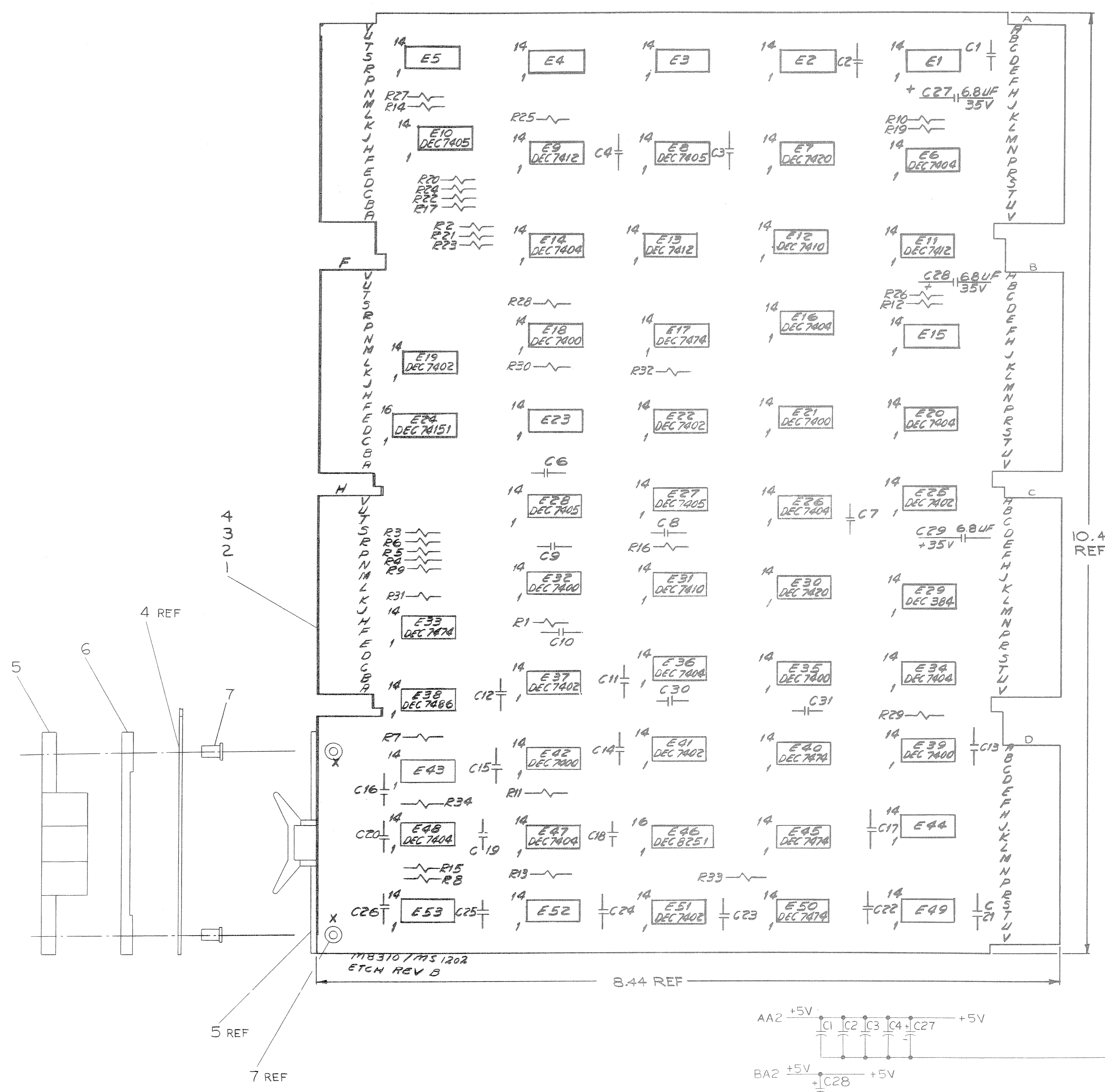
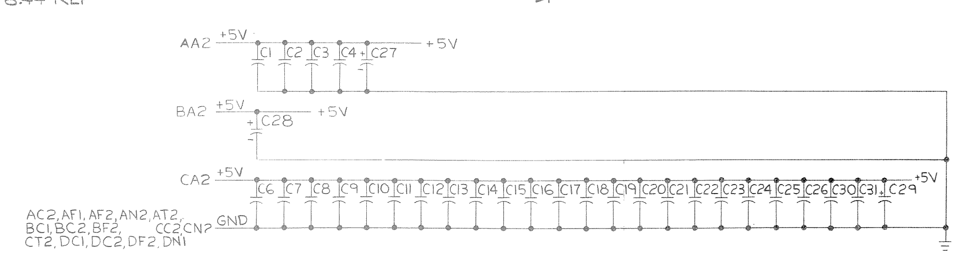
NOTES:





QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E38	I.C. DEC 7486	1910011	23
3	E9, E11, E13	I.C. DEC 7412	1909955	22
1	E24	I.C. DEC 74151	1909936	21
4	E8, E10, E27, E28	I.C. DEC 7405	1909930	20
12	E1-E5, E23, E43, E44, E49, E52, E53, E15	I.C. DEC 8881	1909705	19
9	E6, E14, E16, E20, E26, E34, E36, E47, E48	I.C. DEC 7404	1909686	18
1	E46	I.C. DEC 8251	1909594	17
1	E29	I.C. DEC 384	1909486	16
6	E19, E22, E25, E37, E41, E51	I.C. DEC 7402	1909004	15
2	E7, E30	I.C. DEC 7420	1905577	14
2	E12, E31	I.C. DEC 7410	1905576	13
6	E18, E21, E32, E35, E39, E42	I.C. DEC 7400	1905575	12
5	E17, E33, E40, E45, E50	I.C. DEC 7474	1905547	11
33	R1-R17, R19-R34	RES. 470, 1/4W, 5%	1300316	10
27	C1-C4, C6-C26, C30, C31	CAP. .01UF, 100V, 20% DISC	1001610	9
3	C27-C29	CAP. 6.8UF, 35V, 20% S.TANT	1000067	8
2		EYELETS GS4-11 STIMPSON	9006750	7
1		SPACER (CABLE CLAMP)	1202704	6
1		HANDLE, FLIP CHIP - MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	5009278	4
REF		MODULE ECO HISTORY	B-MH-M831Ø-Ø-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M831Ø-Ø-5	2
REF		X-Y COORDINATE HOLE LOC.	K-CO-M831Ø-Ø-4	1

PARTS LIST

IC TYPE	GND	+5V
DEC 74151	8	16
DEC 8251	8	16
DEC 384	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

REV	CHANGE NO.			
A	M8310-00001	LOUIS KLOTZ 3-5-71		2-4-71
B	M8310-00002	LOUIS KLOTZ 3-5-71	2/8/71	

REVISIONS

REV COLUMN

PRINTED CIRCUIT BOARD REVISION

CIRCUIT SCH. REVISION

DEC NO. | EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. R. E. Hiller DATE 1/5/71
CHKD. DATE 1-6-71
ENG. Louis Klotz DATE 1/12/71
PROJ. ENG. DATE 1/12/71
PROD. Leroy Saylor DATE 3/17/71

FIRST USED ON D-UA-KK8-E-Ø

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE MAJOR REG. CONT. (M831Ø)

SIZE E CODE CS NUMBER M831Ø-Ø-1 REV.

SCALE 2/1 SHEET 1 OF 4

DIST. 324 434 435

4 1 PINK

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+5V 470Ω RUN BV2 8881 E15 100Ω .01MFD E-6

LINK L AV2 R25 +5V LINK +5V R31 +3VA

8881 E43 8881 E4 7474 E33 7400 E32 7404 E34 R7 +5V CR1 INITIALIZE BTP3 R1 +5V CR2 LINK DATA L 7400 E42 7450 E39 7420 E30 TAD·E L OPI L LINK LOAD L

7415I E24 +5V R3 ADLK L FJI E HLI RIGHT L FCI E HJ2 LEFT L FDI E HJ2 TWICE L HK2 AD0 L HM1 AD11 L HN1 AD1 L HR1 AD0 L FHI, HP1

8881 E23 7404 E14 7486 E38 7400 E32 FMP & FCI CAR OUT L OVFLOW L BJ2 8881 E52 BTS3 OV H +3VA 7474 E33 +3V BTP2 IOT L

+5V R9 FEI ADLK DIS L TO EAE 7402 E37 7402 E37

PAGE 2 MC1 7404 E34 +5V R4 R5 R6 7405 E28 7400 E32 7400 E18 7420 E7 7412 E12 F SET L BMD10 BMD9 BMD8

+5V R8 8881 E15 8881 E53 HD1 PC LOAD L 7404 E28 +5V R2 7412 E13 FR2 & EE2 MQ LOAD L +5V R11 HE1 CPMA LOAD L 7405 E27 8881 E52 MB LOAD L HF1 7404 E48 DR2 PULSE LA BUS STROBE HD4 L

TP4 CJ2 7474 E17 CPMA DIS L CUI MAC L HA1 +3V +5V R12 AC LOAD L FK2 & EL1 8881 E15 7420 E7 +5V R14 +5V R15 7405 E27 7402 E22 CSI SKIP L 8881 E52 8881 E4 8881 E5 8881 E43 7486 E38 8881 E3 7400 E12 BTP3 7474 E17 +3B 7405 E28 8881 E52 8881 E53

C2 L SKIP (L) MD4 L BTS4 BTP2 OV H INIT LINK TAD·E L BTP3 BTS3 BF OPI·TS3 FE+FD L JMP TP1 JMS·E CPMA LOAD L OPE TP4·MALC BMD7 BMD5 BMD6 MD7 L MD5 L BF+KC

AND·E L DCA·E L ISZ·E·TS3 OPR+IOT OPE·TS3 OPR+IOT L OPR+F L AC=Ø ACØ BMS DIS TS4·F SET·MS DIS D·JMP TAD·E·TS3 ISZ·E·TS2 DCA·E·TS2 JMS·E·TS3 JMS·E·TS2 BTS2 BD KC OPR·F BMD11 OP2·TS3 OPI·TS3 OPI L BF+KC AND·E·TS3 MD8L

REVISIONS: REV | CHANGE NO. | DATE

FIRST USED ON OPTION MODEL: PDP 8/E

ITEM NO.	QTY.	DESCRIPTION	PART NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: FRACTIONS ± 1/64, ANGLES ± 1°30', FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: NEXT HIGHER ASSY A-ML-KK8-E

FINISH

GRP 5 DATE 7/21/70; CHK'D DATE; ENG DATE; PROD DATE

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

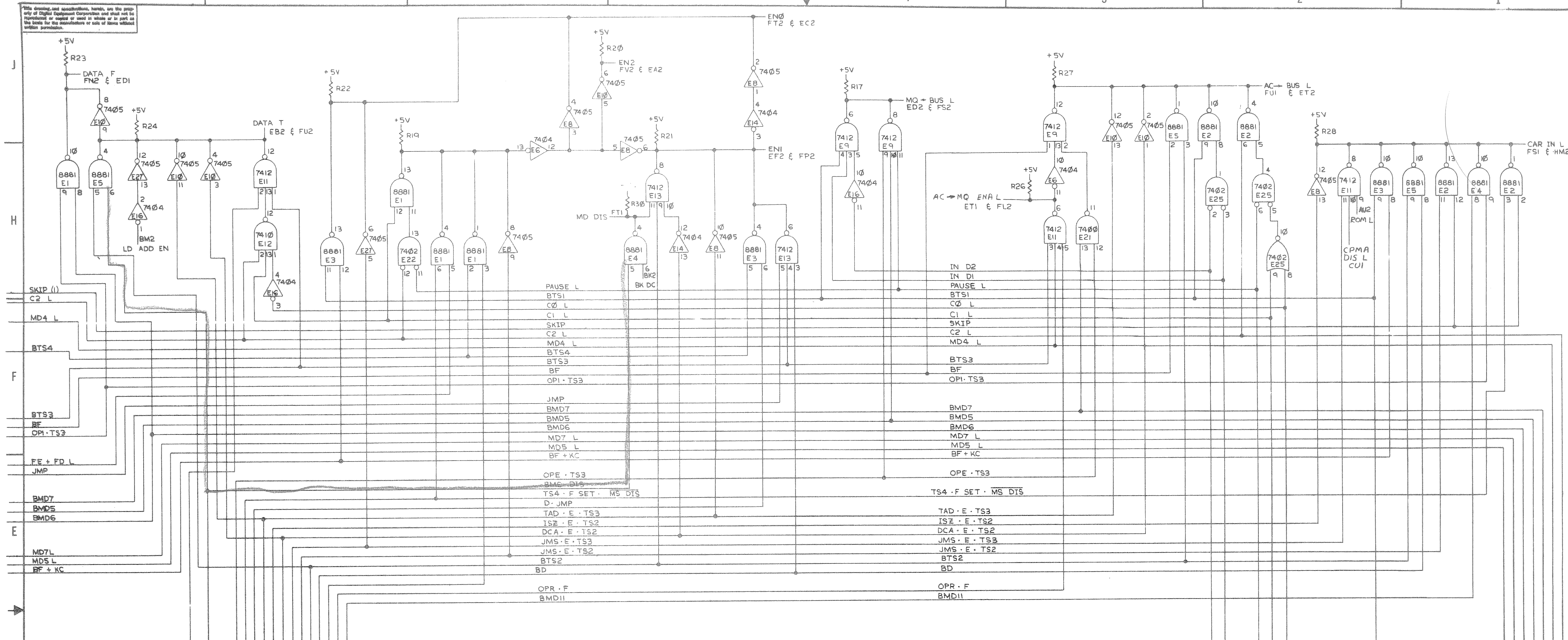
TITLE: VR310 MAJOR REG. CONT.

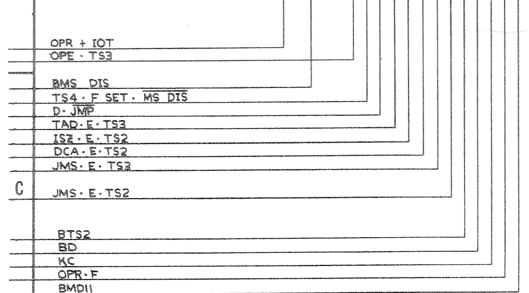
SCALE NONE; SHEET 2 OF 4

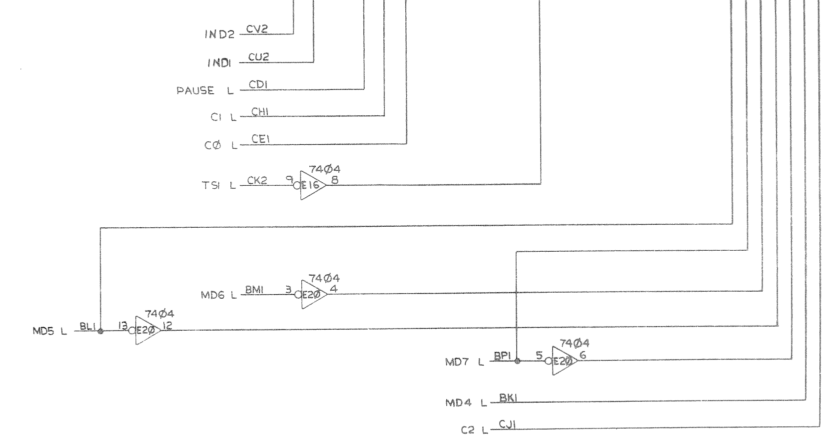
SIZE CODE: E; NUMBER: CS M8310-0-1; REV

DIST

DEC FORM NO. DRE 1120







SIGNALS TO BACK CONNECTORS

PIN	TO MAJOR REGISTER	TO EAE CONTROL	PIN
HV2	MQØ L	MQØ L	FA2
EB1	AC4-11 = Ø L	AC4-11 = Ø L	FP1
ET1	AC→MQ ENA	AC→MQ ENA	FL2
HU2	MQ DATA L	MQ DATA L	FB2
ES2	SHL+LD ENA	SHL+LD ENA	FV1
ED2	MQ→BUS L	MQ→BUS L	FS2
ET2	AC→BUS L	AC→BUS L	FU1
EE2	MQ LOAD L	MQ LOAD L	FR2
EL1	AC LOAD L	AC LOAD L	FK2
HH1	MQ11 L	MQ11 L	FB1
HJ1	MQ1Ø L	MQ1Q L	FA1
ED1	DATA F	DATA F	FN2
EB2	DATA T	DATA T	FU2
EA2	EN2	EN2	FV2
EF2	EN1	EN1	FP2
HL1	AD LK L	AD LK L	FJ1
HP1	AD Ø L	AD Ø L	FH1
EC2	ENØ	ENØ	FT2
EN1	ACØ	ACØ	FH2
EM1	AC1	AC1	FJ2
HH2	RIGHT L	RIGHT L	FC1
HJ2	LEFT L	LEFT L	FD1
EC1	CAR. OUT L	CAR. OUT L	FM2
HM2	CAR. IN L	CAR. IN L	FS1
HK2	TWICE L	AC = Ø	FN1
HC1	PAGE Z	EOP	FE1
HN1	AD11 L	F E SET	FM1
HM1	AD1Ø L	MQ = Ø	FE2
HR1	AD1 L	ACØ = AC1	FF1
HD1	PC LOAD L	F D SET L	FL1
HE1	CPMA LOAD L		
HF1	MB LOAD L	MD DIS	FT1
EP1	AC2	AC2 · AC3 = Ø	FF2
ER1	AC3		
EA1	MQ8-11 = ØL		
HK1	MQØ-7 = ØL		
HA1	MAC L		

RIGHT L	LEFT L	TWICE L	PAGE Z	DATA TO REGISTER	USE
L	L	L	L	MA→Ø-4 MO→5-11	PAGE ADDRESSING
L	L	H	L	MBX ∧ ACX	AND
L	H	L	L	ADDER (X-2)	RTR
L	H	H	L	ADDER (X-1)	RAR
H	L	L	L	ADDER (X+2)	RTL
H	L	H	L	ADDER (X+1)	RAL
H	H	L	L	ADDER (X+6)	BYTE SWAP
H	H	H	L	ADDER X	NO SHIFT
X	X	X	H	Ø→Ø→4 SELECT→5→11	DIRECT/INDIRECT

ENØ	EN1	EN2	INPUT TO ADDER
L	L	L	PC
L	L	H	MD
L	H	L	MQ
L	H	H	MA
H	X	X	H(ARITHMETIC ZERO)

DATA T	DATA F	INPUT TO ADDER
L	L	DATA BUS NOT
L	H	DATA BUS
H	L	H(ARITHMETIC ZERO)
H	H	L(ARITHMETIC ONE)

BIT X OF THE REGISTER SELECTED HERE → IS ADDED TO → BIT X OF THE DATA BUS AS SELECTED HERE AND THE SUM (ADDER X) IS FED TO A MULTIPLEXER TO BE DECODED AS ABOVE. THE OUTPUT OF THIS MULTIPLEXER IS LOADED INTO WHICH EVER REGISTER IS CLOCKED.

SHL ENA L	AC→MQ ENA L	DATA → MQ
L	L	MQX +1 Ø-1Ø MQ DATA → MQ11
L	H	MQX +1 Ø-1Ø MQ DATA → MQ11
H	L	AC (IN COMPLEMENT TO REDEFINE)
H	H	1 (Ø → MQ)

FIRST USED ON OPTION MODEL: PDP 8/E

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —
FINISH —

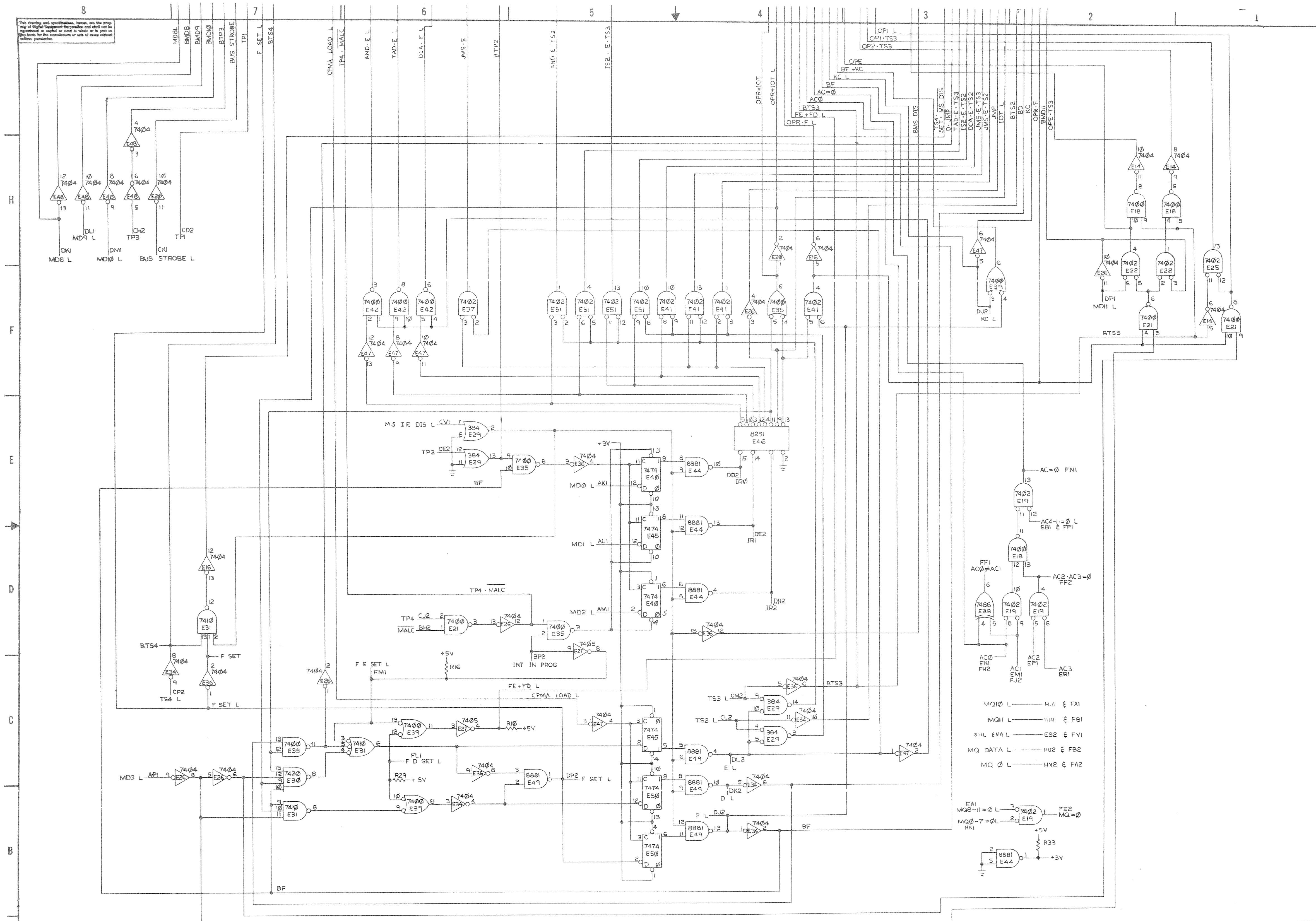
DR'N. DATE 7/31/70
CHK'D. DATE 12-7-70
ENG. DATE 12/16/70
PROJ. ENG. DATE 12/16/70
PROD. DATE
NEXT HIGHER ASSY: A-ML-KK8-E
SCALE: NONE
SHEET 3 OF 4

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: M831Ø MAJOR REG. CONT.

SIZE: E CODE: CS NUMBER: M831Ø-Ø-1

DIST.



FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —/—/—
FINISH —/—/—

DRN. DATE 7/22/70
CHKD. DATE 12-2-70
ENG. DATE 12/4/70
PROJ. ENG. DATE 12/4/70
PROD. DATE 3/1/71

NEXT HIGHER ASSY A-ML-KK8-E
SCALE NONE
SHEET 4 OF 4

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

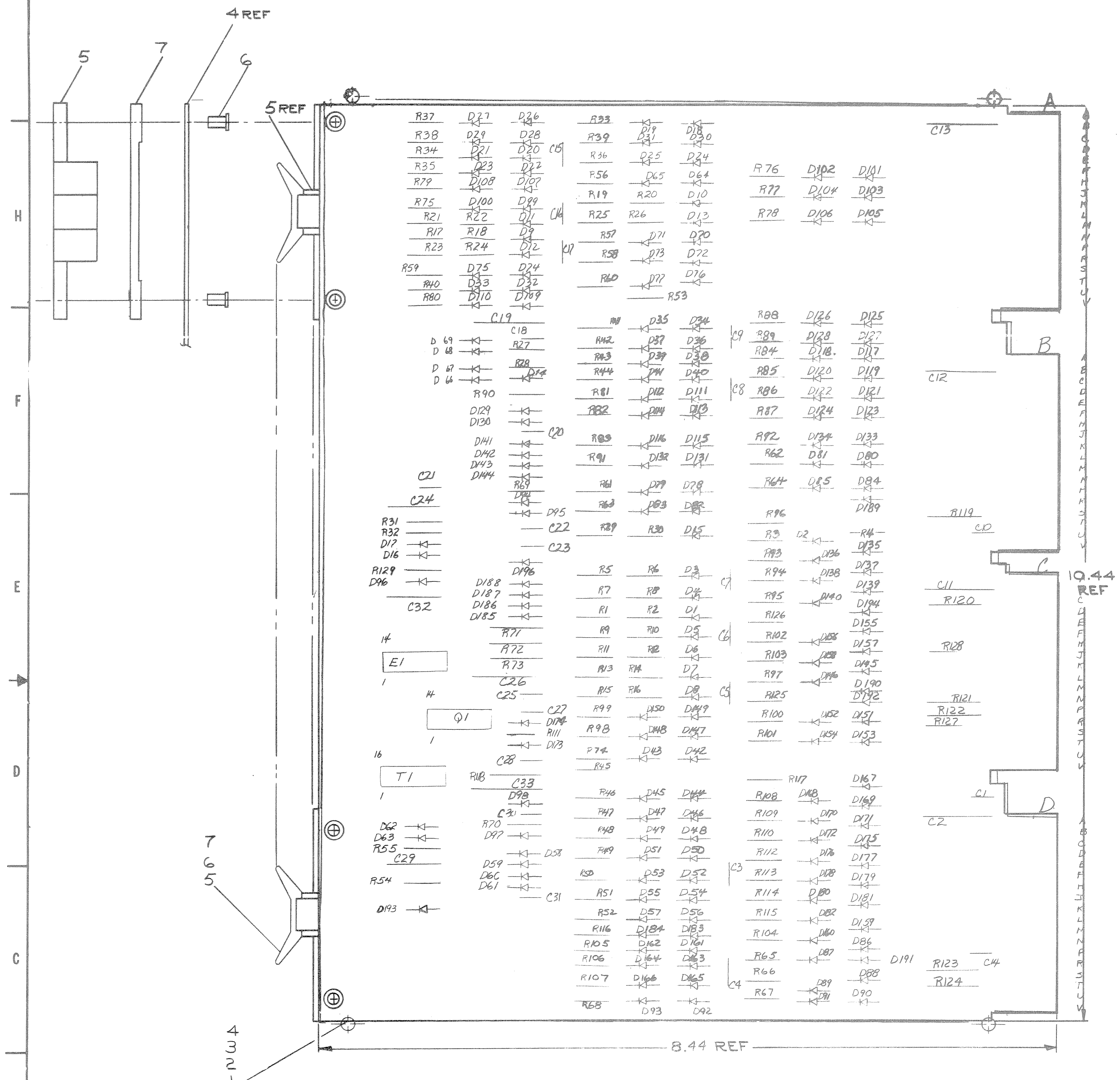
TITLE: M8310 MAJOR REG CONT.

