PDP-11/45
system
engineering drawings

digital equipment corporation · maynard. massachusetts

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © , DIGITAL EQUIPMENT CORPORATION"

CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-11/45-0 (SHT. ONE ONLY)		
CONSOLE PHYSICAL LAYOUT	E-IA-5409684-0-0		
CIRCUIT SCHEMATIC	D-CS-5409684-0-1		
DRAWING DIRECTORY	B-DD-KB11-0 (SHT. ONE ONLY)		
POWER SYSTEM CONFIGURATION	D-IC-11/45-0-1		
11/45 BACK PANEL PC BOARD	D-IC-11/45-0-2		
WIRE LIST	K-WL-7009540-0-2		
DRAWING DIRECTORY	B-DD-861-0 (SHT. ONE ONLY)		
DRAWING DIRECTORY	B-DD-H742-0 (SHT. ONE ONLY)		
DRAWING DIRECTORY	B-DD-H744-0 (SHT. ONE ONLY)		
DRAWING DIRECTORY	B-DD-H745-0 (SHT. ONE ONLY)		
DRAWING DIRECTORY	B-DD-H746-0 (SHT. ONE ONLY)		
CIRCUIT SCHEMATIC	E-CS-H754-0-1		
G772-OPTION HARNESS	E-IA-7009562-0-0		
ACCESSORY LIST	A-AL-11/45-0-3		
ARRANGEMENT DRAWING	D-AR-11/45-0-4		
ARRANGEMENT PARTS LIST	C-PL-11/45-0-4		
DRAWING DIRECTORY	B-DD-DL11-1		

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET 11/45-1
11/45-CA	BASIC ASSY (PDP-11/45) 115V	X
11/45-CB	BASIC ASSY (PDP-11/45) 230V	X
11/45-CC	BASIC ASSY + LA3Ø 115V	X
11/45-CD	BASIC ASSY + LA3Ø 230V	X
11/45-CE	BASIC ASSY + VTØ5B 115V	X
11/45-CF	BASIC ASSY + VTØ5B 230V	X
11/45-CH	BASIC ASSY + LA3Ø 115V	X
11/45-CJ	BASIC ASSY + LA3Ø 230V	X
11/45-CK	BASIC ASSY + VTØ5B 115V	X
11/45-CL	BASIC ASSY + VTØ5B 230V	X
11/45-FA	BASIC ASSY 115V	X
11/45-FB	BASIC ASSY 230V	X
11/45-GA	BASIC ASSY + LA3Ø 115V	X
11/45-GB	BASIC ASSY + LA3Ø 230V	X
11/45-GE	BASIC ASSY + LA3Ø 115V	X
11/45-GF	BASIC ASSY + LA3Ø 230V	X

REVISIONS		
DATE	CHG. NO.	REV
3/74	11/45-57	Y
6/74	11/45-58	Z

DEC 19-13251-106-1A-R672

DRB 106

USED ON OPTION/MODEL	
PDP-11	

SHEET 1 OF 4

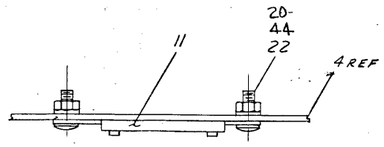
DRN. R. COOK	DATE 4/72	TITLE BASIC ASSY (PDP11/45)	
CHK'D. R. COOK	DATE 4/72		
PROJ ENG. B. DELAGI	DATE 4/72		
PROD. A. HIRSCH	DATE 5/72	SIZE B / CODE DD / NUMBER 11/45-0	REV Z
FIELD SERV. ART ZINS	DATE 5/72	DIST	

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

KNOB LOCATIONS	
ITEM NO.	REFERENCE DESIGNATIONS
8	S1-S3, S7-S9, S13-S15, S20, S22, S24, S26, S28
40	S4-S6, S10-S12, S16-S18, S21, S23, S25, S27
41	S19

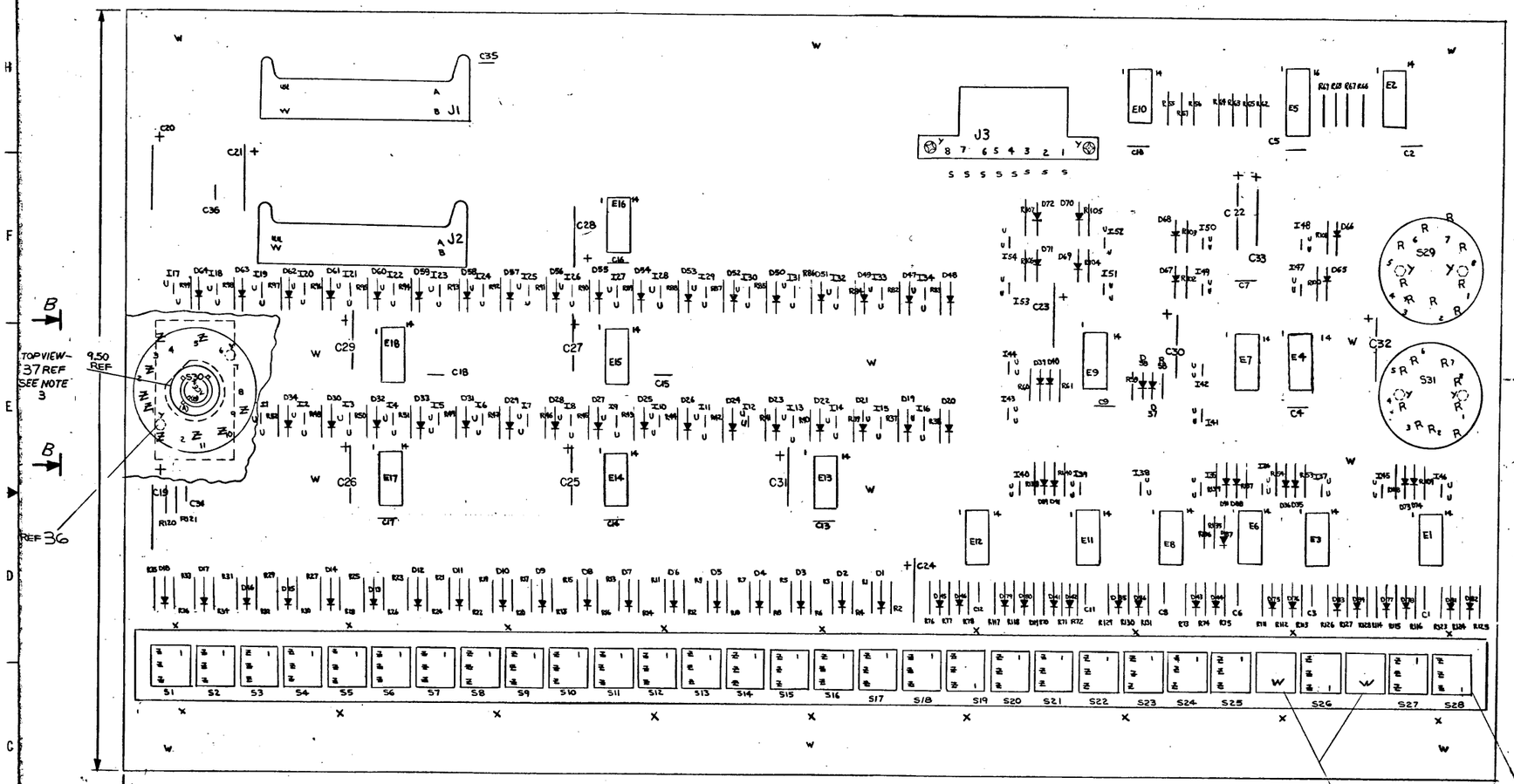
NOTES CONT

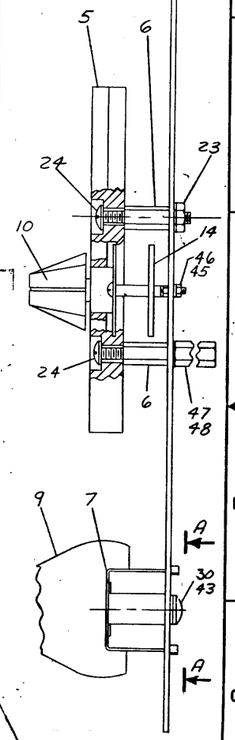
3. IN ORDER TO GET THE PROPER ALIGNMENT BETWEEN ROTARY SWITCH #17 AND POWER LOCK #37, MOUNT ITEM #17 ON P.C. BOARD AND TURN SHAFT C'CLOCKWISE (LEFT) TO STOP. MOUNT ITEM #37 TO SUPPORT BRACKET ITEM #5 WITH 'D' HOLE IN POSITION INDICATED. ROTATE KEY POSITION INDICATED AS 'B' OF ITEM #37 TO LINE UP WITH KEY POSITION INDICATED AS 'A' OF ITEM #37.

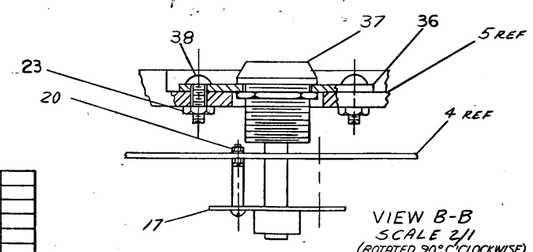


NOTES

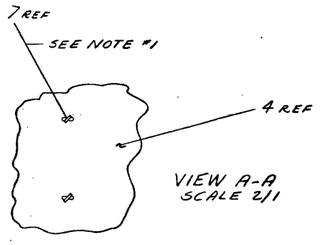
1. AFTER ASSEMBLING ITEM #7 TO ITEM #4, THE TABS OF ITEM #7 ARE TO BE TWISTED AS SHOWN IN VIEW A-A
2. ON S1-S19, S26, S28, THE SWITCH ARM IS TO FLIP UP. THE SWITCH ARM TO FLIP DOWN ON 20-25/27.







VIEW B-B
SCALE 2/1
(ROTATED 90° C'CLOCKWISE)



VIEW A-A
SCALE 2/1

SEE SHEET 2 FOR 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.	AWG	FROM PT	TO PT

JUMPER LIST

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

CHK	REVISIONS	CHANGE NO.	REV
J. SWANSON	ORIGINATED	0000	A
J. SWANSON	5409684-00002	00122	B
J. SWANSON	5409684-00003	01172	C
J. SWANSON	5409684-00004	01272	D
J. SWANSON	5409684-00005	01772	E

NEXT HIGHER ASSY E-11A-KB11-A-A

SCALE 2/1 SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ETCH BOARD ASSY (11/45 CONSOLE)

SIZE E | CODE A | NUMBER 5409684-00 | REV E | DIST

DRN J. Swanson 2-6-72
CHKD G.K. 2/8/72
ENG [illegible] 2/8/72
PROJ. ENG. [illegible] 2/8/72
PROG. [illegible] 3-30-72

DEC FORM NO. DRE 104

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

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R120	RES. 68 1/4W 10%	1300221	51
1	R121	RES. 56 1/4W 10%	1301429	50
				49
3		LOCKWASHER INT TOOTH #6	9006633	48
3		SPACER .25 A.F. #6-32XB816	9006861	47
4		LOCKWASHER #2 INT TOOTH	9006631	46
4		NUT, HEX #2-56	9006555	45
2		SCR. PHL HD PAN #4-40 X .38	9006011-1	44
2		LOCKWASHER #8 INT TOOTH	9006634	43
REF		ASSY/DRILLING HOLE LAYOUT	E-MH-5409684-0-S	42
1		KNOB, SWITCH GRAY	D-FS-1210736-3-0	41
13		KNOB, SWITCH MAGENTA	D-FS-1210736-2-0	40
1	E8	I.C. DEC 7404	1309686	39
2		SCR. PNL PAN HD #6-32 X .3816	9006022-1	38
1		POWER LOCK	1210754	37
1		STRAP, LOCK MTG	B-1A-7409784-00	36
1	E9	I.C. MC 3001	1909514	35
7	E7, E13-E18	I.C DEC 7416	1909928	34
1	E5	I.C DEC 9318	1910454	33
2	E2, E4	I.C DEC 7417	1909929	32
6	E1, E3, E6, E10-E12	I.C DEC 7400	1905575	31
2		8-32 X1/4 SELF TAPPING SCR.	9008143	30
58	R37-R54, R58-R61, R82-R109, R137-R140	RES. 220Ω 1/4W, 10%	1300275	29
76	R1-R36, R55-R57, R62-R78, R111-R115, R123-R131, R135, R136	RES. 2.2K 1/4W, 10%	1300418	28
15	C19-C33	CAP. 6.8 μf 35V 20% STANT	1000067	27
21	C1-C18, C34-C36	CAP. .01 μF 100V 20%	1001610	26
91	D1-D91	DIODE DG64	1100117	25
6		SCR. PHL PAN HD #6-32X.50L6	9006024-1	24
5		NUT, KEPS #6-32	9006560	23
2		WASHER, FIBER H.H.SMITH 242	9006693	22
				21
4		NUT, NYLON #4-40	9007992	20
108		LAMP SOCKET	9003812	19
54	I1-I54	LAMP 2309G NUDSON BLUE	1209219	18
1	S30	SWITCH ROTORY (LEDEX) 3 POS	1210753	17
8	S19-S22, S25-S28	SWITCH SPDT MOMENTARY (CEK)	1210841	16
20	S1-S18, S23, S24	SWITCH SPDT (CEK)	1210840	15
2	S29, S31	SWITCH ROTARY (LEDEX) 8 POS	1210775	14
2	J1, J2	CONN. RIGHT ANGLE HEADER	1209981	13
8		PIN SOCKET AMP 61320-1	1209456	12
1	J3	PIN HOUSING	1209390-00	11
2		KNOB, FUNCTION BLK	1210773	10
2		KNOB, DUMMY GRAY	D-PS-1210825-00	9
14		KNOB, SWITCH ROSE	D-FS-1210796-1-0	8
1		SUPPORT, SWITCH	D-MD-7409270-1-0	7
6		STANDOFF, MALE/FEMALE 6-32	9009120-2	6
1		SUPPORT, INDICATOR PANEL	D-MD-7409785-0-0	5
REF		ETCHED CIRCUIT BOARD	5009683	4
REF		MODULE ECO HISTORY	E-MH-5409684-0-0	3
REF		CIRCUIT SCHEMATIC	D-CS-5409684-0-1	2
REF		X-Y COORDINATE HOLE LOC	K-CO-5409684-0-0	1

PARTS LIST

~~ETCH BOARD REV:~~

IC TYPE	GND	+5V
DEC 9318	8	16

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

CHK1	CHANGE NO.	REV
	REVISIONS	

DEC NO.	EIA NO.	DEC NO.	EIA NO.
DG64	1N3606		

SEMICONDUCTOR CONVERSION CHART

DRN [signature] DATE 4/19/72
CHK'D [signature] DATE 12/1/72
ENG DATE
PROJ. ENG [signature] DATE 4/19/72
PROJ. DATE
NEXT HIGHER ASSY E-UA-KB11-A-0

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ETCH BOARD ASSY (11/45 CONSOLE)

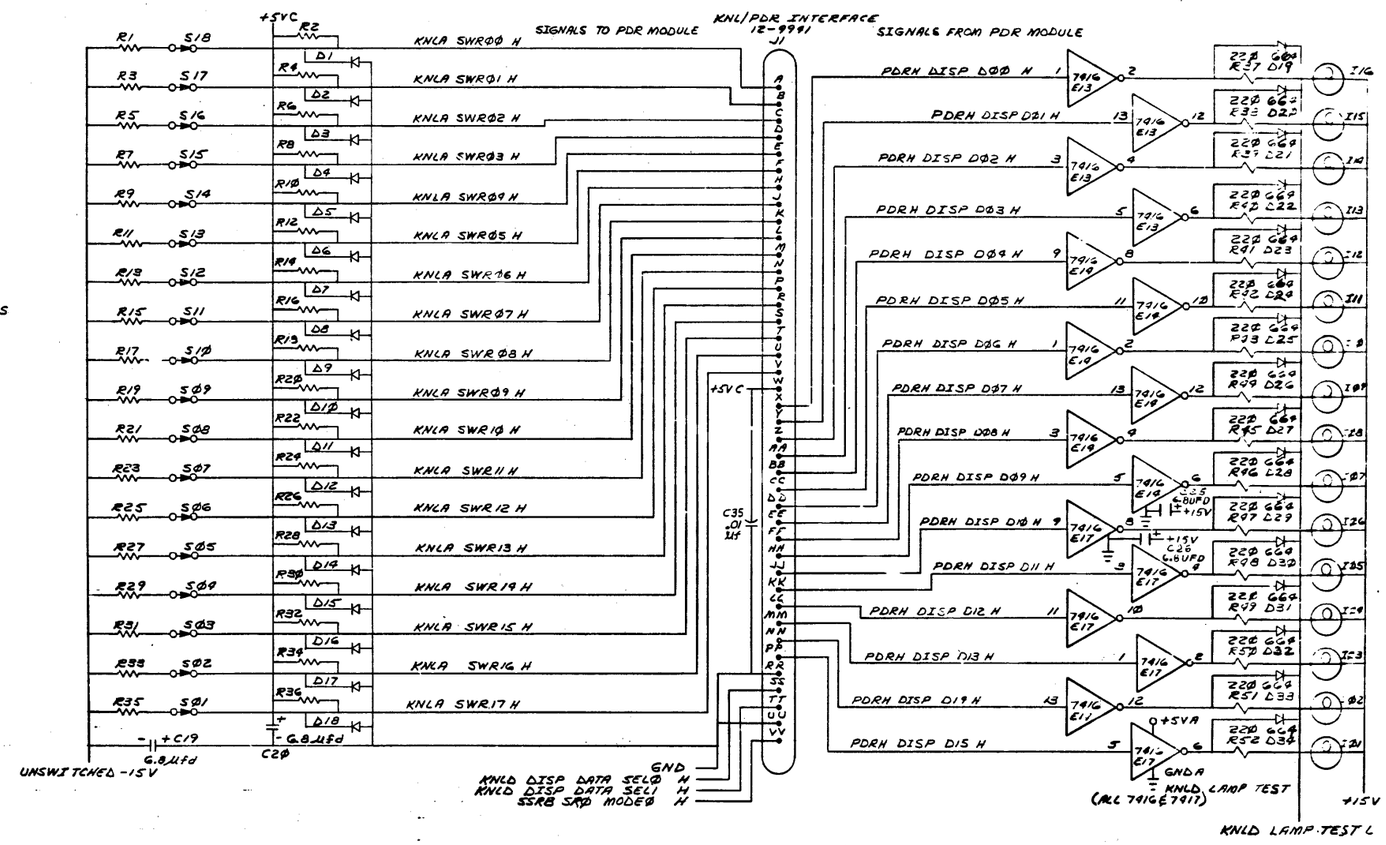
SIZE E | CODE IA | NUMBER 5409684-0-0 | REV. E
SCALE 2/1
SHEET 2 OF 2
DIST

DEC FORM NO. DRE 104

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

"SWITCH REGISTER" SWITCHES SHOWN IN LOGICAL "Ø" STATE (DOWN)

NOTES:
1. CONTROL LOGIC AND DISPLAY GROUNDS MUST BE KEPT SEPARATE
2. ALL RESISTORS ARE 2.2K UNLESS MARKED OTHERWISE.
3. ALL UNMARKED DIODES ARE D664



REVISIONS			
CHK	CHANGE NO	REV	
	5409684-00001	B	6. J. Swanson 7-14-72
	5409684-00002	C	J. SWANSON 9-12-72
	5409684-00003	D	J. SWANSON 9-31-72
	5409684-00004	E	J. SWANSON 11-3-72

DEC FORM NO

FIRST USED ON OPTION/MODEL	11/45
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	

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO

DRN	J. Swanson	6-16-72
CHK'D	[illegible]	7-14-72
ENG	[illegible]	11-3-72
PROJ. ENG.	[illegible]	10-30-72
PROD.		DATE
NEXT HIGHER ASSY	8-DD-11/45-0	
SCALE		
SHEET	1 OF 4	

DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
11/45 CONSOLE BOARD KNLA

SIZE	CODE	NUMBER	REV
D	CS	5409684-0-1	E
DIST			

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

NOTES:
CONTROL SWITCHES ARE SHOWN IN THEIR "NORMAL" OR NON OPERATING POSITION. SWITCHES WITH ARROWS POINTING UP ARE PUSHED DOWN TO OPERATE. THOSE WITH ARROWS DOWN ARE LIFTED TO OPERATE.
CONTROL SWITCHES S25 THRU S28, S19 THRU S22 ARE MOMENTARY SPDT.
ALL 7400 ON SHEETS 1 THRU 3 ARE TO BE CONNECTED TO +5VB AND FUNCTION SW GND RETURN.

12-9991 J2

SIGNALS FROM UBC MODULE

+5V B

R70 R71 R72 R73 R74 R75 R76 R77 R78

S22 S29 S20

D41 D42 D43 D44 D45 D46

7400 E11 7400 E11 7400 E06 7400 E06 7400 E12 7400 E12

KNLB CONT SW H
KNLC PNL LOCK H
SSRB SRØ MODE1 H
KNLB SINGLE CYCLE SW H
KNLB LOAD ADRS SW H
KNLC START SW H
SAPA IND DATA H
KNLC REG EXAM SW H
KNLC EXAM SW H
+5V B
KNLC REG DEP SW H
KNLD DISP ADRS SEL2 H
KNLC DEP SW H
FUNCTION SW GND RETURN
KNLC HALT SW H

KNLC SWITCHED (-V)
FUNCTION SW GND RETURN

C36 .01 μF

KNLD DISP ADRS SELØ H
KNLD DISP ADRS SEL1 H

UBCJ DISP ADRSØØ H
UBCJ DISP ADRSØ1 H
UBCJ DISP ADRSØ2 H
UBCJ DISP ADRSØ3 H
UBCJ DISP ADRSØ4 H
UBCJ DISP ADRSØ5 H
UBCJ DISP ADRSØ6 H
UBCJ DISP ADRSØ7 H
UBCJ DISP ADRSØ8 H
UBCJ DISP ADRSØ9 H
UBCJ DISP ADRS10 H
UBCJ DISP ADRS11 H
UBCJ DISP ADRS12 H
UBCJ DISP ADRS13 H
UBCJ DISP ADRS14 H
UBCJ DISP ADRS15 H
UBCJ DISP ADRS16 H
UBCJ DISP ADRS17 H

7416 E15 7416 E15 7416 E15 7416 E15 7416 E15 7416 E15 7416 E16 7416 E18 7416 E16 7416 E18 7416 E16 7416 E18 7416 E16 7416 E18 7416 E16 7416 E18 7416 E16 7416 E18

+15V C216.8 μF +15V C286.8 μF C29 .68 μF +5V

220Ω R82 220Ω R83 620Ω R84 220Ω R85 220Ω R86 220Ω R87 220Ω R88 220Ω R89 220Ω R90 220Ω R91 220Ω R92 220Ω R93 220Ω R94 220Ω R95 220Ω R96 220Ω R97 220Ω R98 220Ω R99

GGG D47 GGG D48 GGG D49 GGG D50 GGG D51 GGG D52 GGG D53 GGG D54 GGG D55 GGG D56 GGG D57 GGG D58 GGG D59 GGG D60 GGG D61 GGG D62 GGG D63 GGG D64

I34 I33 I32 I31 I30 I29 I28 I27 I26 I25 I24 I23 I22 I21 I20 I19 I18 I17

+15V

OL-2C DEC#12-Ø9219

GNDA (ALL 7416 & 7417)

+5V A

KNLD LAMP TEST L

UBCJ IND PAUSE H
UBCJ IND ADRS ERR H
UBCJ IND MASTER H
UBCJ IND RUN H

FIRST USED ON OPTION/MODEL: 11/45	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 ✓

DRN Wilson 11-5-71 | CHK'D Cook 12-4-71 | ENG [illegible] DATE 1-27-72 | PROJ ENG [illegible] DATE 3-1-72 | PROD [illegible] DATE [illegible]

MATERIAL | FINISH

NEXT HIGHER ASSY: 8-00-11/45-0

SCALE NONE | SHEET 2 OF 4

Digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 11/45 CONSOLE BOARD KNLB

SIZE D | CODE CS | NUMBER 5409684-0-1 | REV. E | DIST

REVISIONS: REV | CHANGE NO | CHK

DRAWING 40-332 1560 | SIZE FORM 140 | DEC 103-B

SIZE CODE D CS 5409684-0-1 NUMBER

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

FUNCTION SW GND RETURN

+5V B

R111

R112

R113

S25

D75

D76

7400 E03

KNLC START SW H

C21 6.8 UFD

R114

R115

R116

S27

D77

D78

7400 E01

KNLC REG EXAM SW H

C24 6.8 UFD

R117

R118

R119

S21

D79

D80

7400 E12

KNLC EXAM SW H

FUNCTION SW GND RETURN

+5V B

R123

R124

R125

S28

D81

D82

7400 E01

7402 E01

KNLC REG DEP SW H

R126

R127

R128

S26

D83

D84

7400 E03

7400 E01

KNLC DEP SW H

R131

R130

R129

S23

D86

D85

7400 E11

KNLC HALT SW H

KNLC PNL LOCK L

7400 E06

7400 E08

KNLC SWITCHED(-V)

+5V B

R135

R136

D87

7400 E06

KNLC PNL LOCK H

FUNCTION SW GND RETURN

J3

+5V A

GND A

GND A

-15V

GND OUT

GND IN

GND A

+15V

C22 .01 UFD

C34 .01 UFD

6.8 UFD

C23

DEC 12-09340

DEC 12-09456

R121 56

R120 68

UNSWITCHED -15V

S30 SHOWN IN OFF POSITION

POSITION	POLE	FUNCTION
POS 1	2,3	OFF
POS 2	4,5; 9,10	ON
POS 3	11,12	ON PAN/LOCK

.01 UFD 100V 20% +5C J1-W

C9 C10

GND J1-UU-RR

.01 UFD 100V 20% +5B J2-PP

C1 C3 C6 C5 C8 C11 C12

FUNCTION SW GND RETURN J2-UU-W

.01 UFD 100V 20% +5A J3-B

C2 C4 C7 C13 C14 C15 C16 C17 C18

GND A J3-G-7-2

UBCJ IND PAUSE H

UBCJ IND ADRS ERR H

UBCJ IND MASTER H

UBCJ IND RUN H

7416 E07

7416 E13

7416 E07

7416 E13

GC9 D88

GC9 D89

GC9 D90

GC9 D91

220Ω R137

220Ω R138

220Ω R139

220Ω R140

+15V C30 6.8 UFD

+15V C31 6.8 UFD

I38

I40

I35

I39

+15 V

KNLD LAMP TEST L

GND A (ALL 7416 & 7417)

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/45		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
CHK		DATE 3/12/72
ENG		DATE 3/29/72
PROJ. ENG		DATE 3/26/72
PROD		DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE 11/45 CONSOLE BOARD KNLC

NEXT HIGHER ASSY B-DD-1145-0

SIZE D CODE CS NUMBER 5409684-0-1 REV E

SCALE

SHEET 3 OF 4

DIST

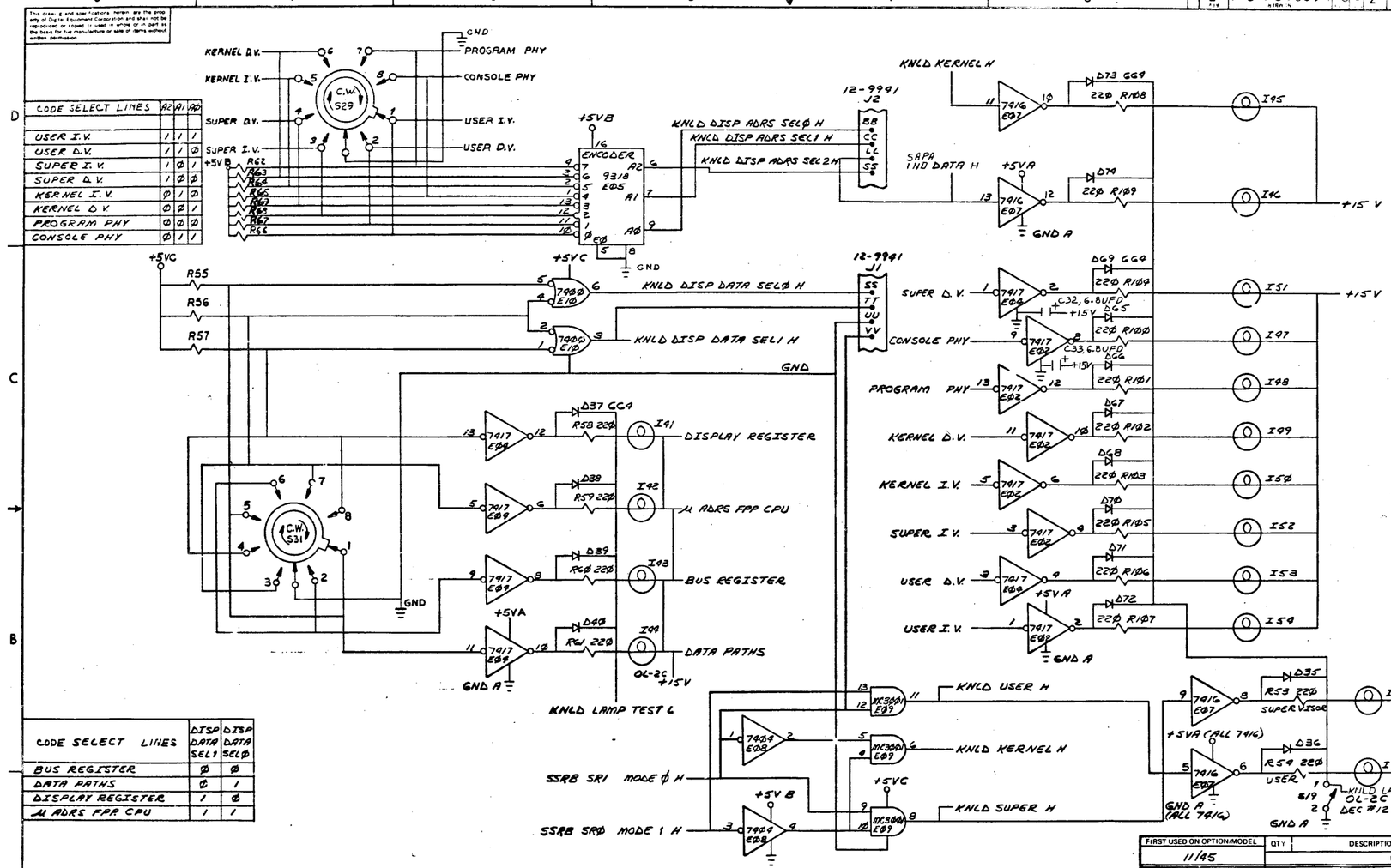
REV	REVISIONS	CHANGE NO	CHK

DRAWING 40-522 18840

DEC FORM NO

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

CODE SELECT LINES	A2	A1	A0
USER I.V.	1	1	1
USER D.V.	1	1	0
SUPER I.V.	1	0	1
SUPER D.V.	1	0	0
KERNEL I.V.	0	1	0
KERNEL D.V.	0	0	1
PROGRAM PHY	0	0	0
CONSOLE PHY	0	1	1



CODE SELECT LINES	DISP DATA SEL 1	DISP DATA SEL Ø
BUS REGISTER	Ø	Ø
DATA PATHS	Ø	1
DISPLAY REGISTER	1	Ø
M ADRS FPP CPU	1	1

REVISIONS	REV
CHANGE NO	
CHK	

DEC FORM NO

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO
11/45		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 12/2-/72
CHK'D [illegible] DATE 9/24/72
ENG [illegible] DATE 9/29/72
PROJ. ENG. [illegible] DATE 10/4/72
PROD. DATE

NEXT HIGHER ASSY B-00-11/45-0

SCALE

SHEET 4 OF 4

Digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE 11/45 CONSOLE BOARD KNLD

SIZE D | CODE CS | NUMBER 5409684-0-1 | REV E

SIZE D | NUMBER CS5409684-0-1 | REV E

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET [ ][ ][ ][ ][ ][ ][ ]

	SEQUENCE	SEQUENCE
DRAWING DIRECTORY	B-DD-KB11-Ø	(SHEET ONE ONLY)
MODULE UTILIZATION	E-MU-KB11-A-1	
BLOCK DIAGRAM	D-BD-KB11-A-Ø2	
KB11-A FLOW DIAGRAMS	D-FD-KB11-A-Ø3	
DATA PATHS (DAP)	E-CS-M81ØØ-Ø-1	
GENERAL REGS & ALU CNTL(GRA)	E-CS-M81Ø1-Ø-1	
IR DECODE & COND CODES(IRC)	E-CS-M81Ø2-Ø-1	
PROC DATA & UNIBUS REG(PDR)	E-CS-M81Ø4-Ø-1	
ROM & ROM CONTROL(RAC)	E-CS-M81Ø3-Ø-1	
SYSTEM JUMPER BOARD(SJB)	E-CS-M8116-Ø-1	
TIMING GENERATOR(TIG)	E-CS-M81Ø9-Ø-1	
TRAP & MISC CNTL(TMC)	E-CS-M81Ø5-Ø-1	
UNIBUS & CONSOLE CNTL (UBC)	E-CS-M81Ø6-Ø-1	
BUS CABLES & GRANT CHAIN	D-IC-KB11-A-BG	
CIRCUIT SCHEMATIC	C-CS-M93Ø-Ø-1	
CIRCUIT SCHEMATIC	C-CS-M92Ø-Ø-1	
CIRCUIT SCHEMATIC	E-CS-5409910-0-1	
CIRCUIT SCHEMATIC	E-CS-5409912-0-1	
CIRCUIT SCHEMATIC(TIG)	**E-CS-M81Ø9-0-1**	
SPECIAL REVISION		

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: KB11-1
KB11-A	16 BIT PROCESSOR	X

REVISIONS		
DATE	CHG. NO.	REV
5/72	7008871-00002	A
	7008871-00003	B
	KB11A-6	C
	KB11A-7	D
	KB11A-8	E
	KB11A-9	F
	KB11A-11	H
	KB11A-12A	J
	KB11A-13	K
7/73	KB11A-14	L
3/73	KB11A-15	M
5/73	KB11A-16	N
5/73	KB11A-17	P
8/73	KB11A-18	R
12/73	KB11A-19	S
3-74	KB11A-20	T
6-74	KB11A-21	U

USED ON OPTION/MODEL
11/45

DRN. R. COOK	DATE 3/30/72	TITLE: 16 BIT PROCESSOR
CHK'D. R. COOK	DATE 3/30/72	
PROJ ENG.	DATE 4/28/72	
PROD.	DATE 5-1-72	
FIELD SERV.	DATE 5/1/72	
SHEET 1 OF 5		

SIZE	CODE	NUMBER	REV
B	DD	KB11-Ø	

DIST

DRB 106

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

WIRED SIDE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
M930	M8114	M8115	M8112	M8113	M8100	M8101	M8102	M8103	M8104	M8105	M8106		M8116		M8110					M8110							
	FRA	FRL	FRM	FXP	DAP	GRA	IRC	RAC	PDR	TMC	UBC		SUB		MEM. CNTRL					MEM CNTRL							
A												NOTE 5 *	NOTE 5 *			G401 G401YA M8111 M8111YA						G401 G401YA M8111 M8111YA			NOTE 3		
B																											
														M8109 TIG													
C	SPACE RESERVED FOR KW11L OPTION	*	*	*	*	SPACE RESERVED FOR FPU OPTION (SLOTS 2 THRU 5)										*	*	*	*	*	*	*	*	*	*	*	*	*
D															SPACE RESERVED FOR SEMICONDUCTOR MEMORY OPTIONS (SLOTS 16 THRU 25)										SPACE RESERVED FOR SMALL PERIPHERAL CONTROLLERS		
E	SPACE RESERVED FOR FPP MAINT. CARD																										
F	SPACE RESERVED FOR CP MAINT CARD																										

✳ DESIGNATES OPTION

NOTES:

1. POWER TO MOS AND BIPOLAR MEMORY REMAINS ON WITH THE CONSOLE ON/OFF SWITCH IN THE OFF POSITION. THIS IS INDICATED BY THE LED ON THE MOS CONTROL BOARD. ~~IF THERE IS NO MEMORY MANAGEMENT (M8107 AND M8108) INSTALLED, THE SYSTEM JUMPER BOARD (M8116) MUST BE INSTALLED IN SLOT #14.~~
2. CAUTION MUST BE OBSERVED WHEN INSTALLING THE BOARDS INTO THE BACK PANEL SLOTS BECAUSE OF NON-STANDARD VOLTAGES PRESENT IN SLOTS Φ1, Φ2 AND 15 THRU 28.
3. IF ONLY ONE UNIBUS IS USED:
   - A. THE UNIBUS PLUGS IN SLOT #28
   - B. PLUG AN INTERNAL BUS CONNECTOR JUMPER (M920Φ) INTO SLOTS #26 AND #27.
   - C. PLUG A BUS TERMINATOR (M930) INTO SLOT #1.

   IF TWO UNIBUSES ARE USED:
   - A. UNIBUS A PLUGS IN SLOT #26
   - B. TERMINATOR (M930) FOR UNIBUS A PLUGS INTO SLOT #1
   - C. UNIBUS B PLUGS IN SLOT #27.
   - D. TERMINATOR (M930) FOR UNIBUS B PLUGS INTO SLOT #28.
4. MODULES IN SLOTS 17-20 MUST BE SAME TYPE; MODULES IN SLOTS 22-25 MUST BE SAME TYPE.
5. IF KT11 OPTION IS PRESENT M8108 GOES IN SLOT 13 & M8107 GOES IN SLOT 14, IF NO KT11 M8116 GOES IN SLOT 14 & SLOT 13 IS EMPTY.

✳	SYSTEM MAINT TOOLS	B-DD-SP45-A	
✳	FLOATING POINT PROC.	B-DD-FP11-B	
✳	64 WORD BOOTSTRAP	B-DD-MR11-D	
✳	INTERVAL CLOCK	A-ML-KW11-D	
✳	BIPOLAR MEMORY	B-DD-MS11C	
✳	MOS MEMORY	B-DD-MS11-B	
✳	MEM. MANAGEMENT UNIT	B-DD-KT11-C	
1	INT. BUS CONN ASSY	M9200	
2	BUS TERMINATOR	M930	
1	SYSTEM JUMPER BD	M8116	
1	TIMING GENERATOR	M8109	
1	UNIBUS & CONSOLE CNTL	M8106	
1	TRAP & MISC. CONTROL	M8105	
1	PROC. DATA & UNIBUS REG	M8104	
1	ROM & ROM CONTROL	M8103	
1	IR DECOD & COND. CODES	M8102	
1	GENERAL REGS & ALU CNTL	M8101	
1	DATA PATHS	M8100	

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: 11/45

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 —

NEXT HIGHER ASSY. B-DD-KB11-Ø

SCALE —

SHEET 1 OF 1

DRN J. Johnson 8/6/76

CHK R. Cole 8/6/76

ENG —

PROJ. ENG. —

PROD. —

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION

SIZE E | CODE MU | NUMBER KB11-A-Ø1 | REV A | DIST

REVISIONS: REV A, DWG KB11-A-Ø1, DATE 8-6-76, DRN R. JOHNSON, CHK R. KETTLEWELL, REC 3107

DEC FORM NO. DNC 1000

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

SIZE D | CODE BD | NUMBER K311-A-Ø2 | REV

ALU

PCA (DAPF,H)

PCA(T2)[51]
0 NO CLOCK
1 LOAD

PCB (DAPF,H)

PCB(T2)[50-49]
0 NO CLOCK
1 LOAD
2 SF7:LOAD
3 DF7:LOAD

PCB

SHFR (DAPF,H,J)

ALU

SHF (T2) [48-47]
0 SWAP BYTES
1 PCB
2 NO SHIFT
3 RIGHT SHIFT

ALU (DAPF, DAPH)

B A

ALU(T1)[17-15]
0 NOT A
1 B
2 A
3 A PLUS B
4 NOT USED
5 A PLUS A
6 A MINUS B
7 INSTRUCTION DEPENDENT

BMX (DAPB,C,D)

BMX (T1) [21-20]
0 KOMX
1 K1MX
2 SR
3 BR

AMX (DAPB,C,D)

AMX(T1)[23-22]
0 DR
1 PCB
2 SR
3 BR

KOMX
K1MX
BR
SR
BR
PCB
SR
DR

GS (16 REGISTERS) (GRAD,E,F,H)

GD (16 REGISTERS) (GRAD,E,F,H)

PAD (T14) [43-41]

GS	GD	GS	GD
0 SF	SF	4 SFV1	SFV1
1 SF	DF	5 DF	DF
2 5	5	6 0	0
3 NOT USED		7 6	6

PWE (T14) [45-44]
0 DON'T WRITE
1 CONDITIONAL
2 WRITE
3 NOT USED

SRX (T2) [61-60]
0 SHFR
1 GS
2 SF7:SHFR; -SF7:GS
3 NOT USED

SRK (T2) [57]
0 NO CLOCK
1 LOAD

G S

SHFR

G D

SRMX (GRAD,E,F,H)

DRMX (GRAD,E,F,H)

DRX (T2) [59-58]
0 SHFR
1 GD
2 DF7:SHFR; -DF7:GD
3 CLR DR

DRK (T2) [56-55]
0 NO CLOCK
1 SHIFT RIGHT
2 SHIFT LEFT
3 LOAD

SR (GRAD,F,H)

DR (GRAD,E,F,H)

SC (GRAJ)

DR

SHC (T1) [34-33]
0 NO COUNT
1 COUNT
2 LOAD DR<5:0>
3 LOAD 17_8

DR

BAX(T1) [38-37]
0 DR
1 PCB
2 SR
3 FP EALU (MAINT)

SR

PCB

B A M X (DAPB, C,D)

VIRTUAL ADDRESS

FROM FPP EALU

KOMX (DAPD)

1 2 SRCCON DSTCON

KMX (T1) [19-18]
KOMX
0 1
1 2
2 SOURCE CONST.
3 DEST. CONST.

K1MX
START VECTOR
TRAP VECTOR
SOB & MARK OFFSET
BXX OFFSET

K1MX (DAPE)

TV SV BR BR

DATA FROM SEMI-COND MEMORY

TO/FROM UNIBUS

SHFR

SEMI

UNIBUS

INT BUS

BRMX (PDRA)

BRX (T2) [62]
0 SHFR
1 BUS(UNIBUS, FAST BUS, OR INTERNAL BUS)

SHFR

FROM FPP UADR/ CPU UADR

MULTIPLEXER DISPLAY (PDRF)

TO CONSOLE DATA LIGHTS

LR

BR

BRK (T2) [63]
0 NO CLOCK
1 LOAD

BR (DAPA)

BRA (PDRB)

IR (IRCA)

AFIR (RACJ)

IRK(T2)[46]
0 NOCLOCK
1 LOAD

BR

DATA TO SEMI-COND MEMORY

BR

LR (PDRB)

PS (IRCH,PDRD)

PIRQ (PDRD)

SL (PDRC)

PB (PDRC)

IBS (T1) [36-35]
0 NO COMMAND
1 READ SW
2 LOAD PS
3 READ PS

FROM SWITCH REGISTER (PDRH)

INTERNAL BUS

SL/PB

PIRQ

PS

D M X (PDRE)

DATA FROM FPP

DATA TO KT11-C REGISTERS AND FPP DATA

DATA FROM KT11-C REGISTERS

11-1019

REVISIONS	REV	CHANGE NO	CHK

BRUNING 40-522 15840

DEC FORM NO. DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 —

		DATE
DRN.	[illegible]	9/13
CHK'D	[illegible]	4/14/72
ENG.	[illegible]	9/19/72
PROJ. ENG.	[illegible]	4/19/72
PROD.		DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BLOCK DIAGRAM

NEXT HIGHER ASSY. E-DD-KB11-A

SCALE —

SHEET 1 OF 2

SIZE	CODE	NUMBER	REV.
D	BD	KB11-A-Ø2	

DIST.

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

CCL (T2) [54-52]

0 NO CHANGE
1 INSTRUCTION DEPENDENT
2 SET/CLR FROM IR (CCOP)
3 LOAD FROM FPP IF ENABLED
4 CCLD4
5 CCLD5
6 CCLD6
7 CCLD7

FEN [14-12]

FEN 14 ENABLE FORK C
FEN 13 ENABLE FORK B
FEN 12 ENABLE FORK A

ADR [07-00]

TO ADDRESS GATING

MSC (T1) [29-27]

0 NO AFFECT
1 ENA FP ATTN
2 NOT USED
3 SET CONF IF KERNEL MODE
4 SPL (SET PRIORITY LEVEL)
5 CONDITIONAL BUST
6 BRQ STROBE
7 BUST (BUS START)

BSD (T1) [40-39]

0 NO PAUSE
1 INTR PAUSE
2 BUS PAUSE
3 BUS LONG PAUSE

BSC (T1) [26-24]

0 DATI
1 SRC1 DATI
2 KERNEL DATI
3 SRC2 DATI
4 FC (CONTROLLED BY FPP)
5 DATO
6 BSOP1
7 BSOP2

BCT (T1) [32-30]

0 NO AFFECT
1 READ FPP DATA
2 CONSOLE ACKNOWLEDGE
3 CLEAR FLAGS
4 INIT IF KERNEL MODE
5 STACK REFERENCE
6 ACKNOWLEDGE
7 BEND (BUS END)

BEF [11-8]	UADR5 [+40]	UADR4 [+20]
0	—	—
1	DESTINATION MODE 3,5,7	SR≠1
2	CONDITION CODE Z	-(PWRF+INTR)
3	SC ≠ 0	SC<0
4	-DIV SUB	CONDITION CODE N
5	-OBD (ODD BYTE DESTINATION)†	-DIV QUIT
6	BR14(0)	PS RESTORE
7	—	-[BRQ*-(T+CONF)]
10	RIP+FP SYNC	-(FP REQ * FP SYNC)
11	SC≠0	DRO(1)
12	CONF (CONSOLE FLAG)	-BRQ
13	PF(0)*(SF+TF)	PF(0)*(SF+ -TF)
14	— †	— †
15	-FJ/CLASS †	-O/CLASS †
16	DRO(1)	SR15(1)
17	RIP+FP SYNC	FP SYNC*FP REG WR

† (BEF=5)*OBD=CONDITIONAL FORK B
(BEF=14)=CONSOLE BRANCHES
(BEF=14)=CONDITIONAL FORK C
(BEF=15)*-FJ/CLASS=CONDITIONAL FORK B

TO CONDITION CODES
FROM DATA PATHS
CONDITION CODE GENERATOR (GRAB, IRCE, F
FROM IR
IR DECODE (IRCB, C, D)
FROM AFIR
AFIR DECODE (RACE, F, H)
SUBSIDIARY ROM CONTROL (IRCH)
FORK C (IRCC)
FORK B (IRCB)
FORK A (RACE, F, H)
CONDITION CODE SUBSIDIARY ROM (IRCH)
ALU SUBSIDIARY ROM (GRAA)
ADDRESS GATING (RACL)
ADR
FEN
BEF
BRANCH (RACK)
RAR (RACD)
TO SEG
RARB (RACA, RACC)
RARA (RACC, RACD)
ZAP 200
ROM
RBR
ROM <63:60> (RACA)
ROM <59:56> (RACA)
ROM <55:52> (RACA)
ROM <51:48> (RACA)
ROM <47:44> (RACB)
ROM <43:40> (RACB)
ROM <39:36> (RACB)
ROM <35:32> (RACB)
ROM <31:28> (RACC)
ROM <27:24> (RACC)
ROM <23:20> (RACC)
ROM <19:16> (RACC)
ROM <15:12> (RACD)
ROM <11:08> (RACD)
ROM <07:04> (RACD)
ROM <03:00> (RACD)
(RACA, RACB, RACC)
T2 CLK
CCL
T1↓ CLK
PWE
PAD
BSD
T1 CLK
BCT
MSC
BSC
ALU
GENERAL REGISTER CONTROL (GRAC)
TO GENERAL REGISTERS
ALU CTRL (GRAA)
TO ALU
FROM CONSOLE
UNIBUS AND CONSOLE CONTROL (UBC)
TO/FROM UNIBUS CONTROL SIGNALS
TRAPS AND MISCELLANEOUS CONTROL (PRIORITY ARBITRATOR) (TMC)
TO/FROM FPP, KT11-C FASTBUS & UNIBUS (BR, BG)
TIMING GENERATOR (TIG)
TO ALL MODULES
FROM KT11-C FASTBUS & UNIBUS

REVISIONS	CHANGE NO	CHK
REV		

BRUNING 40-522 15840
DEC FORM NO DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 4/6/72
CHK. [illegible] DATE 4/19/72
ENG. [illegible] DATE 4/14/72
PROJ. ENG. [illegible] DATE 4/14/72
PROD. [illegible] DATE [illegible]

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BLOCK DIAGRAM

NEXT HIGHER ASSY. B-DD-KB11-E
SCALE —
SHEET 2 OF 2

SIZE	CODE	NUMBER	REV.
D	BD	KB11-A-02	

DIST.

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

PCA CLOCK [51]; PCA:
Ø-NO CLOCK
1-LOAD

PCA

PCB

PCB CLOCK [49-50]; PCB:
Ø-NO CLOCK
1-LOAD
2-SF7:LOAD
3-DF7:LOAD

SHIFTER [47-48]; SHF:
Ø-SWAP (SWAP BYTES)
1-PCB
2-NO SHIFT
3-RIGHT SHIFT

SHFR

PAD WRITE ENABLE [44-45]; PWE:
Ø-DON'T WRITE
1-CONDITIONAL (SIGNALS SIGN EXTEND ON MOVE)
2-WRITE (UNCONDITIONAL)
3-NOT USED

BUS CONTROL [30-32]; BCT:
Ø-NO AFFECT
1-READ FP
2-CONS. ACKN
3-CLR FLAGS
4-INIT IF KERNEL MODE
5-STACK REF
6-ACKN
7-BEND (BUS END)

CONDITION CODE LOAD [52-54]; CCL:
Ø-NO CHANGE
1-INSTRUCTION DER (SUBSIDIARY ROM)
2-SET/CLR CC'S FROM BR (CCOP:S)
3-LOAD CC'S FROM FPU IF FP ENB
4-CCLD Ø (Z IF ACC SHFR; C & V ← Ø)
5-CCLD ST (Z IF ACC SHFR; C ← AMX15; V ← VOLD XOR SHFR15 XOR AMX15)
6-CCLD 6 (N, C, & V UNAFFECTED; Z ← Z IF SHFR=Ø)
7-CCLD 7 (Z, N, & V UNAFFECTED; C ← ALU CARRY)

ARITHMETIC LOGIC UNIT [15-17]; ALU:
Ø-A
1-B
2-A ∧ B
3-A ∨ B
4-NOT USED
5-A PLUS A (LEFT SHIFT)
6-A MINUS B
7-INSTRUCTION DEPENDENT ($)

ALU

SCRATCHPAD ADDRESS (GS; GD) [41-43]; PAD:
Ø-SF; SF
1-SF; DF
2-S; S
3-NOT USED
4-SFVI; SFVI
5-DF; DF
6-Ø; Ø
7-G; G

GR

GS

GD

16 X 16 REGISTER FILES

SR MULTIPLEXOR [60-61]; SRX:
Ø-SHFR
1-GS
2-SF7: SHFR; $\overline{SF7}$: GS
3-NOT USED

DR MULTIPLEXOR [58-59]; DRX:
Ø-SHFR
1-GD
2-DF7: SHFR; $\overline{DF7}$: GD
3-CLEAR DR

CONSOLE DATA LIGHTS
"DATA PATHS"

A MULTIPLEXOR [22-23]; AMX:
Ø-DR
1-PCB
2-SR
3-BR

(A)

(B)

AMX

B MULTIPLEXOR [20-21]; BMX:
Ø-KØMX
1-K1MX
2-SR
3-BR

BMX

KØMX

K1MX

1
2
SRCCON
DSTCON

CONSTANTS
CONSTANTS MULTIPLEXORS [KØMX; K1MX] [18, 19]; KMX:
Ø-1; SV
1-2; TV
2-SRCCON; SOB & MARK OFFSET
3-DSTCON; BXX OFFSET

SV
TV

SRMX

DRMX

SR CLOCK [57]; SRK:
Ø-NO CLOCK
1-LOAD

SR

DR

SHIFT REGISTER
DR CLOCK [55-56]; DRK
Ø-DON'T CLOCK
1-SHIFT RIGHT
2-SHIFT LEFT
3-LOAD

BUS COND [24-26]; BSC:
Ø-DATI
1-SRC1 DATI
2-KERNAL DATI
3-SRC2 DATI
4-FC
5-DATO
6-BSOP1
7-BSOP2

BUS DELAY [39-40]; BSD
Ø-NO PAUSE
1-INTR PAUSE
2-BUS PAUSE
3-BUS LONG PAUSE

SHIFT COUNTER [38-39]; SHC:
Ø-NO COUNT
1-COUNT
2-LOAD (DR-Ø5:ØØ)
3-LOAD (17)

SC

MICRO ADDRESS FIELD [Ø-7]; UAD:
(SEE FLOWS)

BRANCH ENABLE [8-11]; BEN:
(USE FLOWS, Ø IF NOTHING SPECIFIED)

FORK ENABLE [12-19]; FEN:
Ø-NO FORK
1-FORK A
2-FORK B
3-FORK C

MICROPROGRAM FIELD NAME, BIT POSITIONS, AND ENCODING SHOWN NEXT TO ASSOCIATED DATA PATH ELEMENT

INTERNAL BUS [35-36]; IBS:
Ø-NO COMMAND
1-READ SW
2-LOAD PS
3-READ PS

BUS DATA (OUT)

CONSOLE DATA LIGHTS
"BUS REGISTER"

BR CLOCK [62]; BRK
Ø-NO CLOCK
1-LOAD

BR

IR

IR CLOCK [63]; IRK:
Ø-NO CLOCK
1-LOAD

FP EALU

UNIBUS DATA

MOS DATA

BUS INTD (IN)

BAMX

BRMX

VIRTUAL ADDRESS
BUS ADDRESS MULTIPLEXOR [37-38]; BAX:
Ø-DR
1-PCB
2-SR
3-FPU MAINT

MISCELLANEOUS CONTROL SIGNALS [27-29]; MSC:
Ø-NO AFFECT
1-FP ATTN
2-NOT USED
3-SET CONF IF KERNEL MODE
4-SPL
5-CONDITIONAL BUST
6-BRQ STROBE
7-BUST (BUS START)

BR MULTIPLEXOR [62]; BRX:
Ø-SHFR
1-BUS (DETERMINED BY ADDRESS)

DATA PATHS

REVISIONS	CHK	CHANGE NO	REV
	S JENKINS	KB11A-0001	A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. [illegible] DATE 10/14/71
CHK'D. [illegible] DATE [illegible]
ENG. [illegible] DATE [illegible]
PROJ. ENG. [illegible] DATE [illegible]
PROD. [illegible] DATE [illegible]

MATERIAL
FINISH
NEXT HIGHER ASSY. R-DD-KB11-Ø
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: KB11-A FLOW DIAGRAMS

SIZE D | CODE FD | NUMBER KB11-A-Ø3 | REV. A

DRD 102-B

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

FET.ØØ

FET.ØØ (217)
FET.Ø1 (331)
FET.Ø2 (332)
FET.Ø3 (334)
FET.Ø4 (164)
FET.Ø5 (126)
FET.Ø6 (373)
FET.Ø7 (237)
FET.Ø8 (356)
FET.Ø9 (265)

START FETCH NEXT INSTR
CLEAR INSTR. REG

t_1 BA←PCB; BC←DATI
t_2 SHFR←SR-SR
t_3 BUST; CLEAR FLAGS
t_4 IR←SHFR

BEN12 (240)
BRQ

BR.K.ØØ 12 (24Ø)

-BRQ

FET.1Ø (26Ø)
FET.11 (321)
FET.12 (322)
FET.13 (324)

FET.1Ø

GET INSTR & STEP PC BEYOND

t_1 BA←PCB; BC←DATI
t_2 <SHFR←PCB+27
t_3 BRQ STROBE
t_5 BUS LONG PAUSE
PCA←PCB+2
t_6 IR←BUS; BR←BUS
PCB←PCA

(343)

IRD.ØØ

IRD.ØØ (342)

DECODE THIS INSTR & STEP PCA BEYOND & READ SRC & DST FIELD GEN REGS

t_1 BA←PCB; BC←DATI
t_2 SHFR←PCB
t_3 CONDITIONAL BUST
t_5 PCA←PCB+2
t_6 -SFT: SR←GSC[SF]
SFT: SR←SHFR
-DFT: DR←GDC[DF]
DFT: DR←SHFR

FEN1 (377)

SEE PG. 6-34 OF CPUMAINT MAN

A-FORK

BIN * SM123

S13.ØØ (Ø21) SM1
S13.Ø1 (Ø22) SM23

FETCH SRC & STEP REGISTER UP

t_1 BA←SR; BC←SRC1 DATI
t_2 SHFR←SR+SRCCON
t_3 BUST
t_5 PCA←SR+SRCCON
GR[SF]←SHFR
t_6 SFT: PCB←PCA

(Ø27)

S13.1Ø (Ø27)

GET SRC & REREAD DST REG

t_1 BA←SR; BC←SRC1 DATI
t_2 SHFR←PCB
t_3 BRQ STROBE
t_4 BUS LONG PAUSE
t_6 BR←BUS
-DFT: DR←GDC[DF]
DFT: DR←SHFR

FEN4 -SM357

C-FORK 4

S13.2Ø 2 (317)

BEN14 (317) SM357

BIN * SM45

S45.ØØ (Ø24)

STEP REGISTER DOWN

t_1 <BA←PCB>
t_2 SHFR←SR-SRCCON
BEND
t_5 PCA←SR-SRCCON
GR[SF]←SHFR
t_6 SR←SHFR
SFT: PCB←PCA

(Ø23)

S45.1Ø (Ø23)

FETCH SRC

t_1 BA←SR; BC←SRC1 DATI
t_2 <SHFR←PCB>
t_3 BUST; GR[SF]

(Ø27)

MTP

MTP.ØØ (Ø45)

REG 6 IN SR (SF6 IN OR CODE); POP TOP OF STACK

t_1 <BA←PCB>
t_2 SHFR←SR+2
t_3 BEND
t_5 GR[6]←SHFR

(151)

MTP.1Ø (151)

CORRECT DR IN CASE DEST. FIELD 6; GET TOP OF STACK

t_1 BA←SR; BC←SRC2 DATI
t_2 SHFR←PCB
t_3 BUST
t_4 -DFT: DR←GDC[DF]
DFT: DR←SHFR

(146)

S13.4Ø 2

BXX * BCOK

BXX.ØØ (32Ø) -BRQ (BNE, BGE, BGT, BPL, BHI, BVC, BCC)
BXX.Ø1 (325) -BRQ (BMI, BLOS, BVS, BCS)
BXX.Ø2 (326) -BRQ (BR, BEQ, BLT, BLE)
BXX.Ø3 (33Ø) BRQ (BNE, BGE, BGT, BPL, BHI, BVC, BCC)
BXX.Ø4 (335) BRQ (BMI, BLOS, BVS, BCS)
BXX.Ø5 (336) BRQ (BR, BEQ, BLT, BLE)

SUCCESSFUL BRANCH, FIX PC

t_1 <BA←PCB>
t_2 <SHFR←PCB+BXX DISP>
t_3 BEND; BRQ STROBE
t_5 PCA←PCB+BXX DISP
t_6 PCB←PCA

(217)

FET.ØØ 1

BXX * -BCOK * -BRQ

FET.11 1 (321) BPL, BHI, BVC, BCC

FET.12 1 (322) BNE, BGE, BGT

FET.13 1 (324) BEQ, BLT, BLE, BMI, BLOS, BVS, BCS

BXX * -BCOK * BRQ

A-FORK 2

FET.Ø1 1 (331) BPL, BHI, BVC, BCC

FET.Ø2 1 (332) BNE, BGE, BGT

FET.Ø3 1 (334) BEQ, BLT, BLE, BMI, BLOS, BVS, BCS

INSTRUCTION FETCH

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 1-5-71
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE 1-72
PROD.		DATE 1-15-72

NEXT HIGHER ASSY. F-DD-KB11 Ø
SCALE
SHEET 2 OF 15

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE KB11-A FLOW DIAGRAMS (FLOWS 1)

SIZE	CODE	NUMBER	REV
D	FD	KB11-A-03	A

DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

SIZE D | CODE FD | NUMBER KB11-A-03 | REV A

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

A-FORK

BIN*SM67

SM7.0Ø (Ø26)
GET INDEX WORD; FIX UP SRC & DR TO POINT BEYOND INDEX WORD IF SF7 OR DF7
t1 BA←PCB; BC←DATI
t2 SHFR←PCB+2
t3 BUS PAUSE
t4 BR←BUS
-SF7: SR←GS[SF]
SF7: SR←SHFR
-DF7: DR←GS[DF]
DF7: DR←SHFR

SM7.1Ø (Ø54)
DO INDEXING; FIX UP PC TO POINT BEYOND INDEX WORD; DON'T CHANGE ADDR OR C LINES
t1 BA←PCB; BC←DATI
t2 SHFR←SR+BR
t4 SR←SHFR
PCB←PCA

SM7.2Ø (141)
FETCH SRC; NO SL CHECK
t1 BA←SR; BC←SRC1 DATI
t2 <SHFR←PCB>
t3 BUST; GR[C]

SM7.3Ø (142)
GET SRC
t1 BA←SR; BC←SRC1 DATI
t2 <SHFR←PCB>
t3 BRQ STROBE
t5 BUS LONG PAUSE
t6 BR←BUS

FEN & BEN1Ø(317) -SM3,5,7 (NOT)

C-FORK 4

S13.2Ø

S13.2Ø (317)
SRC ADDRS TO SR (INDIRECT)
t1 <BA←PCB>
t2 SHFR←BR
t4 SR←SHFR

S13.3Ø (143)
FETCH SRC OPERAND; NO SL CHECK
t1 BA←SR; BC←SRC2 DATI
t2 <SHFR←PCB>
t3 BUST; GR[C]

S13.4Ø (146)
GET SRC OPERAND
t1 BA←SR; BC←SRC2 DATI
t2 <SHFR←PCB>
t3 BRQ STROBE
t5 BUS LONG PAUSE
t6 BR←BUS

FEN4 (377)

C-FORK 4

F/CLASS

FOP.ØØ (1Ø1)
BACKUP PC TO POINT AT INSTR; ENABLE FP ATTN
t1 <BA←PCB>
t2 SHFR←PCB-2
t3 BEND
t5 PCA←PCB-2
t6 FP ATTN
PCB←PCA
SR←SHFR

(133)

FOP.1Ø (133)
LOOK FOR BREAK REQUESTS SEND PC & OPCODE TO FPU WITH FP ATTN
t1 BA←PCB
t2 <SHFR←BR>

BEN@7(154) BRQ*-(CONF+T) BRK.ØØ 12 (154)

FOP.2Ø (174)
CLK BREAKS; SEND PC & OP CODE TO FPU & LOOK FOR FP READY
t1 BA←PCB
t2 <SHFR←BR>
t3 BRQ STROBE

BEN1Ø (133) -FP SYNC

FOP.3Ø (173)
STEP PC & GET FPU STATUS
t1 <BA←FP EALU> READ FP
t2 SHFR←PCB+2
t5 PCA←PCB+2
t6 BR←BUS
PCB←PCA

FEN4 (377)

C-FORK 4

RTI+.RTT

RTI.ØØ (Ø12) RTI
RTI.Ø1 (Ø14) RTT
GET STACK POINTER (SP)
t1 <BA←PCB>
t2 <SHFR←BR>
t3 BEND
t6 SR←GS[6]

(154)

RTI.1Ø (156)
FETCH TOP OF STACK (NEW PC)
t1 BA←SR; BC←DATI
t2 <SHFR←BR>
t3 BUST; GR[6]

RTI.2Ø (212)
STEP STACK POINTER (POP); ADRS OF NEXT WORD TO DR GET NEW PC
t1 BA←SR; BC←DATI
t2 SHFR←SR+2
t5 BUS LONG PAUSE
GR[6]←SHFR
t6 BR←BUS
DR←SHFR

(213)

RTI.3Ø (213)
FETCH TOP OF STACK (NEW PS)
t1 BA←DR; BC←DATI
t2 <SHFR←PCB>
t3 BUST; GR[C]
t5 PCA←BR
t6 PCB←PCA

RTI.4Ø (219)
STEP STACK POINTER; GET NEW PS
t1 BA←DR; BC←DATI
t2 SHFR←DR+2
BUS PAUSE
t5 GR[6]←SHFR
t6 BR←BUS

(215)

RTI.5Ø

RTI.5Ø (215)
NEW PS TO PS; DON'T CHANGE ADDR OR C LINES
t1 BA←DR; BC←DATI
t2 <SHFR←PCB>
t4 PS←BR

(172)

RTI.6Ø

RTI.6Ø (172)
CLOCK BREAKS
t1 <BA←DR>
t2 <SHFR←PCB>
t3 BRQ STROBE
t4 CONS ACKN

(217)

FET@Ø 1

RTS

RTS.ØØ (Ø4Ø)
DST FIELD REG TO PC, GET STACK POINTER (SP)
t1 <BA←PCB>
t2 <SHFR←DR>
t3 BEND
t5 PCA←DR
t6 SR←GS[C]
PCB←PCA

(223)

RTS.1Ø (223)
FETCH TOP OF STACK, AND STEP SP
t1 BA←SR; BC←DATI
t2 SHFR←SR+2
t3 BUST
t5 GR[C]←SHFR

(224)

RTS.2Ø (224)
GET TOP OF STACK TO BR
t1 BA←SR; BC←DATI
t2 <SHFR←PCB>
BUS PAUSE
t4 BR←BUS

(342)

RTS.3Ø (342)
BR (TOP OF STACK) TO DST FIELD REG; DON'T CHANGE ADDR OR C LINES
t1 BA←SR; BC←DATI
t2 SHFR←BR
t3 BRQ STROBE
t5 PCA←BR
GR[DF]←SHFR
t6 DF: PCB←PCA

(217)

FET@Ø 1

SOB

SOB.ØØ (Ø57)
OLD PC TO BR & PC-OFF SET TO PC
t1 <BA←PCB>
t2 SHFR←PCB
t3 BEND
BRQ STROBE
t5 PCA←PCB-SOB OFFSET
t6 BR←SHFR
PCB←PCA

BEN@1(242) SA≠1

SA=1

SOB.1Ø (242)
FALL THRU SOB (OLD PC TO PC)
t1 <BA←SR>
t2 <SHFR←BR>
t3 BRQ STROBE
t5 PCA←BR
t6 PCB←PCA

(262)

SOB.2Ø (262)
DECREMENT SRC FIELD REG (LOOP COUNT) & START NEXT INSTR FETCH
t1 BA←PCB; BC←DATI
t2 SHFR←SR-1
t3 BUST
t5 GR[SF]←SHFR

BEN12.(24Ø) BRK.9Ø 12 (24Ø) BRQ

-BRQ

FET.1Ø 1 (26Ø)

MARK

MRK.ØØ (242)
PC+OFFSET TO BR & RST0 SR
t1 <BA←PCB>
t2 SHFR←PCB+MARK OFFSET
t3 BEND
t6 SR←GS[5]
DR←SHFR

(252)

MRK.1Ø (252)
RS TO PC; DR POINTS TO TOP OF STACK
t1 BA←DR; BC←DATI
t2 <SHFR←SR>
t3 BUST
t5 PCA←SR
t6 PCB←PCA

(235)

MRK.2Ø (235)
GET TOP OF STACK, STEP SP
t1 BA←DR; BC←DATI
t2 SHFR←DR+2
t3 BRQ STROBE
t5 BUS LONG PAUSE
GR[6]←SHFR
t6 BR←BUS

(239)

MRK.3Ø (239)
START FETCH NEXT INSTR & TOP OF STACK TO RS
t1 BA←PCB; BC←DATI
t2 SHFR←BR
t3 BUST
t5 GR[RS]←SHFR

BEN12.(24Ø) BRK.9Ø 12 (24Ø) BRQ

-BRQ

FET.1Ø 1 (26Ø)

A-FORK 3

CONTROL; FLOATING; INDEXED SOURCE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 2-13-72
CHK'D. DATE
ENG. DATE 4-7-72
PROJ. ENG. DATE 4-3-72
PROD. DATE 4-13-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KB11-A FLOW DIAGRAMS (FLOW 2)

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE
SHEET 5 OF 15
SIZE D | CODE FD | NUMBER KB11-A-05 | REV. A
DIST

REVISION: REV. | CHANGE NO. | CHK

BRUNING 40-522-15840

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

A-FORK

RESET
RES.ØØ (Ø15)
GET RØ TO DR
t1 <BA←PCB>
t2 <SHFR←BR>
t3 BEND
t4 DR←GD[Ø]
RES.1Ø (255)
INIT IF IN KERNEL MODE
t1 <BA←PCB>
t2 <SHFR←DR>
t3 START INIT IF PS 14 (Ø)
RES.2Ø (374) (379)
WAIT FOR INIT DONE SHOW PC AND RØ
t1 BA←PCB
t2 SHFR←DR
t3 BRQ STROBE
t4 CNSL ACKN
RIP
BEN1Ø (334)
-RIP
FET.ØØ 3 (334)

HALT
HLT.ØØ (Ø18)
GET RØ AND PS; PC TO SR
t1 <BA←PCB>
t2 SHFR←PIR
t3 BEND
t4 BR←PS
DR←GD[Ø]
SR←SHFR
HLT.1Ø (327)
SET CONSOLE FLAG IF KERNEL MODE, OTHERWISE TRAP
t1 <BA←PCB>
t2 <SHFR←BR>
t3 CONF←1 IF PS14(Ø)
BEN.ØG (124)
BRK14(1)
TRP.ØG 12 (124)
BR14(7)
FET.ØG 1 (164)

CCOP
CCP.ØØ (Ø99)
CONDITION CODE OPERATE INSTR
t1 <BA←PCB>
t2 <SHFR←BR>
t3 BRQ STROBE
BENL
t4 CC←IR (SET OR CLR SEL. BITS)
(2,7)
FET.Ø4 1

OP3
TRP.ØØ 12 (Ø13)

IOT
TRP.Ø1 12 (Ø19)

OP7
RSD.Ø1 12 (Ø17)

WAIT
WAT.ØØ (Ø11)
READ RØ AND SHOW IT SHOW PC IN ADRS LIGHTS
t1 BA←PCB
t2 SHFR←DR
t3 BENC
t4 DR←GD[Ø]
BEN12 (244)
BRQ
-BRQ
WAT.1Ø (264)
WAT.11 (273)
NO BREAK REQUESTS
t1 BA←PCB
t2 SHFR←DR
t3 BRQ STROBE
(Ø11)
-(PWRF+INTRF)

OP22
RSD.Ø2 13 (Ø12)

SPL
SPL.ØØ (Ø93)
SET PRIORITY LEVEL
t1 <BA←PCB>
t2 <SHFR←BA>
t3 BEND
t5 SPL:PS<7:5>←BR<2:ØT IF KERN MODE
SPL1Ø (361) (361)
START FETCH OF NEXT INSTR
t1 BA←PCB; BC←DATI
t2 <SHFR←PCB>
t3 BUST CLR FLAGS
(264)
FET.1Ø 1

RSVD +EMT+TRAP
RSVD.ØØ 13 (ØØØ)

ILL INSTR * (REF PRESENT)
RSD.ØØ 12 (ØØØ)

A-FORK 5

WAT.2Ø (299)
BREAK REQUEST; GET VECTOR WAS IT HALT SW?
t1 <BA←PCB>
t2 SHFR←TV INTR PAUSE
t4 DR←SHFR BA←FU
BEN 12(127)
CONF
-CONF
CON.Ø1 14 (167)
WAT.3Ø (127)
IF T BIT WAIT; OTHERWISE GO SERVICE
t1 <BA←PCB>
t2 <SHFR←BR>
BEN Ø2(253)
(PWRF+INTRF)
BRK11 12 (253)

A-FORK

(JMP+JSR)*DMØ
RSDØØ 12 (ØØØ)

NEG.E LMØ
NEG.7Ø (3Ø1)
COMPLEMENT DST FIELD REG
t1 <BA←PCB>
t2 SHFR←ALU$ (A=DR, B=1)
t3 BEND
t4 SR←SHFR
(216)
NEG.9Ø (21Ø)
INCREMENT AND SAVE DST
t1 <BA←SR>
t2 SHFR←SR+1
t3 BRQ STROBE
t5 PCR←SR+1
-I/CLASS:GR[DF]←SHFR
t6 CCLD$ DF7: PCB←PCA
(217)
FET.ØØ 1

ASH*DMØ
ASH.1Ø 7 (Ø52)

ASHC*DMØ
ASC.1Ø 7 (Ø53)

MFP*DMØ
MFP.8Ø 11 (Ø96)

E/CLASS*-[DF7+BRQ]*DMØ
EXC.8Ø (Ø2Ø)
SRC MODE & DST MODE Ø FINISH EXEC OF THIS AND FETCH NEXT INSTR
t1 BA←PCB; BC←DATI
t2 SHFR←ALU$ (A=DR, B=SR)
t3 BRQ STROBE
t5 BUS LONG PAUSE -I/CLASS:GR[DF]←SHFR
t6 CCLD$ IR←BUS; BR←BUS PCB←PCA
(393)
IRD.ØØ 1

E/CLASS*[DF7+BRQ]*DMØ
EXC.9Ø (Ø3Ø)
SOURCE & DST MODE Ø FINISH EXECUTE OF THIS INSTR
t1 BA←PCB
t2 SHFR←ALU$ (A=DR, B=SR)
t3 BEND BRQ STROBE
t5 PCR←ALU$ -I/CLASS:GR[DF]←SHFR
t6 CCLD$ DF7: PCB←PCA
(217)
FET.ØØ 1

MUL*DMØ
MUL.8Ø (Ø5Ø)
SETUP SHIFT COUNTER
t1 <BA←PCB>
t2 <SHFR←DR>
t3 BEND SC←17
(1Ø2)
MUL1Ø 8

DIV*DMØ
DVS.ØØ (Ø51)
DIVISOR TO BR
t1 <BA←PCB>
t2 SHFR←DR
t3 BEND
t4 BR←SHFR
(Ø61)
DIVØØ 9

P/CLASS:=SWAB+CLR.B+COM.B+INC.B+DEC.B +NEG.B+ADC.B+SBC.B+ASR.B+ASL.B + ROR.B+ROL.B+BIC.B+BIS.B+ADD+SUB +SXT+MOVB+XOR
I/CLASS:=TST.B+CMP.B+BIT.B+MUL+DIV+MFP
E/CLASS:=E.P/CLASS*-NEG.B]+MOV+TST.B+CMP.B +BIT.B

EXECUTE NO MEM REF

REVISIONS | REV. | CHANGE NO | CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

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

MATERIAL

FINISH

DRN.		DATE 4-2-71
CHK'D.		DATE
ENG.		DATE 9-7-72
PROJ. ENG.		DATE 9-7-72
PROD.		DATE 11-12-72
NEXT HIGHER ASSY	B-DD-KB11-Ø	
SCALE		
SHEET	4 OF 15	

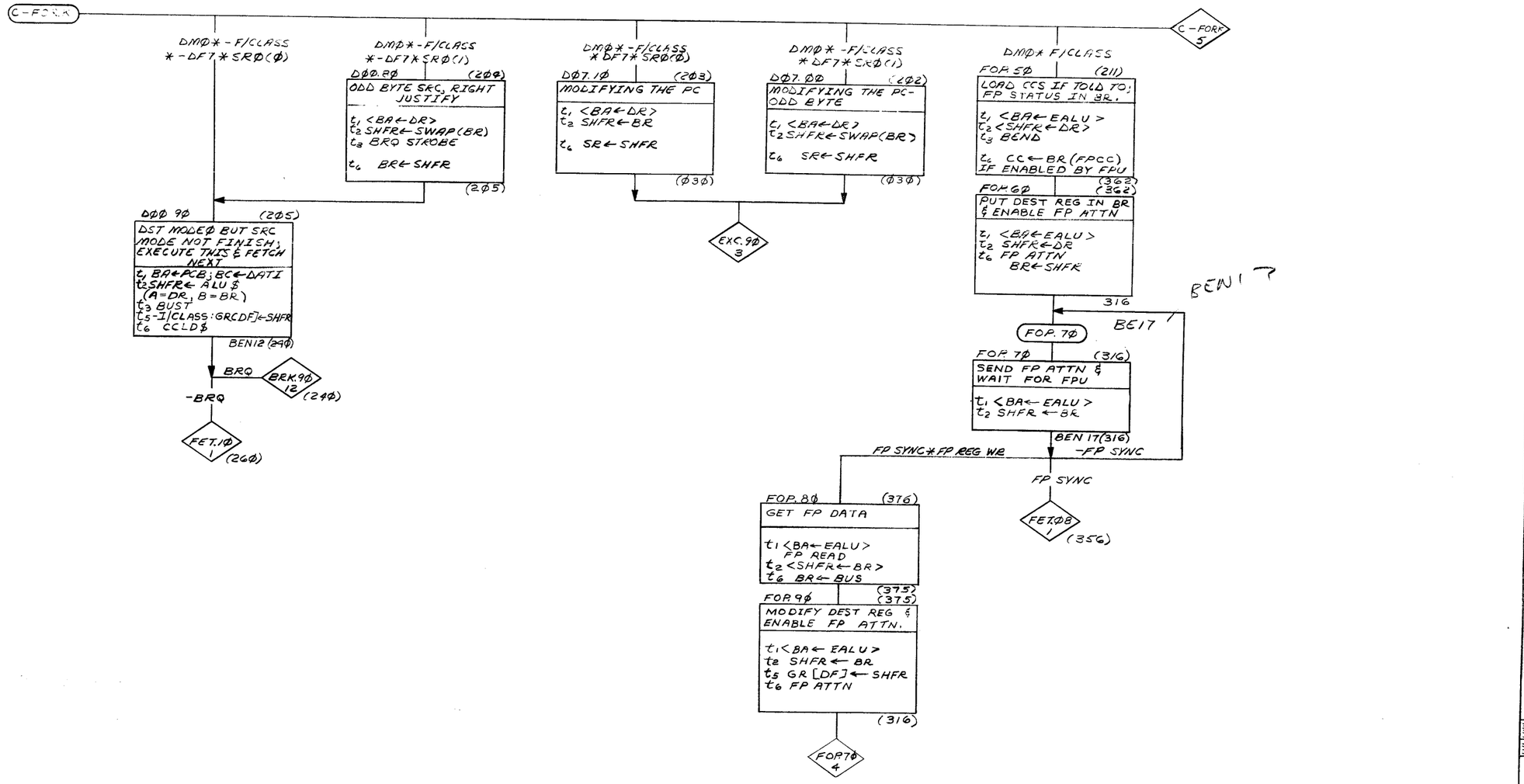
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE KB11-A FLOW DIAGRAMS (FLOWS 3)

SIZE D | CODE FD | NUMBER KB11-A-03 | REV A | DIST.

DEC FORM NO 6RD 1524

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



DESTINATION MODE Ø

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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	11/72
CHK'D.	DATE	
ENG.	DATE	4-5-72
PROJ. ENG.	DATE	4-5-72
PROD.	DATE	4-5-72
NEXT HIGHER ASSY.	B-DD-KB11-Ø	
SCALE	—	
SHEET 5 OF 10		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KB11-A FLOW DIAGRAMS (FLOWS 4)

SIZE	CODE	NUMBER	REV
D	FD	KB11-A-03	A

DIST.

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

A-FORK

DAC * DM12

D12.00 (00)DM1
D12.01 (002)DM2

DESTINATION ADRS IN DR
SRC OPERAND IN BR&SR;
CHECK STACK LIM.

t_1 BA←DR; BC←BSOPI
t_2 SHFR←SR
t_3 BUST; GR[DF]
t_4 BR←SHFR

BEN15 (115)

C-FORK

DM12 * SR0(1)

D12.80 (111)

DST ADRS IN DR; SRC OPERAND IN BR&SR
CHECK STACK LIMIT

t_1 BA←DR; BC←BSOPI
t_2 SHFR←BR
t_3 BUST; GR[DF]
t_4 SR←SHFR
CC←BR(FPCC)
IF ENABLE BY FPU

BEN15(115)

DM12 * SR0(1)

D12.90 (110)

DST ADRS IN DR; RIGHT JUSTIFY SRC
CHECK STACK LIMIT

t_1 BA←DR; BC←BSOPI
t_2 SHFR←SWAP(BR)
t_3 BUST; GR[DF]
t_4 SR←SHFR
CC←BR(FPCC)
IF ENABLE BY FPU

BEN15(115)

DM3 * SR0(0)

D30.80 (113)

FETCH DST OPERAND ADRS
SRC OPERAND IN SR&BR

t_1 BA←DR; BC←DATI
t_2 SHFR←BR
t_3 BUST; GR[DF]
t_4 SR←SHFR
CC←BR(FPCC)
IF ENABLED BY FPU

(221)

DM3 * SR0(1)

D30.90 (112)

FETCH DST OPERAND ADRS
RIGHT JUSTIFY SRC TO SR

t_1 BA←DR; BC←DATI
t_2 SHFR←SWAP(BR)
t_3 BUST; GR[DF]
t_4 SR←SHFR
CC←BR(FPCC)
IF ENABLED BY FPU

(221)

DAC * DM3

D30.00 (003)

FETCH DST OPERAND ADRS
SRC IN SR

t_1 BA←DR; BC←DATI
t_2 <SHFR←SR>
t_3 BUST; GR[DF]

(221)

A-FORK 6

C-FORK 6

D30.10 (221)

GET DST OPERAND ADR;
STEP DST FIELD REGISTER

t_1 BA←DR; BC←DATI
t_2 SHFR←DR+DSTCON

BUS PAUSE

t_5 PCA←DR+DSTCON
GR[DF]←SHFR
t_4 BR←BUS
DF7: PCB←PCA

(233)

D12.40
6

0/CLASS

D12.60 (155)

STEP DST FIELD REG &
OUTPUT SRC TO DST(DATO)

t_1 BA←DR; BC←BSOPI
t_2 SHFR←DR+DSTCON
t_3 BRQ STROBE
t_5 BUS LONG PAUSE

PCA←DR+DSTCON
GR[DF]←SHFR
t_6 DF7: PCB←PCA

(312)

D12.20 (312)

FETCH NEXT INSTR
SET CONDITION CODES

t_1 BA←PCB; BC←DATI
t_2 SHFR←BR
t_3 BUST; GR[DF]
t_6 CCLD $

BEN12 (290)

BRQ

BRK.90
12
(240)

- BRQ

FET.10
1
(260)

-FJ/CLASS * -0/CLASS

D12.10 (175)

FINISH DATIP OR DATI &
STEP DST FIELD REG

t_1 BA←DR; BC←BSOPI
t_2 SHFR←DR+DSTCON
BUS PAUSE
t_3 BRQ STROBE

t_5 PCA←DR+DSTCON
GR[DF]←SHFR
t_6 BR←BUS
DF7: PCB←PCA

BEN05 (137)
FEN2

DR0(1)

D12.30

D12.30 (137)

ODD BYTE DST, RIGHT
JUSTIFY; DON'T
CHANGE ADDR OR C LINES

t_1 BA←DR; BC←BSOPI
t_2 SHFR←SWAP(BR)

t_6 BR←SHFR

FEN2 (377)

B-FORK 7

FJ/CLASS

D12.70 (135)

STEP DST FIELD REGISTER

t_1 <BA←DR>
t_2 SHFR←DR+DSTCON
t_3 BEND
BRQ STROBE
t_5 PCA←DR+DSTCON
GR[DF]←SHFR
t_6 DF7: PCB←PCA

FEN2 (137)

B-FORK 7

DR0(0)

B-FORK 7

BIN:=MOV.B+CMP.B+BIT.B+BIS.B+BIC.B+ADD+SUB
DAC:=[I/CLASS+P/CLASS]*[-BIN+SM0]+[MOV*SM0]+ASH+ASHC+JMP+JSR
0/CLASS:=MOV+MTP
F/CLASS:=IR<15:12>(17)
J/CLASS:=JMP+JSR
FJ/CLASS:=F/CLASS+J/CLASS
BSOPI:=[I/CLASS:DATI]+[P/CLASS:DATIP]+[0/CLASS:DATO]
BSOP2:=[DATO]+[BYTE INSTRUCTION:DATOB]

DESTINATION MODES 1-3

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	REV
11/45		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

		DATE
DRN.		
CHK'D.		
ENG.		
PROJ. ENG.		
PROD.		

NEXT HIGHER ASSY
B-DD-KB11-B

SCALE

SHEET 6 OF 15

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
KB11-A
FLOW DIAGRAMS
(FLOWS 5)

SIZE D | CODE DFD | KB11-A-03 | REV A

DIST

REVISIONS		
LTR	CHANGE NO	REV

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

A-FORK

C-FORK

DM45 * SRØ (Ø)

D45.8Ø (115)
STEP DST FIELD REGISTER
t1 <BA←DR>
t2 SHFR←DR-DSTCON
t5 PCA←DR-DSTCON
GRCDF]←SHFR
t6 DR←SHFR
DF7: PCB←PCA
CC←BR (FPCC) IF ENABLED BY FPU

BENØ1 (121)

-DM357

D4Ø.2Ø (121)
DATIP, DATI, DATO DST SRC OPERAND TO SR; CHECK STACK LIMIT
t1 BA←DR; BC←BSOP1
t2 SHFR←BR
t3 BUST; GRCDF]
t6 SR←SHFR

BEN15 (157)
FEN2

DM357

D5Ø.2Ø (161)
FETCH DST OPERAND ADRS; SRC OPERAND TO SR
t1 BA←DR; BC←DATI
t2 SHFR←BR
t3 BUST; GRCDF]
t6 SR←SHFR
(231)

D1Ø.1Ø
G

DM45 * SRØ (1)

D45.9Ø (114)
STEP DST FIELD REGISTER; ODD BYTE SOURCE
t1 <BA←DR>
t2 SHFR←DR-DSTCON
t3 BRQ STROBE
t5 PCA←DR-DSTCON
GRCDF]←SHFR
t6 DR←SHFR
DF7: PCB←PCA
CCLD3

BENØ1 (131)

-DM357

D4Ø.3Ø (131)
DATIP, DATI, DATO DST RIGHT JUSTIFY SRC TO SR CHECK STACK LIMIT
t1 BA←DR; BC←BSOP1
t2 SHFR←SWAP(BR)
t3 BUST; GRCDF]
t6 SR←SHFR

BEN15 (177)
FEN2

-FJ/CLASS

D1Ø.6Ø
G
(177)

FJ/CLASS

B-FORK
7

DM357

D5Ø.3Ø (171)
FETCH DST OPERAND ADRS; RIGHT JUSTIFY SRC TO SR
t1 BA←DR; BC←DATI
t2 SHFR←SWAP(BR)
t3 BUST; GRCDF]
t6 SR←SHFR
(231)

D1Ø.1Ø

D1Ø.1Ø (231)
GET DST OPERAND ADRS
t1 BA←DR; BC←DATI
t2 <SHFR←BR>
BUS PAUSE
t6 BR←BUS
(238)

D1Ø.2Ø

D1Ø.2Ø (233)
DST OPERAND ADRS TO DR DON'T CHANGE ADDR OR C LINES
t1 BA←DR; BC←DATI
t2 SHFR←BR
t3 BRQ STROBE
t6 DR←SHFR
(311)

D1Ø.5Ø (311)
DATIP, DATI, DATO DST SRC OPERAND TO BR
t1 BA←DR; BC←BSOP1
t2 SHFR←SR
t3 BUST; GRCØ]
t6 BR←SHFR

BEN15 (157)
FEN2

-Ø/CLASS * -FJ/CLASS

D1Ø.6Ø

D1Ø.6Ø (177)
FINISH DATIP, DATI DST
t1 BA←DR; BC←BSOP1
t2 <SHFR←BR>
BUS PAUSE
t3 BRQ STROBE
t6 BR←BUS

BEN05 (137)
FEN2

L12.3Ø (137)
LEQ(-)

UEQ(+)

B-FORK
7

Ø/CLASS

D1Ø.4Ø

D1Ø.4Ø (157)
FINISH DATO DST; LOAD CC'S
t1 BA←DR; BC←BSOP1
t2 SHFR←BR
t3 BRQ STROBE
t5 BUS LONG PAUSE
t6 CCLD8
(331)

FET01
1

DAC * DM45

D45.ØØ (ØØ4) DM4
D45.Ø1 (ØØ5) DM5

STEP DST FIELD REGISTER
t1 <BA←PCB>
t2 SHFR←DR-DSTCON
t3 BEND
t5 PCA←DR-DSTCON
GRCDF]←SHFR
t6 DR←SHFR
DF7: PCB←PCA

BENØ1 (122)

DM357

D1Ø.ØØ

D1Ø.ØØ (162)
FETCH DST OPERAND ADRS
t1 BA←DR; BC←DATI
t2 <SHFR←PCB>
t3 BUST; GRCDF]
(231)

-DM357

D1Ø.3Ø (122)
DATIP, DATI, DATO DST SRC OPERAND TO BR CHECK STACK LIMIT
t1 BA←DR; BC←BSOP1
t2 SHFR←SR
t3 BUST; GRCDF]
t6 BR←SHFR

BEN15 (157)
FEN2

FJ/CLASS

B-FORK
7

DMG7 * SRØ (Ø)

DG7.8Ø (117)
FETCH INDEX WORD; SRC TO SR
t1 BA←PCB; BC←DATI
t2 SHFR←BR
t3 BUST; GRCØ]
t6 SR←SHFR
CC←BR (FPCC) IF ENABLED BY FPU
(ØØ6)

DMG7 * SRØ (1)

DG7.9Ø (116)
FETCH INDEX WORD; RIGHT JUSTIFY SRC TO SR
t1 BA←PCB; BC←DATI
t2 SHFR←SWAP(BR)
t3 BUST; GRCØ]
t6 SR←SHFR
CC←BR (FPCC) IF ENABLED BY FPU
(ØØ6)

DAC * DMG7

DG7.ØØ (ØØ6) DMG
DG7.Ø1 (ØØ7) DM7

GET INDEX WORD; ADJUST DST IF DST FIELD PC
t1 BA←PCB; BC←DATI
t2 SHFR←PCB+2
BUS PAUSE
t5 PCA←PCB+2
t6 BR←BUS
-DF7: DR←GDCDF]
DF7: DR←SHFR
(251)

DG7.1Ø (251)
DO INDEXING, STEP PC; DON'T CHANGE ADDR OR C LINES
t1 BA←PCB; BC←DATI
t2 SHFR←BR+DR
t3 BRQ STROBE
t6 DR←SHFR
PCB←PCA

BENØ1 (122)

-DM357

DM357

D1ØØØ
6
(162)

DESTINATION MODES 4-7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 5-3-72
CHKD. [illegible] DATE
ENG. [illegible] DATE
PROJ. ENG. [illegible] DATE
PROD. [illegible] DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
KB11-A
FLOW DIAGRAMS
(FLOWS 6)

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE
SIZE D CODE FD NUMBER KB11 A-Ø3 REV A
SHEET 7 OF 15
DIST.

REV A
DFD KB11-A-Ø3

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

B-FORK

ASH

ASH.ØØ (ØØ2)
SHIFT COUNT TO LL ; CAN'T CHANGE ADDR OR C LINES
t_1 BA←DR ; BC←BSOP1
t_2 SHFR←BR
t_6 DR←SHFR
(ØØ8)

ASH.1Ø
ASH.1Ø (ØØ8)
LOAD STEP COUNTER WITH SHIFT COUNT
t_1 <BA←PCB>
t_2 <SHFR←SR>
t_3 BEND
SC←DR
(3ØØ5)

ASH.2Ø (3ØØ5)
STEP SC ; SET COND CODES & SEE IF NO SHIFT
t_1 <BA←DR>
t_2 SHFR←SR
t_3 BRQ STROBE
SC←SC ± 1
t_6 CCLD4
[ZEN ACC SHFR ; CÉV←Ø]
BENØ3(217)

SC>Ø
ASH.4Ø (257)
ASH.41 (166)
SHIFT LEFT (ZERO INSERTION) CC'S KEPT CURRENT
t_1 <BA←PCB>
t_2 SHFR←SHL(SR)
t_3 BRQ STROBE
SC←SC ± 1
t_5 GR[SF]←SHFR
t_6 SR←SHFR
CCLD5
[ZEN ACC SHFR ; C←AMX15 V←V_{OLD}+(SHFR15+AMX15)]
BENØ3(126) SC≠Ø
SC=Ø
FE.TØ5 1 (126)

SC<Ø
ASH.3Ø (277)
SHIFT RIGHT SIGN EXTENDED ; CC'S KEPT CURRENT
t_1 <BA←PCB>
t_2 SHFR←SHR(SR)
t_3 BRQ STROBE
SC←SC ± 1
t_5 GR[SF]←SHFR
t_6 SR←SHFR
CCLD$
BENØ3(237) SC≠Ø
SC=Ø
FET.Ø7 1 (237)

SC=Ø
FETØØ 1 (217)

ASHC

ASC.ØØ (ØØ3)
SHIFT COUNT TO DR CAN'T CHANGE ADDR OR C LINES
t_1 BA←DR ; BC←BSOP1
t_2 SHFR←BR
t_6 DR←SHFR
(ØØ9)

ASC.1Ø
ASC.1Ø (ØØ9)
LOAD STEP COUNTER & READ LO-ORDER OPERAND TO DR
t_1 <BA←PCB>
t_2 <SHFR←SR>
t_3 BEND
SC←DR
t_6 DR←GDC SF v 1]
(3ØØ6)

ASC.2Ø (3ØØ6)
STEP SC ; SET COND CODES & SEE IF NO SHIFT
t_1 <BA←DR>
t_2 SHFR←SR
t_3 BRQ STROBE
SC←SC ± 1
t_6 BR←SHFR
CCLD4
[ZEN ACC SHFR ; CÉV←Ø]
BENØ3(2Ø7)

SC<Ø
ASC.4Ø (267)
SHIFT RIGHT ; SR←HI ; DR←LO ; SET COND CODES ON HI
t_1 <BA←DR>
t_2 SHFR←SHR(SR)
t_3 BRQ STROBE
SC←SC ± 1
t_5 GR[SF]←SHFR
t_6 SR←SHFR
DR←RIGHT(DR)
[ALUØ INSERTED]
CCLD$
[ZEN ACC SHFR ; C←AMX15 V←Ø]
BENØ3(227) SC≠Ø
SC=Ø

SC>Ø
ASC.3Ø (247)
ASC.31 (176)
SHIFT LEFT ; SR←HI ; DR←LO ; SET COND CODES ON HI
t_1 <BA←DR>
t_2 SHFR←ALU$(A=SR, B=1) [SHL(SR)+DR15]
t_3 BRQ STROBE
SC←SC ± 1
t_5 GR[SF]←SHFR
t_6 SR←SHFR
DR←LEFT(DR) (Ø INSERTED)
CCLD5
[ZEN ACC SHFR ; C←AMX15 ; V←V_{OLD}+(SHFR15+AMX15)]
BENØ3(136) SC≠Ø
SC=Ø

SC=Ø
ASC.6Ø (227)
ASC.61 (136)
SHIFT DONE ; SAVE LO ORDER, SET COND CODES ON LO ; START FETCH NEXT INSTR.
t_1 BA←PCB ; BC←DATI
t_2 SHFR←DR
t_3 BUST
t_5 GR[SF v 1]←SHFR
t_6 CCLD6
[N, C, ÉV N/A ; Z←Z_{OLD} * SHFR=Ø]
BEN12(24Ø)

-BRQ
FET.1Ø 1 (26Ø)

BRQ
BRK.9Ø 12 (24Ø)

F/CLASS

FOR.4Ø (Ø36)
DST ADRS TO BR ; ENABLE FP ATTN
t_1 <BA←DR>
t_2 SHFR←DR
t_3 BEND
t_6 BR←SHFR ; FP ATTN
(225)

FSV.2Ø 12

B-FORK 3

SC=Ø
(2Ø7)
NO SHIFT ; SET COND CODES ON LO ; START FETCH NEXT INSTR.
t_1 BA←PCB ; BC←DATI
t_2 SHFR←DR
t_3 BUST
t_6 CCLD6
[N, C, ÉV N/A ; Z←Z_{OLD} * SHFR=Ø]
BEN12(29Ø)

ASH & ASC

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. Akuist DATE 3/16/72
CHKD DATE 4/4/72
ENG. DATE 4/27/72
PROJ. ENG. DATE 4/27/72
PROD. DATE 4/27/72
NEXT HIGHER ASSY. FD-KB11-Ø
SCALE
SHEET 8 OF 15

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE KB11-A FLOW DIAGRAMS (FLOWS 7)

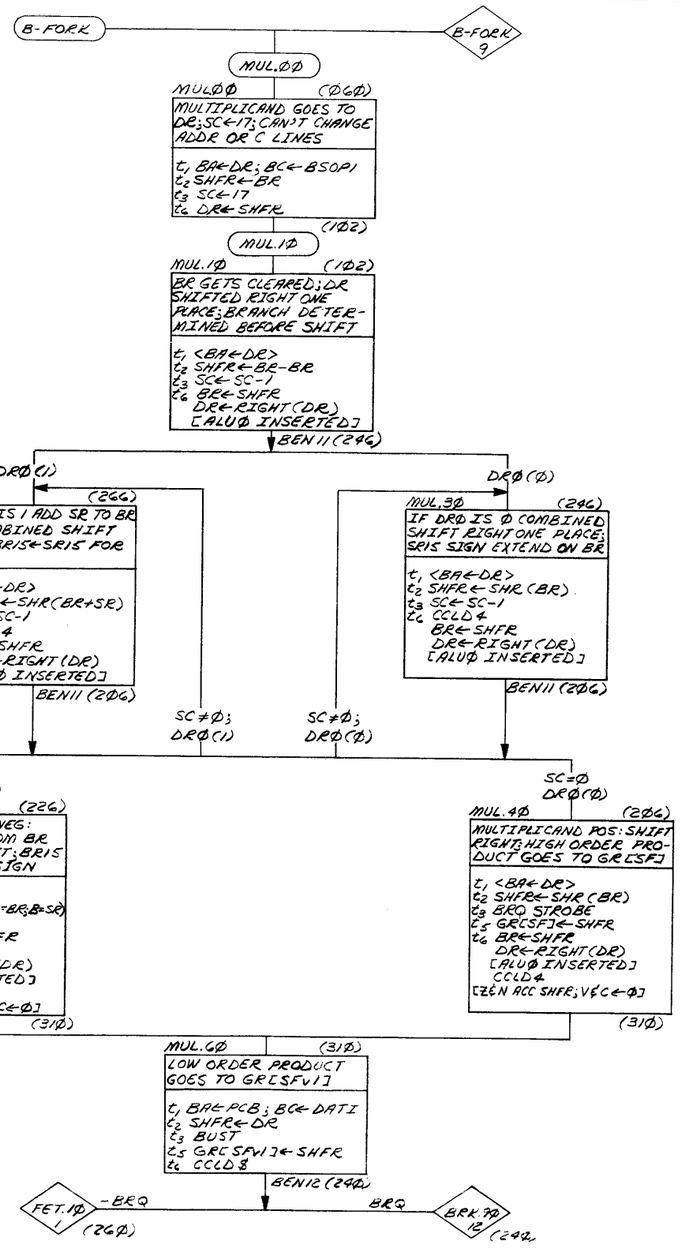
SIZE D CODE FD NUMBER KB11-A-Ø3 REV A

DIST.

