DEC-11-HG1EA-A-D

GT40 graphic display terminal engineering drawings

digital equipment corporation · maynard. massachusetts

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
GRAPHIC TERMINAL (GT4Ø)	A-PL-GT4Ø-Ø-Ø		
KEYBOARD ASSY (LK4Ø)	B-DD-LK4Ø-Ø		
DISPLAY (VR14)	A-ML-VR14-Ø		
VT4Ø COMPUTER ASSY	B-DD-VT4Ø-Ø		
POWER CONTROL ASSY	D-AD-7008930-0-0		
BASE DIAGRAMS	D-SP-GT4Ø-Ø-2		
INTERCONNECT DIAGRAM	D-IC-GT4Ø-Ø-3		
DISPLAY PROCESSOR	D-BD-GT4Ø-Ø-4		
SET GRAPHIC MODE	D-FD-GT4Ø-Ø-5		
DISPLAY JUMP	D-FD-GT4Ø-Ø-6		
NO OPERATION	D-FD-GT4Ø-Ø-7		
LOAD STATUS REGISTER A	D-FD-GT4Ø-Ø-8		
LOAD STATUS REGISTER B	D-FD-GT4Ø-Ø-9		
GRAPH X OR GRAPH Y	D-FD-GT4Ø-Ø-10		
POINT MODE	D-FD-GT4Ø-Ø-11		
VECTOR MODE	D-FD-GT4Ø-Ø-12		
SHORT VECTOR OR REL PT.	D-FD-GT4Ø-Ø-13		
CHARACTER GEN.	D-FD-GT4Ø-Ø-14		
CHAR. GEN. LOGIC TIMING	D-FD-GT4Ø-Ø-16		
WIRE LIST	K-WL-GT4Ø-Ø-WL		
SCOPE CABLE	D-IA-7008993-0-0		
ASYNC LINE INTERFACE	B-DD-DL11-Ø		
LIGHT PEN AMPLIFIER	B-DD-375-Ø		

UNIT VARIATIONS

VAR	TITLE	PRINT SET GT4Ø-Ø
GT4Ø-AA	GRAPHIC TERM (GT4Ø) (115V,60HZ)	x
GT4Ø-AB	GRAPHIC TERM(GT4Ø) (23ØV,50HZ)	x
GT4Ø-BA	GRAPHIC TERM(GT4Ø) (115V,60HZ)	x
GT4Ø-BB	GRAPHIC TERM(GT4Ø) (23ØV,50HZ)	x

REVISIONS	CHG NO.	DATE
A	GT4Ø-4	11/72
B	GT4Ø-7	2/73

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. C.MCCOY	DATE 10/16/2	TITLE: GRAPHIC TERMINAL(GT4Ø)
CHK'D.	DATE 10-22-72	
PROJ ENG.	DATE 10/20/72	
PROD.	DATE 10/26/72	SIZE B · CODE DD · NUMBER GT4Ø - Ø · REV B
FIELD SERV.	DATE 10/26/72	DIST

DNS 106

1

GRAPHIC TERMINAL (GT4Ø-AA) (115V, 6ØHZ)
A-PL-GT4Ø-AA-Ø

GRAPHIC TERMINAL (GT4Ø-AB) (23ØV, 5ØHZ)
A-PL-GT4Ø-AB-Ø

GRAPHIC TERMINAL (GT4Ø-BA) (115V, 6ØHZ)
A-PL-GT4Ø-BA-Ø

GRAPHIC TERMINAL (GT4Ø-BB) (23ØV, 5ØHZ)
A-PL-GT4Ø-BB-Ø

2

SCOPE CABLE
D-IA-7008993-0-0

3

KEYBOARD ASSY (LK4Ø)
D-UA-LK4Ø-Ø-Ø
B-DD-LK4Ø-Ø

4

VR14 DISPLAY ASSY (115V, 6ØHz)
D-UA-VR14-LC-Ø
D-DI-VR14-Ø-Ø1

VR14 DISPLAY ASSY (23ØV, 5ØHZ)
D-UA-VR14-LD-Ø
D-DI-VR14-Ø-Ø1

5

VT4Ø COMPUTER ASSY (115V, 6ØHZ)
A-PL-VT4Ø-AA-Ø
B-DD-VT4Ø-Ø

VT4Ø COMPUTER ASSY (23ØV, 5ØHZ)
A-PL-VT4Ø-AB-Ø
B-DD-VT4Ø-Ø

VT4Ø COMPUTER ASSY (115V, 6ØHZ)
A-PL-VT4Ø-BA-Ø
B-DD-VT4Ø-Ø

VT4Ø COMPUTER ASSY (23ØV, 5ØHZ)
A-PL-VT4Ø-BB-Ø
B-DD-VT4Ø-Ø

6

POWER CONTROL ASSY (115V)
D-AD-7008930-1

POWER CONTROL ASSY (23ØV)
D-AD-7008930-2

7

ASYNC LINE INTERFACE (DL11)
A-PL-DL11-Ø-Ø
B-DD-DL11-Ø

TITLE		SIZE	CODE	NUMBER	REV
GRAPHIC TERMINAL (GT4Ø)	SHEET 2 OF 3	B	DD	GT4Ø-Ø	B

ELECTRICAL

CUSTOMER PRINT SET GT4Ø-Ø	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	D-SP-GT4Ø-Ø-2	*	4	BASE DIAGRAMS	
x			D-IC-GT4Ø-Ø-3	*	1	INTERCONNECT DIAGRAM	
x			D-BD-GT4Ø-Ø-4	*	1	DISPLAY PROCESSOR	
x			D-FD-GT4Ø-Ø-5	*	1	SET GRAPHIC MODE	
x			D-FD-GT4Ø-Ø-6	*	1	DISPLAY JUMP	
x			D-FD-GT4Ø-Ø-7	*	1	NO OPERATION	
x			D-FD-GT4Ø-Ø-8	*	1	LOAD STATUS REGISTER A	
x			D-FD-GT4Ø-Ø-9	*	1	LOAD STATUS REGISTER B	
x			D-FD-GT4Ø-Ø-1Ø	*	1	GRAPH X OR GRAPH Y	
x			D-FD-GT4Ø-Ø-11	*	1	POINT MODE	
x			D-FD-GT4Ø-Ø-12	*	1	VECTOR MODE	
x			D-FD-GT4Ø-Ø-13	*	1	SHORT VECTOR OR REL. POINT	
x			D-FD-GT4Ø-Ø-14	*	1	CHARACTER GENERATOR	
			A-SP-GT4Ø-Ø-15	*	39	ENGINEER SPECIFICATIONS	
x			D-TD-GT4Ø-Ø-16	*	5	CHAR. GEN. LOCK TIMING	
C			K-WL-GT4Ø-Ø-WL	B		WIRE LIST	
x		2	D-IA-7008993-0-0	#	1	SCOPE CABLE	
		7	A-PL-DL11-Ø-Ø		1	ASYNC LINE INTERFACE	
C			B-DD-DL11-Ø	#	3	ASYNC LINE INTERFACE	DL11-3

MECHANICAL

CUSTOMER PRINT SET GT4Ø-Ø	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	A-PL-GT4Ø-Ø-Ø	*	1	GRAPHIC TERMINAL (GT4Ø)	
		3	D-UA-LK4Ø-Ø-Ø		2	KEYBOARD ASSY (LK4Ø)	
C			B-DD-LK4Ø-Ø	#	3	KEYBOARD ASSY (LK4Ø)	
		4	D-UA-VR14-Ø-Ø		3	VR14 DISPLAY ASSY	
			A-PL-VR14-Ø-Ø		3	VR14 DISPLAY ASSY (PL)	
C			A-ML-VR14-Ø	##	1	MASTER LIST (VR14)	
		5	A-PL-VT4Ø-Ø-Ø		1	VT4Ø COMPUTER ASSY	
C			B-DD-VT4Ø-Ø	#	3	VT4Ø COMPUTER ASSY	
x		6	D-AD-7008930-0-0	#	1	POWER CONTROL ASSY	
C			B-DD-375-Ø	#	3	LIGHT PEN AMPLIFIER	

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
GRAPHIC TERMINAL (GT4Ø)	SHEET 3 OF 3	B	DD	GT4Ø-Ø	B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY C.MCCOY	CHECKED R K Cialle	SECTION 1
DATE 10/16/72	DATE 10-22-72	
ENG R K Cialle	PROD P. McCarthy	ISSUED SECT.
DATE 10-23-72	DATE 10-24-72	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION GT4Ø-AA	GT4Ø-AB	GT4Ø-BA	GT4Ø-BB								
1	D-UA-LK4Ø-Ø-Ø	KEYBOARD ASSY (LK4Ø)	1	1	1	1								
2	D-UA-VR14-LC-Ø	VR14 DISPLAY ASSY 115V	1	-	1	-								
3	D-UA-VR14-LD-Ø	VR14 DISPLAY ASSY 23ØV	-	1	-	1								
4	D-IA-7008993-0-0	SCOPE CABLE	1	1	1	1								
5	A-PL-VT4Ø-AA-Ø	VT4Ø COMPUTER ASSY 115V 4K	-	-	1	-								
6	A-PL-VT4Ø-AB-Ø	VT4Ø COMPUTER ASSY 23ØV 4K	-	-	-	1								
7	A-PL-VT4Ø-BA-Ø	VT4Ø COMPUTER ASSY 115V 8K	1	-	-	-								
8	A-PL-VT4Ø-BB-Ø	VT4Ø COMPUTER ASSY 23ØV 8K	-	1	-	-								
9	D-AD-7008930-1-Ø	POWER CONTROL ASSY 115V	1	-	1	-								
10	D-AD-7008930-2-Ø	POWER CONTROL ASSY 23ØV	-	1	-	1								
11	A-PL-DL11-Ø-Ø	ASYNC LINE INTERFACE	1	1	1	1								
		* SEE INTERCONNECT DIAGRAM DWG.												
		NO. D-IC-GT4Ø-Ø-3												
		MODULE UTILIZATION DWG NO.												
		D-MU-VT4Ø-Ø-1, FOR FURTHER												
		INFORMATION.												

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO
GRAPHIC TERMINAL (GT4Ø)		A	PL	GT4Ø-Ø-Ø		
	SHEET 1 OF 1	DIST.	C			

DEC FORM DEC 16-(325)-1031-N870
DRA 110

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		SEQUENCE	
KEYBOARD ASSY	B-DD-LK4Ø-Ø		
KEYBOARD ASSY	D-UA-LK4Ø-Ø-Ø		
SMALL KEYBOARD	D-AD-5410224-0-0		
CIRCUIT SCHEMATIC	D-CS-5410224-0-1		
LARGE KEYBOARD	D-AD-5409945-0-0		
CIRCUIT SCHEMATIC	D-CS-5409945-0-1		
SERIAL TRANSMITTER	D-CS-M7Ø11-Ø-1		

MFG. SET.

KEYBOARD CABLE	D-IA-7008959-0-0
CABLE, KEYBOARD	D-IA-7008960-0-0
CABLE, INTRA-KEYBOARD	D-IA-7008612-10

UNIT VARIATIONS

VAR	TITLE	PRINT SET LK4Ø-Ø
LK4Ø-Ø	KEYBOARD ASSY (LK4Ø)	X

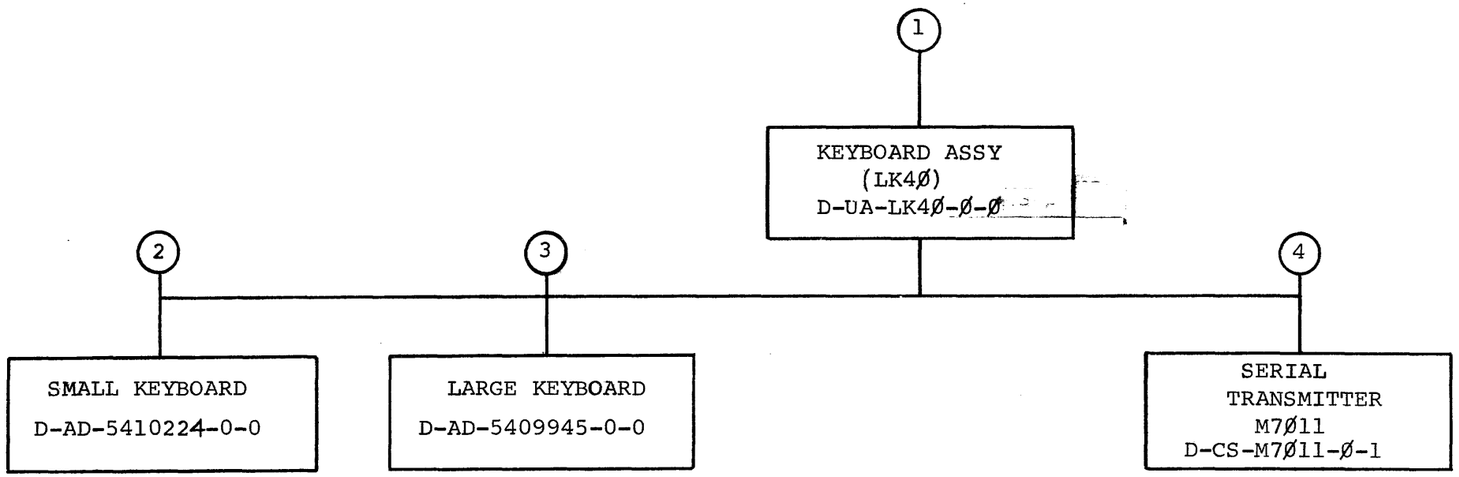
REVISIONS	DATE	CHG NO.	REV
	1/73	LK4Ø-2	A

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. C.B.MCCOY	DATE 8/28/72	TITLE KEYBOARD ASSY (LK4Ø)
CHK'D.	DATE	
PROJ ENG.	DATE	
PROD.	DATE 10/26/72	SIZE B · CODE DD · NUMBER LK4Ø-Ø · REV A
FIELD SERV.	DATE	DIST

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
KEYBOARD ASSY (LK4Ø)	SHEET 2 OF 3	B	DD	LK4Ø-Ø	A

ELECTRICAL

CUSTOMER PRINT SET LK4Ø	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	D-UA-LK4Ø-Ø-Ø	B	2	KEYBOARD ASSY (LK4Ø)	
x		2	D-AD-5410224-0-0	#		SMALL KEYBOARD	
x			D-CS-5410224-0-1	#		CIRCUIT SCHEMATIC	
x		3	D-AD-5409945-0-0	#		LARGE KEYBOARD	
x			D-CS-5409945-0-1	#		CIRCUIT SCHEMATIC	
x		4	D-CS-M7Ø11-Ø-1	#		SERIAL TRANSMITTER	

MECHANICAL

CUSTOMER PRINT SET LK4Ø	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	D-UA-LK4Ø-Ø-Ø	B	2	KEYBOARD ASSY (LK4Ø)	
	x		D-IA-7008959-0-0		1	KEYBOARD CABLE	
			D-IA-7409833-0-0		2	COVER, KEYBOARD	
	x		D-IA-7008960-0-0		1	CABLE, KEYBOARD	
			C-IA-7409761-0-0		1	BRKT, SMALL KEYBD.	
	x		D-IA-7008612-1-0		1	CABLE INTRA KEYBOARD	
			C-IA-7408638-0-0		1	BRKT, LARGE KEYBD.	
			E-IA-7409834-0-0		1	BASE PLATE, KEYBOARD	
			A-PI-3700038-0-0		2	PACKAGING INSTRUCTIONS	

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
KEYBOARD ASSY (LK4Ø)	SHEET 3 OF 3	B	DD	LK4Ø-Ø	A

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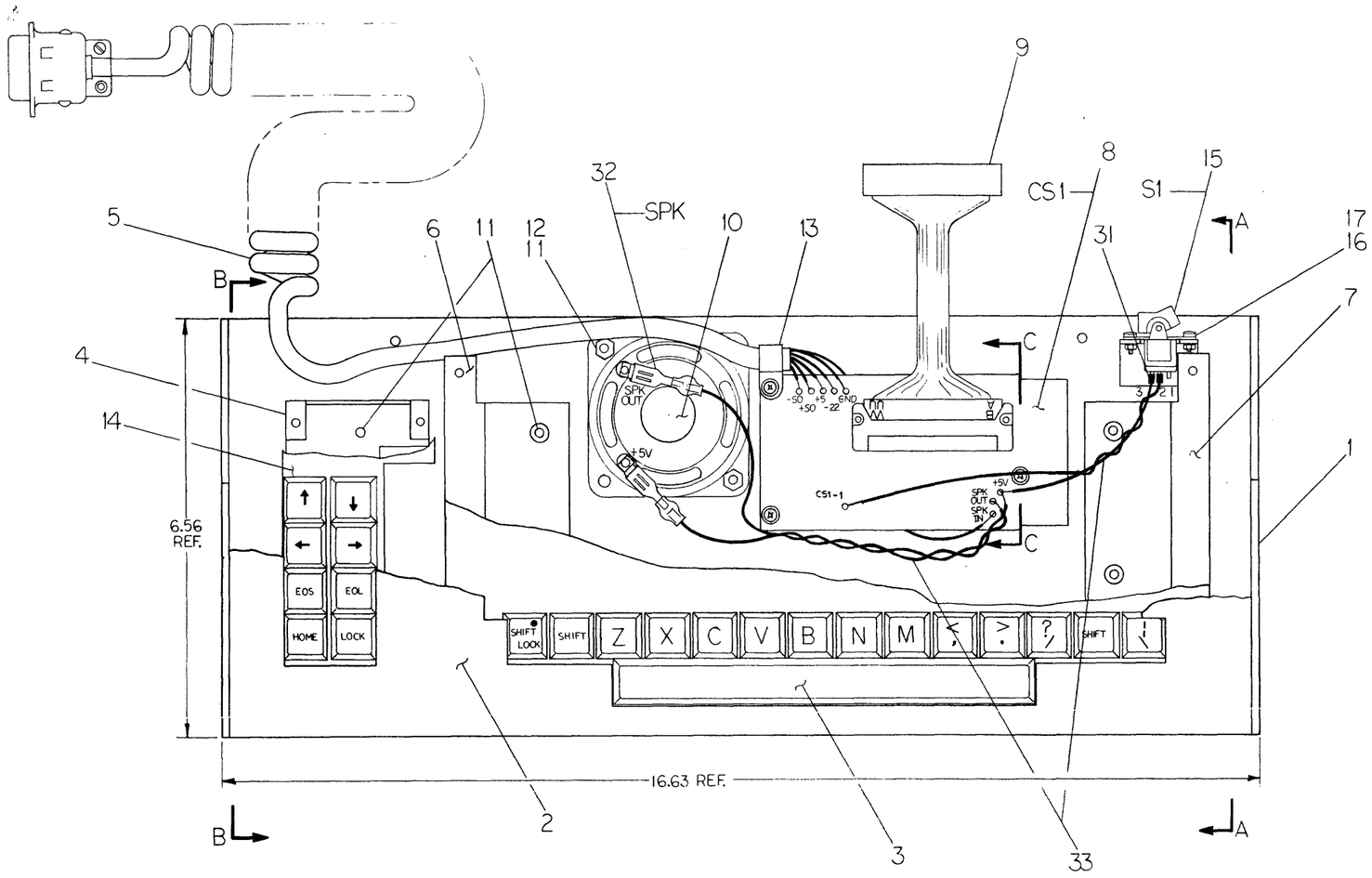

TOP VIEW

PARTIAL TOP COVER AND
PARTIAL LARGE & SMALL
KEYBOARD

3	WASHER, INT. TOOTH #4	9006632	36
4	WASH., FLAT NYLON #4	9006706	35
1	CABLE, INTRA-KEYBOARD	7008612-18	34
A/R	WIRE, #22 AWG TWP WHT/VIO	9107420-79	33
2	TERM., SOLDERLESS	9007917	32
A/R	TUBING, HEAT SHRINK	9107255-09	31
2	SCREW, PHL. PAN HD. #4-40x3/16	9008032-1	30
3	SCREW, PHL. FLT. HD #4-40 x 1/4	9006009-2	29
3	SPACER, FIBER #4-40 X 5/16	9007623	28
1	STRAIN RELIEF	9008492-1	27
4	FOOT, HEMISPHERE, 3M SJ5017	9008525	26
4	SCREW, PHL. FLT. HD. #6-32x1/4	9006020-2	25
1	SCREW, PHL. PAN HD. #4-40 X 5/16	9006010-1	24
4	SCREW, PHL. PAN HD. #4-40 X 5/16	9006010-1	23
4	WASH., INT. TOOTH LOCK #4	9006632	22
4	SCREW, PHL. PAN HD. #8-32x1/2	9006039-1	21
4	WASH., INT. TOOTH LOCK #8	9006634	20
4	SPACER, AL. HEX. 1/8LG. #4	9006791	19
8	SPACER, AL. HEX. 1/8LG. #8	9006795	18
2	NUT, KEPS #4-40	9006557	17
2	SCREW, PHL PAN HD #4-40x1/4	9008301-1	16
1	SWITCH, #7101-J1-ZBE C&K	1210894	15
1	KEYBOARD, SMALL	5410229	14
1	CLAMP, CABLE NYLON 1/4"	9007081	13
2	NUT, KEPS #8-32	9006563	12
8	SCREW, PHL FLT. HD., #8-32X3/8 LG	9006037-2	11
1	SPEAKER, BELL	1210299	10
1	CABLE, KEYBOARD	D-IA-7008960-0-0	9
1	SERIAL TRANSMITTER	M7011	8
1	BRACKET, LARGE KEYBOARD	7408638-1	7
1	BRACKET, LARGE KEYBOARD	7408638-2	6
1	KEYBOARD CABLE	D-IA-7008959-0-0	5
1	BRACKET, SMALL KEYBOARD	C-IA-7409761-0-0	4
1	KEYBOARD, LARGE	5409945	3
1	COVER, KEYBOARD	D-IA-7409833-0-0	2
1	BASEPLATE, KEYBOARD	E-IA-7409834-0-0	1

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: LK40

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005	±0° 30'
.XX = .02	
.X = 1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. CBOYLE DATE 8-9-72
CHK'D. DATE 8-21-72
ENG. DATE
PROJ. ENG. DATE 8-26-72
PROD. DATE 8-21-72

NEXT HIGHER ASSY. LK40-0-0

SCALE 1/1
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KEYBOARD ASS'Y, (LK40)

SIZE	CODE	NUMBER	REV.
D	UA	LK40-0-0	B

DIST.

REVISIONS				
CHK	CHANGE NO.	REV		
	GT40-00001	A		
		B	LK40-00002	

PRINTING 40-107 15988

REV B
SIZE D CODE UA NUMBER LK40-0-0
B
SIZE D CODE UA NUMBER LK40-0-0 REV B

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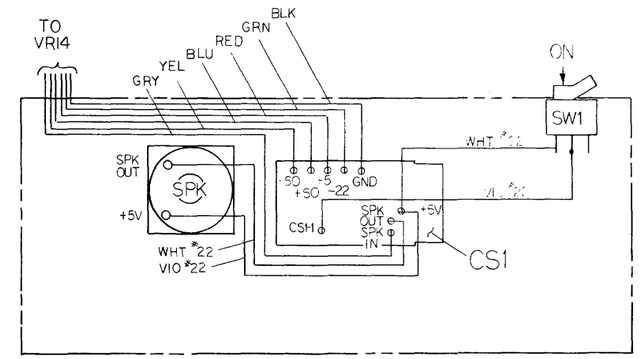
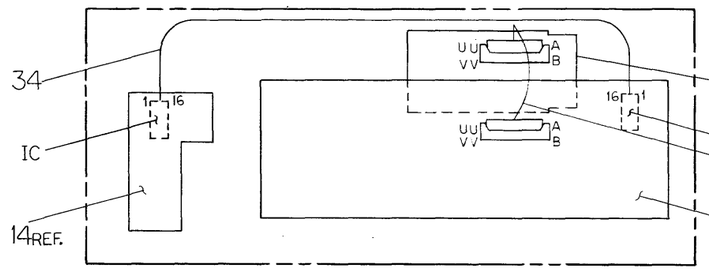
WIRE TABLE

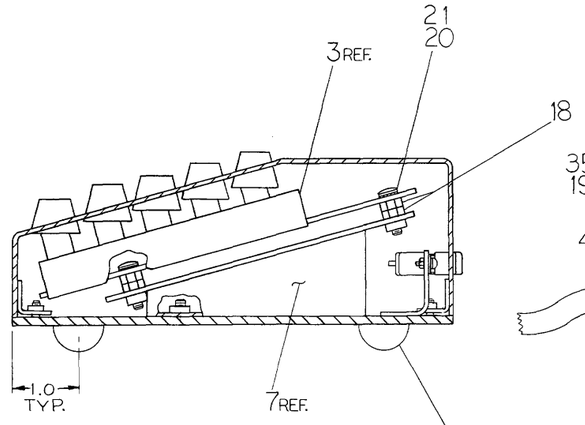
ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	REMARKS
5	#18	GRN	—	—	CS1, -22	SOLDER	
		YEL	—		CS1, -50		
		RED	—		CS1, +5		
		GRY	—		CS1, SPK IN		
		BLU	—		CS1, +50		
5	#18	BLK	—		CS1, GND		
33	#22 TWP	WHT	SPK OUT	32	CS1, SPK OUT		
		VIO	SPK +5V	32	CS1, +5V		
33	#22 TWP	VIO	S1-3	SOLDER	CS1, +5V		USE ITEM 31
		WHT	S1-2	SOLDER	CS1-1	SOLDER	USE ITEM 31



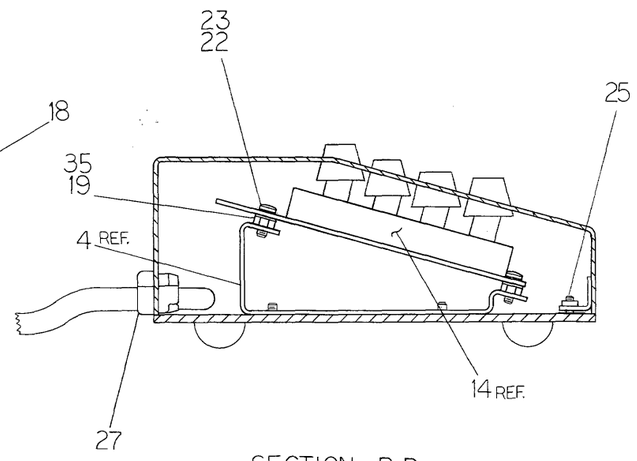
INTERNAL WIRING



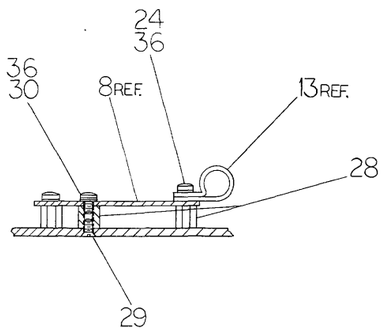
INTERNAL CABLES



SECTION A-A
(LARGE KEYBOARD)



SECTION B-B
(SMALL KEYBOARD)



SECTION C-C

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
LK4Ø		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. CBM Conj DATE 8-18-72
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE 8-24-72
PROD. DATE 8-28-72
NEXT HIGHER ASSY. B-UL-LK4Ø-A

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KEYBOARD ASS'Y (LK4Ø)

SIZE D | CODE UA | NUMBER LK4Ø-Ø-Ø | REV B
SCALE 1/1
SHEET 2 OF 2
DIST.

BRUNING 40-107 1596 — REV | DESCRIPTION | CHANGE NO | CHK
DEC FORM NO. DRD 100-A

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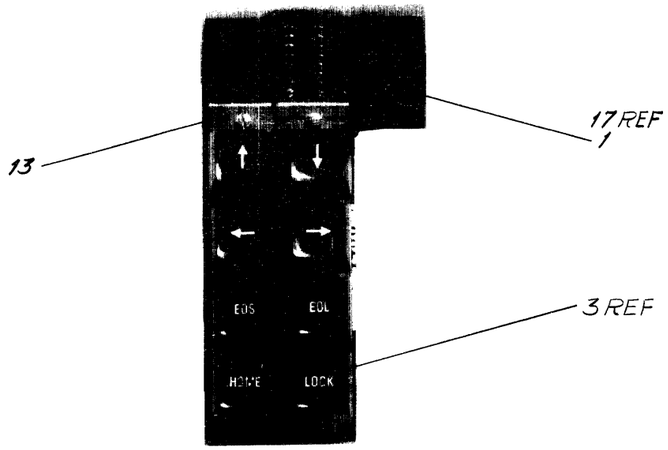
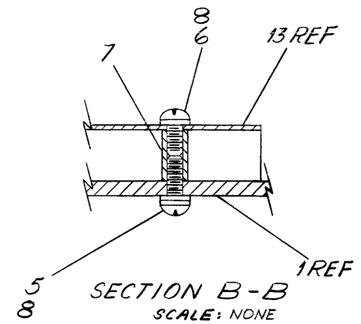
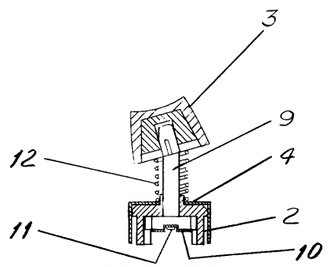
NOTES:
1. FOR REFERENCE INFO REFER TO DWG. NO. D-AD-5409995-0-0

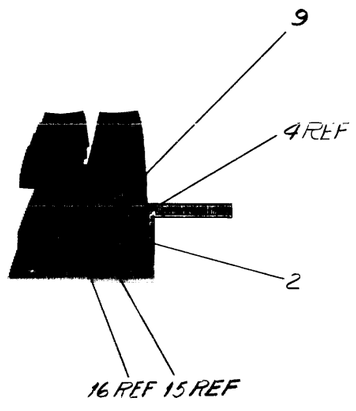


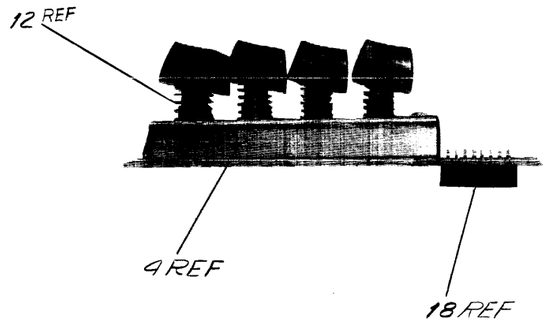


SECTION B-B
SCALE: NONE



SECTION A-A
SCALE: NONE





ITEM NO.	DESCRIPTION	PART NO.	QTY.
1	ETCH CIRCUIT BOARD	5010223	20
2	NYLON WASHER	9009263	19
1	SOCKET, 16 PIN IC	1210025	18
8	TRANSISTOR NPN	1510948	17
1	CAP .005 UF	1001765	16
8	RES, 1/8 W 5% 68K (CARBON COMP)	1301327	15
REF	CURSOR BOARD (KEYBOARD)	D-CS-5410224-0-1	14
1	DUST COVER, SHORT	B-MD-7410521-0-0	13
8	SPRING, LIGHT	9009161	12
8	SCREW, DRIVE 3/16	9009162	11
8	PLATE, COUPLING	C-MD-7409516-0-0	10
8	KEY SHAFT, STEPPED 90° TURN	D-MD-7410599-0-0	9
9	WASHER, #2	9006631	8
2	STANDOFF, CHANNEL	B-MD-7409538-0-0	7
2	SCREW, #2-56 X 1/4 LG	9006001-9	6
2	SCREW, #2-56 X 3/16 LG	9006002-9	5
2	CHANNEL MACHINING	C-MD-7410520-0-0	4
1 SET	KEYCAP, SINGLE	D-PS-9009148-69-0	3
8	KEY GUIDE	C-MD-7409525-0-0	2
REF	PC BOARD, CURSOR BOARD	D-IA-5010223-0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: VTØ5

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: SEE PARTS LIST
FINISH: — —

DRN	D. Schmidt	DATE 7-19-72
CHK'D	B. Patrick	DATE 7-19-72
ENG.	Jos. Sousa	DATE 7-31-72
PROJ. ENG.	D. Alden	DATE 7/31/72
PROD.	R. Oans	DATE 8/14/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CURSOR BOARD ASSY (KEYBOARD)

NEXT HIGHER ASSY: D-UA-VTØ5-Ø-Ø
SCALE: NONE
SHEET 1 OF 2

SIZE D | CODE AD | NUMBER 5410224-0-0 | REV.
DIST.

REVISIONS: REV | CHANGE NO.

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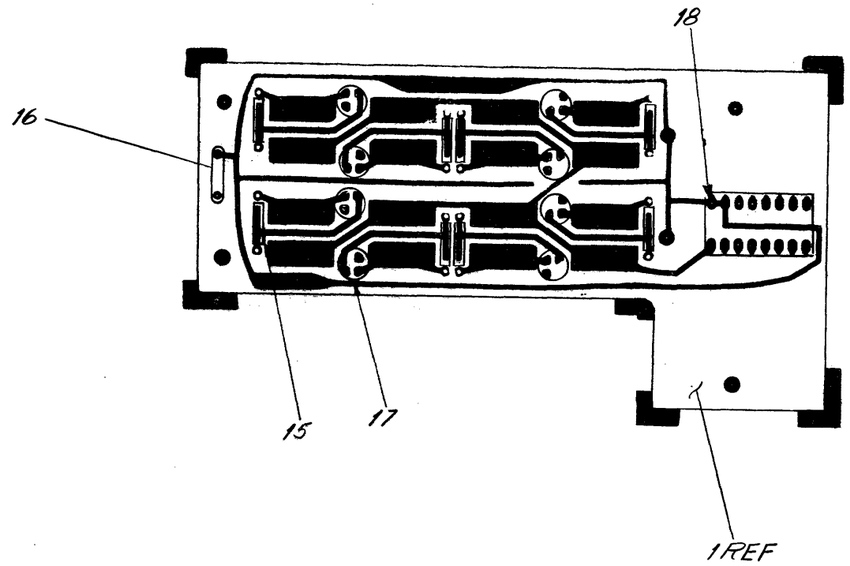

REVISIONS	REV.	CHANGE NO	CHK

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX ± .005	±0° 30'
.X ± .1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. B Schmidt	DATE 7-20-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. R Fitzsch	DATE 9-29-72	
ENG. [illegible]	DATE [illegible]	TITLE CURSOR BOARD ASSY (KEYBOARD)
PROJ. ENG. D Wilder	DATE 9/11/72	
PROD. R Dam	DATE 9/15/72	

NEXT HIGHER ASSY. —

SCALE NONE

SHEET 2 OF 2

SIZE	CODE	NUMBER	REV.
D	AD	5410224-0-0	

DIST.

DEC FORM NO DRD 100-A

SIZE D CODE AD NUMBER 5410224-0-0 REV

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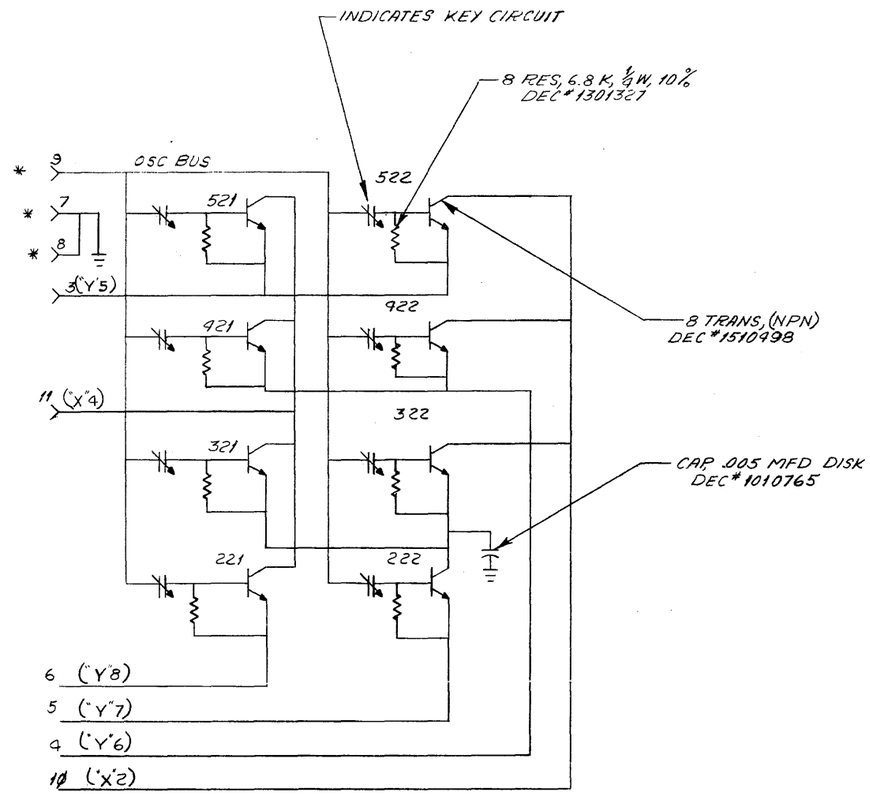
NOTES:

1. KEY 222 IS LOCK FOR KEYS 321 & 322. IT HAS TO BE DEPRESSED FOR OPERATION OF ABOVE KEYS.
2. * FOR REFERENCE INFORMATION SEE DWG. NO. D-CS-5909995-0-1



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VTØ5		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. D Hurst	DATE	7/12/72
CHK'D. D Stetson	DATE	7/19/72
ENG. h	DATE	9/14/72
PROJ. ENG. h	DATE	9/15/72
PROD. R Davis	DATE	8/4/72

NEXT HIGHER ASSY. —

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE

CURSOR BOARD (KEYBOARD)

SIZE	CODE	NUMBER	REV.
D	CS	5410224-0-1	

DIST.

REVISIONS

REV	CHANGE NO	CHK

BRUNING 40-522 15840

DEC FORM NO. DRD 102-B

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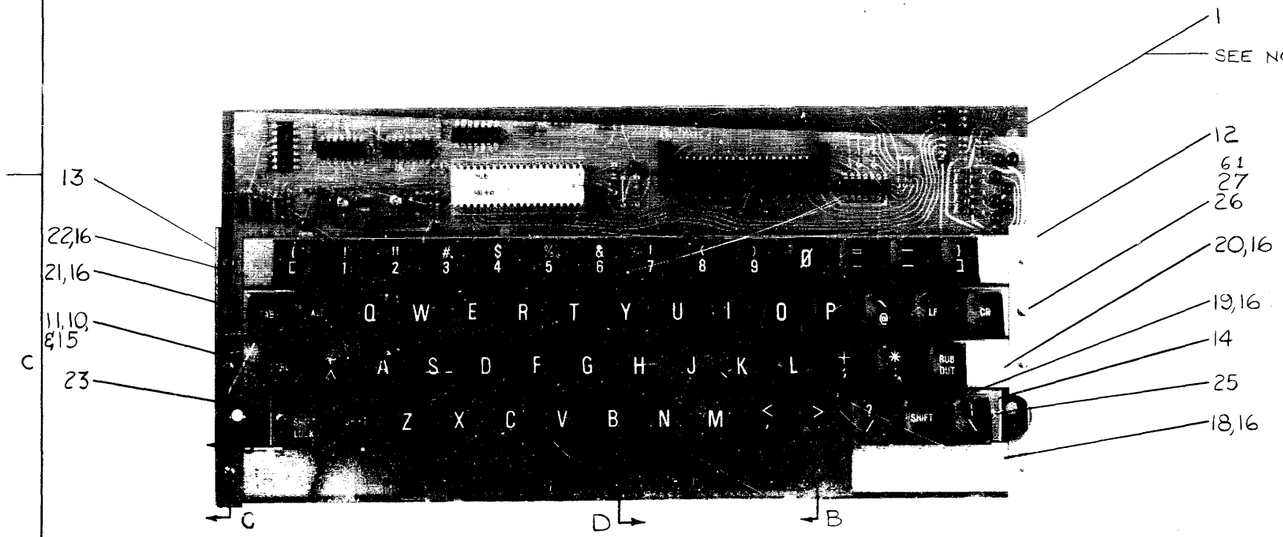
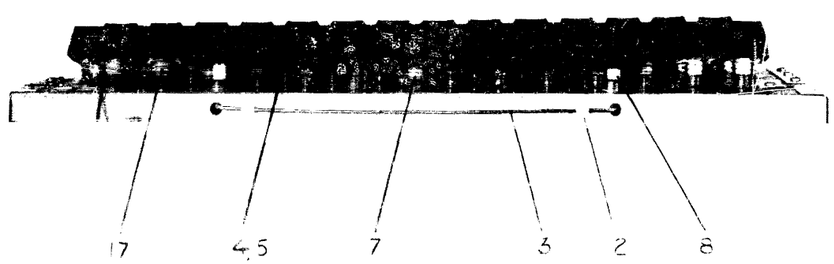
NOTES:

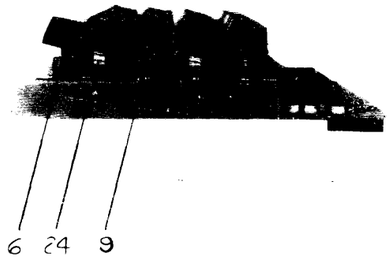
*1. IF ITEM #11 (COMPLETE SET) IS ORDERED DO NOT ORDER ITEM #4 (9 KEY SPACE BAR) AS IT IS PART OF COMPLETE SET WHEN ORDERED FROM CONTROL DEVICES. IF INDIVIDUAL KEYCAPS (ITEM #11) ARE ORDERED ITEM #4 MUST THEN BE ORDERED ALSO AS PER PARTS LIST.

2. FOR COMPONENT ASSY INFORMATION ON ITEM #1 (P.C BOARD) REFER TO SHEET #3

3. FOR CIRCUIT SCHEMATIC INFORMATION REFER TO DWG D-CS-5409945-1







REVISION					
CHK	CHANGE NO	REV			
	LK01-0000	A	BEATTY		
	LK01-0000	B	BEATTY		
	LK01-0000	C	D.WIDDER	6-22-72	
	V105-0000	D	D.WIEDER		
	5409945	E	A.WILLIAMS	7-6-72	

DEC FORM NO. DRD 160-A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: XXX .005, XX .01, X .1 — ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. D Schmidt	DATE 1-4-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D K Berry	DATE 1-7-72	
ENG. [illegible]	DATE 1-7-72	TITLE KEYBOARD ASSY
PROJ. ENG. TD Widder	DATE 2/15/72	
PROD. [illegible]	DATE 2/14/72	
NEXT HIGHER ASSY. B-DD-LK01-0		SIZE D CODE AD NUMBER 5409945-0-0 REV E
SCALE 1/1		
SHEET 1 OF 3		DIST.

SIZE D CODE AD NUMBER 5409945-0-0 REV E

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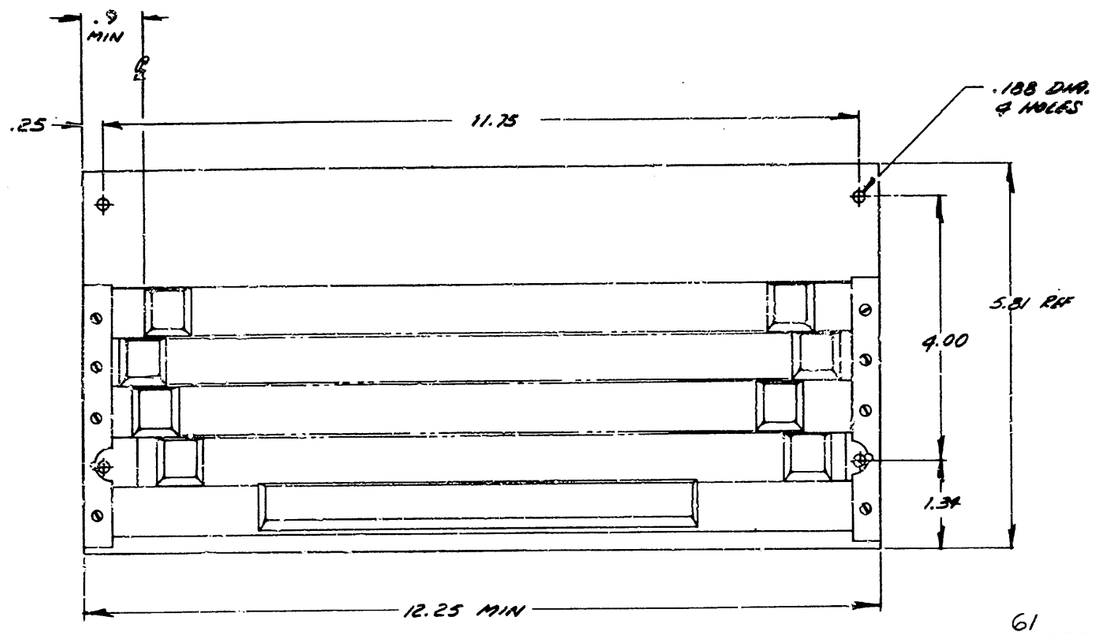

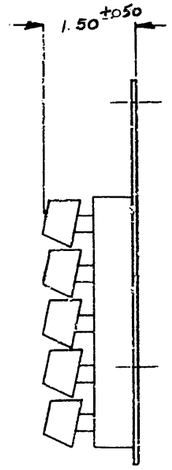

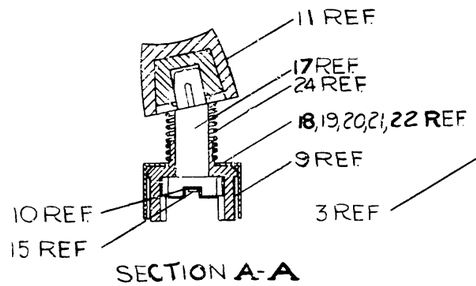

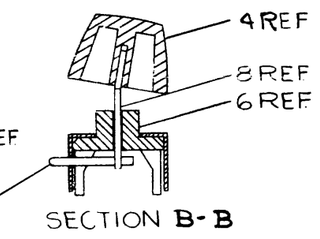

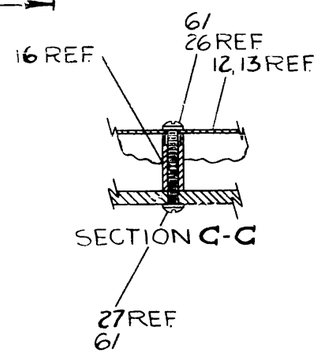

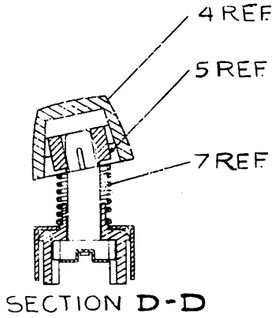

REVISIONS	REV.	CHANGE NO.	CHK

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DECIMALS	ANGLES
XXX ± .005 XX ± .02 X ± .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

D. Schmidt	DATE 1-4-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 1-11-72	
ENG	DATE 1-17-72	TITLE KEYBOARD ASSY
PROJ. ENG	DATE	
PROD.	DATE	
NEXT HIGHER ASSY.		
SCALE NONE	SIZE D	CODE AD
SHEET 2 OF 3	NUMBER 5409945-0-0	REV E
	DIST.	

CEC FORM NO THRD 100-A

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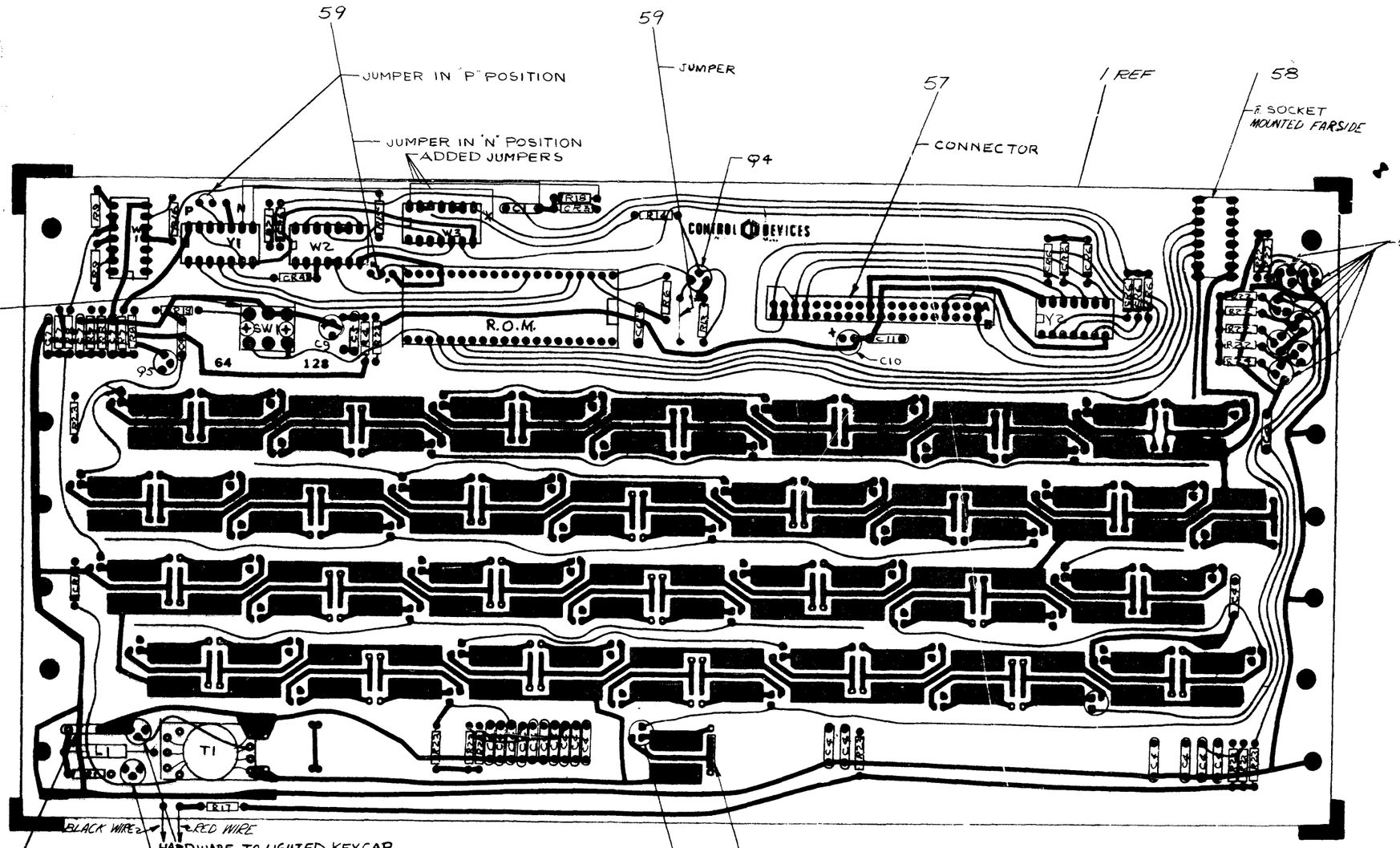
NOTES:
1. FORMERLY CONTROL DEVICE DWG. NO. D4459



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

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

TOLERANCES
DECIMAL
.XXX = .005
.XX = .02
.X = .1

DRN.		DATE 6-6-79
CHK'D		DATE
ENG.		DATE 2/14/79
PROJ. ENG.		DATE 2/14/79
PROD.		DATE 2/14/79
NEXT HIGHER ASSY		
SCALE 2/1		
SHEET 3 OF 3		

digital EQUIPMENT CORPORATION

TITLE: KEYBOARD ASSY

CODE	SIZE	NUMBER	REV.
AD	D	D-5409945-0-0	E
DIST.	G		

REVISIONS		
REV.	CHANGE NO	CHK

SIZE D | NUMBER 5409945-0-0 | REV E

DEC FORM NO. DRD 101

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TYPICAL KEY

+5VCC
C2 .005UF
R1 3.3K
Q1
Q2
2.2mh
T1
CD1
OSCILLATOR
CR1
Q3
X
R2 68K
Y
Q4 (PNP)
R13 1K
R14 4.7K

CONN. AUX. BOARD

1	2	3	4	5	6	7	8
X2	Y5	Y7	Y6	X4			Y8

+5VCC
N
P
-12VGG

C8 .0056uf
Y10 21
Y9 22
Y8 23
Y7 24
Y6 25
Y5 26
Y4 27
Y3 28
Y2 29
Y1 30
Y0 31
X7 32
X6 33
X5 34
X4 35
X3 36
X2 37
X1 38
X0 39
40
ROM 5 CONTROL

DATA+ STROBE INVERT. 20
19
STROBE DELAY
+5VCC
R4 680K
C5 .001uF
18
C9 1uF
17
STROBE
-12VGG
R16 3.3K
R15 330Ω
16
B1
15
B2
14
B3
13
B4
12
B5
11
B6B
9
B7
8
7
6
CONTROL 5
SHIFT 4
3
2
1
CLOCK FREQ.
C6 220
68K

CR6
+5VCC
R21 4.7K

300-1000NS
C1 .0014f
R18 680
STROBE
CR3 IN746A

TYP 37 POS 1
TYP 33-35 POS 2
10Y7
NC
TO KEY 406 EMITTER
R19 3.3K
LOWER CASE ALPHA INHIBIT MODE SW
R17 330Ω
TIL 209 L.E.D

BIT 1 — VV UU — BIT 1
BIT 4 — TT SS — BIT 4
BIT 2 — RR PP — BIT 2
BIT 3 — NN MM — BIT 3
LL KK
JJ HH
FF EE
DD CC
BB AA
Z Y
X W
V U
T S
R P
N M
BIT 5 — L K — BIT 5
BIT 6 — J H — BIT 6
F E
BIT 7 — D C — BIT 7
STROBE — B A — STROBE
+5
C10 10uf
C11 .005

IC DESCRIPTION	
SYMBOL	TYPE
Y1, Y2	7404
W1, W3	7408
W2	7400
R.O.M.	0017
TRANS.	-4

+5V
-12
R24 330K
R23 1K
(PNP)
Q5
X7 LINE ONLY
C4 .005 uF
(X7 ONLY)

-12
+5VCC
R22 680K
R23 1K
(PNP)
Q5
X LINES
C4 .005 uf
TYP X6 THRU X0

+5VCC
CTRL
R7 68K
R8 330Ω
C7 .22MF
R9 3.3K
CONTROL
SHIFT
SH LOCK
CR4
Q3
OSCILLATOR
R2 68K
TYPICAL 3 PLACES

REVISIONS			
CHK	CHANGE NO	REV	
	5409945-00001	A	
	LKO1-00001	B	
BEATTY			
	LKO1-00002	C	
DRAWING WAS 5409317-0-1			
BEATTY			
A. WILLIAMS	5409945-00001	E	

DEC FORM NO. DRD 100

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

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

DRN. Margaret Hamilton 9-29-71
CHK'D. W.F.M. DATE
ENG. Bob Smith DATE 12-3-71
PROJ. ENG. DATE
PROD. J. Kunila DATE 1-14-72
NEXT HIGHER ASSY D-AD-5409945-0-0
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DEC KEYBOARD #2

SIZE D | CODE CS | NUMBER 5409945-0-1 | REV E
DIST.

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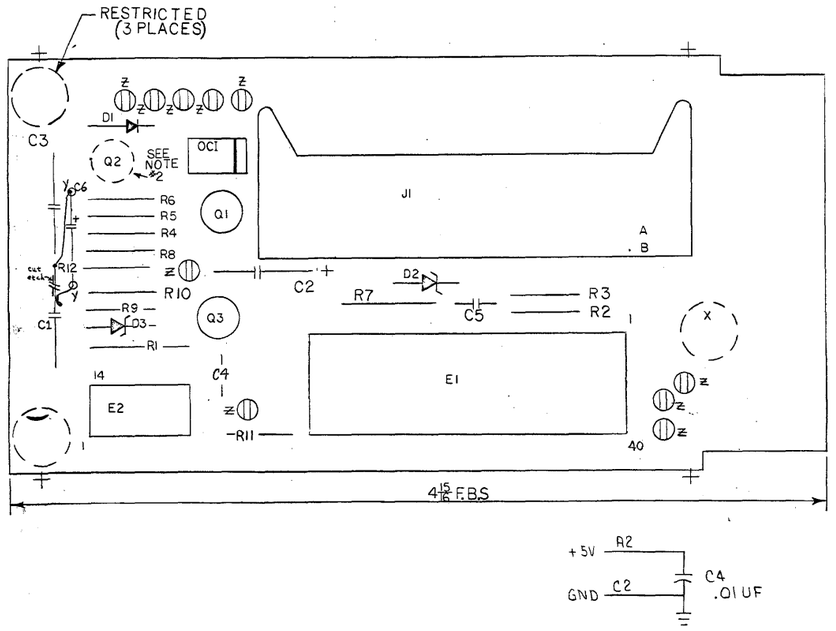
NOTES:

1. Q2 IS A CUSTOMER OPTION, AND SHOULD NOT BE INSERTED ON THE PC BOARD.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R5	RES 120 1/4W 5%	1300247	29
1	R12	RES. 5.6K 1/4W, 5%	1301874	28
1	E1	IC 1808 UART	1910459	27
1	E2	I.C. DEC 7413	1909989	26
1	OC1	OC TIL 108	1510399	25
2	Q1, Q3	TRANS. DEC. 3009 B	1503100	24
1	R9	RES 820 1/4W 5%	1301775	23
1	R3	RES. 750 1/4W 5%	1301401	22
1	R8	RES. 10 1/4W 5%	1301317	21
1	R6	RES. 100 1/4W 5%	1300229	20
1	R10	RES. 2.7K 1/4W 5%	1300426	19
1	R1	RES. 511 1/8W 1%	1302411	18
2	R2, R4	RES. 330 1/4W 5%	1300295	17
1	R7	RES. 330 1/2W 10%	1300294	16
1	R11	RES. 150 1/4W 5%	1300250	15
1	J1	CONN. 40 PIN BERG	1209941	14
1	D2	DIODE IN758	1103116	13
1	D1	DIODE IN4001	1102942	12
1	D3	DIODE ZENER AZ5	1101938	11
1	C4, C5	CAP. .01μF 100V 20% DISC.	10-01610	10
1	C1	CAP. 3.9μF 10V 10% S. TANT	10-00064	9
3	C2, C3, C6	CAP. 1 μF 35V 10% S. TANT	10-01776	8
9		SPLIT LUG	9006735	7
				6
				5
1		ETCHED CIRCUIT BOARD	5010078	4
REF		MODULE ECO HISTORY	B-MH-M7011-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7011-0-5	2
REF		X-Y COORDINATE HOLE LOC	K-CO-M7011-0-4	1

PARTS LIST

ETCH BOARD REV D

FIRST USED ON OPTION MODEL M7011

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

BRUNING 40-522 1665

DEC FORM NO. DRD-135A

REVISIONS				
CHK	CHANGE NO.	REV		
			AZ5	
			DEC 3009 B	2N 3646
			IN4001	SAME
			IN758	SAME
	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. A Campbell DATE 7-26-72
CHK'D. NANCY MOORE DATE 8-1-72
ENG. DATE
DRAFTING DATE
PROD. DATE
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE SERIAL TRANSMITTER

SCALE NONE
SHEET 1 OF 2

SIZE D | CODE CS | NUMBER M7011-0-1 | REV C

DIST.

REV C | SIZE D | CODE CS | NUMBER M7011-0-1

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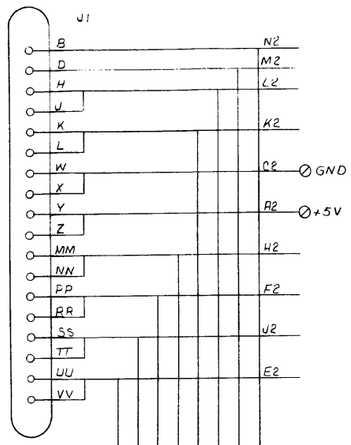
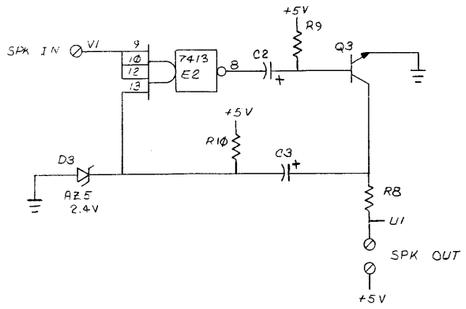
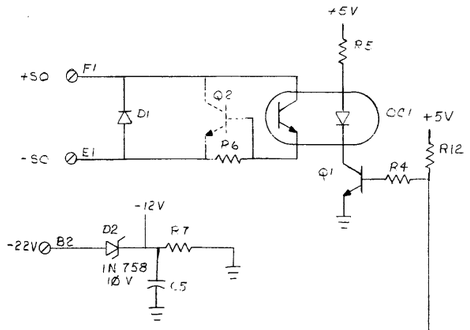
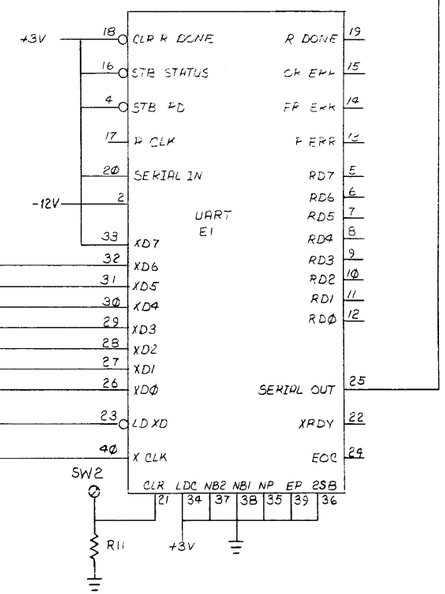
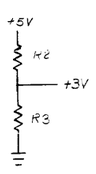
NOTES:

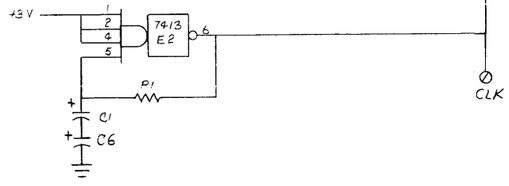












IC TYPE	GND	+ 5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: M7011

ETCH BOARD REV: D

REV	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.

REVISIONS

SEMICONDUCTOR CONVERSION CHART

DRN.	A Campbell	DATE 8-1-72
CHK'D.	NANCY MOORE	DATE 8-1-72
ENG.	Hervé Lavoie	DATE 9/7/72
PROJ. ENG.	Hervé Lavoie	DATE 9/7/72
PROD.		DATE
NEXT HIGHER ASSY		
SCALE		
SHEET	OF	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: SERIAL TRANSMITTER

SIZE	CODE	NUMBER	REV.
D	CS	M7011-Ø-1	C

DIST.

REV C

SIZE D CODE CS NUMBER M7011-Ø-1

BRUNING 40-522 16699

DEC FORM NO. DPD-135A

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS VR14-Ø	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
VR14	DISPLAY	X	X	X	X	X	X	X	X

USED ON OPTIONS

REVISIONS REV.	DATE	CHG. NO.	APP'D.
M	4/72	00016	A.F.
N	7/72	00019	A.F.
P	10/72	00021	A.F.
R	12/72	00022	A.F.
S	1/73	00023	D.C.

DRN. D. CRABBE	DATE 10/70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. D. CRABBE	DATE 10/70	
ENG. D. CRABBE	DATE 11/70	TITLE VR14 DISPLAY
PROJ. ENG. A. FISHMAN	DATE 11/70	
PROD. PETERSON	DATE 11/70	
FIRST USED ON VR14		SIZE A · CODE ML · NUMBER VR14-0 · REV. S
SCALE		
SHEET 1 OF 2		DIST.

DRA 131

Dec 16-(325)-1048-N471

PRINT SET VR14-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-DI-VR14-0-2	J	2	DRAWING INDEX LIST	
X	D-CS-G836-0-1	#	1	POWER SUPPLY & REGULATOR SCHEMATIC	
X	C-CS-7007080-0-1	A	1	POWER SUPPLY HEAT SINK SCHEMATIC	
X	C-CS-7007082-0-1	A	1	DEFLECTION HEAT SINK SCHEMATIC	
X	D-CS-7007084-0-1	D	2	POWER SUPPLY SCHEMATIC	
X	C-MU-VR14-0-3	B	1	MODULE UTILIZATION	
X	D-IC-VR14-0-1	K	3	VR14 BLOCK SCHEMATIC	
X	A-PL-VR14-0-3	B	1	MODULE UTILIZATION (PL)	
X	D-UA-VR14-0-0	J	4	DISPLAY ASSEMBLY	
X	A-PL-VR14-0-0	J	4	DISPLAY ASSEMBLY (PL)	
X	D-AD-7007078-0-0	F	1	WIRED ASSEMBLY	
X	A-PL-7007078-0-0	F	2	WIRED ASSEMBLY (PL)	
X	A-SP-VR14-0-4		4	ENGINEERING SPECIFICATION	
X	A-SP-VR14-0-5	B	31	CHECKOUT & ACCEPTANCE PROCEDURE	
X	D-UA-G836-0-0	#	1	POWER SUPPLY & REGULATOR ASSY	
X	A-PL-G836-0-0	#	3	POWER SUPPLY & REGULATOR ASSY (PL)	
X	D-AD-7007080-0-0		1	POWER SUPPLY HEAT SINK ASSY	
X	A-PL-7007080-0-0		1	POWER SUPPLY HEAT SINK ASSY (PL)	
X	D-AD-7007082-0-0	B	1	DEFLECTION HEAT SINK ASSY	
X	A-PL-7007082-0-0	B	1	DEFLECTION HEAT SINK ASSY (PL)	
X	D-AD-7007084-0-0	F	2	POWER SUPPLY ASSY	
X	A-PL-7007084-0-0	F	3	POWER SUPPLY ASSY (PL)	

TITLE					
VR14 DISPLAY	SHEET 2 OF 2	SIZE A	CODE ML	NUMBER VR14-0	REV. S

DRA 132

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

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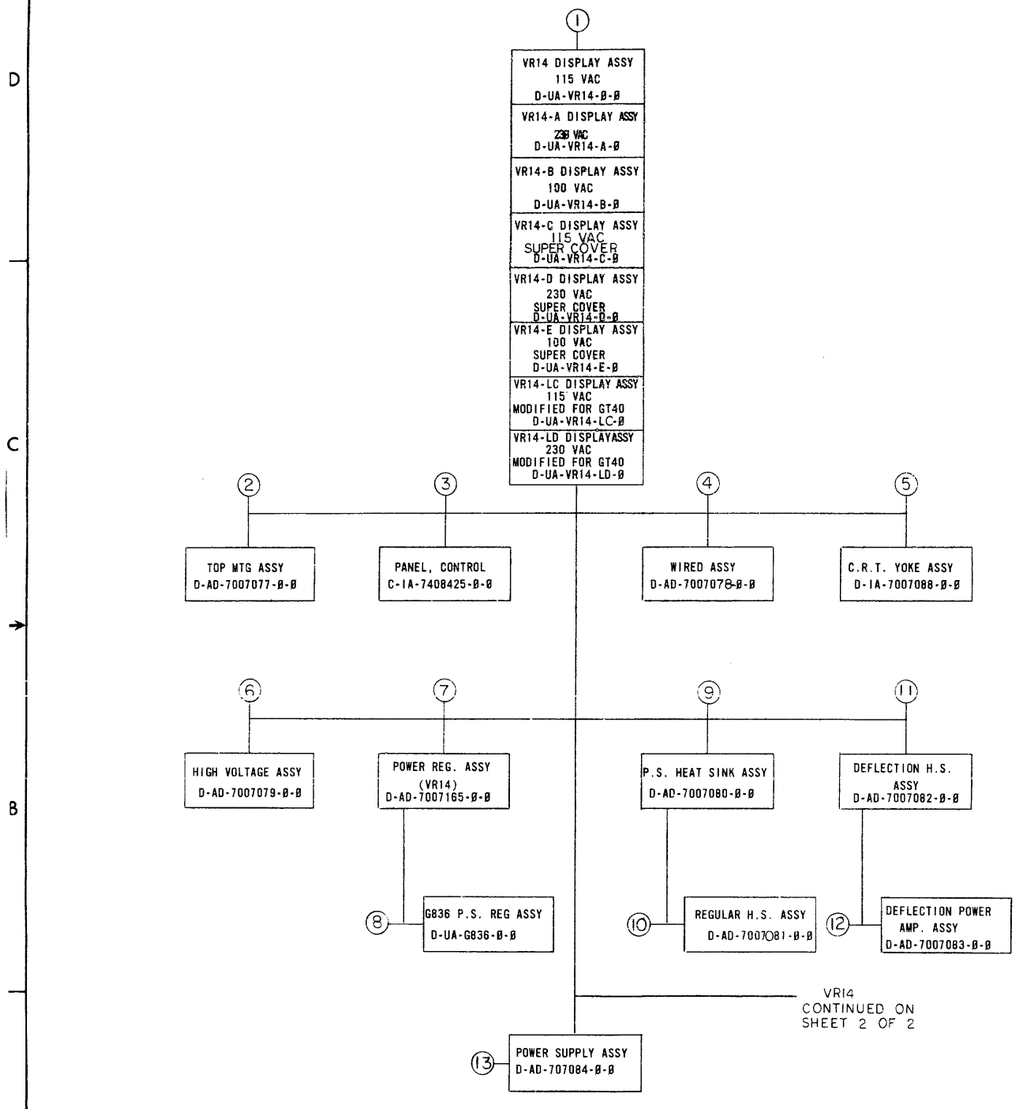
1972



MECHANICAL

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
1.	VR14 DISPLAY ASSY 115 VAC	D-UA-VR14-B-B			
	VR14-A DISPLAY ASSY 230 VAC	D-UA-VR14-A-B			
	VR14-B DISPLAY ASSY 100 VAC	D-UA-VR14-B-B			
	VR14-C DISPLAY 115 VAC S.C.	D-UA-VR14-C-B			
	VR14-D DISPLAY 230 VAC S.C.	D-UA-VR14-D-B			
	VR14-E DISPLAY 100 VAC S.C.	D-UA-VR14-E-B			
	VR14-LC DISPLAY ASSY 115 VAC GT 40	D-UA-VR14-LC-B			
	VR14-LD DISPLAY ASSY 230 VAC GT 40	D-UA-VR14-LD-B			
	VR14 DISPLAY ASSY P.L.	A-PL-VR14-B-B			
	BEZEL (VR12)	E-SC-1209230-B-B			
	BEZEL, CONTROL PANEL (VR12)	E-IA-7406891-B-B			
	CAP, REAR	C-SC-1209229-B-B			
	CAP (VR14)	C-MD-7408434-B-B			
	MASK, C.R.T. (VR14)	D-SC-1209228-B-B			
	MASK C.R.T.	D-MD-7406837-B-B			
	SCREEN, SAFETY	D-SC-1210113-B-B			
	SCREEN, SAFETY (VR14)	D-IA-7408408-B-B			
	PLATE, BOTTOM MTG.	D-IA-7408400-B-B			
	FAN, SCREEN	C-MD-7404881-B-B			
	C.R.T. SHIELD	E-SC-1210104-B-B			
	MAIN CHASSIS CABLE HARNESS	E-IA-7008477-B-B			
	GROUND TUBE	C-IA-7408411-B-B			
	CHASSIS TRACK BRACE	D-MD-7408549-B-B			
	CHANNEL SWITCH	B-IA-7008976-B-B			
	MASK	E-PS-1211106-B-B			
	BRACE, CHASSIS	E-IA-7409964-B-B			
	SHIELD SAFETY	C-IA-7408409-B-B			
	HOLDER, CARD	C-MD-7408414-B-B			
	PKG INST VR14 RACK MOUNT	A-PI-3700026-B-B			
	PKG INST VR14 SUPER COVER	A-PI-3700027-B-B			
	JUMPER	B-IA-7007006-3-B			
2.	TOP MTG. ASSY	D-AD-7007077-B-B			
	TOP MTG. ASSY P.L.	A-PL-7007077-B-B			
	PLATE, TOP MTG.	E-IA-7408401-B-B			
	SCOTCHCALS (VR14)	A-DC-7408407-B-B			
3.	PANEL, CONTROL	C-IA-7408425-B-B			
	PANEL, CONTROL SILK SCREEN	B-SS-7408425-B-1			
4.	WIRED ASSY	D-AD-7007078-B-B			
	WIRED ASSY P.L.	A-PL-7007078-B-B			
	FRAME LOGIC	D-IA-7408422-B-B			
	BAR, MTG	B-MD-7407114-0-B			
	LOGIC FRAME DECALS	A-SS-5308753-B-2			
	LOGIC FRAME DECALS	A-SS-5308753-B-4			
5.	C.R.T. YOKE ASSY	D-IA-7007088-B-B			
6.	HIGH VOLTAGE ASSY	D-AD-7007079-B-B			
	HIGH VOLTAGE ASSY P.L.	A-PL-7007079-B-B			
	PLATE, HIGH VOLTAGE MTG.	D-IA-7408420-B-B			
	SHIELD, HIGH VOL. PROTECTION	B-MD-7406424-B-B			
	SPACER, HEX	B-MD-7408413-B-B			
	HIGH VOLTAGE SHIELD	D-SC-1210169-B-B			
7.	POWER REGULATOR ASSY (VR14)	D-AD-7007165-B-B			
	POWER REG. ASSY (VR14) P.L.	A-PL-7007165-B-B			
	MATE-N-LOK ASSY BRKT	D-IA-7408439-B-B			
	COVER, CAPACITOR	C-MD-7408436-B-B			
8.	G836 POWER REG. ASSY	D-UA-G836-B-B			
	G836 POWER REG. ASSY P.L.	A-PL-G836-B-B			
9.	POWER SUPPLY H.S. ASSY	D-AD-7007080-B-B			
	POWER SUPPLY H.S. ASSY P.L.	A-PL-7007080-B-B			
	SPACER, MTG.	C-MD-7408438-B-B			
	BRKT. MTG. SPACER	C-MD-7408437-B-B			
	POWER SUPPLY HEAT SINK	D-SC-1210131-B-B			
10.	REGULATOR HEAT SINK ASSY	D-AD-7007081-B-B			
	REGULATOR H.S. ASSY P.L.	A-PL-7007081-B-B			
11.	DEFLECTION HEAT SINK ASSY	D-AD-7007082-B-B			
	DEFLECTION H.S. ASSY	A-PL-7007082-B-B			
12.	DEFLECTION POWER AMP. ASSY	D-AD-7007083-B-B			
	DEFLECTION POWER AMP (PL)	A-PL-7007083-B-B			
13.	POWER SUPPLY ASSY	E-AD-7007084-B-B			
	POWER SUPPLY ASSY (PL)	A-PL-7007084-B-B			
	POWER SUP. CABLE HAPN.	E-IA-7007147-B-B			
	COVER, CAPACITOR HOLD DOWN	D-IA-7408433-B-B			
	PLATE, SIDE MTG	E-IA-7408402-B-B			
	COVER, PROTECTION	B-MD-7408416-B-B			

ELECTRICAL

FIND NO.	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F/C
1.	VR14 DISPLAY 115 VAC	A-ML-VR14-B			
	VR14-A DISPLAY 230 VAC	A-ML-VR14-A			
	VR14-B DISPLAY 100 VAC	A-ML-VR14-B			
	VR14-C DISPLAY 115 VAC S.C.	A-ML-VR14-C			
	VR14-D DISPLAY 230 VAC S.C.	A-ML-VR14-D			
	VR14-E DISPLAY 100 VAC S.C.	A-ML-VR14-E			
	VR14-LC DISPLAY ASSY 115 VAC GT 40	D-UA-VR14-LC-B			
	VR14-LD DISPLAY ASSY 230 VAC GT 40	D-UA-VR14-LD-B			
	CIRCUIT SCHEMATIC (VR14)	D-IC-VR14-B-1			
	MODULE UTILIZATION	C-MU-VR14-B-3			
	MODULE UTILIZATION (PL)	A-MU-VR14-B-3			
	ENGINEERING SPECIFICATION	A-SP-VR14-B-4			
	CHECK OUT AND ACCEPTANCE PROCEDURE	A-SP-VR14-B-5			
4.	WIRED ASSY	C-AD-7007078-B-B			
	WIRED ASSY P.L.	A-PL-7007078-B-B			
8.	G836 POWER REG. ASSY	D-UA-G836-B-B			
	G836 POWER REG. ASSY P.L.	A-PL-G836-B-B			
	CIRCUIT SCHEMATIC (G836)	D-SC-G836-B-1			
9.	POWER SUPPLY HEAT SINK ASSY	D-AD-7007080-B-B			
	POWER SUPPLY H.S. ASSY PL	A-PL-7007080-B-B			
	CIRCUIT SCHEMATIC (HEAT SINK)	D-CS-7007080-B-1			
11.	DEFLECTION HEAT SINK ASSY	D-AD-7007082-B-B			
	DEFLECTION H.S. ASSY P.L.	A-PL-7007082-B-B			
	CIRCUIT SCHEMATIC(DEFLECTION)	D-CS-7007082-B-1			
13.	POWER SUPPLY ASSY	D-AD-7007084-B-B			
	POWER SUPPLY ASSY P.L.	A-PL-7007084-B-B			
	CIRCUIT SCHEMATIC (POWER SUPPLY)	D-CS-7007084-B-1			

REVISIONS	CHK	REV
CHANGE NO		
VR14-00019	PM	F
REVISED & REDRAWN		
A. FISHMAN 10/72		
VR14-00021	PM	H
R. Peterson 11/9/72		
FISHMAN 11-7-72		J
VR14-00023	PM	
D. K. CRABBE 2-6-73		

FIRST USED ON OPTION/MODEL
VR14

DRN. D.K.CRABBE	DATE 11-3-70	
CHK'D. D.K.CRABBE	DATE 11-4-70	
ENG. D.K.CRABBE	DATE 11-6-70	
PROJ. ENG. A.FISHMAN	DATE 11-6-70	
PROD. R.PETERSON	DATE 12-8-70	

NEXT HIGHER ASSY
D-UA-VR14-Ø-Ø

SCALE —

SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
DRAWING
INDEX LIST

SIZE D | CODE DI | NUMBER VR14-Ø-2 | REV. J

DIST.

DEC FORM NO
DRG 1B8

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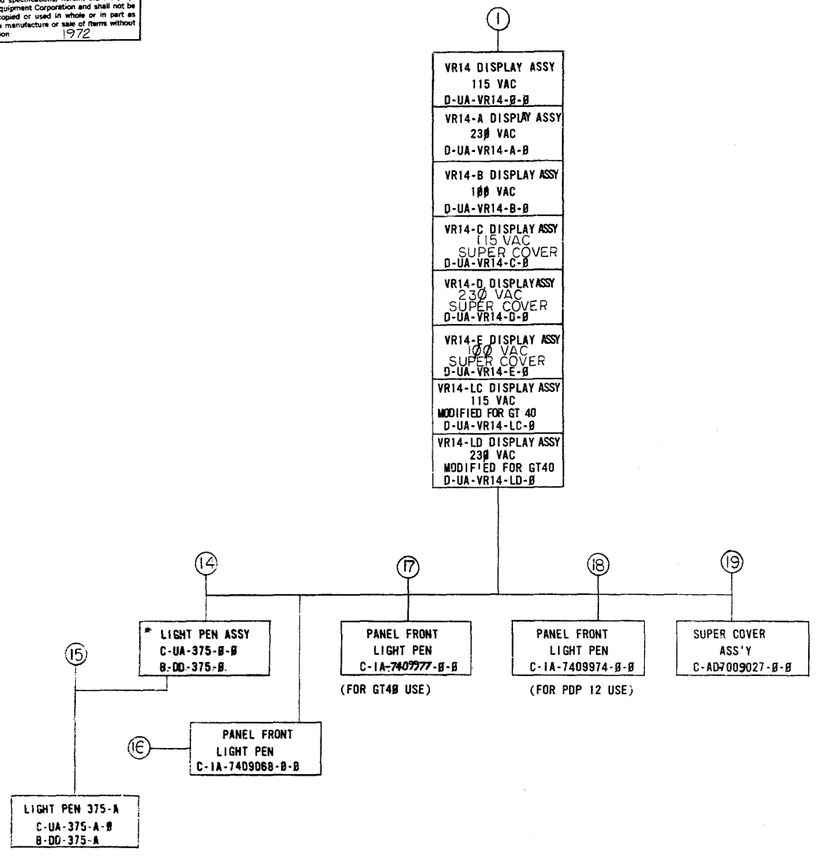

* OPTIONAL

MECHANICAL			DEPT USAGE		
FIND NO.	DESCRIPTION	PART NO.	PROD	CUST	F/C
14.	LIGHT PEN ASSY	C-UA-375-Ø-Ø			
	PHONE JACK CABLE	D-IA-7008433-Ø-Ø			
15.	LIGHT PEN ASSY (375-A) INFRA-RED LIGHT PEN	C-UA-375-A-Ø- 5410268			
16.	PANEL, FRONT LIGHT PEN	C-IA-7409068-Ø-Ø			
	SILK SCREEN	B-SS-7409068-Ø-1			
17.	PANEL FRONT LIGHT PEN	C-IA-7409977-Ø-Ø			
	SILK SCREEN	B-SS-7409977-Ø-1			
18.	PANEL FRONT LIGHT PEN	C-IA-7409974-Ø-Ø			
	SILK SCREEN	B-SS-7409974-Ø-1			
19.	SUPER COVER ASSY	D-AD-7009027-Ø-Ø			
	SHIM, CHASSIS (R.H.)	C-MD-7409968-0-0			
	SHIM, CHASSIS (L.H.)	C-MB-7409969-0-0			
	COVER PANEL REAR TOP	D-MD-7409965-0-0			
	EXTRUSION ASSY LOWER	D-IA-7409972-0-0			
	COVER TOP	E-IA-7409963-0-0			

ELECTRICAL			DEPT USAGE		
FIND NO.	DESCRIPTION	PART NO.	PROD	CUST	F/C

REV. J | SIZE D | CODE DI | NUMBER VR14-Ø-2

REVISIONS			
REV	CHANGE NO	CHANGE	DATE

FIRST USED ON OPTION/MODEL VR14

DRN. K CRABBE	DATE 1-5-70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D K CRABBE	DATE 1-4-70	
ENG	DATE	
PROJ. ENG. A FISHMAN	DATE 1-5-70	
PROD. R PETERSON	DATE 2-3-70	
NEXT HIGHER ASSY D-UA-VR14-Ø-Ø		
SCALE		
SHEET 2 OF 2		

TITLE
DRAWING
INDEX LIST

SIZE D | CODE DDI | NUMBER VR14-0-2 | REV. J | DIST.

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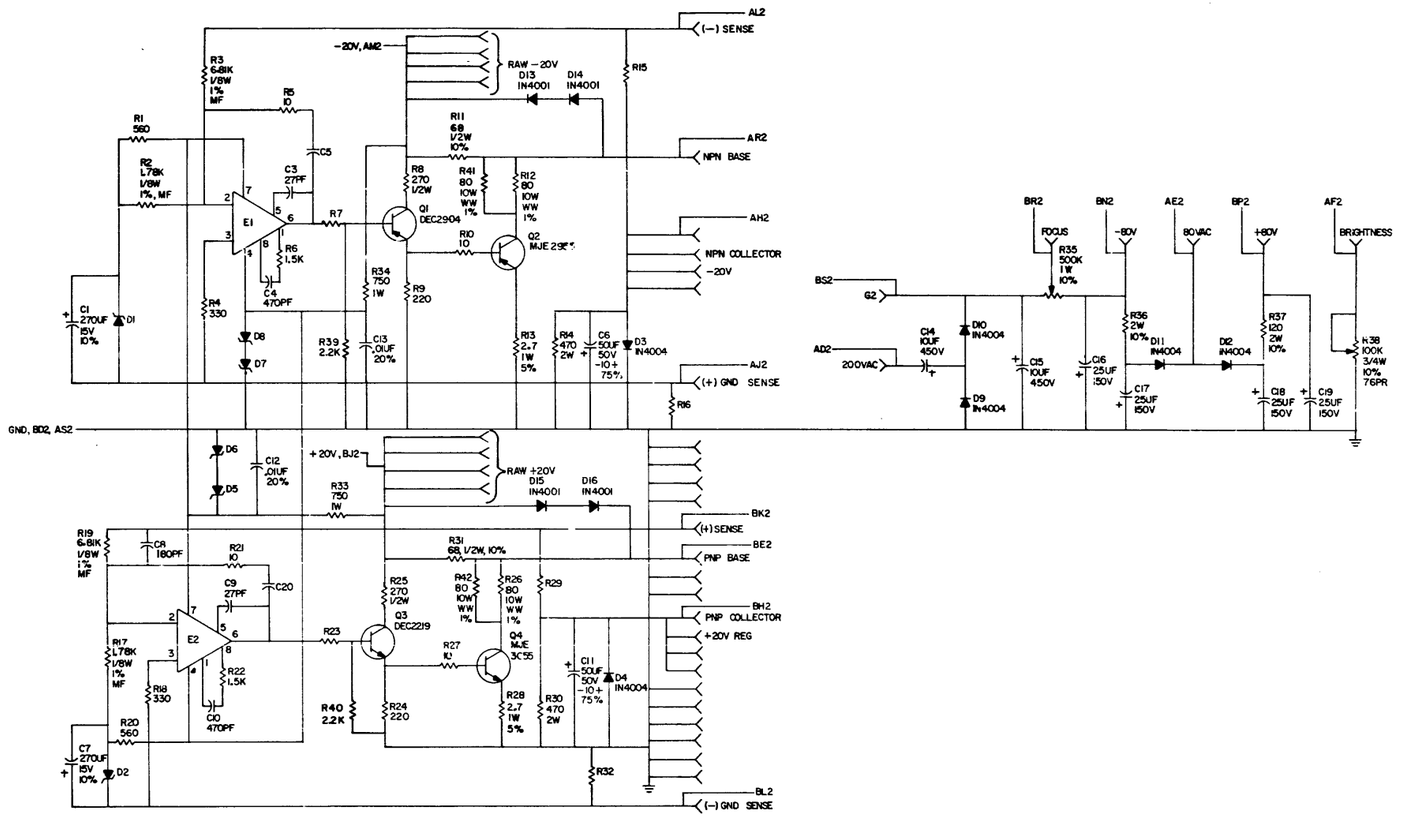

UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1K, 1/4W, 5%
DIODES ARE IN752A, 5.6V
CAPACITORS ARE 1000PF, 100V, 5%
E1, E2 ARE DEC709C
>— = EYELETS

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA
IN752A	5.6	MJE3055	
2N2219	2N2219		
2N2904	2N2904		
MJE2955	2N2955		

REVISIONS			
CHG NO	REV		
10003	B		
10003	C		
10004	D		

DRWN Mary Moore 11/25/70
CHK'D
ENG
PROD

TITLE VR-14 POWER SUPPLY AND REGULATOR BD G836
DIGITAL EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
SIZE D | CODE CS | NUMBER G836-0-1 | REV D
PRINTED CIRCUIT REV D

DEC FORM NO. 1000 116

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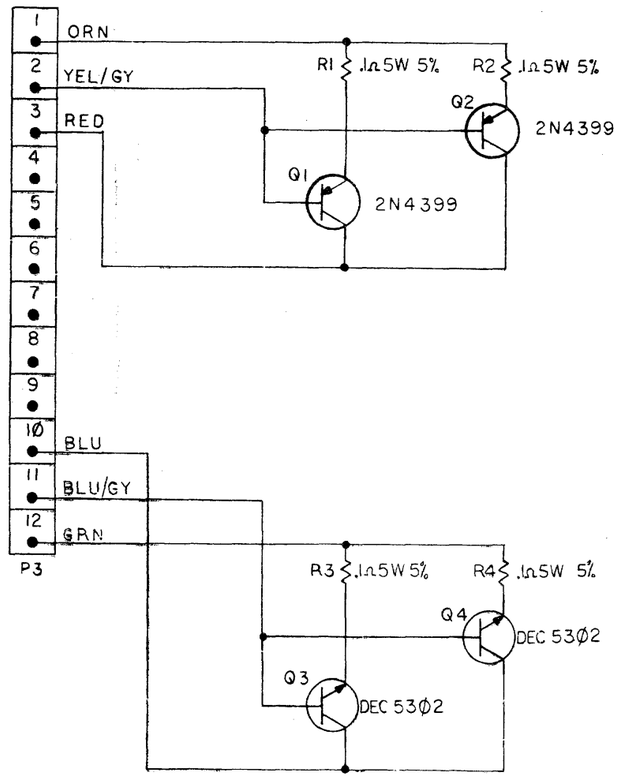
HEAT SINK CONNECTOR
SOCKET HOUSING
DEC 12Ø9351-12



REF DESIGNATION	DESCRIPTION	PART NO.
P3	AMP 12 CIRCUIT	12Ø9351-12
Q1 Q2	TRANSISTOR 2N4399	151Ø362
Q3, Q4.	TRANSISTOR DEC 53Ø2	151Ø196
R1 - R4.	RESISTOR .1Ω 5W 5%	13Ø5872

PARTS LIST

REVISIONS			
CHK	CHANGE NO.	REV.	
	VR14-0C005	A	4/14/71
	A. FISHMAN		4-20-71

FIPST USED ON OPTION MODEL
VR14

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 —

TRANSISTOR/DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
DEC 53Ø2	2N 53Ø2		
DEC 3790	2N 3790		

DRN.	G Marcum	DATE 7/24/70
CHK'D.	W K Gabb	DATE 10/19/70
ENG.	W K Gabb	DATE 11/6/70
MFG ENG.	G F Holmes	DATE 11-7-70
PROD.	R J Peterson	DATE 11/6/70

NEXT HIGHER ASSY
D-AL-7007080-0-0

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CIRCUIT SCHEMATIC
(HEAT SINK)

SIZE	CODE	NUMBER	REV.
C	CS	7007080-0-1	A

DIST.

SIZE C CODE CS NUMBER 7007080-0-1 REV. A

DEC FORM NO. DRC 100

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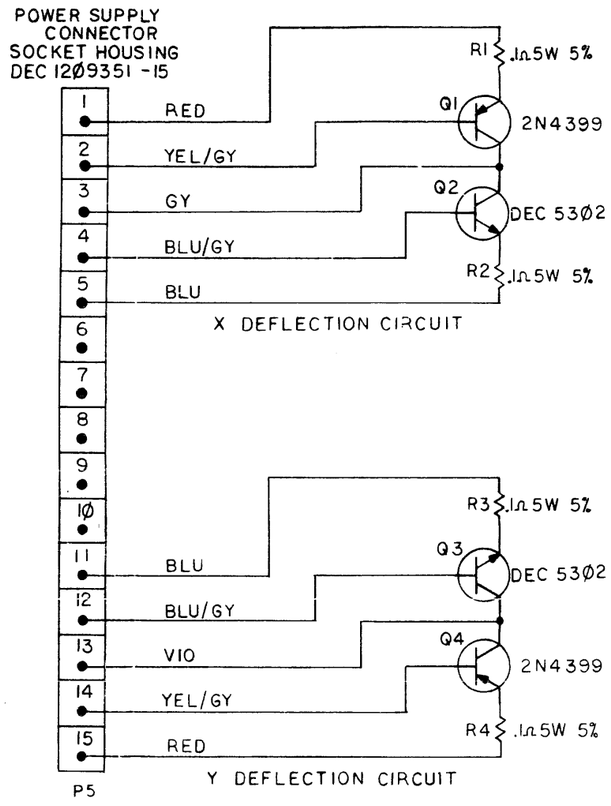


REF DESIGNATION	DESCRIPTION	PART NO.
Q2, Q3.	TRANSITOR DEC 53Ø2	151Ø196
P5	AMP 15-CIRCUIT	12Ø9351-15
Q1, Q4.	TRANSISTOR 2N4399	1510362
R1-R4	RESISTOR .1Ω 5W 5%	13Ø5872

PARTS LIST

TRANSISTOR DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA
DEC 379Ø	2N 379Ø		
DEC 53Ø2	2N 53Ø2		

REVISIONS			
CHK	CHANGE NO.	REV.	
A. FISHMAN 9-20-71	VR14-00005	A	

FIRST USED ON OPTION/MODEL
VR14

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 9/24/70
CHK'D.	D.K. Golden	DATE 10/16/70
ENG.	D.K. Gobbi	DATE 11/6/70
PROJ. ENG.	C.F. Ehman	DATE 11-6-70
PROD.	R. Peterson	DATE 11/6/70

NEXT HIGHER ASSY
D-AD-7007082-0-0

SCALE —

SHEET 1 OF 1

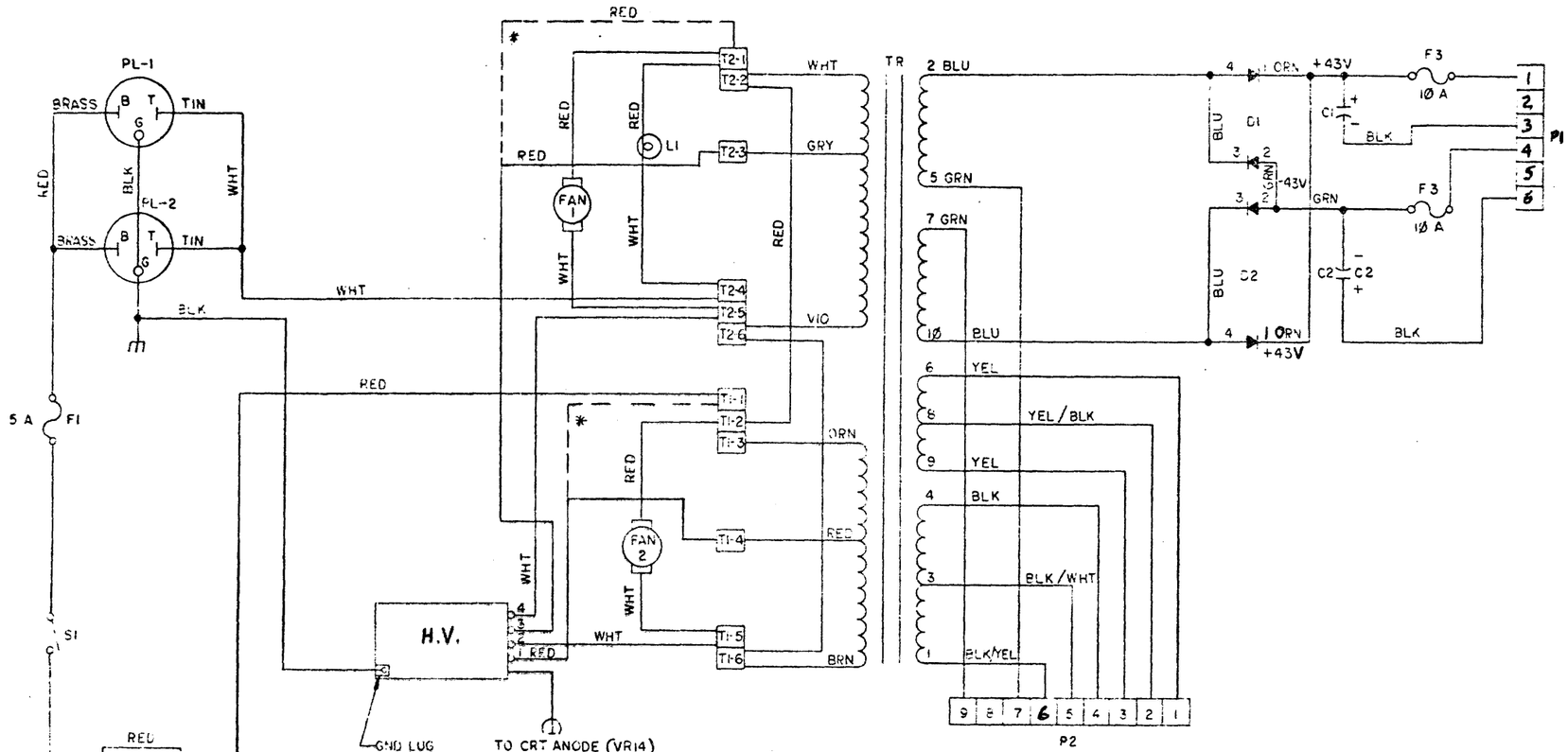
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CIRCUIT SCHEMATIC
(DEFLECTION)

SIZE	CODE	NUMBER	REV.
C	CS	7007082-0-1	A

DIST.

SIZE C CODE CS NUMBER 7007082-0-1 REV. A



115 VAC

* FOR VR2Ø OPERATION:
DELETE T1-4, ADD TO T1-1
DELETE T2-3, ADD TO T2-1

QTY	DESCRIPTION	PART NO.	ITEM NO.
	PWR SUP PARTS LIST	A-PL-7007084-0-0	15
F3	FUSE 1Ø AMP	9006836	14
F2	FUSE 3 AMP	9007218	13
F1	FUSE 5 AMP	9007222	12
TP	TRANSFORMER	1610160-0	11
J7,8	MATE-N-LOCK 3 PIN	1209352-3	10
P2	MATE-N-LOCK 9 PIN	1209351-9	9
P1	MATE-N-LOCK 6 PIN	1209351-6	8
C1,2	CAP 5Ø2Ø μF AT 75 V	1010143-0	7
PL2	RECEP AC MALE 160-5 AMPH (115V)	1201252	6
PL1	RECEP AC FEM 160-4 AMPH (115V)	1201251	5
S1	SWITCH ROT POT 100K 1/2 W	1310383	4
LI	LIGHT, PILOT 115 VAC	1209348	3
D1,2	RECTIFIER, DM-15	1105799	2
TS	JONES STRIP	9006904	1

VR14-00015	5-23	L. SALE	
VR14-00007	5-23	A. FISHMAN	
VR14-00010	5-23	A. FISHMAN	

NEXT ASSY USED ON (SERIAL, MODEL)	VR14
NEXT HIGHER ASSY	D AD-7007084-0-0
TRANSISTOR & DIODE CONVERSION CHART	

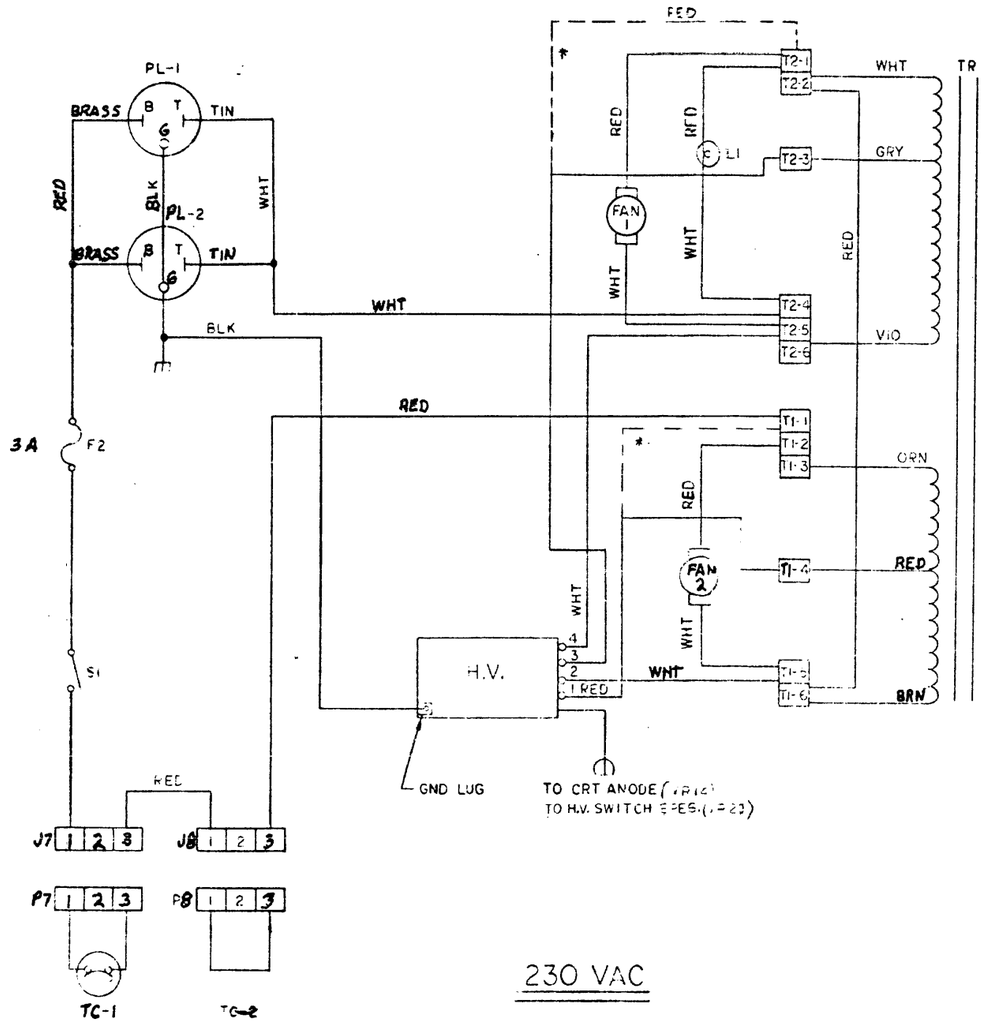
EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: CIRCUIT SCHEMATIC (PWR. SUP.)

SIZE D | NUMBER D SI7007084-0-1 | REV C

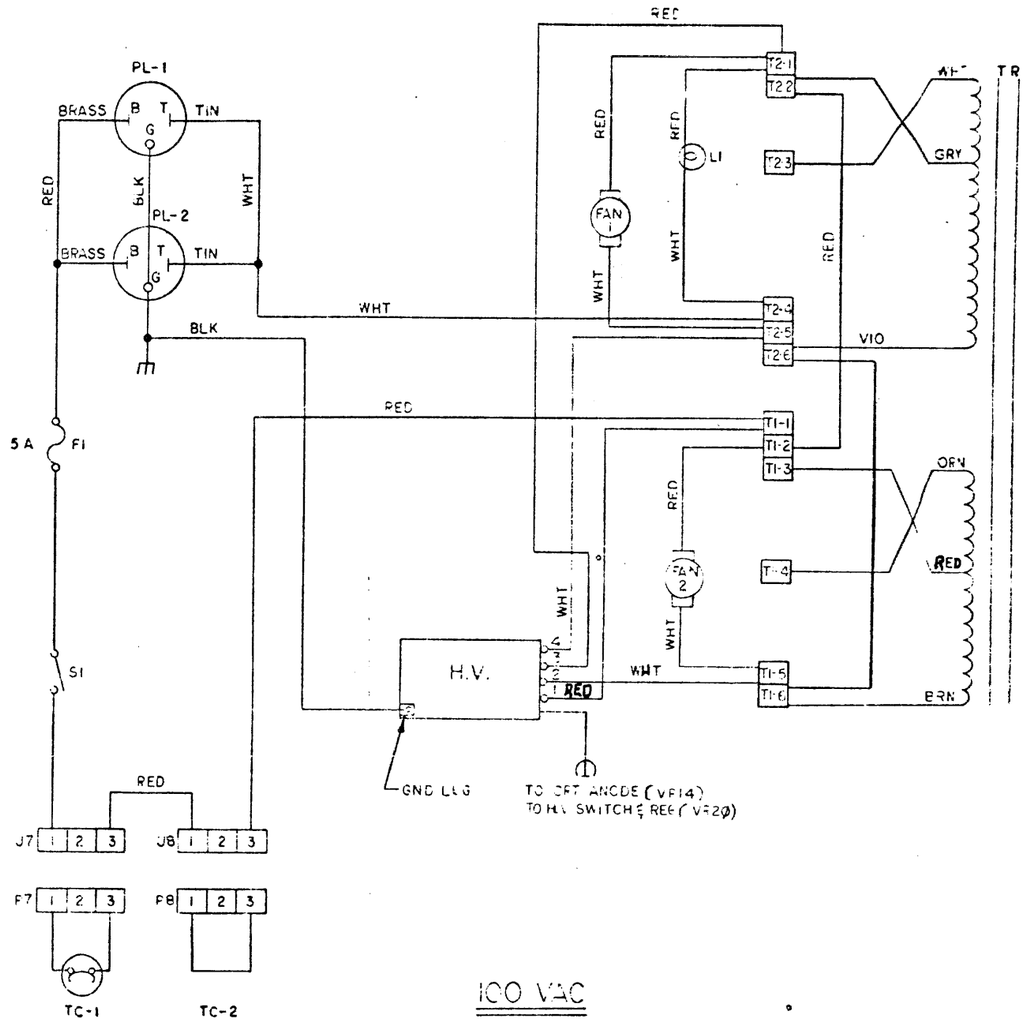
SHEET 1 OF 2

D SI7007084-0-1 (1)



230 VAC

* FOR VR2Ø OPERATION
DELETE T1-4, ADD TO T1-1
DELETE T2-3, ADD TO T2-1



100 VAC

TRANSISTOR & DIODE CONVERSION CHART

QTY	DESCRIPTION	PART NO.	ITEM NO

FIRST USED ON OPTION/MODEL: VR14

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINISH: REMOVE BURRS AND BREAK SHARP EDGES
MATERIAL
FINISH

NEXT HIGHER ASSY: D-1-270784-0-1

ECLIPSE CORPORATION

CIRCUIT SCHEMATIC (PWR. SUP.)

NUMBER: D-1-270784-0-1 REV: D

SIZE: D

SHEET 2 OF 2

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
D			
C			
B			
A			

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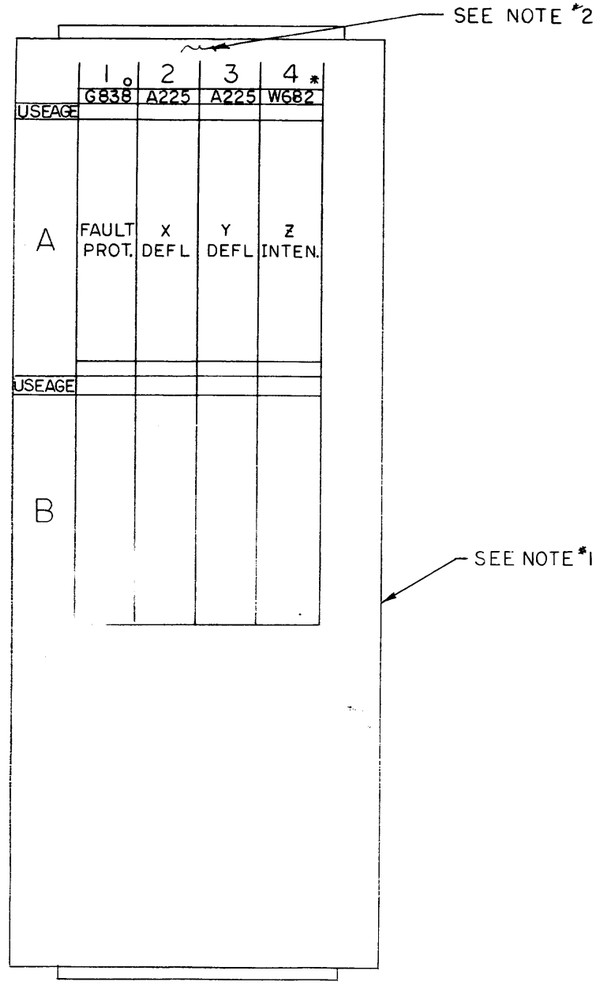

o G840 LIGHT PEN OPTION
* W684 8 LEVEL INTENSITY OPTION } (STANDARD ON VR14 LC, LD)

NOTES:
1. MODULE INFORMATION SHOWN FROM WIRING SIDE.
2. A225' ARE REPLACED WITH A225-YB'S ON VR14-LC AND LD

REVISIONS	CHANGE NO.	REV.
CHK	VR14-00019	A
A.J. ISHMAN	VR14-00022	B
A.F. ISHMAN		

FIRST USED ON OPTION/MOD: VR14

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		

NEXT HIGHER ASSY: C-MU-VR14-Ø-3

		DATE
DRN.	D.K. Gabbe	9/28/70
CHKD.	D.K. Gabbe	9/29/70
ENG.	D.K. Gabbe	11/6/70
PROJ. ENG.	G.F. Lehman	11-6-70
PROD.	R. Peterson	11/6/70

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION (VR14)

SIZE	CODE	NUMBER	REV.
C	MU	VR14-Ø-3	B

DIST.

DEC FORM NO. SAC 3A8

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G838 (G840) O

G840

A225

A225

W682 (W684)*

DEFLECTION HEAT SINK ASSY

YOKE ASSY

AMPHENOL 24 PIN CONTACT CONN P1

AMPHENOL 14 PIN CONTACT CONN. P2

CRT SOCKET

POWER SUPPLY VR14

FRONT PANEL BRIGHTNESS POT

CHANNEL SELECT SWITCH

NOTE: CHANNEL SELECT SWITCH NOT USED WITH VR14-LC, LD

O LIGHT PEN OPTION

✱ 8 LEVEL INTENSITY OPTION

FIRST USED ON OPTION/MODEL # VR14

QTY.	DESCRIPTION	PART NO.	ITEM NO.

EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BLOCK SCHEMATIC (VR14)

SIZE D | IC VR14-Ø-1 | REV K

NEXT HIGHER ASSY A-ML-VR14-Ø

USED NONE

SHEET 1 OF 3

REVISIONS					
CHK	CHANGE NO.	REV			
FV	VR14-00005	B	FISHMAN	6-8-71	FILE
FV	VR14-00010	B	FISHMAN	8-4-71	
FV	VR14-00013	D	A. FISHMAN	9-13-71	
FV	VR14 00014	E	A. FISHMAN	11-2-71	
FV	VR14-00015	F	A. FISHMAN	12-2-71	
FV	VR14-00019	H	A. FISHMAN	2-23-72	
FV	VR14-00021	J	FISHMAN	10/30/72	
			SEE SHEET 2	11-2-72	

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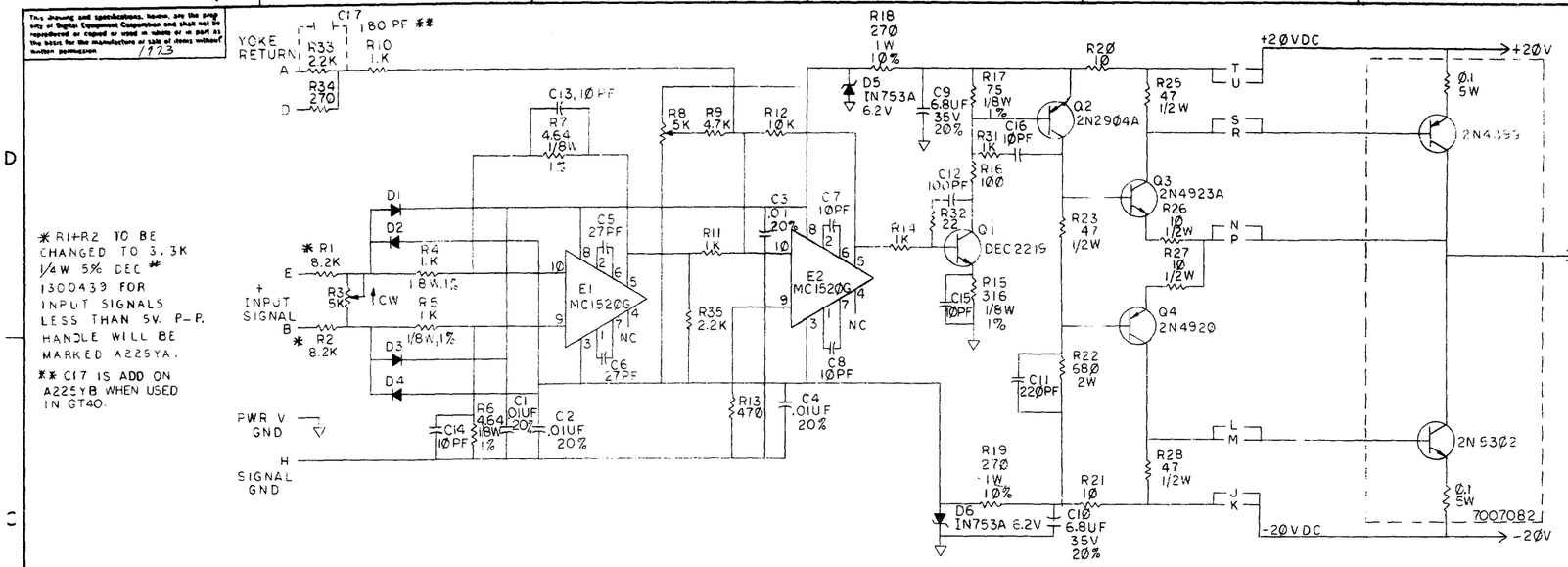
DEFLECTION AMPLIFIER
MAINTAINANCE DRAWING

UNLESS OTHERWISE INDICATED:
ALL CAPS ARE 10PF, 100V, 5%
ALL RESISTORS ARE 1.0K 1/4W, 5%
ALL DIODES ARE D664

* R1+R2 TO BE CHANGED TO 3.3K 1/4W 5% DEC # 1300433 FOR INPUT SIGNALS LESS THAN 5V. P-P. HANDLE WILL BE MARKED A225YA.

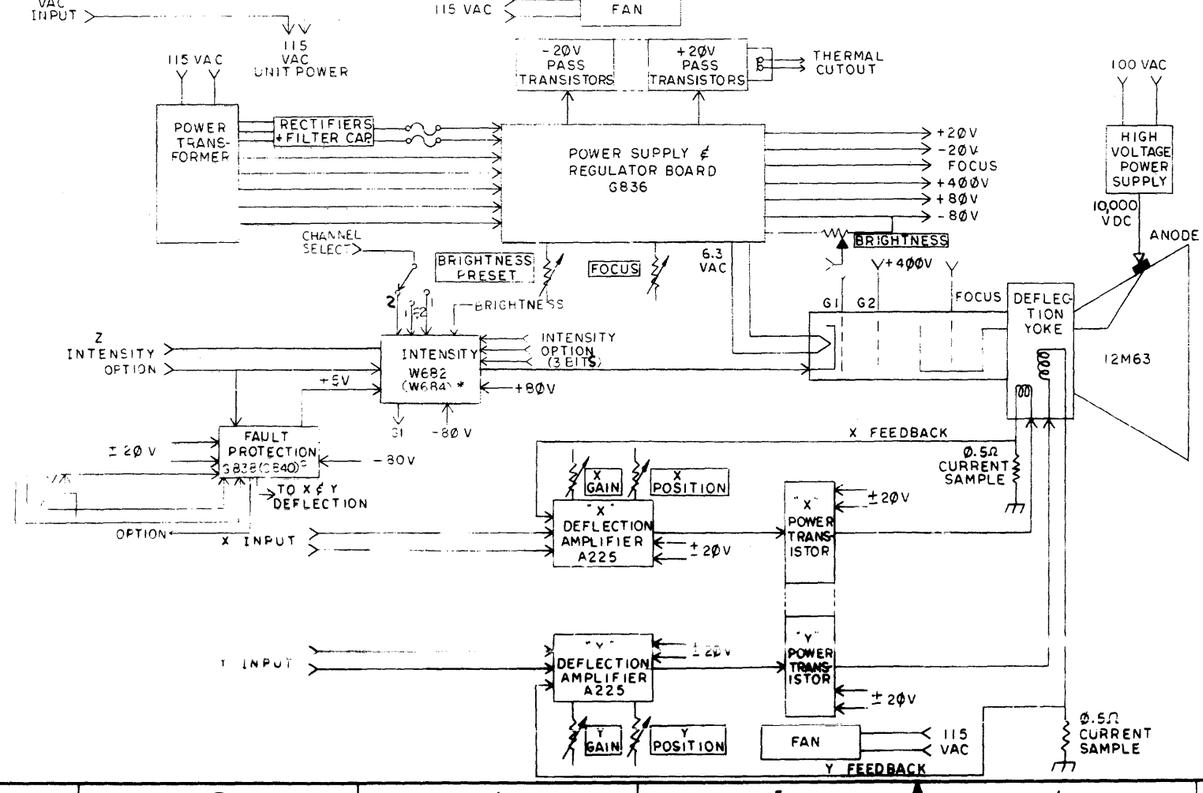
** C17 IS ADD ON A225YB WHEN USED IN GT40.



VR14 FUNCTIONAL BLOCK DIAGRAM
MAINTAINANCE DRAWING

* 8 LEVEL INTENSITY CONTROL OPTION.

O LIGHT PEN OPTION



REVISIONS		
CHK	CHANGE NO.	REV
	VR14-000 22	K

FISHMAN 1-16-73

FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VR14		PARTS LIST		

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

MATERIAL

FINISH

DRAWN	K Josse	DATE 11/25/70
CHK'D	D Tobbe	DATE 12-3-70
ENGR		DATE 12-4-70
MFG APP	C Epting	DATE 12-9-70
PROJ	R Fisher	DATE 12-10-70

NEXT HIGHER ASSY: A-ML-VR14-0

SCALE NONE

SHEET 2 OF 3

EQUIPMENT CORPORATION [redacted] MASSACHUSETTS

TITLE: BLOCK SCHEMATIC (VR14)

SIZE	CODE	NUMBER	REV.
D	IC	VR14-0-1	K

DIST. C

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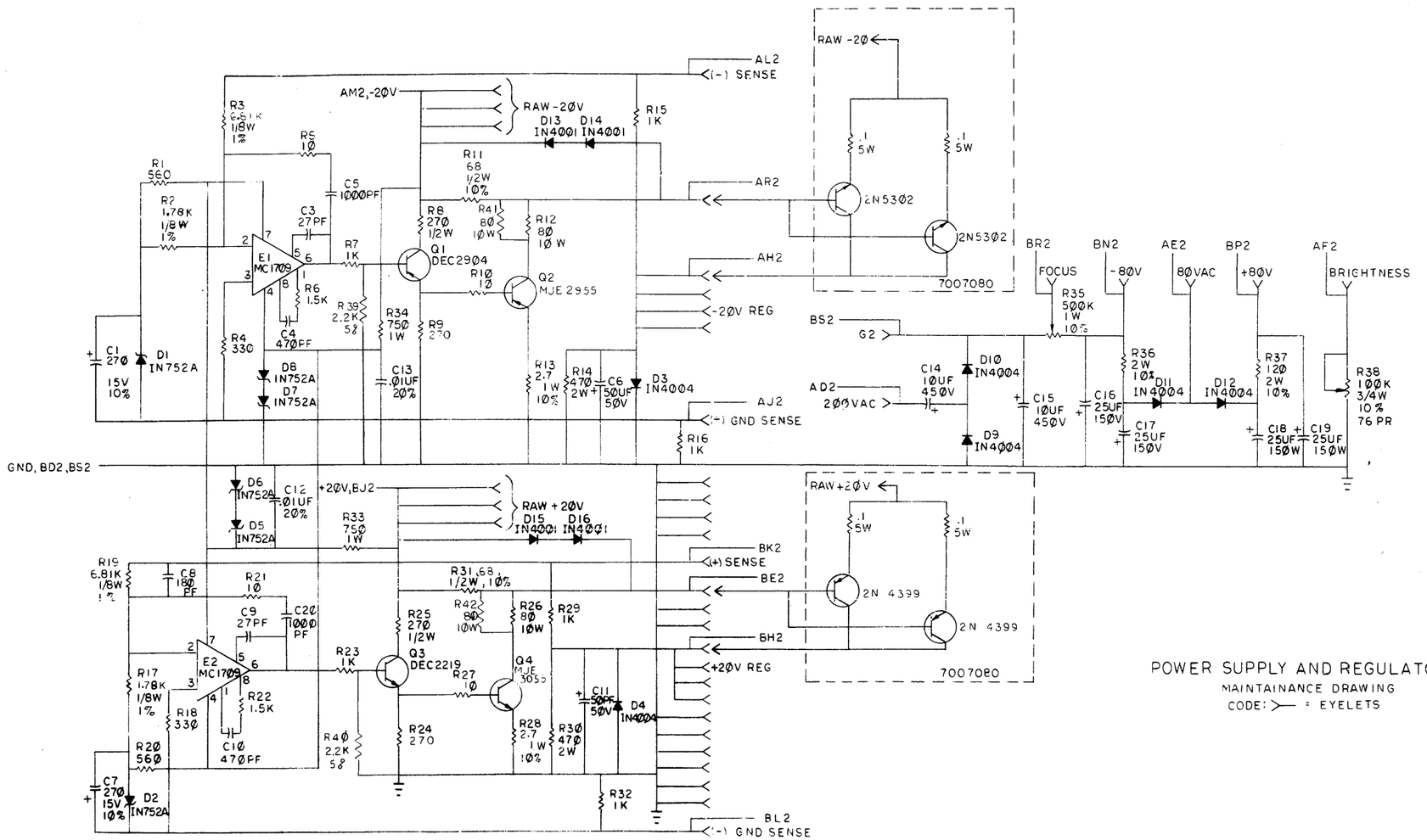

POWER SUPPLY AND REGULATOR
MAINTAINANCE DRAWING
CODE: >— = EYELETS

REVISIONS	REV.	CHANGE NO	CHK

FIRST USED ON OPTION/MCO.	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VR14				

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINISH, MACHINE QUALITY, REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL —
FINISH —

	NAME	DATE
DRAWN	[redacted]	12/1/70
CHECKED	[redacted]	12/2/70
ENGR	[redacted]	12-2-70
MFG	[redacted]	12-2-70
QA	[redacted]	12/9/70

NEXT HIGHER ASSY: A-ML-VR14-0
USED ON: NONE
SHEET 3 OF 3

[redacted] EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: BLOCK SCHEMATIC (VR14)

SIZE: D | CODE: IC | NUMBER: VR14-0-1 | REV: K
SCALE: | SHEET: 6

SIZE D IC VR14-0-1 REV K

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D.K. Crabbe	CHECKED D.K. Crabbe	SECTION
DATE 9/28/70	DATE 10/8/70	1
ENG D.K. Crabbe	PROD R Peterson	ISSUED SECT.
DATE 11/6/70	DATE 11/6/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION VR14-Ø	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
	A225	Deflection Amplifier	2	2	2	2	2	2		
	W682	Intensity Amplifier	1	1	1	1	1	1	-	-
	G838	Fault Protection	1	1	1	1	1	1	-	-
	G840	LIGHT PEN	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
	W684	8 LEVEL INTENSITY	A/R	A/R	A/R	A/R	A/R	A/R	1	1
	A225-YB	DEFLECTION AMPLIFIER	-	-	-	-	-	-	2	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE UTILIZATION LIST	A-MU-VR14-Ø-3	A	PL	VR14-Ø-3	B	VR14-00022
	SHEET 1 OF 1	DIST.				

DEC FORM NO. 16 1031
DRA 110

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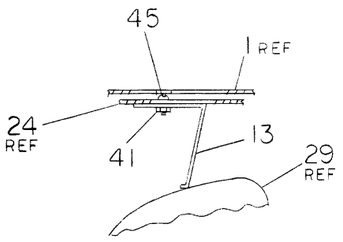
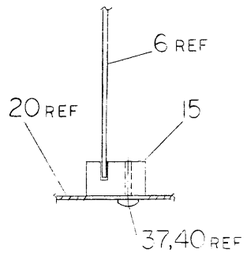
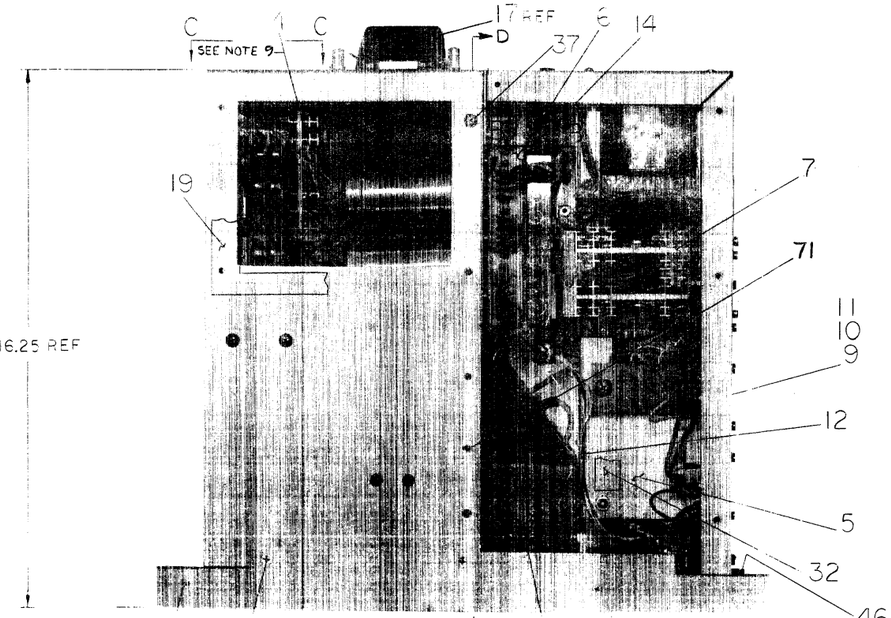
LEGEND	
NO.	VARIATION
VR14-Ø	115 VAC 50/60 HZ
VR14-A	230 VAC 50/60 HZ
VR14-B	100 VAC 50/60 HZ
VR14-C	115 VAC 50/60 HZ SUPER COVER
VR14-D	230 VAC 50/60 HZ SUPER COVER
VR14-E	100 VAC 50/60 HZ SUPER COVER
VR14-LC	115 VAC 50/60 HZ MODIFIED FOR GT 40
VR14-LD	230 VAC 50/60 HZ MODIFIED FOR GT 40

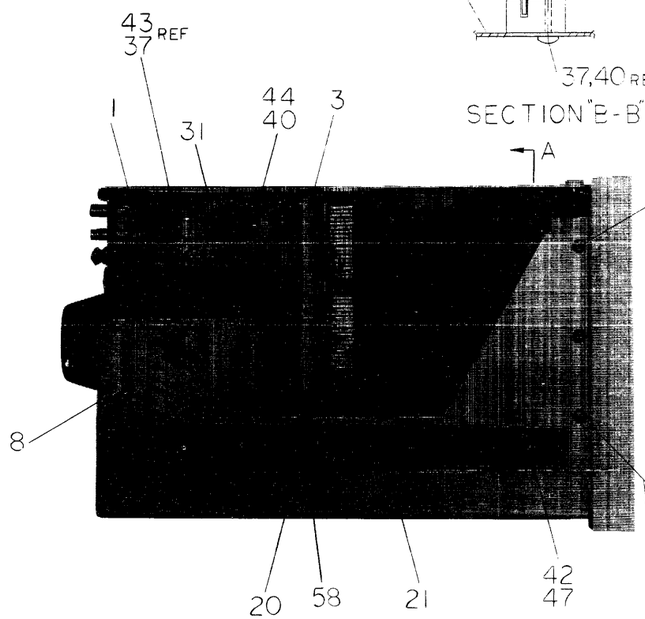


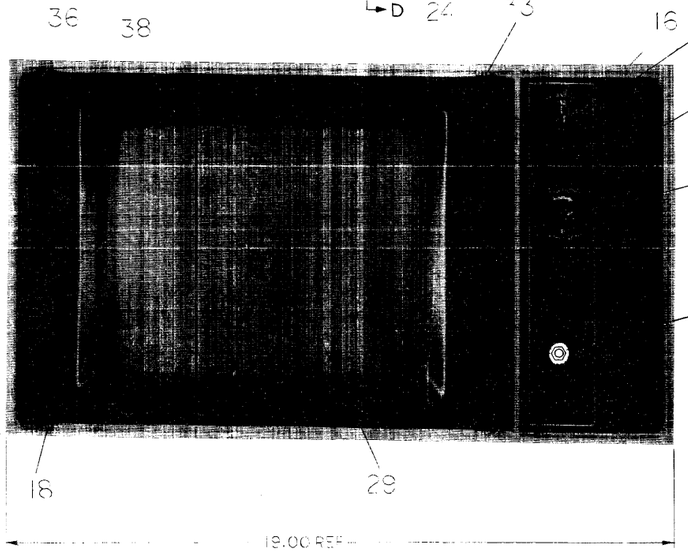
SECTION "A-A"



SECTION "B-B"







NOTES:

1. FOR DWG INDEX LIST REFER TO D-DI-VR14-Ø-2.
2. REMOVE ITEM #52 (WASHER) AFTER SHIPPING.
3. BEFORE MOUNTING CHASSIS TRACKS (ITEM #21) DRILL OUT BEAD OF METAL AT ONE END OF MIDDLE RUNNER ON BOTH TRACKS. USE 1/8 DRILL.
4. PLACE SHRINKIES, ITEM #55 ON POT-A, POT-B, & POT-C.
5. W684 USED WITH VR14-LC, LD.
6. G840 LIGHT PEN OPTION.
7. WHEN KEYBOARD IS CONNECTED THERE IS + AND - 22 VOLTS ON PIN 22+24 ON INPUT CONNECTOR.
8. CONNECT BLK WIRE ITEM #67 WITH ITEM #'S 68, 69 & 55 FROM TOP SCREW OF CONTROL PANEL TO GND LUG ON HI VOLTAGE SUPPLY ONLY ON C, D, E, LC & LD SYSTEMS.
9. FOR VR14'S LC & LD ROTATE YOKE (SYNTRONIC) SO THAT POINTS 3 & 4 ON YOKE ARE LOCATED ON TOP.

REVISIONS				
CHK	CHANGE NO.	REV.		
	VR14-00003	A	FISHMAN	
	VR14-00009	B	FISHMAN	7-6-71
	VR14-00011	C	FISHMAN	7-27-71
	VR14-00013	D	FISHMAN	9-13-71
	VR14-00015	E	A. FISHMAN	8-27-71
	VR14-00018	F	L. GALE	7-18-72
	VR14-00021	H	A. FISHMAN	11-27-72
	VR14-00022	J	FISHMAN	12-14-72

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

FIRST USED ON OPTION/MODEL: VR14

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

DRN.	K. Gribbin	DATE 12/5/70
CHK'D.	K. Gribbin	DATE 12/6/70
ENG.	K. Gribbin	DATE 12/6/70
PROJ. ENG.	[illegible]	DATE 12/8/70
PROD.	[illegible]	DATE 12/9/70

NEXT HIGHER ASSY: A-ML-VR14-Ø

SCALE: NONE

SHEET 1 OF 4

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: VR14 DISPLAY ASSY

SIZE	CODE	NUMBER	REV.
D	UA	VR14-C-Ø	J

DIST.

DEC FORM NO. F 100

REV	NUMBER	CODE	SIZE
J	VR14-Ø-Ø	UA	D

2

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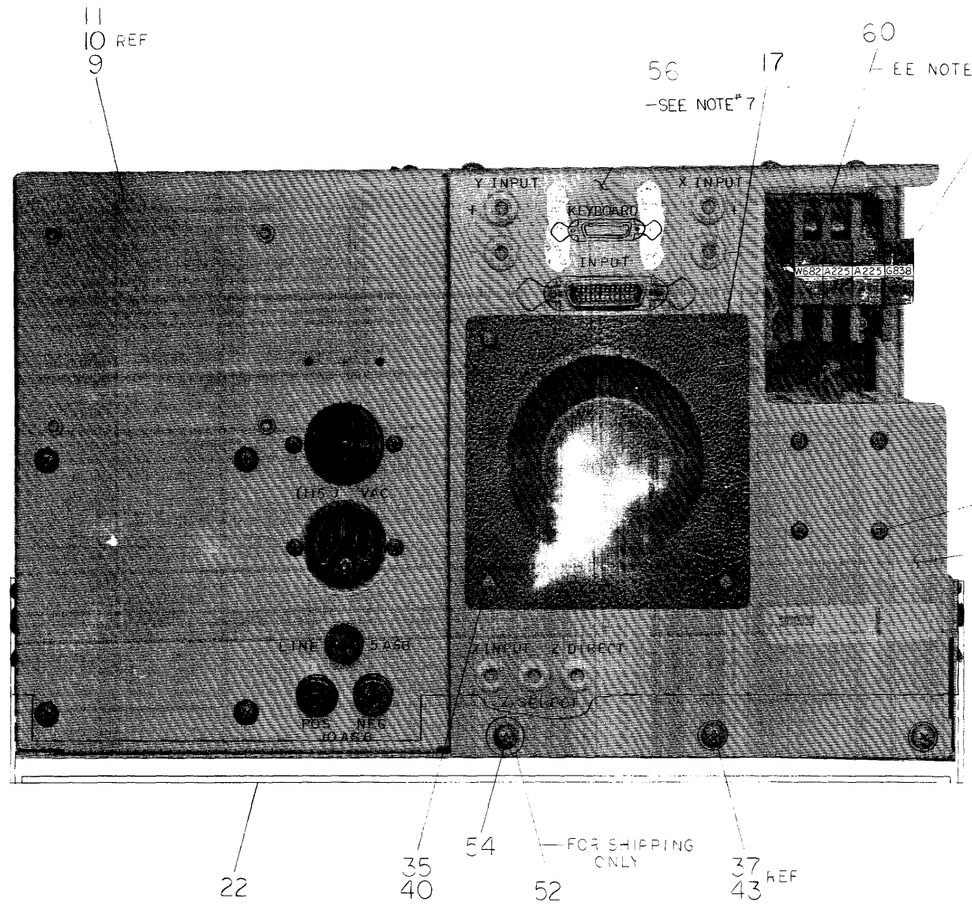

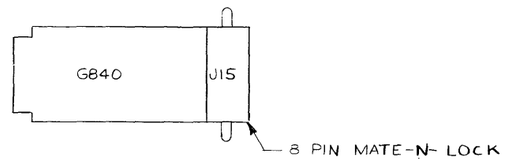

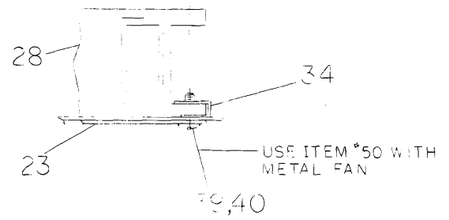

SECTION 'C-C'

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

FIRST USED ON OPTION/MODEL: VR14

DO NOT SCALE DRAWING

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

MATERIAL

FINISH

DRN.	K K Chuda	DATE 12/8/70
CHK'D.	K K Chuda	DATE 12/8/70
ENG.	K A [illegible]	DATE 12/8/70
DEPT ENG	[illegible]	DATE 12-8-70
PROD.	[illegible]	DATE [illegible]

NEXT HIGHER ASSY: A-ML-VR14-Ø

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: VR14 DISPLAY ASSY

SIZE	CODE	NUMBER	REV.
D	UA	VR14-C-Ø	1

SCALE NONE
SHEET 2 OF 4
DIST.

REVISIONS		
LTR	CHG NO.	CHK

DEC FORM NO 1100

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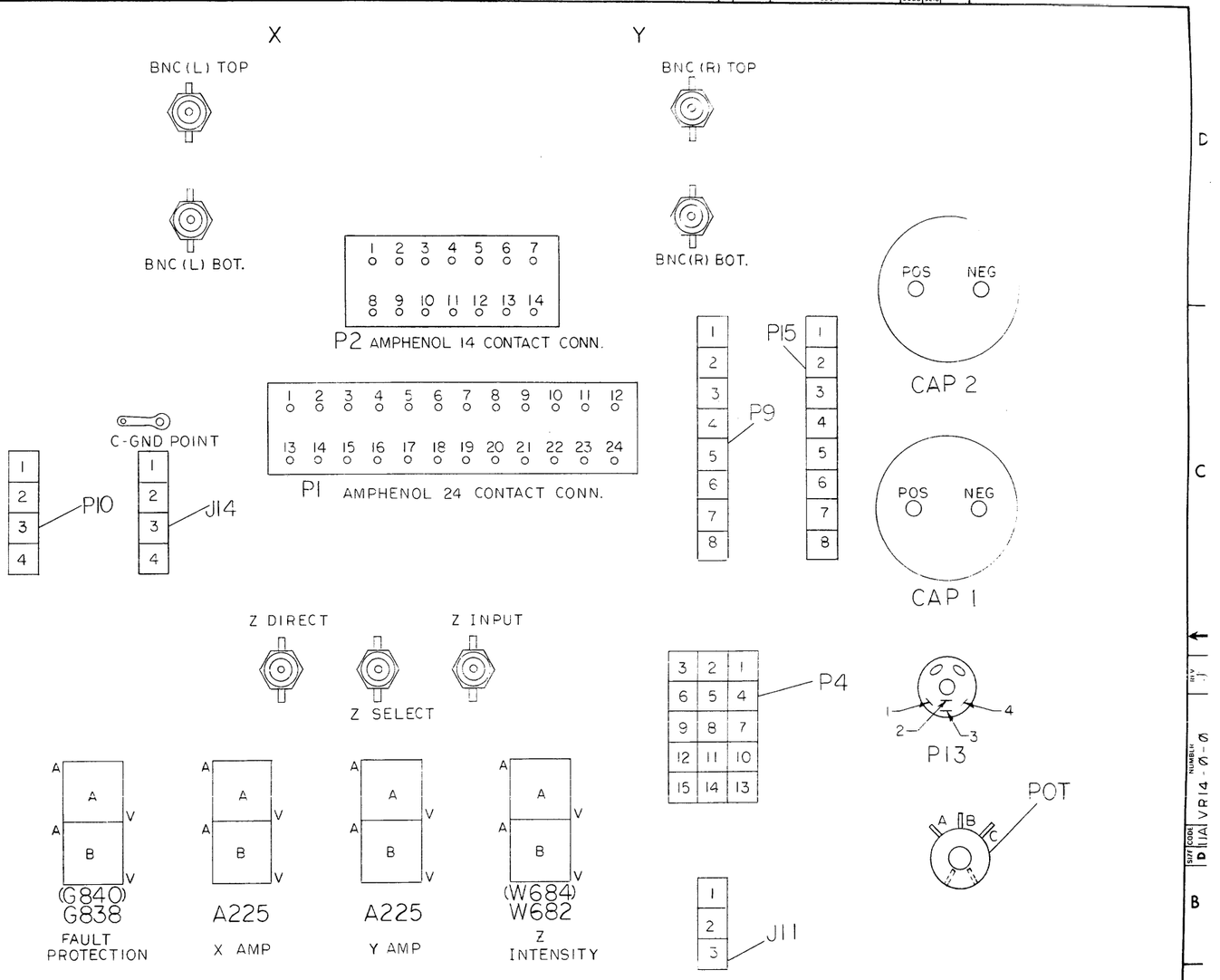
HARNESS TABLE

COLOR	HARN.#	MAIN CHASSIS LOC.
RED	1	BNC (L) TOP
BLK	2	BNC (L) BOT
YEL	3	BNC (L) TOP GND
RED	4	BNC (R) TOP
BLK	5	BNC (R) BOT
YEL	6	BNC (R) TOP GND
WHT/BLU	7	A04C
BLK	8	A04C
WHT/BLU	10	A04D
WHT/VIO	11	A04L
CLEAR	12	A04J
WHT/VIO	13	A04L
ORN	14	E04C
RED	15	B04J
BRN	16	B04A
BRN	17	B04B
BRN	18	B04A
BRN	19	B04B
BRN	20	B04A
BRN	21	B04B
BLK	22	B04N
GRN	23	B04F
YEL	24	B04L
ORN	25	B04D
BLU	26	E03R
BLK	27	B01N
BLU	28	B04R
BLK	29	E03M
RED	30	B04E
GRY/RED	31	B04J
BLK	32	B02M
BLU	33	E03R
RED	34	B03V
BLK	35	E01M
BLK	36	B04M
RED	37	B04V
GRY/BLK	38	A01F
GRY/GRN	39	A01L
WHT/BLK	40	A01E
GRY/GRN	56	POT-A
GRY/GRN	57	POT-A
GRY/GRN	58	POT-A
GRY/VIO	59	POT-C
GRY/BRN	60	POT-B
WHT/GRN	81	A04R
WHT/BRN	82	A04P
WHT/YEL	83	A04M
WHT/ORN	84	A04N
GRY/BRN	85	A04E
BLK	86	B03M
RED	87	E03V

HARNESS TABLE CONT

COLOR	HARN.#	MAIN CHASSIS LOC.
BLK	88	BOX
BLU	89	SCHR
GRY/GRN	90	AC4T
RED	91	AØ2E
BLK	92	AC2B
YEL	93	AC2H
RED	94	AC3E
BLK	95	AØ3B
YEL	96	AØ3H
BLK	97	CAP1- NEG
RED	98	CAP1- POS
BLK	99	CAP2- POS
BLU	100	CAP2- NEG
BLK	101	C-GND POINT
WHT/VIO	102	P1-1
CLEAR	103	P1-4
BLU	104	P1-16
WHT/BLU	105	P1-13
BLK	106	C-GND POINT
CLEAR	107A	Z INPUT
WHT/VIO	108	Z SELECT
BLK	109	Z **INPUT GND**
WHT/BLU	110	Z **DIRECT**
CLEAR	107C	Z INPUT
SHIELD	107B	Z INPUT GND
SHIELD	102D	C-GND POINT
SHIELD	107	Z INPUT GND
SHIELD	11A	AØ4C
WHT/RED	105C	P1-2
WHT/RED	6A	AØ4B
GRN	105B	P1-3
GRN	10A	AØ4K
VIO	105A	P1-14
VIO	13A	AØ4V
BRN	102A	P1-19
BRN	96A	AØ1H
BLU	101C	P2-3
BLU	96F	CAP2-NEG
BLK	101B	P2-2
BLK	96D	CAP2-POS
RED	101A	P2-1
RED	96B	CAP1-POS
BLU	102C	P2-14
BLU	96E	CAP2-NEG
BLK	102B	P2-13
BLK	96C	CAP2-POS



NOTE: ALL ABOVE PARTS SHOWN ARE VIEWED FROM WIRING SIDE. P15 PLUGS INTO J15 ON 6840.

REVISIONS	CHANGE NO	CHK
REV		

DEC FORM NO DRD 100

FIRST USED ON OPTION/MOD: VR14

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

DRN	K Crabbe	DATE 11/5/70
CHKD	K Crabbe	DATE 11/25/70
ENG	K Crabbe	DATE 12/8/70
PROJ ENG.		DATE
PROD	M Peters	DATE 12/8/70

NEXT HIGHER ASSY: D-UA-VR14-Ø-Ø

SCALE NONE

SHEET 3 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VR14 DISPLAY ASSY

SIZE	CODE	NUMBER	REV.
D	UA	VR14-Ø-Ø	J

DIST. C

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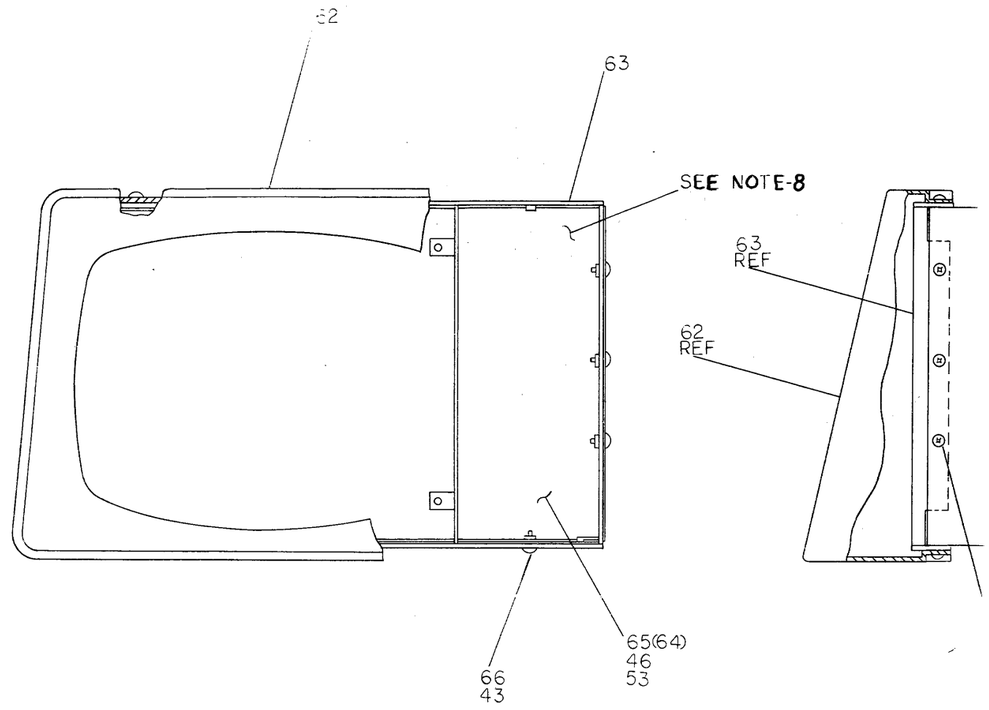

SECTION "D-D"

REV	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES					
DECIMALS	ANGLES	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
XXX = .005	±0° 30'	CHK'D	DATE		
X = .1		ENG	DATE	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROJ. ENG.	DATE	VR14 DISPLAY ASSY	
MATERIAL		PROD.	DATE		
		NEXT HIGHER ASSY.		SIZE CODE NUMBER	REV
		2-ML-VR14-0		D UA VR14-0-0	J
		SCALE NONE			
		SHEET 4 OF 4		DIST.	

REV	REVISION	CHK

BRUNING 40-107 15968

DEC FORM NO DRD 100-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D.K. CRABBE	CHECKED D.K. Gobbe	SECTION
DATE 12-2-70	DATE 12/8/70	1
ENG D.K. Gobbe	PROD R Peterson	ISSUED SECT.
DATE 12/8/70	DATE 12/8/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION VR14-Ø	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
1	D-AD-7007077-0-0	TOP MTG ASSY	1	1	1	1	1	1	1	1
2	C-IA-7409068-0-0	PANEL, CONTROL	1	1	1	-	-	-	-	-
3	D-AD-7007078-0-0	WIRED ASSY	1	1	1	1	1	1	1	1
4	D-IA-7007088-0-0	C.R.T. YOKE ASSY	1	1	1	1	1	1	1	1
5	D-AD-7007079-0-0	HIGH VOLTAGE ASSY	1	1	1	1	1	1	1	1
6	D-AD-7007165-0-0	POWER REGULATOR ASSY (VR14)	1	1	1	1	1	1	1	1
7	D-AD-7007080-0-0	POWER SUPPLY HEAT SINK ASSY	1	1	1	1	1	1	1	1
8	D-AD-7007082-0-0	DEFLECTION HEAT SINK ASSY	1	1	1	1	1	1	1	1
9	D-AD-7007084-1-0	POWER SUPPLY ASSY	1	-	-	1	-	-	1	-
10	D-AD-7007084-2-0	POWER SUPPLY ASSY	-	1	-	-	1	-	-	1
11	D-AD-7007084-3-0	POWER SUPPLY ASSY	-	-	1	-	-	1	-	-
12	E-IA-7008457-0-0	MAIN CHASSIS HARNESS	1	1	1	1	1	1	1	1
13	C-IA-7408411-0-0	GROUND, TUBE	1	1	1	1	1	1	1	1
14	C-IA-7408409-0-0	SHIELD, SAFETY	1	1	1	1	1	1	1	1
15	C-MD-7408414-0-0	HOLDER, CARD	1	1	1	1	1	1	1	1
16	E-IA-7406891-0-0	BEZEL, CONTROL PANEL	1	1	1	1	1	1	1	1
17	C-MD-7408434-0-0	CAP (VR14)	1	1	1	1	1	1	1	1
18	D-MD-7406837-0-0	MASK, CATHODE RAY TUBE	1	1	1	-	-	-	-	-
19	D-IA-7408408-0-0	SCREEN, SAFETY (VR14)	1	1	1	1	1	1	1	1
20	D-IA-7408400-0-0	PLATE, BOTTOM MTG.	1	1	1	1	1	1	1	1
21	D-SC-1209147-0-0	SLIDE, 16" TRAVEL CHASSIS TRACK	1 pr	1 pr	1 pr	-	-	-	-	-
22	D-MD-7408549-0-0	CHASSIS TRACK BRACE	1	1	1	-	-	-	-	-

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
VR14 DISPLAY ASSY	D-UA-VR14-Ø-Ø	A	PL	VR14-Ø-Ø	J	VR14-00022
	SHEET 1 OF 4	DIST.	G			

DEC FORM NO.16-1031

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D. CRABBE	CHECKED D.K. Gobbe	SECTION
DATE 12-2-70	DATE 12/8/70	1
ENG D.K. Gobbe	PROD R Peterson	ISSUED SECT.
DATE 12/8/70	DATE 12/8/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION VR14-Ø	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
23	C-MD-7404881-0-0	FAN, SCREEN	2	2	2	2	2	2	2	2
24	E-SC-1210104-0-0	C.R.T. SHIELD	1	1	1	1	1	1	2	2
~~25~~	~~D-IA-7407791-0-0~~	~~SUPER COVER VR14~~				1	1	1		
~~26~~	~~B-MD-7407793-0-0~~	~~SPACER~~				1	1	1		
~~27~~	~~B-MD-7407794-0-0~~	~~BAR, SPACER~~				1	1	1		
28	1209403-0	FAN, BOXER 7 BLADE	2	2	2	2	2	2	2	2
29	1209597-6	CATHODE RAY TUBE TYPE 12 M63 THOMAS	1	1	1	1	1	1	1	1
30	1209576	KNOB # SS-70L-2-BLK BUCKEYE	1	1	1	1	1	1	1	1
31	1009434	CAPACITOR, 5500 MFD 40 VDC-10, +100%	2	2	2	2	2	2	2	2
32	3610267	"DANGER HIGH VOLTAGE" STICKER	1	1	1	1	1	1	1	1
33	9006584	SPEED NUT #C8091-6-32-4 TINNERMAN	4	4	4	4	4	4	4	4
34	9008202	CLIP, FAN TINNERMAN	8	8	8	8	8	8	8	8
35	9006022-1	SCR, FAN HD PHL #6-32 X 3/8 SST	4	4	4	4	4	4	4	4
36	9006024-2	SCR, FLAT HD PHL #6-32 X ½ SST	4	4	4	4	4	4	4	4
37	9006071-3	SCR, PHL TRUSS HD #10-32 X 3/8 SST	49	49	49	49	49	49	49	49
38	9006071-2	SCR, PHL FLAT HD #10-32 X 3/8 SST	5	5	5	5	5	5	5	5
39	9006024-1	SCR, PAN HD PHL #6-32 X ½ SST	8	8	8	8	8	8	8	8
40	9006633	WASHER, LOCK INT TOOTH #6	26	26	26	26	26	26	26	26
41	9006560	NUT, KEPS #6-32	5	5	5	5	5	5	5	5
42	9006070-1	SCR, PHL TRUSS HD #10-32 X 5/16 SST	10	10	10	2	2	2	2	2
43	9006635	WASHER, LOCK INT TOOTH #10	61	61	61	61	61	61	61	61
44	9006020-1	SCR, PHL PAN HD #6-32 X ⅛ SST	4	4	4	4	4	4	4	4

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
VR14 DISPLAY ASSY.	D-UA-VR14-Ø-Ø	A	PL	VR14-Ø-Ø	J	
	SHEET 2 OF 4	DIST.	G			

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	D. CRABBE	CHECKED D. CRABBE	SECTION
DATE	12-2-70	DATE 12-8-70	1
ENG	D. CRABBE	PROD R. PETERSON	ISSUED SECT.
DATE	12-8-70	DATE 12-8-70	1

ITEM NO.	DWG NO / PART NO.	DESCRIPTION	QUANTITY/VARIATION VR14-Ø	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
45	9006021-1	SCR, PHL PAN HD #6-32 X 5/16 SST	10	10	10	10	10	10	10	10
46	9006563	NUT, KEPS #8-32	2	2	2	3	3	3	3	3
47	9007651	WASHER, LOCK EXT TOOTH #10	8	8	8	-	-	-	-	-
~~48~~	~~9006074-2~~	~~SCR, PHL FLAT HD #10-32 X 5/8 SST~~				1	1	1		
49	9006025-2	SCR, PHL FLAT HD #6-32 X 5/8 SST	-	-	-	2	2	2	2	2
50	9006121	SCR, SELF-TAPPING #8-32 X 3/8 SST	8	8	8	8	8	8	8	8
~~51~~	~~9006071-1~~	~~SCR, PHL PAN HD #10-32 X 3/8 SST~~	6	6	6	6	6	6	-	-
52	9008146	WASHER, FLAT .63 OD X .23 ID X .048 THK	1	1	1	-	-	-	-	-
53	9006660	WASHER, FLAT .375 OD X .187 X .036 THK	-	-	-	3	3	3	3	3
54	9006074-3	SCR, PHL TRUSS HD #10-32 X 5/8 SST	1	1	1	-	-	-	-	-
55	9107305	SHRINKIES (RED)	3	3	3	3	3	3	3	3
56	7408407	DECALS (VR14)	1	1	1	1	1	1	1	1
57	C-IA-7408425-0-0	PANEL CONTROL (GT-40)								
58	7007006-3	JUMPER	1	1	1	1	1	1	1	1
59	7008976	CHANNEL SELECT SWITCH	1	1	1	1	1	1	-	-
60	C-UA-375-0-0	LIGHT PEN OPTION	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
61	D-AD-7009027-0-0	SUPER COVER ASSY	-	-	-	1	1	1	1	1
62	E-PS-1211106-0-0	MASK	-	-	-	1	1	1	1	1
63	E-IA-7409964-0-0	BRACE CHASSIS	-	-	-	1	1	1	1	1
64	C-IA-7409977-0-0	PANEL CONTROL (GT-40)	-	-	-	-	-	-	1	1
65	C-IA-7409974-0-0	PANEL CONTROL (PDP-12)	-	-	-	1	1	1	-	-
66	9006073-3	SCR, PHL TRUSS HD #10-32 X ½ SST	-	-	-	6	6	6	6	6

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
VR14 DISPLAY ASSY	D-UA-VR14-Ø-Ø	A	PL	VR14-Ø-Ø	J	
	SHEET 3 OF 4	DIST.	G			

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	D. CRABBE	CHECKED D. CRABBE	SECTION
DATE	12-2-70	DATE 12-8-70	
ENG	D. CRABBE	PROD R. PETERSON	ISSUED SECT.
DATE	12-8-70	DATE 12-8-70	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION VR14-0	VR14-A	VR14-B	VR14-C	VR14-D	VR14-E	VR14-LC	VR14-LD
67	9107360-0-0	WIRE #18 AWG IVPC BLK	-	-	-	A/R	A/R	A/R	A/R	A/R
68	9007930-0	CONN, ARKLES #50360-1	-	-	-	1	1	1	1	1
69	9007925-0	CONN, #300H21A-1K	-	-	-	1	1	1	1	1
70	9006637	WASHER, INT TOOTH 3/8 ID #1220	1	1	1	1	1	1	1	1
71	9007081	CLAMP, CABLE 1/4 ID	1	1	1	1	1	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
VR14 DISPLAY ASSY	D-UA-VR14-0-0	A	PL	VR14-0-0	J	
	SHEET 4 OF 4	DIST.				

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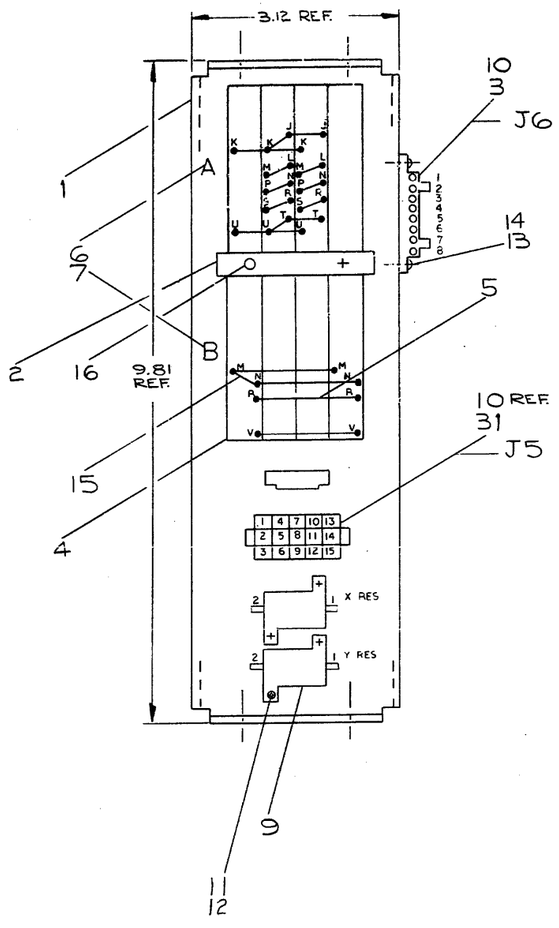
EXTERNAL COMPONENTS TABLE						
ITEM	COMP	POL	FROM	TO	POL	REMARKS
8	RES		AØ4U	AØ4T		100K
9	XRES		SEE WIRE TABLE			0.5Ω
9	YRES		SEE WIRE TABLE			0.5Ω
32	CAP		AØ1K	AØ1V		20. MFD
36	RES		BØ4F	BØ4N		470K



WIRE TABLE						
SIGNAL NAME	ITEM NO	DESCRIPTION AWG	COLOR	CONNECTION FROM	TO	
	5			AØ2T	AØ3T	
				AØ1J	AØ3U	
				AØ2J	AØ3J	
				AØ1K	AØ3K	
				BØ1N	BØ4N	
				BØ1M	BØ4M	
				BØ1R	BØ4R	
	5			BØ1V	BØ4V	
	15	18	BUS	AØ2J	AØ2K	
				AØ2T	AØ2U	
				AØ2S	AØ2R	
				AØ2N	AØ2P	
				AØ2L	AØ2M	
				AØ3S	AØ3R	
				AØ3N	AØ3P	
				AØ3L	AØ3M	
	15		BUS	BØ1N	BØ1M	
+20 DC	17		RED	BØ2V	J5-1	
+20 DC	17		RED	BØ2V	J5-15	
	22		YEL/GRY	AØ2S	J5-2	
	22		YEL/GRY	AØ3S	J5-14	
	23		BLU/GRY	AØ2M	J5-4	
	23		BLU/GRY	AØ3M	J5-12	
-20 DC	20		BLU	BØ2R	J5-5	
-20 DC	20		BLU	BØ2R	J5-11	
X YOKE HOT	19		GRY	AØ2P	J5-3	
Y YOKE HOT	21		VIO	AØ3P	J5-13	
X YOKE HOT	19		GRY	AØ2N	J6-1	
Y YOKE HOT	21		VIO	AØ3N	J6-8	} SEE NOTE #1
X YOKE RETURN	18		WHT	J6-2	XRES-2	
Y YOKE RETURN	18		WHT	J6-7	YRES-1	
+20 DC	17		RED	BØ1V	AØ2U	
-20 DC	20		BLU	BØ1R	AØ2K	
GND	24		BLK	AØ3V	BØ3M	
GND	24		BLK	XRES-1	AØ2V	} SEE NOTE #1
GND	24	18	BLK	YRES-2	AØ3V	
	26	22	YEL	BØ4L	AØ4U	
	25		GRN	BØ4F	AØ4F	
X SAMPLE	29		WHT	AØ1A	XRES-2	} SEE NOTE #1
Y SAMPLE	29		WHT	AØ3A	YRES-1	
X SIG GND	27		BLK	AØ2H	AØ2V	
Y SIG GND	27		BLK	AØ3H	AØ3V	
+5V	28		RED	AØ1P	AØ4A	
GND	27		BLK	AØ4C	BØ3M	
GND	27		BLK	XRES-1	AØ2H	} SEE NOTE #1
GND	27	22	BLK	YRES-2	AØ3H	
	5			AØ1A	AØ2A	
	5			AØ1D	AØ2D	
GND	24	18	BLK	AØ1V	BØ2M	
GND	24	18	BLK	AØ2V	BØ2M	
	29	22	WHT	AØ3A	AØ1B	
	29	22	WHT	AØ3D	AØ1C	
-80V	35	18	GRY/GRN	AØ4S	AØ1L	
	34	22	WHT/BLK	AØ1E	AØ4H	
GND	27	22	BLK	AØ1S	AØ4C	

NOTES:
1. TWIST (2 WIRES) 3 TWIST PER INCH MIN & 4 TWIST PER INCH MAX.
2. USE TERMIPOINT CONNECTORS ON ITEMS 8+32

SIGNAL NAME	ITEM NO	AWG	COLOR	FROM	TO
Z INT	19	22	WHT	AØ1M	AØ4J

FIRST USED ON OPTION/MODEL: VR14

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: [illegible] DATE 10/26/70
CHKD: D.K. Gobbe DATE 11/2/70
ENG: D.K. Gobbe DATE 11/6/70
PROJ. ENG: [illegible] DATE 11/6/70
PROD: [illegible] DATE 11/6/70
NEXT HIGHER ASSY: D-UA-VR14-Ø-Ø
SCALE: NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: WIRED ASSY (VR14)

SIZE D | CODE AD | NUMBER 7007078-0-0 | REV. F
DIST.

REVISIONS				
CHK	CHANGE NO.	REV.		
EV	VR14-00002	A	M. Gosnay	1-6-71
			A. FISHMAN	
			C. Fishman	1-11-71
	VR14-00010	B	M. Gosnay	7-27-71
			FISHMAN	
			C. Fishman	8-2-71
	VR14-00014	C		
			11-2-71	
			A. FISHMAN	
			C. Fishman	11-15-71
	VR14-00019	D		
			K. Gilbert	8-7-72
			A. FISHMAN	
			A. Johnson	8-23-72
	VR14-00021	E		
			C.R. Capen	10/30/72
			FISHMAN	
			C. Fay	11-22-72
	VR14-00022	F		
			M. Toms	1-5-73
			FISHMAN	
			C. Fay	1/16-73

DEC FORM NO. CAD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. Cahill	CHECKED D. Crabbe	SECTION 1
DATE 10/2/70	DATE 10/2/70	
ENG D.K. Crabbe	PROD R Peterson	ISSUED SECT. 1
DATE 11/6/70	DATE 11/6/70	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-740[illegible]422-0-0	FRAME,LOGIC	1
2	B-MD-740[illegible]114-0-0	BAR,MTG	1
3	1209340-[illegible]0	8 CIRCUIT MATE-N-LOK SOCKET AMP	1
4	1202244	144 CONNECTOR BLOCK	1
5	1202188	VOLTAGE CHAIN	A/R
6	A-SS-530[illegible]753-0-2	LOGIC FRAME DECALS	A/R
7	A-SS-530[illegible]753-0-4	LOGIC FRAME DECALS	A/R
8	1302466	RESISTOR 100K 1/4W 5%	1
9	1310180	RESISTOR 0.5Ω 20W 1%	2
10	1209379-[illegible]1	CONTACT TERM PIN SOCKET AMP. INC.	14
11	9006011-[illegible]	SCR,PHL HD PAN #4-40 x 3/8 SST	4
12	9006557	NUT,KEPS #4-40	4
13	9006021-[illegible]	SCR,PHL HD PAN *6-32 x 5/16 SST	2
14	9006560	NUT,KEPS #6-32	2
15	9107560-[illegible]	#18 AWG SOLID BUSSING	A/R
16	9006120	POZIDRIVE SCR FIL HD 8-32 x 5/8 SST	2
17	9107360-[illegible]2	#18 AWG STRD TEFLON (RED)	A/R
18	9107360-[illegible]9	#18 AWG STRD TEFLON (WHITE)	A/R
19	9107360-[illegible]8	#18 AWG STRD TEFLON (GRAY)	A/R
20	9107360-[illegible]6	#18 AWG STRD TEFLON (BLUE)	A/R
21	9107360-[illegible]7	#18 AWG STRD TEFLON (VIO)	A/R
22	9107410-[illegible]4	#18 AWG STRD TEF TRACER (GRAY/YELLOW)	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
WIRED ASSEMBLY (VR14)	D-AD-7007078-0-0	A	PL	7007078-0-0	F	VR14-00022
	SHEET 1 OF 2	DIST.	G			

DEC FORM NO.16-[illegible]31
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. Cahill	CHECKED D. Crabbe	SECTION 1
DATE 11/3/70	DATE 11/3/70	
ENG D.K. Crabbe	PROD R Peterson	ISSUED SECT. 1
DATE 11/6/70	DATE 11/6/70	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	9107410-36	#18 AWG STRD TEF TRACER (GRY/BLU)	A/R
24	9107360-00	#18 AWG STRD TEF WIRE (BLACK)	A/R
25	9107350-55	#22 AWG STRD TEF WIRE (GREEN)	A/R
26	9107350-44	#22 AWG STRD TEF WIRE (YELLOW)	A/R
27	9107350-00	#22 AWG STRD TEF WIRE (BLACK)	A/R
28	9107350-22	#22 AWG STRD TEF WIRE (RED)	A/R
29	9107350-99	#22 AWG STRD TEF WIRE (WHITE)	A/R
30	9107256-1	#22 TEF TUBING (BLACK)	A/R
31	1209350-15	CONN PIN HOUSING MATE-N-LOK AMP	1
32	1010195-0	CAPACITOR 20 mFd 100V 10%	1
33	9007230	TERMI POINT CONNECTORS	6
34	9107420-09	#22 AWG STRD TEF TRACER (BLK/WHT)	A/R
35	9107410-85	#18 AWG STRD TEF TRACER (GRY/GRN)	A/R
36	1302398	RES. 470K 1/4W 5%	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
WIRED ASSEMBLY (VR14)	D-AD-7007078-0-0	A	PL	7007078-0-0	F	
	SHEET 2 OF 2	DIST.				

DEC FORM NO.16-[illegible]31
DRA 110

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 10/22/70

TITLE VR14 SPECIFICATION

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

GENERAL DESCRIPTION

The VR14 is a self-contained CRT display unit requiring only analog position and digital unblanking information. It is designed for use with a digital display controller. The amount of information displayed depends on the specific system; however, 1250 random points can be displayed flicker free at a 40 Hz. refresh rate. Viewable area is 62 inches square with an aspect ratio of 3:4. The unit is 10 1/2 inches high, 19 inches wide, 17 inches deep, and weighs about 75 pounds. It is available in either a rack mounted or table top model.

OPERATOR CONTROLS (All controls labeled as to function)

Front Panel:

Brightness / ON-OFF	Manual brightness control and AC power switch.
Channel Select	Operator selection of either channel 1 or channel 2 if a time multiplexed signal is available.

Internal Controls: These controls accessible from the top of the unit through the safety screen.

Deflection Controls: The following controls are 10 turn pots located on the deflection amplifiers (A225). All inputs have protection against momentary excessive voltage.

X Gain	Controls horizontal input sensitivity.
Y Gain	Controls vertical input sensitivity.
X Position	Manual Position Control.
Y Position	Manual Position Control.

NOTE: With deflection inputs grounded, the position controls allow the beam to be positioned anywhere within the usable screen area.

ENG	APPD	SIZE	CODE	NUMBER	REV
C Fishman 10/28/70	L Gale 10/28/70	A	SP	VR14 -Ø - 4	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION — CONTINUATION SHEET

TITLE VR14 SPECIFICATION

CRT Controls: These controls are 10 turn pots located on the G836 power supply module. Their purpose is to adjust focus and grid bias voltages. They are adjusted at the factory.

Focus: Adjusted for best overall focus.

Brightness Preset: To adjust the range of the front panel brightness control.

GENERAL ELECTRICAL SPECIFICATION

Spot Size: ≤ 20 mils inside the usable screen area at a brightness of 30 footlamberts. Spot size is measured using shrinking raster technique at a brightness of greater than 30 footlamberts.

Jitter: ≤ ± 1/2 spot diameter.

Repeatability: ≤ ± 1 spot diameter
(Repeatability is the deviation from the nominal location of any given spot)

Gain Change: From a fixed point on the screen, less than ± 0.3 percent gain change for each ± 1 percent line voltage variation.

Temperature Range: 0 to 50°C operating

Relative Humidity: 10 to 90 percent noncondensing.

Brightness: ≥ 30 footlamberts; measured using a shrinking raster technique.

Linearity: Maximum deviation of any straight line will be ≤ 1 percent of the line length measured perpendicular to a best fit straight line.

Deflection Method: Magnetic (70° diagonal deflection angle)

Focus Method: Electrostatic

High Voltage: 11.7 KV DC nominal (voltage proportional to input line voltage). Supply is self-contained and equipped with a bleeder resistor.

Shielding: CRT is fully enclosed in a magnetic shield.

Overload Protection: Unit is protected against fan failure or air blockage by thermal cutouts.

SIZE	CODE	NUMBER	REV
A	SP	VR14 - Ø - 4	

DEC FORM NO 16-1022

DEFLECTION AMPLIFIER SPECIFICATION

1. Deflection Amplifiers are DC coupled and are capable of sustaining a worst case AC or DC deflection at environmental extremes.

2. Input Specification

   A. Inputs are differential.
   B. Differential input impedance . . . 5K ohms minimum.
   C. Input sensitivity . . . 200 mv/inch maximum.
   D. Common Mode Rejection Ratio . . . 40 db.
   E. Maximum Operating Input . . . ± 6V. (Maximum operating input is the sum of the common mode input and the differential input.)
   F. Input offset not to exceed ± 1/2 peak to peak input signal.
   G. Maximum non-operating input . . . ± 50V.

3. Full screen deflection and settling time to within ± 1 spot diameter . . . . . ≤ 18 µs.

4. Small signal settling time to within 1/2 spot diameter . . . ≤ 1 µs for a 0.1 inch deflection.

5. Small signal linear slew rate . . . ≥ 0.4 in 1 µs.

6. Velocity error coefficient . . . 500 ns. maximum. (Average ramp delay between input and output.)

Z AXIS SPECIFICATION

1. Z Input
   A negative transition from ≥ +2.4V, but not exceeding +8V, to ≤ +0.8V, but not less than -4V, in ≤ 20 ns will cause an unblanking pulse at the CRT cathode from approximately +60V to ground with a duration of ≥ 200 ns at the 50 percent points. Delay between the 50 percent point of the negative input transition to the 50 percent point of the output pulse is less than 100 ns.

2. Z Direct
   A positive going pulse not exceeding 35V, but at least 20V in height and not exceeding 10 µs, but at least 1 µs in duration will unblank the CRT to a viewable intensity. This signal is AC coupled to the CRT grid.

3. Channel Select
   With the Channel Select Switch in the Channel 1 position, a positive level of greater than +2.4V, but not exceeding +8V will enable the Z input circuit. A level of less than +0.8V but not less than -4V will disable the circuit. With the switch in the Channel 2 position, a positive level will enable the Z circuit; a negative level will disable it. Placing the switch in the Channel 1 and 2 position disables this input.

POWER SUPPLY SPECIFICATION

1. All power supplies necessary for operation of the unit are self contained.

2. Input Requirements

   Voltage: 100 V ± 10 percent
   117 V ± 10 percent
   230 V ± 10 percent

   Selectable by tap changes.

   Frequency: 50 - 60 Hz.

   Power: ≤ 500 Watts

   Current: ≤ 5 Amperes

   Type: Single Phase

   NOTE: Different AC power receptacles are provided on 200 and 230 V Units.

3. Fuses are provided and labeled as to function, type, and rating for the primary circuit and deflection power circuits.

4. Thermal Cutouts, which operate on the AC primary, are used to prevent damage due to fan failure, air blockage, or excessive ambient temperature.

REAR PANEL CONNECTIONS

Deflection Inputs: BNC connectors labeled X+, X-, and Y+, Y-.

With operator facing the screen and the polarity switches in the up position, if X+ is positive with respect to X-, deflection is to the right and, if Y+ is positive with respect to Y-, deflection is up.

CRT Inputs: BNC connectors labeled Z input, Z direct, and channel.

Z input is a TTL compatible input which generates a pulse at the CRT cathode for each negative transition.

Z direct is an AC coupled input to the CRT grid circuit.

Channel is a TTL compatible input which, in conjunction with the Channel Select Switch, enables or disables the Z input circuit.

NOTE: All above inputs are available at a 24 pin plug, DEC No. 1209630.

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 9/20/71

TITLE VR14 CHECKOUT AND ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	00015	A.FILZ	3/72	G Fishman	3-28-72
B	ECO CHANGE	00022	A FISHMAN	1/73	G C Fishman	1-16-73

ENG G. Fishman 9-21-71	APPD	SIZE	CODE	NUMBER	REV
		A	SP	VR14-0-5	B

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE

VR14 CHECKOUT PROCEDURE AND ACCEPTANCE PROCEDURE *

I. INTRODUCTION

The VR14 is a completely self-contained CRT display providing a 6.75 inch by 9 inch viewing area in a compact 19 inch package. The VR14 requires only analog X and Y position information with an intensity pulse to generate sharp, bright point plot displays.

II. SOFTWARE

A. Manuals

1. VR14 Users Manual
2. PDP-12 Systems Reference Manual

B. Prints

1. VR14-Ø
2. VC12-Ø
3. EM12-Ø

C. Diagnostics

1. Display Test Maindec 12-D6BC
   (Maindec-12-D6BB could also be used)

* Acceptance Procedure consist of Section VI through Section X excluding VI-1, VI-10, and VI-10.

SIZE	CODE	NUMBER	REV
A	SP	VR14-0-5	B

DEC FORM NO 16-1022 DRA 108

A. Basic Mechanical Check

1. Check all knobs for position and tightness
2. All silk screening is correct and legible
3. All AC and high voltage is covered and labeled
4. Slides work correctly
5. Tube face and phosphor are not damaged
6. Serial number tag is present and correct
7. 110v, 220v labeling is correct
8. Cables are correct type and length
9. All decals are present and on straight
10. All switches operate smoothly
11. Module block is not cracked or broken
12. Deflection coil is properly adjusted and tightened
13. No chips or scratches on painted surfaces
14. All shrinkies are secure
15. No loose parts or filings on bottom of chassis
16. Check wire dress
17. Check for proper fan operation
18. High voltage connection on CRT is secure
19. All crimped terminations are mated and seated
20. Check for wiring touching power transistor cases

III. TEST EQUIPMENT

A. Off-Line Test

1. VOM

B. On-Line Test

1. VOM
2. Oscilloscope
3. EP12
4. EM12
5. TU56
6. TC12
7. TTY
8. VC12

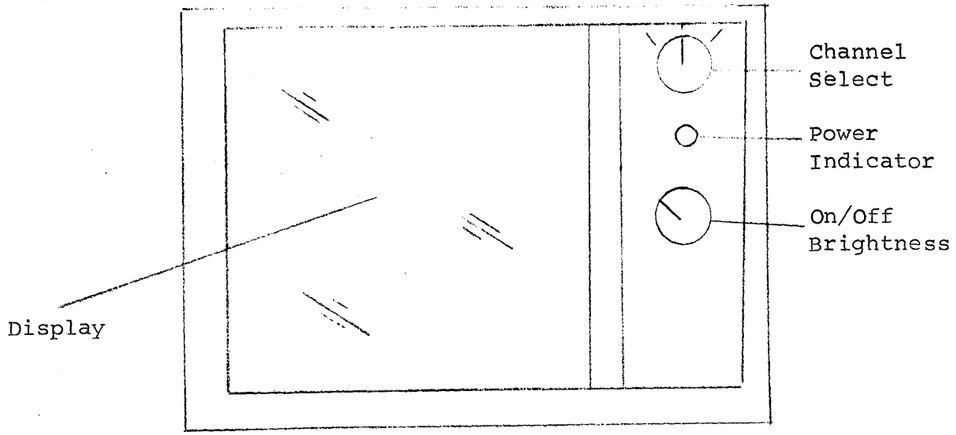
C. Special Test Equipment

None Required

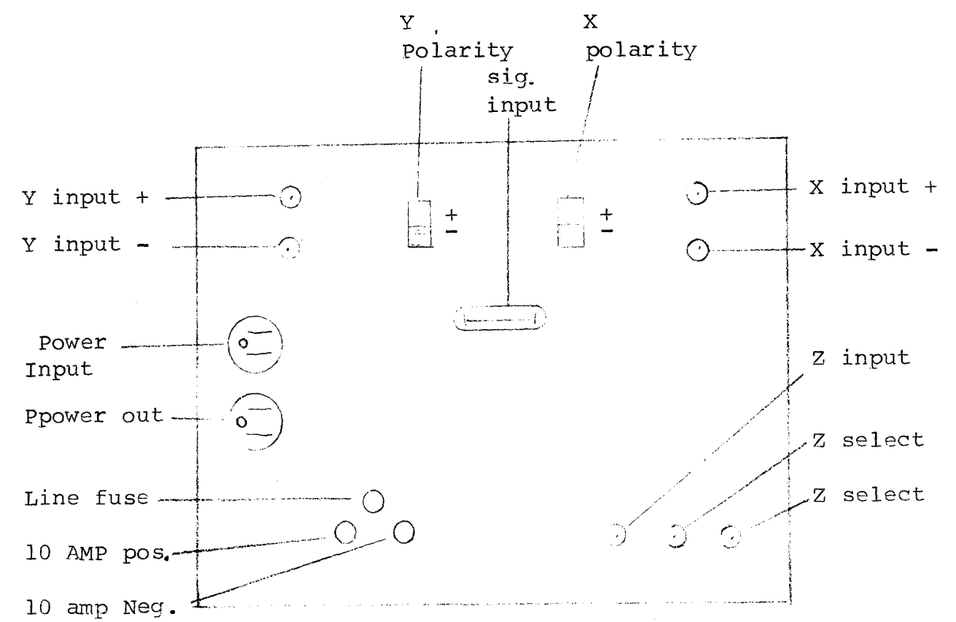
IV. OFF-LINE CHECKOUT PROCEDURE

CAUTION: The CRT is under high vacuum and is potentially in danger of explosion if subject to sharp blows or rough handling.

TITLE



VR14 FRONT VIEW

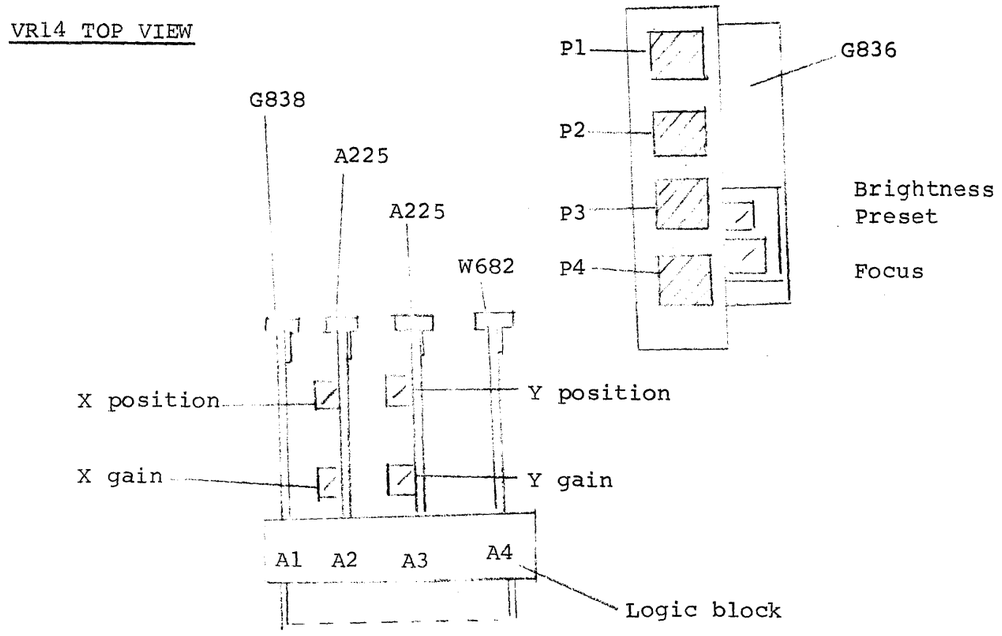


VR14 REAR VIEW

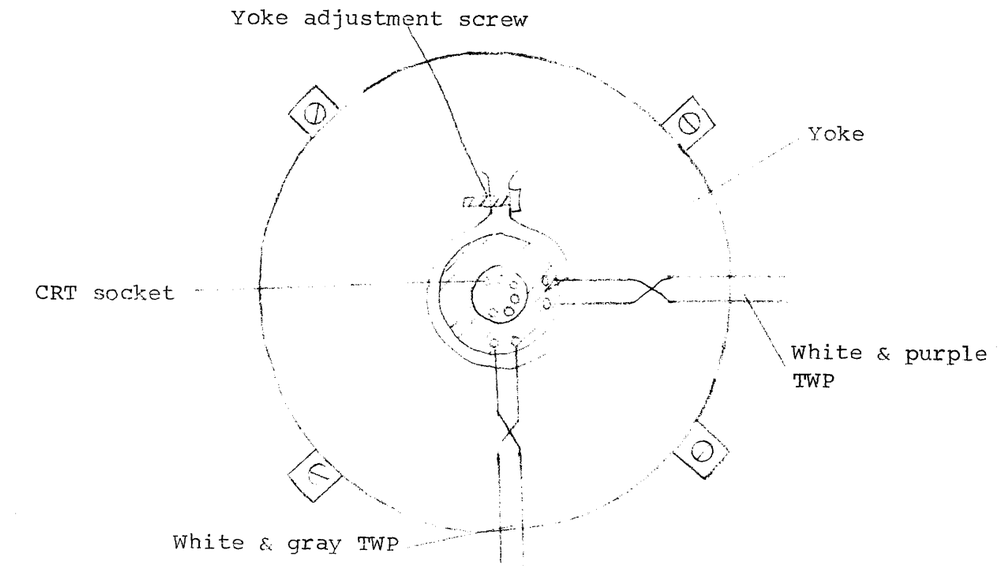
	SIZE	CODE	NUMBER	REV
	A	SP	VR14-0-5	B

TITLE

VR14 TOP VIEW



VR14 YOKE ADJUSTMENT



	SIZE	CODE	NUMBER	REV
	A	SP	VR14-0-5	B

B. Basic Electrical Check

1. Remove the following modules from the VR14 under test.

   a. G838 Location - AØ1

   b. A225 Location - AØ2

   c. A225 Location - AØ3

   d. W682 Location - AØ4

2. Unplug the CRT socket from the CRT.

3. Check all fuses for proper value.

   a. F1 5 AMP Slow Blow (Line Fuse, 110v).

   b. F2 3 AMP Slow Blow (Line Fuse, 220v).

   c. F3 NEG 10 AMP

   d. F3 POS 10 AMP

4. Check the on-off brightness control and put it in the off position.

   NOTE: Check that the line voltage applied is the same as the voltage required by the unit under test.