SIZE E CODE CS NUMBER M8310-0-1 REV. B

DIST.

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   CAPACITORS = .047UF 16V 15-20%
   RESISTORS = 1500 1/4W 5%
   DIODES = D664
2. CONNECT ALL PINS C,F,N,T (EXCEPT AC1) TOGETHER TO GROUND.



QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
3	C24, C29, C32	CAP 330PF 100V 5%	1000023	21
7	C2, C11, C12, C13, C19, C26, C33	CAP 6.8UF 35V 20%	1000067	20
23	C1, C3-C10, C14-C18, C20-C23, C25, C27, C28, C30, C31	CAP .047UF 16V 15-20%	1009678	19
1	E1	IC DEC 7404	1909686	18
1	T1	PULSE XMFR 8010 DUAL INLINE	1609651	17
1	Q1	TRANS DEC 4008	1510015	16
6	R119-R124	RES 1K 1/2W 10%	1302187	15
4	R71-R73, R118	RES 1.2K 1/2W 10%	1300387	14
58	R57-R69, R74-R117, R53	RES 1500 1/4W 5%	1300391	13
41	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32-R52, R55, R56, R70, R127, R128	RES 470 1/4W 10%	1300317	12
20	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R29, R31, R54, R125, R129, R126	RES 150 1/4W 5%	1300250	11
2	D17, D97	DIODE D672	1105275	10
16	D58-D61, D66-D69, D141-D144, D185-D188	DIODE D662	1100113	9
177	D1-D16, D18-D57, D62-D65, D70-D96, D98-D140, D145-D184, D189-D194, D196	DIODE D664	1100114	8
4		SPACER (CABLE CLAMP)	1202704	7
8		EYELET GS4-11 STIMPSON	9006750	6
4		HANDLE FLIP CHIP-MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	5009486	4
REF		MODULE HISTORY LIST	B-MH-M8320-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8320-0-5	2
REF		X-Y COORDINATE HOLE LOC.	K-CO-M8320-0-4	1

PARTS LIST

ETCH BOARD REV

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.	DEC NO.	EIA NO.
DEC 4008	—		
D664	1N3606		
D672	1N3653		
D662	1N645		

IC TYPE	GND	+5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

REV. A ORIGINATED

DRN. Ken Davis DATE 3-3-71
CHK'D. DATE 3-3-71
ENG. G. Esser DATE 3-15-71
PROJ. ENG. G. Esser DATE 3-15-71
PROD. DATE 3/22/71

FIRST USED ON D-UA-KK8-E-0

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BUS LOADS

SIZE E CODE CS NUMBER M8320-0-1 REV. A

SCALE 2/1 SHEET 1 OF 2

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C18 .047 MF
C19 6.8 UF
C26 6.8 MF
C25 .047 MF
C22 .047 MF
C11 6.8 MF
C10 .047 MF
C7 .047 MF
C16 .047 MF
C12 6.8 UF
R231 150Ω
+5V
+15V
C8 6.8 UF
C9 .047 MF
C13 6.8 MF
C27 .047 UF
C24 330 PF
T1
Q1 2N3866
R253
R232 47Ω
TEST POINT AB1
TP Ø4 N
CUR
R1 150Ω
R2 470Ω
D1
R3 150Ω
R24 470Ω
D2
CDE TP Ø1 N
R5 150Ω
R26 470Ω
D3
CEE TP Ø2 N
R7 150Ω
R28 470Ω
D4
CNE TP Ø3 N
R9 150Ω
R10 470Ω
D5
CKE TS Ø1 L
R11 150Ω
R12 470Ω
D6
CLE TS Ø2 L
R13 150Ω
R14 470Ω
D7
CME TS Ø3 L
R15 150Ω
R16 470Ω
D8
CPE TS Ø4 L
R17 150Ω
R18 470Ω
D9
ARE RETURN H
R19 150Ω
R20 470Ω
D10
ALE SOURCE H
R21 150Ω
R22 470Ω
D11
ANE STROBE H
R23 150Ω
R24 470Ω
D12
ASE WRITE H
R25 150Ω
R26 470Ω
D13
APE INHIBIT H
R27 150Ω
R28 470Ω
D14
BDE INT STROBE H
R29 150Ω
R30 470Ω
D15
CQL I/O PAUSE L
R233 470Ω
D18 D19
R234 470Ω
D20 D21
R235 470Ω
D22 D23
R236 470Ω
D24 D25
R237 470Ω
D26 D27
R238 470Ω
D28 D29
R239 470Ω
D30 D31
R240 470Ω
D32 D33
R241 470Ω
D34 D35
R242 470Ω
D36 D37
R243 470Ω
D38 D39
R244 470Ω
D40 D41
R245 470Ω
D42 D43
R246 470Ω
D44 D45
R247 470Ω
D46 D47
R248 470Ω
D48 D49
R249 470Ω
D50 D51
R250 470Ω
D52 D53
R251 470Ω
D54 D55
R252 470Ω
D56 D57
C15 .047 MF
C29 .047 MF
D660 D662 D660 D662
D58 D59 D60 D61
A01 MA Ø0 L
AE1 MA Ø1 L
AN1 MA Ø2 L
AJ1 MA Ø3 L
AD2 E MA Ø0 L
AF2 E MA Ø1 L
AH2 E MA Ø2 L
AU2 ROM ADDRESS L
BD1 MA Ø4 L
BF1 MA Ø5 L
BN1 MA Ø6 L
BJ1 MA Ø7 L
CV1 M'S IR DISABLE L
DD1 MA Ø8 L
DE1 MA Ø9 L
DN1 MA 10 L
DJ1 MA 11 L
DV2 F L
DK2 D L
DL2 E L
+5V
C24 330 pF
R254 150Ω
TEST POINT AB1
T1
Q1 2N3866
R255 47Ω
R256 47Ω
R274
D62 D63
+5V
AM2 MEM DR IN L
D64 D65
C17 .047 MF
C23 .047 MF
D666 D667 D668 D669 D662 D662 D662 D662
R57
D70 D71
R58
D72 D73
R59
D74 D75
R60
D76 D77
R61
D78 D79
R62
D80 D81
R63
D82 D83
R64
D84 D85
R65
D86 D87
R66
D88 D89
R67
D90 D91
R68
D92 D93
R69
D94 D95
ARI DATA Ø0 L
ASI DATA Ø1 L
AUI DATA Ø2 L
AVI DATA Ø3 L
BRI DATA Ø4 L
BSI DATA Ø5 L
BUI DATA Ø6 L
BVI DATA Ø7 L
CRI DATA Ø8 L
DSI DATA Ø9 L
DUI DATA 10 L
DVI DATA 11 L
BPR INT IN PROG H
+15 V
D97 D672
R70 TEST POINT AR1
+5V
D96 C32 .330 pF
R129 150Ω
T1
Q1 2N3866
C33 6.8 UF
C28 .047 UF
C30 .047 UF
D98
R71 1.2K
R73 1.2K
R72 1.2K
R118 1.2K
-15 V
C9 .047 MF
C21 .047 MF
R 96
R75 D79 D180 AKI MD Ø0 L
R76 D181 D182 ALI MD Ø1 L
R77 D183 D184 ANI MD Ø2 L
R78 D185 D186 API MD Ø3 L
R79 D187 D188 AUI MEM START L
R80 D189 D110 AVI LINK L
R81 D111 D112 BEI BRK IN PROG L
R82 D113 D114 BJI OVERFLOW L
R83 D115 D116 BMI LD ADD ENABLE L
R84 D117 D118 BKI MD Ø4 L
R85 D119 D120 BLI MD Ø5 L
R86 D121 D122 BMI MD Ø6 L
R87 D123 D124 BPI MD Ø7 L
R88 D125 D126 BHI MA,MS LOAD CONT L
R89 D127 D128 BKI BREAK DATA CONT L
R90 D129 D130 BLI BREAK CYCLE L
R91 D131 D132 BRI RES Ø1 L
R92 D133 D134 BSI RES Ø2 L
R93 D135 D136 CFI C Ø0 L
R94 D137 D138 CHI C Ø1 L
R95 D139 D140 CUI C Ø2 L
C8 .047 MF
C20 .047 MF
D662 D662 D662 D662
D141 D142 D143 D144
C3 .047 MF
C21 .047 MF
C5 .047 MF
R117
R97 D145 D146 CJI INT RQST L
R98 D147 D148 CSI SKIP L
R99 D149 D150 CAI LINK DATA L
R100 D151 D152 CUI IND Ø1 L
R101 D153 D154 CVI IND Ø2 L
R102 D155 D156 CLI INTERNAL I/O L
R103 D157 D158 CMI NOT LAST IFER L
R104 D159 D160 DBI F SET L
R105 D161 D162 CSI STOP L
R106 D163 D164 DUI KEY CONTROL L
R107 D165 D166 DVI SM L
R108 D167 D168 DDI I.R Ø0 L
R109 D169 D170 DEI I.R Ø1 L
R110 D171 D172 DNI I.R Ø2 L
R111 D173 D174 CUI CPMA DISABLE L
R112 D175 D176 DXI MD Ø8 L
R113 D177 D178 DLI MD Ø9 L
R114 D179 D180 DMI MD 10 L
R115 D181 D182 DFI MD 11 L
R116 D183 D184 DMI USER MODE L
C4 .047 MF
C6 .047 MF
D662 D662 D662 D662
D185 D186 D187 D188
D193
R119 1K BVI POWER ON H
R120 1K
D189
R121 1K CRI INITIALIZE H
R122 1K
D190
R123 1K DRI LOAD ADDRESS L
R124 1K
D191
.047 MF CR6 CR2, DR2
-15 V
R251 E125 150Ω CSI LINK LOAD L
D192
R127 470Ω
R126 150Ω CMI BUS STROBE L
D194
R128 470Ω
BUI RUN H
D196

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
FRACTIONS ± .005 DECIMALS ± .010 ANGLES ± 0°0'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

	NAME	DATE
DRN.	M. Lambert	3-25-71
DSGN.	[illegible]	3-25-71
ENGR.	[illegible]	4-14-71
PROJ. ENGR.	✓	5-18-71
PROG.	[illegible]	5-24-71
HEAT HISNER ASS'Y.		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BUS LOADS

SIZE: E | CODE | NUMBER: CS M8320-0-1 | REV: A
SCALE: 1/2 SIZE
SHEET 2 OF 2
DIST.

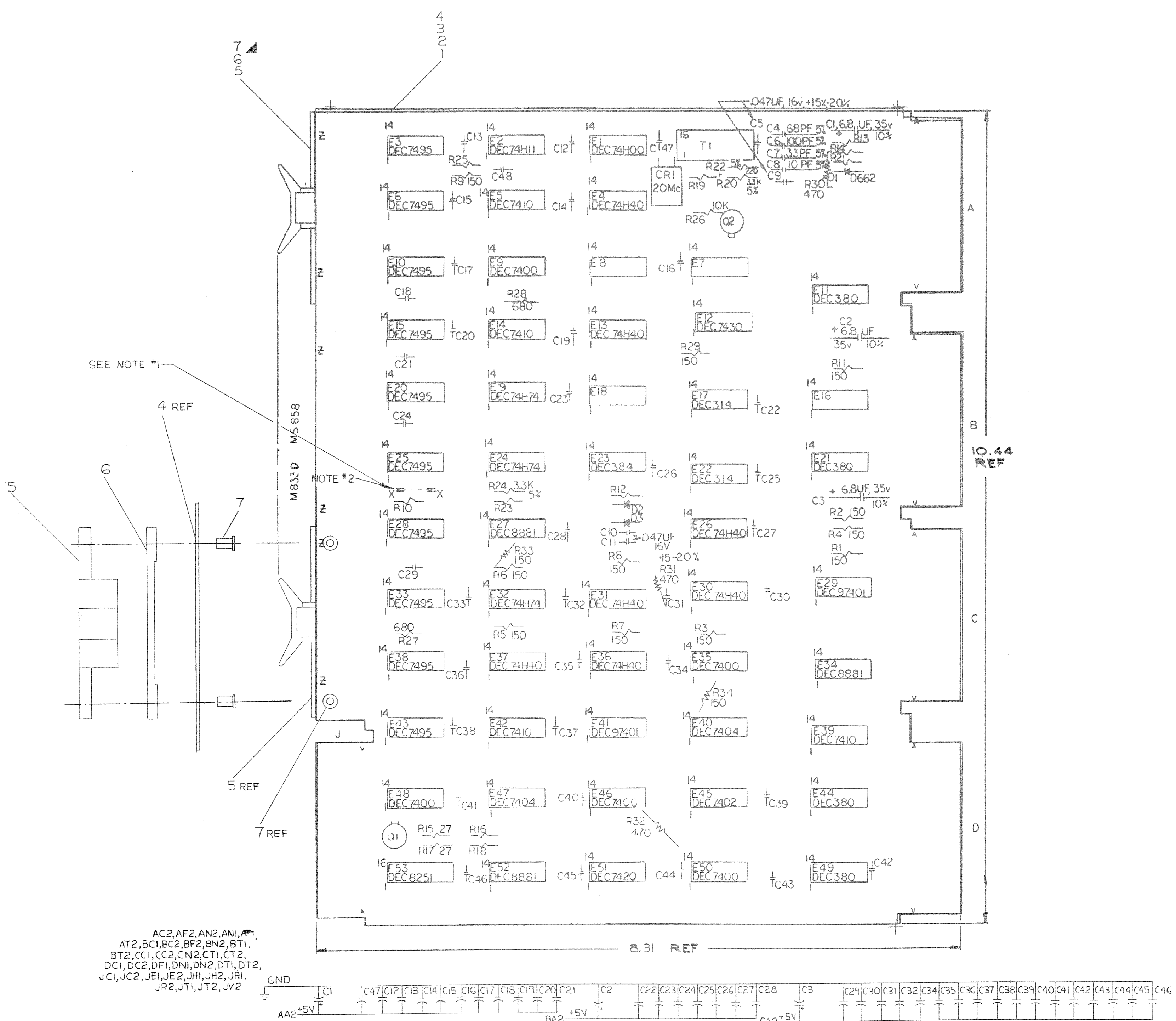
DEC FORM NO. DEC 100

REVISIONS			
LTR	CHANGE NO.	REV.	
A			

CS M8320-0-1 A

NOTES:

1. INSERT JUMPER J1 (ITEM 44) IN ALL REV C AND EARLIER BOARDS.



2	E29, E41	IC DEC 974Ø1	1909973	46
1	E2	IC DEC 74H11	1909267	45
A/R		WIRE #22 AWG BUS	9107560-01	44
2	R27, R28	RES. 680, 1/4 W, 10%	1300350	43
1	CR1	CRYSTAL 20MC	1809880	42
3	E27, E34, E52	I.C. DEC 8881	1909705	41
2	E17, E22	I.C. DEC 314	1909704	40
2	E40, E47	I.C. DEC 7404	1909686	39
3	E19, E24, E32	I.C. DEC 74H74	1909667	38
1	E53	I.C. DEC 8251	1909594	37
1	E23	I.C. DEC 384	1909486	36
4	E11, E21, E44, E49	I.C. DEC 380	1909485	35
1	E1	I.C. DEC 74H00	1909056	34
10	E3, E6, E10, E15, E20, E25, E28, E33, E38, E43	I.C. DEC 7495	1909055	33
1	E45	I.C. DEC 7402	1909004	32
7	E4, E13, E26, E30, E31, E36, E37	I.C. DEC 74H40	1905586	31
4	E7, E8, E16, E18	I.C. DEC 7440	1905579	30
1	E12	I.C. DEC 7430	1905578	29
1	E51	I.C. DEC 7420	1905577	28
4	E5, E14, E39, E42	I.C. DEC 7410	1905576	27
5	E9, E35, E46, E48, E50	I.C. DEC 7400	1905575	26
1	T1	TRANSFORMER PULSE	1609651	25
2	Q1, Q2	TRANSISTOR DEC 3009B	1503100	24
2	R15, R17	RES. 27, 1/4W, 10%	1301420	23
1	R26	RES. 10K, 1/4W, 10%	1300481	22
2	R20, R24	RES. 3.3K, 1/4W, 5%	1300439	21
13	R10, R12, R13, R14, R16, R18, R19, R21, R23, R25, R30-R32	RES. 470, 1/4W, 10%	1300317	20
1	R22	RES. 220, 1/4W, 5%	1300271	19
13	R1-R9, R11, R29, R33, R34	RES. 150, 1/4W, 10%	1300252	18
2	D2, D3	DIODE D664	1100114	17
1	D1	DIODE D662	1100113	16
4	C5, C9-C11	CAP. .047UF, 16V, 15-20% DISC	1009678	15
3	C1-C3	CAP. 6.8UF, 35V, 10% S. TANT	1005306	14
37	C12-C48	CAP. .01UF, 100V, 20% D.M.	1001610	13
1	C6	CAP. 100PF, 100V, 5% D.M.	1000016	12
1	C4	CAP. 68PF, 100V, 5% D.M.	1000014	11
1	C7	CAP. 33PF, 100V, 5% D.M.	1000009	10
1	C8	CAP. 10PF, 100V, 5% D.M.	1000006	9
2		SPLIT LUGS	9006735	8
6		EYELET GS4-11 STIMPSON	9006750	7
3		SPACER (CABLE CLAMP)	1202704	6
3		HANDLE FLIP CHIP - MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	5009105	4
REF		MODULE HISTORY LIST	B-MH-M833-Ø-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M833-Ø-5	2
REF		X-Y COORDINATE HOLE LOC.	K-CO-M833-Ø-4	1
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

IC TYPE	GND	+5V
DEC 380	1	8
DEC 314	1	8
DEC 384	1	8
DEC 8251	8	16

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT
44	22	J1-A	J1-B

JUMPER LIST

DEC NO.	EIA NO.
DEC 3009B	2N3646
D664	1N3606
D662	1N645

SEMICONDUCTOR CONVERSION CHART

REVISIONS: M833-00002 ORIGINATED B — LAWRENCE NARHI 1-14-71; M833-00003 D; M833-00004 E

REV COLUMN: D

PRINTED CIRCUIT BOARD REVISION

CIRCUIT SCH. REVISION

DRN. R.E. Hallen DATE 1/7/71
CHK'D. DATE 1-12-71
ENG. Larry Harlee DATE 1-12-71
PROJ. ENG. DATE 1/12/71
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TIMING GENERATOR (M833)

FIRST USED ON: D-UA-KK8-E-Ø

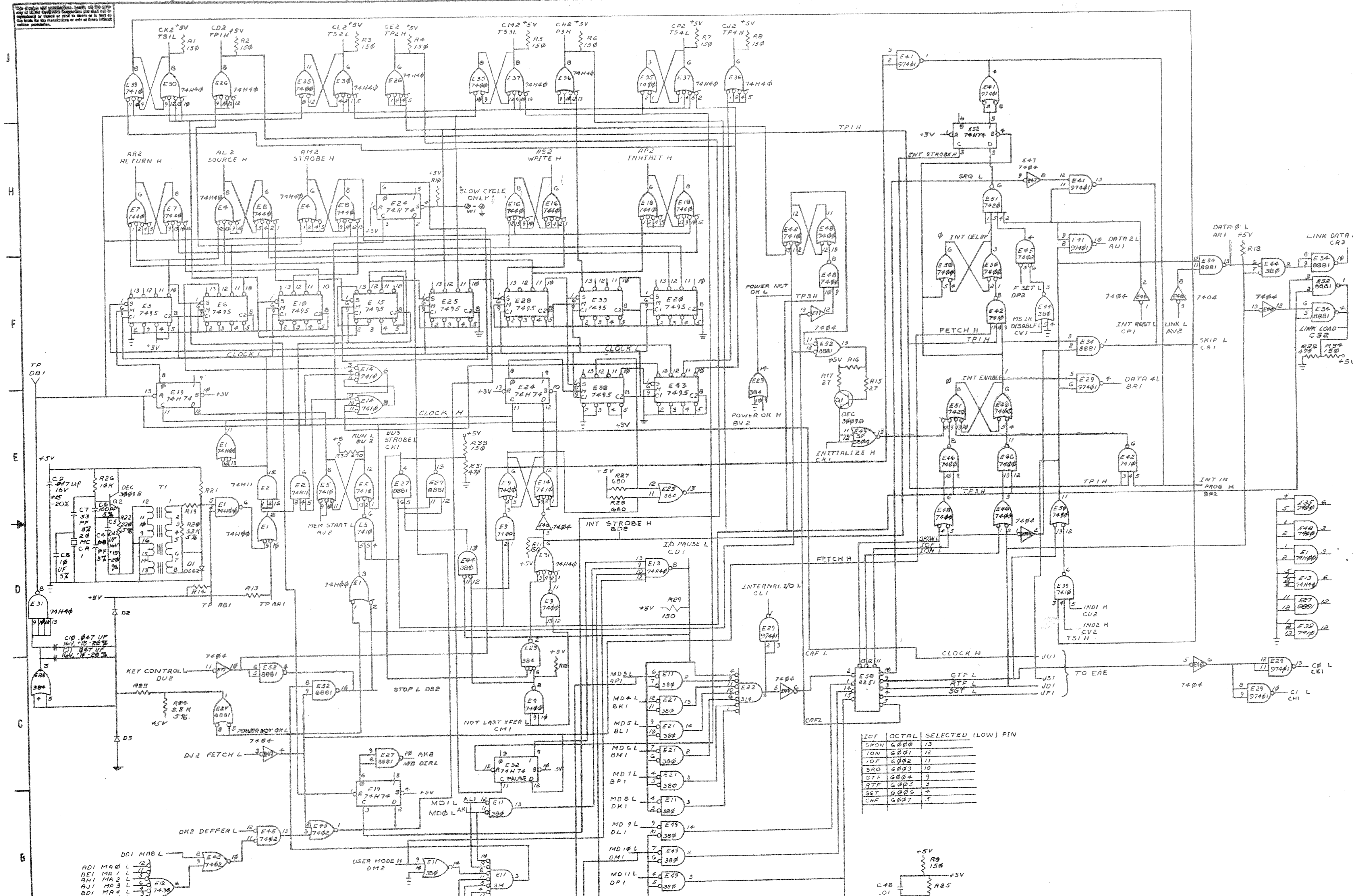
SIZE E CODE CS NUMBER M833-Ø-1 REV. E

SCALE 2/1

SHEET 1 OF 2

DEC FORM NO. DRE 100

Pink BLUE



IOT	OCTAL	SELECTED (LOW) PIN
SKON	6000	13
ION	6001	12
IOF	6002	11
SRQ	6003	10
GTF	6004	9
RTF	6005	3
SGT	6006	4
CAF	6007	5

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —
FINISH —

DRN. V. Bissonnette DATE 11-13-70
CHK'D. DATE 11/16/70
ENG. L. Harker DATE 11-16-70
PROJ. ENG. R. Vogelsang DATE 11/16/70
PROD. DATE

NEXT HIGHER ASSY. A-ML-KK8E
SCALE —
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE TIMING GENERATOR
M833

SIZE E CODE CS NUMBER M833-0-1 REV. F

SIZE	CODE	NUMBER	REV.
B	CS	M849-0-1	B

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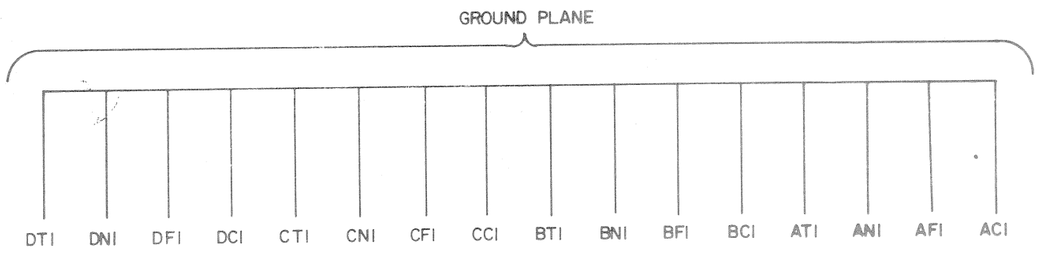

REVISIONS	REV	CHK	CHG NO

DRN. NANCY MOORE	DATE 8/18/70	
CHK'D R. Waldin	DATE 8/24/70	
ENG. Al DeRosa	DATE 10/1/70	
PROD. R.J. Coleman	DATE 7-6-71	

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: RFI SHIELD M849

SIZE	CODE	NUMBER	REV.
B	CS	M849-0-1	C

PRINTED CIRCUIT REV. D

DIST. 324,434,435 5 PINK

DEC FORM NO.
DRB 102

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KL8-E	KL8-EA	KL8-EB	KL8-EC	KL8-ED	KL8-EE	KL8-EF	KL8-EG
KL8-E	ASYNC DATA CONTROL	X	X	X	X	X	X	X	X

USED ON OPTIONS							
PDP8/E							

REVISIONS	REV.	DATE	CHG. NO.	APP'D.
	A	4/71	M865-3 KL8E-3	JM
	B	8/71		

DRN. K. GULICK	DATE 12-3-70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. K. GULICK	DATE 12-3-70	
ENG. MCNAMARA	DATE 1-13-71	TITLE ASYNC DATA CONTROL
PROJ. ENG. VOGELSANG	DATE 1-13-71	
PROD. L. SAYLOR	DATE 1-13-71	
FIRST USED ON PDP8/E		SIZE A CODE ML NUMBER KL8-E REV B
SCALE		
SHEET 1 OF 2		DIST.