REV	REVISIONS	CHANGE NO	CHK

BRUNING 40522 15840

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



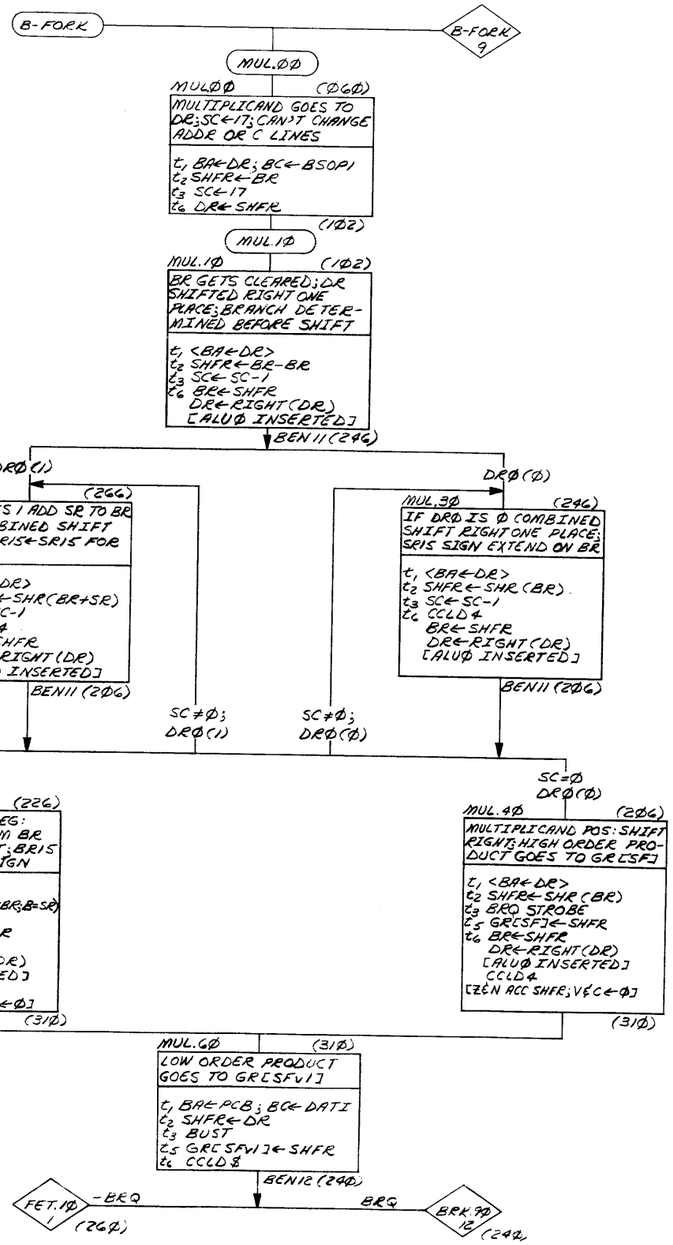
MULTIPLY

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. Akibert	DATE 3/14/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. [illegible]	DATE 3/14/72	
ENG. [illegible]	DATE [illegible]	TITLE KB11-A FLOW DIAGRAM (FLOW 5)
PROJ. ENG. [illegible]	DATE [illegible]	
PROD. [illegible]	DATE [illegible]	
NEXT HIGHER ASSY. B-DD-KB11-A		SIZE D CODE FD NUMBER KB11-A-03 REV. A
SCALE [illegible]		
SHEET 5 OF 15		DIST

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



MULTIPLY

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/15		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	3/16/72
CHK'D.	DATE	
ENG.	DATE	7/74
PROJ. ENG.	DATE	1-1-72
PROD.	DATE	

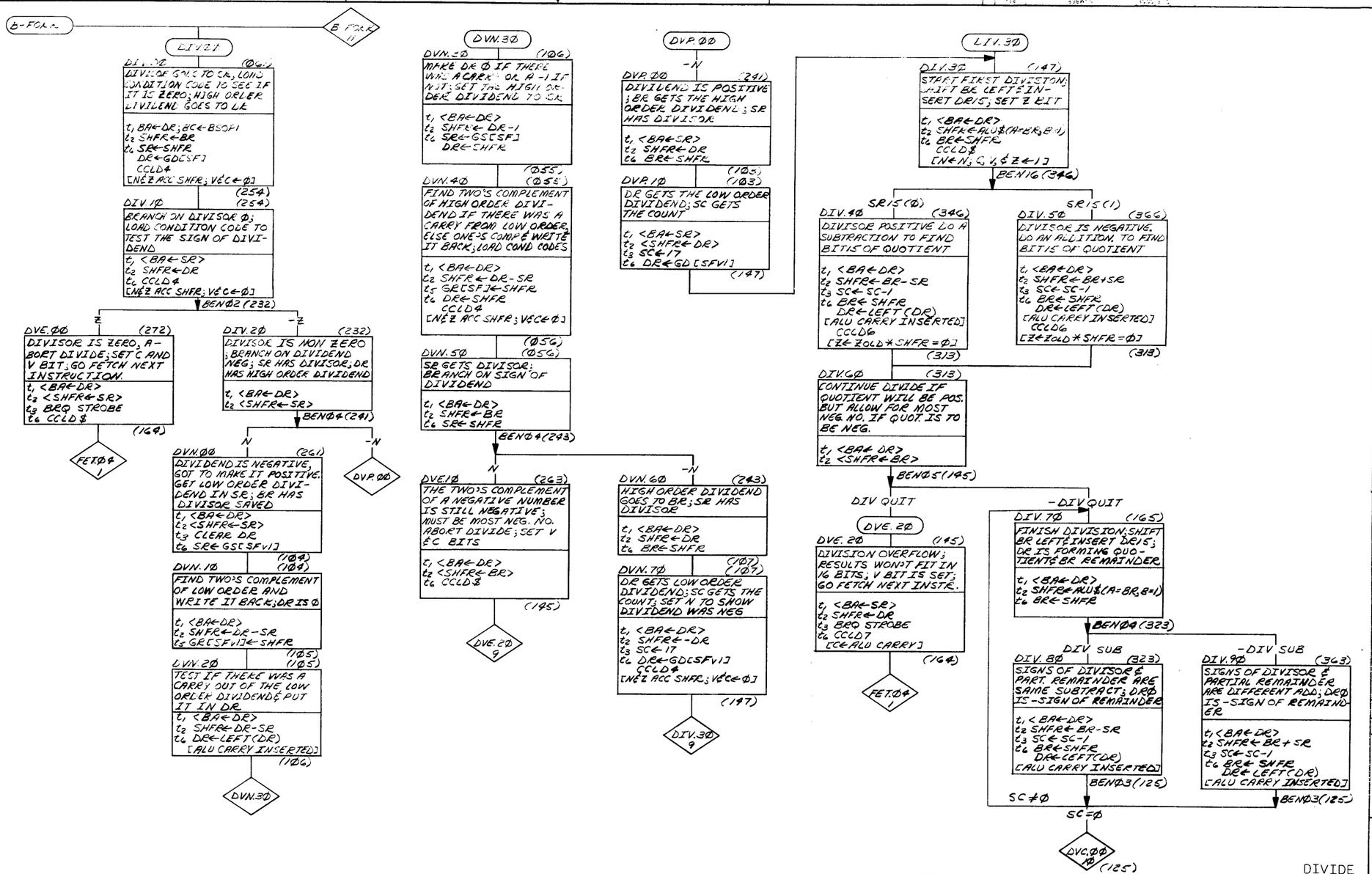
NEXT HIGHER ASSY.: F-DD-KB11-A
SCALE
SHEET 9 OF 15

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: KB11-A FLOW DIAGRAM (FLOW 8)

SIZE D | CODE FD | NUMBER KB11-A-Ø3 | REV. A | DIST.

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



DIVIDE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO
11/45		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 3/17/76	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

NEXT HIGHER ASSY: B-DU-KB11-Ø

SCALE:

SHEET 10 OF 15

TITLE: KB11-A FLOW DIAGRAMS (FLOWS 9)

SIZE	CODE	NUMBER	REV.
D	FD	KB11-A-05	A

DIST:

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

DVC.ØØ

DVC.ØØ (125)
DIVIDE COMPLETE WRITE REMAINDER INTO GR[SFVI] MAY BE MODIFIED LATER
t_1 <BA←DR>
t_2 SHFR←BR
t_5 GR[SFVI]←SHFR

BENIG(216)

-APPL * SP=<Ø> | DRØ(Ø) * SR15(Ø) | DRØ(Ø) * SR15(1) | DRØ(1) * SR15(1)

DVC.3Ø (256)
LAST DIVISION WENT; MAGNITUDE OF REMAINDER CORRECT; DO ONE'S COMPLEMENT IN CASE DIVIDEND STARTED NEG.
t_1 <BA←DR>
t_2 SHFR←-BR
t_6 BR←SHFR

DVC.1Ø (216)
LAST DIVISION DIDN'T GO; CORRECT REMAINDER BY ADDING DIVISOR & WRITE IT AWAY
t_1 <BA←DR>
t_2 SHFR←BR+SR
t_5 GR[SFVI]←SHFR
t_6 BR←SHFR
(256)

DVC.2Ø (236)
LAST DIVISION DIDN'T GO; ADD ABSOLUTE VALUE OF NEG. DIVISOR TO REMAINDER & WRITE IT AWAY
t_1 <BA←DR>
t_2 SHFR←BR-SR
t_5 GR[SFVI]←SHFR
t_6 BR←SHFR
(276)

DVC.4Ø (276)
LAST DIVISION WENT BUT DIVISOR IS NEG.; MAGNITUDE OF REMAINDER CORRECT; DO ONE COMPLEMENT IN CASE DIVIDEND STARTED NEG.
t_1 <BA←DR>
t_2 SHFR←-BR
t_6 BR←SHFR

BENØ4(35Ø)

-N: DVC.7Ø (35Ø)
DIVIDEND STARTED POS. DON'T CHANGE REMAINDER IN[SFVI]; STORE QUOTIENT IN [SF] & RECORD ITS COND. CODES
t_1 <BA←DR>
t_2 SHFR←DR
t_3 BRQ STROBE
t_5 GR[SFI]←SHFR
t_6 CCLD4
ENÉZ ACC SHFR; VÉC←ØJ
(164)
FET.Ø4 1

N: DVC.5Ø (37Ø)
DIVIDEND STARTED NEG. FIND TWO'S COMPLEMENT OF REMAINDER & WRITE IT AWAY
t_1 <BA←DR>
t_2 SHFR←BR+1
t_5 GR[SFVI]←SHFR
(351)

BENØ4(351)

-N: DVC.8Ø (351)
DIVIDEND AND DIVISOR HAD DIFFERENT SIGNS; FIND ONE'S COMPLEMENT OF QUOTIENT
t_1 <BA←DR>
t_2 SHFR←-DR
t_6 DR←SHFR
SR←GS[SF]
CCLD4
ENÉZ ACC SHFR; VÉC←ØJ
(22Ø)

DVC.9Ø (22Ø)
FORM TWO'S COMPLEMENT OF QUOTIENT & WRITE IT AWAY; RECORD IT'S COND. CODES
t_1 <BA←DR>
t_2 SHFR←DR+1
t_3 BRQ STROBE
t_5 GR[SF]←SHFR
t_6 CCLD4
ENÉZ ACC SHFR; VÉC←ØJ
BENØ4(144)

-N: DVC.ØØ (144)
TEST FOR QUOTIENT BEING THE MOST NEGATIVE NUMBER
t_1 <BA←DR>
t_2 <SHFR←SR>
BENØ4(353)

-N: DVC.1Ø (353)
QUOTIENT CAME OUT TO BE POSITIVE AFTER TWO'S COMPLEMENT; SET V BIT TO INDICATE OVERFLOW
t_1 <BA←DR>
t_2 <SHFR←SR>
t_6 CCLD&
(195)
DVE.2Ø 9

N: FET.Ø6 1 (373)

N: FET.Ø4 1 (164)

N: DVC.6Ø (371)
DIVIDEND STARTED NEG. FIND TWO'S COMPLEMENT OF REMAINDER & WRITE IT AWAY
t_1 <BA←DR>
t_2 SHFR←BR+1
t_5 GR[SFVI]←SHFR
(35Ø)
DVC.7Ø ØJ

DIVIDE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45	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 3/23/72
CHK'D — DATE 4/12/72
ENG. — DATE 4-27-72
PROJ. ENG. — DATE 4-27-72
PROD. — DATE 4-27-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KBII-A FLOW DIAGRAMS (FLOWS 1Ø)

NEXT HIGHER ASSY. B-DD-KBII-Ø
SCALE —
SHEET 11 OF 15

SIZE D | CODE FD | NUMBER KBII-A-Ø3 | REV A
DIST.

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

B-FORK

NEG.B

NEG.00 (067)
COMPLEMENT DST OPERAND; CANT CHANGE ADDR OR C LINES UNTIL OPERATION COMPLETED
t1 BA← DR; BC← BSOP1
t2 SHFR← $ALU(A=BR; B=1)
t6 BR ← SHFR
(271)

NEG.10 (271)
FIND THEN INCREMENT SET CC'S SEE IF DST IS ODD BYTE
t1 BA←DR; BC← BSOP1
t2 SHFR← BR + 1
t6 CCLD $
BR← SHFR
BEN#5 (123)
DR#(1)
DR#(0)

NEG.20 (163)
EVEN BYTE OR WORD—OUTPUT RESULTS; CHECK STACK LIMIT
t1 BA←DR; BC← BSOP2
t2 <SHFR← BR>
t3 BUST; GO [DF]
(132)

[ASRB + ADRB] * DR#(1)

SHR.00 (064)
SHIFT OR ROTATE RIGHT ODD BYTE; SET CCS
t1 BA←DR; BC← BSOP1
t2 SHFR← $ALU(A=BR; B=1)
t6 CCLD $
BR←SHFR
(123)

SHR.10 (123)
ODD BYTE—HI. ORDER BYTE POSITIONED & OUTPUT CHECK STACK LIMIT
t1 BA← DR; BC← BSOP2
t2 SHFR← SWAP(BR)
t3 BUST; GO [DF]
t6 BR← SHFR
(132)

EX.,.2: (031)
DO THE OPERATION; START BUS OPERATION KNOWING THAT IT'S NOT QUITE RIGHT
t1 BA←DR; BC← BSOP1
t2 SHFR← $ALU(A=BR, B=#)
t3 BUST; GO [#]
t6 CCLD $
BR←SHFR
(132)

P/C.1: * -L(ASRB + ADRB) * DR#(1) + NEG.BJ

[TST.B + BIT.B + CMP.B] * -FAST

TST.00 (032)
NO MORE BUS OPS NEEDED BUT CAN'T CHANGE ADDR OR C LINES
t1 BA← DR; BC← BSOP1
t2 SHFR← BALU(A=BR; B=SR)
t3 BRQ STROBE
t6 CCLD $
(217)
FET.00

[TST.B + BIT.B + CMP.B] + FAST

TST.10 (033)
NO MORE BUS OPS; SET CC'S & START FETCH NEXT INSTR
t1 BA← PCB; BC← DATI
t2 SHFR← $ALU(A=BR; B=SR)
t3 BUST; GO [DF]
t6 CCLD $
BEN#2 (240)
-BRQ
FET.10 (260)
BRQ
BRK.90 (240)

JMP

JMP.00 (035)
LOAD NEW PC FROM DST ADRS
t1 <BA← DR>
t2 <SHFR← PCB>
t3 BEND
BRQ STROBE
t5 PCA← DR
t6 PCB ← PCA
(217)
FET.00

JSR

JSR.00 (034)
SAVE DST ADRS IN PCA; SET MODIFIED SRC FIELD REG TO SR
t1 <BA← DR>
t2 SHFR← PCB
t3 BEND
t5 PCA← DR
t6 - SF?: SR← GS [SF]
SF?: SR← SHFR
(201)

JSR.10 (201)
GET SP AND PUT SRC FIELD REG IN BR FOR PUSHING OLD CONTENTS ON STACK
t1 <BA← PCB>
t2 SHFR← SR
t3 BRQ STROBE
t6 DR← GD [6]
BR← SHFR
(274)

JSR.20 (274)
STEP SP BACK FOR PUSH
t1 <BA← DR>
t2 SHFR← DR-2
t5 GR [6] ← SHFR
t6 DR← SHFR
(275)

JSR.30 (275)
WRITE OLD SRC FIELD REG ON STACK, OLD PC IN SRC FIELD REG, AND DST ADRS IN PC; CHECK STACK LIMIT
t1 BA←DR; BC← DATO
t2 SHFR← PCB
t3 BUST; STACK REF
t5 GR [SF] ← SHFR
t6 PCB← PCA
(300)
SVC.90 13

MFP

MFP.00 (066)
PREVIOUS MODE DATA IN BR; GET CURRENT MODE SP; SET CC'S.
t1 BA← DR; BC← BSOP1
t2 SHFR← BR
t6 CCLD $
SR← GS [6]
(250)

MFR.00 (046)
FROM PREVIOUS MODE DATA IN SP'S; IF R6 USE PREV MODE SP; R0-R5 SET DEPENDING BY R#'s. SET BIT (PS11)
t1 <BA← PCB>
t2 SHFR← PCB
t3 BEND
t5 -IRCLASS: GR[DF]← SHFR
t6 -DF?: DR← GD [DF]
DF?: DR← SHFR
(304)

MFR.90 (304)
PUT DATA IN BR & SET CC'S; GET CURRENT MODE SP
t1 <BA← DR>
t2 SHFR← DR
t6 CCLD $
BR← SHFR
SR← GS [6]
(250)

MFR.90

MFR.10 (250)
STEP STACK POINTER BACK FOR PUSH
t1 <BA← DR>
t2 SHFR← SR-2
t3 BEND
t5 GR [6] ← SHFR
t6 DR ← SHFR
(222)
SVC.60 13

ENEC.00 (132)
FINISH BUS OPERATION
t1 BA← DR; BC ← BSOP2
t2 <SHFR← BR>
t3 BRQ STROBE
t5 BUS LONG PAUSE
(217)
FET.00

EXECUTE – MEM REF

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45	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. M. Fu...	DATE 3/2/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 4/14/72	
ENG	DATE 4 7 72	TITLE KB11-A FLOW DIAGRAMS (FLOWS 11)
PROJ. ENG.	DATE 4 12 72	
PROD.	DATE 4 13 72	
NEXT HIGHER ASSY. B-DD-KB11-0		SIZE D | CODE FD | NUMBER KB11-A-03 | REV A
SCALE —		
SHEET 12 OF 15		DIST.

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

ZAP.00 (200)
ZAP.00
ABORTED OPERATION OR POWER ON SEQUENCE
t1 <BA←PCB>
t2 <SHFR←DR>
t3 BEND
BRQ STROBE
BEN06 (352)

BRK.90 (240)
BRK.90
BRQ TO BE SERVICED; END LAST OPERATION
t1 <BA←PCB>
t2 <SHFR←DR>
t3 BEND
(154)

RSD.00 (000)
RSD.01 (017)
RSD.02 (092)
RSD.00 RSD.01 RSD.02
DR GETS VECTOR ADDR; PS TO BR
t1 <BA←PCB>
t2 SHFR←TV
t3 BEND
t4 DR←SHFR
BR←PS
(345) (345)
RSD.10
LEFT SHIFT VECTOR ADDR TO CORRECT; RESTORE IN DR
t1 <BA←DR>
t2 SHFR←SHL(DR)
t4 DR←SHFR
(354)

TRP.00 (013) (014) (124)
TRP.00 TRP.01 TRP.02
VECTOR ADRS IN DR; PS IN BR
t1 <BA←PCB>
t2 SHFR←TV
t3 BEND
t4 DR←SHFR
BR←PS
(354)
TRP.10 (354)
PCA GETS OLD PS; FETCH NEW PC FROM VECTOR
t1 BA←DR; BC←KERN DATI
t2 <SHFR←BR>
t3 BUST; GR[0]
t5 PCA←BR
(355)
SVC00 13

FSV.20
FSV.20 (225)
SEND FP ATTN & WAIT UNTIL FPU READY
t1 <BA←EALU>
t2 <SHFR←PCB>
t3 BRQ STROBE
BEN10 (205)
-FP SYNC
-(FP REQ * FP SYNC)
FET09 1 (265)
FP REQ * FP SYNC
FSV.00 (245)
DO BUS OP FOR FPU; FOR DATO BR GETS GOOD DATA FROM FPU TO OUTPUT
t1 BA←DR; BC←FC FP READ
t2 <SHF←PCB>
t3 BUST; GO[0]
t4 BR←BUS
(150)
FSV.10 (150)
FINISH BUS OP & STEP DR; FOR DATI BR GETS DST OPERAND FOR FPU; ENABLE FP ATTN
t1 BA←DR; BC←FC
t2 SHFR←DR+2
t5 BUS LONG PAUSE
t6 FP ATTN
DR←SHFR
BR←BUS
(225)

ZAP.10 (372)
ZAP.10
ABORT CAME FROM SERVICE FLOWS; FIX UP PC & PS; PCB GETS OLD PS; DR HAS ABORTED ADDR
t1 <BA←DR>
t2 <SHFR←PCB>
t4 PCB←PCA
(315) (315)
ZAP.20
RESTORE OLD PC; BR GETS OLD PS
t1 <BA←DR>
t2 SHFR←PCB
t5 PCA←SR
t6 BR←SHFR
PCB←PCA
(302) (302)
ZAP.30
RESTORE OLD PS
t1 <BA←DR>
t2 <SHFR←PCB>
t5 PS←BR
(154)
BRK.00 12

BRK.00 (154)
BRK.00 BRK.01 (352)
WAIT FOR INTR. IF BUS REQ ACTIVE; GET VECTOR
t1 <BA←PCB>
t2 SHFR←PCB
INTR PAUSE
t4 BR←BUS
SR←SHFR
BEN12 (130)
-CONF
CONF
CON00 14 (170)
BRK.10 (130)
BRK.10 BRK.11 (259)
INTR VECTOR TO DR; SR HOLDS PC
t1 <BA←PCB>
t2 SHFR←BR
t4 DR←SHFR
BEN13 (100)

PUP.00 (100)
POWER UP [PF(1)]
START VECTOR ADRS TO DR
t1 <BA←PCB>
t2 SHFR←SV
t3 ACKN
t4 DR←SHFR
(347) (347)
PUP.10
FETCH NEW PC FROM SV
t1 BA←DR; BC←DATI
t2 <SHFR←SV>
t3 BUST; GR[0]
(333) (383)
PUP.20
GET NEW PC & STEP TO NEXT WORD OF VECTOR
t1 BA←DR; BC←DATI
t2 SHFR←DR+2
t5 BUS LONG PAUSE
t6 SR←SHFR
BR←BUS
(340)

PUP.30 (340)
FETCH NEW PS; PC IN BR GOES TO PCB
t1 BA←SR; BC←DATI
t2 <SHFR←BR>
t3 BUST; GR[0]
t5 PCA←BR
t6 PCB←PCA
(341) (341)
PUP.40
GET NEW PS FROM SV+2
t1 BA←SR; BC←DATI
t2 <SHFR←PCB>
t5 BUS LONG PAUSE
t6 BR←BUS
(215)
RTI.50 2

INTERNAL TRAPS EXCEPT RED STACK ERRORS [PF(0)*TF*-SF]
BRK.80 (140)
BRK.80
GET TRAP VECTOR ADRS TO DR & PROCESSOR STATUS (PS) TO BR
t1 <BA←PCB>
t2 SHFR←TV
t4 BR←PS
DR←SHFR
(152)

INTERRUPTS, PASSIVE RELEASE & CONSOLE CONTINUE [PF(0)*-TF*-SF]
BRK.20 (120)
BRK.20
GET PROCESSOR STATUS TO BR; DR HAS INTERRUPT VECTOR
t1 <BA←PCB>
t2 <SHFR←DR>
t3 ACKN
t4 BR←PS
BEN02 (152)
(PWRF+INTRF)
-(PWRF+INTRF)
RTI.00 2 (172)
BRK.30 (152)
BRK.30
FETCH NEW PC FROM VECTOR; PCA GETS OLD PS; ADDR MAPPED TO KERNEL SPACE
t1 BA←DR; BC←KERN DATI
t2 <SHFR←BR>
t3 BUST; GR[0]
ACKN
t5 PCA←BR
(355)
SVC00 13

RED STACK ERRORS [PF(0)*SF]
SER.00 (160)
SER.00
EMERGENCY STACK LOCS 0 & 2 WILL HAVE OLD PC & OLD PS AFTER SERVICE
t1 <BA←PCB>
t2 SHFR←2
t4 SR←SHFR
(344) (344)
SER.10
STACK POINTER SET TO 4 FOR EMERGENCY STACK PUSHES
t1 <BA←PCB>
t2 SHFR←SR+2
t5 GR[6]←SHFR
(140)
BRK.80 12

~ - 1'S COMPLEMENT

BREAK CONDITIONS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 3/28/72
CHK. [illegible] DATE 4/14/72
ENG. [illegible] DATE 4-3-72
PROJ. ENG. [illegible] DATE 4-3-72
PROD. [illegible] DATE 4-13-72
NEXT HIGHER ASSY. B-DD-KB11-0
SCALE —
SHEET 13 OF 15

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

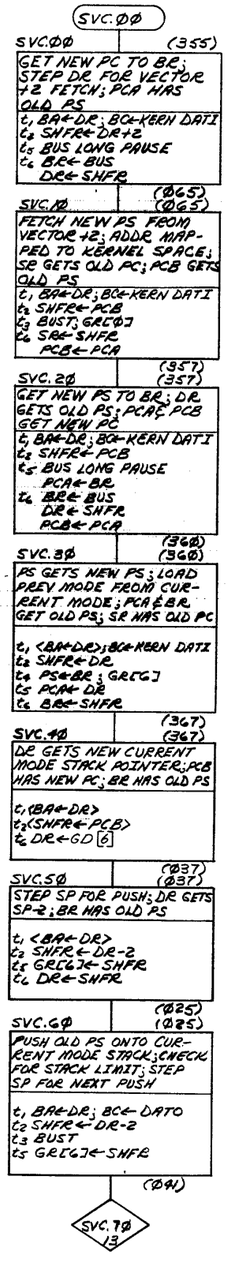
TITLE KB11-A
FLOW DIAGRAMS (FLOWS 12)

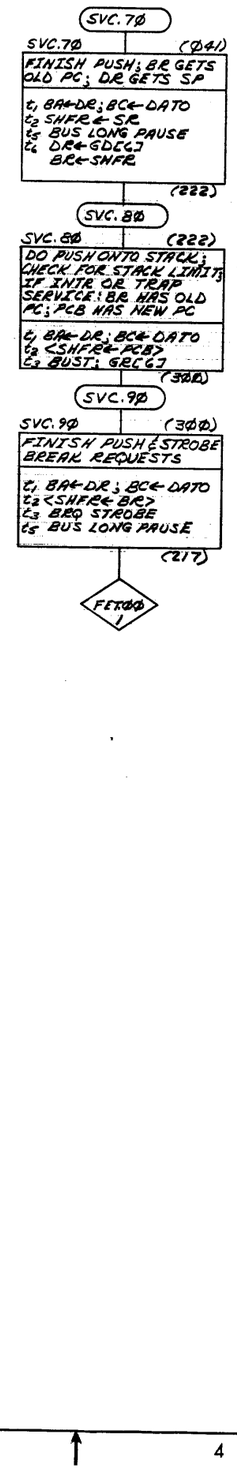
SIZE D | CODE FD | NUMBER KB11-A-03 | REV A
DIST

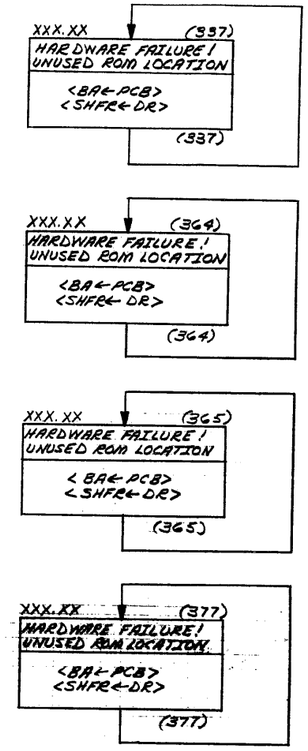
REVISIONS
REV | CHANGE NO. | CHK

BRUNING 40-522 15840
DEC FORM NO DRD 102-B

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







SERVICE SEQUENCE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.	Alex Chart	DATE 3/14/72
CHK'D	Ellen Hoza	DATE 4/12/72
ENG.	Steve Jenkins	DATE 4-3-72
PROJ. ENG.	Steve Jenkins	DATE 4-3-72
PROD.	Jack Doman	DATE 4-13-72

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE —
SHEET 14 OF 15

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KB11-A FLOW DIAGRAMS (FLOWS 13)

SIZE	CODE	NUMBER	REV.
D	FD	KB11-A-Ø3	A

DIST.

REVISIONS			
CHANGE NO.			
REV			
CHK			

BRUNING 40-522 15840
DEC FORM NO DRD 102-B

KB11-A-Ø3 REV A

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

CON.ØØ

CON.ØØ (17Ø)
CON.Ø1 (167)
DISPLAY ADDRESS & DATA; PUT SWITCHES INTO BR
t1 BA←SR
t2 SHFR←DR
t4 BR←SW

BEN1# (Ø7Ø)

EXAM STEP

EXM.ØØ (Ø71)
STEP THE ADDRESS
t1 <BA←SR>
t2 SHFR←SR+2
t4 SR←SHFR
(Ø7Ø)

EXAM

EXM.1Ø (Ø7Ø)
START BUS OPERATION; ASSERT BUS BUSY
t1 BA←SR; BC←DATI
t2 BUST; GDL[Ø]
(153)

EXM.2Ø (153)
FINISH OPERATION; TURN MEMORY ON & WAIT FOR REPLY; BR GETS DATA
t1 BA←SR; BC←DATI
t5 BUS LONG PAUSE
t6 BR←BUS
(139)

EXM.3Ø (139)
PUT DATA IN DR FOR DISPLAY
t1 <BA←SR>
t2 SHFR←BR
t6 DR←SHFR
(23Ø)

REG EXAM

RAD.ØØ (Ø72)
LOAD REG ADDR. IN IR'S DEST. MODE FIELD
t1 <BA←SR>
t2 SHFR←SR
t4 IR←SHFR
(314)

RAD.1Ø (314)
PUT REG. CONTENTS IN DR FOR DISPLAY
t1 <BA←SR>
t2 SHFR←PCB
t4 -DF7: DR←GDL[DF]
DF7: DR←SHFR
(23Ø)

DEPOSIT

DEP STEP

DEP.ØØ (Ø74)
STEP THE ADDRESS
t1 <BA←SR>
t2 SHFR←SR+2
t4 SR←SHFR
(Ø73)

DEP.1Ø (Ø73)
OUTPUT DATA IN BR; ASSERT BUS BUSY
t1 BA←SR; BC←DATO
t2 <SHFR←BR>
t3 BUST; GDL←Ø]
(303)

DEP.2Ø (303)
FINISH OPERATION; TURN MEMORY ON & WAIT FOR REPLY; DR GETS DATA FOR DISPLAY
t1 BA←SR; BC←DATO
t2 SHFR←BR
t5 BUS LONG PAUSE
t4 DR←SHFR
(23Ø)

REG DEP

RDP.ØØ (Ø75)
LOAD REG. ADDR. IN IR'S DEST. MODE FIELD
t1 <BA←SR>
t2 SHFR←SR
t4 IR←SHFR
(3Ø7)

RDP.1Ø (3Ø7)
WRITE THE REGISTER; DR GETS DATA FOR DISPLAY
t1 <BA←SR>
t2 SHFR←BR
t5 GRLDFJ←SHFR
PCA←BR
t6 DR←SHFR
DF7: PCB←PCA
(23Ø)

START

KST.ØØ (Ø76)
PCB GETS PC; GO DO RESET; ACKN FLAGS
t1 <BA←SR>
t2 <SHFR←DR>
t3 ACKN
t4 PCB←PCA
(Ø15)

BRS.ØØ 3

CONT

CON.1Ø (Ø77)
DISPLAY PC OF NEXT FETCH
t1 <BA←PCB>
t2 <SHFR←DR>
(13Ø)

BRK.1Ø 12

NO FUNCTION

CONØØ 18

LOAD ADRS

ADR.ØØ (27Ø)
SR & PCA GET SWITCHES; CLR DR FOR Ø IN DATA LIGHTS
t1 <BA←SR>
t2 SHFR←BR
t3 CLEAR DR
t5 PCA←BR
t6 SR←SHFR
(23Ø)

CON.2Ø (23Ø)
ACKNOWLEDGE FUNCTION SWITCH
t1 <BA←SR>
t2 <SHFR←DR>
t4 CONS ACKN
(17Ø)

CON.ØØ 19

REVISIONS:

REV	CHANGE NO.	CHK

BRUNING 40-522 15840

DEC FORM NO. SRC 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. Abbott	DATE 3/21/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 4/12/72	
ENG.	DATE 4-3-72	
PROJ. ENG.	DATE 4-3-72	
PROD.	DATE 4-13-72	

NEXT HIGHER ASSY. B-DD-KB11-Ø

SCALE —

SHEET 15 OF 15

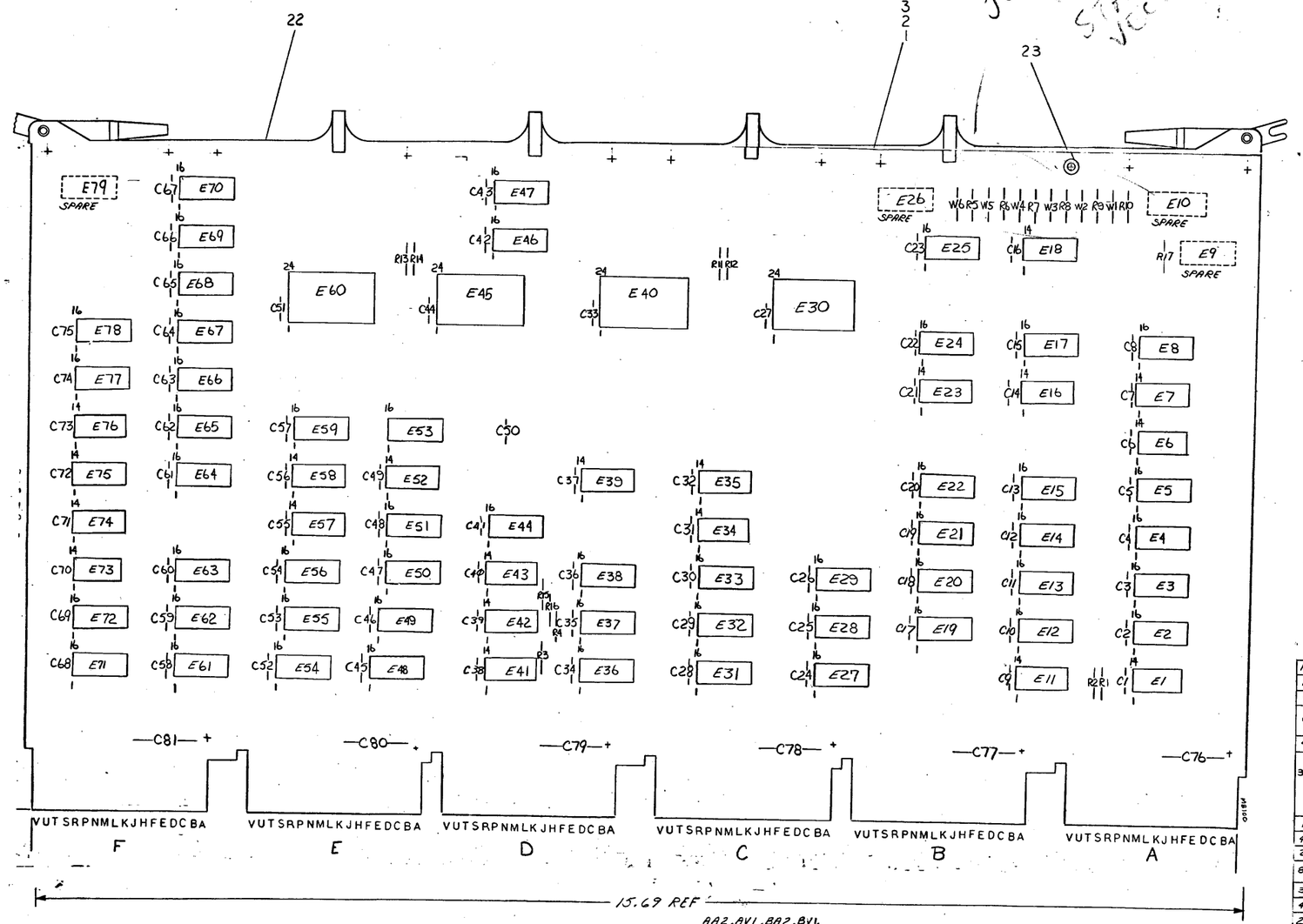
TITLE: CONSOLE
KB11-A
FLOW DIAGRAMS
(FLOWS 14)

SIZE	CODE	NUMBER	REV.
D	FD	KB11-A-03	A

DIST.

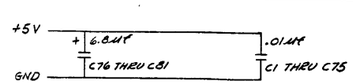
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

NOTES:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS. CAPS WITHOUT VALUE NOTED ARE .01 MFD.
2. E9, E10, E26 & E79 ARE SPARE IC LOCATIONS
3. R1, R3 & R15 ARE NOT USED



AA2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV1

AC2, AN2, AH1, AT1, BC2, BN2, BH1, BT1, CC2, CN2, CH1, CT1, DC2, DN2, DH1, DT1, EC2, EN2, EH1, ET1, FC2, FN2, FH1, FT1



12		EYELETS	9006732	23
1		HANDLE, MODULE	9-PS-121071-2	22
1	E44	IC DEC 74182-1	1910581	21
9	E2, E12, E19, E66, E67, E46, E47, E69, E70	IC DEC 74S174	1910550	20
2	E48, E49	IC DEC 74S157	1910548	19
39	E3, E4, E5, E8, E13, E14, E15, E17, E20, E21, E22, E24, E25, E27, E28, E29, E31, E32, E33, E36, E37, E38, E40, E51, E53, E54, E55, E56, E59, E61, E62, E63, E65, E68, E71, E72, E73, E75	IC DEC 74S153	1910547	18
1	E52	IC DEC 74S20	1910539	17
4	E75, E7, E57, E43	IC DEC 74S11	1910537	16
2	E16, E34	IC DEC 74S10	1910536	15
8	E6, C11, E18, E41, E39, E58, E73, E76	IC DEC 74S04	1910534	14
3	E23, E35, E74	IC DEC 74S00	1910532	13
4	E30, E40, E45, E60	IC DEC 74S181	1910531	12
2	E1, E42	IC DEC 74S64	1910542	11
2	R12, R14	RES., 560Ω, 1/4W, 5%	1301890	10
3	R2, R4, R16	RES., 150Ω, 1/4W, 5%	1300850	9
2	R11, R13	RES., 330Ω, 1/4W, 5%	1300895	8
7	E5 THRU E10, E17	RES. 10K, 1/4W, 5%	1300479	7
6	C76 THRU C81	CAP., 6.8 MF, 35V, 20%	1000067	6
75	C1 THRU C75	CAP., .01 MF, 100V, 20%	1001610	5
1		ETCHED CIRCUIT BOARD	5009886	4
REF		MODULE ECO HISTORY	B-MM-M3100-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	E-MM-M3100-0-5	2
REF		X-Y COORDINATE HOLE LOCATION	XCO-M3100-0-4	1
QTY	REF DESIGNATION	DESCRIPTION / PART NO.		ITEM NO.

PARTS LIST

ETCH BOARD REV C

DEC 74182-1	8	16					
DEC 74S174	8	16					
DEC 74S157	8	16					
DEC 74S153	8	16					
DEC 74S181	12	24					
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

REVISIONS	REV	CHANGE NO.	CHK
ADDED M8100-0001 THRU A	A	1800 00002	S. JENKINS 4-19-72
ADDED M8100-0003 THRU C	B	1800 00002	S. JENKINS 4-19-72
ADDED M8100-0004 THRU D	C	1800 00002	S. JENKINS 6-16-72
ADDED M8100-0005 THRU E	D	1800 00002	S. JENKINS 8-25-72
ADDED M8100-0006 THRU F	E	1800 00002	S. JENKINS 8-25-72

DRN. [illegible] DATE 7/72
CHK'D. DATE 7/
ENG. DATE 8-25-72
PROJ. ENG. DATE 8-25-72
PROG. DATE 8-25-72
NEXT HIGHER ASSY E-CO-KB11-A
SCALE 2/1
SHEET 1 OF 9

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE DAP-DATA PATHS

SIZE E | CODE | NUMBER MS8100-0-1 | REV C | DIST

DEC FORM NO. SMS 100

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

-FROM PDR - BR MUX PINS ASSERTED H. A06N1

DATAPATH PARTS

MUX BACKPLANE

NOTE: DAPA BR REG TO RACK CONN. CONNECTS TO CONN. ON MUX BACKPLANE

ALWAYS 1 - H1 (ECO)

TIMING SIGNAL

PDRA BRMXØ4 H — AN1 — 74S174 D5 E2 — DAPA BRØ4 H
PDRA BRMXØ3 H — AN2 — DAPA BRØ3 H
PDRA BRMXØ2 H — AN1 — DAPA BRØ2 H
PDRA BRMXØ1 H — AL2 — DAPA BRØ1 H
PDRA BRMXØØ H — AL1 — DAPA BRØØ H
BR D2 (Ø4:ØØ) — DU2, DU1, CR2, CR1
DAPF +3V H

PDRA BRMX1Ø H — BB1 — 74S174 D5 E12 — DAPA BR1Ø H
PDRA BRMXØ9 H — BC1 — DAPA BRØ9 H
PDRA BRMXØ8 H — BD1 — DAPA BRØ8 H
PDRA BRMXØ7 H — BD2 — DAPA BRØ7 H
PDRA BRMXØ6 H — BE1 — DAPA BRØ6 H
PDRA BRMXØ5 H — BE2 — DAPA BRØ5 H
BR D2 (1Ø:Ø5)
DAPF +3V H

PDRA BRMX14 H (BF2) — 74SØ4 E11
PDRA BRMX15 H — BF1 — 74S174 D5 E19 — DAPA BR14 L TO RACK
PDRA BRMX14 H — BF2 — DAPA BR15 H
PDRA BRMX13 H — BH2 — DAPA BR14 H
PDRA BRMX12 H — BJ1 — DAPA BR13 H
PDRA BRMX11 H — BJ2 — DAPA BR12 H
BR D2 (15:11) — DAPA BR11 H
DAPF +3V H

R1 NOT USED — R2 15Ø — +5V

TIGC TI L — ABI
UBCB BUS LOAD L — ACI
RACA UBRK H — ADI — 74SØ4 E11
GND ØV — AD2
74S64 E1

(TIL • Remarks)

BUS REGISTER SLOTS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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		7/9/71
CHK'D		2/2/72
ENG		2/2/72
PROJ. ENG.		1/72
PROD.		2/1/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DAPA)

NEXT HIGHER ASSY. B-DD-KB11A
SIZE D CODE CS NUMBER M81ØØ-Ø-1 REV C
SCALE —
SHEET 2 OF 9
DIST

REVISIONS: REV | CHANGE NO. | CHK

BRT 102-B

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

DAPD KØMX Ø1 H
DAPE KIMX Ø1 H
GRAD SR Ø1 H
DAPA BR Ø1 H
DAPD KØMX ØØ H
GRAD SR ØØ H
DAPA BR ØØ H
RACC UBMX Ø1 H
RACC UBMX ØØ H
GRAD DR Ø1 H
DAPF PCB Ø1 H
GRAD DR ØØ H
DAPF PCB ØØ H
RACC UAMX Ø1 H
RACC UAMX ØØ H
FXPA EALU Ø1 H
FXPA EALU ØØ H
RACB UBAX Ø1 H
RACB UBAX ØØ H

DAPB BMX Ø1 H
DAPB BMX ØØ H
DAPB AMX Ø1 H
DAPB AMX ØØ H
DAPB BAMX Ø1 H
DAPB BAMX ØØ H

DAPD KØMX Ø3 H
DAPE KIMX Ø3 H
GRAD SR Ø3 H
DAPA BR Ø3 H
DAPD KØMX Ø2 H
DAPE KIMX Ø2 H
GRAD SR Ø2 H
DAPA BR Ø2 H
GRAD DR Ø3 H
DAPF PCB Ø3 H
GRAD DR Ø2 H
DAPF PCB Ø2 H
FXPA EALU Ø3 H
FXPA EALU Ø2 H

DAPB BMX Ø3 H
DAPB BMX Ø2 H
DAPB AMX Ø3 H
DAPB AMX Ø2 H
DAPB BAMX Ø3 H
DAPB BAMX Ø2 H

DAPE KIMX Ø5 H
GRAD SR Ø5 H
DAPA BR Ø5 H
DAPE KIMX Ø4 H
GRAD SR Ø4 H
DAPA BR Ø4 H
GRAE DR Ø5 H
DAPF PCB Ø5 H
GRAE DR Ø4 H
DAPF PCB Ø4 H
FXPA EALU Ø5 H
FXPA EALU Ø4 H

DAPB BMX Ø5 H
DAPB BMX Ø4 H
DAPE BMXSI L
DAPB BMXSO L
DAPB AMX Ø5 H
DAPB AMX Ø4 H
DAPB AMXSI L
DAPB AMXSØ L
DAPB BAMX Ø5 H
DAPB BAMX Ø4 H
DAPB BAMXSI L
DAPB BAMXSØ L

UBAX Ø1	ØØ
L	L DR
L	H PCB
H	L SR
H	H FP MAINT

UAMX Ø1	ØØ
L	L DR
L	H PCB
H	L SR
H	H BR

UBMX Ø1	ØØ
L	L KØMX
L	H KIMX
H	L SR
H	H BR

B.A.&BUS ADDR. MULTIPLEXERS (Ø5:ØØ) SLOT 6

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	REV
11/45		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.	DATE	7-9-71
CHKD.	DATE	9/72
ENG.	DATE	9/1/72
PROJ. ENG.	DATE	9/72
PROD.	DATE	9/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

MATERIAL
FINISH
NEXT HIGHER ASSY. B-DD-KB11-A
SCALE
SHEET 3 OF 5

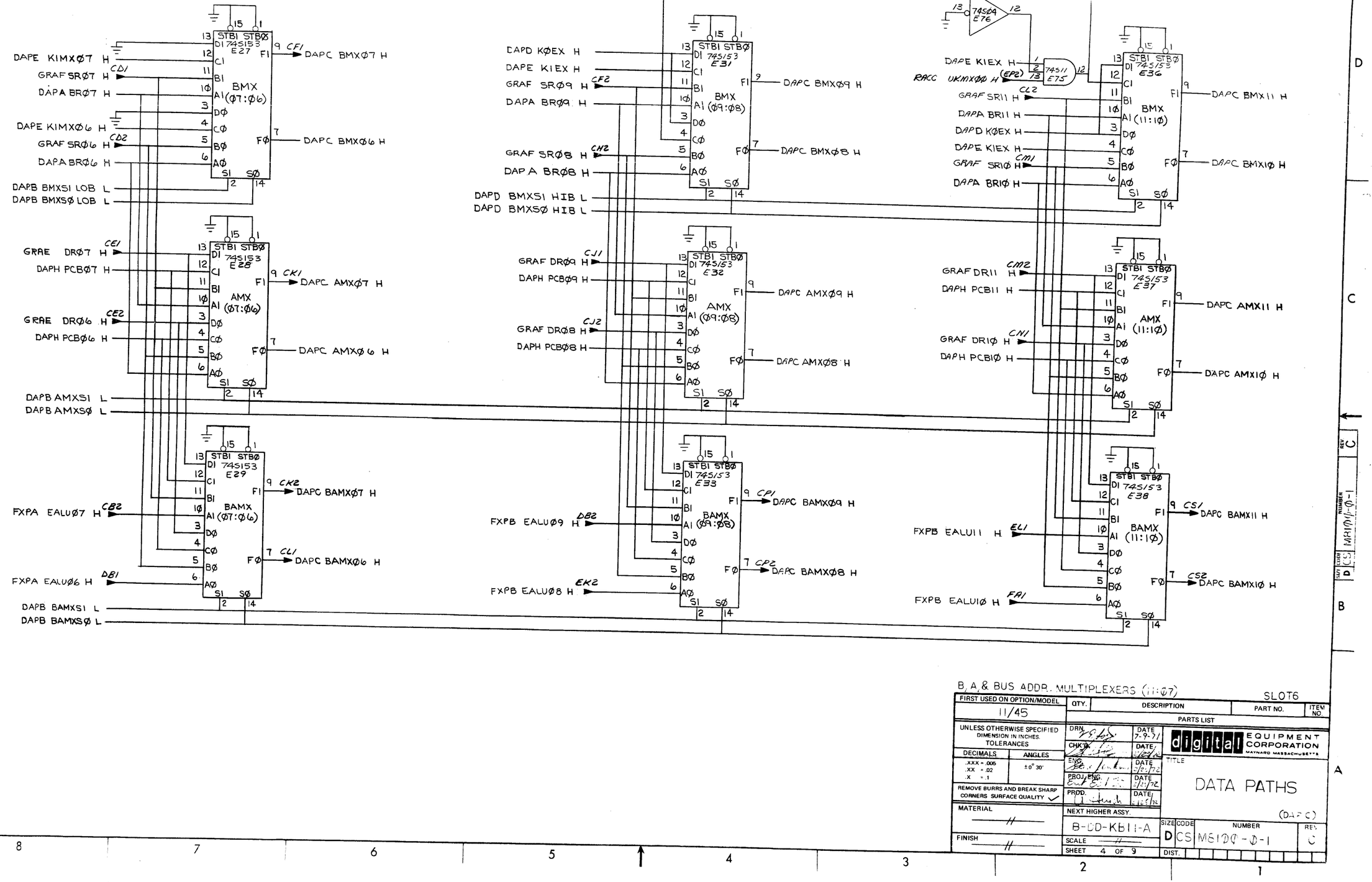
TITLE: DATA PATHS

SIZE D | CODE CS | NUMBER MB100-0-1 | DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM 105 FORD 102-B

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



B, A, & BUS ADDR. MULTIPLEXERS (11:07)

SLOT6

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 —

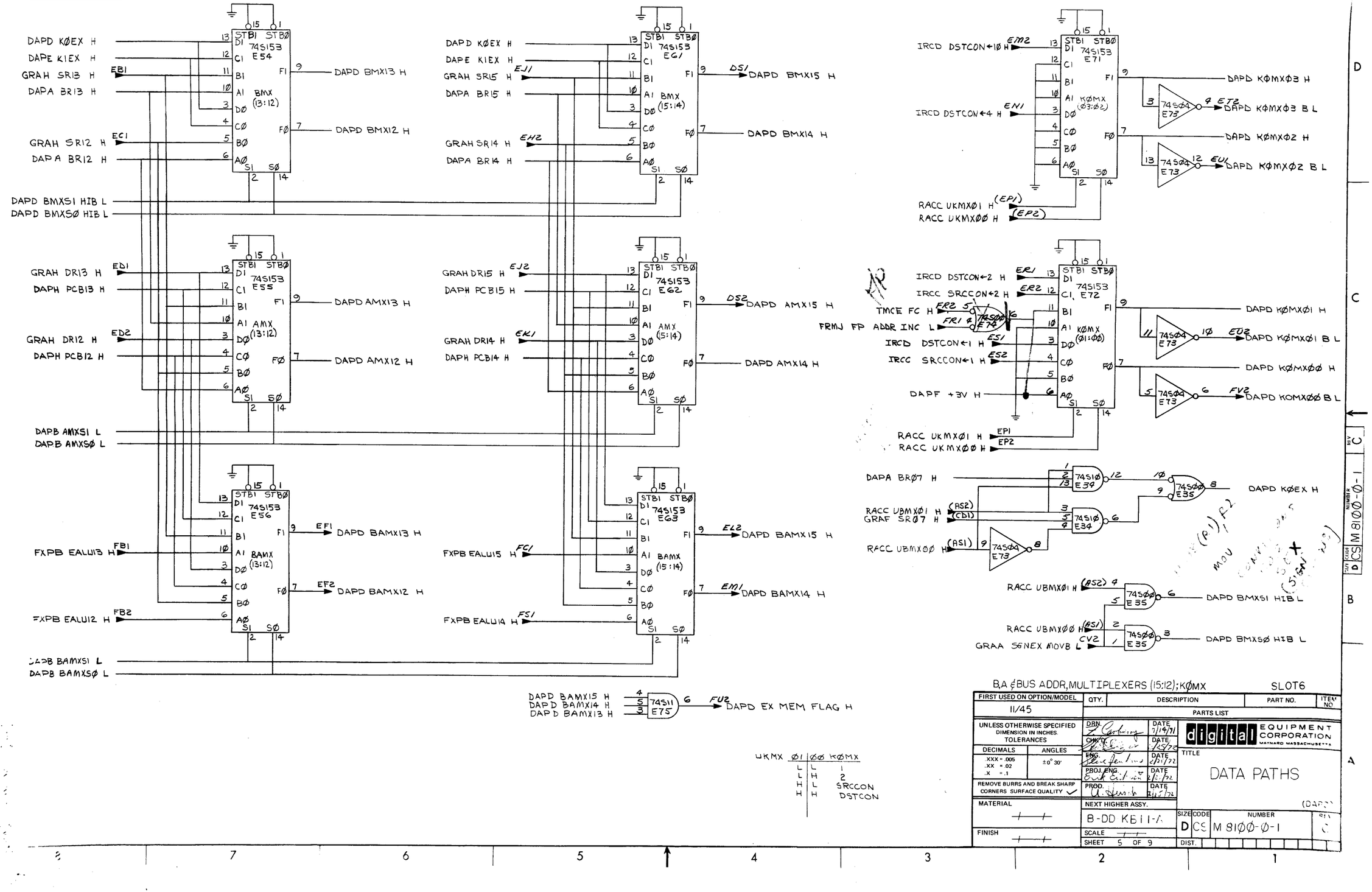
FINISH —

DRN.	DATE 7-9-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE	
ENG.	DATE 7/9/72	TITLE: DATA PATHS (DAPC)
PROJ. ENG.	DATE 7/9/72	
PROD.	DATE 7/25/72	
NEXT HIGHER ASSY.	B-CD-KB11-A	SIZE D, CODE CS, NUMBER MS120-0-1, REV C
SCALE —	SHEET 4 OF 9	DIST.

REV C

SOFT LOCK NUMBER D CS MA120-0-1

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



B.A & BUS ADDR, MULTIPLEXERS (15:12); KØMX — SLOT6

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 7/19/71
CHK'D [illegible] DATE 7/19/71
ENG. [illegible] DATE 8/01/72
PROJ. ENG. [illegible] DATE 8/1/72
PROD. A. Smith DATE 8/15/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DAP)

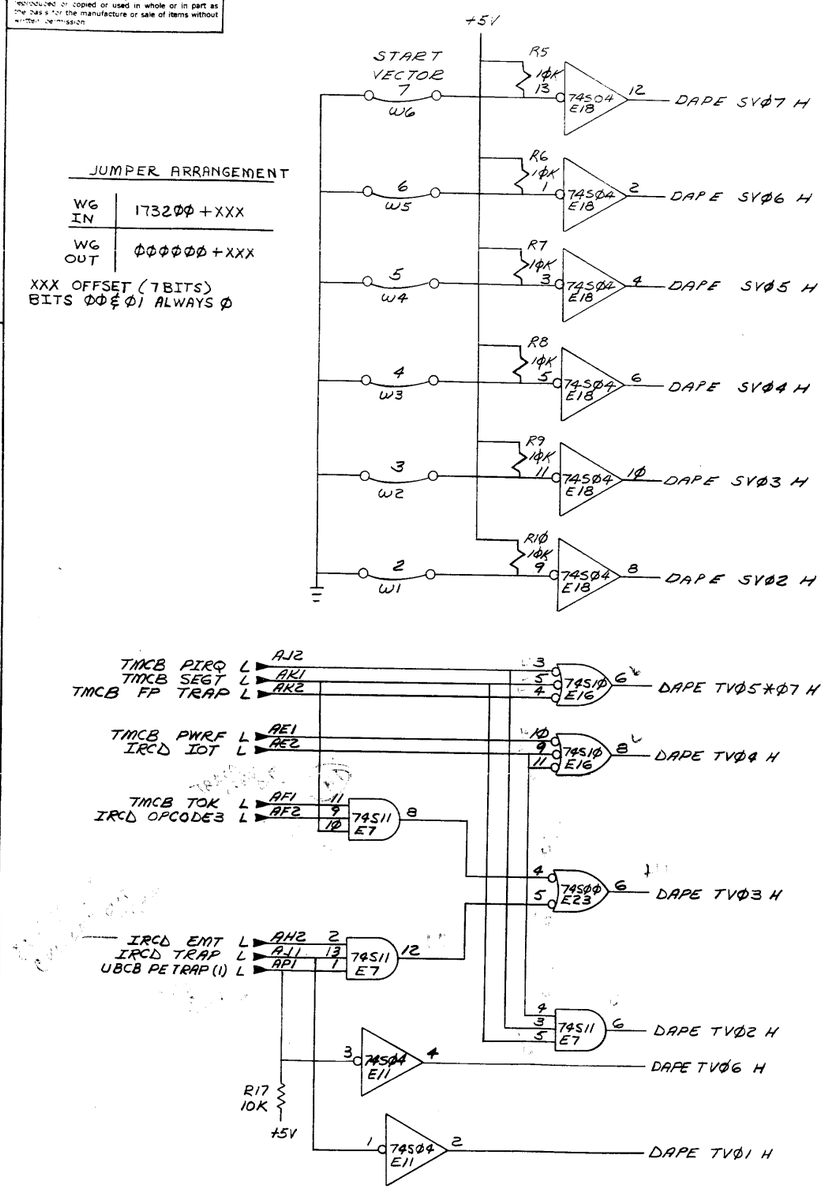
NEXT HIGHER ASSY. B-DD KB11-A

SIZE D | CODE CS | NUMBER M 8100-0-1 | REV C

SCALE

SHEET 5 OF 9 | DIST.

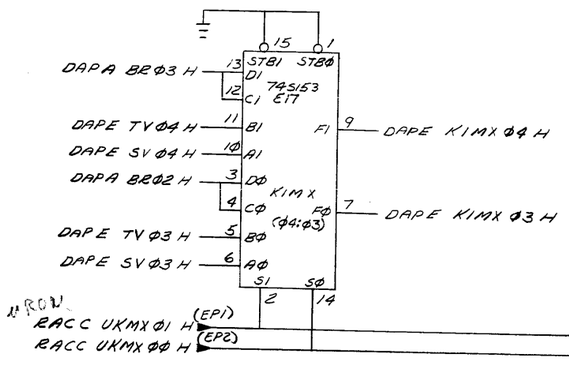
...ing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

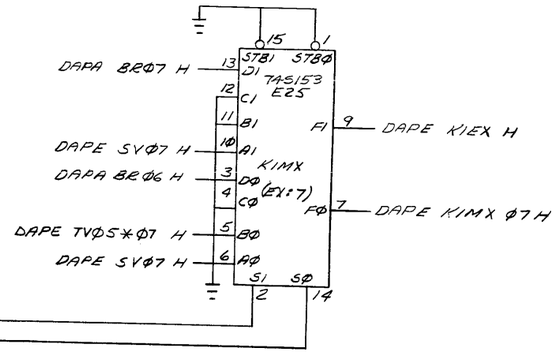


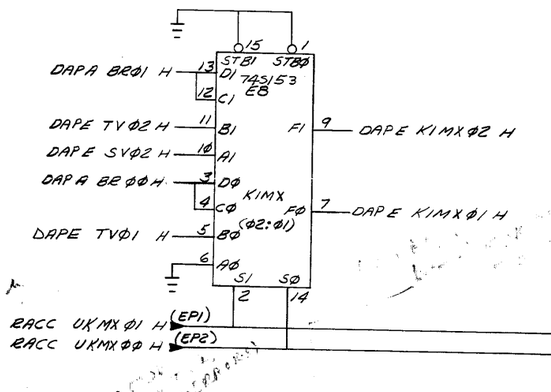
JUMPER ARRANGEMENT

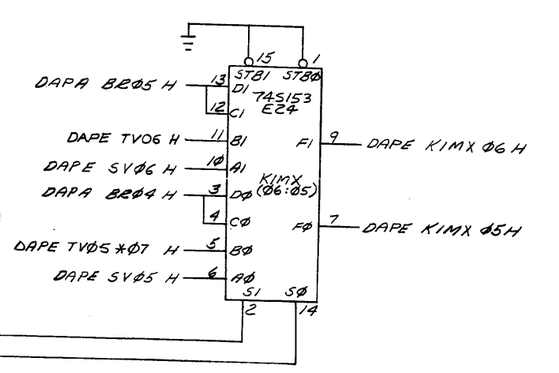
WG IN	1732ØØ + XXX
WG OUT	ØØØØØØ + XXX

XXX OFFSET (7 BITS)
BITS ØØ & Ø1 ALWAYS Ø









	TRAP VECTOR	UKMX Ø1	ØØ	KIMX
RSVD INST	4	L	L	SV
TOK+3	1Ø (4 LEFT SHIFTED)	L	H	TV
IOT	2Ø	H	L	SOB & MARK DISPLACEMENT
PWRF	24	H	H	BRXX DISPLACEMENT
EMT	3Ø (14 LEFT SHIFTED)			
TRAP	34 (16 LEFT SHIFTED)			
PIRQ	24Ø			
FP TRAP	244			
SEGT	25Ø			
PERF	114			

NOTE:
LEFT SHIFTING TAKES PLACE ON FLOWS 12 RSD.1Ø

TRAP VECTORS, START VECTOR, & KIMX — SLOT 6

FIRST USED ON OPTION/MODEL: 11/45	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.	DATE 7-12-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHKD.	DATE	
	ENG.	DATE 2/1/72	TITLE: DATA PATHS
	PROJ. ENG.	DATE 2/15/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD.	DATE 2/25/72	
MATERIAL	NEXT HIGHER ASSY.		(DAPE)
FINISH	B-DD-KB11-A	SIZE D CODE CS NUMBER M8100-0-1	REV C
	SCALE		
	SHEET 6 OF 9	DIST.	

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

DAPF COUTØ3 L
(COUTØ3 = G3 * (P3 + P2 * (P1 + P0 * CIN)))

COUTX 74182-1 E44 CARRY
GØ PØ CIN

GRAA ALUC H FD1 3 — 74S04 E76 — 4

DAPB BMXØ3 H
DAPB AMXØ3 H
DAPB BMXØ2 H
DAPB AMXØ2 H
DAPB BMXØ1 H
DAPB AMXØ1 H
DAPB BMXØØ H
DAPB AMXØØ H

745181 E3Ø ALU (Ø3:ØØ)
A=B COUT G P
S3 S2 S1 SØ M CIN
F3 F2 F1 FØ

DAPF ALUØ4 H
DAPF PCBØ3 H
DAPH ALU11 H
DAPF PCBØ2 H
DAPH ALU1Ø H

745153 E64 SHFR (Ø3:Ø2)
STB1 STBØ
DI CI BI AI DØ CØ BØ AØ S1 SØ
F1 FØ

FK1 BUS A=B (15:8) H → DAPF SHFRØ3 H
FK2 → DAPF SHFRØ2 H

+5V
R11 33ØΩ
R12 56ØΩ
DAPF +3V A H
74S11 E57
74S00 E74
FM2 → DAPF A=B (7:Ø) H
FM1 → DAPF A=B (15:Ø) L

DAPF PCBØ1 H
DAPH ALUØ9 H
DAPF PCBØØ H
DAPH ALUØ8 H

745153 E65 SHFR (Ø1:ØØ)
FL1 → DAPF SHFRØ1 H
FL2 → DAPF SHRØØ H

DAPF ALUØ3 H
DAPF ALUØ2 H
DAPF ALUØ1 H
FJ2 DAPF ALUØØ H

GRAA SHFRS1 L FD2 5 — 74S04 E76 — 6
GRAA SHFRSØ L FE1 9 — 74S04 E76 — 8
GRAA ALUM L FE2 5 — 74S04 E39 — 6
GRAA ALUSØ L FF1 9 — 74S04 E39 — 8
GRAA ALUS1 L FF2 1 — 74S04 E39 — 2
GRAA ALUS2 L FH2 11 — 74S04 E39 — 1Ø
GRAA ALUS3 L FJ1 13 — 74S04 E39 — 12

DAPF LM H
DAPF LSØ H
DAPF LS1 H
DAPF LS2 H
DAPF LS3 H

745174 E67 PCA (Ø5:ØØ)
745174 E66 PCB (Ø5:ØØ)
D5 D4 D3 D2 DI DØ
R5 R4 R3 R2 R1 RØ
CLR CLK

DAPF ALUØ5 H
DAPF ALUØ4 H
DAPF +3V H
DAPJ CLKPCA H
DAPJ CLKPCB H

DAPF PCBØ5 H
DAPF PCBØ4 H
DAPF PCBØ3 H
DAPF PCBØ2 H
DAPF PCBØ1 H
DAPF PCBØØ H

SHFR S1 SØ H
L L SWAB (OB SWAP)
L H PCB
H L ALU
H H RT. SHIFT ALU

DAPF COUTØ7 L
(COUTØ7 = G1 * (P1 + G0 * P0 * CIN))

COUTY 74182-1 E44 CARRY
G1 P1

74S04 E56 → DAPF +3VA H

DAPC BMXØ7 H
DAPC AMXØ7 H
DAPC BMXØ6 H
DAPC AMXØ6 H
DAPB BMXØ5 H
DAPB AMXØ5 H
DAPB BMXØ4 H
DAPB AMXØ4 H

745181 E4Ø ALU (Ø7:Ø4)
A=B COUT G P
S3 S2 S1 SØ M CIN
F3 F2 F1 FØ

DAPF LS3 H
DAPF LS2 H
DAPF LS1 H
DAPF LSØ H
DAPF LM H
DAPF COUTØ3 L

DAPH PCBØ6 H
DAPH ALU14 H

745153 E68 SHFR (ØG)
STBØ DØ CØ BØ AØ S1 SØ
FØ → FN1 DAPF SHFRØ6 H

DAPF PCBØ5 H
DAPH ALU13 H
DAPF PCBØ4 H
DAPH ALU12 H

745153 E78 SHFR (Ø5:Ø4)
STB1 STBØ
DI CI BI AI DØ CØ BØ AØ S1 SØ
F1 FØ
FP1 → DAPF SHFRØ5 H
FP2 → DAPF SHFRØ4 H

DAPF SHFRS1 H
DAPF SHFRSØ H

DAPF ALUØ7 H
DAPF ALUØ6 H
DAPF ALUØ5 H
DAPF ALUØ4 H

74S04 E11 → DAPF +3V H

GRAA SHFRSØ (FE1) 11 — 74S04 E76 — 1Ø → DAPF SHFRSØ B H
GRAA SHFRS1 L (FD2) 1 — 74S04 E76 — 2 → DAPF SHFRS1 B H

745181 - ALU

S3 S2 S1 SØ	M=H LOGIC FUNCTIONS	M=L; ARITHMETIC OPERATIONS $C_N = Ø = H$	$C_N = 1 = L$
L L L L	$F = \overline{A}$	F=A	F=A PLUS 1
L L H H	F = Ø	F=MINUS 1 (2'S COMP)	F = ZERO
L H H L	$F = A \forall B$	F=A MINUS B MINUS 1	F=A MINUS B
L H H H	$F = A\overline{B}$	$F = A\overline{B}$ MINUS 1	$F = A\overline{B}$
H L L H	$F = \overline{A \forall B}$	F = A PLUS B	F=A PLUS B PLUS 1
H L H L	F=B	F=(A+$\overline{B}$) PLUS AB	F=(A+$\overline{B}$) PLUS AB PLUS 1
H L H H	F=AB	F=AB MINUS 1	F=AB
H H L L	F=1	F=A PLUS A	F=A PLUS A PLUS 1
H H H L	F=A+B	F=(A+$\overline{B}$) PLUS A	F=(A+$\overline{B}$) PLUS A PLUS 1
H H H H	F=A	F=A MINUS 1	F=A

ALU (Ø7:ØØ), SHIFTER (Ø6:ØØ), PCA & PCB (Ø5:ØØ) SLOT6

FIRST USED ON OPTION/MODEL: 11/45

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. [illegible] DATE 7-12-71
CHK'D [illegible] DATE 7/15/71
ENG. [illegible] DATE 7/20/71
PROJ. ENG. [illegible] DATE 7/20/71
PROD. [illegible] DATE 7/22/71
NEXT HIGHER ASSY. B-DD-KB11-A
SCALE —
SHEET 7 OF 9

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DAPF)

SIZE D | CODE | NUMBER CS-M8100-Z-1 | REV C
DIST.

REVISIONS: REV | CHANGE NO | CHK

SIZE D | CODE | NUMBER CS-M8100-Z-1 | REV C

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

DAPH COUT 11 L

COUT11 = GR3(P0 + S1 P1 + G3 G1 P3 + CIN G0 S1)

74182-1 E44 CARRY G2 P2

BUS A=B(15:8) H

74S181 E45 ALU (11:Ø8)

DAPC BMX11 H
DAPC AMX11 H
DAPC BMX1Ø H
DAPC AMX1Ø H
DAPC BMXØ9 H
DAPC AMXØ9 H
DAPC BMXØ8 H
DAPC AMXØ8 H

DAPH HM H
DAPF COUTØ7 L

DAPH ALU12 H
DAPH PCB11 H
DAPF ALUØ3 H
DAPH PCBØ H
DAPF ALUØ2 H

74S153 E59 SHFR (11:10)

DM1 — DAPH SHFR11 H
DM2 — DAPH SHFR1Ø H

DAPH PCB09 H
DAPF ALUØ1 H
DAPH PCBØ8 H
DAPF ALUØØ H

74S153 E53 SHFR (Ø9:Ø8)

DN1 — DAPH SHFRØ9 H
DP1 — DAPH SHFRØ8 H

DAPF SHFR S1 H
DAPF SHFR SØ H

DAPH ALU11 H
DAPH ALU1Ø H
DAPH ALUØ9 H
DAPH ALUØ8 H

74S174 E46 PCA (11:Ø6)
74S174 E47 PCB (11:Ø6)

DAPF ALUØ7 H
DAPF ALUØ6 H
DAPF +3V H

DAPH PCB11 H
DAPH PCB1Ø H
DAPH PCBØ9 H
DAPH PCBØ8 H
DAPH PCBØ7 H
DAPH PCBØ6 H

DAPJ CLKPCA H
DAPJ CLKPCB H

GRAA ALUS3 L (FJ1) — 74SØ4 E58 — DAPH HS3 H
GRAA ALUS2 L (FH2) — 74SØ4 E58 — DAPH HS2 H
GRAA ALUS1 L (FF2) — 74SØ4 E58 — DAPH HS1 H
GRAA ALUSØ L (FF1) — 74SØ4 E58 — DAPH HSØ H

74SØ4 E39 — DAPH COUT15 H
COUT15 = GP

DAPH COUT15 L

BUS A=B(15:8) H

R13 330Ω 5% +5V
R14 560Ω 5%

74S181 E60 ALU (15:12)

DAPD BMX15 H
DAPD AMX15 H
DAPD BMX14 H
DAPD AMX14 H
DAPD BMX13 H
DAPD AMX13 H
DAPD BMX12 H
DAPD AMX12 H

DAPH COUT11 L
DAPH HS3 H
DAPH HS2 H
DAPH HS1 H
DAPH HSØ H

GRAA ALUM L (FE2) — 74SØ4 E58 — DAPH HM H

74S153 E68 SHFR (14)

DP2 — DAPH SHFR14 H

DAPH PCB14 H
DAPF ALUØ6 H

74S153 E77 SHFR (13:12)

DR2 — DAPH SHFR13 H
DR1 — DAPH SHFR12 H

DAPH PCB13 H
DAPF ALUØ5 H
DAPH PCB12 H
DAPF ALUØ4 H

DAPH ALU15 H
DAPH ALU14 H
DAPH ALU13 H
DAPH ALU12 H

74S174 E69 PCA (15:12)
74S174 E70 PCB (15:12)

DAPH PCB15 H
DAPH PCB14 H
DAPH PCB13 H
DAPH PCB12 H

DAPJ CLKPCA H
DAPJ CLKPCB H

ALU(15:Ø8),SHIFTER(14:Ø8), PCA & PCB(15:Ø6) SLOT 6

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 1/11/72
CHK'D. — DATE 2/25/72
ENG. — DATE 2/25/72
PROJ ENG. — DATE 2/25/72
PROD. — DATE 3/25/72

NEXT HIGHER ASSY. B-DD-KB11-A
SCALE —
SHEET 8 OF 9

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DATA)

SIZE D | CODE CS | NUMBER M81ØØ-Ø-1 | REV C
DIST.

REV C
NUMBER M81ØØ-Ø-1
SIZE D | CODE CS

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

DAPH ALU15 H
DAPJ PCB+RTSHF15 H
DAPF ALUØ7 H
74S153 E50 SHFR (15)
FS2 DAPJ SHFR15 H
DA1 DAPJ SHFRA15 H
74SØ4 E41
IRCC(ROR.B+MUL) H (CT2)
DAPF SHFRSØ B H
DAPF SHFRS1 B H
74S10 E34
74S11 E75

DAPC AMXØ7 H
DAPD AMX15 H
DAPF ALUØ7 H
DAPH ALU15 H
BUS A=B(15:8) H
DAPF COUTØ7 L
DAPH COUT15 L
IRCD BYIN H (CU1)
74S157 E48 STB
DF2 DAPJ AMX SIGN H
DF1 DAPJ ALU SIGN H
DJ1 DAPJ A=B(15:8)+BYTE H
DH2 DAPJ ALUCN L (ALU C IN)
IRCE VBIT
IRCE NBIT
IRCF ZBIT
IRCF CBIT

DAPH COUT15 H
IRCH R(ICLASS) H
DJ2
74S11 E43
DL1 DAPJ LEFT DATA H
RACA UPCA H
TIGD T5 H
DK1
DK2
74S11 E43
DAPJ CLKPCA H
R15 NOT USED
R16 15Ø
+5V

SHIFT DR GRAJ

IRCC(ROR.B+MUL) H (CT2)
DAPF SHFRSØ B H
DAPF SHFRS1 B H
74S10 E34
74S11 E75

DAPH ALUØ8 H
DAPF ALUØ7 H
DAPJ PCB+RTSHFØ7 H
DAPH ALU15 H
74S153 E51 SHFR (Ø7)
EE1 DAPJ SHFRØ7 H
DC1 DAPJ SHFRAØ7 H
74S11 E57
74S11 E57
74S20 E52
74S20 E52

RACA UPCBØØ H (DD1)
RACA UPCBØ1 H (DD2)
74SØ4 E41
74SØ4 E41
IRCB SRCF7 L DE1
IRCC DSTF7 L DE2
RACA UPCBØØ H DD1
RACA UPCBØ1 H DD2
IRCH R(ICLASS) H (DJ2)
74S64 E42
RACB UPWEØØ H EV2
(REGWRITE)

TIGC T1 H DL2
74S11 E43
DAPJ CLKPCB H
R3 NOT USED
R4 15Ø
+5V

IRCD BYIN H CU1
IRCC (ROR.B+MUL) H CT2
GRAJ SHFR DATA H CU2
DAPH PCB15 H
IRCH C B (1)H DT2
DAPH PCBØ7 H
74S157 E49
DAPJ PCB+RTSHF15 H
DAPJ PCB+RTSHFØ7 H

ROM CONTROL:	SHFR15 S1	SHFR15 SØ	SHFR15
SWAB	L	L	ALUØ7
PCB	L	H	PCB15
RIGHT SHIFT*[ROR.B+MUL]	L	H	SHFR DATA
NO SHIFT	H	L	ALU15
RIGHT SHIFT* ROR.B*MUL	H	H	ALU15

ROM CONTROL:	SHFRØ7 S1	SHFRØ7 SØ	SHFRØ7
SWAB	L	L	ALU15
PCB	L	H	PCBØ7
RIGHT SHIFT * RORB	L	H	C(1)
NO SHIFT + RIGHT SHIFT *BYTE * $\overline{\text{RORB}}$	H	L	ALUØ7
RIGHT SHIFT * $\overline{\text{BYTE}}$	H	H	ALUØ8

UPCB Ø1	ØØ
L	L NO CLOCK
L	H LOAD
H	L SF7:LOAD
H	H DF7:LOAD

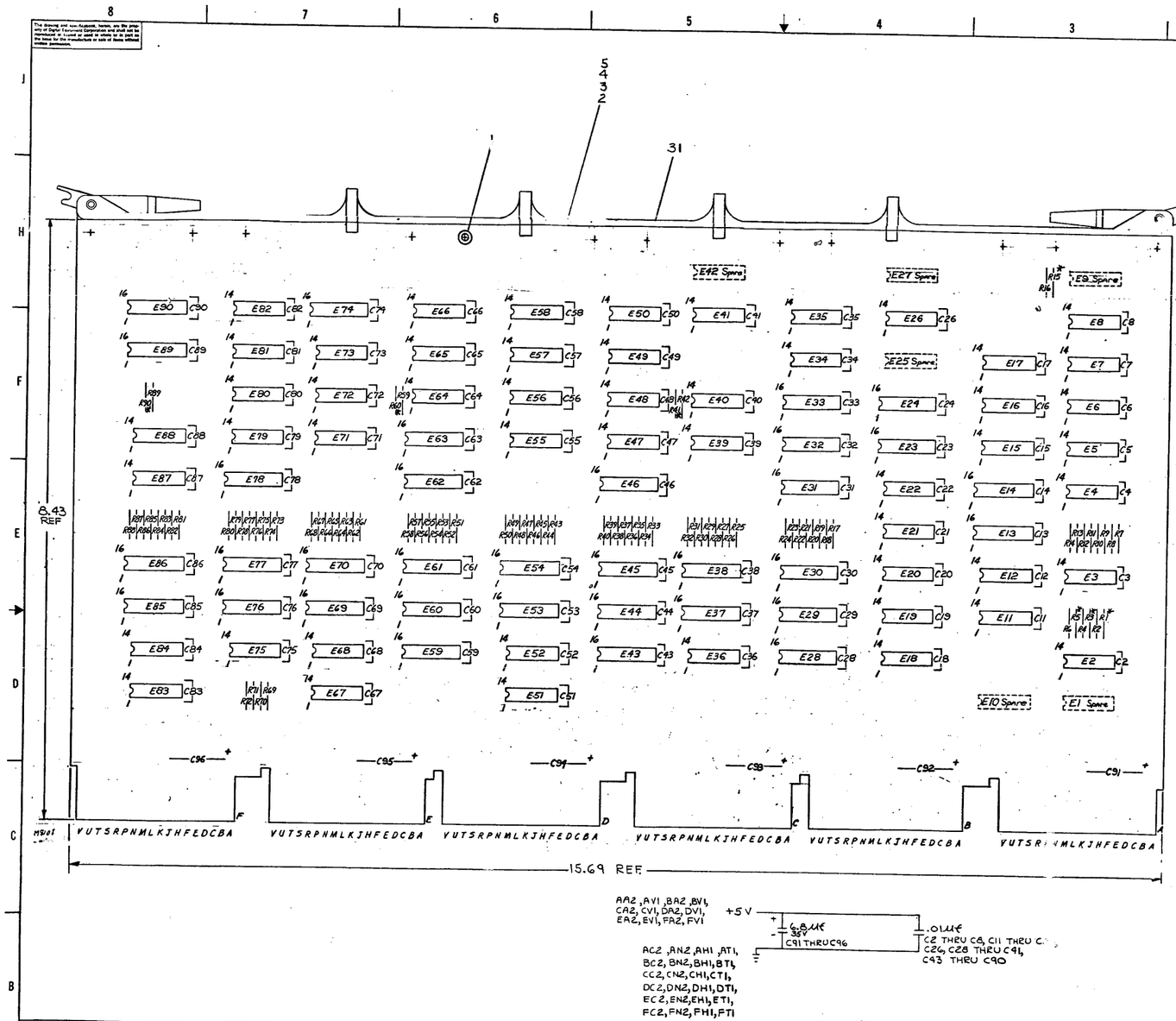
74S157 SØ	
L	A→F
H	B→F

SHIFTER (15:07); PCA & PCB CLOCKS SLOT 6

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 8-12-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 2/2/72	
ENG.	DATE 2/22/72	TITLE: DATA PATHS
PROJ. ENG.	DATE 2/25/72	
PROD.	DATE	
NEXT HIGHER ASSY B-DD [illegible] A		SIZE C NUMBER DCS M8100-0-1
SCALE		
SHEET 9 OF 9		



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

NOTES:

1. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS & CAPACITANCE IS IN PICOFARADS. CAPACITORS WITHOUT VALUE NOTED ARE .01 MFD.
2. RESISTORS MARKED WITH ASTERISK ARE NOT USED.
3. LOCATIONS MARKED E1, E9, E10, E25, E27, & E42 ARE SPARES.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		MODULE, MODULE	9PS-12A011-2	31
1	E74	I.C. DEC, DM8598-AD	23-C83AI	30
8	E57, E58, E53, E54, E62, E70, E85, E86	IC. DEC, 3101A	19105B3	29
4	E31, E46, E62, E78	IC. DEC 74S194	19105B2	28
3	E28, E93, E59	I.C. DEC, 74S174	19105B0	27
18	E29, E58, E94, E95, E68, E61, E71, E77, E83, E90	I.C. DEC, 74S158	19105A9	26
4	E23, E29, E32, E33	IC. DEC, 74S153	19105A7	25
1	E63	IC.DEC, 74S112	19105A5	24
2	E50, E79	I.C. DEC, 74S74	19105A4	23
11	E5, E6, E8, E13, E37, E38, E49, E52, E75, E80	I.C. DEC, 74S64	19105A2	22
3	E66, E73, E81	I.C. DEC, 74S20	19105A9	21
7	E8, E21, E34, E41, E65, E71, E82	IC. DEC, 74S11	19105A7	20
5	E2, E15, E20, E22, E56	I.C. DEC, 74S10	19105A6	19
5	E11, E12, E52, E68, E84	I.C. DEC, 74S05	19105A5	18
10	E7, E36, E37, E40, E51, E57, E66, E67, E83, E87	IC. DEC, 74S04	19105A9	17
5	E9, E9, E17, E26, E88	IC. DEC, 74S02	19105A2	16
2	E13, E14	IC. DEC, 7491	19100A6	15
1	E87	IC. DEC, 74H58	19090A0	14
2	E55, E72	IC. DEC, 74H30	19090A9	13
2	R10, R12	RES, 750Ω, 1/4W, 5%	1301A01	12
32	R11, R13, R21, R23, R25, R27, R29, R31, R33, R35, R37, R39, R41, R43, R45, R47, R49, R51, R53, R55, R57, R59, R61, R63, R65, R67, R69, R71, R73, R75, R77, R79, R81, R83, R85, R87	RES, 681Ω, 1/8W, 1%	1301824	11
4	R6, R18, R42, R48	RES, 562Ω, 1/4W, 1%	1301890	10
7	R2, R9, R6, R14, R82, R51, R81	RES, 150Ω, 1/4W, 1%	1300850	9
38	R7, R9, R11, R13, R15, R20, R23, R24, R26, R28, R30, R32, R34, R36, R38, R40, R42, R44, R46, R50, R52, R54, R56, R58, R60, R62, R64, R66, R68, R70, R72, R74, R76, R78, R80, R82, R84, R86, R88	RES, 330Ω, 1/4W, 1%	1300895	8
64	C2-C8, C11-C69, C26, C28-C41, C43-C90	CAP, .01UF, 100V, ±20% DISC	1001610	7
6	C91-C96	CAP, 6.8UF, 35V, ±20% S TANT	1000067	6
1		ETCHED CIRCUIT BOARD	5003807	5
REF		MODULE ECO HISTORY	B-MM-M8101-B-G	4
REF		ASSY/DRILLING HOLE LAYOUT	E-AN-M8101-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8101-0-4	2
12		EYELET	9006732	1

PARTS LIST

ETCH BOARD REV B

IC TYPE	GND	+5V
DEC DM8598-AD	8	16
DEC 3101A	8	16
DEC 74S174	8	16
DEC 74S158	8	16
DEC 74S153	8	16
DEC 74S74	8	16
DEC 74S112	8	16
DEC 74191	8	16

GND AND 5V ARE USUALLY PIN 7 AND 16 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

DEC FORM NO.

ITEM NO.	AWG	FROM PT	TO PT

JUMPER LIST

REV	CHG	CHANGE NO. REVISIONS	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN S. JENKINS DATE 5/7/73
CHK D. DAVIS DATE 5/7/73
ENG DATE
PROJ ENG DATE
PROG DATE

NEXT HIGHER ASSY B-DD-KB11-0

SCALE 2/1 SHEET 1 OF 10

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE GENERAL REGS. & ALU. CNTL.

SIZE E CODE NUMBER M8101-0-1 REV D

DIST

LSI M8101-0-1

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

IRCH SUBROMA4 H FR1
IRCH SUBROMA3 H FR2
IRCH SUBROMA2 H FS1
IRCH SUBROMA1 H FS2
IRCH SUBROMAØ H FT2

CS DM8598-AD E74 ALU CNTL ROM

GRAA POMM H
GRAA RCMC H
GRAA ROMSHFS1 H
GRAA ROMSHFSØ H
GRAA ROMS3 H
GRAA ROMS2 H
GRAA ROMS1 H
GRAA ROMSØ H

IRCH LI1 + ASHC H FM1
GRAH DR15 L
IRCH C (Ø) H FH1
GRAA ROMSØ L
IRCH C (1) H FC1

74SØØ E28
74S2Ø E73
74SØØ E28
74S2Ø E73

IRCH SXT H FM2
IRCH N (1) H (ALI)
74SØØ E28

GRAA CDEP L

GRAA OB SWAP L
IRCD BYIN H (DF1)
74S11 E25 → AF1 GRAA WORD+OB SWAP L
74SØØ E17 → AF2 GRAA WORD+OB SWAP H

74S11 E71
74S2Ø E81
74S11 E71
74S11 E71

GRAA MODE H
GRAA CIN L
RACA USHFØ1 H ET2
RACA USHFØØ H ES2
GRAA SWAP L

74S158 E89
F3 FE1 GRAA ALUM L
F2 FD1 GRAA ALUC H
F1 FD2 GRAA SHFRS1 L
FØ FE1 GRAA SHFRSØ L

74S04 E66
DAPB AMXØØH BS1
74S10 E56 → DV2 GRAA AMXØ * ASH L

IRCB OBD (ASRB+RORB) L CK2
IRCB NEG.B L CP1
74S11 E65

IRCH SWAB L EV2
74S11 E65 → GRAA SWAP L

74S04 E66 → GRAA ROMSØ L

GRAB OBD (1) H
IRCD BYIN H DF1
IRCC DSTMØ L AP2
74S2Ø E81 → EP1 GRAA OB SWAP L

74S04 E87 → GRAA OB SWAP H

74S11 E82
74S11 E82

RACC UALUØ H (ER1)
RACC UALU1 H (ER2)
RACC UALU2 H (ES1)

74S158 E9Ø
F3 FJ1 GRAA ALUS3 L
F2 FH2 GRAA ALUS2 L
F1 FF2 GRAA ALUS1 L
FØ FF1 GRAA ALUSØ L

74S158 SØ
L A→F
H B→F

RACC UALUØ H (ER1) → 74S04 E66 → AT2 GRAA UALUØ L
RACC UALU1 H (ER2)
RACC UALU2 H (ES1)

74SØØ E26 → GRAA CIN L
74S64 E58 → 8
74S04 E66 → 74S11 E41 → GRAA MODE H
74S04 E66 → 74S24 E66

RACC UALUØ H ER1
RACC UALU1 H ER2
74S11 E82

RACC UALU2 H ES1
74S10 E56 → GRAA ALU INSDEP L

IRCB MOVB H CJ1
74S2Ø E64 → EL1 GRAA SGNEX MOVB L

ALU & SHIFTER CONTROL LOGIC SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. T Dubin DATE 6-23-71
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY. B-DD-KB11-0
SCALE
SHEET 2 OF 16

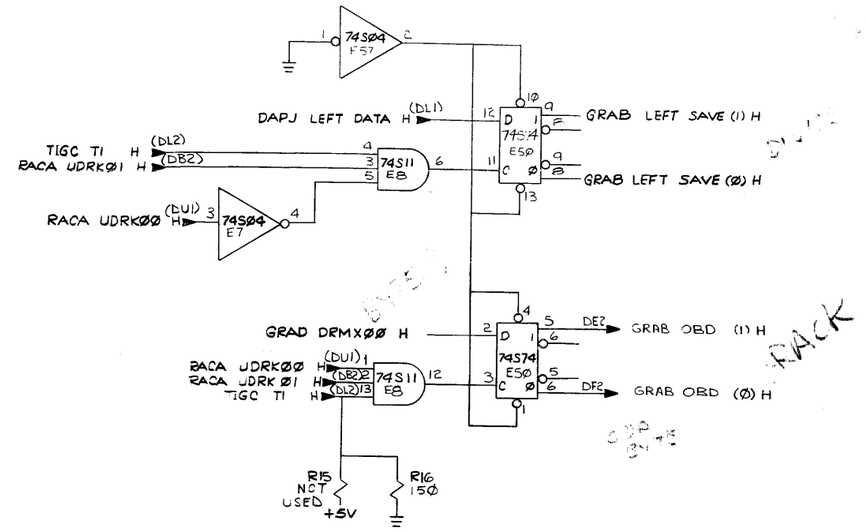
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

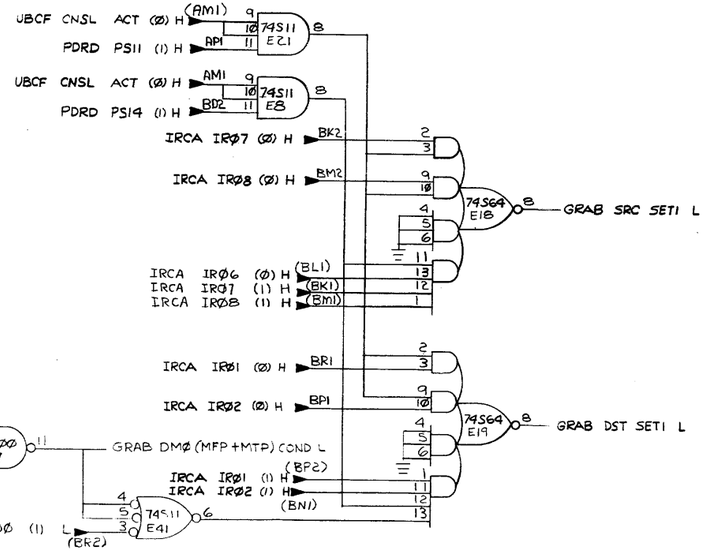
TITLE: GENERAL REGS & ALU CNTL (GRAA)

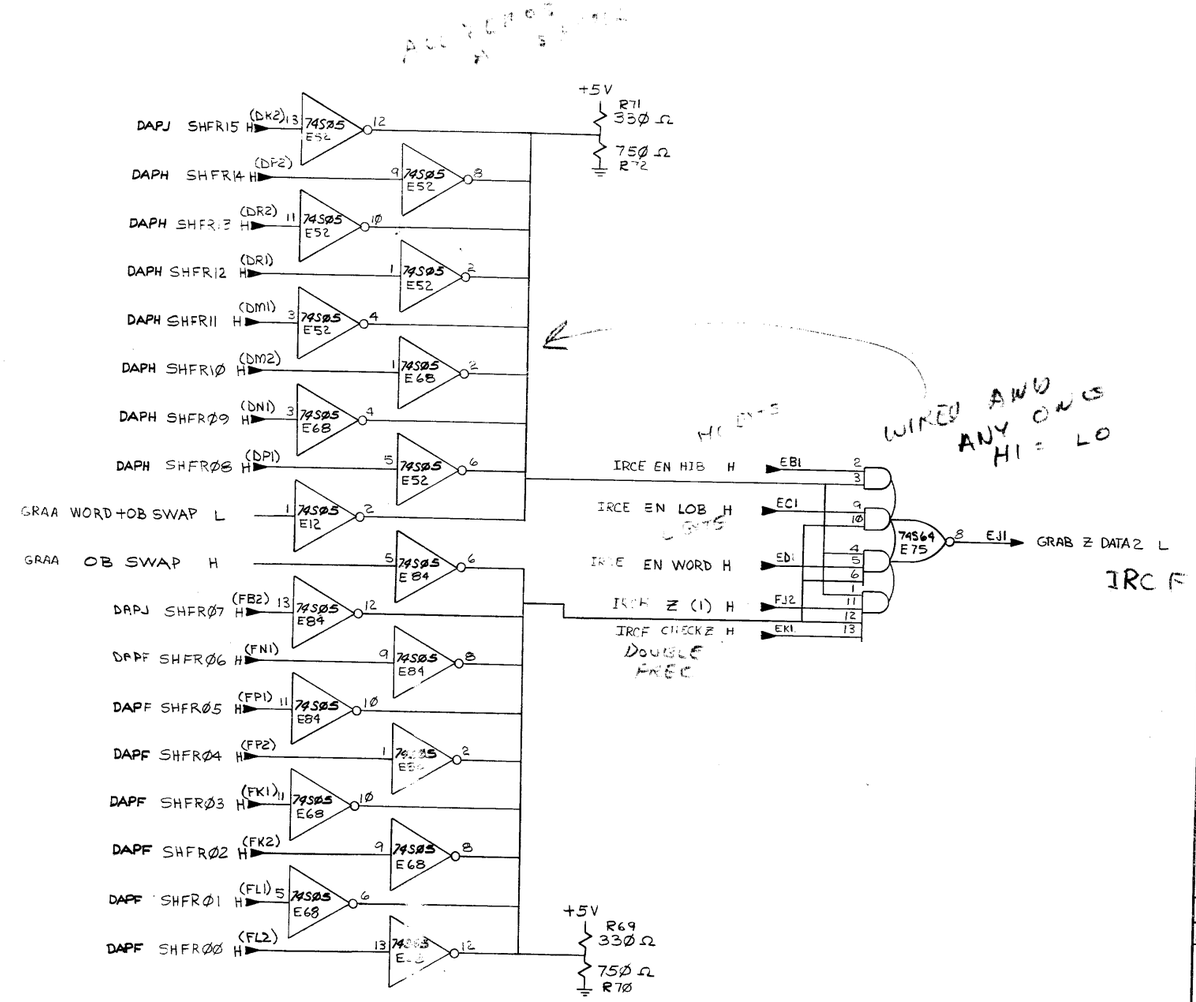
SIZE D | CODE CS | NUMBER M8101-D-1 | REV D | DIST.

REVISIONS: REV | CHANGE NO | CHK

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







SHIFTER = 0 DETECTOR; MISC. LOGIC — SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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	[illegible]	7-15-71
CHK'D	[illegible]	DATE
ENG.	[illegible]	DATE
PROJ. ENG.	[illegible]	DATE 9/2/72
PROD.	[illegible]	DATE 7-15-71

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GENERAL REGS. & ALU CNTL (GRAB)

NEXT HIGHER ASSY. B-D0-KB11-[illegible]

SCALE

SHEET 2 OF 2

SIZE	CODE	NUMBER	REV.
D	CS	M8101-0-1	D

DIST.

REVISIONS

REV.	CHANGE NO.	CHK

SEC FORM 761 GRD 102-B

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

GRAC GRAD EN L

RACB UPAD ØØ H — AD1 — 74S04 E4Ø — GRAC PADØØ L

RACB UPADØ1 H (AC1)
RACB UPADØØ H (AD1)
74S11 E34

STB1 STBØ
74S153 E32
DI CI BI AI DØ CØ BØ AØ S1 SØ F1 FØ
GDAM (2:1)

IRCA IRØ2 (1) H — BN1
IRCA IRØ8 (1) H — BM1
IRCA IRØ1 (1) H — BP2
IRCA IRØ7 (1) H — BK1

GRAC GDA2 H
GRAC GDA1 H

STB1 STBØ
74S153 E33
GSAM (2:1)

GRAC GSA2 H
GRAC GSA1 H

74S04 E39 — GRAC +3V H

RACB UPADØ1 H (AC1)
RACB UPADØØ H (AD1)
GRAC GRAD EN L

RACB UPADØ1 H — AC1
RACB UPADØ2 H — AB2
74S11 E34
GRAC PADØØ L — 74SØØ E17 — GRAC PLUS 1 L

IRCA IRØ6 (1) L — BL1
GRAC PLUS 1 L
74S10 E15

IRCA IRØ8 (1) H — (BM1)
IRCA IRØ7 (1) H — (BK1)
PDRD PS15 (1) H — (BB2)
74S10 E15

ANY CONSOLE OPER.
UBCF CNSL ACT(Ø) L — (BJ1)
IRCA IRØØ (1) L — BR2

IRCD DSTF6 H — DC1 — 74S04 E4Ø

74S64 E35
PDRD PS15 (1) L — AR2
GRAB DMØ (MFP + MTP) COND L
PDRD PS13 (1) L — BU2
GRAC DMØ (MFP+MTP) COND H

COND'L WRITE

PDRD PS15 (1) H — BB2
GRAC +3V H

STB1 STBØ
74S153 E23
DI CI BI AI DØ CØ BØ AØ S1 SØ F1 FØ
GDAM (Ø)

PDRD PS14 (1) L — BD1
PDRD PS11 (1) L — BC1
GRAB DST SET 1 L
GRAB SRC SET 1 L

STB1 STBØ
74S153 E29
GSAM (Ø)

GRAC GSAØ H

IRCA IRØØ ACT (1) H — BJ1
IRCA IRØ3 (1) H — BL2
74S10 E3

PDRD PS12 (1) H — (CB2)
IRCD DSTF6 H — (DC1)
74S10 E2Ø

DK1 — GRAC ACT * IRC3 L

GRAC GDA2 H
GRAC GDA1 H
74S10 E15 — BE1 — GRAC GD6 L

74S04 E39 — GRAC GDAØ H

74S10 E2Ø — GRAC GDREG SET 1 H

74S10 E2Ø — GRAC GSREG SET 1 H

IRCB SRCF7 L — CH2
RACA USRXØØ H — DH2
RACA USRX Ø1 H — CU1
74H5Ø E47 — GRAC SRMX SEL L
74S04 E57

IRCC DSTF7 L — DA1
RACA UDRXØØ H — DJ1
RACA UDRXØ1 H — DJ2
74H5Ø E47 — GRAC DRMX SEL L
74S04 E57

NOT USED — R41 — R42 (1ØK)

GRAC T6 L (DELAY)

SSRA INH PWE L
TIGD T5 H
RACB UWEØ1 L — CS1 CS2
IRCB BYTN * (-MOVE) L — DE1
RACB UPWEØØ H — CT2
IRCB ICLASS L — (CJ2)

74S64 E48 — 74S04 E57 — GRAC GRWE HIB L

74S64 E49 — 74S04 E57 — GRAC GRWE LOB L

74S04 E4Ø

TIGD T4 H — DS1
NOT USED — R6Ø — R59 15Ø — +5V
74S112 E63 A

TIGC TF H (TPH) — EM1
NOT USED — R9Ø — R89 15Ø — +5V
74S112 E63 B

EL2 — GRAC GATE T6 H

74SØØ E88 — DU2 — GRAC T6 L GOES TO IRCØ

GRAC GSAØ H — 74S04 E39 — BE2 — GRAC GRAØ L

GRAC GSA1 H — 74S04 E39 — BF1 — GRAC GRA1 L

GRAC GSA2 H — 74S04 E39 — BF2 — GRAC GRA2 L

GRAC GDREG SET1 H — 74S04 E39 — BH2 — GRAC GRA3 L

GENERATION OF T6

WRITE ENABLE F/F PAD

PSW

GDAM

UPAD	S1	SØ	ADDR OUTPUT
Ø	L	L	SF
4	L	L	SFV1
1+5	L	H	DF
2+3	H	L	5
7+7	H	H	6

GSAM

UPAD	S1	SØ	ADDR OUTPUT
Ø+1	L	L	SF
4	L	L	SFV1
5	L	H	DF
2+3	H	L	5
7	H	H	6

UPWE Ø1	ØØ	GRWE LOB	GRWE HIB
L	L	DON'T WRITE	DON'T WRITE
L	H	WRITE COND: I CLASS	WRITE COND: I CLASS + BYTE INST +MOVIS (SIGN EXTEN.ED)
H	L	WRITE	WRITE
H	H	NOT USED	NOT USED

USRX	Ø1	ØØ	OUTPUT (SRMX)
	L	L	SHFR
	L	H	GS
	H	L	SF7: SHFR ; $\overline{SF7}$: GS
	H	H	NOT USED

UDRX	Ø1	ØØ	OUTPUT (DRMX)
	L	L	SHFR
	L	H	GD
	H	L	DF7: SHFR; $\overline{DF7}$: GD
	H	H	CLEAR DR

GENERAL REGS ADDR & WRITE PULSE CNTL — SLOT 7

FIRST USED ON OPTION/MODEL: 11/45

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. — DATE 12/16/71
CHK'D. — DATE
ENG. — DATE 2/7/72
PROJ. ENG. — DATE 1/7/72
PROD. — DATE

NEXT HIGHER ASSY. B-DD-KB11-D

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GENERAL REGS & ALU CNTL (GRAC)

SIZE D | CODE CS | NUMBER M8101-Ø-1 | REV. D

SHEET 4 OF 1Ø | DIST

REVISIONS: REV | CHANGE NO | CHK

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

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

GRAC GRWE LOB L

DAPF SHFRØ3 H FK1
DAPF SHFRØ2 H FK2
DAPF SHFRØ1 H FL1
DAPF SHFRØØ H FL2

31Ø1A E69 — GS (Ø3:ØØ)

GRAC GSREG SET1 H
GRAC GSA2 H
GRAC GSA1 H
GRAC GSAØ H

+5V
R68 330
R62 330
R61 330
R64 330
R63 330
R66 330
R65 330
68Ø

74S158 E6Ø — SRMX (Ø3:ØØ)

GRAC SRMX SEL L

GRAD GSØØ L
GRAD GSØ1 L
GRAD GSØ2 L
GRAD GSØ3 L

GRAE SRMXØØ H
GRAE SRMXØ4 H

74S174 E51 — SR (Ø5:Ø1)

GRAD SRØ5 H
GRAD SRØ4 H
GRAD SRØ3 H
GRAD SRØ2 H
GRAD SRØ1 H
GRAD SRØØ H

TO R.C

GRAE +3V H

RACA USRK H
TIGC T1 H

74S11 E21

GRAD CLKSR H

CLCK RESET OR SHIFT

RACA UDRKØØ H
RACA UDRKØ1 H

R/L SHIFT REG.

GRAE DRØ4 H

74S194* E62 — DR (Ø3:ØØ)

GRAD DRØ3 H
GRAD DRØ2 H
GRAD DRØ1 H
GRAD DRØØ H

"LEFT SOMETHING"

DAPJ LEFT DATA H

"RIGHT SOMETHING"

RACA UDRXØØ H
RACA UDRXØ1 H
GRAJ TP(3:5) H

74SIØ E22

GRAD CLRDR L

TIGC TIB L

74SØØ E3

R5 NOT USED
R6 15Ø
+5V

TIGD T3 L

GRAD CLKDR H

GRAC GDREG SET1 H
GRAC GDA2 H
GRAC GDA1 H
GRAC GDAØ H

GRAC DRMX SEL L

GRAD DRMXØØ H

WRITE BOTH READ SEP. GSTGD

74S194 S1 SØ

L	L	NO-OP
L	H	SHIFT RIGHT (DSØ)
H	L	SHIFT LEFT (DS3)
H	H	LOAD

74S158 SØ OUTPUT

L	A→f
H	B→f

NOTE:
* EARLY MACHINES HAVE 74S04

GS, GD, SRMX, DRMX, DR (Ø3:ØØ) & SR (Ø5:ØØ) SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 7-13-71
CHK'D. — DATE
ENG. — DATE 12/27
PROJ. ENG. — DATE 1/27/72
PROD. — DATE 2-25-72
NEXT HIGHER ASSY. B-DD-KB11D
SCALE
SHEET 5 OF 10

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GENERAL REGS. & ALU. CNTL (GRAC)

SIZE D | CODE CS | NUMBER M8101-Ø-1 | REV. D | DIST.