5. Plug in AC line cord to the proper line voltage required.

DC VOLTAGE CHECKS

The next series of tests are voltage tests. The meter should be set up and connected to the test points first then power turned on for a minimum amount of time (1 to 3 seconds). It is very important that power be on only briefly because if a fault does exist damage to the unit can be avoided. Never leave power on even if correct voltage is observed because a fault may exist that will not be detected until a later test.

6. Perform the following voltage checks using the procedure outlined above.

   a. Perform voltage check number 1 of table 1.

   b. Perform voltage check number 2 of table 1.

   c. Perform voltage check number 3 of table 1.

   d. Perform voltage check number 4 of table 1.

   e. Plug in the W682 in location AØ4. Perform voltage check number 5 of table 1.

   f. Perform voltage check number 6 of table 1. Adjust the front panel brightness control through its full range.

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE

TEST	VOM SCALE	VOM RANGE	VOM + PROBE	VOM - PROBE	VOLTAGE	NOTES
7	DC	1200V	BØ4J	BØ1M	+350VDC TO -60VDC Tolerance = ±25VDC	ADJUST FOCUS CONTROL TO CHECK. (G836) CCW= -60VDC CW= +350VDC
8	AC	12V	CRT SOCKET PIN 1	CRT SOCKET PIN 12	6.3 VAC Tolerance = ± .3VAC	
9	DC	1200V	CRT SOCKET PIN 10	CHASSIS GND.	+350VDC Tolerance = ±25VDC	
10	DC	300V	CRT SOCKET PIN 2	CHASSIS GND.	-80VDC TO -20VDC Tolerance = ±10V. THE -20VDC MAY BE 0.	ADJUST THE BRIGHTNESS CONTROL ON THE FRONT PANEL TO VARY THIS VOLTAGE.
11	DC	1200V	CRT SOCKET PIN 6	CHASSIS GND.	+350VDC TO -60VDC Tolerance = ±25VDC	ADJUST THE FOCUS CONTROL TO VARY THIS VOLTAGE. (G836) CCW= -60VDC CW= +350VDC
12	DC	60V	BØ1V	BØ1M	Nominal = +21.5V Tolerance = +2V, -1V.	THIS VOLTAGE SHOULD NOT EXCEED23.5VDC OR BE LESS THAN 20.5VDC.

SIZE A | CODE SP | NUMBER VR14-0-5 | RFV B

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DEC FORM NO 16-1022
DRA 108

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE

TEST	VOM SCALE	VOM RANGE	VOM + PROBE	VOM - PROBE	VOLTAGE	NOTES
1	DC	60V	D1-4	CHASSIS GND.	+45VDC Tolerance = ±5V	D1-4 SHOULD HAVE AN ORANGE WIRE ON THIS TERMINAL.
2	DC	60V	CHASSIS GND.	D2-4	-45VDC Tolerance = ±5V	D2-4 SHOULD HAVE A GREEN WIRE ON THIS TERMINAL.
3	AC	12V	BØ4A	BØ4B	6.3VAC Tolerance = ± .3V	
4	DC	1200V	BØ4D	BØ1M	+350VDC Tolerance = ±25V	
5	DC	300V	CRT SOCKET, PIN 11	CHASSIS GND.	+60VDC Tolerance ±6V	PLUG IN THE W682 IN LOCATION AØ4.
6	DC	300V	BØ1M	BØ4F	-80VDC TO -20VDC Tolerance ±10V. The -20VDC COULD BE AS LOW AS 0.	ADJUST THE FRONT PANEL BRIGHTNESS CONTROL TO VARY THIS VOLTAGE.

SIZE A | CODE SP | NUMBER VR14-0-5 | RFV B

SHEET 9 OF 31

DEC FORM NO 16-1022
DRA 108

TABLE VR14-1

TEST	VOM SCALE	VOM RANGE	VOM + PROBE	VOM - PROBE	VOLTAGE	NOTES
13	DC	60V	BØ1M	BØ1R	Nominal = -21.5VDC Tolerance = -2V, +1V	THIS VOLTAGE SHOULD NOT EXCEED -23.5VDC OR BE LESS THAN -20.5VDC.
14	DC	12V	AØ2A	BØ1M	ØVDC	WITH THE A225 REMOVED FROM LOCATION AØ2 THIS VOLTAGE MUST BE ØVDC.
15	DC	12V	AØ3A	BØ1M	ØVDC	WITH THE A225 REMOVED FROM LOCATION AØ3 THIS VOLTAGE MUST BE ØVDC.
16	DC	12V	AØ4A	BØ1M	+5VDC (+4VDC MIN.) (+6VDC MAX.)	PLUG IN THE G838 LOCATION AØ1.
17	DC	12V	AØ2A	BØ1M	+2.6VDC TO -2.6VDC	A. PLUG IN THE A225 LOC. AØ2. B. ADJUST THE POSITION POT ON THE A225 IN LOC. AØ2.
18	DC	12V	BØ1M	AØ3A	+2.6VDC TO -2.6VDC	A. PLUG IN THE A225 LOC. AØ3. B. ADJUST THE POSITION POT ON THE A225 IN LOC. AØ3.

TABLE VR14-1

VOLTAGE CHART

All voltages measured with respect to ground

(chassis or BØ1M, N)

*Indicates voltage depends upon input signal

Circuit Block		
AØ2A	* ±3 volts nominal	X Current Sample
AØ3A	* ±3 volts nominal	Y Current Sample
AØ2E, B	*	X Input Signal
AØ3E, B	*	Y Input Signal
AØ1U, BØ1V	+21.5 VDC (red)	+ Regulated D.C.
AØ1K, BØ1R	-21.5 VDC (blue)	- Regulated D.C.
AØ1P	+5 VDC	For W682
BØ4A	3.5 VRMS	1/2 Filament
BØ4B	3.5 VRMS	1/2 Filament
BØ4D	+400 VDC	G2
BØ4F	0 to -80 VDC	Brightness (G1)
BØ4J	-80 VDC to -400 VDC	Focus
BØ4L	* +60 volts	Cathode With Negative Pulses
Brightness Pot		
Gray/Green	-80 VDC	

TABLE VR14-2

VOLTAGE CHART - (CONTINUED)

Deflection Heat Sink - P5

X AXIS	Y AXIS		
P5 - 2	P5 - 14	+20.5 VDC	PNP Base (2N4399)
P5 - 1	P5 - 15	+21.5 VDC	PNP Emitter (2N4399)
P5 - 3	P5 - 13	* <1 volt	All Collectors
P5 - 4	P5 - 12	-20.5 VDC	NPN Base (2N5302)
P5 - 5	P5 - 11	-21.5 VDC	NPN Emitter (2N5302)

Regulator Heat Sink - P3

P3 - 1	+43 VDC Orange	Emitters of 2N4399
P3 - 2	+42 VDC Gray/Yellow	Bases of 2N4399
P3 - 3	+21.5 VDC Red	Collectors of 2N4399
P3 - 12	-43 VDC Green	Emitters of 2N5302
P3 - 11	-42 VDC Gray/Blue	Bases of 2N5302
P3 - 10	-21.5 VDC Blue	Collectors of 2N5302

G836 Regulator Circuit Connectors -- P1, P2, P4

P1 - 1	+43 VDC	Raw + D.C.
P1 - 3, 6	Ground	
P1 - 4	-43 VDC	Raw - D.C.

TABLE VR14-2

VOLTAGE CHART - (CONTINUED)

P2 - 1	3.5 VRMS	1/2 Filament
P2 - 2, 4, 7, 9	Ground	
P2 - 3	3.5 VRMS	1/2 Filament
P2 - 5	70 VRMS (200 P-P)	±80 v. tap
P2 - 6	150 VRMS (400 P-P)	+400 v. tap
P4 - 1	+21.5 VDC Red	+ Regulated
P4 - 2, 14	Ground Black	
P4 - 3	+21.5 VDC Red	Hot + Sense
P4 - 4	0 VDC Black	Cold + Sense
P4 - 5	-80 to +400 VDC Gray/Red	Focus
P4 - 6	+400 VDC Orange	G2
P4 - 7	3.5 VRMS Brown	Filament
P4 - 8	3.5 VRMS Brown	Filament
P4 - 9	-80 VDC Gray/Green	To Brightness Pot
P4 - 10	0 to -40 VDC Gray/Violet	Brightness Preset
P4 - 11	+80 VDC Gray/Orange	For W682
P4 - 12	-21.5 VDC Blue	Hot - Sense
P4 - 13	0 VDC Black	Cold - Sense
P4 - 15	-21.5 VDC Blue	- Regulated

TABLE VR14-2

(1) OFF = OVDC

(2) FULLY CCW -80VDC

(3) FULLY CW = between 0 and -20VDC

g. Perform voltage check number 7 of table 1 and vary the focus control pot. Adjust this pot to its limits. Reset to approximately + 300 VDC after testing.

h. Make the following voltage checks at the CRT socket.

(1) No. 8 Table 1

(2) No. 9 Table 1

(3) No. 10 Table 1. Vary the brightness control on the front panel to insure proper operation.

(a) OFF OVDC

(b) FULLY CCW -80 VDC

(c) FULLY CW between 0 and -20VDC

(4) Perform check number 11 Table 1. Adjust the focus control on the G836 a minimum amount to insure that the focus control varies this voltage. Reset to +300 after test.

i. Perform voltage check number 12 of table 1.

j. Perform voltage check number 13 of table 1.

k. Perform voltage check number 14 of table 1.

l. Perform voltage check number 15 of table 1.

m. Plug in the G838 in location AØ1 and perform voltage check number 16 of table 1.

NOTE: On A225 voltage checks number 17 and number 18, shut off the VR14 immediately if the voltage exceeds +2.6VDC and cannot be turned down by the position trim pot.

n. Plug in the A225 in location AØ2 and perform voltage check number 17 of table 1. Adjust the position trim pot on the A225 to insure proper control of this voltage. After test position to +2.5VDC.

o. Plug in the A225 in location AØ3 and perform voltage check number 18 of table 1. Adjust position pot on the A225 to insure proper control of the voltage. After test position to +2.5VDC

p. The case temperature of the "X" deflection 2N4399 must be measured while the X deflection current is set for 5 amps (+2.5V at AØ2-A). No unit is to ship if the case is greater than 72°C.

q. Same test for "X" 2N5302 for X current at -5A (-2.5V at AØ2-A). Must be less than 72°C.

r. With AØ2-A and AØ3-A adjusted to +5A (+2.5V on both) measure the case temperature on the top 2N4399 of the power supply. Must be less than 72°C.

s. With AØ2-A, AØ3-A at -2.5V measure the top 2N5302 case temperature on the power supply heat sink. Must be less than 72°C.

V. BASIC ON-LINE TEST PROCEDURE

NOTE: Before applying power check that the power applied is the same as the voltage required by the VR14 under test.

A. Cabling

1. Install the BC12 Display cable from location F38 of the EM12 to the Display under test. (For extended scope output use F39 of the EM12.)

B. Basic Set-Up

1. Set-Up the M711 location CD37 as follows:

a. Intens - Negative

b. P.R.R. - Fast

c. Width - For cables less than 100' set to minimum, for cables over 100' set to maximum.

2. Check that the polarity switches located on the back of the VR14 are in the negative position (down).

3. Set the channel select control on the front panel to channel 1 and 2.

C. Basic On-line Checkout

1. Do not apply power to the VR14 under test at this point.

2. Load in the display diagnostic D6BC.

a. The following switches control this test.

(1) Setting Sense Switch -1 cause the display to freeze on the current test.

(2) Resetting Sense Switches to zero will cause the display to cycle thru the patterns listed below.

(a) Pattern 1 - Point Plotting (Box) Sense Sw Ø

(b) Pattern 2 - Character Generation Sense Sw 1

(c) Pattern 3 - Diagonal Lines Sense Sw 2

3. Start diagnostic D6BC and freeze on Pattern 3 (Diagonal lines). LINC mode/START 20.

4. Using an oscilloscope check the input to the X deflection Tp AØ2-E. This signal should be 6 volts in amplitude. From 0 to -6VDC.

5. Using an oscilloscope check the input to the Y deflection Tp AØ3E. This signal should be 6 volts in amplitude. From 0 to -6VDC.

a. Make sure no oscillations are present at AØ2A and AØ3A.

6. Depress STOP and I/O PRESET on the PDP-12 console.

7. Apply power to the VR14 under test.

8. Using a meter perform voltage check number 17 of table 1.

9. Using a meter perform voltage check number 18 of table 1.

10. Depress "START 20" on the PDP-12 console.

11. **Select Sense Switch** when pattern 1, a box, is displayed.

12. VR14 Alignment.

    a. Adjust the X position pot so that the left side of the box pattern aligns with the left side of plastic display mask. The display should be parallel and about ¼" from the mask at its closest point.

    b. Perform the above step for the Y position using the bottom edge of the display mask.

    c. Adjust the horizontal gain so the right side of the pattern aligns with the right edge of the plastic mask, witnin ¼" at its closest point.

    d. Adjust the vertical gain in the same manner as above for the top edge of the pattern.

    e. On the G836 adjust the brightness preset to prevent the scope display from blooming (when front brightness control is fully CCW).

    f. Adjust the yoke for horizontal and vertical alignment by loosening the adjustment screw and turning the yoke by hand while watching the display. When aligned, the box should be parallel to the mask on all edges. Tighten the alignment screw down securely.

    g. **Reset Sense Switchs to zero.** This will cause patterns to rotate when pattern 2 appears on the scope **select sense switch. Pattern two will now freeze on the scope.**

    h. Adjust the focus for sharp clear character display dots.

    i. Fine tune the brightness preset and focus control for a very clear display.

j. Using character test, select channel 1 using the front channel select knob - only channel 1 should be displayed. Repeat for channel 2 - only channel 2 should be displayed.

k. Reset the front panel channel select to 1 and 2.

13. Stop D6BC Diagnostic

14. Load in DIAL

a. LSW = 701

b. RSW = 7300

c. Line Mode

d. I/O Preset

e. Do

f. The tape will move then stop

g. Hit start 20

h. Program will load in

15. At this point there will be a number 1 displayed in the upper left corner of the display. There will also be a cursor pointing to the present line position.

16. Strike "E" on the TTY and repeat. This will cause a row of E's to be displayed on the VR14 under test. Continue to strike E until 3 rows of E's are displayed.

17. Observe the display for acceptable limits of ripple.

18. Strike rub out and repeat on the TTY until the cursor returns to its original starting position.

19. Strike line feed on the TTY. This will cause the cursor to move to the lower left corner of the display.

20. Type "DX, comma, carriage return," this will cause the directory of tape unit 0 to be displayed. Check the general quality of the display for acceptable limits.

21. Power down the VR14 and disconnect the line cord. Wire the unit for 230VAC input.

22. Power up the VR14 with 230VAC and check display quality with DISPTST.

23. If O.K. remove line cord and rewire for 115VAC.

24. Hit stop and I/O PRESET on the PDP-12 console.

25. With a Variac set the line to each unit to 90VAC and with no signal connected and A02-A, A03-A at approximately +2.2V (standard settings for PDP-12), turn on off switch on and off rapidly (within ½ sec) about 5 times while monitoring the voltage at A02-A. Leave power on after the fifth time. If A02-A does not return to its original value (about 2.2V), but instead goes away negative shut down and do not ship this unit. It has power-on latch up.

26. All VR14/20's must be vibrated horizontally, vertically, and on its back facing up thru the range 0-60 on the vibration table while displaying DISPTST. Any breaking up or disappearing of the picture is a reject and cannot be retested unless the intermittent cause is found and fixed.

27. All units must be tested in a heat tent which has an ambient temperature between 45 and 55° C. For 3 hours with A02-A, A03-A at +2.0V (not 2.5) and then 3 hours with A02-A, A03-A adjusted to -2.0V (not 2.5). Now run DISPTST for 3 hours under heat tent. After both heat tent tests the following measurements must be made to see if any power transistors have become "leaky".

A. Turn the position pots on X and Y deflection (A225) so that +2.5 volts is measured at AØ2-A and AØ3-A. This causes +5 amps to flow from both amplifiers and represents the worst case dissipation for the 2N4399 transistors in the power supply and deflection.

B. **Measure the case temperature of the 2N4399 in the X and Y and power supply. The case temperature a room ambient should never exceed 72 °C (161 °F).**

C. **While the 2N4399's are still at full load, the 2N5302's are all unloaded and should be measured for leakage. Measure AØ2L to AØ2K, this voltage should read less than .75 volts. Measure AØ3L to AØ3K and should read less than .75 volts. This same measurement can be made at the power supply regulator board by measuring less than .75 volts between pin 11 (blue gray) and pin 12 (green) P3.**

D. **Now that the 2N4399's have been run full load, the 2N5302's should be done. Turn the X and Y position pots so that -2.5 volts is measured at AØ2-A and AØ3-A. This loads fully all the 2N5302's.**

E. Measure the case temperatures of all 2N5302's. They should also be less than 72°C (161°F).

F. Now measure the 2N4399's (which should all be off). Measure less than .75 volts between AØ2-R and AØ2-T and also between AØ3-R and AØ3-T. On the power supply measure less than .75 volts between pin 2 (yellow gray) and pin 1 (orange) on P3.

G. After the test return the position setting to 0, 0 in X and Y.

H. If any of the measurements are above limits, the unit should never be shipped to anyone as it is a potential failure.

VI. ON-LINE TEST

1. Plug in the signal input cable from the PDP-12 to the VR14.
2. Load in display test D6CB.
3. Turn on power to the VR14 and PDP-12. (On/off brightness fully CW).
4. Set the channel select on the front of the VR14 to channel 1 and 2.
5. Start the display test, LINC mode, start 20.
6. Freeze the display on pattern 2, character display.
7. Check the displayed characters for acceptable quality.
8. Turn the brightness control on the front panel. CCW fully, (No intensity,)

10. Run the display in this configuration for 48 hours.

11. After completion of the 48 hour run make the following checks.

    a. Turn the front panel intensity control fully CW and check the quality of the displayed characters.

    b. Check the VR14 transformer for excessive heat.

12. Hit I/O PRESET and STOP on the PDP-12 console.

13. Make the following voltage checks (remove signal cable)

    a. Voltage check number 12 of table 1.

    b. Voltage check number 13 of table 1.

    c. Replace signal cable

14. Start the display test D68C(LINC mode, START 20).

15. Select Sense Switch while the display is running pattern 3.

16. Check pattern 3 for the quality of the display.

16A. Check the yoke alignment and adjust if required.

17. Resetting Sense Switchs to zero will cause the display test to rotate thru the patterns.

18. Select Sense Switch while the display is running pattern 1.

19. Check the quality of the display. (The box should extend to within ¼" of the edge of the usable display area at its closest point).

20. Check the yoke alignment and adjust if required.

21. Remove input signal and zero position on X & Y (AØ2A, AØ3A = ØV).

VII. MARGINAL TEST

None Required

VIII. VIBRATION TEST

1. Power up the VR14 and PDP-12.

2. Load and start display test D6CB (LINC, mode, START 20).

3. Vibrate the logic in accordance with specification SP-7665057-0-0. Observe the display for no malfunctions while vibrating the logic.

IX. ACCELERATED LIFE TEST

None Required

X. RELIABILITY TEST

None required

XI VR14 PRODUCTION CHECKLIST

VR14 Serial Number _____

Phosphor _____

Power Required _____

Table Top _____

Chassis Mount _____

	Tech	Date
1. Basic Mechanical Check IV. A1 - A20	_____	_____
2. Basic Electrical Check IV. B1 - B7	_____	_____

Test 1	+ _____ VDC		
Test 2	- _____ VDC		
Test 3	_____ VAC		
Test 4	+ _____ VDC		
Test 5	+ _____ VDC		
Test 6	- _____ VDC	to - _____	VDC
	- _____ VDC	to _____	VDC
Test 7	+ _____ VDC	to - _____	VDC
Test 8	_____ VAC		
Test 9	+ _____ VDC		
Test 10	- _____ VDC	to - _____	VDC
	- _____ VDC	to _____	VDC

Test 11 + _____ VDC to - _____ VDC

Test 12 + _____ VDC

Test 13 - _____ VDC

Test 14 _____ VDC

Test 15 _____ VDC

Test 16 + _____ VDC

Test 17 + _____ VDC to - _____ VDC

Test 18 + _____ VDC to - _____ VDC

B1 - P _____ °C

B1 - Q _____ °C

B1 - R _____ °C

B1 - S _____ °C

3. Basic On Line Test

A. M711 Set up

V. B1 _____ Intens

_____ P.R.R.

_____ Width

B. Input Signal

V. C4 _____ VDC

C5 _____ VDC

C5A _____ yes _____ no

If yes do not proceed until oscillation has been fixed.

C. Brightness Preset

V. C12,i _____

D. Channel Select

V. C12,J _____ Channel 1

_____ Channel 2

V. C12,K _____ Channel 1 and 2

E. V. C25 ____ yes _____ no

If yes do not ship unit.

F. V. C26 _____ O.K.

H. V. $C27_a$ - C27h

C27b + _____ VDC

C27c + _____ VDC

C27d + _____ VDC

C27f - _____ VDC

C27g - _____ VDC

C27h - _____ VDC

4. On Line Testing

A. 48 hour reliability

VI. 10 _____ OK

13A _____ VDC

13b _____ VDC

B. Yoke tightened Down

VI. 16A _____ OK

5. Vidration Test

VIII. 1 - 3 _____ OK

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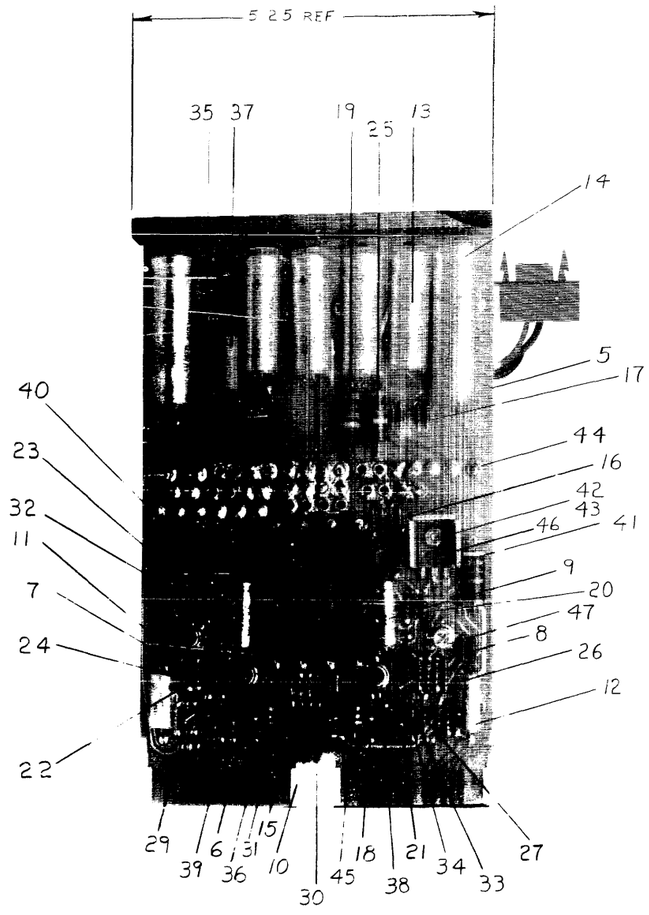

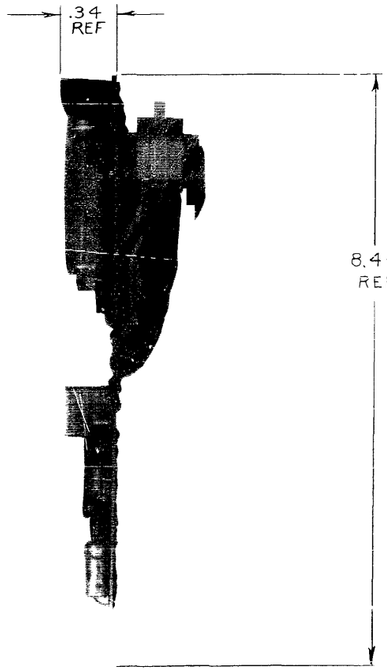

REVISIONS				
DIN	CHANGE NO	REV		
	5-00006		RELEASED	A. FISHMAN 11-8-71
	6-00005			A. FISHMAN 3/24/72
	6-00006			A. FISHMAN 3/29/72
				A. FISHMAN 9/12/72

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
VR14		PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN W. HOVEY	DATE 11/24/70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'	CHK'D D. CRABBE	DATE 11/2/70	TITLE: G836 POWER REGULATOR BOARD ASSEMBLY		
	ENG D. CRABBE	DATE 11/4/70			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG A. FISHMAN	DATE 11/4/70			
	PROD R. PETERSON	DATE 11/6/70			
MATERIAL	NEXT HIGHER ASSY		SIZE D	CODE IIA	NUMBER G836-0-0 REV E
FINISH	SCALE				
	SHEET 1 OF 1		DIST		

SIZE D | CODE IIA | NUMBER G836-0-0 | REV E

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Mary Ann Gilbert | CHECKED | SECTION
DATE July 8, 1971 | DATE 9-11-61
ENG | PROD | ISSUED SECT.
DATE | DATE

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-CS-G836-0-1	CIRCUIT SCHEMATIC	
2	K-CO-G836-0-4	X-Y COORDINATE HOLE LOCATION	
3	E-AH-G836-0-5	ASSY/DRILLING HOLE LAYOUT	
4	B-MH-G836-0-6	MODULE ECO HISTORY	
4½	D-UA-G836-0-0	POWER REGULATOR BOARD ASSEMBLY	
5	5009224	ETCHED CIRCUIT BOARD	1
6	1000020	CAP. 180PF 100V 5% D.M.	1 C8,
7	1000024	CAP. 470PF 100V 5% DL.ML.	2 C4,10
8	1000042	CAP. 1000PF 100V 5% MICA	2 C5,20
9	1000080	CAP. 50UF 50V -10 +75% S.TANT	2 C6,11
10	1001610	CAP. .01UF 100V 20% DISC	2 C12,13
11	1001739	CAP. 27PF 100V 5% MICA	2 C3, 9
12	1001886	CAP. 270UF 15V 10% S.TANT	2 C1, 7
13	1001438	CAP. 25UF 150V 39D	4 C16,17,18,19
14	1001439	CAP. 10UF 450V 39D	2 C14,15
15	1101808	DIODE 1N752A 5.6V	6 D1, 2, 5, 6, 7, 8
16	1102942	DIODE 1N4001	4 D13,14,15,16
17	1101796	DIODE 1N4004	6 D3, 4, 9,10,11,12
18	1300220	RES. 68 ½W 10%	2 R11,31
19	1300245	RES. 120 2W 10%	1 R37
20	1300317	RES. 10 ½W 5%	4 R10,27 5,21
21	1300285	RES. 270 ½W 5%	2 R8, 25

TITLE: VR-14 POWER SUPPLY AND REGULATOR BOARD
ASSY NO.
SHEET 1 OF 3
SIZE A | CODE PL | NUMBER G836-0-0 | REV. E | ECO NO. 00006
DIST.

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Mary Ann Gilbert | CHECKED | SECTION
DATE July 8, 1971 | DATE
ENG | PROD | ISSUED SECT.
DATE | DATE

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
22	1300295	RES. 330 ½W 5%	2 R4, 18
23	1300271	RES. 220 ½W 5%	2 R9, 24
24	1300365	RES. 1K ½W 5%	6 R7, 15,16,23,29,32
25	1300369	RES. 1K 2W 10%	1 R36
26	1300391	RES. 1.5K ½W 5%	2 R6, 22
27	1300417	RES. 2.2K ½W 5%	2 R39,40
~~28~~	~~R314~~	~~RES. 10 ½W 5%~~	~~2 R5, 21~~
29	1301890	RES. 560 ½W 5%	2 R1, 20
30	1302385	RES. 750 1W 5%	2 R33,34
31	~~13-826~~ 1310701	RES. 80 10W 1% WW	4 R12,26,41,42
32	1303062	RES. 470 2W 5%	2 R14,30
33	1312612	RES. 1.78K 1/8W 1% MF	2 R2, 17
34	1314870	RES. 6.81K 1/8W 1% MF	2 R3, 19
35	1310179	RES. 500K 1W 10% 78PR POT	1 R35
36	1310382	RES. 2.7 1W 5%	2 R13,28
37	1309143-14	RES. 100K 3/4W 10% 76PR POT	1 R38
38	1501742	TRANSISTOR 2N2904	1 Q1
39	1501891	TRANSISTOR DEC 2219	1 Q3
40	1512556	TRANSISTOR MJE 2955	1 Q2
41	~~7400589~~ 5509718	HEAT SINK REV A	6
42	9006011	SCREW SLOTTED #4-40 x3/8 SST	2
43	9006556	NUT HEX #4-40 SST	2

TITLE: VR-14 POWER SUPPLY AND REGULATOR BOARD
ASSY NO.
SHEET 2 OF 3
SIZE A | CODE PL | NUMBER G836-0-0 | REV. E | ECO NO. 00006
DIST.

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Mery Ann Gilbert DATE July 8, 1971	CHECKED DATE	SECTION
ENG A. Fishman DATE	PROD DATE	ISSUED SECT.

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
44	9007836	EYELETS #GS4-3	41											
45	9008085	SOLDERLESS TERMINAL	8											
46	1510555	TRANSISTOR MJE 3055	1		Q4									
47	1909344	I.C. MC 1709 OP AMP	2		E1, 2									

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
VR-14 POWER SUPPLY AND REGULATOR BOARD	SHEET 3 OF 3	A	PL	G836-0-0	E	00006

DIST.

DEC FORM NO. 16-1031
DRA 110

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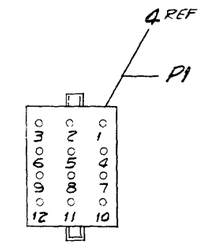
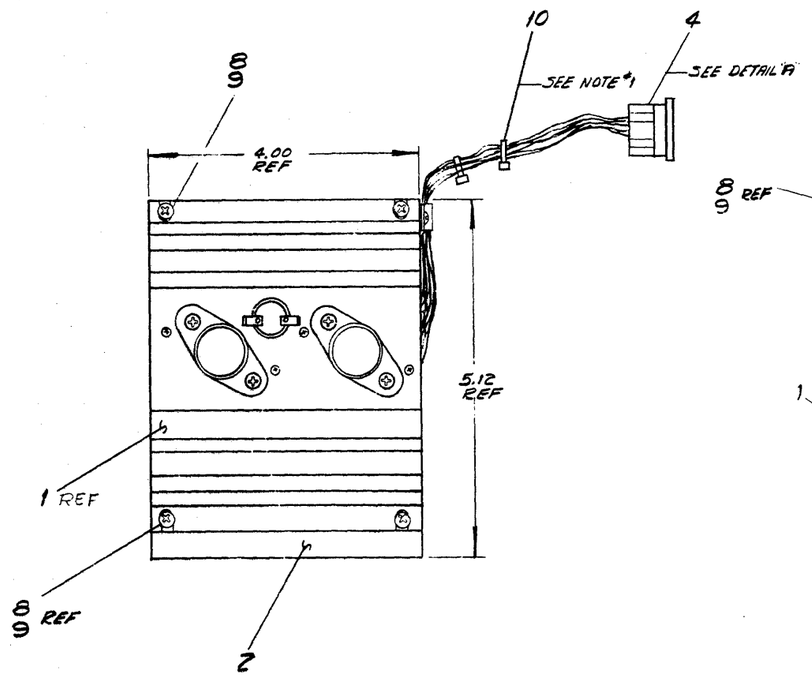
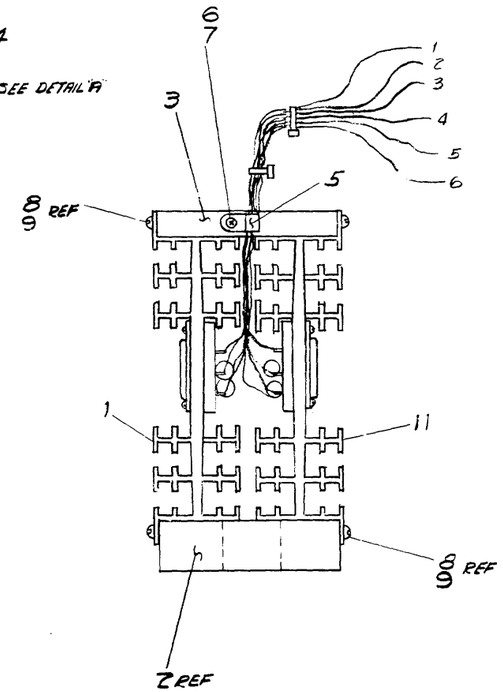
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
1	14	ORN	BRADY M. #4	—	P1-1	4
1	18	GRY/YEL	5	—	P1-2	4
1	14	RED	6	—	P1-3	4
1	14	BLU	1	—	P1-10	4
1	18	GRY/BLU	2	—	P1-11	4
1	14	GRN	BRADY M. 3	—	P1-12	4

NOTES:
1. USE TIE WRAPS WHEREVER NECESSARY.







QTY	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

FIRST USED ON OPTION/MODEL: VR14

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 —

		DATE
DRN		10-14-70
CHK		DATE 10/21/70
ENG		DATE 10/21/70
PROJ. ENG.		DATE 11-1-70
PROD.		DATE 11/2/70

NEXT HIGHER ASSY: D-UA-1212-0-0

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PS HEAT SINK ASSY VR14

SIZE D | CODE AD | NUMBER 7007080-0-0 | REV

DIST

REVISIONS	REV	CHANGE NO	CHK

DEC FORM NO DRG 1100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. Devin	CHECKED D. Crabbe	SECTION 1
DATE 10/14/70	DATE 10/15/70	
ENG D. E. Crabbe	PROD R. Peterson	ISSUED SECT. 1
DATE 11/6/70	DATE 11/6/70	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-AD-7007081-1-0	REGULATOR HEAT SINK ASSY.	1
2	C-MD-7408437-0-0	BRKT, MTG. SPACER	1
3	C-MD-7408438-0-0	SPACER, MTG.	1
4	1209351-12	SOCKET HOUSING MATE-N-LOK	1
5	CPS-1953-4A	CLAMP NYLON ¼ I.D.	1
6	9006021-1	SCR, PHL HD PAN #6-32 x 5/16 LG	1
7	9006656	WASHER, FLAT #6 SST	1
8	9006020-1	SCR, PHL HD PAN #6-32 x ¼ LG SST	8
9	9006633	WASHER, INTERNAL #6-32 SST	8
10	9007031	TIE WRAPS SST-1B	2
11	D-AD-7007081-2-0	REGULATOR HEAT SINK ASSY.	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
P.S. HEAT SINK ASSY.	D-AD-7007080-0-0	A	PL	7007080-0-0		
	SHEET 1 OF 1	DIST.				

DEC FORM NO. 16-1031

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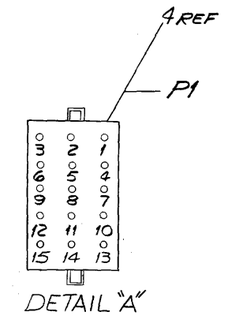
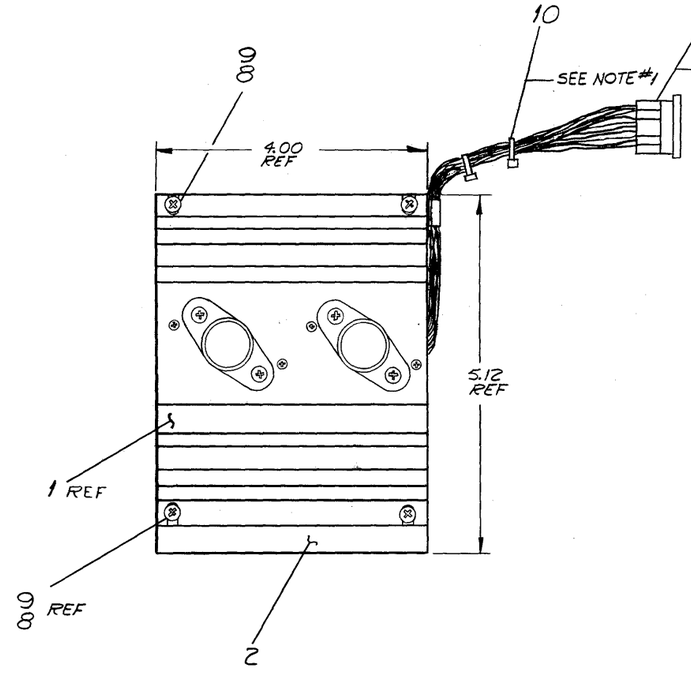
WIRE TABLE

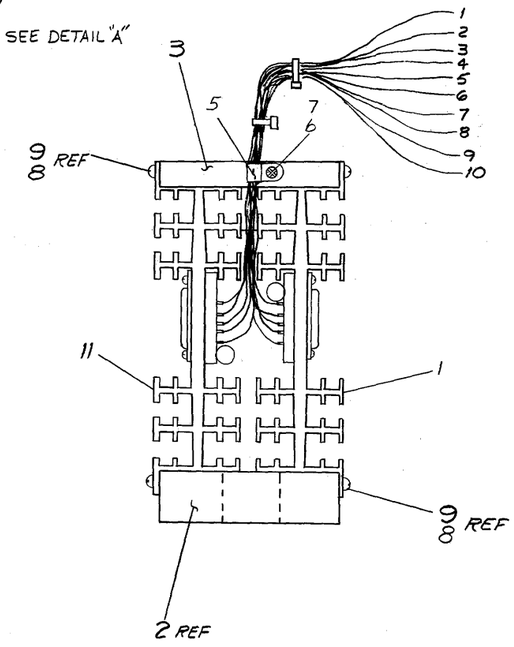
ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
1	18	RED	BRADY M 1	—	P1-1	4
1	"	GRY/YEL	" 2	—	P1-2	4
1	"	GRY	" 3	—	P1-3	4
1	"	GRY/BLU	" 4	—	P1-4	4
1	"	BLU	" 5	—	P1-5	4
11	"	BLU	" 6	—	P1-11	4
11	"	GRY/BLU	" 7	—	P1-12	4
11	"	VIO	" 8	—	P1-13	4
11	"	GRY/YEL	" 9	—	P1-14	4
11	18	RED	BRADY M 10	—	P1-15	4

NOTES:
1. USE TIE-WRAPS WHEREVER NECESSARY.



DETAIL "A"





REV	DNS	REV
CHAN E NO.		A
CHK	VR14- 0003	
CHK	VR14- 0015	B

FISHMAN
L.GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: VR14

DO NOT SCALE DRAWING

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

MATERIAL —

FINISH —

		DATE
DRN.	W. Hooley	18 OCT 72
CHK'D.	R.R. Cobble	10/19/72
ENG.		
PROJ. ENG.		
PROD.		

NEXT HIGHER ASSY: D-UA-VR14-0-0

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DEFLECTION HEAT SINK ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7007082-0-0	E

DIST.

DEC FORM NO. DRD 100

SIZE	CODE	NUMBER	REV.
D	AD	7007082-0-0	B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY W. Hovey	CHECKED D.K. Crabbe	SECTION 1
DATE October 15, 1970	DATE Oct. 15, 1970	
ENG D.K. Crabbe	PROD R. Peterson	ISSUED SECT. 1
DATE 11/6/70	DATE 11/6/70	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-AD-7007083-1-0	DEFLECTION POWER AMP. ASSY.	1
2	C-MD-7408437-0-0	BRKT, MTG. SPACER	1
3	C-MD-7408438-0-0	SPACER, MTG	1
4	1209351-15	SOCKET HOUSING MATE-N-LOK	1
5	CPS-1953-4A	CLAMP NYLON ¼ I.D.	1
6	9006021-1	SCR PHL HD PAN #6-32 x 5/16 LG	1
7	9006656	WASHER, FLAT #6 SST	1
8	9006020-1	SCR, PHL HD PAN #6-32 x ¼ LG SST	8
9	9006633	WASHER, INTERNAL #6-32 SST	8
10	9007031	TIE-WRAPS SST-1B	A/R
11	D-AD-7007083-2-0	DEFLECTION POWER AMP. ASSY.	1
~~12~~	~~1209351-03~~	~~SOCKET HSG (FEM) MATE-N-LOK~~	~~1~~

TITLE DEFLECTION HEAT SINK ASSY.	ASSY NO. D-AD-7007082-0-0	SIZE A	CODE PL	NUMBER 7007082-0-0	REV. B / ECO NO. VRM-00215
	SHEET 1 OF 1	DIST.			

DEC FORM NO.16-1031
DRA 110

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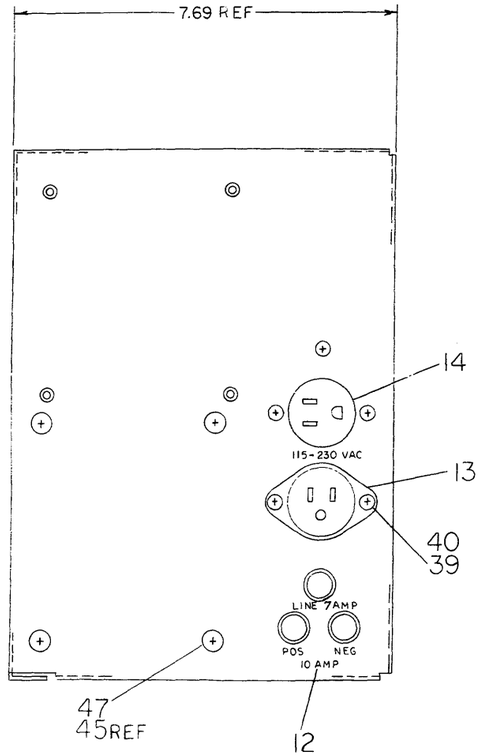
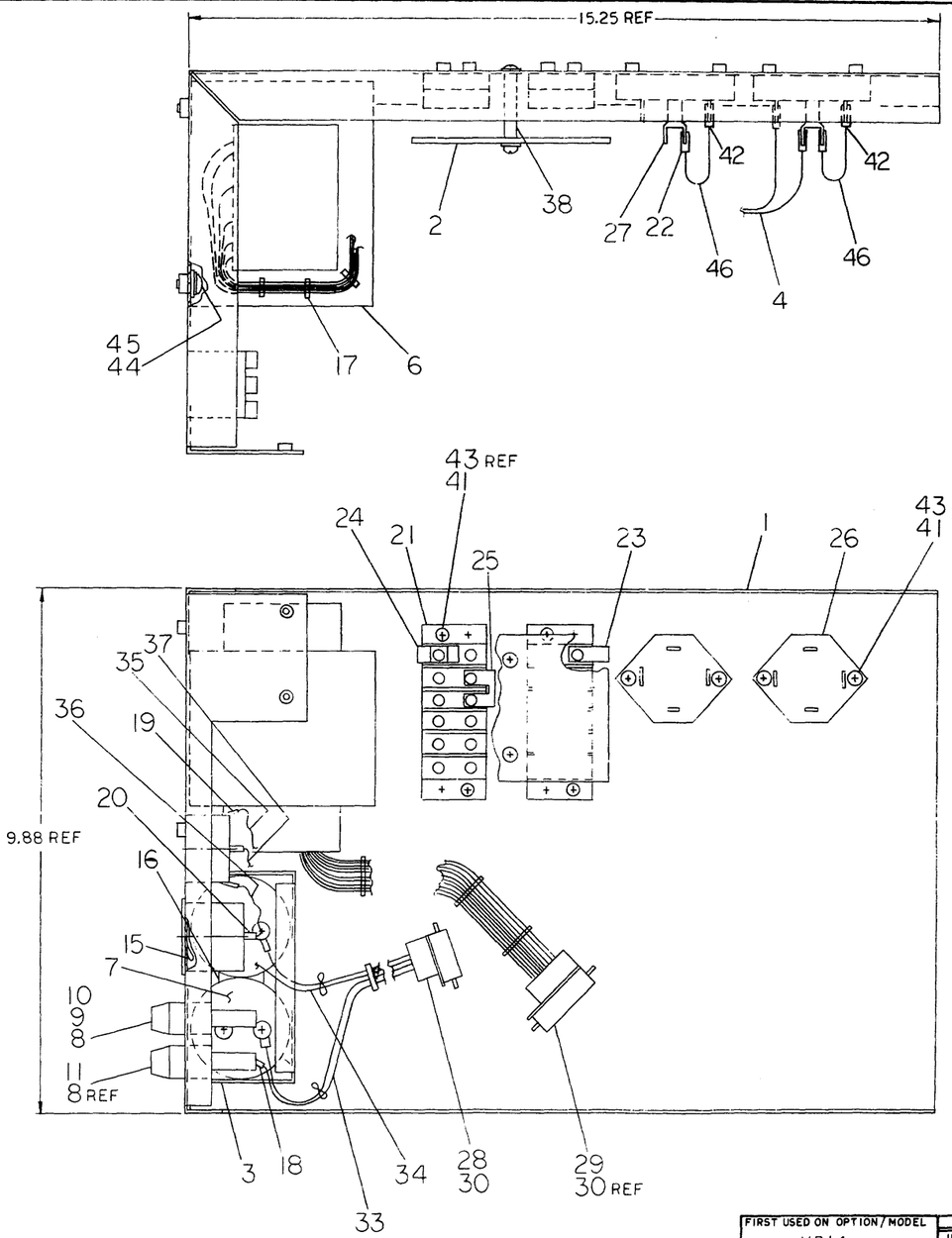
LEGEND	
NUMBER	VARIATION
7007084-1	115 VAC (50/60 HZ)
7007084-2	230 VAC (50/60 HZ)
7007084-3	100 VAC (50/60 HZ)
7007084-4	115 VAC (VR20)
7007084-5	230 VAC (VR20)
7007084-6	100 VAC (VR20)





REVISION:	CHK	CHANGE NO.	REV.
	EV	VR14-00002	A
		M. Gauvin 1-6-71	
		A. FISHMAN	
		D. Eshman 1-15-71	
	ad	VR14-0001	B
		Sean Fraser 2-5-71	
		A. FISHMAN	
		D. Eshman 6-9-71	
		VR14-0001	C
		M. Gauvin 7-27-71	
		FISHMAN	
		D. Eshman 9-27-71	
		VR14-0001	D
		Richard Hall 11-2-71	
		A. FISHMAN	
		D. Eshman 11-2-71	
		VR14-0001	E
		D. Eshman 2-7-72	
		A. FISHMAN	
		D. Eshman 2-7-72	
		VR14-0001	F
		M. Gauvin 6-29-73	
		A. FISHMAN	
		D. Eshman 6-29-73	

DEC FORM NO. ORD 100

FIRST USED ON OPTION/MODEL
VR14

DO NOT SCALE DRAWING
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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN. W. K. Cobb	DATE 10/20/70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. D. Eshman	DATE 11-6-70	
ENG. W. K. Cobb	DATE 11/6/70	TITLE: POWER SUPPLY ASSY (VR14)
PROJ. ENG. D. Eshman	DATE 11-6-70	
PROD. R. Peterson	DATE 11/11/70	
NEXT HIGHER ASSY D-UA-VR14-0-0		SIZE D CODE AD NUMBER 7007084-0-0 REV. F
SCALE NONE		DIST.
SHEET 1 OF 2		

SIZE D CODE AD NUMBER 7007084-0-0 REV F

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HARNESS TABLE

COLOR	HARN PT.	P.S. LOCATION
RED	3	FAN2-1
WHT	4	FAN2-2
GRN	6	C2-NEG
GRN	7	C2-NEG
BLK	8	GND-1
RED	9	F1-2
WHT	10	PL2-T
ORN	11	C1-POS
ORN	12	C1-POS
RED	14	T1-2
WHT	15	T1-5
RED	16	T2-1
WHT	17	T2-5
GRN	22	D1-2
ORN	23	D1-1
GRN	25	D2-2
ORN	24	D2-1
RED	21	T2-1
WHT	20	T2-4
RED	19	T1-1
WHT	18	T2-4
BLK	30	GND-2 (ON H.V. ASSY)
RED	32	FAN1-1
WHT	31	FAN1-2

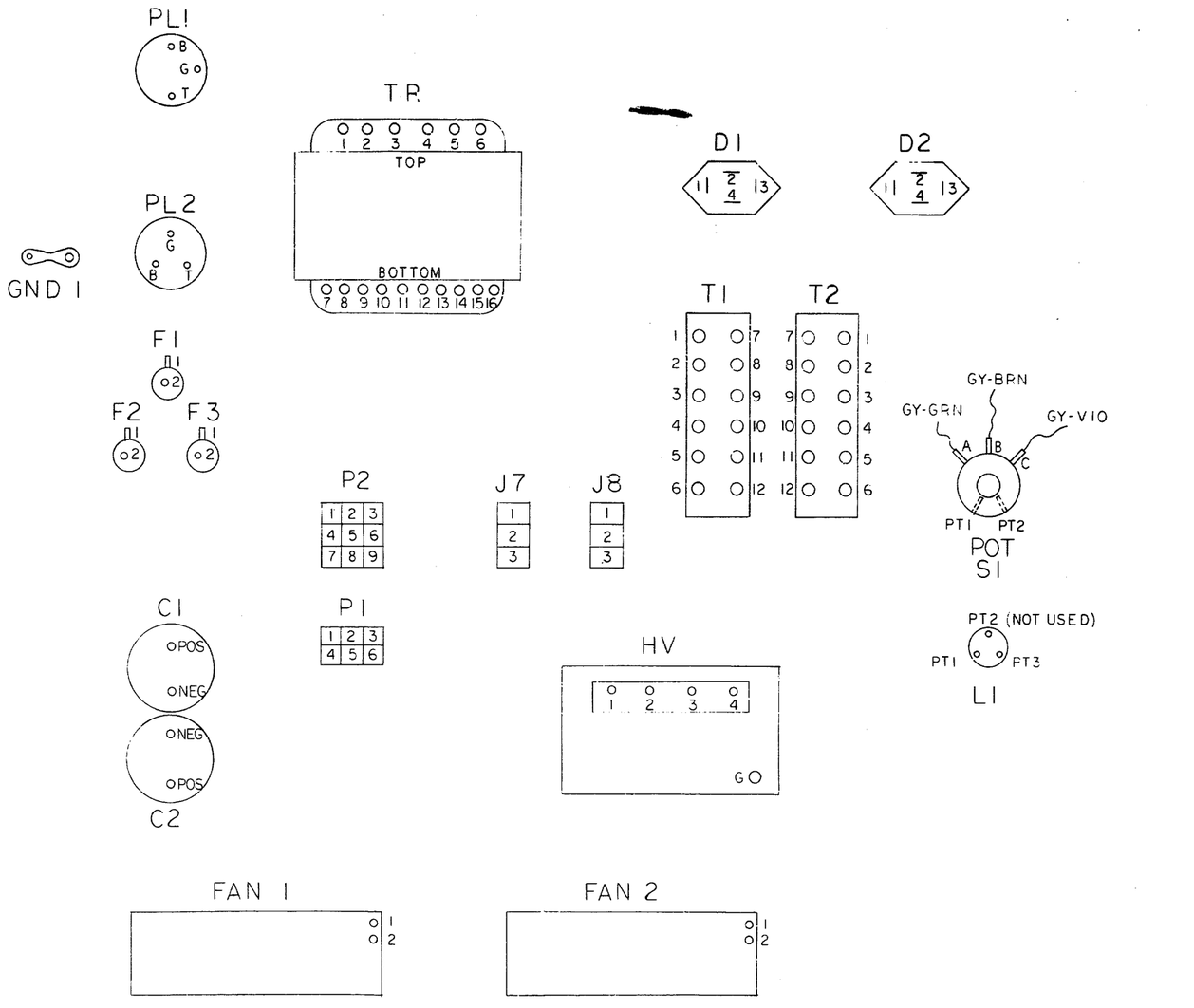
WIRE TABLE

ITEM NO.	WIRE COLOR	CONNECTIONS TYPE-ITEM	FROM	TO	TYPE-ITEM
46	BLU	22	D2-3	D2-4	22,27
46	BLU	22	D1-3	D1-4	22,27
35	RED	22,24	T1-2	T2-2	22,24
36	WHT	22,24	T1-6	T2-6	22,24
32	ORN	19	C1-POS	F3-1	*A,18
33	BLK	19	C1-NEG	P1-3	28,30
	ORN	*A,18	F3-2	P1-1	28,30
34	BLK	19	C2-POS	P1-6	28,30
	GRN	*A,18	F2-2	P1-4	28,30
31	GRN	*A,18	F2-1	C2-NEG	19
35	RED	*A,18	F1-2	PL2-B	20
35	RED	19	PL1-B	PL2-B	20
36	WHT	19	PL1-T	PL2-T	20
37	BLK	19	PL1-G	PL2-G	20
6	VIO	*A	TR-1	T2-6	22
6	GRY		TR-2	T2-3	22
6	WHT		TR-3	T2-2	22
6	BRN		TR-4	T1-6	22
6	RED		TR-5	T1-4	22
6	ORN		TR-6	T1-3	22
6	YEL		TR-7	P2-1	28,30
6	BLU		TR-8	D2-4	22,27
6	YEL-BLK		TR-9	P2-2	28,30
6	GRN		TR-10	P2-9	28,30
6	YEL		TR-11	P2-3	28,30
6	GRN		TR-12	P2-7	28,30
6	BLK		TR-13	P2-4	28,30
6	BLK-WHT		TR-14	P2-5	28,30
6	BLU		TR-15	D1-4	22,27
6	BLK-YEL	*A	TR-16	P2-6	28,30

*LETTER DESIGNATION "A" INDICATES WIRE IS TO BE SOLDERED PER TABLE ABOVE (WIRE TABLE)

JUMPER TABLE

ITEM NO.	FROM	TO
25	T1-7	T1-8
25	T1-8	T1-9
25	T1-11	T1-12
25	T2-7	T2-8
25	T2-10	T2-11
25	T2-11	T2-12



QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: VR14

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

DRN	D.K. Gabbe	DATE 10/15/70
CHK'D	D.K. Gabbe	DATE 10/16/70
ENG.	D.K. Gabbe	DATE 11/6/70
PROJ. ENG.	C.J. Fuhrman	DATE 11-6-70
PROD.	R. Peterson	DATE 11/11/70

NEXT HIGHER ASSY: D-UA-VR14-0-0

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: POWER SUPPLY ASSY (VR14)

SIZE D | CODE AD | NUMBER 7007084-0-0 | REV. F

DIST. G

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D. Crabbe	CHECKED D. Crabbe	SECTION
DATE 10/9/70	DATE 10/22/70	1
ENG D.K. Crabbe	PROD R. Peterson	ISSUED SECT.
DATE 11/6/70	DATE 11/11/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION 7007084-1	7007084-2	7007084-3	7007084-4	7007084-5	7007084-6
1	E-IA-7408402-0-0	PLATE, SIDE MTG.	1	1	1	1	1	1
2	B-MD-7408416-0-0	COVER, PROTECTION	1	1	1	-	-	-
3	D-IA-7408433-0-0	COVER, CAPACITOR HOLDDOWN	1	1	1	1	1	1
4	E-IA-7007147-0-0	POWER SUPPLY CABLE HARNESS	1	1	1	1	1	1
5	D-SC-7007084-0-1	POWER SUPPLY CIRCUIT SCHEMATIC	REF	REF	REF	REF	REF	REF
6	161016-0	TRANSFORMER MMC-3833-1 MERRIMACK	1	1	1	1	1	1
7	101014-0	CAPACITOR, 5900 MFD 75V SPRAGUE	2	2	2	2	2	2
8	900724	FUSE HOLDER #HKP	3	3	3	3	3	3
9	900722	7 AMP SLO BLO FUSE (115V)	1	-	1	1	-	1
10	900721	3 AMP SLO BLO FUSE (230V)	-	1	-	-	1	-
11	900883	10 AMP FAST BLO FUSE (230V)	2	2	2	2	2	2
12	A-DC-7408407-0-0	SCOTCHCALS (VR14)	A/R	A/R	A/R	A/R	A/R	A/R
13	120125	RECEP #160-5 MALE AMPH.	1	1	1	1	1	1
14	120125	RECEP #160-4 FEM AMPH.	1	1	1	1	1	1
15	900676	TERMINAL #2101-06-00 SHAKE PROOF	1	1	1	1	1	1
16		FOAM ½ x 3/4 STICKY BACK 3M	A/R	A/R	A/R	A/R	A/R	A/R
17	900703	TIE WRAP SST-1-B	A/R	A/R	A/R	A/R	A/R	A/R
18	910730	SHRINKIES	A/R	A/R	A/R	A/R	A/R	A/R
19	900677	SOLDERLESS CONN #31889 (RED) AMP	7	7	7	7	7	7
20	900678	SOLDERLESS CONN #34144 (RED) AMP	4	4	4	4	4	4
21	9006904	TERM STRIP #6-541 CINCH JONES	2	2	2	2	2	2
22	900791	FASTON TAB #50902 AMP	12	12	12	12	12	12

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY ASSY (VR14)	D-AD-7007084-0-0	A	PL	7007084-0-0	F	VR14-00022
	SHEET 1 OF 3	DIST.	6			

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D. Crabbe	CHECKED D. Crabbe	SECTION
DATE 10/9/70	DATE 10/22/70	1
ENG D.K. Crabbe	PROD R. Peterson	ISSUED SECT.
DATE 11/6/70	DATE 11/11/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION 7007084-1	7007084-2	7007084-3	7007084-4	7007084-5	7007084-6
23	9007112	FASTON TAB #60145-1 AMP	1	1	1	1	1	1
24	9007269	FASTON TAB # 41287-1 AMP	12	12	12	12	12	12
25	900713	JUMPERS #541 CINCH JONES	6	6	6	6	6	6
26	110579	DIODE PACK DM15 SOLARTRON	2	2	2	2	2	2
27	900792	PIGGYBACK FASTONS #3000H21A ARKLESS	2	2	2	2	2	2
28	120935-06	SOCKET HSG (MALE) #1480273-1 MATE-N-LOK	1	1	1	1	1	1
29	120935-09	SOCKET HSG (MALE) #1480274-1 MATE-N-LOK	1	1	1	1	1	1
30	1209378-01	CONTACT PIN (MALE) MATE-N-LOK	12	12	12	12	12	12
31	9107370-55	#14GA TEF STRD INS WIRE (GRN)	A/R	A/R	A/R	A/R	A/R	A/R
32	9107370-33	#14GA TEF STRD INS WIRE (ORN)	↑	↑	↑	↑	↑	↑
33	9107440-03	#14GA TEF STRD INS TWP (BLK-ORN)						
34	9107440-05	#14GA TEF STRD INS TWP (BLK-GRN)						
35	9107360-22	#18GA TEF STRD INS WIRE (RED)						
36	9107360-99	#18GA TEF STRD INS WIRE (WHT)	↓	↓	↓	↓	↓	↓
37	9107360-00	#18GA TEF STRD INS WIRE (BLK)	A/R	A/R	A/R	A/R	A/R	A/R
38	9006864	SPACER, AL. #6-32 TAP ¼ AF x 1¼	2	2	2	-	-	-
39	900656	NUT, KEPS #6-32	4	4	4	4	4	4
40	900602-1	SCR PHL PAN HD #6-32 x 5/16 SST	8	8	8	4	4	4
41	9006025-1	SCR PHL PAN HD #6-32 x 5/8 SST	4	4	4	4	4	4
42	900791	FASTON TAP AMP	2	2	2	2	2	2
43	900663	LOCK WASHER #6 INT TOOTH	12	12	12	8	8	8
44	900607-1	SCR, PHL PAN HD #10-32 x 5/16 SST	8	8	8	8	8	8

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY ASSY (VR14)	D-AD-7007084-0-0	A	PL	7007084-0-0	F	

| | SHEET 2 OF 3 | DIST. | 5 | | | |

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	D. Crabbe	CHECKED	D. Crabbe	SECTION	
DATE	10/9/70	DATE	10/22/70		1
ENG	O.K. Crabbe	PROD	R. Peterson	ISSUED SECT.	
DATE	11/6/70	DATE	11/11/70		1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION 7007084-1	7007084-2	7007084-3	7007084-4	7007084-5	7007084-6
45	9006635	LOCK WASHER #10 INT TOOTH	12	12	12	12	12	12
46	9107370-66	# 14 AWG TEF STRDINS WIRE (BLUE)	A/R	A/R	A/R	A/R	A/R	A/R
47	9007019-3	SCR, PHL TRUSS HD #10-32 X 5/16SST	4	4	4	4	4	4

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY ASSY (VR14)	D-AD-7007084-0-0	A	PL	7007084-0-0	F	
	SHEET 3 OF 3	DIST.				

DEC FORM NO.16-1031
DRA 110

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE	
COMPUTER ASSY (VT4Ø)	B-DD-VT4Ø-Ø		
16 BIT COMPUTER ASSY (11Ø5)	B-DD-11Ø5-Ø		
MODULE UTILIZATION	D-MU-VT4Ø-Ø-1		
BUS CONTROL	C-CS-M7Ø13-Ø-1		
ROM PATTERNS	D-RL-M7Ø13-Ø-8		
DISPLAY CONTROL	C-CS-M7Ø14-Ø-1		
ROM PATTERNS	D-RL-M7Ø14-Ø-8		
VECTOR GENERATOR	C-CS-A32Ø-Ø-1		
COMPUTER ASSY (VT4Ø)	A-PL-VT4Ø-Ø-Ø		

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET VT4Ø-Ø
VT4Ø-AA	VT4Ø COMPUTER ASSY (115V,60HZ)	x
VT4Ø-AB	VT4Ø COMPUTER ASSY (23ØV,5ØHZ)	x
VT4Ø-BA	VT4Ø COMPUTER ASSY (115V,6ØHZ)	x
VT4Ø-BB	VT4Ø COMPUTER ASSY (23ØV,5ØHZ)	x

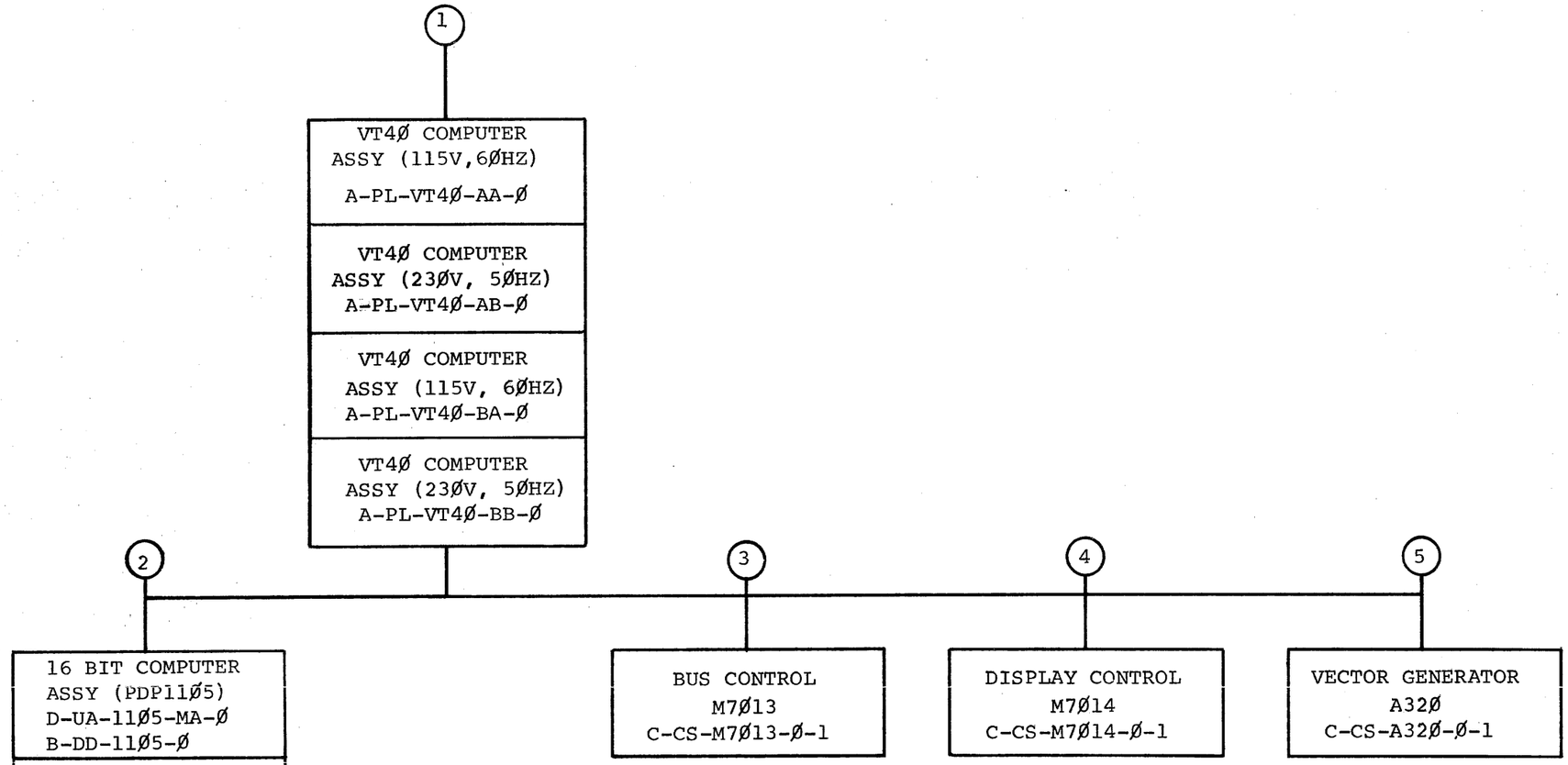
REVISIONS		
REV	CHG. NO.	DATE
A	VT4Ø-1	1-73

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. C.MCCOY	DATE 10/16/2	TITLE VT4Ø COMPUTER ASSY
CHK'D. D.K.Wolle	DATE 10-22-72	
PROJ ENG. H.E.Lavoie	DATE 10/24/72	
PROD. P.M.C.Canty	DATE 10/24/72	SIZE B · CODE DD · NUMBER VT4Ø-Ø · REV A
FIELD SERV. R.B.O'Donnell	DATE 10/30/72	DIST 6

DRB 106
DEC 16-(325)-1062-1A-R972



TITLE		SIZE	CODE	NUMBER	REV
VT4Ø COMPUTER ASSY	SHEET 2 OF 3	B	DD	VT4Ø-Ø	A

ELECTRICAL

CUSTOMER PRINT SET VT4Ø-Ø	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	D-MU-VT4Ø-Ø-1		1	MODULE UTILIZATION	
x		3	C-CS-M7Ø13-Ø-1	#		BUS CONTROL (M7Ø13)	
C			D-RL-M7Ø13-Ø-8	#		ROM PATTERNS	
x		4	C-CS-M7Ø14-Ø-1	#		DISPLAY CONTROL	
C			D-RL-M7Ø14-Ø-8	#		ROM PATTERNS	
x		5	C-CS-A32Ø-Ø-1	#		VECTOR GENERATOR	

MECHANICAL

CUSTOMER PRINT SET VT4Ø-Ø	MFG SET	FIND NO	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	A-PL-VT4Ø-Ø-Ø		1	VT4Ø COMPUTER ASSY	
			D-IA-7409966-0-0		1	COVER PANEL, REAR BOTTOM	
			D-MD-7409971-0-0		1	EXTRUSION, SIDE	
			A-PI-3700079-0-0		2	PACKAGING INSTRUCTIONS	
		2	D-UA-PDP11Ø5-Ø-Ø		3	16 BIT COMPUTER ASSY (PDP11Ø5)	
			A-PL-PDP11Ø5-Ø-Ø		4	16 BIT COMPUTER ASSY (PDP11Ø5)	
C			B-DD-11Ø5-Ø	#	6	16 BIT COMPUTER (PDP11Ø5)	11Ø5-1

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
VT4Ø COMPUTER ASSY	SHEET 3 OF 3	B	DD	VT4Ø-Ø	A

DRB 108

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE	
16 BIT COMPUTER (PDP 11Ø5)	B-DD-11Ø5-Ø
16 BIT COMPUTER (PDP 11Ø5)	D-UA-11Ø5-Ø-Ø
16 BIT COMPUTER (PDP 11Ø5)(PL)	C-PL-11Ø5-Ø-Ø
MODULE UTILIZATION (16K)	D-MU-11Ø5-Ø-Ø2
MODULE UTILIZATION (8K)	D-MU-11Ø5-Ø-Ø1
CENTRAL PROCESSOR	B-DD-KD11-B
16 BIT 18 MIL MEMORY	B-DD-MM11-L
ETCH BOARD ASSY (11Ø5 CONSOLE)	E-IA-5409766-0-0
CIRCUIT SCHEMATIC	D-CS-5409766-0-1
REGULATOR BOARD	E-IA-5409728-0-0
CIRCUIT SCHEMATIC	D-CS-5409728-0-1
LINE SET BCØ5H	B-DD-BCØ5H-0
INPUT HARNESS (A.C.)	E-IA-7008713-0-0
HARNESS (D.C.)	D-IA-7008856-0-0
HEADER CABLE ASSY	D-IA-7008820-0-0
CIRCUIT SCHEMATIC	C-CS-5409949-0-1
CONSOLE ASSY	D-UA-KY11-J-0
CONSOLE ASSY (PL)	A-PL-KY11-J-0
I/O CABLE	C-UA-BCØ8R-Ø3-Ø
CIRCUIT SCHEMATIC (8K)	C-CS-5409818-Ø-1
ETCH/WIRE LIST (8K)	K-WL-7008843-1-1
CIRCUIT SCHEMATIC (16K)	C-CS-5410035-Ø-1
ETCH/WIRE LIST (16K)	K-WL-7008843-2-1
11Ø5 ACCESSORY LIST	A-AL-11Ø5-Ø-Ø4
11Ø5 SOFTWARE LIST	A-SL-11Ø5-Ø-Ø5
11Ø5 ACCEPTANCE PROCEDURE	A-SP-11Ø5-Ø-6

THIS IS PRINT SET

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE 11Ø5-1
	CONFIGURATION #1	
11Ø5-HA	KD11-B, MM11-K, 115V/60HZ	X
11Ø5-HB	KD11-B, MM11-K, 320V/50HZ	X
11Ø5-JA	KD11-B, MM11-L, 115V/60HZ	X
11Ø5-JB	KD11-B, MM11-L, 230V/50HZ	X
	CONFIGURATION #2	
11Ø5-KA	KD11-B, MM11-K, 115V/60HZ	X
11Ø5-KB	KD11-B, MM11-K, 230V/50HZ	X
11Ø5-LA	KD11-B, MM11-L, 115V/60HZ	X
11Ø5-LB	KD11-B, MM11-L, 230V/50HZ	X
	CONFIGURATION #3	
11Ø5-MA	KD11-B, MM11-K, 115V/60HZ	X
11Ø5-MB	KD11-B, MM11-K, 230V/50HZ	X
11Ø5-PA	KD11-B, MM11-L, 115V/60HZ	X
11Ø5-PB	KD11-B, MM11-L, 230V/50HZ	X

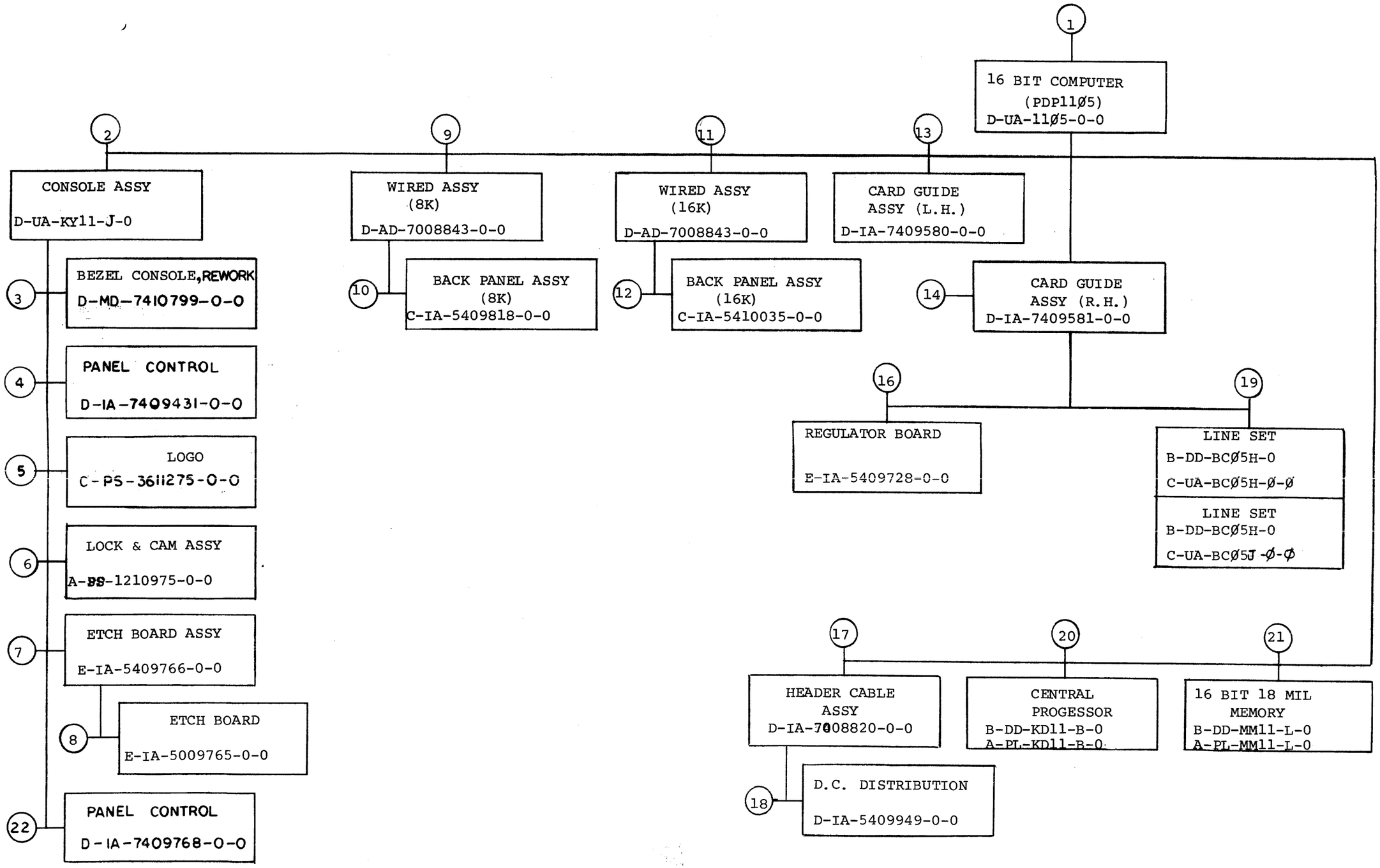
REVISIONS			
REV	CHG. NO.	DATE	
A	11Ø5-17	2.9.	
B	11Ø5-30	M.T.	
C	11Ø5-33	G.G	
D	11Ø5-34	10/72	
E	11Ø5-35	10/72	
F	11Ø5-37	12/72	
H	11Ø5-39	12/72	
J	11Ø5-40	12/74	
K	11Ø5-41	2/73	
L	KY11J-1	2/73	

USED ON OPTION/MODEL

DRN. J.CAHILL	DATE 4/19/72	TITLE: 16 BIT COMPUTER (PDP 11Ø5)
CHK'D. C.TESCHNER	DATE 4/19/72	
PROJ ENG.	DATE 5-25-72	
PROD.	DATE	SIZE B; CODE DD; NUMBER 11Ø5-Ø; REV
FIELD SERV.	DATE 5-25-72	
SHEET 1 OF 6		DIST

DRB 106

DEC 16-(325)-1062-1-N871



TITLE		SIZE	CODE	NUMBER	REV
16 BIT COMPUTER (PDP 11Ø5)	SHEET 2 OF 6	B	DD	11Ø5-Ø	L

DRB 107
DEC 16-(325)-1062-3-N871

CUSTOMER PRINT SET 11Ø5-Ø	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
			ELECTRICAL				
X		1.	E-IA-7008713-Ø-Ø	#	1	AC INPUT HARNESS	
X			E-IA-7008856-Ø-Ø	#	1	HARNESS (D.C.)	
X			A-AL-11Ø5-Ø-04	*	1	11Ø5 ACCESSORY LIST	
X			A-SL-11Ø5-Ø-05	*	1	11Ø5 SOFTWARE LIST	
X			D-MU-11Ø5-Ø-01	*	1	MODULE UTILIZATION (8K)	
X			D-MU-11Ø5-Ø-02	*	1	MODULE UTILIZATION (16K)	
X			A-SP-11Ø5-Ø-6		23	11Ø5 ACCEPTANCE PROCEDURE	
X		7.	E-IA-5409766-0-0	#	1	ETCH BOARD ASSY (11Ø5 CONSOLE)	
X			D-CS-5409766-0-1	#	1	CIRCUIT SCHEMATIC	
			B-MH-5409766-0-6	#	1	MODULE E.C.O. HISTORY	
		9.	D-AD-7008843-0-0	#	1	WIRED ASSY (8K)	
X			K-WL-7008843-1-1	#	1	ETCH/WIRE LIST (8K)	
		10.	C-IA-5409818-0-0	#	1	BACK PANEL ASSY (8K)	
X			C-CS-5409818-0-1	#	2	CIRCUIT SCHEMATIC (8K)	
		11.	D-AD-7008843-0-Ø	#	1	WIRED ASSY (16K)	
X			K-WL-7008843-2-1	#	1	ETCH/WIRE LIST (16K)	
		12.	C-IA-5410035-0-0	#	1	BACK PANEL ASSY (16K)	
X			C-CS-5410035-0-1	#	2	CIRCUIT SHEMATIC (16K)	

CUSTOMER PRINT SET 11Ø5-Ø	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
			ELECTRICAL				
X		16	E-IA-5409728-Ø-Ø	#	1	REGULATOR BOARD	
X			D-GS-5409728-0-1	#	1	CIRCUIT SCHEMATIC	
			B-MH-5409728-0-6	#	1	MODULE E.C.O. HISTORY	
X		17.	D-IA-7008820-0-0	#	1	HEADER CABLE ASSY	
X		18.	D-IA-5409949-0-0	#	1	D.C. DISTRIBUTION	
			C-CS-5409949-0-1	#	1	CIRCUIT SCHEMATIC	
			B-MH-5409949-0-6	#	1	MODULE E.C.O. HISTORY	
C		19.	B-DD-BCØ5H-0	#	3	LINE SET	
			C-UA-BCØ5H-0-0	#	1	LINE SET BCØ5H (115V)	
			C-UA-BCØ5J-0-0	#	1	LINE SET BCØ5J (230V)	
C		20	B-DD-KD11-B	#	1	CENTRAL PROCESSOR	
			A-PL-KD11-B-0-0	#	1	CENTRAL PROCESSOR (PL)	
C		21	B-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY	
			A-PL-MM11-L-0-0	#	1	16 BIT 18 MIL MEMORY (PL)	

TITLE	SHEET	SIZE	CODE	NUMBER	REV
16 BIT COMPUTER (PDP 11Ø5)	3 OF 6	B	DD	11Ø5-Ø	L

CUSTOMER PRINT SET 11Ø5-Ø	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MECHANICAL				
X		1	D-UA-11Ø5-Ø-Ø	F	5	16 BIT (PDP 11Ø5) ASSY	
X			C-PL-11Ø5-Ø-Ø	F	2	16 BIT (PDP 11Ø5) ASSY (P.L.)	
			E-IA-7409458-0-0	#	4	CHASSIS	
			D-IA-7409453-0-0	#	1	FAN MOUNTING PLATE	
			A-DC-5309413-0-0	#	1	SPECIAL DECAL (UL)	
			D-PS-1210974-0-0	#	1	1.75 FILLER STRIP	
			C-IA-7409476-0-0	#	1	RET CONN BLOCK (L.H.)	
			C-IA-7409551-0-0	#	1	RET CONN BLOCK (R.H.)	
			D-IA 7409459-0-0	#	1	BRKT CHASSIS SLIDE (L.H.)	
			D-IA-7409533-0-0	#	1	COVER, SIDE	
			C-MD-7409460-0-0	#	1	COVER, TOP	
			C-IA-7409449-0-0	#	1	BRKT CHASSIS SLIDE (R.H.)	
			C-MD-7409591-0-0	#	1	CLAMP	
			C-PS-1210698-0-0	#	1	GUIDE, CARD CENTER	
			D-PS-1210931-0-0	#	1	BLOCK, CABLE RETAINER	
			D-MD-7409432-0-0	#	1	PLATE, LOWER RETAINER	
			C-MD-7409430-0-0	#	1	NUT, SWIVEL	
			C-MD-7409479-0-0	#	1	PLATE, PRESSURE	
			D-IA-7008856-0-0	#	1	HARNESS DC	
			E-IA-7008713-0-0	#	1	AC INPUT HARNESS	
			A-AL-11Ø5-Ø-Ø4	#	1	11Ø5 ACCESSORY LIST	
			A-SL-11Ø5-Ø-Ø5	#	1	11Ø5 SOFTWARE LIST	
			A-PI-3700061-0-0	#	2	PACKAGING INSTRUCTION	
			B-MD-7409817-0-0	#	1	PLATE, CABLE CLAMP	
			B-MD-7409816-0-0	#	1	SHIPPING BRACKET	
			C-MD-7409818-0-0	#	1	BRACKET, CABLE CLAMP	
			B-IA-7409729-0-0	#	1	JUMPER, POWER	
			D-PS-1210945-0-0	#	4	SLIDES	
			B-IA-7409903-0-0	#	1	JUMPER, POWER	
			D-IA-7409533-1-0	#	1	COVER, SIDE	
			E-IA-5309816-0-0	#	1	CHASSSIS POWER SUPPLY	
			D-IA-7008726-0-0	#	1	TRANSFORMER ASSY	
			A-DC-5309414-0-0	#	1	SPECIAL DECAL (UL)	
X		2	D-UA-KY11-J-Ø	#	1	CONSOLE ASSY	
X			A-PL-KY11-J-Ø	#	2	CONSOLE ASSY (P.L.)	
			C-MD-7409534-0-0	#	1	ACTUATOR (REWORK)	
			B-IA-7409444-0-0	#	1	DETENT	
X			C-UA-BCØ8R-Ø3-Ø	#	1	I/O CABLE	
			B-IA-7409730-0-0	#	1	JUMPER, POWER	
			B-MD-7409867-0-0	#	1	EXTENDED LEAF REWORK (ACTUATOR)	
			B-MD-7409868-0-0	#	1	SWITCH ADAPTER PLATE	
		3	D-MD-7410799-0-0	#	1	BEZEL CONSOLE, REWORK	
			J-PS-1210992-0-0	#	1	BEZEL CONSOLE, CASTING	

CUSTOMER PRINT SET 11Ø5-Ø	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MECHANICAL				
		4	D-IA-7409431-0-0	#	1	PANEL CONTROL	
			C-SS-7409431-0-1	#	1	SILK SCREEN (MAGENTA)	
			C-SS-7409431-0-2	#	1	SILK SCREEN (BLACK) REAR	
			C-SS-7409431-0-3	#	1	SILK SCREEN (11Ø5) VERMILLON	
		5	C-PS-3611275-0-0	#	1	LOGO	
			A-SS-3611275-0-1	#	1	SILK SCREEN	
			A-SS-3611275-0-2	#	1	SILK SCREEN	
			A-SS-3611275-0-3	#	1	SILK SCREEN	
			A-SS-3611275-0-4	#	1	SILK SCREEN	
			A-SS-3611275-0-5	#	1	SILK SCREEN	
		6	A-PS-1210975-0-0	#	1	LOCK & CAM ASSY	
		7	E-IA-5409766-0-0	#	1	ETCH BOARD ASSY (11Ø5 CONSOLE)	
			K-CO-5409766-0-4	#	1	X-Y CO-ORDINATION HOLE LOCATION	
			D-MD-7409270-2-0	#	1	BRACKET, SWITCHES	
			D-PS-1210786-0-0	#	1	KNOB	
			D-SC-1210795-0-0	#	1	L.E.D. HOLDER	
			D-PS-1210848		1	SINGLE L.E.D. HOLDER	
		8	E-IA-5009765-0-0	#	1	ETCH BOARD	
		9	D-AD-7008843-0-0	#	1	WIRED ASSY (8K)	
			D-MD-5010051-0-0	#	1	SHEET, PROTECTION	
		10	C-IA-5409818-0-0	#	1	BACK PANEL ASSY (8K)	
			D-AH-5409818-0-5	#	1	ASSY/DRILLING HOLE	
			K-CO-5409818-0-4	#	1	X-Y CO-ORDINATE HOLE LOCATION	
			C-MD-7409473-0-0	#	1	BRKT, CONN BLOCK BOTTOM	
			C-MD-7409475-0-0	#	1	BAR, RIGHT SUPPORT	
			D-MD-7409471-0-0	#	1	BRKT CONN BLOCK TOP	
			E-PS-1210258-0-0	#	1	288 PIN CONN (H863)	
			D-PS-1210834-0-0	#	1	360 PIN CONN	
			C-MD-7409474-0-0	#	1	BAR, LEFT SUPPORT	
			C-MD-7409472-0-0	#	1	MOUNTING BAR	
			C-PS-1210932-0-0	#	1	CONNECTOR GUIDE	

CUSTOMER PRINT SET CODES

X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE: 16 BIT COMPUTER (PDP 11Ø5)

SHEET 4 OF 6

SIZE	CODE	NUMBER	REV
B	DD	11Ø5-Ø	L

DRB 108

CUSTOMER PRINT SET 1105-Ø	MFG SET	MECHANICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		11.	D-AD-7008843-0-0	#	1	WIRED ASSY (16K)	
			D-MD-5010051-0-0	#	1	SHEET, PROTECTION	
		12.	C-IA-5410035-0-0	#	1	BACK PANEL ASSY (16K)	
			C-MD-7409473-0-0	#	1	BRKT CONN BLOCK BOTTOM	
			C-MD-7409475-0-0	#	1	BAR, RIGHT SUPPORT	
			C-MD-7409472-0-0	#	1	MOUNTING BAR	
			D-MD-7409471-0-0	#	1	BRKT CONN BLOCK TOP	
			D-PS-1210834-0-0	#	1	360 PIN CONN BLOCK	
			E-PS-1210258-0-0	#	1	288 PIN CONN (H 863)	
			D-AH-5410035-0-5	#	1	ASSY/DRILLING HOLE	
			K-CO-5410035-0-4	#	1	X-Y CO-ORDINATE HOLE LOCATION	
			C-PS-1210932-0-0	#	1	CONNECTOR GUIDE	
			C-MD-7409474-0-0	#	1	BAR, LEFT SUPPORT	
		13.	D-IA-7409580-0-0	#	1	CARD GUIDE ASSY (L.H.)	
			D-IA-7409566-0-0	#	1	SUPPORT, LEFT GUIDE	
			D-MD-7409553-0-0	#	1	CARD GUIDE (REWORK)	
		14.	D-IA-7409581-0-0	#	1	CARD GUIDE ASSY (R.H.)	
			D-IA-7409462-0-0	#	1	SUPPORT, RIGHT GUIDE	
			D-PS-1210700-0-0	#	1	GUIDE, CARD	

CUSTOMER PRINT SET 1105-Ø	MFG SET	MECHANICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		[illegible]	[illegible]			[illegible] ASSY	
			[illegible]			[illegible] ASSY	
			[illegible]			[illegible] SUPPLY	
		16	E-IA-5409728-0-0	#	1	REGULATOR BOARD	
			K-CO-5409728-0-4	#	1	X-Y CO-ORDINATE HOLE LAYOUT	
			C-MD-5309779-0-0	#	1	CONTACT COMMON CAPACITOR	
			C-MD-5309781-0-0	#	1	CONTACT CAPACITOR	
			C-IA-53010126-0-0	#	1	HOLDER CAPACITOR	
			C-MD-5309942-0-0	#	1	SCR HOLDER	
			D-PS-1210596-0-0	#	1	HEAT SINK	
		17.	D-IA-7008820-0-0	#	1	HEADER CABLE ASSY	
		18	D-IA-5409949-0-0	#	1	D.C. DISTRIBUTION	
			K-CO-5409949-0-4	#	1	X-Y CO-ORDINATE HOLE LOCATION	
			D-AH-5409949-0-5	#	1	ASSY/DRILLING HOLE LAYOUT	
C		19	B-DD-BCØ5H-0	#	3	LINE SET	
			C-UA-BCØ5H-Ø-Ø	#	1	LINE SET BCØ5H (115)	
			C-UA-BCØ5J-Ø-Ø	#	1	LINE SET BCØ5J (230)	

TITLE		SIZE	CODE	NUMBER	REV
16 BIT COMPUTER (POP11Ø5)	SHEET 5 OF 6	B	DD	11Ø5-Ø	L

CUSTOMER PRINT SET	MFG. SET	MECHANICAL					
1105		FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		20.	B-DD-KD11-B	#	1	CENTRAL PROCESSOR	
			A-PL-KD11-B-0-0	#	1	CENTRAL PROCESSOR (PL)	
		21.	B-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY	
			A-PL-MM11-L-0-0	#	1	16 BIT 18 MIL MEMORY (PL)	
		22.	D-IA-7409768-0-0	#	1	PANEL, CONTROL	
			C-SS-7409768-0-1	#	1	SILK SCREEN	
			C-SS-7409768-0-2	#	1	SILK SCREEN	
			C-SS-7409768-0-3	#	1	SILK SCREEN	

CUSTOMER PRINT SET	MFG SET					
		FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.

TITLE		SIZE	CODE	NUMBER	REV
16 BIT COMPUTER (POP1105)	SHEET 6 OF 6	B	DD	1105-0	L

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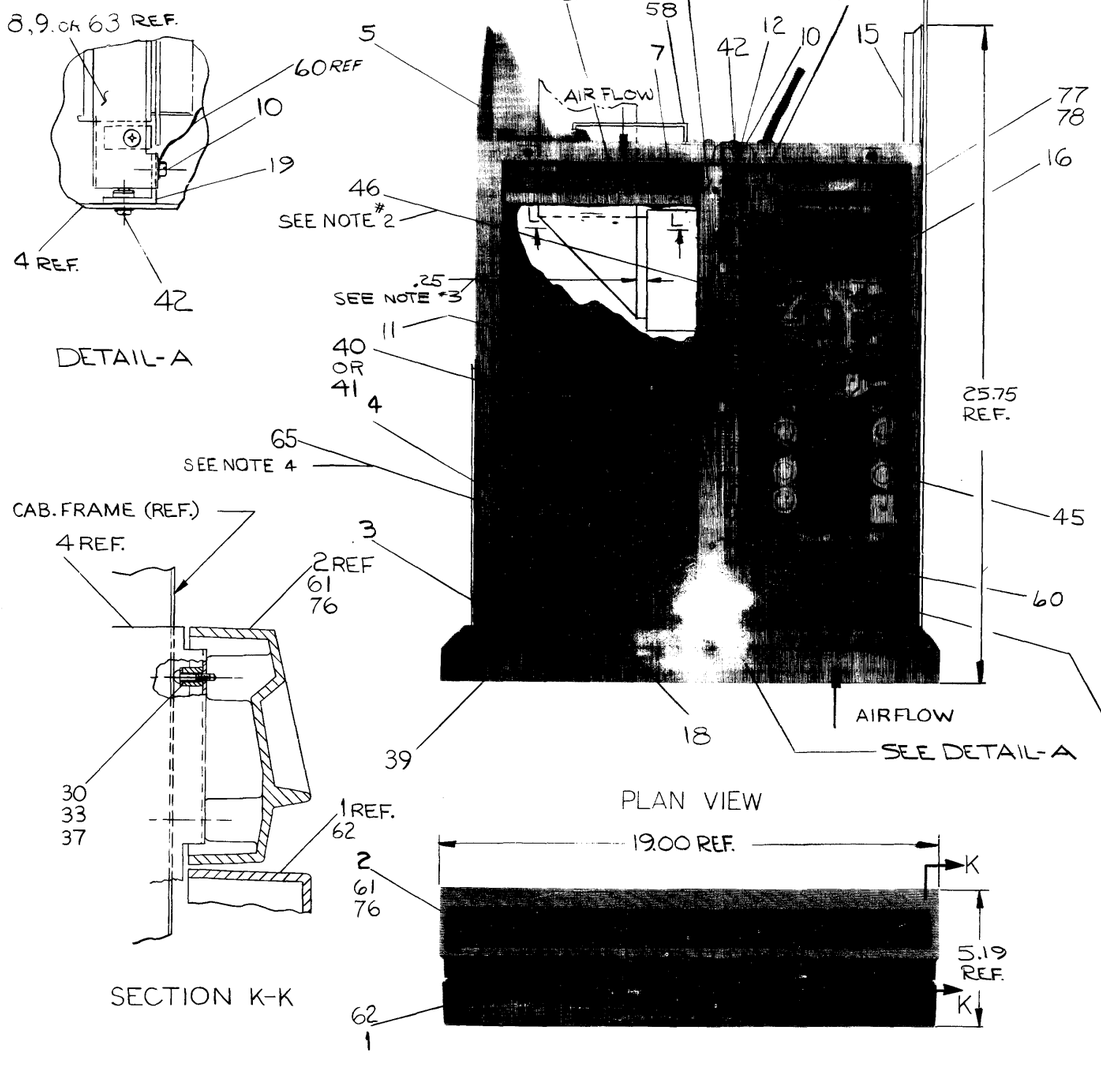

WIRE TABLE

PART NO.	COLOR	FROM HARNESS LEAD NO.	TO SYSTEM LOCATION	REMARKS
7008713	RED	J1	S1-2	VIEW E-E
	RED	J2	S1-1	
	VIO	J3	S1-6	
	BLK	J4	S1-5	
	RED	J12	H740 P.S. J3	THERMAL INTERLOCK
	RED	J11	H740 FAN	P.S. FAN TAB
	WHT	J10	H740 FAN	P.S. FAN TAB
		J6	P9	BACK OF CHASSIS
		J5	P8	BACK OF CHASSIS
		J9	TRANSFORMER P5	VIEW H-H
		P1	A.C. INPUT BOX J13	A.C. INPUT BOX
	RED	J7	11/05 FAN	CHASSIS FAN
7008713	WHT	J8	11/05 FAN	CHASSIS FAN
7008856		P1	H740 P.S. J2	P.S. MATE-N-LOCK
	VIO	8	BP-1	VIEW F-F
	RED	9	BP-3	
	YEL	10	BP-2	
	BLK	11	BP-4	
	BLU	12	BP-5	
	ORN	13	LOGIC POINT C@U1	+15
	BRN	14	LOGIC POINT C@U1	L+C LO
	BLK	15	BP-6	
7008856	RED	16	BP-7	
		TRANSFORMER P2	H740 P/S J1	VIEW H-H & POWER CARD TO TRANSFORMER
7409729-2	RED	B.P.-7	CONSOLE-+5	CONSOLE TO BACK PLANE & VIEW D-D
7409729-1	BLK	B.P.-6	CONSOLE-GND	CONSOLE TO BACK PLANE & VIEW D-D
7409903	BLK	B.P.-6	BACK PLANE-GND	BACK PLANE TO CHASSIS - DETAIL-A

THIS CONNECTION IS SHOWN 90° OUT OF POSITION FOR CLARITY.

NOTES:

1. INSTALLATION OF I/Ø CABLE, WHICH IS ALREADY CONNECTED TO ITEM #(2), CONSOLE ASSY, IS AS FOLLOWS.
   RUN I/Ø CABLE DOWN INNER SIDE OF ITEM #(18) CARD GUIDE ASSY SLIDE CABLE THROUGH OPENING ON BOTTOM OF ITEM #(18) CARD GUIDE ASSY, TO ONE OF THE THREE EXIT LOCATIONS FOR THE CABLE, AFTER EXIT LOCATION IS DECIDED, FOLD CABLE 90° AND HOLD IN PLACE BY USING ITEM # 35 (CLAMP) AND ITEM #46 (TAPE) AS SHOWN IN VIEW C-C.
2. USE TAPE (ITEM #46) TO HOLD HEADER CABLE ASSY TO CHASSIS.
3. FOLD CABLE 90° AS SHOWN TO INSURE CORRECT LOCATION IN CABLE CLAMP.
4. ITEM #65 (ELECTROMAGNETIC SHIELD) GOES BETWEEN CENTRAL PROCESSOR BOARDS & MEMORY BOARDS.
5. THE 6 PIN MATE-N-LOCK CONN (MALE) ON TRANSFORMER (ITEM #67) IS TO REMAIN ON FLOOR OF CHASSIS.
6. CONNECT 3 PIN-MATE-N LOCK CONN. (FEMALE) ON TRANSFORMER (ITEM #67) TO 3 PIN MATE-N-LOCK CONN. (MALE) ON REGULATOR BOARD (ITEM #75) (SECTION P-P).
7. 2 PIN MATE-N-LOCK TO BE SECURED TO HEAT SINK FOR HANDLING.

REV	ORIG	CHK	CHANGE NO	DATE
A	Pat	Pat	0117	11/05
B	Peter	Pat	0130	11/05-0
C	M TITLBAUM		ALT	10-5-72
D	G GRAHAM		C35	11/05-0
E	Peter	Pat	0239	11/05
F	M TITLBAUM		0346	11/05-0
G	Peter	Pat	0341	11/05-0

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 11Ø5		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 Pat Wild DATE 2-24-72
CHK'D J. Teschner DATE 4-19-72
ENG Alan Lyons DATE 5-15-72
PROJ ENG. DATE
PROD. Peter DATE 5/17/72
NEXT HIGHER ASSY. B-DD-1105-Ø
SCALE NONE
SHEET 1 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 16 BIT COMPUTER ASSY (PDP 11Ø5)

SIZE D | CODE UA | NUMBER 11Ø5-Ø-Ø | REV H
DIST

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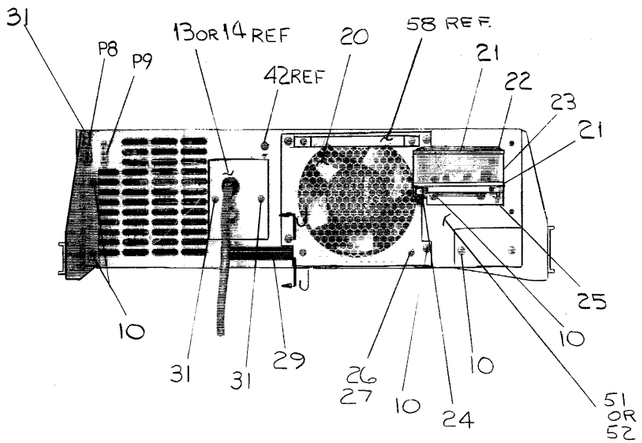
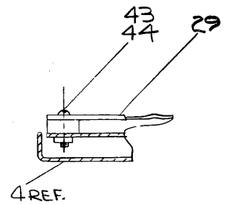
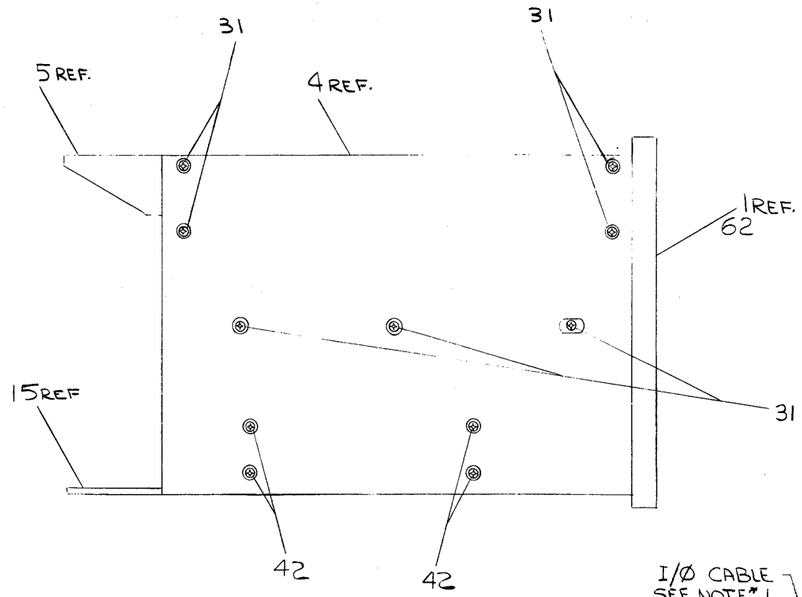
REAR VIEW

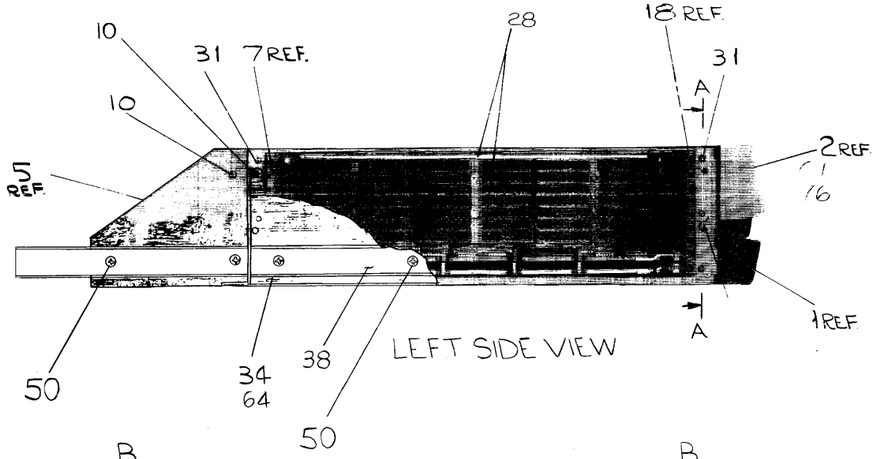




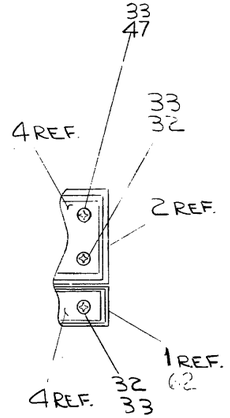
SECTION J-J



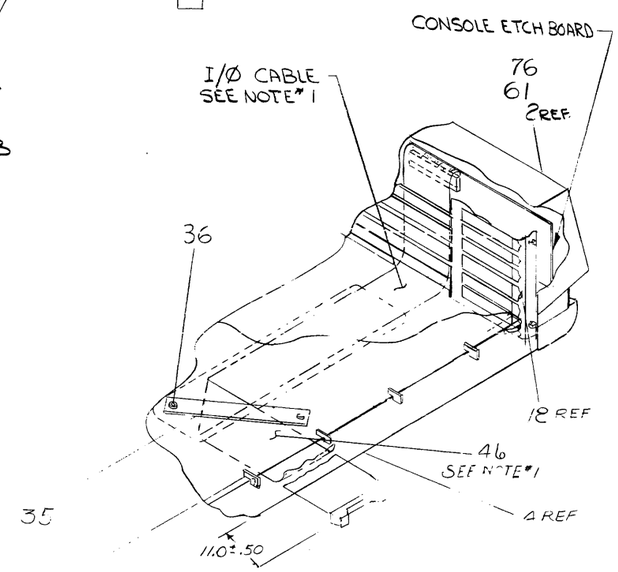
VIEW B-B



LEFT SIDE VIEW



VIEW A-A



VIEW C-C

B

B

— SEE VIEW C-C

REVISIONS	REV	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 1105		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX .005 XX .02 X .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN.		DATE 8-29-72
CHK'D. C. Teschner		DATE 9-19-72
ENG. William Lyons		DATE 5-15-72
PROJ. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASSY. B-DD 1105-Ø

SCALE NONE

SHEET 2 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 16 BIT COMPUTER ASSY (PDP1105)

SIZE	CODE	NUMBER	REV.
D	UA	1105-C-Ø	P

DIST

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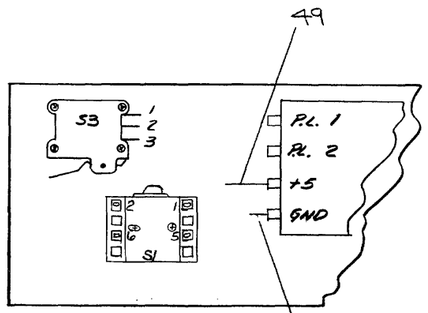
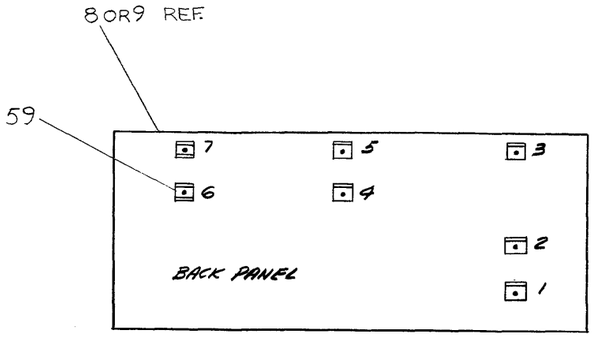
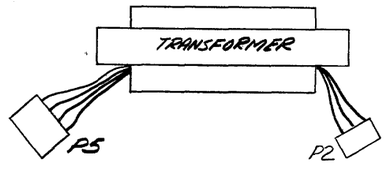


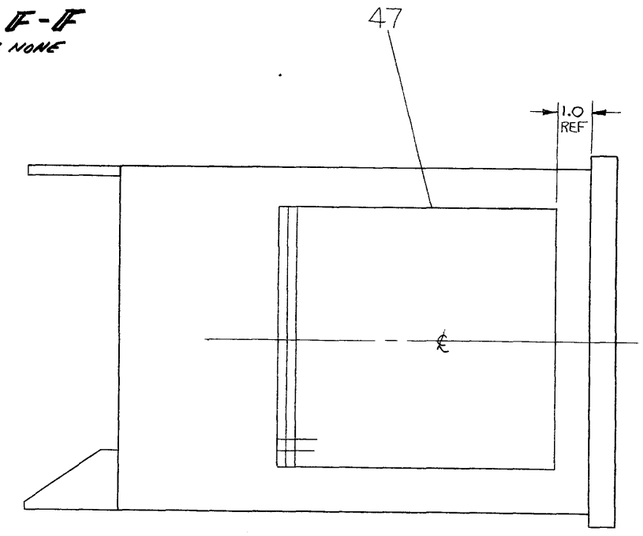
VIEW D-D
SCALE- NONE



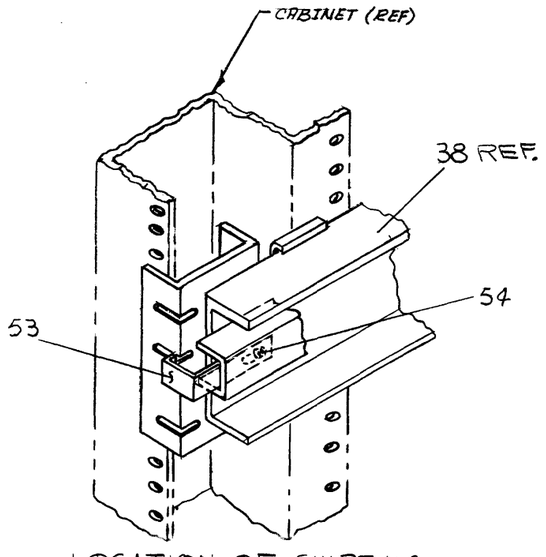
VIEW F-F
SCALE : NONE



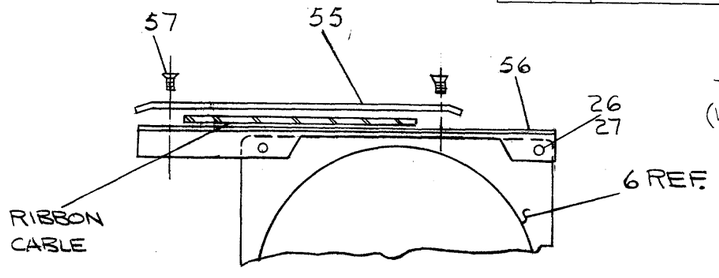
VIEW H-H
SCALE: NONE



TOP VIEW
(WITH TOP COVER)



LOCATION OF SHIPPING BRACKETS WHEN UNIT IS SUPPLIED IN CAB. (BOTH SIDES)



VIEW L-L
SCALE: NONE

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 1105		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. [signature] DATE 3-27-72
CHK'D. C. Teschner DATE 4-14-72
ENG. [signature] DATE 5-15-72
PROG. EASE [signature] DATE 6-6-72
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 16 BIT COMPUTER ASSY (PDP 1105)

NEXT HIGHER ASSY: B-00-1105-0
SCALE: NONE
SHEET 3 OF 5

SIZE	CODE	NUMBER	REV.
D	UA	1105-0-0	H

DIST.

DEC FORM NO. DRD 100-A

SIZE D UA NUMBER 1105-0-0 REV H

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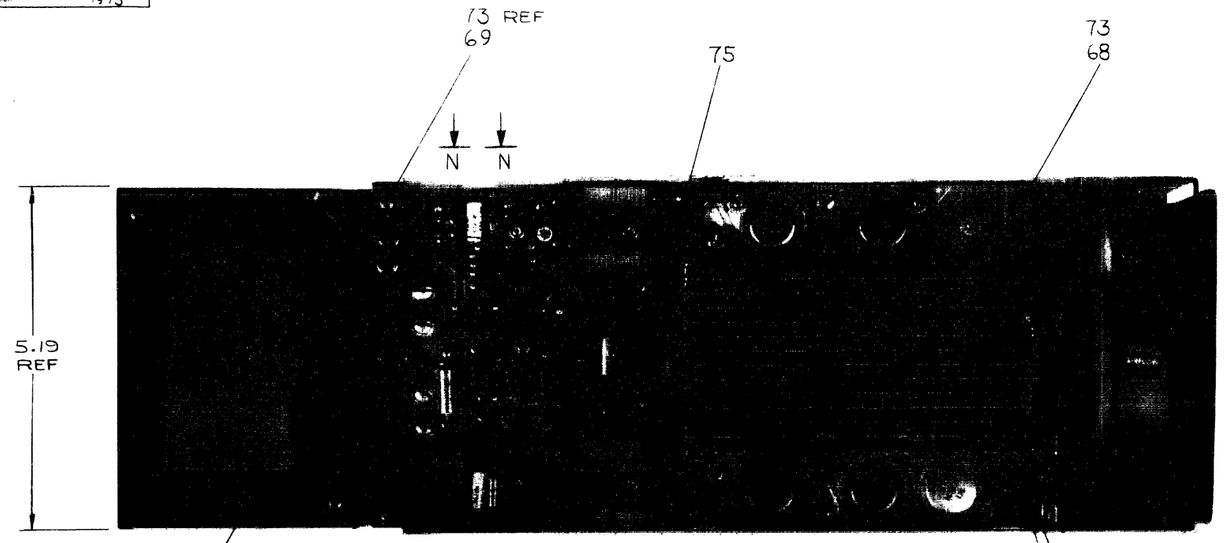

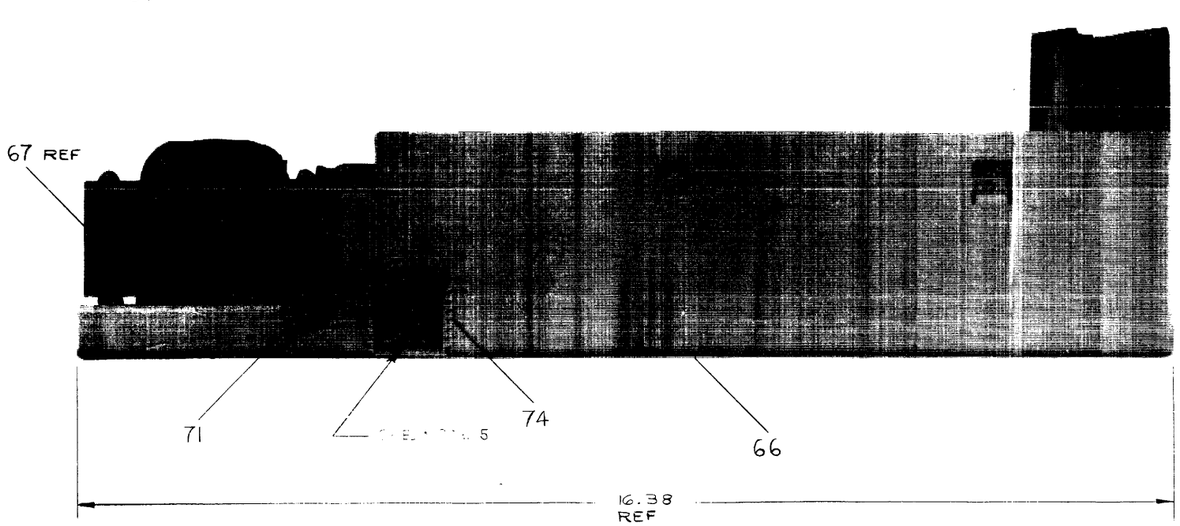

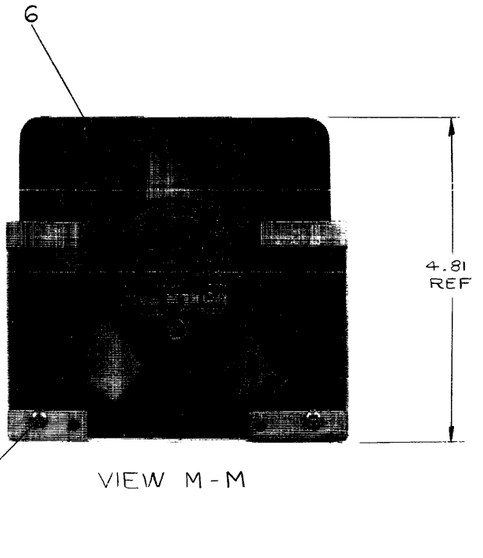

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX .005, XX .02, X .1 — ANGLES: 1.0°
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓

DRN J. CAHILL	DATE 2.24.72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK C. TESCHNER	DATE 4-14-72	
ENG A. LYONS	DATE 5-15-72	
PROJ ENG B. WEEKS	DATE 5-16-72	
PROD R. PETERSON	DATE 5-16-72	

TITLE: 16 BIT COMPUTER ASSY (PDP 1105)

MATERIAL	NEXT HIGHER ASSY	SIZE	CODE	NUMBER	REV.
SEE PART LIST	BDD-1105-0	D	UA	1105-0-0	H
FINISH —	SCALE —				
	SHEET 4 OF 5	DIST			

REVISIONS: REV. | CHANGE NO | CHK

SIZE D | CODE UA | NUMBER 1105-0-0 | REV H

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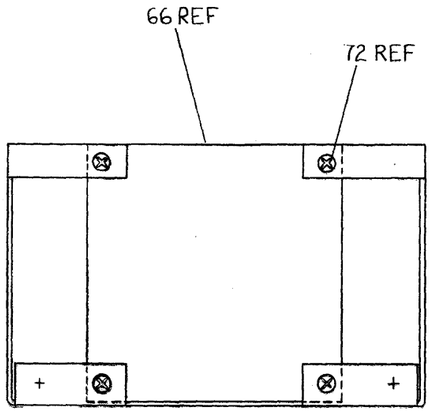
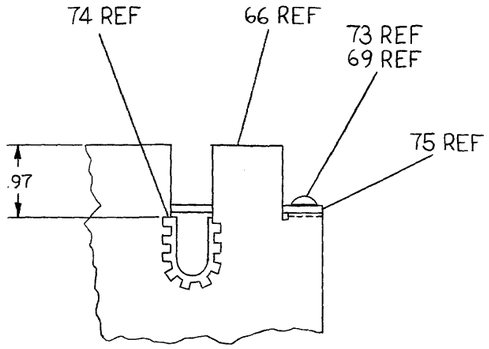
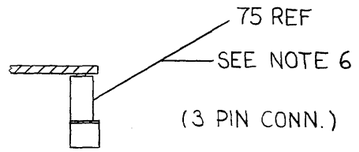


VIEW M-M



VIEW N-N



SECTION P-P

FIRST USED ON OPTION/MODEL: 1105	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS XXX ± .005, XX ± .01, X ± .1; ANGLES ± 0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓. MATERIAL —. FINISH —.

DRN. J. CAHILL	DATE 2-24-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. C. TESCHNER	DATE 4-14-72	
ENG. A. LYONS	DATE 5-15-72	
PROJ. ENG. B. WEEKS	DATE 5-16-72	
PROD. R. PETERSON	DATE 5-16-72	

TITLE: 16 BIT COMPUTER ASSY (PDP 1105)

NEXT HIGHER ASSY.: B-DD-1105-0

SCALE: NONE

SHEET 5 OF 5

SIZE	CODE	NUMBER	REV.
D	UA	1105-0-0	H

DIST.

REV.	REVISIONS	CHANGE NO.	CHK

BRUNING 40-107 15M8

DEC FORM NO. DRD 100-A

SIZE	CODE	NUMBER	REV.
D	UA	1105-0-0	H

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ITEM NO.	DWG. NO./PART NO.	DESCRIPTION	QUANTITY / VARIATION															
			11Ø5-PA	11Ø5-PB	11Ø5-PE	11Ø5-PF	11Ø5-HA	11Ø5-HB	11Ø5-JA	11Ø5-JB	11Ø5-KA	11Ø5-KB	11Ø5-LA	11Ø5-LB	11Ø5-MA	11Ø5-MB	11Ø5-PA	11Ø5-PB
1	D-PS-1210974-0-0	1.75 FILLER STRIP	1	1	1	1	1	1	1	1	1	1	1	1	X	X	X	X
2	D-UA-KY11-J-Ø	CONSOLE ASSY	X	X	X	X	1	1	1	1	1	1	1	1	X	X	X	X
3	C-MD-7409460-Ø-Ø	COVER, TOP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	E-IA-7409458-Ø-Ø	CHASSIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	D-IA-7409459-Ø-Ø	BRACKET,CHASSIS SLIDE (L.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1209403	FAN, SUPER BOXER	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	D-IA-7409580-Ø-Ø	CARD GUIDE ASSY (L.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	C-IA-5409818-Ø-Ø	BACK PANEL ASSY (8K)	1	1	1	1	X	X	X	X	1	1	1	1	X	X	X	X
9	C-IA-5410035-Ø-Ø	BACK PANEL ASSY (16K)	X	X	X	X	1	1	1	1	X	X	X	X	X	X	X	X
10	9009191	SCR PHL HD PAN NYLOK *8-32 x 1/4 LG	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
11	D-IA-7008856-Ø-Ø	HARNESS (D.C.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	C-IA-7410777-0-0	RET. CONN. BLOCK (L.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	C-UA-BCØ5H-Ø-Ø	LINE SET BCØ5H (115V/60HZ)	1	X	1	X	1	X	1	X	1	X	1	X	1	X	1	X
14	C-UA-BCØ5J-Ø-Ø	LINE SET BCØ5J (230V/50HZ)	X	1	X	1	X	1	X	1	X	1	X	1	X	1	X	1
15	C-IA-7409449-Ø-Ø	BRACKET,CHASSIS SLIDE (R.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	E-IA-7008713-Ø-Ø	AC INPUT HARNESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17																		
18	D-IA-7409581-Ø-Ø	CARD GUIDE ASSY (R.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	C-IA-7410778-Ø-Ø	RET. CONN. BLOCK (R.H.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	D-IA-7409463-Ø-Ø	FAN MTG PLATE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	C-MD-7409479-Ø-Ø	PLATE, PRESSURE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
22	9006047-1	SCR PHL HD PAN *8-32 x 2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	D-PS-1210931-Ø-Ø	BLOCK, CABLE RETAINING	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	C-MD-7409480-Ø-Ø	SWIVEL NUT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	D-MD-7409482-Ø-Ø	PLATE LOWER RETAINER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26	9006024-1	SCR PHL HD PAN *6-32 x 1/2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
27	9009165	FAN CLIP	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
28	C-PS-1210698-Ø-Ø	GUIDE CARD CENTER	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
29	C-IA-7008820-Ø-Ø	HEADER CABLE ASSY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	9006074-3	SCR PHL HD TRUSS #10-32 x 5/8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
31	9009186	SCR PHL HD PAN NYLOC #6-32 x 5/16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
32	9006071-3	SCR PHL HD TRUSS #10-32 x 3/8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
33	9007651	WASHER EXT TOOTH #10	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
34	D-IA-7409533-Ø-Ø	COVER SIDE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	C-MD-7409591-Ø-Ø	CLAMP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
36	9009173	SCR BINDER HD NYLON #8-32 x 1/4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
37	9008074	SPACER 1/2" AF x 5/16-#10	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
38	1210945	CHASSIS SLIDE	X	1	1	1	1	1	1	1	1	1	1	1	X	X	X	X
39	9008196	CLIP-ON RECPT.-SOUTHCO #82-47-104-15	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
40	D-MU-11Ø5-Ø1-0	MODULE UTILIZATION (8K)	1	1	1	1	X	X	X	X	1	1	1	1	1	1	1	1
41	D-MU-11Ø5-Ø2-0	MODULE UTILIZATION (16K)	X	X	X	X	1	1	1	1	X	X	X	X	X	X	X	X
42	9009192	SCR PHL HD PAN NYLOC #8-32 x 3/8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
43	9006005-1	SCR PHL HD PAN #2-56 x 1/2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

REVISIONS

REV.	CHANGE NO.	CHK
F	11/05-00040 REVISED & REDRAWN 1-24-72 S. Langevin	PW
H	1105-00041 M. TITLEBAUM 2-23-73	PW

G. CRAHAM 2-8-73

FIRST USED ON OPTION/MODEL
11/Ø5

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.	J. CAHILL	DATE 2/25/2
CHK'D.	C. TESCHNER	DATE 5/2/2
ENG.	A. LYONS	DATE 5/15/2
PROJ. ENG.	B. WEEKS	DATE 5/16/2
PROD.	R. PETERSON	DATE 5/16/2

NEXT HIGHER ASSY.
D-UA-1105-0-0

SCALE —

SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
16 BIT COMPUTER
ASSY (PDP 11Ø5)

SIZE	CODE	NUMBER	REV.
C	PL	11Ø5-0-0	H

DIST.

REV. H
SIZE C CODE PL NUMBER 11Ø5-0-0

DEC FORM NO.
DRC 110

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ITEM NO.	DWG. NO./PART NO.	DESCRIPTION	QUANTITY / VARIATION															
			1105-PA	1105-PB	1105-PE	1105-PF	1105-HA	1105-HB	1105-JA	1105-JB	1105-KA	1105-KB	1105-LA	1105-LB	1105-MA	1105-MB	1105-PA	1105-PB
44	9000781	WASHER INT TOOTH #8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
45	9008447	CABLE CLAMP (1/4)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
46	9009210-01	SCOTCH BRAND ADHESIVE TRANSFER 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
47																		
48	7409729-01	JUMPER POWER (BLACK)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
49	7409729-02	JUMPER POWER (RED)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50	9009224	SCR SLOT PAN HD #8-32 x 1/4 LG	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
51	A-DC-5309900-0-0	POWER CONTROL DECAL (230V)	X	1	X	1	X	1	X	1	X	1	X	1	X	1	X	1
52	A-DC-5309899-0-0	POWER CONTROL DECAL (115V)	1	X	1	X	1	X	1	X	1	X	1	X	1	X	1	X
53	B-MD-7409818-0-0 *	SHIPPING BRACKET	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
54	9008443-1	SCR PHL HD PAN #8-32 X 1/4 THD CUTTING	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
55	B-MD-7409817-0-0	PLATE, CABLE CLAMP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
56	C-MD-7409818-0-0	BRACKET CABLE CLAMP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
57	9006011-2	SCR PHL HD FLAT #4-40 X 3/8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
58	B-MD-7409828-0-0	BRACKET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
59	9007194	QUIK DISCONNECT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60	7409903	JUMPER POWER (BLACK)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
61	D-UA-KY11-JC-0	CONSOLE ASSY	X	X	X	X	X	X	X	X	X	X	X	1	1	1	1	1
62	D-MD-7409978-0-0	BOTTOM TRIM	X	X	X	X	X	X	X	X	X	X	X	1	1	1	1	1
63	D-AD-7009119-0-0	BACK PANEL ASSY	X	X	X	X	X	X	X	X	X	X	X	1	1	1	1	1
	* USED ONLY WHEN INSTALLED IN CABINET																	
64	D-IA-7409533-1-0	COVER SIDE	X	X	X	X	X	X	X	X	X	X	X	1	1	1	1	1
65	1700021-0	ELECTROMAGNETIC SHIELD 1 OZ. CU	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
66	E-IA-5309816-0-0	CHASSIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
67	D-IA-7008726-0-0	TRANSFORMER MMC 415° -1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
68	9006022-1	SCR PHL PAN HD #6-32 X.44 LG	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
69	9006020-1	SCR PHL PAN HD #6-32 X.25 LG	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
70	9006031-1	SCR PHL PAN HD #6-32 X1.75 LG	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
71	9006563	NUT KEPS #8-32	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
72	9006560	NUT KEPS #6-32	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
73	9007649	WASHER EXT. LOCK #6-32	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
74	9007035	GROMMET CATERPILLAR	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
75	E-IA-5409728-0-0	REGULATOR BOARD	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
76	D-UA-KY11-JF-0	CONSOLE ASSY	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
77	A-DC-5309413-0-0	SPECIAL DECAL (UL)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
78	A-DC-5309414-0-0	SPECIAL DECAL (UL)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

REVISIONS | REV. | CHANGE NO. | CHK

FIRST USED ON OPTION/MODEL
11/05

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

		DATE
DRN.	J. CAPUTO	3/25/7
CHK'D.	D. FISCHETTI	3/27
ENG.	[illegible]	[illegible]
PROJ. ENG.	R. WEEKS	[illegible]
PROD.	R. PETERSON	[illegible]

NEXT HIGHER ASSY.
[illegible]
SCALE
SHEET [illegible] OF [illegible]

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
[illegible] COMPUTER
ASSY PDP [illegible]

SIZE	CODE	NUMBER	REV.
C	PL	[illegible]	H

DIST.

REV. H
NUMBER 1105-0-0
SIZE C CODE PL

DEC FORM NO.

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE	
D.G. DIRECTORY	B-DD-BCØ5-Ø
LINE SET 115V	C-UA-BCØ5H-Ø-Ø
LINE SET 230V	C-UA-BCØ5J-Ø-Ø
A.C INPUT BOX	D-UA-H4ØØ-Ø-Ø
A.C INPUT BOX (P.L)	A-PL-H4ØØ-Ø-Ø
PWR CONTROL BD. 115V	C-IA-5409324-Ø-Ø
PWR CONTROL BD. 230V	C-IA-5409329-Ø-Ø

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET TYPE
VARIATION	TITLE	BCØ5H-1
BCØ5H	LINE SET 115VAC 7 AMP	X
BCØ5J	LINE SET 230VAC 5 AMP	X

REVISIONS

REV	CHG. NO.	DATE

USED ON OPTION/MODEL

11/Ø7	

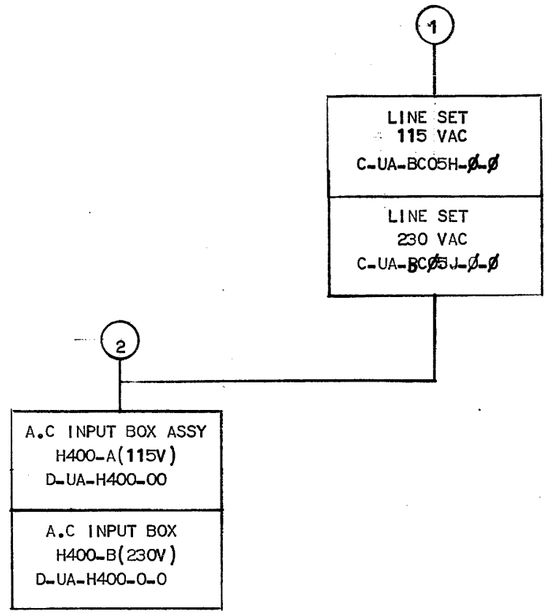
DRN. D. FONTAINE	DATE 4/6/72	TITLE LINE SET
CHK'D.	DATE 4-10-72	
PROJ ENG.	DATE 4-18-72	
PROD.	DATE 4/22	
FIELD SERV.	DATE 4/24	
SHEET 1 OF 3		

SIZE	CODE	NUMBER	REV
B	DD	BCØ5H-Ø	

DIST

DRB 106

DEC-11-DRBA-D (3251) 1069 : N8/71



TITLE		SIZE	CODE	NUMBER	REV
LINE SET	SHEET 2 OF 3	B	DD	BCØ5H-Ø	

CUSTOMER PRINT SET							ELECTRICAL							CUSTOMER PRINT SET							MECHANICAL						
BCØ5-H-1						MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.		BCØ5-H-1						MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.	
														X							1.	C-UA-BCØ5H-Ø-Ø		1	LINE SET 115V 7 AMP	BCØ5H	
														X								C-UA-BCØ5J-Ø-Ø		1	LINE SET 230V 5 AMP	BCØ5J	
X							2.	C-IA-5409824-0-0		1	POWER CONTROL BD 115V	H400															
X								C-IA-5409825-0-0		1	POWER CONTROL BD 230V	H400															
														X							2.	D-UA-H4ØØ-Ø-Ø		1	AC INPUT BOX	H4ØØ	
														X								A-PL-H4ØØ-ØØØ		1	A.C INPUT BOX PARTS LIST	H4ØØ	
																						D-IA-5309845-0-0		1	BOX	H4ØØ	
																						C-MD-5309849-0-0		1	COVER	H4ØØ	
																						A-DC-5309899-0-0		1	PWR CONTROL DECAL 115V	H4ØØ	
																						A-DC-5309900-0-0		1	PWR CONTROL DECAL 230V	H4ØØ	

TITLE		SIZE	CODE	NUMBER	REV
LINE SET	SHEET 3 OF 3	B	DD	BCØ5H-Ø	

DRB 108

DEC - 16- (325)-1062-2A-R272

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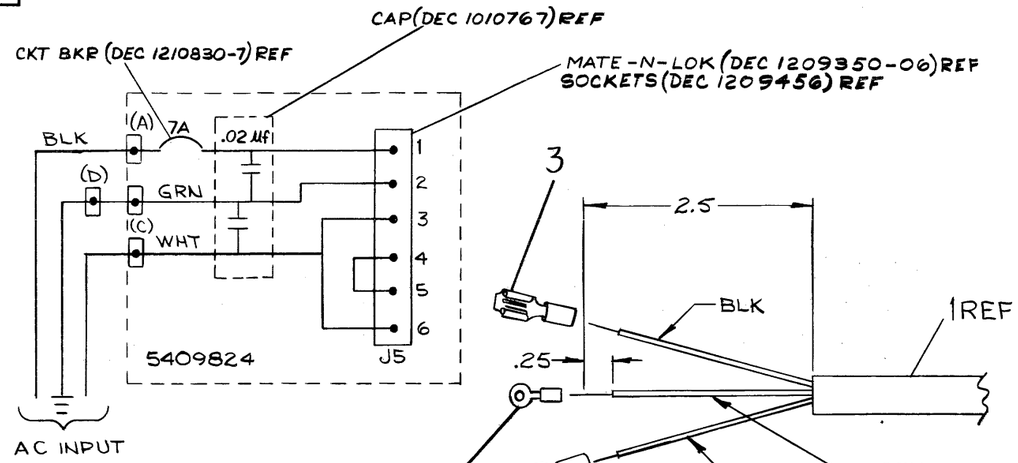

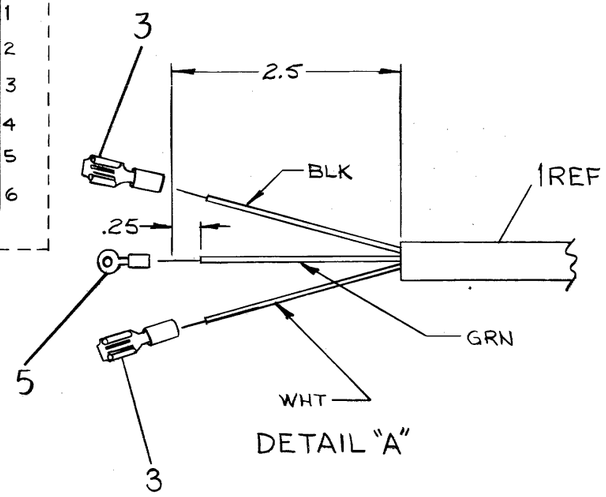

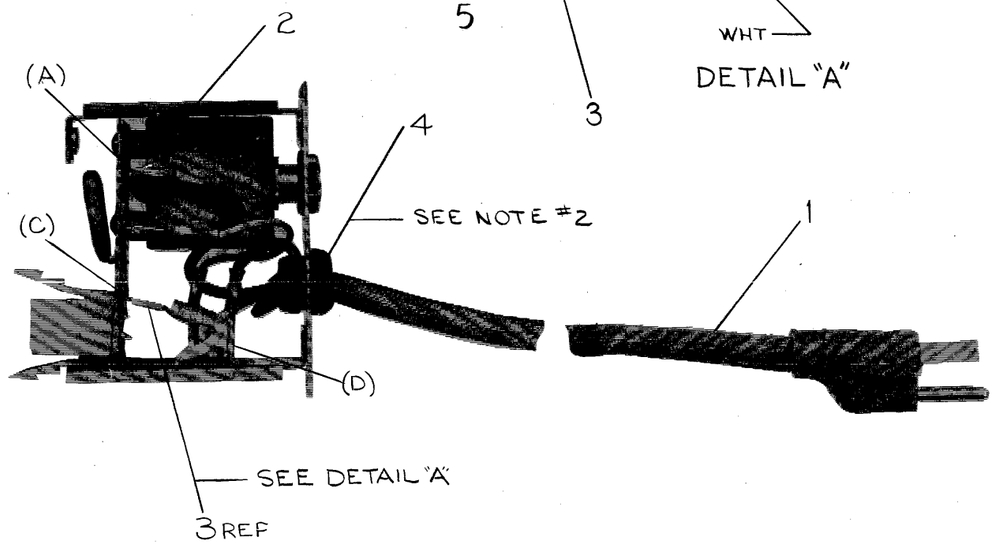

SHOWN WITHOUT COVER

NOTES:

1. CONNECT ITEM #1 (POWER CORD) AND ITEM #2 (AC INPUT BOX) PER CIRCUIT SCHEMATIC.
2. FOR INSTALLATION USE HEYCO #29 STRAIN RELIEF PLIERS

ITEM NO.	QTY.	DESCRIPTION	PART NO.
5	1	SOLDER CONN ARKLESS	9007929-0
4	1	STRAIN RELIEF SR-6N3-4	9008492-2
3	2	SOLDERLESS CONN. ARKLESS	9007919
2	1	AC INPUT BOX H400A	D-UA-H400-0-0
1	1	POWER CORD 120V	170015-6

PARTS LIST

REV.	REVISIONS	CHK
A	CHANGE NO. BC05H-00001	RW
B	BCC5H-00002	RW
C	H400-00002	RW
D	BC05H-00003	PM
E	R. BURTON	

FIRST USED ON OPTION/MODEL: 11/05

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DRN.	T. Guillin	12-27-71
CHK'D		1-4-72
ENG.	David DeMarcello	1-4-72
PROJ. ENG.		1-7-72
PROD.	RK Peterson	1/7/72

NEXT HIGHER ASSY.

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINE SET 115VAC 7AMP

SIZE	CODE	NUMBER	REV.
C	UA	BC05H-0-0	D

DIST.

DEC FORM NO. DRC 100-A

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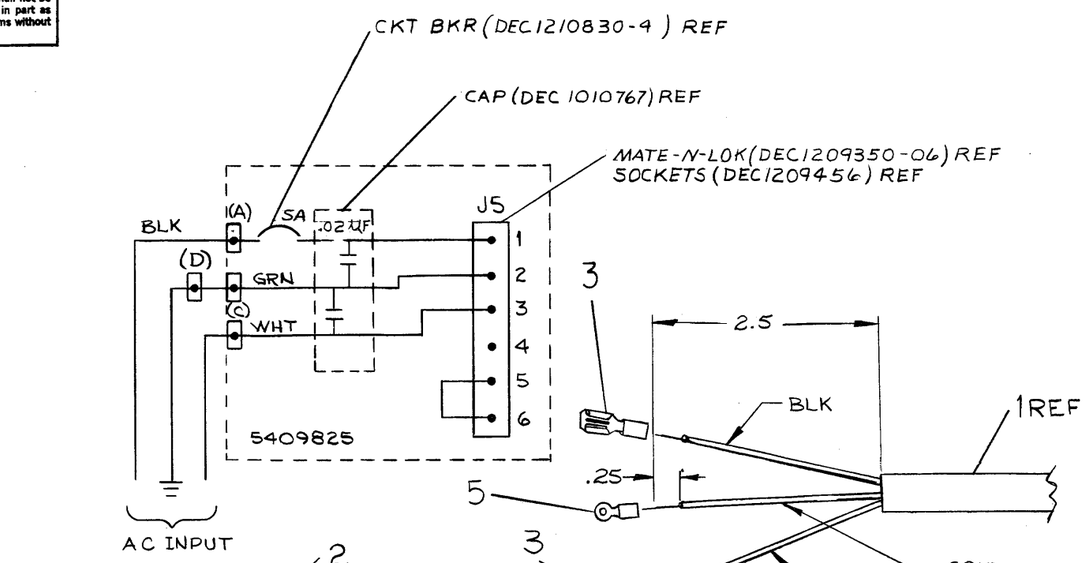
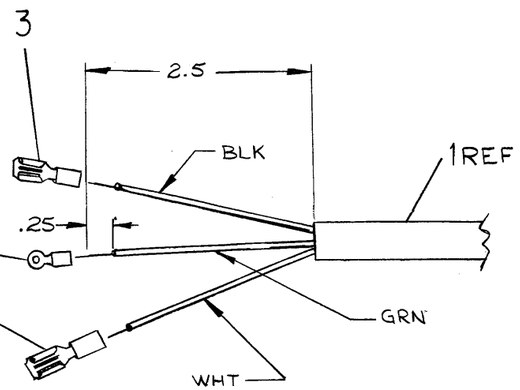
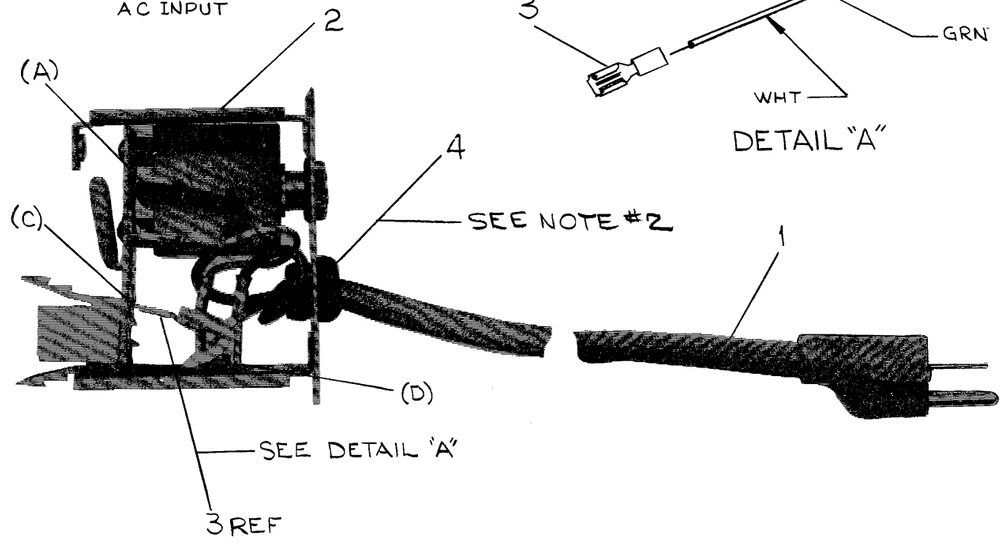
NOTES:

1. CONNECT ITEM #1 (POWER CORD) AND ITEM #2 (AC INPUT) PER CIRCUIT SCHEMATIC.
2. FOR INSTALLATION USE HAYCO #29 STRAIN RELIEF PLIERS.





DETAIL "A"



SHOWN WITHOUT COVER

ITEM NO.	DESCRIPTION	PART NO.	QTY.
1	SOLDER CONN ARKLESS	9007929-0	5
2	GROMMET HEYCO SR-6N3-4	9008492-2	4
3	SOLDER CONN ARKLESS	9007919	1
4	AC INPUT BOX H400B	D-UA-H400-0-0	2
5	POWER CORD 240V	1700016-6	1

PARTS LIST

FIRST USED ON OPTION/MODEL: 11/05

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 X = 1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DRN.	T. Guillen	12-27-71
CHK'D	D. Fontaine	1-4-72
ENG.	David DeMoranville	1-4-72
PROJ ENG.	Ronald Hawkins	1-7-72
PROD	R.K. Peterson	1/7/72

NEXT HIGHER ASSY.

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINE SET 230V AC 4 AMP

SIZE	CODE	NUMBER	REV.
C	UA	BC05J-0-0	D

DIST.

REVISION:	CHK	CHANGE NO.	REV.
		BC05J-0[illegible]001	A
	Mdemarville 3-22-72		
	WOLFF		
		H400-00002	B
		5-25-72	
	R. BURTON		
		BC05J-00002	C
	R. BURTON	11-2-72	
		BC05J-00003	D
	R. BURTON	12-20-72	
		1-2-73	

DEC FORM NO. DRC 100-A

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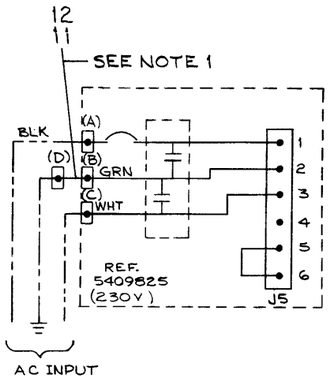
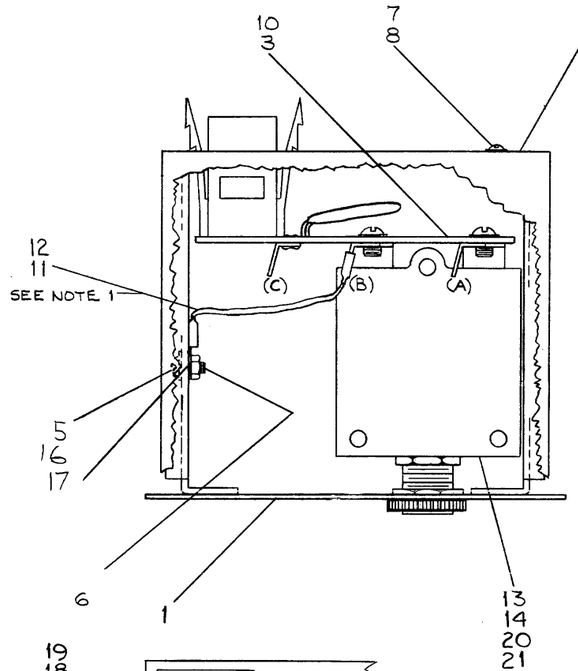
LEGEND		
NUMBER	VARIATION	USED ON
H400 - A	115 VAC 7AMP	BCØ5H
H400 - B	230 VAC 4AMP	BCØ5J
H400 - C	115 VAC 10AMP	BCØ5U
H400 - D	230 VAC 5AMP	BCØ5T

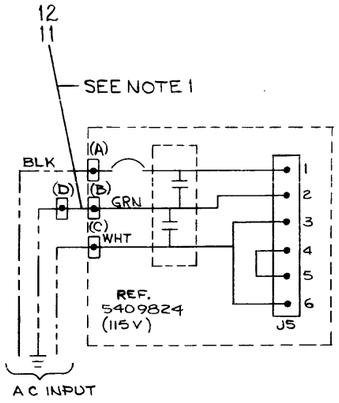
NOTES:

1. ITEM #11 (WIRE) AND TWO OF ITEM #12 (FASTON TABS) ARE TO BE CONNECTED FROM POINT D TO POINT B.

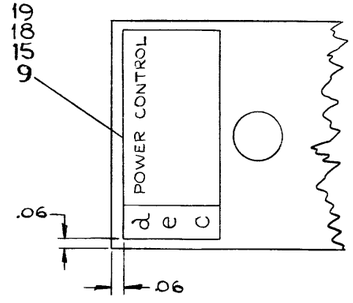


SEE LEGEND





SEE LEGEND



REVISIONS	CHK	CHANGE NO.	REV.
		H400-00002	A
		H400-00003	B
		H400-00004	C
		H400-00005	D

R. BURTON	5-25-72	
R. BURTON	5-31-72	
Secretary		
R. BURTON	11-9-72	
R. BURTON	12-21-72	
R. BURTON	1-3-73	
T. QUILLIN	1-18-73	
R. BURTON	2-8-73	

DEC FORM NO. DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
D-UA-BCØ5H-Ø-Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. T. Quillin	DATE 12-23-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD. R. Peterson	DATE 1-9-72	
ENG. David DeMoranville	DATE 1-9-72	
PROJ. ENG. Ronald Howe	DATE 1-7-72	
PROD. R.K. Peterson	DATE 1/7/72	

TITLE: AC INPUT BOX ASS'Y

NEXT HIGHER ASSY. D-UA-BCØ5H-Ø-Ø

SCALE —

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	UA	H4ØØ-Ø-Ø	D

DIST.

SIZE D CODE UA NUMBER H4ØØ Ø Ø REV D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY TYRONE QUILLIN	CHECKED L. Delaire	SECTION 1
DATE 12-1-71	DATE 1-4-72	
ENG David DeMoranville	PROD R.K. Peterson	ISSUED SECT. 1
DATE 1-4-72	DATE 1/7/72	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H400-A (115V)	H400-B (230V)	H400 C (115V)	H400 D (230V)
1	D-IA-5309845-0-0	BOX	1	1	1	1
2	C-MD-5309849-0-0	COVER	1	1	1	1
3	C-IA-5409825-0-0	POWER CONTROL BOARD (230V)	-	1	-	1
4	~~9007113~~	~~DOUBLE FASTAB~~	~~1~~ 1	-	-	
5	9006011-1	SCR PHL PAN HD #4-40 x 3/8 LG	1	1	1	1
6	9006557	KEP NUT HEX HD #4-40	1	1	1	1
7	9006633	WASHER INT. #6	1	1	1	1
8	9006020-1	SCR PHL PAN HD #6-32 x ¼ LG	1	1	1	1
9	A-DC-5309899-0-0	PWR CONTROL DECAL 115V	1	-	-	-
10	C-IA-5409824-0-0	POWER CONTROL BOARD (115V)	1	-	1	-
11	9107360-55	#18 AWG STRD ~~TEF INS~~ (GRN 3 IN.LG)	1	1	1	1
12	9007917	FASTON TABS	1	1	1	1
13	1210830-4	CRK BREAKER (WOOD 4 AMP)	-	1	-	-
14	1210830-7	CRK BREAKER (WOOD 7 AMP)	1	-	-	-
15	A-DC-5309900-0-0	PWR CONTROL DECAL (230V)	-	1	-	-
16	9006632	WASHER # 4 INTERNAL TOOTH	1	1	1	1
17	9007929-01	CRIMP-ON EYELET	1	1	1	1
18	A-DC-7410727-0-0	PWR CONT DECAL	-	-	1	-
19	A-DC-7410726-0-0	PWR CONT DECAL	-	-	-	1
20	1210830-5	CKT BREAKER (WOOD 5 AMP)	-	-	-	1
21	1210830-10	CKT BREAKER (WOOD 10 AMP)	-	-	1	-

TITLE AC INPUT BOX ASS'Y	ASSY NO. D-UA-H4ØØ-Ø-Ø	SIZE A	CODE PL	NUMBER H4ØØ-Ø-Ø	REV D
	SHEET 1 OF 1	DIST. 6			

DEC FORM DEC 16-(525)-1051-N870
DRA 110

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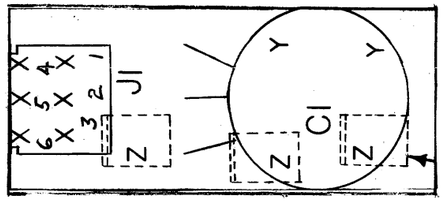
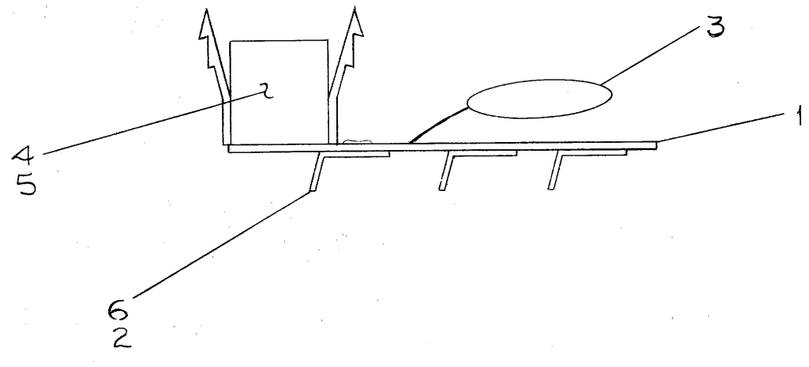
NOTES:

1. FOR CIRCUIT SCHEMATIC REFER TO DWG D-UA-H4ØØ-Ø-Ø
2. ETCHED BOARD #5009821 MUST BE U.L. APPROVED. MANUFACTURER'S U.L. NUMBER LOCATION IS SHOWN ON AH DRAWING.





QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		ASSY/DRILLING HOLE LAYOUT	D-AH-5409824-0-0	REF
3		FASTON TAB	9008219	6
6		P.C. SOCKETS FEMALE	1209456	5
1	J1	MATE-N-LOCK 6-PIN	1209350-06	4
1	C1	CAP INPUT .02 MF	1010767	3
3		EYELET # GS4-5	9009000	2
		ETCHED CIRCUIT BD	5009821	1
		MODULE ECO HISTORY	B-MH-5409824-0-6	REF
		X-Y COORDINATE HOLE LOCATION	K-CO-5409824-0-0	REF

PARTS LIST

FIRST USED ON OPTION/MODEL: H4ØØ A

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.
TOLERANCES

DECIMALS	ANGLES
XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DRN. T. Quillin		12-8-71
CHKD. D. Fortuna		1-6-72
ENG.		1-6-72
PROJ. ENG. R. Burton		1-6-72
PROD. R.K. Peterson		1/7/72

NEXT HIGHER ASSY.
C-UA-H4ØØ-Ø-Ø

SCALE

SHEET | OF

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
POWER CONTROL BOARD (115 V)

SIZE	CODE	NUMBER	REV.
C	IA	5409824-0-0	B

DIST.

REVISIONS			
CHK	CHANGE NO.	REV.	
BJ	5405824-00001	A	BJ Wolff 2-1-72 H. WOLFF
RKP	5409824-00002	B	R.K. Peterson 2-22-72 R. BURTON

DEC FORM NO.

SIZE C | CODE IA | NUMBER 5409824-0-0 | REV. B

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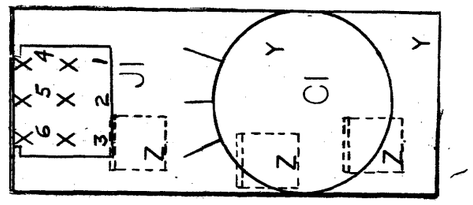
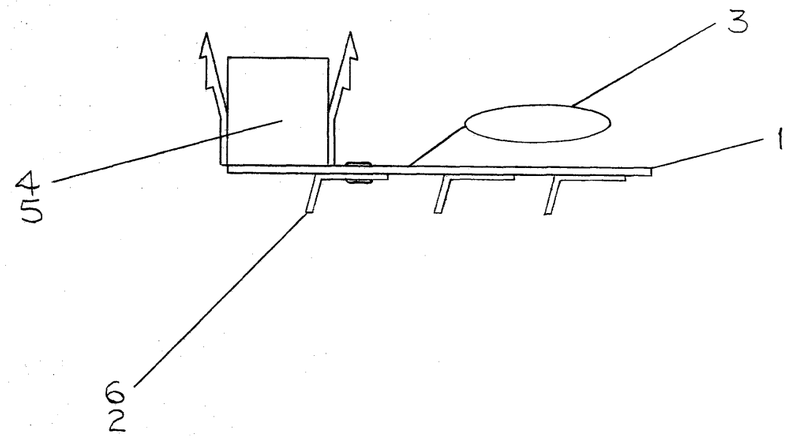
NOTES:

1. FOR CIRCUIT SCHEMATIC REFER TO DWG D-UA-H4ØØ-Ø-Ø.
2. ETCHED BOARD # 5009822 MUST BE U.L. APPROVED. MANUFACTURER'S U.L. NUMBER LOCATION IS SHOWN ON AH DRAWING.





		ASSY/DRILLING HOLE LAYOUT	D-AH-5409825-0-5	REF
3		FASTON TAB	9008219	6
6		P.C. SOCKETS MALE	1209456	5
1	J1	6-PIN MATE-N-LOCK	1209350-06	4
1	C1	CAP. INPUT .02 MF	1010767	3
3		EYELET # G54-5	9009000	2
1		ETCHED CIRCUIT BOARD	5009822	1
		MODULE ECO HISTORY	B-MH-5409825-0-6	REF
		X-Y COORDINATE HOLE LOCATION	K-CO-5409825-0-4	REF
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION/MODEL: H4ØØB

PARTS LIST

REVISIONS			
CHK	CHANGE NO.		REV.
J-M	5401825-0000.1	R. WOLFF Rev. to new mfg 3-2-72	A

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —/—/—

FINISH —/—/—

		DATE
DRN.	T. Guillin	12-9-71
CHK'D.	L. Stevens	1-7-72
ENG.		1-12
PROJ. ENG.		
PROD.	R. Wolff	1/21/72

NEXT HIGHER ASSY. C-UA-H4ØØ-Ø-Ø

SCALE —/—/—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: POWER CONTROL BOARD (230V)

SIZE	CODE	NUMBER	REV.
C	IA	5409825-0-0	A

DIST

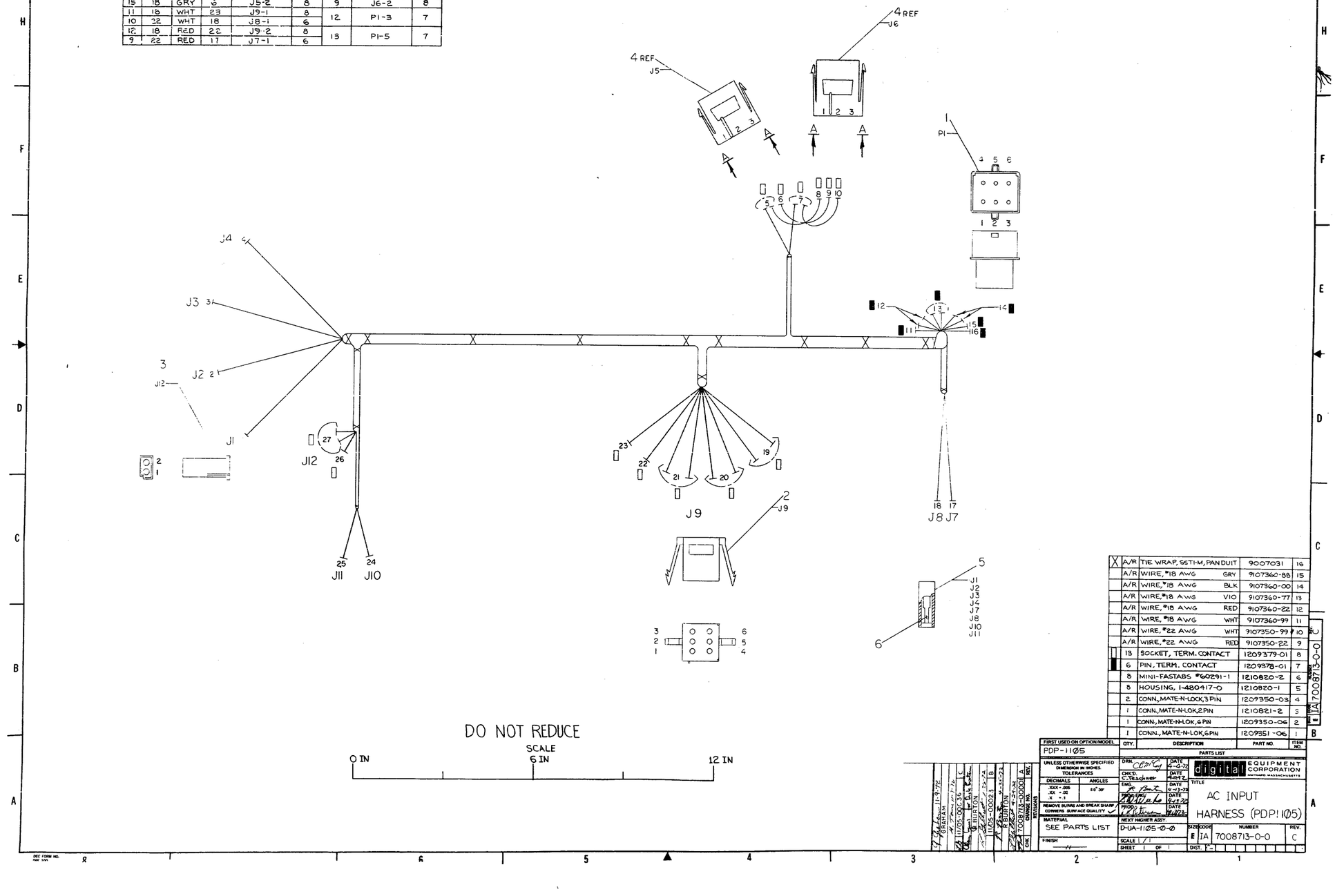
DEC FORM NO.

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM
9	22	RED	24	J10-1	6	19	J9-3	8
12	18	RED	11	P1-6	7			
9	22	RED	25	J11-1	6	27	J12-2	8
12	18	RED	20	J9-4	8			
						16	P1-4	7
12	13	RED	26	J12-1	8	1	J1-1	6
12	18	RED	2	J2-1	6	15	P1-1	7
13	18	VIO	3	J3-1	6	5	J5-1	8
13	18	VIO	8	J6-1	8			
14	18	BLK	1	J4-1	6	21	J9-5	8
4	18	BLK	14	P1-2	7			
14	18	BLK	10	J6-3	8	7	J5-3	8
15	18	GRY	6	J5-2	8	9	J6-2	8
11	18	WHT	23	J9-1	8	12	P1-3	7
10	22	WHT	18	J8-1	6			
12	18	RED	22	J9-2	8	13	P1-5	7
9	22	RED	17	J7-1	6			

NOTES:
1. USE TIE WRAPS (ITEM #16) APPROXIMATELY EVERY THREE INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT

VIEW A-A
SCALE: NONE



DO NOT REDUCE
SCALE
0 IN 6 IN 12 IN

X	A/R			
	A/R	TIE WRAP, SST-M, PANDUIT	9007031	16
	A/R	WIRE, #18 AWG GRY	9107360-88	15
	A/R	WIRE, #18 AWG BLK	9107360-00	14
	A/R	WIRE, #18 AWG VIO	9107360-77	13
	A/R	WIRE, #18 AWG RED	9107360-22	12
	A/R	WIRE, #18 AWG WHT	9107360-99	11
	A/R	WIRE, #22 AWG WHT	9107350-99	10
	A/R	WIRE, #22 AWG RED	9107350-22	9
	13	SOCKET, TERM. CONTACT	1209379-01	8
	6	PIN, TERM. CONTACT	1209378-01	7
	8	MINI-FASTABS #60291-1	1210820-2	6
	8	HOUSING, 1-480417-0	1210820-1	5
	2	CONN., MATE-N-LOK, 3 PIN	1209350-03	4
	1	CONN., MATE-N-LOK, 2 PIN	1210821-2	3
	1	CONN., MATE-N-LOK, 6 PIN	1209350-06	2
	1	CONN., MATE-N-LOK, 6 PIN	1209351-06	1
	QTY.	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION/MODEL: PDP-11/05
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: SEE PARTS LIST
FINISH: —

DRN. C.Cayer 4-4-72
CHK'D C.Teschner 4-4-72
ENG. M. Fenton 4-12-72
PROJECTING Allen L. 4-12-72
PROD. M. Fenton 4/14/72
NEXT HIGHER ASSY. D-UA-1105-0-0
SCALE 1/1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: AC INPUT HARNESS (PDP1105)

SIZE E | CODE IA | NUMBER 7008713-0-0 | REV. C
DIST.

MATERIAL 7008713-0-0 REV. C

REVISIONS			
ORIG.	11-9-72	GRAHAM	
A	11/05-006.36	G. BURTON	12-5-72
B	11/05-006.36	G. BURTON	1-16-73
C	11/05-006.36	R. BURTON	4-3-74

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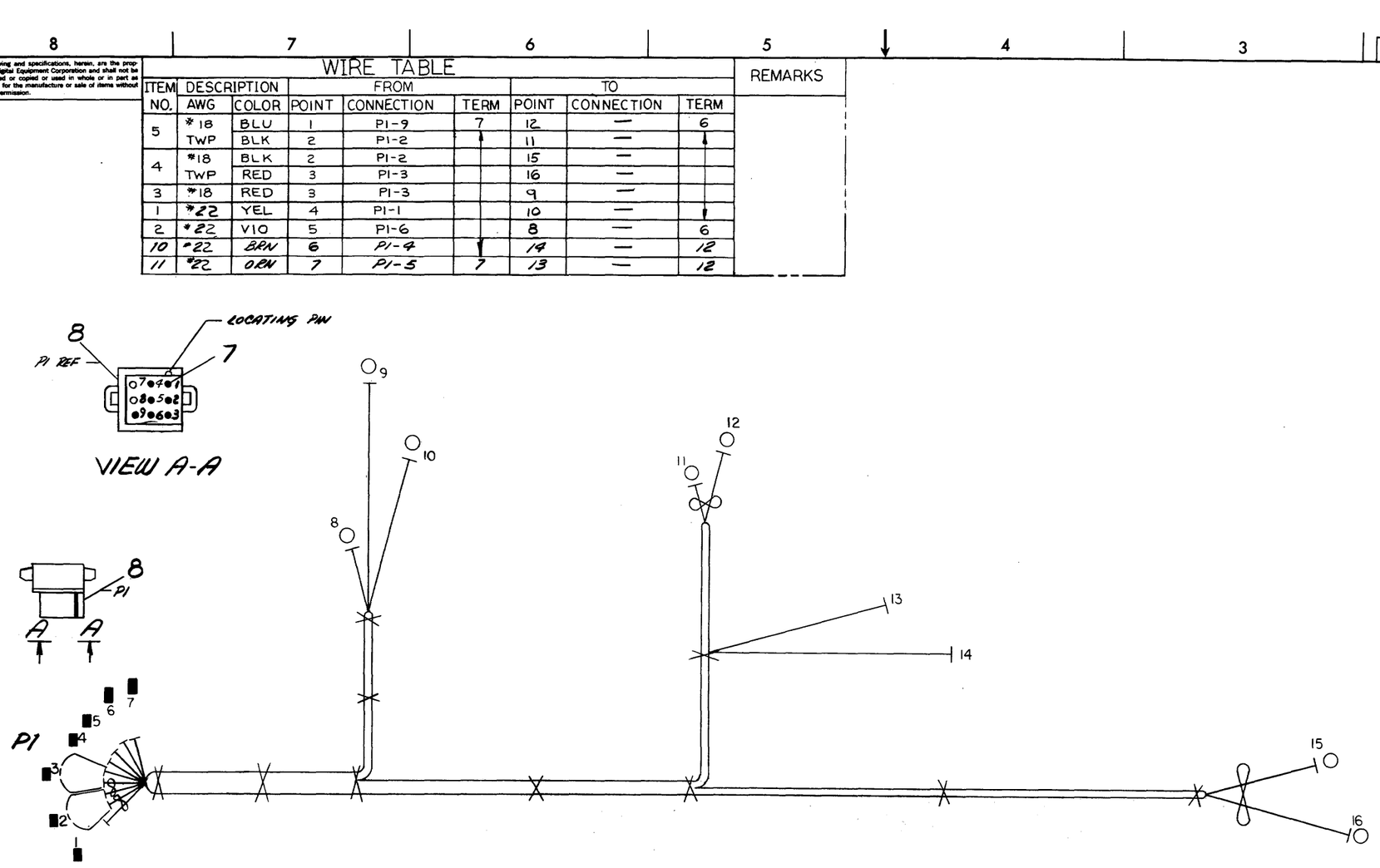
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	REMARKS
5	*18	BLU	1	P1-9	7	12	—	6	
	TWP	BLK	2	P1-2		11	—		
4	*18	BLK	2	P1-2		15	—		
	TWP	RED	3	P1-3		16	—		
3	*18	RED	3	P1-3		9	—		
1	*22	YEL	4	P1-1		10	—		
2	*22	VIO	5	P1-6		8	—	6	
10	*22	BRN	6	P1-4		14	—	12	
11	*22	ORN	7	P1-5	7	13	—	12	

NOTES:
1. USE CABLE TIES (X) ITEM *9 AS SHOWN AND AT BREAK OUT POINTS WHERE NECESSARY.

VIEW A-A



DO NOT REDUCE

SCALE

0 IN. 6 IN. 12 IN.

	QTY.	DESCRIPTION	PART NO.	ITEM NO.
	2	TERMINAL AMP *85952-3	9007655	12
	A/R	WIRE *22 AWG STRD (ORN)	9107350-33	11
	A/R	WIRE *22 AWG STRD (BRN)	9107350-11	10
X	A/R	TIE, CABLE PANDUIT SST 1.5M	9007880	9
P1	1	CONN., MATE-N-LOCK 9 PIN MALE	1209351-09	8
▮	7	PIN, MATE-N-LOCK MALE	1209378-01	7
○	7	TERM., AMP TAB .RED	9007917	6
	A/R	WIRE, *18 AWG STRD TWP BLK/BLK	9107430-06	5
	A/R	WIRE, *18 AWG STRD TWP RED/BLK	9107430-02	4
	A/R	WIRE, *18 AWG STRD RED	9107360-22	3
	A/R	WIRE, *22 AWG STRD VIO	9107350-77	2
	A/R	WIRE, *22 AWG STRD YEL	9107350-44	1

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP 1105

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: SEE PARTS LIST
FINISH

DRN: KOBLENAU DATE 2-28-72
CHK'D: C. Bisbee DATE 3-7-72
ENG. DATE
PROJ. ENG. DATE
PROD. R.K. Peterson DATE 6/4/72
NEXT HIGHER ASSY. D-UA-1105-0-0
SCALE 1/1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: HARNESS DC (PDP 1105)

SIZE D | CODE IA | NUMBER 7008856-0-0 | REV.

DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DIRD 100-A

REV. A | SIZE D | CODE IA | NUMBER 7008856-0-0

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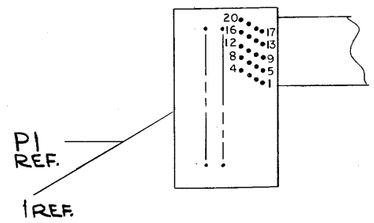
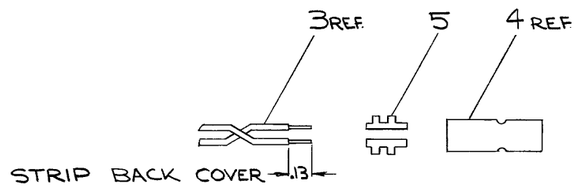
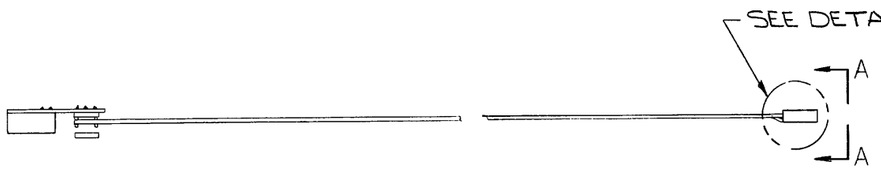
NOTES:

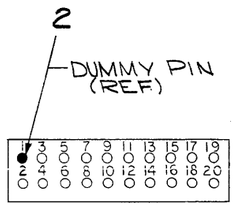
1. CONNECTORS P1 AND P2 ARE TO BE WIRED POINT TO POINT (P1-1 TO P2-1 P1-2 TO P2-2 ECT.)



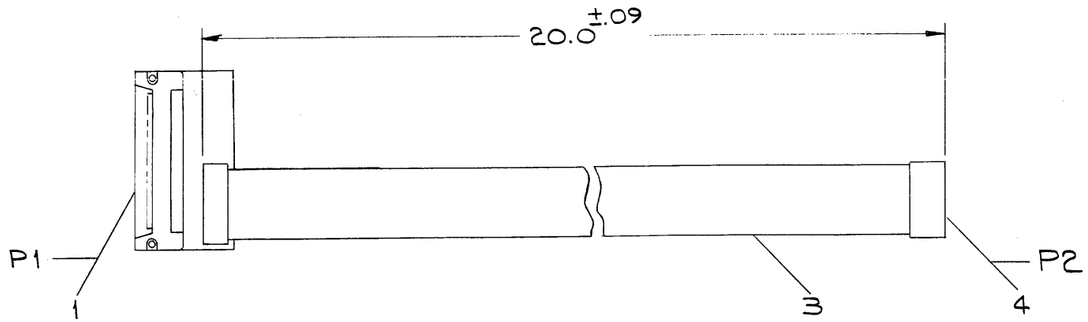


DETAIL-A





VIEW A-A
(FRONT VIEW)



19	MINI-TERMINAL #47783 BERG	1210089-0	5
1	RECEPTACLE 20 PIN #65043-027 BERG	1210918-027	4
A/R	CABLE SCOTCHFLEX #3350 3M	9107747	3
1	DUMMY PIN #47900 BERG	9009/80	2
1	DC. DISTRIBUTION MODULE	5409949-00	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP1105

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: —

DRN.	DATE 2-16-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. C. Teschner	DATE 3-1-72	
ENG. David Dee Morrison	DATE 5-24-72	TITLE: HEADER CABLE ASSY
PROJ. ENG. G. Williams	DATE 3-24-72	
PROD. K.R. Peterson	DATE 3-24-72	

NEXT HIGHER ASSY.: D-UA-1105-0-0

SCALE: NONE

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	IA	7008820-0-0	A

DIST.

REVISIONS		
CHK	CHANGE NO	REV
	7008820-00001	A

DENORANVILLE

DEC FORM NO DRD 100-A

SIZE CODE D IA NUMBER 7008820-0-0 REV A

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J1 BERG HEADER ON P.C. CARD	J2 20 PIN 3M CONNECTOR	SIGNAL	OUTPUT CABLE (REFERENCE)
VV	9-12	GROUND	GROUND (A)
UU	9-12	GROUND	GROUND (B)
B	9-12	GROUND	GROUND (UU)
A	9-12	GROUND	GROUND (VV)
RR	16	SERIAL IN (TTL)	E
NN	15	20 MA INTERLOCK	H
LL	14	SERIAL IN (+20MA)	K
DD	5	SERIAL IN (-20 MA)	S
V	7	SERIAL OUT (+20 MA)	AA
T	6	CLOCK IN (TTL)	CC
R	4	READER RUN (-20 MA)	EE
N	3	CLOCK DISABLE (TTL)	HH
L	2	SERIAL OUT (-20 MA)	KK
F	18	READER RUN (+20 MA)	PP
D	19	SERIAL OUT (TTL)	SS
C	20	+5 VOLTS	TT
BB	8	+15 VOLTS	U

REVISIONS			
REV.	CHANGE NO.	CHK	

BRUNING 40-107 15968

DEC FORM NO. DRC 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-11Ø5		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —/—

FINISH —/—

DRN.	DATE	A-672
CHK'D. C.Teschner	DATE	A-672
ENG. [illegible]	DATE	A-672
PROJ. ENG. [illegible]	DATE	11372
PROD. [illegible]	DATE	[illegible]

NEXT HIGHER ASSY. D-IA-5409949-ØØ

SCALE —/—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

CIRCUIT SCHEMATIC

SIZE	CODE	NUMBER	REV.
C	CS	5409949-0-1	-

DIST.

SIZE	CODE	NUMBER	REV.
C	CS	5409949-0-1	1

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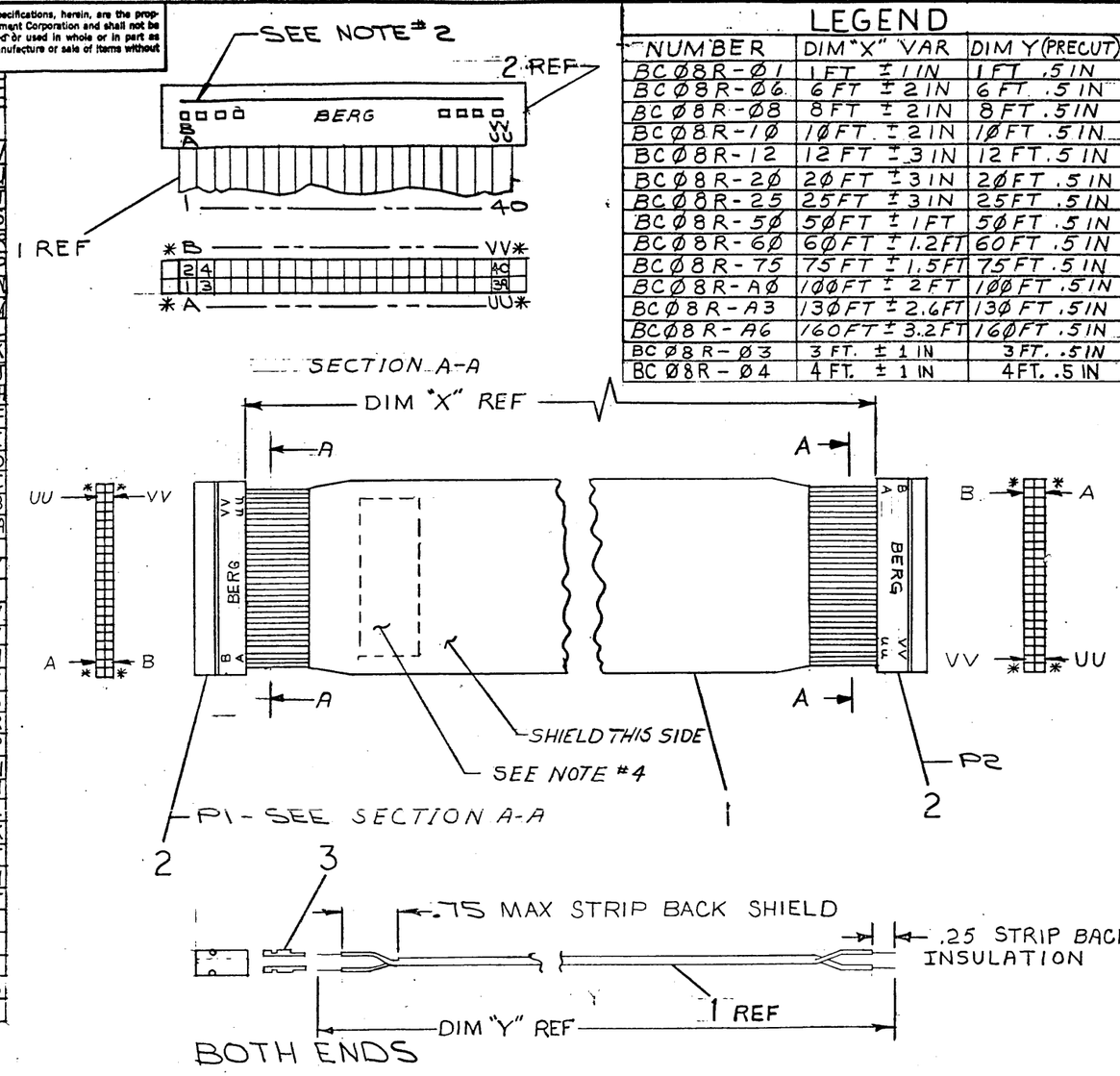
WIRE TABLE	
FROM	TO
P1-A	P2-VV
P1-B	P2-UU
P1-C	P2-TT
P1-D	P2-SS
P1-E	P2-RR
P1-F	P2-PP
P1-H	P2-NN
P1-J	P2-MM
P1-K	P2-LL
P1-L	P2-KK
P1-M	P2-JJ
P1-N	P2-HH
P1-P	P2-FF
P1-R	P2-EE
P1-S	P2-DD
P1-T	P2-CC
P1-U	P2-BB
P1-V	P2-AA
P1-W	P2-Z
P1-X	P2-Y
P1-Y	P2-X
P1-Z	P2-W
P1-AA	P2-V
P1-BB	P2-U
P1-CC	P2-T
P1-DD	P2-S
P1-EE	P2-R
P1-FF	P2-P
P1-HH	P2-N
P1-JJ	P2-M
P1-KK	P2-L
P1-LL	P2-K
P1-MM	P2-J
P1-NN	P2-H
P1-PP	P2-F
P1-RR	P2-E
P1-SS	P2-D
P1-TT	P2-C
P1-UU	P2-B
P1-VV	P2-A



LEGEND

NUMBER	DIM "X" VAR	DIM Y (PRECUT) REF
BCØ8R-Ø1	1 FT ± 1 IN	1 FT .5 IN
BCØ8R-Ø6	6 FT ± 2 IN	6 FT .5 IN
BCØ8R-Ø8	8 FT ± 2 IN	8 FT .5 IN
BCØ8R-1Ø	1ØFT ± 2 IN	1ØFT .5 IN
BCØ8R-12	12 FT ± 3 IN	12 FT .5 IN
BCØ8R-2Ø	2ØFT ± 3 IN	2ØFT .5 IN
BCØ8R-25	25FT ± 3 IN	25FT .5 IN
BCØ8R-5Ø	5ØFT ± 1 FT	5ØFT .5 IN
BCØ8R-6Ø	6ØFT ± 1.2FT	6ØFT .5 IN
BCØ8R-75	75FT ± 1.5FT	75FT .5 IN
BCØ8R-AØ	1ØØFT ± 2 FT	1ØØFT .5 IN
BCØ8R-A3	13ØFT ± 2.6FT	13ØFT .5 IN
BCØ8R-A6	16ØFT ± 3.2FT	16ØFT .5 IN
BCØ8R-Ø3	3 FT. ± 1 IN	3 FT. .5 IN
BCØ8R-Ø4	4 FT. ± 1 IN	4 FT. .5 IN

NOTES:

~~1. CABLE TO BE WIRED POINT TO POINT. P1-A TO P2-VV, P1-B TO P2-UU, P1-C TO P2-TT ETC.~~

2. LINE & LEGEND TO BE HOT STAMPED (WHITE)
3. * DENOTES CAVITIES NOT USED OR DESIGNATED BY LETTERS.
4. VENDOR IDENTIFICATION, DEC PART NO. AND DATE CODE, TO BE HOT STAMPED (WHT), SHIELD SIDE, IN THIS APPROX. AREA.
5. THIS CABLE MUST CONFORM TO THE INSPECTION REQ'S OF DEC. A-II-7007035 UPON RECEIPT AT DEC INCOMING INSPECTION
6. A BERG ELECTRONICS #HT 68 CRIMP TOOL MAY BE USED.