DRA 131

Dec 16-(325)-1048-N471

PRINT SET KL8E	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	E-CS-M865Ø-Ø-1	#	2	ASYNC. DATA CONTROL	
X	E-CS-M865Ø-YA-1	#	2	ASYNC. DATA CONTROL	
X	D-IA-7008360-0-0		1	CABLE ASSY	
X	D-IA-BCØ1V-25-Ø		1	CABLE ASSY	
X	A-SP-KL8-E-1		16	ENGINEERING SPECIFICATIONS	
X	A-PL-KL8-E-Ø		1	ASYNC. DATA CONTROL	

TITLE			
ASYNC. DATA CONTROL	SHEET 2 OF 2	SIZE A CODE ML NUMBER KL8-E	REV B

DRA 132

DEC 16-(325)-1048-1-N471

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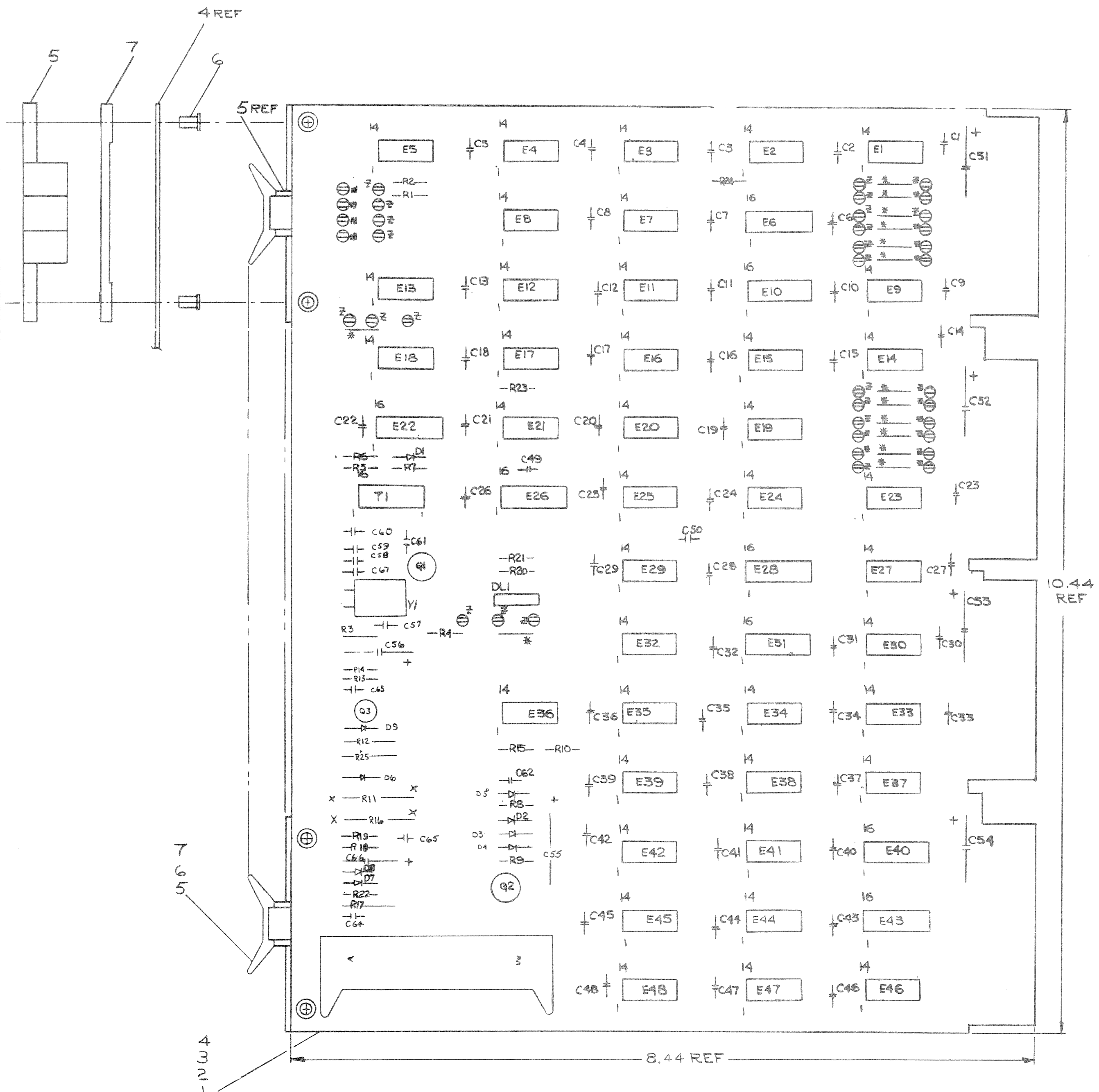

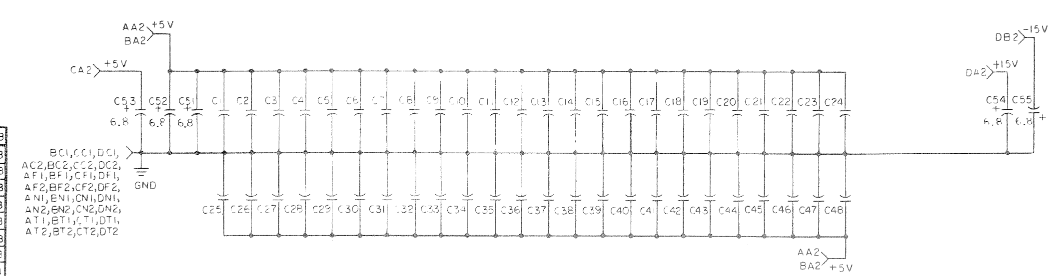

NOTES:

1. 4 -o- A -o- 2 = SPLIT LUGS
   A -o- JD24 -o- B = MACHINE INSERTED JUMPER
   B≻ = 40 PIN HEADER CONNECTION

   DATA 11 DV1 = OMNIBUS CONNECTION

2. PIN F IS EIA TRANSMITTED DATA:
   +6V OR MORE = SPACE = Ø
   -6V OR LESS = MARK = 1
   PIN V IS EIA REQUEST TO SEND, +6V OR MORE = ON (PERMANENTLY).
   PIN DD IS EIA DATA TERMINAL READY, +6V OR MORE = ON (PERMANENTLY).

3. THIS DRAWING FOLLOWS DEC STANDARD 056 LOGIC SYMBOLOGY.
   FLIP-FLOPS ARE NAMED FOR THE CONDITION THEY REPRESENT IN THE "1" STATE.
   THE FOLLOWING FIGURES APPLY:

   CLEAR 1, $\bar{Q}$ 6, Q 5, 7474, PRESET 4, C 3, D 2
   CLEAR 13, $\bar{Q}$ 8, Q 9, PRESET 10, C 11, D 12

   IF "D" SHOWN THUS, "1" STATE = Q STATE.
   IF "D" SHOWN THUS "1" STATE = $\bar{Q}$ STATE.
   IF "1" SHOWN THUS THIS LEAD IS HIGH WHEN FLIP-FLOP IS IN "1" STATE.
   IF "1" SHOWN THUS THIS LEAD IS LOW WHEN FLIP-FLOP IS IN "1" STATE.

4. WAVEFORM AT TEST POINT #6 FOR RECEPTION OF "A" (ASCII 3Ø1)
   +5
   Ø
   START 1 Ø Ø Ø Ø Ø 1 1 STOP 1 STOP 2
   1 Ø 3

5. UNLESS OTHERWISE NOTED:
   RESISTORS = 1K 1/4W 5%
   CAPACITORS = .01 µf 100V 20%
   DIODES = D664

PARTS LIST

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	R12, R14	RES. 1.5K 1/2W 5%	1300394	59
1	R22	RES. 82 1/4W 5%	1301477	58
5	E1, E23, E27, E30, E46	I.C. DEC 5380	1910392	57
4	E2, E15, E33, E37	I.C. DEC 97401	1909973	56
9	E3, E4, E7, E8, E16, E20, E29, E38, E48	I.C. DEC 7474	1905547	55
3	E5, E13, E18	I.C. DEC 7493	1909054	54
5	E6, E10, E26, E28, E31	I.C. DEC 8271	1909615	53
2	E9, E14	I.C. DEC 5314	1910391	52
3	E11, E45, E47	I.C. DEC 7402	1909004	51
3	E12, E41, E44	I.C. DEC 7400	1905575	50
1	E17	I.C. MC1489L EIA RECIEVER	1910323	49
1	E19	I.C. DEC 7410	1905576	48
2	E21, E42	I.C. DEC 7404	1909686	47
1	E22	I.C. DEC 74193	1910018	46
1	E24	I.C. DEC 8815	1909713	45
2	E25, E39	I.C. DEC 7450	1905580	44
1	E32	I.C. MC1488L-EIA DRIVER	1910322	43
2	E34, E36	I.C. DEC 5384	1910394	42
2	E40, E43	I.C. DEC 8251	1909594	41
1	E35	I.C. DEC 74H00	1909056	40
52	C1-C50, C62, C64	CAP. .01µf 100V 20% DISC	1001610	39
6	C51-C56	CAP. 6.8µf 35V 20% TANT	1000067	38
2	C57, C61	CAP. .047µf DISC	1009678	37
1	C58	CAP. 33pf MICA	1000009	36
1	C59	CAP. 100pf MICA	1000016	35
1	C60	CAP. 68pf MICA	1000014	34
1	C63	CAP. .001µf 250V DISC	1000043	33
2	C65, C67	CAP. 10pf 100V 5% MICA	1000006	32
1	C66	CAP. .47µf, 35V TANT	1005965	31
1	D1	DIODE, D662	1100113	30
7	D2-D9	DIODE, D664	1100114	29
3	R1, R4, R20	RES. 220, 1/4W 5%	1300271	28
1	R2	RES. 750, 1/4W, 5%	1301401	27
2	R3, R19	RES. 10K, 1/4W, 5%	1300479	26
2	R5, R18	RES. 3.3K, 1/4W 5%	1300439	25
4	R6, R7, R13, R24	RES. 470 1/4W, 5%	1300316	24
1	R8	RES. 150 1/4W, 5%	1300250	23
2	R10, R15	RES. 1K, 1/4W, 5%	1300365	22
2	R11, R16	RES. 750, 1W, 5%	1302385	21
1	R14	RES. 1.5K, 1/4W, 5%	1300391	20
1	R21	RES. 330, 1/4W, 5%	1300295	19
1	R23	RES. 30K, 1/4W 5%	1302394	18
1	R9,	RES. 180 1/4W, 5%	1301322	17
1	R17	RES. 560, 1/2W, 5%	1300338	16
1	Q1	TRANSISTOR, DEC 3009B	1503100	15
2	Q2, Q3	TRANSISTOR, DEC 6534D	1503409	14
1	T1	XFMR 8010	1609651	13
1	DL1	DELAY LINE 30 NANO SEC	1605528	12
1	Y1	CRYSTAL, 14.418 MHZ.	1809880-01	11
38		LUGS, SPLIT	9006735	10
1		CONNECTOR, 40 PIN	1209941	9
A/R		WIRE #22AWG SOLID BUS	9107560-01	8
4		SPACER (CABLE CLAMP)	1202704	7
8		EYELET GS4-11 STIMPSON	9006750	6
4		HANDLE FLIP CHIP-MAGENTA	900833706	5
1		ETCHED CIRCUIT BOARD	5009546	4
REF		MODULE HISTORY LIST	B-MH-M865Ø-Ø-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M865Ø-Ø-5	2
REF		X-Y COORDINATE HOLE LOC.	K-CO-M865Ø-Ø-4	1

ETCH BOARD REV B

IC PIN LOCATIONS

IC TYPE	GND	+5V
DEC MC1488L	7	14(+15V)
8251	8	16
5384	1	8
74193	8	16
5314	1	8
8271	8	16
7493	10	5
DEC 5380	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

JUMPER LIST

ITEM NO	AWG	FROM PT	TO PT
8	22	JJ23-A	JJ23-B
		JH12-A	JH12-B
		JB13-A	JB13-B
		JB12-A	JB12-B
		JA12-A	JA12-B
		JA13-A	JA13-B
		JF24-A	JF24-B
		JF12-A	JF12-B
		JE13-A	JE13-B
		JE24-A	JE24-B
		JD24-A	JD24-B
		JD13-A	JD13-B
		JC24-A	JC24-B
8	22	JC13-A	JC13-B

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.	DEC NO.	EIA NO.
DEC6534D	[illegible]		
DEC3009B	2N3646		
D664	1N3606		
D662	1N645		

REV.	CHANGE NO.		
A	ORIGINATED		
B	M8650-00001		J. MCNAMARA

DRN. F.M. [illegible] DATE 4/2/71
CHK'D. [illegible] DATE 4-7-71
ENG. [illegible] DATE 4-13-71
PROJ. ENG. [illegible] DATE 4-13-71
PROD. [illegible]
FIRST USED ON A-ML-KL8-E

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ASYNCHRONOUS DATA CONTROL

SIZE E CODE CS NUMBER M865Ø-Ø-1 REV. B

SCALE 2/1 SHEET 1 OF 2

DEC FORM NO. DNE 10B

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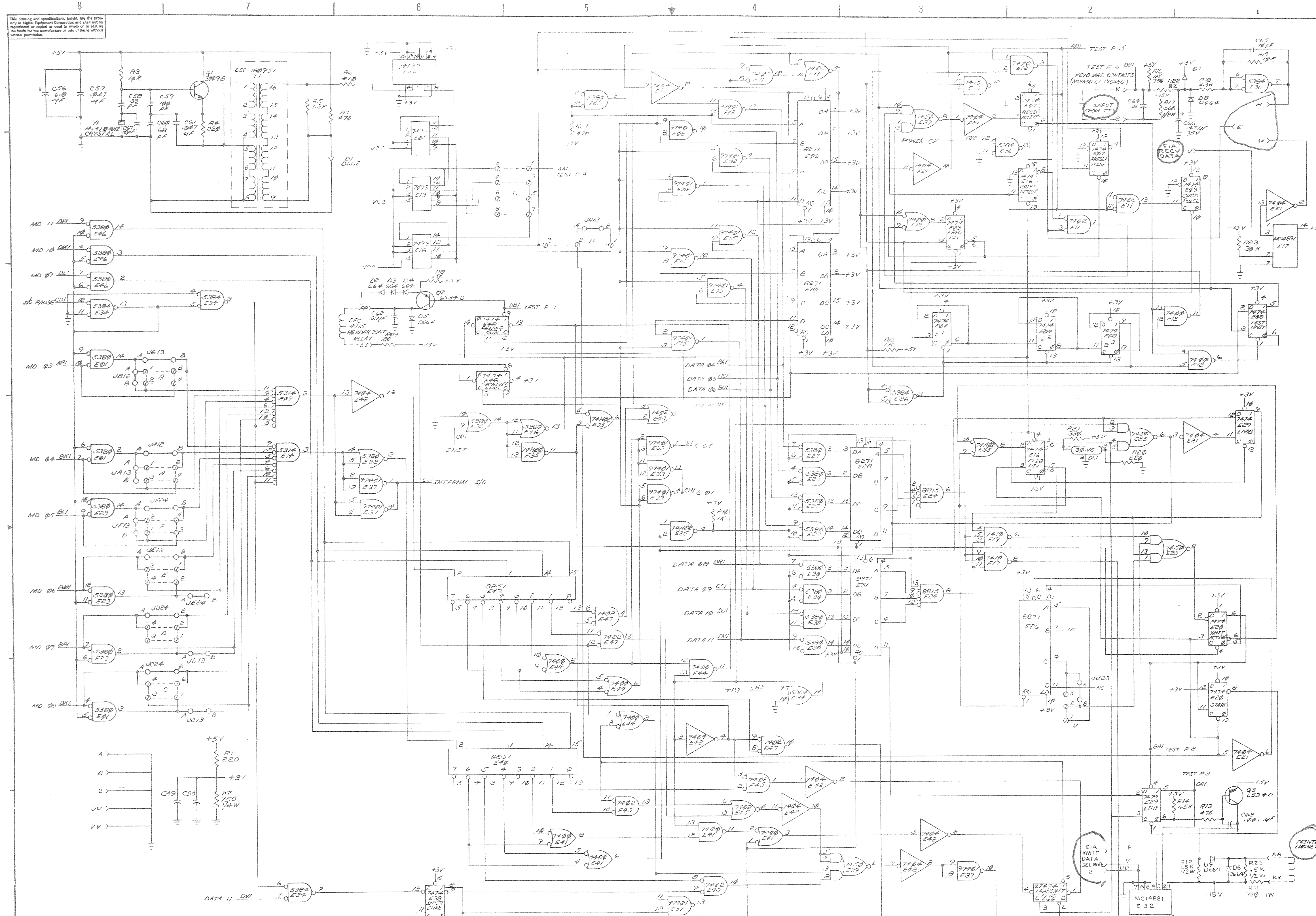

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ±.005 FRACTIONS ±1/64 ANGLES ±0°30'

FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. DATE 4-1-71

CHK'D. DATE 4-2-71

ENG. DATE

PROJ. ENG. DATE 4-13-71

PROD. DATE

NEXT HIGHER ASSY

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS DATA CONTROL

SIZE	CODE	NUMBER	REV.
E	CS	M8650-0-1	B

DIST.

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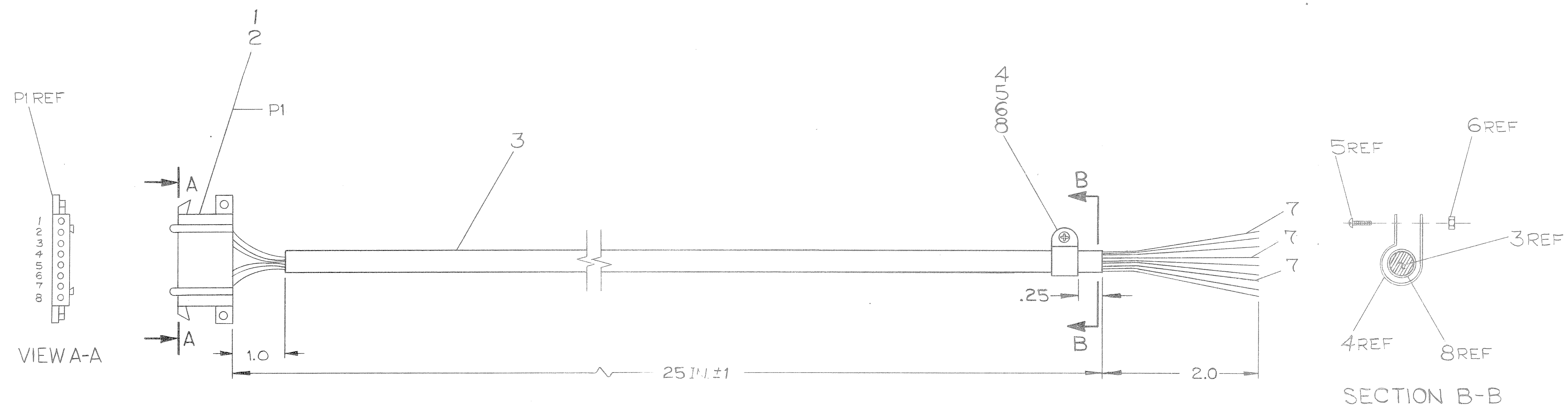
WIRE TABLE

ITEM NO.	AWG	COLOR	PAIR #	CONNECTION
3	22	BLK	1	P1-2
↑	↑	RED	1	P1-3
		SHIELD	1	SEE NOTE 1
		BLK	2	P1-4
		WHT	2	P1-5
		SHIELD	2	SEE NOTE 1
		BLK	3	P1-6
↓	↓	GRN	3	P1-7
3	22	SHIELD	3	SEE NOTE 1

NOTES:

1. DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLE.



PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	DOUBLE SIDE TAPE #4032 1/2"	9007834	8
A/R	#18 TEFLON THIN WALL TUB NAT.	9107278-11	7
1	NUT, KEPS #6-32 SST	9006560	6
1	SCR PHL HD PAN #6-32×.38 SST	9006022-1	5
1	CLAMP, CABLE .31 NYLON	9007082	4
A/R	BELDEN 8777 3PR SHLD CABLE	9107723-0	3
6	CONTACTS FEMALE MATE-N-LOCK	1209379	2
1	CONN FEMALE MATE-N-LOCK	1209340-00	1

REVISIONS		
CHK	CHANGE NO.	REV.
	KL8E-00001 REDRAWN & REVISED T. QUINLAN 10-8-70 MC NAMARA	A

FIRST USED ON OPTION/MODEL: PDP 8-E

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES: DECIMALS ± .005; FRACTIONS ± 1/64; ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: —/—

DRN.	GULICK	DATE 9-8-70
CHK'D.	HEALY	DATE 9-9-70
ENG.	MC NAMARA	DATE 9-9-70
PROJ. ENG.	MC NAMARA	DATE 9-9-70
PROD.	MILLER	DATE 9-9-70

NEXT HIGHER ASSY: M865

SCALE: —/—

SHEET 1 OF 1

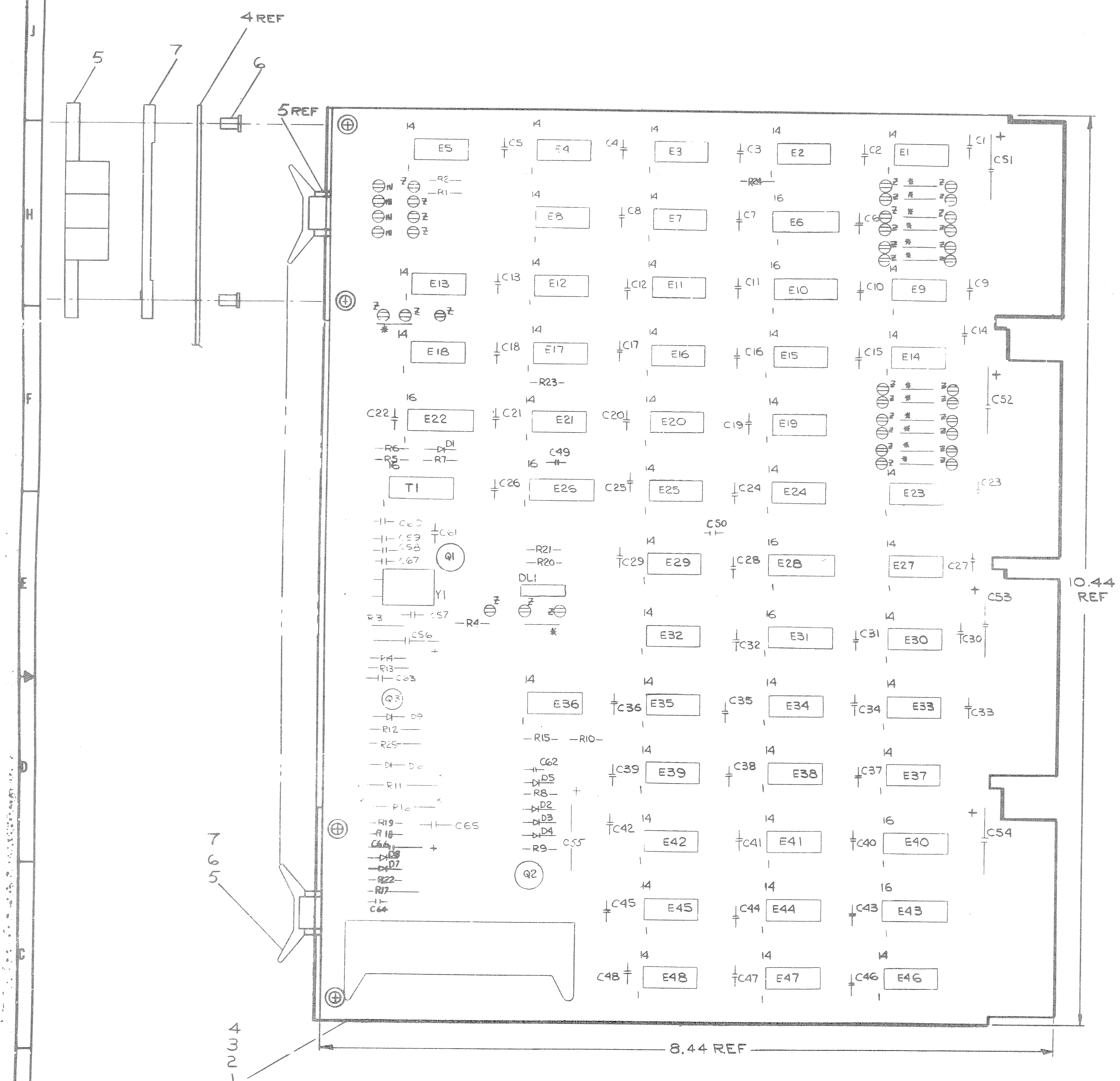
digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

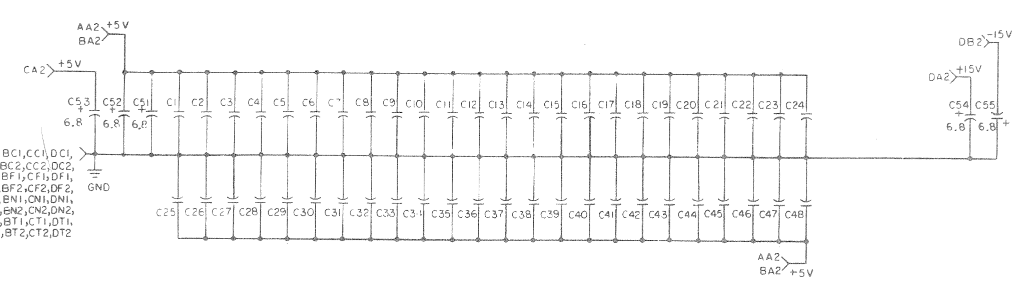
TITLE: CABLE ASSEMBLY KL8E

SIZE: D | CODE: IA | NUMBER: 7007055-0-0 | REV. A

DIST.