REVISIONS: REV | CHANGE NO | CHK

FORM NO. DRD 102-B

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

GRAC GRWE LOB L

3101A E85 (GS (Ø7:Ø4))
W CS
D3 D2 DI DØ
M3 M2 M1 MØ
A3 A2 A1 AØ

DAPJ SHFRØ7 H FB2
DAPF SHFRØ6 H FN1
DAPF SHFRØ5 H FP1
DAPF SHFRØ4 H FP2

GRAC GSREG SETI H
GRAC GSA2 H
GRAC GSA1 H
GRAC GSAØ H

+5V
R88 330
R87 680
R82 330
R81 680
R84 330
R83 680
R86 330
R85 680

74S158 E76 (SRMX (Ø7:Ø4))
B3 B2 B1 BØ STB
A3 A2 A1 AØ SØ
F3 F2 F1 FØ

GRAE GSØ7 L
GRAE GSØ6 L
GRAE GSØ5 L
GRAE GSØ4 L
GRAC SRMX SEL L

GRAE SRMXØ7 H
GRAE SRMXØ6 H
GRAE SRMXØ5 H
GRAE SRMXØ4 H

74S04 E87

GRAH SRI5 L
GRAD SRØØ H
74S64 E80 → GRAE SR LEQ ZERO H

74S74 E79 (D C)
GRAD CLKSR H

74S10 E22 → BV2 → GRAE SR EQ ONE L

74S04 E83 (×3)

GRAE +3V H
GRAD GSØ1 L
GRAD GSØ2 L
GRAD GSØ3 L
GRAE GSØ4 L
GRAE GSØ5 L
GRAE GSØ6 L
GRAE GSØ7 L
74H30 E72 → GRAE +3V H

GRAF GSØ8 L
GRAF GSØ9 L
GRAF GSI0 L
GRAF GSI1 L
GRAH GSI2 L
GRAH GSI3 L
GRAH GSI4 L
GRAH GSI5 L
74H30 E55

RACA UDRKØØ H (DUI)
RACA UDRKØI H (DB2)

74S194 E78 (DR (Ø7:Ø4))
SI SØ
DSØ D3 D2 DI DØ DS3
R3 R2 RI RØ
CLR CLK

GRAF DRØ8 H
GRAD DRØ3 H
GRAD CLRDR L
GRAD CLKDR H

FV2 → GRAE DRØ7 H
FU2 → GRAE DRØ6 H
FU1 → GRAE DRØ5 H
FA1 → GRAE DRØ4 H

3101A E86 (GD (Ø7:Ø4))
W CS
D3 D2 DI DØ
M3 M2 M1 MØ
A3 A2 A1 AØ

GRAC GDREG SETI H
GRAC GDA2 H
GRAC GDAI H
GRAC GDAØ H

+5V
R74 330
R73 680
R78 330
R77 680
R76 330
R75 680
R80 330
R79 680

74S158 E77 (DRMX (Ø7:Ø4))
B3 B2 B1 BØ STB
A3 A2 A1 AØ SØ
F3 F2 F1 FØ

GRAC DRMX SEL L

NOTE:
* EARLY MACHINES HAVE 74LS4-1

GS, GD, SRMX, DRMX, DR (Ø7:Ø4) & SR LEQ ZERO DET. SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.W. Roberts	DATE 7/15/71	
CHK'D	DATE	
ENG.	DATE 8/23/72	
PROJ. ENG. Erik Erikson	DATE 8/23/72	
PROD.	DATE	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: GENERAL REGS. & ALU CNTL (GRAE)

NEXT HIGHER ASSY. B-DD-KB11-D
SCALE
SHEET 6 OF 10
SIZE D | CODE CS | NUMBER M8101-0-1 | REV D
DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

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

GRAC GRWE HIB L

3101 A E37 (W, CS)

DAPH SHFRI1 H — DM1 — D3 — M3
DAPH SHFRI0 H — DM2 — D2 — M2
DAPH SHFR09 H — DN1 — D1 — M1
DAPH SHFR08 H — DP1 — D0 — M0

GS (11:08)

A3 A2 A1 A0

GRAC GSREG SET1 H
GRAC GSA2 H
GRAC GSA1 H
GRAC GSA0 H

+5V

R32 330
R24 330
R25 680
R26 330
R27 680
R30 330
R29 680

74S04 E36 (x4)

GRAC GRWE HIB L

3101A E38 (W, CS)

GD (11:08)

GRAC GDREG SET1 H
GRAC GDA2 H
GRAC GDA1 H
GRAC GDA0 H

+5V

R18 330
R17 680
R22 330
R21 680
R20 330
R19 680
R24 330
R23 680

74S158 E29 — SRMX (11:08)

B3 A3 B2 A2 B1 A1 B0 A0 STB S0 → F3 F2 F1 F0

GRAC SRMX SEL L

GRAF GS08 L
GRAF GS09 L
GRAF GS10 L
GRAF GS11 L

74S158 E30 — DRMX (11:08)

GRAC DRMX SEL L

74S174 E28 — SR (11:06)

D5 D4 D3 D2 D1 D0 CLR CLK → R5 R4 R3 R2 R1 R0

GRAE SRMX07 H
GRAE SRMX06 H
GRAE +3V H
GRAD CLKSR H

GRAF SR11 H (CM1)
GRAF SR10 H (CF1)
GRAF SR09 H (CF2)
GRAF SR08 H (CD1)
GRAF SR07 H (CD2)
GRAF SR06 H

RACA UDRK00 H (DU1)
RACA UDRK01 H (DB2)

74S194X E31 — DR (11:08)

S1 S0 DS0 D3 D2 D1 D0 DS3 CLR CLK → R3 R2 R1 R0

GRAH DR12 H
GRAE DR07 H
GRAD CLRDR L
GRAD CLKDR H

GRAF DR11 H (CM2)
GRAF DR10 H (CN1)
GRAF DR09 H (CK1)
GRAF DR08 H (CP2)

NOTE:
* EARLY MACHINES HAVE 74194-1

REVISIONS: REV. | CHANGE NO. | CHK

GS, GD, SRMX, DRMX, DR (11:08) & SR (11:06) SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.	DATE 7-14-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 7-21-72	
ENG.	DATE 8/23/72	TITLE: GENERAL REGS & ALU CNTL (GRAF)
PROJ. ENG.	DATE 8/31/72	
PROD	DATE 2-25-72	
MATERIAL: —	NEXT HIGHER ASSY.: B-DD-KB11-D	SIZE D, CODE CS, NUMBER M8101-0-1, REV. D
FINISH: —	SCALE: —	
	SHEET 2 OF 10	DIST

DEC FORM NO. CRD 102-B

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

GRAC GRWE HIB L

3104A E53 (GS (15:12))

DAPJ SHFR15 H — DR2
DAPH SHFR14 H — DP2
DAPH SHFR13 H — DR2
DAPH SHFR12 H — DR1

GRAC GSREG SET1 H
GRAC GSA2 H
GRAC GSA1 H
GRAC GSAØ H

+5V

R5Ø 33Ø
R49 68Ø
R44 33Ø
R43 68Ø
R46 33Ø
R45 68Ø
R48 33Ø
R47 68Ø

74S158 E44 (SRMX (15:12))

GRAC SRMX SEL L

GRAH GS12 L
GRAH GS13 L
GRAH GS14 L
GRAH GS15 L

74S174 E43 (SR (15:12))

GRAE +3V H
GRAD CLKSR H

74S04 E51 → GRAH SR15 L

GRAH SR15 H
GRAH SR14 H
GRAH SR13 H
GRAH SR12 H

GRAC GRWE HIB L

3101A E54 (GD (15:12))

GRAC GDREG SET1 H
GRAC GDA2 H
GRAC GDA1 H
GRAC GDAØ H

+5V

R34 33Ø
R33 68Ø
R38 33Ø
R37 68Ø
R36 33Ø
R35 68Ø
R40 33Ø
R39 68Ø

74S158 E45 (DRMX (15:12))

GRAC DRMX SEL L

RACA UDRKØØ H (DU1)
RACA UDRKØ1 H (DB2)

DAPF ALUØØ H

74S194* E46 (DR (15:12))

GRAF DR11 H

GRAD CLRDR L
GRAD CLKDR H

74S04 E87 → GRAH DR15 L

GRAH DR15 H
GRAH DR14 H
GRAH DR13 H
GRAH DR12 H

NOTE:
* EARLY MACHINES HAVE 74LS4-1

GS, GD, SRMX, DRMX, SR & DR (15:12) SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 7-15-71
CHK'D. — DATE
ENG. — DATE 8/23/72
PROJ. ENG. — DATE 2/29/72
PROD. — DATE 8-25-72
NEXT HIGHER ASSY. B-DD-KB11-J
SCALE
SHEET 5 OF 10

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: GENERAL REGS & ALU CNTL (GRAH)

SIZE D | CODE CS | NUMBER M8101-Ø-1 | REV D

DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO ORD 102-B

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

RACC USHC ØØ L
GRAE DRØ5 H
GRAE DRØ4 H
74SØØ E4
74191 E14 SC ⟨Ø5:Ø4⟩ MAX/MIN R/CLK D3 D2 D1 DØ R3(1) R2(1) R1(1) R0(1) LD DN CLK ENB
74SØ4 E7
74S1Ø E22
BJ2
GRAJ SCØ5 L
GRAJ SCØ4 H
BT2
GRAJ SC=Ø L
GRAJ LDSC L
GRAJ SCØ5 L
RACC USHCØ1 H
GRAJ TP(3:5) H
RACC USHCØ1 H
GRAJ LDSC L
RACC USHC ØØ H
GRAD DRØ3 H
GRAD DRØ2 H
GRAD DRØ1 H
GRAD DRØØ H
74SØ5 E11
74SØ5 E12
R13 33Ø
R14 56Ø
R11 33Ø
R12 56Ø
R9 33Ø
R10 56Ø
R7 33Ø
R8 56Ø
+5V
74191 E13 SC ⟨Ø3:ØØ⟩ MAX/MIN R/CLK D3 D2 D1 DØ R3(1) R2(1) R1(1) R0(1) LD DN CLK ENB
GRAJ SCØ3 H
GRAJ SCØ2 H
GRAJ SCØ1 H
GRAJ SCØØ H
GRAJ SCØ5 L
TIGD T3 L
UBCE INIT L
TIGD T5 L
R2 15Ø
R1 NOT USED
R3 NOT USED
R4 15Ø
74S1Ø E2
RACC USHCØØ H
74S11 E21
GRAJ TP(3:5) H
GRAH SR15 L
GRAB LEFT SAVE (1) H
GRAH SR15 H
GRAB LEFT SAVE (Ø) H
74S64 E6
AM2
GRAJ DIV SUB L
IRCF EZ (Ø) H
GRAB LEFT SAVE (1) H
IRCH N (1) H
GRAH SR15 H
IRCH N (Ø) H
GRAH SR15 L
74S64 E5
AE2
GRAJ DIV QUIT L
IRCH C (1) H
IRCB PCLASS H
74SØØ E17
IRCB ICLASS L
GRAH SR15 L
GRAA ALU INSDEP L
GRAE SR LEQ ZERO H
74S64 E16
CU2
GRAJ SHFR DATA H
GRAA ALU INSDEP L
74SØ4 E7

USHC Ø1	ØØ
L	L NO COUNT
L	H COUNT
H	L LOAD (DR)
H	H LOAD (17).

SHIFT COUNT REG (SC) SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 12/10/71
CHK. DATE 12/9/71
ENG. DATE 12/9/72
PROJ. ENG. DATE 12/7/72
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE GENERAL REGS & CONTL (GRAJ)
NEXT HIGHER ASSY. B-CD KBJ11-C
SCALE
SHEET 9 OF 10

SIZE	CODE	NUMBER	REV.
D	DCS	M8100-0-0	D

BRUNING 40-522 15840 REVISIONS CHANGE NO REV CHK

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

INSTRUCTION	OCTAL ADDRESS
ROR.B	00
ROL.B	01
ASR.B	02
ASL.B	03
MARK	04
MFP	05
MTP	06
SXT	07
CLR.B	10
COM.B	11
INC.B	12
DEC.B	13
NEG.B	14
ADC.B	15
SBC.B	16
TST.B	17
SUB	20
MOV.B	21
CMP.B	22
BIT.B	23
BIC.B	24
BIS.B	25
ADD	26
———	27
MUL	30
DIV	31
ASH	32
ASHC	33
XOR	34
———	35
———	36
SOB	37

ALU CNTL ROM
DM8598-AD

ROMM	ROMC	ROMSHFS1	ROMSHFS0	ROMS3	ROMS2	ROMS1	ROMS0
W7	W6	W5	W4	W3	W2	W1	W0
L	L	H	H	L	L	L	L
H	H	H	L	H	H	L	L
L	L	H	H	L	L	L	L
L	L	H	L	H	H	L	L
L	L	L	L	L	L	L	L
H	L	H	L	H	L	H	L
H	L	H	L	H	L	H	L
H	L	H	L	L	L	H	H
H	L	H	L	L	L	H	H
H	L	H	L	L	L	L	L
L	H	H	L	L	L	L	L
L	L	H	L	H	H	H	H
H	L	H	L	L	L	L	L
H	H	H	L	L	L	L	L
H	H	H	L	H	H	H	H
L	L	H	L	L	L	L	L
L	H	H	L	L	H	H	L
H	L	H	L	H	L	H	L
L	L	H	L	L	H	H	L
H	L	H	L	L	H	H	H
H	L	H	L	L	H	H	H
H	L	H	L	H	H	H	L
L	L	H	L	H	L	L	H
L	L	L	L	L	L	L	L
L	H	H	H	L	H	H	L
L	H	H	L	H	H	L	L
L	L	L	H	L	L	L	L
L	H	H	L	H	H	L	L
H	L	H	L	L	H	H	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L

SWAB

INSTRUCTION DEP. ALU FUNCTION (RACC UALU (2:0)=7)
F=A
F=A PLUS A PLUS CBIT
F=A
F=A PLUS A
NOT INST. DEP.
F=B
F=B
N: F=MINUS 1 ; N: F=0
F=0
F=$\overline{A}$
F=A PLUS 1
F=A MINUS 1
F=$\overline{A}$
F=A PLUS C BIT
F=A MINUS C BIT
F=A
F=A MINUS B
F=B
F=A MINUS B MINUS 1
F=AB
F=$\overline{AB}$
F=A+B
F=A PLUS B
———
F=A MINUS B
F=A PLUS A PLUS DR15
NOT INST. DEP.
F=A PLUS A PLUS DR15
F=A ¥ B
———
———
NOT INST. DEP.
F=A

INSTRUCTION DEP. SHFR FUNCTION (RACC UALU (2:0)=7)
RIGHT SHIFT
NO - SHIFT **
RIGHT SHIFT
NO - SHIFT **
NOT INST. DEP.
NO - SHIFT
NO - SHIFT
NO - SHIFT
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT **
NO - SHIFT
RIGHT SHIFT
NO - SHIFT
NOT INST. DEP. *
NO - SHIFT
NO - SHIFT
———
———
NOT INST. DEP.
SWAP BYTES

NOTE: SWAB INST. HAS SAME ROM ADDRESS AS ASL.B
*ROMSHF OUTPUTS USED TO DECODE ASH
**ODD BYTE*BYTE INSTR: SWAP BYTES

ALU CNTL ROM MAP SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 1-25-72
CHK [signature] DATE 2-8-72
ENG [signature] DATE 2/27/72
PROJ ENG. [signature] DATE 2/27/72
PROD. [signature] DATE 2-25-72
NEXT HIGHER ASSY. B-DD-KB11-0
SCALE NONE
SHEET 10 OF 10

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GENERAL REGS. & ALU CNTL (GRAK)

SIZE	CODE	NUMBER	REV.
D	CS	M8101-0-1	D

DIST.

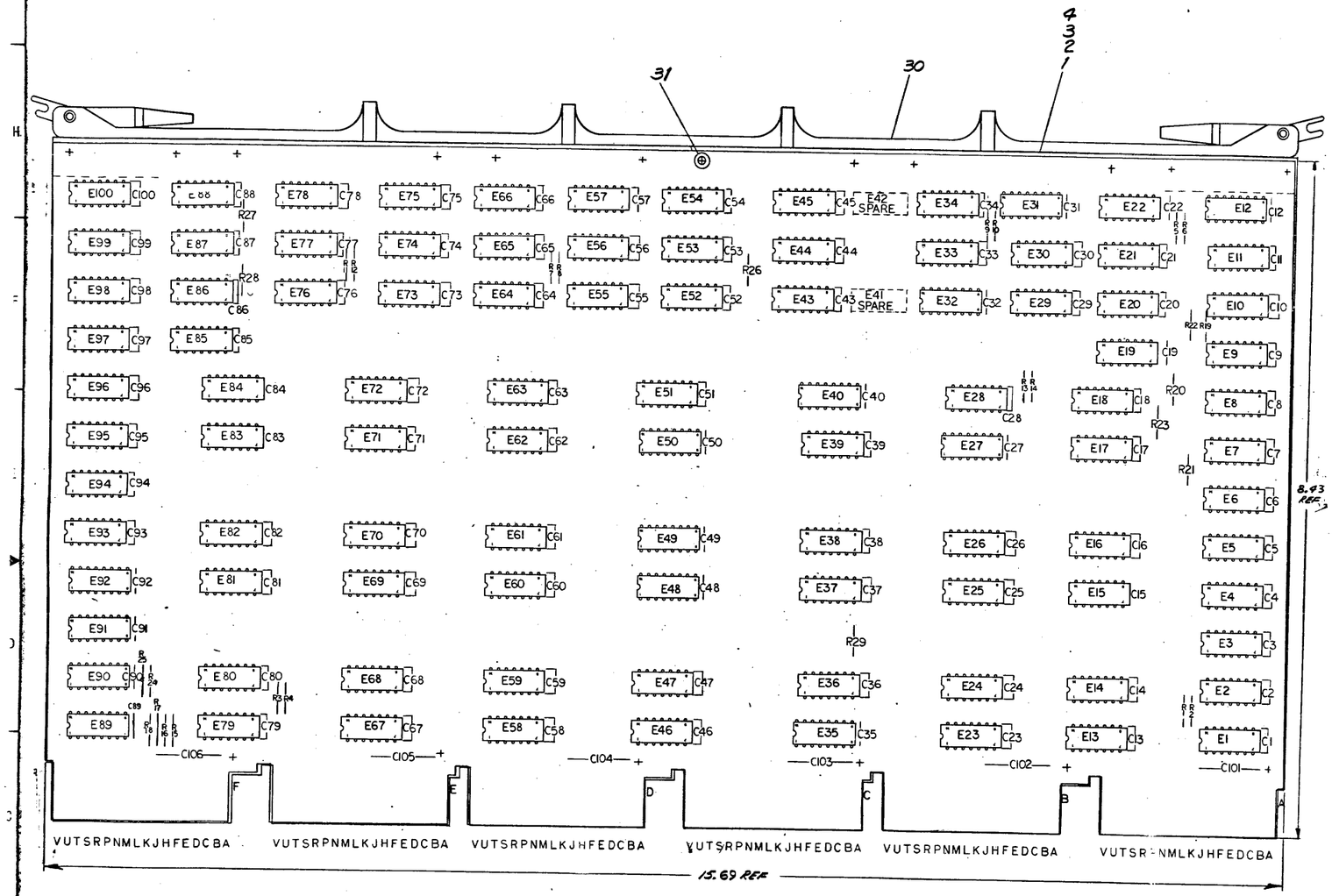
REV	REVISIONS	CHK
	CHANGE NO	

BRUNING 40-522 15840
DEC FORM NO. DRD 102-B

SIZE CODE D CS M8101-0-1 REV D

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

NOTES:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN MICROFARADS. CAPS WITHOUT VALUE NOTED ARE .01 MFD.
2. RESISTORS R1, R12, R19 ARE NOT USED.



AR2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV1

+5V — 6.8 μF C101 THRU C106 — .01 μF C1 THRU C90, C93 THRU C100

GND

AC2, AN2, AH1, AT1, BC2, BN2, BH1, BT1, CC2, CN2, CH1, CT1, DC2, DN2, DH1, DT1, EC2, EN2, EH1, ET1, FC2, FN2, FH1, FT1

LMI 8598-AC	8	16				
DMI 8598-AB	8	16				
DEC 8281-1	8	16				
NEC 74S153	8	16				
DEC 74S157	8	16				
IC TYPE	GND	+5V				
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE			ITEM NO.	AWG	FROM PT	TO PT
IC PIN LOCATIONS			JUMPER LIST			

REV	REVISIONS	CHK	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.
B	ORIGINATED	—	M8102-00001	SEMICONDUCTOR CONVERSION CHART			
A							

B J HAILE 7-11-72
M8102-00002 C 3/14/72

ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
12			EYELET	9006732
1			HANDLE, MODULE	54-12107-2
1	E30		I.C. DM 8598-AC	23-C82A1
1	E89		I.C. DM 8598-AB	23-C81A1
2	E69, E69		I.C. DEC 8885	19/10689
1	E87		I.C. DEC 8873	19/10687
5	E92, E82, E98, E93, E80		I.C. DEC 8281-1	19038858
3	E81, E80, E85		I.C. DEC 74H50	19050060
2	E85, E80		I.C. DEC 74S157	19/10588
4	E68, E81, E91, E92		I.C. DEC 74S153	19/10587
11	E13, E14, E15, E16, E18, E19, E23, E26, E73, E77, E79		I.C. DEC 74S74	19/10584
5	E20, E39, E57, E65, E66		I.C. DEC 74S65	19/10583
10	E1, E5, E61, E63, E77, E81, E82, E83, E89, E88		I.C. DEC 74S64	19/10582
1	E2		I.C. DEC 74S40	19/10581
6	E7, E13, E18, E62, E70, E96		I.C. DEC 74S20	19/10539
16	E4, E6, E10, E22, E28, E36, E56, E59, E60, E71, E72, E75, E76, E78, E86, E99		I.C. DEC 74S11	19/10537
9	E28, E38, E58, E30, E58, E74, E26, E38, E100		I.C. DEC 74S10	19/10536
8	E9, E17, E30, E93, E68, E82, E97, E95		I.C DEC 74S09	19/10584
1	E84		I.C. DEC 74S03	19/10533
12	E8, E11, E19, E21, E36, E37, E39, E58, E85, E64, E69, E38		I.C. DEC 74S00	19/10532
5	R1 THRU R19		RES. 1K, ¼ w, 5%	1300365
9	R3, R6, R7, R10		RES. 360, ¼ w, 5%	1301890
10	R20 THRU R29		RES. 470, ¼ w, 5%	1300316
9	R4, R5, R8, R9		RES. 330, ¼ w, 5%	1300295
3	R2, R11, R13		RES. 150, ¼ w, 5%	1300250
98	C1 THRU C40, C43 THRU C100		CAP. .01 MFD, 100V, 20% DISC	1001610
6	C101 THRU C106		CAP 6.8 MFD, 35V, 20% TANT	1000067
1			ETCHED CIRCUIT BOARD	5003806
REF			MODULE ECO HISTORY	D-MM-M8102-0-0-6
REF			TEST/TOOLING HOLE LAYOUT	E-BB-M8102-0-0-5
REF			X-Y COORDINATE HOLE LOCATION	D-CG-M8102-0-0-4

PARTS LIST

ETCH BOARD REV C

DRAWN	DATE 2/16/72	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHKD	DATE 2/18/72	TITLE	
ENG	DATE 2/22/72	IR DECODE & COND. CODES	
PROJ ENG	DATE 2/22/72		
PROD	DATE 2/23/72		
NEXT HIGHER ASSY B-DD-KB11-0		SIZE E	CODE CS
SCALE 2/1		NUMBER M8102-0-1	REV C
SHEET 1 OF 9		DIST	

M8102-0-1

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

R1 NOT USED +5V
R2 150Ω

TTGC T1 H AT2
RACA UIRK H CU2
UBCB BUS LOAD H AD1
74S64 E1
ALWAYS LO

PDRA BRMX15 H BF1 → 74S74 E23 → AS1 IRCA IR15 (1) H; IRCA IR15 (Φ) H → 74S04 E3 → DPCK IR15 B (1) H
PDRA BRMX14 H BF2 → 74S74 E23 → IRCA IR14 (1) H; IRCA IR14 (Φ) H
PDRA BRMX13 H BH2 → 74S74 E24 → IRCA IR13 (1) H; IRCA IR13 (Φ) H
PDRA BRMX12 H BJ1 → 74S74 E24 → IRCA IR12 (1) H; IRCA IR12 (Φ) H

PDRA BRMX11 H BJ2 → 74S74 E25 → IRCA IR11 (1) H; IRCA IR11 (Φ) H
PDRA BRMX10 H BB1 → 74S74 E25 → IRCA IR10 (1) H; IRCA IR10 (Φ) H
PDRA BRMX09 H BC1 → 74S74 E26 → IRCA IR09 (1) H; IRCA IR09 (Φ) H
PDRA BRMX08 H BD1 → 74S74 E26 → BM1 IRCA IR08 (1) H; BM2 IRCA IR08 (Φ) H → 74S04 E17 → IRCA IR08 B (1) H (BUFFERED)

PDRA BRMX07 H BD2 → 74S74 E16 → BK1 IRCA IR07 (1) H; BK2 IRCA IR07 (Φ) H
PDRA BRMX06 H BE1 → 74S74 E16 → IRCA IR06 (1) H; BL1 IRCA IR06 (Φ) H
PDRA BRMX05 H BE2 → 74S74 E15 → IRCA IR05 (1) H; IRCA IR05 (Φ) H
PDRA BRMX04 H AN1 → 74S74 E15 → IRCA IR04 (1) H; IRCA IR04 (Φ) H

PDRA BRMX03 H AM2 → 74S74 E14 → BL2 IRCA IR03 (1) H; IRCA IR03 (Φ) H
PDRA BRMX02 H AM1 → 74S74 E14 → BN1 IRCA IR02 (1) H; BP1 IRCA IR02 (Φ) H → 74S04 E87 → IRCA IR02 B (1) H
PDRA BRMX01 H AL2 → 74S74 E13 → BP2 IRCA IR01 (1) H; BE1 IRCA IR01 (Φ) H → 74S04 E3 → IRCA IR01 B (1) H
PDRA BRMX00 H AL1 → 74S74 E13 → IRCA IR00 (1) H; BR2 IRCA IR00 (Φ) H

INSTRUCTION REG. SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.W. Roberts	DATE 6/24/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 2/18/72	
ENG.	DATE 2/18/72	
PROJ. ENG. ERIK ERIKSEN	DATE 2/18/72	TITLE: IR DECODE & COND. CODES (IRCA)
PROD.	DATE 2/23/72	
NEXT HIGHER ASSY. B-DD-KB11-0		SIZE D CODE CS NUMBER M8102-0-1 REV. C
SCALE		DIST.
SHEET 2 OF 9		

REV. C | SIZE CODE D CS NUMBER M8102-0-1

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

BCD TO DECIMAL DECODER 8251-1 E49
IRCA IR Ø6 (1) H
IRCA IR Ø7 (1) H
IRCA IR Ø8 (1) H
IRCB IR (8:6) Ø L
IRCB IR (8:6) 1 L
IRCB IR (8:6) 2 L
IRCA IR (8:6) 3 L
IRCB IR (8:6) 4 L
IRCB IR (8:6) 6 L
CH2
IRCB SRCF 7 L

IRCC ROM DEC ENA H
IRCH R (PART PCLASS) H
74S00 E37
IRCB PART PCLASS L
IRCB SWAB H
IRCH IR15 B (Ø) L
IRCB IR (14:9) ØØ L
IRCB IR (8:6) 3 L
8885 E47
74S04 E17
1Ø
CJ1
IRCB MOVB H
IRCA IR15 (1) L
IRCB IR (14:12) 1 L
8885 E44
74S04 E43
IRCB MOVB L
74S1Ø E38
CL2
IRCB PCLASS H
IRCB NEG.B L
IRCB OBD (AS2B+RO2B) L
IRCA IR1Ø (1) H
74S1Ø E36
74S00 E36
IRCB IR (14:12) 7 L
IRCB IR (8:6) Ø+2 H
IRCA IR09 (1) L
IRCA IR11 (1) L
IRCD +3V H

74S157 | SØ
L | A→F
STB=L | H | B→F
STB=H | X | F=L

BFORK MUX 74S157 E35
CM1 IRCB BØ RABØØ L
CM2 IRCB BØ RABØ1 L
CN1 IRCB BØ RABØ2 L
CS2 IRCB BØ RABØ4 L
A→F

BCD TO DECIMAL DECODER 8251-1 E50
IRCA IR Ø9 (1) H
IRCA IR1Ø (1) H
IRCA IR11 (1) H
IRCB IR (14:9) ØØ L
IRCB IR (14:9) Ø4 L
IRCB IR (14:9) Ø5 L
IRCB IR (14:9) Ø6 L

IRCH R (ICLASS) H
74S00 E36
CJ2
IRCB ICLASS L
IRCI +3V H
IRCC ROM DEC ENA H
IRCH R (KCLASS) H
74S11 E46
IRCB K CLASS H
IRCB IR (14:12) 7 H
IRCA IR15 B (1) H
IRCB F CLASS H
8885 E44
LD 2

IRCB IR (8:6) 4 L
IRCB IR (14:9) Ø5 L
CP1
IRCB NEG.B L
IRCB NEG.B H
CP2
IRCB BØ RABØ3 L

IRCA IR15 B (Ø) L
IRCB IR (14:9) ØØ L
IRCB IR (14:9) Ø4 L
IRCB IR (8:6) 1 L
74S64 E63
CL1
IRCB FJ CLASS L
IRCB JMP+JSR H

IRCA IR12 (Ø) H
IRCA IR13 (Ø) H
IRCA IR14 (Ø) H
74S1Ø E28
74S04 E17
IRCB IR (14:12) Ø H

IRCB IR (14:9) Ø4 L
74H5Ø E51
CR2
IRCB BI RABØØ L
UBCB FAST H

BCD TO DECIMAL DECODER 8251-1 E48
IRCA IR12 (1) H
IRCA IR13 (1) H
IRCA IR14 (1) H
IRCB IR (14:12) Ø L
IRCB IR (14:12) 1 L
IRCB IR (14:12) 7 L

IRCC ROM DEC ENA H
IRCH R (MUL:ASHC+MFP) H
74S00 E37
IRCB (MUL:ASHC)+MFP L
IRCB IR (14:12) 2 H
IRCC IR (11:9) 6 H
IRCA IR15 B (1) H
74S11 E4
74S1Ø E38
GRAB OBD (1) H
CK1
CK2
IRCB OBD (AS2B+RO2B) L
IRCB IR (8:6) Ø L
IRCB IR (8:6) 2 L
74S00 E36
IRCB IR (8:6) Ø+2 H

74S04 E17
IRCB IR (14:12) 7 H

PCLASS = (CLR.B : ASL.B)* - TST.B + SWAB + SXT + XOR + MOVB + BIC.B + BIS.B + ADD + SUB
XCLASS = CMP.B + BIT.B + TST.B
ICLASS = CMP.B + BIT.B + TST.B + MUL + DIV + MFP
FJCLASS = FCLASS + JMP + JSR
OBD = ODD BYTE, DESTINATION

BFORK; IR DECODERS — SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
1145		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 6-22-71
CHK'D — DATE 2/16/72
ENG. — DATE 2/19/72
PROJ. ENG. ERIK ERIKSEN — DATE 1/18/72
PROD. — DATE 2/23/72
NEXT HIGHER ASSY. B-DD-KB11-0
SCALE —
SHEET 3 OF 9

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

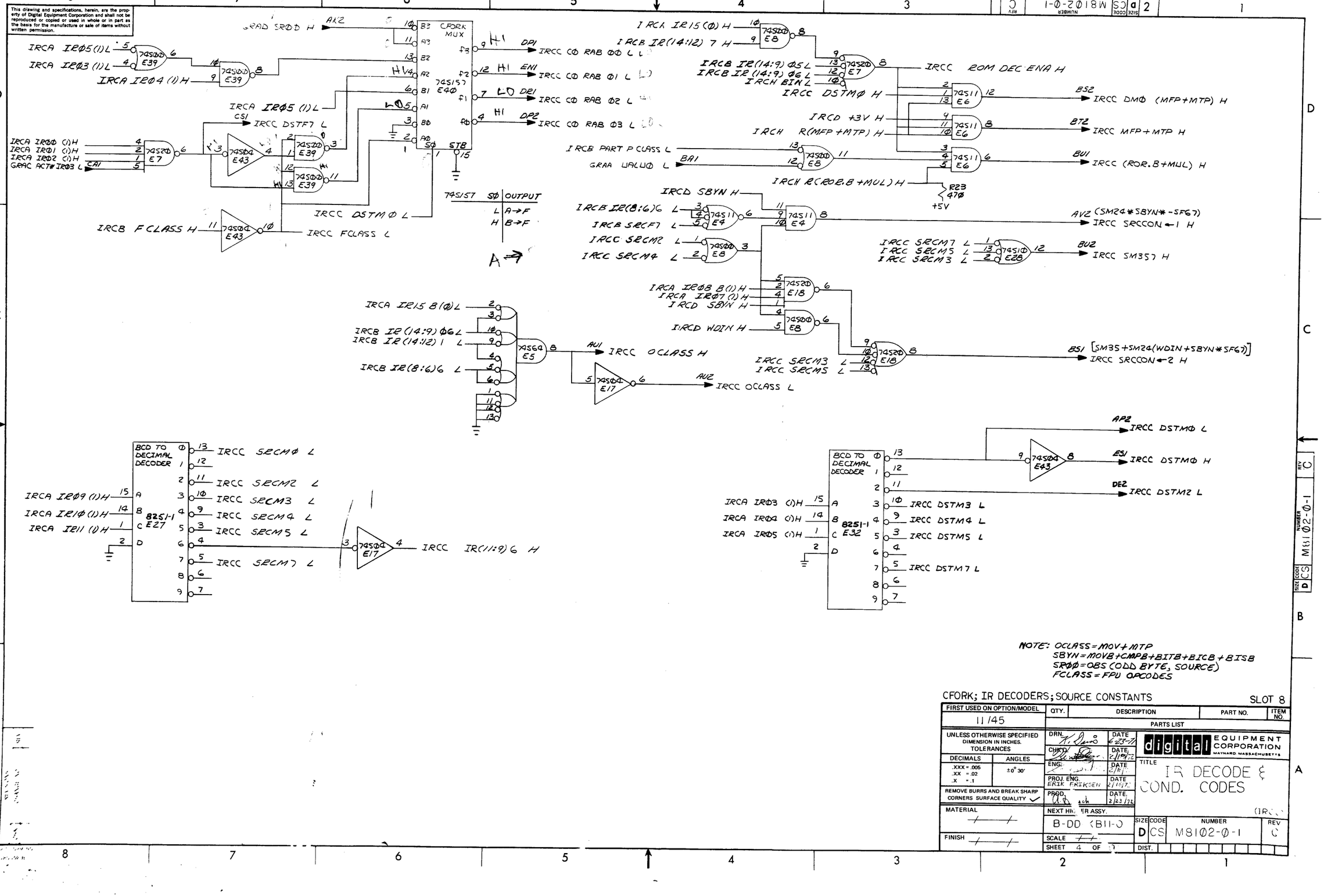
TITLE: IR DECODE & COND. CODES (IRCB)

SIZE D | CODE CS | NUMBER M8102-Ø-1 | REV C | DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO. [illegible]

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



NOTE: OCLASS=MOV+MTP
SBYN=MOVB+CMPB+BITB+BICB+BISB
SRØØ=OBS (ODD BYTE, SOURCE)
FCLASS=FPU OPCODES

CFORK; IR DECODERS; SOURCE CONSTANTS — SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. T. Dano DATE 6-23-71
CHK'D DATE 2/18/72
ENG. DATE
PROJ. ENG. ERIK FRIKSEN DATE 2/15/72
PROD. DATE 2/23/72
NEXT HIGHER ASSY. B-DD <B11-0
SCALE
SHEET 4 OF 9

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IR DECODE & COND. CODES (IRCC)

SIZE D | CODE CS | NUMBER M8102-0-1 | REV C
DIST.

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

IRCC DSTM3 L
IRCC DSTM5 L
IRCC DSTM7 L
74S1Ø E28 → DD2 → IRCD DM357 H

IRCB IR(14:12)Ø H
IRCC IR(11:9) 6 H
IRCA IRØ8 B (1) H
IRCA IR15 (1) H
74S2Ø E70 → 74S11 E59

IRCE MOVB L
IRCD BYINA H
74S00 E62 → DE1 → IRCD BYIN*(~MOVB)L

IRCA IR15 B(Ø)L
IRCA IR14 (1) H
IRCA IR13 (1) H
IRCA IR12 (Ø) H
74S1Ø E58 → 74S00 E62 → IRCD WDIN H

IRCC FCLASS L
74S11 E72 → DF2 → IRCD BYIN H

IRCB IR(14:9)Ø5 L
IRCB IR(14:9)Ø6 L
74S11 E71 → 74S11 E72 → IRCD SBYN H

IRCA IR15 (1) H
74S11 E72 → IRCD BYINA H

IRCD BYINA H
IRCD DSTF67 H
IRCC DSTM2 L
IRCC DSTM4 L
74H5Ø E51 → 74S11 E71 → DK1 → IRCD DSTCON←1 H
DM24 * BYIN* (~DF67)

74S04 E43 → IRCD +3V H

IRCA IRØ2(1) H
IRCD +3V H
IRCA IRØ1(1) H
74S11 E29 → IRCD DSTF67 H

IRCC DSTM3 L
IRCC DSTM5 L
IRCD WDIN H
74S00 E62 → 74S64 E61 → 74S04 E68 → DJ2 → IRCD DSTCON←2 H
DM35 + (FCLASS * ~ADT * AD2) + DM2 * [WDIN + (BYIN * DF67)]

IRCD BYINA H
IRCC DSTM2 L
IRCC DSTM4 L
74S00 E62

FXPE AD2 H (DD1)
IRCB FCLASS H
IRCD DSTM24 H

IRCB IR(14:9)Ø4 L
74S04 E68 → DM24

IRCA IRØ8 (Ø) H
TMCB TRAP INH L
IRCA IRØ8 B(1) H
IRCA IR15(1) H
74S2Ø E67 → DM1 → IRCD EMT L
74S2Ø E67 → BV2 → IRCD TRAP L

IRCC SRCMØ L
74S04 E68

IRCB IR(8:6)Ø L
74S04 E68

IRCB IR(14:12)Ø H
74S11 E59

IRCA IRØ2 (Ø) H
IRCA IRØ1 B(1) H
IRCA IRØØ (1) H
74S11 E6Ø → 74S1Ø E58 → DL1 → IRCD OPCODE3 L

IRCA IRØ2 B(1) H
IRCA IRØ1 (Ø) H
IRCA IRØØ (Ø) H
74S11 E6Ø → 74S1Ø E58 → DM2 → IRCD IOT L

IRCA IR15 (Ø) H
IRCC DSTMØ H
74S11 E59 → 74S00 E37 → DN1 → IRCD RTT L

IRCA IRØ2 B(1) H
IRCA IRØ1 B(1) H
IRCA IRØØ (Ø) H
74S11 E6Ø → DC1 → IRCD DSTF6 H

FXPE AD1 H
74S04 E68 → DB1

IRCB FCLASS H
IRCC DSTF7 L
IRCD DSTM24 H
74S2Ø E7Ø → 8885 E69 → DJ1 → IRCD DSTCON←4 H
(~AD2) * (AD1) * FCLASS * DM24 * (~DF7)

8885 E69 → DH2 → IRCD DSTCON←1Ø H
(~AD2) * (~AD1) * FCLASS * DM24 * (~DF7)

FXPE AD2 H
74S04 E68 → DD1

INSTRUCTION TRAPS & DESTINATION CONSTANTS — SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. Lowell	DATE 6/3/71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE	
ENG.	DATE 2/14/72	TITLE: IR DECODE & COND. CODES (IRCD)
PROJ. ENG. ERIK ERIKSEN	DATE 1/18/72	
PROD.	DATE 2/23/72	
NEXT HIGHER ASSY. B-DD-KB11-0		SIZE D · CODE CS · NUMBER M8102-0-1 · REV C
SCALE		
SHEET 5 OF 9		DIST.

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

IRCE VEN2 L
IRCF CCLD 5L
74S11 E10

DAPD AMX 15 H
GRAA OB SWAP L
74S00 E11
74S04 E30
74S00 E11
74S00 E11
VEN2
DAPB AMXØØ H
DAPC AMX Ø7 H
74S153 E12
STB1 STBØ
DI CI BI AI DØ CØ BØ AØ SI SØ FI FØ

IRCH VMODØ H
74S11 E22
GRAA WORD+OB SWAP L
IRCF CCLD5 L
IRCH SWAB L
IRCH VMOD1 H
IRCF CC INSDEP H
74S20 E9
IRCE VEN2 L
74S00 E19
IRCH ENV H
R22 470Ω +5V
74S04 E30
74S00 E19
IRCE VEN1 L

DAPC BMXØ7 H
IRCH VMOD1 H
74S11 E22
+5V
R20 470
IRCH +3V H
DAPD BMX 15 H
74S11 E22
74S04 E30
VEN1
74S153 E31
STB1 STBØ
DI CI BI AI DØ CØ BØ AØ SI SØ FI FØ
IRCD BYINA H
IRCD VMODØ H

IRCE WOB CARRY H
74S00 E19
DAPJ SHFRA15 H
74S00 E19
IRCE LOB CARRY H
74S00 E19
DAPJ SHFRAØ7 H
74S65 E20
R23 56Ω
R9 33Ω
+5V

IRCH V(1) H
IRCE LOAD FCC L
IRCE PS LOAD L
74S11 E56
IRCE CC←BR H
DAPA BRØ1 H
74S00 E55
74S00 E55
IRCF MUL+DIV NZVEN H
74S00 E55
IRCF SET V H
IRCF CC NONAFF L
IRCF CCLD5 L
IRCF CCLD 67 L
74S10 E33
74S65 E57
IRCE V DATA L

DAPU ALU SIGN H
74S00 E55
DAPJ AMX SIGN H
IRCF CC FP LOAD L
74S04 E30

IRCB FCLASS H
74S10 E33
74S00 E21
IRCE LOAD FCC L
IRCE CC←BR H
IRCE PS LOAD L
RACB UIBSØ1 H
74S00 E21
RACB UIBSØØ H
74S04 E30

IRCD BYINA H
IRCF NENI H
IRCD WDIN H
IRCH SWAB L
IRCH MODEN H
IRCD WDIN H
74S11 E10
74S00 E21
74S11 E10
74S20 E9
AJ2
IRCE EN HIB H
AK1
IRCE EN LOB H

IRCF CCLD4 L
IRCF CCLD5 L
74S10 E33
CE1
IRCE EN WORD H

FXPE FCLD EN L
R5 330Ω
R6 560Ω
+5V
74S00 E11

74S153	S1	SØ	
STB L	L	L	A → F
	L	H	B → F
	H	L	C → F
	H	H	D → F
STB H	X	X	Ø = L

CONDITION CODE V LOGIC SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 6-17-71
CHKD [illegible] DATE 7/18/72
ENG. [illegible] DATE 2/17/72
PROJ. ENG. ERIK ERIKSEN DATE 2/18/72
PROD. [illegible] DATE 2/23/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: IR DECODE & COND. CODES (IRCE)

NEXT HIGHER ASSY. B-DD-KB11-O
SIZE D CODE CS NUMBER M 8102-Ø-1 REV. C
SCALE
SHEET 6 OF 9
DIST.

REVISIONS | REV | CHANGE NO | DATE

SIZE D CODE CS NUMBER M 8102-Ø-1 REV C

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

IRCE WOB CARRY H
IRCE LOB CARRY H
GRAA AMXØ * ASH L (EB1)
DAPJ ALUCM L (EC1)
IRCF CCLD7 L
IRCH CMOD1 H
IRCF CC INSDEPA H
IRCH CMODØ H
IRCF CEN1 H
IRCH ENC H
IRCH CMOD1 H
IRCF CC NONAFF L
IRCF CCLD6 L
IRCE CC ← BR H
DAPA BRØØ H (CT2)
IRCE PS LOAD L
IRCH C(1) H
IRCE LOAD FCC L
IRCF CEN2 H
GRAH DR15 L (ED1)
IRCH Z(1) H
GRAH DR15 H (ED2)
IRCF BR = -1 SAVE(1) H
GRAD DRØØ H (CV2)
IRCF X L
IRCH CMODØ H
IRCF CCLD7 L
IRCF CCLD67 L
IRCF CCLD6 L
IRCF CCLØØ L
IRCF CCLØ2 L
IRCF CCLD5 L
IRCF CC INSDEP H
IRCF CCLD4 L
IRCF CCFP LOAD L
IRCF CC INSDEPA H
RACA UCCLØ2 H (EF1)
RACA UCCLØ1 H (EE2)
RACA UCCLØØ H (EE1)
IRCF CC NONAFF L
IRCF CC INSDEP H
IRCF C DATA L
IRCH ENZN H
IRCF CC NONAFF L
IRCF CCLDG7 L
IRCE PS LOAD L
IRCE LOAD FCC L
IRCH N(1) H
GRAA WORD+OB SWAP L (AF1)
IRCH SWAB L
DAPJ SHFRAØ7 H (CB1)
IRCF CCLD4 L
IRCF CCLD5 L
IRCH MODZN H
DAPJ SHFRA15 H (DA1)
GRAA WORD+OB SWAP H (CC1)
IRCH MODZN H
DAPF A=B(15:Ø) L (EH2)
IRCH +3V H
IRCF BR=1 SAVE(1) H
IRCF BR=1 SAVE(Ø) H
IRCH ZSET L
IRCF ZDATA1 L
IRCF Z1(1) H
IRCF Z1(Ø) H
GRAB ZDATA2 L (EJ1)
IRCF Z2(1) H
IRCH CCCLK H
IRCH ZCLR L
IRCF Z2(Ø) H (DT2)
IRCF MUL+DIV NZVEN H
IRCH MODZN H (EG9)
IRCF CHECKZ H
IRCF CCLDG L
IRCF NENI H
R26 470Ω
R23 470Ω
R27 470Ω
R19 1K
+5V
R8 330Ω
R7 560Ω
R9 330Ω
R10 560Ω
IRCF ZINV H
IRCF SET V H
IRCF N DATA L
IRCF ZDATA1 L
DAPA BR03 H (DV2)
IRCE CC ← BR H
DAPA BR02 H (DU2)
IRCF NENI H
IRCF ZINV H
DAPJ A=B(15:8)+BYTE H (EK2)
DAPF A=B(7:Ø) H (EL1)
IRCH Z(1) H
IRCE LOAD FCC L
IRCE PS LOAD L
WIRED OR
2 BIT FF PSW
NOT USED
NOT USED
NOT USED

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

IRCH SETCC H
IRCA IRØ3 (1) H
DAPA BRØ3 H
UBCC CC DATA (1) H
IRCF NDATA L
IRCA IRØ2 B(1) H
DAPA BRØ2 H
IRCH . Z SET L
IRCA IRØ1 B(1) H
DAPA BRØ1 H
IRCA IRØØ(1) H
DAPA BRØØ H
IRCE VDATA L
IRCF CDATA L
IRCH N (1) H
IRCH N (Ø) H
IRCE Z1 (1) L
IRCE Z2 (1) L
IRCH Z (1) H
IRCH MAT Z H
IRCH Z (Ø) H
IRCH MAT V H
IRCH V (1) H
IRCH V (Ø) H
IRCH C(1) H
IRCH C(Ø) H
IRCH CCCLK H
IRCH CLK INH L
GRAC GATE TG H
TIGC TF H
IRCH +3V H
UBCE INIT H
UBCC CCDATA (1) H
PDRB BRØ3 B L
IRCA IRØ3 (1) H
PDRB BRØ2 B L
IRCA IRØ2 B(1) H
PDRB BRØ1 B L
IRCH Z CLR L
IRCA IRØ1 B(1) H
PDRB BRØØ B L
IRCA IRØØ(1) H
IRCA IRØ4 (1) H
IRCH SETCC H
TIGD T5B H
IRCA IRØ4 (Ø) H
IRCF CCLØØ L
RACA UCCLØ1 H
IRCF CCLØ2 L
IRCH CLK INH L
IRCH N (1) L
IRCH MAT N H
IRCH N B (1) H
IRCA IR15 (1) H
IRCA IR14 (1) H
IRCA IR13 (1) H
IRCA IR12 (Ø) H
IRCH SUB L
IRCH C (1) L
IRCH MAT C H
IRCH C B (1) H
IRCH +3V H
IRCA IRØ7 (1) H
IRCA IRØ1Ø (1) H
IRCA IR13 (1) H
IRCA IRØ6 (1) H
IRCA IRØ9 (1) H
IRCA IR12 (Ø) H
IRCA IR11 (1) H
IRCA IRØ9 (1) H
IRCH +3V H
IRCA IRØ8 (1) H
IRCA IR11 (1) H
IRCA IR14 (1) H
IRCH BIN L
IRCA IR14 (Ø) H
IRCA IR13 (Ø) H
IRCA IR12 (Ø) H
IRCA IR14 (1) H
IRCA IR13 (1) H
IRCA IR12 (1) H
RACC UALUØ H
RACC UALU1 H
RACC UALU2 H
IRCA IR11 (Ø) H
IRCH BIN L
IRCH SWAB L
IRCH MODEN H
IRCH ENEN H
IRCH CMODI H
IRCH CMODØ H
IRCH ENC H
IRCH VMOD1 H
IRCH VMODØ H
IRCH ENV H
IRCH SXT H
IRCH DIV+ASHC H
IRCH R(ROR.B+MUL) H
IRCH R(MFP+MTP) H
IRCH R(MUL:ASHC+MFP) H
IRCH R(KCLASS) H
IRCH R(ICLASS) H
IRCH R(PART PCLASS) H
IRCH SUBROMA4 L
IRCH SUBROMA3 L
IRCH SUBROMA2 L
IRCH SUBROMA1 H
IRCH SUBROMA0 H

74S153 S1 SØ
STB=L L L A→F
L H B→F
H L C→F
H H D→F
STB=H X X F=L

COND. CODE BITS; CC CNTL & INSTR DECODE ROMS SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 2.3JUN71
CHK'D — DATE 2/16/72
ENG. — DATE 2/16/72
PROJ. ENG. ERIK ERIKSEN — DATE 2/15/72
PROD. — DATE 2/23/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: IR DECODE & COND. CODES (IRCH)

NEXT HIGHER ASSY. B-DD-KB11-0
SIZE D | CODE CS | NUMBER M 8102-0-1 | REV C
SCALE —
SHEET 8 OF 9 | DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC 10PR NO DRD 102-B

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

INSTRUCTION	OCTAL ADDRESS
RDR.B	ØØ
ROL.B	Ø1
ASR.B	Ø2
ASL.B	Ø3
MARK	Ø4
MFP	Ø5
MTP	Ø6
SXT	Ø7
CLR.B	1Ø
COM.B	11
INC.B	12
DEC.B	13
NEG.B	14
ADC.B	15
SBC.B	16
TST.B	17
SUB	2Ø
MOV.B	21
CMP.B	22
BIT.B	23
BIC.B	24
BIS.B	25
ADD	26
NOT USED	27
MUL	3Ø
DIV	31
ASH	32
ASHC	33
XOR	34
NOT USED	35
NOT USED	36
SOB	37

INSTRUCTION DECODE ROM DM8598/AB

SXT	DIV+ASHC	R(ROR.B+MUL)	R(MFP+MTP)	R(MUL:ASHC+MFP)	R(K CLASS)	R(I CLASS)	R(PART P CLASS)
M7	M6	M5	M4	M3	M2	M1	MØ
L	L	H	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	L
L	L	L	H	H	L	H	L
L	L	L	H	L	L	L	L
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	H
L	L	L	L	L	H	H	L
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	L
L	L	L	L	L	H	H	L
L	L	L	L	L	H	H	L
L	L	L	L	L	L	L	H
L	L	L	L	L	H	H	L
L	H	L	L	H	L	H	L
L	L	L	L	H	L	L	L
L	H	L	L	H	L	L	L
L	L	L	L	L	L	L	H
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L

COND. CODE CNTL. ROM DM8598/AC

MOD ZN	EN ZN	CMOD 1	CMOD Ø	ENC	VMOD 1	VMODØ	ENV
M7	M6	M5	M4	M3	M2	M1	MØ
H	H	L	L	L	H	H	H
H	H	L	L	L	H	L	H
H	H	L	L	L	H	H	H
H	H	L	L	L	H	L	H
L	L	L	L	L	L	L	L
H	H	H	L	H	L	L	H
H	H	H	L	H	L	L	H
H	H	H	L	H	L	L	H
H	H	H	L	H	L	L	H
H	H	L	H	L	L	L	H
H	H	L	H	L	L	L	H
H	H	H	L	H	L	L	L
H	H	H	L	H	L	H	L
H	H	L	H	L	H	L	L
H	H	H	L	L	L	L	H
H	H	L	H	L	L	H	L
H	H	H	L	L	H	L	H
H	H	H	L	H	L	L	H
L	H	H	L	L	H	H	L
L	H	H	L	L	L	H	L
H	H	L	H	L	L	L	H
H	H	H	L	H	L	L	H
H	H	H	L	H	L	L	H
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L

SWAB

CCLD4 (RACC UCCL(2:Ø)=4)
CCLD5 (RACC UCCL(2:Ø)=5)
CCLD6 (RACC UCCL(2:Ø)=6)
CCLD7 (RACC UCCL(2:Ø)=7)

INSTRUCTION DEPENDENT CONTROL (RACA UCCL(2:Ø)=1)

N		Z		V		C	
WORD+ ODD BYTE	BYTE *(EVEN + DSTMØ)	WORD	BYTE	WORD	BYTE	WORD	BYTE
* SHFR (15)1	; SHFR (7)1	SHFR(15:Ø)Ø	SHFR(7:Ø)Ø	SHFR15 ¥ AMX Ø	SHFR7 ¥ AMXØ	AMXØ	
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	SHFR15 ¥ AMX15	SHFR15 ¥ AMX7 SHFR7 ¥ AMX7	AMX15	AMX7
* SHFR(15)1	; SHFR(7)1	SHFR(15:Ø)Ø	SHFR(7:Ø)Ø	SHFR15 ¥ AMXØ	SHFR7 ¥ AMXØ	AMXØ	
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	SHFR15 ¥ AMX15	SHFR15 ¥ AMX7 SHFR7 ¥ AMX7	AMX15	AMX7
NOT INSTR. DEP.		NOT INSTR. DEP.		NOT INSRT. DEP.		NOT INSRT. DEP.	
SHFR(15)1		SHFR(15:Ø)Ø		Ø		NOT AFFECTED	
SHFR(15)1		SHFR(15:Ø)Ø		Ø		NOT AFFECTED	
SHFR(15)1		SHFR(15:Ø)Ø		Ø		NOT AFFECTED	
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	Ø		ALUCOUT 15	ALUCOUT 7
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	Ø		ALUCOUT 15	ALUCOUT 7
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	$\overline{AMX15 * ALU15}$	$\overline{AMX7 * ALU7}$	NOT AFFECTED	
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	$\overline{AMX15 * ALU15}$	$\overline{AMX7 * ALU7}$	NOT AFFECTED	
* SHFR(15)1	; SHFR(7)1	SHFR(15:Ø)Ø	SHFR(7:Ø)Ø	A15*B15*ALU15 + $\overline{A15}$*B15*ALU15	A7*B7*ALU7 + $\overline{A7}$*B7*ALU7	ALUCOUT 15	ALUCOUT 7
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	$\overline{AMX15 * ALU15}$	$\overline{AMX7 * ALU7}$	ALUCOUT 15	ALUCOUT 7
SHER (15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	AMX15 * $\overline{ALU15}$	AMX7 * $\overline{ALU7}$	$\overline{ALUCOUT 15}$	ALUCOUT 7
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	Ø		ALUCOUT 15	$\overline{ALUCOUT 7}$
SHFR(15)1		SHFR(15:Ø)Ø		AMX15*BMX15*ALU15 + $\overline{AMX15}$*BMX15*ALU15		$\overline{ALUCOUT 15}$	
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	Ø		NOT AFFECTED	
SHFR(15)Ø	SHFR(7)Ø	A=B(15:Ø)	A=B(7:Ø)	A15*B15*ALU15 + $\overline{A15}$*B15*ALU15	A7*B7*ALU7 + $\overline{A7}$*B7*ALU7	ALUCOUT 15	ALUCOUT 7
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	Ø		NOT AFFECTED	
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	Ø		NOT AFFECTED	
SHFR(15)1	SHFR(7)1	SHFR(15:Ø)Ø	SHFR(BYTE)Ø	Ø		NOT AFFECTED	
SHFR(15)1		SHFR(15:Ø)Ø		AMX15*BMX15*ALU15 + AMX15*BMX15*ALU15		ALUCOUT 15	
NOT AFFECTED		Z(OLD) * SHFR(15:Ø)Ø		Ø		$\overline{X}$	
NOT AFFECTED		1		1		1(ALUCN + $\overline{ALUCN}$)	
SHFR(15)1		SHFR(15:Ø)Ø		Ø		AMXØ	
SHFR(15)1		SHFR(15:Ø)Ø		Ø		DRØØ	
SHFR(15)1		SHFR(15:Ø)Ø		Ø		NOT AFFECTED	
NOT INSTR. DEP		NOT INSTR. DEP.		NOT INSTR DEP.		NOT INSTR. DEP.	
SHFR(7)1		SHFR(7:Ø)Ø		Ø		Ø	
SHFR(15)1		SHFR(15:Ø)Ø		Ø		Ø	
SHFR(15)1		SHFR(15:Ø)Ø		V(OLD) + (SHFR15 ¥ AMX15)		AMX15	
NOT AFFECTED		Z(OLD) * SHFR(15:Ø)Ø		NOT AFFECTED		NOT AFFECTED	
NOT AFFECTED		NOT AFFECTED		NOT AFFECTED		ALUOUT 15	

* ODD BYTE SWAPPED TO EVEN DURING COND. CODE CHECKING

NOTE: BYTE INSTRUCTION WITH DSTMØ IS ALWAYS EVEN BYTE

X = Z(OLD)* $\overline{DR15}$ + (SR=Ø)*DR15

SWAB INSTR. HAS SAME ROM ADDRESS AS ASL.B

CC CNTL & INSTR DECODE ROM MAPS SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. W. Abbott	DATE 1-20-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK.	DATE 2/15/72	
ENG.	DATE 2/18/72	TITLE IR DECODE & COND. CODES
PROJ. ENG. ERIK ERIKSEN	DATE 2/17/72	
PROD.	DATE 2/22/72	

NEXT HIGHER ASSY. B-DD-KB11-0

SCALE NONE SHEET 2 OF 2

SIZE D | CODE CS | NUMBER M8102-0-1 | REV C | DIST.

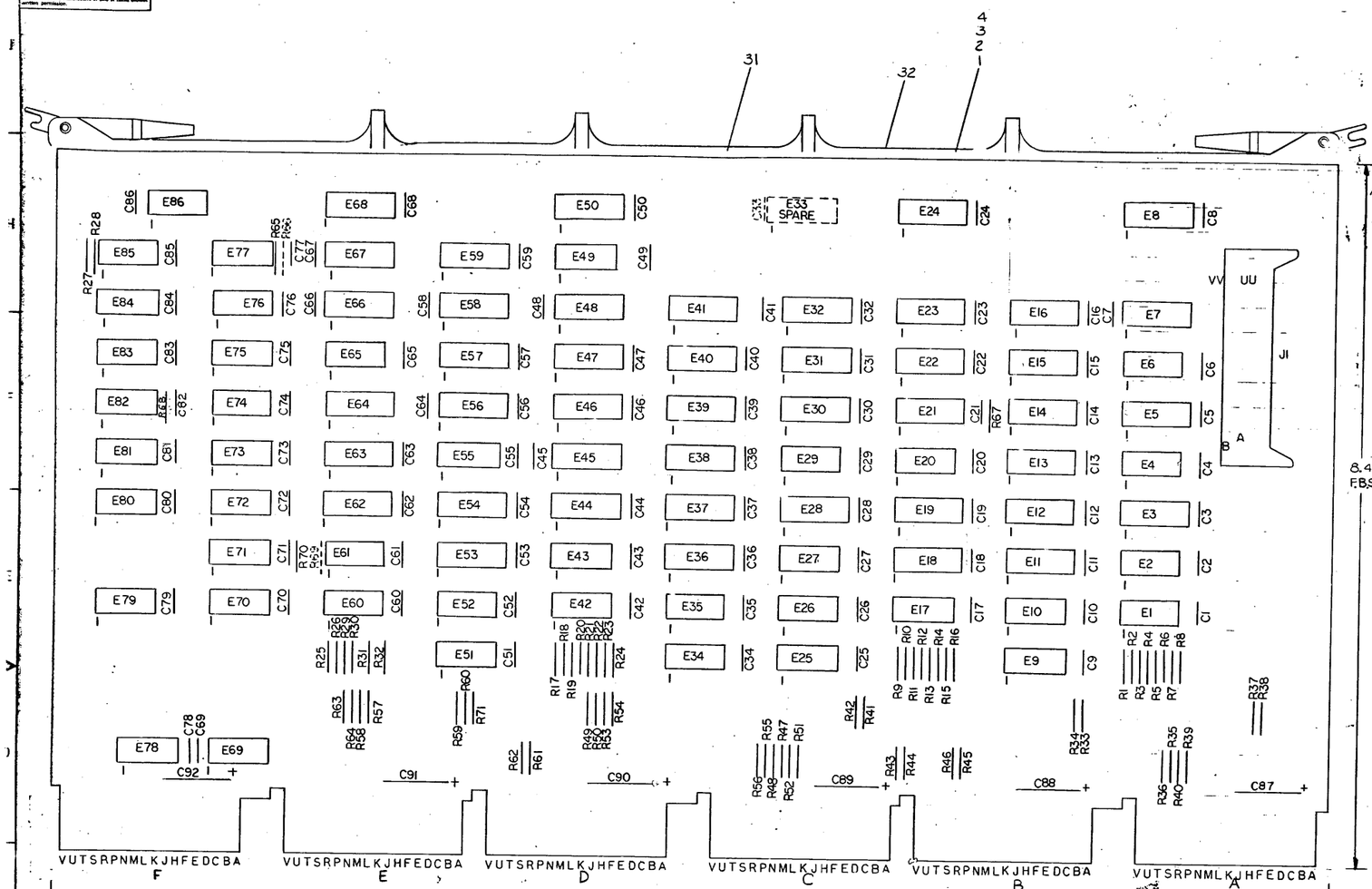
REV C

BRUNING 40 522 158-0 REL SHINS CHANGE NO REV CHK

DEPARTMENT NO FORM 102-B

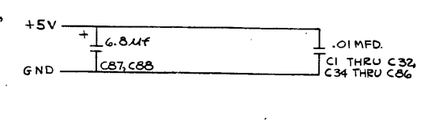
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

NOTES:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS. CAPS. WITHOUT VALUE NOTED .01 MFD.



AA2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV2

AC2, AN2, AH1, AT1, BC2, BN2, BT1, CC2, CN2, CH1, CT1, DC2, DN2, DH1, DT1, EC2, EN2, ET1, FC2, FN2, FH1, FT1



8.43 F.B.S.

ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
			PARTS LIST		
	1		ETCHED CIRCUIT BOARD	5009804	4
	REF		MODULE ECO HISTORY	B-MH-M8104-0-6	3
	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8104-0-5	2
	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8104-0-4	1
	85	C1 THRU C32 C34 THRU C86	CAPACITOR .01µf, 50V, 20% AXIAL	1001610	6
	6	C87 THRU C92,	CAPACITOR 6.8µf, 35V, 10% TANT	1005306	5
	1		ETCHED CIRCUIT BOARD	5009804	4
	REF		MODULE ECO HISTORY	B-MH-M8104-0-6	3
	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8104-0-5	2
	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8104-0-4	1
	1		HANDLE, MODULE	E-PS-1210711-2	32
	12		EYELET	9006732	31
	1	J1	CONN 40PIN BERG	1209941	30
	2	E47, E59	IC DEC 74175	1910651	29
	4	E8, E24, E50, E68	IC DEC 7485	1910224	28
	12	E11, E13, E15, E18 E22, E34 E38, E45, E53, E57, E63, E67	IC DEC 74S174	1910550	27
	1	E31	IC DEC 74S157	1910548	26
	24	E3, E5, E7, E12, E14, E16, E19, E21, E23, E28 E30, E32, E37, E39, E41, E44 E46, E48, E54, E56, E58, E62, E64, E66	IC DEC 74S153	1910547	25
	7	E6, E49, E69, E80, E82, E83, E85	IC DEC 74S74	1910544	24
	1	E 79	IC DEC 74S40	1910541	23
	1	E 71	IC DEC 74S20	1910539	22
	8	E4, E10, E29, E35, E52, E55, E65 E75	IC DEC 74S04	1910534	21
	2	E20, E77	IC DEC 74S11	1910537	20
	3	E70, E73, E86	IC DEC 74S10	1910536	19
	1	E72	IC DEC 74S00	1910532	18
	1	E40	IC DEC 9318	1910454	17
	8	E9, E17, E25, E34, E51, E78, E81, E84	IC DEC 74H01	1909849	16
	4	E1, E26, E42, E60	IC DEC 8881	1909705	15
	4	E2, E27, E43, E61	IC DEC 380	1909485	14
	1	E74	IC DEC 74H50	1909060	13
	1	E76	IC DEC 74H40	1905586	12
	1	R68	RESISTOR 390Ω, ¼W, 5%	1300309	11
	1	R67	RESISTOR 180Ω, ¼W, 5%	1301322	10
	3	R65, R70, R71	RESISTOR 150Ω, ¼W, 5%	1300250	9
	32	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R29, R31, R33, R35, R37, R39, R41, R43, R45, R47, R49, R51, R53, R55, R57, R59, R61, R63	RESISTOR 330Ω, ¼W, 5%	1300295	8
	32	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32, R34, R36, R38, R40, R42, R44, R46, R48, R50, R52, R54, R56, R58, R60, R62, R64	RESISTOR 680Ω, ¼W, 5%	1301424	7

IC TYPE	GND	+5V
DEC 74S153	8	16
DEC 74175	8	16
DEC 7485	8	16
DEC 74S174	8	16
DEC 74S157	8	16
DEC 9318	8	16
DEC 380	1	8

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

REV	REVISIONS	CHG NO.	DEC NO.	EIA NO.
A	ORIGINATED	M8104-0001		
B		M8104-0002		
C				

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV C

DRN K.B. DATE 12-22
CHK J.G. DATE 12-22
ENG [illegible] DATE 1-23
PROJ ENG [illegible] DATE 1-23
PROG [illegible] DATE
NEXT HIGHER ASSY B-CC-11/45-0
SCALE 2/1
SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASS.

TITLE PROCESSOR DATA & UNIBUS REGS.

SIZE E CODE CS NUMBER M8104-0-1 REV C
DIST

DEC FORM NO. DNE 186

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

DAPF SHFR03 H
SMCE MEM D03 H
PDRA INTD03 H
PDRJ D03 H
DAPF SHFR02 H
SMCE MEM D02 H
PDRA INTD02 H
PDRJ D02 H
BRMX (03:02) 74S153 E12
AP2
PDRA BRMX03 H
BD2
PDRA BRMX02 H
DAPJ SHFR07 H
SMCE MEM D07 H
PDRA INTD07 H
PDRJ D07 H
DAPF SHFR06 H
SMCE MEM D06 H
PDRA INTD06 H
PDRJ D06 H
BRMX (07:06) 74S153 E28
BM2
PDRA BRMX07 H
CF1
PDRA BRMX06 H
DAPH SHFR11 H
SMCE MEM D11 H
PDRA INTD 11 H
PDRJ D11 H
DAPH SHFR10 H
SMCE MEM D 10 H
PDRA INTD 10 H
PDRJ D10 H
BRMX (11:10) 74S153 E44
DC1
PDRA BRMX11 H
DD1
PDRA BRMX10 H
DAPH SHFR15 H
SMCE MEM D15 H
PDRA INTD15 H
PDRJ D15 H
DAPH SHFR14 H
SMCE MEM D14 H
PDRA INTD14 H
PDRJ D14 H
BRMX (15:14) 74S153 E62
ES1
PDRA BRMX15 H
EL2
PDRA BRMX14 H
PDRA BRMXS1 H
PDRA BRMXS0 H
BUSES SELECTED ON SHIFTER
DAPF SHFR01 H
SMCE MEM D01 H
PDRA INTD01 H
PDRJ D01 H
DAPF SHFR00 H
SMCE MEM D00 H
PDRA INTD00 H
PDRJ D00 H
BRMX (01:00) 74S153 E3
AM2
PDRA BRMX01 H
AR2
PDRA BRMX00 H
DAPF SHFR05 H
SMCE MEM D05 H
PDRA INTD05 H
PDRJ D05 H
DAPF SHFR04 H
SMCE MEM D04 H
PDRA INTD04 H
PDRJ D04 H
BRMX (05:04) 74S153 E19
BN1
PDRA BRMX05 H
BP2
PDRA BRMX04 H
DAP H SHFR09 H
SMCE MEM D09 H
PDRA INTD09 H
PDRJ D09 H
DAP H SHFR08 H
SMCE MEM D08 H
PDRA INTD08 H
PDRJ D08 H
BRMX (09:08) 74S153 E37
CR2
PDRA BRMX09 H
CR1
PDRA BRMX08 H
DAPH SHFR13 H
SMCE MEM D13 H
PDRA INTD13 H
PDRJ D13 H
DAPH SHFR12 H
SMCE MEM D 12 H
PDRA INTD12 H
PDRJ D12 H
BRMX (13:12) 74S153 E54
DS2
PDRA BRMX13 H
EH2
PDRA BRMX12 H
PDRA BRMXS1 H
PDRA BRMXS0 H
TMCF SEL MEM L
RACA UBRX H
74S00 E72
TMCF SEL INT L
INTERNAL BUS
BUS INTD03 L
BUS INTD02 L
BUS INTD01 L
BUS INTD00 L
74S04 E10
PDRA INTD03 H
PDRA INTD02 H
PDRA INTD01 H
PDRA INTD00 H
BUS INTD07 L
BUS INTD06 L
BUS INTD05 L
BUS INTD04 L
74S04 E35
PDRA INTD07 H
PDRA INTD06 H
PDRA INTD05 H
PDRA INTD04 H
BUS INTD12 L
BUS INTD11 L
BUS INTD10 L
BUS INTD09 L
BUS INTD08 L
74S04 E52
PDRA INTD12 H
PDRA INTD11 H
PDRA INTD10 H
PDRA INTD09 H
PDRA INTD08 H
BUS INTD15 L
BUS INTD14 L
BUS INTD13 L
PDRA INTD15 H
PDRA INTD14 H
PDRA INTD13 H

BRMX S1	S0	
L	L	BUSA DATA
L	H	INTD
H	L	MEMD
H	H	SHFR

BUS REGISTER MULTIPLEXER SLOT 10

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. F. Schultz DATE 7-16-71
CHK'D. [illegible] DATE 3/3/72
ENG. Judy Munster DATE 3-6-72
PROJ. ENG. Judy Munster DATE 3-7-72
PROD. [illegible] DATE 3-15-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE PROCESSOR DATA 5 UNIBUS REGS (PDRA)

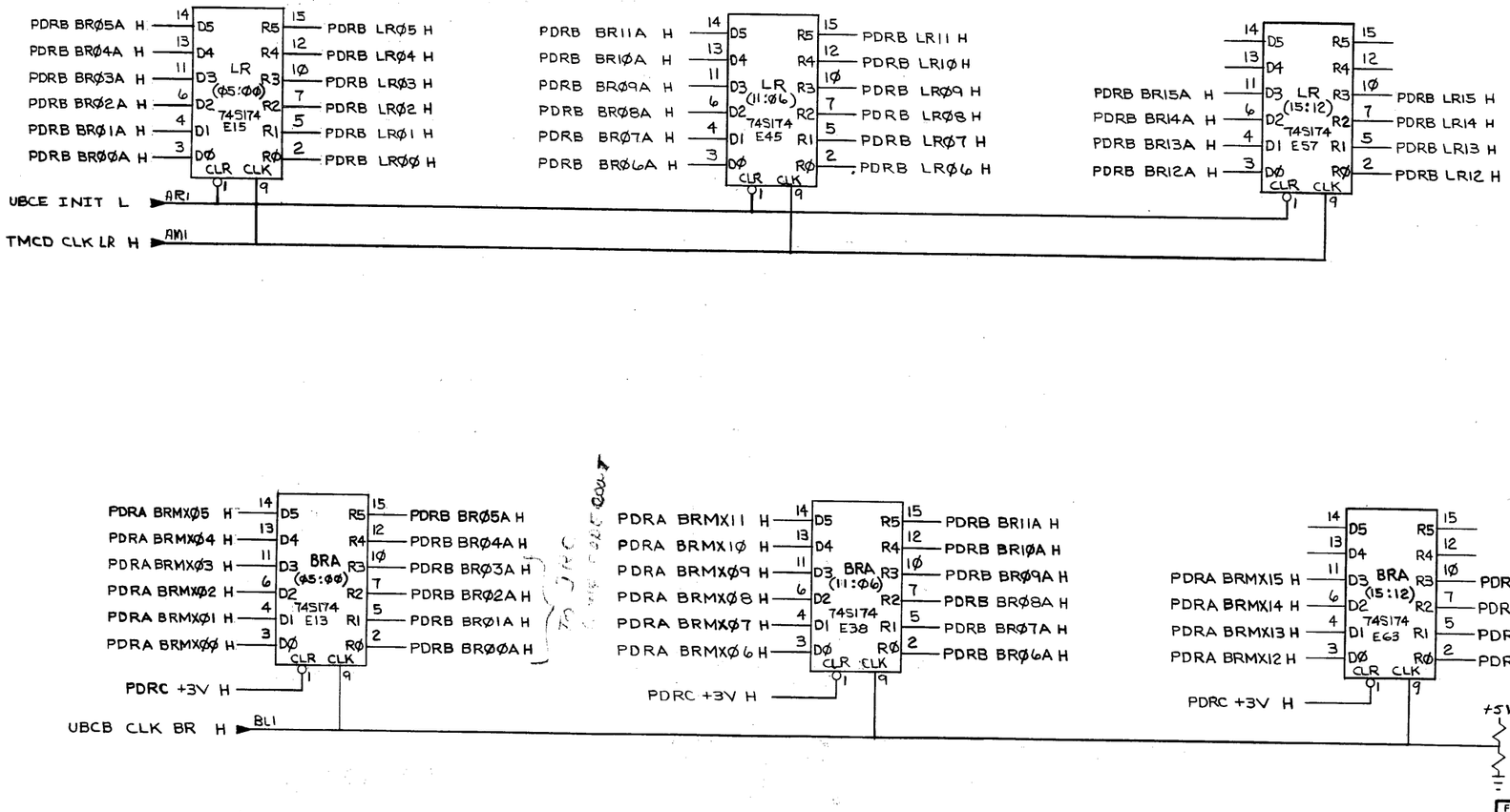
NEXT HIGHER ASSY. B-DD-11/45-0
SCALE —
SHEET 2 OF 9

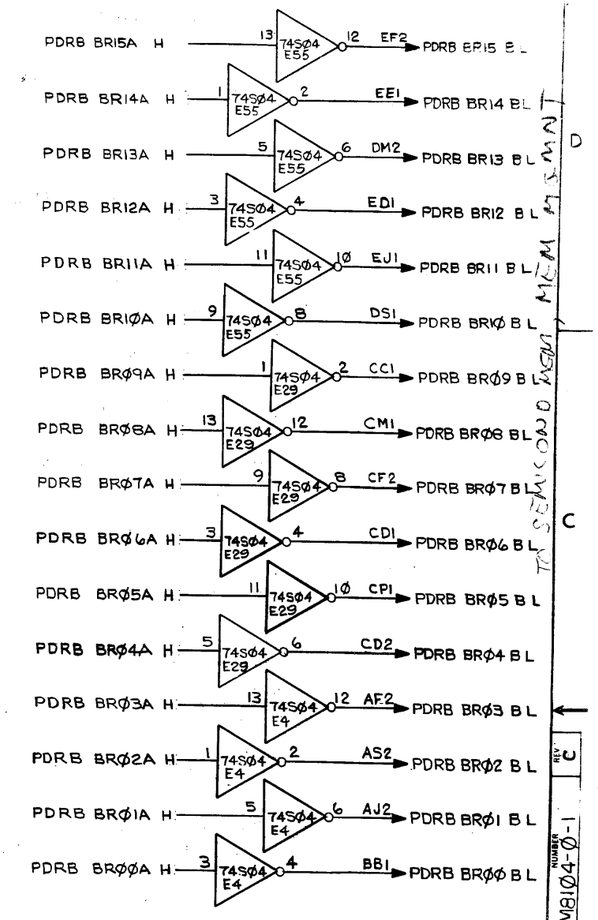
SIZE D | CODE CS | NUMBER M8104-0-1 | REV C
DIST.

REVISIONS	CHANGE NO	CHK	REV
			C
			B
			A

DEC FORM NO. ORD 102-B

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





BUS REGISTER A; LIGHT REGISTER — SLOT 10

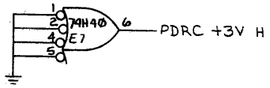
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

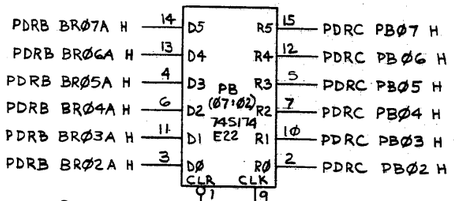
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

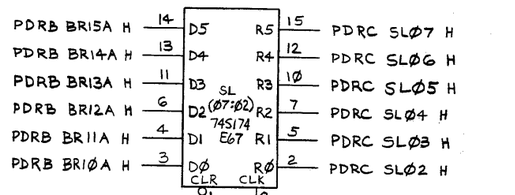
DRN.	DATE 6-29-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 3/3/72	
ENG.	DATE 3-3-72	TITLE
PROJ. ENG.	DATE 3-3-72	PROCESSOR DATA & UNIBUS REGS (PDRB)
PROD.	DATE 3-15-72	
MATERIAL	NEXT HIGHER ASSY.	SIZE D | CODE CS | NUMBER M8104-0-1 | REV. C
FINISH	B-DD-11/45-0	
	SCALE	
	SHEET 3 OF 9	DIST.

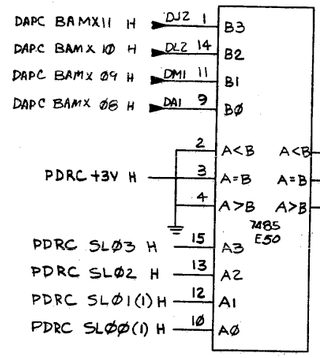
DIGITAL CONFIDENTIAL

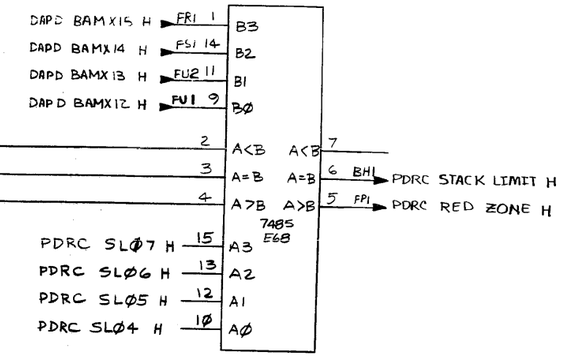
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

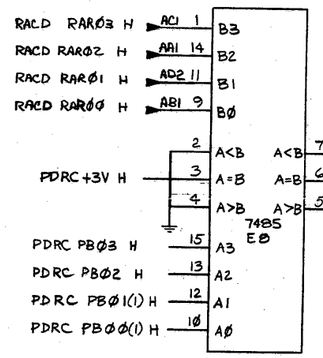


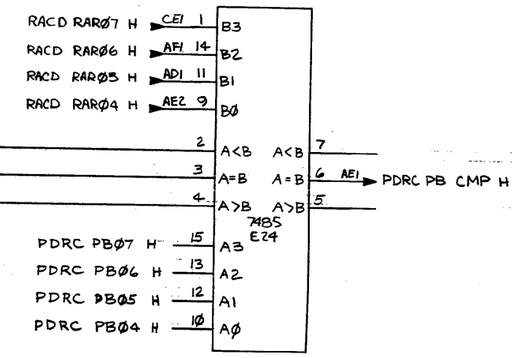












PROGRAM BREAK & STACK LIMIT REGISTERS SLOT 1Ø

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 9/21/71
CHK'D. DATE 3/3/72
ENG. Andy Mentor DATE 3-3-72
PROJ. ENG. Andy Mentor DATE 3-3-72
PROD. D. Smith DATE 3-15-72
NEXT HIGHER ASSY. B-DD-11/45-Ø
SCALE
SHEET 4 OF 9

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE PROCESSOR DATA & UNIBUS REGS (PDRC)

SIZE D | CODE CS | NUMBER M81Ø4-Ø-1 | REV. C | DIST.

DEC FORM NO. ORD 102-B

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

TMCE KERNEL DATI L (FD1) — 74S04 E75 — PDRD KERNEL DATI B H

PDRD ISB00 B L, RACB UIBS01 H, TIGD T4B H — 74S11 E77 — 74H50 E74

PDRB BR15A N — 74S10 E86 — PDRB LOAD PS H

PDRB BR13A N — 74S10 E66

PDRB BR15A H

PDRB BR14A N — 74175 E59 (D2, R2) — PDRD PIR14 (1) H (EK1)

PDRB BR13A H — PIR (15:12) (D1, R1) — PDRD PIR13 (1) H (DL)

PDRB BR12A H — (D0, R0, CLR, CLK) — PDRD PIR12 (1) H (ED2)

TMCD PIR ADRS H (EV2), UBCC CLK SSYN H (BK2), UBCC HI BYTE H (BHN) — 74S11 E20

PDRB BR11A H — 74175 E47 (D3, R3) — ANI PDRD PIR11 (1) H

PDRB BR10A H — PIR (11:09) (D2, R2) — DFI PDRD PIR10 (1) H

PDRB BR09A H — (D1, R1) — CU2 PDRD PIR09 (1) H

UBCE INT BUS INIT L (DR2) — (D0, R0, CLR, CLK)

PDRC +3V H — 9318 E40 (E1, GS, A2, A1, A0, E0) — PDRD PIA02 H, PDRD PIA01 H, PDRD PIA00 H

IRCH N B (1) H (BP1) — 74H01 E17 — BUS INTD03 L

IRCH Z (1) H (BR2) — 74H01 E17 — BUS INTD02 L

IRCH V (1) H (BV2) — 74H01 E17 — BUS INTD01 L

IRCH C B (1) H (BT2) — 74H01 E17 — BUS INTD00 L

PDRD READ PS H — BUS INTD00 L

PDRD PS07 (0) H, PDRD PS06 (0) H, PDRD PS05 (0) H — 74S11 E77 — PDRD PRIORITY=0 H (FI2)

NOTE: RG9 THRU RG6 ARE SPARES. NO VALUE IS ASSIGNED.

SSRA PS RESTORE (1) H (FV2) — 74S04 E65

RACB UIBS01 H (FC1), PDRD IBS00 B L — 74S20 E71 — 150Ω RG5, +5V, RG6

TMCE KERNEL DATI L (FD1), PDRD PS14 (0) L — 74S10 E73

TIGD T4B H (FI1), TMCE SET PRIORITY H (EV2), TMCD PS ADRS H (DL1), UBCC CLKSSYN H (CBL2), UBCC LO BYTE H (CBT2) — 74S10 E70

74S10 E70 — 74S10 E70

RACB UIBS01 H (FC1), PDRD IBS00 B L — 74S20 E71

RACB UIBS00 H (FB2) — 74S04 E75 — TIGD T4B H (FJ1) — 74S11 E77 — PDRD IBS00 B L

PDRD LOAD PS N — 74S10 E73

PDRB BR12A N, TMCE KERNEL DATI L (FD1), PDRD KERNEL DATI B H, PDRD PS14 (1) H — 74H50 E74

PDRB BR11A H — 74S10 E86 — PDRD LOAD PS H

TMCD PS ADRS H (DL1), UBCC CLK SSYN H (BK2), UBCC HI BYTE H (BHN) — 74S10 E73 — 74S00 E72 — PDRD PS CLK H

PDRB BR02B H, PDRB BR07A H, PDRB BR01A H, PDRB BR06A H, PDRB BR00A H, PDRB BR05 AN — 74S157 E31 (A3, A2, A1, A0, B3, B2, B1, B0, Q3, Q2, Q1, Q0, SEL ENA) — PDRC +3V H

UBCE STATUS CLR L (FK2)

UBCE INIT L (RE1)

PDRD PS15 (1) H — PS15 74S74 E82 — FN1 — 74H01 E81 — BUS INTD15 L

PDRD PS15 (0) H — FL2

PDRD PS14 (1) H — PS14 74S74 E69 — AH2 — 74H01 E84 — BUS INTD14 L

PDRD PS14 (0) H — AB2

PDRD PS13 (1) H — PS13 74S74 E82 — 74H01 E81 — BUS INTD13 L

PDRD PS13 (0) H — FB1

PDRD PS12 (1) H — PS12 74S74 E69 — BV2 — 74H01 E78 — BUS INTD12 L

PDRD PS12 (0) H — FD2

PDRD PS11 (1) H — PS11 74S74 E80 — 74H01 E81 — BUS INTD11 L

PDRD PS11 (0) H — FF1

PDRD PS07 (1) H — PS07 74S74 E80 — FJ2 — 74H01 E81 — BUS INTD07 L

PDRD PS07 (0) H — FH2

PDRD PS06 (1) H — PS06 74S74 E83 — FL1 — 74H01 E84 — BUS INTD06 L

PDRD PS06 (0) H — FM2

PDRD PS05 (1) H — PS05 74S74 E83 — FP2 — 74H01 E84 — BUS INTD05 L

PDRD PS05 (0) H — FS2

PDRD PS04 (1) H — PS04 74S74 E85 — 74H01 E84 — BUS INTD04 L

PDRD PS04 (0) H

PDRD READ PS H — 74S00 E79

PDRD READ PS H

PIR + PS REGISTERS — SLOT 10

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. A. Eckert	DATE 2-25-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD. Stephen	DATE 3/3/72	
ENG. Andy Mendrala	DATE 3-3-72	TITLE: PROCESSOR DATA & UNIBUS REGS (PDRD)
PROJ. ENG. Andy Mendrala	DATE 3-3-72	
PROD. A. Hirsch	DATE 3-15-72	

NEXT HIGHER ASSY. B-DD-11/45-0

SCALE —

SHEET 5 OF 9

SIZE	CODE	NUMBER	REV.
D	CS	M8104-0-1	C

DIST.

REVISIONS			
REV	CHANGE NO	CHK	

BRUNING 40-522 15940

DEC FORM NO DRD 102-B

SIZE CODE D CS M8104-0-1 REV 2

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

TMCD HI BYTE EN H ← ER1 11 74S04 E65 10

TMCD LO BYTE EN H ← FE1 5 74S04 E75 6

TMCD DMX3I H ← EJ2 9 74S04 E65 8

TMCD DMXSØ H ← ES2 5 74S04 E65 6

DMX (Ø9:Ø8) 74S153 E39
- PDRB BRØ9A H → DI 13
- PDRC SLØ1 (1) H → CI 12
- PDRD PIRØ9 (1) H → BI 11
- AI 10
- PDRB BRØ8A H → DØ 3
- PDRC SLØØ (1) H → CØ 4
- BØ 5
- AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E42 (8, 9) → 10 (DE2) → BUSA DØ9 L
- FØ 7 → 8881 E42 (5, 6) → 4 (EB1) → BUSA DØ8 L

DMX (11:10) 74S153 E46
- PDRB BRIIA H → DI 13
- PDRC SLØ3 H → CI 12
- PDRD PIRI1 (1) H → BI 11
- PDRD PSI1 (1) H → AI 10
- PDRB BRIØA H → DØ 3
- PDRC SLØ2 H → CØ 4
- PDRD PIRIØ (1) H → BØ 5
- AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E42 (2, 3) → 1 (DH2) → BUSA DII L
- FØ 7 → 8881 E42 (12, 11) → 13 (DI2) → BUSA DIØ L

DMX (13:12) 74S153 E56
- PDRB BRI3A H → DI 13
- PDRC SLØ5 H → CI 12
- PDRD PIRI3 (1) H → BI 11
- PDRD PSI3 (1) H → AI 10
- PDRB BRI2A H → DØ 3
- PDRC SLØ4 H → CØ 4
- PDRD PIRI2 (1) H → BØ 5
- PDRD PSI2 (1) H → AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E60 (5, 6) → 4 (BF1) → BUSA DI3 L
- FØ 7 → 8881 E60 (8, 9) → 10 (BH2) → BUSA DI2 L

DMX (15:14) 74S153 E64
- PDRB BRI5A H → DI 13
- PDRC SLØ7 H → CI 12
- PDRD PIRI5 (1) H → BI 11
- PDRD PSI5 (1) H → AI 10
- PDRB BRI4A H → DØ 3
- PDRC SLØ6 H → CØ 4
- PDRD PIRI4 (1) H → BØ 5
- PDRD PSI4 (1) H → AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E60 (12, 11) → 13 (BJ1) → BUSA DI5 L
- FØ 7 → 8881 E60 (2, 3) → 1 (CJ1) → BUSA DI4 L

PDRE DMXSI L

PDRE DMXSØ L

DMX (Ø1:Ø0) 74S153 E5
- PDRB BRØ1A H → DI 13
- PDRC PBØ1 (1) H → CI 12
- PDRD PIAØØ H → BI 11
- IRCH V (1) H → AI 10
- PDRB BRØØA H → DØ 3
- PDRC PBØØ (1) H → CØ 4
- BØ 5
- IRCH C B (1) H → AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E1 (12, 11) → 13 (AV2) → BUSA DØ1 L
- FØ 7 → 8881 E1 (2, 3) → 1 (BA1) → BUSA DØØ L

DMX (Ø3:Ø2) 74S153 E14
- PDRB BRØ3A H → DI 13
- PDRC PBØ3 H → CI 12
- PDRD PIAØ2 H → BI 11
- IRCH N B (1) H → AI 10
- PDRB BRØ2A H → DØ 3
- PDRC PBØ2 H → CØ 4
- PDRD PIAØ1 H → BØ 5
- IRCH Z (1) H → AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E1 (8, 9) → 10 (AU2) → BUSA DØ3 L
- FØ 7 → 8881 E1 (5, 6) → 4 (AU1) → BUSA DØ2 L

DMX (Ø5:Ø4) 74S153 E21
- PDRB BRØ5A H → DI 13
- PDRC PBØ5 H → CI 12
- PDRD PIAØØ H → BI 11
- PDRD PSØ5 (1) H → AI 10
- PDRB BRØ4A H → DØ 3
- PDRC PBØ4 H → CØ 4
- BØ 5
- PDRD PSØ4 (1) H → AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E26 (5, 6) → 4 (CH2) → BUSA DØ5 L
- FØ 7 → 8881 E26 (8, 9) → 10 (BF2) → BUSA DØ4 L

DMX (Ø7:Ø6) 74S153 E30
- PDRB BRØ7A H → DI 13
- PDRC PBØ7 H → CI 12
- PDRD PIAØ2 H → BI 11
- PDRD PSØ7 (1) H → AI 10
- PDRB BRØ6A H → DØ 3
- PDRC PBØ6 H → CØ 4
- PDRD PIAØ1 H → BØ 5
- PDRD PSØ6 (1) H → AØ 6
- STBI 15, STBØ 1, SI 2, SØ 14
- FI 9 → 8881 E26 (12, 11) → 13 (CH2) → BUSA DØ7 L
- FØ 7 → 8881 E26 (2, 3) → 1 (AK2) → BUSA DØ6 L

DMX	SI	SØ	OUTPUT
	L	L	STATUS
	L	H	PIR ; PIA
	H	L	SL ; PB
	H	H	BR

UNIBUSA DATA MULTIPLEXER SLOTIØ

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

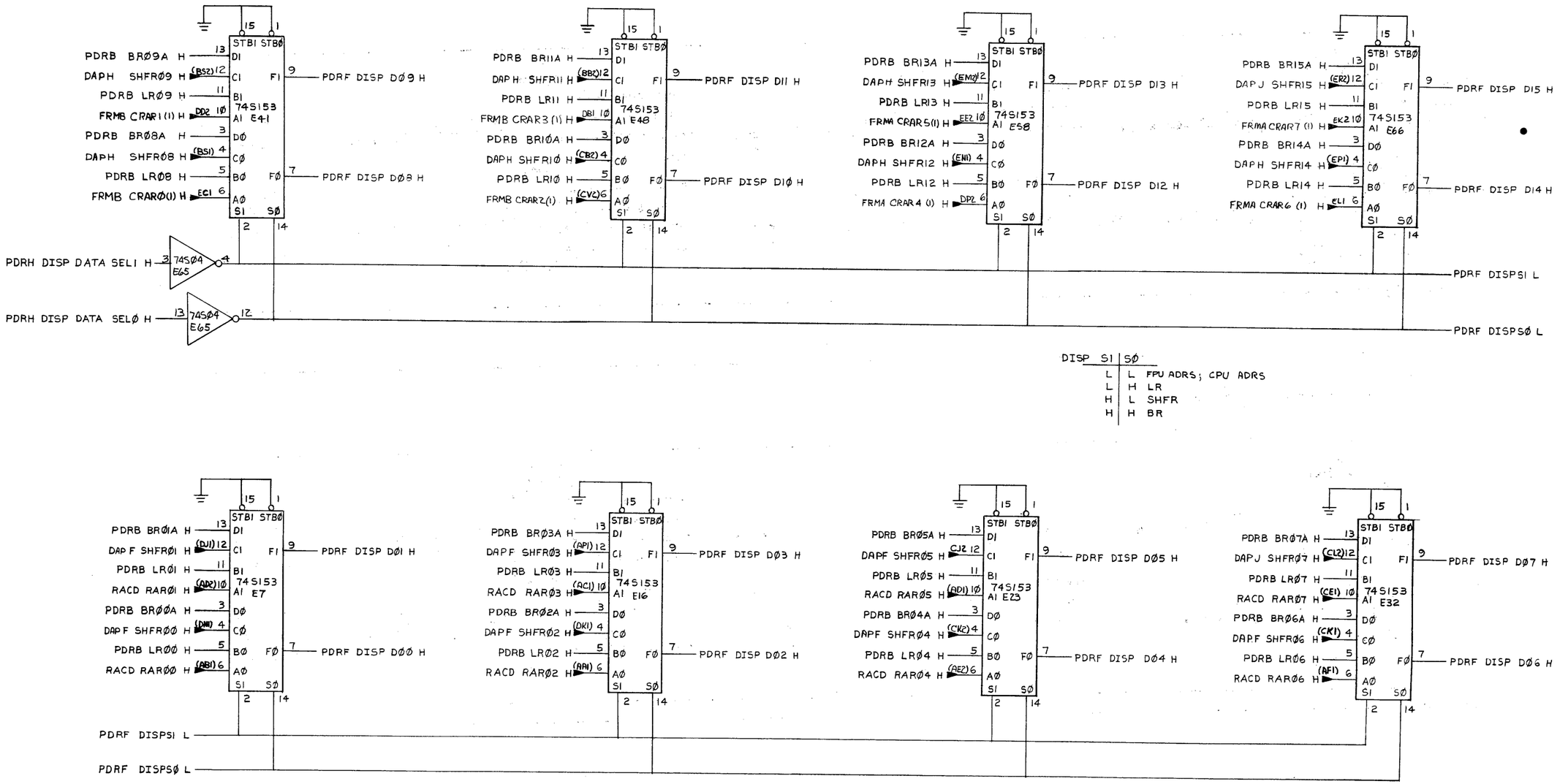
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX = .005 .XX = .02 .X = .1 ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. S.W.Rubenstein	DATE 7/13/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D	DATE 3/3/72	
ENG. Cindy Mercier	DATE 3-3-72	
PROJ. ENG.	DATE 3-3-72	TITLE PROCESSOR DATA & UNIBUS REGS. (PDRE)
PROD. C. Hirsh	DATE 3-15-72	
NEXT HIGHER ASSY. B-DD-11/45-Ø	SIZE D CODE CS NUMBER MSIØ4-Ø-1 REV. C	
SCALE		
SHEET 6 OF 9	DIST.	

REVISIONS: REV | CHANGE NO | CHK

DRAWING NO. MSIØ4-Ø-1 REV C

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



DISP S1	SØ	
L	L	FPU ADRS; CPU ADRS
L	H	LR
H	L	SHFR
H	H	BR

DATA DISPLAY MULTIPLEXER SLOTIØ

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 7-2-71
CHK'D.		DATE 5/2/72
ENG.		DATE 7-3-72
PROJ. ENG.		DATE - 3-72
PROD.		DATE 3-15-72

NEXT HIGHER ASSY. B-DD-11/45-Ø
SCALE
SHEET 7 OF 9

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PROCESSOR DATA & UNIBUS REGS (PDRF)

SIZE	CODE	NUMBER	REV.
D	CS	M 8104-Ø-1	C

DIST.

REVISIONS		
CHA	CHANGE NO	REV

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

TMCF READ SW L
TMCD SW ADRS B L
74S40 E79

PDRH SWR07 H → 74H01 E25 → BUS INTD07 L
PDRH SWR06 H → 74H01 E25 → BUS INTD06 L
PDRH SWR05 H → 74H01 E25 → BUS INTD05 L
PDRH SWR04 H → 74H01 E25 → BUS INTD04 L
PDRH SWR03 H → 74H01 E9 → BUS INTD03 L
PDRH SWR02 H → 74H01 E9 → BUS INTD02 L
PDRH SWR01 H → 74H01 E9 → BUS INTD01 L
PDRH SWR00 H → 74H01 E9 → BUS INTD00 L

PDRH SWR15 H → 74H01 E51 → BUS INTD15 L
PDRH SWR14 H → 74H01 E51 → BUS INTD14 L
PDRH SWR13 H → 74H01 E51 → BUS INTD13 L
PDRH SWR12 H → 74H01 E51 → BUS INTD12 L
PDRH SWR11 H → 74H01 E34 → BUS INTD11 L
PDRH SWR10 H → 74H01 E34 → BUS INTD10 L
PDRH SWR09 H → 74H01 E34 → BUS INTD09 L
PDRH SWR08 H → 74H01 E34 → BUS INTD08 L

J1

PDRH SWR00 H
PDRH SWR01 H
PDRH SWR02 H
PDRH SWR03 H
PDRH SWR04 H
PDRH SWR05 H
PDRH SWR06 H
PDRH SWR07 H
PDRH SWR08 H
PDRH SWR09 H
PDRH SWR10 H
PDRH SWR11 H
PDRH SWR12 H
PDRH SWR13 H
PDRH SWR14 H
PDRH SWR15 H
ALI → PDRH SWR16 H
AKI → PDRH SWR17 H

+5VC

PDRF DISP D00 H
PDRF DISP D01 H
PDRF DISP D02 H
PDRF DISP D03 H
PDRF DISP D04 H
PDRF DISP D05 H
PDRF DISP D06 H
PDRF DISP D07 H
PDRF DISP D08 H
PDRF DISP D09 H
PDRF DISP D10 H
PDRF DISP D11 H
PDRF DISP D12 H
PDRF DISP D13 H
PDRF DISP D14 H
PDRF DISP D15 H

PDRH DISP DATA SEL0 H
PDRH DISP DATA SEL1 H

SSRB SR0 MODE 0 H → BU1

12-9941

PDR/KNL INTERFACE
SIGNALS TO CONSOLE
SIGNALS FROM CONSOLE

SWITCH REGISTER AND CONSOLE CABLE SLOT 0

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 —

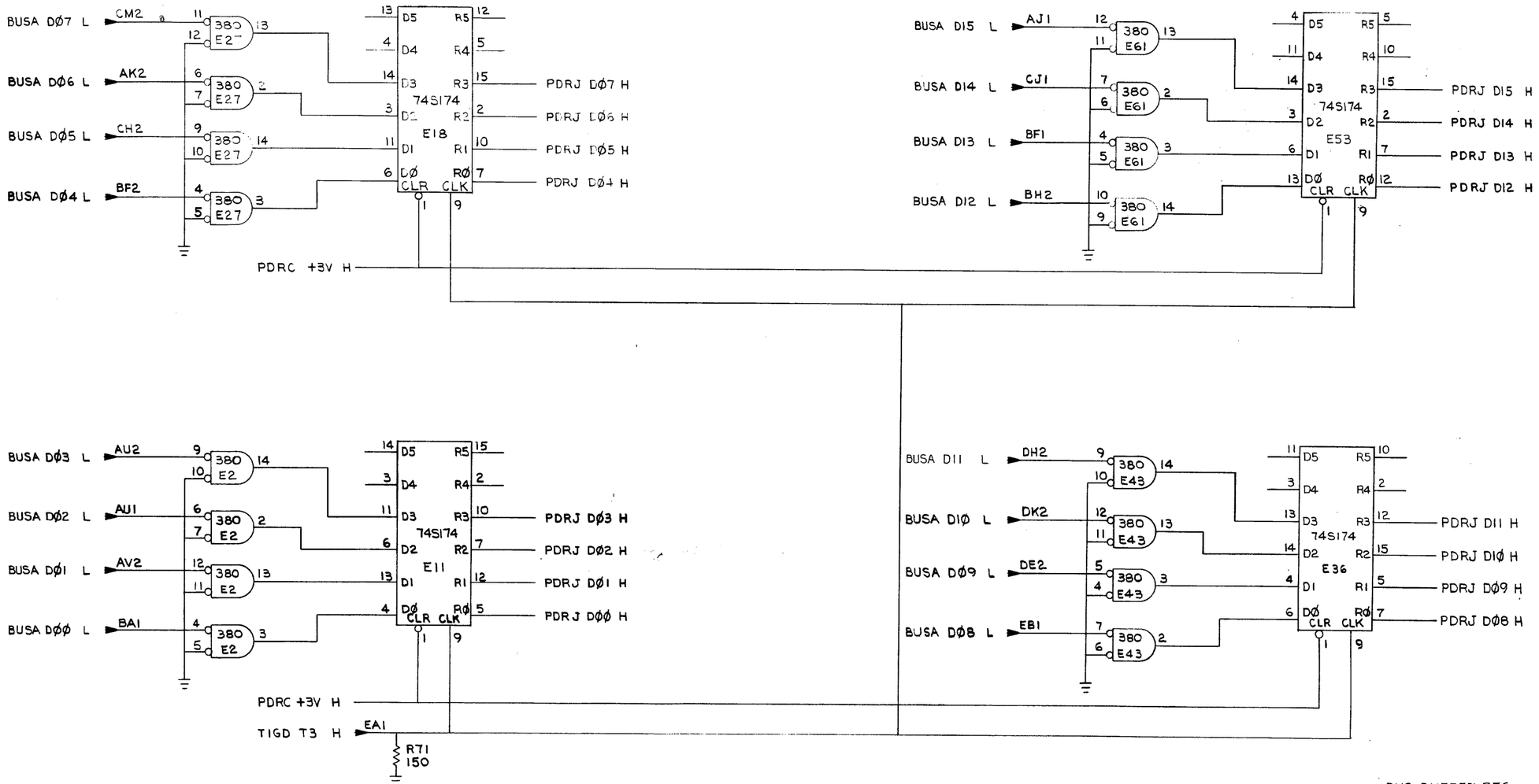
DRN. DATE 7/2/71
CHK'D. DATE 7/3/72
ENG. DATE 3-3-72
PROJ. ENG. DATE 3-3-72
PROD. DATE 3-3-72
NEXT HIGHER ASSY. B-DD-11/45-0
SCALE —
SHEET 6 OF 9

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PROCESSOR DATA
UNIBUS REGS
(PDRH)

SIZE D | CODE CS | NUMBER M8104-0-1 | REV. C
DIST.