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	BC08J-00001	A	10-23-70
GARDNER			10-23-70
[illegible]	BC08J-00002	B	12-3-70
GARDNER			12-3-70
[illegible]	BC08J-00003	C	1-4-71
L. NARHI			1-8-71
FV	BC08R-00001	D	5-20-71
GARDNER			5-25-71
[illegible]	8E-00035	E	7-27-71
PROVIDENT			7-26-71
[illegible]	BC08R-00002	F	2-2-72
P. GARDNER			2-3-72
[illegible]	BC08R-00003	H	11-15-72
M. TITELBAUM			11-15-72

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

FIRST USED ON OPTION MODEL

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		
80	SOCKET #47783 BERG	1210089-0	3
2	HOUSING #20383 BERG	1210090-1	2
A/R	CABLE, FLAT, 40 COND	9107722-0	1

DRN.	[illegible]	DATE 8/28/70
CHK'D.	J. Fleming	DATE 8-28-70
ENG.	[illegible]	DATE 9-3-70
PROJ. ENG.	[illegible]	DATE 9-3-70
PROD.	[illegible]	DATE 9/4/70
NEXT HIGHER ASSY		
SCALE	NONE	
SHEET	1 OF 1	

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
I/O CABLE
(BCØ8R)

SIZE	CODE	NUMBER	REV.
C	UA	BCØ8R-Ø-Ø	H
DIST.			

SIZE C CODE UA NUMBER BCØ8R-0-0 REV. H

DEC FORM NO. DRG 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY E. Pellegrini	CHECKED C. Teschner	SECTION
DATE 5/26/72	DATE 5-31-72	
ENG B.D. Wicks	PROD R.K. Peterson	ISSUED SECT.
DATE 5-31-72	DATE 5/31/72	

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: ALL MODELS							KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	7008360-0-0	CABLE ASSEMBLY	1								
2	11/05-0	CUSTOMER PRINT SET	1								
3	DEC-11-H05AA-A-D	MAINTENANCE MANUAL	*								
4	LIBKIT 11/05 BASEA-A-K	BASIC DIAGNOSTIC KIT	*								
5	LIBKIT 11/05 XBASA-A-K	SYSTEM SOFTWARE KIT	*								

*NOTE: THESE ITEMS ARE TO BE SHIPPED ONLY WHEN SHOWN ON THE CONSTRUCTION REQ.

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
PDP-11/05 ACCESSORY LIST	11/05-0-0	A	AL	11/05-0-4		
	SHEET 1 OF 1	DIST				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY E. Pellegrini	CHECKED C. Teschner	SECTION
DATE 5/30/72	DATE 5-31-72	
ENG B. D. Wiecha	PROD R. K. Peterson	ISSUED SECT.
DATE 5/31/72	DATE 5/31/72	

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: ALL MODELS
1	LIBKIT 11/05 BASEA-A-K	BASIC DIAGNOSTIC KIT	*
2	LIBKIT 11/05 XBASA-A-K	SYSTEM SOFTWARE KIT	*
		NOTE: THESE ITEMS ARE TO BE SHIPPED ONLY WHEN SHOWN ON THE CONSTRUCTION REQ.	

QUANTITY/VARIATION: KIT CHECK BY _____ DATE _____; INSTALLATION CHECK BY _____ DATE _____

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP-11/05 SOFTWARE LIST	11/05-0-0	A	SL	11/05-0-05		
	SHEET OF	DIST.				1

DEC FORM NO. DEC 16-(327)-1049-N471
DRA 120

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 10/9/72

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
		A	SP	11/Ø5-Ø-6	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION digital CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105

1.0 SCOPE

1.1 This procedure establishes the minimum mechanical and electrical standards that a PDP11/05 must meet to be considered acceptable for shipment.

1.2 Any basic PDP11/05 that fails any portion of this procedure may be returned to production for correction of the discrepancy at the discretion of the acceptance supervisor. Upon resubmission of product acceptance, the PDP11/05 may be subjected to this entire procedure or portion thereof; provided no one step of this procedure is omitted.

2.0 INITIAL VERIFICATION

2.1 All PDP11/05's should have the T-17 (DØQE or latest revision) diagnostic in core when the machine is submitted to acceptance.

2.1.1 Plug the power cord of the PDP11/05 into the appropriate AC outlet.

2.1.2 Depress halt switch.

2.1.3 Turn the key switch to power on.

2.1.4 Set the switch register of the PDP11/05 to 200 (8).

2.1.5 Ensure that both fans turn.

2.1.6 Depress the "load address" switch.

2.1.7 Put switches 11 and 15 in the up position and switch 8 in the down position.

2.1.8 Depress the "Start" switch.

2.1.9 After the PDP11/05 has been running for the time specified in Table 1 without halting, depress the "halt" switch. The machine should halt.

2.1.10 Turn off the key switch and remove the AC cord from the power outlet.

2.2 Should the basic PDP11/05 fail to meet the requirements of 2.0, one reloading of the diagnostic will be allowed. (See 9.1 and 9.4.1.1 to 9.4.1.8). Should the PDP11/05 then fail to run properly as described in 2.1.1 to 2.1.10, it shall be rejected and returned to production for repair.

3.0 MECHANICAL INSPECTION

3.1 Description of sides.

3.1.1 Front side shall be the console side.

3.1.2 The right side shall be the side on the right when looking at the PDP11/05 from the front.

SIZE	CODE	NUMBER	REV
A	SP	11/Ø5-Ø-6	

DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

3.2 Inspect the unit for conformance to "Hardware Assembly Standard" A-SP-7665099-0-0.

3.3 With the PDP11/05 chassis on its right side, check the bottom of the chassis for:

3.3.1 Four (4) Phillips head screws with internal lock washers securing the power supply chassis to the PDP11/05 chassis.

3.3.2 Three (3) Phillips head screws with internal lockwashers securing the logic to the chassis.

3.3.3 Four (4) Phillips head screws with internal lockwashers holding the module guides in place.

3.4 With the PDP11/05 chassis on its bottom, check the left side for:

3.4.1 Six (6) Phillips head screws with internal lockwashers securing the card guide supports.

3.4.2 Side cover should have foam against the module handle. This cover is secured to the chassis with four (4) Phillips head screws with internal lockwashers.

3.4.3 Console cable should be routed to avoid damage from module handles.

3.5 Check the 54-9728 regulator module for six (6) Phillips head screws securing the module to the power supply chassis, these screws are located on the top of the module, one on each corner of the heat sink and one at each corner of the module at the end closest to the transformer.

3.5.1 Make sure the regulator module is not bowed.

3.6 All wires must be tied neatly using cable ties.

3.7 Make sure that two (2) plastic cable clamps have been used to dress the AC harness wires coming from the AC input box and going to the power supply fan and the key switch.

3.8 The remaining wires should be supported by two (2) more cable clamps along the left side of the power supply chassis

3.9 Check all crimp connections by pulling gently on the wires entering the crimp. There should be no signs of looseness. The stranded wire should be exposed beyond the crimp approximately 1/16".

3.10 Check the male tabs to which the crimp connector attaches for cold solder joints and flux.

3.11 Insure that an acceptance stamp appears on the top of the logic indicating that the logic has been tested by the AWT.

3.12 All units must be free of all loose hardware.

3.13 Inspect the AC power cord. The cord must be free from cuts, burns and abrasions.

3.14 There should be two (2) Phillips head screws with internal lockwashers securing the AC input box to the chassis.

3.15 The rear fan screw should not be missing, bent, or damaged in anyway.

3.16 The rear fan must be secured to the rear screen assembly by four (4) Phillips head screws with internal lockwashers.

3.17 A second cable clamp should be attached to the left rear of the chassis, across the cable access hole.

3.18 Failure Determination

3.18.1 Any PDP11/05 that fails to meet the criteria in 3.0 with the exceptions of 3.9 and 3.10 will be documented as a recycle, but the failure may be corrected in the acceptance area by a person (s) from production.

3.18.2 Any PDP11/05 that fails to meet the criteria outlined in 3.9 and/or 3.10 must be documented as a recycle and returned to the production area for correction of the discrepancy. Before the unit is returned to acceptance, a quick verify must be run in production.

4.0 MODULE INSPECTION AND LOGIC BLOCK CHECK

4.1 Remove and inspect all modules except power supply for conformance to the specifications listed.

4.1.1 "Final Module Inspection Procedure" A-SP-7665039

4.1.2 "Module Rework Standard" A-SP-7605845

4.1.3 Memory Circuit Boards - Acceptance Standards - A-SP-7665052

4.2 Visually inspect the top of the 54-9728 regulator module for conformance to the specification listed in 4.1.1 and 4.1.2.

4.3 Check the modules for a circuit revision letter and an etch revision letter. These revision letters must be up to shippable ECO levels. A three (3) digit numeric date code must be present on the module handle. If ECO levels are correct, sign the ECO status sheet.

4.3.1 Check the component lead length on side 2 of each module. The leads must not protrude more than 1/16.

4.3.2 Make sure all "ROM's" are marked for identification and ensure the markings are legible.

4.3.3 Make sure the pot on the G110 module is glyptolled to prevent a change in strobe setting.

4.3.4 Make sure the serial number stamped on the three (3) memory modules matches the number on the systems tag.

4.4 When the modules have been removed from the logic block, inspect the logic block.

4.4.1 Any chip or crack which could conceivably allow a shorting of two or more logic pins will not be acceptable.

4.5 Replace the modules in the block in their proper slots.

5.0 POWER & GROUND CHECK

5.1 Make sure the PDP11/05 is not plugged into an AC power source.

5.2 Check chassis ground.

5.2.1 Set a Simpson Module 362 ohmmeter or equivalent to the adjust setting and zero the meter.

5.2.2 Set the Simpson Module 362 ohmmeter to the ground pin on the AC power cord.

5.2.4 Put the other lead of the ohmmeter to the ground lug on the logic block. The ohmmeter should read less than 1Ω.

5.2.5 Remove the lead from the ground lug and put it to the screw on the heat sink of the regulator module that is surrounded by bare metal. The ohmmeter should read less than 1Ω.

5.2.6 Remove the lead from the screw on the regulator module and put it on a screw on the PDP11/05 chassis. The ohmmeter should read less than 1Ω.

5.2.7 Remove both ohmmeter leads.

5.3 Power Supply Check

5.3.1 Plug the power cord of the PDP11/05 into an appropriate AC outlet.

5.3.2 Turn on the key switch on the PDP11/05 console.

5.3.3 Using a Dixson VT-300 meter or its equivalent, measure the power supply voltages on the logic backplane. See attachment 1 for lead placement and voltage tolerances. Record voltages on checklist. (Attachment # 5.)

ENGINEERING SPECIFICATION digital CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

5.4 Failure Determination

5.4.1 If any PDP11/05 fails any portion of 5.0, it shall be documented as a recycle and returned to production for repair.

5.4.2 Upon resubmission to acceptance the PDP11/05 will be visually inspected to ensure all hardware is present and the PDP11/05 will be required to pass 5.0.

6.0 QUICK VERIFY

6.1 Remove terminator per table two and connect the PDP11/05 to a daughter station then connect the teletype to the 11/05 under test.

6.2 Set the program select register switches to reflect the memory size of the PDP11/05 under test (See Table # 4).

6.3 Set the "mode" switch to processor.

6.4 Set the "function" switch to quick verify.

6.5 Set the "type" switch to 11/05.

6.6 Turn on power to the PDP11/05 and put the "enable/halt" switch in the enable position.

6.7 Momentarily depress the "initialize" switch on the daughter station.

6.8 A pass complete message should appear when test is finished.

6.9 Disconnect the 11/05 from the daughter station and replace the terminator.

6.10 Failure Determination

6.10.1 Should the PDP11/05 not run the quick verify properly after the first load, the machine will be documented as a recycle and returned to production for repair.

7.0 CONSOLE TEST

7.1 Depress "enable/halt" switch.

7.2 Turn on power to the PDP11/05.

7.2.1 Load Address 100_8.

7.3 Set "052525" in the switches and lift "DEPosit".

7.4 Set "125252_8" in the switches and lift "DEPosit".

7.5 Load address 100_8.

7.6 Depress and release EXAMINE.

7.7 The address/data display should contain "052525_8".

7.8 Depress and release EXAMINE.

7.9 The address/data display should contain "125252_8".

7.10 Load address 100_8.

7.11 Set "000777_8" in the switches and lift DEPOSIT.

7.12 Put "enable/halt" switch in ENABLE position.

7.13 Depress and release "START" switch. The RUN light should light.

7.14 Turn console key to PANEL LOCK position.

7.15 Put ENABLE/HALT switch in HALT position. The RUN light should remain lit.

7.16 Turn console key to "POWER" position. The PDP11/05 should halt.

7.17 Failure Classification

7.17.1 Any PDP11/05 that fails to pass 7.1 to 7.16 shall be documented as a recycle and returned to production for repair.

7.17.2 Upon resubmission to acceptance, the PDP11/05 may, at the discretion of the acceptance supervisor, be required to pass 24 hours of burn-in.

7.18 Paper Tape Load

7.18.1 Determine start address and load at that address.
4K = 17744
8K = 37744
12K= 57744
16K= 77744

7.18.2 Load bootstrap loader per PDP11 instruction card.

7.18.3 Load start address as in 7.18.1

7.18.4 Read in absolute loader paper tape from teletype.

7.18.5 Load start address as follows:
4K = 17500

8K = 37500
12K = 57500
16K = 77500

7.18.6 Load MAINDEC-11-DØMA (T13) thru teletype.

7.18.7 Load 200 ($_8$).

7.18.8 Put switch 15 up and start.

7.18.9 Allow program to run one pass (One TTY bell). It will halt on error.

7.18.10 Shut off machine and proceed with the next test.

8.0 UNIBUS TESTER

8.1 Insert the unibus cable coming from the unibus tester into the appropriate logic slot in the PDP11/05. First remove terminator from the slot in the PDP11/05. See Table II.

8.2 Plug the PDP11/05 into an appropriate AC power source.

8.3 Turn on power to unibus tester.

8.4 Turn on the power to the PDP11/05.

8.5 If machine has only 4K of memory:

8.5.1 Load unibus test program (Octal number 143).

8.5.2 Load address 200 ($_8$).

8.5.3 Depress START

8.5.4 Program will run continuously without typeout until stopped by operator. Let the program run for 30 minutes. If program fails, it will halt.

8.6 If machine has 8K or more of memory"

8.6.1 Load GTP program (Octal number 135)

8.6.2 Load address 200 ($_8$).

8.6.3 Set bits 0 through 15 up.

8.6.4 Set bits 4, 8, 9 and 14 down and press start.

8.6.5 Set bits 0 through 15 up and press continue two times.

8.6.6 Set bits 0 through 15 down and press continue.

8.6.7 Program will run continuously with typeout until stopped by operator. Let the program run for 30 minutes. If program fails, it will halt and type out error message.

8.7 Power Down Sequence

8.7.1 Halt the 11/05.

8.7.2 Turn key switch of 11/05 to OFF.

8.7.3 Take daughter station off line.

8.7.4 Remove unibus cable and replace terminator.

8.7.5 If desired, you may shut off the unibus tester.

9.0 ELECTRICAL ACCEPTANCE

This test is to be run in the heat box at high temperature.

9.1 Connecting the PDP 11/05 to a daughter station.

9.1.1 Remove the terminator from the slot in the PDP11/05 logic block. (See Table #2).

9.1.2 Insert the unibus cable from the daughter station into the slot in the PDP11/05 logic block specified in Table #2.

9.1.3 Connect the teletype to the Berg connector on the back of the PDP11/05 chassis.

9.1.4 Plug the power cord on the PDP11/05 into an appropriate AC outlet.

9.2 PDP11/05 Diagnostic Testing

9.2.1 The normal mode of diagnostic testing for the PDP11/05 shall be the automatic acceptance method described in 9.3. An alternate method of diagnostic testing is described in 9.4. This method shall be used in the event of an automatic acceptance system hardware failure and must have the acceptance supervisor's approval.

9.3 Automatic Acceptance

9.3.1 Set the "type" switch to 11/05-1.

9.3.2 Set the "mode" switch to processor.

9.3.3 Set the "function" switch to auto accept.

9.3.4 Set the "on line" switch to the UP (one) position. The on line light should be lit.

9.3.5 Set the "heat" switch and the "repeat" switch to the UP (one) position.

9.3.6 Set the program select register switches to reflect the memory size of the PDP11/05 under test (See Table #4).

9.3.7 Depress the initialize switch momentarily.

9.3.8 Check to make sure no error lights are lit. If one is, halt the PDP11/05 and repeat 9.3.1 to 9.3.7 once. If an error light is lit after the second loading attempt, the machine will be recycled and subject to 10.0.

9.3.9 After approximately 1 hour, 45 minutes for 4K and 3 hours 45 minutes for 8K, the TTY should print out a pass complete message.

9.3.10 Load the T17 diagnostic (Section 9.4.1.8)

9.3.11 Verify program runs in machine.

9.3.12 Remove machine from acceptance station.

9.4 Automatic Acceptance Backup

9.4.1 **This section is to be used as back up if the auto accept function of the test line is not working.**

9.4.1.1 Manually set the octal location of the program to be run in the program select register. (See Table #3).

9.4.1.2 Set the "type" switch to 11/05-1.

9.4.1.3 Set the "mode" switch to processor.

9.4.1.4 Set the "function" switch to dump.

9.4.1.5 Set the "on line" switch to the UP (one) position.

9.4.1.6 Set the "heat" and "repeat" switches to UP (one) position.

9.4.1.7 Momentarily depress the "initialize switch.

9.4.1.8 Make sure no error lights are lit. If one or more error lights are lit, repeat steps 9.4.1.1 to 9.4.1.7 once. If an error light is lit after the second loading attemp, the machine will be recycled and subject to 10.0.

9.4.1.9 Set the PDP11/05 switch register to 200. Depress load address. Depress START.

9.4.1.10 Program should be running. Run the program the required length of time (See Table #3).

9.4.1.11 Load the next program listed in Table #3 as in steps 9.4.1.1 to 9.4.1.16.

9.4.2 All programs listed in Table 3 must be run in the order listed.

9.4.3 Load the PDP11/05 memory with the modified T17 diagnostic before sending machine to final inspection area.

9.4.4 Remove the unibus cable and insert the terminator. (see Table #2).

9.5 50 Cycle Conversion

9.5.1 If a machine must be converted to 50 cycle, it will be done after auto accept but before touch up.

9.5.2 After conversion, run the following tests:
A. Power and ground per paragraph 5.0.
B. GTP with power fail option (if only 4K, run T-17 and power fail).

9.6 Failure Classification

9.6.1 Any PDP11/05 that fails 9.4.0 or 9.5.2 will be documented as a recycle and will be returned to production for repair.

9.6.2 Upon resubmission to acceptance, the PDP11/05 may, at the discretion of the acceptance supervisor, be required to pass 24 hours of burn-in.

9.6.3 See next page.

10.0 DOCUMENTATION AND FAILURE CLASSIFICATION (con't)

10.1 Each system accepted against section 9.0 (Electrical Acceptance) of this procedure must have a completed log sheet and a PDP11/05 basic acceptance checklist added to its test and inspection envelope. See attachments.

10.2 Any unit which fails to properly run diagnostics according to MAINDEC documents other than continuously and as specified will be classified defective and returned to production for rework. Printouts, if generated will be returned to production with the PDP11/05.

10.3 Any system which has had any major modification as listed below; must be recycled through the entire production checkout procedure (including the heat cycle) prior to resubmission to the acceptance area. These machines will be required to undergo another 24 hours burn-in.
A. Power Supply replacement.
B. Memory System replacement.
C. Any module replacement in the processor or the front panel.

9.6.3 Any PDP11/Ø5 that only fails T166 (KW11-L) during auto acceptance will have T166 loaded as described in sections 9.4.1.1 - 9.4.1.1Ø. If the program runs for 1Ø minutes the PDP11/Ø5 shall be considered as having passed section 9.3 (Auto Acceptance).

10.3.1 The front panel may have switches and/or LED's replaced and must undergo a Quick Verify only.

11.0 PREPARING MACHINES FOR SHIPMENT

11.1 All paperwork (logics, checklists, etc.), will be complete before the PDP11/05 leaves the electrical acceptance area.

11.2 Load the machine with T17 (4K) or GTP (8K or more), before sending to touch-up.

12.0 MECHANICAL TOUCH-UP

12.1 The PDP11/05 will be sent to the production touch-up area. The PDP11/05 will have minor mechanical defects corrected (keys put with the machine) and installed in a cabinet if necessary.

12.2 All hardware (chassis, tracks, etc.) will be secured to the chassis. The cover to the PDP11/05 will not be secured at this time. This will allow the final visual inspection of the PDP11/05 to be performed.

13.0 FINAL ACCEPTANCE

13.1 The test and inspection envelope of each PDP11/05 submitted to final acceptance must have lines #1 through #8 signed off. The envelope will contain the following:
A. Key Sheet (original and at least 6 copies).
B. Electrical acceptance checklist.
C. Progress reports.
D. ECO Status Sheets (white, pink and blue copies).
E. Waiver if needed (white, pink, and yellow copies).
F. Blanket waiver if needed (2 copies).
G. Construction Requisition (green copy).
H. Transfer sheet.

13.2 Check for 100% agreement between the key sheet, construction requisition, physical unit and print set.

13.3 If the documentation outlined in 13.1 through 13.3 is missing, incorrect, or incomplete, the system will be classified as being "down" and will not proceed any further until all documentation has been completed by the responsible production person (s).

13.4 Visually inspect the PDP11/05.

13.4.1 Ensure that all hardware is present and tight.

13.4.2 Check all decals for readability. If decal has missing letters or is illegible, the decal must be replaced.

13.4.3 Patent decal.
13.4.4 The unit must be free of all foreign matter.
13.4.5 Insure that the unit has keys secured to the power cord with a tie wrap.
13.4.6 Move each switch up and down at least two (2) times to ensure each switch is unrestricted and operates freely.
13.4.7 Missing letters and chipped areas will not be allowed on silk screening.
13.4.8 Inspect each basic PDP11/05 for conformance to DEC STD 092 and recycle units to touch-up as required.
13.4.9 Check for foam on side cover.
13.4.10 Check to assure console cable is folded under the memory stack handle.
13.4.11 Check for unibus cable clamp and "handle".
13.4.12 Have top cover secured to the chassis, and sealed.
13.4.13 Check the power cord for cuts, abrasions, etc.

13.5 Electrical Verification

13.5.1 Complete one pass of the program in memory (T-17) for 4K of GTP for 8K and more. Exercise both TTY reader and punch while making a pass.

13.5.2 Console test run per paragraph 7.0.

13.5.3 Failure Classification

13.5.3.1 Any PDP11/05 that fails 13.5.1 or 13.5.2 will be documented as a recycle and returned to production for repair.

13.5.3.2 The acceptance supervisor will determine what must be run against the recycled unit when it is returned to acceptance.

13.5.3.3 Turn ON/OFF switch several times. Test should continue without error.

13.6 Supplementary Accessory Checklist

13.6.1 This form will be filled in by the final inspector.

13.6.1.1 The form will contain all software, prints, and accessories going to a customer.

13.6.1.2 After completing the form, it should be signed by the inspector and inserted in the T. & I. envelope.

13.7 Separating the paperwork in the T. & I. envelope.

13.7.1 All the paperwork in the T. & I. envelope will be taken out of the envelope and separated.

13.7.1.1 Take the key sheet (two copies) the accounting form, and the green copy of the construction requisition, clip them together and put them in a separate pile.

13.7.1.2 Take the test data, progress reports, final inspection reports, key sheet (one copy) and clip them together.

13.7.1.3 Put these papers in another pile. Get our copy of the construction requisition and attach key sheet (one copy) waiver, (white, and pink copy if needed) and clip them together. Take these papers to Field Service where they will type up the customer envelope

13.7.1.4 Take the pink copy of ECO status sheet and the Supplementary Accessory check list and insert in the customer envelope.

13.7.1.5 Have production stick the "silly sticker" on the top of the PDP11/05.

13.7.1.6 Have the PDP11/05 moved next to the software that will be shipped with the unit.

13.8 A shipping tag must be made out for each box (listing the contents) or unpacked article. (See attachment #4).

13.9 Accessories shipped with each PDP11/05.

13.9.1 All basic PDP11/05 computers will be shipped with the following:

13.9.1.1 Prints

13.9.1.2 Manuals

13.9.1.3 Customer envelope

13.9.1.3.1 Contents of customer envelope will include:

a. ECO Status Sheet (pink copy)
b. Supplementary Accessory Checklist.
c. Customer Acceptance Sheet
d. Key Sheet

13.9.1.3.2 After the customer envelope has been check for contents, it will be sealed and placed in the software box.

13.10 Items shipped if required by the construction requisition.

13.10.1 Basic Software and Accessory List.

13.10.1.1 LIB KIT 11/05 BASEA-A-K

13.10.2 Extended software and accessory list.

13.10.2.1 LIB KIT 11/05 XBASA-A-K

13.10.3 If the basic PDP 11/05 is to be shipped with a teletype, it must also include the teletype accessory list.

13.10.3.1 Teletype accessories include:

a. 310B Teletype Manual Vol. I
b. 310B Teletype Manual Vol. II
c. 1184B Teletype Parts List
d. 36-5365 1 roll of teleprinter paper
e. 36-5630 1 each teletype ribbon
f. 36-5360 3 each rolls of oiled paper tape
g. F4/e/69/260 paper price list.

13.11 After software, accessory hareware, print set, and customer envelope have checked, put them in the software box and seal it.

13.12 Check the contents of the T. & I. envelope for:

a. The remaining Key Sheets
b. ECO Status Sheets (pink copies)
c. Waiver if needed (yellow copy)
d. Blanket waiver if needed.

13.13 Before line #10 on the T. & I. envelope is signed off, an authorized person from computer administration must sign his name and the date across the side of the T. & I. envelope

13.14 Basic PDP11/05 destined for in-house users (CSS, TPL, System Integration) will not have lines 9 and 10 signed off on the T. & I. envelope.

13.14.1 Other items not applicable to the in-house machine include: 13.6, 13.7.1.3, 13.7.1.4, 13.8 and 13.9.1.3.

13.15 The final acceptance line on the DEC 101 cover sheet (line #10) will only be signed off if all items in this procedure have been accepted for formally waivered (DEC Form 12-1026).

13.16 Failure Determination

13.16.1 Any unit which fails any of the requirements of this section will be classified defective and returned to production for the correction of any deficiencies.

13.16.2 All units resubmitted for final inspection after the correction of a deficiency may be recycle through the entire inspection procedure or any portion thereof at the discretion of the Q.C. supervisor provided no one (1) step of section 13 is omitted from any unit.

14.0 PDP11/05 RETURNED FROM CRATING (SHIPPING)

14.1 Any PDP11/05 that is returned from crating (shipping) need only be submitted to 13.0 provided the PDP11/05 remains sealed in its shipping container. The PDP11/05 need not be submitted to 13.4 and 13.5.

15.0 VALIDATION OF SOFTWARE

15.1 10% of all software kits will be opened and the contents of the kits will be checked.

15.2 100% of the software kits will have their labels checked for correct revision levels.

15.3 If any software fails 15.1 and/or 15.2 the complete lot of software will be returned to the program library.

15.4 Assure that all documentation being shipped is at the same rev. as the hardware.

DUMP DIRECTORY

FRG #	END ADD	TITLE	DESC'N
ØØØØØØ	Ø142Ø2	DØAAØ	T1
ØØØØØ1	Ø04326	DØBAØ	T2
ØØØØØ2	ØØ5512	DØCAØ	T3
ØØØØØ3	Ø1636Ø	DØDAØ	T4
ØØØØØ4	Ø1ØØ546	DØEAØ	T5
ØØØØØ5	Ø17214	DØFAØ	T6
ØØØØØ6	Ø1364Ø	DØGAØ	T7
ØØØØØ7	Ø13424	DØHAØ	T8
ØØØØ1Ø	Ø14116	DØIAØ	T9
ØØØØ11	ØØ7462	DØJAØ	T1Ø
ØØØØ12	ØØ711Ø	DØKAØ	T11
ØØØØ13	Ø157Ø6	DØLAØ	T12
ØØØØ14	ØØ3234	DØMAØ	T13
ØØØØ15	ØØ7566	DØNCØ	T14
ØØØØ16	Ø16476	DØOB2	T15
ØØØØ17	Ø15514	DØQE2	T17
ØØØØ2Ø	ØØØ2ØØ	DUMM21	LDR
ØØØØ21	ØØØ2ØØ	D1AAØ	ADR UP
ØØØØ22	ØØØ2ØØ	D1BAØ	ADR DN
ØØØØ23	ØØ14ØØ	ZMMCAØ	N/D AD
ØØØØ24	ØØØ652	ZMMDAØ	BASICP
ØØØØ25	ØØØ636	ZMMEA1	MC1SØS
ØØØØ26	ØØØ75Ø	ZMMFAØ	1'S SU
ØØØØ27	ØØ1316	ZMMGB1	WCN'S
ØØØØ3Ø	ØØØ542	ZMMHAØ	C/HTNG
ØØØØ31	ØØØ716	ZMMIAØ	RANDAT
ØØØØ32	ØØØ426	ZMMKIØ	ADR DN
ØØØØ33	ØØ3Ø46	ZQMAA1	MEMEXR
ØØØØ34	ØØ1646	CMSAAØ	MEMPAR
ØØØØ35	ØØØ2ØØ	CMSBAØ	GALOMP
ØØØØ36	ØØ66Ø6	ZQMBA1	EXTMEM
ØØØØ37	ØØØ2ØØ	LDR	LDR
ØØØØ41	ØØØ2ØØ	DUMMY	LDR
ØØØØ42	ØØ3132	ZTMBØØ	TM-9TK
ØØØØ43	ØØ3252	ZTMCØØ	TM-7TK
ØØØØ44	ØØ254Ø	CKBAAØ	SXT
ØØØØ45	ØØ3562	CKBBAØ	SOB
ØØØØ46	ØØ7366	CKBCAØ	XOR
ØØØØ47	ØØ7234	CKBDAØ	MARK
ØØØØ5Ø	ØØ2174	CKBEAØ	RTT
ØØØØ51	ØØ1712	CKBFAØ	STKLIM
ØØØØ52	ØØ1424	CKBGAØ	SPL
ØØØØ53	ØØ374Ø	CKBHAØ	REGSET
ØØØØ54	Ø1355Ø	CKBIAØ	ASH
ØØØØ55	Ø1466Ø	CKBJAØ	ASHC

TABLE #3

PROGRAM SELECT REGISTER SETTINGS REQUIRED TO RUN AUTO-ACCEPT OR QUICK VERIFY

MEMORY SIZE	SWITCH NUMBER 4	3	2	1	0
4K	0	0	0	0	0
8K	0	0	0	0	1
12K	0	0	0	1	0
16K	0	0	0	1	1

TABLE #4

MEASUREMENT OF POWER SUPPLY OUTPUT

POWER SUPPLY VOLTAGE	POWER SUPPLY VOLTAGE LIMITS	RED METER LEAD	BLACK METER LEAD
+5V	5.00 - 5.10V	Red crimp connector on logic block.	Black crimp connector on logic block.
+15V	14.75 - 15.25	Orange term point connector on logic block.	Black crimp connector on logic block.
-15V	14.75 - 15.25	Blue crimp connector on logic block.	Black crimp connector on logic block.

ATTACHMENT #1

ENGINEERING SPECIFICATION digital CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP1105

SHIPPING TAGS

DEC# _____

ITEM _____ OF _____

SIGNATURE _____

FOR DOMESTIC SHIPMENTS

FOR FOREIGN SHIPMENTS

CUSTOMER _____

DEC# _____

SERIAL# _____

ITEM# _____

TOTAL UNPACKED PIECES _____

DESCRIPTION:

PACKED BY

SHIPPED BY _____

_____ OF _____ PIECES

ATTACHMENT #4

	SIZE	CODE	NUMBER	REV
	A	SP	11/Ø5-Ø-6	

ENGINEERING SPECIFICATION digital CONTINUATION SHEET

TITLE ACCEPTANCE PROCEDURE FOR BASIC PDP11/05

CUSTOMER	SLOT #	DEC #	System Type & Serial #	PRODUCT LINE	FISCAL MONTH

SYSTEM INSPECTED BY:	DATE	TIME IN	TIME OUT	DOWN TIME	TOTAL TIME
	1 2	1 2	1 2		

C.R. CHECKED BY:	DATE	DISPOSITION	CHECK TIME	DOWN TIME	TOTAL TIME

ACCEPTED BY:	Week & Date In	Week & Date Out	Run Time	Down Time	Total Time

CHECKOUT TECH.	Shipped By:	Ship Date	Ship Time	Total Accpt. Time

FAILURE REPORT — TOTAL # OF FAILURES

PROBLEMS:

ITEM FAILED	F	A	R	WAIVERS	DESCRIPTION
1. Modules					
2. Test Equipment					
3. System					
4. Misc.					
5.					
6.					
7.					
8.					
9.					

	SIZE	CODE	NUMBER	REV
	A	SP	11/Ø5-Ø-6	

ATTACHMENT #5

PDP11/05 ACCEPTANCE LOG (BASIC)

	Min Time	Date	Time In	Time Out	Pass	Fail	Time Up	Time Down
1. Initial Verification								
2. Mechanical Inspection								
3. Module Inspection								
4. Power and Ground Check								
5. Voltage Variation								
6. Quick Verify								
7. Burn-in Start Burn-in Recycle 1								
Burn-in Recycle 2 Burn-in Complete								
8. Console Test, Key & Lock Test								
9. Paper Tape Read								
10. Unibus Test								
11. Electrical Acceptance								
12. 50 Cycle Conversion								
13. Final Inspection								
14. Software Check for Completness								

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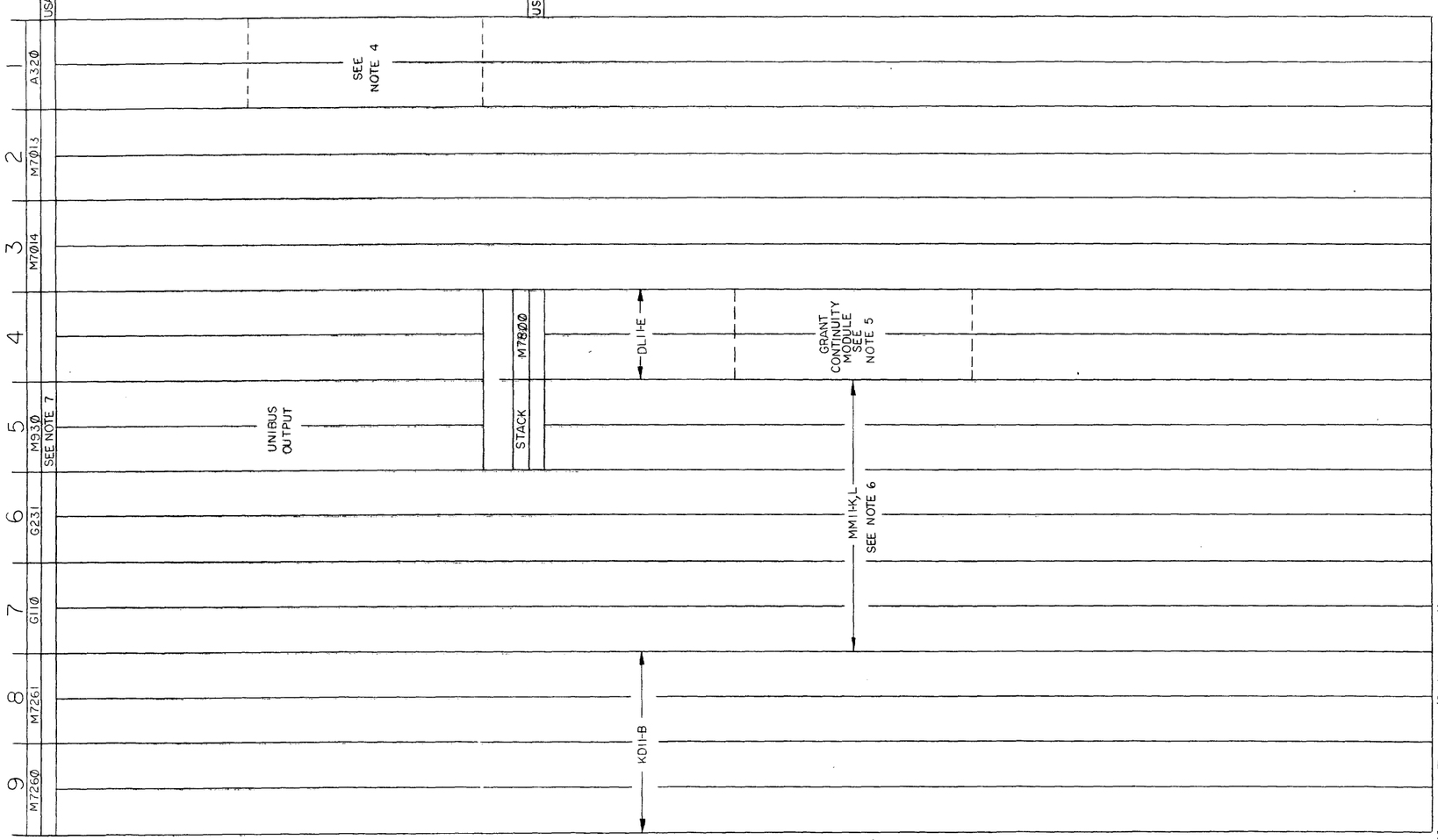


NOTES:

1. SUPPLIED WITH VT4Ø ASSEMBLY, SEE DWG. NO. A-PL-VT4Ø-Ø-Ø
2. SUPPLIED W. TH PDP11Ø5. SEE DWG. NO. D-MU-11Ø5-Ø-Ø1 FOR FURTHER INFORMATION.
3. ASYNC LINE INTERFACE IS OFFERED AS OPTION WITH GT4Ø. SEE DWG. NO. A-PL-GT4Ø-Ø-Ø.
4. THIS SLOT IS WIRED FOR THE KM11 LIGHT BD. FOR DEBUGGING OF THE 11Ø5 CPU. REMOVE A32Ø MODULE TO USE THIS SLOT. REFER TO DWG. NO. A-SS-5509081-0-9 FOR PROPER LIGHT BOARD OVERLAY INFORMATION.
5. PREWIRED MODULE SLOT FOR SMALL PERIPHERAL OPTIONS. WITH NO OPTIONS INSTALLED, BUS GRANT CONTINUITY IS PROVIDED BY G727 MODULE IN LOCATION DØ4. THE G727 MODULE IS REMOVED WHEN A SMALL PERIPHERAL OPTION IS INSTALLED.
6. IF MM11-K, STACK IS H213.
   IF MM11-L, STACK IS H214.
7. BEFORE THE 11Ø5 IS CONNECTED TO OTHER SYSTEM OPTIONS, THE M93Ø BUS TERMINATOR IS MOVED TO THE END SYSTEM OPTION UPON INTERCONNECTION.

SEE NOTE 2	REF	UNIBUS TERMINATOR	M93Ø	12
SEE NOTE 3	REF	ASYNC LINE INTERFACE	M78ØØ	11
SEE NOTE 2	REF	CPU DATA PATH	M7261	10
	REF	CPU CONTROL	M726Ø	9
SEE NOTE 1	REF	TERM., BUS CONT. & BOOTSTRAPS	M7Ø14	8
SEE NOTE 1	REF	DISPLAY CONT. AND CHAR. GEN.	M7Ø13	7
SEE NOTE 2	REF	MEMORY DRIVERS	G231	6
	REF	MEMORY CONTROL	G11Ø	5
	REF	8K MEMORY STACK	H214	4
	REF	4K MEMORY STACK	H213	3
	REF	GRANT CONTINUITY	G727	2
SEE NOTE 1	REF	VECTOR GEN. AND ANALOG	A32Ø	1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES

DECIMALS	ANGLES
XXX ± .005	±0° 30'
XX ± .02	
X ± .1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. L.M.G.	DATE 10-4-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE 11/24/72	
NEXT HIGHER ASSY. B-DU-VT4Ø-Ø		
SCALE —		
SHEET 1 OF 1		

TITLE: MODULE UTILIZATION

SIZE	CODE	NUMBER	REV.
D	MU	VT4Ø-Ø-1	

DIST.

REV	NO.	CHANGE	BY	CHK
		REVISIONS		

BRUNING 40-107 15968
DFC FORM 1/0
DRN 100-A

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET [X]

SEQUENCE		SEQUENCE	
16 BIT PROCESSOR KD11-B	B-DD-KD11-B		
MICROPROGRAM FLOW	K-MP-KD11-B-1		
MICROPROGRAM SYMBOLIC LISTING	K-MP-KD11-B-2		
MICROPROGRAM BINARY LISTING	K-MP-KD11-B-3		
MICROPROGRAM CROSS REF. LISTING	K-MP-KD11-B-4		
DATA PATHS	E-CS-M726Ø-Ø-1		
DATA PATH ROM PATTERNS	K-RL-M726Ø-Ø-8		
CONTROL LOGIC & MICROPROGRAMS	E-CS-M7261-Ø-1		
CONTROL LOGIC ROM PATTERNS	K-RL-M7261-Ø-8		

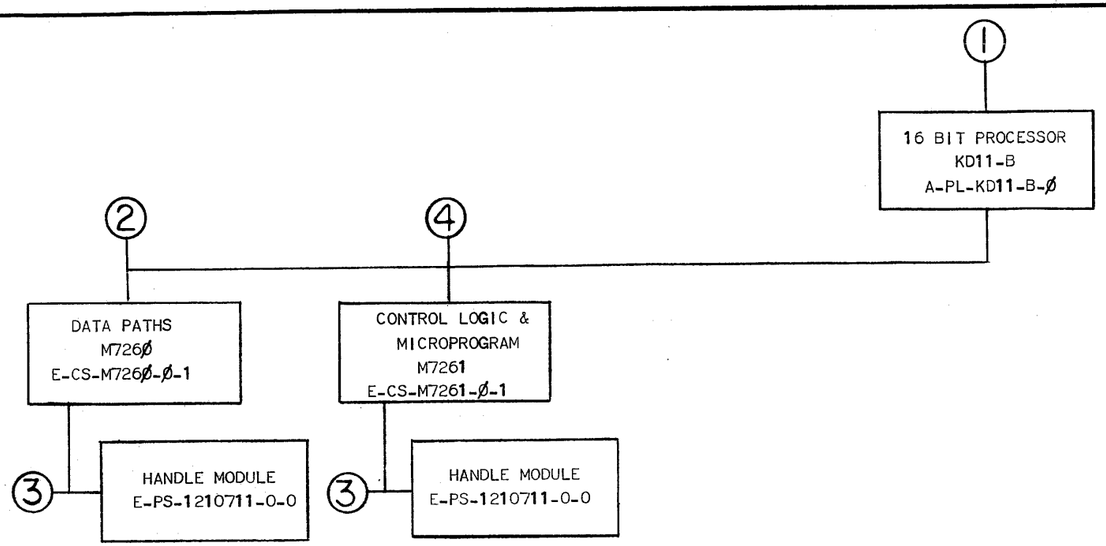
UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: KD11-B
KD11-B	16 BIT PROCESSOR	

REVISIONS			
DATE	CHG. NO.	PRV	
	KD11E-00002	B	C
MT	KD11E-00003		
M.T.	KD11B-4		

USED ON OPTION/MODEL

DRN. J.CAHILL	DATE 4/21/72	TITLE: 16 BIT PROCESSOR KD11-B
CHK'D. C.Teschner	DATE 5-15-72	
PROJ ENG A. Tacher	DATE 5-16-72	
PROD.	DATE 5/16/72	SIZE B; CODE DD; NUMBER KD11-B; REV C
FIELD SERV. D. Beckwith	DATE	
SHEET 1 OF		DIST



TITLE		SIZE	CODE	NUMBER	REV
16 BIT PROCESSOR KD11-B	SHEET 2 OF 3	B	DD	KD11-B	C

ELECTRICAL

CUSTOMER PRINT SET KD11-B	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		1.	A-PL-KD11-B-Ø		1	16 BIT PROCESSOR (KD11-B)	
C			K-MP-KD11-B-1	B	22	MICOPROGRAM FLOW	
C			K-MP-KD11-B-2	C	6	MICROPROGRAM SYMBOLIC LISTING	
C			K-MP-KD11-B-3	C	7	MICROPROGRAM BINARY LISTING	
C			K-MP-KD11-B-4		3	MICROGROGRAM CROSS REF. LISTING	
X		2.	E-CS-M726Ø-Ø-1	#	10	DATA PATHS (M726Ø)	
			B-MH-M726Ø-Ø-6		1	MODULE ECO HISTORY	
			K-CO-M726Ø-Ø-4		1	X-Y CO-ORDINATE HOLE LOCATION	
			B-AH-M726Ø-Ø-5		1	ASSY/DRILLING HOLE	
X			K-RL-M726Ø-Ø-8	#	15	DATA PATH ROM PATTERNS	
X		4.	E-CS-M7261-Ø-1	#	13	CONTROL LOGIC & MICROPROGRAM	
			B-MH-M7261-Ø-6		1	MODULE ECO HISTORY	
			K-CO-M7261-Ø-4		1	X-Y CO-ORDINATE HOLE LOCATION	
			B-AH-M7261-Ø-5		1	ASSY/DRILLING HOLE	
X			K-RL-M7261-Ø-8	#	57	CONTROL LOGIC ROM PATTERNS	

MECHANICAL

CUSTOMER PRINT SET KD11-B	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		1.	A-PL-KD11-B-Ø		1	16 BIT PROCESSOR (KD11-B)	
		2.	E-CS-M726Ø-Ø-1		10	DATA PATHS (M726Ø)	
			B-MH-M726Ø-Ø-6		1	MODULE ECO HISTORY	
			K-CO-M726Ø-Ø-4		1	X-Y CO-ORDINATE HOLE HISTORY	
			B-AH-M726Ø-Ø-5		1	ASSY/DRILLING HOLE	
		3.	E-PS-1210711-0-0		1	HANDLE MODULE	
		4.	E-CS-M7261-Ø-1		13	CONTROL LOGIC & MICROPROGRAM	
			B-MH-M7261-Ø-6		1	MODULE ECO HISTORY	
			K-CO-M7261-Ø-4		1	X-Y CO-ORDINATE HOLE LOCATION	
			B-AH-M7261-Ø-5		1	ASSY/DRILLING HOLE	

TITLE		SIZE	CODE	NUMBER	REV
16 BIT PROCESSOR KD11-B	SHEET 3 OF 3	B	DD	KD11-B	C

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1	A B	
2	A A	
3	A A	
4	A A	
5	A A	
6	A A	
7	A B	
8	A A	
9	A A	
10	A A	
11	A A	
12	A A	
13	A A	
14	A A	
15	A A	
16	A A	
17	A A	
18	A A	
19	A A	
20	A A	
21	A A	
22	A A	

ECO NO.	KD112-2	KD112-3
ETCH REV.		
ENG.	BA	MT
DATE	8-28-72	9-21-72

FIRST USED ON OPTION/MODEL

KD11-B

DRN.	G. TOWNE	DATE 8-21-72
CHK'D.	J McCullough	DATE 8-21-72
ENG.	Bob Armstrong	DATE 8-29-72
PROJ. ENG.	Bob Armstrong	DATE 8-29-72
PROD.		DATE

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE

MICROPROGRAM FLOW

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NEXT HIGHER ASSY.

B-DD-KD11-B

SCALE

SHEET 1 OF 22

SIZE	CODE	NUMBER	REV.
K	MP	KD11-B-1	B

DIST.

NOTES ON NOTATION;

1; MICROROUTINES BEGIN WITH A COMMENT
THE FIRST CHARACTER OF WHICH IS '*',

2; ALL OTHER COMMENTS BEGIN WITH '/',

3; R[N] REFERRS SCRATCH PAD REGISTER N,
R[7] IS ALSO REFERRED TO AS 'PC',

4; R[S] REFERRS TO THAT REGISTER SPECIFIED
IN THE SOURCE PORTION OF THE CURRENT INST,
(IR<11:9>); LIKEWISE, R[D] REFERRS TO THAT
REG SPECIFIED IN THE DESTINATION PORTION OF
THE CURRENT INST, (IR<2:0>),

5; K[N] REFERRS TO THAT LOCATION OF THE
CONSTANTS CHIP CONTAINING THE CONSTANT N,

6; 'BUT' STANDS FOR 'BRANCH ON MICRO TEST',

```
LOC  NXT  * INSTRUCTION FETCH
062  053  F=1   BA=PC; DATI
053  365  F=2   B=PC+2
365  364  F=3   PC=B; CKOFF
364  061  F=4   B,IR=UNIBUS DATA
061  001  F=5   B=B SEX; BUT IR DECODE
          / IF DOUBLE OP INST GOTO S0=1 THRU S7=1 DEPENDING ON SOURCE MODE
          / IF SINGLE OP INST GOTO D0=1 THRU D7=1 DEPENDING ON DEST MODE (INCLUDING JSR)
          / IF BRANCH, CHANGE PC GOTO B=1
          / IF BRANCH, PC UNCHANGED GOTO B2=2
          / IF CLEAR OR SET COND CODE(S) GOTO CCM=1
          / IF INST=RTS GOTO R1=1
          / IF INST=RTI GOTO R2=1
          / IF INST=WAIT GOTO W=1
          / IF INST=HALT GOTO H=1
          / IF INST=RESET GOTO RST=1
          / IF INST=EMT GOTO ET=1
          / IF INST=BREAKPOINT TRAP GOTO BT=1
          / IF INST=IOT GOTO IT=1
          / IF INST=TRAP GOTO T=1
          / IF RESERVED INST (NONE OF THE ABOVE) GOTO RT=1
```



```
LOC  NXT  * SOURCE MODE 0 (REGISTER), GET SOURCE DATA
          / GET TO S0=1 FROM F=5 VIA BUT IR DECODE IR<11:9>=0
201  007  S0=1  B=R[S]; BUT BYTE
          / IF BYTE INST GOTO SBE=1 (MUST BE EVEN BYTE)
007  001  S0=2  R[D]=B; BUT DESTINATION
          / IF IR<5:3>  =0 GOTO D0=1
          /             =1      D1=1
          /             =2      D2=1
          /             =3      D3=1
          /             =4      D4=1
          /             =5      D5=1
          /             =6      D6=1
          /             =7      D7=1
```

```
LOC  NXT  * SOURCE MODE 1 (REG, DEFERRED) GET SOURCE DATA
          / GET TO S1=1 FROM F=5 VIA BUT IR DECODE IR<11:9>
203  244  S1=1  BA=R[S]; DATI; CKOFF; ALBYT
          / GET TO S1=2 FROM S2=3 VIA GOTO
          /          "        S3=5    "
          /          "        S6=5    "
244  007  S1=2  B=UNIBUS DATA; BUT BYTE; GOTO S0=2
          / IF ODD BYTE GOTO SBO=1
          / IF EVEN BYTE GOTO SBE=1
          / IF NOT BYTE FALL THROUGH TO S0=2
```

```
LOC  NXT  * SOURCE MODE 2 (AUTO=INC,) GET SOURCE DATA
          / GET TO S2=1 FROM F=5 VIA BUT IR DECODE IR<11:9>=2
205  301  S2=1  BA=R[S]; DATI; ALBYT
301  014  S2=2  B=R[S]+1+BYTE;BAR
          / GET TO S2=3 FROM S4=1 VIA GOTO
014  244  S2=3  R[S]=B; CKOFF; GOTO S1=2
```

```
LOC  NXT  *SOURCE MODE 3 (AUTO=INC DEFERRED) GET SOURCE DATA
          / GET TO S3=1 FROM F=5 VIA BUT IR DECODE IR<11:9>=3
207  016  S3=1  BA=R[S]; DATI (MUST BE AN EVEN ADDRESS HERE)
016  017  S3=2  B=R[S]+2
```

```
        / GET TO S3=3 FROM S5=1 VIA GOTO
017  134  S3=3  R[S]=B; CKOFF
        / GET TO S3=4 FROM S7=5 VIA GOTO
134  274  S3=4  B=UNIBUS DATA
274  244  S3=5  BA=B; DATI; CKOFF; GOTO S1=2; ALBYT



LOC  NXT  * SOURCE MODE 4 (AUTO=DEC) GET SOURCE DATA
        / GET TO S4=1 FROM F=5 VIA BUT IR DECODE IR<11:9>=4
211  014  S4=1  B,BA=R[S]=1=BYTE,BAR; DATI; ENABOVER; GOTO S2=3; ALBYT



LOC  NXT  * SOURCE MODE 5 (AUTO=DEC DEFERRED) GET SOURCE DATA
        / GET TO S5=1 FROM F=5 VIA BUT IR DECODE IR<11:9>=5
213  017  S5=1  B,BA=R[S]=2; DATI(MUST BE AN EVEN ADDRESS HERE); ENABOVER; GOTO S3=3



LOC  NXT  * SOURCE MODE 6 (INDEXED) GET SOURCE DATA
        / GET TO S6=1 FROM F=5 VIA BUT IR DECODE IR<11:9>=6
215  025  S6=1  BA=PC; DATI(MUST BE EVEN ADDRESS HERE)
025  026  S6=2  B=PC+2
026  027  S6=3  PC=B; CKOFF
027  030  S6=4  B=UNIBUS DATA
030  244  S6=5  BA=B+R[S]; DATI; CKOFF; GOTO S1=2; ALBYT



LOC  NXT  * SOURCE MODE 7 (INDEXED DEFERRED) GET SOURCE DATA
        / GET TO S7=1 FROM F=5 VIA BUT IR DECODE IR<11:9>=7
217  032  S7=1  BA=PC; DATI(MUST BE AN  EVEN ADDRESS HERE)
032  033  S7=2  B=PC+2
033  034  S7=3  PC=B; CKOFF
034  035  S7=4  B=UNIBUS DATA
035  134  S7=5  BA=B+R[S]; DATI(MUST BE AN EVEN ADDRES) ; CKOFF; GOTO S3=4
```



```
LOC  NXT  * SOURCE BYTE ODD
        / GETE TO SBO=1 FROM S1=2 VIA BUT BYTE (BYTE INST, AND SOURCE DATA ODD ADDR)
067  346  SBO=1 SHIFT B RIGHT; F SHIFT
346  324  SBO=2 SHIFT B RIGHT; F SHIFT
324  340  SBO=3 SHIFT B RIGHT; F SHIFT
340  361  SBO=4 SHIFT B RIGHT; F SHIFT
361  050  SBO=5 SHIFT B RIGHT; F SHIFT
050  020  SBO=6 SHFIT B RIGHT; F SHIFT
020  052  SBO=7 SHIFT B RIGHT; F SHIFT
052  047  SBO=8 SHIFT B RIGHT; GOTO SBE=1



LOC  NXT  * SOURCE EVEN BYTE
        / GET TO SBE=1 FROM SBO=8 VIA GOTO
        / GET TO SBE=1 FROM S1=2 VIA BUT BYTE; (BYTE INST AND SOURCE DATA EVEN ADDR)
        / GET TO SBE=1 FROM S0=1 VIA BUT BYTE; (BYTE INST,)
047  001  SBE=1 R[10]=B SEX; BUT DESTINATION
        / IF IF<5:3>  =0 GOTO D0=1
        /    "              =1  "   D1=1
        /    "              =2  "   D2=1
        /    "              =3  "   D3=1
        /    "              =4  "   D4=1
        /    "              =5  "   D5=1
        /    "              =6  "   D6=1
        /    "              =7  "   D7=1



LOC  NXT  * DEST, MODE 0 (REGISTER), GET DEST DATA, OP, AND REPLACE
        / GET TO D0=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=0)
        / GET TO D0=1 FROM SBE=1 VIA BUT DESTINATION (IR<5:3>=0)
101  154  D0=1  B=R[D]; BUT MOVE
        / IF INST=MOVE,BAR (OTHER THAN MOVE) AND BYTE GOTO DB0=1
        / IF INST=MOVE AND BYTE GOTO M8=0
        / IF INST=MOVE AND BYTE,BAR GOTO D0=3A
        / IF INST=MOVE,BAR AND BYTE,BAR FALL THROUGH TO D0=2
157  142  D0=2  R[11]=B; BUT UNARY
        / IF INST=JMP OR JSR GOTO ERT=1 (ILLEGAL INST, TRAP)
        / IF INST=SWAB GOTO SB1=1
        / IF INST=OTHER UNARY(CLR,COM,INC,DEC,NEG,ADC,SBC,TST,ROR,ROL,ASR,ASL) GOTO U1=1
        / GET TO D0=3 FROM U1=1 VIA GOTO
        / GET TO D0=3 FROM D0=1 VIA BUT BYTE (INST=MOVE AND BYTE,BAR)
```

```
192  332  D0=3  B←R[10] OP B; BUT NONMOD
          / SEE DESCRIPTION OF AUXILLARY ALU CONTROL (AUX CONTROL)
          / FOR MORE DETAILS ON WHAT 'OP' ACCOMPLISHES
          / THERE EXISTS A D03=A WHICH IS IDENTICAL TO D0=3 EXCEPT LOC=155
          / GET TO D0=3A FROM SB1=8 VIA GOTO
          / IF NONMOD GOTO B2=2 (BUT SERVICE)
          / IF NOT NONMOD FALL THROUGH TO D0=4
          / GET TO D0=4 FROM R1=6 VIA GOTO
332  040  D0=4  R[D]←B; BUT SERVICE
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERTSA
          / IF POWERFAIL GOTO PF=1
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UATR RECEIVE GOTO URTR
          / IF UART TRANSMIT GOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE GOTO F=1
```

```
LOC  NXT  * DEST, MODE 1 (REG,DEFERRED) GET DEST DATA, OP, AND REPLACE
          / GET TO D1=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=1)
          / GET TO D1=1 FROM SBE=1 VIA BUT DESTINATION (IR<5:3>=1)
103  200  D1=1  B,BA←R[D]; DATIP; BUT JSRMP; ALBT; CKOFF
          / NOTE DATA IN PAUSE HERE
          / IF INST=JMP GOTO J1=1
          / IF INST=JSR GOTO J2=1
          / IF INST NOT JMP OR JSR FALL THROUGH TO D1=2
          / GET DO D1=2 FROM D2=3 VIA GOTO
          / GET TO D1=2 FROM D3=5 VIA GOTO
          / GET TO D1=2 FROM D6=5 VIA GOTO
200  210  D1=2  B←UNIBUS DATA; BUT BYTE
          / IF ODD BYTE GOTO D0=1
          / IF EVEN BYTE GO TO DE=1
          / IF NOT BYTE FALL THROUGH TO D1=3
210  143  D1=3  R[11]←B; BUT UNARY
          / IF INST=SWAB GOTO SB2=1
          / IF INST=OTHER UNARY (CLR, COM,INC,DEC,NEG,ADC, SBC,TST,ROR,ROL,ASR,ASL) GOTO U2=1
          / GET TO D1=4 FROM DE=1 VIA BUT UNARY (NON UNARY)
          / GET TO D1=4 FROM U2=1 VIA GOTO
          / GET TO D1=4 FROM SB2=8 VIA GOTO
163  334  D1=4  B←R[10] OP B; BUT NONMOD
          / SEE DESCRIPTION OF AUXILLARY ALU CONTROL (AUX CONROL)
          / FOR MORE DETAILS ON WHAT 'OP' ACCOMPLISHES
```



```
          / IF NONMOD GOTO B2-2 (BUT SERVICE)
          / IF NOT NONMOD FALL THROUGH TO D1-5
334  065  D1-5  DATO; ALBYT; CKOFF
          / GET TO D1-6 FROM D0-18 VIA GOTO
065  305  D1-6  DRIVERS←B; GOTO B2-2 (BUT SERVICE)
```

```
LOC  NXT  * DEST MODE 2 (AUTO-INC) GET DEST DATA, OP AND REPLACE
          / GET TO D2-1 FROM S0-2 VIA BUT DESTINATION (IR<5:3>=2)
          / GET TO D2-1 FROM SBE-1 VIA BUT DESTINATION (IR<5:3>=2)
105  331  D2-1  BA←R[D]; DATIP; ALBYT
          / NOTE DATA IN PAUSE HERE
331  341  D2-2  B←R[D]+1+BYTE,BAR
          / GET TO D2-3 FROM D4-1 VIA GOTO
341  200  D2-3  R[D]←B; BUT JSRMP; GOTO D1-2; CKOFF
          / IF INST=JMP GOTO J1-1
          / IF INST=JSR GOTO J2-1
          / IF INST NOT JMP OR JSR FALL THROUGH TO D1-2
```

```
LOC  NXT  * DEST MODE 3 (AUTO-INC DEFERRED) GET DEST DATA, OP AND REPLACE
          / GET TO D3-1 FROM S0-2 VIA BUT DESDTINATION (IR<5:3>=3)
          / GET TO D3-1 FROM SBE-1 VIA BUT DESTINATION (IR<5:3>=3)
107  160  D3-1  BA←R[D]; DATI
160  070  D3-2  B←R[D]+2
          / GET TO D3-3 FROM D5-1 VIA GOTO
070  071  D3-3  R[D]←B; CKOFF
          / GET TO D3-4 FROM D7-5 VIA GOTO
071  072  D3-4  B←UNIBUS DATA
072  200  D3-5  BA←B; DATIP; BUT JSRMP; GOTO D1-2; ALBYT; CKOFF
          / NOTE DATA IN PAUSE HERE
          / IF INST=JMP GOTO J1-1
          / IF INST=JSR GOTO J2-1
          / IF INST NOT JMP OR JSR FALL THROUGH TO D1-2
```

```
LOC  NXT  * DEST MODE 4(AUTO-DEC) GET DEST DATA, OP AND REPLACE
          / GET TO S4-1 FROM S0-2 VIA BUT DESTINATRON (IR<5:3>=4)
          / GET TO S4-1 FROM SBE-1 VIA BUT DESTINATION (IR<5:3>=4)
111  341  D4-1  B,BA←R[D]-1-BYTE,BAR; DATIP; ENABOVER; GOTO D2=3; ALBYT
```

```
LOC  NXT  * DEST MODE 5 (AUTO-DEC DEFERRED) GET DEST DATA, OP, AND REPLACE
          / GET TO D5=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=5)
          / GET TO D5=1 FROM SBE=1 VIA BUT DESTINATION (IR<5:3>=5)
113  070  D5=1  B;BA+R[D];=2; DATI; ENABOVER; GOTO D3=3



LOC  NXT  * DEST MODE 6 (INDEXED) GET DTA,OP, AND REPLACE
          / GET TO D6=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=6)
          / GET TO D6=1 FROM SBE=1 VIA BUT DESTINAITON (IR<5:2>=6)
115  075  D6=1  BA+PC; DATI
075  077  D6=2  B+PC+2
077  057  D6=3  PC+B; CKOFF
057  300  D6=4  B+UNIBUS DATA
300  200  D6=5  B;BA+B+R[D]; DATIP; BUT JSRMP; GOTO D1=2; ALBYT; CKOFF
          / NOTE DATA IN PUASE HERE
          / IF INST=JMP GOTO J1=1
          / IF INST=JSR GOTO J2=1
          / IF INST NOT JMP OR JSR FALL THROUGH TO D1=2



LOC  NXT  * DEST MODE 7 (INDEXED DEFERRED) GET DEST DATA,OP, AND REPLACE
          / GET TO D7=1 FROM S0=2 VIA BUT DESTINATION (IR<5:3>=7)
          / GET TO D7=1 FROM SBE=1 VIA BUT DESTINATION (IR<5:3>=7)
117  310  D7=1  BA+PC; DATI
310  104  D7=2  B+PC+2
104  320  D7=3  PC+B; CKOFF
320  106  D7=4  B+UNIBUS DATA
106  071  D7=5  BA+B+R[D]; DATI; CKOFF; GOTO D3=4



LOC  NXT  * DESTINATION MODE 0, BYTE
          / GET TO DB0=1 FROM B0=1 VIA BUT BYTE (BYTE INST AND MOVE,BAR)
156  144  DB0=1 R[11],B=B SEX; BUT UNARY
          / IF UNARY OTHER THAN JSR, JMP, OR SWAB (CLR,COM,INC,DEC,NEG,ADC,SBC,TST,ROR,ROL,ASR,ASL) GOTO U3=1
```



```
          / IF NOT UNARY FALL THROUGH TO DB0=2
164  304  DB0=2 B=R[10] OP B; BUT NONMOD
          / SEE DESCRIPTION OF AUXILLARY ALU CONROL (AUX CONTROL)
          / FOR MORE DETAILS ON WHAT 'OP' ACCOMPLISHES
          / IF NONMOD GOTO B2=2 (SERVICE)
          / IF NOT NONMOD FALL THRU TO DB0=3
304  040  DB0=3 R[D]<7:0>=B; BUT SERVICE; GOTO F=1
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERTSA
          / IF POWER FAIL GOTO PF=1
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UART RECEIVE GOTO URTR
          / IF UART TRANSMIT GOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE GOTO F=1



LOC  NXT  * DESTINATION ODD BYTE
          / GET TO DO=1 FROM DI=2 VIA BUT BYTE (BYTE INST AND ODD ADDR)
270  123  DO=1  SHIFT B RIGHT; F SHIFT
123  124  DO=2  SHIFT B RIGHT; F SHIFT
124  125  DO=3  SHIFT B RIGHT; F SHIFT
125  126  DO=4  SHIFT B RIGHT; F SHIFT
126  127  DO=5  SHIFT B RIGHT; F SHIFT
127  130  DO=6  SHIFT B RIGHT; F SHIFT
130  131  DO=7  SHIFT B RIGHT; F SHIFT
131  132  DO=8  SHIFT B RIGHT
132  145  DO=9  R[11],B=B SEX; BUT UNARY
          / IF UNARY OTHER THAN JSR, JMP, OR SWAB (CLR,COM,INC,DEC,NEG,ADC,SBC,TST,ROR,ROL,ASR,ASL) GOTO U4=1
          / IF NOT UNARY FALL THROUGH TO DO=10
165  342  DO=10 B=R[10] OP B; BUT NONMOD
          / SEE DESCRIPTION OF AUXILLARY ALU CONTROL (AUX CONROL)
          / FOR MORE DETAILS ON WHAT 'OP' ACCOMPLISHES
          / IF NONMOD GOTO B2=2 (BUT SERVICE)
          / IF NOT NONMOD FALL THROUGH TO DO=11
342  135  DO=11 SHIFT B LEFT; F SHIFT
135  136  DO=12 SHIFT B LEFT; F SHIFT
136  137  DO=13 SHIFT B LEFT; F SHIFT
137  140  DO=14 SHIFT B LEFT; F SHIFT
140  141  DO=15 SHIFT B LEFT; F SHIFT
141  142  DO=16 SHIFT B LEFT; F SHIFT
142  143  DO=17 SHIFT B LEFT; F SHIFT
143  065  DO=18 SHIFT B LEFT; DATO; CKOFF; GOTO D1=6; ALBYT
```

```
LOC  NXT  * DESTINATION EVEN BYTE
          / GET TO DE=1 FROM D1=2 VIA BUT BYTE (BYTE INST AND EVEN ADDR)
250  163  DE=1  R[11]=B SEXT GOTO D1=4[ BUT UNARY
          / IF UNARY OTHER THAN JSR,JMP, OR SWAB (CLR,COM,INC,DEC,ADC,SBC,TST,ROR,ASR,ASL) GOTO U5=1
          / IF NOT UNARY FALL THROUGH TO D1=4
```

```
LOC  NXT  * UNARY OPERATORS GET SINGLE OPERAND IN B AND R[10]
          / CKOFF IN EACH OF THE FOLLOWING (U1=1, U2=1, U3=1, U4=1, AND U5=1)
          / GIVES THE AUX CONTROL SUFFICIENT TIME TO DO ITS THING,
          / THAT IS,, REMAIN IN CURRENT STATE (MICRO STEP) FOR TWO
          / PROCESSOR CKOCK PERIODS SO THAT THE CONDITION CODE LOGIC
          / HAS SUFFICIENT TIME TO SETTLE,
          / GET TO U1=1 FROM D0=2 VIA BUT UNARY (INST=CLR,COM,INC,DEC,NEG,ADC,SBC,TST,ROR,ROL,ASR,ASL)
352  162  U1=1  R[10]=B[ CKOFF[ GOTO D0=3
          / GET TO U2=1 FROM D1=3 VIA BUT UNARY (INST=CLR,COM,,,,ASL) SEE U1=1
353  163  U2=1  R[10]=B[ CKOFF[ GOTO D1=4
          / GET TO U3=1 FROM DB0=1 VIA BUT UNARY (INST=CLR,COM,,,,ASL) SEE U1=1
354  164  U3=1  R[10]=B[ CKOFF[ GOTO DB0=2
          / GET TO U4=1 FROM D0=9 VIA BUT UNARY (INST=CLR,COM,,,,ASL) SEE U1=1
355  165  U4=1  R[10]=B[ CKOFF[ GOTO D0=10
          / GET TO U5=1 FROM DE=1 VIA BUT UNARY (INST=CLR,COM,,,,ASL) SEE U1=1
373  163  U5=1  R[10]=B[ CKOFF[ GOTO D1=4
```

```
LOC  NXT  * MOVB INST
          / GET TO MB=0 FROM D0=1 VIA BUT MOVE (INST=MOVE AND BYTE)
154  240  MB=0  CKOFF
          / CKOFF IN MB=0 GIVES THE AUX CONTROL SUFFICIENT TIME TO DO ITS THING,
          / THAT IS,, REMAIN IN CURRENT STATE (MICRO STEP) FOR TWO
          / PROCESSOR CLOCK PERIODS SO THAT THE CONDITION CODE LOGIC
          / HAS SUFFICIENT TIME TO SETTLE,
240  152  MB=1  B=R[10]
152  040  MB=2  R[0]=B SEXT BUT SERVICE
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERT1A
          / IF POWER FAIL GOTO PF=1
```



```
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BG4 GOTO BG=1
          / IF UART RECEIVE GOTO URTR
          / IF UART TRANSMIT GOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE GOTO F=1
```

```
LOC  NXT  * BRANCH, CHANGE PC
015  147  B=1   SHIFT B LEFT
147  146  B=2   B=PC+B
146  040  B=3   PC=B[ BUT SERVICE
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERT1A
          / IF POWER FAIL GOTO  PF=1
          / IF BR7 GOTO BG=1
          / IF BR6  GOTO BG=1
          / IF INTERNAL LINE CLOCK GOT LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UART RECEIVE GOTO URTR
          / IF UART TRANSMIT GOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE GOTO F=1
```

```
LOC  NXT  * CONDITION CODE MASK (FOR BOTH SET AND CLEAR)
151  350  CCM=1 B=B AND K[17]
350  112  CCM=2 BUT DEST
          / IF INST= SET, GO TO SC=1
          / IF INST= CLEAR, GOTO CC=1
```

```
LOC  NXT  * CLEAR CONDITION CODES
112  040  CC=1  PSW=PSW AND (B',BAR)[ BUT SERVICE
          / THIS EFFECTIVELY CLEARS THOSE BITS OF THE PSW WHICH ARE SET
```

```
        / IN THE B REG, B,BAR IS B REGISTER COMPLEMENTED,
        / PRIORITIES ARE LISTED HIGHEST TO LOWEST
        / IF T BIT BRAP GOTO BT=1
        / IF STACK OVERFLOW GOTO ERT1A
        / IF POWER FAIL GOTO PF=1
        / IF BR7 GOTO BG=1
        / IF BR6 GOTO BG=1
        / IF INTERNAL LINE CLOCK GOTO LC=1
        / IF BR5 GOTO BG=1
        / IF BR4 GOTO BG=1
        / IF UART RECEIVE GOTO URTR
        / IF UART TRNASMIT GOTO URTX
        / IF CONSOLE STOP GOTO H=1
        / IF NONE OF THE ABOVE GOTO F=1



LOC  NXT  * SET CONDITION CODES
116  040  SC=1  PSW=PSW OR B; BUT SERVICE
        / PRIORITIES ARE LISTED HIGHEST TO LOWEST
        / IF T BIT TRAP GOTO BT=1
        / IF STACK OVERFLOW GOTO ERT1A
        / IF POWER FAIL GOTO PF=1
        / IF BR7 GOTO BG=1
        / IF BR6 GOTO BG=1
        / IF INTERNAL LINE CLOCK GOTO LC=1
        / IF BR5 GOTO BG=1
        / IF BR4 GOTO BG=1
        / IF UART RECEIVE GOTO URTR
        / IF UART TRANSMIT GOTO URTX
        / IF CONSOLE STOP GOTO H=1
        / IF NONE OF THE ABOVE GOTO F=1



LOC  NXT  * SWAB, MODE 0
        / GET TO SB1=1 FROM D0=2 VIA BUT UNARY (INST=SWAB AND MODE=0)
        / ROTATE LEFT ACCOMPLISHED VIA ASR
166  172  SB1=1 ROTATE B LEFT; F SHIFT
172  173  SB1=2 ROTATE B LEFT; F SHIFT
173  174  SB1=3 ROTATE B LEFT; F SHIFT
174  144  SB1=4 ROTATE B LEFT; F SHIFT
144  176  SB1=5 ROTATE B LEFT; F SHIFT
176  177  SB1=6 ROTATE B LEFT; F SHIFT
177  006  SB1=7 ROTATE B LEFT; F SHIFT
006  155  SB1=8 ROTATE B LEFT; GOTO D0=3A
```



```
LOC  NXT  * SWAB, NOT MODE 0
        / GET TO SB2=1 FROM D1=3 VIA BUT UNARY (INST=SWAB)
        / ROTATE LEFT ACCOMPLISHED VIA ASR
167  012  SB2=1 ROTATE B LEFT; F SHIFT
012  220  SB2=2 ROTATE B LEFT; F SHIFT
220  022  SB2=3 ROTATE B LEFT; F SHIFT
022  023  SB2=4 ROTATE B LEFT; F SHIFT
023  024  SB2=5 ROTATE B LEFT; F SHIFT
024  031  SB2=6 ROTATE B LEFT; F SHIFT
031  330  SB2=7 ROTATE B LEFT; F SHIFT
330  163  SB2=8 ROTATE B LEFT; GOTO D1=4



LOC  NXT  * JMP
        / GET TO J1=1 FROM D1=1 VIA BUT JSRMP (INST=JMP)
        / GET TO J1=1 FROM D2=3 VIA BUT JSRMP (INST=JMP)
        / GET TO J1=1 FROM D3=5 VIA BUT JSRMP (INST=JMP)
        / GET TO J1=1 FROM D6=5 VIA BUT JSRMP (INST=JMP)
204  260  J1=1  NOP
        / J1=1 MUST BE A NOP BECAUSE FOLLOWING A CKOFF, THE AMX WILL
        / BE FORCED TO TAKE DATA FROM THE UNIBUS,
260  040  J1=2  PC=B; BUT SERVICE
        / PRIORITIES ARE LISTED HIGHEST TO LOWEST
        / IF T BIT TRAP GOTO BT=1
        / IF STACK OVERFLOW GOTO ERT1A
        / IF POWER FAIL GOTO PF=1
        / IF BR7 GOTO BG=1
        / IF BR6 GOTO BG=1
        / IF INTERNAL LINE CLOCK GOTO LC=1
        / IF BR5 GOTO BG=1
        / IF BR4 GOTO BG=1
        / IF UART RECEIVE GOTO URTR
        / IF UART TRANSMIT GOTO URTX
        / IF CONSOLE STOP GOTO H=1
        / IF NONE OF THE ABOVE GOTO F=1
```

```
LOC  NXT  * JSR
          / GET TO J2=1 FROM D1=1 VIA BUT JSRMP (INST=JSR)
          / GET TO J2=1 FROM D2=3 VIA BUT JSRMP (INST=JSR)
          / GET TO J2=1 FROM D3=5 VIA BUT JSRMP (INST=JSR)
          / GET TO J2=1 FROM D6=4 VIA BUT JSRMP (INST=JSR)
212  261  J2=1  NOP
          / J2=1 MUST BE A NOP BECAUSE FOLLOWING A CKOFF, THE AMX WILL BE
          / FORCED TO TAKE DATA FROM THE UNIBUS,
261  262  J2=1A R[11]=B
262  214  J2=2  B,BA=R[6]=2; ENABOVER
214  206  J2=3  R[6]=B; CKOFF; DATO
206  216  J2=4  DRIVERS=R[S]
216  263  J2=5  B=PC
263  264  J2=6  R[S]=B
264  265  J2=7  B=R[11]
265  040  J2=8  PC=B; BUT SERVICE
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOT ERT1A
          / IF POWER FAILL GOTO PF=1
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UART RECEIVE GOTO URTR
          / IF UART TRANSMIT GOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE GOTO F=1
```

```
LOC  NXT  * RTS
          / GET TO R1=1 FROM F=5 VIA BUT IR DECODE (INST=RTS)
005  221  R1=1  BA=R[6]; DATI
221  222  R1=2  B=R[6]+2
222  223  R1=3  R[6]=B
223  224  R1=4  B=R[D]
224  225  R1=5  PC=B; CKOFF
225  332  R1=6  B=UNIBUS DATA; GOTO D0=4
```

```
LOC  NXT  * RTI
          / GET TO R2=2 FROM F=5 VIA BUT IR DECODE (INST=RTI)
227  230  R2=1  BA=R[6]; DATI
230  231  R2=2  B=R[6]+2
```



```
231  232  R2=3  R[6]=B; CKOFF
232  234  R2=4  PC=UNIBUS DATA
          / THERE IS NO R2=5 (ANY MORE)
234  235  R2=6  BA=R[6]; DATI
235  236  R2=7  B=R[6]+2
236  237  R2=8  R[6]=B; CKOFF
237  305  R2=9  PS=UNIBUS DATA; GOTO B2=2 (BUT SERVICE)
```

```
LOC  NXT  * WAIT
          / GET TO W=1 FROM F=5 VIA BUT IR DECODE (INST=WAIT)
          / GET TO W=1 FROM W=1 VIA GOTO IF BUT SERVICE IS FALSE
063  040  W=1   BUT SERVICE
          / THE MICRO PROGRAM WILL LOOP ON W=1 UNTIL SOME HIGHER
          / PRIORITY CONDITION IS RECOGNIZED BY THE 'BUT SERVICE' ROM SEE F101 ON
          / THE CONE PRINT,
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERT1A
          / IF POWER FAIL GOT PF=1
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UART RECEIVE URTR
          / IF UART TRANSMIT TOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE TOTO F=1
```

```
LOC  NXT  * HALT
          / GET TO H=1 FROM F=5 VIA BUT IR DECODE (INST=HALT)
          / GET TO H=1 FROM BUT SERVICE
041  302  H=1   B=PC
          / DISPLAY PC IN LIGHTS BY PUTTING IT INTO B
          / GET TO H=2 FROM CE1=3 VIA GOTO
          / GET TO H=2 FROM CD1=5 VIA GOTO
          / GET TO H=2 FROM CL=3 VIA GOTO
302  300  H=2   BA=R[17]; BUT SWITCH
          / THE BA IS LOADED HERE SO THAT THE ADDRESS WILL BE INCREMENTED BY +1 WHEN EXAMINING (DEPOSITING INT
          / AND BY +2 WHEN EXAMINING (DEPOSITING INTO) SUCCESSIVE CORE MEMORY,
          / IF START DEPRESSED GOTO CS=1
          / IF CONTINUE DEPRESSED GOTO CCS=1
```

```
        / IF EXAMINE (1 ST) GOTO CE1=1

        / IF EXAMINE (NOT 1 ST) GOTO CE2=1
        / IF DEPOSIT (1 ST) GOTO CD1=1
        / IF DEPOSIT (NOT 1 ST) GOT CD2=1
        / IF LOAD GOTO CL=1
        / IF NO SWITCHES ARE DEPRESSED LOOP ON H=2



LOC  NXT  * EMT TRAP (VECTOR LOC=30)
          / GET TO ET=1 FROM F=5 VIA BUT IR DECODE (INST=EMT)
011  245  ET=1  B=K[30]
          / GET TO ET=2 FROM BT=1 VIA GOTO
          / GET TO ET=2 FROM IT=1 VIA GOTO
          / GET TO ET=2 FROM TT=1 VIA GOTO
          / GET TO ET=1 FROM RT=1 VIA GOTO
          / GET TO ET=2 FROM ERT=1 VIA GOTO
          / GET TO ET=2 FROM PF=1 VIA GOTO
245  246  ET=2  R[12]=B
246  247  ET=3  B,BA=R[6]=2] ENABOVER
          / ET=4 HAS BEEN ELIMINATED
247  226  ET=5  R[6]=B] CKOFF] DATO
226  251  ET=6  DIRVERS=PS
251  252  ET=7  B,BA=R[6]=2] ENABOVER
252  253  ET=8  R[6]=B] CKOFF] DATO
253  254  ET=9  DIRVERS=PC
254  255  ET=10 BA=R[12]] DATI] CKOFF
255  256  ET=11 PC=UNIBUS DATA
256  257  ET=12 BA=R[12]+2] DATI] CKOFF
257  305  ET=13 PS=UNIBUS DATA] GOTO B2=2 (SERVICE)



LOC  NXT  * BREAKPOINT TRAP (VECTOR LOC=14) AND T BIT TRACE TRAP
          / GET TO BT=1 FROM ALL BUT SERVICE
          / GET TO BT=1 FROM F=5 VIA BUT IR DECODE (INST=BREAKPOINT)
045  245  BT=1  B=K[14] GOTO ET=2



LOC  NXT  * IOT (VECTOR LOC=20)
          / GET TO IT=1 FROM F=5 VIA BUT IR DECODE (INST=IOT
273  245  IT=1  B=K[20] GOTO ET=2
```



```
LOC  NXT  * TRAP (VECTOR LOC=34)
          / GET TO T=1 FROM F=5 VIA BUT IR DECODE (INST=TRAP)
021  245  T=1   B=K[34] GOTO ET=2



LOC  NXT  * RESERVED INST TRAP (VECTOR LOC=10)
          / GET TO RT=1 FROM F=5 VIA BUT IR DECODE (INST=NON VALID)
001  245  RT=1  B=K[10] GOTO ET=2



LOC  NXT  * ERROR TRAP (BUS ERROR, STACK OVERFLOW, ILLEGAL INST) VECTOR LOC=4
          / THERE EXISTS ERT=1 (LOC=10) FOR BUS ERROR
          / THERE ALSO EXISTS ERT1A (LOC=46) FOR STACK OVERFLOW
          / ERT1A GOES TO ET2=2, A SEQUENCE WHICH DOESN'T HAVE THE
          / ENABOVER, WE DON'T WANT TO LOOK FOR STACK OVERFLOW WHILE
          / DOING THE STACK OVERFLOW TRAP, THE ET2=2 SEQUENCE REJOINS THE ET SEQUENCE AT ET=8
          / THERE ALSO EXISTS ERT1B (LOC=153) FOR ILLEGAL INST (JSR OR JMP, MODE 0)
010  245  ERT=1 B=K[4]] GOTO ET=2



LOC  NXT  * CONSOLE START SWITCH
          / GET TO CS=1 FOLLOWING RELEASE OF START SWITCH,
100  322  CS=1  IR=ZERO
          / CLOCKING THE IR TURNS ON THE RUN LIGHT
322  321  CS=2  BA,B=R[17]
321  040  CS=3  PC=B] BUT SERVICE
          / PRIOIRTIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT BRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERT1A
          / IF POWER FAIL GOTO PF=1
          / IF BR7 GOTO BG=1
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
```

```
        / IF BR4 GOTO BG=1
        / IF UART RECEIVE GOTO URTR
        / IF UART TRANSMIT GOTO URTX
        / IF CONSOLE STOP GOTO H=1
        / IF NONE OF THE ABOVE GOTO F=1



LOC  NXT  * CONSOLE EXAMINE SWITCH= FIRST TIME IN SEQUENCE (DON'T INC R[17])
          / GET TO CE1=1 FROM H=2 VIA BUT SWITCH
          / GET TO CE1=1 FROM CE2=2 VIA GOTO
317  307  CE1=1 BA,B=R[17]; BUT SWITCH
          / DISPLAY ADDRESS BY PUTTING INTO THE B REGISTER WHILE EXAMINE IS DOWN
          / LOOP ON CE1=1 UNTIL SWITCH IS RELEASED
307  326  CE1=2 DATI; CKOFF
326  302  CE1=3 B=UNIBUS DATA; GOTO H=2



LOC  NXT  * CONSOLE EXAMINE SWITCH = OTHER THAN FIRST IN SEQUENCE (INC R[17])
          / GET TO CE2=1 FROM H=2 VIA BUT SWITCH
315  371  CE2=1 B=R[17]+2
          / R[17] IS IN BA FROM H=2, THIS WILL CAUSE +2 TO BECOME +1 WHEN EXAMINING REGISTERS;
371  317  CE2=2 R[17]=B; GOTO CE1=1



LOC  NXT  * CONSOLE DEPOSIT SWITCH = FIRST TIME IN SEQUENCE (DON'T INC R[17])
          / GET TO CD1=1 FROM H=2 VIA BUT SWITCH
          / GET TO CD1=1 FROM CD2=2 VIA GOTO
313  303  CD1=1 B=R[17]; BUT SWITCH
          / LOOP ON CD1=1 UNTIL DEPOSIT SWITCH IS RELEASED
303  374  CD1=2 BA=K[207],BAR; DATI; CKOFF
          / COMPLEMENT OF 207 = 177570 = SWITCH REGISTER ADDRESS
374  314  CD1=3 B=UNIBUS DATA
314  372  CD1=4 BA=R[17]; DATO; CKOFF
372  302  CD1=5 DRIVERS=B; GOTO H=2
```



```
LOC  NXT  * CONSOLE DEPOSIT SWITCH = OTHER THAN FIRST IN SEQENCE (INC R[17])
          / GET TO CD2=1 FROM H=3) VIA BUT SWITCH
312  337  CD2=1 B=R[17]+2
          / R[17] IS IN BA, THIS WILL CAUSE +2 TO BECOME +1 WHEN DEPOSITING INTO REGISTERS
337  313  CD2=2 R[17]=B; GOTO CD1=1



LOC  NXT  * CONSOLE CONTINUE SWITCH
          / GET TO CCS=1 FROM H=2 VIA BUT SWITCH
316  276  CCS=1 B=PC
276  270  CCS=2 BUT SWITCH
272  062  CCS=3 IR=ZERO; GOTO F=1
          / CLOCKING THE IR TURNS ON THE RUN LIGHT



LOC  NXT  * CONSOLE LOAD SWITCH
          / GET TO CL=1 FROM H=2 VIA BUT SWITCH
311  375  CL=1  BA=K[207],BAR; DATI; CKOFF
          / COMPLEMENT OF 207 = 177570 = SWITCH REGISTER ADDRSS
375  367  CL=2  B=UNIBUS DATA
367  302  CL=3  R[17]=B; GOTO H=2
          / CL=3 GOES TO H=2 VIA GOTO; IF LOAD IS STILL DEPRESSED, THE BUT
          / SWITCH IN H=2 WILL TAKE US BACK TO CL=1,  THUS, AS LONG AS LOAD IS
          / DEPPRESSED, CHANGES IN THE SWITCHES WILL SHOW UP IN THE B REG (LIGHTS) AND IN R[17];



LOC  NXT  * POWER FAIL (VECTOR LOC=24)
          / GET TO PF=1 FROM SERVICE
043  245  PF=1  B=K[24]; GOTO ET=2

                                                                                )



LOC  NXT  * RESTART FROM POWER FAIL (VECTOR LOC=24)
          / GET TO RS=1 MYSTERIOUSLY AS POWER COMES UP ( NXT CHIPS, F092 AND F103 SHOWN ON THE CONF PRINT,
          / ARE DISABLED FORCING THE MICROPROGRAM TO RS=1 IN LOC 0;
000  241  RS=1  BA=K[24]; DATI
241  347  RS=1A CKOFF
```

```
          / MUST DO CKOFF IN RS=1A BECAUSE OF CONFLICT BETWEEN
          / CKOFF AND INIT CREATED BY CKOFF ASSOCIATED WITH AUX CONTROL
347  074  RS=2  PC=UNIBUS DATA
074  351  RS=3  BA=K[24]=2; DATI; CKOFF
351  305  RS=4  PS=UNIBUS DATA;  GOTO B2=2 (SERVICE)



LOC  NXT  * INTERRUPT SERVICING
          / GET TO INT=1 FROM BG=2 VIA BUT INT (TRUE)
325  246  INT=1 R[12]=UNIBUS DATA; SET SLAVESYNC; GOTO ET=3



LOC  NXT  * BUS GRANT SERVICE
          / GET TO BG=1 FROM BUT SERVICE
040  305  BG=1  BUT INTERRUPT; GOTO B2=2 (BUT SERVICE)
          / IF INTERRUPT GOTO INT=1
          / IF NO INTERRUPT FALL THROUGH TO B2=2



LOC  NXT  * NOP = BRANCH CONDITION NOT TRUE (PC UNCHANGED)
          / B2=1 HAS BEEN ELIMINATED BECAUSE NEWI IS NO LONGER
          / GET TO B2=2A FROM B0=3 VIA BUT NONMOD (TRUE)
          / GET TO B2=2B FROM D1=4 VIA BUT NONMOD (TRUE)
          / GET TO B2=2C FROM D0=10 VIA BUT NONMOD (TRUE)
          / GET TO B2=2D FROM F=5 VIA BUT IR DECODE, BRANCH INST, CONDITION NOT TRUE
          / GET TO B2=2 FROM RST=1 VIA GOTO
          / GET TO B2=2 FROM D0=4 VIA GOTO
          / GET TO B2=2 FROM DB0=2  VIA BUT NONMOD (TRUE)
          / GET TO B2=2 FROM MB=2 VIA GOTO
          / GET TO B2=2 FROM CC=1 VIA GOTO
          / GET TO B2=2 FROM SC=1 VIA GOTO
          / GET TO B2=2 FROM J2=8 VIA GOTO
          / GET TO B2=2 FROM RS=10 VIA GOTO
          / GET TO B2=2 FROM ET=13 VIA GOTO
305  040  B2=2  BUT SERVICE
          / PRIORITIES ARE LISTED HIGHEST TO LOWEST
          / IF T BIT TRAP GOTO BT=1
          / IF STACK OVERFLOW GOTO ERT1A
          / IF POWER FAIL GOTO PF=1
          / IF BR7 GOTO BG=1
```



```
          / IF BR6 GOTO BG=1
          / IF INTERNAL LINE CLOCK GOTO LC=1
          / IF BR5 GOTO BG=1
          / IF BR4 GOTO BG=1
          / IF UART RECEIVE GOTO URTR
          / IF UART TRANSMIT GOTO URTX
          / IF CONSOLE STOP GOTO H=1
          / IF NONE OF THE ABOVE GOTO F=1



LOC  NXT  * RESET
          / GET TO RST=1 FROM F=5 VIA BUT IR DECODE (INST=RESET)
357  305  RST=1 BUT INIT; CKOFF; GOTO B2=2 (BUT SERVICE)



LOC  NXT  * DOUBLE BUS ERROR, GOTO HALT
110  041  DBE=1 NOP; GOTO H=1



LOC  NXT  * UART XMIT (VECTOR LOC 64)
060  245  URTX  B=K[64]; GOTO ET=2



LOC  NXT  * UART RECEIVE (VECTOR LOC 60)
064  245  URTR  B=K[60]; GOTO ET=2



LOC  NXT  * LINE CLOCK (VECTOR LOC 100)
042  245  LC=1  B=K[100]; GOTO ET=2
```

```
ERT1A NOT EXPLICITLY SHOWN IN FLOW
D0-3A NOT EXPLICITLY SHOWN IN FLOW
A145  NOT EXPLICITLY SHOWN IN FLOW
ET2-2 NOT EXPLICITLY SHOWN IN FLOW
ET2-3 NOT EXPLICITLY SHOWN IN FLOW
ET2-5 NOT EXPLICITLY SHOWN IN FLOW
ET2-6 NOT EXPLICITLY SHOWN IN FLOW
ET2-7 NOT EXPLICITLY SHOWN IN FLOW
ERT1B NOT EXPLICITLY SHOWN IN FLOW
B2-2A NOT EXPLICITLY SHOWN IN FLOW
B2-2B NOT EXPLICITLY SHOWN IN FLOW
B2-2C NOT EXPLICITLY SHOWN IN FLOW
B2-2D NOT EXPLICITLY SHOWN IN FLOW
```

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1	A B C	
2	A A A	
3	A B B	
4	A A B	
5	A A A	
6	A A A	

ECO NO.	00002	KD11B 00003	KD11B 00004
ETCH REV.			
ENG.	BA	MT	MT
DATE	8-21-72	7-24-72	10-30-72

FIRST USED ON OPTION/MODEL

KD11-B

DRN.	Y. Tourne	DATE 8-21-72
CHK'D.	D McGillivray	DATE 8-21-72
ENG.	B. ARMSTRONG	DATE 8-29-72
PROJ. ENG.	B. ARMSTRONG	DATE 8-29-72
PROD.		DATE

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE

MICROPROGRAM SYMBOLIC LISTING

NEXT HIGHER ASSY.

B-DD-KD11-B

SIZE	CODE	NUMBER	REV.
K	MP	KD11-B-2	C

SCALE --

SHEET 1 OF 6

DIST.

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NAME	LOC	ABT	ALG	ALU	AUX	BAR	BLG	BRG	BUT	CON	CKO	CRI	FSH	PSW	SAM	SPA	SPF	TNS	NXT
									ROM R0	WRI	ZRO								
B=1	015	NO	SP	ASL	OFF	H			ROM R0	REA	NON	B=2							
B=2	147	NO	SP	A+B	OFF	H			ROM R7	REA	NON	B=3							
B=3	146	NO	SP	BL	OFF	H			ROM R7	WRI	NON	BG=1							
B2=2	305	NO	SP	AL	OFF	H			ROM R0	REA	NON	BG=1							
B2=2A	333	NO	SP	AL	OFF	H			ROM R0	REA	NON	BG=1							
B2=2B	339	NO	SP	AL	OFF	H			ROM R0	REA	NON	BG=1							
B2=2C	343	NO	SP	AL	OFF	H			ROM R0	REA	NON	BG=1							
B2=2D	013	NO	SP	AL	OFF	H			ROM R0	REA	NON	BG=1							
BG=1	040	NO	SP	AL	OFF	H			ROM R0	REA	NON	B2=2							
BT=1	045	NO	NUL	AL	OFF	H			ROM R7	REA	NON	ET=2							
CC=1	112	NO	PSW	ABBAR	OFF	H			ROM R0	REA	NON	BG=1							
CCM=1	151	NO	NUL	AANDB	OFF	H			ROM R0	WRI	NON	CCM=2							
CCM=2	350	NO	SP	AL	OFF	H			ROM R0	REA	NON	CC=1							
CCS=1	316	NO	SP	AL	OFF	H			ROM R7	REA	NON	CCS=2							
CCS=2	276	NO	SP	AL	OFF	H			ROM R0	REA	NON	DO=1							
CCS=3	272	NO	SP	ZERO	OFF	H			ROM R0	REA	NON	F=1							
CD1=1	313	NO	SP	AL	OFF	H			ROM R17	REA	NON	CD1=2							
CD1=2	303	NO	NUL	ABAR	OFF	L	H		ROM R0	WRI	!	CD1=3							
CD1=3	374	NO	NUL	AL	OFF	H			BAR R0	REA	NON	CD1=4							
CD1=4	314	NO	SP	AL	OFF	L			ROM R17	REA	0	CD1=5							
CD1=5	372	NO	SP	BL	OFF	H			BAR R0	REA	NON	H=2							
CD2=1	312	NO	SP	A+B	OFF	H			ROM R17	REA	NON	CD2=2							
CD2=2	337	NO	SP	BL	OFF	H			ROM R17	WRI	NON	CD1=1							
CE1=1	317	NO	SP	AL	OFF	L			ROM R17	REA	NON	CE1=2							
CE1=2	307	NO	SP	AL	OFF	H			ROM R0	REA	!	CE1=3							
CE1=3	326	NO	NUL	AL	OFF	H			BAR R0	REA	NON	H=2							
CE2=1	315	NO	SP	A+B	OFF	L			ROM R17	REA	NON	CE2=2							
CE2=2	371	NO	SP	BL	OFF	H			ROM R17	WRI	'ON	CE1=1							
CL=1	311	NO	NUL	ABAR	OFF	L			ROM R0	WRI	!	CL=2							
CL=2	375	NO	NUL	AL	OFF	H			BAR R0	REA	NON	CL=3							
CL=3	367	NO	SP	BL	OFF	H			ROM R17	WRI	NON	H=2							
CS=1	100	NO	SP	ZERO	OFF	H			ROM R0	REA	NON	CS=2							
CS=2	322	NO	SP	AL	OFF	L			ROM R17	REA	NON	CS=3							
CS=3	321	NO	SP	BL	OFF	H			ROM R7	WRI	NON	BG=1							
D0=1	101	NO	SP	AL	OFF	H			ROM R0	REA	NON	MB=0							
D0=2	157	NO	SP	BL	OFF	H			ROM R11	WRI	NON	D0=17							
D0=3	162	NO	SP	ABAR	ON	H			ROM R10	REA	NON	D0=4							
D0=3A	155	NO	SP	ABAR	ON	H			ROM R10	REA	NON	D0=4							
D0=4	332	NO	SP	BL	OFF	H			IRD R0	WRI	NON	BG=1							
D1=1	103	YES	SP	AL	OFF	L			IRD R0	REA	IP	D1=2							
D1=2	200	NO	NUL	AL	OFF	H			BAR R0	REA	NON	D1=3							
D1=3	210	NO	SP	BL	OFF	H			ROM R11	WRI	NON	D0=18							
D1=4	163	NO	SP	ABAR	ON	H			ROM R10	REA	NON	D1=5							

NAME	LOC	ABT	ALG	ALU	AUX	BAR	BLG	BRG	BUT	CON	CKO	CRI	FSH	PSW	SAM	SPA	SPF	TNS	NXT
									ROM R0	REA	0	D1-6							
D1-6	065	NO	SP	BL	OFF	H			ROM R0	REA	NON	B2-2							
D2-1	105	YES	SP	AL	OFF	L			IRD R0	REA	IP	D2-2							
D2-2	331	NO	SP	A+B	OFF	H			IRD R0	REA	NON	D2-3							
D2-3	341	NO	SP	BL	OFF	H			IRD R0	WRI	NON	D1-2							
D3-1	107	NO	SP	AL	OFF	L			IRD R0	REA	I	D3-2							
D3-2	160	NO	SP	A+B	OFF	H			IRD R0	REA	NON	D3-3							
D3-3	070	NO	SP	BL	OFF	H			IRD R0	WRI	NON	D3-4							
D3-4	071	NO	NUL	AL	OFF	H			BAR R0	REA	NON	D3-5							
D3-5	072	YES	SP	BL	OFF	L			ROM R0	REA	IP	D1-2							
D4-1	111	YES	SP	A-B-1	OFF	L			IRD R0	REA	IP	D2-3							
D5-1	113	NO	SP	A-B-1	OFF	L			IRD R0	REA	I	D3-5							
D6-1	115	NO	SP	AL	OFF	L			ROM R7	REA	I	D6-2							
D6-2	075	NO	SP	A+B	OFF	H			ROM R7	REA	NON	D6-3							
D6-3	077	NO	SP	BL	OFF	H			ROM R7	WRI	NON	D6-4							
D6-4	057	NO	NUL	AL	OFF	H			BAR R0	REA	NON	D6-5							
D6-5	300	YES	SP	A+B	OFF	L			IRD R0	REA	IP	D1-2							
D7-1	117	NO	SP	AL	OFF	L			ROM R7	REA	I	D7-2							
D7-2	310	NO	SP	A+B	OFF	H			ROM R7	REA	NON	D7-3							
D7-3	104	NO	SP	BL	OFF	H			ROM R7	WRI	NON	D7-4							
D7-4	326	NO	NUL	AL	OFF	H			BAR R0	REA	NON	D7-5							
D7-5	106	NO	SP	A+B	OFF	L			IRD R0	REA	I	D3-4							
D80-1	156	NO	SP	BL	OFF	H			ROM R11	WRI	NON	SB1-5							
D80-2	164	NO	SP	ABAR	ON	H			ROM R10	REA	NON	D80-3							
D80-3	304	NO	SPR	BL	OFF	H			IRD R0	WRI	NON	BG-1							
D8E-1	110	NO	SP	AL	OFF	H			ROM R0	REA	NON	H-1							
DE-1	250	NO	SP	BL	OFF	H			ROM R11	WRI	NON	D1-4							
D0-1	270	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-2							
D0-10	165	NO	SP	ABAR	ON	H			ROM R10	REA	NON	D0-11							
D0-11	342	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-12							
D0-12	135	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-13							
D0-13	136	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-14							
D0-14	137	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-15							
D0-15	140	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-16							
D0-16	141	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-17							
D0-17	142	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-18							
D0-18	143	YES	SP	AL	OFF	H			ROM R0	REA	0	D1-6							
D0-2	123	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-3							
D0-3	124	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-4							
D0-4	125	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-5							
D0-5	126	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-6							
D0-6	127	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-7							
D0-7	130	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-8							
D0-8	131	NO	SP	AL	OFF	H			ROM R0	REA	NON	D0-9							

K-MP-KD-1182 MICROPROGRAM SYMBOLIC LISTING REV.B

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NAME  LOC ABT ALG  ALU  AUX BAR BLG BRG BUT CON CKO CRI FSH PSW SAM SPA SPF TNS  NXT
BD-9  132 NO  SP   BL   OFF H       SEX L   UNY NON OFF OFF H ROM R11 WRI NON A145
ERT-1 214 NO  NUL  AL   OFF H       BRG L   CON 4   OFF OFF H ROM R0  WRI NON ET-2
ERT1A 044 NO  NUL  AL   OFF H       BRG L   CON 4/  OFF OFF H ROM R0  WRI NON ET2-2
ERTIP 153 NO  NUL  AL   OFF H       BRG L   CON 4/  OFF OFF H ROM R0  WRI NON ET-2

ET-1  311 NO  NUL  AL   OFF H       BRG L   CON 30  OFF OFF H ROM R0  WRI NON ET-2
ET-10 254 NO  SP   AL   OFF L       BRG H   IRC NON ON  OFF H ROM R12 REA I   ET-11
ET-11 255 NO  SP   AL   OFF H       BRG L   NON NON OFF OFF H ROM R7  WRI NON ET-12
ET-12 256 NO  SP   A+9  OFF L  +1   L   NON NON ON  ON  OFF H ROM R12 REA I   ET-13

ET-13 257 NO  SP   AL   OFF H       BRG L   NON NON OFF OFF L ROM R0  REA NON B2-2
ET-2  245 NO  SP   BL   OFF H       BRG H   NON NON OFF OFF H ROM R12 WRI NON ET-3
ET-3  246 NO  SP   A+B=1 OFF L  +1  L   END NON OFF OFF H ROM R6  REA NON ET-5
ET-5  247 NO  SP   PL   OFF H       BRG H   NON NON ON  OFF H ROM R6  WRI O   ET-6

ET-6  226 NO  PSW  AL   OFF H       BRG H   NON NON OFF OFF H ROM R0  REA NON ET-7
ET-7  251 NO  SP   A=B=1 OFF L  +1  L   END NON OFF OFF H ROM R6  REA NON ET-8
ET-8  252 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF H ROM R6  WRI O   ET-9
ET-9  253 NO  SP   AL   OFF H       BRG H   NON NON OFF OFF H ROM R7  REA NON ET-10

ET2-2 303 NO  SP   BL   OFF H       BRG L   NON NON OFF OFF H ROM R12 WRI NON ET2-3
ET2-3 004 NO  SP   A=B=1 OFF L  +1  L   NON NON OFF OFF H ROM R6  REA NON ET2-5
ET2-5 236 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF H ROM R6  WRI O   ET2-6
ET2-6 237 NO  PSW  AL   OFF H       BRG H   NON NON OFF OFF H ROM R0  REA NON ET2-7

ET2-7 251 NO  SP   A=B=1 OFF L  +1  L   NON NON OFF OFF H ROM R6  REA NON ET-8
F-1   262 NO  SP   AL   OFF L       BRG H   NON NON OFF OFF H ROM R7  REA I   F-2
F-2   253 NO  SP   A+B  OFF H  +1  L   NON NON OFF ON  OFF H ROM R7  REA NON F-3
F-3   365 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF H ROM R7  WRI NON F-4

F-4   364 NO  NUL  AL   OFF H       BRG L   IRC NON OFF OFF H ROM R0  REA NON F-5
F-5   261 NO  SP   BL   OFF H       SEX L   IRD NON OFF OFF H ROM R0  REA NON RT-1
H-1   241 NO  SP   AL   OFF H       BRG L   VON NON OFF OFF H ROM R7  REA NON H-2
H-2   302 NO  SP   AL   OFF L       BRG H   SW  NON OFF OFF H ROM R17 REA NON D6-5

INT-1 325 NO  SP   AL   OFF H       BRG H   SVS NON OFF OFF H ROM R12 WRI NON ET-3
IT-1  273 NO  NUL  AL   OFF H       BRG L   CON 20  OFF OFF H ROM R0  WRI NON ET-2
J1-1  204 NO  SP   AL   OFF H       BRG H   NON NON OFF OFF H ROM R0  REA NON J1-2
J1-2  267 NO  SP   BL   OFF H       BRG H   SRV NON OFF OFF H ROM R7  WRI NON BG-1

J2-1  212 NO  SP   AL   OFF H       BRG H   NON NON OFF OFF H ROM R0  REA NON J2-1A
J2-1A 261 NO  SP   BL   OFF L       BRG H   NON NON OFF OFF H ROM R11 WRI NON J2-2
J2-2  262 NO  SP   A=B=1 OFF L  +1  L   NON NON OFF OFF H ROM R6  REA NON J2-3
J2-3  214 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF H ROM R6  WRI O   J2-4

J2-4  206 NO  SP   AL   OFF H       BRG H   END NON OFF OFF H ROM R0  REA NON J2-5
J2-5  216 NO  SP   AL   OFF H       BRG L   NON NON OFF OFF H ROM R7  REA NON J2-6
J2-6  263 NO  SP   BL   OFF H       BRG H   NON NON OFF OFF H IRS R0  WRI NON J2-7
J2-7  264 NO  SP   AL   OFF H       BRG L   NON NON OFF OFF H ROM R11 REA NON J2-8

J2-8  265 NO  SP   BL   OFF H       BRG H   SRV NON OFF OFF H ROM R7  WRI NON BG-1
LC-1  242 NO  NUL  AL   OFF H       BRG L   CON 100 OFF OFF H ROM R0  WRI NON ET-2
MB-1  154 NO  SP   AL   OFF H       BRG H   NON NON OFF OFF H ROM R0  REA NON MB-1
MB-1  240 NO  SP   ABAR ON  H       BRG L   NON NON OFF ON  OFF H ROM R10 REA NON MB-2
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K-MP-KD-1182 MICROPROGRAM SYMBOLIC LISTING REV. A

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NAME  LOC ABT ALG  ALU  AUX BAR BLG BRG BUT CON CKO CRI FSH PSW SAM SPA SPF TNS  NXT
MB=2  152 NO  SP   BL   OFF H       SRV NON OFF OFF OFF H IRD R4  WRI NON BG=1
PF=1  043 NO  NUL  AL   OFF H       CON 24  OFF OFF OFF H ROM R0  WRI NON ET=2
R1=1  005 NO  SP   AL   OFF L       NON NON OFF OFF OFF H ROM R6  REA ! R1=2
R1=2  221 NO  SP   A+B  OFF H  +1   L   NON NON OFF ON  OFF H ROM R6  REA NON R1=3

R1=3  222 NO  SP   BL   OFF H       BRG H   NON NON OFF OFF OFF H ROM R6  WRI NON R1=4
R1=4  223 NO  SP   AL   OFF H       BRG L   NON NON OFF OFF OFF H IRD R0  REA NON R1=5
R1=5  224 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF OFF H ROM R7  WRI NON R1=6
R1=6  225 NO  NUL  AL   OFF H       BRG L   NON NON OFF OFF OFF H BAR R0  REA NON D0=4

R2=1  227 NO  SP   AL   OFF L       BRG H   NON NON OFF OFF OFF H ROM R6  REA ! R2=2
R2=2  230 NO  SP   A+B  OFF H  +1   L   NON NON OFF ON  OFF H ROM R6  REA NON R2=3
R2=3  231 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF OFF H ROM R6  WRI NON R2=4
R2=4  232 NO  SP   AL   OFF H       BRG H   NON NON OFF OFF OFF H ROM R7  WRI NON R2=6

R2=6  234 NO  SP   AL   OFF L       BRG H   NON NON OFF OFF OFF H ROM R6  REA ! R2=7
R2=7  235 NO  SP   A+B  OFF H  +1   L   NON NON OFF ON  OFF H ROM R6  REA NON R2=8
R2=8  236 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF OFF H ROM R6  WRI NON R2=9
R2=9  237 NO  NUL  AL   OFF H       BRG H   NON NON OFF OFF OFF L ROM R0  REA NON B2=2

RS=1  000 NO  NUL  AL   OFF L       BRG H   CON 24  OFF OFF OFF H ROM R0  WRI ! RS=1A
RS=1A 241 NO  SP   AL   OFF H       BRG H   NON NON ON  OFF OFF H ROM R0  REA NON RS=2
RS=2  347 NO  SP   AL   OFF H       BRG H   NON NON OFF OFF OFF H ROM R7  WRI NON RS=3
RS=3  074 NO  NUL  A+B  OFF L  +1   H   CON 24  ON  ON  OFF H ROM R0  WRI ! RS=4

RS=4  351 NO  SP   AL   OFF H       BRG H   NON NON OFF OFF OFF L ROM R0  REA NON B2=2
RST=1 357 NO  SP   AL   OFF H       BRG H   INI NON ON  OFF OFF H ROM R0  REA NON B2=2
RT=1  001 NO  NUL  AL   OFF H       BRG L   CON 10  OFF OFF OFF H ROM R0  WRI NON E1=2
S0=1  201 NO  SP   AL   OFF H       BRG L   BYT NON OFF OFF OFF H IRS R0  REA NON S0=2

S0=2  007 NO  SP   BL   OFF H       BRG H   DST NON OFF OFF OFF H ROM R1  REA ! S1=2
S1=1  203 YES SP   AL   OFF L       BRG H   NON NON ON  OFF OFF H IRS R0  REA NON S0=2
S1=2  244 NO  NUL  AL   OFF H       BRG L   BYT NON OFF OFF OFF H IRS R0  REA ! S2=2
S2=1  205 YES SP   AL   OFF L       BRG H   NON NON OFF OFF OFF H IRS R0  REA I   S2=2

S2=2  301 NO  SP   A+B  OFF H  +1   L   NON NON OFF ON  OFF H IRS R0  REA NON S2=3
S2=3  014 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF OFF H IRS R0  WRI NON S1=2
S3=1  207 NO  SP   AL   OFF L       BRG H   NON NON OFF OFF OFF H IRS R0  REA ! S3=2
S3=2  016 NO  SP   A+B  OFF H  +1   L   NON NON OFF ON  OFF H IRS R0  REA NON S3=3

S3=3  017 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF OFF H IRS R0  WRI NON S3=4
S3=4  134 NO  NUL  AL   OFF H       BRG L   NON NON OFF OFF OFF H IRS R0  REA NON S3=5
S3=5  274 YES SP   BL   OFF L       BRG H   NON NON ON  OFF OFF H IRS R0  REA ! S1=2
S4=1  211 YES SP   A=B=1 OFF L  +1  L   END NON OFF OFF OFF H IRS R0  REA ! S2=3

S5=1  213 NO  SP   A=B=1 OFF L  +1  L   NON NON OFF OFF OFF H IRS R0  REA ! S3=3
S6=1  215 NO  SP   AL   OFF L       BRG H   NON NON ON  OFF OFF H IRS R0  REA ! S6=2
S6=2  025 NO  SP   A+B  OFF L  +1   L   NON NON OFF ON  OFF OFF H ROM R7  REA NON S6=3
S6=3  026 NO  SP   BL   OFF H       BRG H   NON NON ON  OFF OFF H ROM R7  WRI NON S6=4

S6=4  027 NO  NUL  AL   OFF H       BRG L   NON NON OFF OFF OFF H BAR R0  REA NON S6=5
S6=5  036 YES SP   A+B  OFF L       BRG H   NON NON ON  OFF OFF H IRS R0  REA ! S1=2
S7=1  217 NO  SP   AL   OFF L       BRG H   NON NON OFF OFF OFF H ROM R7  REA ! S7=2
S7=2  032 NO  SP   A+B  OFF H  +1   L   NON NON OFF ON  OFF OFF H ROM R7  REA NON S7=3
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NAME	LOC	AUT	ALG	ALU	AUX	BAR	BLG	BRG	BUT	CON	CKO	CRI	FSH	PSW	SAM	SPA	SPF	TNS	NXT
S7=3	033	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R7	WRI	NON	S7=4
S7=4	034	NO	NUL	AL	OFF	H	BRG	L	NON	NON	OFF	OFF	OFF	H	BAR	RØ	REA	NON	S7=5
S7=5	035	NO	SP	A+B	OFF	L	BRG	H	NON	NON	ON	OFF	OFF	H	IRS	RØ	REA	I	S3=4
SB1=1	166	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB1=2
SB1=2	172	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB1=3
SB1=3	173	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB1=4
SB1=4	174	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB1=5
SB1=5	144	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB1=6
SB1=6	176	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB1=7
SB1=7	177	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB1=8
SB1=8	006	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	OFF	H	ROM	RØ	REA	NON	D0=3A
SB2=1	167	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB2=2
SB2=2	012	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB2=3
SB2=3	220	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB2=4
SB2=4	022	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB2=5
SB2=5	023	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB2=6
SB2=6	024	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB2=7
SB2=7	031	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB2=8
SB2=8	330	NO	SP	ASR	OFF	H	BRG	SL	NON	NON	OFF	OFF	OFF	H	ROM	RØ	REA	NON	D1=4
SBE=1	047	NO	SP	BL	OFF	H	SEX	H	DST	NON	OFF	OFF	OFF	H	ROM	R10	WRI	NON	R↑=1
SB0=1	067	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB0=2
SB0=2	346	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB0=3
SB0=3	324	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB0=4
SB0=4	340	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB0=5
SB0=5	361	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB0=6
SB0=6	050	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB0=7
SB0=7	020	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	ON	H	ROM	RØ	REA	NON	SB0=8
SB0=8	052	NO	SP	AL	OFF	H	BRG	SR	NON	NON	OFF	OFF	OFF	H	ROM	RØ	REA	NON	SBE=1
SC=1	116	NO	PSW	AORB	OFF	H	BRG	H	SRV	NON	OFF	OFF	OFF	L	ROM	RØ	REA	NON	BG=1
T=1	021	NO	NUL	AL	OFF	H	BRG	L	CON	34	OFF	OFF	OFF	H	ROM	RØ	WRI	NON	E↑=2
U1=1	352	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	D0=3
U2=1	353	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	D1=4
U3=1	354	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	DB0=2
U4=1	355	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	DO=10
U5=1	373	NO	SP	BL	OFF	H	BRG	H	NON	NON	ON	OFF	OFF	H	ROM	R10	WRI	NON	D1=4
URTR	064	NO	NUL	AL	OFF	H	BRG	L	CON	60	OFF	OFF	OFF	H	ROM	RØ	WRI	NON	E↑=2
URTX	060	NO	NUL	AL	OFF	H	BRG	L	CON	64	OFF	OFF	OFF	H	ROM	RØ	WRI	NON	E↑=2
W=1	063	NO	SP	AL	OFF	H	BRG	H	SRV	NON	OFF	OFF	OFF	H	ROM	RØ	REA	NON	BG=1

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS			REMARKS
1	A	B	C	
2	A	A	A	
3	A	B	B	
4	A	A	B	
5	A	A	A	
6	A	A	A	
7	A	A	A	

ECO NO.	00002	KD11B 00003	KD11B 00004
ETCH REV.			
ENG.	BA	MT	MT
DATE	8-21-72	9-24-72	10-30-72

FIRST USED ON OPTION/MODEL

KD11-B

DRN. M. Towne	DATE 8-21-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J McCullough	DATE 8-21-72	
ENG. B. ARMSTRONG	DATE 8-29-72	TITLE MICROPROGRAM BINARY LISTING
PROJ. ENG. B. ARMSTRONG	DATE 8-29-72	
PROD.	DATE	

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NEXT HIGHER ASSY.	SIZE	CODE	NUMBER	REV.
B-DD-KD11-B	K	MP	KD11-B-3	C
SCALE ++				
SHEET 1 OF 7	DIST.			

KD-11B MICROPROGRAM BINARY LISTING REV, A

N A H	L O C	N X T	A L U	C F A R S U I H X	P S S D S P P I W 1 3 P	S S S B M P M B O 0 1 T
A14=	145	0000	0000	1 0 1 1 0	0 0 0 0	1 0 0 1 0
B=1	015	1001	1100	1 0 0 1 1	1 0 0 0	1 0 0 1 1
B=2	147	1001	0110	1 0 0 1 1	1 1 0 0	1 1 0 1 1
B=3	146	1101	0101	1 0 0 1 1	1 1 0 0	1 1 0 1 1
B2=2	305	1101	1111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
B2=2A	333	1101	1111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
B2=2B	335	1101	1111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
B2=2C	343	1101	1111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
B2=2D	013	1101	1111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
BG=1	040	0011	1010	1 0 0 1 1	1 0 0 0	1 0 0 1 1
BT=1	045	0101	1010	1 0 0 1 1	1 0 0 0	1 0 0 1 1
CC=1	112	1101	1111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
CCM=1	151	0001	0111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
CCM=2	350	1011	0101	1 0 0 1 1	1 0 0 0	1 0 0 1 1
CCS=1	316	0100	0001	1 0 0 1 1	1 0 0 0	1 0 0 1 1
CCS=2	276	0100	0111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
CCS=3	272	1100	1101	0011	1 0 0 0	1 0 0 1 1
CD1=1	313	0011	1100	0000	1 0 0 1	1 0 0 1 1
CD1=2	303	0000	0011	1111	1 0 0 1	1 0 0 1 1
CD1=3	374	0011	0011	0000	1 0 0 1	1 0 0 1 1
CD1=4	314	0000	0101	0000	1 0 0 1	1 1 1 1 1
CD1=5	372	0011	1101	0101	1 0 0 1	1 0 0 1 1
CD2=1	312	0010	0000	0110	1 0 0 1	1 0 1 1 1
CD2=2	337	0011	0100	0101	1 0 0 1	1 0 0 1 1
CE1=1	317	0011	1000	0000	1 0 0 1	1 1 0 1 1
CE1=2	307	0010	1001	0000	1 0 0 1	1 0 0 1 1
CE1=3	326	0011	1101	0000	1 0 0 1	1 0 0 1 1
CE2=1	315	0000	0110	0110	0 1 1 1	1 1 1 1 1
CE2=2	371	0011	0000	0101	1 0 0 1	1 1 1 1 1
CL=1	311	0000	0010	1111	1 0 0 1	1 0 0 1 1
CL=2	375	0000	1001	0000	1 0 0 1	1 0 0 1 1
CL=3	367	0011	1101	0101	1 0 0 1	1 0 0 1 1
CS=1	100	1010	1101	0011	1 0 0 1	1 0 0 1 1
CS=2	322	0010	1110	0000	1 0 0 1	1 1 1 1 1
CS=3	321	1101	1111	0101	1 0 0 1	1 1 1 1 1
DS=1	101	1001	0011	0011	1 0 0 1	1 0 0 1 1
DS=2	157	1001	1101	0101	1 0 0 1	1 0 1 1 1
DS=3	162	0010	0101	1111	1 1 0 0	1 0 0 1 1
DS=3A	155	0010	0101	1111	1 1 0 0	1 0 0 1 1
DS=4	332	1101	1111	0101	1 0 0 1	1 0 0 1 1

K-MP- KD-11B MICROPROGRAM BINARY LISTING REV, B

N A M	L O C	N X T	A L U	C F A R S U I H X	P S S D S P P I W 1 3 P	S S S B M P M B O 0 1 T
D1-1	103	0111	1111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
D1-2	200	0111	0111	1 0 0 1 1	1 0 0 0	1 0 0 1 1
D1-3	210	1001	1100	1 0 0 1 1	1 0 0 0	1 0 0 1 1
D1-4	163	0010	0011	1 0 0 1 1	1 0 0 0	1 0 0 1 1
D1-5	334	1100	1010	0 0 0 0	1 0 0 1	1 0 0 1 1
D1-6	065	0011	1010	0 1 1 1	1 0 0 1	1 0 0 1 1
D2-1	105	0010	0110	1 0 0 1	1 0 0 0	1 0 0 1 1
D2-2	331	0001	1110	0 1 1 0	1 0 0 1	1 0 0 1 1
D2-3	341	0111	1111	0101	1 0 0 1	1 0 0 1 1
D3-1	107	1000	1111	0000	1 0 0 1	1 0 0 1 1
D3-2	160	1100	0111	0110	0 1 1 1	1 0 0 1 1
D3-3	070	1100	0110	0101	1 0 0 1	1 0 0 1 1
D3-4	071	1100	0101	0000	1 0 0 1	1 0 0 1 1
D3-5	072	0111	1111	0101	1 0 0 1	1 0 0 1 1
D4-1	111	0001	1110	1001	1 0 0 1	1 0 0 1 1
D5-1	113	1100	0111	1001	1 0 0 1	1 0 0 1 1
D6-1	115	1100	0010	0000	1 0 0 1	1 1 0 1 1
D6-2	075	1100	0000	0110	0 1 1 1	1 1 0 1 1
D6-3	077	1101	0000	0101	1 0 0 1	1 1 0 1 1
D6-4	057	0011	1111	0000	1 0 0 1	1 1 0 1 1
D6-5	300	0111	1111	0110	0 0 1 1	1 0 0 0
D7-1	117	0011	0111	0000	1 0 0 1	1 1 1 1
D7-2	310	1011	0111	0110	0 0 1 1	1 1 1 1
D7-3	164	0010	1111	0101	1 0 0 1	1 1 1 1
D7-4	320	1011	1001	0000	1 0 0 1	1 0 0 1
D7-5	106	1100	0110	0110	0 0 1 1	1 0 0 1
DB0-1	156	1001	1011	0101	1 0 0 1	1 0 0 1
DB0-2	164	0011	1011	1111	1 1 1 0	1 1 0 1
DB0-3	304	1101	1111	0101	1 0 0 1	1 0 0 1
DBE-1	110	1101	1110	0000	1 0 0 1	1 0 0 1
DE-1	250	1000	1100	0101	1 0 0 1	1 0 0 1
DD-1	270	1010	1100	0000	1 0 0 1	1 0 0 1
DD-10	165	0001	1101	1111	1 1 0 1	1 1 1 1
DD-11	342	1010	0010	0000	1 0 0 1	1 0 0 1
DD-12	135	1010	0001	0000	1 0 0 1	1 0 0 1
DD-13	136	1010	0000	0000	1 0 0 1	1 0 0 1
DD-14	137	1001	1111	0000	1 0 0 1	1 1 1 1
DD-15	140	1001	1110	0000	1 0 0 1	1 0 0 1
DD-16	141	1001	1101	0000	1 0 0 1	1 0 0 1
DD-17	142	1001	1100	0000	1 0 0 1	1 0 0 1

NAM	LOC	NXT	NXT	ALU		CRI	FSH	AUX	PSW	SP1	SP3	DIP	SM0	SP0	SM1	BBT	BAR	BTP	SPF	SP2	CKO	ABT	TNS	ALG	BRG	BUT
DO-18	143	1100	1010	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	0	0	01	11	01	1111
DO-2	123	1010	1011	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	10	1111
DO-3	124	1010	1010	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	10	1111
DO-4	125	1010	1001	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	10	1111
DO-5	126	1010	1000	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	10	1111
DO-6	127	1010	0111	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	10	1111
DO-7	130	1010	0110	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	10	1111
DO-8	131	1010	0101	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	10	1111
DO-9	132	1001	1010	0101	1	0	1	1	1	0	1	1	1	1	1	1	1	0	0	0	1	1	11	11	11	1010
ERT-1	213	0101	1010	0000	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	11	10	11	1101
ERT1A	046	1111	1100	0000	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	11	10	11	1101
ERT1B	153	0101	1010	0000	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	11	10	11	1101
ET-1	211	0101	1010	0000	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	11	10	11	1101
ET-10	254	0101	0010	0000	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	10	11	00	0000
ET-11	255	0101	0001	0000	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	11	11	11	1111
ET-12	256	0101	0000	0110	0	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	0	1	10	11	11	1111
ET-13	257	0011	1010	0000	1	0	1	1	0	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	11	1111
ET-2	245	0101	1001	0101	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	11	11	00	1111
ET-3	246	0101	1000	1001	0	0	1	1	1	1	0	1	1	0	1	0	0	1	1	1	1	1	11	11	11	0100
ET-5	247	0110	1001	0101	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	01	11	00	1111
ET-6	226	0101	0110	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	00	00	1111
ET-7	251	0101	0101	1001	0	0	1	1	1	1	0	1	1	0	1	0	0	1	1	1	1	1	11	11	11	0100
ET-8	252	0101	0100	0101	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	01	11	00	1111
ET-9	253	0101	0011	0000	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	11	11	00	1111
ET2-2	003	1111	1011	0101	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	11	11	11	1111
ET2-3	004	1110	0001	1001	0	0	1	1	1	1	0	1	1	0	1	0	0	1	1	1	1	1	11	11	11	1111
ET2-5	236	1110	0000	0101	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	01	11	00	1111
ET2-6	237	1101	0110	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	00	00	1111
ET2-7	251	0101	0101	1001	0	0	1	1	1	1	0	1	1	0	1	0	0	1	1	1	1	1	11	11	11	1111
F-1	062	1101	0100	0000	1	0	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	10	11	00	1111
F-2	053	0000	1010	0110	0	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	11	11	11	1111
F-3	365	0000	1011	0101	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	11	11	00	1111
F-4	364	1100	1110	0000	1	0	1	1	1	0	0	1	0	0	0	1	1	1	1	0	1	1	11	10	11	0000
F-5	361	1111	1110	0101	1	0	1	1	1	0	0	1	1	0	1	1	1	0	1	0	1	1	11	11	11	0111
H-1	241	0011	1101	0000	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	11	11	11	1111
H-2	302	0011	1111	0000	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	11	11	00	0110
INT-1	325	0101	1001	0000	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	11	11	00	1000
IT-1	273	0101	1010	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	11	10	11	1101
J1-1	204	0100	1111	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	00	1111
J1-2	260	1101	1111	0101	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	11	11	00	1100

NAM	LOC	NXT	NXT	ALU		CRI	FSH	AUX	PSW	SP1	SP3	DIP	SM0	SP0	SM1	BBT	BAR	BTP	SPF	SP2	CKO	ABT	TNS	ALG	BRG	BUT
J2-1	212	0100	1110	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	00	1111
J2-1A	261	0100	1101	0101	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	11	11	00	1111
J2-2	262	0111	0011	1001	0	0	1	1	1	1	0	1	1	0	1	0	0	1	1	1	1	1	11	11	11	1111
J2-3	214	0111	1001	0101	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	01	11	00	1111
J2-4	206	0111	0001	0000	1	0	1	1	1	0	0	1	1	0	0	1	1	1	1	0	1	1	11	11	00	0100
J2-5	216	0100	1100	0000	1	0	1	1	1	1	[illegible]	1	1	1	1	1	1	1	1	1	1	1	11	11	11	1111
J2-6	263	0100	1011	0101	1	0	1	1	1	0	0	1	1	0	0	1	1	1	0	0	1	1	11	11	00	1111
J2-7	264	0100	1010	0000	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	11	11	11	1111
J2-8	265	1101	1111	0101	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	11	11	00	1100
LC-1	042	0101	1010	0000	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	11	10	11	1101
MB-0	154	0101	1111	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	0	1	11	11	00	1111
MB-1	240	1001	0101	1111	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	0	1	1	11	11	11	1111
MB-2	152	1101	1111	0101	1	0	1	1	1	0	0	1	0	0	1	1	1	0	0	0	1	1	11	11	00	1100
PF-1	043	0101	1010	0000	1	0	1	1	1	0	1	1	1	0	1	1	1	1	1	0	1	1	11	10	11	1101
R1-1	005	0110	1110	0000	1	0	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	10	11	00	1111
R1-2	221	0110	1101	0110	0	1	1	1	1	1	0	1	1	0	1	0	1	1	1	1	1	1	11	11	11	1111
R1-3	222	0110	1100	0101	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	11	11	00	1111
R1-4	223	0110	1011	0000	1	0	1	1	1	0	0	1	0	0	1	1	1	1	1	0	1	1	11	11	11	1111
R1-5	224	0110	1010	0101	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	11	11	00	1111
R1-6	225	0010	0101	0000	1	0	1	1	1	0	0	1	0	0	0	1	1	1	1	0	1	1	11	10	11	1111
R2-1	227	0110	0111	0000	1	0	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	10	11	00	1111
R2-2	230	0110	0110	0110	0	1	1	1	1	1	0	1	1	0	1	0	1	1	1	1	1	1	11	11	11	1111
R2-3	231	0110	0101	0101	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	11	11	00	1111
R2-4	232	0110	0011	0000	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	11	11	00	1111
R2-6	234	0110	0010	0000	1	0	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	10	11	00	1111
R2-7	235	0110	0001	0110	0	1	1	1	1	1	0	1	1	0	1	0	1	1	1	1	1	1	11	11	11	1111
R2-8	236	0110	0000	0101	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	11	11	00	1111
R2-9	237	0011	1010	0000	1	0	1	1	0	0	0	1	1	0	1	1	1	1	1	0	1	1	11	10	00	1111
RS-1	000	0101	1110	0000	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	0	1	1	10	10	00	1101
RS-1A	241	0001	1000	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	0	1	11	11	00	1111
RS-2	347	1100	0011	0000	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	11	11	00	1111
RS-3	074	0001	0110	0110	0	1	1	1	1	0	1	1	1	0	1	0	0	1	1	0	0	1	10	10	00	1101
RS-4	351	0011	1010	0000	1	0	1	1	0	0	0	1	1	0	1	1	1	1	1	0	1	1	11	11	00	1111
RST-1	357	0011	1010	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0	0	1	11	11	00	1110
RT-1	001	0101	1010	0000	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	11	10	11	1101
S0-1	201	1111	1000	0000	1	0	1	1	1	0	0	1	1	0	0	1	1	1	1	0	1	1	11	11	11	0011
S0-2	007	1111	1110	0101	1	0	1	1	1	0	1	1	1	0	1	1	1	1	0	0	1	1	11	11	00	1001
S1-1	203	0101	1011	0000	1	0	1	1	1	0	0	1	1	0	0	1	0	1	1	0	0	0	10	11	00	1111
S1-2	244	1111	1000	0000	1	0	1	1	1	0	0	1	0	0	0	1	1	1	1	0	1	1	11	10	11	0011
S2-1	205	0011	1110	0000	1	0	1	1	1	0	0	1	1	0	0	1	0	1	1	0	1	0	10	11	00	1111

NAM	LOC	NXT	ALU	CRI	FSH	AUX	PSW	PP1	SS3	DIP	SMØ	SP1	SM1	SBT	BAR	BTP	BPF	BP2	CKO	ABT	TNS	AL G	BR G	BUT
S2=2	301	1111	0011	0110	0	1	1	1	0	0	1	1	0	0	0	1	1	1	0	1	1	11	11	1111
S2=3	014	0101	1011	0101	1	0	1	1	0	0	1	1	0	0	1	1	1	0	0	0	1	11	00	1111
S3=1	207	1111	0001	0000	1	0	1	1	0	0	1	1	0	0	1	1	1	1	0	1	1	11	00	1111
S3=2	016	1111	0000	0110	0	1	1	1	0	0	1	1	0	0	0	1	1	1	0	1	1	11	11	1111
S3=3	017	1010	0011	0101	1	0	1	1	0	0	1	1	0	0	1	1	1	0	0	0	1	11	00	1111
S3=4	134	0100	0011	0000	1	0	1	1	0	0	1	0	0	0	1	1	1	1	0	1	1	10	11	1111
S3=5	274	0101	1011	0101	1	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	11	00	1111
S4=1	211	1111	0011	1001	0	0	1	1	0	0	1	1	0	0	0	0	1	1	0	1	0	11	11	0100
S5=1	213	1111	0000	1001	0	0	1	1	0	0	1	1	0	0	0	0	1	1	0	1	1	11	11	1111
S6=1	215	1110	1010	0000	1	0	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	11	00	1111
S6=2	025	1110	1001	0110	0	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	11	11	1111
S6=3	026	1110	1000	0101	1	0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	11	00	1111
S6=4	027	1110	0111	0000	1	0	1	1	0	0	1	0	0	0	1	1	1	1	0	1	1	10	11	1111
S6=5	030	0101	1011	0110	0	0	1	1	0	0	1	1	0	0	1	0	1	1	0	0	0	11	00	1111
S7=1	217	1110	0101	0000	1	0	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	11	00	1111
S7=2	032	1110	0100	0110	0	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	11	11	1111
S7=3	033	1110	0011	0101	1	0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	11	00	1111
S7=4	034	1110	0010	0000	1	0	1	1	0	0	1	0	0	0	1	1	1	1	0	1	1	10	11	1111
S7=5	035	1010	0011	0110	0	0	1	1	0	0	1	1	0	0	1	0	1	1	0	0	1	11	00	1111
SB1=1	166	1000	0101	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB1=2	172	1000	0100	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB1=3	173	1000	0011	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB1=4	174	1001	1011	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB1=5	144	1000	0001	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB1=6	176	1000	0000	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB1=7	177	1111	1001	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB1=8	006	1001	0010	1110	0	0	1	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=1	167	1111	0101	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=2	012	0110	1111	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=3	220	1110	1101	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=4	022	1110	1100	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=5	023	1110	1011	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=6	024	1110	0110	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=7	031	0010	0111	1110	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SB2=8	330	1000	1100	1110	0	0	1	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	01	1111
SBE=1	047	1111	1110	0101	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	11	00	1001
SB0=1	067	0001	1001	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111
SB0=2	346	0010	1011	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111
SB0=3	324	0001	1111	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111
SB0=4	340	0000	1110	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111

NAM	LOC	NXT	ALU	CRI	FSH	AUX	PSW	PP1	SS3	DIP	SMØ	SP1	SM1	SBT	BAR	BTP	BPF	BP2	CKO	ABT	TNS	AL G	BR G	BUT
SB0=5	361	1001	0111	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111
SB0=6	050	1010	1111	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111
SB0=7	020	1001	0101	0000	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111
SB0=8	052	1001	1000	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	10	1111
SC=1	116	1001	1111	0100	1	0	1	1	0	0	0	1	1	0	1	1	1	1	0	1	1	00	00	1100
T=1	021	0101	1010	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	0	1	1	1	10	11	1101
U1=1	352	1000	1101	0101	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	11	00	1111
U2=1	353	1000	1100	0101	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	11	00	1111
U3=1	354	1000	1011	0101	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	11	00	1111
U4=1	355	1000	1010	0101	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	11	00	1111
U5=1	373	1000	1100	0101	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	11	00	1111
URTR	064	0101	1010	0000	1	0	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	10	11	1101
URTX	060	0101	1010	0000	1	0	1	1	0	0	1	1	1	1	1	1	1	0	1	1	1	10	11	1101
W=1	063	1101	1111	0000	1	0	1	1	1	0	0	1	1	0	1	1	1	1	0	1	1	11	00	1100

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1		
2		
3		

ECO NO.	
ETCH REV.	
ENG.	
DATE	

FIRST USED ON OPTION/MODEL

KDII-B

DRN.		DATE 4-21-72
CHK'D.	R. L. Kusik	DATE 4-2-72
ENG.	R. L. Kusik	DATE 5-2-72
PROJ. ENG.	R K Quick	DATE 5-2-72
PROD.	R K Peterson	DATE 5-2-72

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE

MICROPROGRAM CROSS REFERENCE LISTING

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NEXT HIGHER ASSY.				
B-DD-KDII-B	SIZE K	CODE MP	NUMBER KDII-B-4	REV.
SCALE				
SHEET 1 OF 3	DIST.			

000	BS-1	001	RT-1	002	*****	003	ET2-2	004	ET2-3	005	R1-1	006	SB1-8	007	S0-2
010	ERT-1	011	ET-1	012	SB2-2	013	B2-2D	014	S2-3	015	B-1	016	S3-2	017	S3-3
020	SB0-7	021	T-1	022	SB2-4	023	SB2-5	024	SB2-6	025	S6-2	026	S6-3	027	S6-4
030	S6-5	031	SB2-7	032	S7-2	033	S7-3	034	S7-4	035	S7-5	036	ET2-5	037	ET2-6
040	RG-1	041	M-1	042	LC-1	043	PF-1	044	*****	045	BT-1	046	ERT1A	047	SBE-1
050	SB0-6	051	ET2-7	052	SB0-8	053	F-2	054	*****	055	*****	056	*****	057	D6-4
060	URTX	061	F-5	062	F-1	063	W-1	064	URTR	065	D1-6	066	*****	067	SB0-1
070	D3-3	071	D3-4	072	D3-5	073	*****	074	RS-3	075	D6-2	076	*****	077	D6-3
100	CS-1	101	D0-1	102	*****	103	D1-1	104	D7-3	105	D2-1	106	D7-5	107	D3-1
110	DBE-1	111	D4-1	112	CC-1	113	D5-1	114	*****	115	D6-1	116	SC-1	117	D7-1
120	*****	121	*****	122	*****	123	D0-2	124	D0-3	125	D0-4	126	D0-5	127	D0-6
130	D0-7	131	D0-8	132	D0-9	133	*****	134	S3-4	135	D0-12	136	D0-13	137	D0-14
140	D0-15	141	D0-16	142	D0-17	143	D0-18	144	SB1-5	145	A145	146	B-3	147	B-2
150	*****	151	CCM-1	152	MB-2	153	ERT1B	154	MB-0	155	D0-3A	156	DB0-1	157	D0-2
160	D3-2	161	*****	162	D0-3	163	D1-4	164	DB0-2	165	D0-10	166	SB1-1	167	SB2-1
170	*****	171	*****	172	SB1-2	173	SB1-3	174	SB1-4	175	*****	176	SB1-6	177	SB1-7
200	D1-2	201	S0-1	202	*****	203	S1-1	204	J1-1	205	S2-1	206	J2-4	207	S3-1
210	D1-3	211	S4-1	212	J2-1	213	S5-1	214	J2-3	215	S6-1	216	J2-5	217	S7-1
220	SB2-3	221	R1-2	222	R1-3	223	R1-4	224	R1-5	225	R1-6	226	ET-6	227	R2-1
230	R2-2	231	R2-3	232	R2-4	233	*****	234	R2-6	235	R2-7	236	R2-8	237	R2-9
240	MB-1	241	RS-1A	242	*****	243	*****	244	S1-2	245	ET-2	246	ET-3	247	ET-5
250	DE-1	251	ET-7	252	ET-8	253	ET-9	254	ET-10	255	ET-11	256	ET-12	257	ET-13
260	J1-2	261	J2-1A	262	J2-2	263	J2-6	264	J2-7	265	J2-8	266	*****	267	*****
270	D0-1	271	*****	272	CCS-3	273	IT-1	274	S3-5	275	*****	276	CCS-2	277	*****
300	D6-5	301	S2-2	302	M-2	303	CD1-2	304	DB0-3	305	B2-2	306	*****	307	CE1-2
310	D7-2	311	DL-1	312	CD2-1	313	CD1-1	314	CD1-4	315	CE2-1	316	CCS-1	317	CE1-1
320	D7-4	321	DS-3	322	CS-2	323	*****	324	SB0-3	325	INT-1	326	CE1-3	327	*****
330	SB2-8	331	D2-2	332	D0-4	333	B2-2A	334	D1-5	335	B2-2B	336	*****	337	CD2-2
340	SB0-4	341	D2-3	342	D0-11	343	B2-2C	344	*****	345	*****	346	SB0-2	347	RS-2
350	CCM-2	351	RS-4	352	U1-1	353	U2-1	354	U3-1	355	U4-1	356	*****	357	RST-1
360	*****	361	SB0-5	362	*****	363	*****	364	F-4	365	F-3	366	*****	367	CL-3
370	*****	371	CE2-2	372	CD1-5	373	U5-1	374	CD1-3	375	CL-2	376	*****	377	*****

A145 145
B-1 015
B-2 147
B-3 146
B2-2 305
B2-2A 333
B2-2B 335
B2-2C 343
B2-2D 013
BG-1 040
BT-1 045
CC-1 112
CCM-1 151
CCM-2 350
CCS-1 316
CCS-2 276
CCS-3 272
CD1-1 313
CD1-2 303
CD1-3 374
CD1-4 314
CD1-5 372
CD2-1 312
CD2-2 337
CE1-1 317
CE1-2 327
CE1-3 326
CE2-1 315
CE2-2 371
CL-1 311
CL-2 375
CL-3 367
CS-1 100
CS-2 322
CS-3 321
D0-1 101
D0-2 157
D0-3 162
D0-3A 155
D0-4 332
D0-10 165
D0-11 342
D0-12 135
D0-13 136
D0-14 137
D0-15 140
D0-16 141
D0-17 142
D0-18 143
D0-2 123
D0-3 124
D0-4 125
D0-5 126
D0-6 127
D0-7 130
D0-8 131
D0-9 132
D1-1 103
D1-2 200
D1-3 210
D1-4 163
D1-5 334
D1-6 065
D2-1 105
D2-2 331
D2-3 341
D3-1 107
D3-2 160
D3-3 070
D3-4 071
D3-5 072
D4-1 111
D5-1 113
D6-1 115
D6-2 075
D6-3 077
D6-4 057
D6-5 300
D7-1 117
D7-2 310
D7-3 104
D7-4 320
D7-5 106
DB0-1 156
DB0-2 164
DB0-3 304
DBE-1 110
DE-1 250
DO-1 270
DO-10 165
DO-11 342
DO-12 135
DO-13 136
DO-14 137
DO-15 140
DO-16 141
DO-17 142
DO-18 143
DO-2 123
DO-3 124
DO-4 125
DO-5 126
DO-6 127
DO-7 130
DO-8 131
DO-9 132
ERT-1 010
ERT1A 046
ERT1B 153
ET-1 011
ET-10 254
ET-11 255
ET-12 256
ET-13 257
ET-2 245
ET-3 246
ET-5 247
ET-6 226
ET-7 251
ET-8 252
ET-9 253
ET2-2 003
ET2-3 004
ET2-5 036
ET2-6 037
ET2-7 051
F-1 062
F-2 053
F-3 365
F-4 364
F-5 061
M-1 041
M-2 302
INT-1 325
IT-1 273
J1-1 204
J1-2 260
J2-1 212
J2-1A 261
J2-2 262
J2-3 214
J2-4 206
J2-5 216
J2-6 263
J2-7 264
J2-8 265
LC-1 042
MB-0 154
MB-1 240
MB-2 152
PF-1 043
R1-1 005
R1-2 221
R1-3 222
R1-4 223
R1-5 224
R1-6 225
R2-1 227
R2-2 230
R2-3 231
R2-4 232
R2-6 234
R2-7 235
R2-8 236
R2-9 237
RS-1 000
RS-1A 241
RS-2 347
RS-3 074
RS-4 351
RST-1 357
RT-1 001
S0-1 201
S0-2 007
S1-1 203
S1-2 244
S2-1 205
S2-2 301
S2-3 014
S3-1 207
S3-2 016
S3-3 017
S3-4 134
S3-5 274
S4-1 211
S5-1 213
S6-1 215
S6-2 025
S6-3 026
S6-4 027
S6-5 030
S7-1 217
S7-2 032
S7-3 033
S7-4 034
S7-5 035
SB1-1 166
SB1-2 172
SB1-3 173
SB1-4 174
SB1-5 144
SB1-6 176
SB1-7 177
SB1-8 006
SB2-1 167
SB2-2 012
SB2-3 220
SB2-4 022
SB2-5 023
SB2-6 024
SB2-7 031
SB2-8 330
SBE-1 047
SB0-1 067
SB0-2 346
SB0-3 324
SB0-4 340
SB0-5 361
SB0-6 050
SB0-7 020
SB0-8 052
SC-1 116
T-1 021
U1-1 352
U2-1 353
U3-1 354
U4-1 355
U5-1 373
URTR 064
URTX 060
W-1 063
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PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS			REMARKS
1	J	K	L	
2	J	K	L	
3	J	J	J	
4	J	J	J	
5	J	J	J	
6	J	J	J	
7	J	J	J	
8	J	J	J	
9	J	J	J	
10	J	K	L	
11	J	J	L	
DATE	10-11-72	10-30-72	11-27-72	
ENG.	M.T.	B.A.	M.T.	
ETCH REV.	B	B	B	
ECO NO.	00007	00008	00009	

FIRST USED ON OPTION/MODEL

KD11-B

DRN. B. Hall	DATE 10-16-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. M. Tallman	DATE 10/26/72	
ENG. M. Tallman	DATE 10/26/72	TITLE
PROJ. ENG. M. Tallman	DATE	DATA PATHS
PROD.	DATE	

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NEXT HIGHER ASSY.

B-DD-KD11-B

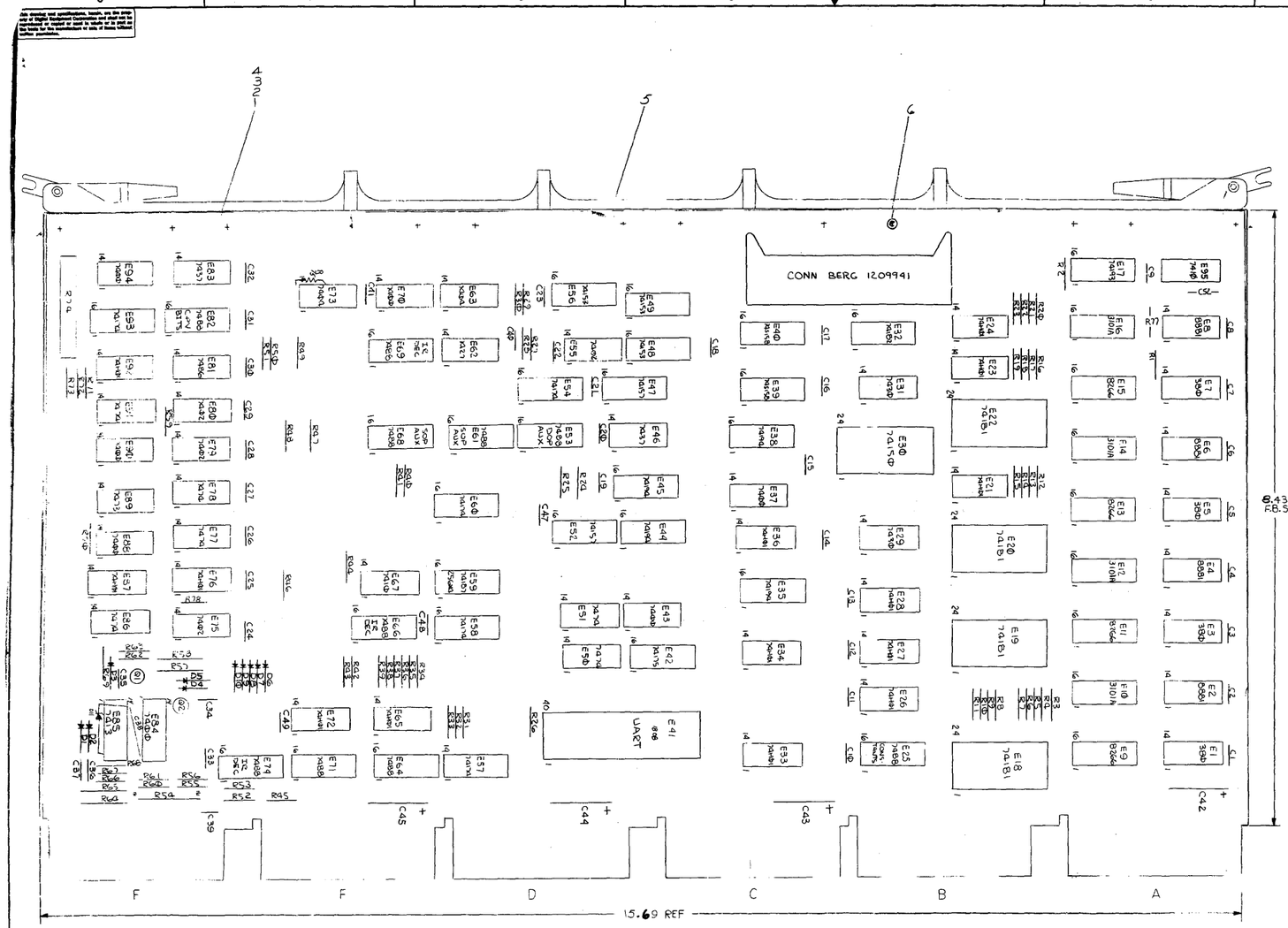
SCALE +-+

SHEET 1 OF 11

SIZE	CODE	NUMBER	REV.
B	CS	M7260-0-1	L

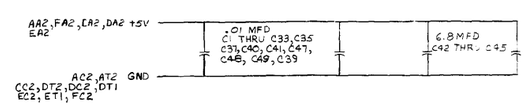
DIST.

NOTE.
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS CAPACITANCE IS IN PICOFARADS.



1	D11	DIODE 1.5231B, 1/2W, 5%	1109443	72
1	R78	RES 220Ω, 1/2W, 5%	1300274	71
1		CONN, BERG	1209941	55
1	R74	RES 500Ω TRIMPOT	1305631	54
1	R34	RES 10K, 1/4W, 5%	1300479	53
				52
1	R67	RES 82Ω 1/4W, 5%	1301677	51
1	R66	RES 75Ω 1/4W, 5%	1301401	50
1	R65	RES 56Ω 1/2W, 5%	1300338	49
1	R64	RES 68Ω 1/2W, 10%	1300220	48
1	R63	RES 15Ω 1/4W, 5%	1300250	47
2	R57, R58	RES 12K 1/2W, 5%	1300487	46
3	R56, R62, R36	RES 47Ω 1/4W, 5%	1300316	45
1	R55,	RES 1.5K 1/4W, 5%	1300391	44
1	R54	RES 750Ω 1/4W, 5%	1302385	43
4	E2, E4, E6, E8	IC DEC 8881	1909705	42
25	R25, R28 THRU R33, R35, R37- R45, R48, R50 THRU R53, R71, R72, R75	RES 2K 1/4W, 5%	1302388	41
35	R1 THRU R24, R26, R27, R46, R47 R49, R59, R60 R61, R68, R70, R69	RES 1K 1/4W, 5%	1300365	40
2	Q1, Q2	TRANSISTOR DEC 2N3640	1503409	39
1	E41	IC DEC 8080 UART	1910459	38
1	E30	IC DEC 74150	1910153	37
4	E18, E19, E20, E22	IC DEC 74181	1909982	36
5	E54, E57, E58, E60, E93	IC DEC 74174	1910652	35
3	E48, E49, E56	IC DEC 74153	1909937	34
2	E47, E52	IC DEC 74157	1910655	33
1	E42	IC DEC 74175	1910631	32
2	E39, E40	IC DEC 7438	1910549	31
4	E35, E38, E44, E45	IC DEC 74194	1910623	30
1	E32	IC DEC 74182	1910019	29
1	E17	IC DEC 74193	1910018	28
4	E10, E12, E14, E16	IC INTEL 3101A	1910653	27
4	E9, E11, E13, E15	IC DEC 8266	1909934	26
1	E89	IC DEC 7473	1905587	25
1	E85	IC DEC 7413	1909989	24
1	E81	IC DEC 7486	1910011	23
2	E67, E95	IC DEC 7410	1905576	22
2	E63, E73	IC DEC 7400	1909686	21
1	E62	IC DEC 7427	1910878	20
4	E55, E75, E79, E80	IC DEC 7402	1909004	19
6	E50, E51, E77, E78, E86, E91	IC DEC 7474	1905547	18
2	E46, E83	IC DEC 7437	1910091	17
7	E37, E43, E70, E84, E88, E90, E94	IC DEC 7400	1905575	16
2	E29, E31	IC DEC 7430	1905578	15
14	E21, E23 E24, E26, E27, E28, E33, E34, E36, E65, E72, E76, E87, E92	IC DEC 74H01	1909849	14
4	E1, E3, E5, E7	IC DEC 330	1909485	13
10	D1 THRU D10	DIODE 666	1100114	12
4	C42 THRU C45	CAP 6.8 MFD, 35V, S TANT	1005306	11
				10
1	C34	CAP 1000 PFD, 100V, 5% MICA	1000042	9
1	C36	CAP .47 MFD, 35V, 10%, S TANT	1005965	8
41	C1 THRU C33, C35, C37, C39 C40, C41, C47, C48, C49	CAP .01 MFD, 100V, 20%, DISC	1001610	7
2		EYELET	9006732	6
1		HANDLE, MODULE	EPS-1210711-2	5
1		ETCHED CIRCUIT BOARD	5009764	4
REF		MODULE ECO HISTORY	B-MH-M726Ø-Ø-6	3
REF		ASSY/DRILL HOLE LAYOUT	E-AH-M726Ø-Ø-5	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M726Ø-Ø-6	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST



	C52	CAP 150PF, 100V, 5%	1000019	70
2	R77, R73	RES. 47, 1/4W, 5%	1300202	69
1	C38	CAP 1 MFD, 35V, 10% STANT	1001776	68
1	E82	IC IM5600	23-A12A1	67
1	E74	IC IM5600	23-A11A1	65
1	E71	IC IM5600	23-A10A1	64
1	E69	IC IM5600	23-A08A1	63
1	E68	IC IM5600	23-A06A1	62
1	E66	IC IM5600	23-A05A1	61
1	E64	IC IM5600	23-A04A1	60
1	E61	IC IM5600	23-A03A1	59
1	E59	IC 74187	23-A03A2	58
1	E53	IC IM5600 ROM	23-A02A1	57
1	E25	IC IM5600 32X8 PROM	23-A01A1	56
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

1	C34	CAP 1000 PFD, 100V, 5% MICA	1000042	9
1	C36	CAP .47 MFD, 35V, 10%, S TANT	1005965	8
41	C1 THRU C33, C35, C37, C39 C40, C41, C47, C48, C49	CAP .01 MFD, 100V, 20%, DISC	1001610	7
2		EYELET	9006732	6
1		HANDLE, MODULE	EPS-1210711-2	5
1		ETCHED CIRCUIT BOARD	5009764	4
REF		MODULE ECO HISTORY	B-MH-M726Ø-Ø-6	3
REF		ASSY/DRILL HOLE LAYOUT	E-AH-M726Ø-Ø-5	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M726Ø-Ø-6	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

ETCH BOARD REV B

DEC 745138	8	16			
DEC 74193	8	16			
DEC 7489	8	16			
DEC 1808	20	40			
DEC 7418	12	24			
DEC 74182	8	16			
DEC 74150	12	24			
DEC 74194	8	16			
DEC 74175	8	16			
DEC 74153	8	16			
DEC 7417	8	16			
DEC 74178	8	16			
DEC 7488	8	16			
DEC 74174	8	16			
IC TYPE	GND	+5V			

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

IC PIN LOCATIONS

ITEM NO.	AWG	FROM PT	TO PT

JUMPER LIST

DWG NO.	REV	CHANGE NO.	DESCRIPTION
M726Ø-00003	M	1116226	MINE TITLEBRAUM 11-11-72
M726Ø-00003	L	1115852	MINE TITLEBRAUM 10-25-72
M726Ø-00003	K	1115600	MINE TITLEBRAUM 10-11-72
M726Ø-00003	J	1115252	MINE TITLEBRAUM 9-27-72
M726Ø-00003	H	1114872	B. ARMSTRONG 9-14-72
M726Ø-00003	G	1114492	B. ARMSTRONG 8-31-72
M726Ø-00003	F	1114112	B. ARMSTRONG 8-17-72
M726Ø-00003	E	1113732	B. ARMSTRONG 8-3-72
M726Ø-00003	D	1113352	B. ARMSTRONG 7-20-72
M726Ø-00003	C	1112972	B. ARMSTRONG 7-6-72
M726Ø-00003	B	1112592	B. ARMSTRONG 6-22-72
M726Ø-00003	A	1112212	B. ARMSTRONG 6-8-72
M726Ø-00001			ORIGINATED

6534 D NONE
DEC NO. ECA NO.

SEMICONDUCTOR CONVERSION CHART

DRN W. MAJOR 6/13/72
CHK'D [illegible] 6/13/72
ENG [illegible] 6/13/72
MFG [illegible] 6/13/72
QUAL [illegible] 6/13/72
NEXT HIGHER ASSY B-DD-KD11-B
SCALE
SHEET 2 OF

[redacted] EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE DATA PATHS

SIZE C CODE IDENT NO. CS M7260-0-1 REV L

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EXTA SWITCH REG Ø3 H BERG CC
DPA ENAB SWITCH REG H
EXTA SWITCH REG Ø2 H BERG AA
EXTA SWITCH REG Ø1 H BERG Y
EXTA SWITCH REG ØØ H BERG W
DPE NEG (1)H
DPE ZERO (1)H
DPE VBIT (1)H
CONG ENAB PSW H CR2
DPE COUT (1)H
CONG ENAB SPR L CE2
DPA SP WRITE L

74HØ1 EØ28, 74HØ1 EØ27

DPA ALEG Ø3 L
DPA ALEG Ø2 L
DPA ALEG Ø1 L
DPA ALEG ØØ L

BUS DØ3 L AE2
BUS DØ2 L AD1
BUS DØ1 L AD2
DPA RUN GND L
BUS DØØ L AC1

38Ø EØØ1

CONF CIN H ET2
DPE COP L
DPE COUT (1)L

7402 EØ8Ø, 7486 EØ81

CARRY 74182 EØ32

DPA ALU CIN Ø1 H
DPA ALU CIN ØØ H
DPA Ø-7=Ø H
+5V
R3 1K

3101A SPM EØ1Ø

DPA AMUX Ø3 H CR1
DPA AMUX Ø2 H CP2
DPA AMUX Ø1 H CP1
DPA AMUX ØØ H CN2
CONB SPA Ø3 H CA1
CONB SPA Ø2 H CB1
CONB SPA Ø1 H CC1
CONB SPA ØØ H CD1

R5 1K, R6 1K, R7 1K, R4 1K

74181 ALU EØ18

DPA ALU S3 H
DPA ALU S2 H
DPA ALU S1 H
DPA ALU SØ H
CONF ALU MODE H DR1
DPA ALU CIN ØØ H

8266 EØØ9 AMUX

DPA RUN GND L
CONA ENAB ALU H FD2

S1	SØ	fn
L	L	fn=Bn
L	H	fn=An
H	L	fn=Bn
H	H	fn=Ø

S1	SØ	fn
L	L	HOLD
L	H	SR
H	L	SL
H	H	LOAD

DPB BREG Ø4 (1)H
CONG BMODE ØØ H CV1
CONG BMODE Ø1 H DA1

SI SØ SR 74194 BREG EØ94

DPA AMUX Ø3 H
DPA AMUX Ø2 H
DPA AMUX Ø1 H
DPA AMUX ØØ H
CLR CLK SL
R26 1K +5V
DPA R26 H
DPA PROC CLOCK L
DPE SERIAL SHFT H
DPA BREG Ø3 (1)H
DPA BREG Ø2 (1)H
DPA BREG Ø1 (1)H
DPA BREG ØØ (1)H

R8 1K +5V DPA BLEG Ø3 L
R9 1K +5V DPA BLEG Ø2 L
R1Ø 1K +5V DPA BLEG Ø1 L
DPA BLEG ØØ L

74HØ1 EØ36

CONG BBOT H FA1
CONB INH +1 L FK1

7404 EØ73, 74HØ1 EØ87

DPA +1 H
R11 1K +5V

CONG SP WRITE H FC1
CONJ PROC CLOCK H
CONC DAT ENAB L FV2

7400 EØ7Ø, R77 47, C52 150 pf, T~30 ms

7410 EØ95

7437 EØ83

DPA SP WRITE L

8881 EØØ2

BUS DØ3 L
BUS DØ2 L
BUS DØ1 L
BUS DØØ L
DPA DAT ENAB H

DPA AMUX Ø3 H
DPA AMUX Ø2 H
DPA AMUX Ø1 H
DPA AMUX ØØ H

CONF ALU S3 L DN1 — DPA ALU S3 H
CONF ALU S2 L DP2 — DPA ALU S2 H
CONF ALU S1 L DP1 — DPA ALU S1 H
CONF ALU SØ L DR2 — DPA ALU SØ H
CONA ENAB SWITCH REG L FV1 — DPA ENAB SWITCH REG H
CONJ PROC CLOCK H DL1 — DPA PROC CLOCK L

7437 EØ46

DATA PATH <Ø3:ØØ>

REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/Ø5		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. W. MAJOR DATE 1/18/72
CHKD DATE 4/27/72
ENG. DATE 4/26/72
PROJ. ENG. DATE 4/26/72
PROD. DATE 11/27/72
NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 3 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
DATA PATHS
(DPA)

SIZE D | CODE CS | NUMBER M726Ø-Ø-1 | REV. J
DIST.

DEC FORM NO DRD 102-B

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EXTA SWITCH REG Ø7 H BERG MM
DPA ENAB SWITCH REG H
EXTA SWITCH REG Ø6 H BERG KK
EXTA SWITCH REG Ø5 H BERG HH
EXTA SWITCH REG Ø4 H BERG EE
DPE PSW Ø7 (I)H
CONG ENAB PSW H
DPE PSW Ø6 (I)H
DPE PSW Ø5 (I)H
DPE TBIT (I)H
CONG ENAB SPR L
DPA SP WRITE L

74HØ1 EØ24 · 74HØ1 EØ24 · 74HØ1 EØ24 · 74HØ1 EØ24 · 74HØ1 EØ34 · 74HØ1 EØ34 · 74HØ1 EØ34 · 74HØ1 EØ34

DPB ALEG Ø7 L
DPB ALEG Ø6 L
DPB ALEG Ø5 L
DPB ALEG Ø4 L

3ØØA SPM EØ12 — A3 A2 A1 AØ — M3(I) M2(I) M1(I) MØ(I)

CONB SPA Ø3 H
CONB SPA Ø2 H
CONB SPA Ø1 H
CONB SPA ØØ H
DPE RIGHT SHFT Ø7 H
CONG BMODE ØØ H
CONG BMODE Ø1 H

DPB AMUX Ø7 H DK1
DPB AMUX Ø6 H DJ1
DPB AMUX Ø5 H DK2
DPB AMUX Ø4 H DJ2

74190 BREG EØ45 — CLR CLK SL — R3(I) R2(I) R1(I) R0(I)

+5V R20 1K · R21 1K · R23 1K · R22 1K · R24 1K

DPB BREG Ø7 (I)H
DPB BREG Ø6 (I)H
DPB BREG Ø5 (I)H
DPB BREG Ø4 (I)H

7400 EØ37 · 7400 EØ37 · 7400 EØ37 · 7400 EØ37

DPB BLEG Ø7 L
DPB BLEG Ø6 L
DPB BLEG Ø5 L
DPB BLEG Ø4 L

DPB R24 H
DPA PROC CLOCK L
DPA BREG Ø3 (I)H
CONG BBCT H

BUS DØ7 L AH2 · BUS DØ6 L AF1 · BUS DØ5 L AF2 · DPA RUN GND L · BUS DØ4 L AE1

38Ø EØØ3 · 38Ø EØØ3 · 38Ø EØØ3 · 38Ø EØØ3

DPB ALU CIN Ø2 H

CARRY 74182 FØ32 — Ø1 Ø2

DPA Ø-7=Ø H

74181 ALU EØ19 — A=B COUT G P — B3 A3 B2 A2 B1 A1 BØ AØ — F3 F2 F1 FØ — S3 S2 S1 SØ M CIN

DPA ALU S3 H
DPA ALU S2 H
DPA ALU S1 H
DPA ALU SØ H
CONF ALU MODE H
DPA ALU CIN Ø1 H

8286 EØ11 AMUX — B3 A3 B2 A2 B1 A1 BØ AØ — F3 F2 F1 FØ — S1 SØ

DPA RUN GND L
CONA ENAB ALU H

DPA DAT ENAB H

8881 EØØ4 · 8881 EØØ4 · 8881 EØØ4 · 8881 EØØ4

BUS DØ7 L
BUS DØ6 L
BUS DØ5 L
BUS DØ4 L

DPB AMUX Ø7 H
DPB AMUX Ø6 H
DPB AMUX Ø5 H
DPB AMUX Ø4 H

23-AØA1A1 EØ25 CONSTANTS — MØ(I) M1(I) M3(I) M2(I) MG(I) M7(I) M4(I) M5(I) — A1 A2 A3 A4 AØ — ENB

CONB SPA ØØ H
CONB SPA Ø1 H
CONB SPA Ø2 H
CONB SPA Ø3 H
CONG SP WRITE H

DPB ALEG Ø7 L
DPB ALEG Ø6 L
DPB ALEG Ø5 L
DPB ALEG Ø4 L
DPB ALEG Ø3 L
DPB ALEG Ø2 L
DPB ALEG Ø1 L
DPB ALEG ØØ L

CONE ALLOW CONSTANTS L CEI

DATA PATH (07:04)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO
11/Ø5		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.	W.MAJOR	DATE 7/11/72
DES'D		DATE 7/27/72
ENG.		DATE 7/24/72
PROJ. ENG.		DATE 4/26/72
PROD.		DATE 7/27/72

digital EQUIPMENT CORPORATION

TITLE: DATA PATH

NEXT HIGHER ASSY. B-DD-KD11-B

SIZE D · CODE CS · NUMBER M7260-0-1 · REV J · SCALE — · SHEET 4 OF — · DIST

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO

SIZE D · CODE CS · NUMBER M7260-0-1 · REV J

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BUS DI1 L
BUS DIØ L
BUS DØ9 L
DPA RUN GND L
BUS DØ8 L

DPC ALU CIN Ø3 H

CARRY 74182 FØ32

+5V R16 1K

DBI DPC 8-15=Ø H

74181 ALU EØ2Ø

DPA ALU S3 H
DPA ALU S2 H
DPA ALU S1 H
DPA ALU SØ H
CONF ALU MODE H
DPB ALU CIN Ø2 H

DPA DAT ENAB H

8881 EØØ6

BUS DI1 L
BUS DIØ L
BUS DØ9 L
BUS DØ8 L

8266 EØ13 AMUX

DPC AMUX 11 H
DPC AMUX 1Ø H
DPC AMUX Ø9 H
DPC AMUX Ø8 H

DPA RUN GND L
CONA ENAB ALU H

EXTA SWITCH REG 11 H BERG K
DPA ENAB SWITCH REG H
EXTA SWITCH REG Ø H BERG H
EXTA SWITCH REG Ø9 H BERG E
EXTA SWITCH REG Ø8 H BERG C

74H01 EØ21

DPC ALEG 11 L
DPC ALEG 1Ø L
DPC ALEG Ø9 L
DPC ALEG Ø8 L

CONG ENAB SPC L CF2
DPA SP WRITE L

+5V
R14 1K
R15 1K
R13 1K
R12 1K

3101A SPM EØ14

CONB SPA Ø3
CONB SPA Ø2
CONB SPA Ø1
CONB SPA ØØ

DPD BREG 12 (1)H
CONG BMODE ØØ H
CONG BMODE Ø1 H

DPC BREG 11 (1)H
DPC BREG Ø8 (1)H

74S158 BLEG MUX EØ39

DPC BLEG 11 L
DPC BLEG 1Ø L
DPC BLEG Ø9 L
DPC BLEG Ø8 L

74196 BREG EØ35

DPC AMUX 11 H
DPC AMUX 1Ø H
DPC AMUX Ø9 H
DPC AMUX Ø8 H

CK1
CK2
CLR

DPA RZG H
DPA PROP. CLOCK L

DPB BREG Ø7 (1)H
DPA +1 H
CONG BYOP H CL2

E	S	Fn
H	-	Fn=Ø
L	L	Fn=An
L	H	Fn=Bn

DATA PATH <11:Ø8>

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11Ø5		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. W.MAJOE DATE 2/9/72
CHK'D DATE 4/7/72
ENG. DATE 4/24/72
PROJ. ENG. DATE 4/24/72
PROD. DATE 4/27/72
NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 5 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DPC)

SIZE D | CODE CS | NUMBER M7260-0-1 | REV. J

DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO. DRD 102-B

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BUS DI5 L
BUS DI4 L
BUS DI3 L
DPA RUN GND L
BUS DI2 L
AM2
AL1
AL2
AK1
3ΦE ΦΦ7

DPA DAT ENAB H
8881 EΦΦ8
BUS DI5 L
BUS DI4 L
BUS DI3 L
BUS DI2 L

EXTA SWITCH REG 15 H
DPA ENAB SWITCH REG H
EXTA SWITCH REG 14 H
EXTA SWITCH REG 13 H
EXTA SWITCH REG 12 H
BERG U
BERG S
BERG P
BERG M
74HΦ1 EΦ23
DPD ALEG 15 L
DPD ALEG 14 L
DPD ALEG 13 L
DPD ALEG 12 L

DPC Β-15=Φ H
74181 ALU EΦ22
A=B COUT G P
S3 S2 S1 SΦ M CIN
DPA ALU S3 H
DPA ALU S2 H
DPA ALU S1 H
DPA ALU SΦ H
CONF ALU MODE H
DPC ALU CIN ΦΦ H

8266 EΦ15 AMUX
S1 SΦ
DPA RUN GND L
CONA ENAB ALU H
DPD AMUX 15 H
DPD AMUX 14 H
DPD AMUX 13 H
DPD AMUX 12 H

+5V
R18 1K
R19 1K
R17 1K
R1 1K

CONG ENAB SPL L
DPA SP WRITE L
3ΦΦ1A SPM EΦ16
A3 A2 A1 AΦ

CONB SPA Φ3 H
CONB SPA Φ2 H
CONB SPA Φ1 H
CONB SPA ΦΦ H
DPD BREG 15 (1)H
DPD BREG 14 (1)H
DPD BREG 12 (1)H

DPE SERIAL SHFT H
CONG BMODE ΦΦ H
CONG BMODE Φ1 H

DPC AMUX 15 H
DPD AMUX 14 H
DPD AMUX 13 H
DPD AMUX 12 H
CH3
CH2
CH1
CF1
74194 BREG EΦ38
S1 SΦ SR
CLR CLK SL

74S158 BΦΦΦ BLEG MUX
E S
DPD BLEG 15 L
DPD BLEG 14 L
DPD BLEG 13 L
DPD BLEG 12 L

DPA R26 H
DPA PROC CLOCK L
DPC BREG 11 (1)H
DPB BREG Φ7 (1)H
DPA +1 H
CONG BTOP H

DATA PATH <15:12>

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11Ø5		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. W.MAJOR DATE 2/25/72
CHKD. DATE 4/2/72
SYS. DATE 4/24/72
PROJ. ENG. DATE 4/24/72
PROD. DATE 4/27/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DPD)

NEXT HIGHER ASSY. B-DD-KD11-B
SCALE —
SHEET 6 OF

SIZE	CODE	NUMBER	REV.
D	CS	M7260-Ø-1	J

DIST.

REVISIONS: REV | CHANGE NO | CHN

DEC FORM NO DRD 103-B

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DPA RUN GND L

DPF NEG DEL (1)H
DPA AMUX Φ3 H
DPF ZERO DEL (1)H
DPA AMUX Φ2 H
DPF SET V H
DPA AMUX Φ1 H
DPF SET COUT H
DPA AMUX ΦΦ H
74157 EΦ52 CC MUX
CONH PROC INIT H
DPF AUX DEL (1)L
DM1

E	S	fn
H	-	fn =Φ
L	L	fn =An
L	H	fn =Bn

DPE NEG (1)H — 74174 NEG EΦ51
DPE ZERO (1)H — 74174 ZERO EΦ50
DPE VBIT (1)H — 74174 VBIT EΦ50
DPE COUT (1)H — 74174 COUT EΦ51
DPE COUT (Φ)H

CONG LOAD PSW L
CONJ PROC CLOCK H
DM2
74ΦΦ EΦ43

DPA RZG H

DPF C CLK DEL (1)L
CONH PROC INIT L
DL2

DPE R59 H — +5V R59 1K
DPE TBIT (1)H
DPE T DEL (1)L — 74174 T DEL EΦ91 — FS2
DPF LOAD IR L
BERG T
DPE PUP L
CONH PROC INIT H — 74ΦΦ EΦ63
CONJ PROC CLOCK H
CONG LOAD PSW L — 74ΦΦ EΦ23
CONA ENAB ALU H — 74ΦΦ EΦ70, 74ΦΦ EΦ80

74175 EΦ42 PSW 7:4

DPB AMUX Φ7 H	D3	R3(1)	DPE PSW Φ7 (1)H
		R3(Φ)	DD1 DPE PSW Φ7 (Φ)H
DPB AMUX Φ6 H	D2	R2(1)	DPE PSW Φ6 (1)H
		R2(Φ)	DC1 DPE PSW Φ6 (Φ)H
DPB AMUX Φ5 H	D1	R1(1)	DPE PSW Φ5 (1)H
		R1(Φ)	DD2 DPE PSW Φ5 (Φ)H
DPB AMUX Φ4 H	DΦ	RΦ(1)	DPE TBIT (1)H
		RΦ(Φ)	

CLR CLK

DPE L SHIFT SIGN H
DPA BLEG ΦΦ L
DPA BREG ΦΦ (1)H
DPD BLEG 15 L
DPD BREG 15 (1)H
DPA ALUS1 H
DPA ALUSΦ H

74153 EΦ49 ROT MUX 2 — DPE ROT COUT H, DPE ROT NEG H
74153 EΦ48 ROT MUX 1 — DPE COUT (1)H

S1	SΦ	FUNCTION
L	L	ROR
L	H	ASR
H	L	ROL
H	H	ASL

DPE SERIAL SHFT H

74157 EΦ47 BYTE MUX

DPC BREG ΦΦ H
DPD BREG 14 (1)H
DPB BREG Φ6 (1)H
DPE RIGHT SHFT Φ7 H
DPE L SHIFT SIGN H
DPA RUN GND L
CONF AUX BYTE H

DPA Φ-7=Φ H
DPC 8-15=Φ H
74ΦΦ EΦ70, 74ΦΦ EΦ63
DPE Φ-15=Φ H

DPB AMUX Φ7 H
DPD AMUX 15 H
DPA Φ-7=Φ H
DPE Φ-15=Φ H
74153 EΦ56 ROT CC MUX — DPE NEG H, DPE SET ≠ H

DPD BLEG 14 L
DPD BLEG 13 L
DPD BLEG 12 L
DPC BLEG 11 L
DPC BLEG 10 L
DPC BLEG Φ9 L
DPC BLEG Φ8 L
DPB BLEG Φ7 L
DPB BLEG Φ6 L
DPB BLEG Φ5 L
DPB BLEG Φ4 L
DPA BLEG Φ3 L
DPA BLEG Φ2 L
DPA BLEG Φ1 L
74ΦΦ EΦ31, 74ΦΦ EΦ29, 74Φ2 EΦ55

DPG BYTE H
DPF ROTATE H

DPA RUN GND L
74150 E3Φ CONSOLE MUX

DPD BLEG 15 L — DI5
DPD BLEG 14 L — DI4
DPD BLEG 13 L — DI3
DPD BLEG 12 L — DI2
DPC BLEG 11 L — DI1
DPC BLEG 10 L — DIΦ
DPC BLEG Φ9 L — DΦ9
DPC BLEG Φ8 L — DΦ8
DPB BLEG Φ7 L — DΦ7
DPB BLEG Φ6 L — DΦ6
DPB BLEG Φ5 L — DΦ5
DPB BLEG Φ4 L — DΦ4
DPA BLEG Φ3 L — DΦ3
DPA BLEG Φ2 L — DΦ2
DPA BLEG Φ1 L — DΦ1
DPA BLEG ΦΦ L — DΦΦ

S3 S2 S1 SΦ

BERG F — DPE DAK H

EXTA SCAN ADDRS Φ1 (1)H — BERG N
EXTA SCAN ADDRS Φ2 (1)H — BERG L
EXTA SCAN ADDRS Φ4 (1)H — BERG J
EXTA SCAN ADDRS Φ8 (1)H — BERG D

PSW

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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.	W. MAJOR	DATE 1/7/72
CHK.		DATE 1/27/72
DWG.		DATE 4/24/72
PROJ. ENG.		DATE 4/24/72
PROD.		DATE 4/27/72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DATA PATHS (DPE)

NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 7 OF
SIZE D CODE CS NUMBER M7260-0-1 REV J.
DIST.

