PDP-11/40 system engineering drawings

digital equipment corporation · maynard, massachusetts

EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE
DRAWING DIRECTORY	B-DD-11/4Ø-Ø
KD11-A PROCESSOR	B-DD- KD11-A
MF11-L MEMORY	B-DD-MF11-L
KY11-D CONSOLE	B-DD-KY11-D
PARTS LIST (11/4Ø)	A-PL-11/4Ø-Ø-Ø
BASIC ASSY (11/4Ø)	D-UA-11/4Ø-Ø-Ø
MOUNTING BOX ASSY	E-UA- BA11-F-Ø
AC DISTRIBUTION (11/4Ø)	D-IC-11/4Ø-Ø-1
861 CONSOLE TO POWER CONTROL HARNESS	C-IA-7ØØ9Ø53-Ø-Ø
POWER DISTRIBUTION CABLE	D-IA-7ØØ9177-Ø-Ø
861 POWER CONTROL	B-DD-861-Ø
CHASSIS ASSY H742	B-DD-H742-Ø
+5V REGULATOR	B-DD-H744-Ø
-15V REGULATOR	B-DD-H745-Ø
ASYNCHRONOUS LINE INTERFACE	B-DD-DL11-A
TELETYPEWRITERS LT33	A-ML-LT33-Ø
ACCESSORY LIST	A-AL-11/4Ø-Ø-4
SOFTWARE LIST	A-SL-11/4Ø-Ø-5
ASSEMBLY CONFIGURATION	C-PL-11/40-0-3
EXPANDER BOX, POWER HARNESS (H742 to 11/ 40)	D-IC-7009566-0-1
WIRELIST (PWR HARNESS)	K-WL-7009566-0-2
POWER HARNESS-OLD (H742 to 11/40)	D-IC-7008754-0-3

	SEQUENCE
KD11-A POWER HARNESS	D-IA-7009994-0-0
MF11-L/LP FIRST MEMORY POWER HARNESS	D-IA-7009565-0-0
6-PIN JUMPER HARNESS	D-IA-7009573-0-0
G772 SYSTEM UNIT POWER HARNESS	D-IA-7009562-0-0
MF11-U MEMORY	B-DD-MF11-U
+20V, -5V REGULATOR	E-CS-H754-0-1

UNIT VARIATIONS

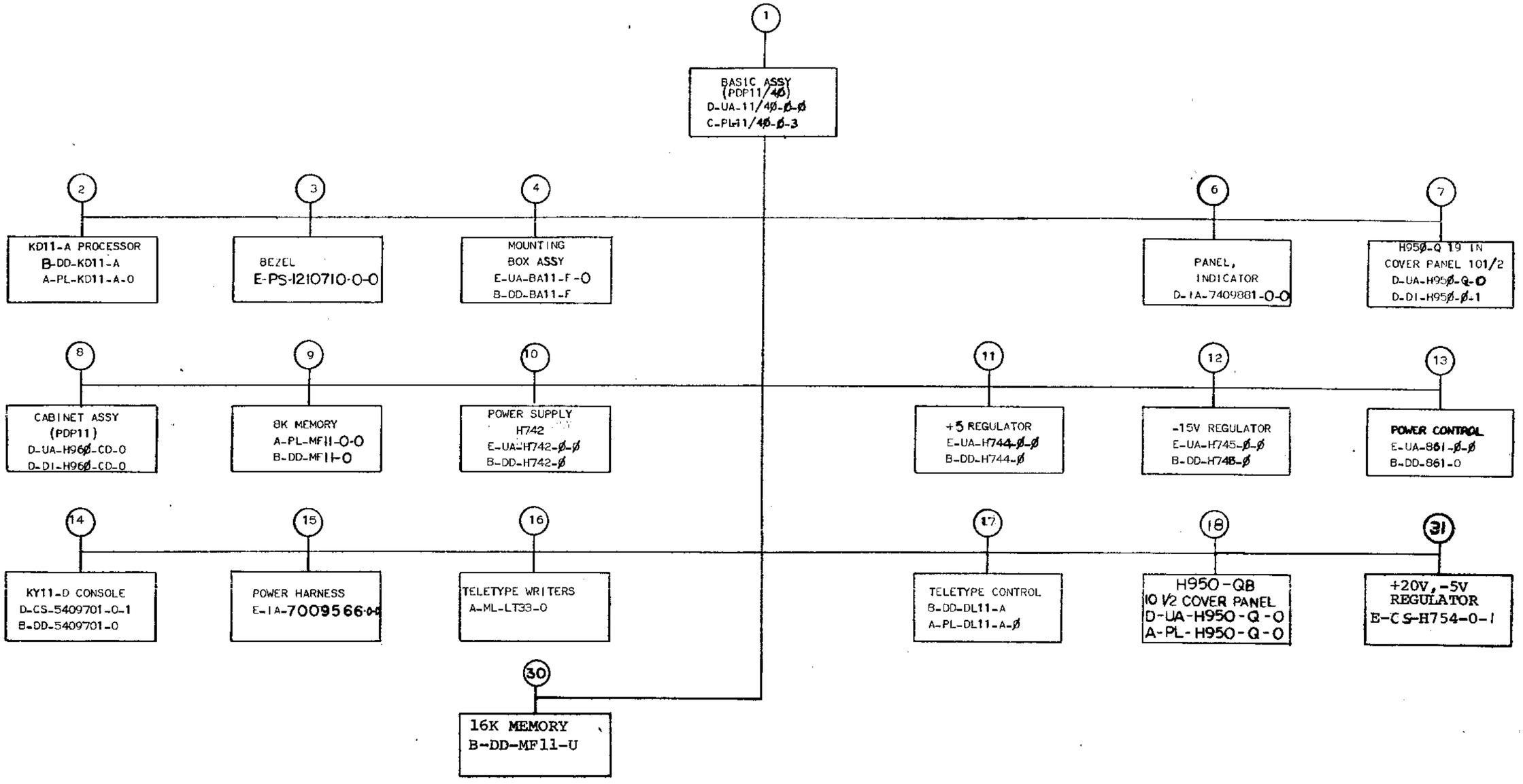
VARIATION	TITLE	PRINT SET TYPE 11/4Ø-1
PDP-11/4Ø-CA	BASIC ASSY (11/4Ø), 115V	X
PDP-11/4Ø-CB	BASIC ASSY (11/4Ø), 230V	X
PDP-11/4Ø-CS	BASIC ASSY (11/4Ø) 115V	X
PDP-11/4Ø-CT	BASIC ASSY (11/4Ø) 230V	X

REVISIONS		
REV	CHG. NO.	DATE
A	11/40-2	11/1/73
B	11/40-3	
C	11/40-4	
D	11'40-5	4/73
E	11/40-7	6/73
F	11/40-8	7/73
H	11/40-9	10/73
J	11/40-10	11/73
K	11/40-11	1/74
L	11/40-12	3/74
M	11/40-13	3/74
N	11/40-14	3/74
P	11/40-15	6-74

USED ON OPTION/MODEL: PDP11/40

DRN.	DATE 9/27/72	TITLE: BASIC ASSY (11/4Ø)
CHK'D	DATE 9/27/72	
PROJ. ENG.	DATE 9/27/72	
PROD.	DATE	SIZE B; CODE DD; NUMBER 11/4Ø-Ø; REV P
FIELD SERV.	DATE 9.28.72	
SHEET 1 OF 6		DIST 6

DRB 106



CENTER LINE

TITLE		SIZE	CODE	NUMBER	REV
BASIC ASSY (PDP 11/40)	SHEET 2 OF 6	B	DD	11/4Ø-Ø	P

DRB 107

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

Center Line

Used for 11/40-$\frac{CS}{CT}$ Only

19 — CAB ASSY (H967)
C-PL-7009134-0-0

27 — H957-B
FULL LENGTH DOOR
D-UA-H957-B-Ø

28 — FAN ASSY
E-AD-7009456-0-0

29 — FILTER
C-UA-H957-SA-Ø

20 — CASTER SET
A-PL-H952-EA-Ø

21 — LEVELER SET
A-PL-H952-FA-Ø

22 — 19 IN FRAME ASSY
E-UA-H957-AA-Ø

23 — DOOR FRAME MTG.
(R.H.)
D-UA-H957-DA-Ø

24 — FILLER STRIP ASSY
A-PL-H957-GA-Ø

25 — PAN BOTTOM
D-UA-H958-PA-Ø

26 — SKID 19 IN
D-AD-7605465-0-0

TITLE			SIZE	CODE	NUMBER	REV
BASIC ASSY (PDP 11/40)	SHEET 3 OF 6		B	DD	11/40-Ø	B

CUSTOMER PRINT SET 11/40-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	D-UA-11/40-0-0	L	6	BASIC ASSY (11/40)	
X			A-PL-11/40-0-0	L	4	BASIC ASSY (11/40) P.L.	
X			D-IC-11/40-0-1	A	1	A.C. DISTRIBUTION (11/40)	
X			C-PL-11/40-0-3	C	2	ASSY CONFIGURATION (11/40)	
X			A-AL-11/40-0-4	B	1	ACCESSORY LIST (11/40)	
X			A-SL-11/40-0-5	*	1	SOFTWARE LIST (11/40)	
X			C-IA-7009053-0-0	#	1	CONSOLE TO PWR CONTROL HARNESS	
	X		A-SP-11/40-0-6		23	PDP11/35&11/40 BASIC BUILD AND ACCEPTANCE PROCEDURE	
	X		A-SP-11/40-0-7		49	PDP11/35&11/40 SYSTEM BUILD AND ACCEPTANCE PROCEDURE	
X			D-IC-7009566-0-1		1	EXPANDER BOX POWER HARNESS	
X			D-IC-7008754-0-3		1	POWER HANRESS	
X			D-IA-7009994-0-0		1	KD11-A POWER HARNESS	
X			D-IA-7009573-0-0		1	6-PIN JUMPER HARNESS	
C			B-DD-KD11-A	#	2	KD11-A PROCESSOR DRAWING DIRECTORY	
	X	4	B-DD-BA11-F	#	3	MOUNTING BOX ASSY DRAWING DIRECTORY	
X			E-UA-BA11-F-0	#	1	MOUNTING BOX ASSY	
X			D-IA-7009177-0-0	#	1	POWER DISTRIBUTION CABLE	
C		9	B-DD-MF11-L	#	3	8K MEMORY DRAWING DIRECTORY	
X			D-IA-7009565-0-0			MF11-L/LP FIRST MEMORY POWER HARNESS	
C		10	B-DD-H742-0	#	3	H742 POWER SUPPLY DRAWING DIRECTORY	
C		11	B-DD-H744-0	#	3	+5 REGULATOR DRAWING DIRECTORY	

CUSTOMER PRINT SET 11/40-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
C		12	B-DD-H745-0	#	3	-15V REGULATOR DRAWING DIRECTORY	
C		13	B-DD-861-0	#	2	POWER CONTROL DRAWING DIRECTORY	
C		14	B-DD-KY11-D	#	2	DRAWING DIRECTORY	
	X		D-CS-5409701-0-1	#	3	KY11-D CONSOLE	
X		15	E-IA-7009566-0-0	#	1	EXPANDER POWER HARNESS	
C			K-WL-7009566-0-2	#	1	WIRE LIST	
C		16	A-ML-LT33-0	#	2	TELETYPE WRITERS	
C		17	B-DD-DL11-A	#	3	ASYNCHRONOUS LINE INTERFACE	
C		30	B-DD-MF11-U			16K MEMORY DRAWING DIRECTORY	
X		31	E-CS-H754-0-1	#		+20V,-5V REGULATOR	

TITLE	SHEET	SIZE	CODE	NUMBER	REV
BASIC ASSY (11/40)	4 OF 6	B	DD	11/40-0	P

CUSTOMER PRINT SET 11/40-1	SET MFG.	FIND NO.	MECHANICAL DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		1	D-UA-11/40-0-0	L	6	BASIC ASSY (11/40)	
			A-PL-11/40-0-0	L	4	BASIC ASSY (11/40) P.L.	
			D-IC-11/40-0-1	A	1	A.C. DISTRIBUTION (11/40)	
			C-PL-11/40-0-3	C	2	ASSY CONFIGURATION (11/40)	
			A-AL-11/40-0-4	B	1	ACCESSORY LIST (11/40)	
			A-SL-11/40-0-5	*	1	SOFTWARE LIST (11/40)	
			C-IA-7009053-0-0	#	1	861 CONSOLE TO PWR CONTROL HARNESS	
			A-DC-7409478-0-0		1	DECAL PATENT	
	X		C-MD-7409312-0-0	#	1	BRACKET, SHIPPING	
	X		D-IA-7409289-0-0	#	1	MTG BRACKET 10½ PANEL	
	X		D-MD-7409445-0-0	#	1	BRACKET, HARNESS SUPPORT	
	X		B-MD-7409447-0-0	#	1	PLATE, SUPPORT	
	X		D-MD-7409446-0-0	#	1	SUPPORT, HARNESS	
	X		C-IA-7410581-0-0	#	1	BRKT. CABLE HOLDOWN	
	X		D-PS-1211215-0-0	#	1	CABLE CLAMP & STRAP	
			C-SC-1209224-0-0		1	LATCH MOLDING	
			A-SP-11/40-0-6		23	PDP11/35&11/40 BASIC BUILD AND ACCEPTANCE PROCEDURE	
			A-SP-11/40-0-7		49	PDP11/35&11/40 SYSTEM BUILD AND ACCEPTANCE PROCEDURE	
			D-IA-7009994-0-0		1	KD11-A POWER HARNESS	
			D-IA-7009573-0-0		1	6 PIN JUMPER HARNESS	
		2	B-DD-KD11-A	#	2	KD11A PROCESSOR DRAWING DIRECTORY	
		3	E-PS-1210710-0-0		1	BEZEL	
			C-PS-1210270-0-0		1	NAME PLATE	
		4	B-DD-BA11-F		3	MOUNTING BOX ASSY DRAWING DIRECTORY	
	X	6	D-IA-7409881-0-0	#	1	PANEL, INDICATOR	
			C-SS-7409881-0-1		1	SILK SCREEN (GRAPE)	
			C-SS-7409881-0-2		1	SILK SCREEN (MAGENTIA)	
			C-SS-7409881-0-3		1	SILK SCREEN (BRITE ROSE)	
			C-SS-7409881-0-5		1	SILK SCREEN (BLACK)	
			C-SS-7409881-0-6		1	SILK SCREEN (WHITE)	
	X	7	D-UA-H950-Q-0	#	1	H950-Q 19 IN COVER PANEL 10½	
	X		A-PL-H950-Q-0	#	1	H950-Q 19 IN COVER PANEL 10½	
	X		D-DI-H950-0-1	#	1	DRAWING INDEX	
	X	8	D-UA-H960-C-0	#	1	CABINET ASSY (PDP-11)	
	X		A-PL-H960-C-0	#	1	CABINET ASSY (PDP-11)	
	X		D-DI-H960-C-1	#	1	DRAWING INDEX	

CUSTOMER PRINT SET 11/40-1	SET MFG	FIND NO.	MECHANICAL DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		9	B-DD-MF11-L	#	3	8K MEMORY DRAWING DIRECTORY	
			D-IA-7009565-0-0		1	MF11-L/LP FIRST MEMORY POWER HARNESS	
		10	B-DD-H742-0	#	3	H742 POWER SUPPLY DRAWING DIRECTORY	
		11	B-DD-H744-0	#	3	+5 REGULATOR DRAWING DIRECTORY	
		12	B-DD-H745-0	#	3	-15V REGULATOR DRAWING DIRECTORY	
		13	B-DD-861-0	#	2	POWER CONTROL DRAWING DIRECTORY	
		14	B-DD-5409701-0	#	2	KY11-D CONSOLE DRAWING DIRECTORY	
		15	B-IA-7009566-0-0		1	EXPANDER BOX POWER HARNESS	
			K-WL-7009566-0-2		1	WIRE LIST	
			D-IC-7009566-0-1			EXPANDER BOX POWER HARNESS	
			D-IC-7008754-0-3			POWER HARNESS (H742 to 11/40-old)	
		16	A-ML-LT33-0	#	2	TELETYPE WRITERS	
		17	B-DD-DL11-A	#	3	ASYNCHRONOUS LINE INTERFACE	
		18	D-UA-H950-QB-0		1	10 1/2 COVER PANEL	
			A-PL-H950-Q-0		1	" " "	
			D-DI-H950-0-1		1	DRAWING INDEX	

TITLE	SHEET	SIZE	CODE	NUMBER	REV
BASIC ASSY (11/40)	5 OF 6	B	DD	11/40-0	P

DRB 108

DLC - 16- (325)-1062-20-B272

G

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MACHANICAL				
		19	C-PL-7009134-0-0		1	CAB ASSY (H967)	
			A-PS-1211442-0-0		1	COUNTER-WEIGHT	
			B-DD-MF11-U			16K MEMORY DRAWING DIRECTORY	
		20	A-PL-H952-EA-Ø		1	CASTER SET	
			B-DD-H754-0			+20V; -5V REGULATOR DRAWING DIRECTORY	
		21	A-PL-H952-FA-Ø		1	LEVELER SET	
		22	E-UA-H957-AA-Ø		4	19 IN FRAME ASSY	
		23	D-UA-H957-DA-Ø		1	DOOR FRAME MTG (R.H.)	
		24	A-PL-H957-CA-Ø		1	FILLER STRIP ASSY	
		25	D-UA-H958-PA-Ø		1	PAN BOTTOM	
		26	D-AD-7605465-0-0		1	SKID 19 IN	
		27	D-UA-H957-B-Ø		1	FULL LENGTH DOOR	
		28	D-AD-7009456-0-0		1	FAN ASSY	
			D-IA-7409126-0-0		1	PANEL FAN	
			A-PS-1210165-0-0		1	FAN (115V)	
			A-PS-1209175-0-0		1	FINGER GUARD	
			A-PS-1209798-0-0		1	FAN CARAVEL (230V)	
		29	C-UA-H957-SA-Ø		1	FILTER	
		#30	B-DD-MF11-U			16K MEMORY DRAWING DIRECTORY	
		31	E-CS-H754-0-1			+20V, -5V REGULATOR	

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MACHANICAL				

CUSTOMER PRINT SET CODES

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

TITLE	SHEET	SIZE	CODE	NUMBER	REV
BASIC ASSY (11/40)	6 OF 6	B	DD	11/40-Ø	P

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE
DRAWING DIRECTORY	B-DD-KD11-A
KD11-A PROCESSOR (BLOCK DIAGRAM U WORD & TABLES)	D-BD-KD11-A-BD
FLOW DIAGRAM	D-FD-KD11-A-FD
PARTS LIST	A-PL-KD11-A-Ø
MODULE UTILIZATION	D-MU-KD11-A-MU
DATA PATHS	D-CS-M7231-Ø-1
U WORD	D-CS-M7232-Ø-1
IR DECODE	D-CS-M7233-Ø-1
TIMING	D-CS-M7234-Ø-1
STATUS	D-CS-M7235-Ø-1
INTERNAL UNIBUS AND TERMINATOR (M981)	D-CS-5409764-Ø-1
CIRCUIT SCHEMATIC BACK PLANE	C-CS-5410904-Ø-1
BACK PANEL (WIRE & ETCH LIST)	K-WL-KD11-A-WL (COMPLETE)
AWT REVISION STATUS	A-WT-7009009-0
STACK LIMIT REGISTER	B-DD-KJ11-A
LINE FREQUENCY CLOCK	B-DD-KW11-L
MAINTENANCE BOARD (1&2)	D-BS-KM11-Ø-MB
SILK SCREEN (KD11-A)	A-SS-5509081-0-12
SILK SCREEN (KT11-D, KE11-E, F)	A-SS-5509081-0-13

UNIT VARIATIONS

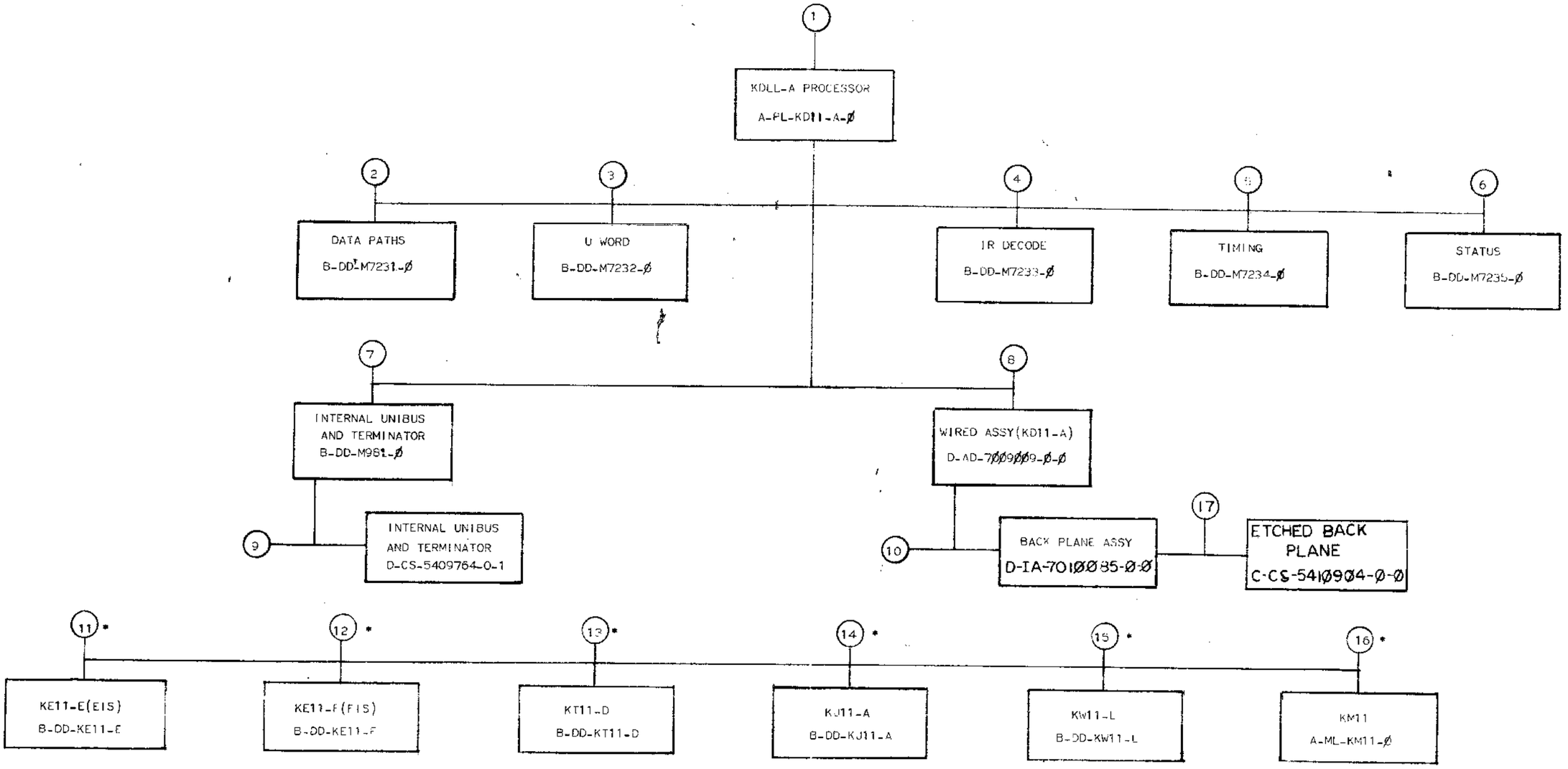
VARIATION	TITLE	PRINT SET TYPE KD11-A
KD11-A	KD11-A PROCESSOR	X

REVISIONS	REV	A	B	C	D	E	F
	CHG. NO.	KD11A-00002	KD11A-00005	KD11A-6	KD11A-00007	KD11A-00008	KD11A-00009
	DATE	10-72	2-73	6-73	11-73	5-74	6-74

USED ON OPTION/MODEL

DRN.	DATE 9/27/72	TITLE: KD11-A PROCESSOR
CHK'D.	DATE 9/27/72	
PROJ ENG.	DATE 9/27/72	
PROD.	DATE 9-28-72	SIZE B, CODE DD, NUMBER KD11-A, REV F
FIELD SERV.	DATE 9-27-72	
SHEET 1 OF 3		DIST G

DRB 106



* OPTIONS TO KD11-A PROCESSOR

TITLE		SIZE	CODE	NUMBER	REV
KD11-A PROCESSOR	SHEET 2 OF 3	B	DD	KD11-A	F

ELECTRICAL

CUSTOMER PRINT SET KD11-A	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	D-BD-KD11-A-BD	A	2	BLOCK DIAGRAM, U WORD&TABLES	
X			D-FD-KD11-A-FD	B	12	FLOW DIAGRAM	
X			D-MU-KD11-A-MU	A	1	MODULE UTILIZATION	
C			K-WL-KD11-A-WL	F	33	WIRE & ETCH LIST (COMPLETE)	
X		17	C-CS-541Ø9Ø4-Ø-1	#	1	CIRCUIT SCHEMATIC BACK PLANE	
		2	B-DD-M7231-Ø		2	DATA PATHS	
X			D-CS-M7231-Ø-1	#	9	DATA PATHS CIRCUIT SCHEMATIC	
		3	B-DD-M7232-Ø		2	U WORD	
X			D-CS-M7232-Ø-1	#	12	U WORD CIRCUIT SCHEMATIC	
		4	B-DD-M7233-Ø		2	IR DECODE	
X			D-CS-M7233-Ø-1	#	9	IR DECODE CIRCUIT SCHEMATIC	
		5	B-DD-M7234-Ø		2	TIMING	
X			D-CS-M7234-Ø-1	#	6	TIMING CIRCUIT SCHEMATIC	
		6	B-DD-M7235-Ø		2	STATUS	
X			D-CS-M7235-Ø-1	#	8	STATUS CIRCUIT SCHEMATIC	
		7	B-DD-M981-Ø		2	INTERNAL UNIBUS AND TERMINATOR	
X		8	D-CS-54Ø9764-Ø-1	#	2	INTERNAL UNIBUS AND TERMINATOR CIRCUIT SCHEMATIC	
			B-DD-KY11-D	REF	2	KY11-D CONSOLE	
		11	B-DD-KE11-E	REF	2	KE11-E (EIS)	
		12	B-DD-KE11-F	REF	2	KE11-F (FIS)	
		13	B-DD-KT11-D	REF	2	MEMORY MANAGEMENT	
C		14	B-DD-KJ11-A	#	2	STACK LIMIT REGISTER	
C		15	B-DD-KW11-L	#		LINE FREQUENCY CLOCK	
		16	A-ML-KM11-Ø	REF	1	MAINTENANCE PANEL(W130,W131)	
X			D-BS-KM11-Ø-MB	#	3	MAINTENANCE BOARD (1&2)	
X			A-SS-5509081-0-12	#	1	SILK SCREEN (KD11-A)	
X			A-SS-5509081-0-13	#	1	SILK SCREEN(KT11-D,KE11-E,F)	

MECHANICAL

CUSTOMER PRINT SET KD11-A	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	A-PL-KD11-A-Ø	*	1	PARTS LIST	
X		9	A-WT-7009009-0	#	1	AWT REVISION STATUS	
			D-AD-7ØØ9ØØ9-Ø-Ø	#	1	WIRED ASSY (KD11-A)	
		10	D-IA-7010085-0-0		1	BACK PLANE ASSY	
			B-DD-2338-0		4	XOR TESTERS	

TITLE		SIZE	CODE	NUMBER	REV
KD11-A PROCESSOR	SHEET 3 OF 3	B	DD	KD11-A	F

DMUX [15:00]

BUS RD [15:00]

REGISTER (REG) KI-8

REG 00 R0	REG 10 R [TEMP]
REG 01 R1	REG 11 R [SOURCE]
REG 02 R2	REG 12 R [DEST]
REG 03 R3	REG 13 R [IR]
REG 04 R4	REG 14 R [VECTOR]
REG 05 R5	REG 15 R [TEMPC]
REG 06 R [SP]	REG 16 R [SP USER]
REG 07 R [PC]	REG 17 R [ADRS]

K4-2 WR R(15:08) L
K4-2 WR R(07:00) L

REG ADRS INPUTS KI-8
K2-4 SRS (1) H
K2-4 SRD (1) H
K2-4 SRBA (1) H
K2-4 SR1 (1) H
IR [08:06]
IR [02:00]
BA [03:00]
K2-4 RIF3 (1) H
K2-4 RIF2 (1) H
K2-4 RIF1 (1) H
K2-4 RIF0 (1) H

EUBC [8:1]
EUPP [8:0]
BUPP [8:0]
BUS U [08:00]
BUS U [56:09]

BUS TERMINATOR & CONNECTOR M8811

SWITCH REGISTER SR [17:00] KYII-D

BUS D [15:00]
8881 KI-9
K4-4 BUS FM SR H

BUS D [07:00]
8881 K5-2
K5-2 BUS FM PS H

PS REGISTER K5-2
K5-2 BUSRD FM PS H
8881 K5-2

CONDITIONAL CODES INPUT K3-9, K5-2
K2-6 SPS2 (1) H
K2-6 SPS1 (1) H
K2-6 SPS0 (1) H

INSTR REGISTER K3
K4-2 CLK IR H

FLAG CONTROL K5-4

IR DECODE K3

D MUX [15:00]

B REGISTER KI

B CONSTANTS K5-5
K2-6 SBC3 H
K2-6 SBC2 H
K2-6 SBC1 H
K2-6 SBC0 H
K4-2 CLK B H

BUS RD [15:00]

DATA DISPLAY DATA [15:00] KYII-D

B MUX KI
K2-5 SBMH1 (1) H
K2-5 SBMH0 (1) H
K2-5 SBML1 (1) H
K2-5 SBML0 (1) H

BUFFER KI

ALU CONTROL K3-8
K2-7 DAD3 (1) H
K2-7 DAD2 (1) H
K2-7 DAD1 (1) H
K2-7 DAD0 (1) H

U BRANCH CONTROL K3

CONSOLE CONTROL K5-6

D MUX KI
K2-5 SDMI (1) H
K2-5 SDM0 (1) H

BUBC (BUTXX)

BUT DECODE K3-3

BUT MUX K3-2

BUBC [5:0]

K2-5 UBF4 (1) H
K2-5 UBF3 (1) H
K2-5 UBF2 (1) H
K2-5 UBF1 (1) H
K2-5 UBF0 (1) H

BUS U [08:00]

NOT OR K2

JAMUPP LOGIC K4-3

K4-2 CLK (UPP * PUPP) H

U WORD REG

BUS U [56:00]

U WORD [56:09] K2

UPP REGISTER K2

DRIVER K2

KMII DISPLAY

PUPP REGISTER K2

U WORD CONTROL ROM 256 WORDS X 56 BITS

UPP [8:0]

DRIVER K2

BUPP & SR MATCH KI-9
UPP MATCH
P MATCH

SR [08:00]

U WORD OUTPUTS TO INTERFACE, DATA PATHS, AND CONTROL (K2 SIGNALS)

K2-8 CLKIR (1) H
K2-7 WRH (1) H
K2-7 WRL (1) H
K2-7 CLKB (1) H
K2-7 CLKD (1) H
K2-7 CLKBA (1) H

K2-8 CLKLI (1) H
K2-8 CLKL0 (1) H
K2-8 CLKOFF (1) H

K4-2 P1 H
K4-2 P2 H
K4-2 P3 H

CLOCK ENABLE GATES K4-2

CLOCK PULSE GENERATOR (P1, P2, P3, P4) K4-2

CLOCK CONTROL (CLK, IDLE) K4-2

VARIOUS ASYNCHRONOUS STARTING SIGNALS

KM-2 MCLK L

K4-2 RECLK H

CLOCK OUTPUTS TO INTERFACE DATA PATHS AND CONTROL (K4 SIGNALS)

BUS BA [17:00]

8881 KI-6
K4-5 BUS FM BA H

ADDRESS DISPLAY ADRS [17:00] KYII-D

BUS D [15:00]

8881 KI
K4-5 BUS FM D H

380 KI

BUS C [1:0] L
BUS MSYN L
BUS SSYN L
BUS RBSY L
BUS NPR L
BUS NPG H
BUS SACK L
BUS INTR L
BUS BR 7-4 H
BUS BG7-4 H
BUS INIT L
BUS AC LO L
BUS DC LO L

UNIBUS TIMING AND CONTROL
K4-4
K4-5
K4-6
K5-8

K2-7 CLKBA (1) H
K2-7 CIBUS (1) H
K2-7 CØBUS (1) H
K2-7 BGBUS (1) H

D [19:00]
D (C)

ARITHMETIC LOGIC UNIT KI
BIN
ASN
K3-8 ALUS3
K3-8 ALUS2
K3-8 ALUS1
K3-8 ALUS0
K3-8 ALUM H

COUT MUX KI-4
COUT 15
COUT 07
ALU 15
K5-2 PS (C) (1) H

CIN LOGIC K3-8
Ø
1
PS (C)

BA MUX KI
K2-5 SBAM (1) H

BA REGISTER KI-6
K4-2 CLK BA H

D REGISTER KI
K4-2 CLK D H
D [15:00]

BA [15:00]

DECODING (ADRS & DATA) KI-7
KI-7 PS ADRS H
KI-7 SLR ADRS H
KI-7 REG ADRS H
KI-7 SR ADRS H
KI-7 D (15:00) = ØH

INTERFACE

DATA PATHS

MICROCONTROL

REVISIONS	REV
CHANGE NO KDIIA-00005	A
CHK	
D. LOUGHLIN 2-N-23	

BRUNING 40-522 15840
DEC-OPM-NO
DRD 202-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. — DATE 7-21-72
CHK'D — DATE 7-25-72
ENG — DATE 7-25-72
PROJ. ENGR — DATE 7-25-72
MOD — DATE 7-25-72

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 2

digital EQUIPMENT CORPORATION

TITLE KDII-A-BD (BLOCK DIAGRAM)

SIZE D | CODE 80 | NUMBER KDII-A-BD | REV A

DIST.

BASIC U WORD [U(56:ØØ)]

CLK			CIR	WR		CP	CD	CPA	BUS			ADR				SPS			A				
CLKLO	FIXLO	CLKOFF	CLKIR	WRH	WRL	CLKP	CLKD	CLKPA	CIBUS	CØBUS	BGBUS	DAD3	DAD2	DAD1	DADØ	SPS2	SPS1	SPSØ	SA3	SA2	SA1	SAØ	
U56(I)H	U55(I)H	U54(I)H	U53(I)H	U52(I)H	U51(I)H	U50(I)H	U49(I)H	U48(I)H	U47(I)H	U46(I)H	U45(I)H	U44(I)H	U43(I)H	U42(I)H	U41(I)H	U40(I)H	U39(I)H	U38(I)H	U37(I)H	U36(I)H	U35(I)H	U34(I)H	U33(I)H

SBC				SBM				SDM		SBA	UBF					SRX				RTF				UPF							
SBC3	SBC2	SBC1	SBCØ	SBMH1	SBMHØ	SBML1	SBMLØ	SDM1	SDMØ	SBAM	UPF4	UBF3	UBF2	UBF1	UBFØ	SRS	SR0	SRBA	SR1	RTF3	RTF2	RTF1	RTFØ	UPF7	UPF6	UPF5	UPF4	UPF3	UPF2	UPF1	UPFØ
U32(I)H	U31(I)H	U30(I)H	U29(I)H	U28(I)H	U27(I)H	U26(I)H	U25(I)H	U24(I)H	U23(I)H	U22(I)H	U21(I)H	U20(I)H	U19(I)H	U18(I)H	U17(I)H	U16(I)H	U15(I)H	U14(I)	U13(I)H	U12(I)H	U11(I)H	U10(I)H	U09(I)H	U07(I)H	U06(I)H	U05(I)H	U04(I)H	U03(I)H	U02(I)H	U01(I)H	U00(I)H

UPF8 (U08(Ø)H)

BUT TABLE (NUMERICAL & MNEMONIC CORRESPONDANCE)							
BUTØØ	NOOP	BUTIØ	BUT (HALT)	BUT2Ø	BUT (BYTE + SERVICE + FETCH)	BUT3Ø	BUT (VARIOUS SWITCHES)
BUTØ1	BUT (CBR1)	BUT11	BUT (MM FAULT)	BUT21	BUT (IRØ3, (BYTE + SOURCE)	BUT31	BUT (NOWR + BYTEWR + WORDWR)
BUTØ2	BUT (CBR2)	BUT12	BUT (DIVØ)	BUT22	BUT (BYTE + SOURCE)	BUT32	NOT USED
BUTØ3	BUT (REG DEP)	BUT13	NOT USED	BUT23	NOT USED	BUT33	BUT (OB + INSTR4)
BUTØ4	BUT (REG EXAM)	BUT14	NOT USED	BUT24	BUT (CBR + HALT)	BUT34	BUT (INSTR4)
BUTØ5	BUT (BEGIN)	BUT15	BUT (JSR + JMP)	BUT25	BUT (BR, WAIT + FETCH)	BUT35	BUT (OB + INSTR3)
BUTØ6	BUT (SWITCH)	BUT16	BUT (SERVICE C + FETCH C)	BUT26	BUT (REQUESTS)	BUT36	BUT (INSTR3)
BUTØ7	BUT (INTR)	BUT17	BUT (IRØ3)	BUT27	BUT (SERVICE B + FETCH, CVLAP + FETCH B)	BUT37	BUT (INSTR1)

BUS TABLE			
C1 BUS	C2 BUS	B6 BUS	USE
Ø	Ø	1	DAT1
Ø	1	1	DATIP
1	Ø	1	DATO
1	1	1	DATOB
Ø	1	Ø	AWBBY ← 1 (AWAIT BUS BUSY)
1	1	Ø	RESTART ON PERIF RELEASE

DAD TABLE				
DAD3	DAD2	DAD1	DADØ	USED
Ø	Ø	Ø	Ø	NOOP
–	–	–	1	ALLOW ODD ADRS AND DATO B FOR BYTE INSTR
Ø	1	1	–	CHECK STACK OVFLW
Ø	1	1	1	DADØ=1 AND DAD=(Ø6+Ø7)
1	Ø	Ø	Ø	GENERATE CARRY IN
1	Ø	Ø	1	DADØ=1 AND DAD=1Ø
1	1	–	–	ALU CNTL FIR
1	–	1	–	INHIBIT DATO OR DATOB AND CLOCKOFF FOR (BIT+CMP+TST)

NOTE:
ABOVE BIT PATTERNS OCCUR IN COMBINATIONS WITH OTHER DAD BITS. THE TOTAL OCTAL DAD CODE IS NOTED IN SPECIFIC U WORDS IN THE FLOWS.

SPS TABLE	
(SPS CODE) 8 Ø	FUNCTION DMUX GATED TO PS INPUT
1,3,5,7	CLK (PS) C
2	CLK PS (N,Z,V)
3	CLK PS (N,Z,V,C)
4	NOT USED
5	NOT USED
6	PS GATED TO BUS RD CLK PS (N,Z,V)
7	LOAD PS FORM DMUX

NOTES:
1. (SPS=3) * CC INSTR ALSO GATES PS TO BUS RD.
2. SPSØ BIT ALWAYS ENABLES THE CLK PS(C) SIGNAL
3. SPS1 BIT ALWAYS ENABLES THE CLK PS (N,Z,V) SIGNAL

B CONSTANT

SBC TABLE

(SBC) 8	USE	B CONSTANT																NOTES
		15	14	13	12	11	1Ø	09	08	07	06	05	04	03	02	01	ØØ	
ØØ	TRAPS	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	T=F(STPM(4,2),
Ø1	CONST 1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	GENERAL USE
Ø2	CONST 2	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	GENERAL USE
Ø3	CONST (1+2)	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	1	1	POSSIBLE CINØØ MAKES THIS 2
Ø4	NOT USED	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	
Ø5	NOT USED	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	
Ø6	NOT USED	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	
Ø7	CONS INC	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	C	C IS 1 IF EXAM (I) OR DEP (I) SET
1Ø	SR ADRS	1	1	1	1	1	1	1	1	1	1	1	1	1	Ø	Ø	Ø	ALSO DISPLAYED ON A CONS TIME OUT
11	PWR UP	W_7	W_6	W_5	W_4	Ø	W_3	W_2	Ø	W_1	W_0	W_6	W_5	W_4	W_3	Ø	Ø	PROGRAM ADRS SELECTED BY JUMPERS
12	CC MASK	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	1	1	MASK USED FOR CONDITION CODE INSTRS
13	SOB MASK	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	1	1	1	1	1	MASK USED IN SOB INSTR
14	SINCLK	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	S	Ø	Ø	Ø	Ø	Ø	S=Ø FOR SWITCHCOUNT IF SINCLK
15	MM VECTOR	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	1	Ø	1	Ø	Ø	Ø	Ø	KT VIOLATION TRAP VECTOR
16	MM CONST	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	M	Ø	M=1 IF SMØ IN MFP INSTR
17	STACK C*	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	PREEMPTIVE STACK POINTER

JAMUPP ADDRESS	
(UPP) 8	USE
377	PWR UP INIT
337	PWR UP # – (HALT)
336	OVFLW ERR (RED ZONE), DUBBER
Ø5Ø	(PWR RESTART) * HALT SW, START * HALT SW, NODAT (I) * CONS (I)
ØØ2	ODA ERR, NODAT (I) * CONS (Ø) NOTE 1.

NOTES:
1. BUS PB ← BUS PA * MSYNA (I), IF MFII-LP IS INSTALLED.

OVERLAP SITUATIONS			
INSTR CLASS	SOURCE MODE	DEST MODE	
DOP	Ø	Ø	NO OVLAP IF DEST IS REG 7 NO OVLAP FOR MOV BYTE * SMØ * DMØ
SINGLE ADRS INSTR	—	Ø	NO OVLAP IF DEST IS REG 7
DOP	G+7	—	
DOP	Ø	G+7	
SINGLE ADRS INSTR, JMP, JSR	—	G+7	

NOTES:
1. SINGLE ADRS INSTR INCLUDES: SOP; SXT; SWAB; ROTSHF AND XOR.
2. NO OVLAP ON DOP * SMO * DMØ + SOP * DMØ IF A BRQ OR PWRON OCCURS OR IF IN SINGLE INSTR MODE.

ALU TABLE											
INSTR	OPERATION	ALU FUNC & MODE SEL M S3 S2 S1 SØ	ALU FUNCTION	OPERAND LOCATION	MICRO ADDRESS	INSTR	OPERATION	ALU FUNC & MODE SEL M S3 S2 S1 SØ	ALU FUNCTION	OPERAND LOCATION	MICRO ADDRESS
MOV	DST ← (SRC)	Ø Ø Ø Ø Ø Ø	F=A CIN=Ø	SRC IN REG		SBC	DST ← (DST) – PS(C)	IF(C)=1 THEN Ø 1 1 1 1 IF(C)=Ø THEN Ø Ø Ø Ø Ø	A MINUS 1 F=A	DST IN REG	1Ø4, 22Ø, 222
SUB	DST ← (DST) – (SRC)	Ø Ø 1 1 Ø	A MINUS B MINUS 1 CIN=+1	SRC IN B DST IN REG	363, 365, 37Ø						
ADD	DST ← (SRC) + (DST)	Ø 1 Ø Ø 1	A PLUS B CIN=Ø	SRC IN REG DST IN B	224, 225, 364, 371	ROL	[15 Ø C] ←	Ø 1 1 Ø Ø	F=A PLUS A CIN ← PS(C)	DST IN REG	
CMP	(SRC) – (DST)	Ø Ø 1 1 Ø	A MINUS B MINUS 1 CIN=+1	SRC IN REG DST IN B	224, 225 250, 231 364, 371	ROR	[15 Ø C] →	Ø Ø Ø Ø Ø	FUNCTION PERFORMED IN DMUX (RO)		1Ø6; 232 233, 272
BIS	DST ← (SRC) V (DST)	Ø Ø Ø Ø 1	F=A+B CIN=Ø	SRC IN REG DST IN B		ASR	[15 Ø C] →	Ø Ø Ø Ø Ø			
BIC	DST ← (SRC) Λ (DST)	1 Ø Ø 1 Ø	F=Ā B CIN —	SRC IN REG DST IN B		ASL	[C] ←	Ø 1 1 Ø Ø	F=A PLUS A CIN ← Ø	DST IN REG	1Ø4, 22Ø, 222
BIT	DST ← (SRC) Λ (DST)	1 1 Ø 1 1	F=Ā B CIN —	SRC IN REG DST IN		SXT	DST ← 1 OR Ø IF (N)	IF(N)=Ø THEN 1 Ø Ø 1 1 IF(N)=1 THEN Ø Ø Ø 1 1	F=LOGICAL Ø F=MINUS 1 2'S COMP		132, 234
CLR	DST ← Ø	1 Ø Ø 1 1	F=LOGICAL Ø CIN —	DST IN REG							
INC	DST ← (DST) + 1	Ø Ø Ø Ø Ø	F=A CIN=+1	DST IN REG	1Ø4, 22Ø, 222						
DEC	DST ← (DST) – 1	Ø 1 1 1 1	A MINUS 1 CIN=Ø	DST IN REG							
NEG	DST ← – (DST) (2'S COMP)	Ø Ø 1 1 Ø	A MINUS B MINUS 1 CIN=+1	DST IN B	221, 223, 272						
TST	ALU OUT=AIN	Ø Ø Ø Ø Ø	F=A CIN=Ø	DST IN REG							
COM	DST ← – (DST) (LOGICAL COMP)	1 Ø Ø Ø Ø	F=Ā CIN —	DST IN REG	1Ø4, 22Ø, 222						
ADC	DST ← (DST) + (C)	Ø Ø Ø Ø Ø	CIN=+1 IF PS(C)=1	DST IN REG							
XOR	DST ← REG ∨ (DST)	1 Ø 1 1 Ø	F=A ⊕ B CIN —	DST IN REG	224						

NOTES:
ALU = ARITHMETIC LOGIC UNIT
REG = PROC INTERNAL REGISTER
SRC = SOURCE
DST = DESTINATION
F = ALU OUTPUT
B = DATA PATH B REGISTER

INPUT OF OPERANDS TO ALU

DOP'S (EXCEPT MOV, SWAB) { BIN ← DST { ← BUS IF DM ≠ Ø ← REG IF DM = Ø ; AIN ← SRC { ← A [SOURCE] IF SM ≠ Ø ← REG IF SM = Ø

SOP'S (EXCEPT NEG) { AIN ← DST { ← A [DEST] IF SM ≠ Ø ← REG IF SM = Ø

REVISIONS	REV	CHARGE NO.	CHK

BRUNING 40-1107 15968

DEC TOOL NO
DRG 100-A

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

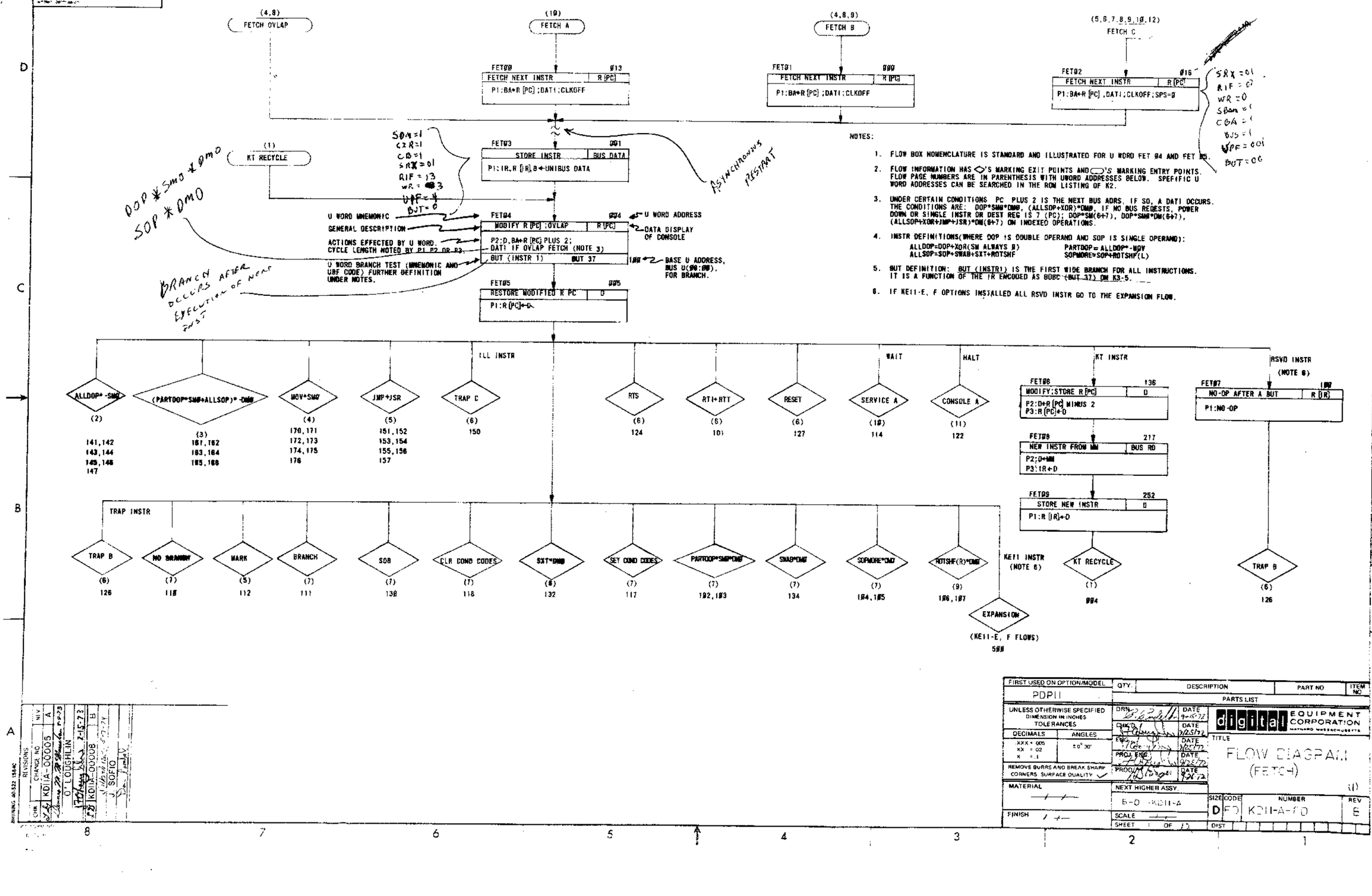
DRN [redacted] DATE 7-24-72
CHK'D [redacted] DATE 7-25-72
ENG [redacted] DATE 3-25-72
PROJ. ENG. [redacted] DATE 3-25-72
PROJ [redacted] DATE [redacted]
NEXT HIGHER ASSY. B-DD-KDII-A
SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE KDII-A PROC BOOK TOLERANCES & NOTES

SIZE D | CODE [redacted] | NUMBER KDII-A-BD | REV. A

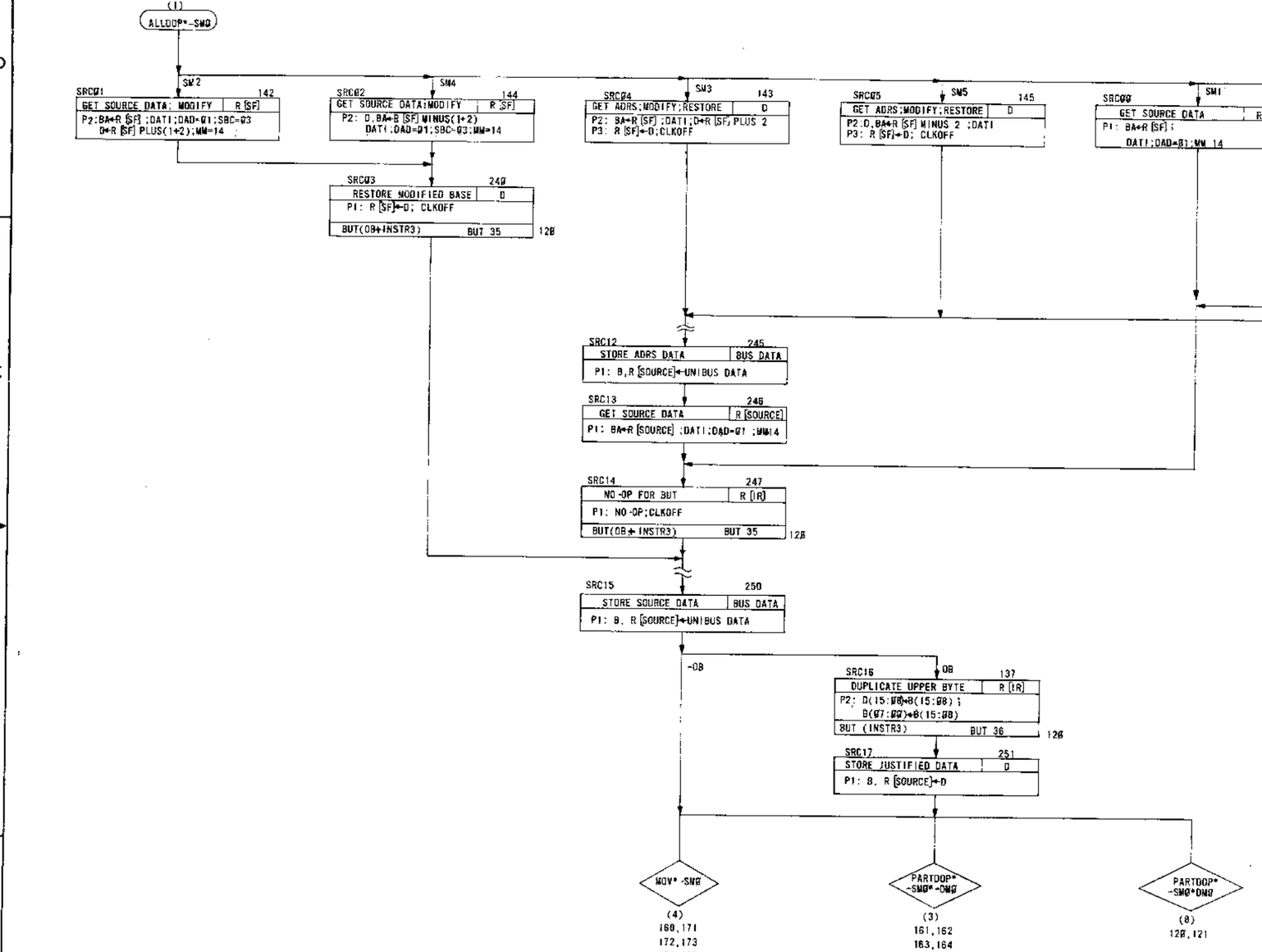
NEXT ASSY KDII-A-BD REV A
SYST CODE D[redacted]



REVISIONS				
CHR	CHANGE NO		REV	
	KD11A-00005		A	
	KD11A-00008		B	

O'LOUGHLIN 7-15-73
SOFIO 7-27-73

FIRST USED ON OPTION/MODEL: PDP11	QTY	DESCRIPTION / PARTS LIST	PART NO / ITEM NO
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES: DECIMALS XXX ± .005, XX ± .02, X ± .1; ANGLES ±0° 30'	DRN	DATE 9-15-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D	DATE 9/25/72	
	ENG	DATE 9/25/72	TITLE: FLOW DIAGRAM (FETCH)
	PROJ ENG	DATE 9/25/72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD	DATE 9/26/72	
MATERIAL	NEXT HIGHER ASSY		(1)
FINISH	B-D-KD11-A	SIZE D / CODE FD / NUMBER KD11-A-FD / REV E	
	SCALE		
	SHEET 1 OF 12	DIST	



NOTES:

1. BUT DEFINITIONS:

   BUT (08+INSTR 3) IS BUT (ODD BYTE+INSTR 3) WHERE AN ODD BYTE INSTANCE IS SERVICED BEFORE A SPECIFIC INSTRUCTION SITUATION. IF NO ODD BYTE EXISTS THE IR ENCODED AS BUBC (BUT 35) ON K3-7 IS SERVICED.
   BUT (INSTR 3) IS THE DIRECT BRANCH SERVICING THE IR, BUBC (BUT 35) ON K3-7, AFTER JUSTIFYING ODD BYTE DATA.

2. R[SF] INDICATES THE SOURCE REGISTER SELECTED BY THE IR.

REVISIONS	REV	CHK
CHANGE NO		

FIRST USED ON OPTION/MODEL: PDP11	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. S.R. Smith — DATE 7-15-72
CHKD. — DATE 7/25/72
ENG. — DATE 7/25/72
PROJ. ENG. — DATE 7/27/72
MGR. — DATE 9/20/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (SOURCE) (2)

NEXT HIGHER ASSY.: B-KD11-A

SIZE	CODE	NUMBER	REV.
D	FD	KD11-A-FD	B

SCALE — SHEET 3 OF 13 — DIST

B KD11-A-FD

(1) (PARTDOF*SMD+ALLSOP)*-DMD

(2) PARTDOP*-SMD*-DMD

DST01 DM2 162
GET DEST DATA;MODIFY | R [DF]
P2: BA←R [DF] ;DATIP ;DAD=01
D←R [DF] PLUS(1+2);SBC=03;MM=01

DST02 DM4 164
GET DEST DATA;MODIFY | R [DF]
P2: D,BA←R [DF] MINUS(1+2)
DATIP;DAD=01;SBC=03;MM=01

DST03 269
RESTORE MODIFIED BASE | D
P1: R [DF]←D;CLKOFF
BUT(OB+INSTR 4) BUT 33 220

DST04 DM3 163
GET ADRS;MODIFY;RESTORE | D
P2:BA←R [DF];DATI;D←R [DF] PLUS 2
P3:R [DF]←D;CLKOFF

DST05 DM5 165
GET ADRS;MODIFY;RESTORE | D
P2: D,BA←R [DF] MINUS 2;DATI
P3: R [DF]←D;CLKOFF

DST06 DM(6+7)*-SMD 167
GET INDEX DATA;MODIFY | D
P2: BA←PC;DATI;D←R [PC] PLUS 2
P3: R [PC]←D;CLKOFF
BUT(IR03) BUT 17 262

DST07 DM(6+7)*SMD 166
OVERLAP;MODIFY R [PC] | D
P2: D←R [PC] PLUS 2
P3: R [PC]←D; CLKOFF
BUT(IR03) BUT 17 262

DST08 DM1 161
GET DEST DATA | R [DF]
P1: BA←R [DF] ,DATIP;
DAD=01,MM=01

DST09 261
STORE INDEX DATA | BUS DATA
P1: B, R [DEST]←UNIBUS DATA

-IR03 IR03

DST10 262
GET INDEXED DEST DATA | R [DF]
P2: BA←R [DF] PLUS 8: DATIP;
DAD=01;MM=01

DST11 263
GET INDEXED ADRS | R [DF]
P2: BA←R [DF] PLUS 8;DATI;CLKOFF

DST12 264
STORE ADRS DATA | BUS DATA
P1: B, R [DEST]←UNIBUS DATA

DST13 265
GET DEST DATA | R [DEST]
P1: BA←R [DEST] , DATIP;DAD=01;MM=01

DST14 266
NO-OP FOR BUT | R [IR]
P1: NO-OP;CLKOFF
BUT(OB+INSTR4) BUT 33 220

DST15 267
STORE DEST DATA | BUS DATA
P1:B,R [DEST]←UNIBUS DATA

-OB

DST16 OB 237
DUPLICATE UPPER BYTE | R [IR]
P2: D(15:08)←B(15:08);
D(07:00)←B(15:08)
BUT(INSTR4) BUT 34 220

DST17 270
STORE JUSTIFIED DATA | D
P1: B,R [DEST]←D

PARTDOP *-DMD (8) 224,225 226,227 230,231

(SOPMORE+SWAB)*-DMD (9) 220,221 222,223 236

SXT*-DMD (8) 234

ROTSHF(R) *-DMD (9) 232,233

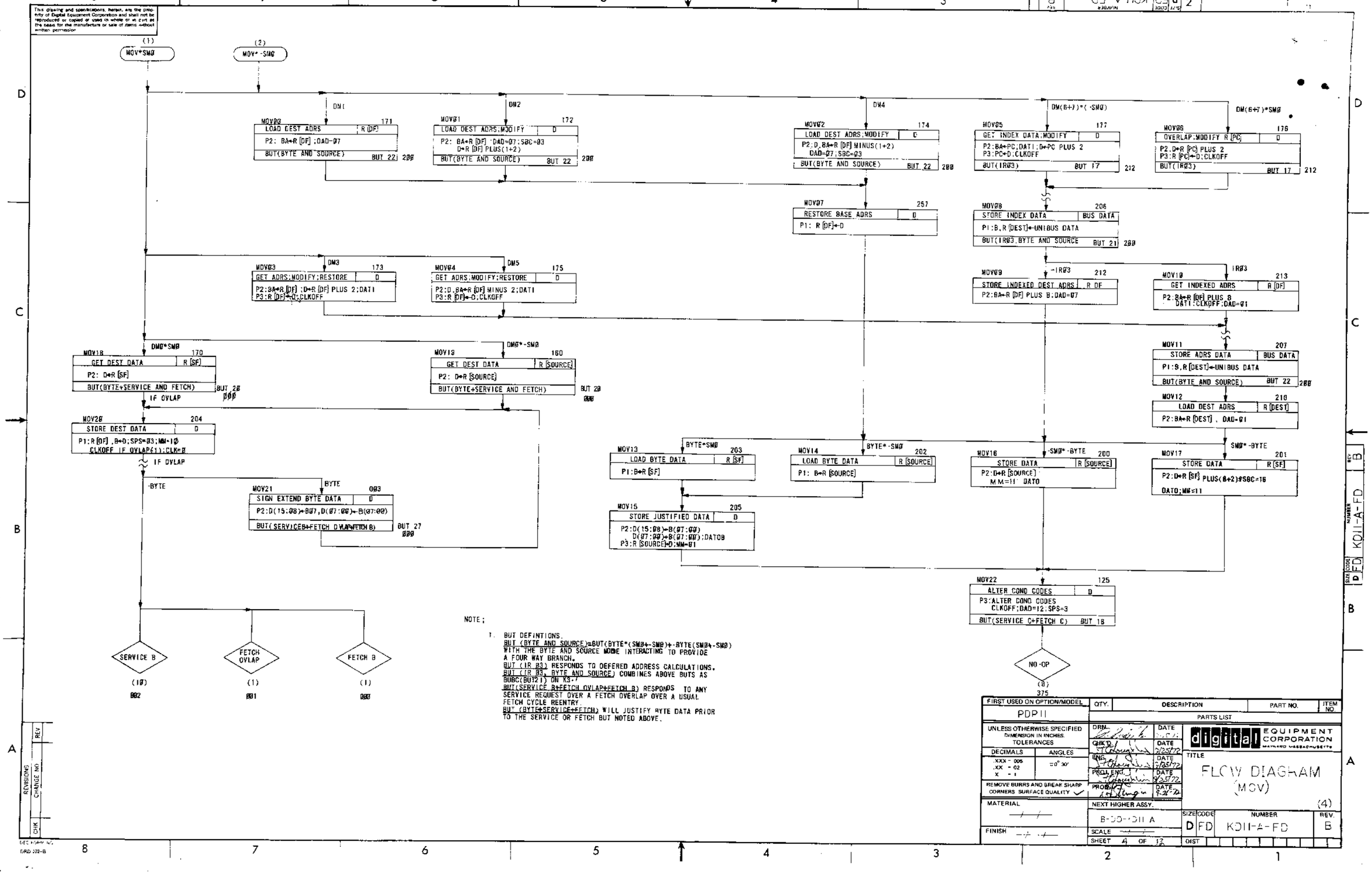
NOTES:

1. BUT DEFINITIONS:
   BUT (OB+INSTR 4) IS BUT (ODD BYTE+INSTR 4)
   WHERE AN ODD BYTE INSTANCE IS SERVICED
   BEFORE A SPECIFIC INSTRUCTION SITUATION.
   IF NO ODD BYTE EXISTS THE IR ENCODED
   AS BUBC (BUT 33) ON K3-7 IS SERVICED.
   BUT (IR 03) RESPONDS TO DEFERED ADDRESS CALCULATIONS.
   BUT (INSTR 4) IS THE DIRECT BRANCH SERVICING
   THE IR ENCODED AS BUBC (BUT 34) ON K3-7.

2. R[DF] INDICATES THE DEST REGISTER SELECTED
   BY THE IR.

REVISIONS | REV. | CHANGE NO. | CHK

FIRST USED ON OPTION/MODEL: PDP11	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.	DATE 9.15.72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
	CHK'D	DATE 9/25/72	
	ENG	DATE 9/25/72	TITLE: FLOW DIAGRAM (DFST)
	PROJ. ENGR	DATE 9/25/72	
	PROD. ENGR	DATE 9-26-72	
MATERIAL: —	NEXT HIGHER ASSY.: KD11-A		SIZE D; CODE FD; NUMBER KD11-A-FD; REV. -
FINISH: —	SCALE: —		
	SHEET 5 OF 12		DIST.



NOTE;

1. BUT DEFINTIONS.
   BUT (BYTE AND SOURCE)=BUT(BYTE*(SM@+-SM@)+-BYTE(SM@+-SM@) WITH THE BYTE AND SOURCE MODE INTERACTING TO PROVIDE A FOUR WAY BRANCH.
   BUT (IR @3) RESPONDS TO DEFERED ADDRESS CALCULATIONS.
   BUT (IR @3, BYTE AND SOURCE) COMBINES ABOVE BUTS AS BUBC(BUT21) ON KB-7
   BUT(SERVICE B+FETCH OVLAP+FETCH B) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH OVERLAP OVER A USUAL FETCH CYCLE REENTRY.
   BUT (BYTE+SERVICE+FETCH) WILL JUSTIFY BYTE DATA PRIOR TO THE SERVICE OR FETCH BUT NOTED ABOVE.

REVISIONS	REV	CHANGE NO	CHK
	B		

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11	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 2/25/72
CHK'D		DATE 2/25/72
ENG		DATE 2/25/72
PROJ ENG		DATE 2/25/72
PROJ		DATE 2-25-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (MOV) (4)

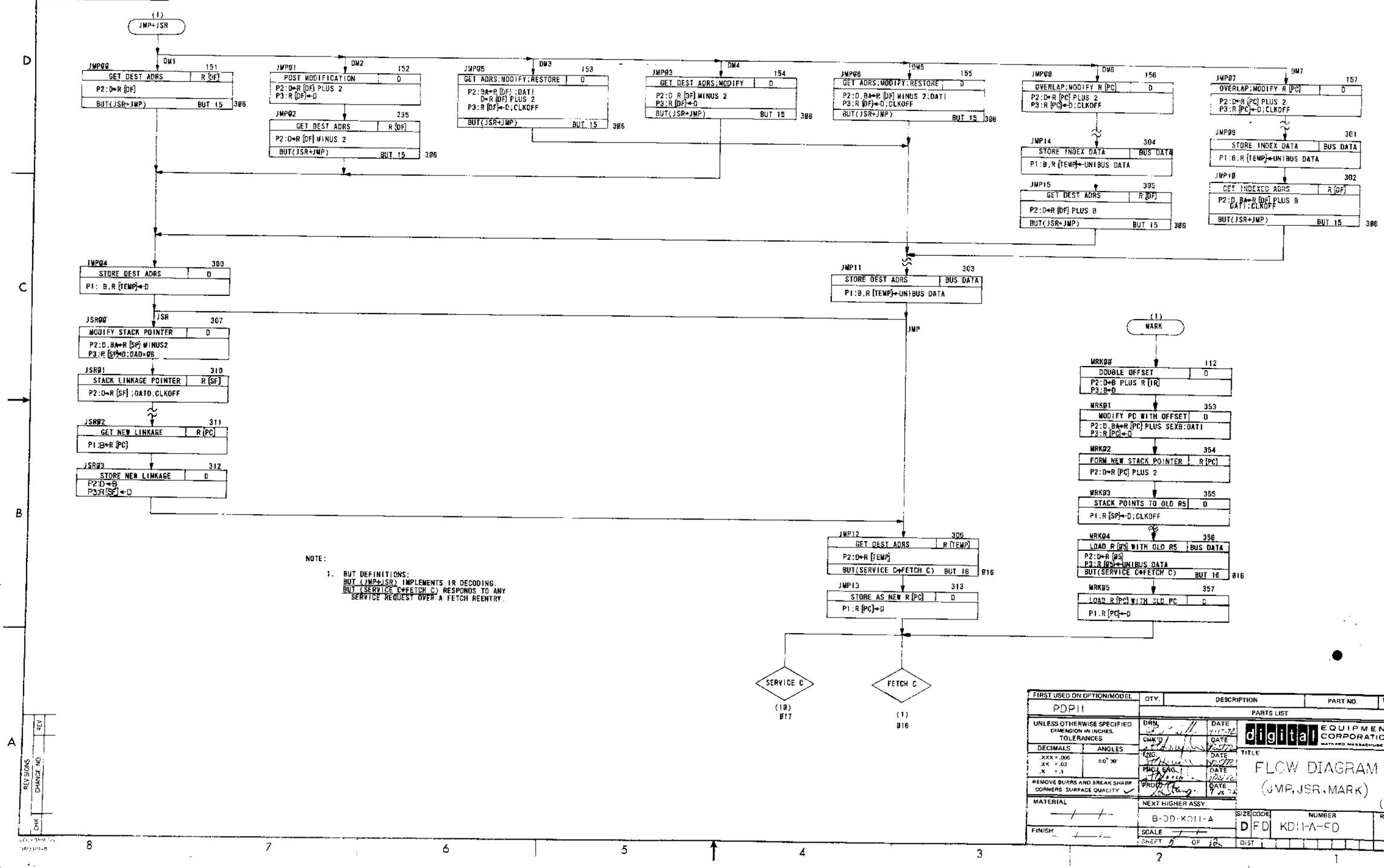
NEXT HIGHER ASSY. B-BD-KD11 A

SCALE —

SIZE D | CODE FD | NUMBER KD11-A-FD | REV B

SHEET 4 OF 12 | DIST

DEC 10-MM-NC DRD 202-B



NOTE:

1. BUT DEFINITIONS:
   BUT (JMP+JSR) IMPLEMENTS IR DECODING.
   BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11		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 11-7-72
CHK'D DATE
ENG. DATE
PROJ. ENG. DATE
PROJ. DATE 7-26-73

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

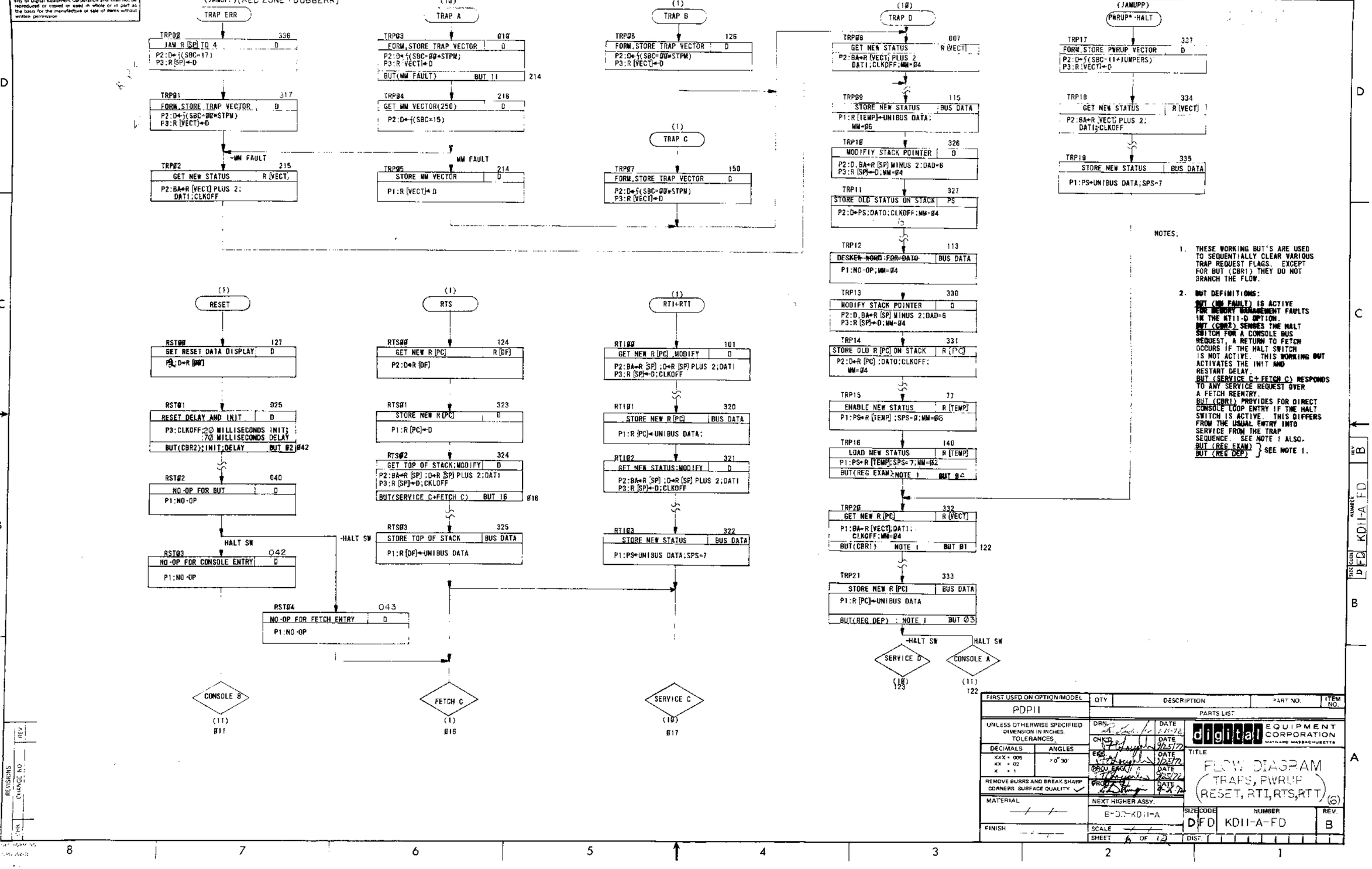
TITLE: FLOW DIAGRAM (JMP, JSR, MARK) (5)

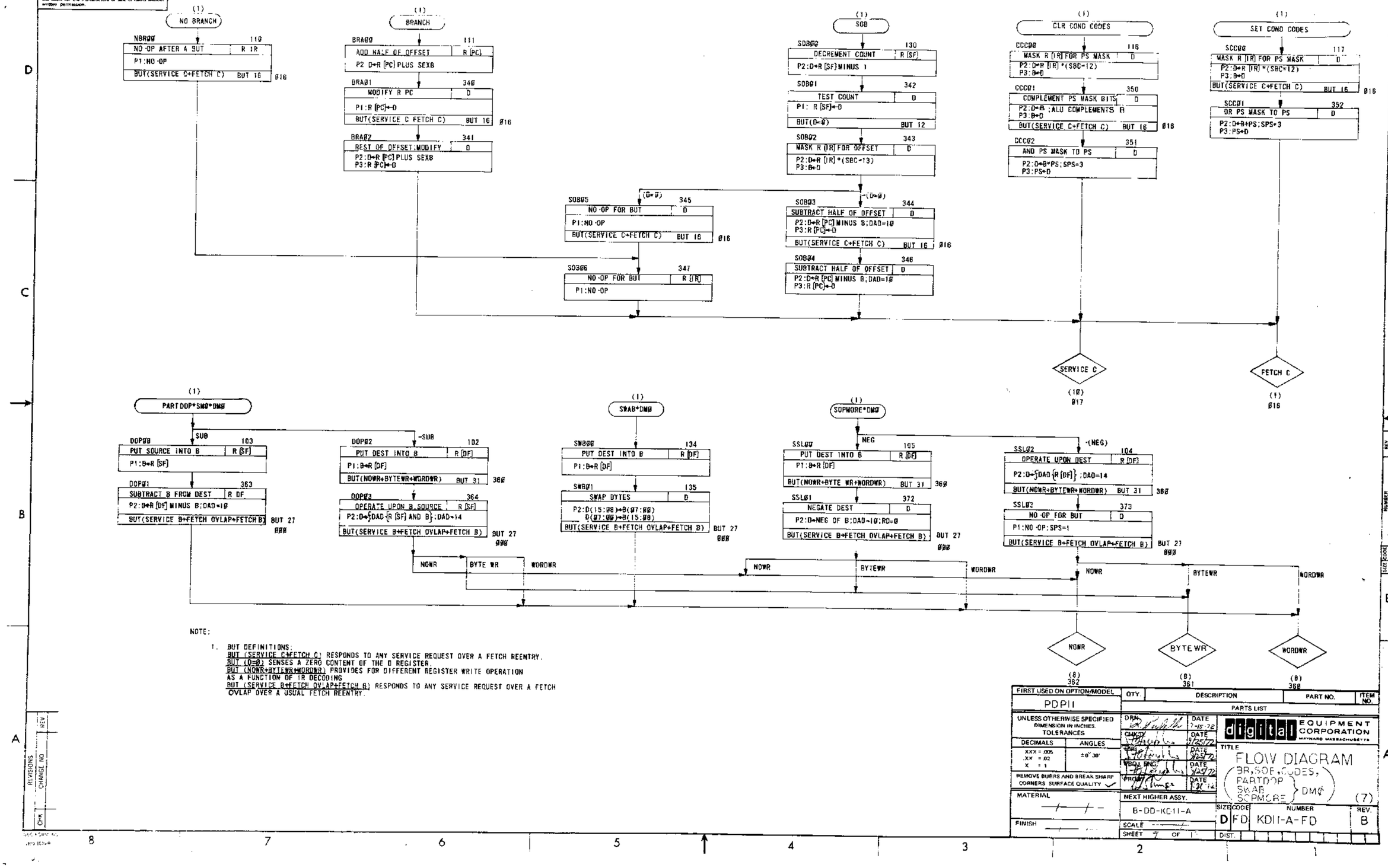
NEXT HIGHER ASSY.: B-DD-KD11-A
SCALE
SHEET 5 OF 10

SIZE	CODE	NUMBER	REV
D	FD	KD11-A-FD	6

DIST

REVISIONS | REV | CHANGE NO. | CHK'





NOTE:

1. BUT DEFINITIONS:
   BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.
   BUT (D=Ø) SENSES A ZERO CONTENT OF THE D REGISTER.
   BUT (NOWR+BYTEWR+WORDWR) PROVIDES FOR DIFFERENT REGISTER WRITE OPERATION AS A FUNCTION OF IR DECODING
   BUT (SERVICE B+FETCH OVLAP+FETCH B) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH OVLAP OVER A USUAL FETCH REENTRY.

REVISIONS	CHANGE NO	CHK	REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11		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		7-15-72
CHK'D		9/25/72
ENG		9/25/72
PROJ. ENG.		9/29/72
PROJ		9/29/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (BR, SOB, CODES, PARTDOP, SWAB, SOPMORE } DMØ) (7)

NEXT HIGHER ASSY. B-DD-KC11-A
SCALE —
SHEET 7 OF 17

SIZE	CODE	NUMBER	REV.
D	FD	KD11-A-FD	B

DIST.

(3) PARTDOP* -DW0

-08

SUB

SW0

DOP04 228 — PUT SOURCE INTO B | R [SF]
P1:B←R [SF]

-SW0

DOP05 227 — PUT SOURCE INTO B | R [SOURCE]
P1:B←R [SOURCE]

DOP06 365 — SUBTRACT B FROM DEST;STORE | R [DEST]
P2:D←R [DEST] MINUS B;DAD=10
DATO;MM=01

-SUB

(SW0+XOR)

DOP07 224 — OPERATE UPON B,SOURCE;STORE | D
P2:D←∫DAD{R [SF] AND B}
(DATO+DATOB);DAD=17;MM=01

-SW0

DOP08 225 — OPERATE UPON B,SOURCE;STORE | R [SOURCE]
P2:D ∫DAD{R [SOURCE] AND B}
(DATO+DATOB);DAD=17;MM=01

08

SW0

DOP09 230 — OPERATE UPON B,SOURCE | R (SF)
P2:D←∫DAD{R [SF] AND B}
DAD=14

-SW0

DOP10 231 — OPERATE UPON B,SOURCE | R [SOURCE]
P2:D←∫DAD{R [SOURCE] AND B}
DAD=14

DOP22 254 — ALTER CODE PS(C) | D
P1:B←D;SPS=1

DOP21 074 — ALTER CODES | D
P1:B←D;SPS=3

DOP11 366 — DUPLICATE LOWER BYTE;STORE | D
P2:D(15:08)←B(07:00);DAD=13
D(07:00)←B(07:00);
DATOB;CLKOFF;MM=01
BUT(SERVICE C+FETCH C BUT 16 016

(2) PARTDOP*-SW0*DW0

SUB

DOP13 121 — PUT SOURCE INTO B | R [SOURCE]
P1:B←R [SOURCE]

DOP14 370 — SUBTRACT B FROM DEST | R [DF]
P2:D←R [DF] MINUS B
BUT(SERVICE B+FETCH OVLAP+FETCHB) BUT 27 000

-SUB

DOP15 120 — PUT DEST INTO B | R [DF]
P1:B←R [DF]
BUT(NOWR+BYTEWR+WORDWR) BUT 31 360

DOP16 371 — OPERATE UPON B, SOURCE | R [SOURCE]
P2:D←∫DAD{R [SOURCE] AND B};DAD=14
BUT(SERVICE B+FETCH OVLAP+FETCH B) BUT 27 000

(7) NOWR

(7) BYTEWR

(1) SXT*DW0

SXT00 132 — EXTEND SIGN | D
P2:D←ALU PS(N) ;DAD=14
BUT(SERVICE B+FETCH OVLAP+FETCH B BUT 27 000

(7) WORDWR

(3) SXT*-DW0

SXT01 234 — EXTEND SIGN;STORE | D
P2:D←ALU PS(N) DAD=14;
DATO;MM=01

(9) CODES

(4,9) NO-OP

DOP12 367 — ALTER CODES,FINISH STORE | D
P1:ALTER COND CODES
CLKOFF;DAD=12;SPS=3
BUT(SERVICE C+FETCH C) BUT 16 016

NOWR | WORDWR | BYTEWR

DOP17 362 — ALTER CODES,NO-STORE | D
P1.SPS=3;CLKOFF IF OVLAP(1);CLK=0

DOP18 361 — ALTER CODES,BYTE STORE | D
P1:R [DF]←D(BYTE);SPS=3
CLKOFF IF OVLAP(1);CLK=0

DOP19 360 — ALTER CODES;WORD STORE | D
P1:R [DF]←D(WORD);SPS=3
CLKOFF IF OVLAP(1);CLK=0

DOP20 375 — NO-OP FOR BUT | D
P1:NO-OP

SERVICE B (10) 002

FETCH OVLAP (1) 001

FETCH B (1) 000

SERVICE C (10) 017

FETCH C (1) 016

NOTE:

1. BUT DEFINITIONS:
BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.
BUT (SERVICE B+FETCH OVLAP+FETCH B) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH OVLAP OVER A USUAL FETCH REENTRY.
BUT (NOWR+BYTEWR+WORDWR) PROVIDES FOR DIFFERENT REGISTER WRITE OPERATION AS A FUNCTION OF IR DECODING.

REVISIONS		
SYM	CHANGE NO	REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11		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 4-15-72
CHK'D — DATE 5/25/72
ENG. — DATE 5/25/72
PROJ ENG. — DATE 5/25/72
PROD — DATE 5-25-72

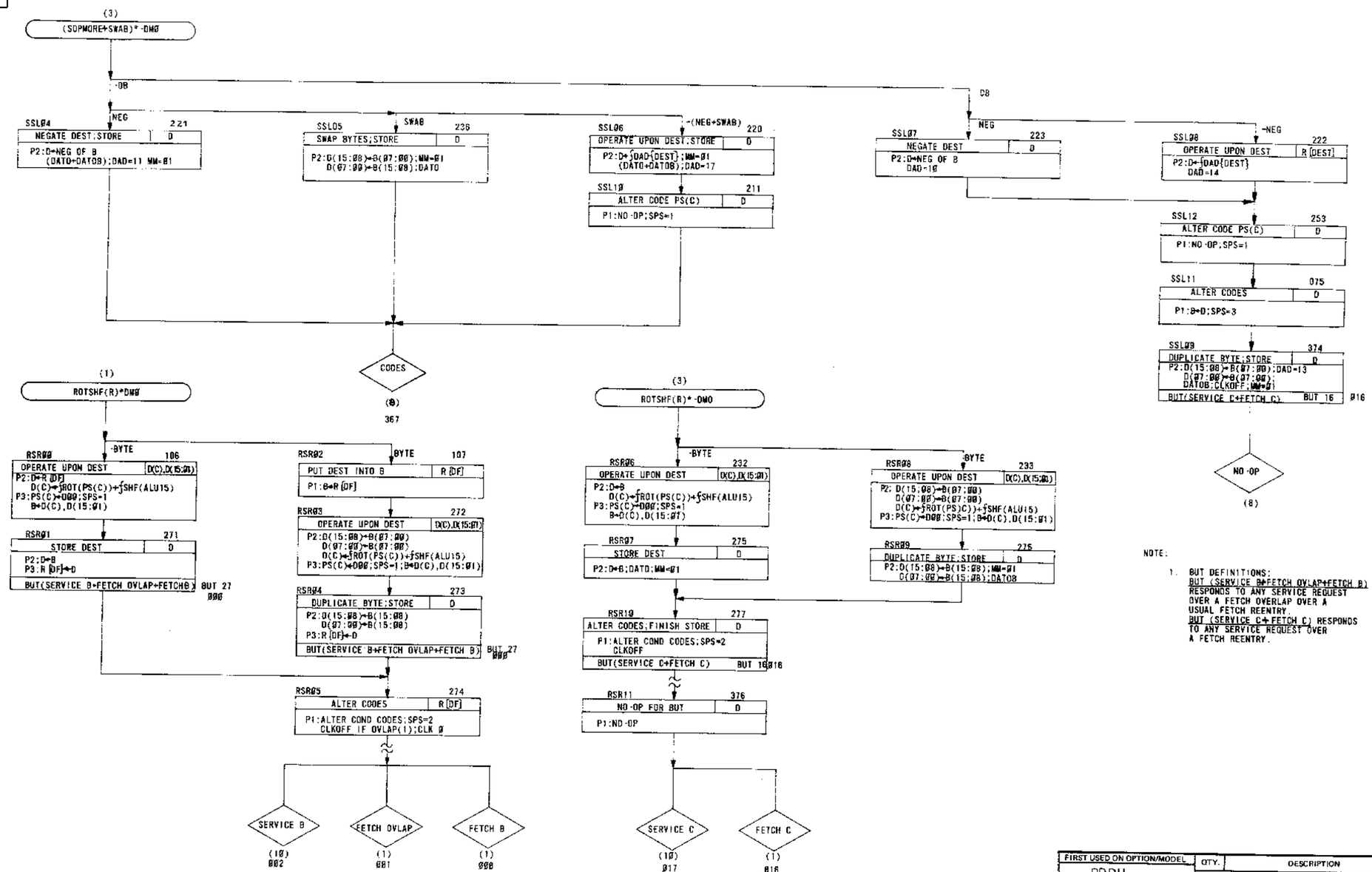
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (PARTDOP,SX*) (8)

NEXT HIGHER ASSY. B-DD-KDII-A
SCALE —
SHEET 8 OF 12

SIZE D | CODE FD | NUMBER KDII-A-FD | REV B | DIST.

DEC FORM NO. DPD 002-B



NOTE:

1. BUT DEFINITIONS:
   BUT (SERVICE B+FETCH OVLAP+FETCH B) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH OVERLAP OVER A USUAL FETCH REENTRY.
   BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.

REVISIONS			
REV	CHANGE NO	CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11		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

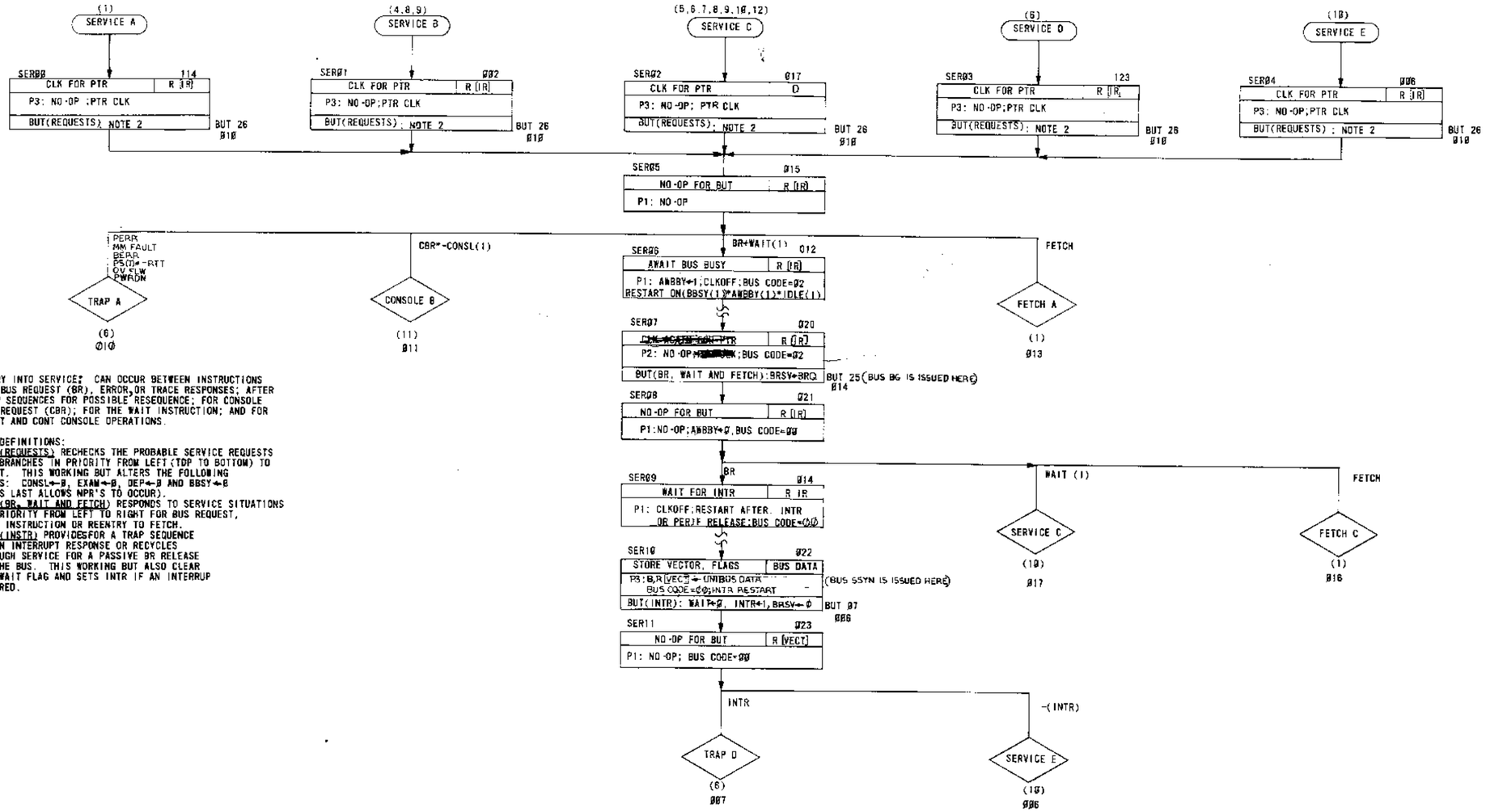
DRN		DATE 9/15/72
CHKD		DATE 9/25/72
ENG		DATE 9/25/72
ENG		DATE 9/25/72
PROJ ENG		DATE 9/25/72
PROJ MGR		DATE 10/2/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (SOPMORE+SWAB)*-DMO) (ROTSHF(R)) (9)

MATERIAL: — NEXT HIGHER ASSY: B-DD-KDII-A
FINISH: — SCALE: — SHEET 2 OF 2

SIZE D | CODE FD | NUMBER KDII-A-FD | REV. B



NOTES:

1. ENTRY INTO SERVICE: CAN OCCUR BETWEEN INSTRUCTIONS FOR BUS REQUEST (BR), ERROR, OR TRACE RESPONSES; AFTER TRAP SEQUENCES FOR POSSIBLE RESEQUENCE; FOR CONSOLE BUS REQUEST (CBR); FOR THE WAIT INSTRUCTION; AND FOR START AND CONT CONSOLE OPERATIONS.

2. BUT DEFINITIONS:
   BUT (REQUESTS) RECHECKS THE PROBABLE SERVICE REQUESTS AND BRANCHES IN PRIORITY FROM LEFT (TOP TO BOTTOM) TO RIGHT. THIS WORKING BUT ALTERS THE FOLLOWING FLAGS: CONSL←Ø, EXAM←Ø, DEP←Ø AND BBSY←Ø (THIS LAST ALLOWS NPR'S TO OCCUR).
   BUT (BR, WAIT AND FETCH) RESPONDS TO SERVICE SITUATIONS IN PRIORITY FROM LEFT TO RIGHT FOR BUS REQUEST, WAIT INSTRUCTION OR REENTRY TO FETCH.
   BUT (INSTR) PROVIDES FOR A TRAP SEQUENCE AS AN INTERRUPT RESPONSE OR RECYCLES THROUGH SERVICE FOR A PASSIVE BR RELEASE OF THE BUS. THIS WORKING BUT ALSO CLEAR THE WAIT FLAG AND SETS INTR IF AN INTERRUP OCCURED.

REVISIONS			
REV	CHANGE NO	CHK	

FIRST USED ON OPTION/MODEL: PDP11	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

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

DRN [illegible] DATE 9-15-72
CHK R. [illegible] DATE 9/25/72
ENG [illegible] DATE 9/25/72
PROJ ENG [illegible] DATE 9/25/72
PROJ [illegible] DATE 9/28/72

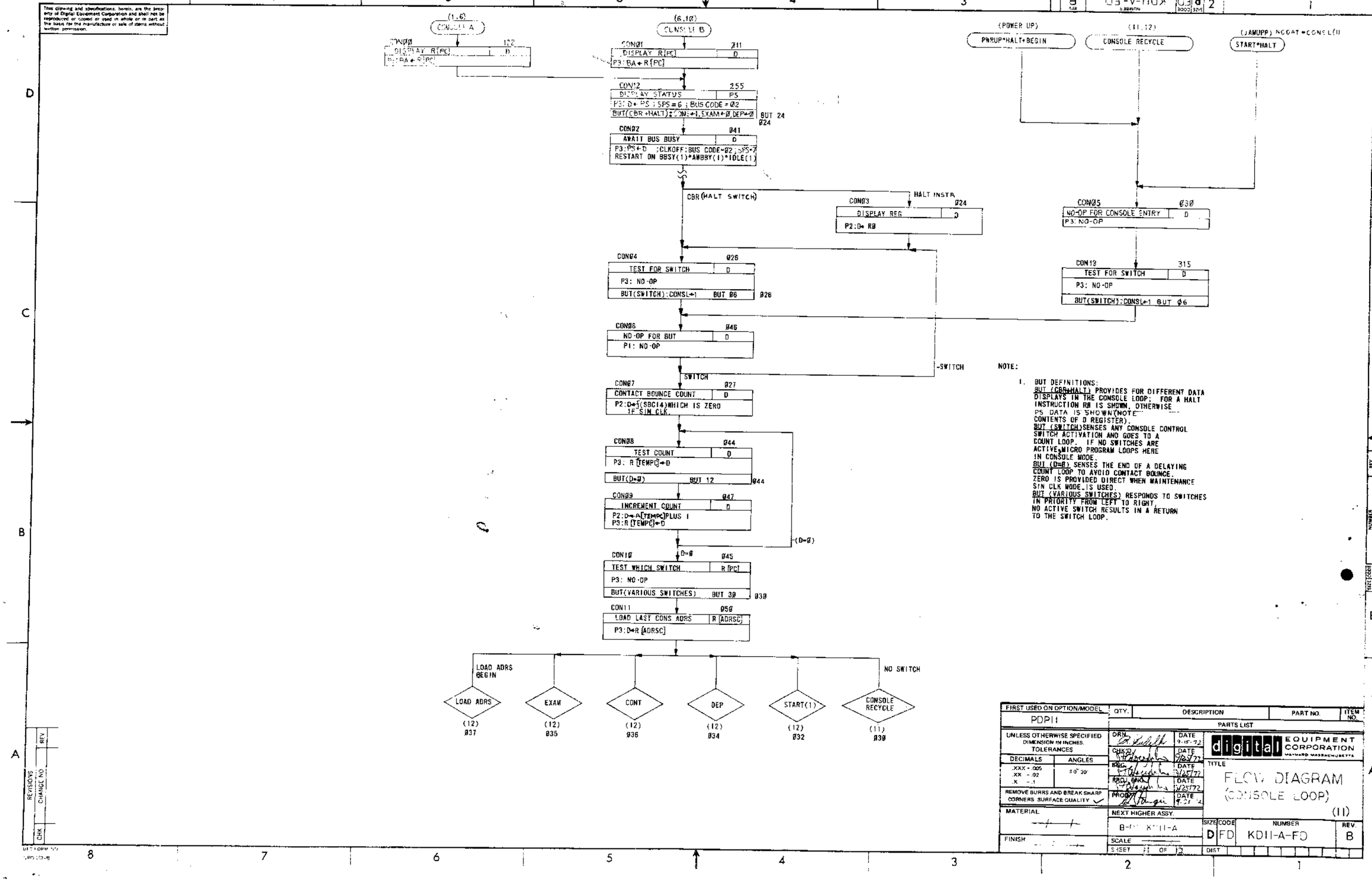
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (SERVICE) (10)

NEXT HIGHER ASSY: B-DD-KD11-A
SCALE —
SHEET 10 OF 12

SIZE	CODE	NUMBER	REV
D	FD	KD11-A-FD	B

DIST



NOTE:

1. BUT DEFINITIONS:
   BUT (CBR+HALT) PROVIDES FOR DIFFERENT DATA DISPLAYS IN THE CONSOLE LOOP; FOR A HALT INSTRUCTION RB IS SHOWN, OTHERWISE PS DATA IS SHOWN(NOTE CONTENTS OF D REGISTER).
   BUT (SWITCH)SENSES ANY CONSOLE CONTROL SWITCH ACTIVATION AND GOES TO A COUNT LOOP. IF NO SWITCHES ARE ACTIVE, MICRO PROGRAM LOOPS HERE IN CONSOLE MODE.
   BUT (D=0) SENSES THE END OF A DELAYING COUNT LOOP TO AVOID CONTACT BOUNCE. ZERO IS PROVIDED DIRECT WHEN MAINTENANCE SIN CLK MODE IS USED.
   BUT (VARIOUS SWITCHES) RESPONDS TO SWITCHES IN PRIORITY FROM LEFT TO RIGHT. NO ACTIVE SWITCH RESULTS IN A RETURN TO THE SWITCH LOOP.

REVISIONS			
REV	CHANGE NO	CHK	

FIRST USED ON OPTION/MODEL: PDP11	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

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

DRN		DATE 9-15-72
CHK'D		DATE 10/5/72
ENG		DATE 3/25/72
PROJ. ENG.		DATE 3/25/72
PROJ.		DATE 9-21-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

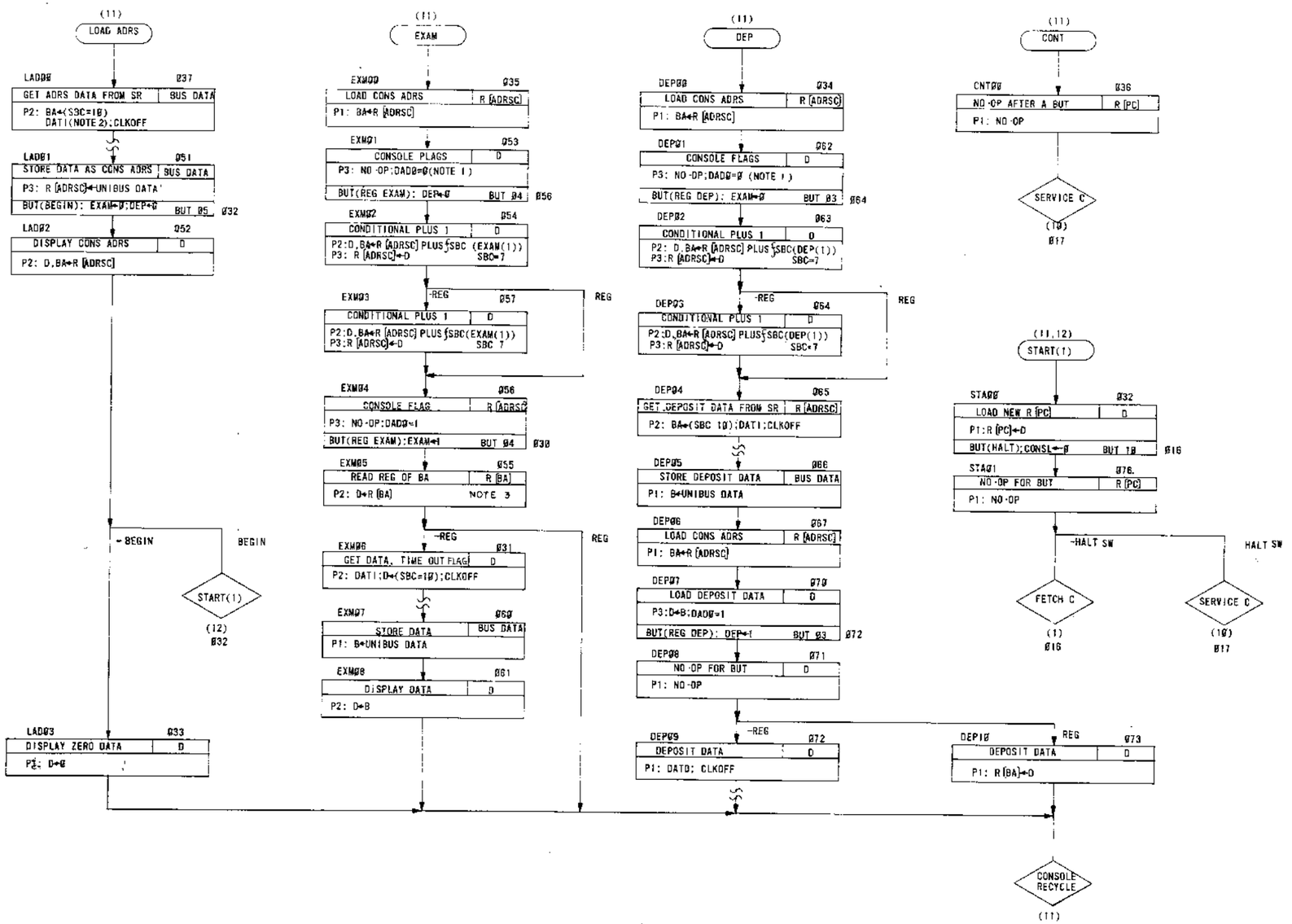
TITLE: FLOW DIAGRAM (CONSOLE LOOP) (11)

NEXT HIGHER ASSY.: B-(11-A-FD KDII-A
SCALE
SHEET 1 OF 12

SIZE	CODE	NUMBER	REV.
D	FD	KDII-A-FD	B

DIST

KDII-A-FD B
SIZE CODE D FD NUMBER KDII-A-FD REV B



NOTES:

1. BUT DEFINITIONS:
   BUT (BEGIN) IS A WORKING BUT THAT CLEARS THE EXAM AND DEP FLAGS AND REACTS TO A BEGIN SWITCH BY SEQUENCING A START OPERATION.
   BUT (REG EXAM) RESPONDS TO REG CONSOLE OPERATION FOR PROPER INCREMENTATION AND DATA DISPLAY. THIS WORKING BUT ALSO ORDERS INCREMENTING FLAGS.
   BUT (REG DEP) RESPONDS TO REG CONSOLE OPERATION FOR PROPER INCREMENTATION AND DATA STORAGE. THIS WORKING BUT ALSO ORDERS INCREMENTING FLAGS.
   BUT (HALT) SENSES THE HALT SWITCH AND EITHER GOES TO FETCH (ENABLE POSITION) OR THROUGH SERVICE TO CONSOLE (HALT POSITION).
2. PROCESSOR RESPONSES TO SR ADDRESS (PROVIDED BY SBC=1Ø) UNLESS BEGIN SWITCH INPUT IS ACTIVE.
3. REGISTER SELECTION AS A FUNCTION OF BA[Ø3=ØØ].

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11	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 1-15-72
CHK'D		DATE 1/25/72
ENG		DATE 1/25/72
PROJ ENG		DATE 1/25/72
PROJ		DATE 1-25-72

NEXT HIGHER ASSY: PDP-KDII-A
SCALE: 12 = 12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (CONSOLE SWITCHES)

SIZE D | CODE | NUMBER: DFD KDII-A-FD | REV: B
SIZE D | CODE | NUMBER: DFD KDII-A-FD | REV: 5

REVISIONS: REV. | CHANGE NO | CHK

DEC FORM NO 1080 1000-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

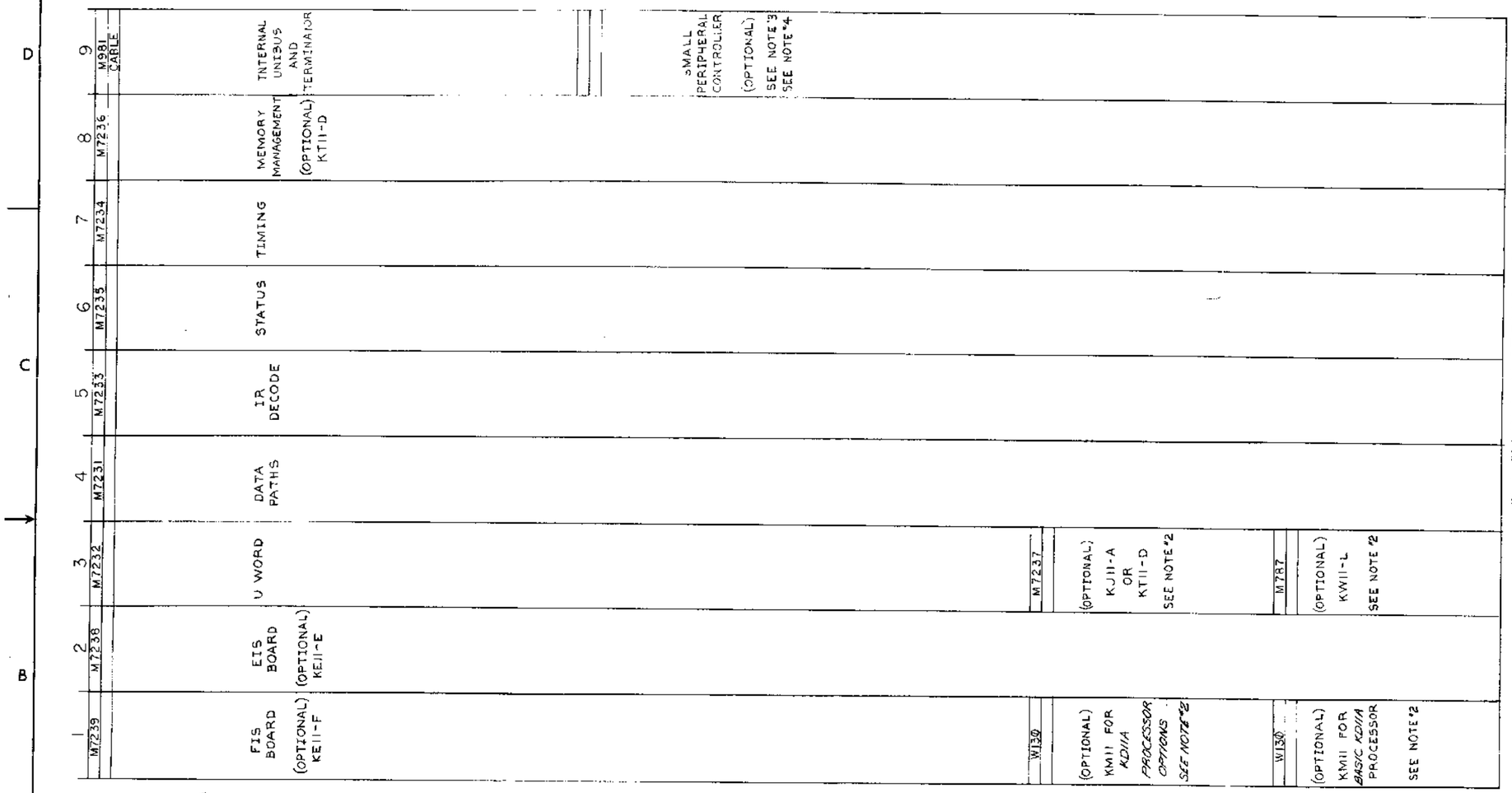
PARTS LIST

MADE BY R. PUDELKO	CHECKED J70 Loughlin	SECTION
DATE 9/15/72	DATE 9/27/72	
ENG J70 Loughlin	PROD [illegible]	ISSUED SECT.
DATE 9/27/72	DATE 9/[illegible]	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY VARIATION KD11-A
1	D-AD-7ØØ9ØØ9-Ø-Ø	WIRED ASSY (KD11-A)	1
2	D-CS-M7231-Ø-1	DATA PATHS	1
3	D-CS-M7232-Ø-1	U WORD	1
4	D-CS-M7233-Ø-1	IR DECODE	1
5	D-CS-M7234-Ø-1	TIMING	1
6	D-CS-M7235-Ø-1	STATUS	1
7	D-UA-M981-Ø-Ø	INTERNAL UNIBUS ASSY	1
8	D-MU-KD11-A-MU	MODULE UTILIZATION	REF
9	A-PL-KT11-D-Ø	MEMORY MANAGEMENT	REF
10	A-PL-KJ11-A-Ø	STACK LIMIT REGISTER	REF
11	D-UA-KE11-E-Ø	KE11-E ASSY	REF
12	D-PL-KE11-F-Ø	KE11-F ASSY	REF
13	A-PL-KW11-L-Ø	LINE FREQUENCY CLOCK	REF
14	A-PL-KM11-Ø-Ø	MAINTENANCE PANEL (W130, W131)	REF
15	A-SS-55Ø9Ø81-Ø-12	SILK SCREEN (KD11-A)	REF
16	A-SS-55Ø9Ø81-Ø-13	SILK SCREEN (KT11-D, KE11-E, F)	REF
17	A-PL-KY11-D-Ø	KY11-D CONSOLE	REF
18	C-CS-M93Ø-Ø-1	BUS TERMINATOR M93Ø	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
KD11-A PROCESSOR	11	A	PL	KD11-A-Ø		
	SHEET 1 OF 1	DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110



NOTES:

1. VIEW OF LOGIC PANEL IS FROM WIRING SIDE.
2. PREWIRED MODULE SLOTS FOR NOTED OPTIONS.
3. THE SMALL PERIPHERAL CONTROLLER SLOT (SLOT Ø9, SECTIONS C,D,E AND F) MAY CONTAIN A VARIETY OF PDP11 OPTIONS. THE OPTION USUALLY CONSIST OF A SINGLE QUAD MODULE BOARD (SECTION C,D,E AND F). IT MAY CONSIST OF A DOUBLE HEIGHT CONTROLLER BOARD (SECTIONS C AND D) WITH A MIØ5 ADDRESS SELECTOR MODULE (SECTION E) AND A M7821 INTERRUPT CONTROL MODULE (SECTION F).
4. IF NO OPTION IS PRESENT IN THE SMALL PERIPHERAL CONTROLLER SLOT, A G727 GRANT CONTINUITY MODULE MUST BE INSERTED INTO SECTION D.

REVISIONS	CHANGE NO	REV
CHK	KDIIA-00005	A
	O'LOUGHLIN 2-15-73	

FIRST USED ON OPTION / MODEL: PDP 11

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

		DATE
DRN.	D. Smith	1-5-72
CHK'D.		1-28-72
ENG.		2-27-72
PROJ. ENG.		2-27-72
PROD.		2-27-72

NEXT HIGHER ASSY: A-[illegible]-KDII-A-Ø
SCALE: NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION

SIZE	CODE	NUMBER	REV
D	MU	KDII-A-MU	A

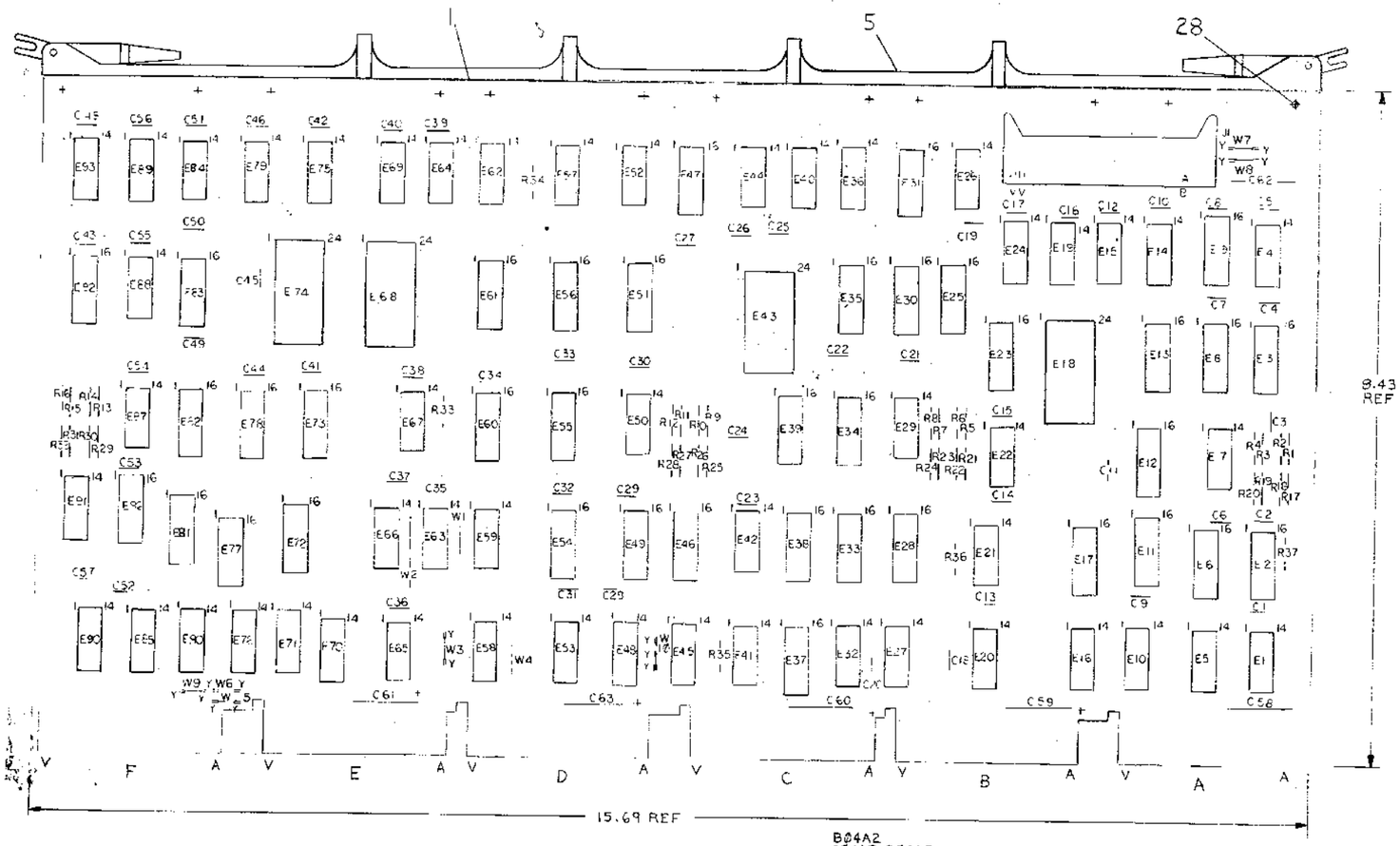
DIST.