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © "DIGITAL EQUIPMENT CORPORATION"



BUS BUFFER REG SLOT IØ

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.		DATE 1/2/73
CHK'D		DATE 1/5/73
ENG.		DATE 1/15/73
PROJ. ENG.		DATE 1/15/73
PROD.		DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PROCESSOR DATA UNIBUS REGS (PDRJ)

MATERIAL
FINISH
NEXT HIGHER ASSY. B-DD-11/45-Ø
SCALE
SHEET 9 OF 9

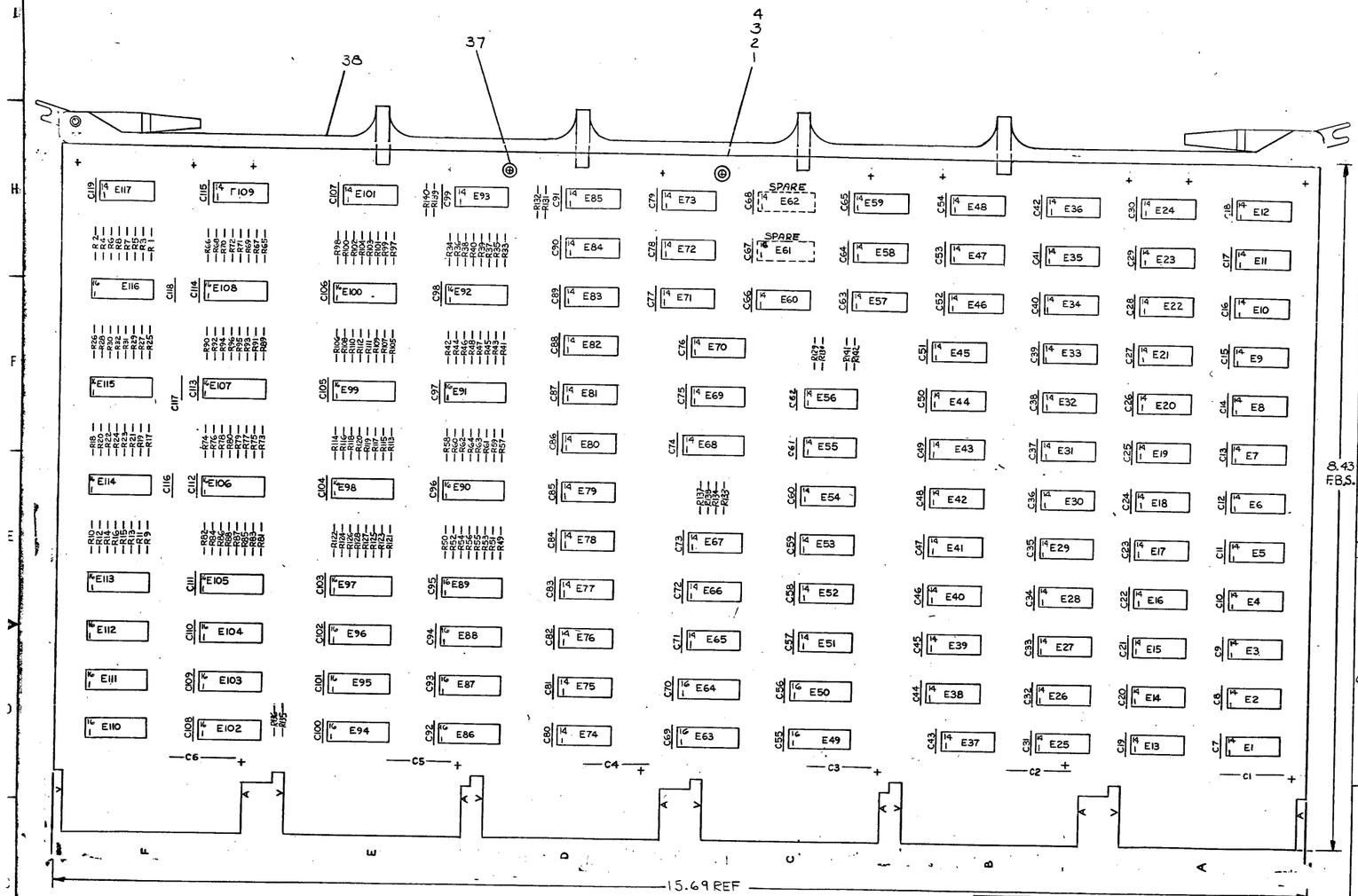
SIZE	CODE	NUMBER	REV.
D	CS	M8104-Ø-1	C

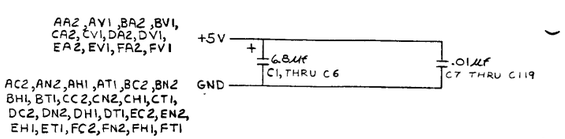
DIST.

SIZE D CODE CS NUMBER M8104-Ø-1 REV C

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

NOTES:
1. UNLESS OTHERWISE NOTED, RESISTANCE IS IN Ω AND CAPACITANCE IS IN MICROFARADS. CAPS. WITHOUT VALUE NOTED ARE .01 MFD
2. E61 & E62 ARE SPARE IC LOCATIONS
3. R131, R133, R135, R137 & R139 ARE NOT USED





ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
66	1	R143	RESISTOR 1K, ¼W, 5%	1300365
39	1		HANDLE, MODULE	E-PS-1210711-2
38	12		EYELET	9006732
37	1	E116	IC DEC 74187 (OR 3304)	23-C44A2
36	1	E113	IC DEC 74187 (OR 3301)	23-C43A2
35	1	E114	IC DEC 74187 (OR 3304)	23-C42A2
34	1	E115	IC DEC 74187 (OR 3301)	23-C41A2
33	1	E108	IC DEC 74187 (OR 3301)	23-C12A2
32	1	E106	IC DEC 74187 (OR 3304)	23-C11A2
31	1	E105	IC DEC 74187 (OR 3301)	23-C47A2
30	1	E107	IC DEC 74187 (OR 3304)	23-C09A2
29	1	E100	IC DEC 74187 (OR 3301)	23-C08A2
28	1	E99	IC DEC 74187 (OR 3301)	23-C07A2
27	1	E98	IC DEC 74187 (OR 3304)	23-C31A2
26	1	E97	IC DEC 74187 (OR 3301)	23-C32A2
25	1	E92	IC DEC 74187 (OR 3304)	23-C04A2
24	REF			
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
23	1	E91	IC DEC 74187 (OR 3304)	23-C44A2
22	1	E89	IC DEC 74187 (OR 3301)	23-C02A2
21	1	E90	IC DEC 74187 (OR 3304)	23-C01A2
20	12	E1, E2, E13, E14, E25, E26, E36, E37, E38, E73, E109, E117	IC DEC 74S74	1910544
19	1	E68	IC DEC 74S74-45	1910950
18	12	E86, E87, E88, E94, E95, E96, E102, E103, E104, E110, E111, E112	IC DEC 74S174	1910550
17	4	E49, E50, E63, E64	IC DEC 74S153	1910547
16	38	E5, E7, E8, E9, E11, E12, E17, E18, E19, E20, E21, E22, E23, E24, E33, E35, E39, E42, E43, E44, E45, E46, E47, E51, E54, E65, E70, E71, E74, E75, E76, E77, E80, E81, E82, E83, E101, E32	IC DEC 74S64	1910542
15	1	E15	IC DEC 74S40	1910541
14	3	E16, E30, E41	IC DEC 74S20	1910539
13	4	E55, E66, E69, E85	IC DEC 74S11	1910537
12	10	E3, E10, E28, E29, E40, E48, E53, E59, E60, E67	IC DEC 74S10	1910536
11	11	E6, E27, E34, E52, E56, E57, E72, E78, E79, E84, E93	IC DEC 74S04	1910534
10	3	E4, E31, E58	IC DEC 74S00	1910532
9	66	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32, R34, R36, R38, R40, R42, R44, R46, R48, R50, R52, R54, R56, R58, R60, R62, R64, R66, R68, R70, R72, R74, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R96, R98, R100, R102, R104, R106, R108, R110, R112, R114, R116, R118, R120, R122, R124, R126, R128, R130, R142	RESISTOR 680Ω, ¼W, 5%	1301424
8	66	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R29, R31, R33, R35, R37, R39, R41, R43, R45, R47, R49, R51, R53, R55, R57, R59, R61, R63, R65, R67, R69, R71, R73, R75, R77, R79, R81, R83, R85, R87, R89, R91, R93, R95, R97, R99, R101, R103, R105, R107, R109, R111, R113, R115, R117, R119, R121, R123, R125, R127, R129, R141	RESISTOR 330Ω, ¼W, 5%	1300295
7	5	R132, R134, R136, R138, R140	RESISTOR 150Ω, ¼W, 5%	1300250
6	6	C1 THRU C6	CAPACITOR 6.8μF, 35V, 20% TANT	1000067
5	113	C7 THRU C119	CAPACITOR .01μF, 100V, 20% DISC	1001610
4	1		ETCHED CIRCUIT BOARD	5009805
3	REF		MODULE ECO HISTORY	B-MH-M8103-C-0
2	REF		ASSY/DRILLING HOLE LAYOUT	E-BH-M8103-0-5
1			X-Y COORDINATE HOLE LOCATION	CO-M8103-0-4

PARTS LIST

IC TYPE	GND	+5V
DEC 74187 (OR 3304)	8	16
DEC 74187 (OR 3301)	8	16

GND AND 5V ARE ALWAYS PIN 7 AND 14 RESPECTIVELY EXCEPT AS NOTED IN THE STATES ABOVE

IC PIN LOCATIONS

ITEM NO.	AWG	FROM PT	TO PT

JUMPER LIST

REV	CHG	CHANGE NO.	ORIGINATED	DEC NO	EIA NO.	DEC NO	EIA NO.
A		M8104-00001	S. JENKINS 5-24-72				
B		M8103-00003	S. JENKINS 5-24-72				
C		M8103-00005	S. JENKINS 6-2-72				

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV C

DRN	A. X.	DATE 10-72
CHK'D		DATE 7
ENG.		DATE
PROJ. ENG.		DATE 5-1-73
PROD.		DATE
NEXT HIGHER ASSY	E-DD-KF11-0	
SCALE	2	
SHEET	OF	

DIGITAL EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ROM & PROM CONTROL

SIZE	CODE	NUMBER	REV.
B	CS	M8103-0-1	H

DIST.

CS M8103-0-1 H

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

RACA CLR RBR L

UBCE ROM INIT H (EJ1) — 74S04 E57

TIGC T2 L — 74S04 E78 — R133 NOT USED — R134 150Ω — +5V

74S174 E111 (63:58): DS D4 D3 D2 D1 DØ CLR CLK; RS R4 R3 R2 R1 RØ
- FS2 RACA UBRK H
- FU1 RACA UBRX H
- FM2 RACA USRXØ1 H
- FS1 RACA USRXØØ H
- FP2 RACA UDRXØ1 H
- FP1 RACA UDRXØØ H

74S174 E112 (57:52): DS D4 D3 D2 D1 DØ CLR CLK; RS R4 R3 R2 R1 RØ
- FU2 RACA USRK H
- FT2 RACA UDRKØ1 H
- FW2 RACA UDRKØØ H
- FU2 RACA UCCLØ2 H
- FL2 RACA UCCLØ1 H
- FK2 RACA UCCLØØ H

74S174 E110 (51:46): DS D4 D3 D2 D1 DØ CLR CLK; RS R4 R3 R2 R1 RØ
- RACB ROM47 H
- RACB ROM46 H
- FE1 RACA UPCA H
- FR2 RACA UPCBØ1 H
- FN1 RACA UPCBØØ H
- FM1 RACA USHFØ1 H
- FL1 RACA USHFØØ H
- RACA UIRKA H
- RACA UIRK H → 74S11 EG9 → CL1

+5V

R1 330 R2 680 R3 330 R4 680 — R5 330 R6 680 R7 330 R8 680 — R9 330 R10 680 R11 330 R12 680 — R13 330 R14 680 R15 330 R16 680 — R17 330 R18 680 R19 330 R20 680 — R21 330 R22 680 R23 330 R24 680 — R25 330 R26 680 R27 330 R28 680 — R29 330 R30 680 R31 330 R32 680

74187 E116 23-C44A2 ROM (63:60): A7 A6 A5 A4 A3 A2 A1 AØ; M3 M2 M1 MØ; CS1 CSØ

74187 E113 23-C43A2 ROM (59:56): A7 A6 A5 A4 A3 A2 A1 AØ; M3 M2 M1 MØ; CS1 CSØ
- RACC RARBØ1 H
- RACC RARBØØ H

74187 E114 23-C42A2 ROM (55:52): A7 A6 A5 A4 A3 A2 A1 AØ; M3 M2 M1 MØ; CS1 CSØ

74187 E115 23-C41A2 ROM (51:48): A7 A6 A5 A4 A3 A2 A1 AØ; M3 M2 M1 MØ; CS1 CSØ
- RACA RARBØ2 H
- RACA RARBØ3 H
- RACA RARBØ4 H
- RACA RARBØ5 H
- RACA RARBØ6 H
- RACA RARBØ7 H

UBCE ROM INIT H (EJ1) — 74S64 E101 — RACA ZAP L

RACB UBSDØ1 H
TMCC ABORT H (EF1)

ADDR 200 FORCES ZAP

RACL RADRØ7 H → RARB Ø7 74S74 E73 → RACA +3V H

TIGD T3 L (EJ2) — 74S04 E93 — R131 NOT USED — R132 150Ω — +5V — RACA CLKA RAR H

74S174 E104 RARB (Ø6:Ø2): DS D4 D3 D2 D1 DØ CLR CLK; RS R4 R3 R2 R1 RØ
- RACL RADRØ6 H
- RACL RADRØ5 H
- RACL RADRØ4 H
- RACL RADRØ3 H
- RACL RADRØ2 H

74S04 E93 → RACA +3V H

TSE TS2 L (EB1) — 74S04 E93 — R139 NOT USED — R140 150Ω — +5V

PE ABORT L — CK1 — R143 1K — +5V — 74S84 E52

RACA CLK RAR H

ROM BITS (63:48) SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 [illegible] DATE 11/4/71
CHK'D [illegible] DATE 3/14/72
ENG. [illegible] DATE 3-23-72
PROJ. ENG. [illegible] DATE 3-21-72
PROD. [illegible] DATE 3-24-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ROM & ROM CONTROL (RACA)

MATERIAL — FINISH — NEXT HIGHER ASSY. B-DD-KB11-Ø — SCALE — SHEET 2 OF 15

SIZE D | CODE CS | NUMBER M 8103-Ø-1 | REV H | DIST.

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

RACA CLR RBR L

TIGC TIB L → DRI 13 74S04 E78 12 → TIGC TIB H (BJ1)

R135 NOT USED

R136 150Ω

+5V

TIGC TIB H (BJ1)

RACB CLKRBR (34:28) H

74S174 E102 (45:41)

6 DS	R5	7	FA1 → RACB UPWEØ1 H
11 D4	R4	10	FB1 → RACB UPWEØØ H
13 D3	R3	12	FD1 → RACB UPADØ2 H
14 D2	R2	15	FF1 → RACB UPADØ1 H
3 D1	R1	2	FJ1 → RACB UPADØØ H
4 DØ	RØ	5	
CLR 1	CLK 9		

74S174 E103 (40:35)

11 DS	R5	10	FE2 → RACB UBSDØ1 H
4 D4	R4	5	FE1 → RACB UBSDØØ H
13 D3	R3	12	FF2 → RACB UBAX01 H
3 D2	R2	2	FD2 → RACB UBAXØØ H
14 D1	R1	15	FH2 → RACB UIBSØ1 H
6 DØ	RØ	7	FC1 → RACB UIBSØØ H
CLR 1	CLK 9		

+5V

R65 330	R66 680	R67 330	R68 680	R69 330	R70 680	R71 330	R72 680
R73 330	R74 680	R75 330	R76 680	R77 330	R78 680	R79 330	R80 680
R81 330	R82 680	R83 330	R84 680	R85 330	R86 680	R87 330	R88 680
R89 330	R90 680	R91 330	R92 680	R93 330	R94 680	R95 330	R96 680

74187 E108 23-C18A2 (47:44)

RACA RARBØ7 H	15 A7	M3	9
RACA RARBØ6 H	1 A6		
RACA RARBØ5 H	2 A5	M2	10 → RACB ROM47 H
RACA RARBØ4 H	3 A4		
RACA RARBØ3 H	4 A3	M1	11 → RACB ROM46 H
RACA RARBØ2 H	7 A2		
RACC RARBØ1 H	6 A1	MØ	12
RACC RARBØØ H	5 AØ		
	CS1 14	CSØ	13

74187 E106 23-C11A2 (43:40)

15 A7	M3	9	
1 A6			
2 A5	M2	10	
3 A4			
4 A3	M1	11	→ RACB ROM45 H
7 A2			
6 A1	MØ	12	
5 AØ			
CS1 14	CSØ	13	

74187 E105 23-C47A2 (39:36)

15 A7	M3	9	
1 A6			
2 A5	M2	10	
3 A4			
4 A3	M1	11	
7 A2			
6 A1	MØ	12	
5 AØ			
CS1 14	CSØ	13	

74187 E107 23-C09A2 (35:32)

15 A7	M3	9	
1 A6			
2 A5	M2	10	→ RACB ROM34 H
3 A4			
4 A3	M1	11	→ RACB ROM33 H
7 A2			
6 A1	MØ	12	→ RACB ROM32 H
5 AØ			
CS1 14	CSØ	13	

RACA +3V H

RACB ROM4Ø H → 2 D

TIGC TIB H (BJ1) → 3 C

74S74 E73: 4, 1, 5, 6 (Q), 1

RACA CLR RBR L → 1

DJ1 → RACB ROM4Ø B L

ROM BITS (47:32) SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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

DSGN		DATE 11/9/71
CHKD		DATE 3/21/72
ENG		DATE 3-21-72
PROJ ENG		DATE 3-24-72
PROD		DATE 3-30-72

NEXT HIGHER ASSY. B-DD-KB11-Ø

SCALE

SHEET 3 OF 15

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ROM & ROM CONTROL (RACF)

SIZE D | CODE CS | NUMBER M8103-Ø-1 | REV H

DIST.

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

RACA +3V H
RACB ROM33 H
RACB CLKRBR (34:28) H
74S74 E117 (33)
RACC USHCØØ H
RACC USHCØØ L
745174 E94
RACB ROM34 H
RACB ROM32 H
(34,32:28)
RACC USHCØ1 H
RACC UBCTØ2 H
RACC UBCTØ1 H
RACC UBCTØØ H
RACC UMSCØ2 H
RACC UMSCØ1 H
UBCE ROM INIT H
(EJ1)
74S04 E72
TIGC TIB L
(DR1) 3
74S04 E79
745174 E95
(26:21)
RACC UASCØ2 H
RACC UBSCØ1 H
RACC UBSCØØ H
RACC UAMXØ1 H
RACC UAMXØØ H
RACC UBMXØ1 H
RACA +3V H
74S74 E117 (27)
RACC UMSCØØ H
RACC UMSCØ1 L
RACA CLR RBR L
745174 E96
RACD ROM15 H
RACC UBMXØØ H
RACC UKMXØ1 H
RACC UKMXØØ H
RACC UALU2 H
RACC UALU1 H
RACC UALUØ H
+5V
R97 33Ø
R98 68Ø
R99 33Ø
R100 68Ø
R101 33Ø
R102 68Ø
R103 33Ø
R104 68Ø
R105 33Ø
R106 68Ø
R107 33Ø
R108 68Ø
R109 33Ø
R110 68Ø
R111 33Ø
R112 68Ø
R113 33Ø
R114 68Ø
R115 33Ø
R116 68Ø
R117 33Ø
R118 68Ø
R119 33Ø
R120 68Ø
R121 33Ø
R122 68Ø
R123 33Ø
R124 68Ø
R125 33Ø
R126 68Ø
R127 33Ø
R128 68Ø
74187 E100 23-C8A2 ROM (31:28)
74187 E97 23-C8TA2 ROM (27:24)
74187 E98 23-C39A2 ROM (23:20)
74187 E97 23-C38A2 ROM (19:16)

RACD RARAØ3 H
RACD RARAØ2 H
RACD RARAØ1 H
RACD RARAØØ H
745174 E87
RACL RADRØ1 H
RACL RADRØØ H
RACL RADRØ6 H
RACL RADRØ5 H
RACL RADRØ4 H
RARB (01:00)
RARA (01:04)
RACC RARBØ1 H
RACC RARBØØ H
RACA ZAP L
RACA CLKA RAR H
RACC RARAØ6 H
RACC RARAØ5 H
RACC RARAØ4 H
RACL RADRØ7 H
RACA CLK RAR H
RARA Ø7
74S74 E109
RACC RARAØ7 H
RACA +3V H

ROM BITS (31:16) SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. M Pierce DATE 3/8/72
CH'D. DATE 3/21/72
ENG. DATE 3-21-72
PROG. ENG. DATE 3-21-72
PROD. DATE 3-22-72
NEXT HIGHER ASSY. B-DD-KB11-0
SCALE
SHEET 4 OF 15

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE ROM & ROM CONTROL (RACC)

SIZE D CODE CS NUMBER M8103-0-1 REV. H
DIST.

REVISIONS REV. CHANGE NO CHK

DEC FORM NO DRD 102-B

REV H
NUMBER M8103-0-1
SIZE CODE D CS

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

74187 E92 23-C0AA2 — ROM (15:12)
RACD ROM15 H
RACD UCFEN L
RACD UBFEN L
RACD UAFEN L

74187 E91 23-C0A32 — ROM (11:08)
RACA +3V H
74S11 E85
RACD UBEF03 H
RACD UBEF03 L
RACD UBEF02 L
RACD UBEFA3 L
RACD UBEFB00 L
RACD UBEFB01 L
RACD UBEFA00 L

74187 E89 23-C0B2 — ROM (07:04)
RACD UADR07 L
RACD UADR06 L
RACD UADR05 L
RACD UADR04 L

74187 E78 23-C0A2 — ROM (03:00)
RACD UADR03 L
RACD UADR02 L
RACD UADR01 L
RACD UADR00 L

+5V

R33 330 R34 680 R35 330 R36 680 R37 330 R38 680 R39 330 R40 680
R41 330 R42 680 R43 330 R44 680 R45 330 R46 680 R47 330 R48 680
R49 330 R50 680 R51 330 R52 680 R53 330 R54 680 R55 330 R56 680
R57 330 R58 680 R59 330 R60 680 R61 330 R62 680 R63 330 R64 680

RACD RARA 00 H
RACD RARA 01 H
RACD RARA02 H
RACD RARA03 H

RACC RARA07 H
RACC RARA06 H
RACC RARA05 H
RACC RARA04 H

74S174 E88 — RARA (03:00)
74S174 E86 — RAR (05:00)
74S74 E109 RAR 07

EC1 RACD RAR07 H
DS2 RACD RAR06 H
EH2 RACD RAR05 H
EE2 RACD RAR04 H
EF2 RACD RAR03 H
DV2 RACD RAR02 H
DT2 RACD RAR01 H
ED2 RACD RAR00 H

RACA +3V H

RACA CLKA RAR H
RACA CLKA RAR L
RACL RADR00 H
RACC RADR01 H
RACL RADR02 H
RACL RADR03 H
RACL RADR04 H
RACL RADR05 H
RACL RADR06 H
RACL RADR07 H

ROM BITS (15:00) SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. M. Perez 11/9/71
CHK. [illegible] 2/4/72
ENG. [illegible] 3-21-72
PROJ. ENG. E Erikson 3-21-72
PROD. [illegible]

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ROM & ROM CONTROL (RACD)
NEXT HIGHER ASSY. B-DD-KB11-0
SIZE D | CODE CS | NUMBER M8103-0-1 | REV. H
SCALE
SHEET 5 OF 15
DIST.

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

RACJ AF IRII (1) H
RACJ AF IRIØ (1) H
RACJ AF IRØ9 (1) H
74S1Ø E29
RACH BF2=7 L

RACJ BUF AF IRØ8 (1) H
RACE BR INST H
74SØØ E04
RACH A2 RABØ2 L

RACF TRUE 2 H
74SØØ E04
RACH A2 RABØ1 L

PDRA BRMXIØ H (BS1)
74SØ4 E6
RACH +3V H
74S74 E36
RACH AF IRIØA (1) H
RACH AF IRIØA (Ø) H

PDRA BRMXØ9 H (BC1)
74S74 E36
RACH AF IRØ9A (1) H

RACJ CLKAFIR L
74SØ4 E27
RACH AF IRØ9A (Ø) H

RACE BFI=7 L
74SØ4 E34
FRMJ FP PRESENT L
BS1
74SØ4 E57
RACH NEG.B*DMØ H
RACF TRUE 1 H
RACE BR INST H
RACJ AFIRIS (1) H
74S64 E12
RACH A2 RABØØ L
R141 33Ø
R142 68Ø
+5V

RACJ AFIRII (Ø) H
RACJ AFIRØ8 (Ø) H
RACJ AFIRØ7 (1) H
RACJ AFIRØ6 (1) H
74S2Ø E16
74S04 E6
RACH PSWAB H

RACJ AFIRII (Ø) H
RACJ AFIRIØ (Ø) H
74SØ4 E31
RACE BFI=Ø L
RACE BFI=7 L
74S1Ø E10
RACH BIN * (-SMØ1) L

RACJ AF IRØ8 (1) H
RACJ AF IRØ7 (Ø) H
RACJ AF IRØ6 (Ø) H
74S1Ø E28
RACE +3V H
RACE BFI=Ø L
RACE BF2=5 L
74S64 E9
RACH NEG.B * DMØ H

RACH +3V H
RACJ AF IRØ5 (Ø) H
RACJ AF IRØ4 (Ø) H
RACJ AF IRØ3 (Ø) H
74S1Ø E3
74S04 E57
RACH AØ RABØ7 L

74S04 E34
RACH DMØ H
RACH DMØ L

TMCB BRQ TRUE L AK1
74SØØ E4
RACH DFT+BRQ H

RACJ AF IRØØ (1) H
RACJ AF IRØ1 (1) H
RACJ AF IRØ2 (1) H
74S1Ø E3
RACH DFT L

RACH +3V H
RACH DMØ L
RACJ AF IRII (1) H
RACJ AF IRIØ (Ø) H
RACJ AF IRØ7 (Ø) H
RACJ BUF AF IRØ8 (1) H
RACJ AF IRØ9 (1) H
RACJ AF IRØ7 (Ø) H
RACJ AF IRØ6 (Ø) H
74S04 E31
74S64 E19
RACH TCLASS L
RACE BIN * SMØ H
RACE RCLASS H
RACE BFI=7 L
RACE BFI=Ø L
RACE SMØ L
RACH DMØ H
RACE JMP+JSR+SWAB H
RACH PSWAB H
74S64 E11
RACH A1 RABØ4 L

RCLASS=(CLR.B:ASL.B)+MFP+SXT+XOR
TCLASS EXCLUDES[MFP+NEG.B+(-DMØ)] FROM RCLASS

RACC UMSCØ2 H
RACC UMSCØØ H
RACH +3V H
74S1Ø E4Ø
RACC UMSCØ1 H
74S04 E56
RACJ AFIRII (Ø) H
RACE SMØ L
74S11 E55
RACE BIN L
74S04 E56
RACJ BUF AFIRII (1) H
RACH AFIRIØA (1) H
74S1Ø E6Ø
TMCB BRQ TRUE H (ALI)
RACE BR INST H
74S64 E54
ANI
RACH BUST H
RACJ AFIRØ5 (Ø) H
RACH DMØ L
74S11 E55
RACE BR INST H
74S04 E56

BUS TRANSFER

DIS BUST L = BUST H

A—FORK LOGIC SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. F.P. Lugo	DATE 7-7-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 3/21/72	
ENGR	DATE 3-21-72	
PROJ. ENG. E. Eskesen	DATE 3-21-72	
PROD.	DATE 3-30-72	

TITLE: ROM&ROM CONTRO_ (RACH)
NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE —
SHEET 8 OF 15
SIZE D | CODE CS | NUMBER M8IØ3-Ø-1 | REV —
DIST.

REVISIONS: REV | CHANGE NO | CHK

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

RACJ AFIR15(Ø) H
RACJ AFIR14(Ø) H
RACJ AFIR13(Ø) H
RACJ AFIR12(Ø) H
74S20 E41
RACF BFØ1=Ø L
RACJ AFIRØ3(1) H
74S64 E18
RACJ AFIR07(Ø) H
RACJ AFIRØ6(Ø) H
RACJ AFIRØ5(Ø) H
RACJ AFIRØ4(Ø) H
74S20 E16
RACJ AFIR11(Ø) H
RACJ AFIR1Ø(Ø) H
RACJ AFIRØ9(Ø) H
RACJ AFIRØ8(Ø) H
74S20 E3Ø
RACF IR(11:8) Ø L

RACJ AFIRØ6(Ø) H
RACJ AFIRØØ(1) H
RACF(HALT:OPCODE7) H
RACH BIN*(-SMØ1) L
RACJ AFIRØ9(1) H
RACJ AFIRØ5(Ø) H
RACJ AFIRØ3(1) H
RACJ AFIRØ4(1) H
74S64 E5
RACF A1 RABØØ L

RACJ AFIR15(Ø) L
RACE BIN L
RACE BF1=7 L
RACJ BUF AFIR11(Ø) L
RACH BF2=7 L
RACE +3V H
RACH DMØ L
74S64 E23
UCLASS
RACJ AFIR07(Ø) H
RACJ AFIRØ1(1) H
RACF UCLASS H
RACJ AFIR1Ø(1) H
RACJ AFIRØ5(Ø) H
RACJ AFIRØ4(1) H
RACH +3V H
74S64 E17
LO
RACF A1 RABØ1 L

RACF BFØ1=Ø L
RACF IR(11:8) Ø L
RACJ AFIRØ7(1) L
RACJ AFIRØ6(Ø) L
RACE +3V H
74S64 E21
RACJ AFIRØ4(1) H
RACF(RTS:CCOP) H
RACJ BUF AFIR11(1) H
RACJ AFIRØ5(1) H
RACH +3V H
74S64 E8
RACF A1 RABØ2 L

RACJ AFIR11(1) H
RACJ AFIR1Ø(1) H
RACJ AFIRØ9(Ø) H
RACJ AFIRØ8(1) H
74S20 E3Ø
RACE +3V H
RACE BF1=Ø L
RACH DMØ L
RACE BF3=5 L
74S64 E2Ø
RACF XCLASS H
NO RABØ3
RACJ AFIR07(1) H
RACJ AFIR06(Ø) H
74S0Ø E58
RACJ AFIR07(Ø) H
RACJ AFIR15(Ø) H
74S1Ø E6Ø
74S0Ø E4
RACF A1 RABØ5 L
RACJ AFIR04(Ø) H
RACJ AFIR05(Ø) H
RACJ AFIR03(1) H
74S1Ø E3

RACE BIN + SMØ H
RACH DF7 + BRQ H
RACH DMØ H
74S1Ø E1Ø
RACF A2 RABØ3 L

RACF XCLASS H
74S04 E34
RACF A2 RABØ5 L

RACJ AFIR15(1) L
IRCH C(1) H
RACH AFIRØ9A(1) H
74S0Ø E58
IRCH Z(1) H
RACH AFIR1ØA(Ø) H
74S1Ø E55
IRCH N(1) H
RACH AFIRØ9A(Ø) H
74S1Ø E59
IRCH V(1) H
RACH AFIR1ØA(1) H
74S1Ø E48
74S64 E47
RACF TRUE1 H
TRUE BRANCH

RACJ AFIR15(Ø) L
RACH AFIRØ9A(1) H
IRCH Z(1) H
IRCH N(1) H
IRCH V(Ø) H
RACH AFIR1ØA(1) H
IRCH N(Ø) H
IRCH V(1) H
RACH AFIR1ØA(Ø) H
RACH AFIRØ9A(Ø) H
74S0Ø E58
74S1Ø E59
74S1Ø E48
74S0Ø E58
74S64 E46
RACF TRUE2 H

BC OK = BR INSR * [IR08(1) * (TRUE1 + TRUE2) + IRP8(Ø) * (TRUE1 + TRUE2)]

UCLASS = (MUL:ASHC) * DMØ + SOB + BIN
XCLASS = MARK + MTP + MFP * DMØ

A-FORK LOGIC — SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 Caberry DATE 7/8/71
CHKD. DATE 5/21/72
ENG. S Perkins DATE 7-21-72
PROJ ENG. C Bukacek DATE 7-21-72
PROD. DATE 8-30-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ROM & ROM CONTROL (RACF)

NEXT HIGHER ASSY. B-DD-KB11-0
SIZE D | CODE CS | NUMBER M8103-0-1 | REV. H
SCALE —
SHEET 7 OF 15
DIST.

REVISIONS | REV. | CHANGE NO | CHK

DEC FORM NO. 2170-102-B

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

R137 NOT USED
R138 150Ω
+5V

TIGC TIB H
RACA UIRKA H
UBCB BUS LOAD H
BJ1
BK1
74S64 E39

KACJ CLK AFIR L

PDRA BRMX 15 H — BP1 — RACJ AFIR15(1) H — RACJ AFIR15(Ø) H — 74S74 E38
PDRA BRMX 14 H — BN1 — RACJ AFIR14(1) H — RACJ AFIR14(Ø) H — 74S74 E38
PDRA BRMX 13 H — BM1 — RACJ AFIR13(1) H — RACJ AFIR13(Ø) H — 74S74 E37
PDRA BRMX 12 H — BL1 — RACJ AFIR12(1) H — RACJ AFIR12(Ø) H — 74S74 E37

PDRA BRMX 11 H — BE1 — RACJ AFIR11(1) H — RACJ AFIR11(Ø) H — RACJ BUF AFIR11(1) H — 74S74 E26, 74S04 E6
PDRA BRMX 10 H — BD1 — RACJ AFIR10(1) H — RACJ AFIR10(Ø) H — 74S74 E26
PDRA BRMX Ø9 H — BC1 — RACJ AFIRØ9(1) H — RACJ AFIRØ9(Ø) H — 74S74 E25
PDRA BRMX Ø8 H — BB1 — RACJ AFIRØ8(1) H — RACJ AFIRØ8(Ø) H — RACJ BUF AFIRØ8(1) H — 74S74 E25, 74S04 E27

PDRA BRMX Ø7 H — AU1 — RACJ AFIRØ7(1) H — RACJ AFIRØ7(Ø) H — 74S74 E14
PDRA BRMX Ø6 H — AS1 — RACJ AFIRØ6(1) H — RACJ AFIRØ6(Ø) H — 74S74 E14
PDRA BRMX Ø5 H — AR1 — RACJ AFIRØ5(1) H — RACJ AFIRØ5(Ø) H — 74S74 E13
PDRA BRMX Ø4 H — AP1 — RACJ AFIRØ4(1) H — RACJ AFIRØ4(Ø) H — 74S74 E13

PDRA BRMX Ø3 H — AT2 — RACJ AFIRØ3(1) H — RACJ AFIRØ3(Ø) H — 74S74 E2
PDRA BRMX Ø2 H — AS2 — RACJ AFIRØ2(1) H — RACJ AFIRØ2(Ø) H — 74S74 E2
PDRA BRMX Ø1 H — AR2 — RACJ AFIRØ1(1) H — RACJ AFIRØ1(Ø) H — 74S74 E1
PDRA BRMX ØØ H — AP2 — RACJ AFIRØØ(1) H — RACJ AFIRØØ(Ø) H — 74S74 E1

74S04 E27 (×5)
74S40 E15 (×2)

INSTRUCTION REG. (A-FORK COPY) SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.		7-7-72
CHK'D		3-21-72
ENG.		3-21-72
PROJ ENG.	E. Eriksen	3-21-72
PROD.		3-30-72

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE
SHEET 9 OF 15

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
ROM ξ
ROM CONTROL
(RACJ)

SIZE	CODE	NUMBER	REV.
D		CS M8103-3-1	H

DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. 12RD 102-B

SIZE D CODE CS M8103-3-1 REV H

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

RACD UBEF Ø3 H
74S04 E57
RACK +3V H
UBCE RIP+FP SYNC L
TIGC TIB L (DR1)
TIGC TIB H (BJ1)
74S74-45 E68
74S11 E66
74S04 E52
RACK SYNC BRC1Ø (1) H
BEN
GND Ø9
1 IRCD DM357 H
2 IRCF E2 (1) H
3 GRAJ SC=Ø L
4 GRAB OBD (Ø) H
5 GRAB BR14 L
6 DAPA BR14 L
7 GND Ø9
74S153 E49
BE (Ø:7) BIT 5
BIT 5
RACD UBEFA Ø1 L
RACD UBEFA ØØ L
74S64 E51
RACK BRCAB Ø5 L
+40 COND FOR BEN
CORRESPONDS TO BLOCK DIAG. BEN TABLE
RACD UBEF Ø3 L
RACK SYNC BRC1Ø (1) H
GRAJ SC=Ø L (BV2)
TMCA CONE (1) H
TMCB PF(Ø)*(SF+TF) H
GND Ø4
IRCB FJ CLASS L
GRAD DRØØ H
74S153 E59
BEN
BER (1Ø:17) BIT 3
RACD UBEFB Ø1 L
RACD UBEFB ØØ L
RACD UBEF Ø2 L
74S04 E52
GND Ø9
GRAE SR EQ ONE L
UBCC (PWRF+INTR) L
GRAJ SC Ø5 L
IRCH N (1) H (BH2)
GRAJ DIV QUIT L
SSRA PS RESTORE (1) H
TMCB BRQ *-(T+CONF) L
74S153 E63
BE (Ø:7) BIT 4
RACD UBEFA Ø1 L
RACD UBEFA ØØ L
RACK FP REQ H
74S10 E60
GRAD DRØØ H
TMCB BRQ TRUE L (AK1)
TMCB PF(Ø)*(SF+-TF) H
GND Ø9
IRCC O CLASS L
GRAH SR15 H
74S153 E64
BEN
BE (1Ø:17) BIT 4
RACK SYNC BRC1Ø (1) H
FRMF FP REQ WR H
74S11 E55
FLAGS IN TMCB
FRMU FP REQ L
+5V
R129 330
R130 680
74S04 E56
1ØCF2
RACK FP REQ H
RACD UBEF Ø3 L
74S04 E72
1:N:1 BEF (1:Ø) Ø H
UBCF CNSL Ø7 (1) H
74S10 E53
RACK BRCAB Ø7 L
RACK BEF (3:2) 3 H
(CNSOLE ACTIVE)
UBCF CNSL ACT (1) H
74S04 E52
UBCH CNSL Ø2 H
UBCH CNSL Ø1 H
UBCH CNSL ØØ H
74S10 E67
RACK BRCAB Ø6 L
RACK BRCAB Ø2 L
RACK BRCAB Ø1 L
RACK BRCAB ØØ L
74S11 E66
74S11 E69
RACK BEF (1:Ø) Ø H
BEN BIT 5
74S64 E65
RACK BRCAB Ø4 L
+20 COND FOR BEN
RACK +3V H
74S11 E66
RACK BEF (3:2) 3 H
74S11 E69
RACK BEF (1:Ø) 1 H
74S04 E72

74S153	S1	SØ	OUTPUT
STB=L	L	L	A→F
	L	H	B→F
	H	L	C→F
	H	H	D→F
STB=H	X	X	F=L

BRANCH CONDITIONS (ROM ADDRESS MODIFICATION) SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. Davis	DATE 7-8-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D	DATE 3/21/72	
ENG. Glen Irving	DATE 3-21-72	TITLE ROM & ROM CONTROL
PROJ. ENG. S Eriksen	DATE 3-21-72	
PROD. G Hinch	DATE 3-30-72	
NEXT HIGHER ASSY. B-DD-KB11-Ø		(RACK)
SCALE	SIZE D	CODE CS NUMBER M81Ø3-Ø-1 REV. H
SHEET 10 OF 15	DIST.	

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DRD 102-B

SIZE D CODE CS NUMBER M81Ø3-Ø-1 REV H

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

RACL +3V H

IRCB BØ RABØ3 L — DL2
IRCC CØ RABØ3 L — DP2
RACD UADRØ3 L
RACE AØ RABØ3 L
RACF A2 RABØ3 L
RACE AØ RABØ5 L
74S64 E74 → RACL RADRØ3 H

RACD UAFEN L → 74S04 E84

IRCB BØ RABØ2 L — DL1
IRCC CØ RABØ2 L — DM1
RACD UADRØ2 L
RACK BRCABØ2 L
RACE AØ RABØ2 L
RACF A1 RABØ2 L
RACH A2 RABØ2 L
74S64 E75 → RACL RADRØ2 H

RACD UBFEN L
IRCB FJCLASS L
RACK BEF(1:Ø)1 H
RACK BEF(3:2)3 H
(CE1)
74S64 E71

GRAB OBD(1) H — DF2
RACD UBEFØ3 L
RACD UBEFØ2 L → 74S04 E72

IRCB BØ RABØ1 L — DA1
IRCC CØ RABØ1 L — DN1
RACD UADRØ1 L
RACK BRCABØ1 L
RACE AØ RABØ1 L
RACF A1 RABØ1 L
RACH A2 RABØ1 L
74S64 E76 → RACL RADRØ1 H

RACD UCFEN L
IRCC SM357 H — DD1
RACK BEF(1:Ø)Ø H
RACK BEF(3:2)3 H
74S64 E7Ø

IRCC CØ RABØØ L — DP1
RACD UADRØØ L
RACK BRCABØØ L
IRCB BØ RABØØ L — DK1
IRCB B1 RABØØ L — DM2
RACE AØ RABØØ L
RACF A1 RABØØ L
RACH A2 RABØØ L
74S64 E77 → RACL RADRØØ H

UADR BITS USED IF NO SPECIAL UADR BETWEEN ETC. BRANCH ADDR. BITS DO GENERATES NEXT uaddr.

DISABLE BFORK: $\overline{\text{UBFEN}}$ + BE15 * $\overline{\text{FJCLASS}}$ + BEØ5 * OBD
DISABLE CFORK: $\overline{\text{UCFEN}}$ + BE14 * SM357

IRCC DSTMØ L — DE2
RACE AØ RABØ4 L
RACH AØ RABØ7 L
RACK BRCABØ7 L
RACD UADRØ7 L
74S64 E83 → RACL RADRØ7 H

IRCC DSTMØ H — DS1
RACD UADRØ6 L
RACK BRCABØ6 L
RACE AØ RABØ4 L
RACH A2 RABØØ L
74S64 E82 → RACL RADRØ6 H

IRCB BØ RABØ4 L — (DF1)
RACD UADRØ5 L
RACK BRCABØ5 L
RACE AØ RABØ5 L
RACF A1 RABØ5 L
RACF A2 RABØ5 L
74S64 E81 → RACL RADRØ5 H

RACD UADRØ4 L
RACK BRCABØ4 L
RACE AØ RABØ4 L
RACH A1 RABØ4 L
IRCB BØ RABØ4 L — DF1
IRCB BØ RABØ3 L — (DL2)
74S64 E8Ø → RACL RADRØ4 H

74S04 E72 → RACL +3V H

ROM ADDRESS SELECTION — SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 7-8-71
CHK. — DATE 3/21/72
ENG. S. Jenkins — DATE 3-21-72
PROJ ENG. E. Anderson — DATE 3-21-72
PROD. — DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ROM & ROM CONTROL (RACL)

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE —
SHEET 15 OF 15

SIZE D | CODE CS | NUMBER M8IØ3-Ø-1 | REV. H
DIST.

REVISIONS: REV | CHK | CHANGE NO

DEC FORM NO. DRD 102-B

SIZE D | CODE CS | NUMBER M8IØ3-Ø-1 | REV H

FLOWS	STATE	ADR	BRK	BRX	SRX	DRX	SRK	DRK	CCL	PCA	PCB	SHF	IRK	PWE	PAD	BSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD
12	RSD,00	000	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	345
5	D12,00	001	1	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	7	6	2	0	0	2	0	15	115
5	D12,01	002	1	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	7	6	2	0	0	2	0	15	115
5	D30,00	003	0	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	7	0	2	0	0	2	0	00	221
6	D45,00	004	0	0	0	0	0	3	0	1	3	2	0	2	5	0	1	0	0	7	0	0	0	0	3	6	0	01	122
6	D45,01	005	0	0	0	0	0	3	0	1	3	2	0	2	5	0	1	0	0	7	0	0	0	0	3	6	0	01	122
6	D67,00	006	1	1	0	2	0	3	0	1	0	2	0	0	5	2	1	0	0	0	0	0	1	0	1	3	0	00	251
6	D67,01	007	1	1	0	2	0	3	0	1	0	2	0	0	5	2	1	0	0	0	0	0	1	0	1	3	0	00	251
3	HLT,00	010	1	1	0	1	1	3	0	0	0	1	0	0	6	0	1	3	0	7	0	0	0	0	0	0	0	00	327
3	WAT,00	011	0	0	0	1	0	3	0	0	0	2	0	0	6	0	1	0	0	7	0	0	0	0	0	2	0	12	244
2	RTI,00	012	0	0	1	0	1	0	0	0	0	2	0	0	7	0	1	0	0	7	0	0	3	0	0	2	0	00	156
12	TRP,01	013	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	354
12	TRP,02	014	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	354
3	RES,00	015	0	0	0	1	0	3	0	0	0	2	0	0	6	0	1	0	0	7	0	0	3	0	0	2	0	00	255
2	RTI,01	016	0	0	1	0	1	0	0	0	0	2	0	0	7	0	1	0	0	7	0	0	3	0	0	2	0	00	156
12	RSD,01	017	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	345
3	EXC,80	020	1	1	0	0	0	0	1	0	1	2	1	1	5	3	1	0	0	0	6	0	0	2	0	7	0	00	343
1	S13,00	021	0	0	0	0	0	0	0	1	2	2	0	2	0	0	2	0	0	0	7	1	2	0	2	3	0	00	027
1	S13,01	022	0	0	0	0	0	0	0	1	2	2	0	2	0	0	2	0	0	0	7	1	2	0	2	3	0	00	027
1	S45,10	023	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	7	1	0	0	0	0	0	00	027
1	S45,00	024	0	0	0	0	1	0	0	1	2	2	0	2	0	0	1	0	0	7	0	0	2	0	2	6	0	00	023
13	SVC,60	025	0	0	0	0	0	0	0	0	0	2	0	2	7	0	0	0	0	7	5	0	0	1	6	0	00	041
2	S67,00	026	1	1	2	2	1	3	0	0	0	2	0	0	1	2	1	0	0	0	0	0	1	0	1	3	0	00	054
1	S13,10	027	1	1	0	2	0	3	0	0	0	1	0	0	5	3	2	0	0	0	6	1	0	0	0	0	4	14	317
3	EXC,90	030	0	0	0	0	0	0	1	1	3	2	0	1	5	0	1	0	0	7	6	0	0	2	0	7	0	00	217
11	EXC,00	031	1	0	0	0	0	0	1	0	0	2	0	0	6	0	0	0	0	0	7	6	3	2	0	7	0	00	132
11	TST,00	032	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	6	6	3	2	0	7	0	00	217
11	TST,10	033	0	0	0	0	0	0	1	0	0	2	0	0	5	0	1	0	0	0	7	0	3	2	0	7	0	12	240
11	JSR,00	034	0	0	2	0	1	0	0	1	0	1	0	0	0	0	0	0	0	7	0	0	0	0	0	2	0	00	201
11	JMP,00	035	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	7	6	0	0	0	0	2	0	00	217
7	FOP,40	036	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	7	1	0	0	0	0	2	0	00	225
13	SVC,50	037	0	0	0	0	0	3	0	0	0	2	0	2	7	0	0	0	0	0	0	0	0	0	1	6	0	00	025
2	RTS,00	040	0	0	1	0	1	0	0	1	1	2	0	0	7	0	1	0	0	7	0	0	0	0	0	2	0	00	223
13	SVC,70	041	1	0	0	1	0	3	0	0	0	2	0	0	7	3	0	0	0	0	0	5	2	0	0	2	0	00	222
12	RSD,02	042	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	345
3	SPL,00	043	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7	4	0	3	0	0	2	0	00	361
3	CCP,00	044	0	0	0	0	0	0	2	0	0	2	0	0	0	0	1	0	0	7	6	0	3	0	0	2	0	00	217
1	MTP,00	045	0	0	0	0	0	0	0	0	0	2	0	2	7	0	1	0	0	7	0	0	2	0	1	3	0	00	151
11	MFP,80	046	0	0	0	2	0	3	0	0	0	1	0	1	5	0	1	0	0	7	0	0	0	0	0	0	0	00	304
2	MRK,00	047	0	0	1	0	1	3	0	0	0	2	0	0	2	0	1	0	0	7	0	0	1	1	2	3	0	00	252
3	MUL,80	050	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3	7	0	0	0	0	0	2	0	00	102
3	DVS,00	051	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7	0	0	0	0	0	2	0	00	061
7	ASH,10	052	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	2	7	0	0	2	0	0	2	0	00	305
7	ASC,10	053	0	0	0	1	0	3	0	0	0	2	0	0	4	0	1	0	2	7	0	0	2	0	0	2	0	00	306
2	S67,10	054	0	0	0	0	1	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0	2	3	0	3	0	00	141
9	DVN,40	055	0	0	0	0	0	3	4	0	0	2	0	2	0	0	0	0	0	0	0	0	0	2	0	6	0	00	056
9	DVN,50	056	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	306
2	SOB,00	057	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	7	6	0	1	1	2	6	0	01	242
8	MUL,00	060	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	3	0	0	6	3	0	0	2	0	00	102
9	DIV,00	061	0	0	0	1	1	3	4	0	0	2	0	0	0	0	0	0	0	0	0	6	3	0	0	2	0	00	254
7	ASH,00	062	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	6	3	0	0	2	0	00	052
7	ASC,00	063	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	6	3	0	0	2	0	00	053
11	SHR,00	064	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	6	3	0	0	7	0	00	123
13	SVC,10	065	0	0	0	0	1	0	0	0	1	1	0	0	6	0	0	0	0	0	7	2	0	0	0	0	0	00	357
11	MFP,00	066	0	0	1	0	1	0	1	0	0	2	0	0	7	0	0	0	0	0	0	6	3	0	0	2	0	00	250
11	NEG,00	067	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	6	3	0	0	7	0	00	271
14	EXM,10	070	0	0	0	0	0	0	0	0	0	0	0	0	6	0	2	0	0	0	7	0	0	0	0	0	0	00	153
14	EXM,00	071	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	1	3	0	00	070
14	RAD,00	072	0	0	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0	0	0	0	2	0	0	2	0	00	314
14	DEP,10	073	0	0	0	0	0	0	0	0	0	2	0	0	6	0	2	0	0	0	7	5	3	0	0	2	0	00	303
14	DEP,00	074	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	1	3	0	00	073
14	RDP,00	075	0	0	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0	0	0	0	2	0	0	2	0	00	307
14	KST,00	076	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	2	0	0	6	0	0	0	0	0	2	0	00	015
14	CON,10	077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	130

DRN	DATE 5/23/72	TITLE ROM & ROM CONTROL (ADR 000 -077)			
CHK'D	DATE 5/23/72				
ENG Steve Jenkins	DATE 3-28-72				
PROJ. ENG. E Eriksen	DATE 3-28-72				
PROD.	DATE 3-30-72	SIZE K	CODE CS	NUMBER M 8103-0-1	REV. H
SHEET 12 OF 15					

FLOWS	STATE	ADR	BRK	BRX	SRX	DRX	SRK	DRK	CCL	PCA	PCB	SHF	IRK	PWE	PAD	BSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD
12	PUP,00	100	0	0	0	0	0	3	0	0	0	2	0	0	0	0	1	0	0	6	0	0	0	1	0	1	0	00	347
2	FOP,00	101	0	0	0	0	1	0	0	1	1	2	0	0	0	0	1	0	0	7	1	0	1	0	1	6	0	00	133
8	MUL,10	102	1	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	3	0	6	0	11	246
9	DVP,10	103	0	0	0	1	0	3	0	0	0	2	0	0	4	0	2	0	3	0	0	0	0	0	0	2	0	00	147
9	DVN,10	104	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	0	2	0	6	0	00	105
9	DVN,20	105	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	00	106
9	DVN,30	106	0	0	1	0	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	00	055
9	DVN,70	107	0	0	0	1	0	3	4	0	0	2	0	0	4	0	0	0	3	0	0	0	0	0	0	6	0	00	147
5	D12,90	110	0	0	0	0	1	0	3	0	0	0	0	0	5	0	0	0	0	0	7	6	3	0	0	2	0	15	135
5	D12,80	111	0	0	0	0	1	0	3	0	0	2	0	0	5	0	0	0	0	0	7	6	3	0	0	2	0	15	115
5	D30,90	112	0	0	0	0	1	0	3	0	0	0	0	0	5	0	0	0	0	0	7	0	3	0	0	2	0	00	221
5	D30,80	113	0	0	0	0	1	0	3	0	0	2	0	0	5	0	0	0	0	0	7	0	3	0	0	2	0	00	221
6	D45,90	114	0	0	0	0	0	3	3	1	3	2	0	2	5	0	0	0	0	0	6	0	0	0	3	6	0	01	131
6	D45,80	115	0	0	0	0	0	3	3	1	3	2	0	2	5	0	0	0	0	0	0	0	0	0	3	6	0	01	121
6	D67,90	116	0	0	0	0	1	0	3	0	0	0	0	0	6	0	1	0	0	0	7	0	3	0	0	2	0	00	006
6	D67,80	117	0	0	0	0	1	0	3	0	0	2	0	0	6	0	1	0	0	0	7	0	3	0	0	2	0	00	006
12	BRK,20	120	1	1	0	0	0	0	0	0	0	2	0	0	0	0	1	3	0	6	0	0	0	0	0	2	0	02	152
6	D40,20	121	0	0	0	0	1	0	0	0	0	2	0	0	5	0	0	0	0	0	7	6	3	0	0	2	2	15	157
6	D10,30	122	1	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	0	7	6	2	0	0	2	2	15	157
11	SHR,10	123	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	7	7	3	0	0	2	0	00	132
12	TRP,02	124	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	354
10	DVC,00	125	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	3	0	0	2	0	16	216
1	FET,05	126	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
3	WAT,30	127	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	3	0	0	3	0	0	2	0	02	253
12	BRK,10	130	0	0	0	0	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3	0	0	2	0	13	100
6	D40,30	131	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	7	6	3	0	0	2	2	15	177
11	EXC,10	132	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	6	7	3	0	0	2	0	00	217
2	FOP,10	133	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3	0	0	2	0	07	154
14	EXM,30	134	0	0	0	0	0	3	0	0	0	2	0	0	0	0	2	0	0	0	0	0	3	0	0	2	0	00	230
5	D12,70	135	0	0	0	0	0	0	0	1	3	2	0	2	5	0	0	0	0	7	6	0	0	0	3	3	2	00	137
7	ASC,61	136	0	0	0	0	0	0	6	0	0	2	0	2	4	0	1	0	0	0	7	0	0	0	0	2	0	12	240
5	D12,30	137	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	2	2	00	377

FLOWS	STATE	ADR	BRK	BRX	SRX	DRX	SRK	DRK	CCL	PCA	PCB	SHF	IRK	PWE	PAD	BSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD
12	BRK,80	140	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	0	0	0	0	1	1	1	0	00	152
2	S67,20	141	0	0	0	0	0	0	0	0	0	1	0	0	6	0	2	0	0	0	7	1	0	0	0	0	0	00	142
2	S67,30	142	1	1	0	0	0	0	0	0	0	1	0	0	0	3	2	0	0	0	6	1	0	0	0	0	4	14	317
2	S13,30	143	0	0	0	0	0	0	0	0	0	1	0	0	6	0	2	0	0	0	7	3	0	0	0	0	0	00	146
10	DVD,00	144	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	04	353
9	DVE,20	145	0	0	0	0	0	0	7	0	0	2	0	0	0	0	2	0	0	0	6	0	0	0	0	2	0	00	164
2	S13,40	146	1	1	0	0	0	0	0	0	0	1	0	0	0	3	2	0	0	0	6	3	0	0	0	0	4	00	377
9	DIV,30	147	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	7	0	16	346
12	FSV,10	150	1	1	0	0	0	3	0	0	0	2	0	0	0	3	0	0	0	0	1	4	0	0	1	3	0	00	225
1	MTP,10	151	0	0	0	2	0	3	0	0	0	1	0	0	5	0	2	0	0	0	7	3	0	0	0	0	0	00	146
12	BRK,30	152	0	0	0	0	0	0	0	1	0	2	0	0	6	0	0	0	0	6	7	2	3	0	0	2	0	00	355
14	EXM,20	153	1	1	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	00	134
12	BRK,00	154	1	1	0	0	1	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	1	0	0	2	0	12	130
5	D12,60	155	0	0	0	0	0	0	0	1	3	2	0	2	5	3	0	0	0	0	6	6	0	0	3	3	0	00	312
2	RTI,10	156	0	0	0	0	0	0	0	0	0	2	0	0	7	0	2	0	0	0	7	0	3	0	0	2	0	00	212
6	D10,40	157	0	0	0	0	0	0	1	0	0	2	0	0	0	3	0	0	0	0	6	6	3	0	0	2	0	00	331
12	SER,00	160	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	00	344
6	D50,20	161	0	0	0	0	1	0	0	0	0	2	0	0	5	0	0	0	0	0	7	0	3	0	0	2	0	00	231
6	D10,00	162	0	0	0	0	0	0	0	0	0	1	0	0	5	0	0	0	0	0	7	0	3	0	0	2	0	00	231
11	NEG,20	163	0	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	0	7	7	3	0	0	2	0	00	132
1	FET,04	164	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
9	DIV,70	165	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	7	0	04	323
7	ASH,41	166	0	0	0	0	1	0	5	0	0	2	0	2	0	0	1	0	1	0	6	0	2	0	0	5	0	03	126
14	CON,01	167	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	2	0	14	070
14	CON,00	170	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	2	0	14	070
6	D50,30	171	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	7	0	3	0	0	2	0	00	231
2	RTI,60	172	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	6	0	0	0	0	0	0	00	217
2	FOP,30	173	1	1	0	0	0	0	0	1	1	2	0	0	0	0	3	0	0	1	0	0	1	0	1	3	4	00	377
2	FOP,20	174	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	6	0	3	0	0	2	0	10	133
5	D12,10	175	1	1	0	0	0	0	0	1	3	2	0	2	5	2	0	0	0	0	6	6	0	0	3	3	2	05	137
7	ASC,31	176	0	0	0	0	1	2	5	0	0	2	0	2	0	0	0	0	1	0	6	0	2	0	0	7	0	03	136
6	D10,60	177	1	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	6	6	3	0	0	2	2	05	137

DRN	DATE 3/23/72	TITLE ROM & ROM CONTROL (ADR 100 - 177)	
CHK'D	DATE 3/23/72		
ENG. Stu Jenkins	DATE 3-28-72		
PROJ. ENG. E Eriksen	DATE 3-28-72		
PROD.	DATE 3-30-72	SIZE K / CODE CS / NUMBER M8103-0-1 / REV. H	
SHEET 13 OF 15			

FLOWS	STATE	ADR	BRK	BRX	SRX	DRX	SRK	DRK	CCL	PCA	PCB	SHF	IRK	PWE	PAD	BSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD
12	ZAP,00	200	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7	6	0	0	0	0	2	0	06	352
11	JSR,10	201	1	0	0	1	0	3	0	0	0	2	0	0	7	0	1	0	0	0	6	0	2	0	0	2	0	00	274
4	D07,0C	202	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	030
4	D07,10	203	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	030
4	D00,80	204	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	3	0	0	2	0	00	205
4	D00,90	205	0	0	0	0	0	0	1	0	0	2	0	1	5	0	1	0	0	0	7	0	0	3	0	7	0	12	240
8	MUL,40	206	1	0	0	0	0	1	4	0	0	3	0	2	0	0	0	0	0	0	6	0	3	0	0	2	0	00	310
7	ASC,80	207	0	0	0	0	0	0	6	0	0	2	0	0	0	0	1	0	0	0	7	0	0	0	0	2	0	12	240
3	NEG,90	210	0	0	0	0	0	0	1	1	3	2	0	1	5	0	2	0	0	0	6	0	2	0	0	3	0	00	217
4	FOP,50	211	0	0	0	0	0	0	3	0	0	2	0	0	0	0	3	0	0	7	0	0	0	0	0	2	0	00	362
2	RTI,20	212	1	1	0	0	0	3	0	0	0	2	0	2	7	3	2	0	0	0	0	0	2	0	1	3	0	00	213
2	RTI,30	213	0	0	0	0	0	0	0	1	1	1	0	0	7	0	0	0	0	0	7	0	3	0	0	2	0	00	214
2	RTI,40	214	1	1	0	0	0	0	0	0	0	2	0	2	7	2	0	0	0	0	0	0	0	0	1	3	0	00	215
2	RTI,50	215	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	00	172
10	DVC,10	216	1	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	3	2	0	3	0	00	256
1	FET,00	217	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
10	DVC,90	220	0	0	0	0	0	0	4	0	0	2	0	2	0	0	0	0	0	0	6	0	0	0	0	3	0	04	144
5	D30,10	221	1	1	0	0	0	0	0	1	3	2	0	2	5	2	0	0	0	0	0	0	0	0	3	3	0	00	233
13	SVC,80	222	0	0	0	0	0	0	0	0	0	1	0	0	7	0	0	0	0	0	7	5	0	0	0	0	0	00	300
2	RTS,10	223	0	0	0	0	0	0	0	0	0	2	0	2	7	0	2	0	0	0	7	0	2	0	1	3	0	00	224
2	RTS,20	224	1	1	0	0	0	0	0	0	0	1	0	0	5	2	2	0	0	0	0	0	0	0	0	0	0	00	342
12	FSV,20	225	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	6	0	0	0	0	0	0	10	205
8	MUL,50	226	1	0	0	0	0	1	4	0	0	2	0	2	0	0	0	0	0	0	6	0	3	2	0	7	0	00	310
7	ASC,60	227	0	0	0	0	0	0	6	0	0	2	0	2	4	0	1	0	0	0	7	0	0	0	0	2	0	12	240
14	CON,20	230	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0	00	170
6	D10,10	231	1	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	3	0	0	2	0	00	233
9	DIV,20	232	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	04	241
6	D10,20	233	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	6	0	3	0	0	2	0	00	311
2	MRK,30	234	0	0	0	0	0	0	0	0	0	2	0	2	2	0	1	0	0	0	7	0	3	0	0	2	0	12	240
2	MRK,20	235	1	1	0	0	0	0	0	0	0	2	0	2	7	3	0	0	0	0	6	0	0	0	1	3	0	00	234
10	DVC,20	236	1	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	3	2	0	6	0	00	276
1	FET,07	237	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240

FLOWS	STATE	ADR	BRK	BRX	SRX	DRX	SRK	DRK	CCL	PCA	PCB	SHF	IRK	PWE	PAD	BSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD
12	BRK,90	240	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7	0	0	0	0	0	2	0	00	154
9	DVP,00	241	1	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	00	103
2	SOB,10	242	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	0	6	0	3	0	0	2	0	00	262
9	DVN,60	243	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	00	107
3	WAT,20	244	1	1	0	0	0	3	0	0	0	2	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	12	127
12	FSV,00	245	1	1	0	0	0	0	0	0	0	1	0	0	6	0	0	0	0	1	7	4	0	0	0	0	0	00	150
8	MUL,30	246	1	0	0	0	0	1	4	0	0	3	0	0	0	0	0	0	1	0	0	0	3	0	0	2	0	11	206
7	ASC,30	247	0	0	0	0	1	2	5	0	0	2	0	2	0	0	0	0	1	0	6	0	2	0	0	7	0	03	136
11	MFP,10	250	0	0	0	0	0	3	0	0	0	2	0	2	7	0	0	0	0	7	0	0	2	0	1	6	0	00	222
6	D67,10	251	0	0	0	0	0	3	0	0	1	2	0	0	0	0	1	0	0	0	6	0	0	3	0	3	0	01	122
2	MRK,10	252	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	7	0	2	0	0	2	0	00	235
12	BRK,11	253	0	0	0	0	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3	0	0	2	0	13	100
9	DIV,10	254	0	0	0	0	0	0	4	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	02	232
3	RES,10	255	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	4	0	0	0	0	0	2	0	00	374
10	DVC,30	256	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	04	350
7	ASH,40	257	0	0	0	0	1	0	5	0	0	2	0	2	0	0	1	0	1	0	6	0	2	0	0	5	0	03	126
1	FET,10	260	1	1	0	0	0	0	0	1	1	2	1	0	0	3	1	0	0	0	6	0	1	0	1	3	0	00	343
9	DVN,00	261	0	0	1	3	1	0	0	0	0	2	0	0	4	0	0	0	0	0	0	0	2	0	0	2	0	00	104
2	SOB,20	262	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	0	0	0	7	0	2	0	0	6	0	12	240
9	DVE,10	263	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	145
3	WAT,10	264	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	6	0	0	0	0	2	0	00	011
1	FET,09	265	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
8	MUL,20	266	1	0	0	0	0	1	4	0	0	3	0	0	0	0	0	0	1	0	0	0	3	2	0	3	0	11	206
7	ASC,40	267	0	0	0	0	1	1	1	0	0	3	0	2	0	0	0	0	1	0	6	0	2	0	0	2	0	03	227
14	ADR,00	270	0	0	0	3	1	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	3	0	0	2	0	00	230
11	NEG,10	271	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	6	3	0	0	3	0	05	123
9	DVE,00	272	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	6	0	2	0	0	2	0	00	164
3	WAT,11	273	0	0	0	0	0	3	0	0	0	2	0	0	0	0	1	0	0	0	6	0	0	0	0	2	0	00	011
11	JSR,20	274	0	0	0	0	0	3	0	0	0	2	0	2	7	0	0	0	0	0	0	0	0	0	1	6	0	00	275
11	JSR,30	275	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	5	7	5	0	0	0	0	0	00	300
10	DVC,40	276	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	04	351
7	ASH,30	277	0	0	0	0	1	0	1	0	0	3	0	2	0	0	1	0	1	0	6	0	2	0	0	2	0	03	237

DRN.	DATE 3/23/72	TITLE ROM & ROM CONTROL (ADR 200-277)
CHK'D	DATE 3/23/72	
ENG. Steve Jenkins	DATE 3-28-72	
PROJ. ENG. E. Eriksen	DATE 3-28-72	
PROD. J. Hansen	DATE 3-30-72	SIZE K · CODE CS · NUMBER M8103-01-1 · REV H
SHEET 14 OF 15		

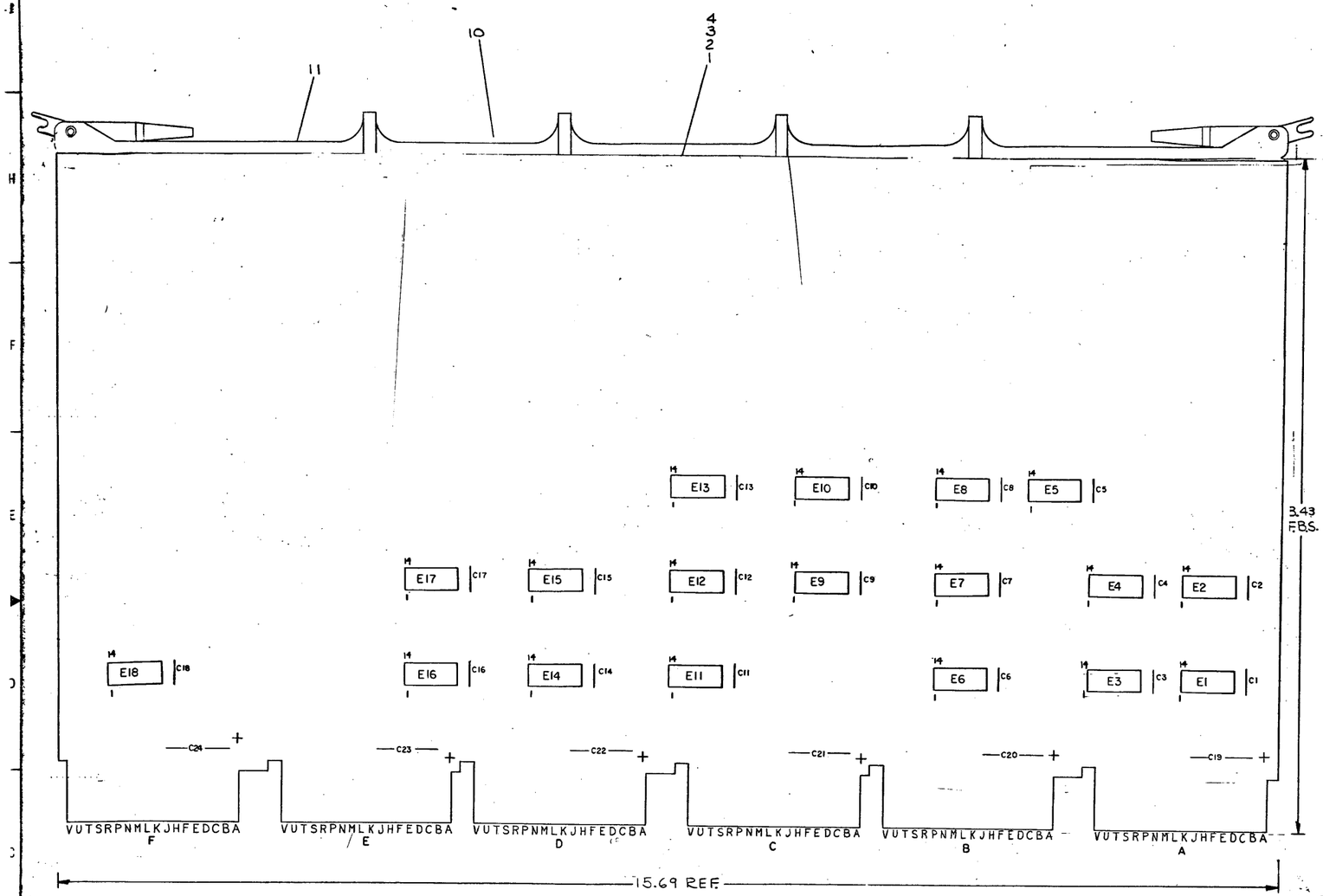
FLOWS	STATE	ADR	BRK	BRX	SRX	DRX	SRK	DRK	CCL	PCA	PCB	SHF	IRK	PWE	PAD	BSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD
13	SVC,90	300	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	6	5	3	0	0	2	0	00	217
3	NEG,70	301	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	7	0	0	0	0	0	7	0	00	210
12	ZAP,30	302	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	00	154
14	DEP,20	303	0	0	0	0	0	3	0	0	0	2	0	0	0	3	2	0	0	0	0	5	3	0	0	2	0	00	230
11	MFP,90	304	1	0	1	0	1	0	1	0	0	2	0	0	7	0	0	0	0	0	0	0	0	0	0	2	0	00	250
7	ASH,20	305	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0	0	1	0	6	0	2	0	0	2	0	03	217
7	ASC,20	306	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0	0	1	0	6	0	2	0	0	2	0	03	207
14	ROP,10	307	0	0	0	0	0	3	0	1	3	2	0	2	5	0	2	0	0	0	0	0	3	0	0	2	0	00	230
8	MUL,60	310	0	0	0	0	0	0	1	0	0	2	0	2	4	0	1	0	0	0	7	0	0	0	0	2	0	12	240
6	D10,50	311	1	0	0	0	0	0	0	0	0	2	0	0	6	0	0	0	0	0	7	6	2	0	0	2	2	15	157
5	D12,20	312	0	0	0	0	0	0	1	0	0	2	0	0	5	0	1	0	0	0	7	0	3	0	0	2	0	12	240
9	DIV,60	313	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	05	145
14	RAD,10	314	0	0	0	2	0	3	0	0	0	1	0	0	5	0	2	0	0	0	0	0	0	0	0	0	0	00	230
12	ZAP,20	315	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	00	302
4	FOP,70	316	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	3	0	0	2	0	17	316
2	S13,20	317	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3	0	0	2	0	00	143
1	BXX,00	320	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217
1	FET,11	321	1	1	0	0	0	0	0	1	1	2	1	0	0	3	1	0	0	0	6	0	1	0	1	3	0	00	343
1	FET,12	322	1	1	0	0	0	0	0	1	1	2	1	0	0	3	1	0	0	0	6	0	1	0	1	3	0	00	343
9	DIV,80	323	1	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	2	0	6	0	03	125
1	FET,13	324	1	1	0	0	0	0	0	1	1	2	1	0	0	3	1	0	0	0	6	0	1	0	1	3	0	00	343
1	BXX,01	325	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217
1	BXX,02	326	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217
3	HLT,10	327	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	3	0	3	0	0	2	0	06	124
1	BXX,03	330	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217
1	FET,01	331	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
1	FET,02	332	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
12	PUP,20	333	1	1	0	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	1	3	0	00	340
1	FET,03	334	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
1	BXX,04	335	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217
1	BXX,05	336	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217
13	XXX,XX	337	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	337

FLOWS	STATE	ADR	BRK	BRX	SRX	DRX	SRK	DRK	CCL	PCA	PCB	SHF	IRK	PWE	PAD	BSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD
12	PUP,30	340	0	0	0	0	0	0	0	1	1	2	0	0	6	0	2	0	0	0	7	0	3	0	0	2	0	00	341
12	PUP,40	341	1	1	0	0	0	0	0	0	0	1	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	00	215
2	RTS,30	342	0	0	0	0	0	0	0	1	3	2	0	2	5	0	2	0	0	0	6	0	3	0	0	2	0	00	217
1	IRD,00	343	0	0	2	2	1	3	0	1	0	1	0	0	1	0	1	0	0	0	5	0	1	0	1	3	1	00	377
12	SER,10	344	0	0	0	0	0	0	0	0	0	2	0	2	7	0	1	0	0	0	0	0	2	0	1	3	0	00	140
12	RSD,10	345	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	00	354
9	DIV,40	346	1	0	0	0	0	2	6	0	0	2	0	0	0	0	0	1	0	0	0	3	2	0	6	0	0	00	313
12	PUP,10	347	0	0	0	0	0	0	0	0	0	2	0	0	6	0	0	0	0	0	7	0	0	1	0	1	0	00	333
10	DVC,70	350	0	0	0	0	0	0	4	0	0	2	0	2	0	0	0	0	0	0	6	0	0	0	0	2	0	00	164
10	DVC,80	351	0	0	1	0	1	3	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	00	220
12	BRK,01	352	1	1	0	0	1	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	1	0	0	2	0	12	130
10	DVD,10	353	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	00	145
12	TRP,10	354	0	0	0	0	0	0	0	1	0	2	0	0	6	0	0	0	0	0	7	2	3	0	0	2	0	00	355
13	SVC,00	355	1	1	0	0	0	3	0	0	0	2	0	0	3	0	0	0	0	0	0	2	0	0	1	3	0	00	065
1	FET,08	356	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
13	SVC,20	357	1	1	0	0	0	3	0	1	1	1	0	0	0	3	0	0	0	0	0	2	3	0	0	2	0	00	360
13	SVC,30	360	1	0	0	0	0	0	0	1	0	2	0	0	7	0	0	2	0	0	0	2	0	0	0	2	0	00	367
3	SPL,10	361	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3	7	0	0	0	0	0	0	00	260
4	FOP,60	362	1	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	1	0	0	0	0	2	0	00	316
9	DIV,90	363	1	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	2	0	3	0	03	125
13	XXX,XX	364	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	364
13	XXX,XX	365	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	365
9	DIV,50	366	1	0	0	0	0	2	6	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	313
13	SVC,40	367	0	0	0	1	0	3	0	0	0	1	0	0	7	0	0	0	0	0	0	0	3	2	0	3	0	00	037
10	DVC,50	370	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	3	0	0	3	0	00	351
10	DVC,60	371	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	3	0	0	3	0	00	350
12	ZAP,10	372	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	00	315
1	FET,06	373	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240
3	RES,20	374	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	2	6	0	0	0	0	2	0	10	334
4	FOP,90	375	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	2	6	0	0	0	0	2	0	10	334
4	FOP,80	376	1	1	0	0	0	0	0	0	0	2	0	2	5	0	3	0	0	0	1	0	3	0	0	2	0	00	316
13	XXX,XX	377	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	1	0	0	3	0	0	2	0	00	375
																	1	0	0	0	0	0	0	0	0	2	0	00	377

DRN.	DATE 3/23/72	TITLE
CHK'D	DATE 3/23/72	ROM & ROM CONTROL
ENG. Steve Jenkins	DATE 3-28-72	(ADR 300 - 377)
PROJ. ENG. E. Eriksen	DATE 3-28-72	
PROD.	DATE 3-30-72	SIZE K · CODE CS · NUMBER M8103-0-1 · REV. H
SHEET 15 OF 15		

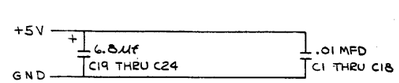
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as are here for the manufacture or sale of items without written permission.

NOTES:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS. CAPS. WITHOUT VALUE NOTED ARE .01, MFD.



AA2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV1

AC2, AN2, AT1, BC2, BN2, BT1, CC2, CN2, CT1, DC2, DN2, DT1, EC2, EN2, ET1, FC2



ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
11	1		HANDLE, MODULE	E-PS-1210711-2
10	12		EYELET	9006732
9	6	E1, E2, E8, E10, E14, E17	IC DEC 74S11	1910537
8	5	E6, E7, E9, E11, E12	IC DEC 8881	1909705
7	7	E3, E4, E5, E13, E15, E16, E18	IC DEC 7404	1909686
6	18	C1 THRU C18	CAPACITOR .01uf, 100, 20% DISC	1001610
5	6	C19 THRU C24	CAPACITOR 6.8uf, 35V, 10%	1005306
4	1		ETCHED CIRCUIT BOARD	5009950
3	REF		MODULE ECO HISTORY	B-MH-MB116-0-6
2	REF		ASSY/DRILLING HOLE LAYOUT	E-AH-MB116-0-5
1	REF		X-Y COORDINATE HOLE LOCATION	K-CO-MB116-0-4

PARTS LIST

ETCH BOARD REV | A | B | C

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

REV	CHG NO.	REVISIONS
A	ECO M1572	ADDED E6
B	ECO M1572	CHANGED E6

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

SEMICONDUCTOR CONVERSION CHART

DRN K.W. DATE 4-17-72
CHK'D DATE
ENG R.C.Gray DATE 7/12/72
PROJ. SYS. DATE
PROD. DATE

NEXT HIGHER ASSY B-ED-11/A5-C

SCALE 2/1 SHEET 1 OF 3

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE SYSTEM ADDRESS BUFFERS

SIZE C | CODE | NUMBER E S M8116-0-1 | REV. B

DEC FORM NO. DNC 3004

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

PHYSICAL ADDRESS

SIZE D CODE CS NUMBER M8116-Ø-1 REV B

UBCA CPBSY B H — CL2 — 8881 E7 — 4 BR1 — BUSA AØØ L
+3V — 74S11 E2 — AF2 — DAPB BAMX ØØ H
74Ø4 E4 — 74Ø4 E4 — AR2 — (SAPK DISP ADR ØØ H)
DAP C BAMXØ6 H — BT2 — 74S11 E8 — 74Ø4 E5 — 74Ø4 E5 — FM1 — (SAPK DISP ADRØ6 H)
UBCA CPBSY B H — BP2 — (SAPJ PA06 H) — 8881 E7 — BJ1 — BUSA AØ6 L

UBCA CPBSY B H — 8881 E7 — BP1 — BUSA AØ1 L
+3V — 74S11 E2 — AJ2 — DAPB BAMX Ø1 H
74Ø4 E4 — 74Ø4 E4 — AS2 — (SAPK DISP ADR Ø1 H)
DAP C BAMXØ7 H — BM2 — 74S11 E8 — 74Ø4 E5 — 74Ø4 E5 — BP1 — (SAPK DISP ADR Ø7 H)
UBCA CPBSY B H — BL2 — (SAPJ PAØ7 H) — 8881 E6 — BK2 — BUSA AØ7 L
+3V — 74S11 E17 — EE1 — DAPD BAMX12 H
UBCA CPBSY B H — CK2 — (SAPJ PA12 H) — 74Ø4 E15 — 74Ø4 E15 — EC1 — (SAPK DISP ADR12 H)
8881 E12 — CP2 — BUSA A12 L

UBCA CPBSY B H — 8881 E7 — BN1 — BUSA AØ2 L
+3V — 74S11 E2 — AK2 — DAPB BAMX Ø2 H
74Ø4 E4 — 74Ø4 E4 — AF1 — (SAPK DISP ADRØ2 H)
DAPC BAMXØ8 H — CB1 — 74S11 E10 — 74Ø4 E13 — 74Ø4 E13 — FE1 — (SAPK DISP ADRØ8 H)
UBCA CPBSY B H — CA1 — (SAPJ PAØ8 H) — 8881 E9 — BH2 — BUSA AØ8 L
+3V — 74S11 E14 — DM1 — DAPD BAMX13 H
UBCA CPBSY B H — CD2 — (SAPJ PA13 H) — 74Ø4 E16 — 74Ø4 E16 — DL2 — (SAPK DISP ADR13 H)
8881 E11 — CT2 — BUSA A13 L

UBCA CPBSY B H — 8881 E6 — BM1 — BUSA AØ3 L
+3V — 74S11 E1 — AH2 — DAPB BAMX Ø3 H
74Ø4 E3 — 74Ø4 E3 — AK1 — (SAPK DISP ADRØ3 H)
DAPC BAMXØ9 H — EH2 — 74S11 E8 — 74Ø4 E5 — 74Ø4 E5 — ED2 — (SAPK DISP ADRØ9 H)
UBCA CPBSY B H — BV2 — (SAPJ PAØ9 H) — 8881 E9 — CS1 — BUSA AØ9 L
+3V — 74S11 E14 — DR1 — DAPD BAMX14 H
UBCA CPBSY B H — CJ1 — (SAPJ PA14 H) — 74Ø4 E16 — 74Ø4 E16 — DL1 — (SAPK DISP ADR14 H)
8881 E11 — CJ2 — BUSA A14 L

UBCA CPBSY B H — 8881 E6 — BL1 — BUSA AØ4 L
+3V — 74S11 E1 — AE2 — DAPB BAMX Ø4 H
74Ø4 E3 — 74Ø4 E3 — AE1 — (SAPK DISP ADRØ4 H)
DAPC BAMXIØ H — EE2 — 74S11 E10 — 74Ø4 E13 — 74Ø4 E13 — ED1 — (SAPK DISP ADRIØ H)
UBCA CPBSY B H — CH2 — (SAPJ PAIØ H) — 8881 E9 — CM2 — BUSA AIØ L
+3V — 74S11 E14 — DK1 — DAPD BAMX15 H
UBCA CPBSY B H — CF2 — (SAPJ PA15 H) — 74Ø4 E16 — 74Ø4 E16 — DK2 — (SAPK DISP ADR15 H)
8881 E11 — CU1 — BUSA A15 L

UBCA CPBSY B H — 8881 E6 — BK1 — BUSA AØ5 L
+3V — 74S11 E1 — BA1 — DAPB BAMX Ø5 H
74Ø4 E3 — 74Ø4 E3 — AJ1 — (SAPK DISP ADRØ5 H)
DAPC BAMXII H — EE1 — 74S11 E10 — 74Ø4 E13 — 74Ø4 E13 — EF1 — (SAPK DISP ADRII H)
UBCA CPBSY B H — CE2 — (SAPJ PAII H) — 8881 E9 — CP1 — BUSA AII L

74Ø4 E15 — +3V
74Ø4 E18 — +3V
74Ø4 E18

SYSTEM ADDR PANEL DISPLAY

ADDRESS LINES Ø - 15

SLOT 14

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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	11-16-71
CHK'D.	DATE	3/2/72
ENG.	DATE	3/2/72
PROJ. ENG.	DATE	3/2/72
PROD.	DATE	3/15/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: SYSTEM ADDRESS BUFFERS (SJBA)

NEXT HIGHER ASSY. B-DB-11/45-Ø

SIZE D CODE CS NUMBER M8116-Ø-1 REV B

SCALE —

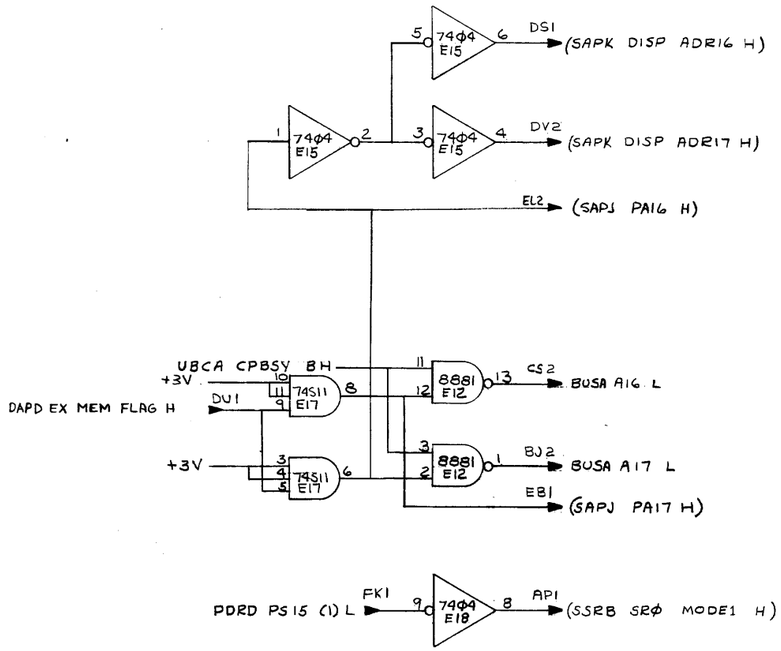
SHEET 2 OF 3 DIST

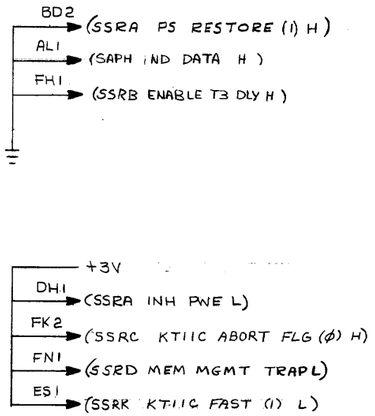
REVISIONS: REV. CHANGE NO. CHK

BRUNING 40-522 15/40

DEC FORM NO. ORD 102-B

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





MISC. SIGNALS AND ADRS. LINES 16 & 17 — SLOT 14

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. K. Davis	DATE 11-18-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD.	DATE 3/2/72	
ENG. K. Chan	DATE 3/6/72	
PROD. ENG. K.C. Chan	DATE 3/7/72	
PROD. A. Hinsh	DATE 3/15/72	

TITLE: SYSTEM ADDRESS BUFFERS (SJBB)

NEXT HIGHER ASSY. B-DD-11/45-0

SCALE —

SHEET 3 OF 3

SIZE	CODE	NUMBER	REV.
D	CS	M8116-Ø-1	B

DIST.

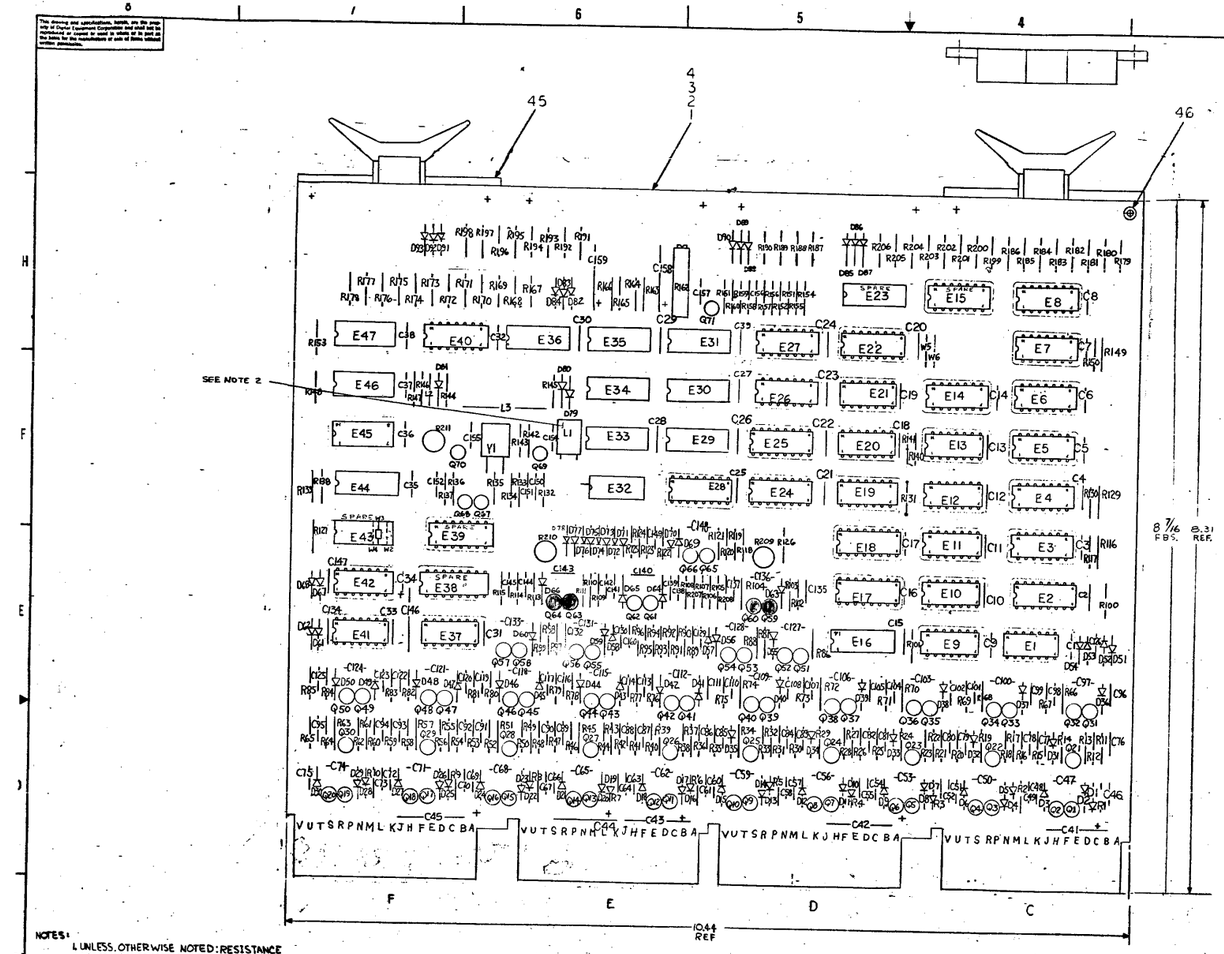
REV	CHANGE NO.	CHK
	REVISIONS	

BRUNING 40-522 15840

DEC FORM NO DRD 102-B

SIZE D CODE CS NUMBER M8116-Ø-1 REV B

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


45
46
SEE NOTE 2
L3
L1
Y1
Q70
Q69
SPARE
SPARE
SPARE

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

TIMING GENERATOR CONTROL

SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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:		4-7-11
CHK'D:		DATE
ENG.		DATE 11/7/12
PROJ. ENG.		DATE 7-20-12
PROD.		DATE 4-7-11

NEXT HIGHER ASSY. B-DD-KB11-C

SCALE —

SHEET 2 OF 6

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING GENERATOR (TIGA)

SIZE D | CODE | NUMBER CS M8109 0-1 | REV. S

DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC/CSM 109
DRD 102-B

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

SOURCE SYNCHRONIZER

PHASE SPLITTER/BUFFER

CRYSTAL CLOCK

R/C CLOCK (MAINTENANCE)

CAN TRIGGER ON MRQ BRK REG (ROM) DYNAMICALLY

MAINT. SWITCHES: REF. TO XMAA BOARD		
S4		SINGLE TIME STEPPER
S3		Ø = CRYSTAL TIMING SOURCE 1 = RC TIMING SOURCE
S1	S2	MODE CONTROL
Ø	Ø	NO EFFECT
Ø	1	SINGLE ROM CYCLE
1	Ø	UPB STOP
1	1	SINGLE PULSE (USE SWØ)

TIMING SOURCE CONTROL — SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.W.R. DATE 8/28/71
CHK'D DATE 9/6/72
ENG. DATE 9/20/72
PROJ. ENG. DATE 9/20/72
PROD. DATE 9-21-72
NEXT HIGHER ASSY. B-DD-KB11-Ø

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING GENERATOR (TIGB)

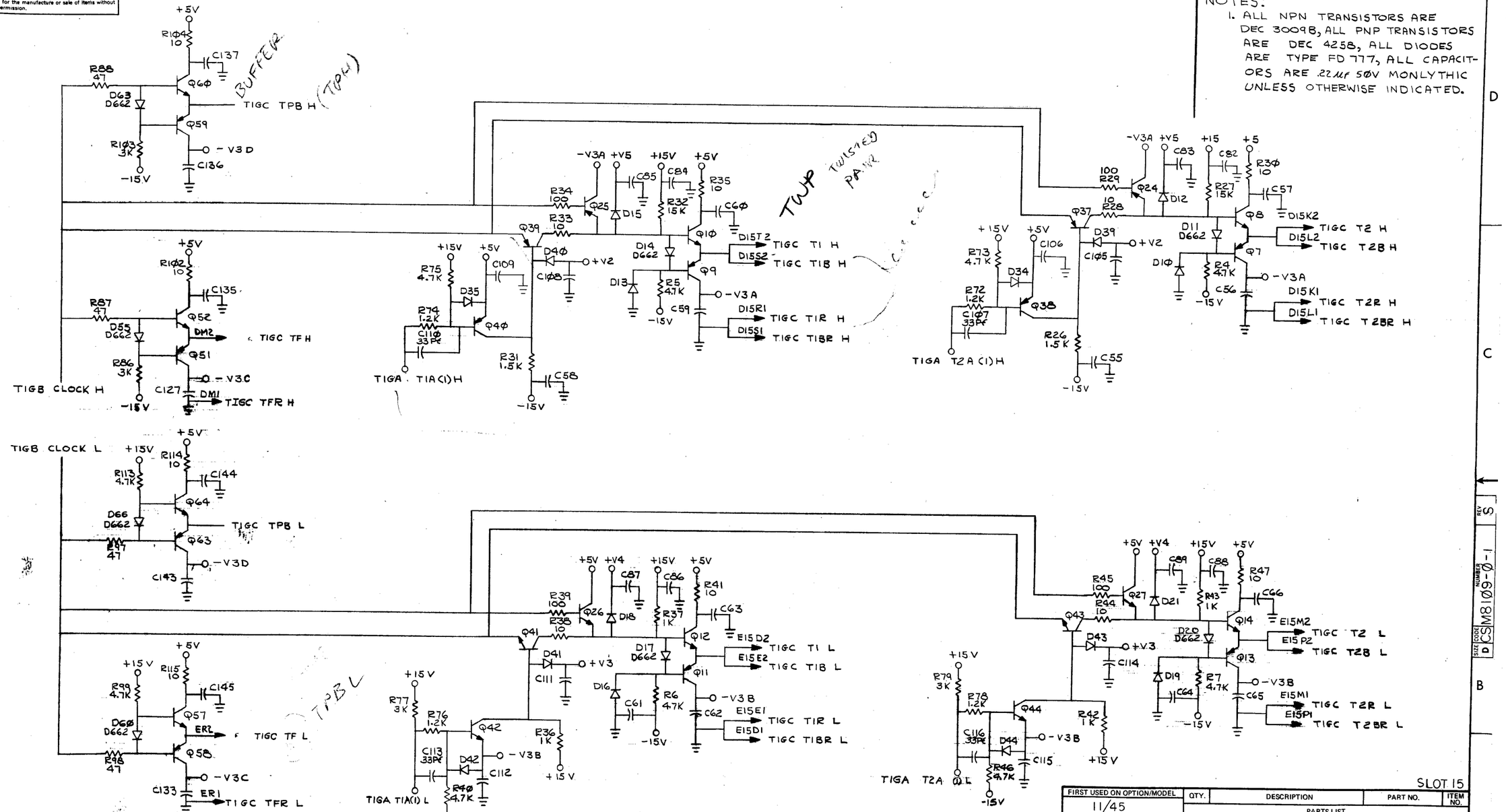
SIZE D | CODE CS | NUMBER M8109-Ø-1 | REV S
SCALE —
SHEET 3 OF 6
DIST.

REVISIONS: REV | CHANGE NO. | CHK

DEC FORM NO. DRD 102-B

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

NOTES:
1. ALL NPN TRANSISTORS ARE DEC 3009B, ALL PNP TRANSISTORS ARE DEC 4258, ALL DIODES ARE TYPE FD 777, ALL CAPACITORS ARE .22 μf 50V MONLYTHIC UNLESS OTHERWISE INDICATED.



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. A. Davis DATE 2-25-72
DSN'D L. Wagner DATE 4-20-72
ENG. R. Hart DATE 4/20/72
PROG. ENG. W. Wade DATE 4-20-72
PROD. [illegible] DATE 4-21-72
NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE
SHEET 4 OF 6

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
TIMING GENERATOR (TIGC)

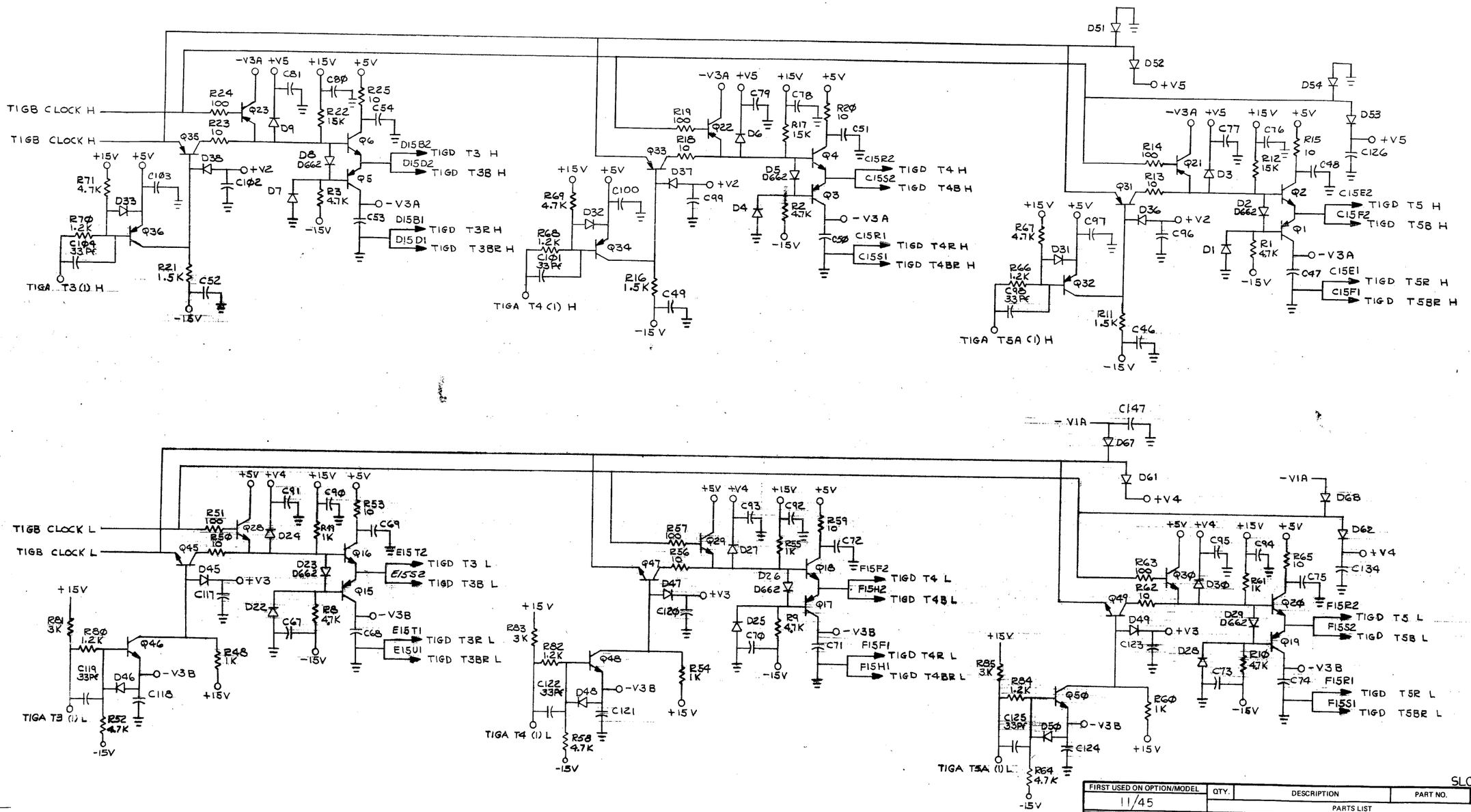
SIZE D CODE CS NUMBER M8IØ9-Ø-1 REV. S
DIST.

SLOT 15

REVISIONS	CHANGE NO.	REV

BRUNING 40-323 15840
DEC FORM NO DRD 102-B

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



NOTE:

1. ALL NPN TRANSISTORS ARE DEC 3009B, ALL PNP TRANSISTORS ARE DEC 4258, ALL DIODES ARE TYPE FD777 ALL CAPACITORS ARE .22 uF MONLYTHIC UNLESS OTHERWISE INDICATED.

SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.	K. Davis	3-1-72
CHK'D		4/20/72
ENG.		4/24/72
PROJ. ENG.		4/20/72
PROD.		4-21-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING GENERATOR (TIGD)

NEXT HIGHER ASSY.: B-DD-KB11-Ø

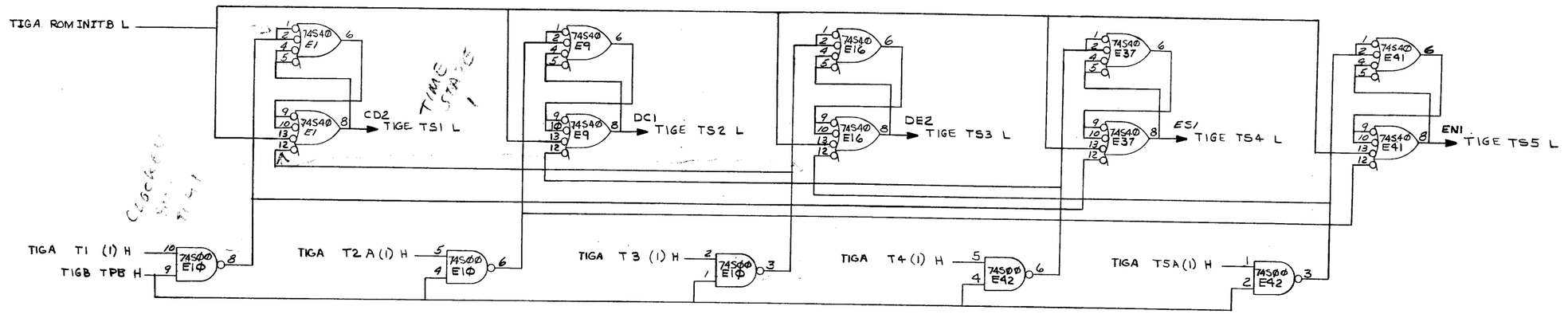
SIZE	CODE	NUMBER	REV.
D	CS	M8109-0-1	S

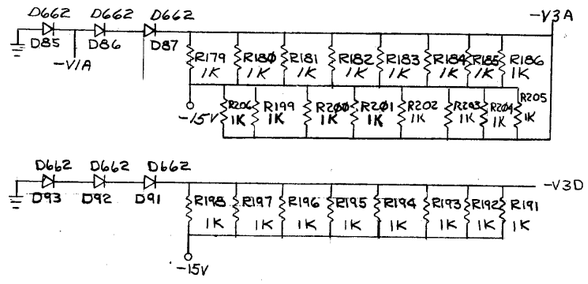
SCALE
SHEET 5 OF 6
DIST.