REVISIONS: REV | CHANGE NO | CHK
DEC FORM NO

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74174 E058 IR
DPD AMUX 15 H — 11 D5 R5(1) 10 — DPF IR 15 (1)H
DPD AMUX 14 H — Φ6 D4 R4(1) Φ7 — DPF IR 14 (1)H
DPD AMUX 13 H — Φ4 D3 R3(1) Φ5 — DPF IR 13 (1)H
DPD AMUX 12 H — Φ3 D2 R2(1) Φ2 — DPF IR 12 (1)H
13 D1 R1(1) 12
14 D0 R0(1) 15
CLR CLK
Φ1 Φ9

74174 E060 IR
DPC AMUX Φ9 H — Φ4 D5 R5(1) Φ5 — DPF IR Φ9 (1)H
DPC AMUX Φ8 H — Φ3 D4 R4(1) Φ2 EF1 — DPF IR Φ8 (1)H
DPB AMUX Φ7 H — 11 D3 R3(1) 10 DS2 — DPF IR Φ7 (1)H
DPB AMUX Φ6 H — 13 D2 R2(1) 12 DS1 — DPF IR Φ6 (1)H
DPC AMUX 11 H — 14 D1 R1(1) 15 — DPF IR 11 (1)H
DPC AMUX 10 H — Φ6 D0 R0(1) Φ7 — DPF IR 10 (1)H
CLR CLK
Φ1 Φ9
DPF LOAD IR L

74174 E057 IR
DPA AMUX Φ3 H — 11 D5 R5(1) 10 — DPF IR Φ3 (1)H
DPA AMUX Φ2 H — 13 D4 R4(1) 12 DU1 — DPF IR Φ2 (1)H
DPB AMUX Φ5 H — Φ3 D3 R3(1) Φ2 — DPF IR Φ5 (1)H
DPA AMUX Φ0 H — 14 D2 R2(1) 15 DU2 — DPF IR Φ0 (1)H
DPA AMUX Φ1 H — Φ6 D1 R1(1) Φ7 DT2 — DPF IR Φ1 (1)H
DPB AMUX Φ4 H — Φ4 D0 R0(1) Φ5 — DPF IR Φ4 (1)H
CLR CLK
Φ1 Φ9
CONH PROC INIT L
CONB IR CLOCK H — EV1 13
CONJ PROC CLOCK H — 12
74ΦΦ E070 — 11 — DPF LOAD IR L

23-A002A1 E053 DOP AUX CTL
DPF IR 15 (1)H — 13 A3 M6(1) Φ7 — CONF ALU S3 L
DPF IR 14 (1)H — 12 A2 M5(1) Φ6 — CONF ALU S2 L
DPF IR 13 (1)H — 11 A1 M4(1) Φ5 — CONF ALU S1 L
DPF IR 12 (1)H — 10 A0 M3(1) Φ4 — CONF ALU S0 L
DPA RUN GND L — 14 A4 M2(1) Φ3 — CONF ALU MODE H
M1(1) Φ2 — CONF CIN H
M0(1) Φ1 R25 2k +5V — DPF C CLK L
M7(1) Φ9 R48 2k +5V — DPF DISAB VBIT ROM H
ENB
CONF AUX CONTROL L — FB1 15 Φ1 — 74ΦΦ E073 — Φ2 — DPF AUX CONTROL H

23-A003A1 E061 SOP AUX CTL
DPF IR 10 (1)H — 12 A2 M0(1) Φ1 — CONF ALU S3 L
DPF IR Φ9 (1)H — 11 A1 M1(1) Φ2 — CONF ALU S2 L
DPF IR Φ8 (1)H — 10 A0 M2(1) Φ3 — CONF ALU S1 L
DPF IR Φ7 (1)H — 13 A3 M3(1) Φ4 — CONF ALU S0 L
DPF IR Φ6 (1)H — 14 A4 M4(1) Φ5 — CONF ALU MODE H
M5(1) Φ6 — CONF CIN H
M6(1) Φ7 — DPF C CLK L
M7(1) Φ9 R28 2k +5V — DPF COP L
ENB
15
DPG CAL SOURCE L — Φ1
DPF AUX CONTROL H — Φ2 — 74ΦΦ E094 — Φ3 — DPF SOP L

23-A006A1 E068 SOP AUX CTL
M3(1) Φ4 R40 2k +5V — DPF CODE Φ L
M2(1) Φ3 R29 2k — DPF SET CARRY L
M0(1) Φ1 — DPG BYTE L
M4(1) Φ5 — CONG B MODE ØØ H
M7(1) Φ9 — DPF DISAB VBIT ROM H
M1(1) Φ2 R30 2k — DPF ROTATE L
M5(1) Φ6 — EU1 — CONG ROM ALEG Φ L
M6(1) Φ7 R21 2k — DPF CODE 1 L
ENB
15
DPF IR 10 (1)H — 12 A2
DPF IR Φ9 (1)H — 13 A3
DPF IR Φ8 (1)H — 14 A4
DPF IR Φ7 (1)H — 10 A0
DPF IR Φ6 (1)H — 11 A1

11 — 74Φ4 E063 — 10 — DPF SET CARRY H
Φ9 — 74Φ4 E063 — Φ8 — FS1 — DPF ROTATE H

DPF ROT DLY (1)H — 12
DPF ROT C DLY (1)H — 13
DPF SET C DLY (1)H — Φ9
10
74HΦ1 EΦ92 — 11
74HΦ1 EΦ92 — Φ8

23-A012A1 EØ82 C ΦV BIT
M5(1) Φ6 — DPF SET COUT L
M7(1)
MØ(1)
M6(1)
M3(1)
M2(1)
M1(1)
M6(1) Φ7 — R51 2k +5V
ENB
15
DPF CODE 1 DEL (1)L — 10 AØ
DPF CODE Φ DEL (1)L — 11 A1
DPF NEG DEL (1)H — 12 A2
DPF BLEG 15 DEL (1)L — 14 A4
DPF ALEG 15 DEL (1)L — 13 A3
DPF DISAB VROM DEL (1)H
DPF ROTC DEL (1)H
Φ1
Φ2 — 74Ø6 EØ81 — Φ3 Φ5
DPF NEG DEL (1)H
DPF ROT DEL (1)H
Φ4 — 74HΦ1 EΦ92 — Φ6

R5Ø +5V 2k
DPF IR 15 (1)H — Φ9
DPF IR 14 (1)H — 10
DPF IR 13 (1)H — 11
74 1Ø EØ67 — Φ8
Φ9
10
74Ø6 EØ81 — Φ8 — DPF SET COUT H

3 — 74Ø4 EØ73 — 4 — DPF SET V H

74174 EØ54
DPE SET Z H — 11 D5 R5(1) 10 — DPF ZERO DEL (1)H
DPE NEG H — 14 D4 R4(1) 15 — DPF NEG DEL (1)H
CONF AUX CONTROL L — 13 D3 R3(1) 12 — DPF AUX DEL (1)L
DPF C CLK L — Φ6 D2 R2(1) Φ7 — DPF C CLK DEL (1)H
DPF CODE 1 L — Φ4 D1 R1(1) Φ5 — DPF CODE 1 DEL (1)L
DPF CODE Φ L — Φ3 D0 R0(1) Φ2 — DPF CODE Φ DEL (1)L
CLR CLK
+5V
DPF R47 H — R47 1K
Φ1 Φ9

74174 EØ93
DPD BLEG 15 L — 13 D5 R5(1) 12 — DPF BLEG 15 DEL (1)L
DPD ALEG 15 L — 14 D4 R4(1) 15 — DPF ALEG 15 DEL (1)L
DPF DISAB VBIT ROM H — 11 D3 R3(1) 10 — DPF DISAB VROM DEL (1)H
DPF ROTATE H — Φ4 D2 R2(1) Φ5 — DPF ROT DEL (1)H
DPF ROT COUT H — Φ3 D1 R1(1) Φ2 — DPF ROT C DEL (1)H
DPF SET CARRY H — Φ6 D0 R0(1) Φ7 — DPF SET C DEL (1)H
CLR CLK
Φ1 Φ9
DPE R59 H
DPA PROC CLOCK L

AUX ALA CONTROL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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. W.MAJOR DATE 1/9/72
CHK'D DATE 1/6/72
ENG. K.Cuneo DATE 4/24/72
PROJ. ENG. DATE 4/26/72
PROD. DATE 4/27/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DPF)

NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 8 OF
SIZE D | CODE CS | NUMBER M7260-0-1 | REV. J
DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO

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23-AØ5A1 EØ66

+5V
R39 2K
R35 2K
R38 2K
R37 2K
R36 470

	M2(1)	Ø3	DPG CAL SOURCE L
CONE BUT DESTINATION L DH1	A4	M6(1) Ø7	EH1 DPG MOVE L
DPF IR 12 (1)H	A3	M3(1) Ø4	EK1 DPG BYTE L
DPF IR 13 (1)H	A2	M4(1) Ø5	DPG CMP+BIT L
DPF IR 14 (1)H	A1	M7(1) Ø9	DPG CODE Ø L
DPF IR 15 (1)H	AØ	M1(1) Ø2	CONF ALU S0 L
		MØ(1) Ø1	CONF ALU S2 L
		M5(1) Ø6	EJ1 DPG DIS ALU S BITS H
	ENB		
DPA RUN GND L	15		

23-AØ3A2 EØ59

DPF IR 15 (1)H	A7	MØ(1)	12 CONF MPC Ø4 L
DPF IR 1Ø (1)H	A4		
DPF IR ØB (1)H	A6	M3(1) Ø9	CONF MPC Ø3 L
DPF IR Ø9 (1)H	A5		
DPE NEG (1)H	A2	M2(1) 1Ø	CONF MPC Ø2 L
DPE ZERO (1)H	AØ		
DPE VBIT (1)H	A3	M1(1) 11	CONF MPC Ø1 L
DPE COUT (1)H	A1		
	ENB1 ENBØ		
CONE BUT IR DECODE L	14	13	
DPG CAL BRANCH L			

23-A1ØA1 EØ71

	M7(1)	Ø9	EL1 CONF MPC ØØ L
	MØ(1)	Ø1	ES1 CONF MPC Ø7 L
	M1(1)	Ø2	FJ1 CONG CKOFF L
	M2(1)	Ø3	EB1 CONF MPC Ø5 L
	M3(1)	Ø4	EC1 CONF MPC Ø4 L
CONE JMP OR JSR L EM2	A4	M4(1)	Ø5 ED1 CONF MPC Ø3 L
DPG SWAB L	A3	M5(1)	Ø6 ER1 CONF MPC Ø2 L
DPG JMP L	A2	M6(1)	Ø7 EP1 CONF MPC Ø1 L
DPG JMPORJSR L	A1		
DPG CAL DEST L	AØ	ENB	
		15	
CONE ENAB UNARY L EN1			

23-AØ4A1 EØ64

+5V
R31 2K

	M7(1)	Ø9	DV1 DPG WAIT L
	M6(1)	Ø7	CONF MPC Ø7 L
DPF IR Ø2 (1)H	A1	M5(1)	Ø6 CONF MPC Ø6 L
DPF IR Ø1 (1)H	A2	M4(1)	Ø5 CONF MPC Ø5 L
DPF IR ØØ (1)H	AØ	M3(1)	Ø4 CONF MPC Ø4 L
CONE BUT IR DECODE L DV2	A3	M2(1)	Ø3 CONF MPC Ø3 L
DPG CC L	A4	M1(1)	Ø2 CONF MPC Ø2 L
		MØ(1)	Ø1 CONF MPC Ø1 L
	ENB		
	15		

23-AØBA1 EØ69

	M4(1)	Ø5	R71 2K FU2 DPG EMT L
	M3(1)	Ø4	R72 2K FU1 DPG TRAP L
	MØ(1)	Ø1	R42 2K EM1 DPG CAL DEST L
DPF IR 15 (1)H	AØ	M1(1)	Ø2 R43 2K DPG JMP OR JSR L
DPF IR ØB (1)H	A3	M5(1)	Ø6 DPG BYTE L
DPF IR Ø9 (1)H	A2	M2(1)	Ø3 R44 2K DPG CAL BRANCH L
DPF IR 1Ø (1)H	A1	M7(1)	Ø9 R49 1K DPG ODD BYTE=Ø L
DPF IR 11 (1)H	A4	M6(1)	Ø7 R27 1K DPG 54 L
	ENB		
	15		

74ØØ4 EØ63: Ø5 → Ø6 DPG BYTE H

7427 EØ62: Ø3 Ø4 Ø5 → Ø6 DPG 54 H

7427 EØ62: DPF IR 14 (1)H 11, DPF IR 13 (1)H 1Ø, DPF IR 12 (1)H Ø9 → Ø8; Ø8 → 1, 2, 13 → 12

23-A11A1 EØ74

+5V

	MØ(1)	Ø1	R52 2K DPG JMP L
	M1(1)	Ø2	R53 2K DPG SWAB L
DPF IR Ø3 (1)H	A2	M3(1)	Ø4 R32 2K DPG CC L
DPF IR Ø4 (1)H	A1	M7(1)	Ø9 R33 2K DPG CC OR OPERATE L
DPF IR Ø5 (1)H	AØ	M4(1)	Ø5
DPF IR Ø6 (1)H	A3	M2(1)	Ø3 DPG JMP OR JSR L
DPF IR Ø7 (1)H	A4	M6(1)	Ø7 R45 2K ES2 DPG RTS L
		M5(1)	Ø6 DPG CAL DEST L
	ENB		
DPG ODD BYTE=Ø L	15		

DPG CAL SOURCE L Ø5, CONE BUT IR DECODE L Ø6 → 7402 EØ79 Ø4

	13	12	74H01 EØ72 11 CONF MPC Ø7 L
DPF IR Ø9 (1)H	1Ø	Ø9	74H01 EØ72 Ø8 CONF MPC Ø1 L
DPF IR 1Ø (1)H	Ø4	Ø5	74H01 EØ72 Ø6 CONF MPC Ø2 L
DPF IR 11 (1)H	Ø2	Ø1	74H01 EØ72 Ø3 CONF MPC Ø3 L

CONE BUT DESTINATION H EE1

12, 13	74H01 EØ65	11 CONF MPC Ø6 L
DPF IR Ø3 (1)H 1Ø, Ø9	74H01 EØ65	Ø8 CONF MPC Ø1 L
DPF IR Ø4 (1)H Ø2, Ø1	74H01 EØ65	Ø3 CONF MPC Ø2 L
DPF IR Ø5 (1)H Ø4, Ø5	74H01 EØ65	Ø6 CONF MPC Ø3 L

DPG CMP+BIT L Ø1, DPG JMP OR JSR L 13 → 74ØØ EØ67 12 FT2 DPG ENAB NON MOD H

DPF IR Ø7 (1)H Ø3, DPF IR Ø6 (1)H Ø4 → 74ØØ EØ67 Ø6

IR DECODE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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. W. MAJOR	DATE 2/22/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
QUAL.	DATE 4/27/72	
ENG.	DATE 4/24/72	TITLE: DATA PATHS
PROJ. ENG.	DATE 4/24/72	DPG
PROD. K. Peterson	DATE 4/27/72	
NEXT HIGHER ASSY. B-DD-KD11-B		SIZE D CODE CS NUMBER M7260-0-1 REV. J
SCALE		DIST.
SHEET 9 OF		

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 102-A

SIZE CODE D CS | NUMBER M7260-0-1 | REV J

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CONA ENABLE DATA H
CONC CLR MSYN H FF2
74ØØ E088
74Ø2 E075
DPH RDR ENB (I)H
74Ø2 E075
FP2 DPH CLEAR BUFF L
74Ø4 E073
FS CLK L FH1
+5V RG1 1K
+5V RGØ 1K
FS CLK DISAB L FH2
74113 EØ85
R73 47
R74 5ØØ
C38 1µF
DPA RUN GND L
74ØØ EØ84
74ØØ EØ94
74Ø2 EØ8Ø
74193 EØ17
CRY BRW
D3 D2 D1 DØ
R3(I) R2(I) R1(I) RØ(I)
CLR LD CUP CDN
DPH START H
+5V R2 1K
UART EØ41
VCC RDA SWE RDE RCP SI
DA OR FER PER RD7 RD6 RD5 RD4 RD3 RD2 RD1 RDØ
DPH DATA AVAIL H
DPH BUSY (I)H
CONA ENAB RCD PSW H FE1
DPH TBMT H
CONA ENAB XMIT PSW H FD1
DPH RCD INT ENAB (I)H
DPH XMIT INT ENAB (I)H
DPH MAINT (I)H
74HØ1 EØ87
74HØ1 EØ76
74HØ1 EØ33
74HØ1 EØ26
DPC ALEG 11 L
DPB ALEG Ø7 L
DPB ALEG Ø6 L
DPB ALEG Ø5 L
DPB ALEG Ø4 L
DPA ALEG Ø3 L
DPA ALEG Ø2 L
DPA ALEG Ø1 L
DPA ALEG ØØ L
DPH SER O H
+5V RG6 75Ø RG7
DPH SER IN H FN1
82
C37 .Ø1µF
C36 .47µF
D1
D2
DPH SI-15 L FP1
RG5 56Ø 1/2W
-15V
+5V RG8 1K
FS SER IN H FM1
74Ø4 EØ73
DPH MAINT (Ø)H
74ØØ EØ84
DPH MAINT (I)H
DPH SER O H
74ØØ EØ88
DPB AMUX Ø7 H
DPB AMUX Ø6 H
DPB AMUX Ø5 H
DPB AMUX Ø4 H
DPA AMUX Ø3 H
DPA AMUX Ø2 H
DPA AMUX Ø1 H
DPA AMUX ØØ H
CONA DATA STROBE L DE2
DB7 DB6 DB5 DB4 DB3 DB2 DB1 DBØ DS TCP Ø2
SO TBMT COC
DPH TBMT H
CLR CS NBS NB1 NP DEV DSB
21 34 37 38 35 39 36
COND INIT H
DPA R26 H
CONA ENAB RCD CN1
DF1 DPH SER O H
+15V EP2
R78 22Ø 1/2W
THIS +5 USE ON E85 ONLY
+5V
D11 IN5231B
-15V DC FB2
D1Ø D9 D8 D7 D6
R34 1ØK
+5V 1.5K R55
R56 47Ø
Q2
D4
C34 1ØØØpF
D5
R57 12K 1/2W
R58 12K 1/2W
-15V
R54 75Ø 1W
FE2 DPH SER O L
FJ2 DPH SER O-15 L
SCL CONTROL

REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX ± .005 .XX ± .02 .X ± .1 ANGLES ±Ø° 3Ø'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

	NAME	DATE
DRN.	W.MAJOR	2/1/72
CHK.		4/2/72
ENG.		4/24/72
PROJ. ENG.		4/24/72
PROD. ENG.		4/27/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS

NEXT HIGHER ASSY. B-DD-KDi1-B
SIZE D CODE CS NUMBER M726Ø-Ø-1 REV. L
SCALE
SHEET 10 OF
DIST.
DPH

DEC FORM NO DRD 102-B

M7260-0-1 REV L

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BERG PIN	SIGNAL NAME	BACKPLANE PIN
DD	CONSOLE DEP L	CM1
FF	CONSOLE START L	CM2
JJ	CONSOLE STOP L	CS1
LL	CONSOLE CONT L	CS2
NN	CONSOLE EXAM L	CT2
RR	CONSOLE LOAD L	CU2
TT	CONB RUN LAMP L	CU1

SPARE

DPE R59 H
DPA AMUX Ø2 H
DPH MAINT (1) H
DPH MAINT (Ø) H
DPH B INIT L
DPB AMUX Ø6 H
DPH XMIT INT ENAB (1)H
CONA LOAD XMIT PSW H
CONJ PROC CLOCK H
DPE PSW Ø7(Ø)L
DPH XMIT INT L
DPH TBMT H
CONE XMIT SER L
CONA DATA STROBE L
COND INIT H
DPH B INIT L
CONJ UNG PROC CLOCK H
+5V
R46 1K
R75 2K
R70 1K
DPH BUSY (1)H
DPH DATA AVAIL H
COND INIT H
DPA AMUX ØØ H
DPH RDR ENAB (1)H
DPH START H
R69 1K
R63 150
R62 47Ø
Q1
D3
FK2
DPH RDR ENAB L
C35 .Ø1MF
DPB AMUX Ø6 H
DPH RCD INT ENAB (1)H
CONA LOAD RCD PSW H
DPE PSW Ø7(Ø)L
-15V
R64 68 1/2W
FR1
DPH RE-15L
DPH DATA AVAIL H
CONJ UNG PROC CLK H
DPH RCD INT L
CONE RCD SER L
DPH CLEAR BUFF L

SCL CONTROL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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. R. Gubbins DATE 2-29-72
CHK'D DATE 4/24/72
ENG. DATE 4/24/72
PROG. ENG. DATE 4/24/72
PROD. DATE 4/24/72
NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 11 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE DATA PATHS (DPH1)

SIZE D CODE CS NUMBER M7260-Ø-1 REV. J
DIST.

REVISIONS | REV | CHANGE NO | CHK

DRAWING 40-522 15840
DEC FORM NO

SIZE D CODE CS NUMBER M7260-Ø-1 REV. J

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THIS FACE SHEET CONTAINS THE FOLLOWING CHIP PART NUMBERS

PART NUMBER

23-A01A1

23-A02A1

23-A03A1

23-A04A1

23-A05A1

23-A06A1

23-A08A1

23-A10A1

23-A11A1

23-A12A1

23-A03A2

FIRST USED ON OPTION MODEL
KDII-B

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN. C. Teschner	DATE 5-8-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. M. Tibbetts	DATE 5-15-72	
ENG. M. Tibbetts	DATE	TITLE: DATA PATH ROM PATTERNS
PROJ. ENG. M. Tibbetts	DATE	
PROD.	DATE	
NEXT HIGHER ASSEMBLY: B-DD-KDII-B		SIZE K | CODE RL | NUMBER M726Ø-Ø-8 | REV.
SCALE		DIST.
SHEET 1 OF 15		

REVISIONS	CHANGE NO.	REV.
CHK		

DEC FORM NO. DRB 109

```
                        /( =Y8 (PIN #9) DPA ALEG 02 L
                        +/( =Y7 (PIN #7) DPA ALEG 03 L
                        ++/( =Y6 (PIN #6) DPA ALEG 00 L
                        +++/( =Y5 (PIN #5) DPA ALEG 01 L
                        ++++/( =Y4 (PIN #4) DPB ALEG 05 L
                        +++++/( =Y3 (PIN #3) DBP ALEG 04 L
                        ++++++/( =Y2 (PIN #2) DPB ALEG 06 L
                        +++++++/( =Y1 (PIN #1) DPB ALEG 07 L
  OCTAL DECIMAL         ++++++++        OCTAL
ADDRESS ADDRESS  EDCBA  ++++++++        DATA
   000      0   00000   11111111        377
   001      1   00001   01001110        116     K=207 SWR ADDRESS I.E. 177570=000207,BAR
   002      2   00010   01110011        163     K=64 RECVR VECTOR
   003      3   00011   00001111        017     K=360 CONDITION CODE MASK (CCM=1)
   004      4   00100   10111011        273     K=30 EMT VECTOR
   005      5   00101   00111111        077     K=14 T BIT VECTOR
   006      6   00110   11111111        377
   007      7   00111   11111111        377
   010      8   01000   11111011        373     K=20 IOT VECTOR
   011      9   01001   00111011        073     K=34 TRAP VECTOR
   012     10   01010   11111111        377
   013     11   01011   11111111        377
   014     12   01100   10111111        277     K=10 RESERVED (ILLEGAL) INSTRUCTION VECTOR
   015     13   01101   01111111        177     K=4 BUS ERROR OR STACK OVERFLOW ERROR
   016     14   01110   11111111        377
   017     15   01111   11111111        377
   020     16   10000   01111011        173     K=24 PWR FAIL VECTOR
   021     17   10001   11111111        377
   022     18   10010   11111101        375     K=100 LCLK INT VECTOR
   023     19   10011   11111111        377
   024     20   10100   11111111        377
   025     21   10101   11111111        377
   026     22   10110   11111111        377
   027     23   10111   11111111        377
   030     24   11000   11111111        377
   031     25   11001   11111111        377
   032     26   11010   11111111        377
   033     27   11011   11111111        377
   034     28   11100   11111111        377
   035     29   11101   11110011        363     K=60 TRANSMIT VECTOR
   036     30   11110   11111111        377
   037     31   11111   11111111        377
                +++++
                ++++/( A(PIN #10) IS  CONG SP WRITE H
                +++/( B(PIN #11) IS  CONG ROM SPA 00 H
                ++/( C(PIN #12) IS  CONG ROM SPA 01 H
                +/( D(PIN #13) IS  CONG ROM SPA 02 H
                /( E(PIN #14) IS  CONG ROM SPA 03 H
```



```
                        /( =Y8 (PIN #9) DPF DISAB V BIT ROM H
                        +/( =Y7 (PIN #7) CONF ALU S3 L
                        ++/( =Y6 (PIN #6) CONF ALU S2 L
                        +++/( =Y5 (PIN #5) CONF ALU S1 L
                        ++++/( =Y4 (PIN #4) CONF ALU S0 L
                        +++++/( =Y3 (PIN #3) CONF ALU MODE H
                        ++++++/( =Y2 (PIN #2) CONF CIN H
                        +++++++/( =Y1 (PIN #1) DPF C CLK L
  OCTAL DECIMAL         ++++++++        OCTAL
ADDRESS ADDRESS  EDCBA  ++++++++        DATA
   000      0   00000   11111111        377
   001      1   00001   10000101        205     MOV F=A
   002      2   00010   01001010        112     CMP F=A MINUS B MINUS 1
   003      3   00011   10001101        215     BIT F=AB
   004      4   00100   10111101        275     BIC F=A,BARB
   005      5   00101   10100101        245     BIS F=A+B
   006      6   00110   00110000        060     ADD F=A PLUS B
   007      7   00111   11111111        377     RI (RESERVED INSTRUCTION)
   010      8   01000   11111111        377     RI
   011      9   01001   10000101        205     MOV(B)
   012     10   01010   01001010        112     CMP(B)
   013     11   01011   10001101        215     BIT(B)
   014     12   01100   10111101        275     BIC(B)
   015     13   01101   10100101        245     BIS(B)
   016     14   01110   00110010        062     SUB F=A PLUS B
   017     15   01111   11111111        377     RI
   020     16   10000   00000000        000     NOT ACCESSED
   021     17   10001   00000000        000     MOV = NOT ACCESSED
   022     18   10010   00000000        000     CMP = NOT ACCESSED
   023     19   10011   00000000        000     BIT = NOT ACCESSED
   024     20   10100   00000000        000     BIC = NOT ACCESSED
   025     21   10101   00000000        000     BIS = NOT ACCESSED
   026     22   10110   00000000        000     ADD = NOT ACCESSED
   027     23   10111   00000000        000     RI = NOT ACCESSED
   030     24   11000   00000000        000     RI = NOT ACCESSED
   031     25   11001   00000000        000     MOV(B) = NOT ACCESSED
   032     26   11010   00000000        000     CMP(B) = NOT ACCESSED
   033     27   11011   00000000        000     BIT(B) = NOT ACCESSED
   034     28   11100   00000000        000     BIC(B) = NOT ACCESSED
   035     29   11101   00000000        000     BIS(B) = NOT ACCESSED
   036     30   11110   00000000        000     SUB = NOT ACCESSED
   037     31   11111   00000000        000     RI = NOT ACCESSED
                +++++
                ++++/( A(PIN #10) IS  DPF IR 12 (1)H
                +++/( B(PIN #11) IS  DPF IR 13 (1)H
                ++/( C(PIN #12) IS  DPF IR 14 (1)H
                +/( D(PIN #13) IS  DPF IR 15 (1)H
                /( E(PIN #14) IS  DPA RUN GND L
```

```
                        /( =Y8 (PIN #9) DPF COP L
                        */( =Y7 (PIN #7) DPF C CLK L
                        **/( =Y6 (PIN #6) CONF CIN H
                        ***/( =Y5 (PIN #5) CONF ALU MODE H
                        ****/( =Y4 (PIN #4) CONF ALU S0 L
                        *****/( =Y3 (PIN #3) CONF ALU S1 L
                        ******/( =Y2 (PIN #2) CONF ALU S2 L
                        *******/( =Y1 (PIN #1) CONF ALU S3 L
  OCTAL  DECIMAL                *******          OCTAL
 ADDRESS ADDRESS   EDCBA        *******          DATA
    000      0     00000   11111111          377
    001      1     00001   11111111          377
    002      2     00010   10011100          234       CLR ALUF=ZERO
    003      3     00011   10101001          251       NEG CIN ALUF=A MINUS B MINUS 1
    004      4     00100   10111111          277       ROR
    005      5     00101   11111111          377
    006      6     00110   11111111          377
    007      7     00111   11111111          377
    010      8     01000   11111111          377
    011      9     01001   11111111          377
    012     10     01010   11100000          340       INC CIN ALUF=A ARITH
    013     11     01011   00101111          057       SBC CIN ALUF=A MINUS 1
    014     12     01100   10110111          267       ASR
    015     13     01101   11111111          377
    016     14     01110   11111111          377
    017     15     01111   11111111          377
    020     16     10000   11111111          377
    021     17     10001   11111111          377
    022     18     10010   10010101          225       COM ALUF=NOT B
    023     19     10011   00000000          000       ADC CIN ALUF=A ARITH
    024     20     10100   10111011          273       ROL
    025     21     10101   11111111          377
    026     22     10110   11111111          377
    027     23     10111   11111111          377
    030     24     11000   10011010          232       SWAB NOT B CLOCK LOW
    031     25     11001   11111111          377
    032     26     11010   11001111          317       DEC CIN ALUF=A MINUS 1
    033     27     11011   10010000          220       TST ALUF=AL
    034     28     11100   10110011          263       ASL
    035     29     11101   11111111          377
    036     30     11110   11111111          377
    037     31     11111   11111111          377
                   *****
                   ****/( A(PIN #10) IS  DPF IR Ø8 (1)H
                   ***/( B(PIN #11) IS  DPR IR Ø9 (1)H
                   **/( C(PIN #12) IS  DPF IR 10 (1)H
                   */( D(PIN #13) IS  DPF IR Ø7 (1)H
                   /( E(PIN #14) IS  DPF IR Ø6 (1)H
```



```
                        /( =Y8 (PIN #9) DPG WAIT L
                        */( =Y7 (PIN #7) CONF MPC Ø7 L
                        **/( =Y6 (PIN #6) CONF MPC Ø6 L
                        ***/( =Y5 (PIN #5) CONF MPC Ø5 L
                        ****/( =Y4 (PIN #4) CONF MPC Ø4 L
                        *****/( =Y3 (PIN #3) CONF MPC Ø3 L
                        ******/( =Y2 (PIN #2) CONF MPC Ø2 L
                        *******/( =Y1 (PIN #1) CONF MPC Ø1 L
  OCTAL  DECIMAL                *******          OCTAL
 ADDRESS ADDRESS   EDCBA        *******          DATA
    000      0     00000   11001011          313       CC OPR
    001      1     00001   11001011          313       CC OPR
    002      2     00010   11001011          313       CC OPR
    003      3     00011   11001011          313       CC OPR
    004      4     00100   11001011          313       CC OPR
    005      5     00101   11001011          313       CC OPR
    006      6     00110   11001011          313       CC OPR
    007      7     00111   11001011          313       CC OPR
    010      8     01000   11111111          377       RI (RESERVED INSTRUCTION)
    011      9     01001   11111111          377       NOT ACCESSED FOR NOT IR DECODE
    012     10     01010   11111111          377       RI
    013     11     01011   11111111          377       RI
    014     12     01100   11111111          377       RI
    015     13     01101   11111111          377       RI
    016     14     01110   11111111          377       RI
    017     15     01111   11111111          377       RI
    020     16     10000   11101111          357       HALT,BUT IR DEC
    021     17     10001   01100110          146       WAIT,BUT IR DEC
    022     18     10010   10100010          242       IOT
    023     19     10011   10001000          210       RESET
    024     20     10100   10110100          264       RTI
    025     21     10101   11101101          355       BREAKPOINT TRAP DECODE
    026     22     10110   11111111          377       RI
    027     23     10111   11111111          377       RI
    030     24     11000   11111111          377       RI
    031     25     11001   01111111          177       WAIT,BUT IR DEC,BAR
    032     26     11010   11111111          377       RI
    033     27     11011   11111111          377       RI
    034     28     11100   11111111          377       RI
    035     29     11101   11111111          377       RI
    036     30     11110   11111111          377       RI
    037     31     11111   11111111          377       RI
                   *****
                   ****/( A(PIN #10) IS  DPF IR Ø0 (1)H
                   ***/( B(PIN #11) IS  DPF IR Ø2 (1)H
                   **/( C(PIN #12) IS  DPF IR Ø1 (1)H
                   */( D(PIN #13) IS  CONE BUT IR DECODE L
                   /( E(PIN #14) IS  DPG CC L
```

```
                        /( =Y8 (PIN #9) DPF CODE Ø L
                        +/( =Y7 (PIN #7) DPG MOVE L
                        ++/( =Y6 (PIN #6) DPG DIS ALU S BITS H
                        +++/( =Y5 (PIN #5) DPG CMP OR BIT L
                        ++++/( =Y4 (PIN #4) DPG BYTE L
                        +++++/( =Y3 (PIN #3) DPG CAL SOURCE L
                        ++++++/( =Y2 (PIN #2) CONF ALU S0 L
                        +++++++/( =Y1 (PIN #1) CONF ALU S2 L
  OCTAL DECIMAL                 ++++++++        OCTAL
 ADDRESS ADDRESS    EDCBA       ++++++++        DATA
    000      0      00000      11011111        337       BR/CC (BRANCH OR CC OPERATOR)
    001      1      00001      11011111        337       BR/CC
    002      2      00010      11011011        333       BIC
    003      3      00011      11010011        323       BIC(B)
    004      4      00100      11001011        313       CMP
    005      5      00101      11000011        303       CMP(B)
    006      6      00110      01011011        133       ADD
    007      7      00111      01111000        170       SUB DIS ALU BITS H
    010      8      01000      10011011        233       MOV
    011      9      01001      10010011        223       MOV(B)
    012     10      01010      11011011        333       BIS
    013     11      01011      11010011        323       BIS(B)
    014     12      01100      11001011        313       BIT
    015     13      01101      11000011        303       BIT(B)
    016     14      01110      11011111        337       RI TRAP
    017     15      01111      11011111        337       RI TRAP
    020     16      10000      11011111        337       BR/CC
    021     17      10001      11011111        337       BR/CC
    022     18      10010      11011011        333       BIC
    023     19      10011      11010011        323       BIC(B)
    024     20      10100      11001011        313       CMP
    025     21      10101      11000011        303       CMP(B)
    026     22      10110      01011011        133       ADD
    027     23      10111      01011011        133       ADD
    030     24      11000      10011011        233       MOV
    031     25      11001      10010011        223       MOV(B)
    032     26      11010      11011011        333       BIS
    033     27      11011      11010011        323       BIS(B)
    034     28      11100      11001011        313       BIT
    035     29      11101      11000011        303       BIT(B)
    036     30      11110      11011111        337       RI TRAP
    037     31      11111      11011111        337       RI TRAP
                        +++++
                        ++++/( A(PIN #10) IS  DPF IR 15 (1)H
                        +++/( B(PIN #11) IS  DPF IR 14 (1)H
                        ++/( C(PIN #12) IS  DPF IR 13 (1)H
                        +/( D(PIN #13) IS  DPF IR 12 (1)H
                        /( E(PIN #14) IS  CONE BUT DESTINATION L
```



```
                        /( =Y8 (PIN #9) DPF DISAB V BIT ROM H
                        +/( =Y7 (PIN #7) DPF CODE 1 L
                        ++/( =Y6 (PIN #6) CONG ROM ALEG Ø L
                        +++/( =Y5 (PIN #5) CONG B MODE ØØ H
                        ++++/( =Y4 (PIN #4) DPF CODE Ø L
                        +++++/( =Y3 (PIN #3) DPF SET CARRY L
                        ++++++/( =Y2 (PIN #2) DPF ROTATE L
                        +++++++/( =Y1 (PIN #1) DPG BYTE L
  OCTAL DECIMAL                 ++++++++        OCTAL
 ADDRESS ADDRESS    EDCBA       ++++++++        DATA
    000      0      00000      11111111        377
    001      1      00001      11111111        377
    002      2      00010      11111111        377
    003      3      00011      10110110        266       SWAB DISAB V BIT ROM
    004      4      00100      11110101        365       ROR
    005      5      00101      11110101        365       ASR
    006      6      00110      11100101        345       ROL
    007      7      00111      11100101        345       ASL
    010      8      01000      10110111        267       CLR
    011      9      01001      00110111        067       INC
    012     10      01010      11110011        363       COM
    013     11      01011      00111111        077       DEC
    014     12      01100      00000001        001       BCC
    015     13      01101      11111111        377
    016     14      01110      11111111        377
    017     15      01111      11111111        377
    020     16      10000      00000001        001       BMI
    021     17      10001      11111111        377
    022     18      10010      11111111        377
    023     19      10011      11111111        377
    024     20      10100      00000001        001       BVS
    025     21      10101      11111111        377
    026     22      10110      11111111        377
    027     23      10111      11111111        377
    030     24      11000      01011111        137       NEG
    031     25      11001      00111111        077       SBC
    032     26      11010      00110111        067       ADC
    033     27      11011      11110111        367       TST
    034     28      11100      11111111        377
    035     29      11101      11111111        377
    036     30      11110      11111111        377
    037     31      11111      11111111        377
                        +++++
                        ++++/( A(PIN #10) IS  DPF IR Ø7 (1)H
                        +++/( B(PIN #11) IS  DPF IR Ø6 (1)H
                        ++/( C(PIN #12) IS  DPF IR 10 (1)H
                        +/( D(PIN #13) IS  DPF IR Ø9 (1)H
                        /( E(PIN #14) IS  DPF IR Ø8 (1)H
```

```
                        /( =Y8 (PIN #9) DPG ODD BYTE = ØL
                        */( =Y7 (PIN #7) DPG 54 L
                        **/( =Y6 (PIN #6) DPG BYTE L
                        ***/( =Y5 (PIN #5) DPG EMT L
                        ****/( =Y4 (PIN #4) DPG TRAP L
                        *****/( =Y3 (PIN #3) DPG CAL BRANCH L
                        ******/( =Y2 (PIN #2) DPG JSR L
                        *******/( =Y1 (PIN #1) DPG CAL DEST L
  OCTAL DECIMAL         ********        OCTAL
 ADDRESS ADDRESS EDCBA  ********        DATA
    ØØØ     Ø   ØØØØØ  Ø1111111        177
    ØØ1     1   ØØØØ1  11111Ø11        373     BPL
    ØØ2     2   ØØØ1Ø  11111Ø11        373     BGE
    ØØ3     3   ØØØ11  11111Ø11        373     BVC
    ØØ4     4   ØØ1ØØ  11111Ø11        373     BNE
    ØØ5     5   ØØ1Ø1  11111Ø11        373     BHI
    ØØ6     6   ØØ11Ø  11111Ø11        373     BGT
    ØØ7     7   ØØ111  11111Ø11        373     BCC
    Ø1Ø     8   Ø1ØØØ  11111Ø11        373     BR
    Ø11     9   Ø1ØØ1  11111Ø11        373     BMI
    Ø12    1Ø   Ø1Ø1Ø  11111Ø11        373     BLT
    Ø13    11   Ø1Ø11  11111Ø11        373     BVS
    Ø14    12   Ø11ØØ  11111Ø11        373     BEQ
    Ø15    13   Ø1111  11111Ø11        373     BLOS
    Ø16    14   Ø1111  11111Ø11        373     BLE
    Ø17    15   Ø1111  11111Ø11        373     BCS
    Ø2Ø    16   1ØØØØ  11111100        374     JSR
    Ø21    17   1ØØØ1  11101111        357     EMT
    Ø22    18   1ØØ1Ø  11111110        376     SOP (CC) ROR/ROL/ASR/ASL
    Ø23    19   1ØØ11  11011110        336     OPR (DST) ROR(B)/ROL(B)/ASR(B)/ASL(B)
    Ø24    2Ø   1Ø1ØØ  11111110        376     SOP (CC) CLR/COM/INC/DEC
    Ø25    21   1Ø1Ø1  11011110        336     OPR(DST) CLR(B)/COM(B)/INC(B)/DEC(B)
    Ø26    22   1Ø11Ø  11111111        377     RI RESERVED INST
    Ø27    23   1Ø111  11111111        377     RI RESERVED INST
    Ø3Ø    24   11ØØØ  11111100        374     JSR
    Ø31    25   11ØØ1  11110111        367     TRAP
    Ø32    26   11Ø1Ø  11111111        377     RI RESERVED INST
    Ø33    27   11Ø11  11111111        377     RI RESERVED INST
    Ø34    28   11100  10111110        276     SOP NEG/ADC/SBC/TST
    Ø35    29   11101  10011110        236     OPR(DST) NEG(B)/ADC(B)/SBC(B)/TST(B)
    Ø36    3Ø   11110  11111111        377     RI RESERVED INST
    Ø37    31   11111  11111111        377     RI RESERVED INST
                        *****
                        ****/( A(PIN #1Ø) IS  DPF IR 15 (1)H
                        ***/( B(PIN #11) IS  DPF IR 1Ø (1)H
                        **/( C(PIN #12) IS  DPF IR Ø9 (1)H
                        */( D(PIN #13) IS  DPF IR Ø8 (1)H
                        /( E(PIN #14) IS  DPF IR 11 (1)H
```



```
                        /( =Y8 (PIN #9) CONF MPC ØØ L
                        */( =Y7 (PIN #7) CONF MPC Ø1 L
                        **/( =Y6 (PIN #6) CONF MPC Ø2 L
                        ***/( =Y5 (PIN #5) CONF MPC Ø3 L
                        ****/( =Y4 (PIN #4) CONF MPC Ø4 L
                        *****/( =Y3 (PIN #3) CONF MPC Ø5 L
                        ******/( =Y2 (PIN #2) CONG CKOFF L
                        *******/( =Y1 (PIN #1) CONF MPC Ø7 L
  OCTAL DECIMAL         ********        OCTAL
 ADDRESS ADDRESS EDCBA  ********        DATA
    ØØØ     Ø   ØØØØØ  11111111        377
    ØØ1     1   ØØØØ1  11111111        377
    ØØ2     2   ØØØ1Ø  11111111        377
    ØØ3     3   ØØØ11  11111111        377
    ØØ4     4   ØØ1ØØ  11111111        377
    ØØ5     5   ØØ1Ø1  11111111        377
    ØØ6     6   ØØ11Ø  11111111        377
    ØØ7     7   ØØ111  11111111        377
    Ø1Ø     8   Ø1ØØØ  11011111        337     JMP BADR TO J=1 @204
    Ø11     9   Ø1ØØ1  11111111        377
    Ø12    1Ø   Ø1Ø1Ø  11011111        337     JMP BADR TO J=1 @204
    Ø13    11   Ø1Ø11  11111111        377
    Ø14    12   Ø11ØØ  10101111        257     JSR BADR TO J2=1 @ 212
    Ø15    13   Ø11Ø1  11111111        377
    Ø16    14   Ø1110  11111111        377     NOT JMP OR JSR FALL THRU TO D1=2 @ 200
    Ø17    15   Ø1111  11111111        377
    Ø2Ø    16   1ØØØØ  11111111        377
    Ø21    17   1ØØØ1  11111111        377
    Ø22    18   1ØØ1Ø  11111111        377
    Ø23    19   1ØØ11  11111111        377
    Ø24    2Ø   1Ø1ØØ  11111111        377
    Ø25    21   1Ø1Ø1  11111111        377
    Ø26    22   1Ø11Ø  11010111        327     SWAB BADR Ø24 INOR NEXT
    Ø27    23   1Ø111  11111111        377
    Ø3Ø    24   11ØØØ  Ø1101111        157     JMP BADR Ø11 INOR NEXT
    Ø31    25   11ØØ1  11111111        377
    Ø32    26   11Ø1Ø  Ø1101111        157     JMP BADR Ø11 INOR NEXT
    Ø33    27   11Ø11  11111111        377
    Ø34    28   11100  Ø1101111        157     JSR BADR Ø11 INOR NEXT
    Ø35    29   11101  11111111        377
    Ø36    3Ø   11110  11101110        356     SOP BADR 21Ø INOR NXT
    Ø37    31   11111  11110101        365     UNARY AND NOT JMP,JSR,SWAB
                        *****
                        ****/( A(PIN #1Ø) IS  DPG CAL DEST L
                        ***/( B(PIN #11) IS  DPG JMP L OR JSR L
                        **/( C(PIN #12) IS  DPG JMP L
                        */( D(PIN #13) IS  DPG SWAB L
                        /( E(PIN #14) IS  CONG JMP OR JSR L
```

```
                        /( =Y8 (PIN #9) DPG CC OR OPERATE L
                        */( =Y7 (PIN #7) DPG RTS L
                        **/( =Y6 (PIN #6) DPG CAL DEST L
                        ***/( =Y5 (PIN #5)
                        ****/( =Y4 (PIN #4) DPG CC L
                        *****/( =Y3 (PIN #3) DPG JMP L OR JSR L
                        ******/( =Y2 (PIN #2) DPG SWAB L
                        *******/( =Y1 (PIN #1) DPG JMP L
  OCTAL  DECIMAL                ********          OCTAL
 ADDRESS ADDRESS    EDCBA       ********          DATA
    000       0    00000       01111111          177       OPR(HALT/WAIT/RTI/BK/IOT/TR)
    001       1    00001       11111111          377       RI
    002       2    00010       11111111          377       RI
    003       3    00011       11111111          377       RI
    004       4    00100       11111111          377       RI
    005       5    00101       11111111          377       RI
    006       6    00110       11111111          377       RI
    007       7    00111       11111111          377       RI
    010       8    01000       11011010          332       JMP MODE 0
    011       9    01001       11011010          332       JMP MODE 4
    012      10    01010       11011010          332       JMP MODE 2
    013      11    01011       11011010          332       JMP MODE 6
    014      12    01100       11011010          332       JMP MODE 1
    015      13    01101       11011010          332       JMP MODE 5
    016      14    01110       11011010          332       JMP MODE 3
    017      15    01111       11011010          332       JMP MODE 7
    020      16    10000       10111111          277       RTS NOT DPG CC OR OPR L
    021      17    10001       01110111          167       CC OPR 240
    022      18    10010       11111111          377       RI
    023      19    10011       01110111          167       CC OPR 260
    024      20    10100       11111111          377       RI
    025      21    10101       01110111          167       CC OPR 240
    026      22    10110       11111111          377       RI
    027      23    10111       01110111          167       CC OPR 260
    030      24    11000       11011101          335       SWAB MODE 0
    031      25    11001       11011101          335       SWAB MODE 4
    032      26    11010       11011101          335       SWAB MODE 2
    033      27    11011       11011101          335       SWAB MODE 6
    034      28    11100       11011101          335       SWAB MODE 1
    035      29    11101       11011101          335       SWAB MODE 5
    036      30    11110       11011101          335       SWAB MODE 3
    037      31    11111       11011101          335       SWAB MODE 7
                   *****
                   ****/( A(PIN #10) IS  DPF IR 05 (1)H
                   ***/( B(PIN #11) IS  DPF IR 04 (1)H
                   **/( C(PIN #12) IS  DPF IR 03 (1)H
                   */( D(PIN #13) IS  DPF IR 06 (1)H
                   /( E(PIN #14) IS  DPF IR 07 (1)H
```



```
                        /( =Y8 (PIN #9)
                        */( =Y7 (PIN #7) DPF SET V L
                        **/( =Y6 (PIN #6) DPF SET COUT L
                        ***/( =Y5 (PIN #5)
                        ****/( =Y4 (PIN #4)
                        *****/( =Y3 (PIN #3)
                        ******/( =Y2 (PIN #2)
                        *******/( =Y1 (PIN #1)
  OCTAL  DECIMAL                ********          OCTAL
 ADDRESS ADDRESS    EDCBA       ********          DATA
    000       0    00000       11011111          337       INC OR ADC
    001       1    00001       10011111          237       ADD OR SUB
    002       2    00010       10111111          277       DEC OR SBC
    003       3    00011       11111111          377       CMP OR NEG
    004       4    00100       11111111          377       INC OR ADC
    005       5    00101       11011111          337       ADD OR SUB
    006       6    00110       11111111          377       DEC OR SBC
    007       7    00111       11011111          337       CMP OR NEG
    010       8    01000       11111111          377       INC OR ADC
    011       9    01001       11011111          337       ADD OR SUB
    012      10    01010       11111111          377       DEC OR SBC
    013      11    01011       11011111          337       CMP OR NEG
    014      12    01100       10111111          277       INC OR ADC
    015      13    01101       11111111          377       ADD OR SUB
    016      14    01110       11011111          337       DEC OR SBC
    017      15    01111       10011111          237       CMP OR NEG
    020      16    10000       11011111          337       INC OR ADC
    021      17    10001       11011111          337       ADD OR SUB
    022      18    10010       10111111          277       DEC OR SBC
    023      19    10011       10111111          277       CMP OR NEG
    024      20    10100       11111111          377       INC OR ADC
    025      21    10101       11111111          377       ADD OR SUB
    026      22    10110       11111111          377       DEC OR SBC
    027      23    10111       11111111          377       CMP OR NEG
    030      24    11000       11111111          377       INC OR ADC
    031      25    11001       11111111          377       ADD OR SUB
    032      26    11010       11111111          377       DEC OR SBC
    033      27    11011       11111111          377       CMP OR NEG
    034      28    11100       10111111          277       INC OR ADC
    035      29    11101       10111111          277       ADD OR SUB
    036      30    11110       11011111          337       DEC OR SBC
    037      31    11111       11011111          337       CMP OR NEG
                   *****
                   ****/( A(PIN #10) IS  DPF CODE 1 DEL (1)L
                   ***/( B(PIN #11) IS  DPF CODE 0 DEL (1)L
                   **/( C(PIN #12) IS  DPE NEG DEL (1)H
                   */( D(PIN #13) IS  DPD ALEG 15 DEL (1)L
                   /( E(PIN #14) IS  DPD BLEG 15 DEL (1)L
```

```
                                        /( =Y4 (PIN # 9) CONF MPC Ø3 L
                                        +/( =Y3 (PIN #10) CONF MPC Ø2 L
                                        ++/( =Y2 (PIN #11) CONF MPC Ø1 L
                                        +++/( =Y1 (PIN #12) CONF MPC Ø4 L
  OCTAL DECIMAL                         ++++          OCTAL
ADDRESS ADDRESS   HGFEDCBA              ++++          DATA
    ØØØ       Ø   ØØØØØØØØ              1111          Ø17
    ØØ1       1   ØØØØØØØ1              1111          Ø17
    ØØ2       2   ØØØØØØ1Ø              1111          Ø17
    ØØ3       3   ØØØØØØ11              1111          Ø17
    ØØ4       4   ØØØØØ1ØØ              1111          Ø17
    ØØ5       5   ØØØØØ1Ø1              1111          Ø17
    ØØ6       6   ØØØØØ11Ø              1111          Ø17
    ØØ7       7   ØØØØØ111              1111          Ø17
    ØØ1Ø      8   ØØØØ1ØØØ              1111          Ø17
    ØØ11      9   ØØØØ1ØØ1              1111          Ø17
    ØØ12     1Ø   ØØØØ1Ø1Ø              1111          Ø17
    ØØ13     11   ØØØØ1Ø11              1111          Ø17
    ØØ14     12   ØØØØ11ØØ              1111          Ø17
    ØØ15     13   ØØØØ11Ø1              1111          Ø17        NOT ACCESSED
    ØØ16     14   ØØØØ111Ø              1111          Ø17
    ØØ17     15   ØØØØ1111              1111          Ø17        ************
    Ø2Ø      16   ØØØ1ØØØØ              ØØ11          ØØ3
    Ø21      17   ØØØ1ØØØ1              ØØ11          ØØ3
    Ø22      18   ØØØ1ØØ1Ø              ØØ11          ØØ3
    Ø23      19   ØØØ1ØØ11              ØØ11          ØØ3
    Ø24      2Ø   ØØØ1Ø1ØØ              Ø1Ø1          Ø05
    Ø25      21   ØØØ1Ø1Ø1              Ø1Ø1          Ø05
    Ø26      22   ØØØ1Ø11Ø              Ø1Ø1          Ø05
    Ø27      23   ØØØ1Ø111              Ø1Ø1          Ø05
    Ø3Ø      24   ØØØ11ØØØ              Ø1Ø1          Ø05
    Ø31      25   ØØØ11ØØ1              Ø1Ø1          Ø05
    Ø32      26   ØØØ11Ø1Ø              Ø1Ø1          Ø05
    Ø33      27   ØØØ11Ø11              Ø1Ø1          Ø05
    Ø34      28   ØØØ111ØØ              ØØ11          ØØ3
    Ø35      29   ØØØ111Ø1              ØØ11          ØØ3        BGE
    Ø36      3Ø   ØØØ1111Ø              ØØ11          ØØ3
    Ø37      31   ØØØ11111              ØØ11          ØØ3        ************

    Ø4Ø      32   ØØ1ØØØØØ              ØØ11          ØØ3
    Ø41      33   ØØ1ØØØØ1              Ø1Ø1          Ø05
    Ø42      34   ØØ1ØØØ1Ø              ØØ11          ØØ3
    Ø43      35   ØØ1ØØØ11              Ø1Ø1          Ø05
    Ø44      36   ØØ1ØØ1ØØ              ØØ11          ØØ3
    Ø45      37   ØØ1ØØ1Ø1              Ø1Ø1          Ø05
    Ø46      38   ØØ1ØØ11Ø              ØØ11          ØØ3
    Ø47      39   ØØ1ØØ111              Ø1Ø1          Ø05
    Ø5Ø      4Ø   ØØ1Ø1ØØØ              ØØ11          ØØ3
    Ø51      41   ØØ1Ø1ØØ1              Ø1Ø1          Ø05
    Ø52      42   ØØ1Ø1Ø1Ø              ØØ11          ØØ3
    Ø53      43   ØØ1Ø1Ø11              Ø1Ø1          Ø05
    Ø54      44   ØØ1Ø11ØØ              ØØ11          ØØ3
    Ø55      45   ØØ1Ø11Ø1              Ø1Ø1          Ø05        BNE
    Ø56      46   ØØ1Ø111Ø              ØØ11          ØØ3
    Ø57      47   ØØ1Ø1111              Ø1Ø1          Ø05        ************
    Ø6Ø      48   ØØ11ØØØØ              ØØ11          ØØ3
    Ø61      49   ØØ11ØØØ1              Ø1Ø1          Ø05
    Ø62      5Ø   ØØ11ØØ1Ø              ØØ11          ØØ3
    Ø63      51   ØØ11ØØ11              Ø1Ø1          Ø05
    Ø64      52   ØØ11Ø1ØØ              Ø1Ø1          Ø05
    Ø65      53   ØØ11Ø1Ø1              Ø1Ø1          Ø05
    Ø66      54   ØØ11Ø11Ø              Ø1Ø1          Ø05
    Ø67      55   ØØ11Ø111              Ø1Ø1          Ø05
    Ø7Ø      56   ØØ111ØØØ              Ø1Ø1          Ø05
    Ø71      57   ØØ111ØØ1              Ø1Ø1          Ø05
    Ø72      58   ØØ111Ø1Ø              Ø1Ø1          Ø05
    Ø73      59   ØØ111Ø11              Ø1Ø1          Ø05
    Ø74      6Ø   ØØ1111ØØ              ØØ11          ØØ3
    Ø75      61   ØØ1111Ø1              Ø1Ø1          Ø05        BGT
    Ø76      62   ØØ11111Ø              ØØ11          ØØ3
    Ø77      63   ØØ111111              Ø1Ø1          Ø05        ************
                  ++++++++
                  +++++++/( A(PIN #Ø5) IS  DPE CC ZERO (1)H
                  ++++++/( B(PIN #Ø6) IS  DPE CC COUT (1)H
                  +++++/( C(PIN #Ø7) IS  DPE CC NEG (1)H
                  ++++/( D(PIN #Ø4) IS  DPE CC VBIT (1)H
                  +++/( E(PIN #Ø3) IS  DPF IR 1Ø (1)H
                  ++/( F(PIN #Ø2) IS  DPF IR Ø9 (1)H
                  +/( G(PIN #Ø1) IS  DPF IR Ø8 (1)H
                  /( H(PIN #15) IS  DPF IR 15 (1)H
```

```
                                /( =Y4 (PIN # 9) CONF MPC 03 L
                                */( =Y3 (PIN #10) CONF MPC 02 L
                                **/( =Y2 (PIN #11) CONF MPC 01 L
                                ***/( =Y1 (PIN #12) CONF MPC 04 L
  OCTAL  DECIMAL                ****          OCTAL
ADDRESS ADDRESS    HGFEDCBA     ****          DATA
    100      64    01000000     0011          003
    101      65    01000001     0011          003
    102      66    01000010     0011          003
    103      67    01000011     0011          003
    104      68    01000100     0011          003
    105      69    01000101     0011          003
    106      70    01000110     0011          003
    107      71    01000111     0011          003
    110      72    01001000     0011          003
    111      73    01001001     0011          003
    112      74    01001010     0011          003
    113      75    01001011     0011          003
    114      76    01001100     0011          003
    115      77    01001101     0011          003       BR (ALWAYS)
    116      78    01001110     0011          003
    117      79    01001111     0011          003       ************
    120      80    01010000     0101          005
    121      81    01010001     0101          005
    122      82    01010010     0101          005
    123      83    01010011     0101          005
    124      84    01010100     0011          003
    125      85    01010101     0011          003
    126      86    01010110     0011          003
    127      87    01010111     0011          003
    130      88    01011000     0011          003
    131      89    01011001     0011          003
    132      90    01011010     0011          003
    133      91    01011011     0011          003
    134      92    01011100     0101          005
    135      93    01011101     0101          005       BLT
    136      94    01011110     0101          005
    137      95    01011111     0101          005       ************

    140      96    01100000     0101          005
    141      97    01100001     0011          003
    142      98    01100010     0101          005
    143      99    01100011     0011          003
    144     100    01100100     0101          005
    145     101    01100101     0011          003
    146     102    01100110     0101          005
    147     103    01100111     0011          003
    150     104    01101000     0101          005
    151     105    01101001     0011          003
    152     106    01101010     0101          005
    153     107    01101011     0011          003
    154     108    01101100     0101          005
    155     109    01101101     0011          003       BEQ
    156     110    01101110     0101          005
    157     111    01101111     0011          003       ************
    160     112    01110000     0101          005
    161     113    01110001     0011          003
    162     114    01110010     0101          005
    163     115    01110011     0011          003
    164     116    01110100     0011          003
    165     117    01110101     0011          003
    166     118    01110110     0011          003
    167     119    01110111     0011          003
    170     120    01111000     0011          003
    171     121    01111001     0011          003
    172     122    01111010     0011          003
    173     123    01111011     0011          003
    174     124    01111100     0101          005
    175     125    01111101     0011          003       BLE
    176     126    01111110     0101          005
    177     127    01111111     0011          003       ************
                   ********
                   ********/( A(PIN #05) IS  DPE CC ZERO (1)H
                   *******/( B(PIN #06) IS  DPE CC COUT (1)H
                   ******/( C(PIN #07) IS  DPE CC NEG (1)H
                   *****/( D(PIN #04) IS  DPE CC VBIT (1)H
                   ****/( E(PIN #03) IS  DPF IR 10 (1)H
                   ***/( F(PIN #02) IS  DPF IR 09 (1)H
                   **/( G(PIN #01) IS  DPF IR 08 (1)H
                   */( H(PIN #15) IS  DPF IR 15 (1)H
```

```
                                        /( =Y4 (PIN # 9) CONF MPC 03 L
                                        */( =Y3 (PIN #10) CONF MPC 02 L
                                        **/( =Y2 (PIN #11) CONF MPC 01 L
                                        ***/( =Y1 (PIN #12) CONF MPC 04 L
 OCTAL DECIMAL                          ****          OCTAL
ADDRESS ADDRESS    HGFEDCBA             ****          DATA
    200     128    10000000             0011          003
    201     129    10000001             0011          003
    202     130    10000010             0011          003
    203     131    10000011             0011          003
    204     132    10000100             0101          005
    205     133    10000101             0101          005
    206     134    10000110             0101          005
    207     135    10000111             0101          005
    210     136    10001000             0011          003
    211     137    10001001             0011          003
    212     138    10001010             0011          003
    213     139    10001011             0011          003
    214     140    10001100             0101          005
    215     141    10001101             0101          005       BPL
    216     142    10001110             0101          005
    217     143    10001111             0101          005       ************
    220     144    10010000             0011          003
    221     145    10010001             0011          003
    222     146    10010010             0011          003
    223     147    10010011             0011          003
    224     148    10010100             0011          003
    225     149    10010101             0011          003
    226     150    10010110             0011          003
    227     151    10010111             0011          003
    230     152    10011000             0101          005
    231     153    10011001             0101          005
    232     154    10011010             0101          005
    233     155    10011011             0101          005
    234     156    10011100             0101          005
    235     157    10011101             0101          005       BVC
    236     158    10011110             0101          005
    237     159    10011111             0101          005       ************

    240     160    10100000             0011          003
    241     161    10100001             0101          005
    242     162    10100010             0101          005
    243     163    10100011             0101          005
    244     164    10100100             0011          003
    245     165    10100101             0101          005
    246     166    10100110             0101          005
    247     167    10100111             0101          005
    250     168    10101000             0011          003
    251     169    10101001             0101          005
    252     170    10101010             0101          005
    253     171    10101011             0101          005
    254     172    10101100             0011          003
    255     173    10101101             0101          005       BHI
    256     174    10101110             0101          005
    257     175    10101111             0101          005       ************
    260     176    10110000             0011          003
    261     177    10110001             0011          003
    262     178    10110010             0101          005
    263     179    10110011             0101          005
    264     180    10110100             0011          003
    265     181    10110101             0011          003
    266     182    10110110             0101          005
    267     183    10110111             0101          005
    270     184    10111000             0011          003
    271     185    10111001             0011          003
    272     186    10111010             0101          005
    273     187    10111011             0101          005
    274     188    10111100             0011          003
    275     189    10111101             0011          003       BCC
    276     190    10111110             0101          005
    277     191    10111111             0101          005       ************
                   ********
                   ********/( A(PIN #05) IS  DPE CC ZERO (1)H
                   *******/( B(PIN #06) IS  DPE CC COUT (1)H
                   ******/( C(PIN #07) IS  DPE CC NEG (1)H
                   *****/( D(PIN #04) IS  DPE CC VBIT (1)H
                   ****/( E(PIN #03) IS  DPF IR 10 (1)H
                   ***/( F(PIN #02) IS  DPF IR 09 (1)H
                   **/( G(PIN #01) IS  DPF IR 08 (1)H
                   */( H(PIN #15) IS  DPF IR 15 (1)H
```

```
                                /( =Y4 (PIN # 9) CONF MPC 03 L
                                */( =Y3 (PIN #10) CONF MPC 02 L
                                **/( =Y2 (PIN #11) CONF MPC 01 L
                                ***/( =Y1 (PIN #12) CONF MPC 04 L
  OCTAL  DECIMAL                ****          OCTAL
ADDRESS ADDRESS    HGFEDCBA     ****          DATA
    300     192    11000000     0101          005
    301     193    11000001     0101          005
    302     194    11000010     0101          005
    303     195    11000011     0101          005
    304     196    11000100     0011          003
    305     197    11000101     0011          003
    306     198    11000110     0011          003
    307     199    11000111     0011          003
    310     200    11001000     0101          005
    311     201    11001001     0101          005
    312     202    11001010     0101          005
    313     203    11001011     0101          005
    314     204    11001100     0011          003
    315     205    11001101     0011          003       BMI
    316     206    11001110     0011          003
    317     207    11001111     0011          003       ************
    320     208    11010000     0101          005
    321     209    11010001     0101          005
    322     210    11010010     0101          005
    323     211    11010011     0101          005
    324     212    11010100     0101          005
    325     213    11010101     0101          005
    326     214    11010110     0101          005
    327     215    11010111     0101          005
    330     216    11011000     0011          003
    331     217    11011001     0011          003
    332     218    11011010     0011          003
    333     219    11011011     0011          003
    334     220    11011100     0011          003
    335     221    11011101     0011          003       BVS
    336     222    11011110     0011          003
    337     223    11011111     0011          003       ************

    340     224    11100000     0101          005
    341     225    11100001     0011          003
    342     226    11100010     0011          003
    343     227    11100011     0011          003
    344     228    11100100     0101          005
    345     229    11100101     0011          003
    346     230    11100110     0011          003
    347     231    11100111     0011          003
    350     232    11101000     0101          005
    351     233    11101001     0011          003
    352     234    11101010     0011          003
    353     235    11101011     0011          003
    354     236    11101100     0101          005
    355     237    11101101     0011          003       BLOS
    356     238    11101110     0011          003
    357     239    11101111     0011          003       ************
    360     240    11110000     0101          005
    361     241    11110001     0101          005
    362     242    11110010     0011          003
    363     243    11110011     0011          003
    364     244    11110100     0101          005
    365     245    11110101     0101          005
    366     246    11110110     0011          003
    367     247    11110111     0011          003
    370     248    11111000     0101          005
    371     249    11111001     0101          005
    372     250    11111010     0011          003
    373     251    11111011     0011          003
    374     252    11111100     0101          005
    375     253    11111101     0101          005       BCS
    376     254    11111110     0011          003
    377     255    11111111     0011          003       ************
                   ********
                   ********/( A(PIN #05) IS  DPE CC ZERO (1)H
                   *******/( B(PIN #06) IS  DPE CC COUT (1)H
                   ******/( C(PIN #07) IS  DPE CC NEG (1)H
                   *****/( D(PIN #04) IS  DPE CC VBIT (1)H
                   ****/( E(PIN #03) IS  DPF IR 10 (1)H
                   ***/( F(PIN #02) IS  DPF IR 09 (1)H
                   **/( G(PIN #01) IS  DPF IR 08 (1)H
                   */( H(PIN #15) IS  DPF IR 15 (1)H
```

PAGE REVISION CONTROL SHEET

SH NO	PAGE REVISIONS					
1	H	J	K	L	M	N
2	H	J	K	L	M	M
3	H	H	H	H	H	H
4	H	H	H	H	H	H
5	H	H	J	J	J	J
6	H	H	J	J	J	K
7	H	H	J	J	J	J
8	H	H	H	H	H	H
9	H	H	J	J	J	J
10	H	J	J	K	L	L
11	H	H	J	K	K	K
12	H	H	J	J	K	K
13	H	H	J	J	K	K
14	H	H	H	H	H	H
ETCH REV	C	C	E*	E	E	E
ECO NO.	5	6	7	8	9	10
						KQ

REMARKS

*ETCH REV'D NOT TO BE USED PER ORDER D.E.

FIRST USED ON OPTION/MODEL

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DRN.	[illegible]	DATE 8/16/72
CHK'D.	M T Tolman	DATE 8/21/72
ENG.	[illegible]	DATE 8/17/72
PROJ. ENG.	[illegible]	DATE 8/17/72
PROD.	M T Tolman	DATE 8/21/72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE CONTROL LOGIC AND MICROPROGRAM

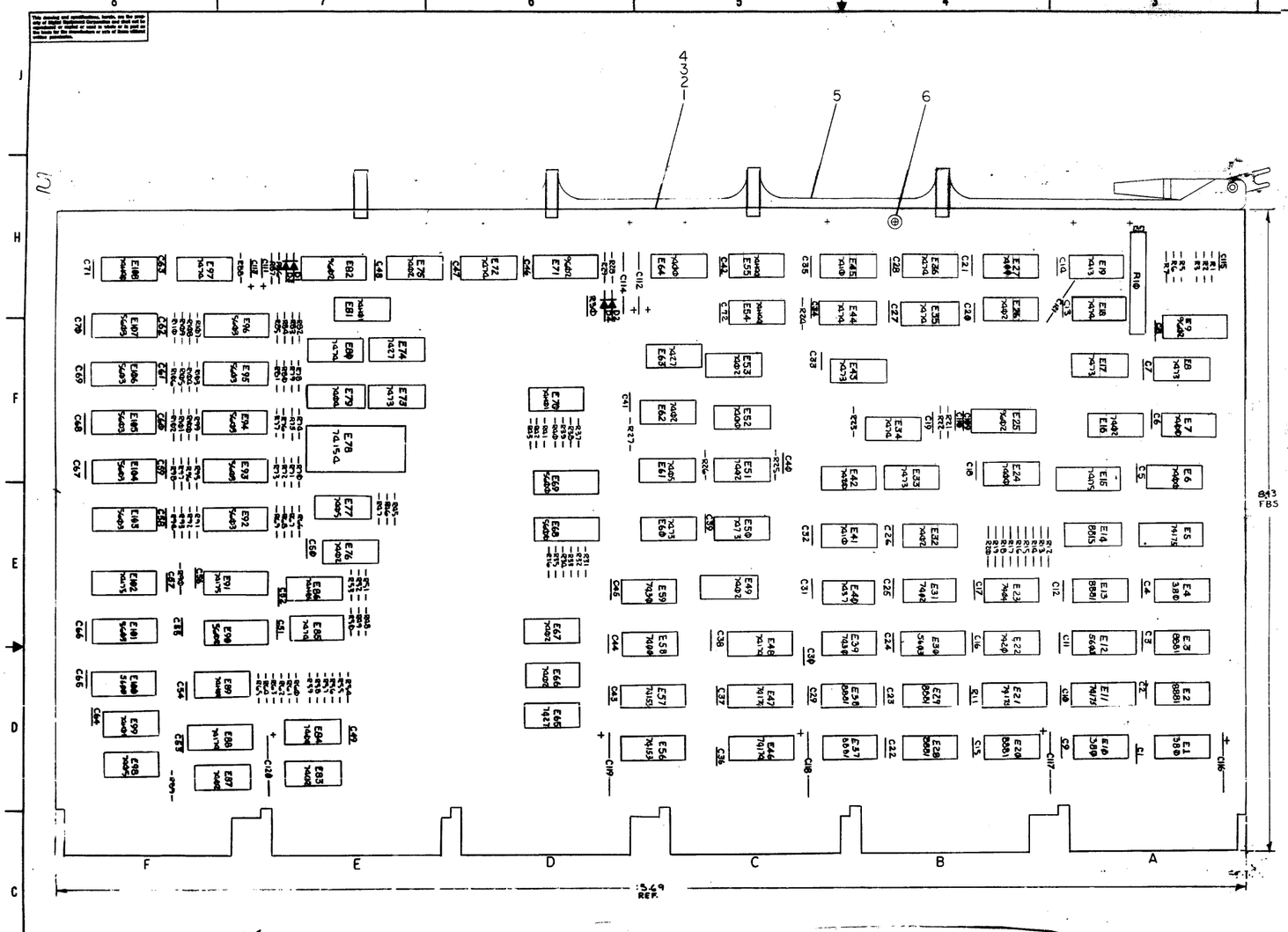
NEXT HIGHER ASSY.

SCALE

SHEET 1 OF 14

SIZE	CODE	NUMBER	REV.
B	CS	M7261-0-1	N

DIST.



NOTE:
1. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS, CAPACITANCE IS IN PICOFARADS.

1	E100	IC IM5600	23-A14A1	60
1	E107	IC IM5603	23-A14A2	59
1	E106	IC IM5603	23-A13A2	58
1	E105	IC IM5603	23-A12A2	57
1	E104	IC IM5603	23-A11A2	56
1	E103	IC IM5603	23-A10A2	55
1	E101	IC IM5603	23-A09A2	54
1	E96	IC IM5603	23-A16A2	53
1	E95	IC IM5603	23-A17A2	52
1	E94	IC IM5603	23-A15A2	51
1	E98	IC IM 5603	23-A05A2	50
1	E92	IC IM 5603	23-A04A2	49
1	E90	IC IM5600	23-A13A1	48
1	E69	IC IM5600	23-A09A1	47
1	E68	IC IM5600	23-A07A1	46
1	E30	IC IM5603	23-A02A2	45
1	E12	IC IM5603	23-A01A2	44
1	R86	RES 10K 1/4W, 5%	1300479	43
5	R21,R22,R28,R29,R87	RES 30K 1/4W, 5%	1302394	42
1	R10	RES 1K 1/2W, 5%, POT	1309143-07	41
1	R6	RES 5.6K 1/4W, 5%	1301874	40
48	R3,5,12-18,20,24,25,27,31-40,42,43,45-50,56,56,60-65,79,81-83,107-109,57	RES 2K 1/4 W, 5%	1302388	39
41	R2,7,41,84,51-54,59,66-78,89,85,91-106,110,	RES 470 1/4W 5%	1300316	38
9	R1,R89,R90,R11,R19,R23,R30,R55,R88,	RES 1K 1/4W 5%	1300365	37
1	C110	CAP 1000 PF D.M.	1000042	36
1	E78	IC DEC 74154	1909701	35
2	E56, E57	IC DEC 74153	1909937	34
6	E46,E47,E48,E88	IC DEC 74174	1910652	33
4	E9, E25,E71,E82	IC DEC 9602	1910751	32
6	E5,E11,E15,E21,E91,E102	IC DEC 74175	1910651	31
3	E61, E77, E98	IC DEC 7405	1909930	30
3	E63, E65, E74	IC DEC 7427	1910878	29
3	E54, E55, E103	IC DEC 74H40	1905586	28
2	E41, E45	IC DEC 7410	1905576	27
1	E40	IC DEC 7437	1910091	26
2	E39, E59	IC DEC 7430	1905578	25
5	E99, E70, E81, E86, E89,	IC DEC 74H01	1909849	24
3	E23, E79, E84	IC DEC 7404	1909686	23
2	E22, E42	IC DEC 7420	1905577	22
1	E19	IC DEC 7413	1909989	21
9	E15, E34, E35, E36, E44, E72, E80, E85, E97	IC DEC 7474	1905547	20
19	E16, E26, E31, E32, E49, E51, E53, E62, E66, E67, E75, E76, E93, E87	IC DEC 7402	1909004	19
1	E14	IC DEC 8815	1909713	18
7	E8, E17, E33, E43, E50, E60, E73	IC DEC 7473	1905587	17
7	E6, E7, E24, E52 E58, E64 E27	IC DEC 7400	1905575	16
8	E2, E3, E13, E20, E28, E29, E37 E38	IC DEC 8881	1909705	15
3	E1, E4 E10	IC DEC 380	1909485	14
4	D1 THRU D4	DIODE D444	1100114	13
1	C115	CAP 120 PFD D.M	1000018	12
1	C121	CAP 2.2 MFD	1002627	11
5	C116 THRU C120	CAP 6.8 MFD	1005306	10
2	C111, C113	CAP .68 MFD	1009964	9
1	C109	CAP 2200 PFD DISC	1000055	8
72	C1 THRU C72	CAP .01 MFD 100V, 20% DISC	1001610	7
12		EYELET	9006732	6
1		HANDLE, MODULE	EPS#21071-2	5
1		ETCHED CIRCUIT BOARD	5009745	4
REF		MODULE ECO HISTORY	8-MH-M7261-0-6	3
REF		ASSY/DRILL HOLE LAYOUT	EAH-M7261-0-5	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7261-0-0	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

AA2, BA2, CA2, DA2, FA2

+5V

AC2, AT1, BC2, BT1, CC2, CT1, DC2, ET1, FC2, FT1

C1 THRU C72 .01 MFD

C112, C116 THRU C120 6.8 MFD

GND

AB2, AC2, API, AV2, BB2, BD1, BE1, BT1, BVC, CC2, CT1, DC2, ET1, FC2, FT1

1	C112	CAP 15MFD 20V 10% S-TANT	1004812			
1	C119	CAP 15MFD 20V 10% S-TANT	1004812			
1	R26	RES. 330 1/4W 5%	1300275	61		

9602	8	16				
74173	8	16				
74174	8	16				
74154	12	24				
74153	8	16				
5603	8	16				
5600	8	16				
IC TYPE	GND	+5V				

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

WIRE NO.	FROM PT	TO PT

IC PIN LOCATIONS — JUMPER LIST

ETCH BOARD REV E

D444 — DEC NO. — IN3600 — EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRAWN D. RANDALL

CHECKED

ENGINEER

MANUFACTURING

QUALITY ASSURANCE

N MAJOR

B-DD-KD11-0

DEC NO. EIA NO.

DIGITAL EQUIPMENT CORPORATION

TITLE: CONTROL LOGIC & MICROPROGRAM

SIZE E | CS | M7261-0-1 | REV M

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CONC DATI (1)H — Ø4
CONC ADV ENAB (1)H — Ø5
74H01 E070 — Ø6

R39 2K +5V

Ø1
Ø2
74H01 E070 — Ø3
CONE SET SSYN H — Ø3

Ø2
74Ø2 E066 — Ø1 DE1
R41 470 +5V
CONA ENAB ALU L
CONA ENAB ALU H

CONA TRAN IN L

74174 EØ48 BA (15,10:8)

DPC AMUX Ø9 H CP2	14	D5	R5(1)	15	CONA BA Ø9 (1) H
DPC AMUX Ø8 H CL2	Ø6	D4	R4(1)	Ø7	CONA BA Ø8 (1) H
DPC AMUX 1Ø H CM2	Ø4	D3	R3(1)	Ø5	CONA BA 1Ø (1) H
DPD AMUX 15 H CN2	Ø3	D2	R2(1)	Ø2	CONA BA 15 (1) H
	11	D1	R1(1)	1Ø	
	13	DØ	RØ(1)	12	

CLR CLK — Ø1 Ø9

74174 EØ46 BA (14,12,7:4)

DPD AMUX 14 H CF2	Ø3	D5	R5(1)	Ø2	CONA BA 14 (1) H
DPD AMUX 12 H CE2	14	D4	R4(1)	15	CONA BA 12 (1) H
DPB AMUX Ø4 H CD1	11	D3	R3(1)	1Ø	CONA BA Ø4 (1) H
DPB AMUX Ø6 H CE1	Ø6	D2	R2(1)	Ø7	CONA BA Ø6 (1) H
DPB AMUX Ø7 H CF1	Ø4	D1	R1(1)	Ø5	CONA BA Ø7 (1) H
DPB AMUX Ø5 H CD2	13	DØ	RØ(1)	12	CONA BA Ø5 (1) H

CLR CLK — Ø1 Ø9

CONA BA CLOCK L

74174 EØ47 BA (13,11,03:00)

DPD AMUX 13 H CJ2	Ø3	D5	R5(1)	Ø2	CONA BA 13 (1) H
DPC AMUX 11 H CA1	11	D4	R4(1)	1Ø	CONA BA 11 (1) H
DPA AMUX ØØ H CK2	14	D3	R3(1)	15	CONA BA ØØ (1) H
DPA AMUX Ø2 H CC1	Ø6	D2	R2(1)	Ø7	CONA BA Ø2 (1) H
DPA AMUX Ø1 H CB1	13	D1	R1(1)	12	CONA BA Ø1 (1) H
DPA AMUX Ø3 H CH2	Ø4	DØ	RØ(1)	Ø5	CONA BA Ø3 (1) H

CLR CLK — Ø1 Ø9

R19 1K +5V

CONG BA CLOCK H — Ø9
CONJ PROC CLOCK H — CN1 10
7437 EØ4Ø — Ø8 — CONA BA CLOCK L

CONH RUN GND L

Ø12
Ø11
Ø6
Ø2
Ø1
Ø5
Ø4
Ø3
7430 EØ39 — Ø8

23-AØ2A2 EØ3Ø INTN ADDRS DECODE

Ø3	A4	M3(1)	Ø9	R16 2K	CONA INTØ H
15	A7				
Ø1	A6	M2(1)	1Ø	R2Ø 2K	CONA INT1 H
Ø2	A5				
Ø7	A2	M1(1)	11	R18 2K	CONA INT2 H
Ø5	A1				
Ø6	AØ	MØ(1)	12	R17 2K	CONA INT3 H
Ø4	A3				

+5V

14 13

CONC DATO (1)H — Ø9
CONC ADV ENAB (1)H — 1Ø
74H01 E070 — Ø8 — CONA TRAN OUT L

R38 2K +5V

CONA LOAD MODEM PSW L — 12 11 — 7402 E067 — 13
CONA ENAB MODEM PSW L — Ø5 Ø6 — 7402 E066 — Ø4

CONA XMIT L
CONA RECEIVE L

23-AØ7A1 EØ69 DATI ADDRS DECODE

CONA INTØ H	14	A4	MØ(1)	Ø1	CONG ENAB PSW L
CONA INT1 H	11	A1	M1(1)	Ø2	CONG ENAB SPR L
CONA INT2 H	12	A2	M2(1)	Ø3	CONG ENAB SPL L
CONA INT3 H	13	A3	M3(1)	Ø4	DF1 CONA ENAB SWITCH REG L
	1Ø	AØ	M4(1)	Ø5	CONA ENAB MODEM PSW L
			M7(1)	Ø9	CONA ENAB L CLK PSW L
			M5(1)	Ø6	CONA ENAB ALU L
			M6(1)	Ø7	CONA INT TRAN SYNC L
			ENB	15	

+5V
R43 2K
R42 2K
R37 2K

23-AØ7A1 EØ68 DATO ADDRS DECODE

CONA INTØ H	14	A4	MØ(1)	Ø1	DH2 CONG LOAD PSW L
CONA INT1 H	11	A1	M1(1)	Ø2	CONG SP WRITE L
CONA INT2 H	12	A2	M3(1)	Ø4	CONA LOAD MODEM PSW L
CONA INT3 H	13	A3	M2(1)	Ø3	CONA LOAD L CLK PSW L
	1Ø	AØ	M5(1)	Ø6	CONA RECEIVE L
			M4(1)	Ø5	CONA XMIT L
			M6(1)	Ø7	CONA REG ADDR L
			M7(1)	Ø9	CONA INT TRAN SYNC L
			ENB	15	

+5V
R34 2K
R36 2K
R32 2K
R33 2K
R31 2K
R35 2K

CONC CLR MSYN H — DJ1 13 — 74H01 E070 — 11 — DK1 CONA DATA STROBE L

RØØ 2K +5V

7427 EØ65

Ø3 Ø4 Ø5	Ø6	CONA TRAN IN L
11 1Ø Ø9	Ø8	DD1 CONA ENAB DATA H
12 11	13	DP1 CONA LOAD XMIT PSW H
Ø3 Ø8	1Ø	DA1 CONA ENAB XMIT PSW L
Ø3 Ø2	Ø1	DR1 CONA LOAD RCD PSW H
Ø5 Ø6	Ø4	DN1 CONA ENAB RCD PSW H

INT ADDR DETECT

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/Ø5		PARTS LIST		

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

DRN. W.MAJOR DATE 2/18/72
CHK'D DATE
ENG. DATE 4/28/72
PROJ ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL LOGIC & MICROPROGRAM (CONA)

NEXT HIGHER ASSY. B-DD-KD11-B

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	H

SCALE
SHEET 3 OF
DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

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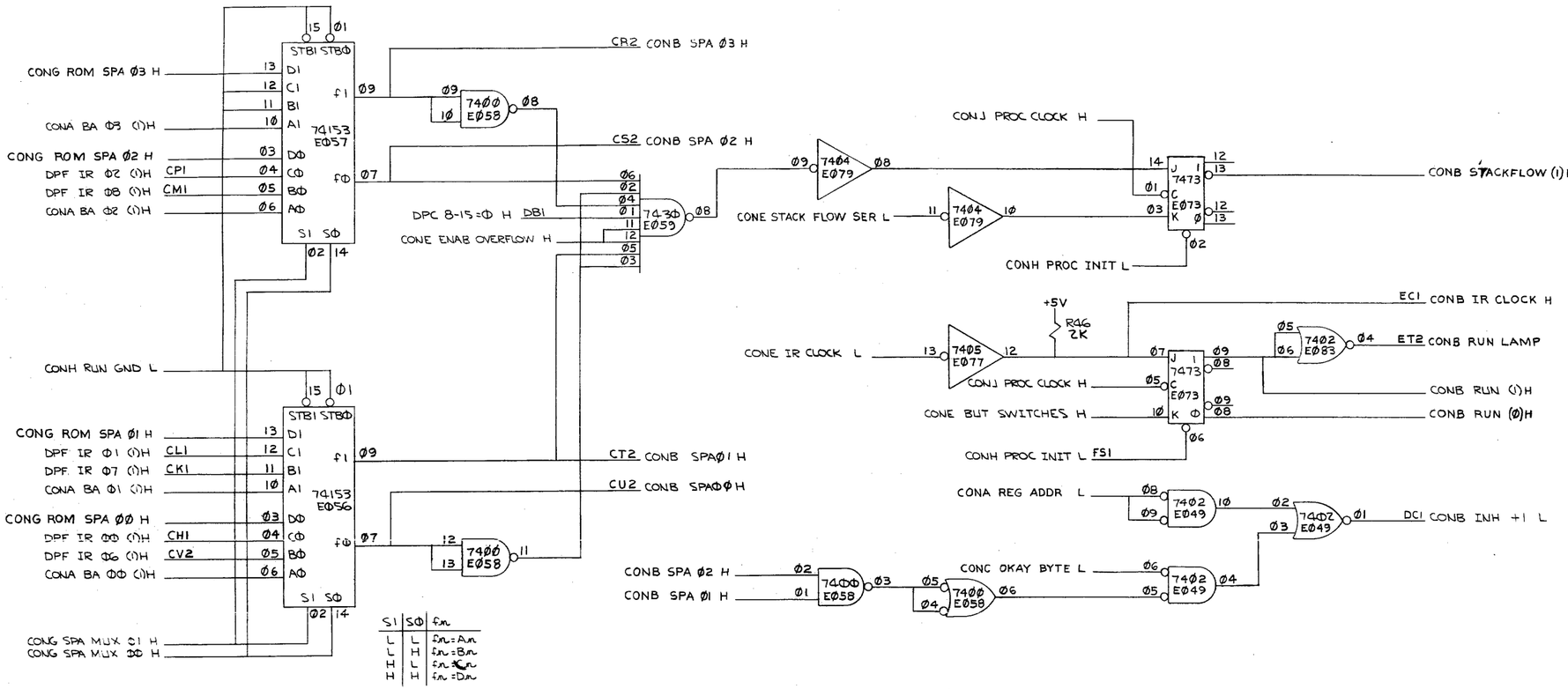

STACKFLOW & SPM

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11Ø5		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. W. MAJOR	DATE 2/17/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 4/26/72	
ENG.	DATE 4/26/72	
PROJ. ENG.	DATE 4/26/72	
PROD.	DATE 4/27/72	

NEXT HIGHER ASSY. B-DD-KD11-B

SCALE —

SHEET 4 OF

TITLE: CONTROL LOGIC & MICROPROGRAM (CONB)

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	H

DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

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CONJ ALLOW PC L
CONG ENAB IN PAUSE L
DPG ENAB NON MOD H
EL2
7427 E063
COND INIT H
CONC DAT ENAB L
J 1 7473 DATIP E008 K Φ
CONC DATIP (I)L
CONG DATI L
7402 E053
J 1 7473 DATI E017 K Φ
7402 E016
CONC D REQ H
CONC DATI (I)H
CONC NPR GRANT H
CONC SACK OR TO DEL (Φ)L
COND BBSY H
8815 E014
CONC SSYN (Φ)H
CONC MSYN (Φ)H
7400 E052
CONC BBSY (I)H
CONC BBSY (I)L
CONC SET BBSY H
J 1 7473 BBSY E043 K Φ
CONJ BC CLOCK H
CONC EOT H
CONJ LNG PROC CLOCK H
7402 E062
J 1 7473 MSYN E060 K Φ
CONC MSYN (I)H
CONC MSYN (I)L
CONC GOOD TRAN L
7400 E051
CONC MSYN OUT H
7405 E061
CONF MPC Φ3 L
CONC BUS ERROR (I)H
CONC ADV ENAB (I)L
COND SSYN H
CONC DATO (I) H
CONA INT TRAN SYNC L
R27 2K +5V
CONC TOTAL SSYN L
DJ11 CONC CLR MSYN H
COND INIT H
7437 E040
CONC BUS INIT L
CONG DATO L
CONC DATO (I)L
CONC BBSY (I) H
CONC DATIP (I) L
7400 E007
DMI CONC DAT ENAB L
CONC CΦ H
CONC BUS ERROR H
CONC BUS ERROR (I)H
CONC SET DBE H
CONC DB ERROR H
CONF MPC Φ6 L
R25 2K +5V
CONC DAT TO (I)L
CONA BA ΦΦ (I)H
CONC D REQ H
CONA REG ADDR L
7420 E042
7410 E041
J 1 7473 BE E050 K Φ
CONJ LNG PROC CLOCK H
CONC CLR MSYN H
J 1 7473 DBE E060 K Φ
DPG BYTE L
CONG ALLOW BYTE L
CONJ BC CLOCK H
CONC EOT H
CONC BUS INIT L
J 1 7473 ALLOW BYTE E043 K Φ
CONC OKAY BYTE L
COND INIT H
CONB RUN (Φ)H
7427 E074
CONC GOOD TRAN L
CONC SET DBE H
CONC DB ERROR H
CONH RUN GND L
CONC MSYN (I)L
9602 2215 E025 Φ
R22 30K
C109 2200 PF
+5V
CONC R23 H
R23 1K
CONJ MAN CLK L
D 1 7474 DAT TO E034 C Φ
CONC DAT TO (I)L
CONC EOT CLR L
CONF AUX CONTROL L
CONJ LNG PROC CLOCK L
CONH PROC INIT L
D 1 7474 E035 C Φ
CONC BG RESTART L
CONH CLR CKOFF (I)H
CONC CLR MSYN H
7400 E024
CONH RBB H
CONG CKOFF L
CONJ PROC CLOCK L
CONH PROC INIT L
D 1 7474 ADV ENAB E032 C Φ
CONC ADV ENAB (I)H
CONC ADV ENAB (I)L
CONH RBB H
CONC CKOFF (I)H
CONC CKOFF (Φ)H
D 1 7474 CKOFF E080 C Φ
CONG CKOFF L
CONJ PROC CLOCK L
7427 E074

UNIBUS CONTROL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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

		DATE
DRN.	W. MAJOR	3/11/72
CHK'D.		4/20/72
ENG.		4/26/72
PROJ. ENG.		4/26/72
PROD.		DATE

NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 5 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CONTROL LOGIC & MICROPROGRAM (CONC)

SIZE	CODE	NUMBER	REV.
D	CS	M7261-0-1	J

DIST.

REVISIONS: NO | CHANGE | CHK | REV

DEC FORM NO DRD 102-B

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CONB RUN (I)H
CONC DATIP(I)L
CONC BG H
74ØØ E007
88:5 E014
CONJ BC CLOCK H
CONH RUN GND L
CONC CLR GRANT L
CONC SET NPG H
74Ø3 E033 NPG
CONC NPG (I) H
CONC NPG (I) L

CONE SET SSYN H
CONJ PROC CLOCK H
COND INIT H
74Ø3 E035 SSYN
CONC SSYN OUT (I)H

CONC R23 H
CONH RUN GND L
CONC NPG (I)H
CONC BG L
+5V
R21 3ØK
C11 1ØØØ PF
74Ø2 E025 MUX
74Ø4 E034
CONC TO (I)L
CONC SACK OR TO DEL (I)L

74175 E0D5
COND NPR H
CONC SACK OR TO (I)H
CONC SACK OR TO DEL (I)H
CONC SACK OR TO DEL (I)L
CONC BUS INIT L
CONJ UNG PROC CLOCK L
CONC MSYN DEL (I)L
CONC MSYN (Ø)L
74Ø2 E031
CONC EOT H

74175 E015
COND INTR H
CONC MSYN (I)H
CONC TO (I)L
74ØØ E006
COND SACK H
74ØØ E006
COND SSYN H
CONJ BC CLOCK L
CONC INTR SYNC (I)H
CONC INTR SYNC (I)L
CONC MSYN DEL (I)L
CONC SACK OR TO (I)H
CONC BG L
74Ø2 E032
CONJ BC CLOCK H
CONC SSYN (Ø) H
CONC BUS INIT L
74Ø3 E033
74ØØ E024
CONC SACK OR TO DEL (Ø)H
74ØØ E024
74ØØ E024
CONC BG RESTART L

74175 E011 BR
COND BR Ø7 H
COND BR Ø6 H
COND BR Ø5 H
COND BR Ø4 H
DPE PSW Ø7(Ø) H CR1
DPE PSW Ø6(Ø) H CS1
DPE PSW Ø5(Ø) H CV1
CONI L CLK INT L
CONC BUS INIT L
CONJ LNG PROC CLOCK L
CONC SACK OR TO DEL (I)L
DPE T DEL (I)L
CONB STACK FLOW (I)L
CONH PDWN SYNC (I)L
74Ø2 E042
CONC SET NPG H
CONC NPG (I)H
74Ø2 E031
74Ø2 E032
CONC NPR GRANT H

Z3-AØ1A2 E012 PRIORITY
+5V
R15 2K
R14 2K
R13 2K
R12 2K
74ØØ E023
74ØØ E023
74ØØ E023
74ØØ E023
74Ø3 E033
COND BUT SERVICE H
CONJ LNG PROC CLOCK H
74Ø2 E022
CONC BR GRANT H
COND INIT H
CONC SACK OR TO DEL (I)H
74Ø2 E031

74175 E021 BG
CONC BG Ø7 (I)L
CONC BG Ø6 (I)L
CONC BG Ø5 (I)L
CONC BG Ø4 (I)L
CONC BG H
CONC BG L
CONC CLR GRANT L
74Ø2 E022
74ØØ E023

PRIORITY ARBITRATION

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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. W.MAJOR	DATE 1/19/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 4/66	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

TITLE: CONTROL LOGIC & MICROPROGRAM (CONC1)
NEXT HIGHER ASSY. B-DD-KD11-B
SCALE — SHEET — OF —

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	K

DIST.

REVISIONS: REV | CHANGE NO

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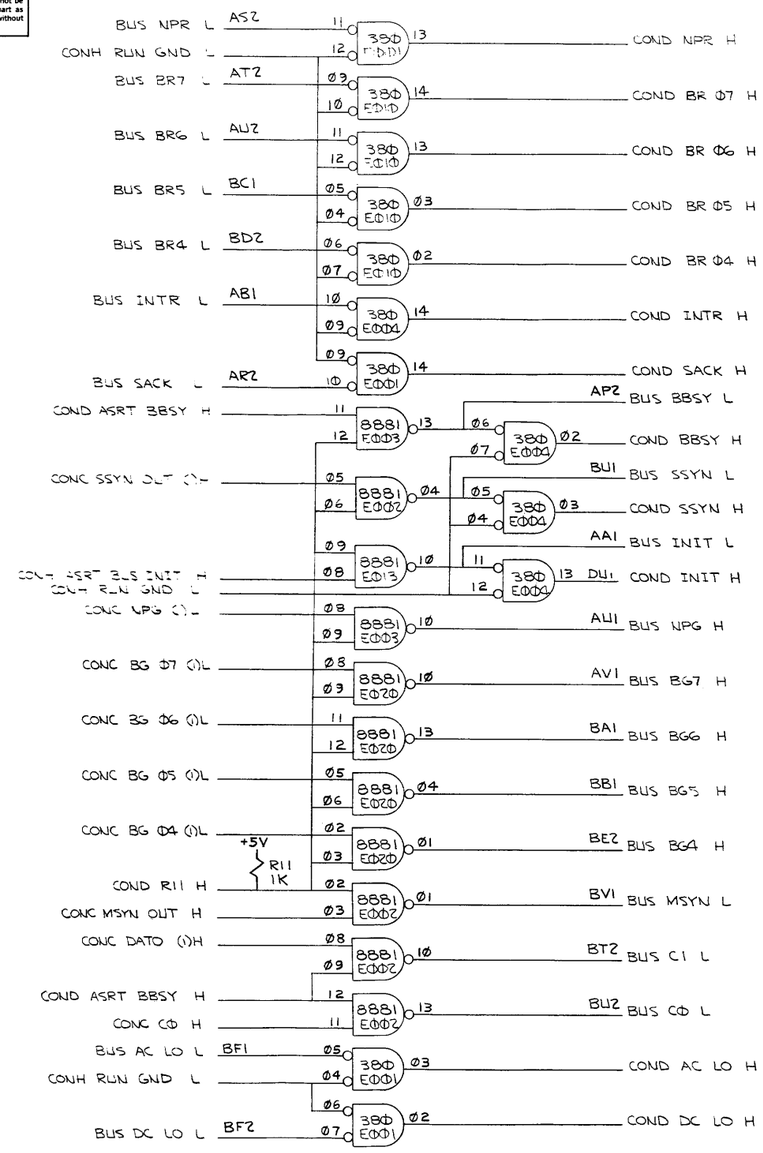

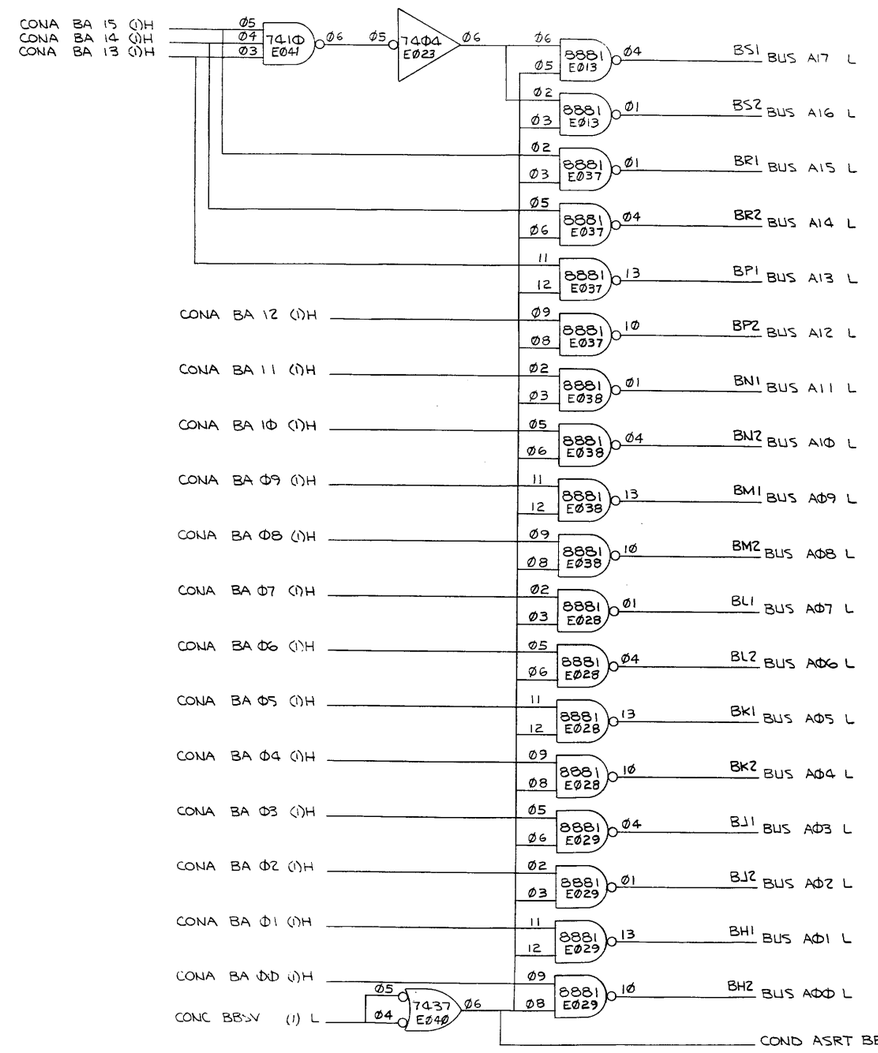

DRIVERS & RECEIVERS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

		DATE
DRN.	W. MAJOR	11/14/72
CHK'D.		
ENG.		
PROJ. ENG.		
PROD.		

NEXT HIGHER ASSY. B-DD-KD11-B

SCALE —

SHEET 7 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL LOGIC & MICROPROGRAM (COND)

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	J

DIST.

REVISIONS	NO	CHANG	CHK	REV

DEC FORM NO DRD 102-B

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74154 EØ78 BUT DECODE

CONG BUT Ø3 L
CONG BUT Ø2 L
CONG BUT Ø1 L
CONG BUT ØØ L
CONC BUS ERROR (1)H
CONJ PROC CLOCK L
STB1 STBØ
CONE BUT NONE L
CONE JMP OR JSR L
CONE BUT IR DECODE L
CONE BUT BYTE L
CONE ALLOW CONSTANTS L
CONE BUT DESTINATION L
CONE BUT MOVE L
CONE BUT INTERRUPT L
CONE BUT INIT L
CONE BUT UNARY L
CONE BUT SWITCHES L
CONE BUT NON MOD L
CONE BUT SERVICE L
CONE IR CLOCK L
CONE ENAB OVERFLOW H
CONE BUT INIT H
CONE ENAB UNARY L
CONE DEP SW L
CONE BUT SWITCHES H
CONJ PROC CLOCK H
CONH PROC INIT L

74174 EØ88 SWITCHES

CONSOLE START L
CONSOLE LOAD L
CONSOLE DEP L
CONSOLE EXAM L
CONSOLE CONT L
CONSOLE STOP L
CONJ UNG PROC CLOCK L
CONE START (1)L
CONE LOAD (1)L
CONE DEP (1)L
CONE EXAM (1)L
CONE CONT (1)L
CONE STOP (1)L

CONE EXAM SW L
CONE IST EXAM (1)H
CONE IST DEP (1)H

23-AØ9A2 EIØ1 BUT SERVICE

DPE T DEL (1)L
DPG WAIT L
DPH XMIT INT L
DPH RCD INT L
CONE STOP (1)L
CONI L CLK INT L
CONH PDWN SYNC (1)L
CONB STACKFLOW (1)L
ENB1 ENBØ
CONE NO BG SERV L
CONF MPC Ø4 L
CONF MPC Ø2 L
CONF MPC Ø1 L
CONF MPC ØØ L

23-A13A1 EØ9Ø INT INTR ACK

CONH RUN GND L
CONE XMIT SER L
CONE RCD SER L
CONE PWR FAIL SER L
CONE STACK FLOW SER L
CONE L CLK SER L

CONE BUT SERVICE H
CONE BUT SERVICE L
CONC BR GRANT H
CONE NO BG SERV L

23-A1ØA1 EIØØ SWITCH

CONE LOAD (1)L
CONE EXAM (1)L
CONE CONT (1)L
CONE DEP (1)L
ENB
CONE EXAM SW L
CONF MPC Ø5 L
CONF MPC ØØ L
CONF MPC Ø4 L
CONF MPC Ø2 L
CONF MPC Ø3 L
CONE DEP SW L
CONF MPC Ø1 L

CONE BUT SWITCHES L
CONE BUT SWITCHES H
DPG CAL DEST L
CONE BUT IR DECODE L
CONE BUT DESTINATION L
DPG BYTE L
CONE BUT BYTE L
CONE BUT DESTINATION H
CONA BA ØØ (1)H
CONE BUT INTERRUPT L
CONC INTR SYNC (1)H
DPG TRAP L
CONE BUT IR DECODE L
DPG EMT L
DPG RTS L
DPG MOVE L
CONE BUT MOVE L
DPG BYTE L
DPG ENAB NON MOD H
CONE BUT NON MOD L
CONF MPC Ø3 L
CONF MPC Ø2 L
CONF MPC Ø1 L
CONF MPC ØØ L
CONF MPC Ø4 L

MICRO BRANCH LOGIC

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/Ø5		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. W.MAJOR DATE 2/26/72
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL LOGIC & MICROPROGRAM (CONE)

NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 8 OF

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	H

DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO 12570 1026-B

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23-A04A2 E092

+5V

15 A7 M3(1) Ø9 — R69 470 — FM2 — CONF MPC Ø7 L
Ø1 A6
Ø2 A5 M2(1) 10 — R68 470 — FL1 — CONF MPC Ø6 L
Ø3 A4
Ø4 A3 M1(1) 11 — R67 470 — FN1 — CONF MPC Ø5 L
Ø7 A2
Ø6 A1
Ø5 A0 M0(1) 12 — R66 470 — FJ2 — CONF MPC Ø4 L

ENB1 ENB0 — 14 13

CONC BUS ERROR (1)H

23-A15A2 E094

+5V

15 A7 M3(1) Ø9 — R77 470 — ED2 — CONF ALU MODE H
Ø1 A6
Ø2 A5 M2(1) 10 — R76 470 — EB1 — CONF CIN H
Ø3 A4
Ø4 A3 M1(1) 11 — R75 470 — EA1 — CONF F SHIFT L
Ø7 A2
Ø6 A1
Ø5 A0 M0(1) 12 — R74 470 — ES2 — CONF AUX CONTROL L

ENB0 ENB1 — 13 14

CONH RUN GND L
CONH PROC INIT H

CONF ROM ADRS Ø7 (1)H
CONF ROM ADRS Ø6 (1)H
CONF ROM ADRS Ø5 (1)H
CONF ROM ADRS Ø4 (1)H
CONF ROM ADRS Ø3 (1)H
CONF ROM ADRS Ø2 (1)H
CONF ROM ADRS Ø1 (1)H
CONF ROM ADRS ØØ (1)H

23-A10A2 E103

+5V

15 A7 M3(1) Ø9 — R94 470 — FK1 — CONF MPC Ø3 L
Ø1 A6
Ø2 A5 M2(1) 10 — R93 470 — FM1 — CONF MPC Ø2 L
Ø3 A4
Ø4 A3 M1(1) 11 — R92 470 — FN2 — CONF MPC Ø1 L
Ø7 A2
Ø6 A1
Ø5 A0 M0(1) 12 — R91 470 — FP2 — CONF MPC ØØ L

ENB1 ENB0 — 14 13

DPG DIS ALU S BITS H EJ2

CONF ROM ADRS Ø7 (1)L
CONF ROM ADRS Ø6 (1)L
CONF ROM ADRS Ø5 (1)L
CONF ROM ADRS Ø4 (1)L
CONF ROM ADRS Ø3 (1)L
CONF ROM ADRS Ø2 (1)L
CONF ROM ADRS Ø1 (1)L
CONF ROM ADRS ØØ (1)L

23-A11A2 E104

+5V

15 A7 M3(1) Ø9 — R98 470 — EE1 — CONF ALU S3 L
Ø1 A6
Ø2 A5 M2(1) 10 — R97 470 — EF2 — CONF ALU S2 L
Ø3 A4
Ø4 A3 M1(1) 11 — R96 470 — EE2 — CONF ALU S1 L
Ø7 A2
Ø6 A1
Ø5 A0 M0(1) 12 — R95 470 — ED1 — CONF ALU S0 L

ENB1 ENB0 — 14 13

Ø8
DPG BYTE L — Ø9 — 74Ø2 E083 — 10 — EJ2 — CONF AUX BYTE H

74175 E102 MPC

CONF MPC Ø7 L — 13 D3 R3(1) 15 — CONF ROM ADRS Ø7 (1)L
R3(Ø) 14 — CONF ROM ADRS Ø7 (1)H
CONF MPC Ø6 L — 12 D2 R2(1) 10 — CONF ROM ADRS Ø6 (1)L
R2(Ø) 11 — CONF ROM ADRS Ø6 (1)H
CONF MPC Ø2 L — Ø4 D1 R1(1) Ø2 — CONF ROM ADRS Ø2 (1)L
R1(Ø) Ø3 — CONF ROM ADRS Ø2 (1)H
CONF MPC Ø1 L — Ø5 DØ RØ(1) Ø7 — CONF ROM ADRS Ø1 (1)L
RØ(Ø) Ø6 — CONF ROM ADRS Ø1 (1)H

CLR CLK

+5V — R90 1K — Ø1 Ø9

74175 E091 MPC

CONF MPC Ø5 L — 12 D3 R3(1) 10 — CONF ROM ADRS Ø5 (1)L
R3(Ø) 11 — CONF ROM ADRS Ø5 (1)H
CONF MPC Ø4 L — 13 D2 R2(1) 15 — CONF ROM ADRS Ø4 (1)L
R2(Ø) 14 — CONF ROM ADRS Ø4 (1)H
CONF MPC Ø3 L — Ø4 D1 R1(1) Ø2 — CONF ROM ADRS Ø3 (1)L
R1(Ø) Ø3 — CONF ROM ADRS Ø3 (1)H
CONF MPC ØØ L — Ø5 DØ RØ(1) Ø7 — CONF ROM ADRS ØØ (1)L
RØ(Ø) Ø6 — CONF ROM ADRS ØØ (1)H

CLR CLK

Ø1 Ø9

CONJ PROC CLOCK L

MICRO PC

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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. W. MAJOR DATE 7/6/72
CHK'D DATE 4/26/73
ENG. DATE 7/26
PROJ. ENG. DATE 4/26/73
PROD. DATE 7-27-73
NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 9 OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CONTROL LOGIC & MICROPROGRAM (CONF)

SIZE	CODE	NUMBER	REV.
D	CS	M7261-0-1	J

DIST.

REVISIONS: REV. | CHANGE NO. | CHK.

DEC FORM NO ORD 102-B

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23-A14A2 E1Ø7

CONG BUS ERROR (1)H

15	A7	M3(1)	Ø9	R11Ø 470	ER1 CONG CKOFF L
Ø1	A6				
Ø2	A5	M2(1)	1Ø	R1Ø9 2K	CONG ALLOW BYTE L
Ø3	A4				
Ø4	A3	M1(1)	11	R1Ø8 2K	CONG DATO L
Ø7	A2				
Ø6	A1				
Ø5	AØ	MØ(1)	12	R1Ø7 2K	CONG DATI L
	ENB1	ENBØ	14	13	

23-A13A2 E1Ø6

15	A7	M3(1)	Ø9	R1Ø6 470	CONG SPA MUX ØØ H
Ø1	A6				
Ø2	A5	M2(1)	1Ø	R1Ø5 470	CONG ROM SPA ØØ H
Ø3	A4				
Ø4	A3	M1(1)	11	R1Ø4 470	CONG SPA MUX Ø1 H
Ø7	A2				
Ø6	A1				
Ø5	AØ	MØ(1)	12	R1Ø3 470	DS1 CONG BBOT H
	ENB1	ENBØ	14	13	

23-A12A2 E1Ø5

CONH PROC INIT H
CONH RUN GND L

15	A7	M3(1)	Ø9	R1Ø2 470	CONG BUT Ø1 L
Ø1	A6				
Ø2	A5	M2(1)	1Ø	R1Ø1 470	CONG BUT ØØ L
Ø3	A4				
Ø4	A3	M1(1)	11	R1ØØ 470	CONG BUT Ø2 L
Ø7	A2				
Ø6	A1				
Ø5	AØ	MØ(1)	12	R99 470	CONG BUT Ø3 L
	ENB1	ENBØ	14	13	

CONF ROM ADRS Ø7 (1)L
CONF ROM ADRS Ø6 (1)L
CONF ROM ADRS Ø5 (1)L
CONF ROM ADRS Ø4 (1)L
CONF ROM ADRS Ø3 (1)L
CONF ROM ADRS Ø2 (1)L
CONF ROM ADRS Ø1 (1)L
CONF ROM ADRS ØØ (1)L

23-A17A2 EØ95

CONG BA CLOCK L
CONG SP WRITE L

15	A7	M3(1)	Ø9	RB1 2K	
Ø1	A6				
Ø2	A5	M2(1)	1Ø	RBØ 470	
Ø3	A4				
Ø4	A3	M1(1)	11	R79 2K	
Ø7	A2				
Ø6	A1				
Ø5	AØ	MØ(1)	12	R78 470	
	ENB1	ENBØ	14	13	

7ØØ1 EØ79: Ø5 → Ø6 — CONG BA CLOCK H

EH2 CONG BTOP H

7ØØ4 EØ79: 13 → 12 — EF1 CONG SP WRITE H

CONG ROM SPA Ø2 H

CONG ROM ALEG 1 L
EP2 CONG ROM ALEG Ø L
EM2 CONG BMODE ØØ H

23-AØ5A2 EØ93

15	A7	M3(1)	Ø9	R73 470	
Ø1	A6				
Ø2	A5	M2(1)	1Ø	R72 470	
Ø3	A4				
Ø4	A3	M1(1)	11	R71 470	
Ø7	A2				
Ø6	A1				
Ø5	AØ	MØ(1)	12	R7Ø 470	DPF ROTATE H EN1
	ENB1	ENBØ	14	13	

7ØØ2 EØ76: Ø3 → Ø1; Ø2 → 2

7ØØ5 EØ77: 1 → Ø2 — +5V R52 470 — CONG ENAB PSW L

7ØØ5 EØ77: Ø5 → Ø6 — +5V R51 470 — EK1 CONG ENAB PSW H

74HØ1 EØ86: 1Ø, Ø9 → Ø8

7ØØ1 EØ79: 13 → 12 — -5V R53 470 — EN2 CONG ENAB SPL L

7ØØ5 EØ77: Ø3 → Ø4 — +5V R53 470 — EL1 CONG ENAB SPR L

EM1 CONG BMODE Ø1 H

23-A16A2 EØ96

15	A7	M3(1)	Ø9	RB3 2K	CONG LOAD PSW L
Ø1	A6				
Ø2	A5	M2(1)	1Ø	RB4 470	CONG ROM SPA Ø1 H
Ø3	A4				
Ø4	A3	M1(1)	11	RB5 470	CONG ROM SPA Ø3 H
Ø7	A2				
Ø6	A1				
Ø5	AØ	MØ(1)	12	RB2 2K	CONG ENAB IN PAUSE L
	ENB1	ENBØ	14	13	

CONF ROM ADRS Ø7 (1)H
CONF ROM ADRS Ø6 (1)H
CONF ROM ADRS Ø5 (1)H
CONF ROM ADRS Ø4 (1)H
CONF ROM ADRS Ø3 (1)H
CONF ROM ADRS Ø2 (1)H
CONF ROM ADRS Ø1 (1)H
CONF ROM ADRS ØØ (1)H

CONTROL STORE

FIRST USED ON OPTION/MODEL: 11/Ø5	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. W. MAJOR	DATE 2/15/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

TITLE: CONTROL LOGIC & MICROPROGRAM (CONG)

NEXT HIGHER ASSY. B-DD-KD11-B

SIZE D | CODE CS | NUMBER M7261-Ø-1 | REV. L

SCALE — SHEET 12 OF — DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

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CONE ASRT INIT H
COND DC LO H
CONH PDWN (Φ)L
CONH INIT (1)H
COND AC LO H
CONJ PROC CLOCK L
CONH INIT SYNC (1)L
CONH R88 H
CONE BUT INIT H
CONH PDWN SYNC (1)L
CONSOLE START L
CONH RUN GND L
CONH PROC INIT L
CONE PWR FAIL SER L
CONJ R24 H
CONJ E0909 L
FT2 CONH PROC INIT H
FS1 CONJ PROC INIT L
CONH INIT SYNC (1)L
CONH PDWN (1)H
CONH PDWN (Φ)H
+5V R88 1K
CONH R88 H
CONH PDWN SYNC (1)L
CONJ LNG PROC CLOCK L
CONH CLR CKOFF (1)H
CONH ASRT BUS INIT H

POWER FAIL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/Ø5		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DRN.	W. MAJOR	2/7/72
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE
NEXT HIGHER ASSY.	B-DD-KD11-B	
SCALE		
SHEET 11 OF		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE CONTROL LOGIC & MICROPROGRAM (CONH)

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	K

DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

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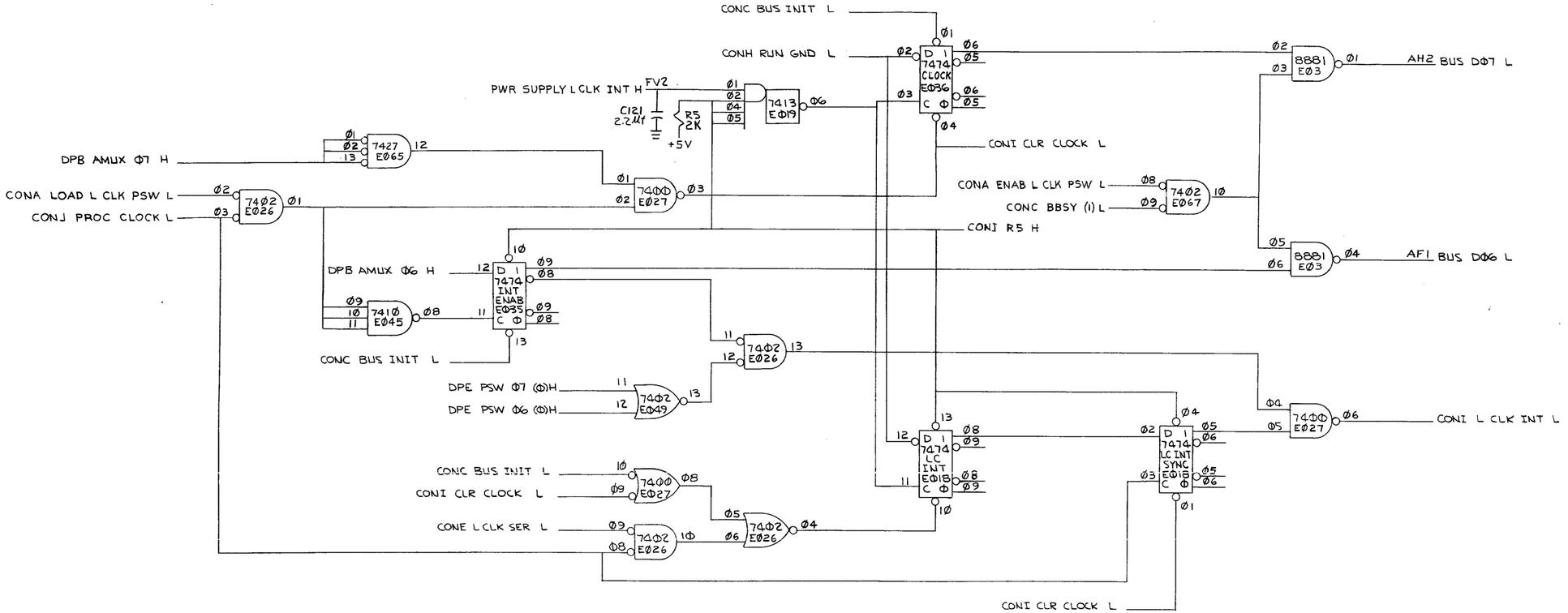

LINE CLOCK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —/—

FINISH —/—

DRN. W. MAJOR	DATE 3/2/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	
NEXT HIGHER ASSY. B-DD-KD11-B		
SCALE —/—		
SHEET 12 OF		

TITLE: CONTROL LOGIC & MICROPROGRAM (CONI)

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	K

DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

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CONJ S CLK ON L
CONJ MAN CLK L
CONC TOTAL SSYN L
CONC BUS ERROR H
CONC MSYN (1) H
CONC CKOFF (1) H
CONJ DIV (1) H
FU2
FV1
+5V
R3 2K
R1 1K
8881 E013
7402 E032
7410 E091
7413 E019
R2 47Φ
R1Φ 1K
C115 120 PF
7400 E027
+5V
R6 5.6K
CONI R5 H
9602 E009
CONJ R24 H
R24 2K
7474 E044
CONJ DIV(1) H
CONFF SHFT L
7910 E045
CONJ E09Φ9 L
7410 E045
7405 E061
R26,330
DV1
CONJ LNG PROC CLOCK L
CONJ LNG PROC CLOCK H
7400 E055
CONJ PROC CLOCK L
CONJ PROC CLOCK H
CONI
7400 E054
CONJ BC CLOCK L
CONJ BC CLOCK H
7400 E064
CONJ ALLOW PC L
EV1

CPU CLOCK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/05		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. W.MAJOR 3/18/72 | CHK'D. 3/24/72 | ENG. 3/24/72 | PROD. 3/25/72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CONTROL LOGIC & MICROPROGRAM (CONJ)

NEXT HIGHER ASSY. B-DD-KD11-B
SCALE
SHEET 13 OF

SIZE D | CODE CS | NUMBER M7261-Ø-1 | REV. K
DIST.

REVISIONS: REV. | NO. | CHANGE | CHK

DEC FORM NO DRD 102-B

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39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
CONF MPC Ø7 L	CONF MPC Ø6 L	CONF MPC Ø5 L	CONF MPC Ø4 L	CONF MPC Ø3 L	CONF MPC Ø2 L	CONF MPC Ø1 L	CONF MPC ØØ L	CONF ALU S3 L	CONF ALU S2 L	CONF ALU S1 L	CONF ALU SØ L	CONF ALU MODE L	CONF CIN H	CONF F SHIFT L	CONF AUX CONTROL L	CONG LOAD PSW L	CONG ROM SPA Ø1 H	CONG ROM SPA Ø3 H	CONG ENAB IN PAUSE L	CONG SPA MUX ØØ H	CONG ROM SPA ØØ H	CONG SPA MUX Ø1 H	CONG BBOT H	CONG BA CLOCK L	CONG BTOP H	CONG SP WRITE L	CONG ROM SPA Ø2 H	CONG CKOFF L	CONG ALLOW BYTE L	CONG DATO L	CONG DATI L	CONG ROM ALEG 1 L	CONG ROM ALEG Ø L	CONG BMODE ØØ H	CONG BMODE Ø1 H	CONG BUT Ø1 L	CONG BUT ØØ L	CONG BUT Ø2 L	CONG BUT Ø3 L
NXT								ALU					CRI	FSH	AUX	PSW	SP1	SP3	DIP	SMØ	SPØ	SM1	BBT	BAR	BTP	SPF	SP2	CKO	ABT	TNS		ALG		BRG		BUT			
FØ92				FØ03				FØ04				FØ94				FØ96				FØ06				FØ95				FØ07				FØ93				FØ05			

	31	30	29	28	27
	ALU				
AL	L	L	L	L	H
AA	L	L	L	L	L
AB	L	L	L	H	L
AB̄	L	L	L	H	H
Ø	L	L	H	L	H
A OR B	L	H	L	L	H
BL	L	H	L	H	L
A PLUS B	L	H	L	L	L
A XOR B	L	H	H	L	H
A-B-1	H	L	L	H	L
B̄	H	L	H	L	H
-1	H	H	L	H	H
A-1	H	H	H	L	L
Ā	H	H	H	H	H
ASL	H	H	L	L	L
ROL	H	H	L	H	L
ASR	H	H	H	L	L
ROR	H	H	H	H	L

26 CRI	
OFF	L
ON	H

23 PSW	
HOLD	H
LOAD	L

14 BTP	
BREG	H
SEX	L
+1	L

10 ABT	
NO	H
YES	L

	Ø5	Ø4
	BRG	
LOAD	H	H
SLEFT	L	H
SRIGHT	H	L
HOLD	L	L

	Ø3	Ø2	Ø1	ØØ
	BUT			
NON	H	H	H	H
JMP/JSR	H	L	H	H
IR DECODE	L	H	H	H
BYTE	L	L	H	H
CONST	H	H	L	H
DEST	H	L	L	H
MOV	L	H	L	H
INTR	L	L	L	H
INIT	H	H	H	L
UNARY	H	L	H	L
SWITCHES	L	H	H	L
NON MOD	L	L	H	L
SERVICE	H	H	L	L
SSYNC	H	L	L	L
ENOVFLO	L	H	L	L
IR CLK	L	L	L	L

25 FSH	
OFF	H
ON	L

20 DIP	
OFF	H
ON	L

16 BBT	
BRG	H
SEX	H
+1	L

13 SPF	
READ	H
WRITE	L

	Ø9	Ø8
	TNS	
NONE	H	H
DATI	H	L
DATO	L	H

24 AUX	
OFF	H
ON	L

	19 SMØ	17 SM1
ROM	H	H
IRS	H	L
IRD	L	H
BA	L	L

15 BAR	
HOLD	H
LOAD	L

11 CKO	
OFF	H
ON	L

	Ø7	Ø6
	ALG	
SP	H	H
NULL	H	L
SPR	L	H
PSW	L	L

CONTROL STORE WORD FORMAT

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/Ø5		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005	±0° 30'
.XX = .02	
.X = .1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN.	DATE	4-26-72
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

NEXT HIGHER ASSY. B-DD-KDII-B

SCALE —

SHEET 14 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL LOGIC & MICROPROGRAM

SIZE	CODE	NUMBER	REV.
D	CS	M7261-Ø-1	H

DIST.

REVISIONS	REV	CHANGE NO	CHK

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

PAGE REVISION CONTROL SHEET

SH NO	PAGE REVISIONS	REMARKS
1	A	
2	A	
3	A	
4	A	
5	A	
6	A	
7	A	
8	A	
9	A	
10	A	
11	A	
12	A	
13	A	
14	A	
15	A	
16	A	
17	A	
ETCH REV	C	
ECO NO.	5	

FIRST USED ON OPTION/MODEL

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	DRN.	DATE
	CHK'D M T Tellman	DATE 8/21/72
	ENG.	DATE 8/17/72
	PROJ. ENG.	DATE 8/17/72
	PROD. M T Tellman	DATE 8/2/72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

CONTROL LOGIC ROM PATTERNS

NEXT HIGHER ASSY.

SIZE	CODE	NUMBER	REV.
B	RL	M7261-0-8	A

SCALE

SHEET 1 OF 17

DIST.

```
                        /( =Y8 (PIN #9) CONA INT TRAN SYNC L
                        */( =Y7 (PIN #7) CONA REG ADDR L
                        **/( =Y6 (PIN #6) CONA RECEIVE L
                        ***/( =Y5 (PIN #5) CONA TRANSMIT L
                        ****/( =Y4 (PIN #4) CONA LOAD MODEM PSW L
                        *****/( =Y3 (PIN #3) CONA LOAD L CLK PSW L
                        ******/( =Y2 (PIN #2) CONG SP WRITE L
                        *******/( =Y1 (PIN #1) CONG LOAD PSW L
  OCTAL DECIMAL                 ********        OCTAL
ADDRESS ADDRESS    EDCBA        ********        DATA
   000      0      00000        11111111        377
   001      1      00001        11111111        377
   002      2      00010        11111111        377
   003      3      00011        11111111        377
   004      4      00100        01111110        176       PSW ,TRAN OUT BA=177776
   005      5      00101        11111111        377       PSW ,TRAN OUT,BAR
   006      6      00110        01111011        173       LCLK ,TRANOUT
   007      7      00111        11111111        377       LCLK ,TRANOUT,BAR
   010      8      01000        00111101        075       GR<R0|R17> ,TRANOUT BA=1777XX
   011      9      01001        10111111        277       GR<R0|R17> ,TRANOUT,BAR
   012     10      01010        01111111        177       ODD BYTE (LCLK/TK/TP)
   013     11      01011        11111111        377
   014     12      01100        11111111        377
   015     13      01101        11111111        377
   016     14      01110        01111111        177       SWR ,TRANOUT BA=177570
   017     15      01111        11111111        377       SWR ,TRANOUT,BAR
   020     16      10000        01010111        127       TKS ,TRANOUT BA=177560
   021     17      10001        11011111        337       TKS ,TRANOUT,BAR
   022     18      10010        01100111        147       TPS ,TRANOUT BA=177564
   023     19      10011        11101111        357       TPS ,TRANOUT,BAR
   024     20      10100        01011111        137       TKB ,TRANOUT BA=177562
   025     21      10101        11011111        337       TKB ,TRANOUT,BAR
   026     22      10110        01101111        157       TPB ,TRANOUT BA=177566
   027     23      10111        11101111        357       TPB ,TRANOUT,BAR
   030     24      11000        11111111        377
   031     25      11001        11111111        377
   032     26      11010        11111111        377
   033     27      11011        11111111        377
   034     28      11100        11111111        377
   035     29      11101        11111111        377
   036     30      11110        11111111        377
   037     31      11111        11111111        377
                   *****
                   ****/( A(PIN #10) IS  CONA TRAN OUT L
                   ***/( B(PIN #11) IS  Y3 OF F025
                   **/( C(PIN #12) IS  Y2 OF F025
                   */( D(PIN #13) IS  Y1 OF F025
                   /( E(PIN #14) IS  Y4 OF F025
```



```
                        /( =Y8 (PIN #9) CONA ENAB L CLK PSW L
                        */( =Y7 (PIN #7) CONA INT TRAN SYNC L
                        **/( =Y6 (PIN #6) CONA ENAB ALU L
                        ***/( =Y5 (PIN #5) CONA ENAB MODEM PSW L
                        ****/( =Y4 (PIN #4) CONA ENAB SWITCH REG L
                        *****/( =Y3 (PIN #3) CONG ENAB SPL L
                        ******/( =Y2 (PIN #2) CONG ENAB SPR L
                        *******/( =Y1 (PIN #1) CONG ENAB PSW L
  OCTAL DECIMAL                 ********        OCTAL
ADDRESS ADDRESS    EDCBA        ********        DATA
   000      0      00000        11111111        377
   001      1      00001        11111111        377
   002      2      00010        11111111        377
   003      3      00011        11111111        377
   004      4      00100        10011110        236       PSW ,TRANIN BA=177776
   005      5      00101        11111111        377       PSW ,TRANIN,BAR
   006      6      00110        00111111        077       LCLK ,TRANIN BA=177546
   007      7      00111        11111111        377       LCLK ,TRANIN,BAR
   010      8      01000        10011001        231       GEN REG, ,TRANIN BA=1777XX
   011      9      01001        11111111        377       GEN REG ,TRANIN,BAR
   012     10      01010        10111111        277       ODD BYTE ADDRESS (LCLK/TK/TP)
   013     11      01011        11111111        377
   014     12      01100        11111111        377
   015     13      01101        11111111        377
   016     14      01110        10010111        227       SWR ,TRANIN BA=177570
   017     15      01111        11111111        377       SWR ,TRANIN,BAR
   020     16      10000        10001111        217       TKS ,TRANIN BA=177560
   021     17      10001        11111111        377       TKS ,TRANIN,BAR
   022     18      10010        10001111        217       TPS ,TRANIN BA=177564
   023     19      10011        11111111        377       TPS ,TRANIN,BAR
   024     20      10100        10011111        237       TKB ,TRANIN BA=177562
   025     21      10101        11111111        377       TKB ,TRANIN,BAR
   026     22      10110        10011111        237       TPB ,TRANIN BA=177566
   027     23      10111        11111111        377       TPB ,TRANIN,BAR
   030     24      11000        11111111        377
   031     25      11001        11111111        377
   032     26      11010        11111111        377
   033     27      11011        11111111        377
   034     28      11100        11111111        377
   035     29      11101        11111111        377
   036     30      11110        11111111        377
   037     31      11111        11111111        377
                   *****
                   ****/( A(PIN #10) IS  CONA TRAN IN L
                   ***/( B(PIN #11) IS  Y3 OF F025
                   **/( C(PIN #12) IS  Y2 OF F025
                   */( D(PIN #13) IS  Y1 OF F025
                   /( E(PIN #14) IS  Y4 OF F025
```

```
                        /( =Y8 (PIN #9)
                        */( =Y7 (PIN #7) CONE LINE CLOCK SER L
                        **/( =Y6 (PIN #6) CONE STACK FLOW L
                        ***/( =Y5 (PIN #5) CONE PWR FAIL SER L
                        ****/( =Y4 (PIN #4) CONE RCD SER L
                        *****/( =Y3 (PIN #3) CONE XMIT SER L
                        *******/( =Y2 (PIN #2)
                        *******/( =Y1 (PIN #1)
  OCTAL DECIMAL         ********        OCTAL
ADDRESS ADDRESS  EDCBA  ********        DATA
   000      0   00000  11111111        377
   001      1   00001  11111111        377
   002      2   00010  11111111        377
   003      3   00011  11111111        377
   004      4   00100  11111111        377
   005      5   00101  11111111        377
   006      6   00110  11111111        377
   007      7   00111  11111111        377
   010      8   01000  11111111        377
   011      9   01001  11111111        377
   012     10   01010  11110111        367     UART RCD INT MPC=64
   013     11   01011  11111111        377
   014     12   01100  11111111        377
   015     13   01101  11111111        377
   016     14   01110  11111011        373     UART XMIT INT MPC=60
   017     15   01111  11111111        377
   020     16   10000  11111111        377
   021     17   10001  11111111        377
   022     18   10010  11011111        337     ERT=1A STACK FLOW MPC=46
   023     19   10011  11111111        377
   024     20   10100  11101111        357     PWR FAIL MPC=43
   025     21   10101  11111111        377
   026     22   10110  10111111        277     LINE CLK INT MPC=42
   027     23   10111  11111111        377
   030     24   11000  11111111        377
   031     25   11001  11111111        377
   032     26   11010  11111111        377
   033     27   11011  11111111        377
   034     28   11100  11111111        377
   035     29   11101  11111111        377
   036     30   11110  11111111        377
   037     31   11111  11111111        377
                *****
                ****/( A(PIN #10) IS  CONN RUN GND L
                ***/( B(PIN #11) IS  CONF MPC 00 L
                **/( C(PIN #12) IS  CONF MPC 02 L
                */( D(PIN #13) IS  CONF MPC 01 L
                /( E(PIN #14) IS  CONF MPC 04 L
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```
                        /( =Y8 (PIN #9) CONF MPC 05 L
                        */( =Y7 (PIN #7) CONE EXAM SW L
                        **/( =Y6 (PIN #6) CONE DEP SW L
                        ***/( =Y5 (PIN #5) CONF MPC 00 L
                        ****/( =Y4 (PIN #4) CONF MPC 04 L
                        *****/( =Y3 (PIN #3) CONF MPC 01 L
                        *******/( =Y2 (PIN #2) CONF MPC 02 L
                        *******/( =Y1 (PIN #1) CONF MPC 03 L
  OCTAL DECIMAL         ********        OCTAL
ADDRESS ADDRESS  EDCBA  ********        DATA
   000      0   00000  11111000        370     CONTINUE
   001      1   00001  11111011        373     TWO SW =CONT,DEP
   002      2   00010  11111011        373     TWO SW EXAM,CONT
   003      3   00011  11111011        373     TWO SW LOAD,CONT
   004      4   00100  11111011        373     NO SW
   005      5   00101  11001010        312     DEP SW1 GOTO 313
   006      6   00110  10101000        250     EXAM GOTO TO 317
   007      7   00111  11101110        356     LOAD  GOTO TO 311
   010      8   01000  11111000        370     CONT=CLR EXAM
   011      9   01001  11111011        373     TWO SW =CONT,DEP
   012     10   01010  11101011        353     TWO SW EXAM,CONT
   013     11   01011  11101011        353     TWO SW LOAD,CONT
   014     12   01100  10111011        273     NO SW 1ST EXAM
   015     13   01101  11001010        312     DEP SW1
   016     14   01110  10101100        254     EXAM AND 1ST EXAM 323
   017     15   01111  11101110        356     LOAD GOTO 311
   020     16   10000  11111000        370     CONT=CLR DEP
   021     17   10001  11111011        373     TWO SW =CONT,DEP
   022     18   10010  11111011        373     TWO SW EXAM,CONT
   023     19   10011  11011011        333     TWO SW LOAD,CONT
   024     20   10100  11011011        333     NO SW 1ST DEP
   025     21   10101  11011010        332     DEP SW2 GOTO 312
   026     22   10110  10101000        250     EXAM,1ST DEP 317
   027     23   10111  11101110        356     LOAD GOTO 311
   030     24   11000  00000100        004
   031     25   11001  00000000        000
   032     26   11010  00000000        000
   033     27   11011  00000000        000
   034     28   11100  00000000        000
   035     29   11101  00000000        000
   036     30   11110  00000000        000
   037     31   11111  00000000        000
                *****
                ****/( A(PIN #10) IS  CONE LOAD (1)L ,AND, DEP (1)L ;BAR
                ***/( B(PIN #11) IS  CONE LOAD (1)L ;AND, EXAM (1)L ;BAR
                **/( C(PIN #12) IS  CONE CONT (1)L
                */( D(PIN #13) IS  CONE 1ST EXAM (1)H
                /( E(PIN #14) IS  CONE 1ST DEP (1)H
```

```
                                    /( =Y4 (PIN # 9) CONC SET BG 07 L
                                    */( =Y3 (PIN #10) CONC SET BG 06 L
                                    **/( =Y2 (PIN #11) CONC SET BG 05 L
                                    ***/( =Y1 (PIN #12) CONC SET BG 04 L
  OCTAL DECIMAL                     ****          OCTAL
ADDRESS ADDRESS   HGFEDCBA          ****          DATA
    000       0   00000000          1111          017
    001       1   00000001          1111          017
    002       2   00000010          1111          017
    003       3   00000011          1111          017
    004       4   00000100          1111          017
    005       5   00000101          1111          017
    006       6   00000110          1111          017
    007       7   00000111          1111          017
    010       8   00001000          1111          017
    011       9   00001001          1111          017
    012      10   00001010          1111          017
    013      11   00001011          1111          017
    014      12   00001100          1111          017
    015      13   00001101          1111          017
    016      14   00001110          1111          017
    017      15   00001111          1111          017
    020      16   00010000          1111          017
    021      17   00010001          1111          017
    022      18   00010010          1111          017
    023      19   00010011          1111          017
    024      20   00010100          1111          017
    025      21   00010101          1111          017
    026      22   00010110          1111          017
    027      23   00010111          1111          017
    030      24   00011000          1111          017
    031      25   00011001          1111          017
    032      26   00011010          1111          017
    033      27   00011011          1111          017
    034      28   00011100          1111          017
    035      29   00011101          1111          017
    036      30   00011110          1111          017
    037      31   00011111          1111          017
```

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```
    040      32   00100000          0111          007
    041      33   00100001          1011          013
    042      34   00100010          0111          007
    043      35   00100011          1111          017       LCLK
    044      36   00100100          0111          007
    045      37   00100101          1011          013
    046      38   00100110          0111          007
    047      39   00100111          1101          015
    050      40   00101000          0111          007
    051      41   00101001          1011          013
    052      42   00101010          0111          007
    053      43   00101011          1111          017
    054      44   00101100          0111          007
    055      45   00101101          1011          013
    056      46   00101110          0111          007
    057      47   00101111          1110          016
    060      48   00110000          0111          007
    061      49   00110001          1011          013
    062      50   00110010          0111          007
    063      51   00110011          1111          017       LCLK
    064      52   00110100          0111          007
    065      53   00110101          1011          013
    066      54   00110110          0111          007
    067      55   00110111          1101          015
    070      56   00111000          0111          007
    071      57   00111001          1011          013
    072      58   00111010          0111          007
    073      59   00111011          1111          017
    074      60   00111100          0111          007
    075      61   00111101          1011          013
    076      62   00111110          0111          007
    077      63   00111111          1111          017
                  ********
                  *******/( A(PIN #05) IS  CONC BR 07 (1)L
                  ******/( B(PIN #06) IS  CONC BR 06 (1)L
                  *****/( C(PIN #07) IS  CONI LCLK INT L
                  ****/( D(PIN #04) IS  CONC BR 05 (1)L
                  ***/( E(PIN #03) IS  CONC BR 04 (1)L
                  **/( F(PIN #02) IS  DPE PSW 07 (0)H
                  */( G(PIN #01) IS  DPE PSW 06 (0)H
                  /( H(PIN #15) IS  DPE PSW 05 (0)H
```

```
                                    /( =Y4 (PIN # 9) CONC SET BG 07 L
                                    +/( =Y3 (PIN #10) CONC SET BG 06 L
                                    ++/( =Y2 (PIN #11) CONC SET BG 05 L
                                    +++/( =Y1 (PIN #12) CONC SET BG 04 L
  OCTAL DECIMAL                     ++++              OCTAL
ADDRESS ADDRESS   HGFEDCBA          ++++              DATA
    100      64   01000000          0111              007
    101      65   01000001          1011              013
    102      66   01000010          0111              007
    103      67   01000011          1111              017
    104      68   01000100          0111              007
    105      69   01000101          1011              013
    106      70   01000110          0111              007
    107      71   01000111          1111              017
    110      72   01001000          0111              007
    111      73   01001001          1011              013
    112      74   01001010          0111              007
    113      75   01001011          1111              017
    114      76   01001100          0111              007
    115      77   01001101          1011              013
    116      78   01001110          0111              007
    117      79   01001111          1111              017
    120      80   01010000          0111              007
    121      81   01010001          1011              013
    122      82   01010010          0111              007
    123      83   01010011          1111              017
    124      84   01010100          0111              007
    125      85   01010101          1011              013
    126      86   01010110          0111              007
    127      87   01010111          1111              017
    130(     88   01011000          0111              007
    131      89   01011001          1011              013
    132      90   01011010          0111              007
    133      91   01011011          1111              017
    134      92   01011100          0111              007
    135      93   01011101          1011              013
    136      94   01011110          0111              007
    137      95   01011111          1111              017
```

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7 Cont

```
    140      96   01100000          0111              007
    141      97   01100001          1011              013
    142      98   01100010          0111              007
    143      99   01100011          1111              017       LCLK
    144     100   01100100          0111              007
    145     101   01100101          1011              013
    146     102   01100110          0111              007
    147     103   01100111          1101              015
    150     104   01101000          0111              007
    151     105   01101001          1111              017
    152     106   01101010          0111              007
    153     107   01101011          1111              017       LCLK
    154     108   01101100          0111              007
    155     109   01101101          1011              013
    156     110   01101110          0111              007
    157     111   01101111          1110              016
    160     112   01110000          0111              007
    161     113   01110001          1011              013
    162     114   01110010          0111              007
    163     115   01110011          1111              017       LCLK
    164     116   01110100          0111              007
    165     117   01110101          1011              013
    166     118   01110110          0111              007
    167     119   01110111          1101              015
    170     120   01111000          0111              007
    171     121   01111001          1011              013
    172     122   01111010          0111              007
    173     123   01111011          1111              017
    174     124   01111100          0111              007
    175     125   01111101          1011              013
    176     126   01111110          0111              007
    177     127   01111111          1111              017
                  ++++++++
                  +++++++/( A(PIN #05) IS  CONC BR 07 (1)L
                  ++++++/( B(PIN #06) IS  CONC BR 06 (1)L
                  +++++/( C(PIN #07) IS  CONI LCLK INT L
                  ++++/( D(PIN #04) IS  CONC BR 05 (1)L
                  +++/( E(PIN #03) IS  CONC BR 04 (1)L
                  ++/( F(PIN #02) IS  DPE PSW 07 (0)H
                  +/( G(PIN #01) IS  DPE PSW 06 (0)H
                  /( H(PIN #15) IS  DPE PSW 05 (0)H
```

```
                                        /( =Y4 (PIN # 9) CONC SET BG 07 L
                                        */( =Y3 (PIN #10) CONC SET BG 06 L
                                        **/( =Y2 (PIN #11) CONC SET BG 05 L
                                        ***/( =Y1 (PIN #12) CONC SET BG 04 L
  OCTAL DECIMAL                         ****          OCTAL
ADDRESS ADDRESS    HGFEDCBA             ****          DATA
    200     128    10000000             0111          007
    201     129    10000001             1111          017
    202     130    10000010             0111          007
    203     131    10000011             1111          017
    204     132    10000100             0111          007
    205     133    10000101             1111          017
    206     134    10000110             0111          007
    207     135    10000111             1111          017
    210     136    10001000             0111          007
    211     137    10001001             1111          017
    212     138    10001010             0111          007
    213     139    10001011             1111          017
    214     140    10001100             0111          007
    215     141    10001101             1111          017
    216     142    10001110             0111          007
    217     143    10001111             1111          017
    220     144    10010000             0111          007
    221     145    10010001             1111          017
    222     146    10010010             0111          007
    223     147    10010011             1111          017
    224     148    10010100             0111          007
    225     149    10010101             1111          017
    226     150    10010110             0111          007
    227     151    10010111             1111          017
    230     152    10011000             0111          007
    231     153    10011001             1111          017
    232     154    10011010             0111          007
    233     155    10011011             1111          017
    234     156    10011100             0111          007
    235     157    10011101             1111          017
    236     158    10011110             0111          007
    237     159    10011111             1111          017
```

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```
    240     160    10100000             0111          007
    241     161    10100001             1011          013
    242     162    10100010             0111          007
    243     163    10100011             1111          017          LCLK
    244     164    10100100             0111          007
    245     165    10100101             1011          013
    246     166    10100110             0111          007
    247     167    10100111             1101          015
    250     168    10101000             0111          007
    251     169    10101001             1011          013
    252     170    10101010             0111          007
    253     171    10101011             1111          017          LCLK
    254     172    10101100             0111          007
    255     173    10101101             1011          013
    256     174    10101110             0111          007
    257     175    10101111             1110          016
    260     176    10110000             0111          007
    261     177    10110001             1011          013
    262     178    10110010             0111          007
    263     179    10110011             1111          017          LCLK
    264     180    10110100             0111          007
    265     181    10110101             1011          013
    266     182    10110110             0111          007
    267     183    10110111             1101          015
    270     184    10111000             0111          007
    271     185    10111001             1011          013
    272     186    10111010             0111          007
    273     187    10111011             1111          017
    274     188    10111100             0111          007
    275     189    10111101             1011          013
    276     190    10111110             0111          007
    277     191    10111111             1111          017
                   ********
                   ********/( A(PIN #05) IS  CONC BR 07 (1)L
                   *******/( B(PIN #06) IS  CONC BR 06 (1)L
                   ******/( C(PIN #07) IS  CONI LCLK INT L
                   *****/( D(PIN #04) IS  CONC BR 05 (1)L
                   ****/( E(PIN #03) IS  CONC BR 04 (1)L
                   ***/( F(PIN #02) IS  DPE PSW 07 (0)H
                   **/( G(PIN #01) IS  DPE PSW 06 (0)H
                   */( H(PIN #15) IS  DPE PSW 05 (0)H
```

```
                                /( =Y4 (PIN # 9) CONC SET BG 07 L
                                */( =Y3 (PIN #10) CONC SET BG 06 L
                                **/( =Y2 (PIN #11) CONC SET BG 05 L
                                ***/( =Y1 (PIN #12) CONC SET BG 04 L
  OCTAL DECIMAL                 ****          OCTAL
ADDRESS ADDRESS    HGFEDCBA     ****          DATA
    300     192    11000000     0111          007
    301     193    11000001     1011          013
    302     194    11000010     0111          007
    303     195    11000011     1111          017       LCLK
    304     196    11000100     0111          007
    305     197    11000101     1011          013
    306     198    11000110     0111          007
    307     199    11000111     1101          015
    310     200    11001000     0111          007
    311     201    11001001     1011          013
    312     202    11001010     0111          007
    313     203    11001011     1111          017       LCLK
    314     204    11001100     0111          007
    315     205    11001101     1011          013
    316     206    11001110     0111          007
    317     207    11001111     1111          017
    320     208    11010000     0111          007
    321     209    11010001     1011          013
    322     210    11010010     0111          007
    323     211    11010011     1111          017       LCLK
    324     212    11010100     0111          007
    325     213    11010101     1011          013
    326     214    11010110     0111          007
    327     215    11010111     1101          015
    330     216    11011000     0111          007
    331     217    11011001     1011          013
    332     218    11011010     0111          007
    333     219    11011011     1111          017
    334     220    11011100     0111          007
    335     221    11011101     1011          013
    336     222    11011110     0111          007
    337     223    11011111     1111          017
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```
    340     224    11100000     0111          007
    341     225    11100001     1011          013
    342     226    11100010     0111          007
    343     227    11100011     1111          017       LCLK
    344     228    11100100     0111          007
    345     229    11100101     1011          013
    346     230    11100110     0111          007
    347     231    11100111     1101          015
    350     232    11101000     0111          007
    351     233    11101001     1011          013
    352     234    11101010     0111          007
    353     235    11101011     1111          017       LCLK
    354     236    11101100     0111          007
    355     237    11101101     1011          013
    356     238    11101110     0111          007
    357     239    11101111     1110          016
    360     240    11110000     0111          007
    361     241    11110001     1011          013
    362     242    11110010     0111          007
    363     243    11110011     1111          017       LCLK
    364     244    11110100     0111          007
    365     245    11110101     1011          013
    366     246    11110110     0111          007
    367     247    11110111     1101          015
    370     248    11111000     0111          007
    371     249    11111001     1011          013
    372     250    11111010     0111          007
    373     251    11111011     1111          017
    374     252    11111100     0111          007
    375     253    11111101     1011          013
    376     254    11111110     0111          007
    377     255    11111111     1111          017
                   ********
                   ********/( A(PIN #05) IS  CONC BR 07 (1)L
                   *******/( B(PIN #06) IS  CONC BR 06 (1)L
                   ******/( C(PIN #07) IS  CONI LCLK INT L
                   *****/( D(PIN #04) IS  CONC BR 05 (1)L
                   ****/( E(PIN #03) IS  CONC BR 04 (1)L
                   ***/( F(PIN #02) IS  DPE PSW 07 (0)H
                   **/( G(PIN #01) IS  DPE PSW 06 (0)H
                   */( H(PIN #15) IS  DPE PSW 05 (0)H
```

```
                                        /( =Y4 (PIN # 9) Y4
                                        +/( =Y3 (PIN #10) Y3
                                        ++/( =Y2 (PIN #11) Y2
                                        +++/( =Y1 (PIN #12) Y1
 OCTAL  DECIMAL                         ++++          OCTAL
ADDRESS ADDRESS   HGFEDCBA              ++++          DATA
   000       0   00000000              0000          000
   001       1   00000001              0000          000
   002       2   00000010              0000          000
   003       3   00000011              0000          000
   004       4   00000100              0000          000
   005       5   00000101              0000          000
   006       6   00000110              0000          000
   007       7   00000111              0000          000
   010       8   00001000              0000          000
   011       9   00001001              0000          000
   012      10   00001010              0000          000
   013      11   00001011              0000          000
   014      12   00001100              0000          000
   015      13   00001101              0000          000
   016      14   00001110              0000          000
   017      15   00001111              0000          000
   020      16   00010000              0000          000
   021      17   00010001              0000          000
   022      18   00010010              0000          000
   023      19   00010011              0000          000
   024      20   00010100              0000          000
   025      21   00010101              0000          000
   026      22   00010110              0000          000
   027      23   00010111              0000          000
   030      24   00011000              0000          000
   031      25   00011001              0000          000
   032      26   00011010              0000          000
   033      27   00011011              0000          000
   034      28   00011100              0000          000
   035      29   00011101              0000          000
   036      30   00011110              0000          000
   037      31   00011111              0000          000
```

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```
   040      32   00100000              0000          000
   041      33   00100001              0000          000
   042      34   00100010              0000          000
   043      35   00100011              0000          000
   044      36   00100100              0000          000
   045      37   00100101              0000          000
   046      38   00100110              0000          000
   047      39   00100111              0000          000
   050      40   00101000              0000          000
   051      41   00101001              0000          000
   052      42   00101010              0000          000
   053      43   00101011              0000          000
   054      44   00101100              0000          000
   055      45   00101101              0000          000
   056      46   00101110              0000          000
   057      47   00101111              0000          000
   060      48   00110000              0000          000
   061      49   00110001              0000          000
   062      50   00110010              0000          000
   063      51   00110011              0000          000
   064      52   00110100              0000          000
   065      53   00110101              0000          000
   066      54   00110110              0000          000
   067      55   00110111              0000          000
   070      56   00111000              0000          000
   071      57   00111001              0000          000
   072      58   00111010              0000          000
   073      59   00111011              0000          000
   074      60   00111100              0000          000
   075      61   00111101              0000          000
   076      62   00111110              0000          000
   077      63   00111111              0000          000
                 ++++++++
                 +++++++/( A(PIN #05) IS  CONA BA 02 (1)H
                 ++++++/( B(PIN #06) IS  CONA BA 01 (1)H
                 +++++/( C(PIN #07) IS  CONA BA 00 (1)H
                 ++++/( D(PIN #04) IS  CONA BA 03 (1)H
                 +++/( E(PIN #03) IS  CONA BA 04 (1)H
                 ++/( F(PIN #02) IS  CONA BA 05 (1)H
                 +/( G(PIN #01) IS  CONA BA 07 (1)H
                 /( H(PIN #15) IS  CONA BA 06 (1)H
```

```
                                    /( =Y4 (PIN # 9) Y4
                                    +/( =Y3 (PIN #10) Y3
                                    ++/( =Y2 (PIN #11) Y2
                                    +++/( =Y1 (PIN #12) Y1
 OCTAL DECIMAL                      ++++          OCTAL
ADDRESS ADDRESS   HGFEDCBA          ++++          DATA
    100      64   01000000          0000          000
    101      65   01000001          0000          000
    102      66   01000010          0000          000
    103      67   01000011          0000          000
    104      68   01000100          0000          000
    105      69   01000101          0000          000
    106      70   01000110          0000          000
    107      71   01000111          0000          000
    110      72   01001000          0000          000
    111      73   01001001          0000          000
    112      74   01001010          0000          000
    113      75   01001011          0000          000
    114      76   01001100          0000          000
    115      77   01001101          0000          000
    116      78   01001110          0000          000
    117      79   01001111          0000          000
    120      80   01010000          0000          000
    121      81   01010001          0000          000
    122      82   01010010          0000          000
    123      83   01010011          0000          000
    124      84   01010100          0000          000
    125      85   01010101          0000          000
    126      86   01010110          0000          000
    127      87   01010111          0000          000
    130      88   01011000          0000          000
    131      89   01011001          0000          000
    132      90   01011010          0000          000
    133      91   01011011          0000          000
    134      92   01011100          0000          000
    135      93   01011101          0000          000
    136      94   01011110          0000          000
    137      95   01011111          0000          000
```

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```
    140      96   01100000          0000          000
    141      97   01100001          0000          000
    142      98   01100010          0000          000
    143      99   01100011          0000          000
    144     100   01100100          0000          000
    145     101   01100101          0000          000
    146     102   01100110          0000          000
    147     103   01100111          0000          000
    150     104   01101000          0000          000
    151     105   01101001          0000          000
    152     106   01101010          0000          000
    153     107   01101011          0000          000
    154     108   01101100          0000          000
    155     109   01101101          0000          000
    156     110   01101110          0000          000
    157     111   01101111          0000          000
    160     112   01110000          0000          000
    161     113   01110001          0000          000
    162     114   01110010          0000          000
    163     115   01110011          0000          000
    164     116   01110100          0000          000
    165     117   01110101          0000          000
    166     118   01110110          0000          000
    167     119   01110111          0000          000
    170     120   01111000          0000          000
    171     121   01111001          0000          000
    172     122   01111010          0000          000
    173     123   01111011          0000          000
    174     124   01111100          0000          000
    175     125   01111101          0000          000
    176     126   01111110          0000          000
    177     127   01111111          0000          000
                  ++++++++
                  +++++++/( A(PIN #05) IS  CONA BA 02 (1)H
                  ++++++/( B(PIN #06) IS  CONA BA 01 (1)H
                  +++++/( C(PIN #07) IS  CONA BA 00 (1)H
                  ++++/( D(PIN #04) IS  CONA BA 03 (1)H
                  +++/( E(PIN #03) IS  CONA BA 04 (1)H
                  ++/( F(PIN #02) IS  CONA BA 05 (1)H
                  +/( G(PIN #01) IS  CONA BA 07 (1)H
                  /( H(PIN #15) IS  CONA BA 06 (1)H
```

```
                                        /( =Y4 (PIN # 9) Y4
                                        */( =Y3 (PIN #10) Y3
                                        **/( =Y2 (PIN #11) Y2
                                        ***/( =Y1 (PIN #12) Y1
  OCTAL  DECIMAL                        ****          OCTAL
 ADDRESS ADDRESS    HGFEDCBA            ****          DATA
    200      128    10000000            0000          000
    201      129    10000001            0000          000
    202      130    10000010            0000          000
    203      131    10000011            0000          000
    204      132    10000100            0000          000
    205      133    10000101            0000          000
    206      134    10000110            0000          000
    207      135    10000111            0000          000
    210      136    10001000            0000          000
    211      137    10001001            0000          000
    212      138    10001010            0000          000
    213      139    10001011            0000          000
    214      140    10001100            0000          000
    215      141    10001101            0000          000
    216      142    10001110            0000          000
    217      143    10001111            0000          000
    220      144    10010000            0000          000
    221      145    10010001            0000          000
    222      146    10010010            0000          000
    223      147    10010011            0000          000
    224      148    10010100            0000          000
    225      149    10010101            0000          000
    226      150    10010110            0000          000
    227      151    10010111            0000          000
    230      152    10011000            0000          000
    231      153    10011001            0000          000
    232      154    10011010            0000          000
    233      155    10011011            0000          000
    234      156    10011100            0000          000
    235      157    10011101            0000          000
    236      158    10011110            0000          000
    237      159    10011111            0000          000

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    240      160    10100000            0000          000
    241      161    10100001            0000          000
    242      162    10100010            0000          000
    243      163    10100011            0110          006     KW11-L LINE CLK CSR
    244      164    10100100            0000          000
    245      165    10100101            0000          000
    246      166    10100110            0000          000
    247      167    10100111            0101          005     KW11-L (ODD BYTE)
    250      168    10101000            0000          000
    251      169    10101001            0000          000
    252      170    10101010            0000          000
    253      171    10101011            0000          000
    254      172    10101100            0000          000
    255      173    10101101            0000          000
    256      174    10101110            0000          000
    257      175    10101111            0000          000
    260      176    10110000            1000          010     TKS TTY KEYBOARD CSR
    261      177    10110001            1100          014     TPS PRINTER CSR
    262      178    10110010            1010          012     TKB TTY KEYBOARD  DBR
    263      179    10110011            1110          016     TPB TTY PRINTER DBR
    264      180    10110100            0101          005     TKS (ODD BYTE)
    265      181    10110101            0101          005     TPS (ODD BYTE)
    266      182    10110110            0101          005     TKB (ODD BYTE)
    267      183    10110111            0101          005     TPB (ODD BYTE)
    270      184    10111000            0111          007     SWITCH REGISTER
    271      185    10111001            0000          000
    272      186    10111010            0000          000
    273      187    10111011            0000          000
    274      188    10111100            0111          007     CONSOLE SW REG, (ODD BYTE)
    275      189    10111101            0000          000
    276      190    10111110            0000          000
    277      191    10111111            0000          000
                   ********
                   *******/( A(PIN #05) IS  CONA BA 02 (1)H
                   ******/( B(PIN #06) IS  CONA BA 01 (1)H
                   *****/( C(PIN #07) IS  CONA BA 00 (1)H
                   ****/( D(PIN #04) IS  CONA BA 03 (1)H
                   ***/( E(PIN #03) IS  CONA BA 04 (1)H
                   **/( F(PIN #02) IS  CONA BA 05 (1)H
                   */( G(PIN #01) IS  CONA BA 07 (1)H
                   /( H(PIN #15) IS  CONA BA 06 (1)H
```

```
                        /( =Y4 (PIN # 9) Y4
                        +/( =Y3 (PIN #10) Y3
                        ++/( =Y2 (PIN #11) Y2
                        +++/( =Y1 (PIN #12) Y1
                        ++++      OCTAL
  OCTAL  DECIMAL        +++++     DATA
ADDRESS ADDRESS  HGFEDCBA
    300     192  11000000  0001  001    REG R0
    301     193  11000001  0001  001    REG R4
    302     194  11000010  0001  001    REG R2
    303     195  11000011  0001  001    REG R6
    304     196  11000100  0001  001    REG R1
    305     197  11000101  0001  001    REG R5
    306     198  11000110  0001  001    REG R3
    307     199  11000111  0001  001    REG R7
    310     200  11001000  0001  001    REG R10
    311     201  11001001  0001  001    REG R14
    312     202  11001010  0001  001    REG R12
    313     203  11001011  0001  001    REG R16
    314     204  11001100  0001  001    REG R11
    315     205  11001101  0001  001    REG R15
    316     206  11001110  0001  001    REG R13
    317     207  11001111  0001  001    REG R17
    320     208  11010000  0000  000
    321     209  11010001  0000  000
    322     210  11010010  0000  000
    323     211  11010011  0000  000
    324     212  11010100  0000  000
    325     213  11010101  0000  000
    326     214  11010110  0000  000
    327     215  11010111  0000  000
    330     216  11011000  0000  000
    331     217  11011001  0000  000
    332     218  11011010  0000  000
    333     219  11011011  0000  000
    334     220  11011100  0000  000
    335     221  11011101  0000  000
    336     222  11011110  0000  000
    337     223  11011111  0000  000
    340     224  11100000  0000  000
    341     225  11100001  0000  000
    342     226  11100010  0000  000
    343     227  11100011  0000  000
    344     228  11100100  0000  000
    345     229  11100101  0000  000
    346     230  11100110  0000  000
    347     231  11100111  0000  000
    350     232  11101000  0000  000
    351     233  11101001  0000  000
    352     234  11101010  0000  000
    353     235  11101011  0000  000
    354     236  11101100  0000  000
    355     237  11101101  0000  000
    356     238  11101110  0000  000
    357     239  11101111  0000  000
    360     240  11110000  0000  000
    361     241  11110001  0000  000
    362     242  11110010  0000  000
    363     243  11110011  0000  000
    364     244  11110100  0000  000
    365     245  11110101  0000  000
    366     246  11110110  0000  000
    367     247  11110111  0000  000
    370     248  11111000  0000  000
    371     249  11111001  0000  000
    372     250  11111010  0000  000
    373     251  11111011  0010  002    PSW
    374     252  11111100  0000  000
    375     253  11111101  0000  000
    376     254  11111110  0000  000
    377     255  11111111  0010  002    PSW (ODD BYTE)
                ********
                ********/( A(PIN #05) IS  CONA BA 02 (1)H
                *******/( B(PIN #06) IS  CONA BA 01 (1)H
                ******/( C(PIN #07) IS  CONA BA 00 (1)H
                *****/( D(PIN #04) IS  CONA BA 03 (1)H
                ****/( E(PIN #03) IS  CONA BA 04 (1)H
                ***/( F(PIN #02) IS  CONA BA 05 (1)H
                **/( G(PIN #01) IS  CONA BA 07 (1)H
                */ H(PIN #15) IS  CONA BA 06 (1)H
```


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```
                                /( =Y4 (PIN # 9) CONF MPC 04 L
                                */( =Y3 (PIN #10) CONF MPC 01 L
                                **/( =Y2 (PIN #11) CONF MPC 02 L
                                ***/( =Y1 (PIN #12) CONF MPC 00 L
  OCTAL  DECIMAL                ****          OCTAL
ADDRESS ADDRESS   HGFEDCBA      ****          DATA
    000       0   00000000      1100          014       T
    001       1   00000001      1100          014       T
    002       2   00000010      1100          014       T
    003       3   00000011      1100          014       T
    004       4   00000100      1100          014       T
    005       5   00000101      1100          014       T
    006       6   00000110      1100          014       T
    007       7   00000111      1100          014       T
    010       8   00001000      1100          014       T
    011       9   00001001      1100          014       T
    012      10   00001010      1100          014       T
    013      11   00001011      1100          014       T
    014      12   00001100      1100          014       T
    015      13   00001101      1100          014       T
    016      14   00001110      1100          014       T
    017      15   00001111      1100          014       T
    020      16   00010000      1100          014       T
    021      17   00010001      1100          014       T
    022      18   00010010      1100          014       T
    023      19   00010011      1100          014       T
    024      20   00010100      1100          014       T
    025      21   00010101      1100          014       T
    026      22   00010110      1100          014       T
    027      23   00010111      1100          014       T
    030      24   00011000      1100          014       T
    031      25   00011001      1100          014       T
    032      26   00011010      1100          014       T
    033      27   00011011      1100          014       T
    034      28   00011100      1100          014       T
    035      29   00011101      1100          014       T
    036      30   00011110      1100          014       T
    037      31   00011111      1100          014       T
```

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```
    040      32   00100000      1100          014       T
    041      33   00100001      1100          014       T
    042      34   00100010      1100          014       T
    043      35   00100011      1100          014       T
    044      36   00100100      1100          014       T
    045      37   00100101      1100          014       T
    046      38   00100110      1100          014       T
    047      39   00100111      1100          014       T
    050      40   00101000      1100          014       T
    051      41   00101001      1100          014       T
    052      42   00101010      1100          014       T
    053      43   00101011      1100          014       T
    054      44   00101100      1100          014       T
    055      45   00101101      1100          014       T
    056      46   00101110      1100          014       T
    057      47   00101111      1100          014       T
    060      48   00110000      1100          014       T
    061      49   00110001      1100          014       T
    062      50   00110010      1100          014       T
    063      51   00110011      1100          014       T
    064      52   00110100      1100          014       T
    065      53   00110101      1100          014       T
    066      54   00110110      1100          014       T
    067      55   00110111      1100          014       T
    070      56   00111000      1100          014       T
    071      57   00111001      1100          014       T
    072      58   00111010      1100          014       T
    073      59   00111011      1100          014       T
    074      60   00111100      1100          014       T
    075      61   00111101      1100          014       T
    076      62   00111110      1100          014       T
    077      63   00111111      1100          014       T
                  ********
                  *******/( A(PIN #05) IS  CONB STACKFLOW (1)L
                  ******/( B(PIN #06) IS  CONH PDWN SYNC (1)L
                  *****/( C(PIN #07) IS  CONI LCLK INT (1)L
                  ****/( D(PIN #04) IS  CONE STOP (1)L
                  ***/( E(PIN #03) IS  DPH RCD INT (1)L
                  **/( F(PIN #02) IS  DPH XMIT INT (1)L
                  */( G(PIN #01) IS  DPG WAIT L
                  /( H(PIN #15) IS  DPE T DEL (1)L
```

```
                                /( =Y4 (PIN # 9) CONF MPC 04 L
                                */( =Y3 (PIN #10) CONF MPC 01 L
                                **/( =Y2 (PIN #11) CONF MPC 02 L
                                ***/( =Y1 (PIN #12) CONF MPC 00 L
  OCTAL  DECIMAL                ****          OCTAL
ADDRESS ADDRESS    HGFEDCBA     ****          DATA
    100      64    01000000     1100          014       T
    101      65    01000001     1100          014       T
    102      66    01000010     1100          014       T
    103      67    01000011     1100          014       T
    104      68    01000100     1100          014       T
    105      69    01000101     1100          014       T
    106      70    01000110     1100          014       T
    107      71    01000111     1100          014       T
    110      72    01001000     1100          014       T
    111      73    01001001     1100          014       T
    112      74    01001010     1100          014       T
    113      75    01001011     1100          014       T
    114      76    01001100     1100          014       T
    115      77    01001101     1100          014       T
    116      78    01001110     1100          014       T
    117      79    01001111     1100          014       T
    120      80    01010000     1100          014       T
    121      81    01010001     1100          014       T
    122      82    01010010     1100          014       T
    123      83    01010011     1100          014       T
    124      84    01010100     1100          014       T
    125      85    01010101     1100          014       T
    126      86    01010110     1100          014       T
    127      87    01010111     1100          014       T
    130      88    01011000     1100          014       T
    131      89    01011001     1100          014       T
    132      90    01011010     1100          014       T
    133      91    01011011     1100          014       T
    134      92    01011100     1100          014       T
    135      93    01011101     1100          014       T
    136      94    01011110     1100          014       T
    137      95    01011111     1100          014       T
```

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```
    140      96    01100000     1100          014       T
    141      97    01100001     1100          014       T
    142      98    01100010     1100          014       T
    143      99    01100011     1100          014       T
    144     100    01100100     1100          014       T
    145     101    01100101     1100          014       T
    146     102    01100110     1100          014       T
    147     103    01100111     1100          014       T
    150     104    01101000     1100          014       T
    151     105    01101001     1100          014       T
    152     106    01101010     1100          014       T
    153     107    01101011     1100          014       T
    154     108    01101100     1100          014       T
    155     109    01101101     1100          014       T
    156     110    01101110     1100          014       T
    157     111    01101111     1100          014       T
    160     112    01110000     1100          014       T
    161     113    01110001     1100          014       T
    162     114    01110010     1100          014       T
    163     115    01110011     1100          014       T
    164     116    01110100     1100          014       T
    165     117    01110101     1100          014       T
    166     118    01110110     1100          014       T
    167     119    01110111     1100          014       T
    170     120    01111000     1100          014       T
    171     121    01111001     1100          014       T
    172     122    01111010     1100          014       T
    173     123    01111011     1100          014       T
    174     124    01111100     1100          014       T
    175     125    01111101     1100          014       T
    176     126    01111110     1100          014       T
    177     127    01111111     1100          014       T
                   ********
                   ********/( A(PIN #05) IS  CONB STACKFLOW (1)L
                   *******/( B(PIN #06) IS  CONH PDWN SYNC (1)L
                   ******/( C(PIN #07) IS  CONI LCLK INT (1)L
                   *****/( D(PIN #04) IS  CONE STOP (1)L
                   ****/( E(PIN #03) IS  DPH RCD INT (1)L
                   ***/( F(PIN #02) IS  DPH XMIT INT (1)L
                   **/( G(PIN #01) IS  DPG WAIT L
                   */( H(PIN #15) IS  DPE T DEL (1)L
```

```
                                        /( #Y4 (PIN # 9) CONF MPC 04 L
                                        *// ( #Y3 (PIN #10) CONF MPC 01 L
                                        ****/ ( #Y2 (PIN #11) CONF MPC 02 L
                                        *****/ ( #Y1 (PIN #12) CONF MPC 00 L
 OCTAL DECIMAL                          *****    OCTAL
 ADDRESS ADDRESS     HGFEDCBA           *****    DATA
     200     128     10000000           1001      011      STKFL
     201     129     10000001           1010      012      PWRF
     202     130     10000010           1001      011      STKFL
     203     131     10000011           1011      013      LCLK
     204     132     10000100           1001      011      STKFL
     205     133     10000101           1010      012      PWRF
     206     134     10000110           1001      011      STKFL
     207     135     10000111           0101      005      RCD
     210     136     10001000           1001      011      STKFL
     211     137     10001001           1010      012      PWRF
     212     138     10001010           1001      011      STKFL
     213     139     10001011           1011      013      LCLK
     214     140     10001100           1001      011      STKFL
     215     141     10001101           1010      012      PWRF
     216     142     10001110           1001      011      STKFL
     217     143     10001111           0101      005      RCD
     220     144     10010000           1001      011      STKFL
     221     145     10010001           1010      012      PWRF
     222     146     10010010           1001      011      STKFL
     223     147     10010011           1011      013      LCLK
     224     148     10010100           1001      011      STKFL
     225     149     10010101           1010      012      PWRF
     226     150     10010110           1001      011      STKFL
     227     151     10010111           0111      007      XMIT
     230     152     10011000           1001      011      STKFL
     231     153     10011001           1010      012      PWRF
     232     154     10011010           1001      011      STKFL
     233     155     10011011           1011      013      LCLK
     234     156     10011100           1001      011      STKFL
     235     157     10011101           1010      012      PWRF
     236     158     10011110           1001      011      STKFL
     237     159     10011111           0111      007      XMIT

     240     160     10100000           1001      011      STKFL
     241     161     10100001           1010      012      PWRF
     242     162     10100010           1001      011      STKFL
     243     163     10100011           1011      013      LCLK
     244     164     10100100           1001      011      STKFL
     245     165     10100101           1010      012      PWRF
     246     166     10100110           1001      011      STKFL
     247     167     10100111           0101      005      RCD
     250     168     10101000           1001      011      STKFL
     251     169     10101001           1010      012      PWRF
     252     170     10101010           1001      011      STKFL
     253     171     10101011           1011      013      LCLK
     254     172     10101100           1001      011      STKFL
     255     173     10101101           1010      012      PWRF
     256     174     10101110           1001      011      STKFL
     257     175     10101111           0101      005      RCD
     260     176     10110000           1001      011      STKFL
     261     177     10110001           1010      012      PWRF
     262     178     10110010           1001      011      STKFL
     263     179     10110011           1011      013      LCLK
     264     180     10110100           1001      011      STKFL
     265     181     10110101           1010      012      PWRF
     266     182     10110110           1001      011      STKFL
     267     183     10110111           1110      016      STOP
     270     184     10111000           1001      011      STKFL
     271     185     10111001           1010      012      PWRF
     272     186     10111010           1001      011      STKFL
     273     187     10111011           1011      013      LCLK
     274     188     10111100           1001      011      STKFL
     275     189     10111101           1010      012      PWRF
     276     190     10111110           1001      011      STKFL
     277     191     10111111           0010      002      WAIT
                     **********
                     ********/ A(PIN #05) IS  CONB STACKFLOW (1)L
                     ********/ B(PIN #06) IS  CONH PDWN SYNC (1)L
                     *******/ C(PIN #07) IS  CONJ LCLK INT (1)L
                     ******/ D(PIN #04) IS  CONE STOP (1)L
                     *****/ E(PIN #03) IS  DPH RCD INT (1)L
                     ****/ F(PIN #02) IS  DPH XMIT INT (1)L
                     ***/ G(PIN #01) IS  DPG WAIT L
                     /( H(PIN #15) IS  DPE T DEL (1)L
```

```
                                  /( =Y4 (PIN # 9) CONF MPC 04 L
                                  */( =Y3 (PIN #10) CONF MPC 01 L
                                  **/( =Y2 (PIN #11) CONF MPC 02 L
                                  ***/( =Y1 (PIN #12) CONF MPC 00 L
 OCTAL  DECIMAL                   ****          OCTAL
ADDRESS ADDRESS   HGFEDCBA        ****          DATA
   300      192   11000000        1001          011       STKFL
   301      193   11000001        1010          012       PWRF
   302      194   11000010        1001          011       STKFL
   303      195   11000011        1011          013       LCLK
   304      196   11000100        1001          011       STKFL
   305      197   11000101        1010          012       PWRF
   306      198   11000110        1001          011       STKFL
   307      199   11000111        0101          005       RCD
   310      200   11001000        1001          011       STKFL
   311      201   11001001        1010          012       PWRF
   312      202   11001010        1001          011       STKFL
   313      203   11001011        1011          013       LCLK
   314      204   11001100        1001          011       STKFL
   315      205   11001101        1010          012       PWRF
   316      206   11001110        1001          011       STKFL
   317      207   11001111        0101          005       RCD
   320      208   11010000        1001          011       STKFL
   321      209   11010001        1010          012       PWRF
   322      210   11010010        1001          011       STKFL
   323      211   11010011        1011          013       LCLK
   324      212   11010100        1001          011       STKFL
   325      213   11010101        1010          012       PWRF
   326      214   11010110        1001          011       STKFL
   327      215   11010111        0111          007       XMIT
   330      216   11011000        1001          011       STKFL
   331      217   11011001        1010          012       PWRF
   332      218   11011010        1001          011       STKFL
   333      219   11011011        1011          013       LCLK
   334      220   11011100        1001          011       STKFL
   335      221   11011101        1010          012       PWRF
   336      222   11011110        1001          011       STKFL
   337      223   11011111        0111          007       XMIT
```

M7261-8 REV A