DEC FORM NO. DRD 100

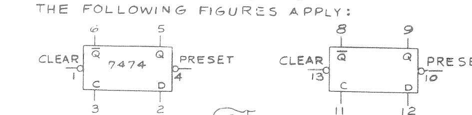




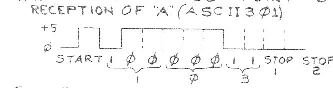
NOTES:

1. 4 A 2 (split lug symbol) = SPLIT LUGS
   A JD24 B (jumper symbol) = MACHINE INSERTED JUMPER
   B> = 40 PIN HEADER CONNECTION

   DATA II DV1 = OMNIBUS CONNECTION
2. PIN F IS EIA TRANSMITTED DATA:
   +6V OR MORE = SPACE = Ø
   -6V OR LESS = MARK = 1
   PIN V IS EIA REQUEST TO SEND, +6V OR MORE = ON (PERMANENTLY).
   PIN DD IS EIA DATA TERMINAL READY, +6V OR MORE = ON (PERMANENTLY).
3. THIS DRAWING FOLLOWS DEC STANDARD 056 LOGIC SYMBOLOGY.
   FLIP-FLOPS ARE NAMED FOR THE CONDITION THEY REPRESENT IN THE "1" STATE.
   THE FOLLOWING FIGURES APPLY:



   IF "D" SHOWN THUS (symbol), "1" STATE = Q STATE
   IF "D" SHOWN THUS (symbol), "1" STATE = $\bar{Q}$ STATE
   IF "1" SHOWN THUS (symbol), THIS LEAD IS HIGH WHEN FLIP-FLOP IS IN "1" STATE.
   IF 1 SHOWN THUS (symbol), THIS LEAD IS LOW WHEN FLIP-FLOP IS IN "1" STATE.
4. WAVEFORM AT TEST POINT #6 FOR RECEPTION OF "A" (ASCII 3Ø1)



5. UNLESS OTHERWISE NOTED:
   RESISTORS = 1K 1/4W 5%
   CAPACITORS = .01µf 100V 20%
   DIODES = D664

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	R12, R25	RES. 1.5K 1/2 W 5%	1300394	60
A/R		TUB THIN WALL #22 TEFLON (WHT)	9107265	59
1	R22	RES. 82 1/4W 5%	1301477	58
5	E1, E23, E27, E30, E46	I.C. DEC 5380	1910392	57
4	E2, E15, E33, E37	I.C. DEC 97401	1909973	56
9	E3, E4, E7, E8, E16, E20, E29, E38, E48	I.C. DEC 7474	1905547	55
3	E5, E13, E18	I.C. DEC 7493	1909054	54
5	E6, E10, E26, E28, E31	I.C. DEC 8271	1909615	53
2	E9, E14	I.C. DEC 5314	1910391	52
3	E11, E45, E47	I.C. DEC 7402	1909004	51
3	E12, E41, E44	I.C. DEC 7400	1905575	50
1	E17	I.C. MC1489L EIA RECIEVER	1910323	49
1	E19	I.C. DEC 7410	1905576	48
2	E21, E42	I.C. DEC 7404	1909686	47
1	E22	I.C. DEC 74193	1910018	46
1	E24	I.C. DEC 8815	1909713	45
2	E25, E39	I.C. DEC 7450	1905580	44
1	E32	I.C. MC1488L EIA DRIVER	1910322	43
2	E34, E36	I.C. DEC 5384	1910394	42
2	E40, E43	I.C. DEC 8251	1909594	41
1	E35	I.C. DEC 74H00	1909056	40
52	C1-C50, C62, C64	CAP. .01µf 100V 20% DISC	1001610	39
6	C51-C56	CAP. 6.8µf 35V 20% TANT	1000067	38
2	C57, C61	CAP. .047µf DISC	1009678	37
1	C58	CAP. 33 Pf MICA	1000009	36
1	C59	CAP. 100 Pf MICA	1000016	35
1	C60	CAP. 68 Pf MICA	1000014	34
1	C63	CAP. .001 µf 100V DISC	1000043	33
2	C65, C67	CAP. 10 pf 100V 5% MICA	1000006	32
1	C66	CAP. .47µf. 35V TANT	1005965	31
1	D1	DIODE, D662	1100113	30
8	D2-D9	DIODE, D664	1100114	29
3	R1, R4, R20	RES. 220, 1/4W 5%	1300271	28
1	R2	RES. 750, 1/4W 5%	1301401	27
2	R3, R19	RES. 10K 1/4W 5%	1300479	26
2	R5, R18	RES. 3.3K 1/4W 5%	1300439	25
4	R6, R7, R13, R24	RES. 470 1/4W, 5%	1300 316	24
1	R8	RES. 150 1/4W, 5%	1300250	23
2	R10, R15,	RES. 1K, 1/4W, 5%	1300365	22
2	R11, R16	RES. 750, 1W, 5%	1302385	21
1	R14	RES. 1.5K, 1/4W, 5%	1300391	20
1	R21	RES. 330, 1/4W, 5%	1300295	19
1	R23	RES. 30K, 1/4W, 5%	1302394	18
1	R9,	RES. 180 1/4W, 5%	1301322	17
1	R17	RES. 560, 1/2W, 5%	1300338	16
1	Q1	TRANSISTOR, DEC 3009B	1503100	15
2	Q2, Q3	TRANSISTOR, DEC 6534D	1503409	14
1	T1	XFMR 8010	1609651	13
1	DL1	DELAY LINE 30 NANO SEC	1605528	12
1	Y1	CRYSTAL 19.661 MHZ	1809880-02	11
38		LUGS, SPLIT	9006735	10
1		CONNECTOR, 40 PIN	1209941	9
A/R		WIRE #22AWG SOLID BUS	9107560-01	8
4		SPACER (CABLE CLAMP)	1202704	7
8		EYELET GS4-11 STIMPSON	9006750	6
4		HANDLE FLIP CHIP-MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	5009546	4
REF		MODULE HISTORY LIST	B-MH-M8650-YA-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8650-YA-5	2
REF		X-Y COORDINATE HOLE LOC.	K-CO-M8650-YA-4	1

PARTS LIST

ETCH BOARD REV C

IC TYPE	GND	+5V
DEC MC1488L	7	14(+15V)
8251	8	16
5384	1	8
74193	8	16
5314	1	8
8271	8	16
7493	10	5
DEC 5380	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT
59/8	22	JJ23-A	JJ23-B
		JH12-A	JH12-B
		JB13-A	JB13-B
		JB12-A	JB12-B
		JA12-A	JA12-B
		JA13-A	JA13-B
		JF24-A	JF24-B
		JF12-A	JF12-B
		JE13-A	JE13-B
		JE24-A	JE24-B
		JD24-A	JD24-B
		JD13-A	JD13-B
		JC24-A	JC24-B
59/8	22	JC13-A	JC13-B

JUMPER LIST

DEC FORM NO. DRE 1413

DEC NO.	EIA NO.	DEC NO.	EIA NO.
DEC6534D	MPS6534		
DEC3009B	2N3646		
D664	IN3606		
D662	IN645		

SEMICONDUCTOR CONVERSION CHART

ORIGINATED A REV. CHANGE NO. / REVISIONS CHK.

DRN P. W. Poma DATE 4/2/71
CHK'D DATE 4-7-71
DATE 4-13-71
DATE 4-13-71
DATE 9-16-71

FIRST USED ON A-ML-KL8-E

SCALE 2/1 SHEET 1 OF 2

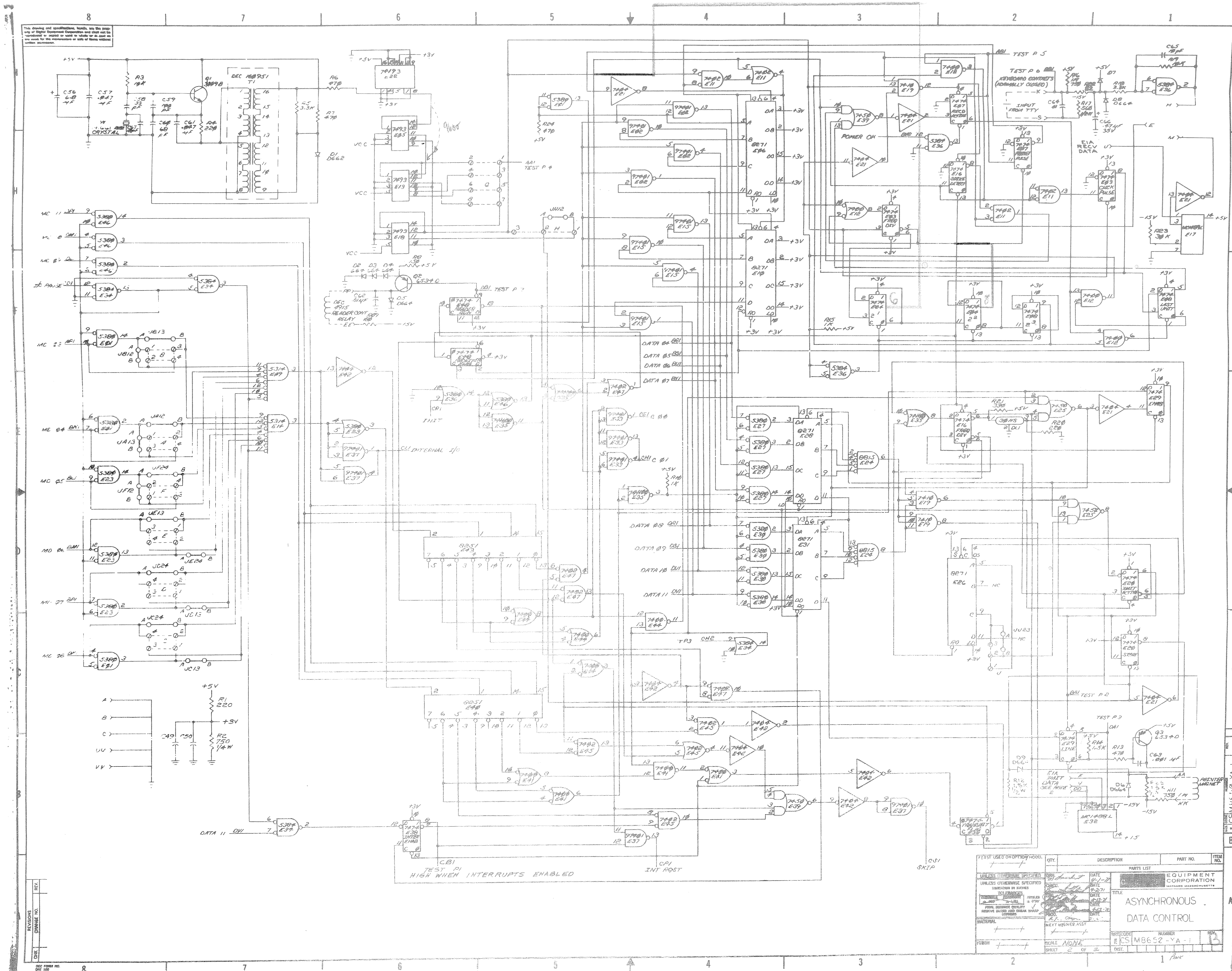
EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS DATA CONTROL

SIZE E CODE CS NUMBER M8650-YA-1 REV. A

DIST.

PINK



ASYNCHRONOUS DATA CONTROL
EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
CS M8652-YA-1
REV. B
SCALE NONE
SHEET 2 OF 2
PARTS LIST
UNLESS OTHERWISE SPECIFIED
HIGH WHEN INTERRUPTS ENABLED
INT RQST
TEST P1
TEST P2
TEST P3
TEST P5
INPUT FROM TTY
EIA RECV DATA
PRINTER MAGNET
POWER OK
DATA 11

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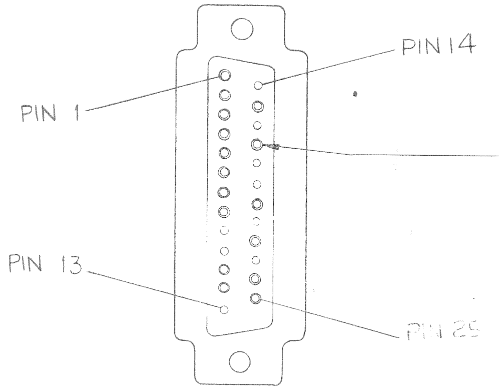
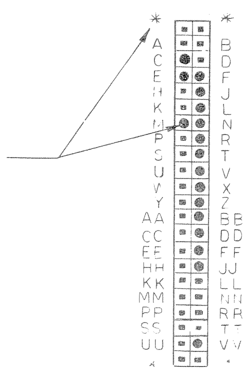


P2
SECTION A-A



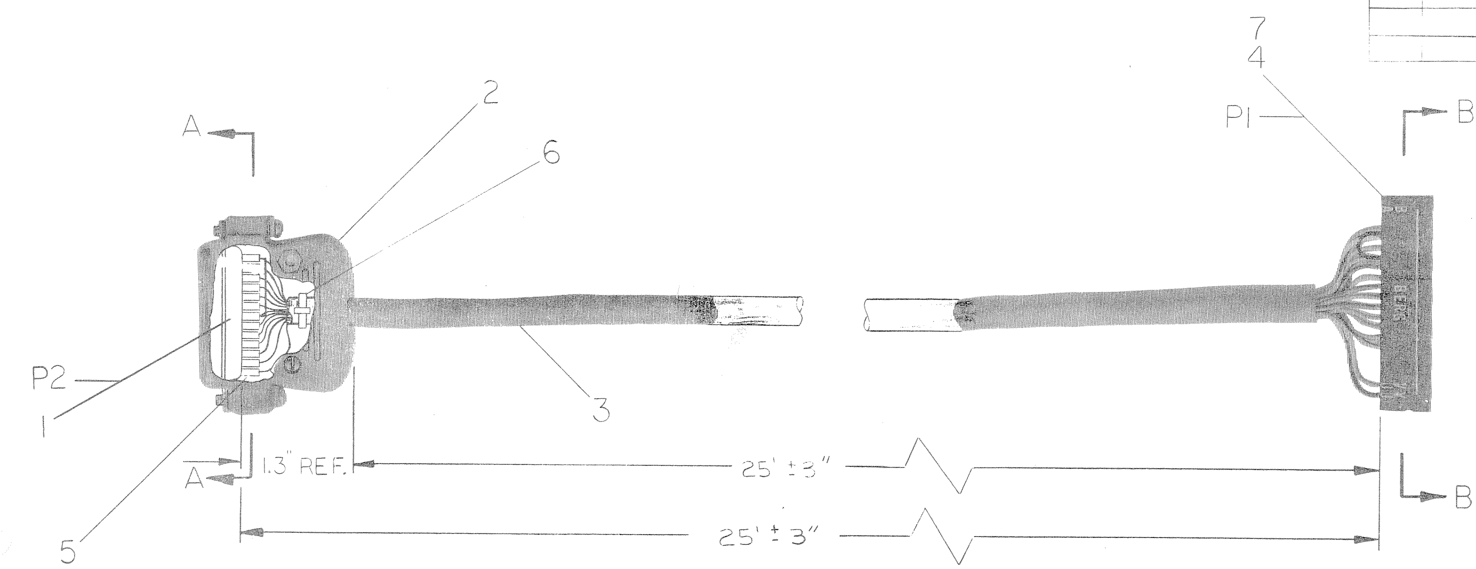
P1
SECTION B-B

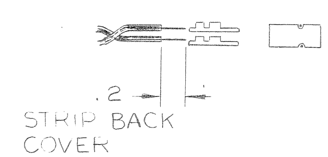
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	P1-VV	CRIMP	P2-7	SOLD.
		GRN/WHT	P1-C		P2-25	
		GRN/BLK	P1-JJ		P2-12	
		ORN/BLK	P1-FF		P2-11	
		RED	P1-DD		P2-20	
		GRN	P1-BB		P2-8	
		BLU/WHT	P1-Z		P2-6	
		ORN	P1-X		P2-22	
		BLU	P1-V		P2-4	
		WHT	P1-T		P2-5	
		BLU/BLK	P1-R		P2-17	
		BLK/WHT	P1-N		P2-15	
		RED/WHT	P1-L		P2-24	
		WHT/BLK	P1-J		P2-3	
3		RED/BLK	P1-F		P2-2	SOLD.
8		BLK	P1-E	CRIMP	P1-M	CRIMP
8	22	BLK	P2-1	SOLD.	P2-7	SOLD.

NOTES:

1. EACH SOLDERED CONN. ON P2 SHALL BE INSULATED WITH A 1/4" PIECE OF HY-SHRINK TUBING (ITEM #5).
2. • INDICATES PINS USED ON P1 (BERG CONN)
   ◎ INDICATES PINS USED ON P2 (CINCH PLUG)
   * DENOTES CAVATIES NOT USED OR DESIGNATED BY LETTER ON P1 (BERG CONN)





QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	WIRE #22 AWG STRD TEF BLK	9107350-0-0	8
17	PIN, CONN. #47706 BERG	1210089-6	7
1	TIE WRAP, PANDUIT #SST-1B	9007031	6
16	TUBING, HEAT SHRINK 1/8	9107255	5
1	HOUSING #20383 BERG	1210090-0	4
A/R	CABLE, BELDON 15 CONN.	9107672	3
1	HOOD, PLUG, CINCH #DB51226-1	1205885	2
1	PLUG, CINCH #DB-25P	1205886	1

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP8/E

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: —//—

DRN.	C. McCoy	DATE 3-5-71
CHK'D.	[signature]	DATE 3-15-71
ENG.	Robert M. Smith	DATE 3-15-71
PROJ. ENG.	Hans Vogelsang	DATE 3-15-71
PROD.	Larry Saylor	DATE 3/18/71

NEXT HIGHER ASSY: A-PL-DP8-EA-Ø

SCALE: NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: CABLE ASS'Y (BCØ1V)

SIZE	CODE	NUMBER	REV.
D	UA	BCØ1V-25-Ø	A

DIST.

REVISIONS		
REV.	CHANGE NO.	CHK
A	BC01V-00001	

J. McNAMARA

DEC FORM NO. ?-100

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 3/15/71

TITLE KL8/E Asynchronous Data Control (M8650)

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

Abstract

The KL8/E is a single line asynchronous data control for the PDP8-E. A variety of speeds are offered and split lugs are provided such that any desired device codes may be wired in. Factory wiring provides the standard console teleprinter device codes 03 and 04. Both 20 milliampere and EIA/CCITT levels are offered at 110 baud. In the higher speed ranges, only EIA/CCITT interface is offered. The EIA/CCITT interface applies to data leads only; no modem control is provided. This specification includes a complete discussion of the current driver capabilities, the selection of device codes, the selection of speeds, and the configurations available under each option designation.

ENG	APPD	SIZE	CODE	NUMBER	REV
John E. McNamara	John E. McNamara	A	SP	KL8-E-1	

DEC FORM NO. DRA 107

I. General Description

The KL8/E provides complete facilities for interfacing an asynchronous device such as a teleprinter or display to the PDP8/E. Split lugs are provided such that a KL8/E may be assigned any two device codes desired. In this manner a quantity of KL8/E units may be used on a single PDP8/E to provide a multiple teleprinter capability. The instruction set is similar to that used on previous Family-of-8 console teleprinter controls and asynchronous data controls. Several different clock speed and interface options are offered.

II. Physical

The KL8/E is a single quad board which plugs directly into the Omnibus. The same etched board (M8650) is used for all KL8/E options listed below, with a crystal change or cable change determining the option designation applicable.

III. Options

The KL8/E is available in the following options:

Designation	Receive Speed	Transmit Speed	Interface Type	(Board Type)
KL8/E	110 Baud	110 Baud	20 milliampere	M8650
KL8/EA	110 Baud	110 Baud	EIA Data Leads	M8650
KL8/EB	150 Baud	150 Baud	EIA Data Leads	M8650 YA
KL8/EC	300 Baud	300 Baud	EIA Data Leads	M8650 YA
KL8/ED	600 Baud	600 Baud	EIA Data Leads	M8650 YA
KL8/EE	1200 Baud	1200 Baud	EIA Data Leads	M8650 YA
KL8/EF	150 Baud	1200 Baud	EIA Data Leads	M8650 YA
KL8/EG	150 Baud	2400 Baud	EIA Data Leads	M8650 YA

The M8650 and M8650 YA boards use an identical etched board, but differ in their parts lists. The M8650 uses a DEC Part # 18-09880-01 14.418 MHz crystal, while the M8650 YA uses a DEC Part # 18-09880-02 19.661 MHz crystal. The 14.418 MHz crystal is used to obtain the 110 baud frequency, while the 19.661 MHz crystal is used to obtain the 150, 300, 600, 1200, and 2400 baud frequencies. This means that if one desires to change speeds in the field, a crystal change is involved to change to or from the 110 baud speed, plus re-labelling the board handle. To change amongst the speeds that are multiples of 150 baud, only jumper changes are involved.

	SIZE	CODE	NUMBER	REV
	A	SP	KL8-E-1	

DEC FORM NO 16-1022 DRA 108

Both the M8650 and M8650 YA boards contain the appropriate circuitry for both 20 milliampere and EIA operation. A noise suppression network in the 20 milliampere circuitry protects against high frequency noise, but in so doing limits the operating speed of the 20 milliampere interface to 110 baud. The 20 milliampere circuitry is automatically connected when the 7008360 interface cable assembly supplied with the KL8/E option is connected to the board. This cable terminates in a Mate-N-Lock connector compatible with PDP8/E teleprinters, PDP-11 teleprinters, and Mate-N-Lock equipped PDP-15 teleprinters. In like manner, the EIA interface circuitry is automatically connected when the BC01V cable assembly (or BC05C) supplied with the KL8/EA, EB,EC,ED,EE,EF, and EG options is connected. (See Section X)

The EIA interface circuitry meets all present requirements of EIA Specification RS232-C and CCITT Recommendation V24, but interfaces the DATA LEADS ONLY. No modem control is supplied - Data Terminal Ready and Request To Send are held asserted. Use of these options on modems arranged for automatic origination or automatic answering of dial telephone calls is not recommended. The EIA interfaces provided are intended for use with private(non-switched) wire modems operated on a full duplex basis or with a Null Modem (H308 or H312) and a terminal with an EIA interface.

IV. Specifications - Environment

Temperature: Ø degrees to 55 degrees C (Operating)
Humidity: 10% to 90% non-condensing (Operating)

During storage, temperature extremes of -15 degrees C and +65 degrees C can be tolerated.

V. Specifications - Communications Variables

A. Type or Transmission: Asynchronous
Type of Reception: Asynchronous

B. Number of Start Elements Per Character: One

C. Number of Data Elements Per Character: Eight

D. Number of Stop Elements Per Character: One or Two (Jumper selectable on board. Unless otherwise specified, the KL8/E and KL8/EA options will be supplied jumpered for two stop elements and all other options will be supplied jumpered for one stop element.)

E. Receiver Sample Rate: 16 times the baud rate

F. Capabilities of the 20 milliampere driver:

For current calculation purposes, the driver circuit may be envisioned as one lead returned through 750 ohms to -15 volts and the other lead as going to a point connected to -15 through 1 K and to +5 through a 6534D PNP transistor, the state of which is controlled by the KL8/E transmitter circuitry. If one assumes a maximum voltage drop across the transistor when saturated as 1 volt and a minimum potential difference between -15 and +5 of 19.75 volts, the output circuit may be envisioned as an 18.75 volt source in series with a 750 ohm resistor, or at worst a 788 ohm resistor. This arrangement would deliver 24 milliamperes in the short circuit case and would tolerate 150 additional ohms for resistance of the teleprinter magnet circuit and the wiring to the teleprinter magnet. The following wire resistances may be of assistance: (Annealed copper wire, 20 degrees C)

26 AWG : 40.81 ohms/1000 feet
24 AWG : 25.67 ohms/1000 feet
22 AWG : 16.14 ohms/1000 feet
19 AWG : 8.05 ohms/1000 feet

In calculating permissable loop length, remember that the above figures are for one conductor only. You must measure the distance from the KL8/E to the teleprinter AND BACK to obtain a footage distance for use in the above calculation. In addition, certain environmental influences such as radio interference, transformers, possibility of physical damage, etc. may cause the maximum operating distance to be less than that indicated by simple resistive calculations. Extreme caution should be used in any installation over 1500 feet.

G. Capabilities of the 20 milliampere receiver:

For current calculation purposes, the receiver circuit may be envisioned as one lead returned through 560 ohms to -15 volts and the other lead returned to both + 5 through 750 ohms and to a -.7 volt diode drop through 82 ohms. The resultant current will be 21 milliamperes for a zero ohm resistance loop to the keyboard contacts and 18 milliamperes in the case of a 150 ohm loop such as that mentioned in Section V-F above. Intermediate values can be determined from straight line interpolation between these points. It is not recommended that contact currents less than 18 milliamperes be used.

The 20 milliampere current receiving circuitry contains

an integrator circuit that may be modelled as a capacitor in series with 402 ohms. The standard value for this capacitor is .47 mfd. This arrangement assists in providing noise reduction by integrating high frequency noise such that its amplitude is insufficient to operate the Schmidt Trigger circuit that follows the integrator. Unfortunately, the integration reduces the rate-of-rise of signals, introducing an additional 2% distortion to the received signal at 110 baud. The high sampling rate of the receiver (16 times the baud rate) makes this additional distortion inconsequential except in the case of very extreme distortion already being present in the received signals. At speeds greater than 110 baud, EIA interface circuitry is used, bypassing both the 20 milliampere integrator circuit and the 20 milliampere Schmidt Trigger circuit.

Should it be desired to operate in current loop mode at speeds greater than 110 baud, the .47 mfd capacitor should be reduced in size by the same proportion as the speed is increased; i.e. if you double the speed, halve the value of the capacitor. This product is not specified to operate in current loop mode at speeds greater than 110 baud and the suggestions given above should not be construed as a commitment on the part of Digital Equipment Corporation to make this product operate in current loop mode at any speed other than 110 baud.

H. Capabilities of the Reader Run Control:

For current calculation purposes, this circuitry may be modelled as one lead being connected to -15 through 180 ohms and the other lead connected to +5 through a 6534D PNP transistor and a 150 ohm resistor. Due to the presence of diode clamps, transistor voltage drop, etc., this second lead may be envisioned as being connected to a + 7/10ths volt source or floating, depending upon the state of the 6534D transistor. The circuit formed by the above elements may be considered as a 14 volt source in series with 180 ohms.

The reader run leads operate a Wheelock #30002 reed relay mounted on a DEC 4915 teleprinter reader control card mounted within the call control area of the Teletype.* This relay has a coil resistance of 920 ohms and is specified to operate by the time the voltage across its coil reaches 9.6 volts. There is a ± 10% tolerance on coil resistance, so a worst case current of 12 milliamperes is required to achieve 9.6 volts across 828 ohms. The 12 milliamperes would cause a 2.3 volt drop across the 180 ohm resistor if that resistor were at the 189 ohm extreme of its ± 5% specification. This means that no more than 14.0 - 11.9 = 2.1 volts can

* "Teletype" is a registered trademark of Teletype Corporation, Skokie, Ill. USA

be dropped by the passage of 12 milliamperes through the wiring to the reader run. That sets a resistance limit of 175 ohms for the reader run control wiring from the KL8/E to the Teletype (and back). (See Section X)

I. EIA Signals Provided

Circuitry on the M8650 and M8650 YA modules conditions the transmitted data and received data to the specifications of Electronic Industries Association (EIA) Specification RS 232 C and Committe Consultatif International Telephonique et Telegraphique (CCITT) Recommendation V24.

The signals and their assigned pins on the 40 pin header found on the M8650 are as follows:

Protective Ground	UU	
Send Data	F	
Receive Data	J	
Request To Send	V	(Held Asserted)
Signal Ground	VV	
Data Terminal Ready	DD	(Held Asserted)

Assertion of the Request To Send lead is required with such modems as the Bell System 103F to maintain them in Full Duplex transmission mode on a private (non-switched) line.

Assertion of the Data Terminal Ready lead is required with such modems as the Bell System 103A to maintain an established dial-up connection.