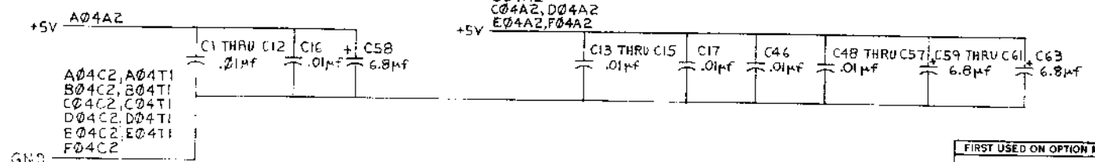
DEC FORM NO DRD 100

REV	NUMBER	SIZE	CODE
A	KDII-A-MU	D	MU

NOTES:

1. PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KDII-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
3. PROCESSOR SIGNAL PREFIX NOTATION (K##) FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
4. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.





DEC 74157	8	16
DEC 3101A	8	16
DEC 74174	8	16
DEC 74182	8	16
DEC 74181	12	24
DEC 74153	8	16
DEC 380	1	8
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
AR		INSULATED JUMPER	9009185	30
15		SPLIT LUG	9006735	29
12		EYELET	9006732	28
4	E6, E28, E49, E81	IC DEC 74157	1910655	27
4	E3, E25, E47, E92	IC DEC 3101A	1910653	26
12	E2, E8, E9, E30, E31, E33, E46 E54, E56, E73, E77, E86	IC DEC 74174	1910652	25
1	E39	IC DEC 74182	1910019	24
4	E18, E43, E68, E74	IC DEC 74181	1909982	23
17	E11, E12, E13, E17, E23, E34 E35, E37, E38, E51, E55, E60 E61, E72, E78, E82, E83	IC DEC 74153	1909937	22
4	E7, E29, E50, E87	IC DEC 74H04	1909931	21
9	E16, E24, E53, E58, E59 E63, E67, E70, E75	IC DEC 8815	1909713	20
3	E41, E69, E79	IC DEC 8242	1909712	19
13	E1, E10, E15, E19, E32, E40, E44 E45, E57, E64, E88, E89, E91	IC DEC 8881	1909705	18
1	E21	IC DEC 74H74	1909667	17
8	E4, E14, E26, E36, E52 E62, E84, E93	IC DEC 380	1909485	16
1	E5	IC DEC 74H11	1909267	15
1	E71	IC DEC 74H60	1909064	14
4	E80, E85, E90, E76	IC DEC 74H53	1909062	13
1	E20	IC DEC 74H30	1909059	12
2	E27, E66	IC DEC 74H10	1909057	11
2	E22, E65	IC DEC 74H00	1909056	10
2	E42, E48	IC DEC 74H20	1905635	9
16	R17 THRU R32	RES 620 1/4W ±5%	1303178	8
16	R1 THRU R16	RES 300 1/4W ±5%	1301425	7
5	R33, R34, R35, R36, R37	RES 1K 1/4W ±5%	1300365	6
1		HANDLE MODULE	12107II-02	5
1	J1	CONN 40 PIN	1209941	4
6	C58 THRU C63	CAP 6.8μf 35V ±10% TANT	1005306	3
56	C1 THRU C46, C48 THRU C57	CAP .01μf 100V ±20% DISC	1001610	2
1		ETCHED CIRCUIT BOARD	5009980	1

PARTS LIST

ETCH BOARD REV D

FIRST USED ON OPTION MODEL: PDP 11

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK
A	ORIGINATED M7231-00001	J.J. LOUGHLIN 9/27/72
B	M7231-00001	J.J. LOUGHLIN 9/27/72
C	M7231-00002	J.J. LOUGHLIN 2/19/73

REVISIONS

DRN J.J. LOUGHLIN 3-22-73
CHKD T. OSMAN 7-6-72
ENG [illegible] DATE 7/31/72
PROJ. ENG [illegible] DATE 7/31/72
PROJ [illegible] DATE 8-1-72
NEXT HIGHER ASSY KDII-A
SCALE —
SHEET 1 OF 9

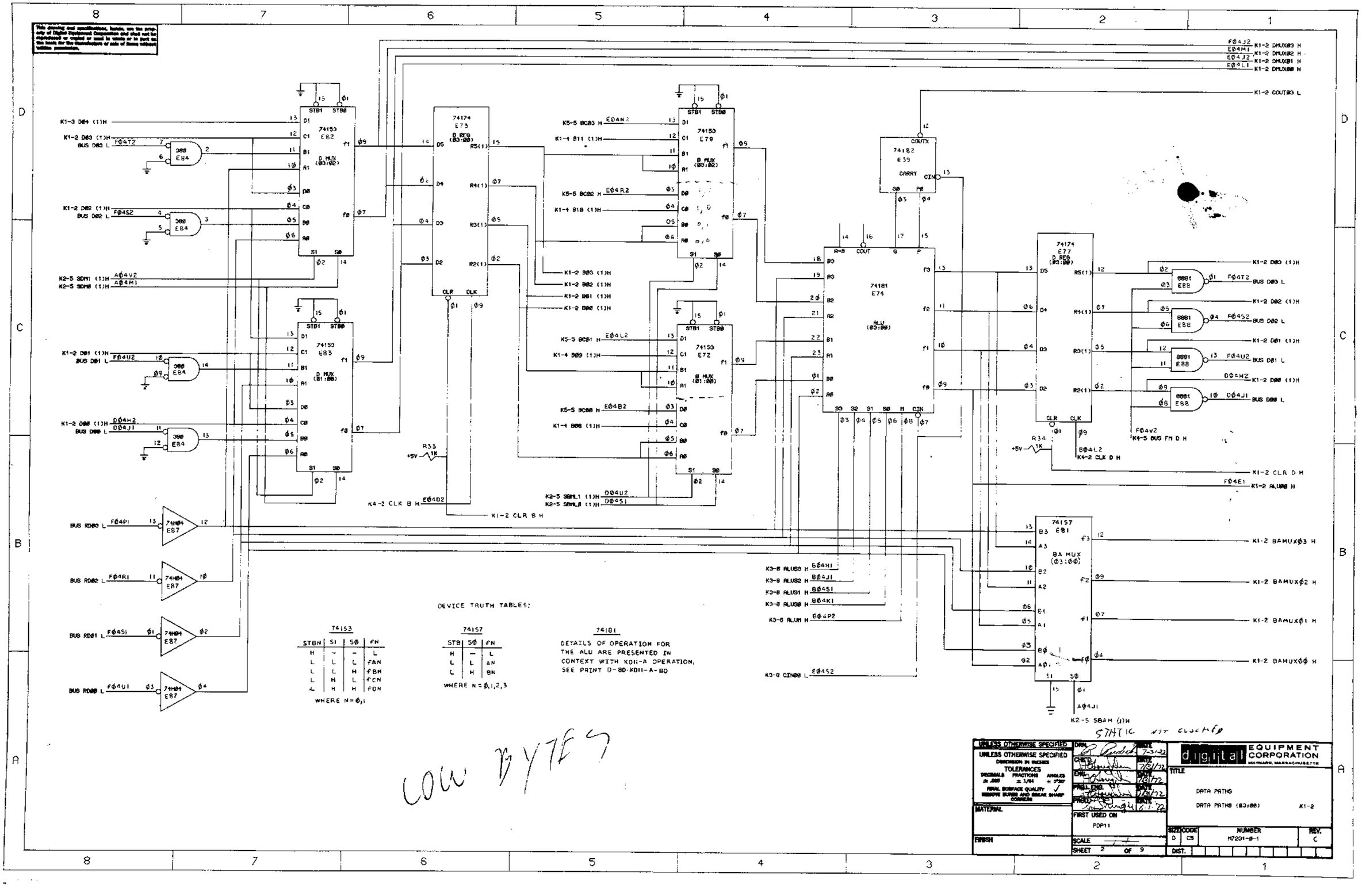
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DATA PATHS KI-1

SIZE D CODE CS NUMBER M7231-0-1 REV C
DIST.

REF CODE D C M7231-0-1

DRAWING 40-522 16699
DEC FORM NO. FRD 138A



DEVICE TRUTH TABLES:

74153

STBN	S1	S0	FN
H	-	-	L
L	L	L	FAN
L	L	H	FBN
L	H	L	FCN
L	H	H	FDN

WHERE N = 0,1

74157

STB	S0	FN
H	-	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

74181

DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH KDII-A OPERATION, SEE PRINT D-BD-KDII-A-BD

STATIC NOT CLOCKED

LOW BYTES

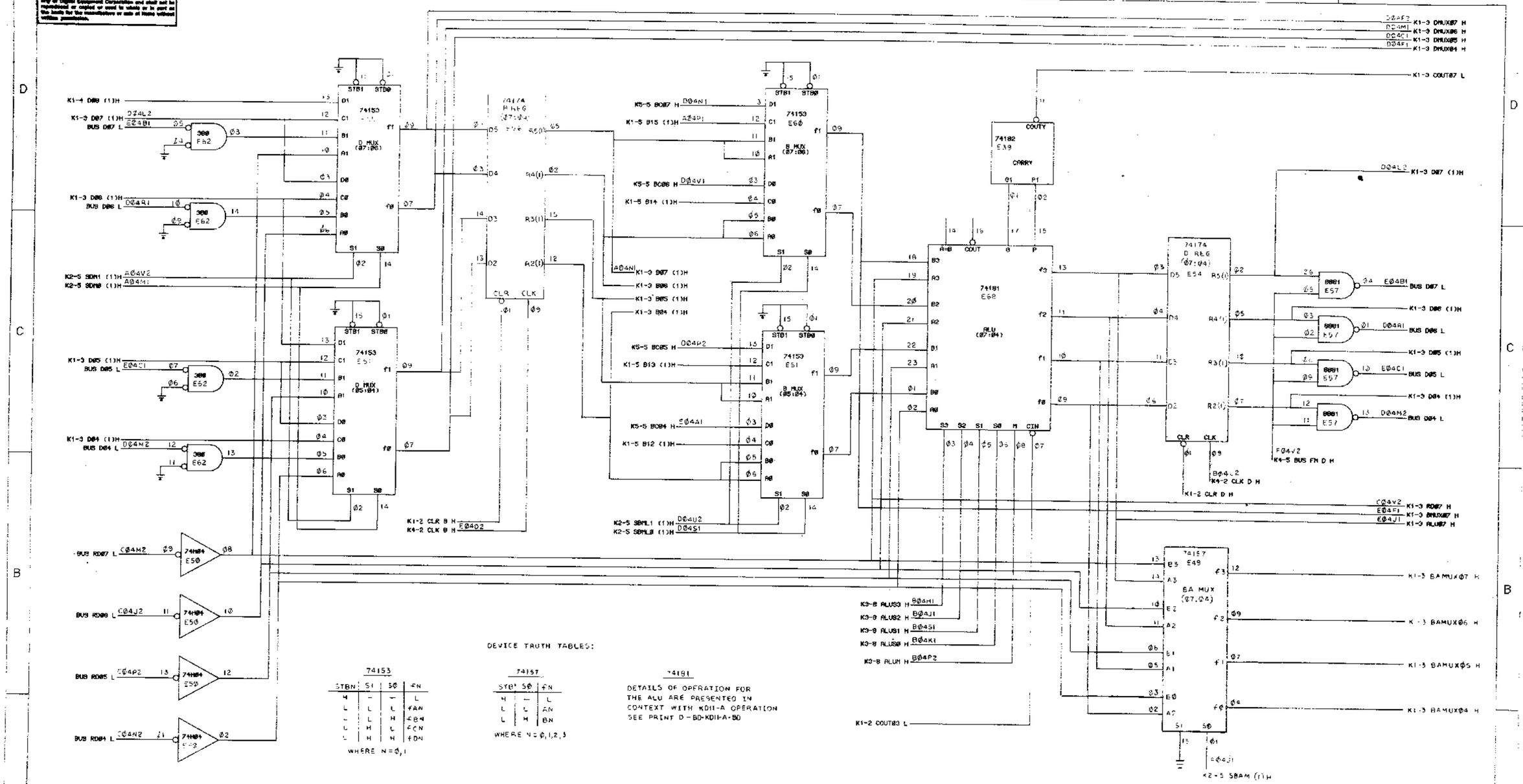
UNLESS OTHERWISE SPECIFIED	DRN. R. Rudolph	DATE 7-31-72
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D.	DATE 7/31/72
	ENG.	DATE 7/31/72
	PROJ. ENG.	DATE 7/31/72
MATERIAL	PROJ.	DATE 8-1-72
FINISH	FIRST USED ON PDP11	
	SCALE	
	SHEET 2 OF 9	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DATA PATHS
DATA PATHS (03:00) K1-2

SIZE	CODE	NUMBER	REV.
D	CS	M7201-0-1	C

DIST.



DEVICE TRUTH TABLES:

74153

STBN	S1	SØ	FN
H	–	–	L
L	L	L	FAN
L	L	H	FBN
L	H	L	FCN
L	H	H	FDN

WHERE N = Ø, 1

74157

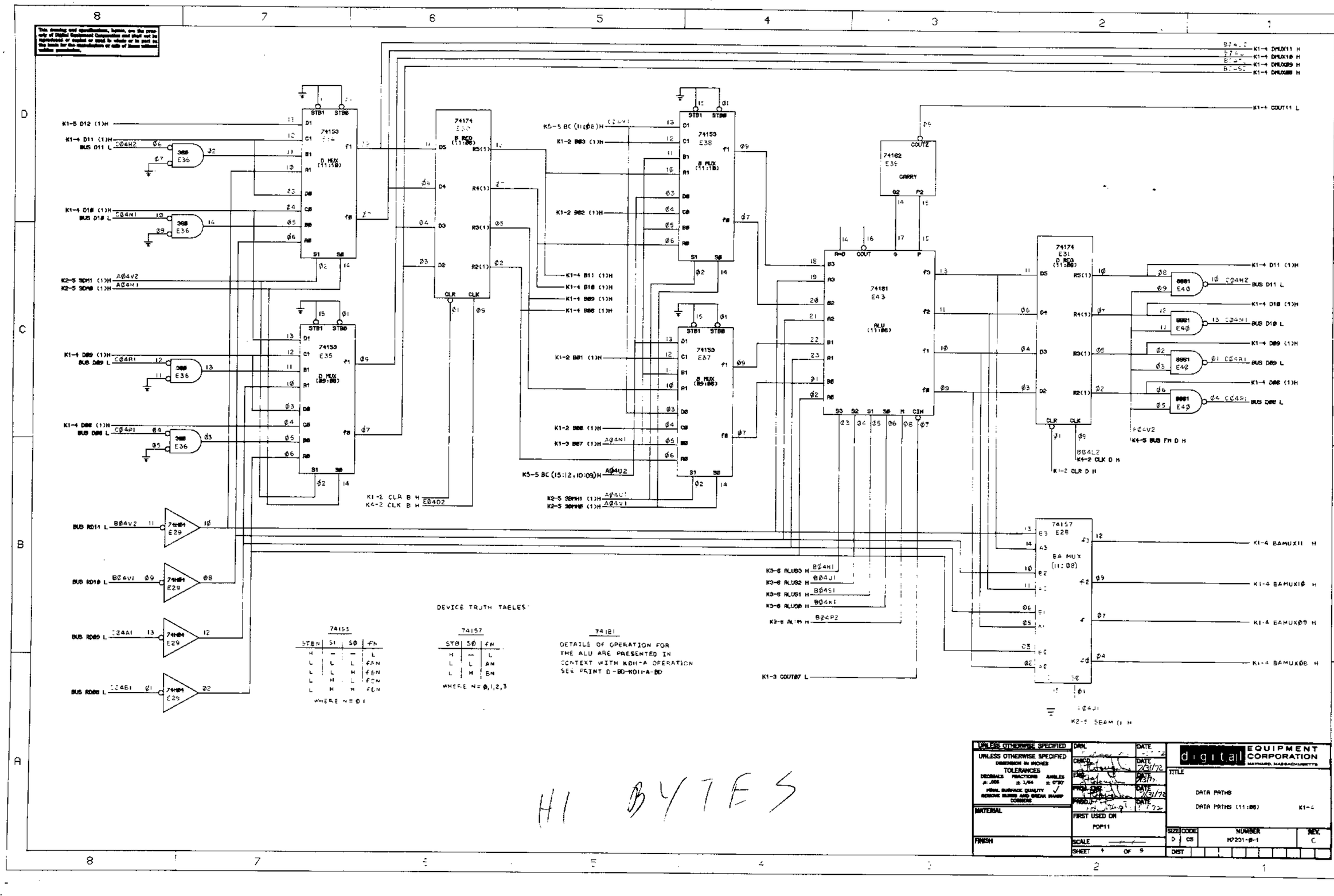
STB'	SØ	FN
H	–	L
L	L	AN
L	H	BN

WHERE N = Ø, 1, 2, 3

74181

DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH KDII-A OPERATION SEE PRINT D-BD-KDIIA-BO

UNLESS OTHERWISE SPECIFIED	DRN	DATE 7-27-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 7/31/72	TITLE DATA PATHS DATA PATHS (Ø7:Ø4) K1-3
	ENG	DATE 7/5/72	
	PROJ. ENG.	DATE 7/31/72	
MATERIAL	PROD.	DATE 8-1-72	
FINISH	FIRST USED ON PDP11		SIZE D CODE C9 NUMBER M7231-0-1 REV. C
	SCALE		DIST.
	SHEET 9 OF 9		



DEVICE TRUTH TABLES:

74153

STBN	S1	S0	FN
H	—	—	L
L	L	L	FAN
L	L	H	FBN
L	H	L	FCN
L	H	H	FDN

WHERE N = 0,1

74157

STB	S0	FN
H	—	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

74181

DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH KDH-A OPERATION SEE PRINT D-BD-KDH-A-BD

HI BYTES

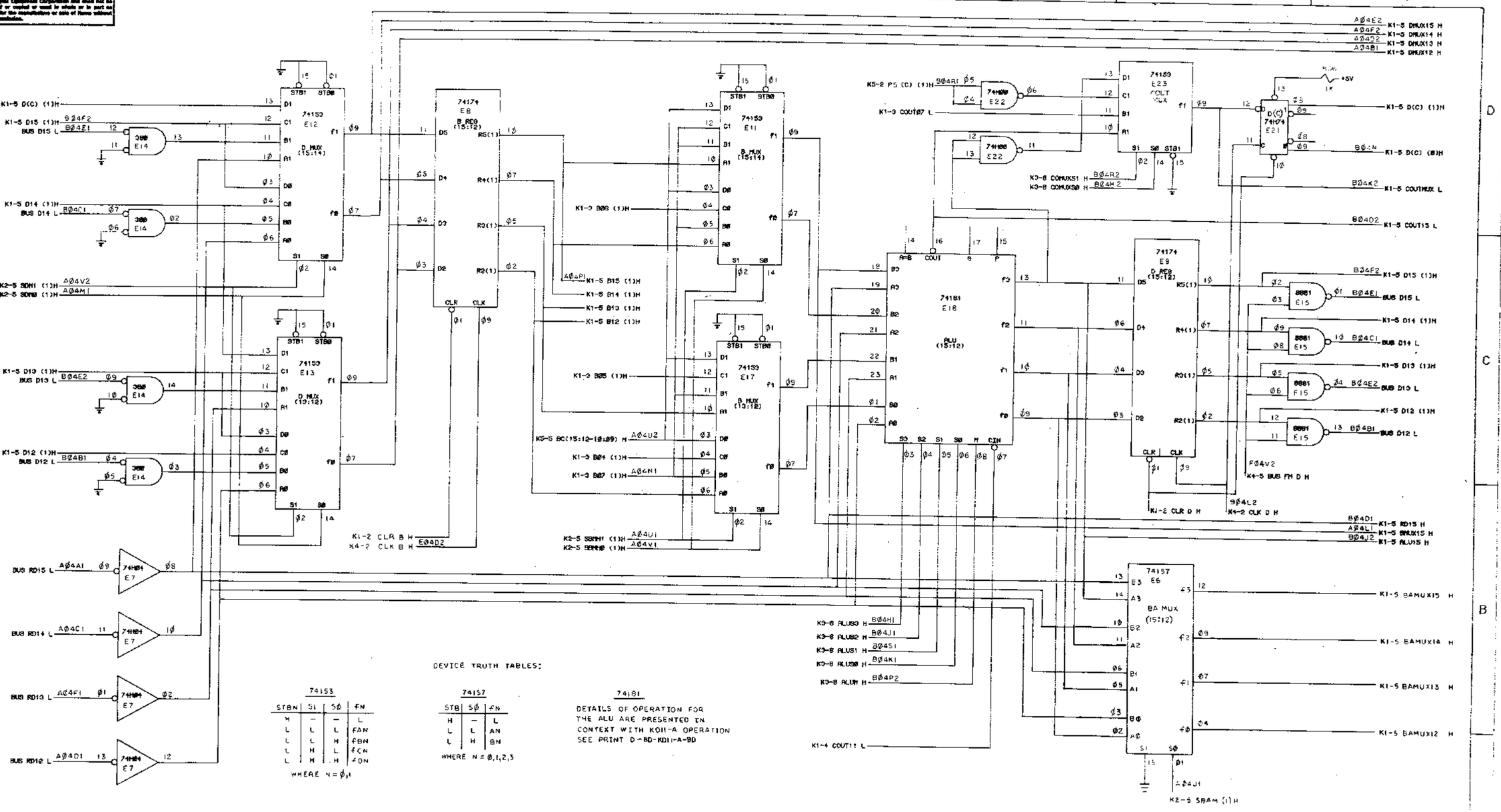
UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN.	DATE 7/31/72
	CHECKED	DATE 7/31/72
	ENGR	DATE 7/31/72
MATERIAL	PROJ. ENGR	DATE 7/31/72
FINISH	PROD.	DATE
FIRST USED ON: PDP11	SCALE	SHEET 4 OF 9

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DATA PATHS
DATA PATHS (11:08) K1-4

SIZE	CODE	NUMBER	REV.
D	05	M7231-B-1	C

DIST



DEVICE TRUTH TABLES:

74153

STBN	S1	S0	FN
H	–	–	L
L	L	L	FAN
L	L	H	FBN
L	H	L	FCN
L	H	H	FDN

WHERE N = ϕ,1

74157

STB	Sϕ	FN
H	–	L
L	L	AN
L	H	BN

WHERE N = ϕ,1,2,3

74181

DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH KOII-A OPERATION SEE PRINT D-BD-KOII-A-BD

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 7-20-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHKD.	DATE 7/31/72	TITLE DATA PATHS DATA PATHS (15:08) K1-5
MATERIAL	ENG.	DATE 7/31/72	
	FINAL ENG.	DATE 7/31/72	
FINISH	PROD.	DATE 8-1-72	
FIRST USED ON PDP11	SCALE		SIZE 0 CODE CS NUMBER M7201-F-1 REV. C
	SHEET 5 OF 9		DIST.

74174 E2 BA(15:12)
K1-5 BAMUX13 H
K1-5 BAMUX14 H
K1-5 BAMUX15 H
K1-5 BAMUX12 H
R5(1) R4(1) R3(1) R2(1)

74174 E33 BA(11:08)
K1-4 BAMUX11 H
K1-4 BAMUX10 H
K1-4 BAMUX09 H
K1-4 BAMUX08 H
R5(1) R4(1) R3(1) R2(1)

74174 E46
K1-3 BAMUXØ7 H
K1-3 BAMUXØ6 H
R3(1) R2(1)

74174 E46 BA(Ø5:Ø4)
K1-3 BAMUXØ5 H
K1-3 BAMUXØ4 H
R5(1) R4(1)

74174 E86 BA(Ø3:ØØ)
K1-2 BAMUXØ3 H
K1-2 BAMUXØ2 H
K1-2 BAMUXØ1 H
K1-2 BAMUXØØ H
R3(1) R2(1) R1(1) R0(1)

74H11 E_

8881 E10
8881 E10
8881 E1
8881 E1
8881 E1
8881 E32
8881 E32
8881 E32
8881 E32
8881 E45
8881 E45
8881 E45
8881 E91
8881 E91
8881 E91
8881 E91

+5V R37 1K

K5-8 INIT2 L AØ4KI
K4-2 CLK BA H AØ4H2
K4-5 BUS FM BA H DØ4J2

NOTE: JUMPER W10 IS MOVED TO GROUND INPUTS OF 8881 GATES FOR KT11-D OPTION

AØ4S2 K1-6 BA(17:16) H
AØ4R1 BUS A17 L
AØ4S1 BUS A16 L
AØ4K2 K1-6 BA15 (1) H
AØ4J2 BUS A15 L
AØ4H1 K1-6 BA14 (1) H
AØ4L2 BUS A14 L
AØ4P2 K1-6 BA13 (1) H
AØ4R2 BUS A13 L
AØ4M2 K1-6 BA12 (1) H
AØ4N2 BUS A12 L

CØ4K1 K1-6 BA11 (1) H
CØ4L1 BUS A11 L
CØ4F1 K1-6 BAIØ (1) H
CØ4H1 BUS AIØ L
CØ4D2 K1-6 BAØ9 (1) H
CØ4E2 BUS AØ9 L
CØ4F2 K1-6 BAØ8 (1) H
CØ4J1 BUS AØ8 L
CØ4E1 K1-6 BAØ7 (1) H
CØ4A1 BUS AØ7 L
CØ4T2 K1-6 BAØ6 (1) H
CØ4V1 BUS AØ6 L

CØ4R2 K1-6 BAØ5(1) H
CØ4S1 BUS AØ5 L
DØ4B1 K1-6 BAØ4 (1) H
CØ4S2 BUS AØ4 L

DØ4K2 K1-6 BA03 (1)H
FØ4R2 BUS A03 L
FØ4B1 K1-6 BA02 (1)H
FØ4M2 BUS A02 L
FØ4F1 K1-6 BA01 (1)H
FØ4N2 BUS A01 L
FØ4J1 K1-6 BA00 (1)H
FØ4P2 BUS A00 L

UNLESS OTHERWISE SPECIFIED	DRN	DATE 2-10-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHKD	DATE 7/31/72	TITLE DATA PATHS BA (15:08) K1-6
MATERIAL	ENG	DATE 7/31/72	
	PROJ ENG	DATE 7/31/72	
	PROJ	DATE 8-1-72	
FINISH	FIRST USED ON PDP11	SCALE	SIZE D CODE CS NUMBER M7231-6-1 REV. C
		SHEET 8 OF 9	DIST.

K1-6 BA01 (1)H — 5Ø4L1
K1-6 BA02 (1)H — LØ4G1
K1-6 BA07 (1)H — ØØ4E1

74H10 E46 → Ø6
8815 E67 → Ø3
74H00 E65 → Ø5
74H10 F66 → Ø8
74H00 F63 → 11
74H20 E48 → Ø8
74H28 E48 → Ø6
8815 E53 → Ø8
74H10 E27 → 12
74H08 E20 → Ø8
8815 E16 → Ø8
8815 E16 → Ø6

K1-6 BA06 (1)H — CØ4T2
K1-6 BA05 (1)H — CØ4R2
K1-6 BA04 (1)H — ØØ4B1
K1-6 BA03 (1)H — DØ4K2
K1-6 BA15 (1)H — AØ4K2
K1-6 BA14 (1)H — AØ4H1
K1-6 BA13 (1)H — AØ4P2
K1-6 BA12 (1)H — AØ4M2
K1-6 BA11 (1)H — CØ4K1
K1-6 BA10 (1)H — CØ4F1
K1-6 BA09 (1)H — CØ4D2
K1-6 BA08 (1)H — CØ4F2

8815 E63 → Ø8 — W1 — EØ4D1 — K1-7 PS ADRS H
8815 E63 → Ø6 — W2 — EØ4H2 — K1-7 SLR ADRS H
8815 E58 → Ø6 — W3 — DØ4U1 — K1-7 REG ADRS H
8815 E58 → Ø8 — W4 — DØ4S2 — K1-7 SR ADRS H
8815 E53 → Ø6 — DØ4O2 — K1-7 BA(08:00)=1 H
DØ4P1 — K1-7 CRSI ADRS H
DØ4K1 — K1-7 BA(08:00)=8 H
BØ4P1 — K1-7 BA(07:05)=1 L
BØ4N2 — K1-7 BA(15:08)=1 L
74H11 E5 → Ø6 — CØ4E1 — K1-7BOVFL STOP H
74H10 E27 → Ø8 — CØ4C1 — K1-7 BOVFL L
K1-4 CKOVF H — CØ4D1

K1-4 D11 (1)H
K1-4 D10 (1)H
K1-4 D09 (1)H
K1-4 D08 (1)H
8815 E24 → Ø5
K1-2 D03 (1)H
K1-2 D02 (1)H
K1-2 D01 (1)H
K1-2 D00 (1)H — DØ4H2
8815 E75 → Ø6

K1-5 D15 (1)H — BØ4F2
K1-5 D14 (1)H
K1-5 D13 (1)H
K1-5 D12 (1)H
8815 E24 → Ø8
K1-3 D07 (1)H — DØ4L2
K1-3 D06 (1)H
K1-3 D05 (1)H
K1-3 D04 (1)H
8815 E59 → Ø8
74H28 E42 → Ø5
74H00 E65 → Ø8 — DØ4V2 — K1-7 D(15:08)=8 H
DØ4H1 — K1-7 D(07:04)=8 H
DØ4O1 — K1-7 D(03:00)=8 H

PROCESSOR ADDRESSES

NAME & MNEMONICS			(ADRS)8
PROCESSOR STATUS		PS	777776
STACK LIMIT REGISTER		S_A	777774
GENERAL REGISTERS			
REGISTERS USED TO IMPLEMENT MICROFLOW	R [ADRS]	REG 17	777717
	R [SP USER]	REG 16	777716
	R [TEMPC]	REG 15	777715
	R [VECT]	REG 14	777714
	R [IR]	REG 13	777713
	R [DEST]	REG 12	777712
	R [SOURCE]	REG 11	777711
	R [TEMP]	REG 10	777710
REGISTERS USE IN INSTRUCTIONS FOR POP11	R [PC], R7	REG 07	777707
	R [SP], R6	REG 06	777706
	R5	REG 05	777705
	R4	REG 04	777704
	R3	REG 03	777703
	R2	REG 02	777702
	R1	REG 01	777701
	R0	REG 00	777700
CONSLE SWITCH REGISTER		SR	777570

NOTES:
1. JUMPERS W1, W3 AND W4 ARE REMOVED FOR KTII-D OPTION.
2. JUMPER W2 IS MOVED TO CONNECT E63 PIN Ø6 TO EØ4H2 FOR KJII-A OPTION ALONE. JUMPER IS COMPLETELY REMOVED FOR KTII-D OPTION.

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 7-25-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' MINM. SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D.	DATE 7/31/72	TITLE: DATA PATH ADRS DECODE K1-7
	ENG.	DATE 7/31/72	
	PROJ. ENG.	DATE 7/31/72	
MATERIAL	PRODY	DATE 8-1-72	
FINISH	FIRST USED ON PDP11		SIZE D CODE C9 NUMBER M7201-0-1 REV C
	SCALE	SHEET 7 OF 9	DIST.

NOTE: JUMPERS W5, W6, AND W8 ARE REMOVED FOR MAPPED OPTION

K1-2 WR R(15:00) L

K1-2 MODE SEL H
K2-4 RIF0 (0) H
K1-5 S HOOK H
K1-6 BA03 (1) H
K2-4 RIF3 (1) H
K1-8 D HOOK H
K3-3 IR08 (1) H
K3-3 IR02 (1) H
K1-6 BA02 (1) H
K2-4 RIF2 (1) H
K3-3 IR07 (1) H
K3-3 IR01 (1) H
K1-6 BA01 (1) H
K2-4 RIF1 (1) H
K3-3 IR00 (1) H
K2-4 SRS (1) H
K3-3 IR00 (1) H
K2-4 SRD (1) H
K1-6 BA00 (1) H
K2-4 SRBA (1) H
K2-4 RIF0 (1) H
K2-4 SRI (1) H

74H53 E8P
74H53 E7P
74H53 E8S
74H53 E8N
74H53 E8R

3101A E5 RC15:00](15:12)
3101A E47 RC15:00](07:04)
3101A E6 RC15:00](11:08)
3101A E92 RC15:00](03:00)

K1-5 DMUX15 H
K1-5 DMUX14 H
K1-5 DMUX13 H
K1-5 DMUX12 H
K1-3 DMUX07 H
K1-3 DMUX06 H
K1-3 DMUX05 H
K1-3 DMUX04 H
K1-4 DMUX11 H
K1-4 DMUX10 H
K1-4 DMUX09 H
K1-4 DMUX08 H
K1-2 DMUX03 H
K1-2 DMUX02 H
K1-2 DMUX01 H
K1-2 DMUX00 H

R1 R2 R3 R4 R17 R18 R19 R20 R5 R6 R7 R8 R21 R22 R23 R24 R9 R10 R11 R12 R25 R26 R27 R28 R13 R14 R15 R16 R29 R30 R31 R32 300 620

BUS RD15 L
BUS RD14 L
BUS RD13 L
BUS RD12 L
BUS RD11 L
BUS RD10 L
BUS RD09 L
BUS RD08 L
BUS RD07 L
BUS RD06 L
BUS RD05 L
BUS RD04 L
BUS RD03 L
BUS RD02 L
BUS RD01 L
BUS RD00 L

K1-8 R(X8+X7) H

K1-8 RADR03 L
K1-8 RADR02 L
K1-8 RADR01 L
K1-8 RADR00 L

UNLESS OTHERWISE SPECIFIED	DRN	DATE 1-27-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 2/01/72	TITLE DATA PATHS RE0(15:00](15:08) K1-8
MATERIAL	ENG.	DATE 7/31/72	
	PROJ. ENG.	DATE 7/31/72	
	PROJECT	DATE	
FINISH	FIRST USED ON PDP11		SIZE D CODE CS NUMBER M7231-0-1 REV. C
	SCALE		
	SHEET 8 OF 9		DIST.

NOTE: JUMPERS W7 AND W8 ARE REMOVED FOR KTII-D OPTION

B0ΦBP CABLE, SHIELD TOWARD BOARD, TO J1 OF KYII-D CONSOLE

J1

K1-9 BA(17*16)L

KYD-3 SR17 H
KYD-3 SR16 H
K1-9 DMUX15 L
K1-9 DMUX14 L
K1-9 DMUX13 L
K1-9 DMUX12 L
KYD-3 SR15 H
K1-9 DMUX11 L
KYD-3 SR14 H
K1-9 DMUX10 L
KYD-3 SR13 H
K1-9 DMUX09 L
KYD-3 SR12 H
K1-9 DMUX08 L
KYD-3 SR11 H
K1-9 DMUX07 L
KYD-3 SR10 H
K1-9 DMUX06 L
KYD-3 SR09 H
K1-9 DMUX05 L
KYD-3 SR08 H
K1-9 DMUX04 L
KYD-3 SR07 H
K1-9 DMUX03 L
KYD-3 SR06 H
K1-9 DMUX02 L
KYD-3 SR05 H
K1-9 DMUX01 L
KYD-3 SR04 H
K1-9 DMUX00 L
+5V
C62 6.8 MFD
KYD-3 SR03 H
KYD-3 SR02 H
KYD-3 SR01 H

K1-5 DMUX15 H A0ΦE2
K1-5 DMUX14 H A0ΦF2
K1-5 DMUX13 H A0ΦD2
K1-5 DMUX12 H A0ΦB1
K1-4 DMUX11 H B0Φ4U2
K1-4 DMUX10 H B0Φ4U1
K1-4 DMUX09 H B0Φ4T2
K1-4 DMUX08 H B0Φ4S2
K1-3 DMUX07 H D0ΦF2
K1-3 DMUX06 H D0Φ4M1
K1-3 DMUX05 H D0Φ4C1
K1-3 DMUX04 H D0ΦF1
K1-2 DMUX03 H F0Φ4J2
K1-2 DMUX02 H E0Φ4M1
K1-2 DMUX01 H E0Φ4J2
K1-2 DMUX00 H E0Φ4L1

8881 E12
8242 E4
8242 E26
8242 E52
8242 E93

K2-3 BUPP8 H C0Φ4K2
K2-3 BUPP7 H E0Φ4N1
K2-3 BUPP6 H D0Φ4T2
K2-3 BUPP5 H E0Φ4K1
K2-3 BUPP4 H E0Φ4A1
K2-2 BUPP3 H E0Φ4K2
K2-2 BUPP2 H E0Φ4H2
K2-2 BUPP1 H E0Φ4T2
K2-2 BUPP0 H E0Φ4L2
K2-2 P ENC H E0Φ4F2

8242 E41
8242 E69
8242 E79
R35 1K +5V
74H00 E65

C0Φ4L2 K1-9 UPP MATCH H
E0Φ4E2 K1-9 P MATCH L

K1-4 BUS FM SR H B0Φ4F1

B0Φ4M1 K1-9 SR17 H
B0Φ4L1 K1-9 SR16 H

8881 E19
8881 E44
8881 E64
8881 E89

B0Φ4E1 BUS D15 L
B0Φ4C1 BUS D14 L
B0Φ4E2 BUS D13 L
B0Φ4B1 BUS D12 L
C0Φ4H2 BUS D11 L
C0Φ4N1 BUS D10 L
C0Φ4R1 BUS D09 L
C0Φ4P1 BUS D08 L
E0Φ4B1 BUS D07 L
D0Φ4A1 BUS D06 L
E0Φ4C1 BUS D05 L
0Φ4N2 BUS D04 L
F0ΦT2 BUS D03 L
F0Φ4S2 BUS D02 L
F0Φ4U2 BUS D01 L
D0Φ4J1 BUS D00 L

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 2-9-72
CHK'D DATE 7/31/72
ENG DATE 7/31/72
PROJ. ENG. DATE 2/21/72
PROJ. DATE 2-9-72

FIRST USED ON PDP11

SCALE

SHEET 9 OF 9

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

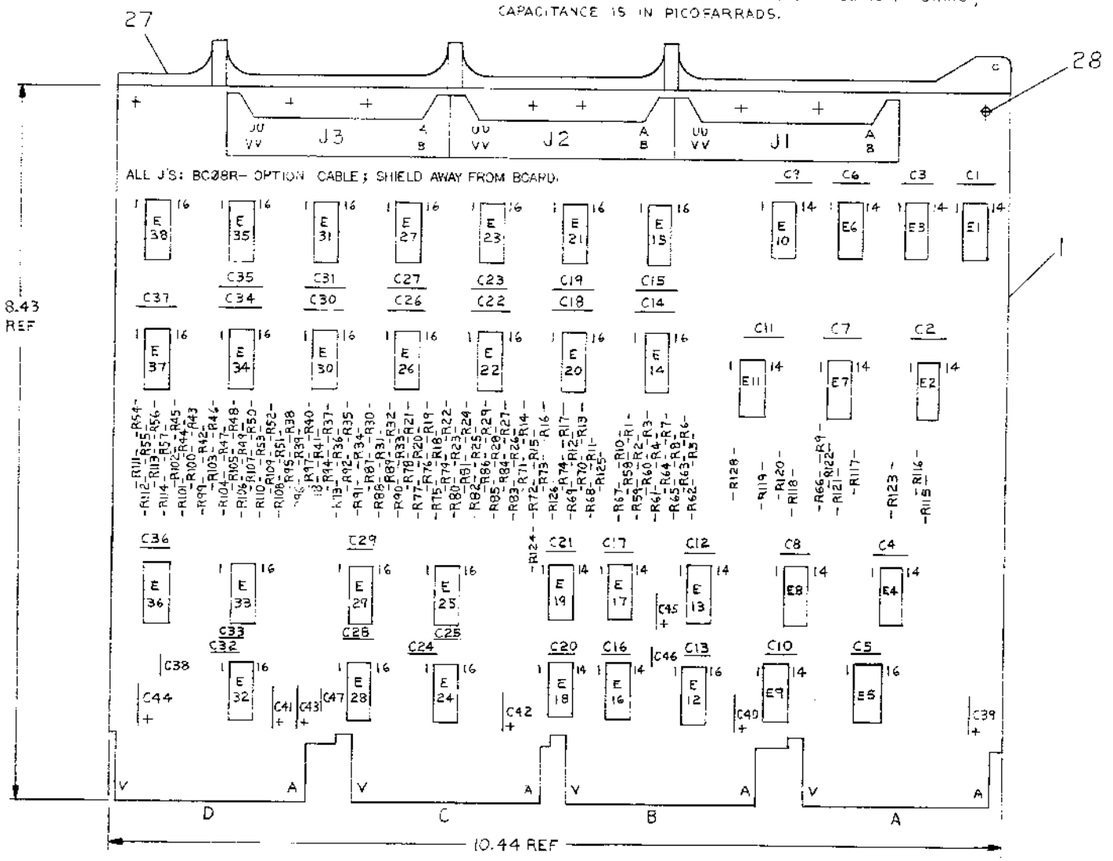
TITLE
DATA PATHS
CONSOLE & MATCH K1-9

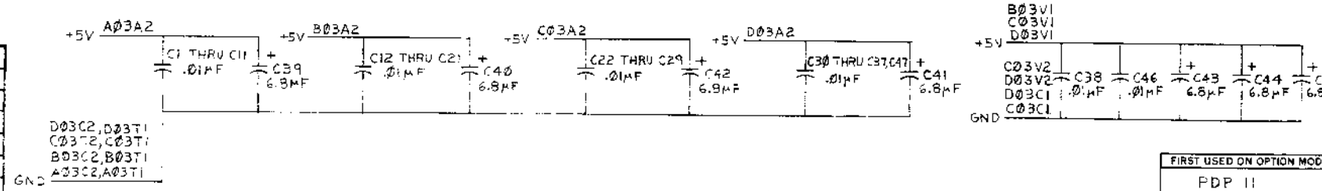
SIZE D | CODE CS | NUMBER M7231-0-1 | REV. C

DIST.

NOTES:

1. PIN NOTATION THROUGHOUT IS BASED ON MODULE PLACEMENT IN THE KDI1-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
3. PROCESSOR SIGNAL PREFIX NOTATION (K2-1 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A 'BUS' PREFIX REPRESENT A "WIRED OR" SITUATION AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
4. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.





23B00A2 THRU 23B13A2	8	16
DEC 74174	8	16
DEC 74175	8	16
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

BRUNING 40-532 16693

DEC FORM NO ORD-235A

ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
	9		EYELET	9Ø06732
	1		HANDLE	74Ø9871
	1	E38	I.C. DEC 23B40A2	23B40A2
	1	E34	I.C. DEC 23B12A2	23B12A2
	1	E35	I.C. DEC 23B11A2	23B11A2
	1	E37	I.C. DEC 23B10A2	23B10A2
	1	E31	I.C. DEC 23B35A2	23B35A2
	1	E30	I.C. DEC 23B08A2	23B08A2
	1	E27	I.C. DEC 23B07A2	23B07A2
	1	E22	I.C. DEC 23B06A2	23B06A2
	1	E23	I.C. DEC 23B42A2	23B42A2
	1	E26	I.C. DEC 23B41A2	23B41A2
	1	E21	I.C. DEC 23B03A2	23B03A2
	1	E20	I.C. DEC 23B02A2	23B02A2
	1	E14	I.C. DEC 23B01A2	23B01A2
	1	E15	I.C. DEC 23B00A2	23B00A2
	1	E36	I.C. DEC 74175	1910651
	8	E5, E12, E24, E25, E28 E29, E32, E33	I.C. DEC 74174	1910652
	3	E4, E8, E13	I.C. DEC 74H04	1909931
	9	E1, E3, E6, E9, E10, E18 E19, E16, E17	I.C. DEC 74H74	1909667
	3	E2, E7, E11	I.C. DEC 74H10	1909057
	13	R115 THRU R126, R128	RES. 1K 1/4W ±5%	1300365
	57	R1 THRU R57	RES. 680 1/4W ±5%	1301424
	57	R58 THRU R114	RES. 390 1/4W ±5%	1300309
	3	J1, J2, J3	CONN. 40 PIN	1209941
	7	C39 THRU C45	CAP 6.8μF 35V ±10% TANT	1005306
	40	C1 THRU C38, C46, C47	CAP .01μF 100V ±20% DISC	1001610
	1		ETCHED CIRCUIT BOARD	5009951

PARTS LIST

ETCH BOARD REV E

FIRST USED ON OPTION MODEL: PDP 11

REV	CHANGE NO.	CHK
F	M7232-00004	J. BUZYNSKI
E	M7232-00003	J. O'LOUGHLIN
D	M7232-00002	J. O'LOUGHLIN
C	M7232-00001	J. O'LOUGHLIN
B	ORIGINATE	

REVISIONS

DEC NO.	EIA NO.	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRN. DATE 6-14-72
CHK'D. DATE 6/14/72
ENG. DATE 6/14/72
PROJ. ENGR. DATE 6/14/72
PROD. DATE
NEXT HIGHER ASSY

TITLE: UNITED

SIZE D | NUMBER CS M7232-0-1 | REV E

SCALE

23E0DA2
E15
U(0:255)(B0:B0)

K2-3 UPP7 (1)H B03N1
K2-3 UPP6 (1)H B03K1
K2-3 UPP5 (1)H A03E2
K2-3 UPP4 (1)H B03E1
K2-2 UPP3 (1)H B03P1
K2-2 UPP2 (1)H A03J1
K2-2 UPP1 (1)H A03K1
K2-2 UPP0 (1)H B03M1
K2-3 UPP0 (0)L 003J1

M3(1) M2(1) M1(1) M0(1) CS1 CS0

BUS U00 L R1 680
BUS U01 L R2 680
BUS U02 L R3 680
BUS U03 L R4 680

R57 390 R58 390 R59 390 R60 390

K3-2 BUBC3 A23S1 A03R1 R117 1K
K3-4 BUBC3
K3-2 BUBC2 A23N1 A03M1 R116 1K
K3-4 BUBC2
K3-2 BUBC1 A23J1 A23J2 R115 1K
K3-4 BUBC1
K3-2 BUBC0 (BUT 17:00) A23K2
K3-2 BUBC0 (BUT 37:20) A23H1 R114 1K

74H10 E7 E2 E2 E2

K4-3 SET UPP4,3 L B03C
K4-3 CLR UPP4,3 L B03H1
K4-3 SET UPP7,6,2 L B03U1
K4-3 CLR UPP7,6,2 L B03X1
K4-3 SET UPP1 L A03F1
K4-3 CLR UPP1 L A03H2
K4-3 SET UPP0 L A03E1
K4-3 CLR UPP0 L A03F2
K4-2 CLK(UPP+PUPP) H B23F2

UPP3 74H74 E3
UPP2 74H74 E3
UPP1 74H74 E1
UPP0 74H74 E1

B03P1 K2-2 UPP3 (1)H
A23J1 K2-2 UPP2 (1)H
A03K1 K2-2 UPP1 (1)H
B03M1 K2-2 UPP0 (1)H

74H04 E4 E4 E9 E8 E4 E4 E4

A23J2 K2-2 BUPP3 H
A03J2 K2-2 BUPP2 H
A23S2 K2-2 BUPP1 H
A23U2 K2-2 BUPP0 H

74174 E5
PUPP(3:0)
D5 D4 D3 D2 CLR CLK
R5(1) R4(1) R3(1) R2(1)

A03M2 K2-2 PUPP3 (1)H
A03R2 K2-2 PUPP2 (1)H
A03N2 K2-2 PUPP1 (1)H
A23T2 K2-2 PUPP0 (1)H

+5V R123 1K
B03L1 K2-2 CLR PUPP L

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-27-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHKD.	DATE 2/16/72	TITLE U WORD U(B0:B0) K2-2
	ENG.	DATE 2/16/72	
	PROJ. ENG.	DATE 2/16/72	
MATERIAL	PROD.	DATE 2/16/72	
	FIRST USED ON PDP11		
FINISH	SCALE		SIZE 0 CODE C9 NUMBER M7202-B-1 REV. F
	SHEET 2 OF 12		DIST.

K2-3 UPP7 (1)H B03N1
K2-3 UPP6 (1)H B03F1
K2-3 UPP5 (1)H A03E2
K2-3 UPP4 (1)H B03E1
K2-3 UPP3 (1)H B03F1
K2-2 UPP2 (1)H A03J1
K2-2 UPP1 (1)H A03K1
K2-2 UPP0 (1)H B03M1
K2-3 UPP8 (0)L D03U1

256@1A2 E14
U(0:2S5)(07:04)
M3(1) M2(1) M1(1) M0(1)
CS1 CS0

BUS U08 L R66 390
BUS U07 L R8 680
BUS U06 L R64 390 R7 680
BUS U05 L R63 390 R6 680
BUS U04 L R62 390 R5 680
+5V

K4-3 JAMUPP L A03V1
K4-3 SET UPP7,6,2 L B23S1
K4-3 CLR UPP7,6,2 L B23K1
K4-3 SET UPP5,3 L A03A1
K4-3 CLR UPP5 L A03P1
K4-3 SET UPP4,0 L B03C1
K4-3 CLR UPP4-0 L B23H1
K4-2 CLK(UPP4PUPP) H B23F2

EUBC8 L A23R1
EUBC7 L A23B1
K2-4 EUBC6 L A23U1
K2-4 EUBC5 L A23D2
K2-4 EUBC4 L A23C1
K3-2 EUBC4 L A03D1

74H10 E7 E11 E1
74H08 E6 E9 E13
UPP8 UPP7 UPP6 UPP5 UPP4
R121 R122 R120 R119 R118 1K

K2-3 EUPP8 H
K2-3 UPP8 (0)L
K2-3 EUPP7 H
K2-3 UPP7 (1)H
K2-3 UPP6 (1)H
K2-3 EUPP6 H
K2-3 UPP5 (1)H
K2-3 EUPP5 H
K2-3 UPP4 (1)H
K2-3 EUPP4 H

K2-3 BUPP8 H
K2-3 BUPP7 H
K2-3 BUPP6 H
K2-3 BUPP5 H
K2-3 BUPP4 H

74174 E12 PUPP(0:4)
D5 D4 D3 D2 D1 D0
R5(1) R4(1) R3(1) R2(1) R1(1) R0(1)
CLR CLK
B03K2 K2-3 PUPP6 (1)H
B03H2 K2-3 PUPP7 (1)H
B03L2 K2-3 PUPP8 (1)H
B03N2 K2-3 PUPP5 (1)H
B0352 K2-3 PUPP4 (1)H
K2-2 CLR PUPP L B03L1

UNLESS OTHERWISE SPECIFIED	DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D.	DATE	TITLE U WORD. D(07:04) K2-3
	ENG.	DATE	
	PROJ. ENG.	DATE	
MATERIAL	PROD.	DATE	
FINISH	FIRST USED ON PDP11		SIZE D CODE CS NUMBER M7202-0-1 REV. F
	SCALE		
	SHEET 3 OF 12		DIST.

23B03A2
E21
U(8:255)(16:13)

23B02A2
E20
U(8:255)(12:09)

SRS 74H74 E15
SRD 74H74 E19
SRBA 74H74 E19
SRI 74H74 E18
RIF3 74H74 E17
RIF2 74H74 E16
RIF1 74H74 E17
RIF0 74H74 E16

+5V R126 1K
+5V R125 1K
+5V R124 1K
+5V R74 390
+5V R73 390
+5V R72 390
+5V R71 390
+5V R70 390
+5V R69 390
+5V R68 390
+5V R67 390

BUS U16 L — R17 680
BUS U15 L — R16 680
BUS U14 L — R15 680
BUS U13 L — R14 680
BUS U12 L — R13 680
BUS U11 L — R12 680
BUS U10 L — R11 680
BUS U09 L — R10 680

C03E1 K2-4 SRS (1)H
C0302 K2-4 SRD (1)H
C03E2 K2-4 SRBA (1)H
C03B1 K2-4 SRI (1)H

K2-4 R125 PULL UP H
B03S1 K2-4 RIF3 (1)H
B03U1 K2-4 RIF2 (1)H
B03U2 K2-4 RIF1 (1)H
B03T2 K2-4 RIF0 (1)H
C03A1 K2-4 RIF0 (0) H
C05H1 K2-4 CLR U(16:09) L

K2-3 UPP7 (1)H B03N1
K2-3 UPP6 (1)H B03F1
K2-3 UPP5 (1)H A03E2
K2-3 UPP4 (1)H B03E1
K2-2 UPP3 (1)H B03P1
K2-2 UPP2 (1)H A03J1
K2-2 UPP1 (1)H A03K1
K2-2 UPP0 (1)H B03M1

K2-3 UPP8 (8)L D03U1

K4-2 CLK U(16:09) H C03F1

UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY ✓; REMOVE BURRS AND BREAK SHARP CORNERS	DRN. T. Pudlik	DATE 7-27-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
	CHK'D.	DATE 8/16/72	TITLE: U WORD U(16:09) K2-4
	ENG. T. Howe	DATE 8/16/72	
	PROJ. ENGR.	DATE 8/16/72	
MATERIAL	PROD. Dooley	DATE 8/16/72	
FINISH	FIRST USED ON: PDP11		
	SCALE: --/--	SIZE D	CODE 09
	SHEET 4 OF 12	NUMBER M7232-C-1	REV. F
		DIST.	

E3606A2
E22
U(8:255)(28:25)

74174
E24
SBMH:SBML

23642A2
E23
U(8:255)(24:21)

74174
E24
SDM1:SDM0

74174
E25
SBA0:UBF0

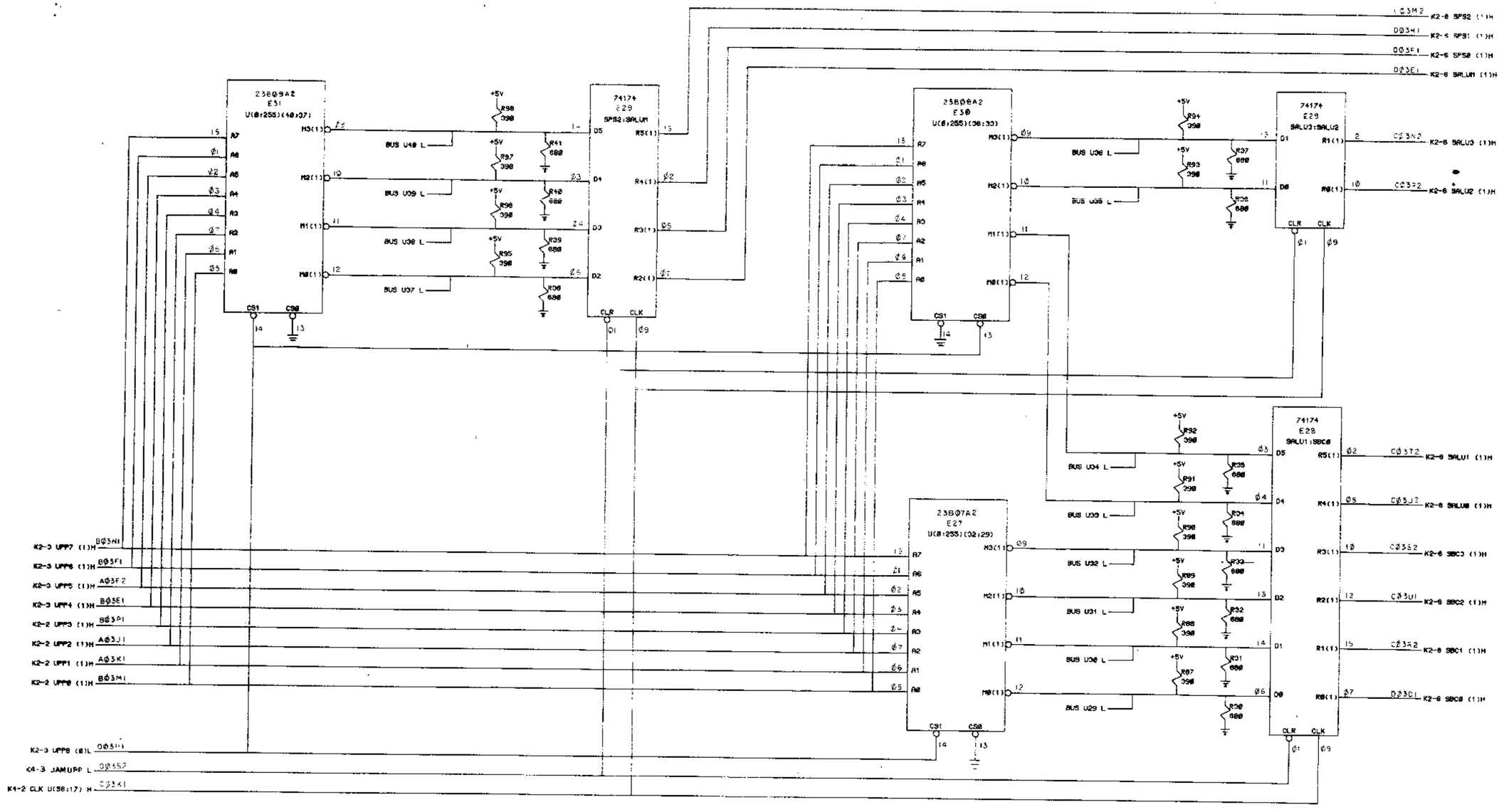
23B41A2
E26
U(8:255)(20:17)

BUS U20 L
BUS U27 L
BUS U26 L
BUS U25 L
BUS U24 L
BUS U23 L
BUS U22 L
BUS U21 L
BUS U28 L
BUS U19 L
BUS U18 L
BUS U17 L

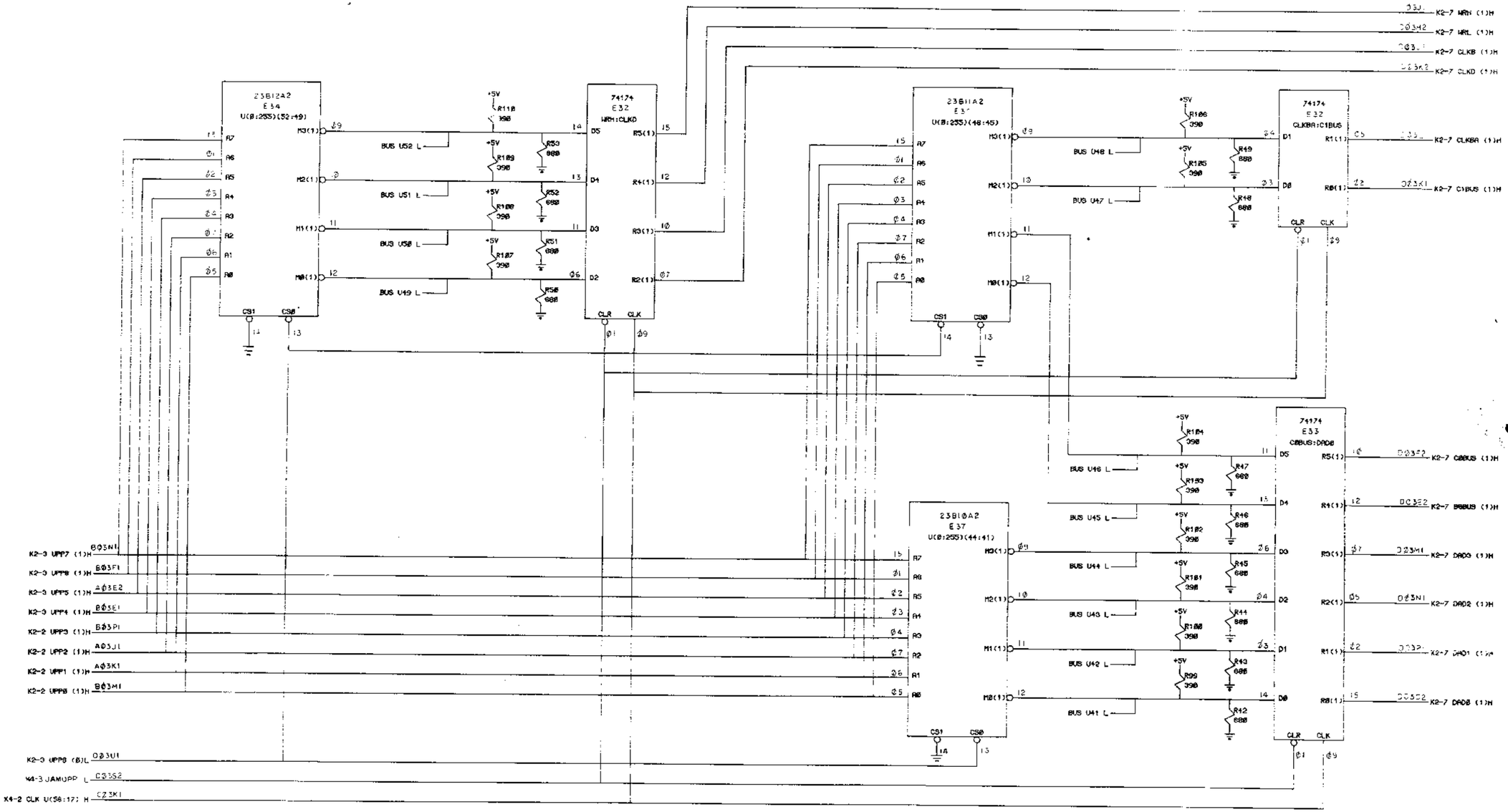
K2-5 SBMH1 (1)H
K2-5 SBMH0 (1)H
K2-5 SBML1 (1)H
K2-5 SBML0 (1)H
K2-5 SDM1 (1)H
K2-5 SDM0 (1)H
K2-5 SBM1 (1)H
K2-5 UBF4 (1)H
K2-5 UBF3 (1)H
K2-5 UBF2 (1)H
K2-5 UBF1 (1)H
K2-5 UBF0 (1)H

K2-3 UPP7 (1)H
K2-3 UPP6 (1)H
K2-3 UPP5 (1)H
K2-3 UPP4 (1)H
K2-3 UPP3 (1)H
K2-2 UPP2 (1)H
K2-2 UPP1 (1)H
K2-2 UPP0 (1)H
K2-3 UPP8 (0)L
K4-3 JAM UPP L
K4-2 CLK U(58:17) H

UNLESS OTHERWISE SPECIFIED	DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D.	DATE	TITLE U WORD U(28:17) K2-5
	ENG.	DATE	
	PROJ. ENG.	DATE	
	PROD.	DATE	
MATERIAL	FIRST USED ON PDP11		SIZE D CODE CS NUMBER M7202-0-1 REV F
FINISH	SCALE		
	SHEET 5 OF 12		DIST.



UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-27-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHKD.	DATE 6/16/72	TITLE U WORD U(48:29) K2-6
MATERIAL	ENG.	DATE 6/16/72	
	PROJ. ENG.	DATE 6/16/72	
FINISH	PROD.	DATE 6/16/72	
	FIRST USED ON POP11		SIZE D CODE C9 NUMBER M7232-0-1 REV. F
	SCALE		DIST.
	SHEET 6 OF 12		



UNLESS OTHERWISE SPECIFIED	DRN	DATE 11-22-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 12/16/72	TITLE U WORD U(52:41) K2-7
	ENG	DATE 12/16/72	
	PROJ. ENG.	DATE 12/16/72	
MATERIAL	PROD.	DATE	
FINISH	FIRST USED ON PDP11	SIZE D CODE CS NUMBER M7232-0-1 REV. F	
	SCALE	SHEET 7 OF 12	DIST.

J1 BC08R- , CABLE
SHIELD AWAY FROM BOARD

K2-2 EUPP8 H — R
K2-2 EUPP1 H — B
C
K2-2 EUPP2 H — Y
E
K2-2 EUPP3 H — D
H
NN
K — BUS U00 L
LL
M — BUS U01 L
JJ
P — BUS U02 L
FF
S — BUS U03 L
R
K2-3 EUPP4 H — U
K2-3 EUPP5 H — V
K2-3 EUPP6 H — W
K2-3 EUPP7 H — T
Y
L
AA
K2-3 EUPP8 H — N
CC
DD — BUS U04 L
EE
BB — BUS U05 L
HH
Z — BUS U06 L
KK
X — BUS U07 L
MM
F — BUS U08 L
PP
UU — BUS U09 L
SS
W — BUS U10 L
TT — BUS U12 L
RR — BUS U11 L

J2 BC08R- , CABLE
SHIELD AWAY FROM BOARD

T — BUS U13 L
NN — BUS U14 L
C — BUS U15 L
B — BUS U16 L
E — BUS U17 L
A — BUS U18 L
H — BUS U19 L
JJ — BUS U20 L
K — BUS U21 L
FF — BUS U22 L
M — BUS U23 L
DD — BUS U24 L
P — BUS U25 L
BB — BUS U26 L
S — BUS U27 L
Z — BUS U28 L
U — BUS U29 L
X — BUS U30 L
W — BUS U31 L
V — BUS U32 L
Y — BUS U35 L
AA — BUS U36 L

J3 BC08R- , CABLE
SHIELD AWAY FROM BOARD

A — BUS U33L
B — BUS U34L
C — BUS U37 L
CC — BUS U38 L
J — BUS U39 L
F — BUS U40 L
K — BUS U41 L
Q — BUS U42 L
M — BUS U43 L
NN — BUS U44 L
P — BUS U45 L
LL — BUS U46 L
S — BUS U47 L
JJ — BUS U48 L
U — BUS U49 L
FF — BUS U50 L
W — BUS U51 L
DD — BUS U52 L
Y — BUS U53 L
BB — BUS U54 L
AA — BUS U55 L
Z — BUS U56 L
CC
X
EE
V
HH
T
KK
R
MM
N
PP
UU
SS

23B40A2
E58
U(8:255)(56:59)

K2-3 UPP7 (1)H — BØ3N1 — 15 — A7
K2-3 UPP6 (1)H — BØ3F1 — Ø1 — A8
K2-3 UPP5 (1)H — AØ3E2 — Ø2 — A5
K2-3 UPP4 (1)H — BØ3E1 — Ø3 — A4
K2-3 UPP3 (1)H — BØ3P1 — Ø4 — A3
K2-3 UPP2 (1)H — AØ3J1 — Ø7 — A2
K2-3 UPP1 (1)H — AØ3K1 — Ø6 — A1
K2-3 UPP0 (1)H — BØ3M1 — Ø5 — A6

M3(1) — 22 — +5V R114 390 — BUS U56 L — R57 680
M2(1) — 10 — +5V R113 390 — BUS U55 L — R56 680
M1(1) — 11 — +5V R112 390 — BUS U54 L — R55 680
M0(1) — 12 — +5V R111 390 — BUS U53 L — R54 680

CS1 — 14
CS0 — 13

K2-3 UPP0 (0)H — DØ3U1

74175
E56
CLK1↑CLKIR

D0 — 12
D1 — 13
D2 — 15
D3 — 4
CLR — 1
CLK — 9

R3(1) — 3 — DØ3N2 — K2-8 CLKL1 (1)H
R3(0) — 11 — DØ3M2 — K2-8 CLKL1 (0)H
R2(1) — 15 — DØ3L2 — K2-8 CLKL0 (1)H
R2(0) — 14 — DØ3J1 — K2-8 CLKL0 (0)H
R1(1) — 22 — DØ3U2 — K2-8 CLKOFF (1)H
R1(0) — Ø3
R0(1) — Ø7 — DØ3T2 — K2-8 CLKIR (1)H
R0(0) — Ø6

K4-2 JAMUPP L — DØ3S2 — Ø1
K4-2 CLK U(56:17) H — CØ3K1 — Ø9

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 2-10-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHKD.	DATE 11/6/72	TITLE: UNIBUS U(56:53) & CONNECTORS K2-8
MATERIAL	ENG.	DATE 11/6/72	
	PROJ. ENGR.	DATE 11/6/72	
FINISH	PROD.	DATE 11/6/72	
	FIRST USED ON PDP11		
	SCALE		SIZE D CODE CS NUMBER M7202-8-1 REV. F
	SHEET 8 OF 12		DIST.

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
01	FET01	000	3	0	0	0	0	1	1	00	0	00	00	00	0	1	00	01	07	001
01	FET03	001	2	1	3	1	0	0	0	00	0	00	00	00	1	0	00	01	13	004
10	SER01	002	6	0	0	0	0	0	0	00	0	00	00	00	0	0	26	01	13	015
04	MOV21	003	4	0	0	0	1	0	0	00	0	32	00	05	2	0	27	00	00	204
01	FET04	004	4	0	0	0	1	1	1	00	0	11	02	17	0	0	37	01	07	005
01	FET05	005	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	07	100
10	SER04	006	6	0	0	0	0	0	0	00	0	00	00	00	0	0	26	01	13	015
06	TRP08	007	5	0	0	0	0	1	1	00	0	11	02	17	0	0	00	01	14	115
06	TRP03	010	6	0	3	0	1	0	0	00	0	32	00	17	2	0	11	01	14	216
11	CON01	011	6	0	0	0	0	1	0	00	0	00	00	00	2	1	00	01	07	255
10	SER00	012	3	0	0	0	0	0	2	00	0	00	00	00	0	0	00	01	13	020
01	FET00	013	3	0	0	0	0	1	1	00	0	00	00	00	0	1	00	01	07	001
10	SER09	014	3	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	13	022
10	SER05	015	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	13	010
01	FET02	016	3	0	0	0	0	1	1	00	0	00	00	00	0	10	00	01	07	001
10	SER02	017	6	0	0	0	0	0	0	00	0	00	00	00	2	0	26	01	13	015
10	SER07	020	4	0	0	0	0	0	2	00	0	00	00	00	0	0	25	01	13	021
10	SER08	021	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	13	014
10	SER10	022	6	0	3	1	0	0	0	00	0	00	00	00	1	0	07	01	14	023
10	SER11	023	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	14	006
11	CON03	024	4	0	0	0	1	0	0	00	0	00	00	00	2	0	00	01	00	026
06	RST01	025	7	0	0	0	0	0	0	00	0	00	00	00	2	0	02	00	00	040
11	CON04	026	6	0	0	0	0	0	0	00	0	00	00	00	2	0	06	00	00	046
11	CON07	027	4	0	0	0	1	0	0	00	0	32	14	17	2	0	00	00	00	044
11	CON05	030	6	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	315
12	EXM00	031	5	0	0	0	1	0	1	00	0	32	10	17	2	0	00	00	00	060
12	STA00	032	6	0	3	0	0	0	0	00	0	00	00	00	2	0	10	01	07	076
12	LAD03	033	4	0	0	0	1	0	0	00	0	23	00	00	2	0	00	00	00	030
12	DEP00	034	2	0	0	0	0	1	0	00	0	00	00	00	0	1	00	01	17	062
12	EXM00	035	2	0	0	0	0	1	0	00	0	00	00	00	0	1	00	01	17	053
12	CNT00	036	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	07	017
12	LAD00	037	5	0	0	0	0	1	1	00	0	32	10	17	1	0	00	00	00	051

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
06	RST02	040	2	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	042
11	CON02	041	7	0	0	0	0	0	2	00	7	00	00	00	2	0	00	00	00	024
06	RST04	042	2	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	011
06	RST03	043	2	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	016
11	CON08	044	6	0	3	0	0	0	0	00	0	00	00	00	2	0	12	01	15	047
11	CON10	045	6	0	0	0	0	0	0	00	0	00	00	00	0	0	30	01	07	050
11	CON06	046	2	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	026
11	CON09	047	6	0	3	0	1	0	0	00	0	11	01	17	2	0	00	01	15	044
11	CON11	050	6	0	0	0	1	0	0	00	0	00	00	00	0	0	00	01	17	030
12	LAD01	051	6	0	3	0	0	0	0	00	0	00	00	00	1	0	05	01	17	052
12	LAD02	052	4	0	0	0	1	1	0	00	0	00	00	00	2	1	00	01	17	032
12	EXM01	053	6	0	0	0	0	0	0	00	0	00	00	00	2	0	04	00	00	054
12	EXM02	054	6	0	3	0	1	1	0	00	0	11	07	17	2	0	00	01	17	056
12	EXM03	055	4	0	0	0	1	0	0	00	0	00	00	00	0	0	00	02	00	030
12	EXM04	056	6	0	0	0	0	0	0	01	0	00	00	00	0	0	04	01	17	055
12	EXM03	057	6	0	3	0	1	1	0	00	0	11	07	17	2	0	00	01	17	056
12	EXM07	060	2	0	0	1	0	0	0	00	0	00	00	00	1	0	00	00	00	061
12	EXM08	061	4	0	0	0	1	0	0	00	0	32	00	00	2	0	00	00	00	030
2	DEP01	062	6	0	0	0	0	0	0	00	0	00	00	00	2	0	03	00	00	063
12	DEP02	063	6	0	3	0	1	1	0	00	0	11	07	17	2	0	00	01	17	064
12	DEP03	064	6	0	3	0	1	1	0	00	0	11	07	17	2	0	00	01	17	065
12	DEP04	065	5	0	0	0	0	1	1	00	0	32	10	17	0	0	00	01	17	066
12	DEP05	066	2	0	0	1	0	0	0	00	0	00	00	00	1	0	00	00	00	067
12	DEP06	067	2	0	0	0	0	1	0	00	0	00	00	00	0	1	00	01	17	070
12	DEP07	070	6	0	0	0	1	0	0	01	0	32	00	00	2	0	03	00	00	071
12	DEP08	071	2	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	072
12	DEP09	072	3	0	0	0	0	0	5	00	0	00	00	00	2	0	00	00	00	030
12	DEP10	073	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	02	00	030
08	DOP21	074	2	0	0	1	0	0	0	00	3	00	00	00	2	0	00	00	00	366
9	SSL11	075	2	0	0	1	0	0	0	00	3	00	00	00	2	0	00	00	00	374
12	STA01	076	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	07	016
06	TRP15	077	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	10	140

NOTE: THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF FIELD IS LISTED HERE FOR CLARITY.

DRN.	DATE 6-15-72	TITLE: U WORD (ADR 000-077)
CHK'D	DATE 7/16/72	
ENG.	DATE 7/16/72	
PROJ. ENG.	DATE 7/16/72	SIZE K; CODE CS; NUMBER M7232-0-1; REV. F
PROD.	DATE 6/30/72	
SHEET 9 OF 12		DIST.

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRx	RIF	UPF
01	FET07	100	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	13	126
06	RTI00	101	7	0	3	0	1	1	1	00	0	11	02	17	2	1	00	01	06	320
27	DOP02	102	2	0	0	1	0	0	0	00	0	00	00	00	0	0	31	04	00	364
07	DOP00	103	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	10	00	363
07	SSL02	104	4	0	0	0	1	0	0	14	0	00	00	00	0	0	31	04	00	373
07	SSL00	105	2	0	0	1	0	0	0	00	0	00	00	00	0	0	31	04	00	372
09	RSR00	106	6	0	0	1	1	0	0	00	1	00	00	00	3	0	00	04	00	271
09	RSR02	107	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	04	00	272
27	ARR00	110	2	0	0	0	0	0	0	00	0	00	00	00	0	0	16	01	13	347
07	ARA00	111	4	0	0	0	1	0	0	00	0	11	00	05	0	0	00	01	07	340
05	ARK00	112	6	0	0	1	1	0	0	00	0	11	00	00	2	0	00	01	13	353
06	TRP12	113	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	330
10	SER00	114	6	0	0	0	0	0	0	00	0	00	00	00	0	0	26	01	13	015
05	TRP07	115	2	0	3	0	0	0	0	00	0	00	00	00	0	0	26	01	13	015
07	CCC00	116	6	0	0	1	1	0	0	00	0	33	12	17	2	0	00	01	10	326
07	SCC00	117	6	0	0	1	1	0	0	00	0	33	12	17	2	0	16	01	13	352
08	DOP13	120	2	0	0	1	0	0	0	00	0	00	00	00	0	0	31	04	00	371
08	DOP13	121	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	01	11	370
11	CON00	122	6	0	0	0	0	1	0	00	0	00	00	00	2	1	00	01	07	255
10	SER03	123	6	0	0	0	0	0	0	00	0	00	00	00	0	0	26	01	13	015
06	RTS00	124	4	0	0	0	1	0	0	00	0	00	00	00	0	0	00	04	00	323
04	MOV22	125	7	0	0	0	0	0	0	12	3	00	00	00	2	0	16	00	00	375
06	TRP06	126	6	0	3	0	1	0	0	00	0	32	02	17	2	0	00	01	14	007
06	RST00	127	4	0	0	0	1	0	0	00	0	00	00	00	2	0	00	01	00	025
07	SOB00	130	4	0	0	0	1	0	0	00	0	17	00	00	0	0	00	10	00	342
		131	0	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	000
08	SXT00	132	4	0	0	0	1	0	0	14	0	03	00	00	2	0	27	00	00	360
		133	0	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	000
07	SWB00	134	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	04	00	135
07	SWB01	135	4	0	0	0	1	0	0	00	0	32	00	12	2	0	27	00	00	360
01	FET06	136	6	0	3	0	1	1	0	00	0	06	01	17	2	0	00	01	07	217
02	SRC10	137	4	0	0	0	1	0	0	00	0	32	00	02	0	0	36	01	13	251

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRx	RIF	UPF
06	TRP10	140	2	0	0	0	0	0	0	00	7	00	00	00	0	0	04	01	10	332
02	SRC00	141	2	0	0	0	0	1	1	01	0	00	00	00	0	1	00	10	00	247
02	SRC01	142	4	0	0	0	1	1	1	01	0	11	03	17	0	1	00	10	00	240
02	SRC04	143	7	0	3	0	1	1	1	00	0	11	02	17	2	1	00	10	00	245
02	SRC02	144	4	0	0	0	1	1	1	01	0	06	03	17	0	0	00	10	00	240
02	SRC05	145	7	0	3	0	1	1	1	00	0	06	01	17	2	0	00	10	00	245
02	SRC06	146	7	0	3	0	1	0	0	00	0	11	02	17	2	0	00	01	07	241
02	SRC09	147	7	0	3	0	1	0	0	00	0	11	02	17	2	0	00	01	07	243
06	TRP07	150	6	0	3	0	1	0	0	00	0	32	00	17	2	0	00	01	14	007
05	JMP00	151	4	0	0	0	1	0	0	00	0	00	00	00	0	0	15	04	00	300
05	JMP01	152	6	0	3	0	1	0	0	00	0	11	02	17	2	0	00	04	00	235
05	JMP02	153	7	0	3	0	1	1	1	00	0	11	02	17	2	1	15	04	00	303
05	JMP03	154	6	0	3	0	1	0	0	00	0	06	01	17	2	0	15	04	00	300
05	JMP04	155	7	0	3	0	1	1	1	00	0	06	01	17	2	0	15	04	00	303
05	JMP05	156	7	0	3	0	1	0	0	00	0	11	02	17	2	0	15	01	07	304
05	JMP07	157	7	0	3	0	1	0	0	00	0	11	02	17	2	0	00	01	07	301
04	MOV19	160	4	0	0	0	1	0	0	00	0	00	00	00	0	0	20	01	11	204
03	OST00	161	2	0	0	0	0	1	3	07	0	00	00	00	0	1	00	04	00	266
03	DST01	162	4	0	0	0	1	1	3	07	0	11	03	17	0	1	00	04	00	260
03	DST04	163	7	0	3	0	1	1	1	00	0	11	02	17	2	1	00	04	00	264
03	DST02	164	4	0	0	0	1	1	3	07	0	06	03	17	0	0	00	04	00	260
03	DST05	165	7	0	3	0	1	1	1	00	0	06	01	17	2	0	00	04	00	264
03	DST07	166	7	0	3	0	1	0	0	00	0	11	02	17	2	0	17	01	07	261
03	DST06	167	7	0	3	0	1	1	1	00	0	11	02	17	2	1	17	01	07	261
04	MOV18	170	4	0	0	0	1	0	0	00	0	00	00	00	0	0	20	10	00	204
04	MOV00	171	4	0	0	0	1	1	0	07	0	00	00	00	0	1	22	04	00	257
04	MOV01	172	4	0	0	0	1	1	0	07	0	11	03	17	2	1	22	04	00	257
04	MOV03	173	7	0	3	0	1	1	1	01	0	11	02	17	2	1	00	04	00	207
04	MOV02	174	4	0	0	0	1	1	0	07	0	06	03	17	2	0	22	04	00	257
04	MOV04	175	7	0	3	0	1	1	1	01	0	06	01	17	2	0	00	04	00	207
04	MOV06	176	7	0	3	0	1	0	0	00	0	11	02	17	2	0	17	01	07	206
04	MOV05	177	7	0	3	0	1	1	1	00	0	11	02	17	2	1	17	01	07	206

NOTE: THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF FIELD IS LISTED HERE FOR CLARITY.

DRM	DATE 6-15-72	TITLE: U WORD (ADR 100-177)
CHK'D	DATE 6/17/72	
ENG	DATE 6/17/72	
PROJ ENG	DATE 6/17/72	
PROD	DATE 6/30/72	SIZE K, CODE CS, NUMBER M7232-0-1, REV. F
SHEET 10 OF 12		DIST.

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
04	MOV16	200	4	0	0	0	1	0	5	00	0	00	00	00	0	0	00	01	11	125
04	MOV17	201	4	0	0	0	1	0	5	00	0	11	16	17	0	0	00	10	00	125
04	MOV14	202	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	01	11	205
04	MOV13	203	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	10	00	205
04	MOV20	204	0	0	3	1	0	0	0	00	3	00	00	00	2	0	00	04	00	000
04	MOV15	205	6	0	3	0	1	0	7	00	0	32	00	10	2	0	00	01	11	125
04	MOV08	206	2	0	3	1	0	0	0	00	0	00	00	00	1	0	21	01	12	212
04	MOV11	207	2	0	3	1	0	0	0	00	0	00	00	00	1	0	22	01	12	210
04	MOV12	210	2	0	0	0	0	1	0	01	0	00	00	00	0	1	00	01	12	200
09	SSL10	211	2	0	0	0	0	0	0	00	1	00	00	00	2	0	00	00	00	367
04	MOV09	212	4	0	0	0	0	1	0	07	0	11	00	00	0	0	00	04	00	200
04	MOV10	213	5	0	0	0	0	1	1	01	0	11	00	00	0	0	00	04	00	207
06	TRP05	214	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	14	007
06	TRP02	215	5	0	0	0	0	1	1	00	0	11	02	17	0	0	00	01	14	115
06	TRP04	216	4	0	0	0	1	0	0	00	0	32	15	17	2	0	00	00	00	214
01	FET08	217	6	1	0	0	1	0	0	00	0	00	00	00	0	0	00	00	00	252
09	SSL06	220	4	0	0	0	1	0	5	17	0	00	00	00	2	0	00	01	12	211
09	SSL04	221	4	0	0	0	1	0	5	11	0	06	00	00	2	0	00	00	12	367
09	SSL08	222	4	0	0	0	1	0	0	14	0	00	00	00	0	0	00	01	12	253
09	SSL07	223	4	0	0	0	1	0	0	10	0	06	00	00	2	0	00	00	00	253
08	DOP07	224	4	0	0	0	1	0	5	17	0	00	00	00	0	0	00	10	00	367
08	DOP03	225	4	0	0	0	1	0	5	17	0	00	00	00	0	0	00	01	11	367
08	DOP04	226	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	10	00	365
08	DOP05	227	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	01	11	365
08	DOP09	230	4	0	0	0	1	0	0	14	0	00	00	00	0	0	00	10	00	254
08	DOP10	231	4	0	0	0	1	0	0	14	0	00	00	00	0	0	00	01	11	254
09	RSR06	232	6	0	0	1	1	0	0	00	1	32	00	00	3	0	00	00	00	275
09	RSR08	233	6	0	0	1	1	0	0	00	1	32	00	10	3	0	00	00	00	276
08	SXT01	234	4	0	0	0	1	0	5	14	0	03	00	00	2	0	00	00	00	367
05	JMP02	235	4	0	0	0	1	0	0	00	0	06	01	17	0	0	15	04	00	300
09	SSL05	236	4	0	0	0	1	0	5	00	0	32	00	12	2	0	00	00	00	367
03	DST16	237	4	0	0	0	1	0	0	00	0	32	00	02	0	0	34	01	13	270

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
02	SRC03	240	3	0	3	0	0	0	0	00	0	00	00	00	2	0	35	10	00	250
02	SRC07	241	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	11	242
02	SRC08	242	4	0	0	0	1	1	01	0	11	00	00	0	0	00	10	00	247	
02	SRC10	243	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	11	244
02	SRC11	244	5	0	0	0	0	1	1	00	0	11	00	00	0	0	00	10	00	245
02	SRC12	245	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	11	246
02	SRC13	246	2	0	0	0	0	1	1	01	0	00	00	00	0	1	00	01	11	247
02	SRC14	247	3	0	0	0	0	0	0	00	0	00	00	00	0	0	35	01	13	250
02	SRC15	250	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	11	120
02	SRC17	251	2	0	3	1	0	0	0	00	0	00	00	00	2	0	00	01	11	120
01	FET09	252	2	0	3	1	0	0	0	00	0	00	00	00	2	0	00	01	13	004
09	SSL12	253	2	0	0	0	0	0	0	00	1	00	00	00	2	0	00	00	00	075
08	DOP22	254	2	0	0	0	0	0	0	00	1	00	00	00	2	0	00	00	00	074
11	CON12	255	6	0	0	0	1	0	2	00	6	00	00	00	0	0	24	00	00	041
		256	0	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	000
08	MOV07	257	2	0	3	0	0	0	0	00	0	00	16	00	2	0	00	04	00	200
03	DST05	260	3	0	3	0	0	0	0	00	0	00	00	00	2	0	33	04	00	267
03	DST09	261	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	12	262
03	DST10	262	4	0	0	0	0	1	3	07	0	11	00	00	0	0	00	04	00	266
03	DST11	263	5	0	0	0	0	1	1	00	0	11	00	00	0	0	00	04	00	264
03	DST12	264	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	12	265
03	DST13	265	2	0	0	0	0	1	3	01	0	00	00	00	0	1	00	01	12	266
03	DST14	266	3	0	0	0	0	0	0	00	0	00	00	00	0	0	33	01	13	267
03	DST15	267	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	12	220
03	DST17	270	2	0	3	1	0	0	0	00	0	00	00	00	2	0	00	01	12	220
09	RSR01	271	6	0	3	0	1	0	0	00	0	32	00	00	2	0	27	04	00	274
09	RSR03	272	6	0	0	1	1	0	0	00	1	32	00	10	3	0	00	00	00	273
09	RSR04	273	6	0	1	0	1	0	0	00	0	32	00	02	2	0	27	04	00	274
09	RSR05	274	0	0	0	0	0	0	0	00	2	00	00	00	0	0	00	04	00	000
09	RSR07	275	4	0	0	0	1	0	5	00	0	32	00	00	2	0	00	00	00	277
09	RSR09	276	4	0	0	0	1	0	7	00	0	32	00	02	2	0	00	00	00	277
09	RSR10	277	3	0	0	0	0	0	0	00	2	00	00	00	2	0	16	00	00	376

NOTE: THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF FIELD IS LISTED FOR CLARITY.

DRN:	DATE 6-15-72
CHK:	DATE 6/16/72
ENG:	DATE 6/16/72
PROJ. ENG:	DATE 6/16/72
MOD: R. Doorley	DATE 6/30/72
SHEET 11 OF 12	

TITLE: U WORD (ADR 200-277)

SIZE	CODE	NUMBER	REV.
K	CS	M7232-0-1	F

DIST.

NOTE: THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF FIELD IS LISTED FOR CLARITY.

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
05	JMP24	300	2	0	3	1	0	0	0	00	0	00	00	00	2	0	00	01	10	306
05	JMP09	301	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	10	302
05	JMP10	302	5	0	0	0	1	1	0	00	0	11	00	00	0	0	00	04	00	303
5	JMP11	303	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	10	306
05	JMP14	304	2	0	3	1	0	0	0	00	0	00	00	00	1	0	00	01	10	305
05	JMP15	305	4	0	0	0	1	0	0	00	0	00	00	00	5	0	15	04	00	300
05	JMP12	306	4	0	0	0	1	0	0	00	0	00	00	00	6	0	16	01	10	313
05	JSR00	307	6	0	3	0	1	1	0	00	0	06	00	00	2	0	00	01	06	310
05	JSR01	310	5	0	0	0	1	0	1	00	0	00	00	00	0	0	00	10	00	000
05	JSR02	311	2	0	0	0	1	0	0	00	0	00	00	00	0	0	00	01	07	312
05	JSR03	312	6	0	3	0	1	0	0	00	0	00	00	00	2	0	00	10	00	306
05	JMP13	313	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	07	316
11	CON13	314	6	0	0	0	0	0	0	00	0	00	00	00	0	0	00	10	00	000
		315	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	01	06	046
		316	6	0	3	0	0	0	0	00	0	00	00	00	2	0	00	10	00	000
06	TRP01	317	6	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	14	215
06	RTN01	320	2	0	3	0	0	0	1	00	0	00	00	00	1	0	00	01	07	321
06	RTN02	321	7	0	3	0	0	1	0	00	0	00	00	00	2	1	00	01	06	322
06	RTN03	322	2	0	0	0	0	0	0	00	0	00	00	00	1	0	00	01	07	317
06	RTS01	323	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	07	324
06	RTS02	324	7	0	3	0	0	1	0	00	0	00	00	00	1	1	16	01	06	325
06	RTS03	325	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	04	00	016
06	TRP10	326	6	0	3	0	0	1	0	00	0	06	00	00	1	0	00	01	06	327
06	TRP11	327	5	0	0	0	0	1	0	00	0	00	00	00	0	0	00	01	00	113
06	TRP13	330	6	0	3	0	0	1	0	00	0	06	00	00	2	0	00	01	06	331
06	TRP14	331	5	0	0	0	0	1	0	00	0	00	00	00	0	0	00	01	07	077
06	TRP20	332	3	0	0	0	0	0	1	00	0	00	00	00	0	1	01	01	14	333
06	TRP21	333	2	0	3	0	0	0	0	00	0	00	00	00	1	0	03	01	07	102
06	TRP18	334	5	0	0	0	0	0	1	00	0	00	00	00	0	0	00	01	14	335
06	TRP19	335	2	0	0	0	0	0	0	00	0	00	00	00	1	0	00	00	00	332
06	TRP00	336	6	0	3	0	0	0	1	00	0	00	00	00	2	0	00	01	06	317
06	TRP17	337	6	0	3	0	0	0	1	00	0	00	00	00	2	0	00	01	14	334

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
07	BRA01	340	2	0	3	0	0	0	0	00	0	00	00	00	2	0	16	01	07	341
07	BRA02	341	6	0	3	0	0	1	0	00	0	00	00	00	2	0	00	01	07	016
07	SOB01	342	2	0	3	0	0	0	1	00	0	00	00	00	2	0	12	10	00	343
07	SOB02	343	6	0	0	1	1	0	0	00	0	00	00	00	2	0	00	01	13	344
07	SOB03	344	6	0	3	0	1	0	0	10	0	06	00	00	2	0	16	01	07	346
07	SOB05	345	2	0	0	0	1	0	0	00	0	00	00	00	2	0	16	00	00	347
07	SOB04	346	6	0	3	0	0	1	0	10	0	06	00	00	2	0	00	01	07	016
07	SOB06	347	2	0	0	0	0	0	0	00	0	00	00	00	2	0	00	01	13	016
07	CCC01	350	6	0	0	0	1	0	0	00	0	00	00	00	2	0	16	00	00	351
07	CCC02	351	6	0	0	0	1	0	0	00	0	00	00	00	2	0	00	00	00	016
07	SCC01	352	6	0	0	0	1	0	0	00	0	00	00	00	2	0	00	00	00	016
05	HRK01	353	6	0	3	0	1	1	1	00	0	00	00	00	2	0	00	01	07	354
05	HRK02	354	4	0	0	0	1	0	0	00	0	00	00	00	1	0	00	01	07	355
05	HRK03	355	3	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	06	356
05	HRK04	356	6	0	3	0	0	1	0	00	0	00	00	00	1	0	16	01	05	357
05	HRK05	357	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	07	016
08	DDP19	360	5	0	3	0	0	0	0	00	0	00	00	00	2	0	00	04	00	000
08	DDP18	361	6	0	1	0	0	0	0	00	0	00	00	00	2	0	00	04	00	000
08	DDP17	362	6	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	000
07	DDP01	363	4	0	0	0	1	0	0	10	0	00	00	00	2	0	27	04	00	360
08	DDP03	364	4	0	0	0	1	0	0	14	0	00	00	00	0	0	27	10	00	360
08	DDP06	365	4	0	0	0	1	0	0	14	0	00	00	00	0	0	27	01	00	360
08	DDP11	366	5	0	0	0	1	0	0	10	0	00	00	00	0	0	27	04	00	360
08	DDP12	367	3	0	0	0	0	0	0	00	0	00	00	00	0	0	27	00	00	360
08	DDP14	370	4	0	0	0	1	0	0	10	0	00	00	00	0	0	27	04	00	360
08	DDP10	371	4	0	0	0	1	0	0	14	0	00	00	00	0	0	27	01	11	360
07	SSL01	372	4	0	0	0	1	0	0	10	0	00	00	00	0	0	27	00	00	360
07	SSL03	373	2	0	0	0	0	0	0	00	0	00	00	00	0	0	27	00	00	360
09	SSL09	374	5	0	0	0	0	1	0	13	0	00	00	00	0	0	16	00	00	375
08	DDP20	375	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	016
09	RSR11	376	2	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	016
		377	0	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	000

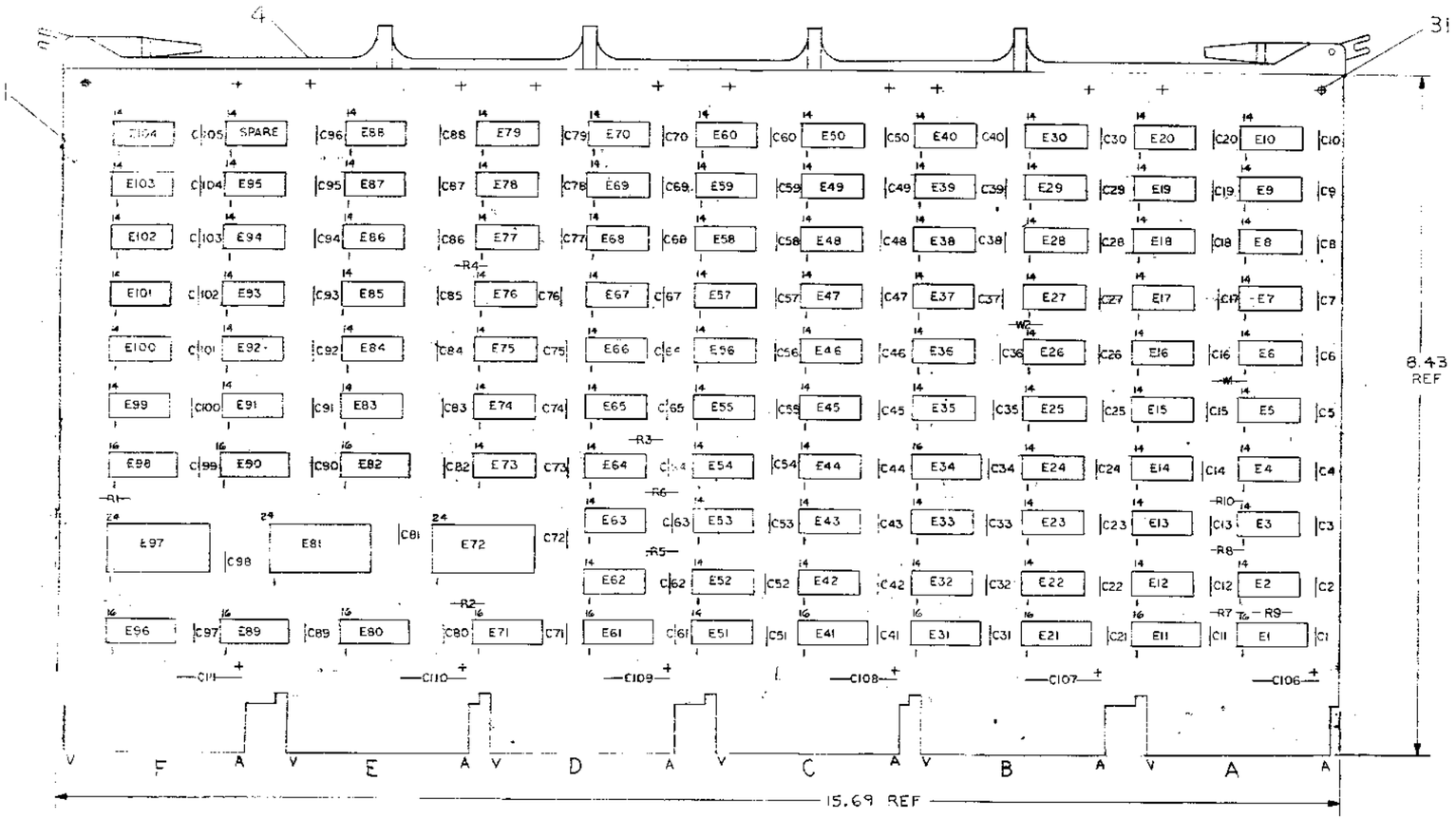
DRN	DATE 6-15-72
ENG	DATE 6/16/72
PROJ ENG	DATE 6/16/72
QUAL ENG	DATE 6/16/72
PROD ENG	DATE 6/16/72

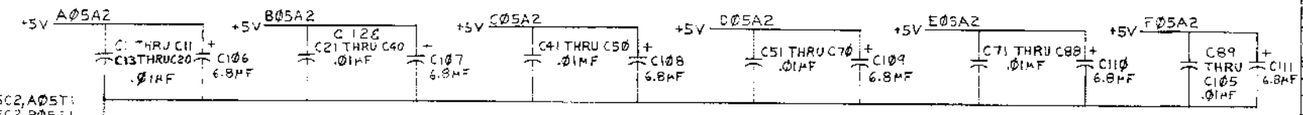
TITLE: U WORD (ADR 300-377)

SIZE: K | CODE: CS | NUMBER: M7232-0-1 | REV.: F

NOTES:

1. PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KD11-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
3. PROCESSOR SIGNAL PREFIX NOTATION (K2-1 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
4. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.





QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	W1, W2	INSULATED JUMPER	9009185	32
12		EYELET	9006732	31
1	E1	I.C. DEC 74157	1910655	30
4	E21, E71, E96, E41	I.C. DEC 74175	1910651	29
3	E81, E97, E72	I.C. DEC 74150	1910153	28
1	E82	I.C. DEC 74153	1909937	27
2	E90, E98	I.C. DEC 7415!	1909936	26
11	E5, E8, E29, E33, E37, E45 E62, E75, E86, E92, E95	I.C. DEC 74H04	1909931	25
6	E11, E31, E34, E61, E80, E89	I.C. DEC 8251	1909594	24
6	E20, E22, E23, E27, E32, E56	I.C. DEC 8815	1909713	23
7	E14, E36, E51, E79, E83 E84, E59	I.C. DEC 74H11	1909267	22
1	E26	I.C. DEC 74H61	1909065	21
2	E6, E7	I.C. DEC 74H60	1909064	20
3	E39, E17, E57	I.C. DEC 74H53	1909062	19
5	E4, E28, E52, E53, E54	I.C. DEC 74H52	1909061	18
3	E87, E49, E19	I.C. DEC 74H50	1909060	17
5	E24, E67, E68, E69, E70	I.C. DEC 74H30	1909059	16
4	E12, E13, E38, E102	I.C. DEC 74H21	1909058	15
8	E15, E40, E42, E64, E77 E104, E47, E101	I.C. DEC 74H10	1909057	14
14	E2, E3, E18, E35, E43, E48 E58, E73, E76, E78, E85 E88, E93, E99	I.C. DEC 74H00	1909056	13
7	E9, E10, E16, E44, E60 E100, E103	I.C. DEC 7402	1909004	12
7	E25, E30, E46, E55 E65, E66, E94	I.C. DEC 74H20	1905635	11
1	E50	I.C. DEC 74H40	1905586	10
3	E63, E74, E91	I.C. DEC 7400	1905575	6
10	R1 THRU R10	RES. 1K 1/4W ±5%	1300365	5
1		HANDLE MODULE	1210711-02	4
105	C1 THRU C105	CAP .01MF 100V ±20% DISC	1001610	3
6	C106 THRU C111	CAP 6.8MF 35V ±20% STANT	1002067	2
1		ETCHED CIRCUIT BOARD	5009982	1

PARTS LIST

ETCH BOARD REV C D

IC TYPE	GND	+ 5V
DEC 74157	5	16
DEC 74175	8	16
DEC 74150	12	24
DEC 74153	8	16
DEC 7415!	8	8
DEC 8251	8	16

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

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL: PDP 11

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK	DATE
E	ORIGINATED	J.LOUGHLIN	6/27/72
D	M7233-00003	J.LOUGHLIN	6/8/72
C	M7233-00002	J.LOUGHLIN	4-28-72
B	M7233-0002	J.LOUGHLIN	4-22-72
A	M7233-00004	J.LOUGHLIN	4/6/72

REVISIONS

DRN. DATE 6-2-72
CHK'D DATE 12/7/72
ENG. DATE 12/27/72
PROJ. ENG. DATE 6/27/72
PROD. DATE 6/27/72
NEXT HIGHER ASSY K7-1
SCALE
SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

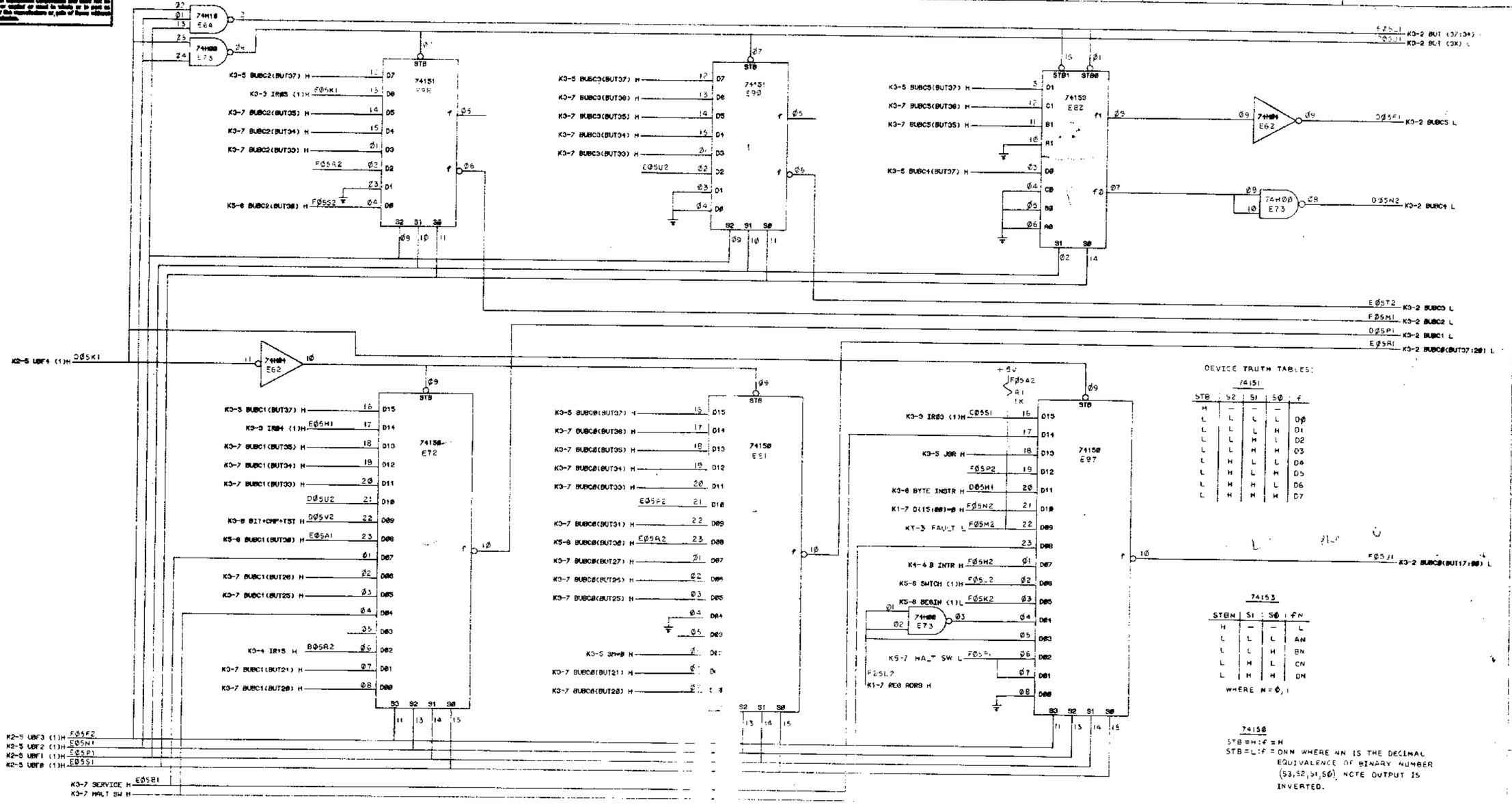
TITLE: IR DECODE

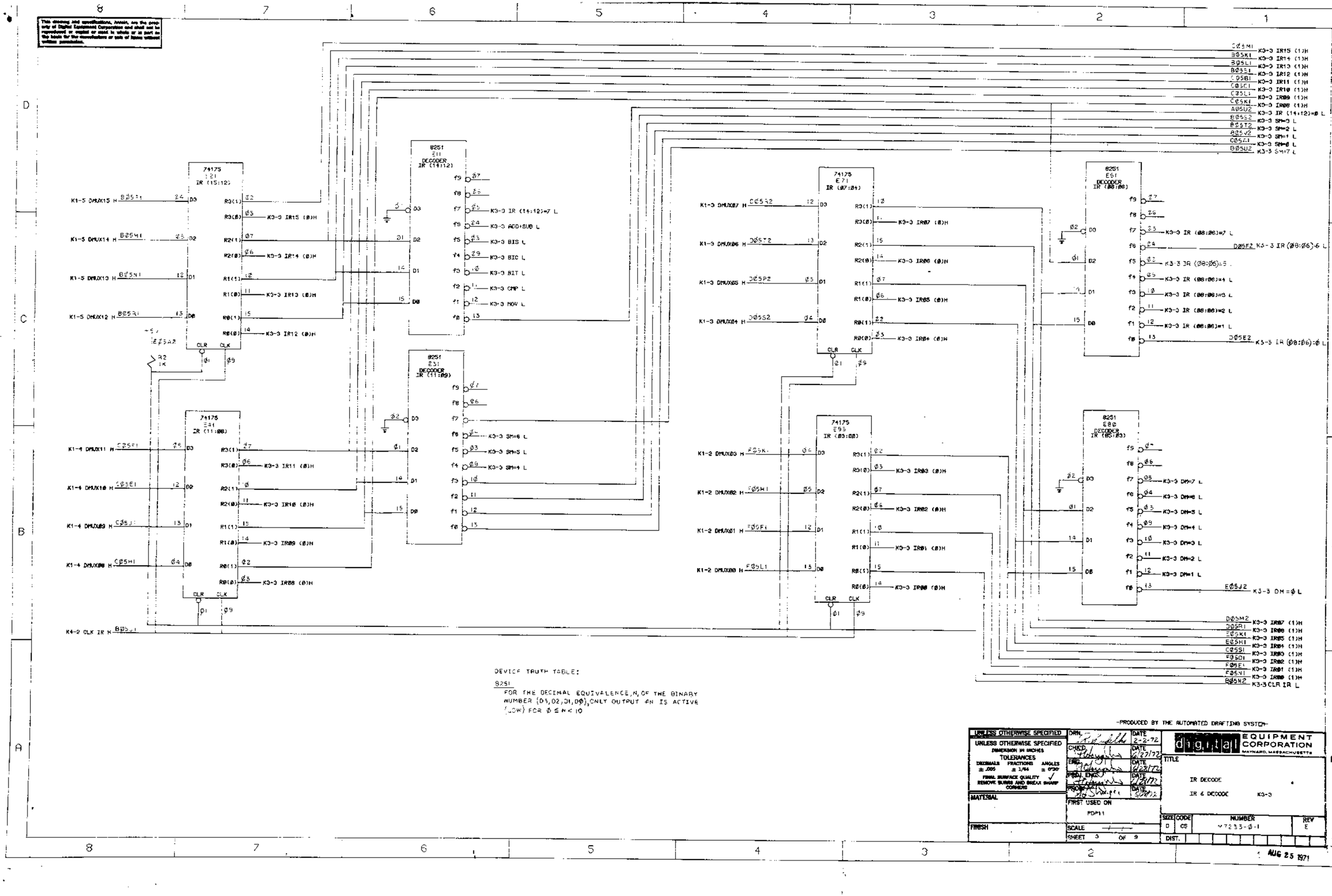
SIZE C | CODE CS | NUMBER M7233-0-1 | REV. E

DIST.

M7233-0-1 E

BRUNING 40-522 16698 DEC FORM NO. DRD 135A


74H10 E64
74H08 E73
74151 E98
74151 E90
74153 E82
74H04 E62
74H00 E73
74H04 E62
74158 E72
74158 E51
74158 E97
K3-5 BUBC2(BUT37) H
K3-3 IR85 (1)H
K3-7 BUBC2(BUT35) H
K3-7 BUBC2(BUT34) H
K3-7 BUBC2(BUT33) H
K5-6 BUBC2(BUT38) H
K3-5 BUBC3(BUT37) H
K3-7 BUBC3(BUT36) H
K3-7 BUBC3(BUT35) H
K3-7 BUBC3(BUT34) H
K3-7 BUBC3(BUT33) H
K3-5 BUBC5(BUT37) H
K3-7 BUBC5(BUT36) H
K3-7 BUBC5(BUT35) H
K3-5 BUBC4(BUT37) H
K2-5 UBF4 (1)H
K3-5 BUBC1(BUT37) H
K3-3 IR84 (1)H
K3-7 BUBC1(BUT35) H
K3-7 BUBC1(BUT34) H
K3-7 BUBC1(BUT33) H
K3-8 BIT+CMP+TST H
K5-8 BUBC1(BUT38) H
K3-7 BUBC1(BUT28) H
K3-7 BUBC1(BUT25) H
K3-4 IR15 H
K3-7 BUBC1(BUT21) H
K3-7 BUBC1(BUT20) H
K3-5 BUBC0(BUT37) H
K3-7 BUBC0(BUT36) H
K3-7 BUBC0(BUT35) H
K3-7 BUBC0(BUT34) H
K3-7 BUBC0(BUT33) H
K3-7 BUBC0(BUT31) H
K5-8 BUBC0(BUT38) H
K3-7 BUBC0(BUT27) H
K3-7 BUBC0(BUT25) H
K3-5 JMP H
K3-7 BUBC0(BUT21) H
K3-7 BUBC0(BUT20) H
K2-5 UBF3 (1)H
K2-5 UBF2 (1)H
K2-5 UBF1 (1)H
K2-5 UBF0 (1)H
K3-7 SERVICE H
K3-7 HALT SW H
+5V
K3-3 IR80 (1)H
K3-5 J9R H
K3-8 BYTE INSTR H
K1-7 D(15:08)=0 H
KT-3 FAULT L
K4-4 B INTR H
K5-6 SWITCH (1)H
K5-8 BEGIN (1)L
K5-7 HALT SW L
K1-7 REQ REQ9 H
K3-2 BUT (37:34)
K3-2 BUT (3X) L
K3-2 BUBC5 L
K3-2 BUBC4 L
K3-2 BUBC3 L
K3-2 BUBC2 L
K3-2 BUBC1 L
K3-2 BUBC0(BUT37:28) L
K3-2 BUBC0(BUT17:08) L
DEVICE TRUTH TABLES:
74151
74153
74158
PRODUCED BY THE AUTOMATED DRAFTING SYSTEM
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
MATERIAL
FINISH
FIRST USED ON
DRN
CHKD
ENG
PROJ ENGR
MGR
DATE
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
IR DECODE
BUT MUX
K3-2
SIZE
CODE
NUMBER
REV.
SCALE
SHEET 2 OF 9
DIST



DEVICE TRUTH TABLE:

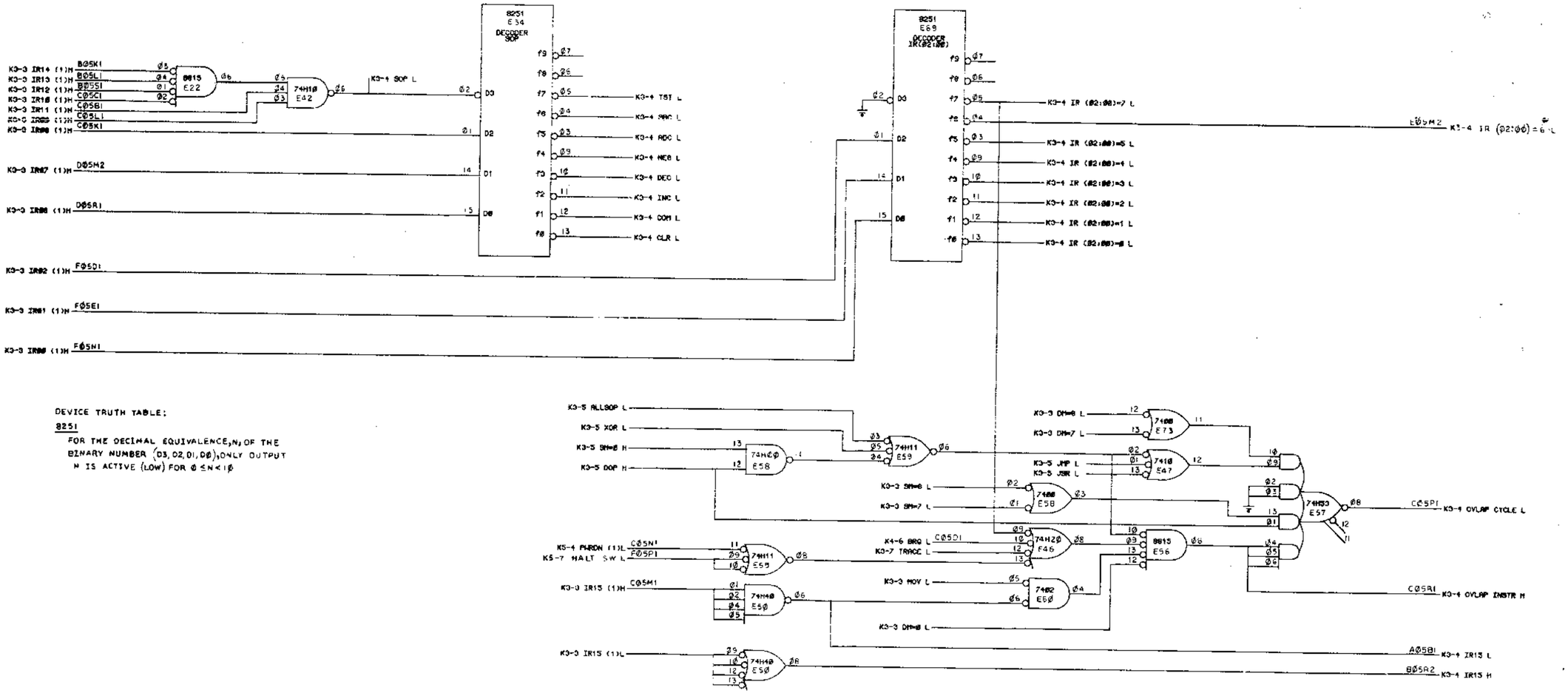
8251

FOR THE DECIMAL EQUIVALENCE,N, OF THE BINARY NUMBER (D5,D2,D1,D0), ONLY OUTPUT #N IS ACTIVE (LOW) FOR $0 \leq N < 10$

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 2-2-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHKD	DATE 2/27/72	TITLE IR DECODE IR & DECODE K3-3
	ENG	DATE 2/27/72	
	PROJ. ENGR	DATE 2/27/72	
MATERIAL	PROD. ENGR	DATE 3/9/72	
FIRST USED ON PDP11			SIZE D CODE CS NUMBER 7233-0-1 REV E
FINISH	SCALE		
	SHEET 3 OF 9		DIST.