```
   340      224   11100000        1001          011       STKFL
   341      225   11100001        1010          012       PWRF
   342      226   11100010        1001          011       STKFL
   343      227   11100011        1011          013       LCLK
   344      228   11100100        1001          011       STKFL
   345      229   11100101        1010          012       PWRF
   346      230   11100110        1001          011       STKFL
   347      231   11100111        0101          005       RCD
   350      232   11101000        1001          011       STKFL
   351      233   11101001        1010          012       PWRF
   352      234   11101010        1001          011       STKFL
   353      235   11101011        1011          013       LCLK
   354      236   11101100        1001          011       STKFL
   355      237   11101101        1010          012       PWRF
   356      238   11101110        1001          011       STKFL
   357      239   11101111        0101          005       RCD
   360      240   11110000        1001          011       STKFL
   361      241   11110001        1010          012       PWRF
   362      242   11110010        1001          011       STKFL
   363      243   11110011        1011          013       LCLK
   364      244   11110100        1001          011       STKFL
   365      245   11110101        1010          012       PWRF
   366      246   11110110        1001          011       STKFL
   367      247   11110111        1110          016       STOP
   370      248   11111000        1001          011       STKFL
   371      249   11111001
```

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	R. ROBICHAUD	CHECKED	C. TESCHNER	SECTION
DATE	12-8-71	DATE	5-1-72	1
ENG	G. Graham	PROD	R. K. PETERSON	ISSUED SECT.
DATE	4-5-72	DATE	5-10-72	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION KY11-JA	KY11-JB	KY11-JC	KY11-JF
1	D-MD-7410799-0-0	CONSOLE BEZEL REWORK	1	1	1	1
~~2~~	~~E-IA-7409374-3-0~~	~~BEZEL CONSOLE (11/10)~~	~~X~~	~~1~~	~~X~~	~~X~~
3	E-IA-5409766-0-0	CONSOLE ETCH BOARD ASSY	1	1	1	1
~~4~~	~~E-IA-5409766-2-0~~	~~CONSOLE ETCH BOARD ASSY (OPOCA)~~	~~X~~	~~X~~	~~1~~	
5	A-PS-1210975-0-0	LOCK & CAM ASS'Y	1	1	1	1
6	900602[illegible]-1	SCR, PHL PAN HD. #6-32 X 1/4 LG	6	6	6	6
7	900663[illegible]	WASH INT TOOTH LOCK #6	6	6	6	6
8	900600[illegible]-1	SCR PHL PAN HD # 2-56 X 3/8 LG	2	2	2	2
9	900802[illegible]-1	SCR PHL PAN HD #2-56 X 5/8 LG	2	2	2	2
10	~~121079[illegible]-0-0~~	~~SWITCH DPST N.O.~~	~~1~~	~~1~~	~~1~~	
11	~~C-MD-7409534-0-0~~	~~ACTUATOR RE-WORK~~	~~1~~	~~1~~	~~1~~	
12	~~121090[illegible]-1~~	~~INSULATOR~~	~~2~~	~~2~~	~~2~~	
13	B-IA-7[illegible]09444-0-0	DETENT	1	1	1	1
14	900668[illegible]	WASH #2 SPLIT LOCK	5	5	5	6
15	900600[illegible]-4	SCR BINDER HD #2-56 X3/16 LG	2	2	2	2
16	~~121090[illegible]-1~~	~~SWITCH TMD 5201 (COLD CONTAC[illegible] 291-5201-00~~	~~1~~	~~1~~	~~1~~	
17	C-UA-B[illegible]08R-Ø3	I/O CABLE (3'-0" LG)	1	1	1	1
18	490107[illegible]	LUBE (FOR CAM LOCK)	A/R	A/R	A/R	A/R
19	B-IA-7409730-0-0	JUMPER, POWER	2	2	2	2
20	~~B-MD-7409868-0-0~~	~~SWITCH ADAPTER PLATE~~	~~1~~	~~1~~	~~1~~	
21	~~B-MD-7409867-0-0~~	~~EXTENDER LEAF REWORK (ACTUATOR)~~	~~1~~	~~1~~	~~1~~	
22	~~9008449-2~~	~~SCR PHL FLAT HD #2-56 X 1/4 LG.~~	~~2~~	~~2~~	~~2~~	

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO
CONSOLE ASSY (PDP11/05)	D-UA-KY11-J-Ø	A	PL	KY11-J-Ø	F	KY11J-00001
	SHEET 1 OF 2	DIST.	G			

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	R. ROBICHAUD	CHECKED	C. TESCHNER	SECTION
DATE	12-8-71	DATE	5-1-72	1
ENG	G. GRAHAM	PROD	R. K. PETERSON	ISSUED SECT.
DATE	4-5-72	DATE	5-10-72	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION KY11-JA	KY11-JB	KY11-JC	KY11-JF
~~23~~	~~E-IA-7409374-4-0~~	~~BEZEL CONSOLE (VT40)~~	~~X~~	~~X~~	~~1~~	~~X~~
24	A-PS-12[illegible]0982-0-0	KEY LOCK SWITCH	1	1	1	1
~~25~~	~~E-IA-7409374-5-0~~	~~BEZEL CONSOLE (UC15)~~	~~X~~	~~X~~	~~X~~	~~1~~
26	C-PS-361[illegible]1275-0-0	LOGO (PDP-1105) NOTE VARIATIONS	1	1	X	X
27	D-IA-740[illegible]9431-1-0	PANEL CONTROL (1105)	1	X	X	X
28	9009210-1	ADHESIVE TRANSFER TAPE ¼ WIPE	A/R	A/R	A/R	A/R
29	1211052	CONSOLE PROTECTIVE COVER	1	1	1	1
30	D-IA-7409431-3-0	PANEL CONTROL (1110)	X	1	X	X
31	D-IA-7409768-0-0	PANEL CONTROL (GT40)	X	X	1	X
32	C-PS-3611275-4-0	LOGO (DEC GRAPHIC)	X	X	1	X
33	C-PS-3611275-5-0	LOGO (UC15)	X	X	X	1
34	D-IA-7409431-4-0	PANEL CONTROL (UC15)	X	X	X	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO
CONSOLE ASSY (PDP11/05)	D-UA-KY11-J-Ø	A	PL	KY11-J-Ø	F	
	SHEET 2 OF 2	DIST.	G			

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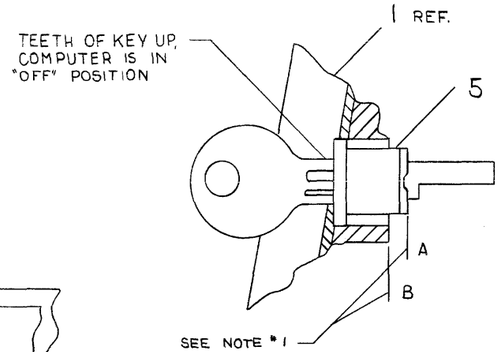
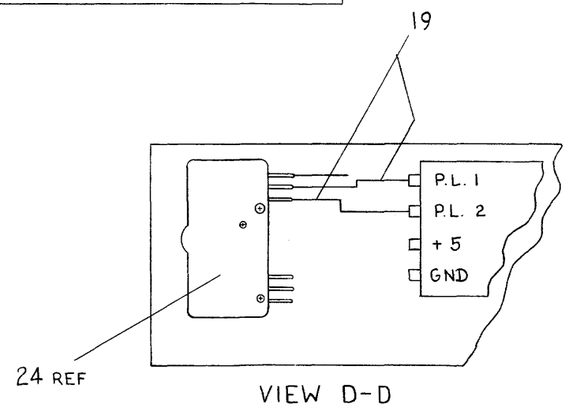
LEGEND	
PART NO.	VARIATION
KY11-JA	1105 CONSOLE WITH L.E.D.S.
KY11-JB	1V10 CONSOLE WITH L.E.D.S.
KY11-JC	VT40 CONSOLE WITH L.E.D.S.
KY11-JF	UC15 CONSOLE WITH L.E.D.S.

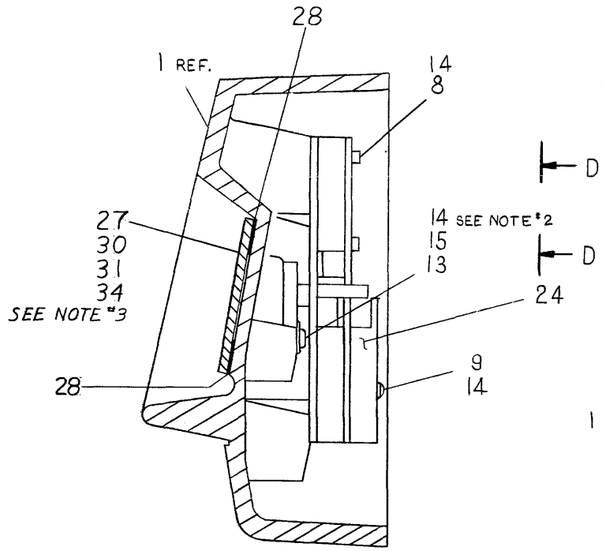
NOTES:
1. CASTING KEY HOLE SURFACES A & B TO BE COATED WITH LUBE (ITEM # 18)
2. LOCK WASHER IS NOT USED ON SCREW UNDER SWITCH.
3. INSERT CONTROL PANEL (ITEM #27,30,31 OR 34) USING ADHESIVE TRANSFER TAPE (ITEM #28) ON REAR SURFACE & PRESS FIRMLY IN PLACE.



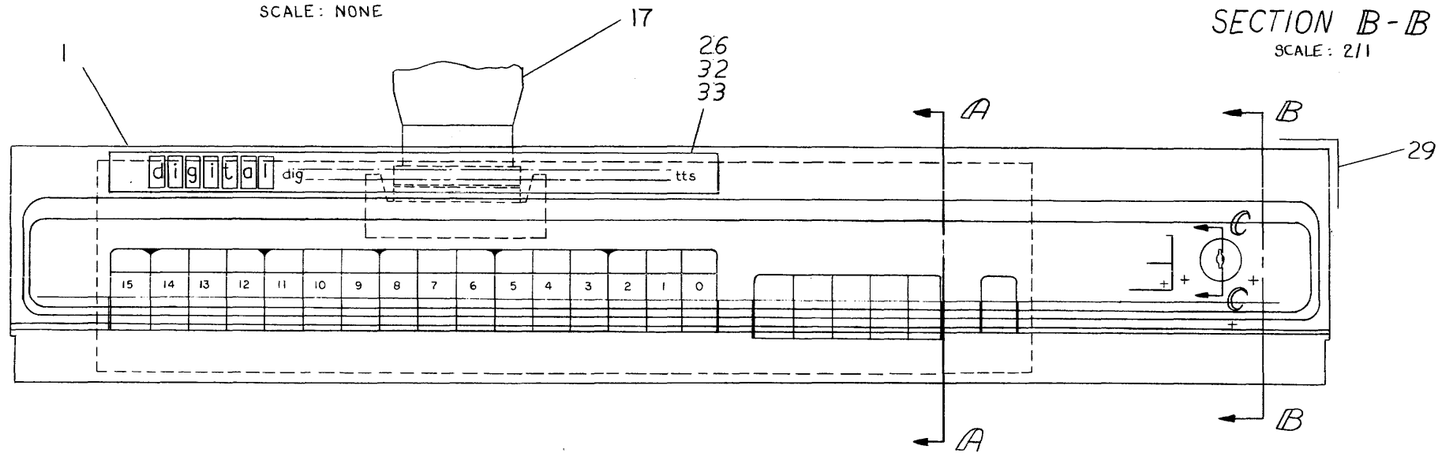
SECTION C-C
SCALE: 2/1

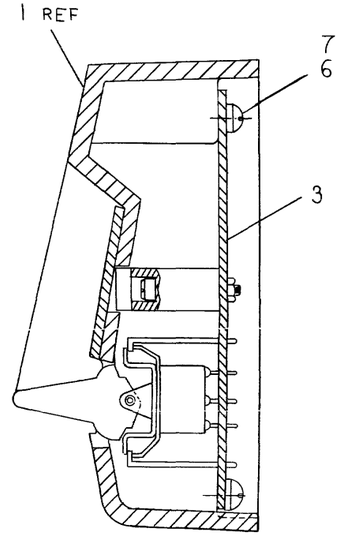


VIEW D-D
SCALE: NONE



SECTION B-B
SCALE: 2/1





SECTION A-A
SCALE: 2/1

REVISIONS				
CHK	CHANGE NO.	REV		
GG	KY11-00021	D		
	REVISED & REDRAWN			
	G. GRAHAM			
J. Graham			11-28-72	
PM	1105-00040	E		
N. Eldridge			1-10-73	
	M. TITELBAUM			
Mark Titelbaum				
DWG	NO WAS KY11-0-0			
PM	KY11J-00001	F		
J. Glasgow			2-9-73	
	G. GRAHAM			
J. Graham			2-12-73	

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP 1105

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

		DATE
DRN.	CAHILL	11-16-71
CHK'D.	TESCHNER	4-4-72
ENG.	GRAHAM	4-5-72
PROJ. ENG.	WEEKS	5-5-72
PROD.	PETERSON	5-10-72

NEXT HIGHER ASSY: D-UA-1105-0-0

SCALE: 1/1

SHEET 1 OF 1

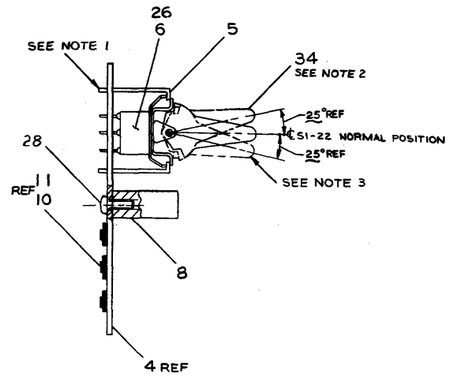
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONSOLE ASSY (PDP 1105)

SIZE	CODE	NUMBER	REV.
D	UA	KY11-J-0	F

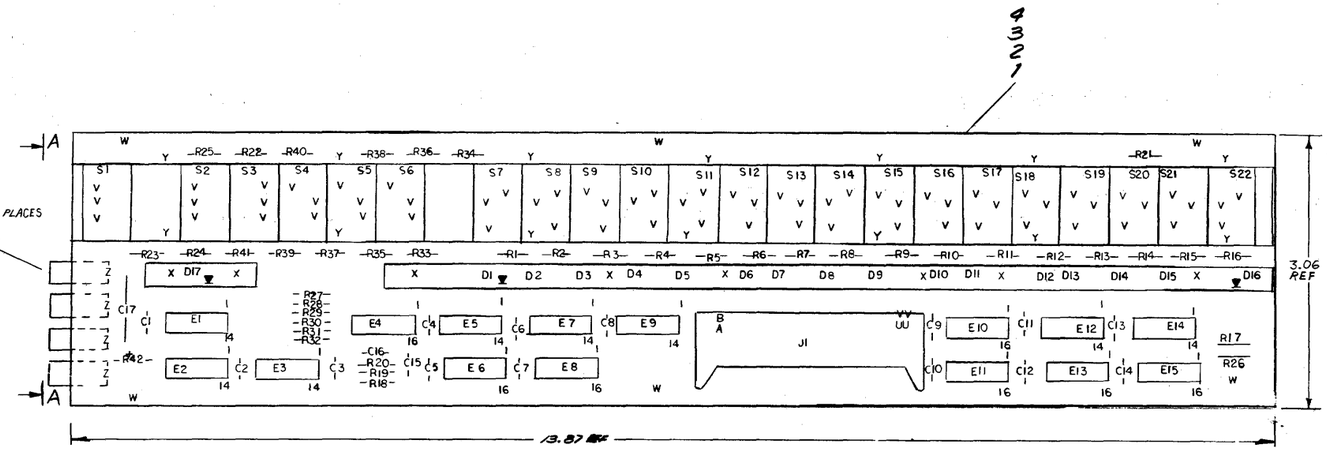
DIST.

DEC FORM NO DRD 100



VIEW A-A

NOTES:
1. ATTACH SWITCH BRACKET (ITEM #2) TO ETCH BOARD (ITEM #9) BY TURNING THRU 1/4 TURN ON SWITCH BRACKET USING TWISTING TOOL # B-MD-7606203 (14 PLACES)
2. ASSEMBLE S2, 3, 4, 5 & 6 AS SHOWN.
3. ASSEMBLE S1 & S7 THRU S22 AS SHOWN.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
ETCH BOARD REV	D			
1		ETCH BOARD	D-PS-1210786-0-0	22
1		POLY-DRIVE TYPE F 4-90-516	9009236	8
5	S1,S2,S4,S5,S6	SWITCHES, MOMENTARY	1210841	5
1	E3	IC. DEC 7417	1909929	1
1	E4	IC. DEC 74123	1910936	1
2	E6, E8	IC. DEC 74193	1910018	2
6	E9, E12, E14, E2, E1, E2	IC. DEC 7416	1909928	6
1	E5,	IC. DEC 7409	1909686	1
4	E10, E11, E13, E15	I.C. DEC 8271	1909615	4
2	RP7-R20	RES. 22Ω 1/4W 5%	1305396	2
1	R-216 R29	RES. 180 OHM 5%	1301322	1
17	R1-R15, R22, R40, R38, R36, R34	RES. 1K 1/4W 5%	1300565	17
6	R17-R32	RES. 47 1/4W 5%	1300202	6
14	C1-C14	CAP. .01 MF 100V 20%	1000	14
1	C17	CAP 6.8 MF 35V 20%	1000067	1
2	C15, C16	CAP. 100 PF 1KV 5%	1000016	2
17	D1-D17	DIODE, LIGHT EMITTING (RED)	1110	17
9		EMPLOT "ESS-9 STIMPSON	9007887	9
9		AMPHENOL 748	9007112	9
3		HDR HOLDER (BLK)	1210795-2	3
1		SINGLE C.S.D. HOLDER (BLK)	1210848-2	1
1	J1	CONNECTOR	1203941	1
17	S7-S22, S3	SWITCHES TOGGLE	1210840	17
1		SUPPORT SWITCHES	D-MS-9907170-2-0	1
1		ETCH CIRCUIT BOARD	D-EB-5907765-0-0	1
REF		ARTWORK ECO HISTORY	D-AW-5907766-0-0	REF
REF		CIRCUIT SCHEMATIC	D-CS-5907766-0-1	REF
REF		X-Y COORDINATE HOLE LOCATION	XCD-5907766-0-0	1

E IA 5409766-0-0 B

DEC 74123	8	16
DEC 74193	8	16
DEC 8271	8	16
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

ITEM NO.	AWG	FROM PT	TO PT

JUMPER LIST

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

SEMICONDUCTOR CONVERSION CHART

REV	DESCRIPTION	DATE	APPROVED
A	ORIGINATED	7-25-72	
B	CHANGE NO. 5409766-0001	8-28-72	
C	CHANGE NO. 5409766-0002	9-5-72	
D	CHANGE NO. 5409766-0003	11-6-72	
E	CHANGE NO. 5409766-0004	1-3-73	

DRAWN: K. KATSINA 7-25-72
CHECKED: R. STOTTS 7-25-72
ENGINEER: E. GRAHAM 7-25-72
MFG. APPROVAL: E. HOLM 7-25-72

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

	DATE	APPROVED
DRAWN	7-25-72	
CHECKED	8-10-72	
ENGINEER	8-10-72	
MFG. APPROVAL	8-16-72	

TITLE: ETCH BOARD ASSY. (1105 CONSOLE)

NEXT HIGHER ASSY: D-UA-KY11-0-0
SCALE: 2/1
SHEET 1 OF 1
SIZE: E
NUMBER: IA 5409766-0-0
REV: E

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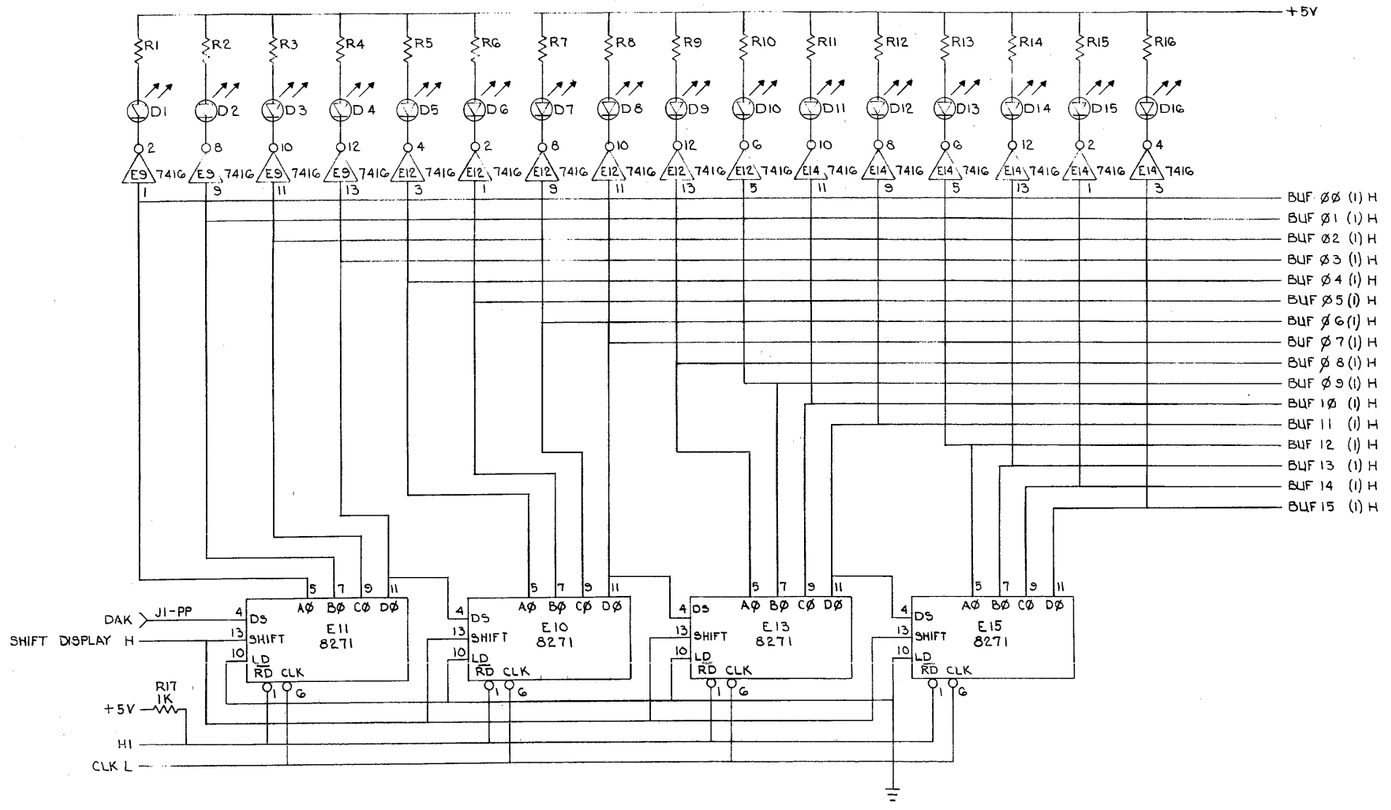
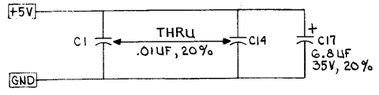


UNLESS OTHERWISE INDICATED:
RESISTORS= 1/4W, 5%
CAPACITORS= 100V, 5%
DIODES ARE LIGHT EMITTING
PIN 14=+5V, PIN7=GND ON DEC 7404, 7416, 7417
PIN 16=+5V, PIN8=GND ON DEC 8271, 74123, 74193



REV	REVISIONS	CHK	CHANGE NO.
B			5409766-00001
C			5409766-00002+2A
D			5409766-00003
E			5409766-00004

G. Graham 11-6-72 G. GRAHAM
R. Krishna 11-25-72 R. KRISHNA
G. Graham 7-5-72 G. Graham R. KRISHNA
R. Krishna 8-11-72 R. KRISHNA
R. Krishna 9-4-72 R. KRISHNA
L. Marineau 9-4-72 L. Marineau
B. J. Tarbell 3-12-73 B. J. Tarbell

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV D

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

SEMICONDUCTOR CONVERSION CHART

DRN. Roger J. Doucette DATE 18 JAN 72
CHK'D. G. Graham DATE 20 JAN 72
ENG. R. Krishna DATE 2-10-72
PROJ. ENG. R. Krishna DATE 2-10-72
PROD. R. K. Peterson DATE 2-10-72
NEXT HIGHER ASSY E-IA-5409766-0-0
SCALE
SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE 11/05 CONSOLE

SIZE D | CODE CS | NUMBER 5409766-0-1 | REV. E
DIST.

SIZE D | CODE CS | NUMBER 5409766-0-1 | REV E

DEC FORM NO. DRD-135

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J1
E KEY LOAD ADRS (1) L
H KEY EXAM (1) L
K KEY CONT (1) L
M KEY HLT ENB (1) L
P KEY START (1) L
S KEY DEP (1) L

+5V

R27 47
R28 47
R29 47
R30 47
R31 47
R32 47

R33 1K
R34 1K
R35 1K
R36 1K
R37 1K
R38 1K
R39 1K
R40 1K
R41 1K
R22 1K
R23 1K
R25 1K

LOAD ADDRESS S6 DOWN UP
EXAMINE S5 DOWN UP
CONTINUE S4 DOWN UP
HALT S3 DOWN UP
START S2 DOWN UP
DEPOSIT S1 UP DOWN

7416 7417

R42 1K

PANEL LOCK

7416 7404

PUP L

RUN J1-C

7404 7416

DIT

R24 +5V

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV D

REV	CHANGE NO.	CHK	DEC NO.	EIA NO.	DEC NO.	EIA NO.

REVISIONS

SEMICONDUCTOR CONVERSION CHART

DRN. Roger J Duquette DATE 15 JAN 72
CHK'D. [illegible] DATE 20 JAN 72
ENG. [illegible] DATE 7[illegible]
PROJ. ENG. [illegible] DATE 2-10-72
PROD. R.F. Peterson DATE 2-10-72
NEXT HIGHER ASSY E-IA-5409566-0-0
SCALE
SHEET 2 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE 11/05 CONSOLE

SIZE D | CODE CS | NUMBER 5409766-0-1 | REV. E
DIST.

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J1

BB SW 15 (1) H
DD SW 14 (1) H
FF SW 13 (1) H
JJ SW 12 (1) H
LL SW 11 (1) H
NN SW 10 (1) H
RR SW 09 (1) H
TT SW 08 (1) H
J SW 07 (1) H
L SW 06 (1) H
N SW 05 (1) H
R SW 04 (1) H
T SW 03 (1) H
V SW 02 (1) H
X SW 01 (1) H
Z SW 00 (1) H

+5V
R21
1K

S22 S21 S20 S19 S18 S17 S16 S15 S14 S13 S12 S11 S10 S9 S8 S7

J1

HH SCAN ADRS 01 (1) L
KK SCAN ADRS 02 (1) L
MM SCAN ADRS 04 (1) L
SS SCAN ADRS 08 (1) L

E5 7404 (1→2, 13→12, 11→10, 9→8)

E7 7416 (11→10, 13→12, 9→8, 1→2)

SHIFT DISPLAY H

R26
1K
+5V

PUP-L
J1-CC

E4 74123 (1Q 13, 2Q 5)
R18 1K
R19 27K
R20 27K
C15 100PF
C16 100PF

+5V
HI

E6 74193 (UP CNT 5, DN CNT 4, LD 11, CLEAR 14, QA 3, QB 2, QC 6, QD 7, 12)
E8 74193 (UP CNT 5, DN CNT 4, LD 11, CLEAR 14, QA 3, QB 2, QC 6, QD 7)

CLK L

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV D

REV	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. Roger V. Doucette DATE 20 Jan 72
CHK'D. [illegible] DATE 20 Jan 72
ENG. [illegible] DATE 2-10-72
PROJ. ENG. [illegible] DATE 2-10-72
PROD. [illegible] DATE 2-10-72
NEXT HIGHER ASSY E-IA-5409766-0-0
SCALE
SHEET 3 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE 11/05 CONSOLE

SIZE D | CODE CS | NUMBER 5409766-0-1 | REV. E | DIST.

DEC FORM NO DRD-135

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

	SEQUENCE
MODULE UTILIZATION	D_MU_MM11_L_1
BLOCK DIAGRAM	D_BD_MM11_L 2
TIMING DIAGRAM	D_TD_MM11_L_3
* MEMORY DRIVERS	E_SC_G231_0_1
* CONTROL & DATA LOOPS	E_CS_G110_0_1
STACK SCHEMATIC	E_CS_H213_0_1
STACK SCHEMATIC	E_CS_H214_0_1
BLOCK DIAGRAM	D-BD-MMII-S-2
4K MEMORY	A-PL-MMII-K-0
8K MEMORY	A-PL-MMII-L-0

SEQUENCE

MFG. PRINT SET
MFG. TEST PRO. FOR MMII/K,L,M,S&SP
A-SP-MMII-L-5

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET TYPE
VARIATION	TITLE	MM11_L
MM11_K	4K 16 BIT 18 MIL MEMORY	X
MM11_L	8K 16 BIT 18 MIL MEMORY	X

* SPECIAL REVISION PRINTS ARE AVAILABLE ON "C" ETCH REV. MODULES.
CARE SHOULD BE TAKEN TO INSURE THAT PROPER PRINTS ARE ORDERED.

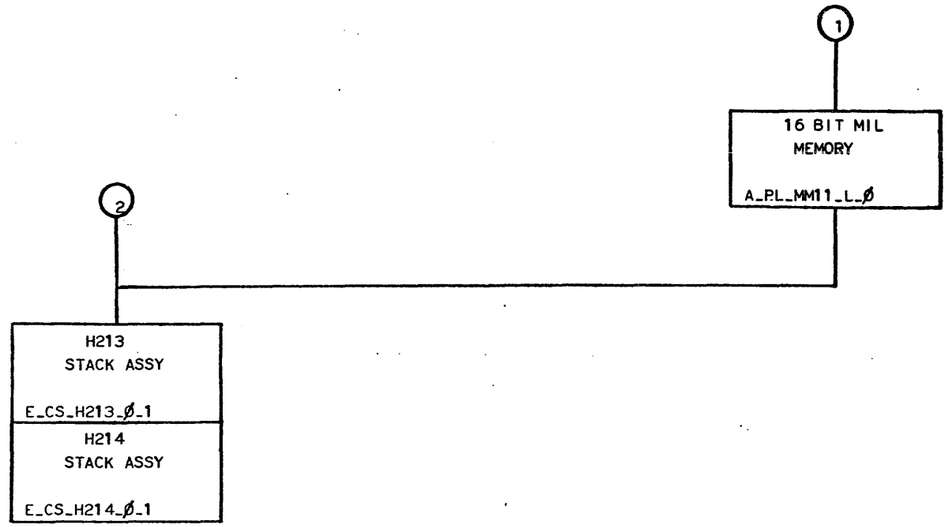
REVISIONS	DATE	CHG. NO.	REV
	9/72	MMIIL-00001	A
	11-72	MMIIL00002	B
	1-73	MISC-00107	C

USED ON OPTION/MODEL
MM11_K
MM11_L

DRN. J. Balaghi	DATE 1-25-72	TITLE
CHK'D. J. Barbato	DATE 1-25-72	
PROJ ENG. P Durant	DATE 1-25-72	
PROD. R K Peters	DATE 1-26-72	SIZE B / CODE DD / NUMBER MM11_L / REV C
FIELD SERV. W A Finnerty	DATE 1-27-72	
SHEET 1 OF 3		DIST

DRB 106

DEC 16-(325) 1002 -1-N871



TITLE		SIZE	CODE	NUMBER	REV
16 BIT 18 MIL MEMORY	SHEET 2 OF 3	B	DD	MM11_L	C

ELECTRICAL

CUSTOMER PRINT SET MM11_L						SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X							1	D_MU_MM11_L_1	*	1	MODULE UTILIZATION	
X								D_BD_MM11_L_2	*	1	BLOCK DIAGRAM	
X								D_TD_MM11_L_3	*	1	TIMING DiAGRAM	
X								E_CS_G231_Ø_1	E4	5	MEMORY DRIVER	
X								E_CS_G11Ø_Ø_1	E5	5	CONTROL & DATA LOOPS	
X								D-BD-MMII-S-2	#	2	BLOCK DIAGRAM	
X								A-PL-MMII-K-O		1	4K MEMORY	
X								A-PL-MMII-L-O		1	8K MEMORY	
X							2	E_CS_H213_Ø_1	#	2	STACK SCHEMATIC	
X								E_CS_H214_Ø_1	#	2	STACK SCHEMATIC	
								A-SP-G109-0-8		1	G109,G110 CONT & DATA LOOP MFG. SPEC.	
								A-SP-G231-0-8		1	MEMORY DRIVER MFG. SPEC.	
								A-SP-MMII-L-4		1	MMII-K,-L,-S &-SP MFG. TEST SPEC.	
						X		A-SP-MMII-L-5		29	MFG. TEST PRO. MMII/K,L,M,S & SP	

MECHANICAL

CUSTOMER PRINT SET MM11_L						SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
							1	A_PL_MM11_L_Ø	*	1	MEMORY	
								A_PS_3010654_0_0			PURCHASE SPEC	
							2	B_DD_H214_Ø_1	#	2	STACK SCHEMATIC	
								B_DD_H213_Ø	#	2	STACK SCHEMATIC	
								A-PL_G645_Ø-Ø		1	STACK BOARD	

TITLE		SIZE	CODE	NUMBER	REV
16 BIT 18 MIL MEMORY	SHEET 3 OF 3	B	DD	MM11_L	C

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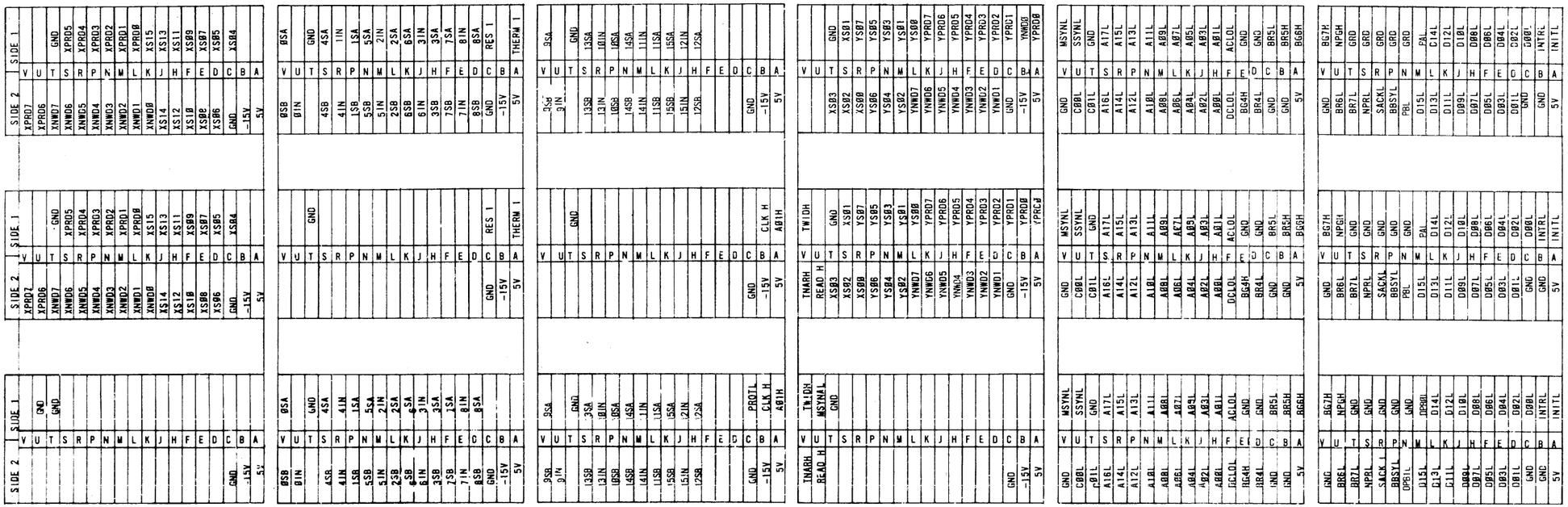
PIN SIDE VIEW OF BACKPLANE

THESE 2 SLOTS ARE UNIBUS WIRED ON ALL 3 CONNECTORS



FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
MMII-L		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	Slater	DATE 1/26/72
CHK'D	Wiggs	DATE
ENG		DATE
PROJ ENG		DATE
PROD	K. Peters	DATE 1/26/72

NEXT HIGHER ASSY: B-DD-MMIIL

SCALE —

SHEET —

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION

SIZE D | CODE | NUMBER: MUMMII-L-1 | REV

DIST

REV	CHANGE NO	REVISIONS

REGISTERED 40 522 15840

SIZE FORM NO. BD 102-B

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NOTES:
*1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.
**2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.
***3. ACTUAL MATRIX HAS { Y AXIS 8PRD, 8NRD, 8SS
X AXIS 4K 8PRD, 8NRD, 8SS
X AXIS 8K 8PRD, 8NRD, 16SS

UNIBUS

BUS A0L

BUS INITL
BUS DCLO L
BUS DATA(0-15) L
BUS C0L, C1L
BUS MSYNL
BUS SSYNL
BUS A1L, A14L
BUS A15L, 16L, 17L

BUS A2,3,4,5,6,7, 8,9,10,11,12,13

BUS DCLOL

G110 CONTROL & DATA LOOPS MODULE

BYTE MASKING

16 DATA LOOPS

STROBE 0 & 1H
RESET 0 & 1 L
LOAD 0 & 1 H

DATA FF
INHIBIT DRIVER
SENSE AMP
BUS DRIVER

TIMING CHAIN
MODE CONTROLS
BUS RECEIVERS
DEVICE SELECTOR
INTERLEAVE CONTROL

TINH H
DATAOUT H
DATA H

I0H
CLK H
TWR H
TWID H
READ H

BUS RECEIVERS
ADDRESS LATCHES
FIRST LEVEL DECODE

ADDRESS BITS USED	CKTS	
A02, 03 I0H	YPRD 0-7 YNWD 0-7	YDR0-7
A04,5,6	YSS 0-7	YSS 0-7
A07,8,9	XPRD 0-7 XNWD 0-7	XDR 0-7
A10,11,12,13	XSS 0-15 0-7 FOR 4K	XSS 0-15

ADDRESS
TDR
TSS
READ-WRITE

STACK DISCHARGE CKT — READ=GND WRITE=-15

X & Y CURRENT GENERATOR (XIG, YIG)

DC LO CKT

(-15 V SERIES TRANSISTOR) V REF CKT

CURRENT CONTROL & TEMPERATURE COMPENSATION

G231 DRIVER MODULE

H213, 214 MEMORY STACK
4 OR 8K X 16 BIT

I — 16 CKTS
SA
SB

4096 CORES FOR 4K
8192 CORES FOR 8K
} PER BIT

X-Y DIODE MATRICES * *
X DRIVE LINES
Y DRIVE LINES

PRD0
NWD0
PRD1
NWD1

SS0
SS1
SS2
SS3

***

R1
THERMISTER RESISTOR
RT1

REVISIONS			
REV.	CHANGE NO	CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO
MM11-L		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. L. Carberry DATE 11/10/71
CHK'D. [illegible] DATE
ENG. P.Dumont DATE -25-71
PROJ. ENG. P.Dumont DATE -25-71
PROD. W.K. Peterson DATE 11-26-71

digital EQUIPMENT CORPORATION

TITLE: BLOCK DIAGRAM
MM11-L

NEXT HIGHER ASSY. B-DD-MM11-L
SCALE
SHEET OF

SIZE D | CODE DBD | NUMBER MM11-L-2 | REV.
DIST.

FORM NO. 102-B

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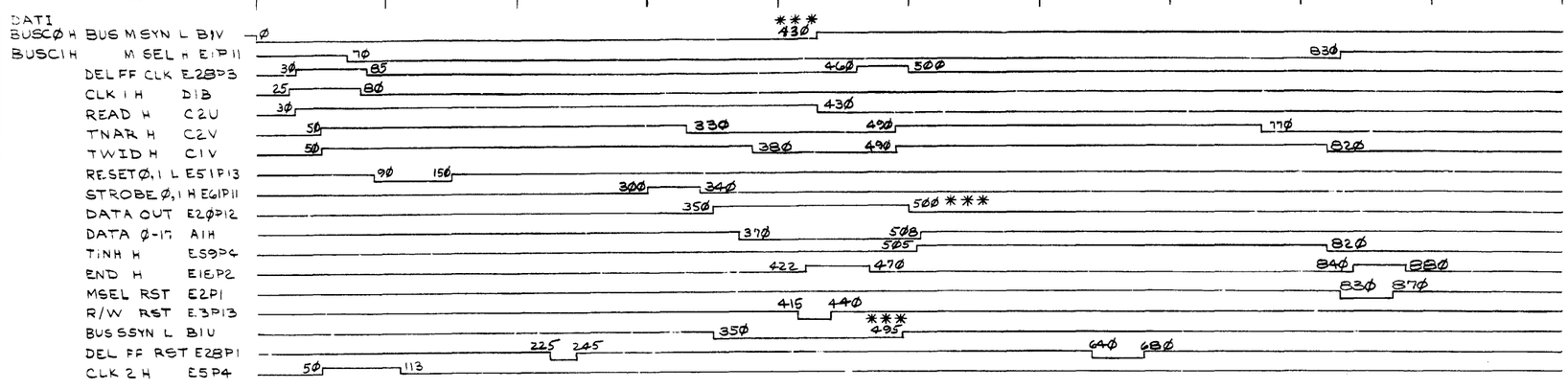
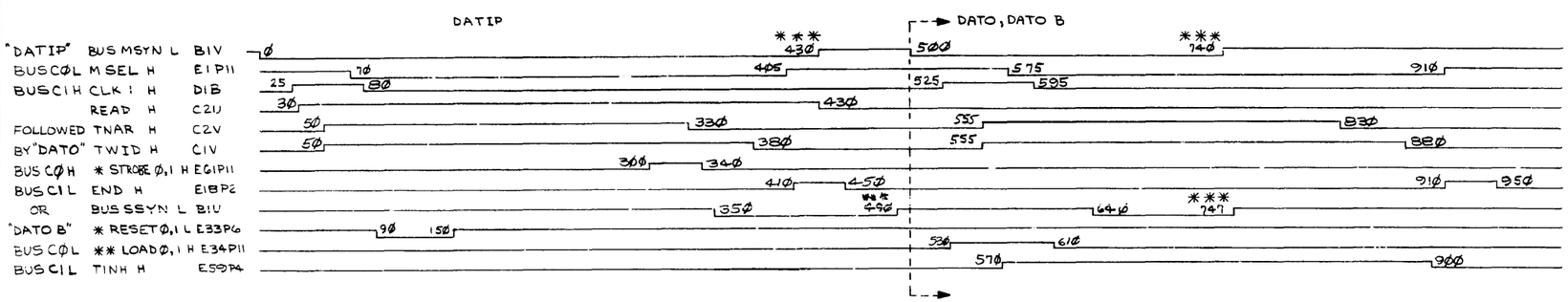
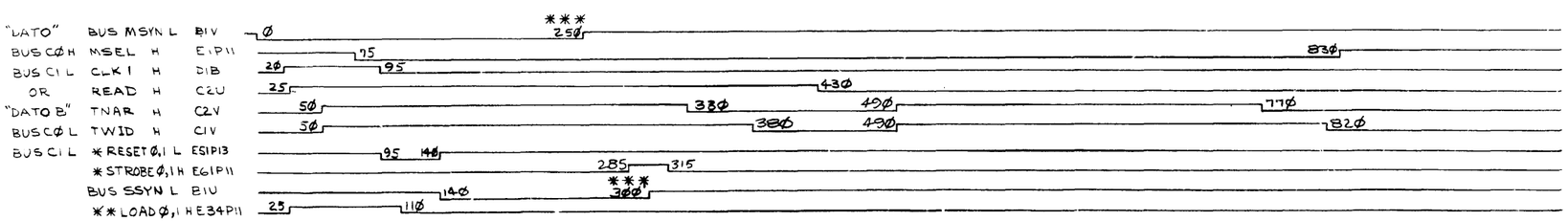
NOTES:
1. ANY SIGNALS NOT SHOWN ON DATIP, DATO OR DATO B ARE AS SHOWN ON DATI TIMING.
* 2. RESET L AND STROBE H DO NOT OCCUR IN DATO MODE. THEY ONLY OCCUR FOR THE BYTE NOT BEING ADDRESSED IN DATO B MODE.
** 3. LOAD H OCCURS FOR BOTH BYTES IN DATO MODE AND ONLY FOR THE ADDRESSED BYTE IN THE DATO B MODE.
*** 4. ACTUAL TIME DEPENDS ON BUS AND PROCESSOR DELAYS.

5. ALL SIGNALS ON G109 OR G110 MODULE







FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
MMII-L		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 5 MAX. EQUALLY ✓
MATERIAL
FINISH

DRN [illegible] DATE 2-3-72
CHK [illegible] DATE 2-22-72
ENG [illegible] DATE 2-25-72
PROJ ENG [illegible] DATE 2-25-72
PROD. [illegible] DATE 2-29-72

NEXT HIGHER ASSY: B DD MMII L

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING DIAGRAM
(MMII-L, MMII-K)

SIZE D | CODE TD | NUMBER MMII-L-3 | REV

SCALE
SHEET OF
DIST

REVISIONS: REV | CHANGE NO | CHK

BRUNING 40-522 (5841)

SIZE D CODE TD NUMBER MMII-L-3 REV

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 150Ω ¼W 5% AND ALL CAPACITORS ARE 680 PF 100V 5%.
2. J5 & J6 SHOULD BE 1.5 INCH OF INSULATED LOOP
3. THIS PRINT IS FOR C REV ETCH MODULES ONLY

TYP POLARITY FOR ALL DIODES ON BOARD EXCEPT WHERE SHOWN DIFFERENT

VIEW A-A

0	W1, 2	3/8" STANDOFF	9008213	59
0		NYLON SCREWS	9008212	58
AR		WAKEFIELD COMPOUND	9008268	57
1	C58	CAP. 470 PF 100V 5%	1000024	56
3	W3-5	STANDOFF 1/4" O.D. 7/16 LG 4-40TH	9009306	55
3		SCREW NYLON 3/8" LG 4-40TH	9006401-04	54
80	R11-24, R37-52, 61-76 R123-138, R158-173	RES 100Ω ¼W 5%	1300229	53
				52
1	C56	CAP. 680 PF 100V 5%	1000026	51
4		INSULATING FILM 2.5" × 6.00" COIL TAPE	9008493	50
12		EYELET #454-7 2.8 STIMPSON	9008732	49
1		HANDLE	1210711	48
82		SPLIT LUGS	9006735	47
8		HEAT SINK	202913	46
7	E11-E14, E18, E18, E28	IC 74174	1909667	45
1	E8	IC 74104	1909931	44
10	E3, E8, E23, E28, E31, E34 L37, L48, L43, L46	IC 8251	1909584	43
3	E2, E4, E27	IC 74H08	1909056	42
2	E22, E25	IC 74H10	1909057	41
20	T1-T20	TRANSFORMER	1609996	40
4	E8, E15, E16, E17	IC DEC 350	1909485	39
20	E1, E5, E7, E10, E21, E24 E26, E29, E30, E32, E33 E35, E36, E38, E39, E41 E42, E44, E45, E47	IC 4008 QUAD TRANSISTOR	1510015	38
4	Q9, Q10, Q12, Q15	TRANSISTOR 2N3762	1509649	37
3	Q8, Q8, Q11	TRANSISTOR 2N4258	1505321	36
1	Q1	TRANSISTOR 8536 B	1507408	35
1	Q5	TRANSISTOR 3899 B	1503100	34
3	Q2, Q3, Q7	TRANSISTOR 1868	1502155	33
1	Q4	TRANSISTOR 2218	1501881	32
4	R85, R86, R183, R184	RES 18.0 KΩ 1%	1310932	31
1	R82	RES 12.1K 1/8W 1%	1302682	30
1	R81	RES 909 7.8Ω 1%	1302685	29
2	R88, R94	RES 147 1/2W 1%	1302874	28
2	R89, R185	RES 2K ¼W 5%	1302387	27
4	R9, R18, R180, R141	RES 680 ¼W 5%	1301624	26
1	R83	RES 750 ¼W 5%	1301681	25
4	R27, R36, R138, R148	RES 5.1 ¼W 5%	1309422	24
1	R87	RES 15K ¼W 5%	1300498	23
1	R174	RES 18K ¼W 5%	1300479	22
1	R85	RES 2.2K ¼W 5%	1300417	21
4	R87, R88, R181, R182	RES 1.5K ¼W 5%	1306594	20
2	R76, R96	RES 47Ω ¼W 10%	1300311	19
3	R84, R99, R188	RES 1.5K ¼W 5%	1300391	18
1	R93	RES 47Ω ¼W 5%	1309315	17
A/R		WIRE JUMPER AWG #18 STRANDED (BLACK)	9107360-0	16
2	R78, R80	RES 330 ¼W 5%	1300295	15
41	R1-R8, R28-R35 R53-R60, R96 R107-R114 R142-R149	RES 150 ¼W 5%	1300250	14
2	R77, R81	RES 100 ¼W 5%	1300229	13
1	D56	DIODE 1N823 ZENER	1105500	12
25	D17-D18, D56, D60, D61, D64-D67, D101-D116	DIODE D872	1105275	11
88	D1-D16, D19-D54, D56, D57 D58, D62, D63, D65-D99	DIODE D884	1180114	10
8	C1-C5, C48	CAP 6.8 MFD 35V 20%	1000067	9
36	C8-C29, C46, C47, C48, C50, C53, C54, C74, C107, C108, C125, C126, C58	CAP 22nF 50V -20% BOS	1818274	8
80	C30-C45, C51, C52, C57-C73, C75-C106, C109-C124	CAP 1000 PF 100V 5% DM	1000042	7
A/R		WIRE JUMPER AWG #22 SOLID	9107560-01	6
3	C51, C55	CAP 39nF 100V 5% DM	1000818	5
1		ETCHED CIRCUIT BOARD	5089789	4
REF		MODULE ECO HISTORY	B-BM-G231-BD	3
REF		ASSY/DRILLING HOLE LAYOUT	C-BM-G231-BD	2
REF		X-Y COORDINATE HOLE LOCATION	X-CD-G231-BD	1
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	

IC TYPE	GND	+5V
8800 ARE BY ARE NORMALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE SHOWN ABOVE		
E1-E20		J1-A, J1-B
E21-E40		J2-A, J2-B
E41-E60		J3-A, J3-B
E61-E80		J4-A, J4-B
E81-E100		J5-A, J5-B
E101-E120		J6-A, J6-B

IC PIN LOCATIONS

JUMPER LIST			
FROM	WIRE	TO	
E121 PT	#26	E122 PT	
E123 PT	#26	E124 PT	
E125 PT	#26	E126 PT	
E127 PT	#26	E128 PT	
E129 PT	#26	E130 PT	
E131 PT	#26	E132 PT	
E133 PT	#26	E134 PT	
E135 PT	#26	E136 PT	
E137 PT	#26	E138 PT	
E139 PT	#26	E140 PT	

2N2368	GAME				
6536D	NONE				
3689-B	2N3644				
22.19	2N2219				
IN 823	NONE				
DG72	IN 3653				
DG64	IN 3686	1008	NONE		
DEC NO.	EIA NO.	2N3762	GAME		
SEMICONDUCTOR CONVERSION CHART		DEC NO.	EIA NO.		

ETCH BOARD REV			
MMU-L			
B-DD-MMU-L			
SCALE 2/1	SHEET 1 OF 5		

EQUIPMENT CORPORATION.

PDP-11 MEMORY DRIVER (MDI)

ECS G231-0-1 E4

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BUS A10 L BN2 4 — E16 380 — 3
BUS A11 L BN1 7 — E16 380 — 2
BUS A09 L BM1 7 — E15 380 — 2
BUS A08 L BM2 4 — E15 380 — 3
BUS A07 L BL1 9 — E15 380 — 14
BUS A03 L BJ1 12 — E17 380 — 13
BUS A02 L BJ2 9 — E17 380 — 14

CDL2 A01H — DA1

E9 380 — 3 — 2

10K R174 ✱✱ +5V — J3 — J4 — BUSA13 L BP1

MD2 A10H — E18 74H74 — 1
MD2 A11H — E18 74H74 — 13
MD2 A09H — E19 74H74 — 1
MD2 A09L — E19 74H74 — 13
MD2 A08H — E20 74H74 — 1
MD2 A07H — E13 74H74 — 13
MD2 A03H — E13 74H74 — 1
MD2 A03L — E13 74H74 — 13
MD2 A02H — E4 74H74 — 1
MD2 A01H — E11 74H74 — 1

DB1 — CDL2 CLK ↑ H

BUSA06 L BL2 12 — E15 380 — 13
BUS A12 L BP2 7 — E17 380 — 2
BUS A05 L BK1 12 — E16 380 — 13
BUS A04 L BK2 9 — E16 380 — 14

MD2 A05H — E14 74H74 — 1
MD2 A04H — E12 74H74 — 1

E9 380 SPARE — 14
E9 380 SPARE — 13
E2 74H00 SPARE — 8

WRITE H — E4 74H04 — 11
TWIDH
CDL2 READ H — CV2 — E6 74H04 — 8
E4 74H04 — 6
E4 74H04 — 3 — TSSH
CDL2 TNAR H — CV2 — E4 74H04 — 8
TNAR H

T.P.3

E22 74H10 — 12 — MD2 Y S1L
E22 74H10 — 8 — MD2 Y S0L
E22 74H10 — 6 — MD2 X S3L
E25 74H10 — 12 — MD2 X S2L
E25 74H10 — 8 — MD2 X S1L
E25 74H10 — 6 — MD2 X S0L

✱✱

	J3	J4
4K	IN	OUT
8K	OUT	IN

✱✱✱ ALL INPUTS ARE FROM UNIBUS (BUS xxxL) OR G10 9 OR G11 0

✱✱✱ CDL2 TWID H — CV1 — E2 74H00 — 6
CDL2 READ H — CV2 — 5
CDL2 TNAR H — CV2 — 2
WRITE H — 1
E2 74H00 — 3
E2 74H00 — 12 — 13 — 11 — MD2 TDR H
T.P.2

✱ THIS CIRCUIT IS ON STACK BOARD

+5V
100Ω R77 — 330Ω R78 — 470Ω R79
DS1 — Q1 GS34 — 1000B Q2 — STACK DISCHARGE
330Ω R80 — DS2 — DS3 — DS4 — DS5 — DS6 — DS7
100Ω RB1 — Q3 1000B
C59 .22uF
300Ω — 196Ω ✱ — EC1 — EA1 — VREF
BUS DCL0L BF2L — R96 150Ω — Q5 3000B
6.2V DS8 — C48 .22uF — R94 147Ω — R95 2.2K — Q4 2219 — C49 6.8 uF
C47 .22uF — R90 147Ω — R91 909Ω — J31 — R92 1.78K — J2 — R93 470Ω
R97 1.5K — R98 470Ω — DS9 — Q6 4258 — R99 1.5K — Q7 1000B
-15V — X-Y REFFERENCE SUPPLY — C50 .22uF

CDL2 TWIDH — CV1 — E6 74H04 — 6
E6 74H04 — 4
+5V
750Ω R83 — 1.5K R84 — Q8 4258 — C51 39 pF
470 pF C52 — R85 16.9Ω — R86 16.9Ω — Q9 — Q10 3762 — TP4
CURRENT LOOP — J5 — TO READ DRIVERS & WRITE SWITCHES
R87 1.5K — R88 1.5K — D60 — R89 2K — D61
CUT ETCH FORECO#5 — -15V
.22 uF C54
D62 — .22 uF C53 — D63 — C56 680 PF
1.5K R100 — Q11 4258 — C55 39 pF
R101 1.5K — R102 1.5K
R103 16.9Ω — R104 16.9Ω — Q12 — Q13 3762
CURRENT LOOP — J6 — X AXIS TO READ DRIVERS & WRITE SWITCHES
D64 — R105 2K — D65 — -15V
CUT ETCH FORECO#5

T.P.1
CDL2 READ H — CV2 — E6 74H04 — 13 — 12 — READ L
E6 74H04 — 11 — 10

REVISIONS | REV | CHANGE NO | CNR

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	REV NO
		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 SLIGHTLY
MATERIAL
FINISH

DRN — DATE 9-24-71
CHKD — DATE
ENG — DATE
PROJ ENG — DATE
PROD — DATE 3-72
NEXT ASSY USED ON
SCALE — SHEET 3

DIGITAL EQUIPMENT CORPORATION
TITLE: PDP-8 MEMORY DRIVER
DRAWING NUMBER: D CS G231-0-1 E4

DEC FORM 140 DRD 197-8

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FROM CURRENT LOOP MD2 IX — D18 — 680Ω R10 — +5V READ SWITCHES — WRITE SWITCHES

MD2 XS3L — MD2 A11H — MD2 A10H — E46 8251 D1 D2 D3 D0

T16 T15 T14 T13 — R28 R29 R30 R31 R32 R33 R34 R35 — 150

FK1 XS15 — FJ2 XS14 — FJ1 XS13 — FH2 XS12 — FH1 XS11 — FF2 XS10 — FF1 XS09 — FE2 XS08

MD2 XS2L — MD2 A11H — MD2 A10H — E37 8251 D1 D2 D3 D0

MD2 STACK DISCHARGE

5.1Ω R36 — -15V — C74 .22 uF

MD2 XS1L — MD2 A11H — MD2 A10H — E34 8251 D1 D2 D3 D0

T12 T11 T10 T09 — R53 R54 R55 R56 R57 R58 R59 R60 — 150

READ SWITCHES — WRITE SWITCHES

FE1 XS07 — FD2 XS06 — FD1 XS05 — FC1 XS04 — CT2 XS03 — CS2 XS02 — CS1 XS01 — CR2 XS00

MD2 X S0L — MD2 A11H — MD2 A10H — E31 8251 D1 D2 D3 D0

+5V

MD2 READ L

ALL INPUTS FROM G231 SHEET 2 (MD2)
ALL OUTPUTS GO TO MEMORY STACK

FROM CURRENT LOOP MD2 IX — DG6 — R106 680Ω — +5V

MD2A09H — MD2TDRH — MD2A08H — MD2A07H — E27 74H00 — E46 8251 D1 D2 D3 D0

T19 T20 — R123 R124 R125 R126 R127 R128 R129 R130 R131 R132 R133 R134 R135 R136 R137 R138 — 150

WRITE DRIVERS — READ DRIVERS

D672

-15V — FL2 XPRD7 — FT2 XNWD7 — FU2 XPRD6 — FS2 XNWD6 — FS1 XPRD5 — FR2 XNWD5 — FZ1 XPRD4 — FP2 XNWD4 — +5V — FP1 XPRD3 — FN2 XNWD3 — FN1 XPRD2 — FM2 XNWD2 — FM1 XPRD1 — FL2 XNWD1 — FL1 XPRD0 — FK2 XNWD0

51Ω R139 — -15 — C107 .22uf

NOTES:
1. UNLESS SPECIFIED ALL RESISTORS ARE 100Ω, 1/4W, 5% AND ALL CAPACITORS ARE 1000 PF, 100V, 5% ALL TRANSFORMERS ARE 16-09996 ALL DIODES ARE D664 ALL IC'S ARE 4008
2. D101-108 REPLACED R115-122, IN ECO# 3
3. ECO#6 DID THE FOLLOWING:
R37-52, 61-76, 123-138 CHANGED FROM: 150Ω TO: 100Ω
C57, 58, 60-73, 75-106 CHANGED FROM: 680PF TO: 1000PF
T09-20 CHANGED FROM: 16-09651 TO: 16-09996.

REVISIONS		
REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO
		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 Z Cooling 10-1-71 — CHK'D — ENG. PDelmat 1-25-72 — PROJ ENG. F Dalvoort 1-25-72 — PROD R K Peterson 1-26-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PDP-11 MEMORY DRIVER (MD3)

NEXT HIGHER ASSY

SIZE	CODE	NUMBER	REV
D	CS	G231-0-1	E4

SCALE — SHEET 3 OF 5 — DIST

DEC FORM NO LARD 107-B

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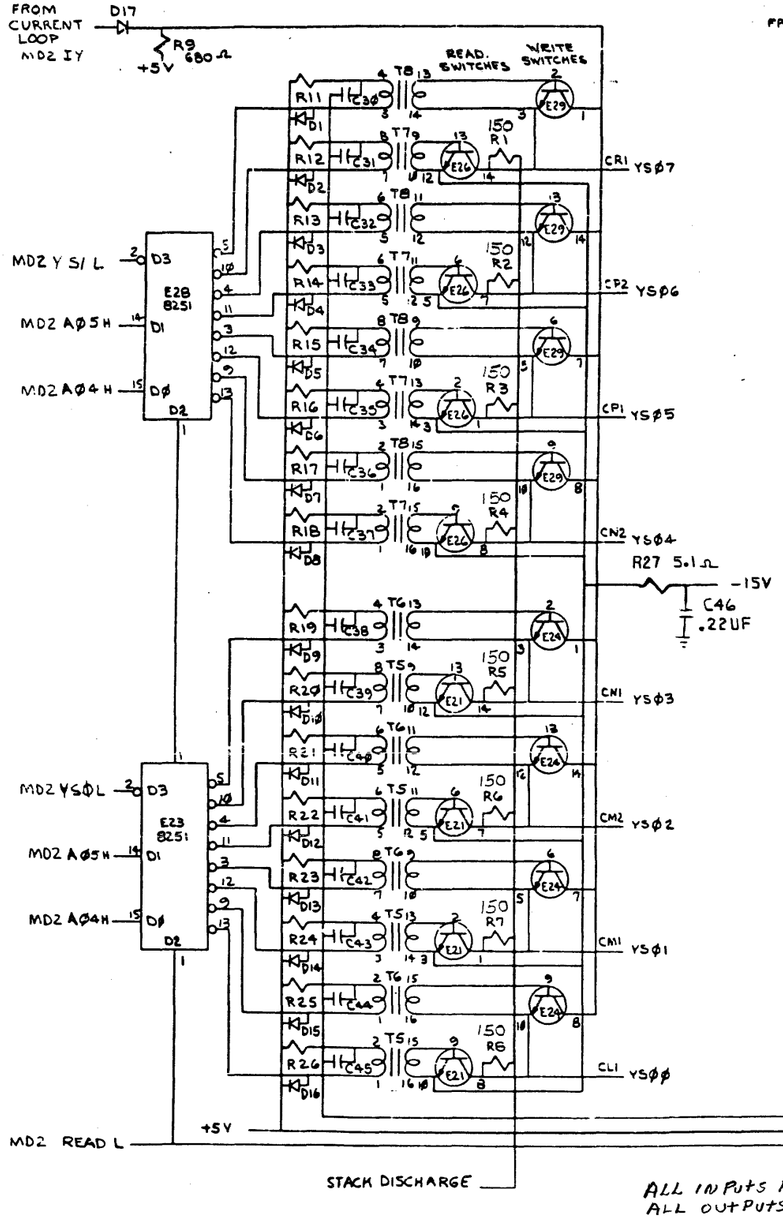

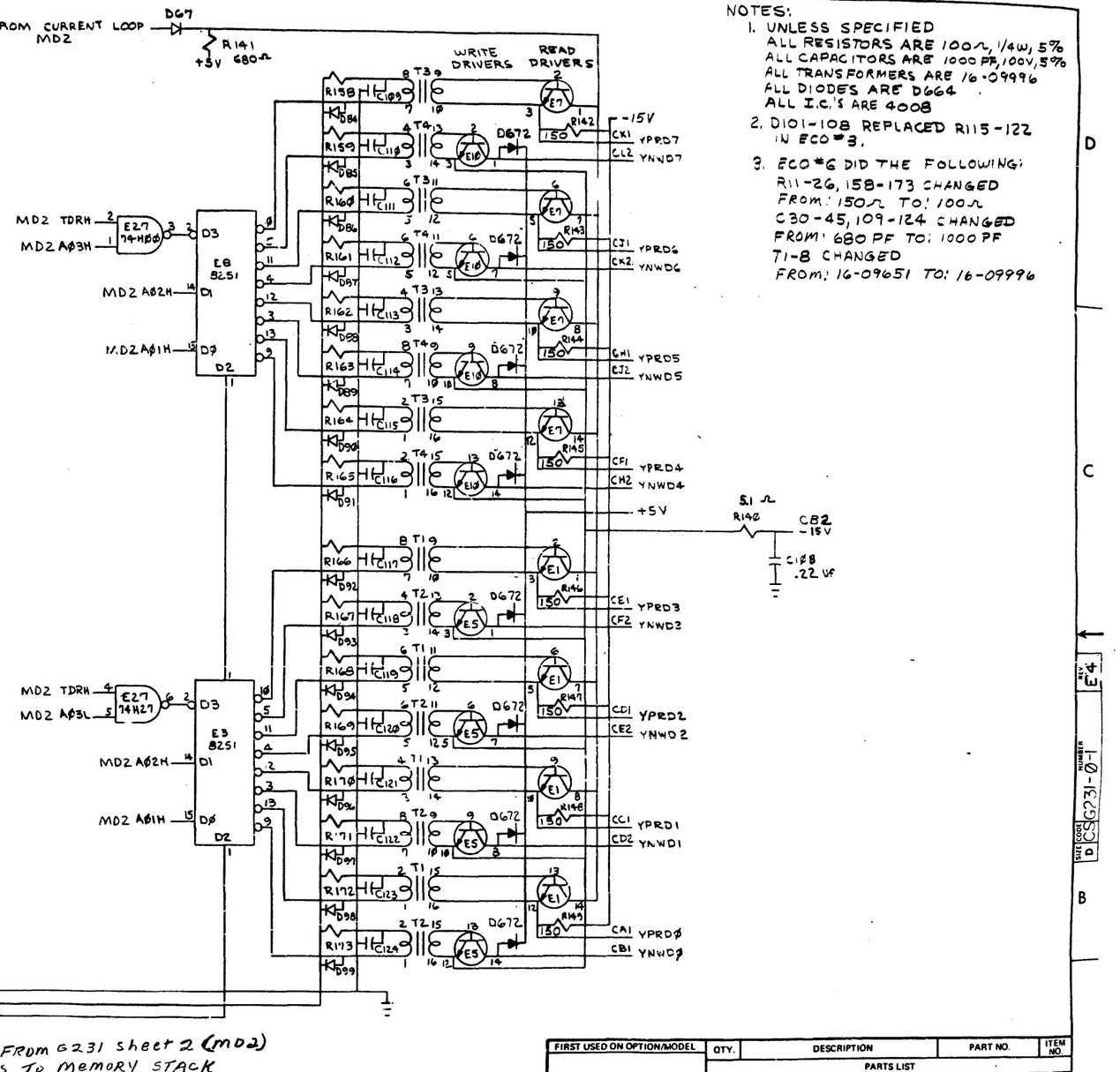

NOTES:
1. UNLESS SPECIFIED
   ALL RESISTORS ARE 100Ω, 1/4W, 5%
   ALL CAPACITORS ARE 1000 PF, 100V, 5%
   ALL TRANSFORMERS ARE 16-09996
   ALL DIODES ARE D664
   ALL I.C.'S ARE 4008
2. D101-108 REPLACED R115-122 IN ECO #3.
3. ECO #6 DID THE FOLLOWING:
   R11-26, 158-173 CHANGED FROM: 150Ω TO: 100Ω
   C30-45, 109-124 CHANGED FROM: 680 PF TO: 1000 PF
   T1-8 CHANGED FROM: 16-09651 TO: 16-09996

ALL INPUTS FROM G231 sheet 2 (MD2)
ALL OUTPUTS TO MEMORY STACK

REVISIONS	CHANGE NO	CHK
REV		

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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	P. Carberry	DATE 10/5/71
CHK'D	J. Zelezny	DATE 1-21-72
ENG	P. Duvauchelle	DATE 1-25-72
PROJ. ENG.	P.D. Duvauchelle	DATE 1-25-72
PROD.	Ron Peterson	DATE 1-26-72

NEXT HIGHER ASSY.
SCALE —
SHEET 4 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PDP-11 MEMORY DRIVER (MD4)

SIZE	CODE	NUMBER	REV
D	CS	G231-Ø-1	E4

DIST.

DEC FORM NO 11RD 102-B

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ECO MODULE REFERENCE

ECO NO.	SUMMARY OF ECO (NOTE: MODULE WAS RELEASED AT C.S. REV B)	PRINT CHANGE LOCATIONS	MODULE STAMPED REVISION	CIRCUIT SCHEMATIC REVISION	ECO REQUIREMENTS 1	2	3	4	5	6	7	8	9
1	ADD (2) STAND-OFFS	STAND-OFFS GLUED ON WITH ECCO BOND	C	C	□								
2	DID NOT EFFECT "C" REV ETCH MODULES				*	*							
3	REMOVE 16-150Ω RESISTORS, ADD 16-D672 DIODES (D101-116)	SEE SHEETS 3&4 AREA 1-D	E	C1	□	*	□						
4	DID NOT EFFECT "C" REV ETCH MODULES				*	*	*	*					
5	FIXED DCLO 3-ETCH CUTS, 3 JUMPERS	SEE SHEET 2 AREA 2-B	E1	1	□	*	□	*	□				
6	IF ECO #6 IS NOT INSTALLED REF TABLE BELOW QTY 20 — REF DESIGNATION: T1-20 — DESCRIPTION: TRANSFORMER — PART NO.: 1909651 — ITEM: 40 QTY 80 — REF DESIGNATION: R11-26, 37-52, 61-76, 123-138, 158-173 — DESCRIPTION: 150Ω RES. — PART NO.: 1300250 — ITEM: 53 QTY 80 — REF DESIGNATION: C30-45, 57, 60-73, 58, 75-106, 109-124 — DESCRIPTION: 680PF CAP. — PART NO.: 1000026 — ITEM: 7	SEE SHEET 3&4 AREA 1-C	E2	2	□	*	□	*	□	□			
7	DRILL BOARDS IN BOARD FABRICATION TO INSTALL NEW STAND-OFFS WITH SCREWS GENERATE CORRECT PRINTS HANDLE STAMPED E — C.S. PRINT REQUIRED C1 HANDLE STAMPED E1 — C.S. PRINT REQUIRED 1 HANDLE STAMPED E2 — C.S. PRINT REQUIRED 2	SEE SHEET 1 AREA 2-F	3	3	*	*	□	*	□	*	□		
8	CHANGE VALUE OF C52 FROM: 680 PF TO: 470PF	SEE SHEET 2 AREA 2-C	3A	3A	△	*	□	*	□	*	△	□	
9	GENERATE A PRINT THAT SHOWS ECO STATUS AND UPDATE PRINTS TO DEC STANDARDS	PRINT CHANGE ONLY	E4	E4	△	*	□	*	□	*	△	□	□

NOTES:

1. THIS PRINT IS FOR "C" REV ETCH MODULES ONLY.
2. THIS CHART IS DESIGNED TO ALLOW THIS G231 CIRCUIT SCHEMATIC TO BE USED WITH ALL PREVIOUS REVISION MODULES
3. TABLE IS USED AS FOLLOWS:
   - A. LOCATE REVISION LETTER STAMPED ON THE HANDLE.
   - B. FOLLOW THE MODULE STAMPED REVISION COLUMN TO FIND APPROPRIATE REV.
   - C. NOTICE SYMBOLS TO RIGHT OF REVISION LETTER, THESE SYMBOLS WILL INDICATE ECO REQUIREMENTS FOR THAT MODULE.
4. SYMBOLS:
   - □ = REQUIRED
   - △ = ONE OR THE OTHER IS REQUIRED
   - * = NOT REQUIRED

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS .XX = .02 .X = .1 ANGLES REMOVE BURRS AND BREAK SHARP CORNERS	12/14/72 DATE	digital EQUIPMENT CORPORATION	
MATERIAL	NEXT HIGHER ASSY	TITLE: PDP-11 MEMORY DRIVER (MD5)	
FINISH	SCALE NONE SHEET 5 OF 5	SIZE D DWG NUMBER CS G231-0-1	REV E4

E4 CS G231-0-1

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS WILL BE 82Ω ½W 5% AND ALL CAPACITORS WILL BE 120 PF 100V 5% DM
2. NOTE POLARITY OF 3.9UF CAPS.
3. THIS PRINT IS FOR C REV ETCH MODULES ONLY.

58 REF

5 REF

DL 1

VIEW A-A

4		SPREW NYLON #4-40X3/16"	9006901-0467	F
4	S1-S6	1/4"X7/16 L-#4-40STHRWARD	9009306	60
AR	TECCO BOND-26	USE AS NEEDED	N/A	59
16	R37-R52	RES 2K 1/16W 5%	1302388	64
1	DL1	DELAY LINE D-1000	1409579	63
2	R116, R118	RES 220 1/4W 5%	1300477	62
AR		WIRE, JUMPER #30 BARE STRD SILVER	1700029	61
27		SOLLT LUGS	9004135	60
				59
1		HANDLE ASSY	1210711	58
1	E33	IC DEC 74H40	1905586	57
1	E27	IC DEC 74H18	1909053	56
1	E30	IC DEC 7475	1909058	55
1	E8	IC DEC 7400	1911935	54
1	E1	IC DEC 74H55	1909083	53
1	E28	IC DEC 7402	1909084	52
1	E36	IC DEC 74121	1910230	51
2	E13,E24	IC DEC 8242	1909712	50
7	E41, E47, E53, E58, E16 E34,E38	IC DEC 7437	1910091	49
1	E32	IC DEC 74H11	1909287	48
1	E18	IC DEC 74H53	1909082	47
9	E40, E43, E46, E49, E52, E55, E58, E61	IC DEC 7520	1911687	46
6	E35, E44, E56 E58, E62, E15	IC DEC 74H04	1909931	45
11	E39, E42, E45 E51, E54, E57 E60, E63, E3, E9, E48	IC DEC 74H74	1909667	44
8	E10-E22, E5	IC DEC 74H51-1	1909849	43
8	E6 THRU 12 E23, E7, E29	IC DEC 7320	1911898	42
3	E17, E25, E31	IC DEC 7486	1909575	41
4	E4, E8, E8, E18	8 TAP 5.72 QUAD LINE	1409996	40
4	E3, E6, E7, E10	9TAP 137677	1438478-1	39
2	E2, E28	IC DEC 7474	1905547	38
1	DL1	DELAY LINE DL5183	1409579	37
1	DL2	DELAY LINE DL5184	1409578	36
16	R1 THRU R16	RES 2KΩ 1/4W 5%	1438788	35
1	R29	RES 510Ω 1/4W 5%	1438788	34
1	R18	RES 2KΩ 1/4W 5%	1438788	33
1	R30	RES 3KΩ 1/4W 5%	1438788	32
7	R107 THRU R112, R120	RES 4.7K 1/4W 5%	1300441	31
2	R105, R106	RES 100Ω 1/4W 5%	1300232	30
1	R103	RES 220Ω 1/4W 5%	1300269	29
14	R93 THRU R80	RES 13.8 1/8W 1%	1318832-8-1	28
32	R1 THRU R32	RES 75 1.0W 1%	1303864	27
1	R124	RES 316 1/4W 1%	1301872	26
1	R102	RES 348Ω 1/4W 1%	1301886	25
4	R54, R58, R60, R61	RES 619Ω 1/8W 1%	1304324	24
3	R123, R122, R115	RES 1K 1/4W 1%	1300385	23
3	R113, R100, R101	RES 200Ω 1/4W 1%	1300390	22
2	C90, C91	CAP 5.6MMF 500V 10% S.TANT	1002246	21
1	R117	RES 100Ω 1/4W 5%	1300220	20
16	R83 THRU R98	RES 82Ω 1/4W 5%	1301781	19
4	R55, R57, R59, R62	RES 19.6 1/8W 1%	1303880	18
1	R119	RES 5.45K 1/8W 1%	1303047	17
1	R120	RES 5K TRIMPOT	1301845-09	16
1	D13	DIODE 1N5142	1105873	15
48	D1 THRU D32, D33 THRU D48	DIODE 1N752	1105275	14
16	D33 THRU D48	DIODE, ZENER	1108118	13
29	C90, C102 THRU C105 C120 THRU C124, C126 THRU C128, C130 THRU C134, C136 THRU C139, C141 THRU C144, C146 THRU C149	CAP .01 MF 100V 20% DISC	10-01010	12
28	CAPACITORS C143 C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87	CAP .22 MF 50V 20% CERAM	1010274	11
16	C88 THRU C103	CAP .001 FUF 100V 20% STAND	1101762	10
16	C67 THRU C82	CAP 1000PF 100V 5% DISC	10-00847	9
8	C21 C23 C25 C30 C32 C34 C36, C45	CAP 120 PF 100V 5% DM	10-00819	8
9	C-20 THRU C29	CAP 10MF 20V 10%	10-00814	7
5	C141 C139 C137 C140 C138 C31 C33, C96, C97, C98	CAP 5.6MF 20V 10% TANT	10-00305	6
17	C40 C1 THRU C16	CAP 200F 100V 5% DM	1000889	5
		CYCLET 65-8-7	9006732	4
		CHANGE PER INTERNET	E-81-619-2-1	3
		VISIT/INTELLIGENCE MACE LATEST	E-78-519-2-1	2
		E-V ENGINEERING RELEASE/LAYOUT	E-78-519-2-1	1
		ETCHED CIRCUIT BOARD	9007928	B
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	

ETCH BOARD REV C

EQUIPMENT CORPORATION

CONTROL & DATA LOOPS (CDL)

SIZE B

DRAWN P. DURANT 8-10-78
CHECKED
ENGR
MFG
APPD

DEC NO 8242
SIZE B
SCALE
SHEET

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W'S 2,3,4,5,6 PROGRAM MEMORY BANK LOCATION CUT JUMPER FOR BUS A LINE LOW (ASSERTED) WHEN BANK SELECTED. W5 MUST BE IN WHEN USED AS 8K BANK

	W5	W6
4K	IN	OUT
8K	OUT	IN

MEMORY BANK SIZE

BUS A13 L, BUS A16 L, BUS A15 L, BUS A17 L, BUS A11 L, BUS A14 L

DEVICE SELECT CIRCUIT (DSELH)

HIGH WHEN MEMORY BANK IS SELECTED

* USE INSULATED JUMPERS IN POSITIONS SHOWN BY DOTTED LINES WHEN INTERLEAVING

-5V SUPPLY

-5V TO SENSE AMPS

-15V

TP2 TP3

SPARES

BUS A00 L, BUS C00 L, BUS C01 L

PROTECT LOW

BYTE MASKING LOGIC

25NS/TAP

DELAY FF RESET

READ H

STROBE 05

MSEL RESET

TO IN DRIVERS

WRITE RESTART ONE SHOT CKT

WRITE RESTART L

LOAD 0 H

LOAD 1 H

TO DATA 7474 F.F.

AB LATCH

CD LATCH

CI LATCH

RESET 1 L

TO DATA 7474 FF

RESET 0 L

STROBE 1 H

TO SENSE AMPS (N528)

STROBE 0 H

BUS SSYN L

DATA OUT H

TO BUS DRIVERS

FIRST USED ON OPTION MODEL: MMII-L	QTY	DESCRIPTION	PART NO / ITEM NO
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES. TOLERANCES: DECIMALS .XXX ± .005, .XX ± .02, .X ± .1; ANGLES ± 1° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓

DWN J Cochran 1/5/72 — CHKD J Pabich 1/5/72 — ENG J Durant 1/5/72 — PROJ ENG J Durant 1/27/72 — PROD C.W. Pete 1/31/72

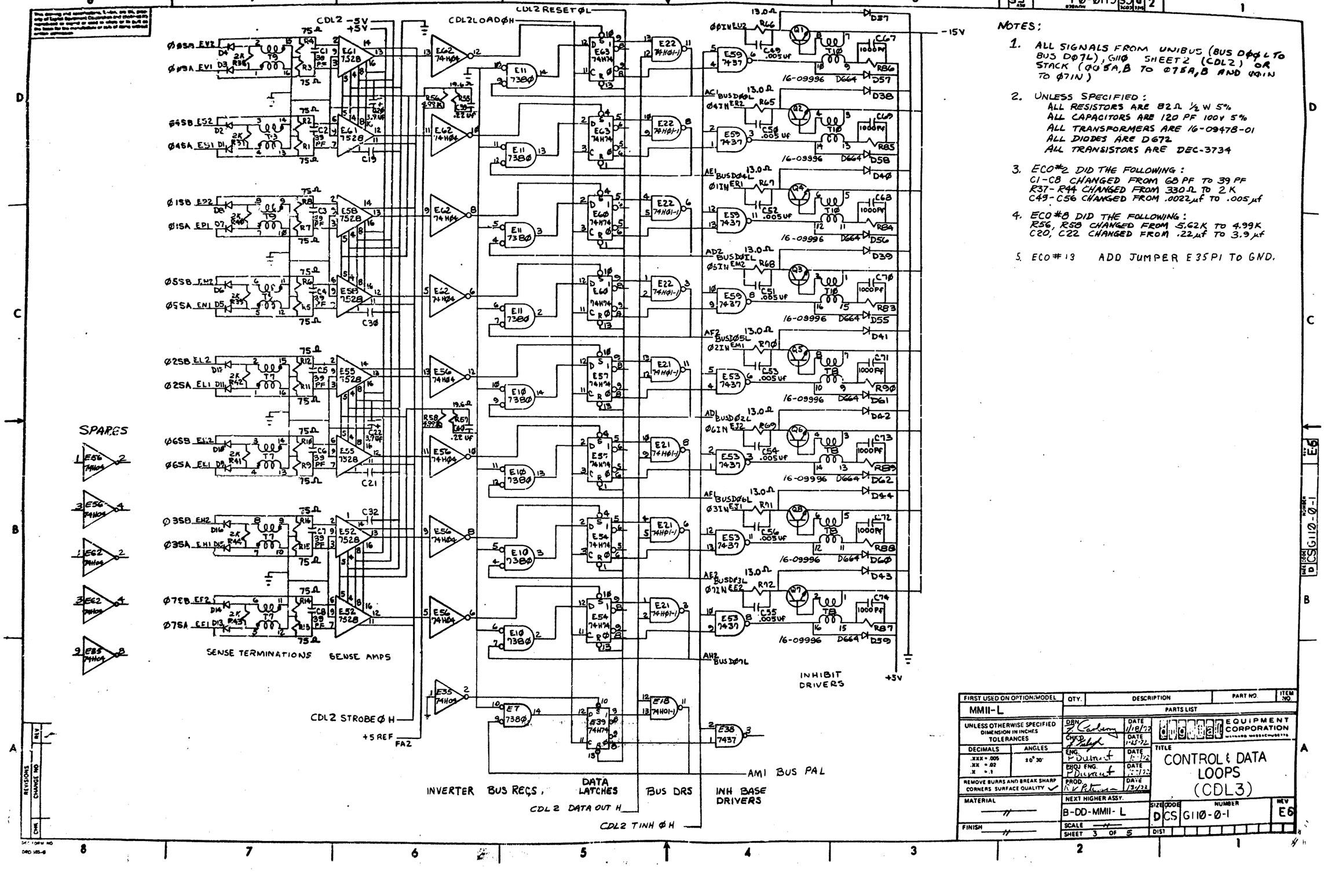
MATERIAL — FINISH — NEXT HIGHER ASSY: B-00-MMII-L — SCALE — SHEET 2 OF 5 — DIST

EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: CONTROL & DATA LOOPS (CDL 2)

SIZE D — CODE DCS — NUMBER G110-0-1 — REV E5

1-0-0110 SCS D



NOTES:

1. ALL SIGNALS FROM UNIBUS (BUS DØØL TO BUS DØ7L), G110 SHEET 2 (CDL2) OR STACK (ØØ5A,B TO Ø75A,B AND ØØIN TO Ø7IN)
2. UNLESS SPECIFIED:
   ALL RESISTORS ARE 82Ω ½W 5%
   ALL CAPACITORS ARE 120 PF 100V 5%
   ALL TRANSFORMERS ARE 16-09478-01
   ALL DIODES ARE D672
   ALL TRANSISTORS ARE DEC-3734
3. ECO#2 DID THE FOLLOWING:
   C1-C8 CHANGED FROM 68 PF TO 39 PF
   R37-R44 CHANGED FROM 330Ω TO 2K
   C49-C56 CHANGED FROM .0022μf TO .005μf
4. ECO#8 DID THE FOLLOWING:
   R56, R58 CHANGED FROM 5.62K TO 4.99K
   C20, C22 CHANGED FROM .22μf TO 3.9μf
5. ECO#13 ADD JUMPER E35P1 TO GND.

FIRST USED ON OPTION/MODEL: MMII-L	QTY.	DESCRIPTION — PARTS LIST	PART NO. / ITEM NO.
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 ✓	DRN Z Carbone 11/18/72; CHK'D [illegible] 11-25-72; ENG. P Dumont 1-1-73; PROJ ENG. P Dumont 1-1-73; PROD. K V Peterson 12/1/72	EQUIPMENT CORPORATION — DIGITAL MASSACHUSETTS	TITLE: CONTROL & DATA LOOPS (CDL3)
MATERIAL: //	NEXT HIGHER ASSY. B-DD-MMII-L	SIZE D; CODE DCS; NUMBER G110-0-1	REV E6
FINISH: //	SCALE: //	SHEET 3 OF 5	DIST

REVISIONS — REV / CHANGE NO / CHK

DRD 165-B

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CDL2 -5V +5V

CDL2LOAD1H

CDL2RESET1L

-15V

+5V

ØBSB ED2 D28 2K R46 T5 R18 75Ω E49 7528 C9 39 PF

ØBSA ED1 D19 R19 75Ω

ØBIN EF1 13.0Ω R74 Q9 T6 C57 .005 uf C98 1000PF R94 D45 16-09996 DGG4 D65

ØBSB DV2 D18 2K R45 T5 R18 75Ω E49 7528 C16 39 PF

ØBSA DV1 D17 R17 75Ω C23

AH1 BUSDØBL DV2 9IN 13.0Ω R73 Q10 T6 C58 .005 uf C97 1000PF R93 D46 16-09996 DGG4 D66

13SB DS2 D24 2K R48 T5 R24 75Ω E46 7528 C11 39 PF

13SA DS1 D23 R23 75Ω

AJ2 BUSD13L 13IN DR1 13.0Ω R75 Q12 T6 C60 .005 uf C94 1000PF R92 D48 16-09996 DGG4 D64 D47

1ØSB DP2 D22 2K R47 T5 R22 75Ω E46 7528 C12 39 PF

1ØSA DP1 D21 R21 75Ω C34

AJ1 BUSD10L 1ØIN DP1 13.0Ω R76 Q11 T6 C59 .005 uf C98 1000PF R91 D49 16-09996 DGG4 D63

14SB DN2 D28 2K R50 T3 R26 75Ω E43 7528 C13 33 PF

14SA DN1 D27 R27 75Ω

AL1 BUSD14L 11IN DN1 13.0Ω R77 Q14 T4 CL2 .005 UF C79 1000PF R97 D50 16-09996 DGG4 D70 D52

11SB DL2 D26 2K R49 T3 R26 75Ω E43 7528 C14 33 PF

11SA DL1 D25 R25 75Ω C25

AK2 BUSD15L 15IN DP2 13.0Ω R79 Q16 T4 CL4 .005 UF C80 1000PF R96 D68 16-09996 DGG4 D51

15SB DK2 D32 2K R52 T3 R31 75Ω E40 7528 C15 33 PF

15SA DK1 D31 R31 75Ω C36

AM2 BUSD12L 12IN DS1 13.0Ω R80 Q15 T4 CL3 .005 UF C83 1000PF R95 D69 16-09996 DGG4 D67 +5V

12SB DH2 D30 2K R51 T3 R29 75Ω E40 7528 C14 33 PF

12SA DH1 D29 R29 75Ω

AE BUSD12L

SPARES

E44 74H04 2

3 E44 74H04 4

1 E50 74H06 2

3 E50 74H06 4

SENSE TERMINATIONS

SENSE AMPS

INH DRIVERS

CDL2 STROBE1H

+SREF

FAZ

E38 74H04 12

E7 7380 13

E37 7357 6

AN2 BUS PBL

INVERTERS

BUS RECS

DATA LATCH

BUS DRS

INH BASE DRIVERS

CDL2 DATA OUT H

CDL2 INH 1H

E9 7380 13

E8 7380 13

E7 7380 13

E6 7380 13

E5 7380 13

E4 7380 13

E3 7380 13

E2 7380 13

E51 74H74

E50 74H74

E49 74H74

E48 74H74

E47 74H74

E46 74H74

E45 74H74

E42 74H74

E39 74H74

E20 74H01-1

E19 74H01-1

E18 74H01-1

E41 7437

E38 7437

NOTES :

1. ALL SIGNALS FROM UNIBUS (BUS DOBL-DISL) G110 SHEET 2 (CDL2) OR STACK (08SA,B TO 15SA,B AND ØBIN TO 15 IN)
2. UNLESS SPECIFIED :
   ALL RESISTORS ARE 82Ω ½W 5%
   ALL DIODES ARE DG72
   ALL CAPACITORS ARE 120 PF 100V 5%
   ALL TRANSFORMERS ARE 16-09478-01
   ALL TRANSISTORS ARE DEC-3734
3. ECO #2 DID THE FOLLOWING :
   C9-C16 CHANGED FROM 68 PF TO 39 PF.
   R45-R52 CHANGED FROM 330Ω TO 2K
   C57-C64 CHANGED FROM .0022 µf TO .005 µf
4. ECO #8 DID THE FOLLOWING :
   R60, R61 CHANGED FROM 5.62K TO 4.99 K
   C24, C26 CHANGED FROM .22 µf TO 3.9 µf
5. ECO #13 ADD JUMER E35P13 TO GND.

CAUTION

REVISIONS	REV	CHANGE NO	DWN

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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES . TOLERANCES DECIMALS .XXX = ±.010 .XX = ±.02 .X = ±.1 ANGLES ±0° 30' REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓ MATERIAL FINISH

	NAME	DATE
Drawn	F. Cabral	11/4/72
Chkd	J. Ralph	12-12-72
Engr		
Engr Ldr		
Prod Engr	R. J. Peterson	1-30-73

EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL & DATA LOOPS (CDL 4)

NEXT HIGHER ASSY: B-DD-MMII-L

SIZE D | CODE CS | NUMBER G110-0-1 | REV EB

SCALE — SHEET 4 OF 5 | DIST

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E.C.O. MODULE REFERENCE

ECO. NUMBER	SUMMARY OF E.C.O	PRINT CHANGE LOCATION	MODULE STAMPED REVISION	CIRCUIT SCHEM. REVISION	E.C.O. REQUIREMENTS 1	2	3	3A	4	5	6	7	8	9	9A	10	10A	11	12	13
1	CHANGE R116, R118 FROM 1K TO 220Ω. CUT ETCH FROM E2-P3 TO E5-P4 & TO E15-P4, ADD JUMPERS FROM E2-P3 TO GND, FROM E5-P4 TO E15-P4, CUT ETCH FROM E2-P4 TO E2-P2, ADD JUMPER FROM E2-P4 TO DL2-P3, CUT ETCH FROM E 26-P8 TO DL1-P10, ADD JUMPER FROM E26-P8 TO DL1-P9.		A	A	□															
2	CHANGE SENSE TERM. CAPS FROM 68 PF TO 39 PF (C1-C6, 10 PART #), CHANGE BALUN R'S'S, R37-R51 FROM 330Ω TO 1K (16 PARTS), CHANGE INH. BY PASS CAPS, C49-C64, FROM .0022 UF TO .005 UF. (16 PARTS)	SHT 3 & 4 AREA 2-C	B	B	□	□														
	CHANGE DL 3 FROM 50NS TO 100NS DELAY LINE	SH. 2 AREA 4-C																		
	CHANGE TERM. RES R115 FOR DL3 FROM 390Ω TO 3K.	SH. 2 AREA 4-C																		
3	DID NOT EFFECT C REV ETCH MODULES		—	—	*	*	*													
3A	DID NOT EFFECT C REV ETCH MODULES		—	—	*	*	*	*												
4	DL3 NOT TERMINATED PROPERLY, CHANGE R115 FROM 3K TO 1K, CUT ETCH FROM DL3 OUT TO E16-P8, CUT ETCH FROM DL3 IN TO E2-P1, ADD JUMPER FROM DL3 IN TO E16-P8, ADD JUMPER FROM DL3 OUT TO E2-P1	SHEET 2 AREA 4-C	D	D	□	□	*	*	□											
	GLUE DOWN DL2 WITH ECCO BONE	SHT 1 AREA 3-D																		
5	REVERSE C152, SO THAT + SIDE OF CAP IS TOWARDS +5V INSTALL 4-1/4 OD X 3/8 LG STAND-OFFS	SHT 1 AREA 4-E " " 2-E	E	E	□	□	*	*	□	□										
6	DID NOT EFFECT C REV ETCH MODULES				*	*	*	*	*	*	*									
7	DRILL BLANK BOARD, AND INSTALL (4) STANDOFFS & SCREWS	S.T 1 AREA 2-P	E1	E1	□	□	*	*	□	□	*	□								
8	CHANGE R56, 58, 60, 61 FROM 5.62K TO 4.99K	SHT 3 & 4 AREA 2-C	E2	E2	□	□	*	*	□	○	*	○	□							
	CHANGE C20, 22, 24, 26, 29, 31, 33, 35 FROM .22 UF TO 3.9 UF	& SHT 1 AREA 5-C																		
	CHANGE C44-47 FROM .22 UF TO .01 UF	& SHTS 3-4 AREA 2-C & SHT 1 AREA 3-C																		
9	INSTALL GND JUMPERS ON SIDE 1, CHANGE PART NO. OF #18 WIRE FROM 9107360-00 TO 1700029	SHEET 1	H	E3	□	□	*	*	□	○	*	○	□	□						
9A	RESTAMP HANDLE E-3, CHANGE PRINT FROM H TO E-3		E3	E3	□	□	*	*	□	○	*	○	□	□	□					
10	REMOVE E28, CUT ETCH FROM E28-P13 TO E28-P2 ADD E28 AND JUMPER E26-P13 TO E15-P10		J	E4	□	□	*	*	□	○	*	○	□	*	*	□				
10A	RESTAMP HANDLE E-4, CHANGE PRINT REV FROM J TO E4		E4	E4	□	□	*	*	□	○	*	○	□	*	*	□	□			
11	CANCELED	———	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	PRINT CHANGE ONLY		E5	E5	□	□	*	*	□	○	*	○	□	*	*	□	□	—	□	
13	ADD 2 JUMPERS SO THAT PAL AND PBL ARE HIGH ON THE BUS		E6	E6	□	□	*	*	□	○	*	○	□	*	*	□	□	—	□	□

NOTES:

1. THIS PRINT IS FOR 'C' REV. ETCH MODULES ONLY.
2. THIS CHART IS DESIGNED TO ALLOW THIS G110 CIRCUIT SCHEMATIC TO BE USED WITH ALL PREVIOUS REVISION MODULES
3. CHART IS USED AS FOLLOWS:
   - A. LOCATE REVISION LETTER STAMPED ON HANDLE
   - B. FOLLOW THE MODULE STAMPED COLUMN TO FIND APPROPRIATE REVISION
   - C. NOTICE SYMBOLS TO RIGHT OF REVISION LETTER, THESE SYMBOLS WILL INDICATE ECO REQUIREMENTS FOR THAT MODULE.
4. SYMBOLS:
   - □ = REQUIRED
   - Δ = ONE OR THE OTHER IS REQUIRED
   - ○ = ONE OR THE OTHER IS REQUIRED BUT (C152 MUST BE CHANGED)
   - * = NOT REQUIRED

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: 10' 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √

DRN.	L.G.	DATE 12-22-72
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL & DATA LOOPS (CDL5)

MATERIAL —/—/— FINISH —/—/—

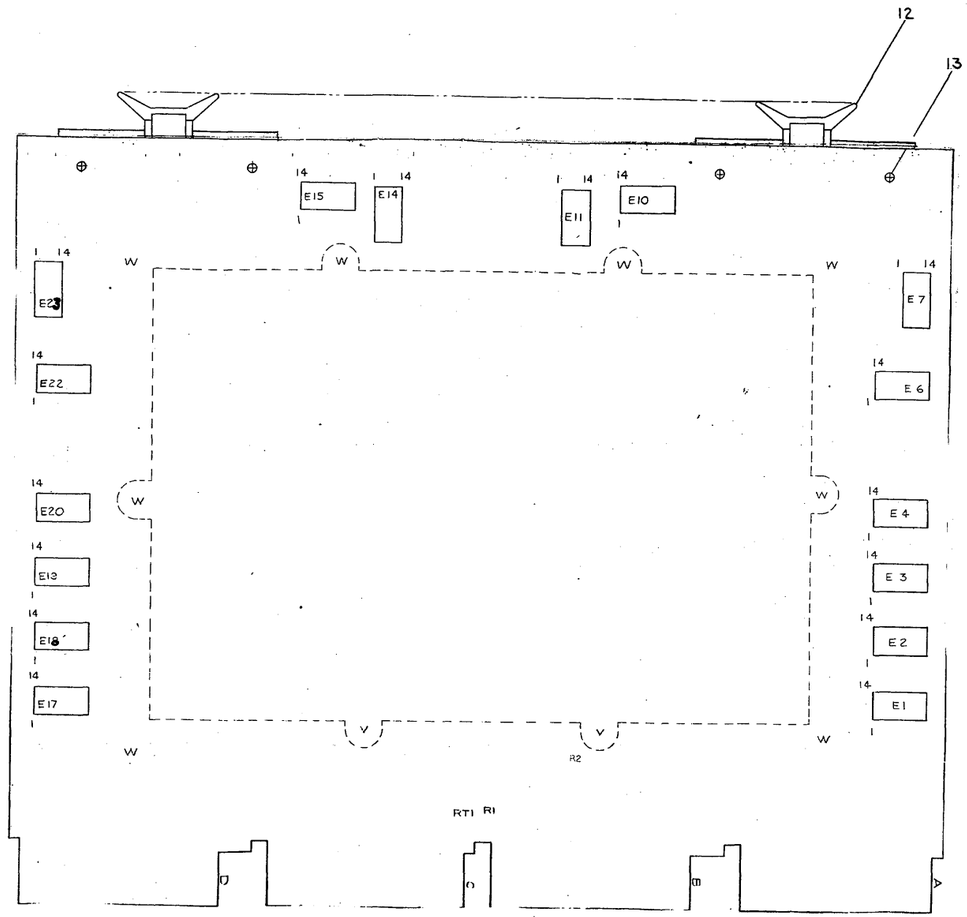
NEXT HIGHER ASSY. B-DD-MMII-L

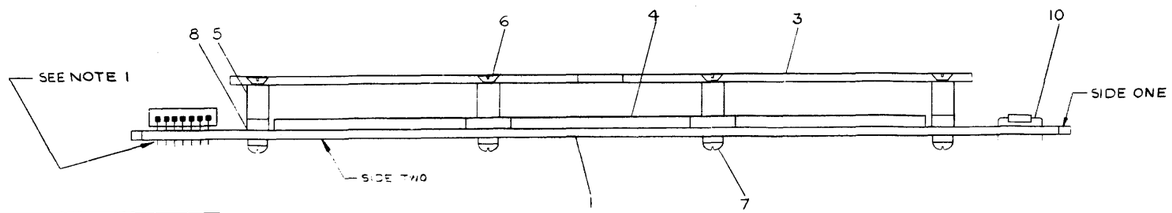
SIZE D | CODE CS | NUMBER GII0-Ø-Ø | REV. E6

SCALE NONE | SHEET 5 OF 5 | DIST.

93 Ø-Ø-ØIIØ DCS E6

NOTES:
1. ALL COMPONENT LEADS TO BE LESS THAN 1/16 INCHES LONG ON SIDE TWO OF MODULE





LEGEND	
MODULE CONN	BACK PANEL LOCATION
A	C
B	D
C	E
D	F

1	RT1	THERMISTOR 300 2%	1309785	16
1	R2	RESISTOR 5.1 1/4W 5%	309422	15
1	R1	RESISTOR 196 1/8W 1%	1302956	14
8		EYELET	9006732	13
4		HANDLE, GREEN	9008337-0-1	12
1		STICKER/DEC PART & PO NO.	VENDOR SUPP	11
2		JUMPER		10
16		4096-CORE MATS (STRUNG)		9
4		WASHER, NYLON #X1/4 (#4-40 HOLE)		8
10		SCREW, NYLON FILISTER HD #4-40X.19 LG		7
10		SCREW, F.H. NYLON #4-40x.19 LG		6
10		STANDOFF, THREADED #4-40 X DIA LG		5
1		SUBSTRATE		4
1		COVER PLATE	VENDOR SUPP	3
16	E1-E15, E17-E20, E22, E23 E1-E4, E6, E7, E10, E11	I.C. DEC 2501	21001C	
1		PLANER MEMORY BOARD	[illegible]	
QTY		DESCRIPTION	DEC NO.	ITEM NO.

PARTS LIST

IC TYPE	GND	+5V
GND AND 5V ARE NORMALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE		

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

REV	DESCRIPTION	DATE	APPROVED
A	ORIGINATED	7-10-72	P.DURANT
B	[illegible]	[illegible]	[illegible]
C	H213-00002	[illegible]	[illegible]

H213-00001

FIRST USED ON OPTIONAL

MM11-L

ETCH BOARD REV

DEC NO	EIA NO	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

[redacted] EQUIPMENT CORPORATION

TITLE

SIZE MM11-L

DWG NO H213-01-1 REV C

SCALE

SHEET 1 OF 2

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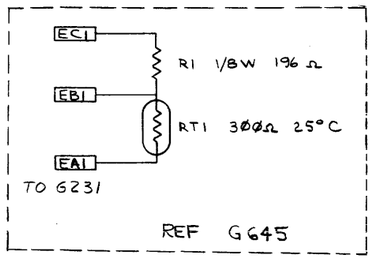
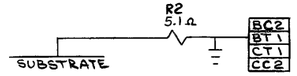
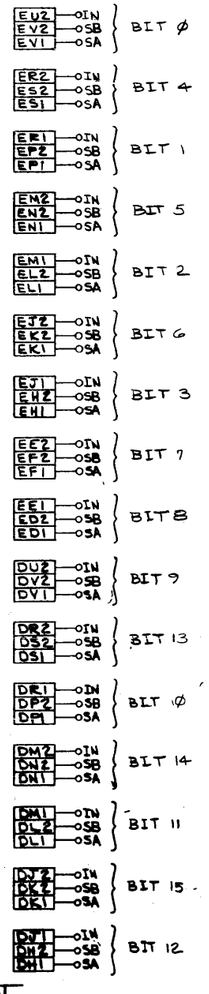
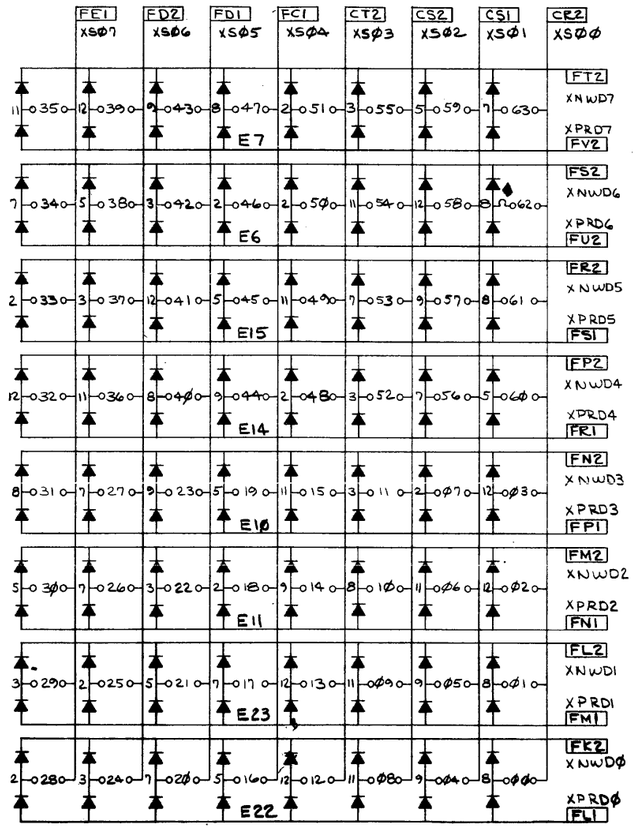
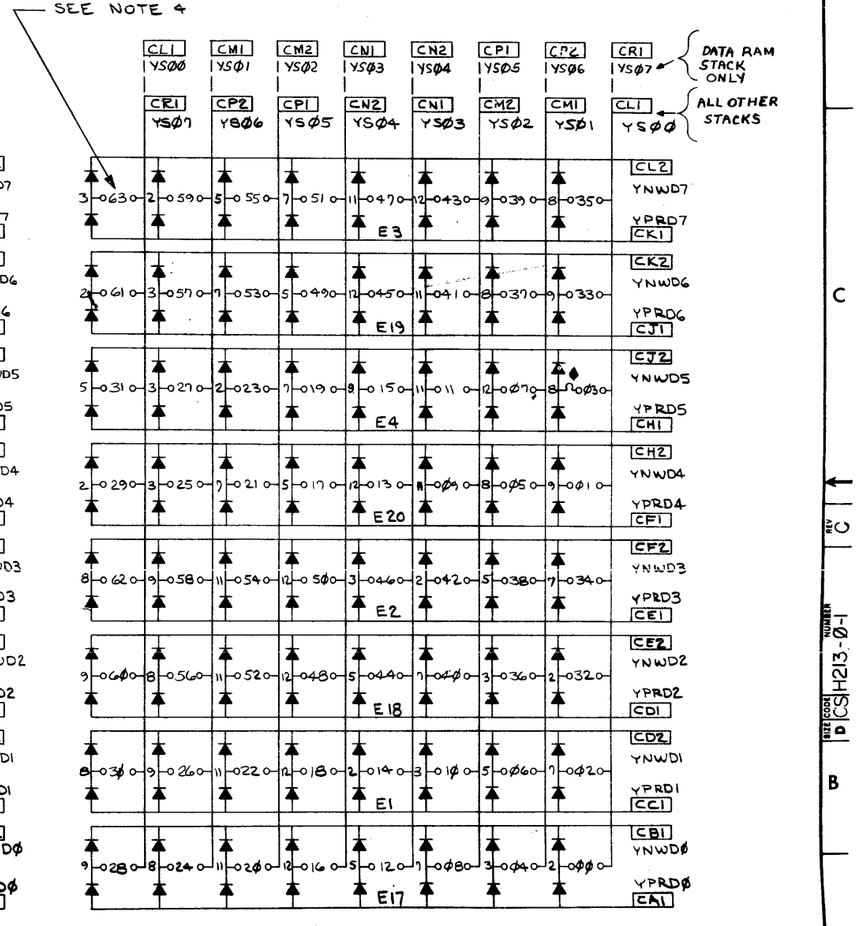




NOTES
1. UNLESS OTHERWISE SPECIFIED: IC'S ARE TO BE DEC PART # 1910010
2. INDICATES STACK LINE NUMBER. (TYP)
3. INDICATES CURRENT LOOP.
4. INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).







FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L		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 —

		DATE
DRAWN	[redacted]	12/1/71
CHK	[illegible]	1-25-72
ENGR	P.Durant	1-25-72
PROJ. ENGR.	P.Durant	1-25-72
PROJ.	[illegible]	1-26-72

EQUIPMENT CORPORATION [redacted] MASSACHUSETTS

TITLE: STACK SCHEMATIC 4K X 16 BIT

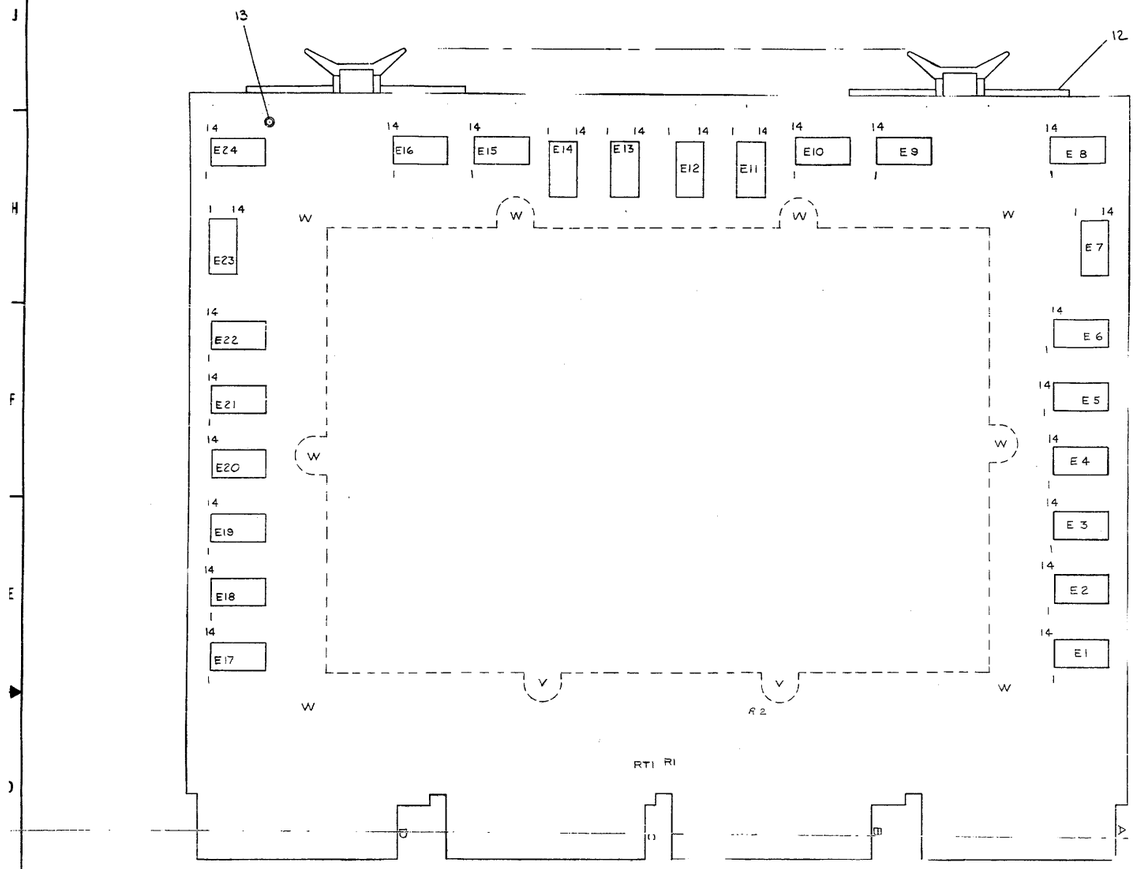
HIGHEST ASSEMBLY: B-DD-MM11-L-Ø

SIZE D | CODE | CS | NUMBER H213-Ø-1 | REV. C

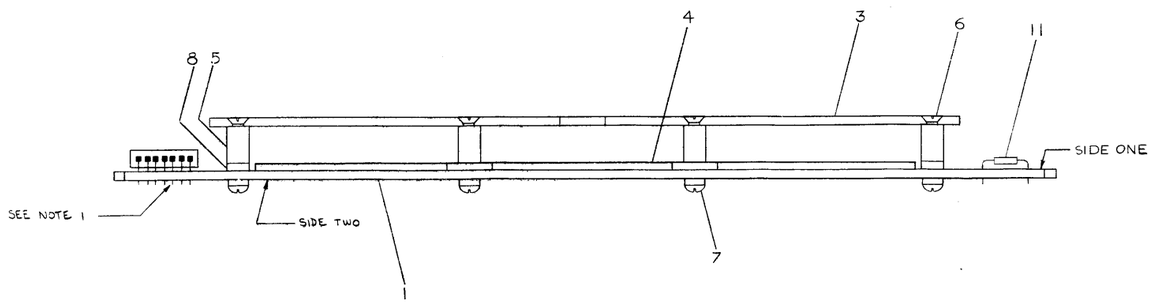
SCALE — SHEET 2 OF 2 | DIST.

REVISIONS REV.	CHANGE NO.	CHK

NOTES:
1. ALL COMPONENT LEADS TO BE LESS THAN 1/16 INCHES LONG ON SIDE TWO OF MODULE



LEGEND	
MODULE CONN.	BACK PANEL LOCATION
A	C
B	D
C	E
D	F



H216	H215	H214	REF DESIGNATION	DESCRIPTION	PART NO.	
1	1	1	RT1	THERMISTOR 300 2%	1309785	16
1	1	1	R2	RESISTOR 5.1 1/4W 5%	1309422	15
1	1	1	R1	RESISTOR 196 1/8W 1%	1302956	14
8	8	8		EYELET	9006732	13
4	4	4		HANDEL, GREEN	9008337-0-1	12
2	2	2		JUMPER,	VENDOR SUPP	11
1	1	1		STICKER WITH DEC PART & P.O. NO.		10
18	18	16		8132-CORE MATS (STRUNG)		9
4	4	4		WASHER, NYLON 5/32 X 1/4 (#40 HOLE)		8
10	10	10		SCREW NYLON FILISTER #6-40 X .187 LG		7
10	10	10		SCREW, FLAT HEAD NYLON #6-40 X .187 LG		6
10	10	10		STANDOFF, THREADED #6-40 X HEX X 1/4 LG		5
1	1	1		SUBSTRATE		4
1	1	1		COVER PLATE	VENDOR SUPP	3
24	24	24	E1 THRU E24	I.C. DIODE 2501	19-10010	2
1	1	1		PLANER MEMORY BOARD	5009713	1

PARTS LIST

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

IC PIN LOCATIONS

ITEM NO	WIRE	FROM PT	TO PT

JUMPER LIST

REV	CHANGE NO.	DESCRIPTION	DATE	APPD
A		ORIGINATED	6/20/72	P. DURANT
B			8/22/72	P. DURANT
C			10-13	P. DURANT

MM11 | ETCH BOARD REV

DEC NO. | ECA NO. | DEL NO. | ECA NO.

SEE CONTROL FOR CONFIGURATION CHART

EQUIPMENT CORPORATION

SCHEMATIC

H214-0-1

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EC1 — R1 196 Ω — EB1 — RT1 300Ω @ 25°C — EA1
TO G231 REF G645

R2 5.1Ω — BC2, BT1, CT1, CC2 — SUBSTRATE

NOTES!
1. UNLESS OTHERWISE SPECIFIED IC'S E1-E24 ARE TO BE DEC PART # 19I0010
2. INDICATES STACK LINE NUMBER (TYP)
◆ 3. INDICATES CURRENT LOOP
—o 4. INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).
* 5. FOR H215 & H216 ONLY. PØ=PA, P1=PB
** 6. FOR H216 ONLY

SEE NOTE 4

FK1 XS15	FJ2 XS14	FJ1 XS13	FH2 XS12	FH1 XS11	FF2 XSØ10	FF1 XSØ9	FE2 XSØ8	FE1 XSØ7	FD2 XSØ6	FD1 XSØ5	FC1 XSØ4	CT2 XSØ3	CS2 XSØ2	CS1 XSØ1	CR2 XSØØ
EV2 EV2 EV1	IN SB SA	BIT Ø													
ER2 ES2 ES1	IN SB SA	BIT 4													
ER1 EP2 EP1	IN SB SA	BIT 1													
EM2 EN2 EN1	IN SB SA	BIT 5													
EM1 EL2 EL1	IN SB SA	BIT 2													
EJ2 EK2 EK1	IN SB SA	BIT 6													
EJ1 EH2 EH1	IN SB SA	BIT 3													
EE2 EF2 EF1	IN SB SA	BIT 7													
EE1 ED2 ED1	IN SB SA	BIT 8													
DV2 DV2 DV1	IN SB SA	BIT 9													
DR2 DS2 DS1	IN SB SA	BIT 13													
DR1 DP2 DP1	IN SB SA	BIT 10													
DM2 DN2 DN1	IN SB SA	BIT 14													
DM1 DL2 DL1	IN SB SA	BIT 11													
DJ2 DK2 DK1	IN SB SA	BIT 15													
DJ1 DH2 DH1	IN SB SA	BIT 12													
DE2 DF2 DF1	IN SB SA	BIT P0*													
DE1 DD2 DD1	IN SB SA	BIT P1*													
DB1 DA2 DA1	IN SB SA	BIT 19**													
			FT2 XNWD7	XPRD7 FV2	FS2 XNWD6	XPRD6 FU2	FR2 XNWD5	XPRD5 FS1	FP2 XNWD4	XPRD4 FR1	FN2 XNWD3	XPRD3 FP1	FM2 XNWD2	XPRD2 FN1	FL2 XNWD1	XPRD1 FM1	FK2 XNWDØ	XPRDØ FL1

CL1 YSØØ	CM1 YSØ1	CM2 YSØ2	CN1 YSØ3	CN2 YSØ4	CP1 YSØ5	CP2 YSØ6	CR1 YSØ7 ← DATA RAM STACK ONLY
CR1 YSØ7	CP2 YSØ6	CP1 YSØ5	CN2 YSØ4	CN1 YSØ3	CM2 YSØ2	CM1 YSØ1	CL1 YSØØ ← ALL OTHERS STACK
							CL2 YNWD7 / YPRD7 CK1
							CK2 YNWD6 / YPRD6 CJ1
							CJ2 YNWD5 / YPRD5 CH1
							CH2 YNWD4 / YPRD4 CF1
							CF2 YNWD3 / YPRD3 CE1
							CE2 YNWD2 / YPRD2 CD1
							CD2 YNWD1 / YPRD1 CC1
							CB1 YNWDØ / YPRDØ CA1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VMI1-_		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 [illegible] DATE 11/22/72
CHK'D [illegible] DATE 12-5-72
ENG [illegible] DATE
PROJ ENG [illegible] DATE
PROG [illegible] DATE 11-26-72

NEXT HIGHER ASSY B-DD-VMI1-_-3
SCALE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE STACK SCHEMATIC (H214 SHEET 1 OF 2)

SIZE D | CODE CS | NUMBER H214 Ø1 | REV C | DIST

REVISIONS — REV | CHANGE NO | CHK
DRAWING 40-633 10040
DEC FORM NO DIED 169-0

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NOTES:
* 1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.
** 2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.
*** 3. ACTUAL MATRIX HAS { Y AXIS 8 PRD, 8 NRD, 8 SS
X AXIS 4K 8 PRD, 8 NRD, 8 SS
X AXIS 8K 8 PRD, 8 NRD, 16 SS

UNIBUS

BUS A0L

BUS INITL
BUS DCLO L
BUS DATA(0-15) L
BUS C0L, C1L
BUS MSYNL
BUS SSYNL
BUS A1L, A14L
BUS A15L, 16L, 17L

BUS A2,3,4,5,6,7, 8,9,10,11,12,13

BUS DCLOL

G110 CONTROL & DATA LOOPS MODULE

BYTE MASKING

16 DATA LOOPS

STROBE 0 ↑ 1 H
RESET 0 ↑ 1 L
LOAD 0 ↑ 1 H

DATA FF
INHIBIT DRIVER
SENSE AMP
← BUS DRIVER

TIMING CHAIN
MODE CONTROLS
BUS RECEIVERS
DEVICE SELECTOR
INTERLEAVE CONTROL

TINH H
DATAOUT H
DATA H

I0 H
CLK H
TMR H
TWID H
READ H

BUS RECEIVERS
ADDRESS LATCHES
FIRST LEVEL DE[illegible]

	ADDRESS BITS USED	CKTS	
	A02, 03	YPRD0-7	YDR0-7
	I0 H	YNWD0-7	
ADDRESS			
TDR	A04,5,6	YSS0-7	Y66 0-7
TSS			
READ-WRITE			
STACK DISCHARGE CKT READ=GND WRITE=-15V	A07,8,9	XPRD0-7 XNWD0-7	KDR 0-7
X & Y CURRENT GENERATOR (XIG, YIG)	A10,11,12,13	XSS 0-15 0-7 FOR 4K	XSS 0-15

DC LO CKT
(-15V SERIES TRANSISTOR)
V REF CKT
CURRENT CONTROL & TEMPERATURE COMPENSATION
G231 DRIVER MODULE

H213, 214 MEMORY STACK
4 OR 8K X 16 BIT

I — 16 CKTS
SA
SB

4096 CORES FOR 4K
8192 CORES FOR 8K
} PER BIT

X-Y DIODE MATRICES * *
X DRIVE LINES
Y DRIVE LINES

PRD0
NWD0
SS0
SS1
SS2
SS3
PRD1
NWD1
***

R1
RT1
THERMISTER RESISTOR

REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO.
MM11-S		PARTS LIST		

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

DRN. L Carberry	DATE 11/4/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D P Ralph	DATE 2-16-72	
ENG. P Dwyer	DATE 11-30-72	TITLE BLOCK DIAGRAM
PROJ. ENG. P Dwyer	DATE 12-7-72	
PROD. Jack Norman	DATE 12-8-72	

NEXT HIGHER ASSY: B-DD-MM11-S

SIZE	CODE	NUMBER	REV
D	DBD	MM11-S-2	

SCALE
SHEET 2 OF 2
DIST

DEC FORM NO 0300 MR-9

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MEMORY BANK	MACHINE ADDRESS	W1 ✳	W5 A13 △	W6 □ A14 OR A01	W4 A15	W3 A16	W2 A17L	△ W9 4K-8K	W10	W7-8 INTER LEAVE □	W11 PROTECT
0-4K	000000-017776	IN	IN	IN	IN	IN	IN				
4-8K	020000-037776		OUT	IN	IN	IN	IN				
8-12K	040000-057776		IN	OUT	IN	IN	IN				
12-16K	060000-077776		OUT	OUT	IN	IN	IN				
16-20K	100000-117776		IN	IN	OUT	IN	IN				
20-24K	120000-137776		OUT	IN	OUT	IN	IN				
24-28K	140000-157776		IN	OUT	OUT	IN	IN				
28-32K	160000-177776		OUT	OUT	OUT	IN	IN				
32-36K	200000-217776		IN	IN	IN	OUT	IN				
36-40K	220000-237776		OUT	IN	IN	OUT	IN				
40-44K	240000-257776		IN	OUT	IN	OUT	IN				
44-48K	260000-277776		OUT	OUT	IN	OUT	IN				
48-52K	300000-317776		IN	IN	OUT	OUT	IN				
52-56K	320000-337776		OUT	IN	OUT	OUT	IN				
56-60K	340000-357776	IN	IN	OUT	OUT	OUT	IN				
60-64K	360000-377776		OUT	OUT	OUT	OUT	IN				
64-68K	400000-417776		IN	IN	IN	IN	OUT				
68-72K	420000-437776		OUT	IN	IN	IN	OUT				
72-76K	440000-457776		IN	OUT	IN	IN	OUT				
76-80K	460000-477776		OUT	OUT	IN	IN	OUT				
80-84K	500000-517776		IN	IN	OUT	IN	OUT				
84-88K	520000-537776		OUT	IN	OUT	IN	OUT				
88-92K	540000-557776		IN	OUT	OUT	IN	OUT				
92-96K	560000-577776		OUT	OUT	OUT	IN	OUT				
96-100K	600000-617776		IN	IN	IN	OUT	OUT				
100-104K	620000-637776		OUT	IN	IN	OUT	OUT				
104-108K	640000-657776		IN	OUT	IN	OUT	OUT				
108-112K	660000-677776		OUT	OUT	IN	OUT	OUT				
112-116K	700000-717776		IN	IN	OUT	OUT	OUT				
116-120K	720000-737776		OUT	IN	OUT	OUT	OUT				
120-124K	740000-757776		IN	OUT	OUT	OUT	OUT				
DEVICE USED AS 4K MEMORY △		IN	X	X	X	X	X	IN	OUT		

WHEN USED AS A 4K OR A NON INTER-LEAVED 8K JUMPERS ARE

WHEN USED AS AN 8K INTERLEAVED (2-8K BANKS REQUIRED) JUMPERS ARE

WHEN W11 IS INSTALLED IT MAKES THE MEMORY DO A DATI RE-GARDLESS OF THE STATE OF THE C00 AND C01 LINES

NOTES:

✳1 W1 IS FOR TEST PURPOSES ONLY

△2 WHEN USED AS AN 8K BANK W5 AND W10 MUST BE INSTALLED AND W9 MUST BE OUT
WHEN USED AS A 4K BANK W10 MUST BE OUT W9 MUST BE IN AND W5 DETERMINES THE BANKS LOCATION ON THE BUS

□3 THIS MEMORY CAN ONLY BE INTERLEAVED AS 16K (TWO ADJACENT CONTIGUOUS ADDRESS SPACE BANKS) WHEN NOT INTERLEAVED (SOLID JUMPERS ON W7 AND W8) THE DEVICE SELECT IS AS SHOWN IN TABLE 1 USING A 4K. WHEN TWO 8K BANKS ARE INTERLEAVED W7 AND W8 MUST BE AS SHOWN IN DOTTED LINES IN TABLE 1 ALSO IN TABLE 1 A01 NOW GOES TO THE DEVICE SELECTOR GATE CONTROLLED BY W6 THE TWO BANKS MUST HAVE W5 IN ON ONE BANK AND OUT ON THE OTHER

4 FIGURE 1 SHOWS THE PHYSICAL LOCATION OF THE JUMPERS ON THIS G110 IF THE MODULE WERE LYING ON THE PRINT WITH COMPONENTS UP AND CONNECTORS TOWARD BOTTOM OF PRINT W7 & W8 ARE AS SHOWN SCHEMATICALLY ON D CS-G110 0 1

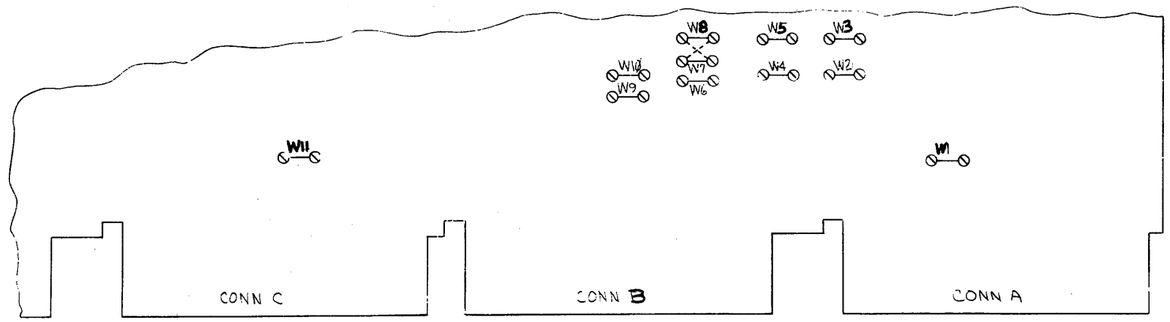


FIGURE 1
G110 JUMPER PHYSICAL LOCATION
SEE NOTE 4

FIRST USED ON OPTION/MODEL: MM11-S	QTY.	DESCRIPTION	PART NO / ITEM NO
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS .XXX ± .005, .XX ± .02, .X ± .1; ANGLES ± 0° 30'	DRN. [signature]	DATE 3/15/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D. [signature]	DATE 5-25-72	
	ENG. [signature]	DATE 5-22-72	TITLE: BLOCK DIAGRAM (DEVICE DECODING)
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. [signature]	DATE 5-22-72	
MATERIAL: ———	PROD. [signature]	DATE 5-22-72	NEXT HIGHER ASSY.: B-DD-MM11-S-0
FINISH: ———	SCALE: ———	SHEET 2 OF 2	SIZE D, CODE BD, NUMBER MM11 S 2, REV, DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO 1201-100-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

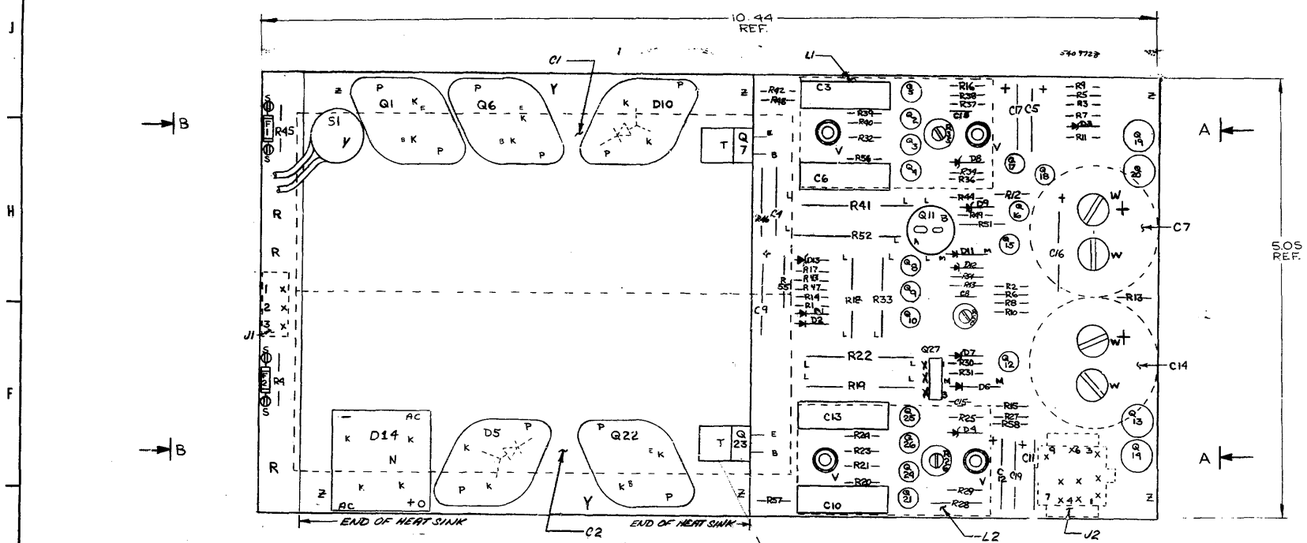
PARTS LIST

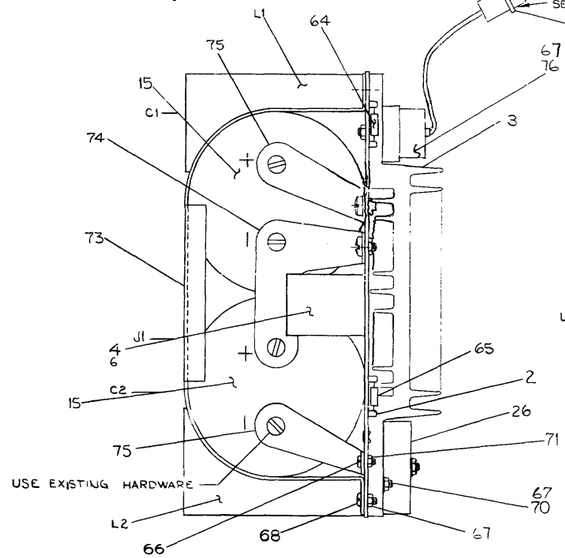
MADE BY F. CARBERRY DATE 1/5/72	CHECKED J. Murphy DATE 1-25-72	SECTION
ENG P. Durant DATE 1/25/72	PROD R.K. Patterson DATE 1-26-72	ISSUED SECT.

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION MM11-L	MM11-K
1	B-DD-H213-Ø	H213 MEMORY STACK (4K X 16)		1
2	E-CS-G231-Ø-1	MEMORY DRIVER	1	1
3	E-CS-G11Ø-Ø-1	CONTROL & DATA LOOPS	1	1
4	B-DD-H214-Ø	H214 MEMORY STACK (8K X16)	1	

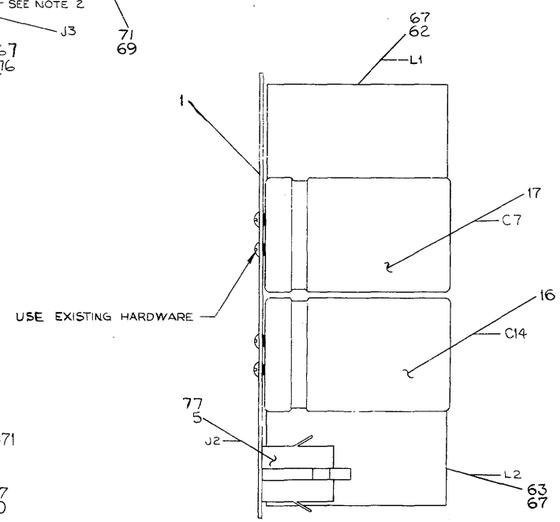
TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MEMORY, MM11	//	A	PL	MM11-L-Ø		
	SHEET 1 OF 1	DIST.				

DEC FORM DEC 16-(325)-1031-N870
DRA 110





VIEW B-B



VIEW A-A

NOTES:

1. APPLY ITEM #8 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND HEAT SINK FOR Q1, Q6, Q7, Q22, Q23, D5, D10, D14 & S1.
2. TRIM LEADS ON ITEM #76 (THERMOSTAT) TO (5) INCHES AND ATTACH ITEM #84 (PINS) AND ITEM #83 (HOUSING) AS SHOWN.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
				88
				87
1	Q11	XSTR C32AX135	1510928	86
2	R9, R13	RES 470 1/4 W, 5%	1300816	85
2		PINS MALE CRIMP	1209376-01	84
1	J3	MATE-N-LOCK CONNECTOR	1210822-02	83
				82
1	D12	DIODE, ZENER, 5.7 V, 2%	1111205	81
1	C12, C19	CAP 2.2 MF 35V 10% S.TANT	1002431	80
				79
2	R39, R40	RES 5.1 1/4 W 5%	1309422	78
9		PIN FEMALE	1209456	77
1	S1	THERMOSTAT SPST	1210824	76
2		CONTACT, CAPACITOR	C-MD-5309788-0-0	75
1		CONTACT, COMMON CAPACITOR	C-MD-5309779-0-0	74
1		HOLDER, CAPACITOR	C-IA-5310126-0-0	73
AR				72
5		NUT, KEPS 4-40	9008557	71
1		SCR PHL PAN HD 6-32-3/4 LG.	9006026-1	70
2		SCR PHL PAN HD 4-40X 1/2 LG	9006013-4	69
18		SCR. PHL HD. 6-32 X 9/16 LG	9007793-1	68
18		NUT KEPS #6-32 X 1/4	9008185	67
3		SCR. PHL PAN HD 4-40 X 5/16 LG.	9006040-5	66
1	F2	FUSE 10 AMP, PICO	1210929-01	65
1	F1	FUSE 15 AMP, PICO	1210929	64
1	L2	CHOKE 100 MH 10A MMC 4445	1611031	63
1	L1	CHOKE .100 MH 20A MMC 4289	1610717	62
1	Q27	XSTR MAC 11-3	1510765	61
1	Q1	XSTR MJ2500	1511282	60
2	Q7, Q23	XSTR D45 H8-B	1510708-2	59
10	Q2, Q3, Q5, Q8, Q9 Q15, Q16, Q17 Q18, Q26	XSTR XA95	1510706	58
6	Q4, Q6, Q12, Q21, Q24, Q25	XSTR XA05	1510705	57
2	Q6, Q22	XSTR 2N5302	1510196	56
2	Q19	XSTR 2N1309	1510311	55
2	Q13, Q20	TRANSISTOR 2N1308	1500583	54
1	R91	RES .025, 7W 3%	1310709-1	53
				52
1	R22	RES .2 5W 5%	1309884	51
3	R26, R35, R50	DT .100, 1/2 W 20% 62 PR	1309150-05	50
1	R 52	RES .1 5W, 5% WW	1305872	49
1	R33	RES .39 2W 5% WW	1310868	48
1	R10	RES 7.5K 1/8W 1% MF	1305322	47
2	R25, R34	RES 383, 1/8W, 1% MF	1305125	46
8	R2, R5, R6, R11, R12, R3	RES 10K, 1/8 W, 1% MF	1303512	45
4	R8, R1, R7, R14	RES 1K, 1/8W, 1% MF	1303116	44
2	R27, R36	RES 909, 1/8 W, 1% MF	1303097	43
1	R51	RES 100, 3%, PTC	1310927	42
1	R49	RES 147, 1/8 W, 1% MF	1302874	41
				40
				39
2	R24 R47	RES 68K 1/4W, 5%	1301327	38
5	R20, R21, R30, R48, A54	RES 10 1/4 W, 5%	1301317	37
4	R38, R43, R56, R57	RES. 10K 1/4 W, 5%	1300979	36
4	R28, R46, R4, R45	RES 4.7K, 1/2W, 5%	1300945	35
1	R55	RES 2.7K, 1/2W, 5%	1300925	34
1	R19	RES .06 5W 3% WW	1310876-02	33
2	R29, R37	RES 1K, 1/4W, 5%	1300365	32
3	R44, R16, R58	RES 330 1/4 W, 5%	1300295	31
1	R18	RES 100, 2W, 5%	1302380	30
7	R15, R17, R23, R31, R32, R42, R53	RES 100, 1/4 W 5%	1300229	29
1	D7	DIODE IN5248B 18V ZENER	1110766	28
2	D5, D10	DIODE 20 AMP FAST RECOVERY RECT	1110715	27
1	D14	DIODE- BRIDGE RECTIFIER	1110714	26
1	D3	DIODE 5.1 V ZENER	1110525	25
2	D6, D11	DIODE IN5624	1110420	24
2	D1, D2	DIODE IN4004	1105796	23
2	D4, D8	DIODE IN753A 6.2 V ZENER	1102421	22
1	D9	DIODE AZ5 2.4 V ZENER	1101938	21
1	D13	DIODE IN748A 3.9 V ZENER	1100122	20
1	C18	CAP 680 PF, 100V, DM	1000026	19
1	C9	CAP 20 MF 60V 5% TANT	1010716	18
1	C7	CAP 6000 MF 10V -10+75% S.TANT	1010709	17
1	C14	CAP 3,000 MF 25V -10+75% S.TANT	1010703	16
2	C1, C2	CAP 24000 MF 30V -10%+75%	1010702	15
1	C16	CAP 22 MF 35V 20% S.TANT	1002433	14
4	C3, C6, C10, C13	CAP 1 MF 100V 10%	1011032	13
2	C8, C15	CAP .22 MF 50V	1010274	12
2	C5, C17	CAP 6.8 MF 35V 10% S.TANT	1005306	11
2	C4, C11	CAPACITOR .033 MF 100V 10% MYLAR	1000050	10
				9
AR		THERMAL COMPOUND	9008268	8
				7
3		PINS MALE	1210823-01	6
1	J2	MATE-N-LOCK CONNECTOR	1209350-09	5
1	J1	MATE-N-LOCK CONNECTOR	1209351-03	4
1		HEAT SINK	1210596	3
4		SPLIT LUG	9006735	2
1		ETCHED BOARD	5009727	1
		MODULE ECO HISTORY	D-HH-5409728-0-0	REV
		X-Y COORDINATE HOLE LOC.	X-CO-5409728-0-0	REV
		CIRCUIT SCHEMATIC	D-CS-5409728-01	REV

PARTS LIST

1		5409728 INTERPLANT PACKAGE	A-PI-3700065-0-0
		MANUFACTURING SPECIFICATION	A-SP-5409728-0-0
		ASSEMBLY PROCEDURE	A-SP-5409728-0-0
		INSPECTION PROCEDURE	A-SP-5409728-0-0
		MANUFACTURING TEST PROCEDURE	A-SP-5409728-0-3

ITEM NO.	
93	
92	
91	
90	
89	

PCB ASSEMBLY TEST PROGRAM 11/05

ETCH BOARD REV. A

DRAWN		12-8-71	
ENGR			
MFG			
QUAL			
NEXT HIGHER ASSY	D-AD-7008731-0-0		
APPROVED			

[redacted] EQUIPMENT CORPORATION

TITLE: REGULATOR BOARD

SIZE: E | DWG NO: ETA 5409728-0-0 | REV: J

SHEET 1 OF 1

IC TYPE | GND | +5V

IC PIN LOCATIONS

FROM NO	AWG	TO PT	TO PT

JUMPER LIST

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

SEMICONNECTOR CONVERSION CHART

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(THERMOSTAT NORMALLY CLOSED)

S1 J3-1 J3-2

INPUT 28-0-28V AC 47-63HZ

AC J1-3 CENTER TAP J1-1 AC J1-2

NSS-3514

D14

F1, 15A

+39V

R45 4.7K 1/2W

R38 10K

R56 10K

Q3

R33 .39 2W

Q1 MJ2500

R32 100 Q2

R34 383 1%

R35 100, CW

C18 680 PF

Q4 XA05

D8 IN753A, 6.2V

R37 1K

R36 464 1%

J2-5 +15V OUTPUT

C16 22 UF 35 V

R55 2.7K 1/2W

C2 24KUF 50V

C1 24 KUF 50V

D13 IN748A 3.9V

J2-4 LTC L OUTPUT

D2 IN4004 D1 IN4004

R14 1K 1%

R1 1K 1%

+26V

C9 20UF 5%

J2-8 PWR OK L

J2-7 PWR OK ENABLE } OUTPUT

J2-1 BUS AC LO L

R2 10K 1%

R3 10K 1%

R5 0K 1%

R6 10K 1%

+3.3V Q17

Q18 +11.4V

R8 1K 1%

J2-6 BUS DC LO L OUTPUT

+10V

Q15 Q16

D3 5.1V

R11 10K 1%

R10 7.5K 1%

Q19 2N1309

Q20 2N1308

R9 470

R18 100 2W

R17 100

Q12 GPS A05

Q13 2N1308

Q14 2N1309

R13 470

R15 100

R12 10K 1%

R7 1K 1%

R4 4.7K 1/2W

F2, 10A

−39V

R41 .025 7W, 3%

R39 5.1

R40 5.1

Q5

C4 .033UF

C3 1UF

Q6 2N 5302

R48 10

Q7 D45H8

R42 100

Q8

L1 100 UH 20A

D10, 20A FAST RECOVERY

C7 6000 UF, 10V

D11 IN5624

J2-3 +5V OUTPUT

D12 5.7V 2%

R54 10

R52 .1 5W

Q11 C32AX135

A G C

R53 100

C8 .22 UF

Q9

R43 10K

R46 4.7K 1/2W

R47 68K

R49 147 1%

C5 6.8UF 35V 10%

R16 330

D9 2.4V AZ5

Q10 XA05

CW R50 100

C17 6.8UF 35V 10%

R44 330

R51 100 3% P.T.C.

C6 1UF

C10 1UF

C19 2.2UF 35V 10%

R53 330

R29 1K

D4, 6.2V IN 753A

Q26

R28 4.7K 1/2W

R27 464 1%

CW R26 100 1/2W

R24 68K

R25 383 1%

C13 1UF

D5, 20A FAST RECOVERY

C14 3000UF 25V

Q27 MAC11-3

J2-2 GROUND OUTPUT

R31 100

C15 .22 UF

R30 10

C12 2.2UF 35V

R57 10K

XA05 Q25

C11 .033UF 100V

Q21 XA05

R20 10

R19 .06 5W 3%WW

R22 .2 5W

Q24 XA05

R23 100

R21 10

Q23 D45H8

Q22 2N 5302

L2 100UH 10A

D6 1N5534

D7, 18V IN 5248B

J2-9 −15V OUTPUT

UNLESS OTHERWISE INDICATED:
1% RESISTORS ARE 1/8 W
TRANSISTORS = XA05
VOLTAGES ARE TAKEN AT NO LOAD WITH 115 VAC LINE
VOLTAGES ARE ±10 % TAKEN BY A ≥ 10K/V METER

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV E

REV	CHANGE NO.	DATE	DRN.	CHK.
B	5409728-00011	1-19-72	R. WOLFF	R. Burton
C	5409728-00012	1-21-72	R. WOLFF	R. Burton
D	5409728-00004	5-1-72	R. BURTON	R. Burton
E	5409728-00005	6-27-72	J. WLAWRENCE	R. Burton
F	5409728-00006	9-29-72	R. WOLFF	R. Burton
G	5409728-00007	10-18-72	R. WOLFF	R. Burton
H	5409728-00008	12-26-72	S. Baker	R. Burton
J	5409728-00008	12-26-72	S. Baker	R. Burton

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

DRN. Roger V Doucette	DATE 12-20-71
CHK'D Mike Hall	DATE 12-21-71
ENG. R. Wolff	DATE 12-28-71
PROJ. ENG. R. Wolff	DATE 12-29-71
PROD. R. Wolff	DATE 12/30/71
NEXT HIGHER ASSY	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE REGULATOR BOARD FOR H740

SIZE D CODE CS NUMBER 5409728-0-1 REV. J

DIST.

DEC FORM NO DRD-135

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1	*	
2	*	
3	*	(TD)
4	*	(MD)
5	*	(SABR)
6	*	(GM)
7	*	(PVCS)
8	*	(SDM)
9	*	(CCL1)
10	*	(CCL2)
11	*	(CRD)
12	*	(CSC)

ECO NO.	
ETCH REV.	A
ENG.	
DATE	

FIRST USED ON OPTION/MODEL

GT4Ø

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DRN.	NANCY MOORE	DATE 10-27-72
CHK'D.	NANCY MOORE	DATE
ENG.	[signature]	DATE 10-30-72
PROJ. ENG.	H E Lavoie	DATE 10/30/72
PROD.	[signature]	DATE 11/3/72

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE

VT 40 DISPLAY CONTROL

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NEXT HIGHER ASSY.

B-DD-GT4Ø-Ø

SCALE —H—

SHEET 1 OF 12

SIZE	CODE	NUMBER	REV.
B	CS	M7Ø13-Ø-1	

DIST.

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TD LOAD PULSE L
MD JUMP WORD 1 L
7402 E42
CD1
MD JUMP LOAD PULSE H
TD TPI H
7410 E102
EN1
MD PC + 2 L
MD CHARACTER H
PVCS WORD 1 H
7400 E107
MD CHAR WORD 1 L

SDM DB14 L
SDM DB11 L
SDM DB12 L
SDM DB13 L
7402 E37
7402 E37
7402 E37
CONTROL MODE REG
74175 E38
D3 D2 D1 D0
R3(1) R3(0) R2(1) R2(0) R1(1) R1(0) R0(1) R0(0)
CLR CLK
CCL2 INIT L

TD LOAD MODE H
BDL DB15 H
BDL DB14 H
7420 E22
7400 E23
TD LOAD MODE H
BDL DB15 H
SDM DB14 L
7420 E22
7404 E24
MD JUMP H
PVCS WORD 1 H
7400 E23
MD JUMP WORD 1 L

BDL DB11 H
BDL DB12 H
BDL DB13 H
DATA MODE REG
74175 E50
D3 D2 D1 D0
R3(1) R3(0) R2(1) R2(0) R1(1) R1(0) R0(1) R0(0)
CLR CLK
CCL2 INIT L

+3VA
74157 E39
A0 B0 A1 B1 A2 B2 A3 B3
f0 f1 f2 f3
MODE SELECT
STB S0
MD MODE 3 H 20
MD MODE 2 H 21
MD MODE 1 H 22
MD MODE 0 H 23
MODE DECODE
74154 E29
f15 f14 f13 f12 f11 f10 f9 f8 f7 f6 f5 f4 f3 f2 f1 f0
D3 D2 D1 D0
STB1 STB0

INIT L
BDL DB15 H
7474 E25
D C
MD CONT WORD (1) H
TD LOAD MODE H
MD JUMP WORD 1 L
7400 E23
7404 E24
+3V A

MD STATUS B L
7404 E27
MD STATUS B H
MD STATUS A L
7404 E27
MD STATUS A H
MD JUMP L
7404 E27
MD JUMP H
MD GRAPHIC MODE L
7404 E27
MD GRAPHIC MODE H
MD DNOP L

MD POINT L
7400 E12
AU2
MD PT + REL PT H
7404 E21
MD REL PT H
MD REL PT L
MD S VECTOR L
7400 E60
MD SV + REL PT H
MD GRAPH Y L
7404 E28
BR2
MD GRAPH Y H
MD S VECTOR L
MD GRAPH X L
7404 E28
BS1
MD GRAPH X H
7404 E28
MD POINT H
AS2
MD POINT L
MD VECTOR L
7404 E28
MD VECTOR H
MD CHARACTER L
CJ2
7404 E28
MD CHARACTER H

MODE DECODE (MD)

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

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

DRN. R E Hallen	DATE 9/4/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. Manny Moore	DATE 10-30-72	
ENG.	DATE	TITLE: VT40 DISPLAY CONTROL (MD)
PROJ. ENG. R E Larrabee	DATE 11/3/72	
PROD.	DATE 11/3/72	
NEXT HIGHER ASSY.		SIZE D CODE CS NUMBER M7013-0-1 REV
SCALE		SHEET 4 OF DIST.

REVISIONS: REV | CHANGE NO | CHK
BRUNING 40-322 15840
DEC FORM NO DRD 102-B

M7013-0-1 SIZE D CODE CS

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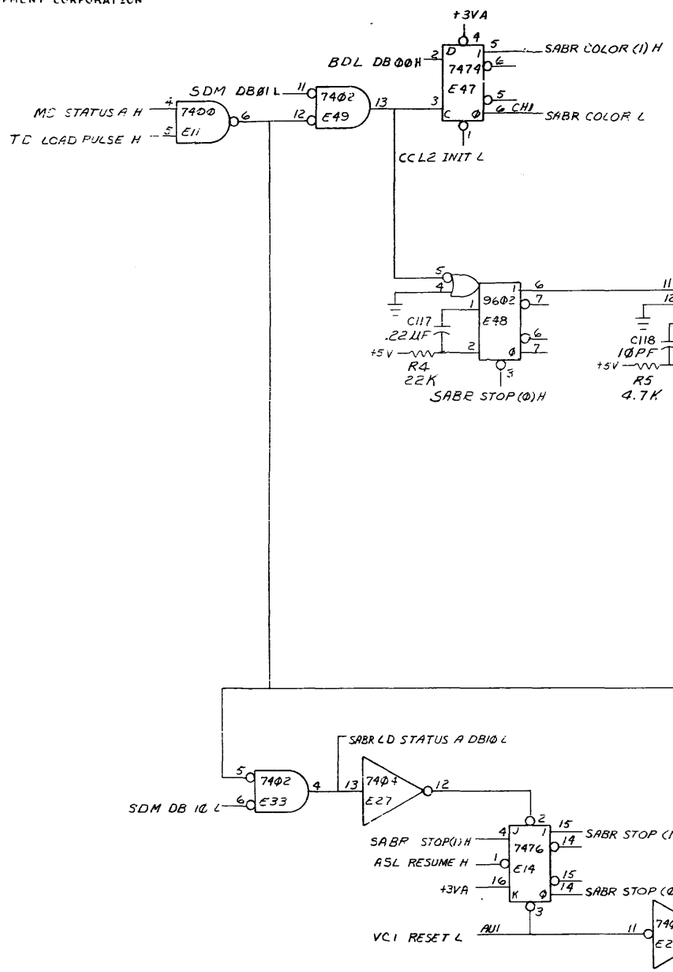

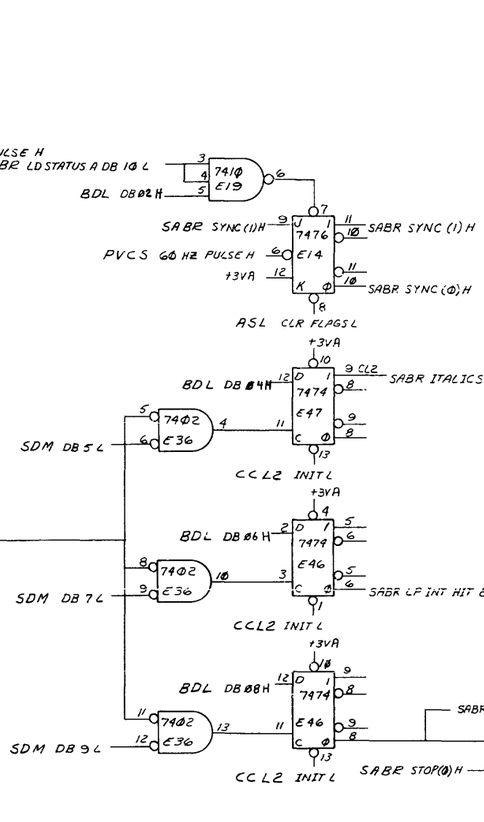

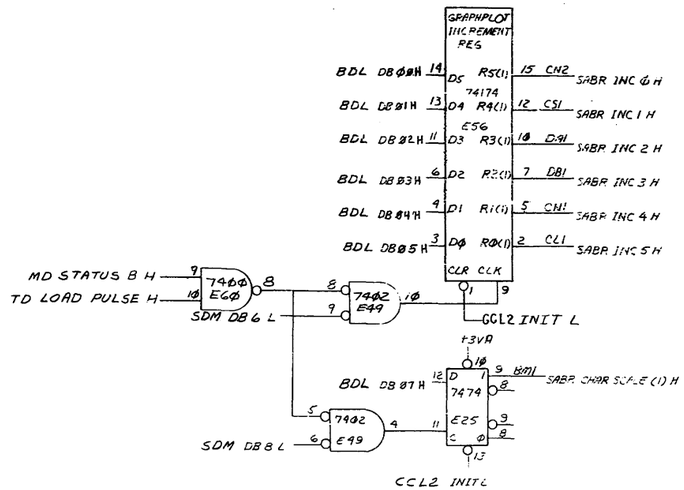

STATUS A & B REG (SABR)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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.	B. Manchester	DATE 9-6-72
CHK'D.	MARY MOORE	DATE 10-30-72
ENG.	J. Somers	DATE 10-30-72
PROJ. ENG.	H. Lewis	DATE 11/30/72
PROD.	Tom Courtney	DATE 11/1/72
NEXT HIGHER ASSY.		
SCALE		
SHEET 5 OF		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT40 DISPLAY CONTROL (SABR)

SIZE	CODE	NUMBER	REV.
D	CS	M7013-0-1	

DIST

REVISIONS: REV. | CHANGE NO | CHK

BRUNING 40-522 15M40
DEC FORM NO DRD 102-B

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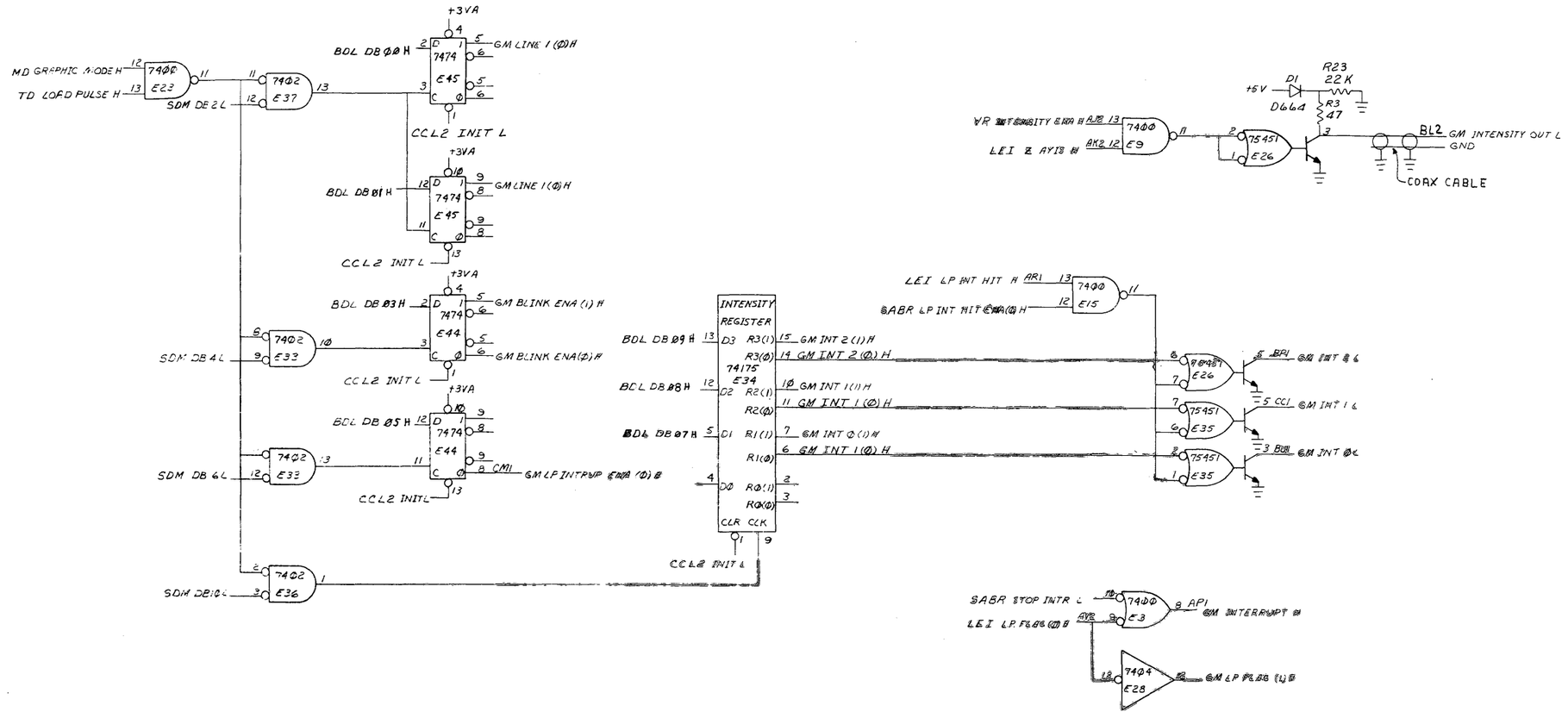

GRAPHIC MODE (GM)

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

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

DRN G.S. Hornbuckle DATE 2-2-72
CHK'D NANCY MOORE DATE 10-26-72
ENG DATE
PROJ. ENG. R.E. Lavoie DATE 10/24/72
PROD. F.M. McGauley DATE 11/6/72
NEXT HIGHER ASSY.
SCALE
SHEET 6 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: V140 DISPLAY CONTROL (GM)

SIZE	CODE	NUMBER	REV
D	CS	M7013-0-1	

DIST.

DRAWING 40 322 1540 REVISION CHANGE No. REV CHK

DEC FORM NO DRD 102-B

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PVCS LC1 H
PVCS LC2 H
PVCS LC3 L
7410 E19
PVCS LC4 L
7400 E11
PVCS LC3 H
PVCS LC 4 H
+3VB
74153 E19 LINE DECODER
LINE DECODER TABLE

S1	SØ	SØ	
L	L	L	AØ
L	H	L	BØ
H	L	L	CØ
H	H	L	DØ

GM LINE 1 (1)H
GM LINE Ø (1)H
PVCS VEC INT (Ø) H
7404 E21
PVCS PNTS VEC INT (Ø)H
CM BLINK ENA (Ø)H
7420 E13
GM BLINK ENA (1)H
PVCS BLINK (1) H
7410 E30
BS1
MD GRAPH X H
7402 E40
BR2
MD GRAPH Y H
BA1
PVCS GRAPHICS L
AS1
CSC CR ST L
7400 E11
MD CHARACTER H
7400 E12
8 AV1 PVCS INTENSITY LEVEL H
MD VECTOR L
PVCS WORD 1 H
7402 E41
PVCS VEC WORD Ø H
TD LOAD PULSE L
7402 E42
4 CE2 PVCS LD △ X H
MD SV+REL PT H
RS2
MD POINT L
PVCS POINT WORD Ø H
BS1
MD GRAPH X H
TD LOAD PULSE L
7402 E42
7404 E21
2 AD1 PVCS LOAD X L
7404 E63
CSC CHAR GO L
7400 E11
8 AT2 PVCS VEC + CHAR GO H
TD TP 2 H
7400 E12
MD CHARACTER H
7400 E107
TD TP 2 H
PVCS CHAR GEN GO L
7404 E71
PVCS CHAR GEN GO H
MD VECTOR L
PVCS WORD Ø H
7402 E53
PVCS VEC WORD 1 H
MD SV+REL PT H
TD LOAD PULSE L
7402 E53
13 AB1 PVCS LD △ Y H
+5V
R7 4.7K
C120 100PF
74123 E59 70NS
PVCS GØ HZ PULSE H
PVCS GØ HZ PULSE L
+3VB
PWR SUPPLY L
CLK INT H
AA1
7413 E10
R21 560
R22 560
C125 .22 μF
PVCS BLINK(Ø)H
7493 E20 DIVIDE BY FOUR REG
R3(1)
R2(1)
R1(1)
R0(1)
CLR
CLKBC CLKØ
7474 E52
PVCS BLINK (1) H
PVCS BLINK (Ø) H
CCL2 INIT L
PVCS STROBE BELL L
CJ1
BDL DB14H
7474 E7
PVCS PNTS VEC INT (1) H
PVCS PNTS VEC INT (Ø)H
MD REL PT H
TD LOAD PULSE L
7402 E6
PVCS POINT WORD Ø H
BCL INIT H
CR1
AF1
VC2 VEC GEN OP DONE H
7402 E6
PVCS INIT OP DONE L
BDL DB13 H
CK1
7400 E9
MD SV+REL PT H
BDL DB Ø6 H
BV2
7400 E9
PVCS LD △ Y H
+3VB
7474 E8
AC1 PVCS △ Y L
ABI 3
AM1 PVCS △ Y H
PVCS INIT OP DONE L
CJ1
BDL DB13H
CC2
PVCS LD △ X H
7474 E72
CSC BS H
7402 E113
13 FV2 PVCS X UP ENA H
DM2 PVCS △ X H
PVCS INIT OP DONE L
BDL DB14 H
PVCS LD △ X H
7474 E8
PVCS VEC INT (1) H
PVCS VEC INT (Ø) H
PVCS INIT OP DONE L
AF1
MD CHARACTER H
VC2 VEC GEN OP DONE H
7400 E15
7400 E15
TD TP 2 H
MD VECTOR L
MD JUMP L
MD POINT L
AS2
7410 E19
7400 E15
PVCS WORD 1 H
PVCS WORD Ø H
7473 E16
MD CLR WORD L
CRY BRW
74193 E17 LINE COUNT REGISTER
D3 D2 D1 D0
R3(1) R2(1) R1(1) R0(1)
CLR LD CUP CDN
PVCS LC4H
PVCS LC3H
PVCS LC2H
PVCS LC1H
7404 E21
PVCS LC 4L
PVCS LC3 L
PVCS LC2 L
PVCS LC1 L
+3VB
ANI
LEI INTENSITY MOVE H
CF2
PCC DIS. CLOCK H
7473 E16
PR Y8 H
EV2 11
EP2 9
7410 E30
7404 E71
12 DC1 PVCS Y8·Y9 H
MD POINT H
PVCS WORD 1 H
7400 E31
MD GRAPH Y L
MD GRAPH X L
7410 E30
TD TP 2 H
7400 E31
7404 E21
12 AN12 PVCS POINT + GRAPH GO H
MD GRAPH Y L
TD LOAD PULSE H
7400 E31
BP2 PVCS LOAD Y L

POINT, VECTOR, CHARACTER, START (PVCS)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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.		DATE 9-8-72
CHK'D.	Mary Hore	DATE 10-30-72
ENG.		DATE 10-30-72
PROJ. ENG.		DATE 11/30/72
PROD.		DATE 11-1-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT40 DISPLAY CONTROL (PVCS)

NEXT HIGHER ASSY.
SCALE
SHEET 7 OF

SIZE	CODE	NUMBER	REV.
D	CS	M7013-0-1	A

DIST.

REV	REVISIONS	CHANGE NO.	CHK
A			

BRUNING 40-522 15840
DEC 10 DRW NO
DRD 102-B

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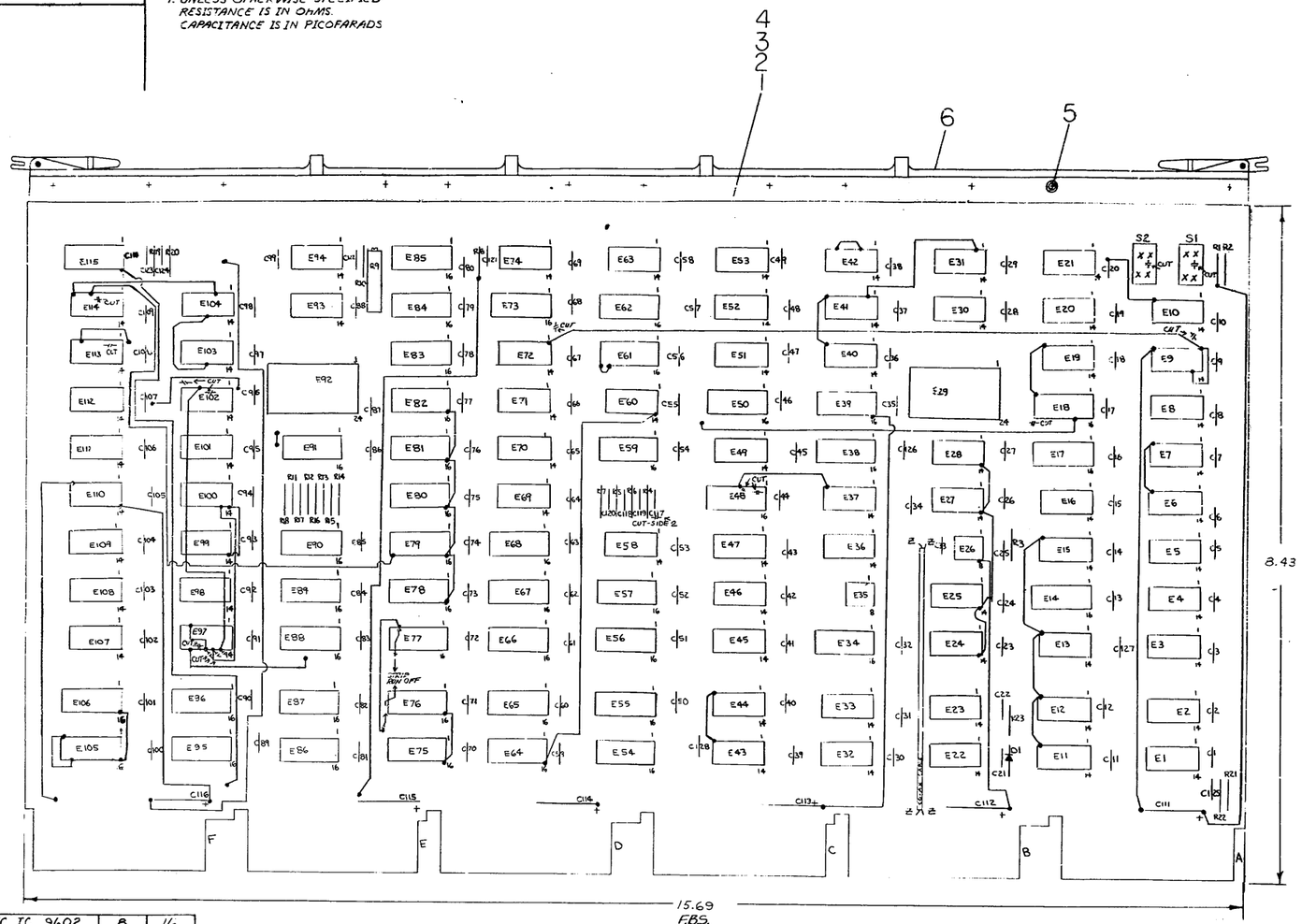
NOTES:

1. UNLESS OTHERWISE SPECIFIED
   RESISTANCE IS IN OHMS.
   CAPACITANCE IS IN PICOFARADS



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		ETCHED CIRCUIT BOARD	50:0146	1
REF		X/Y COORDINATE HOLE LOCATION	K-GD-M7013-0-4	2
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7013-0-5	3
REF		MODULE ECO HISTORY	B-MH-M7013-0-6	4
12		EYELET	9006732	5
1		HANDLE	1210711-2	6
3	C118, C120, C124	CAP 10PF 100V 5%	10 00006	7
2	C121, C123	CAP 100PF 100V 5%	10 00016	8
1	C119	CAP 330PF 100V 5%	10 00023	9
1	C122	CAP 470PF 100V 5%	10 00024	10
5	C111 THRU C116	CAP 6.8 MFD 35V 20% TANT	10 00067	11
115	C1 THRU C110, C125, C126, C127 C128, C117	CAP .22UF 50V 20%	10 0274	12
1	D1	DIODE D664	11 00114	13
10	E7, E8, E25, E44, E45, E46, E47, E52, E58, E72	I.C. DEC 7474	19 05547	14
14	E3, E5, E9, E11, E12, E15, E23, E31 E60, E99, E93, E107, E114, E109,	I.C. DEC 7400	19 05575	15
4	E2, E19, E30, E102	I.C. DEC 7410	19 05576	16
2	E13, E22	I.C. DEC 7420	19 05577	17
3	E1, E4, E70	I.C. DEC 7430	19 05578	18
2	E14, E73	I.C. DEC 7476	19 05585	19
6	E16, E51, E103, E104, E111 E112	I.C. DEC 7473	19 05587	20
14	E6, E33, E36, E37, E40, E41, E42, E49, E53, E100, E97, E101, E98, E113	I.C. DEC 7402	19 09004	21
1	E20	I.C. DEC 7493	19 09054	22
10	E21, E24, E27, E28, E32, E43, E63, E69, E71 E110	I.C. DEC 7404	19 09686	23
2	E29, E92	I.C. DEC 74154	19 09701	24
9	E18, E75, E76, E86, E87, E95, E96, E105, E106	I.C. DEC 74153	19 09937	25
1	E10	I.C. DEC 7413	19 09989	26
4	E17, E61, E83, E89	I.C. DEC 74193	19 10018	27
3	E84, E85, E88	I.C. DEC 7442	19 10046	28
1	E108	I.C. DEC 7437	19 10091	29
2	E74, E94	I.C. DEC 74121	19 10230	30
2	E59, E115	I.C. DEC 74123	19 10436	31
2	E90, E91	I.C. DEC 74194	19 10623	32
3	E34, E38, E50	I.C. DEC 74175	19 10651	33
3	E56, E57, E66	I.C. DEC 74174	19 10652	34
7	E39, E54, E55, E64, E65, E67, E68	I.C. DEC 74157	19 10655	35
1	E62	I.C. DEC 74155	19 10656	36
2	E26, E35	I.C. DEC 75451	19 11036	37
1	E48	I.C. 9602	19 10951	38
1	E77	I.C. IM 5603 OR 74187	23009A2	39
1	E78	I.C. IM 5603 OR 74187	23009A2	40
1	E79	I.C. IM 5603 OR 74187	23010A2	41
1	E80	I.C. IM 5603 OR 74187	23012A2	42
1	E81	I.C. IM 5603 OR 74187	23011A2	43
1	E82	I.C. IM 5603 OR 74187	23007A2	44
1	R3	RES 47 ¼W 5%	13 00202	45
10	R1, R2, R11 THRU R18	RES 1K ¼W 5%	13 00365	46
3	R5, R6, R7	RES 4.7K ¼W 5%	13 00447	47
2	R4, R23	RES 22K ¼W 5%	13 01808	48
2	R19, R20	RES 5.6K ¼W 5%	13 01874	49
2	R21, R22	RES 560 ¼W 5%	130189D	50
2	R8, R10	RES 3K 1/8 W 1%	13 02676	51
1	R9	RES POT 2K ¾W 10% 76PR	13 09143-08	52
2	S1, S2	SWITCH	12 09698	53
1		COAX CABLE RG174U 4" LG	9107530	54

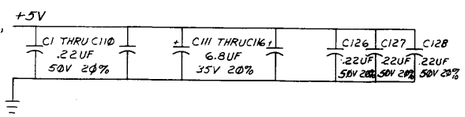
PARTS LIST

IC TYPE	GND	+ 5V
DEC IC 9602	8	16
IM 5603	8	16
DEC IC 74155	8	16
DEC IC 74174	8	16
DEC IC 75451	4	8
DEC IC 7493	10	5
DEC IC 7476	13	5
DEC IC 7473	11	4
DEC IC 7442	8	16
DEC IC 74194	8	16
DEC IC 74193	8	16
DEC IC 74175	8	16
DEC IC 74157	8	16
DEC IC 7454	12	24
DEC IC 74153	8	16
DEC IC 74123	8	16

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

IC PIN LOCATIONS

AA2, BA2, CA2, DA2, EA2, FA2
AC2, AT1, BC2, BT1, CC2, CT1, DC2, DT1 EC2, ET1, FC2, FT1



FIRST USED ON OPTION MODEL: GT40

ETCH BOARD REV

REV	CHANGE NO	CHK
D664	IN3606	

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

SEMICONDUCTOR CONVERSION CHART

DRN: J.S. Meehan — DATE 9-11-72
CHK'D: Larry Moore — DATE 10-30-72
ENG: [illegible] — DATE 11/3/72
PROJ. ENG.: M.G. Lavoie — DATE 11/3/72
PROD.: [illegible] — DATE 11/21/72
NEXT HIGHER ASSY
SCALE: 1/1
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT40 DISPLAY CONTROL

SIZE D | CODE CS | NUMBER M7013-0-1 | REV. D

DIST.

M7013-0-1 SCO D

BRUNING 40-522 16699 DEC FORM NO [illegible]

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MD STATUS A H
SABR STOP (Ø) H
SABR SYNC (Ø) H
SABR CHANGE (Ø) H
7420 E13
PVCS POINT WORD Ø H
PVCS VEC WORD Ø H
7402 E33
MD JUMP L
+3V A
MD GRAPHIC MODE L
MD DNOP L
MD STATUS B L
+3V A
7430 E1
TD TP 2 H
TD MAINT 2 L
7410 E2
7430 E4
TD NPR REQ (1) H
MD CHAR WORD 1 L
MD CHARACTER H
7400 E3
VC2 VEC GEN OP DONE H
TD MAINT 2 L
AF2
7410 E2
+5V
R1 1K
S1 N.O.
ASL START H
AH1
7400 E3
BCL REQ CLR L
AJ1
7400 E3
AE1
TD NPR REQ (Ø) H
SABR STOP (1) H
ASL RESUME H
AL2
7400 E5
+5V
R2 1K
S2 N.O.
TD MAINT 2 L
7404 E24
7400 E5
PVCS 60 HZ PULSE H
SABR SYNC (1) H
7400 E5
MD STATUS A H
SABR COLOR PULSE H
7400 E5
VC2 VEC GEN OP DONE H
MD CHARACTER H
7410 E2
7404 E71
TD RESTART H
TD RESTART L
CRY BRW
D3 D2 D1 D0
74193 E61 TIME CNT UP
R3(1) R2(1) R1(1) R0(1)
+3V A
CR LD CUP CDN
TD RESTART L
SDM DATA READY L
VC1 RESET L
7400 E60
PCC DIS CLOCK H
CF2
7400 E60
TD SYNC UP H
+3V A
+3V A
7474 E52
7473 E51
TD TIME ON H
BCL DATA READY H
BR1
TD RESTART H
7402 E40
SABR RESET H
TD TP 2 H
7402 E40
VC1 RESET L
7404 E63
74155 E62
STBB STBA
DB
DA
S1 SØ
FB3 FB2 FB1 FBØ
FA3 FA2 FA1 FAØ
TD TP2 L
7404 E63
TD TP2 H
TD TP1 L
7404 E63
TD TP1 H
TD LOAD PULSE L
7404 E63
AN2
TD LOAD PULSE H
TD LOAD MODE L
7404 E63
TD LOAD MODE H

MODE TIME TABLE

INPUTS S1	INPUTS SØ	DA	OUTPUTS (L)
L	L	H	FAØ
L	H	H	FA1
H	L	H	FA2
H	H	H	FA3

TIMING DECODER (TD)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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. [illegible] DATE 9/5/72
CHK'D. NANCY MOORE DATE 10-30-72
ENG. [illegible] DATE 10-30-72
PROJ. ENG. H.S. Lawson DATE 10/30/72
PROD. [illegible] DATE 11/3/72
NEXT HIGHER ASSY.
SCALE
SHEET 3 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
VT40 DISPLAY CONTROL (TD)

SIZE	CODE	NUMBER	REV
D	CS	M7013-0-1	

DIST

REVISIONS

REV	CHANGE NO	CHK

BRUNING 40-522 15840
DEC FORM NO DRD 102-B

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BCL DATA READY H → 7404 E24 → SDM DATA READY L

BDL DB Ø1 H → 7404 E32 → SDM DB 1 L

BDL DB Ø2 H → 7404 E32 → SDM DB 2 L

BDL DB Ø4 H → 7404 E32 → SDM DB 4 L

BDL DB Ø5 H → 7404 E32 → SDM DB 5 L

BDL DB Ø6 H → 7404 E32 → SDM DB 6 L

BDL DB 27 H → 7404 E32 → SDM DB 7L

BDL DB Ø9 H → 7404 E93 → SDM DB 9L

BDL DB10H → 7404 E93 → SDM DB10L

BDL DB11H → 7404 E93 → SDM DB11L

BDL DB12H → 7404 E93 → SDM DB12L

BDL DB13H → 7404 E93 → SDM DB13L

BDL DB14H → 7404 E93 → SDM DB14L

BDL DB ØBH → 7404 E2C → SDM DB 8 L

74153 E87: CCL1 B5 H, SABR INC 4 H, MD MODE 3 H, PCC PC14 H, CCL1 B6 H, SABR INC 5 H, SABR STOP(1) H, PCC PC15 H; STB1 STBØ DI STATUS MUX SI SØ; EF2 EB1; ASL AØ2 H, ASL AØ1 H; 9 EH2 SDM STATUS 14 H; 7 EGL SDM STATUS 15 H

74153 E75: CCL1 B1 H, SABR INCØ H, GM INT2(1)H, PCC PC1Ø H, CCL1 B2 H, SABR INC 1 H, MD MODEØ H, PCC PC11 H; DU2 DS1; ASL AØ2 H, ASL AØ1 H; 9 GV2 SDM STATUS 1Ø H; 7 DT2 SDM STATUS 11 H

74153 E95: PR Y6 H, PR X6 H, CSC SHIFT H, PCC PC6 H, PR Y7 H, PR X7 H, LEI LP FLAG(1) H, PCC PC 7 H; EV1 FA1 FD1 ET2 EU1 ES2; ASL AØ2 H, ASL AØ1 H; 9 FEI SDM STATUS ØG H; 7 FHL SDM STATUS Ø7 H

74153 E106: PR Y2 H, PR X2 H, SABR COLOR(Ø)H, PCC PC 2 H, PR Y3 H, PR X3 H, GM BLINK ENA(1) H, PCC PC 3 H; EV2 EU1 EP1 EL2 EM2 ER1; ASL AØ2 H, ASL AØ1 H; 9 FR2 SDM STATUS Ø2 H; 7 FSL SDM STATUS Ø3 H

74153 E76: CCL1 B3 H, SABR INC 2 H, MD MODE1 H, PCC PC 12 H, CCL1 B4 H, SABR INC 3 H, MD MODE2 H, PCC PC13 H; DU1 DR1; ASL AØ2 H, ASL AØ1 H; 9 DV1 SDM STATUS 12 H; 7 DS2 SDM STATUS 13 H

74153 E96: PR Y8 H, PR X8 H, GM INTØ(1) H, PCC PC 8 H, PR Y9 H, PR X9 H, GM INT1(1) H, PCC PC 9 H; EV2 FB1 FD2 EP2 EU2 ER1; ASL AØ2 H, ASL AØ1 H; 9 FE2 SDM STATUS ØB H; 7 FC1 SDM STATUS Ø9 H

74153 E86: PR Y4 H, PR X4 H, SABR ITALICS(1) H, PCC PC 4 H, PR Y5 H, PR X5 H, LEI EDGE H, PCC PC 5 H; EJ1 EK1 EK2 EC1 EA1 EJ2 EC1; ASL AØ2 H, ASL AØ1 H; 9 EL2 SDM STATUS Ø4 H; 7 EMI SDM STATUS Ø5 H

74153 E106: PR YØ H, PR XØ H, GM LINEØ(1) H, PR Y1 H, PR X1 H, GM LINE 1(1) H, PCC PC 1 H; FL1 FM1 FK2 FK1 FN2; ASL AØ2 H, ASL AØ1 H; DP2 DR2; 9 FN1 SDM STATUS ØØ H; 7 FP2 SDM STATUS Ø1 H

74157 E64: BDL DE Ø6 H, BDL DE Ø7 H, BDL DE Ø8 H, BDL DE Ø9 H; DU2 DT2 DH1; SDM S VEC + VEC L, MD SV + REL PT H; 9 DL2 SDM △ X6 H; 12 DJ1 SDM △ X7 H; 7 DL1 SDM △ X8 H; 4 DH1 SDM △ X9 H

74157 E54: BDL DB Ø9 H, BDL DB Ø2 H, BDL DB 10 H, BDL DB Ø3 H, BDL DB 11 H, BDL DB Ø4 H, BDL DB 12 H, BDL DB Ø5 H; SDM S VEC + VEC L, MD SV + REL PT H; 9 CV2 SDM △ X2 H; 12 CS2 SDM △ X3 H; 7 CV1 SDM △ X4 H; 4 CU1 SDM △ X5 H

74157 E65: BDL DB ØBH, BDL DB Ø7 H, BDL DB Ø1 H, BDL DB Ø5 H, BDL DB Ø1 H; SDM S VEC + VEC L, MD SV + REL PT H; 9 DM1 SDM △ Y8 H; 12 DJ2 SDM △ Y9 H; 7 DK2 SDM △ XØ H; 4 DH2 SDM △ X1 H

74157 E55: BDL DB Ø4 H, BDL DB Ø4 H, BDL DB Ø5 H, BDL DB Ø5 H, BDL DB Ø6 H, BDL DB Ø7 H; MD SV + RELPT H, MD VECTOR H, MD SV + REL PT H; 9 CU2 SDM △ Y4 H; 12 CR2 SDM △ Y5 H; 7 CT2 SDM △ Y6 H; 4 CP2 SDM △ Y7 H

STATUS REG. TABLE (74153)

S1	SØ	SELECT
L	L	A
L	H	B
H	L	C
H	H	D

STATUS & DELTA MUX (SDM)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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 G.S. Manchester DATE 9-7-72
CHK'D. NORMAN MOORE DATE 10-30-72
ENG. [illegible] DATE [illegible]
PROJ. ENG. H.E. Savage DATE 11/30/72
PROD. [illegible] DATE 11/7/72
NEXT HIGHER ASSY. —
SCALE —
SHEET 9 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: V140 DISPLAY CONTROL (SDM)

SIZE D CODE CS NUMBER M7013-0-1 REV

DIST.

REVISIONS: REV | CHG | CHANGE No.

ENGINEERING 40 832 19840 DEC 1 2000 MD 2000 102-0

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+3V A
BDL DBØ6H BV2
CCL2 INIT L
74174 E53 CHAR ATTR REG
BDL DBØ5H CB1
74174 E57 CHAR REG
BDL DB14 H
BDL DBØØ CP1
BDL DBØ1H BT2
BDL DBØ2H BV1
BDL DBØ3H CE1
BDL DBØ4H CA1
74174 E66 CHAR REG
BDL DBØ8H
BDL DBØ9H
BDL DB1Ø H BF1
BDL DB11 H CM2
BDL DB12 H CK2
BDL DB13 H CK1
MD CHARACTER L
TD LOAD PULSE L
7402 E49
74157 E68 A3 CHAR WORD SELECT
74157 E67 A2 CHAR WORD SELECT
STB SØ
7404 E69
CCL1 B5 H
CCL1 B6 H
CCL1 B7 L
CCL1 B7 H
FVCS WORD 1 H
PVCS WORD 1 H
CCL1 B1 H
CCL1 B2 H
CCL1 B3 H
CCL1 B4 H
CCL2 LOR L
CCL2 CHAR COL CLK L
CCL2 INIT P L
7473 E104
7400 E93
SØ
S1
SRI L
SLI L
CCL2 GO CLK H
CCL2 BLANK (Ø) H
7400 E114
7402 E113
+5V
R19 5.6K
C123 100 PF
350 NSEC
74123 E115
DP1
CCL1 CHAR INTENSITY H
CCL2 EOC L
74194 E91 CHAR OUTPUT REG
74194 E90 CHAR OUTPUT REG
CRD CB1 H
CRD CB2 H
CRD CB3 H
CRD CB4 H
CRD CB5 H
CRD CB6 H
CRD CB7 H
CRD CB8 H
CLR CLK DSØ
S1 SØ DSS
R3(1)
R2(1)
R1(1)
RØ(1)

CHARACTER OUTPUT TABLE

S1	SØ	FUNCTION
L	L	INHIBIT CLK (DO NOTHING)
L	H	SHIFT RIGHT (R3 → RØ)
H	L	SHIFT LEFT (RØ → R3)
H	H	PARALLEL LOAD ON CLOCK

CCL1 COUNT 4 L
CCL1 COUNT 3H
CCL1 COUNT 3L
CCL1 COUNT 2L
CCL1 COUNT 1L
74193 E89
CDN LDCUP CLR
CRY BRW
+3V B
7442 E88 CHAR COL DECODE
CCL2 CHAR COL CLK L
CCL1 CCGL
CCL1 CC1 L
7400 E107
EH1
CCL1 CHAR STOP LP H
R6 4.7K
C119 330PF
500NSEC
DD2
CCL1 CHAR GEN DONE H

CHARACTER CONTROL LOGIC 1 (CCL1)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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. K.E. Hallen	DATE 9/14/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. NANCY MOORE	DATE 10-30-72	
ENG. J. Tunning	DATE 10-30-72	TITLE VT4Ø DISPLAY CONTROL (CCL1)
PROJ. ENG. H.E. Lawrence	DATE 10/30/72	
PROD. D. McCarter	DATE 11/3/72	
NEXT HIGHER ASSY.		SIZE D CODE CS NUMBER M7013-Ø-1 REV
SCALE		
SHEET 2 OF		DIST

REVISIONS | REV | CHANGE NO | CHK
BRUNING 40-522 15840
DEC FORM NO DRD 102-B

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CCL1 CHAR GEN DONE H — 7402 E101 — CCL2 EOC L
BCL INIT H, CR1, CCL2 INIT P H — 7402 E100 — CCL2 INIT & INIT P L
CCL1 B6 H, CCL1 B7 H — 7400 E114; CCL1 CC1 L — 7402 E113
CRD CB8 H — 7400 E114 — 7404 E110
CCL2 LOR L — 7402 E113
CCL2 GO CLK L, CCL2 EOC L — J UNBLANK 7473 E104 K — CCL2 BLANK (Ø) H
CCL1 B5 H — 7404 E69; CCL1 B7 L, CCL1 B6 H — 7430 E70 — CCL2 SPACE L
CCL1 B4 H — 7404 E69; + 3V A — 7404 E71 — CCL2 SPACE H
CCL1 B3 H — 7404 E69
CCL1 B2 H — 7404 E69
CCL1 B1 H — 7404 E69
CCL2 CHAR CLK L, CCL2 CHAR CLK H — 7400 E109 — 7404 E110
+ 3V B, CSC PRINT CHAR L — J GO 7473 E112 K — CCL2 INIT & INIT P L
CCL2 INIT P H, CCL2 EOC L — J INIT P 7473 E112 K
J RUN 7473 E111 K — FF2 CCL2 RUN (Ø) H
CCL2 GO CLK H — J DESCEND 7473 E111 K — FU1 CCL2 DESCEND (1) H; FV1 CCL2 DESCEND (Ø) H; CCL2 EOC L
+3V A, +3V B — 7437 E108
7442 E85 CHAR BIT DECODE — D3, D2, D1, D0 — CCL2 LOR L
C122 470 PF, R10 3K, R9 2K, +5V; CCL2 INIT P L, CCL2 DEFL DONE — 74121 E94 — +3V B
< .98 μ SEC, > 1.4 μ SEC
C121 100 PF, R8 3K, +5V; +3V B — 74121 E74 — DN1 CCL2 STEP X H
+3V A, CCL2 EOC L — RAMP Y 7473 E103 — FF1 CCL2 RAMP Y (1) H
200 NSEC
BCL INIT H — 7402 E53 — PVCS GØ HZ PULSE H
SDM DBI L — 7474 E72; CCL2 INIT L — 7476 E73 — ASL BELL CHAR L DE2; +3V B
CCL2 BELL L DF2
7442 E84 CHAR BIT DECODE — D3, D2, D1, D0 — CCL2 CBC11 L
+3V B — 74193 E83 CHAR BIT CNTR — R3(1), R2(1), R1(1), R0(1); CRY BRN; CLR LD CUP CDN
CCL2 CLK H, CCL2 EOC L, CCL2 GO CLK H, +3V B
7404 E71
CCL2 INIT P L — 7400 E109
PCC DIS CLOCK H — 7473 E103 — CCL2 CHAR CLK H; CCL2 CHAR CLK L
C124 10 PF, R20 5.6 K, +5V; 100 N SEC — 74123 E115 — CCL2 CHAR COL CLK L
CCL1 COUNT 4 L — 7402 E100 — CCL2 CLK H

CHARACTER CONTROL LOGIC 2 (CCL2)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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. R E Hallen DATE 9/11/72
CHK'D. NANCY MOORE DATE 10-30-72
ENG. J Manning DATE 10-30-72
PROJ. ENG. H C Lucas DATE 10/30/72
PROD. P McCarthy DATE 11/7/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

NEXT HIGHER ASSY.
SCALE — SHEET 10 OF

VT40 DISPLAY CONTROL (CCL2)

SIZE D | CODE CS | NUMBER M7013-0-1 | REV
DIST

REV	REVISIONS	CHANGE NO	CHK

BRUNING 40-522 15840
DEC-10PM-NO
DRD 102-B

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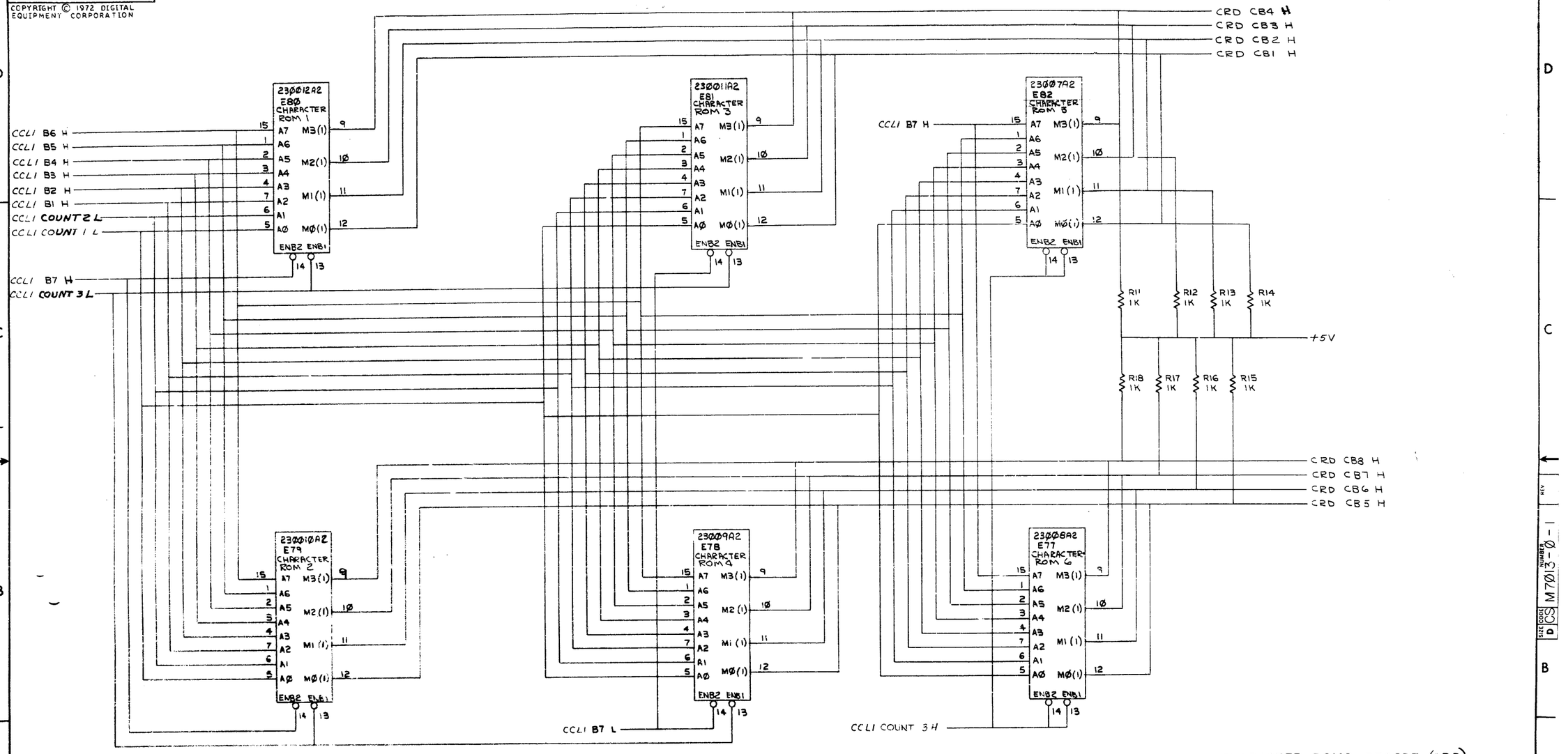

CHARACTER ROMS DECODE (CRD)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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. R E Fuller DATE 9/14/72
CHK'D. NANCY MOORE DATE 10-30-72
ENG. J Sonsky DATE 10-30-72
PROJ ENG. [illegible] DATE [illegible]
PROD. [illegible] DATE [illegible]
NEXT HIGHER ASSY.
SCALE
SHEET 1 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
VT40 DISPLAY CONTROL (CRD)

SIZE D CODE CS NUMBER M7013-0-1 REV.
DIST.

REVISIONS		
REV	CHANGE NO	CHK

DEC FORM NO
DRD 169-B

SIZE D CODE CS NUMBER M7013-0-1 REV

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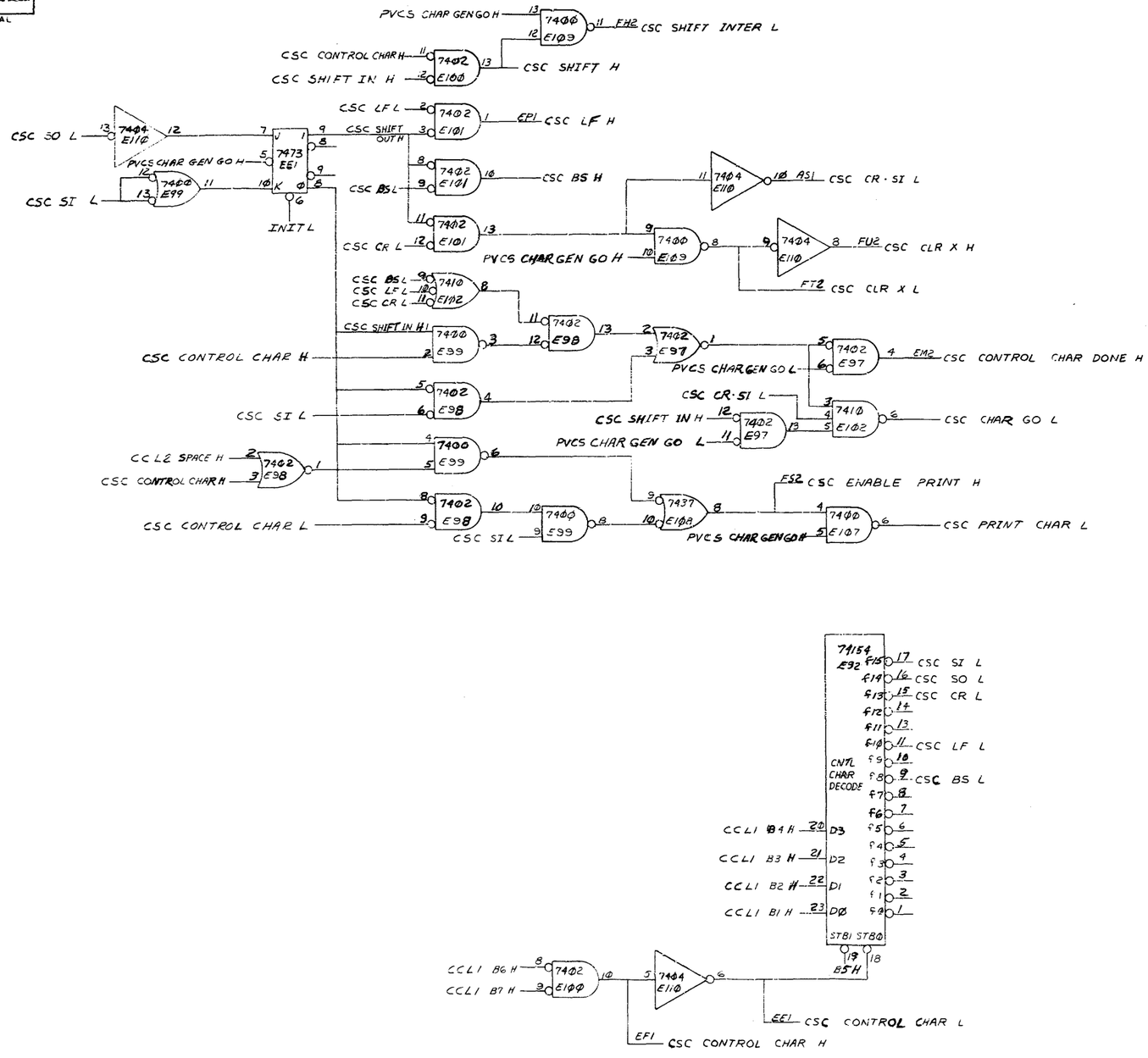

CONTROL & SPECIAL CHARACTERS (CSC)

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX - .005, .XX - .02, X - .1 | ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN G.J.Mannington DATE 7-1-72
CHK'D NANCY MOORE DATE 10-30-72
ENG. DATE
PROJ. ENG. H.E.Lawson DATE 10/30/72
PROD. E.McCarthy DATE 11/3/72
NEXT HIGHER ASSY.
SCALE
SHEET 12 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT40 DISPLAY CONTROL (CSC)

SIZE	CODE	NUMBER	REV
D	CS	M7013-0-1	

DIST.

REV	REVISION / CHANGE NO	CHK

BRUNING # 5322 15840

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THIS FACE SHEET CONTAINS THE FOLLOWING CHIP PART NUMBERS:

PART NUMBER
23-007A2
23-008A2
23-009A2
23-010A2
23-011A2
23-012A2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		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. C B McCoy	DATE 10-2-72	
CHK'D D K Gale	DATE 10-1-72	
ENG. L Tomasso	DATE 10-30-72	
PROJ. ENG. H E Lavoie	DATE 10/30/72	
PROD. F M Cantley	DATE 11/1/72	

NEXT HIGHER ASS'Y
B-DD-GT40-0

SCALE —

SHEET 1 OF

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CHARACTER GENERATOR ROM PATTERNS

SIZE	CODE	NUMBER	REV.
K	RL	M7013-0-8	

DIST.

REVISIONS

REV.	CHANGE NO.	CHK

DEC FORM NO.
DRB 100

ROM PATTERN SPEC PAGE 1 OF 8

DEC PART NUMBI 23-007A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0001	01
1	001	1110	16
2	002	0011	03
3	003	1100	14
4	004	0010	02
5	005	0001	01
6	006	1000	10
7	007	1100	14
8	010	1001	11
9	011	0110	06
10	012	1000	10
11	013	1111	17
12	014	1000	10
13	015	1000	10
14	016	0000	00
15	017	0000	00
16	020	0000	00
17	021	1111	17
18	022	0010	02
19	023	0001	01
20	024	0000	00
21	025	0000	00
22	026	0000	00
23	027	0000	00
24	030	0000	00
25	031	1000	10
26	032	0100	04
27	033	0011	03
28	034	1000	10
29	035	1100	14
30	036	0000	00
31	037	0000	00
32	040	1111	17
33	041	0000	00
34	042	1111	17
35	043	0000	00

ROM PATTERN SPEC PAGE 2 OF 8

DEC PART NUMBI 23-007A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	1010	12
37	045	1001	11
38	046	0111	07
39	047	0000	00
40	050	0000	00
41	051	0000	00
42	052	1001	11
43	053	0000	00
44	054	0000	00
45	055	0000	00
46	056	0001	01
47	057	0000	00
48	060	0000	00
49	061	0000	00
50	062	0100	04
51	063	0010	02
52	064	0000	00
53	065	0000	00
54	066	1000	10
55	067	1000	10
56	070	0001	01
57	071	0001	01
58	072	0010	02
59	073	0001	01
60	074	0000	00
61	075	0000	00
62	076	1000	10
63	077	1111	17
64	100	0000	00
65	101	0000	00
66	102	0000	00
67	103	0000	00
68	104	0000	00
69	105	0000	00
70	106	0111	07
71	107	0001	01

DEC PART NUMBI 23-007A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0011	03
73	111	0000	00
74	112	1010	12
75	113	0100	04
76	114	0101	05
77	115	1000	10
78	116	0000	00
79	117	0000	00
80	120	1000	10
81	121	0000	00
82	122	0000	00
83	123	0000	00
84	124	0001	01
85	125	0010	02
86	126	0000	00
87	127	0000	00
88	130	0000	00
89	131	0000	00
90	132	0000	00
91	133	0000	00
92	134	0000	00
93	135	0000	00
94	136	0000	00
95	137	0000	00
96	140	1000	10
97	141	0111	07
98	142	0000	00
99	143	0000	00
100	144	1000	10
101	145	1000	10
102	146	1000	10
103	147	0111	07
104	150	1111	17
105	151	0010	02
106	152	1000	10
107	153	0111	07

DEC PART NUMBI 23-007A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-3-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1001	11
109	155	0110	06
110	156	0000	00
111	157	0000	00
112	160	1000	10
113	161	0111	07
114	162	0100	04
115	163	0011	03
116	164	0000	00
117	165	0000	00
118	166	0000	00
119	167	0000	00
120	170	0100	04
121	171	0000	00
122	172	0001	01
123	173	0001	01
124	174	0000	00
125	175	0000	00
126	176	0000	00
127	177	0000	00
128	200	1001	11
129	201	0100	04
130	202	0001	01
131	203	1111	17
132	204	1000	10
133	205	0111	07
134	206	1000	10
135	207	0100	04
136	210	0100	04
137	211	0011	03
138	212	1000	10
139	213	1100	14
140	214	0000	00
141	215	0000	00
142	216	1001	11
143	217	1111	17

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0000	00
145	221	1111	17
146	222	0000	00
147	223	0000	00
148	224	0111	07
149	225	0000	00
150	226	0010	02
151	227	1100	14
152	230	1000	10
153	231	1100	14
154	232	0000	00
155	233	1111	17
156	234	0010	02
157	235	1111	17
158	236	0100	04
159	237	0011	03
160	240	0000	00
161	241	0000	00
162	242	0100	04
163	243	1011	13
164	244	0010	02
165	245	1100	14
166	246	1001	11
167	247	0110	06
168	250	1000	10
169	251	0000	00
170	252	1000	10
171	253	0111	07
172	254	0000	00
173	255	0000	00
174	256	0100	04
175	257	1111	17
176	260	0010	02
177	261	1100	14
178	262	0000	00
179	263	0000	00

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1000	10
181	265	1000	10