Note that, since the Request To Send lead is held true, the M8650 and M8650 YA are suitable ONLY FOR FULL DUPLEX OPERATION (An additional reason is that there is no interlocking logic in the M8650 and M8650 YA to make the transmitter and receiver dependent upon each other in the fashion that Half Duplex would require).

Note further that, since Data Terminal Ready is held true, the M8650 and M8650 YA are suitable for dial telephone connection use (such as with the Bell System 103A) ONLY UNDER MANUAL CONTROL. In other words, these modules should not be used in dial telephone connections arranged for the automatic origination of calls or arranged for the automatic answering of calls. The reason for this is that Data Terminal Ready must be negated for a dial-up connection to be dropped when the call is over and the M8650 and M8650 YA are incapable of doing this. In addition, they do not monitor the leads necessary to tell them when to take such action.

In summary, the KL8/E, EA, EB, EC, ED, EE, EF, and EG do not have modem control. Thus, their use with modems is limited to full duplex private line and manual use on the dial-up telephone network.

J. Capabilities of the EIA interface

Total cable length from the KL8/EA(EB, EC,etc) to the associated modem or terminal must not exceed 50 feet under any circumstances.

K. Use With EIA Interface Terminals

The BC01V and BC05C cable assemblies end in male 25 pin connectors in accordance with the EIA specification requirements for data terminal equipment. Likewise, most terminals that have EIA interfaces also employ male 25 pin connectors, as they too are data terminal equipment in the language of the EIA specification.

The EIA specification, in specifying male connectors for data terminal equipment, envisions that each piece of data terminal equipment will be connected to a piece of data communications equipment. The typical connection which the specification envisions is data terminal equipment - modem-communication facility - modem - data terminal equipment. Thus, to stay within the specification when connecting a piece of data terminal equipment to another piece of data terminal equipment, one must introduce the modem-communications facility-modem link. In cases where the two terminals are more than 50 feet apart this would be done with real modems and a real communications facility. Where distances less than fifty feet are involved, Digital Equipment Corporation has devices called Null Modems which contain a female 25 pin connector,a length of cable that transposes the transmitted an received data leads such as a communications facility would,and a second female connector at the opposite end. Use of the Null Modem (H312 or H308) permits the same cables and other hardware to be used for both local and remote terminal applications.

Should a null modem not be available in a VT06 installation, the male/male cord supplied with the VT06 could be removed and the BC01V plugged directly into the female receptacle on the VT06 provided that the following lead swaps are made in the BC01V by swapping pins in the forty pin connector: Swap F & J; Move V to BB.

The above pin changes are not recommended as a general thing, as they result in non-standard cables.

VI. Programming

The KL8/E uses an augmented version of the instruction set used on Family-of-8 console teleprinters and teleprinter controls such as the PT08.

The instruction set is as follows:

6XX0 Clear Keyboard Flag (KCF)

Clears the keyboard flag without setting the reader run flip-flop. The AC is not cleared by this instruction.

6XX1 Skip on Keyboard Flag (KSF)

Increments the contents of the Program Counter if the keyboard flag is set,so that the next sequential instruction is skipped.

6XX2 Clear Keyboard Flag (KCC)

Clears the keyboard flag and AC and sets the reader run flip-flop. This action allows the hardware to begin assembling the next input character in the TTI register. If the reader is activated and there is tape in the reader, a serial character is read from the tape and is assembled in the TTI register. The keyboard can also load characters into the TTI register provided that the reader is deactivated. In either case, the keyboard flag is set when the character is assembled in the TTI register.

6XX4 Read Keyboard Buffer Static (KRS)

ORs the contents of the TTI register with AC4 through 11, and leaves the result in AC4-11. This is termed a static command because neither the AC nor the keyboard flag is cleared.

6XX5 Set/Clear Interrupt Enable (KIE)

Sets or clears the interrupt enable flip-flop as determined by AC11. If AC11 is asserted, an interrupt request will be generated when the KL8/E keyboard or teleprinter flag is set. If AC11 is negated interrupt requests cannot be generated.

6XX6 Read Keyboard Buffer Dynamic (KRB)

Performs the combined operations of the KCC and KRS instructions. Clears the AC and keyboard flag and transfers the contents of the TTI register to AC4 through AC11. This instruction also sets the reader run flip-flop to begin assembly of another character in the TTI register. When this operation is complete, the keyboard flag is set to indicate that another character is available.

The computer clears all flags which are on the clear flags bus (including both the keyboard flag and the reader run enable) when the console CLEAR pushbutton is depressed or when a Clear All Flags instruction is given. This means that the user program must set the reader enable by means of a KCC or KRB instruction before the first input data can be received from the reader. After the first character is assembled, the KRB instructions used to read that character and the succeeding characters will operate the reader appropriately.

6YY0 Set Teleprinter Flag (TFL)

Sets the teleprinter flag to ready the logic for another character.

6YY1 Skip on Teleprinter Flag (TSF)

If the teleprinter flag is set, increments the contents of the program counter by one so that the next sequential instruction will be skipped.

6YY2 Clear Teleprinter Flag (TCF)

Clears the teleprinter flag. This instruction can be microprogrammed with TPC.

6YY4 Load Teleprinter and Print (TPC)

Transfers AC bits 4-11 to the TTO register and starts shifting the character out to the printer/punch units. This instruction does not clear the teleprinter flag. This instruction can be microprogrammed with TCF to produce TLS.

6YY5 Skip on Printer or Keyboard Flag (TSK)

Skips the next instruction if the keyboard flag or printer flag is set and the interrupt enable flip-

flop is set.

6YY6 Load Teleprinter Sequence (TLS)

This instruction combines TCF and TPC. The teleprinter flag is cleared and the contents of AC bits 4-11 are transferred to the TTO register where the hardware shifts the character out to the printer/punch unit. Then the shifting operation has finished outputting the character and is ready for another character, the teleprinter flag is set. The whole operation, from the time at which the TLS has cleared the flag and the TTO starts character transfer, until the time the hardware finishes with the character and again sets the flag, requires 100 milliseconds at 110 baud.

Since a Clear All Flags instruction or operation of the CLEAR button on the console will cause the teleprinter output flag to be cleared, it is necessary that each program set the flag by means of a TFL instruction before commencing a teleprinter output sequence for the first time.

In all of the above instructions the device code has been represented as XX for keyboard instructions and YY for teleprinter instructions. In the case of the console teleprinter, these would be device codes 03 and 04 respectively. For further information on device codes, consult Secion VII of this specification.

VII. Device Code Selection

All input/output devices on a PDP8/E (or other Family-of-8 machine) have device codes. These device codes determine which unique input/output device responds to a given instruction. In a typical I/O instruction, such as 6031, the "6" indicates that this is an I/O instruction; the"03"indicates that the device having device code 03 is the device that is to respond to the instruction; and the "1" determines exactly what type of input/output operation is to take place at device 03.

It is vitally necessary that no two input/output devices on the same PDP8/E system have the same device code. If, for example, two devices use code 03, the instruction 6031 would cause a skip on teleprinter receiver flag if either flag was set. Instruction 6036 would probably OR together the contents of both receiver input registers, even if one contained only a partially assembled character - so long as one of them had the receiver flag set. In summary, a multiple teleprinter system (or any multi-input/output device system) must have unique device codes for each device so that the program can address each device individually.

Since there are a limited number of possible device codes in a PDP8/E, no assignment of device codes for large multi-teleprinter systems can be made. It is suggested, however, that the following device codes be used first:

03/04 Console teleprinter receive/transmit
30/31 Second KL8/E teleprinter receive/transmit
32/33
34/35
36/37

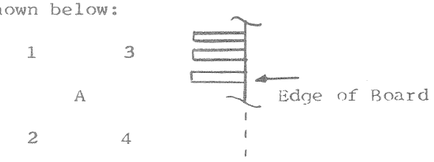
For PT08 compatibility 40/41,42/43,44/45,46/47 may be used, as long as no DP8-E Synchronous Modem Control is used.

To obtain additional device codes, determine which device codes you do not have yet on your system. Then write down the desired device code as two binary numbers, labelling the most significant bit "MD3", the next "MD4", the next"MD5", the next "MD6", the next "MD7", and the last "MD8". For example, for device code 03:

Octal:		0			3		
Binary:	0	0	0	0	1	1	
Label:	MD3	MD4	MD5	MD6	MD7	MD8	
Split Lug Group:	B	A	F	E	D	C	

The "Split Lug Groups" are explained on the next page.

In the lower right hand corner of the M8650/M8650YA board are split lugs which determine the device code to which the receiver will respond and the device code to which the transmitter will respond. The split lugs are arranged in groups of four. Each group has an alphabetic designation (A-F), and each split lug within a group has a numeric designation (1-4). A typical layout is shown below:



The correct strapping for each possible RECEIVER device code is given below:

	Group A	Group B	Group C	Group D	Group E	Group F
00	1-3	1-2	1-2	1-2	2-4	2-1
01	1-3	1-2	4-2	1-2	2-4	2-1
02	1-3	1-2	1-2	4-2	2-4	2-1
03	1-3	1-2	4-2	4-2	2-4	2-1
04	1-3	1-2	1-2	1-2	3-4	2-1
05	1-3	1-2	4-2	1-2	3-4	2-1
06	1-3	1-2	1-2	4-2	3-4	2-1
07	1-3	1-2	4-2	4-2	3-4	2-1
10	1-3	1-2	1-2	1-2	2-4	3-1
11	1-3	1-2	4-2	1-2	2-4	3-1
12	1-3	1-2	1-2	4-2	2-4	3-1
13	1-3	1-2	4-2	4-2	2-4	3-1
14	1-3	1-2	1-2	1-2	3-4	3-1
15	1-3	1-2	4-2	1-2	3-4	3-1
16	1-3	1-2	1-2	4-2	3-4	3-1
17	1-3	1-2	4-2	4-2	3-4	3-1
20	4-3	1-2	1-2	1-2	2-4	2-1
21	4-3	1-2	4-2	1-2	2-4	2-1
22	4-3	1-2	1-2	4-2	2-4	2-1
23	4-3	1-2	4-2	4-2	2-4	2-1
24	4-3	1-2	1-2	1-2	3-4	2-1
25	4-3	1-2	4-2	1-2	3-4	2-1
26	4-3	1-2	1-2	4-2	3-4	2-1
27	4-3	1-2	4-2	4-2	3-4	2-1

9600

IMPORTANT NOTICE: Device codes 03 for receiver and 04 for transmitter are factory wired by means of machine inserted jumpers located in the split lug groups A,B,C,D,E,&F.
CUT THESE JUMPERS BEFORE ADDING THE JUMPERS LISTED ABOVE.

Continuation of receiver device code strapping table:

	Group A	Group B	Group C	Group D	Group E	Group F
30	4-3	1-2	1-2	1-2	2-4	3-1
31	4-3	1-2	4-2	1-2	2-4	3-1
32	4-3	1-2	1-2	4-2	2-4	3-1
33	4-3	1-2	4-2	4-2	2-4	3-1
34	4-3	1-2	1-2	1-2	3-4	3-1
35	4-3	1-2	4-2	1-2	3-4	3-1
36	4-3	1-2	1-2	4-2	3-4	3-1
37	4-3	1-2	4-2	4-2	3-4	3-1
40	1-3	4-2	1-2	1-2	2-4	2-1
41	1-3	4-2	4-2	1-2	2-4	2-1
42	1-3	4-2	1-2	4-2	2-4	2-1
43	1-3	4-2	4-2	4-2	2-4	2-1
44	1-3	4-2	1-2	1-2	3-4	2-1
45	1-3	4-2	4-2	1-2	3-4	2-1
46	1-3	4-2	1-2	4-2	3-4	2-1
47	1-3	4-2	4-2	4-2	3-4	2-1
50	1-3	4-2	1-2	1-2	2-4	3-1
51	1-3	4-2	4-2	1-2	2-4	3-1
52	1-3	4-2	1-2	4-2	2-4	3-1
53	1-3	4-2	4-2	4-2	2-4	3-1
54	1-3	4-2	1-2	1-2	3-4	3-1
55	1-3	4-2	4-2	1-2	3-4	3-1
56	1-3	4-2	1-2	4-2	3-4	3-1
57	1-3	4-2	4-2	4-2	3-4	3-1
60	4-3	4-2	1-2	1-2	2-4	2-1
61	4-3	4-2	4-2	1-2	2-4	2-1
62	4-3	4-2	1-2	4-2	2-4	2-1
63	4-3	4-2	4-2	4-2	2-4	2-1
64	4-3	4-2	1-2	1-2	3-4	2-1
65	4-3	4-2	4-2	1-2	3-4	2-1
66	4-3	4-2	1-2	4-2	3-4	2-1
67	4-3	4-2	4-2	4-2	3-4	2-1
70	4-3	4-2	1-2	1-2	2-4	3-1
71	4-3	4-2	4-2	1-2	2-4	3-1
72	4-3	4-2	1-2	4-2	2-4	3-1
73	4-3	4-2	4-2	4-2	2-4	3-1
74	4-3	4-2	1-2	1-2	3-4	3-1
75	4-3	4-2	4-2	1-2	3-4	3-1
76	4-3	4-2	1-2	4-2	3-4	3-1
77	4-3	4-2	4-2	4-2	3-4	3-1

IMPORTANT NOTICE: Device codes 03 and 04 for receiver and transmitter respectively are factory wired by means of machine inserted jumpers located in the split lug groups A,B,C,D,E,&F. CUT THESE JUMPERS BEFORE ADDING THE JUMPERS LISTED ABOVE.

The correct strapping for each possible TRANSMITTER device code is given below:

	Group A	Group B	Group C	Group D	Group E	Group F
00	1-2	1-3	1-3	1-3	2-1	2-4
01	1-2	1-3	4-3	1-3	2-1	2-4
02	1-2	1-3	1-3	4-3	2-1	2-4
03	1-2	1-3	4-3	4-3	2-1	2-4
04	1-2	1-3	1-3	1-3	3-1	2-4
05	1-2	1-3	4-3	1-3	3-1	2-4
06	1-2	1-3	1-3	4-3	3-1	2-4
07	1-2	1-3	4-3	4-3	3-1	2-4
10	1-2	1-3	1-3	1-3	2-1	3-4
11	1-2	1-3	4-3	1-3	2-1	3-4
12	1-2	1-3	1-3	4-3	2-1	3-4
13	1-2	1-3	4-3	4-3	2-1	3-4
14	1-2	1-3	1-3	1-3	3-1	3-4
15	1-2	1-3	4-3	1-3	3-1	3-4
16	1-2	1-3	1-3	4-3	3-1	3-4
17	1-2	1-3	4-3	4-3	3-1	3-4
20	4-2	1-3	1-3	1-3	2-1	2-4
21	4-2	1-3	4-3	1-3	2-1	2-4
22	4-2	1-3	1-3	4-3	2-1	2-4
23	4-2	1-3	4-3	4-3	2-1	2-4
24	4-2	1-3	1-3	1-3	3-1	2-4
25	4-2	1-3	4-3	1-3	3-1	2-4
26	4-2	1-3	1-3	4-3	3-1	2-4
27	4-2	1-3	4-3	4-3	3-1	2-4
30	4-2	1-3	1-3	1-3	2-1	3-4
31	4-2	1-3	4-3	1-3	2-1	3-4
32	4-2	1-3	1-3	4-3	2-1	3-4
33	4-2	1-3	4-3	4-3	2-1	3-4
34	4-2	1-3	1-3	1-3	3-1	3-4
35	4-2	1-3	4-3	1-3	3-1	3-4
36	4-2	1-3	1-3	4-3	3-1	3-4
37	4-2	1-3	4-3	4-3	3-1	3-4
40	1-2	4-3	1-3	1-3	2-1	2-4
41	1-2	4-3	4-3	1-3	2-1	2-4
42	1-2	4-3	1-3	4-3	2-1	2-4
43	1-2	4-3	4-3	4-3	2-1	2-4
44	1-2	4-3	1-3	1-3	3-1	2-4
45	1-2	4-3	4-3	1-3	3-1	2-4
46	1-2	4-3	1-3	4-3	3-1	2-4
47	1-2	4-3	4-3	4-3	3-1	2-4

Continuation of transmitter device code strapping table:

	Group A	Group B	Group C	Group D	Group E	Group F
50	1-2	4-3	1-3	1-3	2-1	3-4
51	1-2	4-3	4-3	1-3	2-1	3-4
52	1-2	4-3	1-3	4-3	2-1	3-4
53	1-2	4-3	4-3	4-3	2-1	3-4
54	1-2	4-3	1-3	1-3	3-1	3-4
55	1-2	4-3	4-3	1-3	3-1	3-4
56	1-2	4-3	1-3	4-3	3-1	3-4
57	1-2	4-3	4-3	4-3	3-1	3-4
60	4-2	4-3	1-3	1-3	2-1	2-4
61	4-2	4-3	4-3	1-3	2-1	2-4
62	4-2	4-3	1-3	4-3	2-1	2-4
63	4-2	4-3	4-3	4-3	2-1	2-4
64	4-2	4-3	1-3	1-3	3-1	2-4
65	4-2	4-3	4-3	1-3	3-1	2-4
66	4-2	4-3	1-3	4-3	3-1	2-4
67	4-2	4-3	4-3	4-3	3-1	2-4
70	4-2	4-3	1-3	1-3	2-1	3-4
71	4-2	4-3	4-3	1-3	2-1	3-4
72	4-2	4-3	1-3	4-3	2-1	3-4
73	4-2	4-3	4-3	4-3	2-1	3-4
74	4-2	4-3	1-3	1-3	3-1	3-4
75	4-2	4-3	4-3	1-3	3-1	3-4
76	4-2	4-3	1-3	4-3	3-1	3-4
77	4-2	4-3	4-3	4-3	3-1	3-4

It will be noted that in many cases two straps are inserted in the same split lug. This is acceptable, but three in the same lug would not be, nor would a diagonal run such as from lug 1 to 4 or from lug 2 to 3. If such runs exist, the strapping has been done incorrectly.

VIII. Speed Selection

A group of split lugs labelled "G" determine the operating speed of each KL8/E, EA, EB etc. option. Another split lug group labelled "H" determines whether the transmitter and receiver sections operate at the same speed. The correct strappings of groups G & H are listed below for each option:

Option	REC Group G	TX Group H	Notes	REC	TX
KL8/E	7-8	1-2	M8650 board	110	110
KL8/EA	7-8	1-2	M8650 board	110	110
KL8/EB	7-8	1-2	M8650 YA board	150	150
KL8/EC	5-6	1-2 — 300	M8650 YA board	300	300
KL8/ED	3-4	1-2	M8650 YA board	600	600
KL8/EE	1-2	1-2 — 1200	M8650 YA board	1200	1200
KL8/EF	7-8	2-3	M8650 YA board	150	1200
KL8/EG	7-8	H2 to G5	M8650 YA board	150	2400

9600 9600

IMPORTANT NOTICE: There are no factory machine inserted jumpers in Group G. There must be one and only one of the straps shown in the above table in place in section G for the board to work; said jumper was hand soldered between the split lugs at the time the board left Digital's production facility. Remove that jumper before adding any other Group G jumpers. Group H has a factory machine inserted jumper between H1 and H2. Cut this jumper before adding any other Group H jumper.

IX. Stop Code Selection

Mechanical teleprinters, such as those that operate at 110 baud, require stop bits after each character transmitted so that their mechanisms can coast to a predetermined starting position before handling the next character. The same restriction applies to their receivers. To prevent the KL8/E from sending characters during this stopping interval, a stop bit counter is inserted in the KL8/E transmitter circuitry. This counter permits the KL8/E to request another character from the program as soon as it has send the last information bit of the preceding character, but prohibits it from sending that new character until an appropriate stop bit interval has been counted out following the transmission of the final information bit of the preceding character. This counter is controlled by a split lug group labelled "J".

Group J	Stop Code	Devices Using This Stop Code
1-2	1 bit —	Electronic receiver devices operating at 150 baud and above.
2-3	2 bits	Mechanical receiver devices operating at 110 baud.

The KL8/E and KL8/EA contain a machine inserted jumper

that provides 2 stop bits (J2-J3), as 110 baud devices use 2 stop bits. To the best of the author's knowledge, all devices operating at speeds above 110 baud use electronic receiver systems (even though all other parts of the device may be mechanical), so the KL8/EB, EC, etc are provided with hand inserted jumpers from J1 to J2, thus providing only 1 stop bit.

X. Special Notes

In the upper right corner of schematic E-CS-M8650-0-1, one will find points labelled E, H, and M. These, as indicated in the notes on the cover sheet,are designations of pins on the forty pin header at which point cables connect to the M8650 printed circuit board. Pin E is the input to the M8650 TTL logic circuitry in the receiver section. Pin H is the output of a filter and Schmidt Trigger circuit which convert 20 milliampere signals from the teleprinter keyboard to TTL logic signals. Pin M is the output of an inverter and EIA/CCITT level converter that convert EIA/CCITT received signals to TTL logic signals. The cable that is used for serving 20 milliampere devices (7008360) consists of a Mate-N-Lock connector at one end and a 40 pin housing at the other. The 40 pin housing contains a jumper from pin E to pin H, so that when that cable is plugged into the 40 pin header, a connection will be established from the 20 milliampere receiving circuitry to the receiving circuitry of the M8650. The cables that can be used with EIA/CCITT interface devices (BC01V and BC05C) consist of a 25-pin male connector at one end and a 40 pin housing at the other. In this housing there is a jumper from pin E to pin M, so that when this cable is plugged into the forty pin header, a connection will be established from the EIA/CCITT receiving circuitry to the receiving circuitry of the M8650 board.

It should be noted that the 175 ohm limitation cited for Reader Run control is actually unimportant, as the keyboard and printer requirements of 150 ohm limitation on line resistance are the ruling limitations.

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS: H724-Ø	H724-A
H724-Ø	PWR SUPPLY	X	X

USED ON OPTIONS

PDP8/E							

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
REVISED & RETYPED			
D	6/71	H724-12	JD
E	7/71	H724-13	
F	8/71	H72414	

DRN. DEVIN	DATE 1/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. FLEMING	DATE 1/71	TITLE POWER SUPPLY H724
ENG. PROVIDENT	DATE 1/71	
PROJ. ENG. E.M. KITE	DATE 1/71	
PROD. P. FAZIO	DATE 1/71	
FIRST USED ON PDP8/E		SIZE A CODE ML NUMBER H724-Ø REV. F
SCALE		
SHEET 1 OF 2		DIST.

DRA 131
Dec 16-(325)-1048-N471

PRINT SET H724-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	E-UA-H724-0-0	D	3	POWER SUPPLY	
X	A-PL-H724-0-0	D	6	POWER SUPPLY	
X	D-CS-H724-0-1	E	1	CIRCUIT SCHEMATIC (115V)	
X	D-CS-H724-A-1	E	1	CIRCUIT SCHEMATIC (230V)	
X	D-DI-H724-0-2	A	1	DRAWING INDEX	
X	E-IA-5409262-0-0	C	1	CONTROL BOARD A2	
X	E-IA-5409264-0-0	D	1	CONTROL BOARD A1	

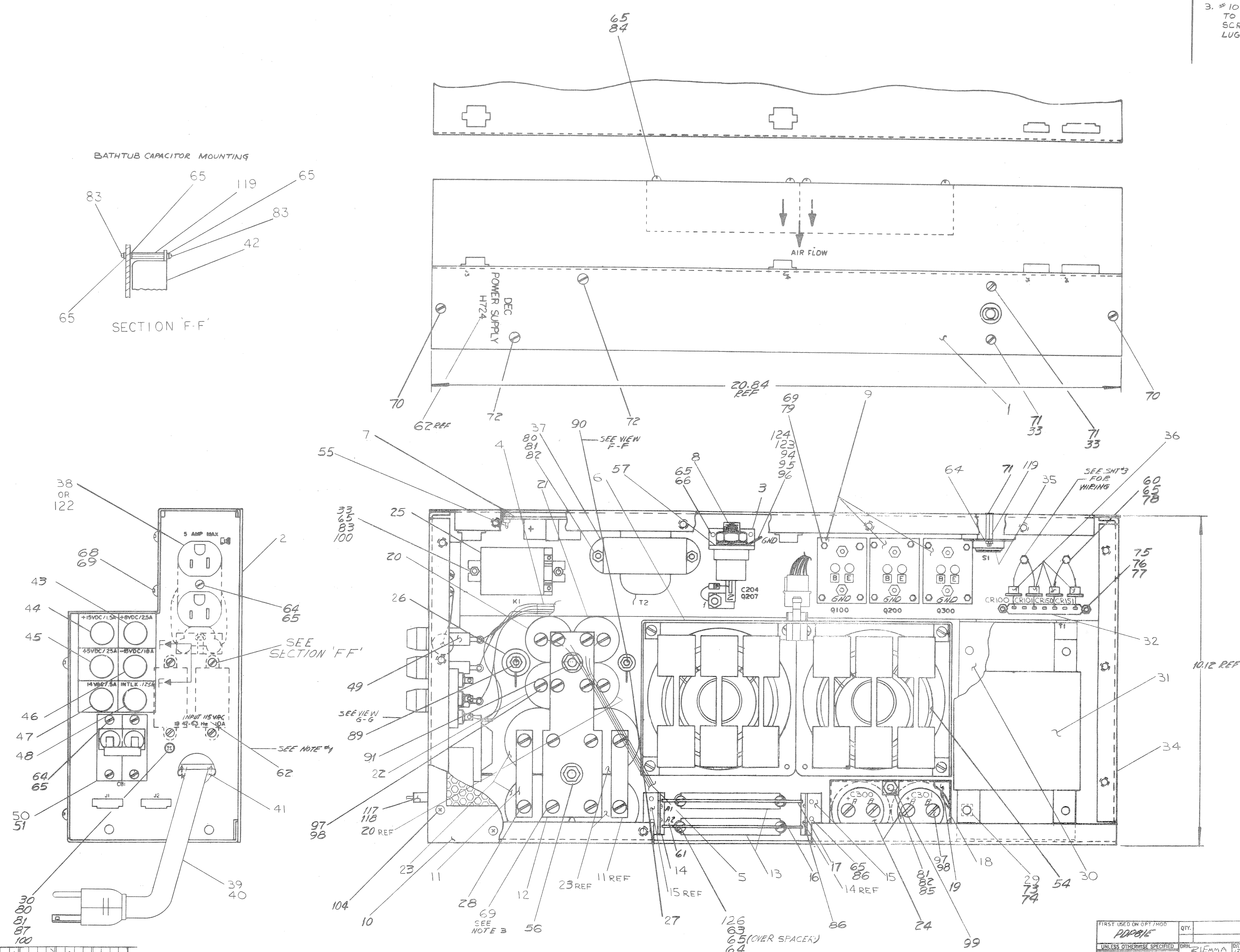
TITLE POWER SUPPLY — SHEET 2 OF 2 — SIZE A — CODE ML — NUMBER H724-Ø — REV. F

DRA 132
DEC 16-(325)-1048-1-N471

LEGEND	
NUMBER	VARIATION
H724-0	SEE PARTS LIST
H724-A	SEE PARTS LIST

NOTES:

1. ITEM #62 (DECAL) TO BE PLACED ON 230V POWER SUPPLY ONLY.
2. WIRE SOLDERED TO DIODES TO BE DONE AS SHOWN. DETAIL E' REF.
3. #10 EXT TOOTH LOCKWASHER TO BE INSTALLED BETWEEN SCREWHEAD AND LUG & BETWEEN LUG AND GND PLATE.