AUG 25 1971



DEVICE TRUTH TABLE:

8251

FOR THE DECIMAL EQUIVALENCE,N, OF THE BINARY NUMBER (D3, D2, D1, DØ), ONLY OUTPUT N IS ACTIVE (LOW) FOR Ø ≤ N < 1Ø

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 2-2-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS .XXX ± .005 FRACTIONS ± 1/64 ANGLES ± Ø°3Ø' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 6/27/72	TITLE IR DECODE IRD & OVLAP K3-4
	ENG	DATE 6/27/72	
	PROJ. ENG.	DATE 6/27/72	
	PROD.	DATE 6/30/72	
MATERIAL	FIRST USED ON PDP11		SIZE D / CODE CB / NUMBER M7753-Ø-4 / REV E
FINISH	SCALE 1-1		DIST.
	SHEET 4 OF 9		

AUG 25 1971

K3-4 IR15 H
K3-3 IR (14:12)=7 L
K3-3 SM=4 L
B05A2
8815 F32
K3-5 XOR H
K3-4 SOP L
74H04 E33
K3-5 SOP H
8815 E32
K3-5 ALLSOP L
K3-3 IR (14:12)=0 L
K3-3 SM=0 L
A05U2
8815 E23
K3-5 ROTSHF H
K3-3 IR08 (0)L
C05K1
K3-3 IR15 (0)L
C05M1
8815 E22
K3-5 SXT H
K3-3 IR (08:06)=7 L
74H00 E43
K3-5 DOP L
K3-5 SMW0 H
K3-3 SM=0 L
C05A1
K3-5 IR (15:08)=0 H
8815 E23
K3-3 IR07 (1)H
K3-3 IR08 (1)H
K3-3 IR07 (0)H
D05M2
D05R1
74H11 E51
74H10 E42
K3-5 SWB L
K3-5 JMP L
74H04 E45
74H04 E33
K3-5 SM=4 H
K3-3 IR15 (0)H
74H11 E42
74H00 E43
K3-5 JMP+JSR H
74H04 E33
K3-5 IR (14:12)=0 H
K3-5 JSR L
74H04 E45
K3-5 JSR H
74H04 E33
K3-5 XOR L
74H00 E43
K3-3 DM=0 L
74H04 E45
K3-5 DOP L
74H00 E43
74H02 E44
K3-3 MOV L
K3-5 SM=0 H
74H02 E44
K5-3 BR INSTR L
K3-6 MARK L
K3-6 WAIT L
K3-6 CC INSTR L
K3-6 SOB L
K3-6 SXT*DM0 L
K3-6 SWAB*DM0 L
D05A1
D05A2
+5V
R3
1K
D05B1
74H30 E70
K3-6 SOPHORE*DM0 L
K3-6 ROTSHF(R)*DM0 L
K3-6 RTS L
K3-6 TRAP INSTR L
74H30 E69
K3-6 PARTDOP*RC0 L
K3-6 HALT*RESET L
74H30 E68
K5-3 TRUE BR L
K5-3 FALSE BR L
K3-6 RTI+RTT L
K3-6 I1K0 (CINSTR) L
D05L1
D05H1
74H20 E66
74H30 E67
74H04 E45
74H04 E29
K3-5 I1K3 L
74H04 E45
74H20 E35
74H20 E46
74H20 E56
K3-5 BUBC5(BUT37) H
K3-5 BUBC4(BUT37) H
K3-5 MOV*SM0 L
K3-5 DOP*-SM0 L
74H00 E35
K3-5 BUBC3(BUT37) H
K3-3 IR11 (1)H
C05B1
K3-6 RESET H
74H52 E34
K3-5 BUBC2(BUT37) H
K3-3 IR05 (1)H
E05K1
K3-5 I1K3 H
K3-3 IR10 (1)H
C05C1
74H52 E53
K3-5 BUBC1(BUT37) H
K3-5 I1K1 H
K3-3 IR04 (1)H
E05H1
K3-3 IR09 (1)H
C05L1
K3-5 I1K0 H
74H52 E52
K3-5 BUBC0(BUT37) H
K3-5 I1K4 L
K3-3 IR03 (1)H
C05S1
K3-3 DM=7 L
74H11 E51

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN. R.Smith	DATE 2-2-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
	CHKD. J.Mahoney	DATE 4/27/72	TITLE: IR DECODE; BUBC (INSTR 1) K3-5
	ENGR. Hamlin	DATE 4/25/72	
	PROJ. ENG.	DATE	
MATERIAL	PROJ. Langer	DATE 4/24/72	
FINISH	FIRST USED ON: PDP11		SIZE D; CODE C3; NUMBER M7033-0-1; REV. E
	SCALE		DIST.
	SHEET 5 OF 9		

AUG 24 1977

K3-3 IR87 (1)H
K3-3 IR80 (0)H
K3-5 IR (15:08)=0 H
K3-3 DMM L
K3-3 IR85 (1)H
K3-5 ROTSHF H
K3-5 DOP L
K3-4 IR15 H
K3-3 IR86 (1)H
K3-4 SOP L
K3-5 SM=0 H
K3-3 IR87 (0)H
K3-3 IR81 (1)H
K3-3 IR80 (0)H
K3-3 ADD+SUB L
K3-6 ROTSHF L
K3-6 ROTSHF(R1+DM8 L
K3-4 NE0 L
K3-6 ROTSHF(L) L
K3-3 IR84 (1)H
K3-5 SUB H
K3-6 RTS L
K3-6 CC INSTR L
K3-6 DM=0 H
K3-4 IR15 L
K3-5 IR (14:12)=0 H
K3-3 SM=0 L
K3-3 IR (08:00)=4 L
K3-5 SM=4 H
K3-6 XOR H
K3-3 MOV L
K3-3 IR (14:12)=0 L
K3-3 IR (14:12)=7 L
K3-5 SXT H
K3-5 SWAB H
K3-3 SM=7 L
K3-6 MARK L
K3-6 EMT+TRAP L
K3-6 PARTOOP*REG L
K3-6 SXT*DM8 L
K3-6 SWAB*DM8 L
K3-6 SOB L
K3-6 SM=7 H
K3-5 BUBC4(BUT07) H
K3-5 BUBC2(BUT07) H
K3-5 BUBC1(BUT07) H
K3-5 BUBC0(BUT07) H
K3-5 BUBC5(BUT07) H
K3-5 BUBC3(BUT07) H
K3-6 BYTE INSTR H
K3-6 CC INSTR H
K3-6 RSVD INSTR L
K3-6 ILL INSTR L
K3-6 TRAPS DATA L
K3-6 I1K0 (CINSTR) L
K3-6 SOPHORE=DM8 L
K3-6 SOPHORE H
K3-3 IR82 (1)L
K3-6 RTT L
K3-6 RTT H
K3-6 RTI+RTT L
K7-2 PSW (0) H
K3-6 IR (15:05)=0 H
K3-6 RESET L
K3-6 RESET H
K3-6 HALT+RESET L
K3-6 PRIV INSTR L
K3-6 WAIT L
K3-6 DR=1 H
K3-6 IOT L
K3-6 BPT L
K3-6 TRAP INSTR L
K3-6 EMT+TRAP H
K3-6 EMT L
K3-6 TRAP L
K3-6 IR(14:12)=7 H
K3-4 IR (02:00)=5 L
K3-4 IR (02:00)=6 L
K3-4 IR (02:00)=1 L
K3-4 IR (02:00)=4 L
K3-4 IR (02:00)=3 L
K3-3 IR88 (0)H
K3-3 IR88 (1)H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED	DRN. R Gudeth	DATE 12-3-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 12/27/72	TITLE IR DECODE IRQ DISCRETE K3-6
MATERIAL	ENG.	DATE 12/27/72	
	PROJ. ENG.	DATE 12/27/72	
FINISH	PROD. SUPT.	DATE 12/27/72	
	FIRST USED ON PDP11		SIZE D CODE C8 NUMBER 23-7- REV. E
	SCALE		
	SHEET 6 OF 9		DIST.

K5-6 OVLAP (1)H E25D1 — 74H04 E56 — K3-7 BUBC0(BUT27) H
K3-3 DM=0 L E25J2
K1-7 PS AORS H E25K2
K4-5 CBR (1)L E25E2 — 74H08 E93 — 74H20 E94
K5-2 PSCT (1)H E25S2
K3-8 RTT L — 74H00 E83
K5-4 BERR (1)L E25U2
K5-4 BOVFLW (1)L E25V2
K5-4 PWRDN (1)L E25S1 — 74H21 E102
K5-8 CONSL (1)L E25N2 — 74H00 E89
K1-6 BRQ L C05D1 — 74H08 E85
K5-4 WAIT (1)L E05J1 — 74H04 E86 — 74H08 E95
K4-5 BRPTH (0)H E05J2 — 74H08 E85 — 74H00 F93 — K3-7 BUBC1(BUT25) H
K5-7 HALT SW L E05P1 — 74H04 E92 — K3-7 HALT SW H — 74H04 E92 — K3-7 BUBC0(BUT25) H
K3-3 MOV L
K3-5 IR03(0)H — 74H11 E84 — K3-7 BUBC1(BUT26) H — 74H11 E84 — K3-7 BUBC0(BUT26) H

K3-7 TRACE L E25S1
K3-7 SERVICE H E25S1
74H02 E102 — 74H04 E75 — K3-7 BUBC1(BUT28) H
74H02 E102 — 74H04 E92 — K3-7 BUBC0(BUT29) H
K3-8 BIT+CMP+TST H 00SV2 — 74H02 F100 — K3-7 BUBC0(BUT31) H
74H04 E92 — K3-5 SUAB L — 74H00 E99
74H02 E100 — 74H02 E99 — K3-7 BUBC5(BUT35) H
74H04 L92 — K3-3 IR05 (1)L — 74H11 E83 — 74H08 E91 — K3-7 BUBC3(BUT35) H
74H08 E91 — K3-7 BUBC2(BUT35) H
K3-3 IR04 (1)L — 74H08 E91 — K3-7 BUBC1(BUT35) H
74H04 E92 — 74H08 E91 — K3-7 BUBC0(BUT35) H
K3-6 DM=0 H — 74H00 E99
K3-3 SUB H — 74H10 E101
K3-3 DM=6 L
F25T2 — K3-7 BYTE CODES H
K3-7 BUBC5(BUT33) H
K3-7 BUBC3(BUT36) H
K3-7 BUBC2(BUT36) H
K3-7 BUBC0(BUT36) H

K3-5 SXT L
K3-8 ROTSHF(R) L
K3-5 SWAB L
K3-5 DOP H — 74H00 E76 — 74H20 E65 — 74H04 E75 — 74H08 E74 — K3-7 BUBC3(BUT33) H
K3-5 XOR L — 74H00 E76 — 74H20 E65 — 74H04 E75 — 74H08 E74 — K3-7 BUBC2(BUT33) H
K3-9 SUB L
K3-6 SOPHOMR H — 74H00 E76 — 74H20 E65 — 74H04 E75 — 74H08 E74 — K3-7 BUBC1(BUT33) H
74H04 E75 — K3-7 ODD BYTE H — 74H04 E75 — 74H08 E74 — K3-7 BUBC0(BUT33) H
K3-7 ODD BYTE L

K3-4 IR15 H B05A2 — 74H11 E83 — K3-7 BUBC1(BUT21) H
K3-5 SM=0 H — 74H11 E83 — K3-7 BUBC0(BUT21) H

K1-6 BA00 (1)H C05S1 — 74H08 E76
K3-5 DOP=-SM0 L — 74H10 E101
K3-4 NE0 L
K3-8 ROTSHF(R) H — 74H00 E99
K3-8 BYTE INSTR H C05H1

PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

UNLESS OTHERWISE SPECIFIED	DRN	DATE 2-2-72
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHKD	DATE 2/7/72
	ENGR	DATE 2/29/72
	PROJ ENGR	DATE 2/29/72
MATERIAL	PROD	DATE 2/29/72
	FIRST USED ON PDP11	
FINISH	SCALE	
	SHEET 7 OF 9	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: IR DECODE
BUBC (OTHER) K3-7

SIZE	CODE	NUMBER	REV
D	CS	7233-2-1	E

DIST.

AUG 24

8 7 6 5 4 3 2 1

K5-2 PS(C) H A05R2
K2-6 SALU1 (1)H A05F1
K2-6 SALU0 (1)H A05E2
K1-8 R(X8+X7) H A05C1
KE-5 ECOMUX01 L D05E1
KE-5 ECOMUX00 L D05C1
K3-3 IR00 (0)H
K3-3 IR (00:00)=2 L D05
K3-3 IR (00:00)=0 L D05E2
K3-8 BYTE INSTR H D05H1
K3-3 IR (00:00)=1 L
K3-5 ROTSHF H
K3-3 CMP L
K2-7 DAD3 (1)H B05C1
K2-7 DAD2 (1)H A05S1
K2-7 DAD1 (1)H B05B1
K3-4 INC L
K3-4 ADC L
K3-8 PS(C) L
K3-8 CMP+INC H
K3-8 ADC+PS(C) H
K3-8 ROTSHF(R) H
K3-8 ROTSHF(R) L
K3-8 ROT(R) L
K3-8 SHF(R) L
K3-8 ROT(L) H
KE-5 ECOMUX01 H
KE-5 ECOMUX00 H
K3-8 CIA00 L
KE-5 ESALU3 L A05H2
KE-5 ESALU2 L A05M2
KE-5 ESALU1 L A05L2
KE-5 ESALU0 L A05N2
K3-4 TSF L
K3-3 BIT L
K3-8 BIT-CMP-TST H
K3-8 ROTSHF(L) L
K3-3 ADD+SUB L
K3-5 XOR L
K3-3 BIC L
K3-3 BIS L
K3-9 DEC+SBC+PS(C) L
K3-4 CLR L
K3-4 COM L
K3-8 BIC+BIT H
K2-6 SALU3 (1)H A05D2
K2-6 SALU2 (1)H A05E1
K3-8 ALUS3 H
K3-8 ALUS2 H
K3-8 ALUS1 H
K3-8 ALUS0 H
K3-5 SXT L
K2-6 SALU1 (1)H A05N1
K3-8 DAD (3#2) H
K3-5 SAT H
K3-2 PS(N) (1)H A05F1
ESALUM H B05N2
K3-8 ALUM H
K3-8 DAD (3#2) L
W1 ECIN00
W2 ESALUM

DEVICE TRUTH TABLE:
74157

STB	SØ	FN
H	-	L
L	L	AN
L	H	BN

WHERE N = Ø,1,2,3

NOTE: THE W1 JUMPER IS REMOVED IF KE11-E OPTION IS INSTALLED

NOTE: THE W2 JUMPER DISABLES THE PRESENTLY UNUSED ESALUM INPUT.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

DRN.		DATE 2-7-72
CHKD.		DATE 6/27/72
ENG.		DATE 6/27/72
PROJ. ENG.		DATE 6/28/72
PROD. MGR.		DATE 6/30/72
FIRST USED ON	PDP11	
SCALE		
SHEET 8 OF 9		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
ALU CONTROL K3-8

SIZE	CODE	NUMBER	REV.
D	CS	7233-0-1	E

DIST.

AUG 25 '72

K5-2 : DRD PS L B05X2 — 74H04 E29 — 74H04 E29

K3-8 PS(C) L, K3-4 SBC L — 7402 E9 — 7402 E9 — K3-9 DEC+SBC+PS(C) L

K3-4 DEC L — 74H04 E8 — K3-9 DEC H

K3-4 ADC L — 74H04 E8

K3-8 CMP+INC H, K3-3 CMP L — 74H20 E30 — 8815 E22 — K5-2 N DATA L B05S

K5-2 PRSTC (1)L A03A1, K3-4 IR15 L A05B1, K3-3 ADD+SUB L — 7402 E9 — 7402 E10 — K3-9 SUB H — 74H04 E8 — K3-9 SUB L

K3-9 ADD H

K3-4 IR15 H B05R2 — 7402 E10

K5-2 PRSTB H A05R1

K3-4 NCO L

K5-2 PRSTA (1)H A05V2 — 74H10 E15

K3-5 ROTSHF H — 74H00 E18 — 74H50 E19 — 74H04 E29 — 8815 E27 — K3-9 V DATA L B05N1

K5-2 PS(C) H A05R2 — 74H50 E19 — 7402 E16 — K3-9 V (ROTSHF) H

74H04 E29 — 74H20 E30 — 7402 E16 — K3-9 V (COMPARE1) H

8815 E20 — K3-9 V (COMPARE 2) H

74H50 E19 — B05 — 7402 E9

K1-5 DCO (1)L B04L2 — 74H04 E29 — 74H11 E36 — 74H52 E28 — K3-9 C DATA H B05R1

K1-2 DMUX00 H F05L1 — 8815 E27

K3-4 SBC L — 74N11 E59

K2-6 SPS2 (1)H B05J2, K3-6 DM=8 H — 7402 E15

K2-6 SPS1 (1)H B05F2, K2-6 SPS0 (1)H B05P2, K3-7 ODD BYTE H — 74H20 E25

K3-4 DEC L

K3-8 BIC+BIT H — 74H04 E8

K3-4 COM L — 74H10 E15 — 74H00 E18

K3-3 MOV L, K3-5 XOR L, K3-5 SXT L, K3-4 INC L, K3-3 BIS L — 74H08 E24 — K3-8 ROTSHF (R) H, K1-2 D00 (1)H B05N2

74H51 E25 — 74H51 E25

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED: DIMENSIONS IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	DRN		DATE 2-3-72
	CHKD		DATE 2/27/72
	ENG		DATE
	PROJ MGR		DATE
	PROJ		DATE 2/27/72
MATERIAL	FIRST USED ON: PDP11		
FINISH	SCALE		
	SHEET 9 OF 9		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IR DECODE
CODES C,V K3-9

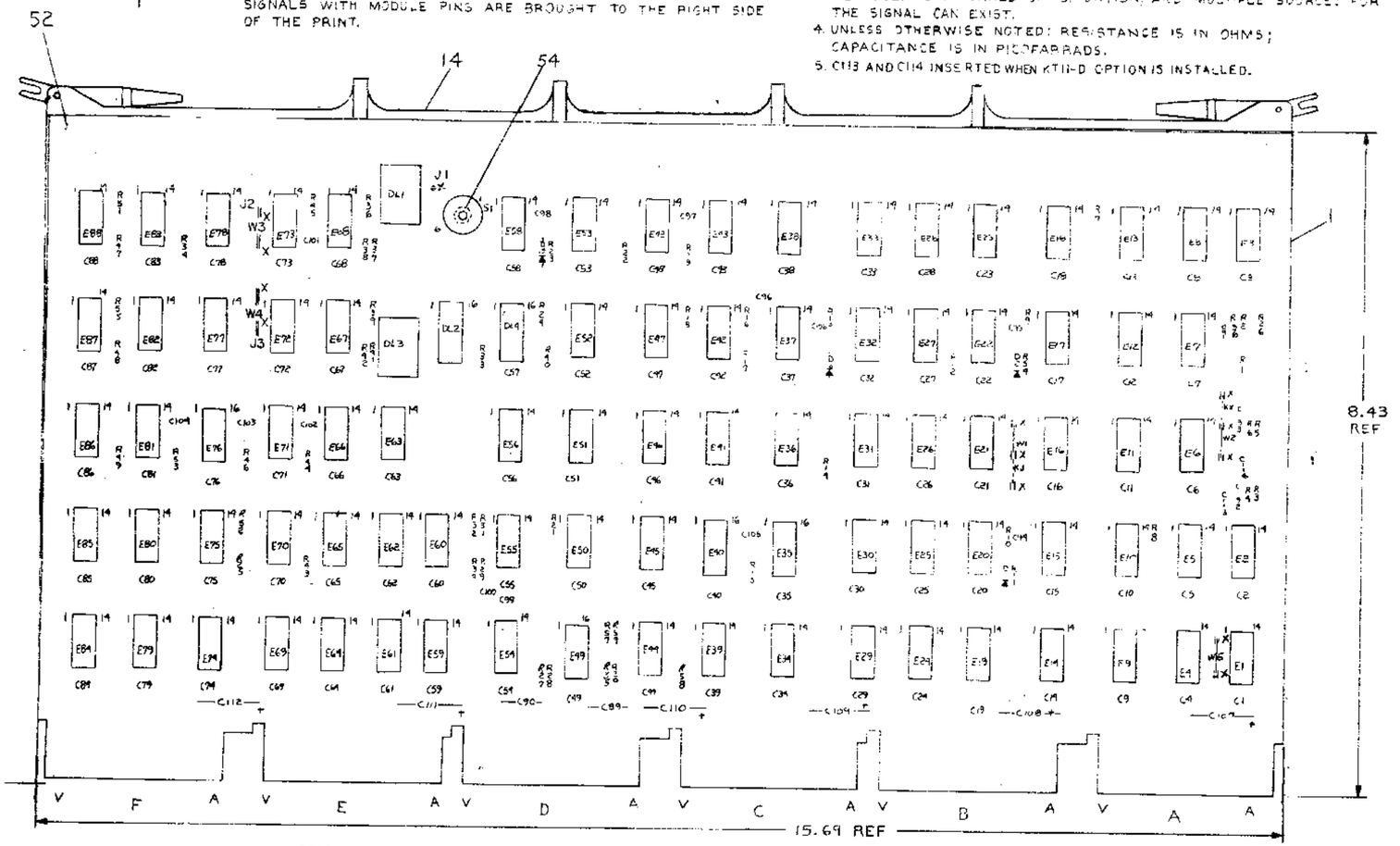
SIZE	CODE	NUMBER	REV.
D	CS	✓1233-0-1	E

DIST

AUG 25 1971

NOTES:

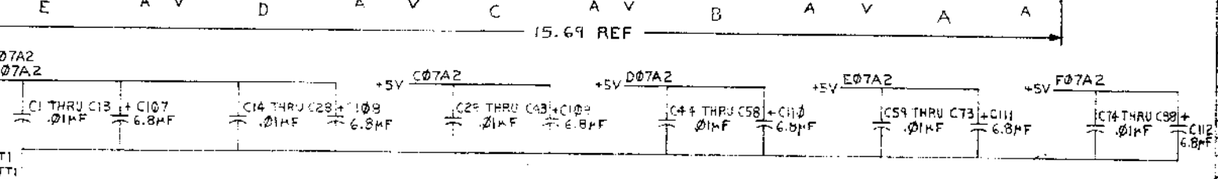
1. PIN NOTATION THROUGHOUT IS ORDER UPON MODULE PLACEMENT IN THE KDII-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
3. PROCESSOR SIGNAL PREFIX NOTATION (K2-I FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A BUS PREFIX REPRESENTS A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
4. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.
5. C113 AND C114 INSERTED WHEN KTII-D OPTION IS INSTALLED.



DEC 74175	8	16
DEC 74123	8	16
DEC 380	1	8
IC TYPE	GND	+5V

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

IC PIN LOCATIONS



QTY	REF DESIGNATION	DESCRIPTION	DEC NO.
5	W1,W2,W3,W4,W5	INSULATED JUMPER	3005343
1	USED AS A SPACER	HEX NYLON NUT, #3-40	3003749
18		SPACER	
12		EYELET	
	E40	I.C. DEC 74175	1905575
3	E33, E43, E6	I.C. DEC 74123	1905435
4	E26, E30, E56, E19	I.C. DEC 8915	1909713
6	E2, E9, E42, E44, E55, E70	I.C. DEC 8235	1909705
7	E7, E15, E21, E32, E53, E75, E58	I.C. DEC 7404	1909696
5	E10, E27, E78, E83, E12	I.C. DEC 74H74	1909667
4	E1, E3, E37, E39	I.C. DEC 380	1909485
7	E14, E33, E46, E47, E50 E71, E5	I.C. DEC 74H11	1909267
1	E88	I.C. DEC 74H55	1909263
3	E77, E82, E6	I.C. DEC 74H53	1909062
4	E16, E23, E65, E31	I.C. DEC 74H50	1909060
2	E34 E51	I.C. DEC 74H21	1909058
4	E17, E4, E41, E69	I.C. DEC 74H10	1909057
6	E21, E63, E64, E66, E72, E73	I.C. DEC 74H00	1909056
3	E22, E43, E86	I.C. DEC 7402	1909004
5	E62, E87, E9, E80, E48	I.C. DEC 74H20	1905435
5	E59, E67, E68, E61, E25	I.C. DEC 74H40	1905586
10	E18, E20, E28, E36, E45, E52 E74, E76, E84, E85	I.C. DEC 7400	1905575
7	E11, E13, E38, E50, E54, E81 E24	I.C. DEC 7474	1905547
2	DL2, DL4	DELAY LINE 100NS	1610033
1	DL3	DELAY LINE 50NS	1609428
1	DL1	DELAY LINE 30NS	1609427
2	R20, R28	RES 39K 1/4W ±5%	1302514
3	R15, R46, R53	RES 5.6K 1/4W ±5%	1301874
23	R1, R2, R3, R5, R7, R8, R12 R18, R21, R22, R25, R26, R27 R31, R32, R34, R43, R47, R48, R49, R51, R52, R55	RES 1K 1/4W ±5%	1300385
4	R35, R57, R58, R59	RES 180 1/4W ±5%	1301995
5	R9, R10, R14, R17, R24	RES 470 1/4W ±5%	1300316
2	R39, R37	RES 330 1/4W ±5%	1300295
6	R11, R13, R23, R33, R40, R54	RES 220 1/4W ±5%	1300271
2	R38, R41	RES 150 1/4W ±5%	1300250
3	R36, R42, R45	RES 100 1/4W ±5%	1300229
8	R4, R6, R16, R19, R29 R30, R44, R56	RES 47 1/4W ±5%	1300202
1		HANDLE, MODULE	1210711-02
1	S1	SWITCH, 10 POS	1210042-01
4	D1, D2, D5, D6	DIODE D664	1100114
6	C107 THRU C112	CAP 6.8MF 35V ±10% TANT	1005306
3	C89, C90, C91	CAP 1200PF 100V ±5% D.M.	1002619
2	C104, C105	CAP 27PF 100V ±5% D.M.	1001733
88	C1 THRU C88	CAP .01MF 100V ±20% DISC	1301619
3	C97, C101, C103	CAP 1000PF 100V ±5% D.M.	1000942
3	C92, C99, C100	CAP 470PF 100V ±5% D.M.	1000924
5	C94, C96, C98, C102, C106	CAP 330PF 100V ±5% D.M.	1000918
2	C93, C95	CAP 220PF 100V ±5% D.M.	1000821
1		ETCH CIRCUIT BOARD	5009883

PARTS LIST

ETCH BOARD REV D

FIRST USED ON OPTION MODEL: PDP 11

DEC NO.	EIA NO.
D664	IN5626

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	DATE	NAME
A	ORIGINATED	2-14-72	J. LOUGHLIN
B	M7234-00001	2-23-72	J. LOUGHLIN
C	M7234-00002	3-14-72	J. LOUGHLIN
D	M7234-00003	3/30/72	J. LOUGHLIN
E	M7234-00004	5-22-72	J. LOUGHLIN

REVISIONS

DRN. 6-23-72
CHK'D 7/11/72
ENG. 7/26/72
PROJ. ENG. 7/26/72
PROD. DATE

NEXT HIGHER ASSY
KDII-A

SCALE NONE

SIZE D

M7234-0-1

P ESTART L
K5-8 P ENDRESET L
K5-4 BRSV (1)L
K4-5 PERIF RELEASE H
K4-4 B INTR H
K4-3 P JAMSTART H
K5-8 PWR UP INIT L
K5-5 BSSY (1)H
K5-4 BMBY (1)H
K4-6 B SSYN H
K4-4 MSYN (1)H
KM-2 MCLK ENABLE L
K4-2 RECLK H
K5-8 B DC LO L
K4-3 JAMUPP H
K2-8 CLKOFF (1)H
K4-4 ALLOW CLK L
KM-2 MSTOP L
K1-9 UPP MATCH H
K5-4 OVLAP (0)H
KM-2 MCLK L
K2-8 CLKL1 (0)H
K2-8 CLKL0 (0)H

K4-2 IDLE (1)H

K4-3 JAM CLK H

CLK WAVEFORMS:

U WORD CONTROL	NAME	WAVEFORMS
K2-8 CLK1 (1)H = Ø K2-8 CLKØ (1)H = Ø,1	CL1	140 NS → K4-2 P1 H
K2-8 CLK1 (1)H = 1 K2-8 CLKØ (1)H = Ø	CL2	200 NS → K4-2 P2 H
K2-8 CLK1 (1)H = 1 K2-8 CLKØ (1)H = 1	CL3	200 NS → K4-2 P2 H 300 NS → K4-2 P3 H

NOTE:
* SYMBOL ON SCHEMATIC INDICATES NOMINAL SETTING FOR A CL1 TIME ≥ 135NS. DETAILS ON CLOCK ADJUSTMENTS NOTED BELOW.

XOR TEST:
JUMPERS W3 AND W4 ARE REMOVED ONLY DURING XOR MODULE TEST. THEY ARE NORMALLY INSERTED.

CLOCK ADJUSTMENT:
CLOCK ADJUSTMENT REQUIRES A DUAL-TRACE OSCILLOSCOPE WITH ONE CHANNEL (TRIGGERING) ON K4-2 P END H AND THE OTHER CHANNEL ON K4-2 P1 H. THE MACHINE SHOULD BE IN THE CONSOLE LOOP WAITING FOR A SWITCH ACTIVATION. NO-OP WORDS CONSOLE (Ø26) AND CONBR (Ø46) THIS LOOP IS USUAL WHEN IN CONSOLE MODE, OR MAY BE FORCED BY A START IN THE HALT MODE. THE S1 SWITCH IS ADJUSTED (+ OR -) NANO SECONDS INCREMENTALLY UNTIL THE CL1 INTERVAL NOTED BELOW IS ≥ 135 NANO SECONDS.

K4-2 P END H
K4-2 P1 H

K4-2 IDLE L
K4-2 SET CLK L
K4-2 ECLK L
K4-2 CLK U(36:17) H
K4-2 CLK U(16:00) H
K4-2 CLK(UPP+PUPP) H
K4-2 RECLK H
K4-2 P END H
K4-2 PART P END H
K4-2 PS(P1+P3) H
K4-2 (P1+P3) H
K4-2 CLK B H
K4-2 MR R(15:00) L
K4-2 MR R(07:00) L
K4-2 CLK IR H
K4-2 P1 H
K4-2 CLK BUS H
K4-2 CLK BR H
K4-2 P2 H
K4-2 CLK D H
K4-2 P3 H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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 7/5/72
CHK'D DATE 7/14/72
ENG. DATE 7/6/72
PROJ. ENG. DATE 7/14/72
PROD. DATE 7/14/72
FIRST USED ON
PDP11
SCALE
SHEET 2 OF 6

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TIMING
CLOCK K4-2

SIZE D | CODE CS | NUMBER M7234-0-1 | REV. E
DIST.

K4-4 BUS STOP H F07K1
K4-4 CLK MSYN H F07L2
K5-8 B AC LO L F07M1
K5-7 START SW (1)L F07U1
K5-7 HALT SW L F07S1
K5-8 PWR RESTART H F07P2
K4-3 P JAMSTART H D07L1
K5-8 INIT H D07R2
K4-6 NODAT (1)L D07S2
K5 R PWRUP INIT L F07R2
K5-6 CONSL (1)L F07P1

NOTE; W5 MUST BE REMOVED WHEN MFII-LP IS INSTALLED.

JAMUPP ADDRESSES $(UPP)_8$	USE
377	PWRUP INIT
337	PWR UP *-(HALT)
336	OVFLW ERR (RED ZONE) &ERR
030	(PWR RESTART) *HALT SW, START *HALT SW, NODAT (1)* CONS (1)
002	ODA ERR, NODAT (1) * CONS (0)

BUS PB *-BUS PA *MSYNA (1)

K4-3 PERJ H

K4-6 NODAT (1)H
K4-4 ODA ERR L E07U2
K5-4 DUBBERR L E07T2
K4-4 OVFLW ERR L E07S2

BUS PA L
BUS PB L
K4-4 MSYNA (1)H
K4-2 PS(P1+P3)H
K4-2 P3 H
K2-5 UBFØ (1)H B07L1
K4-5 B INIT L C07M1

B07U1 K4-3 PERR(Ø)H

K4-3 JBERR (1)L F07C1
K4-3 JAMUPP H F07A1
K4-3 JAM CLK H F07S1
K4-3 P JAMSTART H D07L1
K4-3 P JAMSTART L F07J1
K4-3 JAMUPP L F07E1
K4-3 JPUP (1)L F07T2
K4-3 SET UPP$_{7,5}$ L F07D1
K4-3 CLR UPP$_{7,5}$ L F07D2
K4-3 SET UPP$_{7,2}$ L E07V2
K4-3 CLR UPP$_{7,2}$ L F07C1
K4-3 SET UPP$_{4,3}$ L F07M2
K4-3 CLR UPP$_{4,3}$ L F07T2
K4-3 SET UPP1 L F07E2
K4-3 CLR UPP1 L F07F2
K4-3 SET UPP8 L F07R1
K4-3 CLR UPP8 L F07S2

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH
DRN. DATE 1-31-72
CHECK DATE 2/14/72
ENG DATE 2/14/72
MAINT DATE 2/14/72
PROJ DATE 2/14/72
FIRST USED ON PDP11
SCALE
SHEET 3 OF 6

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE TIMING CLK JAM K4-3

SIZE D CODE C8 NUMBER M7219-0-1 REV. E
DIST.

K5-3 BUS7 H
K3-4 OVLAP CYCLE L
K3-8 BIT+CMP+TST H
K2-7 DAD3 (1)H
K2-7 DAD1 (1)H
K4-4 ALLOW CLK L
K2-7 DAD2 (1)H
K1-8 RADRS0 L
K1-8 REG(X6+X7) H
K5-4 STALL (1)L
K2-7 DAD0 (1)H
K3-6 BYTE INSTR H
K4-2 CLK BA H
K4-2 IDLE L
K4-2 (P1+P3) H
K4-6 NO DAT (1)L
K2-7 C1BUS (1)H
K2-7 C0BUS (1)H
K4-2 CLK BUS H
K5-8 IN&T2 L
K4-5 BBSY (1)H
K1-7 BABB (1)H
K4-2 P2 H
K4-6 PROC RELEASE L
K4-5 B SSYN L
K4-5 BBSY (1)H
KT-2 PSIS Ø, H
K4-4 NOT DATI H
KJ-2 EOVFL STOP H
K1-7 BOVFL STOP H
K4-6 PROC ADRS H
K5-6 CONSL (1)L
K4-3 PERU H
KT-5 FAULT H
K4-3 JAMUPP L
BUS INTR L
K4-6 NO MSYN L
K4-6 BUS (1)H
K4-6 CLK MSYN H
K4-6 CLK MSYNR H
K4-6 MSYNR (1)H
K4-6 MSYNR L
K4-6 B MSYN L
K4-6 B MSYN H
K4-6 BUS MSYN L
K4-6 MSYN (1)H
K4-6 P CLR MSYN L
K4-6 OVFLW ERR L
K4-6 ODA ERR L
K4-6 CKOVF H
K4-6 BUS STOP H
K4-6 BC1 (1)H
K4-6 BC1 (1)L
K4-6 BC0 (1)L
K4-6 NOT DATI H
K4-6 BWRIT (1)H
K4-6 ORTIP L
K4-6 BUS C1 L
K4-6 BUS D8 L
K4-6 BC1 H
K4-6 BC0 H
K4-6 CKODA (1)H
K4-6 Ø INTR H
K4-6 DOUT HIGH H
K4-6 DOUT LOW H
K4-6 CLK BOVFLW H

NOTE: JUMPER W1 IS MOVED TO CONNECT E16 PIN 10 TO B07F2 FOR KJ11-A OPTION.

NOTE: JUMPER W2 IS MOVED TO CONNECT E6 PIN 10 TO A07H2 FOR KT11-D OPTION.

NOTE: C113 INSERTED PER KT-11 INSTALLATION PROCEDURE TO EXTEND δ TO 300 NS

δ=75NS
δ=150NS
δ=175NS

BUS TABLE:

C1BUS	C0BUS	BGBUS	USE
Ø	Ø	1	DATI
Ø	1	1	DATIP
1	Ø	1	DATO
1	1	1	DATOB
Ø	1	Ø	AWBBY (AWAIT BUS BUSY)
1	1	Ø	RESTART ON PERIF RELEASE

BUS ORIENATED DAD TABLE:

DAD3	DAD2	DAD1	DAD0	USE
—	—	—	1	ALLOW ODD ADDRS AND DATO B FOR BYTE MSTR
—	1	1	—	CHECK STACK OVFLEW
1	—	1	—	INHIBIT DATO OR DATOB AND CLKOFF FOR (BIT+CMP+TST)

NOTE
ABOVE BIT PATTERNS OCCUR IN COMBINATIONS WITH OTHER DAD BITS. THE TOTAL OCTAL DAD CODE IS NOTED IN SPECIFIC U WORDS IN THE FLOWS.

PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

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

DRN. DATE 1-17-72
CHKD. DATE 7-19-72
ENG. DATE 7-19-72
PROJ. ENGR. DATE 7-19-72
PROD. DATE 7/19/72
FIRST USED ON PDP11
SCALE
SHEET 4 OF 9

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TIMING
BUS DATA CNTL K4-4

SIZE	CODE	NUMBER	REV.
D	CS	M7234-Ø-1	E

DIST.

BUS SACK L C07L2 J6 — 300 E37 — Ø2 — Ø7 — Ø5 — 8881 E42 — Ø1 — T=75NS — +5V — R17 470 — R16 47 — C96 330 — 7404 E32 — Ø2

K4-6 GRANT H C07A1 — K4-6 & SSYN H B07U2 — K4-5 & BBSY H — Ø1 Ø4 Ø5 — 8815 E30 — Ø6

Ø6 — 7404 E32 — Ø6 — Ø5 Ø6 — 8881 E42 — Ø4 — δ = 300 NS — +5V — R18 1K — R19 47 — C97 1000 — Ø2 Ø3 — 7402 E43 — Ø1

K5-6 INIT H D07R2

K4-5 NPR (1)L D07B1 — K4-2 CLK BUS H E07K1 — K4-4 P CLR MSYN L B07K2 — Ø1 Ø2 — 74H00 E21 — Ø3

Ø5 — 7404 E32 — Ø4

Ø1 Ø2 — 7400 E36 — Ø3

K4-4 BCI (1)H — K5-4 BRSV (B)H C07N2 — Ø8 Ø9 — 7402 E43 — 10

Ø4 — 74H11 E28 — Ø5 Ø6 — 9334 7474 E38 — Ø3 Ø1 — Ø2 — Ø5 Ø6

Ø9 10 11 — 74H11 E53 — Ø8

K4-6 BRQ H — 13 12 — 7400 E28 — 11

11 12 13 — 8881 E42 — 13

Ø4 Ø5 — 300 E37 — Ø3 — B07U2 — K4-5 B BBSY H

C07M2 — BUS BBSY L

A07M2 — K4-5 BBSY (1)H

Ø5 Ø4 — 7400 E28 — Ø6

Ø1 Ø2 Ø4 Ø5 — 74H40 E25 — Ø6 — B07N1 — K4-5 BUS FN D H

Ø5 10 12 13 — 74H40 E25 — Ø8 — B07L2 — K4-5 BUS FN BA H

9 10 11 12 13 — 8815 E26 — Ø8 — C07L1 — K4-5 PART GRANT BR H

13 Ø2 Ø1 — 74H11 E46 — 12 — D07M1 — K4-5 GRANT BR H

C07M1 — K4-5 'B INIT L

C07J1 — K4-5 P NO SACK L

C07F1 — K4-5 CBR (1)L

B07V2 — K4-5 PTRD(1) H

K5-8 INIT H — K4-5 NO SACK (1)L — K5-7 HALT SW L C07D1

K4-5 ENPRCLK D27E1 — RS-3 BUT26 H D07K1 — K4-2 P3 H E07F1 — 7400 E52 — 2

BUS INIT L C07H1 — 300 E37 — 14 — 13 — 7404 E32 — 12

+5V — R22 1K

Ø8 — 10 — PTRD — R15 5.6K — +5V — C105 27PF — 74S163 E35 — Ø5 Ø6 Ø7 — 12 11

Ø8 — 10 — R14 470 — +5V — C106 330 — D5 D664 — R13 220 — 7404 E32 — 11 — 10

Ø9 10 — 7400 E36 — Ø8

12 13 — 8815 E30 — Ø8 — Ø9 10

K4-6 BRQ H — 13 12 — 7400 E28 — 11

Ø6 Ø5 — 7404 E32 — Ø6

Ø8 9 10 11 — 74H11 E53 — Ø8

Ø1 Ø2 — 7400 E36 — Ø3

Ø5 — 7404 E32 — Ø4

K4-4 DATIP L — K4-4 CLK MSYNA H — 12 13 — DATA IP 74H74 E83 — Ø8 Ø9 — 11 C — Ø8 Ø9

+5V — R34 1K

K4-4 BUS NPR L C07D2 — 300 E37 — 13

K4-6 BRQ H — 13 12 — 7400 E28 — 11

Ø2 Ø1 — 74H11 E33 — 12

Ø1 — NPR 74H74 E27 — Ø2 — Ø6 Ø5 — K4-5 NPR (1)H — Ø3 — Ø6 Ø5 — Ø4

Ø8 Ø9 — 8881 E42 — 10 — C07P2 — BUS NPR H

D07B1 — K4-5 NPR (1)L

Ø1 — 10 — PTRD — R12 1K — +5V — 9316 74H74 E27 — Ø9 Ø8 — 12 — 11 C — Ø9 Ø8

B07M1 — K4-5 BRPTR (1)L

D07H1 — K4-5 CLR PTR L

C07E1 — K4-5 PTRD (B)H

K4-6 BUS ACK L D07H1 — K4-6 B AC LO L B07P2 — Ø9 — 7404 E32 — Ø8

K5-6 CONSL (1)L C07B1 — K2-7 BSSUB (1)H E07E1

K5-4 OVLAP (1)H D07J1 — 11 — 7404 E53 — 10 — K4-5 OVLAP L

12 — 7400 E52 — 11

K4-5 P MSYN L D07P1 — 10 — 74H00 E73 — Ø9

K4-2 CLK IR H D07C1

K5-4 RMBY (1)H

K4-2 SET CLK L — 7404 E53

K4-4 B MSYN L

Ø1 Ø2 — 74H11 E47 — 12

Ø9 Z3 Z4 — 74H11 E47 — Ø6

Ø1 Ø2 Ø5 Ø4 — 74H20 E46 — Z3

δ = 100NS — R45 100 — C101 1000 — Ø1 — 7404 E58 — Ø2 — 13 12 — 74H00 E73 — 11

Ø2 Ø3 — 7400 E52 — Ø1

+5V — R24 470 — C98 330 — D5 D664 — R23 220 — 7404 E53 — Ø2

Ø9 — 7404 E53 — Ø8

C07P1 — K4-5 CLK PTRD H

C07C1 — K4-5 CLK NPR H

C07K2 — K4-5 P MSYN L

K4-5 P MSYN H

PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

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

MATERIAL

FINISH

DRN — DATE 2-1-72
CHK'D — DATE 7/18/72
ENGR — DATE 7/19/72
PROJ. ENG. — DATE 7/19/72
PROD. — DATE 7/19/72

FIRST USED ON
PDP11

SCALE

SHEET 5 OF 6

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TIMING
BUS OWNERSHIP K4-5

SIZE D | CODE CS | NUMBER | REV.
DIST

K1-8 PSØ7 (1)H B07H2
K1-8 PSØ6 (1)H C07K2
K1-8 PSØ5 (1)H B07A1
BUS BR7 L C07A2
BUS BR6 L C07S2
BUS BR5 L C07T2
BUS BR4 L C07U2
74175 E40
CLR CLK
K4-6 B INIT C07M1
K4-5 PTRD (1)H B07V2
K4-5 GRANT BR H C07K1
K4-6 BUS RQ L
K4-6 BUS PA H
K4-6 BUS PB H

K4-4 BURIT (1)H A07L2
K4-4 MSYN (1)H B07J1
GND Ø7 B07C1
K1-7 SLR ADRS H A07V2
K4-4 DOUT LOW H B07K1
K1-7 PS ADRS H A07P2
K1-7 SR ADRS H A07A1
K5-6 BEGIN (1)L A07U2
K4-4 B INTR H B07C1
K5-4 INTR (1) H B07J1
K4-6 PROC RESPOND L
K4-6 PROC ADRS H
K4-6 PROC RESPOND H
K4-6 BUS FM PS L
K4-6 BUS FM SR H

K4-5 NPR (1)L D07B1
K4-5 GRANT BR H D07M1
DISABLE TSACK L D07H2
K4-6 B SSYN H C07A1
K4-3 P JAMSTART H J07L1
K5-6 INIT H C07R2
K4-5 CLR PTR L D07H1
K4-6 NOSACK (1)L
K4-4 MSYN (1)L B07J1
KM-2 MCLK ENABLE L E07K1
TIME SACK
TIME DATA
K4-5 TSACK
K4-5 NOSACK
K4-5 TDATA

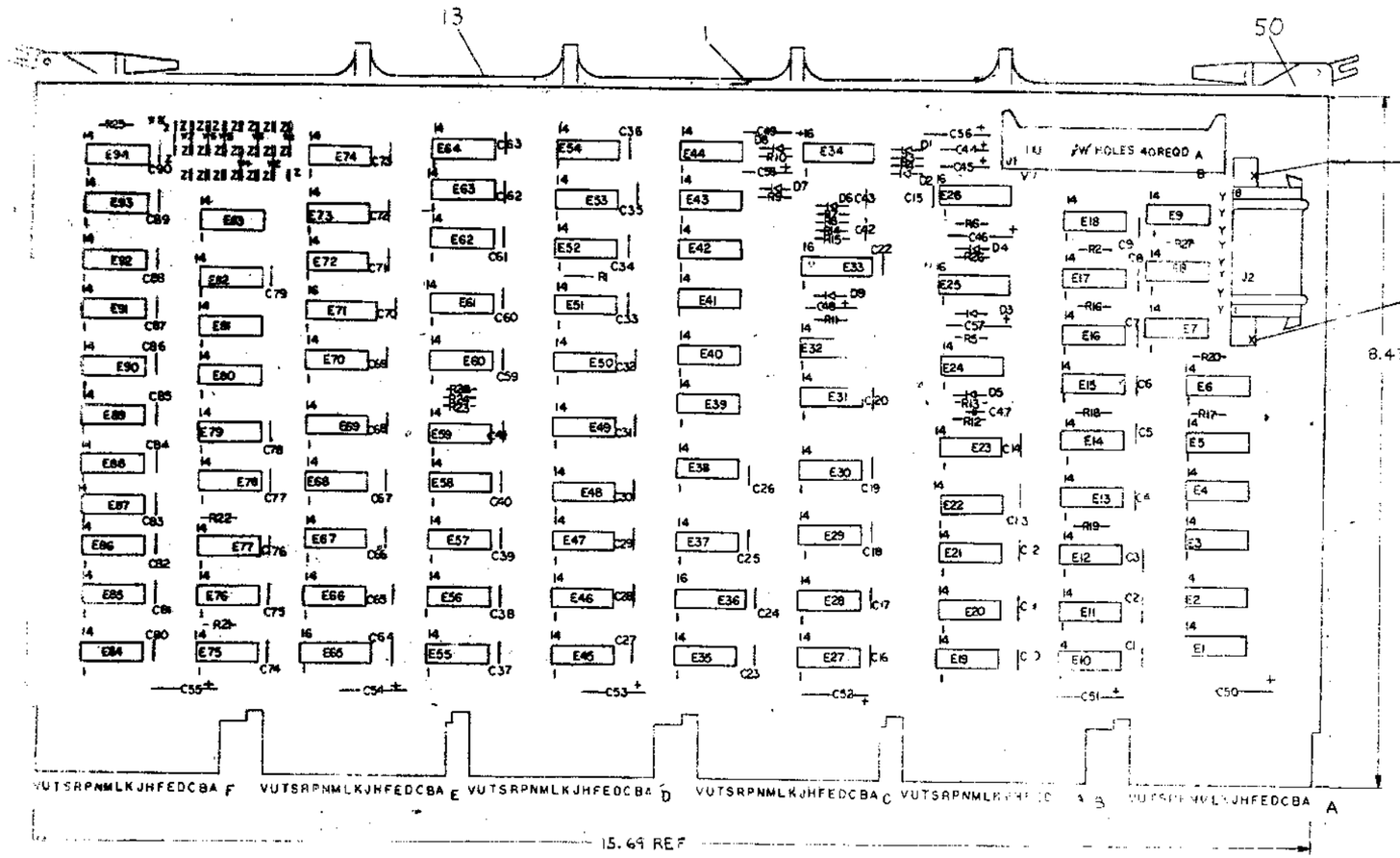
NOTE:
THE TSACK TIMEOUT CIRCUIT CAN BE DISABLED BY GROUNDING THE SIGNAL DISABLE TSACK L (D07H2)

PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

UNLESS OTHERWISE SPECIFIED	DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE	
	ENG.	DATE	TITLE TIMING
	PROJ. ENG.	DATE	
	PROD. MGR.	DATE	
MATERIAL	FIRST USED ON PDP11		SIZE D CODE 08 NUMBER REV E
FINISH	SCALE		
	SHEET 8 OF 8		DIST

NOTES:

1. PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KIM-1 PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE LETTER.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
3. PROCESSOR SIGNAL PREFIX NOTATION (XX/YY) FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST TWO DIGITS AFTER THE X INDICATES THE MODULE PRINT SET, WHILE THE SECOND SET DENOTES THE SHEET WITHIN THE SET. SIGNALS WITH A BUS PREFIX REPRESENT A WIRED OR SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
4. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS



QTY	REF DESIGNATION	DESCRIPTION
8		INSULATED WASHER
2		HEX NUT NYLON
23		SPLIT LUG
12		EYELET
2		SHOULDER WASHER FIBER
2		SCREW NYLON
1	E65	I.C. DEC 74157
4	E25,E26,E33,E34	I.C. DEC 74123
4	E24,E45,E60,E82	I.C. DEC 74H04
5	E13,E37,E58,E70,E81	I.C. DEC 8815
5	E16,E84,E85,E88,E89	I.C. DEC 8881
7	E1 THRU E4,E20,E29,E41	I.C. DEC 7404
1	E52	I.C. DEC 74H74
2	E36,E71	I.C. DEC 8251
1	E15	I.C. DEC 380
4	E14,E40,E48,E72	I.C. DEC 74H11
1	E55	I.C. DEC 74H61
1	E66	I.C. DEC 74H60
1	E59	I.C. DEC 74H55
2	E91,E92	I.C. DEC 74H53
2	E63,E67	I.C. DEC 74H52
4	E47,E56,E69,E87	I.C. DEC 74H50
1	E62	I.C. DEC 74H21
4	E7,E68,E80,E83	I.C. DEC 74H10
2	E57,E90	I.C. DEC 74H00
7	E5,E27,E28,E35,E39,E49,E54	I.C. DEC 7402
1	E46	I.C. DEC 74H20
3	E17,E18,E86	I.C. DEC 74H40
2	E31,E64	I.C. DEC 7450
2	E9,E94	I.C. DEC 7430
4	E8,E19,E43,E93	I.C. DEC 7420
3	E38,E51,E53	I.C. DEC 7410
7	E11,E21,E22,E23,E30,E73,E74	I.C. DEC 7400
13	E6,E10,E12,E32,E42,E44 E50,E61,E75 THRU E79	I.C. DEC 7474
4	R3,R4,R5,R6	RES 18K 1/4W ±5%
4	R9,R10,R11,R15	RES 12K 1/4W ±5%
16	R1,R2,R14,R16 THRU R28	RES 1K 1/4W ±5%
2	R8,R12	RES 470Ω 1/4W ±5%
2	R7,R13	RES 220Ω 1/4W ±5%
1		HANDLE MODULE
8		PINS SOCKET AMP
1	J1	CONN RIGHT ANGLE HEADER
1	J2	CONN PIN HOUSING
9	D1 THRU D9	DIODE D664
7	C50 THRU C56	CAP 6.8MF 35V ±10% TANT
2	C46,C57	CAP 15MF 20V ±10% TANT
1	C48	CAP 2.2MF 20V ±10% TANT
1	C58	CAP 1MF 35V ±10% TANT
73	C1 THRU C41 C59 THRU C90	CAP .01MF 100V ±20% DISC
3	C44,C45,C49	CAP 3.9MF 10V ±10% TANT
3	C42,C43,C47	CAP 680 PF 100V ±5% D.M
1		ETCH CIRCUIT BOARD

PARTS LIST

ETCH BOARD REV D E

FIRST USED ON OPTION MODEL: POP 11

8			16
8			16
			16
			8
GND			+5V

ABOVE

DRN. DATE 7-25-72
CHKD DATE 7/26/72
ENGR DATE 7/31/72
DATE 7/26/72

KIM-1 02-4-0

CUSTOMER
DRAWING NO. 1235-00002 IC
SCALE
CHANGE NO.
REVISIONS
REV

K1-3 DMUX87 H E06R2
K1-3 DMUX86 H E06V2
K5-8 INIT1 L B06A1
K1-3 DMUX85 H E06R1
K1-3 DMUXØ4 H E06C1
K4-6 BUS FM PS L F06F1
K5-2 BUS FM PS H
K1-2 DMUX83 H D06N1
K1-2 DMUX82 H D06M1
K1-7 D(15:88)=8 H D06P2
K1-7 D(87:84)=8 H E0602
K1-7 D(83:80)=8 H E06B1
K3-9 V DATA L E06U2
K3-9 C DATA H E06K1
K5-2 PS(N) (Ø) H
K5-2 PS(Z)(I) L
K5-2 PS(C)(I)H
K5-2 PS(C)(I) L
K5-2 PS (V) (Ø) H
K5-2 PS(C) H
K5-2 PS(N,Z,V) H
K5-2 CLK PS(87:84)H
K5-2 LOAD PS L
K5-2 CLK PS(C) H
K5-2 CLK PS(N,Z,V) H
K5-4 P BUT 37 L
K5-2 SPS (Ø2:ØØ)=7 H
K5-2 BUSRD FM PS H
K5-2 NOMTR L
K5-2 LOAD PS L
K5-2 PSBTB (1)H
K5-2 PSBTB H
K5-2 PS(C) (1)L
K5-2 PS(N) (1)H
K5-2 PS(Z) (1)H
K5-2 PS(I) (1)H
K5-2 PS(V) (1)H
K5-2 PS87 (1)H
K5-2 PS86 (1)H
K5-2 PS85 (1)H
K5-2 PS84 (1)H
K5-2 PS83 (1)H
K5-2 PS82 (1)H
K5-2 PS81 (1)H
K5-2 PS80 (1)H
BUS RD87 L
BUS RD86 L
BUS RD85 L
BUS RD84 L
BUS RD83 L
BUS RD82 L
BUS RD81 L
BUS RD80 L
BUS D87 L
BUS D86 L
BUS D85 L
BUS D84 L
BUS D83 L
BUS D82 L
BUS D81 L
BUS D80 L
K1-7 PS ADRS H D06S2
K2-6 SPS2 (1)H D06N2
K2-6 SPS1 (1)H C06V2
K2-6 SPS0 (1)H D06U2
K4-2 PS(P1+P3) H E06D1
K4-4 PS(P FM BUS) H E06E1
K3-8 CC INSTR H D06R1
K1-3 D87(D)H E06F2
K1-5 D15 (D)H E06E2
K1-3 BMUX87 H E06H2
K1-5 BMUX15 H E06J2
K1-3 RD87 H E06M2
K1-5 RD15 H E06L2
K3-7 BYTE CODE8 H E06A1
K4-2 CLK D H E06N2
K4-2 PS(P1+P3) H E06D1
K4-4 PS(P FM BUS) H E06E1
K3-8 CC INSTR H D06R1
K1-8 INH PS CLK 1 L D06K1
K1-2 INH PS CLK 2 L D06J1
R21 1K
R22 1K
R23 1K
R24 1K
+5V
74H10 E68
74H11 E48
74H55 E59
74H58 E69
74H15 E58
74H04 E60
74H08 E57
74H18 E80
74H00 E66
74H50 E56
74H74 E75
74H74 E76
74H74 E78
74H74 E79
74H74 E77
74157 E65
74H40 E86
8881 E84
8881 E85
8881 E88
8881 E89
STB
SB

SPS TABLE:

(SPS CODE) Ø	FUNCTION
Ø	DMUX GATED TO PS INPUT
1,3,5,7	CLK (PS)C
2	CLK PS(N,Z,V)
3	CLK PS(N,Z,V,C)
4	NOT USED
5	NOT USED
6	PS GATED TO BUS RD CLK PS (N,Z,V)
7	LOAD PS FROM DMUX

DEVICE TRUTH TABLE:
74157

STB	SØ	FN
H	–	L
L	L	AN
L	H	BN

WHERE N = Ø,1,2,3

NOTES
1. (SPS 3) BCC INSTR ALSO GATES PS TO BUS RD.
2. SPS. BIT ALWAYS ENABLES THE CLK PS(C) SIGNAL.
3. SPS. BIT ALWAYS ENABLES THE CLK PS(N,Z,V) SIGNAL.

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
DRW. R. Smith DATE 2-4-72
CHK'D. DATE 7/26/72
ENG. DATE 7/26/72
PROJ. DIR. DATE 7/26/72
PROJ. MGR. DATE 8-1-72
FIRST USED ON
PDP11
SCALE
SHEET 2 OF 8

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
STATUS
PS (87:80) K5-2
SIZE D CODE CS NUMBER M7235-2-1 REV. D
DIST.

AUG 27 1971

BUT TABLE (NUMERICAL / MNEMONIC CORRESPONDANCE):

BUT∅∅	NO OP	BUT1∅	BUT (HALT)	BUT2∅	BUT (BYTE+SERVICE+FETCH)	BUT3∅	BUT (VARIOUS SWITCHES)
BUT∅1	BUT (CBR1)	BUT11	BUT (MM FAULT)	BUT21	BUT (IRØ3, BYTE+SOURCE)	BUT3I	BUT (NOWR+BYTEWR+WORDWR)
BUT∅2	BUT (CBR2)	BUT12	BUT (Δ=∅)	BUT22	BUT (BYTE+SOURCE)	BUT32	NOT USED
BUT∅3	BUT (REG DEP)	BUT13	NOT USED	BUT23	NOT USED	BUT33	BUT (OB+INSTR4)
BUT∅4	BUT (REG EXAM)	BUT14	NOT USED	BUT24	BUT (CBR+HALT)	BUT34	BUT (INSTR4)
BUT∅5	BUT (BEGIN)	BUT15	BUT (JSR+JMP)	BUT25	BUT (BR, WAIT+FETCH)	BUT35	BUT (OB+INSTR3)
BUT∅6	BUT (SWITCH)	BUT16	BUT (SERVICE C+FETCH C)	BUT26	BUT (REQUESTS)	BUT36	BUT (INSTR3)
BUT∅7	BUT (INTR)	BUT17	BUT (IRØ3)	BUT27	BUT (SERVICE B+FETCH OVLAP+FETCH B)	BUT37	BUT (INSTR1)

DEVICE TRUTH TABLE:
8251
FOR THE DECIMAL EQUIVALENCE, N, OF THE BINARY NUMBER (D3,D2,D1,D0), ONLY OUTPUT PN IS ACTIVE (LOW)
FOR ØCN(10.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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. R Bedell DATE 12-4-72
CHK'D DATE 2/21/72
ENG DATE 2/21/72
PROJ ENG DATE 2/21/72
PROD DATE 12-7-72
FIRST USED ON

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
BUT & BRANCH KS-3

SCALE
SHEET 3 OF 8
NUMBER D CS M7235-Ø-1 REV D
DIST.

AUG 17 1971

K4-6 NODAT (1)L C06D2
K3-4 SDR ERR L C06J1
K4-3 JAMUPP H C06T2
K5-8 CONSL (1)H
K5-5 EXT P CLR TRAP L B06F2
K3-6 TRAP DATA L B06N2
K5-8 INITI L
K5-3 BUT(03:00) H C06N2
K2-5 UBF1 (1)H C06N1
K2-5 UBF0 (1)H
K5-5 STACKS H
K5-4 PWRON (1)H
K4-4 B INTR H D06L2
K4-2 SET CLR L B06K1
K4-2 P1 H D0602
K4-2 (P1+P3) H B06L2
K2-7 DSBUS (1)H E06M1
K2-7 C1BUS (1)H C06E2
K2-7 CBUS (1)H D0651
K4-2 P3 H C06M2
K5-6 P BUT37 H C06R2
+5V
1K
R1
1K
R2
1K
7400 E52
7408 E50
7402 E49
7408 E50
7402 E49
7408 E17
7408 E22
7410 E51
7408 E22
7404 E29
7410 E38
7408 E22
9615 E70
7408 E22
7404 E69
7404 E29
7458 E31
7404 E41
BERR 74H74 E52
TRAP 7474 E61
INTR 7474 E61
QUOT 7474 E32
7404 E41
7458 E31
7404 E41
74H21 E42
74H11 E40
74H11 E40
74H11 E40
74H11 E40
7410 E38
7404 E41
7404 E41
7404 E41
7410 E38
7404 E41
BOVFL L D06-
K5-7 BOVFL L C06-
K4-3 OVFLW ERR L D0-
NOTE:
JUMPER W1 IS MADE TO CONNECT PIN 01 TO D06J2 FOR NORMAL OPERATION
K4-4 CLK BOVFLW H C06-2
7410 E43
7402 E39
7474 E44
7474 E44
7474 E44
7474 E44
7474 E50
7474 E50
7474 E52
K5-4 CLR BERR L
K5-4 DUBUSINT L
K5-4 BERR (1)H
K5-4 BERR (1)L
K5-4 TRAP (1)H
K5-4 CLR OVFLW L
K5-4 INTR (1)H
K5-4 TRAP (1)H
K5-4 PWRON (1)H
K5-4 PWRON (1)L
K5-8 CLK PWRON H
K5-8 INIT H B06F1
K5-4 P BUT04 H
K5-3 BUT(04+00) H C06P2
K2-5 UBF2 (1)H
K5-3 BUT25 H
K4-2 P2 H C06J2
K4-5 BRPTR (1)L C06U2
K5-4 FLAG CLR H
K5-3 BUT07 H
K5-4 P BUT37 L
K3-4 OVLAP INSTR H C06E2
K5-3 WAIT L B06P1
K5-4 STALL (1)L
K5-4 WAIT (1)L
K5-4 BROV (1)H
K5-4 A PULLUP H
K5-4 A PULLUP H
K5-4 CLR BERR L B06U1
K5-4 DUBUSINT L B06U2
K5-4 PWRT (1)H B06S2
K5-4 PWRT (1)L B06S2
K5-4 BROV (1)H B06V2
K5-4 A PULLUP H
K5-4 A PULLUP H
K5-4 BERR (1)H
K5-4 BERR (1)L
K5-4 TRAP (1)H
K5-4 PWRON (1)H
K5-4 PWRON (1)L
K5-4 STALL (1)L
K5-4 PWRT (1)H
K5-4 WAIT (1)L
K5-4 BROV (1)H
K5-4 A PULLUP H
K5-4 A PULLUP H
BR SERVICE
SERVICE LINE

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY MACHINE FINISH AND BREAK SHARP NO BURRS
MATERIAL
FINISH
DSN R Radelli DATE 2-7-72
CHKD DATE
ENGR DATE
PROJ DATE
MFGR DATE 2-7-72
NEXT ASSY USED ON
PDP11
SCALE
SHEET 4 OF 8

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
STATUS
FLAMS KS-4
SIZE D | CAGE CODE CS | NUMBER M7035-0-1 | REV D
DIST.

FINAL

K3-8 IOT L
K3-8 TRAP L
K3-8 EMT L
K3-8 RSVD INSTR L
K3-8 BPT L
K3-8 ILL INSTR L
K5-4 PWRDN (1)H
K3-7 TRACE L
K5-4 TRAP (1)H
K5-4 BOWFLW (1)H
K5-4 STALL (1)L
K5-4 BERR (1)L

DEVICE TRUTH TABLE:
8251
FOR THE DECIMAL EQUIVALENCE N OF THE BINARY NUMBER (D3,D2,D1,D0) ONLY THE OUTPUT ON TS ACTIVE (LOW) FOR ØSYNC(Ø

NOTES:
1- CONNECTIONS FOR W7 THRU W2 ARE SHOWN FOR BASIC PWR FAIL UP VECTOR ADDRESS OF 124Ø. ON ETCH THE W'S ARE LOCATED UNDER THESE ORIGINAL JUMPER POSITIONS.
2 REMOVE W8 WHEN MF11-LP IS INSTALLED.

PWR FAIL UP

K4-3 PERR(Ø)H F06V1

K5-5 STPM1 H
K5-5 STPM2 H
K5-5 STPM3 H
K5-5 SBC-18 L
K5-5 BC(15,12,10:09) H
K5-5 BC(11,08) H
K5-5 BC07 H
K5-5 BC06 H
K5-5 BC05 H
K5-5 BC04 H
K5-5 BC02 H
K5-5 BC01 H
K5-5 BC00 H
K5-5 BCON (1+2) H
K5-5 SBC=16 L

K2-6 SBC3 H F06S2
K2-6 SBC2 H F06R1
K2-6 SBC1 H F06R2
K2-6 SBC0 H F06J1

K5-6 CONSL ENC H

K4-2 RCLR ENABLE L C06S2

K1-3 MFP SMD D06V1

SBC TABLE

(SBC) B	USE	B CONSTANT 15 14 13 12 11 10 09 08 07 06 05 04 03 02 01 00	NOTES
00	TRAPS	Ø Ø Ø P Ø Ø P P Ø P P T T T T P	T=F(STPM(1:2)), SEE BELOW
Ø1	CONST 1	Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø 1	GENERAL USE
Ø2	CONST 2	Ø Ø Ø P Ø Ø P P Ø Ø Ø Ø Ø 1 Ø	GENERAL USE
Ø3	CONST(1+2)	Ø Ø Ø P Ø Ø P P Ø Ø Ø Ø Ø 1 1	POSSIBLE CIN(Ø) MAKES THIS 2
Ø4	NOT USED	P Ø Ø P # # P # # # # # # # P	
Ø5	NOT USED	P Ø Ø P # # P # # Ø # # # # P	
Ø6	NOT USED	P Ø Ø P # # P # # # # # # # P	
Ø7	CONS INC	Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø C	C IS 1 IF EXAM(1) OR DEP(1) SET
10	SR ADRS	1 1 1 1 1 1 1 Ø 1 1 1 1 Ø Ø P	ALSO DISPLAYED ON A CONS TIME OUT
11	PWR UP	W7 W6 W5 W4 W3 Ø W1 W0 Ø W7 W6 W5 W4 W3 Ø P	PROGRAM ADRS SELECTED BY JUMPERS
12	CC MASK	Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø 1 1 1 1	MASK USED FOR CONDITION CODE INSTRS
13	SOB MASK	Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø 1 1 1 1 1	MASK USE IN SOB INSTR
14	SINCLK	Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø S S Ø Ø Ø	S=Ø FOR SWITCHCOUNT IF SINCLK
15	MM VECTOR	Ø Ø Ø Ø Ø Ø Ø Ø 1 Ø 1 Ø Ø Ø Ø	KT VIOLATION TRAP VECTOR
16	MM CONST	Ø Ø Ø Ø 1 Ø Ø Ø Ø Ø Ø Ø M Ø	M=1 IF SMD IN MFP INSTR
17	STACK Ø4	Ø Ø Ø 1 1 Ø 1 Ø Ø Ø Ø Ø 1 Ø Ø	PREEMPTIVE STACK POINTER

STPM TABLE:

(STPM) B	USE
4	BUS ERROR TRAPS (ØERR+STALL) FOR ODD ADRS AND RED ZONE OVFLW
	TRAP INSTR (MUTUALLY EXCLUSIVE)
4	ILLEGAL INSTR
10	RESERVED INSTR
14	BPT INSTR
20	IOT INSTR
30	EMT INSTR
34	TRAP INSTR
14	TRACE TRAP (PS(T))
4	OVFL (YELLOW ZONE)
24	POWER DOWN (PWRDN)

NOTE: PERR(1) CAUSES BERR(1)
PERR(Ø) & BERR(-) PRODUCES ØCTRL#.

-PRODUCED BY THE AUTOMATED DRAWING SYSTEM-

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES
FRACTIONS ± 1/64
MATERIAL
FINISH
DRN. E. Rudolph DATE 12-7-72
CHK'D. DATE 12/6/72
ENG. DATE 12/6/72
SHELL ENG. DATE 12/6/72
PROJ. DATE 12-7-72
FIRST USED ON PDP11
SCALE
SHEET 5 OF 9

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
CONSTANTS K5-5

SIZE D CODE CS NUMBER M7235-Ø-1 REV D
DIST.

AUG 87 SHT

KS-7 BEGIN SW (8)H A06A1
KS-7 START SW (8)H A06B1
KS-7 LD ADRS SW (1)L
KS-7 EXAM SW (1)L
KS-7 CONT SW (1)L
KS-7 DEP SW (1)L
KS-6 SWITCH (1)H A06R2
KS-6 START (1)L
KS-6 BEGIN (1)L A06RJ
KS-6 F BUT37 H C06RZ
KS-6 BUBC2(BUT38) H A06S1
KS-6 BUBC1(BUT38) H A06U2
KS-6 BUBC0(BUT38) H B06J2
KS-6 CONSL (1)H
KS-6 CONSL(1)L A06S2
KS-6 EXAM (1)H
KS-6 CONSL INC H
KS-6 DEP (1)H
KS-6 INIT1 L B05A1
KS-6 BUT18 L
KS-6 BUT37 L
K1-2 PART P END H A06P2
KS-6 INIT H B06F1
K3-2 BUT3K L C06D1
K2-7 DADS (1)H B06K2
KS-3 BUT18 L
KS-3 BUT24 L
KS-3 BUT26 L
KS-3 BUT04 H
KS-3 BUT03 L
KS-3 BUT03 H
KS-3 BUT03 L
KS-3 BUT04 L

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

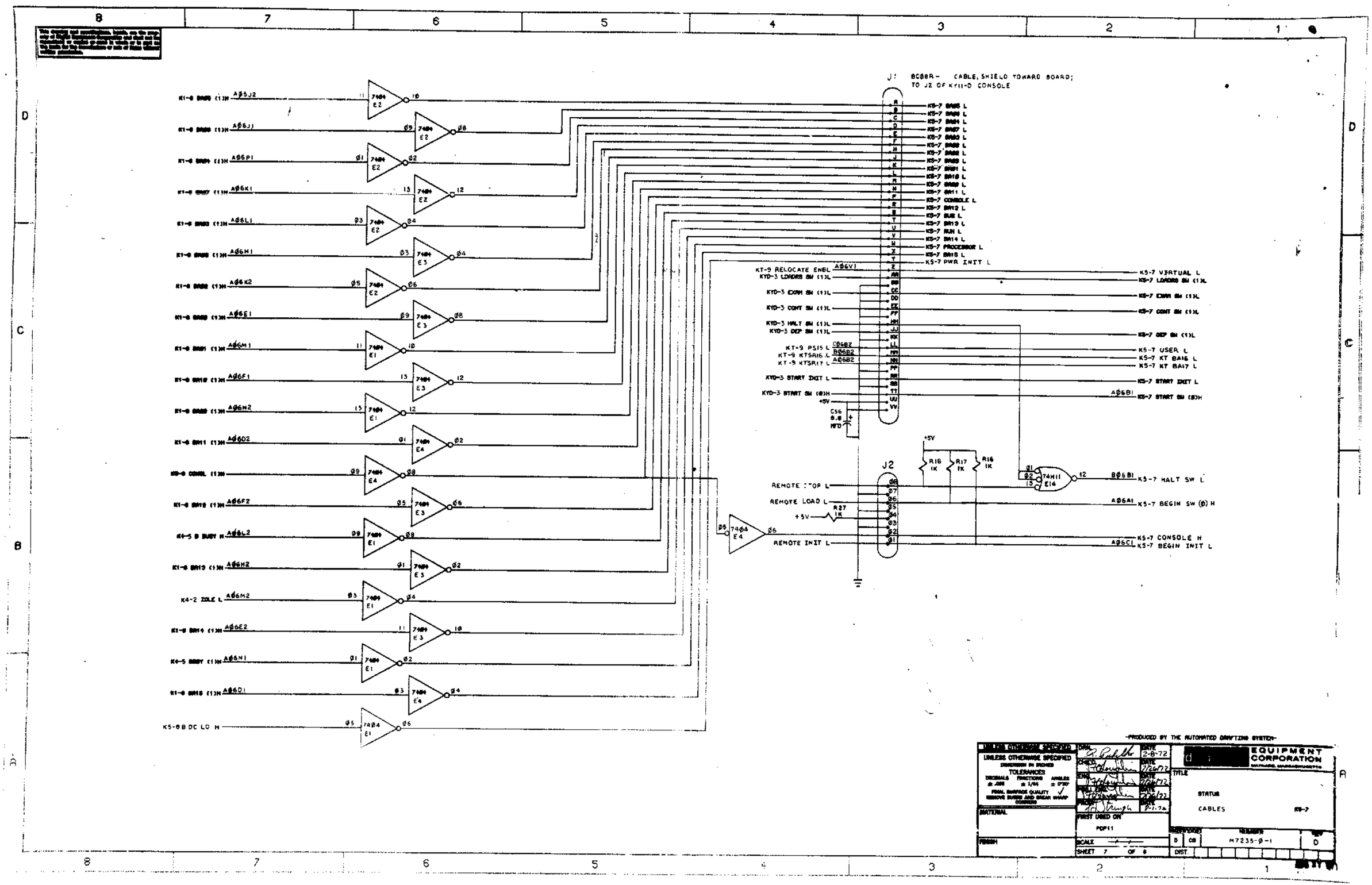
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRWN J. Smith 2-8-72
CHECD [illegible] 2/8/72
ENG [illegible] 2/26/72
PROJ ENG [illegible] 2/26/72
PROD CONT [illegible] 2-7-72
FIRST USED ON PDP11
SCALE
SHEET 8 OF 8

[redacted] EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
CONSOLE KS-8

SIZE D CODE CS NUMBER M7235-0-1 REV D
DIST.



PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

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

DRN. [illegible] DATE 2-8-72
CHECD. [illegible] DATE 2/8/72
ENG. [illegible] DATE 2/8/72
QA [illegible] DATE 2/8/72
MGR. [illegible] DATE 2-8-72
FIRST USED ON
PDP11
SCALE
SHEET 7 OF 8

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
STATUS
CABLES
KS-7
SIZE D CAGE CODE 08 NUMBER M7235-0-1 REV D
DIST.

K5-2 JPUP (1) L B05T2

K5-4 PWRDW (I) L C06F2

K5-8 INIT L

K4-2 (P1+P3) H B06L2

K5-4 RI PULLUP H

K5-3 BUT02 H C06E1

K4-2 P3 H C06M2

K5-7 START INIT L
K5-7 BEGIN INIT L A06C1

BUS AC LO L B06O2

K5-8 DELAY DC L H

K5-8 B AC LO H

K5-8 B CLK PWR DN H

B06H1 K5-8 PWR RESTART H

B06J1 K5-8 F ENDRESET L

K5-8 RESET RESTART L

A06V2 K5-8 INIT*RESET H

B06O1 BUS INIT L

B06A1 K5-8 INIT1 L

A06T2 K5-8 INIT2 L

B05H2 K5-8 PWRUP INIT L

K5-8 B DC LO H

B06E1 K5-8 B DC LO L

B06F1 K5-8 INIT H

B06N1 K5-8 B AC LO L

B06C1 BUS DC LO L

B06E2 BUS AC LO L

USUAL POWER FAIL WAVEFORMS:

AC POWER ON / OFF

BUS AC LO L

BUS DC LO L

AC LO (E34,13) — 15MS

DELAY DC LO (E33,05) — 7MS

PULSE DC LO (E33,13) — 2MS

K5-8 INIT 1L
K5-8 INIT 2L

PWRUP INIT (E26,04) — 20MS

DELAY POWER DOWN (E34,05) — 3MS

POWER RESTART (E25,13) — 70MS

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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 R. Bradley DATE 2-8-72
CHK DATE 7/31/72
ENG DATE 7/31/72
PROJ DATE 7/31/72
MFG DATE 8-1-72

FIRST USED ON
PDP11

SCALE

SHEET 0 OF 0

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
BUS DELAYS K5-8

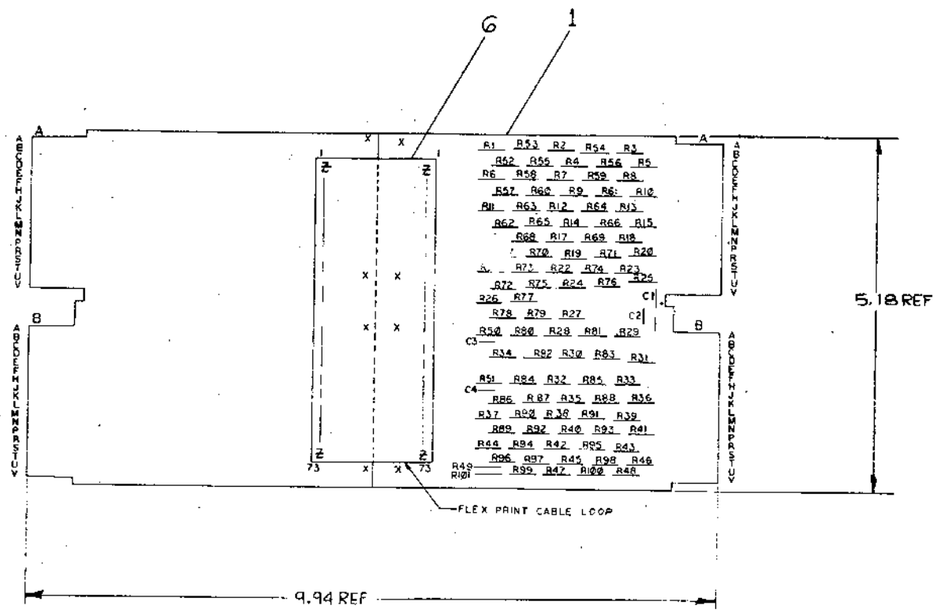
SIZE D | CODE | NUMBER M7235-0-1 | REV D

DIST.

AUG 27 1971

NOTES:

1. CONNECTOR MODULE, M981, INTERCONNECTS THE KDII-A PROCESSOR WITH A NEXT UNIBUS DEVICE. RESISTIVE TERMINATION OF THE UNIBUS IS ALSO PROVIDED.
2. COMPONENTS ARE LOCATED IN AND POWERED FROM THAT PORTION OF THE MODULE IN THE NEXT DEVICE. GROUND IS CONNECTED BETWEEN THE KDII-A AND THE NEXT DEVICE.
3. SIGNALS ON THE LEFT OF THE CONNECTORS ONLY OUTPUT FROM THE KDII-A. SIGNALS TO THE RIGHT OF THE CONNECTORS ARE RECEIVED AND TRANSMITTED FROM THE KDII-A.



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

DRAWING 40-522, 16689

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
AR		CABLE FLEXPRINT, 2 7/16 LG	9105692-5	6
50	R52 THRU R101	RES. 178 1/4W. 1%	1311422	5
51	R1 THRU R51	RES. 383 1/4W. 1%	1305125	4
1	C1	CAP. 39 MFD 10V 10%	1000076	3
3	C2, C3, C4	CAP. 1000 MMF 1000V 20%	1000043	2
1		ETCHED CIRCUIT BOARD	5009763	1

PARTS LIST

ETCH BOARD REV F

FIRST USED ON OPTION MODEL: KDII-A

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK
H	5409764-00002	J BUYNSKI 12/27/73
F	5409764-00001	J. O'LOUGHLIN 6-22
E	ORIGINATED	6/28/72

DRAWN 12/27/73 J BUYNSKI

CHK'D DATE 7/7/72

ENGR DATE 7/8/72

PROJ ENGR DATE 7/10/72

PROD ENGR DATE

NEXT HIGHER ASSY: D-UA-M981-0-0

SCALE

SHEET 1 OF 2

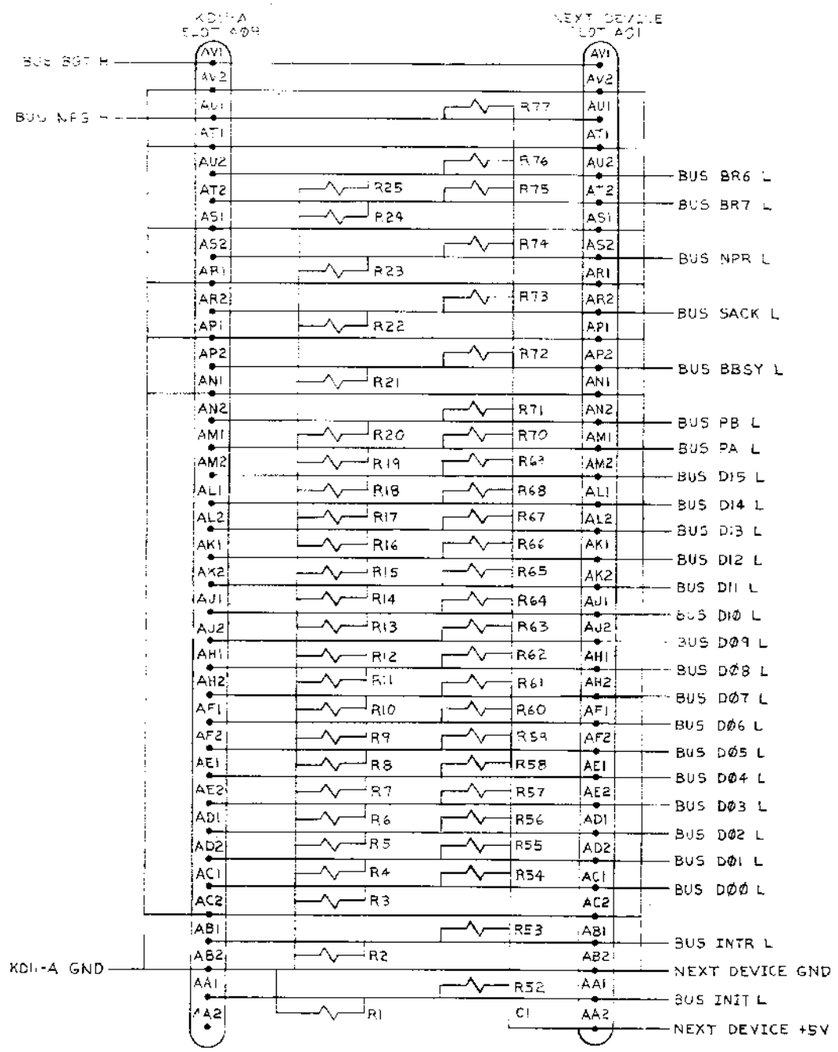
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

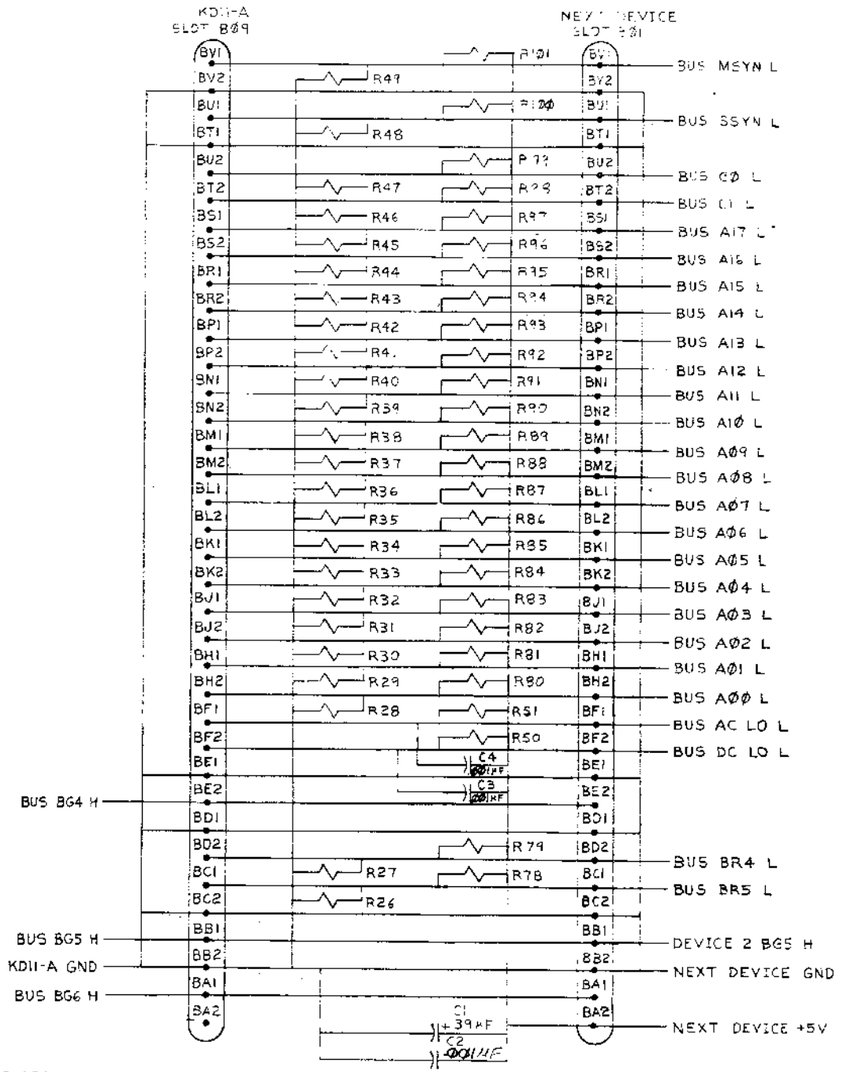
TITLE: INTERNAL UNIBUS AND TERMINATOR

SIZE D | CODE CS | NUMBER 5409764-0-1 | REV. H

DIST.

H 5409764-0-1 CS D





NOTE:
RESISTOR VALUES ARE:
R1 THRU R51 ARE 383Ω
R52 THRU R101 ARE 178Ω

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KDII-A		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		6-DEC-72
CHK		7/19/72
ENG		7/19/72
PROJ ENG		7/19/72
PROD		7/19/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: INTERNAL UNIBUS AND TERMINATOR

NEXT HIGHER ASSY. D-UA-M981-0-0

SIZE	CODE	NUMBER	REV
D	CS	5409764-0-1	H

SCALE NONE SHEET 2 OF 2 DIST.

REV	REVISIONS	CHANGE NO	CHK

BRUNING 40-522 15840
DEC-D-BPM-RO
DRD 107-B

WIRE LIST CHARACTERISTICS:

1. SIGNAL NAMES ARE LISTED WITHOUT THEIR PRINT SOURCE PREFIX. THIS AIDS ALPHLABETICAL SEARCHES.

2. THE PRINT OR PRINTS UPON WHICH A GIVEN PIN ENTRY APPEARS IS NOTED IN THE "DRAW" COLUMN. MULTIPLE SHEET ENTRIES ARE NOTED WITHOUT COMMA'S WITH THE PRINT DESIGNATORS. FOR EXAMPLE "K4-235" INDICATES ENTRIES ON SHEETS 2,3 and 5 IN THE K4 MODULE PRINTS, NO PRINT SETS HAVE MORE THAN NINE PAGES.

3. THE PRINT PREFIX AND THE ORIGIN OF THE SIGNAL CAN BE DETERMINED BY THE SOURCE NOTATION IN THE "REMARK" COLUMN. THIS SOURCE ENTRY, PRINT PREFIX IS USED BEFORE THE SIGNAL NAME ON ALL DRAWINGS. MULTIPLE SHEET ENTRIES HAVE THE SPECIFIC PRINT NOTED.

4. BUS SIGNALS WHICH OFTEN HAVE MULTIPLE (WIRED OR) SOURCES DO NOT HAVE PRINT PREFIXES. THE USE OF "BUS" IN THE NAME IDENTIFIES THESE SIGNALS, SIGNALS FOR +5V AND GND ALSO HAVE NO PRINT PREFIX.

5. THE WIRE LIST CONTAINS ETCH BACKPANEL CONNECTIONS AS WELL AS WIRE WRAP CONNECTIONS. ETCH IS IDENTIFIED BY AN "H" IN THE "Q" COLUMN AND A "P" IN THE "REMARK" COLUMN. "EXCEPTION" COLUMN NOTATIONS FOR ETCH CONNECTIONS SHOULD BE IGNORED.

REVISIONS														
CHK	CHANGE NO.	REV.												
BM	KD11A-00002	A												
	O'LOUGHLIN 10/12/72													
BM	KD11A-00003	B												
	O'LOUGHLIN 11/7/72													
BM	KD11A-00005	C												
	O'LOUGHLIN 2-15-73													
BM	KD11A-00006	D												
	O'LOUGHLIN 6/14/73													
BM	KD11A-00007	E												
	O'LOUGHLIN 1-14-74													
BM	KD11A-00009	F												
	SOF10													

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

DRN 7Dloughlin	DATE 7/31/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD 7Dloughlin	DATE 7/31/72	TITLE
ENG 7Dloughlin	DATE 7/31/72	BACK PLANE
PROJ ENG 7Dloughlin	DATE 7/31/72	(KD11-A PROCESSOR)
PROD A Stanger	DATE 8-2-72	
NEXT HIGHER ASSEMBLY D-AD-7009009-0-0		SIZE K CODE WL NUMBER KD11-A-WL REV. F
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRB 109

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
(P1-P3)	H	B06L2		1-01 *		K5-48		1				1
(P1-P3)	H	D08J1		1-02 *		KT-2		2				1
(P1-P3)	H	E07J2		1-03 *		K4-24			SOURCE (K4-2)			1
(P1-P3)				1						12-6/8		1
+5V		C09D1			H						1-PIN RUN	2
+5V		A01A2		1-01 *	H			1		P	HAND WIRE	3
+5V		A02A2		1-02 *	H			2		P	HAND WIRE	3
+5V		A03A2		1-03 *	H			1		P	HAND WIRE	3
+5V		A04A2		1-04 *	H			2		P	HAND WIRE	3
+5V		A05A2		1-05 *	H			1		P	HAND WIRE	3
+5V		A06A2		1-06 *	H			2		P	HAND WIRE	3
+5V		A07A2		1-07 *	H			1		P	HAND WIRE	3
+5V		A08A2		1-08 *	H			2		P	HAND WIRE	3
+5V		A09A2		1-09 *	H			1		P	HAND WIRE	3
+5V		B09A2		1-10 *	H			2		P	HAND WIRE	3
+5V		B08A2		1-11 *	H			1		P	HAND WIRE	3
+5V		B07A2		1-12 *	H			2		P	HAND WIRE	3
+5V		B06A2		1-13 *	H			1		P	HAND WIRE	3
+5V		B05A2		1-14 *	H			2		P	HAND WIRE	3
+5V		B04A2		1-15 *	H			1		P	HAND WIRE	3
+5V		B03A2		1-16 *	H			2		P	HAND WIRE	3
+5V		B02A2		1-17 *	H			1		P	HAND WIRE	3
+5V		B01A2		1-18 *	H			2		P	HAND WIRE	3
+5V		C01A2		1-19 *	H			1		P	HAND WIRE	3
+5V		C02A2		1-20 *	H			2		P	HAND WIRE	3
+5V		B03V1		1-21 *	H			1		P	HAND WIRE	3
+5V		C03A2		1-22 *	H			2		P	HAND WIRE	3
+5V		C04A2		1-23 *	H			1		P	HAND WIRE	3
+5V		C05A2		1-24 *	H			2		P	HAND WIRE	3
+5V		C06A2		1-25 *	H			1		P	HAND WIRE	3
+5V		C07A2		1-26 *	H			2		P	HAND WIRE	3
+5V		C08A2		1-27 *	H			1		P	HAND WIRE	3
+5V		C09A2		1-28 *	H			2		P	HAND WIRE	3
+5V		D09A2		1-29 *	H			1		P	HAND WIRE	3
+5V		D08A2		1-30 *	H			2		P	HAND WIRE	3
+5V		D07A2		1-31 *	H			1		P	HAND WIRE	3
+5V		D06A2		1-32 *	H			2		P	HAND WIRE	3
+5V		D05A2		1-33 *	H			1		P	HAND WIRE	3
+5V		D04A2		1-34 *	H			2		P	HAND WIRE	3
+5V		D03A2		1-35 *	H			1		P	HAND WIRE	3
+5V		D02A2		1-36 *	H			2		P	HAND WIRE	3
+5V		D01A2		1-37 *	H			1		P	HAND WIRE	3
+5V		C03V1		1-38 *	H			2		P	HAND WIRE	3
+5V		D03V1		1-39 *	H			1		P	HAND WIRE	3
+5V		E02A2		1-40 *	H			2		P	HAND WIRE	3
+5V		E01B1		1-41 *	H			1		P	HAND WIRE	3
+5V		E01A2		1-42 *	H			2		P	HAND WIRE	3
+5V		E04A2		1-43 *	H			1		P	HAND WIRE	3
+5V		E04A2		1-44 *	H			2		P	HAND WIRE	3
+5V		E05A2		1-45 *	H			1		P	HAND WIRE	3
+5V		E06A2		1-46 *	H			2		P	HAND WIRE	3
+5V		E07A2		1-47 *	H			1		P	HAND WIRE	3
+5V		E08A2		1-48 *	H			2		P	HAND WIRE	3
+5V		E09A2		1-49 *	H			1		P	HAND WIRE	3

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
+5V		F09A2		1-50 *	H			2		P	HAND WIRE	3
+5V		F08A2		1-51 *	H			1		P	HAND WIRE	3
+5V		F07A2		1-52 *	H			2		P	HAND WIRE	3
+5V		F06A2		1-53 *	H			1		P	HAND WIRE	3
+5V		F05A2		1-54 *	H			2		P	HAND WIRE	3
+5V		F04A2		1-55 *	H			1		P	HAND WIRE	3
+5V		F03A2		1-56 *	H			2		P	HAND WIRE	3
+5V		F02A2		1-57 *	H			1		P	HAND WIRE	3
+5V		F01A2		1-58 *	H			2		P	HAND WIRE	3
+5V		F01B1		1-59 *	H					P	H TO WHERE	3
+5V				1						172-0/8		3
-15V		C09B2		1-01 *	H			1		P	HAND WIRE	4
-15V		D09B2		1-02 *	H			2		P	HAND WIRE	4
-15V		E09B2		1-03 *	H			1		P	HAND WIRE	4
-15V		F09B2		1-04 *	H					P	H TO WHERE	4
-15V				1						14-6/8		4
A INTR DONE	H	F09L2		1-01 *		DD		1	SOURCE			5
A INTR DONE	H	F09R1		1-02 *		DD						5
A INTR DONE				1						3-0/8		5
A MASTER	L	F09D2		1-01 *		DD		2				6
A MASTER	L	F09R2		1-02 *		DD		1				6
A MASTER	L	F09N1		1-03 *		DD			SOURCE			6
A MASTER				1						6-2/8		6
ADRS (777774)	H	B07A1		1-01 *		K4-6		1	SOURCE			7
ADRS (777774)	H	E03D1		1-02 *		KJ-2						7
ADRS (777774)				1						13-0/8		7
ALU00	H	C02P2		1-01 *		KE-26		1				8
ALU00	H	E04E1		1-02 *		K1-2			SOURCE			8
ALU00				1						9-6/8		8
ALU07	H	E04J1				K1-3			SOURCE		1-PIN RUN	9
ALU15	H	B04J2				K1-5			SOURCE		1-PIN RUN	10
ALUM	H	A05H1		1-01 *		K3-8		1	SOURCE			11
ALUM	H	B04P2		1-02 *		K1-2345						11
ALUM				1						6-0/8		11
ALUS0	H	A05M1		1-01 *		K3-8		1	SOURCE			12
ALUS0	H	B04K1		1-02 *		K1-2345						12
ALUS0				1						5-0/8		12

ALUS1	H	A05K1		1-01 *			K3-8		1	SOURCE			13
ALUS1	H	B04S1		1-02 *			K1-2345						13
ALUS1				1							6-0/8		13
ALUS2	H	A05J1		1-01 *			K3-8		1	SOURCE			14
ALUS2	H	B04J1		1-02 *			K1-2345						14
ALUS2				1							5-2/8		14
ALUS3	H	A05L1		1-01 *			K3-8		1	SOURCE			15
ALUS3	H	B04R1		1-02 *			K1-2345						15
ALUS3				1							5-0/8		15
ARGA (1)	H	A01K1		1-01 *			KF-4		1	SOURCE			16
ARGA (1)	H	D02L1		1-02 *			KE-9						16
ARGA (1)				1							10-6/8		16
ASH	L	A02P2					KE-4			SOURCE		1-PIN RUN	17
ASHC	L	A02R2					KE-24			SOURCE (KE-4)		1-PIN RUN	18
AWBY (1)	H	B06S2		1-01 *			K5-4		1	SOURCE			19
AWBY (1)	H	D07L2		1-02 *			K4-25						19
AWBY (1)				1							7-2/8		19
B AC LO	L	B06N1		1-01 *			K5-8		2	SOURCE			20
B AC LO	L	B07P2		1-02 *			K4-5		1				20
B AC LO	L	F07M1		1-03 *			K4-3						20
B AC LO				1							15-6/8		20
B BBSY	H	A06L2		1-01 *			K5-7		1				21
B BBSY	H	B07U2		1-02 *			K4-5			SOURCE			21
B BBSY				1							6-2/8		21
B DC LO	L	D06E1		1-01 *			K5-8		1	SOURCE			22
B DC LO	L	E07R1		1-02 *			K4-2						22
B DC LO				1							11-4/8		22
B EUPPBA	H	C02R2					KE-4					1-PIN RUN	23
B EUPPBB	H	D02D2		1-01 *	1				1				24
B EUPPBB	H	C01B1		1-02 *			KF-4						24
B EUPPBB				1							5-0/8		24
B INIT	L	C08T2		1-01 *			KT-2		2				25
B INIT	L	C07M1		1-02 *			K4-6		1	SOURCE			25
B INIT	L	E03L1		1-03 *			KJ-2						25
B INIT				1							11-6/8		25

B INTR	H	D06L2		1-01 *			K5-4		2				26
B INTR	H	E07C1		1-02 *			K4-24		1	SOURCE (K4-4)			26
B INTR	H	F05B2		1-03 *			K3-2						26
B INTR				1							10-0/8		26
B INTR DONE	H	F09M2		1-01 *			DD		1	SOURCE			27
B INTR DONE	H	F09S1		1-02 *			DD						27
B INTR DONE				1							3-0/8		27
B MASTER	L	F09P2		1-01 *			DD		1				28
B MASTER	L	F09S2		1-02 *			DD			SOURCE			28
B MASTER				1							2-4/8		28
B MSYN	H	B07S1		1-01 *			K4-4		1	SOURCE			29
B MSYN	H	F01E1		1-02 *			KM-2						29
B MSYN				1							12-6/8		29
B SSYN	H	C07A1		1-01 *			K4-256		1	SOURCE (K4-6)			30
B SSYN	H	F01M1		1-02 *			KM-2						30
B SSYN				1							12-6/8		30
B WAIT (1)	H	A07L2					K4-4			SOURCE		1-PIN RUN	31
B07 (1)	H	A04N1					K1-345			SOURCE (K1-3)		1-PIN RUN	32
B15 (1)	H	A04P1		1-01 *			K1-35		2	SOURCE (K1-5)			33
B15 (1)	H	B02M2		1-02 *			KE-45		1				33
B15 (1)	H	D01E2		1-03 *			KF-4		2				33
B15 (1)	H	E01S1		1-04 *			KM-2						33
B15 (1)				1							18-4/8		33
BA(00:03)=0	H	D04K1					K1-7			SOURCE		1-PIN RUN	34
BA(00:03)=1	H	D04D2					K1-7			SOURCE		1-PIN RUN	35
BA(07:05)=1	L	B04P1		1-01 *			K1-7		1	SOURCE			36
BA(07:05)=1	L	E03A1		1-02 *			KJ-2						36
BA(07:05)=1				1							8-6/8		36
BA(15:08)=1	L	B04N2					K1-7			SOURCE		1-PIN RUN	37
BA(17:16)	H	A04S2		1-01 *			K1-69		1	SOURCE (K1-6)			38
BA(17:16)	H	C08K2		1-02 *			KT-9						38
BA(17:16)				1							7-6/8		38

KD11A.F
RUN NAME

HN0288,V22(22) 11/06/73

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BA00 (1)	H	A08F2		1-01 *		KT-8		1				
BA00 (1)	H	A07F1		1-02 *		K4-4		2				39
BA00 (1)	H	A06N2		1-03 *		K5-7		1				39
BA00 (1)	H	D05S1		1-04 *		K3-7		2				39
BA00 (1)	H	F04J1		1-05 *		K1-68						39
BA00 (1)				1					SOURCE (K1-6)			39
										24-2/8		39
BA01 (1)	H	A08E2		1-01 *		KT-8		1				
BA01 (1)	H	A06M1		1-02 *		K5-7		2				40
BA01 (1)	H	F04F1		1-03 *		K1-678						40
BA01 (1)				1					SOURCE (K1-6)			40
										19-2/8		40
BA02 (1)	H	A08H2		1-01 *		KT-8		2				
BA02 (1)	H	A06K2		1-02 *		K5-7		1				41
BA02 (1)	H	F04B1		1-03 *		K1-678						41
BA02 (1)				1					SOURCE (K1-6)			41
										18-6/8		41
BA03 (1)	H	A08D2		1-01 *		KT-8		2				
BA03 (1)	H	A06L1		1-02 *		K5-7		1				42
BA03 (1)	H	D04K2		1-03 *		D1-678						42
BA03 (1)				1					SOURCE (K1-6)			42
										14-4/8		42
BA04 (1)	H	A08K2		1-01 *		KT-8		2				
BA04 (1)	H	A06P1		1-02 *		K5-7		1				43
BA04 (1)	H	D04B1		1-03 *		K1-67						43
BA04 (1)				1					SOURCE (K1-6)			43
										13-0/8		43
BA05 (1)	H	A08A1		1-01 *		KT-8		2				
BA05 (1)	H	A06J2		1-02 *		K5-7		1				44
BA05 (1)	H	C04R2		1-03 *		K1-67						44
BA05 (1)				1					SOURCE (K1-6)			44
										12-2/8		44
BA06 (1)	H	A08J2		1-01 *		KT-8		2				
BA06 (1)	H	A06J1		1-02 *		K5-7		1				45
BA06 (1)	H	C04T2		1-03 *		K1-67						45
BA06 (1)				1					SOURCE (K1-6)			45
										12-4/8		45
BA07 (1)	H	A08B1		1-01 *		KT-8		2				
BA07 (1)	H	A06K1		1-02 *		K5-7		1				46
BA07 (1)	H	D04E1		1-03 *		K1-67						46
BA07 (1)				1					SOURCE (K1-6)			46
										14-0/8		46
BA08 (1)	H	A06H1		1-01 *		K5-7						
BA08 (1)	H	B08E1		1-02 *		KT-8		2				47
BA08 (1)	H	C04F2		1-03 *		K1-67		1	SOURCE (K1-6)			47
BA08 (1)	H	E04D1		1-04 *		KJ-2						47
BA08 (1)				1								47
										18-6/8		47

KD11A.F
RUN NAME

HN0288,V22(22) 11/06/73

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BA09 (1)	H	A06E1		1-01 *		K5-7		1				
BA09 (1)	H	B08E2		1-02 *		KT-8		2				48
BA09 (1)	H	C04D2		1-03 *		K1-67		1	SOURCE (K1-6)			48
BA09 (1)	H	E03C1		1-04 *		KJ-2						48
BA09 (1)				1								48
										19-0/8		48
BA10 (1)	H	A06F1		1-01 *		K5-7		1				
BA10 (1)	H	B08M2		1-02 *		KT-8		2				49
BA10 (1)	H	C04F1		1-03 *		K1-67		1	SOURCE (K1-6)			49
BA10 (1)	H	E03B1		1-04 *		KJ-2						49
BA10 (1)				1								49
										18-6/8		49
BA11 (1)	H	A06D2		1-01 *		K5-7		1				
BA11 (1)	H	B08K1		1-02 *		KT-8		2				50
BA11 (1)	H	C04K1		1-03 *		K1-67		1	SOURCE (K1-6)			50
BA11 (1)	H	E03D2		1-04 *		KJ-2						50
BA11 (1)				1								50
										18-6/8		50
BA12 (1)	H	A06F2	A04M2	1-01 *		K5-7		1				
BA12 (1)	H	A04M2		1-02 *		K1-67		2	SOURCE (K1-67)3-0			51
BA12 (1)	H	B08N2		1-03 *		KT-8		1				51
BA12 (1)	H	E03N2		1-04 *		KJ-2						51
BA12 (1)				1								51
										21-5/8		51
BA13 (1)	H	A06H2	A04P2	1-01 *		K5-7		1				
BA13 (1)	H	A04P2		1-02 *		K1-67		2	SOURCE (K1-6) 2-6			52
BA13 (1)	H	B08L1		1-03 *		KT-85		1				52
BA13 (1)	H	E04M2		1-04 *		KJ-2						52
BA13 (1)				1								52
										21-1/8		52
BA14 (1)	H	A04H1		1-01 *		K1-67		2	SOURCE (K1-6)			53
BA14 (1)	H	A06E2		1-02 *		K5-7		1				53
BA14 (1)	H	C08F1		1-03 *		KT-85		2				53
BA14 (1)	H	E03L2		1-04 *		KJ-2						53
BA14 (1)				1								53
										20-6/8		53
BA15 (1)	H	A04K2		1-01 *		K1-67		2	SOURCE (K1-6)			54
BA15 (1)	H	A06D1		1-02 *		K5-7		1				54
BA15 (1)	H	C08D2		1-03 *		KT-85		2				54
BA15 (1)	H	E03E2		1-04 *		KJ-2						54
BA15 (1)				1								54
										20-4/8		54
BBSY (1)	H	A06N1		1-01 *		K5-7		1				
BBSY (1)	H	A07M2		1-02 *		K4-245						55
BBSY (1)				1					SOURCE (K4-5)			55
										3-0/8		55

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BC(11,08)	H	C04M1		1-01 *		K1-4		1				56
BC(11,08)	H	E06T2		1-02 *		K5-5			SOURCE			56
BC(11,08)				I						8-6/8		56
BC(15:12,10:09)	H	A04U2		1-01 *		K1-45		1		3-4		57
BC(15:12,10:09)	H	C06L2		1-02 *		K5-5			SOURCE			57
BC(15:12,10:09)				I						7-5/8		57
BC00	H	E04B2		1-01 *		K1-2		1				58
BC00	H	F06A1		1-02 *		K5-5			SOURCE			58
BC00				I						5-2/8		58
BC00 (0)	H	B07E2		1-01 *		K4-4		1	SOURCE			59
BC00 (0)	H	B08N1		1-02 *		KT-36						59
BC00 (0)				I						3-4/8		59
BC01	H	E04L2		1-01 *		K1-2		1				60
BC01	H	F06T2		1-02 *		K5-5			SOURCE			60
BC01				I						6-2/8		60
BC01 (0)	H	A07J1		1-01 *		K4-4		2	SOURCE			61
BC01 (0)	H	B08R2		1-02 *		KT-36		1				61
BC01 (0)	H	E03V2		1-03 *		KJ-2						61
BC01 (0)				I						18-0/8		61
BC02	H	E04R2		1-01 *		K1-2		1				62
BC02	H	F06R1		1-02 *		K5-5			SOURCE			62
BC02				I						5-4/8		62
BC03	H	E04N2		1-01 *		K1-2		1				63
BC03	H	F06V2		1-02 *		K5-5			SOURCE			63
BC03				I						6-2/8		63
BC04	H	E04A1		1-01 *		K1-3		1				64
BC04	H	E06S2		1-02 *		K5-5			SOURCE			64
BC04				I						4-6/8		64
BC05	H	C06K2		1-01 *		K5-5		1	SOURCE			65
BC05	H	D04P2		1-02 *		K1-3						65
BC05				I						6-0/8		65
BC06	H	D04Y1		1-01 *		K1-3		1				66
BC06	H	D06H2		1-02 *		K5-5			SOURCE			66
BC06				I						4-2/8		66

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BC07	H	B06L1		1-01 *		K5-5		1	SOURCE			67
BC07	H	D04N1		1-02 *		K1-3						67
BC07				I						8-2/8		67
BCON (1-2)	H	A05P2		1-01 *		K3-8		1				68
BCON (1-2)	H	F06U2		1-02 *		K5-5			SOURCE			68
BCON (1-2)				I						16-2/8		68
BEGIN (1)	L	A07U2		1-01 *		K4-6		2				69
BEGIN (1)	L	A06R1		1-02 *		K5-6		1	SOURCE			69
BEGIN (1)	L	F05K2		1-03 *		K3-2						69
BEGIN (1)				I						18-4/8		69
BEGIN INIT	L	A06C1				K5-7			SOURCE		1-PIN RUN	70
BEGIN SW (0)	H	A06A1				K5-7			SOURCE		1-PIN RUN	71
BERR (0)	H	D06J2		1-01 *		K5-4		1	SOURCE			72
BERR (0)	H	F05U2		1-02 *		K3-7						72
BERR (0)				I						9-0/8		72
BG BETWEEN	H	F09E1		1-01 *		DD		1				73
BG BETWEEN	H	F09V2		1-02 *		DD			SOURCE			73
BG BETWEEN				I						4-2/8		73
BG IN	H	D09U2		1-01 *		DD		1	SOURCE			74
BG IN	H	F09B1		1-02 *		DD						74
BG IN				I						5-6/8		74
BG OUT	H	D09V2		1-01 *		DD		1	SOURCE			75
BG OUT	H	F09A1		1-02 *		DD			SOURCE			75
BG OUT				I						5-6/8		75
BG4	H	D07E2		1-01 *		K4-6		1	SOURCE			76
BG4	H	D09S2		1-02 *		DD						76
BG4				I						4-0/8		76
BG5	H	C07V2		1-01 *		K4-6		1	SOURCE			77
BG5	H	D09P2		1-02 *		DD						77
BG5				I						4-6/8		77
BG6	H	D07F2		1-01 *		K4-6		1	SOURCE			78
BG6	H	F03R2		1-02 *		KW-2		2				78
BG6	H	F03V2		1-03 *		KW-2		1	SOURCE			78
BG6	H	D09M2		1-04 *		DD						78
BG6				I						22-0/8		78

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BG7	H	D07D2		1-01 *		K4-6		1	SOURCE			79
BG7	H	D09K2		1-02 *		DD						79
BG7				1						3-4/8		79
BGBUS (1)	H	D03E2		1-01 *	2	K2-7		2				80
BGBUS (1)	H	E06H1		1-02 *		K5-4		1				80
BGBUS (1)	H	E07E1		1-03 *		K4-25						80
BGBUS (1)				1						8-6/8		80
BIT+CMP+TST	H	A07J2		1-01 *		K4-4		1				81
BIT+CMP+TST	H	D05V2		1-02 *		K3-278			SOURCE (K3-8)			81
BIT+CMP+TST				1						12-0/8		81
BMUX07	H	E04F1		1-01 *		K1-3		1	SOURCE			82
BMUX07	H	E06H2		1-02 *		K5-2						82
BMUX07				1						3-4/8		82
BMUX15	H	A04L1		1-01 *		K1-5		1	SOURCE			83
BMUX15	H	E06J2		1-02 *		K5-2						83
BMUX15				1						13-2/8		83
BOVFL	L	C04C1		1-01 *		K1-7		1	SOURCE			84
BOVFL	L	F06S1		1-02 *		K5-4						84
BOVFL				1						12-2/8		84
BOVFL STOP	H	B07F1		1-01 *		K4-4		1				85
BOVFL STOP	H	C04E1		1-02 *		K1-7			SOURCE			85
BOVFL STOP				1						5-4/8		85
BOVFLW (0)	H	D06K2		1-01 *		K5-4		1	SOURCE			86
BOVFLW (0)	H	F05V2		1-02 *		K3-7						86
BOVFLW (0)				1						9-0/8		86
BPT	L	C06J1		1-01 *		K5-5		1		2-4		87
BPT	L	D05J2		1-02 *		K3-6			SOURCE			87
BPT				1						5-5/8		87
BR INSTR	L	D05N1		1-01 *		K3-5		1				88
BR INSTR	L	F06P1		1-02 *		K5-3			SOURCE			88
BR INSTR				1						8-0/8		88
BR00 (1)	H	D01A1		1-01 *		KF-2		1				89
BR00 (1)	H	D02J1		1-02 *		KE-2346			SOURCE (KE-2)			89
BR00 (1)				1						3-4/8		89

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BR01 (1)	H	D01B1		1-01 *		KF-2		1				90
BR01 (1)	H	D02M2		1-02 *		KE-2346			SOURCE (KE-2)			90
BR01 (1)				1						3-6/8		90
BR02 (1)	H	D01C1		1-01 *		KF-2		1				91
BR02 (1)	H	D02K2		1-02 *		KE-2346			SOURCE (KE-2)			91
BR02 (1)				1						3-4/8		91
BR03 (1)	H	D01D1		1-01 *		KF-2		1				92
BR03 (1)	H	D02G2		1-02 *		KE-2346			SOURCE (KE-2)			92
BR03 (1)				1						3-4/8		92
BR04 (1)	H	B01J1		1-01 *		KF-2		1				93
BR04 (1)	H	D02U1		1-02 *		KE-2346			SOURCE (KE-2)			93
BR04 (1)				1						9-0/8		93
BR05 (1)	H	B01K1		1-01 *		KF-2		1				94
BR05 (1)	H	B02P2		1-02 *		KE-2346			SOURCE (KE-2)			94
BR05 (1)				1						3-2/8		94
BR06 (1)	H	B01L2		1-01 *		KF-2		1				95
BR06 (1)	H	E02B1		1-02 *		KE-236			SOURCE (KE-2)			95
BR06 (1)				1						9-2/8		95
BR07 (1)	H	B01L1		1-01 *		KF-2		1				96
BR07 (1)	H	F02P2		1-02 *		KE-236			SOURCE (KE-2)			96
BR07 (1)				1						13-4/8		96
BR08 (1)	H	D01E1		1-01 *		KF-2		1				97
BR08 (1)	H	F02L2		1-02 *		KE-23			SOURCE (KE-2)			97
BR08 (1)				1						8-4/8		97
BR09 (1)	H	D01F1		1-01 *		KF-2		1				98
BR09 (1)	H	F02L1		1-02 *		KE-23			SOURCE (KE-2)			98
BR09 (1)				1						8-2/8		98
BR10 (1)	H	D01H1		1-01 *		KF-2		1				99
BR10 (1)	H	F02M1		1-02 *		KE-23			SOURCE (KE-2)			99
BR10 (1)				1						8-2/8		99
BR11 (1)	H	D01J1		1-01 *		KF-2		1				100
BR11 (1)	H	F02P1		1-02 *		KE-23			SOURCE (KE-2)			100
BR11 (1)				1						8-4/8		100
BR12 (1)	H	B01M2		1-01 *		KF-2		1				101
BR12 (1)	H	E02U2		1-02 *		KE-23			SOURCE (KE-2)			101
BR12 (1)				1						11-0/8		101