182	266	1000	10
183	267	0000	00
184	270	0010	02
185	271	0100	04
186	272	1111	17
187	273	0000	00
188	274	0000	00
189	275	0000	00
190	276	1000	10
191	277	1000	10
192	300	0000	00
193	301	0000	00
194	302	0101	05
195	303	1111	17
196	304	1000	10
197	305	0111	07
198	306	1000	10
199	307	0100	04
200	310	0100	04
201	311	1111	17
202	312	1001	11
203	313	1001	11
204	314	0000	00
205	315	0000	00
206	316	1001	11
207	317	0111	07
208	320	0000	00
209	321	1111	17
210	322	1000	10
211	323	0000	00
212	324	0111	07
213	325	0000	00
214	326	0100	04
215	327	1000	10

DEC PART NUMBI 23-007A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-3-72

ROM PATTERN SPEC PAGE 7 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1000	10
217	331	0000	00
218	332	0000	00
219	333	1111	17
220	334	0000	00
221	335	1111	17
222	336	1000	10
223	337	0111	07
224	340	0010	02
225	341	0001	01
226	342	0001	01
227	343	1111	17
228	344	0000	00
229	345	0000	00
230	346	1001	11
231	347	0110	06
232	350	1000	10
233	351	0000	00
234	352	0100	04
235	353	1111	17
236	354	0100	04
237	355	0011	03
238	356	1000	10
239	357	0111	07
240	360	0010	02
241	361	1100	14
242	362	1001	11
243	363	0111	07
244	364	1000	10
245	365	1000	10
246	366	1000	10
247	367	1000	10
248	370	0000	00
249	371	0000	00
250	372	0110	06
251	373	0001	01

DEC PART NUMBI 23-007A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-3-72

ROM PATTERN SPEC PAGE 8 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0001	01
253	375	0000	00
254	376	1111	17
255	377	1111	17

ROM PATTERN SPEC PAGE 1 OF 8

DEC PART NUMBER: 23-008A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0001	01
1	001	1010	12
2	002	0100	04
3	003	1000	10
4	004	1000	10
5	005	0100	04
6	006	0100	04
7	007	1000	10
8	010	0000	00
9	011	1000	10
10	012	0100	04
11	013	1111	17
12	014	0001	01
13	015	0011	03
14	016	0101	05
15	017	1001	11
16	020	0000	00
17	021	0010	02
18	022	0101	05
19	023	1001	11
20	024	0000	00
21	025	0000	00
22	026	0000	00
23	027	1000	10
24	030	0000	00
25	031	0100	04
26	032	0100	04
27	033	1100	14
28	034	0010	02
29	035	0100	04
30	036	1000	10
31	037	0100	04
32	040	1110	16
33	041	0001	01
34	042	0001	01
35	043	0001	01

ROM PATTERN SPEC PAGE 2 OF 8

DEC PART NUMBER: 23-008A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0010	02
37	045	1110	16
38	046	0000	00
39	047	1111	17
40	050	0000	00
41	051	1000	10
42	052	1000	10
43	053	1010	12
44	054	0000	00
45	055	0110	06
46	056	1001	11
47	057	1001	11
48	060	0000	00
49	061	0000	00
50	062	0000	00
51	063	1000	10
52	064	0000	00
53	065	0000	00
54	066	1100	14
55	067	0000	00
56	070	1000	10
57	071	1110	16
58	072	1001	11
59	073	1001	11
60	074	0000	00
61	075	0000	00
62	076	0000	00
63	077	0000	00
64	100	0100	04
65	101	0010	02
66	102	1110	16
67	103	0010	02
68	104	0000	00
69	105	1111	17
70	106	0000	00
71	107	0000	00

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1000	10
73	111	0100	04
74	112	0010	02
75	113	0010	02
76	114	1000	10
77	115	0100	04
78	116	0110	06
79	117	1010	12
80	120	0100	04
81	121	0010	02
82	122	0010	02
83	123	1110	16
84	124	0000	00
85	125	1000	10
86	126	0100	04
87	127	0010	02
88	130	1000	10
89	131	1100	14
90	132	1010	12
91	133	1000	10
92	134	1000	10
93	135	1000	10
94	136	1000	10
95	137	1010	12
96	140	0000	00
97	141	0100	04
98	142	0010	02
99	143	1111	17
100	144	0000	00
101	145	0000	00
102	146	0000	00
103	147	1110	16
104	150	0000	00
105	151	1111	17
106	152	0001	01
107	153	0001	01

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	0000	00
110	156	0000	00
111	157	1111	17
112	160	0100	04
113	161	0100	04
114	162	0100	04
115	163	1100	14
116	164	0100	04
117	165	0010	02
118	166	0010	02
119	167	0100	04
120	170	0000	00
121	171	0100	04
122	172	1000	10
123	173	0000	00
124	174	1111	17
125	175	0001	01
126	176	0001	01
127	177	0001	01
128	200	0000	00
129	201	0000	00
130	202	0000	00
131	203	0000	00
132	204	0000	00
133	205	0000	00
134	206	1111	17
135	207	0000	00
136	210	0000	00
137	211	0111	07
138	212	0000	00
139	213	0000	00
140	214	0000	00
141	215	0100	04
142	216	1111	17
143	217	0100	04

DEC PART NUMBER 23-008A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC PAGE 5 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1100	14
145	221	1010	12
146	222	1111	17
147	223	1010	12
148	224	0010	02
149	225	0101	05
150	226	0010	02
151	227	1000	10
152	230	0110	06
153	231	1001	11
154	232	1001	11
155	233	0110	06
156	234	0000	00
157	235	0000	00
158	236	0100	04
159	237	0010	02
160	240	0000	00
161	241	0000	00
162	242	1100	14
163	243	0010	02
164	244	0000	00
165	245	0001	01
166	246	0010	02
167	247	1100	14
168	250	0000	00
169	251	0010	02
170	252	0100	04
171	253	1111	17
172	254	0000	00
173	255	1000	10
174	256	1000	10
175	257	1110	16
176	260	0000	00
177	261	0000	00
178	262	0000	00
179	263	0000	00

DEC PART NUMBER 23-008A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC PAGE 6 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	1000	10
182	266	1000	10
183	267	1000	10
184	270	0000	00
185	271	0000	00
186	272	0000	00
187	273	0000	00
188	274	0000	00
189	275	0000	00
190	276	0000	00
191	277	1000	10
192	300	1110	16
193	301	0001	01
194	302	0001	01
195	303	1001	11
196	304	0000	00
197	305	0010	02
198	306	1111	17
199	307	0000	00
200	310	0010	02
201	311	0001	01
202	312	1001	11
203	313	1001	11
204	314	0011	03
205	315	0001	01
206	316	1001	11
207	317	1101	15
208	320	0000	00
209	321	1000	10
210	322	0100	04
211	323	0010	02
212	324	1111	17
213	325	1001	11
214	326	1001	11
215	327	1001	11

DEC PART NUMBI 23-008A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1100	14
217	331	0010	02
218	332	0001	01
219	333	0001	01
220	334	0011	03
221	335	0001	01
222	336	0001	01
223	337	1001	11
224	340	0110	06
225	341	1001	11
226	342	1001	11
227	343	1001	11
228	344	0110	06
229	345	1001	11
230	346	1001	11
231	347	1001	11
232	350	0000	00
233	351	0000	00
234	352	0110	06
235	353	0110	06
236	354	0000	00
237	355	0000	00
238	356	0110	06
239	357	0110	06
240	360	0000	00
241	361	1000	10
242	362	0100	04
243	363	0010	02
244	364	0000	00
245	365	0100	04
246	366	0100	04
247	367	0100	04
248	370	0000	00
249	371	0001	01
250	372	0010	02
251	373	0100	04

DEC PART NUMBI 23-008A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0010	02
253	375	0001	01
254	376	1001	11
255	377	1001	11

DEC PART NUMBI 23-009A2
ORIG NATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC PAGE 1 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1111	17
1	001	0000	00
2	002	0000	00
3	003	0000	00
4	004	0111	07
5	005	1000	10
6	006	0100	04
7	007	0010	02
8	010	0000	00
9	011	0001	01
10	012	0010	02
11	013	1111	17
12	014	1100	14
13	015	1010	12
14	016	1001	11
15	017	1000	10
16	020	0000	00
17	021	0110	06
18	022	1001	11
19	023	1000	10
20	024	1100	14
21	025	1010	12
22	026	1001	11
23	027	1000	10
24	030	0000	00
25	031	0000	00
26	032	0000	00
27	033	1111	17
28	034	0110	06
29	035	1001	11
30	036	1000	10
31	037	0111	07
32	040	1111	17
33	041	0000	00
34	042	0000	00
35	043	0000	00

DEC PART NUMBI 23-009A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

ROM PATTERN SPEC PAGE 2 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0000	00
37	045	0001	01
38	046	0010	02
39	047	1111	17
40	050	0000	00
41	051	0000	00
42	052	0000	00
43	053	0010	02
44	054	0000	00
45	055	0000	00
46	056	0000	00
47	057	0000	00
48	060	0000	00
49	061	1000	10
50	062	0000	00
51	063	0000	00
52	064	1000	10
53	065	0100	04
54	066	0011	03
55	067	0100	04
56	070	1000	10
57	071	1111	17
58	072	1000	10
59	073	1000	10
60	074	0000	00
61	075	0000	00
62	076	0000	00
63	077	0000	00
64	100	0000	00
65	101	0000	00
66	102	1111	17
67	103	0000	00
68	104	0000	00
69	105	1111	17
70	106	0000	00
71	107	0000	00

DEC PART NUMBI 23-009A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1011	13
73	111	1100	14
74	112	0000	00
75	113	0100	04
76	114	0011	03
77	115	0100	04
78	116	1000	10
79	117	1000	10
80	120	0000	00
81	121	0000	00
82	122	0000	00
83	123	1111	17
84	124	0000	00
85	125	0011	03
86	126	0101	05
87	127	1001	11
88	130	0000	00
89	131	0001	01
90	132	0010	02
91	133	0000	00
92	134	0000	00
93	135	0000	00
94	136	0000	00
95	137	0010	02
96	140	0000	00
97	141	0000	00
98	142	0000	00
99	143	0111	07
100	144	0000	00
101	145	0010	02
102	146	0100	04
103	147	1111	17
104	150	0000	00
105	151	1111	17
106	152	0000	00
107	153	0000	00

DEC PART NUMBI 23-009A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	1000	10
110	156	1000	10
111	157	1111	17
112	160	0001	01
113	161	0101	05
114	162	0011	03
115	163	0001	01
116	164	0010	02
117	165	0001	01
118	166	0001	01
119	167	0010	02
120	170	0000	00
121	171	0000	00
122	172	0000	00
123	173	0001	01
124	174	1111	17
125	175	1000	10
126	176	1000	10
127	177	1000	10
128	200	0000	00
129	201	0000	00
130	202	0000	00
131	203	0000	00
132	204	0000	00
133	205	0000	00
134	206	1011	13
135	207	0000	00
136	210	0000	00
137	211	0000	00
138	212	0000	00
139	213	0000	00
140	214	0000	00
141	215	0001	01
142	216	0111	07
143	217	0001	01

DEC PART NUMBI 23-009A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0100	04
145	221	0100	04
146	222	1111	17
147	223	0100	04
148	224	0100	04
149	225	0010	02
150	226	0001	01
151	227	0100	04
152	230	0110	06
153	231	1001	11
154	232	1001	11
155	233	0110	06
156	234	0000	00
157	235	0000	00
158	236	0000	00
159	237	0000	00
160	240	0000	00
161	241	0000	00
162	242	0011	03
163	243	0100	04
164	244	0000	00
165	245	1000	10
166	246	0100	04
167	247	0011	03
168	250	0000	00
169	251	0010	02
170	252	0001	01
171	253	0000	00
172	254	0000	00
173	255	0000	00
174	256	0000	00
175	257	0011	03
176	260	0000	00
177	261	1000	10
178	262	0110	06
179	263	0000	00

DEC PART NUMBI 23-009A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	0000	00
182	266	0000	00
183	267	0000	00
184	270	0000	00
185	271	0000	00
186	272	1100	14
187	273	1100	14
188	274	0100	04
189	275	0010	02
190	276	0001	01
191	277	0000	00
192	300	0111	07
193	301	1010	12
194	302	1001	11
195	303	1000	10
196	304	0000	00
197	305	1000	10
198	306	1111	17
199	307	1000	10
200	310	1110	16
201	311	1001	11
202	312	1000	10
203	313	1000	10
204	314	0100	04
205	315	1000	10
206	316	1000	10
207	317	1000	10
208	320	0011	03
209	321	0010	02
210	322	0010	02
211	323	0010	02
212	324	0100	04
213	325	1000	10
214	326	1000	10
215	327	1000	10

DEC PART NUMBI 23-009A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0011	03
217	331	0110	06
218	332	1001	11
219	333	1001	11
220	334	0000	00
221	335	1110	16
222	336	0001	01
223	337	0000	00
224	340	0111	07
225	341	1000	10
226	342	1000	10
227	343	1000	10
228	344	0100	04
229	345	1000	10
230	346	1000	10
231	347	1000	10
232	350	0000	00
233	351	0000	00
234	352	0110	06
235	353	0110	06
236	354	0000	00
237	355	0000	00
238	356	1000	10
239	357	0110	06
240	360	0000	00
241	361	0000	00
242	362	0001	01
243	363	0010	02
244	364	0000	00
245	365	0001	01
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	0100	04
250	372	0010	02
251	373	0001	01

DEC PART NUMBI 23-009A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	0000	00
254	376	1011	13
255	377	0000	00

DEC PART NUMBI 23-010A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

ROM PATTERN SPEC PAGE 1 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1100	14
1	001	0010	02
2	002	1001	11
3	003	0101	05
4	004	1100	14
5	005	0010	02
6	006	0001	01
7	007	0001	01
8	010	0001	01
9	011	1111	17
10	012	1001	11
11	013	1001	11
12	014	1100	14
13	015	0010	02
14	016	0001	01
15	017	0001	01
16	020	0001	01
17	021	1111	17
18	022	0001	01
19	023	0001	01
20	024	0001	01
21	025	1111	17
22	026	1001	11
23	027	1001	11
24	030	0001	01
25	031	1111	17
26	032	1001	11
27	033	1001	11
28	034	1100	14
29	035	0010	02
30	036	0001	01
31	037	0001	01
32	040	1111	17
33	041	1000	10
34	042	1000	10
35	043	1000	10

DEC PART NUMBI 23-010A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

ROM PATTERN SPEC PAGE 2 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0000	00
37	045	0001	01
38	046	1111	17
39	047	0001	01
40	050	0000	00
41	051	0000	00
42	052	0001	01
43	053	0001	01
44	054	1111	17
45	055	0000	00
46	056	1000	10
47	057	0100	04
48	060	0001	01
49	061	1111	17
50	062	0001	01
51	063	0000	00
52	064	1111	17
53	065	0010	02
54	066	1100	14
55	067	1100	14
56	070	1111	17
57	071	0100	04
58	072	1000	10
59	073	0000	00
60	074	1100	14
61	075	0010	02
62	076	0001	01
63	077	0001	01
64	100	0001	01
65	101	1111	17
66	102	1001	11
67	103	1001	11
68	104	1100	14
69	105	0010	02
70	106	0001	01
71	107	0001	01

DEC PART NUMBI 23-010A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0001	01
73	111	1111	17
74	112	1001	11
75	113	1001	11
76	114	0100	04
77	115	1010	12
78	116	1001	11
79	117	1001	11
80	120	0011	03
81	121	0001	01
82	122	0001	01
83	123	1111	17
84	124	1111	17
85	125	0000	00
86	126	0000	00
87	127	0000	00
88	130	1111	17
89	131	0000	00
90	132	0000	00
91	133	0000	00
92	134	1111	17
93	135	0000	00
94	136	0000	00
95	137	0000	00
96	140	0011	03
97	141	0100	04
98	142	1000	10
99	143	1000	10
100	144	0000	00
101	145	0111	07
102	146	1000	10
103	147	0000	00
104	150	0001	01
105	151	0001	01
106	152	0001	01
107	153	1001	11

DEC PART NUMBI 23-010A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	1111	17
110	156	0001	01
111	157	0001	01
112	160	0010	02
113	161	0100	04
114	162	1000	10
115	163	0000	00
116	164	0000	00
117	165	0001	01
118	166	0001	01
119	167	0001	01
120	170	0000	00
121	171	1000	10
122	172	0100	04
123	173	0010	02
124	174	0000	00
125	175	0000	00
126	176	0000	00
127	177	0000	00
128	200	0000	00
129	201	0000	00
130	202	0001	01
131	203	0010	02
132	204	0000	00
133	205	0100	04
134	206	0100	04
135	207	0100	04
136	210	0000	00
137	211	1111	17
138	212	1000	10
139	213	0100	04
140	214	0000	00
141	215	1000	10
142	216	0100	04
143	217	0100	04

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0000	00
145	221	1000	10
146	222	0100	04
147	223	0100	04
148	224	0000	00
149	225	1000	10
150	226	0100	04
151	227	0100	04
152	230	0000	00
153	231	0100	04
154	232	1110	16
155	233	0101	05
156	234	0000	00
157	235	1110	16
158	236	0001	01
159	237	0001	01
160	240	0000	00
161	241	1111	17
162	242	1000	10
163	243	0100	04
164	244	0000	00
165	245	0000	00
166	246	0100	04
167	247	1101	15
168	250	0000	00
169	251	0000	00
170	252	0000	00
171	253	0001	01
172	254	0000	00
173	255	1111	17
174	256	0000	00
175	257	1000	10
176	260	0000	00
177	261	0000	00
178	262	1111	17
179	263	0000	00

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	1100	14
182	266	0100	04
183	267	1000	10
184	270	0000	00
185	271	1100	14
186	272	1000	10
187	273	0100	04
188	274	0000	00
189	275	1000	10
190	276	0100	04
191	277	0100	04
192	300	0000	00
193	301	1111	17
194	302	0010	02
195	303	0001	01
196	304	0000	00
197	305	1110	16
198	306	0001	01
199	307	0001	01
200	310	0000	00
201	311	1100	14
202	312	0000	00
203	313	1000	10
204	314	0000	00
205	315	1000	10
206	316	0100	04
207	317	0100	04
208	320	0000	00
209	321	0100	04
210	322	1111	17
211	323	0100	04
212	324	0000	00
213	325	1100	14
214	326	0000	00
215	327	0000	00

DEC PART NUMBI 23-010A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	1100	14
218	332	0000	00
219	333	0000	00
220	334	0000	00
221	335	1100	14
222	336	0000	00
223	337	1000	10
224	340	0000	00
225	341	0100	04
226	342	1000	10
227	343	0000	00
228	344	0000	00
229	345	1111	17
230	346	0000	00
231	347	0000	00
232	350	0000	00
233	351	0100	04
234	352	0100	04
235	353	0100	04
236	354	0000	00
237	355	1000	10
238	356	0110	06
239	357	0001	01
240	360	0000	00
241	361	0000	00
242	362	0111	07
243	363	0000	00
244	364	0000	00
245	365	0001	01
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	1000	10
250	372	0100	04
251	373	1000	10

DEC PART NUMBI 23-010A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGINI 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1111	17
254	376	1111	17
255	377	1111	17

DEC PART NUMBI 23-011A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

ROM PATTERN SPEC PAGE 5 OF 8

DECIMAL LOC	BINARY DATA	OCTAL DATA
144	1000	10
145	1111	17
146	0000	00
147	0000	00
148	1111	17
149	0001	01
150	0010	02
151	0001	01
152	0000	00
153	0000	00
154	0010	02
155	1111	17
156	0000	00
157	1111	17
158	0010	02
159	1100	14
160	1001	11
161	0110	06
162	0010	02
163	1100	14
164	1001	11
165	0110	06
166	0001	01
167	0010	02
168	0001	01
169	0011	03
170	0000	00
171	1111	17
172	1000	10
173	0111	07
174	0000	00
175	1111	17
176	0100	04
177	0011	03
178	1000	10
179	0111	07

DEC PART NUMBI 23-011A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

ROM PATTERN SPEC PAGE 6 OF 8

DECIMAL LOC	BINARY DATA	OCTAL DATA
180	0101	05
181	0011	03
182	0001	01
183	0000	00
184	0000	00
185	0000	00
186	1111	17
187	0000	00
188	0100	04
189	1000	10
190	0000	00
191	0000	00
192	0100	04
193	0000	00
194	0100	04
195	1000	10
196	0100	04
197	1000	10
198	0100	04
199	1000	10
200	1000	10
201	1111	17
202	0100	04
203	1000	10
204	0101	05
205	0001	01
206	0010	02
207	1111	17
208	0100	04
209	1000	10
210	0000	00
211	0000	00
212	1111	17
213	0000	00
214	0100	04
215	0100	04

DEC PART NUMBI 23-011A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0000	00
218	332	0100	04
219	333	1000	10
220	334	0100	04
221	335	1000	10
222	336	0100	04
223	337	1000	10
224	340	0001	01
225	341	1110	16
226	342	0010	02
227	343	1111	17
228	344	0100	04
229	345	0100	04
230	346	0100	04
231	347	0100	04
232	350	0100	04
233	351	0000	00
234	352	0000	00
235	353	1100	14
236	354	0000	00
237	355	1100	14
238	356	0000	00
239	357	1100	14
240	360	1000	10
241	361	0100	04
242	362	0000	00
243	363	1111	17
244	364	1100	14
245	365	0100	04
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	0000	00
250	372	0110	06
251	373	1000	10

DEC PART NUMBI 23-011A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1100	14
254	376	1111	17
255	377	1111	17

DEC PART NUMBI 23-011A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-15-72

ROM PATTERN SPEC PAGE 5 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1000	10
145	221	1111	17
146	222	0000	00
147	223	0000	00
148	224	1111	17
149	225	0001	01
150	226	0010	02
151	227	0001	01
152	230	0000	00
153	231	0000	00
154	232	0010	02
155	233	1111	17
156	234	0000	00
157	235	1111	17
158	236	0010	02
159	237	1100	14
160	240	1001	11
161	241	0110	06
162	242	0010	02
163	243	1100	14
164	244	1001	11
165	245	0110	06
166	246	0001	01
167	247	0010	02
168	250	0001	01
169	251	0011	03
170	252	0000	00
171	253	1111	17
172	254	1000	10
173	255	0111	07
174	256	0000	00
175	257	1111	17
176	260	0100	04
177	261	0011	03
178	262	1000	10
179	263	0111	07

DEC PART NUMBI 23-011A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-15-72

ROM PATTERN SPEC PAGE 6 OF 8

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0101	05
181	265	0011	03
182	266	0001	01
183	267	0000	00
184	270	0000	00
185	271	0000	00
186	272	1111	17
187	273	0000	00
188	274	0100	04
189	275	1000	10
190	276	0000	00
191	277	0000	00
192	300	0100	04
193	301	0000	00
194	302	0100	04
195	303	1000	10
196	304	0100	04
197	305	1000	10
198	306	0100	04
199	307	1000	10
200	310	1000	10
201	311	1111	17
202	312	0100	04
203	313	1000	10
204	314	0101	05
205	315	0001	01
206	316	0010	02
207	317	1111	17
208	320	0100	04
209	321	1000	10
210	322	0000	00
211	323	0000	00
212	324	1111	17
213	325	0000	00
214	326	0100	04
215	327	0100	04

DEC PART NUMBI 23-011A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0000	00
218	332	0100	04
219	333	1000	10
220	334	0100	04
221	335	1000	10
222	336	0100	04
223	337	1000	10
224	340	0001	01
225	341	1110	16
226	342	0010	02
227	343	1111	17
228	344	0100	04
229	345	0100	04
230	346	0100	04
231	347	0100	04
232	350	0100	04
233	351	0000	00
234	352	0000	00
235	353	1100	14
236	354	0000	00
237	355	1100	14
238	356	0000	00
239	357	1100	14
240	360	1000	10
241	361	0100	04
242	362	0000	00
243	363	1111	17
244	364	1100	14
245	365	0100	04
246	366	0001	01
247	367	0001	01
248	370	0000	00
249	371	0000	00
250	372	0110	06
251	373	1000	10

DEC PART NUMBI 23-011A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-15-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1100	14
254	376	1111	17
255	377	1111	17

DEC PART NUMBI 23-012A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGINI 8-4-72

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0011	03
1	001	0100	04
2	002	0000	00
3	003	0001	01
4	004	0001	01
5	005	0001	01
6	006	0001	01
7	007	0001	01
8	010	0000	00
9	011	1111	17
10	012	0000	00
11	013	0000	00
12	014	0000	00
13	015	0001	01
14	016	0100	04
15	017	0000	00
16	020	0000	00
17	021	1111	17
18	022	0000	00
19	023	0000	00
20	024	0000	00
21	025	1111	17
22	026	0000	00
23	027	0000	00
24	030	0000	00
25	031	1111	17
26	032	0000	00
27	033	0000	00
28	034	0011	03
29	035	0100	04
30	036	1000	10
31	037	1001	11
32	040	1111	17
33	041	0000	00
34	042	0000	00
35	043	0000	00

DEC PART NUMBI 23-012A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGINI 8-4-72

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0000	00
37	045	1000	10
38	046	1111	17
39	047	1000	10
40	050	0111	07
41	051	1000	10
42	052	1000	10
43	053	1000	10
44	054	1111	17
45	055	0001	01
46	056	0000	00
47	057	0001	01
48	060	1000	10
49	061	1111	17
50	062	1000	10
51	063	1000	10
52	064	1111	17
53	065	0000	00
54	066	0000	00
55	067	0000	00
56	070	1111	17
57	071	0000	00
58	072	0000	00
59	073	0001	01
60	074	0011	03
61	075	0100	04
62	076	1000	10
63	077	1000	10
64	100	1000	10
65	101	1111	17
66	102	1000	10
67	103	0000	00
68	104	0011	03
69	105	0100	04
70	106	1000	10
71	107	1011	13

ROM PATTERN SPEC PAGE 3 OF 8

DEC PART NUMBI 23-012A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1000	10
73	111	1111	17
74	112	1000	10
75	113	0001	01
76	114	0100	04
77	115	1000	10
78	116	1000	10
79	117	1000	10
80	120	0000	00
81	121	0000	00
82	122	1000	10
83	123	1111	17
84	124	0111	07
85	125	1000	10
86	126	1000	10
87	127	1000	10
88	130	1111	17
89	131	0100	04
90	132	0010	02
91	133	0001	01
92	134	1111	17
93	135	0100	04
94	136	0011	03
95	137	0011	03
96	140	1100	14
97	141	0010	02
98	142	0001	01
99	143	0001	01
100	144	0000	00
101	145	0000	00
102	146	0000	00
103	147	1111	17
104	150	1100	14
105	151	1010	12
106	152	1001	11
107	153	1000	10

ROM PATTERN SPEC PAGE 4 OF 8

DEC PART NUMBI 23-012A2
ORIGINATOR: JOHN BENTON
DATE OF ORIGIN: 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	1111	17
110	156	1000	10
111	157	1000	10
112	160	0000	00
113	161	0000	00
114	162	0000	00
115	163	0001	01
116	164	0000	00
117	165	1000	10
118	166	1000	10
119	167	1000	10
120	170	0000	00
121	171	0000	00
122	172	0000	00
123	173	0000	00
124	174	1000	10
125	175	1000	10
126	176	1000	10
127	177	1000	10
128	200	0000	00
129	201	0000	00
130	202	0000	00
131	203	0000	00
132	204	0000	00
133	205	0110	06
134	206	1001	11
135	207	1001	11
136	210	0000	00
137	211	1111	17
138	212	0100	04
139	213	1000	10
140	214	0000	00
141	215	0111	07
142	216	1000	10
143	217	1000	10

DEC PART NUMBI 23-012A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0000	00
145	221	0111	07
146	222	1000	10
147	223	1000	10
148	224	0000	00
149	225	0111	07
150	226	1001	11
151	227	1001	11
152	230	0000	00
153	231	0000	00
154	232	1111	17
155	233	0000	00
156	234	1000	10
157	235	0001	01
158	236	1010	12
159	237	1010	12
160	240	0000	00
161	241	1111	17
162	242	0000	00
163	243	0000	00
164	244	0000	00
165	245	0000	00
166	246	1000	10
167	247	1111	17
168	250	1000	10
169	251	0100	04
170	252	1000	10
171	253	1000	10
172	254	0000	00
173	255	1111	17
174	256	0001	01
175	257	0010	02
176	260	0000	00
177	261	0000	00
178	262	0111	07
179	263	1000	10

DEC PART NUMBI 23-012A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	1111	17
182	266	0000	00
183	267	1111	17
184	270	0000	00
185	271	1111	17
186	272	0000	00
187	273	0000	00
188	274	0000	00
189	275	0111	07
190	276	1000	10
191	277	1000	10
192	300	1000	10
193	301	1111	17
194	302	0001	01
195	303	0010	02
196	304	1000	10
197	305	0001	01
198	306	0010	02
199	307	0010	02
200	310	0000	00
201	311	1111	17
202	312	0001	01
203	313	0000	00
204	314	0000	00
205	315	0100	04
206	316	1001	11
207	317	1001	11
208	320	0000	00
209	321	0000	00
210	322	0111	07
211	323	1000	10
212	324	0000	00
213	325	0111	07
214	326	1000	10
215	327	1000	10

DEC PART NUMBI 23-012A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0011	03
218	332	0100	04
219	333	1000	10
220	334	0000	00
221	335	0111	07
222	336	1000	10
223	337	0111	07
224	340	0000	00
225	341	1100	14
226	342	0010	02
227	343	0001	01
228	344	1000	10
229	345	0001	01
230	346	1010	12
231	347	1010	12
232	350	0000	00
233	351	1100	14
234	352	1010	12
235	353	1001	11
236	354	0000	00
237	355	0001	01
238	356	0110	06
239	357	1000	10
240	360	0000	00
241	361	0000	00
242	362	1110	16
243	363	0000	00
244	364	0000	00
245	365	1000	10
246	366	1000	10
247	367	1000	10
248	370	0000	00
249	371	0001	01
250	372	0000	00
251	373	0000	00

DEC PART NUMBI 23-012A2
ORIGINATORI JOHN BENTON
DATE OF ORIGINI 8-4-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	1111	17
254	376	1111	17
255	377	1111	17

PAGE REVISION CONTROL SHEET

H NO.	PAGE REVISIONS	REMARKS
001	*	
002	*	
003	*	
004	*	
005	*	
006	*	
007	*	
008	*	
009	*	
010	*	
		(ASL)
		(BCL)
		(PCC)
		(VCI)
		(VC2)
		(LEI)
		(BRL)
		(BDL)
ECO NO.	—	
FTCH REV.	A	
ENG.	—	
DATE	—	FIRST USED ON OPTION/MODEL

DRN. D. Caunter	DATE 11-6-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. Paul Reed	DATE 11/9/72	
ENG. B Quinn	DATE 11/9/72	TITLE BUS CONTROL & BOOTSTRAP
PROJ. ENG. H E Lavoie	DATE 11/9/72	
PROD. P J McCarthy	DATE 11/9/72	

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NEXT HIGHER ASSY.	SIZE	CODE	NUMBER	REV.
B-DD-GT40-Ø	B	CS	M7Ø14-Ø-1	*
SCALE —				
SHEET 1 OF 11	DIST.			

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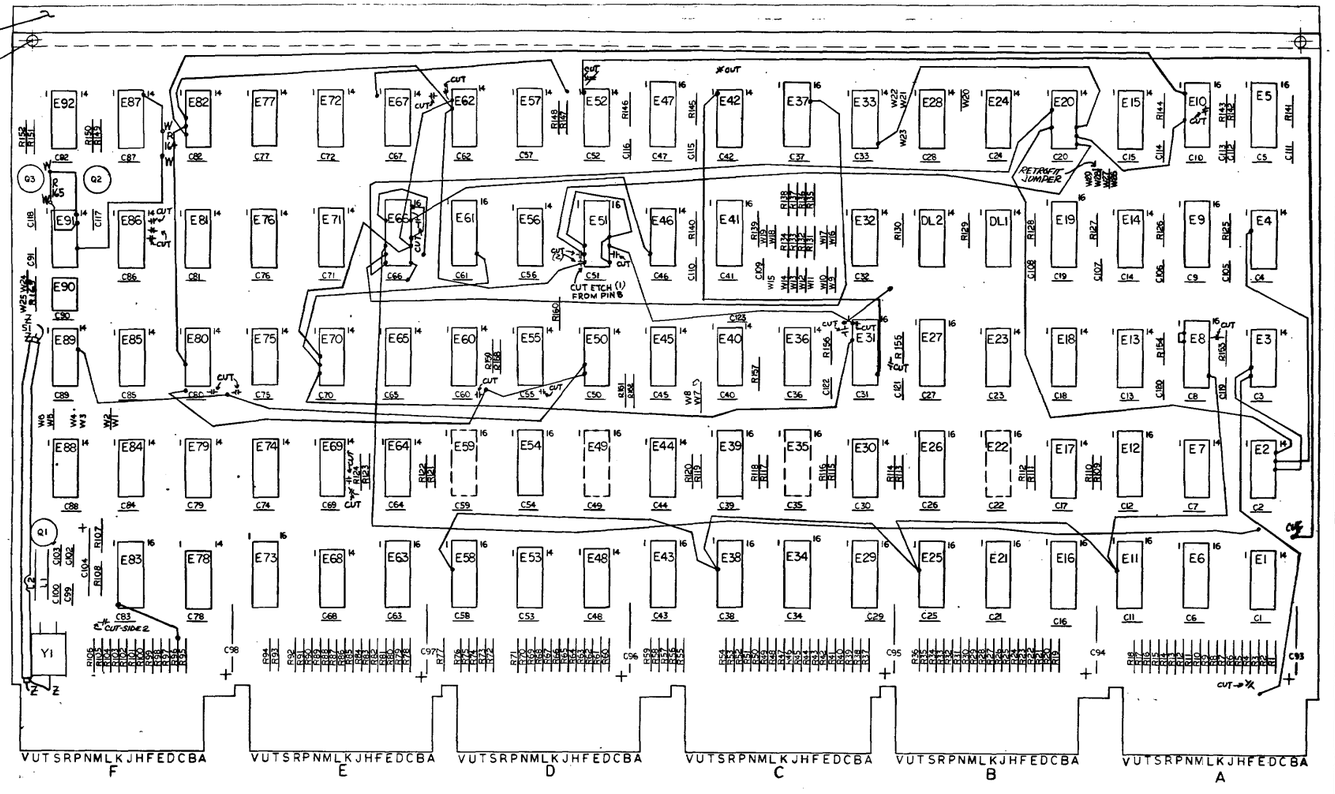
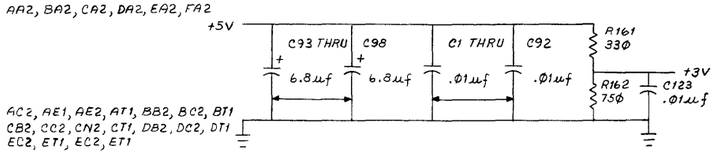
NOTES:

JUMPERS ☐ INSERT

EDGE CUTOFF	BOOTSTRAP ROM SELECT 16	VECTOR INTERRUPT	INTENSITY DELAY	CHARACTER SPACING	INT CLOCK	ADDRESS SELECT	
W1 = 1024 UNITS	W26 = DIS. 1	W8 = D08	W21 = 550 NS	W4 = 72 CHAR 29 LINES	[W24] = INT.	W11 = A12	[W18] = A05
[W2] = 768 UNITS	[W27] = ENA. 1	[W7] = D07	[W20] = 600 NS	W3 = 86 CHAR 32 LINES	W25 = EXT.	[W13] = A09	[W14] = A04
	W28 = ENA 2	[W10] = D06	W23 = 700 NS	[W5] = 72 CHAR 32 LINES		[W16] = A08	[W12] = A03
	[W29] = DIS. 2	W15 = D05	W22 = 1000 NS	W6 = 86 CHAR 29 LINES		[W19] = A07	
		[W9] = D04				[W17] = A06	





REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7014-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7014-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7014-0-6	3
1		ETCHED CIRCUIT BOARD	5010129	4
10	C100,C103,C106,C107,C109, ,C112, ,C115,C119, C121,C122	CAP 10PF 5% 100V DM	1000006	5
2	C102,C110	CAP 100PF 5% 100V DM	1000016	6
4	C105,C108,C120,C111	CAP 330PF 5% 100V DM	1000023	7
2	C117,C118	CAP 560PF 5% 100V DM	1000025	8
6	C93 THRU C98	CAP 6.8UF 20% 35V TANT	1000067	9
4	C99,C114,C116,C123	CAP .01UF 20% 100V	1001610-01	10
1	C104	CAP 1 5UF 10% 20V	1004812	11
91	C1 THRU C72,C74 THRU C92	CAP .22UF 80% 20V	1010274	12
1	R161	RES 330 5% 1/4W	1300295	13
56	R1,R3,R5,R7,R9,R12,R13, R16,R17,R19,R22,R23,R25, R28,R30,R32,R34,R36,R37, R40,R41,R44,R45,R48,R50, R52,R54,R55,R57,R59,R62, R63,R65,R67,R69,R72,R74 R75,R77,R80,R81,R83,R86, R87,R89,R92,R93,R96,R99, R101,R103,,R105,R147,R150, R151,R158	RES 390 5% 1/4W	1300309	14
27	R109,THRU R124,R131 THRU R138,R157,R164,R165	RES 1K 5% 1/4W	1300365	15
8	R126,R127,R139,R142, R145,R153,R155,R156	RES 4.7K 5% 1/4W	1300447	16
61	R2,R4,R6,R8,R10,R11,R14, R15,R18,R20,R21,R24,R26, R27,R29,R31,R33,R35,R38, R39,R42,R43,R46,R47,R49, R51,R53,R56,R58,R60,R61, R64,R66,R68,R70,R71,R73, R76,R78,R79,R82,R84,R85, R88,R90,R91,R94,R95,R97, R98,R100,R102,R104,R106, R129,R130,R148,R149,R152, R159,R160,	RES 180 5% 1/4W	1301322	17
1	R162	RES 750 5% 1/4W	1301401	18
5	R128,R140,R141,R143, R154	RES 22K 5% 1/4W	1301808	19
1	R107	RES 270 5% 1/4W	1301972	20
1	R108	RES 100K 5% 1/4W	1302466	21
2	Q2,Q3	TRANS. DEC 3009B	1503100	22
1	Q1	TRANS. 2N5245	1509681	23
1	L2	COIL 2.2MH	1602912	24
1	L1	COIL 2.2UH	1609620	25
2	DL1,DL2	DELAY LINE L1842	1611197	26
1	Y1	CRYSTAL 20.0 MC	1809880-0	27
3	E28,E42,E77	IC DEC 7474	1905547	28
11	E2,E14,E15,E57,E70,E71,E72, E75,E80,E82,E89	IC DEC 7400	1905575	29
1	E13	IC DEC 7410	1905576	30
1	E68	IC DEC 7453	1905582	31
4	E37,E51,E61,E66	IC DEC 7476	1905585	32
13	E4,E7,E32,E33,E46,E62,E67, E74,E78,E79,E85,E86,E88	IC DEC 7402	1909004	33
2	E40,E56	IC DEC 74H21	1909058	34
2	E1,E55	IC DEC 380	1909485	35
7	E3,E18,E50,E60,E69,E76,E84	IC DEC 7404	1909686	36
1	E48	IC DEC 314	1909704	37
11	E17,E30,E44,E45,E52,E53, E64, E65,E87,E91,E92	IC DEC 8881	1909705	38
2	R144,R146	RES 6.8K 5% 1/4W	1301423	39
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV B

FIRST USED ON OPTION MODEL GT40

8838	8	16	
75451	4	8	
74193	8	16	
74157	8	16	
7496	12	5	
7476	13	5	
5603	8	16	
2602	8	16	
380	1	8	
314	1	8	
IC TYPE	GND	+ 5V	

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

IC PIN LOCATIONS

BRUNING 40-522 1689

DEC FORM NO. DRD-135A

REV	CHANGE NO.	REVISIONS			
				2N5245	SAME
CHK		DEC NO.	EIA NO.	DEC 30098	2N3646

SEMICONDUCTOR CONVERSION CHART

DRN. G. Dimont	DATE 10-2-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. Ken Olsen	DATE 10/2/72	TITLE BUS CONTROL & BOOTSTRAP
ENG. R. Gumm	DATE 10/2/72	
DRFT ENG.	DATE	
PROD.	DATE	
NEXT HIGHER ASSY B-DD-GT40-0		SIZE D CODE CS NUMBER M7014-0-1 REV. A
SCALE		DIST.
SHEET 2 OF		

SIZE D CODE CS NUMBER M7014-0-1 REV A

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NOTES:

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	E23,E36	IC DEC 8242	1909712	39
4	E11,E25,E38,E58	IC DEC 74193	1910018	40
1	E20	IC DEC 7437	1910091	41
1	E19	IC DEC 2602	1910257	42
1	E27	IC DEC 7496	1910363	43
1	E90	IC DEC 75451	1910406	44
7	E5,E8,E9,E10,E31,E41,E47	IC DEC 74123	1910436	45
1	E83	IC DEC 74157	1910655	46
1	E24	IC DEC 7427	1910878	47
7	E6,E16,E21,E29,E34,E43,E63	IC DEC 8838 OR LM331	1911117	48
1	E12	IC DEC IM5603 OR 74187	23016A2	49
1	E54	IC DEC IM5603 OR 74187	23017A2	50
1	E39	IC DEC IM5603 OR 74187	23018A2	51
1	E26	IC DEC IM5603 OR 74187	23019A2	52
4	E22,E35,E49,E59	IC DEC IM5603 OR 74187 (OPTIONAL)		53
1	E81	IC DEC 74H74	1909867	54
1	E73	PRIORITY JUMPER (LEVEL) PLUG	5408776	55
12		EYELET GS-4-7	9006732	56
A/R		INSULATED JUMPER L-2007-1	9009185	57
1		COAX CABLE RG174U 6 IN. LG	9107530	58
1		HANDLE ASSY MODULE	1210711-2	59
REF		BOOT STRAP ROM PATTERNS	K-RL-M7014-0-8	60
1	C113	CAP 120 PF 5% 100V	1000018	61
1	R163	RES 47 OHM 5% 1/4 W	1300202	62
1	R125	RES 68 K OHM 5% 1/4 W	1301327	63

PARTS LIST

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

IRVINE, 40-522 16699

USE FORM NO. DPD 1356

FIRST USED ON OPTION MODEL: GT40

ETCH BOARD REV: B

REVISIONS	CHANGE NO.	REV

DEC NO.	EIA NO.	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART			

DRN. — DATE 11-6-7[illegible]
CHK'D. — DATE 11/[illegible]
ENG. — DATE
PROJ. ENG. — DATE
PROD. — DATE

NEXT HIGHER ASSY: B-DD-GT40-0

SCALE

SHEET 3 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BUS CONTROL & BOOTSTRAP

SIZE D | CODE CS | NUMBER M7014-0-1 | REV. A

DIST.

SIZE D | CODE CS | NUMBER M7014-0-1 | REV A

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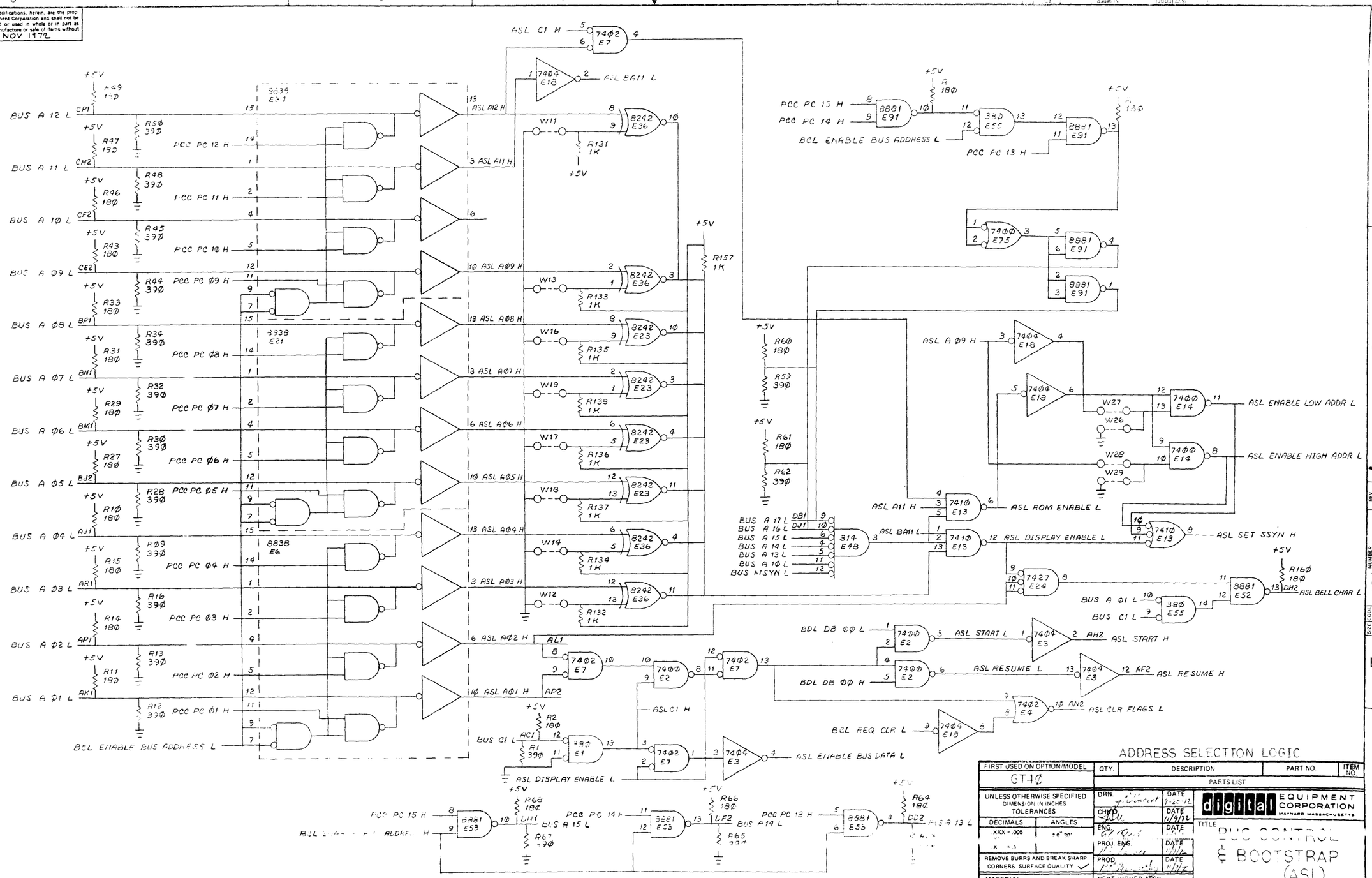

ADDRESS SELECTION LOGIC

BUS CONTROL & BOOTSTRAP (ASL)

FIRST USED ON OPTION/MODEL	GT4Ø
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DECIMALS .XXX ± .005; ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	
MATERIAL	— //
FINISH	— //
DRN.	[illegible] DATE 9-25-72
CHK'D	DATE 11/9/72
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
NEXT HIGHER ASSY.	B-DD-GT4Ø-Ø
SCALE	— //
SHEET 4 OF	
SIZE	D
CODE	CS
NUMBER	M7Ø14-Ø-1
REV	
DIST	

QTY. | DESCRIPTION | PART NO | ITEM NO

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

REVISIONS			
REV	CHAN E NO	CHK	

BRUNING 40-522 1584

DEC-D-DRW-NO DRD 102-B

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BCL INTERRUPT L
BCL SET TIME OUT L
7400 E72
BCL BR REQ (1) H
BCL BR REQ (Ø) H
7404 E76
8881 E87
BCL BR L
BCL NPR REQ (1) H
7402 E67
8881 E87
R104 180
FF2
BUS NPR L
R105 390
R148 180
DC1
BUS SACK L
R147 390
8881 E52
BUS BBSY L
7400 E82
BCL MINE L
+3V
7474 E77 S+BSY
TD NPR REQ (Ø) H
FR2
BCL BR REQ (Ø) H
7402 E86
R106 180
FN1
BUS NPG OUT H
R95 180
R159 180
DL2
BUS NPG IN H
R158 390
380 E55
R150 390
Q2 DEC 3009B
R149 180
C117 560pf
R151 390
Q3 DEC 3009B
R152 180
C118 560pf
BCL BG OUT H
BCL BG IN H
R8 180
AH1
BUS SSYN L
R7 390
380 E1
BCL SSYN H
R6 180
AF1
BUS BBSY L
R5 390
BCL BUSY H
R4 180
AD1
BUS INIT L
R3 390
BCL INIT H
BCL TIME OUT (1) L
VCI INIT L
7400 E2
7404 E3
AE1
BCL TIME OUT + INIT L
TD NPR REQ (Ø) H
BCL NPR REQ (Ø) L
BCL ENABLE BUS ADDRESS H
BCL ENABLE BUS ADDRESS L
BCL MINE L
7402 E67
100n SEC
74123 E47 SET MSYN
R195 4.7K
C115 10pf
+5V
+3V
7474 E28
BCL MSYN (1) H
8881 E53
R70 180
DP1
BUS MSYN L
R69 390
GM INTERRUPT H
DH1
BCL INTERRUPT L
BCL INTR DONE H
BCL TIME OUT 1 H
BCL DATA CLR H
7427 E24
BL2
BCL REQ CLR L
CSC SHIFT INTR L
DA1
7474 E92
BCL TIME OUT (1) H
BCL TIME OUT (1) L
22µ SEC
74123 E47 TIME OUT DLY
R146 6.8K
C116 .01µf
BCL DATA CLR L
TD LOAD PULSE H
BCL CLR TIME OUT H
BCL INIT H
BU2
BCL DATA CLR H
BUS BR 4 L
BUS BR 5 L
BUS BR 6 L
BUS BR 7 L
EK1
EJ1
EH1
EF1
PRIORITY JUMPER E73
BCL BR L
BCL BG OUT H
BCL BG IN H
BUS BG 4 OUT H
BUS BG 5 OUT H
BUS BG 6 OUT H
BUS BG 7 OUT H
BUS BG 4 IN H
BUS BG 5 IN H
BUS BG 6 IN H
BUS BG 7 IN H
EM1
EP2
ER1
DS1
R88 180
R85 180
R84 180
R82 180
R87 390
R86 390
R83 390
R81 390
R73 180
R91 180
R94 180
R90 180
R74 390
R92 390
R93 390
R89 390
BUS COL
FB2
R99 390
R98 180
BUS DCLO
FD2
R101 390
R100 180
BUS ACLO
FE2
R103 390
R102 180
BUS A ØØ L
AU1
R17 390
R18 180
BCL TIME OUT (1) L
BCL SET TIME OUT L
BCL CLR TIME OUT H
BCL INTR DONE H
BRL INTR H
BCL SSYN H
BCL TIME OUT (1) L
BCL DATA RDY H
BK2
R126 4.7K
C106 10pf
BCL 1SYN (1) H
ASL SET SSYN H
R156 4.7K
C122 10pf
BUS SSYN L
7474 E42 SSYN

BUS CONTROL LOGIC

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		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. J. Vincent	DATE 4-25-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 11/9/72	
ENG. W. Cramm	DATE 11/9/72	
PROJ. ENG. H. Sinclair	DATE 11/9/72	
PROD. F. Whitney	DATE 11/9/72	

TITLE: BUS CONTROL & BOOTSTRAP (BCL)
NEXT HIGHER ASSY. B-DD-GT4Ø-Ø
SCALE
SHEET 5 OF
SIZE DCS | CODE | NUMBER M7Ø14-Ø-1 | REV. A
DIST.

REVISIONS: REV | CHANGE NO | CHK
BRUNING 40.522 15840
DEC FORM NO DRD 102-B

SIZE CODE DCS NUMBER M7Ø14-Ø-1 REV A

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DCR 4 OUT H FP2
CSC L.F. H
DCR 3 OUT H FN2
CSC CHAR. $\overline{CR}$ H
DCR 2 OUT H FT2
VCC CHAR. $\overline{LF}$ H
DCR 1 OUT H FS2
W5 W3 W6 W4
7402 E88 7404 E84
DCR 5 OUT H FL1
74157 E83 CHAR. SCALE MUX.
STB SLTB
FØ FK PCC 5 IN H
F1 FJ PCC 4 IN H
F2 FS PCC 3 IN H
F3 FR PCC 2 IN H
SABR CHAR SCALE (1) H FP1
7402 E79 4 ET2 PCC 1 IN H

MD JUMP LOAD PULSE H AV2
ASL START H
7402 E4
74193 E58 DPC
BDL DB13 H BDL DB14 H BDL DB15 H
DØ D1 D2 D3
RØ(1) R1(1) R2(1) R3(1)
3 DM1 PCC PC 13 H
2 DL1 PCC PC 14 H
6 DK2 PCC PC 15 H
7
CRY BRW CLR LD CUP CDN
+3V
BCL INIT H
74193 E38 DPC
BDL DB Ø9 H BDL DB 10 H BDL DB 11 H BDL DB 12 H
3 CK1 PCC PC Ø9 H
2 CJ1 PCC PC 10 H
6 CH1 PCC PC 11 H
7 CF1 PCC PC 12 H
Ø5 Ø4
74193 E25 DPC
BDL DB Ø5 H BDL DB Ø6 H BDL DB Ø7 H BDL DB Ø8 H
3 BK1 PCC PC Ø5 H
2 BL1 PCC PC Ø6 H
6 BJ1 PCC PC Ø7 H
7 BH1 PCC PC Ø8 H
74193 E11 DPC
BDL DB Ø1 H BDL DB Ø2 H BDL DB Ø3 H BDL DB Ø4 H
3 AR2 PCC PC Ø1 H
2 AS1 PCC PC Ø2 H
6 AV2 PCC PC Ø3 H
7 AV1 PCC PC Ø4 H
AV2
MD PC +2 L

+15 V DR2
L2 2.2 M H
C100 10 pf C102 100 pf C103 10 pf
L1 2.2 μH
Q1 DEC 2N5245
C104 15 μf C99 .01 μf
Y1 20 mHZ
R108 100K R107 270
W24 W25
MAINT CLK H EV2
+3V
74H74 E81
+5V
R163 47
75451 E90
FU1 PCC ANALOG CLOCK H
7400 E71 PCC DIS. CLOCK L
7404 E69 10 DN2 PCC DIS. CLOCK H

PROGRAM COUNTER AND CLOCK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	REV
GT40		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. DATE 7-15-70
CHK'D. DATE 11/17/70
ENG. DATE 11/17/70
PROJ. ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE BUS CONTROL & BOOTSTRAP (PCC)

NEXT HIGHER ASSY. B-DD-GT40-0
SIZE D CODE CS NUMBER M7014-0-1 REV A
SCALE
SHEET 6 OF DIST

BRUNING 40.522 1584 REV CHANGE NO CHK DATE
DEC FORM NO DRD 102-B

SIZE CODE DCS NUMBER M7014-0-1 REV A

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+3V
VC1 TIME 1 H
7476 E66 DISCLK ENA
VC1 DOWN COUNT ZERO L
PCC DIS CLOCK L
7402 E46
74H21 E56
DE2 VC1 SHIFT CLK H
7496 E27 SET 4 SET 3 SET 2 SET 1 SETØ SET IN TIME SHIFT REG
R9(1) R3(1) R2(1) R1(1) RØ(1)
VC1 TIME 2 H
VC1 TIME 1 H
CLR CLK ENBSET
VC1 CLR Δ REG L
PCC DIS CLOCK H
PVCS VEC + CHAR GO H
PVCS POINT + GRAPH GO H
BT2
FA1
7402 E86
EU2 VC1 LOAD DOWN COUNT L
VC1 CHAR·CR L
7476 E61 SHIFT ENA
VC2 SET COUNT L
VC1 COUNT (1) H
VC1 COUNT (Ø) H
VC1 DOWN COUNT ZERO L
VC1 ENABLE COUNT CLK H
74H21 E56
VC1 VEC CLK H
7400 E57
EP1 VC1 COUNT CLK L
CS2 VC1 UNLATCH H
7402 E46
100n SEC
74123 E41 ENA COUNT DLY
R139 4.7K
C109 10pf
VC1 CHAR + GRAPH MODE L
7476 E51
VC1 ENABLE COUNT CLK H
BRM DY9 H
BRM DX9 H
DX1
DF1
7402 E62
VC1 SHIFTED L
7400 E57
7404 E50
LE1 POST L.P. FLAG (1) H
VC2 22μ SEC DELAY H
7402 E62
7400 E57
800n SEC
74123 E41
R119Ø 22K
C11Ø 100pf
CR2 VC1 LOAD DAC H
7402 E33
VC1 STOP INT L
MD PT + REL PT H
DCR 8-9 (Ø) H
DCR 4-7 (Ø) H
DCR Ø-3 (Ø) H
CN1
CH2
CJ2
74H21 E9Ø
VC1 RESET H
7402 E33
VC1 DOWN COUNT ZERO L
7400 E2Ø
7476 E51
VC1 RESET H
7402 E33
CV2 VC1 CLR Δ REG L
VC1 TIME 2 H
7400 E7Ø
VC1 ZERO DONE L
VC2 22M SEC DELAY H
CSC CHAR· CR H
CSC ENABLE PRINT H
FM2
7400 E89
7400 E71
VC1 COUNT (1) H
100n SEC
74123 E5 LATCH DLY
R142 4.7K
C112 10pf
CCL1 CHAR GEN DONE H
AL2
2μ SEC
74123 E9 SETTLE DLY
R125 6.8K
C105 330pf
100n SEC
74123 E31 RA
R155 4.7K
C121 10pf
VC2 PT + REL PT L
7400 E8Ø
VC1 DONE L
7402 E32
VC1 REL PT INT H
LE1 POST L.P.FLAG (1) H
VC1 COUNT (Ø) H
7400 E7Ø
VC1 GRAPH MODE H
7404 E84
EU1 VC1 CHAR + GRAPH MODE H
PVCS GRAPH L
DE1
VC1 CHAR·CR L
7400 E8Ø
7404 E5Ø
VC1 CHAR + GRAPH MODE L
VC1 COUNT (1) H
7400 E71
DU2 VC1 ENABLE L
CSC CHAR· CR H
ES2
7404 E5Ø
VC1 CHAR·CR L
VC1 INIT L
BCL INIT H
7404 E5Ø
ASL START L
7437 E2Ø
VC1 RESET H
7437 E2Ø
AK2 VC1 RESET L

VECTOR CONTROL 1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		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. J. Sullivan DATE 9-12-72
CHK'D [illegible] DATE 10/2/72
ENG. [illegible] DATE 9/19/72
PROJ. ENG. [illegible] DATE 9/19/72
PROD. [illegible] DATE 10/2/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BUS CONTROL & BOOTSTRAP (VC1)

NEXT HIGHER ASSY. B-DD-GT4Ø-Ø
SCALE —
SHEET 7 OF

SIZE	CODE	NUMBER	REV.
D	CS	M7Ø14-Ø-1	A

DIST.

REVISIONS | REV | CHANGE NO | CHK

BRUNING 40 522 15840
DEC FORM NO DRD 102-B

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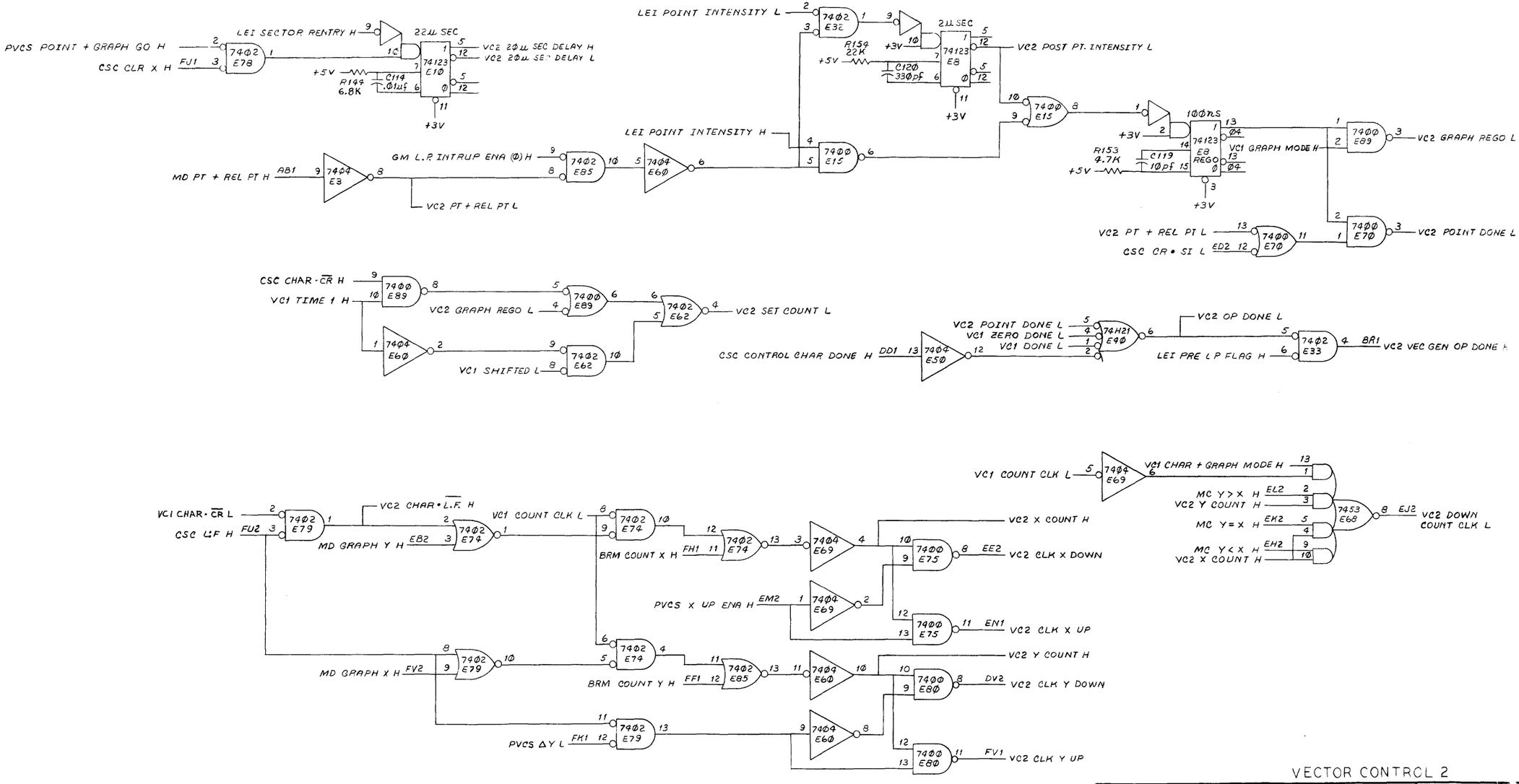

VECTOR CONTROL 2

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO
GT40		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 ✓

DRN. J. Vincent	DATE 9-11-72	digital EQUIPMENT CORPORATION
CHK'D Fred D. Noe	DATE 9/27/72	
ENG. Al Cini	DATE 11/7/72	TITLE
PROJ. ENG.	DATE	BUS CONTROL & BOOTSTRAP (VC2)
PROD. T. McGrath	DATE 11/6/72	
MATERIAL —	NEXT HIGHER ASSY B-DC-GT40-0	SIZE D, CODE CS, NUMBER M7014-0-1, REV A
FINISH —	SCALE —	
	SHEET 8 OF	DIST

REV A | DCS M7014-0-1

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VC2 22 μSEC DELAY H
VC1 CHAR · $\overline{CR}$ L
7400 E82
VC1 REL PT INT H
1.2 μ SEC
74123 E10
R143 22 K +5V
C113 120PF
LEI POINT INTENSITY L
LEI POINT INTENSITY H
+3V

C108 330 pf
R128 22 K +5V
> 400 n SEC
BRM COUNT X H
BRM COUNT Y H
7402 E78
LEI EDGE L
2602 E19 INTENSITY
+5V
R129 180
75451 E90
500 n SEC
DL1
DL2
1 μ SEC
R130 180
W21
W20
W23
W22
7400 E19
CCL1 CHAR INTENSITY H
PVCS INTENSITY LEVEL H
7402 E32
7400 E71
AM2
DT2
BM2
LEI Z AXIS H
LEI Z AXIS L
7404 E3

VC1 STOP INT L
7474 E28
BS2
LEI INTENSITY MOVE H

C107 10 pf
R127 4.7 K +5V
100 n SEC
2602 E19
LEI SECTOR RENTRY H
MD POINT L
AS2

MC L.P. PULSE L
AA1
2 μ SEC
74123 E5
R141 22K
C111 330PF
AB2
LEI L.P. INT HIT H

PR Y10 H
PR Y11 H
PR X10 H
PR X11 H
FC1
EV1
FE1
FD1
7402 E78
7400 E75
7402 E85
LEI EDGE L
7404 E69
EF2
LEI EDGE H
PVCS Y8 · Y9 H
FL2
W2
W1

VC2 OP DONE L
7404 E50
7400 E57

CCL1 CHAR STOP L.P H
GM L.P INTRUP ENA (Ø) H
FH2
FM1
7402 E85
7404 E60
7402 E86
7400 E15
VC2 POST PT INTENSITY L
LEI Z AXIS L
7400 E73

LEI PRE L.P. FLAG H
VC1 VEC CLK H
7476 E37
LEI L.P. FLAG (1) H
LEI L.P. FLAG (Ø) H
CE1
ASL RESUME H
ASL CLR FLAGS L
7476 E66
LEI POST L.P. FLAG (1) H
+3V
VC1 RESET L

LIGHT PEN, EDGE AND INTENSITY LOGIC

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		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. G. Ulmer DATE 11-14-72
CHK'D. DATE 11/15/72
ENG. DATE 11/16/72
PROJ. ENG. DATE 11/17/72
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

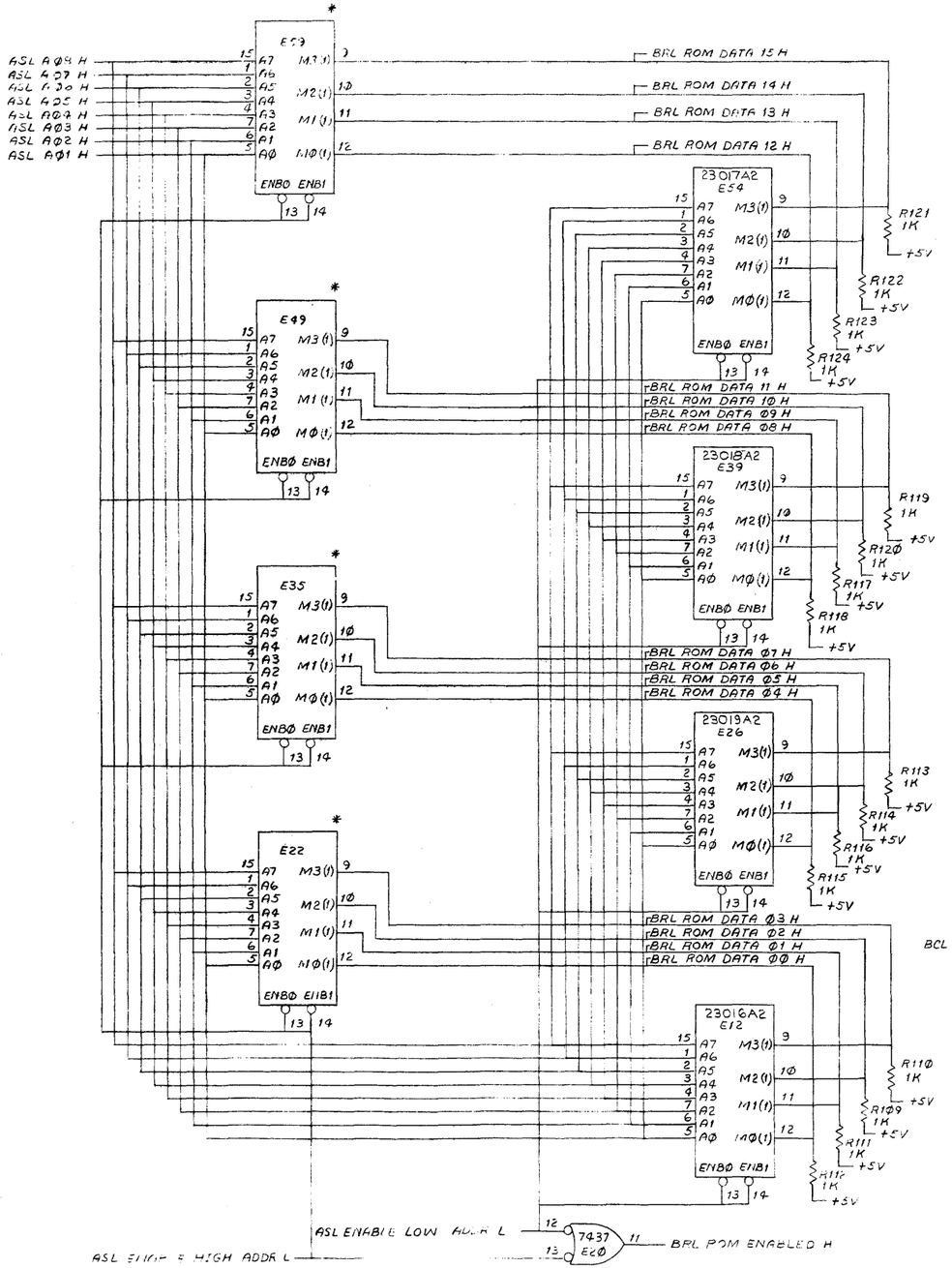
TITLE: BUS CONTROL & BOOTSTRAP (LEI)

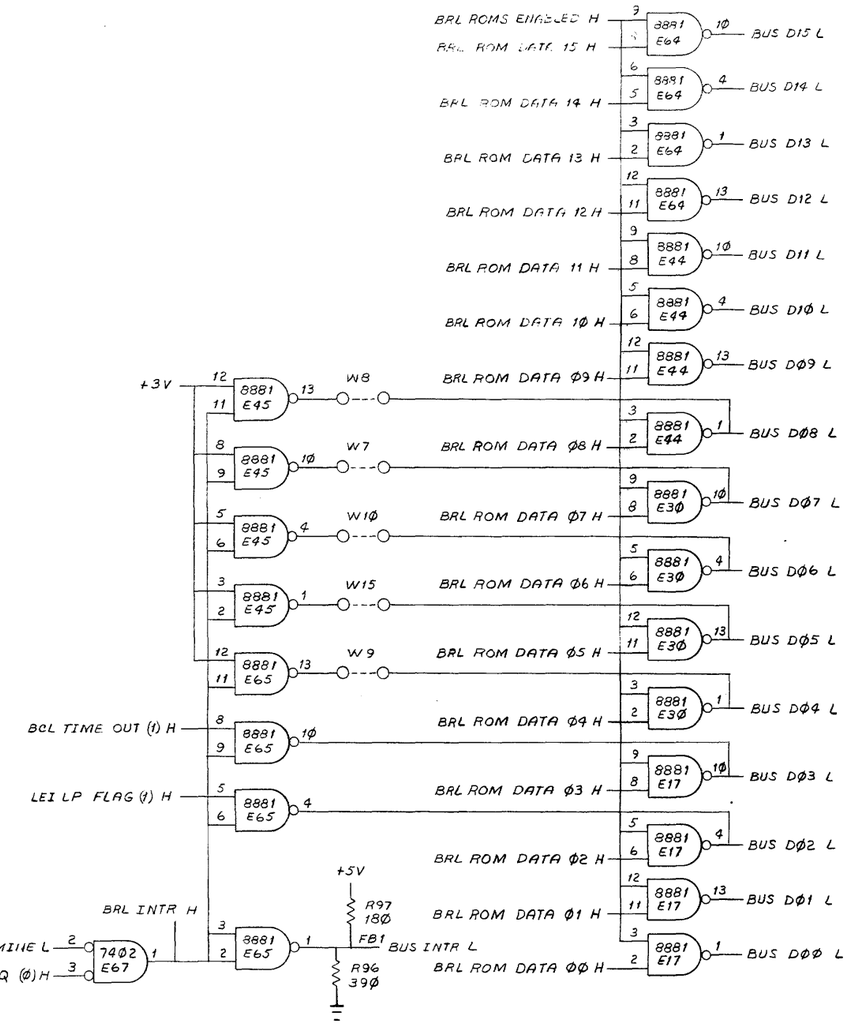
NEXT HIGHER ASSY. B-DD-GT40-0
SCALE
SHEET 9 OF

SIZE D | CODE CS | NUMBER M7014-0-1 | REV. A
DIST

REV	REVISIONS	CHK
	CHANGE NO	

BRUNING 40-522 15840
DEC FORM NO DRD 102-B





BRUNING 40522 15M40
REVISIONS
CHANGE NO
REV
CHK
DESCRIPTION
CRD 102-B

BOOTSTRAP ROM LOGIC

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

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

DRN. [illegible] DATE 9-7-72
CHK'D. [illegible] DATE 11/72
ENG. [illegible] DATE 11/1/72
PROJ ENG. DATE
PROD. [illegible] DATE 11/1/72
NEXT HIGHER ASSY. B-DD-GT40
SCALE 1/1
SHEET 10 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
BUS CONTROL & BOOTSTRAP (BRL)

SIZE D | CODE DCS | NUMBER M7014-0-1 | REV H

DIST

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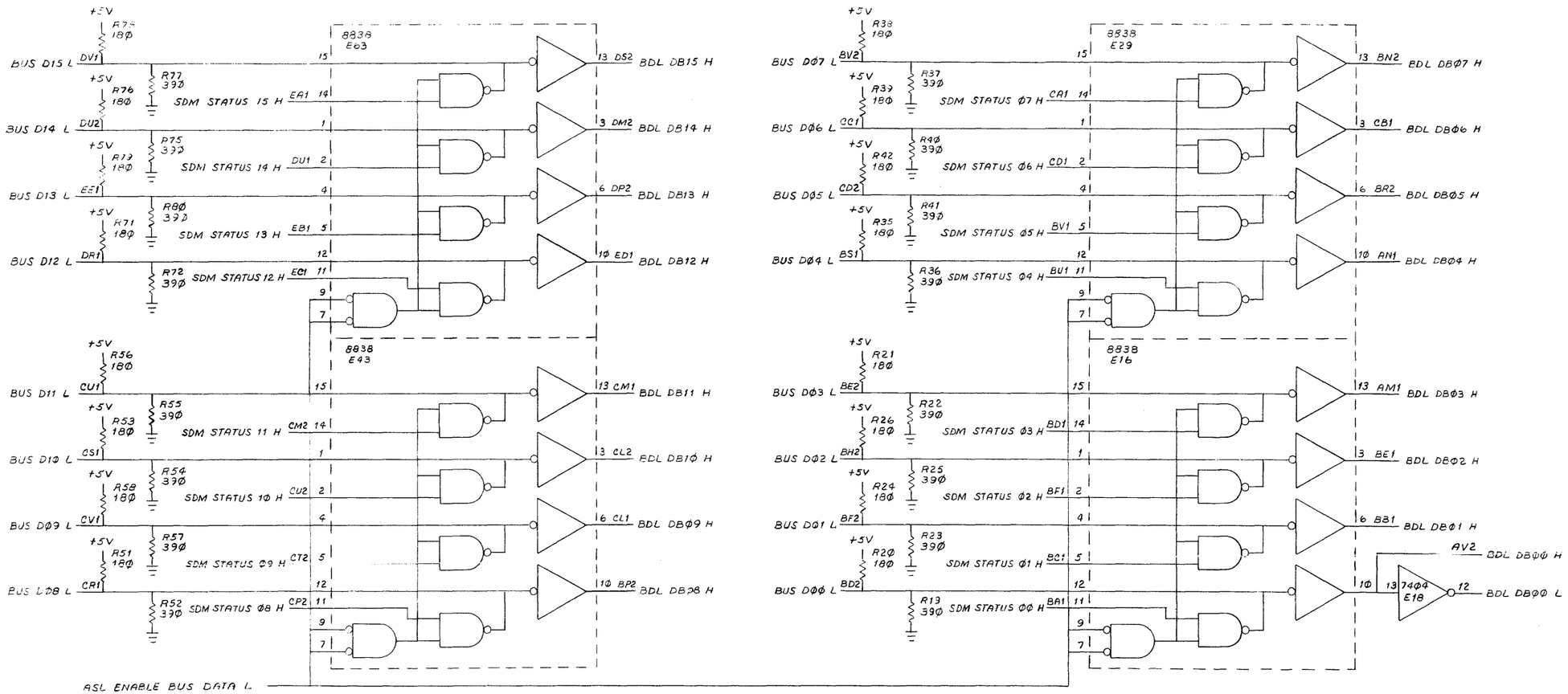

BUS DATA LINES

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

DRN. J. Vincent	DATE 9-26-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. C. J.	DATE 11/7/72	
ENG.	DATE 11/7/72	
PROJ. ENG. H. S. Lucas	DATE 11/8/72	TITLE: BUS CONTROL & BOOTSTRAP (BDL)
PROD.	DATE 11/8/72	
NEXT HIGHER ASSY. B-DD-GT40-0		SIZE D · CODE CS · NUMBER M7014-0-1 · REV.
SCALE —"—		DIST.
SHEET 11 OF		

REVISIONS: REV | CHANGE NO | CHK

DRAWING 40-522-15840

SIZE D · CODE CS · NUMBER M7014-0-1 · REV

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REV.	NUMBER	CODE	SIZE
	M7014-0-8	RL	K

THIS FACE SHEET CONTAINS THE FOLLOWING CHIP PART NUMBERS:

PART NUMBER
23-016A2
23-017A2
23-018A2
23-019A2

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

DRN. CB McCoy	DATE 10-11-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. G. Nagchaudhuri	DATE 10-11-72	
ENG. D K Gelli	DATE 10-11-72	TITLE
PROJ. ENG. H E Lavoie	DATE 11/9/72	BOOTSTRAP ROM PATTERNS
PROD. D F McGrath	DATE 11/14/72	
NEXT HIGHER ASSEMBLY B-DD-GT40-0		SIZE K · CODE RL · NUMBER M7014-0-8 · REV.
SCALE 1/1		
SHEET 1 OF 33		DIST.

REVISIONS	CHANGE NO.	REV.
CHK		

DEC FORM NO. DRB 109

DEC PART NUMB: 23-Ø16A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0101	05
1	001	0110	06
2	002	1101	15
3	003	0101	05
4	004	0101	05
5	005	0111	07
6	006	0111	07
7	007	1000	10
8	010	0111	07
9	011	0001	01
10	012	1010	12
11	013	0111	07
12	014	0001	01
13	015	0000	00
14	016	0110	06
15	017	1000	10
16	020	0001	01
17	021	0010	02
18	022	0000	00
19	023	0001	01
20	024	1001	11
21	025	1110	16
22	026	0001	01
23	027	1000	10
24	030	0000	00
25	031	0111	07
26	032	0010	02
27	033	0111	07
28	034	0110	06
29	035	0111	07
30	036	1000	10
31	037	0000	00
32	040	0000	00
33	041	0000	00
34	042	0110	06
35	043	1010	12

DEC PART NUMB: 23-Ø16A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0101	05
37	045	0101	05
38	046	0101	05
39	047	0101	05
40	050	1101	15
41	051	1001	11
42	052	0001	01
43	053	1001	11
44	054	0111	07
45	055	0111	07
46	056	0100	04
47	057	0110	06
48	060	0001	01
49	061	0010	02
50	062	0010	02
51	063	0111	07
52	064	1000	10
53	065	0111	07
54	066	0100	04
55	067	0100	04
56	070	0000	00
57	071	0000	00
58	072	0000	00
59	073	1110	16
60	074	0000	00
61	075	1110	16
62	076	0000	00
63	077	0111	07
64	100	0000	00
65	101	0000	00
66	102	0000	00
67	103	0100	04
68	104	0000	00
69	105	0100	04
70	106	0000	00
71	107	0100	04

DEC PART NUMB: 23-016A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0000	00
73	111	0100	04
74	112	0000	00
75	113	0100	04
76	114	0111	07
77	115	0000	00
78	116	0000	00
79	117	0100	04
80	120	0000	00
81	121	0100	04
82	122	0000	00
83	123	0110	06
84	124	0111	07
85	125	0000	00
86	126	0110	06
87	127	0000	00
88	130	1000	10
89	131	0111	07
90	132	0000	00
91	133	0111	07
92	134	0000	00
93	135	0110	06
94	136	0111	07
95	137	1111	17
96	140	0011	03
97	141	0111	07
98	142	0110	06
99	143	0000	00
100	144	1010	12
101	145	0111	07
102	146	0100	04
103	147	1000	10
104	150	1100	14
105	151	0110	06
106	152	0000	00
107	153	1110	16

DEC PART NUMB: 23-016A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0000	00
109	155	0100	04
110	156	1110	16
111	157	1111	17
112	160	0001	01
113	161	1000	10
114	162	1101	15
115	163	0111	07
116	164	1000	10
117	165	0111	07
118	166	0010	02
119	167	0110	06
120	170	0111	07
121	171	1100	14
122	172	1101	15
123	173	1000	10
124	174	0000	00
125	175	0111	07
126	176	1101	15
127	177	0011	03
128	200	0111	07
129	201	0111	07
130	202	1000	10
131	203	1000	10
132	204	0111	07
133	205	0000	00
134	206	0101	05
135	207	0111	07
136	210	1100	14
137	211	1010	12
138	212	0111	07
139	213	0110	06
140	214	0111	07
141	215	0100	04
142	216	1100	14
143	217	0110	06

DEC PART NUMB: 23-Ø16A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0000	00
145	221	0111	07
146	222	0001	01
147	223	1000	10
148	224	0111	07
149	225	0110	06
150	226	0111	07
151	227	1110	16
152	230	1011	13
153	231	0111	07
154	232	1000	10
155	233	0111	07
156	234	1110	16
157	235	1001	11
158	236	0111	07
159	237	1010	12
160	240	1000	10
161	241	0111	07
162	242	0000	00
163	243	0010	02
164	244	0111	07
165	245	0111	07
166	246	1010	12
167	247	0111	07
168	250	0010	02
169	251	1010	12
170	252	0000	00
171	253	0110	06
172	254	1000	10
173	255	0011	03
174	256	0111	07
175	257	1000	10
176	260	0000	00
177	261	1011	13
178	262	0111	07
179	263	0000	00

DEC PART NUMB: 23-Ø16A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0111	07
181	265	1010	12
182	266	0101	05
183	267	0101	05
184	270	0100	04
185	271	0101	05
186	272	0010	02
187	273	1111	17
188	274	0111	07
189	275	1010	12
190	276	0001	01
191	277	0111	07
192	300	0110	06
193	301	1000	10
194	302	0011	03
195	303	1001	11
196	304	0000	00
197	305	0010	02
198	306	0111	07
199	307	1000	10
200	310	0111	07
201	311	1000	10
202	312	0001	01
203	313	0011	03
204	314	0111	07
205	315	1110	16
206	316	0011	03
207	317	0000	00
208	320	0000	00
209	321	0101	05
210	322	0111	07
211	323	0111	07
212	324	1110	16
213	325	0110	06
214	326	0111	07
215	327	1000	10

DEC PART NUMBI 23-Ø16A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	Ø000	ØØ
217	331	Ø000	ØØ
218	332	Ø111	Ø7
219	333	Ø111	Ø7
220	334	1100	14
221	335	Ø110	Ø6
222	336	Ø111	Ø7
223	337	1000	10
224	340	Ø011	Ø3
225	341	Ø010	Ø2
226	342	1110	16
227	343	Ø001	Ø1
228	344	Ø110	Ø6
229	345	Ø000	ØØ
230	346	Ø111	Ø7
231	347	Ø111	Ø7
232	350	Ø110	Ø6
233	351	Ø000	ØØ
234	352	1110	16
235	353	1110	16
236	354	Ø111	Ø7
237	355	Ø110	Ø6
238	356	Ø111	Ø7
239	357	1110	16
240	360	1011	13
241	361	Ø111	Ø7
242	362	1000	10
243	363	Ø000	ØØ
244	364	Ø000	ØØ
245	365	Ø110	Ø6
246	366	Ø111	Ø7
247	367	1110	16
248	370	Ø100	Ø4
249	371	Ø000	ØØ
250	372	Ø000	ØØ
251	373	Ø000	ØØ

DEC PART NUMBI 23-Ø16A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-9-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	Ø000	ØØ
253	375	1000	10
254	376	Ø000	ØØ
255	377	Ø000	ØØ

DEC PART NUMB: 23-017A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0001	01
1	001	0000	00
2	002	0000	00
3	003	0001	01
4	004	0000	00
5	005	0001	01
6	006	0000	00
7	007	0000	00
8	010	0001	01
9	011	0000	00
10	012	0001	01
11	013	0001	01
12	014	0000	00
13	015	0000	00
14	016	0001	01
15	017	0001	01
16	020	0000	00
17	021	0001	01
18	022	1110	16
19	023	0001	01
20	024	0001	01
21	025	1110	16
22	026	0001	01
23	027	0000	00
24	030	0000	00
25	031	0000	00
26	032	0000	00
27	033	0000	00
28	034	0000	00
29	035	0000	00
30	036	0000	00
31	037	0000	00
32	040	0000	00
33	041	0000	00
34	042	0001	01
35	043	1110	16

DEC PART NUMB: 23-017A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0001	01
37	045	0010	02
38	046	0000	00
39	047	0001	01
40	050	0000	00
41	051	0000	00
42	052	0101	05
43	053	0001	01
44	054	0000	00
45	055	0000	00
46	056	0000	00
47	057	0001	01
48	060	0000	00
49	061	0000	00
50	062	0000	00
51	063	0110	06
52	064	1110	16
53	065	0000	00
54	066	0000	00
55	067	0001	01
56	070	0000	00
57	071	0000	00
58	072	1000	10
59	073	1000	10
60	074	1000	10
61	075	1000	10
62	076	0001	01
63	077	0000	00
64	100	0000	00
65	101	0000	00
66	102	1000	10
67	103	1000	10
68	104	1000	10
69	105	1000	10
70	106	1000	10
71	107	1000	10

DEC PART NUMBR 23-017A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1000	10
73	111	1000	10
74	112	0001	01
75	113	0001	01
76	114	0000	00
77	115	0000	00
78	116	0000	00
79	117	0000	00
80	120	1000	10
81	121	0000	00
82	122	1000	10
83	123	0000	00
84	124	0000	00
85	125	0000	00
86	126	0000	00
87	127	0000	00
88	130	1111	17
89	131	0000	00
90	132	0000	00
91	133	0010	02
92	134	0000	00
93	135	0000	00
94	136	0010	02
95	137	0000	00
96	140	0000	00
97	141	0000	00
98	142	0000	00
99	143	0001	01
100	144	0001	01
101	145	0000	00
102	146	0000	00
103	147	0000	00
104	150	0000	00
105	151	0001	01
106	152	0000	00
107	153	0100	04

DEC PART NUMBR 23-017A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-10-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1111	17
109	155	0000	00
110	156	0010	02
111	157	0000	00
112	160	0000	00
113	161	0010	02
114	162	0000	00
115	163	0000	00
116	164	0001	01
117	165	0010	02
118	166	0000	00
119	167	0000	00
120	170	0010	02
121	171	0000	00
122	172	0000	00
123	173	0001	01
124	174	0001	01
125	175	0010	02
126	176	0000	00
127	177	0000	00
128	200	0000	00
129	201	0000	00
130	202	0010	02
131	203	0000	00
132	204	1000	10
133	205	0000	00
134	206	1000	10
135	207	0001	01
136	210	0010	02
137	211	0000	00
138	212	0000	00
139	213	0010	02
140	214	1000	10
141	215	0001	01
142	216	1000	10
143	217	1001	11

DEC PART NUMB: 23-017A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-19-72

ROM PATTERN SPEC

OCTAL LOC	BINARY DATA	OCTAL DATA
144	0001	01
145	0001	01
146	0000	00
147	0001	01
150	0000	00
151	1111	17
152	0000	00
153	0001	01
154	0000	00
155	1000	10
156	0000	00
157	1000	10
158	1001	11
159	0000	00
160	0010	02
161	0101	05
162	1111	17
163	0010	02
164	0001	01
165	0000	00
166	0000	00
167	0000	00
170	0000	00
171	0001	01
172	0001	01
173	0000	00
174	0000	00
175	0000	00
176	1000	10
177	0000	00
178	0000	00
179	0000	00

DEC PART NUMB: 23-017A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-19-72

ROM PATTERN SPEC

OCTAL LOC	BINARY DATA	OCTAL DATA
180	0000	00
181	0000	00
182	0001	01
183	1110	16
184	0000	00
185	0010	02
186	0000	00
187	0000	00
188	0000	00
189	0000	00
190	0001	01
191	0000	00
192	0000	00
193	0000	00
194	1000	10
195	0000	00
196	0001	01
197	0111	07
198	0000	00
199	0000	00
200	0000	00
201	1111	17
202	1001	11
203	0000	00
204	0000	00
205	1111	17
206	0110	06
207	0100	04
208	1111	17
209	0000	00
210	0000	00
211	0000	00
212	1111	17
213	0001	01
214	0000	00
215	1111	17

DEC PART NUMBER 23-A17A2
ORIGINATOR BRIAN O'DONNELL
DATE OF ORIGIN 10-17-72

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0101	05
218	332	0000	00
219	333	0000	00
220	334	1111	17
221	335	0001	01
222	336	0000	00
223	337	1111	17
224	340	1000	10
225	341	0000	00
226	342	0011	03
227	343	0000	00
228	344	0000	00
229	345	0001	01
230	346	0111	07
231	347	0000	00
232	350	0000	00
233	351	0000	00
234	352	0000	00
235	353	0000	00
236	354	0000	00
237	355	1111	17
238	356	0000	00
239	357	0010	02
240	360	0000	00
241	361	0001	01
242	362	0000	00
243	363	1000	10
244	364	0000	00
245	365	0000	00
246	366	0000	00
247	367	1111	17
248	370	1001	11
249	371	0000	00
250	372	0000	00
251	373	1000	10

DEC PART NUMBER 23-A17A2
ORIGINATOR BRIAN O'DONNELL
DATE OF ORIGIN 10-17-72

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1110	16
253	375	0000	00
254	376	0000	00
255	377	0000	00

DEC PART NUMB: 23-018A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0101	05
1	001	0000	00
2	002	1010	12
3	003	0001	01
4	004	0000	00
5	005	0101	05
6	006	0000	00
7	007	1111	17
8	010	0101	05
9	011	0000	00
10	012	0011	03
11	013	0101	05
12	014	0000	00
13	015	1111	17
14	016	0101	05
15	017	1011	13
16	020	1010	12
17	021	0101	05
18	022	0000	00
19	023	0000	00
20	024	0101	05
21	025	1101	15
22	026	0101	05
23	027	0000	00
24	030	1010	12
25	031	1001	11
26	032	0000	00
27	033	1010	12
28	034	0111	07
29	035	1001	11
30	036	0000	00
31	037	0000	00
32	040	0000	00
33	041	0000	00
34	042	0101	05
35	043	1100	14

DEC PART NUMB: 23-018A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0000	00
37	045	0101	05
38	046	1010	12
39	047	0000	00
40	050	1010	12
41	051	1010	12
42	052	0000	00
43	053	0000	00
44	054	0000	00
45	055	1001	11
46	056	0000	00
47	057	0000	00
48	060	0001	01
49	061	1010	12
50	062	1011	13
51	063	1100	14
52	064	1100	14
53	065	1001	11
54	066	0000	00
55	067	0000	00
56	070	1100	14
57	071	1100	14
58	072	1100	14
59	073	1100	14
60	074	1100	14
61	075	1100	14
62	076	0101	05
63	077	0000	00
64	100	1100	14
65	101	1100	14
66	102	1100	14
67	103	1100	14
68	104	1100	14
69	105	1100	14
70	106	1100	14
71	107	1100	14

DEC PART NUMBI 23-018A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1100	14
73	111	1100	14
74	112	0001	01
75	113	0101	05
76	114	0000	00
77	115	1100	14
78	116	1100	14
79	117	1100	14
80	120	1100	14
81	121	1100	14
82	122	1100	14
83	123	1011	13
84	124	0000	00
85	125	0000	00
86	126	0000	00
87	127	0000	00
88	130	1111	17
89	131	1001	11
90	132	0000	00
91	133	0000	00
92	134	0000	00
93	135	0101	05
94	136	0000	00
95	137	0000	00
96	140	0110	06
97	141	0000	00
98	142	1011	13
99	143	0101	05
100	144	1011	13
101	145	1001	11
102	146	0000	00
103	147	1011	13
104	150	0011	03
105	151	0010	02
106	152	1010	12
107	153	0101	05

DEC PART NUMBI 23-018A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1111	17
109	155	0011	03
110	156	0101	05
111	157	0000	00
112	160	0011	03
113	161	0101	05
114	162	0000	00
115	163	0010	02
116	164	0011	03
117	165	0010	02
118	166	0000	00
119	167	0011	03
120	170	0010	02
121	171	0000	00
122	172	0011	03
123	173	0011	03
124	174	0101	05
125	175	0000	00
126	176	0000	00
127	177	0011	03
128	200	0000	00
129	201	1011	13
130	202	1110	16
131	203	0011	03
132	204	1011	13
133	205	1110	16
134	206	0000	00
135	207	1101	15
136	210	1110	16
137	211	1110	16
138	212	1010	12
139	213	1110	16
140	214	1011	13
141	215	0010	02
142	216	0000	00
143	217	1101	15

DEC PART NUMB: 23-018A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0010	02
145	221	0101	05
146	222	0000	00
147	223	0010	02
148	224	1001	11
149	225	1111	17
150	226	1011	13
151	227	1110	16
152	230	0010	02
153	231	0101	05
154	232	1110	16
155	233	1011	13
156	234	1110	16
157	235	0000	00
158	236	1101	15
159	237	1110	16
160	240	1110	16
161	241	0101	05
162	242	1111	17
163	243	1110	16
164	244	0101	05
165	245	0000	00
166	246	1110	16
167	247	0000	00
168	250	1010	12
169	251	0101	05
170	252	0100	04
171	253	0101	05
172	254	1011	13
173	255	1010	12
174	256	1001	11
175	257	0000	00
176	260	1010	12
177	261	0010	02
178	262	1001	11
179	263	0000	00

DEC PART NUMB: 23-018A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1001	11
181	265	0000	00
182	266	0000	00
183	267	0101	05
184	270	0000	00
185	271	0101	05
186	272	0000	00
187	273	0011	03
188	274	1001	11
189	275	0000	00
190	276	0000	00
191	277	1001	11
192	300	0000	00
193	301	0100	04
194	302	1011	13
195	303	0011	03
196	304	0101	05
197	305	1101	15
198	306	1001	11
199	307	0000	00
200	310	0000	00
201	311	1110	16
202	312	0000	00
203	313	0001	01
204	314	1001	11
205	315	1110	16
206	316	0000	00
207	317	0101	05
208	320	1111	17
209	321	1010	12
210	322	0000	00
211	323	1001	11
212	324	1111	17
213	325	0000	00
214	326	1001	11
215	327	1111	17

DEC PART NUMBI 23-018A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0101	05
218	332	0000	00
219	333	1001	11
220	334	1111	17
221	335	0000	00
222	336	1001	11
223	337	1111	17
224	340	1011	13
225	341	0010	02
226	342	0101	05
227	343	0000	00
228	344	0011	03
229	345	0101	05
230	346	1101	15
231	347	1001	11
232	350	0000	00
233	351	0000	00
234	352	0001	01
235	353	0000	00
236	354	1001	11
237	355	1111	17
238	356	1011	13
239	357	1110	16
240	360	0010	02
241	361	0000	00
242	362	1101	15
243	363	1010	12
244	364	0000	00
245	365	0010	02
246	366	0000	00
247	367	0000	00
248	370	1010	12
249	371	0000	00
250	372	0010	02
251	373	0000	00

DEC PART NUMBI 23-018A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	0000	00
254	376	0000	00
255	377	0000	00

DEC PART NUMB: 23-Ø19A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
Ø	ØØØ	1100	14
1	ØØ1	ØØØ1	Ø1
2	ØØ2	ØØØØ	ØØ
3	ØØ3	1110	16
4	ØØ4	ØØØØ	ØØ
5	ØØ5	1111	17
6	ØØ6	ØØØØ	ØØ
7	ØØ7	Ø111	Ø7
8	Ø1Ø	1111	17
9	Ø11	ØØØØ	ØØ
1Ø	Ø12	Ø101	Ø5
11	Ø13	1111	17
12	Ø14	1ØØØ	1Ø
13	Ø15	Ø111	Ø7
14	Ø16	1100	14
15	Ø17	1111	17
16	Ø2Ø	ØØØØ	ØØ
17	Ø21	1100	14
18	Ø22	ØØØØ	ØØ
19	Ø23	1ØØ1	11
2Ø	Ø24	1100	14
21	Ø25	1110	16
22	Ø26	1100	14
23	Ø27	ØØØ1	Ø1
24	Ø3Ø	ØØØØ	ØØ
25	Ø31	1111	17
26	Ø32	ØØØ1	Ø1
27	Ø33	ØØ11	Ø3
28	Ø34	1100	14
29	Ø35	1111	17
3Ø	Ø36	1ØØØ	1Ø
31	Ø37	1Ø1Ø	12
32	Ø4Ø	1Ø1Ø	12
33	Ø41	1Ø1Ø	12
34	Ø42	1110	16
35	Ø43	ØØ11	Ø3

DEC PART NUMB: 23-Ø19A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	Ø44	ØØ1Ø	Ø4
37	Ø45	ØØ11	Ø5
38	Ø46	ØØØ1	Ø1
39	Ø47	1ØØ1	11
4Ø	Ø5Ø	ØØØØ	ØØ
41	Ø51	ØØØØ	ØØ
42	Ø52	ØØØ1	Ø1
43	Ø53	1ØØØ	1Ø
44	Ø54	1ØØØ	1Ø
45	Ø55	1111	17
46	Ø56	Ø101	Ø5
47	Ø57	ØØ1Ø	Ø2
48	Ø6Ø	ØØØØ	ØØ
49	Ø61	ØØØØ	ØØ
5Ø	Ø62	1101	15
51	Ø63	1ØØØ	1Ø
52	Ø64	1Ø1Ø	12
53	Ø65	1111	17
54	Ø66	Ø1ØØ	Ø4
55	Ø67	ØØØØ	ØØ
56	Ø7Ø	1100	14
57	Ø71	1100	14
58	Ø72	1100	14
59	Ø73	Ø1ØØ	Ø4
6Ø	Ø74	1100	14
61	Ø75	Ø1ØØ	Ø4
62	Ø76	1ØØØ	1Ø
63	Ø77	1ØØØ	1Ø
64	1ØØ	1100	14
65	1Ø1	1100	14
66	1Ø2	1100	14
67	1Ø3	Ø1ØØ	Ø4
68	1Ø4	1100	14
69	1Ø5	Ø1ØØ	Ø4
7Ø	1Ø6	1100	14
71	1Ø7	Ø1ØØ	Ø4

DEC PART NUMB: 23-019A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1100	14
73	111	0100	04
74	112	0000	00
75	113	1000	10
76	114	1000	10
77	115	0100	04
78	116	0100	04
79	117	0000	00
80	120	0000	00
81	121	0000	00
82	122	0000	00
83	123	1101	15
84	124	1000	10
85	125	0000	00
86	126	0001	01
87	127	0011	03
88	130	1111	17
89	131	1111	17
90	132	0001	01
91	133	0001	01
92	134	0010	02
93	135	0110	06
94	136	0001	01
95	137	0101	05
96	140	0110	06
97	141	1000	10
98	142	1101	15
99	143	1100	14
100	144	1111	17
101	145	1111	17
102	146	0011	03
103	147	1100	14
104	150	1111	17
105	151	0010	02
106	152	0001	01
107	153	1100	14

DEC PART NUMB: 23-019A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1000	10
109	155	1111	17
110	156	1100	14
111	157	0111	07
112	160	1111	17
113	161	1100	14
114	162	0111	07
115	163	0000	00
116	164	1000	10
117	165	0001	01
118	166	0101	05
119	167	1001	11
120	170	0001	01
121	171	0100	04
122	172	0010	02
123	173	1000	10
124	174	1000	10
125	175	0001	01
126	176	0111	07
127	177	1110	16
128	200	1000	10
129	201	1111	17
130	202	1111	17
131	203	0000	00
132	204	1111	17
133	205	1000	10
134	206	0000	00
135	207	1111	17
136	210	1110	16
137	211	0111	07
138	212	0011	03
139	213	1110	16
140	214	1111	17
141	215	0101	05
142	216	0000	00
143	217	1110	16

DEC PART NUMBI 23-019A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0101	05
145	221	1111	17
146	222	0000	00
147	223	0100	04
148	224	1111	17
149	225	1101	15
150	226	1111	17
151	227	1100	14
152	230	1111	17
153	231	1011	13
154	232	0101	05
155	233	1111	17
156	234	0100	04
157	235	0000	00
158	236	1111	17
159	237	0100	04
160	240	1011	13
161	241	1111	17
162	242	0000	00
163	243	1011	13
164	244	1111	17
165	245	0000	00
166	246	0011	03
167	247	1000	10
168	250	0000	00
169	251	1100	14
170	252	0000	00
171	253	1100	14
172	254	1111	17
173	255	0000	00
174	256	1111	17
175	257	0011	03
176	260	1100	14
177	261	1111	17
178	262	1111	17
179	263	0011	03

DEC PART NUMBI 23-019A2
ORIGINATORI BRIAN O'DONNELL
DATE OF ORIGINI 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	0011	03
182	266	0000	00
183	267	1100	14
184	270	0000	00
185	271	1100	14
186	272	0000	00
187	273	0001	01
188	274	1111	17
189	275	0010	02
190	276	0000	00
191	277	1111	17
192	300	0001	01
193	301	0000	00
194	302	1100	14
195	303	1110	16
196	304	1100	14
197	305	0100	04
198	306	1111	17
199	307	0100	04
200	310	0111	07
201	311	1000	10
202	312	0001	01
203	313	1111	17
204	314	1111	17
205	315	1011	13
206	316	0000	00
207	317	1100	14
208	320	0000	00
209	321	1100	14
210	322	1000	10
211	323	1111	17
212	324	1110	16
213	325	0010	02
214	326	1111	17
215	327	1110	16

DEC PART NUMB: 23-019A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1100	14
217	331	1000	10
218	332	1000	10
219	333	1111	17
220	334	1110	16
221	335	0010	02
222	336	1111	17
223	337	1101	15
224	340	1100	14
225	341	1110	16
226	342	1100	14
227	343	0000	00
228	344	0000	00
229	345	1100	14
230	346	0100	04
231	347	1111	17
232	350	0000	00
233	351	0000	00
234	352	1111	17
235	353	0101	05
236	354	1111	17
237	355	0010	02
238	356	1111	17
239	357	0001	01
240	360	1111	17
241	361	0011	03
242	362	1010	12
243	363	0000	00
244	364	1100	14
245	365	1111	17
246	366	1000	10
247	367	1010	12
248	370	0101	05
249	371	0000	00
250	372	1111	17
251	373	0000	00

DEC PART NUMB: 23-019A2
ORIGINATOR: BRIAN O'DONNELL
DATE OF ORIGIN: 10-11-72

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	0001	01
254	376	0000	00
255	377	0000	00

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1	B	
2	B	
3	B	
4	B	(VG)
5	B	(CSG)
6	B	(VR)
7	B	(BRM)
8	B	(MC)
9	B	(DCR)
10	B	(PR)
11	B	(DAC)
ECO NO.	—	
ETCH REV.	C	
ENG.	—	
DATE	—	

FIRST USED ON OPTION/MODEL

VT4Ø

DRN. S. Roberts	DATE 10/11/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 10/25/72	
ENG. T. T. Welsh	DATE 10/25/72	
PROJ. ENG. H. E. Lassie	DATE 10/26/72	TITLE VT4Ø DISPLAY GENERATOR
PROD. D. M. Conroy	DATE 10/25/72	

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NEXT HIGHER ASSY. B-DD-VT4Ø-Ø

SCALE —

SHEET 1 OF 11

SIZE	CODE	NUMBER	REV.
B	CS	A32Ø-Ø-1	B

DIST.

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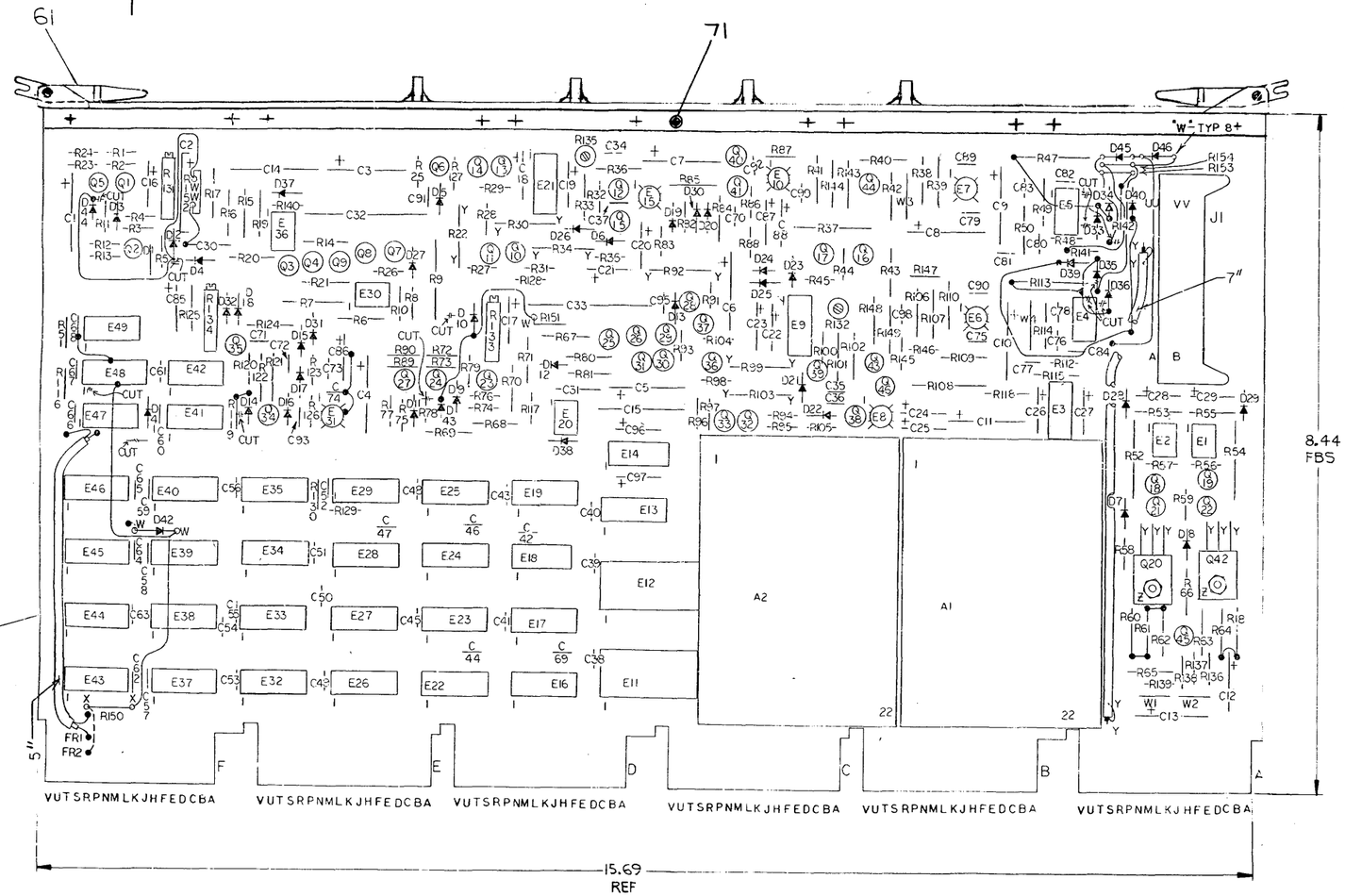
NOTES:



REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-A320-B-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-A320-B-5	2
REF		MODULE ECO HISTORY	B-MH-A320-B-6	3
1		ETCHED CKT BD	5010099	4
2	C34, C35	CAP 27PF 100V 5% DM	1001739	5
2	C36, C37	CAP 47PF 100V 5% DM	1000011	6
2	C91, C95	CAP 330PF 100V 5% DM	1000623	7
2	C14, C15	CAP .22UF 100V 10% MYLAR	1000037	8
2	C32, C33	CAP .02UF 50V 5% POLY	1011094	9
1	C98	CAP 10PF 100V 5% DM	1000006	10
32	C38 THRU C69	CAP 22UF 50V 8% CLR	1010274	11
1	C99	CAP 56PF 100V 5% DM	1000012	12
13	C1 THRU C13	CAP 100UF 20V 10% TANT	1004815	13
15	C70 THRU C84	CAP .01UF 100V 20% DISC	1001610	14
18	C16 THRU C29, E87, C88, C96, C97	CAP 1UF 35V 10% TANT	1001776	15
2	C89, C90	CAP 100PF 100V 5% DM	1000016	16
2	C85, C86	CAP 6.8UF 35V 10% TANT	1005306	17
2	C92, C93	CAP 1000PF 100V 5% DM	1000042	18
2	C30, C31	CAP 15UF 20V 10% TANT	1004812	19
2	D43, D44	DIODE IN753A	1102421	20
4	D39, D40, D45, D46	DIODE IN746A 3.3V ZENER	1104860	21
3	D41, D42, D33	DIODE 1N5.1AZ1 5.1V 1%	1105871	22
3	D27, D28, D29	DIODE IN825	1101385	23
22	D5, D6, D13-D26, D33-D38	DIODE D664	T100114	24
8	D1-D4, D9-D12	DIODE DEC777	1103041	25
2	D7, D8	DIODE IN4001	1102942	26
2	D31, D32	DIODE IN752A	1102808	27
1	J1	CONNECTOR RT, ANG, HEADER	1200941	28
2	A1, A2	12 BIT DAC	A6000	29
2	R151, R152	RESISTOR 270 ½W 5%	1300285	30
1	R150	RESISTOR 180 1W 5%	1300262	31
1	R137	RESISTOR 1.5K ¼W 5%	1300391	32
10	R46, R53, R56, R47, R108, R102, R143, R144, R148, R149	RESISTOR 1K 1/8W .1% MF	1304865	33
1	R130	RESISTOR 330 ¼W 10%	1300293	34
1	R129	RESISTOR 750 ¼W 5%	1301401	35
1	R118	RESISTOR 464K1/8W 1% MF	1303043	36
1	R42	RESISTOR 4.64K 1/8W 1% MF	1301802	37
2	R3, R74	RESISTOR 2.7K ¼W 5%	1300426	38
2	R11, R78	RESISTOR 68 ¼W 5%	1300219	39
8	R37, R39, R41, R47, R108, R110, R105, R113	RESISTOR 2K 1/8W .1% MF	1305352	40
2	R38, R109	RESISTOR 422 ¼W 1% MF	1300314	41
14	R1, R2, R12, R24, R72, R73, R77, R90, R27, R31, R94, R96, R45, R48	RESISTOR 470 ¼W 5%	1300316	42
17	R13, R23, R25, R89, R91, R28, R128, R29, R127, R95, R97, R99, R104, R44, R147, R146, R75	RESISTOR 270 ¼W 5%	1301972	43
1	R43	RESISTOR 562 ⅛W 1% MF	1304693	44
3	R84, R121, R124	RESISTOR 562 ⅛W 1% MF	1305769	45
2	R85, R122	RESISTOR 2.74K 1/8W 1% MF	1304868	46
1	R125	RESISTOR 4.64K 1/8W 1% MF	1304856	47
1	R123	RESISTOR 6.8K ¼W 5%	1301423	48
2	R65, R66	RESISTOR 1K ½W 5%	1300364	49
2	R62, R63	RESISTOR 7K 1/8W .1% MF	1305355	50
8	R56-R59, R138, R139, R140, R117	RESISTOR 2.2K ¼W 5%	1300417	51
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV C

7496	12	5	
7497	8	16	
74193	8	16	
7476	13	5	
74191	8	16	
7485	8	16	
IC TYPE	GND	+ 5V	

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

IC PIN LOCATIONS

ORIGINATE		
REV	B	
CHANGE NO	IN4001	MR-2064
	FD777	SAME
	D664	IN746
REVISIONS	IN825	SAME
	1/4M5.1AZ1	NA
	IN747A	NA
	IN753A	NA
CHK	DEC NO.	EIA NO.

	IN752A
	NA
DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: VT40

NEXT HIGHER ASSY: B-DD-VT40-0

SCALE —

SHEET 2 OF

DRN. S. Roberts DATE 3/25/72
CHKD. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT40 DISPLAY GENERATOR

SIZE D | CODE CS | NUMBER A320-0 | REV.

DIST.

BRUNING 4X-522 18699 DEC FORM NO CPD.35A

REV B | SIZE D | CODE CS | NUMBER A320-0-1

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NOTES:

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2		SCR BHM #4-40 X 5/16 LG	9006019-4	105
2		KEP NUT #4-40	9006557	106
1		COAX CABLE RG174U 7" LONG	9107530	107
1		COAX CABLE RG174U 5" LONG	9107530	108

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	R52, R54	RESISTOR 2K ½W 1% MF	1302329	52
2	R53, R55	RESISTOR 4K 1/8W 1% MF	1305354	53
2	R18, R60	RESISTOR 1.5 ½W 10%	1301641	54
6	R14,R20,R21,R67,R80,R81	RESISTOR 6.2K 1/20W .5% MF	1311093	55
2	R132, R135	RESISTOR 1K ½W 20% 62PR	1309150-03	56
2	R131, R133	RESISTOR 20K ¼W 10% 76PR	1309143-11	57
1	R134	RESISTOR 1K ¼W 10% 76PR	1309143-07	58
6	R92,R22,R30,R34,R99,R103	RESISTOR 1K 1W 5%	1300368	59
6	R93,R26,R35,R32,R100,R105	RESISTOR 10K ¼W 5%	1300479	60
1		HANDLE	1210711-2	61
2	R19, R71	RESISTOR 100 1/8W 1% MF	1302825	62
1	R7	RESISTOR 6.49K ¼W 1% MF	1309314-08	63
2	R15, R68	RESISTOR 5.11K 1/8W 1% MF	1304854	64
2	R17, R70	RESISTOR 19.6K 1/8W 1% MF	1309419	65
2	R4, R79	RESISTOR 680 ¼W 5%	1301424	66
1	R6	RESISTOR 3.83K 1/8W 1% MF	1309413	67
1	R8	RESISTOR 390 ¼W 5%	1300309	68
12	R136,R5,R76,R10,R119,R82, R51,R88,R142,R141,R153,R154	RESISTOR 1K ¼W 5%	1300365	69
1	R9	RESISTOR 422 ½W 1% MF	1300313	70
12		EYELET (GS-4-7)	9006732	71
4	R49,R50,R114,R115	RESISTOR 100 ½W 5%	1300228	72
2	R48, R112	RESISTOR 100 ¼W 5%	1300229	73
2	R61, R64	RESISTOR 10K 1/8W .1% MF	1305431	74
				75
1	R86	RESISTOR 820 ¼W 5%	1301775	76
3	R120,R116,R83	RESISTOR 560 ¼W 5%	1301890	77
2	R87,R126	RESISTOR 15K 1/4W 1% MF	1300496	78
2	R107, R40	RESISTOR 5[illegible]1/8W 1% MF	1305122	79
1	Q45	TRANSISTOR DEC 3009B	1503100	80
12	Q19,Q22,Q5,Q27,Q10,Q11,Q34, Q32,Q33,Q40,Q17,Q46	TRANSISTOR DEC 6534B	1503409-01	81
7	Q21,Q18,Q35,Q41,Q44,Q16,Q43	TRANSISTOR DEC 6531B	1509338	82
4	Q12,Q15,Q38,Q39	TRANSISTOR 2N5245	1509681	83
10	Q1,Q2,Q6,Q13,Q14,Q23,Q24, Q28,Q36,Q37	TRANSISTOR DEC 3646	1503014	84
4	Q3,Q4,Q25,Q26	TRANSISTOR 2N4250	1509142	85
1	Q20	TRANSISTOR MJE 3055	1510555	86
1	Q42	TRANSISTOR MJE 2955	1510556	87
6	Q7,Q8,Q9,Q29,Q30,Q31	TRANSISTOR 2N5638	1511095	88
3	E34,E39,E45	IC DEC 7485	1910224	89
5	E23,E28,E35,E40,E46	IC DEC 74157	1910655	90
3	E24,E25,E29	IC DEC 74191	1910096	91
4	E6,E7,E8,E15	IC LM 318	1910735	92
2	E4, E5	IC DEC 0002	1910446	93
5	E1,E2,E20,E30,E36	IC DEC 741	1910298	94
2	E10, E31	IC LM 302	1909343	95
4	E3,E9,E14,E21	IC LM 310	1910235	96
1	E47	IC DEC 7417	1909929	97
1	E49	IC DEC 7474	1905547	98
2	E41, E42	IC DEC 74S04	1910534	99
1	E48	IC DEC 7476	1905585	100
2	E11, E12	IC DEC 8202	1910275	101
6	E13,E16,E17,E18,E19,E22	IC DEC 74193	1910018	102
4	E27,E33,E38,E44	IC DEC 7497	1911195	103
4	E26,E32,E37,E43	IC DEC 7496	1910363	104

PARTS LIST

IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

DRAWING 40-522 16599

DEC FORM NO DPD 1254

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

SEMICONDUCTOR CONVERSION CHART

REVISIONS

REV	CHANGE NO.	CHK

FIRST USED ON OPTION MODEL: VT4Ø

ETCH BOARD REV

		DATE
DRN.	[illegible]	9/22/72
CHK'D.	[illegible]	[illegible]
ENG.	[illegible]	
PROJ. ENG.	[illegible]	10/23/72
PROD.	[illegible]	[illegible]

NEXT HIGHER ASSY: B-DD-VT4Ø-Ø

SCALE: NONE

SHEET 3 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT4Ø DISPLAY GENERATOR

SIZE	CODE	NUMBER	REV.
D	CS	A32Ø-Ø-1	3

DIST.

SIZE D CS NUMBER A32Ø-Ø-1 REV B

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DIGITAL EQUIPMENT CORPORATION

X CHARACTER GEN

Y CHARACTER GEN

ITALICS

X SUMMERS

Y SUMMERS

DESCEND

CCL2 STEP X H

CCL2 RAMP Y (I) H

CCL2 RUN (Ø) H

CCL2 DESCEND (Ø) H

CHAR SCALE (I) H

SABR ITALICS (I) H

V CHAR DEFLECTION

Y CHAR DEFLECTION

DAC X

DAC Y

VG VECTOR X

VG VECTOR Y

CGS X OUT

CGS Y OUT

VR ANALOG +15V

VR ANALOG -15V

+15V

+5V

-15V

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

		DATE
DRN. E Rosete		7/13/72
CHK'D. [illegible]		8/1/72
ENG. C Welch		8/24/72
PROJ. ENG. H E Lawce		8/25/72
PROD. P. McCarthy		8/25/72

NEXT HIGHER ASSY: B-DD-VT4Ø-Ø

SCALE —//—

SHEET 5 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CHARACTER GENERATOR & SUMMERS (CSG)

VT4Ø DISPLAY GENERATOR

SIZE	CODE	NUMBER	REV.
D	CS	A32Ø-Ø-1	B

DIST.

REVISIONS	REV.	CHANGE NO	CHK

BRUNING 40-522 15840
DES - DRW NO
DRD 102-B

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X PRECISION PULSE

X RAMP GEN

X RAMP SWITCH

CONSTANT VOLTAGE SOURCE

Y RAMP GEN

Y RAMP SWITCH

Y PRECISION PULSE

VG VECTOR X

VG VECTOR Y

VECTOR GENERATOR (VG)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT40		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 ✓

DRN. S Roberts 9/22/72 — CHK'D. 9/26/72 — ENG. 9/27/72 — PROJ. ENG. 10/5/72 — PROD. 10/24/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT40 DISPLAY GENERATOR

MATERIAL — FINISH — NEXT HIGHER ASSY. B-DD-VT40-Ø

SIZE D | CODE CS | NUMBER A32Ø-Ø-1 | REV. B

SCALE — SHEET 4 OF — DIST.

BRUNING 40 522 15840 — DEC FORM NO 102-B

REVISIONS: REV | CHANGE NO | CHK

NUMBER A32Ø-Ø-1 REV B — SIZE D CODE CS

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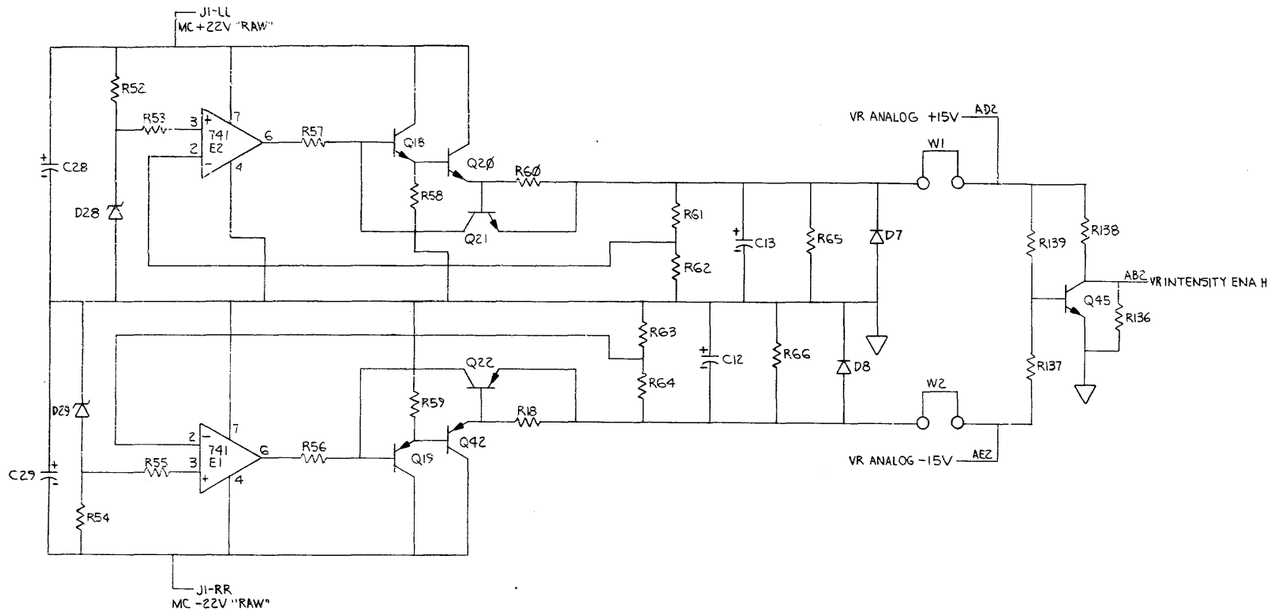

VOLTAGE REGULATORS (VR)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO.
VT40		PARTS LIST		

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

DRN S Roberts DATE 7/25/72
CHKD. DATE 7/25/72
ENG DATE
PROJ. ENG. H.E. Fawcett DATE 10/25/72
PROD. P. McGinty DATE 10/25/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
VT40
DISPLAY GENERATOR

NEXT HIGHER ASSY. B-DD-VT40-0
SCALE —
SHEET 6 OF

SIZE	CODE	NUMBER	REV
D	CS	A320-0-1	B

DIST.

REV	REVISION	CHK
B	CHANGE NO	

BRUNING 40522 15840
DEC FORM NO ORD 102-B

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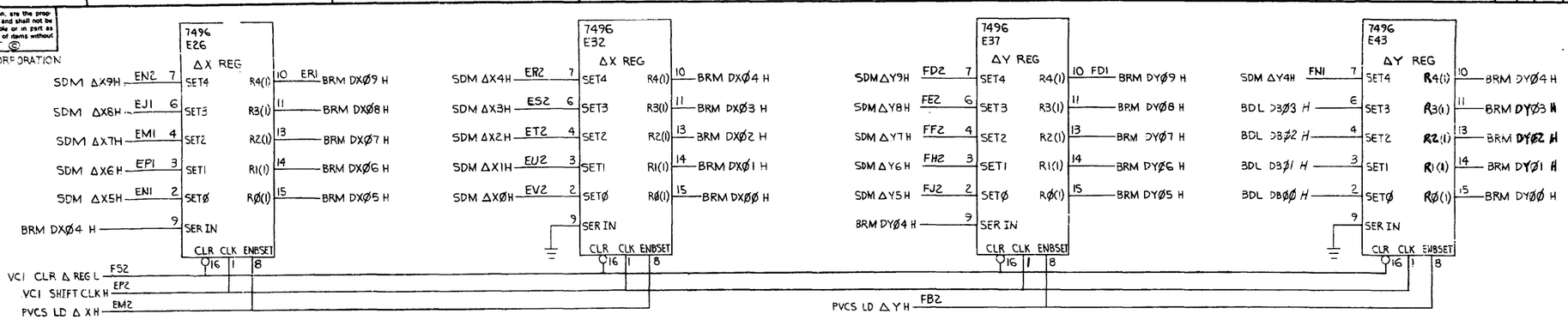

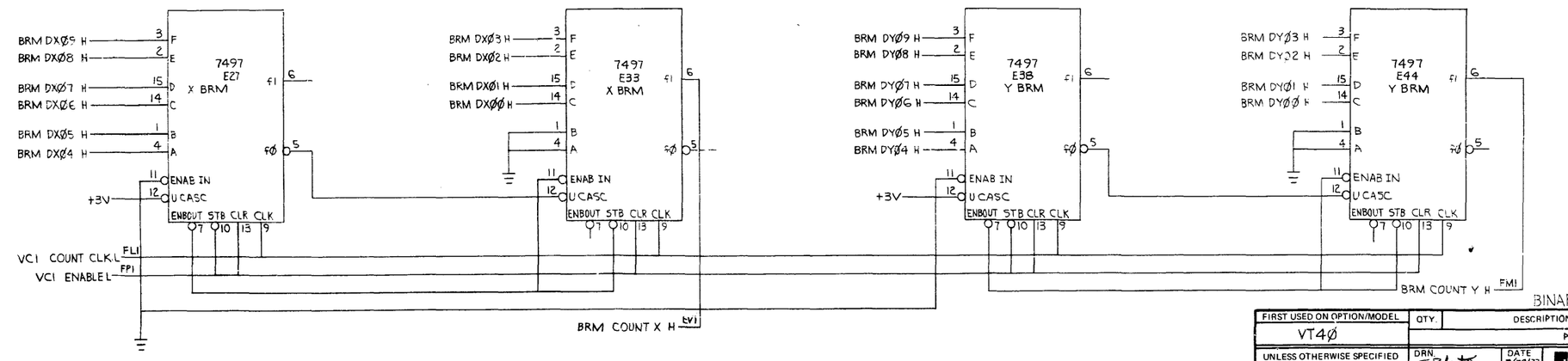

BINARY RATE MULTIPLIERS (BRM)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VTØØ		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. S Roberts	DATE 7/28/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE	
ENG. Rob Swann	DATE 10/25/72	
PROJ. ENG. Ed Lavin	DATE 10/25/72	TITLE VT40 DISPLAY GENERATOR
PROD. Tom Conroy	DATE 10/25/72	
NEXT HIGHER ASSY. B-DD-VT4Ø-Ø		SIZE D CODE CS NUMBER A32Ø-Ø-1 REV. B
SCALE —		
SHEET 7 OF		DIST.

REVISIONS: REV | CHANGE NO | CHK
BRUNING 40-522 15840
DEC FORM NO. DRD 102-B

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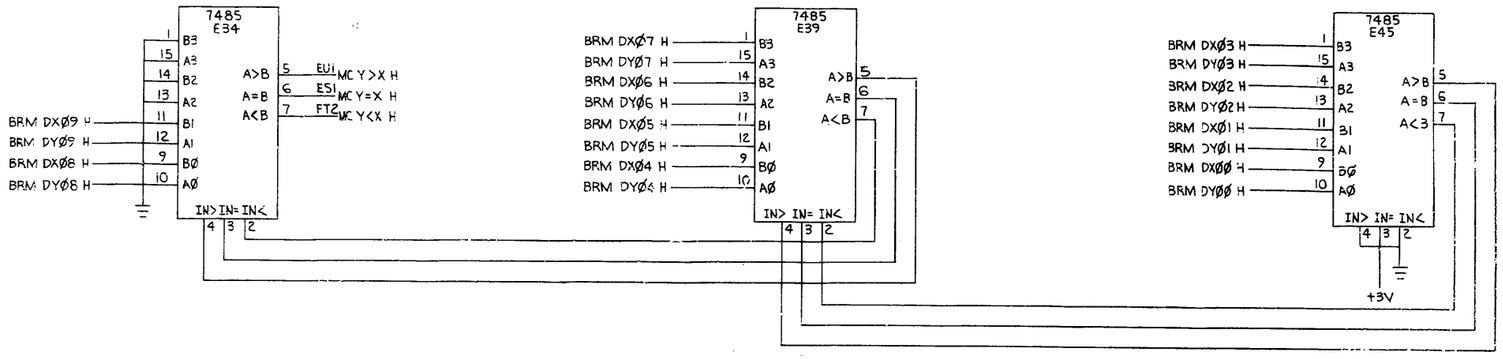

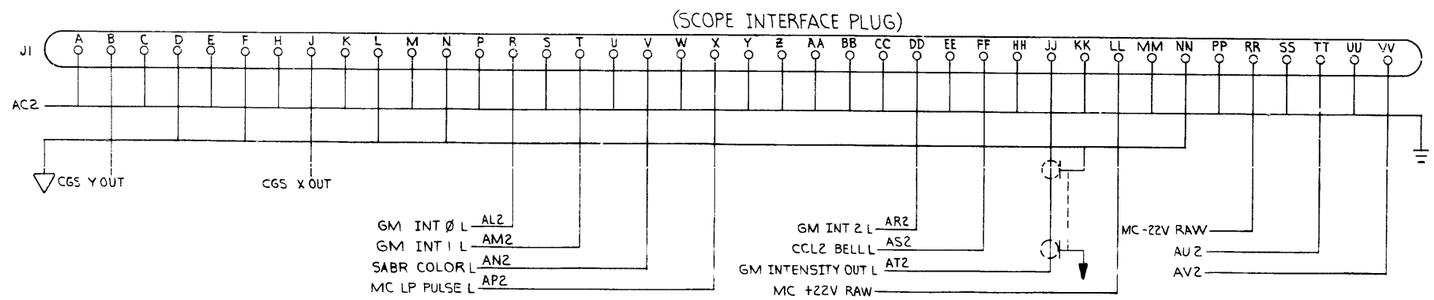

MAGNITUDE COMPARTORS (MC)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT4Ø		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. S. Roberts DATE 10/9/72
CHK. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 10/25/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE VT4Ø DISPLAY GENERATOR

NEXT HIGHER ASSY. B-DD-VT4Ø-Ø

SIZE	CODE	NUMBER	REV
D	CS	A320-D-1	B

SCALE —
SHEET 8 OF
DIST

REV	REVISIONS	CHK
	CHANGE NO.	

BRUNING 40 322 15840
DEC FORM NO DRD 192-B

A320-D-1 B CS D 2

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74157 E35 — ΔX,Y MUX
BRM DXØ8 H
BRM DYØ8 H
BRM DXØ9 H (FM1)
BRM DYØ9 H (FD1)
VC1 CHAR + GRAPH MODE H FE1
MCY<X H (FT2)
→ FH1 DCR Ø OUT H
→ FF1 DCR1 OUT H
→ FV2 DCR2 OUT H
→ FU2 DCR3 OUT H

74157 E40 — ΔX,Y MUX
BRM DXØ4 H
BRM DYØ4 H
BRM DXØ5 H
BRM DYØ5 H
BRM DXØ6 H
BRM DYØ6 H
BRM DXØ7 H
BRM DYØ7 H
→ FC1 DCR4 OUT H
→ FB1 DCR5 OUT H

74157 E46 — ΔX,Y MUX
BRM DXØØ H
BRM DYØØ H
BRM DXØ1 H
BRM DYØ1 H
BRM DXØ2 H
BRM DYØ2 H
BRM DXØ3 H
BRM DYØ3 H

74157 E28 — GRAPH OR, CHAR MUX
PCC 4 IN H EF1
INC 4 H EH1
PCC 5 IN H EK1
INC 5 H EL1

74157 E23 — GRAPH OR, CHAR MUX
DCR Ø OUT H DM1
INC Ø H DS1
PCC 1 IN H DU1
INC 1 H DV1
PCC 2 IN H EF2
INC 2 H EH2
INC 3 H EK2
PCC 3 IN H EJ2
PVCS GRAPH L EL2

74191 E29 — DOWN COUNT REG
74191 E25 — DOWN COUNT REG
74191 E24 — DOWN COUNT REG
MAX/MIN, RCLK, LD DN CLK ENB, +3V
EE1 DCR 8-9 Ø) H
EDI VC1 LOAD DOWN COUNT L
EC1 DCR 4-7 (Ø) H
FB1 DCR Ø-3 (Ø) H
VC2 DOWN COUNT CLK EE2

DOWN COUNT REGISTERS (DCR)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT4Ø		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. S Roberts DATE 10/6/72
CHK'D [illegible] DATE 10/25/72
ENG. Robt E Lynn DATE 11/25/72
PROJ. ENG. H C Lavoie DATE 10/26/72
PROD. [illegible] DATE 10/26/72
NEXT HIGHER ASSY. B-DD-VT4Ø-Ø
SCALE —
SHEET 9 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT4Ø DISPLAY GENERATOR

SIZE D | CODE CS | NUMBER A32Ø-Ø-1 | REV 5 | DIST.

REVISIONS: REV | CHANGE NO | CHK
BRUNING 40-522 15840
DEC FORM NO DRD 102-B

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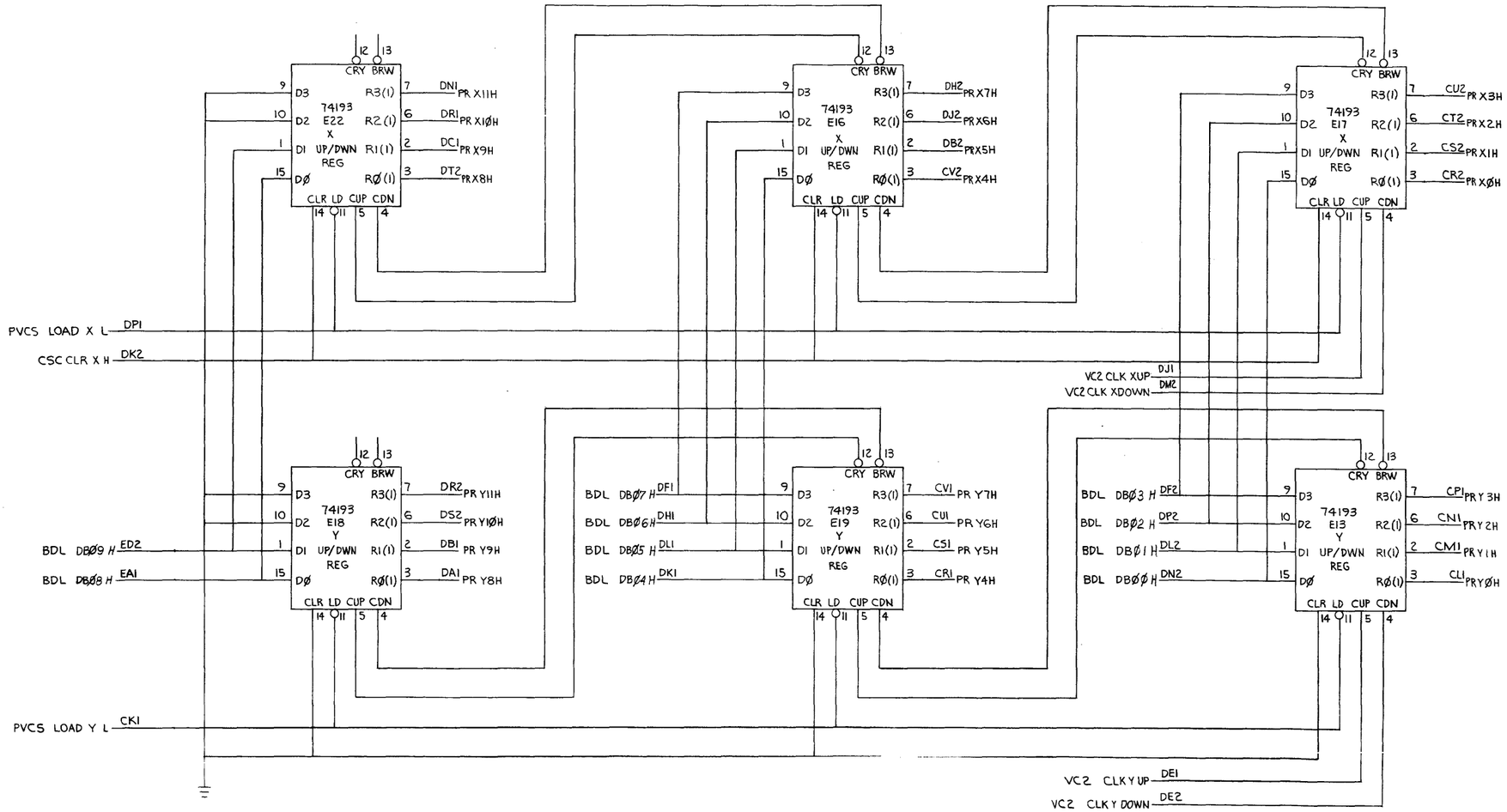

POSITION REGISTERS (PR)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT4Ø		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 —

		DATE
DRN	S. Bisenta	10/3/72
CHKD	[illegible]	[illegible]
ENG.	[illegible]	[illegible]
PROJ. ENG.		
PROD.	[illegible]	[illegible]

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VT4Ø DISPLAY GENERATOR

NEXT HIGHER ASSY: B-DD-VT4Ø-Ø
SCALE —
SHEET 10 OF

SIZE	CODE	NUMBER	REV.
D	CS	A32Ø-Ø-1	B

DIST.

REV	DESCRIPTION	CHANGE NO	CHK

BRUNING 40-522 1584
DEC FORM NO DRD 102-B

REV B
NUMBER A32Ø-Ø-1
SIZE D CODE CS

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+5V
R13Ø 33Ø
+3V
R129 75Ø

8202 E11 X POS REG

PRX9H	(DC1)	2	22
PRX8H	(DT2)	3	21
PRX7H	(DH2)	4	20
PRX6H	(DJ2)	5	19
PRX5H	(DB2)	6	18
PRX4H	(CV2)	7	17
PRX3H	(CU2)	8	16
PRX2H	(CT2)	9	15
PRX1H	(CS2)	10	14
PRXØH	(CR2)	11	13

23 1

CSC CLR X L — DD1
VC1 LOAD DAC H — DD2

A6ØØØ X DAC

MSB	11
	12
	13
	14
	15
	16
	17
	18
	19
LSB	20
BIT11	21
BIT12	22
	1
BIPOLAR	2
GND	GND
	7 9 6 5

A2 — 8 — DAC X

VR ANALOG +15
VR ANALOG -15

8202 E12 Y POS REG

PRY9H	(DB1)	2	22
PRY8H	(DA1)	3	21
PRY7H	(CV1)	4	20
PRY6H	(CU1)	5	19
PRY5H	(CS1)	6	18
PRY4H	(CR1)	7	17
PRY3H	(CP1)	8	16
PRY2H	(CN1)	9	15
PRY1H	(CM1)	10	14
PRYØH	(CL1)	11	13

23 1

+3V

A6ØØØ Y DAC

MSB	11
	12
	13
	14
	15
	16
	17
	18
	19
LSB	20
BIT11	21
BIT12	22
	1
BIPOLAR	2
GND	GND
	7 9 6 5

A1 — 8 — DAC Y

VR ANALOG +15
VR ANALOG -15

DIGITAL TO ANALOG CONVERTERS (DAC)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. S. Roberts	DATE 10/10/72	
CHK'D	DATE 10/12/72	
ENG.	DATE	
PROJ. ENG.	DATE 10/13/72	
PROD.	DATE 10/13/72	

NEXT HIGHER ASSY. B-DD-VT4Ø-Ø

SCALE —

SHEET 11 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
VT4Ø
DISPLAY
GENERATOR

SIZE	CODE	NUMBER	REV.
D	CS	A32Ø-Ø-1	B

DIST.

REV	REVISIONS	CHK
	CHANGE NO	

BRUNING 40-522 15840
DEC FORM NO DRD 102-B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY C.MCCOY DATE 10/16/72	CHECKED R K Cialli DATE 10-22-72	SECTION 1
ENG R K Cialli DATE 10-23-72	PROD D. McCarthy DATE 10/24/72	ISSUED SECT.

	ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
				VT40-AA	VT40-AB	VT40-BA	VT40-BB								
	1	D-UA-1105-MA-0	16 BIT COMPUTER ASSY (PDP1105) 115V	-	-	1	-								
	2	D-UA-1105-MB-0	16 BIT COMPUTER ASSY (PDP1105) 230V	-	-	-	1								
	3	D-UA-1105-PA-0	16 BIT COMPUTER ASSY (PDP1105) 115V	1	-	-	-								
	4	D-UA-1105-PB-0	16 BIT COMPUTER ASSY (PDP1105) 230V	-	1	-	-								
	5	D-IA-7409966-0-0	COVER PANEL, REAR BOTTOM	1	1	1	1								
	6	9009019-3	SCREW, PHL TRUSS HD #10-32 x .25 LG	4	4	4	4								
	7	D-MD-7409971-1-0	EXTRUSION, SIDE (L.H.)	1	1	1	1								
	8	D-MD-7409971-2-0	EXTRUSION, SIDE (R.H.)	1	1	1	1								
	9	9009266	WASHER, FINISHING	4	4	4	4								
	10	9006035-2	SCREW, PHL FLT HD #8-32 x .25 LG	4	4	4	4								
*	11	C-CS-M7013-0-1	BUS CONTROL	1	1	1	1								
*	12	C-CS-M7014-0-1	DISPLAY CONTROL	1	1	1	1								
*	13	C-CS-A320-0-1	VECTOR GENERATOR	1	1	1	1								
			* SEE DWG. NO. D-MU-VT40-0-1												
			FOR APPLICATION.												

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
VT40 COMPUTER ASSY	-	A	PL	VT40-0-0		
	SHEET 1 OF 1	DIST.	6			

DEC FORM DEC 16-(325)-1051-X870
DRA 110

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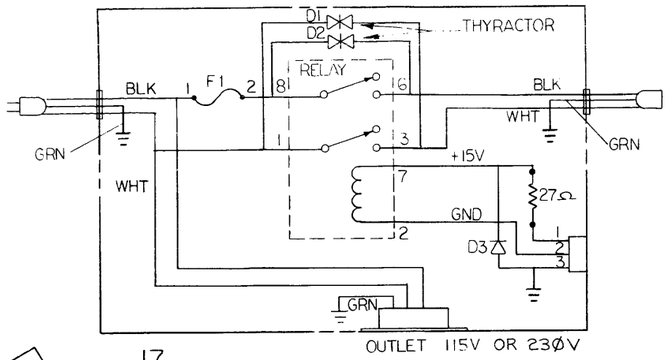
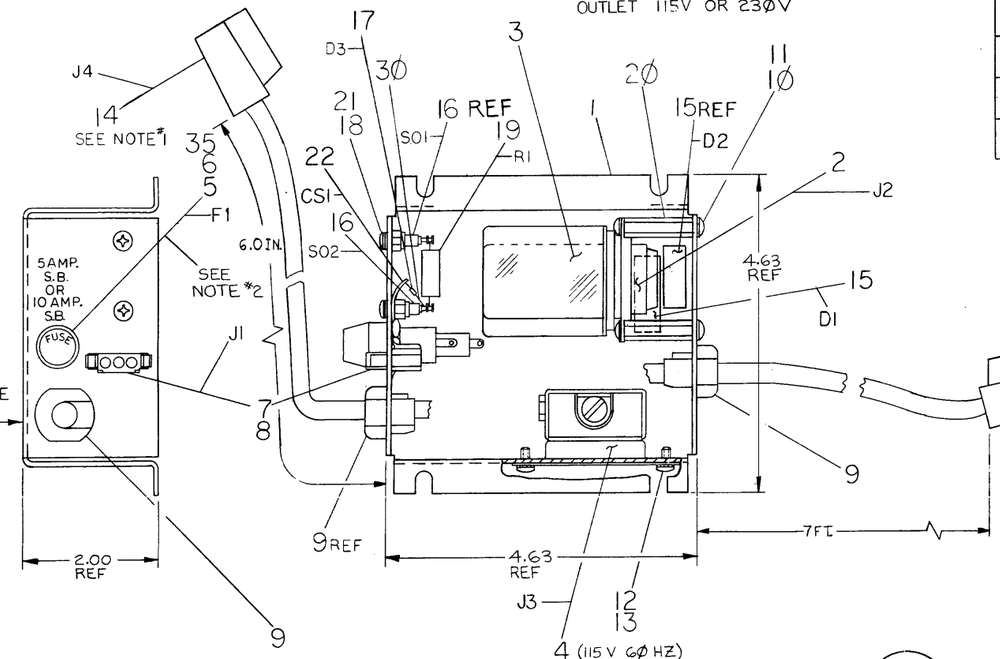
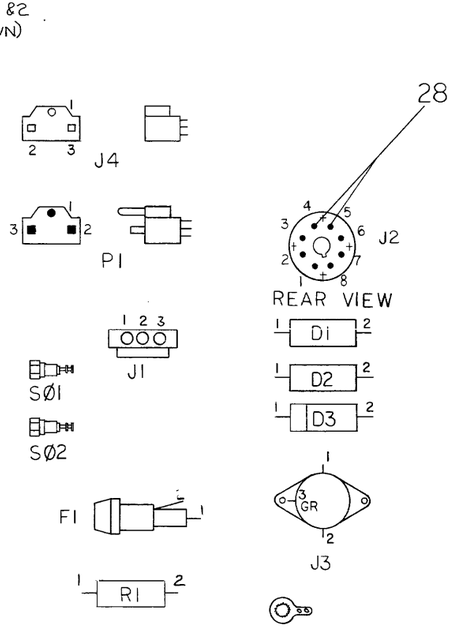
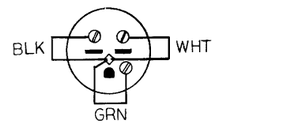
LEGEND	
NUMBER	VARIATION
7008930-1	115V 60 HZ
7008930-2	230V 50 HZ









PLUG WIRING (P1)
(COVER REMOVED)
ITEM *33 230V OPER.

WIRE TABLE

ITEM NO.	DESCRIPTION AWG.	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	REMARKS
14	14	GRN	J4-1	—	CS1	SOLD	
23	18	GRN	J1-3	8	CS1	SOLD	
14	14	BLK	J4-2	—	J2-6	SOLD,28	
14	14	WHT	J4-3	—	J2-3	SOLD,28	
24	18	ORN	J1-1	8	SO-1	SOLD	
24	18	ORN	SO-2	SOLD	J2-7	SOLD,28	
25	18	BLU	J1-2	8	J2-2	SOLD,28	
14	14	GRN	P1-1	—	J3-3	29	
14	14	WHT	P1-3	—	J3-1	29	
14	14	BLK	P1-2	—	J3-2	29	
27	14	BLK	F1-1	SOLD,28	J3-2	29	
26	14	WHT	J2-1	SOLD,28	J3-1	29	
27	14	BLK	F1-2	SOLD,28	J2-8	SOLD,28	
15	—	—	D1-1	—	J2-1	SOLD 28,30	
			D1-2	—	J2-3		
15	—	—	D2-1	—	J2-8		
			D2-2	—	J2-6	SOLD 28,30	
17	—	—	D3-1	—	SO-2	SOLD	
			D3-2	—	CS-1	SOLD	
19	—	—	R1-1	—	SO-1	SOLD,30	
			R1-2	—	SO-2	SOLD,30	

NOTES:

1. CUT ITEM #14 (POWER CORD) APPROXIMATELY 13.0 IN. FROM RECEPTACLE (J4) AND INSTALL EACH PIECE AS INDICATED IN WIRE TABLE.
2. WHEN THE SYSTEM IS 230V, ITEM #14 IS REMOVED AND ITEM #33 IS WIRED TO REMAINING CORD USING DIAGRAM SHOWN. ITEM #4 (RECEPT.) IS REPLACED BY ITEM #32. ITEM #6 IS REPLACED BY ITEM #35. ADD APPROPRIATE DECALS WHERE SHOWN.

7008930-2	7008930-1			
1	—	FUSE 5 AMP S.B.	9007222	35
A/R	A/R	DECALS	7408407	34
1	—	PLUG, HUBBELL #5666 230V	9008853	33
1	—	OUTLET, HUBBELL #5656 230V	9008470	32
A/R	A/R	TIE WRAP #SST2-M PANDUIT	9007032	31
A/R	A/R	TUBING, THINWAL TEF BLK	9107259-00	30
5	5	CONN. SOLD. #50364 ARK LESS	9007928	29
A/R	A/R	TUBING SHRINKABLE RED	9107305-02	28
A/R	A/R	WIRE #14 AWG IPVC INS BLK	9107370-00	27
A/R	A/R	WIRE #14 AWG IPVC INS WHT	9107370-99	26
A/R	A/R	WIRE #18 AWG IPVC INS. BLU	9107360-66	25
A/R	A/R	WIRE #18 AWG IPVC INS. ORN	9107360-33	24
A/R	A/R	WIRE #18 AWG IPVC INS. GRN	9107360-55	23
1	1	CONN. #2102-0600 SHAKEPROOF	9006765	22
2	2	WASHER INT TOOT LOCK #4	9006632	21
2	2	SPACER 1/4 AF x 1" LG #6-32	9006862	20
1	1	RESISTOR 27Ω 2W 10%	1305624	19
2	2	SCREW, PHL PAN HD #4-40 x 3/16	9008032-1	18
1	1	DIODE #DG72	1105275	17
2	2	STAND-OFF, PORCELAIN	9006965	16
2	2	THYRACTOR #GRS20SP484	1100106	15
1	1	POWER CORD	9107673-9	14
2	2	WASHER, INT TOOTH LOCK #8	9006634	13
2	2	SCREW, PHL PAN HD #8-32 x 1/4	9006035-1	12
4	4	WASHER, INT. TOOTH LOCK #6	9006633	11
4	4	SCREW, PHL HD PAN #6-32 x 3/8	9006022-1	10
2	2	BUSHING, STRAIN RELIEF	9008492-1	9
3	3	PIN, MATE-N-LOCK FEMALE	1209378-01	8
1	1	CONN., MATE-N-LOCK 3 PIN	1209350-3	7
—	1	FUSE 10AMP S.B.	9007225	6
1	1	FUSE HOLDER	9007242	5
—	1	OUTLET, HUBBELL 15A. 125 V	1210761	4
1	1	RELAY, P.&B. KRP11DG 12 V DC	1203431	3
1	1	OCTAL SOCKET 8 EM	1201244	2
1	1	BOX, POWER CONTROL	D-IA-7409765-0-0	1

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS	REV.	CHK	CHANGE NO.
	A		GT40-00002

AC FILE

FIRST USED ON OPTION/MODEL	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN.	DATE
GT40	DECIMALS	ANGLES	CHK'D.	DATE 7-8-72
	.XXX = .005 .XX = .02 .X = .1	±0° 30'	ENG.	DATE
	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROJ. ENG.	DATE 8-26-72
			PROD.	DATE 5-28-72
MATERIAL: SEE PARTS LIST	NEXT HIGHER ASSY.: D-UA-GT40-0-0		SCALE 1/1	
FINISH			SHEET OF	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: POWER CONTROL ASS'Y

SIZE	CODE	NUMBER	REV.
D	AD	7008930-0-0	A

DIST.

BRUNING 40-107 15568
DEC FORM NO DRD 100-A

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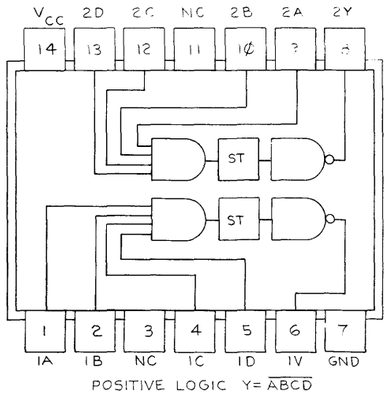
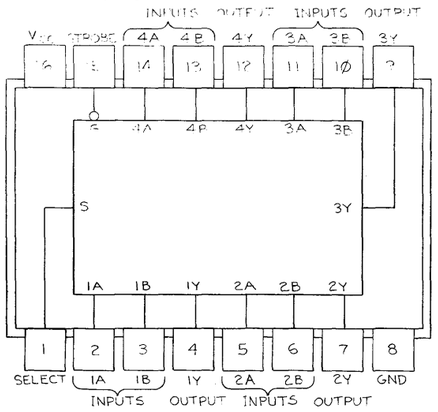
SN7413 1909933
DUAL NAND SCHMITT TRIGGER



POSITIVE LOGIC $Y = \overline{ABCD}$

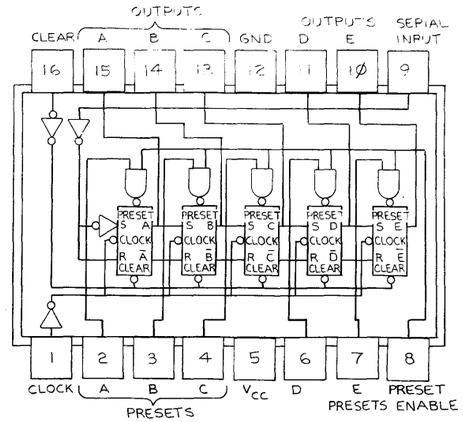
SN74157 1910655
QUAD 2 TO 1 MULTIPLEXER



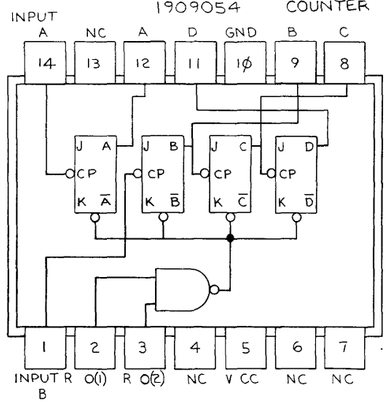
INPUTS				OUTPUT
STROBE	SELECT	A	B	Y
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

POSITIVE LOGIC:
LOW LOGIC LEVEL AT S SELECTS A INPUTS.
HIGH LOGIC LEVEL AT S SELECTS B INPUTS.

SN 7496 1910363 5-BIT SHIFT REG.

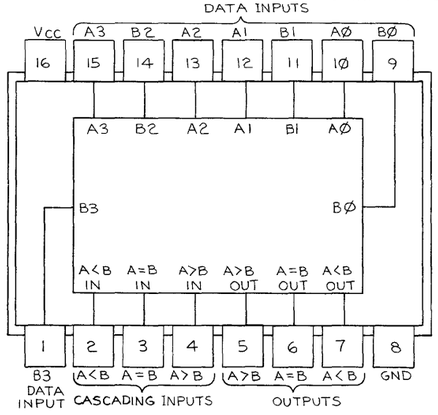


SN7493 1909054 4-BIT BINARY COUNTER



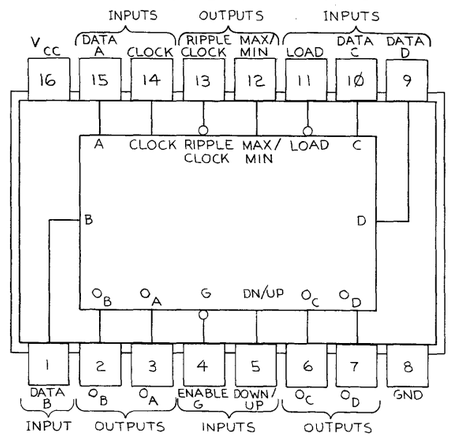
COUNT	OUTPUT D	C	B	A
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

SN7485 1910224 4-BIT MAGNITUDE COMPARATOR



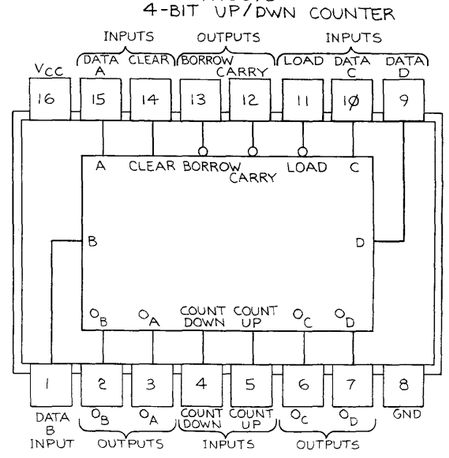
COMPARING INPUTS				CASCADING INPUTS			OUTPUTS		
A3, B3	A2, B2	A1, B1	AØ, BØ	A>B	A<B	A=B	A>B	A<B	A=B
A3>B3	X	X	X	X	X	X	H	L	L
A3<B3	X	X	X	X	X	X	L	H	L
A3=B3	A2>B2	X	X	X	X	X	H	L	L
A3=B3	A2<B2	X	X	X	X	X	L	H	L
A3=B3	A2=B2	A1>B1	X	X	X	X	H	L	L
A3=B3	A2=B2	A1<B1	X	X	X	X	L	H	L
A3=B3	A2=B2	A1=B1	AØ>BØ	X	X	X	H	L	L
A3=B3	A2=B2	A1=B1	AØ<BØ	X	X	X	L	H	L
A3=B3	A2=B2	A1=B1	AØ=BØ	H	L	L	H	L	L
A3=B3	A2=B2	A1=B1	AØ=BØ	L	H	L	L	H	L
A3=B3	A2=B2	A1=B1	AØ=BØ	L	L	H	L	L	H

SN74191 1910096 SYNC UP/DWN COUNTER



ASYNCHRONOUS INPUTS: LOW INPUTS TO LOAD SETS $Q_A = A$, $Q_B = B$, $Q_C = C$, AND $Q_D = D$

SN74193 1910098 4-BIT UP/DWN COUNTER



LOGIC: LOW INPUTS TO LOAD SETS $Q_A = A$, $Q_B = B$, $Q_C = D$ AND $Q_D = D$

REV.	DESCRIPTION	DATE	APPROVED
A	REVISIONS CHANGE NO CHK		

BRUNING 40-107 1966
DEC FORM NO
DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

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

DRN. — DATE 9-26-72
CHK'D. — DATE
ENG. — DATE
PROD. — DATE 11/24/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASE DIAGRAMS

NEXT HIGHER ASSY. B-DD-GT40-0
SCALE —"—
SHEET 1 OF 4

SIZE	CODE	NUMBER	REV.
D	SP	GT40-0-2	

DIST.

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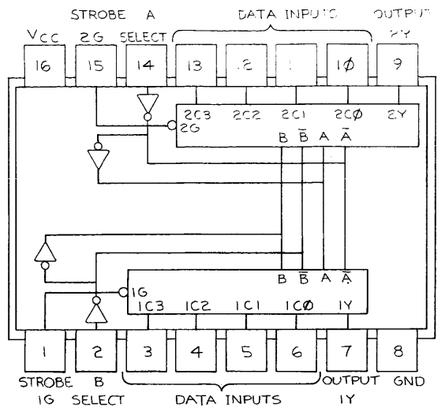
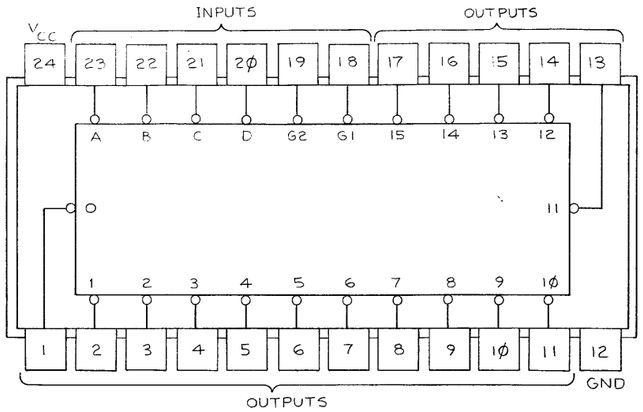
SN74155 / 1909257
DUAL 4 TO 1 MULTIPLEXER



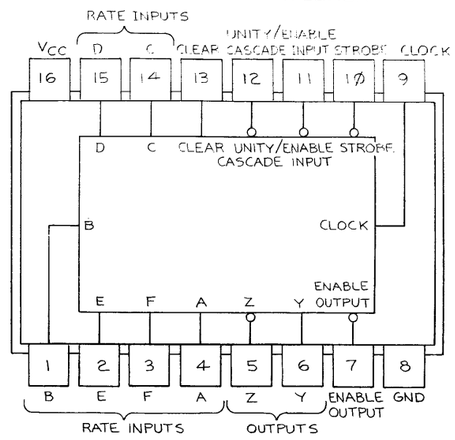
ADDRESS INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	G	Y
X	X	X	X	X	X	H	L
L	L	X	X	X	X	L	L
L	L	H	X	X	X	L	H
L	H	X	L	X	X	L	L
L	H	X	H	X	X	L	H
H	L	X	X	L	X	L	L
H	L	X	X	H	X	L	H
H	H	X	X	X	L	L	L
H	H	X	X	X	H	L	H

SN74154 / 1909701
4 TO 16 DECODER / DEMULTIPLEXER



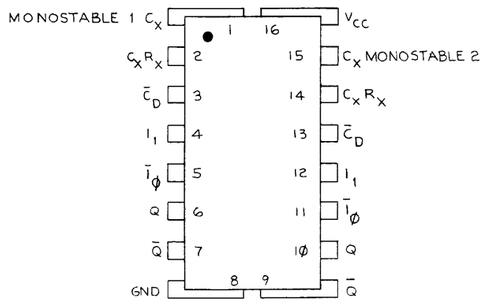
INPUTS						OUTPUTS														
G1	G2	D	C	B	A	Ø	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	L	L	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	L	H	L	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	L	H	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	H	L	L	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H
L	L	L	H	L	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H
L	L	L	H	H	L	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H	H
L	L	L	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H
L	L	H	L	L	L	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H	H
L	L	H	L	L	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H
L	L	H	L	H	L	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H
L	L	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H
L	L	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H
L	L	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L	H	H
L	L	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L	H
L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L
L	H	X	X	X	X	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
H	X	X	X	X	X	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

SN7497 / 1911195
BINARY RATE MULTIPLEXER

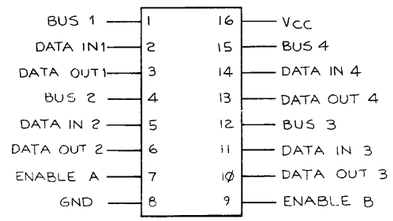


INPUTS							OUTPUTS			
CLEAR	ENABLE	STROBE	BINARY RATE F E D C B A	NUMBER OF CLOCK PULSES	UNITY / CASCADE	LOGIC LEVEL OR NUMBER OF PULSES Y	Z	ENABLE	NOTES
H	X	H	X X X X X X	X	H	L	H	H	B
L	L	L	L L L L L L	64	H	L	H	I	C
L	L	L	L L L L L H	64	H	1	1	I	C
L	L	L	L L L L H L	64	H	2	2	I	C
L	L	L	L L L H L L	64	H	4	4	I	C
L	L	L	L L H L L L	64	H	8	8	I	C
L	L	L	L H L L L L	64	H	16	16	I	C
L	L	L	H L L L L L	64	H	32	32	I	C
L	L	L	H H H H H H	64	H	63	63	I	C
L	L	L	H H H H H L	64	H	H	63	I	E
L	L	L	H L H H L L	64	L	40	40	I	F

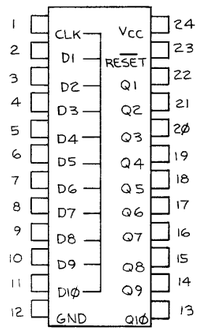
9602 / 1910951
2602 / 1910257
MONOSTABLE ONE SHOTS



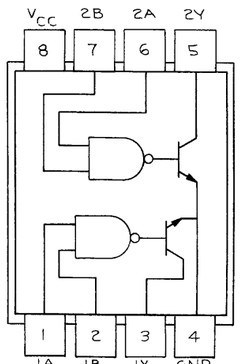
8838 / 9011117
BUS XCEIVER



8202 / 1910275
10 BIT BUFFER



SN75451A / 1910406
POSITIVE - AND DRIVER



POSITIVE LOGIC: Y=AB

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		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 —//—

		DATE
DRN.	C BMcEvoy	9-25-72
CHK'D.		
ENG.		
PROJ. ENG.		
PROD.	T.M. Mantay	10/24/72

NEXT HIGHER ASSY. B-DD-GT40-0

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASE DIAGRAMS

SIZE D | CODE SP | NUMBER GT40-0-2 | REV.

SCALE —//— | SHEET 2 OF 4 | DIST

REV.	REVISIONS	CHK.
	CHANGE NO.	

BRUNING 40-107 15968
DEC FORM NO DRD 100-A

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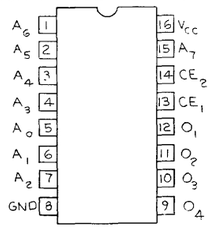
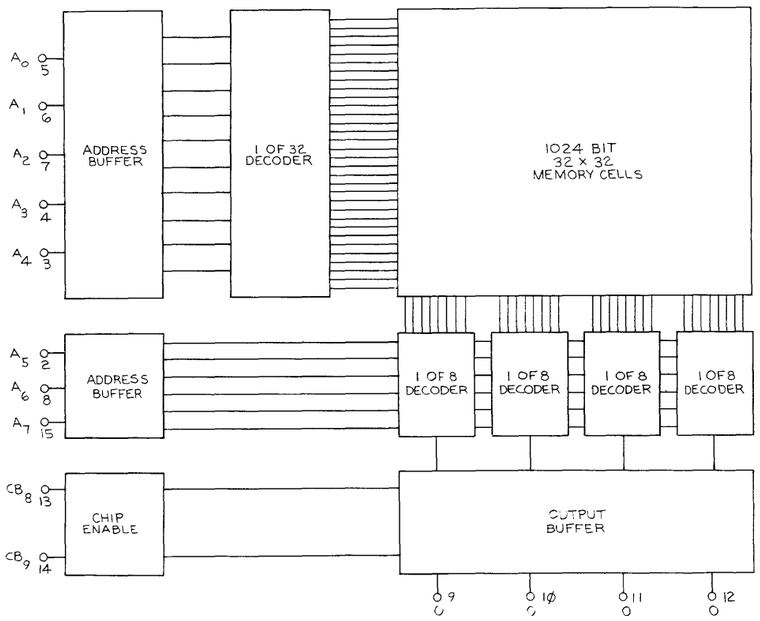
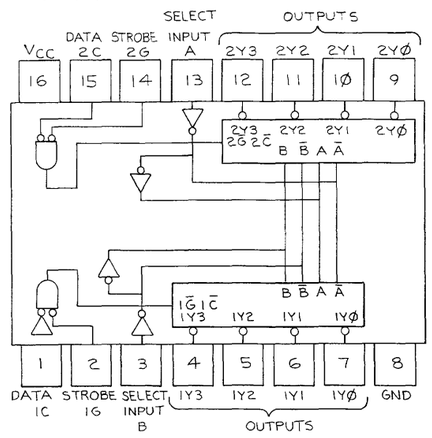
IM5603
23000A2-03
PROGRAMABLE READ ONLY MEMORY



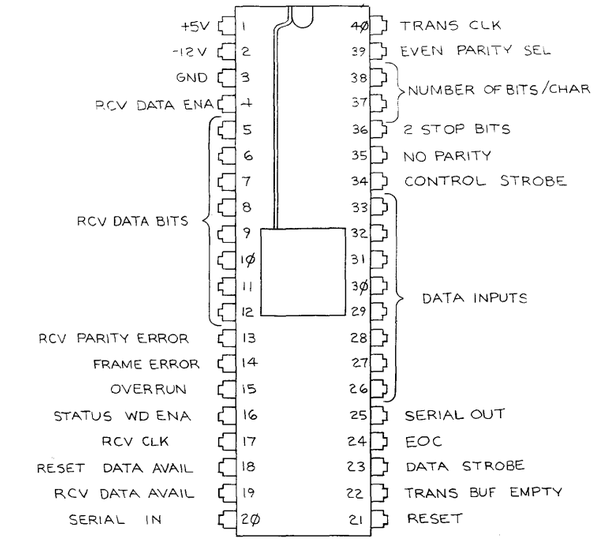


SN74155
1910656
2 TO 4 DECODER / DEMULTIPLEXER

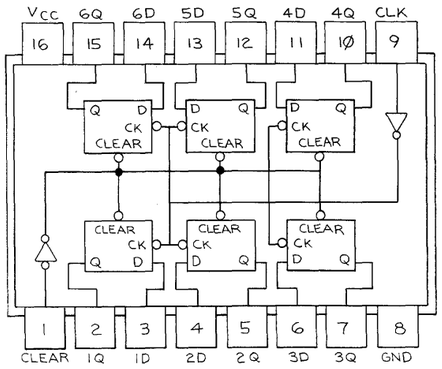


INPUTS				OUTPUTS			
SELECT		STROBE	DATA				
B	A	1G	1C	1Y0	1Y1	1Y2	1Y3
X	X	H	X	H	H	H	H
L	L	L	H	L	H	H	H
L	H	L	H	H	L	H	H
H	L	L	H	H	H	L	H
H	H	L	H	H	H	H	L
X	X	X	L	H	H	H	H

UART
1910459
UNIVERSAL ASYNC. RECEIVER TRANSMITTER

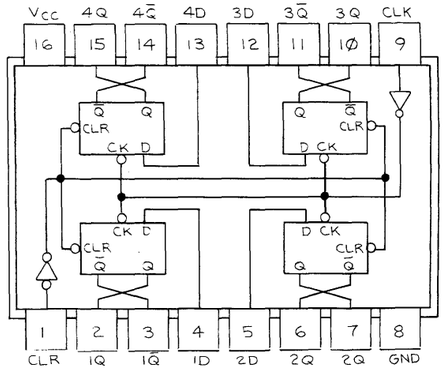


SN74174
1910652
HEX D-TYPE FF'S



POSITIVE LOGIC: SEE FUNCTION TABLE

SN74175
1910651
QUAD D-TYPE FF'S



POSITIVE LOGIC: SEE FUNCTION TABLE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		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. CLEMCG DATE 9-25-72
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 10/24/72
NEXT HIGHER ASSY. B-PL GT40

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASE DIAGRAMS

SIZE D | CODE SP | NUMBER GT40-0-2 | REV.
SCALE —"—
SHEET 3 OF 4 | DIST.

BRUNING 40-107 15566 DFC FORM NO. DRG 100-A

REV.	REVISIONS	CHANG. NO.	CHK

SIZE D | CODE SP | NUMBER GT40-0-2 | REV.

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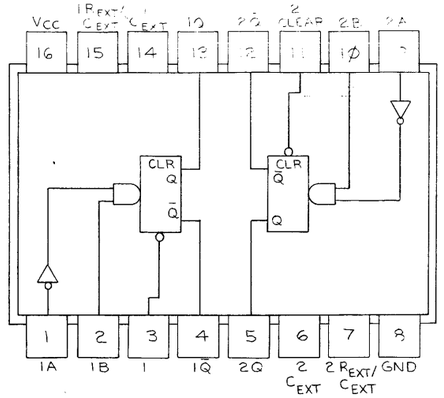
SN74123
1910436

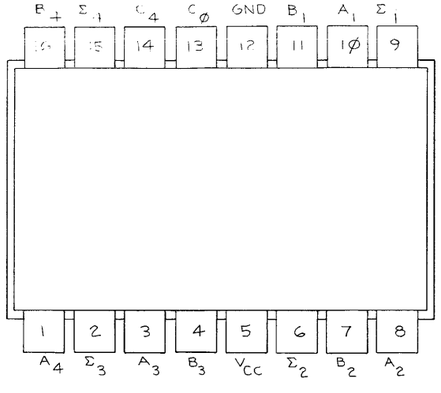
RETRIGGERABLE MONOSTABLE MULTIVIBRATOR



POSITIVE LOGIC
LOW INPUT TO CLEAR RESETS Q TO LOW LEVEL AND INHIBITS DATA INPUTS.

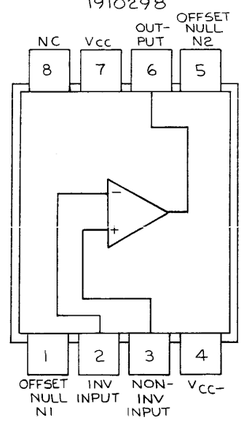
SN7483
1909232

4-BIT BINARY FULL ADDER

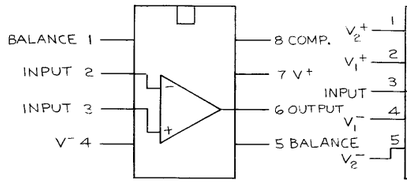


INPUT				OUTPUT					
				WHEN $C_0=0$			WHEN $C_0=1$		
						WHEN $C_2=0$			WHEN $C_2=1$
A_1 / A_3	B_1 / B_3	A_2 / A_4	B_2 / B_4	Σ_1 / Σ_3	Σ_2 / Σ_4	C_2 / C_4	Σ_1 / Σ_3	Σ_2 / Σ_4	C_2 / C_4
0	0	0	0	0	0	0	1	0	0
1	0	0	0	1	0	0	0	1	0
0	1	0	0	1	0	0	0	1	0
1	1	0	0	0	1	0	1	1	0
0	0	1	0	0	1	0	1	1	0
1	0	1	0	1	1	0	0	0	1
0	1	1	0	1	1	0	0	0	1
1	1	1	0	0	0	1	1	0	1
0	0	0	1	0	1	0	1	1	0
1	0	0	1	1	1	0	0	0	1
0	1	0	1	1	1	0	0	0	1
1	1	0	1	0	0	1	1	0	1
0	0	1	1	0	0	1	1	0	1
1	0	1	1	1	0	1	0	1	1
0	1	1	1	1	0	1	0	1	1
1	1	1	1	0	1	1	1	1	1

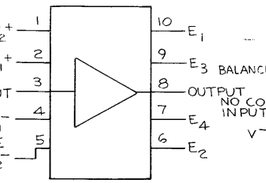
DEC741C
1910298



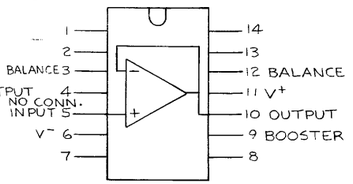
DEC 5010AN
1910282



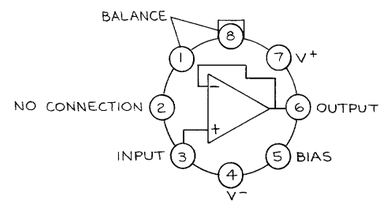
NH0002CN
1910446



LM310
1910235

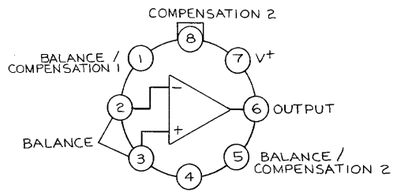


NOTE: PIN 6 CONNECTED TO BOTTOM OF PACKAGE.



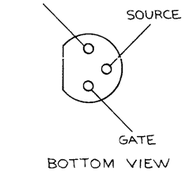
NOTE: PIN 4 CONNECTED TO CASE.

LM302
1909343



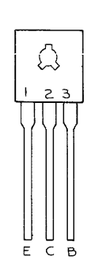
LM318
1910735

2N5245
1509681

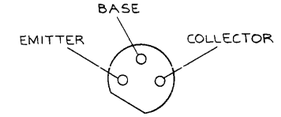


BOTTOM VIEW

MJE 2955
1510556
MJE 3055
1510555



2N4250
1509142
DEC6534-B
1503409-01



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40	PARTS LIST			

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. CBMcG	DATE 9-26-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD. Ron Country	DATE 10/24/72	
NEXT HIGHER ASSY. B-DD-GT40-0		
SCALE —//—		
SHEET 4 OF 4		

TITLE: BASE DIAGRAMS

SIZE	CODE	NUMBER	REV.
D	SP	GT40-0-2	

DIST.

REVISIONS		
REV.	CHANGE NO.	CHK

BRUNING 40-107 15968