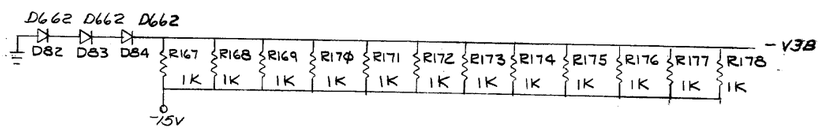
REV	CHANGE NO	CHK
S	HEL 5/5/72	

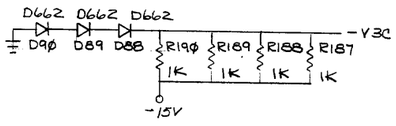
BRUNING 40-322 158-D
DRD 102-B

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









TIMING STATE DRIVERS

SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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	L. Carberry	8-25-71
CHK'D	[illegible]	11/30/72
ENG	[illegible]	12/20/72
PROJ. ENG.	[illegible]	1-20-72
PROD.	[illegible]	4-21-72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TIMING GENERATOR (TIGE)

NEXT HIGHER ASSY.: B-DD-KB11-Ø

SCALE —

SHEET 6 OF 6

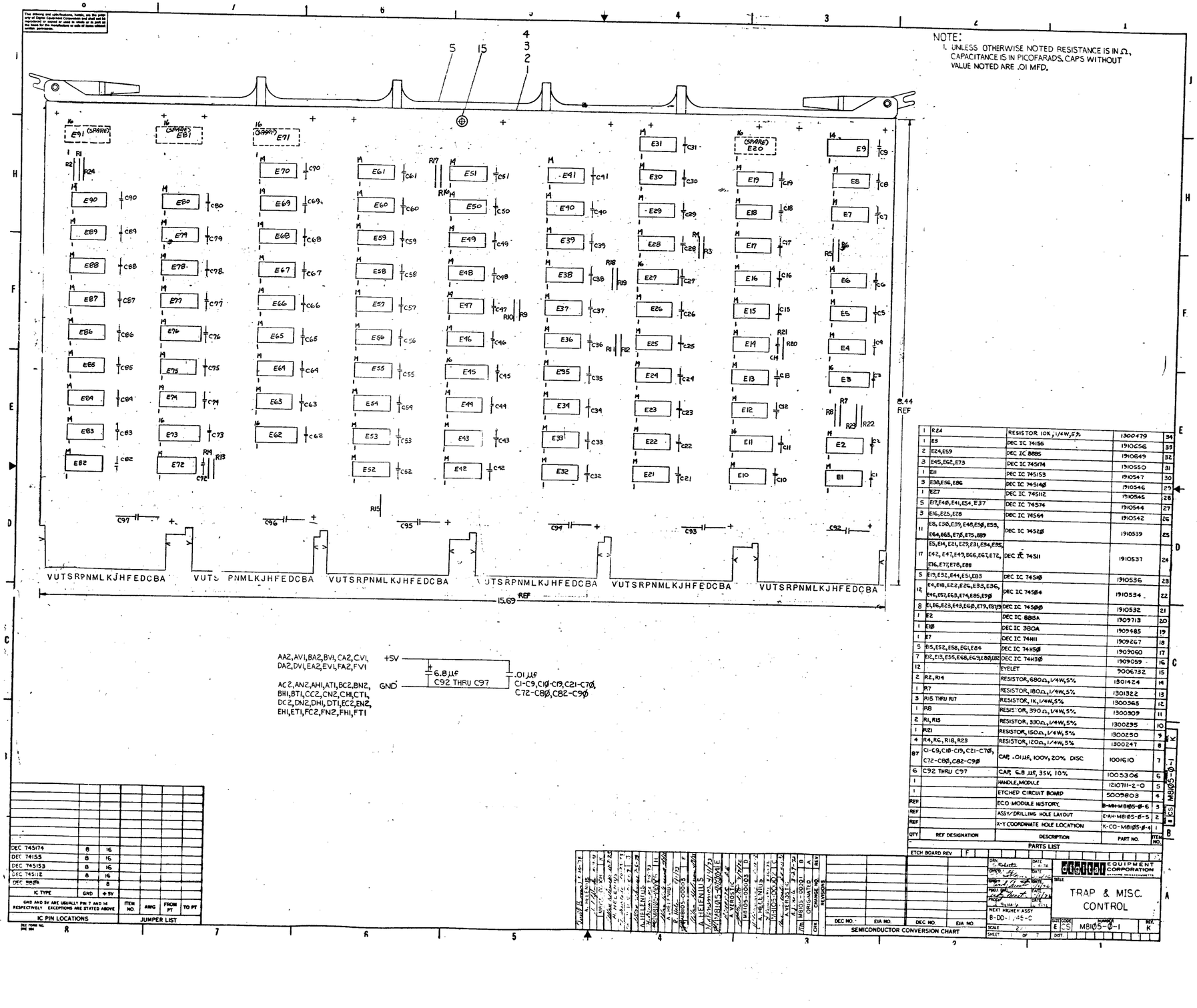
SIZE	CODE	NUMBER	REV.
D	CS	M8ØØ9-Ø-1	S

DIST.

REVISIONS | REV | CHANGE NO. | CHK

DEC FORM NO. DRD 102-B

SIZE D | CODE CS | NUMBER M8ØØ9-Ø-1 | REV. S


NOTE:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω, CAPACITANCE IS IN PICOFARADS. CAPS WITHOUT VALUE NOTED ARE .01 MFD.
E91 (SPARE)
E81 (SPARE)
E71 (SPARE)
E20 (SPARE)
VUTSRPNMLKJHFEDCBA
15.69 REF
8.44 REF
AA2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV1
AC2, AN2, AH1, AT1, BC2, BN2, BH1, BT1, CC2, CN2, CH1, CT1, DC2, DN2, DH1, DT1, EC2, EN2, EH1, ET1, FC2, FN2, FH1, FT1
+5V
GND
6.8 µF
C92 THRU C97
.01 µF
C1-C9, C18-C19, C21-C70, C72-C80, C82-C90
IC PIN LOCATIONS
JUMPER LIST
DEC 74S174 8 16
DEC 74155 8 16
DEC 74S153 8 16
DEC 74S112 8 16
DEC 8885 8
IC TYPE GND +5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE
ITEM NO. AWG FROM PT TO PT
SEMICONDUCTOR CONVERSION CHART
DEC NO. EIA NO. DEC NO. EIA NO.
ETCH BOARD REV F
PARTS LIST
QTY REF DESIGNATION DESCRIPTION PART NO. ITEM NO.
1 R24 RESISTOR 10K, 1/4W, 5% 1300479 34
1 E9 DEC IC 74155 1910656 33
2 E24, E59 DEC IC 8885 1910649 32
3 E45, E62, E73 DEC IC 74S174 1910550 31
1 E11 DEC IC 74S153 1910547 30
3 E38, E56, E86 DEC IC 74S140 1910546 29
1 E27 DEC IC 74S112 1910545 28
5 E17, E40, E41, E54, E37 DEC IC 74S74 1910544 27
3 E16, E25, E28 DEC IC 74S64 1910542 26
11 E8, E30, E39, E48, E58, E63, E64, E65, E75, E76, E89 DEC IC 74S20 1910539 25
17 E5, E14, E21, E29, E31, E34, E35, E42, E47, E49, E66, E67, E72, E76, E77, E78, E88 DEC IC 74S11 1910537 24
5 E19, E32, E44, E51, E83 DEC IC 74S00 1910536 23
12 E4, E18, E22, E26, E33, E36, E46, E57, E63, E74, E85, E90 DEC IC 74S04 1910534 22
8 E1, E6, E23, E43, E60, E79, E81, E90 DEC IC 74S00 1910532 21
1 E2 DEC IC 8835A 1909713 20
1 E10 DEC IC 380A 1909485 19
1 E7 DEC IC 74H11 1909267 18
5 E15, E52, E58, E61, E84 DEC IC 74H50 1909060 17
7 E12, E13, E55, E68, E69, E82, E88 DEC IC 74H30 1909059 16
12 EYELET 9006732 15
2 R2, R14 RESISTOR, 680Ω, 1/4W, 5% 1301424 14
1 R7 RESISTOR, 180Ω, 1/4W, 5% 1301322 13
3 R15 THRU R17 RESISTOR, 1K, 1/4W, 5% 1300365 12
1 R8 RESISTOR, 390Ω, 1/4W, 5% 1300309 11
2 R1, R13 RESISTOR, 330Ω, 1/4W, 5% 1300295 10
1 R21 RESISTOR, 150Ω, 1/4W, 5% 1300250 9
4 R4, R6, R18, R23 RESISTOR, 120Ω, 1/4W, 5% 1300247 8
87 C1-C9, C18-C19, C21-C70, C72-C80, C82-C90 CAP, .01µF, 100V, 20% DISC 1001610 7
6 C92 THRU C97 CAP, 6.8 µF, 35V, 10% 1005306 6
1 HANDLE, MODULE 1210711-2-0 5
1 ETCHED CIRCUIT BOARD 5009803 4
REF ECO MODULE HISTORY B-MH-M8105-0-6 3
REF ASSY/DRILLING HOLE LAYOUT E-AH-M8105-0-5 2
REF X-Y COORDINATE HOLE LOCATION K-CO-M8105-0-4 1
DIGITAL EQUIPMENT CORPORATION
TITLE TRAP & MISC. CONTROL
SIZE E CODE CS NUMBER M8105-0-1 REV K
M8105-0-1 REV K

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

TMCE SET CONF L

UBCF S/INST L EJ2 — 74S00 E79 pin 1
TMCA CONF (1) L — 74S00 E79 pin 2
74S00 E79 pin 3 → 74S74 CONF pin 12 (D pin 1, pin 10)
74S74 CONF pin 9 → CL → TMCA CONF (1) H
74S74 CONF pin 8 → D

TMCE CLK CONF H → 74S74 E37 pin 11 (C)
74S74 E37 pin 9 → CE1 → TMCA CONF (Ø) H
74S74 E37 pin 8 → TMCA CLR CONF L
74S74 E37 pin 13

UBCH STRB FTN H — DS1 — 74S20 E53 pin 1
UBCF CONT (1) H — DF1 — 74S20 E53 pin 2
74S20 E53 pin 6 → UBCE START INIT L — FB2 — 74S11 E77 pin 9
UBCE DC LOB L — FC1 — 74S11 E77 pin 10
74S11 E77 pin 8 → TMCA CLR CONF L

SSRD MEM MGMT TRAP L — FE1 — 74H50 E52 pin 4
TMCE PAUSES H — 74H50 E52 pin 5
74H50 E52 pin 6 → TMCA SEGTF L — FE2 — 74S04 E74 pin 11
TMCA SEGTF L — 74H50 E52 pin 2
TMCE PAUSES L — 74H50 E52 pin 3

FRHH FP EXC TRAP L — ET2 — 74S04 E85 pin 5
74S04 E85 pin 6 → R13 330Ω, R14 680Ω → +5V
74S04 E85 pin 6 → PDRD PIR15 (1) H — EV2 — 74S174 E73 pin 3 (D0)

UBCE PF CLR (1) L — FK1 — 74S11 E77 pin 1
TMCC PRIORITY CLR L — 74S11 E77 pin 2
UBCE INT BUS INIT L — FD2 — 74S11 E77 pin 13
74S11 E77 pin 12 → TMCA BRQ CLR L

74S174 E73 (D5 D4 D3 D2 D1 D0, CLR, CLK; R5 R4 R3 R2 R1 R0)
UBCE PDNF (1) H — FB1 — 74S174 E73 pin 6 (D2)
TMCD SLYEL (1) H — 74S174 E73 pin 11 (D3)
74S174 E73 CLK → TMCE BRQ CLK H

74S04 E74 (pins 11→10, 9→8, 5→6, 3→4, 13→12)
74S04 E79 (pins 9→8)

74S11 E78 (pins 3,4,5 → 6)
74S11 E76 (pins 2,1,13 → 12; 4,3,5 → 6; 9,10,11 → 8)
74S11 E77 (pins 3,5,4 → 6)

UBCB ACKN B H — DR1 — 74S00 E79 pin 12
74S00 E79 pin 11 → EH2 → TMCA SEG ACKN L

TMCA HONOR SEGT H → 74S11 E78 pin 10
TMCA HONOR SLY L → 74S04 E85 pin 9
74S04 E85 pin 8 → TMCA HONOR SLY H

74S00 E93 (pins 13,12 → 11)
74S10 E51 (pins 9,10,11 → 8) → DS2 → TMCA HONOR PWRF L
74S20 E75 (pins 2,1,5,4 → 6) → TMCA HONOR FPTRAP L
TMCA SEG+CON L
74S20 E75 (pins 9,10,12,13 → 8) → TMCA HONOR PIR7 L
TMCB BLOCK LEV 7 L
TMCA ABOVE BR7 L

74S10 E83 (pins 9,10,11 → 8) → FK2 → TMCA HONOR BR7 L

TMCB BLOCK LEV 6 L
74S20 E65 (pins 1,5,2,4 → 6) → TMCA HONOR PIR6 L

74S20 E65 (pins 13,10,12,9 → 8) → EM2 → TMCA HONOR BR6 L
TMCA INH BELOW BR6 L

TMCB BLOCK LEV 5 L
74S20 E64 (pins 1,2,4,5 → 6) → TMCA HONOR PIR5 L

74S20 E64 (pins 13,9,10,12 → 8) → EL2 → TMCA HONOR BR5 L

PDRD PS07ØØH
74S20 E53 (pins 12,13,9,10 → 8) → TMCA HONOR PIR4 L
TMCA BLOCK BR4 L
TMCA INH BELOW PIR4 L

PRIORITY ARBITRATION

BUSA BR7 L — AT2 — 74S30 E10 pin 7
74S30 E10 pin 2 → PDRD PIR14 (1) H — EK2 — 74S174 E62 pin 13 (D4)
BUSA BR6 L — AU2 — 74S30 E10 pin 9
74S30 E10 pin 14 → PDRD PIR13 (1) H — EK1 — 74S174 E62 pin 6 (D2)
BUSA BR5 L — BC1 — 74S30 E10 pin 12
74S30 E10 pin 13 → PDRD PIR12 (1) H — EL1 — 74S174 E62 pin 3 (D0)

74S174 E62 (D5 D4 D3 D2 D1 D0, CLR, CLK; R5 R4 R3 R2 R1 R0)
74S174 E62 CLK → TMCE BRQ CLK H

74S04 E63 (pins 13→12, 11→10, 9→8, 5→6, 3→4, 1→2)

74S11 E66 (pins 2,13,1 → 12; 4,5,3 → 6; 11,10,9 → 8)
74S11 E67 (pins 2,13,1 → 12; 3,5,4 → 6; 11,10,9 → 8)

ORDER OF SERVICE / VECTOR

1 CONSOLE FLAG	—
2 SEG MEM MANAGEMENT TRAP	250
3 STACK LIMIT YELLOW	4
4 POWER FAIL	24
5 FP EXCEPTION TRAP	244

CP LEVEL 7		CP LEVEL 3	
6 PIRQ 7 (PIR15)	240	14 PIRQ3 (PIR11)	240
7 BUS REQUEST 7	INTR	CP LEVEL 2	
CP LEVEL 6		15 PIRQ2 (PIR10)	240
8 PIRQ 6 (PIR14)	240	CP LEVEL 1	
9 BUS REQUEST 6	INTR	16 PIRQ1 (PIR09)	240
CP LEVEL 5		CP LEVEL Ø	
10 PIRQ 5 (PIR13)	240	17 T BIT (PS09) AND NOT RTT	14
11 BUS REQUEST 5	RTT INTR	NOT LOCKED OUT BY PROC STATUS LEVELS BUT SERVICED LAST	
CP LEVEL 4			
12 PIRQ 4 (PIR12)	240		
13 BUS REQUEST 4	INTR		

REVISIONS | REV | CHANGE NO | CHK

PRIORITY ARBITRATION SLOT11

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 6/29/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 3/6/72	
ENG.	DATE 3-6-72	
PROJ. ENG.	DATE 3/6/72	TITLE: TRAP & MISC CONTROL (TMCA)
PROD.	DATE 3/15/72	

NEXT HIGHER ASSY. B-DD-11/45-Ø
SCALE —
SHEET 2 OF 7

SIZE D | CODE CS | NUMBER M8105-Ø-1 | REV. K
DIST.

DEC FORM NO DRD 102-B

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

BUSA BR4 L
PDRD PIRI1 (1) H
PDRD PIRIØ (1) H
PDRD PIRØ9 (1) H
PDRD PSØ4 (1) H
IRCD RTT L
TMCA BRQ CLR L
TMCE BRQ CLK H
TMCB PSØ4 MAT H

TMCA SEG +CON L
TMCA HONOR SLY L
TMCA HONOR PWRF L
TMCA HONOR FPTRAP L
TMCA HONOR PIR7 L
TMCA HONOR BR7 L
TMCA HONOR PIR6 L

TMCA HONOR BR6 L
TMCA HONOR PIR5 L
TMCA HONOR BR5 L
TMCA HONOR PIR4 L
TMCB HONOR BR4 L
TMCB HONOR PIR3 L
TMCB HONOR PIR2 L
TMCB HONOR PIR1 L

TMCD +3V H
UBCD EXT BRQ L
TMCE INTR PAUSE H
TMCE BRQ TRUE H
TMCC TS3 CLK H
UBCE INIT H
UBCB ACKN B H
TMCB CLR INTRFL

TMCA ABOVE BR7 L
PDRD PSØ7 (Ø) H
TMCA BLOCK BR4 L
TMCB HONOR BR4 L

TMCB BLOCK LEV 3 L
TMCB BLOCK LEV 2 L
TMCA INH BELOW BR6 L
TMCA INH BELOW PIR4 L
TMCB HONOR PIR3 L
TMCB HONOR PIR2 L
PDRD PRIORITY = Ø H
TMCB HONOR PIR1 L

PDRD PSØ7 (1) H
PDRD PSØ6 (1) H
PDRD PSØ5 (1) H
TMCB BLOCK LEV 7 L
TMCB BLOCK LEV 6 L
TMCB BLOCK LEV 5 L
TMCB BLOCK LEV 3 L

PDRD PSØ7 (1) L
PDRD PSØ6 (1) L
TMBC BLOCK LEV 2 L

TMCB BRQ TRUE L
TMCB HONOR T L
TMCB BRQ TRUE H
TMCB BRQ *-(T+CONF) L
TMCA CONF(Ø) H

TMCC SEG ABORTED (1) H
TMCC AERF (1) H
TMCA HONOR SEGT H
TMCB SEGT L
TMCA HONOR PWRF L
TMCC SERF (1) H
TMCB HONOR PWRF H
TMCB PWRF L
TMCC BLOCK STROBE (1) H
TMCB TRAP INH L
TMCB PIRQ L

TMCA HONOR FPTRAP L
TMCB HONOR FPTRAP H
TMCB FPTRAP L
TMCB HONOR T L
TMCB TOK L
UBCB ACKN B H
TMCB FP ACKN L

TMCB PIRQ L
TMCA HONOR PWRF L
TMCC AERF (1) L
TMCB TOK L
UBCB PARITY ERR L
TMCA HONOR SLY L
TMCA HONOR FP TRAP L
TMCB SEGT L
UBCE PUPF (Ø) L
TMCC SERF (1) L
TMCB PF(Ø) * (SF + TF) H
TMCB PF(Ø) * (SF+-TF) H

TMCA HONOR PIR7 L
TMCA HONOR PIR6 L
TMCA HONOR PIR5 L
TMCA HONOR PIR4 L
TMCB HONOR PIR3 L
TMCB HONOR PIR2 L
TMCB HONOR PIR1 L

TO DAPE

PRIORITY ARBITRATION; TRAP VECTORS SLOT 11

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.F. Lougee	DATE 6/25/71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D [illegible]	DATE 3/6/72	
ENG [illegible]	DATE 3/6/72	TITLE TRAP & MISC. CONTROL TMCB
PROJ ENG [illegible]	DATE 3/6/72	
PROD [illegible]	DATE 3/15/72	
NEXT HIGHER ASSY. B-DD-11/45-Ø		SIZE D CODE CS NUMBER M8105-Ø-1 REV. K
SCALE //		
SHEET 3 OF 7		DIST.

REVISIONS | REV | CHNG NO | CHK

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

TMCC ODD ADRS ERR L
UBCB PARITY ERR L
UBCB TIME OUT (1) L
74S11 E29
TMCC BUS ERROR L

+5V
R24 10K 1/4W 5%
UBCB PE ABORT L
TMCE PAUSES L
74S00 E87
SSRC KTIIC ABORT FLG L (CH2)
TMCD SL RED L
74S10 E44
TMCC BUS ERROR L
TMCC CLK FLAGS H
RACB UBSD0 H (CM2)
74S20 E39
TMCC KERNEL RG(1) H
TMCB HONOR PWRF H
8885 E24
TMCC SERF MAT H
R17 1K DE2
TMCC SERF (1) H
UBCB ACKN B H (DR1)
TMCC SERF(0) H
74S74 E41
TMCC +3V H
TMCA HONOR SLV H
74S11 E78
TMCC BCT02 B L
RACC UBCT02 H (AE2)
74S04 E26
UBCE INIT L (BS1)
74S11 E29
TMCC TS3 CLK H
RACC UBCT01 H (AE2)
RACC UBCT00 H (AE2)
74S20 E30
TMCC BLOCK STROBE (1) H
74S10 E19
TMCC AC CLEAR L
TMCE CLK CONF H (74S74)
74S11 E29
TMCC STROBE INH L
SSRC KTIIC ABORT FLG L (CH2)
74S04 E36
TMCC +3V H
74S112 E27
TMCC FREE CLK (1) H
TMCC FREE CLK (0) H
TMCC KERNAL RG (1) H
TMCC KERNAL RG (0) H
TMCE PAUSES H
UBCE INIT L (BS1)
74S64 E25
TIGD T4 H
R18 120Ω
R19 +5V
TMCC +3V H
TIGC TF L
R3
R4 120Ω
+5V
GRAC GRAB L
BU1
TMCE BUST H
74S00 E23
UBCC DATI L
RACB UBAX00 H
RACC UBCT02 H
RACC UBCT00 H
PDRD PS14 (0) H
74S20 E06
GRAC GD6 L
RACC UBCT 01 H (AF2)
74S04 E18
TMCC BCT01 B L
TIGE TS3 L
R9 +5V
R10
TMCC TS3 CLK H
TMCC TS3 CLKA H
TIGE TS2 L
R11 R12
TMCC TS2 CLK H
IRCD BYIN H
BF1
DAPB BAMX00 H
BR2
RACC UBSC02 H
RACC UBSC01 H
RACC UBSC00 H
74S64 E28
TMCC ODD ADRS ERR L
TMCC BSC01 B L
IRCC SM357 H
DD1
TMCC +3V H
SSRC KTIIC ABORT FLG L (CH2)
74S74 E40
TMCC SEG ABORTED (1) H
UBCF CNSL ACT (0) H (DJ2)
UBCE INIT L (BS1)
TMCC INIT + ACKN L
UBCB ACKN B H (DR1)
TMCC SERF(1) H
TMCC ABORT CLR L
TMCD SLRED L
TMCA HONOR PWRF L
74S50 E15
TMCC PRIORITY CLR L
TMCC CLK FLAGS H
TMCC TS2 CLK H
UBCF CNSL ACT (0) H (DJ2)
TMCC KERNEL RG (0) H
RACB UBSD0 H (CM2)
TMCC BUS ERROR L
SSRC KTIIC ABORT FLG L (CH2)
R16 1K DC1
TMCC AERF MAT H
TMCC AERF (1) H
TMCC AERF (0) H
TMCB CLR INTRF L
R12, R19, R3, R9, R10, R11 ARE SPARE'S NO VALUE IS ASSIGNED.

AERF ; SERF; ODD ADDRESS SLOT11

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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

DBN T. Carberry DATE 6-29-71
CHK'D. DATE 3/6/72
ENG. Andy Mantis DATE 3/6/72
PROJ ENG. Andy Mantis DATE 3/6/72
PROD. DATE 3/15/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE TRAP & MSC CONTROL (TMCC)
NEXT HIGHER ASSY. B-DD-11/45-0
SCALE
SHEET 4 OF 7
SIZE D CODE CS NUMBER M8105-0-1 REV K
DIST.

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

SAPJ PA17 H
SAPJ PA16 H
SAPJ PA15 H
SAPJ PA14 H
SAPJ PA13 H
SAPJ PA12 H
SAPJ PA11 H
SAPJ PA10 H
74H30 E82
8885 E24
CK2 TMCD INTERNAL ADRS H
STBI STBØ
INTERNAL ADRS MUX
74155 E3
AI AØ
IF2 IF1 IFØ F3 F2 F1 FØ SI SØ
TMCD SW ADRS L
UBCA CPBSY B H
SAPJ PAØ9 H
SAPJ PAØ8 H
SAPJ PAØ7 H
SAPJ PAØ6 H
TMCD BAMX Ø5 BH
DAPB BAMX Ø4 H
DAPB BAMX Ø3 H
74H30 E12
74H30 E13
74S04 E4
DAPB BAMX Ø2 H AN1
DAPB BAMX Ø1 H AP1
74S00 E1
TMCD SW ADRS B L AN2
FS2
SSRK KT11C FAST (1) L
74S04 E18
TMCD INTERNAL ADRS H
UBCB MSYN SET H ACI
74S08 E9
TMCF GET OFF H
TMCD GET OFF L
74S04 E18
74S00 E15
TMCE C1 H
TMCD +3V H
74S11 E14
74S00 E6
UBCA CPBSY B H AU1
TMCC SERF (1) H
TMCC BLOCK STROBE (1) H
74S00 E6
+5V R2Ø 150Ω R21
UBCB ABORT ACKN L BM1
TIGD T5 H BB1
TMCC KERNEL R6 (1) H
74S11 E14
TMCD INTERNAL ADRS H
PDRC STACK LIMIT H BM2
PDRC RED ZONE H BP1
74S64 E16
DE1 TMCD SL RED L
74S04 E18
DAPC BAMX Ø7 H AL2
DAPC BAMX Ø6 H AM2
74S11 E14
74S04 E18
TMCD YEL ZONE H
DAPB BAMX Ø5 H BK1
74S11 E5
TMCD BAMX Ø5 BH
TMCD +3V H
74S04 E4
AP2 TMCD SL ADRS H
AS2 TMCD PS ADRS H
74S10 E19
AR1 TMCD PB ADRS H
74S00 E6
74S04 E4
AR2 TMCD PIR ADRS H
74H11 E7
AA1 TMCD DMX SØ H
AB2 TMCD DMX SI H
UBCB MYSN SET H ACI
74S04 E18
74S11 E5
AS1 TMCD HI BYTE EN H
AD2 TMCD LO BYTE EN H
74S04 E18
TMCD +3V H
TMCD YEL ZONE H
TMCC KERNEL R6 (1) H
RACB UBSDØ1 H
PDRC STACK LIMIT H
74S20 E8
74S00 E6
74S74 E17
TMCD SL YEL (1) H
TIGC T2 L ADI
RS RØ 120Ω +5V
UBCE INIT H (CJ1)
8885 E24
TMCC SERF (1) H
+5V R7 180Ω R8 390Ω
TIGE T55 L AM2
TMCD SW ADRS B L
TMCE PAUSES L
8813 E2
AE1 TMCD CLKLE H

REGISTER ADDRESSES

PROC STATUS	777776
STACK LIMIT	777775
PROG INT	777772
PROG BREAK	777770
SWITCH REGISTER	777570 (IN)
DISPLAY REGISTER	777570 (OUT)

INTERNAL ADRS MUX

SI	SØ	1F	F
L	L	PB	SW
L	H	PIR	
H	L	SL	
H	H	PS	

NOTE: RS AND RØ ARE SPARE NO VALUE IS ASSIGNED

INTERNAL REG DECODES; STACK LIMIT SLOT11

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. Davis DATE 0-26-71
CHK'D C. Spence DATE 3-6-72
ENG. Rick Merritt DATE 3/6/72
PROJ. ENG. Andy Morton DATE 3/6/72
PROD. U. Hirsch DATE 3/15/72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TRAP & MSC CONTROL (TMCD)

NEXT HIGHER ASSY. B-DD-11/45-Ø
SIZE D CODE CS NUMBER M81Ø5-Ø-1 REV. K
SCALE —
SHEET 5 OF 7 DIST.

REVISIONS: REV. CHANGE NO. CHK

DEC FORM NO. SRD 102-B

SIZE D CODE CS NUMBER M81Ø5-Ø-1 REV K

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

RACC UMSCØ2 H (ER2) 13
RACC UMSCØ1 H ES1 1
RACC UMSCØØ L DT2 2
74S11 E35 12 → TMCE BRQ STROBE H

74S11 E72 8 → TMCE CLK CONF H

TMCC STROBE INH L 1
TMCC TS3 CLKA H 13
74S11 E34 12 → TMCE BRQ CLK H

TMCC ABORT H 4
TMCE PAUSES H 5
74S00 E09 6
74S00 E09 9
74S00 E09 10
74S00 E09 8
TMCC TS3 CLKA H 13
74S00 E09 12
11 CUI → TMCE BEND CLR L

RACC UBCTØ2 H (AE2) 1
RACC UBCTØ1 H (AF2) 13
RACC UBCTØØ H (AK2) 2
74S10 E19 12
CV2 → TMCE BEND H

TMCE PAUSES H 1
74S00 E43 3
74S00 E43 5
74S00 E43 4
74S00 E43 6

TMCC BUS ERROR L 3
UBCB PARITY ERR L (DD2) 4
TMCD SL RED L 5
74S10 E44 6

74S04 E46 1 → 2 DB2 → TMCE BEND ERR L

RACC UMSCØ2 H ER2 3
TMCE MSCØ1 B L 4
RACC UMSCØØ L DT2 5
74S11 E35 6 CL2 → TMCE SET PRIORITY H

DU2 → TMCE BUST H

UBCB PE ABORT L FF1
74S140 E39 9 10 12 13 8 DL1 → TMCE BUST OUT L

TIGD T3 L AF1 5
R22
R23 120Ω 4
+5V
74S00 E1 6
74S00 E1 2
74S00 E1 1
TIGE T55 L (AM2)
74S00 E1 3

TMCE MSCØ2 B L 11
RACC UMSCØØ H DU1 9
74S11 E35 10 8 CS1 → TMCE FLOATING ATTN H

RACC UMSCØ1 H (ES1) 5
74S04 E33 6 → TMCE MSCØ1 B L

RACH BUST H → TMCE BUST H
CT2 DU2

RACC UMSCØ2 H (ER2) 13
74S04 E33 12 → TMCE MSCØ2 B L

3 5 4 74S11 E34 6
TMCC TS3 CLKA H 1
PDRD PS14 (Ø) H (CP2) 13
74S10 E32 12
10 11 9 74S11 E21 8 → TMCE SET CONF L
UBCB PARITY ERR SET L BU2
UBCF CNSL RESET L CF1

MSC + BCT DECODE

RACC UBSCØ2 H (EP1) 10
TMCC BSCØ1 B L 11
74S11 E31 9
8 ALI → TMCE FC H

RACC UBSCØ1 H (ER1) 9
10
74S10 E32 8 CM1 → TMCE KERNEL DATI L

RACC UBSCØØ H (EN1) 3
74S04 E33 4 → TMCE BSCØØ B L

TMCE BSCØ2 B L

RACC UBSCØ2 H (EP1) 11
74S04 E33 10

TMCD +3V H 13
IRCC OCLASS H BE1 12
FRMJ FP CI H BE2 10
IRCD BYIN H (BF1) 3
IRCB PCLASS H (BF2) 4
5
6
STBI STBØ
DI BUS COND MUX FI 9 → BB2 TMCE CI H
CI
BI 11
AI 10
DØ
CØ
BØ
AØ
SI SØ 15 1 2 14
E11 74S153
FØ 7 → BDI TMCE CØ H

UBSC	ØI	ØØ
	L	L FP
	L	H DATO
	H	L BSOPI
	H	H BSOP2

RACC UBSCØ1 H (ER1)
IRCC OCLASS H (BF1) 3
RACC UBSC Ø2 H (EP1) 4
74S11 E72 6 CP1 → TMCE DATO BUSOP H

RACC UBSCØØ H (EN1)
2
13
1
74S11 E72 12 FL1 → TMCE BSOP2 H

1 74S04 E22 2 → TMCE +3V H

RACB UBSDØØ H FE2
RACB UBSDØ1 H CM2
3 4 5 74S11 E21 6 CD2 → TMCE BUS LONG PAUSE H

3 74S04 E22 4
13 1 2 74S11 E21 12 CCI → TMCE INTR PAUSE H
13 74S04 E22 12 FL2 → TMCE INTR PAUSE L

9 74S04 E22 8 → TMCE PAUSES H

4 5 3 74S10 E32 6 CNI → TMCE INTR CLR L
TMCC TS2 CLK H

11 74S04 E22 10 CE2 → TMCE PAUSES B H
TMCE PAUSES L

5 74S04 E22 6 CB2 → TMCE PAUSES B L

BUS DELAY DECODE

NOTE: R22 IS A SPARE NO VALUE IS ASSIGNED.

MSC, BCT, BSC DECODE SLOT11

REVISIONS	REV	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.W.Roberts DATE 6/28/71
CHK'D DATE 7/6/72
ENG. DATE 7/6/72
PROJ ENG. DATE 7/6/72
PROG DATE 3/15/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TRAP & MSC CONTROL (TMCE)

NEXT HIGHER ASSY. -11/45-Ø
SCALE -
SHEET 6 OF 7

SIZE	CODE	NUMBER	REV.
D	CS	M8105-Ø-1	K

DIST.

DEC FORM NO DRD 102-B

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

TMCD +3V H

UBCF DDC STOP L — FR1 — 74S04 E85

TMCC TS3 CLK H

74S74 E40 — FR2 → TMCF DDC ATTN (1) H

(BS1) → UBCE INIT L

RACB UIBSØØ H (FS1)
TMCF IBSØ1 B L
TMCA CONF (1) H
→ 74S140 E86

TMCE INTR PAUSE L → 74S11 E88 → 74SØØ E87 — FJ2 → TMCF SELINT L

SSRL KTIIC FAST (1) L
TMCD SW ADRS L
TMCF IBSØØ B L
TMCF FP READ L
FS2 → 74S20 E89 → 74S04 E90 → 74S10 E83 — FP1 → TMCF SELMEM L

+5V
R1 33Ø
SMCF MEM L — FT2
R2 68Ø
74S04 E90 — FS1 → TMCF MEM H

74S11 E88 — EB2 → TMCF FAST L

TMCF IBSØØ B L
TMCF IBSØ1 B L
→ 74S11 E88 → 74SØØ E87 — FM2 → TMCF GET OFF H

TMCC BCTØ2 B L
TMCC BCTØ1 B L
RACC UBCTØØ H (AK2)
→ 74S140 E86 — FJ1 → TMCF FP READ L

74S10 E83 — FM1 → TMCF READ SW L

RACB UIBSØ1 H — FH2 → 74S04 E90 → TMCF IBSØ1 B L

RACB UIBSØØ H — FD1 → 74S04 E90 → TMCF IBSØØ B L

TMCA CONF (1) L
TMCE PAUSES L
→ 74H11 E7 — AB1 → TMCF IND RUN H

TMCC ABORT CLR L

74S74 E54 IND ADRS ERR

BV2
UBCF CNSL ACT (1) H → 74S04 E85 — FD1 → TMCF IND ADRS ERR H

TMCC INIT + ACKN L

SEL MEM = SAME CONDITIONS AS SEL INTR / INTR PAUSE * MCMM * (RD PULSE + BRMX OP + FPSTRW) + MEM TEST (CT11-C)

TO PORA

K7IIC FAST SIGNAL DISQUALIFIES STOP LO

BRMX SELECTION; FP READ SLOT11

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 6-28-11
CHK'D — DATE 6/6/72
ENG. — DATE 7/6/72
PROJ. ENG. — DATE 7/10/72
PROD. — DATE 7/5/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TRAP & MSC CONTROL (TMCF)

NEXT HIGHER ASSY. B-DD-11/45-Ø

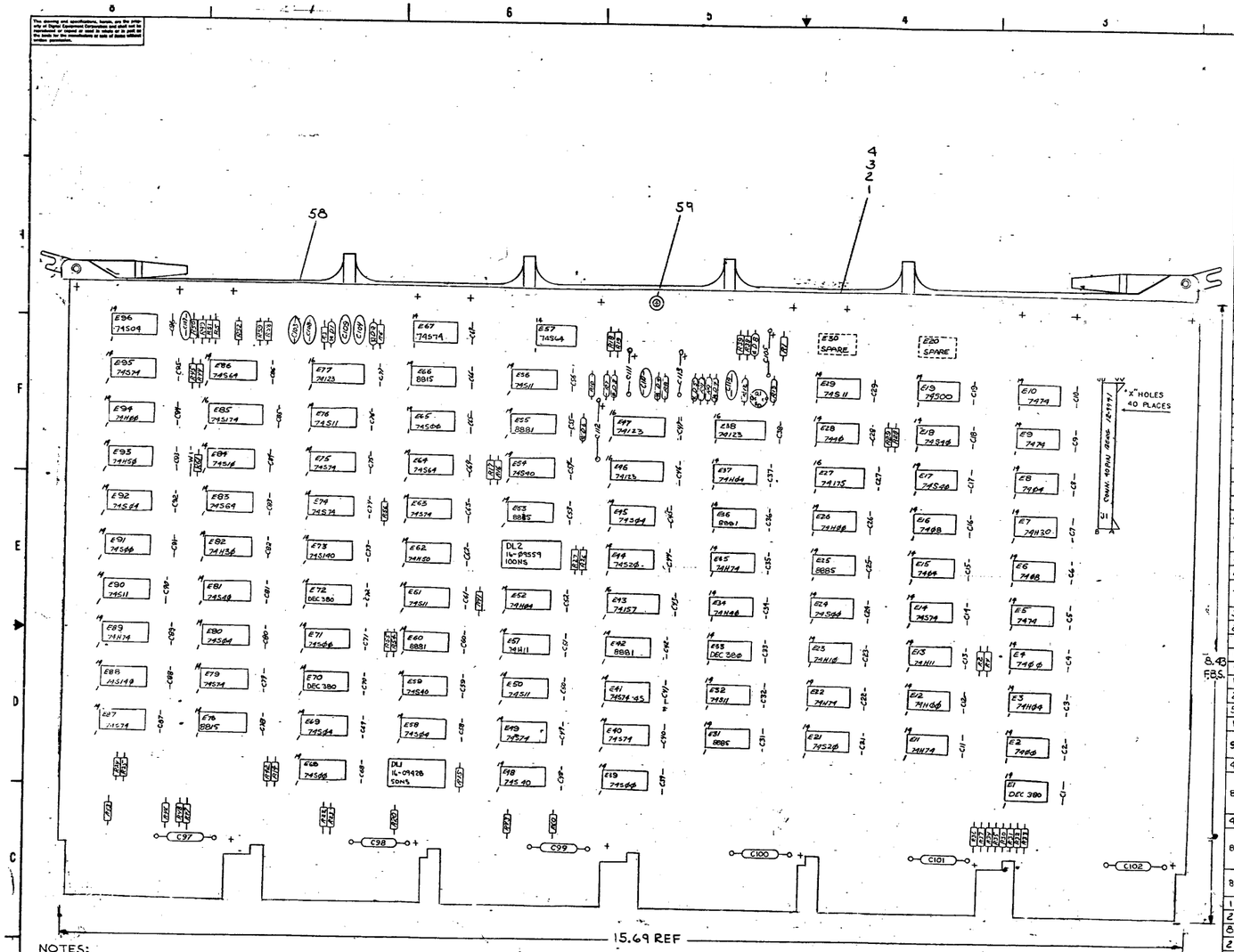
SIZE D | CODE CS | NUMBER M8105-Ø-1 | REV. K

SCALE — SHEET 7 OF 7 — DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO 10RD 102-B

SIZE D | CODE CS | NUMBER M8105-Ø-1 | REV K

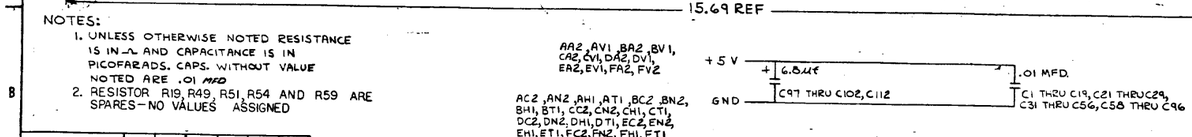


NOTES:

1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS. CAPS. WITHOUT VALUE NOTED ARE .01 MFD
2. RESISTOR R19, R49, R51, R54 AND R59 ARE SPARES—NO VALUES ASSIGNED

AA2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV2

AC2, AN2, AH1, AT1, BC2, BN2, BH1, BT1, CC2, CN2, CH1, CT1, DC2, DN2, DH1, DT1, EC2, EN2, EH1, ET1, FC2, FN2, FH1, FT1



DEC 74175	8	16				
DEC 74157	8	16				
IC TYPE	GND	+5V				
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE			ITEM NO.	AWG	FROM PT	TO PT
IC PIN LOCATIONS			JUMPER LIST			

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
		ECO- BOARD REV. F		
R/R		INSULATED JUMPERS 22 AWG	9107350	62
1/R	W1	22 AWG BUSS WIRE	9107560-01	61
1		CONN, BERG (40 PIN)	1209991	60
12		EYELET	9000732	59
1		HANDLE, MODULE	E-PS-1210711-2	58
1	E41	IC DEC 74S74-45	1910950	57
2	E66, E78	IC DEC 8815	1909713	56
3	E25, E31, E53	IC DEC 8885	1910649	55
4	E34, E42, E55, E60	IC DEC 8881	1909705	54
4	E11, E33, E70, E72	IC DEC 380	1909485	53
1	E27	IC DEC 74175	1910651	52
1	E85	IC DEC 74S174	1910550	51
1	E43	IC DEC 74157	1910655	50
2	E73, E88	IC DEC 74S140	1910546	49
4	E38, E46, E47, E77	IC DEC 74123	1910436	48
10	E 9, E40, E49, E63, E67, E74, E79, E87 E95, E75	IC DEC 74S74	1910544	47
4	E11, E22, E35, E89	IC DEC 74H74	1909667	46
3	E5, E9, E10	IC DEC 7474	1905547	45
4	E24, E83, E86, E57	IC DEC 74S64	1910542	44
2	E62, E93	IC DEC 74H50	1909060	43
6	E17, E18, E48, E54, E59, E81	IC DEC 74S40	1910541	42
1	E34	IC DEC 74H40	1905586	41
1	E28	IC DEC 7440	1905579	40
2	E7, E82	IC DEC 74H30	1909059	39
2	E21, E44	IC DEC 74S20	1910539	38
7	E29, E32, E50, E56, E61, E76, E90	IC DEC 74S11	1910537	37
2	E3, E51	IC DEC 74H11	1909267	36
1	E84	IC DEC 74S10	1910536	35
1	E23	IC DEC 74H10	1909057	34
2	E6, E16	IC DEC 7408	1910155	33
6	E45, E58, E69, E80, E92, E96	IC DEC 74S04	1910534	32
3	E13, E37, E52	IC DEC 74H04	1909931	31
2	E8, E15	IC DEC 7404	1909686	30
7	E 9, E24, E39, E65 E68, E71, E91	IC DEC 74S00	1910532	29
3	E12, E26, E94	IC DEC 74H00	1909056	28
2	E2, E4	IC DEC 7400	1905575	27
1	DL2	DELAY LINE 100NS	1609559	26
1	DL1	DELAY LINE 50 NS	1609428	25
1	Q1	TRANSISTOR DEC 3009B	1503100	24
1	R10	RESISTOR 30K, ¼W, 5%	1302394	23
2	R7, R11	RESISTOR 20K, ¼W, 5%	1302391	22
5	R1, R3, R6, R8, R9	RESISTOR 15K, ¼W, 5%	300496	21
1	R12	RESISTOR 3.9K, ¼W, 5%	1300444	20
9	R5, R13, R26, R27, R61 R62, R43, R46, R53	RESISTOR 1K, ¼W, 5%	1300345	19
4	R4, R23, R25, R39	RESISTOR 680Ω, ¼W, 5%	1301424	18
8	R17, R28, R31, R33, R35, R37, R45, R48	RESISTOR 390Ω, ¼W, 5%	1300309	17
4	R22, R22, R24, R38	RESISTOR 330Ω, ¼W, 5%	1300295	16
8	R14, R29, R30, R32, R34, R36, R44, R47	RESISTOR 180Ω, ¼W, 5%	1301322	15
8	R15, R41, R52, R55, R56, R58, R60, R20	RESISTOR 150Ω, ¼W, 5%	1300250	14
1	R50	RESISTOR 120Ω, ¼W, 5%	1300247	13
2	R16, R18	RESISTOR 100Ω, ¼W, 5%	1300229	12
8	D1 THRU D8	DIODE D664	1100114	11
2	C111, C113	CAPACITOR .47µF, 35V, 10%	1005965	10
3	C107, C110, C114	CAPACITOR 330PF, 100V, 5%	1000023	9
1	C105	CAPACITOR 2.2µF, 20V, 10%	1002627	8
4	C103, C109, C108, C109	CAPACITOR 1200PF, 100, 5%	1002424	7
7	C97 THRU C102, C112	CAPACITOR 6.8µF, 35V, 20%	1000067	6
93	C1 THRU C19, C21 THRU C29, C31 THRU C56, C58 THRU C96	CAPACITOR .01µF, 100V, 20% DISC	1001610	5
1		ETCHED CIRCUIT BOARD	5009802	4
REF		MODULE ECO HISTORY	B-MH-MB106-0-4	3
REF		ASSY/DRILLING HOLE LOCATION	E-AH-MB106-0-5	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-MB106-0-4	1

REVISIONS				
REV	CHANGE NO.	CHK		
B	5403			
C	5403			
D	5403			
E	5403			
F	5403			

DEC 3009 B	5003100
DEC D664	1100114
DEC NO.	EIA NO.
DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN	DATE	CROMEMCO EQUIPMENT CORPORATION
CHK	DATE	
PROJ	DATE	TITLE: UNIBUS 6' CONSOLE CONTROL
NEXT HIGHER ASSY		SIZE/CODE: E
B-DD-4811 -B		NUMBER: ES MB106-0-1
SCALE 2/1		REV: F
SHEET 1 OF 16		DWT

8-30-78

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

+5V
R26 1K
74S40 E54
LOCATION BETWEEN 52 AND 53
100 NS
DL2
R27 1K
74H04 E52
UBCA D SACK H
UBCA D SACK L
UBCA UNIBUS RELEASE H
UBCD NPR (Ø) L
UBCD NPG (Ø) L
8815 E66
74S00 E65
UBCA +3V H
UBCA BLP DESKEW H
74S74 E75
TIGC TIB H
DJ2
UBCA +3V H
8881 E60
ED2
BUSA BBSY L
UBCA CPBSY (1) H
UBCA GET BUS (1) H
UBCC SSYN * CI L
74S11 E76
UBCA DESKEW ADRS H
UBCA CPBSY (Ø) H
BUSA BBSY L
ED2
3800 E72
74H04 E52
UBCA BBSY MAT H
R43 1K
DM1
BUSA SACK L
FJ2
3800 E72
UBCA SACK B H
UBCA +3VH
TMCE BUST H
EP1
74S74 E74
GET BUS
UBCA GET BUS (1) H
74S40 E59
DT2
UBCA CPBSY B H
TMCE BUST OUT L
ER1
74S04 E69
UBCA BUST OUT B H
TIGD T3 B H
EJ2
R56 150
UBCB CLR UNI H
74S64 E64
UBCB MSYN (Ø) L
UBCA GET BUS (Ø) L
8815 E66
CH2
UBCA BLP DESKEW H
74S40 E54
UBCA +3Y H
UBCB MSYN SET H
UBCB CLR UNI H
8885 E53
TMCE PAUSES B L
UBCB BUST B L
UBCC DATIP L
BN1
UBCC DATIP L
TMCE BUS LONG PAUSE H
DS1
74S00 E65
74S74 PASSIVE E63
UBCD GRANT BR (1) L
UBCA BBSY L
UBCD LONG SACK L
74S20 E44
UBCD GRANT BR H
UBCA PASSIVE (Ø) H
UBCC INTR B L
74H10 E23
CD1
UBCA INTR RESTART
UBCE INIT L
74S11 E61
DR2
TIGD T5 L
R41 150
TIGD T3 B H
EJ2
74S00 E39
TIGE TS4 L
ES1
74S04 E69
R16 180
R17 390
+5V
UBCA TS4 CLK H
R42 1K
EU2
UBCA CONTROL OK MAT H
TMCE BEND ERR L
TMCE PAUSES B H
DP1
FT2
74S11 E61
UBCB DESKEW COMP H
TMCC ABORT H
DN1
74H50 EG2
UBCB MSYN (1) H
UBCC SSYN B H
SSRC KTIIC ABORT FLG L
DD2
74S10 E84
FA1
UBCA SSYN RESTART H
UBCB TIME OUT (Ø) H
FC1
TIGC TIB L
74S74 CONTROL OK E63
74S140 E73
EF1
UBCA CONTROL OK H
UBCE INIT L
TIGE TS2 L
CP2
74S04 E69
R44 180
R45 390
±5V
UBCA TS2 CLK H

NOTES:
1. UNLESS OTHERWISE STATED ALL RESISTORS ARE 1/4 5%.

R57, R40 IS A SPARE; NO VALUE ASSIGNED.

CP BUSY; CONTROL OK; TIG RESTARTS — SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.	T. Davis	6-24-71
CHKD.		3/72
ENG.	Judy Weisbord	3-3-72
PROJ. ENG.	Judy Weisbord	3-3-72
PROD.	A. Hinch	3-15-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCA)

NEXT HIGHER ASSY. B-DD-KB11-Ø

SCALE //

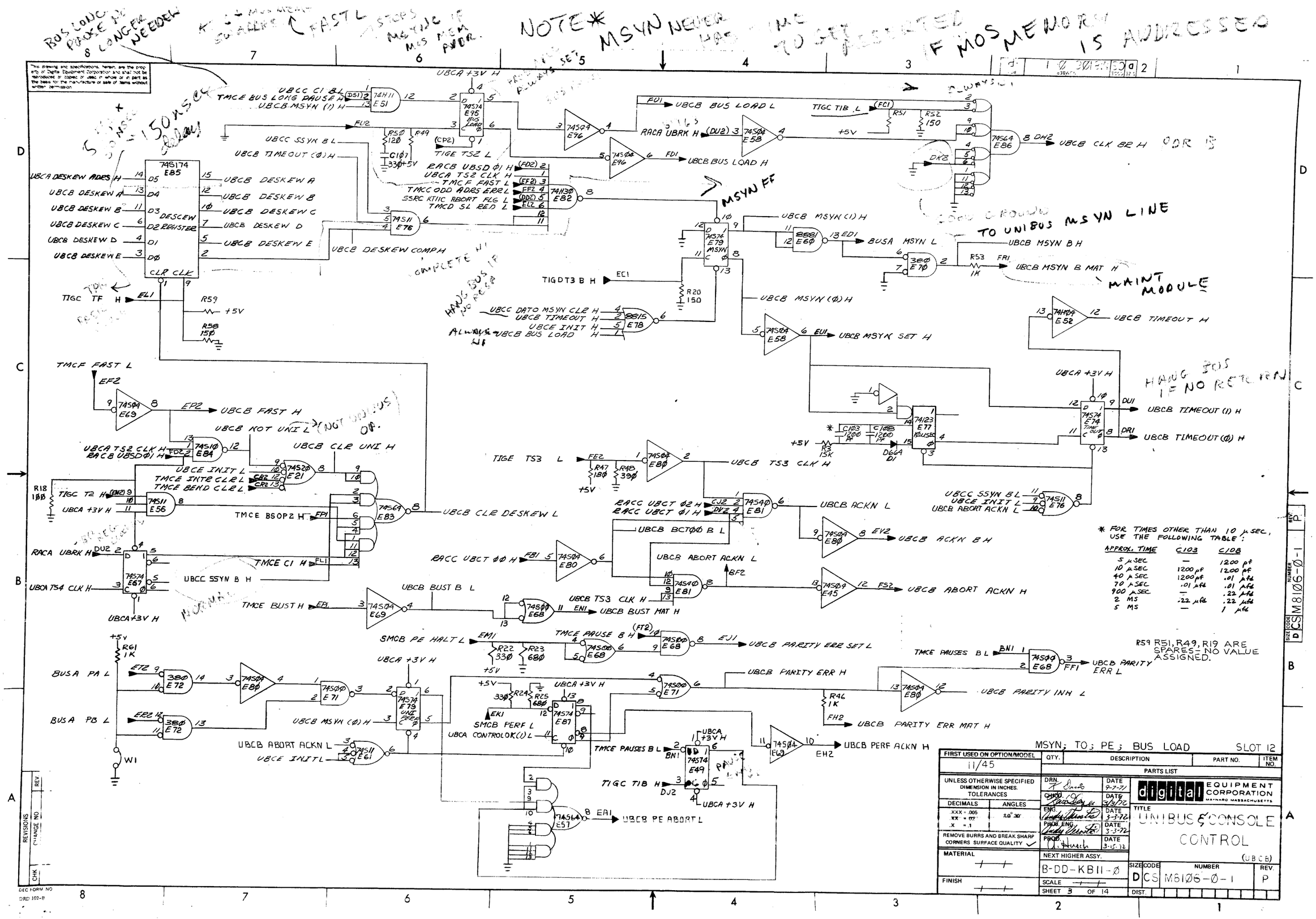
SHEET 2 OF 14

SIZE	CODE	NUMBER	REV.
D	CS	M8106-Ø-1	P

DIST.

REVISIONS | REV | CHANGE NO. | CHK

DEC FORM NO DRD 102-B


NOTE* MSYN NEVER GOES TO SET IF MOS MEMORY IS ADDRESSED
MSYN FF
TO UNIBUS MSYN LINE
MAINT MODULE
UBCB MSYN B H
UBCB MSYN B MAT H
UBCB MSYN (1) H
UBCB MSYN (Ø) H
UBCB MSYN SET H
BUSA MSYN L
UBCB TIMEOUT H
UBCB TIMEOUT (1) H
UBCB TIMEOUT (Ø) H
UBCB DESKEW A
UBCB DESKEW B
UBCB DESKEW C
UBCB DESKEW D
UBCB DESKEW E
UBCB DESKEW COMP H
UBCA DESKEW ADRS H
UBCB FAST H
UBCB NOT UNI L
UBCB CLR UNI H
UBCB CLR DESKEW L
UBCB CLK B2 H OR 15
UBCB BUS LOAD L
UBCB BUS LOAD H
UBCB TS3 CLK H
UBCB BUST MAT H
UBCB ACKN L
UBCB ACKN B H
UBCB ABORT ACKN H
UBCB PARITY ERR SET L
UBCB PARITY ERR H
UBCB PARITY INH L
UBCB PARITY ERR MAT H
UBCB PE ABORT L
UBCB PERF ACKN H
UBCC SSYN B L
UBCB SSYN B H
UBCC DATO MSYN CLR H
UBCE INIT H
UBCB BUS LOAD H
TMCE BUS LONG PAUSE H
UBCB MSYN (1) H
UBCC SSYN B L
UBCB TIMEOUT (Ø) H
TMCE FAST L
TMCC ODD ADRS ERR L
SSRC RTIC RBORT FLG L
TMCD SL REQ L
TMCE BSOP2 H
TMCE INTR CLR L
TMCE BEND CLR L
TMCE BUST H
TMCE PAUSE B H
TMCE PAUSES B L
TMCE CI H
SMCB PE HALT L
SMCB PERF L
UBCA CONTROLOK(1) L
TIGC TF H
TIGC T2 H
TIGC TIB L
TIGDT3 B H
TIGE TS2 L
TIGE TS3 L
RACA UBRK H
RACB UBSD Ø1 H
RACC UBCT Ø2 H
RACC UBCT Ø1 H
RACC UBCT ØØ H
UBCA TS2 CLK H
UBCA TS4 CLK H
UBCA +3V H
+5V
74S174 E85
DESCEW D2 REGISTER
CLR CLK
74S11 E76
74H30 E82
74S74 E79 MSYN
74S74 E74 TIMEOUT
74S74 E67
74S74 E87
74S74 E49 PAUSE
74S74 E95 BUS LOAD Ø
74S11 E84
74S20 E21
74S64 E83
74S11 E56
74S11 E61
74S64 E57
74S64 E86
74S11 E76
74S00 E68
74S00 E71
74S04 E69
74S04 E80
74S04 E58
74S04 E76
74S04 E96
74S04 E45
74S00 E81
74S00 E91
74S04 E62
74S04 E52
74S04 E74
74S04 E68
74S04 E60
74S04 E70
74S04 E72
74S04 E61
74S15 E78
74S10 E84
74S20 E21
74S64 E83
74S11 E56
74S11 E61
74S64 E57
74S64 E86
74S11 E76
74S00 E68
74S00 E71
74S04 E69
74S04 E80
74S04 E58
74S04 E76
74S04 E96
74S04 E45
74S00 E81
74S00 E91
74S04 E62
74S04 E52
74S04 E74
74S04 E68
74S04 E60
74S04 E70
74S04 E72
74S04 E61
74S15 E78
74123 E77 MONOSEC
74S74 E74 TIMEOUT
74S74 E49 PAUSE
74S74 E87
74S74 E79 MSYN
74S74 E95 BUS LOAD Ø
74S74 E67
74H04 E52
380 E72
380 E70
380 E60
74S10 E84
74S20 E21
74S64 E83
74S11 E56
74S11 E61
74S64 E57
74S64 E86
74S11 E76
74S00 E68
74S00 E71
74S04 E69
74S04 E80
74S04 E58
74S04 E76
74S04 E96
74S04 E45
74S00 E81
74S00 E91
74S04 E62
74S04 E52
74S04 E74
74S04 E68
74S04 E60
74S04 E70
74S04 E72
74S04 E61
74S15 E78
R59 150Ø
R58 150Ø
R20 150
R18 1ØØ
R61 1K
R46 1K
R53 1K
R3 15K
R50 120
R49
C1Ø7 330 +5V
R47 180
R48 390
R22 330
R23 680
R24 330
R25 680
C1Ø3 1200 pf
C1Ø8 1200 pf
D64A
D1
W1
RS1
RS2
150
DK8
FRI
DJ2
DU2
FU1
FU2
FE2
FF2
FD2
FD1
FC1
FT2
FE1
FP1
FI1
FL1
FL2
EF2
EP2
EE2
EE1
EC1
EK1
EJ1
EI1
EH2
EH1
EG1
EF1
EE1
ED1
EC2
EB2
EB1
EA1
BF2
BN1
FH2
FF1
DU1
DR1
DV2
CJ2
CR2
CP2
EN2
EM1
EL1
EK2
EJ2
EH1
EG2
EF1
EE2
EB2
EB1
EA1
BNI
FFI
DRI
DV1
CJ1
CR1
CP1
EN1
EM2
EL2
EK1
EJ1
EH2
EG1
EF2
EE1
EB1
EA2
BF1
FS2
FE1
FD2
FC2
FB2
FB1
FA2
FA1
DJ1
DU1
DR2
DV2
CJ2
CR2
CP2
EN2
EM2
EL2
EK2
EJ2
EH1
EG2
EF2
EE2
EB2
EB1
EA2
BF2
FS2
FE2
FD2
FC2
FB2
FB1
FA2
FA1
DJ2
DU2
DR1
DV1
CJ1
CR1
CP1
EN1
EM1
EL1
EK1
EJ1
EH2
EG1
EF1
EE1
EB1
EA1
BF1
FS1
FE1
FD1
FC1
FB1

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

BUSA CLL
AC1
38Ø E33
8885 E31
38Ø E33
EE2
BUSA CØ L

TMCB PIRQ L DF2
TMCA HONOR PWRF L DF1
74S11 E9Ø
FJ1 UBCC (PWRF+INTR) L
UBCA +3V H
D INTRF E89 74H74 C Ø
UBCC INTRF (1) H
TMCB CLR INTRF L FK2
INTERRUPT FLAG

ES2 UBCC INTR B H
BUSA INTR L AD2
38Ø E7Ø
74S04 E92
UBCC INTR B L
74S00 E24
74S00 E71
74S00 E71
TIGC TIB H (DJ2)
R54 R55 150
+5V
TMCD INTERNAL ADRS H DS2
74S40 E59
UBCB MSYN SET H
DL1 5ØNS
R15 150 +5V
LOCATED BETWEEN ES7 & ES8
R14 100Ω
74S04 E92
FE1 UBCC CLK SSYN H

UBCA +3V H
D INT SSYN 74S74 E87 C Ø
UBCB MSYN (Ø) H
74H00 E94
UBCC INTR B L
UBCC CØ B H

UBCC SSYN MAT H
BA1
R5 1 KΩ
CJ1 BUSA SSYN L
8881 E55
38Ø E7Ø
UBCC SSYN B H
74S04 E92
UBCC SSYN B L
74H00 E94
UBCC SSYN * CI L
UBCC CI B H
8885 E53
TIGE TS4 L (ES1)
DAPB BAMX ØØ H
UBCC DATO MSYN CLR H

HI BYTE = DATO + DATOB + BAMX00
LO BYTE = DATO + DATOB + BAMX00

UBCC DATOB L
UBCC DATO L
74S04 E92
74H50 E93
FN UBCC HI BYTE H
TO SMIC TO SDRC

UBCA +3V H
UBCC CC DATA (1) H
UBCC DATO L
UBCC DATOB L
74H54 E93
TMCD PSADRS H FR2
74H00 E94
D CC DATA E95 74S74 C Ø
FV2
UBCB MSYN B H
FP2 UBCC LO BYTE H
TO PDEC

UBCA TS4CLK H
TMCE PAUSES B L (BN1) 10
74H00 E94

TMCE CØ H EB1
8881 E6Ø
4 (EE2) BUSA CØ L
TMCE CI H DL1
8881 E6Ø
10 (AC1) BUSA CI L
UBCA CPBSY B H
74S04 E58
UBCC CØ B L
74S04 E58
UBCC CI B L
74S10 E88
8 FK1 UBCC MEM BUS CØ L
UBCA +3V H
74S11 E9Ø
UBCC CI B H
74S14 E88
6 FM1 UBCC MEM BUS CI L
UBCA +3V H

UBCA CP BSY (1) H
74S04 E91
UBCC DATOB L
74S04 E91
UBCC DATO L
74S10 E84
UBCC DATIP L
74S04 E91
8 FM2 UBCC DATI L

R54 IS A SPARE; NO VALUE IS ASSIGNED.

INTERNAL SSYN; INTRF; CC DATA SLOT 12

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL 11/45	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 Carberry	DATE 24JUN71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD.	DATE 3/3/72	
ENG.	DATE 3-3-72	TITLE UNIBUS & CONSOLE CONTROL (UBCC)
PROJ. ENG.	DATE 3-7-72	
PROD.	DATE 3-10-72	
NEXT HIGHER ASSY. B-DD-KB11-Ø		SIZE D CODE CS NUMBER M81Ø6-Ø-1 REV. P
SCALE —		
SHEET 4 OF 14		DIST.

DEC FORM NO DRD 102-B

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

TMCA HONOR BR7 L
TMCA HONOR BR6 L
TMCA HONOR BR5 L
TMCB HONOR BR4 L
74S20 E44
74S04 E45
D.11
UBCD EXT BRQ L
CU2
UBCD EXT BRQ H
UBCD GRANT L
74S00 E39
UBCD GRANT CLK L
74157 E43
UBCD GRANT BR (Ø) H
UBCD NPG (Ø) H
74S11 E32
UBCD GRANT L
UBCD NPR RQ L
SITS LOW
SERVICE BR E41
74S74-45
UBCD SERVICE BR (Ø) H
GRANT BR 74S74 E40
UBCD GRANT CLR L
74H04 E52
UBCD GRANT BR H
TMCE INTR PAUSE H
UBCA TS2 CLK H
74S11 E50
TMCC FREE CLK(1) H
UBCA PASSIVE(1) L
UBCE INIT L
NOTE:
TO OBTAIN 5μ SEC TIME OUT REMOVE ONE OF THE CAPACITORS BETWEEN PINS 7 & 6.
UBCD GRANT L
UBCD+3V H
R6 15K
+5V
D2
D664
C109
C104
1200 PF
74123 E77
74H74 E89
UBCD NO SACK (1) L
UBCA SACK B H
UBCA DSACK H
8885 E53
UBCD LONG SACK L
UBCE INIT L
74H11 E51
UBCA D SACK L
UBCD +3V H
TMCE FLOATING ATTN H
FP ATTN 74S74 E49
TIGC TIB H
UBCE INIT L
TIGD TSB H
R68 150
74S40 E48
UBCD FP ATTN L
74S04 E45
UBCD FP ATTN H
BUS A NPR L
UBCF DISABLE NPR H
UBCC DATIP L
UBCE ACLO B L
74S11 E29
74S00 E24
UBCD NPR (1) H
NPR E41
UBCD GRANT CLK L
UBCD NPG (1) H
UBCD NPG (Ø) H
8881 E55
UBCD PROC NPG H
UBCE INIT L
UBCA DSACK L
UBCD NO SACK (1) L
74H11 E51
UBCD GRANT CLR L
UBCD PROC BG7 H
UBCD PROC BG6 H
UBCD PROC BG5 H
UBCD PROC BG4 H
8881 E42

GRANT HI - SELECT B INPUTS
GRANT LO SELECT A INPUTS
(ALL BGS GO LOW)

NPR-BR SERVICING; FP ATTENTION SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 6/24/71
CHK'D [illegible] DATE 3/8/72
ENG. [illegible] DATE 3-7-72
PROJ ENG. [illegible] DATE 3-7-72
PROG [illegible] DATE 3-15-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCD)

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE
SHEET 5 OF 14

SIZE D CODE | NUMBER DCSM8106-Ø-1 | REV. P
DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

SIZE D CODE | NUMBER DCSM8106-Ø-1 | REV P

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

TMCA HONOR PWRF L (DF1)
TMCC AC CLEAR L DF2
UBCE +3V H
UBCE PF CLR (1) H
UBCE PF CLR (1) L
UBCE BUST+ DC LO B L
UBCE DC LO B H
UBCB ABORT ACKN L
BUSA AC LO L CS1
UBCE MAINT PF L
UBCE DCLO B L
UBCB TS3 CLK H
UBCE PUPF (1) L
UBCE ACLO B L
UBCE PFCLR(1) H
UBCE DC LO B H
UBCE ALLOW UP(1) H
UBCE PF CLR (1) H
RACC UBCT Ø1 H (DV2)
RACC UBCT Ø2 H (CV2)
UBCB BCT ØØ BL
UBCB TS3 CLK H
PDRD PSI4Ø Ø H
UBCE +3V H
UBCE DC LO B L
UBCE ALLOW UP(1) H
UBCE +3V H
UBCE PUPF (1) H
UBCE +3V H
UBCE PDNF (1) H
UBCE +3V H
UBCE DC LO B H
UBCE PDNF(1) H
BUSA DC LO L
UBCE +3V H
UBCE +3V H
UBCJ HALT SW H
UBCF START H
UBCA BUST OUT B H
UBCE DC LO BH
UBCE BUST + DC LO B L
UBCF CNSL RESET L
UBCF START (1) H
FRMJ FP SYNC L
UBCE +3V H
UBCE +3V H
UBCE +3V H

UBCE DC LO B L
UBCE FP SYNC H
UBCE RIP+FP SYNC L
UBCE INT BUS INIT L
BUSA INIT L
UBCE ROM INIT H
UBCE INIT H
UBCE INII L
UBCE START INIT L
UBCE STATUS CLR L

* UBCE MAINT PF - WHEN GROUNDED CAN BE USED TO SCOPE CP POWER FAIL LOGIC WHEN RUNNING A POWER FAIL DIAGNOSTIC.

AC POWER
BUS ACLO L
BUS DCLO L
PDNF
BLOCK DOWN
ACKN PWRF
ALLOW UP
PUPF
70MS RESTART
ACKN PUP

95 VDC
2MSEC
2MS
70MS

POWER FAIL INITIALIZE SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. A. Davis	DATE 6-25-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D Walt Keyser	DATE 3-3-72	
ENG. Andy Thurston	DATE 3-3-72	TITLE UNIBUS & CONSOLE CONTROL (UBCE)
PROJ. ENG. Andy Thurston	DATE 3-3-72	
PROD. A. Edwards	DATE 3-15-72	
NEXT HIGHER ASSY. B-DD-KB11-Ø		SIZE D CODE CS NUMBER M8106-Ø-1 REV. P
SCALE //		
SHEET 6 OF 14		DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO DRD 102-B

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

UBCF EXAM (I) H
UBCJ EXAM SW H
UBCF EXAM (Ø) H
UBCF REG EXAM (I) H
UBCJ REG EXAM SW H
UBCF REG EXAM (Ø) H
UBCF DEPOS (I) H
UBCJ DEP SW H
UBCF DEPOS (Ø) H
UBCF ACKN T4 L
TMCE INTR CLR L
UBCE INIT L
UBCF +3V H
XDDC DDC BEGIN L
UBCJ REG DEP SW H
UBCF REG DEP (Ø) H
UBCF BEGIN H
TMCA CONF (I) H
UBCF START (I) H
UBCJ START SW H
XDDC DDC STOP L
UBCF START (Ø) H
UBCE DC LO B L
UBCF CLR START L
UBCF DDC STOP L
UBCF START H
UBCF CONT (I) H
UBCJ CONT SW H
UBCF CONT (Ø) H
XDDC DDC LOAD L
UBCF STOP H
UBCF CNSLØ7 (I) H
UBCF DDC LD ADRS L
UBCF CNSLØ7 (Ø) H
UBCJ LOAD ADRS SW H
UBCF LAS L
UBCF CLKLA H
UBCF ACKN T4 L
TMCE INTR CLR L
UBCE INIT L
UBCF CLR CONTROL REG L
UBCF ACT H
UBCB TS3 CLK H
TMCA CONF (1) H
UBCF ACTIV L
UBCF CLR CONTROL REG L
AV2 UBCF CNSL ACT (I) H
AT2 UBCF CNSL ACT (Ø) H
SR FF
UBCF START H
UBCJ HALT SW H
XDDC DDC INIT L
UBCF CNSL RESET L
TMCF DDC ATTN(I) H
UBCF DDC ATTN L
UBCF DDC STOP L
AJ2 UBCF S/INST L
UBCJ HALT SW H
UBCF STOP L
UBCJ SINGLE CYCLE SW H
UBCF DISABLE NPR H
RACC UBCTØ2 H
RACC UBCTØ1 H
UBCB BCTØØ B L
UBCF ACKN LEVEL H
UBCA TS4 CLK H
UBCF ACKN T4 L

CONSOLE FUNCTIONS SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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.W. Roberts DATE 6/25/71
CHK'D DATE 6/25/72
ENG. DATE 3-3-72
PROJ ENG. DATE 3-3-72
PROG DATE 3-15-72
NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE —
SHEET 7 OF 14

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE UNIBUS & CONSOLE CONTROL (UBCF)

SIZE D CODE CS NUMBER M8106-Ø-1 REV P DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO. DRD 102-B

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

CONSOLE FUNCTION	MICRO ADRS BIT 7	2	1	0
EXAM	0	0	0	0
STEP EXAM	0	0	0	1
REG EXAM	0	0	1	0
DEPOSIT	0	0	1	1
STEP DEPOSIT	0	1	0	0
REG DEPOSIT	0	1	0	1
START	0	1	1	0
CONTINUE	0	1	1	1
LD ADRS	1	0	0	0

UBCH STEP DEPOSIT 2 L

UBCF DEPOS (1) H
UBCH STEP DEP + DEP H
→ 74S00 E19

UBCH MICRO AD2 H

UBCF REG DEP (1) L
UBCF START (1) L
UBCF CONT (1) L
→ 74S40 E17

UBCH MICRO AD1 H

UBCF CONT (1) L
UBCF REG EXAM (1) L
UBCF START (1) L
→ 74S40 E18

UBCH EXAM + STEP EXAM H
UBCF EXAM (1) H
→ 74S00 E19

UBCH STEP EXAM Ø L

UBCH STEP DEP + DEP L
UBCF DEPOS (1) H
→ 74S00 E19

UBCH DEPOSIT + REG DPST L

UBCH MICRO AD0 H

UBCF CONT (1) L
UBCF REG DEP (1) L
→ 74S40 E18

UBCF CNSL07 (Ø) H

BPI → UBCH CNSLØ2 H
BLI → UBCH CNSLØ1 H
BK2 → UBCH CNSLØØ H
→ 7408 E16

HOLDS MICROCODE OF PREVIOUS CONSOLE OPERATION

74175 E27
D3 D2 D1 DØ
R3(1) R3(Ø) R2(1) R2(Ø) R1(1) R1(Ø) RØ(1) RØ(Ø)
CLR CLK

UBCE INIT L

→ 7404 E15

→ 7440 E28

UBCH DEP L
UBCH STEP DEP + DEP H
→ 74S00 E19
UBCH STEP DEP L
→ 7404 E15
UBCH STEP DEP + DEP L

→ 7440 E28

→ 74S11 E29
UBCH EXAM + STEP EXAM H

UBCF ACKN LEVEL H
UBCB TS3 CLK H
→ 7408 E16

CK2 → UBCH STRB FTN H

CONSOLE µ ADRS — SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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	6/24/71
DSGN.	DATE	2/3/72
ENG.	DATE	2-3-72
PROJ ENG.	DATE	3-3-72
PROD	DATE	3-15-72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCH)

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE —
SHEET 8 OF 14
SIZE D | CODE CS | NUMBER M8106-Ø-1 | REV. P
DIST.

REVISIONS | CHK

DEC FORM NO DRD 102-B

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

TMCE INTR PAUSE L — BM2 1
TMCE PAUSESB L — (BN1) 2
74H00 E12 — 3 — UBCJ IND PAUSE H

TMCA CONF(I) L — BL2 4
UBCA CPBSY(I) L — 5
74H00 E12 — 6 — UBCJ IND MASTER H

UBC/KNL INTERFACE

	SIGNALS TO CONSOLE		SIGNALS FROM CONSOLE
SAPK DISP ADRSØØ H	AM2	A	
SAPK DISP ADRSØ1 H	AM1	B	
SAPK DISP ADRSØ2 H	AL1	C	
SAPK DISP ADRSØ3 H	AK1	D	
SAPK DISP ADRSØ4 H	AL2	E	
SAPK DISP ADRSØ5 H	AP1	F	
SAPK DISP ADRSØ6 H	AK1	H	
SAPK DISP ADRSØ7 H	AP2	J	
SAPK DISP ADRSØ8 H	AK2	K	
SAPK DISP ADRSØ9 H	AR1	L	
SAPK DISP ADRS1Ø H	AH2	M	
SAPK DISP ADRS11 H	AR2	N	
SAPK DISP ADRS12 H	AE2	P	
SAPK DISP ADRS13 H	AS1	R	
SAPK DISP ADRS14 H	AE1	S	
SAPK DISP ADRS15 H	AS2	T	
SAPK DISP ADRS16 H	AF1	U	
SAPK DISP ADRS17 H	AU1	V	
	AD1	W	
UBCJ IND PAUSE H		X	
TMCF IND ADRS ERR H	FS1	Y	
UBCJ IND MASTER H		Z	
TMCF IND RUN H	AB2	AA	
	BS1	BB	UBCJ DISP ADRS SELØ H
	BT2	CC	UBCJ DISP ADRS SEL1 H
	AF2	DD	UBCJ PNL LOCK H
	BS2	EE	UBCJ CONT SW H
	BV2	FF	UBCJ SINGLE CYCLE SW H
		HH	UBCJ LOAD ADRS SW H
SSRB SRØ MODE 1 H	BC1	JJ	
		KK	UBCJ START SW H
SAPA IND DATA H	BE2	LL	
		MM	UBCJ REG EXAM SW H
		NN	UBCJ EXAM SW H
+5VB		PP	
		RR	UBCJ REG DEP SW H
	AB1	SS	UBCJ DISP ADRS SEL2 H
		TT	UBCJ DEP SW H
		UU	
	BU2	VV	UBCJ HALT SW H

7008864

CONSOLE CABLE; INDICATORS SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 6-25-71
CHK'D. — DATE 3/3/72
ENG. — DATE 3-7-72
PROJ ENG. — DATE 3-7-72
PROG. — DATE 3-15-72
NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE —
SHEET 9 OF 14

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCJ)

SIZE D | CODE CS | NUMBER M8106-Ø-1 | REV. P

DIST.

DEC FORM NO. 1RD 102-B

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

WAT.2Ø
BRK.ØØ
} INTR PAUSE
RACB UBSD ØØ:Ø1=1

-(BR4+BR5+BR6+BR7)

BR4 + BR5 + BR6 + BR7

SERVICE ALL EXISTING NPR'S

NPR+SACK+NPG

-(NPR +SACK + NPG)

T2 → UBCD SERVICE BR ← 1
DISABLE NPG'S

ASSERT BUS GRANT ON APPROPRIATE LEVEL AND CLEAR UBCD SERVICE BR F.F.

WAIT FOR BUS SACK FROM FROM DEVICE

-SACK

10μ SEC: NO SACK TIME OUT → RESTART TIMING; CLEAR BUS GRANT IF NO SACK TIME OUT

BUS SACK

WAIT 75 NS AND THEN CLEAR GRANT

WAIT FOR BUS INTR AND VECTOR OR BUS BBSY TO GO AWAY; SERVICE NPR'S WHEN -(SACK + GRANT)

-(SACK+BUSY)

BUS INTR

RESTART CLOCK AND DESCEW VECTOR

T1 → CLK VECTOR INTO BR → ENTER NEXT ROM STATE

NOTE:
IF PROCESSOR HAS M8104 REV "C" AND KB11-A ECO #13 USE PRINT UBCN FOR UNIBUS TIMING.

T1 → BUST — CLOCK ROM OUTPUT BUFFER; RACC UMSC ØØ:Ø2 EQUAL 5+7

T2 → SEG DLY — SEGMENTATION OPTION PRESENT AND ENABLED: WAIT 90NS FOR ADDRESS RELOCATION; IF ABSENT OR DISABLED: NORMAL TIMING.

SEGMENTATION RELOCATION OR PROTECTION ERROR

T3 → FAST BUS DEVICES AND SOLID STATE MEORY DECODE PHYSICAL ADRS. LINES

SERVICE ALL EXISTING NPR'S; TAKE UNIBUS CONTROL, ASSERT ADRS AND CONTROL LINES, START ADRS DESCEW

TMCE BUST OUT AT TS3 SETS UBCA GET BUS F.F. UBCA GET BUS (1) * -(NPR +NPG + BUS BBSY+D SACK): UBCA CP BUSY ← 1

CHECK FOR PARITY ERRORS ODD ADDRESS ERRORS AND STACK LIMIT ERRORS IF APPLICABLE.

ERROR DETECTED → SERVICE AT T3 OF PAUSE STATE

NO ERRORS

FAST BUS OR SOLID STATE MEM ADRS

BUS END

T1 → PAUSE — CLOCK ROM OUTPUT BUFFER; RACB UBSDØ1=1 LOAD BR IF DATO* RACA UBRK (MAY HAVE BEEN DONE IN PREVIOUS STATE

BEND — RACC UBCT ØØ:Ø2 EQUAL 7

PAUSE — RACB UBSDØ1=1 LOAD BR IF DATO *

PAUSE — RACB UBSDØ1 = 1

BEND — RACC UBCT ØØ:Ø2 EQUAL 7

T2 → RELINQUISH UNIBUS CONTROL: CLEAR UBCA CP BUSY F.F

TMCF FAST * TS2 = UBCB CLR UNI: UBCA GET BUS ← Ø UBCA CP BUSY ← Ø ABANDON UNIBUS OPERATION.

RELINQUISH UNIBUS CONTROL: CLEAR UBCA CP BUSY F.F.

RESTART UNIBUS ADRS DESKEW FOR DATO * CLK BR FINISH DESKEW FOR ALL OTHERS & ASSERT MSYN UPON COMPLETION

RACA UBRK * (TMCE DATO BUS OP + TMCE BSCP2): UBCB CLR DESKEW AT T2.

UBCA GET BUS ← Ø; WAIT FOR SSYN + TIMEOUT

STOP TIMING GEN IN TS2 AND WAIT FOR UBCA SSYN RESTART

NO SSYN (UBCB TIMEOUT)

ABORT OPERATION ZAP ROM → 2ØØ AND TRAP TO CORESPONDING VECTOR CLEAR UBCA GET BUS AND CP BUSY IF ASSERTED

TMCC ABORT * TS2: RACA ZAP

RELINQUISH UNIBUS CONTROL; CLEAR UBCA CP BUSY F.F IGNORE ERROR CHECKS

TMCE BEND CLR AT TS3: UBCA GET BUS ← Ø UBCA CP BUSY ← Ø RACB UBSDØ1=Ø: INHIBIT ERRORS.

T3 → SEND CONTROL OK TO SOLID STATE MEM — TMCE PAUSES * T3: UBCA CONTROL OK ← 1

RACB UBSDØØ:Ø1=3 BUS LONG PAUSE

T5 → STOP TIMING IF SOLID STATE MEMORY AND WAIT FOR DATA AND MEM SYNC. — BIPOLAR MEMORY STOPS TIMING ONLY IF IT IS BUSY WHEN BUST OUT IS ISSUED.

STOP TIMING GEN IN TS5 FINISH 75 NS DATA DESKEW TAKE DATA AT T4 VIA UBCB BUS LOAD IF DATI, CLEAR MSYN. DO 75 NS ADDRESS DESKEW AND RESTART TIMING. CLEAR UBCA CP BUSY AT T1

UBCB BUS LOAD (1) * RACA UBRK: UBCB CLK BR (ALSO DAPA)

DESKEW DATA FROM T3 TO NEXT T1

RACB UBSD ØØ:Ø1=2 BUS PAUSE

T1 → TAKE DATA IF DATI CLK BR; CLK IR IF FET.1; DROP CONTROL OK — TIGC T1 * RACA UBRK: UBCB CLK BR (ALSO DAPA) TIGC T1: UBCA CONTROL OK ← Ø

TAKE DATA IF DATI CLK IR AND BR DROP MSYN AND START 75 NS ADRS DESCEW — TIGC T1 * RACA UBRK: UBCB CLK BR (ALSO DAPA)

ENTER NEW ROM STATE

* THIS OCCURS IN SHR1Ø AND EXC. ØØ FOR ODD BYTE OPERATIONS.

T4 → RELINQUISH UNIBUS CONNTROL: CLEAR UBCA CP BUSY F.F. DROP ADRS AND CONTROL LINES — TIGD T3Ø * -(TMCE PAUSES + UBCB BUST + UBCC DATIP): UBCA CP ← Ø

BUS CYCLE AND INTERRUPT FLOW — SLOT 12

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO.
11/45	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 —

DRWN — DATE 3/14/72
CHKD — DATE 4/20/72
ENG — DATE 4/20/72
PROJ ENG — DATE 4/20/72
PROD — DATE 5-1-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCK)

NEXT HIGHER ASSY. B-DD-KB11-A
SCALE —
SHEET 10 OF 14

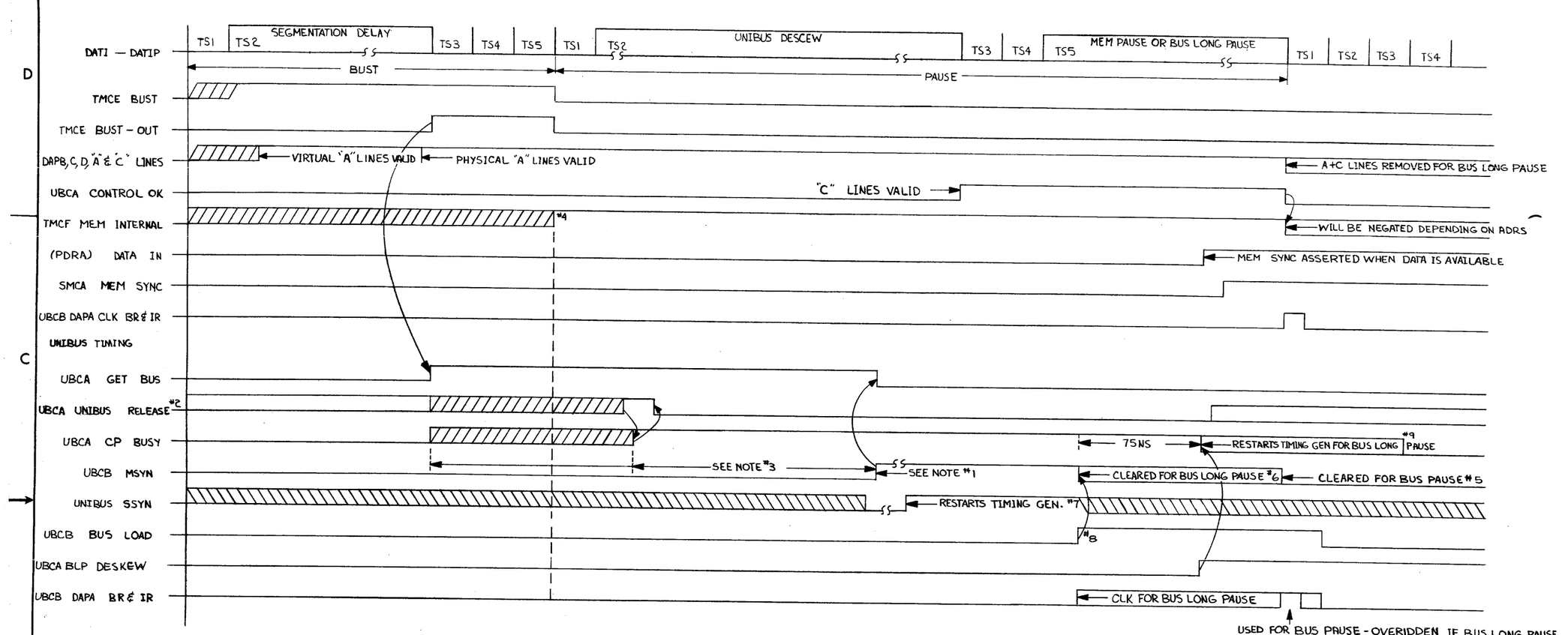
SIZE D | CODE CS | NUMBER M8106-Ø-1 | REV P
DIST.

REVISIONS | REV | CHANGE NO. | CHK

BRUNING 40-522 15940
DEC FORM NO DRD 102-B

M8106-Ø-1 REV P

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



1. MSYN IS NOT SET IF ODD ADRS, SEGMENTATION, PARITY OR STACK LIMIT ERROR HAS OCCURED. ERROR CONDITION RESTARTS TIMING GENERATOR AND ROM IS FORCED TO ZAP.ØØ
2. UNIBUS RELEASE = -(NPG + NPR + DSACK + BBSY)
3. MSYN IS SET 150 NS AFTER CP BUSY IS SET OR WHENEVER SSYN IS NOT PRESENT AFTER THE 150NS DESCEW
4. IF ADRS IS INTERNAL OR SOLID STATE MEMORY UNIBUS CNTL LOGIC IS CLEARED, DESCEW STOPPED, MSYN NOT ASSERTED.
5. BUS PAUSE – ADRS WILL NOT BE CHANGED IMMEDIATELY UPON EXITING PAUSE STATE

NOTE:
IF PROCESSOR HAS M8104 REV 'C' AND KB11-A ECO # 13 USE PRINT UBCP FOR UNIBUS TIMING.

6. BUS LONG PAUSE – 75NS ADRS DESCEW AFTER NEGATION OF MSYN MUST BE DONE BEFORE TIMING GEN. RESTARTS AT T5 OF PAUSE CYCLE BECAUSE "A" & C LINES WILL CHANGE UPON EXITING PAUSE STATE.
7. IF NON-EXISTANT MEMORY, TIMEOUT RESTARTS CLOCK.
8. BUS LOAD IS SET ONE CLOCK AFTER T5 TO ALLOW COMPLETION OF WRITE TO SCRATCHPAD FOR PREVIOUS CYCLE BEFOR NEW IR & BR ARE LOADED
9. CLEARED 75NS AFTER MSYN → Ø : T4 FOR BUS PAUSE

DATI - DATIP TIMING DIAGRAM — SLOT 12

FIRST USED ON OPTION/MODEL	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 —

DRW — DATE 9/12/72
CHK'D — DATE 9/12/72
ENG. — DATE 9/12/72
PROJ. ENG. — DATE 9/12/72
PROD. — DATE 5-1-73

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCL)

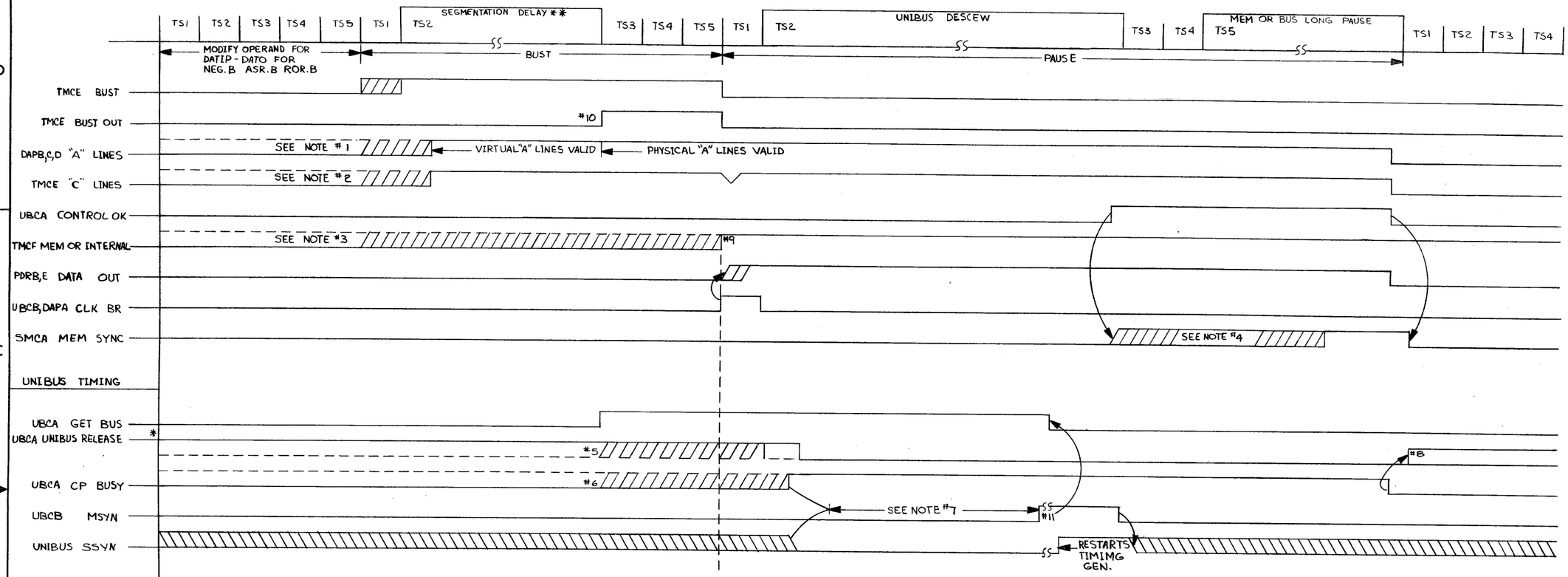
NEXT HIGHER ASSY.: B-DD-KB11-A
SCALE —
SHEET 11 OF 14

SIZE D | CODE CS | NUMBER M8106-Ø-1 | REV. P
DIST.

REV	REVISIONS	CHANGE NO.	CHK

BRUNING 40-522 15640
DEC FORM NO DRD 102-B

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



NOTES:

* UNIBUS RELEASE = -(NPR+NPG+BBSY+SACK)

** TIMING GEN: PROVIDES DELAY EQUIVELENT TO 3 TIME STATES FOR RELOCATION OF ADDRESSES IF SEGMENTATION IS PRESENT AND ENABLED

1. ADDRESS WILL NOT BE CHANGING IF DATO IS PRECEEDED BY DATIP (DOTTED LINE SHOWS DATIP)
2. CONTROL LINES WILL SHOW DATIP OR ELSE ARE INVALID UNTIL CONTROL OK
3. MEM OR INTERNAL WILL BE TRUE UPON ENTERING DATO IF ADDRESS WAS SEMI CONDUCTOR MEMORY OR INTERNAL FROM PREVIOUS DATIP
4. MEM SYNC IS ASSERTED BY SEMI CONDUCTOR MEMORY AS SOON AS DATA IS TAKEN-IF DATA IS TAKEN AND MEM SYNC ASSERTED PRIOR TO T 5 OF THE PAUSE CYCLE TIMING GENERATOR IS NOT STOPPED IN T5
5. UNIBUS RELEASE WILL NOT BE TRUE IF PREVIOUS OPERATION WAS A DATIP TO A UNIBUS ADDRESS.
6. CP BUSY WILL BE ASSERTED UPON ENTRY INTO DATO IF PREVIOUS OPERATION WAS A DATIP TO A UNIBUS ADDRESS
7. DESKEW FOR "A" "C" "D" LINES IS 150 NS STARTING WHEN CP BUSY IS SET AND SSYN FROM THE PREVIOUS BUS OPERATION IS NEGATED.
8. UNIBUS RELEASE BECOMES TRUE IF NO NPR DEVICE HAS BEEN GIVEN CONTROL OR IS REQUESTING PRIOR TO CP BSY GETING CLEARED
9. IF ADDRESS IS SEMI CONDUCTOR MEMORY OR INTERNAL, UNIBUS LOGIC IS CLEARED DESKEW IS STOPPED AND MSYN IS NOT ASSERTED.
10. BUST OUT IS INHIBITED IN IRD00 FOR CONDITIONAL BUST (MSC=5) IF BIN * SM123 + BR INST * BRQ TRUE + DM123 * -(BIN * SM161 + BR INSTR)
11. MSYN IS NOT SET IF AN ODD ADRS, STACK LIMIT RED SEGMENTATION OR PARITY ERROR HAS OCCURED

NOTE:
IF PROCESSOR HAS M8104 REV "C" AND KB11-A ECO #13, USE PRINT UBCP FOR UNIBUS TIMING.

NOTE:
1. ALL SIGNALS ARE SHOWN TRUE WHEN HIGH

DATO TIMING DIAGRAM — SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 3/27/72
CHK'D		DATE 4/4/72
ENG		DATE 4/24/72
PROJ. ENG.		DATE 4/24/72
PROD		DATE 5-1-72

NEXT HIGHER ASSY. B-DD-KB11-A

SCALE —

SHEET 12 OF 14

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCM)

SIZE	CODE	NUMBER	REV.
D	CS	M8106-Ø-1	P

DIST.

BRUNING 40-522 15940 DEC FORM NO DRD 102-B

REVISIONS	CHANGE NO.	REV.
		CHK

SIZE D CODE CS NUMBER M8106-Ø-1 REV P

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

WAT.2Ø
BRK.ØØ
INTR PAUSE
RACB UBSD ØØ:Ø1=1

-(BR4+BR5+BR6+BR7)

BR4 + BR5 + BR6 + BR7

SERVICE ALL EXISTING NPR'S

NPR+SACK+NPG

-(NPR + SACK + NPG)

T2 → UBCD SERVICE BR ←1 DISABLE NPG'S

ASSERT BUS GRANT ON APPROPRIATE LEVEL AND CLEAR UBCD SERVICE BR F.F.

WAIT FOR BUS SACK FROM FROM DEVICE

-SACK

10µ SEC: NO SACK TIMEOUT → RESTART TIMING; CLEAR BUS GRANT IF NO SACK TIME OUT

BUS SACK

WAIT 75NS AND THEN CLEAR GRANT

WAIT FOR BUS INTR AND VECTOR OR BUS BBSY TO GO AWAY; SERVICE NPR'S WHEN -(SACK + GRANT)

-(SACK+BUSY)

BUS INTR

RESTART CLOCK AND DESCEW VECTOR

T1 → CLK VECTOR INTO BR → ENTER NEXT ROM STATE

T1 → BUST — CLOCK ROM OUTPUT BUFFER; RACC UMSC ØØ:Ø2 EQUAL 5+7

T2 → SEG DLY — SEGMENTATION OPTION PRESENT AND ENABLED: WAIT 90NS FOR ADDRESS RELOCATION; IF ABSENT OR DISABLED: NORMAL TIMING.

SEGMENTATION RELOCATION OR PROTECTION ERROR

T3 → FAST BUS DEVICES AND SOLID STATE MEORY DECODE PHYSICAL ADRS. LINES

SERVICE ALL EXISTING NPR'S; TAKE UNIBUS CONTROL, ASSERT ADRS AND CONTROL LINES, START ADRS DESCEW

TMCE BUST OUT AT TS3 SETS UBCA GET BUS F.F. UBCA GET BUS (1)* -(NPR +NPG + BUS BBSY+D SACK): UBCA CP BUSY ←1

CHECK FOR PARITY ERRORS ODD ADDRESS ERRORS AND STACK LIMIT ERRORS IF APPLICABLE.

ERROR DETECTED → SERVICE AT T3 OF PAUSE STATE

NO ERRORS

FAST BUS OR SOLID STATE MEM ADRS

BUS END

T1 → PAUSE — CLOCK ROM OUTPUT BUFFER; RACB UBSDØ1=1 LOAD BR IF DATO* RACA UBRK (MAY HAVE BEEN DONE IN PREVIOUS STATE

T2 → RELINQUISH UNIBUS CONTROL; CLEAR UBCA CP BUSY F.F

TMCF FAST * TS2=UBCB CLR UNI: UBCA GET BUS ←Ø UBCA CP BUSY ←Ø ABANDON UNIBUS OPERATION.

T3 → SEND CONTROL OK TO SOLID STATE MEM — TMCE PAUSES * T3: UBCA CONTROL OK ←1

T5 → STOP TIMING IF SOLID STATE MEMORY AND WAIT FOR DATA AND MEM SYNC. — BIPOLAR MEMORY STOPS TIMING ONLY IF IT IS BUSY WHEN BUST OUT IS ISSUED.

T1 → TAKE DATA IF DATI CLK BR: CLK IR IF FET.1; DROP CONTROL OK — TIGC T1* RACA UBRK: UBCB CLK BR(ALSO DAPA) TIGC T1: UBCA CONTROL OK ←Ø

BEND — RACC UBCT ØØ:Ø2 EQUAL 7

RELINQUISH UNIBUS CONTROL; CLEAR UBCA CP BUSY F.F.

PAUSE — RACB UBSDØ1=1 LOAD BR IF DATO*

RESTART UNIBUS ADRS DESKEW FOR DATO* CLK BR FINISH DESKEW FOR ALL OTHERS* ASSERT MSYN UPON COMPLETION — RACA UBRK*(TMCE DATO BUS OP +TMCE BSCP2): UBCB CLR DESKEW AT T2.

UBCA GET BUS ←Ø; WAIT FOR SSYN + TIMEOUT — STOP TIMING GEN IN TS2 AND WAIT FOR UBCA SSYN RESTART

NO SSYN (UBCB TIMEOUT)

RACB UBSD ØØ:Ø1=3

BUS LONG PAUSE

DESKEW DATA FROM SSYN TO T3 VIA SYNCRONIZER. TAKE DATA AT T3 TO BUFFER. DESKEW ADDRESS & CONTROL T3 TO T1. DROP MSYN T3.

MOVE DATA FROM BUFFER TO BR IF DATI AT T1, HOLD ADDRESS AND CONTROL TO T4 IF BUS PAUSE — TIGC T1* RACA UBRK: UBCB CLK BR (ALSO DAPA)

TIGD TS4*-(TMCE PAUSES + UBCB BUST + UBCC DATIP): UBCA CP ←Ø

PAUSE — RACB UBSDØ1=1

ABORT OPERATION ZAP ROM →ØØØ AND TRAP TO CORESPONDING VECTOR CLEAR UBCA GET BUS AND CP BUSY IF ASSERTED

TMCC ABORT * TS2: RACA ZAP

BEND — RACC UBCT ØØ:Ø2 EQUAL 7

RELINQUISH UNIBUS CONTROL; CLEAR UBCA CP BUSY F.F IGNORE ERROR CHECKS

TMCE BEND CLR AT TS3: UBCA GET BUS ←Ø UBCA CP BUSY ←Ø RACB UBSDØ1=Ø: INHIBIT ERRORS.

ENTER NEW ROM STATE

* THIS OCCURS IN SHRIØ AND EXC.ØØ FOR ODD BYTE OPERATIONS.

BUS CYCLE AND INTERRUPT FLOW — SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN		DATE 3/14/72
CHK'D		DATE 4/20/72
ENG.		DATE 4/20/72
PROJ. ENG.		DATE 4/20/72
PROJ.		DATE 5-1-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCN)

NEXT HIGHER ASSY. B-DD-KB11-A

SCALE —

SHEET 13 OF 14

SIZE	CODE	NUMBER	REV.
D	CS	M8106-Ø-1	P

DIST.

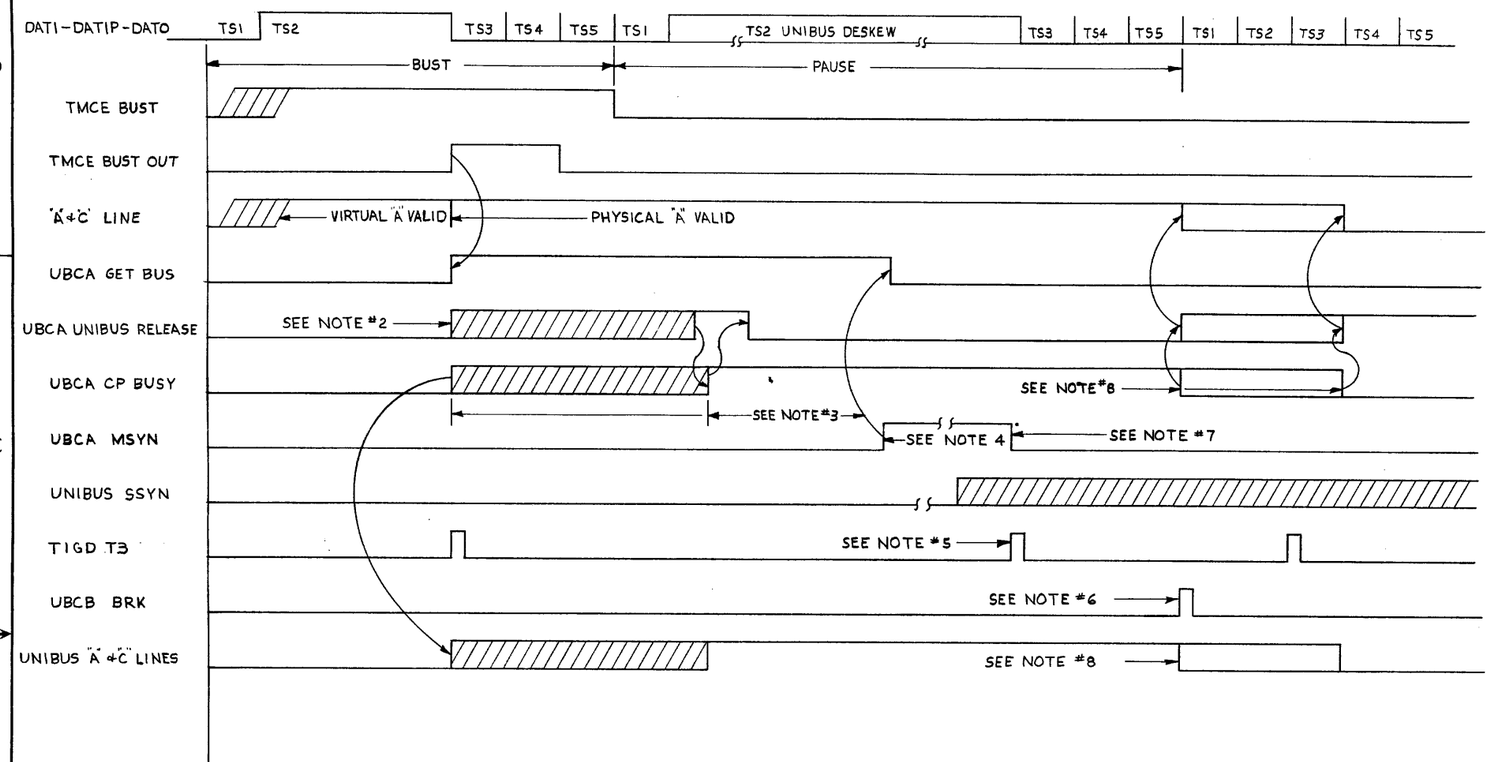
REV	REVISIONS	CHANGE NO	CHK

BRUNING 40-822 15840

DEC FORM NO DRD 102-B

M8106-Ø-1 P

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © , DIGITAL EQUIPMENT CORPORATION



NOTES:

#1 MSYN IS NOT SET IF ODD ADDRESS, KTIIC, PARITY OR STACK LIMIT HAS OCCURED. ERROR CONDITION RESTARTS TIMING GEN. AND ROM IS FORCED TO ZAP.00

#2 UNIBUS RELEASE = -(NPG + NPR + SACK + B BUSY)

#3 MSYN IS SET 150 NS AFTER CP BUSY OR WHENEVER SSYN IS NOT PRESENT AFTER 150 NS DESKEW.