FIRST USED ON OPT/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —//—
FINISH —//—

DRN. BIEMMA DATE 12-14-70
CHK'D DATE 1-20-71
ENG. Provident DATE 1-21-71
PROJ ENG. DATE 1-25-71
PROD. DATE 1-25-71
NEXT HIGHER ASSY E-UA-PDP8/E-Ø
SCALE —//—
SHEET 1 OF 3

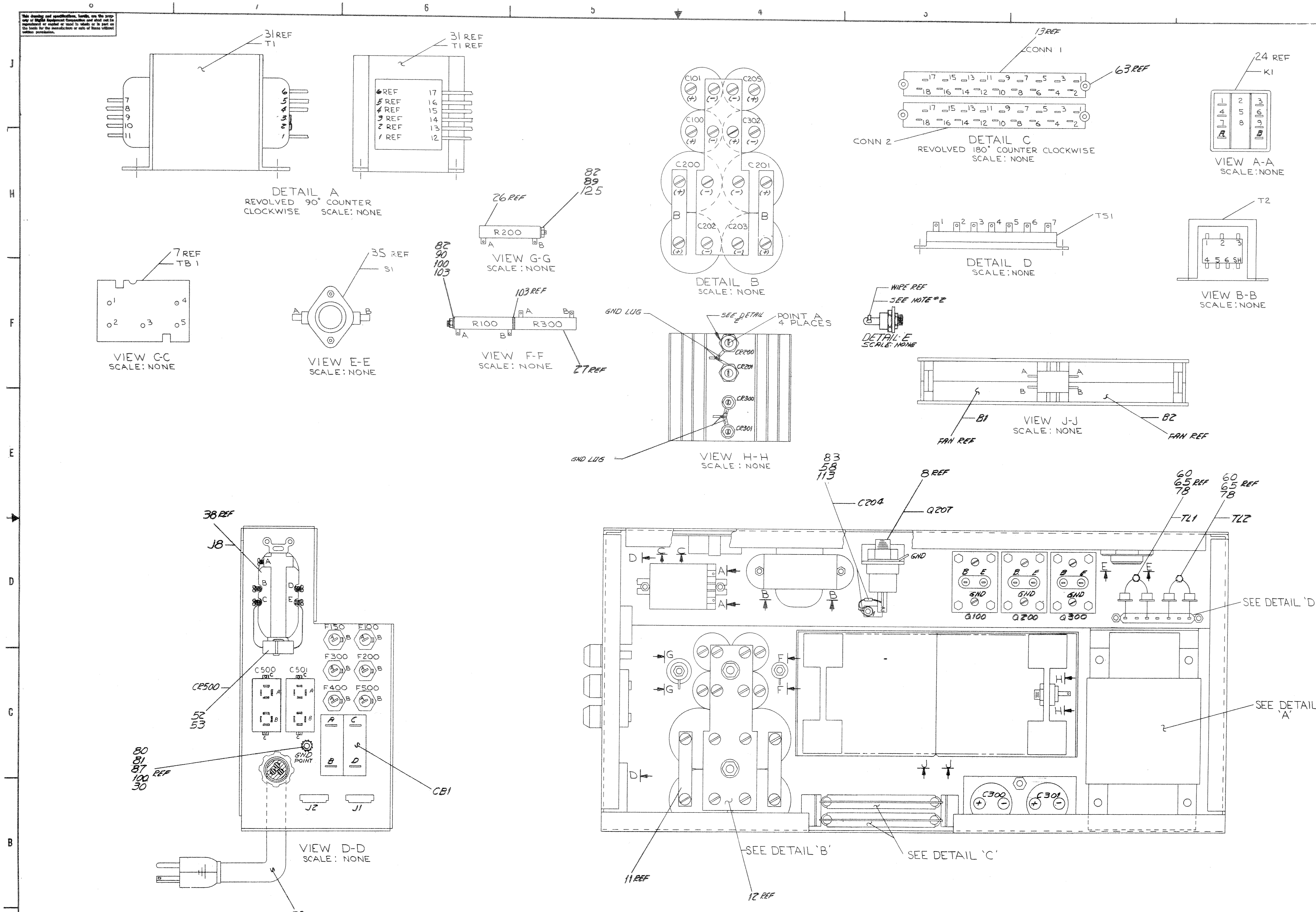
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: POWER SUPPLY (H724)

SIZE	CODE	NUMBER	REV.
E	UA	H724-Ø-Ø	D

DIST.

E UA H724-Ø-Ø B



DETAIL A
REVOLVED 90° COUNTER CLOCKWISE SCALE: NONE
VIEW G-G
SCALE: NONE
DETAIL B
SCALE: NONE
DETAIL C
REVOLVED 180° COUNTER CLOCKWISE
SCALE: NONE
CONN 1
CONN 2
VIEW A-A
SCALE: NONE
VIEW C-C
SCALE: NONE
VIEW E-E
SCALE: NONE
VIEW F-F
SCALE: NONE
DETAIL D
SCALE: NONE
VIEW B-B
SCALE: NONE
VIEW H-H
SCALE: NONE
POINT A
4 PLACES
GND LUG
DETAIL E
SCALE: NONE
VIEW J-J
SCALE: NONE
FAN REF
VIEW D-D
SCALE: NONE
GND POINT
SEE DETAIL 'D'
SEE DETAIL 'A'
SEE DETAIL 'B'
SEE DETAIL 'C'

FIRST USED ON OPTION MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —
FINISH —

DRN. DATE 12-14-70
CHK'D. DATE 1-20-71
ENG. DATE 1-21-71
PROJ. ENG. DATE 1-25-71
PROD. DATE

NEXT HIGHER ASSY E-UA-PDP8/E-Ø

SCALE —
SHEET 2 OF 3

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
POWER SUPPLY
(H724)

SIZE	CODE	NUMBER	REV.
E	UA	H724-Ø-Ø	D

DIST. G

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WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM HARNESS NUMBER	TO POWER SUPPLY LOCATION	REMARKS
4	18	BLK	1	C202-(−)	
	18	BLK			
	18	BLK	2	C201-(−)	
	18	BLK			
	18	RED	3	C202-(+)	
				C501-C	
	22	BLK	9		
			LOCATION	POWER	
	22	VIO	J2	SUPPLY SLOT	
	22	GRN	HARNESS	J2	
			LOCATION	POWER	
	22	BLU	J1	SUPPLY SLOT	
	22	GRN	HARNESS	J1	
	18	BRN	19	F500-B	
	18	BRN	20	F300-A	
	18	BRN	21		
	18	BLK	22	F300-B	
	14	RED	23	F200-B	
	18	BLK	24	F200-A	
	18	BLK	25		
	18	BLK	26		
	22	YEL	27	F150-B	
	22	RED	28	F150-A	
	22	ORN	29	F100-B	
	22	RED	30	F100-A	
	22	ORN	LOCATION	POWER	
	18	BLU	J3	SUPPLY SLOT	
	14	RED	HARNESS	J3	
	18	BLK			
	14	BLK			
	22	GRN	38	TB1-5	
	22	GRN	39		
	18	BLK	46	T2-GND	
	18	BLK	48	Q207-1	
	14	BLK			
	14	RED	LOCATION	POWER	
	18	BLK	J4	SUPPLY SLOT	
	18	BLU	HARNESS	J4	
	22	ORN			
	18	RED	55	Q207-GND	
	22	WHT/BLU	56	Q207-2	
	22	YEL	57	Q100-E	
	22	YEL	58		
	22	ORN	59	Q100-GND	
	22	ORN	60		
	22	WHT/BRN	61	Q100-B	
4	22	YEL	62	Q200-E	

WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM HARNESS NUMBER	TO POWER SUPPLY LOCATION	REMARKS
4	22	YEL	63	Q200-E	
	22	YEL	64		
	22	WHT/YEL	65		
	22	WHT/RED	66	Q200-B	
	18	RED	67	Q200-GND	
	22	BLU	68	Q300-E	
	22	BLU	69		
	22	BLU	70		
	22	WHT/ORN	71	Q300-B	
	18	RED	72	Q300-GND	
	22	GRN	73	S1-A	
	22	BLU	74	S1-B	
	22	BRN	J5 HARNESS	PS. SLOT J5	
	22	YEL	LOCATION	POWER	
	22	GRN	J6	SUPPLY SLOT	
	22	VIO	HARNESS	J6	
	22	BLU			
	22	WHT/BRN	82	CONN 1-17	
	22	YEL	83	CONN 1-14	
	22	ORN	84	CONN 1-12	
	22	WHT/ORN	85	CONN 1-8	
	22	BLU	86	CONN 1-2	
	22	BLK	87	CONN 1-3	
	22	WHT/YEL	90	CONN 2-12	
	22	WHT/BLU	91	CONN 2-15	
	22	WHT/RED	92	CONN 2-17	
	18	ORN	93	C300-(+)	
	18	ORN			
	18	BLK	94	C300-(−)	
	22	BLK			
	18	RED	95	C301-(+)	
	18	RED			
	18	BLU	96	C301-(−)	
	22	RED	99	TL-1	
	22	RED	100	TL-2	
	22	BLU	LOCATION (MALE) P7 HARNESS	HEAT SINK HOUSING ASSY (FEMALE) MATING JACK J7	
	22	BLU			
	22	YEL			
	22	YEL			
	22	YEL			
	18	BRN			
	18	BRN			
	18	BLK			
	18	BLK			
	18	BLK			
	18	ORN			
	18	ORN			
	18	RED			
	18	RED			
	18	RED			
	18	BLK	116	R300-B	
	18	RED	117	R300-A	
	18	BLU	118	C302-(−)	
	18	BLU			
	18	BLU			
	18	BLU			
	18	RED	119	C205-(+)	
	14	RED			
	14	RED	120		
	14	RED			
	22	ORN	121	C101-(+)	
	22	ORN			
	22	YEL			
	22	RED	122	C100-(+)	
	22	RED			
4	18	RED	123	C200-(+)	

WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM HARNESS NUMBER	TO POWER SUPPLY LOCATION	REMARKS
4	18	RED	123	C200-(+)	
4	18	RED			
4	14	BLK	124	C200-(−)	
4	14	BLK			
5	22	YEL	1	C302-(+)	
	22	BLK	2	C205-(−)	
	22	BLK	3		
	22	ORN	4	C101-(+)	
	22	ORN	5		
	22	BLK	6	C101-(−)	
	22	BLK	7		
	18	RED	8	C205-(+)	
	18	RED	9		
	18	RED	10		
	22	BLU	11		
	22	GRY	12	C302-(−)	
	22	BLK	13		
	22	BLK	14	CONN 1-4	
	22	BLK	15	CONN 2-4	
	18	RED	17	CONN 2-14	
	22	ORN	18	CONN 1-16	
	18	RED	19	CONN 2-16	
	22	BLK	20	CONN 2-18	
	22	YEL	21	CONN 1-15	
	22	BLK	22	CONN 1-13	
	22	ORN	23	CONN 2-13	
	22	BLK	24	CONN 1-10	
	22	GRY	25	CONN 1-9	
5	18	RED	26	CONN 2-2	

JUMPER TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
31	—	BLK	T1-4	—	J5-1	SOL
31	—	BLK	T1-5	—	F500-A	SOL
31	—	BLK	T1-6	—	J5-3	SOL
31	—	BLK	T1-12	—	CR200-A	SOL 114
31	—	BLK	T1-13	—	C203-(−)	SOL
31	—	BLK	T1-14	—	CR201-A	SOL 114
31	—	BLK	T1-15	—	CR300-A	SOL 114
31	—	BLK	T1-16	—	C301-(−)	SOL
31	—	BLK	T1-17	—	CR301-A	SOL 114
106	18	RED	C300-(+)	111	C301-(+)	111
105	18	BLK	C300-(−)	111	C301-(−)	111

EXTERNAL COMPONENT LIST

ITEM NO	DESCRIPTION	POL	FROM	TO	POL	REMARKS
52	THYRECTOR (CR500)		J8-C	J8-E		115 V
53	THYRECTOR (CR500)		J8-C	J8-E		230 V
58	CAPACITOR (C204)		Q207-1	Q207-2		
36	DIODE (CR100)		TS1-1	TL1		
36	DIODE (CR101)		TS1-3	TL1		
36	DIODE (CR150)		TS1-5	TL2		
36	DIODE (CR151)		TS1-7	TL2		

JUMPER TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	REMARKS
105	18	BLK	K1-A	110	TB1-3	SOL	4 1/2"
105	18	BLK	K1-B	110	TB1-4	SOL	3 1/2"
37	—	BLK	T2-1	SOL	CB1-D	SOL	
37	—	BLK	T2-4	SOL	TB1-1	SOL	
37	—	BLK	T2-5	SOL	F400-A	SOL	
37	—	BLK	T2-6	SOL	TB1-2	SOL	
37	—	BLK	T2-SH	SOL	T2-GND	112	
106	18	RED	C100-B	111	R100-A	SOL	6"
105	18	BLK	C100-A	111	R100-B	SOL	8"
106	18	RED	C200-A	111	R200-A	SOL	6"
105	18	BLK	C200-B	111	R200-B	SOL	7 1/2"
109	14	RED	C200-A	113	C201-(+)	113	5"
109	14	RED	C203-B	113	CR200 & 201 (GND LUG)	113	26"
106	18	RED	C300-A	111	CR300 & 301 (GND LUG)	SOL	
39	16	GRN	ITEM #39	—	GND CORD	SOL	
		WHT		—	CB1-A	SOL	
		BLK		—	CB1-C	SOL	
40	18	GRN	ITEM #40	—	GND CORD	SOL	
		WHT		—	CB1-A	SOL	
		BLK		—	CB1-C	SOL	
~~107~~	~~18~~	~~GRN~~	~~C500-C~~	~~SOL~~	~~C501-C~~	~~SOL~~	
31	—	BLK	T1-11	—	TS1-3	SOL	
31	—	BLK	T1-10	—	TS1-7	SOL	
31	—	BLK	T1-9	—	C205-(−)	SOL	
31	—	BLK	T1-8	—	TS1-5	SOL	
31	—	BLK	T1-7	—	TS1-1	SOL	
31	—	BLK	T1-1	—	C501-A	SOL	
115	22	RED	C501-A	110	B1-A	SOL	
	∞	WHT	T1-2	SOL	B1-B	SOL	
116	18	WHT	T1-2	SOL	C501-B	110	H724-Ø (ONLY)
116	18	WHT	T1-3	SOL	C501-B	110	H724-A (ONLY)
106	18	RED	C500-A	110	C501-A	110	2 1/2"
116	18	WHT	C500-B	110	C501-B	110	2 1/2"
116	18	WHT	C500-B	110	J8-B	110	6"
106	18	RED	C500-A	110	J8-D	121	6"

JUMPER TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	REMARKS
108	22	BLK	J2-3	123	GRND PNT	112	
108	22	BLK	J1-3	123	GRND PNT	112	
105	18	BLK	TB1-4	SOL	GRND PNT	112	
105	18	BLK	C200-	113	GRND PNT	112	
105	18	BLK	F400-B	SOL	GRND PNT	112	
105	18	BLK	C501-C	111	GRND PNT	112	
108	22	BLK	A2 PIN 11	SOL	C101 NEG	112	
108	22	BLK	A2 PIN 11	SOL	C101 NEG	112	
129	18	RED	CB1-D	SOL	K1-7	128	
129	18	WHITE	CB1-B	SOL	K1-9	128	
129	18	RED	C501-A	110	K1-4	128	
129	18	WHITE	C501-B	110	K1-6	128	
130	22	VIOLET	J4-6	127	CONN 2-10	SOL	
130	22	VIOLET	J3-6	127	CONN 2-10	SOL	
116	18	WHITE	T2-2 OR 3 *	SOL	K1-9	128	
108	18	BLK	J8-A	112	C501-C	112	

* T2-2 ON H724
T2-3 ON H724-A

FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —
FINISH —

DRN. DATE 1-14-71
CHK'D DATE 1-20-71
ENG. DATE 1-20-71
PROJ. ENG. DATE 1-20-71
PROD. DATE 1-20-71
NEXT HIGHER ASSY E-UA-PDP8/E-Ø
SCALE —
SHEET 3 OF 3

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
POWER SUPPLY (H724)

SIZE	CODE	NUMBER	REV.
E	UA	H724-Ø-Ø	D

DIST.

REVISIONS / CHANGE NO. / REV. / CHK

DEC FORM NO. DRL 100

E UA H724-Ø-Ø D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY BOB EMMA	CHECKED [illegible]	SECTION 1	
DATE 12-22-70	DATE 1-20-71		
ENG [illegible]	PROD	ISSUED SECT. 1	
DATE 1-20-71	DATE [illegible] 1/21/71		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	H724-0	H724-A
1	E-IA-5309257-0-0	CHASSIS	1	1
2	D-IA-5309252-0-0	PANEL REAR	1	1
3	B-MD-5309199-0-0	BRKT MTG. SCR. PRV	1	1
4	E-IA-7007191-0-0	HARNESS, MAIN CHASSIS	1	1
5	D-IA-7007192-0-0	HARNESS, CONNECTORS	1	1
6	D-AD-7007197-0-0	HEAT SINK HOUSING ASSY	1	1
7	C-AD-5409248-0-0	TURRET BD. ASSY	1	1
8	1110183	SCR. PRU. 100 IDC 55A	1	1
9	C-AD-7007205-0-0	CASTING HEAT SINK ASSY	1	1
10	D-IA-5309187-0-0	COVER, POWER SUPPLY	1	1
11	B-MD-5309202-0-0	BAR, BUS	2	2
12	B-MD-5309251-0-0	PLATE, BUS	1	1
13	B-MD-5509626-0-0	18 PIN CONNECTOR BLOCK	2	2
14	B-MD-5309196-0-0	CARD GUIDE	2	2
15	B-MD05309197-0-0	BRKT, MTG CARD GUIDE	2	2
16	E-IA-5409262-0-0	MODULE BD (A2)	1	1
17	E-IA-5409264-0-0	MODULE BD (A1)	1	1
18	B-MD-5309200-0-0	CAP. PLATE, TOP	1	1
19	B-MD05309201-0-0	CAP. PLATE, BOTTOM	1	1
20	1010185	CAP. 10800 MFD @ 20VDC	2	2
21	1010197	CAP 18000 MFD @ 10 VDC	1	1
22	1010186	CAP. 6000 MFD @ 40 VDC	1	1

TITLE: POWER SUPPLY (H724)	ASSY NO. E-UA-H724-0-0	SIZE A	CODE PL	NUMBER H724-0-0	REV. D	ECO NO. H724-00014
	SHEET 1 OF 6	DIST. 6				

DEC FORM NO.16-1031

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY BOB EMMA	CHECKED [illegible]	SECTION 1	
DATE 12-22-70	DATE 1-20-71		
ENG [illegible]	PROD	ISSUED SECT. 1	
DATE 1-20-71	DATE [illegible] 1/21/71		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	H724-0	H724-A
23	1010184	CAP 30000 MFD @ 25 VDC	4	4
24	1010187	CAP 14000 MFD @ 40 VDC	2	2
25	1210198	RELAY 24V	1	1
26	1302888	RES. 100Ω 25W 5%	1	1
27	1310188	RES. 300Ω 10W 5%	2	2
28	9008203	SCR. PAN HD PHL #10-32 X ½ LG SST	12	12
29	9006590	NUT, ¼-20 TINNERMAN	4	4
30	9008072	WASHER, EXT TOOTH #8	1	1
31	1610178	TRANSFORMER, #6012296	1	1
32	9008392	TERM STRIP 7 POS. JONES #2007	1	1
33	9006560	NUT, KEPS #6-32 SST	10	10
34	D-MD-5309260-0-0	PANEL, FRONT	1	1
35	1210199	SWITCH, THERMOSTAT	1	1
36	1110182	DIODE IN4721	4	4
37	1610177	TRANSFORMER #6012297	1	1
38	1205351	RECPT. DUPLEX 3 WIRE	1	—
39	1700006-15	POWER CORD (115V)	1	-
40	1700005-15	POWER CORD (230V)	-	1
41	9008280	CONN. EFCOR 3/8 DIA	1	1
42	1002153	CAP. .1 MFD @ 1000 VDC	2	2
43	9008387	FUSE 2.5A 250V AGC 2½ BUSSMAN	1	1
44	9008388	FUSE 1.5A 250V AGC 1½ BUSSMAN	1	1

TITLE: POWER SUPPLY (H724)	ASSY NO. E-UA-H724-0-0	SIZE A	CODE PL	NUMBER H724-0-0	REV. D	ECO NO.
	SHEET 2 OF 6	DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY BOB EMMA	CHECKED John Dunn	SECTION 1	
DATE 12-22-70	DATE 1-20-71		
ENG E M Kite	PROD	ISSUED SECT. 1	
DATE 1-20-71	DATE Paul Fazio 1/25/71		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	H724-0	H724-A
45	9008386	FUSE 25A 125V ABC25 BUSSMAN	1	1
46	9008390	FUSE 10A 250V ABC10 BUSSMAN	1	1
47	9007208	FUSE .5A 250V AGC ½ BUSSMAN	1	1
48	9008389	FUSE .125A 250V AGC 1/8 BUSSMAN	1	1
49	9007242	FUSE HOLDER	6	6
50	1210191-0	CIRCUIT BREAKER 10A (115V)	1	-
51	12-10364	CIRCUIT BREAKER 5A (230V)	-	1
52	1110181	TYRECTOR 6RS20SP5B5	1	-
53	1102915	TYRECTOR 6RS20SP9B9	-	1
54	1210263	GUARD-INLET MUFFIN	2	2
55	9008395	NUT, TOGGLE TINNERMAN	2	2
56	9008426	BUSHING INS. FLANGED	2	2
57	9008418	WASHER SCR. ½ I.D.	2	2
58	1001776	CAP. IMFD 35VDC	1	1
~~59~~	~~9006809~~	~~SPACER ¼ AFX 1 LG~~	~~1~~	~~1~~
60	9006966	LUG. TURRET #6-32	2	2
61	A-DC-5309375-0-0	DECAL MODULE BDS	A/R	A/R
62	A-DC-5309376-0-0	DECAL 230V	-	A/R
63	B-MD-5309198-0-0	SPACER, CONNECTOR BLOCK	2	2
64	9006021-1	SCR, HD. PAN, PHL #6-32 X 5/16 LG	7	7
65	9006633	WASHER INT TOOTH #6	18	18
66	9008407-1	SCR. THD CUTTING HD. PAN. PHL #6-32X3/8	4	4

TITLE POWER SUPPLY	ASSY NO. E-UA-H724-0-0	SIZE A	CODE PL	NUMBER H724-0-0	REV. D
	SHEET 3 OF 6	DIST.			ECO NO.

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY BOB EMMA	CHECKED John Dunn	SECTION 1	
DATE 12-22-70	DATE 1-20-71		
ENG E M Kite	PROD	ISSUED SECT. 1	
DATE 1-20-71	DATE Paul Fazio 1/25/71		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	H724-0	H724-A
~~67~~	~~9008400~~	~~NUT SPEED #6-32 TINNERMAN~~	~~4~~	~~4~~
68	9006072-1	SCR, HD PAN, PHL #10-32 X 7/16 LG	8	8
69	9006635	WASHER, INT TOOTH #10	24	24
70	9006022-2	SCR, HD FLAT, PHL #6-32 X 5/16 LG	8	8
71	9006029-2	SCR HD FLAT PHL #6-32 X ¼ LG	2	2
72	9008409-2	SCR, HD FLAT, #8-18 X ½ LG	2	2
73	9006058-3	SCR,HD TRUSS, PHL #¼-20 X 3/4 LG	4	4
74	9006637	WASHER INT TOOTH #¼	4	4
75	9006010-1	SCR, HD PAN, PHL #4-40 X 5/16 LG	2	2
76	9006557	NUT, KEPS #4-40	2	2
77	9006632	WASHER INT. TOOTH #4	2	2
78	9007842-1	SCR, HD PAN, PHL #6-32 X 3/16 LG	2	2
79	9008915-1	SCR, HD. PAN, PHL #10-32 X 11/16 LG	12	12
80	9006039-1	SCR, HD PAN, PHL #8-32 X ½ LG	2	2'
81	9006634	WASHER, INT TOOTH #8	13	13
82	9006563	NUT, KEPS #8-32	4	4
83	9006022-1	SCR, HD, PAN, PHL #6-32 X 3/8 LG	12	12
84	9006026-1	SCR, HD, PAN, PHL #6-32 X 3/4 LG	16	16
85	9008412-5	SCR, HD, ROUND, SLOT #8-32 X 4 5/8 LG	2	2
86	9008408-1	SCR, HD PAN SELG CUTTING&FORM 6-32X¼LG	4	4
87	9006561	NUT, HEX #8-32	1	1
88	9007649	WASHER(EXT TOOTH) #6	2	2

TITLE POWER SUPPLY (H724)	ASSY NO. E-UA-H724-0-0	SIZE A	CODE PL	NUMBER H724-0-0	REV. D
	SHEET 4 OF 6	DIST.			ECO NO.

DEC FORM NO.16 1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	BOB EMMA	CHECKED	SECTION
DATE	12-22-70	DATE 1-20-71	1
ENG	Em Mita	PROD	ISSUED SECT.
DATE	1-20-71	DATE Paul Frazo 1/25/71	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H724-0	H724-A
89	9008410-5	SCR, HD ROUND SLOT #8-32 X 2 9/16 LG	1	1
90	9008411-5	SCR, HD ROUND SLOT #8-32 X 4 ¼ LG	1	1
91	9008401	CARRIAGE BOLT 5"LG	2	2
92	9008203	NUT, KEPS #¼-20	2	2
93	9005576	WASHER FLAT #¼	2	2
94	9008418	WASHER, MICA (SCR)	2	2
95	9008068	WASHER, FLAT #½ SS. (SCR)	1	1
96	9008439	LUG GROUND #½ (SCR)	1	1
97	9006071-1	SCR, HD PAN, PHL #10-32 3/8 LG	8	8
98	9007906	WASHER, SPLIT LOCK	8	8
99	9007081	CABLE CLAMP, HOLUB	1	1
100	9006660	WASHER, FLAT #8 SS	5	5
101	9008414	WASHER, MKA	4	4
102	9008417	WASHER, INS	2	2
103	9008416	WASHER, INS	5	5
104	9006022-2	SCR, HD FLAT, PHL #6-32 X 3/8 LG	14	14
105	9107360-00	WIRE #18 AWH STRD TEF INS COLOR BLK	A/R	A/R
106	9107360-22	WIRE #18 AWG STRD TEF INS COLOR RED	A/R	A/R
107	9107360-55	WIRE #18 AWG STRD TEF INS COLOR GRN	A/R	A/R
108	9107350-00	WIRE #22 AWG STRD TEF INS COLOR BLK	A/R	A/R
109	9107370-22	WIRE #14 AWG STRD TEF INS COLOR RED	A/R	A/R
110	9007917	CONN, SOLDERLESS #5-902 ARKLESS	10	11

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY (H724	E-UA-H724-0-0	A	PL	H724-0-0	D	
	SHEET 5 OF 6	DIST.				