DEC FORM NO DRD 100-A

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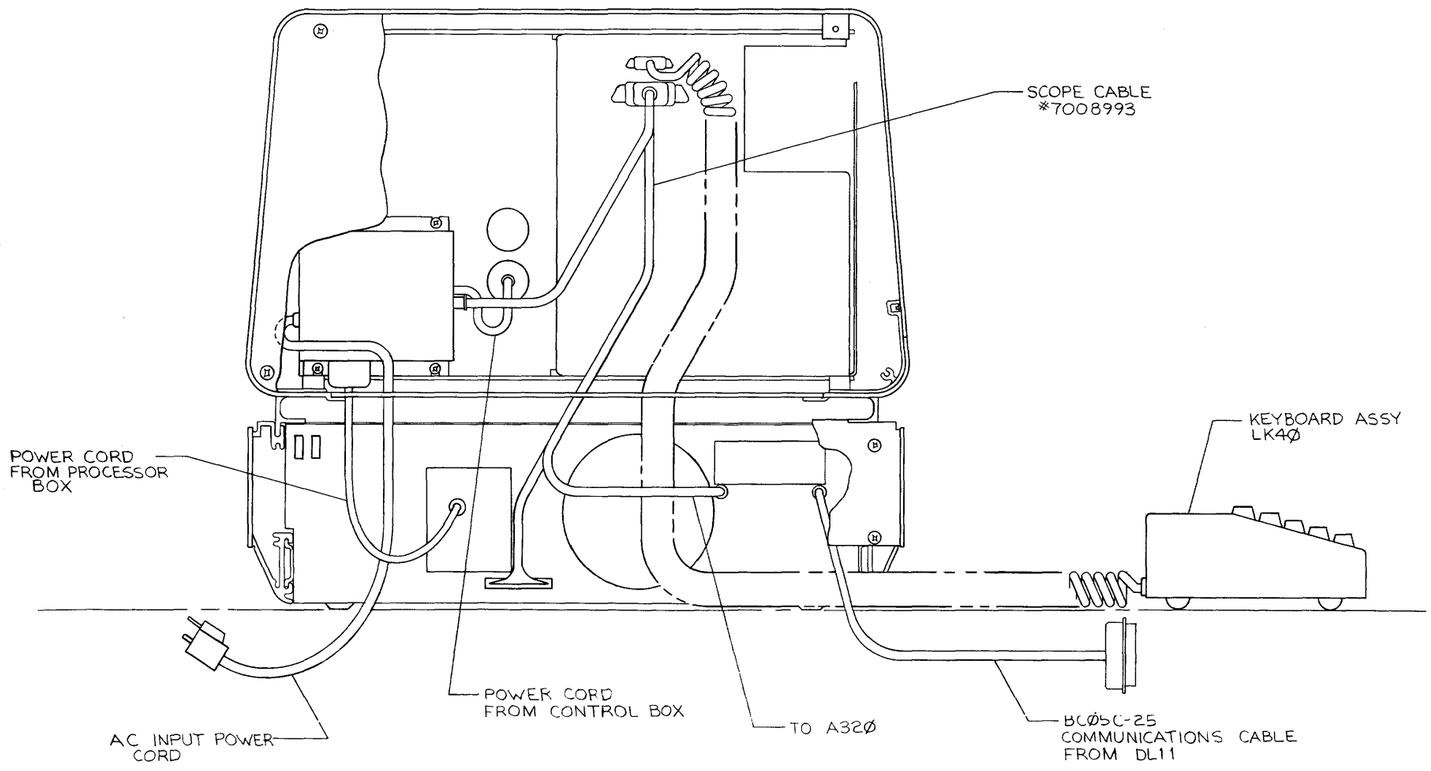

REAR VIEW

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX = .005 XX = .02	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. CBMcG	DATE 9-21-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ ENG	DATE	
PROD	DATE 10/24/72	

TITLE: INTERCONNECT DIAGRAM

NEXT HIGHER ASSY. B-DD-GT40-0

SCALE NONE

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	IC	GT40-0-3	

DIST

REV.	DESCRIPTION	CHANGE NO.	CHK.

BRUNING 40-107 1586

DEC FORM NO. DRD 100-A

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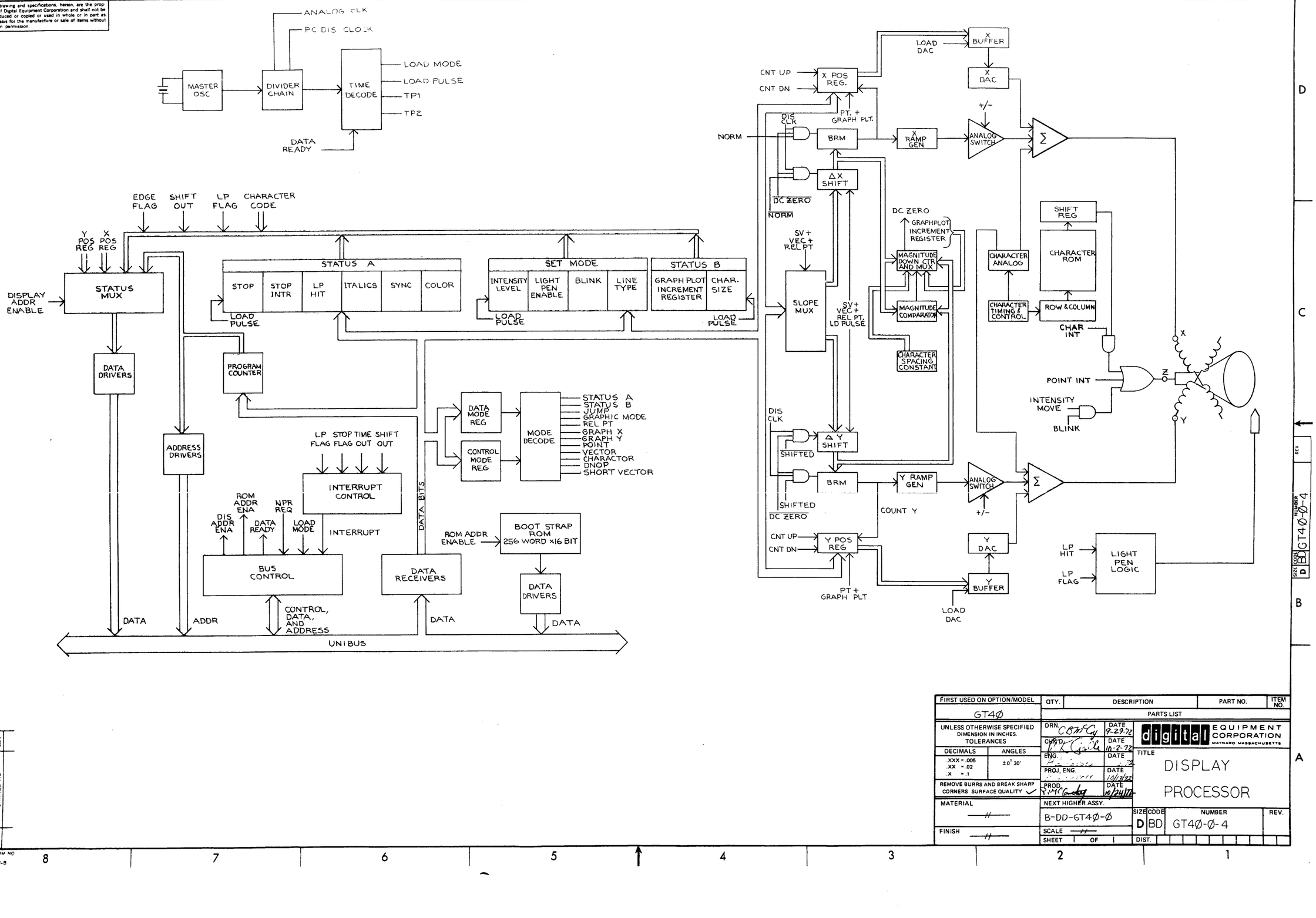

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

		DATE
DRN.	CONFCy	9-29-72
CH'D.		10-2-72
ENG.		DATE
PROJ. ENG.		DATE 10/31/72
PROD.		DATE 10/24/72

NEXT HIGHER ASSY. B-DD-GT40-0

SCALE —"—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE

DISPLAY PROCESSOR

SIZE	CODE	NUMBER	REV.
D	BD	GT40-0-4	

DIST.

REVISIONS

REV	CHANGE NO	CHK

BRUNING 40-522 15640

DEC FORM NO ORD 101-8

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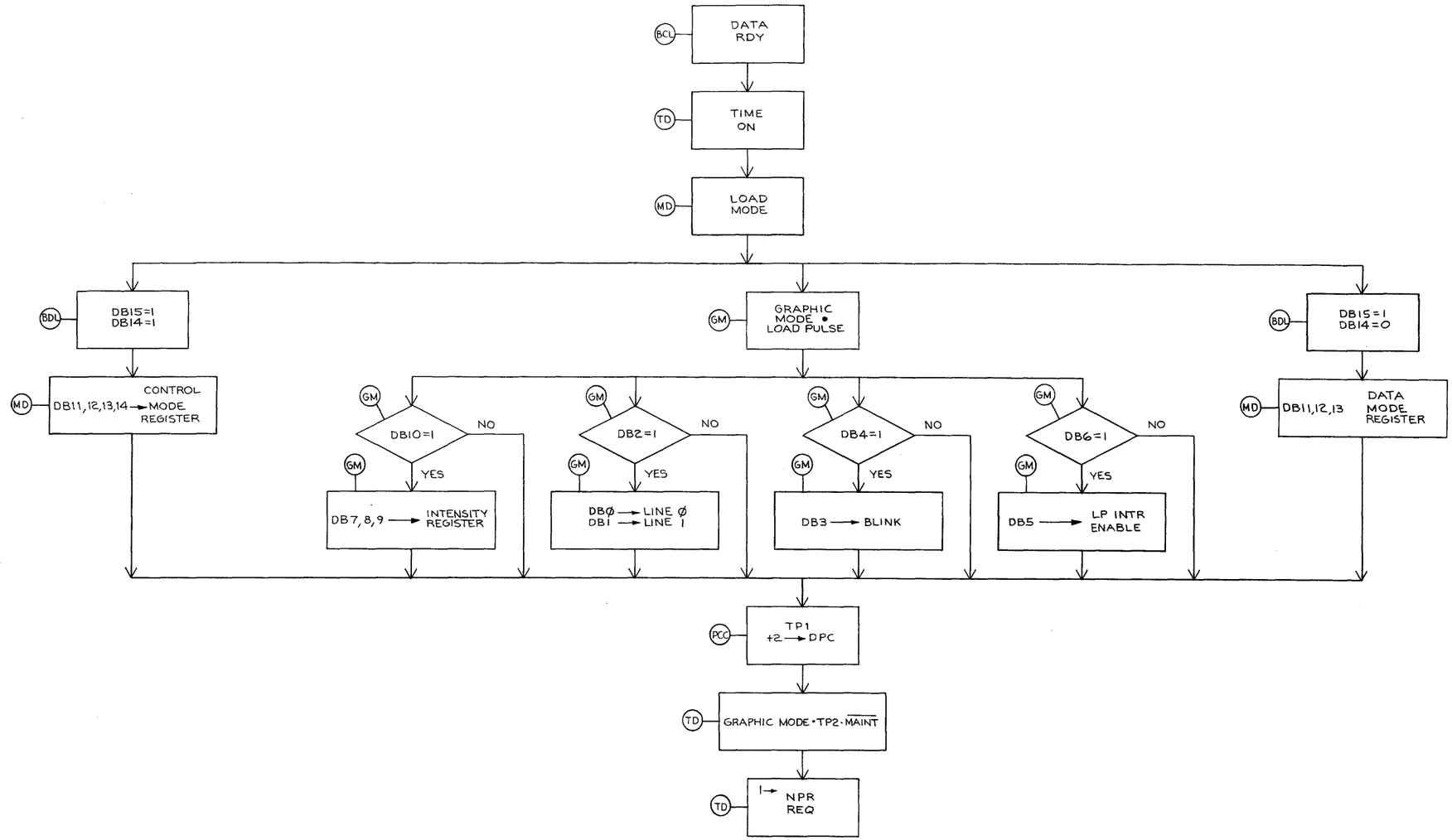

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02 — ANGLES: ± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. C8M8G DATE 10-2-72
CHK'D. K Wells DATE 10-17-72
ENG. DATE
PROJ ENG DATE
PROD. DATE 10/19/72

NEXT HIGHER ASSY. B-DD-GT4Ø-Ø

SCALE —//—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE SET GRAPHIC MODE

SIZE	CODE	NUMBER	REV.
D	FD	GT4Ø-Ø-5	

DIST.

BRUNING 40-522 1584

REVISIONS	REV
CHANGE NO	
CHK	

DEC FORM NO DRD 102-B

SIZE D | CODE FD | NUMBER GT4Ø-Ø-5 | REV

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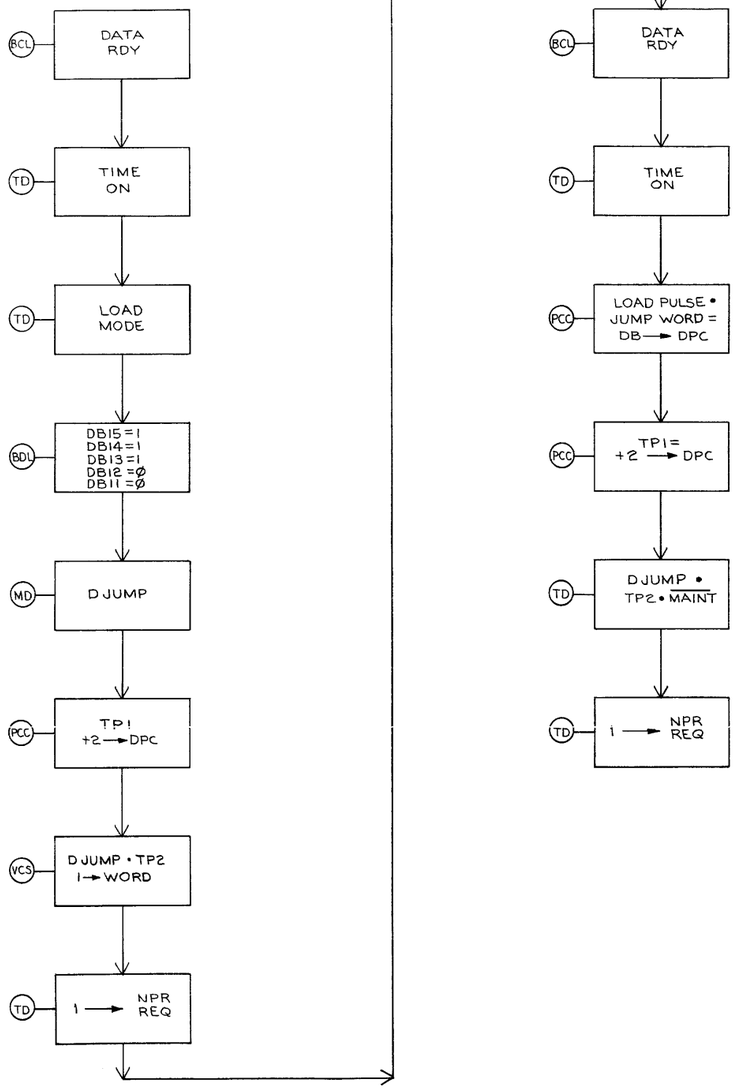

REVISIONS	REV	CHK	CHANGE NO

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. CBMcCoy	DATE 10-2-72
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'	CHK'D.	DATE 10-2-72
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	ENG.	DATE 11/1/72
MATERIAL —	PROJ. ENG.	DATE 11/1/72
FINISH —	PROD.	DATE 11/1/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DISPLAY JUMP

NEXT HIGHER ASSY.: B-DD-GT4Ø-Ø

SCALE —

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	FD	GT4Ø-Ø-6	

DIST.

REV	NUMBER	SIZE	CODE
	GT40-0-6	D	FD

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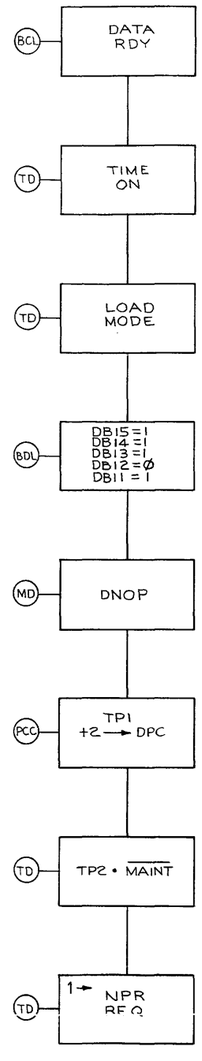

FIRST USED ON OPTION/MODEL: GT4Ø	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX ± .005 .XX ± .02 X ± 1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

DRN. CBMcCoy	DATE 10-2-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. R. Kowal	DATE 10-5-72	
ENG. H.A. Lavoie	DATE 10/6/72	TITLE: NO OPERATION
PROJ. ENG.	DATE	
PROD. R.E. Kowal	DATE 10/17/72	

NEXT HIGHER ASSY. B-DD-GT4Ø-Ø

SCALE —"—

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	FD	GT4Ø-Ø-7	

DIST.

REVISIONS		
REV.	CHANGE NO.	CHK.

BRUNING 40-522. 1584

DEC FORM NO DRD 102-B

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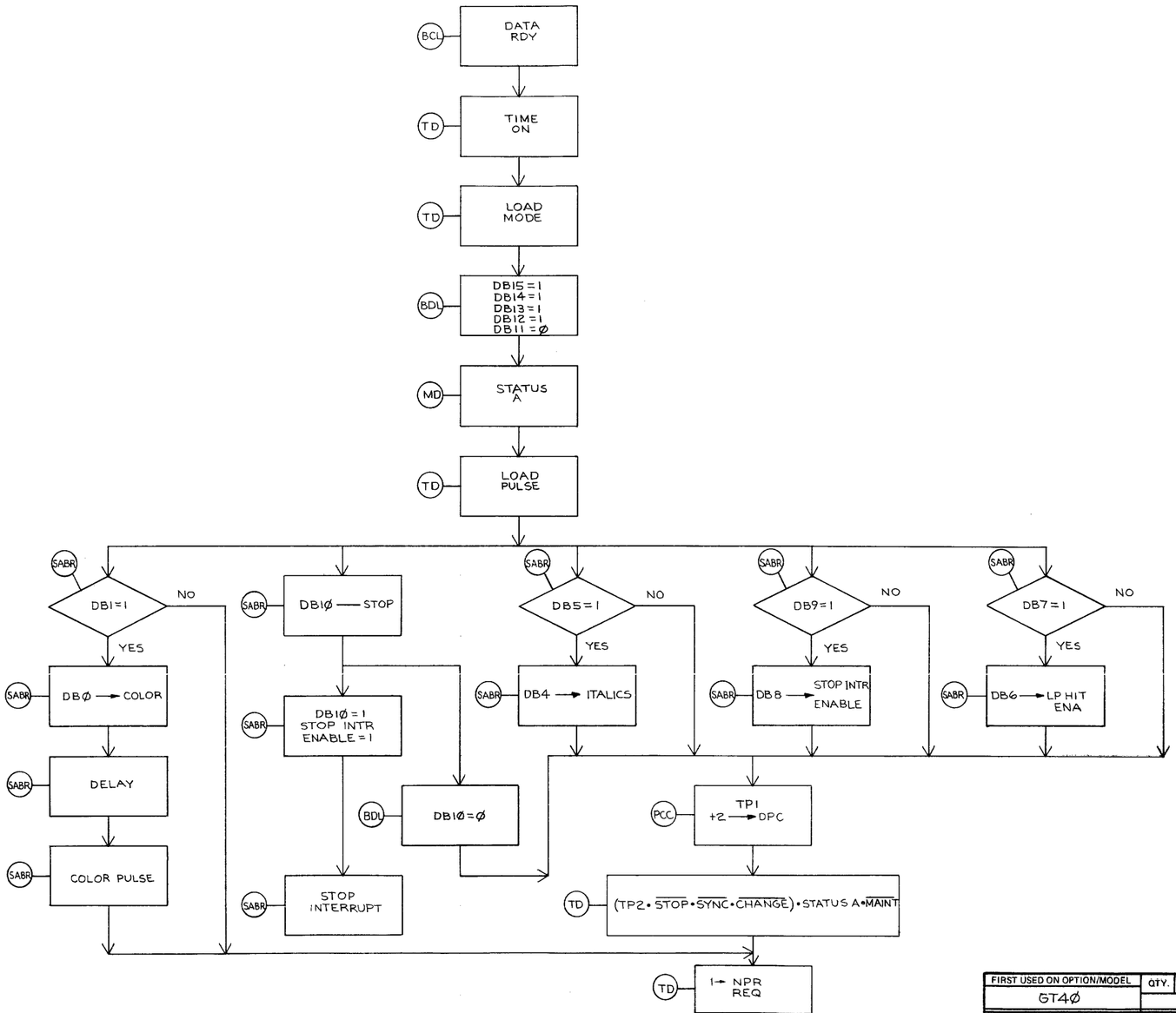

FIRST USED ON OPTION/MODEL: GT4Ø	QTY.	DESCRIPTION: PARTS LIST	PART NO. / ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS .XXX = .005 .XX = .02 .X = .1; ANGLES ±0° 30'	DRN. CBMcCoy DATE 10-2-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	CHK'D. DATE	TITLE: LOAD STATUS REGISTER A	
MATERIAL	ENG. DATE 10/3/72		
FINISH	PROJ. ENG. DATE 10/3/72		
	PROD. DATE 10/9/72		
	NEXT HIGHER ASSY. B-DD-GT4Ø-Ø	SIZE D CODE FD NUMBER GT4Ø-Ø-8	REV.
	SCALE	DIST.	
	SHEET 1 OF 1		

REVISIONS: REV | CHANGE NO | CHK

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

SIZE D CODE FD NUMBER GT4Ø-Ø-8 REV

SIZE D CODE FD NUMBER GT4Ø-Ø-8 REV

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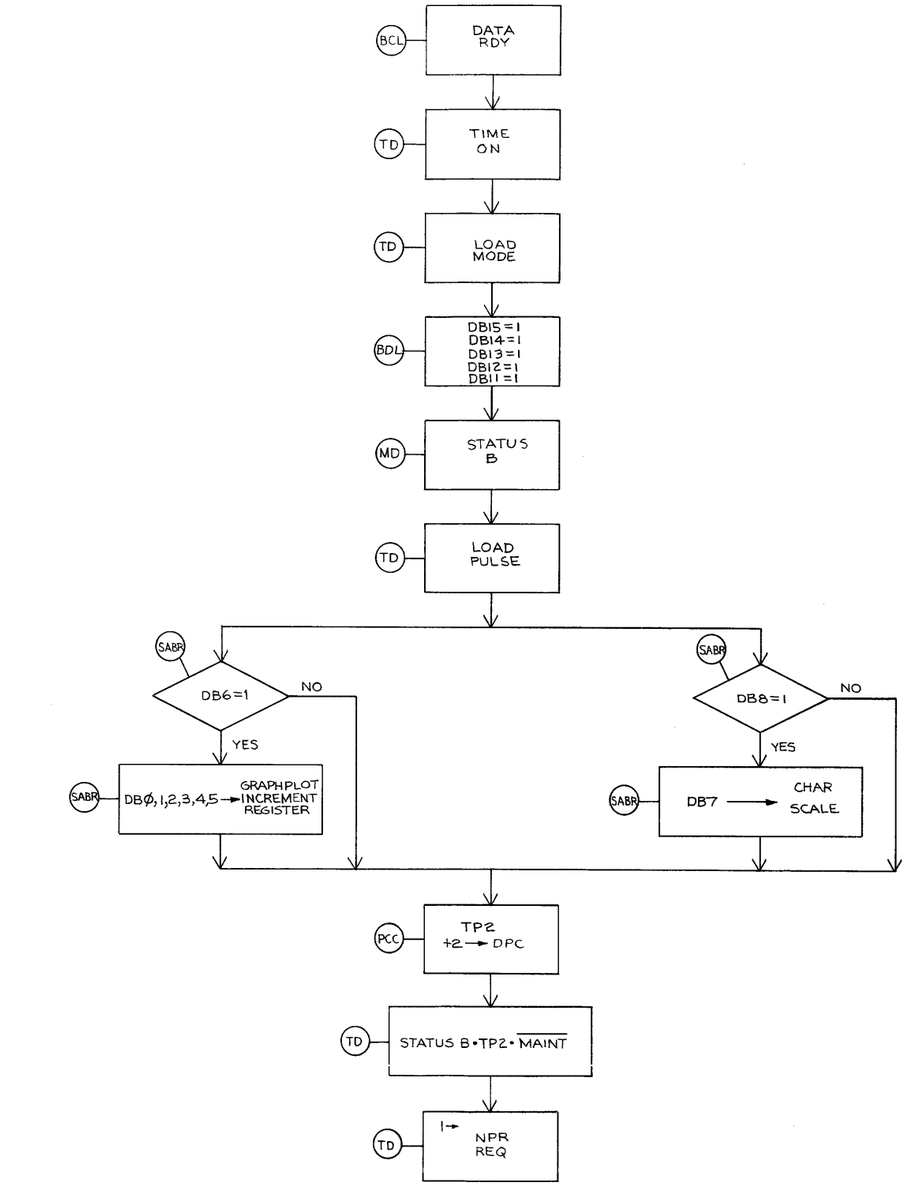

REV	CHANGE NO.	CHK

REVISIONS

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. CBMFGY	DATE 10-3-72
DECIMALS	ANGLES	CHK'D.	DATE
.XXX ± .005	±0° 30'	ENG.	DATE
.XX ± .02		PROJ. ENG.	DATE
X ± 1		PROD.	DATE

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

NEXT HIGHER ASSY. B-DD-GT4Ø-Ø

SCALE —"—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE LOAD STATUS REGISTER B

SIZE	CODE	NUMBER	REV
D	FD	GT4Ø-Ø-9	

DIST.

SIZE D CODE FD NUMBER GT4Ø-Ø-9 REV

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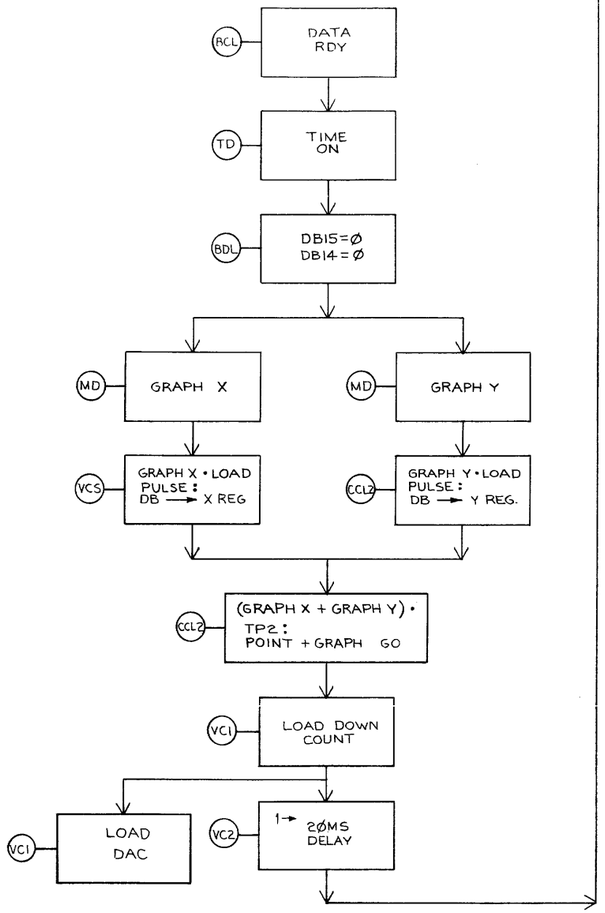

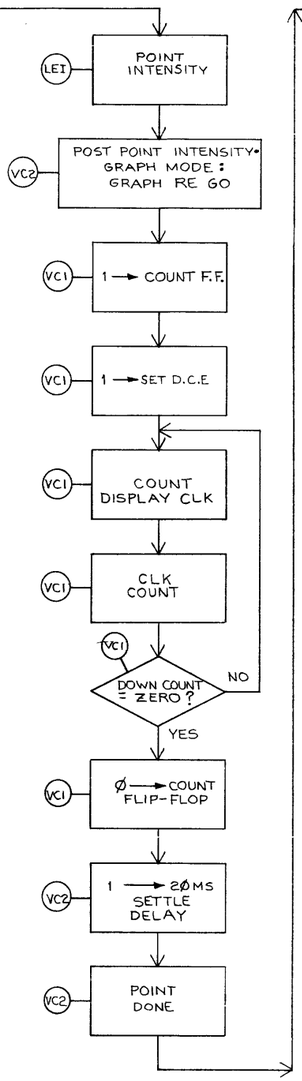

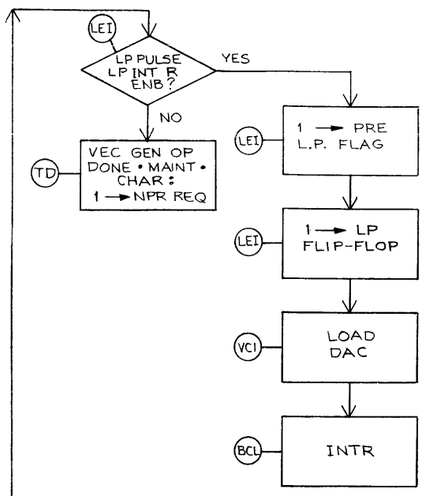

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. CBMcG	DATE 10-3-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 10 5 72	
ENG.	DATE	TITLE: GRAPH X OR GRAPH Y
PROJ. ENG.	DATE	
PROD.	DATE 10/24/72	

NEXT HIGHER ASSY. B-DD-GT4Ø-Ø

SCALE —//—

SHEET OF

SIZE	CODE	NUMBER	REV.
D	FD	GT4Ø-Ø-1Ø	

DIST.

REVISIONS	CHANGE NO	CHK	REV

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

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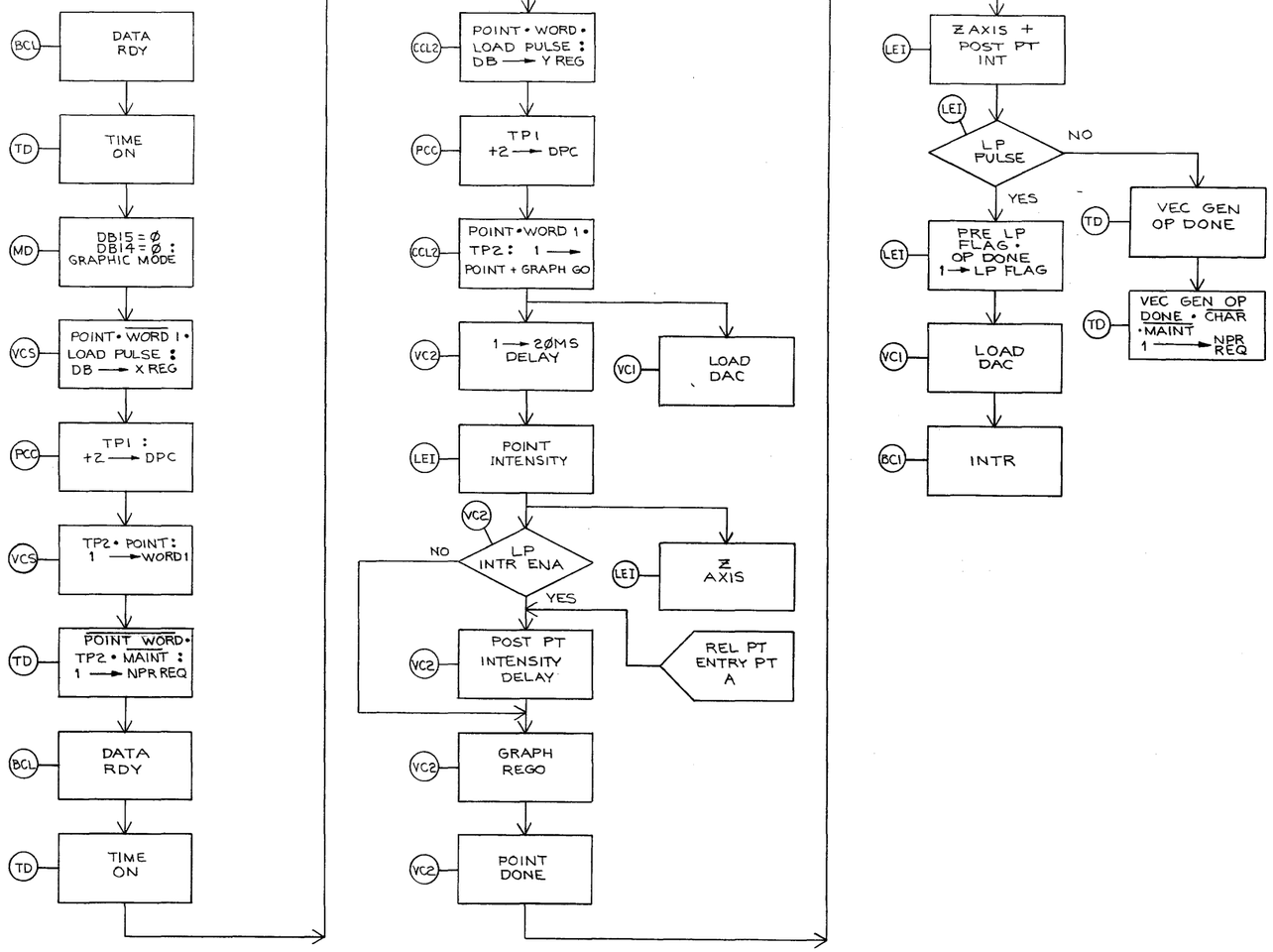

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GTØ		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX = .005	±0° 30'
XX = 02	
X = 1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. C B McCoy	DATE 10-4-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. W. R. Clark	DATE 10-11-72	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD. Paul Landry	DATE 10/24/72	
NEXT HIGHER ASSY. B-DD-GTØ-Ø		
SCALE —//		
SHEET 1 OF 1		

TITLE: POINT MODE

SIZE	CODE	NUMBER	REV.
D	FD	GTØ-Ø-11	

DIST.

REVISIONS

REV	CHANGE NO	CHK

BRUNING 40-522 1984

DEC FORM NO DRD 102-B

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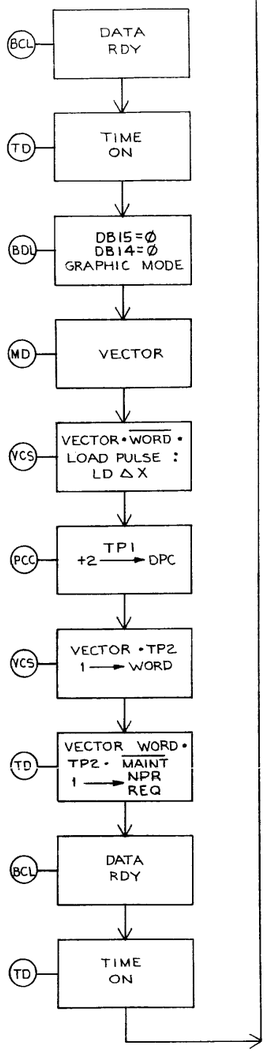

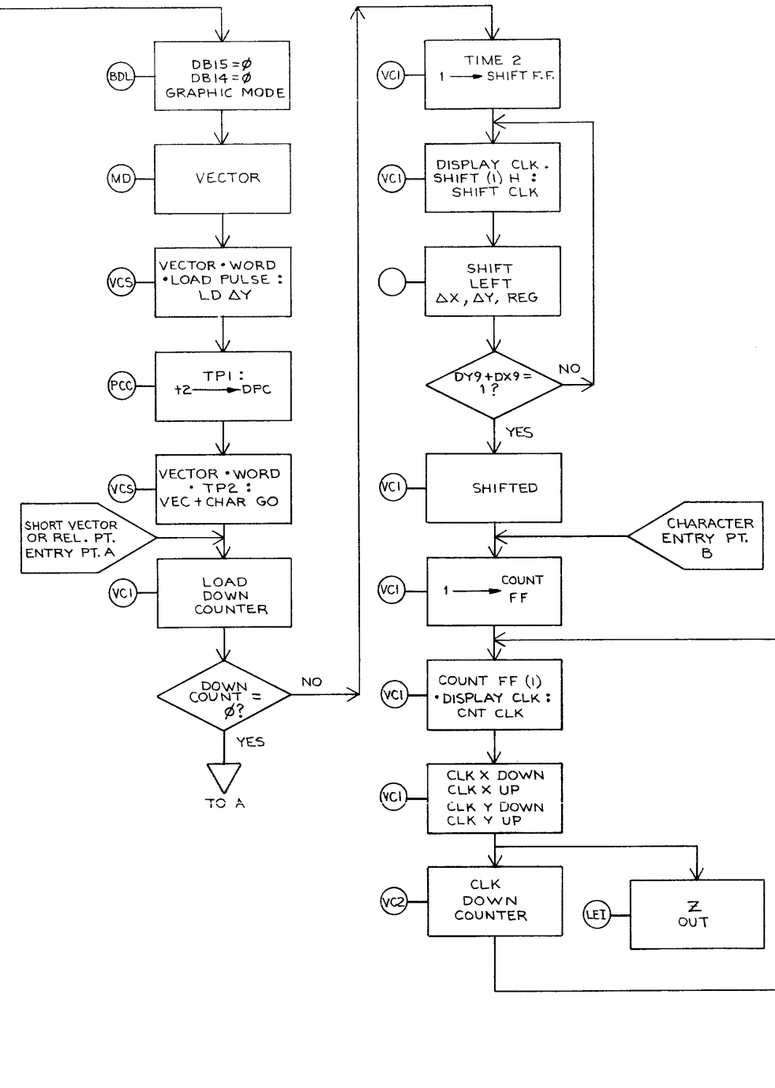

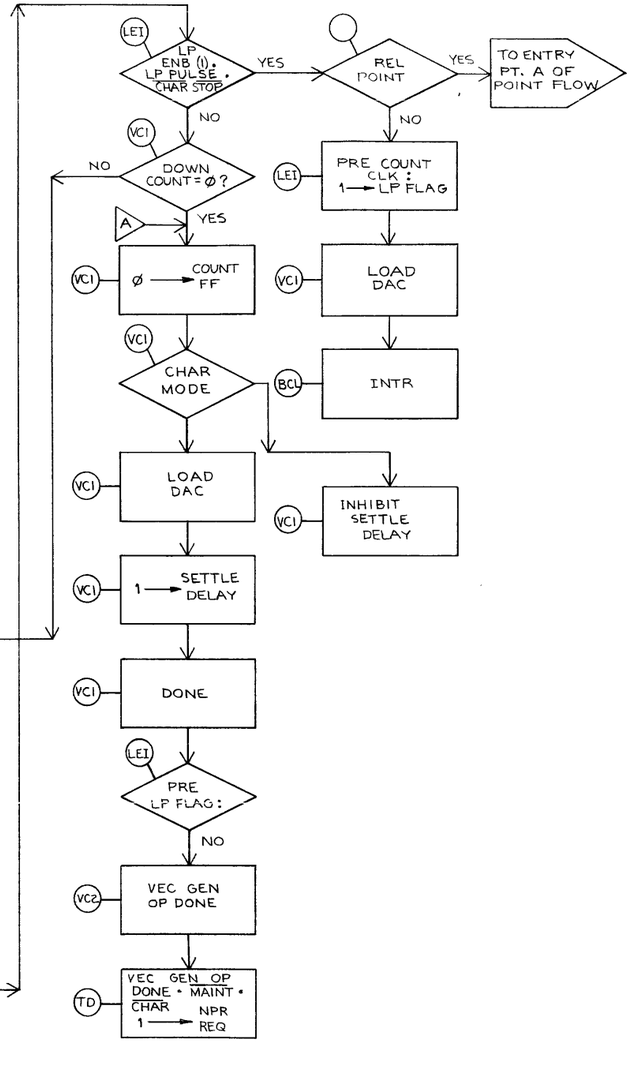

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. C.B. McCoy	DATE 10-20-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 11-22-72	
ENG.	DATE 10/24/72	
PROJ. ENG.	DATE 10/24/72	TITLE: VECTOR MODE
PROD.	DATE 10/24/72	

NEXT HIGHER ASSY. B-DD-GT4Ø-Ø

SCALE —//—

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	FD	GT4Ø-Ø-12	

DIST.

BRUNING 40-522 15840 DEC FORM NO DRD 102-B

REVISIONS

REV	CHANGE NO	CHK

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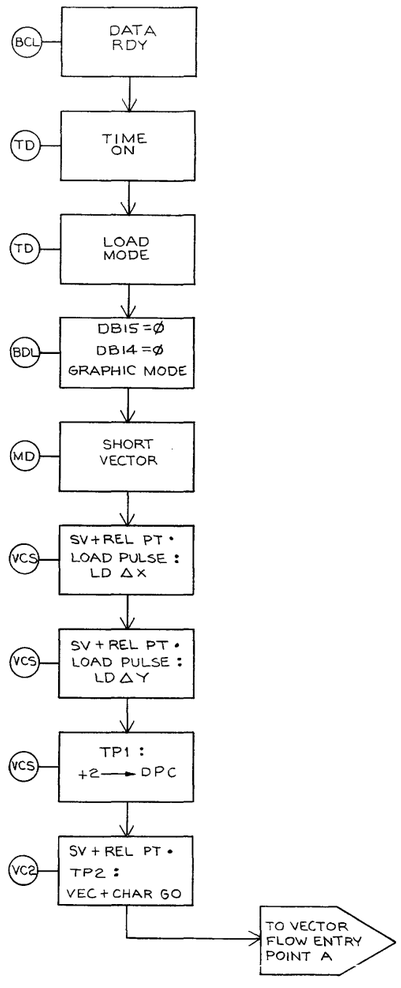

REVISIONS			
REV	CHANGE NO	CHK	

BRUHING 40.522 15M

DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX = .005 XX = .02 X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

		DATE
DRN.	CBM Coy	10-5-72
CHK'D.		DATE
ENG.		10-11-72 DATE
PROJ. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASSY. B-DD-GT4Ø-*

SCALE —"—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: SHORT VECTOR OR RELATIVE POINT

SIZE	CODE	NUMBER	REV.
D	FD	GT4Ø-Ø-13	

DIST.

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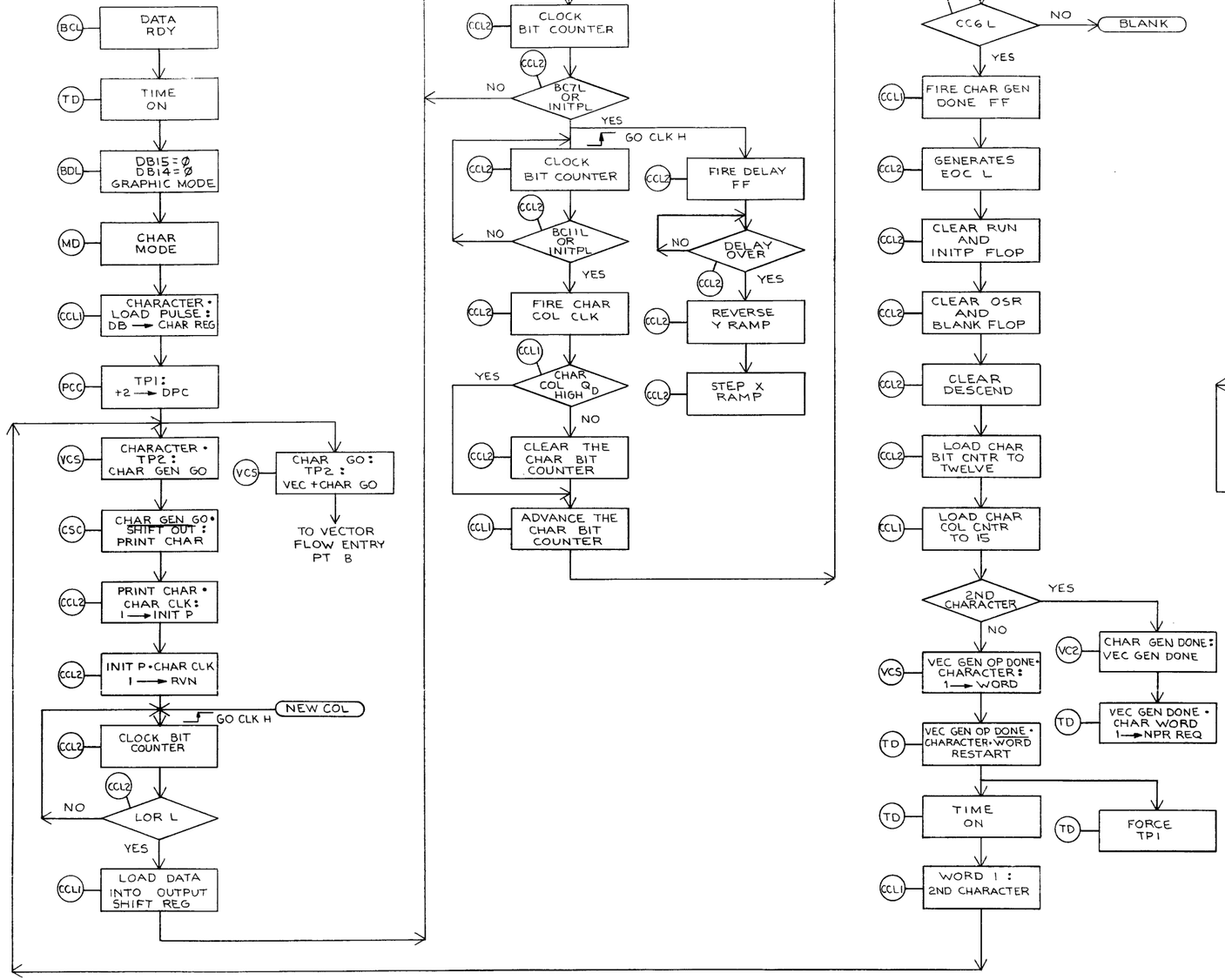

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. CBMcCoy	DATE 10-5-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 10-11-72	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

TITLE: CHARACTER GENERATOR

NEXT HIGHER ASSY. B-DD-GT4Ø-Ø

SCALE —//—

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	FD	GT4Ø-Ø-14	

DIST.

REV	REVISIONS	CHANGE NO	CHK

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

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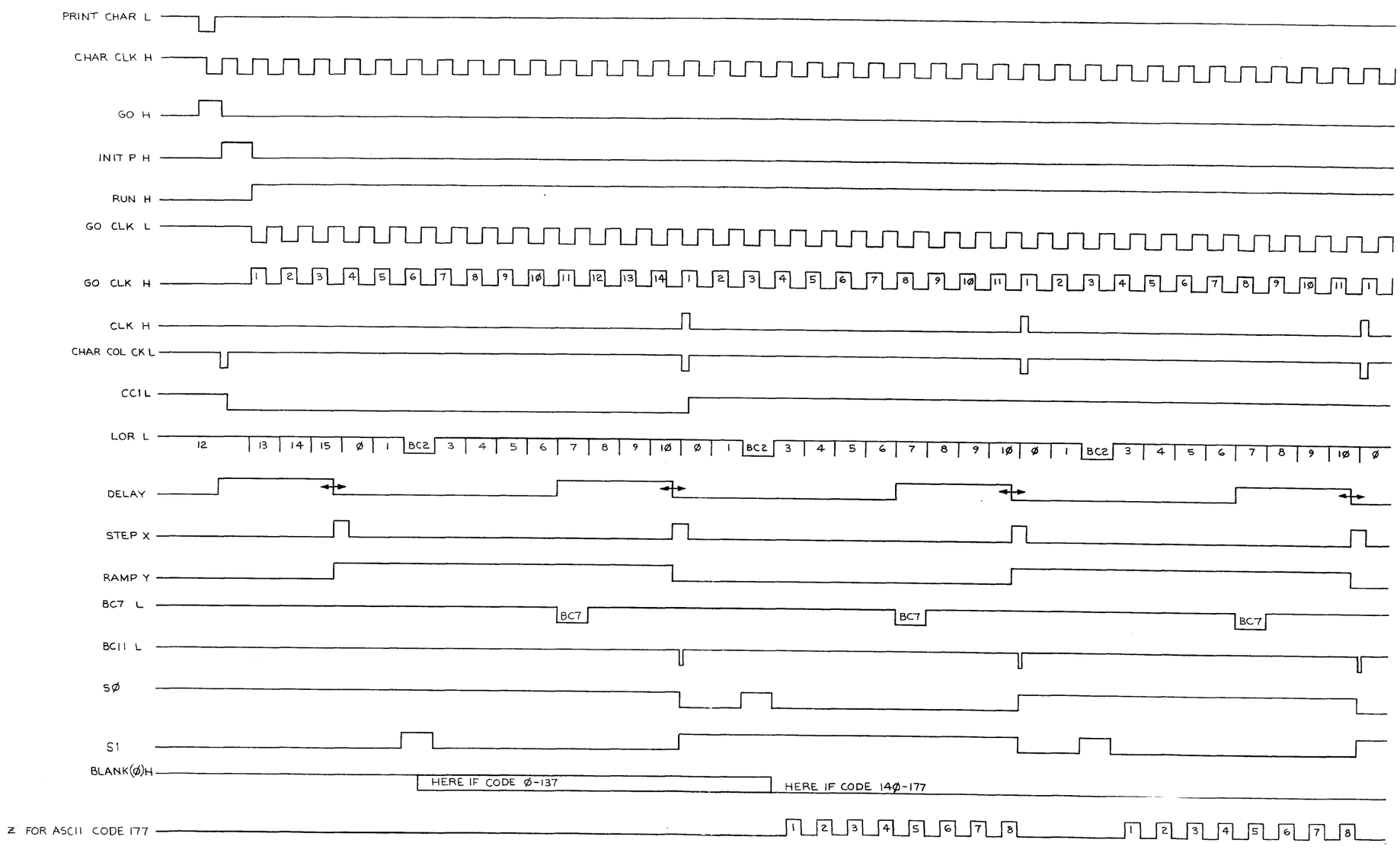

FIRST USED ON OPTION/MODEL: GT40	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, X ± ; ANGLES: ±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN. CBMcG	DATE 10-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 11-13-72	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

TITLE: CHARACTER GENERATOR LOGIC TIMING

NEXT HIGHER ASSY. B-DD-GT40-Ø

SIZE D | CODE TD | NUMBER GT40-Ø-16 | REV.

SCALE —

SHEET 1 OF 5 | DIST.

REV	DESCRIPTION	CHK	DATE

BRUHING 40-522 1584

DEC FORM NO DRD 102-B

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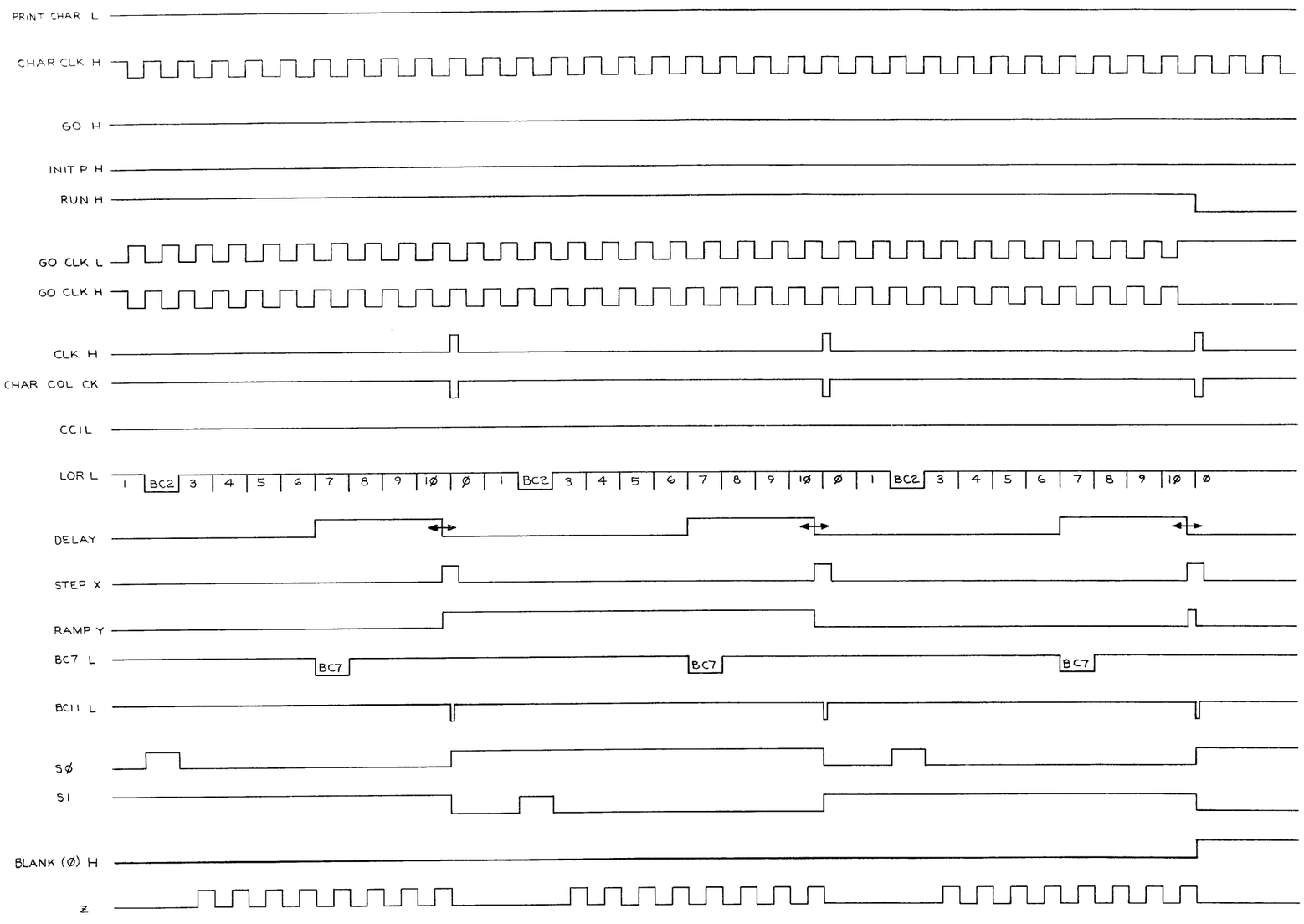

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT4Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

		DATE
DRN. CBMcCoy		10-10-72
CHK'D.		11-13-72
ENG.		11-15-72
PROJ. ENG.		11-17-72
PROD.		11/19/72

NEXT HIGHER ASSY.: B-DD-GT4Ø-Ø

SCALE —"—

SHEET 2 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CHARACTER GENERATOR LOGIC TIMING

SIZE	CODE	NUMBER	REV.
D	TD	GT4Ø-Ø-16	

DIST.

REV	REVISIONS	CHK
	CHANGE NO	

DRUMING 40-522 15840

DEC FORM NO DRD 102-B

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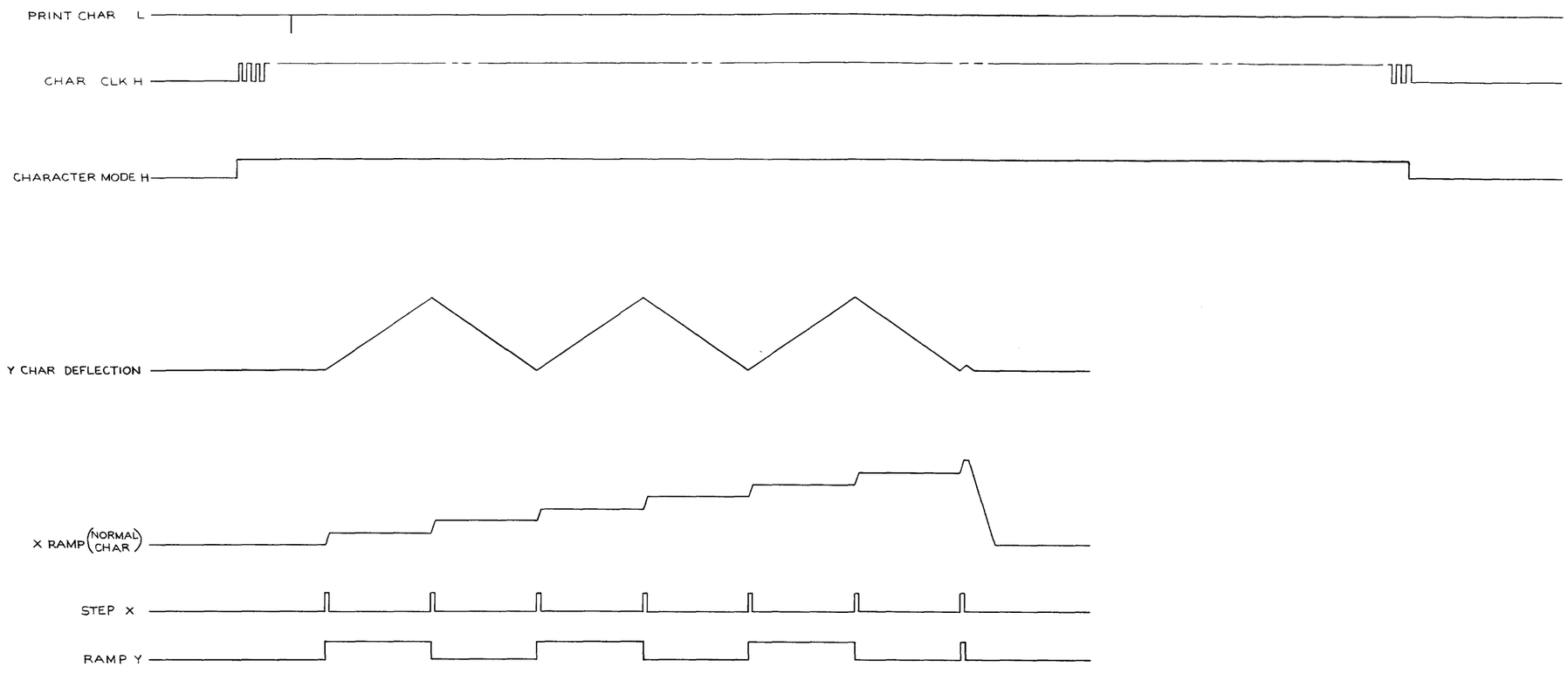

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX ± .005 .XX ± .02 X ± 1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

DRN. CBMcG DATE 10-10-72
CHK'D. DATE 10-12-72
ENG. DATE 10-13-72
PROJ. ENG. DATE
PROD. DATE

NEXT HIGHER ASSY. B-DD-GT40-0

SCALE —"—

SHEET 3 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE CHARACTER GENERATOR LOGIC TIMING

SIZE	CODE	NUMBER	REV
D	TD	GT40-0-16	

DIST.

REVISIONS		
REV	CHANGE NO	CHK

BRUNING 40-522 1584

DEC FORM NO ORD 102-8

REV | NUMBER GT40-0-16 | SIZE D | CODE TD | DIST | GOVT | REV

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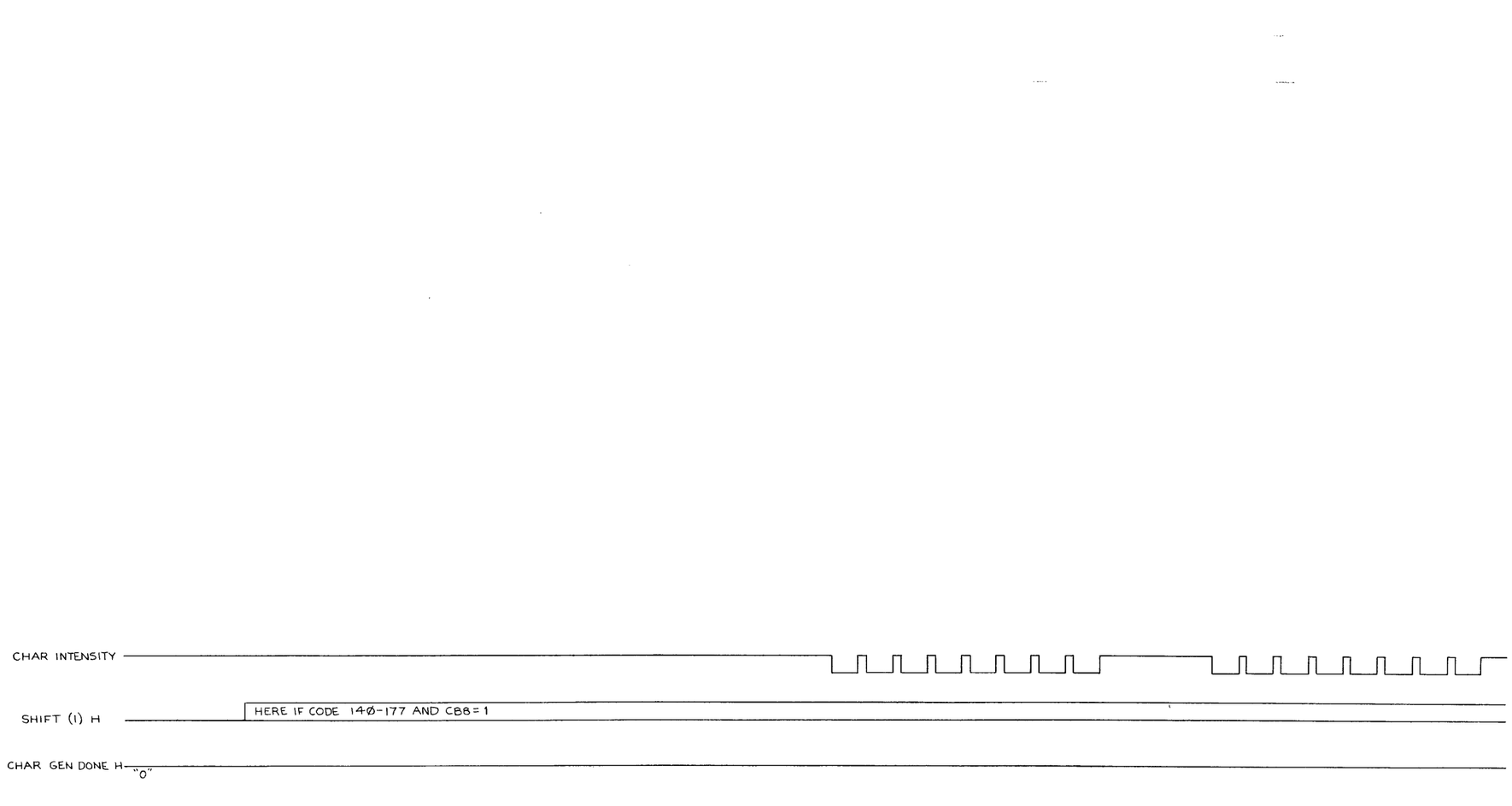

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX = .005 XX = .02 X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

	NAME	DATE
DRN.	CBMcG	10-10-72
CHK'D.	[illegible]	[illegible]
ENG.	[illegible]	10-3-72
PROJ. ENG.	[illegible]	[illegible]
PROD.	[illegible]	[illegible]

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CHARACTER GENERATOR LOGIC TIMING

NEXT HIGHER ASSY: B-DD-GT40-0

SCALE —"—

SHEET 4 OF 5

SIZE	CODE	NUMBER	REV.
D	TD	GT40-0-16	

DIST.

REVISIONS

REV	CHANGE NO	CHK

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

REV | NUMBER GT40-0-16 | SIZE D CODE TD

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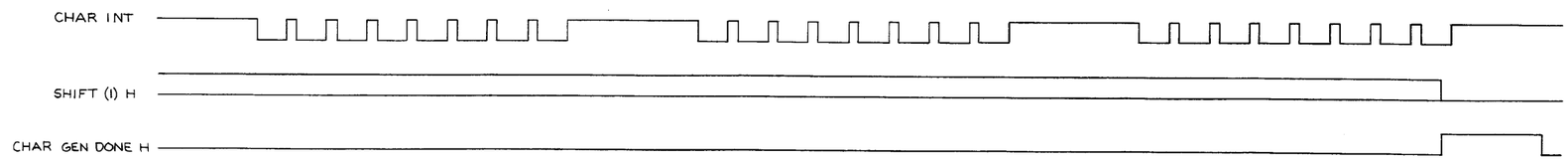

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO
GT40		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 X = 1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

		DATE
DRN.	C B McCoy	10-11-72
CHKD.		DATE 10-13-72
ENG.		DATE 10-13-72
PROJ. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASSY. B-DD-GT40-0

SCALE —

SHEET 5 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE CHARACTER GENERATOR LOGIC TIMING

SIZE	CODE	NUMBER	REV
D	TD	GT40-0-16	

BRUNING 40-522 15840 REVISIONS: REV / CHANGE NO / CHK

DEC FORM NO ORD 102-B

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SIZE	CODE	NUMBER	REV.
K	WL	GT40-0-WL	B

REVISIONS	CHK	CHANGE NO.	REV.
		GT40-00004	A
Seasley 11.27.72			
B. QUINN			
Bob Swan 12-22-72			
		GT40-00007	B
B. Blodgett 2-23-73			
R. QUINN			
Heidenreich 3-5-73			

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
GT40		PARTS LIST		

DRN. CBMcCoy	DATE 10-2-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. A Voghan	DATE 10/22/72	
ENG. [illegible]	DATE 10-13-72	TITLE GRAPHIC TERMINAL
PROJ. ENG. H E Savoie	DATE 10/24/72	
PROD. P. M C Courtney	DATE 10/24/72	
NEXT HIGHER ASSEMBLY B-DD-GT40-0		SIZE K CODE WL NUMBER GT40-0-WL REV. B
SCALE — H —		DIST.
SHEET 1 OF		

DEC FORM NO
DRB 109

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN NAME — ORDER BAY - PIN ORDER — Q DRAW RV PG Y X # MEMARKS

1-MAR-73 LENGTH — 6152 EXCEPTIONS — PAGE 1 RUN NUMBER

A/P PIN NAME	ORDER BAY - PIN ORDER	Q	DRAW	RV	PG	Y	X	#	MEMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
E09P2	1-01	*	H					2	24 AWG		HAND WIRE	1
F01R2	1-02	*	H					1	24AWG		HAND WIRE	1
D03R2	1-03	*	H					2	24AWG		HAND WIRE	1
C04U1	1-04	*						2	24AWG		TO HERE	1
	1									20-2/8		1
A01A2	1-01	*	H					2		P	HAND WIRE	2
A02A2	1-02	*	H					1		P	HAND WIRE	2
A03A2	1-03	*	H					2		P	HAND WIRE	2
A04A2	1-04	*	H					1		P	HAND WIRE	2
A05A2	1-05	*	H					2		P	HAND WIRE	2
A06A2	1-06	*	H					1		P	HAND WIRE	2
A07A2	1-07	*	H					2		P	HAND WIRE	2
A09A2	1-08	*	H					1		P	HAND WIRE	2
A08A2	1-09	*	H					2		P	HAND WIRE	2
B09A2	1-10	*	H					1		P	HAND WIRE	2
B08A2	1-11	*	H					2		P	HAND WIRE	2
B07A2	1-12	*	H					1		P	HAND WIRE	2
B06A2	1-13	*	H					2		P	HAND WIRE	2
B05A2	1-14	*	H					1		P	HAND WIRE	2
B04A2	1-15	*	H					2		P	HAND WIRE	2
B03A2	1-16	*	H					1		P	HAND WIRE	2
B02A2	1-17	*	H					2		P	HAND WIRE	2
B01B1	1-18	*	H					1		P	HAND WIRE	2
B01A2	1-19	*	H					2		P	HAND WIRE	2
C01A2	1-20	*	H					1		P	HAND WIRE	2
C02A2	1-21	*	H					2		P	HAND WIRE	2
C03A2	1-22	*	H					1		P	HAND WIRE	2
C04A2	1-23	*	H					2		P	HAND WIRE	2
C05A2	1-24	*	H					1		P	HAND WIRE	2
C06A2	1-25	*	H					2		P	HAND WIRE	2
C07A2	1-26	*	H					1		P	HAND WIRE	2
C08A2	1-27	*	H					2		P	HAND WIRE	2
C09A2	1-28	*	H					1		P	HAND WIRE	2
D09A2	1-29	*	H					2		P	HAND WIRE	2
D08A2	1-30	*	H					1		P	HAND WIRE	2
D07A2	1-31	*	H					2		P	HAND WIRE	2
D06A2	1-32	*	H					1		P	HAND WIRE	2
D05A2	1-33	*	H					2		P	HAND WIRE	2
D04A2	1-34	*	H					1		P	HAND WIRE	2
D03A2	1-35	*	H					2		P	HAND WIRE	2
D02A2	1-36	*	H					1		P	HAND WIRE	2
D01A2	1-37	*	H					2		P	HAND WIRE	2
E01A2	1-38	*	H					1		P	HAND WIRE	2
E02A2	1-39	*	H					2		P	HAND WIRE	2
E03A2	1-40	*	H					1		P	HAND WIRE	2
E04A2	1-41	*	H					2		P	HAND WIRE	2
E05A2	1-42	*	H					1		P	HAND WIRE	2
E06A2	1-43	*	H					2		P	HAND WIRE	2
E07A2	1-44	*	H					1		P	HAND WIRE	2
E08A2	1-45	*	H					2		P	HAND WIRE	2
E09A2	1-46	*	H					1		P	HAND WIRE	2
F09A2	1-47	*	H					2		P	HAND WIRE	2
F08A2	1-48	*	H					1		P	HAND WIRE	2
F07A2	1-49	*	H					2		P	HAND WIRE	2
F06A2	1-50	*						1		P	HAND WIRE	2

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN NAME — ORDER BAY - PIN ORDER — Q DRAW RV PG Y X # MEMARKS

1-MAR-73 LENGTH — 6152 EXCEPTIONS — PAGE 2 RUN NUMBER

A/P PIN NAME	ORDER BAY - PIN ORDER	Q	DRAW	RV	PG	Y	X	#	MEMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
F09A2	1-51	*	H					2		P	HAND WIRE	2
F04A2	1-52	*	H					1		P	HAND WIRE	2
F03A2	1-53	*	H					2		P	HAND WIRE	2
F02A2	1-54	*	H					1		P	HAND WIRE	2
F01A2	1-55	*						2		P	H TO WHERE	2
	1									160-0/8		2
C07B2	1-01	*	H					2		P	HAND WIRE	3
C08B2	1-02	*	H					1		P	HAND WIRE	3
C09B2	1-03	*	H					2		P	HAND WIRE	3
C04B2	1-04	*	H					1		P	HAND WIRE	3
D04B2	1-05	*	H					2		P	HAND WIRE	3
D05B2	1-06	*	H					1		P	HAND WIRE	3
D06B2	1-07	*	H					2		P	HAND WIRE	3
D07B2	1-08	*	H					1		P	HAND WIRE	3
E07B2	1-09	*	H					2		P	HAND WIRE	3
E06B2	1-10	*	H					1		P	HAND WIRE	3
E05B2	1-11	*	H					2		P	HAND WIRE	3
E04B2	1-12	*	H					1		P	HAND WIRE	3
F04B2	1-13	*	H					2		P	HAND WIRE	3
F05B2	1-14	*	H					1		P	HAND WIRE	3
F06B2	1-15	*	H					2		P	HAND WIRE	3
F07B2	1-16	*	H					1		P	HAND WIRE	3
F08B2	1-17	*						2		P	TO HERE	3
	1									51-0/8		3
E05U2	1-01	*	H					2		P	HAND WIRE	4
E06U2	1-02	*	H					1		P	HAND WIRE	4
E07U2	1-03	*						2		P	TO HERE	4
	1									5-4/8		4
E05V1	1-01	*	H					2		P	HAND WIRE	5
E06V1	1-02	*	H					1		P	HAND WIRE	5
E07V1	1-03	*						2		P	TO HERE	5
	1									5-4/8		5
E05V2	1-01	*	H					2		P	HAND WIRE	6
E06V2	1-02	*	H					1		P	HAND WIRE	6
E07V2	1-03	*						2		P	TO HERE	6
	1									5-4/8		6
E07R1	1-01	*	H					2		P	HAND WIRE	7
E06R1	1-02	*	H					1		P	HAND WIRE	7
E05R1	1-03	*						2		P	TO HERE	7
	1									5-4/8		7

+5 VDC
+5 VDC
+5 VDC
+5 VDC
+5 VDC
-15V
-15V
-15V
-15V
-15V
-15V
-15V
-15V
-15V
-15V
-15V
-15V
-15V
00 IN
00 IN
00 IN
00 IN
00 SA
00 SA
00 SA
00 SA
00 SB
00 SB
00 SB
00 SB
01 IN
01 IN
01 IN
01 IN

HND288,V17(17) 06/22/72

G140,B RUN NAME	A/P	PIN NAME	ORDER BAY - ORDER PIN	Q	DRAW RV PG	X	Y	#	REMARKS	LENGTH	RUN NUMBER
01 SA		E05P1	1-01 * H					2	HAND WIRE		8
01 SA		E06P1	1-02 * H					1	HAND WIRE		8
01 SA		E07P1	1-03 *						TO HERE		8
01 SA			1							5-4/8	8
01 SB		E05P2	1-01 * H					2	HAND WIRE		9
01 SB		E06P2	1-02 * H					1	HAND WIRE		9
01 SB		E07P2	1-03 *						TO HERE		9
01 SB			1							5-4/8	9
02 IN		E05M1	1-01 * H					2	HAND WIRE		10
02 IN		E06M1	1-02 * H					1	HAND WIRE		10
02 IN		E07M1	1-03 *						TO HERE		10
02 IN			1							5-4/8	10
02 SA		E05L1	1-01 * H					2	HAND WIRE		11
02 SA		E06L1	1-02 * H					1	HAND WIRE		11
02 SA		E07L1	1-03 *						TO HERE		11
02 SA			1							5-4/8	11
02 SB		E05L2	1-01 * H					2	HAND WIRE		12
02 SB		E06L2	1-02 * H					1	HAND WIRE		12
02 SB		E07L2	1-03 *						TO HERE		12
02 SB			1							5-4/8	12
03 IN		E05J1	1-01 * H					2	HAND WIRE		13
03 IN		E06J1	1-02 * H					1	HAND WIRE		13
03 IN		E07J1	1-03 *						TO HERE		13
03 IN			1							5-4/8	13
03 SA		E05H1	1-01 * H					2	HAND WIRE		14
03 SA		E06H1	1-02 * H					1	HAND WIRE		14
03 SA		E07H1	1-03 *						TO HERE		14
03 SA			1							5-4/8	14
03 SB		E05H2	1-01 * H					2	HAND WIRE		15
03 SB		E06H2	1-02 * H					1	HAND WIRE		15
03 SB		E07H2	1-03 *						TO HERE		15
03 SB			1							5-4/8	15
04 IN		E05R2	1-01 * H					2	HAND WIRE		16
04 IN		E06R2	1-02 * H					1	HAND WIRE		16
04 IN		E07R2	1-03 *						TO HERE		16
04 IN			1							5-4/8	16

HND288,V17(17) 06/22/72

G140,B RUN NAME	A/P	PIN NAME	ORDER BAY - ORDER PIN	Q	DRAW RV PG	X	Y	#	REMARKS	LENGTH	RUN NUMBER
04 SA		E05S1	1-01 * H					2	HAND WIRE		17
04 SA		E06S1	1-02 * H					1	HAND WIRE		17
04 SA		E07S1	1-03 *						TO HERE		17
04 SA			1							5-4/8	17
04 SB		E05S2	1-01 * H					2	HAND WIRE		18
04 SB		E06S2	1-02 * H					1	HAND WIRE		18
04 SB		E07S2	1-03 *						TO HERE		18
04 SB			1							5-4/8	18
05 IN		E05M2	1-01 * H					2	HAND WIRE		19
05 IN		E06M2	1-02 * H					1	HAND WIRE		19
05 IN		E07M2	1-03 *						TO HERE		19
05 IN			1							5-4/8	19
05 SA		E05N1	1-01 * H					2	HAND WIRE		20
05 SA		E06N1	1-02 * H					1	HAND WIRE		20
05 SA		E07N1	1-03 *						TO HERE		20
05 SA			1							5-4/8	20
05 SB		E05N2	1-01 * H					2	HAND WIRE		21
05 SB		E06N2	1-02 * H					1	HAND WIRE		21
05 SB		E07N2	1-03 *						TO HERE		21
05 SB			1							5-4/8	21
06 IN		E05J2	1-01 * H					2	HAND WIRE		22
06 IN		E06J2	1-02 * H					1	HAND WIRE		22
06 IN		E07J2	1-03 *						TO HERE		22
06 IN			1							5-4/8	22
06 SA		E05K1	1-01 * H					2	HAND WIRE		23
06 SA		E06K1	1-02 * H					1	HAND WIRE		23
06 SA		E07K1	1-03 *						TO HERE		23
06 SA			1							5-4/8	23
06 SB		E05K2	1-01 * H					2	HAND WIRE		24
06 SB		E06K2	1-02 * H					1	HAND WIRE		24
06 SB		E07K2	1-03 *						TO HERE		24
06 SB			1							5-4/8	24
07 IN		E05E2	1-01 * H					2	HAND WIRE		25
07 IN		E06E2	1-02 * H					1	HAND WIRE		25
07 IN		E07E2	1-03 *						TO HERE		25
07 IN			1							5-4/8	25

1-MAR-73 6152 EXCEPTIONS

PG	Y	X	±	REMARKS	LENGTH	RUN NUMBER
			2			26
			1	HAND WIRE	P	26
				HAND WIRE	P	26
				TO HERE	5-4/8	26
			2			27
			1	HAND WIRE	P	27
				HAND WIRE	P	27
				TO HERE	5-4/8	27
			2			28
			1	HAND WIRE	P	28
				HAND WIRE	P	28
				TO HERE	5-4/8	28
			2			29
			1	HAND WIRE	P	29
				HAND WIRE	P	29
				TO HERE	5-4/8	29
			2			30
			1	HAND WIRE	P	30
				HAND WIRE	P	30
				TO HERE	5-4/8	30
			2			31
			1	HAND WIRE	P	31
				HAND WIRE	P	31
				TO HERE	5-4/8	31
			2			32
			1	HAND WIRE	P	32
				HAND WIRE	P	32
				TO HERE	5-4/8	32
			2			33
			1	HAND WIRE	P	33
				HAND WIRE	P	33
				TO HERE	5-4/8	33
			2			34
			1	HAND WIRE	P	34
				HAND WIRE	P	34
				TO HERE	5-4/8	34

HND288,V17(17) 06/22/72 BAY - Q DRAW RV

GT40,B RUN NAME	A/P	PIN NAME	ORDER PIN ORDER	
07 SA		E05F1	1-01	* H
07 SA		E06F1	1-02	* H
07 SA		E07F1	1-03	* *
07 SA			1	
07 SB		E05F2	1-01	* H
07 SB		E06F2	1-02	* H
07 SB		E07F2	1-03	* *
07 SB			1	
08 IN		E05E1	1-01	* H
08 IN		E06E1	1-02	* H
08 IN		E07E1	1-03	* *
08 IN			1	
08 SA		E05D1	1-01	* H
08 SA		E06D1	1-02	* H
08 SA		E07D1	1-03	* *
08 SA			1	
08 SB		E05D2	1-01	* H
08 SB		E06D2	1-02	* H
08 SB		E07D2	1-03	* *
08 SB			1	
09 IN		D05U2	1-01	* H
09 IN		D06U2	1-02	* H
09 IN		D07U2	1-03	* *
09 IN			1	
09 SA		D05V1	1-01	* H
09 SA		D06V1	1-02	* H
09 SA		D07V1	1-03	* *
09 SA			1	
09 SB		D05V2	1-01	* H
09 SB		D06V2	1-02	* H
09 SB		D07V2	1-03	* *
09 SB			1	
10 IN		D05R1	1-01	* H
10 IN		D06R1	1-02	* H
10 IN		D07R1	1-03	* *
10 IN			1	

1-MAR-73 6152 EXCEPTIONS

PG	Y	X	±	REMARKS	LENGTH	RUN NUMBER
			2			35
			1	HAND WIRE	P	35
				TO HERE		35
					5-4/8	35
			2			36
			1	HAND WIRE	P	36
				TO HERE		36
					5-4/8	36
			2			37
			1	HAND WIRE	P	37
				HAND WIRE	P	37
				TO HERE		37
					5-4/8	37
			2			38
			1	HAND WIRE	P	38
				HAND WIRE	P	38
				TO HERE		38
					5-4/8	38
			2			39
			1	HAND WIRE	P	39
				HAND WIRE	P	39
				TO HERE		39
					5-4/8	39
			2			40
			1	HAND WIRE	P	40
				HAND WIRE	P	40
				TO HERE		40
					5-4/8	40
			2			41
			1	HAND WIRE	P	41
				HAND WIRE	P	41
				TO HERE		41
					5-4/8	41
			2			42
			1	HAND WIRE	P	42
				HAND WIRE	P	42
				TO HERE		42
					5-4/8	42
			2			43
			1	HAND WIRE	P	43
				HAND WIRE	P	43
				TO HERE		43
					5-4/8	43

HND288,V17(17) 06/22/72 BAY - Q DRAW RV

GT40,B RUN NAME	A/P	PIN NAME	ORDER PIN ORDER	
10 SA		D05P1	1-01	* H
10 SA		D06P1	1-02	* H
10 SA		D07P1	1-03	* *
10 SA			1	
10 SB		D05P2	1-01	* H
10 SB		D06P2	1-02	* *
10 SB		D07P2	1-03	* *
10 SB			1	
11 IN		D05M1	1-01	* H
11 IN		D06M1	1-02	* H
11 IN		D07M1	1-03	* *
11 IN			1	
11 SA		D05L1	1-01	* H
11 SA		D06L1	1-02	* H
11 SA		D07L1	1-03	* *
11 SA			1	
11 SB		D05L2	1-01	* H
11 SB		D06L2	1-02	* H
11 SB		D07L2	1-03	* *
11 SB			1	
12 IN		D05J1	1-01	* H
12 IN		D06J1	1-02	* H
12 IN		D07J1	1-03	* *
12 IN			1	
12 SA		D05H1	1-01	* H
12 SA		D06H1	1-02	* H
12 SA		D07H1	1-03	* *
12 SA			1	
12 SB		D05H2	1-01	* H
12 SB		D06H2	1-02	* H
12 SB		D07H2	1-03	* *
12 SB			1	
13 IN		D05R2	1-01	* H
13 IN		D06R2	1-02	* H
13 IN		D07R2	1-03	* *
13 IN			1	

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
13 SA		D05S1		1-01 *	H			2	P		HAND WIRE	44
13 SA		D06S1		1-02 *	H			1	P		HAND WIRE	44
13 SA		D07S1		1-03 *							TO HERE	44
13 SA				1						5-4/8		44
13 SB		D05S2		1-01 *	H			2	P		HAND WIRE	45
13 SB		D06S2		1-02 *	H			1	P		HAND WIRE	45
13 SB		D07S2		1-03 *							TO HERE	45
13 SB				1						5-4/8		45
14 IN		D05M2		1-01 *	H			2	P		HAND WIRE	46
14 IN		D06M2		1-02 *	H			1	P		HAND WIRE	46
14 IN		D07M2		1-03 *							TO HERE	46
14 IN				1						5-4/8		46
14 SA		D05N1		1-01 *	H			2	P		HAND WIRE	47
14 SA		D06N1		1-02 *	H			1	P		HAND WIRE	47
14 SA		D07N1		1-03 *							TO HERE	47
14 SA				1						5-4/8		47
14 SB		D05N2		1-01 *	H			2	P		HAND WIRE	48
14 SB		D06N2		1-02 *	H			1	P		HAND WIRE	48
14 SB		D07N2		1-03 *							TO HERE	48
14 SB				1						5-4/8		48
15 IN		D05J2		1-01 *	H			2	P		HAND WIRE	49
15 IN		D06J2		1-02 *	H			1	P		HAND WIRE	49
15 IN		D07J2		1-03 *							TO HERE	49
15 IN				1						5-4/8		49
15 SA		D05K1		1-01 *	H			2	P		HAND WIRE	50
15 SA		D06K1		1-02 *	H			1	P		HAND WIRE	50
15 SA		D07K1		1-03 *							TO HERE	50
15 SA				1						5-4/8		50
15 SB		D05K2		1-01 *	H			2	P		HAND WIRE	51
15 SB		D06K2		1-02 *	H			1	P		HAND WIRE	51
15 SB		D07K2		1-03 *							TO HERE	51
15 SB				1						5-4/8		51
A BG IN	H	D04U2		1-01 *				1				52
A BG IN	H	F04B1		1-02 *								52
A BG IN				1						5-6/8		52
A BG OUT	H	D04V2		1-01 *				1				53
A BG OUT	H	F04A1		1-02 *								53
A BG OUT				1						5-6/8		53

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
A BR OUT	L	D04J2		1-01 *				1				54
A BR OUT	L	F04P1		1-02 *				2				54
A BR OUT	L	F04U2		1-03 *								54
A BR OUT				1						11-4/8		54
A IN	H	D04H1		1-01 *				1				55
A IN	H	E04M1		1-02 *								55
A IN				1						5-2/8		55
A INT A	H	D04N1		1-01 *				1				56
A INT A	H	F04U1		1-02 *								56
A INT A				1						8-2/8		56
A INT B	H	C04J1		1-01 *				1				57
A INT B	H	F04K2		1-02 *								57
A INT B				1						10-4/8		57
A INT ENB A	H	D04M1		1-01 *				1				58
A INT ENB A	H	F04V1		1-02 *								58
A INT ENB A				1						8-4/8		58
A INT ENB B	H	C04L1		1-01 *				1				59
A INT ENB B	H	F04H2		1-02 *								59
A INT ENB B				1						10-0/8		59
A OUT HIGH	H	D04K1		1-01 *				1				60
A OUT HIGH	H	E04M2		1-02 *								60
A OUT HIGH				1						5-2/8		60
A OUT LOW	H	D04D1		1-01 *				1				61
A OUT LOW	H	E04N1		1-02 *								61
A OUT LOW				1						5-6/8		61
A SELECT 0	H	D04F1		1-01 *				1				62
A SELECT 0	H	E04S2		1-02 *								62
A SELECT 0				1						6-0/8		62
A SELECT 0	H	D04J1		1-01 *				1				63
A SELECT 0	H	E04T2		1-02 *								63
A SELECT 0				1						6-0/8		63
A SELECT 0	H	D04E1		1-01 *				1				64
A SELECT 0	H	E04R2		1-02 *								64
A SELECT 0				1						6-2/8		64

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	±	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
A SELECT Ø6	H	DØ4C1		1-Ø1 *				1				65
A SELECT Ø6	H	EØ4S1		1-Ø2 *								65
A SELECT Ø6				1						6-2/8		65
A SSYN INHIBIT	L	DØ4V1		1-Ø1 *				1				66
A SSYN INHIBIT	L	EØ4B1		1-Ø2 *								66
A SSYN INHIBIT				1						2-6/8		66
AØ1	H	DØ6A1		1-Ø1 *	H			1		P	HAND WIRE	67
AØ1	H	DØ7A1		1-Ø2 *							TO HERE	67
AØ1				1						2-6/8		67
AØ3E1		AØ2K1		1-Ø1 *				1				68
AØ3E1		AØ3E1		1-Ø2 *								68
AØ3E1				1						3-Ø/8		68
ASL AØ1	H	AØ3P2	DØ2P2	1-Ø1 *				1				69
ASL AØ1	H	DØ2P2		1-Ø2 *								69
ASL AØ1				1						10-4/8		69
ASL AØ2	H	AØ3L1	DØ2N2	1-Ø1 *				1				70
ASL AØ2	H	DØ2N2		1-Ø2 *								70
ASL AØ2				1						10-6/8		70
ASL BELL CHAR	L	DØ2E2		1-Ø1 *				1				71
ASL BELL CHAR	L	DØ3H2		1-Ø2 *								71
ASL BELL CHAR				1						3-Ø/8		71
ASL RESUME	H	AØ2L2		1-Ø1 *				1				72
ASL RESUME	H	AØ3F2		1-Ø2 *								72
ASL RESUME				1						3-Ø/8		72
ASL START	H	AØ2H1		1-Ø1 *				1				73
ASL START	H	AØ3H2		1-Ø2 *								73
ASL START				1						3-Ø/8		73
BCL DATA RDY	H	BØ2R1		1-Ø1 *				1				74
BCL DATA RDY	H	BØ3K2		1-Ø2 *								74
BCL DATA RDY				1						3-2/8		74
BCL INIT	H	AØ3Q2		1-Ø1 *				1				75
BCL INIT	H	CØ2R1		1-Ø2 *								75
BCL INIT				1						9-2/8		75
BCL REQ CLR	L	AØ2J1		1-Ø1 *				1				76
BCL REQ CLR	L	BØ3L2		1-Ø2 *								76
BCL REQ CLR				1						5-6/8		76

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	±	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BDL DB ØØ	H	A03V2		1-Ø1 *				1				77
BDL DB ØØ	H	CØ2P1		1-Ø2 *				2				77
BDL DB ØØ	H	DØ1N2		1-Ø3 *								77
BDL DB ØØ				1						12-2/8		77
BDL DB Ø1	H	BØ3B1		1-Ø1 *				2				78
BDL DB Ø1	H	BØ2T2		1-Ø2 *				1				78
BDL DB Ø1	H	DØ1L2		1-Ø3 *								78
BDL DB Ø1				1						11-2/8		78
BDL DB Ø2	H	BØ3E1		1-Ø1 *				2				79
BDL DB Ø2	H	BØ2V1		1-Ø2 *				1				79
BDL DB Ø2	H	DØ1P2		1-Ø3 *								79
BDL DB Ø2				1						11-4/8		79
BDL DB Ø3	H	AØ3M1		1-Ø1 *				1				80
BDL DB Ø3	H	CØ2E1		1-Ø2 *				2				80
BDL DB Ø3	H	DØ1F2		1-Ø3 *								80
BDL DB Ø3				1						12-2/8		80
BDL DB Ø4	H	AØ3N1		1-Ø1 *				1				81
BDL DB Ø4	H	CØ2A1		1-Ø2 *				2				81
BDL DB Ø4	H	DØ1K1		1-Ø3 *								81
BDL DB Ø4				1						12-6/8		81
BDL DB Ø5	H	BØ3R2		1-Ø1 *				2				82
BDL DB Ø5	H	CØ2B1		1-Ø2 *				1				82
BDL DB Ø5	H	DØ1L1		1-Ø3 *								82
BDL DB Ø5				1						10-Ø/8		82
BDL DB Ø6	H	BØ2V2		1-Ø1 *				2				83
BDL DB Ø6	H	CØ3B1		1-Ø2 *				1				83
BDL DB Ø6	H	DØ1H1		1-Ø3 *								83
BDL DB Ø6				1						9-2/8		83
BDL DB Ø7	H	BØ3N2		1-Ø1 *				2				84
BDL DB Ø7	H	BØ2U2		1-Ø2 *				1				84
BDL DB Ø7	H	DØ1F1		1-Ø3 *								84
BDL DB Ø7				1						9-6/8		84
BDL DB Ø8	H	BØ3P2		1-Ø1 *				2				85
BDL DB Ø8	H	BØ2N1		1-Ø2 *				1				85
BDL DB Ø8	H	EØ1A1		1-Ø3 *								85
BDL DB Ø8				1						12-Ø/8		85

PG	Y	X	#	REMARKS	RUN NUMBER
			1		86
			2		86
				10-2/8	86
			1		87
				5-6/8	87
			1		88
				2-4/8	88
			1		89
				7-2/8	89
			1		90
				6-0/8	90
			1		91
				5-6/8	91
			1		92
				8-6/8	92
			1		93
				4-0/8	93
			1		94
				3-6/8	94
			1		95
				6-2/8	95
			1		96
				7-2/8	96

GT40,B HND288,V17(17) 06/22/72 Q DRAW RV PG Y

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER
BUL DB 09	H	C02H2	1-01	*
BUL DB 09	H	C03L1	1-02	*
BUL DB 09	H	E01D2	1-03	*
BUL DB 09			1	
BUL DB 10	H	B02F1	1-01	*
BUL DB 10	H	C03L2	1-02	*
BUL DB 10			1	
BUL DB 11	H	C02M2	1-01	*
BUL DB 11	H	C03M1	1-02	*
BUL DB 11			1	
BUL DB 12	H	C02K2	1-01	*
BUL DB 12	H	E03D1	1-02	*
BUL DB 12			1	
BUL DB 13	H	C02K1	1-01	*
BUL DB 13	H	D03P2	1-02	*
BUL DB 13			1	
BUL DB 14	H	C02J1	1-01	*
BUL DB 14	H	D03M2	1-02	*
BUL DB 14			1	
BUL DB 15	H	B02J1	1-01	*
BUL DB 15	H	D03S2	1-02	*
BUL DB 15			1	
BKM COUNT >	H	E01V1	1-01	*
BKM COUNT >	H	F03H1	1-02	*
BKM COUNT >			1	
BKM COUNT >	H	F01M1	1-01	*
BKM COUNT >	H	F03F1	1-02	*
BKM COUNT >			1	
BKM DX09	H	D03F1	1-01	*
BKM DX09	H	E01R1	1-02	*
BKM DX09			1	
BKM DY09	H	D03K1	1-01	*
BKM DY09	H	F01D1	1-02	*
BKM DY09			1	

PG	Y	X	#	REMARKS	RUN NUMBER
P			2	HAND WIRE	97
P			1	HAND WIRE	97
P			2	HAND WIRE	97
P			1	HAND WIRE	97
			2	TO HERE	97
			1		97
				36-4/8	97
P			2	HAND WIRE	98
P			1	HAND WIRE	98
P			2	HAND WIRE	98
P			1	HAND WIRE	98
			2	TO HERE	98
			1		98
				34-0/8	98
P			2	HAND WIRE	99
P			1	HAND WIRE	99
P			2	HAND WIRE	99
P			1	HAND WIRE	99
			2	TO HERE	99
			1		99
				33-4/8	99
P			2	HAND WIRE	100
P			1	HAND WIRE	100
P			2	HAND WIRE	100
P			1	HAND WIRE	100
			2	TO HERE	100
			1		100
				36-2/8	100
P			2	HAND WIRE	101
P			1	HAND WIRE	101
P			2	HAND WIRE	101
P			1	HAND WIRE	101
			2	TO HERE	101
			1		101
				36-4/8	101

GT40,B HND288,V17(17) 06/22/72 Q DRAW RV PG Y

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER
BUS A00	L	B09H2	1-01	* H
BUS A00	L	B05H2	1-02	* H
BUS A00	L	B07H2	1-03	* H
BUS A00	L	B06H2	1-04	* H
BUS A00	L	B05H2	1-05	*
BUS A00	L	E04H2	1-06	*
BUS A00	L	A03U1	1-07	*
			1	
BUS A01	L	B09H1	1-01	* H
BUS A01	L	B08H1	1-02	* H
BUS A01	L	B07H1	1-03	* H
BUS A01	L	B06H1	1-04	* H
BUS A01	L	B05H1	1-05	*
BUS A01	L	E04H1	1-06	*
BUS A01	L	A03K1	1-07	*
			1	
BUS A02	L	B09J2	1-01	* H
BUS A02	L	B08J2	1-02	* H
BUS A02	L	B07J2	1-03	* H
BUS A02	L	B06J2	1-04	* H
BUS A02	L	B05J2	1-05	*
BUS A02	L	E04F1	1-06	*
BUS A02	L	A03P1	1-07	*
			1	
BUS A03	L	B09J1	1-01	* H
BUS A03	L	B08J1	1-02	* H
BUS A03	L	B07J1	1-03	* H
BUS A03	L	B06J1	1-04	* H
BUS A03	L	B05J1	1-05	*
BUS A03	L	E04V2	1-06	*
BUS A03	L	A03R1	1-07	*
			1	
BUS A04	L	B09K2	1-01	* H
BUS A04	L	B08K2	1-02	* H
BUS A04	L	B07K2	1-03	* H
BUS A04	L	B06K2	1-04	* H
BUS A04	L	B05K2	1-05	*
BUS A04	L	E04U2	1-06	*
BUS A04	L	A03J1	1-07	*
			1	

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	≠	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A05	L	B09K1		1-01 *	H						2		P	HAND WIRE	102
BUS A05	L	B08K1		1-02 *	H						1		P	HAND WIRE	102
BUS A05	L	B07K1		1-03 *	H						2		P	HAND WIRE	102
BUS A05	L	B06K1		1-04 *	H						1		P	HAND WIRE	102
BUS A05	L	B05K1		1-05 *							2			TO HERE	102
BUS A05	L	E04V1		1-06 *							1				102
BUS A05	L	B03J2		1-07 *											102
BUS A05				1									34-0/8		102
BUS A06	L	B09L2		1-01 *	H						1		P	HAND WIRE	103
BUS A06	L	B08L2		1-02 *	H						2		P	HAND WIRE	103
BUS A06	L	B07L2		1-03 *	H						1		P	HAND WIRE	103
BUS A06	L	B06L2		1-04 *	H						2		P	HAND WIRE	103
BUS A06	L	B05L2		1-05 *							1			TO HERE	103
BUS A06	L	E04U1		1-06 *							2				103
BUS A06	L	B03M1		1-07 *											103
BUS A06				1									33-2/8		103
BUS A07	L	B09L1		1-01 *	H						2		P	HAND WIRE	104
BUS A07	L	B08L1		1-02 *	H						1		P	HAND WIRE	104
BUS A07	L	B07L1		1-03 *	H						2		P	HAND WIRE	104
BUS A07	L	B06L1		1-04 *	H						1		P	HAND WIRE	104
BUS A07	L	B05L1		1-05 *							2			TO HERE	104
BUS A07	L	E04P2		1-06 *							1				104
BUS A07	L	B03N1		1-07 *											104
BUS A07				1									32-2/8		104
BUS A08	L	B09M2		1-01 *	H						2		P	HAND WIRE	105
BUS A08	L	B08M2		1-02 *	H						1		P	HAND WIRE	105
BUS A08	L	B07M2		1-03 *	H						2		P	HAND WIRE	105
BUS A08	L	B06M2		1-04 *	H						1		P	HAND WIRE	105
BUS A08	L	B05M2		1-05 *							2			TO HERE	105
BUS A08	L	E04N2		1-06 *							1				105
BUS A08	L	B03P1		1-07 *											105
BUS A08				1									31-6/8		105
BUS A09	L	B09M1		1-01 *	H						1		P	HAND WIRE	106
BUS A09	L	B08M1		1-02 *	H						2		P	HAND WIRE	106
BUS A09	L	B07M1		1-03 *	H						1		P	HAND WIRE	106
BUS A09	L	B06M1		1-04 *	H						2		P	HAND WIRE	106
BUS A09	L	B05M1		1-05 *							1			TO HERE	106
BUS A09	L	E04R1		1-06 *							2				106
BUS A09	L	C03E2		1-07 *											106
BUS A09				1									30-6/8		106

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	≠	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A10	L	B09N2		1-01 *	H						1		P	HAND WIRE	107
BUS A10	L	B08N2		1-02 *	H						2		P	HAND WIRE	107
BUS A10	L	B07N2		1-03 *	H						1		P	HAND WIRE	107
BUS A10	L	B06N2		1-04 *	H						2		P	HAND WIRE	107
BUS A10	L	B05N2		1-05 *							1			TO HERE	107
BUS A10	L	E04P1		1-06 *							2				107
BUS A10	L	C03F2		1-07 *											107
BUS A10				1									30-0/8		107
BUS A11	L	B09N1		1-01 *	H						1		P	HAND WIRE	108
BUS A11	L	B08N1		1-02 *	H						2		P	HAND WIRE	108
BUS A11	L	B07N1		1-03 *	H						1		P	HAND WIRE	108
BUS A11	L	B06N1		1-04 *	H						2		P	HAND WIRE	108
BUS A11	L	B05N1		1-05 *							1			TO HERE	108
BUS A11	L	E04L1		1-06 *							2				108
BUS A11	L	C03H2		1-07 *											108
BUS A11				1									29-2/8		108
BUS A12	L	B09P2		1-01 *	H						1		P	HAND WIRE	109
BUS A12	L	B08P2		1-02 *	H						2		P	HAND WIRE	109
BUS A12	L	B07P2		1-03 *	H						1		P	HAND WIRE	109
BUS A12	L	B06P2		1-04 *	H						2		P	HAND WIRE	109
BUS A12	L	B05P2		1-05 *							1			TO HERE	109
BUS A12	L	E04C1		1-06 *							2				109
BUS A12	L	C03P1		1-07 *											109
BUS A12				1									26-6/8		109
BUS A13	L	B09P1		1-01 *	H						1		P	HAND WIRE	110
BUS A13	L	B08P1		1-02 *	H						2		P	HAND WIRE	110
BUS A13	L	B07P1		1-03 *	H						1		P	HAND WIRE	110
BUS A13	L	B06P1		1-04 *	H						2		P	HAND WIRE	110
BUS A13	L	B05P1		1-05 *							1			TO HERE	110
BUS A13	L	E04K2		1-06 *							2				110
BUS A13	L	D03D2		1-07 *											110
BUS A13				1									26-4/8		110
BUS A14	L	B09R2		1-01 *	H						1		P	HAND WIRE	111
BUS A14	L	B08R2		1-02 *	H						2		P	HAND WIRE	111
BUS A14	L	B07R2		1-03 *	H						1		P	HAND WIRE	111
BUS A14	L	B06R2		1-04 *	H						2		P	HAND WIRE	111
BUS A14	L	B05R2		1-05 *							1			TO HERE	111
BUS A14	L	E04K1		1-06 *							2				111
BUS A14	L	D03F2		1-07 *											111
BUS A14				1									26-0/8		111

GT40,B RUN NAME — HND288.V17(17) 06/22/72 A/P PIN NAME — 1-MAR-73 LENGTH — 6152 EXCEPTIONS — BAY-ORDER PIN ORDER — RUN NUMBER — Q DRAW RV PG

Y	X	#	REMARKS	LENGTH	EXCEPTIONS	BAY-ORDER PIN ORDER	RUN NUMBER
BUS A15							
	1				HAND WIRE	1-01 * H	112
	2				HAND WIRE	1-02 * H	112
	1				HAND WIRE	1-03 * H	112
	2				HAND WIRE	1-04 * H	112
	1				TO HERE	1-05 * H	112
	2						112
				24-2/8			112
BUS A16							
	1				HAND WIRE	1-01 * H	113
	2				HAND WIRE	1-02 * H	113
	1				HAND WIRE	1-03 * H	113
	2				HAND WIRE	1-04 * H	113
	1				TO HERE	1-05 * H	113
	2						113
				24-6/8			113
BUS A17							
	1				HAND WIRE	1-01 * H	114
	2				HAND WIRE	1-02 * H	114
	1				HAND WIRE	1-03 * H	114
	2				HAND WIRE	1-04 * H	114
	1				TO HERE	1-05 * H	114
	2						114
				25-2/8			114
BUS AC LO							
	1				HAND WIRE	1-01 * H	115
	2				HAND WIRE	1-02 * H	115
	1				HAND WIRE	1-03 * H	115
	2				HAND WIRE	1-04 * H	115
	1				TO HERE	1-05 * H	115
	2						115
				55-0/8			115
BUS BUSY							
	2				HAND WIRE	1-01 * H	116
	1				HAND WIRE	1-02 * H	116
	2				HAND WIRE	1-03 * H	116
	1				HAND WIRE	1-04 * H	116
	2				TO HERE	1-05 * H	116
	1						116
	2						116
				46-4/8			116

A/P	PIN NAME	ORDER PIN	BAY-ORDER
BUS A15			
J	B09R1		1-01 * H
J	B08R1		1-02 * H
J	B07R1		1-03 * H
J	B06R1		1-04 * H
J	B05R1		1-05 * H
J	E04D2		1-06 *
J	D03N1		1-07
			1
BUS A16			
J	B09S2		1-01 * H
J	B08S2		1-02 * H
J	B07S2		1-03 * H
J	B06S2		1-04 * H
J	B05S2		1-05 * H
J	E04E2		1-06 *
J	D03J1		1-07
			1
BUS A17			
J	B09S1		1-01 * H
J	B08S1		1-02 * H
J	B07S1		1-03 * H
J	B06S1		1-04 * H
J	B05S1		1-05 * H
J	E04D1		1-06 *
J	D03B1		1-07 *
			1
BUS AC LO			
J	B09F1		1-01 * H
J	B06F1		1-02 * H
J	B07F1		1-03 * H
J	B08F1		1-04 * H
J	B09F1		1-05 * H
J	C04V1		1-06 *
J	F03E2		1-07 *
J	B0182	F01K1	1-08 *
J	F01K1		1-09 *
			1
BUS BUSY			
J	A09P2		1-01 * H
J	A08P2		1-02 * H
J	A07P2		1-03 * H
J	A06P2		1-04 * H
J	A05P2		1-05 * H
J	F04D1		1-06 *
J	A03F1		1-07 *
J	B01E2		1-08 *
			1

GT40,B RUN NAME — HND288.V17(17) 06/22/72 A/P PIN NAME — 1-MAR-73 LENGTH — 6152 EXCEPTIONS — BAY-ORDER PIN ORDER — RUN NUMBER — Q DRAW RV PG

Y	X	#	REMARKS	LENGTH	EXCEPTIONS	BAY-ORDER PIN ORDER	RUN NUMBER
	1						117
							117
				4-4/8			117
	2				HAND WIRE	1-01 * H	118
	1				HAND WIRE	1-02 * H	118
	2				TO HERE	1-03 * H	118
	1					1-04 * H	118
				21-0/8		1-05 *	118
	1						119
							119
				5-2/8			119
	2				HAND WIRE	1-01 * H	120
	1				HAND WIRE	1-02 * H	120
	2				TO HERE	1-03 * H	120
	1					1-04 * H	120
				20-4/8		1-05 *	120
	1						121
							121
				9-2/8			121
	1						122
							122
				9-2/8			122
	2				HAND WIRE	1-01 * H	123
	1				HAND WIRE	1-02 * H	123
	2				HAND WIRE	1-03 * H	123
	1				TO HERE	1-04 * H	123
				21-2/8		1-05 *	123
	1						124
							124
				5-2/8			124
	1						125
							125
				9-0/8			125

A/P	PIN NAME	ORDER PIN	BAY-ORDER
BUS BG 04 OUT 3			
H	D04S2		1-01 *
H	E03L1		1-02 *
			1
BUS BG 05			
H	B0631		1-01 * H
H	B0731		1-02 * H
H	B0831		1-03 * H
H	B0931		1-04 * H
H	E03P2		1-05 *
			1
BUS BG 05 OUT 03			
H	D04P2		1-01 *
H	E03R2		1-02 *
			1
BUS BG 4			
H	B06E2		1-01 * H
H	B07E2		1-02 * H
H	B08E2		1-03 * H
H	B09E2		1-04 * H
H	E03M1		1-05 * H
			1
BUS BG 4 OUT 04			
	D04T2		1-01 *
	B05E2		1-02 *
BUS BG 4 OUT 04			1
	D04R2		1-01 *
	B05B1		1-02 *
BUS BG 5 OUT 04			1
BUS BG 5 OUT 04			
BUS BG 6			
H	B06A1		1-01 * H
H	B07A1		1-02 * H
H	B08A1		1-03 * H
H	B09A1		1-04 * H
H	E03R1		1-05 * H
			1
BUS BG 6 OUT 03			
	E03N2		1-01 *
	D04M2		1-02 *
BUS BG 6 OUT 03			1
	D04N2		1-01 *
	B05A1		1-02 *
BUS BG 6 OUT 04			1
BUS BG 6 OUT 04			
BUS BG 6 OUT 04			

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	±	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS BG 7	H	A06V1		1-01 *	H						2		P	HAND WIRE	126
BUS BG 7	H	A07V1		1-02 *	H						1		P	HAND WIRE	126
BUS BG 7	H	A08V1		1-03 *	H						2		P	HAND WIRE	126
BUS BG 7	H	A09V1		1-04 *							1			TO HERE	126
BUS BG 7	H	D03S1		1-05 *											126
BUS BG 7				1									19-4/8		126
BUS BG 7 OUT 03		E03S1		1-01 *							1				127
BUS BG 7 OUT 03		D04K2		1-02 *											127
BUS BG 7 OUT 03				1									6-0/8		127
BUS BG 7 OUT 04		D04L2		1-01 *							1				128
BUS BG 7 OUT 04		A05V1		1-02 *											128
BUS BG 7 OUT 04				1									9-4/8		128
BUS BH 4	L	B05D2		1-01 *	H						1		P	HAND WIRE	129
BUS BH 4	L	B06D2		1-02 *	H						2		P	HAND WIRE	129
BUS BH 4	L	B07D2		1-03 *	H						1		P	HAND WIRE	129
BUS BH 4	L	B08D2		1-04 *	H						2		P	HAND WIRE	129
BUS BH 4	L	B09D2		1-05 *							1			TO HERE	129
BUS BH 4	L	D04H2		1-06 *							2				129
BUS BH 4	L	E03K1		1-07 *											129
BUS BH 4				1									25-4/8		129
BUS BH 5	L	B05C1		1-01 *	H						1		P	HAND WIRE	130
BUS BH 5	L	B06C1		1-02 *	*						2		P	TO HERE	130
BUS BH 5	L	B07C1		1-03 *	H						1		P	HAND WIRE	130
BUS BH 5	L	B08C1		1-04 *	H						2		P	HAND WIRE	130
BUS BH 5	L	B09C1		1-05 *							1			TO HERE	130
BUS BH 5	L	D04F2		1-06 *							2				130
BUS BH 5	L	E03J1		1-07 *											130
BUS BH 5				1									25-4/8		130
BUS BH 6	L	A05U2		1-01 *	H						1		P	HAND WIRE	131
BUS BH 6	L	A06U2		1-02 *	H						2		P	HAND WIRE	131
BUS BH 6	L	A07U2		1-03 *	H						1		P	HAND WIRE	131
BUS BH 6	L	A08U2		1-04 *	H						2		P	HAND WIRE	131
BUS BH 6	L	A09U2		1-05 *							1			TO HERE	131
BUS BH 6	L	D04E2		1-06 *							2				131
BUS BH 6	L	E03H1		1-07 *											131
BUS BH 6				1									26-4/8		131

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	±	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS BH 7	L	A05T2		1-01 *	H						1		P	HAND WIRE	132
BUS BH 7	L	A06T2		1-02 *	H						2		P	HAND WIRE	132
BUS BH 7	L	A07T2		1-03 *	H						1		P	HAND WIRE	132
BUS BH 7	L	A08T2		1-04 *	H						2		P	HAND WIRE	132
BUS BH 7	L	A09T2		1-05 *							1			TO HERE	132
BUS BH 7	L	D04D2		1-06 *							2				132
BUS BH 7	L	E03F1		1-07 *											132
BUS BH 7				1									26-4/8		132
BUS C0	L	B05U2		1-01 *	H						1		P	HAND WIRE	133
BUS C0	L	B06U2		1-02 *	H						2		P	HAND WIRE	133
BUS C0	L	B07U2		1-03 *	H						1		P	HAND WIRE	133
BUS C0	L	B08U2		1-04 *	H						2		P	HAND WIRE	133
BUS C0	L	B09U2		1-05 *							1			TO HERE	133
BUS C0	L	E04J2		1-06 *							2				133
BUS C0	L	F03B2		1-07 *											133
BUS C0				1									25-4/8		133
BUS C1	L	B05T2		1-01 *	H						2		P	HAND WIRE	134
BUS C1	L	B06T2		1-02 *	H						1		P	HAND WIRE	134
BUS C1	L	B07T2		1-03 *	H						2		P	HAND WIRE	134
BUS C1	L	B08T2		1-04 *	H						1		P	HAND WIRE	134
BUS C1	L	B09T2		1-05 *							2			TO HERE	134
BUS C1	L	E04F2		1-06 *							1				134
BUS C1	L	A03C1		1-07 *											134
BUS C1				1									34-4/8		134
BUS D00	L	B03D2		1-01 *							2				135
BUS D00	L	C04S2		1-02 *							1				135
BUS D00	L	A05C1		1-03 *	H						2		P	HAND WIRE	135
BUS D00	L	A06C1		1-04 *	H						1		P	HAND WIRE	135
BUS D00	L	A07C1		1-05 *	H						2		P	HAND WIRE	135
BUS D00	L	A08C1		1-06 *	H						1		P	HAND WIRE	135
BUS D00	L	A09C1		1-07 *										TO HERE	135
BUS D00				1									26-6/8		135
BUS D01	L	A09D2		1-01 *	H						1		P	HAND WIRE	136
BUS D01	L	A08D2		1-02 *	H						2		P	HAND WIRE	136
BUS D01	L	A07D2		1-03 *	H						1		P	HAND WIRE	136
BUS D01	L	A06D2		1-04 *	H						2		P	HAND WIRE	136
BUS D01	L	A05U2		1-05 *							1			TO HERE	136
BUS D01	L	C04R2		1-06 *							2				136
BUS D01	L	B03F2		1-07 *											136
BUS D01				1									26-0/8		136

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN NAME

1-MAR-73
LENGTH

6152
EXCEPTIONS

RUN NUMBER

X	Y	REMARKS	ORDER PIN	ORDER	EXCEPTIONS	RUN NUMBER
BUS D02			A09D1	1-01		137
BUS D02			A08D1	1-02	HAND WIRE	137
BUS D02			A07D1	1-03	HAND WIRE	137
BUS D02			A06D1	1-04	HAND WIRE	137
BUS D02			A05D1	1-05	TO HERE	137
BUS D02			C04U2	1-06		137
BUS D02			F04E2	1-07		137
BUS D02			B03H2	1-08		137
				1	42-0/8	
BUS D03			A09E2	1-01		138
BUS D03			A08E2	1-02	HAND WIRE	138
BUS D03			A07E2	1-03	HAND WIRE	138
BUS D03			A06E2	1-04	HAND WIRE	138
BUS D03			A05E2	1-05	TO HERE	138
BUS D03			C04T2	1-06		138
BUS D03			F04L1	1-07		138
BUS D03			B03E2	1-08		138
				1	43-6/8	
BUS D04			A09E1	1-01		139
BUS D04			A08E1	1-02	HAND WIRE	139
BUS D04			A07E1	1-03	HAND WIRE	139
BUS D04			A06E1	1-04	HAND WIRE	139
BUS D04			A05E1	1-05	TO HERE	139
BUS D04			C04N2	1-06		139
BUS D04			F04N2	1-07		139
BUS D04			B03S1	1-08		139
				1	42-4/8	
BUS D05			A09F2	1-01		140
BUS D05			A08F2	1-02	HAND WIRE	140
BUS D05			A07F2	1-03	HAND WIRE	140
BUS D05			A06F2	1-04	HAND WIRE	140
BUS D05			A05F2	1-05	TO HERE	140
BUS D05			C04P2	1-06		140
BUS D05			F04F1	1-07		140
BUS D05			C03D2	1-08		140
				1	40-0/8	

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN NAME

4-MAR-73
LENGTH

6152
EXCEPTIONS

RUN NUMBER

X	Y	REMARKS	ORDER PIN	ORDER	EXCEPTIONS	RUN NUMBER
BUS D06			A09F1	1-01		141
BUS D06			A08F1	1-02	HAND WIRE	141
BUS D06			A07F1	1-03	HAND WIRE	141
BUS D06			A06F1	1-04	HAND WIRE	141
BUS D06			A05F1	1-05	TO HERE	141
BUS D06			C04V2	1-06		141
BUS D06			F04F2	1-07		141
BUS D06			C03C1	1-08		141
				1	40-0/8	
BUS D07			A09H2	1-01		142
BUS D07			A08H2	1-02	HAND WIRE	142
BUS D07			A07H2	1-03	HAND WIRE	142
BUS D07			A06H2	1-04	HAND WIRE	142
BUS D07			A05H2	1-05	TO HERE	142
BUS D07			C04M2	1-06		142
BUS D07			F04H1	1-07		142
BUS D07			B03V2	1-08		142
				1	40-6/8	
BUS D08			A09H1	1-01		143
BUS D08			A08H1	1-02	HAND WIRE	143
BUS D08			A07H1	1-03	HAND WIRE	143
BUS D08			A06H1	1-04	HAND WIRE	143
BUS D08			A05H1	1-05	TO HERE	143
BUS D08			C04L2	1-06		143
BUS D08			F04K1	1-07		143
BUS D08			C03R1	1-08		143
				1	39-4/8	
BUS D09			A09J2	1-01		144
BUS D09			A08J2	1-02	HAND WIRE	144
BUS D09			A07J2	1-03	HAND WIRE	144
BUS D09			A06J2	1-04	HAND WIRE	144
BUS D09			A05J2	1-05	TO HERE	144
BUS D09			C04K2	1-06		144
BUS D09			C03V1	1-07		144
				1	22-6/8	
BUS D10			A09J1	1-01		145
BUS D10			A08J1	1-02	HAND WIRE	145
BUS D10			A07J1	1-03	HAND WIRE	145
BUS D10			A06J1	1-04	HAND WIRE	145
BUS D10			A05J1	1-05	TO HERE	145
BUS D10			C04J2	1-06		145
BUS D10			C03S1	1-07		145
				1	22-2/8	

GT40,B — HND288,V17(17) 06/22/72 — 1-MAR-73 — 6152

RUN NAME	A/P	PIN NAME	ORDER PIN ORDER	Q	DRAW RV PG X Y	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D11	J	A09K2	1-01	H		1	P		HAND WIRE	146
BUS D11	J	A08K2	1-02	H		2	P		HAND WIRE	146
BUS D11	J	A07K2	1-03	H		1	P		HAND WIRE	146
BUS D11	J	A06K2	1-04	H		2	P		HAND WIRE	146
BUS D11	J	A05K2	1-05			1	P		TO HERE	146
BUS D11	J	C04H1	1-06	*		2		22-4/8		146
BUS D11	J	C03U1	1-07	*						
BUS D11			1							
BUS D12	J	A09K1	1-01	H		1	P		HAND WIRE	147
BUS D12	J	A08K1	1-02	H		2	P		HAND WIRE	147
BUS D12	J	A07K1	1-03	H		1	P		HAND WIRE	147
BUS D12	J	A06K1	1-04	H		2	P		HAND WIRE	147
BUS D12	J	A05K1	1-05			1	P		TO HERE	147
BUS D12	J	C04H2	1-06	*		2		24-6/8		147
BUS D12	J	D03R1	1-07	*						
BUS D12			1							
BUS D13	J	A09L2	1-01	H		2	P		HAND WIRE	148
BUS D13	J	A08L2	1-02	H		1	P		HAND WIRE	148
BUS D13	J	A07L2	1-03	H		2	P		HAND WIRE	148
BUS D13	J	A06L2	1-04	H		1	P		HAND WIRE	148
BUS D13	J	A05L2	1-05			2	P		TO HERE	148
BUS D13	J	C04F2	1-06	*		1		26-0/8		148
BUS D13	J	E03E1	1-07	*						148
BUS D13			1							
BUS D14	J	A09L1	1-01	H		1	P		HAND WIRE	149
BUS D14	J	A08L1	1-02	H		2	P		HAND WIRE	149
BUS D14	J	A07L1	1-03	H		1	P		HAND WIRE	149
BUS D14	J	A06L1	1-04	H		2	P		HAND WIRE	149
BUS D14	J	A05L1	1-05			1	P		TO HERE	149
BUS D14	J	C04E2	1-06	*		2		25-0/8		149
BUS D14	J	D03U2	1-07	*						149
BUS D14			1							
BUS D15	J	A09M2	1-01	H		2	P		HAND WIRE	150
BUS D15	J	A08M2	1-02	H		1	P		HAND WIRE	150
BUS D15	J	A07M2	1-03	H		2	P		HAND WIRE	150
BUS D15	J	A06M2	1-04	H		1	P		HAND WIRE	150
BUS D15	J	A05M2	1-05			2	P		TO HERE	150
BUS D15	J	C04D2	1-06	*		1		25-2/8		150
BUS D15	J	D03V1	1-07	*						150
BUS D15			1							

GT40,B — HND288,V17(17) 06/22/72 — 1-MAR-73 — 6152

RUN NAME	A/P	PIN NAME	ORDER PIN ORDER	Q	DRAW RV PG X Y	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS DG LO	J	B09F2	1-01	H		2	P		HAND WIRE	151
BUS DG LO	J	B08F2	1-02	H		1	P		HAND WIRE	151
BUS DG LO	J	B07F2	1-03	H		2	P		HAND WIRE	151
BUS DG LO	J	B06F2	1-04	H		1	P		HAND WIRE	151
BUS DG LO	J	B05F2	1-05	*		2			TO HERE	151
BUS DG LO	J	C04N1	1-06	*		1		26-4/8		151
BUS DG LO	J	F03D2	1-07	*						151
BUS DG LO			1							151
BUS INIT	J	A09A1	1-01	H		1	P		HAND WIRE	152
BUS INIT	J	A08A1	1-02	H		2	P		HAND WIRE	152
BUS INIT	J	A07A1	1-03	H		1	P		HAND WIRE	152
BUS INIT	J	A06A1	1-04	H		2	P		HAND WIRE	152
BUS INIT	J	A05A1	1-05	*		1	P		TO HERE	152
BUS INIT	J	D04L1	1-06	*		2		34-0/8		152
BUS INIT	J	A03D1	1-07	*						152
BUS INIT			1							
BUS INTK	J	A09B1	1-01	H		1	P		HAND WIRE	153
BUS INTK	J	A08B1	1-02	H		2	P		HAND WIRE	153
BUS INTK	J	A07B1	1-03	H		1	P		HAND WIRE	153
BUS INTK	J	A06B1	1-04	H		2	P		HAND WIRE	153
BUS INTK	J	A05B1	1-05	*		1	P		TO HERE	153
BUS INTK	J	F04M1	1-06	*		2		31-6/8		153
BUS INTK	J	F03B1	1-07	*						153
BUS INTK			1							153
BUS MSYN	J	B01L2	1-01	*		2	P		HAND WIRE	154
BUS MSYN	J	B05V1	1-02	*	H	1	P		HAND WIRE	154
BUS MSYN	J	B06V1	1-03	*	H	2	P		HAND WIRE	154
BUS MSYN	J	B07V1	1-04	*	H	1	P		HAND WIRE	154
BUS MSYN	J	B08V1	1-05	*	H	2	P		TO HERE	154
BUS MSYN	J	B09V1	1-06	*	H	1		29-0/8		154
BUS MSYN	J	E04E1	1-07	*	H					154
BUS MSYN	J	D03P1	1-08	*	H					154
BUS MSYN			1							154
BUS NPG IN	H	A06U1	1-01	*	H	2	P		HAND WIRE	155
BUS NPG IN	H	A07U1	1-02	*	H	1	P		HAND WIRE	155
BUS NPG IN	H	A08U1	1-03	*	H	2	P		HAND WIRE	155
BUS NPG IN	H	A09U1	1-04	*	H	1	P		HAND WIRE	155
BUS NPG IN	H	D03L2	1-05	*	H				TO HERE	155
BUS NPG IN			1					18-6/8		

HND288,V17(17) 06/22/72
A/P PIN NAME — ORDER PIN — BAY - ORDER — Q — DRAW RV PG Y

X	E	MEMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
					156
	2				156
	1				156
	2				156
			20-4/8		156
	1			HAND WIRE	157
	2			HAND WIRE	157
	1			HAND WIRE	157
	2			TO HERE	157
	1				157
					157
			26-6/8		157
	1				158
					158
			9-0/8		158
	1			HAND WIRE	159
	2			HAND WIRE	159
	1			HAND WIRE	159
	2			HAND WIRE	159
	1			TO HERE	159
			17-6/8		159
	1			HAND WIRE	160
	2			HAND WIRE	160
	1			HAND WIRE	160
	2			HAND WIRE	160
	1			TO HERE	160
			19-2/8		160
	1			HAND WIRE	161
	2			HAND WIRE	161
	2			HAND WIRE	161
	2			HAND WIRE	161
	1			TO HERE	161
	2				161
			36-4/8		161

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y
BUS NPG OUT		A05U1	1-01	*		
BUS NPG OUT		C04B1	1-02	*		
BUS NPG OUT		C04A1	1-03	*		
BUS NPG OUT		F03N1	1-04	*		
			1			
BUS NPR	L	A06S2	1-01	*	H	
BUS NPR	L	A07S2	1-02	*	H	
BUS NPR	L	A08S2	1-03	*	H	
BUS NPR	L	A09S2	1-04	*	H	
BUS NPR	L	F04J1	1-05	*		
BUS NPR	L	F03F2	1-06	*		
			1			
BUS NPR I	L	A05S2	1-01	*		
BUS NPR I	L	D03B2	1-02	*		
BUS NPR I			1			
BUS PA	L	A09M1	1-01	*	H	
BUS PA	L	A08M1	1-02	*	H	
BUS PA	L	A07M1	1-03	*	H	
BUS PA	L	A06M1	1-04	*	H	
BUS PA	L	A05M1	1-05	*	H	
BUS PA	L	C04C1	1-06	*		
			1			
BUS PB	L	A09N2	1-01	*	H	
BUS PB	L	A08N2	1-02	*	H	
BUS PB	L	A07N2	1-03	*	H	
BUS PB	L	A06N2	1-04	*	H	
BUS PB	L	A05N2	1-05	*	H	
BUS PB	L	C04S1	1-06	*		
			1			
BUS SACK	L	A09R2	1-01	*	H	
BUS SACK	L	A08R2	1-02	*	H	
BUS SACK	L	A07R2	1-03	*	H	
BUS SACK	L	A06R2	1-04	*	H	
BUS SACK	L	A05R2	1-05	*		
BUS SACK	L	F04T2	1-06	*		
BUS SACK	L	D03C1	1-07	*		
			1			

HND288,V17(17) 06/22/72
A/P PIN NAME — ORDER PIN — BAY - ORDER — Q — DRAW RV PG Y

X	E	MEMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
	2			HAND WIRE	162
	1			HAND WIRE	162
	2			TO HERE	162
	2				162
	2				162
	1				162
	2				162
	1				162
	2				162
			41-0/8		162
	1				163
			9-6/8		163
	1				164
					164
			11-0/8		164
	1				165
					165
			5-4/8		165
	1				166
					166
			9-4/8		166
	1				167
					167
			12-0/8		167
	1				168
					168
			10-2/8		168
	1				169
					169
			11-2/8		169
	1				170
					170
			6-2/8		170
	1			HAND WIRE	171
				TO HERE	171
			2-6/8		171

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y
BUS SSYN	L	B09U1	1-01	*	H	
BUS SSYN	L	B08U1	1-02	*	H	
BUS SSYN	L	B07U1	1-03	*	H	
BUS SSYN	L	B06U1	1-04	*		
BUS SSYN	L	B05U1	1-05	*		
BUS SSYN	L	A03H1	1-06	*		
BUS SSYN	L	B01A1	1-07	*		
BUS SSYN	L	B01H1	1-08	*		
BUS SSYN	L	E04J1	1-09	*		
BUS SSYN	L	F04C1	1-10	*		
			1			
CCL1 CHAR GEN DONE	H	A03L2	1-01	*		
CCL1 CHAR GEN DONE	H	D02D2	1-02	*		
CCL1 CHAR GEN DONE			1			
CCL1 CHAR INTENSITY	H	A03M2	1-01	*		
CCL1 CHAR INTENSITY	H	D02P1	1-02	*		
CCL1 CHAR INTENSITY			1			
CCL1 CHAR STOP L.P.	H	E02H1	1-01	*		
CCL1 CHAR STOP L.P.	H	F03H2	1-02	*		
CCL1 CHAR STOP L.P.			1			
CCL2 BELL	H	A01S2	1-01	*		
CCL2 BELL	H	D02F2	1-02	*		
CCL2 BELL			1			
CCL2 DESCEND (0)	H	C01F1	1-01	*		
CCL2 DESCEND (0)	H	F02V1	1-02	*		
CCL2 DESCEND (0)			1			
CCL2 RAMP Y (1)	H	C01J1	1-01	*		
CCL2 RAMP Y (1)	H	F02F1	1-02	*		
CCL2 RAMP Y (1)			1			
CCL2 RUN (0)	H	C01A1	1-01	*		
CCL2 RUN (0)	H	F02F2	1-02	*		
CCL2 RUN (0)			1			
CCL2 STEP X	H	C01E1	1-01	*		
CCL2 STEP X	H	D02N1	1-02	*		
CCL2 STEP X			1			
CLK	H	D06B1	1-01	*	H	
CLK	H	D07B1	1-02	*		
CLK			1			

CONA DATA STROBE	L	D08K1		1-01 *						1			172
CONA DATA STROBE	L	D09E2		1-02 *									172
CONA DATA STROBE				1								3-2/8	172
CONA ENAB ALU	H	D08E1		1-01 *						1			173
CONA ENAB ALU	H	F09D2		1-02 *									173
CONA ENAB ALU				1								7-6/8	173
CONA ENAB RCD PSW	H	D08N1		1-01 *						1			174
CONA ENAB RCD PSW	H	F09E1		1-02 *									174
CONA ENAB RCD PSW				1								7-0/8	174
CONA ENAB SWTCH REG	L	D08F1		1-01 *						1			175
CONA ENAB SWTCH REG	L	F09V1		1-02 *									175
CONA ENAB SWTCH REG				1								9-2/8	175
CONA ENAB XMIT PSW	H	D08A1		1-01 *						1			176
CONA ENAB XMIT PSW	H	F09D1		1-02 *									176
CONA ENAB XMIT PSW				1								8-2/8	176
CONA ENABLE DATA	H	C09N1		1-01 *						1			177
CONA ENABLE DATA	H	D08D1		1-02 *									177
CONA ENABLE DATA				1								4-2/8	177
CONA LOAD RCD PSW	H	D08R1		1-01 *						1			178
CONA LOAD RCD PSW	H	F09L2		1-02 *									178
CONA LOAD RCD PSW				1								7-4/8	178
CONA LOAD XMIT PSW	H	D08P1		1-01 *						1			179
CONA LOAD XMIT PSW	H	F09F1		1-02 *									179
CONA LOAD XMIT PSW				1								7-0/8	179
CONB INH *1	L	D08C1		1-01 *						1			180
CONB INH *1	L	F09K1		1-02 *									180
CONB INH *1				1								8-4/8	180
CONB IR CLOCK	H	E08C1		1-01 *						1			181
CONB IR CLOCK	H	E09V1		1-02 *									181
CONB IR CLOCK				1								4-4/8	181
CONB RUN LAMP	L	C09U1		1-01 *						1			182
CONB RUN LAMP	L	E08T2		1-02 *									182
CONB RUN LAMP				1								7-4/8	182
CONB SPA 00	H	C08U2		1-01 *						1			183
CONB SPA 00	H	C09D1		1-02 *									183
CONB SPA 00				1								4-2/8	183

CONB SPA 01	H	C08T2		1-01 *						1			184
CONB SPA 01	H	C09C1		1-02 *									184
CONB SPA 01				1								4-0/8	184
CONB SPA 02	H	C08S2		1-01 *						1			185
CONB SPA 02	H	C09B1		1-02 *									185
CONB SPA 02				1								4-2/8	185
CONB SPA 03	H	C08R2		1-01 *						1			186
CONB SPA 03	H	C09A1		1-02 *									186
CONB SPA 03				1								4-0/8	186
CONC CLR MSYN	H	D08J1		1-01 *						1			187
CONC CLR MSYN	H	F09F2		1-02 *									187
CONC CLR MSYN				1								7-6/8	187
CONC DAT ENAB	L	D08M1		1-01 *						1			188
CONC DAT ENAB	L	F09V2		1-02 *									188
CONC DAT ENAB				1								8-6/8	188
COND INIT	H	D08U1		1-01 *						1			189
COND INIT	H	D09E1		1-02 *									189
COND INIT				1								4-0/8	189
CONE ALLOW CONSTANTS	L	C09E1		1-01 *						1			190
CONE ALLOW CONSTANTS	L	E08H1		1-02 *									190
CONE ALLOW CONSTANTS				1								8-0/8	190
CONE BUT DESTINATION	H	E09E1		1-01 *						1			191
CONE BUT DESTINATION	H	F08C1		1-02 *									191
CONE BUT DESTINATION				1								5-0/8	191
CONE BUT DESTINATION	L	D09H1		1-01 *						1			192
CONE BUT DESTINATION	L	E08J1		1-02 *									192
CONE BUT DESTINATION				1								5-2/8	192
CONE BUT IR DECODE	L	B01R2		1-01 *						1			193
CONE BUT IR DECODE	L	D09V2		1-02 *						2			193
CONE BUT IR DECODE	L	E08V2		1-03 *									193
CONE BUT IR DECODE				1								14-6/8	193
CONE ENAB UNARY	L	E08R2		1-01 *						1			194
CONE ENAB UNARY	L	E09N1		1-02 *									194
CONE ENAB UNARY				1								2-6/8	194

CONF JMP OR JSR	L	E08K2	1-01 *						195
CONF JMP OR JSR	L	E09M2	1-02 *	1					195
CONF JMP OR JSR			1		3-0/8				195
CONF MCD SER	L	F08A1	1-01 *	1					196
CONF MCD SER	L	F09P2	1-02 *						196
CONF MCD SER			1		4-2/8				196
CONF XMIT SER	L	F08B1	1-01 *	1					197
CONF XMIT SER	L	F09M2	1-02 *						197
CONF XMIT SER			1		3-6/8				197
CONF ALU MODE	H	D09R1	1-01 *	1					198
CONF ALU MODE	H	E08D2	1-02 *						198
CONF ALU MODE			1		3-6/8				198
CONF ALU S0	L	D09R2	1-01 *	1					199
CONF ALU S0	L	E08D1	1-02 *						199
CONF ALU S0			1		4-0/8				199
CONF ALU S1	L	D09P1	1-01 *	1					200
CONF ALU S1	L	E08E2	1-02 *						200
CONF ALU S1			1		4-0/8				200
CONF ALU S2	L	D09P2	1-01 *	1					201
CONF ALU S2	L	E08F2	1-02 *						201
CONF ALU S2			1		4-2/8				201
CONF ALU S3	L	D09N1	1-01 *	1					202
CONF ALU S3	L	E08E1	1-02 *						202
CONF ALU S3			1		4-2/8				202
CONF AUX BYTE	H	D09N2	1-01 *	1					203
CONF AUX BYTE	H	E08U2	1-02 *						203
CONF AUX BYTE			1		5-6/8				203
CONF AUX CONTROL	L	E08S2	1-01 *	1					204
CONF AUX CONTROL	L	F09B1	1-02 *						204
CONF AUX CONTROL			1		3-6/8				204
CONF GIN	H	E08S1	1-01 *	1					205
CONF GIN	H	E09T2	1-02 *						205
CONF GIN			1		4-4/8				205

CONF MPC 00	L	B01P2	1-01 *	1					206
CONF MPC 00	L	E09L1	1-02 *	2					206
CONF MPC 00	L	F08P2	1-03 *						206
CONF MPC 00			1		17-0/8				206
CONF MPC 01	L	B01V1	1-01 *	1					207
CONF MPC 01	L	E09P1	1-02 *	2					207
CONF MPC 01	L	F08N2	1-03 *						207
CONF MPC 01			1		16-0/8				207
CONF MPC 02	L	B01N1	1-01 *	1					208
CONF MPC 02	L	E09R1	1-02 *	2					208
CONF MPC 02	L	F08M1	1-03 *						208
CONF MPC 02			1		17-0/8				208
CONF MPC 03	L	B01K2	1-01 *	1					209
CONF MPC 03	L	E09D1	1-02 *	2					209
CONF MPC 03	L	F08K1	1-03 *						209
CONF MPC 03			1		17-0/8				209
CONF MPC 04	L	B01U2	1-01 *	1					210
CONF MPC 04	L	E09C1	1-02 *	2					210
CONF MPC 04	L	F08J2	1-03 *						210
CONF MPC 04			1		15-6/8				210
CONF MPC 05	L	B01T2	1-01 *	1					211
CONF MPC 05	L	E09B1	1-02 *	2					211
CONF MPC 05	L	F08N1	1-03 *						211
CONF MPC 05			1		16-4/8				211
CONF MPC 06	L	B01C1	1-01 *	1					212
CONF MPC 06	L	E09A1	1-02 *	2					212
CONF MPC 06	L	F08L1	1-03 *						212
CONF MPC 06			1		18-0/8				212
CONF MPC 07	L	B01J1	1-01 *	1					213
CONF MPC 07	L	E09S1	1-02 *	2					213
CONF MPC 07	L	F08M2	1-03 *						213
CONF MPC 07			1		17-2/8				213
CONF SPARE	L	E08A1							214
					1-PIN RUN				
CONG BBOT	H	D08S1	1-01 *	1					215
CONG BBOT	H	F09A1	1-02 *	2					215
CONG BBOT			1		6-0/8				215

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	±	REMARKS	LENGTH	RUN NUMBER
CONG BMODE 00	H	C09V1		1-01 *				1			216
CONG BMODE 00	H	E08M2		1-02 *							216
CONG BMODE 00				1						7-0/8	216
CONG BMODE 01	H	D09A1		1-01 *				1			217
CONG BMODE 01	H	E08M1		1-02 *							217
CONG BMODE 01				1						6-2/8	217
CONG BSTOP	H	C09L2		1-01 *				1			218
CONG BSTOP	H	E08H2		1-02 *							218
CONG BSTOP				1						7-4/8	218
CONG CKOFF	L	E08R1		1-01 *				1			219
CONG CKOFF	L	F09J1		1-02 *							219
CONG CKOFF				1						4-4/8	219
CONG ENAB PSW	H	C09R2		1-01 *				1			220
CONG ENAB PSW	H	E08K1		1-02 *							220
CONG ENAB PSW				1						7-2/8	220
CONG ENAB SPL	L	C09F2		1-01 *				1			221
CONG ENAB SPL	L	E08N2		1-02 *							221
CONG ENAB SPL				1						8-4/8	221
CONG ENAB SPR	L	C09E2		1-01 *				1			222
CONG ENAB SPR	L	E08L1		1-02 *							222
CONG ENAB SPR				1						8-4/8	222
CONG LOAD PSW	L	D08H2		1-01 *				1			223
CONG LOAD PSW	L	D09M2		1-02 *							223
CONG LOAD PSW				1						3-0/8	223
CONG ROM ALEG 00	L	E08P2		1-01 *				1			224
CONG ROM ALEG 00	L	E09U1		1-02 *							224
CONG ROM ALEG 00				1						3-0/8	224
CONG SP WRITE	H	E08F1		1-01 *				1			225
CONG SP WRITE	H	F09C1		1-02 *							225
CONG SP WRITE				1						5-0/8	225
CONH PROC INIT	H	D09M1		1-01 *				1			226
CONH PROC INIT	H	F08T2		1-02 *							226
CONH PROC INIT				1						8-2/8	226
CONH PROC INIT	L	D09L2		1-01 *				1			227
CONH PROC INIT	L	F08S1		1-02 *							227
CONH PROC INIT				1						8-4/8	227

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	±	REMARKS	LENGTH	RUN NUMBER
CONJ MAN CLK	L	B01V2		1-01 *				1			228
CONJ MAN CLK	L	F08V1		1-02 *							228
CONJ MAN CLK				1						14-2/8	228
CONJ PROC CLOCK	H	C08N1		1-01 *				1			229
CONJ PROC CLOCK	H	D09L1		1-02 *							229
CONJ PROC CLOCK				1						5-0/8	229
CONJ S CLK ON	L	B01U1		1-01 *				1			230
CONJ S CLK ON	L	F08U2		1-02 *							230
CONJ S CLK ON				1						14-4/8	230
CONJ UNG PROC CLOCK	H	D08V1		1-01 *				1			231
CONJ UNG PROC CLOCK	H	F09L1		1-02 *							231
CONJ UNG PROC CLOCK				1						6-6/8	231
CONSOLE CONT	L	C09S2		1-01 *				1			232
CONSOLE CONT	L	F08H2		1-02 *							232
CONSOLE CONT				1						9-4/8	232
CONSOLE DEP	L	C09M1		1-01 *				1			233
CONSOLE DEP	L	F08D2		1-02 *							233
CONSOLE DEP				1						9-4/8	233
CONSOLE EXAM	L	C09T2		1-01 *				1			234
CONSOLE EXAM	L	F08F2		1-02 *							234
CONSOLE EXAM				1						9-2/8	234
CONSOLE LOAD	L	C09U2		1-01 *				1			235
CONSOLE LOAD	L	F08J1		1-02 *							235
CONSOLE LOAD				1						9-4/8	235
CONSOLE START	L	C09M2		1-01 *				1			236
CONSOLE START	L	F08E2		1-02 *							236
CONSOLE START				1						9-6/8	236
CONSOLE STOP	L	C09S1		1-01 *				1			237
CONSOLE STOP	L	F08H1		1-02 *							237
CONSOLE STOP				1						9-4/8	237
CR1		C04R1								1-PIN RUN	238
CSC CHARACTER,CR-	H	C02J2		1-01 *				1			239
CSC CHARACTER,CR-	H	E03S2		1-02 *							239
CSC CHARACTER,CR-				1						8-6/8	239

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
CSC CLR X	H	D01K2		1-01 *							1				240
CSC CLR X	H	F03J1		1-02 *							2				240
CSC CLR X	H	F02U2		1-03 *											240
CSC CLR X				1									11-4/8		240
CSC CLR X	L	D01D1		1-01 *							1				241
CSC CLR X	L	F02T2		1-02 *											241
CSC CLR X				1									9-4/8		241
CSC CNTRL CHAR DONE	H	D03D1		1-01 *							1				242
CSC CNTRL CHAR DONE	H	E02M2		1-02 *											242
CSC CNTRL CHAR DONE				1									6-0/8		242
CSC CK,SI	L	A02S1		1-01 *							1				243
CSC CK,SI	L	E03D2		1-02 *											243
CSC CK,SI				1									11-6/8		243
CSC L,F,	H	E02P1		1-01 *							1				244
CSC L,F,	H	F03U2		1-02 *											244
CSC L,F,				1									6-0/8		244
CSC SHIFT INTR	L	D03A1		1-01 *							1				245
CSC SHIFT INTR	L	F02H2		1-02 *											245
CSC SHIFT INTR				1									8-4/8		245
DCR 0-3 (0)	H	C03J2		1-01 *							1				246
DCR 0-3 (0)	H	E01B1		1-02 *											246
DCR 0-3 (0)				1									7-4/8		246
DCR 4-7 (0)	H	C03K2		1-01 *							1				247
DCR 4-7 (0)	H	E01C1		1-02 *											247
DCR 4-7 (0)				1									7-4/8		247
DCR 8,9 (0)	H	C03N1		1-01 *							1				248
DCR 8,9 (0)	H	E01E1		1-02 *											248
DCR 8,9 (0)				1									7-2/8		248
DCR DIS 00 IN	H	D01M1		1-01 *							1				249
DCR DIS 00 IN	H	F01H1		1-02 *											249
DCR DIS 00 IN				1									7-0/8		249
DCR01 OUT	H	F01F1		1-01 *							1				250
DCR01 OUT	H	F03S2		1-02 *											250
DCR01 OUT				1									4-0/8		250

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
DCR02 OUT	H	F01V2		1-01 *							1				251
DCR02 OUT	H	F03T2		1-02 *											251
DCR02 OUT				1									3-4/8		251
DCR03 OUT	H	F01U2		1-01 *							1				252
DCR03 OUT	H	F03N2		1-02 *											252
DCR03 OUT				1									3-6/8		252
DCR04 OUT	H	F01C1		1-01 *							1				253
DCR04 OUT	H	F03P2		1-02 *											253
DCR04 OUT				1									4-2/8		253
DCR05 OUT	H	E01K1		1-01 *							1				254
DCR05 OUT	H	F01B1		1-02 *											254
DCR05 OUT				1									4-2/8		254
DPA AMUX 0[illegible]	H	B01D1		1-01 *							1				255
DPA AMUX 0[illegible]	H	C08K2		1-02 *							2				255
DPA AMUX 0[illegible]	H	C09N2		1-03 *											255
DPA AMUX 0[illegible]				1									10-4/8		255
DPA AMUX 0[illegible]	H	B01F1		1-01 *							1				256
DPA AMUX 0[illegible]	H	C08B1		1-02 *							2				256
DPA AMUX 0[illegible]	H	C09P1		1-03 *											256
DPA AMUX 0[illegible]				1									10-6/8		256
DPA AMUX 0[illegible]	H	B01L1		1-01 *							1				257
DPA AMUX 0[illegible]	H	C08C1		1-02 *							2				257
DPA AMUX 0[illegible]	H	C09P2		1-03 *											257
DPA AMUX 0[illegible]				1									10-4/8		257
DPA AMUX 0[illegible]	H	B01P1		1-01 *							1				258
DPA AMUX 0[illegible]	H	C08H2		1-02 *							2				258
DPA AMUX 0[illegible]	H	C09R1		1-03 *											258
DPA AMUX 0[illegible]				1									10-2/8		258
DPB AMUX 0[illegible]	H	B01M1		1-01 *							1				259
DPB AMUX 0[illegible]	H	C08D1		1-02 *							2				259
DPB AMUX 0[illegible]	H	D09J2		1-03 *											259
DPB AMUX 0[illegible]				1									12-6/8		259
DPB AMUX 0[illegible]	H	B01S2		1-01 *							1				260
DPB AMUX 0[illegible]	H	C08D2		1-02 *							2				260
DPB AMUX 0[illegible]	H	D09K2		1-03 *											260
DPB AMUX 0[illegible]				1									12-4/8		260

DPB AMUX 06		H	B01K1		1-01 *					1			261
DPB AMUX 06		H	C08E1		1-02 *					2			261
DPB AMUX 06		H	D09J1		1-03 *								261
DPB AMUX 06					1							12-4/8	261
DPB AMUX 07		H	B01R1		1-01 *					1			262
DPB AMUX 07		H	C08F1		1-02 *					2			262
DPB AMUX 07		H	D09K1		1-03 *								262
DPB AMUX 07					1							12-2/8	262
DPC 8-15-0		H	D08B1		1-01 *					1			263
DPC 8-15-0		H	D09B1		1-02 *								263
DPC 8-15-0					1							2-6/8	263
DPC AMUX 08		H	B01E1		1-01 *					1			264
DPC AMUX 08		H	C08L2		1-02 *					2			264
DPC AMUX 08		H	C09J2		1-03 *								264
DPC AMUX 08					1							10-4/8	264
DPC AMUX 09		H	B01F2		1-01 *					1			265
DPC AMUX 09		H	C08P2		1-02 *					2			265
DPC AMUX 09		H	C09K1		1-03 *								265
DPC AMUX 09					1							10-2/8	265
DPC AMUX 10		H	B01M2		1-01 *					1			266
DPC AMUX 10		H	C08M2		1-02 *					2			266
DPC AMUX 10		H	C09K2		1-03 *								266
DPC AMUX 10					1							10-0/8	266
DPC AMUX 11		H	B01S1		1-01 *					1			267
DPC AMUX 11		H	C08A1		1-02 *					2			267
DPC AMUX 11		H	C09L1		1-03 *								267
DPC AMUX 11					1							10-0/8	267
DPD AMUX 12		H	B01J2		1-01 *					2			268
DPD AMUX 12		H	C08E2		1-02 *					1			268
DPD AMUX 12		H	C09F1		1-03 *								268
DPD AMUX 12					1							9-4/8	268
DPD AMUX 13		H	B01H2		1-01 *					2			269
DPD AMUX 13		H	C08J2		1-02 *					1			269
DPD AMUX 13		H	C09H1		1-03 *								269
DPD AMUX 13					1							9-4/8	269

DPD AMUX 14		H	B01D2		1-01 *					2			270
DPD AMUX 14		H	C08F2		1-02 *					1			270
DPD AMUX 14		H	C09H2		1-03 *								270
DPD AMUX 14					1							9-6/8	270
DPD AMUX 15		H	B01N2		1-01 *					1			271
DPD AMUX 15		H	C08N2		1-02 *					2			271
DPD AMUX 15		H	C09J1		1-03 *								271
DPD AMUX 15					1							10-0/8	271
DPE PSW 05(0)		H	C08V1		1-01 *					1			272
DPE PSW 05(0)		H	D09D2		1-02 *								272
DPE PSW 05(0)					1							3-6/8	272
DPE PSW 06(0)		H	C08S1		1-01 *					1			273
DPE PSW 06(0)		H	D09C1		1-02 *								273
DPE PSW 06(0)					1							3-6/8	273
DPE PSW 07(0)		H	C08R1		1-01 *					1			274
DPE PSW 07(0)		H	D09D1		1-02 *								274
DPE PSW 07(0)					1							4-0/8	274
DPE T DEL(0)		H	F08S2		1-01 *					1			275
DPE T DEL(0)		H	F09S2		1-02 *								275
DPE T DEL(0)					1							2-6/8	275
DPF IR 00(1)		H	C08H1		1-01 *					1			276
DPF IR 00(1)		H	D09U2		1-02 *								276
DPF IR 00(1)					1							6-6/8	276
DPF IR 01(1)		H	C08L1		1-01 *					1			277
DPF IR 01(1)		H	D09T2		1-02 *								277
DPF IR 01(1)					1							6-2/8	277
DPF IR 02(1)		H	C08P1		1-01 *					1			278
DPF IR 02(1)		H	D09U1		1-02 *								278
DPF IR 02(1)					1							5-6/8	278
DPF IR 06(1)		H	C08V2		1-01 *					1			279
DPF IR 06(1)		H	D09S1		1-02 *								279
DPF IR 06(1)					1							4-6/8	279
DPF IR 07(1)		H	C08K1		1-01 *					1			280
DPF IR 07(1)		H	D09S2		1-02 *								280
DPF IR 07(1)					1							6-2/8	280

GI40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN NAME | ORDER PIN | BAY - ORDER

Q DRAW RV PG Y X

1-MAR-73 LENGTH | 6152 EXCEPTIONS | PAGE 35 RUN NUMBER

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
DPF IR Ø9(1)	H	C08M1		1-01 *							1				281
DPF IR Ø9(1)	H	E09F1		1-02 *											281
DPF IR Ø9(1)				1									7-2/8		281
DPF ROTATE	H	E08N1		1-01 *							1				282
DPF ROTATE	H	F09S1		1-02 *											282
DPF ROTATE				1									5-6/8		282
DPG BYTE	L	D08L1		1-01 *							1				283
DPG BYTE	L	E09K1		1-02 *											283
DPG BYTE				1									5-Ø/8		283
DPG CAL TEST	L	E08U1		1-01 *							1				284
DPG CAL TEST	L	E09M1		1-02 *											284
DPG CAL TEST				1									3-2/8		284
DPG DIS ALU S BITS	H	E08J2		1-01 *							1				285
DPG DIS ALU S BITS	H	E09J1		1-02 *											285
DPG DIS ALU S BITS				1									2-4/8		285
DPG EMT	L	F08E1		1-01 *							1				286
DPG EMT	L	F09U2		1-02 *											286
DPG EMT				1									4-2/8		286
DPG ENAB NON MOD	H	E08L2		1-01 *							1				287
DPG ENAB NON MOD	H	F09T2		1-02 *											287
DPG ENAB NON MOD				1									6-Ø/8		287
DPG JMP OR JSR	L	D08H1		1-01 *							1				288
DPG JMP OR JSR	L	E09E2		1-02 *											288
DPG JMP OR JSR				1									5-Ø/8		288
DPG MOVE	L	E09H1		1-01 *							1				289
DPG MOVE	L	F08K2		1-02 *											289
DPG MOVE				1									5-4/8		289
DPG RCD INT	L	F08R2		1-01 *							1				290
DPG RCD INT	L	F09R2		1-02 *											290
DPG RCD INT				1									2-6/8		290
DPG RTS	L	E09S2		1-01 *							1				291
DPG RTS	L	F08F1		1-02 *											291
DPG RTS				1									4-2/8		291
DPG THAP	L	F08D1		1-01 *							1				292
DPG THAP	L	F09U1		1-02 *											292
DPG THAP				1									4-2/8		292

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
DPG WAIT	L	D09V1		1-01 *							1				293
DPG WAIT	L	F08R1		1-02 *											293
DPG WAIT				1									7-2/8		293
DPH RUN ENB	L	F09K2										1-PIN RUN			294
DPH RL -15	L	F09R1										1-PIN RUN			295
DPH SO -15	L	F09J2										1-PIN RUN			296
DPH SLR Ø	H	D09F1										1-PIN RUN			297
DPH SLR Ø	L	F09E2										1-PIN RUN			298
DPH SLR IN	L	F09N1										1-PIN RUN			299
DPH SI -15	L	F09P1										1-PIN RUN			300
DPH XMIT INT	L	F08P1		1-01 *							1				301
DPH XMIT INT	L	F08N2		1-02 *											301
DPH XMIT INT				1									3-2/8		301
F04E1		F04E1		1-01 *							1				302
F04E1		F04V2		1-02 *											302
F04E1				1									4-2/8		302
F04L2		F04L2		1-01 *							1				303
F04L2		F04R1		1-02 *											303
F04L2				1									3-Ø/8		303
F04M2		F04M2		1-01 *							1				304
F04M2		F04S1		1-02 *											304
F04M2				1									3-Ø/8		304
F04P2		F04P2		1-01 *							1				305
F04P2		F04S2		1-02 *											305
F04P2				1									2-4/8		305
F04R2		F04D2		1-01 *							2				306
F04R2		F04R2		1-02 *							1				306
F04R2		F04N1		1-03 *											306
F04R2				1									6-2/8		306
F05A1		F05A1		1-01 * H							1	P			307
F05A1		F06A1		1-02 *								HAND WIRE TO HERE			307
F05A1				1								)2-6/8			307

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
F09B1		F09B1		1-01	*	H			1		P	HAND WIRE	308
F09B1		F06B1		1-02	*							TO HERE	308
F09B1				1							2-6/8		308
F05U1		F05U1		1-01	*	H			1		P	HAND WIRE	309
F05U1		F06U1		1-02	*							TO HERE	309
F05U1				1							2-6/8		309
F05V1		F05V1		1-01	*	H			1		P	HAND WIRE	310
F05V1		F06V1		1-02	*							TO HERE	310
F05V1				1							2-6/8		310
FS CLK	L	F09H1										1-PIN RUN	311
FS CLK DISAB	L	F09H2										1-PIN RUN	312
FS SER IN	L	F09M1										1-PIN RUN	313
GM INT 00	L	A01L2		1-01	*				1				314
GM INT 00	L	B02U1		1-02	*						6-0/8		314
GM INT 00				1									314
GM INT 01	L	A01M2		1-01	*				1				315
GM INT 01	L	C02C1		1-02	*						6-6/8		315
GM INT 01				1									315
GM INT 02	L	A01R2		1-01	*				1				316
GM INT 02	L	B02P1		1-02	*						5-0/8		316
GM INT 02				1									316
GM INTENSITY OUT	L	A01T2		1-01	*	H			1	TWISTED PAIR		HAND WIRE	317
GM INTENSITY OUT	L	B02L2		1-02	*	H						H TO WHERE	317
GM INTENSITY OUT				1							4-4/8		317
GM INTERRUPT	H	A02P1		1-01	*				1				318
GM INTERRUPT	H	D03H1		1-02	*								318
GM INTERRUPT				1							9-6/8		318
GM L.P.INTERPT ENA (0)	H	C02M1		1-01	*				1				319
GM L.P.INTERPT ENA (0)	H	F03M1		1-02	*								319
GM L.P.INTERPT ENA (0)				1							10-4/8		319

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND 01-03		A01C1		1-01	*	H			2		P	HAND WIRE	320
GND 01-03		A01T1		1-02	*				1		P	HAND WIRE	320
GND 01-03		A01C2		1-03	*	H			2		P	HAND WIRE	320
GND 01-03		A03C2	A02C2	1-04	*	H			1	24 AWG	P	HAND WIRE	320
GND 01-03		A02C2		1-05	*	H			2	24AWG	P	HAND WIRE	320
GND 01-03		A03E2		1-06	*	H			1	24AWG	P	HAND WIRE	320
GND 01-03		C03B2		1-07	*	H			2	24 AWG	P	HAND WIRE	320
GND 01-03		C03N2	A03T1	1-08	*	H			1		P	HAND WIRE	320
GND 01-03		A03T1	B03B2	1-09	*	H			2		P	HAND WIRE	320
GND 01-03		B03B2		1-10	*	H			1		P	HAND WIRE	320
GND 01-03		B03C2		1-11	*	H			2		P	HAND WIRE	320
GND 01-03		B02C2		1-12	*	H			1		P	HAND WIRE	320
GND 01-03		B01C2		1-13	*	H			2		P	HAND WIRE	320
GND 01-03		A02T1		1-14	*	H			1		P	HAND WIRE	320
GND 01-03		B02T1		1-15	*	H			2		P	HAND WIRE	320
GND 01-03		B01T1		1-16	*	H			1		P	HAND WIRE	320
GND 01-03		B03T1		1-17	*	H			2		P	HAND WIRE	320
GND 01-03		C03C2		1-18	*	H			1		P	HAND WIRE	320
GND 01-03		C02C2		1-19	*	H			2		P	HAND WIRE	320
GND 01-03		C01C2		1-20	*	H			1		P	HAND WIRE	320
GND 01-03		C01T1		1-21	*	H			2		P	HAND WIRE	320
GND 01-03		C02T1		1-22	*	H			1		P	HAND WIRE	320
GND 01-03		C03T1		1-23	*	H			2		P	HAND WIRE	320
GND 01-03		D03C2		1-24	*	H			1		P	HAND WIRE	320
GND 01-03		D02C2		1-25	*	H			2		P	HAND WIRE	320
GND 01-03		D01C2		1-26	*	H			1		P	HAND WIRE	320
GND 01-03		D01T1		1-27	*	H			2		P	HAND WIRE	320
GND 01-03		D02T1		1-28	*	H			1		P	HAND WIRE	320
GND 01-03		D03T1		1-29	*	H			2		P	HAND WIRE	320
GND 01-03		E03T1		1-30	*	H			1		P	HAND WIRE	320
GND 01-03		E02T1		1-31	*	H			2		P	HAND WIRE	320
GND 01-03		E01T1		1-32	*	H			1		P	HAND WIRE	320
GND 01-03		F01C2		1-33	*	H			2		P	HAND WIRE	320
GND 01-03		F02C2		1-34	*	H			1		P	HAND WIRE	320
GND 01-03		F03C2		1-35	*	H			2		P	HAND WIRE	320
GND 01-03		F03T1		1-36	*	H			1		P	HAND WIRE	320
GND 01-03		F02T1		1-37	*	H			2		P	HAND WIRE	320
GND 01-03		F01T1		1-38	*	H			1		P	HAND WIRE	320
GND 01-03		E01C2		1-39	*	H			2		P	HAND WIRE	320
GND 01-03		E02C2		1-40	*	H			1		P	HAND WIRE	320
GND 01-03		E03C2		1-41	*	H			2		P	HAND WIRE	320
GND 01-03		E04A1		1-42	*	H			1		P	HAND WIRE	320
GND 01-03		E04C2		1-43	*	H			2		P	HAND WIRE	320
GND 01-03		F04T1		1-44	*	H			1		151-2/8	H TO WHERE	320

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER		Q	DRAW RV PG Y X	≠	REMARKS		LENGTH	EXCEPTIONS	RUN NUMBER
GND Ø4-Ø6		AØ6B2		1-Ø1	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ6C2		1-Ø2	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ5B2		1-Ø3	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ5C2		1-Ø4	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ4C2		1-Ø5	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ5T1		1-Ø6	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ5S1		1-Ø7	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ5R1		1-Ø8	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ5P1		1-Ø9	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ5N1		1-1Ø	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ6P1		1-11	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ6N1		1-12	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ6R1		1-13	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ6S1		1-14	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ6V2		1-15	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		AØ6T1		1-16	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		AØ5V2		1-17	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		BØ5B2		1-18	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		BØ5C2		1-19	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		BØ4C2		1-2Ø	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		BØ5E1		1-21	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		BØ5D1		1-22	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		BØ6E1		1-23	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		BØ6D1		1-24	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		BØ6C2		1-25	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		BØ6B2		1-26	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		BØ6V2		1-27	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		BØ6T1		1-28	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		BØ5V2		1-29	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		BØ5T1		1-3Ø	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		BØ4T1		1-31	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		CØ4C2		1-32	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		CØ5C2		1-33	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		CØ6C2		1-34	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		CØ6T1		1-35	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		CØ5T1		1-36	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		CØ4T1		1-37	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		DØ4C2		1-38	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		DØ5C2		1-39	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		DØ6C2		1-4Ø	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		DØ6T1		1-41	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		DØ5T1		1-42	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		DØ4T1		1-43	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		EØ5C2		1-44	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		EØ6C2		1-45	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		EØ6T1		1-46	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		EØ5T1		1-47	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		EØ4T1		1-48	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		FØ4C2		1-49	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		FØ5C2		1-5Ø	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		FØ6C2		1-51	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		FØ4J2		1-52	*	H		1		P		HAND WIRE	321
GND Ø4-Ø6		FØ5T1		1-53	*	H		2		P		HAND WIRE	321
GND Ø4-Ø6		FØ6T1		1-54	*	H				P		H TO WHERE	321
GND Ø4-Ø6				1							153-6/8		321

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER		Q	DRAW RV PG Y X	≠	REMARKS		LENGTH	EXCEPTIONS	RUN NUMBER
GND Ø7-Ø9		AØ9B2		1-Ø1	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ9C2		1-Ø2	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ8B2		1-Ø3	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ8C2		1-Ø4	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ7B2		1-Ø5	*	*		1		P		TO HERE	322
GND Ø7-Ø9		AØ7C2		1-Ø6	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ7N1		1-Ø7	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ7P1		1-Ø8	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ7R1		1-Ø9	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ7S1		1-1Ø	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ7T1		1-11	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ7V2		1-12	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ8T1		1-13	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ8S1		1-14	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ8R1		1-15	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ8P1		1-16	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ8N1		1-17	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ9P1		1-18	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ9N1		1-19	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ9R1		1-2Ø	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ9S1		1-21	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ9V2		1-22	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		AØ9T1		1-23	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		AØ8V2		1-24	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ8B2		1-25	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ8C2		1-26	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ7B2		1-27	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ7E1		1-28	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ7D1		1-29	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ7C2		1-3Ø	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ8E1		1-31	*	*		1		P		TO HERE	322
GND Ø7-Ø9		BØ8D1		1-32	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ9E1		1-33	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ9D1		1-34	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ9C2		1-35	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ9B2		1-36	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ9V2		1-37	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ9T1		1-38	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ8V2		1-39	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ8T1		1-4Ø	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		BØ7V2		1-41	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		BØ7T1		1-42	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		CØ7C2		1-43	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		CØ8C2		1-44	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		CØ9C2		1-45	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		CØ9T1		1-46	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		CØ8T1		1-47	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		CØ7T1		1-48	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		DØ7C2		1-49	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		DØ8C2		1-5Ø	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		DØ9C2		1-51	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		DØ9T1		1-52	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		DØ8T1		1-53	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		DØ7T1		1-54	*	H		2		P		HAND WIRE	322
GND Ø7-Ø9		EØ7C2		1-55	*	H		1		P		HAND WIRE	322
GND Ø7-Ø9		FØ8C2		1-56	*	H		2		P		HAND WIRE	322

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND 07-09		E09C2		1-57 *	H						1		P	WAND WIRE	322
GND 07-09		E09T1		1-58 *	H						2		P	WAND WIRE	322
GND 07-09		E08T1		1-59 *	H						1		P	WAND WIRE	322
GND 07-09		E07T1		1-60 *	H						2		P	WAND WIRE	322
GND 07-09		F07C2		1-61 *	H						1		P	WAND WIRE	322
GND 07-09		F08C2		1-62 *	H						2		P	WAND WIRE	322
GND 07-09		F08T1		1-63 *	H						1		P	WAND WIRE	322
GND 07-09		F07T1		1-64 *	H								P	W TO WHERE	322
GND 07-09				1									178-4/8		322
GND 07-09		F09C2		1-01 *	H						1		P	TOO MNY PN	322
GND 07-09		F09T1		1-02 *	H								P	TOO MNY PN	322
GND 07-09				1									4-0/8		322
LEI EDGE	H	E02J2		1-01 *							1				323
LEI EDGE	H	E03F2		1-02 *											323
LEI EDGE				1									3-0/8		323
LEI L.P. FLAG (0)	H	A02V2		1-01 *							1				324
LEI L.P. FLAG (0)	H	C03E1		1-02 *											324
LEI L.P. FLAG (0)				1									6-0/8		324
LEI LP INT HIT	H	A02R1		1-01 *							1				325
LEI LP INT HIT	H	A03B2		1-02 *											325
LEI LP INT HIT				1									4-2/8		325
LEI Z AXIS	H	A02K2		1-01 *							1				326
LEI Z AXIS	H	B03M2		1-02 *											326
LEI Z AXIS				1									5-4/8		326
LSC ENABLE PRINT	H	F02S2		1-01 *							1				327
LSC ENABLE PRINT	H	F03M2		1-02 *											327
LSC ENABLE PRINT				1									3-0/8		327
MC L.P. PULSE	L	A01P2		1-01 *							1				328
MC L.P. PULSE	L	A03A1		1-02 *											328
MC L.P. PULSE				1									4-2/8		328
MC Y<X	H	E03H2		1-01 *							1				329
MC Y<X	H	F01T2		1-02 *											329
MC Y<X				1									6-4/8		329
MC Y=X	H	E01S1		1-01 *							1				330
MC Y=X	H	E03K2		1-02 *											330
MC Y=X				1									4-0/8		330

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
MC Y>X	H	E01U1		1-01 *							1				331
MC Y>X	H	E03L2		1-02 *											331
MC Y>X				1									4-0/8		331
MD GRAPH X	H	B02S1		1-01 *							1				332
MD GRAPH X	H	F03V2		1-02 *											332
MD GRAPH X				1									13-4/8		332
MD GRAPH Y	H	B02R2		1-01 *							1				333
MD GRAPH Y	H	E03B2		1-02 *											333
MD GRAPH Y				1									8-6/8		333
MD JUMP LOAD PULSE	H	A03J2		1-01 *							1				334
MD JUMP LOAD PULSE	H	C02D1		1-02 *											334
MD JUMP LOAD PULSE				1									7-4/8		334
MD PC+2L	L	A03U2		1-01 *							1				335
MD PC+2L	L	E02N1		1-02 *											335
MD PC+2L				1									12-4/8		335
MD POINT	L	A02S2		1-01 *							1				336
MD POINT	L	A03S2		1-02 *											336
MD POINT				1									2-6/8		336
MD PT+REL PT	H	A02U2		1-01 *							1				337
MD PT+REL PT	H	A03B1		1-02 *											337
MD PT+REL PT				1									4-4/8		337
P0 IN		D05E2		1-01 *	H						2		P	WAND WIRE	338
P0 IN		D06E2		1-02 *	H						1		P	WAND WIRE	338
P0 IN		D07E2		1-03 *										TO HERE	338
P0 IN				1									5-4/8		338
P0 SA		D05F1		1-01 *	H						2		P	WAND WIRE	339
P0 SA		D06F1		1-02 *	H						1		P	WAND WIRE	339
P0 SA		D07F1		1-03 *										TO HERE	339
P0 SA				1									5-4/8		339
P0 SB		D05F2		1-01 *	H						2		P	WAND WIRE	340
P0 SB		D06F2		1-02 *	H						1		P	WAND WIRE	340
P0 SB		D07F2		1-03 *										TO HERE	340
P0 SB				1									5-4/8		340
P1 IN		D05E1		1-01 *	H						2		P	WAND WIRE	341
P1 IN		D06E1		1-02 *	H						1		P	WAND WIRE	341
P1 IN		D07E1		1-03 *										TO HERE	341
P1 IN				1									5-4/8		341

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN ORDER BAY - Q DRAW RV PG Y

6152 EXCEPTIONS

X	#	REMARKS	1-MAR=73 LENGTH	A/P	PIN NAME	ORDER PIN	RUN NUMBER
	2			P			342
	1			P			342
					HAND WIRE		342
					TO HERE		342
			5-4/8			1	342
	2			P			343
	1			P			343
					HAND WIRE		343
					TO HERE		343
			5-4/8			1	343
	1	TWISTED PAIR			HAND WIRE		344
					H TO WHERE		344
			3-4/8			1	344
	1						345
							345
			3-4/8				345
	1						346
							346
			5-2/8				346
	1						347
							347
			6-4/8				347
	1						348
							348
			6-2/8				348
	1						349
							349
			6-0/8				349
	1	TWISTED PAIR			HAND WIRE		350
					TO HERE		350
			6-0/8				350
	1						351
							351
			15-4/8				351
	1						352
							352
			15-4/8				352

X	#	REMARKS	A/P	PIN NAME	ORDER PIN	RUN NUMBER
PGC	ANALOG CLOCK		H	F01R1	1-01 *	H
PGC	ANALOG CLOCK		H	F03U1	1-02 *	H
PGC	ANALOG CLOCK				1	
PGC	ANALOG EDGE		L	F03P1	1-01 *	
PGC	ANALOG EDGE		L	F01V1	1-02 *	
PGC	ANALOG EDGE				1	
PGC	DIS 01 IN		H	D01U1	1-01 *	
PGC	DIS 01 IN		H	E03T2	1-02 *	
PGC	DIS 01 IN				1	
PGC	DIS 02 IN		H	E01F2	1-01 *	
PGC	DIS 02 IN		H	F03R1	1-02 *	
PGC	DIS 02 IN				1	
PGC	DIS 03 IN		H	E01J2	1-01 *	
PGC	DIS 03 IN		H	F03S1	1-02 *	
PGC	DIS 03 IN				1	
PGC	DIS 04 IN		H	E01F1	1-01 *	
PGC	DIS 04 IN		H	F03J2	1-02 *	
PGC	DIS 04 IN				1	
PGC	DIS CLK		H	C02F2	1-01 *	H
PGC	DIS CLK		H	D03N2	1-02 *	H
PGC	DIS CLK				1	
PGC	PG 01		H	A03R2	1-01 *	
PGC	PG 01		H	F02N2	1-02 *	
PGC	PG 01				1	
PGC	PG 02		H	A03S1	1-01 *	
PGC	PG 02		H	F02P1	1-02 *	
PGC	PG 02				1	

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN ORDER BAY - Q DRAW RV PG Y

6152 EXCEPTIONS

X	#	REMARKS	1-MAR=73 LENGTH	A/P	PIN NAME	ORDER PIN	RUN NUMBER
	1						353
							353
			15-6/8				353
	1						354
							354
			12-0/8				354
	1						355
							355
			10-4/8				355
	1						356
							356
			12-2/8				356
	1						357
							357
			11-2/8				357
	1						358
							358
			12-4/8				358
	1						359
							359
			8-4/8				359
	1						360
							360
			6-4/8				360
	1						361
							361
			6-2/8				361
	1						362
							362
			6-6/8				362
	1						363
							363
			3-0/8				363
	1						364
							364
			4-4/8				364

X	#	REMARKS	A/P	PIN NAME	ORDER PIN	RUN NUMBER
PGC	PG 03		H	A03T2	1-01 *	
PGC	PG 03		H	F02R1	1-02 *	
PGC	PG 03				1	
PGC	PG 04		H	A03V1	1-01 *	
PGC	PG 04		H	E02K2	1-02 *	
PGC	PG 04				1	
PGC	PG 05		H	B03K1	1-01 *	
PGC	PG 05		H	E02L1	1-02 *	
PGC	PG 05				1	
PGC	PG 06		H	B03L1	1-01 *	
PGC	PG 06		H	F02D1	1-02 *	
PGC	PG 06				1	
PGC	PG 07		H	B03J1	1-01 *	
PGC	PG 07		H	E02S2	1-02 *	
PGC	PG 07				1	
PGC	PG 08		H	B03H1	1-01 *	
PGC	PG 08		H	F02D2	1-02 *	
PGC	PG 08				1	
PGC	PG 09		H	C03K1	1-01 *	
PGC	PG 09		H	E02R1	1-02 *	
PGC	PG 09				1	
PGC	PG 10		H	C03J1	1-01 *	
PGC	PG 10		H	D02U2	1-02 *	
PGC	PG 10				1	
PGC	PG 11		H	C03H1	1-01 *	
PGC	PG 11		H	D02S1	1-02 *	
PGC	PG 11				1	
PGC	PG 12		H	C03F1	1-01 *	
PGC	PG 12		H	D02U1	1-02 *	
PGC	PG 12				1	
PGC	PG 13		H	D02R1	1-01 *	
PGC	PG 13		H	D03M1	1-02 *	
PGC	PG 13				1	
PGC	PG 14		H	D03L1	1-01 *	
PGC	PG 14		H	E02F2	1-02 *	
PGC	PG 14				1	

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN ORDER BAY - Q DRAW RV
NAME PIN ORDER

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PG Y X # REMARKS LENGTH EXCEPTIONS RUN NUMBER

PGC PG 15								
PGC PG 15								
PGC PG 15								
PK X00	1			H	D03K2	1-01 *	4-2/8	365
PK X00				H	E02B1	1-02 *		365
PK X00						1		
PK X01	1			H	C01R2	1-01 *	10-0/8	366
PK X01				H	F02M1	1-02 *		366
PK X01						1		
PK X02	1			H	C01S2	1-01 *	9-6/8	367
PK X02				H	F02K1	1-02 *		367
PK X02						1		
PK X03	1			H	C01T2	1-01 *	9-4/8	368
PK X03				H	F02J1	1-02 *		368
PK X03						1		
PK X04	1			H	C01U2	1-01 *	9-6/8	369
PK X04				H	F02M2	1-02 *		369
PK X04						1		
PK X05	1			H	C01V2	1-01 *	6-4/8	370
PK X05				H	E02K1	1-02 *		370
PK X05						1		
PK X06	1			H	D01B2	1-01 *	4-6/8	371
PK X06				H	E02A1	1-02 *		371
PK X06						1		
PK X07	1			H	D01J2	1-01 *	6-6/8	372
PK X07				H	F02A1	1-02 *		372
PK X07						1		
PK X08	1			H	D01H2	1-01 *	6-2/8	373
PK X08				H	E02U1	1-02 *		373
PK X08						1		
PK X09	1			H	D01T2	1-01 *	6-0/8	374
PK X09				H	F02B1	1-02 *		374
PK X09						1		
PK X10	1			H	D01C1	1-01 *	6-0/8	375
PK X10				H	E02U2	1-02 *		375
PK X10						1		
PK X11	1			H	D01R1	1-01 *	7-0/8	376
PK X11				H	F03E1	1-02 *		376
PK X11						1		

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN ORDER BAY - Q DRAW RV
NAME PIN ORDER

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PG Y X # REMARKS LENGTH EXCEPTIONS RUN NUMBER

PK X11	1			H	D01N1	1-01 *	7-0/8	377
PK X11				H	F03D1	1-02 *		377
PK X11						1		
PK Y00	1			H	C01L1	1-01 *	10-4/8	378
PK Y00				H	F02L1	1-02 *		378
PK Y00						1		
PK Y01	1			H	C01M1	1-01 *	10-4/8	379
PK Y01				H	F02K2	1-02 *		379
PK Y01						1		
PK Y02	1			H	C01N1	1-01 *	10-2/8	380
PK Y02				H	F02J2	1-02 *		380
PK Y02						1		
PK Y03	1			H	C01P1	1-01 *	10-2/8	381
PK Y03				H	F02L2	1-02 *		381
PK Y03						1		
PK Y04	1			H	C01R1	1-01 *	7-0/8	382
PK Y04				H	E02J1	1-02 *		382
PK Y04						1		
PK Y05	1			H	C01S1	1-01 *	6-2/8	383
PK Y05				H	E02C1	1-02 *		383
PK Y05						1		
PK Y06	1			H	C01U1	1-01 *	8-0/8	384
PK Y06				H	E02V1	1-02 *		384
PK Y06						1		
PK Y07	1			H	C01V1	1-01 *	7-6/8	385
PK Y07				H	E02T2	1-02 *		385
PK Y07						1		
PK Y08	1			H	D01A1	1-01 *	7-2/8	386
PK Y08				H	E02V2	1-02 *		386
PK Y08						1		
PK Y09	1			H	D01B1	1-01 *	6-4/8	387
PK Y09				H	E02P2	1-02 *		387
PK Y09						1		
PK Y10	1			H	D01S2	1-01 *	6-4/8	388
PK Y10				H	F03C1	1-02 *		388
PK Y10						1		

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
PR Y11	H	D01R2		1-01 *							1				389
PR Y11	H	E03V1		1-02 *											389
PR Y11				1									5-6/8		389
PVCS DELTA X	H	C01B1		1-01 *							1				390
PVCS DELTA X	H	D02M2		1-02 *											390
PVCS DELTA X				1									6-4/8		390
PVCS DELTA Y	H	A02M1		1-01 *							1				391
PVCS DELTA Y	H	C01D1		1-02 *											391
PVCS DELTA Y				1									7-0/8		391
PVCS DELTA Y	L	A02L1		1-01 *							1				392
PVCS DELTA Y	L	F03K1		1-02 *											392
PVCS DELTA Y				1									15-6/8		392
PVCS GRAPH	L	B02A1		1-01 *							1				393
PVCS GRAPH	L	D03E1		1-02 *							2				393
PVCS GRAPH	L	E01L2		1-03 *											393
PVCS GRAPH				1									14-0/8		393
PVCS INTENSITY LEVEL	H	A02V1		1-01 *							1				394
PVCS INTENSITY LEVEL	H	D03T2		1-02 *											394
PVCS INTENSITY LEVEL				1									10-4/8		394
PVCS LD DELTA Y	H	A02B1		1-01 *							1				395
PVCS LD DELTA Y	H	F01B2		1-02 *											395
PVCS LD DELTA Y				1									15-6/8		395
PVCS LOAD DELTA X	H	C02E2		1-01 *							1				396
PVCS LOAD DELTA X	H	E01M2		1-02 *											396
PVCS LOAD DELTA X				1									8-4/8		396
PVCS LOAD X	L	A02D1		1-01 *							1				397
PVCS LOAD X	L	D01P1		1-02 *											397
PVCS LOAD X				1									11-6/8		397
PVCS LOAD Y	L	B02P2		1-01 *							1				398
PVCS LOAD Y	L	C01K1		1-02 *											398
PVCS LOAD Y				1									4-6/8		398
PVCS POINT OR GRAPH GO		A02M2		1-01 *							1				399
PVCS POINT OR GRAPH GO		F03A1		1-02 *											399
PVCS POINT OR GRAPH GO				1									14-4/8		399