#4 IF ADRS IS INTERNAL OR SOLID STATE MEMORY, UNIBUS CONTROL LOGIC IS CLEARED, DESKEW STOPPED, MSYN NOT ASSERTED.

#5 T3 STROBES UNIBUS DATA TO BUS BUFFER REGISTER EVERY T3. FOR DATI- DATIP THE BR CLOCK IS NEXT TI

#6 BRK IS DEPENDENT ON ROM TO LOAD BUS TO BR.

#7 75 NS DESKEW FOR MSYN IS OBTAINED BY THE FACT THAT SSYN MUST GO THROUGH 2 RANKS OF SYNCRONIZATION

#8 FOR BUS LONG PAUSE ADDRESS + CONTROL IS DESKEWED FROM T3 TO T1. FOR BUS PAUSE THEY ARE HELD TO TS4 OF THE NEXT ROM CYCLE.

SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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. R. Hale	DATE 5/24/73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 5/24/73	
ENG.	DATE	
PROJ. ENG. Allan Kellerman	DATE 5/30/73	
PROD. A. Hirschi	DATE 5/30/73	

MATERIAL —
FINISH —
NEXT HIGHER ASSY. B-DD-KB11-A
SCALE —
SHEET 14 OF 14

TITLE: UNIBUS & CONSOLE CONTROL (UBCP)

SIZE	CODE	NUMBER	REV.
D	CS	M8106-0-1	P

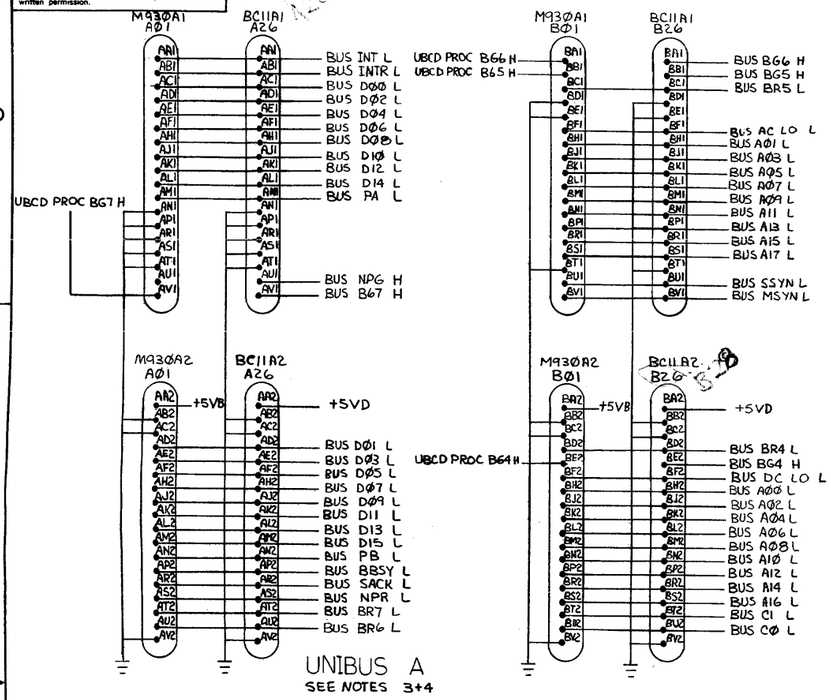
DIST.

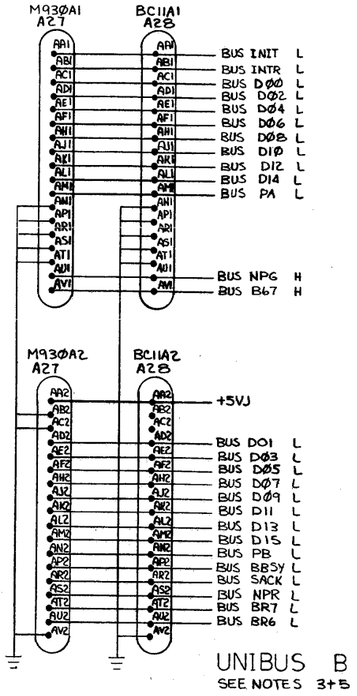
REVISIONS		
CHANGE NO		
CHK		
REV		

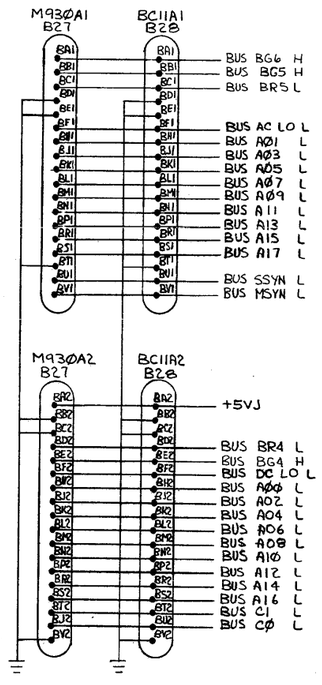
DEC FORM 105
DRD 102-C

SIZE CODE DCS M8106-0-1 REV P

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

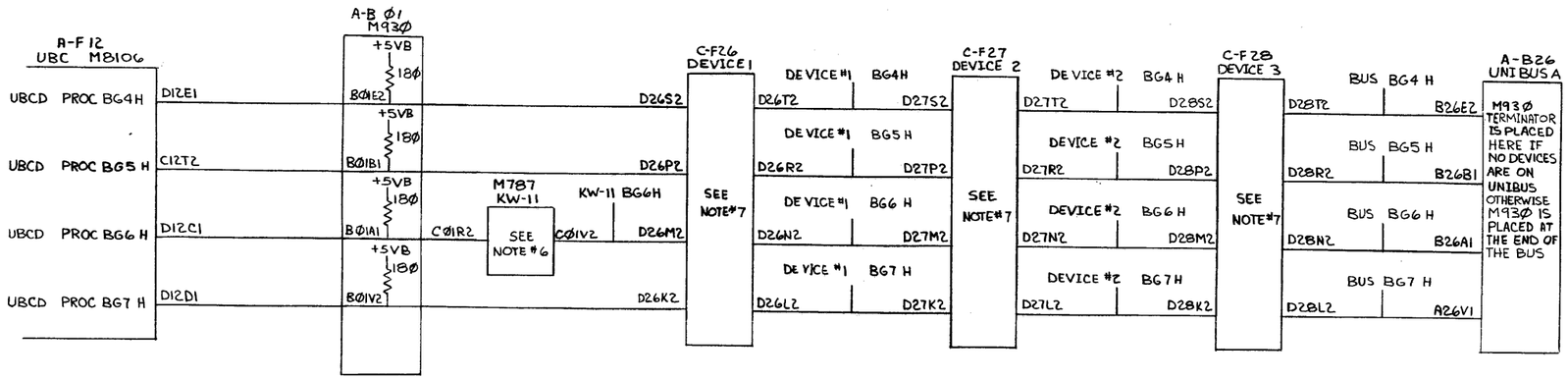






NOTES:

1. UNIBUS A IS A CONVENTIONAL UNIBUS WITH PRIORITY ARBITRATION CONTAINED WITHIN THE KB11-A
2. UNIBUS B IS TRANSPARENT TO THE KB11-A IN THAT NO PRIORITY ARBITRATION IS PRESENT, SEMICONDUCTOR MEMORY (UNIBUS PORT) IS TIED TO BUS B.
3. TO CONNECT SEMICONUCTOR MEMORY TO UNIBUS A IN SINGLE BUS CONFIGURATION BUS A (A826) IS CONNECTED TO BUS B (AB27) VIA M9200 AND BUS B OUT (AB28) BECOMES UNIBUS OUT.
4. BUS A SIGNAL PREFIXES IN KB11-A REFER TO UNIBUS A IN MULTIBUS CONFIGURATIONS,
5. BUS B SIGNAL PREFIXES IN MS11 REFER TO UNIBUS B IN MULIBUS CONFIGURATIONS.
6. C0IR2 - C0IV2 MUST BE DELETED ON BACKPANEL WHEN KW11 IS INSTALLED.
7. WHEN NO DEVICE IS INSERTED G727 MUST BE BE PLACED IN THE 'D' SLOT TO JUMPER GRANT LINES TO UNIBUS OUT.



FIRST USED ON OPTION/MODEL: 11/45	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 3/01/72
CHK D		DATE 4/7/72
ENG		DATE 4/29/72
PROJ ENG.		DATE 4/19/72
PROD		DATE 4-21-72

NEXT HIGHER ASSY. B-DD-KB11-A

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BUS CABLES AND GRANT CHAIN (BUS)

SIZE D | CODE IC | NUMBER KB11-A-BG | REV

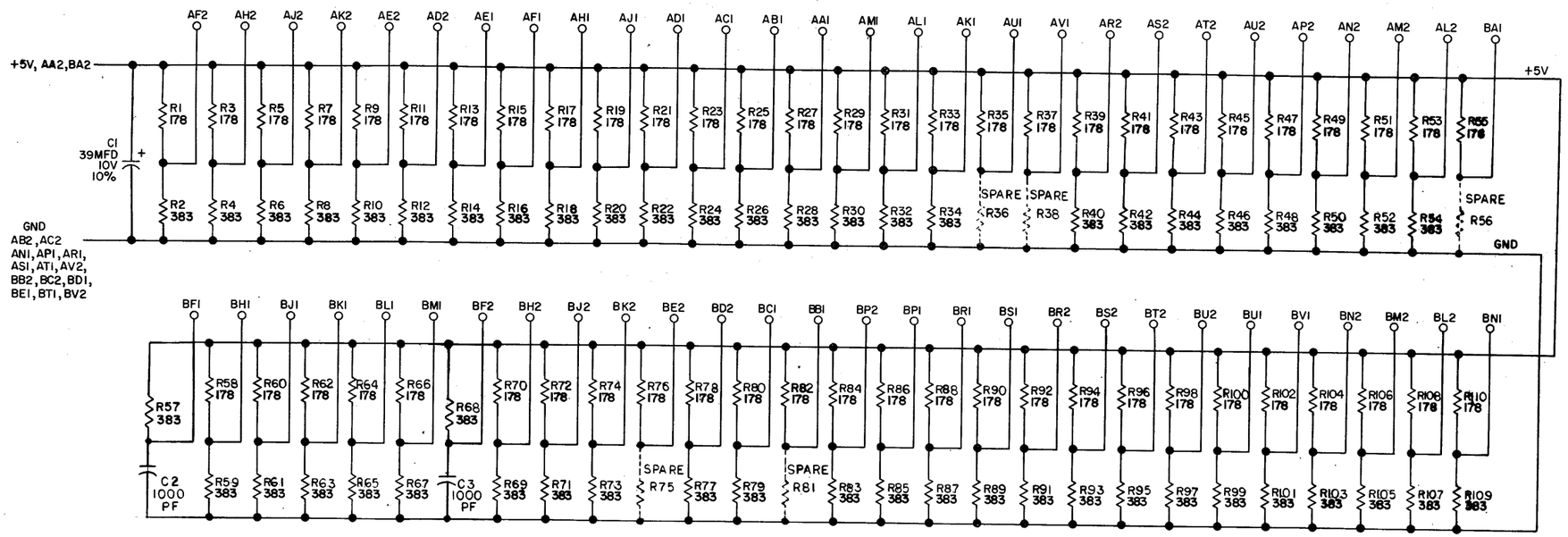
DIST

REVISIONS: REV | CHANGE NO | CHK

BRUNING 40-522 (5840)
DEC FORM NO FORM 102-B

REV | SIZE D | CODE IC | NUMBER KB11-A-BG

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY.
COPYRIGHT 1969 BY DIGITAL EQUIPMENT CORPORATION



UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W, 1%
CAPACITORS ARE .001UF, 250V, 20%

REVISIONS					
CHK	CHG NO.	REV.			
	00001	A			
	00002	B			
	00003	C			
D. J. Hale 5-29-73			P. JANSON 6-5-73	00004	D

DRN. BOTLER	DATE 11-21-69	
CHK'D T. Whitewright	DATE 12-3-69	
ENG. D. E. Jansen	DATE	
PROD.	DATE	

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BUS TERMINATOR M930

SIZE	CODE	NUMBER	REV.
C	CS	M930-0-1	D

PRINTED CIRCUIT REV. D

SIZE	CODE	NUMBER	REV.
C	CS	M930-0-1	D

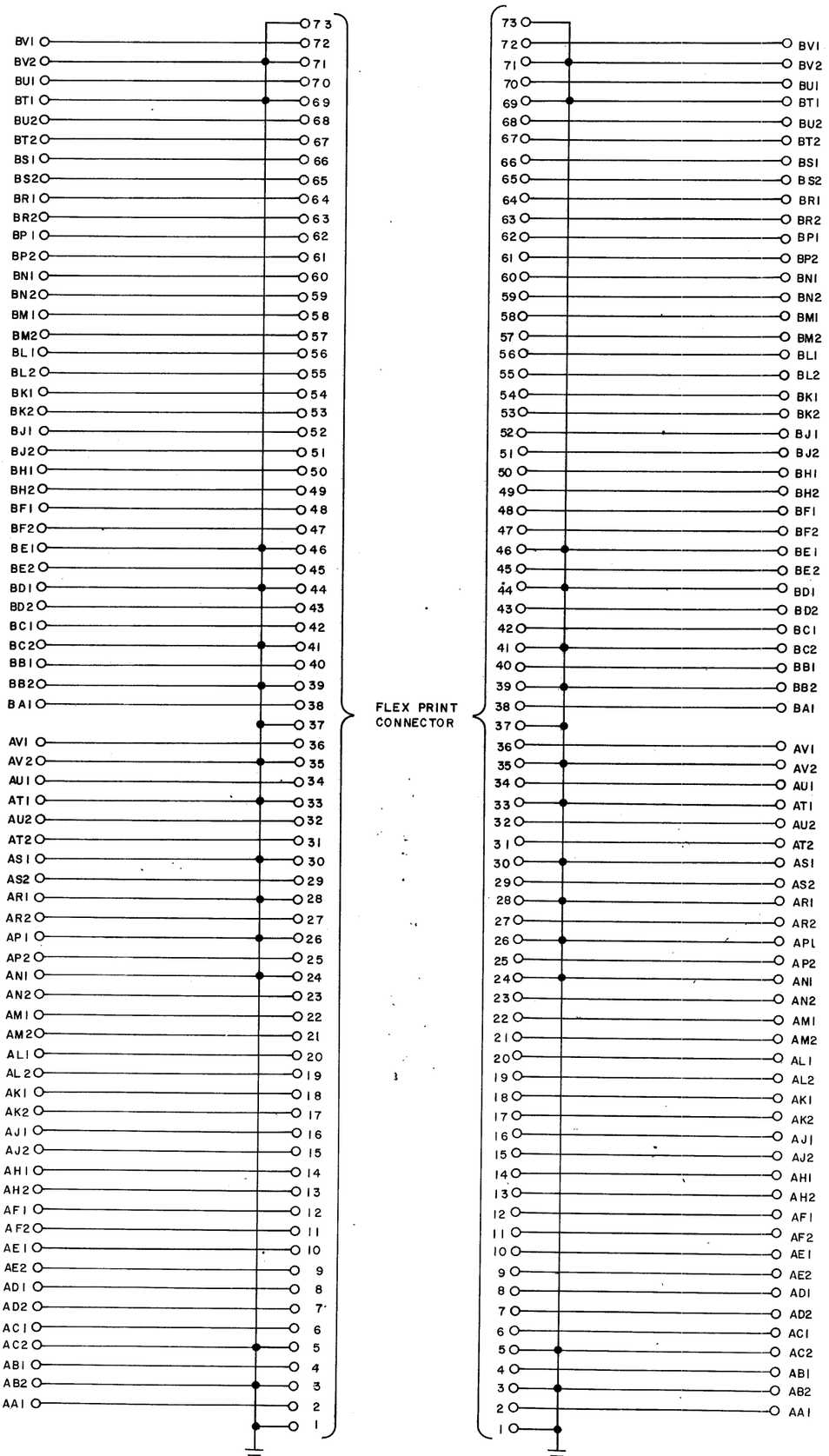
DEC FORM NO. SMC 102

5 PINK DIST. 314, 434, 455 5 Pink

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY.
COPYRIGHT 1969 BY DIGITAL EQUIPMENT CORPORATION

REVISIONS		
CHK	CHG NO.	REV.
	00001	A
	00002	B

DEC DWG NO. D-M920-0-2



	NAME	DATE
DRN	[illegible]	11-6-69
CHK'D	[illegible]	11-6-69
ENG	[illegible]	11-7-69
PROJ	[illegible]	11/7/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: INTERNAL BUS CONNECTOR M920

SIZE	CODE	NUMBER	REV.
C	CS	M920-0-1	B

PRINTED CIRCUIT REV. B

5

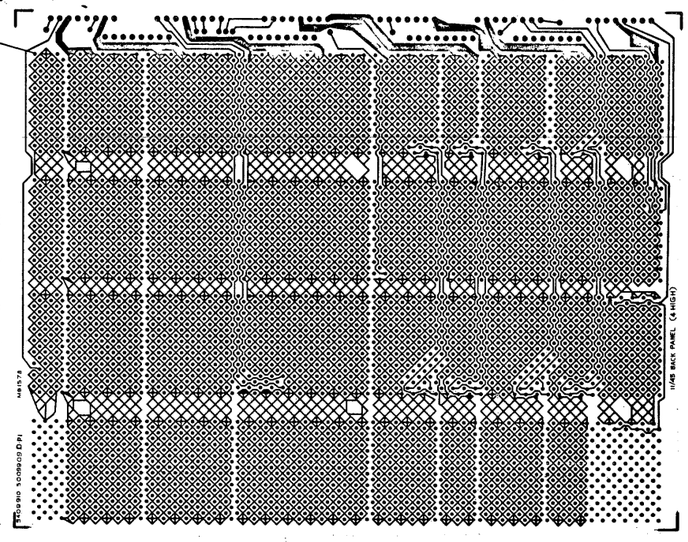
DIST 324,324,253

PWK

21

SIZE C | CODE CS | NUMBER M920-0-1 | REV. B

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



SOLDER SIDE (SIDE 2)

BLOCK SIDE (SIDE 1)

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

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		ASSY-DRILLING HOLE LAYOUT	D-AH-5409910-0-5	5
		11/45 BACK PANEL	E-IA-5009909-0-0	4
REF		X-Y COORDINATE HOLE LOC	K-CO-5409910-0-4	3
REF		MODULE HISTORY	E-MH-5409910-0-6	2
1		ETCHED CIRCUIT BOARD	5009909	1

PARTS LIST

ETCH BOARD REV D

REV	REVISIONS	CHK	CHANGE NO.	DATE
A	ORIGINATED	J.SWANSON	5409910-00000	8/26/72
C		J.SWANSON	5409910-00000	8/30/72
D		J.SWANSON	5409910-00000	9/26/72
D		J.SWANSON	5409910-00000	11/30/72

SEMICONDUCTOR CONVERSION CHART

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

DRN A. Davis 5-31-72
CHK R. Card 6-1-72
ENG J. Swanson 6/1/72
PROJ. ENG. M. Dill 6/1/72
PROD. S. Lamb 6/2/72
NEXT HIGHER ASSY E-AD-7008752-0-0

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

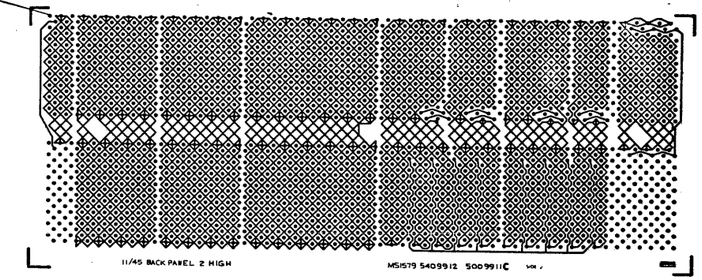
TITLE CIRCUIT SCHEMATIC

SIZE E | CODE | NUMBER CS 5409910-0-1 | REV D
SCALE 1/1
SHEET 1 OF 1
DIST

CS5409910-0-1 D

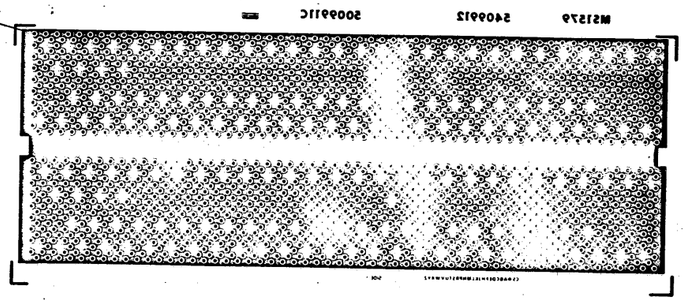
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

1A1



SOLDER SIDE (SIDE 2)

1A1



BLOCK SIDE (SIDE 1)

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

REV	DESCRIPTION	DATE	APPROVED
A	INITIATED	11/10/72	J.SWANSON
B	CHANGE NO. 5109912-0000(M1) C	11/17/72	A.J. Nolan 6675

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

SEMICONDUCTOR CONVERSION CHART

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		ETCHED CIRCUIT BOARD	5-1A-5009911-0-0	1
REF		MODULE ECO HISTORY	5-MH-5409912-0-0	2
REF		X-Y COORDINATE HOLE LOC	K-CO-5409912-0-5	3

PARTS LIST

ETCH BOARD REV C

DRN		DATE 11/10/72
CHK		DATE 11/10/72
ENG	D. SWANSON	DATE 11/10/72
PROJ ENG		DATE 11/10/72
PROD		DATE 11/10/72

NEXT HIGHER ASSY

SCALE

SHEET OF 1

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

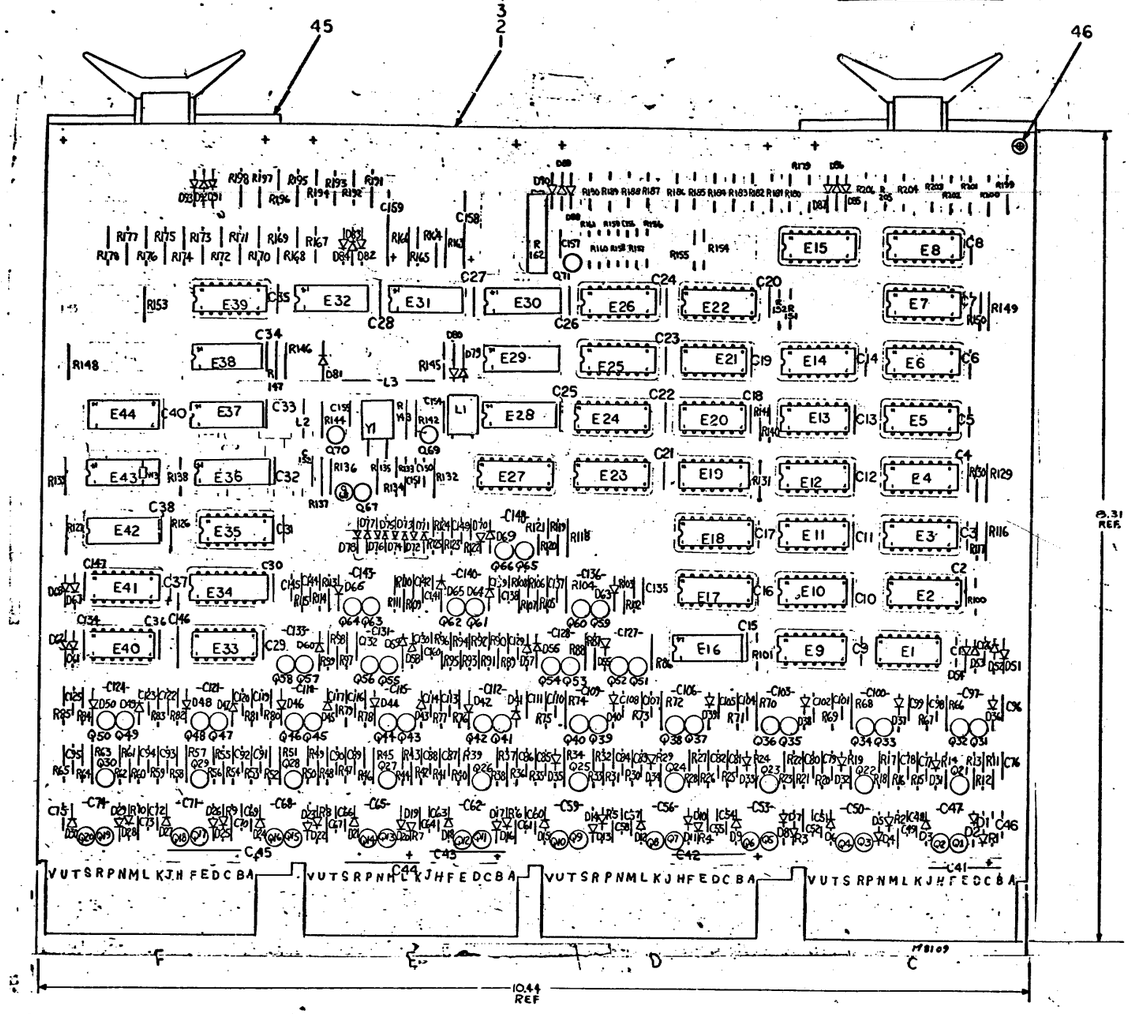
TITLE: CIRCUIT SCHEMATIC

SIZE E | CODE | NUMBER 5409912-0-1 | REV C

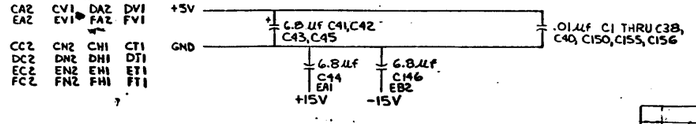
DIST

MODULE C5409912-0-1 C

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



NOTES:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS CAPS WITHOUT VALUE NOTED ARE .22 MFD



— CAUTION —
NON-STANDARD DRAWING FOR SPECIAL APPLICATION

DEC 74511		16					
IC TYPE	GND	+5V					
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE			ITEM NO.	AWG	FROM PT	TO PT
IC PIN LOCATIONS			JUMPER LIST				

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
		PARTS LIST		
1	W3	JUMPER INSULATED	NA	48
8		EYELET #G64-7	9006732	47
4		HANDLE FLIP-CHIP MAGENTA	9008337-06	46
1	Y1	CRYSTAL 33.333 MHZ	1810694-1	45
1	L2	INDUCTOR 47 uh NYTRONICS WEE-WEE -047	1610999	44
1	L1	INDUCTOR .22 uh, VARIABLE NYTRONICS WEE VL .22	1611000	43
1	L3	INDUCTOR RFCS 33 uh	1601759	42

42	1	C1 THRU C38, C40, C150, C155, C156	CAP .01 uf 100V 20% DISC	1001610
41	1	C154	CAP 100 PF 100V 5% D.M.	1000016
40	1	C157	CAP 47 PF 100V 5% D.M.	1000011
39	10	C98, C101, C104, C107, C110, C113, C116, C119, C122, C125	CAP 33 PF 100V 5% D.M.	1000009
38	1		ETCHED CIRCUIT BOARD	5009799
37	REF		MODULE ECO HISTORY	S-MM-M8109-0-0
36	REF		ASSY/DRILL HOLE LAYOUT	D-AD-M8109-0-0
35	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8109-0-0
	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
		PARTS LIST		

35	01,07,05,07,09,011, 013,015,017,019,021, THRU 025,031 THRU 040 051,054,056,059,069, 063,065,066,069,070	TRANSISTOR DEC 4258	1505321	40
36	02,04,06,08,010,012, 014,016,018,020,026 THRU 030,041 THRU 050, 052,053,057,060,061 062,064, 067, 068, 071,055	TRANSISTOR DEC 3009 B	1503100	39
1	E30	IC. DEC 74S140	1910546	38
8	E2,E17,E18,E22,E23, E34,E35,E36	I.C. DEC 74S112	1910545	37
8	E5,E19,E28,E24,E6, E8,E15,E42	IC. DEC 74S74	1910544	36
4	E11,E12,E13,E20	IC DEC 74S65	1910543	35
1	E27	I.C. DEC 74S64	1910542	34
6	E1,E9,E14,E16,E33,E40	I.C. DEC 74S40	1910541	33
2	E32,E38	I.C. DEC 74S20	1910539	32
4	E3,E29,E39,E44	I.C. DEC 74S11	1910537	31
5	E4 E7 E21 E25 E37	I.C. DEC 74S04	1910534	30
4	E10,E24,E31,E41	I.C. DEC 74S00	1910532	29
1	R162	RES. 1K 3/4W 10%	3091143-07	28
9	R117,R130,R151,R140, R147,R150,R115,R143,R166	RES. 680 Ω 1/4W 5%	1301424	27
1	R142	RES. 750 Ω 1/4W 5%	1301401	26
13	R66,R68,R70,R72,R74, R76,R78,R80,R82,R84, R118,R173,R120	RES. 1.2K 1/4W 5%	1301320	25
26	R13,R15,R18,R20,R23,R25, R28,R30,R33,R35,R38, R41,R44,R47,R50,R53, R56,R59,R62,R65,R108, R104,R114,R115,R132,R158	RES. 10 Ω 1/4W 5%	1301317	24
5	R12 R17 R22 R27 R32	RES. 15K 1/4 5%	1300496	23
22	R1 THRU R10 R40 R46 R52 R58 R64 R67 R69 R71 R73 R75 R99 R113	RES. 4.7K 1/4 5%	1300447	22
7	R77,R79,R81,R83, R85,R86,R103	RES. 3K 1/4 5%	1300432	21
6	R11,R16,R21,R26,R31, R143	RES. 1.5K 1/4 5%	1300391	20
74	R34,R37,R42,R43,R48, R49,R54,R55,R60,R61, R89 THRU R96,R105 THRU R111 R122,R123,R124,R126, R101 R138 R139 R148 R153 R167 THRU R206	RES. 1K 1/4 5%	1300365	19
12	R116 R129,R141,R146,R149,R156, R152,R155,R110,R112 R164,R165	RES. 330 1/4W 5%	1300295	18
2	R136, R145	RES. 220 1/4W 5%	1300271	17
6	R100,R125,R127,R131,R154,R163	RES. 150 Ω 1/4W 5%	1300250	16
11	R14 R19 R24 R29 R34 R39 R45 R51 R57 R63 R121	RES. 100 Ω 1/4W 5%	1300229	15
2	R133, R137	RES. 68 Ω 1/4W 5%	1300219	14
7	R87, R88, R97 R134, R135, R144, R98	RES. 47 Ω 1/4W 5%	1300202	13
59	D1,D2,D4,D6,D7,D9,D10,D12 D13,D15,D16,D18,D19,D21, D22,D24,D25,D27 D28,D30,D31 THRU D56 D57,D58,D61,D62,D64, D67,D68,D69,D65,D70	DIODE FD777	1103041	12
39	D2,D5,D8,D11,D14,D17, D20,D23,D26,D29,D55, D54,D59,D60,D63,D66, D71 THRU D93	DIODE D662	1100113	11
76	C46 THRU C93,C99,C100,C160 C102,C103,C105,C106,C108 C109,C111,C112,C114,C115 C117,C118,C120,C121,C123 C124,C126,C127 THRU C145 C147,C148,C149,C151,C152	CAP .22 uf 50V MONO	1010274-1	10
8	C41 THRU C45,C144,C158,C159	CAP 6.8 uf 35V 10% S.TANT	1005306	9

DEC 4258	NONE			
DEC 3009 B	2N3646			
DEC FD777	1103041			
DEC 662	1N645			
DEC NO.	EIA NO.	DEC NO.	EIA NO.	

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV [C]

| REVISIONS | | | | | | |

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

TIGC TPB L
TIGA T1(1)L
PHKA STOP T1 L
TMCF SEL MOS L
TMCC ABORT H
UBCA BLP DESKEW H
TMCF FAST L
TIGC TPB L
TIGA ROM INIT B L
TIGB CONT L
TIGA T1 (1) B L
TIGB ROM+UPB (1) H
TIGC TPB H
UBCA SSYN RESTART H
UBCA INTR RESTART H
RACB ROM40 BL
TIGA ROM 40 H
SMCA MEM SYNC (B) L
TIGA MEM SYNC H
TIGA STOP T1 L
TIGA UBSDØØ H
TIGA UBSDØ1 H
TIGA T1 (1) L
TIGA ROM INITA L
TIGC TPB H
TIGA CONT H
TIGA CONT (1) L
TMCF FAST L
TIGA ROM40 H
UBCD EXT BRQ H
RACB UBSDØØ H
TIGA UBSDØ1 L
PHKA STOP T3 L
TIGA T1 (1) H
TIGC TPB H
TIGA CONT H
SSRB ENABLE T3 DLY H
TIGA S0 (1) H
TIGA S1 (1) H
TIGB SINGLE CYL
TIGC TPB H
TIGA CONT H
TIGA STOP T3 L
TIGA SNGCY (1) H
TIGA T2A (1) H
TIGA CONT (1) L
RACH DIS BUST L
TIGA T4 (1) H
TIGA T1 SYNC (1) H
TIGA T5 (Ø) H
TIGA T2 (Ø) H
TIGA T1A (Ø) H
TIGA UBSDØØ H
TIGA SNG CY (1) H
TIGA T1 (1) H
TIGA STOP T1 L
TIGA T1 SYNC (1) H
UBCE ROM INIT H
TIGA ROM INITA L
TIGA ROM INITB L
TIGA T1 (1) B L
TIGA T1 (1) H
TIGA UBSDØ1 L
RACB UBSDØ1 H
TIGA UBSDØ1 H
RACB UBSDØØ H
TIGA UBSDØØ H
TIGA T1 MAT H
TIGA T2 MAT H
TIGA T3 MAT H
TIGA T4 MAT H
TIGA T5 MAT H
TIG TPH MAT H
TIGA STOP T1 L
+3VA
+3VB
+3VC
+3VD
+3VF
+3VK
+3VM
+3VN
+3VH
+5V

— CAUTION —
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

TIMING GENERATOR CONTROL — SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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

DRW. DATE 9/6/71
CHK'D DATE 10/6/71
ENG. DATE 11/2/71
PROJ. ENG. DATE 12/20/72
PROD. DATE 4/21/72

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE
SHEET 2 OF 6

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE TIMING GENERATOR (TIGA)

SIZE D | CODE CS | NUMBER M8109-Ø-1 | REV. M4
DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DRD 188-B

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

SOURCE SYNCHRONIZER

PHASE SPLITTER/BUFFER

CRYSTAL CLOCK

R/C CLOCK (MAINTENANCE)

ROM V UPB CYCLE

MAINT. SWITCHES: REF. TO XMAA BOARD		
S4	SINGLE TIME STEPPER	
S3	Ø = CRYSTAL TIMING SOURCE 1 = RC TIMING SOURCE	
S1	S2	MODE CONTROL
Ø	Ø	NO EFFECT
Ø	1	SINGLE ROM CYCLE
1	Ø	UPB STOP
1	1	SINGLE PULSE (USE SWØ)

NOTE:
1. ALL NPN TRANSISTORS ARE DEC 3009B AND ALL PNP. TRANSISTORS ARE DEC 4258 UNLESS OTHERWISE NOTED. ALL DIODES ARE TYPE FD777 ALL CAPS ARE .22 µf 50V MONLYTHIC UNLESS OTHERWISE INDICATED.

CUSTOMER DRAWING FOR SERVICE APPLICATION

TIMING SOURCE CONTROL — SLOT 15

FIRST USED ON OPTION/MODEL: 11/45

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 —

		DATE
DRN.	S.W. Roberts	8/25/71
CHK'D		4/20/72
ENG.		4/20/72
PROJ. ENG.		4-20-72
PROD.	Jack Zimmer	4-21-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING GENERATOR (TIGB)

NEXT HIGHER ASSY.: B-DD-KB11-Ø

SIZE	CODE	NUMBER	REV.
D	CS	M8109-Ø-1	M4

SCALE — SHEET 3 OF 6 DIST.

REVISIONS	REV.	CHANGE NO.	CHK

DEC FORM NO DRD 102-B

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

NOTES:
1. ALL NPN TRANSISTORS ARE DEC 3009B, ALL PNP TRANSISTORS ARE DEC 4258, ALL DIODES ARE TYPE FD 777, ALL CAPACITORS ARE .22μF 50V MONLYTHIC UNLESS OTHERWISE INDICATED.

TIGB CLOCK H
TIGB CLOCK L
TIGA T2A (1)H
TIGA T2A (1) L
TIGA T1A(1)H
TIGA T1A(1) L
TIGC TPB H
TIGC TPB L
TIGC TFH
TIGC TF L
TIGC TFR H
TIGC TFR L
TIGC T2 H
TIGC T2B H
TIGC T2R H
TIGC T2BR L
TIGC T2 L
TIGC T2B L
TIGC T2R L
TIGC T2BR L
TIGC T1 H
TIGC T1B H
TIGC T1R H
TIGC T1BR H
TIGC T1 L
TIGC T1B L
TIGC T1R L
TIGC T1BR L

— CAUTION —
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 A. Davis DATE 2-25-72
CHK'D DATE
ENG DATE 7/12/72
PROJ. ENG DATE 4-20-72
PROD. DATE 4-21-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING GENERATOR (TIGC)

NEXT HIGHER ASSY. B-DD-KB11-Ø
SCALE —
SHEET 4 OF 6

SIZE D | CODE DCS | NUMBER M8109-Ø-1 | REV. M4
DIST.

REVISIONS: REV | CHANGE NO | CHK
DRAWING 40-532 15440
DEC FORM NO DRD 103-B

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

TIGB CLOCK H
TIGB CLOCK L
TIGB CLOCK L
TIGB CLOCK L

TIGA T3 (1) H
TIGA T3 (1) L
TIGA T4 (1) H
TIGA T4 (1) L
TIGA T5A (1) H
TIGA T5A (1) L

TIGD T3 H
TIGD T38 H
TIGD T3R H
TIGD T3BR H
TIGD T3 L
TIGD T3B L
TIGD T3R L
TIGD T3BR L
TIGD T4 H
TIGD T4B H
TIGD T4R H
TIGD T4BR H
TIGD T4 L
TIGD T4B L
TIGD T4R L
TIGD T4BR L
TIGD T5 H
TIGD T5B H
TIGD T5R H
TIGD T5BR H
TIGD T5 L
TIGD T5B L
TIGD T5R L
TIGD T5BR L

NOTE:
1. ALL NPN TRANSISTORS ARE DEC 3009B, ALL PNP TRANSISTORS ARE DEC 4258, ALL DIODES ARE TYPE FD777 ALL CAPACITORS ARE .22 µF MONOLYTHIC UNLESS OTHERWISE INDICATED.

CAUTION
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

SLOT15

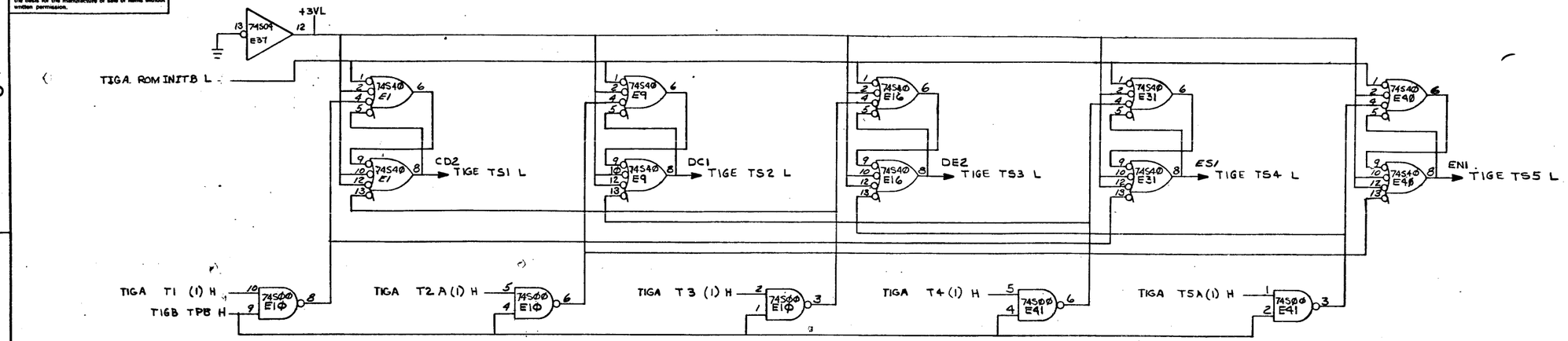
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

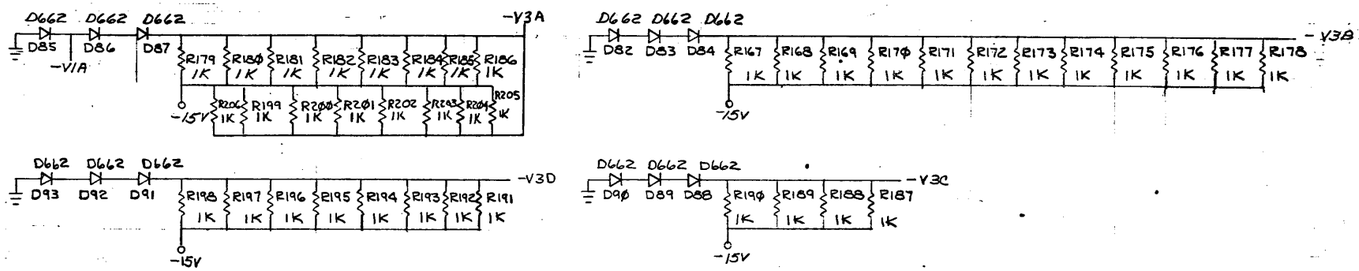
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS .XXX ± .005, .XX ± .02, .X ± .1; ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. K. Davis	DATE 3-1-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. R.V. Gale	DATE 4/27/72	
ENG. D.W. Hill	DATE 4/28/72	TITLE: TIMING GENERATOR (TIGD)
PROJ. ENG. D.J. Smith	DATE 4-20-72	
PROD. Jack Lawson	DATE 4-21-72	
NEXT HIGHER ASSY. B-DD-KB11-Ø		SIZE D CODE CS NUMBER M8109-Ø-1 REV. M4
SCALE —		
SHEET 5 OF 6		DIST.

REVISIONS: REV | CHANGE NO | CHK
BRUNING 40-322 15840
DEC FORM NO DRD 102-B

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





CAUTION
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

TIMING STATE DRIVERS — SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, .X ± .9 — ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN	L Carberry	DATE 8-25-71
CHKD	L Dolan	DATE 9/10/72
ENG	R Rabbat	DATE 9/26/72
PROJ ENG	[illegible]	DATE 9/26/72
PROD	Jack Norman	DATE 9-27-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING GENERATOR (TIGE)

NEXT HIGHER ASSY. B-DD-KB11-0
SCALE —
SIZE D CODE CS NUMBER M8109-0-1 REV M4
SHEET 6 OF 6 DIST.

REVISIONS: REV | CHANGE NO. | CHK

DEC FORM NO DRD 105-B

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

NOTE

1. FOR 11/45 SYSTEMS BUILT WITH 860 POWER CONTROLS, REFER TO D-IC-11/45-0-1 REV.A DRAWING.

*861 POWER CONTROL

90-135V/47-63Hz (2-PHASE 120° OR 180° DISPLACED) OR 180-270V/47-63Hz SINGLE PHASE

BLK
GRN
WHT

REFER TO CIRCUIT SCHEMATIC

D-CS-861-A-1 OR D-CS-861-B-1

861-A: NEMA L14-20P CONNECTOR
861-B: NEMA L6-20P CONNECTOR

SWITCHED AND UNSWITCHED AC OUTLETS ARE INDICATED BY PANEL MARKINGS.

*861-A: 90-135V/47-63Hz 2-PHASE (120° OR 180° DISPLACED)
861-B: 230V/60Hz

PI-4 — 1 KEY 1
PI-3 — 2 3 KEY 2

PI3-6 — 1 TERM 1
PI3-5 — 2 3 TERM 2

1 2 3

PART OF POWER DISTRIBUTION CABLE HARNESS

UPPER H742 POWER SUPPLY
REFER TO D-CS-H742-0-1

CONNECT TO ANY SWITCHED AC POWER CONNECTOR

M1 — CB1 — 0.1μF — C1 0.1μF — TB1 (See note) — T1

SECONDARY WINDINGS SHOWN ON SHEET 2

F1 — L1 — P/O J2 P13

ELAPSED TIME METER

F2 F3 F4 REGULATOR FANS

COOLING FANS TOP OF CABINET

CONNECT TO THE SAME UNSWITCHED LINE (LINE 1 ON 861) AS THE LOWER H742 (FOR 230 VAC OPERATION CONNECT FANS IN SERIES)

LOWER H742 POWER SUPPLY

CONNECT TO UNSWITCHED AC POWER CONNECTOR (LINE 1 ON 861) (SEE NOTE ON TOP OF CABINET FANS)

M1 — CB1 — 0.1μF — C1 0.1μF — TB1 (See note) — T1

SECONDARY WINDINGS SHOWN ON SHEET 3

F1 — L1 — P/O J2 P23

REFER TO SHEET 3

F2 F3 F4 REGULATOR FANS

NOTE:

FOR 115Vac OPERATION
JUMPER TB1-1&2, TB1-3&4 (H742-A)

FOR 230Vac OPERATION
JUMPER TB1-2&3 (H742-B)

REVISIONS					
REV.	CHANGE NO.	CHK			
A	11/45-00031	BW	V. BOAEN	8-23-72	
B	11/45-00047		SWANSON	9/1/72	
			B. MINOR	2/1/73	
C	11/45-00052		V. BOAEN	7-6-73	
D	11/45-00054		V. BOAEN	10-16-73	
E	11/45-00057		V. BOAEN	1-7-74	
			V. BOAEN	3-21-74	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 4/24/72
CHK — DATE 4/27/72
ENG — DATE 4/28/72
PROJ. ENG. — DATE 4/28/72
PROD. — DATE 4/27/72

NEXT HIGHER ASSY. B-DD-11/45-0

SCALE —
SHEET 1 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: POWER SYSTEMS CONFIGURATION

SIZE D | CODE IC | NUMBER 11/45-0-1 | REV. E

DIST.

DEC FORM NO DRD 100-A

"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT ©1973, DIGITAL EQUIPMENT CORPORATION"

UPPER H742

SECONDARY - H742

TB2

20-30 VAC

20-30 VAC

20-30 VAC

20-30 VAC

20-30 VAC

J1 / J4 P14

+8V1
+15V1
+15V2
GND1
GND2
GND3
LO GND1
AC LO1
DC LO2
AC LO4
LINE CLOCK
DC LO1

P2-8 WHT
P25-4 GRY
P12-2 GRY
P21-3 BLK
P8-8 BLK
P25-3 BLK
P10-1 BLK 18GA
P3-7 YEL. 18 GA
P22-10 YEL. 18GA
P22-8 YEL 18GA.
P7-7 YEL 18 GA
P37-2 BRN 18GA
P3-8 VIO 18 GA

J3 P16

AC-1 P18-6 RED
AC-2 P18-7 WHT
AC-3 P19-6 RED
AC-4 P19-7 WHT

J2 P15

AC-5 P17-6 RED
AC-6 P17-7 WHT
AC-7 P20-6 RED
AC-8 P20-7 WHT
AC-9 P21-6 RED
AC-10 P21-8 WHT

AC27 115 VAC
AC28

RED
WHT

P34
P35

TO ELAPSED TIME METER

115 VAC

TO H742 FANS

TO LOWER H742

P17

RED P15-1
WHT P15-2

H744 +5V REGULATOR (FP11)

AC-5
AC-6

+5VA1
GND A1
GND A2
+5VA2

SLOT A

P17

P2-6 RED
P8-2 BLK
P8-1 BLK
P2-5 RED

P18

RED P16-3
WHT P16-4

H744 +5V REGULATOR

AC-1
AC-2

+5VB1
GND B1
GND B2
+5VB2

SLOT B

P18

P2-2 RED
P8-4 BLK
P8-3 BLK
P2-1 RED

P19

RED P16-7
WHT P16-8

H744 +5V REGULATOR

AC-3
AC-4

+5VC1
GND C1
GND C2
+5VC2

SLOT C

P19

P3-6 RED
P8-6 BLK
P8-5 BLK
P3-5 RED

P20

RED P15-8
WHT P15-10

H744 +5V REGULATOR

AC-7
AC-8

+5VD1
GND D1
GND D2
+5VD2

SLOT D

P20

P1-8 RED
P1-7 BLK
P12-7 BLK
P12-1 RED

P21

RED P15-9
WHT P15-12

SEE NOTE *3

H745 -15V REGULATOR (SYSTEM UNITS)

AC-9
AC-10

-15VE1
GND E1
GND D1
+15V3
+15V

SLOT E

P21

P36-13 BLU
P36-11 BLK
P14-4 BLK
P25-5 GRY

P40-H754

BLK P12-5
BRN P12-14
ORN P12-3

-5VE1
+20VE1

TWP

P15-9
P15-12

AC-9
AC-10

SEE NOTE *2

P45/J45

BLU P7-1
BLU

BLU(-15VF1) P25-1
BLU(-15V2) P12-13

SEE NOTE 2

-15V3

P5

RED P28-5 +5VH2
RED P28-2 +5VH1
RED +5V1
BLUE P3-1 +5V1
BLUE P22-4 -15V5
RED -15V1
+5V2
+5V2

P6

GRN P26-4 +19.7VH1
YEL P26-5 +23.2VH1
BRN P26-3 -5VH1
RED P29-5 +5VL2
RED P29-2 +5VL1
RED +5V3
+5V3

P7

BLUE -15V3
BLUE P3-4 -15V6
BLUE P1-5 -15V4
VIO. 18GA. P22-9 DC LO 2
RED P27-5 +5VJ2
RED P4-4 +5V1
YEL P14-10 AC LO 2
RED P12-4 +5V4

P8

BLK P17-4 GND A2
BLK P17-3 GND A1
BLK P18-4 GND B2
BLK P18-3 GND B1
BLK P19-4 GND C2
BLK P19-3 GND C1
P41 BLK
BLK P14-5 GND 2

TO PLUGS ON SHEET 2

CUT JUMPERS		
P5 1-8	P5 3-4	P6 7-8
BIPOLAR ONLY		
IF MORE THAN 2K OF BIPOLAR	IF MORE THAN 4K OF BIPOLOR	IF MORE THAN 6K OF BIPOLAR
BIPOLAR AND MOS.		
NEVER CUT	ALWAYS CUT	IF MORE THAN 2K OF BIPOLAR

P1

GRY P3-3 +15V5
BLK P10-3 GND 11
BLK P32-3 PWR CONT COM 1
WHT P32-1 PWR CONT SW 1
BLU P7-3 -15V4
BLK P10-4 GND 12
BLK P20-3 GND D1
RED P20-2 +5VD1

P2

RED P18-5 +5VB2
RED P18-2 +5VE1
RED P17-5 +5VA2
RED P17-2 +5VA1
BRN 18GA. P37-2 LINE CLK
WHT P14-1 +8V

P3

BLU P5-5 -15V5
GRY P36-2 +15V4
GRY P1-1 +15V5
BLU P7-2 -15V6
RED P19-5 +5VC2
RED P19-2 +5VC1
YEL. 18GA. P14-8 AC LO 1
VIO. 18GA. P14-12 DC LO 1

P4

RED P31-5 +5VH2
RED P31-2 +5VH1
VIO. 18GA. P22-12 DC LO X
RED P7-6 +5V5
RED P27-2 +5VJ1

REVISIONS			
REV.	CHANGE NO	CHK	DATE

DEC FORM NO DRD 100-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS .XXX ± .005 .XX ± .02
ANGLES ± 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √
MATERIAL
FINISH

DRN R Cau... DATE 8/16/73
CHK'D DATE
ENG. DATE
PROJ ENG DATE
PROD. DATE
NEXT HIGHER ASSY.
SCALE NONE
SHEET 2 OF 5
DIST.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE 11/45
POWER SYSTEM (UPPER H742)

SIZE D | CODE IC | NUMBER 11/45-0-1 | REV. E

"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT ©1973, DIGITAL EQUIPMENT CORPORATION"

TO UPPER H742

FROM SHEET 1

LOWER H742

SECONDARY - H742

TB2

J4 — P22

J1 * SEE NOTE 3

* GND
* GND 4
* -15V 1
-15V 2
-15V 3
LO GND 2
AC LO 2
DC LO 2
AC LO 3
* DC LO X

P1Ø-5 BLK
P5-6 BLU
P1Ø-2 BLK 18 GA
P14-1Ø YEL 18 GA
P7-4 VIO 18 GA
P14-8 YEL 18 GA
P4-3 VIO 18 GA

20-30 VAC (×4)

J3 — P24 AC11

P27-6 RED
AC12 P27-7 WHT
AC15 P26-7 RED
AC16 P26-8 WHT
AC17 P31-6 RED
AC18 P31-7 WHT

J2 — P23

AC19 P29-6 RED
AC2Ø P29-7 WHT
AC21 P28-6 RED
AC22 P28-7 WHT
AC23 P25-6 RED
AC24 P25-8 WHT
AC25 P13-1 RED
AC26 P13-2 WHT
SHIELD

115V AC TO LOGIC FANS
CHASSIS GND
115 VAC
TO H742 FANS

P25 — H745 -15V REGULATOR — P25

RED P23-9
WHT P23-12
AC23
AC24
GND F1
GND 3
+15V 1
+15V 3
-15V F1
J45-1 BLU
P9-4 BLK
P14-6 BLK
P14-2 GRY
P21-4 GRY
SLOT F

P26 — H746 MOS REGULATOR — P26

RED P24-5
WHT P24-6
AC15
AC16
GND H3
-5V H1
+19.7V H1
+23.2V H1
SEE NOTE *1
P11-2 BLK
P6-4 BRN
P6-2 GRN
P6-3 YEL
SLOT H

P27 — H744 +5V REGULATOR — P27

RED P24-1
WHT P24-2
AC11
AC12
+5V J1
GND J1
GND J2
+5V J2
SEE NOTE 2
P4-5 RED
P9-2 BLK
P9-1 BLK
P7-5 RED
SLOT J

P28 — H744 +5V REGULATOR — P28

RED P23-8
WHT P23-1Ø
AC21
AC22
+5V K1
GND K1
GND K2
+5V K2
P5-2 RED
P11-4 BLK
P11-3 BLK
P5-1 RED
SLOT K

P29 — H744 +5V REGULATOR — P29

RED P23-1
WHT P23-2
AC19
AC2Ø
+5V L1
GND L1
GND L2
+5V L2
P6-6 RED
P11-6 BLK
P11-5 BLK
P6-5 RED
SLOT L

SEE NOTE 1
H744
P31

RED P4-2 — +5V H1
BLK P11-1 — GND H1
BLK P1Ø-8 — GND H2
RED P4-1 — +5V H2
RED P24-7 — AC17
WHT P24-8 — AC18

P32 J2

WHT 18GA P1-4 — SW 1
BLK 18GA P1-3 — COM 1

POWER CONTROL (REF. ONLY)

P33 J3

RED 18GA P13-5 — THERM 2
BLK 18GA P13-6 — THERM 1

P9

BLK P27-4 — GND J2
BLK P27-3 — GND J1
BLK P12-8 — GND 9
BLK P25-2 — GND F1
BLK 18GA. P37-1 — LO GND 3
BLK — GND 5
P38

P1Ø

BLK 18GA P14-7 — LO GND 1
BLK 18GA P22-7 — LO GND 2
BLK P1-2 — GND 11
BLK P1-6 — GND 12
BLK P22-3 — GND 4
BLK P31-4 — GND H2

P11

BLK P31-3 — GND H1
BLK P26-2 — GND H3
BLK P28-4 — GND K2
BLK P28-3 — GND K1
BLK P29-4 — GND L2
BLK P29-3 — GND L1
P39
BLK P36-8 — GND 6
GND 1Ø

P13

RED P23-5 — AC25 } 115V AC TO LOGIC FANS
WHT P23-6 — AC26 }
SHIELD — AC25
#18 RED — AC26
RED 18GA P33-2 — THERM 2 } TO THERMAL SWITCH
BLK 18GA P33-3 — THERM 1 }

SHIELD CONNECTED AT P23 ONLY

P12

RED P2Ø-5 — +5V D2
GRY P14-3 — +15V 2
ORN P4Ø-5 — +2ØV E1
RED P7-8 — +5V 4
BLK P4Ø-2 — GND E2 } TWP
BLK P2Ø-4 — SPARE -1
BLK P9-3 — GND D2
GND 9
GND
SPARE -2
GND
SPARE -3
BLU J45-4 — -15V2
BRN P4Ø-3 — -5V E1
SPARE -3

P36

GRY P3-2 — +5V
+15V 4
+2ØV
+5V
GND
SPARE -1
GND
BLK P11-8 — GND 1Ø (CPU)
GND
SPARE -2
BLK P21-2 — GND E1
SPARE -3
BLU P21-1 — -15V E1
-5V
SPARE -3

P37

BLK 18GA P9-5 — LO GND 3
BRN 18GA P2-7 — LINE CLK
BRN 18GA P14-11 — DC LO
AC LO
SPARE 4
SPARE 5

NOTES:

1. IF BIPOLAR MEMORY IS USED H746 IN SLOT H IS REPLACED BY H744 AND CONNECTOR P31 IS USED INSTEAD OF P26.
2. IF MEMORY OR OTHER OPTION REQUIRING +20V & -5V IS INSTALLED IN SYSTEM UNIT LOCATION, REPLACE SLOT E - H745 WITH H759 AND USE P4Ø INSTEAD OF P21, ALSO MOVE AC WIRES FROM P21-6,8 TO P4Ø-7,8. TO PERMIT INSTALLATION OF OPTIONS REQUIRING -15V IN SYSTEM UNIT: MOVE JUMPER FROM P45 PIN 3 TO P45-PIN 4.
3. (*)-15V OF H742 RECONFIGURED AT P22/J4 TO PROVIDE -15V. THEREFORE LINE CLOCK AND +8V OUTPUTS OF THIS H742 MUST NOT BE USED.

REVISIONS	CHANGE NO	CHK	REV

DEC FORM NO DRD 102-C

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. J. Vincent	DATE 8-17-73
TOLERANCES	CHK'D.	DATE
DECIMALS: .xxx = .005, .xx = .02, .x = .1 — ANGLES: ±0° 30'	ENG.	DATE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √	PROJ. ENG.	DATE
MATERIAL	PROD.	DATE
FINISH	NEXT HIGHER ASSY.	
	SCALE	
	SHEET 3 OF 5	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 11/45 POWER SYSTEM (LOWER H742)

SIZE	CODE	NUMBER	REV.
D	IC	11/45-0-1	E

DIST.

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

UPPER H742 POWER SUPPLY

T1 SECONDARY UPPER H742 POWER SUPPLY

TB2

J1

POWER CONTROL UPPER H742 POWER SUPPLY
REFER TO C-CS-5409730-0-1

J4 P14

+8V	P2-8
+15V	P21-5
+15V	P36-8
GND	P21-3
GND	P8-8
GND	P25-3
GND	P10-1
AC LO 1	P3-7/P22-10
AC LO 2	P22-8
CLOCK	P36-6
DC LO 1	P3-8

J3 P16

P18-7	
P18-6	
P19-7	
P19-6	

P/O J2 P15

P17-7	
P17-6	
P20-7	
P20-6	
P21-8	
P21-6	

115V AC FROM UPPER H742 TBI
- TBI-2
- TBI-4

P/O P15

TO ELAPSED TIME METER

J/P17 — H744 +5V REGULATOR (FP11) — SLOT A

P15-2	AC IN	
P15-1		
	+5V	P2-6
	GND	P8-2
	GND	P8-1
	+5V	P2-5

J/P18 — H744 +5V REGULATOR — REFER TO D-CS-H744-0-1 — SLOT B

P16-4	AC IN	
P16-3		
	+5V	P2-2
	GND	P8-4
	GND	P8-3
	+5V	P2-1

J/P19 — H744 +5V REGULATOR — SLOT C

P16-8	AC IN	
P16-7		
	+5V	P3-6
	GND	P8-6
	GND	P8-5
	+5V	P3-5

J/P20 — H744 +5V REGULATOR — SLOT D

P15-10	AC IN	
P15-8		
	+5V	P1-8
	GND	P1-7
	GND	P12-6
	+5V	P12-5

J/P21 — H745 -15V REGULATOR — REFER TO D-CS-H745-0-1 — SLOT E

P15-12	AC IN	
P15-9		
P14-2	+15V	+15V P25-5
P14-4	GND	
	-15V	P12-7
	GND	P12-8

7008784 OLD POWER DISTRIBUTION CABLE HARNESS

P5

P28-5	+5V
P28-2	+5V
	+5V
P3-1	-15V
P22-4	-15V
	+5V

P6

P4-7	FUTURE V
P26-4	+19.7V
P26-5	+23.2V
P26-3	-5V
P29-5	+5V
P29-2	+5V
	+5V

P7

P12-2	-15V
P3-4	-15V
P1-5	-15V
P22-9	DC LO 2
P27-5	+5V
P4-4	+5V
P22-8	AC LO 2
P12-4	+5V

P8

P17-4	GND
P17-3	
P18-4	
P18-3	
P19-4	
P19-3	
P14-5	

CUT JUMPERS

P5 7-8	P5 3-4	P6 7-8
BIPOLAR ONLY		
IF MORE THAN 2K OF BIPOLAR	IF MORE THAN 4K OF BIPOLAR	IF MORE THAN 6K OF BIPOLAR
BIPOLAR AND MOS		
NEVER CUT	ALWAYS CUT	IF MORE THAN 2K OF BIPOLAR

P1

P3-3	+15V
P10-3	GND
P32-3	860 GND IN
P32-1	860 GND OUT
P7-3	-15V
P10-4	GND
P20-3	GND
P20-2	+5V

TO CONSOLE CONNECTOR J3

P2

P18-5	+5V
P18-2	+5V
P4-8	FUTURE V
P30-4	FUTURE V
P17-5	+5V
P17-2	+5V
P36-5	CLOCK
P14-1	+8V

P3

P5-5	-15V
P36-7	+15V
P1-1	+15V
P7-2	-15V
P19-5	+5V
P19-2	+5V
P14-8	AC LO 1
P14-9	DC LO 1

P4

P31-2	+5V
P31-2	+5V
P22-12	DC LO X
P7-6	+5V
P27-2	+5V
P30-3	FUTURE V
P6-1	FUTURE V
P2-3	FUTURE V

THIS SHEET APPLIES TO MACHINES WITH SERIAL NUMBERS LESS THAN 2000.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100-A

FIRST USED ON OPTION/MODEL: 11/45	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.	DATE 4/1/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D	DATE 4/24/72	
	ENG.	DATE 4/28/72	TITLE: OLD POWER SYSTEMS CONFIGURATION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD. ENG.	DATE 4/28/72	
MATERIAL	PROD.	DATE 4/28/72	
FINISH	NEXT HIGHER ASSY. B-DD-11/45-0		SIZE D CODE IC NUMBER 11/45-0-1 REV. E
	SCALE		
	SHEET 4 OF 5		DIST.

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

LOWER H742 POWER SUPPLY

T1 SECONDARY LOWER H742 POWER SUPPLY

TB2

J1

J4 P22

SEE NOTE

POWER CONTROL
LOWER H742 POWER SUPPLY
REFER TO C-CS-5409730-0-1

NOTE: +15V output configured to provide −15V at J4-4 with respect to J4-3

GND 1
GND 2
GND 3
−15V 4
GND 5
GND 6
GND 7
AC LO 2 8
DC LO 2 9
AC LO 1 10
CLOCK 11
DC LO X 12

P10-5
P5-6
P10-2
P7-7 / P14-10
P7-4
P14-8
P4-3

J3 P24

20 - 30 VAC
20 - 30 VAC
20 - 30 VAC
20 - 30 VAC
20 - 30 VAC

P27-7
P27-6
P30-8
P30-7
P26-8
P26-7
P31-7
P31-6

P/O J2 P23

P29-7
P29-6
P28-7
P28-6
P25-8
P25-6
P13-1
P13-2

115 VAC FROM LOWER H742 TB1
TB1-2
TB1-4
TO LOGIC FANS

P/O P23

J/P25

P23-12
P23-9

AC IN
H745
−15V REGULATOR
SLOT F

−15V 1
GND 2
GND 3
4
+15V 5

P13-7
P13-8
P14-6
P21-4

J/P26

P24-6
P24-5

SEE NOTE 1
AC IN
H746
MOS REGULATOR
REFER TO D-CS-H746-0-1
SLOT H

GND 1
−5V 2
+19.7V 3
+23.2V 4
5

P11-2
P6-4
P6-2
P6-3

J/P27

P24-2
P24-1

SEE NOTE 2
AC IN
H744
+5V REGULATOR
SLOT J

+5V 1
GND 2
GND 3
GND 4
+5V 5

P4-5
P9-2
P9-1
P7-5

J/P28

P23-10
P23-8

AC IN
H744
+5V REGULATOR
SLOT K

+5V 1
GND 2
GND 3
GND 4
+5V 5

P5-2
P11-4
P11-3
P5-1

J/P29

P23-2
P23-1

AC IN
H744
+5V REGULATOR
SLOT L

+5V 1
GND 2
GND 3
GND 4
+5V 5

P6-6
P11-6
P11-5
P6-5

7008784 OLD POWER DISTRIBUTION CABLE HARNESS

P30

P10-7
P4-6
P2-4
P10-6
P24-4
P24-3

2 GND
3 FUTURE V
4 FUTURE V
5 GND
6
7
8

SEE NOTE 2

P31

P4-2
P11-1
P10-8
P4-1
P24-8
P24-7

2 +5V
3 GND
4 GND
5 +5V
6
7
8

SEE NOTE 1

P9

P27-4
P27-3
P12-1

1
2
3
4
5
6
7
8

GND

P10

P14-7
P22-7
P1-2
P1-6
P22-3
P30-5
P30-2
P31-4

1
2
3
4
5
6
7
8

GND

P11

P31-3
P26-2
P28-4
P28-3
P29-4
P29-3
P12-3

1
2
3
4
5
6
7
8

GND

P12

P9-3
P7-1
P11-8
P7-8
P20-5
P20-4
P21-1
P21-2

1 GND
2 −15V
3 GND
4 +5V
5 +5V
6 GND
7 −15V
8 GND

CONNECT TO SYSTEM UNIT POWER DISTRIBUTION BOARD

P13

P23-5
P23-6

1 115VAC TO LOGIC FANS
2
3
4

P33-2
P33-3

5 BA11 THERMAL SWITCH
6

P25-1
P25-2

7 −15V
8 GND

P36

P2-7
P14-11
P3-2
P14-3

1
2
3
4
5 CLK
6 CLK
7 +5V
8 +5V

POWER DISTRIBUTION CABLE HARNESS

NOTES:

1 If Bipolar Memory is used H746 is replaced by H744 in slot H and connector P31 is used instead of P26

2. If slot J H744 is replaced in future, use P30 instead of P27

THIS SHEET APPLIES TO MACHINES WITH SERIAL NUMBERS LESS THAN 2000

REVISIONS	REV.
CHANGE NO.	
CHK	

DEC FORM NO. DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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 ✓

DRN		DATE 4-11-72
CHK'D		DATE 4/11/72
ENG.		DATE 4/11/72
PROJ. ENG.		DATE 4/10/72
MOD. SY.		DATE 4/24/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: OLD POWER SYSTEMS CONFIGURATION

MATERIAL	NEXT HIGHER ASSY.	SIZE	CODE	NUMBER	REV.
	B-DD-11/45-Ø	D	IC	11/45-Ø-1	E
FINISH	SCALE				
	SHEET 5 OF 5	DIST.			

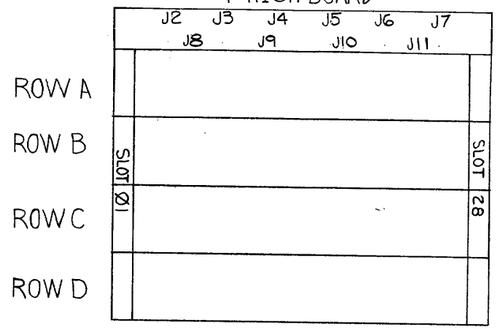
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

VOLTAGE	REGULATOR LOCATION	PIN	ROW	SLOT	MATE N LOCK CONNECTION	WIRE WRAP PIN
+5V	A	A2,V1	A-F	2-5	J2-5,6	
↕	B	A2	↕	1,6-9	J2-3,4	
	B	V1		6-9	J2-3,4	
	C	A2,V1		10-15	J3-5,6	
	J1	↑		16-18	J4-6,7	
	H2			19,20	J4-1,2 , J5-8	
	K	↓	↓	21-23	J5-1,2,3	
	L	A2,V1	A-F	24,25	J6-5,6,7	
	J	A2	A	16	J5-4,7, J6-8	
	D	↑	A,B	26	J7-8	
↓	D	↓	C-F	26-28	J7-8	
+5V	J1	A2	A,B	27,28	J7-5,6	
+8V	TOP H742	B1	F	1	J2-8	SP-1
LTCL	TOP H742	R1	C	1	J2-7	
FV1	J2	—	—	—	J2-1,2	SP-2
DCLO1	TOP H742	U1	C	12	J3-8	
ACLO1	TOP H742	S1	C	12	J3-7	
-15V	E	B2	E	2	J3-4	SP-3
+15V	TOP H742	A1	E	15	J3-2,3	SP-4
-15V	BOT. H742	B2	E	16	J3-1	SP-5
FV1	J2	—	—	—	J4-8	SP-6
FV2	J2	—	—	—	J4-4,5, J6-3	SP7,SP10
DCLOX	BOT. H742	U2	B	16	J4-3	
-15V	BOT. H742	B2	E	21	J5-5,6	SP-8
-5V	H1	C1	F	17-20,22-25	J6-4	SP-9
+23V	H1	V2	A,C,E	17-20,22-25	J6-2	
+19V	H1	U2	A,C,E	17-20,22-25	J6-1	
ACLO2	BOT. H742	F1	B	28	J7-7	
DCLO2	BOT. H742	F2	B	28	J7-4	

	PIN	ROW	SLOT	MATE N LOCK CONNECTION
GROUND	C2,N2,T1	A-F	2-25	J8-1, 8
	C2,T1	A-F	1,26-28	J9-1, 8
	B2,V2	A,B	↕	J10-1, 8
	N1,P1,R1,S1	A		J11 -1,8
	D1,E1	B	1,26-28	

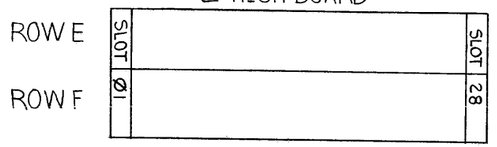
NOTES:
1. THIS LISTING IS FURNISHED TO SHOW COMBINATIONS OF MATE N LOCK CONNECTORS (J#) AND WIREWRAP PINS THAT ARE TO BE ETCHED TOGETHER. VOLTAGES WILL BE WIREWRAPPED BETWEEN 5409910 AND 5409912
2. ALL MATE N LOCK CONNECTORS AND PINS LISTED ARE CONNECTED TOGETHER BY THE GROUND PLANE (5409910-4 HIGH BOARD). WIREWRAP CONNECTIONS WILL BE MADE BETWEEN DXXT1 (5409910) AND EXXC2 (5409912)-XX= SLOT NUMBERS 01-28

4 HIGH BOARD

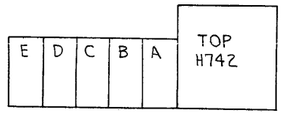


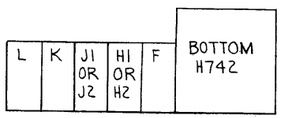
5409910
(POWER PLANE)

2 HIGH BOARD

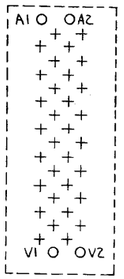


5409912
(POWER PLANE)



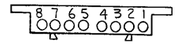


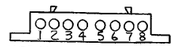
REGULATOR LOCATIONS



PIN CONFIGURATION
(ONE ROW-ONE SLOT SECTION)

MATE N LOCK CONNECTORS J2-J6





MATE N LOCK CONNECTORS J7-J11

REVISIONS	CHANGE NO.	CHK	REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11/45	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 4/26/72
CHK'D. DATE 4/28/72
ENG. DATE 4/28/72
PROJ. ENG. DATE 4/28/72
PROD. DATE 5-1-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 11/45 BACK PANEL PC BOARD

NEXT HIGHER ASSY. B-DD-11/45-0
SCALE —
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	IC	11/45-0-2	

DIST.

DEC FORM NO. DRD 100-A

REV. 11/45-0-2 SIZE D CODE IC

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

SIZE	CODE	NUMBER	REV.
K	WL	7009540-0-2	A

FIRST USED ON OPTION MODEL
11/45

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN. B. Blagaert	DATE 10-5-73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. G. Vaglas	DATE 11/5/73		
ENG. Verill Boan	DATE 11/5/73		
PROJ. ENG. Verill Boan	DATE 11/5/73		
PROD. Jack Norman	DATE 11-5-73		
NEXT HIGHER ASSEMBLY J-IA-7009540-0-0		TITLE WIRE LIST	
SCALE —			
SHEET 1 OF —		SIZE K / CODE WL / NUMBER 7009540-0-2 / REV. A	
		DIST.	

REVISIONS			
CHK	CHANGE NO.	REV.	
RJ	11/45-00057	A	R. Vaules 3-21-74

V. BOAEN
Verill Boan

DEC FORM NO. DRB 109

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
SEE NOTE:		NOTE							ALL WIRES #14 AWG	X	1
SEE NOTE:		NOTE							UNLESS OTHERWISE NOTED		1
+15V1		P14-2									
+15V1		P25-4 42.25"				GRY				X	2
											2
+15V2		P12-2									
+15V2		P14-3 56.5"				GRY				X	3
											3
+15V3		P21-4									
+15V3		P25-5 51"				GRY				X	4
											4
+15V4		P3-2									
+15V4		P36-2 31.5"				GRY				X	5
											5
+15V5		P1-1									
+15V5		P3-3 18"				GRY				X	6
											6
+19.7VH1		P26-4 72"				GRN				X	7
+19.7VH1		P6-2									7
+20VE1		P12-3									
+20VE1		P40-5 62.5"							ORN-BLK TWP(GND E2)	X	8
											8
+23.2VH1		P26-5 72"				YEL				X	9
+23.2VH1		P6-3									9
+5J1		P27-2 80"				RED				X	10
+5J1		P4-5									10
+5V1		P5-3									
+5V1		P5-4 2.25"				RED				X	11
											11
+5V2		P5-7									
+5V2		P5-8 2.25"				RED				X	12
											12
+5V3		P6-7									
+5V3		P6-8 2.25"				RED				X	13
											13
+5V4		P12-4 20.5"				RED				X	14
+5V4		P7-8									14
+5V5		P4-4									
+5V5		P7-6 17"				RED				X	15
											15
+5VA1		P17-2 65"				RED				X	16
+5VA1		P2-6									16
+5VA2		P17-5 65.5"				RED				X	17
+5VA2		P2-5									17
+5VB2		P18-5 69"				RED				X	18
+5VB2		P2-1									18

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
+5VC1		P19-2 71"				RED				X	19
+5VC1		P3-6									19
+5VC2		P19-5 71"				RED				X	20
+5VC2		P3-5									20
+5VD1		P1-8									
+5VD1		P20-2 82"				RED				X	21
											21
+5VD2		P12-1									
+5VD2		P20-5 59.5"				RED				X	22
											22
+5VE1		P18-2 69"				RED				X	23
+5VE1		P2-2									23
+5VH1		P31-2 77"				RED				X	24
+5VH1		P4-2									24
+5VH2		P31-5 77"				RED				X	25
+5VH2		P4-1									25
+5VJ2		P27-5 72.5"				RED				X	26
+5VJ2		P7-5									26
+5VK1		P28-2 81.25"				RED				X	27
+5VK1		P5-2									27
+5VK2		P28-5 81"				RED				X	28
+5VK2		P5-1									28
+5VL1		P29-2 81"				RED				X	29
+5VL1		P6-6									29
+5VL2		P29-5 81"				RED				X	30
+5VL2		P6-5									30
+8V		P14-1 71"				WHT				X	31
+8V		P2-8									31
-15V1		P22-4 76.5"				BLU				X	32
-15V1		P5-6									32
-15V2		J45-4 21"				BLU				X	33
-15V2		P12-13									33
-15V3		P07-1 4"				BLU			#18AWG	X	34
-15V3		P45-1 2"				BLU			#18AWG		34
-15V3		P45-3									34
-15V4		P1-5									
-15V4		P7-3 27.75"				BLU				X	35
											35
-15V5		P3-1									
-15V5		P5-5 14.5"				BLU				X	36
											36

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
-15V6		P3-4										
-15V6		P7-2 19.5"				BLU					X	37
												37
-15VE1		P21-1										
-15VE1		P36-13 64"				BLU					X	38
												38
-15VF1		J45-1										
-15VF1		P25-1 65"				BLU					X	39
												39
-5VE1		P12-14										
-5VE1		P40-3 62.75"				BRN					X	40
												40
-5VH1		P26-3 72.5"				BRN						
-5VH1		P6-4									X	41
												41
AC L01		P14-8 70.5				YEL				#18AWG	X	42
AC L01		P3-7										42
AC L01'		P14-8										
AC L01'		P22-10 47"				YEL				#18AWG	X	43
												43
AC L02		P14-10				YEL				#18AWG		
AC L02		P7-7 60.25"									X	44
												44
AC L02'		P14-10										
AC L02'		P22-8 46"				YEL				#18AWG	X	45
												45
AC01		P16-3										
AC01		P18-6 12"								RED-WHT TWP(AC2)	X	46
												46
AC02		P16-4										
AC02		P18-7 12"								WHT-RED TWP(AC1)	X	47
												47
AC03		P16-7										
AC03		P19-6 15.75"								RED-WHT TWP(AC4)	X	48
												48
AC04		P16-8										
AC04		P19-7 15.75"								WHT-RED TWP(AC3)	X	49
												49
AC05		P15-1										
AC05		P17-6 11.5"								RED-WHT TWP(AC6)	X	50
												50
AC06		P15-2										
AC06		P17-7 11.5"								WHT-RED TWP(AC5)	X	51
												51
AC07		P15-8										
AC07		P20-6 16"								RED-WHT TWP(AC8)	X	52
												52
AC08		P15-10										
AC08		P20-7 16"								WHT-RED TWP(AC7)	X	53
												53
AC09		P15-9										
AC09		P21-6 21.5"								RED-WHT TWP(AC10)	X	54
												54

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
AC10		P15-12										
AC10		P21-8 21.5"								WHT-RED TWP(AC9)	X	55
												55
AC11		P24-1										
AC11		P27-6 21"								RED-WHT TWP(AC12)	X	56
												56
AC12		P24-2										
AC12		P27-7 21"								WHT-RED TWP(AC11)	X	57
												57
AC15		P24-5										
AC15		P26-7 18"								RED-WHT TWP(AC16)	X	58
												58
AC16		P24-6										
AC16		P26-8 18"								WHT-RED TWP(AC15)	X	59
												59
AC17		P24-7										
AC17		P31-6 17.5"								RED-WHT TWP(AC18)	X	60
												60
AC18		P24-8										
AC18		P31-7 17.5"								WHT-RED TWP(AC17)	X	61
												61
AC19		P23-1										
AC19		P29-6 21"								RED-WHT TWP(AC20)	X	62
												62
AC20		P23-2										
AC20		P29-7 21"								WHT-RED TWP(AC19)	X	63
												63
AC21		P23-8										
AC21		P28-6 17.5"								RED-WHT TWP(AC22)	X	64
												64
AC22		P23-10										
AC22		P28-7 17.5"								WHT-RED TWP(AC21)	X	65
												65
AC23		P23-9										
AC23		P25-6 9.5"								RED-WHT TWP(AC24)	X	66
												66
AC24		P23-12										
AC24		P25-8 9.5"								WHT-RED TWP(AC23)	X	67
												67
AC25		P13-1										
AC25		P13-3 2.75"				RED				#18AWG	X	68
												68
AC25'		P13-1										
AC25'		P23-5 64.5"				RED				CABLE 9107761	X	69
												69
AC26		P13-2										
AC26		P23-6 64.5"				WHT				CABLE 9107761	X	70
												70
AC26'		P13-2										
AC26'		P13-4 2.75"				WH				#18AWG	X	71
												71
AC2		P15-5										
AC27		P34 57"								RED-WHT TWP TO TIME MTR	X	72
												72

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
AC28		P15-6									X	73
AC28		P35 57"								WHT-RED TWP TO TIME MTR		73
DC L01		P14-12 69.5"					VIO			#18AWG	X	74
DC L01		P3-8										74
DC L02		P22-9 71"					VIO			#18AWG	X	75
DC L02		P7-4										75
DC LOX		P22-12					VIO			#18AWG	X	76
DC LOX		P4-3 78.5"										76
GND 01		P14-4									X	77
GND 01		P21-3 28.5"					BLK					77
GND 02		P14-5 73"					BLK				X	78
GND 02		P8-8										78
GND 03		P14-6									X	79
GND 03		P25-3 43.5"					BLK					79
GND 04		P10-5									X	80
GND 04		P22-3 74"					BLK					80
GND 05		P38 9"					BLK				X	81
GND 05		P9-6										81
GND 06		P11-7									X	82
GND 06		P39 9"					BLK					82
GND 09		P12-8 31.5"					BLK				X	83
GND 09		P9-3										83
GND 10		P11-8									X	84
GND 10		P36-8 25.5"					BLK					84
GND 11		P1-2									X	85
GND 11		P10-3 24.5"					BLK					85
GND 12		P1-6									X	86
GND 12		P10-4 24.5"					BLK					86
GND 13		P41 9"					BLK				X	87
GND 13		P8-7										87
GND A1		P17-3 64.5"					BLK				X	88
GND A1		P8-2										88
GND A2		P17-4 66"					BLK				X	89
GND A2		P8-1										89
GND B1		P18-3 70.75"					BLK				X	90
GND B1		P8-4										90

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
GND B2		P18-4 71.5"					BLK				X	91
GND B2		P8-3										91
GND C1		P19-3 73.5"					BLK				X	92
GND C1		P8-6										92
GND C2		P19-4 73.5"					BLK				X	93
GND C2		P8-5										93
GND D1		P1-7									X	94
GND D1		P20-3 82"					BLK					94
GND D2		P12-7									X	95
GND D2		P20-4 61"					BLK					95
GND E1		P21-2									X	96
GND E1		P36-11 64"					BLK					96
GND E2		P12-5									X	97
GND E2		P40-2 63"								BLK-ORN TWP(+20VE1)		97
GND F1		P25-2 75.5"					BLK				X	98
GND F1		P9-4										98
GND H1		P11-1									X	99
GND H1		P31-3 74.5"					BLK					99
GND H2		P10-8									X	100
GND H2		P31-4 74"					BLK					100
GND H3		P11-2									X	101
GND H3		P26-2 73"					BLK					101
GND J1		P27-3 82.5"					BLK				X	102
GND J1		P9-2										102
GND J2		P27-4 82.5"					BLK				X	103
GND J2		P9-1										103
GND K1		P11-4									X	104
GND K1		P28-3 78"					BLK					104
GND K2		P11-3									X	105
GND K2		P28-4 78"					BLK					105
GND L1		P11-6									X	106
GND L1		P29-3 81"					BLK					106
GND L2		P11-5									X	107
GND L2		P29-4 81"					BLK					107
LINE CLOCK		P14-11									X	108
LINE CLOCK		P37-2 58.5"					BRN			#18AWG		108

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV RG Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
LINE CLOCK'		P2-7								
LINE CLOCK'		P37-2	33"		BRN			#18AWG	X	109
										109
LO GND 01		P10-1								
LO GND 01		P14-7	66"		BLK			#18AWG	X	110
										110
LO GND 02		P10-2								
LO GND 02		P22-7	78"		BLK			#18AWG	X	111
										111
LO GND 03		P37-1	30.5"		BLK			#18AWG	X	112
LO GND 03		P9-5								112
PWR CONT COM1		P1-3								
PWR CONT COM1		P32-3	98.25"		BLK-WHT			TWP(P.C SW1)#18AWG	X	113
										113
PWR CONT SW1		P1-4								
PWR CONT SW1		P32-1	98.25"		WHT-BLK			TWP(P.C COM1)#18AWG	X	114
										114
SHIELD		P23-4						CABLE 9107761	X	115
THERM 1		P13-6								
THERM 1		P33-3	77.75"		BLK			#18AWG	X	116
										116
THERM 2		P13-5								
THERM 2		P33-2	77.75"		RED			#18AWG	X	117
										117

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © , DIGITAL EQUIPMENT CORPORATION"

CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-861-0		
POWER CONTROL, 861	E-UA-861-0-0		
PILOT CONTROL	D-CS-5410206-0-1		
CIRCUIT SCHEMATIC 861	D-CS-861-A-1		
CIRCUIT SCHEMATIC 861	D-CS-861-B-1		
CIRCUIT SCHEMATIC 861	D-CS-861-C-1		
PACKAGING INSTRUCTION	A-PI-3700083-0-0		

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET
861	POWER CONTROL, 861	

REVISIONS		
REV	CHG. NO.	DATE
A	861-3	2/73
B	861-4	8/74

USED ON OPTION/MODEL

DRN. SCHMIDT	DATE 9/13/72	TITLE 861 POWER CONTROL	
CHK'D. B. ALLEN	DATE 9/13/72		
PROJ ENG. JIM KALAGHER	DATE 9/13/72		
PROD. Fazio Paul	DATE 9/25/72	SIZE B / CODE DD / NUMBER 861-0	REV B
FIELD SERV. Paton Irving	DATE 9/25/72	DIST	

SHEET 1 OF 3

DEC 16-13251-1062-1A-R&S

DRB 106

LEGEND			
DWG. NO.	VARIATION		
	VAC OUT	PHASES	AMP OUT
B61-A	120	2	32
B61-B	240	1	16
B61-C	120	1	24

NOTES:
1. FOR WIRE TABLES, SEE SHEET #2
2. LOCKWASHER (ITEM 21) MUST BE PLACED UNDER SOLDERLESS CONN (ITEM 42)
3. LOCKWASHER (ITEM 19) MUST BE PLACED BETWEEN FILTER (ITEM #8) AND TERM. CLAMP (ITEM #49)

VIEW B-B

DETAIL 'A'
SCALE: NONE

SECTION C-C
B61-A
SCALE: NONE

SECTION C-C
B61-B
SCALE: NONE

SECTION C-C
B61-C
SCALE: NONE

DETAIL 'E'
SCALE: NONE

DETAIL 'D'
RECEPTACALS FOR
B61-B

	B61-C	B61-B	B61-A			
3	—	—	CLAMP TERMINAL	1211223-01	57
1	1	1	LOCKNUT	9009309	56
18	—	—	CONN, SOLDERLESS, (GEL)	9008283	55
A/R	—	—	WIRE, #10 AWG I.P.V.C. (WHT)	9107390-99	54
—	1	—	STRAIN RELIEF (BLU)	1211198-00	53
1	—	—	MALE PLUG, 125V 30A	1211193	52
—	1	—	MALE PLUG, 250V 20A	1211192	51
1	—	—	POWER CORD 15 FT. 12/3	1700025	50
	3	4	CLAMP TERMINAL	1211223-00	49
1	—	—	FILTER 2 POLE 3 WIRE	1211199	48
A/R	A/R	A/R	GROMMET, CATERPILLAR	9007035	47
—	1	—	CONTACTOR, 230 V	1211197-1	46
—	6	—	RECEPTACLE, 15A 230 VAC	1211204	45
1	—	—	CIRCUIT BREAKER 20-20-30	1211196	44
—	B/R	—	POWER CORD 15 FT. 10/3	1700027	43
1	1	1	CONN, SOLDERLESS	9007928	42
2	2	2	NUT, KEP #4-40	9006557	41
2	2	2	SCREW, PH. PAN HD #4-40 X 5/16	9008301-1	40
1	—	—	NAME PLATE, B61-C	APS 3611218-04	39
9	9	9	CONN, ARKLESS DUAL 3000 HRM	9007925	38
27	37	98	CONN, SOLDERLESS (BLU)	9007919	37
7	6	7	CONN, SOLDERLESS (RED)	9007917	36
A/R	A/R	A/R	WIRE, #10 AWG I.P.V.C. (GRN)	9107360-33	35
A/R	A/R	A/R	WIRE, #18 AWG I.P.V.C. (BRN)	9107360-11	34
A/R	A/R	A/R	WIRE, #18 AWG I.P.V.C. (BLK)	9107360-00	33
A/R	A/R	A/R	WIRE, #18 AWG I.P.V.C. (WHT)	9107360-99	32
A/R	—	A/R	WIRE, #18 AWG I.P.V.C. (RED)	9107360-22	31
A/R	A/R	A/R	WIRE, #14 AWG I.P.V.C. (GRN)	9107370-55	30
A/R	A/R	A/R	WIRE, #14 AWG I.P.V.C. (BLK)	9107370-00	29
—	A/R	A/R	WIRE, #14 AWG I.P.V.C. (WHT)	9107370-99	28
A/R	—	A/R	WIRE, #14 AWG I.P.V.C. (RED)	9107370-22	27
6	5	5	NUT, KEP #8-32	9006563	26
4	4	4	SCREW, PH. PAN HD #8-32 X 5/16	9006037-1	25
2	2	2	NUT, KEP #6-32	9006560	24
18	18	18	SCREW, PH. PAN HD #6-32 X 5/16	9006021-1	23
2	2	2	LOCKWASHER, #6 EXT TOOTH	9007649	22
4	1	1	LOCKWASER #8 INT. TOOTH	9006634	21
—	1	—	NAME PLATE B61-B	APS-3611211-00	20
19	17	18	LOCKWASHER, #6 INT. TOOTH	9006633	19
—	—	1	NAME PLATE, B61-A	APS-3611216-04	18
2	2	2	PIN, MALE	1209378-01	17
1	1	1	HOUSING, 2 PIN MALE	1210922-2	16
3	3	3	PIN, FEMALE	1209379-01	15
1	1	1	HOUSING, 2 PIN FEMALE	1210921-9	14
1	1	1	P.C. BOARD ASSY	0C3941026-0-1	13
—	—	1	MALE PLUG, 125/250V 20A	1211193	12
—	—	A/R	POWER CORD 18 FT. 12/4	1700026	11
1	1	1	THERMOSTAT	1211158	10
1	—	1	STRAIN RELIEF (GRN)	1211198-01	9
—	1	1	FILTER 3 POLE 4 WIRE	1211157	8
1	1	1	CAPACITOR	1000039	7
1	—	1	CONTACTOR 115 V	1211197-0	6
2	2	2	LAMP, POWER 115 V	1205303	5
6	—	6	RECEPTACLE 15A, 115 VAC	1205351	4
—	1	1	CIRCUIT BREAKER, 20 A 2 POLE	1211192	3
1	1	1	COVER, 861 P.C.	0MD-7410508-0	2
1	1	1	CHASSIS, 861 P.C.	0SA-7410567-00	1
QTY.	QTY.	QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPT / MOD: 861 P.C.

REVISIONS				
ZONE	LTR	DESCRIPTION	CHANGE NO.	DATE
	B	861-00003		2-27-73

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. Howard	DATE 9-10-72
CHK'D.	J. Gaby	DATE 9-11-72
ENG.		DATE
PROD. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASSY.: B-DD-661-0

SCALE: 1/1 SHEET 1 OF 2

ANGLE EQUIPMENT CORPORATION, HAVERHILL, MASSACHUSETTS

TITLE: POWER CONTROL, 861

SIZE: E CODE: UA NUMBER: 861-0-0 REV.: B

DIST:

UA 861-0-0 B

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

WIRE TABLE 861-A

ITEM NO	DESCRIPTION COLOR	AWG	CONN	FROM POINT	WITH	TO CONN	POINT	WITH	REMARKS SEE DETAIL 'A'
29	BLK	14	P1-B2		37	K1-A3		37	12.0
33	BLK	18	P1-B1		36	K1-A5		36	12.0
28	WHT	14	P1-S1		37	P2-S1		37	9.0
28	WHT	14	P1-S2		37	K1-A2		37	12.0
32	WHT	18	P2-S2		36	P7-2		15	10.0
31	RED	18	P2-B2		36	P7-3		15	10.0
27	RED	14	P2-B1		37	K1-A1		37	12.0
28	WHT	14	P3-S1		37	P4-S2		37	6.0
28	WHT	14	P3-S2		37	C1-A3		37	6.0
27	RED	14	P3-B1		37	C1-A1		37	6.0
27	RED	14	P3-B2		37	P4-B1		37	9.0
28	WHT	14	P4-S1		37	P5-S2		37	9.0
28	WHT	14	P5-S1		37	P6-S2		37	6.0
29	BLK	14	P5-B1		37	C1-A2		37	6.0
29	BLK	14	P5-B2		37	P6-B1		37	9.0
29	BLK	14	K1-B3		37	C1-B2		37	9.0
28	WHT	14	K1-B2		37	C1-B3	C	37	9.0
27	RED	14	K1-B1		37	C1-B1		37	9.0
5	BLK	14	T1-A		—	CB1-B1	LINE +	38	—
5	BLK	14	T1-B		—	CB1-A1	LINE +	38	—
5	BLK	14	T2-A		—	CB1-B1	LINE +	38	—
5	BLK	14	T2-B		—	CB1-C1	LINE +	38	—
29	BLK	14	F1-C	OUT PUT	37	CB1-A1	LINE +	37	6.0
28	WHT	14	F1-B	OUT PUT	37	CB1-B1	LINE +	37	6.0
27	RED	14	F1-A	OUT PUT	37	CB1-C1	LINE +	37	6.0
27	RED	14	K1-A1		37	CB1-C2	LOAD −	37	6.0
28	WHT	14	K1-A2		37	CB1-B2	LOAD −	37	6.0
29	BLK	14	K1-A3		37	CB1-A2	LOAD −	37	6.0
30	GRN	14	F1-G	OUT PUT	37	GND		92	6.0
34	BRN	18	K1-A4		36	P7-1		15	* 10.0
35	ORN	18	P8-1		17	T1		36	10.0
35	ORN	18	P8-2		17	T1		36	10.0
11	BLK	12	P3-Y		—	F1-C	INPUT	49	
11	RED	12	P3-X		—	F1-A	INPUT	49	
11	WHT	12	P3-S		—	F1-B	INPUT	49	
11	GRN	12	P3-G		—	F1-G	INPUT	49	

WIRE TABLE 861-B

ITEM NO	DESCRIPTION COLOR	AWG	CONN	FROM POINT	WITH	TO CONN	POINT	WITH	REMARKS SEE DETAIL 'A'
29	BLK	14	P4-B2		37	K1-A3		37	12.0
29	BLK	14	P4-B1		37	P2-B2		37	6.0
28	WHT	14	P4-S1		37	P2-S1		37	9.0
28	WHT	14	P4-S2		37	K1-A2		37	12.0
32	WHT	18	P2-S2		36	P7-2		15	10.0
28	WHT	14	P3-S1		37	P2-S2		37	6.0
28	WHT	14	P3-S2		37	C1-A3		37	6.0
29	BLK	14	P3-B2		37	P2-B1		37	9.0
28	WHT	14	P4-S1		37	P6-S2		37	9.0
28	WHT	14	P5-S1		37	P6-S2		37	6.0
29	BLK	14	P5-B1		37	C1-A2		37	6.0
29	BLK	14	P5-B2		37	P6-B1		37	9.0
29	BLK	14	K1-B3		37	C1-B2		37	9.0
28	WHT	14	K1-B2		37	C1-B3	C	37	9.0
5	BLK	14	T1-A		—	CB1-B1	LINE +	38	—
5	BLK	14	T1-B		—	CB1-A1	LINE +	38	—
5	BLK	14	T2-A		—	CB1-B1	LINE +	38	—
5	BLK	14	T2-B		—	CB1-C1	LINE +	38	—
29	BLK	14	F1-C	OUT PUT	37	CB1-A1	LINE +	37	6.0
28	WHT	14	F1-B	OUT PUT	37	CB1-B1	LINE +	37	6.0
29	BLK	14	K1-A3		37	CB1-C2	LOAD −	37	6.0
30	GRN	14	F1-G	OUT PUT	37	GND		92	6.0
34	BRN	18	K1-A4		36	P7-1		15	10.0
35	ORN	18	P8-1		17	T1		36	10.0
35	ORN	18	P8-2		17	T1		36	10.0
33	BLK	18	P2-B1		36	P7-4		15	10.0
33	BLK	18	K1-A5		36				10.0
93	GRN	14	P3-G		—	F1-G	INPUT	49	—
43	BLK	14	P3-Y		—	F1-C	INPUT	49	—
43	WHT	14	P3-X		—	F1-B	INPUT	49	—
29	BLK	14	P4-B2		37	P6-B2		37	6.0

WIRE TABLE 861-C

ITEM NO	DESCRIPTION COLOR	AWG	CONN	FROM POINT	WITH	TO CONN	POINT	WITH	REMARKS SEE DETAIL 'A'
29	BLK	14	P1-B2		37	K1-A3		37	12.0
33	BLK	18	P1-B1		36	K1-A5		36	12.0
28	WHT	14	P1-S1		55	P2-S1		55	9.0
28	WHT	14	P1-S2		55	K1-A2		55	12.0
32	WHT	18	P2-S2		36	P7-2		15	10.0
31	RED	18	P2-B2		36	P7-3		15	10.0
27	RED	14	P2-B1		37	K1-A1		37	12.0
28	WHT	14	P3-S1		55	P4-S2		55	6.0
28	WHT	14	P3-S2		55	C1-A3		55	6.0
27	RED	14	P3-B1		37	C1-A1		37	6.0
27	RED	14	P3-B2		37	P4-B1		37	9.0
28	WHT	14	P4-S1		55	P5-S2		55	9.0
28	WHT	14	P4-S2		55	P6-S2		55	6.0
29	BLK	14	P5-B1		37	C1-A2		37	6.0
29	BLK	14	P5-B2		37	P6-B1		37	9.0
29	BLK	14	K1-B3		37	C1-B2		37	9.0
28	WHT	14	K1-B2		37	C1-B3	C	37	9.0
27	RED	14	K1-B1		37	C1-B1		37	9.0
5	BLK	14	T1-A		—	CB1-A1	LINE +	38	—
5	BLK	14	T1-B		—	CB1-B1	LINE +	38	—
5	BLK	14	T2-A		—	CB1-A1	LINE +	38	—
5	BLK	14	T2-B		—	CB1-C1	LINE +	38	—
29	BLK	14	F1-B	OUT PUT	37	CB1-B1	LINE +	37	6.0
59	WHT	10	F1-A	OUT PUT	55	CB1-A1	LINE +	55	6.0
27	RED	14	F1-B	OUT PUT	37	CB1-C1	LINE +	37	6.0
27	RED	14	K1-A1		37	CB1-C2	LOAD −	37	6.0
59	WHT	10	K1-A2		55	CB1-A2	LOAD −	55	6.0
29	BLK	14	K1-A3		37	CB1-B2	LOAD −	37	6.0
30	GRN	14	F1-G	OUT PUT	37	GND		92	6.0
35	ORN	12	P8-1		17	T1		36	10.0
35	ORN	18	P8-2		17	T1		36	10.0
34	BRN	18	K1-A4		36	P7-1		15	10.0
50	GRN	12	P9-G		—	F1-G	INPUT	49	
50	BLK	12	P9-B		—	F1-B	INPUT	49	
50	WHT	12	P9-S		—	F1-A	INPUT	49	

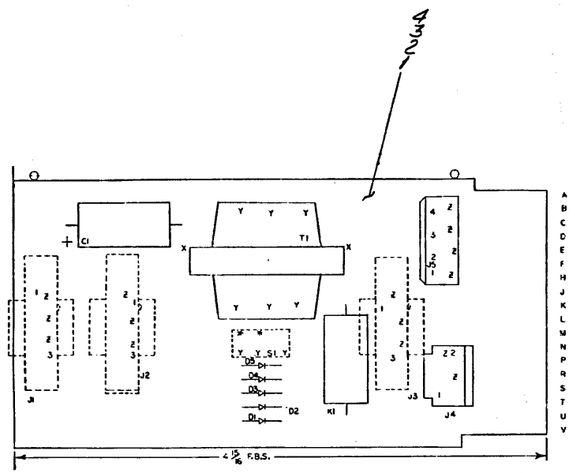
FIRST USED ON OPTION/MODEL: 861 PC	QTY.	DESCRIPTION	PARTS LIST	PART NO.	ITEM NO.	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS XXX ± .005, XX ± .02, X ± .1; ANGLES ±0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓	DRN. E. Bennett DATE 9-6-72	digital EQUIPMENT CORPORATION				
	CHK'D. DATE					
	ENG. DATE	TITLE: POWER CONTROL, 861				
	PROJ. ENG. DATE					
	PROD. DATE					
MATERIAL: —	NEXT HIGHER ASSY.					
FINISH: —	SCALE: —	SIZE: E	CODE: UA	NUMBER: 861-0-0	REV: B	
	SHEET 2 OF 2	DIST.				

MADE IN U.S.A. 861-0-0

BSD FORM NO. 5001

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

NOTES:



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	S1	SWITCH, 3-POS.	12-11132	14
1	K1	RELAY, REED	12-11173	13
1	T1	PC TRANSFORMER	16-11179	12
9	FOR USE ON J5	PIN, PC MALE MATE-N-LOCK	12108Z3	11
1	J4	SOCKET, 2 PIN MATE-N-LOCK	12103Z1-02	10
11	FOR USE ON J1-J4	PIN, PC FEMALE MATE-N-LOCK	1209756	9
1	J5	PLUG, 9 PIN MATE-N-LOCK	12033351-04	8
3	J1, J2, J3	SOCKET 3PIN MATE-N-LOCK	12033350-03	7
5	D1 - D5	DIODE 1N4004	11057136	6
1	C1	CAP, 5 UF, 50V 6% AL SL	1000330	5
REF		MODULE ECO HISTORY	PRINT 5410206-0-6	4
REF		ASSY DRILLING HOLE LAYOUT	PRINT 5410206-0-5	3
REF		X-Y COORDINATE HOLE LOCA.	PRINT 5410206-0-4	2
1		ETC CKT BOARD	50/0305	1

PARTS LIST

FIRST USED ON OPTION MODEL: 861 P.C.