KF=2		1			102
KE=23			SOURCE (KE=2)		102
				11=0/8	102
KF=2		1			103
KE=236			SOURCE (KE=2)		103
				5=6/8	103
KF=2		1			104
KE=2346			SOURCE (KE=2)		104
				5=4/8	104
K4=5		2	SOURCE		105
K5=4		1			105
K3=7					105
				14=6/8	105
KF=4		1			106
K3=47		2			106
K4=6			SOURCE		106
				13=4/8	106
K5=4		2	SOURCE		107
K4=5		1			107
K4=2					107
				9=4/8	107
K5=6		1	SOURCE		108
K3=2					108
				11=0/8	108
K2=2		1			109
K3=2			SOURCE		109
				11=2/8	109
K5=6		1	SOURCE		110
K3=2					110
				11=2/8	110
K2=2		1			111
K3=2			SOURCE		111
				16=0/8	111
K5=6		1	SOURCE		112
K3=2					112
				15=6/8	112

K2=2			1						113
K3=2				SOURCE					113
							13=6/8		113
K2=3			1						114
K3=2				SOURCE					114
							12=0/8		114
K2=3			1						115
K3=2				SOURCE					115
							11=0/8		115
K2=2			1						116
K3=2				SOURCE					116
							10=0		116
							16=5/8		116
K2=2			1						117
K3=2				SOURCE					117
							9=0		117
							14=5/8		117
KE=789			2						118
K2=2			1	SOURCE					118
KF=4			2						118
KT=2			1						118
K1=9			2						118
KM=2									118
							33=2/8		118
KE=789			2						119
K2=2			1	SOURCE					119
KF=4			2						119
KT=2			1						119
K1=9			2						119
KM=2									119
							32=6/8		119
KE=789			2						120
K2=2			1	SOURCE					120
KF=4			2						120
KT=2			1						120
K1=9			2						120
KM=2									120
							32=2/8		120

BR13 (1)	H	B01M1					1=01	*	
BR13 (1)	H	K02U1					1=02	*	
BR14 (1)	H	B01N1					1=01	*	
BR14 (1)	H	C02T2					1=02	*	
BR15 (1)	H	B04P1					1=01	*	
BR15 (1)	H	C02S2					1=02	*	
BRPTR (0)	H	B07M1					1=01	*	
BRPTR (0)	H	C06U2					1=02	*	
BRPTR (0)	H	F05U2					1=03	*	
BRQ	L	A01S2					1=01	*	
BRQ	L	C05D1					1=02	*	
BRQ	L	D07M2					1=03	*	
BRSV (0)	H	B06V2					1=01	*	
BRSV (0)	H	C07N2					1=02	*	
BRSV (0)	H	D07N1					1=03	*	
BUSC0 (BUT30)	H	B06U2					1=01	*	
BUSC0 (BUT30)	H	E05P2					1=02	*	
BUSC1	L	A03U2					1=01	*	
BUSC1	L	D05P1					1=02	*	
BUSC1 (BUT30)	H	A06U2					1=01	*	
BUSC1 (BUT30)	H	E05A1					1=02	*	
BUSC1 (BUT30)									
BUSC2	L	A03M1					1=01	*	
BUSC2	L	F05M1					1=02	*	
BUSC2									
BUSC2 (BUT30)	H	A06S1					1=01	*	
BUSC2 (BUT30)	H	F05S2					1=02	*	
BUSC2 (BUT30)									
BUSC3	L	A03R1					1=01	*	2
BUSC3	L	E05T2					1=02	*	
BUSC3									
BUSC4	L	A03D1					1=01	*	
BUSC4	L	D05N2					1=02	*	
BUSC4									
BUSC5	L	A03D2					1=01	*	
BUSC5	L	D05P1					1=02	*	
BUSC5									
BUSC0 (BUT17_00)	L	A03K2					1=01	*	
BUSC0 (BUT17_00)	L	F05J1					1=02	*	
BUSC0 (BUT17_00)									
BUSC0 (BUT37_00)	L	A03H1					1=01	*	
BUSC0 (BUT37_00)	L	E05R1					1=02	*	
BUSC0 (BUT37_00)									
BUPP0	H	C02M1					1=01	*	2
BUPP0	H	A03U2					1=02	*	
BUPP0	H	C01K2					1=03	*	
BUPP0	H	D04J2					1=04	*	
BUPP0	H	E04U2					1=05	*	
BUPP0	H	F01N2					1=06	*	
BUPP0									
BUPP1	H	C02E1					1=01	*	2
BUPP1	H	A03S2					1=02	*	
BUPP1	H	C01M1					1=03	*	
BUPP1	H	D08H2					1=04	*	
BUPP1	H	E04T2					1=05	*	
BUPP1	H	F01U2					1=06	*	
BUPP1									
BUPP2	H	B02S1					1=01	*	2
BUPP2	H	A04P2					1=02	*	
BUPP2	H	C01L1					1=03	*	
BUPP2	H	D08F2					1=04	*	
BUPP2	H	E04M2					1=05	*	
BUPP2	H	F01H2					1=06	*	
BUPP2									

RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
KE=789		2				121
K2=2		1	SOURCE			121
KF=4		2				121
KT=2		1				121
K1=9		2				121
KM=2				37=0/8		121
K2=3		2	SOURCE			122
KF=4		1				122
KT=2		2				122
K1=9		1				122
KM=2		2				122
KE=789				31=8/8		122
K2=3		2	SOURCE			123
KF=4		1		3=5		123
KT=2		2				123
K1=9		1				123
KM=2		2				123
KE=789				25=5/8		123
K2=3		2	SOURCE			124
KF=4		1				124
KT=2		2				124
K1=9		1				124
KM=2		2				124
KE=789				28=0/8		124
K2=3		2	SOURCE			125
KF=4		1		3=7		125
KT=2		2				125
K1=9		1				125
KM=2		2				125
KE=789				27=7/8		125
KF=4		2				126
K2=3		1	SOURCE			126
K1=9		2				126
KT=2		1				126
KM=2				27=2/8		126

KD11A.F
RUN NAME:

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A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW
H	D02H1		1-01	*	2
H	A03L2		1-02	*	
H	C01D2		1-03	*	
H	D08K2		1-04	*	
H	E04K2		1-05	*	
H	F01S1		1-06	*	
			I		
H	B03R2		1-01	*	
H	C01E1		1-02	*	
H	D08L2		1-03	*	
H	E04R1	D02K1	1-04	*	
H	F01M2	D02K1	1-05	*	
H	D02K1		1-06	*	
			I		
H	B01P2	C01E2	1-01	*	
H	C01E2		1-02	*	
H	D08M2		1-03	*	
H	E04R1		1-04	*	
H	F01P2	F02E2	1-05	*	
H	F02E2		1-06	*	
			I		
H	B01M2		1-01	*	
H	C01F1		1-02	*	
H	D08N2		1-03	*	
H	D04T2		1-04	*	
H	F01R1	F02T2	1-05	*	
H	F02T2		1-06	*	
			I		
H	A03D2	C01D1	1-01	*	
H	C01D1		1-02	*	
H	D08R1		1-03	*	
H	E04N1		1-04	*	
H	F01K1	F02D2	1-05	*	
H	F02D2		1-06	*	
			I		
H	A01C1		1-01	*	
H	B03E2		1-02	*	
H	C04K2		1-03	*	
H	D08N1		1-04	*	
H	F01S2		1-05	*	
			I		

RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K4=4			SOURCE		1-PIN RUN	127
DD		1	SOURCE			128
UD		2				128
K1=6			SOURCE			128
				17=0/8		128
DD		1	SOURCE			129
DD		2				129
KM=2		1				129
K1=6			SOURCE			129
				20=0/8		129
DD		1	SOURCE			130
UD		2		3=2		130
KM=2		1	SOURCE			130
K1=6				19=7/8		130
DD		1	SOURCE			131
DD		2				131
K1=6		1	SOURCE			131
KM=2						131
				20=6/8		131
DD		2	SOURCE			132
K1=6		1	SOURCE			132
KM=2		2				132
DD						132
				22=4/8		132
DD		2	SOURCE			133
K1=6		1	SOURCE			133
KM=2		2		2=7		133
DD						133
				22=7/8		133
KT=4		1	SOURCE			134
DD		2	SOURCE			134
K1=6		1	SOURCE			134
KM=2		2		2=7		134
DD						134
				27=6/8		134

KD11A.F
RUN NAME:

HND2BB.V22(22) 11/06/73

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW
H	A01M1				
			I		
L	B09H2		1-01	*	
L	E09H2		1-02	*	
L	F04P2		1-03	*	
			I		
L	B09H1		1-01	*	
L	E09H1		1-02	*	
L	F03E1		1-03	*	
L	F04N2		1-04	*	
			I		
L	B09J2	E09F1	1-01	*	
L	E09F1		1-02	*	
L	F01L2		1-03	*	
L	F04M2		1-04	*	
			I		
L	B09J1		1-01	*	
L	E09Y2		1-02	*	
L	F04R2		1-03	*	
L	F03M1		1-04	*	
			I		
L	B09K2		1-01	*	
L	C04S2		1-02	*	
L	F03J2		1-03	*	
L	E09U2		1-04	*	
			I		
L	B09K1		1-01	*	
L	C04S1	F03J1	1-02	*	
L	F03J1		1-03	*	
L	E09U1		1-04	*	
			I		
L	A08S1		1-01	*	
L	B09L2		1-02	*	
L	C04V1	F03K1	1-03	*	
L	F03K1		1-04	*	
L	E09Q1		1-05	*	

HN0288,V22(22) 11/06/73

A/P	PIN NAME	URDER PIN	BAY - URDER	Q	DRAW	RV	PG	X	Z	REMARKS	3-JUL-74 LENGTH	23155 EXCEPTIONS	PAGE 15 RUN NUMBER
L	A08R2		1-01 *		KT-4				2	SOURCE			135
L	B09L1		1-02 *		DD				1	SOURCE			135
L	B04A1		1-03 *		K1-6				2	SOURCE			135
L	P03K2		1-04 *		KW-2				1				135
L	E09P2		1-05 *		DD						27-2/8		135
			1										
L	A08P1		1-01 *		KT-4				1	SOURCE			136
L	B09M2		1-02 *		DD				2	SOURCE			136
L	C04J1	E09N2	1-03 *		K1-6				1	SOURCE			136
L	E09N2		1-04 *		DD				2		3-3		136
L	P03L1		1-05 *		KW-2								136
			1								27-7/8		136
L	A08N2		1-01 *		KT-4				1	SOURCE			137
L	B09M1		1-02 *		DD				2	SOURCE			137
L	C04E2	E09K1	1-03 *		K1-6				1	SOURCE			137
L	E09R1		1-04 *		DD				2		3-1		137
L	P03M2		1-05 *		KW-2								137
			1								26-7/8		137
L	B09N2		1-01 *		DD				1	SOURCE			138
L	B08D2		1-02 *		KT-4				2	SOURCE			138
L	C04H1		1-03 *		K1-6				1	SOURCE			138
L	P03A1		1-04 *		KW-2				2				138
L	E09P1		1-05 *		DD						25-4/8		138
			1										
L	B08C1		1-01 *		KT-4				1	SOURCE			139
L	B09N1		1-02 *		DD				2	SOURCE			139
L	C04G1		1-03 *		K1-6				1	SOURCE			139
L	P03B1		1-04 *		KW-2				2				139
L	E09L1		1-05 *		DD						25-0/8		139
			1										
L	A04N2		1-01 *		K1-6				1	SOURCE			140
L	A08U1		1-02 *		KT-4				2	SOURCE			140
L	B09P2		1-03 *		DD				1	SOURCE			140
L	E09C1		1-04 *		DD				2				140
L	P03C1		1-05 *		KW-2						24-6/8		140
			1										

HN0288,V22(22) 11/06/73

A/P	PIN NAME	URDER PIN	BAY - URDER	Q	DRAW	RV	PG	X	Z	REMARKS	3-JUL-74 LENGTH	23155 EXCEPTIONS	PAGE 16 RUN NUMBER
L	A04R2		1-01 *	1	K1-6				1	SOURCE			141
L	B08A1		1-02 *		KT-4				2	SOURCE			141
L	B09P1		1-03 *		DD				1	SOURCE			141
L	E09K2		1-04 *		DD				2				141
L	P03D1		1-05 *		KW-2						25-3/8		141
			1										
L	A04G2		1-01 *		K1-6				1	SOURCE			142
L	B09R2		1-02 *		DD				2	SOURCE			142
L	B08T2	E09K1	1-03 *		KT-4				1	SOURCE			142
L	E09K1		1-04 *		DD				2		2-7		142
L	P03E2		1-05 *		KW-2								142
			1								25-3/8		142
L	A04J2		1-01 *		K1-6				1	SOURCE			143
L	B09R1		1-02 *		DD				2	SOURCE			143
L	C08B1	E09D2	1-03 *		KT-4				1	SOURCE			143
L	E09D2		1-04 *		DD				2		3-2		143
L	P03F2		1-05 *		KW-2								143
			1								25-5/8		143
L	A04S1		1-01 *	2	K1-6				2	SOURCE			144
L	B09S2		1-02 *		DD				1	SOURCE			144
L	B08V2	E09E2	1-03 *		KT-4				2	SOURCE			144
L	E09E2		1-04 *		DD				1		3-4		144
L	P03H2		1-05 *		KW-2								144
			1								26-6/8		144
L	A04R1		1-01 *	1	K1-6				1	SOURCE			145
L	B08P1		1-02 *		KT-4				2	SOURCE			145
L	B09S1		1-03 *		DD				1	SOURCE			145
L	E09D1		1-04 *		DD				2				145
L	P03D2		1-05 *		KW-2						24-7/8		145
			1										
L	B06D2		1-01 *		K5-8				1				146
L	B06R2		1-02 *		K5-8				2	SOURCE			146
L	B19F1		1-03 *		DD					SOURCE,ETCH TO CON			146
			1								6-2/8		146
L	A09P2	C07M2	1-01 *		K4-5				2	SOURCE			147
L	C07M2		1-02 *		DD				1	SOURCE	4-7		147
L	P09D1		1-03 *		DD				2				147
L	P03T2		1-04 *		KW-2					SOURCE			147
			1								23-1/8		147

DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
		1				148
DD			SOURCE	9-0/8		148
						148
	1					149
DD			SOURCE	9-2/8		149
						149
	1					150
DD			SOURCE	9-2/8		150
						150
		1	SOURCE			151
DD		1	SOURCE			151
K4=6		2		2-1		151
DD						152
				11-7/8		152
		1	SOURCE			152
K4=6		2		2-0		153
DD						153
				11-3/8		153
		1	SOURCE			154
K4=6		2		2-1		154
DD		1				154
KM=2			SOURCE	23-1/8		154
		1	SOURCE			155
K4=6		2		2-0		155
DD						155
				12-3/8		155
		2	SOURCE			156
K4=4		1	SOURCE			156
DD				16-0/8		156
			SOURCE			157
K4=4			SOURCE			157
DD		2				157
KM=2				23-0/8		157

HND288,V22(22) 11/06/73

A/P	PIN NAME	ORDER PIN	BAY - ORDER
H	B09E2		I-01 *
H	D09T2		I-02 *
			I
H	B09U1		I-01 *
H	D09R2		I-02 *
			I
H	B09A1		I-01 *
H	D09N2		I-02 *
			I
H	A09V1		I-01 *
H	D09L2		I-02 *
			I
L	B09D2	C07U2	I-01 *
L	C07U2		I-02 *
L	D09H2		I-03 *
			I
L	B09C1	C07T2	I-01 *
L	C07T2		I-02 *
L	D09F2		I-03 *
			I
L	A09U2	C07S2	I-01 *
L	C07S2		I-02 *
L	D09E2		I-03 *
L	F04U1		I-04 *
			I
L	A09T2	C07R2	I-01 *
L	C07R2		I-02 *
L	D09D2		I-03 *
			I
L	A07H1		I-01 *
L	B09U2		I-02 *
L	E09U2		I-03 *
			I
L	A07E2		I-01 *
L	H09T2		I-02 *
L	E09F2		I-03 *
L	F04N1		I-04 *
			I

KD11A,F
RUN NAME:

BUS BG4	L	A09C1	I-01 *
BUS BG4	L	A08K1	I-02 *
BUS BG4	L	C09S2	I-03 *
BUS BG4	L	D04J1	I-04 *
BUS BG4	L	F06L1	I-05 *
			I
BUS BG5	L	A08F1	I-01 *
BUS BG5	L	A09D2	I-02 *
BUS BG5	L	C09R2	I-03 *
BUS BG5	L	F06P2	I-04 *
BUS BG5	L	F04U2	I-05 *
			I
BUS BG6	L	A09D1	I-01 *
BUS BG6	L	A08L2	I-02 *
BUS BG6	L	C09U2	I-03 *
BUS BG6	L	F09E2	I-04 *
BUS BG6	L	F06K1	I-05 *
BUS BG6	L	F04S2	I-06 *
			I
BUS BG7	L	A08H1	I-01 *
BUS BG7	L	A09E2	I-02 *
BUS BG7	L	C09T2	I-03 *
BUS BG7	L	F09L1	I-04 *
BUS BG7	L	F06J1	I-05 *
BUS BG7	L	F04T2	I-06 *
			I
BUS BR4	L	A09E1	I-01 *
BUS BR4	L	B08F1	I-02 *
BUS BR4	L	C09N2	I-03 *
BUS BR4	L	D04M2	I-04 *
BUS BR4	L	F06E1	I-05 *
BUS BR4	L	F09N2	I-06 *
			I
BUS BR5	L	A09F2	I-01 *
BUS BR5	L	B08H1	I-02 *
BUS BR5	L	C09P2	I-03 *
BUS BR5	L	E04C1	I-04 *
BUS BR5	L	F06D1	I-05 *
BUS BR5	L	F09F1	I-06 *
			I

DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
		2	SOURCE			158
KT=8		1	SOURCE			158
DD		2	SOURCE			158
K1=29		1	SOURCE (K1=29)			158
K5=2			SOURCE			158
				26-0/8		158
KT=8		1	SOURCE			159
		2	SOURCE			159
DD		1	SOURCE			159
K5=2		2	SOURCE			159
K1=29			SOURCE (K1=29)			159
				26-4/8		159
		2	SOURCE			160
KT=8		1	SOURCE			160
DD		2	SOURCE			160
K5=2		1	SOURCE			160
K1=29		2	SOURCE			160
			SOURCE (K1=29)			160
				28-4/8		160
KT=8		2	SOURCE			161
		1	SOURCE			161
DD		2	SOURCE			161
DD		1	SOURCE			161
K5=2		2	SOURCE			161
K1=29			SOURCE (K1=29)			161
				29-6/8		161
		2	SOURCE			162
KT=8		1	SOURCE			162
DD		2	SOURCE			162
K1=39		1	SOURCE (K1=39)			162
K5=2		2	SOURCE			162
DD			SOURCE			162
				29-2/8		162
		1	SOURCE			163
KT=8		2	SOURCE			163
DD		1	SOURCE			163
K1=39		2	SOURCE (K1=39)			163
K5=2		1	SOURCE			163
DD			SOURCE			163
				28-6/8		163

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A/P	PIN NAME	ORDER PIN	BAY - ORDER
L	A09C1		I-01 *
L	A08K1		I-02 *
L	C09S2		I-03 *
L	D04J1		I-04 *
L	F06L1		I-05 *
			I
L	A08F1		I-01 *
L	A09D2		I-02 *
L	C09R2		I-03 *
L	F06P2		I-04 *
L	F04U2		I-05 *
			I
L	A09D1		I-01 *
L	A08L2		I-02 *
L	C09U2		I-03 *
L	F09E2		I-04 *
L	F06K1		I-05 *
L	F04S2		I-06 *
			I
L	A08H1		I-01 *
L	A09E2		I-02 *
L	C09T2		I-03 *
L	F09L1		I-04 *
L	F06J1		I-05 *
L	F04T2		I-06 *
			I
L	A09E1		I-01 *
L	B08F1		I-02 *
L	C09N2		I-03 *
L	D04M2		I-04 *
L	F06E1		I-05 *
L	F09N2		I-06 *
			I
L	A09F2		I-01 *
L	B08H1		I-02 *
L	C09P2		I-03 *
L	E04C1		I-04 *
L	F06D1		I-05 *
L	F09F1		I-06 *
			I

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RUN NAME: LENGTH EXCEPTIONS RUN NUMBER

HND288,V22(22) 11/06/73

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	RUN NUMBER
L	A09F1	1=01 *			KT=8					2	SOURCE		164
L	B08J2	1=02 *			DD					1	SOURCE		164
L	C09W2	1=03 *			K1=39					2	SOURCE		164
L	D04R1	1=04 *			KW=2					1	SOURCE (K1=39)		164
L	F03P1	1=05 *			K5=2					2	SOURCE		164
L	F06C1	1=06 *			DD					1			164
L	F09F2	1=07 *									SOURCE	34=4/8	164
L	A09H2	1=01 *			KT=8					1	SOURCE		165
L	B08H2	1=02 *			DD					2	SOURCE		165
L	C09M2	1=03 *			K1=39					1	SOURCE		165
L	E04B1	1=04 *			KW=2					2	SOURCE (K1=39)		165
L	F04A1	1=05 *			K5=2					1	SOURCE		165
L	F06F2	1=06 *			DD					2	SOURCE		165
L	F09H1	1=07 *								1	SOURCE		165
												33=4/8	165
L	A09H1	1=01 *			KT=9					1	SOURCE		166
L	C08D1	1=02 *			DD					2	SOURCE		166
L	C09L2	1=03 *			K1=49					1	SOURCE		166
L	C04P1	1=04 *			KJ=2					2	SOURCE (K1=49)		166
L	E04E1	1=05 *			DD					1	SOURCE		166
L	F09K1	1=06 *									SOURCE	30=0/8	166
L	A09J2	1=01 *			KT=9					2	SOURCE		167
L	B08P2	1=02 *			DD					1	SOURCE		167
L	C09K2	1=03 *			K1=49					2	SOURCE		167
L	C04R1	1=04 *			KJ=2					1	SOURCE (K1=49)		167
L	E03F1	1=05 *									SOURCE	22=4/8	167
L	A09J1	1=01 *			KT=9					2	SOURCE		168
L	B08M1	1=02 *			DD					1	SOURCE		168
L	C09J2	1=03 *			K1=49					2	SOURCE		168
L	C04N1	1=04 *			KJ=2					1	SOURCE (K1=49)		168
L	E03J2	1=05 *									SOURCE	23=0/8	168
L	A09K2	1=01 *			KT=9					2	SOURCE		169
L	B08R1	1=02 *			DD					1	SOURCE		169
L	C09H1	1=03 *			K1=49					2	SOURCE		169
L	C04H2	1=04 *			KJ=2					1	SOURCE (K1=49)		169
L	E03H2	1=05 *									SOURCE	22=4/8	169

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RUN NAME: LENGTH EXCEPTIONS RUN NUMBER

HND288,V22(22) 11/06/73

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	RUN NUMBER
L	A09K1	1=01 *	2		K1=59					2	SOURCE		170
L	B04B1	1=02 *			DD					1	SOURCE (K1=59)		170
L	C09H2	1=03 *			KT=29					2	SOURCE		170
L	C08P1	1=04 *			KJ=2					1	SOURCE		170
L	E04H2	1=05 *									SOURCE	2=5	170
												24=3/8	170
L	A09L2	1=01 *			K1=59					2	SOURCE		171
L	B04E2	1=02 *			DD					1	SOURCE (K1=59)		171
L	C09F2	1=03 *			KT=29					2	SOURCE		171
L	C08H1	1=04 *			KJ=2					1	SOURCE		171
L	E04K2	1=05 *									SOURCE	24=0/8	171
L	A09L1	1=01 *	2		K1=59					2	SOURCE		172
L	B04C1	1=02 *			DD					1	SOURCE (K1=59)		172
L	C09E2	1=03 *			KT=29					2	SOURCE		172
L	C08C1	1=04 *			KJ=2					1	SOURCE		172
L	E03S2	1=05 *									SOURCE	25=5/8	172
L	A09M2	1=01 *			K1=59					2			173
L	B04K1	1=02 *			DD					1	SOURCE (K1=59)		173
L	C09D2	1=03 *			KT=29					2	SOURCE		173
L	C08E1	1=04 *			KJ=2					1	SOURCE		173
L	E03R2	1=05 *									SOURCE	25=2/8	173
L	B06C1	1=01 *			K5=8					1	SOURCE		174
L	B09F2	1=02 *									SOURCE,ETCH TO COM		174
												4=4/8	174
H	A08S2	1=01 *	2		KT=4					2			175
H	B07L2	1=02 *			K4=5					1	SOURCE		175
H	D04J2	1=03 *			K1=6								175
												13=3/8	175
H	B07N1	1=01 *			K4=5					1	SOURCE		176
H	F04V2	1=02 *			K1= 2345								176
												14=2/8	176
L	B07J2	1=01 *			K4=6					2	SOURCE		177
L	D08D1	1=02 *			KT=2					1			177
L	F06F1	1=03 *			K5=2								177
												15=4/8	177

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DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K1=9		1				178
K4=6			SOURCE	10=4/8		178
						178
		2				
K5=8		1	SOURCE			179
K4=5		2				179
DD		1				179
KW=2						179
				26=6/8		179
K4=4		2				180
		1	SOURCE	10=2		180
DD		2	SOURCE			180
KW=2			SOURCE			180
				26=1/8		180
K4=4		2	SOURCE			181
		1	SOURCE	4=1		181
DD		2				181
KW=2						181
				22=5/8		181
K4=5		1				182
			SOURCE	7=4/8		182
						182
		2	SOURCE			183
K4=5		1				183
DD						183
				17=6/8		183
K4=3		1	SOURCE			184
						184
				3=2/8		184
K4=3		1	SOURCE			185
				3=6/8		185
						185
KT=2		1				186
K5=2						186
				10=2/8		186

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RUN NAME:

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A/P	PIN NAME	ORDER PIN	BAY - ORDER	
H	B04F1		1=01	*
H	E07D2		1=02	*
			1	
L	A09A1		1=01	*
L	B06D1		1=02	*
L	C07H1		1=03	*
L	D09L1		1=04	*
L	F03P2		1=05	*
			1	
L	A07A1	A09B1	1=01	*
L	A09B1		1=02	*
L	F09M1		1=03	*
L	F05U2		1=04	*
			1	
L	A07D1	B09V1	1=01	*
L	B09V1		1=02	*
L	B09E1		1=03	*
L	F03F1		1=04	*
			1	
H	A09U1		1=01	*
H	C07P2		1=02	*
			1	
L	A09S2		1=01	*
L	C07D2		1=02	*
L	F09J1		1=03	*
			1	
L	A09M1		1=01	*
L	A07G1		1=02	*
			1	
L	A09N2		1=01	*
L	A07P2		1=02	*
			1	
H	C08F2		1=01	*
H	F06B2		1=02	*
			1	

DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
KF=3		1	SOURCE			187
KE=3		2	SOURCE			187
K1=28		1	SOURCE (K1=8)			187
K5=2		2	SOURCE			187
KT=7			SOURCE			187
				21=6/8		187
KF=3		1	SOURCE			188
KE=3		2	SOURCE			188
K1=28		1	SOURCE (K1=8)			188
K5=2		2	SOURCE			188
KT=7			SOURCE			188
				21=2/8		188
KF=3		1	SOURCE			189
KE=3		2	SOURCE			189
K1=28		1	SOURCE (K1=8)			189
K5=2		2	SOURCE			189
KT=7			SOURCE			189
				23=0/8		189
KF=3		1	SOURCE			190
KE=3		2	SOURCE			190
K1=28		1	SOURCE (K1=8)			190
K5=2		2	SOURCE			190
KT=7			SOURCE			190
				23=2/8		190
KF=3		2	SOURCE			191
K1=38		1	SOURCE (K1=8)			191
KE=3		2	SOURCE			191
KT=7		1	SOURCE			191
K5=2			SOURCE			191
				25=4/8		191
KF=3		2	SOURCE			192
K1=38		1	SOURCE (K1=8)			192
KE=3		2	SOURCE			192
K5=2		1	SOURCE			192
KT=7			SOURCE			192
				26=0/8		192

KD11A.F
RUN NAME:

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A/P	PIN NAME	ORDER PIN	BAY - ORDER	
L	C01L2		1=01	*
L	E02L2		1=02	*
L	F04U1		1=03	*
L	F06M1		1=04	*
L	F08B2		1=05	*
			1	
L	C01J2		1=01	*
L	E02L1		1=02	*
L	F04S1		1=03	*
L	F06N2		1=04	*
L	F08R1		1=05	*
			1	
L	B01U1		1=01	*
L	E02M2		1=02	*
L	F04R1		1=03	*
L	F06M2		1=04	*
L	F08D2		1=05	*
			1	
L	B01P2		1=01	*
L	E02N2		1=02	*
L	F04P1		1=03	*
L	F06G2		1=04	*
L	F08F2		1=05	*
			1	
L	B01A1		1=01	*
L	C04N2		1=02	*
L	F02A1		1=03	*
L	F08A1		1=04	*
L	F06K2		1=05	*
			1	
L	A01R1		1=01	*
L	C04P2		1=02	*
L	F02C1		1=03	*
L	F06H2		1=04	*
L	F08F1		1=05	*
			1	

RUN NAME	PG	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS RD06			2	SOURCE			193
BUS RD06			1	SOURCE (K1=8)			193
BUS RD06			2	SOURCE			193
BUS RD06			1	SOURCE			193
BUS RD06				SOURCE			193
					27=2/8		193
BUS RD07			2	SOURCE			194
BUS RD07			1	SOURCE (K1=8)			194
BUS RD07			2	SOURCE			194
BUS RD07			1	SOURCE			194
BUS RD07				SOURCE			194
					27=2/8		194
BUS RD08			2	SOURCE (K1=8)			195
BUS RD08			1	SOURCE			195
BUS RD08			2	SOURCE			195
BUS RD08				SOURCE			195
					21=2/8		195
BUS RD09			2	SOURCE (K1=8)			196
BUS RD09			1	SOURCE			196
BUS RD09			2	SOURCE			196
BUS RD09				SOURCE			196
					21=2/8		196
BUS RD10			2	SOURCE			197
BUS RD10			1	SOURCE (K1=8)			197
BUS RD10			2	SOURCE			197
BUS RD10				SOURCE			197
					21=0/8		197
BUS RD11			2	SOURCE			198
BUS RD11			1	SOURCE (K1=8)			198
BUS RD11			2	SOURCE			198
BUS RD11				SOURCE			198
					22=2/8		198
BUS RD12			2	SOURCE (K1=8)			199
BUS RD12			1	SOURCE			199
BUS RD12			2	SOURCE			199
BUS RD12				SOURCE (KT=27)			199
					26=4/8		199

RUN NAME	PG	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS RD13			1	SOURCE (K1=8)			200
BUS RD13			2	SOURCE			200
BUS RD13			1	SOURCE			200
BUS RD13				SOURCE			200
					25=2/8		200
BUS RD14			2	SOURCE			201
BUS RD14			1	SOURCE (K1=8)			201
BUS RD14			2	SOURCE			201
BUS RD14				SOURCE			201
					26=0/8		201
BUS RD15			2	SOURCE			202
BUS RD15			1	SOURCE (K1=8)			202
BUS RD15			2	SOURCE			202
BUS RD15				SOURCE			202
					26=0/8		202
BUS REQUEST			1	SOURCE			203
BUS REQUEST			2	SOURCE			203
BUS REQUEST				SOURCE			203
					11=4/8		203
BUS SACK			2	SOURCE			204
BUS SACK			1				204
BUS SACK			2	SOURCE			204
BUS SACK				SOURCE			204
					24=4/8		204
BUS SSYN			2	SOURCE			205
BUS SSYN			3	SOURCE			205
BUS SSYN			2	SOURCE			205
BUS SSYN			1	SOURCE			205
BUS SSYN			2	SOURCE			205
BUS SSYN				SOURCE			205
					28=6/8		205
BUS STOP				SOURCE (K4=4)		1-PIN RUN	206
BUT (37:44)				SOURCE		1-PIN RUN	207
			1				
BUT (3X)				SOURCE			208
BUT (3X)					5=6/8		208
BUT (3X)							208
				SOURCE (K5=3)		1-PIN RUN	209
BUT 42							

A/D	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y
H	A01E2		1=01 *		KF=3
L	C0G32		1=02 *		K1=38
L	F08G1		1=03 *		KT=7
L	F06D2		1=04 *		K5=2
L	F02B1		1=05 *		KE=3
			1		
L	A01B1		1=01 *		KF=3
L	C09M2		1=02 *		K1=38
L	F02F2		1=03 *		KE=3
L	F06E2		1=04 *		K5=2
L	F08K2		1=05 *		KT=7
			1		
L	C0A81		1=01 *		K1=40
L	C01M2		1=02 *		KF=3
L	F02S1		1=03 *		KE=3
L	F08Q1		1=04 *		KT=7
			1		
L	C0A41		1=01 *		K1=48
L	C01K1		1=02 *		KF=3
L	F02R2		1=03 *		KE=3
L	F08D1		1=04 *		KT=7
			1		
L	B01V1		1=01 *		KF=3
L	B04V1		1=02 *		K1=48
L	E08B1		1=03 *		KT=7
L	F02U1		1=04 *		KE=3
			1		
L	B01N2		1=01 *		KF=3
L	A04V2		1=02 *		K1=48
L	F08H1		1=03 *		KT=7
L	F02U2		1=04 *		KE=3
			1		
L	A04Q1		1=01 *		K1=58
L	B01B1		1=02 *		KF=3
L	F02R1		1=03 *		KE=3
L	E08P1		1=04 *		KT=27
			1		

A/D	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y
L	A04F1		1=01 *		K1=58
L	A01S1		1=02 *		KF=3
L	C08H2		1=03 *		KT=2
L	F02S2		1=04 *		KE=3
			1		
L	A01F1		1=01 *		KF=3
L	A04C1		1=02 *		K1=58
L	C08R2		1=03 *		KT=2
L	F02V2		1=04 *		KE=3
			1		
L	A01A1		1=01 *		KF=3
L	A04A1		1=02 *		K1=58
L	C08S2		1=03 *		KT=2
L	F02V1		1=04 *		KE=3
			1		
L	D09J2		1=01 *		DD
L	F09P1		1=02 *		DD
L	F09U2		1=03 *		DD
			1		
L	A09R2		1=01 *		
L	C07L2		1=02 *		K4=5
L	F09T2		1=03 *		DD
L	F01S2		1=04 *		KW=2
			1		
L	A07D2		1=01 *		K4=4
L	B09U1		1=02 *		
L	E08C1		1=03 *		K3=6
L	E09J1		1=04 *		DD
L	F09C1		1=05 *		DD
L	F01N2		1=06 *		KW=2
			1		
H	F07K1				K4=34
L	F05L1				K3=2
L	C06D1		1=01 *		K5=36
L	D09J1		1=02 *		K3=2
			1		
H	C06E1				K5=38

DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K5=3					1	SOURCE			210
K7=9							4=6/8		210
									210
K5=3					2	SOURCE			211
K7=9					1				211
K4=5							9=2/8		211
									211
K4=4					1				212
K5=3					2	SOURCE			212
K6=5							11=4/8		212
									212
K5=2					1		3=3		213
K3=7						SOURCE			213
							7=3/8		213
									213
K4=4					1				214
K3=2678						SOURCE (K3=6)			214
							4=6/8		214
									214
K3=9					1	SOURCE			215
K5=2									215
							10=6/8		215
									215
K4=4					1				216
K5=4					2				216
K2=7						SOURCE			216
							13=2/8		216
									216
K4=4					2				217
K5=4					1				217
K2=7						SOURCE			217
							11=0/8		217
									217
K1=7						SOURCE		1=PIN RUN	218
									218
K4=5					1	SOURCE			219
K3=7									219
							10=4/8		219
									219
K3=6					1	SOURCE			220
K9=2									220
							8=4/8		220
									220

BUT 05	H	B06F1	1=01 *
BUT 05	H	C08N2	1=02 *
BUT 05			1
BUT 26	H	C06A1	1=01 *
BUT 26	H	C08J1	1=02 *
BUT 26	H	D07K1	1=03 *
BUT 26			1
BUT 37	H	A07P1	1=01 *
BUT 37	H	C06B1	1=02 *
BUT 37	H	C02Y2	1=03 *
BUT 37			1
BYTE CODES	H	E06A1	1=01 *
BYTE CODES	H	F05F2	1=02 *
BYTE CODES			1
BYTE INSTR	H	C07R1	1=01 *
BYTE INSTR	H	D05H1	1=02 *
BYTE INSTR			1
C DATA	H	B05F1	1=01 *
C DATA	H	E06K1	1=02 *
C DATA			1
CBUS (1)	H	B07D2	1=01 *
CBUS (1)	H	D08S1	1=02 *
CBUS (1)	H	D03P2	1=03 *
CBUS (1)			1
CIBUS (1)	H	B07H2	1=01 *
CIBUS (1)	H	C06E2	1=02 *
CIBUS (1)	H	D03K1	1=03 *
CIBUS (1)			1
CASI ADRS	H	D04P1	
CBR (0)	H	C07F1	1=01 *
CBR (0)	H	F05E2	1=02 *
CBR (0)			1
CC INSTR	H	B05J2	1=01 *
CC INSTR	H	D06R1	1=02 *
CC INSTR			1

DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K3=8					1	SOURCE			221
K1=2							13=2/8		221
									221
K4=4					1				222
K7=3									222
							16=0/8		222
									222
K4=4					2	SOURCE			223
K1=7					1				223
K3=2									223
							16=4/8		223
									223
K2=23					1				224
K4=2						SOURCE			224
							10=0/8		224
									224
K1=2345					1	SOURCE			225
K3=2							4=0/8		225
									225
K2=7					1	SOURCE			226
K4=2									226
							6=0/8		226
									226
K1=6					1				227
K4=24						SOURCE (K4=2)			227
							13=4/8		227
									227
K7=9					2				228
K2=7					1	SOURCE			228
K4=2									228
							13=2/8		228
									228
K4=4					1	SOURCE			229
K5=4									229
							10=2/8		229
									229
K7=3					1				230
K4=245						SOURCE (K4=2)			230
							5=2/8		230
									230
K1=2345					1				231
K5=2					2				231
K4=2						SOURCE			231
							13=4/8		231

CINOO	L	A05P1	1=01 *
CINOO	L	E04S2	1=02 *
CINOO			1
CKODA (1)	H	A07T2	1=01 *
CKODA (1)	H	F08V2	1=02 *
CKODA (1)			1
CKOVF	H	A07R2	1=01 *
CKOVF	H	C04Q1	1=02 *
CKOVF	H	E03U2	1=03 *
CKOVF			1
CLK (UPP*PUPP)	H	B03F2	1=01 *
CLK (UPP*PUPP)	H	D07V2	1=02 *
CLK (UPP*PUPP)			1
CLK B	H	E04D2	1=01 *
CLK B	H	E07M2	1=02 *
CLK B			1
CLK B (1)	H	D03J1	1=01 *
CLK B (1)	H	E07L2	1=02 *
CLK B (1)			1
CLK BA	H	A04H2	1=01 *
CLK BA	H	E07H1	1=02 *
CLK BA			1
CLK BA (1)	H	B08U1	1=01 * 2
CLK BA (1)	H	D04L1	1=02 *
CLK BA (1)	H	E07J1	1=03 *
CLK BA (1)			1
CLK BOVFLW	H	A07K2	1=01 * 1
CLK BOVFLW	H	D06F2	1=02 *
CLK BOVFLW			1
CLK BUS	H	D08H1	1=01 *
CLK BUS	H	E07K1	1=02 *
CLK BUS			1
CLK D	H	B04G2	1=01 *
CLK D	H	E06N2	1=02 *
CLK D	H	E07N2	1=03 *
CLK D			1

CLK D (1)	H	A01K2		1=01 *		KF=4		1					232
CLK D (1)	H	D03K2		1=02 *		K2=7		2	SOURCE				232
CLK D (1)	H	E07P2		1=03 *		K4=2							232
CLK D (1)				I						17=0/8			232
CLK EPS(C)	H	B02S2				KE=5			SOURCE		1=PIN RUN		233
CLK EPS(N,Z)	H	A01D2		1=01 *		KF=4		1					234
CLK EPS(N,Z)	H	D02A1		1=02 *		KE=5			SOURCE				234
CLK EPS(N,Z)				I						10=0/8			234
CLK EPS(V)	H	C02L2				KE=6					1=PIN RUN		235
CLK EU(88:57)	H	C01U2		1=01 *		KF=4		1					236
CLK EU(88:57)	H	C02N2		1=02 *		KE=457			SOURCE (KE=5)				236
CLK EU(88:57)				I						3=2/8			236
CLK IR	H	B05J1		1=01 *		K3=3		2					237
CLK IR	H	D07C1		1=02 *		K4=25		1	SOURCE				237
CLK IR	H	F08R2		1=03 *		KT=78							237
CLK IR				I						16=4/8			237
CLK MSYN	H	E08M1		1=01 *		KT=56		1					238
CLK MSYN	H	F07L2		1=02 *		K4=34			SOURCE (K4=4)				238
CLK MSYN				I						5=0/8			238
CLK NPR	H	C07C1				K4=5			SOURCE		1=PIN RUN		239
CLK PIRQ	H	C07P1				K4=5			SOURCE		1=PIN RUN		240
CLK U(16:09)	H	C03F1		1=01 *		K2=4		1					241
CLK U(16:09)	H	D07T2		1=02 *		K4=2			SOURCE				241
CLK U(16:09)				I						7=2/8			241
CLK U(56:17)	H	C03K1		1=01 *		K2=5678		1					242
CLK U(56:17)	H	D08K1		1=02 *		KT=2		2					242
CLK U(56:17)	H	D07U2		1=03 *		K4=2			SOURCE				242
CLK U(56:17)				I						9=6/8			242
CLKIR (1)	H	D03T2		1=01 *		K2=8		1	SOURCE				243
CLKIR (1)	H	E07P1		1=02 *		K4=2		2					243
CLKIR (1)	H	F08K1		1=03 *		KT=7							243
CLKIR (1)				I						10=0/8			243
CLKL1 (0)	H	D03M2		1=01 *		K2=8		1	SOURCE				244
CLKL1 (0)	H	E07A1		1=02 *		K4=2							244
CLKL1 (0)				I						4=6/8			244

CLKL1 (1)	H	D03N2		1=01 *		K2=8		1	SOURCE				245
CLKL1 (1)	H	D07U1		1=02 *		K4=2							245
CLKL1 (1)				I						4=2/8			245
CLKL0 (0)	H	D03R1		1=01 *		K2=8		1	SOURCE				246
CLKL0 (0)	H	F07H1		1=02 *		K4=2							246
CLKL0 (0)				I						7=4/8			246
CLKL0 (1)	H	D03L2		1=01 *		K2=8		1	SOURCE				247
CLKL0 (1)	H	E07M1		1=02 *		K4=2							247
CLKL0 (1)				I						5=6/8			247
CLKOFF (1)	H	D03U2		1=01 *		K5=8		1	SOURCE				248
CLKOFF (1)	H	F07J1		1=02 *		K4=2							248
CLKOFF (1)				I						7=2/8			248
CLR BERR	L	C06U1				K5=4			SOURCE		1=PIN RUN		249
CLR IR	L	B05B2				K3=3			SOURCE		1=PIN RUN		250
CLR PIR	L	D07H1				K4=56			SOURCE (K4=5)		1=PIN RUN		25
CLR POPP	L	B04L1				K2=23			SOURCE (K2=2)		1=PIN RUN		252
CLR U(16:09)	L	C03H1				K2=4			SOURCE		1=PIN RUN		253
CLR UPP0	L	A03F2		1=01 *	1	K2=2		1		10=6			254
CLR UPP0	L	F07S2		1=02 *		K4=3			SOURCE				254
CLR UPP0				I						18=1/8			254
CLR UPP1	L	A03H2		1=01 *		K2=2		1					255
CLR UPP1	L	F07F2		1=02 *		K4=3			SOURCE				255
CLR UPP1				I						16=4/8			255
CLR UPP4,3	L	B04H1		1=01 *		K2=23		1					256
CLR UPP4,3	L	F07B2		1=02 *		K4=3			SOURCE				256
CLR UPP4,3				I						13=6/8			256
CLR UPP7,6:2	L	B03K1		1=01 *		K2=23		1					257
CLR UPP7,6:2	L	F07C1		1=02 *		K4=3			SOURCE				257
CLR UPP7,6:2				I						13=0/8			257
CLR UPP8,5	L	A03P1		1=01 *		K2=2		1					258
CLR UPP8,5	L	F07D2		1=02 *		K4=3			SOURCE				258
CLR UPP8,5				I						15=4/8			258

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
COMUXS0	H	B04H2		1-01 *		K1-5		1				259
COMUXS0	H	D05A1		1-02 *		K3-8			SOURCE			259
COMUXS0				1						7-0/8		259
COMUXS1	H	B04B2		1-01 *		K1-5		1				260
COMUXS1	H	D05D1		1-02 *		K3-8			SOURCE			260
COMUXS1				1						6-6/8		260
CONSL (0)	H	A07E1		1-01 *		K4-4		2				
CONSL (0)	H	A06S2		1-02 *		K5-6		1	SOURCE			261
CONSL (0)	H	C07D1		1-03 *		K4-5		2				261
CONSL (0)	H	C08P2		1-04 *		KT-39		1				261
CONSL (0)	H	E05N2		1-05 *		K3-7		2				261
CONSL (0)	H	F07P1		1-06 *		K4-3						261
CONSL (0)				1						27-4/8		261
COUNT0 (1)	H	B01H2	D02R2	1-01 *		KF-4		1				
COUNT0 (1)	H	D02R2		1-02 *		KE-6			SOURCE			262
COUNT0 (1)				1						8-6/8		262
COUNT1 (1)	H	B01H1	D02R1	1-01 *		KF-4		1				
COUNT1 (1)	H	D02R1		1-02 *		KE-6			SOURCE			263
COUNT1 (1)				1						8-6/8		263
COUNT2 (1)	H	B01F1		1-01 *		KF-4		1				264
COUNT2 (1)	H	D02N1		1-02 *		KE-6			SOURCE			264
COUNT2 (1)				1						8-4/8		264
COUNT3 (1)	H	B01R2		1-01 *		KF-4		1				
COUNT3 (1)	H	D02N2		1-02 *		KE-6			SOURCE			265
COUNT3 (1)				1						7-4/8		265
COUNT4 (1)	H	B01S2		1-01 *		KF-4		1				
COUNT4 (1)	H	E02D2		1-02 *		KE-6			SOURCE			266
COUNT4 (1)				1						9-0/8		266
COUNT5 (1)	H	B01T2		1-01 *		KF-4		1				
COUNT5 (1)	H	E02C1		1-02 *		KE-6			SOURCE			267
COUNT5 (1)				1						8-4/8		267
COUNT6 (1)	H	B01U2		1-01 *		KF-4		1				
COUNT6 (1)	H	E02E2		1-02 *		KE-6			SOURCE			268
COUNT6 (1)				1						8-6/8		268
COUNT7 (1)	H	B01V2		1-01 *		KF-4		1				
COUNT7 (1)	H	E02D1		1-02 *		KE-6			SOURCE			269
COUNT7 (1)				1						8-4/8		269

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
COUNT=0	H	D02P2				KE-6			SOURCE		1-PIN RUN	270
COUT 15	L	B04D2		1-01 *		K1-5		1	SOURCE			271
COUT 15	L	C02N1		1-02 *		KE-6						271
COUT 15				1						6-4/8		271
COUT MUX	L	B04K2				K1-5			SOURCE		1-PIN RUN	272
D HOOK	H	E04V2		1-01 *		K1-8		1				273
D HOOK	H	E08J2		1-02 *		KT-9			SOURCE			273
D HOOK				1						5-0/8		273
D PERIF RELEASE	L	C07N1				K4-5			SOURCE		1-PIN RUN	274
D SACK	H	B07S2				K4-5			SOURCE		1-PIN RUN	275
D(03:00)=0	H	D04D1		1-01 *		K1-7		1	SOURCE			276
D(03:00)=0	H	E06B1		1-02 *		K5-2						276
D(03:00)=0				1						5-0/8		276
D(07:04)=0	H	D04H1		1-01 *		K1-7		1	SOURCE			277
D(07:04)=0	H	E06D2		1-02 *		K5-2						277
D(07:04)=0				1						5-0/8		277
D(15:00)=0	H	B02U2		1-01 *		KE-46		2	SOURCE			278
D(15:00)=0	H	D01F2		1-02 *		KF-4		1				278
D(15:00)=0	H	D04V2		1-03 *		K1-7		2	SOURCE			278
D(15:00)=0	H	D06P2		1-04 *		K5-2		1				278
D(15:00)=0	H	F05N2		1-05 *		K3-2						278
D(15:00)=0				1						22-2/8		278
D(15:00)=0	L	B02U1				KE-4			SOURCE		1-PIN RUN	279
D(C) (0)	H	B04N1		1-01 *		K1-5		1	SOURCE			280
D(C) (0)	H	B05L2		1-02 *		K3-9						280
D(C) (0)				1						3-2/8		280
D00 (1)	H	B05N2		1-01 *		K3-9		1				
D00 (1)	H	D04H2		1-02 *		K1-27			SOURCE (K1-2)			281
D00 (1)				1						7-2/8		281
D07 (1)	H	D04L2		1-01 *		K1-37		1	SOURCE (K1-3)			282
D07 (1)	H	E06F2		1-02 *		K5-2						282
D07 (1)				1						4-5/8		282

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
DIS (1)	H	B04F2		1-01 *		K1-57		2	SOURCE (K1-5)			283
DIS (1)	H	C02K1		1-02 *		KE-4		1				283
DIS (1)	H	E06E2		1-03 *		K5-2						283
DIS (1)				!						13-6/8		283
DAD(3*2)	L	A05T2		1-01 *		K3-8		2	SOURCE			284
DAD(3*2)	L	B02C1		1-02 *		KE-5		1				284
DAD(3*2)	L	D01M1		1-03 *		KF-4						284
DAD(3*2)				!						13-4/8		284
DAD0 (1)	H	B06K2	C07S1	1-01 *		K5-6		1				285
DAD0 (1)	H	C07S1		1-02 *		K4-4		2		2-0		285
DAD0 (1)	H	D03D2		1-03 *		K2-7			SOURCE			285
DAD0 (1)				!						10-3/8		285
DAD1 (1)	H	B05B1		1-01 *		K3-8		2				286
DAD1 (1)	H	C07F2		1-02 *		K4-4		1				286
DAD1 (1)	H	D03P1		1-03 *		K2-7			SOURCE			286
DAD1 (1)				!						13-0/8		286
DAD2 (1)	H	A05S1		1-01 *		K3-8		2				287
DAD2 (1)	H	C07E2		1-02 *		K4-4		1				287
DAD2 (1)	H	D03N1		1-03 *		K2-7			SOURCE			287
DAD2 (1)				!						14-0/8		287
DAD3 (1)	H	B07M2		1-01 *		K4-4		2				288
DAD3 (1)	H	B05C1		1-02 *		K3-8		1				288
DAD3 (1)	H	D03M1		1-03 *		K2-7			SOURCE			288
DAD3 (1)				!						13-0/8		288
DISABLE TSACK	L	D07H2				K4-6					1-PIN RUN	289
DIV	L	C02D2				KE-45			SOURCE (KE-4)		1-PIN RUN	290
DM-0	L	E05J2		1-01 *		K3-3		1				291
DM-0	L	E08D1		1-02 *		KT-9						291
DM-0				!						3-6/8		291
DMUX00	H	A08E1		1-01 *		KT-4		1				292
DMUX00	H	E02K1		1-02 *		KE-2		2				292
DMUX00	H	E04L1		1-03 *		K1-289		1	SOURCE (K1-2)			292
DMUX00	H	F05L1		1-04 *		K3-39						292
DMUX00				!						23-2/8		292

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
DMUX01	H	A08D1		1-01 *		KT-4		1				293
DMUX01	H	E04J2		1-02 *		K1-289		2	SOURCE (K1-2)			293
DMUX01	H	E02J2		1-03 *		KE-2		1				293
DMUX01	H	F05F1		1-04 *		K3-39						293
DMUX01				!						22-6/8		293
DMUX02	H	A08C1		1-01 *		KT-4		1				294
DMUX02	H	D06M1		1-02 *		K5-2		2				294
DMUX02	H	E02K2		1-03 *		KE-2		1				294
DMUX02	H	E04M1		1-04 *		K1-289		2	SOURCE (K1-2)			294
DMUX02	H	F05H1		1-05 *		K3-3						294
DMUX02				!						25-0/8		294
DMUX03	H	A08J1		1-01 *		KT-4		2				295
DMUX03	H	D06N1		1-02 *		K5-2		1				295
DMUX03	H	E02J1		1-03 *		KE-2		2				295
DMUX03	H	F04J2		1-04 *		K1-289		1	SOURCE (K1-2)			295
DMUX03	H	F05K1		1-05 *		K3-3						295
DMUX03				!						24-6/8		295
DMUX04	H	A08M1		1-01 *		KT-4		1				296
DMUX04	H	D04F1		1-02 *		K1-389		2	SOURCE (K1-3)			296
DMUX04	H	D05S2		1-03 *		K3-3		1				296
DMUX04	H	E06C1		1-04 *		K5-2		2				296
DMUX04	H	E02H1		1-05 *		KE-2						296
DMUX04				!						22-2/8		296
DMUX05	H	A08L1		1-01 *		KT-4		1				297
DMUX05	H	D04C1		1-02 *		K1-389		2	SOURCE (K1-3)			297
DMUX05	H	D05P2		1-03 *		K3-3		1				297
DMUX05	H	E02H2		1-04 *		KE-2		2				297
DMUX05	H	E06R1		1-05 *		K5-2						297
DMUX05				!						23-6/8		297
DMUX06	H	B08D1		1-01 *		KT-4		1				298
DMUX06	H	D04M1		1-02 *		K1-389		2	SOURCE (K1-3)			298
DMUX06	H	D05T2	E06V2	1-03 *		K3-3		1				298
DMUX06	H	E06V2		1-04 *		K5-2		2		2-5		298
DMUX06	H	F02N1		1-05 *		KE-2						298
DMUX06				!						24-1/8		298
DMUX07	H	B08F2		1-01 *		KT-4		1				299
DMUX07	H	D04F2		1-02 *		K1-389		2	SOURCE (K1-3)			299
DMUX07	H	D05R2		1-03 *		K3-3		1				299
DMUX07	H	E06R2		1-04 *		K5-2		2				299
DMUX07	H	F02M2		1-05 *		KE-2						299
DMUX07				!						22-6/8		299

X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
	1				300
	2	SOURCE (K1=4)			300
	1				300
	2				300
			22=2/8		300
	1				301
	2	SOURCE (K1-4)			301
	1				301
	2				301
			21=6/8		301
	1				302
	2	SOURCE (K1-4)			302
	1				302
	2				302
			22=1/8		302
	1				303
	2	SOURCE (K1-4)			303
	1				303
	2				303
			22=2/8		303
	1	SOURCE (K1=5)			304
	2				304
	1				304
	2				304
			25=0/8		304
2	2	SOURCE (K1=5) 3=0			305
	1				305
	2				305
	1				305
			25=3/8		305
			25=3/8		305

KD11A-F RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y
		HN0288,V22(22) 11/06/73							
DMUX08	H	B08J1		1=01 *		KT=4			
DMUX08	H	B04S2		1=02 *		K1=489			
DMUX08	H	C05H1		1=03 *		K3=3			
DMUX08	H	E03H1		1=04 *		KJ=2			
DMUX08	H	F02N2		1=05 *		KE=2			
				1					
DMUX09	H	B08K2		1=01 *		KT=4			
DMUX09	H	B04T2		1=02 *		K1=489			
DMUX09	H	C05J1		1=03 *		K3=3			
DMUX09	H	E03J1		1=04 *		KJ=2			
DMUX09	H	F02J2		1=05 *		KE=2			
				1					
DMUX10	H	C08J2		1=01 *		KT=4			
DMUX10	H	C05E1		1=02 *		K3=3			
DMUX10	H	D04U1		1=03 *		K1=489			
DMUX10	H	E03K1		1=04 *		KJ=2			
DMUX10	H	F02K1		1=05 *		KE=2			
				1					
DMUX11	H	B08L2		1=01 *		KT=4			
DMUX11	H	B04U2		1=02 *		K1=489			
DMUX11	H	C05F1		1=03 *		K3=3			
DMUX11	H	E03M1		1=04 *		KJ=2			
DMUX11	H	F02K2		1=05 *		KE=2			
				1					
DMUX12	H	A04B1		1=01 *		K1=589			
DMUX12	H	B05R1		1=02 *		K3=3			
DMUX12	H	C08V2		1=03 *		KT=2			
DMUX12	H	E03N1		1=04 *		KJ=2			
DMUX12	H	F02D1		1=05 *		KE=2			
				1					
DMUX13	H	A04D2		1=01 *	2	K1=589			
DMUX13	H	B04N1		1=02 *		K3=3			
DMUX13	H	D08E2		1=03 *		KT=2			
DMUX13	H	E03P1		1=04 *		KJ=2			
DMUX13	H	F02E1		1=05 *		KE=2			
				1					

X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
	2	SOURCE (K1=5)			306
	1				306
	2				306
	1				306
			25=0/8		306
1	1	SOURCE (K1=5)			307
	2				307
	1				307
	2				307
			24=2/8		307
1	1	SOURCE			308
	2				308
					308
			15=4/8		308
1	1	SOURCE			309
					309
			10=0/8		309
		SOURCE		1=PIN RUN	310
2	2	SOURCE (KE=2)			311
	1				311
					311
			14=0/8		311
1	1	SOURCE (KE=2)			312
					312
			7=6/8		312
1	1	SOURCE (KE=2)			313
					313
			8=2/8		313
1	1	SOURCE (KE=2)			314
					314
			10=6/8		314
1	1	SOURCE (KE=2)			315
					315
			11=2/8		315

KD11A-F RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y
		HN0288,V22(22) 11/06/73							
DMUX14	H	A04F2		1=01 *		K1=589			
DMUX14	H	B05M1		1=02 *		K3=3			
DMUX14	H	D08D2		1=03 *		KT=2			
DMUX14	H	E03S1		1=04 *		KJ=2			
DMUX14	H	F02F1		1=05 *		KE=2			
				1					
DMUX15	H	A04E2		1=01 *		K1=589			
DMUX15	H	B05P1		1=02 *		K3=3			
DMUX15	H	C08U2		1=03 *		KT=2			
DMUX15	H	E03R1		1=04 *		KJ=2			
DMUX15	H	F02B1		1=05 *		KE=2			
				1					
DOUT HIGH	H	B07H1		1=01 *		K4=4			
DOUT HIGH	H	E08E1		1=02 *		KT=26			
DOUT HIGH	H	E03V1		1=03 *		KJ=2			
				1					
DOUT LOW	H	B07K1		1=01 *		K4=4			
DOUT LOW	H	E08F1		1=02 *		KT=6			
				1					
DRV0	L	A02L1				KE=5			
DRV0 (1)	H	B02D1		1=01 *		KE=23456			
DRV0 (1)	H	B01H1		1=02 *		KF=2			
DRV0 (1)	H	E01N2		1=03 *		KM=2			
DRV0 (1)				1					
DRV1 (1)	H	C01H2		1=01 *		KF=3			
DRV1 (1)	H	E02F2		1=02 *		KE=23			
DRV1 (1)				1					
DRV2 (1)	H	C01B1		1=01 *		KF=3			
DRV2 (1)	H	E02F1		1=02 *		KE=23			
DRV2 (1)				1					
DRV3 (1)	H	B01S1		1=01 *		KF=3			
DRV3 (1)	H	E02V2		1=02 *		KE=23			
DRV3 (1)				1					
DRV4 (1)	H	A01D1		1=01 *		KF=3			
DRV4 (1)	H	E02M1		1=02 *		KE=23			
DRV4 (1)				1					

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
DR05 (1)	H	A01N1		1-01 *		KF-3		1				316
DR05 (1)	H	E02R1		1-02 *		KE-23			SOURCE (KE-2)			316
DR05 (1)				1						13-2/8		316
DR06 (1)	H	A01P2		1-01 *		KF-3		1				317
DR06 (1)	H	E02R2		1-02 *		KE-23			SOURCE (KE-2)			317
DR06 (1)				1						14-0/8		317
DR07 (1)	H	E02P1				KE-23			SOURCE (KE-2)		1-PIN RUN	318
DR08 (1)	H	A01P2		1-01 *		KF-4		1				319
DR08 (1)	H	E02V1		1-02 *		KE-23			SOURCE (KE-2)			319
DR08 (1)				1						13-6/8		319
DR09 (1)	H	A01R2		1-01 *		KF-4		1				320
DR09 (1)	H	E01D2		1-02 *		KM-2		2				320
DR09 (1)	H	F02J1		1-03 *		KE-23			SOURCE (KE-2)			320
DR09 (1)				1						17-2/8		320
DR10 (1)	H	F02H2				KE-23			SOURCE (KE-2)		1-PIN RUN	321
DR11 (1)	H	E02T2				KE-23			SOURCE (KE-2)		1-PIN RUN	322
DR12 (1)	H	E02P2				KE-23			SOURCE (KE-2)		1-PIN RUN	323
DR13 (1)	H	E02S1				KE-23			SOURCE (KE-2)		1-PIN RUN	324
DR14 (1)	H	E02N1				KE-23			SOURCE (KE-2)		1-PIN RUN	325
DR15 (1)	H	C02F1				KE-2345			SOURCE (KE-2)		1-PIN RUN	326
DUBBERR	L	B06U2		1-01 *		K5-4		1	SOURCE			327
DUBBERR	L	E07T2		1-02 *		K4-3						327
DUBBERR				1						10-2/8		327
E(P1+P2)	H	A01H2		1-01 *		KF-2		1				328
E(P1+P2)	H	E02S2		1-02 *		KE-25			SOURCE (KE-5)			328
E(P1+P2)				1						14-0/8		328
ECIN00	H	A05S2		1-01 *		K3-8		2				329
ECIN00	H	B02F2		1-02 *		KE-5		1	SOURCE			329
ECIN00	H	E01M2		1-03 *		KM-2						329
ECIN00				1						15-4/8		329
ECLK U	L	C02M2		1-01 *		KE-5		1				330
ECLK U	L	D07S1		1-02 *		K4-						330
ECLK U				1						6-4/8		330

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
ECOMUXS0	L	D02H2		1-01 *		KE-5		1	SOURCE			331
ECOMUXS0	L	D05C1		1-02 *		K3-8						331
ECOMUXS0				1						3-6/8		331
ECOMUXS1	L	D02F2		1-01 *		KE-5		1	SOURCE			332
ECOMUXS1	L	D05E1		1-02 *		K3-8						332
ECOMUXS1				1						3-4/8		332
EMT	L	B06R1		1-01 *		K5-5		1				333
EMT	L	E05F1		1-02 *		K3-6			SOURCE			333
EMT				1						9-2/8		333
ENPR CLK	L	A02M2		1-01 *		KE-9		1	SOURCE			334
ENPR CLK	L	D07E1		1-02 *		K4-5						334
ENPR CLK				1						10-4/8		334
EOVFL STOP	H	B07F2		1-01 *		K4-4		1				335
EOVFL STOP	H	E03F2		1-02 *		KJ-2			SOURCE			335
EOVFL STOP				1						11-0/8		335
EOVFLW	L	D06R2		1-01 *		K5-4		1				336
EOVFLW	L	E03T2		1-02 *		KJ-2			SOURCE			336
EOVFLW				1						5-6/8		336
EPS(C) (1)	H	C01J1		1-01 *		KF-2		1				337
EPS(C) (1)	H	D02V1		1-02 *		KE-356		2	SOURCE (KE-6)			337
EPS(C) (1)	H	E01R2		1-03 *		KM-2						337
EPS(C) (1)				1						11-0/8		337
EPS(N) (1)	H	A01D1		1-01 *		KF-3		1				338
EPS(N) (1)	H	C02K2		1-02 *		KE-346		2	SOURCE (KE-6)			338
EPS(N) (1)	H	E01L2		1-03 *		KM-2						338
EPS(N) (1)				1						16-4/8		338
EPS(V) (1)	H	C02L1		1-01 *		KE-36		1	SOURCE (KE-6)			339
EPS(V) (1)	H	E01E2		1-02 *		KM-2						339
EPS(V) (1)				1						7-2/8		339
EPS(Z) (0)	H	A01M2		1-01 *		KF-4		1				340
EPS(Z) (0)	H	D02J2		1-02 *		KE-6			SOURCE			340
EPS(Z) (0)				1						10-2/8		340
EPS(Z) (1)	H	D02F1		1-01 *		KE-3		1				341
EPS(Z) (1)	H	E01H1		1-02 *		KM-2						341
EPS(Z) (1)				1						5-2/8		341

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
ESALU0												
ESALU0	L	A02C1		1-01 *		KE-5		1	SOURCE			342
ESALU0	L	A05N2		1-02 *		K3-8						342
				1						4-6/8		342
ESALU1												
ESALU1	L	A05G2		1-01 *		K3-8		1				343
ESALU1	L	B02E2		1-02 *		KE-5			SOURCE			343
				1						8-2/8		343
ESALU2												
ESALU2	L	A02F1		1-01 *		KE-5		1	SOURCE			344
ESALU2	L	A05M2		1-02 *		K3-8						344
				1						4-2/8		344
ESALU3												
ESALU3	L	A02D1		1-01 *		KE-5		1	SOURCE			345
ESALU3	L	A05K2		1-02 *		K3-8						345
				1						4-2/8		345
ESALUM												
	B	B05M2				K3-8						345
											1-PIN RUN	346
EUBC1												
EUBC1	L	A03L1		1-01 *		K2-2		1				347
EUBC1	L	B02F1		1-02 *		KE-4			SOURCE			347
				1						4-6/8		347
EUBC2												
EUBC2	L	A02S2		1-01 *		KE-4		1	SOURCE			348
EUBC2	L	A03N1		1-02 *		K2-2						348
				1						3-0/8		348
EUBC3												
EUBC3	L	A03S1		1-01 *		K2-2		1				349
EUBC3	L	C02B1		1-02 *		KE-4			SOURCE			349
				1						6-2/8		349
EUBC4												
EUBC4	L	A03C1		1-01 *		K2-3		1				350
EUBC4	L	B02T2		1-02 *		KE-4			SOURCE			350
				1						6-6/8		350
EUBC5												
EUBC5	L	B03D2		1-01 *		K2-3		1				351
EUBC5	L	C01F2		1-02 *		KF-42			SOURCE (KF-4)			351
				1						5-4/8		351
EUBC6	L	B03R1				K2-3					1-PIN RUN	352
EUBC7	L	A03B1				K2-3					1-PIN RUN	353
EUBC8												
EUBC8	L	A03U1		1-01 *		K2-3		1				354
EUBC8	L	B02R1		1-02 *		KE-5			SOURCE			354
				1						5-0/8		354

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
EUBF0 (1)												
EUBF0 (1)	H	A01T2		1-01 *		KF-4		1				355
EUBF0 (1)	H	B02L1		1-02 *		KE-457			SOURCE (KE-7)			355
				1						4-4/8		355
EUBF1 (1)												
EUBF1 (1)	H	A01U2		1-01 *		KF-4		1				356
EUBF1 (1)	H	B02D1		1-02 *		KE-457			SOURCE (KE-7)			356
				1						3-6/8		356
EUBF2 (1)												
EUBF2 (1)	H	A01V2		1-01 *		KF-4		1				357
EUBF2 (1)	H	A02N1		1-02 *		KE-47			SOURCE (KE-7)			357
				1						3-2/8		357
EUBF3 (1)	H	C02E2				KE-7			SOURCE		1-PIN RUN	358
EUBF4 (0)												
EUBF4 (0)	H	D01D2		1-01 *		KF-4		1	SOURCE			359
EUBF4 (0)	H	D02B1		1-02 *		KE-4						359
				1						2-6/8		359
EUPP8	H	D02S2				KE-35					1-PIN RUN	360
EXT P CLR TRAP												
EXT P CLR TRAP	L	B02D2		1-01 *		KE-5		1	SOURCE			361
EXT P CLR TRAP	L	B06F2		1-02 *		K5-4						361
				1						4-4/8		361
FALSE BR												
FALSE BR	L	D05M1		1-01 *		K3-5		1				362
FALSE BR	L	F06N1		1-02 *		K5-3			SOURCE			362
				1						8-0/8		362
FAULT												
FAULT	H	A07B2		1-01 *		K4-4		1				363
FAULT	H	C08S1		1-02 *		KT-3			SOURCE			363
				1						8-6/8		363
FAULT												
FAULT	L	C08R1		1-01 *		KT-3		1	SOURCE			364
FAULT	L	F05M2		1-02 *		K3-2						364
				1						10-4/8		364
FAUX ALU												
FAUX ALU	H	A02B1		1-01 *		KE-5		1				365
FAUX ALU	H	D01P1		1-02 *		KF-4			SOURCE			365
				1						12-0/8		365
FC1BUS (1)												
FC1BUS (1)	H	B02A1		1-01 *		KE-9		1				366
FC1BUS (1)	H	D01M2		1-02 *		KF-4			SOURCE			366
				1						9-0/8		366
FDIV												
FDIV	H	C02F2		1-01 *		KE-2		1				367
FDIV	H	D01L2		1-02 *		KF-4			SOURCE			367
				1						5-6/8		367

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS		LENGTH	EXCEPTIONS	RUN NUMBER
F1S 1NSTR	L	B02H2		1-01 *		KE-5		2					368
F1S 1NSTR	L	C02J1		1-02 *		KE-4		1					368
F1S 1NSTR	L	D01R2		1-03 *		KF-4			SOURCE				368
F1S 1NSTR				1							11-0/8		368
FUBC1	L	B01J2		1-01 *		KF-4		1	SOURCE				369
FUBC1	L	B02R2		1-02 *		KE-4							369
FUBC1				1							3-2/8		369
GND AB		A01C2		1-01 *	H			1	GND AB	P		HAND WIRE	370
GND AB		A02C2		1-02 *	H			2	,GND CD	P		HAND WIRE	370
GND AB		A03C2		1-03 *	H			1	AND GND EF	P		HAND WIRE	370
GND AB		A04C2		1-04 *	H			2	ARE	P		HAND WIRE	370
GND AB		A05C2		1-05 *	H			1	PHYSICALLY	P		HAND WIRE	370
GND AB		A06C2		1-06 *	H			2	TIED	P		HAND WIRE	370
GND AB		A07C2		1-07 *	H			1	TOGETHER	P		HAND WIRE	370
GND AB		A08C2		1-08 *	H			2	BY ETCH	P		HAND WIRE	370
GND AB		A09C2		1-09 *	H			1		P		HAND WIRE	370
GND AB		A09B2		1-10 *	H			2		P		HAND WIRE	370
GND AB		A09N1		1-11 *	H			1		P		HAND WIRE	370
GND AB		A09P1		1-12 *	H			2		P		HAND WIRE	370
GND AB		A09R1		1-13 *	H			1		P		HAND WIRE	370
GND AB		A09S1		1-14 *	H			2		P		HAND WIRE	370
GND AB		A09T1		1-15 *	H			1		P		HAND WIRE	370
GND AB		A09V2		1-16 *	H			2		P		HAND WIRE	370
GND AB		B09B2		1-17 *	H			1		P		HAND WIRE	370
GND AB		B09C2		1-18 *	H			2		P		HAND WIRE	370
GND AB		B09D1		1-19 *	H			1		P		HAND WIRE	370
GND AB		B09E1		1-20 *	H			2		P		HAND WIRE	370
GND AB		B08C2		1-21 *	H			1		P		HAND WIRE	370
GND AB		B07C2		1-22 *	H			2		P		HAND WIRE	370
GND AB		B07C1		1-23 *	H			1		P		HAND WIRE	370
GND AB		B06C2		1-24 *	H			2		P		HAND WIRE	370
GND AB		B05C2		1-25 *	H			1		P		HAND WIRE	370
GND AB		B04C2		1-26 *	H			2		P		HAND WIRE	370
GND AB		B03C2		1-27 *	H			1		P		HAND WIRE	370
GND AB		B02C2		1-28 *	H			2		P		HAND WIRE	370
GND AB		B01C2		1-29 *	H			1		P		HAND WIRE	370
GND AB		A01T1		1-30 *	H			2		P		HAND WIRE	370
GND AB		A02T1		1-31 *	H			1		P		HAND WIRE	370
GND AB		A03T1		1-32 *	H			2		P		HAND WIRE	370
GND AB		A04T1		1-33 *	H			1		P		HAND WIRE	370
GND AB		A05T1		1-34 *	H			2		P		HAND WIRE	370
GND AB		A06T1		1-35 *	H			1		P		HAND WIRE	370
GND AB		A07T1		1-36 *	H			2		P		HAND WIRE	370
GND AB		A08T1		1-37 *	H			1		P		HAND WIRE	370
GND AB		B08T1		1-38 *	H			2		P		HAND WIRE	370
GND AB		B09T1		1-39 *	H			1		P		HAND WIRE	370
GND AB		B09V2		1-40 *	H			2		P		HAND WIRE	370
GND AB		B07T1		1-41 *	H			1		P		HAND WIRE	370
GND AB		B06T1		1-42 *	H			2		P		HAND WIRE	370
GND AB		B05T1		1-43 *	H			1		P		HAND WIRE	370
GND AB		B04T1		1-44 *	H			2		P		HAND WIRE	370
GND AB		B03T1		1-45 *	H			1		P		HAND WIRE	370
GND AB		B02T1		1-46 *	H			2		P		HAND WIRE	370
GND AB		B01T1		1-47 *	H					P		H TO WHERE	370

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS		LENGTH	EXCEPTIONS	RUN NUMBER
GND AB				1							129-2/8		370
GND CD		C01C2		1-01 *	H			2	GND AB	P		HAND WIRE	371
GND CD		C02C2		1-02 *	H			1	,GND CD,EF	P		HAND WIRE	371
GND CD		C03C1		1-03 *	H			2	ARE	P		HAND WIRE	371
GND CD		C03C2		1-04 *	H			1	PHYSICALLY	P		HAND WIRE	371
GND CD		C04C2		1-05 *	H			2	TIED	P		HAND WIRE	371
GND CD		C05C2		1-06 *	H			1	TOGETHER	P		HAND WIRE	371
GND CD		C07C2		1-07 *	H			2	BY ETCH	P		HAND WIRE	371
GND CD		C06C2		1-08 *	H			1		P		HAND WIRE	371
GND CD		C06T1		1-09 *	H			2		P		HAND WIRE	371
GND CD		C05T1		1-10 *	H			1		P		HAND WIRE	371
GND CD		C04T1		1-11 *	H			2		P		HAND WIRE	371
GND CD		C03T1		1-12 *	H			1		P		HAND WIRE	371
GND CD		C03V2		1-13 *	H			2		P		HAND WIRE	371
GND CD		C02T1		1-14 *	H			1		P		HAND WIRE	371
GND CD		C01T1		1-15 *	H			2		P		HAND WIRE	371
GND CD		C08C2		1-16 *	H			1		P		HAND WIRE	371
GND CD		C09C2		1-17 *	H			2		P		HAND WIRE	371
GND CD		C09T1		1-18 *	H			1		P		HAND WIRE	371
GND CD		C08T1		1-19 *	H			2		P		HAND WIRE	371
GND CD		C07T1		1-20 *	H			1		P		HAND WIRE	371
GND CD		D09C2		1-21 *	H			2		P		HAND WIRE	371
GND CD		D08C2		1-22 *	H			1		P		HAND WIRE	371
GND CD		D07C2		1-23 *	H			2		P		HAND WIRE	371
GND CD		D69C2		1-24 *	H			1		P		HAND WIRE	371
GND CD		D05C2		1-25 *	H			2		P		HAND WIRE	371
GND CD		D04C2		1-26 *	H			1		P		HAND WIRE	371
GND CD		D03C2		1-27 *	H			2		P		HAND WIRE	371
GND CD		D04C1		1-28 *	H			1		P		HAND WIRE	371
GND CD		D02C2		1-29 *	H			2		P		HAND WIRE	371
GND CD		D01C2		1-30 *	H			1		P		HAND WIRE	371
GND CD		D01T1		1-31 *	H			2		P		HAND WIRE	371
GND CD		D02T1		1-32 *	H			1		P		HAND WIRE	371
GND CD		D03T1		1-33 *	H			2		P		HAND WIRE	371
GND CD		D03V2		1-34 *	H			1		P		HAND WIRE	371
GND CD		D04T1		1-35 *	H			2		P		HAND WIRE	371
GND CD		D05T1		1-36 *	H			1		P		HAND WIRE	371
GND CD		D06T1		1-37 *	H			2		P		HAND WIRE	371
GND CD		D07T1		1-38 *	H			1		P		HAND WIRE	371
GND CD		D08T1		1-39 *	H			2		P		HAND WIRE	371
GND CD		D09T1		1-40 *	H					P		H TO WHERE	371
GND CD				1							110-6/8		371

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS		LENGTH	EXCEPTIONS	RUN NUMBER
GND EF	E09C2		1-01 *	H			2	GND AB	P		HAND WIRE	372
GND EF	E09A1		1-02 *	H			1	,GND CD	P		HAND WIRE	372
GND EF	E08C2		1-03 *	H			2	AND GND EF	P		HAND WIRE	372
GND EF	E07C2		1-04 *	H			1	ARE	P		HAND WIRE	372
GND EF	E06C2		1-05 *	H			2	PHYSICALLY	P		HAND WIRE	372
GND EF	E05C2		1-06 *	H			1	TIED	P		HAND WIRE	372
GND EF	E04C2		1-07 *	H			2	TOGETHER	P		HAND WIRE	372
GND EF	E03C2		1-08 *	H			1	BY ETCH	P		HAND WIRE	372
GND EF	E02C2		1-09 *	H			2		P		HAND WIRE	372
GND EF	E01C2		1-10 *	H			1		P		HAND WIRE	372
GND EF	E01T1		1-11 *	H			2		P		HAND WIRE	372
GND EF	E02T1		1-12 *	H			1		P		HAND WIRE	372
GND EF	E03T1		1-13 *	H			2		P		HAND WIRE	372
GND EF	E04T1		1-14 *	H			1		P		HAND WIRE	372
GND EF	E05T1		1-15 *	H			2		P		HAND WIRE	372
GND EF	E06T1		1-16 *	H			1		P		HAND WIRE	372
GND EF	E07T1		1-17 *	H			2		P		HAND WIRE	372
GND EF	E08T1		1-18 *	H			1		P		HAND WIRE	372
GND EF	E09T1		1-19 *	H			2		P		HAND WIRE	372
GND EF	F09C2		1-20 *	H			1		P		HAND WIRE	372
GND EF	F08C2		1-21 *	H			2		P		HAND WIRE	372
GND EF	F07C2		1-22 *	H			1		P		HAND WIRE	372
GND EF	F06C2		1-23 *	H			2		P		HAND WIRE	372
GND EF	F05C2		1-24 *	H			1		P		HAND WIRE	372
GND EF	F04C2		1-25 *	H			2		P		HAND WIRE	372
GND EF	F03C2		1-26 *	H			1		P		HAND WIRE	372
GND EF	F02C2		1-27 *	H			2		P		HAND WIRE	372
GND EF	F01C2		1-28 *	H			1		P		HAND WIRE	372
GND EF	F01T1		1-29 *	H			2		P		HAND WIRE	372
GND EF	F02T1		1-30 *	H			1		P		HAND WIRE	372
GND EF	F03T1		1-31 *	H			2		P		HAND WIRE	372
GND EF	F04T1		1-32 *	H			1		P		HAND WIRE	372
GND EF	F05T1		1-33 *	H			2		P		HAND WIRE	372
GND EF	F06T1		1-34 *	H			1		P		HAND WIRE	372
GND EF	F07T1		1-35 *	H			2		P		HAND WIRE	372
GND EF	F08T1		1-36 *	H			1		P		HAND WIRE	372
GND EF	F09T1		1-37 *	H			2		P		HAND WIRE	372
GND EF	F09J2		1-38 *								TO HERE	372
			1							105-6/8		372
GPC=1	A01N2		1-01 *		KF-4		1					373
GPC=1	A02A1		1-02 *		KE-5							373
GPC=1			1							3-6/8		373
GPC=2	A02E1		1-01 *		KE-5		1	SOURCE				374
GPC=2	D01N1		1-02 *		KF-4							374
GPC=2			1							11-4/8		374

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GPC=5	A02J1		1-01 *		KE-25		1	SOURCE (KE-5)			375
GPC=5	C01T2		1-02 *		KF-2						375
GPC=5			1						8-6/8		375
GPC=6	A02K2		1-01 *		KE-5		1	SOURCE			376
GPC=6	D01R1		1-02 *		KF-4						376
GPC=6			1						11-2/8		376
GPC=7	A02J2		1-01 *		KE-5		1	SOURCE			377
GPC=7	D01T2		1-02 *		KF-4						377
GPC=7			1						11-4/8		377
GRANT BR	B07M1				K4-56			SOURCE (K4-5)		1-PIN RUN	378
HALT SW	B06B1		1-01 *		K5-7		2	SOURCE			379
HALT SW	C07D1		1-02 *		K4-5		1				379
HALT SW	F07S1		1-03 *		K4-3		2				379
HALT SW	F05P1		1-04 *		K3-247						379
HALT SW			1						20-4/8		379
HSR00 (1)	C01N2				KF-2			SOURCE		1-PIN RUN	380
HSR01 (1)	C01N1				KF-2			SOURCE		1-PIN RUN	381
HSR02 (1)	C01P1				KF-2			SOURCE		1-PIN RUN	382
HSR03 (1)	C01R1				KF-2			SOURCE		1-PIN RUN	383
HSR04 (1)	B01C1				KF-2			SOURCE		1-PIN RUN	384
HSR05 (1)	A01P1				KF-2			SOURCE		1-PIN RUN	385
HSR06 (1)	A01L1				KF-2			SOURCE		1-PIN RUN	386
HSR07 (1)	A01M1				KF-2			SOURCE		1-PIN RUN	387
HSR08 (1)	C01S2				KF-2			SOURCE		1-PIN RUN	388
HSR09 (1)	C01R2				KF-2			SOURCE		1-PIN RUN	389
HSR10 (1)	C01P2				KF-2			SOURCE		1-PIN RUN	390
HSR11 (1)	C01S1				KF-2			SOURCE		1-PIN RUN	391
HSR12 (1)	B01P2				KF-2			SOURCE		1-PIN RUN	392

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
HSR13 (1)	H	B01E2				KF=2			SOURCE		1=PIN RUN	393
HSR14 (1)	H	B01D2				KF=2			SOURCE		1=PIN RUN	394
HSR15	L	A01H1		1=01 *		KF=2		1	SOURCE			395
HSR15	L	C02A1		1=02 *		KE=2						395
HSR15				1						7=0/8		395
HSR15 (1)	H	B01E1				KF=2			SOURCE		1=PIN RUN	396
IDLE	L	A06M2		1=01 *		K5=7		1				397
IDLE	L	D07J2		1=02 *		K4=24			SOURCE (K4=2)			397
IDLE				1						10=2/8		397
ILL INSTR	L	C06H1		1=01 *		K5=5		1				398
ILL INSTR	L	F05R1		1=02 *		K3=6			SOURCE			398
ILL INSTR				1						11=4/8		398
IN	H	B09H1		1=01 *		DD		1	SOURCE			399
IN	H	E09M1		1=02 *		DD			SOURCE			399
IN				1						5=2/8		399
INH PS CLK 1	L	D02K2	D06K1	1=01 *		KE=5		2	SOURCE			400
INH PS CLK 1	L	D06K1		1=02 *				1				400
INH PS CLK 1	L	E08R2		1=03 *		KT=2						400
INH PS CLK 1				1						10=2/8		400
INH PS CLK 2	L	C08M2	D06J1	1=01 *		KT=2		1	SOURCE			401
INH PS CLK 2	L	D06J1		1=02 *								401
INH PS CLK.2				1						5=2/8		401
INIT	H	B06F1		1=01 *		K5=468		1	SOURCE (K5=8)			402
INIT	H	D07R2		1=02 *		K4=35						402
INIT				1						9=0/8		402
INIT*RESET	H	A06V2				K5=8			SOURCE		1=PIN RUN	403
INIT1	L	B06A1				K5=2468			SOURCE (K5=8)		1=PIN RUN	404
INIT2	L	A04K1	A06T2	1=01 *	2	K4=3		2				405
INIT2	L	A06T2		1=02 *		K5=8		1	SOURCE	7=2		405
INIT2	L	F07F1		1=03 *		K4=4						405
INIT2				1						19=1/8		405
INTR (1)	H	B07J1		1=01 *		K4=4		1				406
INTR (1)	H	C06K1		1=02 *		K5=4			SOURCE			406
INTR (1)				1						5=2/8		406

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
INTR A	H	D09N1		1=01 *		DD		1	SOURCE			407
INTR A	H	F09G1		1=02 *		DD						407
INTR A				1						8=2/8		407
INTR B	H	C09J1		1=01 *		DD		1	SOURCE			408
INTR B	H	F09K2		1=02 *		DD						408
INTR B				1						10=4/8		408
INTR ENB A	H	D09M1		1=01 *		DD		1	SOURCE			409
INTR ENB A	H	F09V1		1=02 *		DD						409
INTR ENB A				1						8=4/8		409
INTR ENB B	H	C09L1		1=01 *		DD		1	SOURCE			410
INTR ENB B	H	F09H2		1=02 *		DD						410
INTR ENB B				1						10=0/8		410
IOT	L	C06H2		1=01 *		K5=5		1				411
IOT	L	D05K2		1=02 *		K3=6			SOURCE			411
IOT				1						5=4/8		411
IR(02:00)=6	L	E05M2		1=01 *		K3=4		1				412
IR(02:00)=6	L	E08L1		1=02 *		KT=9						412
IR(02:00)=6				1						3=6/8		412
IR(08:06)=0	L	C01C1		1=01 *		KF=4		1				413
IR(08:06)=0	L	D05E2		1=02 *		K3=3			SOURCE			413
IR(08:06)=0				1						6=2/8		413
IR(08:06)=6	L	D05F2		1=01 *		K3=3		1	SOURCE			414
IR(08:06)=6	L	E08B1		1=02 *		KT=9						414
IR(08:06)=6				1						5=4/8		414
IR(14:12)=0	L	A05U2		1=01 *		K3=356		1	SOURCE			415
IR(14:12)=0	L	D06V2		1=02 *		K5=3						415
IR(14:12)=0				1						10=6/8		415
IR(14:12)=7	H	B05E2		1=01 *		K3=6		1				416
IR(14:12)=7	H	C02H1		1=02 *		KE=4						416
IR(14:12)=7				1						5=6/8		416
IR00 (1)	H	F04M1		1=01 *		K1=8		2				417
IR00 (1)	H	F05N1		1=02 *		K3=34		1	SOURCE			417
IR00 (1)	H	F08L2		1=03 *		KT=7						417
IR00 (1)				1						7=2/8		417

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
IR01 (1)	H	F04F2		1-01 *		K1-8		1				418
IR01 (1)	H	F05E1		1-02 *		K3-346		2	SOURCE			418
IR01 (1)	H	F08E1		1-03 *		KT-7						418
IR01 (1)				|					6-2/8		418
IR02 (1)	H	F04C1		1-01 *		K1-8		2				419
IR02 (1)	H	F05D1		1-02 *		K3-34		1	SOURCE			419
IR02 (1)	H	F08E2		1-03 *		KT-7						419
IR02 (1)				|					7-0/8		419
IR03 (1)	H	C02J2		1-01 *		KE-4		1				420
IR03 (1)	H	C05S1		1-02 *		K3-235		2	SOURCE (K3-3)			420
IR03 (1)	H	D01K2		1-03 *		KF-4		1				420
IR03 (1)	H	F08H2		1-04 *		KT-7						420
IR03 (1)				|					17-4/8		420
IR04 (1)	H	B02J2		1-01 *		KE-4		1				421
IR04 (1)	H	D01J2		1-02 *		KF-4		2				421
IR04 (1)	H	E05H1		1-03 *		K3-2356		1	SOURCE (K3-3)			421
IR04 (1)	H	F08M2		1-04 *		KT-7						421
IR04 (1)				1						19-4/8		421
IR05 (1)	H	B02J1		1-01 *		KE-4		1				422
IR05 (1)	H	D01K1		1-02 *		KF-4		2				422
IR05 (1)	H	E05K1		1-03 *		K3-2356		1	SOURCE (K3-3)			422
IR05 (1)	H	F08J1		1-04 *		KT-7						422
IR05 (1)				|					19-4/8		422
IR06 (1)	H	D05R1		1-01 *		K3-3456		1	SOURCE (K3-3)			423
IR06 (1)	H	F04N1		1-02 *		K1-8		2				423
IR06 (1)	H	F08N1		1-03 *		KT-7						423
IR06 (1)				1						11-6/8		423
IR07 (1)	H	D05M2		1-01 *		K3-3456		1	SOURCE (K3-3)			424
IR07 (1)	H	F04B2		1-02 *		K1-8		2				424
IR07 (1)	H	F08M1		1-03 *		KT-7						424
IR07 (1)				1						11-4/8		424
IR08 (1)	H	C05K1		1-01 *		K3-3456		2	SOURCE (K3-3)			425
IR08 (1)	H	D06T2		1-02 *		K5-3		1				425
IR08 (1)	H	F04D1		1-03 *		K1-8		2				425
IR08 (1)	H	F08S2		1-04 *		KT-7						425
IR08 (1)				|					18-0/8		425

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
IR09 (1)	H	B02L2		1-01 *		KE-4		2				426
IR09 (1)	H	C05L1		1-02 *		K3-345		1	SOURCE (K3-3)			426
IR09 (1)	H	F08L1		1-03 *		KT-7						426
IR09 (1)				|					16-4/8		426
IR10 (1)	H	A02N2		1-01 *		KE-4		2				427
IR10 (1)	H	C05C1		1-02 *		K3-345		1	SOURCE (K3-3)			427
IR10 (1)	H	F08T2		1-03 *		KT-7						427
IR10 (1)				|					19-6/8		427
IR11 (1)	H	A02T2		1-01 *		KE-4		2				428
IR11 (1)	H	C05B1		1-02 *		K3-345		1	SOURCE (K3-3)			428
IR11 (1)	H	F08D2		1-03 *		KT-7						428
IR11 (1)				|					19-4/8		428
IR12 (1)	H	B05S1		1-01 *	|	K3-34		1	SOURCE (K3-3) 6-4			429
IR12 (1)	H	F08N2		1-02 *		KT-7						429
IR12 (1)				1						13-6/8		429
IR13 (1)	H	B05L1		1-01 *		K3-34		1	SOURCE (K3-3)			430
IR13 (1)	H	F08P2		1-02 *		KT-7						430
IR13 (1)				|					14-0/8		430
IR14 (1)	H	B05K1		1-01 *		K3-34		1	SOURCE (K3-3)			431
IR14 (1)	H	E08V2		1-02 *		KT-7						431
IR14 (1)				|					12-0/8		431
IR15	H	B05R2		1-01 *		K3-2479		1	SOURCE (K3-4)			432
IR15	H	D06L1		1-02 *		K5-3						432
IR15				|					7-2/8		432
IR15	L	A05B1		1-01 *		K3-469		1	SOURCE (K3-4)			433
IR15	L	C02H2		1-02 *		KE-4		2				433
IR15	L	D06M2		1-03 *		K5-3						433
IR15				|					15-2/8		433
IR15 (1)	H	C05M1				K3-345			SOURCE (K3-3)		1-PIN RUN	434
IR-075XXX	L	A02D2		1-01 *		KE-4		1	SOURCE			435
IR-075XXX	L	D01G1		1-02 *		KF-4						435
IR-075XXX				|					9-6/8		435
JAM CLK	H	E07B1				K4-23			SOURCE (K4-3)		1-PIN RUN	436
JAMUPP	H	C06T2		1-01 *		K5-4		1				437
JAMUPP	H	F07A1		1-02 *		K4-23			SOURCE (K4-3)			437
JAMUPP				|					8-4/8		437

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
JAMUPP	L	D03S2	A03V1	1-01 *	1	K2-5678		1				438
JAMUPP	L	A03V1		1-02 *		K2-3		2				438
JAMUPP	L	C06L1		1-03 *		K5-4		1				438
JAMUPP	L	F07E1		1-04 *		K4-3			SOURCE			438
JAMUPP										27-2/8		438
JBERR (0)	H	F07L1				K4-3			SOURCE		1-PIN RUN	439
JPUP (0)	H	B06T2		1-01 *		K5-8		1				440
JPUP (0)	H	F07T2		1-02 *		K4-3			SOURCE			440
JPUP (0)										13-0/8		440
KT INSTR	L	D09B1		1-01 *		K3-5		1				441
KT INSTR	L	E08N1		1-02 *		KT-7			SOURCE			441
KT INSTR										6-6/8		441
KTSR16	L	B06B2		1-01 *		K5-7		1				442
KTSR16	L	C08K1		1-02 *		KT-9			SOURCE			442
KTSR16										6-0/8		442
KTSR17	L	A06R2		1-01 *		K5-7		1				443
KTSR17	L	C08L2		1-02 *		KT-9			SOURCE			443
KTSR17										9-0/8		443
LOAD PS	L	B05K2		1-01 *		K3-9		1				444
LOAD PS	L	D06P1		1-02 *		K5-2			SOURCE			444
LOAD PS										8-2/8		444
LTC	L	F03R1	C09D1	1-01 *	1	KW-2		1				445
LTC	L	C09D1		1-02 *		DD						445
LTC										12-6/8		445
MCLK	L	F01U1		1-01 *	1	KM-2		1	SOURCE			446
MCLK	L	F07V2		1-02 *		K4-2						446
MCLK										5-6/8		446
MCLK ENABLE	L	C06S2	E07N1	1-01 *		K5-5		2				447
MCLK ENABLE	L	E07N1		1-02 *		K4-26		1		3-3		447
MCLK ENABLE	L	F01V2		1-03 *		KM-2			SOURCE			447
MCLK ENABLE										14-7/8		447
MFP SMO	L	D06V1		1-01 *		K5-5		1				448
MFP SMO	L	D08C1		1-02 *		KT-9			SOURCE			448
MFP SMO										4-4/8		448
MFPI (1)	H	E08D2				KT-7			SOURCE		1-PIN RUN	449

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
MODE SEL1	H	E04U1		1-01 *	1	K1-8		1				450
MODE SEL1	H	E08A1		1-02 *		KT-2			SOURCE			450
MODE SEL1										5-2/8		450
MSR00	L	A02L2		1-01 *		KE-5		1				451
MSR00	L	D01N2		1-02 *		KF-2			SOURCE			451
MSR00										10-6/8		451
MSR00 (1)	H	A02F2		1-01 *		KE-5		1				452
MSR00 (1)	H	D01P2		1-02 *		KF-2		2	SOURCE			452
MSR00 (1)	H	E01H2		1-03 *		KM-2						452
MSR00 (1)										15-4/8		452
MSR01 (1)	H	B01K2		1-01 *		KF-24		1	SOURCE (KF-2)			453
MSR01 (1)	H	E01J2		1-02 *		KM-2						453
MSR01 (1)										10-0/8		453
MSYN (1)	H	B07D1		1-01 *		K4-246		2	SOURCE (K4-4)			454
MSYN (1)	H	E08P2		1-02 *		KT-2		1				454
MSYN (1)	H	E08N2		1-03 *		KT-256						454
MSYN (1)										14-0/8		454
MSYNA	L	A07B1				K4-4			SOURCE		1-PIN RUN	455
MSYNA (1)	H	A07K1				K4-4			SOURCE		1-PIN RUN	456
MTPI (1)	H	E08T2				KT-7			SOURCE		1-PIN RUN	457
MUL	L	C02D1				KE-245			SOURCE (KE-4)		1-PIN RUN	458
N DATA	L	B05D1		1-01 *		K3-9		1				459
N DATA	L	E06B1		1-02 *		K5-2			SOURCE			459
N DATA										11-6/8		459
NO MSTOP	L	E07S1		1-01 *		K4-2		1				460
NO MSTOP	L	F01B2		1-02 *		KM-2			SOURCE			460
NO MSTOP										5-4/8		460
NO MSYN	L	A07C1		1-01 *		K4-4		1		6-0		461
NO MSYN	L	D08R2		1-02 *		KT-6			SOURCE			461
NO MSYN										12-5/8		461
NODAT (0)	H	C06D2		1-01 *		K5-4		1				462
NODAT (0)	H	D07S2		1-02 *		K4-346			SOURCE (K4-6)			462
NODAT (0)										6-6/8		462

DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K4=6						SOURCE		1=PIN RUN	463
K4=56						SOURCE (K4=5)		1=PIN RUN	464
K5=4					1				465
K4=34						SOURCE (K4=4)	9=6/8		465
DD					1	SOURCE			466
DD						SOURCE			466
							5=2/8		466
DD					1	SOURCE			467
DD						SOURCE			467
							5=6/8		467
KE=4					1				468
KF=4					2	SOURCE			468
KM=2									468
							14=0/8		468
K5=4					1				469
K4=34						SOURCE (K4=4)			469
							11=0/8		469
KJ=2								1=PIN RUN	470
K5=4					2	SOURCE			471
K4=5					1				471
K3=7					2				471
K4=2									471
							15=4/8		471
K4=4					1				472
K3=4						SOURCE			472
							8=2/8		472
K3=4					1	SOURCE			473
K5=4									473
							4=2/8		473
K5=46						SOURCE (K5=6)		1=PIN RUN	474
K4=2					1				475
KE=5						SOURCE			475
							7=0/8		475

A/P	PIN NAME	ORDER PIN	BAY - ORDER
H	D07P2		
H	D07B1		
L	C06C1		1=01 *
L	E07D2		1=02 *
			1
H	D09K1		1=01 *
H	E09K2		1=02 *
			1
H	D09D1		1=01 *
H	E09W1		1=02 *
			1
H	A02V2		1=01 *
H	D01B2	E01E1	1=02 *
H	E01E1		1=03 *
			1
L	B06W1		1=01 *
L	E07S2		1=02 *
			1
L	E03B2		
H	C06S1		1=01 *
H	D07D1		1=02 *
H	E05D1		1=03 *
H	F07J2		1=04 *
			1
L	A07N1		1=01 *
L	C05P1		1=02 *
			1
H	C05R1		1=01 *
H	D06E2		1=02 *
			1
H	C06R2		1=01 *
H	B03G1		1=02 *
H	C02V1		1=03 *
			1

DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K4=45					1	SOURCE (K4=4)			476
K7=9							9=0/8		476
									476
KE=59					1				477
K4=2					2	SOURCE			477
K1=9									477
							10=4/8		477
K5=8					1	SOURCE			478
K4=2									478
							13=4/8		478
K4=2								1=PIN RUN	479
K4=236						SOURCE (K4=3)		1=PIN RUN	480
K4=3						SOURCE (K4=3)		1=PIN RUN	481
K1=9						SOURCE		1=PIN RUN	482
K4=5						SOURCE		1=PIN RUN	483
K4=5						SOURCE		1=PIN RUN	484
KF=4					2				485
KE=5					1				485
K5=4					2				485
K4=2						SOURCE			485
							19=0/8		485
KE=5					2				486
K5=4					1				486
K4=2					2	SOURCE			486
K4=4					1				486
KT=9									486
							35=2/8		486
KE=5					2				487
K5=48					1				487
K4=25						SOURCE (K4=2)			487
							12=2/8		487
K4=5						SOURCE		1=PIN RUN	488

A/P	PIN NAME	ORDER PIN	BAY - ORDER
L	B07K2		1=01 * 1
L	D08V1		1=02 *
			1
H	C02R1		1=01 *
H	D07P1	E04F2	1=02 *
H	E04F2		1=03 *
			1
L	B06J1		1=01 *
L	F07N1		1=02 *
			1
L	F07N2		
H	D07L1		
L	F07B1		
L	E04E2		
L	D07K2		
L	C07J1		
H	A01J2		1=01 *
H	B02V2		1=02 *
H	D06D2		1=03 *
H	F07L1		1=04 *
			1
H	B02V1		1=01 *
H	C06J2		1=02 *
H	E07R2	H07B1	1=03 *
H	B07B1	1=04 *	
H	D08U1	1=05 *	
			1
H	C02C1		1=01 *
H	C06M2		1=02 *
H	E07F1		1=03 *
			1
H	C07L1		

KD11A.F
RUN NAME:

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PART GRANT BR

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
PART P END	H	A06P2		1-01 *		K5-6		1				489
PART P END	H	C02U2		1-02 *		KE-5		2				489
PART P END	H	D07R1		1-03 *		K4-2			SOURCE			489
PART P END										14-6/8		489
PASTA (1)	H	A05V2		1-01 *		K3-9		1				490
PASTA (1)	H	E06P1		1-02 *		K5-2			SOURCE			490
PASTA (1)										12-2/8		490
PASTB	H	A05R1		1-01 *		K3-9		1				491
PASTB	H	E06K2		1-02 *		K5-2			SOURCE			491
PASTB										12-4/8		491
PASTC (0)	H	A05A1		1-01 *		K3-9		1				492
PASTC (0)	H	E06N1		1-02 *		K5-2			SOURCE			492
PASTC (0)										14-4/8		492
PBA06	H	A08R1		1-01 *		KT-4		1	SOURCE			493
PBA06	H	E08E2		1-02 *		KT-6		2				493
PBA06	H	E01R1		1-03 *		KM-2						493
PBA06										18-2/8		493
PBA07	H	A08P2		1-01 *	1	KT-4		1	SOURCE	6-2		494
PBA07	H	E08L2		1-02 *		KT-6		2				494
PBA07	H	E01K1		1-03 *		KM-2						494
PBA07										19-3/8		494
PBA08	H	A08N1		1-01 *	1	KT-4		1	SOURCE	5-7		495
PBA08	H	E08D2		1-02 *		KT-6		2				495
PBA08	H	E01S2		1-03 *		KM-2						495
PBA08										18-7/8		495
PBA09	H	A08M2		1-01 *	1	KT-4		1	SOURCE	5-4		496
PBA09	H	D08V2		1-02 *		KT-6		2				496
PBA09	H	E01P1		1-03 *		KM-2						496
PBA09										18-5/8		496
PBA10	H	B08B1		1-01 *		KT-4		1	SOURCE			497
PBA10	H	E01L1		1-02 *		KM-2						497
PBA10										12-4/8		497
PBA11	H	A08V2		1-01 *		KT-4		1	SOURCE			498
PBA11	H	D08U2		1-02 *		KT-6		2				498
PBA11	H	E01F1		1-03 *		KM-2						498
PBA11										16-6/8		498

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
PBA12	H	A08T2		1-01 *		KT-4		1	SOURCE			499
PBA12	H	E01J1		1-02 *		KM-2						499
PBA12										13-4/8		499
PBA13	H	A08U2		1-01 *		KT-4		1	SOURCE			500
PBA13	H	E01C1		1-02 *		KM-2						500
PBA13										12-6/8		500
PBA14	H	B08S1		1-01 *		KT-4		1	SOURCE			501
PBA14	H	E01T2		1-02 *		KM-2						501
PBA14										11-4/8		501
PBA15	H	C08A1		1-01 *		KT-4		1	SOURCE			502
PBA15	H	E01K2		1-02 *		KM-2						502
PBA15										10-0/8		502
PBA16	H	B08U2		1-01 *		KT-4		1	SOURCE			503
PBA16	H	E01N1		1-02 *		KM-2						503
PBA16										11-0/8		503
PBA17	H	B08S2		1-01 *		KT-4		1	SOURCE			504
PBA17	H	E01V1		1-02 *		KM-2						504
PBA17										12-0/8		504
PERIF RELEASE	H	D07A1				K4-25			SOURCE (K4-5)		1-PIN RUN	505
PERR (0)	H	B07U1		1-01 *		K4-3		1	SOURCE			506
PERR (0)	H	F06V1		1-02 *		K5-5						506
PERR (0)										13-2/8		506
PRIV INSTR	L	E05M1		1-01 *		K3-6		1	SOURCE			507
PRIV INSTR	L	F08P1		1-02 *		KT-7						507
PRIV INSTR										6-0/8		507
PROC RELEASE	L	A07N2				K4-45			SOURCE (K4-5)		1-PIN RUN	508
PROC RESPOND	H	A07S1				K4-6			SOURCE		1-PIN RUN	509
PS ADRS	H	A07P2		1-01 *		K4-6		1				510
PS ADRS	H	D06S2		1-02 *		K5-2		2				510
PS ADRS	H	E04D1		1-03 *		K1-7		1	SOURCE			510
PS ADRS	H	E08F2		1-04 *		KT-6		2	SOURCE			510
PS ADRS	H	E05V2		1-05 *		K3-7						510
PS ADRS										24-0/8		510

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
									K3=89	1				511
									K1=5	2				511
PS(C)	H	A05R2		1=01 *					K5=2	1	SOURCE			511
PS(C)	H	B04R1		1=02 *					KM=2					511
PS(C)	H	D06F1		1=03 *								22=0/8		511
PS(C)	H	F01K2		1=04 *										
PS(C)									K3=8	1				512
									K5=23	2	SOURCE (K5=2)			512
PS(N) (1)	H	A05D1		1=01 *					KM=2					512
PS(N) (1)	H	F06H1		1=02 *								21=0/8		512
PS(N) (1)	H	F01L2		1=03 *										
PS(N) (1)				1					K4=6	1	SOURCE			513
									K5=2					513
PS(P FM BUS)	H	B07E1		1=01 *								10=2/8		513
PS(P FM BUS)	H	E06E1		1=02 *										
PS(P FM BUS)				1					K4=2	2	SOURCE			514
									K5=2	1				514
PS(P1+P3)	B	E07D1		1=01 *					KT=29					514
PS(P1+P3)	H	E06D1		1=02 *								7=0/8		514
PS(P1+P3)	H	E08B2		1=03 *										
PS(P1+P3)				1					K3=7	2				515
PS(T) (1)	H	E05B2		1=01 *					K5=2	1	SOURCE			515
PS(T) (1)	H	F06J2		1=02 *					KM=2					515
PS(T) (1)	H	F01J2		1=03 *								9=2/8		515
PS(T) (1)				1										
PS(V) (1)	H	E06A1		1=01 *					K5=23	1	SOURCE (K5=2)			516
PS(V) (1)	H	F01E2		1=02 *					KM=2					516
PS(V) (1)				1								5=6/8		516
PS(Z) (1)	H	E06M1		1=01 *					K5=23	1	SOURCE (K5=2)			517
PS(Z) (1)	H	F01M1		1=02 *					KM=2					517
PS(Z) (1)				1								5=6/8		517
PS05 (1)	H	B07R1		1=01 *					K4=6	1	SOURCE			518
PS05 (1)	H	E06F1		1=02 *					K5=2					518
PS05 (1)				1								9=2/8		518
PS06 (1)	H	C07K2		1=01 *					K4=6	1	SOURCE			519
PS06 (1)	H	F06B1		1=02 *					K5=2					519
PS06 (1)				1								9=6/8		519
PS07 (1)	H	B07R2		1=01 *					K4=6	1	SOURCE			520
PS07 (1)	H	E06P2		1=02 *					K5=2					520
PS07 (1)				1								10=2/8		520
PS12 (1)	H	C08U1							KT=2		SOURCE		1-PIN RUN	521

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
									KT=2		SOURCE		1-PIN RUN	522
PS13 (1)	H	E08K2												
									KT=2		SOURCE		1-PIN RUN	523
PS14 (1)	H	E08B1												
									K5=7	1				524
PS15	L	C06B2		1=01 *					KT=9		SOURCE			524
PS15	L	C08N1		1=02 *								4=0/8		524
PS15				1										
PS15 (0)	H	A07S2		1=01 *					K4=4	1				525
PS15 (0)	H	D08E1		1=02 *					KT=2	2	SOURCE			525
PS15 (0)	H	D05L2		1=03 *					K3=6					525
PS15 (0)				1								13=0/8		525
PTRD (0)	H	C07E1							K4=5		SOURCE		1-PIN RUN	526
PTRD (1)	B	B07Y2							K4=56		SOURCE (K4=5)		1-PIN RUN	527
PUPP0 (1)	H	A01T2		1=01 *					K2=2	1	SOURCE			528
PUPP0 (1)	H	F01D1		1=02 *					KM=2					528
PUPP0 (1)				1								15=6/8		528
PUPP1 (1)	H	A03N2		1=01 *					K2=2	1	SOURCE			529
PUPP1 (1)	H	F01L1		1=02 *					KM=2					529
PUPP1 (1)				1								16=0/8		529
PUPP2 (1)	H	A03R2		1=01 *					K2=2	1	SOURCE			530
PUPP2 (1)	H	F01F1		1=02 *					KM=2					530
PUPP2 (1)				1								15=2/8		530
PUPP3 (1)	H	A03M2		1=01 *					K2=2	1	SOURCE			531
PUPP3 (1)	H	F01J1		1=02 *					KM=2					531
PUPP3 (1)				1								15=6/8		531
PUPP4 (1)	H	B03S2		1=01 *					K2=3	1	SOURCE			532
PUPP4 (1)	H	F01C1		1=02 *					KM=2					532
PUPP4 (1)				1								12=0/8		532
PUPP5 (1)	H	B03W2		1=01 *					K2=3	1	SOURCE			533
PUPP5 (1)	H	F01T2		1=02 *					KM=2					533
PUPP5 (1)				1								13=6/8		533
PUPP6 (1)	H	B03L2		1=01 *					K2=3	1	SOURCE			534
PUPP6 (1)	H	F01K2		1=02 *					KM=2					534
PUPP6 (1)				1								13=2/8		534

PUPP7 (1)	H	B03H2		1-01 *			K2-3		1	SOURCE				535
PUPP7 (1)	H	F01N1		1-02 *			KM-2							535
PUPP7 (1)				1								14-0/8		535
PUPP8 (1)	H	B03K2		1-01 *			K2-3		1	SOURCE				536
PUPP8 (1)	H	F01V1		1-02 *			KM-2							536
PUPP8 (1)				1								14-4/8		536
PWR RESTART	H	B06H1		1-01 *			K5-8		1	SOURCE				537
PWR RESTART	H	F07P2		1-02 *			K4-3							537
PWR RESTART				1								14-0/8		537
PWRDN (0)	H	C05N1		1-01 *			K3-47		1					538
PWRDN (0)	H	C06F2		1-02 *			K5-48			SOURCE (K5-4)				538
PWRDN (0)				1								3-4/8		538
PWRUP INIT	L	B06H2		1-01 *			K5-8		1	SOURCE				539
PWRUP INIT	L	F07R2		1-02 *			K4-3							539
PWRUP INIT				1								14-0/8		539
R(X6+X7)	H	A05C1		1-01 *			K3-8		2					540
R(X6+X7)	H	C07J2		1-02 *			K4-4		1					540
R(X6+X7)	H	E04P1		1-03 *			K1-8			SOURCE				540
R(X6+X7)				1								17-6/8		540
RADRS0	L	A04E1		1-01 *			K1-8		1	SOURCE				541
RADRS0	L	C07K1		1-02 *			K4-4							541
RADRS0				1								8-6/8		541
RD07	H	C04V2		1-01 *	1		K1-3		1	SOURCE	3-4			542
RD07	H	E06M2		1-02 *			K5-2							542
RD07				1								7-5/8		542
RD15	H	B04D1		1-01 *			K1-5		1	SOURCE				543
RD15	H	E06L2		1-02 *			K5-2							543
RD15				1								11-4/8		543
REG ADRS	H	D08S2		1-01 *			KT-6		2	SOURCE				544
REG ADRS	H	D04U1		1-02 *			K1-7		1	SOURCE				544
REG ADRS	H	F05L2		1-03 *			K3-2							544
REG ADRS				1								11-6/8		544
RELOCATE ENB	L	A06V1		1-01 *			K5-7		1					545
RELOCATE ENB	L	C08L1		1-02 *			KT-9			SOURCE				545
RELOCATE ENB				1								7-0/8		545

R1F0 (0)	H	C03A1		1-01 *			K2-4		1	SOURCE				546
R1F0 (0)	H	E04P2		1-02 *			K1-8							546
R1F0 (0)				1								9-4/8		546
R1F0 (1)	H	B03T2		1-01 *			K2-4		1	SOURCE				547
R1F0 (1)	H	F04K1		1-02 *			K1-8							547
R1F0 (1)				1								12-0/8		547
R1F1 (1)	H	B03U2		1-01 *			K2-4		1	SOURCE				548
R1F1 (1)	H	F04E2		1-02 *			K1-8							548
R1F1 (1)				1								11-4/8		548
R1F2 (1)	H	B03U1		1-01 *			K2-4		1	SOURCE				549
R1F2 (1)	H	F04D2		1-02 *			K1-8							549
R1F2 (1)				1								11-4/8		549
R1F3 (1)	H	B03S1		1-01 *			K2-4		1	SOURCE				550
R1F3 (1)	H	E04V1		1-02 *			K1-8							550
R1F3 (1)				1								10-6/8		550
ROMA (1)	H	D08L1		1-01 *			KT-2		1	SOURCE				551
ROMA (1)	H	E01P2		1-02 *			KM-2							551
ROMA (1)				1								7-0/8		551
ROMB (1)	H	D08M1		1-01 *			KT-2		1	SOURCE				552
ROMB (1)	H	E01D2		1-02 *			KM-2							552
ROMB (1)				1								7-0/8		552
ROMC (1)	H	D08P1		1-01 *			KT-2		1	SOURCE				553
ROMC (1)	H	E01D1		1-02 *			KM-2							553
ROMC (1)				1								6-2/8		553
ROMD (1)	H	D08S1		1-01 *			KT-2		1	SOURCE				554
ROMD (1)	H	E01M1		1-02 *			KM-2							554
ROMD (1)				1								6-6/8		554
RSVD INSTR	L	C06F1		1-01 *			K5-5		2					555
RSVD INSTR	L	D02C1		1-02 *			KE-5		1					555
RSVD INSTR	L	E05C1		1-03 *			K3-6			SOURCE				555
RSVD INSTR				1								11-2/8		555
S HOOK	H	E08H2		1-01 *			KT-9		1	SOURCE				556
S HOOK	H	F04A1		1-02 *			K1-8							556
S HOOK				1								5-4/8		556

	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
SALU0 (1)	H	A05E2		1-01 *		K3-8		1				557
SALU0 (1)	H	C03D2		1-02 *		K2-6			SOURCE			557
SALU0 (1)				1						9-4/8		557
SALU1 (1)	H	A05F1		1-01 *		K3-8		1				558
SALU1 (1)	H	C03T2		1-02 *		K2-6			SOURCE			558
SALU1 (1)				1						9-2/8		558
SALU2 (1)	H	A05E1		1-01 *		K3-8		1				559
SALU2 (1)	H	C03P2		1-02 *		K2-6			SOURCE			559
SALU2 (1)				1						9-0/8		559
SALU3 (1)	H	A05D2		1-01 *		K3-8		1				560
SALU3 (1)	H	C03N2		1-02 *		K2-6						560
SALU3 (1)				1						9-0/8		560
SALUM (1)	H	A05N1		1-01 *		K3-8		1				561
SALUM (1)	H	D03E1		1-02 *		K2-6			SOURCE			561
SALUM (1)				1						10-0/8		561
SBAM (1)	H	A04J1		1-01 *		K1-2345		1				562
SBAM (1)	H	C03J2		1-02 *		K2-5			SOURCE			562
SBAM (1)				1						7-6/8		562
SBC0 (1)	H	D03D1		1-01 *		K2-6		1	SOURCE			563
SBC0 (1)	H	E06J1		1-02 *		K5-5						563
SBC0 (1)				1						6-0/8		563
SBC1 (1)	H	C03R2		1-01 *		K2-6		1	SOURCE			564
SBC1 (1)	H	F06R2		1-02 *		K5-5						564
SBC1 (1)				1						11-0/8		564
SBC2 (1)	H	C03D1		1-01 *		K2-6		1	SOURCE			565
SBC2 (1)	H	C06R1		1-02 *		K5-5						565
SBC2 (1)				1						4-2/8		565
SBC3 (1)	H	C03S2		1-01 *		K2-6		1	SOURCE			566
SBC3 (1)	H	F06S2		1-02 *		K5-5						566
SBC3 (1)				1						11-0/8		566
SBC=10	L	F06U1		1-01 *		K5-5		1				567
SBC=10	L	C08V1		1-02 *		KT-9						567
SBC=10				1						10-6/8		567
SBC=16	L	E06V1		1-01 *		K5-5		1	SOURCE			568
SBC=16	L	E08J1		1-02 *		KT-9						568
SBC=16				1						4-0/8		568

	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
SBMH0 (1)	H	A04V1		1-01 *		K1-45		1				569
SBMH0 (1)	H	C03M1		1-02 *		K2-5			SOURCE			569
SBMH0 (1)				1						7-0/8		569
SBMH1 (1)	H	A04U1		1-01 *		K1-45		1				570
SBMH1 (1)	H	C03N1		1-02 *		K2-5			SOURCE			570
SBMH1 (1)				1						7-2/8		570
SBML0 (1)	H	C04J1		1-01 *		K2-5		1	SOURCE			571
SBML0 (1)	H	D04S1		1-02 *		K1-23						571
SBML0 (1)				1						6-2/8		571
SBML1 (1)	H	C03L1		1-01 *		K2-5		1	SOURCE			572
SBML1 (1)	H	D04U2		1-02 *		K1-23						572
SBML1 (1)				1						6-2/8		572
SDM0 (1)	H	A04M1		1-01 *		K1-2345		1				573
SDM0 (1)	H	C03K2		1-02 *		K2-5			SOURCE			573
SDM0 (1)				1						7-4/8		573
SDM1 (1)	H	A04V2		1-01 *		K1-2345		1				574
SDM1 (1)	H	C03L2		1-02 *		K2-5			SOURCE			574
SDM1 (1)				1						6-6/8		574
SELECT 0	H	D09F1		1-01 *		DD		1				575
SELECT 0	H	E09S2		1-02 *		DD			SOURCE			575
SELECT 0				1						6-0/8		575
SELECT 2	H	D09J1		1-01 *		DD		1				576
SELECT 2	H	E09T2		1-02 *		DD			SOURCE			576
SELECT 2				1						6-0/8		576
SELECT 4	H	D09E1		1-01 *		DD		1				577
SELECT 4	H	E09R2		1-02 *		DD			SOURCE			577
SELECT 4				1						6-2/8		577
SELECT 6	H	D09C1		1-01 *		DD		1				578
SELECT 6	H	E09S1		1-02 *		DD			SOURCE			578
SELECT 6				1						6-2/8		578
SERVICE	H	E05B1				K3-27			SOURCE (K3-7)		1=PIN RUN	579
SET CLK	L	B06K1		1-01 *		K5-4		1				580
SET CLK	L	D07F1		1-02 *		K4-25			SOURCE (K4-2)			580
SET CLK				1						7-4/8		580

SET UPP0	L	A03E1		1-01 *	1	K2-2		1					581
SET UPP0	L	F07R1		1-02 *		K4-3			SOURCE				581
SET UPP0				1						18-5/8			581
SET UPP1	L	A03F1		1-01 *		K2-2		1					582
SET UPP1	L	F07E2		1-02 *		K4-3			SOURCE				582
SET UPP1				1						16-4/8			582
SET UPP4,3	L	B03C1		1-01 *		K2-23		1					583
SET UPP4,3	L	F07M2		1-02 *		K4-3			SOURCE				583
SET UPP4,3				1						14-6/8			583
SET UPP7,6,2	L	B03D1		1-01 *		K2-3		1					584
SET UPP7,6,2	L	E07V2		1-02 *		K4-3			SOURCE				584
SET UPP7,6,2				1						12-6/8			584
SET UPP8,5	L	A03A1		1-01 *		K2-3		1					585
SET UPP8,5	L	F07D1		1-02 *		K4-3			SOURCE				585
SET UPP8,5				1						17-0/8			585
SLR ADRS	H	A07V2		1-01 *		K4-6		1					586
SLR ADRS	H	D08T2		1-02 *		KT-6		2	SOURCE				586
SLR ADRS	H	E04H2		1-03 *		K1-7			SOURCE				586
SLR ADRS				1						15-2/8			586
SM=0	L	C05A1		1-01 *		K3-35		2	SOURCE (K3-3)				587
SM=0	L	D06A1		1-02 *		K5-3		1					587
SM=0	L	E08K1		1-03 *		KT-9							587
SM=0				1						11-4/8			587
SM=1	L	B05V2		1-01 *		K3-3		1	SOURCE				588
SM=1	L	D06B1		1-02 *		K5-3							588
SM=1				1						5-6/8			588
SM=2	L	B05T2		1-01 *		K3-3		1	SOURCE				589
SM=2	L	D06C1		1-02 *		K5-3							589
SM=2				1						6-0/8			589
SM=3	L	B05S2		1-01 *		D3-3		1	SOURCE				590
SM=3	L	D06D1		1-02 *		K5-3							590
SM=3				1						6-4/8			590
SM=7	L	B05U2				K3-36			SOURCE (K3-3)		1-PIN RUN		591
SPS(02:00)=7	H	D06B2		1-01 *		K5-8		1					592
SPS(02:00)=7	H	E08M2		1-02 *		KT-2							592
SPS(02:00)=7				1						6-2/8			592

SPS0 (1)	H	B05P2		1-01 *		K3-9		1					593
SPS0 (1)	H	D03F1		1-02 *		K2-6		2	SOURCE				593
SPS0 (1)	H	D06G2		1-03 *		K5-2							593
SPS0 (1)				1						11-6/8			593
SPS1 (1)	H	B05F2	C06V2	1-01 *		K3-9		1					594
SPS1 (1)	H	C06V2		1-02 *		K5-2		2		2-2			594
SPS1 (1)	H	D03H1		1-03 *		K2-6			SOURCE				594
SPS1 (1)				1						11-5/8			594
SPS2 (1)	H	B05A1	C03M2	1-01 *		K3-9		2					595
SPS2 (1)	H	C03M2		1-02 *		K2-6		1	SOURCE	3-0			595
SPS2 (1)	H	D06N2		1-03 *		K5-2							595
SPS2 (1)				1						13-1/8			595
SR ADRS	H	A07R1		1-01 *		K4-6		1					596
SR ADRS	H	D08P2		1-02 *		KT-6		2	SOURCE				596
SR ADRS	H	D04S2		1-03 *		K1-7			SOURCE				596
SR ADRS				1						15-0/8			596
SR16	H	B04L1		1-01 *		K1-9		1	SOURCE				597
SR16	H	C08E2		1-02 *		KT-9							597
SR16				1						5-2/8			597
SR17	H	B04M1		1-01 *		K1-9		1	SOURCE				598
SR17	H	C08M1		1-02 *		KT-9							598
SR17				1						5-6/8			598
SRBA (1)	H	C03E2		1-01 *		K2-4		1	SOURCE				599
SRBA (1)	H	F04D2		1-02 *		K1-8							599
SRBA (1)				1						11-2/8			599
SRD (1)	H	C03D2		1-01 *		K2-4		1	SOURCE				600
SRD (1)	H	F04C1		1-02 *		K1-8							600
SRD (1)				1						11-2/8			600
SRDM0 (1)	H	D01V2		1-01 *		KF-3		1					601
SRDM0 (1)	H	E02E1		1-02 *		KE-37			SOURCE (KE-7)				601
SRDM0 (1)				1						3-2/8			601
SRDM1 (1)	H	D01U2		1-01 *		KF-3		1					602
SRDM1 (1)	H	D02T2		1-02 *		KE-37			SOURCE (KE-7)				602
SRDM1 (1)				1						3-0/8			602
SRI (1)	H	C03R1		1-01 *		K2-4		1	SOURCE				603
SRI (1)	H	F04H1		1-02 *		K1-8							603
SRI (1)				1						11-2/8			603

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
SRS (1)	H	C03E1		1-01 *		K2-4		1	SOURCE			604
SRS (1)	H	F04K2		1-02 *		K1-8						604
SRS (1)				I						11-2/8		604
SSYN INHIBIT	L	D09V1		1-01 *		DD		1				605
SSYN INHIBIT	L	E09B1		1-02 *		DD			SOURCE			605
SSYN INHIBIT				I						2-6/8		605
STALL (0)	H	C06M1		1-01 *		K5-4		2	SOURCE			606
STALL (0)	H	C07H2		1-02 *		K4-4		1				606
STALL (0)	H	D08F1		1-03 *		KT-3						606
STALL (0)				I						8-4/8		606
START SW (0)	H	A06B1		1-01 *		K5-7		1	SOURCE			607
START SW (0)	H	F07U1		1-02 *		K4-3						607
START SW (0)				I						17-6/8		607
SWTCH (1)	H	A06R2		1-01 *		K5-6		1	SOURCE			608
SWTCH (1)	H	F05J2		1-02 *		K3-2						608
SWTCH (1)				I						15-0/8		608
T14 (1)	H	D08A1				KT-2			SOURCE		1-PIN RUN	609
T15 (1)	H	D08B1				KT-2			SOURCE		1-PIN RUN	610
TDATA (0)	H	D07N2				K4-6			SOURCE		1-PIN RUN	611
TRACE	L	B06M2		1-01 *		K5-45		1				612
TRACE	L	F05S1		1-02 *		K3-7			SOURCE			612
TRACE				I						13-6/8		612
TRAP	L	B06B1		1-01 *		K5-5		1				613
TRAP	L	E05E1		1-02 *		K3-6			SOURCE			613
TRAP				I						9-0/8		613
TRAP (1)	H	D06H1		1-01 *		K5-4		1	SOURCE			614
TRAP (1)	H	F01D1		1-02 *		KM-2						614
TRAP (1)				I						8-2/8		614
TRAPS DATA	L	B06N2		1-01 *		K5-4		1				615
TRAPS DATA	L	D05H2		1-02 *		K3-6			SOURCE			615
TRAPS DATA				I						7-2/8		615
TRUE BR	L	D05L1		1-01 *		K3-5		1				616
TRUE BR	L	D06E1		1-02 *		K5-3			SOURCE			616
TRUE BR				I						3-2/8		616

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
TSACK (0)	H	D07J1				K4-6			SOURCE		1-PIN RUN	617
UBF0 (1)	H	C03F2		1-01 *		K2-5		2	SOURCE			618
UBF0 (1)	H	C06N1		1-02 *		K5-34		1				618
UBF0 (1)	H	E05S1	B07L1	1-03 *		K3-2		2				618
UBF0 (1)	H	B07L1		1-04 *		K4-3						618
UBF0 (1)				I						23-4/8		618
UBF1 (1)	H	C04P1		1-01 *		K2-5		2	SOURCE			619
UBF1 (1)	H	C06N2		1-02 *		K5-34		1				619
UBF1 (1)	H	E05P1		1-03 *		K3-2						619
UBF1 (1)				I						12-2/8		619
UBF2 (1)	H	C03R1		1-01 *		K2-5		2	SOURCE			620
UBF2 (1)	H	C06P2		1-02 *		K5-34		1				620
UBF2 (1)	H	E05N1		1-03 *		K3-2						620
UBF2 (1)				I						11-6/8		620
UBF3 (1)	H	B06P2		1-01 *		K5/3		2				621
UBF3 (1)	H	C03S1		1-02 *		K2-5		1	SOURCE			621
UBF3 (1)	H	F05F2		1-03 *		K3-2						621
UBF3 (1)				I						15-4/8		621
UBF4 (1)	H	B06R2		1-01 *		K5-3		2				622
UBF4 (1)	H	C03H2		1-02 *		K2-5		1	SOURCE			622
UBF4 (1)	H	D05K1		1-03 *		K3-2						622
UBF4 (1)				I						10-4/8		622
UNFL	H	A01L2		1-01 *		KF-4		1	SOURCE			623
UNFL	H	B02N2	E01F2	1-02 *		KE-4		2				623
UNFL	H	E01F2		1-03 *		KM-2						623
UNFL				I						15-0/8		623
UPP MATCH	H	C04L2		1-01 *		K1-9		1	SOURCE			624
UPP MATCH	H	F07K2		1-02 *		K4-2						624
UPP MATCH				I						10-6/8		624
V DATA	L	B05H1		1-01 *		K3-9		1	SOURCE			625
V DATA	L	E06U2		1-02 *		K5-2						625
V DATA				I						11-6/8		625
WAIT	L	B05E1		1-01 *		K3-6		1	SOURCE			626
WAIT	L	B06P1		1-02 *		K5-4						626
WAIT				I						3-4/8		626

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
WAIT (0)	H	C06P1		1-01 *			K5-4				1	SOURCE			627
WAIT (0)	H	E05J1		1-02 *			K3-7								627
WAIT (0)				1									7-2/8		627
WR R(07:00)	L	E07F2		1-01 *			K4-2				1	SOURCE			628
WR R(07:00)	L	F04V1		1-02 *			K1-8								628
WR R(07:00)				1									7-2/8		628
WR R(15:08)	L	B04A1		1-01 *			K1-8				1				629
WR R(15:08)	L	E07K2		1-02 *			K4-2					SOURCE			629
WR R(15:08)				1									11-6/8		629
WRH (1)	H	D03J2		1-01 *			K2-7				1	SOURCE			630
WRH (1)	H	E07H2		1-02 *			K4-2								630
WRH (1)				1									5-4/8		630
WRL (1)	H	D03H2		1-01 *			K2-7				1	SOURCE			631
WRL (1)	H	E07E2		1-02 *			K4-2								631
WRL (1)				1									5-4/8		631
ZB (1)	H	A01E1		1-01 *			KF-4				1	SOURCE			632
ZB (1)	H	A02B1		1-02 *			KE-4								632
ZB (1)				1									3-2/8		632
ZB+EPS(Z)	H	A01J1		1-01 *			KF-4				1				633
ZB+EPS(Z)	H	B02K2		1-02 *			KE-4					SOURCE			633
ZB+EPS(Z)				1									5-4/8		633

DRAWING NUMBER	INIT REL	AUTOMATIC WIRE TESTER (AWT) REVISION STATUS
	TIO	F
K-WL-KDII-A-WL	E	F
D-AD-7009009-0-0	B	C

REV. F

SIZE A | CODE WT | NUMBER 7009009-0

REVISIONS

REV.	CHANGE NO.	CHK
—	KDIIA-00009 ORIGINATED	—

DRN. J. Chartier	DATE 6-26-74	
CHK'D. L. Gillett	DATE 6-28-74	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON KDII-A		
SCALE —		
SHEET 1 OF 1		

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

KDII-A

AWT REVISION STATUS

SIZE	CODE	NUMBER	REV.
A	WT	7009009-0	F

DIST.