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
PVCS VEC*CHAR GO	H	A02T2		1-01 *							1				400
PVCS VEC*CHAR GO	H	B03T2		1-02 *											400
PVCS VEC*CHAR GO				1									5-2/8		400
PVCS XUP ENA	H	E03M2		1-01 *							1				401
PVCS XUP ENA	H	F02V2		1-02 *											401
PVCS XUP ENA				1									6-2/8		401
PVCS Y8,Y9	H	D02C1		1-01 *							1				402
PVCS Y8,Y9	H	F03L2		1-02 *											402
PVCS Y8,Y9				1									8-6/8		402
PWR SUPPLY L CLK INT	H	C04D1		1-01 *							1				403
PWR SUPPLY L CLK INT	H	F08V2	A02A1	1-02 *							2				403
PWR SUPPLY L CLK INT	H	A02A1		1-03 *											403
PWR SUPPLY L CLK INT				1									32-2/8		403
READ	H	C06U2		1-01 * H							1		P	HAND WIRE	404
READ	H	C07U2		1-02 *										TO HERE	404
READ				1									2-6/8		404
RES 1		E05C1		1-01 * H							1		P	HAND WIRE	405
RES 1		E06C1		1-02 *										TO HERE	405
RES 1				1									2-6/8		405
RES 2		E05B1		1-01 * H							1		P	HAND WIRE	406
RES 2		E06B1		1-02 *										TO HERE	406
RES 2				1									2-6/8		406
SABR CHAR SCALE (1)	H	B02M1									2			1-PIN RUN	407
SABR INC 00	H	C02N2		1-01 *							1				408
SABR INC 00	H	D01S1		1-02 *											408
SABR INC 00				1									5-6/8		408
SABR INC 01	H	C02S1		1-01 *							1				409
SABR INC 01	H	D01V1		1-02 *											409
SABR INC 01				1									5-6/8		409
SABR INC 02	H	D02A1		1-01 *							1				410
SABR INC 02	H	E01H2		1-02 *											410
SABR INC 02				1									5-6/8		410
SABR INC 03	H	D02B1		1-01 *							1				411
SABR INC 03	H	E01K2		1-02 *											411
SABR INC 03				1									6-0/8		411

SABR INC Ø4	H	C02N1		1-01 *						1				412
SABR INC Ø4	H	E01H1		1-02 *										412
SABR INC Ø4				1									7-2/8	412
SABR INC Ø5	H	C02L1		1-01 *						1				413
SABR INC Ø5	H	E01L1		1-02 *										413
SABR INC Ø5				1									7-6/8	413
SABR ITALICS (1)	H	C01B2		1-01 *						1				414
SABR ITALICS (1)	H	C02L2		1-02 *										414
SABR ITALICS (1)				1									3-4/8	414
SUM DELTA X00	H	D02K2		1-01 *						1				415
SUM DELTA X00	H	E01V2		1-02 *										415
SUM DELTA X00				1									6-2/8	415
SUM DELTA X01	H	D02H2		1-01 *						1				416
SUM DELTA X01	H	E01U2		1-02 *										416
SUM DELTA X01				1									6-2/8	416
SUM DELTA X02	H	C02V2		1-01 *						1				417
SUM DELTA X02	H	E01T2		1-02 *										417
SUM DELTA X02				1									7-4/8	417
SUM DELTA X03	H	C02S2		1-01 *						1				418
SUM DELTA X03	H	E01S2		1-02 *										418
SUM DELTA X03				1									7-6/8	418
SUM DELTA X04	H	C02V1		1-01 *						1				419
SUM DELTA X04	H	E01R2		1-02 *										419
SUM DELTA X04				1									7-2/8	419
SUM DELTA X05	H	C02U1		1-01 *						1				420
SUM DELTA X05	H	E01N1		1-02 *										420
SUM DELTA X05				1									7-2/8	420
SUM DELTA X06	H	D02L2		1-01 *						1				421
SUM DELTA X06	H	E01P1		1-02 *										421
SUM DELTA X06				1									5-4/8	421
SUM DELTA X07	H	D02J1		1-01 *						1				422
SUM DELTA X07	H	E01M1		1-02 *										422
SUM DELTA X07				1									5-4/8	422
SUM DELTA X08	H	D02L1		1-01 *						1				423
SUM DELTA X08	H	E01J1		1-02 *										423
SUM DELTA X08				1									4-6/8	423

SUM DELTA X09	H	D02H1		1-01 *						1				424
SUM DELTA X09	H	E01N2		1-02 *										424
SUM DELTA X09				1									5-4/8	424
SUM DELTA Y04	H	C02U2		1-01 *						1				425
SUM DELTA Y04	H	F01N1		1-02 *										425
SUM DELTA Y04				1									10-0/8	425
SUM DELTA Y05	H	C02R2		1-01 *						1				426
SUM DELTA Y05	H	F01J2		1-02 *										426
SUM DELTA Y05				1									9-6/8	426
SUM DELTA Y06	H	C02T2		1-01 *						1				427
SUM DELTA Y06	H	F01H2		1-02 *										427
SUM DELTA Y06				1									9-4/8	427
SUM DELTA Y07	H	C02P2		1-01 *						1				428
SUM DELTA Y07	H	F01F2		1-02 *										428
SUM DELTA Y07				1									9-6/8	428
SUM DELTA Y08	H	D02M1		1-01 *						1				429
SUM DELTA Y08	H	F01E2		1-02 *										429
SUM DELTA Y08				1									7-0/8	429
SUM DELTA Y09	H	D02J2		1-01 *						1				430
SUM DELTA Y09	H	F01D2		1-02 *										430
SUM DELTA Y09				1									7-2/8	430
SUM STATUS Ø0	H	B03A1		1-01 *						1				431
SUM STATUS Ø0	H	F02P2		1-02 *										431
SUM STATUS Ø0				1									14-4/8	431
SUM STATUS Ø1	H	B03C1		1-01 *						1				432
SUM STATUS Ø1	H	F02N1		1-02 *										432
SUM STATUS Ø1				1									14-2/8	432
SUM STATUS Ø2	H	B03F1		1-01 *						1				433
SUM STATUS Ø2	H	F02R2		1-02 *										433
SUM STATUS Ø2				1									14-0/8	433
SUM STATUS Ø3	H	B03D1		1-01 *						1				434
SUM STATUS Ø3	H	F02S1		1-02 *										434
SUM STATUS Ø3				1									14-4/8	434
SUM STATUS Ø4	H	B03U1		1-01 *						1				435
SUM STATUS Ø4	H	E02L2		1-02 *										435
SUM STATUS Ø4				1									9-2/8	435

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
SDM STATUS 05	H	B03V1		1-01 *							1				436
SDM STATUS 05	H	E02M1		1-02 *											436
SDM STATUS 05				1									9-4/8		436
SDM STATUS 06	H	C03D1		1-01 *							1				437
SDM STATUS 06	H	F02E1		1-02 *											437
SDM STATUS 06				1									10-6/8		437
SDM STATUS 07	H	C03A1		1-01 *							1				438
SDM STATUS 07	H	F02H1		1-02 *											438
SDM STATUS 07				1									11-2/8		438
SDM STATUS 08	H	C03P2		1-01 *							1				439
SDM STATUS 08	H	F02E2		1-02 *											439
SDM STATUS 08				1									9-4/8		439
SDM STATUS 09	H	C03T2		1-01 *							1				440
SDM STATUS 09	H	F02C1		1-02 *											440
SDM STATUS 09				1									9-0/8		440
SDM STATUS 10	H	C03U2		1-01 *							1				441
SDM STATUS 10	H	D02V2		1-02 *											441
SDM STATUS 10				1									5-4/8		441
SDM STATUS 11	H	C03M2		1-01 *							1				442
SDM STATUS 11	H	D02T2		1-02 *											442
SDM STATUS 11				1									6-0/8		442
SDM STATUS 12	H	D02V1		1-01 *							1				443
SDM STATUS 12	H	E03C1		1-02 *											443
SDM STATUS 12				1									3-2/8		443
SDM STATUS 13	H	D02S2		1-01 *							1				444
SDM STATUS 13	H	E03B1		1-02 *											444
SDM STATUS 13				1									3-4/8		444
SDM STATUS 14	H	D03U1		1-01 *							1				445
SDM STATUS 14	H	E02H2		1-02 *											445
SDM STATUS 14				1									3-6/8		445
SDM STATUS 15	H	E02D1		1-01 *							1				446
SDM STATUS 15	H	E03A1		1-02 *											446
SDM STATUS 15				1									3-0/8		446
TO LOAD PULSE	H	A02N2		1-01 *							1				447
TO LOAD PULSE	H	B03U2		1-02 *											447
TO LOAD PULSE				1									6-0/8		447

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
TO N,P,R, REQ (0)	H	A02E1		1-01 *							1				448
TO N,P,R, REQ (0)	H	F03R2		1-02 *											448
TO N,P,R, REQ (0)				1									17-0/8		448
THERM 1		E05A1		1-01 *	H						1		P	HAND WIRE	449
THERM 1		E06A1		1-02 *										TO HERE	449
THERM 1				1									2-6/8		449
TNAR	H	C06V2		1-01 *	H						1		P	HAND WIRE	450
TNAR	H	C07V2		1-02 *										TO HERE	450
TNAR				1									2-6/8		450
TWID	H	C06V1		1-01 *	H						1		P	HAND WIRE	451
TWID	H	C07V1		1-02 *										TO HERE	451
TWID				1									2-6/8		451
VG1 CHAR+GRAPH MODE	H	E03U1		1-01 *							1				452
VG1 CHAR+GRAPH MODE	H	F01E1		1-02 *											452
VG1 CHAR+GRAPH MODE				1									4-0/8		452
VG1 CLR DELTA REG	L	C03V2		1-01 *							1				453
VG1 CLR DELTA REG	L	F01S2		1-02 *											453
VG1 CLR DELTA REG				1									10-4/8		453
VG1 CLR FLAGS	L	A03N2		1-01 *							1				454
VG1 CLR FLAGS	L	B02B1		1-02 *											454
VG1 CLR FLAGS				1									4-2/8		454
VG1 COUNT CLK		E03P1		1-01 *							1				455
VG1 COUNT CLK		F01L1		1-02 *											455
VG1 COUNT CLK				1									5-0/8		455
VG1 ENABLE	L	D03J2		1-01 *							1				456
VG1 ENABLE	L	F01P1		1-02 *											456
VG1 ENABLE				1									8-6/8		456
VG1 LOAD DAC	H	C03R2		1-01 *							1				457
VG1 LOAD DAC	H	D01D2		1-02 *											457
VG1 LOAD DAC				1									4-2/8		457
VG1 LOAD DOWN COUNT	L	E01D1		1-01 *							1				458
VG1 LOAD DOWN COUNT	L	E03U2		1-02 *											458
VG1 LOAD DOWN COUNT				1									4-4/8		458
VG1 RESET	L	A02U1		1-01 *							1				459
VG1 RESET	L	A03K2		1-02 *											459
VG1 RESET				1									3-6/8		459

VG1 SHIFT CLK	H	D03E2		1-01 *						1					460
VG1 SHIFT CLK	H	E01P2		1-02 *											460
VG1 SHIFT CLK				1								6-2/8			460
VG1 UNLATCH	H	C01C1		1-01 *						1					461
VG1 UNLATCH	H	C03S2		1-02 *											461
VG1 UNLATCH				1								4-4/8			461
VG2 CLK X DOWN		D01M2		1-01 *						1					462
VG2 CLK X DOWN		E03E2		1-02 *											462
VG2 CLK X DOWN				1								4-4/8			462
VG2 CLK X UP		D01J1		1-01 *						1					463
VG2 CLK X UP		E03N1		1-02 *											463
VG2 CLK X UP				1								5-6/8			463
VG2 CLK Y DOWN		D01E2		1-01 *						1					464
VG2 CLK Y DOWN		D03V2		1-02 *											464
VG2 CLK Y DOWN				1								4-4/8			464
VG2 CLK Y UP		D01E1		1-01 *						1					465
VG2 CLK Y UP		F03V1		1-02 *											465
VG2 CLK Y UP				1								9-6/8			465
VG2 DOWN COUNT CLK	L	E01E2		1-01 *						1					466
VG2 DOWN COUNT CLK	L	E03J2	A02N1	1-02 *						2					466
VG2 DOWN COUNT CLK	L	A02N1		1-03 *											466
VG2 DOWN COUNT CLK				1								16-4/8			466
VG2 VEC GEN OP DONE		A02F2		1-01 *						1					467
VG2 VEC GEN OP DONE		B03R1		1-02 *											467
VG2 VEC GEN OP DONE				1								6-2/8			467
VR ANALOG +15V		A01D2												1=PIN RUN	468
VR ANALOG -15V		A01E2												1=PIN RUN	469
VR INTENSITY ENA	H	F01J1		1-01 *	2					2					470
VR INTENSITY ENA	H	A01B2		1-02 *						1					470
VR INTENSITY ENA	H	A02J2		1-03 *											470
VR INTENSITY ENA				1								19-6/8			470
XNWD0		F05K2		1-01 *	H					1		P		HAND WIRE	471
XNWD0		F06K2		1-02 *										TO HERE	471
XNWD0				1								2-6/8			471

XNWD1		F05L2		1-01 *	H					1		P		HAND WIRE	472
XNWD1		F06L2		1-02 *										TO HERE	472
XNWD1				1								2-6/8			472
XNWD2		F05M2		1-01 *	H					1		P		HAND WIRE	473
XNWD2		F06M2		1-02 *										TO HERE	473
XNWD2				1								2-6/8			473
XNWD3		F05N2		1-01 *	H					1		P		HAND WIRE	474
XNWD3		F06N2		1-02 *										TO HERE	474
XNWD3				1								2-6/8			474
XNWD4		F05P2		1-01 *	H					1		P		HAND WIRE	475
XNWD4		F06P2		1-02 *										TO HERE	475
XNWD4				1								2-6/8			475
XNWD5		F05R2		1-01 *	H					1		P		HAND WIRE	476
XNWD5		F06R2		1-02 *										TO HERE	476
XNWD5				1								2-6/8			476
XNWD6		F05S2		1-01 *	H					1		P		HAND WIRE	477
XNWD6		F06S2		1-02 *										TO HERE	477
XNWD6				1								2-6/8			477
XNWD7		F05T2		1-01 *	H					1		P		HAND WIRE	478
XNWD7		F06T2		1-02 *										TO HERE	478
XNWD7				1								2-6/8			478
XPRD0		F05L1		1-01 *	H					1		P		HAND WIRE	479
XPRD0		F06L1		1-02 *										TO HERE	479
XPRD0				1								2-6/8			479
XPRD1		F05M1		1-01 *	H					1		P		HAND WIRE	480
XPRD1		F06M1		1-02 *										TO HERE	480
XPRD1				1								2-6/8			480
XPRD2		F05N1		1-01 *	H					1		P		HAND WIRE	481
XPRD2		F06N1		1-02 *										TO HERE	481
XPRD2				1								2-6/8			481
XPRD3		F05P1		1-01 *	H					1		P		HAND WIRE	482
XPRD3		F06P1		1-02 *										TO HERE	482
XPRD3				1								2-6/8			482
XPRD4		F05R1		1-01 *	H					1		P		HAND WIRE	483
XPRD4		F06R1		1-02 *										TO HERE	483
XPRD4				1								2-6/8			483

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
XPRD5		F05S1		1-01 *	H			1		P	HAND WIRE	484
XPRD5		F06S1		1-02 *							TO HERE	484
XPRD5				1						2-6/8		484
XPRD6		F05U2		1-01 *	H			1		P	HAND WIRE	485
XPRD6		F06U2		1-02 *							TO HERE	485
XPRD6				1						2-6/8		485
XPRD7		F05V2		1-01 *	H			1		P	HAND WIRE	486
XPRD7		F06V2		1-02 *							TO HERE	486
XPRD7				1						2-6/8		486
XS 00		C05R2		1-01 *	H			1		P	HAND WIRE	487
XS 00		C06R2		1-02 *							TO HERE	487
XS 00				1						2-6/8		487
XS 01		C05S1		1-01 *	H			1		P	HAND WIRE	488
XS 01		C06S1		1-02 *							TO HERE	488
XS 01				1						2-6/8		488
XS 02		C05S2		1-01 *	H			1		P	HAND WIRE	489
XS 02		C06S2		1-02 *							TO HERE	489
XS 02				1						2-6/8		489
XS 03		C05T2		1-01 *	H			1		P	HAND WIRE	490
XS 03		C06T2		1-02 *							TO HERE	490
XS 03				1						2-6/8		490
XS 04		F05C1		1-01 *	H			1		P	HAND WIRE	491
XS 04		F06C1		1-02 *							TO HERE	491
XS 04				1						2-6/8		491
XS 05		F05D1		1-01 *	H			1		P	HAND WIRE	492
XS 05		F06D1		1-02 *							TO HERE	492
XS 05				1						2-6/8		492
XS 06		F05D2		1-01 *	H			1		P	HAND WIRE	493
XS 06		F06D2		1-02 *							TO HERE	493
XS 06				1						2-6/8		493
XS 07		F05E1		1-01 *	H			1		P	HAND WIRE	494
XS 07		F06E1		1-02 *							TO HERE	494
XS 07				1						2-6/8		494
XS 08		F05E2		1-01 *	H			1		P	HAND WIRE	495
XS 08		F06E2		1-02 *							TO HERE	495
XS 08				1						2-6/8		495

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
XS 09		F05F1		1-01 *	H			1		P	HAND WIRE	496
XS 09		F06F1		1-02 *							TO HERE	496
XS 09				1						2-6/8		496
XS 10		F05F2		1-01 *	H			1		P	HAND WIRE	497
XS 10		F06F2		1-02 *							TO HERE	497
XS 10				1						2-6/8		497
XS 11		F05H1		1-01 *	H			1		P	HAND WIRE	498
XS 11		F06H1		1-02 *							TO HERE	498
XS 11				1						2-6/8		498
XS 12		F05H2		1-01 *	H			1		P	HAND WIRE	499
XS 12		F06H2		1-02 *							TO HERE	499
XS 12				1						2-6/8		499
XS 13		F05J1		1-01 *	H			1		P	HAND WIRE	500
XS 13		F06J1		1-02 *							TO HERE	500
XS 13				1						2-6/8		500
XS 14		F05J2		1-01 *	H			1		P	HAND WIRE	501
XS 14		F06J2		1-02 *							TO HERE	501
XS 14				1						2-6/8		501
XS 15		F05K1		1-01 *	H			1		P	HAND WIRE	502
XS 15		F06K1		1-02 *							TO HERE	502
XS 15				1						2-6/8		502
YNWD0		C05B1		1-01 *	H			1		P	HAND WIRE	503
YNWD0		C06B1		1-02 *							TO HERE	503
YNWD0				1						2-6/8		503
YNWD1		C05D2		1-01 *	H			1		P	HAND WIRE	504
YNWD1		C06D2		1-02 *							TO HERE	504
YNWD1				1						2-6/8		504
YNWD2		C05E2		1-01 *	H			1		P	HAND WIRE	505
YNWD2		C06E2		1-02 *							TO HERE	505
YNWD2				1						2-6/8		505
YNWD3		C05F2		1-01 *	H			1		P	HAND WIRE	506
YNWD3		C06F2		1-02 *							TO HERE	506
YNWD3				1						2-6/8		506
YNWD4		C05H2		1-01 *	H			1		P	HAND WIRE	507
YNWD4		C06H2		1-02 *							TO HERE	507
YNWD4				1						2-6/8		507

YNWD5		C05J2	1-01 *	H				1		P		HAND WIRE	508
YNWD5		C06J2	1-02 *									TO HERE	508
YNWD5			1								2-6/8		508
YNWD6		C05K2	1-01 *	H				1		P		HAND WIRE	509
YNWD6		C06K2	1-02 *									TO HERE	509
YNWD6			1								2-6/8		509
YNWD7		C05L2	1-01 *	H				1		P		HAND WIRE	510
YNWD7		C06L2	1-02 *									TO HERE	510
YNWD7			1								2-6/8		510
YPRD0		C05A1	1-01 *	H				1		P		HAND WIRE	511
YPRD0		C06A1	1-02 *									TO HERE	511
YPRD0			1								2-6/8		511
YPRD1		C05C1	1-01 *	H				1		P		HAND WIRE	512
YPRD1		C06C1	1-02 *									TO HERE	512
YPRD1			1								2-6/8		512
YPRD2		C05D1	1-01 *	H				1		P		HAND WIRE	513
YPRD2		C06D1	1-02 *									TO HERE	513
YPRD2			1								2-6/8		513
YPRD3		C05E1	1-01 *	H				1		P		HAND WIRE	514
YPRD3		C06E1	1-02 *									TO HERE	514
YPRD3			1								2-6/8		514
YPRD4		C05F1	1-01 *	H				1		P		HAND WIRE	515
YPRD4		C06F1	1-02 *									TO HERE	515
YPRD4			1								2-6/8		515
YPRD5		C05H1	1-01 *	H				1		P		HAND WIRE	516
YPRD5		C06H1	1-02 *									TO HERE	516
YPRD5			1								2-6/8		516
YPRD6		C05J1	1-01 *	H				1		P		HAND WIRE	517
YPRD6		C06J1	1-02 *									TO HERE	517
YPRD6			1								2-6/8		517
YPRD7		C05K1	1-01 *	H				1		P		HAND WIRE	518
YPRD7		C06K1	1-02 *									TO HERE	518
YPRD7			1								2-6/8		518
YS 00		C05L1	1-01 *	H				1		P		HAND WIRE	519
YS 00		C06L1	1-02 *									TO HERE	519
YS 00			1								2-6/8		519

YS 01		C05M1	1-01 *	H				1		P		HAND WIRE	520
YS 01		C06M1	1-02 *									TO HERE	520
YS 01			1								2-6/8		520
YS 02		C05M2	1-01 *	H				1		P		HAND WIRE	521
YS 02		C06M2	1-02 *									TO HERE	521
YS 02			1								2-6/8		521
YS 03		C05N1	1-01 *	H				1		P		HAND WIRE	522
YS 03		C06N1	1-02 *									TO HERE	522
YS 03			1								2-6/8		522
YS 04		C05N2	1-01 *	H				1		P		HAND WIRE	523
YS 04		C06N2	1-02 *									TO HERE	523
YS 04			1								2-6/8		523
YS 05		C05P1	1-01 *	H				1		P		HAND WIRE	524
YS 05		C06P1	1-02 *									TO HERE	524
YS 05			1								2-6/8		524
YS 06		C05P2	1-01 *	H				1		P		HAND WIRE	525
YS 06		C06P2	1-02 *									TO HERE	525
YS 06			1								2-6/8		525
YS 07		C05R1	1-01 *	H				1		P		HAND WIRE	526
YS 07		C06R1	1-02 *									TO HERE	526
YS 07			1								2-6/8		526

ERROR LISTING

HND288,V17(17) 06/22/72

WIRE WRAP RUN NAME	A/P PIN NAME	ORDER PIN ORDER	BAY - Q DRAW RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 1 RUN NUMBER
+15V	E09P2	1-01 * H	H	2	2	24 AWG	P	HAND WIRE	1
+15V	F01R2	1-02 * H	H	1	1	24AWG	P	HAND WIRE	1
+15V	D03R2	1-03 * H	H	2	2	24AWG	P	HAND WIRE	1
+15V	C04U1	1-04 * H	H	1	2	24AWG	P	TO HERE	1
+5 VDC	A01A2	1-01 * H	H	2	2		P	HAND WIRE	2
+5 VDC	A02A2	1-02 * H	H	1	2		P	HAND WIRE	2
+5 VDC	A03A2	1-03 * H	H	2	2		P	HAND WIRE	2
+5 VDC	A04A2	1-04 * H	H	1	2		P	HAND WIRE	2
+5 VDC	A05A2	1-05 * H	H	2	2		P	HAND WIRE	2
+5 VDC	A06A2	1-06 * H	H	1	2		P	HAND WIRE	2
+5 VDC	A07A2	1-07 * H	H	2	2		P	HAND WIRE	2
+5 VDC	A09A2	1-08 * H	H	1	2		P	HAND WIRE	2
+5 VDC	A08A2	1-09 * H	H	2	2		P	HAND WIRE	2
+5 VDC	B09A2	1-10 * H	H	1	2		P	HAND WIRE	2
+5 VDC	B08A2	1-11 * H	H	2	2		P	HAND WIRE	2
+5 VDC	B07A2	1-12 * H	H	1	2		P	HAND WIRE	2
+5 VDC	B06A2	1-13 * H	H	2	2		P	HAND WIRE	2
+5 VDC	B05A2	1-14 * H	H	1	2		P	HAND WIRE	2
+5 VDC	B04A2	1-15 * H	H	2	2		P	HAND WIRE	2
+5 VDC	B03A2	1-16 * H	H	1	2		P	HAND WIRE	2
+5 VDC	B02A2	1-17 * H	H	2	2		P	HAND WIRE	2
+5 VDC	B01B1	1-18 * H	H	1	2		P	HAND WIRE	2
+5 VDC	B01A2	1-19 * H	H	2	2		P	HAND WIRE	2
+5 VDC	C01A2	1-20 * H	H	1	2		P	HAND WIRE	2
+5 VDC	C02A2	1-21 * H	H	2	2		P	HAND WIRE	2
+5 VDC	C03A2	1-22 * H	H	1	2		P	HAND WIRE	2
+5 VDC	C04A2	1-23 * H	H	2	2		P	HAND WIRE	2
+5 VDC	C05A2	1-24 * H	H	1	2		P	HAND WIRE	2
+5 VDC	C06A2	1-25 * H	H	2	2		P	HAND WIRE	2
+5 VDC	C07A2	1-26 * H	H	1	2		P	HAND WIRE	2
+5 VDC	C08A2	1-27 * H	H	2	2		P	HAND WIRE	2
+5 VDC	C09A2	1-28 * H	H	1	2		P	HAND WIRE	2
+5 VDC	D09A2	1-29 * H	H	2	2		P	HAND WIRE	2
+5 VDC	D08A2	1-30 * H	H	1	2		P	HAND WIRE	2
+5 VDC	D07A2	1-31 * H	H	2	2		P	HAND WIRE	2
+5 VDC	D06A2	1-32 * H	H	1	2		P	HAND WIRE	2
+5 VDC	D05A2	1-33 * H	H	2	2		P	HAND WIRE	2
+5 VDC	D04A2	1-34 * H	H	1	2		P	HAND WIRE	2
+5 VDC	D03A2	1-35 * H	H	2	2		P	HAND WIRE	2
+5 VDC	D02A2	1-36 * H	H	1	2		P	HAND WIRE	2
+5 VDC	D01A2	1-37 * H	H	2	2		P	HAND WIRE	2
+5 VDC	E01A2	1-38 * H	H	1	2		P	HAND WIRE	2
+5 VDC	E02A2	1-39 * H	H	2	2		P	HAND WIRE	2
+5 VDC	E03A2	1-40 * H	H	1	2		P	HAND WIRE	2
+5 VDC	E04A2	1-41 * H	H	2	2		P	HAND WIRE	2
+5 VDC	E05A2	1-42 * H	H	1	2		P	HAND WIRE	2
+5 VDC	E06A2	1-43 * H	H	2	2		P	HAND WIRE	2
+5 VDC	E07A2	1-44 * H	H	1	2		P	HAND WIRE	2
+5 VDC	E08A2	1-45 * H	H	2	2		P	HAND WIRE	2
+5 VDC	E09A2	1-46 * H	H	1	2		P	HAND WIRE	2
+5 VDC	F09A2	1-47 * H	H	2	2		P	HAND WIRE	2
+5 VDC	F08A2	1-48 * H	H	1	2		P	HAND WIRE	2
+5 VDC	F07A2	1-49 * H	H	2	2		P	HAND WIRE	2

GT40,B

ERROR LISTING

HND288,V17(17) 06/22/72

RUN NAME	A/P PIN NAME	ORDER PIN ORDER	BAY - Q DRAW RV PG Y	X	Z	REMARKS	1-MAR-73 LENGTH	6152 EXCEPTIONS	PAGE 2 RUN NUMBER
+5 VDC	F06A2	1-50 * H	H	1	2		P	HAND WIRE	2

GT40,B
RUN NAME

HND288,V17(17) 06/22/72

1=MAR=73

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	≠	REMARKS	LENGTH	6152 EXCEPTIONS	RUN NUMBER
+5 VDC		F05A2		1-51 *	H						2		P	HAND WIRE	2
+5 VDC		F04A2		1-52 *	H						1		P	HAND WIRE	2
+5 VDC		F03A2		1-53 *	H						2		P	HAND WIRE	2
+5 VDC		F02A2		1-54 *	H						1		P	HAND WIRE	2
+5 VDC		F01A2		1-55 *	H								P	H TO WHERE	2
-15V		C07B2		1-01 *	H						2		P	HAND WIRE	3
-15V		C06B2		1-02 *	H						1		P	HAND WIRE	3
-15V		C05B2		1-03 *	H						2		P	HAND WIRE	3
-15V		C04B2		1-04 *	H						1		P	HAND WIRE	3
-15V		D04B2		1-05 *	H						2		P	HAND WIRE	3
-15V		D05B2		1-06 *	H						1		P	HAND WIRE	3
-15V		D06B2		1-07 *	H						2		P	HAND WIRE	3
-15V		D07B2		1-08 *	H						1		P	HAND WIRE	3
-15V		E07B2		1-09 *	H						2		P	HAND WIRE	3
-15V		E06B2		1-10 *	H						1		P	HAND WIRE	3
-15V		E05B2		1-11 *	H						2		P	HAND WIRE	3
-15V		E04B2		1-12 *	H						1		P	HAND WIRE	3
-15V		F04B2		1-13 *	H						2		P	HAND WIRE	3
-15V		F05B2		1-14 *	H						1		P	HAND WIRE	3
-15V		F06B2		1-15 *	H						2		P	HAND WIRE	3
-15V		F07B2		1-16 *	H						1		P	HAND WIRE	3
-15V		F09B2		1-17 *										TO HERE	3
00 IN		E05U2		1-01 *	H						2		P	HAND WIRE	4
00 IN		E06U2		1-02 *	H						1		P	HAND WIRE	4
00 IN		E07U2		1-03 *										TO HERE	4
00 SA		E05V1		1-01 *	H						2		P	HAND WIRE	5
00 SA		E06V1		1-02 *	H						1		P	HAND WIRE	5
00 SA		E07V1		1-03 *										TO HERE	5
00 SB		E05V2		1-01 *	H						2		P	HAND WIRE	6
00 SB		E06V2		1-02 *	H						1		P	HAND WIRE	6
00 SB		E07V2		1-03 *										TO HERE	6
01 IN		E07R1		1-01 *	H						2		P	HAND WIRE	7
01 IN		E06R1		1-02 *	H						1		P	HAND WIRE	7
01 IN		E05R1		1-03 *										TO HERE	7
01 SA		E05P1		1-01 *	H						2		P	HAND WIRE	8
01 SA		E06P1		1-02 *	H						1		P	HAND WIRE	8
01 SA		E07P1		1-03 *										TO HERE	8
01 SB		E05P2		1-01 *	H						2		P	HAND WIRE	9
01 SB		E06P2		1-02 *	H						1		P	HAND WIRE	9
01 SB		E07P2		1-03 *										TO HERE	9
02 IN		E05M1		1-01 *	H						2		P	HAND WIRE	10
02 IN		E06M1		1-02 *	H						1		P	HAND WIRE	10
02 IN		E07M1		1-03 *										TO HERE	10
02 SA		E05L1		1-01 *	H						2		P	HAND WIRE	11
02 SA		E06L1		1-02 *	H						1		P	HAND WIRE	11
02 SA		E07L1		1-03 *										TO HERE	11
02 SB		E05L2		1-01 *	H						2		P	HAND WIRE	12
02 SB		E06L2		1-02 *	H						1		P	HAND WIRE	12

ERROR LISTING

GT40,B
RUN NAME

HND288,V17(17) 06/22/72

1=MAR=73

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	≠	REMARKS	LENGTH	6152 EXCEPTIONS	RUN NUMBER
02 SB		E07L2		1-03 *										TO HERE	12
03 IN		E05J1		1-01 *	H						2		P	HAND WIRE	13
03 IN		E06J1		1-02 *	H						1		P	HAND WIRE	13
03 IN		E07J1		1-03 *										TO HERE	13
03 SA		E05H1		1-01 *	H						2		P	HAND WIRE	14
03 SA		E06H1		1-02 *	H						1		P	HAND WIRE	14
03 SA		E07H1		1-03 *										TO HERE	14
03 SB		E05H2		1-01 *	H						2		P	HAND WIRE	15
03 SB		E06H2		1-02 *	H						1		P	HAND WIRE	15
03 SB		E07H2		1-03 *										TO HERE	15
04 IN		E05R2		1-01 *	H						2		P	HAND WIRE	16
04 IN		E06R2		1-02 *	H						1		P	HAND WIRE	16
04 IN		E07R2		1-03 *										TO HERE	16
04 SA		E05S1		1-01 *	H						2		P	HAND WIRE	17
04 SA		E06S1		1-02 *	H						1		P	HAND WIRE	17
04 SA		E07S1		1-03 *										TO HERE	17
04 SB		E05S2		1-01 *	H						2		P	HAND WIRE	18
04 SB		E06S2		1-02 *	H						1		P	HAND WIRE	18
04 SB		E07S2		1-03 *										TO HERE	18
05 IN		E05M2		1-01 *	H						2		P	HAND WIRE	19
05 IN		E06M2		1-02 *	H						1		P	HAND WIRE	19
05 IN		E07M2		1-03 *										TO HERE	19
05 SA		E05N1		1-01 *	H						2		P	HAND WIRE	20
05 SA		E06N1		1-02 *	H						1		P	HAND WIRE	20
05 SA		E07N1		1-03 *										TO HERE	20
05 SB		E05N2		1-01 *	H						2		P	HAND WIRE	21
05 SB		E06N2		1-02 *	H						1		P	HAND WIRE	21
05 SB		E07N2		1-03 *										TO HERE	21
06 IN		E05J2		1-01 *	H						2		P	HAND WIRE	22
06 IN		E06J2		1-02 *	H						1		P	HAND WIRE	22
06 IN		E07J2		1-03 *										TO HERE	22
06 SA		E05K1		1-01 *	H						2		P	HAND WIRE	23
06 SA		E06K1		1-02 *	H						1		P	HAND WIRE	23
06 SA		E07K1		1-03 *										TO HERE	23
06 SB		E05K2		1-01 *	H						2		P	HAND WIRE	24
06 SB		E06K2		1-02 *	H						1		P	HAND WIRE	24
06 SB		E07K2		1-03 *										TO HERE	24
07 IN		E05E2		1-01 *	H						2		P	HAND WIRE	25
07 IN		E06E2		1-02 *	H						1		P	HAND WIRE	25
07 IN		E07E2		1-03 *										TO HERE	25
07 SA		E05F1		1-01 *	H						2		P	HAND WIRE	26
07 SA		E06F1		1-02 *	H						1		P	HAND WIRE	26
07 SA		E07F1		1-03 *										TO HERE	26
07 SB		E05F2		1-01 *	H						2		P	HAND WIRE	27
07 SB		E06F2		1-02 *	H						1		P	HAND WIRE	27
07 SB		E07F2		1-03 *										TO HERE	27
08 IN		E05E1		1-01 *	H						2		P	HAND WIRE	28
08 IN		E06E1		1-02 *	H						1		P	HAND WIRE	28
08 IN		E07E1		1-03 *										TO HERE	28
08 SA		E05D1		1-01 *	H						2		P	HAND WIRE	29
08 SA		E06D1		1-02 *	H						1		P	HAND WIRE	29
08 SA		E07D1		1-03 *										TO HERE	29
08 SB		E05D2		1-01 *	H						2		P	HAND WIRE	30

ERROR LISTING

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN NAME

X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
08	$B	E06D2			
08	$B	E07D2			
09	IN	D05U2			
09	IN	D06U2			
09	IN	D07U2			
09	$A	D05V1			
09	$A	D06V1			
09	$A	D07V1			
09	$B	D05V2			
09	$B	D06V2			
09	$B	D07V2			
10	IN	D05R1			
10	IN	D06R1			
10	IN	D07R1			
10	$A	D06P1			
10	$A	D07P1			
10	$B	D05P2			
10	$B	D06P2			
11	IN	D05M1			
11	IN	D06M1			
11	IN	D07M1			
11	$A	D05L1			
11	$A	D06L1			
11	$A	D07L1			
11	$B	D05L2			
11	$B	D06L2			
11	$B	D07L2			
12	IN	D05J1			
12	IN	D06J1			
12	IN	D07J1			
12	$A	D05H1			
12	$A	D06H1			
12	$A	D07H1			
12	$B	D05H2			
12	$B	D06H2			
12	$B	D07H2			
13	IN	D05R2			
13	IN	D06R2			
13	IN	D07R2			
13	$A	D05S1			
13	$A	D06S1			
13	$A	D07S1			
13	$B	D05S2			
13	$B	D06S2			
13	$B	D07S2			
14	IN	D05M2			
14	IN	D06M2			
14	IN	D07M2			
14	$A	D05N1			
14	$A	D06N1			
14	$A	D07N1			
14	$B	D05N2			
14	$B	D06N2			

X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
1	P	HAND WIRE			30
2	P	TO HERE			30
1	P	HAND WIRE			31
2	P	TO HERE			31
1	P	HAND WIRE			32
2	P	HAND WIRE			32
1	P	TO HERE			32
2	P	HAND WIRE			33
1	P	HAND WIRE			33
2	P	TO HERE			33
1	P	HAND WIRE			34
2	P	HAND WIRE			34
1	P	TO HERE			34
2	P	HAND WIRE			35
1	P	TO HERE			35
2	P	HAND WIRE			36
1	P	TO HERE			36
2	P	HAND WIRE			37
1	P	HAND WIRE			37
2	P	TO HERE			37
1	P	HAND WIRE			38
2	P	HAND WIRE			38
1	P	TO HERE			38
2	P	HAND WIRE			39
1	P	HAND WIRE			39
2	P	TO HERE			39
1	P	HAND WIRE			40
2	P	HAND WIRE			40
1	P	TO HERE			40
2	P	HAND WIRE			41
1	P	HAND WIRE			41
2	P	TO HERE			41
1	P	HAND WIRE			42
2	P	HAND WIRE			42
1	P	TO HERE			42
2	P	HAND WIRE			43
1	P	HAND WIRE			43
2	P	TO HERE			43
1	P	HAND WIRE			44
2	P	HAND WIRE			44
1	P	TO HERE			44
2	P	HAND WIRE			45
1	P	HAND WIRE			45
2	P	TO HERE			45
1	P	HAND WIRE			46
2	P	HAND WIRE			46
1	P	TO HERE			46
2	P	HAND WIRE			47
1	P	HAND WIRE			47
2	P	TO HERE			47
1	P	HAND WIRE			48
2	P	HAND WIRE			48

X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
2	P	TO HERE			48
1	P	HAND WIRE			49
2	P	TO HERE			49
1	P	HAND WIRE			50
2	P	TO HERE			50
1	P	HAND WIRE			51
2	P	TO HERE			51
1	P	HAND WIRE			67
2	P	TO HERE			67
1	P	HAND WIRE			97
2	P	HAND WIRE			97
1	P	HAND WIRE			97
2	P	TO HERE			97
1	P	HAND WIRE			98
2	P	HAND WIRE			98
1	P	HAND WIRE			98
2	P	TO HERE			98
1	P	HAND WIRE			99
2	P	HAND WIRE			99
1	P	HAND WIRE			99
2	P	TO HERE			99
1	P	HAND WIRE			100
2	P	HAND WIRE			100
1	P	HAND WIRE			100
2	P	TO HERE			100
1	P	HAND WIRE			101
2	P	HAND WIRE			101
1	P	HAND WIRE			101
2	P	TO HERE			101
1	P	HAND WIRE			102
2	P	HAND WIRE			102
1	P	HAND WIRE			102
2	P	TO HERE			102
1	P	HAND WIRE			103
2	P	HAND WIRE			103
1	P	HAND WIRE			103
2	P	TO HERE			103
1	P	HAND WIRE			104
2	P	HAND WIRE			104
1	P	HAND WIRE			104
2	P	TO HERE			104
1	P	HAND WIRE			105

ERROR LISTING

GT40,B
RUN NAME

HND288,V17(17) 06/22/72
A/P PIN NAME

X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
14	$B	D07N2			
15	IN	D05J2			
15	IN	D06J2			
15	IN	D07J2			
15	$A	D05K1			
15	$A	D06K1			
15	$A	D07K1			
15	$B	D05K2			
15	$B	D06K2			
15	$B	D07K2			
A01		D06A1			
A01		D07A1			
BUS	A00	B09H2			
BUS	A00	B05H2			
BUS	A00	B07H2			
BUS	A00	B08H2			
BUS	A01	B08H1			
BUS	A01	B07H1			
BUS	A01	B06H1			
BUS	A01	B05H1			
BUS	A02	B09J2			
BUS	A02	B08J2			
BUS	A02	B07J2			
BUS	A02	B05J2			
BUS	A03	B09J1			
BUS	A03	B08J1			
BUS	A03	B07J1			
BUS	A03	B06J1			
BUS	A04	B05J1			
BUS	A04	B09K2			
BUS	A04	B08K2			
BUS	A04	B07K2			
BUS	A04	B06K2			
BUS	A05	B05K2			
BUS	A05	B09K1			
BUS	A05	B08K1			
BUS	A05	B07K1			
BUS	A05	B06K1			
BUS	A06	B05K1			
BUS	A06	B09L2			
BUS	A06	B08L2			
BUS	A06	B07L2			
BUS	A06	B06L2			
BUS	A07	B05L2			
BUS	A07	B09L1			
BUS	A07	B08L1			
BUS	A07	B07L1			
BUS	A07	B06L1			
BUS	A08	B05L1			
BUS	A08	B09M2			

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	E	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A08	L	B08M2		1-02 *	H			1		P	HAND WIRE	105
BUS A08	L	B07M2		1-03 *	H			2		P	HAND WIRE	105
BUS A08	L	B06M2		1-04 *	H			1		P	HAND WIRE	105
BUS A08	L	B05M2		1-05 *				2			TO HERE	105
BUS A09	L	B09M1		1-01 *	H			1		P	HAND WIRE	106
BUS A09	L	B08M1		1-02 *	H			2		P	HAND WIRE	106
BUS A09	L	B07M1		1-03 *	H			1		P	HAND WIRE	106
BUS A09	L	B06M1		1-04 *	H			2		P	HAND WIRE	106
BUS A09	L	B05M1		1-05 *				1			TO HERE	106
BUS A10	L	B09N2		1-01 *	H			1		P	HAND WIRE	107
BUS A10	L	B08N2		1-02 *	H			2		P	HAND WIRE	107
BUS A10	L	B07N2		1-03 *	H			1		P	HAND WIRE	107
BUS A10	L	B06N2		1-04 *	H			2		P	HAND WIRE	107
BUS A10	L	B05N2		1-05 *				1			TO HERE	107
BUS A11	L	B09N1		1-01 *	H			1		P	HAND WIRE	108
BUS A11	L	B08N1		1-02 *	H			2		P	HAND WIRE	108
BUS A11	L	B07N1		1-03 *	H			1		P	HAND WIRE	108
BUS A11	L	B06N1		1-04 *	H			2		P	HAND WIRE	108
BUS A11	L	B05N1		1-05 *				1			TO HERE	108
BUS A12	L	B09P2		1-01 *	H			1		P	HAND WIRE	109
BUS A12	L	B08P2		1-02 *	H			2		P	HAND WIRE	109
BUS A12	L	B07P2		1-03 *	H			1		P	HAND WIRE	109
BUS A12	L	B06P2		1-04 *	H			2		P	HAND WIRE	109
BUS A12	L	B05P2		1-05 *				1			TO HERE	109
BUS A13	L	B09P1		1-01 *	H			1		P	HAND WIRE	110
BUS A13	L	B08P1		1-02 *	H			2		P	HAND WIRE	110
BUS A13	L	B07P1		1-03 *	H			1		P	HAND WIRE	110
BUS A13	L	B06P1		1-04 *	H			2		P	HAND WIRE	110
BUS A13	L	B05P1		1-05 *				1			TO HERE	110
BUS A14	L	B09R2		1-01 *	H			1		P	HAND WIRE	111
BUS A14	L	B08R2		1-02 *	H			2		P	HAND WIRE	111
BUS A14	L	B07R2		1-03 *	H			1		P	HAND WIRE	111
BUS A14	L	B06R2		1-04 *	H			2		P	HAND WIRE	111
BUS A14	L	B05R2		1-05 *				1			TO HERE	111
BUS A15	L	B09R1		1-01 *	H			1		P	HAND WIRE	112
BUS A15	L	B08R1		1-02 *	H			2		P	HAND WIRE	112
BUS A15	L	B07R1		1-03 *	H			1		P	HAND WIRE	112
BUS A15	L	B06R1		1-04 *	H			2		P	HAND WIRE	112
BUS A15	L	B05R1		1-05 *				1			TO HERE	112
BUS A16	L	B09S2		1-01 *	H			1		P	HAND WIRE	113
BUS A16	L	B08S2		1-02 *	H			2		P	HAND WIRE	113
BUS A16	L	B07S2		1-03 *	H			1		P	HAND WIRE	113
BUS A16	L	B06S2		1-04 *	H			2		P	HAND WIRE	113
BUS A16	L	B05S2		1-05 *				1			TO HERE	113
BUS A17	L	B09S1		1-01 *	H			1		P	HAND WIRE	114
BUS A17	L	B08S1		1-02 *	H			2		P	HAND WIRE	114
BUS A17	L	B07S1		1-03 *	H			1		P	HAND WIRE	114
BUS A17	L	B06S1		1-04 *	H			2		P	HAND WIRE	114
BUS A17	L	B05S1		1-05 *				1			TO HERE	114
BUS AC LO	L	B05F1		1-01 *	H			1		P	HAND WIRE	115
BUS AC LO	L	B06F1		1-02 *	H			2		P	HAND WIRE	115
BUS AC LO	L	B07F1		1-03 *	H			1		P	HAND WIRE	115
BUS AC LO	L	B08F1		1-04 *	H			2		P	HAND WIRE	115

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	E	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS AC LO	L	B09F1		1-05 *				1			TO HERE	115
BUS BBSY	L	A09P2		1-01 *	H			2		P	HAND WIRE	116
BUS BBSY	L	A08P2		1-02 *	H			1		P	HAND WIRE	116
BUS BBSY	L	A07P2		1-03 *	H			2		P	HAND WIRE	116
BUS BBSY	L	A06P2		1-04 *	H			1		P	HAND WIRE	116
BUS BBSY	L	A05P2		1-05 *				2			TO HERE	116
BUS BG 05	H	B06B1		1-01 *	H			2		P	HAND WIRE	118
BUS BG 05	H	B07B1		1-02 *	H			1		P	HAND WIRE	118
BUS BG 05	H	B08B1		1-03 *	H			2		P	HAND WIRE	118
BUS BG 05	H	B09B1		1-04 *				1			TO HERE	118
BUS BG 4	H	B06E2		1-01 *	H			2		P	HAND WIRE	120
BUS BG 4	H	B07E2		1-02 *	H			1		P	HAND WIRE	120
BUS BG 4	H	B08E2		1-03 *	H			2		P	HAND WIRE	120
BUS BG 4	H	B09E2		1-04 *				1			TO HERE	120
BUS BG 6	H	B06A1		1-01 *	H			2		P	HAND WIRE	123
BUS BG 6	H	B07A1		1-02 *	H			1		P	HAND WIRE	123
BUS BG 6	H	B08A1		1-03 *	H			2		P	HAND WIRE	123
BUS BG 6	H	B09A1		1-04 *				1			TO HERE	123
BUS BG 7	H	A06V1		1-01 *	H			2		P	HAND WIRE	126
BUS BG 7	H	A07V1		1-02 *	H			1		P	HAND WIRE	126
BUS BG 7	H	A08V1		1-03 *	H			2		P	HAND WIRE	126
BUS BG 7	H	A09V1		1-04 *				1			TO HERE	126
BUS BR 4	L	B05D2		1-01 *	H			1		P	HAND WIRE	129
BUS BR 4	L	B06D2		1-02 *	H			2		P	HAND WIRE	129
BUS BR 4	L	B07D2		1-03 *	H			1		P	HAND WIRE	129
BUS BR 4	L	B08D2		1-04 *	H			2		P	HAND WIRE	129
BUS BR 4	L	B09D2		1-05 *				1			TO HERE	129
BUS BR 5	L	B05C1		1-01 *	H			1		P	HAND WIRE	130
BUS BR 5	L	B06C1		1-02 *	*			2		P	TO HERE	130
BUS BR 5	L	B07C1		1-03 *	H			1		P	HAND WIRE	130
BUS BR 5	L	B08C1		1-04 *	H			2		P	HAND WIRE	130
BUS BR 5	L	B09C1		1-05 *				1			TO HERE	130
BUS BR 6	L	A05U2		1-01 *	H			1		P	HAND WIRE	131
BUS BR 6	L	A06U2		1-02 *	H			2		P	HAND WIRE	131
BUS BR 6	L	A07U2		1-03 *	H			1		P	HAND WIRE	131
BUS BR 6	L	A08U2		1-04 *	H			2		P	HAND WIRE	131
BUS BR 6	L	A09U2		1-05 *				1			TO HERE	131
BUS BR 7	L	A05T2		1-01 *	H			1		P	HAND WIRE	132
BUS BR 7	L	A06T2		1-02 *	H			2		P	HAND WIRE	132
BUS BR 7	L	A07T2		1-03 *	H			1		P	HAND WIRE	132
BUS BR 7	L	A08T2		1-04 *	H			2		P	HAND WIRE	132
BUS BR 7	L	A09T2		1-05 *				1			TO HERE	132
BUS C0	L	B05U2		1-01 *	H			1		P	HAND WIRE	133
BUS C0	L	B06U2		1-02 *	H			2		P	HAND WIRE	133
BUS C0	L	B07U2		1-03 *	H			1		P	HAND WIRE	133
BUS C0	L	B08U2		1-04 *	H			2		P	HAND WIRE	133
BUS C0	L	B09U2		1-05 *				1			TO HERE	133
BUS C1	L	B05T2		1-01 *	H			2		P	HAND WIRE	134
BUS C1	L	B06T2		1-02 *	H			1		P	HAND WIRE	134
BUS C1	L	B07T2		1-03 *	H			2		P	HAND WIRE	134
BUS C1	L	B08T2		1-04 *	H			1		P	HAND WIRE	134
BUS C1	L	B09T2		1-05 *				2			TO HERE	134
BUS D00	L	A05C1		1-03 *	H			2		P	HAND WIRE	135

RUN NAME	A/P PIN NAME	ORDER PIN ORDER	BAY - LENGTH	G	DRAW	RV	PG	Y	X	Z	REMARKS	EXCEPTIONS	RUN NUMBER
BUS D00	A06C1	1-04		H				1	1	2		HAND WIRE	135
BUS D00	A07C1	1-05		H				2	1	2		HAND WIRE	135
BUS D00	A08C1	1-06		H				1	1	1		HAND WIRE	135
BUS D00	A09C1	1-07		H								TO HERE	135
BUS D01	A09D2	1-01		H				1	2	2		HAND WIRE	136
BUS D01	A08D2	1-02		H				2	2	2		HAND WIRE	136
BUS D01	A07D2	1-03		H				1	2	1		HAND WIRE	136
BUS D01	A06D2	1-04		H				2	2	1		HAND WIRE	136
BUS D01	A05D2	1-05		H								TO HERE	136
BUS D02	A09D1	1-01		H				1	1	2		HAND WIRE	137
BUS D02	A08D1	1-02		H				2	1	2		HAND WIRE	137
BUS D02	A06D1	1-03		H				1	1	2		HAND WIRE	137
BUS D02	A05D1	1-04		H				2	1	1		HAND WIRE	137
BUS D02	A09E2	1-05		H								TO HERE	137
BUS D03	A08E2	1-01		H				1	2	2		HAND WIRE	138
BUS D03	A07E2	1-02		H				2	2	2		HAND WIRE	138
BUS D03	A06E2	1-03		H				1	2	1		HAND WIRE	138
BUS D03	A05E2	1-04		H				2	2	1		HAND WIRE	138
BUS D03	A09E1	1-05		H								TO HERE	138
BUS D04	A08E1	1-01		H				1	1	2		HAND WIRE	139
BUS D04	A07E1	1-02		H				2	1	2		HAND WIRE	139
BUS D04	A06E1	1-03		H				1	1	1		HAND WIRE	139
BUS D04	A05E1	1-04		H				2	1	1		HAND WIRE	139
BUS D04	A09F2	1-05		H								TO HERE	139
BUS D05	A08F2	1-01		H				1	2	2		HAND WIRE	140
BUS D05	A07F2	1-02		H				2	2	2		HAND WIRE	140
BUS D05	A06F2	1-03		H				1	2	1		HAND WIRE	140
BUS D05	A05F2	1-04		H				2	2	1		HAND WIRE	140
BUS D05	A09F1	1-05		H								TO HERE	140
BUS D06	A08F1	1-01		H				1	1	2		HAND WIRE	141
BUS D06	A07F1	1-02		H				2	1	2		HAND WIRE	141
BUS D06	A06F1	1-03		H				1	1	1		HAND WIRE	141
BUS D06	A05F1	1-04		H				2	1	1		HAND WIRE	141
BUS D06	A09H2	1-05		H								TO HERE	141
BUS D07	A08H2	1-01		H				1	2	2		HAND WIRE	142
BUS D07	A07H2	1-02		H				2	2	2		HAND WIRE	142
BUS D07	A06H2	1-03		H				1	2	1		HAND WIRE	142
BUS D07	A05H2	1-04		H				2	2	1		HAND WIRE	142
BUS D08	A09H1	1-05		H								TO HERE	142
BUS D08	A08H1	1-01		H				1	1	2		HAND WIRE	143
BUS D08	A07H1	1-02		H				2	1	2		HAND WIRE	143
BUS D08	A06H1	1-03		H				1	1	1		HAND WIRE	143
BUS D08	A05H1	1-04		H				2	1	1		HAND WIRE	143
BUS D09	A09J2	1-05		H								TO HERE	143
BUS D09	A08J2	1-01		H				1	2	2		HAND WIRE	144
BUS D09	A07J2	1-02		H				2	2	2		HAND WIRE	144
BUS D09	A06J2	1-03		H				1	2	1		HAND WIRE	144
BUS D09	A05J2	1-04		H				2	2	1		HAND WIRE	144
BUS D10	A09J1	1-05		H								TO HERE	144
BUS D10	A08J1	1-01		H				1	1	2		HAND WIRE	145
BUS D10	A07J1	1-02		H				2	1	2		HAND WIRE	145
BUS D10	A06J1	1-03		H				1	1	1		HAND WIRE	145
BUS D10	A05J1	1-04		H				2	1	1		HAND WIRE	145

RUN NAME	A/P PIN NAME	ORDER PIN ORDER	BAY - LENGTH	G	DRAW	RV	PG	Y	X	Z	REMARKS	EXCEPTIONS	RUN NUMBER
BUS D10	A05J1	1-05		H								TO HERE	145
BUS D11	A09K2	1-01		H				1	1	2		HAND WIRE	146
BUS D11	A08K2	1-02		H				2	1	2		HAND WIRE	146
BUS D11	A07K2	1-03		H				1	1	1		HAND WIRE	146
BUS D11	A06K2	1-04		H				2	1	1		HAND WIRE	146
BUS D11	A05K2	1-05		H								TO HERE	146
BUS D12	A09K1	1-01		H				1	2	2		HAND WIRE	147
BUS D12	A08K1	1-02		H				2	2	2		HAND WIRE	147
BUS D12	A07K1	1-03		H				1	2	1		HAND WIRE	147
BUS D12	A06K1	1-04		H				2	2	1		HAND WIRE	147
BUS D12	A05K1	1-05		H								TO HERE	147
BUS D13	A09L2	1-01		H				1	1	2		HAND WIRE	148
BUS D13	A08L2	1-02		H				2	1	2		HAND WIRE	148
BUS D13	A07L2	1-03		H				1	1	1		HAND WIRE	148
BUS D13	A06L2	1-04		H				2	1	1		HAND WIRE	148
BUS D13	A05L2	1-05		H								TO HERE	148
BUS D14	A09L1	1-01		H				1	2	2		HAND WIRE	149
BUS D14	A08L1	1-02		H				2	2	2		HAND WIRE	149
BUS D14	A07L1	1-03		H				1	2	1		HAND WIRE	149
BUS D14	A06L1	1-04		H				2	2	1		HAND WIRE	149
BUS D14	A05L1	1-05		H								TO HERE	149
BUS D15	A09M2	1-01		H				1	1	2		HAND WIRE	150
BUS D15	A08M2	1-02		H				2	1	2		HAND WIRE	150
BUS D15	A07M2	1-03		H				1	1	1		HAND WIRE	150
BUS D15	A06M2	1-04		H				2	1	1		HAND WIRE	150
BUS D15	A05M2	1-05		H								TO HERE	150
BUS DC LO	B09F2	1-01		H				1	2	2		HAND WIRE	151
BUS DC LO	B08F2	1-02		H				2	2	2		HAND WIRE	151
BUS DC LO	B07F2	1-03		H				1	2	1		HAND WIRE	151
BUS DC LO	B06F2	1-04		H				2	2	1		HAND WIRE	151
BUS DC LO	B05F2	1-05		H								TO HERE	151
BUS INIT	A09A1	1-01		H				1	1	2		HAND WIRE	152
BUS INIT	A08A1	1-02		H				2	1	2		HAND WIRE	152
BUS INIT	A07A1	1-03		H				1	1	1		HAND WIRE	152
BUS INIT	A06A1	1-04		H				2	1	1		HAND WIRE	152
BUS INIT	A05A1	1-05		H								TO HERE	152
BUS INTR	A09B1	1-01		H				1	2	2		HAND WIRE	153
BUS INTR	A08B1	1-02		H				2	2	2		HAND WIRE	153
BUS INTR	A07B1	1-03		H				1	2	1		HAND WIRE	153
BUS INTR	A06B1	1-04		H				2	2	1		HAND WIRE	153
BUS INTR	A05B1	1-05		H								TO HERE	153
BUS MSYN	B09V1	1-02		H				1	1	2		HAND WIRE	154
BUS MSYN	B08V1	1-03		H				2	1	2		HAND WIRE	154
BUS MSYN	B07V1	1-04		H				1	1	1		HAND WIRE	154
BUS MSYN	B06V1	1-05		H				2	1	1		HAND WIRE	154
BUS MSYN	B05V1	1-06		H								TO HERE	154
BUS NPG IN	A06U1	1-01		H				1	2	2		HAND WIRE	155
BUS NPG IN	A07U1	1-02		H				2	2	2		HAND WIRE	155
BUS NPG IN	A08U1	1-03		H				1	2	1		HAND WIRE	155
BUS NPG IN	A09U1	1-04		H				2	2	1		HAND WIRE	155
BUS NPR	A06S2	1-01		H								TO HERE	155
BUS NPR	A07S2	1-02		H				1	1	2		HAND WIRE	157
BUS NPR	A08S2	1-03		H				2	1	2		HAND WIRE	157

BUS NPR	L	A09S2		1-04	*					2				TO HERE	157
BUS PA	L	A09M1		1-01	*	H				1		P		HAND WIRE	159
BUS PA	L	A08M1		1-02	*	H				2		P		HAND WIRE	159
BUS PA	L	A07M1		1-03	*	H				1		P		HAND WIRE	159
BUS PA	L	A06M1		1-04	*	H				2		P		HAND WIRE	159
BUS PA	L	A05M1		1-05	*					1				TO HERE	159
BUS PB	L	A09N2		1-01	*	H				1		P		HAND WIRE	160
BUS PB	L	A08N2		1-02	*	H				2		P		HAND WIRE	160
BUS PB	L	A07N2		1-03	*	H				1		P		HAND WIRE	160
BUS PB	L	A06N2		1-04	*	H				2		P		HAND WIRE	160
BUS PB	L	A05N2		1-05	*					1				TO HERE	160
BUS SACK	L	A09R2		1-01	*	H				1		P		HAND WIRE	161
BUS SACK	L	A08R2		1-02	*	H				2		P		HAND WIRE	161
BUS SACK	L	A07R2		1-03	*	H				1		P		HAND WIRE	161
BUS SACK	L	A06R2		1-04	*	H				2		P		HAND WIRE	161
BUS SACK	L	A05R2		1-05	*					1				TO HERE	161
BUS SSYN	L	B09U1		1-01	*	H				2		P		HAND WIRE	162
BUS SSYN	L	B08U1		1-02	*	H				1		P		HAND WIRE	162
BUS SSYN	L	B07U1		1-03	*	*				2		P		TO HERE	162
CLK	H	D06B1		1-01	*	H				1		P		HAND WIRE	171
CLK	H	D07B1		1-02	*									TO HERE	171
CONF SPARE	L	E08A1												1-PIN RUN	214
CR1		C04R1												1-PIN RUN	238
DPH RDR ENB	L	F09K2												1-PIN RUN	294
DPH RE -15	L	F09R1												1-PIN RUN	295
DPH SO -15	L	F09J2												1-PIN RUN	296
DPH SER 0	H	D09F1												1-PIN RUN	297
DPH SER 0	L	F09E2												1-PIN RUN	298
DPH SER IN	L	F09N1												1-PIN RUN	299
DPH SI -15	L	F09P1												1-PIN RUN	300
F05A1		F05A1		1-01	*	H				1		P		HAND WIRE	307
F05A1		F06A1		1-02	*									TO HERE	307
F05B1		F05B1		1-01	*	H				1		P		HAND WIRE	308
F05B1		F06B1		1-02	*									TO HERE	308
F05U1		F05U1		1-01	*	H				1		P		HAND WIRE	309
F05U1		F06U1		1-02	*									TO HERE	309
F05V1		F05V1		1-01	*	H				1		P		HAND WIRE	310
F05V1		F06V1		1-02	*									TO HERE	310
FS CLK	L	F09H1												1-PIN RUN	311
FS CLK DISAB	L	F09H2												1-PIN RUN	312
FS SER IN	L	F09M1												1-PIN RUN	313
GM INTENSITY OUT	L	A01T2		1-01	*	H				1	TWISTED PAIR			HAND WIRE	317
GM INTENSITY OUT	L	B02L2		1-02	*	H								H TO WHERE	317
GND 01-03		A01C1		1-01	*	H				2		P		HAND WIRE	320
GND 01-03		A01T1		1-02	*	H				1		P		HAND WIRE	320
GND 01-03		A01C2		1-03	*	H				2		P		HAND WIRE	320
GND 01-03		A03C2	A02C2	1-04	*	H				1		P		HAND WIRE	320
GND 01-03		A02C2		1-05	*	H				2	24 AWG			HAND WIRE	320
GND 01-03		A03E2		1-06	*	H				1	24AWG			HAND WIRE	320
GND 01-03		C03B2		1-07	*	H				2	24AWG			HAND WIRE	320
GND 01-03		C03N2	A03T1	1-08	*	H				1	24AWG			HAND WIRE	320
GND 01-03		A03T1	B03B2	1-09	*	H				2	24 AWG			HAND WIRE	320
GND 01-03		B03B2		1-10	*	H				1		P		HAND WIRE	320

GND 01-03		B03C2		1-11	*	H				2		P		HAND WIRE	320
GND 01-03		B02C2		1-12	*	H				1		P		HAND WIRE	320
GND 01-03		B01C2		1-13	*	H				2		P		HAND WIRE	320
GND 01-03		A02T1		1-14	*	H				1		P		HAND WIRE	320
GND 01-03		B02T1		1-15	*	H				2		P		HAND WIRE	320
GND 01-03		B01T1		1-16	*	H				1		P		HAND WIRE	320
GND 01-03		B03T1		1-17	*	H				2		P		HAND WIRE	320
GND 01-03		C03C2		1-18	*	H				1		P		HAND WIRE	320
GND 01-03		C02C2		1-19	*	H				2		P		HAND WIRE	320
GND 01-03		C01C2		1-20	*	H				1		P		HAND WIRE	320
GND 01-03		C01T1		1-21	*	H				2		P		HAND WIRE	320
GND 01-03		C02T1		1-22	*	H				1		P		HAND WIRE	320
GND 01-03		C03T1		1-23	*	H				2		P		HAND WIRE	320
GND 01-03		D03C2		1-24	*	H				1		P		HAND WIRE	320
GND 01-03		D02C2		1-25	*	H				2		P		HAND WIRE	320
GND 01-03		D01C2		1-26	*	H				1		P		HAND WIRE	320
GND 01-03		D01T1		1-27	*	H				2		P		HAND WIRE	320
GND 01-03		D02T1		1-28	*	H				1		P		HAND WIRE	320
GND 01-03		D03T1		1-29	*	H				2		P		HAND WIRE	320
GND 01-03		E03T1		1-30	*	H				1		P		HAND WIRE	320
GND 01-03		E02T1		1-31	*	H				2		P		HAND WIRE	320
GND 01-03		E01T1		1-32	*	H				1		P		HAND WIRE	320
GND 01-03		F01C2		1-33	*	H				2		P		HAND WIRE	320
GND 01-03		F02C2		1-34	*	H				1		P		HAND WIRE	320
GND 01-03		F03C2		1-35	*	H				2		P		HAND WIRE	320
GND 01-03		F03T1		1-36	*	H				1		P		HAND WIRE	320
GND 01-03		F02T1		1-37	*	H				2		P		HAND WIRE	320
GND 01-03		F01T1		1-38	*	H				1		P		HAND WIRE	320
GND 01-03		E01C2		1-39	*	H				2		P		HAND WIRE	320
GND 01-03		E02C2		1-40	*	H				1		P		HAND WIRE	320
GND 01-03		E03C2		1-41	*	H				2		P		HAND WIRE	320
GND 01-03		E04A1		1-42	*	H				1		P		HAND WIRE	320
GND 01-03		E04C2		1-43	*	H				2		P		HAND WIRE	320
GND 01-03		F04T1		1-44	*	H						P		H TO WHERE	320
GND 04-06		A06B2		1-01	*	H				2		P		HAND WIRE	321
GND 04-06		A06C2		1-02	*	H				1		P		HAND WIRE	321
GND 04-06		A05B2		1-03	*	H				2		P		HAND WIRE	321
GND 04-06		A05C2		1-04	*	H				1		P		HAND WIRE	321
GND 04-06		A04C2		1-05	*	H				2		P		HAND WIRE	321
GND 04-06		A05T1		1-06	*	H				1		P		HAND WIRE	321
GND 04-06		A05S1		1-07	*	H				2		P		HAND WIRE	321
GND 04-06		A05R1		1-08	*	H				1		P		HAND WIRE	321
GND 04-06		A05P1		1-09	*	H				2		P		HAND WIRE	321
GND 04-06		A05N1		1-10	*	H				1		P		HAND WIRE	321
GND 04-06		A06P1		1-11	*	H				2		P		HAND WIRE	321
GND 04-06		A06N1		1-12	*	H				1		P		HAND WIRE	321
GND 04-06		A06R1		1-13	*	H				2		P		HAND WIRE	321
GND 04-06		A06S1		1-14	*	H				1		P		HAND WIRE	321
GND 04-06		A06V2		1-15	*	H				2		P		HAND WIRE	321
GND 04-06		A06T1		1-16	*	H				1		P		HAND WIRE	321
GND 04-06		A05V2		1-17	*	H				2		P		HAND WIRE	321
GND 04-06		B05B2		1-18	*	H				1		P		HAND WIRE	321
GND 04-06		B05C2		1-19	*	H				2		P		HAND WIRE	321

ERROR LISTING

GT40.B
RUN NAME

HND288.V17(17) 06/22/72
A/P PIN NAME

ORDER BAY - ORDER

Q DRAW RV PG Y X E REMARKS

1-MAR-73 9152 LENGTH EXCEPTIONS

RUN NUMBER

GT40.B RUN NAME	A/P PIN NAME	ORDER BAY - ORDER	Q	DRAW	RV	PG	Y	X	E	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND 04-06	B04C2	1-20	*	H					1		P	HAND WIRE	321
GND 04-06	B05E1	1-21	*	H					2		P	HAND WIRE	321
GND 04-06	B05D1	1-22	*	H					1		P	HAND WIRE	321
GND 04-06	B06E1	1-23	*	H					2		P	HAND WIRE	321
GND 04-06	B06D1	1-24	*	H					1		P	HAND WIRE	321
GND 04-06	B06C2	1-25	*	H					2		P	HAND WIRE	321
GND 04-06	B06B2	1-26	*	H					1		P	HAND WIRE	321
GND 04-06	B06V2	1-27	*	H					2		P	HAND WIRE	321
GND 04-06	B06T1	1-28	*	H					1		P	HAND WIRE	321
GND 04-06	B05V2	1-29	*	H					2		P	HAND WIRE	321
GND 04-06	B05T1	1-30	*	H					1		P	HAND WIRE	321
GND 04-06	B04T1	1-31	*	H					2		P	HAND WIRE	321
GND 04-06	C04C2	1-32	*	H					1		P	HAND WIRE	321
GND 04-06	C05C2	1-33	*	H					2		P	HAND WIRE	321
GND 04-06	C06C2	1-34	*	H					1		P	HAND WIRE	321
GND 04-06	C06T1	1-35	*	H					2		P	HAND WIRE	321
GND 04-06	C05T1	1-36	*	H					1		P	HAND WIRE	321
GND 04-06	C04T1	1-37	*	H					2		P	HAND WIRE	321
GND 04-06	D04C2	1-38	*	H					1		P	HAND WIRE	321
GND 04-06	D05C2	1-39	*	H					2		P	HAND WIRE	321
GND 04-06	D06C2	1-40	*	H					1		P	HAND WIRE	321
GND 04-06	D06T1	1-41	*	H					2		P	HAND WIRE	321
GND 04-06	D05T1	1-42	*	H					1		P	HAND WIRE	321
GND 04-06	D04T1	1-43	*	H					2		P	HAND WIRE	321
GND 04-06	E05C2	1-44	*	H					1		P	HAND WIRE	321
GND 04-06	E06C2	1-45	*	H					2		P	HAND WIRE	321
GND 04-06	E06T1	1-46	*	H					1		P	HAND WIRE	321
GND 04-06	E05T1	1-47	*	H					2		P	HAND WIRE	321
GND 04-06	E04T1	1-48	*	H					1		P	HAND WIRE	321
GND 04-06	F04C2	1-49	*	H					2		P	HAND WIRE	321
GND 04-06	F05C2	1-50	*	H					1		P	HAND WIRE	321
GND 04-06	F06C2	1-51	*	H					2		P	HAND WIRE	321
GND 04-06	F04J2	1-52	*	H					1		P	HAND WIRE	321
GND 04-06	F05T1	1-53	*	H					2		P	HAND WIRE	321
GND 04-06	F06T1	1-54	*	H					1		P	HAND WIRE	321
GND 07-09	A09B2	1-01	*	H					2		P	HAND WIRE	322
GND 07-09	A09C2	1-02	*	H					1		P	HAND WIRE	322
GND 07-09	A08B2	1-03	*	H					2		P	HAND WIRE	322
GND 07-09	A08C2	1-04	*	H					1		P	HAND WIRE	322
GND 07-09	A07B2	1-05	*	H					2		P	HAND WIRE	322
GND 07-09	A07C2	1-06	*	H					1		P	HAND WIRE	322
GND 07-09	A07N1	1-07	*	H					2		P	HAND WIRE	322
GND 07-09	A07P1	1-08	*	H					1		P	HAND WIRE	322
GND 07-09	A07R1	1-09	*	H					2		P	HAND WIRE	322
GND 07-09	A07S1	1-10	*	H					1		P	HAND WIRE	322
GND 07-09	A07T1	1-11	*	H					2		P	HAND WIRE	322
GND 07-09	A07V2	1-12	*	H					1		P	HAND WIRE	322
GND 07-09	A08T1	1-13	*	H					2		P	HAND WIRE	322
GND 07-09	A08S1	1-14	*	H					1		P	HAND WIRE	322
GND 07-09	A08R1	1-15	*	H					2		P	HAND WIRE	322
GND 07-09	A08P1	1-16	*	H					1		P	HAND WIRE	322
GND 07-09	A08N1	1-17	*	H					2		P	HAND WIRE	322
GND 07-09	A09P1	1-18	*	H					1		P	HAND WIRE	322

GT40.B RUN NAME	A/P PIN NAME	ORDER BAY - ORDER	Q	DRAW	RV	PG	Y	X	E	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND 07-09	A09N1	1-19	*	H					1		P	HAND WIRE	322
GND 07-09	A09R1	1-20	*	H					2		P	HAND WIRE	322
GND 07-09	A09S1	1-21	*	H					1		P	HAND WIRE	322
GND 07-09	A09V2	1-22	*	H					2		P	HAND WIRE	322
GND 07-09	A09T1	1-23	*	H					1		P	HAND WIRE	322
GND 07-09	A08V2	1-24	*	H					2		P	HAND WIRE	322
GND 07-09	B08B2	1-25	*	H					1		P	HAND WIRE	322
GND 07-09	B08C2	1-26	*	H					2		P	HAND WIRE	322
GND 07-09	B07B2	1-27	*	H					1		P	HAND WIRE	322
GND 07-09	B07E1	1-28	*	H					2		P	HAND WIRE	322
GND 07-09	B07D1	1-29	*	H					1		P	HAND WIRE	322
GND 07-09	B07C2	1-30	*	H					2		P	HAND WIRE	322
GND 07-09	B08E1	1-31	*	H					1		P	HAND WIRE	322
GND 07-09	B08D1	1-32	*	H					2	TO HERE	P	HAND WIRE	322
GND 07-09	B09E1	1-33	*	H					1		P	HAND WIRE	322
GND 07-09	B09D1	1-34	*	H					2		P	HAND WIRE	322
GND 07-09	B09C2	1-35	*	H					1		P	HAND WIRE	322
GND 07-09	B09B2	1-36	*	H					2		P	HAND WIRE	322
GND 07-09	B09V2	1-37	*	H					1		P	HAND WIRE	322
GND 07-09	B09T1	1-38	*	H					2		P	HAND WIRE	322
GND 07-09	B08V2	1-39	*	H					1		P	HAND WIRE	322
GND 07-09	B08T1	1-40	*	H					2		P	HAND WIRE	322
GND 07-09	B07V2	1-41	*	H					1		P	HAND WIRE	322
GND 07-09	B07T1	1-42	*	H					2		P	HAND WIRE	322
GND 07-09	C07C2	1-43	*	H					1		P	HAND WIRE	322
GND 07-09	C08C2	1-44	*	H					2		P	HAND WIRE	322
GND 07-09	C09C2	1-45	*	H					1		P	HAND WIRE	322
GND 07-09	C09T1	1-46	*	H					2		P	HAND WIRE	322
GND 07-09	C08T1	1-47	*	H					1		P	HAND WIRE	322
GND 07-09	C07T1	1-48	*	H					2		P	HAND WIRE	322
GND 07-09	D07C2	1-49	*	H					1		P	HAND WIRE	322
GND 07-09	D08C2	1-50	*	H					2		P	HAND WIRE	322
GND 07-09	D09C2	1-51	*	H					1		P	HAND WIRE	322
GND 07-09	D09T1	1-52	*	H					2		P	HAND WIRE	322
GND 07-09	D08T1	1-53	*	H					1		P	HAND WIRE	322
GND 07-09	D07T1	1-54	*	H					2		P	HAND WIRE	322
GND 07-09	E07C2	1-55	*	H					1		P	HAND WIRE	322
GND 07-09	E08C2	1-56	*	H					2		P	HAND WIRE	322

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
P0 IN		D06E2		1-02 *	H						1		P	HAND WIRE	338
P0 IN		D07E2		1-03 *										TO HERE	338
P0 SA		D05F1		1-01 *	H						2		P	HAND WIRE	339
P0 SA		D06F1		1-02 *	H						1		P	HAND WIRE	339
P0 SA		D07F1		1-03 *										TO HERE	339
P0 SB		D05F2		1-01 *	H						2		P	HAND WIRE	340
P0 SB		D06F2		1-02 *	H						1		P	HAND WIRE	340
P0 SB		D07F2		1-03 *										TO HERE	340
P1 IN		D05E1		1-01 *	H						2		P	HAND WIRE	341
P1 IN		D06E1		1-02 *	H						1		P	HAND WIRE	341
P1 IN		D07E1		1-03 *										TO HERE	341
P1 SA		D05D1		1-01 *	H						2		P	HAND WIRE	342
P1 SA		D06D1		1-02 *	H						1		P	HAND WIRE	342
P1 SA		D07D1		1-03 *										TO HERE	342
P1 SB		D05D2		1-01 *	H						2		P	HAND WIRE	343
P1 SB		D06D2		1-02 *	H						1		P	HAND WIRE	343
P1 SB		D07D2		1-03 *										TO HERE	343
PCC ANALOG CLOCK	H	F01R1		1-01 *	H						1	TWISTED PAIR		HAND WIRE	344
PCC ANALOG CLOCK	H	F03U1		1-02 *	H									H TO WHERE	344
PCC DIS CLK	H	C02F2		1-01 *	H						1	TWISTED PAIR		HAND WIRE	350
PCC DIS CLK	H	D03N2		1-02 *										TO HERE	350
READ	H	C06U2		1-01 *	H						1		P	HAND WIRE	404
READ	H	C07U2		1-02 *										TO HERE	404
RES 1		E05C1		1-01 *	H						1		P	HAND WIRE	405
RES 1		E06C1		1-02 *										TO HERE	405
RES 2		E05B1		1-01 *	H						1		P	HAND WIRE	406
RES 2		E06B1		1-02 *										TO HERE	406
SABR CHAR SCALE (1)	H	R02M1									2			1-PIN RUN	407
THERM 1		E05A1		1-01 *	H						1		P	HAND WIRE	449
THERM 1		E06A1		1-02 *										TO HERE	449
TNAR	H	C06V2		1-01 *	H						1		P	HAND WIRE	450
TNAR	H	C07V2		1-02 *										TO HERE	450
TWID	H	C06V1		1-01 *	H						1		P	HAND WIRE	451
TWID	H	C07V1		1-02 *										TO HERE	451
VR ANALOG +15V		A01D2												1-PIN RUN	468
VR ANALOG -15V		A01E2												1-PIN RUN	469
XNWD0		F05K2		1-01 *	H						1		P	HAND WIRE	471
XNWD0		F06K2		1-02 *										TO HERE	471
XNWD1		F05L2		1-01 *	H						1		P	HAND WIRE	472
XNWD1		F06L2		1-02 *										TO HERE	472
XNWD2		F05M2		1-01 *	H						1		P	HAND WIRE	473
XNWD2		F06M2		1-02 *										TO HERE	473
XNWD3		F05N2		1-01 *	H						1		P	HAND WIRE	474
XNWD3		F06N2		1-02 *										TO HERE	474
XNWD4		F05P2		1-01 *	H						1		P	HAND WIRE	475
XNWD4		F06P2		1-02 *										TO HERE	475
XNWD5		F05R2		1-01 *	H						1		P	HAND WIRE	476
XNWD5		F06R2		1-02 *										TO HERE	476
XNWD6		F05S2		1-01 *	H						1		P	HAND WIRE	477
XNWD6		F06S2		1-02 *										TO HERE	477
XNWD7		F05T2		1-01 *	H						1		P	HAND WIRE	478
XNWD7		F06T2		1-02 *										TO HERE	478
XPRD0		F05L1		1-01 *	H						1		P	HAND WIRE	479

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	#	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
XPRD0		F06L1		1-02 *										TO HERE	479
XPRD1		F05M1		1-01 *	H						1		P	HAND WIRE	480
XPRD1		F06M1		1-02 *										TO HERE	480
XPRD2		F05N1		1-01 *	H						1		P	HAND WIRE	481
XPRD2		F06N1		1-02 *										TO HERE	481
XPRD3		F05P1		1-01 *	H						1		P	HAND WIRE	482
XPRD3		F06P1		1-02 *										TO HERE	482
XPRD4		F05R1		1-01 *	H						1		P	HAND WIRE	483
XPRD4		F06R1		1-02 *										TO HERE	483
XPRD5		F05S1		1-01 *	H						1		P	HAND WIRE	484
XPRD5		F06S1		1-02 *										TO HERE	484
XPRD6		F05U2		1-01 *	H						1		P	HAND WIRE	485
XPRD6		F06U2		1-02 *										TO HERE	485
XPRD7		F05V2		1-01 *	H						1		P	HAND WIRE	486
XPRD7		F06V2		1-02 *										TO HERE	486
XS 00		C05R2		1-01 *	H						1		P	HAND WIRE	487
XS 00		C06R2		1-02 *										TO HERE	487
XS 01		C05S1		1-01 *	H						1		P	HAND WIRE	488
XS 01		C06S1		1-02 *										TO HERE	488
XS 02		C05S2		1-01 *	H						1		P	HAND WIRE	489
XS 02		C06S2		1-02 *										TO HERE	489
XS 03		C05T2		1-01 *	H						1		P	HAND WIRE	490
XS 03		C06T2		1-02 *										TO HERE	490
XS 04		F05C1		1-01 *	H						1		P	HAND WIRE	491
XS 04		F06C1		1-02 *										TO HERE	491
XS 05		F05D1		1-01 *	H						1		P	HAND WIRE	492
XS 05		F06D1		1-02 *										TO HERE	492
XS 06		F05D2		1-01 *	H						1		P	HAND WIRE	493
XS 06		F06D2		1-02 *										TO HERE	493
XS 07		F05E1		1-01 *	H						1		P	HAND WIRE	494
XS 07		F06E1		1-02 *										TO HERE	494
XS 08		F05E2		1-01 *	H						1		P	HAND WIRE	495
XS 08		F06E2		1-02 *										TO HERE	495
XS 09		F05F1		1-01 *	H						1		P	HAND WIRE	496
XS 09		F06F1		1-02 *										TO HERE	496
XS 10		F05F2		1-01 *	H						1		P	HAND WIRE	497
XS 10		F06F2		1-02 *										TO HERE	497
XS 11		F05H1		1-01 *	H						1		P	HAND WIRE	498
XS 11		F06H1		1-02 *										TO HERE	498
XS 12		F05H2		1-01 *	H						1		P	HAND WIRE	499
XS 12		F06H2		1-02 *										TO HERE	499
XS 13		F05J1		1-01 *	H						1		P	HAND WIRE	500
XS 13		F06J1		1-02 *										TO HERE	500
XS 14		F05J2		1-01 *	H						1		P	HAND WIRE	501
XS 14		F06J2		1-02 *										TO HERE	501
XS 15		F05K1		1-01 *	H						1		P	HAND WIRE	502
XS 15		F06K1		1-02 *										TO HERE	502
YNWD0		C05B1		1-01 *	H						1		P	HAND WIRE	503
YNWD0		C06B1		1-02 *										TO HERE	503
YNWD1		C05D2		1-01 *	H						1		P	HAND WIRE	504
YNWD1		C06D2		1-02 *										TO HERE	504
YNWD2		C05E2		1-01 *	H						1		P	HAND WIRE	505
YNWD2		C06E2		1-02 *										TO HERE	505

ERROR LISTING

G140,B HND288,V17(17) 06/22/72 1=MAR=73 6152

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER		Q	DRAW	RV	PG	Y	X	±	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
YNWD3		C05F2		1-01	*	H						1		P	WAND WIRE	506
YNWD3		C06F2		1-02	*										TO HERE	506
YNWD4		C05H2		1-01	*	H						1		P	WAND WIRE	507
YNWD4		C06H2		1-02	*										TO HERE	507
YNWD5		C05J2		1-01	*	H						1		P	WAND WIRE	508
YNWD5		C06J2		1-02	*										TO HERE	508
YNWD6		C05K2		1-01	*	H						1		P	WAND WIRE	509
YNWD6		C06K2		1-02	*										TO HERE	509
YNWD7		C05L2		1-01	*	H						1		P	WAND WIRE	510
YNWD7		C06L2		1-02	*										TO HERE	510
YPRD0		C05A1		1-01	*	H						1		P	WAND WIRE	511
YPRD0		C06A1		1-02	*										TO HERE	511
YPRD1		C05C1		1-01	*	H						1		P	WAND WIRE	512
YPRD1		C06C1		1-02	*										TO HERE	512
YPRD2		C05D1		1-01	*	H						1		P	WAND WIRE	513
YPRD2		C06D1		1-02	*										TO HERE	513
YPRD3		C05E1		1-01	*	H						1		P	WAND WIRE	514
YPRD3		C06E1		1-02	*										TO HERE	514
YPRD4		C05F1		1-01	*	H						1		P	WAND WIRE	515
YPRD4		C06F1		1-02	*										TO HERE	515
YPRD5		C05H1		1-01	*	H						1		P	WAND WIRE	516
YPRD5		C06H1		1-02	*										TO HERE	516
YPRD6		C05J1		1-01	*	H						1		P	WAND WIRE	517
YPRD6		C06J1		1-02	*										TO HERE	517
YPRD7		C05K1		1-01	*	H						1		P	WAND WIRE	518
YPRD7		C06K1		1-02	*										TO HERE	518
YS 00		C05L1		1-01	*	H						1		P	WAND WIRE	519
YS 00		C06L1		1-02	*										TO HERE	519
YS 01		C05M1		1-01	*	H						1		P	WAND WIRE	520
YS 01		C06M1		1-02	*										TO HERE	520
YS 02		C05M2		1-01	*	H						1		P	WAND WIRE	521
YS 02		C06M2		1-02	*										TO HERE	521
YS 03		C05N1		1-01	*	H						1		P	WAND WIRE	522
YS 03		C06N1		1-02	*										TO HERE	522
YS 04		C05N2		1-01	*	H						1		P	WAND WIRE	523
YS 04		C06N2		1-02	*										TO HERE	523
YS 05		C05P1		1-01	*	H						1		P	WAND WIRE	524
YS 05		C06P1		1-02	*										TO HERE	524
YS 06		C05P2		1-01	*	H						1		P	WAND WIRE	525
YS 06		C06P2		1-02	*										TO HERE	525
YS 07		C05R1		1-01	*	H						1		P	WAND WIRE	526
YS 07		C06R1		1-02	*										TO HERE	526

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WIRE TABLE

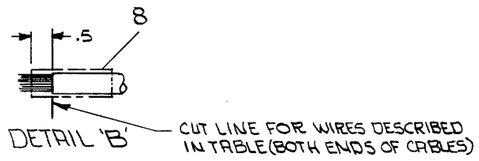
ITEM NO	DESCRIPTION PAIR #	COLOR	FROM CONNECTION	WITH ITEM	TO CONNECTION	WITH ITEM	CUT POINT	SIGNAL NAME	
6	1	RED	P1-2	12,SOLD	P3-R	3	7A	INT Φ	
		BLK	P1-3	12,SOLD	P3-T		9A	INT 1	
		DRAIN	SEE NOTE #3	12	P3-S		8A	GND	
	2	WHT	P1-4	12,SOLD	P3-JJ		17A	Z INPUT	
		BLK	P1-5	12,SOLD	P3-HH		16A	GND	
		DRAIN	SEE NOTE #3	12	P3-KK		18A	GND	
	3	GRN	P1-7	12,SOLD	P3-J		4A	-X INPUT	
		BLK	P1-8	12,SOLD	P3-L	3	5A	+X INPUT	
		DRAIN	P1-9	12,9 SOLD	P3-M	3,9	6A	GND	SEE NOTE 6
	4	BLU	P1-10	12,SOLD	P3-B	3	1A	-Y INPUT	
		BLK	P1-11	12,SOLD	P3-D	3	2A	+Y INPUT	
		DRAIN	P1-12	12,9 SOLD	P3-E	3,9	3A	GND	SEE NOTE6
	5	YEL	P1-15	12,SOLD	P3-FF	3	15A	SPEAKER	
		BLK	P1-16	12,SOLD	P3-V		10A	COLOR RED	
		DRAIN	SEE NOTE #3	12	P3-W		11A	GND	
	6	BRN	P1-17	12,SOLD	P4-K		3B	+KB SIG	
		BLK	P1-18	12,SOLD	P4-S		4B	-KB SIG	
		DRAIN	SEE NOTE #3	12	P4-A		1B	GND	
	7	ORN	P1-19	12,SOLD	P3-X		12A	LIGHT PEN	
		BLK	P1-20	12,SOLD	P4-TT		6B	+5V IN	
		DRAIN	SEE NOTE #3	12	P3-Y		13A	GND	
	8	WHT	P1-1	12,SOLD	P3-DD		14A	INT 2	
		RED	P1-22	12,SOLD	P3-LL		19A	+22 V	
		DRAIN	SEE NOTE #3	12	P3-PP		21A	GND	
	9	GRN	P1-23	12,SOLD	P3-NN		20A	H.Q. GND	
		RED	P1-24	12,SOLD	P3-RR		22A	-22 V	
		DRAIN	SEE NOTE #3	12	P3-UU		23A	GND	
7	1	RED	P2-1	5	P4-U		5B	REMOTE	
		BLK	P2-2	5	P4-B		2B	GND	
		DRAIN	P2-3	5	P4-UU	3	7B	GND	

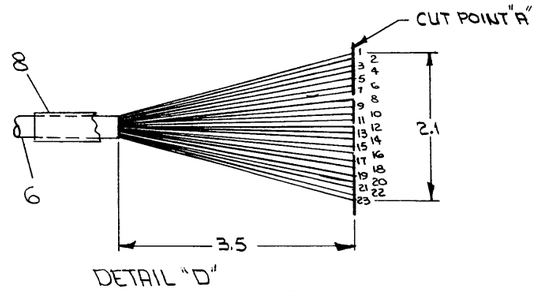
LEGEND

NUMBER	VARIATION			
	DIM."V"	DIM"W"(PRECUT)	DIM"X"	DIM"Y"(PRECUT)
7008993-3F	4FT.11IN.±1IN.	5FT.0IN.±1IN.	3FT.6IN.±1IN.	4FT2IN.±1IN.
7008993-5	6FT.5IN.±2IN.	6FT.6IN.±2IN.	5FT.0IN.±1IN.	5FT.8IN.±1IN.
7008993-10	11FT.5IN.±3IN.	11FT.6IN.±3IN.	10FT.0IN.±2IN.	10FT.8IN.±2IN
7008993-15	16FT.5IN.±3IN.	16FT.6IN.±3IN.	15FT.0IN.±3IN.	15FT.8IN.±3IN.
7008993-20	21FT.5IN.±3IN.	21FT.6IN.±3IN.	20FT.0IN.±3IN.	20FT.8IN.±3IN

NOTES:

1. CLEAR TEFLON TUBING (ITEM #12) TO BE USED ON ALL P1 PINS (ITEM #1).
2. MANUFACTURING SHOULD USE MACHINE CRIMPER. TOOL FOR CRIMPING PINS (ITEM #3) MUST BE HT66/HT68 FROM BERG OR EQUIV.
3. DRAINS FROM PAIR #1,2,5,6,7,8&9 ARE TO BE TIED TOGETHER AND ONE LEAD SOLDERED TO P1-6, SEE DETAIL 'C'.
4. ALL EXPOSED DRAIN WIRES TO HAVE CLEAR TUBING (ITEM #10) ADDED BEFORE SOLDERING.
5. TWP #6 AND BLK WIRE OF TWP #7, FROM P3, ARE TO BE SEPARATED FROM CABLE AND BROUGHT TO P4 AT POINT SHOWN, WIRES ARE TO BE TWISTED TOGETER.
6. AFTER CUTTING MYLAR FOIL BACK, COVER CUT END WITH ITEM # 9.





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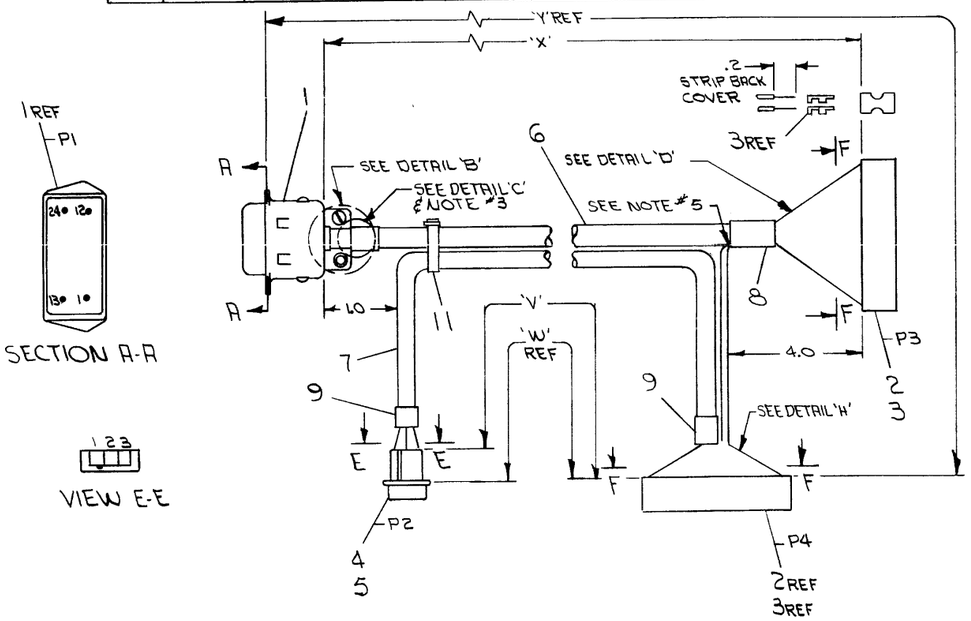

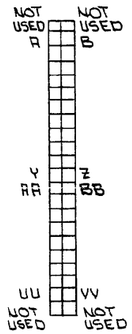

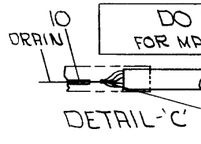

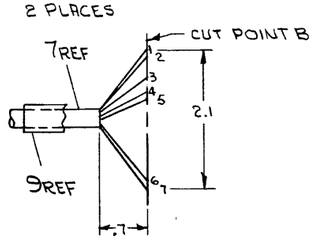

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QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	TUBING, TEFLON #12 CLR	9107301-10	12
A/R	TIE WRAP #SST-2M PANDUIT	9007032	11
A/R	TUBING, TEFLON #18 (CLEAR)	9107278-10	10
A/R	TUBING, RED SHRINK 1/4 I.D	9107253-02	9
A/R	TUBING, BLK SHRINK 3/4 O.D.	9107250-00	8
A/R	CABLE #8451 BELDEN	9107703	7
A/R	CABLE, 18 COND. #8774 BELDEN	9107687	6
3	TERMINAL PIN CONTACT	1209378-03	5
1	HOUSING #1-480305-0 MATE-N-LOCK	1209351-03	4
30	PIN, BERG #48015	12100089-4	3
2	CONN/W RET ROD BERG	12100090-0	2
1	CONN 24 PIN #37-50240 AMP	1203466	1

PARTS LIST

FIRST USED ON OPTION/MODEL: GT40

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: SEE PARTS LIST
FINISH: //

		DATE
DRN.	[illegible]	6/11/72
CHK'D.	[illegible]	7-11-72
ENG.	[illegible]	8/14/72
PROJ. ENG.	[illegible]	7-7-72
PROD.		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: SCOPE CABLE

NEXT HIGHER ASSY.: D-UA-GT40-0-0
SCALE: NONE
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	IA	7008993-0-0	B

DIST.

REVISIONS	REV	CHK	CHANGE NO	REV
		PM	GT40-00003	A
		PM	GT40-00005	B

ENGINEERING RELEASE FILE 11-2-73

ECO FORM NO 3100-A

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE

PRINT SET #1

DRAWING DIRECTORY	B-DD-DL11-Ø
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE (PL)	A-PL-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	E-CS-M78ØØ-YA-1
CABLE ASSEMBLY (KL8/E)	D-1A-7008360-ØØ-Ø
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5

PRINT SET #2

DRAWING DIRECTORY	B-DD-DL11-Ø
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE (PL)	A-PL-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	E-CS-M78ØØ-Ø-1
CABLE, MODEM BCØ5C	D-UA-BCØ5C-Ø-Ø
FILTER NETWORK	B-CS-GEØØØ-Ø-1
MODEM TEST CONN	D-CS-H315-Ø-1
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5

SEQUENCE

PRINT SET #3

DRAWING DIRECTORY	B-DD-DL11-0
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-0-0
ASYNCHRONOUS LINE INTERFACE (PL)	A-PL-DL11-0-0
ASYNCHRONOUS LINE INTERFACE	E-CS-M7800-0-1
CABLE, MODEM BC05C	D-UA-BC05C-0-0
CABLE ASSEMBLY (KL8/E)	D-1A-7008360-0-0
MODEM TEST CONN.	D-CS-H315-0-1

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE DL11-1	PRINT SET TYPE DL11-2
DL11-A	ASYNC LINE INTERFACE, CURRENT LOOP	1	0
DL11-B	ASYNC LINE INTERFACE, EIA	0	1
DL11-C	ASYNC LINE INTERFACE, CURRENT LOOP	1	0
DL11-D	ASYNC LINE INTERFACE, EIA	0	1
DL11-E	ASYNC LINE INTERFACE, DATA SET	0	1

REVISIONS	DATE	CHG. NO.	REV
	7-17-72	DL11-00001	A
	11-30-72	DL11-00002	B
	12-20-72	DL11-00003	C

USED ON OPTION/MODEL

DRN. M. Pierce	DATE 4-28-72	
CHK'D. R. Cook	DATE 5/9/72	
PROJ ENG. [illegible]	DATE 5/11/72	
PROD. [illegible]	DATE 5-15-72	
FIELD SERV. [illegible]	DATE 5/15/72	
SHEET 1 OF 3		

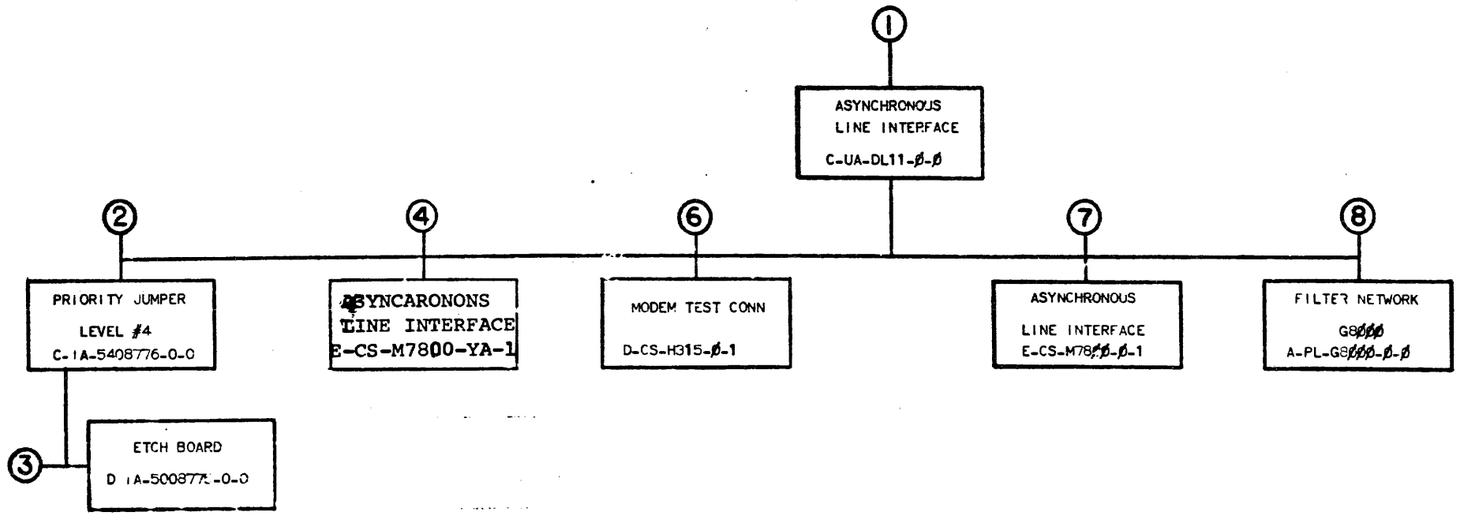
TITLE: ASYNCHRONOUS LINE INTERFACE

SIZE	CODE	NUMBER	REV
B	DD	DL11-Ø	C

DIST G

DRB 106

DEC 16-(325)-1062-1-N871



TITLE	SHEET	SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	2 OF 3	B	DD	DLII - Ø	C

DRB 107
DEC 16-(325)-1062-3-N871

CUSTOMER PRINT SET

DL11-1	DL11-2	DL11-3					DEPOT	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X	X	X						1.	C-UA-DL11-Ø-Ø	B	1	ASYNCHRONOUS LINE INTERFACE	
X	X	X							A-PL-DL11-Ø-Ø	B	1	ASYNCHRONOUS LINE INTERFACE (PL)	
	X	X							D-UA-BCØ5C-Ø-Ø	#	1	CABEE, MODEM, BCØ5C	
X		X							D-IA-7008360-0-0	#	1	CABLE, ASSEMBLY (KL8/E)	
									A-SP-DL11-Ø-1	*	11	ENGINEERING SPECIFICATION	
									A-SP-DL11-Ø-2	*	8	INSTALLATION PROCEDURE	
									A-SP-DL11-Ø-3	Δ	7	TEST PROCEDURE	
X	X								A-SL-DL11-Ø-4	*	1	SOFTWARE LIST	
X	X								A-AL-DL11-Ø-5	Δ	1	ACCESSORY LIST	
								2.	C-IA-5408776-0-0		1	PRIORITY JUMPER LEVEL #4	
									B-CS-5408776-0-1		1	CIRCUIT SCHEMATIC	
									K-CO-5408776-0-4		1	X-Y COORDINATE HOLE LOC	
									B-MH-5408776-0-6		1	MODULE ECO HISTORY	
								3.	C-AH-5408776-0-5		1	ASSY/DRILLING HOLE LAYOUT	
X								4	E-CS-M7800-YA-1	#	6	ASYNCHRONOUS LINE INTERFACE	
									K-CO-M7800-YA-4		1	X-Y COORDINATE HOLE LOCATION	
									D-AH-M7800-YA-5		1	ASSY DRILLING HOLE LAYOUT	
									B-MH-M7800-YA-6		1	MODULE ECO HISTORY	
	X	X						6.	D-CS-H315-Ø-1	#	1	MODEM TEST CONN	
									K-CO-H315-Ø-4		1	X-Y COORDINATE HOLE LOC	
									D-AH-H315-Ø-5		1	ASSY DRILLING HOLE LAYOUT	
									B-MH-H315-Ø-6		1	MODULE ECO HISTORY	
	X	X						7.	E-CS-M78ØØ-Ø-1	#	7	ASYNCHRONOUS LINE INTERFACE	
									K-CO-M78ØØ-Ø-4		1	X-Y COORDINATE HOLE LOC	
									D-AH-M78ØØ-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
									B-MH-M78ØØ-Ø-6		1	MODULE ECO HISTORY	
								8.	A-PL-G8ØØ-Ø-Ø		1	FILTER NETWORK	
	X								B-CS-G8ØØ-Ø-1	#	1	CIRCUIT SCHEMATIC	
									K-CO-G8ØØ-Ø-4		1	X-Y COORDINATE HOLE LOC	
									C-AH-G8ØØ-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
									B-MH-G8ØØ-Ø-6		1	MODULE ECO HISTORY	

MECHANICAL PRINT SET

DL11-1	DL11-2	DL11-3					DEPOT	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
								1.	C-UA-DL11-Ø-Ø	B	1	ASYNCHRONOUS LINE INTERFACE	
									A-PL-DL11-Ø-Ø	B	1	ASYNCHRONOUS LINE INTERFACE (PL)	
									D-UA-BCØ5C-Ø-Ø		1	CABLE, MODEM BCØ5C	
									D-IA-7008360-0-0		1	CABLE ASSEMBLY (KL8/E)	
								2.	C-IA-5408776-0-0		1	PRIORITY JUMPER LEVEL #4	
									K-CO-5408776-0-4		1	X-Y COORDINATE HOLE LOC	
									B-MH-5408776-0-6		1	ASSY/DRILLING HOLE LAYOUT	
								3.	D-IA-5008775-0-0		1	ETCH BOARD	
									C-AH-5408776-0-5		1	ASSY/DRILLING HOLE LAYOUT	
								6.	D-CS-H315-Ø-1		1	MODEM TEST CONN	
									K-CO-H315-Ø-4		1	X-Y COORDINATE HOLE LOC	
									C-AH-H315-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
									B-MH-H315-Ø-6		1	MODULE ECO HISTORY	
								7.	E-CS-M78ØØ-Ø-1		7	ASYNCHRONOUS LINE INTERFACE	
									K-CO-M78ØØ-Ø-4		1	X-Y COORDINATE HOLE LOC	
									D-AH-M78ØØ-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
									B-MH-M78ØØ-Ø-6		1	MODULE ECO HISTORY	
								8.	A-PL-G8ØØ-Ø-Ø		1	FILTER NETWORK	
									K-CO-G8ØØ-Ø-4		1	X-Y COORDINATE HOLE LOC	
									C-AH-G8ØØ-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
									B-MH-G8ØØ-Ø-6		1	MODULE ECO HISTORY	

TITLE	SHEET	SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	3 OF 3	B	DD	DL11-Ø	C

DRB 108

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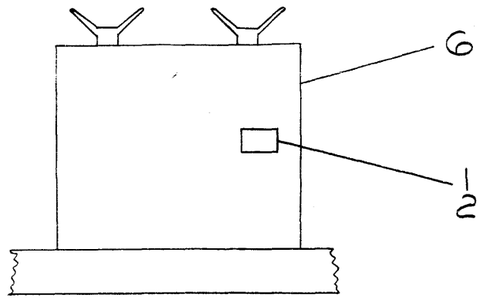
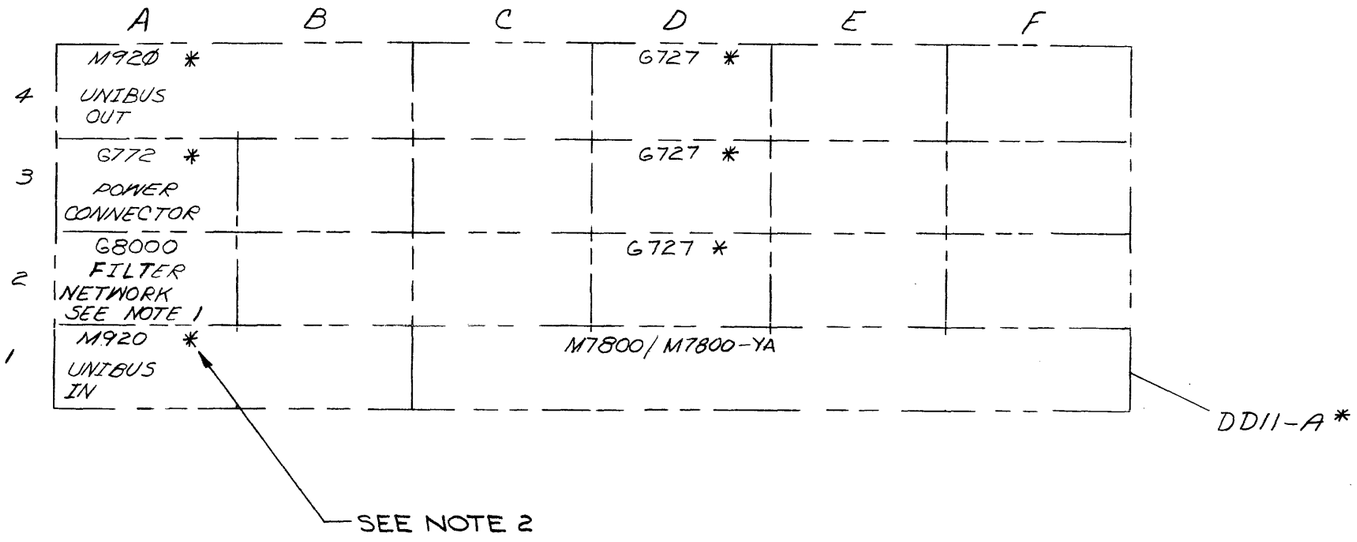


NOTES:

1. G 8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. THE INSTALLATION REQUIRES 2 WIRES TO BE ADDED.
   AØ3V2 - AØ2U2
   AØ2N2 - CXXU1
   WHERE (XX) IS THE SLOT NUMBER CONTAINING THE DL11.
2. ITEMS INDICATED WITH ASTERICK (*) ARE SHOWN FOR REFERENCE ONLY AND ARE NOT PART OF THIS UNIT.



REVISIONS			
CHK	CHANGE NO.	REV.	
PM	DL11-00001	A	M. Farrier 2-18-72 P. JANSON
PM	DL11-00002	B	P.E. Jenson 7-19-72 P.E. Jenson 11-6-72 P.E. JANSON 12-5-72

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-11		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. M. Farrier	DATE 7/18/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. J. Farrier	DATE 4-24-72	
ENG. P.E. Jenson	DATE 5-11-72	TITLE ASYNCHRONOUS LINE INTERFACE
PROJ ENG. P.E. Jenson	DATE 5-11-72	
PROD. [illegible]	DATE 5-15-72	

NEXT HIGHER ASSY. B-OD-DL11-Ø

SCALE NONE

SHEET OF

SIZE	CODE	NUMBER	REV.
C	UA	DL11-Ø-Ø	B

DIST. G

SIZE C | CODE UA | NUMBER DL11-Ø-Ø | REV. B

DEC FORM NO. DRC 100-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M.PIERCE	CHECKED J.FERGUSON	SECTION
DATE 4/27/72	DATE 4/27/72	1
ENG D.E.Jamson	PROD J. McIntyre	ISSUED SECT.
DATE 5/11/72	DATE 5/15/72	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-A	DL11-B	DL11-C	DL11-D	DL11-E							
1	C-IA-5408776-0-0	PRIORITY JUMPER LEVEL #4	1	1	1	1	1							
~~2~~	~~C-IA-5408778-0-0~~	~~PRIORITY JUMPER LEVEL #5~~	-	-	-	-	~~1~~							
3	D-UA-BCØ5C-25	CABLE, MODEM BCØ5C	-	1	-	1	1							
4	D-IA-7008360-0-0	CABLE ASSEMBLY (KL8E)	1	-	1	-	-							
5	D-CS-H315-Ø-1	MODEM TEST CONNECTOR	-	-	-	-	A/R	See Note 2						
6	E-CS-M7800-Ø-1	ASYNCHRONOUS LINE INTERFACE	-	1	-	1	1							
7	A-PL-G8ØØØ-Ø-Ø	FILTER NETWORK	-	A/R	-	A/R	A/R	See Note 1						
8		CRYSTAL	A/R	A/R	A/R	A/R	A/R	See Note 3						
9	E-CS-M7800-YA-1	ASYNCHRONOUS LINE INTERFACE	1	-	1	-	-							

NOTES:
1. G8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A.
2. ONE H315 PER PDP11 SYSTEM
3. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø	A	PL	DL11-Ø-Ø	B	DL11-00002
	SHEET 1 OF 1	DIST.	G			

DEC FORM DEC 16-(323)-1031-N870
DRA 110

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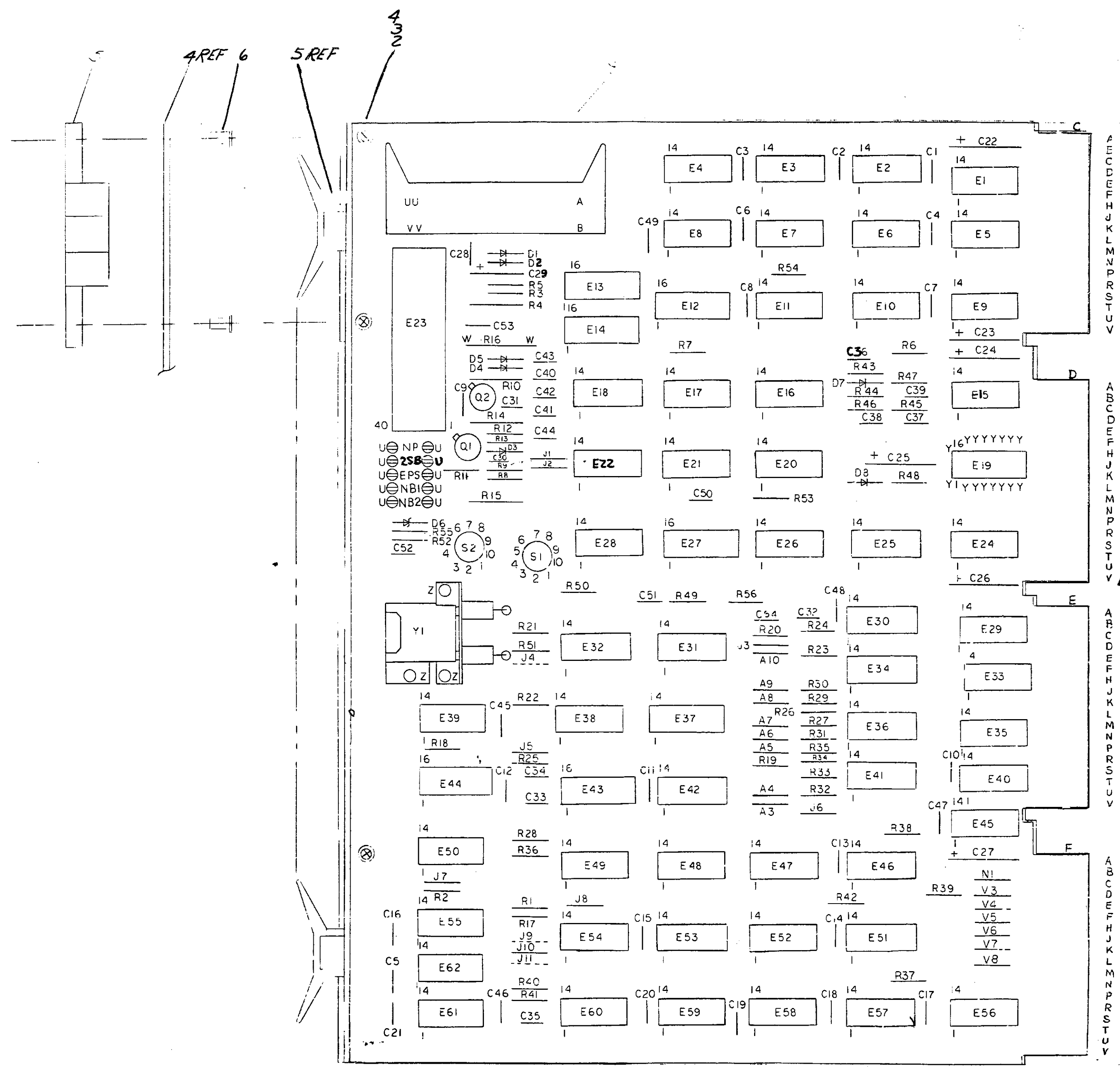
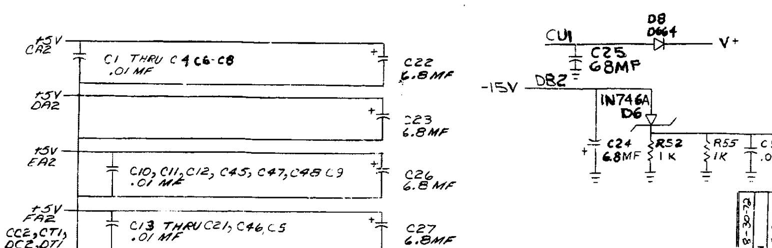
NOTES:

1.) PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE SYSTEM UNIT. MODULE REFERENCE ALONE IS OBTAINED BY CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT THE LEFT.
2.) JUMPERS TO BE USED AT CONNECTIONS A3-A10, J1-J10, V3-V8, AND N1.
3.) LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X).



PIN NOMENCLATURE

MODULE	SYSTEM UNIT
A	C
B	D
C	E
D	F



IC TYPE	GND	+5V	V	-12V
DEC 74161	8	16	—	—
DEC 1488	7	—	4	1
DEC UART	3	1	—	2
DEC 74175	8	16	—	—
DEC 8271	8	16	—	—
DEC 7442	8	16	—	—
DEC 314	1	8	—	—
DEC 7493	10	5	—	—
DEC 7492	10	3	—	—
DEC 74153	8	16	—	—
DEC 380	1	8	—	—
DEC 7490	10	5	—	—
DEC 74123	8	16	—	—

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

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E27	IC DEC 74161	1910650	70
3		NUT KEPS #2	9006555	69
3		SCR PHL PAN HD #2-56X 1/4 LG	9006001-1	68
2		AUGAT 8000 PG-1	1202812	67
7	D1-D5, D7 D8	DIODE D664 20V 100MA	1100114	66
1	D6	DIODE 1N746A	1104860	65
2	Q1, Q2	TRANSISTOR G534D	1503409-00	64
1	C53	CAP 100PF 100V 5% DIPPED MICA	1000016	63
1	C54	CAP 560PF 100V 5% DIPPED MICA	1000025	62
2	C50, C51	CAP .047MF CERAMIC	1009678	61
1	C36	CAP 220PF 100V 5% DIPPED MICA	1000021	60
2	C34, C35	CAP 330PF 100V 5% DIPPED MICA	1000023	59
9	C32, C37-C44	CAP 470PF 100V 5% DIPPED MICA	1000024	58
1	C31	CAP 1000PF 100V 5% DIPPED MICA	1000042	57
29	C1-C21, C28 C30, C45-C49, C52	CAP .01UF 100V 20% CERMIC DISC	1001610	56
1	C29	CAP .47UF 35V 10% TANT	1005965	55
6	C22-C27	CAP 6.8 UF 35V 20% TANT	1000067	54
1	C33	CAP 150PF 100V 5% DIPPED MICA	1000019	53
2	R14, R15	RES 1.5K 1/2W 5%	1300394	52
6	R23 R26, R40, R48, R52 R55	RES 1K 1/4W 5%	1300365	51
1	R41	RES 47Ω 1/4W 5%	1300202	50
1	R10	RES 68Ω 1/2W 10%	1300220	49
1	R5	RES 82Ω 1/4W 5%	1301477	48
4	R24, R45, R46, R47	RES 100Ω 1/4W 5%	1300229	47
1	R11	RES 150Ω 1/4W 5%	1300250	46
1	R42	RES 180Ω 1/4W 5%	1301322	45
2	R44, R53	RES 220Ω 1/4W 5%	1300271	44
1	R38	RES 390Ω 1/4W 5%	1300309	43
4	R9, R13, R43, R51	RES 470Ω 1/4W 5%	1300316	42
1	R4	RES 560Ω 1/2W 5%	1300338	41
1	R3	RES 750Ω 1/4W	1301401	40
1	R16	RES 750Ω 1W 5%	1302385	39
27	R1, R2, R6, R7, R17-R22, R25, R27-R37, R39, R49, R50, R54, R56	RES 10K 1/4W 5%	1300479	38
2	R8, R12	RES 1.5K 1/4W 5%	1300391	37
1	E23	IC DEC UART	1910459	36
4	E32, E55, E61, E62	IC DEC 7474	1905547	35
3	E15, E36, E41	IC DEC 8242	1909712	34
3	E31, E49, E59	IC DEC 7408	1910155	33
2	E18, E21	IC MC1489	1910323	32
2	E20, E26	IC DEC 7490	1909057	31
11	E1, E2, E5, E7-E9, E11, E30, E47, E54, E56	IC DEC 8881	1909705	30
1	E22	IC MC1488	1910322	29
1	E43	IC DEC 74123	1910436	28
3	E48, E57, E52	IC DEC 74H74	1909667	27
3	E42, E59, E58	IC DEC 7400	1905575	26
1	E10	IC DEC 7413	1909989	25
2	E50, E53	IC DEC 7402	1909004	24
8	E3, E4, E33, E35, E40, E45, E46, E28	IC DEC 380	1909485	23
1	E12	IC DEC 74153	1909537	22
1	E60	IC DEC 74H04	1909931	21
1	E25	IC DEC 7492	1909053	20
5	E6, E16, E17, E38, E39	IC DEC 7404	1909686	19
1	E24	IC DEC 7493	1909054	18
1	E34	IC DEC 7410	1905576	17
1	E29	IC DEC 314	1909704	16
1	E37	IC DEC 7442	1910046	15
1	E44	IC DEC 8271	1909615	14
2	E13, E14	IC DEC 74175	1910651	13
1		BRACKET, CRYSTAL HOLDER	5302825	12
1		BRACKET, CRYSTAL HOLDER	5303154	11
1	E19	IC SOCKET	[illegible]	10
2	S1, S2	SWITCH, SINGLE POLE, 10 POS	1210042-1	9
1		40 PIN CONNECTOR BERG	1209941	8
10		SPLIT LUGS	9006735	7
8		EYELET #GS4-7 E.B.STIMPSON	9006732	6
4		HANDLE, FLIP-CHIP, MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	5009978	4
REF		MODULE ECO HISTORY	B-MH-M7800-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7800-0-5	2
REF		X-Y COORDINATE HOLE	K-CC-M7800-0-4	1

PARTS LIST

ETCH BOARD REV E

REV	CHANGE NO.	DATE	CHK
B	N7800-00001	5/23/72 P. JANSON	
C	M7800-00002	6-22-72 / 6-12-72 P. JANSON	
D	M7800-00003E3A	7-21-72 / 6-26-72 P. JANSON / 8-30-72	

REVISIONS

DEC NO.	EIA NO.
G534D	MPS6534
1N746A	1/4M3.3AZ
D664	1N3606

SEMICONDUCTOR CONVERSION CHART

DRN. M. Pierce DATE 2/8/72
CHK'D, ENG., PROJ. ENG., PROD. (signed)
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 7

DIGITAL EQUIPMENT CORPORATION, MAYNARD MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE

SIZE E | CODE CS | NUMBER M7800-0-1 | REV D

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DL-2 BINIT H
DL1 BUS INIT L
DL-2 BINIT L

DL-2 BD07 H
DL-2 BD06 H
DL-2 BD05 H
DL-2 BD04 H
DL-2 BD03 H
DL-2 BD02 H
DL-2 BD01 H
DL-2 BD00 H

DL-4 RD7 H
DL-4 RD6 H
DL-4 RD5 H
DL-4 RD4 H
DL-4 RD3 H
DL-4 RD2 H
DL-4 RD1 H
DL-4 RD0 H
DL-5 RBUF TO BUS H

DL-4 XMIT READY H
DL-4 XMIT INT ENB (1)H
DL-4 MAINT (1)H
DL-4 BREAK (1)H
DL-5 XCSR TO BUS H

DL-4 RCVR DONE H
DL-4 RCVR INT ENB (1)H
DL-4 DATASET INT ENB (1)H
DL-4 SEC XMIT (1)H CK1
DL-4 REQ TO SEND (1)H CM1
DL-4 DATA TERMINAL READY (1)H CF1

CM2 BUS D07 L
CV2 BUS D06 L
CP2 BUS D05 L
CN2 BUS D04 L
CT2 BUS D03 L
CU2 BUS D02 L
CR2 BUS D01 L
CS2 BUS D00 L

+5V R1 10K J8 DL-5 RBUF TO BUS L

+5V R2 10K J7 DL-5 RCSR TO BUS L

DL-4 OR ERR H
DL-4 FR ERR H
DL-4 P ERR H

ERROR H

DL-7 DATASET INT (1)H
DL-7 RING H
DL-7 CLEAR TO SEND H
DL-7 CARRIER H
DL-5 RCSR TO BUS H
DL-4 RCVR BUSY (1)H
DL-7 SEC REC DATA H

CD2 BUS D15 L
CE2 BUS D14 L
CF2 BUS D13 L
CH2 BUS D12 L
CH1 BUS D11 L
CJ2 BUS D10 L

REVISIONS

CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11		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. B. Pisa DATE 3-20-72
CHKD. P. Ferguson DATE 4-5-72
ENG. Ralph Gordon DATE 4-12-72
PROJ ENG. W. Jensen DATE 4-27-72
PROD. M. Martin DATE 4-27-72
NEXT HIGHER ASSY. —/—
SCALE —/—
SHEET 2 OF 7

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (BUS RECEIVERS & DRIVERS) DL-2

SIZE	CODE	NUMBER	REV.
D	CS	M7800-0-1	D

DIST.

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YI		844.8 KHZ		1.3296 MHZ		1.152 MHZ		4.608MHZ	
		BAUD	μSEC	BAUD	μSEC	BAUD	μSEC	BAUD	μSEC
SWITCH POS.	1	36.7	1700	44.8	1342	50	1250	200	312
	2	55	1135	67.3	928	75	833	300	208
	3	110	567	134.5	464	150	417	600	104
	4	220	284	269	232	300	208	1200	52
	5	440	142	538	116	600	104	2400	26
	6	880	71	1076	58	1200	52	4800	13
	7	1320	47.4	1614	38.7	1800	34.6	7200	8.7
	8	1760	35.5	2152	29	2400	26	9600	6.5
	9	BERG CLOCK INPUT-COMMON TO RCVR AND XMIT							
	10	EXTERNAL CLOCK INPUT-RCVR: DSI; XMIT DRI							

DL-3 BB IN H	Ø1 / DU2 Ø2	18 DD2	BUS BR7 L
DL-6 BB OUT H	DV2 Ø3	15 DE2	BUS BR6 L
BUS BG4 OUT H	DT2 Ø4	14 DF2	BUS BR5 L
BUS BG4 IN H	DS2 Ø5	13 DH2	BUS BR4 L
BUS BG5 OUT H	DR2 Ø6	12 DJ2	DL-6 REQUEST L
BUS BG5 IN H	DP2 Ø7	11 DK2	BUS BG7 IN H
BUS BG8 OUT H	DN2 Ø8	10 DL2	BUS BG7 OUT H
		Ø9 DM2	BUS BG6 IN H

PRIORITY PLUG E19

NOTES:
1. LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X)
2. NUMBERS WITHIN TRIANGLES REFER TO PINS ON THE FEMALE MATE-N-LOCK CONNECTOR WHEN USING THE 70083GO CABLE. THIS CABLE ALSO CONNECTS BERG PINS H TO E.

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11		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 —

		DATE
DRN.	E Pinder	3-24-72
CHK'D.	[illegible]	4-5-72
ENG.	Larry Carlson	4/27/72
PROJ. ENG.	P S Fenn	4-27-72
PROD.	J. Mathe	4-27-72

NEXT HIGHER ASSY. —
SCALE —
SHEET 3 OF 7

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE (CLOCK & CURRENT LOOPS) DL-3

SIZE	CODE	NUMBER	REV.
D	CS	M78ØØ-Ø-1	D

DIST.

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DL-2 BINT L

DL-5 SEL 2 L — 7408 E31

UART E23

DL-2 BD07 H, DL-2 BD06 H, DL-2 BD05 H, DL-2 BD04 H, DL-2 BD03 H, DL-2 BD02 H, DL-2 BD01 H, DL-2 BD00 H — XD7, XD6, XD5, XD4, XD3, XD2, XD1, XD0

DL-5 LD XD L — LD XD

X CLK H — DU1 40 — X CLK

CLR LDC NB2 NB1 NP EP 2SB — 21, 34, 37, 38, 35, 39, 36

CLR R DONE, STB STATUS, STB RD, R CLK, SERIAL IN

R DONE, OR ERR — DL-4 OR ERR H, FR ERR — DL-4 FR ERR H, P ERR — DL-4 P ERR H

RD7 — DL-4 RD7 H, RD6 — DL-4 RD6 H, RD5 — DL-4 RD5 H, RD4 — DL-4 RD4 H, RD3 — DL-4 RD3 H, RD2 — DL-4 RD2 H, RD1 — DL-4 RDI H, RD0 — DL-4 RD0 H

SERIAL OUT, XRDY, EOC

+5V R17 10K — 7474 E55 — DL-4 RCVR BUSY (1)H

7404 E38 — 7408 E49 — DL-2 BINIT H

7402 E50

8271 E44 — CLR LD CLK DS — FSI DL-3 SI H

DL-3 RCLK H FRI — 7474 E55

7402 E58 — 7400 E42

7474 E61 — DL-4 SERIAL OUT H

7404 E17 — R53 220 — C54 560 pf

7400 E20 — SET 9 — CLR — CLKBC CLK0 — DL-3 XMIT CLK H

7400 E54 — 7408 E59 — J9, J11, J10

7404 E38 — 7408 E31 — 7474 E62

74175 E14 — CLR CLK

DL-2 BD02 H — D3 — R3(1) — DL-4 MA INT (1)H; R3(0)

DL-2 BD00 H — D2 — R2(1); R2(0) — J5 — +5K R18 10K — DL-4 BREAK (0)H

DL-2 BD06 H — D1 — R1(1) — DL-4 XMIT INT ENB (1)H; R1(0)

D0 — R0(1); R0(0)

7404 E39 — DL-4 BREAK (1)H

DL-5 BUS TO XCSR H

DL-4 XMIT READY H

7408 E31 — DL-4 XMIT INT H

DL-4 RCVR DONE H

7400 E42 — +5V R19 10K — J6 — DL-4 RCVR INT H

DL-7 DATASET INT (1)H

74175 E13 — CLR CLK

DL-2 BD05 H — D3 — R3(1) — DL-4 DATASET INT ENB (1)H; R3(0)

DL-2 BD02 H — D2 — R2(1); R2(0) — J3 — +5V R20 10K CMI — DL-4 REQ TO SEND (1)H; DL-4 REQ TO SEND (0)H

DL-2 BD06 H — D1 — R1(1) — DL-4 RCVR INT ENB (1)H; R1(0)

DL-2 BD03 H — D0 — R0(1) — 02 CKL DL-4 SEC XMIT (1)H; R0(0) — 03 DL-4 SEC XMIT (0)H

DL-4 DATA LEADS ONLY L

+5V R21 10K — J4

DTR 7474 E32 — DL-2 BD01 H — 09 CFI DL-4 DATA TERMINAL READY (1)H; 08 DL-4 DATA TERMINAL READY (0)H

+5V R22 10K

RDR ENB 7474 E32 — DL-2 BD00 H — 05 DL-4 RDR ENB (1) H

DL-5 BUS TO RCSR H

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11		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. B Pinson	DATE	3/26/72
CHK'D. R. Ferguson	DATE	6-11-72
ENG.	DATE	7/3/72
PROJ. ENG.	DATE	10-27-72
PROD.	DATE	4-27-73
NEXT HIGHER ASSY.		
SCALE		
SHEET 4 OF 7		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (UART & STATUS) DL-4

SIZE	CODE	NUMBER	REV.
D	CS	M7800-0-1	D

DIST.

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BUS A11 L EL1 Ø4
BUS A13 L EK2 Ø5
BUS A14 L EK1 Ø6
BUS A15 L ED2 Ø9
BUS A16 L EE2 1Ø
BUS A17 L ED1 11
BUS A12 L EC1 12
314 E29 Ø3

BUS MSYN L EE1 12
380 E30 13

Ø9 1Ø 11
7410 E34 8

Ø5 Ø6
8881 E30 Ø4
+5V
R23 1K
R24 1ØØ
Ø2 Ø3
8881 E30 Ø1
EJ1 BUS SSYN L
C32 47Ø pf

Ø9
7404 E39 Ø8
EL2 REG SEL H

A1Ø R27 1ØK
A9 R29 1ØK
A8 R3Ø 1ØK
A7 R31 1ØK
A6 R32 1ØK
A5 R33 1ØK
A4 R34 1ØK
A3 R35 1ØK
+5V
R26 1K
8242 E36
8242 E41

BUS A1Ø L EP1
BUS A09 L ER1
BUS A08 L EN2
BUS A07 L EP2
BUS A06 L EU1
BUS A05 L EV1
BUS A04 L EU2
BUS A03 L EV2
BUS A01 L EH1
BUS A02 L EF1
BUS A00 L EH2
BUS C1 L EF2
BUS C0 L EJ2
380 E40 E35 E45 E40 E35 E30 E35 E30 E35

Ø3 Ø4 Ø5
7410 E34 Ø6
1Ø Ø1 Ø2
7410 E34 12

7442 E37
12 D3
13 D2
14 D1
15 D0
f9 11
f8 1Ø
f7 Ø9
f6 Ø7
f5 Ø6
f4 Ø5
f3 Ø4
f2 Ø3
f1 Ø2
f0 Ø1

+5V R28 1ØK
+5V R25 1ØK
Ø9 1Ø Ø7
C33 15Ø pf
5ØØ ns
74123 E43
Ø5 12
Ø6 11
EBL DL-5 LD XD L
DL-5 BUS TO XBUF L

Ø3 7404 E39 Ø4 DL-5 BUS TO XCSR H
Ø5 7404 E39 Ø6 DL-5 BUS TO RCSR H
Ø1 7404 E38 Ø2 DL-5 XCSR TO BUS H
DL-5 RBUF TO BUS L
Ø3 7404 E38 Ø4 DL-5 RBUF TO BUS H
Ø5 7404 E38 Ø6 DL-5 RCSR TO BUS H

Ø1 Ø2
74123 E43
13 Ø4
Ø Ø4
+5V R36 1ØK
C34 33Ø pf
1ØØØ ns
Ø3
DL-5 SEL 2 L
DL-5 BUS TO RBUF L
DL-5 RCSR TO BUS L

NOTE 1: THE "A" LINES ARE TO BE JUMPERED FOR A 0.

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL: DL11	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		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 —

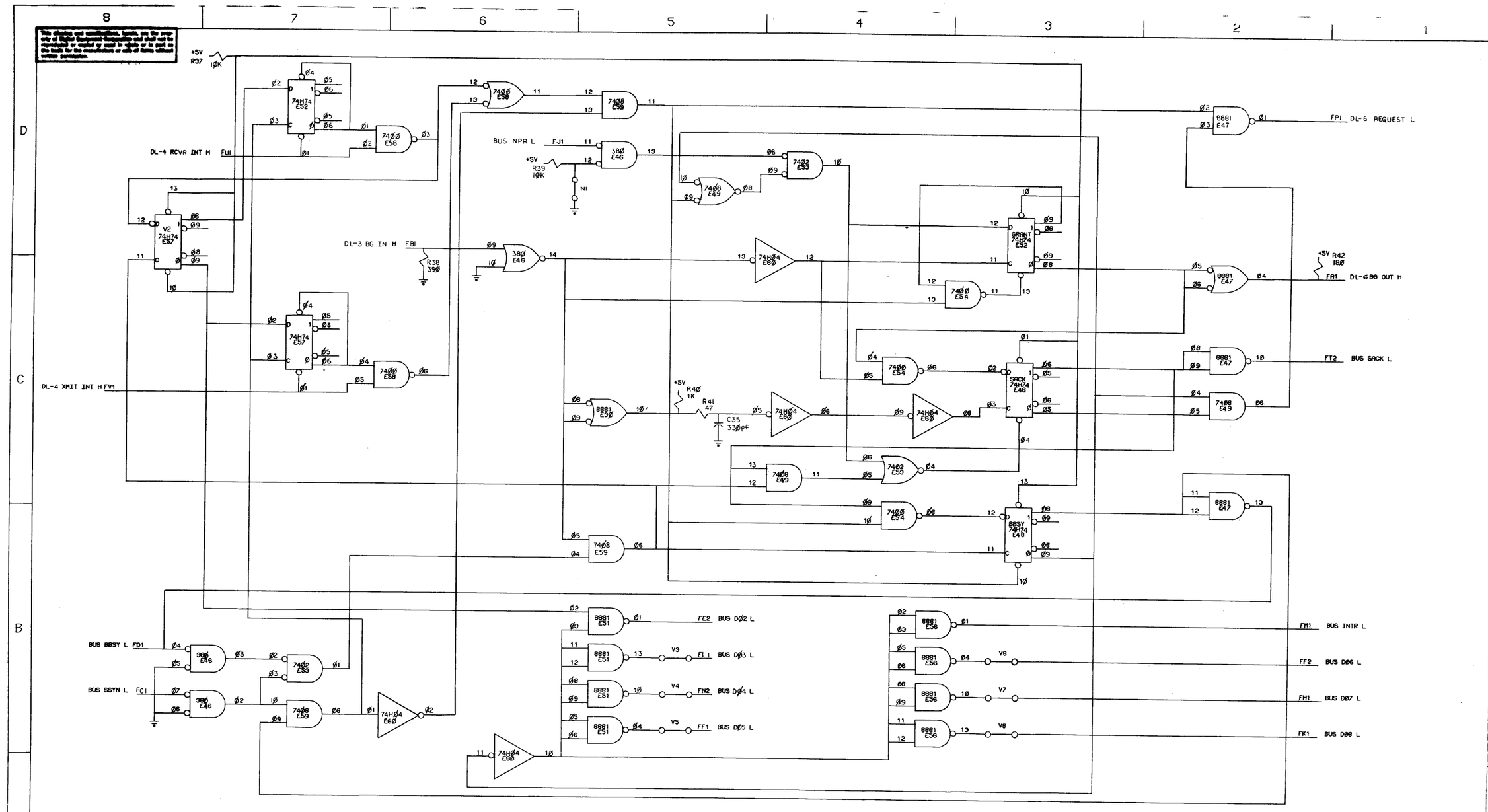
DRN. B. Pride — DATE 9-20-72
CHK'D. J. Ferguson — DATE 9-27-72
ENG. Dan Cardon — DATE 9/27/72
PROJ. ENG. Jim Guyer — DATE 9-27-72
PROD. — DATE 9/27/72
NEXT HIGHER ASSY. —
SCALE —
SHEET 5 OF 7

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (ADDRESS SELECTION) DL-5

SIZE	CODE	NUMBER	REV.
D	CS	M7800-0-1	D

DIST.



NOTE: THE "V" LINES ARE TO BE JUMPERED FOR A 1.

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL: DLII	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		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. B Pond DATE 3-26-79
CHK'D. [illegible] DATE 4-6-79
ENG. [illegible] DATE 4/6/79
PROJ ENG. DATE
PROD. [illegible] DATE 4-6-79
NEXT HIGHER ASSY.
SCALE
SHEET 8 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE (INTERRUPT CONTROL) DL-6

SIZE	CODE	NUMBER	REV.
D	CS	M7800-0-1	D

DIST.

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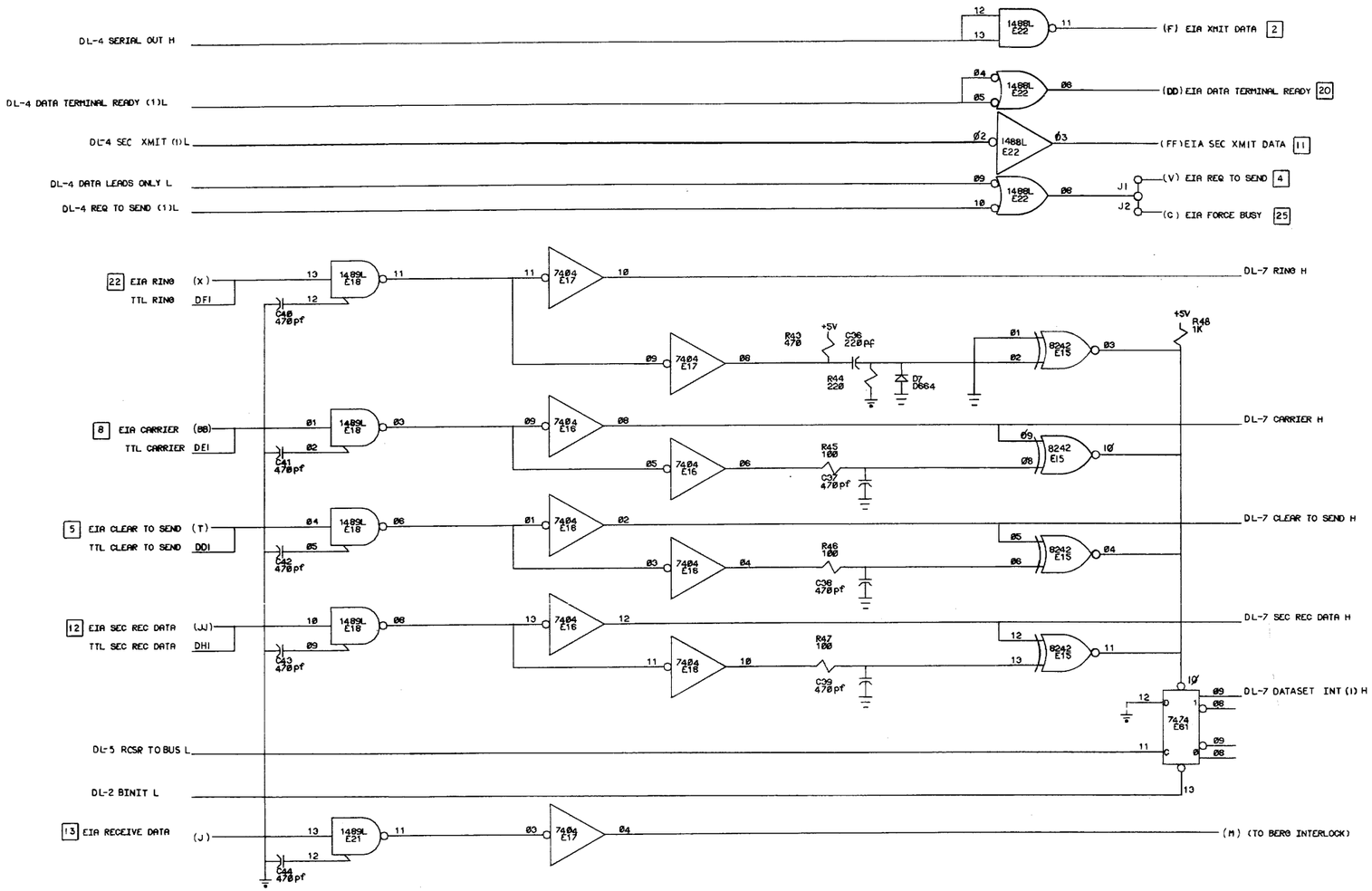

NOTES:

1. LETTERS ENCLOSED - EXAMPLE (M) REFER TO PINS ON THE BERG CONNECTOR.
2. NUMBERS WITHIN BOXES REFER TO PINS ON THE MALE CINCH CONNECTOR WHEN USING THE BC05-C CABLE. THIS CABLE ALSO CONNECTS BERG PINS M TO E.

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11		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.	B Pardi	DATE 5-??-72
CHK'D.	D Harrison	DATE 9-5-72
ENG.	Kay Carlson	DATE 10-??-72
PROJ. ENG.	Jim Guyer	DATE 9-??-72
PROD.	J Mallory	DATE 9-??-72
NEXT HIGHER ASSY.		
SCALE		
SHEET 7 OF 7		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (EIA DRIVERS & RECEIVERS) DL-7

SIZE	CODE	NUMBER	REV.
D	CS	M7800-0-1	D

DIST.

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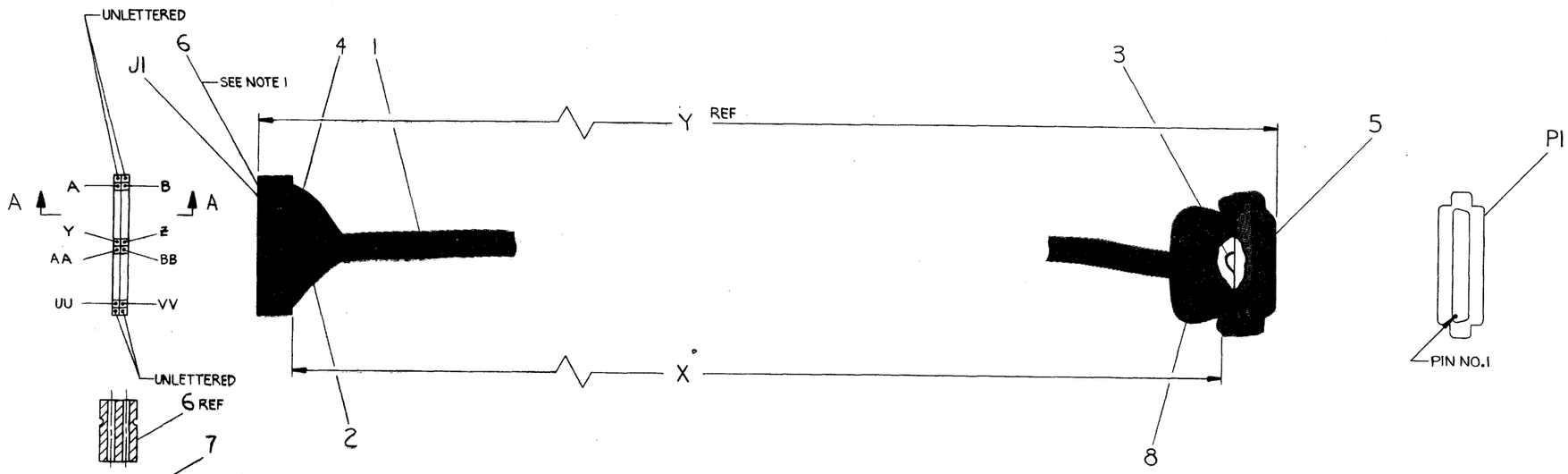
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
1	22	BLU/WHT	P1-1		J1-VV	
"	"	WHT/BLU	P1-2		J1-F	
		ORN/WHT	P1-3		J1-J	
		WHT/ORN	P1-4		J1-V	
		GRN/WHT	P1-5		J1-T	
		WHT/GRN	P1-6		J1-Z	
		BRN/WHT	P1-7		J1-UU	
		WHT/BRN	P1-8		J1-BB	
		SLA/WHT	P1-9		J1-Y	
		WHT/SLA	P1-10		J1-W	
		BLU/RED	P1-11		J1-FF	
		RED/BLU	P1-12		J1-JJ	
		ORN/RED	P1-13		J1-D	
"	"	SLA/RED	P1-14		J1-LL	
1	22	SLA/GRN	P1-15		J1-N	

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
1	22	RED/BRN	P1-16		J1-NN	
"	"	SLA	P1-17		J1-R	
		RED/SLA	P1-18		J1-U	
		BLU/BLK	P1-19		J1-P	
		BLK/BLU	P1-20		J1-DD	
		ORN/BLK	P1-21		J1-MM	
		BLK/ORN	P1-22		J1-X	
		GRN/BLK	P1-23		J1-RR	
		BRN/RED	P1-24		J1-L	
		RED/ORN	P1-25		J1-C	
"	"	BLK	P1-1	4	J1-A	
1	22	BLK	P1-7	4	J1-B	
3	26	BLK	P1-1		P1-7	
2	26	RED	J1-E		J1-M	

LEGEND NUMBER	VARIATION DIM X	VARIATION DIM Y (PRECUT)
BCØ5C-25	25'±3"	25'1.8"
BCØ5C-5Ø	5Ø'±2%	5Ø'1.8"

NOTES:
1. MANUFACTURING SHOULD USE MACHINE CRIMPER TOOL FOR CRIMPING PINS (ITEM #7) MUST BE HT68 FROM BERG ELECT
2. ONLY DEC PART #12100900-0-0 MAY BE USED AS J1.



ITEM NO.	QTY.	DESCRIPTION	PART NO.
1	1	HOOD, #DB51226-1 CINCH	12Ø5885
29	1	SOCKET, #HT-68	12100689-5
1	1	HOUSING, #20383 BERG	12100900-0-0
1	1	PLUG, #DB-25P CINCH	1205886
A/R	1	TUBING, #22 AWG TEF BLK	9107256-00
A/R	1	WIRE, #26 AWG STRD TEF BLK	9107636-00
A/R	1	WIRE, #26 AWG STRD TEF RED	9107636-22
A/R	1	CABLE, 25 CONDUCTOR	9107736

PARTS LIST

FIRST USED ON OPTION/MODEL: DN11

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

DRN. S Roberts DATE 11/3/71
CHK R. Cook DATE 11/5/71
ENG. [illegible] DATE 11/6/71
PROJ. ENG. [illegible] DATE 11/5/71
PROD. [illegible] DATE 11/7/71
NEXT HIGHER ASSY. —
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CABLE, MODEM BCØ5C

SIZE	CODE	NUMBER	REV.
D	UA	BCØ5C-Ø-Ø	A

DIST.

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	BCØ5C-Ø-ØØ1	A	11-7-71 SMITH

DFC FORM NO DRD 100-A

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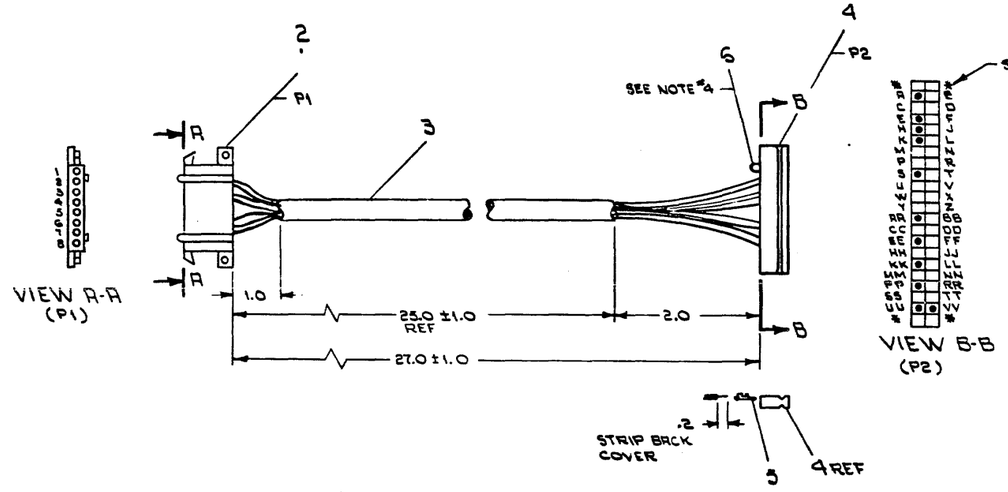
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	PAIR NO.	FROM CONNECTION	WITH	TO CONNECTION	WITH
3	22	BLK	1	P1-2	2	P2-KK	5
3		RED		P1-3	2	P2-S	
3,7		SHIELD		SEE NOTE #2	—	P2-R(NOTE #3)	
3		BLK	2	P1-4	2	P2-EE	
3		WHT		P1-5	2	P2-RR	
3,7		SHIELD		SEE NOTE #2	—	P2-UU(NOTE #3)	
3		BLK	3	P1-6	2	P2-PP	
3		GRN		P1-7	2	P2-K	
3,7		SHIELD		SEE NOTE #2	—	P2-VV(NOTE #3)	
6	22	BLK	—	P2-E	5	P2-H	5

NOTES:

1. * ASTERISKS INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
2. 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 CABLES.
3. DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM #7 (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
4. ITEM #6 (WIRE) TO BE APPROXIMATELY ONE (1) INCH LONG.



QTY	DESCRIPTION	PART NO	ITEM NO
A/R	TUB. #18 TEF. THINWALL VAT	9107278-11	7
A/R	WIRE, #22 AWG STR'D TEF BLK	9107350-00	6
11	SOCKET, BERG #47706	1210089-6	5
1	HOUSING, BERG #20383	1210090-0	4
A/R	CABLE, BELDEN #8777-3PR SHLD	9107723-0	3
6	CONTACT MATE-N-LOCK (FEMALE)	1209379	2
1	CONN. MATE-N-LOCK (FEMALE)	1209340-00	1

PARTS LIST

REVISIONS	CHANGE NO	CHK	REV
	RF-00[illegible]	[illegible]	A

FIRST USED ON OPTION/MODEL: PDP-8E

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

		DATE
DRN	[illegible]	DATE 12-2-71
CHKD	[illegible]	DATE 12-2-71
ENGR	[illegible]	DATE 12-2-71
PROJ ENG	[illegible]	DATE 12-2-71
PROD		DATE

NEXT HIGHER ASSY: A-ML-KL8-E-0

SCALE: NONE

SHEET 1 OF 1

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: CABLE ASSEMBLY (KL8E)

SIZE	CODE	NUMBER	REV
D	IA	7008360-0-0	A

DIST

DEC FORM NO IWD 100

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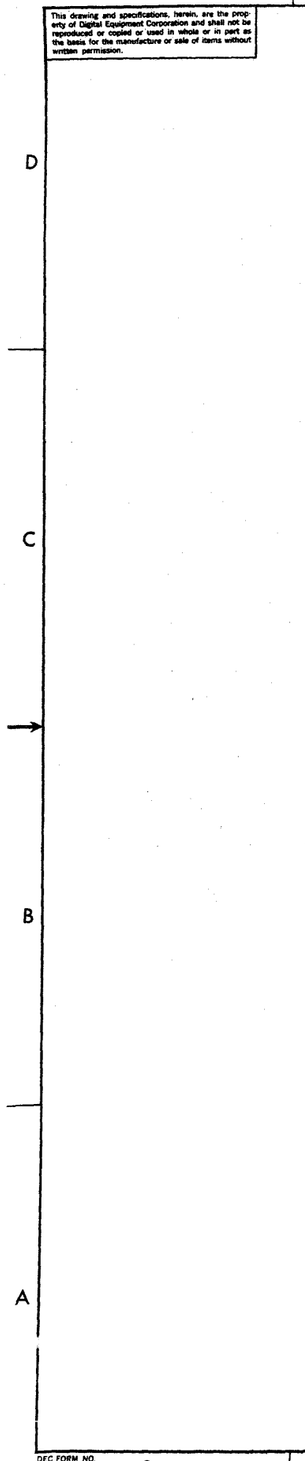

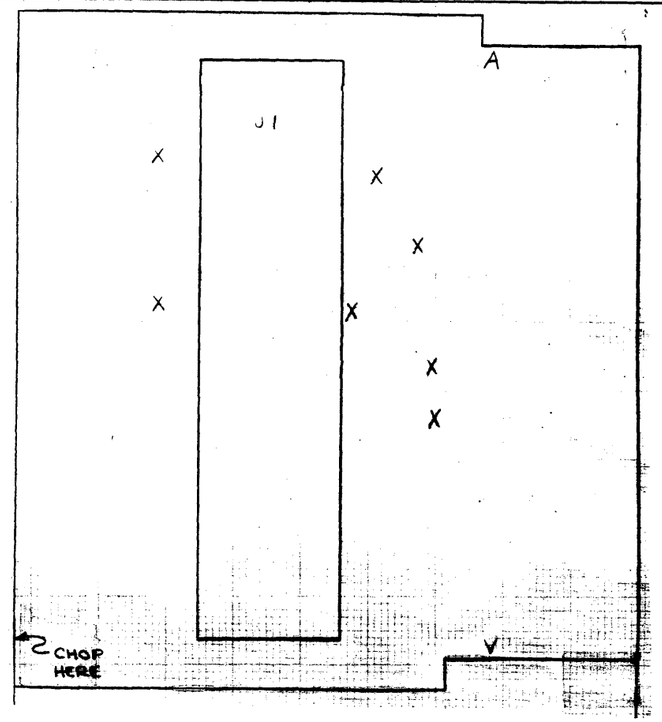

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
7		EYELET FEED THRU	9006731	6
1	J1	CONN. CINCH DB-255-3	1210247	5
1		ETCHED CIRCUIT BOARD	5010020	4
		MODULE ECO HISTORY	B-MM-H315-0-4	3
		ASSY/DRILLING HOLE LAYOUT	C-AH-H315-0-5	2
		X-Y COORDINATE HOLE LOCATION	K-CO-H315-0-4	1
QTY.	REF. DESIGNATION	DESCRIPTION	DEC PART NO.	ITEM NO.

ETCH BOARD REV A

REV	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. Roger J. Doucette DATE 3-5-72
CHK'D. DATE 3-16-72
ENG. DATE 3-17-72
PROG ENG. DATE 3-17-72
PROD'N DATE 3/24/72
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODEM TEST CONNECTOR

SIZE D | CODE DCS | NUMBER H315-0-1 | REV.

DIST.

DEC FORM NO. DRD-135

SIZE D | CODE DCS | NUMBER H315-0-1 | REV

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		SEQUENCE	
LIGHT PEN ASSY (375-Ø)	C-UA-375-Ø-Ø		

UNIT VARIATIONS

VAR	TITLE	PRINT SET 375-Ø
375-Ø	LIGHT PEN ASSY (375)	X

REVISIONS: REV | CHG. NO. | DATE

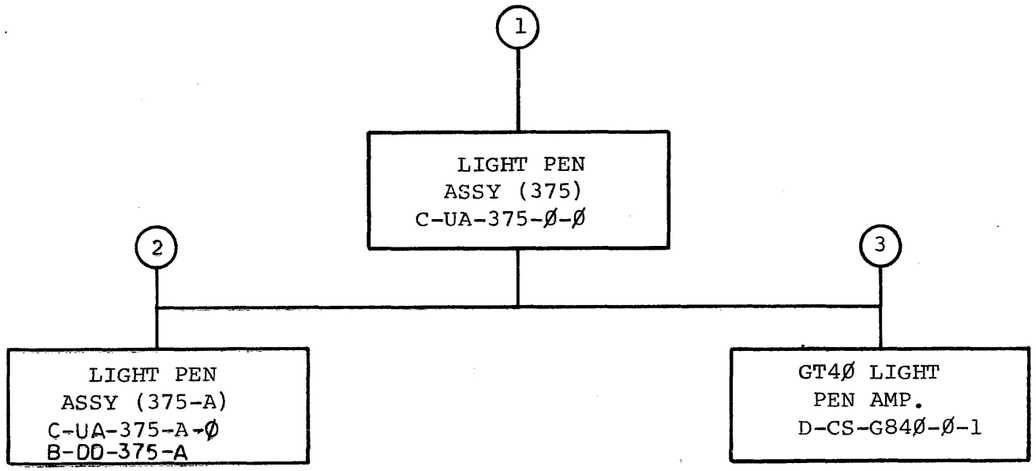
USED ON OPTION/MODEL

DRN. C.MCCOY	DATE 10/11/2	TITLE: LIGHT PEN ASSY (375)	
CHK'D. R.R.Golb	DATE 10-22-72		
PROJ ENG. H.C.Lavoie	DATE 10/24/72		
PROD. R.M.Conroy	DATE 10/30/72	SIZE B / CODE DD / NUMBER 375-Ø	REV
FIELD SERV. R.B.O'Donnell	DATE 10/26/72	DIST	

SHEET 1 OF 3

DRB 106

DEC 16-(325)-1062-1A-R972



TITLE		SIZE	CODE	NUMBER	REV
LIGHT PEN ASSY (375)	SHEET 2 OF 3	B	DD	375-Ø	

DRB 107
DEC 16—(325)—1062—3—N871

ELECTRICAL

CUSTOMER PRINT SET 375-Ø	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		3	D-CS-G84Ø-Ø-1		2	GT4Ø LIGHT PEN AMP.	

MECHANICAL

CUSTOMER PRINT SET 375-Ø	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	C-UA-375-Ø-Ø	#	1	LIGHT PEN ASSY (375-Ø)	
			1209608		1	CABLE	
		2	C-UA-375-A-Ø	#	1	LIGHT PEN ASSY (375-A)	
			B-DD-375-A	#	3	LIGHT PEN ASSY (375-A)	
		3	D-CS-G84Ø-Ø-1		2	GT4Ø LIGHT PEN AMP.	

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
LIGHT PEN ASSY (375)	SHEET 3 OF 3	B	DD	375-Ø	

DRB 108

DEC 16-(325)-1062-2B-R972

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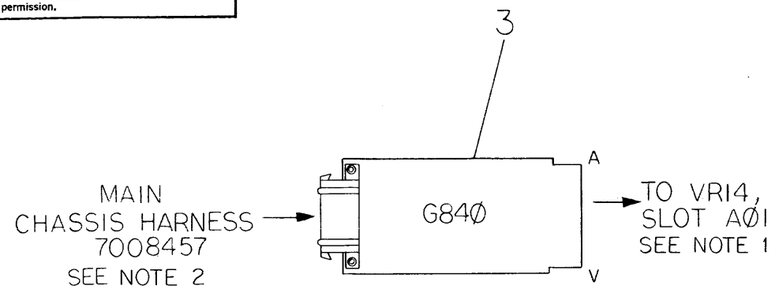
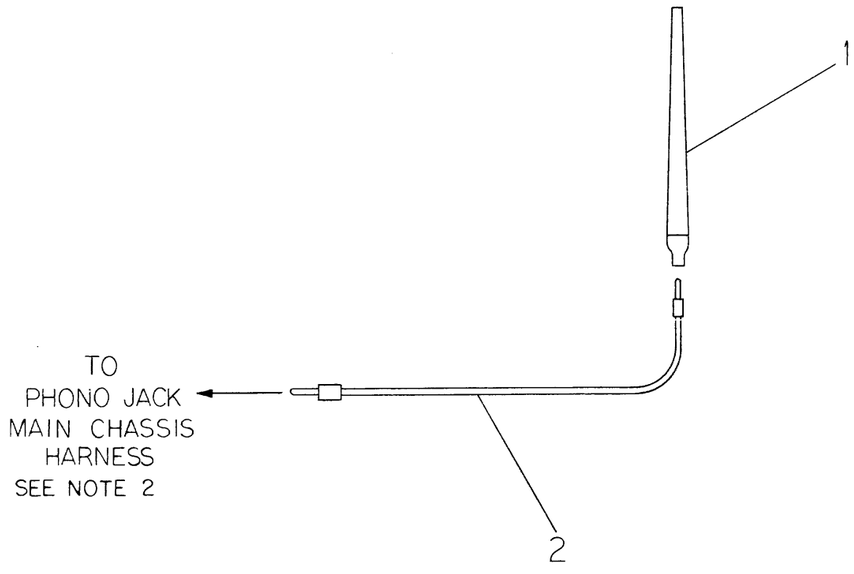
NOTES:
1. ITEM #3 (L.P. AMPLIFIER) REPLACES THE G838 PHOSPHOR PROTECT MODULE IN SLOT AØ1 IN THE VR14.
2. MAIN CHASSIS HARNESS SUPPLIED WITH EXISTING HARDWARE.





1	GT4Ø LIGHT PEN AMP.	G84Ø	3
1	CABLE, SWITCHCRAFT	1209608	2
1	LIGHT PEN ASSY (375-A)	C-UA-375-A-Ø	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: VR14

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—

FINISH —"—

DRN. CBMcG	DATE 10-12-72	
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

NEXT HIGHER ASSY. B-DD-375-Ø

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LIGHT PEN ASS'Y (375)

SIZE	CODE	NUMBER	REV.
C	UA	375-Ø-C	

DIST.

REVISIONS

REV.	CHANGE NO.	CHK

SIZE C CODE UA NUMBER 375-Ø-Ø REV.

DEC FORM NO. DRG 109-A

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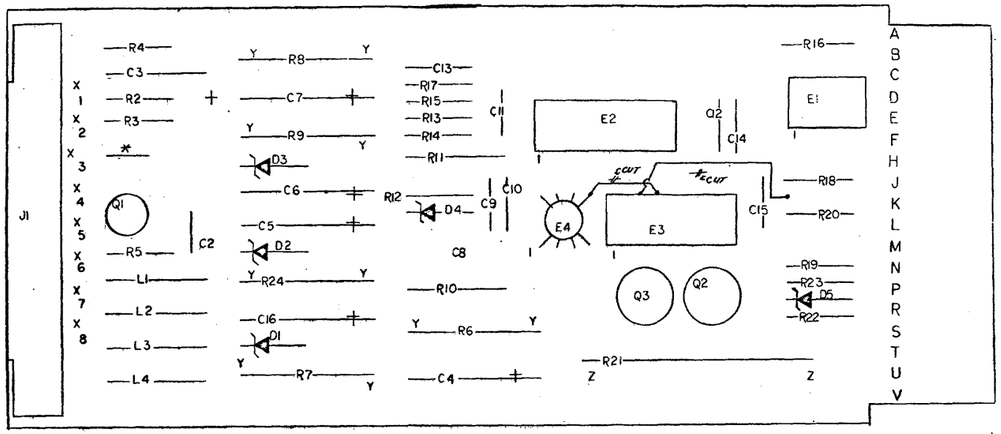
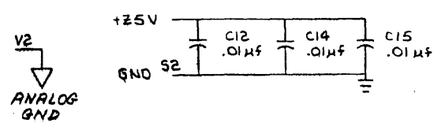
NOTES:

1. PLACE ITEM #40 (TERMINAL) ON ITEM #25 (RESISTOR) R21.





QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		INSULATED JUMPER (1/4")	9009185	41
2		SOLDER TERMINAL #2027-2 CAMBION	9008085	40
2		EYELET GS4-7 STIMPSON	9006732	39
8		PIN SOCKET #61320-1 (MATE-N-LOCK)	1209456	38
1		CONN MATE-N-LOCK (6 SOCKET) #4-480459	1209340-00	37
1	E3	IC DEC 74H04	1909931	36
1	E1	IC 75453	1911036	35
1	E2	IC 9602	1910951	34
1	E4	IC LM306	1909675	33
4	L1,L2,L3,L4	CHOKE 2200 UH 10% 99 ma	1603421	32
1	Q1	TRANS DEC 6534B	1503409-01	31
1	Q3	TRANS 2N2904A	1501913	30
1	Q2	TRANS DEC 2219-3	1501891	29
1	R5	RES 180 5% 1/4W	1301322	28
1	R14	RES 68K 5% 1/4W	1301327	27
2	R10, R11	RES 10K 1% 1/8W MF	1302886	26
1	R21	RES 150 5% 5W WW	1301898	25
2	R3, R18	RES 2.2K, 5% 1/4W	1300417	24
2	R7, R8	RES 10, 5% 1 W	1300171	23
1	R22	RES 10, 5% 1/4 W	1301317	22
4	R2, R13, R17, R23	RES 4.7K, 5% 1/4W	1300447	21
2	R4, R15	RES 1K 5% 1/4 W	1300365	20
1	R12	RES 470, 5% 1/4 W	1300316	19
1	R6	RES 100 5% 2W	1302380	18
2	R16, R20	RES 150 5% 1/4 W	1300250	17
2	R9, R24	RES 100 5% 1W	1300232	16
1	R19	RES 100 5% 1/4W	1300229	15
1	D9	DIODE IN 746A, 3.6V 5% 400W	1104860	14
2	D1, D5	DIODE 1N4733A 5.1V, 5% 1W	1109943	13
2	D2, D3	DIODE IN4744	1105648	12
5	C4, C5, C6, C7, C16	CAP 6.8UF, 10%, 35V TANT	1005306	11
1	C13	CAP .047UF, 20%, 250V MYLAR	1003053	10
1	C3	CAP 1.0UF, 10%, 35V TANT	1001776	9
5	C15, C12, C14, C10, C9	CAP .01UF, 20%, 50V	1001610-00	8
1	C11	CAP 47PF 5% 100V DM	1000011	7
1	C8,	CAP .02UF 20% 100V DISC	1000004	6
1	C2	CAP 100PF 5% 100V DM	1000016	5
1		ETCHED CIRCUIT BOARD	5010281	4
REF		MODULE ECO HISTORY	B-MH-G840-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-G840-0-5	2
REF		XY COORDINATE HOLE LOCATION	K-CO-G840-0-4	1

PARTS LIST

ETCH BOARD REV C

FIRST USED ON OPTION MODEL: VT40

IC TYPE	GND	+ 5V
IC 9602	8	16
IC 75453	4	8

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

IC PIN LOCATIONS

REVISIONS	CHANGE NO.	ORIGINATED	CHK
DEC 6534B	SAME		
2N2904A	SAME		
DEC 2219-3	SAME		
IN4733A	SAME		
IN746A	SAME		
IN4744	SAME		
DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN.	J. Chartow	DATE 11/9/72
CHK'D	D.J. Lefebvre	DATE 11/9/72
ENG.	T. Conroy	DATE 11-9-72
PROJ. ENG.	Howard Lavoie	DATE 11/9/72
PROG.	T. McCarthy	DATE 11/9/72
NEXT HIGHER ASSY		
SCALE		
SHEET 1 OF 2		

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: VT 40 LIGHT PEN AMPLIFIER

SIZE D | CODE CS | NUMBER G840-0-1 | REV. B

DIST.

DRAWING 40-522 16699

DEC FORM NO DRD-139A

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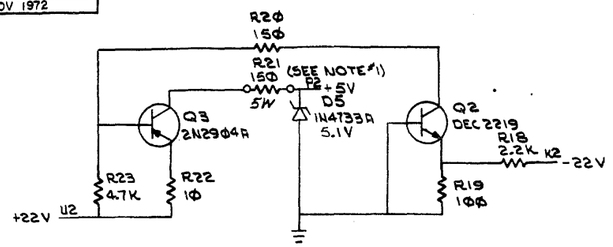

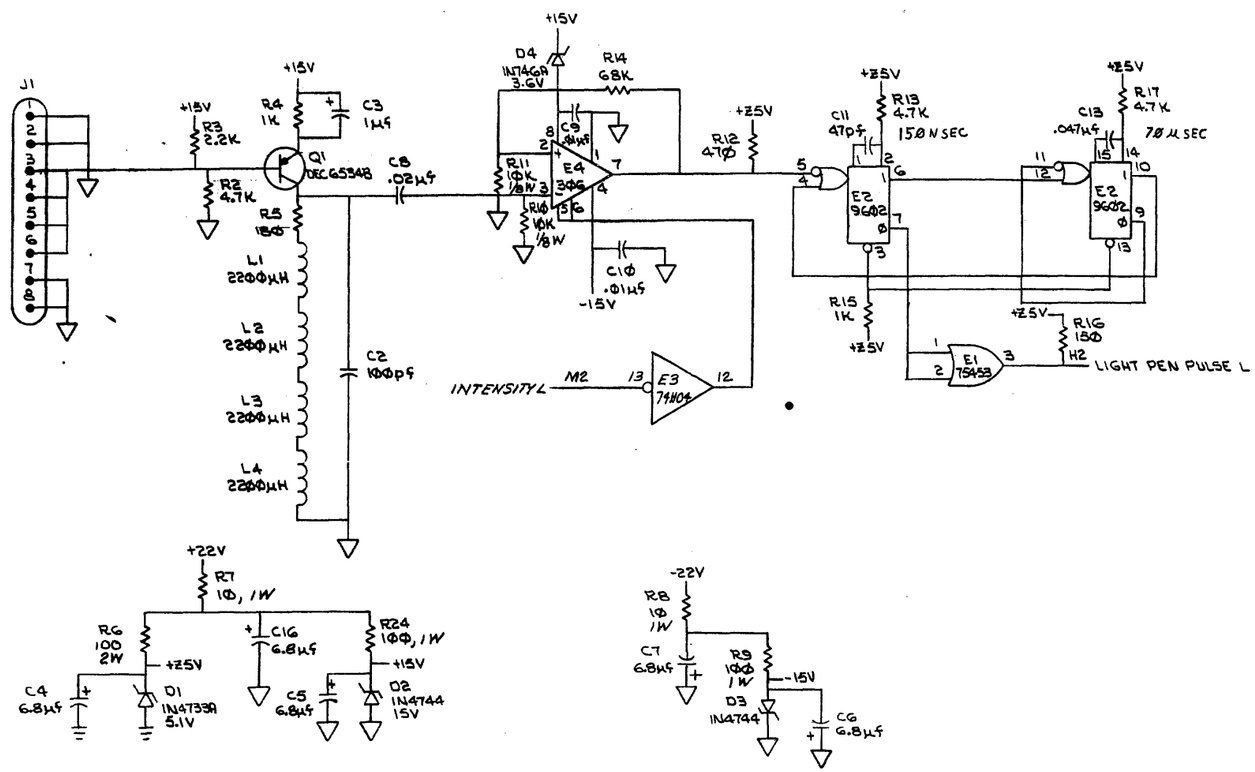

FIRST USED ON OPTION/MODEL: VT40	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. J. Fenton	DATE 3 NOV 72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. NANCY MOORE	DATE 11-9-72	
ENG. J. Tomony	DATE 11-7-72	
PROJ. ENG. H.E. Laviose	DATE 11/9/72	
PROD. [illegible]	DATE [illegible]	

NEXT HIGHER ASSY. —

SCALE —

SHEET 2 OF 2

TITLE: VT40 LIGHT PEN AMPLIFIER

SIZE	CODE	NUMBER	REV.
D	CS	G840-0-1	B

DIST.

DRAWING 40-522 15840
REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 107-B