ETCH BOARD REV: B

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

IC PIN LOCATIONS

CHANGE NO.	REV

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

DRN. A. Hewitt DATE 2-27-72
CHK'D K. Lough DATE 3-1-72
ENG. F. H. E. DATE 3-1-72
PROJ. ENG. J. T. R. DATE 3-1-72
PROD. DATE
NEXT HIGHER ASSY
SCALE 2/1
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PILOT CONTROL

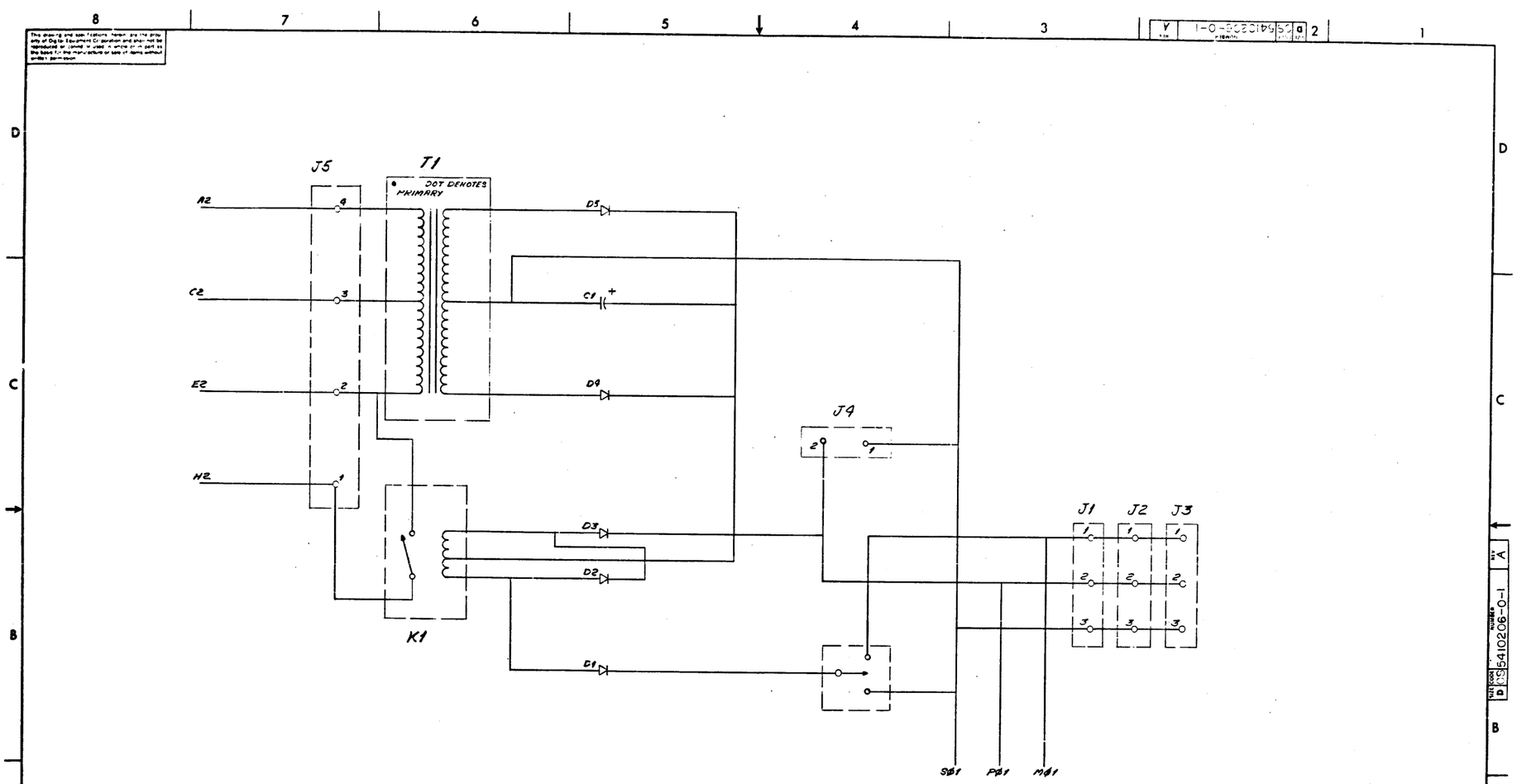
SIZE D | CODE 08936 | NUMBER 5410206-0-1 | REV. A

DIST.

SAT CODE D | NUMBER 5410206-0-1 | REV. A

DEC FORM NO. 2010-1264

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



FIRST USED ON OPTION MODEL: 861 P.C.	QTY	DESCRIPTION	PART NO / ITEM NO
		PARTS LIST	

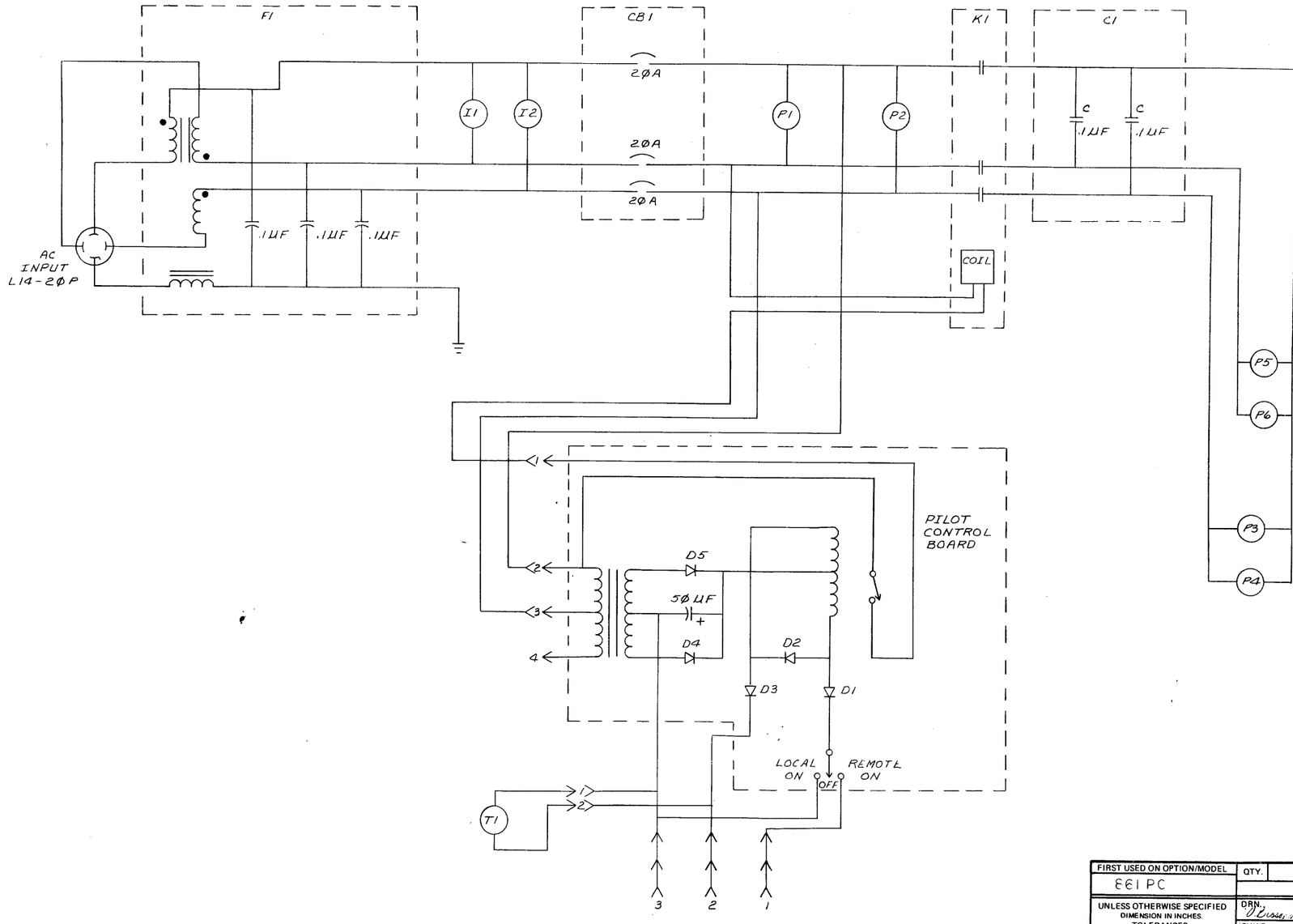
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: PILOT CONTROL
PROJ ENG.	DATE	
PROD.	DATE	
NEXT HIGHER ASSY		SIZE D / CODE / NUMBER 54102O6-0-1 / REV A
SCALE NONE		
SHEET 2 OF 2		CIST

REVISIONS			
CHG	CHANGE NO	REV	

DRAWING NUMBER: D 54102O6-0-1 REV A

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



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
861 PC		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. Bessette	DATE 9-11-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D L. Salopek	DATE 10-6-72	
ENG. R. Fenton	DATE 10-6-72	TITLE CIRCUIT SCHEMATIC (861-A PC)
PROJ. ENG. Ralph Rolle	DATE 10-6-72	
PROD. [illegible]	DATE	

NEXT HIGHER ASSY. B DD-861-0

SCALE —

SHEET OF

SIZE	CODE	NUMBER	REV.
D	CS	861-A-1	

DIST

REV.	CHANGE NO.	CHK

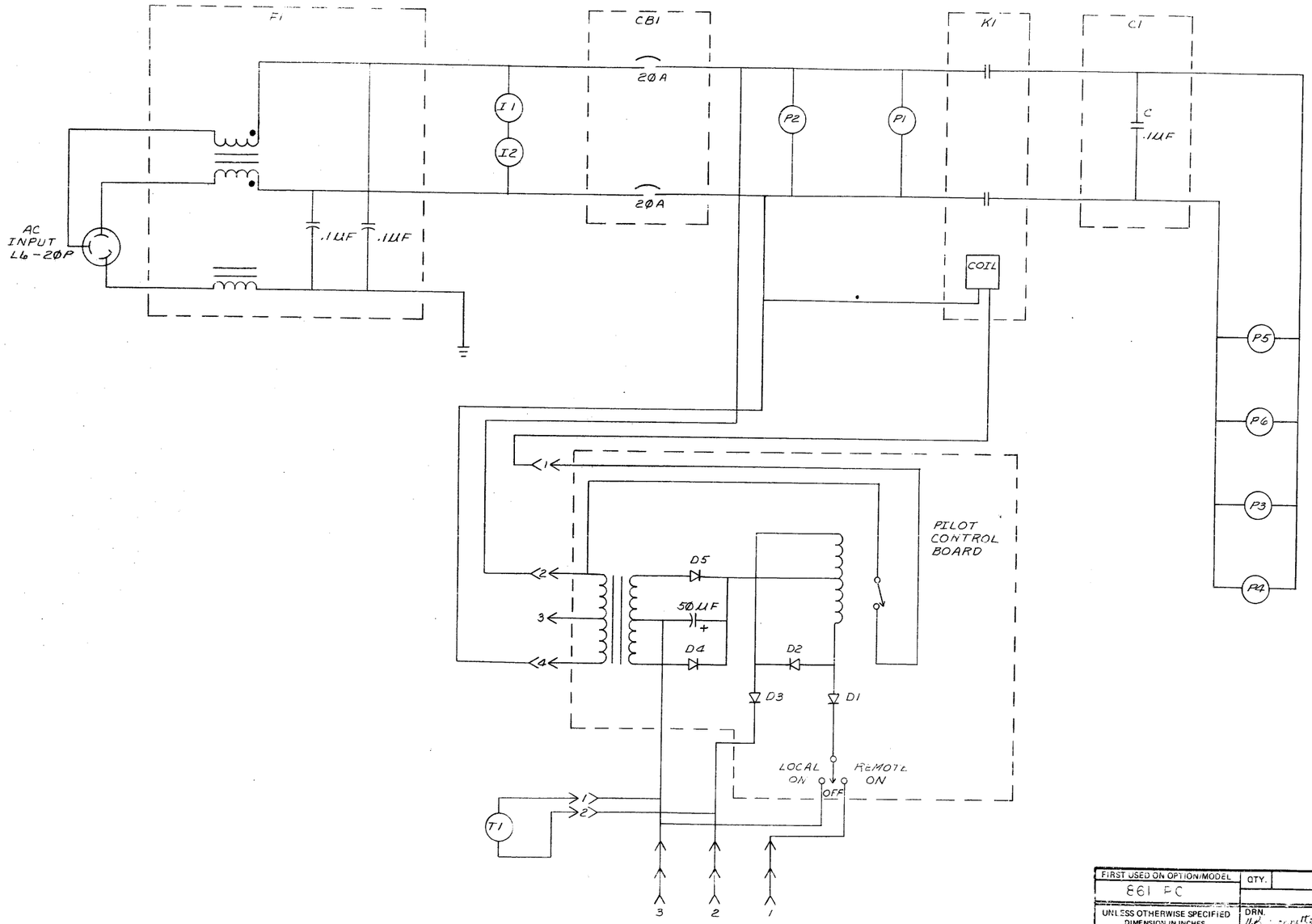
REVISIONS

JMING 40-107 15968

C FORM 100-A

REV	NUMBER	SIZE	CODE
	861-	D	CS

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



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
861 PC		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 9-11-72
CHK'D. [illegible] DATE 11-6-72
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

NEXT HIGHER ASSY.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CIRCUIT SCHEMATIC (861-B)

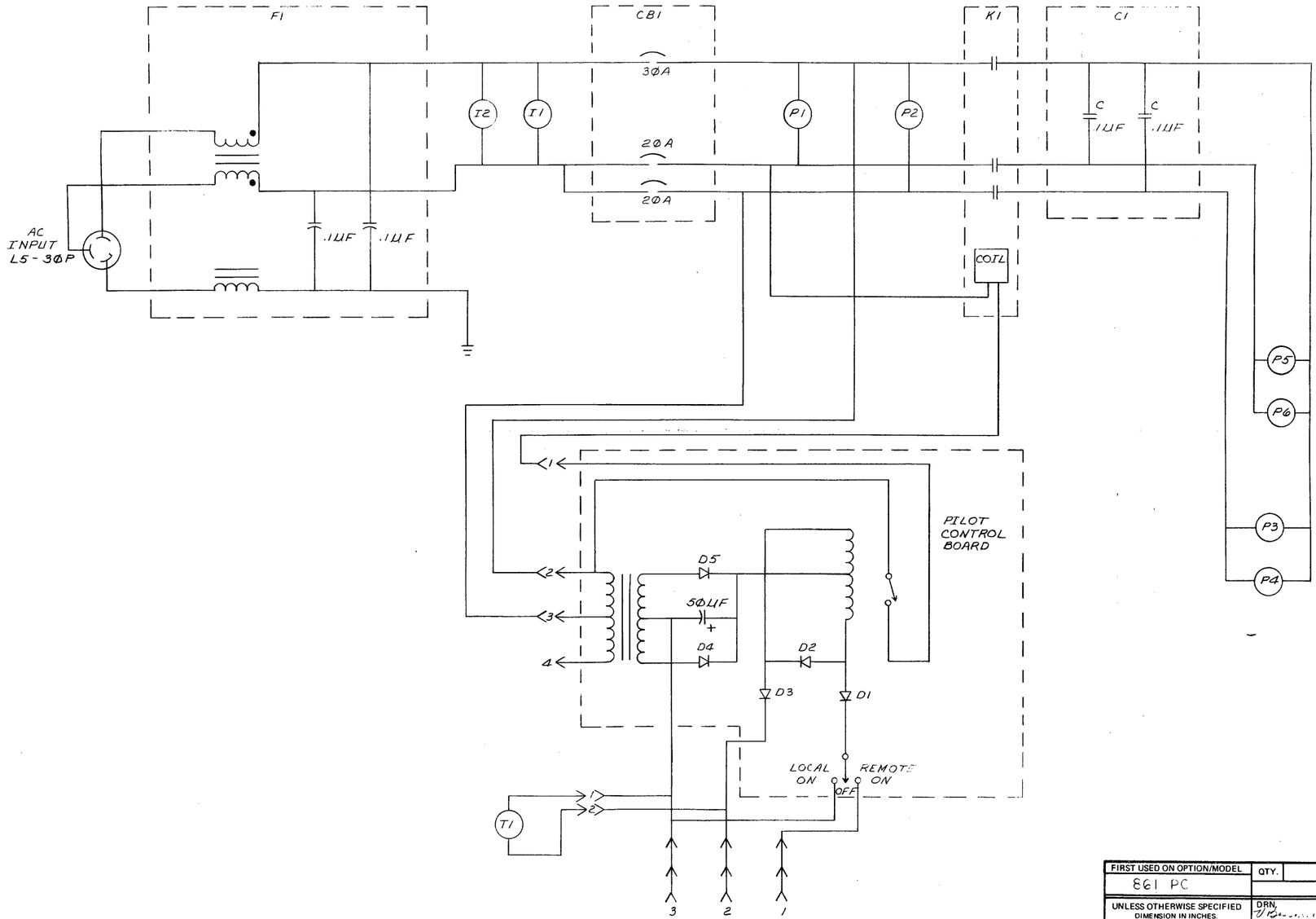
SIZE D | CODE CS | NUMBER 861-B-1 | REV.

SCALE
SHEET OF | DIST

BRUNING 40-107 15968
DFC FORM 140
DRD 100-A

REV.	REVISIONS	CHK
	CHANGE NO.	

herein, are the prop... corporation and shall not be ... or used in whole or in part as ... the manufacture or sale of items without ... permission.



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
861 PC		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	9-12-72
CHK'D	DATE	10-5-72
ENG.	DATE	10-6-72
PROD. ENG.	DATE	10-6-72
PROD.	DATE	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CIRCUIT SCHEMATIC 861-C P.C.

NEXT HIGHER ASSY. —

SCALE —

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	CS	861-C-1	

DIST.

REV.	REVISIONS	CHANGE NO	CHK

BRUNING 40-107 15966

DEC FORM NO DRD 100-A

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

PACKAGING INSTRUCTION REV: A DATE: 4-73

TITLE 861 POWER CONTROL, INTERPLANT PACKAGE

MATERIAL REQUIREMENTS

Quantity	Identification No.	Purchase Spec	Description
1	7-2008 1314 0500-0	9905229	Full overlap carton
2		9905228	Expanded polystyrene foam insert
A/R			3-inch wide Glasflex tape

PACKAGING INSTRUCTIONS

Step	Procedure
1	Set up the full over lap carton (9905229) using one strip of tape across the bottom and extending up the sides approximately three inches. See Figure 1.
2	Place one expanded polystyrene foam insert (9905228) in each end of the carton with the slots in the foam facing inward.
3	Place the 861 power control in the carton with the ears of the upright sliding into the slots in the foam.
4	Coil the power cord so that it fits into the cavity in the rear of the power control.
5	Close and seal the carton with one piece of tape across the top of the carton and extending down the sides approximately three inches.

ENG	APPD	SIZE	CODE	NUMBER	REV
R. E. Gamer 4/14/73		A	PI	3700083-0-0	A

DEC 8-(551)-1031-1-R671
DRA - 129

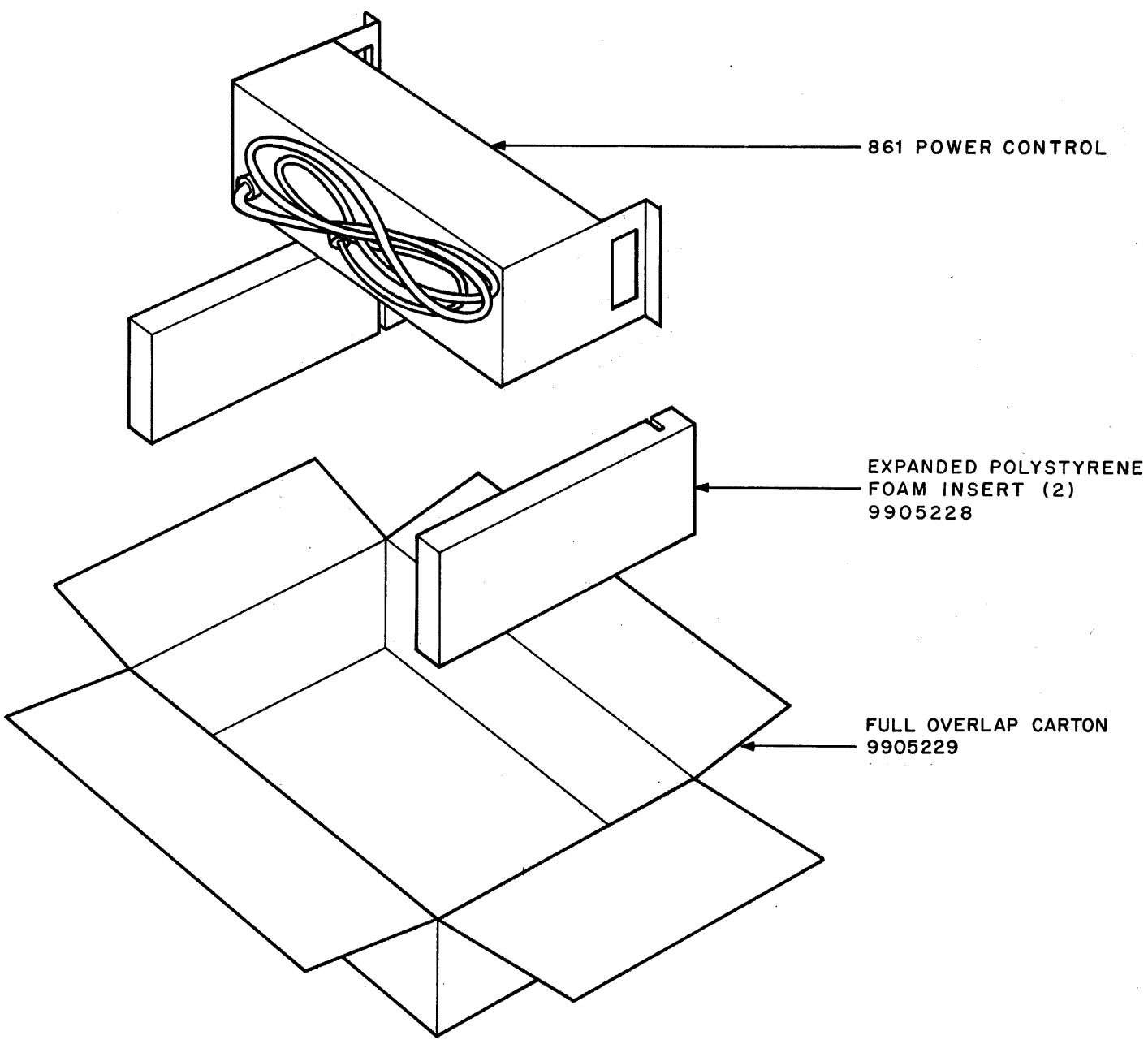
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

PACKAGING INSTRUCTION

REV:	A	DATE:	4/73

TITLE 861 POWER CONTROL, INTERPLANT PACKAGE

FIGURE 1



NOTE
Make changes to the "C" size original only and rephotograph.

ENG.	APPD.	SIZE	CODE	NUMBER	REV
Willard M Patten 12/11/72	J W Laurence 12/11/72	A	PI	3700083-0-0	A

DRC-107

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

	SEQUENCE
DRAWING DIRECTORY	B-DD-H742-Ø
CIRCUIT SCHEMATIC	D-CS H742-Ø-1
PWR CONTROL BOARD	E-IA 5409730-0-0
CIRCUIT SCHEMATIC	C-CS 5409730-0-1
UNIT ASSEMBLY H742	E-UA-H742-Ø-Ø
UNIT ASSEMBLY (PL)	A-PL-H742-Ø-Ø

	MFG SET
TEST PROCEDURE	A-SP-H742 Ø-3
MFG SPEC.	A-SP-H742-Ø-8
PACKAGING INSTRUCTION	A-PI-3700073-0-0

THIS IS PRINT SET

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE H742-1
H742-A	CHASSIS ASSY (115V)	X
H742-B	CHASSIS ASSY (230V)	X
H742-C	CHASSIS ASSY (115V)	X
H742-D	CHASSIS ASSY (230V)	X

REVISIONS	DATE	CHG. NO.	REV
	7/72	H742-2	A
	7/72	H742-3	B
	8/72	H742-4	C
	8/72	H742-5	D
	10/72	H742-7	E
	11/72	H742-8	F
	12/72	H742-11	H
	2/73	H742-12	J
	2/73	H742-13	K
	2-73	H742-14	L
	4-73	H742-15	M
	4-73	H742-16	N
	5-73	H742-17	P
	6-73	H742-18	R
	12-73	H742-19	S
	3-74	H742-20	T
	4-74	H742-21	U

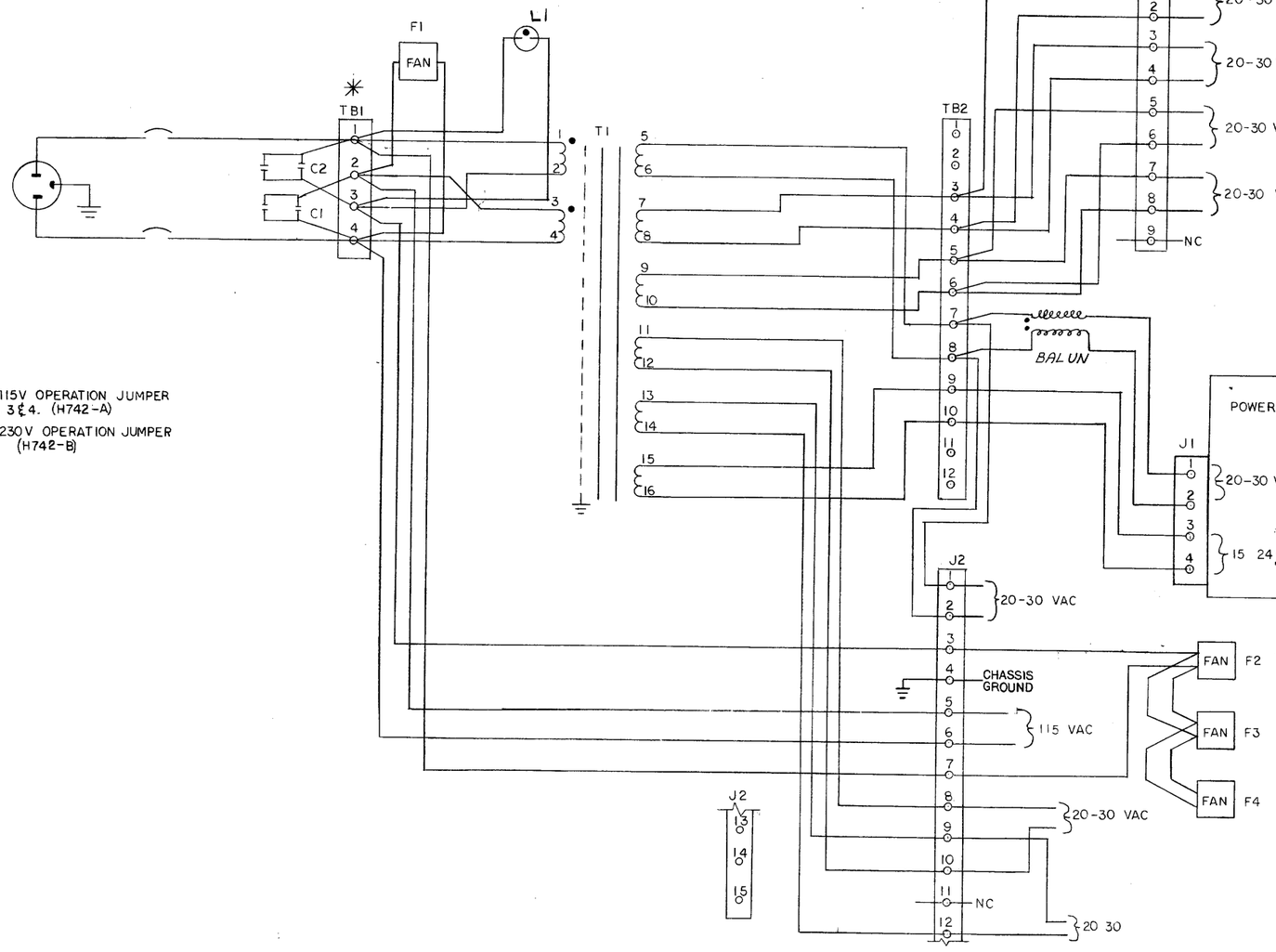
USED ON OPTION/MODEL
1145

DRN. D.FONTAINE	DATE 13172	TITLE CHASSIS ASSY H742	
CHK'D.	DATE 2-4-72		
PROJ ENG.	DATE 2-4-72		
PROD.	DATE 2-24-72	SIZE B	CODE DD
FIELD SERV.	DATE 2-7-72	NUMBER H742-Ø	REV C
SHEET 1 OF 3		DIST	

DRB 106

DEC 16—(325)—1062—1—N871

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



NOTE

✳ FOR 115V OPERATION JUMPER 1&2, 3&4. (H742-A)
FOR 230V OPERATION JUMPER 2&3. (H742-B)

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		POWER CONTROL	5409730	11
1	T1	XMFR	1610857	10
3	FAN, F2 F3 F4	FAN SUPER BOXER	1209403-1	9
1	J2	MATE-N-LOCK	1209350-15	8
1		BALUN ASSY	1611444	7
1	J3	MATE-N-LOCK	1209350-9	6
1	I1	LIGHT PILOT	1201280	5
1	FAN, F1	FAN PEWEE	1210719	4
1	TB2	JONES STPIP	9006917	3
1	TB1	JONES STRIP	9006902	2
1	C1, C2	CAPACITOR 2 X .1 UF 1000V	1010193	1

PARTS LIST

REV	CHANGE NO.	CHK	REVISIONS
D	H742-00018	R. WOLF	6-15-73
C	H742-00017	G. POTTER	3-14-73
B	H742-00004	G. POTTER	8-25-72
A	H742-00001	G. POTTER	5-23-72

ETCH BOARD REV

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

SEMICONDUCTOR CONVERSION CHART

DRN	R. Wolf	DATE 2-3-72
CHK'R	G. Potter	DATE 2-4-72
ENG.	[illegible]	DATE 2-7-72
PROJ. ENG.	G. Potter	DATE 2-9-72
PROD.	[illegible]	DATE 2-24-72

NEXT HIGHER ASSY B-DD-H742-Ø

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

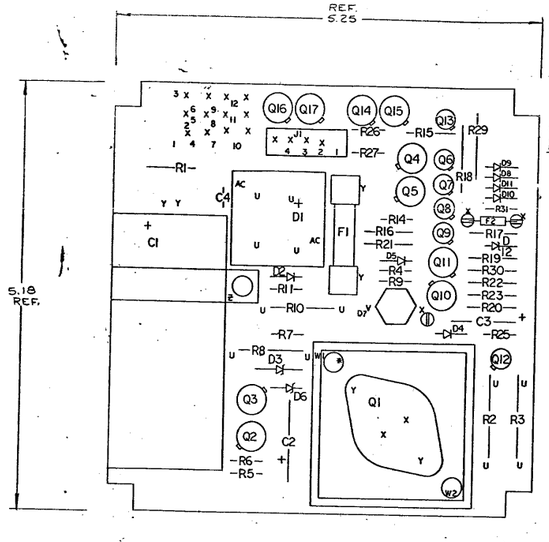
TITLE CIRCUIT SCHEMATIC H742

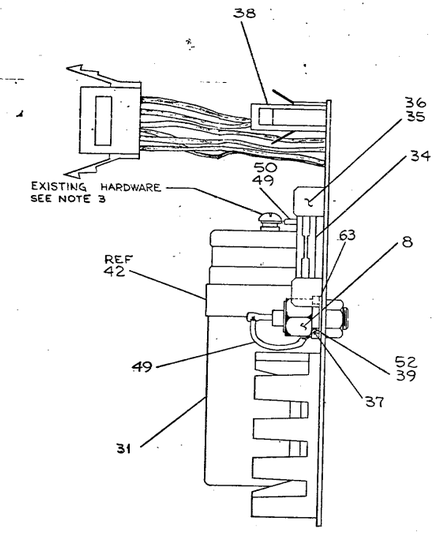
SIZE D | CODE CS | NUMBER H742-Ø-1 | REV. E

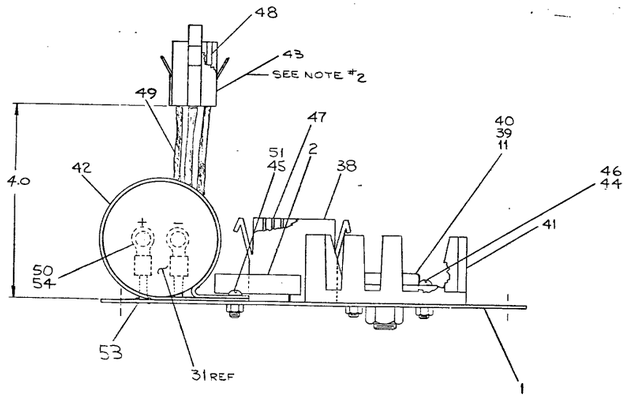
DIST.

DEC FORM NO. DRD-135

SIZE D | CODE CS | NUMBER H742-Ø-1 | REV E







NOTES:

1. APPLY ITEM # 39 (COMPOUND) BETWEEN TRANSISTOR (Q1) AND ITEM # 40 (WASHER) ALSO BETWEEN WASHER & HEAT SINK. ITEM # 41 ALSO BETWEEN HEATSINK AND ETCHED BOARD ITEM # 1.
2. CONNECTIONS BETWEEN P.C. BOARD AND MATE-N-LOCK CONNECTOR (ITEMS #43 & 48) ARE TO BE MADE POINT TO POINT.
3. HARDWARE FOR ITEMS 8 & 31 IS SUPPLIED UNLESS OTHERWISE SPECIFIED.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R8	1K 2W 10%	1300369	66
1	F2	FUSE, PICO 1/4AMP	1210929-4	64
1		FLAT WASHER	9006664	63
2		NUT, KEPS #6-32	9006560	62
2		SCR, PPH #6-32 X 7/16LG	9006023-1	61
1	C4	CAP .22 MF 50V	1010274	60
1	R29	RESISTOR 2K, 1/2W, 1%	1302329	59
1	R17	RESISTOR 3.48K, 1/8W, 1%	1305114	58
1	R19	RESISTOR 3.16K, 1/8W, 1%	1303045	57
1	R31	RESISTOR 10, 1/4W, 5%	130127	56
1	R20	RESISTOR 4.64K, 1/8W, 1%	1304856	55
A/R		#18 AWG BUS WIRE	9007560-3	54
2		EYELET GS-4-3	9007836	53
1		SPACER #10	9008825	52
1		KEPSNUT #6-32	9006563	51
2		TERMINAL RING	9007930	50
A/R		#18 AWG 19 STRD TEF INS (BLK)	9107360-00	49
12		CONTACTS FEMALE (CRIMP)	1209379	48
4		CONTACTS FEMALE (BOARD)	1209456	47
2		SCR, PHL PAN HD #6-40 X 1/2 LG	9006013-1	46
1		SCR, PHP PAN HD #8-32 X 3/8 LG	9006037-1	45
2		NUT, KEPS # 4-40	9006557	44
1		MATE-N-LOCK (12 PIN)	1209360-12	43
1		C-CLAMP 1.38	9007095-1	42
1		HEAT SINK	1205817	41
1		INSULATOR, WASHER	9006721	40
A/R		COMPOUND THERMAL JOINT	9008268	39
1		MATE-N-LOCK (4 PIN)	1209360-4	38
3		SPLIT LUG M-1033	9006735	37
2		EYELET GS-4-7	9006732	36
2		FUSE CLIP	9007203	35
1	F1	FUSE AGC 5	9007221	34
1	C3	CAP 20 μf @ 60V 5%	1010716	33
1	C2	CAP 50 μf @ 25V	1001796	32
1	C1	CAP 5.8K μf @ 40V.	1010960	31
1	R23	RESISTOR 2.0 K 1/8W 1%	1302716	30
1	R18	RESISTOR 2.49K 1/2 W 1%	1300924	29
3	R16, R21, R22	RESISTOR 10 K 1/8W 1%	1303312	28
1	R18	RESISTOR 27.4 K 1/8W 1%	1309417	27
1	R30	RESISTOR 24.3K 1/8W 1%	1309418	26
4	R14, R25 R26 R27	RESISTOR 470Ω 1/4W, 5%	1300316	25
1	R11	RESISTOR 560 1/4W, 5%	1301890	24
1	R10	RESISTOR 390Ω 2W, 10%	1301880	23
1	R6	RESISTOR 1.5K 1/4W 10%	1300393	22
1	R7	RESISTOR 270 1/4W 5%	1301972	21
2	R6, R9	RESISTOR 1K 1/4W 5%	1300365	20
1	R5	RESISTOR 5.1Ω 1/4 5%	1309422	19
1	R4	RESISTOR 390 1/4W 5%	1300309	18
2	R2, R3	RESISTOR 200Ω 5W, 5%	1309639	17
1	R1	RESISTOR 3.9K 1/2 W, 5%	1300493	16
4	Q5, Q11, Q13 Q17	TRANSISTOR 2N1309	1501311	15
4	Q4, Q10, Q14 Q16	TRANSISTOR 2N1308	1500983	14
7	Q3, Q6, Q7, Q8, Q9, Q12, Q13	TRANSISTOR MPSA55	1510706	13
1	Q2	TRANSISTOR DEC 2219	1501881	12
1	Q1	TRANSISTOR MJ3000	1511349	11
1	D12	DIODE 5.1 V 1MA	1110925	10
4	D8, THRU D11	DIODE IN4002	1104961	9
1	D7	DIODE IN2970B	1100134	8
1	D6	DIODE IN746A	1104860	7
1	D5	DIODE Dec4	1100114	6
1	D4	DIODE IN4001	1102942	5
1	D3	DIODE IN5353B	1110854	4
1	D2	DIODE 1MS.121 5.1V 1%	1105873	3
1	D1	DIODE BRIDGE MBS 354	1110714	2
		POWER CONTROL BOARD	DEA-5009732-00	1
		MODULE ECO HISTORY	SHEET-5409732-0-HIST	
		X-Y COORDINATE HOLE LOCATION	XCO-5409730-0-XCO	
		CIRCUIT SCHEMATIC	CCS-5409730-0-P,S	

PARTS LIST

ETCH BOARD REV. E

FIRST USED ON OPT./MOD. H742

DEC NO.	EIA NO.	DEC NO.	EIA NO.
5564	N3606		

SEMICONDUCTOR CONVERSION CHART

REV	CHG NO.	DESCRIPTION	DATE
C	5429730-0001	ECO	5-17-72
D	5409730-0002	ECO	6-1-72
E	5409730-0003	ECO	6-15-72
F	5409730-0004	ECO	7-7-72
G	5409730-0005	ECO	7-21-72
H	5409730-0006	ECO	8-4-72
J	5409730-0007	ECO	8-18-72
K	5409730-0008	ECO	9-1-72
L	5409730-0009	ECO	9-15-72
M	5409730-0010	ECO	9-29-72
N	5429730-0011	ECO	10-13-72

REVISIONS

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 FORM NO. BME 104

DRAWN	R. WOLF	DATE	5-4-72
ENG		DATE	
PROJ. ENG		DATE	
PROJ.		DATE	
NEXT HIGHER ASSY	E-UA-11-IL-0-0		
SCALE			
SHEET	OF		

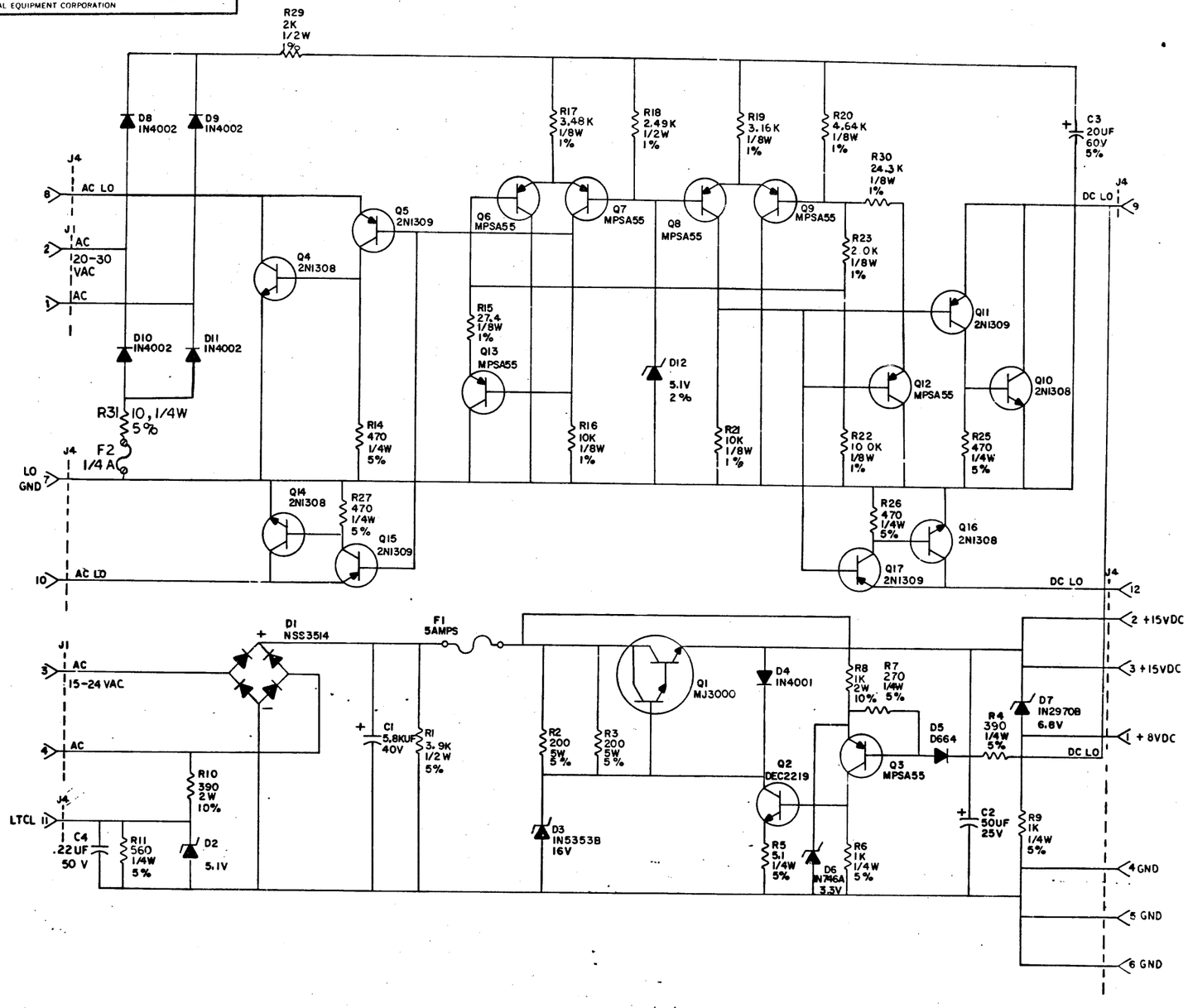
EQUIPMENT CORPORATION

TITLE

POWER CONTROL BOARD 11/45

SIZE	CODE	NUMBER	REV.
E	FA	5409730-0-0	N

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY.
COPYRIGHT 1972 BY DIGITAL EQUIPMENT CORPORATION



REVISIONS					
CHR	CHG NO.	REV.			
1	000001	C	G.POTTER	1-14-72	
2	000021	D	G.POTTER	2-3-72	
3	000023	E	G.POTTER	2-10-72	
4	000024	F	G.POTTER	2-22-72	
5	000035	H	G.POTTER	3-24-72	
6	000056	J	G.POTTER	4-19-72	
7	000057	K	R.WOLF	4-21-72	
8	000081	L	R.WOLF	4-21-72	
9	000090	M	R.WOLF	4-23-72	
10	000109	N	R.WOLF	5-11-72	

DRN.	S.Cooper	DATE 2/24/72
CHK'D		DATE 3-1-72
ENG.		DATE 3-1-72
PROD.		DATE 3-1-72

TRANSISTOR & DIODE CONVERSION CHART			
DEC2219	2N2219	IN5231	
2N1308	SAME	IN5353B	
MPSA55		IN751A	SAME
MJ3000		IN4001	SAME
2N1309	SAME	IN2970B	
IN4002		IN746A	
D664	IN3606		

DEC FORM NO. DRC 102

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: POWER CONTROL BD.

SIZE	CODE	NUMBER	REV
C	CS	5409730-0-1	N

PRINTED CIRCUIT REV. E

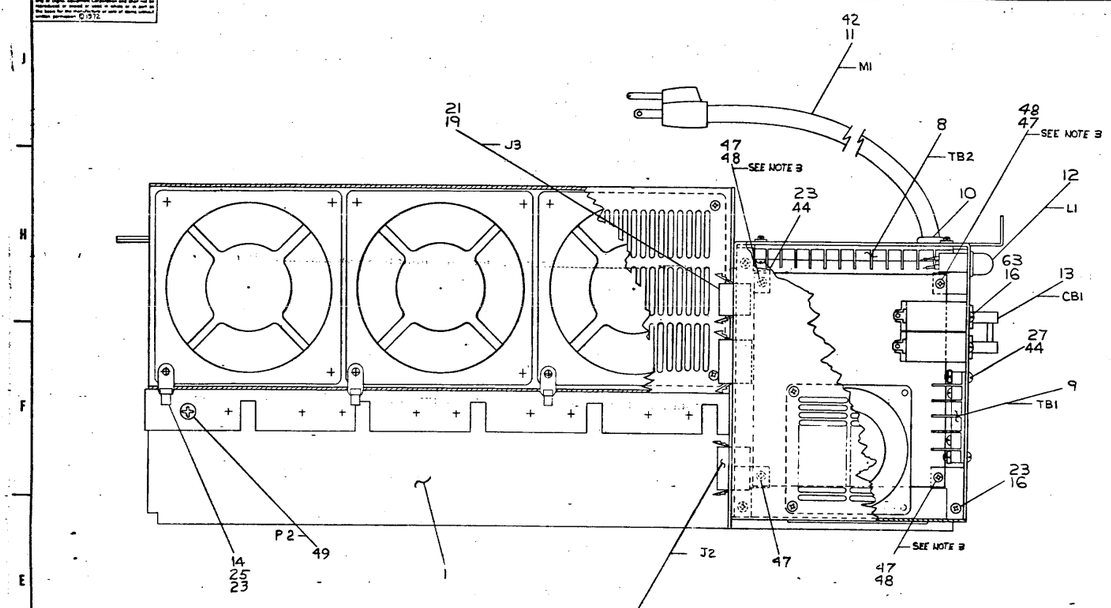
REV N
SIZE C CODE CS NUMBER 5409730-0-1

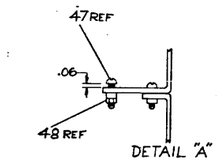
LEGEND	
VARIATION	NUMBER
115 VAC	H742-A
230 VAC	H742-B
115 VAC	H742-C
230 VAC	H742-D

SEE SHEET #3

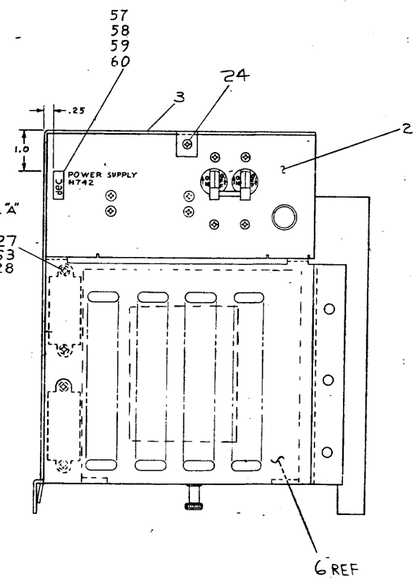
NOTES:

1. # ITEM #22 (MALE CONTACTS) ARE TO BE INSERTED INTO MALE CONNECTING BLOCK, IN APPROPRIATE CABLE TO, J2.
2. ITEM #49 WILL BE INSTALLED DURING FINAL ASSEMBLY.
3. ITEMS #47 & 48 SHOULD BE TIGHTENED AS SHOWN TO ALLOW 1/16 CLEARANCE FOR INSERTION AND REMOVAL OF 5409730.
4. FOR IMC FAN WS 2107F-110-01 USE ITEMS 14 & 33. FOR ROT-GT FAN 3A2 AND HOWARD FAN 9-30-8120 USE ITEMS 64 & 65.
5. TO ALLOW PROPER SERVICE LOOP. WIRES TO C-1 SHOULD BE 6 INCHES LONG AND WIRES TO C-2 SHOULD BE 9 INCHES LONG.
6. ROUTE ALL AC WIRING (ESPECIALLY TRANSFORMER LEADS 1,2,3 & 4) AS FAR AWAY AS POSSIBLE FROM 5409730 CONTROL BOARD.





SEE SHT. #2 FOR WIRING INFORMATION



ITEM NO.	QTY.	DESCRIPTION	PART NO.
		PARTS LIST	

FIRST USED ON OPTION/MODEL	11/45
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	
TOLERANCES	
DECIMALS	ANGLES
.XXX=±.005	±1°
.XX=±.01	
REMOVE BURR AND BREAK SHARP CORNERS SURFACE QUALITY	
MATERIAL	SEE PARTS LIST
FINISH	
NEXT HIGHER ASSY	

DRN — DATE 12-5-74
CHK — DATE 12-5-74
ENG — DATE 12-5-74
PROD — DATE 12-5-74

ORIDAL EQUIPMENT CORPORATION

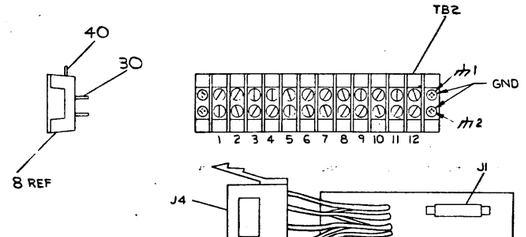
TITLE: POWER SUPPLY H742

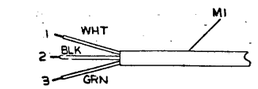
SIZE	CODE	NUMBER	REV
E	UA	H742-0-0	U

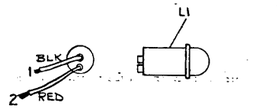
SCALE: 1/1
SHEET 1 OF 3
DIST

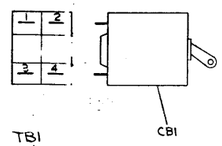
E UA H742-0-0 U

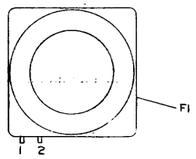
The drawing and specifications, herein, are the property of Digital Equipment Corporation and in part of the agreement or intended to be used only in connection with the sales for the manufacture or sale of items covered herein, permission 8/4/72

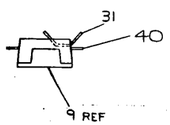


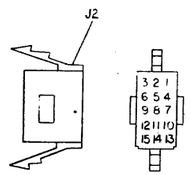


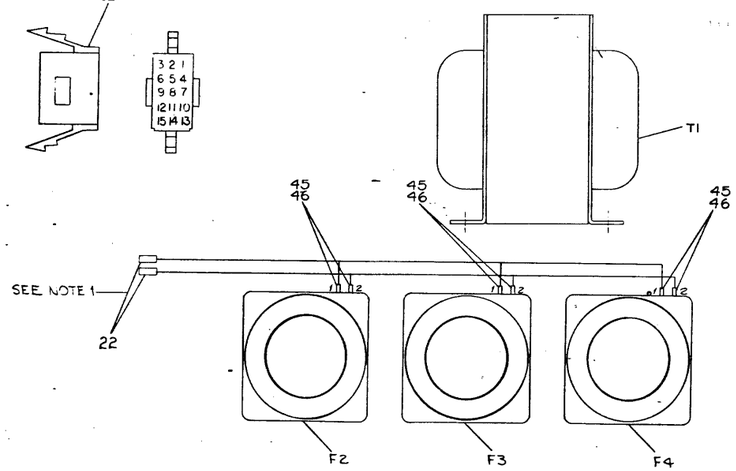








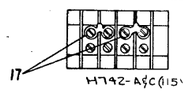




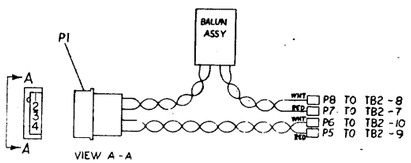


WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
34	18	WHT	C2-1	SOLDER	TB1-3	35	SEE NOTE "5
34	18	WHT	J2-3	18,21			
34	18	RED	J2-7	18,21	TB1-1	35	
34	18	RED	C2-3	SOLDER			
6		BLK	T1-5		TB2-7	35	
↓	↓	↓	T1-6		TB2-8	↓	
			T1-7		TB2-3		
			T1-8		TB2-4		
			T1-9		TB2-5		
			T1-10		TB2-6	35	
			T1-11		J2-8	21,18	
			T1-12		J2-10	21,18	
			T1-13		J2-9	21,18	
			T1-14		J2-12	21,18	
↑	↓	↓	T1-15		TB2-9	35	
6		BLK	T1-16		TB2-10	35	
12		BLK	L1-1		TB1-1	39	
12		RED	L1-2		TB1 3	39	
34	18	RED	TB1-2	39	F1-1	SOLDER	TWISTED PAIR
		WHT	TB1-4	39	F1-2	SOLDER	
43	18	RED	C2-2	SOLDER	C2-3	SOLDER	
43	18	RED	C1-2	SOLDER	C1-3	SOLDER	
11	16	WHT	M1-1		CB1-3	35	POWER CORD
11	16	BLK	M1-2		CB1-4	35	
11	16	GRN	M1-3		TB2-GND	23,38	
32	14	RED	TB2-3	35	J3-1	19,21	
↓	↓	↓	TB2-3		J3-3	↓	
			TB2-4		J3-2		
			TB2-4		J3-4		
			TB2-5		J3-5		
			TB2-5		J3-7		
			TB2-6		J3-6		
↑	↓	↓	TB2-6	↓	J3-8	19,21	
32	14	RED	TB2-7	35	J2-1	18,21	
32	14	RED	TB2-8	35	J2-2	18,21	
6		BLK	TB1-3	35	T1-2		
6		BLK	TB1-1	35	T1-1		
6		BLK	TB1-4	35	T1-4		
6		BLK	TB1-2	35	T1-3		
34	18	RED	J2-5	18,21	TB1-2	35	SEE NOTE "5
34	18	RED	C1-3	SOLDER			
34	18	WHT	J2-6	18,21	TB1-4	35	
34	18	WHT	C1-1	SOLDER			
34	18	RED	F4-1	45,46	F3-1	45,46	TWISTED PAIR
34	18	WHT	F4-2	45,46	F3-2	45,46	
34	18	RED	F3-1	45,46	F2-1	45,46	TWISTED PAIR
34	18	WHT	F3-2	45,46	F2-2	45,46	
34	18	RED	F2-1	45,46	P2-7 *	22	TWISTED PAIR
34	18	WHT	F2-2	45,46	P2-3 *	22	
32	14	WHT	CB1-1	35	TB1-4	35	
32	14	RED	CB1-2	35	TB1-1	35	
62	14	GRN	J2-4	21	TB2-GND	23,38	



JUMPER INSTRUCTIONS



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		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: T. Smith DATE 11/25/72
CHK: Glen Bliss DATE 12/5/72
ENG: A. Myrna DATE 12-5-72
PROJ ASST: DATE
PROJ: DATE
NEXT HIGHER ASSY:
SCALE NONE
SHEET 2 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

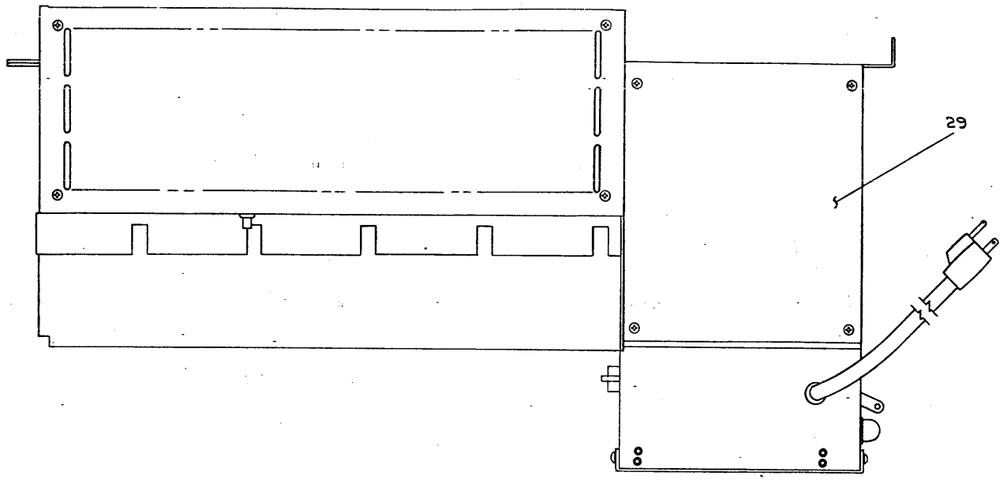
TITLE: POWER SUPPLY H742

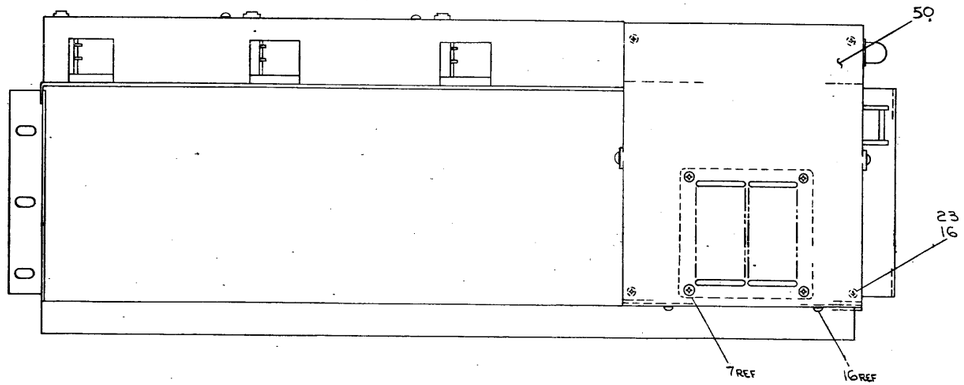
SIZE E | CODE U4 | NUMBER H742 -0-0 | REV U

DIST

REVISIONS	CHG	CHANGE NO.	REC

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or part as the basis for manufacture or sale of items without written permission.
1972





FOR VARIATIONS H742-C & D, ITEMS ARE SAME AS A & B WITH EXCEPTIONS SHOWN

SEE SHEET #2 FOR WIRING INFORMATION

FIRST USED ON OPTION/MODEL: 11/45	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: SEE PARTS LIST
FINISH

DRN: T. QUILLIN — DATE: 9/1972
CHK'D: D. FONTAINE — DATE: 9/9/72
ENG: J. MORRIS — DATE: 9/9/72
PROJ ENG: G. POTTER — DATE: 9/9/72
PROG: A. HIRSCH — DATE: 11/9/72
NEXT HIGHER ASSY:
SCALE: 1/1
SHEET 3 OF 3

EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: POWER SUPPLY H742

SIZE: C — CODE: EUA — NUMBER: H742-0-0 — REV: U

DIST:

CHANGE NO. — DESCRIPTION — DATE — APPROVED

EUAH742-0-0

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. QUILLIN | CHECKED D. FONTAINE | SECTION 1
DATE 1/19/72 | DATE 1/26/72 |
ENG [signature] 2/4-72 | PROD [signature] | ISSUED SECT. 1
DATE | DATE 2-24-72 |

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H742-A (115V)	H742-B (230V)	H742-C (115V)	H742-D (230V)
1	E-IA-5309755-0-0	CHASSIS	1	1	1	1
2	D-IA-5309854-0-0	CONTROL BOX POWER	1	1	1	1
3	D-MD-5309850-0-0	POWER CONTROL COVER	1	1	—	—
4	1209403-1	FAN, BOXER	3	3	3	3
5	5409730-0-0	POWER CONTROL BOARD	1	1	1	1
6	16-10857	XMFR	1	1	1	1
7	1210719	FAN PEWEE, BOXER	1	1	1	1
8	9006916	JONES STRIP (12 CONN) 540	1	1	1	1
9	9006902	JONES STRIP (4 CONN) 540	1	1	1	1
10	9008509	STRAIN RELIEF	1	1	1	1
11	1700006-6	CORD, POWER (115V)	1	—	1	1
12	1211263	LIGHT, PILOT	1	1	1	1
13	1210191-3	CIRCUIT BREAKER 15 AMP	1	1	1	1
14	9006025-1	SCR. PHL PAN HD #6 X 32 X 5/8 LG	12	12	12	12
15	9006071-3	SCR. PHL TRUSS HD #10-32 X 3/8 LG	4	4	4	4
16	9006020-1	SCR. PHL PAN HD #6-32 X 1/4 LG	8	8	14	14
17	9009002	MECHANICAL JUMPER	2	1	2	1
18	1209350-15	MATE-N-LOCK 15 PIN (FEMALE)	1	1	1	1
19	1209350-09	MATE-N-LOCK 9 PIN (FEMALE)	1	1	1	1
~~20~~	~~1209352-04~~	~~MATE-N-LOCK 4 PIN (FEMALE)~~	1	1	1	1
21	1209379-01	CONTACTS (FEMALE)	19	19	19	19
22	1209378-01	CONTACTS (MALE)	6	6	16	16

TITLE: H742, POWER CONTROL | ASSY NO. E-UA-H742-0-0 | SHEET 1 OF 4 | SIZE A | CODE PL | NUMBER H742-0-0 | REV U | ECO NO. H742-00028 | DIST. G

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. QUILLIN | CHECKED D. FONTAINE | SECTION 1
DATE 1-19-72 | DATE 1-26-72 |
ENG S. Potter | PROD [signature] | ISSUED SECT. 1
DATE 2-14-72 | DATE 2-24-72 |

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H742-A (115V)	H742-B (230V)	H742-C (115V)	H742-D (230V)
		[illegible]	[illegible]			
		[illegible] WASH #10 EXT	[illegible]		4	4
27	9006561	KEPS NUT #6-32	16	16	16	16
28	9006029-1	SCR. PHL HD PAN #6-32 X .38	12	12	12	12
29	D-IA-7409701-0-0	BRACKET, POWER SUPPLY	—	—	1	1
30	9007113	DOUBLE UPRIGHT 90	8	8	8	8
31	9007269	DOUBLE 45°	4	4	4	4
32	9107370-22	#14 AWG 19 STRAND PVC. INS. (RED)	A/R	A/R	A/R	A/R
33	9009165	FAN MTG CLIP	12	12	12	12
34	9107360-22	#18 AWG 19 STRAND PVC. INS. (RED/WHT)TWP	A/R	A/R	A/R	A/R
35	9007913	FASTON TAB (.250 SERIES) BLU	32	32	32	32
36	16-10192	CAPACITOR 2 X .1 uf @ 1000v	2	2	2	2
~~37~~	~~9007920~~	~~FASTON TAB (.250 SERIES) YEL~~	4	4	4	4
38	9007927	RING TERMINAL BLU	2	2	2	2
39	9007917	FASTON TAB (.250 SERIES) RED	8	8	8	8
40	9007112	SINGLE FLAT	16	16	16	16
~~41~~	~~D-IA-5309854-2~~	~~POWER CONTROL BOX~~	—	—	—	—
42	1700016-6	CORD POWER (230V)	—	1	—	—
43	9107360-22	#18 AWG 19 STRAND PVC. INS. (RED)	A/R	A/R	A/R	A/R
44	9007793-1	SCR PHL PAN HD #6-32 X 9/16 LG	8	8	8	8

TITLE: H742 POWER CONTROL | ASSY NO. E-UA-H742-Ø-Ø | SHEET 2 OF 4 | SIZE A | CODE PL | NUMBER H742-Ø-Ø | REV U | ECO NO. | DIST. G

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. Quillin	CHECKED D. Fontaine	SECTION 1
DATE 1/19/72	DATE 1/26/72	
ENG G. POTTER	PROD A. HIRSCH	ISSUED SECT. 1
DATE 2-14-72	DATE 2-24-72	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H742-A (115V)	H742-B (230V)	H742-C (115V)	H742-D (230V)
45	12-10820-1	CONNECTOR, HOUSING	6	6	6	6
46	12-10820-2	CONNECTOR, PIN	6	6	6	6
47	9006022-3	SCR, PHL, TRUSS HD. #6-32 X 3/8 LG.	4	4	4	4
48	9006558	NUT, HEX #6-32 X 5/16 X 1/8	3	3	3	3
49	9009228	SCR PHL PAN HD. 10-32 X 3/8 SEMS	10	10	10	10
50	C-MD-7409702-0-0	COVER, POWER CONTROL	-	-	1	1
~~51~~	~~D-IA-5309854-3-0~~	~~POWER CONTROL BOX~~	~~-~~	~~-~~	~~1~~	~~1~~
~~52~~	~~D-IA-5309854-4-0~~	~~" " "~~	~~=~~	~~=~~	~~=~~	~~=~~
53	9006796	SPACER #6-32X 3/16LG SST	-	-	4	4
54	A-PI-3700073-0-0	H742 POWER SUPPLY INTERPLANT PACKAGE	1	1	1	1
* 55	C-IA-7009737-0-0	MINI BOXER FAN SCREEN	1	1	1	1
~~56~~	~~9006024-1~~	~~SCR, PHL, PAN HD. #6-32 X 1/2 LG~~	~~12~~	~~12~~	~~12~~	~~12~~
57	A-DC-5310459-0-0	DECAL, H742A	1	-	-	-
58	A-DC-5310460-0-0	DECAL, H742B	-	1	-	-
59	A-DC-5310461-0-0	DECAL, H742C	-	-	1	-
60	A-DC-5310462-0-0	DECAL, H742D	-	-	-	1
61	1611444	BALUN ASSEMBLY	1	1	1	1
62	9107370-55	*14 AWG IPVC STRANDED, GREEN	A/R	A/R	A/R	A/R
63	9006633	LOCK WASHER, #6 INT. TOOTH	8	8	8	8
* 64	9007993-1	SCR. PHL. PAN HD. 6-32 X 9/16LG	12	12	12	12
* 65	9008208	FAN MTG. CLIP	12	12	12	12
		*SEE NOTE 4 ON E-UA-H742-0-0				

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
H742 POWER CONTROL	E-UA-H742-0-0	A	PL	H742-0-0	U	
	SHEET 3 OF 4	DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. QUILLIN	CHECKED D. FONTAINE	SECTION 1
DATE 1-19-72	DATE 1-26-72	
ENG G. POTTER	PROD A. HIRSCH	ISSUED SECT. 1
DATE 2-14-72	DATE 2-24-72	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H742-A (115V)	H742-B (230V)	H742-C (115V)	H742-D (230V)
66	A-PI-3700073-0-0	PACKAGING INSTRUCTIONS	-	-	-	-

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
H742 POWER CONTROL	E-UA-H742-0-0	A	PL	H742-0-0	U	
	SHEET 4 OF 4	DIST.				

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

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H744-0		
CIRCUIT SCHEMATIC	D-CS-H744-0-1		
UNIT ASS'Y	E-UA-H744-0-0	MFG. SET	
		TEST PROCEDURE	A-SP-H744-0-3
		MFG. SPE	A-SP-H744-0-8
		PACKAGING INSTRUCTIONS	A-PI-3700074-0-0

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE H744-1
H744	+8V REGULATOR	X

REVISIONS		
DATE	CHG. NO.	REV
4-24-74	00005	A
4-11-74	00007	B

S. Baker 10-6-73
J. W. LAWRENCE
R. WOLF

USED ON OPTION/MODEL	
11/45	

DRN. D. FONTAINE	DATE 2-4-72	TITLE +8V REGULATOR
CHK'D. D. FONTAINE	DATE 2-4-72	
PROJ ENG.	DATE 2-25-72	
PROD.	DATE	
FIELD SERV.	DATE	
SHEET 1 OF 2		

SIZE	CODE	NUMBER	REV
B	DD	H744-0	B

DIST

DRB 106

-(7251)-1062-1-N871

ELECTRICAL

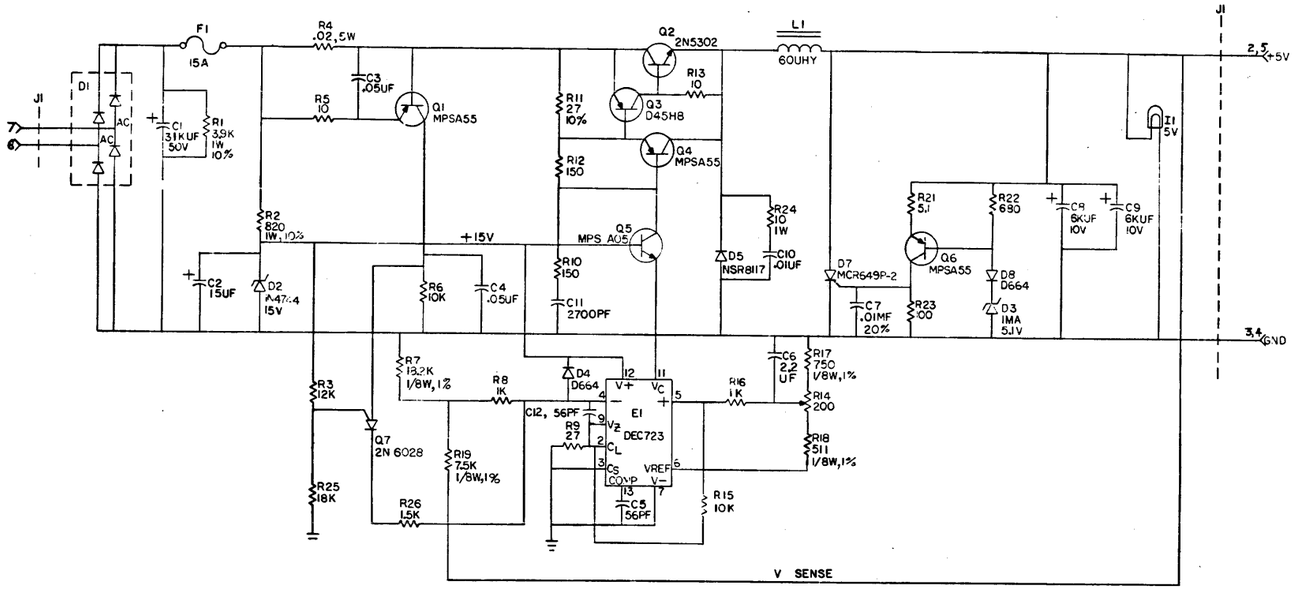
CUSTOMER PRINT SET H744-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	D-CS-H744-Ø-1	#	1	CIRCUIT SCHEMATIC	H744
	X		A-SP-H744-Ø-3			TEST PROCEDURE	H744
	X		A-SP-H744-Ø-8			MFG. SPEC	H744

MECHANICAL

CUSTOMER PRINT SET H744-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	E-VA-H744-Ø-Ø	K	1	UNIT ASSY	H744
			D-PS-1210737-0-0		1	HEAT SINK	H744
			D-IA-5309756-0-0		1	REGULATOR BRK'T	H744
			C-IA-5309761-0-0		1	2 - 5 CAP HOLDER	H744
			C-IA-5309760-0-0		1	COMPONENT COVER	H744
			C-MD-5309759-0-0		1	CAPACITOR STRAP	H744
		2	A-PI-3700074-0-0	-	2	PACKAGING INSTRUCTION	H744
			A-PS-9905211-0-0	-	2	OUTER CARTON	
			A-PS-9905212-0-0	-	2	INNER PACKAGE	

TITLE		SIZE	CODE	NUMBER	REV
+5V REGULATOR	SHEET 2 OF 2	B	DD	H744-Ø	B

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



UNLESS OTHERWISE INDICATED:

RESISTORS ARE 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
		ETCH BOARD REV F H		

DEC NO.	EIA NO.	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART			
1N914	SAME	MPSA55	
D024	1N3606	2N6502	
M MPS-A05		D45H5	
LT1.A	SAME	MPSA05	
1N4744	SAME		
NSR5117			
2N6[illegible]3			

REVISIONS	REV	CHK	CHANGE NO.
H744-00002	F	G.POTTER	11-24-72
H744-00003	H	G.POTTER	2-21-73
H744-00004	J	G.POTTER	3/1/73
H744-00005	K	S.Blair	10-5-73
H744-00006	L	R.WOLF	11-5-73

DRN. [illegible] DATE 10-5-71
CHK'D. [illegible] DATE 10-5-71
ENG. [illegible] DATE 1/7/72
PROJ. [illegible] DATE
PROD. [illegible] DATE 10/31/72
NEXT HIGHER ASSY

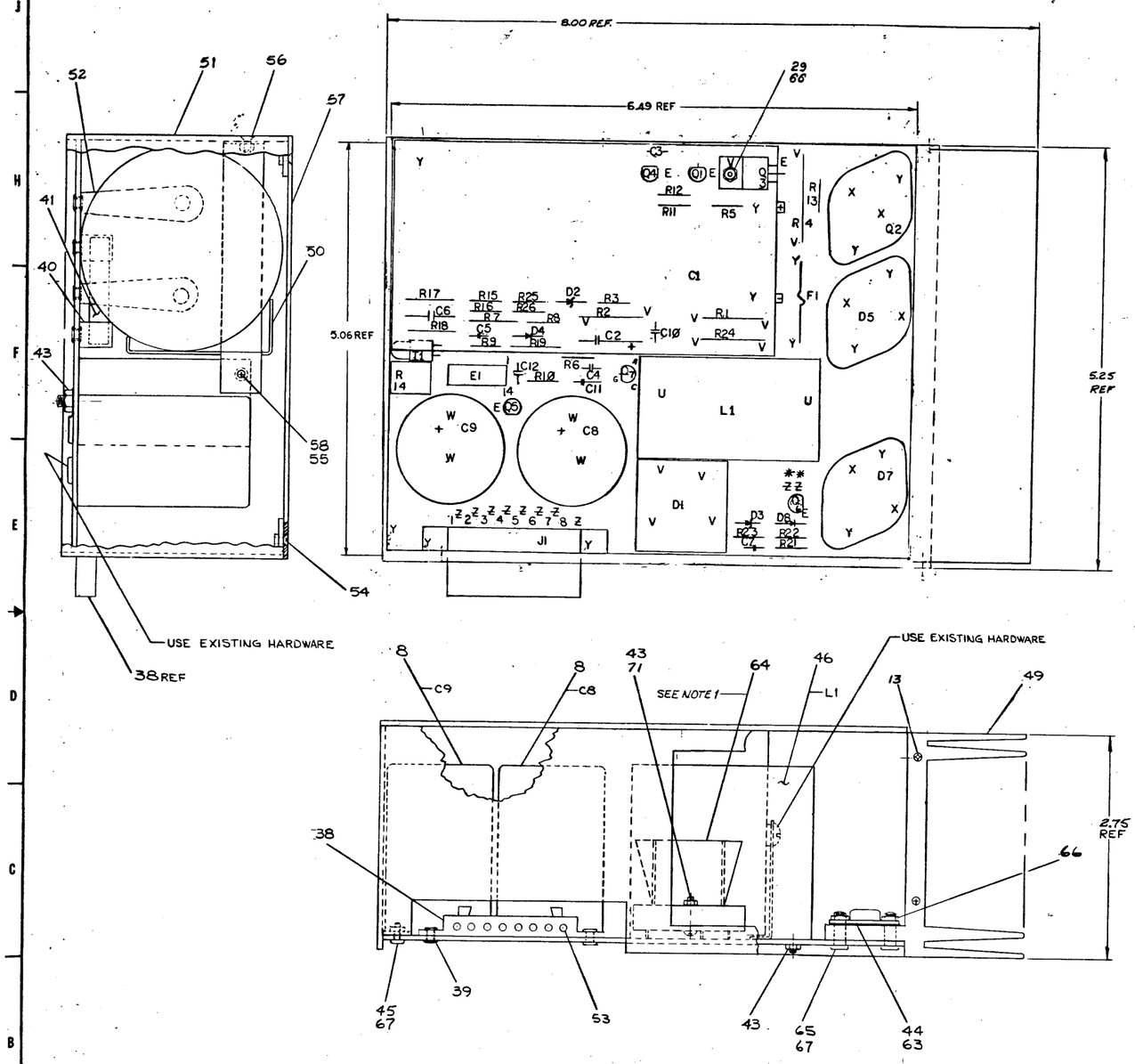
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 5V REGULATOR

SIZE D | CODE CS | NUMBER H744-0-1 | REV. L

SCALE | SHEET 1 OF 1 | DIST.

DEC P/N'S 50 CHRD-139



NOTES:

1. APPLY ITEM #63 (COMPOUND) BETWEEN TRANSISTOR (Q2), DIODES (D5, D7) AND ITEM #14 (WASHER) ALSO BETWEEN ITEM #49 (WASHER) AND HEAT SINK (ITEM #49). ALSO APPLY ITEM #63 (COMPOUND) BETWEEN ITEM #9 (DIODE BRIDGE) AND ITEM #69 (HEAT SINK BRIDGE).

1	J1	5 VOLT LAND	12-09219-1	68
8		L WASHER #4	9006632	67
7		NUT KEPS #4-40	9006537	66
6		SCR PHL PAN HD #4-40 X 3/16 LG	9008033-1	65
1		HEAT SINK BRIDGE	1210907	69
NR		COMPOUND THERMAL JOINT	8008268	63
1	R26	RESISTOR 1.5K 1/4 W 5%	1300581	62
1	R19	RESISTOR 7.5K 1/8 W 1%	1305322	61
1	R3	RESISTOR 12K 1/4W 5%	1300488	60
1	Q7	TRANSISTOR, UNIJUNCTION 2N6028	1510877	59
1		SCR. PHL PAN HD #6-32 X 1/4 LG	9006020-1	58
1		COVER	C-MD-5309760-00	57
1		SCR. PHL FLT HD #6-32 X 1/4 LG	9006020-2	56
1		WASHER, LOCK #6	9007649	55
4		SCR. PHL FLT. HD #4-40 X 3/16 LG	9006010-2	54
8		CONTACT FEMALE	1209456	53
2		STRAP, CAPACITOR	C-MD-5309759-00	52
1		BRACKET, REGULATOR	D-IA-5309756-00	51
1		HOLDER, CAPACITOR 2.5	C-IA-5309761-00	50
1		HEAT SINK REGULATOR	D-PS-1210737-0-0	49
2	C6, C12	CAP 56 PF	1000112	48
1	R24	RESISTOR 10 1W	1300171	47
1	L1	REACTOR 60 MHY MMC 4347	1610850	46
2		SCR, PHL PAN HD #4-40 1/4 LG	9006009-1	45
3		WASHER, INSULATOR	9006721	44
3		NUT, KEPS #6-32	9006185	43
				42
1	F1	FUSE 15 AMP	9007226	41
2		FUSE CLIP	9007203	40
6		EYELET GS-9-7	9006732	39
1	J1	MATE-N-LOK CONN. 8 PIN	1209340	38
1	E1	INTEGRATED CIRCUIT DEC 723C	1910415	37
1	Q5	TRANSISTOR AOS	1510705	36
1	Q3	TRANSISTOR D45H8	1510708	35
3	Q1, Q6, Q4	TRANSISTOR MPSA55 MOT	1510706	34
1	Q2	TRANSISTOR 2N5302	1510196	33
1	R14	RES; VARIABLE 200	1310852	32
1	R21	RES. 5.1 1/4W 5%	1309422	31
1	R23	RES, 100 1/4W 5%	1300229	30
1		SCR, PPN #4-40 X 5/16 LG	9006010	29
3	R11	RES 27 1/4W 10%	1301420	28
1	R17	RES 750 1/8W, 1%	1302955	27
1	R9	RES 27 1/4W 5%	1301522	26
1	R7	RES 18.2K 1/8W, 1%	1309412	25
2	R8, R16	RES 1K 1/4W 5%	1300365	24
1	R18	RES 511 1/8W 1%	1302411	23
1	R25	RES 18 K 1/4W 5%	1302465	22
2	R6, R15	RES 10 K 1/4W 5%	1300479	21
1	R4	RES .02 5W 3%	1310 876	20
1	R2	RES 820. 1W 10%	1300358	19
1	R1	RES 3.9K 1W 10%	1302927	18
2	R5, R13	RES 10 1/4W 5%	1301317	17
2	R12, R10	RES 150 1/4W 5%	1300250	16
1	D3	DIODE ZENER 1 MA 5.1V	1110925	15
1	D7	SCR MCR 6491-2	1109463	14
4		SCR, PPN #4 X 5/16 LG STST 300	9003142	13
1	D5	DIODE PWR NSR 8117	1110718	12
2	D4, D8	DIODE PWR D669	1100114	11
1	D2	DIODE ZENER IN 4744	110 5648	10
1	D1	DIODE BRIDGE	1110714	9
2	C8, C9	CAP 6K MF 10V	1010704	8
1	C1	CAP 31 K MF 50V	1010858	7
2	C4, C3	CAP .05 MF 25 V	1001774	6
1	C2	CAP 15 MF 20V 10%	1 104812	5
1	C11	CAP 2700PF 100V 5% DM	1001637	4
2	C7, C10	CAP .01 MF 100V 20% DISC	1001610	3
1	C6	CAP 2.2 UF, 20V, 10%	1002627	2
1		ETCHED CIRCUIT BOARD	5009725	1
		ASSY/DRILLING HOLE LAYOUT	D-AH-H744-0-5	
		X-Y COORDINATE, HOLE LOCATION	X-CO-H744-0-4	REF
		MODULE ECO HISTORY	D-MH-H744-0-6	REF
		CIRCUIT SCHEMATIC	D-SCH-H744-0-1	REF
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

1		SCR, PHL PAN HD #6-32 5/8 LG.	9006025-1	71
1		PACKING INSTRUCTIONS	API-3700074-0-0	70
1	R22	RES 680 1/4W 5%	1301429	69

MA 723C	7	12
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	EIA
	D669	IN3606
	IN4744	
DEC NO.		EIA NO.

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTIMOD D-UA-H742A-0-0

ETCH BOARD REV H

DRN		DATE 11/14/72
CHK		DATE 11/14/72
ENG		DATE
PROJ ENG		DATE
MFG		DATE 11-21-72

digital EQUIPMENT CORPORATION

TITLE 5V REGULATOR

SIZE C | NUMBER D-AH-H744-0-0 | REV L

SCALE | SHEET 1 OF 1

DWG. NO. D-AH-H744-0-0 L

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H745-Ø			
CIRCUIT SCHEMATIC	D-CS-H745-Ø-1			
UNIT ASSY	E-UA-H745-Ø-Ø			
		MFG. SET		
		TEST PROCEDURE	A-SP-11/45-TA-2	
		MFG. SPEC.	A-SP-H745-Ø-9	
		PACKAGING INSTRUCTION	A-PI-3700074-0-0	

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: MFG-1
H745	-15V REGULATOR	X

REVISIONS					
DATE	CHG. NO.	REV			
	00004	A			
			G.POTTER		
	00005	B			
	SBlake 10-6-72		J.W. LAWRENCE		
	00006	C			
11-14-72			G.POTTER		
	00007	D			
B. Blake 2-15-73			G.POTTER		
	00010	E			
(illegible) 4-11-74			R.WOLF		
(illegible) 4-24-74					

USED ON OPTION/MODEL		DRN.	DATE	TITLE
11/45		CHK'D.	DATE 2-19-74	-15V REGULATOR
		PROJ ENG.	DATE 2-25-74	
		PROD.	DATE 2-25-74	SIZE B / CODE DD / NUMBER H745-Ø / REV E
		FIELD SERV.	DATE	
		SHEET 1 OF		DIST

DRB 100

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

ELECTRICAL

CUSTOMER PRINT SET H745-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	D-CS-H745-Ø-1	#	1	CIRCUIT SCHEMATIC	H745
	X		A-SP-11/45-TA-2			TEST PROCEDURE	H745
	X		A-SP-H745-Ø-8			MFG SPEC	H745

MECHANICAL

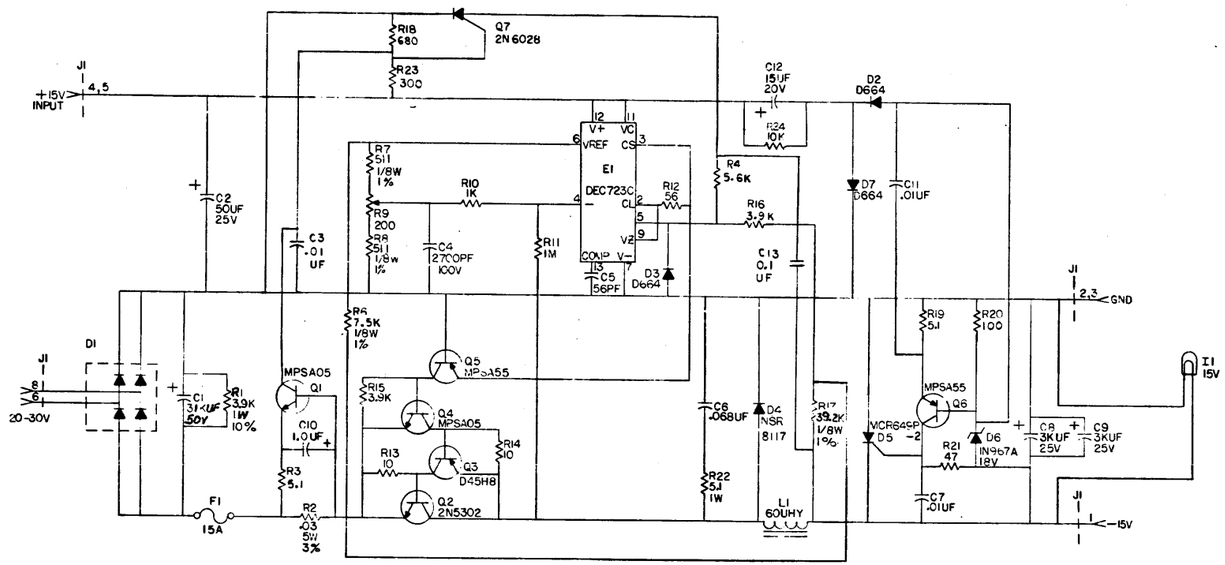
CUSTOMER PRINT SET H745-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	E-UA-H745-Ø-Ø	J	1	UNIT ASS'Y	H745
			D-PS-1210737-0-0		1	HEAT SINK	H745
			D-IA-5309756-0-0		1	REGULATOR BRKT	H745
			D-IA-5309761-0-0		1	2 - 5 CAP BRKT	H745
			C-IA-5309760-0-0		1	COMPONENT COVER	H745
			C-MD-5309759-0-0		1	CAPACITOR STRAP	H745
		2	A-PI-3700074-0-0	-	2	PACKAGING INSTRUCTIONS	H745
			A-PS-9905211-0-0	-	2	OUTER CARTON	H745
			A-PS-9905212-0-0	-	2	INNER PACKAGE	H745

TITLE		SIZE	CODE	NUMBER	REV
-15V REGULATOR	SHEET 2 OF 2	B	DD	H745-Ø	E

DRB 108

DEC 16-(325)-1062-2-N871

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



UNLESS OTHERWISE INDICATED:

RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
		ETCH BOARD REV E		

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	IN 3606	D45H8	
NSR8117		2N6026	
MCR649P-2			
IN967A	SAME		
2N 5302			
MPSA05			
MPSA55			

SEMICONDUCTOR CONVERSION CHART

REVISIONS	REV	CHG NO.	
1. ADJ'T			5-21-72
R.J. WOLF	L	H745-00009	6/19/72
R.D. Mallo			
1. Change R18 to 680 ohms.	K	H745-00007	12-20-72
G. POTTER			
1. Change R1 to 3.9K ohms.	J	H745-00006	11-14-72
G. POTTER			
1. Add Zener Diode D6	H	H745-00005	10-5-72
J. W. LAWRENCE			
1. Change R6 to 7.5K ohms.	F	H745-00004	8-24-72
G. POTTER			
1. Change R1 to 3.3K ohms.	E	H745-00003A	7-24-72
G. POTTER			
1. Add R24 10K ohms.	D	H745-00002A	5-17-72
G. POTTER			
1. Change R2 to 0.3 ohms.	C	H745-00001	3-22-72
G. POTTER			
1. Change R1 to 3.9K ohms.	B	H745-00000	2-25-72
G. POTTER			
1. Change R1 to 3.3K ohms.	A	H745-00000	2-25-72
G. POTTER			
1. Change R1 to 3.9K ohms.		H745-00000	2-25-72
G. POTTER			

DRN.		DATE 11-4-71
CHK'D.		DATE 11-9-71
ENG.		DATE 11/72
PROJ. ENG.		DATE 11/10/72
PROJ.		DATE 11/15/72
NEXT HIGHER ASSY		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

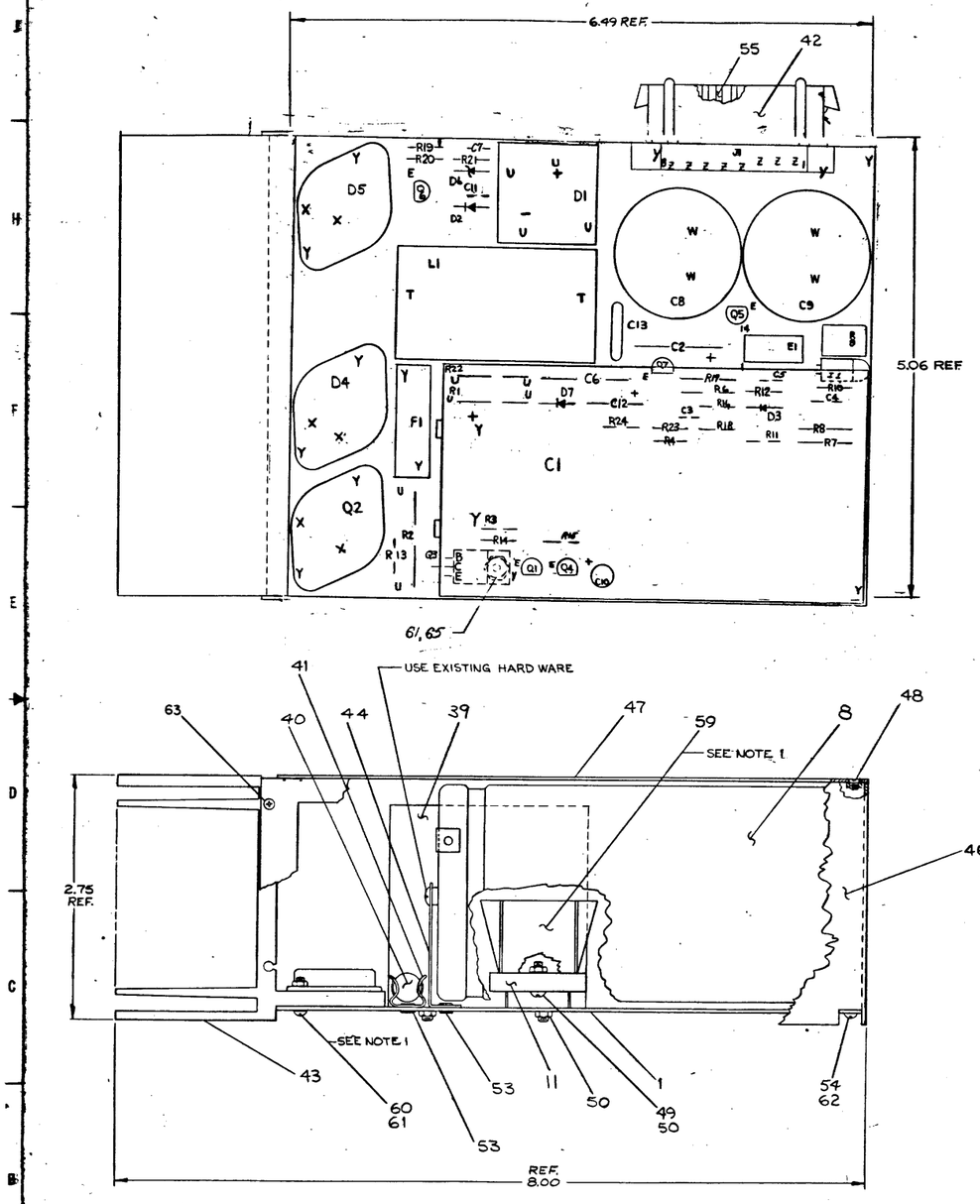
TITLE: -15V REG.

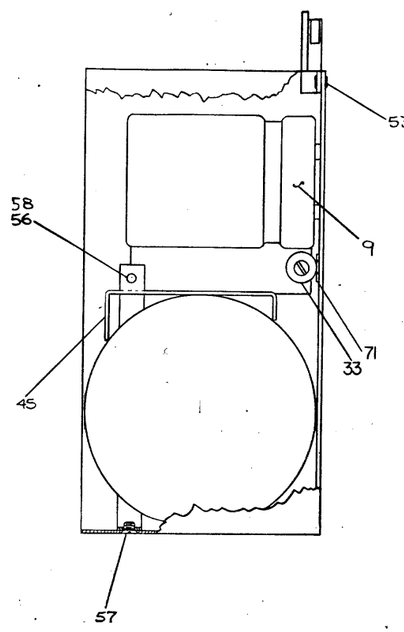
SIZE D | CODE CS | NUMBER H745 -0-1 | REV. L

DIST.

SIZE D | CODE DCS | NUMBER H745-0-1 | REV. L

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





NOTE:

1. APPLY ITEM# 51 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND INSULATOR, WASHER (ITEM# 52) ALSO BETWEEN WASHER & HEAT SINK FOR Q2, Q4 & D5 ALSO APPLY ITEM# 51 (COMPOUND) BETWEEN ITEM #11 (DIODE BRIDGE AND ITEM# 59 (HEAT SINK).
2. 1010621 MAY BE SUBSTITUTED FOR C13 (1000030).

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		ASSY/DRILLING HOLE LAYOUT	D-AM-H745-0-S	70
1		PACKING INSTRUCTIONS	API-3700074-0-0	69
1	R18	RES. 680 ¼W 5%	1301424	68
1	R23	RES 300 ¼W 5%	1301425	67
1	C13 (SEE NOTE 2)	CAP. 0.1 UF 100V 20%	1000030	66
1		SCR PH #4-40 X 5/16 LG	9006010-1	65
1	I1	LAMP 15V	1205169	64
4		SCR, PFH #4 X 5/16 LG, SELF TAPPING	9009142	63
2		L. WASHER #4	9006632	62
7		NUT KEPS #4-40	9008557	61
8		SCR PHL PAN HD #4-40 X ¼ LG	9008013-1	60
1		HEAT SINK BRIDGE RECT	1210807	59
1		SCR PHL PAN HD #6-32 X ¼ LG	9008020-1	58
1		SCR PHL FLT HD #6-32 X 1/4 LG	9008026-2	57
1		WASHER LOCK #8	9007648	56
8		CONTACT FEMALE	1208458	55
2		SCR PHL PAN HD#4-40 X ¼ LG	9008008-1	54
6		EYELET 08-4-7	9008732	53
3		INSULATOR, WASHER	9008721	52
A/R		THERMAL COMPOUND	9008288	51
3		NUT KEPS 6-32	9008185	50
1		SCREW PHL PAN HD 6-32 X ½ LG	9008024-1	49
4		SCREW PHL FLT HD 4-40 X 5/16 LG	9008010-2	48
1		COVER/COMPONENT	C-MD-5308788-B-B	47
1		ANNULATOR BRKT	D-1A-5308758-B-B	46
1		2.5 HOLDER CAPACITOR	C-1A-5308781-B-B	45
2		STRAP CAPACITOR	C-MD-5308758-B-B	44
1		HEAT SINK	D-FS-1210737-B-B	43
1	J1	CONN. MATE-N-LOCK 6 PIN	1208340	42
2		FUSE CLIP	9007203	41
1	F1	FUSE AGC 15	9007228	40
1	L1	REACTOR 88 UHY	1810850	39
1	E1	INTERGRATED CIRCUIT UA723C	1810415	38
1	Q3	TRANSISTOR 04918	1510708	37
2	Q5,Q8	TRANSISTOR 835	1510788	36
2	Q1,Q4	TRANSISTOR 885	1510705	35
1	Q2	TRANSISTOR 2N5302	1510188	34
1	R9	RES VARIABLE 200 Ω 20%	1310852	33
1	R20	RES 100 Ω 5%	1300229	32
1	R11	RES 1 MEG ½W 5%	1309595	31
1	R4	RES. 5.6 K ½W 5%	1301874	30
2	R15, R16	RES 3.8K ½W 5%	1309444	29
2	R18, R3	RES 5.1 ½W 5%	1309422	28
1	R12	RES 56 ½W 5%	1302802	27
1	R21	RES 47 ½W 5%	1302202	26
1	R17	RES 39.2K ¼W 1%	1305265	25
1	R10	RES 1K ½W 5%	1300385	24
2	R13, R14	RES 10 ½W 5%	1301317	23
1	R6	RES 7.5K 1/8W 1%	1305322	22
2	R7, R8	RES 541 1.2W 1%	1302411	21
1	R22	RES 5.1 1% 5%	1302138	20
1	R24	RES 10K ½W 5%	1300478	19
1	R2	RES .02Ω 5W 3%	1310876-1	18
1	R1	RES 3.8K 1% 10%	1302927	17
1	D6	DIODE IN967	1110088	16
1	D5	SCR MCR64P-2	1108465	15
1	D4	DIODE NSR8117	1110715	14
3	D3, D7, D2	DIODE D84	1100114	13
1	Q7	TRANSISTOR UNI JUNCTION 2N6028	1510877	12
1	D1	DIODE BRIDGE	1110714	11
1	C12	CAP 15UF 20V 10%	1004812	10
2	C8, C9	CAP 3.0K UF 25V	1010703	9
1	C1	CAP 31K UF 50V	1010858	8
1	C10	CAP 1.0 UF 25V	1010866-01	7
1	C2	CAP 50 UF 25V -10+75%	1001396	6
1	C5	CAP .068 UF 100V 10%	1000052	5
1	C4	CAP 2700PF 100V 5%	1001637	4
3	C7, C11, C3	CAP .01UF 100V 20%	1001610	3
1	C6	CAP 50Ø 100V A	1000017	2
1		ETCHED CIRCUIT BOARD	5009723	1
		MODULE ECO HISTORY	D-M-H745-0-B	REF
		CIRCUIT SCHEMATIC	C-S-H745-0-1	REF
		X-Y COORDINATE TRIM LOCATION	X-Y-D-H745-0-A	REF

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	AWG	FROM PT	TO PT
JUMPER LIST			

TRANSIPAD 9008206 71

ETCH BOARD REV E

0669 IN3606

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

SEMICONDUCTOR CONVERSION CHART

DRAWN	R.J. WOLF	11/72	
CHKD	G. POTTER	11/72	
ENG	G. POTTER	11/72	
PROJ ENG	G. POTTER	11/72	
MGR	J.W. LAWRENCE	11/72	
FIRST USED ON			

DIGITAL EQUIPMENT CORPORATION

TITLE: -15 REGULATOR

SIZE E | DRAWING NO. H745-0-0 | REV L

SCALE | SHEET OF | DIST

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
L	ECO H745-00009	12-20-72	R.J. WOLF
K	ECO H745-00007	10-18-72	G. POTTER
J	ECO H745-00006	9-14-72	G. POTTER
H	ECO H745-00005	8-23-72	J.W. LAWRENCE
F	ECO H745-00004	8-23-72	G. POTTER
D	ECO H745-00002	5-16-72	G. POTTER
C	ECO H745-00001	3-21-72	G. POTTER
REV.	CHANGE NO.		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H746-Ø		
CIRCUIT SCHEMATIC	D-CS-H746-Ø-1		
UNIT ASSY	E-UA-H746-Ø-Ø	MFG SET	
		TEST PROCEDURE	A-SP-H746-Ø-3
		MFG SPEC.	A-SP-H746-Ø-8
		PACKAGING INSTRUCTION	A-PI-3700074-0-0

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: H746-1
H746	MOS REGULATOR	X

REVISIONS	DATE	CHG. NO.	REV
	8Ø2772	-00005	A
	3-9-72	-00006	B
	7-14-72	-00007	C
	11-6-73	-00012	D
	4-2474		

USED ON OPTION/MODEL: 11/45

DRN. D. FONTAINE	DATE 2-7-72	TITLE: MOS REGULATOR	
CHK'D	DATE 2-11-72		
PROJ ENG.	DATE 2-25-72		
PROD.	DATE 2-27-72	SIZE B	CODE DD
FIELD SERV.	DATE 2-25-72	NUMBER H746-Ø	REV D
SHEET 1 OF 2		DIST	

DRB 106

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

ELECTRICAL

CUSTOMER PRINT SET H746-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	D-CS-H746-Ø-1	K	1	CIRCUIT SCHEMATIC	H746
	X		A-SP-H746-Ø-3	#		TEST PROCEDURE	H746
	X		A-SP-H746-Ø-8	#		MFG. SPEC	H746

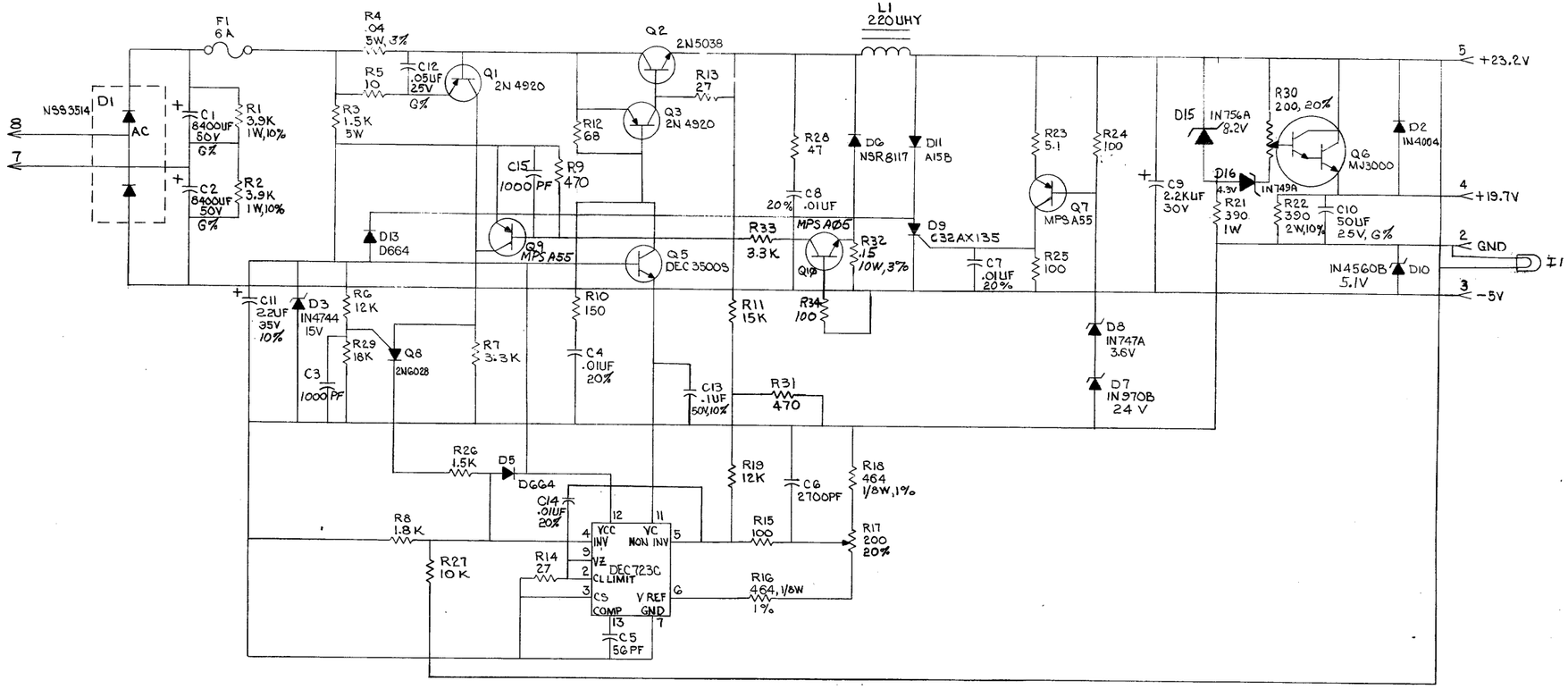
MECHANICAL

CUSTOMER PRINT SET H746-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	E-UA-H746-Ø-Ø	K	1	UNIT ASSY	H746
			D-PS-1210737-0-0	#	1	HEAT SINK	H746
			D-IA-5309756-0-0	#	1	REGULATOR BRK'T	H746
			C-IA-5309758-0-0	#	1	1.5 CAP BRK'T	H746
			C-IA-5309760-0-0	#	1	COMPONENT COVER	H746
			C-MD-5309759-0-0	#	1	CAPACITOR STRAP	H746
			A-PI-3700074-0-0	–	2	PACKAGING INSTRUCTION	H746
			A-PS-9905211-0-0	–	2	OUTER CARTON	
			A-PS-9905212-0-0	–	2	INNER PACKAGE	

TITLE		SIZE	CODE	NUMBER	REV
MOS REGULATOR	SHEET 2 OF 2	B	DD	H746-Ø	D

DRB 118

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



UNLESS OTHERWISE INDICATED:
CAPACITORS = 100V, 5%
RESISTORS = 1/4W, 5%
G% = -10% + 75%

REV	CHK	CHANGE NO.	REVISIONS
P	R. WOLF	H746-00011	3/27/72
N	R. WOLF	H746-00010	12/17/71
M	R. WOLF	H746-00009	11-2-71
L	R. WOLF	H746-00008	10-8-71
K	R. WOLF	H746-00007	9/13/71
J	G. POTTER	H746-00006	12-8-72
H	J.W. LAWRENCE	H746-00005	10/6/72
G	G. POTTER	H746-00004-4C	5-5-72
F	G. POTTER	H746-00004-4C	5-5-72
E	G. POTTER	H746-00003	5-5-72
D	G. POTTER	H746-00002	3-22-72
C	G. POTTER	H746-00001-1A	3-14-72

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV H

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

SEMICONDUCTOR CONVERSION CHART

DRN. Roger V. Doucette DATE 8 Jan 72
CHK'D DATE 2/1/72
ENG. DATE
PROJ. ENG. DATE 2/1/72
PROD. DATE 2/3/72
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE MOS REGULATOR

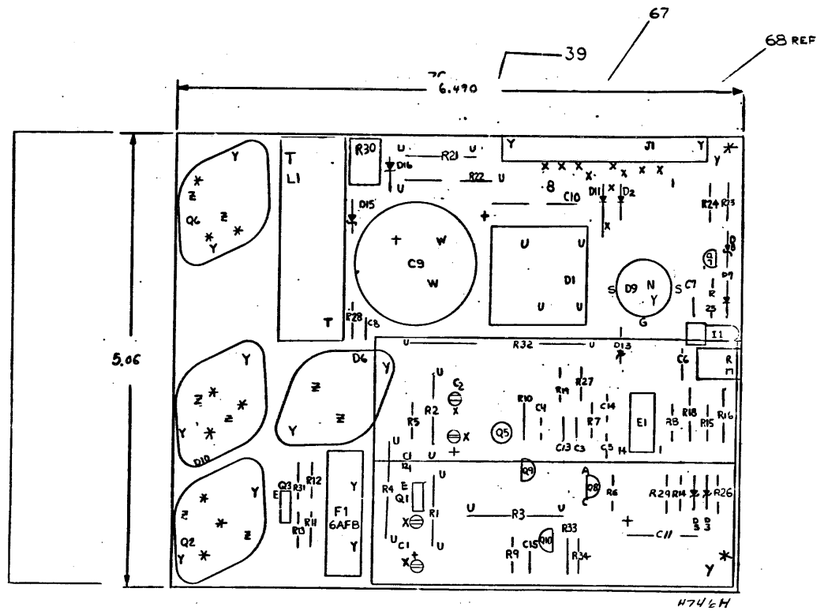
SIZE D | CODE CS | NUMBER H746-0-1 | REV. P

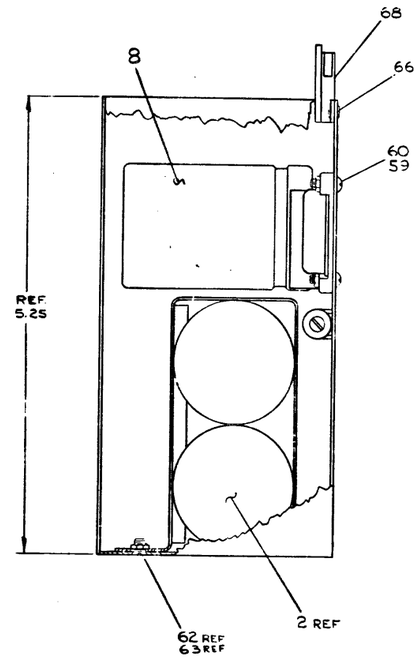
DIST.