DRA 123

DEC 16-(325)-1097-N174

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-KJ11-A (SHEET1 ONLY)	
PARTS LIST	A-PL-KJ11-A-Ø	
STACK LIMIT REGISTER	D-CS-M7237-Ø-1	
SOFTWARE LIST	A-SL-KJ11-A-SL	

THIS IS PRINT SET [x]

UNIT VARIATIONS		PRINT SET TYPE
VARIATION	TITLE	KJ11-A
KJ11-A	STACK LIMIT REGISTER	X

REVISIONS	REV	CHG. NO.	DATE

USED ON OPTION/MODEL	
KD11-A	

DRN. J.T.Clough	DATE 9/26/72	TITLE STACK LIMIT REGISTER
CHK'D J.T.Clough	DATE 9/27/72	
PROJ ENG. J.T.Clough	DATE 9/27/72	
PROD. [illegible]	DATE 9-28-72	SIZE B · CODE DD · NUMBER KJ11-A · REV
FIELD SERV.	DATE	
SHEET 1 OF 2		DIST

DRB 106

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J.F. Loughlin	CHECKED J.F. Loughlin	SECTION
DATE 9/26/72	DATE 9/27/72	
ENG J.F. Loughlin	PROD R.J. Stewart	ISSUED SECT.
DATE 9/27/72	DATE 9-28-72	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION KJ11-A
1	D-CS-M7237-Ø-1	STACK LIMIT REGISTER	1
2	D-MU-KD11-A-MU	MODULE UTILIZATION	REF

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
STACK LIMIT REGISTER (PL)		A	PL	KJ11-A-Ø		
	SHEET 1 OF 1	DIST.				

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

PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	E1, E6	DEC 5384 IC	19-0395	2
2	E2, E7	DEC 74175 IC	19-0651	2
3	E3, E8	DEC 8281 IC	1209705	2
4	E4 THRU E9	DEC 9425 IC	19-0224	6
5	E5	DEC 74H00 IC	1905036	1
6	E10	DEC 74H20 IC	1905038	1
7	E11	DEC 9408 IC	19-0 55	1
8	C1 THRU C11	.01 MFD 100V 20% CAP	100 610	11
9	C12	5.8 MFD 35V 20% CAP	100006	1
10	R1, R2	1K 1/4W 5% RES	1330365	2
REF		STACK LIMIT REGISTER	A-PL-M7237-0-0	

NOTES:

1. PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.

2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED; MULTIPLE NOTATIONS OF THE SAME SIGNALS WITHIN A MODULE HAVE THE PIN NOTED ON EACH. AN INPUT SIGNAL IS NOTED ONLY ONCE PER SHEET UNLESS SEPERATE PINS ARE USED; MULTIPLE INPUTS ARE CONNECTED. MODULE OUTPUT SIGNALS ARE BROUGHT TO THE EXTREME RIGHT OF EACH SHEET

3. KJ-1 SIGNAL SOURCE NOTATION (A1-2, FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE FROM THE PROCESSOR. FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THESE SIGNALS CAN EXIST.

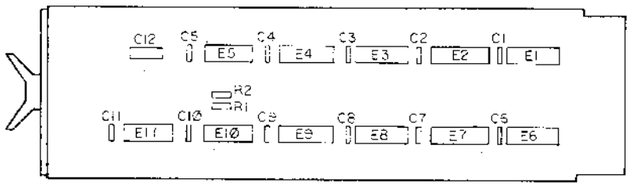
4. UNLESS OTHERWISE SPECIFIED: RESISTANCE IS IN OHMS

5. DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE, PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM. CAPACITORS WITHOUT NOTED VALUES ARE .01 MFD.

6. GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY. EXCEPTIONS ARE:

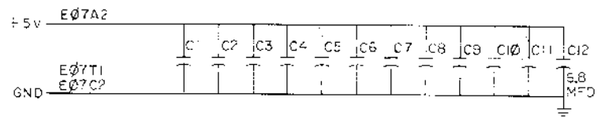
IC TYPE	GND	+5V
DEC 5384	PIN 1	PIN 8
DEC 74175	PIN 8	PIN 16

COMPONENT PLACEMENT



PIN NOMENCLATURE

MODULE	PROCESSOR
A	EØ7



REVISIONS: REV | CHANGE NO | CHK

FIRST USED ON OPTION / MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 11/25		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.	W. MAJOR	DATE 9/27/71
CHK'D		DATE 5/7/72
ENG.		DATE 5-23-72
PROJ. ENG.		DATE 5-23-72
PROD. ENG.		DATE 5/25/72

NEXT HIGHER ASSY: A-ML-KJ11-A

SCALE —

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: STACK LIMIT REGISTER

M7237 KJ-1

SIZE	CODE	NUMBER	REV.
D	CS	M7237-Ø-1	A

DIST.

DEC FORM NO DRD 100A

M7237-Ø-1 CS 3003 2275 2

REV A

SIZE D CODE CS M7237-Ø-1

K1-6 BA15 (1)H E07E2
K1-6 BA14 (1)H E07L2
K1-6 BA13 (1)H E07M2
K1-6 BA12 (1)H E07N2
K1-6 BA11 (1)H E07D2
K1-6 BA10 (1)H E07B1
K1-6 BA09 (1)H E07C1
K1-6 BA08 (1)H E07D1

K1-5 DMUX15 H E07R1
K1-5 DMUX14 H E07S1
K1-5 DMUX13 H E07P1
K1-5 DMUX12 H E07N1

K1-4 DMUX11 H E07M1
K1-4 DMUX10 H E07K1
K1-4 DMUX09 H E07J1
K1-4 DMUX08 H E07H1

K4-5 B INIT L E07L1

K4-4 DOUT HIGH H E07V1
K4-6 ADRS(777774) H E07U1
K4-4 BC1 (00)H E07V2

74175 E07 — 5384 E06 — 8881 E08
74175 E02 — 5384 E01 — 8881 E03
7485 E09
7485 E04
74H08 E11

+5V R1 1K
+5V R2 1K

K4-4 CKOVF H E07U2
K1-7 BA(07:09)=1 L E07A1

74H20 E10 — 74H00 E05

E07T2 K1-2 EOWFLW L (TO K5-4)
E07F2 K1-2 EOWFLSTOP H (TO K4-4)

E07R2 BUS DI5 L
E07S2 BUS DI4 L
E07K2 BUS DI3 L
E07P2 BUS DI2 L
E07H2 BUS DI1 L
E07J2 BUS DI0 L
E07F1 BUS DX09 L
E07E1 BUS DX08 L

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 11/25		PARTS LIST		

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

DRN. W. MAJOR	DATE 7/22/71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 2-7-72	
ENGR	DATE 5-23-73	TITLE STACK LIMIT REGISTER
PROJ ENG	DATE 5-23-73	M7237 KJ-2
PROD'N	DATE 5/29/73	
NEXT HIGHER ASSY. A-ML-KJ11-A		SIZE D CODE CS NUMBER M7237-0-1 REV. A
SCALE —		
SHEET 2 OF 2		DIST

REVISIONS | REV | CHANGE NO | CHK

DEC FORM 101
DRD 102-B

M7237-0-1 REV A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY T.Hoeschele	CHECKED [illegible]	SECTION	PA PAPER TAPE [illegible]
DATE 9/26/72	DATE 9/27/72		DA [illegible]
ENG T.Hoeschele	PROD W.Zeiger	ISSUED	PA [illegible]
DATE 9/27/72	DATE 9/27/72	DATE	DA [illegible]

KIT CHECK
BY ____ DATE ____
INSTALLATION CHECK
BY ____ DATE ____

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QTY
1	MAINDEC-11-DCKBF-A-D	STACK LIMIT TEST	
2	MAINDEC-11-DCKBF-A-PB	STACK LIMIT TEST	1

TITLE: STACK LIMIT REGISTER	ASSY. NO. ~~~	SIZE: A	CODE: SL	NUMBER: KJ11-A-SL	REV.	ECO NO
	SHEET 1 OF 1	DIST.				

DEC FORM NO.
DRA 120

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE
TIMING DIAGRAM	D-TD-KW11-L-Ø2
LINE FREQUENCY CLOCK	D-BS-KW11-L-01
LINE CLOCK	D-CS-M787-Ø-1
LINE FREQUENCY CLOCK	A-PL-KW11-L-Ø
SOFTWARE LIST	A-SL-KW11-L-28

MFG PRINTS

TEST PROCEDURE	A-SP-KW11-L-Ø3

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: KW11-L
KW11-L	LINE FREQUENCY CLOCK	X

REVISIONS

REV	CHG. NO.	DATE

USED ON OPTION/MODEL

DRN. S ROTHMAN	DATE 2 MAY 72
CHK'D. M Buzynski	DATE 6-13-72
PROJ. ENG. M Buzynski	DATE 6-14-72
PROJ. [illegible] Stanger	DATE 6/14/72
FIELD SERV. [illegible]	DATE 6-14-72

TITLE: LINE FREQUENCY CLOCK (KW11-L)

SIZE	CODE	NUMBER	REV
B	DD	KW11-L-Ø	*

SHEET 1 OF 2

DIST

DRB 106

DEC 16—(325)—1062—1—N871

CUSTOMER PRINT SET KW11-L	DEPOT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X	X		D-TD-KW11-L-02	*	1	TIMING DIAGRAM, KW11-L	
X	X		D-BS-KW11-L-01	A	2	LINE FREQUENCY INTERNAL CLOCK	
	X		A-SP-KW11-L-03	*	3	TEST PROCEDURE	
X	X		D-CS-M787-0-1	#	2	LINE CLOCK	
X	X		A-PL-KW11-L-0	*	1	LINE FREQUENCY CLOCK	
X	X		A SL KW11 L 28	*	1	SOFTWARE LIST	

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

TITLE		SIZE	CODE	NUMBER	REV
LINE FREQUENCY CLOCK (KW11-L)	SHEET 2 OF 2	B	DD	KW11-L-0	*

BIT 6

BIT 7

KI4-2 LTC

INTERRUPT FLOP

BRØ5 L

BGØ6 H

BUS SACK _

BUS BBSY L

BUS INTR _

BUS SSYN L

BIT 6

BIT 7

BUS MSYN L

BUS CØ1 L

BUS DØ7 L

BUS SSYN L

KA I BUSY

KWII BUSY

KAI BUSY

INTERRUPT MODE

NON-INTERRUPT MODE

FIRST USED ON OPTION/MODEL
KWII-L

DO NOT SCALE DRAWING

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

MATERIAL

FINISH

NEXT HIGHER ASSY
A-ML-KWII-L

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN.		DATE 7/6/70
CHK'D		DATE 7/7/70
ENG.		DATE 7/8/70
PROJ. ENG.		DATE 7/8/70
PROD.		DATE 7/8/70

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
TIMING DIAGRAM
(KWII-_)

SIZE	CODE	NUMBER	REV.
D	TD	KWII-L-Ø2	

DIST.

REVISIONS

REV.	CHANGE NO.	CHK

DEC FORM NO. ehp
DRD 101

ehp

SIZE D | NUMBER TD-KWII-L-Ø2 | REV.

PARTS REFERENCE

ITEM NO.	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	R1, R3	390Ω 1/4 W 5% CC	1300309	2
2	R2,R6 - R11	1K 1/4 W 5% CC	1300365	7
3	R4, R5	180Ω 1/4W 5% CC	1301322	2
4	R12	2.4K 1/4W 5% CC	1303177	1
5	C1 - C15, C18, C19	.01 MFD 100V 20% DISC	1001810	17
6	C16, C17	560 MMF 100V 5% D.M.	1000025	2
7	Q1, Q2	TRANSISTOR DEC 3009 B.S.	1503100	2
8	E1, E5, E8, E9, E18	I.C. DEC 380	1909485	5
9	E2	I.C. DEC 7430	1905578	1
10	E3	I.C. DEC 8815	1908713	1
11	E4	I.C. DEC 7400	1905575	1
12	E6, E7, E13	I.C. DEC 7474	1905547	3
13	E11	I.C. DEC 7404	1909886	1
14	E12, E14, E15	I.C. DEC 8881	1909705	3

INSTALLATION PROCEDURE

1. REMOVE JUMPER FROM B12V2 TO B12R2
2. INSTALL M787 LINE FREQUENCY CLOCK MODULE IN KAII SLOT B12
3. RUN MAINDEC DEC-11-D2DA LINE FREQUENCY CLOCK TEST

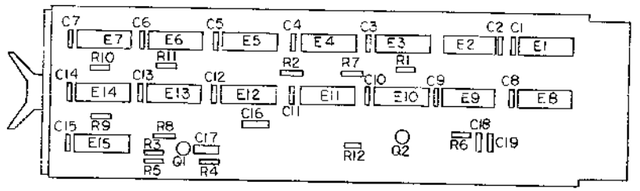
NOTES

1. PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KAII PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED; MULTIPLE NOTATIONS OF THE SAME SIGNALS WITHIN A MODULE HAVE THE PIN NOTED ON EACH. AN INPUT SIGNAL IS NOTED ONLY ONCE PER SHEET UNLESS SEPERATE PINS ARE USED; MULTIPLE INPUTS ARE CONNECTED. MODULE OUTPUT SIGNALS ARE BROUGHT TO THE EXTREME RIGHT OF EACH SHEET.
3. PROCESSOR SIGNAL SOURCE NOTATION (K10-2, FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET. WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET: IF ON A PRINT, THE FIRST NUMBER OF THE K PREFIXES COINCIDE FOR A SIGNAL NAME AND THE PRINT (SEE TITLE BLOCK), THE SIGNAL IS GENERATED ON THE MODULE. A DIFFERENCE IN THE FIRST NUMBER OF THE K PREFIXES INDICATES A SIGNAL GENERATED OFF THE MODULE. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATIONS AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
4. DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE, PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM.
5. GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY. EXCEPTIONS ARE:

IC TYPE	GND	+5V
DEC 7481	PIN 10	PIN 4
DEC 7482	PIN 11	PIN 4
DEC 8251	PIN 8	PIN 16
DEC 8271	PIN 8	PIN 16
DEC 380	PIN 1	PIN 8
DEC 384	PIN 1	PIN 8

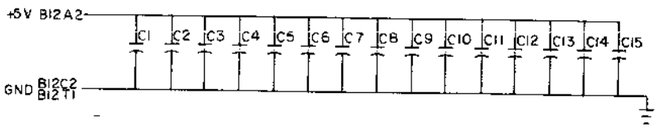
6. UNLESS OTHERWISE NOTED - RESISTANCE IS IN OHMS; CAPACITANCE IS IN MICRO MICRO FARADS, CAPACITORS WITHOUT ANY NOTED VALUES ARE .01 MFD.

COMPONENT PLACEMENT



PIN NOMENCLATURE

MODULE	PROCESSOR
A	B



REVISIONS			
CHK	CHANGE NO.		REV
	KWII-L0000		A
	Released 8-21-70		
	M. FRITZ	14-73	

DEC FORM NO DRD 100

FIRST USED ON OPTION/MODEL: KWII-L

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL —
FINISH —

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

DRN. J. Flanders	10/1/70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D K. Rees	10/1/70	
ENG. M. Fritz	10/1/70	TITLE: LINE FREQUENCY INTERVAL CLOCK
PROJ. ENG. M. Fritz	10/1/70	
PROD. Thomas Dwelle	10/1/70	
NEXT HIGHER ASSY A-ML-KWII-L		
SCALE —		SIZE D CODE BS NUMBER KWII-L-01 REV A
SHEET 1 OF 2		DIST.

BUS A17L BI2D2 E1 380
BUS A16L BI2H2 E1 380
BUS A15L BI2F2 E1 380
BUS A14L BI2E2 E1 380
BUS A13L BI2D1 E1 380
BUS A12L BI2C1 E1 380
BUS A11L BI2B1 E1 380
BUS A10L BI2A1 E1 380
BUS A09 BI2M2 E8 380
BUS A08L BI2L1 E8 380
BUS A06L BI2K1 E8 380
BUS A05L BI2J1 E8 380
BUS A02L BI2L2 E8 380
BUS A01L BI2E1 E8 380
BUS MSYN L BI2F1 E8 380
BUS A07L BI2K2 E9 380
BUS A04L BI2J2 E9 380
BUS A03L BI2M1 E9 380
E2 7430
E3 8815

ADRS H
BUS C01 L BI2N1 E9 380
E4 7400
E11 7404
ADRS L
E10 380
BUS INIT L BI2P2
BUS D06 L BI2P1 E5 380
E13 7474
E12 8881 BI2P1 BUS D06 L
BIT 6
+5V R8 1K
BIT 7
E11 7404
R12 2.4K
R6 1K
R7 1K
K14-2 LTC L BI2R1
C18
C19
Q2 DEC 30098-S
E13 7474
E12 8881 BI2S1 BUS D07 L
+5V R11 1K
E6 7474
E5 380
E11 7404
E4 7400
E12 8881
C16 560
E10 380
E4 7400
E5 380
BI2N2 BUS SSYN L
E14 8881 BI2U1 BUS BR06 L
E15 8881
E14 8881 BI2U2 BUS INTR L
E14 8881 BI2S2 BUS SACK L
E14 8881 BI2T2 BUS BBSY L
BI2V2 BG06 OUT H

+5V R9 1K
E7 FF1 7474
+5V R10 1K
E7 FF2 7474
BG06 IN H BI2R2 R1 390
E10 380
E11 7404
BUS BBSY L BI2T2 E10 380
E3 8815
+5V R3 390
Q1 30098-S δ=100 NS
E15 8881
R4 180
C17 560
+5V R5 180
E15 8881

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO ORD 102A

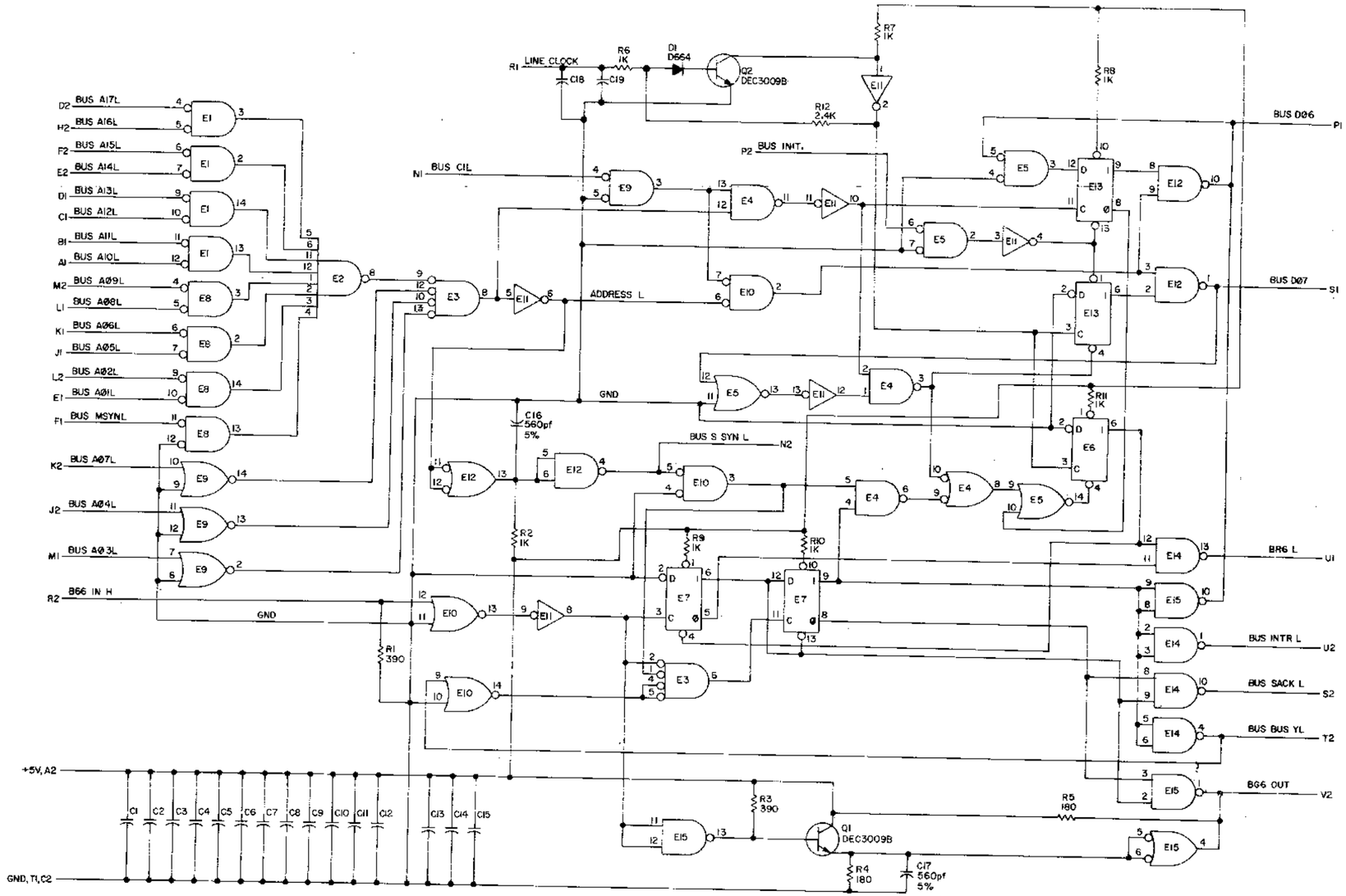
FIRST USED ON OPTION/MODULE: KWII-L

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

MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN. M Flumbaum	DATE 4/30/70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. K O'Brien	DATE 5/5/70	
ENG. M Fritz	DATE 5/8/70	TITLE: LINE FREQUENCY INTERVAL CLOCK
PROJ. ENG. M Fritz	DATE 7/8/70	
PROD. Mike Duvald	DATE 7/15/70	
NEXT HIGHER ASSY A-ML-KWII-L		SIZE D CODE BS NUMBER KWII-L-01 REV. A
SCALE		
SHEET 2 OF 2		DIST.



UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W, 5%
CAPACITORS ARE .01uf, 100V, 20%
DEC380 = E1, E5, E8, E10, E9
DEC7430 = E2
DEC8815 = E3
DEC7400 = E4
DEC7404 = E11
DEC8881 = E6, E12, E14
DEC7474 = E6, E7, E13

PIN 1 = GND
PIN 8 = +5V ON E1, E8, E9, E10, E5

PIN 7 = GND
PIN 14 = +5V ON E2, E3, E4, E11, E12, E14, E13, E7, E15, E6

REVISIONS	CHG NO.	REV
	00001	A
	00002	B
	00003	C

DRN BUTLER 4-2-70
CHK'D 4-24-70
ENG 4-24-70
PROD

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
DEC3009B	2N3009B	D664	IN2626

EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: LINE TIME CLOCK INTERRUPT M787

SIZE D | CODE CS | NUMBER M787-0-1 | REV C

PRINTED CIRCUIT REV. C D

DEC 12884 NO. 869 1/6

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M.Buczynski	CHECKED	SECTION
DATE 6-15-72	DATE 7/6/72	
ENG M. Buczynski	PROD W.J. Stringer	ISSUED SECT.
DATE 6-15-72	DATE 6/15/72	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION KW11-L
1	M787	LINE TIME CLOCK INTERRUPT	X

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
LINE FREQUENCY CLOCK (KW11-L)	SHEET 1 OF 1	A	PL	KW11-L-Ø	*	
		DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY	M.Buczynski	CHECKED	SECTION
DATE	6-15-72	DATE 6/28/72	
ENG	M.Buczynski	PROD Hal Stimpson	ISSUED SECT.
DATE	6-15-72	DATE 6/15/72	

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	MAINDEC 11-DZDA-PB	LINE FREQUENCY CLOCK TEST	1
2	MAINDEC 11-D2DA-D	LINE FREQUENCY CLOCK TEST	1

KIT CHECK BY _____ DATE _____

INSTALLATION CHECK BY _____ DATE _____

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
LINE FREQUENCY CLOCK (KW11-L)	SHEET 1 OF 1	A	SL	KW11-L-28	*	
		DIST.				

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

W130 PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	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	15K, 1/4W, 5% RES.	1300496	28
2	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	470, 1/4W, 5% RES.	1300316	28
3	Q1-Q56	DEC 3009B TRANSISTOR	1503100	56
4	P1	H807 BLOCK, CONNECTOR	1209123	1

W131 PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	E1	DEC 7400N I.C.	1905575	1
2	C1	.01 MFD, 100V, 20% DC CAP.	1001610	1
3	C2	6.8 MFD, 35V, 20% ST CAP.	1000067	1
4	R1,R2,R3,R4,R5	3K, 1/4W, 5% RES.	1300432	5
5	R6	330, 1/4W, 5% RES.	1300295	1
6	Q1	DEC 3009B TRANSISTOR	1503100	1
7	I1-I28	LAMP, HUDSON, BLUE #2309G	1209219	28
8	S1-S4	SWITCH, TOGGLE, SPST, 6ATI-T2	1201168	4

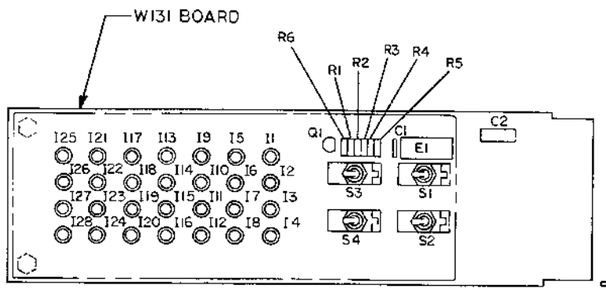
NOTES:
1. THE KM11 IS A TWO MODULE (W130, W131) OPTION TO THE KA11 TO AID MAINTENANCE. THIS PREWIRED OPTION IS INSTALLED BY INSERTING THE W130 MODULE INTO LOCATION B02 AND INSERTING THE W131 MODULE INTO THE W130. NOTE THAT THE SWITCHES AND LIGHTS FACE TOWARD AND EXTEND BELOW THE CONSOLE. THE BOTTOM COVER MUST BE REMOVED WITH THE CHASSIS EXTERNAL TO THE CABINET.

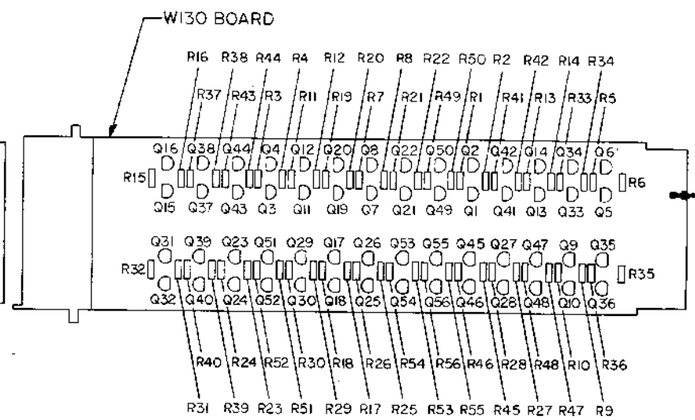
2. LABELS FOR THE INTERNAL MACHINE STATES LAMPS ARE NOTED ON THE W131 ETCH BOARD. SWITCHES PROVIDE A MANUAL CLOCK AND BUS RESPONSE AND ARE ACTIVE WHEN THE TOGGLE IS TOWARD THE NAME. NORMAL MACHINE OPERATION REQUIRES THAT ALL SWITCHES BE IN THE OFF POSITION.

3. "M CLK ENABLE" AND "M CLK" PROVIDE A MANUAL CLOCK FOR THE KA11. "M CLK ENABLE" IS ACTIVATED WHILE THE PROCESSOR IS HALTED. EACH TOGGLE OF "M CLK" THEN STEPS THE PROCESSOR THROUGH THE SMALLEST PROCESSOR CLOCK INTERVALS, THE R/W STATES, THE NEXT HIGHEST CLOCK INTERVAL (S CLK) IS PROVIDED BY FOUR TOGGLES (2 COMPLETE SWITCH CYCLES) AND INDICATED BY THE R/W2 LAMP. R/W2 IS THE LAST (OR REST) R/W STATE IN A "S CLK" INTERVAL. NORMAL OPERATION IS RESUMED WHEN "M CLK" AND THEN "M CLK ENABLE" ARE RETURNED TO OFF.

4. "NO TIME OUT" AND "SSYN" PROVIDE A MANUAL BUS RESPONSE TO THE PROCESSOR. IT IS USED WHEN OTHER DEVICES ARE NOT AVAILABLE. "NO TIME OUT" IS ACTIVATED, WHILE THE PROCESSOR IS HALTED, TO ELIMINATE AN ERROR TRAP ON MANUAL "SSYN". AT THE APPROPRIATE TIMES IN A BUS TRANSFER "SSYN" IS ACTIVATED AND DEACTIVATED.

COMPONENT PLACEMENT





PIN NOMENCLATURE

MODULE	PROCESSOR
A	B

REVISIONS	CHANGE NO.	CHK	REV.

FIRST USED ON OPTION / MODEL	DO NOT SCALE DRAWING	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	PARTS LIST			
	MATERIAL	DRN.	DATE 4/15/74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
	FINISH	CHK'D.	DATE 5/1/74	TITLE MAINTENANCE BOARD (182) KM-1	
		ENG.	DATE 5/17/74		
		PROJ. ENG.	DATE 5/17/74		
		PROD.	DATE 5/5/10		
		NEXT HIGHER ASSY A-ML-KM11-Ø		SIZE D CODE BS NUMBER KM11-Ø-MB REV.	
		SCALE 1/1			
		SHEET 1 OF 3		DIST.	

DEC FORM NO. 3RD 100

CONNECTOR AT REAR OF MODULE
TO EXTEND MAINTENANCE BOARD
E, WIRE (KM-3).

+5V	BØ2A2	A2	+5V
+8V	BØ2B1	B1	+8V
KM-3 M CLK ENABLE L		V2	BØ2V2 KM-2 M CLK ENABLE L
KM-3 M CLK L		V1	BØ2U1 KM-2 M CLK L
KM-3 TIME OUT (1) H	BØ2B2	B2	KM-2 TIME OUT (1)H
BUS SSYN L		A1	BØ2A1 BUS SSYN L

KM-3 BSR Ø H — BØ2R2 — R29 15K — Q29 Q30 — R30 470Ω — KM-3 BSR 1 H — BØ2S2 — R21 15K — Q21 Q22 — R22 470Ω — KM-3 BSR 3 H — BØ2H1 — R1 15K — Q1 Q2 — R2 470Ω — KM-3 BSR 7 H — BØ2L2 — R43 15K — Q43 Q44 — R44 470Ω

GND — C2,T1

KM-2 LAMP BSRØ L
KM-2 LAMP BSR 1 L
KM-2 LAMP BSR 3 L
KM-2 LAMP BSR 7 L

GND

KM-3 BSR 15 H — BØ2N2 — R39 15K — Q39 Q40 — R40 470Ω — KM-3 BSR 14 H — BØ2D2 — R49 15K — Q49 Q50 — R50 470Ω — KM-3 BSR 12 H — BØ2H2 — R19 15K — Q19 Q20 — R20 470Ω — KM-3 BSR 8 H — BØ2J2 — R11 15K — Q11 Q12 — R12 470Ω

KM-2 LAMP BSR 15 L
KM-2 LAMP BSR 14 L
KM-2 LAMP BSR 12 L
KM-2 LAMP BSR 8 L

KM-3 ISR Ø H — BØ2S1 — R55 15K — Q55 Q56 — R56 470Ω — KM-3 ISR 1 H — BØ2M2 — R37 15K — Q37 Q38 — R38 470Ω — KM-3 ISR 3 H — BØ2F2 — R7 15K — Q7 Q8 — R8 470Ω — KM-3 ISR 7 H — BØ2E1 — R33 15K — Q33 Q34 — R34 470Ω

KM-2 LAMP ISR Ø L
KM-2 LAMP ISR 1 L
KM-2 LAMP ISR 3 L
KM-2 LAMP ISR 7 L

KM-3 ISR 15 H — BØ2R1 — R45 15K — Q45 Q46 — R46 470Ω — KM-3 ISR 14 H — BØ2K1 — R31 15K — Q31 Q32 — R32 470Ω — KM-3 ISR 12 H — BØ2S2 — R17 15K — Q17 Q18 — R18 470Ω — KM-3 ISR 8 H — BØ2M1 — R9 15K — Q9 Q10 — R10 470Ω

KM-2 LAMP ISR 15 L
KM-2 LAMP ISR 14 L
KM-2 LAMP ISR 12 L
KM-2 LAMP ISR 8 L

K9-5 N (1)H — BØ2P1 — R27 15K — Q27 Q28 — R28 470Ω — K9-5 Z (1)H — BØ2L1 — R51 15K — Q51 Q52 — R52 470Ω — K9-5 V (1)H — BØ2F1 — R5 15K — Q5 Q6 — R6 470Ω — K9-5 C (1)H — BØ2D1 — R13 15K — Q13 Q14 — R14 470Ω

KM-2 LAMP N (1)L
KM-2 LAMP Z (1)L
KM-2 LAMP V (1)L
KM-2 LAMP C (1)L

K9-4 T (1)H — BØ2J1 — R15 15K — Q15 Q16 — R16 470Ω — K12-3 TRAPS H — BØ2C1 — R41 15K — Q41 Q42 — R42 470Ω — K13-3 B MSYN H — BØ2T2 — R35 15K — Q35 Q36 — R36 470Ω — K13-3 B SSYN H — BØ2U2 — R53 15K — Q53 Q54 — R54 470Ω

KM-2 LAMP T (1)L
KM-2 LAMP TRAPS L
KM-2 LAMP B MSYN L
KM-2 LAMP B SSYN L

K1-2 R/W2 H — BØ2K2 — R3 15K — Q3 Q4 — R4 470Ω — KM-2 TST1 H — BØ2N1 — R47 15K — Q47 Q48 — R48 470Ω — KM-2 TST2 H — BØ2V1 — R25 15K — Q25 Q26 — R26 470Ω — K13-3 ISR 2 H — BØ2P2 — R23 15K — Q23 Q24 — R24 470Ω

KM-2 LAMP R/W2 L
KM-2 LAMP TST1 L
KM-2 LAMP TST2 L
KM-2 LAMP ISR 2 L

FIRST USED ON OPTION/MODEL: PDP11	QTY.	DESCRIPTION	PART NO.	ITEM NO
		PARTS LIST		

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

MATERIAL

FINISH

DRN: P. Stillwell — DATE: 12-18-69
CHK'D: — DATE: 4/1/70
ENG: — DATE: 5-6-70
PROJ ENG: — DATE: —
PROD: Thomas Wood — DATE: 5/5/70

NEXT HIGHER ASSY: A-ML-KM11-Ø

SCALE: NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MAINTENANCE BOARD (1)

W130 KM-2

SIZE	CODE	NUMBER	REV.
D	BS	KM11-Ø-MB	

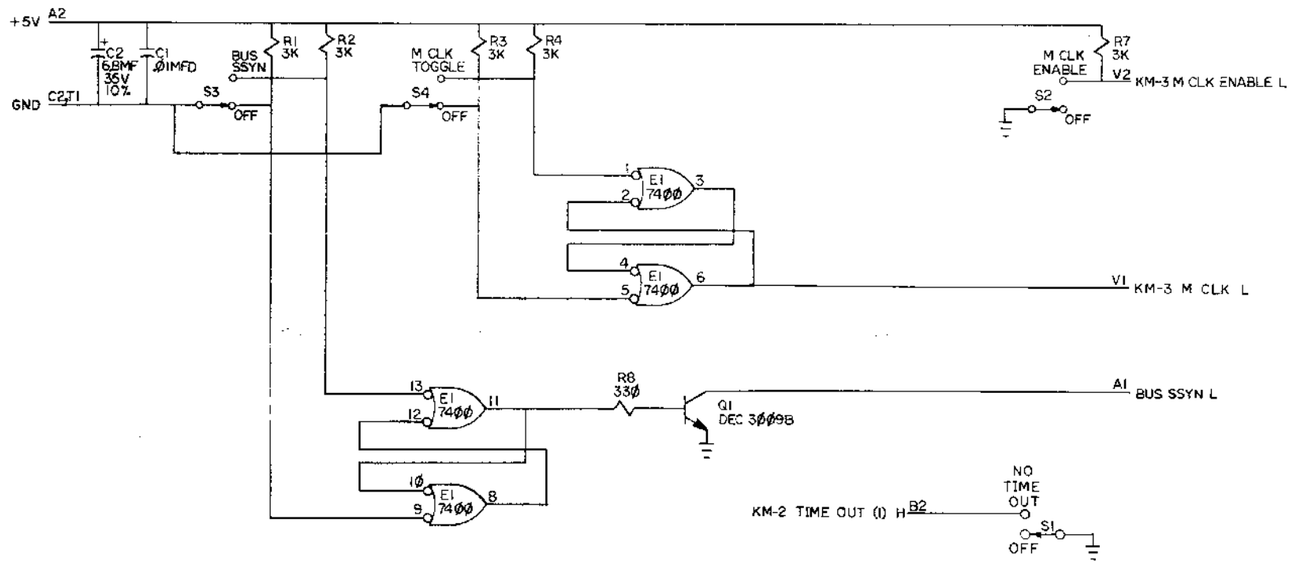
DIST

REVISIONS | REV | CHANGE NO | CHK

DEC FORM 111 SPD 1022A

+8V B1

	I1 BSRØ	I2 BSR1	I3 BSR3	I4 BSR7
KM-2 LAMP BSR Ø L	U1			
KM-2 LAMP BSR 1 L	J1			
KM-2 LAMP BSR 3 L	C1			
KM-2 LAMP BSR 7 L	F2			
	I5 BSR15	I6 BSR14	I7 BSR12	I8 BSR8
KM-2 LAMP BSR 15 L	R1			
KM-2 LAMP BSR 14 L	H1			
KM-2 LAMP BSR 12 L	D2			
KM-2 LAMP BSR 8 L	H2			
	I9 ISRØ	I10 ISR1	I11 ISR3	I12 ISR7
KM-2 LAMP ISR Ø L	P1			
KM-2 LAMP ISR 1 L	F1			
KM-2 LAMP ISR 3 L	E2			
KM-2 LAMP ISR 7 L	J2			
	I13 ISR15	I14 ISR14	I15 ISR12	I16 ISR8
KM-2 LAMP ISR 15 L	N1			
KM-2 LAMP ISR 14 L	T2			
KM-2 LAMP ISR 12 L	U2			
KM-2 LAMP ISR 8 L	K2			
	I17 N	I18 Z	I19 V	I20 C
KM-2 LAMP N (1) L	M1			
KM-2 LAMP Z (1) L	S1			
KM-2 LAMP V (1) L	L2			
KM-2 LAMP C (1) L	M2			
	I21 T	I22 TRAPS	I23 MSYN	I24 SSYN
KM-2 LAMP T (1) L	E1			
KM-2 LAMP TRAPS L	K1			
KM-2 LAMP B MSYN L	N2			
KM-2 LAMP B SSYN L	P2			
	I25 R/W2	I26 TST1	I27 TST2	I28 ISR2
KM-2 LAMP R/W2 L	D1			
KM-2 LAMP TST1 L	L1			
KM-2 LAMP TST2 L	R2			
KM-2 LAMP ISR2 L	S2			



FIRST USED ON OPTION/MODEL: PDP 11	QTY.	DESCRIPTION	PART NO.
UNLESS OTHERWISE SPECIFIED		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN. J. Curtis DATE 12-17-69		
	CHK'D. DATE 4/2/70		
	ENG. DATE 3-6-70		
	PROJ. ENG. DATE 3-6-70		
	PROD. DATE 3/5/70		
MATERIAL	NEXT HIGHER ASSEMBLY A-ME-KM11-Ø		
FINISH	SCALE NONE	SHEET 3 OF 3	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

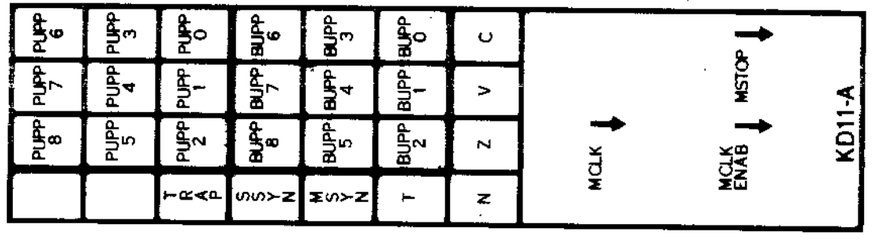
TITLE: MAINTENANCE BOARD(2)

W131 KM-3

SIZE D | CODE BS | NUMBER KM11-Ø-MB | REV.

DIST.

DEC FORM .10 3RD 107A



FIRST USER ON OPT / MOD

KD11-A

REVISIONS	CHANGE NO.	REV.
CHK		

SPEC # 9200100-94 (BLACK)

DRN D. Mattson	DATE 6-9-72
CHK'D. Carl	DATE 7/7/72
ENG W. E. Frigon	DATE 7/11/72
PROJ. ENG T. Coughlin	DATE 7/7/72
PROD A. Singer	DATE 7/31/72
NEXT HIGHER ASSY C-MD-5509081-0-0	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
MAINT. MODULE OVERLAY (KD11-A)

SIZE	CODE	NUMBER	REV.
A	55	5509081-0-12	

DIST.

	KE11-E,F			KT11-D			
KT11-D KE11-E,F	EPS (N)	MSR 01	EXP OVFL	ROM D	ROM C	ROM B	ROM A
	EPS (Z)	MSR 00	EXP UNFL	PBA 08	PBA 11	PBA 14	PBA 17
	EPS (V)	DR09	ECN 00	PBA 07	PBA 10	PBA 13	PBA 16
	EPS (C)	DR00	B 15	PBA 06	PBA 09	PBA 12	PBA 15

First used on opt/mod
KT11-D
KE11-E,F

REVISIONS	REV.	CHANGE NO.	CHK

SPEC # 9200101-94 (Black)

DRN. J Powers	DATE 7-12-72
CHK'D. BW	DATE 7-12-72
ENG. [illegible]	DATE 7/25/72
PROJ. ENG. [illegible]	DATE 7/25/72
PROD. [illegible]	DATE 7/31/72
Next Higher Assy. C-MD-5509081-0-0	
SCALE	
SHEET OF	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
Maint. Module
OVERLAY (KT11-D KE11-E,F)

SIZE	CODE	NUMBER	REV.
A	SS	5509081-013	

DIST. 6

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-MF11-L	
MODULE UTILIZATION	D-MU-MF11-L-MU	
16 BIT 18 MIL MEMORY	A-DD-MM11-L	
CIRCUIT SCHEMATIC	C-CS-54Ø9959-Ø-1	
PARTS LIST	A-PL-MF11-L-Ø	
MF11-L/LP OPTION HARNESS	D-IA-7009560-0-0	
UNIT ASSEMBLY	D-UA-MF11-L-0	

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET TYPE
VARIATION	TITLE	MF11-L
MF11-L	MF11-L MEMORY (8K TO 24K, 16 BIT)	X

REVISIONS		
REV	CHG. NO.	DATE
A	12/40 2	11/1/72
B	MF11L-1	12/5/72
C	MF11L-2	3-14-73
D	MF11L-3	3/73
E	MF11L-4	4/73
F	MF11L-5	5/73
H	MF11L-6	11-73
J	MF11L-7	

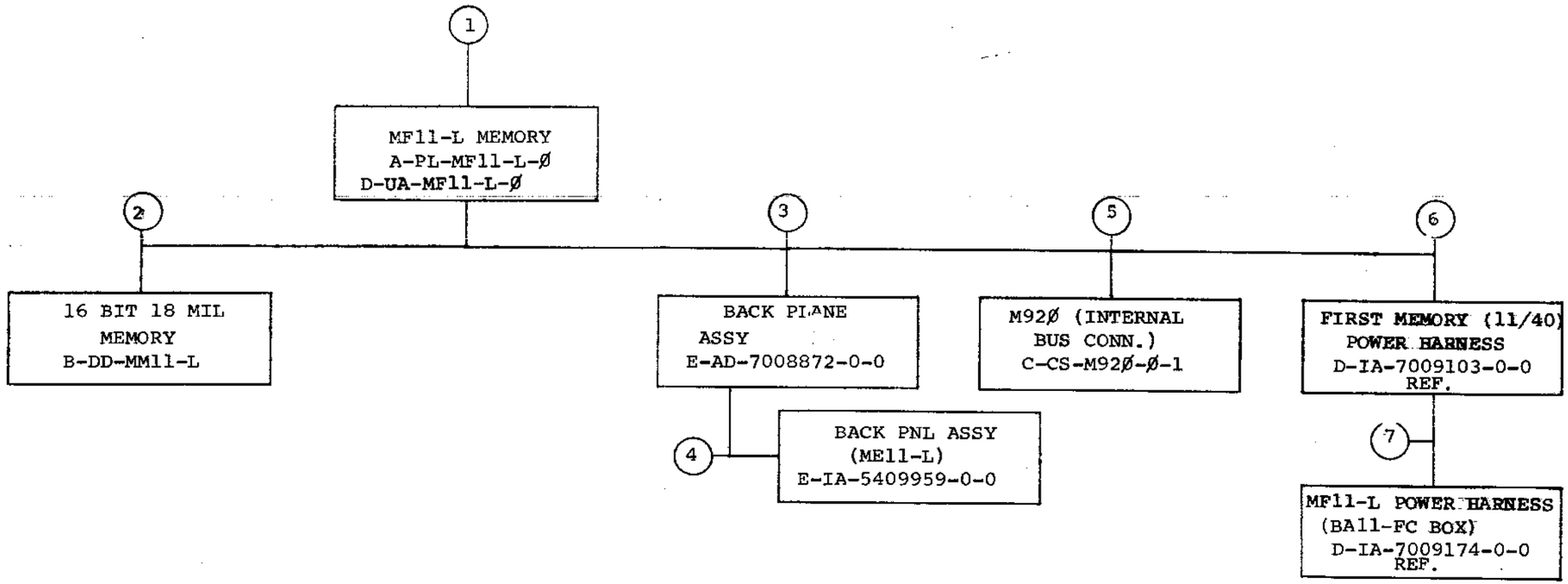
USED ON OPTION/MODEL
PDP-11/4Ø

DRN.	DATE 9/5/72	TITLE: MF11-L MEMORY (8K TO 24K, 16 BIT)
CHK'D.	DATE	
PROJ ENG.	DATE	
PROD.	DATE	
FIELD SERV.	DATE	

SHEET 1 OF 3

SIZE	CODE	NUMBER	REV
B	DD	MF11-L	J

DIST



TITLE		SIZE	CODE	NUMBER	REV
BACK PLANE MF11-L	SHEET 2 OF 3	B	DD	MF11-L	J

ELECTRICAL

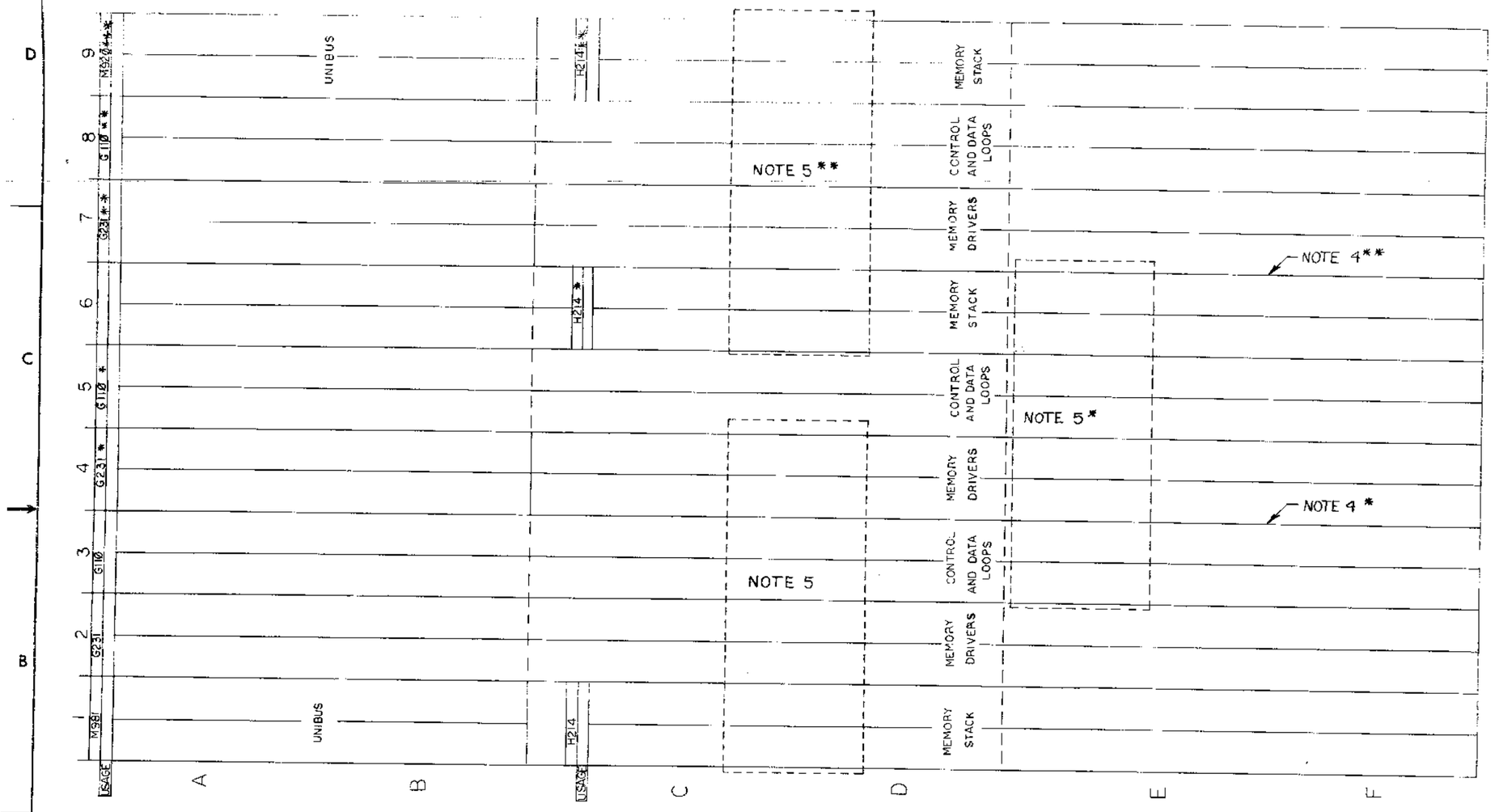
CUSTOMER PRINT SET MF11-L						SET MFG.	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X							1	A-PL-MF11-L-0	D	1	MF11-L MEMORY (PL)	
X								D-UA-MF11-L-0	D	1	MF11-L MEMORY	
X								D-MU-MF11-L-MU	C	1	MODULE UTILIZATION	
X								D-IA-7009560-0-0	#	1	MF11-L/LP OPTION HARNESS	
C							2	B-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY	
							3	E-AD-7008872-0-0		1	BACK PLANE ASSY	
							4	E-IA-5409959-0-0		1	BACK PANEL ASSY (ME11-L)	
X								E-CS-5409959-0-1	#	1	CIRCUIT SCHEMATIC	
								K-WL-7008872-0-1		1	ETCH/WIRE LIST (ME11-L)	
							5	C-CS-M920-0-1		1	CIRCUIT SCHEMATIC (INTERNAL BUS CONN)	
							6	D-IA-7009103-0-0	#	1	FIRST MEMORY(11/40) POWER HARNESS (OLD-REF.)	
							7	D-IA-7009174-0-0	#	1	MF11-L POWER HARNESS (BA11-FC BOX) (OLD-REF)	
							8	D-IA-7009565-0-0	#	1	FIRST MEMORY - 11/40 HARNESS (REF.)	

MECHANICAL

CUSTOMER PRINT SET MF11-L						SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
							1	A-PL-MF11-L-0	D	1	MF11-L MEMORY (PL)	
								D-UA-MF11-L-0	D	1	MF11-L MEMORY	
								C-PS-1210698-0-0		1	GUIDE, CARD CENTER	
								D-IA-7009560-0-0	#	1	MF11-L/LP OPTION HARNESS	
							2	B-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY	
							3	E-AD-7008872-0-0		1	BACK PLANE ASSY (ME11-L)	
										1		
										1		
										1		
								E-PS-1210258-0-0		1	288 PIN CONN (H863)	
								D-SC-1210834-0-0		1	360 PIN CONN	
										1		
								E-PS-1211459-0-0		1	LOGIC FRAME	
							4	E-IA-5409959-0-0		1	BACK PANEL (ME11-L)	
								E-CS-5409959-0-1		1	CIRCUIT SCHEMATIC	
								5409959-0-5		1	ASSY/DRILLING HOLE	
								5409959-0-4		1	X-Y COORDINATE HOLE LOCATION	
								5409959-0-6		1	MODULE ECO HISTORY	
							5	C-CS-M920-0-1		1	CIRCUIT SCHEMATIC	
							6	D-IA-7009103-0-0		1	FIRST MEMORY(11/40) POWER HARNESS(OLD-REF)	
							7	D-IA-7009174-0-0		1	MF11-L POWER HARNESS (BA11-FC BOX) (OLD-REF)	
							8	D-IA-7009565-0-0	#	1	FIRST MEMORY - 11/40 HARNESS (REF)	

TITLE		SHEET	SIZE	CODE	NUMBER	REV
MF11-L MEMORY (8K TO 24K, 16 BIT)		3 OF 3	B	DD	MF11-L	J

DLC - 16- (3251)-1062-2A-B272



NOTES:

1. * ADD THESE ITEMS FOR 16K MEMORY MACHINE.
   ** ADD THESE ITEMS PLUS 16K MODULES FOR 24K MEMORY MACHINE.
2. *** REPLACE M920 WITH M930 WHEN MEMORY IS AT END OF BUS.
4. ELECTROMAGNETIC SHIELD (1700021-02) REQUIRED BETWEEN SLOTS Ø3 AND Ø4, AND SLOTS Ø6 AND Ø7 WHEN OPTIONAL MEMORY SEGMENTS ARE ADDED. SHIELDS ARE POSITIONED IN MODULE SECTIONS C, D, E AND F AND HELD IN WITH MODULE HOLDERS
5. MODULE HOLDERS (1209856-0-02) ARE POSITIONED AS NOTED. POSITION AND NUMBER DEPEND UPON INSTLLATION OF OPTIONAL MEMORY SEGMENTS.

REVISIONS	CHK	CHANGE NO.	REV.
		MFII-00000	A
		MFII-00003	B
		MFII-00005	C

DEC FORM NO DPD 100

FIRST USED ON OPTION/MODEL: MFII-L

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ±.005 FRACTIONS ±1/64 ANGLES ±0°30'
FINAL SURFACE QUALITY 7
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN.	DATE 8/16/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD.	DATE 8/29/72	
ENG.	DATE 9/05/72	
PROJ. ENG.	DATE 10/4/72	
APPD.	DATE 11/29/72	

NEXT HIGHER ASSY: A-PL-MFII-Ø-Ø

SCALE

SHEET OF

TITLE: MODULE UTILIZATION

SIZE	CODE	NUMBER	REV.
D	M	MFII-L-MU	C

DIST.

SIZE D CODE M NUMBER MFII-L-MU REV C

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE	
MODULE UTILIZATION	D_MU_MM11_L_1
BLOCK DIAGRAM	D_BD_MM11_L 2
TIMING DIAGRAM	D_TD_MM11_L_3
* MEMORY DRIVERS	E_SC_G231_0_1
* CONTROL & DATA LOOPS	E_CS_G110_0_1
STACK SCHEMATIC	E_CS_H213_0_1
STACK SCHEMATIC	E_CS_H214_0_1
BLOCK DIAGRAM	D-BD-MM11-S-2
8K MEMORY	A-PL-MM11-L-0

SEQUENCE	
MFG. PRINT SET	
MFG. TEST PRO. FOR MM11/K,L,M,S&SP	A-SP-MM11-L-5

THIS IS PRINT SET

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: MM11_L
MM11_K	4K 16 BIT 18 MIL MEMORY	X
MM11_L	8K 16 BIT 18 MIL MEMORY	X

* SPECIAL REVISION PRINTS ARE AVAILABLE ON "C" ETCH REV. MODULES.
CARE SHOULD BE TAKEN TO INSURE THAT PROPER PRINTS ARE ORDERED.

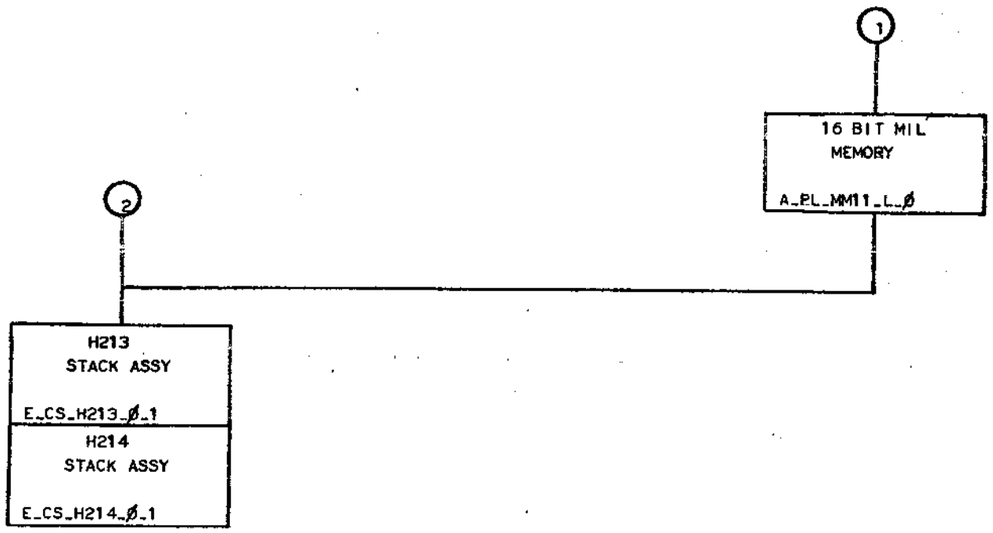
REVISIONS	DATE	CHG. NO.	REV
	9/72	MM11L-00001	A
	11-72	MM11L00002	B
	1-73	MISC-00107	C
	2-73	MISC-00111	D
	2-73	MISC-00112	E
	2-73	MISC-00113	F
	1-74	MM11L-3	H

USED ON OPTION/MODEL	
MM11_K	
MM11_L	

DRN. L. Balagha	DATE 1-25-72	TITLE: 16 BIT 18 MIL MEMORY
CHK'D. L. Balagha	DATE 1-25-72	
PROJ ENG. P. Durant	DATE 1-25-72	
PROD. R.K. Peterson	DATE 1-26-72	SIZE B / CODE DD / NUMBER MM11-L / REV H
FIELD SERV.	DATE	SHEET 1 OF 3 / DIST

DRB 106

DEC-16-(335)-1062-1-N871



TITLE		SIZE	CODE	NUMBER	REV
16 BIT 18 MIL MEMORY	SHEET 2 OF 3	B	DD	MM11_L	H

ELECTRICAL

CUSTOMER PRINT SET MM11_L	SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	D_MU_MM11_L_1	*	1	MODULE UTILIZATION	
X			D_BD_MM11_L_2	*	1	BLOCK DIAGRAM	
X			D_TD_MM11_L_3	*	1	TIMING DIAGRAM	
X			E_CS_G231_Ø_1	#	5	MEMORY DRIVER	
X			E_CS_G11Ø_Ø_1	#	5	CONTROL & DATA LOOPS	
X			D-BD-MM11-S-2	#	2	BLOCK DIAGRAM	
X			A-PL-MM11-L-0		1	8K MEMORY	
			A-SP-MM11-1-7	A	4	PRELIM. ENG. SPEC. FOR MM11-K,L	
X		2	E_CS_H213_Ø_1	#	2	STACK SCHEMATIC	
X			E_CS_H214_Ø_1	#	2	STACK SCHEMATIC	
			A-SP-G109-0-8		1	G109,G110 CONT & DATA LOOP MFG. SPEC.	
			A-SP-G231-0-8		1	MEMORY DRIVER MFG. SPEC.	
			A-SP-MM11-L-4		1	MM11-K,-L,-S & -SP MFG. TEST SPEC.	
	X		A-SP-MM11-L-5		29	MFG. TEST PRO. MM11/K,L,M,S & SP	

MECHANICAL

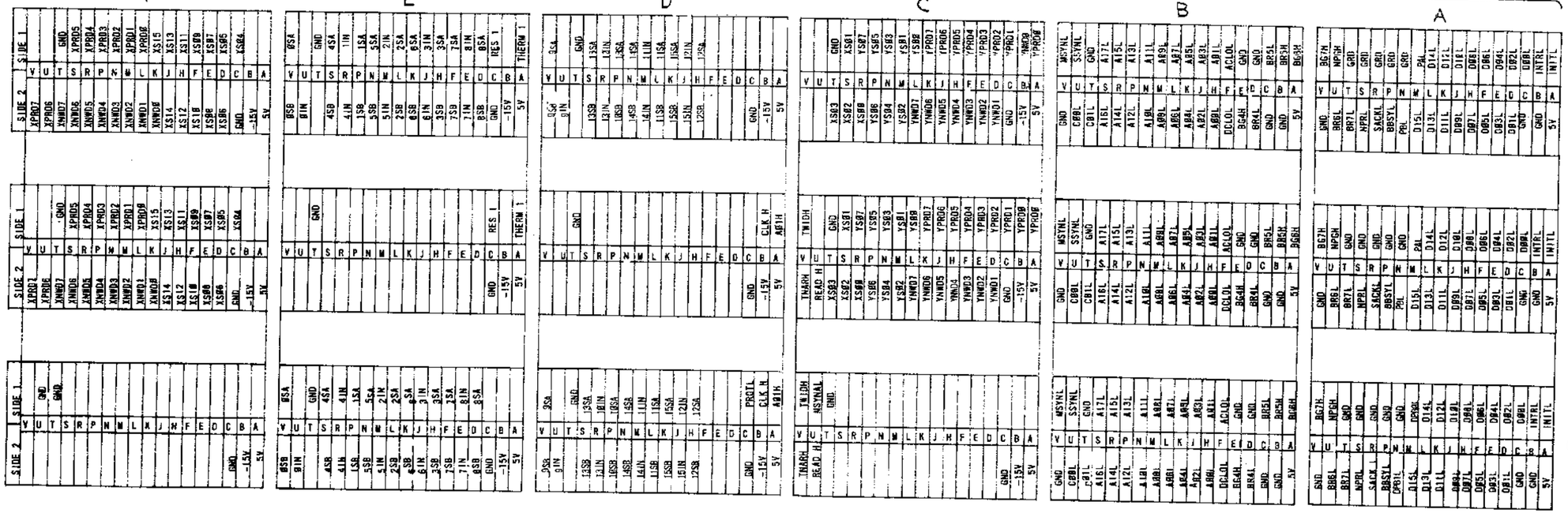
CUSTOMER PRINT SET MM11_L	SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		1	A_PL_MM11_L_Ø	*	1	MEMORY	
			A_PS_3010654_0_0			PURCHASE SPEC	
		2	B_DD_H214_Ø_/	#	2	STACK SCHEMATIC	
			B_DD_H213_Ø	#	2	STACK SCHEMATIC	
			A-PL_G645_Ø_-Ø		1	STACK BOARD	

TITLE		SIZE	CODE	NUMBER	REV
16 BIT 18 MIL MEMORY	SHEET 3 OF 3	B	DD	MM11_L	H

DRB 108

PIN SIDE VIEW OF BACKPLANE

THESE 2 SLOTS ARE UNIBUS WIRED ON ALL 3 CONNECTORS



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO.
MM11-L		PARTS LIST		

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

DRN		DATE 1/19/72
CHK'D		DATE 1-24-72
ENG		DATE 1-24-72
PROJ ENG		DATE 1-25-72
PROD		DATE 1-27-72

MATERIAL —
FINISH —
NEXT HIGHER ASSY. B-DD-MM11-L

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION

SIZE D | CODE DMU | NUMBER MM11-L-1 | REV

SCALE — SHEET 1 OF 1 | DIST

REVISIONS: REV | CHANGE NO | CHK

BRUSING 40-523 19840
DEC FORM NO DRD 102-B

NOTES:
* 1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.
** 2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.
*** 3. ACTUAL MATRIX HAS { Y AXIS 8 PRD, 8 NRD, 8 SS / X AXIS 4K 8 PRD, 8 NRD, 8 SS / X AXIS 8K 8 PRD, 8 NRD, 16 SS

UNIBUS

BUS A0L

BUS INITL
BUS DCLO L
BUS DATA(0-15) L
BUS C0L, C1L
BUS MSYNL
BUS SSYNL
BUS A1L, A14L
BUS A15L, 16L, 17L

BUS A2,3,4,5,6,7, 8,9,10,11,12,13

BUS DCLOL

G110 CONTROL & DATA LOOPS MODULE

BYTE MASKING

16 DATA LOOPS

STROBE 0 & 1 H → DATA FF
RESET 0 & 1 L → INHIBIT DRIVER
LOAD 0 & 1 H → SENSE AMP
← BUS DRIVER

TIMING CHAIN
MODE CONTROLS
BUS RECEIVERS
DEVICE SELECTOR
INTERLEAVE CONTROL

TINH H
DATAOUT H
DATA H

I0H, CLK H, TNPR H, TWID H, READ H

H213, 214 MEMORY STACK
4 OR 8K X 16 BIT

I — 16 CKTS
SA
SB

4096 CORES FOR 4K
8192 CORES FOR 8K
} PER BIT

BUS RECEIVERS
ADDRESS LATCHES
FIRST LEVEL DECODE

ADDRESS BITS USED	CKTS	
A02, 03 I0H	YPRD 0-7 YNWD 0-7	YDR 0-7
A04,5,6	YSS 0-7	YSS 0-7
A07,8,9	XPRD 0-7 XNWD 0-7	XDR 0-7
A10,11,12,13	XSS 0-15 0-7 FOR 4K	XSS 0-15

ADDRESS
TDR
TSS
READ-WRITE

STACK DISCHARGE CKT — READ=GND WRITE=-15

X & Y CURRENT GENERATOR (XIG, YIG)

DC LO CKT

(-15 V SERIES TRANSISTOR) V REF CKT

CURRENT CONTROL & TEMPERATURE COMPENSATION

G231 DRIVER MODULE

X-Y DIODE MATRICES * *
X DRIVE LINES
Y DRIVE LINES

PRD 0
NWD 0
SS 0
SS 1
SS 2
SS 3
PRD 1
NWD 1
***

R1
THERMISTER RESISTOR
RT1

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

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

DRN. P. Cadorny — DATE 11/10/71
CHK'D. F. Ralph — DATE 1-25-72
ENG. P. Dumont — DATE 1-25-72
PROJ. ENG. P. Dumont — DATE 1-25-72
PROD. R.W. Peterson — DATE 1-26-72
NEXT HIGHER ASSY. B-DD-MMII-L
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

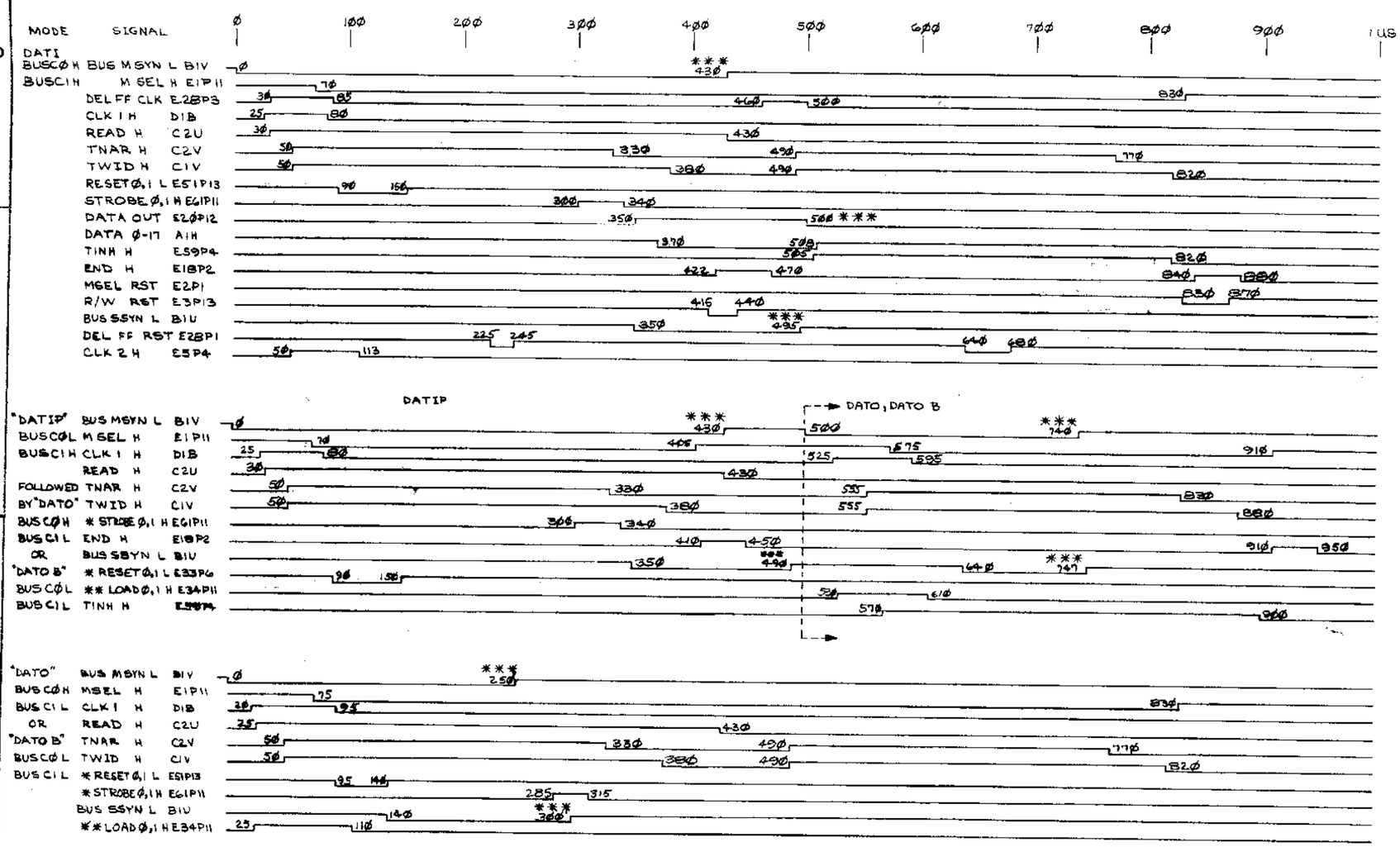
TITLE: BLOCK DIAGRAM (MMII-L)

SIZE	CODE	NUMBER	REV.
D	BD	MMII-L-2	

DIST.

REVISIONS	REV.
CHANGE NO.	
CHK.	

DEC FORM NO. 1000-1000-A



NOTES:
1. ANY SIGNALS NOT SHOWN ON DATIP, DATO OR DATO B ARE AS SHOWN ON DATI TIMING.
* 2. RESET L AND STROBE H DO NOT OCCUR IN DATO MODE. THEY ONLY OCCUR FOR THE BYTE NOT BEING ADDRESSED IN DATO B MODE.
** 3. LOAD H OCCURS FOR BOTH BITS IN DATO MODE AND ONLY FOR THE ADDRESSED BYTE IN THE DATO B MODE.
*** 4. ACTUAL TIME DEPENDS ON BUS AND PROCESSOR DELAYS.
5. ALL SIGNALS ON G109 OR G110 MODULE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-L		PARTS LIST		

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

DRN	T Carberry	DATE 12/3/71
CHK'D	T Halpin	DATE 1-22-72
ENG	P.D. Lavoie	DATE 1-25-72
PROJ. ENG.	P.D. Lavoie	DATE 1-25-72
PROD	R.P. Peterson	DATE 1-27-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING DIAGRAM (MM11-L, MM11-K)

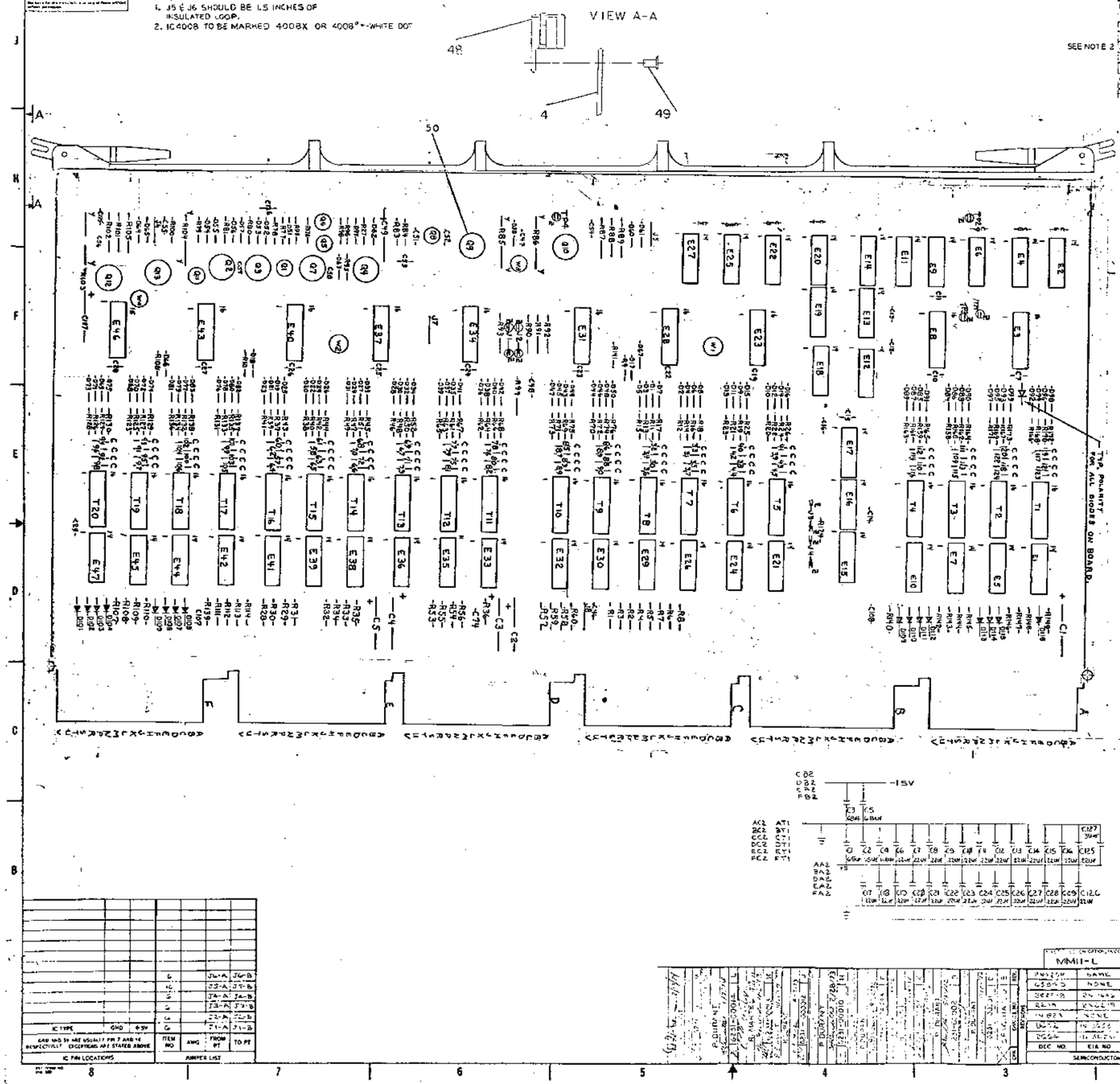
NEXT HIGHER ASSY.: B-DD-MM11-L
SIZE D | CODE TD | NUMBER MM11-L-3 | REV.
SCALE — OF 1 | DIST.

REVISION: REV | CHANGE NO | CHK
DRAWING 40-522 15MAR
DEC FORM 1C
DEC 107-B

DIGITAL MM11-L-3

NOTES:
1. J5 & J6 SHOULD BE 1.5 INCHES OF INSULATED LOOP.
2. IC4008 TO BE MARKED 4008X OR 4008*--WHITE DOT

VIEW A-A



ITEM NO	ORIGINAL PART DESCRIPTION	PART NO.	SUBSTITUTE PART DESCRIPTION	PART NO.
SEE NOTE 2	36 IC 4011 QUAD TRANSISTOR	9111102	IC 4008 QUAD TRANSISTOR	1510015 *
	42 IC 1074H00	9110462	IC 74H00	1909056 #
	44 IC 1074H04	9110463	IC 74H04	1909931 #

1	R176	RES 4.7K 1/4W 5%	1300447	60
4	J1, J2, J3, J4	JUMPER MACH INSERTED	9009185	59
1	C52	CAP 470 PF 100V 5%	1000024	58
1	C56	CAP 680 PF 100V 5%	1000026	57
1	C127	CAP .55UF 10V	1000076	56
4		SCREW, NYLON 6-32	9008212	55
4	W1-W4	STANDOFF, THREADED, INSULATED 1/4 X 3/8 LG	9008213	54
83	W11-28, R57-52, R81-75, R123-135, R158-173 R27, 331, 827	RES 100 1/4 W 5%	1300229	53
				52
		INSULATING WASHER .062 x .656 x .006 THK	9008453	50
10		AMPLIT MOD-T E B STRIPPER	9006732	49
1		BUSBAR	1210111	48
16		SPLIT LUGS	9008135	47
4		HEAT SINK	1210001	46
1	E44-E46, E18, E19, E28	IC 74H74	1909667	45
1	E6	IC 1074H04	19-10463	44
10	E7, E8, E17, E18, E21, E24, E37, E40, E42, E44, E45	IC 8251-1	1909856	43
3	E2, E4, E27	IC 1074H00*	19-10462	42
2	E22, E25	IC 74H18	1908053	41
20	T1-T20	TRANSFORMER	1909996	40
4	E9, E15, E16, E37	IC REC 7308	1910390	39
29	E7, E8, E12, E16, E21, E26, E28, E29, E30, E32, E35, E38, E39, E40, E42, E44, E45, E47	IC 4011 QUAD TRANSISTOR	1911902	* 38
4	Q8, Q18, Q12, Q13	TRANSISTOR 2N3962	1909648	37
3	Q6, Q8, Q11	TRANSISTOR 2N4258	1905321	36
1	Q1	TRANSISTOR 8334 B	1903408	35
1	Q9	TRANSISTOR 3859 B	1903100	34
3	Q2, Q3, Q9	TRANSISTOR 10098	1909155	33
1	D4	1N6515 HW 2218	1901881	32
4	R65, R88, R103, R184	RES 18.9 1/8 1%	1310032	31
1	R97	RES 7.87K 1/8 1%	1302642	30
1	R51	RES 909 1/8 1%	1302695	29
2	R98, R94	RES 147 1/8 1%	1302874	28
2	R89, R183	RES 26.1K 1/8	1302987	27
5	R5, R10, R180, R181	RES 470 1/4 5%	1301474	26
1	R83	RES 150 1/4 5%	1301401	25
5	R36, R126, R149	RES 51 1/4 5%	1309422	24
1	R87	RES 150 1/4 5%	1300495	23
1	R174	RES 10K 1/4 5%	1300478	22
1	R95	RES 2.2K 1/4 5%	1300417	21
4	R67, R96, R101, R182	RES 1.5K 1/4 5%	1300594	20
1	R19	RES 470 1/8 10%	1303317	19
5	R84, R99, R186,	RES 3.3K 1/4 5%	1300381	18
1	R94	RES 470 1/4 5%	1300315	17
A/R		WIRE, JUMPER, INSULATED (BLACK)	9107350	16
3	R28, R80 R98	RES 332 1/4 5%	1300325	15
4	R1-R8, R25-R35, R53-R60, R86, R107-R114, R162-R169	RES 15K 1/4 5%	1300258	14
				13
1	D58	DIODE 1N823 ZENER	1105069	12
25	D17, D19, D55, D68, D81, D84-D87, D91-D116	DIODE 0972	1105276	11
88	D1, D16, D35-D54, D56, D57, D62, D83, D88-D89	DIODE 0664	1105114	10
6	C1-C5, C48	CAP 6.8 MFD 35V 20%	1000067	9
36	C9-C29, C46, C47, C48, C50, C53, C54, C74, C107, C108, C125, C126, C58	CAP 22uF 50V -20% 80%	1000274	8
80	C30-C35, C57, C58, C88-C93, C75-C106, C189-C194	CAP CERAMIC 100V 5% 0.01	1000562	7
A/R		WIRE, JUMPER, AWG #22 SOLID	9107360-01	6
7	C51, C55	CAP 33PF 10V 5% MICA	1000018	5
REF			1000926	4
REF			9-MM-G121 B6	3
REF			E-CM-G231 D5	2
REF			4-CD-G231-B4	1
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

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
		J4-A	J4-B
		J5-A	J5-B
		J4-A	J4-B
		J3-A	J3-B
		J1-A	J1-B
		J1-A	J1-B

JUMPER LIST

MMII-L

DRAWN	DATE		
CHKD	NONE		
ENGR	DATE		
APPD	DATE		
MFG ENG	DATE		
QA	DATE		
1ST USED	NONE		
DEC NO.	ECO NO.	DEC NO.	ECO NO.

SEMICONDUCTOR CONVERSION CHART

DIGITAL EQUIPMENT CORPORATION

TITLE: PDP-11 MEMORY DRIVER

8-00 MMII-L

SIZE: D | DRAWING NO: G231-0-1 | REV: H

SCALE: 2/1 | SHEET 1 OF 4

J3	J4
4K IN	OUT
8K OUT	IN

*** ALL INPUTS ARE FROM UNIBUS (BUS xxxL) OR G109 OR G110 (CDL2 xxxL)

*** CDL2 TWID H, CDL2 READ H, CDL2 TNAR H, WRITE H → E2 → T.P.2 → MD2 TDR H
1074H00 (3 CKTS.)

* THIS CIRCUIT IS ON STACK BOARD

MD2 A00H, A01H, A02H, A03H, A04H, A05H, A06H, A07H, A08H, A09H, A10H, A11H
DAI, DBI, CDL2 CLKH
BUSA13L, BUSA12L, BUSA05L, BUSA04L
WRITE H, CDL2 READ H, CDL2 TNAR H, TWIDH, TSSH, TNARH
MD2 YS1L, MD2 YS0L, MD2 XS3L, MD2 XS2L, MD2 XS1L, MD2 XS0L
CDL2 TWID H, MD2 TDR H
+5V, -15V, BUS DCLOL, TWID H, STACK DISCHARGE MD25D
X-Y REFERENCE SUPPLY
CDL2 TWIN, MD2 READ L
MD2IY Y AXIS TO WRITE SWITCHES AND READ DRIVERS
MD2IX X AXIS TO WRITE SWITCHES AND READ DRIVERS

REVISIONS	CHARGE NO.	CHK
REV.		

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

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

DRN	Lee Courtenay	DATE 9-24-71
CHK'D	J. Delgado	DATE 1-21-72
ENG.	P.D. Dumont	DATE 1-25-72
PROJ. ENG	P. Dumont	DATE 1-25-72
PROD.	K.V. Peterson	DATE 1-26-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PDP-11 MEMORY DRIVER

SIZE	CODE	NUMBER	REV.
D	CS	G231-0-1	M

SCALE —
SHEET 2 OF 4
DIST.

FROM CURRENT LOOP MUX

MD2 XS3L

MD2 A11H

MD2A1ØH

MD2 XS1L

MD2 XSØL

MD2 XS2L

MD2SD STACK DISCHARGE

MD2 READ L

ALL INPUTS FROM G231 SHEET 2 (MD2)
ALL OUTPUTS GO TO MEMORY STACK

FK1	XS15	FE1	XSØ7
FJ2	XS14	FD2	XSØ6
FI1	XS13	FD1	XSØ5
FH2	XS12	FC1	XSØ4
FH1	XS11	CT2	XSØ3
FF2	XS1Ø	CS2	XSØ2
FF1	XS09	CS1	XSØ1
FE2	XS08	CR2	XSØØ

FROM CURRENT LOOP MUX

MD2A09H, MD2TDRH → E27 1074H08 → MD2A08H, MD2A07H

MD2A09L, MD2TDRH → E27 1074H08 → MD2A08H, MD2A07H

FV2	XPRD7	FT2	XNWD7
FU2	XPRD6	FS2	XNWD6
FS1	XPRD5	FR2	XNWD5
FR1	XPRD4	FP2	XNWD4
FP1	XPRD3	FN2	XNWD3
FN1	XPRD2	FM2	XNWD2
FM1	XPRD1	FL2	XNWD1
FL1	XPRDØ	FK2	XNWDØ

+5V, -15V, 5.1Ω R139, C107 .22 UF

REVISIONS	REV	CHANGE NO.	CHK

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

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

DRN. R Carbonaro DATE 10-1-71
CHK'D. R Gilooly DATE 1-21-72
ENG. P Dupuis DATE 1-25-72
PROJ. ENG. D Bissett DATE 1-25-72
PROD. R K Peterson DATE 1-26-72
NEXT HIGHER ASSY. —
SCALE —
SHEET 3 OF 4
DIST.

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: PDP-11 MEMORY DRIVER

SIZE D | CODE DCS | NUMBER G231-Ø-1 | REV A

DEC FORM NO. DRD 102-B

MD2 READ L

MD2 SD STACK DISCHARGE

ALL INPUTS FROM G231 SHEET 2 (MD2)
ALL OUTPUTS TO MEMORY STACK

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

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

DRN T. Carberry DATE 10/9/71
CHKD [illegible] DATE 1-21-72
ENG P.D. [illegible] DATE 1-25-72
PROJ. ENG. P.D. [illegible] DATE 1-25-72
PROD. [illegible] DATE 1-26-72
NEXT HIGHER ASSY.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PDP-11 MEMORY DRIVER

SIZE D | CODE DCS | NUMBER G231-0-1 | REV. M
SCALE —
SHEET 4 OF 4
DIST.

REVISIONS: REV. | CHANGE NO | CHK

58 REF

5 REF

DL 1

VIEW A-A

— CAUTION —
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

25NS/TAP

W1 2,3,4,5,6 PROGRAM MEMORY BANK LOCATION CUT JUMPER FOR BUS A LINE LOW (ADDRESSED) WHEN BANK SELECTED. W1 MUST BE IN WHEN USED AS 8K BANK

	W1	W2
4K	IN	OUT
8K	OUT	IN

MEMORY BANK SIZE

BUS AI3 L
BUS AI6 L
BUS AI5 L
BUS AI7 L
BUS AI1 L
BUS AI2 L

DEVICE SELECT CIRCUIT (DSELH)

HIGH WHEN MEMORY BANK IS SELECTED

* USE INSULATED JUMPERS IN POSITIONS SHOWN BY DOTTED LINES WHEN INTERLEAVING

-5V TO SENSE AMPS

-5V SUPPLY

-16V

SPARES

BUS AØØ L
BUS CØØ L
BUS CØ1 L

BYTE MASKING LOGIC

PROTECT LOW

CLK1H

WRITE RESTART

SSYN RESET

LOAD ØH
LOAD 1H

TO DATA 74174 F.F.

AØ LATCH
CØ LATCH
C1 LATCH

DELAY FF RESET

READ H

TO IN DRIVERS
IINHØH
IINH1H

SSYN RESET BUS IN H L

MACH RESET

WRITE RESTART ONE SHOT CKT

STROBE SPLIT LUG T.P.1

RESET 1L
RESET ØL
STROBE 1H
STROBE ØH

TO DATA 74174 F.F.

TO SENSE AMPS(7528)

DATA OUT H
TO BUS DRIVERS

BUS SSYN L

CAUTION
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

FIRST USE ITEM OR OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO
MMII-L		PARTS LIST		

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

DRN	F. Mahony	DATE 1-27-72
CHK	D. Balph	DATE 1-27-72
ENG	D. Durant	DATE 1-27-72
PROJ ENG	D. Durant	DATE 1-27-72
PROD	P. W. Peterson	DATE 1-27-72

MATERIAL
FINISH

DIGITAL EQUIPMENT CORPORATION

TITLE: CONTROL & DATA LOOPS (CDL 2)

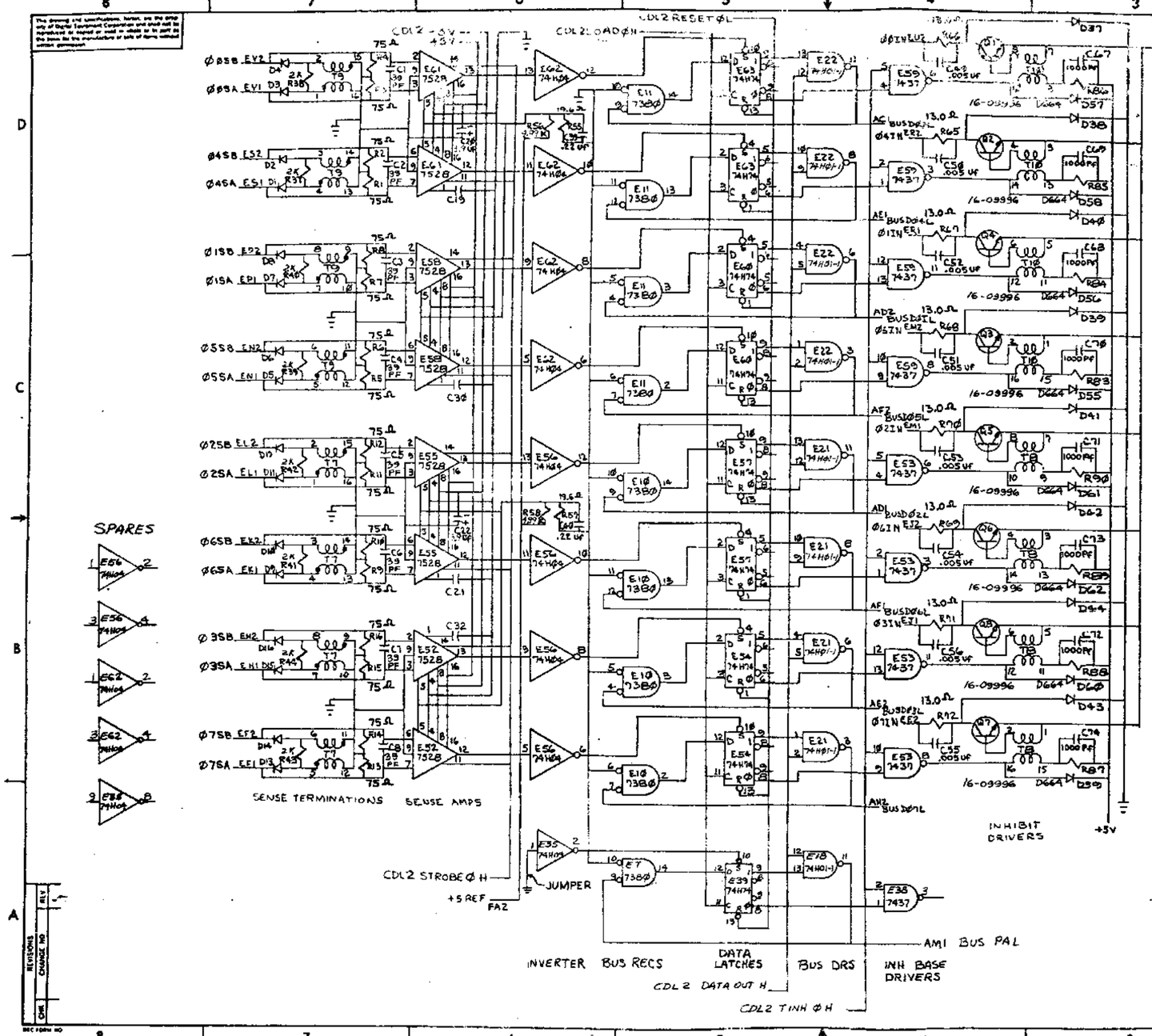
NEXT HIGHER ASSY: 8-00-MMII-L

SIZE	CODE	NUMBER	REV
D	CS	G110-0-1	E10

SCALE
SHEET 2 OF 5
DIST

REVISIONS			
REV	CHANGE NO	DATE	DR

DECTOOL NO



NOTES:

1. ALL SIGNALS FROM UNIBUS (BUS DØØL TO BUS DØ7L), GIØ SHEET 2 (CDL2) OR STACK (ØØ5A,B TO Ø75A,B AND MAIN TO Ø7IN)
2. UNLESS SPECIFIED:
   ALL RESISTORS ARE 82Ω ½W 5%
   ALL CAPACITORS ARE 120 PF 100V 5%
   ALL TRANSFORMERS ARE 16-09478-01
   ALL DIODES ARE D672
   ALL TRANSISTORS ARE DEC-3734
3. ECO#2 DID THE FOLLOWING:
   C1-C8 CHANGED FROM 68 PF TO 39 PF
   R37-R44 CHANGED FROM 330Ω TO 2K
   C49-C56 CHANGED FROM .0022μf TO .005μf
4. ECO#8 DID THE FOLLOWING:
   R56, R58 CHANGED FROM 5.62K TO 4.99K
   C20, C22 CHANGED FROM .22μf TO 3.9μf
5. ECO#13 ADD JUMPER E35 P1 TO GND.

CAUTION
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

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

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

DSN J. Cadieux DATE 11/18/72
CHK [illegible] DATE 11/22/72
ENG [illegible] DATE 12/1/72
PROJ ENG [illegible] DATE 12/1/72
PROD A.V. Pelt DATE 12/1/72

EQUIPMENT CORPORATION

TITLE: CONTROL & DATA LOOPS (CDL3)

NEXT HIGHER ASSY: B-DD-MMII-L
SIZE D CODE CS NUMBER G110-0-1 REV E10
SCALE —
SHEET 3 OF 5
DIST

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO D80 HB-8

NOTES:

1. ALL SIGNALS FROM UNIBUS (BUS D08L-D15L) G110 SHEET 2 (CDL2) OR STACK (Ø8SA,B TO 15SA,B AND ØBIN TO 15IN)
2. UNLESS SPECIFIED:
   ALL RESISTORS ARE 82Ω ½W 5%
   ALL DIODES ARE D672
   ALL CAPACITORS ARE 120 PF 100V 5%
   ALL TRANSFORMERS ARE 16-09478-01
   ALL TRANSISTORS ARE DEC-3734
3. ECO #2 DID THE FOLLOWING:
   C9-C16 CHANGED FROM 68 PF TO 39 PF.
   R45-R52 CHANGED FROM 330Ω TO 2K
   C57-C64 CHANGED FROM .0022 μf TO .005 μf
4. ECO #8 DID THE FOLLOWING:
   R60, R61 CHANGED FROM 5.62K TO 4.99K
   C24, C26 CHANGED FROM .22 μf TO 3.9 μf
5. ECO #13 ADD JUMER E35P13 TO GND.