DEC FORM NO. 16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	BOB EMMA	CHECKED	SECTION
DATE	12-22-70	DATE 1-20-71	1
ENG	Em Mita	PROD	ISSUED SECT.
DATE	1-20-71	DATE Paul Frazo 1/25/71	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H724-0	H724-A
111	9007930	CONN. SOLDERLESS #50360 ARKLESS	9	9
112	9007928	CONN. SOLDERLESS #50364 ARKLESS	1	1
113	9007926	CONN. SOLDERLESS #50368 ARKLESS	3	3
114	9107250	TUBING, SHRINKABLE WHT	A/R	A/R
115	9107420-29	#22 AWG TWP TEF INS COLOR RED/WHT	A/R	A/R
116	9107360-99	#18 AWG STR TEF INS COLOR WHT	A/R	A/R
117	7007006-1	JUMPER	1	1
118	7007006-2	JUMPER	1	1
119	9006861	SPACER ¼ AF X 7/8 AL #6-32	6	6
120	9007919	250 SERIES 14-16 AWG	1	-
121	9006998	250 FLAG 10-20 AWG	1	1
122	90-08856	250V 15A 50HZ DUPLEX RECEPTACLE	-	1
123	90-08448	INS BUSHING (USE WITH ITEM #8)	1	1
124	90-08447	EXT TOOTH LOCK WASHER (USED WITH ITEM #8)	1	1
125	90-06674	CENTER WASHER	2	2
126	90-06653	#6 FLAT WASHER	2	2
127	1209379-01	PIN CONTACT FEMALE MATE-N-LOCK	4	4
128	9008836	CONN SOLDERLESS #42566-1 AMP	4	4
REF	D-CS-H724-0-1	CIRCUIT SCHEMATIC		
REF	D-CS-H724-A-1	CIRCUIT SCHEMATIC		
129	9107430-29	#18 AWG STRD TEF TWP RED/WHT	A/R	A/R
130	9107350-77	WIRE #22 AWG STRD TEF INS VIO.	A/R	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY (H724)	E-UA-H724-0-0	A	PL	H724-0-0	D	
	SHEET 6 OF 6	DIST.				

DEC FORM NO. 16-1031
DRA 110

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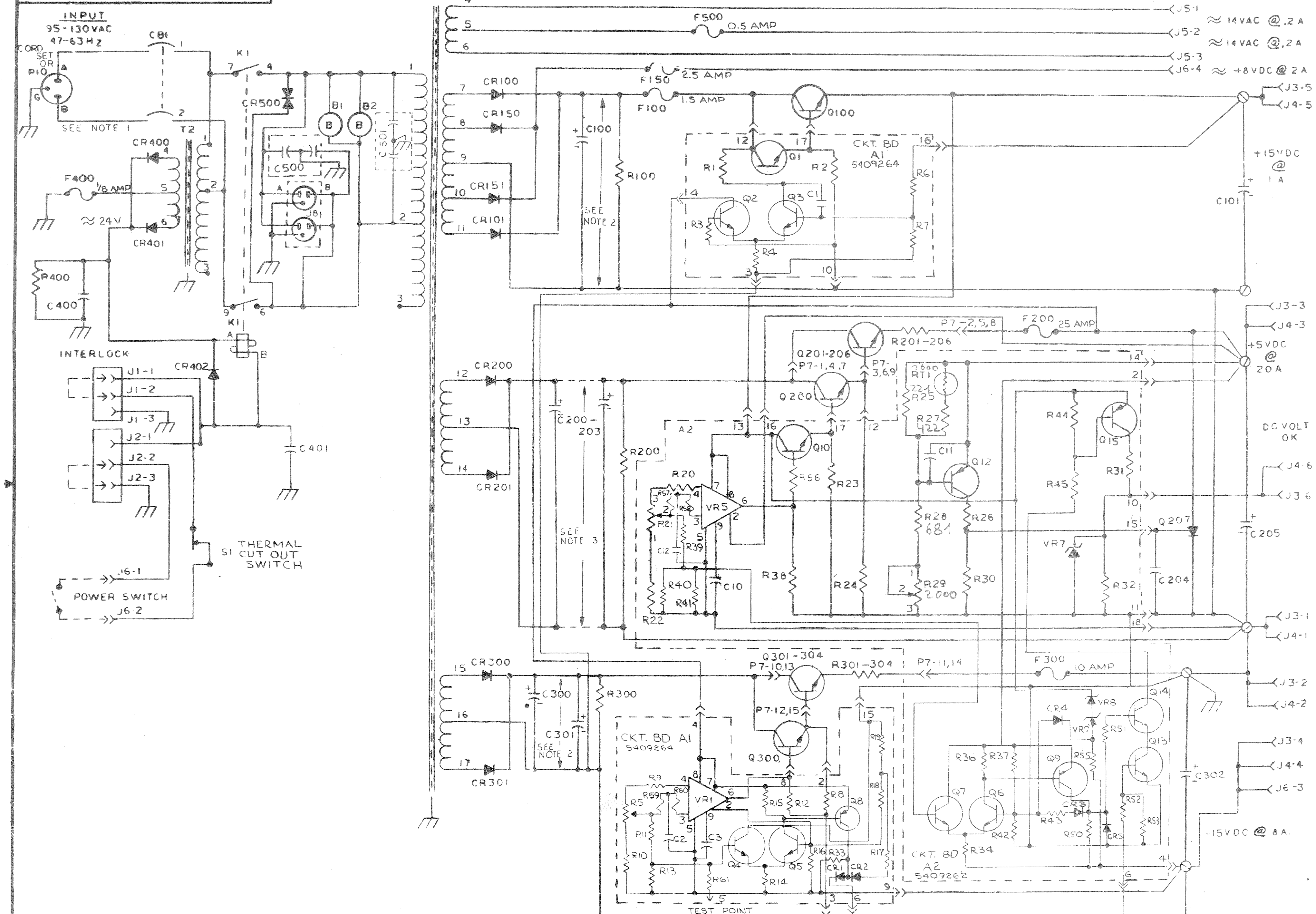

NOTES:

1. FOR POWER SUPPLIES MADE BY NORTH ELECTRIC CO. AC INPUT WILL BE THRU P.Ø INLET
FOR POWER SUPPLIES MADE BY DEC, AC INPUT WILL BE THRUGH CORD SET DEC PART #1700006-15
2. +18.9VDC MINIMUM
+36VDC MAXIMUM
3. +8.6VDC MINIMUM
+18VDC MAXIMUM

REF DES	DESCRIPTION	PART NO.
Q100	2N3055 TO-41 CASE	1510008
Q300-304	2N3055 TO-41 CASE	1510008
Q200-206	2N3055 TO-41 CASE	1510008
R100,R300	RES 300Ω 10W 5%	1310188-0
R200	RES 100Ω 25W 5%	1302888
R201-206	RES .14Ω 5W 1%	1310189
R301-304	RES .25Ω 3W 1%	1310219
R400	RES 3.9K 1/2W 5%	1300443
S1	SWITCH THERMOSTAT	1210199-0
T1	TRANSFORMER	1160178-0
T2	TRANSFORMER	1610177-0
J8	OUTLET AH #10103 OR EQUIV	1205351
P10	MALE INLET AH# 5278 OR EQUIV	1204983
CR400,402	DIODE 1N645	1105314
F400	FUSE 1/8 SLO BLO	9008527
C401	CAP .01 MFD @ 200V DC	1001610
C400	CAP 270 MFD @ 50V DC	1010192-0
CR500	THYRECTOR 6RS 20SP 5B5	1110181
B1, 2	BLOWER	1209403-1
Q207	SCR PRV 100 Icc 55A	1110183-0
C100	CAP 6,000 MFD @ 40V DC	1010186
C101,302	CAP 10,800 MFD @ 20V DC	1010185-0
C200-203	CAP 30,000 MFD @ 25 VDC	1010184-0
C204	CAP 1.0 MFD @ 35VDC	1001776
C205	CAP 8,000 MFD @ 10VDC	1010197-0
C300,301	CAP 14,000 MFD @ 40VDC	1010187-0
C500,501	CAP .1-.1 MFD @ 1000 V DC	1002153
CB1	CKT. BRK. 10 AMP	120191-0
CR100,101	DIODE 1N4721	1110182-0
CR150,151	DIODE 1N4721	1110182-0
CR200,201	DIODE 1N1185A	1109979
CR300,301	DIODE 1N1201A	1110006
F500	FUSE .5A AGC	9007208
F100	FUSE 1.5 AGC	9006388
F150	FUSE 2.5A ABC	9008387
F200	FUSE 25A ABC	9008386
F300	FUSE 10A ABC	9008390
K1	REALY	121098-0

PARTS LIST

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: H724 SCHEMATIC

SIZE: D | CODE: CS | NUMBER: H724-Ø-1 | REV: E

PRINTED CIRCUIT REV

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H724-A-1 REVISION D

NOTES:

1. FOR POWER SUPPLIES MADE BY NORTH ELECTRIC C.O. AC INPUT WILL BE THROUGH P10 INLET. FOR POWER SUPPLIES MADE BY DEC AC INPUT WILL BE THROUGH CORD SET DEC PART # 17000005-15
2. +16.9VDC MINIMUM, +36VDC MAXIMUM
3. +5.6VDC MINIMUM, +18VDC MAXIMUM

Q300-304 Q200-206 Q100	2N3055 TO-41 CASE	1510008
R100, R300	RES 300 Ω 10 W 5%	1310188
R200	RES 100 Ω 2.5 W 5%	1302888
R201-206	RES .14Ω 5W 1%	1310189
R301-304	RES .25Ω 3W 1%	1310219
R400	RES 3.9 K 1/2 W 5%	1300443
S1	SWITCH THERMOSTAT	12101990
T1	TRANSFORMER	16017800
T2	TRANSFORMER	16017700
J8	OUTLET AH #5662-D OR EQUIV	9008854
P10	MALE INLET AH #5678 OR EQUIV	9008855
CR400-402	DIODE IN645	1105314
F400	FUSE 1/8 SLO BLO	9008527
C401	CAP .01 MFD @ 200 VDC	10016100
C400	CAP 270 MFD @ 50 VDC	1010192
CR500	THYRECTOR GRS 20SP9B9	1102915
B1, 2	BLOWER	12094031
Q207	SCR PRV 100 Idc 55A	11101830
C100	CAP 60001 MFD @ 40 VDC	10101860
C101,302	CAP 10,800 MFD @ 20 VDC	10101855
C200-203	CAP 30,000 MFD @ 25 VDC	10101840
C204	CAP 4.0 MFD @ 35 VDC	10017776
C205	CAP 18000 MFD @ 10 VDC	10101970
C300,301	CAP 14,000 MFD @ 40 VDC	10101870
C500,501	CAP .1-.1 MFD @ 1000 VDC	9002153
CB1	CKT. BRK. 5 AMP	1210364
CR100,101 CR150,151	DIODE IN4721	1101182
CR200,201	DIODE IN1185A	1109979
CR300,301	DIODE IN1201A	1100096
F500	FUSE .5A AGC	9007208
F100	FUSE 1.5 AGC	9008388
F150	FUSE 2.5A ABC	9008387
F200	FUSE 10A ABC	9008386
F300	FUSE 10A ABC	9008390
K1	RELAY	12101980
REF DES	DESCRIPTION	PART NO

PARTS LIST

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

TITLE: H724A SCHEMATIC

DIGITAL EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

SIZE D | CODE CS | NUMBER H724-A-1 | REV E

PRINTED CIRCUIT REV

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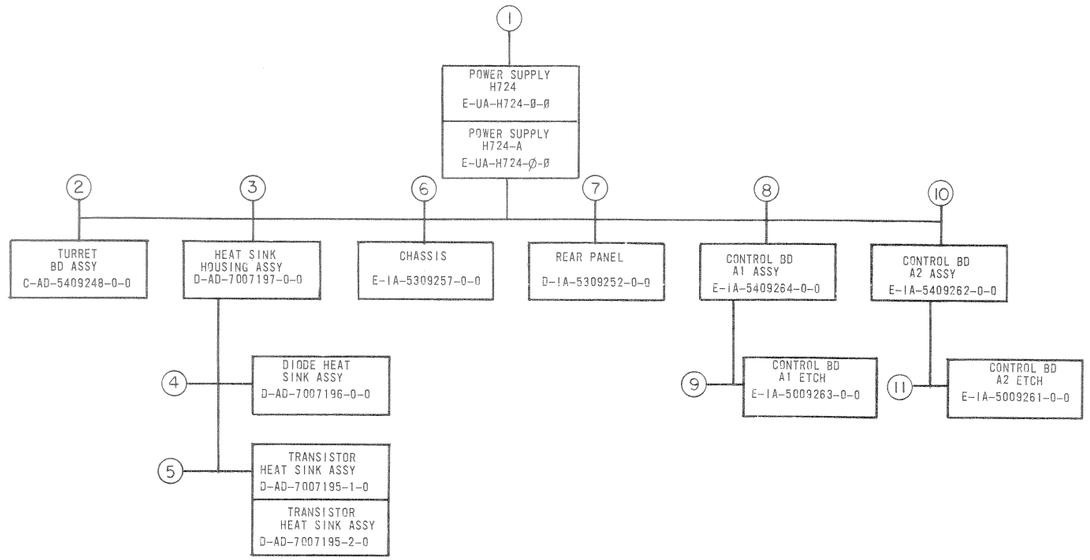


MECHANICAL

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
1.	POWER SUPPLY ASSY (H724)	E-UA-H724-Ø-Ø			
	POWER SUPPLY ASSY (PL)	A-PL-H724-Ø-Ø			
	~~POWER SUPPLY (H724A)~~	~~E-UA-H724-A-Ø~~			
	~~POWER SUPPLY (H724A) (PL)~~	~~A-PL-H724-A-Ø~~			
	PLATE, CAP. TOP	B-MD-5309200-0-0			
	PLATE, CAP. BTM	B-MD-5309201-0-0			
	BRKT. MTG. CARD GUIDE	B-MD-5309197-0-0			
	GUIDE, CARD	B-MD-5309196-0-0			
	BAR, BUS	B-MD-5309202-0-0			
	BRKT. MTG SCR. PRv.	B-MD-5309199-0-0			
	SPACER, CONN	B-MD-5309198-0-0			
	DECAL MODULE BDS	A-DC-5309375-0-0			
	DECAL 230V	A-DC-5309376-0-0			
	CASTING HEAT SINK ASSY	C-AD-7007205-0-0			
	CASTING HEAT SINK ASSY (PL)	A-PL-7007205-0-0			
	PANEL, FRONT	D-MD-5309260-0-0			
	COVER, POWER SUPPLY	D-IA-5309187-0-0			
	HARNESS, CONN.	D-IA-7007192-0-0			
	HARNESS, MAIN CHASSIS	E-IA-7007191-0-0			
	PLATE, BUS	B-MD-5309251-0-0			
	18 PIN CONN BLOCK	B-MD-5509626-0-0			
	INTERPLANT SHIPPING (H724)	A-PI-3700030-00			
2.	TURRET BD ASSY	C-AD-5409248-0-0			
	TURRET BD ASSY (PL)	A-PL-5409248-0-0			
	BOARD TURRET	C-MD-5309301-0-0			
3.	HEAT SINK HOUSING ASSY	D-AD-7007197-0-0			
	HEAT SINK HOUSING ASSY (PL)	A-PL-7007197-0-0			
	HOUSING HEAT SINK	C-MD-5309256-0-0			
	STANDOFF FAN SUPPORT	B-MD-5309265-0-0			
4.	DIODE H.S. ASSY	D-AD-7007196-0-0			
	DIODE HEAT SINK (PL)	A-PL-7007196-0-0			
	DIODE H.S.	D-PS-1210212-0-1			
5.	TRANS H.S. ASSY	D-AD-7007195-0-0			
	TRANS H.S. ASSY (PL)	A-PL-7007195-0-0			
	TRANS H.S.	D-PS-1210211-0-1			
6.	CHASSIS	E-IA-5309257-0-0			
	SILK SCREEN (WHT)	B-SS-5309257-0-1			
	BRKT, TRANSFORMER	C-MD-5309296-0-0			
7.	REAR PANEL	D-IA-5309252-0-0			
	SILK SCREEN (WHT)	B-SS-5309252-0-1			
8.	CONTROL BD A1 ASSY	E-IA-5409264-0-0			
	DRILLING TAPE (A1)	K-CO-5409264-0-4			
	MODULE HISTORY (A1)	B-MH-5409264-0-6			
9.	CONTROL BD A1 FAB	E-IA-5009263-0-0			
10.	CONTROL BD A2 ASSY	E-IA-5409262-0-0			
	DRILLING TAPE (A1)	K-CO-5409262-0-4			
	MODULE HISTORY (A1)	B-MH-5409262-0-6			
11.	CONTROL BD A2 FAB	E-IA-5009261-0-0			

ELECTRICAL

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
1.	POWER SUPPLY	A-ML-H724-Ø			
	~~POWER SUPPLY~~	~~A-ML-H724-A~~			
	CIRCUIT SCHEMATIC	D-CS-H724-0-1			
	CIRCUIT SCHEMATIC	D-CS-H724-A-1			
~~9~~	~~CIRCUIT SCHEMATIC~~	~~B-CS-5409264-0-1~~			
~~9~~	~~P.C. LAYOUT~~	~~PC-5009263-0-1~~			
~~10~~	~~CIRCUIT SCHEMATIC~~	~~B-CS-5409262-0-1~~			
~~11~~	~~P.C. LAYOUT~~	~~PC-5009261-0-1~~			

REVISIONS

REV	CHANGE NO	CHK
A	H724-00012	DI MACK

FIRST USED ON OPTION/MODEL: H724

		DATE
DRN.		1-5-71
CHK'D.		1-19-71
ENG.		
PROJ. ENG.		1-19-71
PROD.		

NEXT HIGHER ASSY: A-ML-H724-Ø

SCALE: NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

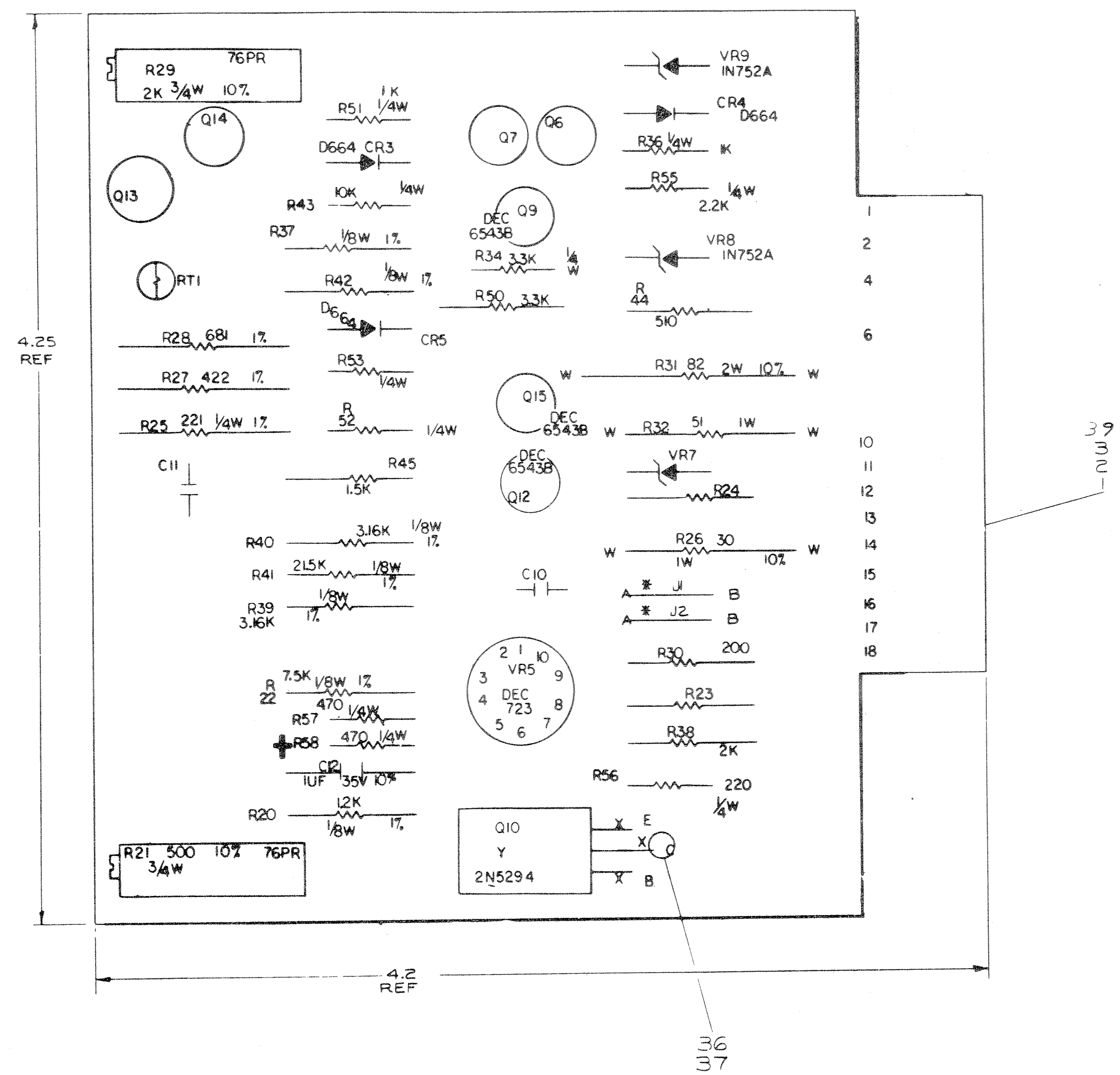
TITLE: DRAWING INDEX LIST (H724)

SIZE	CODE	NUMBER	REV
D	DI	H724-Ø-2	A

DIST.

DEC FORM NO. DOD 119

REV A | SIZE D CODE DL | NUMBER H724-Ø-2 | REV A



3	CR3, CR4, CR5	DIODE IN914 OR EQUIV (D664)	1100114	42
1	R55	RES 2.2K 1/4 W 5%	1300417	41
1	R50	RES 3300 Ω 1/2 W 5%	1300440	40
REF		CIRCUIT SCHEMATIC	D-CS-H724-A-1	39
REF		CIRCUIT SCHEMATIC	D-CS-H724-0-1	39
A/R	J1, J2	WIRE, #22 AWG BUS	9107560-01	38
1		SCREW, PHL. PAN HD. #4-40×25	9008301-1	37
1		KEP NUT #4-40	9006587	36
1	Q1Ø	TRANSISTOR 2N5294	1510377	35
3	Q9, Q12, Q15	TRANSISTOR DEC 6534-B	1503409-01	34
4	Q6, Q7, Q13, Q14	TRANSISTOR MPS 6531	1509338	33
2	VR8, VR9	DIODE IN752A ZENER	1102808	32
2	R57, R58	RES 470 Ω 1/4 W 5%	1300316	31
1	RT1	THERMISTOR 1000 ±10%	1310170	30
4	R36, R51, R52, R53	RES. 1K, 1/4W, 5%	1300365	29
1	R45	RES. 1.5K, 1/2W, 5%	1300384	28
1	R44	RES. 510, 1/2W, 5%	1302321	27
1	R43	RES. 10K, 1/4W, 5%	1300479	26
1	R41	RES. 21.5K, 1/8W, 1% MF	1303155	25
2	R39, R4Ø	RES. 3.16K, 1/8W, 1% MF	1303045	24
1	R38	RES. 2K, 1/2W, 5%	1302387	23
2	R37, R42	RES. 1K, 1/8W, 1% MF	1303114	22
1	C12	CAP 1.0 MFD 35V 10%	1001776	21
1	R34	RES. 3300 Ω 1/4W 5%	1300439	20
1	R32	RES. 51, 1W, 5%	1310173	19
1	R31	RES. 82, 2W, 10%	1301654	18
1	R30	RES. 200, 1/2W, 5%	1302381	17
1	R29	RES. 2K, 3/4W, 10% POT 76PR	1309143-08	16
1	R28	RES. 681, 1/2W, 1% MF	1302922	15
1	R27	RES. 422, 1/2W, 1% MF	1300313	14
1	R26	RES. 30, 1W, 10%	1302782	13
1	R25	RES. 221, 1/4W, 1% MF	1302222	12
2	R23, R24	RES. 1K, 1/2W, 5%	1300364	11
1	R22	RES. 7.5K, 1/8W, 1% MF	1305322	10
1	R21	RES. 500, 3/4W, 10% POT 76 PR	1309143-06	9
1	R2Ø	RES. 1.21K, 1/8W, 1% MF	1302871	8
1	VR5	I.C. DEC 723	1503581	7
1	R56	RES 220 1/4W 5%	1300271	6
1	VR7	DIODE IN749 A ZENER	1109977	5
2	C1Ø, C11	CAP. .01 MFD 100 V, 20%	1001610	4
1		ETCHED CIRCUIT BOARD	E-IA-5009261-0-0	3
REF		MODULE ECO HISTORY	B-MH-5409262-0-6	2
REF		X-Y COORDINATE HOLE	K-CO-5409262-0-6	1
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV C