DEC FORM NO 050-155

SIZE D | CODE CS | NUMBER H746-0-1 | REV P

This drawing and specification, herein, are the property of Digital Equipment Corporation and both shall not be loaned, copied or used in whole or part, or disclosed to any person or firm for any purpose whatsoever without written permission.

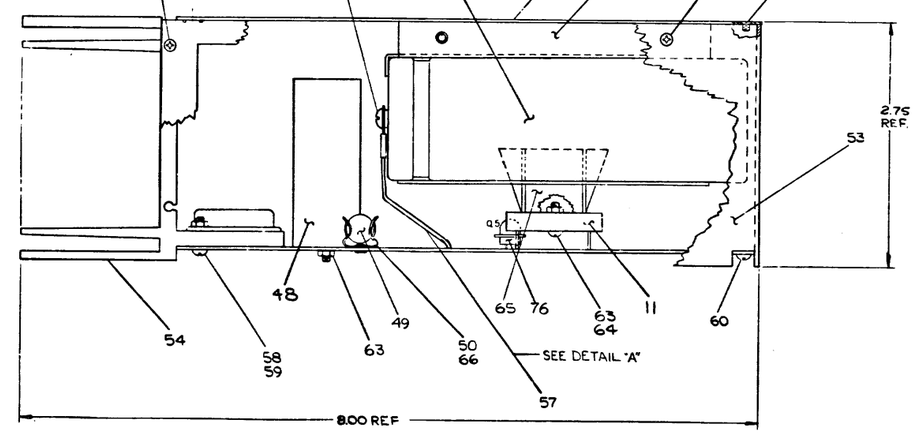


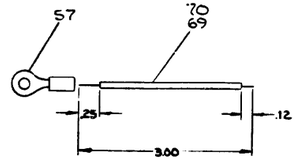


NOTES:
APPLY ITEM #71 (COMPOUND) ON:
1. BOTH SIDES OF INSULATOR WASHERS FOR Q2, Q6, D5, D10.
2. BETWEEN ITEM #11 DIODE BRIDGE (D1) AND ITEM #65 HEAT SINK.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		ASSY/DRILLING HOLE LAYOUT	1-AM-746-0-5	80
		PACKING INSTRUCTIONS	AP1-3700174-0-0	80
1	D16	DIODE IN759A	11-07491	79
1	R21	RES 390 1/4W 5%	13-02394	78
1	I1	LAMP 24V	12-00344	77
2		TRANSPAD	[illegible]	76
1	D8	DIODE IN747A	1113672	75
4		SCR PHL FLAT HD. #4 SELF TAPPING	9009142-02	73
4		WASHER INSULATOR	9001121	72
A R		COMPOUND THERMAL	9008208	71
A R		#18 AWG STRD TCP INS. (BLK)	9360240 00	70
A R		#18 AWG STRD TCP INS. (RED)	9360240 02	69
1		WIRE-N-LOCK CONN 8 PIN	1-105340	68
8		CONTACT FEMALE	1-09458	67
4		STUDLET 6S-6-7	99 8132	66
1		HEAT SINK, BRIDGE	12 0882	65
1		SCR PHL PAN HD 8-32 X 3/4	9304075-1	64
5		KEPS NUT 8-32	9008185	63
2		SCR PHL FLAT HD. 8-32 X 5/16	9001721-2	62
4		SCR PHL FLAT HD. 4-40 X 1/4	900 008-2	61
8		SCR PHL PAN HD. 4-40 X 3/8	3006011-1	60
6		KEPS NUT 4-40	9008557	59
4		SCR PHLPAN HD 4-40 X 1/2	9004263-1	58
1		TERMINAL RING	9007530	57
1		COVER COMP	C-AB-5307760-0-0	56
1		I S CAP BRKT	C-1A 5309758-0-0	55
1		HEAT SINK, REGULATOR	C-PS 1210731-0-0	54
1		BRACKET, REG	C-1A 5309756-0-3	53
4		SPLIT LUG	9008735	52
1	Q8	TRANSISTOR 2N6028	15-10877	51
2		FUSE CLIP	9007263	50
1	F1	FUSE, 6A3B	9007368	49
1	L1	REACTOR 220UHY	12-10868	48
1	U1	INTEGRATED CIRCUIT UA723C	18-10415	47
2	Q7 Q9	TRANSISTOR 2N5 (MOT)	15-10798	46
1	Q8	TRANSISTOR MJ3000 (MOT)	15-11349	45
1	Q5	TRANSISTOR GE-35005	15-03209	44
1	Q2	TRANSISTOR 2N5030	15-10868	43
2	Q1, Q3	TRANSISTOR 2N5320	15-08865	42
2	R17, R30	RES VARIABLE 200, 20%	13-10852	41
1	R23	RES 5.1 OHM 5%	13-09422	40
2		#10 LOCKWASHER EXTERNAL TOOTH	9003651	39
2	R31 P9	RES 470 OHM 5%	13-00316	38
1	R11	RES 15K OHM 5%	13-00426	37
1	R30	RES 150 OHM 5%	13-00250	36
1	R27	RES 10K OHM 5%	13-00479	34
2	R6, R19	RES 12K OHM 5%	13-00466	33
4	R15, R25, R24, R34	RES 100 OHM 5%	13-00359	32
2	R13, R36	RES 2.2 OHM 5%	13-01522	31
1	R5	RES 10 OHM 5%	13-01317	30
				29
2	R16, R18	RES 4641 OHM 1%	13-09047	27
1	R29	RES 18K OHM 5%	13-02465	26
1	C11	CAP, 2.2 UF 35V 10%	10-02431	25
1	R4	RES .04 OHM 5%	13-11362	24
1	R3	RES 4.2K OHM 5%	13-01897	23
1	R22	RES 390 2W 10%	13-01880	22
1	R28	RES 1.5K OHM 5%	13-00391	21
2	R1, R2	RES 3.9K OHM 10%	13-02927	20
1	R20	RES 47 OHM 5%	13-00282	19
1	D11	DIODE IN5624	11-10429	18
1	D2	DIODE 1N4004	11-05796	17
1	C10	DIODE IN4560B	11-10856	16
1	D7	DIODE IN5708	11-10854	14
1	D8	DIODE TRANSORB 117	11-10715	13
1	D3	DIODE IN4764	11-05448	12
1	D1	DIODE NSS 3514	11-10714	11
2	D5, D13	DIODE 1N84	11-00114	10
1	C10	CAP 50UF 25V -10+75%	10-01798	9
1	C9	CAP 2 2K UF 30V	10-10898	8
4	C7, C8, C4, C14	CAP .01UF 100V 20%	10-01610	7
1	C6	CAP 2700PF 100 5%	10-01837	6
1	D5	CAP 50PF 100V 5%	10-08812	5
1	D16	DIODE IN749A	11-05377	4
1	C12	CAP 10UF 25V	10-01774	3
2	C1 C2	CAP 6 4UF 50V	10-10851	2
1		ETCHED CIRCUIT BOARD	9008721	1
		MODULE ECO HISTORY	B-BM-H746-0-0	REF
		X-Y COORDINATE HOLE LOCATION	C-CP-H746-0-1	REF
		CIRCUIT SCHEMATIC	C-CP-H746-0-1	REF

PARTS LIST





DETAIL "A"
SCALE: NONE
RED WIRE GOES TO POSITIVE TERMINAL
BLK WIRE GOES TO NEGATIVE TERMINAL

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	R7, R33	RES. 3.3K, 1/8W 5%	13-00439	29
1	R8	RES. 1.8K, 1/4W 5%	13-00398	74
1	R32	RES. 15 ±10W 3%	13-11625	24
1	D9	SCR C 32 4X135	15-10928	15
1	Q10	TRANSISTOR A05 (MOT)	15-10705	84
2	C3, C15	CAP.1000PF, 100V DM	10-00042	85
1	C13	CAP. .1UF, 50V, 10%	10-10978-36	92
1	R12	RES 68, 1/4W, 5%	13-00219	81

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.	AWG	FROM PT	TO PT

JUMPER LIST

REV	CHANGE NO.	REVISIONS	DATE	BY
P		R.WOLF 3/27/74		
O	H746-00011	R.WOLF 12-10-73		
N	H746-00010	R.WOLF 12-7-73		
M	H746-00009	R.WOLF 11-29-73		
L	H746-00008	R.WOLF 11-16-73		
K	H746-00007	R.WOLF 11-9-73		
J	H746-00006	G.POTTER 10-26-73		
H	H746-00005	G.POTTER 10-15-73		
G	H746-00004	G.POTTER 9-24-73		
F	H746-00003	G.POTTER 9-11-73		
E	H746-00002	G.POTTER 8-31-73		
D	H746-00001	G.POTTER 8-22-73		
C	H746-00000	G.POTTER 8-14-73		

DEC NO.	EIA NO.
E664	1N3406
1N4001	SEE MR 22-4

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV H

DRN [illegible] DATE 8/14/73
ENG [illegible] DATE
PROJ [illegible] DATE
PROG [illegible] DATE
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION

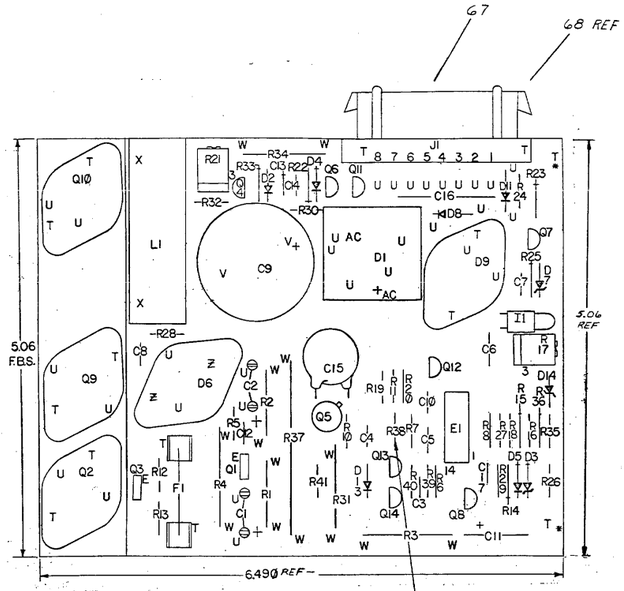
TITLE: MOS REGULATOR

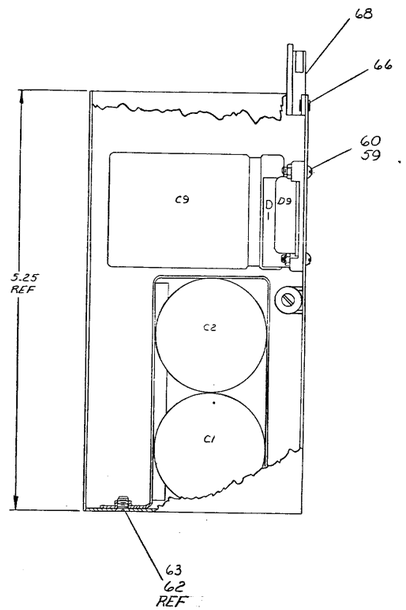
SIZE E | CODE | NO. H746-0-0 | REV P
SCALE NONE
SHEET 1 OF 1
DST

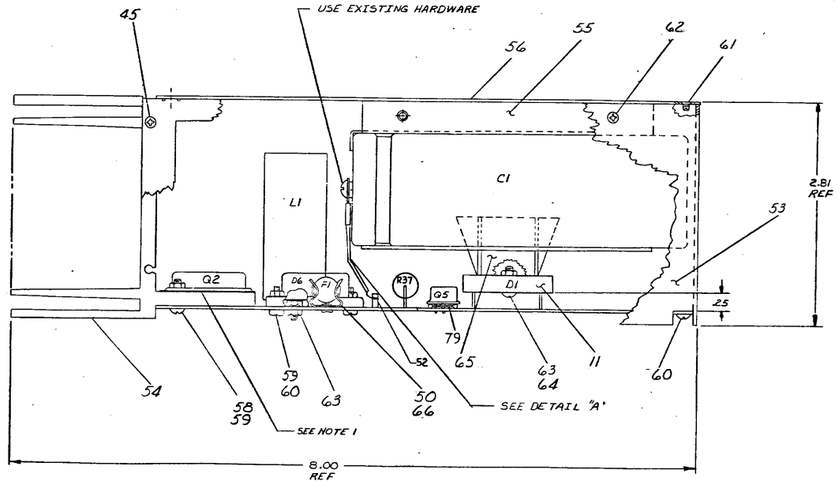
H746-0-0

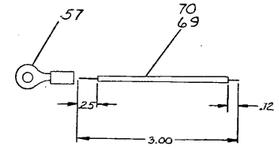
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

COPYRIGHT © 1972 DIGITAL EQUIPMENT CORPORATION









DETAIL "A"
SCALE : NONE
RED WIRE GOES TO POSITIVE TERMINAL
BLK WIRE GOES TO NEGATIVE TERMINAL

DELETED COMPONENTS	
RESISTORS	R9
DIODES	D10,D12

NOTES:
1. APPLY ITEM # 71 (COMPOUND) ON BOTH SIDES OF ITEM # 72 (INSULATOR WASHER) FOR Q2, Q9, Q10. ALSO APPLY BETWEEN ITEM # 11 (DIODE BRIDGE D1). FOR ITEM # 65 (HEAT SINK, BRIDGE ASSY.)
2. - UNLESS OTHERWISE INDICATED:
   RESISTORS ARE 1/4 W, ±5%.
   CAPACITORS ARE 100V, ±5%.
3. ADD INSULATION (9107256-11) TO BOTH LEADS OF R38 TO AVOID SHORT TO ETCH.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
AR		INSULATION	9107256-11	90
1	R39	RES 220 1/4W 5%	1300271	89
1	R37	RES. .1 10W 1%	1309108	88
1	R38	RES.1K 15 "THERMISTOR	1310071	87
1	C16	CAP. 100UF 25V	1002781	86
1	Q10	TRANSISTOR MJ900	1311778	85
1	Q9	TRANSISTOR MJ3660	1311349	84
1	C13	CAP. 100 PF 100V ±5% DM	1000616	83
2	Q6, Q14	TRANSISTOR MPS A05	1310765	82
1	D2	DIODE D083	1100100	81
5	(UNDER Q5 I REQ)	TRANSIPAD	9207202	80
1	R31	RES .1Ω 2W 10%	1310127	79
2	C14, C17	CAP, 1000 PF, 100V, ±5% DM	1000942	78
1	R23	RES 383Ω 1/8W 1%	1305123	77
2	R35, R8	RES 1.78K 1/8W 1%	1302612	76
1	R11	RES 15K 1/8W 1%	1300996	75
1	R20	RES 470Ω 1/4W 1%	1300316	74
				REF
3		WASHER, INSULATOR	9008121	73
A/R		COMPOUND, THERMAL	3008268	72
A/R		WIRE, #18AWG, STRD, TFE 2KV (BLK)	9107360-00	71
A/R		WIRE #18AWG, STRD, TFE, 2KV (RED)	9107360-22	69
8	J1	MATE-N-LOCK CONN 8 PIN	1200340	68
		PIN, SOCKET, MATE-N-LOCK	1200458	67
4		EYELET .062-4-2	9008139	66
1		HEAT SINK BRIDGE RECTIFIER	1210007	65
5		SCR PHL PAN HD 6-32 X ¼	9008024-1	64
5		KEPS NUT 6-32 SS	9008185	63
2		SCR PHL FLAT HD 6-32 X 5/16	9008021-2	62
4		SCR PHL FLAT HD 4-40 X 1/4	9002009-2	61
10		SCR PHL PAN HD 4-40 X 3/8	9008011-1	60
6		KEPS NUT 4-40	9008007	59
4		SCR PHL PAN HD 4-40 X ¼	9008013-1	58
1		TERMINAL, SOLDERLESS, #10	9007890	57
1		COVER, COMP	C-MD-5308760-0-0	56
1		1.5 CAP. BRKT	C-1A-5308758-0-0	55
1		HEAT SINK, REGULATOR	D-PS-1210737-0-0	54
1		BRACKET, REG	D-1A-5308758-A-0	53
4		SPLIT LUG	9008235	52
1	Q8	TRANSISTOR 2N6278	15-11877	51
2		FUSE CLIP	9007203	50
1	F1	FUSE 10 AMP	90-08838	49
1	L1	REACTOR 170 UHY	16-10549	48
1	E1	INTEGRATED CIRCUIT 722	19-10415	47
6	Q7, Q6, Q11, Q12, Q13	TRANSISTOR MPS A05	15-10706	46
4		SCR PHL FLAT HD #4-40 SELF TAPPING	9008142	45
1	Q5	TRANSISTOR DEC3500	15-03099	44
1	Q2	TRANSISTOR 2N5039	15-10869	43
2	Q1, Q3,	TRANSISTOR 2N4920	15-09805	42
2	R17, R21	RES VARIABLE 200 ±20% POT	13-10852	41
2	R23, R36	RES 5.1 1/8 5%	13-09422	40
1	R18	RES 237 1/8W 1%	1304857	39
REF		ELECTRICAL SCHEMATIC	E-CS-H754-0-1	38
3	R14, R13, R5	RES 1/8 5% 27	13-01522	37
1	R10	RES 150 1/8 5%	13-00250	36
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-H754-0-5	35
2	R7, R40	RES. 2K 1/4W 5%	1302988	34
2	R6, R19	RES 10K 1/8 5%	13-00488	33
6	R15, R25, R30, R24, R35, R41	RES 100 1/8 5%	13-00229	32
1	R12	RES 68Ω 1/4W 5%	13-00219	31
1	R27	RES 10K 1/2W 1%	1303312	30
1	R32	RESISTOR 1489 5%	13-00444	29
1	R16	RES 267Ω 1/8 W 1%	13-05104	27
1	R29	RES 18K 1/8 5%	13-02483	26
1	C11	CAP. 2.2 UF 35V 10% S TANT	10-02431	25
1	R4	RES 5K 3% .04 /L	1311362	24
1	R3	RES 1.5K 5W 5%	13-01857	23
1	R34	RES 47 2W 5%	13-05258	22
1	R26	RES 1.5K 1/8 5%	13-00361	21
2	R1 R2	RES 3.3K 1/8 10%	13-02927	20
1	R28	RES 47 1/8 5%	13-00202	18
2	D11, D8	DIODE IN5624	1110420	18
1	D14	DIODE 752A ZENER	1102808	17
1	D9	DIODE MCR 649 P-2	11-09465	16
1	D7	DIODE IN4738 24V	11-10856	14
1	D6	DIODE 20 AMP FAST REC	11-10715	13
1	D3	DIODE IN4744 ZENER 15V	11-09648	12
1	D1	DIODE MDS 3514	11-10714	11
3	D5, D13 D4	DIODE D064	11-10114	10
1	C15	CAP. 1 UF 100V 20% DISC	10CC030	9
1	C9	CAP 2.2K UF 30V G% AL EL.	10-10858	8
5	C7, C8, C4, C10, C3	CAP .01UF 50V 20% DISC.	10-01610	7
1	C6	CAP 270PF 100V 5% DM	10-01637	6
1	C5	CAP 50PF 100V 5% DM	10-00012	5
1	J1	LAMP 6.5V .150 MA	12-11239	4
1	C12	CAP .1UF 25V DISC	10-01774	3
2	C1 C2	CAP 2.5 UF 50V G% AL EL.	10-11763	2
1		P.C. CIRCUIT BOARD	50ICA71	1
		MODULE ECO HISTORY	B-MH-H754-0-6	REF
		P.C. COMPONENT HOLE LOCATION	N-CO-H754-0-4	REF

PARTS LIST

ETCH BOARD REV F

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

REVISIONS						
REV	CHANGE NO.	CHK	DATE	APVD	DATE	
A	11754-00001	G. WHITCOMB	10-8-72	R. BURTON	10-8-72	
B	11754-00002	G. WHITCOMB	10-18-72	R. BURTON	10-18-72	
C	11754-00003	G. WHITCOMB	10-27-72	R. BURTON	10-27-72	
D	11754-00004	G. WHITCOMB	11-6-72	R. BURTON	11-6-72	
E	11754-00005	G. WHITCOMB	11-15-72	R. BURTON	11-15-72	
F	11754-00006	G. WHITCOMB	11-22-72	R. BURTON	11-22-72	

SEMICONDUCTOR CONVERSION CHART

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

DRN G. WHITCOMB DATE 10-6-72
CHK'D DATE
ENG DATE
PROJ. ENG DATE
PROJ. DATE
NEXT HIGHER ASSY

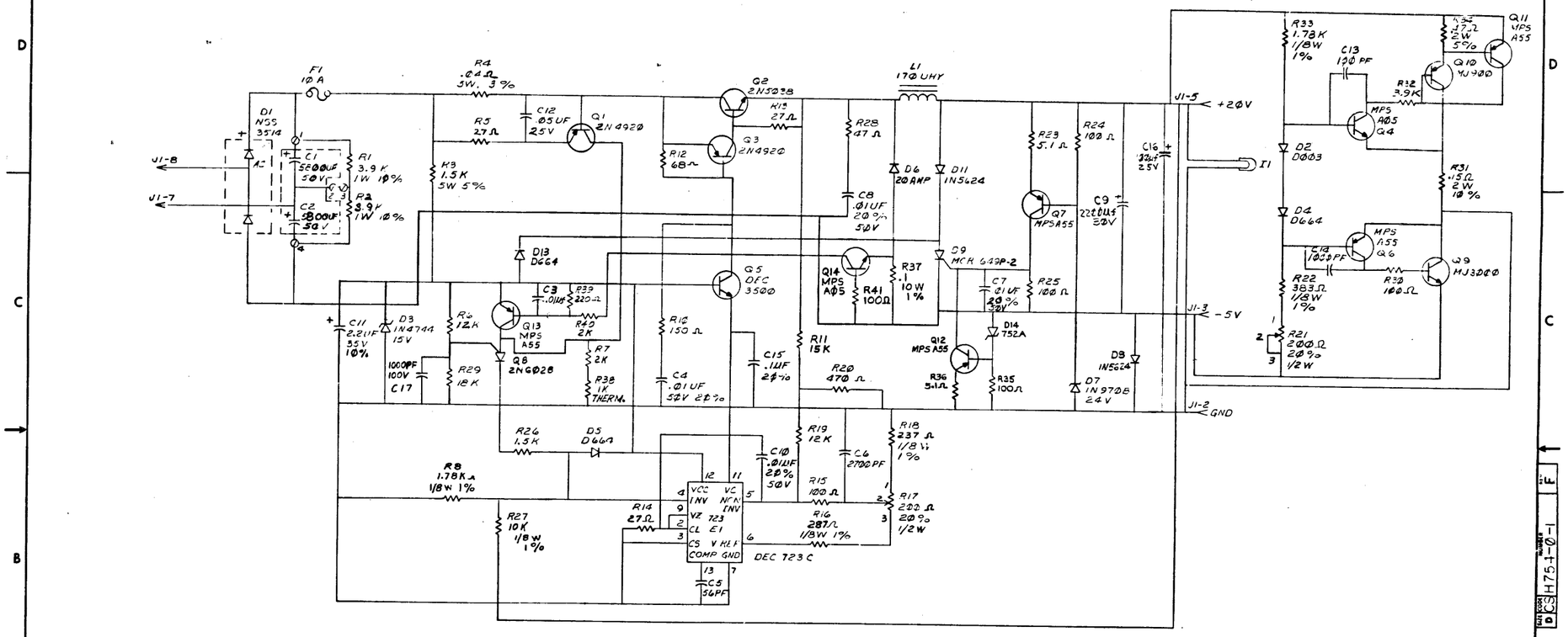
DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: +28 VOLT REGULATOR

SIZE E | CODE CS/H754-0-1 | NUMBER | REV F
SCALE | SHEET OF | DIST

8 7 6 5 4 3 2 1

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



FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
H754		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 1-27-72
CHK'D [illegible] DATE
ENG. [illegible] DATE 4-7-72
PROJ. ENG. [illegible] DATE 4-7-72
PROD. [illegible] DATE 4-7-72
NEXT HIGHER ASSY —
SCALE —
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: +20 VOLT REGULATOR

SIZE/CODE D/CS NUMBER H754-0-1 REV F
DIST

REVISIONS			
CHG	CHANGE NO	REV	
	H754-0-1	F	
	[illegible]		
	G.WHITCOMB		

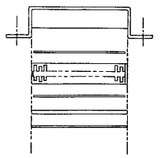
DEC 1 DRW NO
DRD 102-B

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

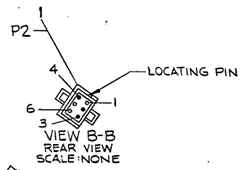
WIRE TABLE

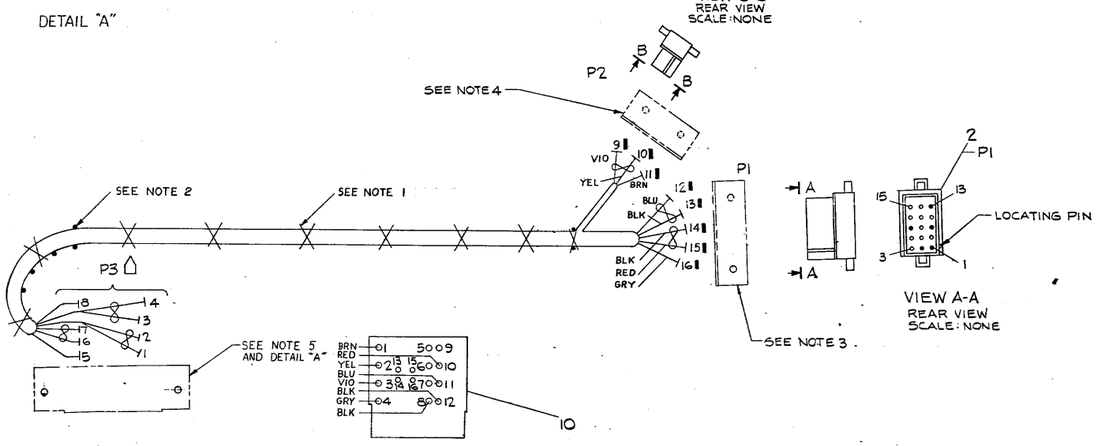
ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
5	14	RED	3	P3-10	SOLD	15	P1-1	3	+5V
	TWP	BLK	4	P3-8	SOLD	14	P1-7	3	GND
9	14	GRY	5	P3-4	SOLD	16	P1-2	3	-5V
6	14	BLK	1	P3-12	SOLD	13	P1-9	3	GND
	TWP	BLU	2	P3-11	SOLD	12	P1-13	3	-15V
8	18	BRN	8	P3-1	SOLD	11	P2-2	3	LTc
7	18	VIO	6	P3-3	SOLD	9	P2-3	3	DcLo
	TWP	YEL	7	P3-2	SOLD	10	P2-4	3	AcLo
11	22	-	-	P3-13	SOLD	-	P3-14	SOLD	DcLo
11	22	-	-	P3-15	SOLD	-	P3-16	SOLD	AcLo

NOTES:
1. USE TIE WRAPS (X) ITEM #4 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. DOT (•) INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.
3. USE CONN BRKT C-MD-9305761-H16-0 MOUNT WITH WOOD SCREWS. USE MATING CONN 1209350-13.
4. USE CONN BRKT C-MD-9305761-H6-0 MOUNT WITH WOOD SCREWS. USE MATING CONN 1209350-06.
5. USE CONN. HOLD DOWN B-MD-9305767-0-0 WITH PLATE B-MD-9305767-0-1, USE TAPE DEC #9008734 & CONN HOOD DEC # (1209123) REMOVE PINS & FLANGES AS SHOWN IN DETAIL "A". MOUNT WITH WOOD SCREWS.



DETAIL "A"





P3

0 IN. SCALE 6 IN. 12 IN.

DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

	A/R	BUSS WIRE #22 AWG	9107560-01	11
	1	POWER CONN	6772	10
	A/R	WIRE #14 AWG GRY	9107310-88	9
	A/R	WIRE #18 AWG BRN	9107360-11	8
	A/R	WIRE #18 TWP YEL/VIO	9107480-47	7
	A/R	WIRE #14 TWP BLK/BLU	9107440-06	6
	A/R	WIRE #14 TWP BLK/RED	9107442-02	5
X	A/R	WRAP, TIE	9007031	4
	8	PIN, MALE	1209378-00	3
	1	HOUSING, CONN. 15 PIN	1209351-15	2
SYM	1	HOUSING, CONN. 6 PIN	1209351-06	1

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

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS 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

DRW. — DATE
ENG. DATE
PROJ. ENGR. DATE
PROD. DATE
NEXT HIGHER ASSY.
SCALE 1/1
SHEET OF

digital EQUIPMENT CORPORATION

TITLE: G772 SYSTEM UNIT HARNESS

SIZE E | CODE 1A | NUMBER 7009562-0-0 | REV. | DIST.

CHANGE NO. | REV. | DIR. | REVISIONS

7009562-0-0 | 1A | B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY Q. Hoffman DATE 6-15-72	CHECKED J. Rogers DATE 6-15-72	SECTION
ENG DATE 6/20/72	PROD Jack Hoffman DATE 6-20-72	ISSUED SECT.

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION Basic
	Lib Kit 11-Bas 45-B-K	System Software Kit	1
	Dec 11-H45B-D	11/45 Systems and installation Manual	1
	112-01071-1854-D-09-25	11 Peripherals and interfacing Handbook	1
	112-01071-1876-D-09	11/45 Processor Handbook	1
	Dec 11-HKBA-D	KB11 Maintenance Manual	1
	B-DD-11/45-0	PDP-11/45 Systems Eng. Drawings	1
		Dec Supplies List	1
		Log Book	1
		PDP-11 Instruction Card	1
		H960C Cab Filter	1
	9007221	AGC 5 A Fuse	5
	9007226	AGC 15A Fuse	5
	9009039	Fuse 2/10A SB	5
		Key on off Switch	2
	7008855	POWER CABLE, SYSTEM UNIT	3

KIT CHECK BY _____ DATE _____

INSTALLATION CHECK BY _____ DATE _____

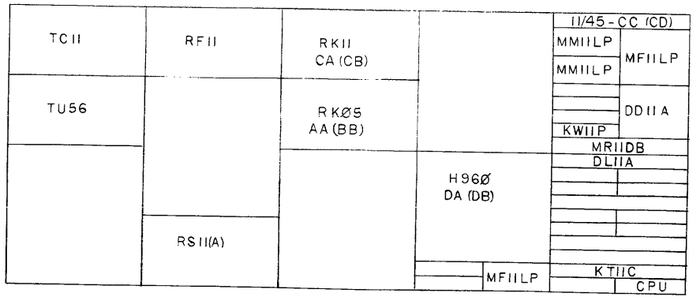
TITLE: Central Processor	ASSY. NO.	SIZE: A	CODE: AL	NUMBER: 11/45 – [illegible]	REV: A	ECO NO: 11/45-00038
	SHEET 1 OF 1	DIST.				

DEC 16-(325)-1075-N172 DRA 121

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

NOTES:
1. SYSTEMS IN ( ) ARE 230v 50 HZ VERSIONS
2. DL11A SPEED GROUP 3 (300 BAUD ONE STOP BITS, NO PARITY, 8 BITS)
3. DL11A MUST BE SET FOR 150 BAUD TO RUN DIAGNOSTICS.

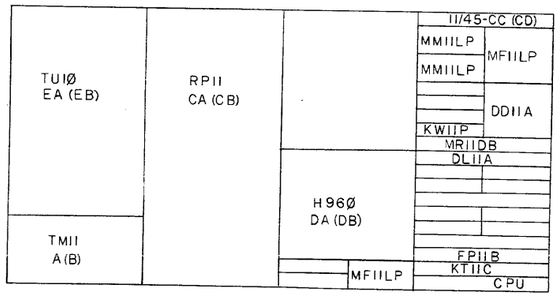
11/45 - RA (RB)



SOFTWARE QR43Ø-AC

LA3Ø
CA (CD)

11/45 - RE (RF)

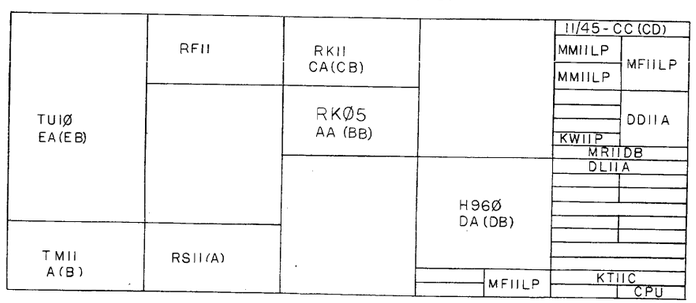


SOFTWARE QR43Ø-AD

RPØ3
AS (BS)

LA3Ø
CA (CD)

11/45 RC(RD)



SOFTWARE QR43Ø-AD

LA3Ø
CA (CD)

REVISIONS	CHANGE NO	REV
CHK	11/45-00048 REVISED & REDRAWN	A
	11/45-00056	B

B FITZGERALD 11-6-72
J Mahon 11-10-72
MINOR

BRUNING 40-107 15968
DEC FORM NO

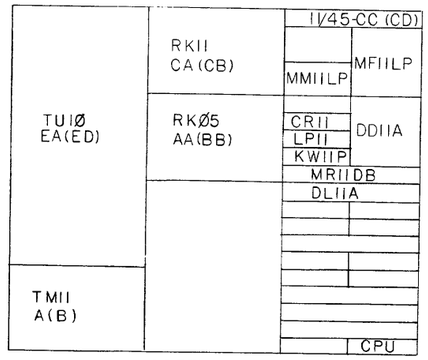
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11/45		PARTS LIST		

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 CRAMM	DATE 11-6-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D J BAILEY	DATE 11-10-72	
ENG. SWANSON	DATE 11-13-72	TITLE TIME SHARING SYSTEMS
PROJ. ENG. SVANSON	DATE 11-13-72	
PROD HILGENDORF	DATE	
NEXT HIGHER ASSY. B-DD-11/45-Ø		SIZE D CODE AR NUMBER 11/45-0-4 REV. B
SCALE —		
SHEET 1 OF 5		DIST.

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

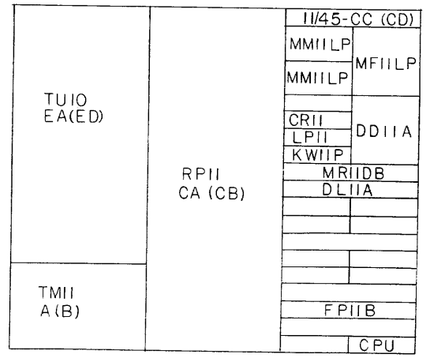
11/45 - PA (PB)



SOFTWARE QJ25Ø-AD

CR11(A) 300 CPM | LP11 JA(JB) | LA30 CA(CD)

11/45 - PC (PD)



SOFTWARE QJ25Ø-AD

RPØ3 AS(BS) | CR11(A) 300 CPM | LP11 JA(JB) | LA3Ø CA(CD)

REV.	REVISIONS	CHANGE NO.	CHK

BRUNING 40-107 15968

DFC FORM NO DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11/45		PARTS LIST		

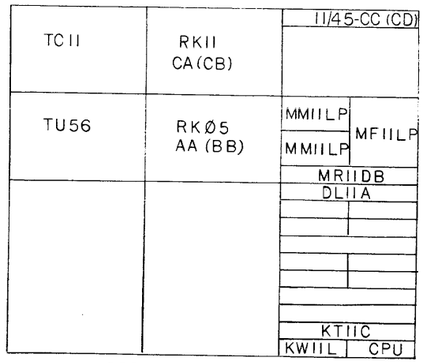
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX = .005, .XX = .02, .X = .1 | ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —//—
FINISH —//—

DRN. B.CRAMM	DATE 11-6-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. J.BAILEY	DATE 11-10-72	
ENG. SWANSON	DATE 11-13-72	TITLE BATCH PROCESSING SYSTEMS
PROJ. ENG. SWANSON	DATE 11-13-72	
PROD. R.HILGENDORF	DATE	
NEXT HIGHER ASSY. B-DD-11/45-Ø		SIZE D / CODE AR / NUMBER 11/45-0-4 / REV. B
SCALE —//—		
SHEET 2 OF 5		DIST.

SIZE D / CODE AR / 11/45-0-4 / REV. B

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

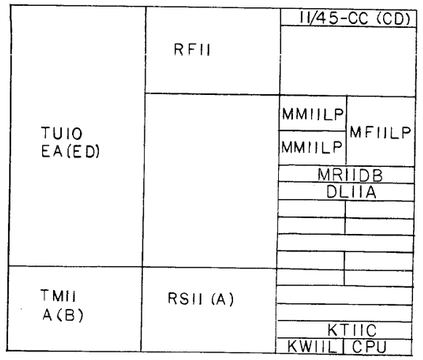
11/45 - MA (MB)



SOFTWARE QJ58Ø-AC

LA3Ø
CA(CD)

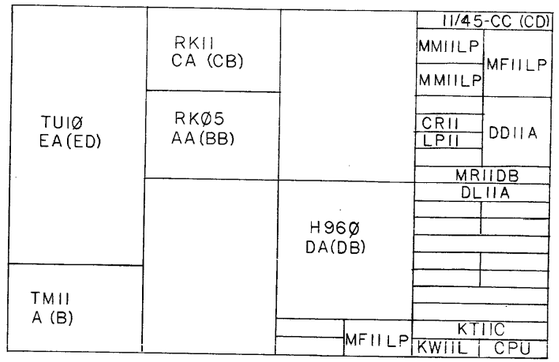
11/45 - MC (MD)



SOFTWARE QJ58Ø-AD

LA3Ø
CA(CD)

11/45 - MH (MJ)



SOFTWARE QJ58Ø - AD

CR11(A)
300
CPM

LP11
JA(JB)

LA3Ø
CA(CD)

SIZE D CODE AR NUMBER 11/45-0-4 REV B

REV	REVISIONS	CHK
	CHANGE NO	

BRUNING 40-107 15968

DEC FORM NO DEC 100-4

PDP11/45

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	B.CRAMM	11-6-72
CHK'D.	J.BAILEY	11-10-72
ENG.	SWANSON	11-13-72
PROJ. ENG.	SWANSON	11-13-72
PROD.	HILGENDORF	DATE

NEXT HIGHER ASSY. B-DD-11/45-0

SCALE —

SHEET 3 OF 5

ITEM NO.

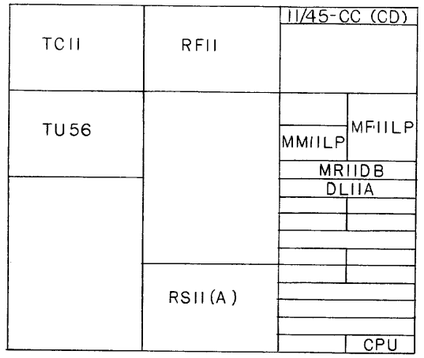
TITLE REAL TIME SYSTEMS

SIZE	CODE	NUMBER	REV.
D	AR	11/45-Ø-4	B

DIST.

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

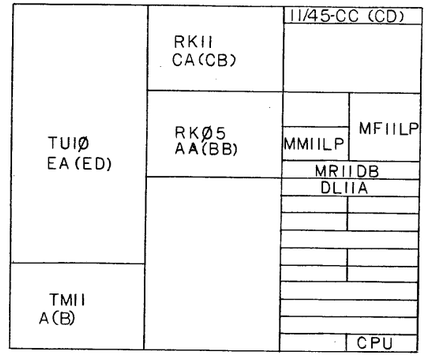
11/45 - DA (DB)



SOFTWARE QJ22Ø - AC

LA3Ø CA (CD)

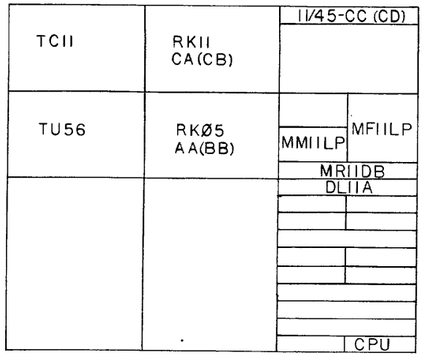
11/45 - DU (DV)



SOFTWARE QJ22Ø - AD

LA3Ø CA (CD)

11/45 - DS (DT)



SOFTWARE QJ22Ø-AC

LA3Ø CA (CD)

REVISIONS	CHANGE NO.	REV.

BRUNING 40-107 15968

DEC FORM NO DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES			
DECIMALS	ANGLES	DRN. BCRAMM	DATE 11-6-72
.XXX = .005 .XX = .02 .X = .1	±0° 30'	CHK'D. J.BAILEY	DATE 11-10-72
		ENG. SWANSON	DATE 11-13-72
		PROJ. ENG. SWANSON	DATE 11-13-72
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD. HILGENDORF	DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

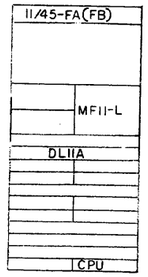
TITLE: INTERACTIVE DISK SYSTEMS

MATERIAL	NEXT HIGHER ASSY.	SIZE	CODE	NUMBER	REV.
— // —	B-DD-11/45-Ø	D	AR	11/45-0-4	B
FINISH — // —	SCALE — // —				
	SHEET 4 OF 5	DIST.			

11/45-0-4 B
SIZE D CODE AR NUMBER 11/45-0-4 REV B

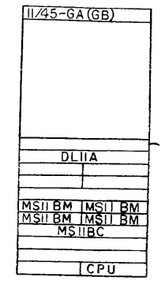
This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission. 1973

11/45-FC (FD)



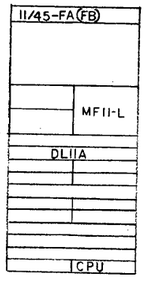
LA30
CA(CD)

11/45-GK (GL)



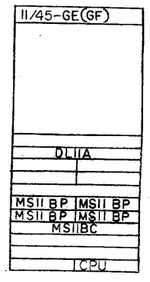
LA30
CA(CD)

11/45-FE (FF)



VT05B
AA(AD)

11/45-GP(GR)



LA 30
CA (CD)

REV	REVISIONS	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-11		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 CRAMM	DATE 2-22-73
CHK'D.	[illegible]	DATE 3-30-73
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: OEM SYSTEMS

NEXT HIGHER ASSY.: B-DD-11/45-0
SCALE —
SHEET 5 OF 5

SIZE	CODE	NUMBER	REV.
D	AR	11/45-0-4	B

DIST:

REV B
ISSD CODE D AR NUMBER 11/45-0-4

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

ITEM NO.	DWG. NO./PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	C-PL-11/45-CC	BASIC ASS Y 115V 60 HZ	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
2	C-PL-11/45-CD	BASIC ASS Y 230V 50 HZ	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
3	B-DD-KT11-C	MEMORY MANAGEMENT	1 1 1 1 1 1 - - - - - - 1 1 1 1 1 -
4	B-DD-FP11-B	FLOATING POINT PROCESSOR	- - - - 1 1 - - 1 1 -
5	B-DD-KW11-L	LINE FREQUENCY CLOCK	- - - - - - - - - - 1 1 1 1 1 -
6	B-DD-KW11-P	PROGRAMMABLE CLOCK	1 1 1 1 1 1 1 1 1 1 -
7	B-DD-MF11-LP	8K PARITY CORE MEM. AND CONTROL	1 1 1 1 1 1 - - - - - - - - 1 -
8	B-DD-MM11-LP	8K PARITY CORE MEM.	1 1 1 1 1 1 - - 1 1 1 1 1 1 1 -
9	B-DD-MR11-DB	MULTI-DEVICE BOOTSTRAP LOADER	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 - - - - - - - - - - - - - - - -
10	A-ML-RF11-Ø	DISK CONTROL	1 1 1 1 - - - - - - - - - 1 - - 1 -
11	A-ML-RK11-CA	DISK CONTROL 115V 60 HZ	1 - 1 - - - 1 - - - 1 - - - - - - 1 - 1 - - - - - - - - - - - - - - - -
12	A-ML-RK11-CB	DISK CONTROL 230V 50 HZ	- 1 - 1 - - - 1 - - - 1 - - - - - - 1 - 1 - - - - - - - - - - - - - - - -
13	B-DD-RP11-CA	DISK CONTROL 115V 60 HZ	- - - - 1 - - - 1 -
14	B-DD-RP11-CB	DISK CONTROL 230V 50 HZ	- - - - - 1 - - - 1 -
15	A-ML-RS11-Ø	DISK DRIVE 115V 60 HZ	1 - 1 - - - - - - - - 1 -
16	A-ML-RS11-A	DISK DRIVE 230V 50 HZ	- 1 - 1 - - - - - - - - - 1 -
17	B-DD-RKØ5-AA	DISK DRIVE 115V 60 HZ	1 - 1 - - - 1 - - - 1 - - - - - - 1 - 1 - - - - - - - - - - - - - - - - -
18	B-DD-RKØ5-BB	DISK DRIVE 230V 50 HZ	- 1 - 1 - - - 1 - - - 1 - - - - - - 1 - 1 - - - - - - - - - - - - - - - -
19	A-PL-RPØ3-AS	DISK DRIVE 115V 60 HZ	- - - - 1 - - - 1 -
20	A-PL-RPØ3-BS	DISK DRIVE 230V 50 HZ	- - - - - 1 - - - 1 -
21	A-ML-TC11-Ø	MAGNETIC TAPE CONTROL	1 1 - - - - - - - - 1 1 - - - - 1 1 1 - - - - - - - - - - - - - - - - - -
22	A-ML-TM11-A	MAGNETIC TAPE CONTROL 115V 60 HZ	- - 1 - 1 - 1 - 1 - - - 1 - - - 1 -
23	A-ML-TM11-B	MAGNETIC TAPE CONTROL 230V 50 HZ	- - - 1 - 1 - 1 - 1 -
24	A-ML-TU56-Ø	MAGNETIC TAPE TRANSPORT	1 1 - - - - - - - - 1 1 - - - - 1 1 1 - - - - - - - - - - - - - - - - - -
25	C-PL-TU1Ø-EA	MAGNETIC TAPE TRANSPORT 115V 60 HZ	- - 1 - 1 - 1 - 1 - - - 1 -
26	C-PL-TU1Ø-ED	MAGNETIC TAPE TRANSPORT 230V 50 HZ	- - - 1 - 1 - 1 - 1 -
27	A-PL-LP11-JA	LINE PRINTER & CONTROL 115V 60 HZ	- - - - - - 1 - 1 -
28	A-PL-LP11-JB	LINE PRINTER & CONTROL 230V 50 HZ	- - - - - - - 1 - 1 -
29	A-PL-LP11-RA	LINE PRINTER & CONTROL 115V 60 HZ	- -
30	A-PL-LP11-RB	LINE PRINTER & CONTROL 230V 50 HZ	- -
31	A-PL-CR11	CARD READER & CONTROL 115V 60 HZ	- - - - - - 1 - 1 -
32	A-PL-CR11-A	CARD READER & CONTROL 230V 50 HZ	- - - - - - - 1 - 1 -
33	B-DD-DL11-A	TERMINAL CONTROL	- -
34	C-PL-LA3Ø-CA	SERIAL DEC WRITER 115V 60 HZ	- -
35	C-PL-LA3Ø-CD	SERIAL DEC WRITER 230V 50 HZ	- -
36	D-UA-H96Ø-DA	EXTENSION MOUNTING BOX 115V 60 HZ	1 - 1 - 1 -
37	D-UA-H96Ø-DB	EXTENSION MOUNTING BOX 230V 50 HZ	- 1 - 1 - 1 -
38	A-PL-DD11-A	SYSTEM UNIT	1 1 1 1 1 1 1 1 1 1 - - - - 1 1 -
39	QR43Ø-AC	TIMESHARING SOFTWARE	1 1 -
40	QR43Ø-AD	TIMESHARING SOFTWARE	- - 1 1 1 1 -
41	QJ25Ø-AD	BATCH SOFTWARE	- - - - - - 1 1 1 1 -
42	QJ58Ø-AC	REAL-TIME SOFTWARE	- - - - - - - - - - 1 1 -
43	QJ58Ø-AD	REAL-TIME SOFTWARE	- - - - - - - - - - - - 1 1 1 -

REVISIONS	REV.	CHK
CHANGE NO.	-	-
11/45-00043 ORIGINATED	A	
11/45-00048 REVISED & REDRAWN DWG. NO. WAS 11/45-0-5 B. FITZGERALD 4-2-73	B	
11/45-00063		

FIRST USED ON OPTION/MODEL
11/45

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.	BEASLEY	12/19/2
CHK'D.	L. GILBERT	1/2/73
ENG.	J. SWANSON	1/11/73
PROJ. ENG.	J. SWANSON	1/11/73
PROD.	A. ZINS	1/11/73

NEXT HIGHER ASSY.
B-DD-11/45-0

SCALE

SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ARRANGEMENT
PARTS LIST

SIZE	CODE	NUMBER	REV.
C	PL	11/45-0-4	B

DIST.

DEC FORM NO. DPC 11/

REV. B
NUMBER 11/45-0-4
SIZE CODE C PL

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

ITEM NO.	DWG. NO./PART NO.	DESCRIPTION	QUANTITY / VARIATION
44	QJ220-AC	DISK-SYSTEM SOFTWARE	- - - - - - - - - - - - - - - - - - 1 1 1 1 - - - - - - - - - -
45	QJ220-AD	DISK-SYSTEM SOFTWARE	- 1 1 - - - - - - -
~~46~~	~~QJ001~~	~~DDP-2~~	= = - - - - - - - - - - - - - - - - = = = = - - - - - - - - - -
47	B-DD-MS11-BP	4K MOS MEM W/PARITY	- 2 2
48	B-DD-MS11-BM	4K MOS MEM	- 2 2 - -
49	B-DD-MS11-BD	SECOND MOS MEM CONTROL	- -
50	C-PL-11/45-FA	BASIC ASS'Y 115V 60 HZ	- 1 - 1 - - - - -
51	C-PL-11/45-FB	BASIC ASS'Y 230V 50 HZ	- 1 - 1 - - - -
52	C-PL-11/45-GA	BASIC ASS'Y 115V 60 HZ	- 1 - - -
53	C-PL-11/45-GB	BASIC ASS'Y 230V 50 HZ	- 1 - -
54	C-PL-11/45-GE	BASIC ASS'Y 115V 60 HZ	- 1 -
55	C-PL-11/45-GF	BASIC ASS'Y 230V 50 HZ	- 1
56	A-PL-VTØ5B-AA	ALPHANUMERIC CRT 115V 60 HZ	- 1 - - - - -
57	A-PL-VTØ5B-AD	ALPHANUMERIC CRT 230V 50 HZ	- 1 - - - -
58	B-DD-MF11-L	8K CORE MEM. W/CONTROL	- -
59	B-DD-MM11-L	8K CORE MEM	- -

REVISIONS

REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL
11/45

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.	BEASLEY	DATE 12/19/72
CHK'D.	L.GILBERT	DATE 1/2/73
ENG.	J.SWANSON	DATE 1/11/73
PROJ. ENG.	J.SWANSON	DATE 1/11/73
PROD.	A.ZINS	DATE 1/11/73

NEXT HIGHER ASSY.
B-DD-11/45-0

SCALE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ARRANGEMENT
PARTS LIST

SIZE	CODE	NUMBER	REV.
C	PL	11/45-0-4	B

DIST.

SIZE C CODE PL NUMBER 11/45-0-4 REV. B

DEC FORM NO. DRC 110

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-ØX-Ø
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

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-G8ØØØ-Ø-1
MODEM TEST CONN	D-CS-H315-Ø-1
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

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
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

UNIT VARIATIONS

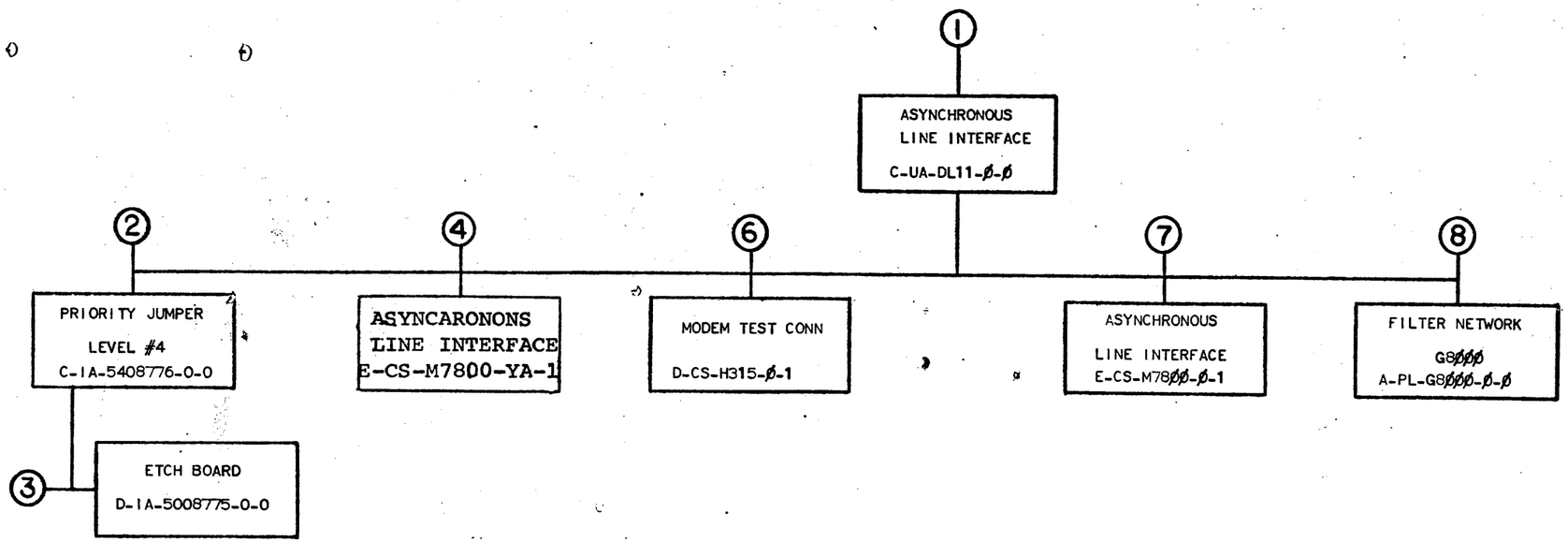
VARIATION	TITLE	PRINT SET TYPE DL11-1	PRINT SET TYPE DL11-2
DL11-A	ASYNC LINE INTERFACE, CURRENT LOOP	1	0
DL11-B	ASYNC LINE INTERFACE, EIA	0	1
DL11-C	ASYNC LINE INTERFACE, CURRENT LOOP	1	0
DL11-D	ASYNC LINE INTERFACE, EIA	0	1
DL11-E	ASYNC LINE INTERFACE, DATA SET	0	1

REVISIONS			
REV	CHG. NO.	DATE	
A	DL11-00001	8/82	M. Pierce
		7-11-72	P. JANSON
B	DL11-00002	11-30-72	P. JANSON
C	DL11-00003	12-20-72	JANSON
D	DL11-00004	3-28-73	JANSON
E	DL11-00005	7-31-73	L. CONDON
F	DL11-00006	8/8/73	L. CONDON
H	DL11-00007	8-14-74	CONDON

USED ON OPTION/MODEL

DRN. M. Pierce	DATE 4-28-72	TITLE: ASYNCHRONOUS LINE INTERFACE
CHK'D. R. Cook	DATE 5/9/72	
PROJ ENG. P.E. Janson	DATE 5/11/72	
PROD. Dinah Ly	DATE 5-15-72	
FIELD SERV. M. Pierce	DATE 6/13/72	
SHEET 1 OF 3		SIZE B, CODE DD, NUMBER DL11-Ø, REV H
		DIST G

106



TITLE			SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	SHEET 2 OF 3		B	DD	DLII - Ø	H

ELECTRICAL

CUSTOMER PRINT SET DL11-1	DL11-2	DL11-3	DEPOT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X	X	X		1.	C-UA-DL11-Ø-Ø	D	1	ASYNCHRONOUS LINE INTERFACE	
X	X	X			A-PL-DL11-Ø-Ø	D	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	
X	X	X			A-SP-DL11-Ø-2	E	9	INSTALLATION PROCEDURE	
					A-SP-DL11-Ø-3	A	7	TEST PRODEDURE	
X	X				A-SL-DL11-Ø-4	*	1	SOFTWARE LIST	
X	X				A-AL-DL11-Ø-5	C	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	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	
	X			8.	A-PL-G8ØØØ-Ø-Ø		1	FILTER NETWORK	
					B-CS-G8ØØØ-Ø-1	#	1	CIRCUIT SCHEMATIC	
					K-CO-G8ØØØ-Ø-4		1	X-Y COORINATE HOLE LOC	
					C-AH-G8ØØØ-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-G8ØØØ-Ø-6		1	MODULE ECO HISTORY	

MECHANICAL

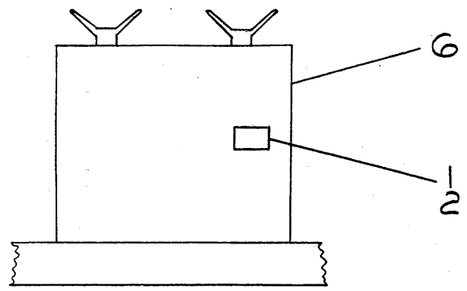
CUSTOMER PRINT SET DL11-1	DL11-2	DL11-3	DEPOT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
				1.	C-UA-DL11-Ø-Ø	D	1	ASYNCHRONOUS LINE INTERFACE	
					A-PL-DL11-Ø-Ø	D	1	ASYNCHRONOUS LINE INTERFACE (PL)	
					D-UA-BCØ5C-Ø-Ø		1	CABLE, MODEM BCØ5C	
					D-IA-7008360-0-0		1	CABLE ASSEMBLY (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-G8ØØØ-Ø-Ø		1	FILTER NETWORK	
					K-CO-G8ØØØ-Ø-4		1	X-Y COORDINATE HOLE LOC	
					C-AH-G8ØØØ-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-G8ØØØ-Ø-6		1	MODULE ECO HISTORY	

TITLE	SHEET	SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	3 OF 3	B	DD	DL11-Ø	

DRB 108

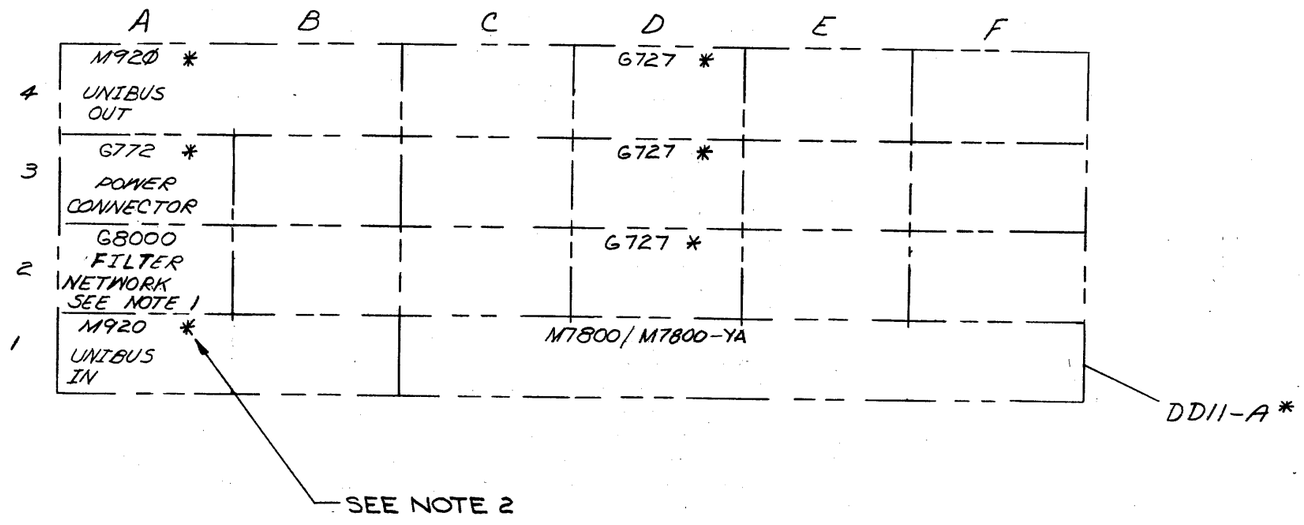
DEC 16—(325)—1062—2—NA71

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission. 1972



NOTES:

1. G 8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. THE INSTALATION REQUIRES 2 WIRES TO BE ADDED.
   A03V2 - A02V2
   A02N2 - 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. Garcia 2-16-72	P. JANSON	R.E. Janson 7-19-72						
SW	DL11-00002	B	O.R. Gauss 11-6-72	JANSON	R.E. Janson 12-5-72						
PM	DL11-00005	C	S. Lancaster 1-31-73	L. CONDON	Larry Condon 2-8-73						
PM	DL11-00006	D	J. Lantos 9-21-73	CONDON	Larry Condon 12-19-73						

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. Price	DATE 3/8/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. Enerson	DATE 4-24-72	
ENG. R.E. Janson	DATE 5-11-72	TITLE ASYNCHRONOUS LINE INTERFACE
PROJ ENG. R.E. Janson	DATE 5-11-72	
PROD. J. McAfee	DATE 5-15-72	

NEXT HIGHER ASSY. B-DD-DL11-Ø

SCALE NONE

SHEET OF

SIZE	CODE	NUMBER	REV.
C	UA	DL11-Ø-Ø	D

DIST. G

REV. D
NUMBER DL11-Ø-Ø
SIZE C CODE UA

DEC FORM NO. DRC 100-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

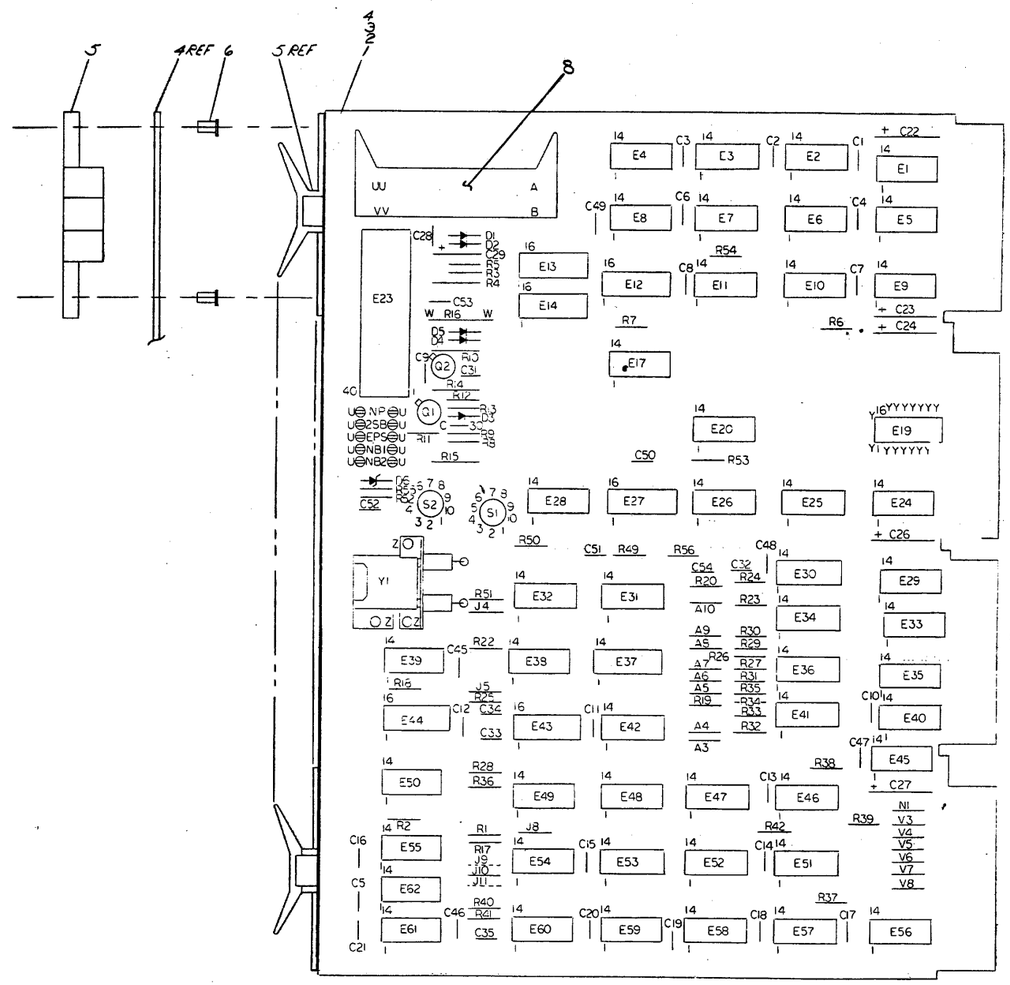
MADE BY M.PIERCE DATE 4/27/72	CHECKED J.FERGUSON DATE 4/27/72	SECTION 1
ENG P.E. Jamson DATE 5/11/72	PROD L. McIntyre DATE 5/15/72	ISSUED SECT. 1

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					
	4.	APPLY TAPE TO TOP SURFACES OF CRYSTAL AND MOUNTING BRACKETS TO INSULATE FROM ADJACENT MODULES.					
10	9008269	TRANSPARENT VINYL TAPE	A/R				

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø	A	PL	DL11-Ø-Ø	D	DL11-00005
	SHEET 1 OF 1	DIST.	G			

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

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis of manufacture or sale of apparatus not made by or for Digital Equipment Corporation.
COPYRIGHT © 1972
DIGITAL EQUIPMENT CORPORATION.



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, J4-J6, J8-J10, V3-V8, AND N1.
3. LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X).
4. ON ITEM NO. 23, ALL 7 CHIPS MUST BE EITHER DEC 380s' OR ITS' SUBSTITUTE 11380 ICs'. A DEC 380 AND 11380 MIXTURE OF THESE 7 CHIPS IS NOT ALLOWED. E28 MUST BE A DEC 380. (ITEM NO. 68).

PIN NOMENCLATURE MODULE	SYSTEM UNIT
A	C
B	D
C	E
D	F

ALLOWABLE SUBSTITUTION LIST			
ORIG. PART NO.	SUBSTITUTE PART DESCRIPTION	PART NO.	ITEM NO.
1909485	IC 11380	1911113	23

*SEE ALLOWABLE SUBSTITUTION LIST & NOTE 4.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E28	IC DEC 380	1909485	68
1	R3	RES 750Ω 1/4W 5%	1301401	67
1	R38	RES 390 Ω 1/4 W, 5%	1300309	66
1	D6	DIODE IN746A	1104860	65
2	Q1,Q2	TRANSISTOR GS34D	1503409-00	64
1	C53	CAP 100PF 100V 5% MICA	1000016	63
1	C54	CAP 560PF 100V 5% MICA	1000025	62
2	C50,C51	CAP .047MF CERAMIC	1009078	61
1	E27	IC DEC 74161	1910650	60
2	C34,C35	CAP 330PF 300V 5% DIPPED MICA	1000029	59
1	C32	CAP 470PF 100V 5% DIPPED MICA	1000024	58
1	C31	CAP 1000PF 100V 5% DIPPED MICA	1000042	57
27	C10,C12,C30,C45,C49,C50	CAP .01UF 100V 20% CERAMIC DISC	1001401	56
1	C29	CAP .47UF 35V 10% TANT	1003925	55
5	C2-C24,C26,C27	CAP 6.8 UF 35V 20% TANT	1000067	54
1	C33	CAP 150PF 500V 5% DIPPED MICA	1000019	53
2	R14,R15	RES 1.3K 1/2W 5%	1300394	52
5	R23,R26,R40, R52,R55	RES 1K 1/4W 5%	1300395	51
1	R41	RES 47Ω 1/4W 5%	1300202	50
1	R10	RES 68 Ω 1/2W 10%	1300220	49
1	R5	RES 82Ω 1/4W 5%	1301477	48
1	R24	RES 100Ω 1/4W 5%	1300229	47
1	R11	RES 130Ω 1/4W 5%	1300232	46
1	R42	RES 180Ω 1/4W 5%	1301322	45
1	E53	RES 220Ω 1/4W 5%	1300227	44
5	D1-D5	DIODE IN464 30V 100MA	1100114	43
3	R9,R13,R51	RES 430Ω 1/4W 5%	1300376	42
1	R4	RES 560Ω 1/2W 5%	1300338	41
3		NUT HEX #2-56	9006555	40
1	R16	RES 750Ω 1W 5%	1322385	39
26	R1,R2,R6,R7,R11-R20, R25,R27-R33,R39, R43, R50, R22 R54,R56	RESTOR 1/4W 5%	1300479	38
2	R8,R12	RES 1.5K 1/4W 5%	1300391	37
1	E22	IC DEC UART	1910339	36
4	E32,E33,E61,E62	IC DEC 7414	1903347	35
2	E36,E41	IC DEC 8242	1909712	34
3	E3,E49,E59	IC DEC 7408	1901155	33
3		SCR PHIL HD PKH #2-56x.250	9006001-1	32
2	E20,E26	IC DEC 7490	1909037	31
11	E12,E35,E37-E39,E11, E30,E42,E54,E36	IC DEC 8881	1909705	30
2		ALSAT 2222 PS-1	1202812	29
1	E43	IC DEC 74123	1910436	28
3	E48,E57,E52	IC DEC 74174	1909867	27
3	E45,E34,E58	IC DEC 7400	1903375	26
1	E10	IC DEC 7473	1909989	25
2	E50,E53	IC DEC 7402	1909004	24
7	E3,E9,E33,E35,E40, E47,E46.	IC DEC 380	1909485 *	23
1	E21	IC DEC 74153	1909837	22
1	E60	IC DEC 74107	1909827	21
1	E25	IC DEC 7492	1909033	20
4	E6, E17,E28,E31	IC DEC 7406	1909686	19
1	E24	IC DEC 7473	1909058 *	18
1	E31	IC DEC 7410	1903376	17
1	E29	IC DEC 314	1909796	16
1	E51	IC DEC 7442	1900046	15
1	E44	IC DEC 8877	1909613	14
2	E13,E14	IC DEC 74175	1903631	13
1		BRACKET, CRYSTAL HOLDER	5302825	12
1		BRACKET, CRYSTAL HOLDER	5303154	11
1	E19	IC SOCKET	1201938	10
2	S1, S2	SWITCH, SINGLE POLE, 10 POS	1210042-1	9
1		40 PIN CONNECTOR BERG	1207941	8
AR		SPLIT LUGS	9000735	7
3		CIRCUIT #054-7 E.B. STIMPSON	9000732	6
1		HANDLE, FLIP-CHIP, MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	3009978	4
REF		MODULE ECO HISTORY	EM41-M7800-YA-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AW-M7800-YA-0	2
REF		XY COORDINATE HOLE	ECO-M7800-YA	1

PARTS LIST
ETCH BOARD REV E

DEC. 74161	8	16	—	—
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	5	—	—
DEC 74153	8	16	—	—
DEC 380	1	8	—	—
DEC 7490	10	5	—	—
DEC 74123	8	16	—	—
IC TYPE	GND	+5V	+V	-12V

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

IC PIN LOCATIONS

G534-D	MPS6539		
1N746A	11AM3.3AZ		
DG68	1N3606		
DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REVISIONS					
SYM	CHANGE NO.	DESCRIPTION	BY	APP	DATE
A	1	ADD ITEM 68			7-26-72
B	2	ADD ITEM 69			8-24-72

DRAWN [illegible] DATE 6-16-72
CHKD [illegible] DATE
ENG [illegible] DATE
PROJ ENG [illegible] DATE
PROD [illegible] DATE
NEXT HIGHER ASSY
SCALE
SHEET OF

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ASYNCHRONOUS LINE INTERFACE

SIZE E | CODE | NUMBER CS M7800 -YA-1 | REV B
DIST

CS M7800-YA-1 B

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

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

DL-5 RBUF TO BUS L
DL-5 RCSR TO BUS L
DL-4 OR ERR H
DL-4 FR ERR H
DL-4 P ERR H

ERROR H

CD2 BUS D15 L
CE2 BUS D14 L
CF2 BUS D13 L
CH2 BUS D12 L
DL-5 RCSR TO BUS H
DL-4 RCVR BUSY (1)H
CH1 BUS D11 L
CJ2 BUS D10 L

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 —

DRAN. — DATE 10/67
CHK'D. — DATE
ENG. — DATE 10/67
PROJ. ENG. — DATE 10/67
PROD. — DATE
NEXT HIGHER ASSY. —
SCALE —
SHEET 3 OF 6

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE (BUS RECEIVERS & DRIVERS) DL-2

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	B

DIST.

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

YI	344.8 KHZ		103296 MHZ		1.152 MHZ		1.608MHZ	
SWITCH POS.	BAUD	USEC	BAUD	USEC	BAUD	USEC	BAUD	USEC
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 ORI							

DL 3 B9 IN H	DI2	Ø1	16	DD2 BUS BR7 L
DL-6 B9 OUT H	DV2	Ø2	15	DE2 BUS BRG L
BUS BG4 OUT H	DT2	Ø3	14	DF2 BUS BR5 L
BUS BG4 IN H	DS2	Ø4	13	DH2 BUS BR4 L
BUS BG5 OUT H	DR2	Ø5	12	DJ2 DL-6 REQUEST L
BUS BG5 IN H	DP2	Ø6	11	DK2 BUS BG7 IN H
BUS BG6 OUT H	DN2	Ø7	10	DL2 BUS BG7 OUT H
		Ø8	09	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 100360 CABLE. THE FOLLOWING CONNECTS BERG (X) TO 5.

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

DRN		DATE 11/6/72
CHK		DATE
ENGR		DATE
PROJ		DATE
MATERIAL	NEXT HIGHER ASSY.	
FINISH		

DIGITAL EQUIPMENT CORPORATION

TITLE ASYNCHRONOUS LINE INTERFACE (CLOCK & CURRENT LOOPS) DL-3

SIZE	CODE	NUMBER	REV.
D		M78ØØ-YA-1	B

SHEET 3 OF 6 DIST.

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

DL-2 BINIT L

DL-5 SEL 2 L — 74Ø8 E31

DL-2 BINIT H

UART E23
CLR R DONE
STB STATUS
STB RD
R CLK
SERIAL IN
DL-2 BDØ7 H — XD7
DL-2 BDØ6 H — XD6
DL-2 BDØ5 H — XD5
DL-2 BDØ4 H — XD4
DL-2 BDØ3 H — XD3
DL-2 BDØ2 H — XD2
DL-2 BDØ1 H — XD1
DL-2 BDØØ H — XDØ
DL-5 LD XD L — LD XD
X CLK H — DUI 48 X CLK
CLR LDC NB2 NB1 NP EP 2SB
R DONE — DL-4 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 RD1 H
RDØ — DL-4 RDØ H
SERIAL OUT
XRDY
EOC

+5V R17 1ØK

7474 E55 — DL-4 RCVR BUSY (1)H

7404 E38

7488 E49

7402 E50

8271 E44 — FSI DL-3 SI H

7402 E58

7400 E42

7474 E55 — DL-3 RCLK H FRI

7474 E61 — DL-4 SERIAL OUT H

7404 E17

R53 22Ø

C54 56ØØpf

7490 E20 SET 9 — DL-3 XMIT CLK H

7400 E54 — J9

7408 E59 — J11

J10

7474 E62

74175 E14
DL-2 BDØ2 H — R3(1) — DL-4 MAINT (1)H
R3(Ø)
DL-2 BDØØ H — R2(1)
R2(Ø) — J5 — +5K R18 1ØK — DL-4 BREAK (Ø)H
DL-2 BDØ6 H — R1(1) — DL-4 XMIT-INT ENB (1)H
R1(Ø)
DØ — RØ(1)
RØ(Ø)
CLR CLK
DL-5 BUS TO XCSR H

7404 E39 — DL-4 BREAK (1)H

DL-4 XMIT READY H

7400 E31 — DL-4 XMIT INT H

DL-4 RCVR DONE H

7408 E42 — +5V R19 1ØK — 7400 E42 — DN1 DL-4 RCVR INT H

74175 E13
DL-2 BDØ5 H — R3(1) — DL-4 DATASET INT ENB (1)H
+5V R20 1ØK
DL-2 BDØ2 H — R2(1) — J3 — CMI DL-4 REQ TO SEND (1)H
R2(Ø) — DL-4 REQ TO SEND (Ø)H
DL-2 BDØ6 H — R1(1) — DL-4 RCVR INT ENB (1)H
R1(Ø)
DL-2 BDØ3 H — RØ(1) — DL-4 SEC XMIT (1)H
RØ(Ø) — DL-4 SEC XMIT (Ø)H
CLR CLK

DL-4 DATA LEADS ONLY L
J4
DL-2 BDØ1 H — DTR 7474 E32 — CFI DL-4 DATA TERMINAL READY (1)H
DL-4 DATA TERMINAL READY (Ø)H
+5V R22 1ØK
DL-2 BDØØ H — RDR ENB 7474 E32 — 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.
DLII		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
CHK'D — DATE
ENG — DATE
PROJ. ENG. — DATE
MGR — DATE
NEXT HIGHER ASSY.
SCALE
SHEET 4 OF 6

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (UART & STATUS) DL-4

SIZE	CODE	NUMBER	REV.
D	CS	M78ØØ-YA-1	B

DIST.

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

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
398 E33
7410 E34
Ø9 1Ø 11 → 8

8881 E30 Ø5 Ø6 → Ø4
+5V R23 1K
R24 1ØØ
Ø2 8881 E30 Ø3 Ø1 → EJ1 BUS SSYN L
C32 17Ø pf

7404 E39 Ø9 → Ø8 → EL2 REG SEL H

+5V R26 1K

A1Ø +5V R27 1ØK → 8242 E36 Ø5 Ø6 Ø4
A9 R29 1ØK → 8242 E36 Ø1 Ø2 Ø3
A8 R30 1ØK → 8242 E36 Ø8 Ø9 1Ø
A7 R31 1ØK → 8242 E36 12 13 11
A6 R32 1ØK → 8242 E41 Ø3 Ø6 Ø4
A5 R33 1ØK → 8242 E41 Ø1 Ø2 Ø0
A4 R34 1ØK → 8242 E41 12 13 11
A3 R35 1ØK → 8242 E41 Ø8 Ø9 1Ø

BUS A1Ø L EP1 → 398 E40 11 12 13
BUS A09 L ER1 → 398 E40 1Ø Ø9 14
BUS A08 L EN2 → 398 E35 Ø7 Ø6 Ø2
BUS A07 L EP2 → 398 E35 Ø4 Ø5 Ø0
BUS A06 L EU1 → 398 E45 11 12 13
BUS A05 L EV1 → 398 E45 1Ø Ø9 14
BUS A04 L EU2 → 398 E40 Ø7 Ø6 Ø2
BUS A03 L EV2 → 398 E40 Ø4 Ø5 Ø3
BUS A01 L EH1 → 398 E33 Ø4 Ø5 Ø0
BUS A02 L EF1 → 398 E33 1Ø Ø9 14
BUS A00 L EH2 → 398 E35 11 12 13
BUS C1 L EF2 → 398 E33 Ø7 Ø6 Ø2
BUS C0 L EJ2 → 398 E35 1Ø Ø9 14

7410 E34 Ø0 Ø4 Ø5 → Ø6
7410 E34 13 Ø1 Ø2 → 12

7442 E37
D3 ← 12
D2 ← 13
D1 ← 14
D0 ← 15
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 → 74123 E43 1 12 Ø5
Ø7 C33 15Ø pf Ø6 5ØØ ns
74123 E43 13 12 Ø5 → EBL DL-5 LD XD L
11 → 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
C34 33Ø pf 14 15 1ØØØ ns
+5V R36 1ØK
13 Ø4 → DL-5 SEL 2 L
Ø0 →

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	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. DATE 10/27/72
CHK'D. DATE 10/27/72
ENG. DATE 11/4/72
PROJ. ENG. DATE 11/4/72
PROD. DATE 11/4/72
NEXT HIGHER ASSY.
SCALE
SHEET 5 OF 6

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (ADDRESS SELECTION) DL-5

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	B

DIST.

COPYRIGHT ©
DIGITAL EQUIPMENT CORPORATION

DL-4 RCVR INT H FU1

DL-4 XMIT INT H FV1

DL-3 BG IN H FB1

BUS NPR L FJ1

BUS BBSY L FD1

BUS SSYN L FC1

FP1 DL-6 REQUEST L

FR1 DL-6 BG OUT H

FT2 BUS SACK L

FE2 BUS D02 L

FL1 BUS D03 L

FN2 BUS D04 L

FF1 BUS D05 L

FH1 BUS INTR L

FF2 BUS D06 L

FH1 BUS D07 L

FK1 BUS D08 L

NOTE: THE "V" LINES ARE TO BE JUMPERED FOR A 1.

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 ✓

DRAW. — DATE 11/6/72
CHK'D. — DATE
ENG. — DATE 11/6/72
PROJ. ENG. — DATE 11/6/72
PROD. — DATE 11/6/72

MATERIAL
FINISH
NEXT HIGHER ASSY.
SCALE
SHEET 6 OF 6

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (INTERRUPT CONTROL) DL-6

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	B

DIST.

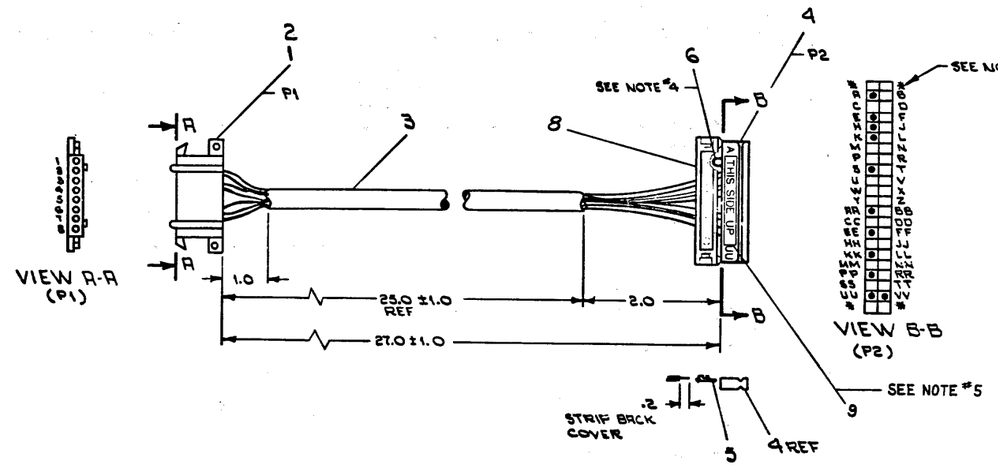
This drawing and the information hereon are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	PAIR NO.	FROM CONNECTION	WITH	TO CONNECTION	WITH
3	22	BLK	1	P1-2	2	P2-K,K	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.
5. PLACE ITEM #9 (THIS SIDE UP STICKER) ON LETTERED SIDE OF ITEM #4 (BERG HOUSING) AS SHOWN.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	LABEL, THIS SIDE UP	361567	9
1	STRAIN RELIEF	121166	8
A/R	TUB. #18 TEF. THINWALL WHT	9107218-11	7
A/R	WIRE, #22 AWG STRD TEF BLK	9107350-00	6
11	SOCKET, CRIMP # 47216	1210089-07	5
1	HOUSING, BERG #65043-015	1210913-15	4
A/R	CABLE, BELDEN #8777-3PR SHLD	9107725-0	3
6	CONTACT MATE-N-LOCK (FEMALE)	1209379	2
1	CONN. MATE-N-LOCK (FEMALE)	1209340-00	1

PARTS LIST

REVISIONS CHK	CHANGE NO.	REV.
	KL8E-0002	A
	ML11-0006	B
	7008360 00001	C
	7008360-00002	D

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.	F. CLARK	3/13/73
CHK'D.	E. Allen	10-29-73
ENG.	B. REGAN	
PROJ. ENG.		
PROD.	REGAN	3/13/74

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	D

DIST.

DEC FORM NO BRD 160

SIZE D CODE IA NUMBER 7008360-0-0 REV D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY EMPellegrini DATE 8/29/72	CHECKED P. Janson DATE 8-30-72	SECTION
ENG P. Janson DATE 8/29/72	PROD J. Mattes DATE 8-31-72	ISSUED SECT.

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-A	DL11-B	DL11-C	DL11-D	DL11-E			KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	LIBKIT-11-KL11-Ø4	KL11 MAINDEC	1	1	0	0	0				
2	LIBKIT-11-DL11C-A-K	DL11 MAINDEC	0	0	1	1	0				
3	LIBKIT-11-DL11E-A-K	DL11 MAINDEC	0	0	0	0	1				

TITLE: DL11 SOFTWARE LIST	ASSY. NO.	SIZE A	CODE SL	NUMBER DL11-0-4	REV.	ECO NO
	SHEET 1 OF 1	DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY	E. Pellegrini	CHECKED	O. Janson
DATE	June 26, 1972	DATE	8-8-72
ENG	Paul Janson	PROD	J. Thibodeau
DATE	June 26, 1972	DATE	8-8-72

SECTION

ISSUED SECT.

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-A	DL11-B	DL11-C	DL11-D	DL11-E			KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	M7800	ASYNCHRONOUS LINE INTERFACE (EIA)	-	1	-	1	1				
2	G8000	FILTER NETWORK	0	A/R	0	A/R	A/R				
3	M7800-YA	ASYNCHRONOUS LINE INTERFACE (CURRENT LOOP)	1	0	1	0	0				
4	5408776	PRIORITY JUMPER LEVEL #4	1	1	1	1	1				
5	BC05-C-25	MODEM CABLE	0	1	0	1	1				
6	7008360	TTY CABLE	1	0	1	0	0				
7	-	CRYSTAL	1	1	1	1	1				
8	-	DL11 ENGINEERING DRAWINGS	1	1	1	1	1				
9	DEC-11-HDLAA-A-D	DL11 ASYNCHRONOUS LINE INTERFACE MANUAL	1	1	1	1	1				
10	LIBKIT-11-KL11-04	KL11 MAINDEC	1	1	0	0	0				
11	LIBKIT-11-DL11C-A-K	DL11 MAINDEC	0	0	1	1	0				
12	LIBKIT-11-DL11E-A-K	DL11 MAINDEC	0	0	0	0	1				
13	H315	MODEM TEST CONNECTOR	0	0	0	0	A/R				

NOTES: 1. G8000 IS REQUIRED ONLY IN PDP-11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A.

2. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE.
3. ONE H315 PER PDP11 SYSTEM
4. INSURE THAT TRANSPARENT VINYL TAPE HAS BEEN APPLIED TO THE TOP SURFACE OF THE CRYSTAL AND MOUNTING BRACKET.

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
DL11 CHECK LIST	SHEET 1 OF 1	A	AL	DL11-0-5	C	DL11-00005
		DIST.				

Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DATE 6-21-72

TITLE DL11 INSTALLATION PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
C	CHANGE PER ECO	DL11-4	JANSON	3/73	P. Janson	4-6-73
D	CHANGE PER ECO	DL11-5	CONDON	7/73	L. Condon	8/8/73
E	CHANGE PER ECO	DL11-7	CONDON	8/74	L. Condon	8/21/74

ENG	APPD	SIZE	CODE	NUMBER	REV
Paul E. Janson	Paul E. Janson	A	SP	DL11-0-2	E

DEC FORM NO DRA 107A

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

DL11 INSTALLATION PROCEDURE:

Installation of the M7800 module or its variation as a DL11-A through DL11-E option consists of the following preparations:

1. Jumper insertion/deletion for selection of [illegible] (A, B, C, D, or E).
2. Register address assignment.
3. Vector address assignment.
4. Priority assignment.
5. Special NPR jumper insertion/deletion.
6. Selection of data format (data bits, stop bits, parity).
7. Selection of crystal for baud rate.
8. Installation of G8000 in systems where +15V is not available.
9. Filter capacitor selection for high baud rate current-loop.

A. OPERATION MODE:

The following describes the jumpers associated with controlling the mode of operation (A,B,C,D, or E):

J1. Ties EIA driver to REQUEST-TO-SEND lead (pin 4) of dataset cable. IN for DL11-B,D, and E; does not affect DL11-A and C. Drawing DL-7.

J2. Ties EIA driver, normally used for the REQUEST-TO-SEND lead, to FORCE BUSY lead (pin 25) for use with Bell 103E. This is a customer option. If not specified, jumper is OUT for all DL11's. Drawing DL-7.

J3. When inserted, allows REQUEST-TO-SEND lead (pin 4) to be controlled by bit 2 of the receiver status register. OUT for DL11-B and D; IN for DL11-E; does not affect DL11-A and C. Drawing DL-4.

J4. When inserted, forces "DATA LEADS ONLY" mode of EIA operation. Turns DATA TERMINAL READY (pin 20) and REQUEST-TO-SEND (pin 4) on. IN for DL11-B and D; OUT for DL11-E; does not affect DL11-A and C. Drawing DL-4.

J5. When inserted, allows the BREAK bit to function. OUT for DL11-A and B; IN for DL11-C,D, and E. Drawing DL-4.

J6. When inserted, allows DSET INT to cause interrupts. OUT for DL11-A,B,C and D; IN for DL11-E. Drawing DL-4.

J7. When inserted, allows dataset control bits to be read as part of the receiver status register.

	SIZE	CODE	NUMBER	REV
	A	SP	DL11-0-2	E

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

J7. (con't)

OUT for DL11-A,B,C and D; IN for DL11-E. Drawing DL-2.

J8. When inserted, allows error bits to be read as part of the receiver data register. OUT for DL11-A and B; IN for DL11-C,D and E. Drawing DL-2.

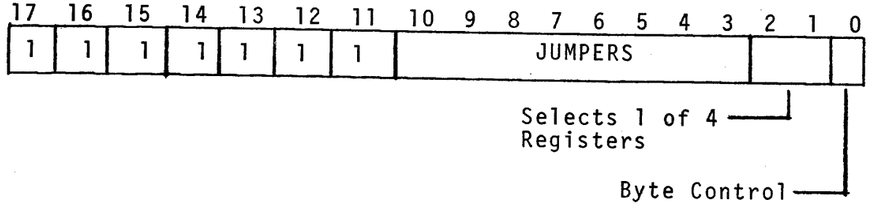
Summary of mode control jumpers:

JUMPER	A	B	C	D	E	DRAWING
J1	*	IN	*	IN	IN	DL-7
J2	OUT	OUT	OUT	OUT	OUT	DL-7
J3	*	OUT	*	OUT	IN	DL-4
J4	*	IN	*	IN	OUT	DL-4
J5	OUT	OUT	IN	IN	IN	DL-4
J6	OUT	OUT	OUT	OUT	IN	DL-4
J7	OUT	OUT	OUT	OUT	IN	DL-2
J8	OUT	OUT	IN	IN	IN	DL-2

*= don't care

B. REGISTER ADDRESS ASSIGNMENTS:

The DL11 can respond to addresses with the following format:



Bits 10 through 3 are controlled by jumpers A10 to A3. A jumper inserted indicates a zero.

For the DL11-A and B used as the console device, address 777560 is assigned. For additional units, assign 776XX0, where XX=50 for the first additional unit and XX=67 for the 16th unit.

For the DL11-C,D and E assign address 77XXX0, where XXX=561 for the first line, and XXX=617 for the 31st line. Assign all C's first, then D's, and then E's.

C. VECTOR ADDRESS ASSIGNMENT:

Jumpers V8 through V3 control the interrupt vector. A jumper inserted provides a vector bit of one. Vectors can be produced in the form XXØ and XX4, where XX ranges from ØØ to 77.

For the DL11-A and B used as a console device the vector address is 060/064. For additional units, vectors are floating.

For the DL11-C,D, and E vector addresses are floating. Assign all C's first, then D's, then E's.

D. PRIORITY ASSIGNMENT:

Interrupt priority is established by inserting a "priority plug" in the socket at IC location E19. For DL11-A,B,C, D and E use level 4.

SUMMARY OF REGISTER, VECTOR AND PRIORITY ASSIGNMENTS:

	ADDRESS	VECTOR	PRIORITY
DL11-A,B CONSOLE	777560 777562 777564 777566	60/64	BR4
DL11-A,B ADDITIONAL UNITS	776XXØ 776XX2 776XX4 776XX6	Floating	BR4

Where XX= 50 for line #1
and XX= 67 for line #16

	ADDRESS	VECTOR	PRIORITY
DL11-C,D,E	77XXXØ 77XXX2 77XXX4 77XXX6	Floating	4

Where XXX= 561 for line #1
and XXX= 617 for line #31

E. SPECIAL NPR JUMPER:

Jumper N1, shown on drawing DL-6, controls the response of the interrupt circuit to an NPR request. The jumper should normally be IN, except for 11/20 and 11/15 systems without the KH11 option.

F. SELECTION OF DATA FORMAT:

1. Data Bits

Split lug pairs NB2 and NB1 control the number of data bits in the serial character as follows:

NB2	NB1	# OF DATA BITS
OUT	OUT	8
OUT	IN	7
IN	OUT	6
IN	IN	5

2. Parity

Parity is controlled by split lug pairs NP and EPS as follows:

NP	EPS	PARITY
OUT	OUT	OFF
OUT	IN	OFF
IN	OUT	EVEN
IN	IN	ODD

3. Stop Bits

Split lug pair 2SB and jumpers J9, J10 and J11 control the number of stop bits in the serial character as follows:

2SB	J9	J10	J11	# OF STOP BITS
OUT	OUT	IN	OUT	2
IN	OUT	IN	OUT	1
IN	OUT	OUT	IN	1.5 for TI, GI, and SCM UARTS
IN	IN	OUT	OUT	1.5 for WD UARTS

G. CRYSTAL SELECTION:

The clocking scheme of the DL11 consists of a single crystal oscillator feeding a divider network, with two 10-position switches tapping various points to feed into the UART's

G. Con't

transmitter and receiver sections. Thus, for a given crystal frequency, 8 baud rates are independently selectable for transmit and receive. The two addition switch positions select external clocks.

SPEED GROUP		1	2	3	4
		CRYSTAL (HZ)			
POSITION	FACTOR	844.8K	1.03296M	1.152M	4.608M
1*	23040	36.7	44.8	50	200
2	15360	55	67.3	75	300
3	7680	110	134.5	150	600
4	3840	220	269	300	1200
5	1920	440	538	600	2400
6	960	880	1076	1200	4800
7	640	1320	1614	1800	7200
8	480	1760	2152	2400	9600

*Most counter-clock wise position.

To determine a crystal frequency for a non-standard baud rate, pick the position of the closest baud rate in the 1.152MHz column, and then multiply the non-standard baud rate by the factor for that position. For example, if the customer specifies 1050 baud, this is closest to 1200 baud, position 6.

1050 X 960 = 1008000 = 1.008MHz.

The crystal frequency should not fall outside the range of the standard crystals.

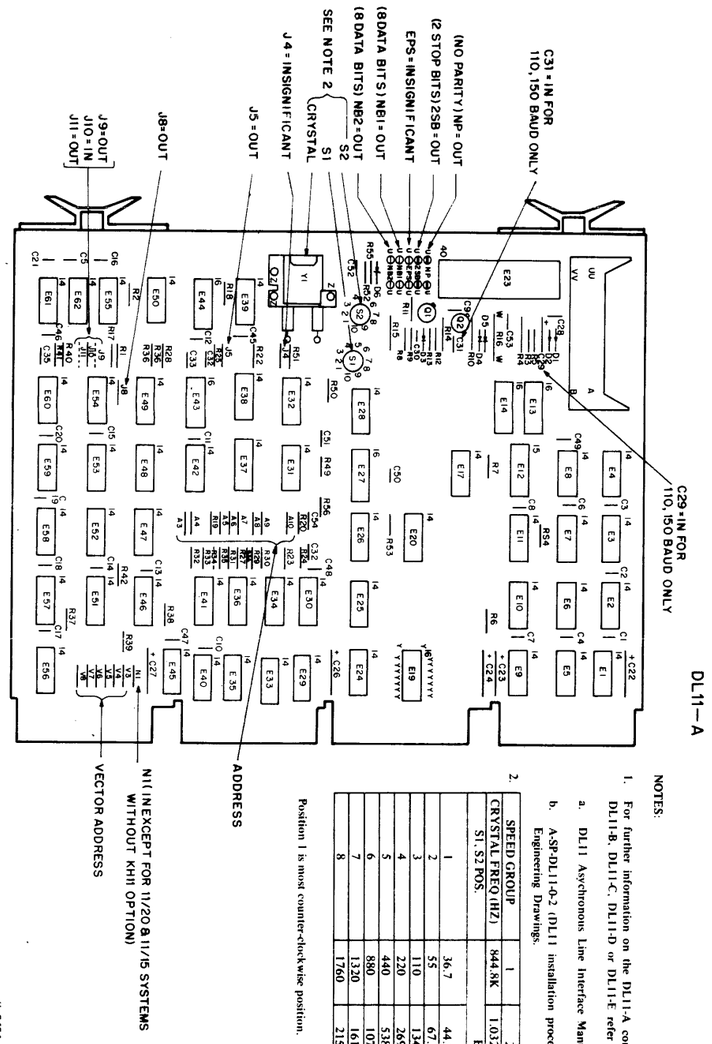
DEC part numbers for the standard crystals are as follows:

844.8 KHz	18-10245-1*
1.03296 MHz	18-05501-6
1.152 MHz	18-05501-5
4.608 MHz	18-05501-7

*Use A or C cut crystals only. Do not use crystals marked NE-6D.

When ordering a special crystal, refer to purchase specification 18-05501 for crystal specification.

Insure that transparent vinyl tape (9008269) is applied to the top surfaces of the crystal and mounting brackets to insulate from adjacent modules.



NOTES:

1. For further information on the DL11-A configuration or the installation of DL11-B, DL11-C, DL11-D or DL11-E refer to:
   a. DL11 Asynchronous Line Interface Manual
   b. A-SP-DL11-0-2 (DL11 installation procedure) in the DL11 Engineering Drawings.
2. Position 1 is most counter-clockwise position.

SPEED GROUP	1	2	3	4
CRYSTAL FREQ.(HZ)	844.8K	1.0329MM	1.152M	4.608M
S1, S2 POS.	BAUD RATE			
1	36.7	44.8	50	200
2	55	67.3	75	300
3	110	134.5	150	600
4	220	269	300	1200
5	440	538	600	2400
6	880	1076	1200	4800
7	1320	1614	1800	7200
8	1760	2152	2400	9600