SPARES

SENSE TERMINATIONS

SENSE AMPS

INVERTERS

BUS RECS

DATA LATCH

BUS DRS

INH BASE DRIVERS

INH DRIVERS

CDL2 STROBE 1 H

+5REF FA2

JUMPER

CDL2 DATA OUT H

CDL2 TINH 1H

AN2 BUS PB L

— CAUTION —
NON-STANDARD DRAWING
FOR SPECIAL APPLICATION

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES +TOLERANCES
DECIMALS .XXX ± .010 .XX ± .02 X ± .1 ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN J. Landeau 11/9/72
CHK'D J. Pelagi 11/20/72
ENG — DATE —
PROJ ENG — DATE —
PROD — DATE 1-31-73

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CONTROL & DATA LOOPS (CDL 4)

NEXT HIGHER ASSY: B-DD-MMII-L
SCALE —
SHEET 4 OF 5

SIZE D | CODE CS | NUMBER G110-0-1 | REV E10
DIST

REVISIONS: REV | CHANGE NO | CHK

DEC/SPM NO G110-0-1

E.C.O. MODULE REFERENCE

ECO NUMBER	SUMMARY OF E.C.O	PRINT CHANGE LOCATION	MODULE STAMPED REVISION	CIRCUIT SCHEM. REVISION	E.C.O. REQUIREMENTS 1	2	3	3A	4	5	6	7	8	9	9A	10	10A	11	12	13 (13A)	14 (14A)	15	16	17	18	19
1	CHANGE R116, R118 FROM 1K TO 220 Δ, CUT ETCH FROM E2-P3 TO E5-P4 & TO E15-P4, ADD JUMPERS FROM E2-P3 TO GND, FROM E3-P4 TO E15-P4, CUT ETCH FROM E2-P4 TO E2-P2, ADD JUMPER FROM E2-P4 TO DL2-P3, CUT ETCH FROM E26-P8 TO DL1-P9, ADD JUMPER FROM E26-P8 TO DL1-P9.		A	A	□																					
2	CHANGE SENSE TERM. CAPS. FROM 68 PF TO 39 PF, C1-C6 (1% PARTS), CHANGE BALUN RES'S. R37-R52, FROM 330Δ TO 2K (1% PARTS), CHANGE INH. BY PASS CAPS. C49-C64, FROM .0022 UF TO .005 UF (1% PARTS) CHANGE DL2 FROM 50NS TO 100NS DELAY LINE CHANGE TERM. RES R115 FOR DL3 FROM 390Δ TO 3K	SHT 3 & 4 AREA 2-C; SHT 2 AREA 4-C; SHT 2 AREA 4-C	B	B	□	□																				
3	DID NOT AFFECT C REV ETCH MODULES		—	—	*	*	*																			
3A	DID NOT AFFECT "C" REV ETCH MODULES		—	—	*	*	*	*																		
4	DL3 NOT TERMINATED PROPERLY, CHANGE R115 FROM 3K TO 1K, CUT ETCH FROM DL3 OUT TO E16-P8, CUT ETCH FROM DL3 IN TO E2-P1, ADD JUMPER FROM DL3 OUT TO E2-P1	SHEET 2 AREA 4-C	D	D	□	□	*	*	□																	
	GLUE DOWN DL2 WITH ECCO BOND	SHT 1 AREA 3-D																								
5	REVERSE C152, SO THAT + SIDE OF CAPACITOR GOES TO +5V. INSTALL 4 - 1/4"OD x 3/8 I.G. STAND-OFFS	SHT 1 AREA 2-E	E	E	□	□	*	*	□	□																
6	DID NOT AFFECT C REV ETCH MODULES				*	*	*	*	*	*	*															
7	DRILL BLANK BOARD, AND INSTALL (4) STANDOFFS	SHT 1 AREA 2-P	E1	E1	□	□	*	*	□	□	*	□														
8	CHANGE R56, 58, 60, 61 FROM 5.62K TO 4.99K; CHANGE C20, 22, 24, 26, 29, 31, 33, 35 FROM .22 UF TO 3.9 UF; CHANGE C44-47 FROM .22UF TO .01UF	SHT 3 & 4 AREA 2-C; SHT 2 AREA 2-C; SHTS 3 & 4 AREA 2-C; SHT 1 AREA 3-C	E2	E2	□	□	*	*	□	○	*	○	□													
9	INSTALL GND JUMPERS ON SIDE 1; CHANGE PART NO. OF #18 WIRE FROM 9107360-00 TO 1700029	SHEET 1	H	E3	□	□	*	*	□	○	*	○	□	□												
9A	RESTAMP HANDLE E-3, CHANGE PRINT FROM H TO E-3		E3	E3	□	□	*	*	□	○	*	○	□	□	□												
10	REROUT E28, CUT ETCH FROM E28-P13 TO E28-P2 ADD E28 AND JUMPER E28-P13 TO E15-P10		J	E4	□	□	*	*	□	○	*	○	□	*	*	□											
10A	RESTAMP HANDLE E-4, CHANGE PRINT REV FROM J TO E4		E4	E4	□	□	*	*	□	○	*	○	□	*	*	□	□										
11	CANCELED		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	PRINT CHANGE ONLY		E5	E5	□	□	*	*	□	○	*	○	□	*	*	□	*	—	□								
13	ADD 2 JUMPERS SO THAT PAL AND PBL ARE HIGH ON THE DU'S		E6	E6	□	□	*	*	□	○	*	○	□	*	*	□	*	—	*	□							
13A	CHANGE EFFECTIVITY DATE																										
14 (14A)	DID NOT EFFECT C REV ETCH MODULE				*	*	*	*	*	*	*	*	*	*	*	*	*	—	*	*	*						
15	GENERATE AN ALLOWABLE SUBSTITUTION LIST, CHANGE DL3	SHEET 1 AREA 1-E	E7	E7	□	□	*	*	□	○	*	○	□	*	*	□	*	—	*	□	*	□					
15A	DELETE 68Δ RES FROM ALLOWABLE SUBSTITUTION LIST.	SHEET 1 AREA 1+2-H	E7	E7	□	□	*	*	□	○	*	○	□	*	*	□	*	—	*	□	*	□	□				
16	3 ETCH CUTS, 2 JUMPERS TO E7 PINS 6 & 7	SHT 2 AREA 2-C	E8	E8	□	□	*	*	□	○	*	○	□	*	*	□	□	—	□	□	*	*	*	□			
17	DID NOT AFFECT C REV ETCH MODULES				*	*	*	*	*	*	*	*	*	*	*	*	*	—	*	*	*	*	*	*	*		
18	2 ETCH CUT, REMOVE 1 JUMPER INSTALL #30 TWP FOR STROBE Φ H		E9	E9	□	□	*	*	□	○	*	○	□	*	*	□	□	—	□	□	*	*	*	□	*	□	
19	MOVE E26-8 FROM TAP 9 TO TAP 10 OF DELAY LINE 1.	SHEET 2 AREA D4	E10	E10	□	□	*	*	□	○	*	○	□	*	*	□	□	—	□	□	*	*	*	□	*	□	□

NOTES:
1. THIS PRINT IS FOR 'C' REV. ETCH MODULES ONLY.
2. THIS CHART IS DESIGNED TO ALLOW THIS GIIØ CIRCUIT SCHEMATIC TO BE USED WITH ALL PREVIOUS REVISION MODULES
3. CHART IS USED AS FOLLOWS:
   A. LOCATE REVISION LETTER STAMPED ON HANDLE
   B. FOLLOW THE MODULE STAMPED COLUMN DOWN TO FIND APPROPRIATE REVISION
   C. NOTICE SYMBOLS TO RIGHT OF REVISION LETTER, THESE SYMBOLS WILL INDICATE ECO REQUIREMENTS FOR THAT MODULE.
4. SYMBOLS:
   □ = REQUIRED BUT REFER TO EFFECTIVITY DATE
   Δ = ONE OR THE OTHER IS REQUIRED
   ○ = ONE OR THE OTHER IS REQUIRED BUT (C152 MUST BE CHANGED)
   * = NOT REQUIRED

— CAUTION —
NON-STANDARD DRAWING FOR SPECIAL APPLICATION

REVISIONS	REV	CHK
CHANGE NO		

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS .xx = .005, .xxx = .002, .x = .1; ANGLES ±0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √

MATERIAL —/—

FINISH —/—

DRN. LG, DATE 12-22-76
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY. B-DD-MMII-L
SCALE NONE
SHEET 5 OF 5

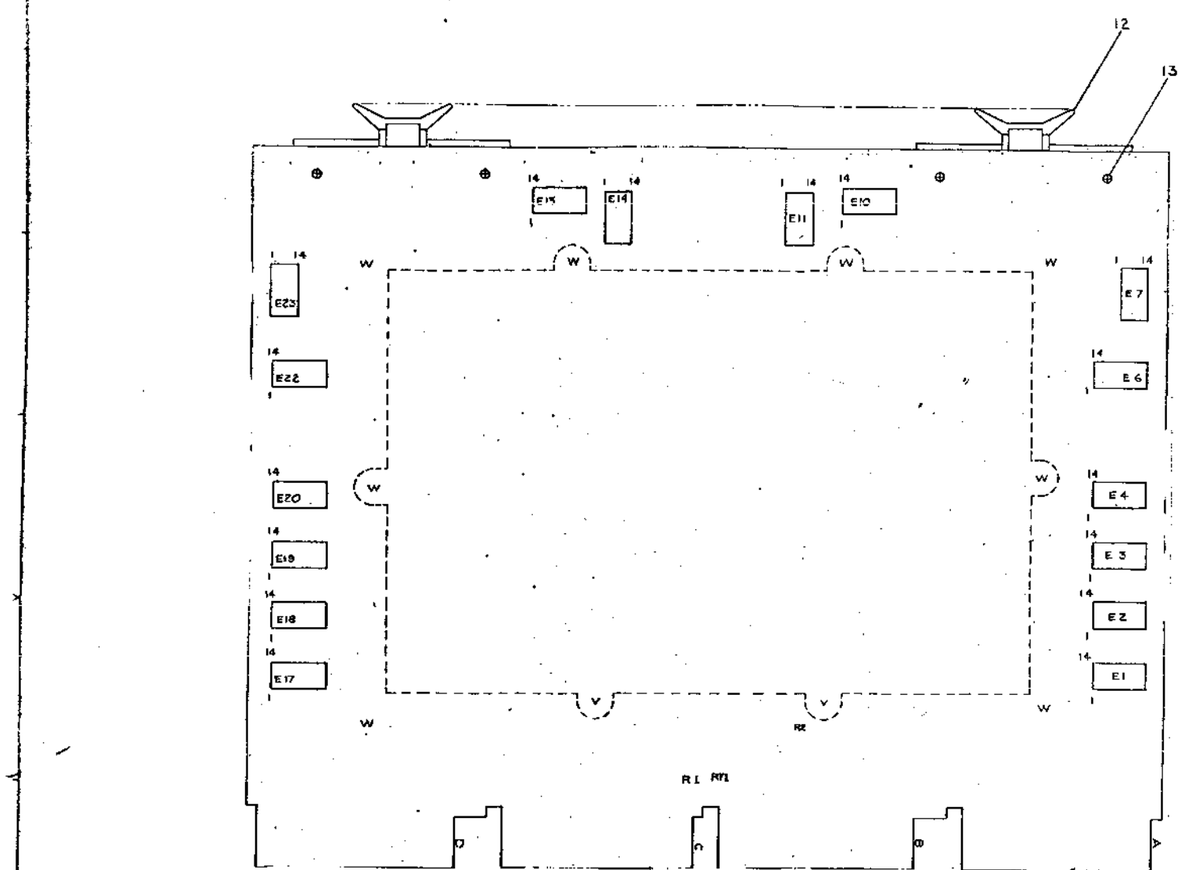
digital EQUIPMENT CORPORATION

TITLE: CONTROL & DATA LOOPS (CDL5)

SIZE D | CODE CS | NUMBER GIIØ-Ø-Ø | REV. EIØ | DIST.

NOTES:

1. ALL COMPONENT LEADS TO BE LESS THAN 1/16" LONG AND CLINCHED ON SIDE TWO OF MODULE



COMPONENT SUBSTITUTION LIST

MODULE	ORIGINAL PART DESCRIPTION	ORIGINAL PART PART NO	SUBSTITUTE PART DESCRIPTION	SUBSTITUTE PART PART NO	ITEM NO
H213	2501-00 I.C. DIODE	1910010-00	2501-011 C DIODE	1910010-01	2
H213	2501-00 I.C. DIODE	1910010-00	2501-035 C DIODE	1910010-03	2
H213	2501-00 I.C. DIODE	1910010-00	2501-027 C DIODE	1910010-02	2

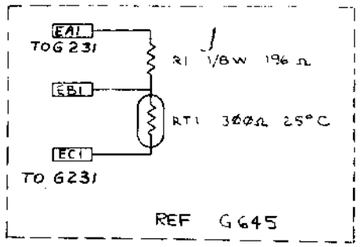
LEGEND

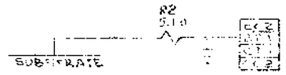
MODULE CONN.	BACK PANEL LOCATION
A	C
B	D
C	E
D	F

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	RT1	THERMISTOR 300 2%	1309785	16
1	R2	RESISTOR 5.1 1/4W 5%	1309422	15
1	R1	RESISTOR 196 1/8W 1%	1302956	14
8		EYELET	9006732	13
4		HANDLE, GREEN	9008337-0-1	12
1		STICKER/DEC PART ETC NO	VENDOR SUPP	11
2		JUMPER		10
16		4096-CORE MATS (STRUNG)		9
4		WASHER, NYLON 5/8 X 1/4 (6-40 HOLE)		8
10		SCREW, NYLON FILLISTER NO 4-40 X 7/16 LG		7
10		SCREW, F.H. NYLON 4-40 X .19 LG		6
10		STANDOFF, THREADED 4-40 X 5/16 LONG		5
1		SUBSTRATE		4
1		COVER PLATE	VENDOR SUPP	3
16	E14, E15, E17-E20, E22, E23 E1-E4, E6, E7, E10, E11	I.C. DIODE 2501	1910010 *	2
1		PLANER MEMORY BOARD	5009713	1

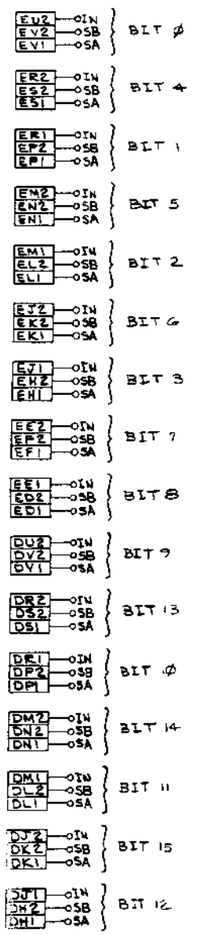
EQUIPMENT CORPORATION

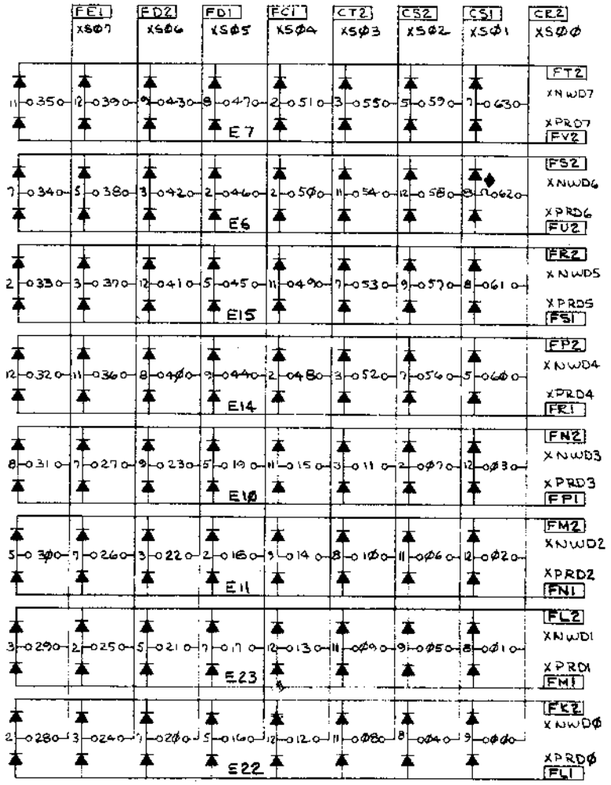
TITLE: STACK SCHEMATIC (2K 16 BIT)

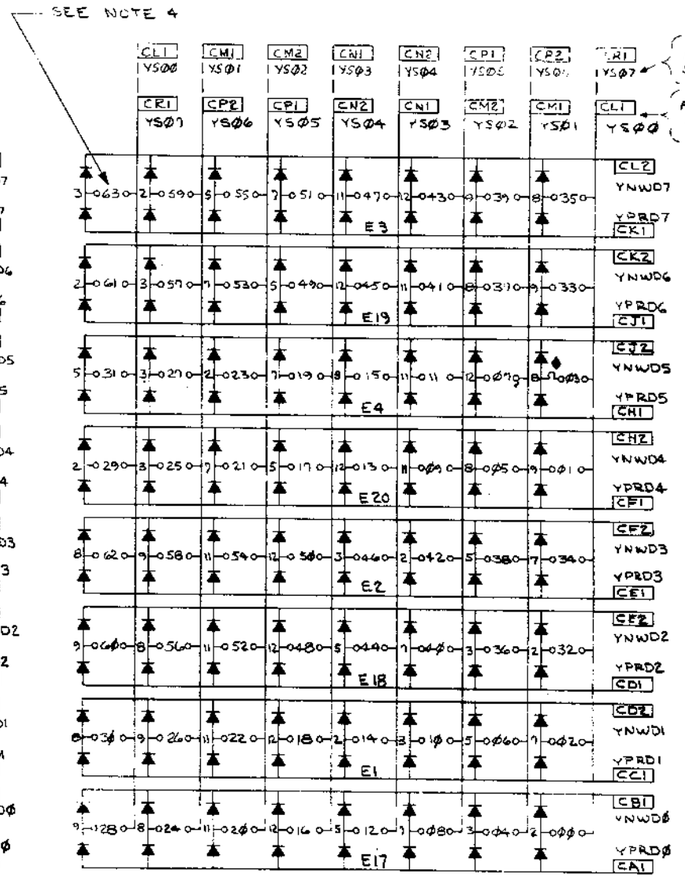




NOTES
1. UNLESS OTHERWISE SPECIFIED: ICs ARE TO BE DEC PART # 19100/0
2. INDICATES STACK LINE NUMBER. (TYP)
3. ♦ INDICATES CURRENT LOOP.
4. → INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).







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

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

DRN		DATE 12/1/71
CHK'D		DATE 1-25-72
ENG.	P.Sunaut	DATE 1-25-72
PROJ. ENG.	P.Sunaut	DATE 1-25-72
PROD.	D.A.Peterson	DATE 1-26-72

NEXT HIGHER ASSY. B-DD-MMII-_-Ø

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

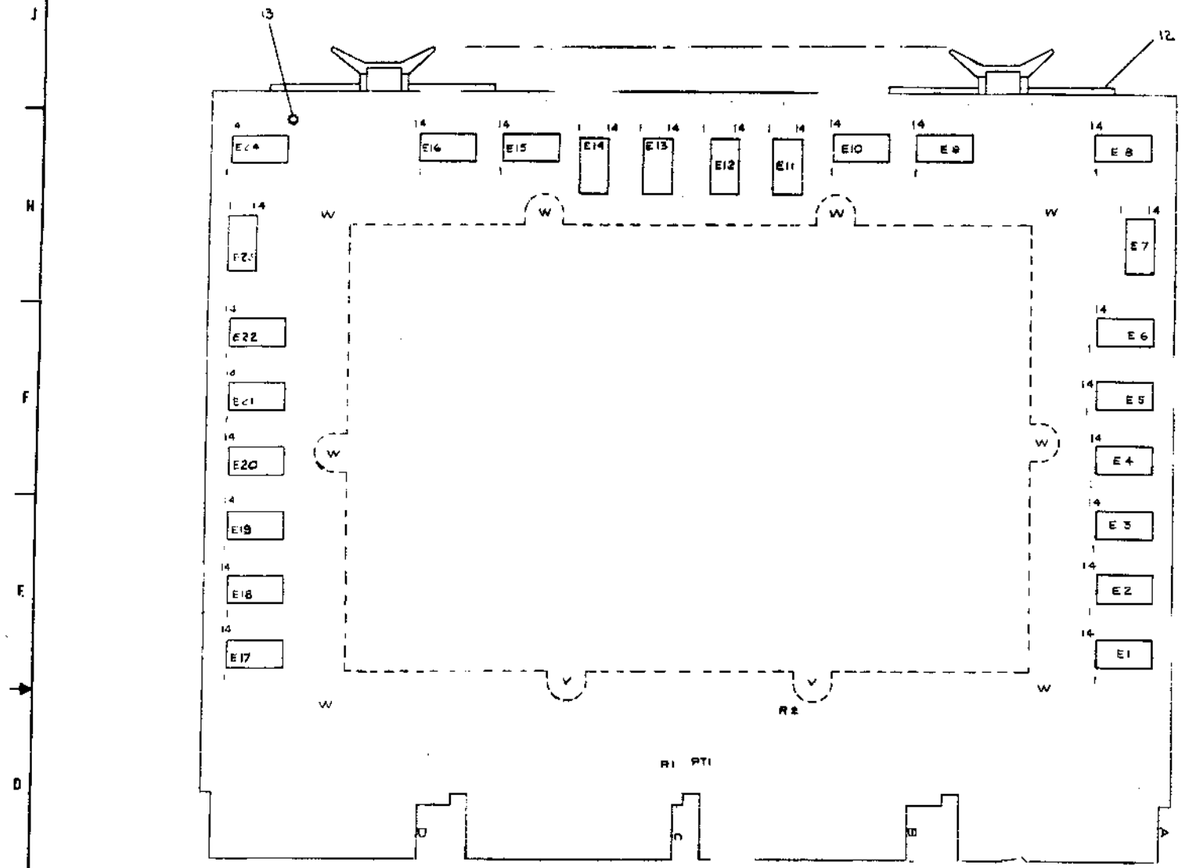
TITLE: STACK SCHEMATIC 4K X 16 BIT

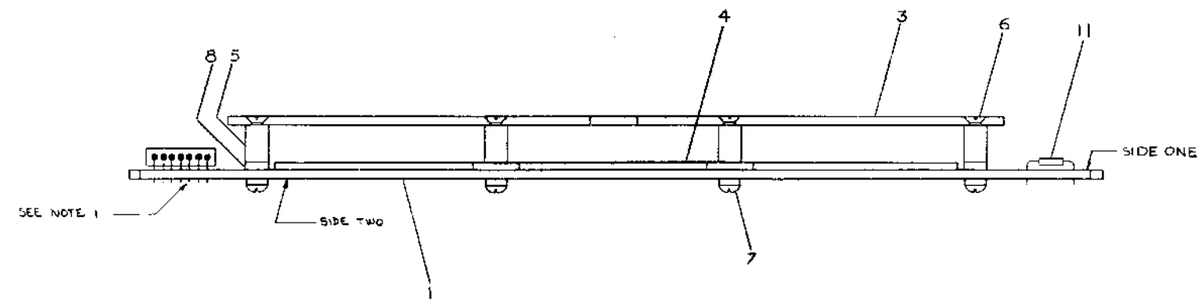
SIZE D | CODE CS | NUMBER H213-Ø-1 | REV. F | SHEET 2 OF 2 | DIST

REV.	REVISIONS	CHANGE NO	CHK.
F			

DRAWING NO. 40-421 19340 | DEC-11-D-C-1 FORM RVD

NEXT ASSY D CS H213-Ø-1 REV F





NOTES:
1. ALL COMPONENT LEADS TO BE LESS THAN 1/16 INCHES LONG ON SIDE TWO OF MODULE

MODULES	COMPONENT SUBSTITUTION LIST ORIGINAL PART DESCRIPTION	PART NO.	SUBSTITUTE PART DESCRIPTION	PART NO.	ITEM NO.
H214, H215, H216	2501-00 - DIODE	19 10010-00	2501-01 DIODE	19 10010-01	2
H214, H215, H216	2501-00 - DIODE	19 10010-00	2501-02 DIODE	19 10010-02	2
H214	2501-00 - DIODE	19 10010-00	2501-03 DIODE	19 10010-03	2

LEGEND	
MODULE CONN	BACK PANEL LOCATION
A	C
B	D
C	E
D	F

H216	H215	H214				
1	1	1	RT1	THERMISTOR 300 2%	1309785	16
1	1	1	R2	RESISTOR 5 1/4W 5%	1309422	15
1	1	1	R1	RESISTOR 196 1/8W 1%	1.02956	14
8	8	8		EYELET	9006732	13
4	4	4		HANDLE, GREEN	3008337-001	12
2	2	2		JUMPER	VENDOR SUPP	11
1	1	1		STIKER WITH DEC PART & PO NO		10
16	16	16		8132-CORE MATS (STRUNG)		9
4	4	4		WASHER, NYLON 1/2 X 1/4 (#40 HOLE)		8
10	10	10		SCREW, NYLON PHIL STEEL #4-40 X 1/4 LG		7
10	10	10		SCREW, FLAT HEAD MACHINE #4-40 X 1/4 LG		6
10	10	10		STANDOFF, HEXAGON #4-40 X 1/4 LG		5
1	1	1		SUBSTRATE		4
1	1	1		COVER PLATE	VENDOR SUPP	3
24	24	24	E1 THRU E24	I.C. DIODE 2501	19-10010	2
1	1	1		PLANER MEMORY BOARD	5009715	1
QTY	QTY	QTY.	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

IC TYPE	GND	+5V
SEE AREA BY IC'S USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		

IC PIN LOCATIONS

ITEM NO	WIRE	FROM PT	TO PT

JUMPER LIST

MM11-L

ETCH BOARD REV

REC NO.	ECA NO.	REC NO	ECA NO.

SEMICONDUCTOR CONVERSION CHART

8-DD-MM11-L-B

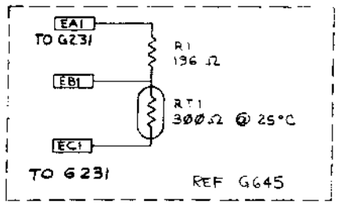
EQUIPMENT CORPORATION

TITLE: STACK SCHEMATIC (H214 8K X 16BIT, H215 8K X 18BIT, H216 8K X 18BIT)

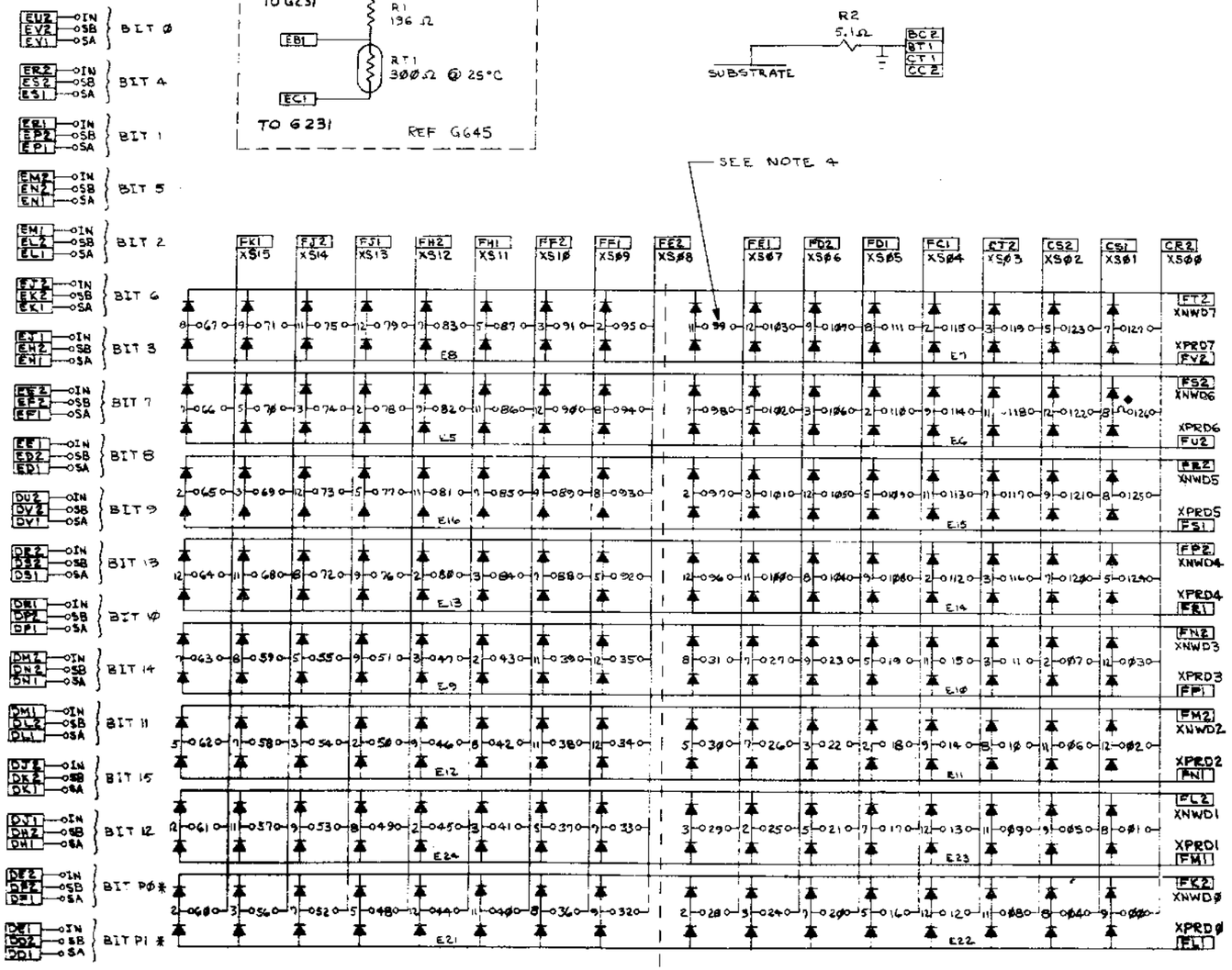
SIZE: E CS: H214-0-1

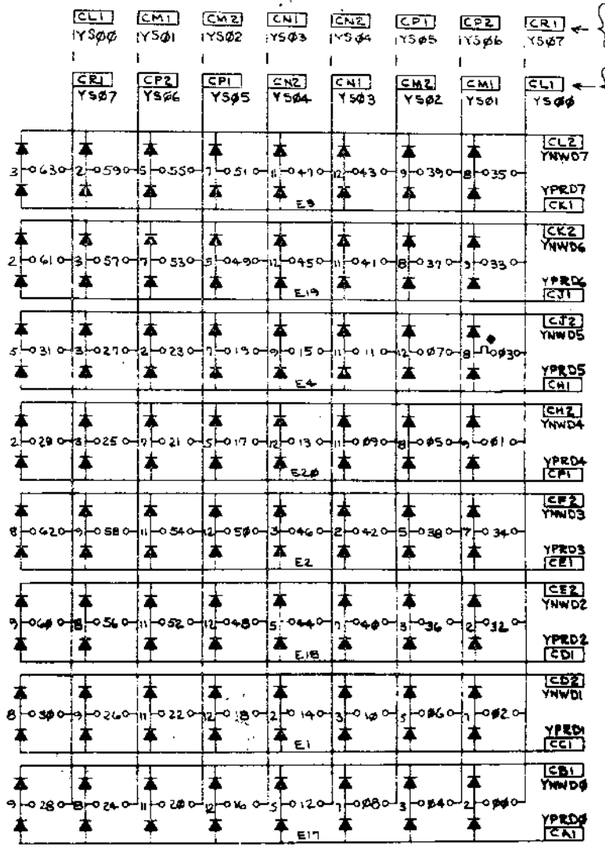
SHEET 1 OF 2

REV: F



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   IC'S E1-E24 ARE TO BE DEC PART# 1910010
2. INDICATES STACK LINE NUMBER. (TYP)
3. INDICATES CURRENT LOOP
4. INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).
5. FOR H215 & H216 ONLY. PØ=PA, P1=PB
6. FOR H216 ONLY.





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

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

MATERIAL —

FINISH —

DRN R. Cadorette 11/23/71
CHK'D R. Wright DATE 1-25-72
ENG P.D. Lamont DATE 1/25/72
MGR ENG P.D. Lamont DATE 1/25/72
PROG R.K. Peterson DATE 1-26-72

NEXT HIGHER ASSY. B-DD-MMII-L-Ø

SCALE —

SHEET 2 OF 2

digital EQUIPMENT CORPORATION

TITLE STACK SCHEMATIC (H214-8K X 16 BIT) (H215-8K X 18 BIT) (H216-8K X 19 BIT)

SIZE D CODE CS NUMBER H214-Ø-1 REV. F

DIST.

REVISIONS		
LTR	CHANGE NO	DIR
F		

NOTES:
* 1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.
** 2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.
*** 3. ACTUAL MATRIX HAS { Y AXIS 8PRD,8NRD,8SS / X AXIS 4K 8PRD,8NRD,8SS / X AXIS 8K 8PRD,8NRD,16SS

UNIBUS

BUS A0L

BUS INITL
BUS DCLO L
BUS DATA(0-15)L
BUS C0L, C1L
BUS MSYNL
BUS SSYNL
BUS A1L, A14L
BUS A15L, 16L, 17L

BUS A2,3,4,5,6,7, 8,9,10,11,12,13

BUS DCLOL

G110 CONTROL & DATA LOOPS MODULE

BYTE MASKING

16 DATA LOOPS

STROBE 0 & 1 H
RESET 0 & 1 L
LOAD 0 & 1 H

DATA FF
INHIBIT DRIVER
SENSE AMP
BUS DRIVER

TIMING CHAIN
MODE CONTROLS
BUS RECEIVERS
DEVICE SELECTOR
INTERLEAVE CONTROL

TINH H
DATA OUT H
DATA H

I 0 H
CLK H
TINH H
TWID H
READ H

BUS RECEIVERS
ADDRESS LATCHES
FIRST LEVEL DECODE

	ADDRESS BITS USED	CKTS	
	A02, 03 I0H	YPRD0-7 YNWD0-7	YDR0-7
ADDRESS	A04,5,6	YSS0-7	Y6S 0-7
TDR, TSS, READ-WRITE			
STACK DISCHARGE CKT READ=GND WRITE=-15V	A07,8,9	XPRD0-7 XNWD0-7	XDR 0-7
X & Y CURRENT GENERATOR (X16, Y16)	A10,11,12,13	XSS 0-15 0-7 FOR 4K	XSS 0-15
V REF CKT			
CURRENT CONTROL & TEMPERATURE COMPENSATION			

DC LO C.KT (-15 V SERIES TRANSISTOR)

G231 DRIVER MODULE

H213, 214 MEMORY STACK
4 OR 8K X 16 BIT

I 16 CKTS
SA
SB

4096 CORES FOR 4K
8192 CORES FOR 8K
} PER BIT

X-Y DIODE MATRICES * **
X DRIVE LINES
Y DRIVE LINES

PRD0
NWD0
SS0
SS1
SS2
SS3
PRD1
NWD1
***

R1
THERMISTER RESISTOR
RT1

REVISIONS: REV | CHANGE NO | DRK

FIRST USED ON OPTION/MODEL: MMII-S	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. L. Cadery	DATE 1/14/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D. J. Mahaffey	DATE 2-16-72	
	ENG. D. Burns	DATE 3-20-72	TITLE: BLOCK DIAGRAM
	PROJ. ENG. D. Howard	DATE 3-31-72	
	PROD. Jack Hamm	DATE 4-2-72	
MATERIAL	NEXT HIGHER ASSY. B-DD-MMII-S	SIZE D	CODE DBD	NUMBER MMII-S-2	REV.
FINISH	SCALE		
	SHEET OF 2	DIST	

DEC FORM NO. DRD 102-B

MEMORY BANK	MACHINE ADDRESS	W1 ✳	W5 A13 △	W6 □ A14 OR A81	W4 A15	W3 A16	W2 A17L	△ W9 4K-8K	W10	W7-8 INTER LEAVE □	W11 PROTECT
0-4K	000000-017776	IN	IN	IN	IN	IN	IN			WHEN USED AS A 4K OR A NON INTER-LEAVED 8K JUMPERS ARE W8 W7	WHEN W11 IS INSTALLED IT MAKES THE MEMORY DO A DATI RE-GARDLESS OF THE STATE OF THE CDO AND CB1 LINES
4-8K	020000-037776		OUT	IN	IN	IN	IN				
8-12K	040000-057776		IN	OUT	IN	IN	IN				
12-16K	060000-077776		OUT	OUT	IN	IN	IN				
16-20K	100000-117776		IN	IN	OUT	IN	IN				
20-24K	120000-137776		OUT	IN	OUT	IN	IN				
24-28K	140000-157776		IN	OUT	OUT	IN	IN				
28-32K	160000-177776		OUT	OUT	OUT	IN	IN				
32-36K	200000-217776		IN	IN	IN	OUT	IN				
36-40K	220000-237776		OUT	IN	IN	OUT	IN				
40-44K	240000-257776		IN	OUT	IN	OUT	IN				
44-48K	260000-277776		OUT	OUT	IN	OUT	IN				
48-52K	300000-317776		IN	IN	OUT	OUT	IN				
52-56K	320000-337776		OUT	IN	OUT	OUT	IN				
56-60K	340000-357776	IN	IN	OUT	OUT	OUT	IN			WHEN USED AS AN 8K INTERLEAVED (2-8K BANKS REQUIRED) JUMPERS ARE W8 W7	
60-64K	360000-377776		OUT	OUT	OUT	OUT	IN				
64-68K	400000-417776		IN	IN	IN	IN	OUT				
68-72K	420000-437776		OUT	IN	IN	IN	OUT				
72-76K	440000-457776		IN	OUT	IN	IN	OUT				
76-80K	460000-477776		OUT	OUT	IN	IN	OUT				
80-84K	500000-517776		IN	IN	OUT	IN	OUT				
84-88K	520000-537776		OUT	IN	OUT	IN	OUT				
88-92K	540000-557776		IN	OUT	OUT	IN	OUT				
92-96K	560000-577776		OUT	OUT	OUT	IN	OUT				
96-100K	600000-617776		IN	IN	IN	OUT	OUT				
100-104K	620000-637776		OUT	IN	IN	OUT	OUT				
104-108K	640000-657776		IN	OUT	IN	OUT	OUT				
108-112K	660000-677776		OUT	OUT	IN	OUT	OUT				
112-116K	700000-717776		IN	IN	OUT	OUT	OUT				
116-120K	720000-737776		OUT	IN	OUT	OUT	OUT				
120-124K	740000-757776		IN	OUT	OUT	OUT	OUT				
DEVICE USED AS 4K MEMORY △		IN	X	X	X	X	X	IN	OUT		

NOTES:

✳1. W1 IS FOR TEST PURPOSES ONLY

△2. WHEN USED AS AN 8K BANK, W5 AND W10 MUST BE INSTALLED AND W9 MUST BE OUT.
WHEN USED AS A 4K BANK W10 MUST BE OUT, W9 MUST BE IN AND W5 DETERMINES THE BANKS LOCATION ON THE BUS.

□3. THIS MEMORY CAN ONLY BE INTERLEAVED AS 16K (TWO ADJACENT, CONTIGUOUS ADDRESS 8K BANKS). WHEN NOT INTER-LEAVED (SOLID JUMPERS ON W7 AND W8) THE DEVICE SELECT IS AS SHOWN IN TABLE 1 USING A14. WHEN TWO 8K BANKS ARE INTER-LEAVED W7 AND W8 MUST BE AS SHOWN IN DOTTED LINES IN TABLE 1. ALSO IN TABLE 1, A81 NOW GOES TO THE DEVICE SELECTOR GATE CONTROLLED BY W6. THE TWO BANKS MUST HAVE W6 IN ON ONE BANK AND OUT ON THE OTHER.

4. FIGURE 1 SHOWS THE PHYSICAL LOCATION OF THE JUMPERS ON THE G11Ø IF THE MODULE WERE LYING ON THE PRINT WITH COMPONENTS UP AND CONNECTORS TOWARD BOTTOM OF PRINT. W7 & W8 ARE AS SHOWN SCHEMATICALLY ON D-CS-G11B-0-1

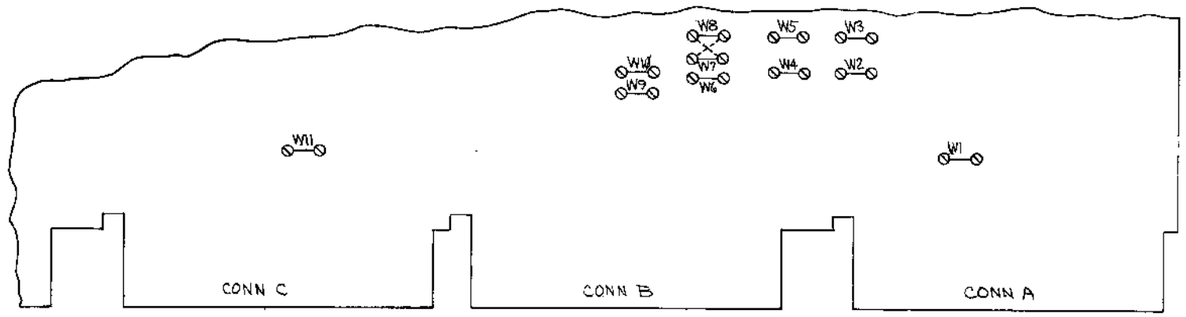


FIGURE 1
G11Ø JUMPER PHYSICAL LOCATION
SEE NOTE 4

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MM11-S		PARTS LIST		

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

DRN K. Carberry 5/15/72
CHK'D L. Raleigh 5-25-72
ENG. P. Durant 5-22-72
PROJ. ENG. P. Durant 5-22-72
PROD. E. Yoshi Kamura 6-2-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BLOCK DIAGRAM (DEVICE DECODING)

NEXT HIGHER ASSY. B-DD-MM11-S-0
SIZE D | CODE BD | NUMBER MM11-S-2 | REV
SCALE —
SHEET 2 OF 2 | DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO DRD 107-A

SIZE D | CODE BD | NUMBER MM11-S-2 | REV

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

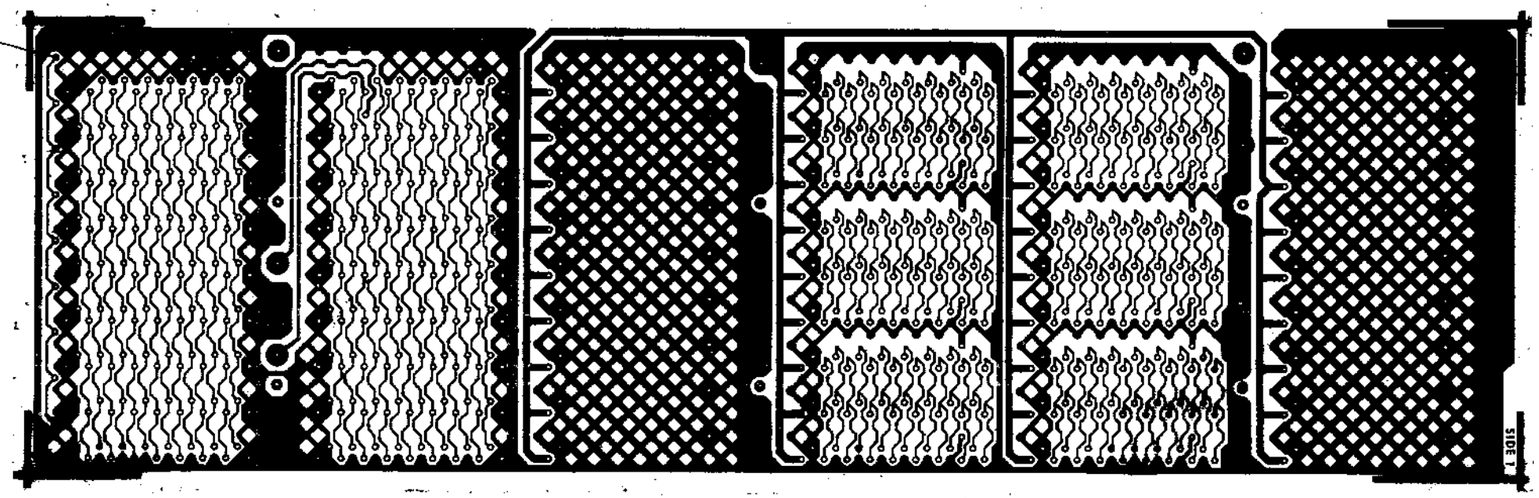
PARTS LIST

MADE BY F. CARBERRY	CHECKED J. Hayes	SECTION
DATE 1/5/72	DATE 1-25-72	
ENG P. Durant	PROD R.K. Peterson	ISSUED SECT.
DATE 1/25/72	DATE 1-26-72	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION MM11-L	MM11-K
1	B-DD-H213-Ø	H213 MEMORY STACK (4K X 16)		1
2	E-CS-G231-Ø-1	MEMORY DRIVER	1	1
3	E-CS-G11Ø-Ø-1	CONTROL & DATA LOOPS	1	1
4	B-DD-H214-Ø	H214 MEMORY STACK (8K X 16)	1	

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MEMORY, MM11	//	A	PL	MM11-L-Ø		
	SHEET 1 OF 1	DIST.				

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



BLOCK SIDE (SIDE 1)

REV.	REVISIONS	CHK	
A	CHANGE NO. 5409959-00001		S. ROTHMAN 8-23-72
B	5409959-00002		S. ROTHMAN 9-30-72
C	5409969-00003		C. BLASI 3-5-73
			C. BLASI 4-5-73
			C. VALLIANT 4-10-73

BRUNING 40-107 15968

DEC FORM NO. DRC 100-A

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN. K. I. Wells	DATE 8-23-72	
CHK'D. [illegible]	DATE 8/31/72	
ENG. S. ROTHMAN	DATE 8/31/72	
PROJ. ENG. S. ROTHMAN	DATE 8/31/72	
PROD. R. PETERSON	DATE 8/31/72	
NEXT HIGHER ASSY. E-AD7003872-0-0		
SCALE 2/1		
SHEET 1 OF 2		

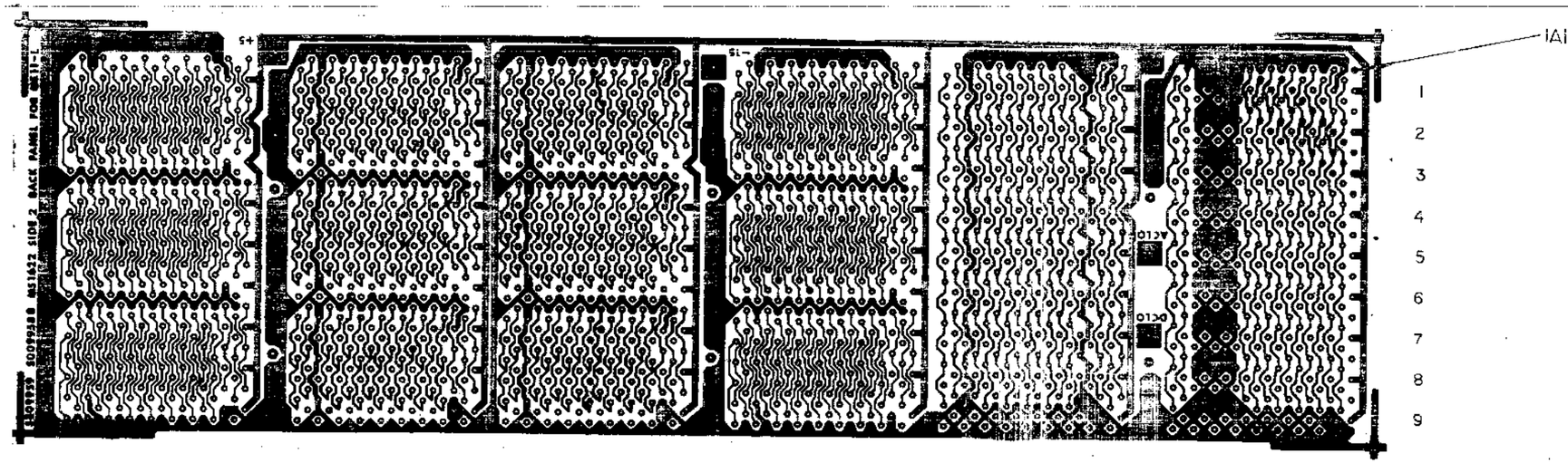
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CIRCUIT SCHEMATIC

SIZE	CODE	NUMBER	REV.
C	CS	5409959-0-1	C

DIST.

REV.	C
NUMBER	5409959-0-1
SIZE	CODE
C	CS



SOLDER SIDE (SIDE 2)

REVISIONS	CHANGE NO.	CHK	REV.

BRUNING 40-107 15968

DEC FORM NO. DRC 100-A

FIRST USED	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS
FRACTIONS
ANGLES
BREAK SURFACE
MATERIAL

DRAWN DATE 8-23-72
CHECKED DATE 8/31/72
ENGR DATE 8/31/72
MFG DATE
QA DATE 9/7/72
NEXT HIGHER ASSY.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CIRCUIT SCHEMATIC

SIZE	CODE	NUMBER	REV.
C	CS	54-09959-0-1	C

DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY L. D. ANDERSON	CHECKED J. O'LOUGHLIN	SECTION
DATE 9-29-72	DATE 9-29-72	1
ENG J. O'LOUGHLIN	PROD G.L. STRINGER	ISSUED SECT.
DATE 9-29-72	DATE 9-29-72	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION MFII-L
1	A-PL-MM11-L-0	16 BIT 18 MIL MEMORY	1
2	E-AD-7008872-0-0	BACK PLANE ASSY	1
3	A-PL-M920-0-0	INTERNAL BUS CONN ASSY	1
4	9009168	SCREW, PAN HD. "NYLOC" #6-32	1
~~5~~	~~C-MD-7410871-0-0~~	~~SUPPORT BAR, RIGHT~~	~~1~~
~~6~~	~~C-MD-7410870-0-0~~	~~BRKT, CONN BLOCK TOP~~	~~1~~
7	C-PS-120698-0	GUIDE CARD CENTER	6
8	9009070	SCR PHIL FLAT HD #8-32 X .81	12
9	9107688-0-0	24 AWG SOLID WIRE BLK.	A/R
10	9006766	LOCKING TERMINAL	1
11	1209856-02	MODULE HOLDER	A/R
12	1700021-02	ELECTRO MAGNETIC SHIELD	A/R
13*	D-IA-7009560	MF11-L/LP OPTION HARNESS *	1

NOTE: * IF FIRST MEMORY IN 11/35-11/40 USE 7009565. FOR 11/45-11/50 WITH SERIAL NO. LESS THAN 2000 USE HARNESS 7009242. FOR 11/35-11/40 WITH SERIAL NO. LESS THAN 6000 USE 7009103(FIRST MEMORY) OR 7009174. FOR H960-D,E WITH NO. LESS THAN 7000 USE HARNESS 7009174.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MF11-L MEMORY (PL)	D-UA-MF11-L-0	A	PL	MF11-L-0	D	MF11L-00007
	SHEET 1 OF 1	DIST.				

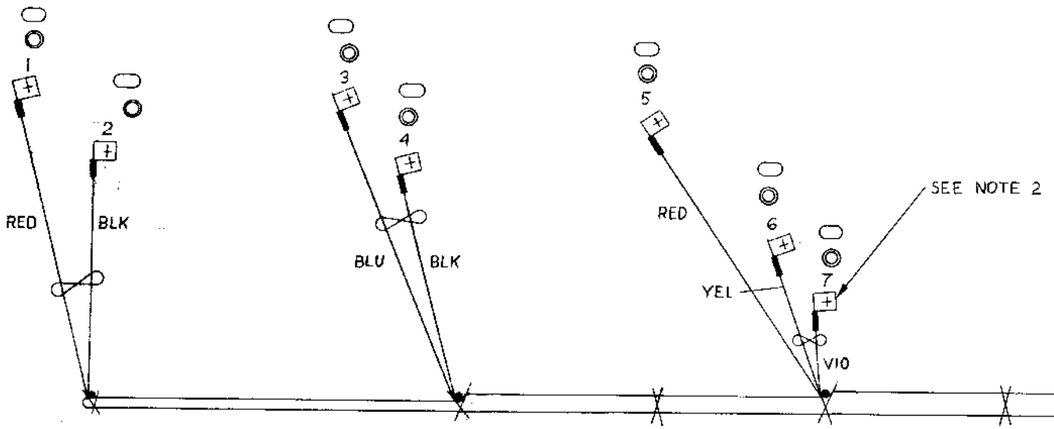
DEC FORM DEC 16-(325)-1031-N870
DRA 110

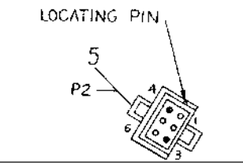
WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
3	14	RED	1		8,10	13	P1-4	7	+5
TWP	14	BLK	2			12	P1-7		GND
2	14	BLU	3			10	P1-13		-15
TWP	14	BLK	4			11	P1-9		GND
4	14	RED	5			14	P1-1		+5
1	18	YEL	6			8	P2-4		AC LO
TWP	18	VIO	7		8,10	9	P2-3	7	DC LO

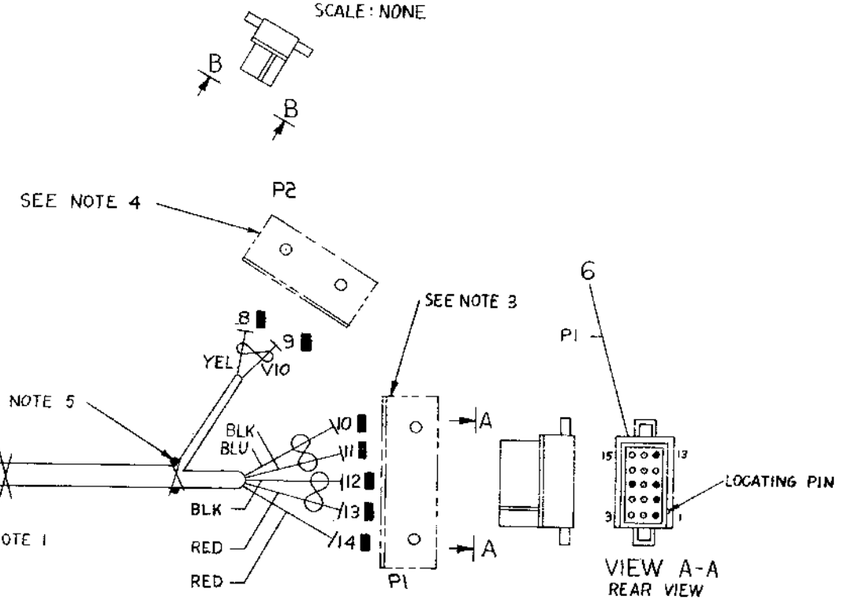
NOTES:

1. USE TIE WRAPS ITEM #9 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAKOUT POINT.
2. ATTACH MALE FASTON DEC # (9008219-0) WITH #4 WOOD SCREWS (7 PLACES).
3. USE CONN. BRKT. #C-MD-9305761-H15-0, MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-15.
4. USE CONN. BRKT. #C-MD-9305761-H6-0, MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-06.
5. DOT (●) INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS





VIEW B-B
REAR VIEW
SCALE: NONE



VIEW A-A
REAR VIEW
SCALE : NONE

SCALE
0 INCHES 6 INCHES 12 INCHES

DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

A/R	TUBING, SHRINKABLE 3/16 ID X 9/16	9107305-02	10
A/R	WRAP, TIE	9007031	9
7	CONN, SOLDERLESS	9009262-0	8
7	PIN, MALE	1209378-01	7
1	HOUSING, CONN 15 PIN	1209351-15	6
1	HOUSING, CONN 6 PIN	1209351-06	5
A/R	WIRE #14 AWG RED	9107370-22	4
A/R	WIRE #14 AWG TWP BLK/RED	9107440-02	3
A/R	WIRE #14 AWG TWP BLK/BLU	9107440-06	2
A/R	WIRE #18 AWG TWP YEL/VIO	9107430-47	1

FIRST USED ON OPT / MOD	SYM	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. R. Albright DATE 9-26-73
CHK. DATE 10/1/73
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 10/5/73

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MFII-L/LP POWER HARNESS

MATERIAL: SEE PARTS LIST
FINISH
NEXT HIGHER ASSY.
SCALE 1/1
SHEET 1 OF 1

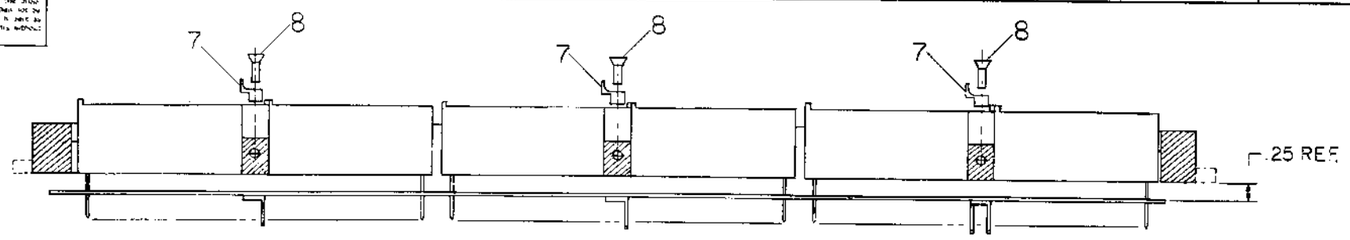
SIZE	CODE	NUMBER	REV.
D	1A	7009560-0-0	

DIST.

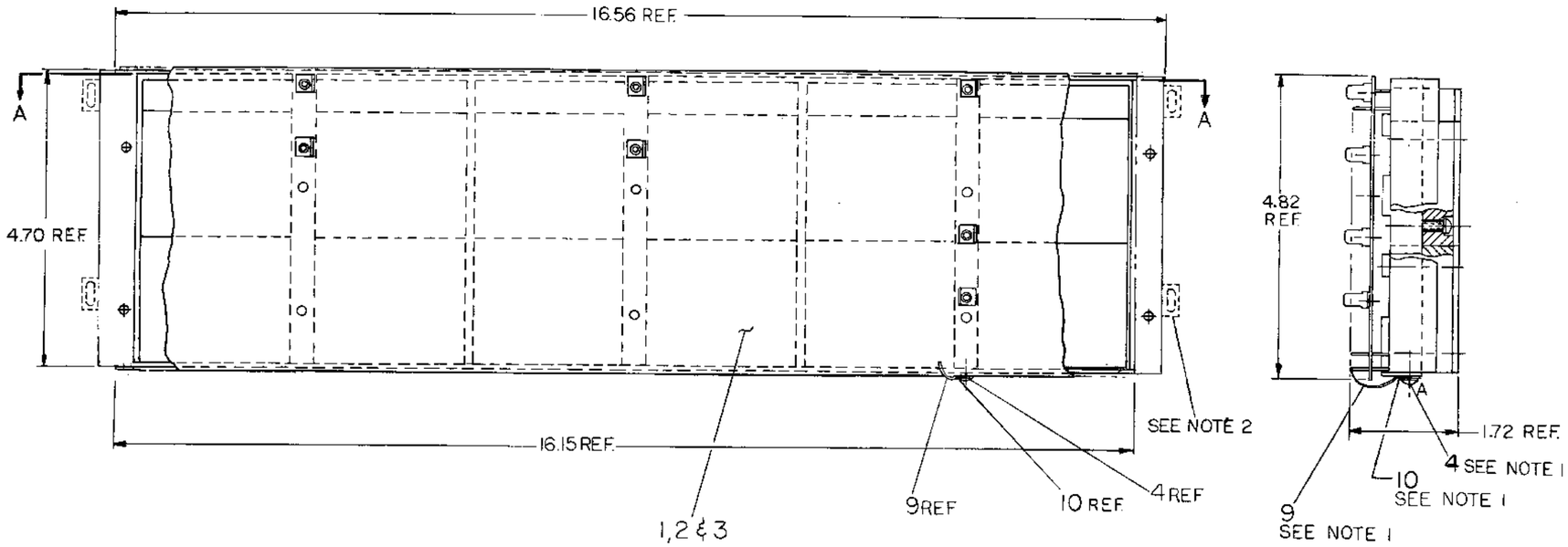
REVISIONS: REV. | CHANGE NO. | CHK

DEC 10840 MC SRD 12.4

7009560-0-0 D 1A



SECTION A-A



NOTES:

1. WIRE WRAP ONE END OF ITEM #9 TO PIN 8Ø962 AND SOLDER THE OTHER END TO ITEM #10 WHICH IS MOUNTED AS SHOWN.
2. IF LOGIC FRAMES DEC P/N 1210103 OR 1210991 ARE USED, THE MOUNTING EARS ARE TO BE MACHINED OFF FLUSH WITH THE SIDES OF THE CASTING.

REVISIONS				
DASH	CHANGE NO.	REV		
	MFII-00002 ORIGINATED	A	2-28-73	J.F.O'LOUGHLIN
P1	MFIL-00003	B	3-5-73	J.F.O'LOUGHLIN
P1	MFIL-00006	C	3-15-73	B. MINOR
P1	MFIL-00007	D	3-29-73	P. DURANT

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

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

MATERIAL —

FINISH —

DRN. Beasley 2	DATE 2.28.73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 3-5-73	
ENG.	DATE 3-9-73	
PROJ. ENGR.	DATE 3-16-73	
MGR.	DATE 3-16-73	

TITLE: MFII-L MEMORY

NEXT HIGHER ASSY.: B-DD-MFII-L

SCALE 1/1

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV
D	UA	MFII-L-0	D

DIST

DRAWING 40-107 15mm

DEC-10PM-NO DRD 100-A

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-KY11-D	(SHEET 1 ONLY)	
PARTS LIST	A-PL-KY11-D-Ø		
KY11-D CONSOLE	D-CS-54Ø97Ø1-Ø-1		
I/O CABLES (BCØ8R)	C-UA-BCØ8R-Ø3-Ø		

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: KY11-D	PRINT SET TYPE: KY11-DJ
KY11-D	KY11-D CONSOLE	X	
KY11-DJ	INDUSTRIAL CONSOLE		X

REVISIONS	DATE	CHG. NO.	REV
	11-73	KY11D-1	A
	1/74	KY11D-2	B

USED ON OPTION/MODEL

PDP-11/40

DRN.	DATE	9/26/72
CHK'D	DATE	9/27/72
PROJ ENG.	DATE	9/27/72
PROD.	DATE	9-29-72
FIELD SERV.	DATE	

SHEET 1 OF 2

TITLE: KY11-D CONSOLE

SIZE	CODE	NUMBER	REV
B	DD	KY11-D	B

DIST

DRB 106

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J7 Houghlin	CHECKED J7 Houghlin	SECTION
DATE 9/26/72	DATE 9/27/72	
ENG J7 Houghlin	PROD [illegible]	ISSUED SECT.
DATE 9/27/72	DATE 9-28-72	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION KY11-D	KY11-DJ
1	D-CS-54Ø97Ø1-Ø-1	KY11-D CONSOLE	1	—
2	C-UA-BCØ8R-Ø3-Ø	I/Ø CABLES (BCØ8R)	2	2
3	D-IA-7411317-Ø-Ø	INDICATOR PANEL INDUSTRIAL	—	1
4	D-CS-54Ø97ØI-I-I	KY11-DJ CONSOLE	—	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
KY11-D CONSOLE (PL)	SHEET 1 OF 1	A	PL	KY11-D-Ø	B	KY11D-00002
		DIST.	5			

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

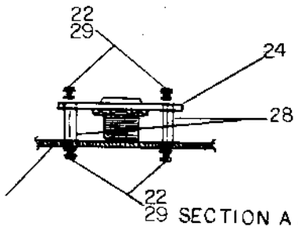
NOTES:

1. KYII-D CONSOLE IS CONNECTED TO THE KDII-A BY MEANS OF TWO BC∅8R CABLES TO CONNECTORS J1 AND J2. BOTH LOGIC SIGNALS AND POWER ARE SO CONDUCTED. INSTALLATION INFORMATION IS NOTED ON SCHEMATIC AND ETCHED CIRCUIT BOARD.
2. AC POWER CONTROL IS PROVIDED BY SWITCH CLOSURE ON CONNECTORS J3 AND J4.
3. PROCESSOR SIGNAL PREFIX NOTATION (K5-7 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENTS A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST. THE KYD PREFIX INDICATES SIGNALS ORIGINATING ON THE KYII-D CONSOLE BOARD.
4. PANEL INFORMATION ON SWITCH AND LIGHT FUNCTIONS ARE NOTED IN THE SCHEMATIC IN PARENTHESIS ( ) AND ON ETCHED CIRCUIT BOARD
5. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS: CAPACITANCE IS IN PICOFARADS.
6. FOR SWITCH HANDLE REMOVAL TOOL, SEE C-MD-9606145-0-0

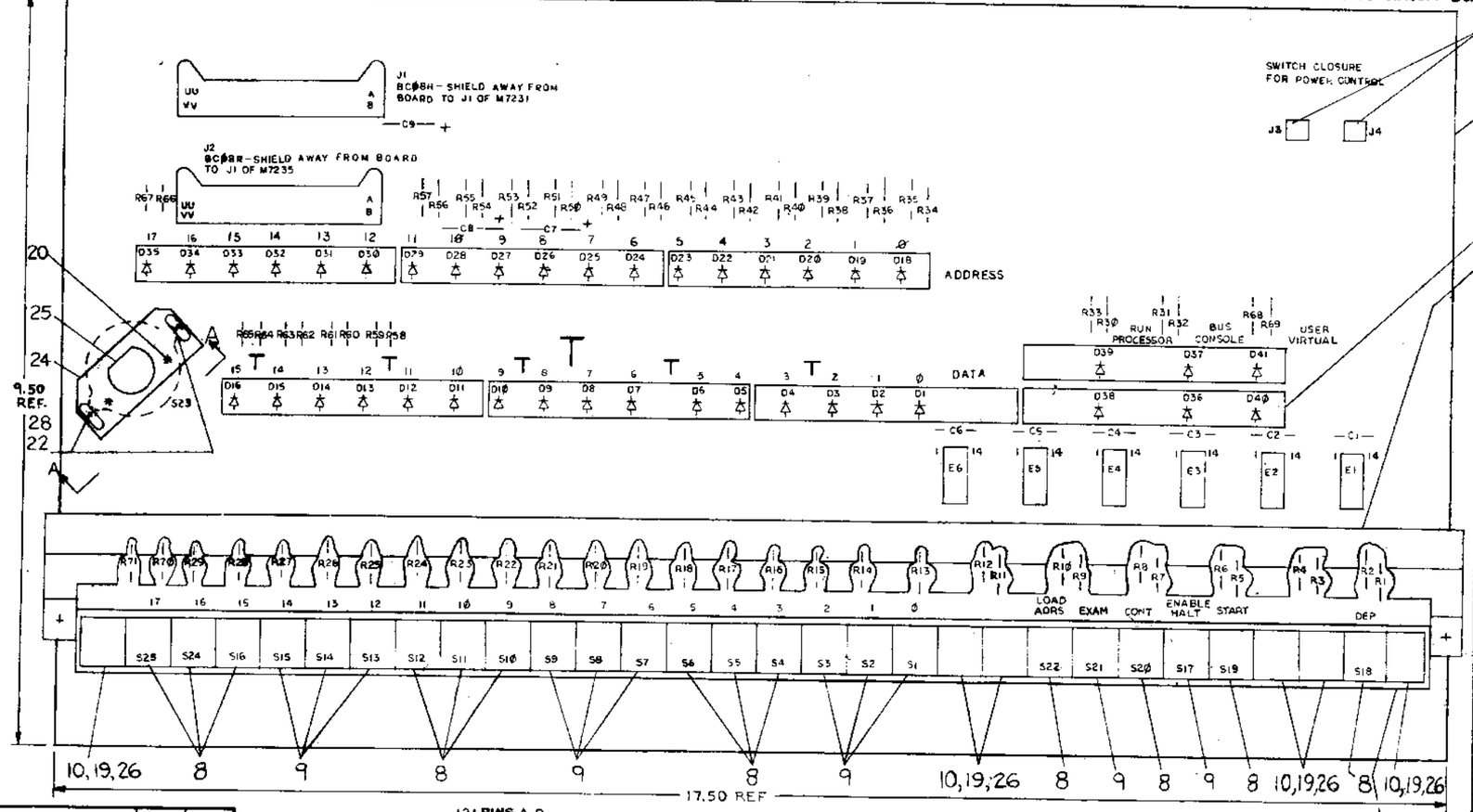
LEGEND

VARIATION	ITEM 8	ITEM 9	USED ON
5409701-0	1210796-01, ROSE	1210796-02, MAGENTA	KYII-D
5409701-1	1210796-08, DC BLUE	1210796-09, AC RED	KYII-DJ

* ITEM 23, KEPS NUT, IS MOUNTED AGAINST BRACKETS ON SIDE 1.



SECTION A A



K5-7 SWITCH +5V H — J2: PINS A, B

K5-7 GND L — J2: PINS D, F, L, P, S, U

C1 .01MF, C2 .01MF, C3 .01MF, C4 .01MF, C5 .01MF, C6 .01MF, C7 6.8MF, C8 6.8MF

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

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
4		#6 INT. TOOTH LOCKWASHER	9006633	29
2		1/4 AF x 11/16 #6-32 HEX SPACER	9006858	28
2		EYELET G54-5	9009000	27
6		LOCKWASHER #8 INT. TOOTH	9006634	26
1	S23	LOCK - 3 POS - 90° - INDEX	1210754	25
1	S23	BRACKET, SWITCH (LOCK)	7411613	24
4		NUT, #6-32 KEPS	9006560	23
8		SCREW, SLOTTED BINDER HD 6-32 X 5/16	9006021-4	22
1		BRACKET, SUPPORT	7409895	21
2		NUT, 4-40 x 3/16 AF x 1/16 THK	9009280	20
6		SCR 8-32 X 5/16 SELF-TAP	9009540	19
16		SCR #4 X 5/16 LG SELF TAPPING	9009236	18
2	J3, J4	TAB, FASTON	9007112	17
1		SWITCH BRACKET	7409270-01	16
6	E1 THRU E6	I.C DEC 7410	1905576	15
40	R30 THRU R69	RES 180, 1/4W ±5%	1301322	14
31	R1 THRU R29, R70, R71	RES 1K, 1/4W ±5%	1300365	13
5	S18 THRU S22	SWITCH, SPDT, MOMENTARY	1210841	12
19	S1 THRU S17, S24, S25	SWITCH, SPDT, SUSTAINED	1210840	11
6		KNOB, GREY	1210825	10
11		KNOB	SEE LEGEND	9
13		KNOB	SEE LEGEND	8
8		LED, HOLDER, LONG	1210795-02	7
1	S23	SWITCH ROTARY	1210753	6
2	J1, J2	CONN 40 PIN	1209941	5
40	D1 THRU D16, D18 THRU D41	DIODE LIGHT EMITTING SSL-22L2	1110864	4
3	C7, C8, C9	CAP 6.8MF 35V, ±10% TANT	1005306	3
6	C1 THRU C6	CAP .01MF 100V, ±20%	1001610	2
1		ETCHED CIRCUIT BOARD	5009700	1

PARTS LIST — ETCH BOARD REV F

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: PDP 11/40

REV	CHANGE NO.	CHK	REVISIONS
K	5409701-00007	W. MINOR	5-4-74
J	5409701-00006	W. MINOR	2-6-74
H	5409701-00005	F.E.LIA	1-10-74
G	5409701-00004	J.O'LOUGHLIN	12-4-73
F	5409701-00004	J.O'LOUGHLIN	9/14/73
E	5409701-00003	R.D. HALE	4/10/73
D	5409701-00002	J.O'LOUGHLIN	10-30-72
C	5409701-00001	J.O'LOUGHLIN	8/23/72
B	ORIGINATED		

DRN.	DATE
	7-15-72
CHECKED	DATE 8/22/72
ENG	DATE
PROJ ENG	DATE 8/22/72
PROJ MGR	DATE 8/22/72

NEXT HIGHER ASSY: KYII-D

SCALE —

SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: KYII-D CONSOLE

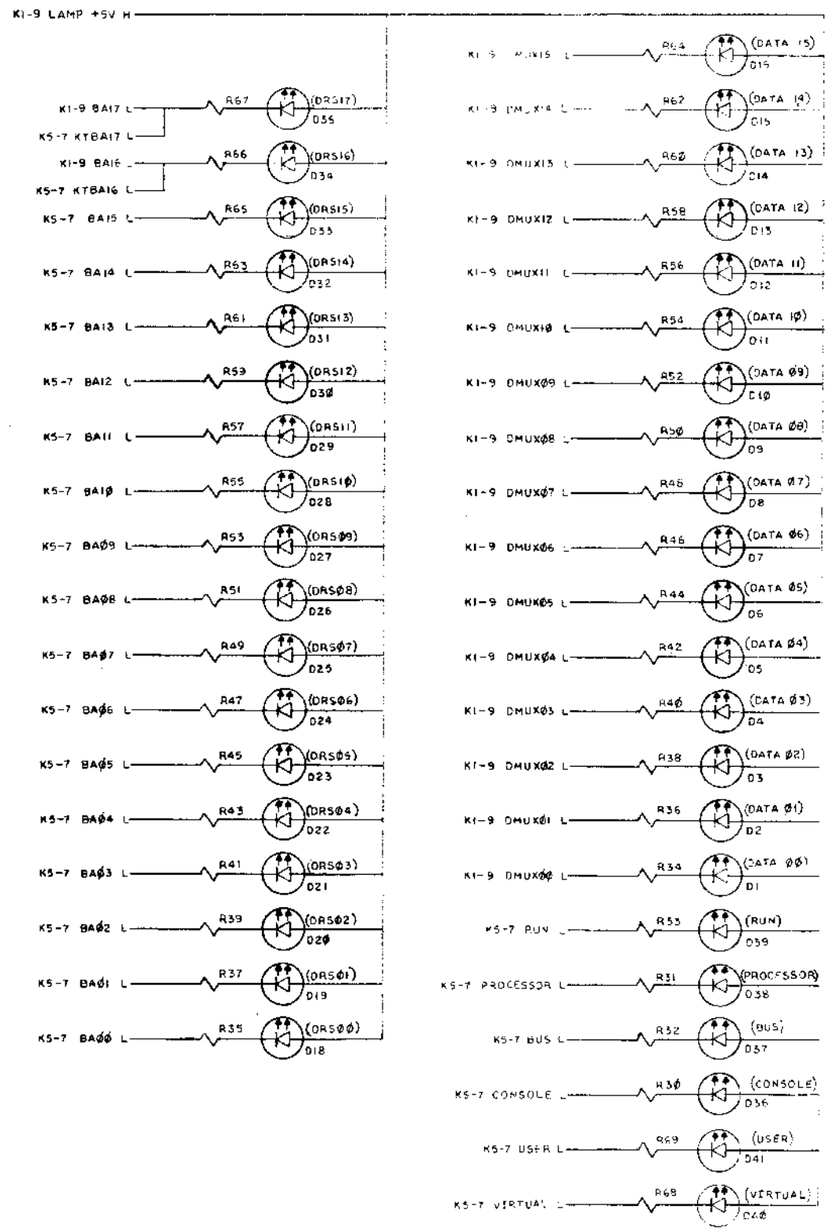
SIZE	CODE	NUMBER	REV.
D	CS	5409701-0-1	K

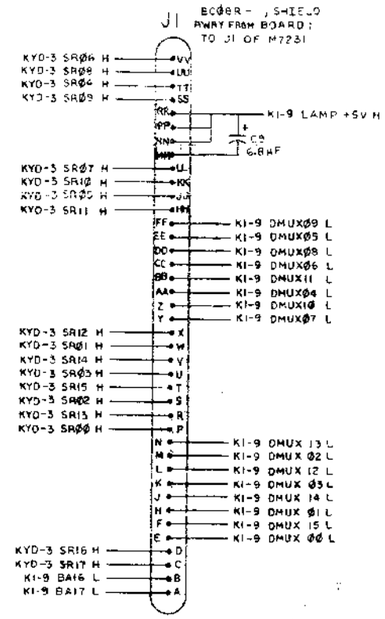
DIST.

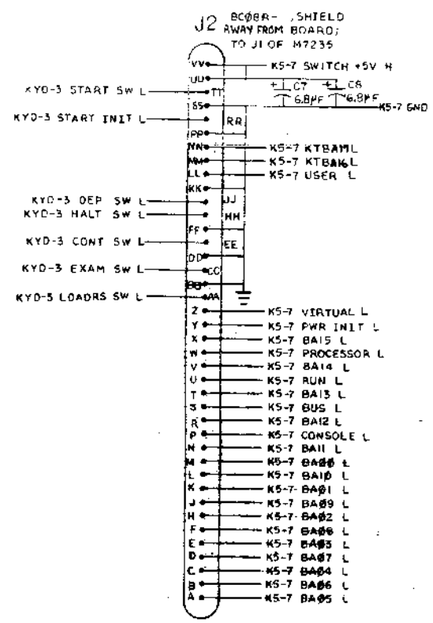
5409701-0-1 REV K

DEC FORM NO. DRB-1754

BRUNING 40-522 18689







NOTES:

1. CONSOLE LABELS ARE NOTED IN PARENTHESIS.
2. CABLE CONNECTION INFORMATION IS NOTED ON SCHEMATIC AND ETCHED BOARD, CABLES MUST BE CONNECTED WITH SHIELD AWAY FROM BOARD.

REVISIONS			
REV	CHANGE NO	CHK	

BEGINNING 40-522 1940

DEC-04M-ND
DRD 105-B

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
POP 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	R Smith	DATE 2-20-72
CHK'D		DATE 6/27/72
ENG		DATE 6/23/72
SRG ENG		DATE 6/23/72
MGR		DATE 6/24/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KYII-D CONSOLE DISPLAY

NEXT HIGHER ASSY. KY2-2

KYII-D

SIZE	CODE	NUMBER	REV
D	CS	5409701-0-1	K

SCALE —
SHEET 2 OF 3
DIST.

K5-7 SWITCH +5V H

S19 (START) — R3 1K, R4 1K — 7410 E2 — KYD-3 START SW L; KYD-3 START INIT L

S21 (EXAM) — R9 1K, R10 1K — 7410 E5 — KYD-3 EXAM SW L

S18 (DEP) — R2 1K, R1 1K — 7410 E1 — KYD-3 DEP SW L

S17 (ENABLE) (HALT) — R5 1K, R6 1K — 7410 E3 — KYD-3 HALT SW L

S22 (LOAD) (ADRS) — R11 1K, R12 1K — 7410 E6 — KYD-3 LOADRS SW L

S20 (CONT) — R7 1K, R8 1K — 7410 E4 — KYD-3 CONT SW L

K5-7 PWR INIT L

SWITCH CLOSURE FOR POWER CONTROL

J3 J4

(LOCK) (POWER) (OFF)

S23 TWO POLE, THREE POSITION, KEY SWITCH

(LOCK) (POWER) (OFF)

S25 (SR17) — R71 1K — KYD-3 SR17 H

S24 (SR16) — R70 1K — KYD-3 SR16 H

S16 (SR15) — R29 1K — KYD-3 SR15 H

S15 (SR14) — R28 1K — KYD-3 SR14 H

S14 (SR13) — R27 1K — KYD-3 SR13 H

S13 (SR12) — R26 1K — KYD-3 SR12 H

S12 (SR11) — R25 1K — KYD-3 SR11 H

S11 (SR10) — R24 1K — KYD-3 SR10 H

S10 (SR09) — R23 1K — KYD-3 SR09 H

S9 (SR08) — R22 1K — KYD-3 SR08 H

S8 (SR07) — R21 1K — KYD-3 SR07 H

S7 (SR06) — R20 1K — KYD-3 SR06 H

S6 (SR05) — R19 1K — KYD-3 SR05 H

S5 (SR04) — R18 1K — KYD-3 SR04 H

S4 (SR03) — R17 1K — KYD-3 SR03 H

S3 (SR02) — R16 1K — KYD-3 SR02 H

S2 (SR01) — R15 1K — KYD-3 SR01 H

S1 (SR00) — R14 1K — KYD-3 SR00 H

NOTES:

1. SWITCHES ARE SHOWN IN THEIR NON-ACTIVE OR ZERO POSITION: FOR ALL DATA SWITCHES (SR) THIS IS DOWN; FOR ALL CONTROL SWITCHES, EXCEPT DEP, THIS IS UP.
2. CONSOLE LABELS ARE SHOWN IN PARENTHESIS

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.
PDP 11		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN	DATE	2-15-72
CHK	DATE	6/27/72
ENG	DATE	6/28/72
PROJ ENG	DATE	6/28/72
PROJ LDR	DATE	6/28/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KY11-D CONSOLE SWITCHES KYD-3

NEXT HIGHER ASSY: KY11-D

SCALE

SHEET 3 OF 3

SIZE	CODE	NUMBER	REV
D	CS	5409701-0-1	K

DIST

SIZE CODE D CS — NUMBER 5409701-0-1 — REV K

WIRE TABLE

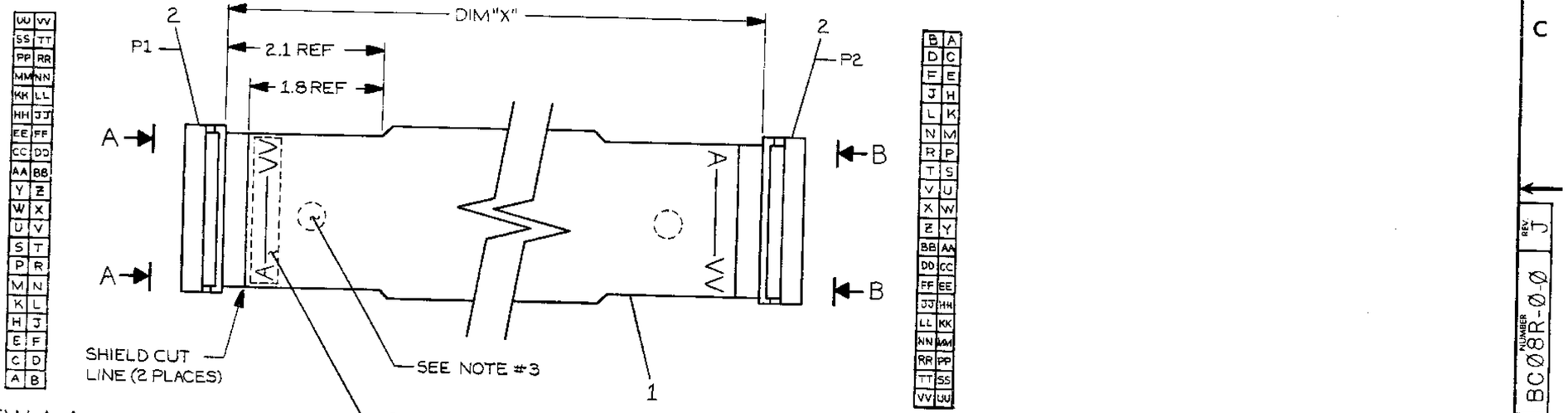
FROM	TO	FROM	TO
P1-A	P2-VV	P1-Y	P2-X
P1-B	P2-UU	P1-Z	P2-W
P1-C	P2-TT	P1-AA	P2-V
P1-D	P2-SS	P1-BB	P2-U
P1-E	P2-RR	P1-CC	P2-T
P1-F	P2-PP	P1-DD	P2-S
P1-H	P2-NN	P1-EE	P2-R
P1-J	P2-MM	P1-FF	P2-P
P1-K	P2-LL	P1-HH	P2-N
P1-L	P2-KK	P1-JJ	P2-M
P1-M	P2-JJ	P1-KK	P2-L
P1-N	P2-HH	P1-LL	P2-K
P1-P	P2-FF	P1-MM	P2-J
P1-R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

LEGEND

NUMBER	DIM "X"	PRECUT LENGTH
BCØ8R-Ø1	1FT	1FT 1.5 IN ± 1 IN
BCØ8R-Ø2	2FT	2FT 1.5 IN ± 1 IN
BCØ8R-Ø3	3FT	3FT 1.5 IN ± 1 IN
BCØ8R-Ø4	4FT	4FT 1.5 IN ± 1 IN
BCØ8R-Ø6	6FT	6FT 1.5 IN ± 2 IN
BCØ8R-Ø8	8FT	8FT 1.5 IN ± 2 IN
BCØ8R-1Ø	1ØFT	1ØFT 1.5 IN ± 2 IN
BCØ8R-12	12FT	12FT 1.5 IN ± 3 IN
BCØ8R-2Ø	2ØFT	2ØFT 1.5 IN ± 3 IN
BCØ8R-25	25FT	25FT 1.5 IN ± 3 IN
BCØ8R-3Ø	3ØFT	3ØFT 1.5 IN ± .6FT
BCØ8R-5Ø	5ØFT	5ØFT 1.5 IN ± 1FT
BCØ8R-6Ø	6ØFT	6ØFT 1.5 IN ± 1.2FT
BCØ8R-75	75FT	75FT 1.5 IN ± 1.5FT
BCØ8R-A0	1ØØFT	1ØØFT 1.5 IN ± 2FT
BCØ8R-A3	13ØFT	13ØFT 1.5 IN ± 2.6FT
BCØ8R-A6	16ØFT	16ØFT 1.5 IN ± 3.2FT

NOTES:

1. ASSEMBLE THIS CABLE PER PROCESS SPEC #7606485-Ø-Ø.
2. CONNECTOR LEGEND IDENTIFICATION TO BE PLACED ON SHIELD SIDE OF CABLE IN THIS AREA AS SHOWN.
3. INSPECTION & TEST STAMPS TO BE PLACED AT EACH END OF THE CABLE ASSEMBLY.



VIEW A-A
CONN. LEGEND REF.

VIEW B-B
CONN. LEGEND REF.

REVISIONS			
CHK	CHANGE NO.	REV	
	BCØ8R-00004	J	REVISED & REDRAWN 3-6-74

P. GARDNER 7/17/73

2	CONNECTOR, 4Ø SOCKET	1211206	2
A/R	CABLE, 4Ø COND. FLAT W/SHIELD	17ØØØ4	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL

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. D. FONTAINE	DATE 8-28-70	
CHK'D. J. FLEMING	DATE 8-28-70	
ENG. P. GARDNER	DATE 9-3-70	
PROJ. ENG. P. GARDNER	DATE 9-3-70	
PROD. DONALD	DATE 9-4-70	
NEXT HIGHER ASSY.		
SCALE NONE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
BCØ8R
I/O CABLE

SIZE	CODE	NUMBER	REV.
C	UA	BCØ8R -Ø-Ø	J

DIST.

SIZE C CODE UA NUMBER BCØ8R-Ø-Ø REV. J

SEC FORM NO
SRC 100-B

DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

PARTS LIST

MADE BY G. FLANDERS
DATE 7/17/72
ENG W. Munn
DATE 9-22-72

CHECKED C. Fessenden
DATE 9/22/72
PROD W. Stough
DATE 9-26-72

SECTION 1
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	11/40-CA	11/40-CB	11/40-CS	11/40-CT	11/40 AC	11/40AD
1	A-PL-KD11-A-0	KD11-A PROCESSOR	1	1	1	1	1	1
2	E-UA-H742-A-Ø	POWER SUPPLY, H742A	1	-	1	-	1	-
3	E-UA-H742-B-Ø	POWER SUPPLY, H742B	-	1	-	1	-	1
4	E-UA-H744-Ø-Ø	+5 REGULATOR	3	3	3	3	3	3
5	E-UA-H745-Ø-Ø	-15 REGULATOR	2	2	2	2	2	2
6	D-UA-H96Ø-CD-Ø	CABINET ASSEMBLY PDP-11	1	1	-	-	-	-
7	E-UA-BA11-FC-Ø	MOUNTING BOX ASSY	1	1	1	1	1	1
8	E-UA-861-C-Ø	CONTROL, POWER	1	-	1	-	-	-
9	E-UA-861-B-Ø	CONTROL, POWER	-	1	-	1	-	-
10	D-IA-7469881-2	PANEL INDICATOR	1	1	1	1	-	-
11	E-PS-1210710-0-0	BEZEL	1	1	1	1	-	-
12	A-PL-KY11-D-Ø	KY11-D CONSOLE	1	1	1	1	1	1
13	D-IA-7409289-0-0	MTG BRKT 10½ PANEL	2	2	2	2	-	-
14	D-UA-H95Ø-C-Ø	H95Ø-C 19" COVER PANEL, 10½	1	1	1	1	-	-
15	C-IA-7008754-0-0	HARNESS POWER (EXPANDER)	1	1	1	1	1	1
16	D-MD-7409445-0-0	BRACKET, HARNESS SUPPORT	1	1	1	1	-	-
17	D-MD-7409446-0-0	SUPPORT, HARNESS	1	1	1	1	-	-
18	D-MD-7409447-0-0	PLATE, SUPPORT	1	1	1	1	-	-
19	D-IA-7009566-0-0	Expander Box Power Harness	1	1	1	1	1	1
20	C-IA-7009311-0-0	FIRST MEMORY (CORE) (AC) POWER HARNESS	1	1	1	1	1	1
21	A-PL-MSV11-L-Ø	BACK PLANE (MSV11-L) 8 K MEMORY	1	1	1	1	1	1
22	D-MD-7409312-0-0	BRACKET, SHIPPING	1	1	1	1	-	-

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
BASIC ASSY (PDP 11/40)	D-UA-11/40-Ø-Ø	A	PL	11/40-Ø-Ø		
	SHEET 1 OF 4	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS
PARTS LIST

CHECKED C. Fessenden
DATE 9/22/72
PROD W. Stough
DATE 9-26-72

SECTION 1
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	11/40-CA	11/40-CB	11/40-CS	11/40-CT	11/40 AC	11/40AD
23	9006031-1	SCR PHL PAN HD #6-32 x .31 LG	6	6	6	6	6	6
24	9006033	LOCK WASHER #6 INT TOOTH	17	17	17	17	4	4
25	9009120-1	SPACER HEX SPECIAL	3	3	3	3	3	3
26	9006037-1	SCR PHL PAN HD #8-32 x .38 LG	4	4	4	4	-	-
27	9006039-1	SCR PHL PAN HD #8-32 x .50 LG	4	4	4	4	-	-
28	9008072	LOCK WASHER #8 EXT TOOTH	9	9	9	9	5	5
29	9006563	NUTS, KEP #8-32	4	4	4	4	-	-
30	9006073-1	SCR PHL PAN HD #10-32 x .50	4	4	4	4	-	-
31	9006074-1	SCR PHL PAN HD #10-32 x .62	52	52	52	52	-	-
32	9007651	LOCK WASHER #10 EXT TOOTH	50	50	50	50	-	-
33	9006071-1	SCR PHL PAN HD #10-32 x .38	2	2	6	6	-	-
34	9006565	NUT KEPS #10-32	7	7	7	7	3	3
35	9007080	CLAMP, CABLE 7/8	2	2	2	2	2	2
36	9007786	NUT, TINNERMAN	45	45	6	6	-	-
37	9007880	TIE WRAPS	A/R	A/R	A/R	A/R	-	-
38	9007087	CLAMP, CABLE 5/8	1	1	1	1	1	1
39	9007867	TIE MOUNT	A/R	A/R	A/R	A/R	A/R	A/R
40	9007080	CLAMP, CABLE 5/16	1	1	1	1	1	1
41	9006404-2	SCR SLOTTED FLAT HD NYLON #6-32 x.38	5	5	5	5	-	-
42	9006043-1	SCR PHL PAN HD #8-32 x 1.00 LG	4	4	4	4	4	4
43	D-IA-7009046-0-0	PDP11/40 PROCESSOR POWER HARNESS	1	1	1	1	1	1
44	C-IA-7009053-0-0	CONSOLE TO POWER CONTROL HARNESS	1	1	1	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
BASIC ASSY (PDP 11/40)	D-UA-11/40-Ø-Ø	A	PL	11/40-Ø-Ø		

| | SHEET 2 OF 4 | DIST. | | | | |

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. FLANDERS DATE 9/15/72
ENG W. Minor DATE 9-22-72
CHECKED C. Teschner DATE 9/22/72
PROD A.L. Stringer DATE 9-26-72
SECTION 1
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
			11/40-CA	11/40-CB	11/40-CS	11/40-CT	11/40 AC	11/40 AD						
45	9006560	NUT KEPS #6-32	3	3	3	3	3	3						
46	9007926	CONN, SOLDERLESS ARKLESS #50368	6	6	6	6	—	—						
47	A-ML-LT33-DC	TELETYPE WRITERS	1	x	—	—	—	—						
48	A-ML-LT33-DD	TELETYPE WRITERS	x	1	—	—	—	—						
49	3-378-1474-H272	DECAL	1	1	1	1	—	—						
50	A-PL-DL11-A-0	TELETYPE CONTROL	1	1	1	1	1	1						
51	C-IA-7410581-0-0	BRKT CABLE HOLDDOWN	A/R	A/R	A/R	A/R	A/R	A/R						
52	D-PS-1211215-0-0	CABLE CLAMP + STRAP	A/R	A/R	A/R	A/R	A/R	A/R						
53	D-IA-7009177-0-0	POWER DISTRIBUTION CABLE	A/R	A/R	A/R	A/R	—	—						
54	9006025-1	SCR PHL PAN HD #6-32 X .62;	4	4	—	—	—	—						
55	9006857	SPACER HEX THREADED #6-32 X .62	4	4	—	—	—	—						
56	9006026-1	SCR PHL PAN HD #6-32 X .75"LG	4	4	4	4	4	4						
57	C-MD-7407607-0-0	PLATE, JONES STRIP	1	1	—	—	—	—						
58	B-MD-7404721-0-0	PROTECTION COVER, 541	1	1	—	—	—	—						
59	9007589	CINCH JONES JUMPER	2	2	—	—	—	—						
60	9009033	CINCH JONES TERM STRIP	1	1	—	—	—	—						
61	9007036	CATER PILLAR GROMMET	25"	25"	25"	25"	25"	25"						
62	100104-1	115 VAC DECAL (WHITE) 11/40CA	1	1	1	1	—	—						
63	100104-7	230 VAC DECAL (WHITE) 11/40CB	1	1	1	1	—	—						
64	9107673-9	LINE CORD	1	1	1	1	—	—						
65	H950-QB-0	10-1/2 COVER PANEL	2	2	1	1	—	—						
66	G-SC-1209224-0-0	LATCH MOLDING	8	8	4	4	—	—						

TITLE: BASIC ASSY (PDP11/40)
ASSY NO. D-UA-11/40-0-0
SHEET 3 OF 4
SIZE A | CODE PL | NUMBER 11/40-0-0 | REV. L | ECO NO.
DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. FLANDERS DATE 9-15-72
ENG W. Minor DATE 9-22-72
CHECKED C. Teschner DATE 9-22-72
PROD G.L. Stringer DATE 9-26-72
SECTION 1
ISSUED SECT. 1

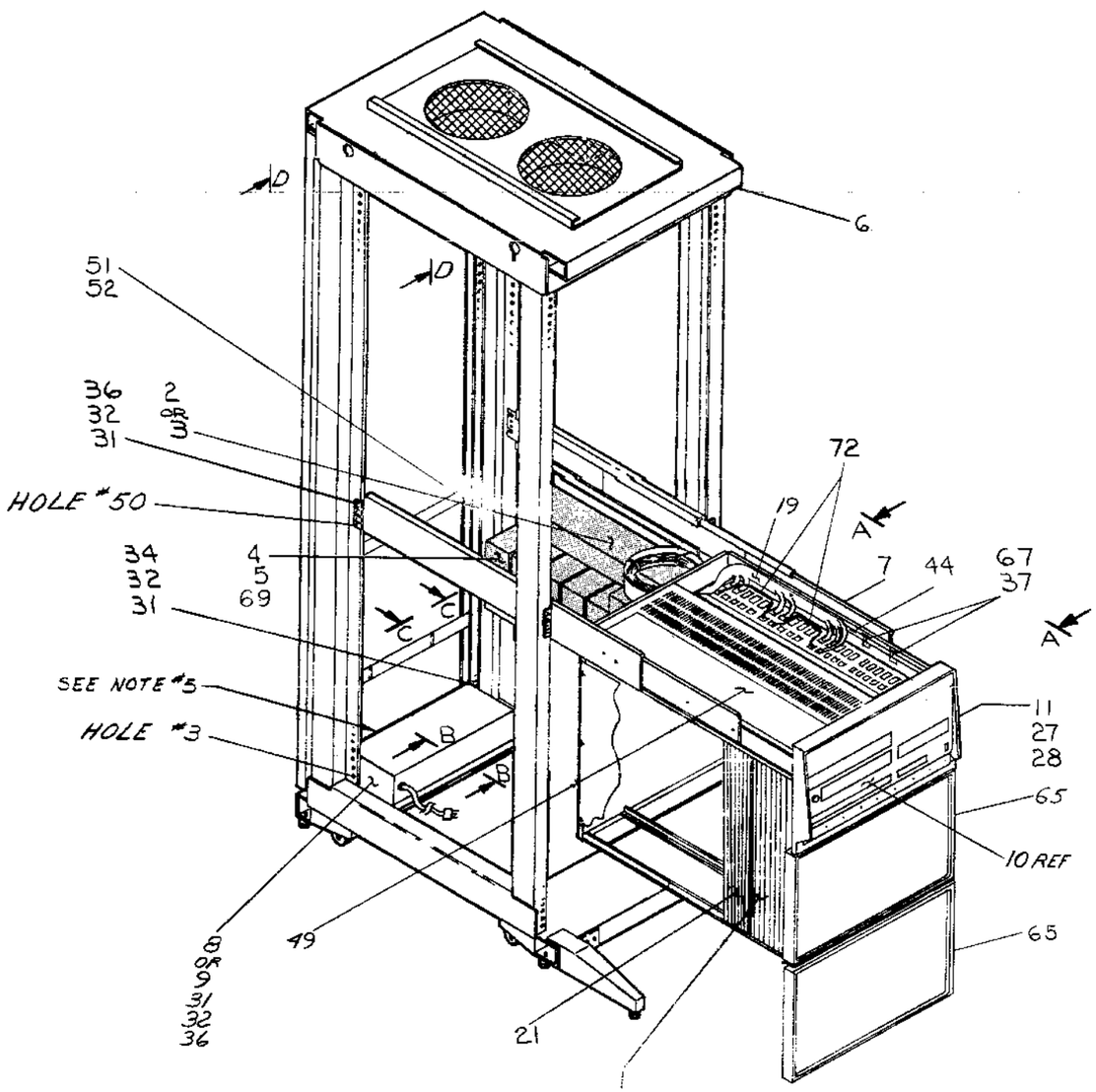
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
			11/40-CA	11/40-CB	11/40-CS	11/40-CT	11/40-AC	11/40-AD						
67	E-UA-H967-GA-0	CABINET ASSY 115V	-	-	1	-	-	-						
68	E-UA-H967-GB-0	CABINET ASSY 230V	-	-	-	1	-	-						
69	D-PS-1211442-0-0	COUNTER-WEIGHT	-	-	4	4	-	-						
70	D-MD-7411159-0-0	COUNTER WEIGHT BRKT	-	-	1	1	-	-						
71	9008264	ADHESIVE TIE MOUNT	12	12	12	12	6	6						
72	D-IA-7009573-0-0	6-PIN JUMPER HARNESS	2	2	2	2	2	2						
73	E-UA-H754-0-0	+20V; -5V REGULATOR (REF)	-	-	-	-	-	-						
74	1209340	8-PIN MATE-N-LOK FEMALE	2	2	2	2	2	2						
75	9009263	WASHER, FLAT NYLON #6	4	4	4	4	4	4						
76	A-DC-7411323-0-0	DECAL-11/40 REGULATOR CONFIGURATION	1	1	1	1	1	1						
77	D-IA-7009994-0-0	KD11-A POWER HARNESS	1	1	1	1	1	1						
78	D-IA-7009565-0-0	MF11-L/LP FIRST MEMORY PWR. HARNESS	1	1	1	1	1	1						
79	9006035-2	SCR PHL FLAT HD. 8-32X1/4 LG	16	16	8	8	-	-						
80	A-DC-7409478-0-0	DECAL PATENT	1	1	1	1	1	1						

TITLE: BASIC ASSY)PDP11/40)
ASSY NO. D-UA-11/40-0-0
SHEET 4 OF 4
SIZE A | CODE PL | NUMBER 11/40-0-0 | REV. L | ECO NO.
DIST.

LEGEND	
NUMBER	VARIATION
11/4Ø-CA	115 V, 60 HZ
11/4Ø-CB	23Ø V, 50 HZ
11/4Ø-CS	115 V, 60 HZ
11/4Ø-CT	23Ø V, 50 HZ

NOTES:

1. A.C. CONNECTION FOR CABINET FAN MAY BE ON BRACKET (VIEW D-D) OR ON JONES STRIP ON INTERIOR OF REAR SIDE OF CABINET MOUNTING CHANNEL.
2. FOR SYSTEMS CONFIGURATIONS NOT LISTED REFER TO C-PL-11/4Ø-Ø-3.
3. BEHIND EACH 10 1/2" PANEL INSTALL (4) 3/8" SPACERS.
4. FOR VARIATIONS CS & CT SEE SHT. #5 VARIATIONS CA & CB ON SHT. #1 ONLY.
5. TOP OF CABINET FAN AND H742 POWER SUPPLY MUST BE PLUGGED INTO LINE 1 OUTLETS ON THE 861 POWER CONTROL
6. MAIN HARNESS (ITEM #19) HAS TWO (2) UNSUSED 8-PIN PLUGS (P16 AND EITHER P15 OR P17). TO PREVENT DAMAGE TO REGULATORS INSERT AN EMPTY MATING CONN. (ITEM #74) INTO THEM AND TIE THEM OUT OF THE WAY, ALSO ADD OR REMOVE JUMPERS PER DIC-10095GG-0-1



VARIATION CA & CB (ONLY)

REVISIONS			
CHK	CHANGE NO.	REV.	
PJM	11/40-00010A	F	REVISED AND REDRAWN E. Allen 11-12-73 B. ARMSTRONG
	11/40-00011	H	B. MINOR
	11/40-00012	J	B MINOR
			B MINOR
	11/40-00014	K	B MINOR
	11/40-00015	L	SOFIO

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11/4Ø		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 7/11/72
CHK'D C. Fischer DATE 7/12/72
ENG. [illegible] DATE 7/12/72
PROJ. ENG. [illegible] DATE 9/22/72
PROD. [illegible] DATE 9/26

NEXT HIGHER ASSY. B-DD-11/4Ø

SCALE —

SHEET 1 OF 6

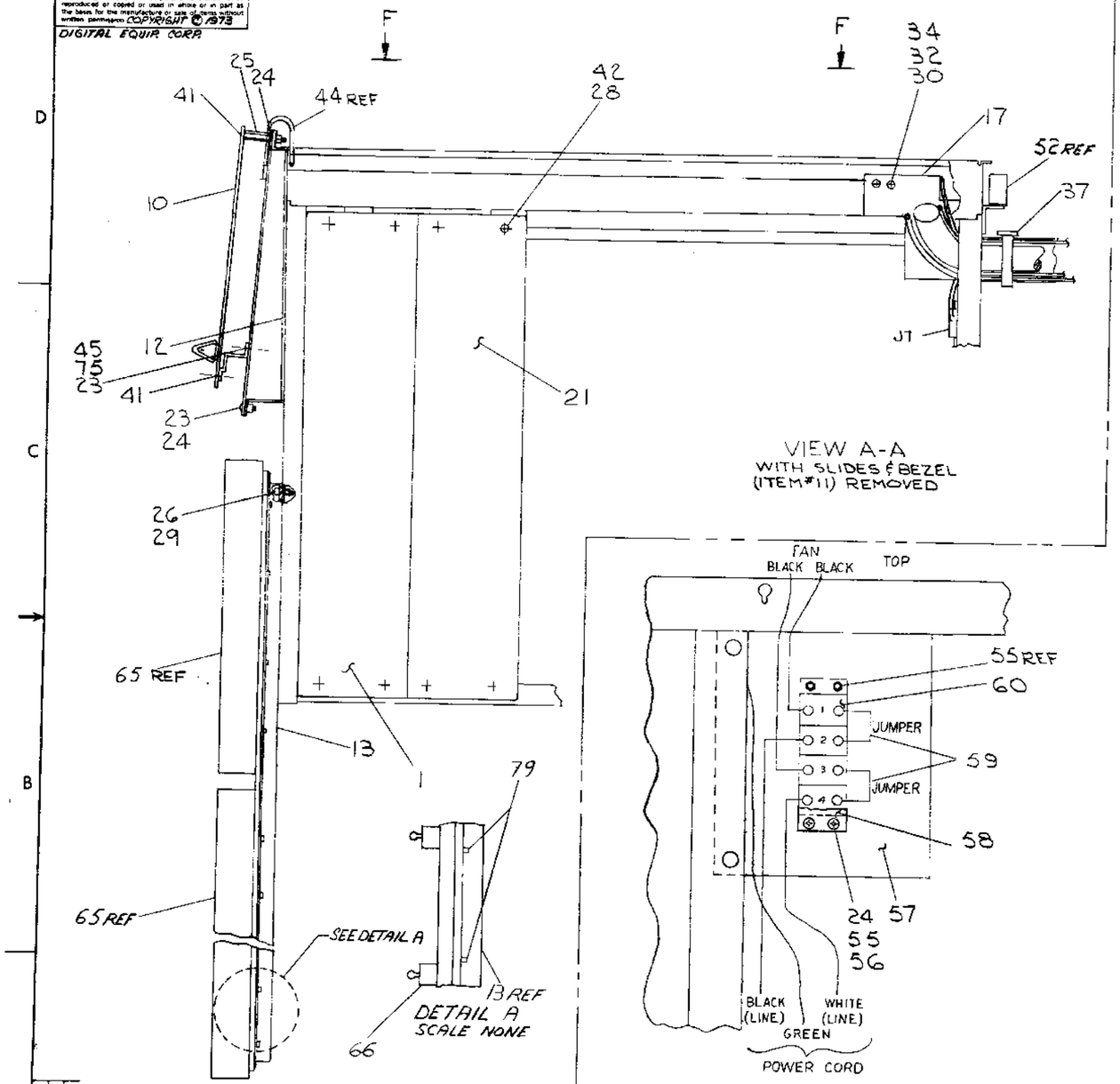
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BASIC ASSY (11/4Ø)

SIZE D | CODE | NUMBER UA 11/4Ø Ø-Ø | REV. L

DIST.

DEC FORM NO. DRD 100-A



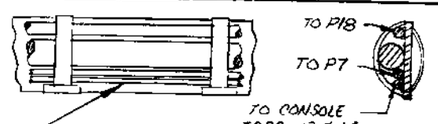
VIEW A-A
WITH SLIDES & BEZEL
(ITEM #11) REMOVED

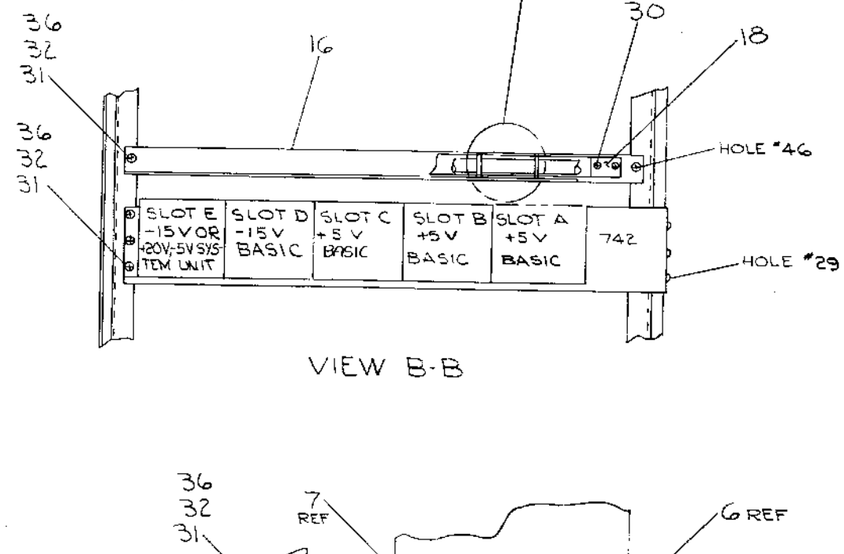
DETAIL A
SCALE NONE

VIEW D-D
FAN WIRING
(TOP OF CABINET)

NOTE:
115V WIRE TO P7 MUST BE SEPARATED FROM WIRE TO P18 BY MAIN BODY OF HARNESS

ROUTE KEYSWITCH WIRES WITH P7 WIRE.





VIEW B-B

VIEW C-C

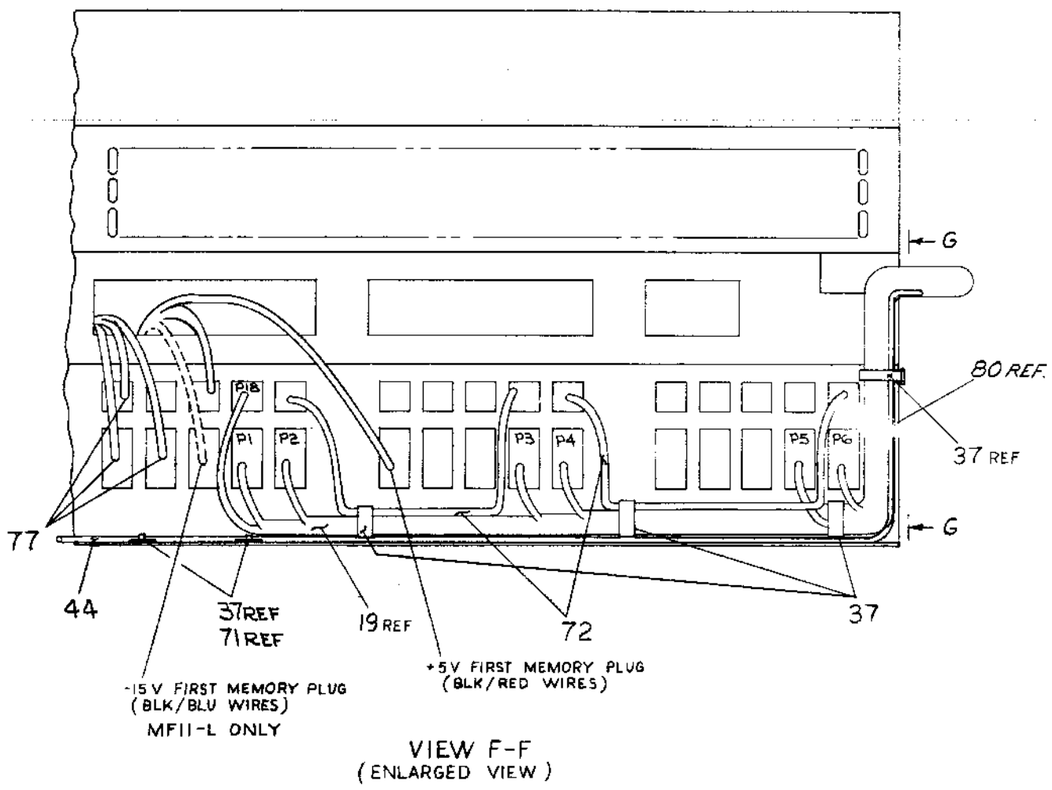
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11		PARTS LIST		

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

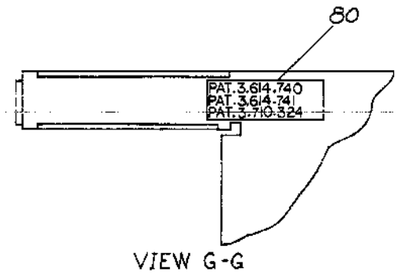
DRN. G. FLANDER	DATE 7-19-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D C. TESCHNER	DATE 9-22-72	
ENG. C.K. BLASI	DATE 9-22-72	TITLE
PROJ ENG J.F. LOUGHLIN	DATE 9-22-72	BASIC ASSY (11/40)
PROD G. STRINGER	DATE 9-26-72	
NEXT HIGHER ASSY.		SIZE D CODE UA NUMBER 11/40-0-0 REV. L
SCALE		DIST.
SHEET 2 OF 6		

REV	REVISIONS	CHK
	CHANGE NO.	

BRUNING 40-107 15868
DEC FORM NO ORD 180-A



VIEW F-F
(ENLARGED VIEW)



VIEW G-G

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx = .005, .xx = .02, .x = .1 | ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √

MATERIAL

FINISH

DRN.	G. FLANDER	DATE 7-19-72
CHK'D.	C. TESCHNER	DATE 9-22-72
ENG.	C.K. BLASI	DATE 9-22-72
PROJ. ENG.	T.F. LOUGHLIN	DATE 9-22-72
PROD.	G. STRINGER	DATE 9-26-72

NEXT HIGHER ASSY.

SCALE

SHEET 3 OF 6

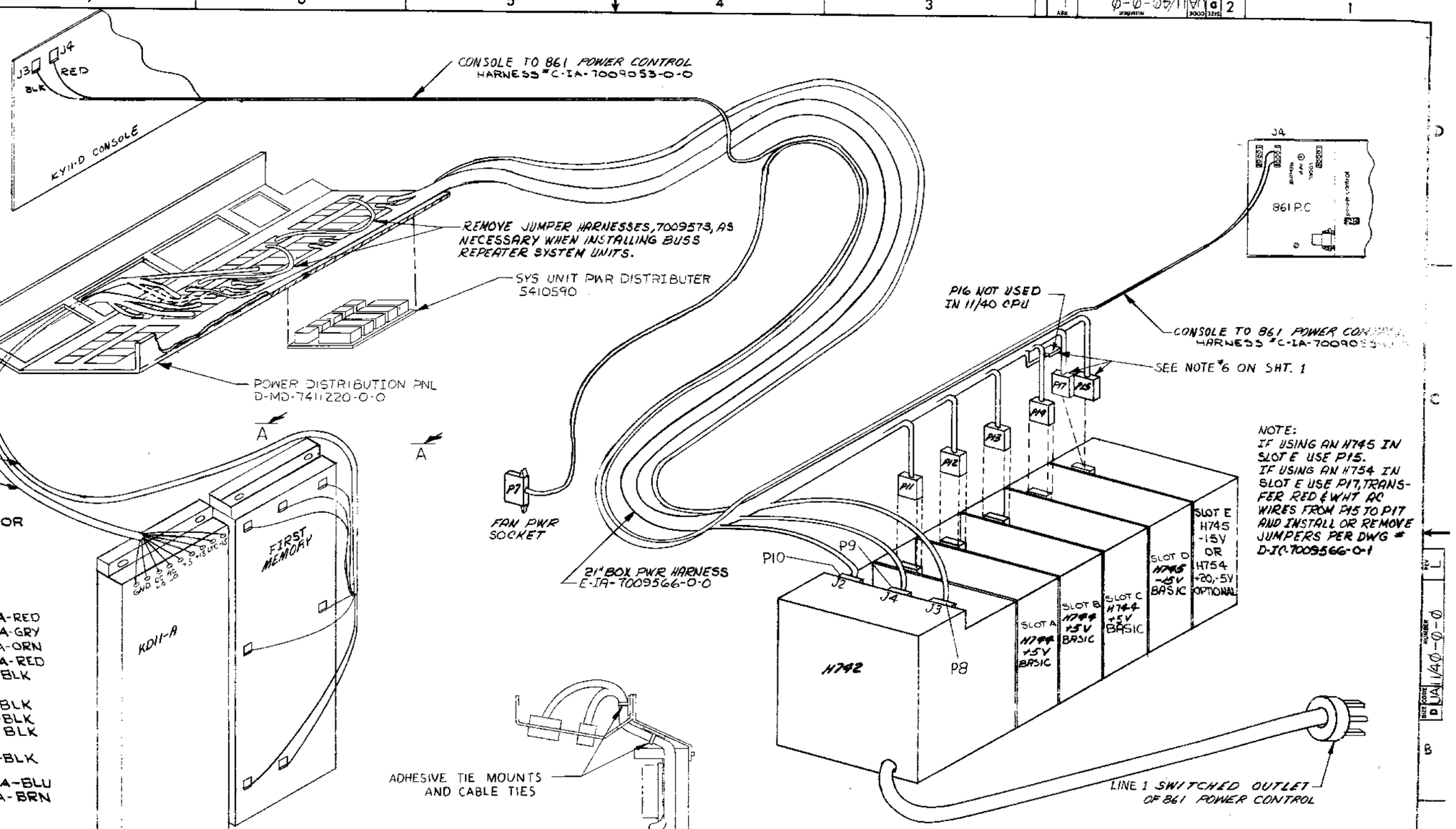
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASIC ASSY (11/40)

SIZE	CODE	NUMBER	REV.
D	UA	11/40-0-0	L

DIST.

REVISIONS	CHANGE NO.	REV.
CHK.		

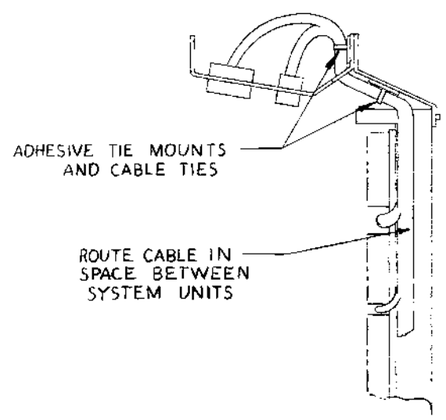


NOTE:
IF USING AN H745 IN SLOT E USE P15.
IF USING AN H754 IN SLOT E USE P17, TRANSFER RED & WHT AC WIRES FROM P15 TO P17 AND INSTALL OR REMOVE JUMPERS PER DWG # D-JC-7009566-0-1

OPTION POWER CONNECTOR PIN ASSIGNMENTS (WIRING SIDE)

6 PIN	15 PIN
1. LO GND-BLK	1. +5V TO 7.5A-RED
2. LINE CLOCK-BRN	2. +15V TO 3.0A-GRY
3. DC LO-VIO	3. +20V TO 8A-ORN
4. AC LO-YEL	4. +5V TO 7.5A-RED
5. SPARE 4	5. GROUND - BLK
6. SPARE 5	6. SPARE #1
	7. GROUND - BLK
	8. GROUND - BLK
	9. GROUND - BLK
	10. SPARE #2
	11. GROUND - BLK
	12. SPARE #3
	13. -15V TO 10A - BLU
	14. -5V TO 8A - BRN
	15. SPARE #3

USE #14 WIRE FOR +5, GROUND, ALL OTHERS CAN BE #18.



VIEW A-A

NEW PWR DISTRIBUTION VERSION FOR SYSTEM SERIAL NUMBERS 6,000 AND GREATER

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS .XXX = .005, .XX = .02, .X = .1; ANGLES ±0° 30'	DRN. FLANDER	DATE 7-19-72
	CHK'D C TESCHNER	DATE 9-22-72
	ENG C.K. BLISI	DATE 9-22-72
	PROJ ENG J.F. O'LOUGHLIN	DATE 9-22-72
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD STRINGER	DATE 9-26-72
MATERIAL	NEXT HIGHER ASSY.	
FINISH	SCALE -	
	SHEET 4 OF 6	

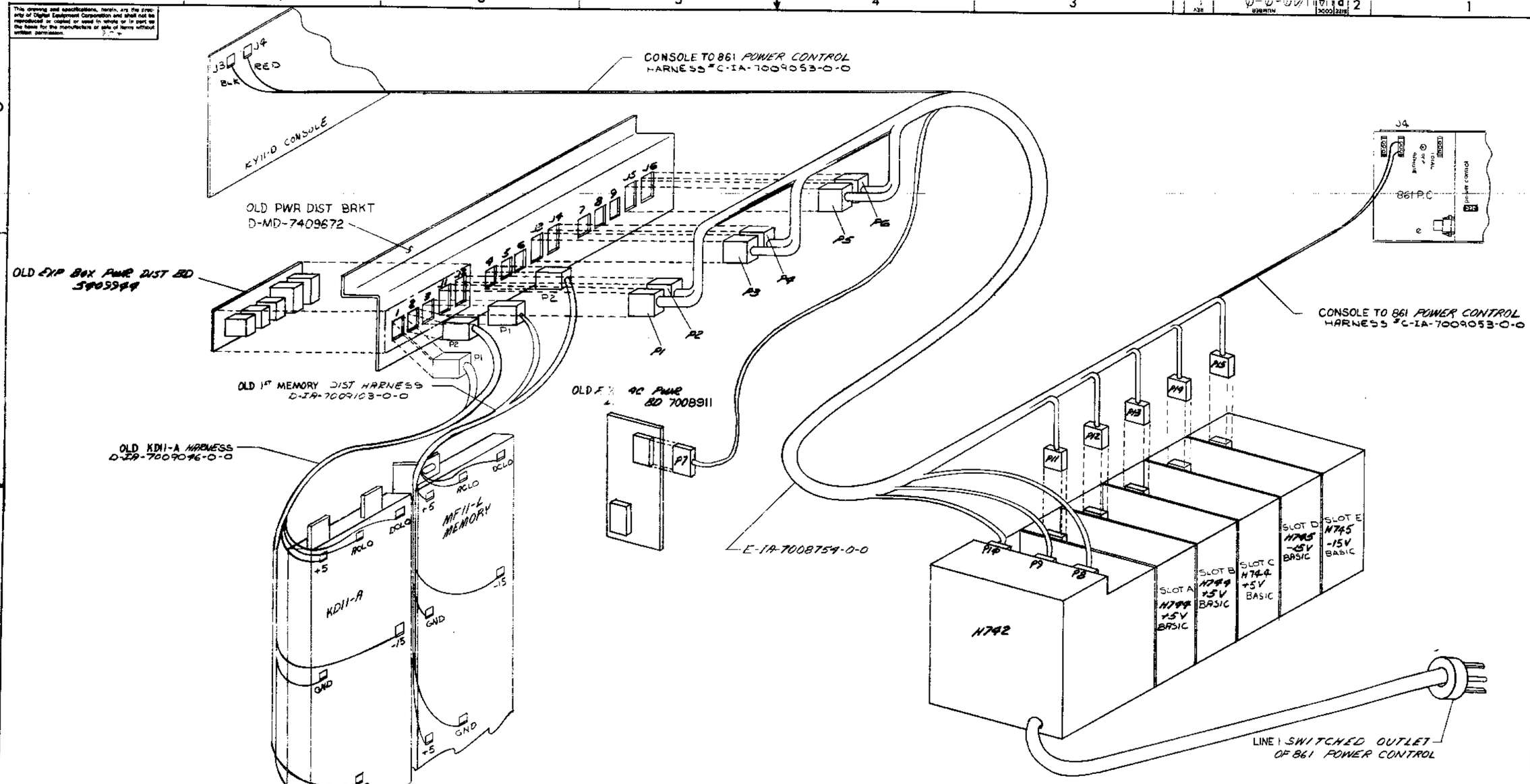
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASIC ASS'Y (11/40)

SIZE D | CODE | NUMBER DUA11/40-0-0 | REV. L | DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO DRD 105-A



OLD PWR DISTRIBUTION VERSION FOR
SYSTEM SERIAL NUMBERS 5999 AND LOWER.