DEC NO.	EIA NO.
2N5294	
DEC D44C3	NONE
DEC 6531	MPS6531
DEC 6534B	MPS 6534
IN749A	SAME
D672	IN3653

SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION

TITLE: CONTROL BOARD A2

FIRST USED ON: E-UA-H724-Ø-Ø

SCALE 4/1 SHEET 1 OF 1

E IA 5409262-0-0 REV. C

	H724 00012		C	
BI MACK	D. ADAMS 5/10/71	5409262-0000	B	
	7-6-71	5409262-1-2	A	

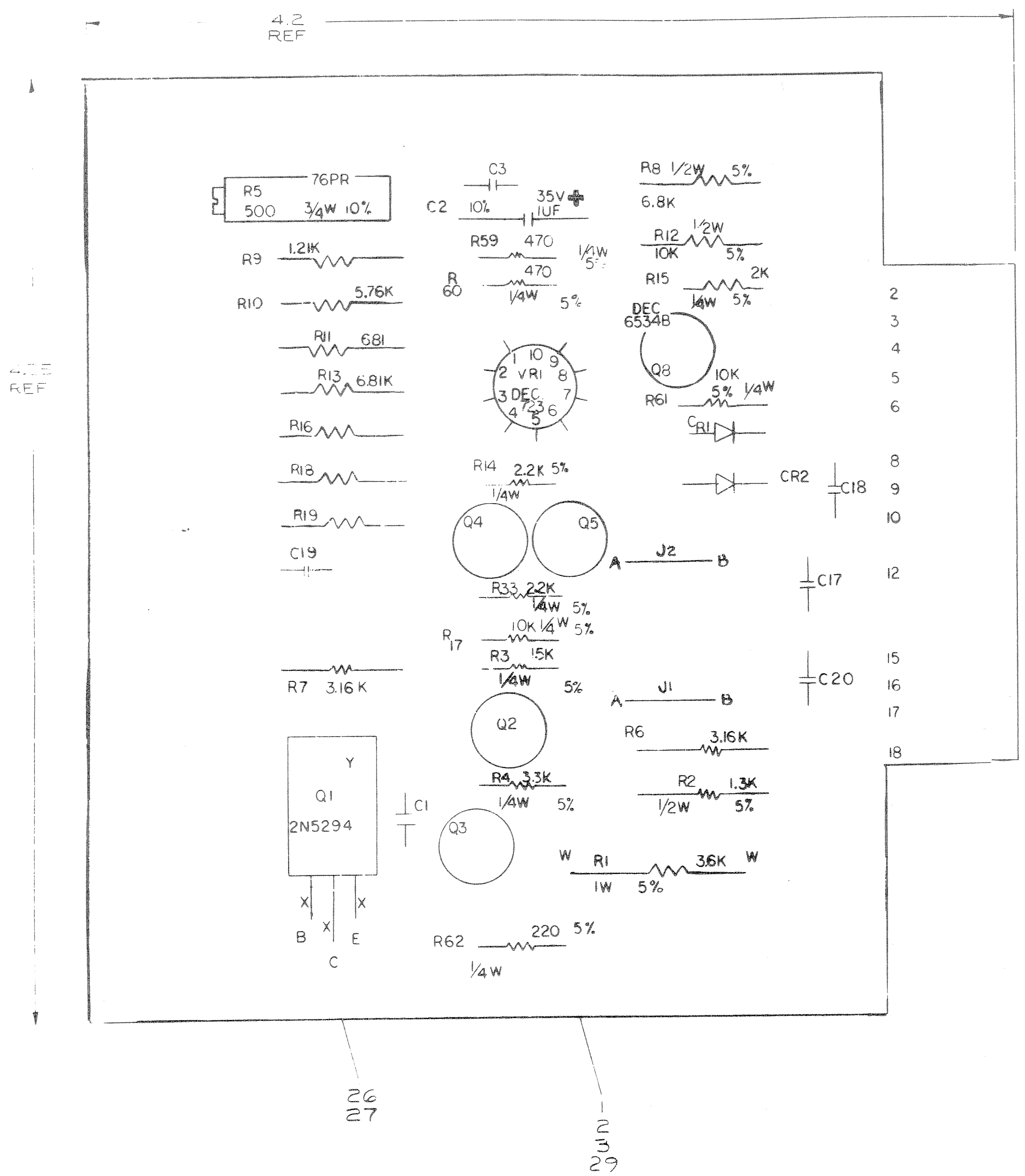
IC TYPE	GND	+5V
UA 723 C	5	2

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT
38	22	J2-A	J2-B
38	22	J1-A	J1-B

JUMPER LIST



QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
1	R62	RES 220Ω 1/4W 5%	1300271	32
1	C2	CAP 1.0 MFD. 35 VDC 10%	1001776	31
2	R59, R60	RES 470Ω 1/4 W 5%	1300316	30
REF		CIRCUIT SCHEMATIC	D-CS-H724-A-1	29
REF		CIRCUIT SCHEMATIC	D-CS-H724-Ø-1	29
A/R	J1, J2	WIRE, #22 AWG BUS	9107560-01	28
1		SCREW, PHL, PAN HD #4-40 x .25 LG.	9008301-1	27
1		KEP NUT #4-40	9006557	26
1	Q8	TRANSISTOR, DEC 6534 B	1503409-01	25
4	Q2, Q3, Q4, Q5	TRANSISTOR DEC 6531	1509338	24
1	Q1	TRANSISTOR 2N5294	1510377	23
2	R17 R61	RES. 10K, 1/4W, 5%	1300479	22
3	R16, R18, R19	RES. 1K, 1/8W, 1% 100 MFP	1303114	21
1	R15	RES. 2K, 1/4W, 5%	1302388	20
2	R14, R33	RES. 2.2K, 1/4W, 5%	1300417	19
1	R13	RES. 6.81K 1/8W, 1% 100MFP	1304870	18
1	R12	RES. 10K, 1/2W, 5%	1300478	17
1	R11	RES. 681, 1/8W, 1% 100MFP	1302872	16
1	R1Ø	RES. 5.76K, 1/8W, 1% 100 MF	1302859	15
1	R9	RES. 1.21K, 1/8W, 1% 100MFP	1302871	14
1	R8	RES. 6.8K, 1/2W, 5%	1300461	13
2	R6 R7	RES. 3.16K, 1/8W, 1% 100 MFP	1303045	12
1	R5	RES. POT 500, 3/4W 10% 76 PR	1309143-06	11
1	R4	RES. 3.3K, 1/4W, 5%	1300439	10
1	R3	RES. 15K, 1/4W, 5%	1300391	9
1	R2	RES. 1.3K, 1/2W, 5%	1310175	8
1	R1	RES. 3.6K, 1W. 5%	1310174	7
1	VR1	IC DEC723	1909981	6
2	CR1, CR2	DIODE D664	1100114	5
6	C1, C3 C17-C20	CAP. .01 MFD, 100 V, 20% DISC	1001610	4
1		ETCHED CIRCUIT BOARD	E-IA-5009263-0-0	3
REF		MODULE ECO HISTORY	B-MH-5409264-0-0	2
REF		X-Y COORDINATE HOLE	K-CO-5409264-0-4	1

PARTS LIST

ETCH BOARD REV C

DEC NO.	EIA NO.
2N5294	⟷
DEC D44C3	NONE
DEC 6531	MPS 6531
DEC 6534B	MPS 6534
D664	IN 3606

SEMICONDUCTOR CONVERSION CHART

IC TYPE	GND	+5V
DEC 723	8	

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO.	MFG.	FROM PT	TO PT
28	22	J2-A	J2-B
28	22	J1-A	J1-B

JUMPER LIST

E-UA-H724-Ø-Ø

EQUIPMENT CORPORATION

CONTROL BOARD A1

E IA 5409264-0-0 D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY FERGUSON DATE 11-30-70	CHECKED GULICK DATE 1-2-70	SECTION
ENG CHERTKOW DATE 12-7-70	PROD SAYLOR DATE 12-8-70	ISSUED SECT.

LEGEND

D DOCUMENT
DN DOCUMENT CHANGE NOTICE
PA PAPER TAPE ASCII
PB PAPER TAPE BINARY
PM PAPER TAPE READ-IN-MODE

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION: PDP8/E-GA to MB	PDP8/E-DA to FB	PDP8/E-AA to CB					KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	A-ML-PDP8/E-Ø	PDP8/E PRINT SET	X	X	X						
2	DEC-8E-HR1A-D	PDP8/E PRELIMINARY MAINT MANUAL	X	X	X						
3	12-1Ø31	LOG BOOK	X	X	X						
4		DECUS INSTALLATION MEMBERSHIP FORM	X	X	X						
5		DECUS INDIVIDUAL MEMBERSHIP FORM	X	X	X						
6		CUSTOMER SERVICE LETTER	X	X	X						
7	DEC-7-1Ø34	FORM	X	X	X						
8		CUSTOMER FOLLOW-UP LETTER	X	X	X						
9		SOFTWARE PERFORMANCE REPORT	X	X	X						
10		CUSTOMER ENVELOPE	X	X	X						
11		ECO STATUS SHEET	X	X	X						
12		SUPPLEMENTARY ACCESSORY LIST	X	X	X						
13		INSTALLATION REPORT SHEET	X	X	X						
14		CUSTOMER ACCEPTANCE SHEET	X	X	X						
15		KEY SHEET	X	X	X						
16	LIBKIT-8E-BASE	BASIC SOFTWARE KIT		X	X						
17	LIBKIT-8E-XBAS	EXTENDED SOFTWARE KIT			X						

TITLE SOFTWARE LIST (PDP8/E)	ASSY. NO. A-ML-PDP8/E-Ø SHEET OF	SIZE A	CODE SL	NUMBER PDP8/E-Ø-3	REV. A	ECO NO 8E-0001
		DIST.				

DEC FORM NO.
DRA 120

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FERGUSON	CHECKED K. GULICK	SECTION
DATE 11-30-70	DATE 11-30-70	1
ENG D. Chethow	PROD Leroy Sayler	ISSUED SECT.
DATE 12-1-70	DATE 12/7/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION SP8-EA
1	M8300	MAJOR REGISTERS MODULE	1
2	M8310	REGISTERS CONTROL MODULE	1
3	M833	TIMING MODULE	1
4	G104	SENSE/INHIBIT MODULE	1
5	G227	X/Y DRIVE MODULE	1
6	1205941	SLIDE SWITCH	2
7	1205375	SLIDE SWITCH	2
8	125849-13	HANDLE, TERRA COTTA	2
9	125849-12	HANDLE, AMBER	2
10	1209219	INDICATOR BULB	6
11	7006994	KEY SWITCH ASSEMBLY	1
12	5409264	POWER SUPPLY CONTROL MODULE A1	1
13	5409262	POWER SUPPLY CONTROL MODULE A2	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP8/E RECOMMENDED 1ST LEVEL SPARES	SHEET 1 OF 1	A	PL	SP8-EA-Ø	A	SP8EA-00001
		DIST.				

DEC FORM NO. 16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FERGUSON	CHECKED K. GULICK	SECTION
DATE 11-30-70	DATE 11-30-70	1
ENG D. Christman	PROD Leroy Baylor	ISSUED SECT.
DATE 12-1-70	DATE 12/7/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION SP8-EB
1	1000004	CAPACITOR .02 MFD	2
2	1000016	CAPACITOR .100 MFD	2
3	1003053	CAPACITOR .47 MFD	2
4	1005306	CAPACITOR 6.8 MFD	2
5	1009678	CAPACITOR .47 MFD	2
6	1100114	IN914 OR IN644	1
7	1105314	IN645	1
8	1109977	IN749A	1
9	1109979	IN1185A	1
10	1110006	IN1201A	1
11	1110181-0	THYRECTOR 6RS05P5B5	1
12	1110182-0	IN4721	2
13	1110183-0	SCR C45A	1
14	1205317	SWITCH	2
15	1209403	FAN	1
16	1210043	SWITCH	1
17	1210072	TERMINAL	2
18	1210073	CONNECTOR SOCKET	2
19	1210198-0	RELAY	1
20	1210199-0	THERMAL RELAY	1
21	1300229	RESISTOR 100, ¼W	2
22	1300317	RESISTOR 470, ¼W	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP8/E RECOMMENDED 2ND LEVEL SPARES		A	PL	SP8-EB-Ø		
	SHEET 1 OF 5	DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FERGUSON	CHECKED K. GULICK	SECTION
DATE 11-30-70	DATE 11-30-70	1
ENG D. Christman	PROD Leroy Baylor	ISSUED SECT.
DATE 12-1-70	DATE 12/7/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION SP8-EB
23	1300439	RESISTOR 3.3K, ¼W	2
24	1301420	RESISTOR 27, ¼W	2
25	1302871	RESISTOR 1.21K, 1/8W	2
26	1302941	RESISTOR 14.7K, 1/8W	2
27	1302955	RESISTOR 750, 1/8W	2
28	1302956	RESISTOR 196, 1/8W	2
29	1303156	RESISTOR 34.8K, 1/8W	2
30	1304833	RESISTOR 1.96K, 1/8W	2
31	1304855	RESISTOR 9.09K, 1/8W	2
32	1304868	RESISTOR 2.74K, 1/8W	2
33	1305128	RESISTOR 5.62K, 1/8W	2
34	1305252	RESISTOR 68.1K, 1/8W	2
35	1309143-6	POTENTIOMETER 2K 3/4W	1
36	1309143-8	POTENTIOMETER 500 3/4W	1
37	1310032	RESISTOR 16.9K 6W	2
38	1310071	RESISTOR	2
39	1310170	THERMISTER	1
40	1503409	MPS6534 OR 2N3133	2
41	1505321	2N4258	3
42	1505819	2N3055 T041 CASE	2
43	1509338	MPS6531 OR 2N1613	1
44	1509632	DEC 2007	4

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP8/E RECOMMENDED 2ND LEVEL SPARES		A	PL	SP8-EB-Ø		
	SHEET 2 OF 5	DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FERGUSON	CHECKED K. GULICK	SECTION 1
DATE 11-30-70	DATE 11-30-70	
ENG D. Clothier	PROD Leroy Baylor	ISSUED SECT. 1
DATE 12-1-70	DATE 12/7/70	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION SP8-EB
45	1509649	2N3762	3
46	1509854	DEC 8251	2
47	1510150	DEC 4008	4
48	1510151	RCA 40372	2
49	1609478	TRANSFORMER 17Z5	2
50	1609651	TRANSFORMER 8010	2
51	1609996	TRANSFORMER 6501	1
52	1809880	CRYSTAL 20 MHZ	1
53	1809880-01	CRYSTAL 14.418 MHZ	1
54	1905521	DEC 1540	2
55	1905547	DEC 7474	3
56	1905586	DEC 74H40	2
57	1909004	DEC 7402	2
58	1909055	DEC 7495	2
59	1909056	DEC 74H00	1
60	1909057	DEC 74H10	1
61	1909267	DEC 74H11	1
62	1909373	DEC ML-9601	1
63	1909594	DEC 82513-930	2
64	1909667	DEC 74H74	1
65	1909686	DEC 7404	2
66	1909867	DEC 4007	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP8/E RECOMMENDED 2ND LEVEL SPARES	SHEET 3 OF 5	A	PL	SP8-EB-Ø		
		DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FERGUSON	CHECKED K. GULICK	SECTION 1
DATE 11-30-70	DATE 11-30-70	
ENG D. Clothier	PROD Leroy Baylor	ISSUED SECT. 1
DATE 12-1-70	DATE 12/7/70	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION SP8-EB
67	1909927	DEC 74H87	1
68	1909928	DEC 7416	2
69	1909929	DEC 7417	1
70	1909930	DEC 7405	1
71	1909931	DEC 74H04	1
72	1909932	DEC 7483	1
73	1909934	DEC 8266	2
74	1909935	DEC 8235	1
75	1909936	DEC 74151	2
76	1909937	DEC 74153	1
77	1909955	DEC 7412	1
78	1909971	DEC 6380A	3
79	1909972	DEC 6314A	1
80	1909973	DEC 97401	5
81	1909981	DEC UA723C	1
82	1910010	DEC FSA2501	4
83	1910011	DEC 7486	1
84	9007209	FUSE .5A 250V AGC ½	5
85	9008349	SOCKET	2
86	9008350-0	HOUSING	2
87	9008386-0	FUSE 25A 125V ABC 25	5
88	9008387-0	FUSE 2.5A 250V AGC 2½	5

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP8/E RECOMMENDED 2ND LEVEL SPARES	SHEET 4 OF 5	A	PL	SP8-EB-Ø		
		DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FERGUSON	CHECKED K. GULICK	SECTION
DATE 11-30-70	DATE 11-30-70	1
ENG D. Christian	PROD Leroy Taylor	ISSUED SECT.
DATE 12-1-70	DATE 12/7/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION SPS-EB
89	9008388-0	FUSE 1.5A 250V AGC 1½	5
90	9008389-0	FUSE .125A 250V AGC 1/8	5
91	9008390-0	FUSE 10A 250V ABC 10	5
92	9107722	SCR HEX SET ¼-20 X ¼LG NYLON	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP8/E RECOMMENDED 2ND LEVEL SPARES	SHEET 5 OF 5	A	PL	SP8-EB-Ø		
		DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY J. CUDMORE	CHECKED PFYFFER	SECTION
DATE 7/21/69	DATE 7/25/69	1
ENG Maidman	PROD Maidman	ISSUED SECT.
DATE 7/28/69	DATE 7/28/69	1

LEGEND

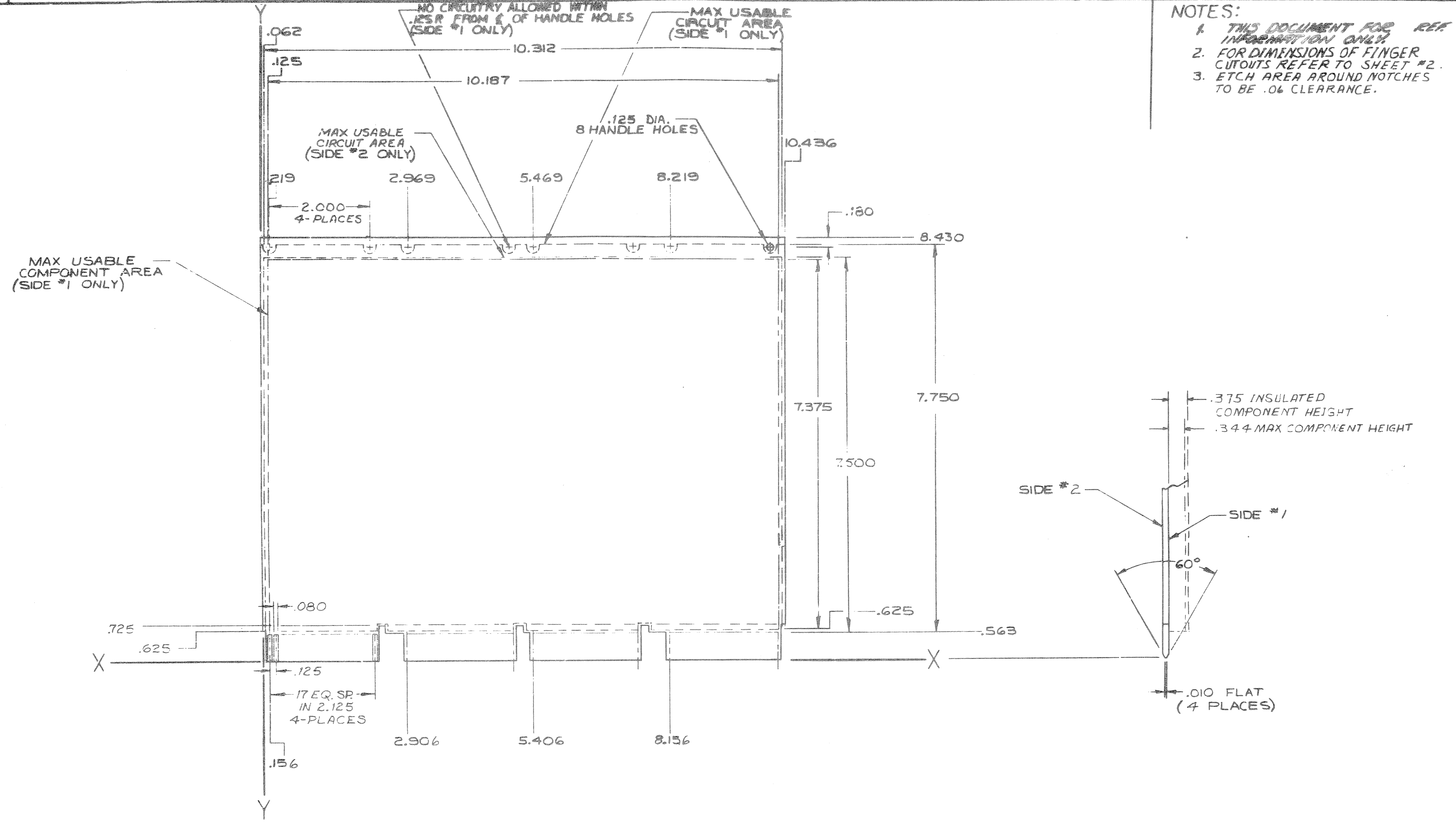
D DOCUMENT
DN DOCUMENT CHANGE NOTICE
PA PAPER TAPE ASCII
PB PAPER TAPE BINARY
PM PAPER TAPE READ-IN-MODE

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION LT33-BA,-BB,-DA,	-DB,-DC,-DD,-DE,	-EA,-EB,-HA,-HB	LT33-AA,-AB,	-CA,-CB,-CC,	-CD,-CE		KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	36-5360	ROLLS, ROLLED OILED PAPER TAPE	3			-					
2	36-5365	ROLL, TWX PAPER	1			1					
3	BULLETIN 273B	TTY MANUAL VOL #1 (VENDOR)	1			1					
4	BULLETIN 310B	TTY MANUAL VOL #2 (VENDOR)	1			1					
5	BULLETIN 1184B	TTY MANUAL PARTS (VENDOR)	1			1					
6	18-9137	ROLL TTY RIBBON	1			1					

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
TELETYPE WRITERS LT33 SERIES	SHEET 1 OF 1	A	AL	LT33-0-12	A	LT33-00002
		DIST.				

DEC FORM NO.
DRA 121

NOTES:
1. THIS DOCUMENT FOR REF. INFORMATION ONLY.
2. FOR DIMENSIONS OF FINGER CUTOUTS REFER TO SHEET #2.
3. ETCH AREA AROUND NOTCHES TO BE .06 CLEARANCE.



TOLERANCE
DECIMALS
.XXX = ±.005
.XX = ±.02
.X = ±.1

REVISIONS		
CHK	CHANGE NO	REV
	7605994-0-0	A
	CHERTKOW	

FIRST USED ON OPT./MOD.	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

		DATE
DRN.		4-13-71
CHKD.		5-5-71
ENG.	Dave Chertkow	5-5-71
PROJ. ENG.	Dave Chertkow	5-5-71
PROD.	Dave Chertkow	5-5-71

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE PANEL DATA CUSTOMER (REF)

MATERIAL
FINISH
NEXT HIGHER ASS'Y.

SIZE	CODE	NUMBER	REV.
D	MD	7605994-0-0	A

SCALE 1/1
SHEET 1 OF 2
DIST.

DEC FORM NO DRD 107A

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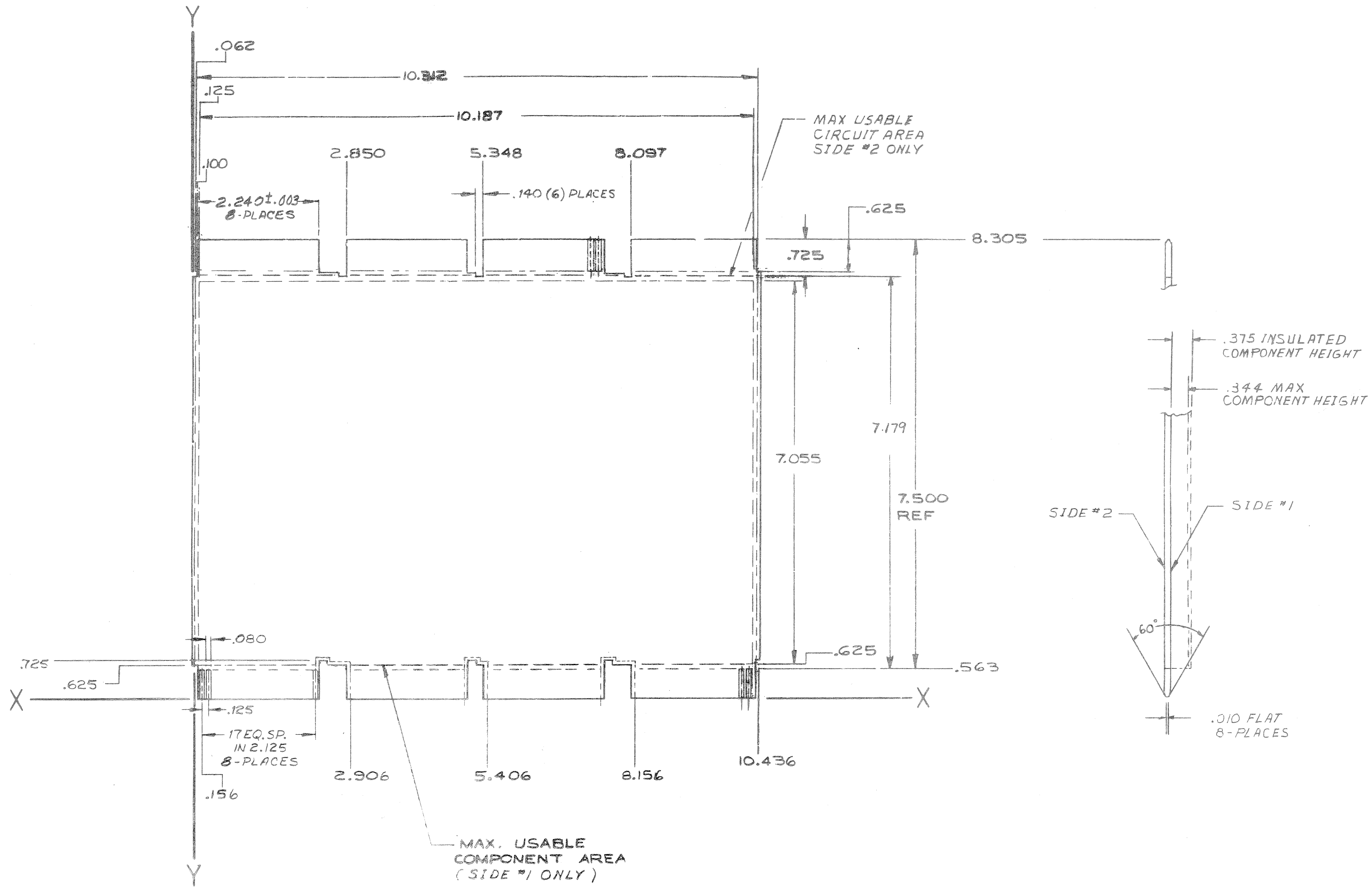

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

FIRST USED ON OPTION/MODEL

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN	T. Quillin	DATE 4-29-71
CHK'D		DATE 5-5-71
ENG	Dave Cheston	DATE 5-5-71
PROJ. ENG	Dave Cheston	DATE 5-5-71
PROD	Dave Cheston	DATE 5-5-71

NEXT HIGHER ASSY

SCALE 1/1
SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PANEL DATA
CUSTOMER (REF)

SIZE	CODE	NUMBER	REV.
D	MD	7605994-0-0	A

DIST. G

DEC FORM NO DRD 100