REVISIONS	CHANGE NO	CHK	REV

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

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

DRN. — DATE 11/1/72
CHK'D. — DATE 9/22/72
ENG. — DATE 9/22/72
PROJ/ENG. — DATE 9/22/72
PROD. — DATE 9/22/72
NEXT HIGHER ASSY.
SCALE —
SHEET 5 OF 6

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

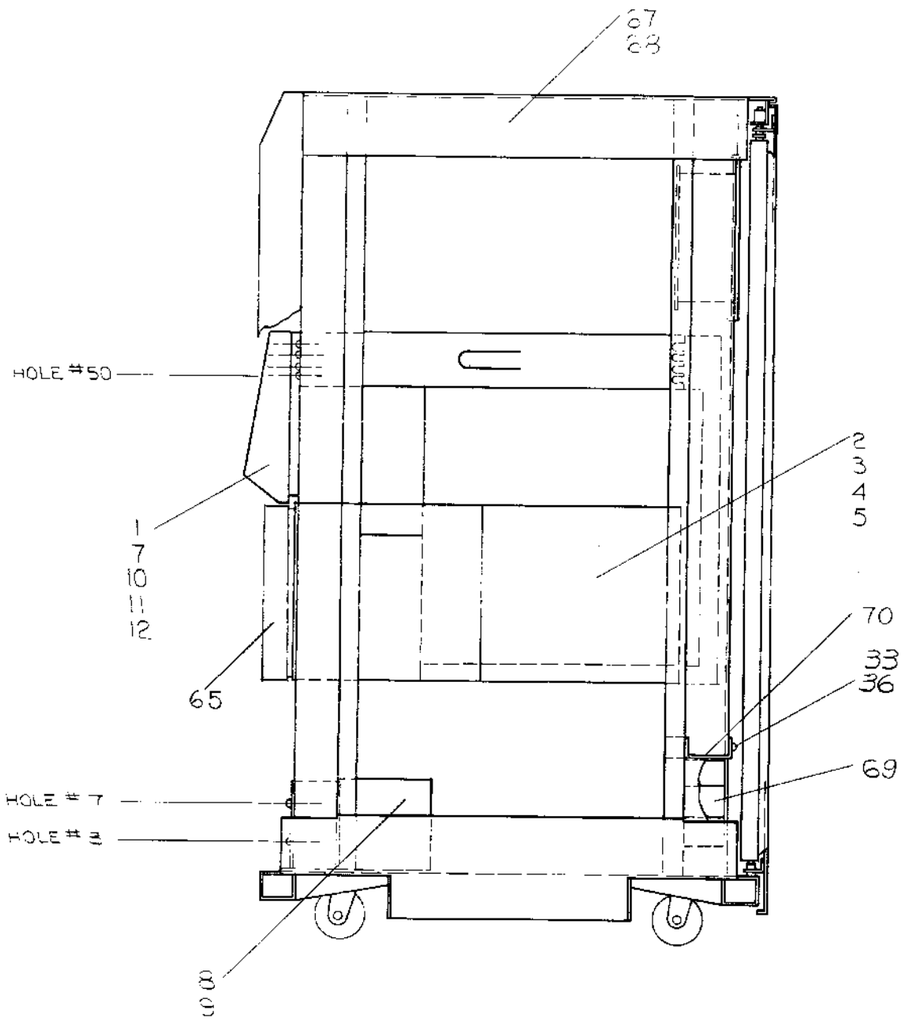
TITLE: BASIC ASS'Y (11/40)

SIZE	CODE	NUMBER	REV
D	UA	11/40-0-0	L

DIST.

SIZE D | CODE UA | NUMBER 11/40-0-0 | REV L

OFC FORM NO DRD 168-A



VARIATION SHEET (SH. 1)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO
PDP 11/40		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 —

DRN. FLANDER	DATE 7-19-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D C. TESCHNER	DATE 9-22-72	
ENG. BLASI	DATE 9-22-72	
PROJ. ENG. J.F. OLOUGHLIN	DATE 9-22-72	
PROD. STRINGER	DATE 9-26-72	

TITLE: BASIC ASSY 11/40

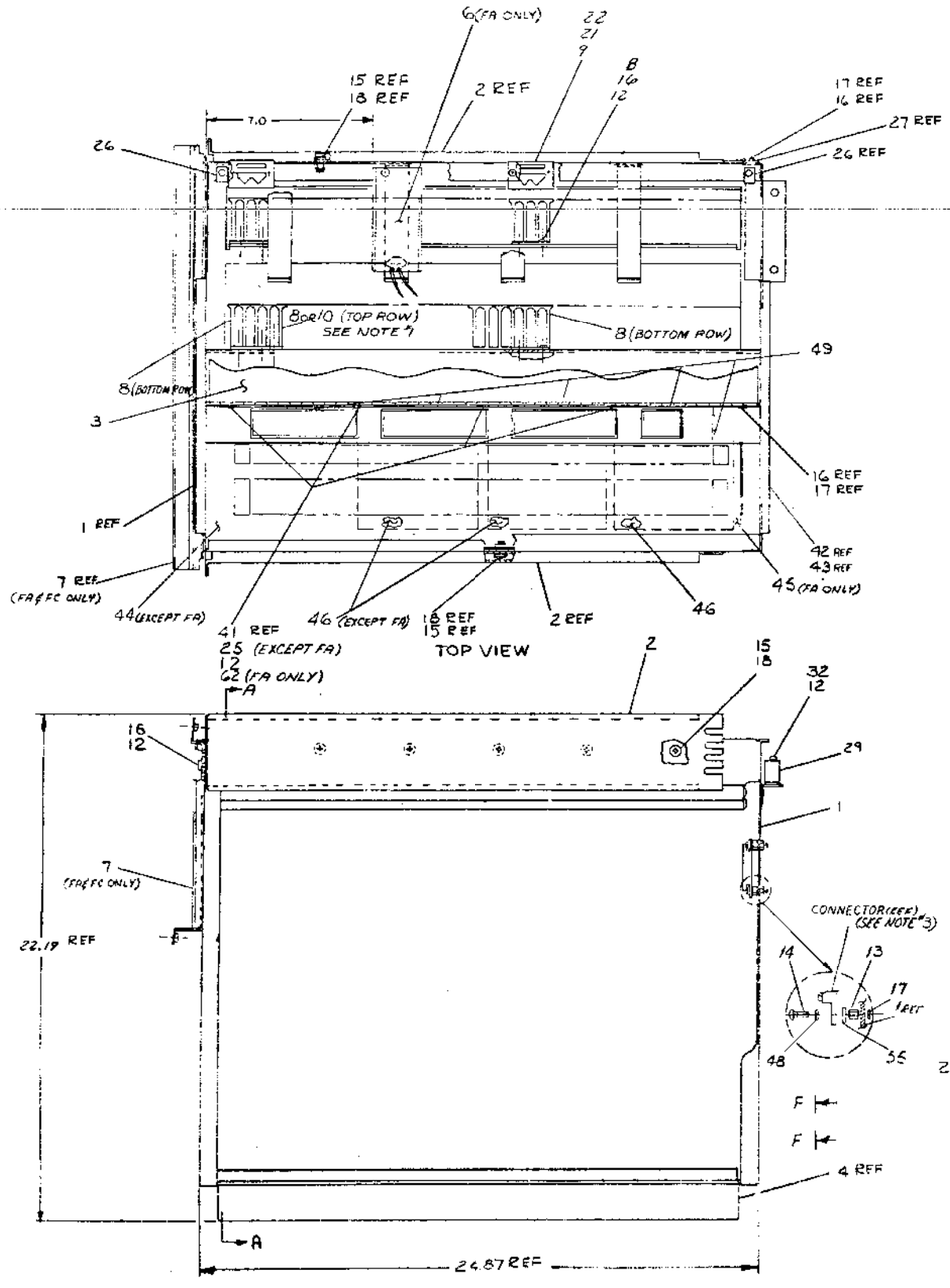
NEXT HIGHER ASSY: A-DD-11/40
SIZE: D CODE: DUA NUMBER: 11/40-0-0 REV: L
SCALE: 6 6

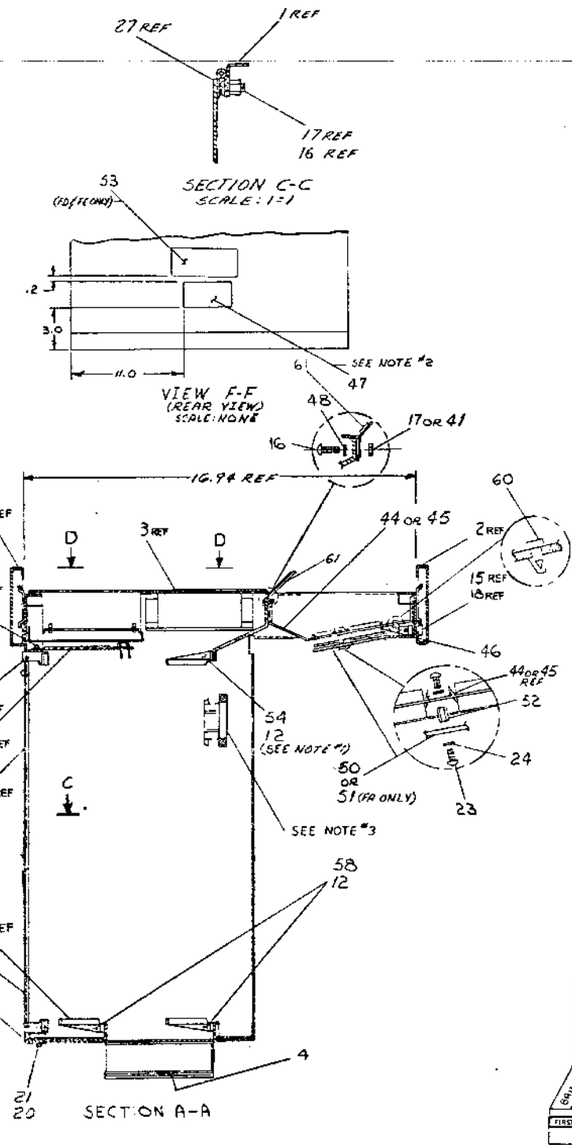
BRUNING 40-107 15965
REVISIONS: REV | CHANGE NO | CHK

LEGEND	
NUMBER	VARIATION
BA11-FA	BASIC 11/45
BA11-FB	EXPANDER
BA11-FC	BASIC 11/40
BA11-FD	FIELD EXPANSION BOX 456V 115V
BA11-FE	FIELD EXPANSION BOX 456V 230V
BA11-FH	FIELD EXPANSION BA11-FD WITH +20V DC REGULATOR
BA11-FJ	FIELD EXPANSION BA11-FE WITH +20V DC REGULATOR

NOTES

SEE SHEET #2 FOR ALL NOTES





-	-	-	-	4	SCR PHL PAN HD #2-32 x 3/16	9007854-1	62
-	-	-	-	1	PLATE SUPPORT	12-741162-0-0	61
4	4	4	4	1	CABLE TIE MOUNT	9007867	60
1	1	-	-	-	BA11 ACCESSORY BRD	12-BA11-F-01	59
44	44	44	44	44	SCR PHL HD PAN #6-32 x 7/16	9006384-1	58
-	-	-	-	1	DECAL, EXP. BOX (FD & FE)	12-BC11-0-0-0-F	57
1	-	1	-	-	DECAL, EXP. BOX	12-BC11-0-0-0-E	56
8	12	8	12	12	NYLON FLAT SEP. WASHER	9006662	55
22	22	22	22	22	SCR PHL HD PAN #6-32 x 1/4	9006035-1	54
1	1	-	1	-	EXPANDER BOX DECAL	12-BC11-B-C-0	53
6	6	6	6	9	SPACER (AREA 3/4 LG) #6-32	9006859	52
-	-	-	-	1	KNUCKLE GUARD (FD & FE)	12-BA11-F-0-0	51
-	1	-	-	-	KNUCKLE GUARD	12-BA11-E-0-0	50
FA	FB	FC	FD	FE	GROMMET, NYLON	9007622	49
6	6	6	6	6	WASHER EXT TOOTH #8	9008072	48
1	1	1	1	1	DECAL, VAR. RANGE STATUS	12-BA11-B-0-0-1	47
3	3	3	3	1	PWR DISTRIBUTION BOARD	54-5810830-0-1	46
-	-	-	1	-	PWR DISTRIBUTION PNL (115)	12-A-H7621-C-0	45
1	1	1	1	-	PWR DISTRIBUTION PANEL	12-A7411220-0-0	44
1	1	1	1	1	DECAL	A-DC-5309414-0-0	43
1	1	1	1	1	DECAL	A-DC-5309413-0-0	42
-	-	-	-	3	NUT, HEX #8-32	9006561	41
-	-	-	-	-	ACCESSORY KIT LIST	REF BA11-FC	REF
-	-	-	-	-	ACCESSORY KIT LIST	REF BA11-FD	REF
3	3	3	3	6	MOUNT, ADH. BACK.	9008264	40
3	3	3	3	6	TIE WRAPS	9007880	39
22	22	22	-	-	SCR PHL HD PAN 4-40 x 1/2	9006073	38
-	-	-	-	1	BRKT, CABLE PROTECTION	70-09097-00	37
-	-	-	-	-	HINGE, DOOR RETAINER	12-BC11-0-0-0	36
-	-	-	-	-	CAP SCREW	12-BC11-0-0-0	35
16	16	8	12	12	SCR PH ----	9006020-00	34
16	16	8	12	12	CLIP, [illegible]	9006020-00	33
2	2	2	2	2	SCR PHL HD PAN #6-32 x 1/8	9001854-1	32
1	1	1	1	1	PORT, DRIVE 3 [illegible]	12-BC11-0-0-0-B	31
3	3	3	3	-	EXPANDER BOX POWER DIST.	12-BA11-0-0-0	30
1	1	-	1	1	CABLE CLAMP & STRAP	3-PS-121615-0-0	29
-	-	-	-	-	CABLE STRAP	12-BC11-0-0-0	28
1	1	1	1	1	DOOR, LEFT SIDE	12-BA11-0-0-0-0	27
2	2	2	2	2	CLIP ON ESCP 82-47-104 S	9006196	26
2	2	2	2	2	SCR PHL HD PAN #6-32 x 1/8	9006039-1	25
12	12	12	12	9	WASHER EXT TOOTH #6	9006633	24
12	12	12	12	8	SCR PHL HD FLAT 6-32 x 3/8	12-BC11-0-0-1	23
22	22	22	-	22	SCR PHL HD PAN #4-40 x 3/8	9006011-1	22
44	44	44	-	28	WASHER EXT TOOTH #4	9006632	21
-	-	22	-	12	SCR PHL HD PAN #4-40 x 5/8	9006014-1	20
-	-	10	10	10	NUT, KEPS #4-40	9006205	19
10	10	10	10	5	SCR PHL HD PAN #3-32 x 1/4	9006079-1	18
10	10	10	10	10	NUT, KEPS #6-32	9006563	17
9	9	9	9	9	SCR PHL HD PAN #6-32 x 1/4 LG	9006037-1	16
10	10	10	10	10	NUT, KEPS #10-32	9006565	15
2	2	2	2	2	SCR PHL HD PAN #8-32 x 3/4 LG	9006041-1	14
2	2	2	2	2	SPACER (.5 AF x 1/4 LG) #8	9006818	13
51	61	51	15	52	WASHER EXT TOOTH #8	9006634	12
2	2	-	2	2	CABLE PROTECTION	12-BA11-0-0-0	11
11	11	11	11	5	CARD GUIDE ASSMBLY	12-BC11-0-0-0	10
22	22	22	22	22	EXTRACTOR/CARD GUIDE	12-BC11-0-0-1	9
22	22	22	22	28	CARD GUIDE	12-BC11-0-0-0	8
-	-	1	-	1	BEZEL MTG BRKT	12-BA11-0-0-0	7
-	-	-	-	1	7-TERM. CUTOUT BRKT ASSY	12-BA11-0-0-0	6
-	-	-	-	1	CORE MEM. POWER DIST. BD.	12-BA11-0-0-0	5
1	1	1	1	1	FAN ASSY (BOTTOM)	12-BA11-0-0-0	4
1	1	1	1	-	FAN ASSY (TOP)	12-BA11-0-0-0	3
1	1	1	1	1	SLIDE CHASSIS 23" TRAVEL	12-BC11-0-0-0	2
1	1	1	1	1	CHASSIS	12-BA11-0-0-0	1

BA11-FE BA11-FD BA11-FC BA11-FB BA11-FA

FIRST USED ON PART OR MODEL	DESCRIPTION	PART NO	REV
11/45	PARTS LIST		

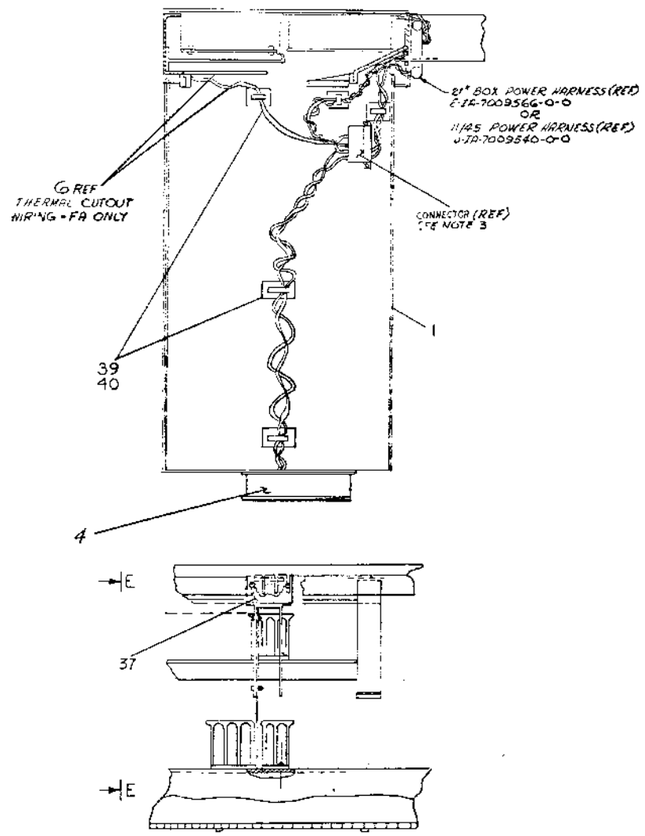
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ANGULAR 45° 30'

digital EQUIPMENT CORPORATION

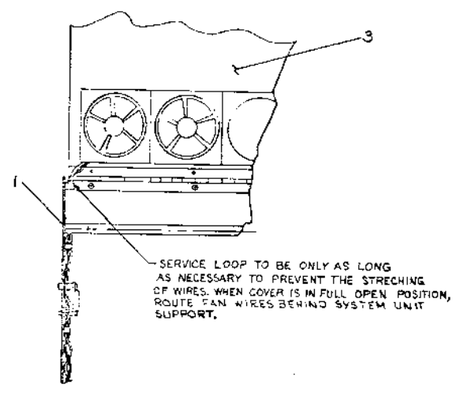
TITLE MOUNTING BOX ASSY

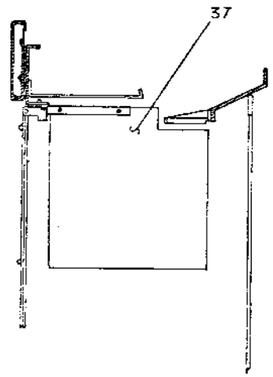
SIZE E CODE A SCALE NONE REV

12-BA11-F-0



VIEW D-D
(FA ONLY)





VIEW E-E
(FA ONLY)

NOTES:

1. CARD GUIDE MOUNTING - THE BOTTOM TWO ROWS (22 GUIDES - ITEM 8) ARE MOUNTED SO THAT THE FIRST GUIDE IS IN LINE WITH HOLES 1, 2 & 3 IN THE FRONT OF THE BOX AND REMAINING GUIDES ARE MOUNTED EDGE TO EDGE (DO NOT SKIP SPACES).
   THE BA11-FA TOP ROW CONSISTS OF FIVE CARD GUIDES (ITEM 8) WITH THE FIRST ONE IN LINE WITH HOLES 2, 3 & 4 FOLLOWED BY SIX REWORKED GUIDES (ITEM 10) MOUNTED EDGE TO EDGE. DO NOT PUT CARD GUIDE SCREWS IN THE FOLLOWING HOLES AS THEY ARE USED FOR SYSTEM UNITS: SKIP HOLES 2, 14, 26, 31, 36 & 41 IN BA11-FA TOP AND BOTTOM ROWS.
   FOR BA11-FB, FC, FD & FE THE TOP ROW CONSISTS OF 11 REWORKED CARD GUIDES (ITEM 10) WITH THE FIRST ONE MOUNTED IN LINE WITH HOLES 1, 2 & 3 AND REMAINING GUIDES MOUNTED EDGE TO EDGE. DO NOT PUT CARD GUIDE SCREWS IN THE FOLLOWING HOLES: 2, 7, 12, 17, 22, 27, 32, 37 & 42 TOP AND BOTTOM ROWS. THEY WILL BE USED FOR MOUNTING SYSTEM UNITS. SOME CHASSIS ASSY'S MAY HAVE ONE EXTRA CARD GUIDE MOUNTING HOLE IN TOP BRACKET. HOLE FOR POSITION 1 IS ALWAYS 1.44" FROM FRONT OF CHASSIS ASSY.
2. MECHANICAL STATUS DECAL MUST SHOW BOX VARIATION AND REVISION.
3. CONNECTOR IS SHOWN FOR REFENCE ONLY, IT IS INSTALLED AT NEXT HIGHER ASS'Y.

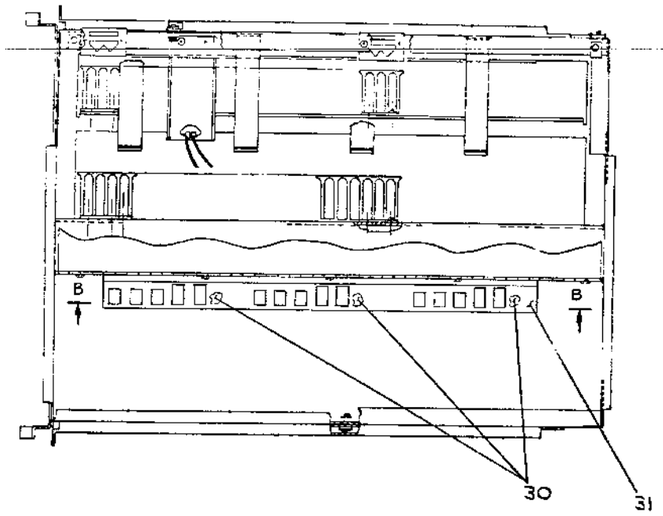
FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED CO DIMENSION IN INCHES
TOLERANCES
DECIMALS .XXX ± .005, .XX ± .02, .X ± .1
ANGLES ± 30'
MATERIAL
FINISH

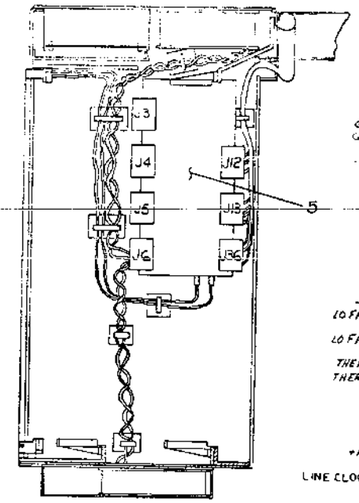
DRN R. DAVIS 12-14-72
CHK'D E. COOK 12-14-72
ENG 12-14-72
PROJ MGR 12-14-72
MFG ENGR ASSY
TITLE: MOUNTING BOX ASSY
SIZE E
CODE LA
NUMBER BA11-F-0
REV. V

DIGITAL EQUIPMENT CORPORATION

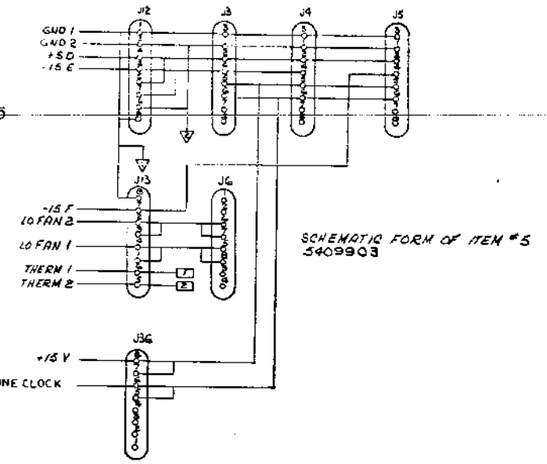
LAST USED ON DRAWING: E LA BA11-F-0 V



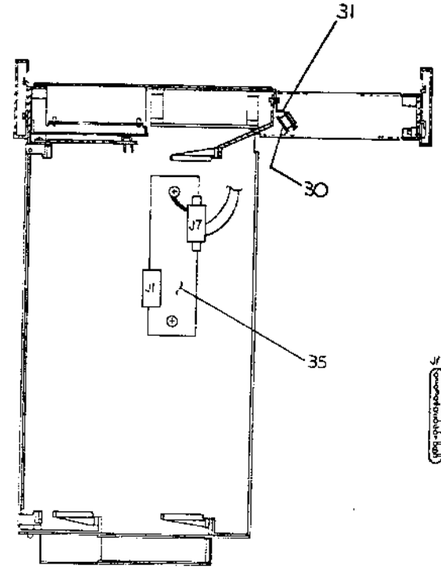
OLD TOP VIEW



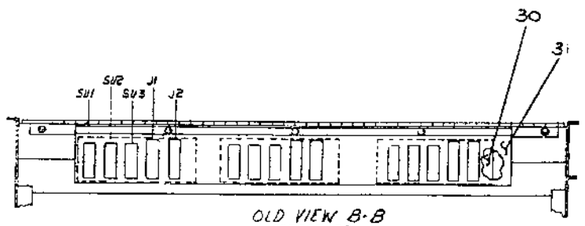
THIS VIEW FOR OLD FA MODEL ONLY



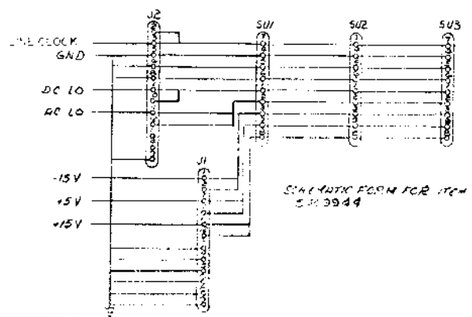
SCHEMATIC FORM OF ITEM #5
5409903



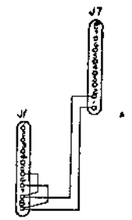
OLD SECTION A-A
EXCEPT FA



OLD VIEW B-B
EXCEPT FA



SCHEMATIC FORM FOR ITEM #30
5409944



SCHEMATIC FORM OF ITEM #35
7008911

SEE NOTE THIS PAGE

1	1	1	1	—	EXP BOX PC STRIP ASSY	6-10,XCOPH-0-0	35
1	1	1	1	—	PLATE POWER SUPPORT	70-20408-12-0-0	31
3	3	3	3	—	EXPANDER BOX POWER DIST	70-19-5109864-0-0	30
—	—	—	—	1	CORE MEM POWER DIST BD	070-B4C0502-0-0	5
(MFI-FE)	(BAII-FD)	(BAII-FC)	(BAII-FB)	(BAII-FA)			

DESCRIPTION	PART NO.	ITEM NO.

DESIGNER PARTS LIST

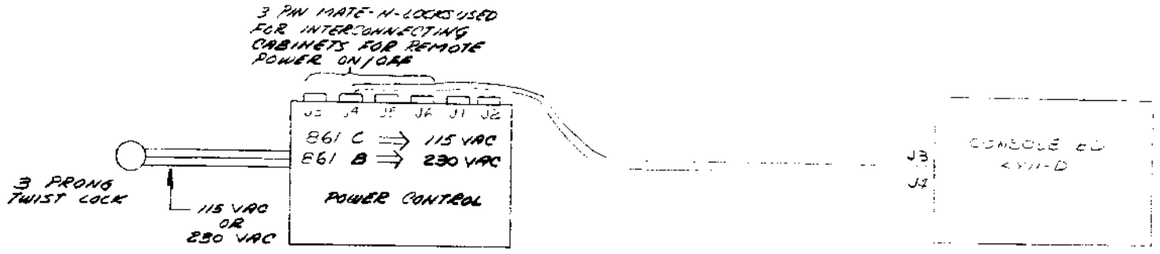
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS ±
ANGLES ±
DRN. DAVIS
DES.
ENG.
MFG.
QA
MATERIAL
NEXT HIGHER ASSY.
DATE

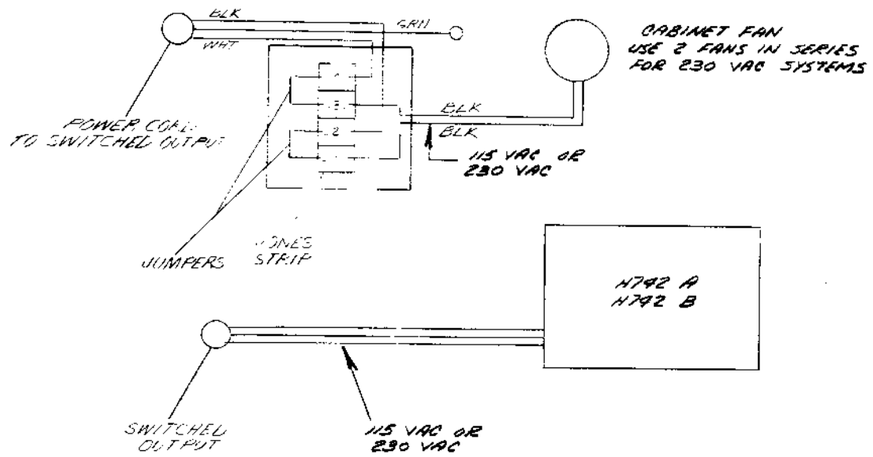
digital EQUIPMENT CORPORATION

TITLE
MOUNTING BOX ASSY

FSCM NO. 07260
NUMBER E JA BAII-F-0
REV. V

REFERENCE ONLY





REVISIONS			
DWK	CHANGE NO	REV	
	11/40-00004	A	
	W. MINOR		

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
	1/	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 9/22/72
CHK'D		DATE 9/22/72
ENG		DATE 9/22/72
PROJ ENG		DATE 10/2/72
PROD. ENG		DATE 9/26/72

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE

SIZE D | CODE | NUMBER | REV A

SCALE

SHEET 1 OF | DIST

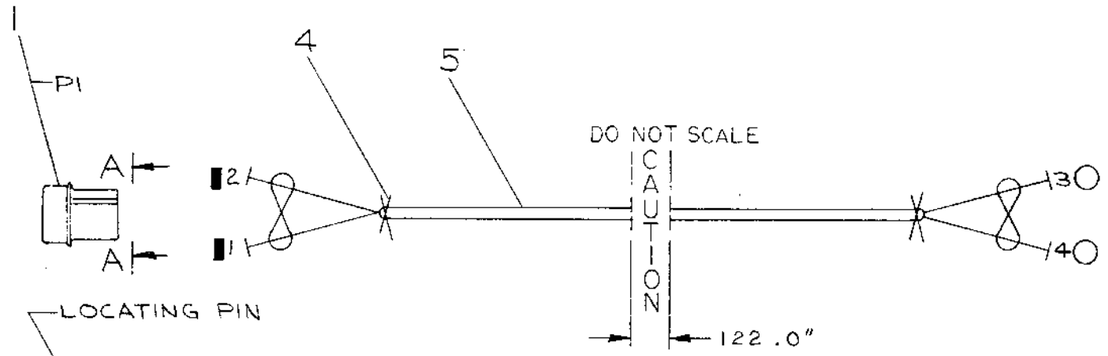
DEC FORM NO DRD 100-A

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM
5	18	BLK	1	P1-3	2	3	—	3
		RED	2	P1-1	2	4	—	3

NOTES:

1. USE TIE WRAPS(X) ITEM #4 AT END BREAKOUT POINTS.



0" 6" 12"

SCALE

DO NOT REDUCE

	QTY	DESCRIPTION	PART NO.	ITEM NO.
	A/R	WIRE #18 AWG TWP BLK/RED	9107430-02	5
X	A/R	TIE-WRAP SST 1.5M	9007880	4
○	2	CONN SOLDERLESS #50902	9007917	3
▮	2	MATE-N-LOCK TERM (MALE)	1209378-01	2
SYM	1	CONN MATE-N-LOCK (3 PIN)	1209351-03	1

PARTS LIST

FIRST USED ON OPTION/MODEL: 11/4Φ

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: —

		DATE
DRN.		8/11/72
CHK'D.		9/27/72
ENG.	C.R. BLASI	9/27/72
PROJ. ENG.		9/22/72
PROD.		9-26-72

NEXT HIGHER ASSY.: D-UA-11/4Φ-Φ-Φ

SCALE 1/1

SHEET 1 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONSOLE TO POWER CONTROL HARNESS

SIZE	CODE	NUMBER	REV.
C	IA	7009053-0-0	B

DIST.

REVISIONS			
CHK	CHANGE NO.	REV.	
	7009053-00001	A	E.F. Berry 4-3-73 C.R. BLASI
	7009053-00002	B	B. MINOR

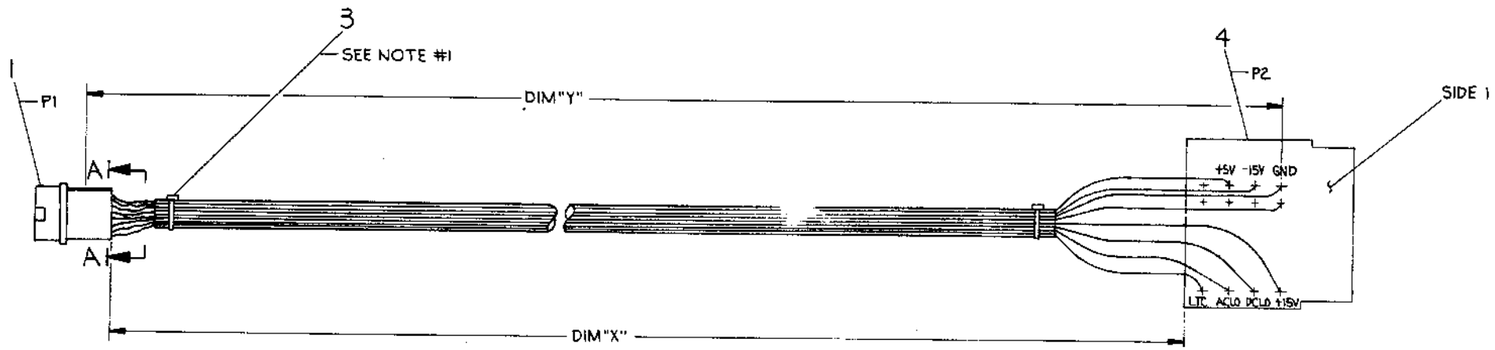
SIZE C CODE IA NUMBER 7009053-0-0 REV. B

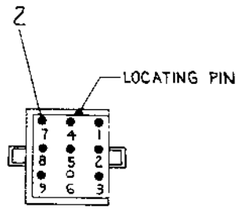
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	REMARKS
5	18	VIO	P1-1	P2-DCLO	
6	14	BLK	P1-4	P2-GND	
7	18	BRN	P1-7	P2-LTC	
8	18	YEL	P1-2	P2-ACLO	
6	14	BLK	P1-5	P2-GND	
9	14	GRY	P1-8	P2-+15V	
10	18	BLU	P1-3	P2--15V	
11	14	RED	P1-9	P2-+5V	

NUMBER	DIM "X" VARIATION	DIM "Y" (PRECUT) REF
7009177-02	2 FEET	2 FEET 2 INCHES

NOTES:
1. USE TIE WRAPS ITEM #3 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAKOUT POINT





SECTION A-A
RIGHT-HAND VIEW
P1

A/R	WIRE, #14 AWG	RED	9107370-22	11
A/R	WIRE, #18 AWG	BLU	9107360-66	10
A/R	WIRE, #14 AWG	GRY	9107370-88	9
A/R	WIRE, #18 AWG	YEL	9107360-44	8
A/R	WIRE, #18 AWG	BRN	9107360-11	7
A/R	WIRE, #14 AWG	BLK	9107370-00	6
A/R	WIRE, #18 AWG	VIO	9107360-77	5
1	POWER CONN. G772		A-PL-G772-Ø-Ø	4
A/R	TIE WRAP SST1.5M		9007880	3
8	MATE-N-LOC TERM.	(MALE)	1209318-01	2
1	CONN., MATE-N-LOC	(9 PIN)	1209351-09	1

ITEM NO.	QTY.	DESCRIPTION	PART NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: 11/40

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH

		DATE
DRN.	Shatetter	10/16/72
CHK'D	C. Teschner	10/25/72
ENG.	R. B. Lan	10/25/72
PROJ. ENG.	C. K. Lan	10/25/72
PROD.	[illegible]	10/25/72

NEXT HIGHER ASSY.: D-UA-11/40-Ø-Ø

SCALE: 1/1

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: POWER DISTRIBUTION CABLE

SIZE D | CODE | NUMBER: 7009177-0-0

DIST

REVISIONS

REV	CHANGE NO	CHK

RUNNING 40-107 15968

PROG. COMP. A7009177-0-0 REV. D

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

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	

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET TYPE
VARIATION	TITLE	861-1
861 P.C.	POWER CONTROL, 861	x

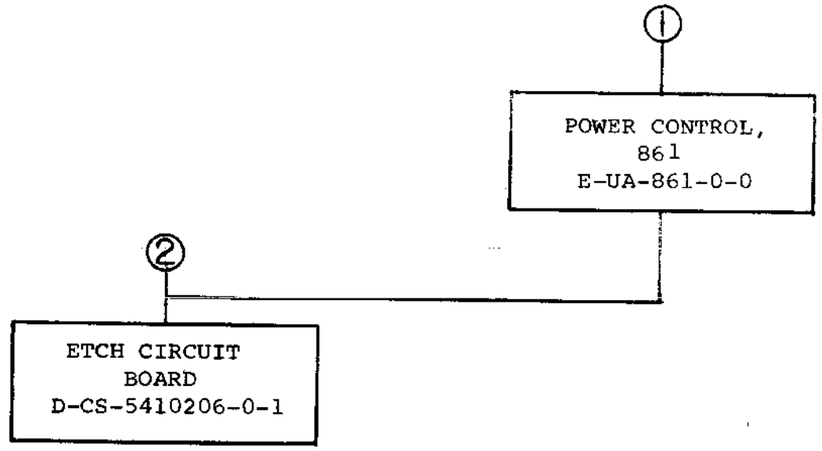
REVISIONS		
DATE	CHG. NO.	REV
2/73	861-3	A

USED ON OPTION/MODEL

DRN. SCHMIDT	DATE 9/13/2	TITLE: 861 POWER CONTROL
CHK'D.	DATE 10-6-72	
PROJ ENG.	DATE 10 6 72	
PROD.	DATE	SIZE B · CODE DD · NUMBER 861-0 · REV A
FIELD SERV.	DATE	
SHEET 1 OF 3		DIST G

DRB 106

DEC 16—(325)—1062—1—NA71



TITLE		SIZE	CODE	NUMBER	REV
POWER CONTROL	SHEET 2 OF 3	B	DD	861-0	A

ELECTRICAL

CUSTOMER PRINT SET 861-1	SET MFG.	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	D-CS-861-A-1		1	CIRCUIT SCHE. \TIC, 861 P.C.	
x			D-CS-861-B-1		1	CIRCUIT SCHEMATIC, 861 P.C.	
x			D-CS-861-C-1		1	CIRCUIT SCHEMATIC, 861 P.C.	
			A-SP-861-0-1		2	TEST AND INSPECTION PRO.	
x		2	D-CS-5410206-0-1	#	2	PILOT CONTROL	
			PC-5010205-0-1		1	ETCH CIRCUIT BOARD	
			K-CO-5410206-0-4		1	X-Y COORDINATE HOLE LOCA.	
			D-AH-5410206-0-5		1	ASSY DRILLING HOLE LAYOUT	
			B-MH-5410206-0-6		1	MODULE ECO HISTORY	

MECHANICAL

CUSTOMER PRINT SET 861-1	SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	E-UA-861-0-0	B	2	POWER CONTROL, 861	
			E-IA-7410567-0-0		1	CHASSIS, 861 PC	
			D-IA-7410568-0-0		2	COVER, 861 P.C.	
			A-PS-3611216-0-0			NAME PLATE 861-A	
			C-SS-3611216-0-1		1	NAME PLATE 861-A ARTWORK	
			A-PS-3611217-0-0			NAME PLATE 861-B	
			C-SS-3611217-0-1		1	NAME PLATE 861-B ARTWORK	
			A-PS-3611218-0-0			NAME PLATE 861-C	
			C-SS-3611218-0-1		1	NAME PLATE 861-C ARTWORK	

CUSTOMER PRINT SET CODES		TITLE	SIZE	CODE	NUMBER	REV
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED	POWER CONTROL, 861 SHEET 3 OF 3	B	DD	861-0	A

DRB 108

LEGEND			
DWG. NO.	VARIATION VAC OUT	PHASES	AMP OUT
861-A	120	2	32
861-B	230	1	16
861-C	120	1	64

NOTES:
1. FOR WIRE TABLES, SEE SHEET #2
2. LOCKWASHER (ITEM 40) MUST BE PLACED UNDER SOLDERLESS CONN (ITEM 42)
3. LOCKWASHER (ITEM 19) MUST BE PLACED BETWEEN FILTER (ITEM #8) AND TERM CLAMP (ITEM #49)

DETAIL 'A'
SCALE: NONE

SECTION C-C
861-A
SCALE: NONE

SECTION C-C
861-B
SCALE: NONE

SECTION C-C
861-C
SCALE: NONE

DETAIL 'E'
SCALE: NONE

VIEW B-B

DETAIL 'D'
SCALE: NONE

	861-C	861-B	861-A			
3	—	—		CLAMP TERMINAL	1211223-01	57
1	1	1		LOCKNUT	9009309	56
18	—	—		CONN, SOLDERLESS (BLK)	9008283	55
A/R	—	—		WIRE, #14 AWG STR'D (WHT)	9107390-89	54
—	1	—		STRAIN RELIEF (BLU)	1211198-00	53
1	—	—		MALE PLUG, 125V 30A	1211198	52
—	1	—		MALE PLUG, 250V 20A	1211192	51
1	—	—		POWER CORD 18 FT. #12/3	1700025	50
	3	4		CLAMP, TERMINAL	1211223-00	49
1	—	—		WATER 2 MALE 3 MALE	1211199	48
A/R	A/R	A/R		GROMMET, CATERPILLAR	9007035	47
—	1	—		CONTACTOR, 230 V	1211147-1	46
—	6	—		RECEPTACLE, 15A 250VAC	1211204	45
1	—	—		CIRCUIT BREAKER 20-20-30	1211196	44
—	A/R	—		POWER CORD 18 FT. #14/3	1700027	43
1	1	1		CONN, SOLDERLESS	9007828	42
2	2	2		NUT, KEP #4-40	9006457	41
2	2	2		SCREW, PHL PAN HD #4-40 X 7/16	9008301-1	40
1	—	—		NAME PLATE, 861-C	APS 341118-86C	39
4	4	4		CONN, ARMLESS DUAL 3000 SERIES	9007825	38
27	37	48		CONN, SOLDERLESS (BLU)	9007819	37
7	6	7		CONN, SOLDERLESS (RED)	9007817	36
A/R	A/R	A/R		WIRE, #18 AWG STR'D (GRN)	9107360-33	35
A/R	A/R	A/R		WIRE, #16 AWG STR'D (RED)	9107360-11	34
A/R	A/R	A/R		WIRE, #16 AWG STR'D (WHT)	9107360-00	33
A/R	A/R	A/R		WIRE, #18 AWG STR'D (WHT)	9107360-99	32
A/R	—	A/R		WIRE, #18 AWG STR'D (RED)	9107360-22	31
A/R	A/R	A/R		WIRE, #14 AWG STR'D (GRN)	9107370-55	30
A/R	A/R	A/R		WIRE, #14 AWG STR'D (BLK)	9107370-00	29
—	A/R	A/R		WIRE, #14 AWG STR'D (WHT)	9107370-99	28
A/R	—	A/R		WIRE, #14 AWG STR'D (RED)	9107370-22	27
5	5	5		NUT, KEP #8-32	9006563	26
4	4	4		SCREW, PHL PAN HD #8-32 X 3/8	9006037-1	25
2	2	2		NUT KEP #6-32	9006560	24
18	18	18		SCREW, PHL PAN HD #6-32 X 5/16	9006021-1	23
2	2	2		LOCKWASHER, #6 EXT TOOTH	9007493	22
4	1	1		LOCKWASHER #8 INT TOOTH	9006634	21
—	1	—		NAME PLATE, 861-B	APS-341118-86B	20
19	17	18		LOCKWASHER, #6 INT TOOTH	9006633	19
—	—	1		NAME PLATE, 861-A	APS-341118-86A	18
2	2	2		PIN, MALE	1203378-01	17
1	1	1		HOUSING, 2 PIN MALE	1203982-2	16
3	3	3		PIN, FEMALE	1203379-01	15
1	1	1		HOUSING, 3 PIN FEMALE	1-1-08P1-9	14
1	1	1		PC BOARD ASSY	861-MAIN-0-1	13
—	—	1		MALE PLUG, 125/250V 20A	1211193	12
—	—	A/R		POWER CORD 18 FT. #12/3	1700026	11
1	1	1		THERMOSTAT	1211158	10
1	—	1		STRAIN RELIEF (GRN)	1211198-01	9
—	1	1		FILTER 3 POLE 4 WIRE	1211187	8
1	1	1		CAPACITOR	1000039	7
1	—	1		CONTACTOR 115 V	1211197-0	6
6	6	2		LAMP, POWER 115 V	1405307	5
6	—	4		RECEPTACLE 15A, 115 VAC	1205383	4
—	1	1		CIRCUIT BREAKER 20A, 2 POLE	1211192	3
1	1	1		COVER, 861 P.C.	C-861-MAIN-0-2	2
1	1	1		CHASSIS, 861 P.C.	C-861-MAIN-0-1	1
QTY.	QTY.	QTY.		DESCRIPTION	PART NO.	ITEM NO.

861 P.C.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS .XX ± .03 .X ± .1 ANGLES ± 1/2°

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY MATERIAL FINISH

DRAWN [illegible] DATE 7-14-71
CHK'D [illegible] DATE 7-14-71
ENG [illegible] DATE
PROJ ENG [illegible] DATE
MFG DATE
NEXT HIGHER ASSY

EQUIPMENT CORPORATION

TITLE POWER CONTROL, 861

SEE PARTS LIST 4-00-EE-0

SIZE B CODE IDENT NO. 46101 DWG NO. 4-861-0-0

SCALE SHEET 1 OF 2

WIRE TABLE — B61-A

ITEM NO	WIRE COLOR	WIRE SIZE	FROM POINT	TO POINT	REMARKS OR DETAIL #
20	BLK	14	P1-B2		12.0
21	BLK	14	P1-B1		14.0
22	WHT	14	P1-S1		9.0
23	WHT	14	P1-S2		11.0
32	WHT	18	P1-S3		10.0
31	RED	18	P2-B3		10.0
27	RED	18	P2-B1		12.0
22	WHT	18	P3-S1		6.0
25	WHT	18	P3-S2		6.0
27	RED	18	P3-B1		6.0
27	RED	18	P3-B2		9.0
28	WHT	18	P4-S1		6.0
28	WHT	18	P5-S1		6.0
29	BLK	18	P5-B1		6.0
29	BLK	18	P5-B2		9.0
29	BLK	18	K1-B2		9.0
28	WHT	18	K1-S2		9.0
27	RED	18	K1-B1		9.0
5	BLK	18	J1-A	—	—
5	BLK	18	J1-B	—	—
5	BLK	18	J2-A	—	—
5	BLK	18	J2-B	—	—
29	BLK	18	F1-C	OUT PUT	6.0
28	WHT	18	F1-B	OUT PUT	6.0
27	RED	18	F1-A	OUT PUT	6.0
27	RED	18	K1-A1		6.0
22	WHT	18	K1-A2		6.0
29	BLK	18	K1-A3		6.0
30	GRN	18	F1-G	OUT PUT	6.0
34	BRN	18	K1-A4		10.0
35	ORN	18	P8-1		10.0
33	ORN	18	P8-2		10.0
11	BLK	12	P9-Y		
11	RED	12	P9-X		
11	WHT	12	P9-S		
11	GRN	12	P9-G		

WIRE TABLE — B61-F

ITEM NO	WIRE COLOR	WIRE SIZE	FROM POINT	TO POINT	REMARKS OR DETAIL #
29	BLK	14	K1-A2		10.0
22	BLK	14	K1-A1		6.0
24	WHT	14	K1-S1		9.0
22	WHT	14	K1-S3		11.0
32	WHT	14	P2-S3		10.0
28	WHT	14	K4-S1		6.0
27	RED	14	K2-B1		6.0
29	BLK	14	K2-B2		9.0
28	WHT	14	K2-S1		9.0
28	WHT	14	K2-S2		6.0
29	BLK	14	P5-B1		6.0
29	BLK	14	P5-B2		9.0
29	BLK	14	K4-B2		9.0
28	WHT	14	K4-B1		9.0
5	BLK	14	J1-A		—
5	BLK	14	J1-B		—
5	BLK	14	J2-A		—
5	BLK	14	J2-B		—
29	BLK	14	F1-C	OUT PUT	6.0
28	WHT	14	F1-B	OUT PUT	6.0
27	RED	14	F1-A	OUT PUT	6.0
27	RED	14	K1-B1		6.0
22	WHT	14	K1-B3		6.0
29	BLK	14	K1-B2		6.0
30	GRN	14	F1-G	OUT PUT	6.0
34	BRN	18	K1-A4		10.0
35	ORN	18	P8-1		10.0
33	BLK	18	P8-B1		10.0
33	BLK	18	K1-B5		10.0
33	GRN	14	P9-G		—
33	BLK	14	P9-Y		—
43	WHT	14	P9-X		—
39	BLK	14	P4-B2		6.0

WIRE TABLE — B61-C

ITEM NO	WIRE COLOR	WIRE SIZE	FROM POINT	TO POINT	REMARKS OR DETAIL #
23	BLK	18	K1-B3		12.0
22	BLK	18	K1-A1		6.0
24	WHT	18	K1-S1		9.0
22	WHT	18	K1-S3		11.0
32	WHT	18	P2-S3		10.0
31	RED	18	P2-B3		10.0
27	RED	18	P2-B1		12.0
22	WHT	18	P3-S1		6.0
54	WHT	18	P3-S2		9.0
27	RED	18	P3-B1		6.0
27	RED	18	P3-B2		9.0
28	WHT	18	P4-S1		6.0
28	WHT	18	P5-S1		6.0
29	BLK	18	P5-B1		6.0
29	BLK	18	P5-B2		9.0
29	BLK	18	K1-B2		9.0
28	WHT	18	K1-S2		9.0
27	RED	18	K1-B1		9.0
5	BLK	18	J1-A	—	—
5	BLK	18	J1-B	—	—
5	BLK	18	J2-A	—	—
5	BLK	18	J2-B	—	—
29	BLK	18	F1-E	OUT PUT	6.0
59	WHT	18	F1-A	OUT PUT	6.0
27	RED	18	F1-E	OUT PUT	6.0
27	RED	18	K1-A1		6.0
54	WHT	18	K1-A2		6.0
29	BLK	18	K1-A3		6.0
30	GRN	18	F1-G	OUT PUT	6.0
35	ORN	18	P8-1		10.0
35	ORN	18	P8-2		10.0
39	BRN	18	K1-A4		10.0
50	GRN	12	P96		
50	BLK	12	P9-B		
50	WHT	12	P9-S		

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DEC ±0.5, ANGLES ±0° 30' — .XXX ± .005, .XX ± .02, .X ± .1 — REMOVE ALL BURRS AND SHARP EDGES — MATERIAL — FINISH

DRWN — CHKD — ENG — PROJ ENG. — PROD — APPROVED — NEXT HIGHER ASSY — SCALE — SHEET 1 OF 2

DATE 2-MAY-62 — DATE 12-JUL-62 — DATE — DATE — LTR

EQUIPMENT CORPORATION

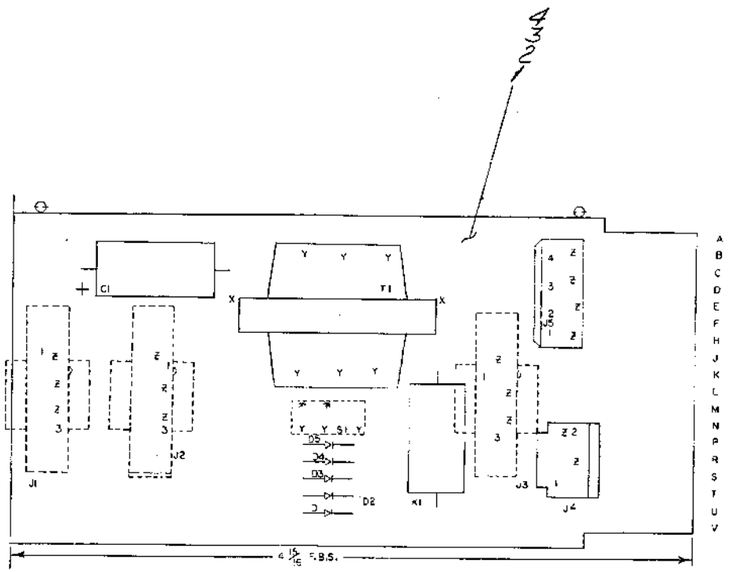
TITLE: POWER CONTROL, 861

SIZE E — FSCM NO. — DRAWING NUMBER P61-0-0 — REV. 13

CHANGE NOTICES — REVISIONS — LTR — DESCRIPTION — DATE — APPROVED

A — 861-0-0

NOTES:



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		ETC CKT BOARD	5010205	1
REF		X-Y COORDINATE HOLE LOCA.	K-CO-5910206-0-4	2
REF		ASSY DRILLING HOLE LAYOUT	D.PAT.5910206-0-5	3
REF		MODULE E.C.O. HISTORY	E.MH.5910206-0-6	4
5	D1 - D5	DIODE, IN 4004	1105796	6
1	C1	CAP, 50UF, 50V 6% AL EL	1000080	5
3	J1, J2, J3	SOCKET, 3 PIN MATE-N-LOCK	1209350-03	7
1	J5	PLUG, 9 PIN MATE-N-LOCK	1209351-04	8
11	FOR USE ON J1-J4	PIN, PC FEMALE MATE-N-LOCK	1209956	9
1	J4	SOCKET, 2 PIN MATE-N-LOCK	1210824-02	10
4	FOR USE ON J5	PIN, PC MALE MATE-N-LOCK	1210823	11
1	K1	RELAY, REED	12-11179	13
1	T1	PC TRANSFORMER	16-11178	12
1	S1	SWITCH, 3-POS.	12-11180	14

PARTS LIST

FIRST USED ON OPTION MODEL: 861 PC.

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

BRUNING 40-522-16699

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

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN.		8-25-72
CHK'D.		9-19-72
ENG.		9-19-72
PROJ. ENG.		9-19-72
PROD.		DATE

NEXT HIGHER ASSY

SCALE 2/1

SHEET OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PILOT CONTROL

SIZE	CODE	NUMBER	REV.
D	CS	5410206-0-1	A

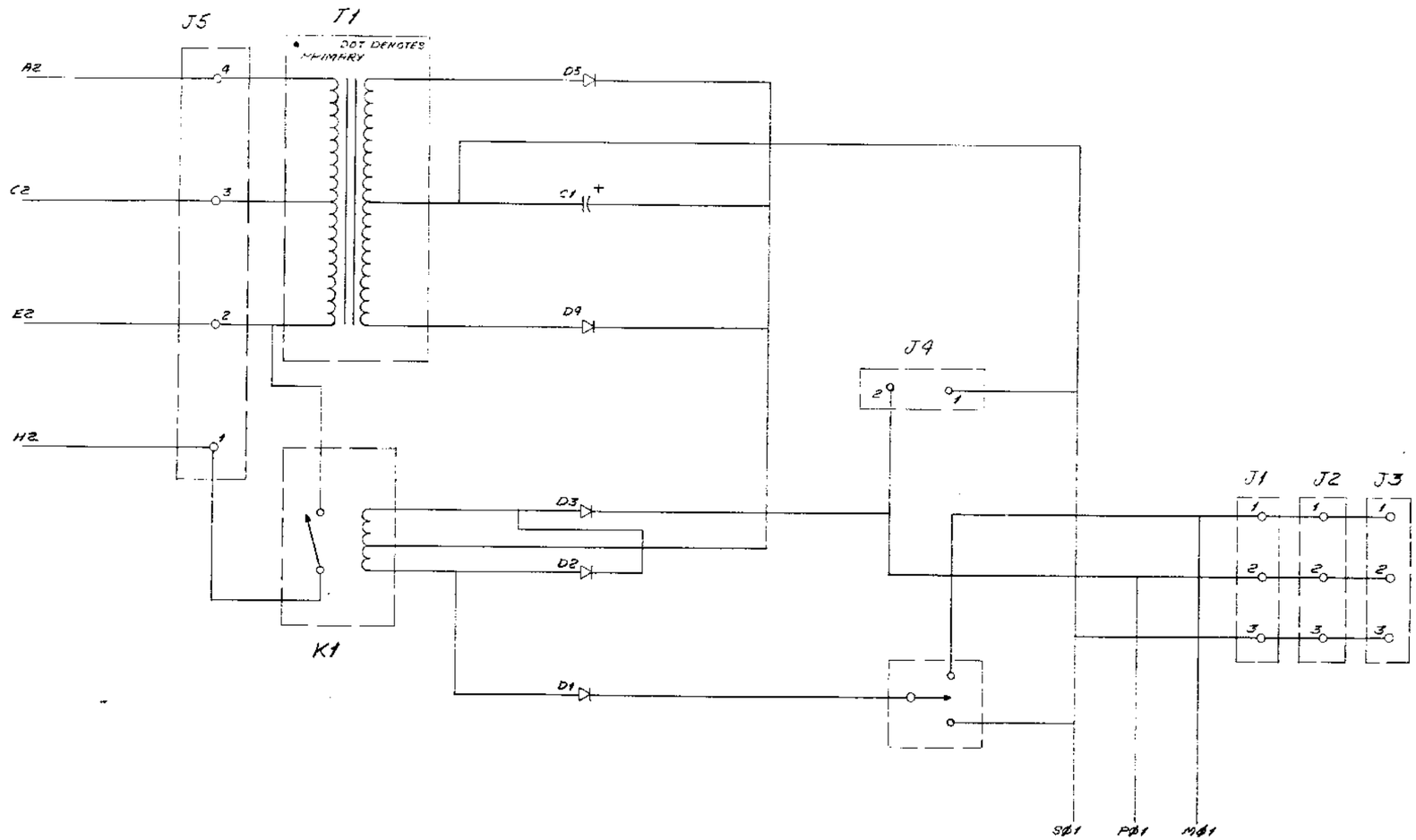
DIST.

REV. A

5410206-0-1

B

A



FIRST USED ON OPTION/MODEL: 861 PC.	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. Bellmont DATE 8-25-72
CHK'D. Delph DATE 9-19-72
ENG. JC Bouton DATE 9-19-72
PROJ. ENG. JC Bouton DATE 9-19-72
PROD. [illegible] DATE [illegible]

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PILOT CONTROL

NEXT HIGHER ASSY. —

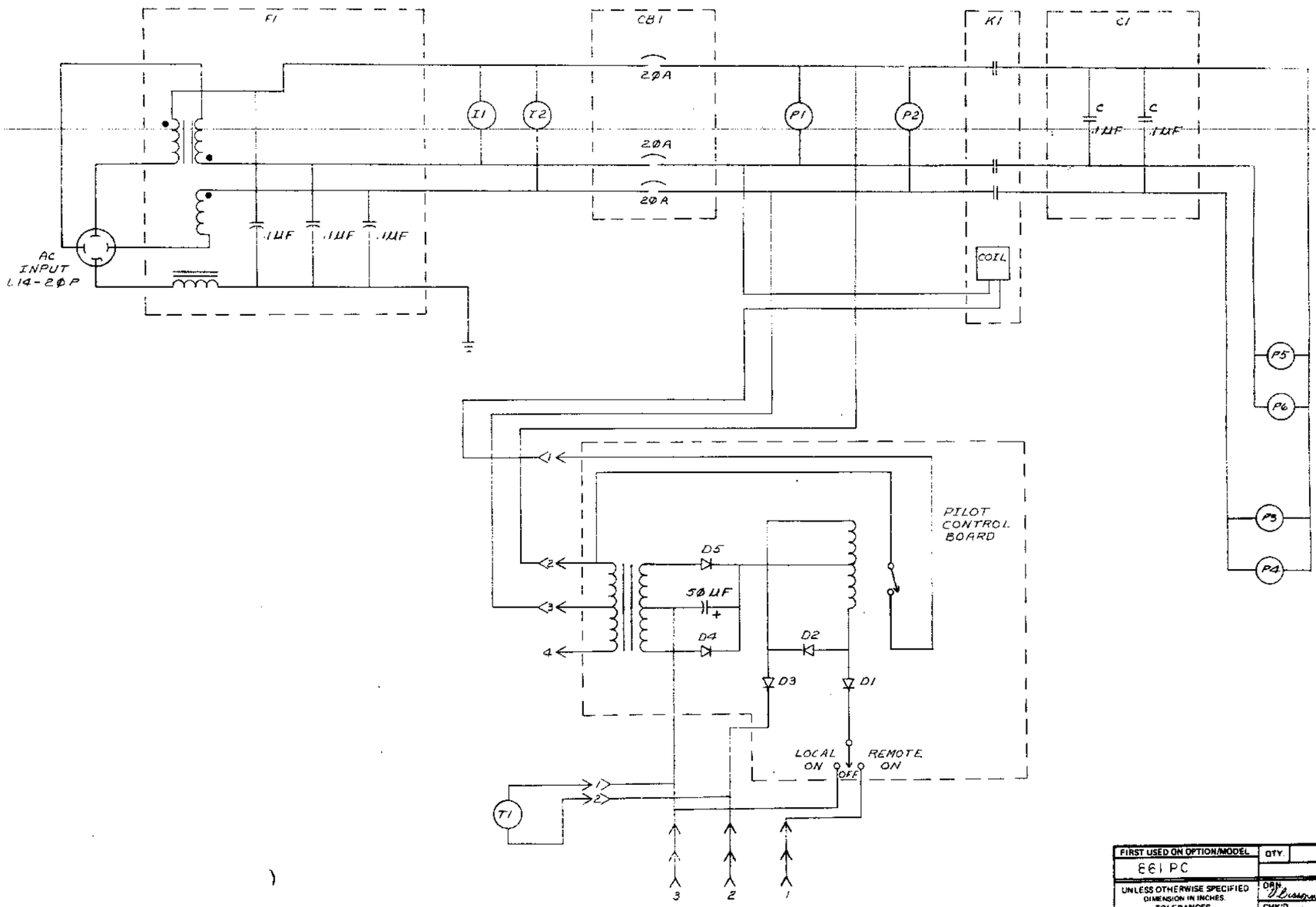
SIZE D | CODE 05 | NUMBER 5410206-0-1 | REV. A

SCALE NONE
SHEET 2 OF 2
DIST.

REV	REVISIONS	CHARGE NO.	CHK
A	ECO 1074		

BRUNING 40-522 15040
DRD 1074

D 5410206-0-1 A



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 —

	NAME	DATE
DRN	J Bourgouin	9-11-72
CHK'D	L Gallagher	10-6-72
ENG	R Bouchard	10-6-72
PROJ. ENG	Richard Rolfe	10-6-72
PROD	Paul Noyes	10-6-72

NEXT HIGHER ASSY. B-DD-861-0
SCALE —
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

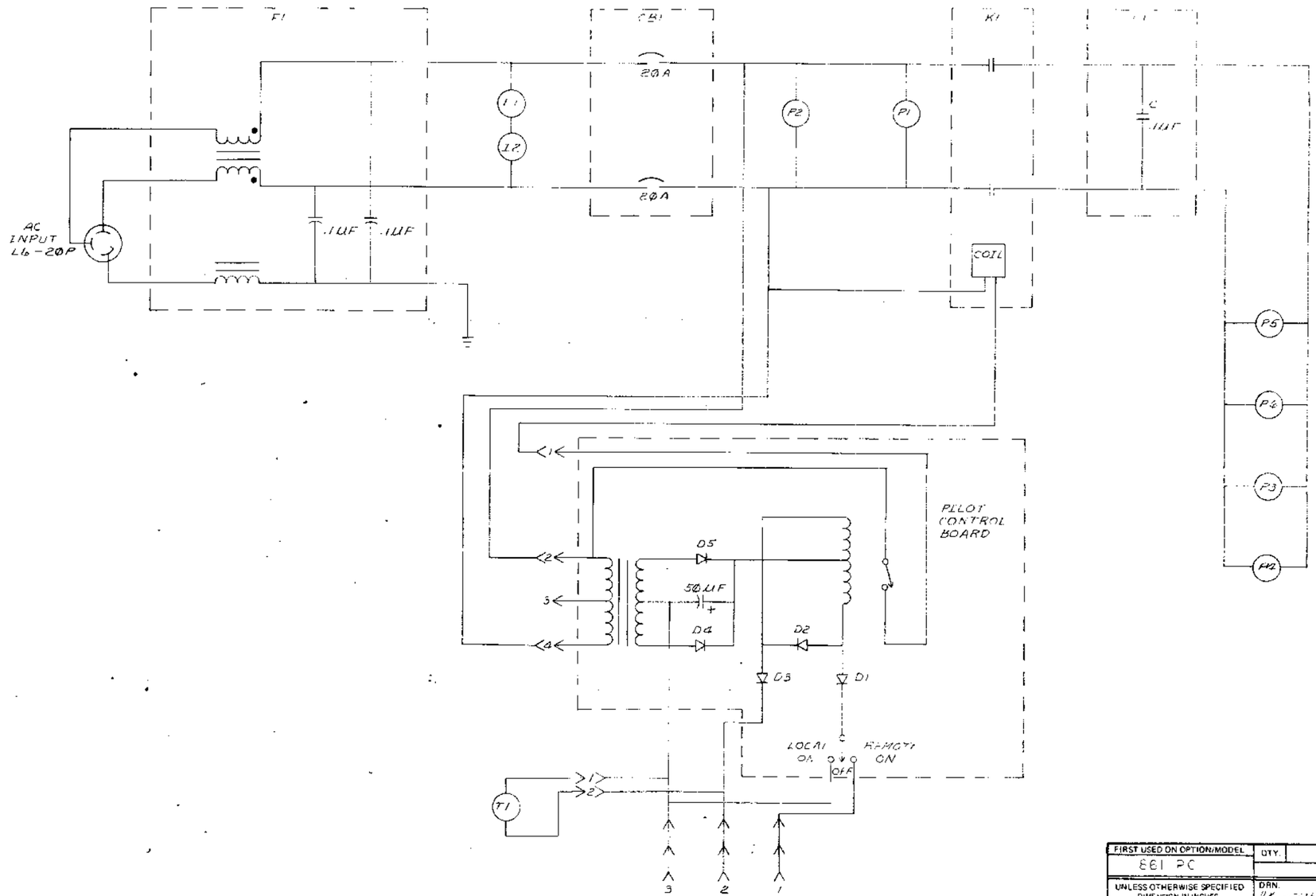
TITLE: CIRCUIT SCHEMATIC (861-A P.C.)

SIZE	CODE	NUMBER	REV.
D	CS	861-A-1	

DIST.

REV.	REVISIONS	CHK	CHANGE NO.

DRAWING 40-307 15868
DEC 105-A



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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN.	DATE	4-72
CHK'D	DATE	10-6-72
ENG.	DATE	10-6-72
PROJ. ENG.	DATE	10/17/72
PROD.	DATE	
NEXT HIGHER ASSY		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CIRCUIT SCHEMATIC (BC)

SIZE	CODE	NUMBER	REV
D	CS	881-B-1	

SCALE

SHEET OF

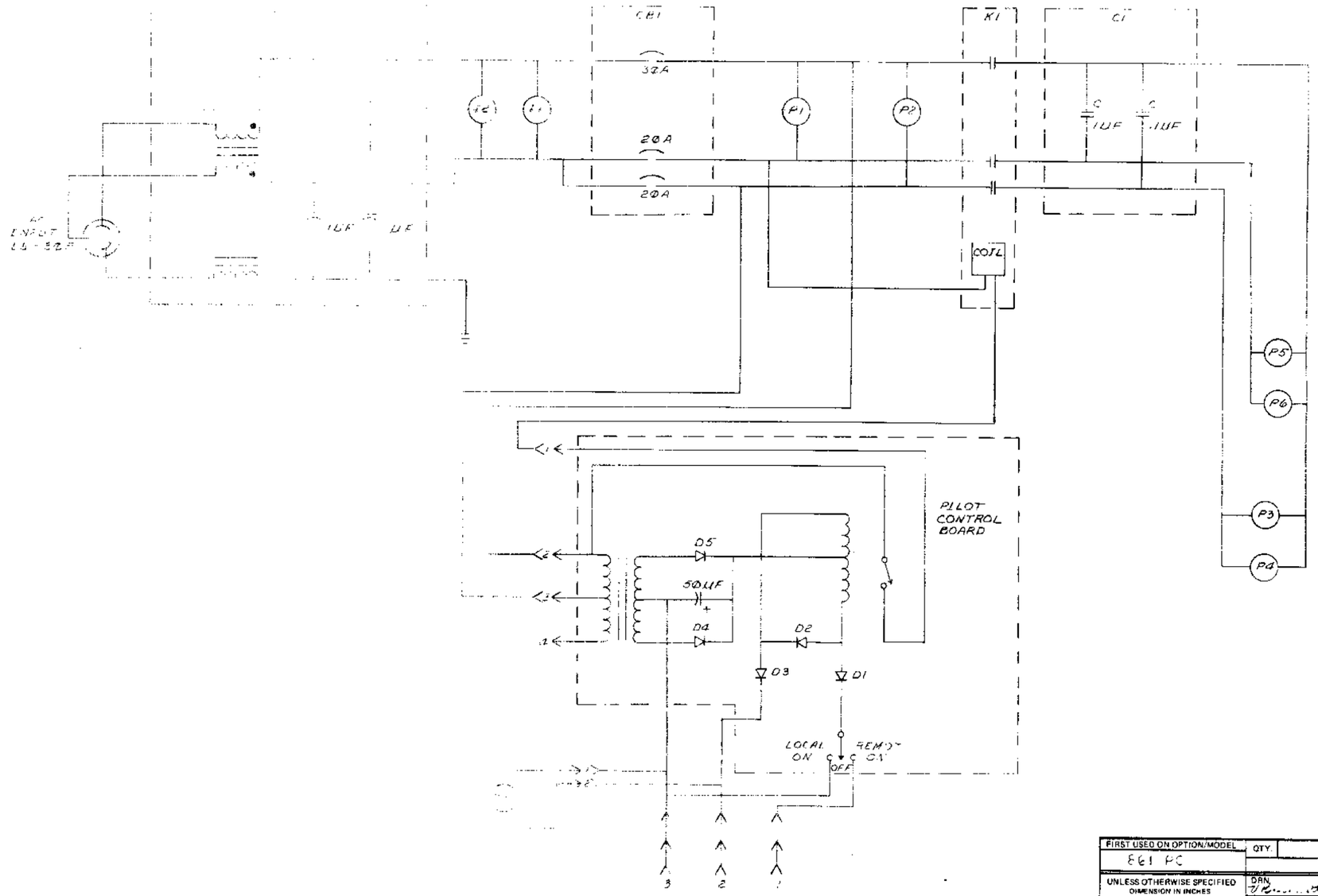
DIST.

REVISIONS	REV.	CHANGE NO	CHK

BRUNING 40-107-15988

DEC FORM NO DRD 100-A

D CS 881-B-1 B



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. DATE
CHK'D DATE 12-6-72
ENG DATE 12-6-72
PROJ ENG DATE 12-6-72
PROD DATE
NEXT HIGHER ASSY
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE CIRCUIT SCHEMATIC 861-C P.C.

SIZE D | CODE | NUMBER 861-C-1 | REV.
DIST

REV
A
B

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
1/72	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 / NUMBER H742-A / REV U
FIELD SERV.	DATE 2-7-72	
SHEET 1 OF 3		DIST

DRB 106

(1)

CHASSIS ASSY H742-A 115 V AC E-UA-H742-Ø-Ø	CHASSIS ASSY H742-C 115V AC E-UA-H742-0-0
CHASSIS ASSY H742-B 230V AC E-UA-H742-Ø-Ø	CHASSIS ASSY H742-D 230V AC E-UA-H742-0-0

(2) PWR CONTROL BOX
D-IA 5309850-0-0

(3) PWR CONTROL COVER
D-MD-5309850-0-0

(4) POWER CONTROL BOARD 11/45
E-IA-5409730-0-0

(5) BALUN ASSEMBLY
1611444

(6) MINI BOXER FAN SCREEN
C-IA-7009737-0-0

(7) PACKAGING INSTRUCTION
A-PI-3700073-0-0

TITLE		SIZE	CODE	NUMBER	REV
CHASSIS ASSY H742	SHEET 2 OF 3	B	DD	H742-Ø	U

ELECTRICAL

CUSTOMER PRINT SET H742-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	D-CS-H742-Ø-1	E	1	CIRCUIT SCHEMATIC	H742
	X		A-SP-H742-Ø-3			TEST PROCUDERE	H742
	X		A-SP-H742-Ø-8			MFG SPECIFICATION	H742
X		4	C-CS-5409730-0-1	#	1	CIRCIUT SCHEMATIC	H742

MECHANICAL

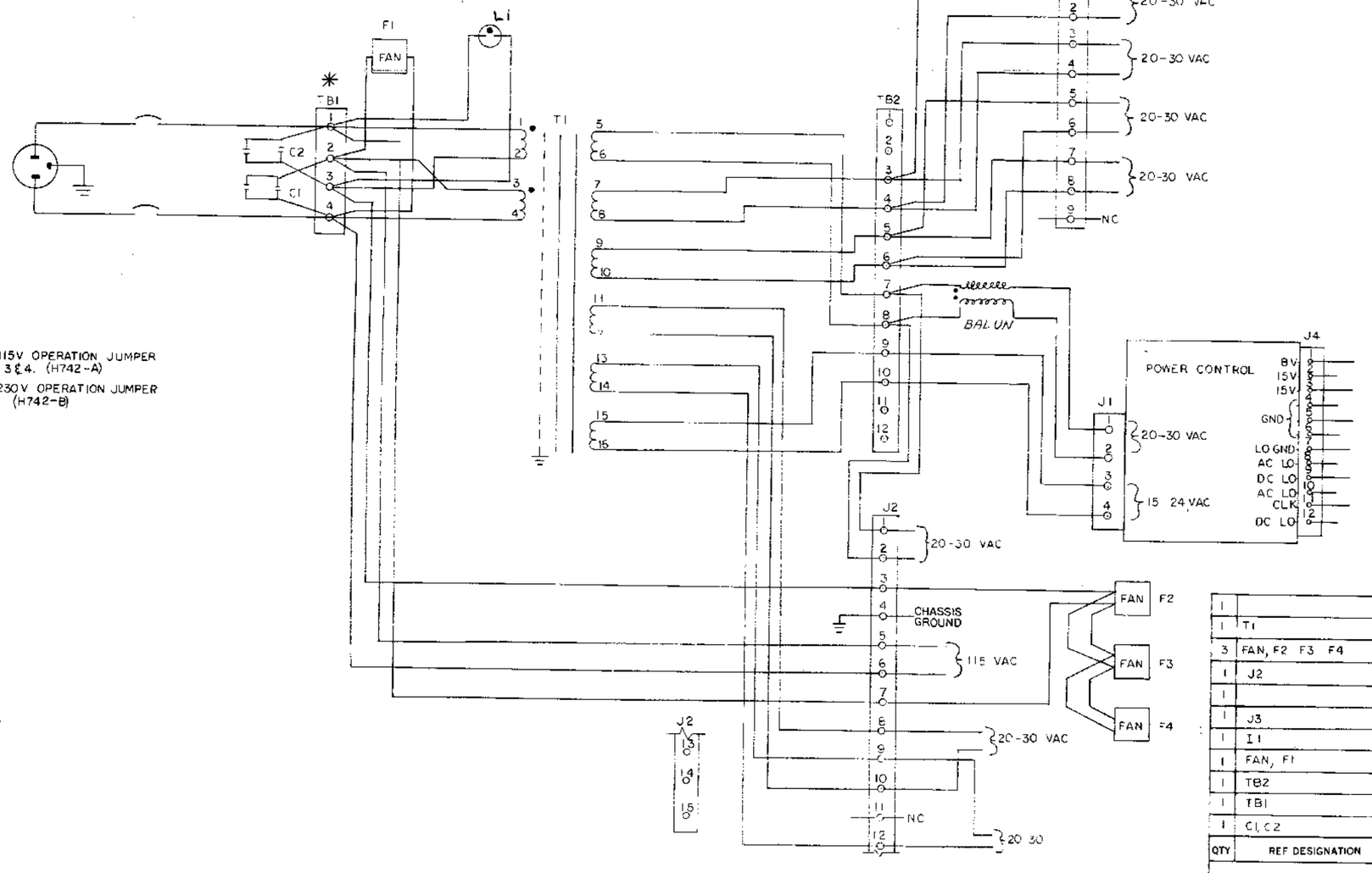
CUSTOMER PRINT SET H742-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-UA-H742-Ø-Ø	U	3	CHASSIS ALLY H742	H742
X			A-PL-H742-Ø-Ø	U	4	CHASSIS ASSY H742	H742
			E-IA-5309755-0-0		3	CHASSIS H742	H742
			D-IA-7409701-0-0		1	BRACKET, POWER SUPPLY	H742
			C-MD-7409702-0-0		1	COVER POWER SUPPLY	H742
			A-DC-5310459-0-0		1	DECAL, H742A	H742
			A-DC-5310460-0-0		1	DECAL, H742B	H742
			A-DC-5310461-0-0		1	DECAL, H742C	H742
			A-DC-5310462-0-0		1	DECAL, H742D	H742
		2	D-IA-5309854-0-0		1	POWER CONTROL BOX	H742
			A-SS-5309854-0-1		1	SILK SCREEN (H742)	H742
		3	D-MD-5309850-0-0		1	POWER CONTROL COVER	H742
			A-SS-5309850-0-1		1	SILK SCREEN	H742
X		4	E-IA-5409730-0-0	#	1	PWR CONTROL BD ASSY	H742
			5009729-0-0	#	1	PWR CONTROL BD	H742
		5	1611444		1	BALUN ASSEMBLY	H742
		6	C-IA-7009737-0-0		1	MINI BOXER FAN SCREEN	
			B-MD-7411626-0-0		1	FAN SCREEN	
			B-MD-7411627-0-0		1	FAN PLATE	
	X	7	A-PI-3700073-0-0	#	2	PACKAGING INSTRUCTION	
			A-PS-9905205-0-0		2	REGULAR SLOTTED CARTON	
			A-PS-9905206-0-0		2	DIE-CUT SHEET	
			A-PS-9905207-0-0		2	LAMINATED BASE	

CUSTOMER PRINT SET CODES

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

TITLE		SIZE	CODE	NUMBER	REV
CHASSIS ASSY H742	SHEET 3 OF 3	B	DD	H742-Ø	U

DRB 108



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.
		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 STRIP	9006917	3
1	TB1	JONES STRIP	9006902	2
1	C1, C2	CAPACITOR 2 X 1 UF 1000V	1010193	1

PARTS LIST

ETCH BOARD REV

REV	REVISIONS	CHG NO.	CHK	
E	R. WOLF 1-7-74	H742-00019		
D	R. WOLF 6-11-73	H742-00018		
C	R. WOLF 6-25-73	H742-00017		
B	G. POTTER 5-23-72	H742-00004		
A	G. POTTER 5-23-72	H742-00001		

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

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN		2-7-72
CHK'D		2-7-72
ENG		2-7-72
PROJ. ENG		2-4-72
PROG.		2-4-72

NEXT HIGHER ASSY B-DD-H742-0

SCALE

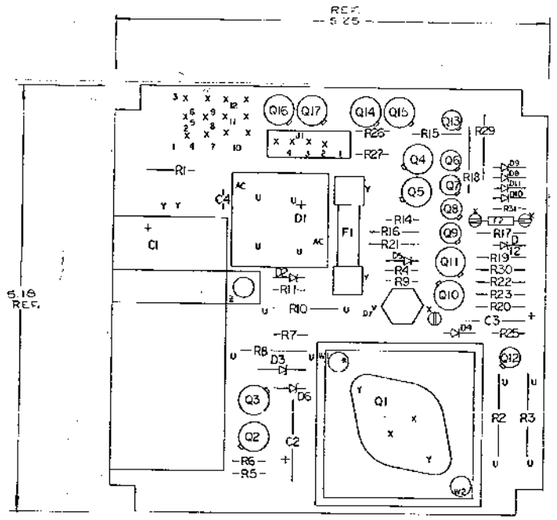
SHEET OF

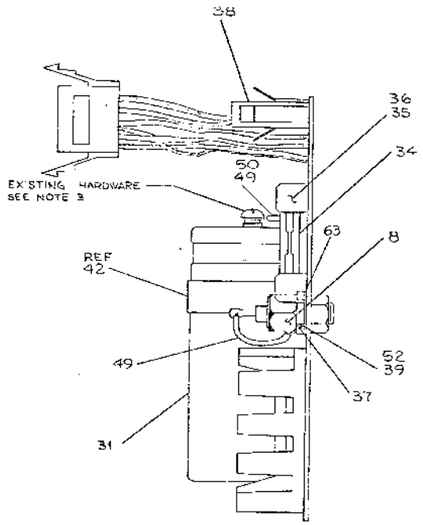
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

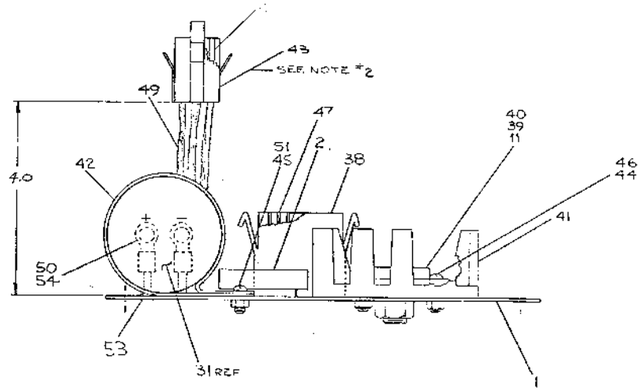
TITLE: CIRCUIT SCHEMATIC H742

SIZE D | CODE | NUMBER CS H742-0-1 | REV E

DEC FORM NO. DRD-175







1. APPLY TFE V 1.8 (COMPOUND) BETWEEN TRANS 1, CR (EQ.) AND HEATSINK (EQ.) AND ALSO BETWEEN TRANS 1 & HEAT SINK (ITEM 41) ALSO BETWEEN HEATSINK AND ETCHED BOARD ITEM # 2.
2. CONNECTION BETWEEN P.C. BOARD AND MATE-N-LOCK CONNECTOR (ITEMS 63 & 64) ARE TO BE MADE POINT TO POINT.
3. HARDWARE FOR ITEM NO. 31 IS SUPPLIED UNLESS OTHERWISE SPECIFIED.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
1	R6	1K 2W 10%	1300369	65
1	F2	FUSE, PICO ¼AMP	1210329-4	64
1		FLAT WASHER	9306664	63
2		NUT, KEPS 4-40-32	9005560	62
2		SCR, PPH 4-32 X 7/16LG	9005023-1	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	R14	RESISTOR 10 OHM 5%	1302317	56
1	R20	RESISTOR 4.64K, 1/8W, 1%	1304856	55
AR		WIRE AWG 22/7 W.32	9007544-5	54
6		INSERT, 6-32	9007536	53
1		SPACER #10	9006823	52
1		HEXNUT #8-32	9006852	51
8		TERMINAL, PINS	9007955	50
AR		WIRE AWG 22/7 TFE RED (EQ.)	9107330-01	49
12		CONTACTS, FEMALE (CRIMP)	1209339	48
4		CONTACTS, FEMALE (BOARD)	1209456	47
2		SCR, PHL PAN HD #4-40 X 1/2 LG	9006013-1	46
1		SCR, PHP PAN HD #7-32 X 5/8 LG	9006027-1	45
2		NUT, KEPS 4-40	9006557	44
1		MATE-N-LOCK (12 PIN)	2093-12PG	63
1		C-CLAMP 1.58	9007855-1	42
1		HEAT SINK	1205817	41
1		INSULATOR, WASHER	9006721	40
AR		COMPOUND THERMAL JOINT	9008268	39
1		MATE-N-LOCK (4 PIN)	1209360-4	38
3		SPLT LUG M-1033	9008735	37
2		EYELET GS-4-7	9006732	36
2		FUSE CLIP	9007203	35
1	F1	FUSE AGC 5	9007221	34
1	C3	CAP 20 MF @ 40V 5%	1010716	33
1	C2	CAP 50 MF @ 25V	1001796	32
1	C1	CAP 5.8K MF @ 40V.	1010840	31
1	R23	RESISTOR 20 K 1/8W 1%	1302715	30
1	R18	RESISTOR 2.49K 1/2W 1%	1300424	29
3	R16,R21,R22	RESISTOR 10K 1/8W 1%	1303512	28
1	R15	RESISTOR 27.4 K 1/8W 1%	1302417	27
1	R30	RESISTOR 24.3K 1/8W 1%	1303418	26
4	R4,R25,R26,R27	RESISTOR 470 Ω 1/4W, 5%	1300316	25
1	R11	RESISTOR 560 1/4W, 5%	1301590	24
1	R10	RESISTOR 590 Ω 2W, 10%	1301880	23
		[illegible]	[illegible]	[illegible]
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 200 Ω 5W, 5%	1309639	17
1	R1	RESISTOR 3.9K 1/2 W 5%	1309443	16
4	Q5,Q11,Q15,Q17	TRANSISTOR 2N3569	1101511	15
4	Q4,Q10,Q16 ,Q14	TRANSISTOR 2N3908	1100583	14
7	Q3,Q6,Q7,Q8,Q9,Q12,Q13	TRANSISTOR MPSA55	1101726	13
1	Q2	TRANSISTOR DEC 2319	1101831	12
1	Q1	TRANSISTOR MJ3440	1311349	11
1	D12	DIODE 5.1 V 1MA	1100925	10
4	D8 THRU D11	DIODE IN4002	1104961	9
1	D7	DIODE IN2970 B	1100134	8
1	D6	DIODE IN746A	1104860	7
1	D5	DIODE D944	1100119	6
1	D4	DIODE IN4001	1104942	5
1	D3	DIODE IN5532 B	1101559	4
1	D2	DIODE .4MS .121 5.1V 1%	1105973	3
1	D1	DIODE BRIDGE MDS 3814	1110719	2
		POWER CONTROL BOARD	D-IA-5009730-00	1
		MODULE ECO HISTORY	[illegible]	
		X-Y COORDINATE HOLE LOCATION	[illegible]	
		CIRCUIT SCHEMATIC	[illegible]	

PARTS LIST

ETCH BOARD REV E

FIRST USED ON OPT/MOD. H742

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

DASH	EIA NO.	DEC NO.	EIA NO.

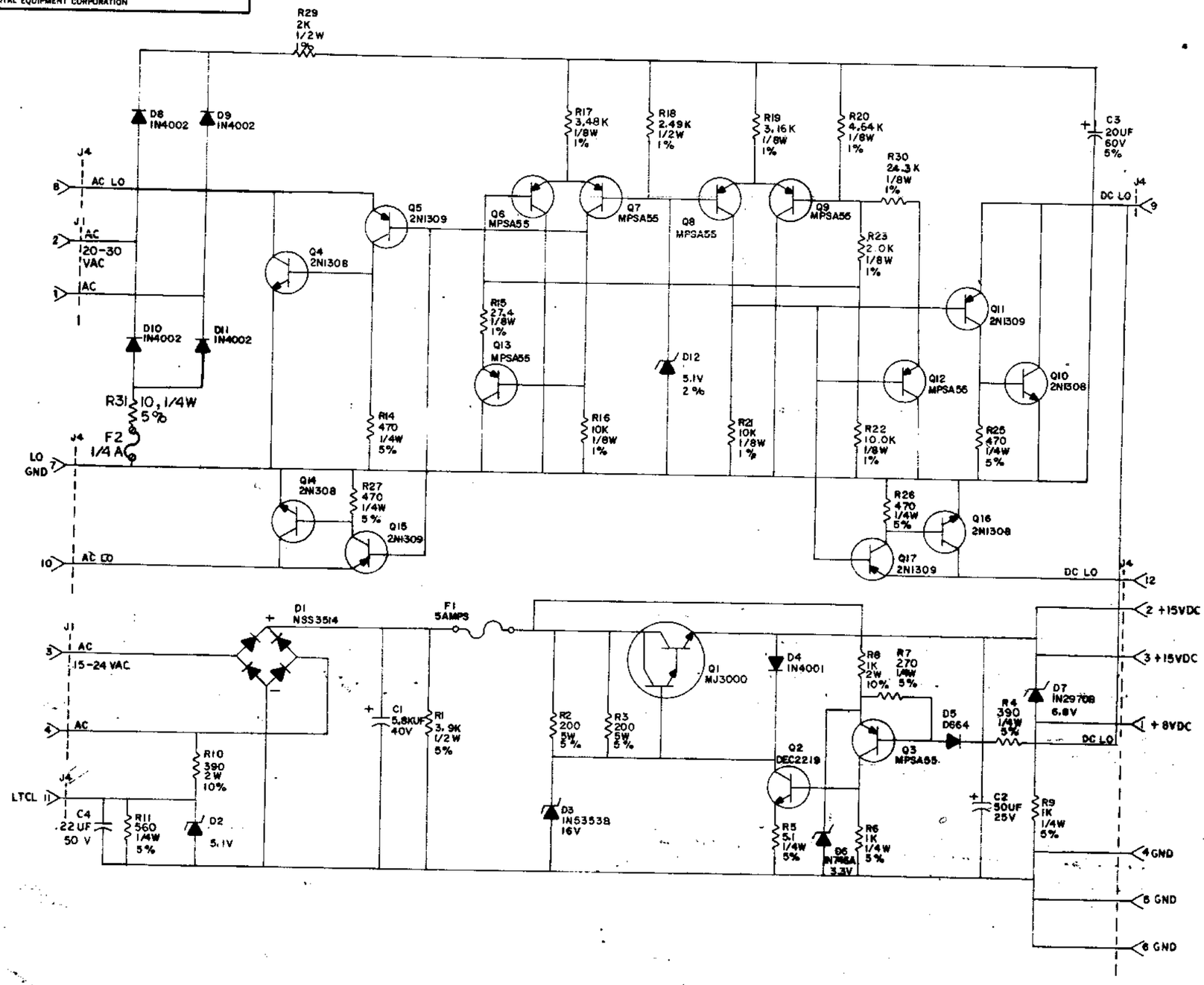
SEMICONDUCTOR CONVERSION CHART

DRN [illegible] DATE [illegible]
CHK'D [illegible] DATE [illegible]
ENG [illegible] DATE [illegible]
MFG [illegible] DATE [illegible]
NEXT HIGHER ASSY
SCALE [illegible] SIZE [illegible]

DIGITAL EQUIPMENT CORPORATION

TITLE
POWER CONTROL BOARD 11/45

MATERIAL [illegible] SIZE B DWG NO. 5409730-00-0 REV IV
FINISH [illegible] SHEET 1 OF 1



REVISIONS

CHK	CHG NO.	REV.
	00001	C
G. POTTER	00002	D
G. POTTER	00003	E
G. POTTER	00004	F
G. POTTER	00005 (5EA)	H
G. POTTER	00006 (6A)	J
G. POTTER	00007	K
R. WOLF	00008	L
R. WOLF	00009	M
R. WOLF	00010	N
R. WOLF		
D.T. 4-23-74		

DEC FORM NO.
DRC 102

DRN. S. Cooper DATE 2/24/72
CHK'D DATE 2-1-72
ENG. DATE 3-1-72
DATE 2-1-72

TRANSISTOR & DIODE CONVERSION CHART

DEC2219	2N2219	1N5231	
2N1308	SAME	1N5353B	
MPSA55		1N751A	SAME
MJ3000		1N4001	SAME
2N1309	SAME	1N2970B	
1N4002		1N746A	
D664	1N3606		

digital
EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
POWER CONTROL BD.

SIZE	CODE	NUMBER	REV.
C	CS	5409730-0-1	N

PRINTED CIRCUIT REV. E

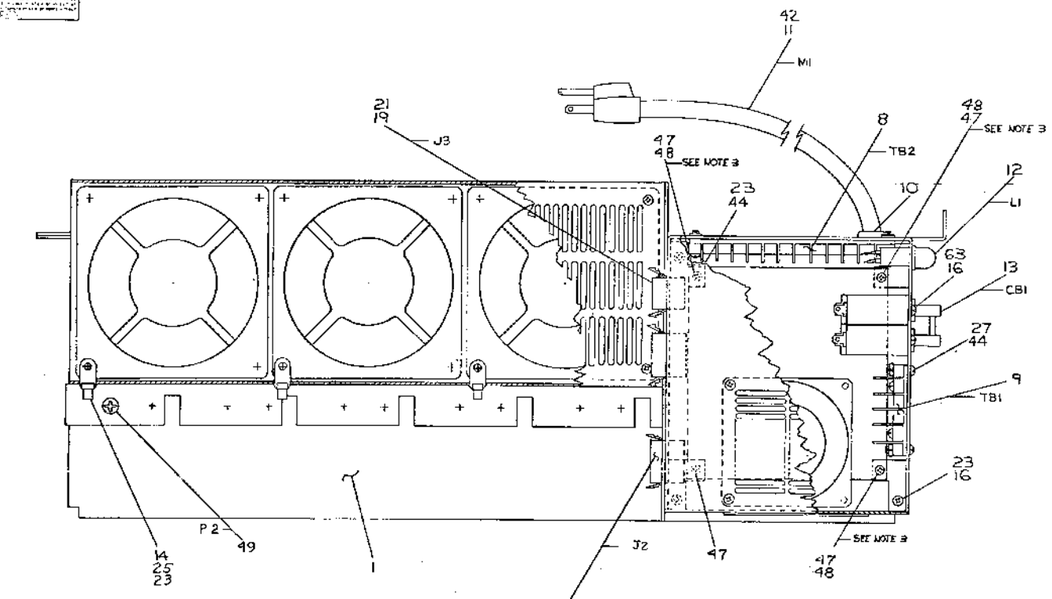
SIZE C CODE CS NUMBER 5409730-0-1 REV N

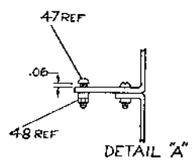
LEGEND	
VARIATION	NUMBER
115 VAC	H742-A
230 VAC	H742-B
115 VAC	H742-C
230 VAC	H742-D

SEE SHEET #3

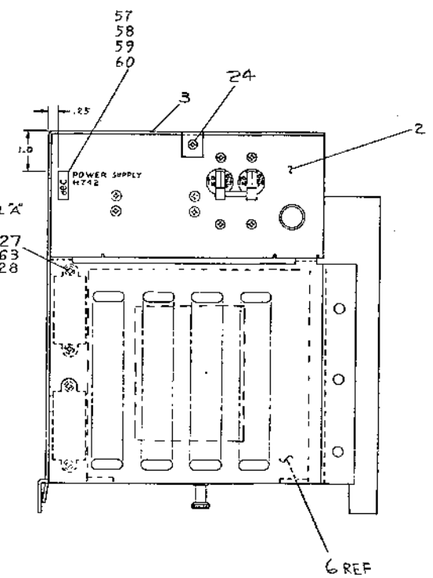
NOTES:

1. * ITEM #22 (MALE CONTACTS) ARE TO BE INSERTED INTO YALE CONNECTING BLOCK IN APPROPRIATE CABLE ID, 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-CT 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



PARTS LIST				
FIRST USED ON OPTION NUMBER	QTY.	DESCRIPTION	PART NO.	REV. NO.
11/45				

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES. TOLERANCES: DECIMALS ± .005, ± .02, ± .1; ANGLES ±30'. REMOVE BURRS AND BREAK SHARP CORNERS. REMOVE SURFACE ROUGHNESS QUALITY.

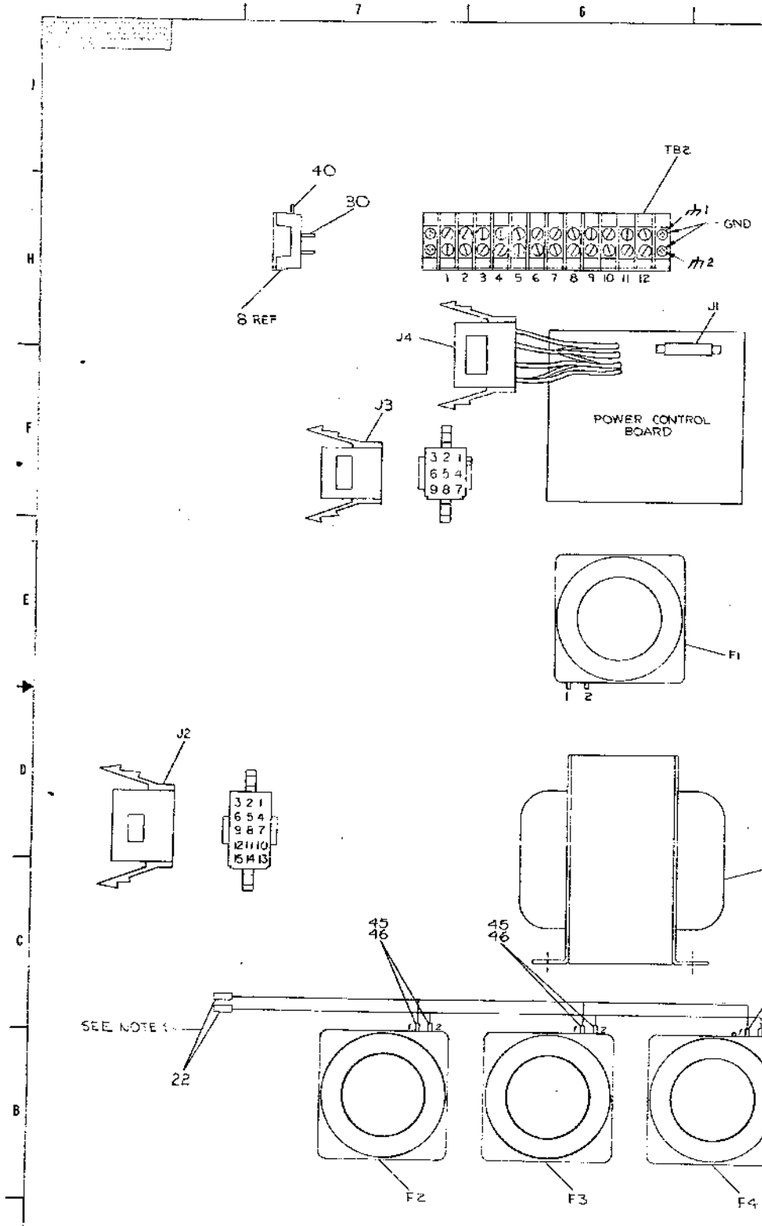
MATERIAL: SEE PARTS LIST. FINISH. NEXT HIGHER ASSY. SCALE: 1/4. SHEET 1 OF 2.

DRAWN: E. Gerhardt 11/5/45. CHK'D: Jim Mann 11/5/45. ENGR: Jim Mann 11/5/45. PROJ ENGR: Jim Mann 11/5/45. PROD: 11/5/45.

EQUIPMENT CORPORATION

TITLE: POWER SUPPLY H742

SIZE: E. DWG NO: H742-Ø-Ø. REV: U.



WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONN	WITH	TO CONN	WITH	REMARKS
34	18	WHT	C2-1	SOLDER	TB1-3	35	SEE
34	18	WHT	T2-3	19,21			
34	18	WHT	T2-4	19,21			
34	18	RED	T2-6	SOLDER	TB1-1	39	NOTE 5
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	21,15	
			T1-12		J2-10	21,15	
			T1-13		J2-9	21,15	
			T1-14		J2-12	21,15	
			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	
42	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-#1	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-#2	23,38	

ITEM NO.	QTY.	DESCRIPTION	PART NO	ITEM NO
	1	PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN PARENTHESES ARE REFERENCE. TOLERANCES: DECIMALS ±.XX=.03 ±.XXX=.010; ANGLES ±1°. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ____. MATERIAL ____. NEXT HIGHER ASSY. ____. FINISH ____.

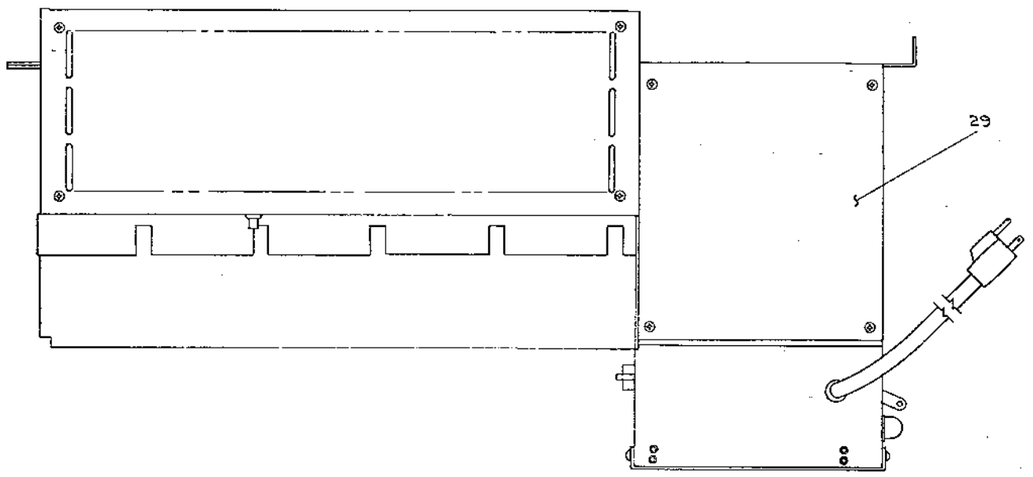
EQUIPMENT CORPORATION

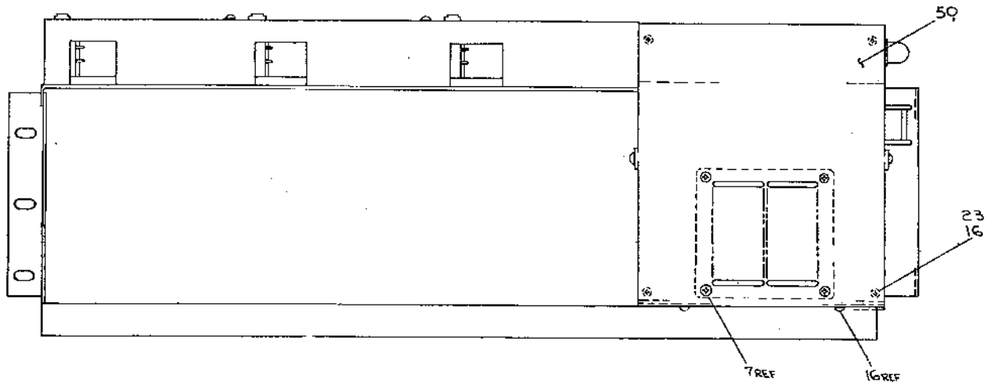
TITLE: POWER SUPPLY H742

SIZE E; NUMBER H742-C-C; REV. U

SEE PARTS LIST

1:1.45





FOR VARIATIONS H742-C & D, ITEMS ARE SAME AS A & B WITH EXCEPTIONS SHOWN

SEE SHEET #2 FOR WIRING INFORMATION

ITEMS USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART 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. DEBURR TO SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH:

	NAME	DATE
DRN	T. QUILLIN	1/5/72
CHK'D	D. FONTAINE	2/6/72
ENG	J. MORRIS	2/8/72
APPR'D ENG	G. POTTER	2/10/72
APPR'D	A. JESPSEN	2/13/72

NEXT HIGHER ASSY

SCALE: 1/1 SHEET 1 OF 2

DO NOT SCALE DRAWING

REVISIONS: DWG NO. 1JA-H742-0-0

DWG NO. 1JA-H742-0-0 REV. U

TITLE: POWER SUPPLY H742

CODE IDENT NO. 17018

DEC EQUIPMENT CORPORATION

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. QUILLIN DATE 1/19/72
ENG [signature] DATE 2-14-72
CHECKED D. FONTAINE DATE 1/26/72
PROD A. Hinch DATE 2-24-72
SECTION 1
ISSUED SECT. 1

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	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	-	-
19	1209350-09	MATE-N-LOCK 9 PIN (FEMALE)	1	1	1	1
20	~~1209351-04~~	~~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. H742-100021
DIST. G

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. QUILLIN DATE 1-19-72
ENG [illegible] DATE 2-14-72
CHECKED D. FONTAINE DATE 1-26-72
PROD [signature] DATE 2-24-72
SECTION 1
ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION H742-A (115V)	H742-B (230V)	H742-C (115V)	H742-D (230V)
23	9007649	L'WASH #6 EXT	20	20	12	12
24	9006453	#6-32 SEMS X 3/8 LG	2	2	6	6
25	9007033	TY WRAP HOLDER	3	3	3	3
26	9007651	L'WASH #10 EXT	4	4	4	4
27	9006560	KEPS NUT #6-32	16	16	16	16
28	9006022-1	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	22	12	12
34	9107530-29	#18 AWG 19 STRAND PVC. INS. (RED/WHT) TWP	A/R	A/R	A/R	A/R
35	9007919	FASTON TAB (.250 SERIES) BLU	32	32	32	32
36	10-10193	CAPACITOR 2 X .1 uf @ 1000V	2	2	2	2
37	~~9007926~~	~~FASTON TAB (.250 SERIES)~~	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-5309854-0-0~~	~~POWER CONTROL BOX~~	1	1	1	1
42	1700006-6	CORD POWER (230V)	1	1	1	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-H742-0-0
SHEET 2 OF 4
SIZE A | CODE PL | NUMBER H742-0-0 | REV U | ECO NO.
DIST. G

DEC FORM DEC 16-(325) 1031 N870

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. Quillin	CHECKED D. Fontaine	SECTION
DATE 1/19/72	DATE 1/26/72	1
ENG G. POTTER	PROD A. HIRSCH	ISSUED SECT.
DATE 2-14-72	DATE 2-24-72	1

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-5309654-3-0~~	~~POWER CONTROL BOX~~	~~-~~	~~-~~	~~1~~	~~-~~
~~52~~	~~U-IA-5309654-4-0~~	~~" " "~~	~~-~~	~~-~~	~~-~~	~~1~~
53	9006796	SPACER #6 X 32 X 3/16 LG 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
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T. QUILLIN	CHECKED D. FONTAINE	SECTION
DATE 1-19-72	DATE 1-26-72	1
ENG G. POTTER	PROD A. HIRSCH	ISSUED SECT.
DATE 2-14-72	DATE 2-24-72	1

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	1	1	1	1

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
DRA 110

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H744-Ø		
CIRCUIT SCHEMATIC	D-CS-H744-Ø-1		
UNIT ASSY	E-UA-H744-0-0	MFG. SET	
		TEST PROCEDURE	A-SP-H744-Ø-3
		MFG. SPE	A-SP-H744-Ø-8
		PACKAGING INSTRUCTIONS	A-PI-3700074-0-0

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: H744-1
H744	+5V REGULATOR	X

REVISIONS	CHG. NO.	REV
INITIAL	00005 Blake 10-6-72	A
J. W. LAWRENCE		
	00007 Wales 4-11-74	B
R. WOLF		
	4-24-74	

USED ON OPTION/MODEL
11/45

DRN. D FONTAINE	DATE 2-4-72	TITLE +5V REGULATOR	
CHK'D. D FONTAINE	DATE 2-4-72		
PROJ ENG.	DATE 2-25-72		
PROD.	DATE 2-28-72	SIZE B	CODE DD
FIELD SERV.	DATE 3-25-72	NUMBER H744-Ø	REV B
SHEET 1 OF 2		DIST	

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

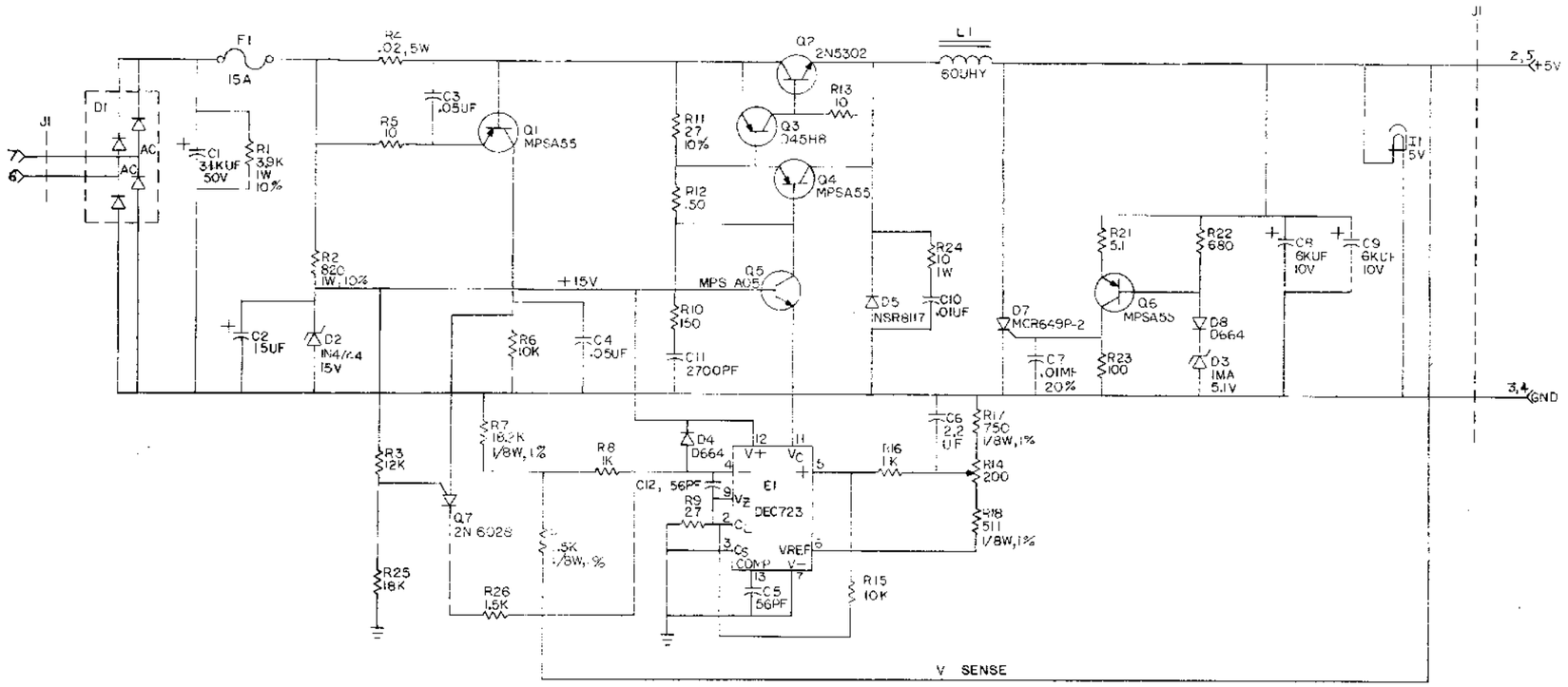
MECHANICAL

CUSTOMER PRINT SET H744-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	C-UA-H744-Ø-Ø	K	1	UNIT ASSY	H744
			D-PS-1210737-0-0		1	HEAT SINK	H744
			D-IA-5309756-0-0		1	REGULATOR BRKT	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	

SIZE	CODE	NUMBER	REV
B	DD	H744-Ø	B

SHEET 2 OF 2

DPB 108



UNLESS OTHERWISE INDICATED:

RESISTORS ARE 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV F H

REVISIONS	DEC NO.	EIA NO.	DEC NO.	EIA NO.
	IN964A	SAME	MPSA55	
	D664	IN3606	2N5302	
	MCR649P-2		D45H9	
	IN750A	SAME	MPSA05	
	IN4744	SAME		
	NSR8117			
	2N6028			

SEMICONDUCTOR CONVERSION CHART

DRN	R.WOLF	DATE 8-24-72
CHK'D	JOHN HICKE	DATE 9-5-72
ENG		DATE
PROJ. ENG		DATE
PROG		DATE
NEXT HIGHER ASSY		
SCALE		
SHEET 1 OF 1		

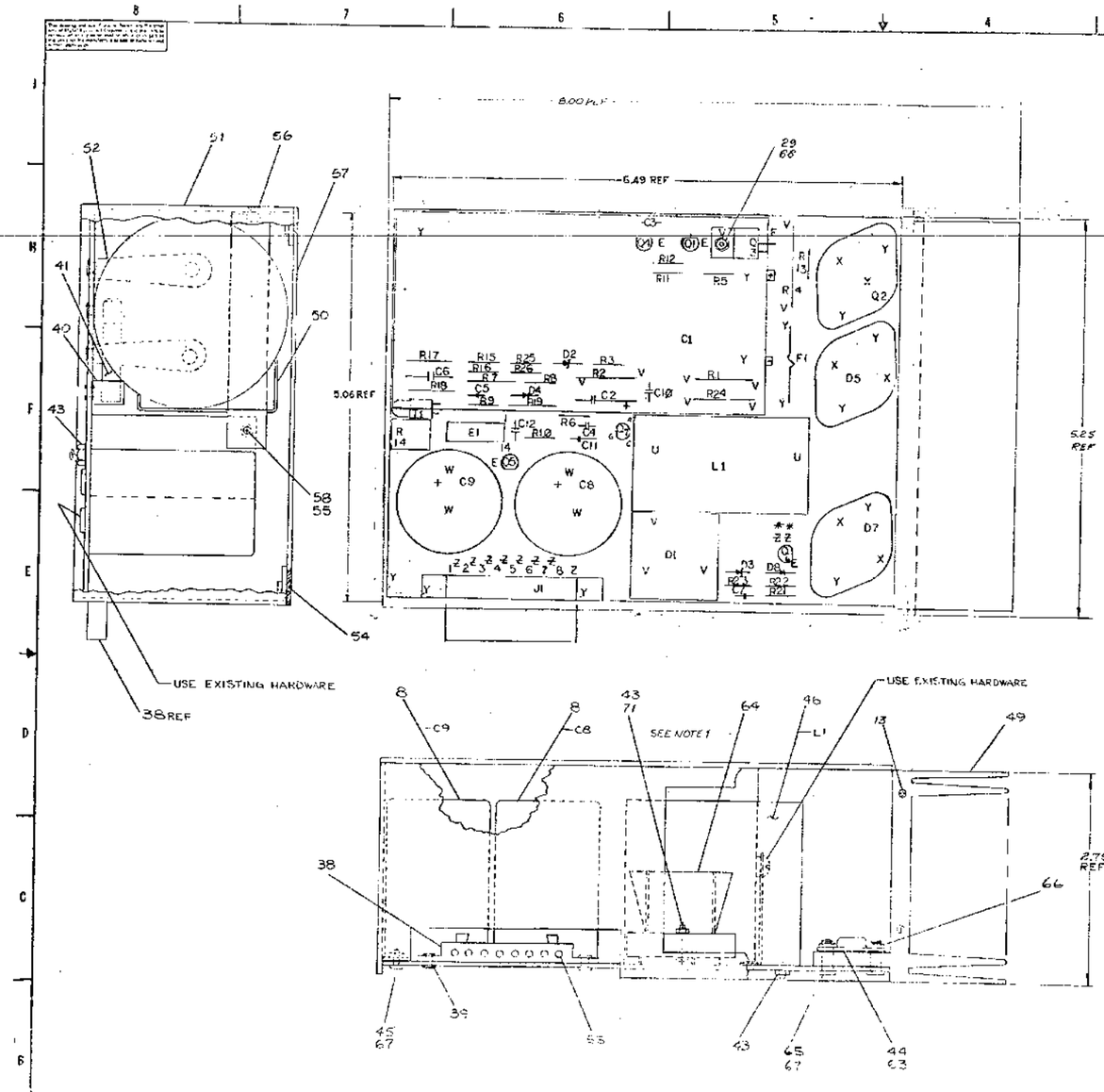
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: 5V REGULATOR

SIZE	CODE	NUMBER	REV.
D	CS	H744-0-1	L

DIST.

DEC FORM NO. 6ORD-135



NOTES:

1 APPLY ITEM # 63 (COMPOUND) BETWEEN TRANSISTOR (Q2), DIODES (D5, D7) AND ITEM #44 (WASHER). ALSO BETWEEN ITEM #44 (WASHER) AND HEAT SINK (ITEM #49). ALSO APPLY ITEM # 63 (COMPOUND) BETWEEN ITEM #9 (DIODE BRIDGE) AND ITEM #64 (HEAT SINK BRIDGE).

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	[illegible]	[illegible]	[illegible]	[illegible]
8		L WASHER #4	9008632	[illegible]
7		NUT KEPS #4 40	9006597	[illegible]
6		SCR PHL PAN HD #4-40 × 9/16 LG	9006033-1	[illegible]
1		HEAT SINK BRIDGE	1210907	[illegible]
A/R		COMPOUND THERMAL JOINT	9006268	[illegible]
1	R26	RESISTOR 15K 1/4W 5%	1300391	[illegible]
1	R19	RESISTOR 7.5K 1/8W 1%	1303322	[illegible]
1	R3	RESISTOR 12K 1/4W 5%	1300488	[illegible]
1	Q7	TRANSISTOR, UNIJUNCTION 2N6026	1510877	[illegible]
1		SCR PHL PAN HD #6-32 × 1/4 LG	9006020-1	[illegible]
1		COVER	C-MD-5309760-0-0	[illegible]
1		SCR. PHL FLT HD #6-32 × 1/4 LG	9006020-2	[illegible]
1		WASHER, LOCK #6	9007649	[illegible]
4		SCR. PHL FLT HD #4-40 × 5/16 LG	9006010-2	[illegible]
8		CONTACT FEMALE	1209456	[illegible]
2		STRAP, CAPACITOR	C-MD-5309759-0-0	[illegible]
1		BRACKET, REGULATOR	D-IA-5309756-0-0	[illegible]
1		HOLDER, CAPACITOR 2.5	C-IA-5300751-0-0	[illegible]
1		HEAT SINK REGULATOR	D-PS-1210737-0-0	49
2	C5, C12	CAP 56 PF	1000012	48
1	R24	RESISTOR 10 1W	1300171	47
1	L1	REACTOR 80 μHY MMC4547	16-C350	46
2		SCR, PHL PAN HD #4-40 . 1/4 LG	9006009-1	[illegible]
3		WASHER, INSULATOR	9006721	44
3		NUT, KEPS #6-32	9008185	43
				42
1	F1	FUSE 15 AMP	9007226	[illegible]
2		FUSE CLIP	9007203	[illegible]
6		EYELET 66-4-7	9007732	[illegible]
1	J1	MATE-N-LOCK CONN, 6 PIN	1209340	38
1	E1	INTEGRATED CIRCUIT DEC 723C	1910415	37
1	Q5	TRANSISTOR A05	1510705	36
1	Q3	TRANSISTOR D45H5	1510708	[illegible]
3	Q1, Q6, Q4	TRANSISTOR MPSA55 MOT.	1510706	[illegible]
1	Q2	TRANSISTOR 2N6302	1510196	[illegible]
1	R14	RES VARIABLE 200	1310862	
1	R21	RES 5.1 1/4W 5%	1309422	[illegible]
1	R23	RES 100 1/4W 5%	1300229	[illegible]
1		SCR, PPH #4-40 × 3/8 LG	9006010	[illegible]
1	R11	RES 27 1/4W 10%	1301420	[illegible]
1	R17	RES 750 1/8W, 1%	1302955	27
1	R9	RES 27 1/4W 5%	1301522	[illegible]
1	R7	RES 18.2K 1/8W, 1%	1309112	[illegible]
2	R8, R16	RES 1K 1/4W 5%	1300505	[illegible]
1	R18	RES 511 1/8W 1%	1302411	[illegible]
1	R25	RES 18 K 1/4W 5%	1302465	[illegible]
2	R6, R15	RES 10 K 1/4W 5%	1300479	[illegible]
1	R4	RES .02 5W 3%	1310 876	[illegible]
1	R2	RES 820 1W 10%	1300358	[illegible]
1	R1	RES 3.9K 1W 10%	1302927	[illegible]
2	R5, R13	RES 10 1/4W 5%	1301317	[illegible]
2	R12, R10	RES 150 1/4W 5%	1300250	
1	D3	DIODE ZENER 1 MA 5.1V	1110925	
1	D7	SCR MCR 649P-2	1109465	14
4		SCR, PPH #4 × 5/16 LG SST TYPE	9009142	13
1	D5	DIODE PWR KSR 8117	1110715	12
2	D4, D6	DIODE PWR D664	1100114	11
1	D2	DIODE ZENER 1N 4744	1105648	[illegible]
1	D1	DIODE BRIDGE	1110714	[illegible]
2	C8, C9	CAP 6K μF 10V	1010704	8
1	C1	CAP 31 Kμf 50V	1010658	7
2	C4, C3	CAP .001μF 25 V	1001774	[illegible]
1	C2	CAP 15 μF 20V 10%	1004812	5
1	C11	CAP 2700PF 100V 5% DM	1001637	[illegible]
2	C7, C10	CAP .01 μF 100V 20% DISC	1001610	[illegible]
1	C6	CAP 2.2 UF, 20V, 10%	1002527	[illegible]
1		ETCHED CIRCUIT BOARD	5009725	[illegible]
		ASSY/DRILLING HOLE LAYOUT	D-AH H744-0-5	
		X-Y COORDINATE [illegible]	[illegible]	[illegible]
		MODULE ECO HISTORY	[illegible]	[illegible]
		CIRCUIT SCHEMATIC	[illegible]	[illegible]

1		SCR. PHL PAN HD #6-32 5/8 LG	9006025-1	71
1		PACKING INSTRUCTIONS	API-5700074-0-0	70
1	R22	RES 680 1/4W 5%	1301429	69

PARTS LIST

ETCH BOARD REV H

FIRST USED ON CAT/HCO
D-UA-H742A-0-0

D664 IN3606
IN4774

MA 723C 1 12

IC TYPE GND +5V

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

IC PIN LOCATIONS

EQUIPMENT CORPORATION

TITLE REGULATOR

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-8
		PACKAGING INSTRUCTION	A-PI-3700074-0-0

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE H745-1
H745	-15V REGULATOR	X

REVISIONS			
DATE	CHG. NO.	REV	
	00004	A	A. Wade 6-26-72 G.POTTER
	00005	B	S.Blake 10-6-72 J. W. LAWRENCE
	00006	C	A. Wade 11-14-72 G.POTTER
	00007	D	A. Wade 2-15-73 G.POTTER
	00010	E	C.B.Charles 4-11-74 R. WOLF 4-24-74

USED ON OPTION/MODEL
11/45

DRN. D. FONTAINE	DATE 2-7-72	TITLE -15V REGULATOR
CHK'D.	DATE 2-17-72	
PROJ. ENG.	DATE 2-25-72	
PROD.	DATE 2-25-72	
FIELD SERV.	DATE	
SHEET 1 OF 2		

SIZE	CODE	NUMBER	REV
B	DD		E

DIST

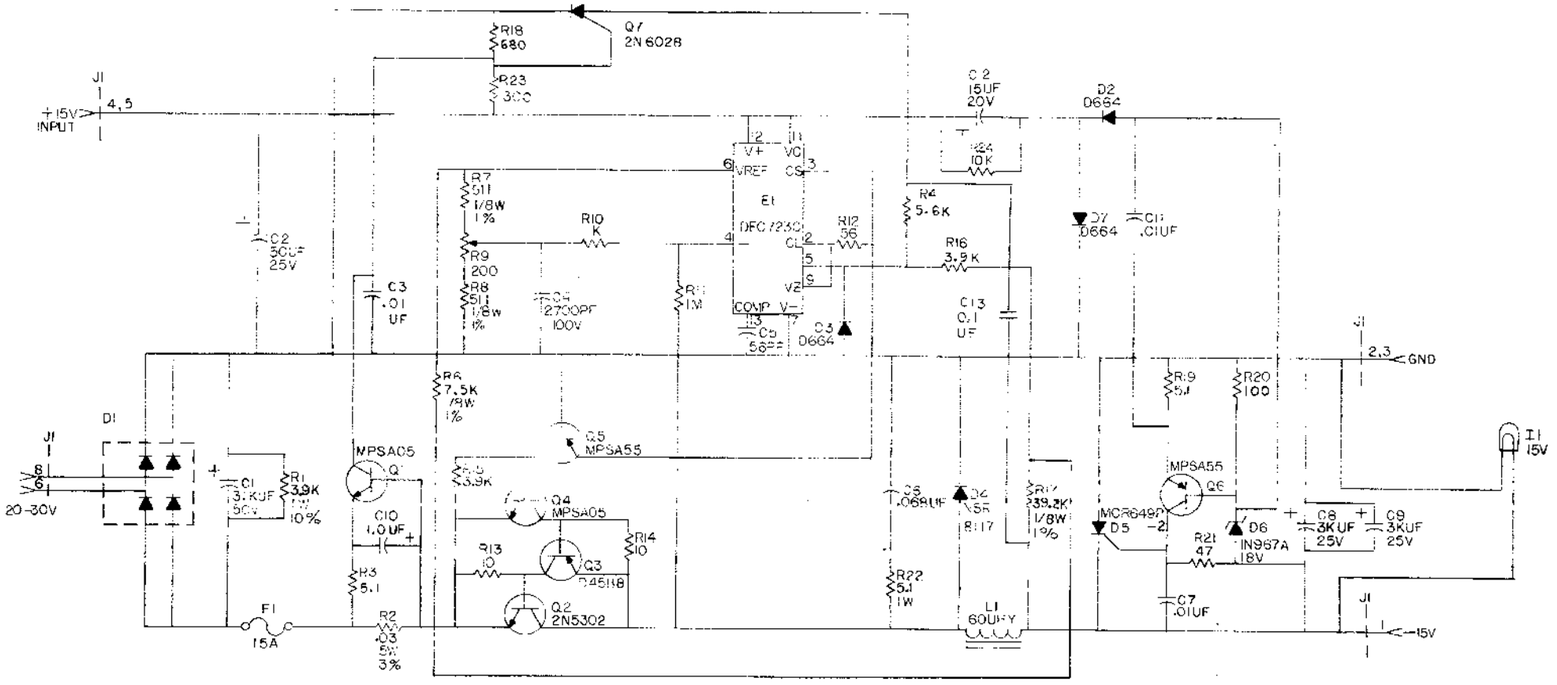
ELECTRICAL

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	QTY	FIND NO.	DRAWING NO.	REV.	NO OF SHT	DESCRIPTION	OPTION NO.
X	1	1	[illegible]-Ø	[illegible]	1	UNIT ASSY	H745
	1		D-PS-1[illegible]77-0-0		1	HEAT SINK	H745
	1		D-A-[illegible]56-0-0		1	REGULATOR BRKT	H745
	1		D-A-[illegible]61-0-0		1	2 - 5 CAP BRKT	H745
	1		D-A-[illegible]750-0-0		1	COMPONENT COVER	H745
	1		D-MI-[illegible]759-0-0		1	CAPACITOR STRAP	H745
	2		A-PS-[illegible]0074-0-0	-	2	PACKAGING INSTRUCTIONS	H745
			A-PS-[illegible]221-0-0	-	2	OUTER CARTON	H745
			A-PS-[illegible]212-0-0	-	2	INNER PACKAGE	H745

FIRE CODE	NUMBER	REV
[illegible]	[illegible]	E



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	
NSR 8117		2N 6028	
MCR649P-2			
IN 967A	SAME		
2N 5302			
MPS A05			
MPS A55			

SEMICONDUCTOR CONVERSION CHART

REVISIONS	REV	CHANGE NO.	CHK
	C	H745-00001	
	D	H745-00002	
	E	H745-00003	
	F	H745-00004	
	G	H745-00005	
	H	H745-00006	
	J	H745-00007	
	K	H745-00009	
	L		

R.J.WOLF 4/17/71

DRN.	DATE 11-4-71
CHK'D.	DATE 11-9-71
ENG.	DATE 11/11/72
PROJ. MGR.	DATE 11/11/72
PROG.	DATE 11/13/72
NEXT HIGHER ASSY	
SCALE	
SHEET OF	

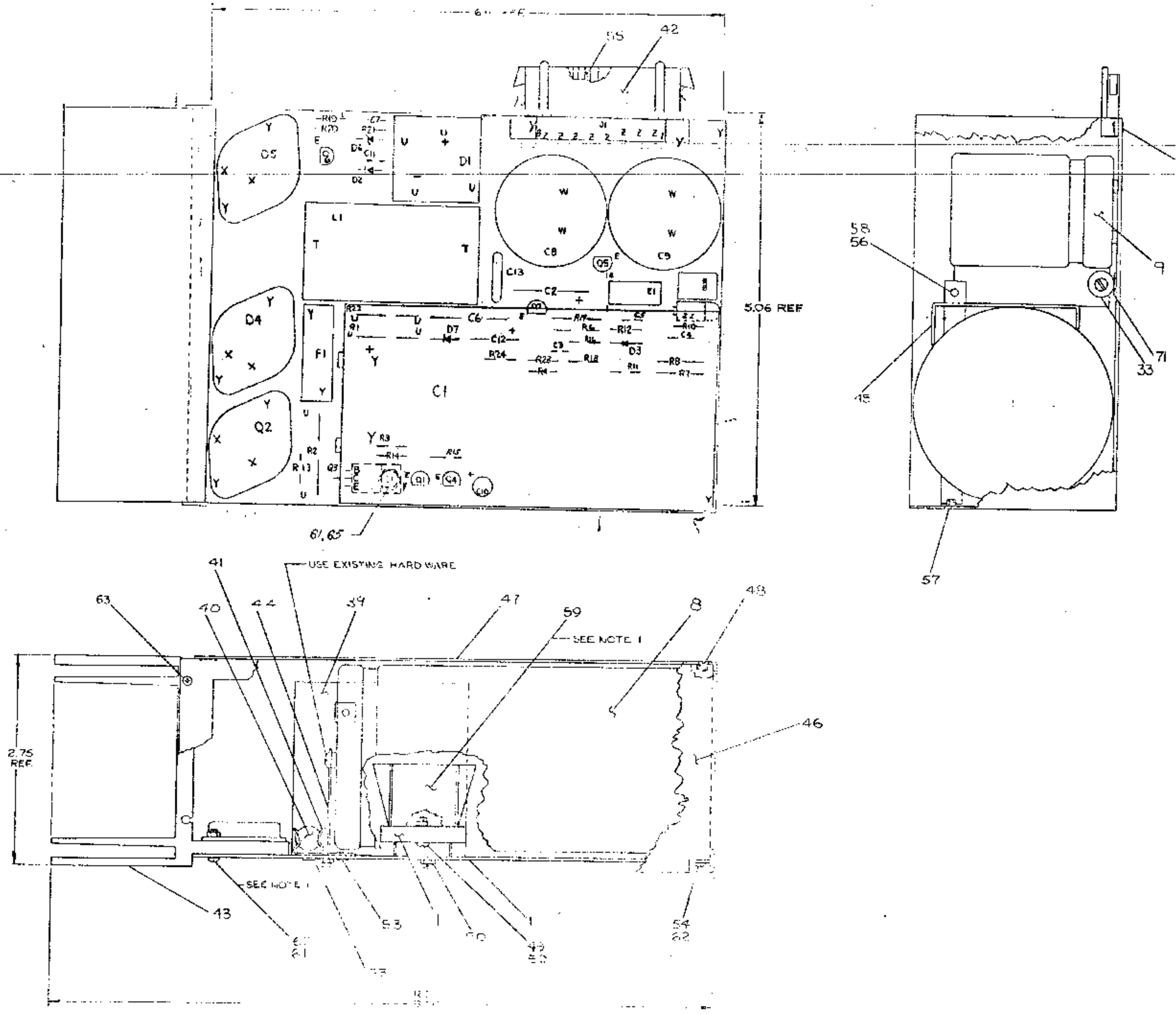
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: −15V REG.

SIZE	CODE	NUMBER	REV.
D	CS	H745 −0−1	L

DIST.

DEC FORM NO. DRD-135



NOTE:
1. APPLY ITEM #51 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND INSULATOR WASHER (ITEM #52), ALSO BETWEEN WASHER & HEAT SINK FOR Q7, Q4 & Q5. 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-IH-H745-0-5	70
1		PACKING INSTRUCTIONS	API 3700074-0-0	69
1	R15	RES. 680 [illegible] 5%	1301426	68
1	R23	RES. 390 ½W 5%	1301425	67
1	C13 (SEE NOTE 2)	CAP. 0.1 UF 100V 20%	[illegible]	66
1		SCR. PH #4-40 X 5/16 LG	9006010-[illegible]	65
1	I1	LAMP 15V	1209169	64
4		SCR. PPH #4 X 5/16 LG, SELF TAPPING	9009942	63
2		WASHER #4	9006632	62
7		NUT KEPS #4-40	9006557	61
4		SCR PHL PAN HD #4-40 X ¼ LG	9006013-1	60
1		HEAT SINK BRIDGE RECT	1210009	59
1		SCR PHL PAN HD #6-32 X ¼ LG	9006020-1	58
1		SCR PHL FLT HD #6-32 X ¼ LG	9006020-2	57
1		WASHER LOCK #6	9006649	56
8		CONTACT FEMALE	1208459	55
2		SCR PHL PAN HD #4-40 X ¼ LG	9006099-1	54
8		EYELET 05-4-7	9006782	53
3		INSULATOR WASHER	9008721	52
A/R		THERMAL COMPOUND	9008280	51
3		NUT KEPS 6-32	[illegible]	50
1		SCREW PHL PAN HD 6-32 X ¼ LG	9006024-1	49
4		SCREW PHL FLT HD 4-40 X 5/16 LG	9006010-2	48
1		COVER COMPONENT	C-MD-5308780-0-0	47
1		REGULATOR MNT	D-IA-5308754-0-2	46
1		2.5 HOLDER CAPACITOR	C-IA-5308761-0-0	45
2		STRAP CAPACITOR	C-MD-5308759-0-0	44
1		HEAT SINK	D-PS-1210731-0-0	43
1	J1	CONN. MATE-N-LOCK 8 PIN	[illegible]	42
2		FUSE CLIP	9007203	41
1	F1	FUSE AGC 15	9007228	40
1	L1	REACTOR 60 UHY	1616850	39
1	E1	INTEGRATED CIRCUIT UA723C	1910415	38
1	Q9	TRANSISTOR D45H8	1510708	37
2	Q5, Q6	TRANSISTOR 456	1510706	36
2	Q1, Q4	TRANSISTOR 405	1510705	35
1	Q7	TRANSISTOR 2N5302	1510758	34
1	R5	RES VARIABLE 200 Ω 20%	1310452	33
1	R20	RES 100 ¼ 5%	1300229	32
1	R11	RES 1 MEG ¼ 5%	[illegible]	31
1	R4	RES. 5.6K ¼W 5%	1301924	30
2	R15, R16	RES 3.9K ¼ 5%	1300444	29
2	R9, R3	RES 5.1 ¼ 5%	[illegible]	28
1	R12	RES 56 ¼ 5%	[illegible]	27
1	R21	RES 47 ¼ 5%	1300202	26
1	R17	RES 38.2K ⅛W 1%	1305265	25
1	R10	RES 1K ¼ 5%	1300365	24
2	R13, R14	RES 10 ¼ 5%	1301313	23
1	R6	RES 2.5K 1 [illegible] 1%	1303522	22
2	R7, R8	RES 5K [illegible] 1%	1302411	21
1	R22	RES 5.1 [illegible] 5%	1302138	20
1	R24	RES 10K ¼ 5%	1300479	19
1	R2	RES .02 Ω 3W 3%	1310178-1	18
1	R1	RES 3.9K 1W 10%	1300921	17
1	D4	BRIDGE INSET	[illegible]	16
1	D6	SCR MCR649P-2	[illegible]	15
1	D4	DIODE MSP8117	[illegible]	14
3	D3, D7, D2	DIODE D664	1100114	13
1	Q?	TRANSISTOR UNI JUNCTION 2N6028	1510977	12
1	D1	DIODE BRIDGE	1110114	11
1	C12	CAP 15UF 20V 10%	1004812	10
2	C8, C9	CAP 3.8K UF 25V	[illegible]	9
1	C1	CAP 91K UF 50V	[illegible]	8
1	C10	CAP 1.0 UF 25V	1010966-01	7
1	C2	CAP 50 UF 25V [illegible]	[illegible]	6
1	C6	CAP .068 UF 100V 10%	1000057	5
1	C4	CAP 2700PF 100V 5%	1001637	4
3	C7, C11, C3	CAP .01UF 100V 20%	1001610	3
1	C5	[illegible]	[illegible]	2
1		ETCHED CIRCUIT BOARD	[illegible]	1
		[illegible]	[illegible]	
		[illegible]	[illegible]	
		[illegible]	[illegible]	

PARTS LIST

IC TYPE	GND	+5V
	E1	E1, E2

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

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

WIRE LIST

TRANS PAD 9006208 71

ETCH BOARD REV C

DEC NO | EA NO

EQUIPMENT CORPORATION.

TITLE -15 REGULATOR

H745-0-0

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-IA-7008360-ØC-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-IA-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	DATE	CHG. NO.	REV
	8/11	DL11-00001	A
	12-30-72	DL11-00002	B
	12-5-72	DL11-00003	C
	1-2-73	DL11-00004	D
	4-6-73	DL11-00005	E
	8/8/73	DL11-00006	F

P. JANSON 7-17-72
N. Pierce 11-30-72
P. JANSON 12-5-72
Bradley 12-20-72
JANSON 1-2-73
P. JANSON 3-28-73
JANSON 4-6-73
L. CONDON 7-31-73
Cindy Condon 8/8/73
J. Chartier 9-21-73
CONDON 10/9/73

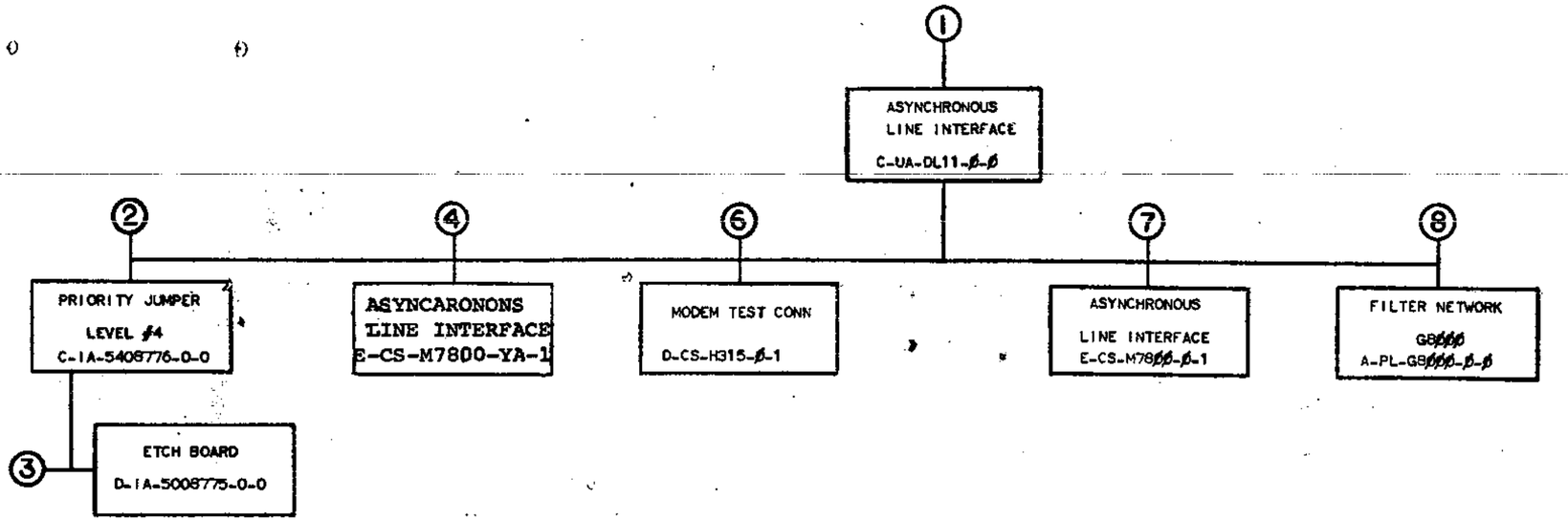
USED ON OPTION/MODEL

DRN. M. Pierce	DATE 4-28-72	TITLE: ASYNCHRONOUS LINE INTERFACE
CHK'D. R. Cook	DATE 5/9/72	
PROJ ENG. P. Janson	DATE 5/11/72	
PROD.	DATE 5-15-72	
FIELD SERV.	DATE	SIZE B · CODE DD · NUMBER DLII-Ø · REV F

SHEET 1 OF 3 · DIST

DRB 106

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



TITLE		SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	SHEET 2 OF 3	B	DD	DLII - Ø	F

62-3-N871

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	D	8	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	
				8.	A-PL-G8ØØØ-Ø-Ø		1	FILTER NETWORK	
	X				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	

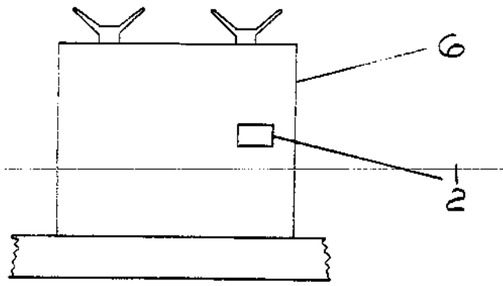
MECHANICAL

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-DL..-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	
	X	X		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	

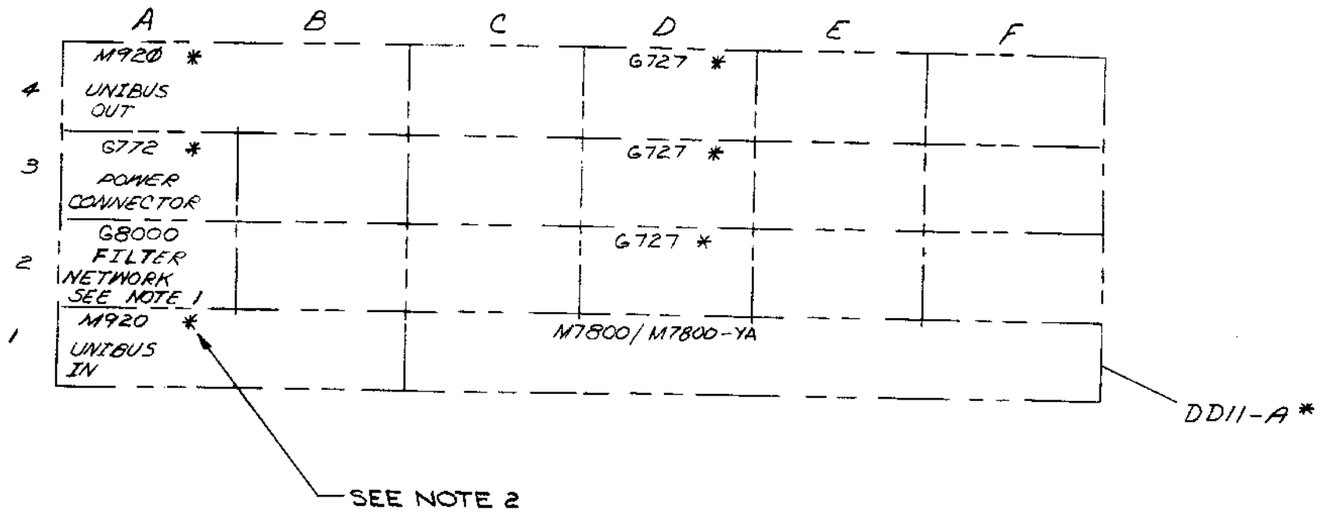
TITLE	SHEET	SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	3 OF 3	B	DD	DLII-Ø	F

DRB 108

DEC 16—(325)—1062—2—N871



NOTES:
1. G8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. THE INSTALATION REQUIRES 2 WIRES TO BE ADDED.
   A09V2 - 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	PM Galvin 2-18-72 R JANSON	
RE	DL11-00002	B	RE Johnson 7-19-73 CR Page - Wilson	
PM	DL11-00005	C	JANSON RE Johnson 12-5-72 J. Quinn 7-31-73 L. CONDON	
PM	DL11-00006	D	Jay Galvin 11-73 J. Quinn 9-21-73 CONDON Lyford 11-73	

DEC FORM NO. DRC 100-A

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .006, .XX ± .02, .X ± .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. M Paine	DATE 7/10/72	
CHK'D. R Freeman	DATE 4-24-72	
ENG. RE Johnson	DATE 5-11-72	
PROJ. ENG. RE Johnson	DATE 5-11-72	
PROD. J Mullaney	DATE 5-15-72	

NEXT HIGHER ASSY. B-00-DL11-Ø
SCALE NONE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE

SIZE	CODE	NUMBER	REV.
C	UA	DL11-Ø-Ø	D

DIST. G

SIZE C CODE UA NUMBER DL11-Ø-Ø REV. D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M.PIERCE	CHECKED J.FERGUSON	SECTION
DATE 4/27/72	DATE 4/27/72	1
ENG P.E. Jamson	PROD J. MacDougall	ISSUED SECT.
DATE 5/11/72	DATE 5/15/72	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-A	DL11-B	DL11-C	DL11-D	DL11-E
1	C-IA-5408776-0-0	PRIORITY JUMPER LEVEL #4	1	1	1	1	1
2	C-IA-5408778-0-0	PRIORITY JUMPER LEVEL #5	-	-	-	-	1
3	D-UA-BCØ5C-25	CABLE, MODEM BCØ5C	-	1	-	1	1
4	D-IA-7008360-0-0	CABLE ASSEMBLY (KL8E)	1	-	1	-	-
5	D-CS-H315-Ø-1	MODEM TEST CONNECTOR	-	-	-	-	A/R See Note 2
6	E-CS-M7800-Ø-1	ASYNCHRONOUS LINE INTERFACE	-	1	-	1	1
7	A-PL-G8ØØØ-Ø-Ø	FILTER NETWORK	-	A/R	-	A/R	A/R See Note 1
8		CRYSTAL	A/R	A/R	A/R	A/R	A/R See Note 3
9	E-CS-M7800-YA-1	ASYNCHRONOUS LINE INTERFACE	1	-	1	-	-
	NOTES: 1.	G8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A.					
	2.	ONE H315 PER PDP11 SYSTEM					
	3.	CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE					
	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	DL11-00006
	SHEET 1 OF 1	DIST. G				

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

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, J3-J6, J3-J10, V3-V3, AND W1.
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 380's OR ITS' SUBSTITUTE 11380 IC's, 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	SUBSTITUTE PART PART NO.	ITEM NO.
1509485	IC 11380	1911113	23

*SEE ALLOWABLE SUBSTITUTION LIST & NOTE 4.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E68	IC DEC 380	1509485	68
1	R3	RES 750Ω 1/4W 5%	1301401	49
1	R58	RES 390Ω 1/4W 5%	1300391	74
1	CR2	DIODE 1N4148A	1104880	85
1	Q1,Q2	TRANSISTOR 2N5306	1504101-0001	84
1	C54	CAP 100PF 100V 5% EPOXY	1000418	94
1	C34	CAP 560PF 100V 5% EPOXY	1000525	96
1	C51	CAP .047MF CERAMIC	1000478	81
1	E69	IC DEC 7416	1510430	65
2	C33, C35	CAP 330PF 100V 5% SUPPLY DECO	1000423	97
1	C42	CAP 820PF 200V 5% DIPPED MICA	1000523	95
1	C36	CAP 1000PF 200V 5% DIPPED MICA	1000425	93
19	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C17,C18,C19	CAP .01UF 100V CERAMIC DISC	1000410	98
1	C41	CAP .015UF 100V 10% DIPPED MICA	1000163	99
1	C37	CAP .022UF 100V 10% DIPPED MICA	1000167	100
1	C38	CAP 150PF 200V 5% DIPPED MICA	1000476	92
1	R54	RES 2.2K 1/4W 5%	1302294	102
2	R21, R22	RES 1.5K 1/4W 5%	1301895	101
1	R53	RES 1.2K 1/4W 5%	1301871	100
1	R41	RES 47Ω 1/4W 5%	1300282	50
1	R42	RES 68Ω 1/4W 5%	1300320	52
1	R43	RES 100Ω 1/4W 5%	1300329	53
1	R44	RES 180Ω 1/4W 5%	1300347	55
1	R52	RES 270Ω 1/4W 5%	1300363	57
1	R53	RES 820Ω 1/4W 5%	1300471	61
2	R1, R2	RES 10K 1/4W 5%	1302374	104
1	R39	RES 560Ω 1/4W 5%	1300398	59
1	R49	RES 1.8K 1/4W 5%	1300914	103
1	R46	RES 1.5Ω 1/4W 5%	1300385	54
24	W1,W2,W3,W4,J1,J2,J3,J4,J5,J6,J7,J8,J9,J10,J11,J12,R55,R56	RES 10K 1/4W 5%	1300499	106
2	R5, R6	RES 1.3K 1/4W 5%	1300991	63
1	U8	IC DEC 7404	1504294	78
4	C53, C55, C40, E62	IC DEC 7474	1901237	79
2	E36, E61	IC DEC 8242	1909112	86
3	C39, C49, E67	IC DEC 7408	1901115	83
1	E66	IC 8251A (10 PIN) *2-SIO 2SIO	1909207	87
2	E60, E26	IC DEC 7430	1909097	82
11	E12, E31, E37-E39, E41, E43, E44, E47, E58, E59	IC DEC 8801	1909105	90
1	E	ALPAT EC200 PC-1	1909202	89
1	E13	IC DEC 74123	1504295	80
1	E40, E51, E56	IC DEC 7438	1909247	91
3	E24, E34, E35	IC DEC 7404	1909393	76
1	E10	IC DEC 7427	1909189	75
2	E30, E33	IC DEC 7402	1909004	74
7	E3, E4, E32, E52, E42, E46, E64, E65, E66	IC DEC 380	1909805 *	68
1	E28	IC DEC 74123	1909811	67
1	E29	IC DEC 7400	1909032	73
1	E45	IC DEC 7432	1909133	70
2	E1, E11	IC DEC 7404	1909686	72
1	E27	IC DEC 7493	1909376	69
1	E14	IC DEC 7410	1903276	77
1	E59	IC DEC 367	1901204	64
1	E17	IC DEC 7451	1901200	62
1	E48	IC DEC 8271	1909423	88
1	E18, E19	IC DEC 74151	1909411	71
1		40 PIN CONNECTOR MALE	1503288	60
1		24 PIN CONNECTOR MALE	1503289	66
1		SOCKET 40 PIN	1503290	107
1		SOCKET 24 PIN	1503291	108
1		CABINET 5 1/4" & 8" W/HARDWARE	1503292	109
1		CABINET FRONT PANEL MACHINED	1503293	110
1		FINISHED CIRCUIT BOARD	1503294	111
1		WIRING LIST	1503295	112
1		ASSEMBLY DRAWING	1503296	113
1		PC BOARD LAYOUT	1503297	114

PARTS LIST

DEC PART #	8	16	—	—
DEC UART	5	1	—	8
DEC 74135	10	14	—	—
DEC 8271	8	16	—	—
DEC 7498	8	16	—	—
DEC 334	1	8	—	—
DEC 7493	10	5	—	—
DEC 7892	10	5	—	—
DEC 74123	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 16 RESPECTIVELY. EXCEPTIONS ARE DENOTED ABOVE.

IC PIN LOCATIONS

SEMICONDUCTOR CONVERSION CHART

DEC NO	EIA NO	DEC NO	EIA NO
		9334-5	MPS6516
		W7406	
		W7406	

NEXT HIGHER ASSY

EQUIPMENT CORPORATION

ASYNCHRONOUS LINE INTERFACE

SIZE A | DWG NO M7800 | REV 11-1 | SHEET 1 OF 1

DL-2 BINIT H
DL1 BUS INIT L
DL-2 BINIT L
DL-2 BDØ7 H
DL-2 BDØ6 H
DL-2 BDØ5 H
DL-2 BDØ4 H
DL-2 BDØ3 H
DL-2 BDØ2 H
DL-2 BDØ1 H
DL-2 BDØØ 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 RDØ H
DL-5 RBUF TO BUS H
DL-4 XMIT READY H
DL-4 XMIT INT ENB (1)H
DL-4 PRINT (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 CX1
DL-4 REQ TO SEND (1)H CX1
DL-4 DATA TERMINAL READY (1)H CF1
CR2 BUS DØ7 L
CV2 BUS DØ6 L
CP2 BUS DØ5 L
CN2 BUS DØ4 L
CT2 BUS DØ3 L
CX2 BUS DØ2 L
CR2 BUS DØ1 L
CS2 BUS DØØ L
+5V
J8
R1 10K
DL-5 RBUF TO BUS L
DL-4 DR ERR H
DL-4 FR ERR H
DL-4 P ERR H
+5V
J7
R2 10K
DL-5 RCSR TO BUS L
ERROR H
DL-5 RCSR TO BUS H
DL-4 RCVR BUSY (1)H
CD2 BUS D15 L
CE2 BUS D14 L
CF2 BUS D13 L
CH2 BUS D12 L
CH1 BUS D11 L
CJ2 BUS D10 L

REVISIONS		
CHK.	ECO NO.	REV.

FIRST USED ON OPTION/MODEL: DL11	QTY.	DESCRIPTION	PART NO.
		PARTS LIST	

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

DRAWN — DATE
CHK'D — DATE
ENG. — DATE 11/16/72
PROJ. ENG. — DATE 11/16/72
PROG. — DATE 11/16/72
NEXT HIGHER ASSY.
SCALE
SHEET 2 OF 6

digital EQUIPMENT CORPORATION

TITLE: ASYNCHRONOUS LINE INTERFACE (BUS RECEIVERS & DRIVERS) DL-2

SIZE D | CODE CS | NUMBER M7800-YA-1 | REV. B
DIST.

SWITCH POS.	Y1	844.6 KHZ BAUD	844.6 KHZ µSEC	1053.96 KHZ BAUD	1053.96 KHZ µSEC	1.152 MHZ BAUD	1.152 MHZ µSEC	4.608 MHZ BAUD	4.608 MHZ µSEC
	1	36.7	1700	44.8	1342	50	1250	200	312
	2	55	1135	67.3	928	75	833	300	208
	3	110	557	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; DS1 ; XMIT DR1							

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 70083601 CABLE, THIS CABLE ALSO CONNECTS BERG PINS H TO E.

REVISIONS		
DRK	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART 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 —. NEXT HIGHER ASSY. —. SCALE —. SHEET 3 OF 6.

DRAWN — DATE —
CHECK — DATE —
ENG — DATE —
PROJECT — DATE —
PROG — DATE —

digital EQUIPMENT CORPORATION

TITLE: ASYNCHRONOUS LINE INTERFACE (CLOCK & CURRENT LOOPS) DL-3

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	B

DIST.

DL-2 BINIT L

DL-5 SEL 2 L

DL-2 BDØ7 H
DL-2 BDØ6 H
DL-2 BDØ5 H
DL-2 BDØ4 H
DL-2 BDØ3 H
DL-2 BDØ2 H
DL-2 BDØ1 H
DL-2 BDØØ H

DL-5 LD XD L
X CLK H

CLR R DONE
STB STATUS
STB RD
R CLK
SERIAL IN

R DONE
OR ERR
FR ERR
P ERR
RD7
RD6
RD5
RD4
RD3
RD2
RD1
RDØ

DL-4 OR ERR H
DL-4 FR ERR H
DL-4 P ERR 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 RDØ H

SERIAL OUT
XRDY
EOC

CLR LDC NS2 NB1 PE CP 2SB

DL-4 RCVR BUSY (1)H

DL-2 BINIT H

DL-3 SI H

DL-3 RCLK H FR

DL-4 SERIAL OUT H

DL-3 XMIT CLK H

DL-5 BUS TO XCSR H

DL-4 BREAK (1)H
DL-4 MA INT (1)H
DL-4 BREAK (Ø)H
DL-4 XMIT INT ENB (1)H
DL-4 XMIT READY H
DL-4 XMIT INT H
DL-4 RCVR DONE H
DL-4 RCVR INT H
DL-4 DATASET INT ENB (1)H
DL-4 REQ TO SEND (1)H
DL-4 REQ TO SEND (Ø)H
DL-4 RCVR INT ENB (1)H
DL-4 SEC XMIT (1)H
DL-4 SEC XMIT (Ø)H
DL-4 DATA LEADS ONLY L
DL-4 DATA TERMINAL READY (1)H
DL-4 DATA TERMINAL READY (Ø)H
DL-4 RDR ENB (1) H

DL-5 BUS TO RCSR H

REVISIONS		
CHR	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
CHKD — DATE
ENG — DATE
PROJ ENG — DATE
PROD — DATE
NEXT HIGHER ASSY. —
SCALE —
SHEET 1 OF 6

digital EQUIPMENT CORPORATION

TITLE ASYNCHRONOUS LINE INTERFACE (UART & STATUS) DL-4

SIZE CODE D CS — NUMBER M7800-YA-1 — REV. B

DIST.

NOTE 1: THE "A" LINES ARE TO BE JUMPERED FOR A D.

REVISIONS		
DIR.	CHANGE NO.	REV.

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXXX ± .0005, .XXX ± .002, .XX ± .01 — ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRAWN	DATE	DIGITAL EQUIPMENT CORPORATION
CHKD	DATE	
ENGR	DATE 11/72	
PROJ. LDR.	DATE	
MGR	DATE 11/72	
NEXT HIGHER ASSY.		

TITLE: ASYNCHRONOUS LINE INTERFACE (ADDRESS SELECTION) DL-5

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	B

SCALE —
SHEET 5 OF 6
DIST.

DL-4 RCVR INT H FU1

DL-4 XMIT INT H FX1

DL-3 BG IN H FB1

BUS NPR L FJ1

FP1 DL-6 REQUEST L

FM1 DL-600 OUT H

FT2 BUS SACK L

FE2 BUS DØ2 L

FL1 BUS DØ3 L

FH2 BUS DØ4 L

FF1 BUS DØ5 L

FH1 BUS INTR L

FF2 BUS DØ6 L

FH1 BUS DØ7 L

FK1 BUS DØ8 L

NOTE: THE 'V' LINES ARE TO BE JUMPERED FOR A 1.

REVISIONS		
ENG.	CHANGE NO.	REV.

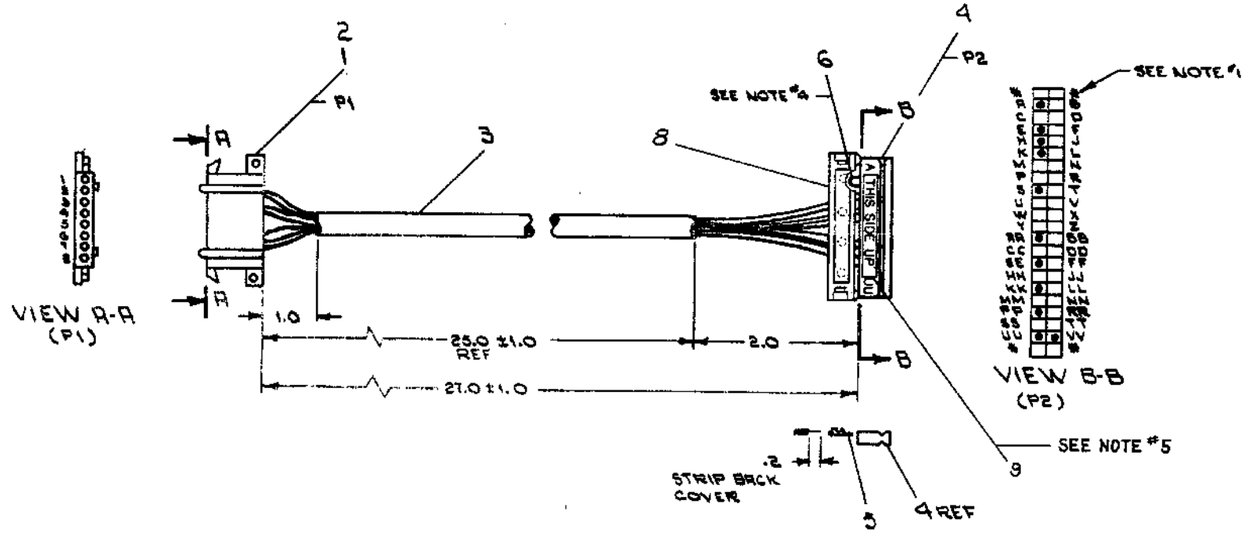
FIRST USED ON OPTION/MODEL: DL11	QTY.	DESCRIPTION: PARTS LIST	PART NO.	REV. LTR.	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS .XXX = .005, .XX = .03, .X = .1; ANGLES ±0° 30'	DSN	DATE	DIGITAL EQUIPMENT CORPORATION		
	CHKD	DATE	TITLE: ASYNCHRONOUS LINE INTERFACE (INTERRUPT CONTROL) DL-6		
	ENG	DATE			
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓	PROG	DATE			
MATERIAL: —	NEXT HIGHER ASSY.		SIZE: D	CODE: CS	NUMBER: M7800-YA-I
FINISH: —	SCALE: —				REV: B
	SHEET 6 OF 6		DIST.		

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	CUT NO.	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	1	P1-2	2	P2-KK	5
3		RED		P1-3	2	P2-S	
3,7		SHIELD		SEE NOTE #2	—	P2-N(NOTE #3)	
3		BLK	2	P1-4	2	P2-EE	
3		WHT		P1-5	2	P2-RR	
3,7		SHIELD		SEE NOTE #2	—	P2-MM(NOTE #3)	
3		BLK	3	P1-6	2	P2-PP	
3		GRN		P1-7	2	P2-K	
3,7		SHIELD		SEE NOTE #2	—	P2-W(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.



ITEM NO.	QTY.	DESCRIPTION	PART NO.
9	1	LABEL, THIS SIDE UP	3611567
8	1	STRAIN RELIEF	1211166
7	A/R	TUB. #18 TEF. THINWALL WHT	9107278-11
6	A/R	WIRE, #22 AWG STRD TEF BLK	9107350-00
5	11	SOCKET, CRIMP # 47216	1210089-07
4	1	HOUSING, BERG # 65043-015	1210918-15
3	A/R	CABLE, BELDEN #8777-3PR SHLD	9107728-0
2	6	CONTACT MATE-N-LOCK (FEMALE)	1209379
1	1	CONN. MATE-N-LOCK (FEMALE)	1209340-00

PARTS LIST

REVISIONS			
CHK	CHANGE NO.	REV.	
	KL8E-00002	A	
	KL8E-00006	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: FRACTIONS ±1/32, ANGLES ±0°30', FINAL SURFACE QUALITY 125, REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: SEE PARTS LIST
FINISH

ORIG.	K. Ryland	DATE 3/22/71
CHK'D.		DATE 4-8-71
ENG.		DATE 4-8-71
PROJ. ENG.		DATE 4-8-71
PROD.		DATE 4/8/71

NEXT HIGHER ASSY: A-ML-KL8-E-Ø
SCALE: NONE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CABLE ASSEMBLY (KL8E)

SIZE D | CODE IA | NUMBER 7008360-0-0 | REV D | DIST

NEXT ASSY 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. Hardy 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-KL11-04	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	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
DL11 SOFTWARE LIST	SHEET 1 OF 1	A	SL	DL11-0-4		
		DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY	E. Pellegrini	CHECKED P. Janson	SECTION
DATE	June 26, 1972	DATE 8-8-72	
ENG	Paul Janson	PROD J. Mullen	ISSUED SECT.
DATE	June 26, 1972	DATE 8-8-72	

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION 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.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DATE 6 [illegible]

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	[illegible]

ENG	APPD	SIZE	CODE	NUMBER	REV
Paul E. Janson	Paul E. Janson	A	SP	DL11 0 2	D

DEC FORM NO. DRA 107A

ENGINEERING SPECIFICATION [illegible] 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 operation mode (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	D

DEC FORM NO DRA 108 DEC 16-(381)-1022-N3/0

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.

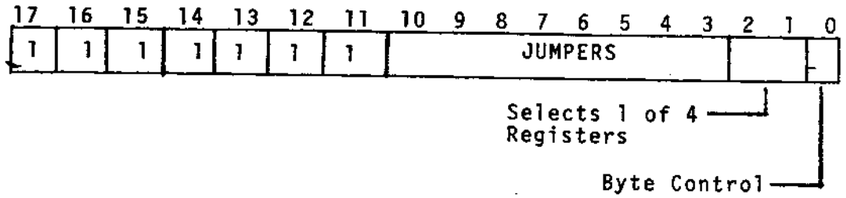
Summary of mode control jumpers:

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 A1Ø 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 = 10080000 = 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.

H. G8000 INSTALLATION:

For DL11-B, D, and E a positive voltage is required between 9 and 15 volts to operate the EIA drivers. For PDP-11/20 and PDP-11/15 systems with the H720 power supply, a G8000 module must be installed to provide this voltage. Using a filter network, this module converts the full-wave rectified "+8V" signal to a positive DC voltage.

1. Install G8000 into slot AØ2 of DD11-A.
2. Wire AØ3V2 to AØ2V2.
3. Wire AØ2N2 to CXXU1 where XX is the slot location of the M7800.

Refer to diagram 1.

I. FILTER CAPACITOR SELECTION:

For DL11-A's and DL11-C's, which operate with 20ma current loops, capacitors are used to filter the receive line and slow the switching time of the transmit line. To avoid excessive distortion above 150 baud, the capacitance in each of these two circuits must be reduced. This is accomplished by clipping C29 (.47 mfd) and C31 (1000 pf), both shown on drawing DL-3.

J. DL11-B,D,E in Systems with +15V available using DD11-A
There is a special situation of using a DD11-A to mount a DL11-B, D, Or E in systems with +15V available. These systems have +15V available and it appears at pin AØ3V2 of the DD11-A when using power harness such as 7009177, 7008855, or 7008909. In this situation, no G8000 is necessary, and +15V can be wired directly from AØ3V2 to CXXU1, where XX is the slot number of the DL11.
NOTE: this does not apply to DL11-A or C or DD11-B.

K. When using the DL11-B,D,E in an 11/05 processor pin CXXU1 has +15V available on it so no G8000 or no jumpers are required.

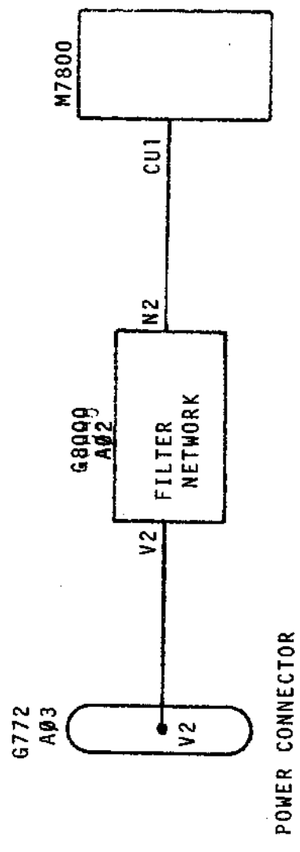


DIAGRAM 1. G8000 INSTALLATION

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY J Holoughlin	CHECKED J Holoughlin	SECTION
DATE 9/28/72	DATE 9/28/72	
ENG J Holoughlin	PROD W Burgess	ISSUED SECT.
DATE 9/28/72	DATE 9-28-72	

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION: ALL MODELS	OPTIONAL						KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	LIBKIT-11/4Ø-BASE-A-K	PDP-11/4Ø PROGRAM LIBRARY CHECK LIST AND KIT	1								
2	DEC-11-H4ØSA-A-D	PDP-11/4Ø SYSTEMS MANUAL	1								
3	DEC-11-HKDAA-A-D	KD11-A PROCESSOR MANUAL	1								
4	DEC-11-HKEFA-A-D	KE1 NSTRUCTION SET OPTIONS MANUAL		1							
5	DEC-11-HKTDA-A-D	KT1 MEMORY MANAGEMENT OPTION MANUAL		1							
6	DEC-11-HMELA-A-D	ME11-L CORE MEMORY MANUAL	1								
7	DEC-11-HDLAA-A-D	DL11 ASYNCHRONOUS LINE INTERFACE MANUAL	1								
8	B-DD-11/4Ø-Ø	PDP-11/4Ø PRINT SET	1								
9	B-DD-KE11-E	KE11-E PRINT SET		1							
1Ø	B-DD-KE11-F	KE11-F PRINT SET		1							
11	B-DD-KT11-D	KT11-D PRINT SET		1							
~~12~~	~~D-IA-7009177-0-0~~	~~POWER DISTRIBUTION CABLES FOR UNUSED SYSTEM~~		~~*~~							
		~~UNIT PLACED IN BOX~~									

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
ACCESSORY LIST (PDP-11/4Ø)	SHEET 1 OF 1	A	AL	11/4Ø-Ø-4	B	11/40 00013
		DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY J.F. Loughlin	CHECKED J.F. Loughlin	SECTION
DATE 9/28/72	DATE 9/28/72	
ENG J.F. Loughlin	PROD K.R. Stringer	ISSUED SECT.
DATE 9/28/72	DATE 9/28/72	

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION ALL MODELS	KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	LIBKIT-11/40-BASE	PDP-11/40 PROGRAM LIBRARY CHECK LIST	*		
		(DIAGNOSTIC AND SYSTEM SOFTWARE)			
		*THIS LIST SUPERCEEDS THE INDIVIDUAL SOFTWARE			
		LISTS NOTED FOR KJ11-A, KW11-L, AND MF11-L			
		(MM11-L) IN THE PDP-11/40 DOCUMENTATION.			
		SOFTWARE FOR THESE DEVICES IS INCLUDED ONCE			
		IN THE ABOVE LIBKIT.			

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
SOFTWARE LIST (PDP-11/40)	SHEET 1 OF 1	A	SL	11/40-0-5		
		DIST.				

DEC FORM NO.
DRA 120

			CA	CE	DA	DC	DE	DH	DK	DM	DP	DS	DU	DW	EA	EC	EE	PA	PC	PE	PH	PK	RA	RC	RE	EK	EH	EP	EM	PM	PS	PP	RK	RP	RS	KP	RW	RU	FA	FE	MP	MQ	MR	CP
1	D-UA-11/4Ø-CA-Ø	BASIC ASSY (11/40)																																										
2	A-PL-PCII-Ø-Ø	PCII CONTROL																																											
3	D-UA-LA3Ø-PA-Ø	LA3Ø DECWRITER ASSY																																											
4	A-PL-LCII-A-Ø	LA3Ø CONTROL																																											
5	D-UA-RFII-Ø-Ø	DISK CONTROL																																											
6	D-UA-RSII-Ø-Ø	DISK DRIVE																																											
7	D-UA-TCII-Ø-Ø	DECTAPE CONTROL																																											
8	D-UA-TU56-Ø-Ø	DECTAPE TRANSPORT																																											
9	A-PL-M792-YB Ø	BOOTSTRAP LOADER																																											
10	D-UA-TMII-A-Ø	MAGTAPE CONTROLLER																																											
11	D-UA-TUIØ-EA-Ø	TRANSPORT (MAGTAPE) 9 TRACK																																											
12	A-PL-MRII-DB-Ø	BOOTSTRAP LOADER																																											
13	D-UA-TUIØ-FA-Ø	TRANSPORT (MAGTAPE) 7 TRACK																																											
14	A-PL-RCII-Ø-Ø	DISK CONTROL																																											
15	E-UA-RS64-A-Ø	DISK FILE																																											
16	D-UA-RKII-CA-Ø	DECPACK (CONTROL)																																											
17	D-UA-RKØ5-AA-Ø	DECPACK (115V)																					2													2	2	2							
18	D-UA-DDII-A-Ø	SYSTEM UNIT																																											
19	A-PL-MMII-L-Ø	MEMORY																					2	2	2																				
20	A-PL-CRII-Ø-Ø	CARD READER (60HZ)																																											
21	A-PL-KWII-L-Ø	LINE FREQ. CLOCK																																											
22	D-UA-PRII-Ø-Ø	H.S. READER																																											
23	QJ 250	SOFTWARE LIST (BATCH)																																											
24	QJ 220	SOFTWARE LIST (DOS)																																											
25	QJ 400	SOFTWARE LIST (RSTS)																																											
26	QJ 420	SOFTWARE LIST (MINI RSTS)																																											
27	A-PL-MFII-LP-Ø	MEMORY (PARITY)																																											
28	A-PL-MMII-LP-Ø	MEMORY (PARITY)																																										2	
29	QJ 180-AN	SOFTWARE (CAPS-11)																																											
30	C-UA-TAII-Ø-Ø	CASSETTE CONTROL																																											
31	D-UA-TU60-Ø-Ø	DECASSETTE TRANSPORT																																											

NOTE: 1. WHEN 11/40-VT IS ORDERED WITH STAR SYSTEMS, REPLACE LA30 & LCII WITH VTØ5 & CONTROL.

2. WHEN 11/40-LT IS ORDERED WITH STAR SYSTEMS, DISREGARD NOTE 1 AND USE LT33-DD AND DLII-A.

REVISIONS	CHANGE NO.	CHK	REV.
	11/40-00002	DW	A
J. LOUGHLIN 11/22	11/40-00007	DW	B
J. LOUGHLIN 7/13/73	11/40-00009	JB	C
J. BUZYNSKI			

FIRST USED ON OPTION/MODEL: 11/40

*DELETE LT33-CC AND DLII-A

ΔWHEN 11/40-M-SYSTEM ARE ORDERED REPLACE MFII-L & MMII-L WITH MFII-LP & MMII-LP RESPECTIVELY.

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.		7-27-72
CHK'D		9/28/72
ENG.		9/28/72
PROJ. ENG.		9/28/72
PROD.		9/29/72

NEXT HIGHER ASSY: B-DD-11/40-0

SCALE — SHEET 1 OF 2

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ASSY CONFIGURATION (11/40)

SIZE	CODE	NUMBER	REV.
C	PL	11/40-0-3	C

DIST.

REV. C | NUMBER 11/40-0-3 | SIZE CODE C PL

DEC FORM NO. DRC 110

1	D-UA-II/4Ø-CB-Ø	BASIC ASSY (II/40)
2	A-PL-PCII-A-Ø	PCII CONTROL
3	D-UA-LA3Ø-PD-Ø	LA3Ø DECWRITER ASSY
4	A-PL-LCII-A-Ø	LA3Ø CONTROL
5	D-UA-RFII-Ø-Ø	DISK CONTROL
6	D-UA-RSII-A-Ø	DISK DRIVE
7	D-UA-TCII-Ø-Ø	DECTAPE CONTROL
8	D-UA-TU56-Ø-Ø	DECTAPE TRANSPORT
9	A-PL-M792-YB Ø	BOOTSTRAP LOADER
10	D-UA-TMII-B-Ø	MAGTAPE CONTROLLER
11	D-UA-TUIØ-ED-Ø	TRANSPORT (MAGTAPE) 9 TRACK
12	A-PL-MRII-DB-Ø	BOOTSTRAP LOADER
13	D-UA-TUIØ-FD-Ø	TRANSPORT (MAGTAPE) 7 TRACK
14	A-PL-RCII-Ø-Ø	DISK CONTROL
15	E-UA-RS64-B-Ø	DISK FILE
16	D-UA-RKII-CB-Ø	DECPACK (CONTROL)
17	D-UA-RKØ5-BB-Ø	DECPACK (230V)
18	D-UA-DDII-A-Ø	SYSTEM UNIT
19	A-PL-MMII-L-Ø	MEMORY
20	A-PL-CRII-A-Ø	CARD READER (50HZ)
21	A-PL-KWII-L-Ø	LINE FREQ. CLOCK
22	D-UA-PRII-A-Ø	H.S. READER
23	QJ 250	SOFTWARE LIST (BATCH)
24	QJ 220	SOFTWARE LIST (DOS)
25	QJ 400	SOFTWARE LIST (RSTS)
26	QJ 420	SOFTWARE LIST (MINI RSTS)
27	A-PL-MFII-LP-Ø	MEMORY (PARITY)
28	A-PL-MMII-LP-Ø	MEMORY (PARITY)
29	QJ 180-AN	SOFTWARE (CAPS-II)
30	C-UA-TAII-Ø-Ø	CASSETTE CONTROL
31	D-UA-TU60-Ø-Ø	DECASSETT TRANSPORT

CB	1	
CF	1	
CB	1	
DB	1	
DF	1	
DJ	1	
EL	1	
GN	1	
DR	1	
DT	1	
GV	1	
DY	1	
FB	1	
ED	1	
EF	1	
FB	1	
PB	1	
PD	1	
PF	1	
PJ	1	
PL	1	
RB	1	
RD	1	
RF	1	
EL	1	
EJ	1	
ER	1	
EN	1	
PN	1	
PT	1	
PR	1	
RL	1	
RJ	1	
RN	1	
RT	1	
RR	1	
RY	1	
RV	1	
FB	1	
FF	1	
MP		
MQ	1	
MR	2	
CR	1	

NOTE: WHEN II/40-VU IS ORDERED WITH STAR SYSTEMS, REPLACE LA30 & LCII WITH VT05 & CONTROL.

2. WHEN II/40-LU IS ORDERED WITH STAR SYSTEMS, DISREGARD NOTE 1. AND USE LT33-DD AND DLII-A.

REVISIONS

REV.	CHANGE NO.	CHK

FIRST USED ON CPU CONFIGURATION/MODEL
11/40

*DELETE LT33-DD AND DLII-A

ΔWHEN II/40-M-SYSTEM ARE ORDERED REPLACE MFII-L & MMII-L WITH MFII-LP & MMII-LP RESPECTIVELY.

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.		7-22-72
CHK'D		7/23/72
ENG.		8/2/72
PROJ. ENG.		8/2/72
PROD.		8/2/72

NEXT HIGHER ASSY.
B-DD-11/40-0

SCALE

SHEET 2 OF 2

DEC FORM 10. DRG 119

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ASSY CONFIGURATION (11/40)

SIZE	CODE	NUMBER	REV.
C	PL	11/40-0-3	C

DIST.

H742 BULK SUPPLY REF. ONLY

SECONDARY-H742

TB2

5409730 POWER CONTROL+8V BOARD J1 J4 P9

+15V1
+15V2
GND1
GND 3
LO GND
AC LO 1
DC LO 2
AC LO 2
LINE CLOCK
DC LO 1

P5-2 GRY
P14-5 GRY
P14-2 BLK
P15-3 BLK
P5-5 BLK
P18-1 SHLD
P18-4 RED
P18-2 BLK
P18-3 CLR

20-30 VAC

J3 P8

AC1 P12-6 RED
AC2 P12-7 WHT
AC3 P14-6 (P17-7*) RED
AC4 P14-8 (P17-8*) WHT

J2 P10

AC5 P11-6 RED
AC6 P11-7 WHT
AC7 P13-6 RED
AC8 P13-7 WHT
AC9 P15-6 RED
AC10 P15-8 WHT

115 VAC
115 VAC
RED
WHT
RED LINE 1 P7-1
LINE 2 P7-6 WHT
SHLD
CABLE DEC*9107761
115 VAC TO H742 FANS

H-744 +5V — SLOT A

RED P10-1
WHT P10-2
AC1
AC2
+5VA1
GND A1
GND A2
+5VA2
P1-1 RED
P1-7 BLK
P2-7 BLK
P2-1 RED

H-744 +5V — SLOT B

RED P8-1
WHT P8-2
AC5
AC6
+5VB1
GND B1
GND B2
+5VB2
P3-1 RED
P3-7 BLK
P4-7 BLK
P4-1 RED

H-744 +5V — SLOT C

RED P10-8
WHT P10-10
AC7
AC8
+5VC1
GND C1
GND C2
+5VC2
P5-1 RED
P5-7 BLK
P6-7 BLK
P6-1 RED

H-745 -15V — SLOT D

RED P8-7
WHT P8-8
BLK P9-4
GRY P15-4
GRY P9-3
AC3
AC4
GND 1
+15V3
+15V2
-15VD1
GND D1
P5-13 BLU
P5-11 BLK

H-745 -15V — SLOT E

WHT P10-9
RED P10-12
BLK P9-5
GRY P14-4
AC9
AC10
GND 2
+15V3
-15VE1
GND E1
P2-13 BLU
P2-11 BLK

BLK P3-11
BRN P3-14
GND10
-5V1
ORN P3-3
+20V1
TWP
P8-7 OR P10-8
P8-8 OR P10-10
AC7
AC8

BLK P1-11
BRN P1-14
GND11
-5V2
ORN P1-3
+20V2
P10-9
P10-12
AC9
AC10

P16 & P17 SEE NOTES *2 & 3

CABLE DEC*9107761

P5

RED P13-2 +5V C1
GRY P9-2 +15V1
+20VJ2
+5V
BLK P9-6 GND3
BLK P13-3 SPARE*1
P21 BLK GND C1
GND
GND
BLK P14-3 SPARE*2
GND D1
BLU P14-1 SPARE*3
BRN P2-14 -15V D1
-5VJ3
SPARE*3

P6

RED P13-5 +5V C2
GRY P4-2 +15V5
ORN P4-3 +20V3
+5V
BLK P4-5 GND 4
BLK P13-4 SPARE*1
BLK P2-8 GND C2
BLK P2-9 GND 5
GND 6
BLK P4-11 SPARE*2
GND 7
BLU P4-13 SPARE*3
BRN P4-14 -15V2
-5V3
SPARE*3

P7 (FEMALE HOUSING)

P10-5
RED RED P10-6 18GA
WHT
WHT 18GA
LINE1 (115 VAC TO FANS)
LINE2
P22

P3

RED P12-2 +5V B1
GRY P1-2 +15V4
ORN P16-5 +20V1
P2Ø BLK +5V
GND
SPARE*1
BLK P12-3 GND B1
BLK P1-8 GND8
BLK P1-9 GND9
BLK P16-2 SPARE*2
GND10
SPARE*3
BLU P1-13 -15VJ1
BRN P16-3 -5V1
SPARE*3

TWP

P4

RED P12-5 +5VB2
GRY P16-2 +15V5
ORN P6-3 +20V3
+5V
BLK P6-5 GND 4
BLK P12-4 SPARE*1
GND B2
GND
GND
BLK P6-11 SPARE*2
GND 7
BLU P6-13 SPARE*3
BRN P6-14 -15V2
-5V3
SPARE*3

P1

RED P11-2 +5VA1
GRY P3-2 +15V4
ORN P17-5 +20V2
P1Ø BLK +5V
GND
SPARE*1
BLK P11-3 GND A1
BLK P3-8 GND8
BLK P3-9 GND9
BLK P17-2 SPARE*2
GND11
SPARE*3
BLU P3-13 -15VJ1
BRN P17-3 -5V2
SPARE*3

TWP

P2

RED P11-5 +5VA2
ORN P5-3 +15V
+20VJ2
+5V
GND
SPARE*1
BLK P11-4 GND A2
BLK P6-8 GND5
BLK P6-9 GND6
BLK P15-2 SPARE*2
GND 7
BLU P15-1 SPARE*3
BRN P5-14 -15V E1
-5VJ3
SPARE*3

P18

CABLE DEC*9107574

P9-11 BLK — LINE CLOCK
P9-12 CLR — DC LO 1
P9-8 RED — AC LO 1
P9-7 SHLD — LO GND

NOTES:
1. ALL WIRES ARE 14 AWG UNLESS OTHERWISE SPECIFIED.
2. IF OPTIONS REQUIRING +20V AND -5V ARE INSTALLED IN BOX, REPLACE H745 AND P15 IN SLOT E WITH H754 AND P17, TRANSFER AC WIRES FROM P15 PIN 6&8 TO P17 PINS 7&8. IF ADDITIONAL +20, -5 IS REQUIRED REPLACE H745 AND P14 IN SLOT D WITH H754 AND P16, TRANSFER AC WIRES AS ABOVE.
3. WARNING TO PREVENT DAMAGE TO REGULATORS REMOVE OR ADD JUMPERS ACCORDING TO TABLE BELOW:

REGULATORS		JUMPERS		
SLOT D	SLOT E	-15VJ1	+20V J2	-5V J3
H745	H745	OUT	—	—
H745	H754	IN	IN	IN
H754	H754	—	OUT	OUT

REVISIONS			
CHG NO.	CHK	REV	
7009566-00001	[illegible]	A	

BOWEN 11/24/72

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO. / ITEM NO.
H960-D/E		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES: DECIMALS .xxx = .005, .xx = .02, .x = .1; ANGLES ±0° 30'		DRN. R Saunter DATE 7-19-73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
		CHKD. DJ DeVarco DATE 8-2-73	
		ENG. Jerrold Bowen DATE 8/2/73	TITLE: 21" BOX POWER HARNESS
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √		PROJ. ENG. Jerrold Bowen DATE 8/2/73	
MATERIAL —"		PROD. [illegible] DATE 9/6/73	
FINISH —"		NEXT HIGHER ASSY. —	SIZE D, CODE IC, NUMBER 7009566-0-1, REV. A
		SCALE NONE, SHEET 1 OF 1	DIST.

REVISIONS		
CHK	CHANGE NO.	REV.
RD	7009566-00002	A

RD Waters 12-19-73
V. BOAEN
Verell Boaen 12-26-73

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
H960-D/E		PARTS LIST		

DRN P.S. LeBlanc	DATE 9-10-73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D P Daigneault	DATE 9-19-73	
ENG. Verell Boaen	DATE 9/19/73	TITLE
PROJ. ENG. VERELL BOAEN JR.	DATE 9-19-73	WIRE LIST
PROD. Jack Norman	DATE 9/19/73	
NEXT HIGHER ASSEMBLY E-IA-7009566-0-0		SIZE K · CODE WL · NUMBER 7009566-0-2 · REV. A
SCALE —		DIST.
SHEET 1 OF 1		

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										
SEE NOTE		NOTE								ALL WIRES #14 AWG		1
SEE NOTE		NOTE								UNLESS OTHERWISE NOTED		1
										WIRE LENGTH IS APROX.		1
+15 V1		P5-2	51"				GRY				X	
+15 V1		P9-2										2
												2
+15 V2		P14-5										
+15 V2		P9-3	15"				GRY				X	3
												3
+15 V3		P14-4	12,5"				GRY					
+15 V3		P15-4									X	4
												4
+15 V4		P1-2	13"				GRY					
+15 V4		P3-2									X	5
												5
+15 V5		P4-2	13,25"				GRY					
+15 V5		P6-2									X	6
												6
+20 V1		P16-5										
+20 V1		P3-3	61"				ORN			ORN-BLK TWP(GND 10)	X	7
												7
+20 V2		P1-3	71"				ORN			ORN-BLK TWP,GND 11)		
+20 V2		P17-5									X	8
												8
+20 V3		P4-3	12,5"				ORN					
+20 V3		P6-3									X	9
												9
+20VJ2		P2-3	17"				ORN					
+20VJ2		P5-3									X	10
												10
+5V A1		P1-1	61,5"				RED					
+5V A1		P11-2									X	11
												11
+5V A2		P11-5										
+5V A2		P2-1	60"				RED				X	12
												12
+5V B1		P12-2										
+5V B1		P3-1	56"				RED				X	13
												13
+5V B2		P12-5										
+5V B2		P4-1	55"				RED				X	14
												14
+5V C1		P13-2										
+5V C1		P5-1	53"				RED				X	15
												15
+5V C2		P13-5										
+5V C2		P6-1	52"				RED				X	16
												16
-15 V2		P4-13	13"				BLU					
-15 V2		P6-13									X	17
												17

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
-15V D1		P14-1										
-15V D1		P5-13	56"				BLU				X	18
												18
-15V E1		P15-1										
-15V E1		P2-13	69"				BLU				X	19
												19
-15VJ1		P1-13	13.5"				BLU					
-15VJ1		P3-13									X	20
												20
-5V1		P16-3										
-5V1		P3-14	67"				BRN				X	21
												21
-5V2		P1-14	70.5"				BRN					
-5V2		P17-3									X	22
												22
-5V3		P4-14	12.25"				BRN				X	23
-5V3		P6-14										23
-5VJ3		P2-14	17"				BRN					
-5VJ3		P5-14									X	24
												24
AC 01		P12-6										
AC 01		P8-1	10.25"				RED			RED-WHT TWP(AC2)	X	25
												25
AC 02		P12-7										
AC 02		P8-2	10.25"				WHT			WHT-RED TWP(AC1)	X	26
												26
AC 03		P14-6										
AC 03		P8-7	17"				RED			RED-WHT TWP(AC4)	X	27
												27
AC 04		P14-8										
AC 04		P8-8	17"				WHT			WHT-RED TWP(AC3)	X	28
												28
AC 05		P10-1	10"				RED			RED-WHT TWP(AC6)		
AC 05		P11-6									X	29
												29
AC 06		P10-2	10"				WHT			WHT-RED TWP(AC5)		
AC 06		P11-7									X	30
												30
AC 07		P10-8	12.25"				RED			RED-WHT TWP(AC8)	X	31
AC 07		P13-6										31
AC 08		P10-10					WHT			WHT-RED TWP(AC7)	X	32
AC 08		P13-7	12.25"									32
AC 09		P10-9	17.5"				RED			RED-WHT TWP(AC10)	X	33
AC 09		P15-6										33
AC 10		P10-12	17.5"				WHT			WHT-RED TWP(AC9)	X	34
AC 10		P15-8										34
AC LO 1		P18-4										
AC LO 1		P9-8	62.5"				RED			CABLE PN 9107574	X	35
												35

RUN NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
DC LO 1		P18-3										
DC LO 1		P9-12	62.5"				CLR			CABLE PN 9107574	X	36
												36
GND		P21										
GND		P5-8	8"				BLK				X	37
												37
GND '		P1-5	8"				BLK					
GND '		P19									X	38
												38
GND ''		P20										
GND ''		P3-5	8"				BLK				X	39
												39
GND 01		P14-2										
GND 01		P9-4	14.5"				BLK				X	40
												40
GND 02		P15-3										
GND 02		P9-5	17"				BLK				X	41
												41
GND 03		P5-5	52"				BLK					
GND 03		P9-6									X	42
												42
GND 04		P4-5	13"				BLK				X	43
GND 04		P6-5										43
GND 05		P2-8	18"				BLK				X	44
GND 05		P6-8										44
GND 06		P2-9	18.5"				BLK				X	45
GND 06		P6-9										45
GND 07		P4-11	14"				BLK				X	46
GND 07		P6-11										46
GND 08		P1-8	13"				BLK				X	47
GND 08		P3-8										47
GND 09		P1-9	13.5"				BLK				X	48
GND 09		P3-9										48
GND 10		P16-2									X	49
GND 10		P3-11	61"				BLK			BLK-ORN TWP(+20 V1)		49
GND 11		P1-11	71"				BLK			BLK-ORN TWP(+20 V2)	X	50
GND 11		P17-2										50
GND A1		P1-7	62"				BLK				X	51
GND A1		P11-3										51
GND A2		P11-4									X	52
GND A2		P2-7	61"				BLK					52
GND B1		P12-3									X	53
GND B1		P3-7	56.5"				BLK					53

RUN NAME	A/P	PIN LOCATION		BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
GND B2		P12-4										X	54
GND B2		P4-7	57"					BLK					54
GND C1		P13-3										X	55
GND C1		P5-7	53"					BLK					55
GND C2		P13-4										X	56
GND C2		P6-7	52"					BLK					56
GND D1		P14-3										X	57
GND D1		P5-11	56.25"					BLK					57
GND E1		P15-2										X	58
GND E1		P2-11	68.5"					BLK					58
LINE 1		P7-1	2"					RED			#18 AWG	X	59
LINE 1		P7-3											59
LINE 2		P7-2										X	60
LINE 2		P7-4	2"					WHT			#18 AWG		60
LINE 1		P10-5										X	61
LINE 1		P7-1	46"					RED			CABLE PN 9107761		61
LINE 2		P10-6										X	62
LINE 2		P7-2	46"					WHT			CABLE PN 9107761		62
LINE CLOCK		P18-2										X	63
LINE CLOCK		P9-11	62.5"					BLK			CABLE PN 9107574		63
LO GND		P18-1										X	64
LO GND		P9-7	62.5"					SHLD			CABLE PN 9107574		64
SHIELD		P22						SHLD			CABLE PN 9107761	X	65

H742
BULK SUPPLY

P8
P11-6
P11-7
P14-6
P14-8

P9
P5-11
P14-5
P14-2
P15-3
P5-6
P6-6
P6-12
P6-7
P6-2

P10
P12-6
P12-7
P7-1
P7-2
P15-6
P15-5
P14-7
P15-8

P11 — BASIC H744 +5V REGULATOR — SLOT A
P8-1
P8-2
P1-7
P1-8
P1-9
P1-10

P12 — BASIC H744 +5V REGULATOR — SLOT B
P10-1
P10-2
P3-7
A3-8
P3-9
P3-10

P13 — OPTIONAL H744 +5V REGULATOR — SLOT C
P10-8
P10-10
P5-7
P5-8
P5-9
P5-10

P14 — BASIC H745 -15V REGULATOR — SLOT D
P8-7
P8-8
P5-1
P9-9
P5-3
P15-10
P9-3

P15 — BASIC H745 -15V REGULATOR — SLOT E
P10-9
P10-12
P9-1
P9-2
P14-9

P5
P14-1 -15V D REG
P9-1 -15V D REG
P14-3 GND
P9-3 GND
P9-6 GND
P9-10 GND
P10-2 +5V C REG
P15-3 GND
P13-9 GND
P13-5 +5V C REG
P9-2 +15V
P9-11 +15V

P6
P9-11 LCLK
P9-2 LCLK
P6-6 GND
P6-7 GND
P6-12 DCLO
P7-7 DCLO
P9-12 ACLO
P9-8 ACLO

P3
P5-2 -15V D REG
P5-4 GND
P1-6 GND
P5-1 GND
P10-2 +5V B REG
P5-9 GND
P14-4 +5V B REG
P13-5 +15V
P5-12 +15V
P1-11

P4
P6-3 LCLK
P2-2 LCLK
P6-6 GND
P6-5 GND
P6-10 DCLO
P2-7 DCLO
P6-12 ACLO
P6-11 ACLO

P1
P5-1 -15V C REG
P15-2 GND
P3-5 GND
P10-2 +5V A REG
P1-4 GND
P3-5 +5V A REG
P3-12 +15V

P2
P4-3 LCLK
P4-5 GND
P4-10 DCLO
P4-11 ACLO

P7
P15-5 1
P14-6 2
115V AC TO LOGIC FANS

HARNESS POWER
(EXPANDER)
E-IA-7008754-0-0

OLD STYLE HARNESS FOR SYSTEMS
WITH SERIAL NUMBERS 5999 AND LOWER

REVISIONS			
REV.	CHANGE NO.	CHK.	
—	11/40-00010		ORIGINATED

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/40		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.T. Landon 8/1/72
CHK'D. C. Teschner 8/24/72
ENG. P.K. Allen 8/24/72
PROJ. ENG. [illegible] 8/22/72
PROD. [illegible] 8/24/72
NEXT HIGHER ASSY. 8-DD-11/40-0

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: POWER HARNESS

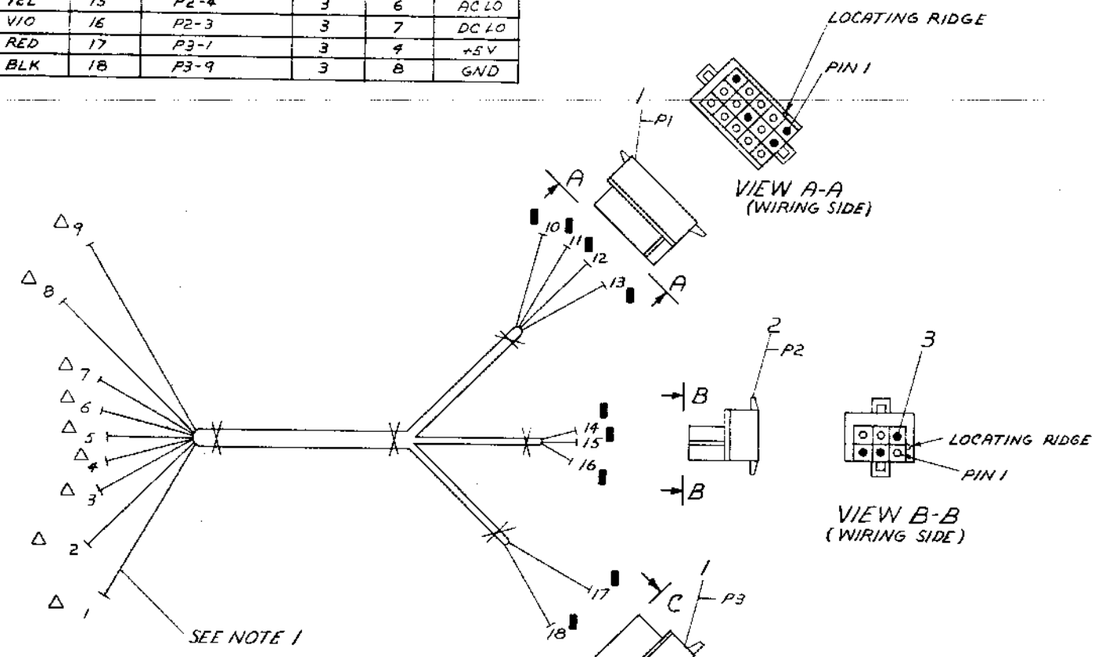
SIZE D | CODE IC | NUMBER 7008754-0-3 | REV.
SCALE —
SHEET 1 OF 1 | DIST.

DEC FORM NO DRD 100-A

WIRE TABLE

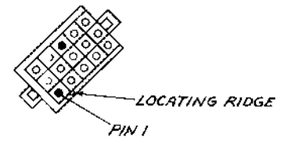
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	WITH	TO POINT	SIGNAL
6	14	BLU	10	P1-13	3	1	-15V
5	14	BLK	11	P1-8	3	9	GND
4	14	RED	12	P1-1	3	5	+5V
9	18	GRY	13	P1-2	3	3	+15V
10	18	BRN	14	P2-2	3	2	LTC
8	18	YEL	15	P2-4	3	6	AC LO
7	18	VIO	16	P2-3	3	7	DC LO
4	14	RED	17	P3-1	3	4	+5V
5	14	BLK	18	P3-9	3	8	GND

NOTES:
1. INSULATION AT POINT 1 THRU 9 SHOULD BE STRIPPED BACK .25 INCH WHEN HARNESS IS SOLDER CONNECTED TO BACKPANEL.



VIEW A-A
(WIRING SIDE)

VIEW B-B
(WIRING SIDE)



VIEW C C
(WIRING SIDE)

SCALE
0 IN. 6 IN. 12 IN.

DO NOT REDUCE

X	A/R	TIE WRAP	9007031	11
	A/R	WIRE, 18 AWG BRN	9107360-11	10
	A/R	WIRE, 18 AWG GRY	9107360-88	9
	A/R	WIRE, 18 AWG YEL	9107360-44	8
	A/R	WIRE, 18 AWG VIO	9107360-77	7
	A/R	WIRE, 14 AWG BLU	9107370-66	6
	A/R	WIRE, 14 AWG BLK	9107370-00	5
	A/R	WIRE, 14 AWG RED	9107370-22	4
■	9	PIN, MALE	1209378-01	3
	1	HOUSING, CONN, 6 PIN	1209351-06	2
	2	HOUSING, CONN 15 PIN	1209351-15	1

FIRST USED ON OPT/MOD	SYM.	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/40			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 √

		DATE
DRN.	S Chester	5-5-74
CHK'D	Gilbert	5-7-74
ENG.		
PROJ. ENG.		6-3-74
PROD.		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 11/40 CPU POWER HARNESS

MATERIAL: SEE PARTS LIST
FINISH:
NEXT HIGHER ASSY.: D-UA-11/40-0-0
SCALE:
SHEET 1 OF 1

SIZE D | CODE IA | NUMBER 7009994-0-0 | REV.
DIST.

REVISIONS

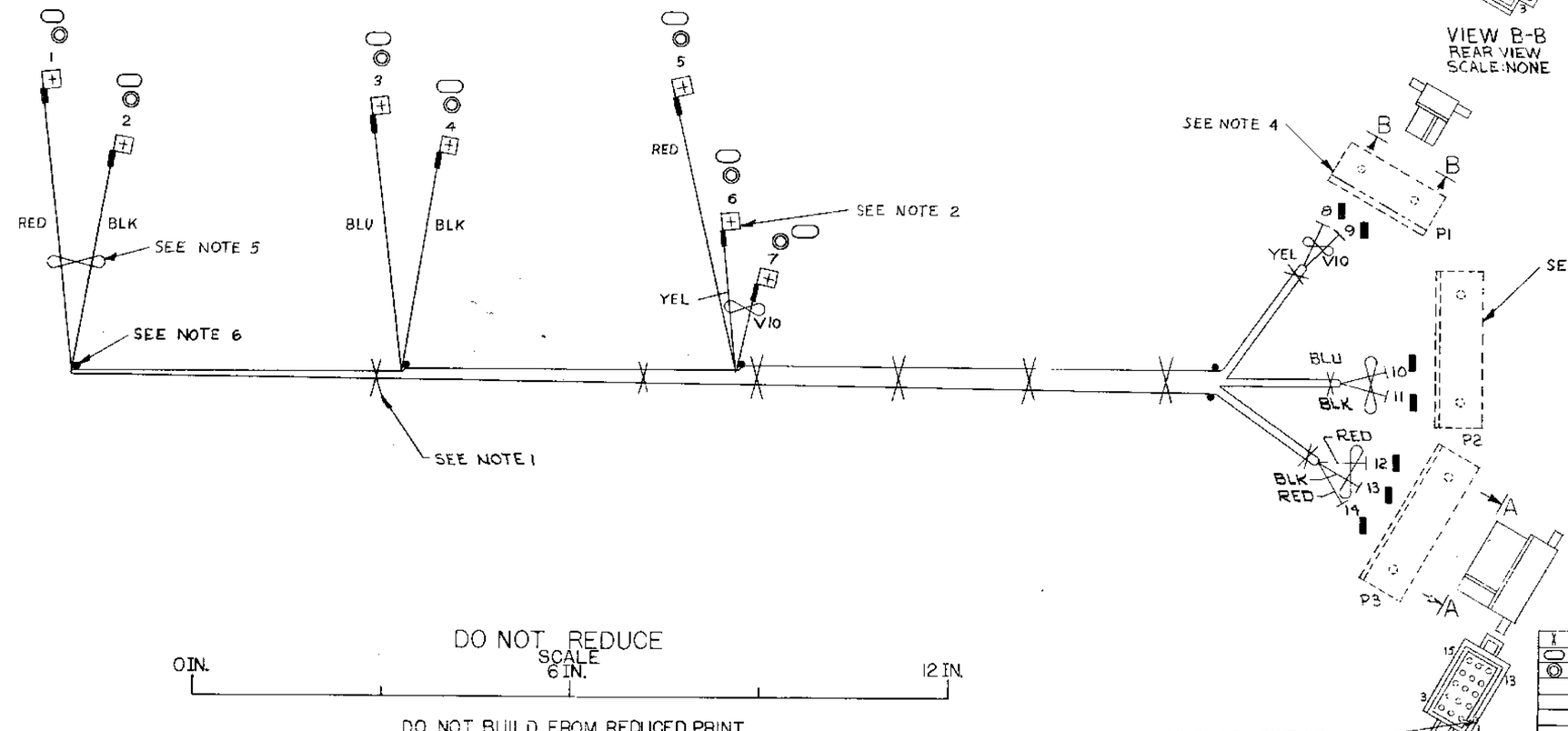
REV	CHANGE NO.	CHK
—	11/40-00015	ORIGINATED

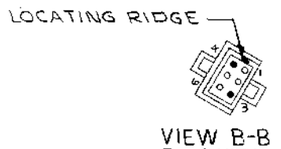
SIZE D | CODE IA | 7009994-0-0 | REV

WIRE LIST

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH	SIGNAL
4	14 TWP	RED	1	—	8,9	12	P3-1	3	+5V
		BLK	2	—	8,9	13	P3-8	3	GND
5	14 TWP	BLU	3	—	8,9	10	P2-13	3	-15V
		BLK	4	—	8,9	11	P2-8	3	GND
6	14	RED	5	—	8,9	14	P3-4	3	+5V
7	18 TWP	YEL	6	—	8,9	8	P1-4	3	AC LO
		VIO	7	—	8,9	9	P1-3	3	DC LO

NOTES:
1. USE TIE WRAPS (8) PER MIO APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAK-OUT POINT.
2. ATTACH MALE FASTON DEC # (9008219-0) WITH #4 WOOD SCREWS (7 PLACES).
3. USE CONN. BRKT G-MD-9305761-H15-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-15
4. USE CONN. BRKT G-MD-9305761-H6-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-06
5. AT POINTS 1-7 UNTWIST WIRES BACK TO NAIL
6. DOT (8) DENOTES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.





VIEW B-B
REAR VIEW
SCALE: NONE

VIEW A-A
REAR VIEW
SCALE: NONE

DO NOT REDUCE
SCALE
0 IN. 6 IN. 12 IN.
DO NOT BUILD FROM REDUCED PRINT

SYM	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
X	A/R	WRAP, TIE	9007031	15
O	A/R	TUBING, SHRINK	9107305-02	9
◎	7	CONN. SOLDERLESS	9009262-0	8
	A/R	WIRE, #18 TWP YEL/VIO	9107430-47	7
	A/R	WIRE, #14 AWG RED	9107370-22	6
	A/R	WIRE, #14 TWP BLK/BLU	9107440-04	5
	A/R	WIRE, #14 TWP BLK/RED	9107440-02	4
	7	PIN, MALE	1209378-01	3
	2	HOUSING CONN. 15 PIN	1209351-15	2
	1	HOUSING CONN. 6 PIN	1209351-06	1

FIRST USED ON OPTION/MODEL: MF11-L

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx = .005, .xx = .02, .x = .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE DUALITY √

MATERIAL: SEE PARTS LIST
FINISH:

DRN. K. Reynolds DATE 9/23/73
CHK. J. Eaton DATE 10/1/73
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 10/19/73
NEXT HIGHER ASSY.

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MF11-L 1ST MEMORY (POWER HARNESS)

SIZE D | CODE | NUMBER 7009565-0-0 | REV. A
SCALE 1/1
SHEET 1 OF 1 | DIST

REVISIONS
SYM	DESCRIPTION	DATE	APPROVED
A	ECO 7009565-00001	10/19/73	BOREN

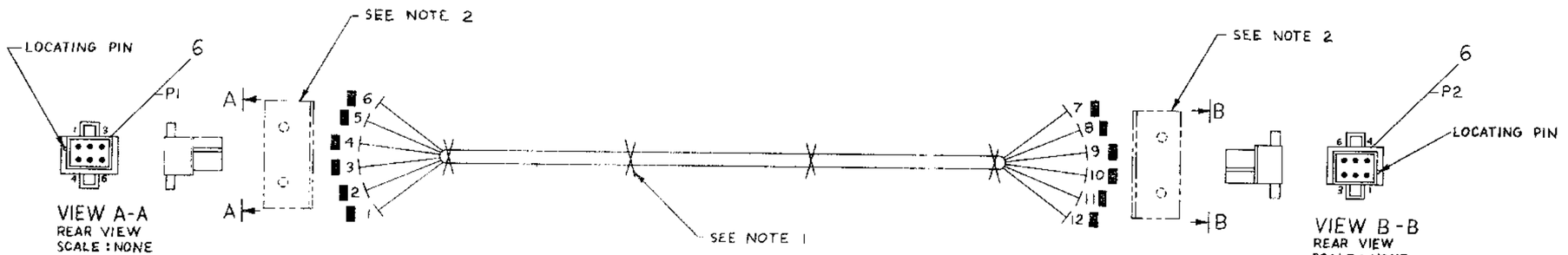
DIA 7009565-0-0 A

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL	LENGTH
1	18	WHT	1	P1-6	7	7	P2-6	7	SPARE-2	12 IN
1	↓	WHT	2	P1-5	↓	8	P2-5	↓	SPARE-1	↓
3		YEL	3	P1-4		9	P2-4		AC LO	
2		VIO	4	P1-3		10	P2-3		DC LO	
4		BRN	5	P1-2		11	P2-2		LINE CLOCK	
5	18	BLK	6	P1-1	7	12	P2-1	7	LO GND	12 IN

NOTES:

1. USE TIE WRAPS ITEM 8 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. USE CONN. BRKT. C-MD-9305761-H6-0. MOUNT WITH WOOD SCREWS. USE MATING CONN. 1209350-06.



VIEW A-A
REAR VIEW
SCALE : NONE

VIEW B-B
REAR VIEW
SCALE : NONE

SCALE
0 IN — 6 IN — 12 IN

DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

SYM	QTY.	DESCRIPTION	PART NO.	ITEM NO.
X	4	WRAP, TIE	9007031	8
■	12	PIN, MALE	1209378-00	7
	2	HOUSING, CONN. 6 PIN	1209351-06	6
	12 IN	WIRE #18 AWG BLK	9107360-00	5
	12 IN	WIRE #18 AWG BRN	9107360-11	4
	12 IN	WIRE #18 AWG YEL	9107360-44	3
	12 IN	WIRE #18 AWG VIO	9107360-77	2
	24 IN	WIRE #18 AWG WHT	9107360-99	1

FIRST USED ON OPT/MOD

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. G. Madgett DATE 10-15-73
CHK'D. [illegible] DATE 10/17/73
ENG. [illegible] DATE 10/19/73
PROJ. ENG. [illegible] DATE 7/1/74
PROD. [illegible] DATE 10/-/73

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
6 PIN
JUMPER HARNESS

MATERIAL
SEE PARTS LIST

NEXT HIGHER ASSY.

FINISH

SCALE 1 / 1
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	IA	7009573-0-0	

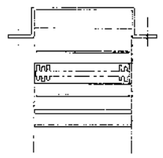
DIST.

REVISIONS
REV
CHANGE NO.
CHK

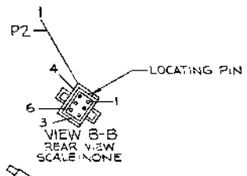
7009573-0-0 REV
SHEET 1 OF 1
D IA 7009573-0-0

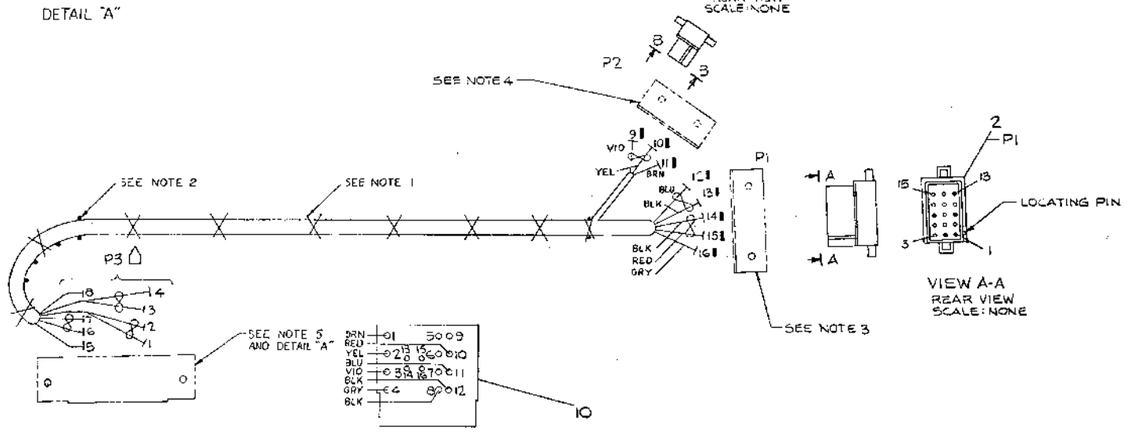
REV. NO.	WIRE GAUGE AWG	WIRE COLOR	FROM POINT	FROM CONNECTION	TERM	POINT	TO CONNECTION	TERM	SIGNAL
5	14	RED	3	P3-10	SOLD	5	P1-1	3	+5V
	TWP	BLK	4	P3-8	SOLD	14	P1-7	3	GND
9	4	GRY	5	P3-4	SOLD	5	P1-2	3	+15V
6	4	BLK	1	P3-12	SOLD	5	P1-9	3	GND
	TWP	BLU	2	P3-11	SOLD	5	P1-13	3	-15V
8	18	BRN	8	P3-1	SOLD	11	P2-2	3	L.T.
7	8	VIO	6	P3-3	SOLD	9	P2-3	3	D.L.D.
	TWP	YEL	7	P3-2	SOLD	10	P2-4	3	A.L.D.
11	22	-	-	P3-13	SOLD	-	P3-14	SOLD	D.L.D.
11	22	-	-	P3-15	SOLD	-	P3-16	SOLD	A.L.D.

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 G-MD-9805736H-G-0 MOUNT WITH WOOD SCREWS. USE MATING CONN 1209350-5.
4. USE CONN BRKT G-MD-9805736H-M-G-0 MOUNT WITH WOOD SCREWS. USE MATING CONN 1209350-06.
5. USE CONN, HOLD DOWN G-MD-9905767-0-0 WITH PLATE G-MD-9905767-0-1, USE TAPE DEC "9008734 & CONN HDW DEC" (1209123) REMOVE PINS & FLANGES AS SHOWN IN DETAIL "A". MOUNT WITH WOOD SCREWS.



DETAIL "A"





P 3

SCALE
0 IN. 6 IN. 12 IN.
DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

ITEM NO.	QTY	DESCRIPTION	PART NO
	NR	BUSS WIRE #22 AWG	9107560001
10	1	POWER CONN.	G772
9	A/R	WIRE #14 AWG GRY	9C 510-88
8	A/R	WIRE #18 AWG BRN	9C 360-11
7	A/R	WIRE #TWP YEL/VIO	9C [illegible]-47
6	A/R	WIRE #TWP BLU/BLK	9C [illegible]-06
5	A/R	WIRE #TWP BLK/RED	9C [illegible]-02
4	X A/R	WRAP TIE	9007103
3	8	PIN, MALE	1209373-00
2	1	HOUSING CONN. 12 PIN	1209351-12
1	1	HOUSING CONN. 6 PIN	1209351-06

FIRST USED ON OPTION MODEL			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES: DECIMALS .XX ± .03, .XXX ± .01, X ± .1; ANGLES ± 1/2°	DWN — DATE		EQUIPMENT CORPORATION
	CHK DATE		
	ENG APPR. DATE		TITLE G772 SYSTEM UNIT HARNESS
	MFG APPR. DATE		
	PROD. DATE		
MATERIAL AS PARTS LIST	TEST MACHINE ASSY	SIZE F	CODE IDENT NO. 70095622-00
FINISH	SCALE	SHEET OF	DRAWING NO. 70095622-00 REV.

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE	
DRAWING DIRECTORY	B-DD-MF11-U
MODULE UTILIZATION	D-MU-MF11-U-MU
TIMING DIAGRAM	D-TD-MF11-U-1
16K UNIBUS TIMING	D-CS-M8293-0-1
16K X-Y DRIVE	D-CS-G235-0-1
16K SENSE MEMORY	D-CS-G114-0-1
MEMORY STACK (16K X 16)	D-CS-H217-0-1
PARITY CONTROL	D-CS-M7259-0-1
BACK PLANE	D-CS-5410345-0-1
OPTION HARNESS	E-IA-7009535-0-0
PARTS LIST	A-PL-MF11-U-0
CUSTOMER ACCEPTANCE PROC.	A-SP-MF11-U-3

MFG. PRINT SET

SEQUENCE		
ON-LINE TEST PROCEDURE	A-SP-MF11-U-2	
MF11-U ENGINEERING SPECIFICATION	A-SP-MF11-U-4	

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET MF11-U
MF11-U	16K SENSE MEMORY	X
MM11-U	16K SENSE MEMORY	X
MF11-UP	16K SENSE MEMORY	X
MM11-UP	16K SENSE MEMORY	X

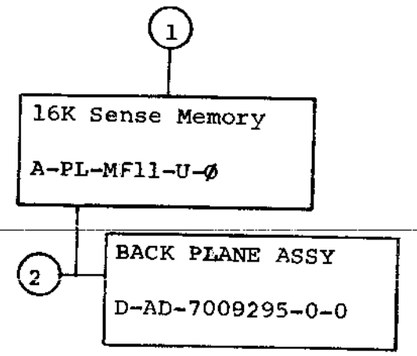
NOTE: TO INSTALL MF11-U OR MF11-UP IN 11/40 CPU WITH SERIAL NUMBER LESS THAN 6000 OR H96Ø-D (OR-E) WITH SERIAL LESS THAN 7000 A FIELD MODIFICATION KIT (FM11-UA, -UB, OR -UC) IS REQUIRED.

REVISIONS	DATE	CHG. NO.	REV
	12/73	MF11-U	A

DEC 14-13251-1042-1A-8972

USED ON OPTION/MODEL					
		DRN. J. FLEMING	DATE 5/1/73	TITLE 16K SENSE MEMORY	
		CHK'D. W. MAJOR	DATE 5/11/73		
		PROJ ENG. D. SMELSER	DATE 5/15/73		
		PROD. R. SHOOP	DATE 6/13/73	SIZE B / CODE DD / NUMBER MF11-U	REV A
		FIELD SERV. WP AUBEE	DATE 1/8/74	DIST	
SHEET 1 OF 3					

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
16K SENSE MEMORY	SHEET 2 OF 3	B	DD	MF11-U	A

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

ELECTRICAL

CUSTOMER PRINT SET MF11-U	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	A-PL-MF11-U-0	A	1	16K SENSE MEMORY	
X			D-CS-G114-0-1	#	9	16K SENSE INHIBIT	
X			D-CS-G235-0-1	#	9	16K X-Y DRIVE	
X			D-CS-M8293-0-1	#	10	16K UNIBUS TIMING	
X			D-CS-H217-0-1	#	3	MEMORY STACK	
X			D-MU-MF11-U-MU	A	1	MODULE UTILIZATION	
X			D-TD-MF11-U-1	A	1	TIMING DIAGRAM	
X			D-CS-M7259-0-1	#	3	PARITY CONTROL	
X			A-SP-MF11-U-3	*	2	CUSTOMER ACCEPTANCE PROCEDURE	
	X		A-SP-MF11-U-2	*	6	ONLINE TEST PROCEDURE	
	X		A-SP-MF11-U-4	*	3	MF11-U ENG. SPEC.	
X		2	D-AD-7009295-0-0	#	1	BACK PLANE ASSY	
X			D-CS-5410345-0-1	#	1	32K X 16,18 MEMORY BACKPLANE	

MECHANICAL

CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-MF11-U-0	A	1	16K SENSE MEMORY	
X			E-TA-7009535-0-0	#	1	OPTION HARNESS	

CUSTOMER PRINT SET CODES

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

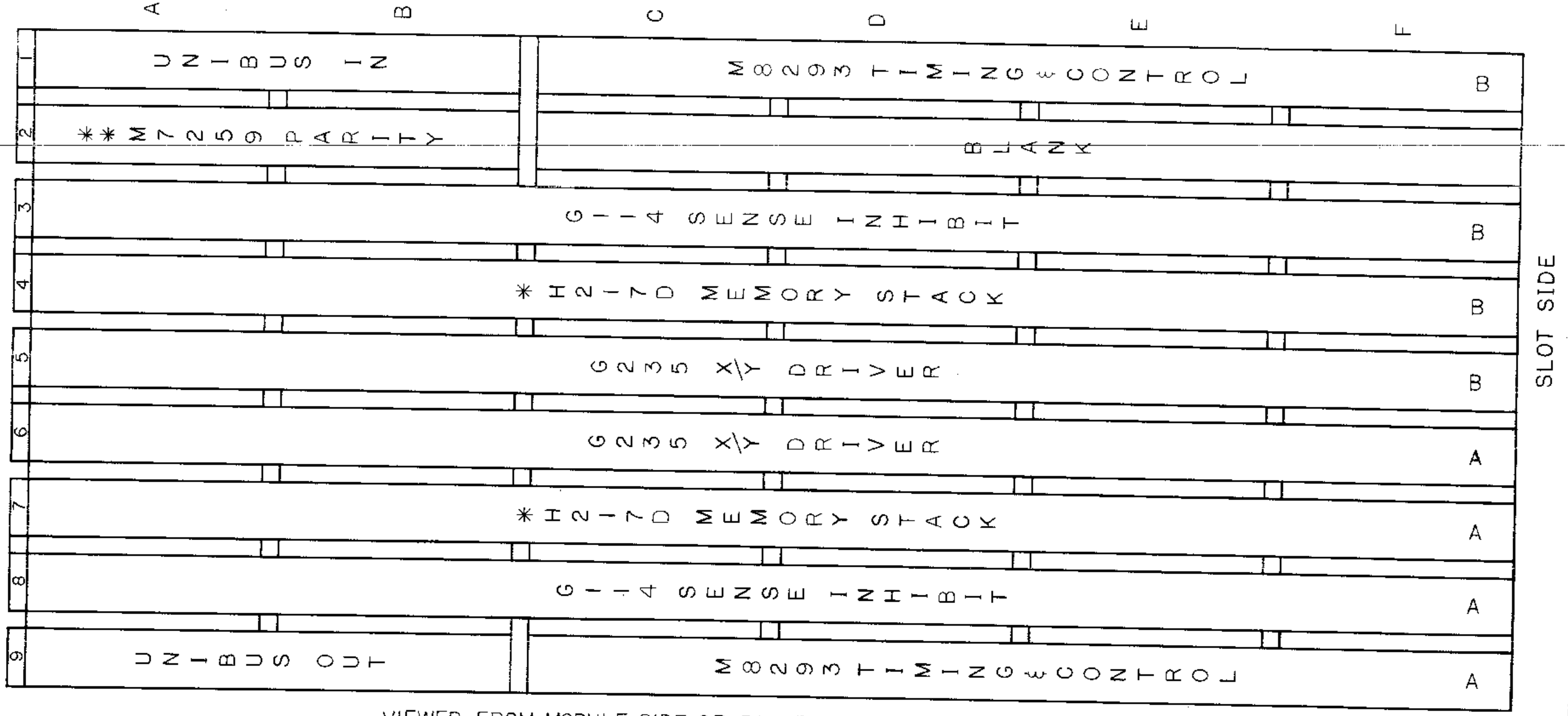
TITLE		SIZE	CODE	NUMBER	REV
16K SENSE MEMORY	SHEET 3 OF 3	B	DD	MF11-U	A

NOTES:

* 1. FOR [illegible] MEMORY WITH [illegible] USE H217C MEMORY STACK.

** 2. M7259 IS USED WITH [illegible] ONLY

3. INSTALL A MODULES FOR FIRST 16K, B MODULES FOR 2ND 16K



Slot	A	B	C	D	E	F	
1	UNIBUS IN		M8293 TIMING CONTROL				B
2	**M7259 PARITY		BLANK				
3	G114 SENSE INHIBIT						B
4	*H217D MEMORY STACK						B
5	G235 X/Y DRIVER						B
6	G235 X/Y DRIVER						A
7	*H217D MEMORY STACK						A
8	G114 SENSE INHIBIT						A
9	UNIBUS OUT		M8293 TIMING CONTROL				A

SLOT SIDE

VIEWED FROM MODULE SIDE OF BACKPLANE

IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: MF11-U

ETCH BOARD REV

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.		CHK
A	MF11U-00001	R. DURANT -3-74	

REVISIONS

DRN. DATE 4-11-73

CHK'D. Major DATE 4/13/73

ENG. DATE 5/15/73

PROJ. ENG. DATE 5/15/73

PROD. DATE 6/11/73

NEXT HIGHER ASSY B-DD-MF11-U

SCALE

SHEET 1 OF 1

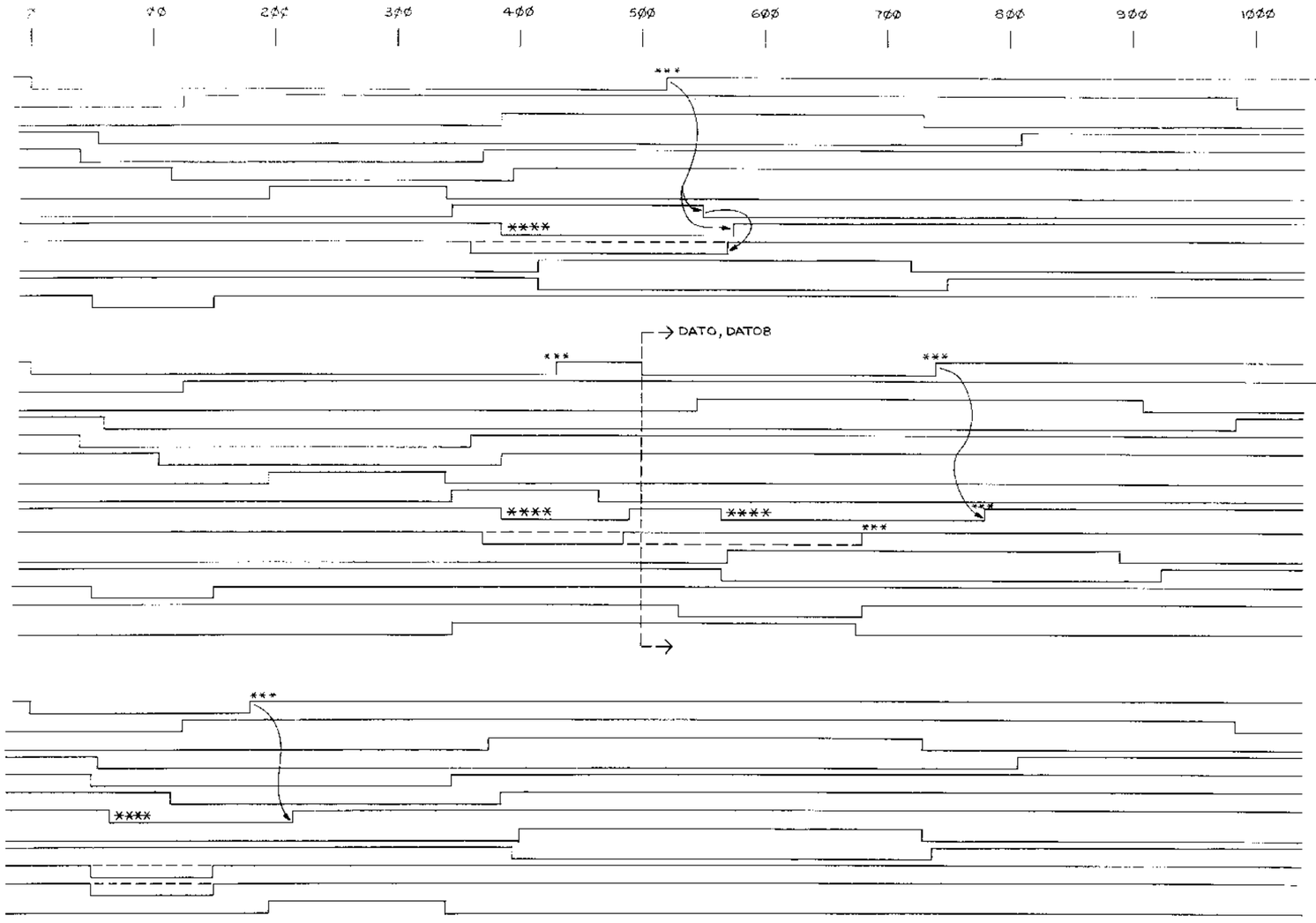
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE MODULE UTILIZATION

SIZE D CODE MU NUMBER MF11-U-MU REV. A

DIST.

DEC FORM NO DRD 135A



NOTES:

1. * IN THE DATOB MODE CLEAR MDRL ONLY OCCURS IN THE BYTE NOT BEING ADDRESSED.
2. ** IN THE DATOB MODE CLOCK MDRL ONLY OCCURS IN THE BYTE BEING ADDRESSED.
3. *** ACTUAL TIME DEPENDS ON BUS AND PROCESSOR DELAYS.
4. **** IN PARITY SYSTEMS BUS SSYNL WILL BE 20 NS LATER THAN SHOWN FOR DATO-DATOB BUSS MODES AND 150 NS LATER FOR DATI-DATIP MODES.

FIRST USED ON OPTION/MODEL: MFII-U	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. P. Durant	DATE 4-19-73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. D. Lindsay	DATE 4/30/73	
ENG. D. Lindsay	DATE 5/29/73	
PROJ ENG. D. Lindsay	DATE 5/19/73	
PROD. K. Lacy	DATE 6/11/73	

MATERIAL
FINISH
NEXT HIGHER ASSY. B-0D-MFII-U
SCALE
SHEET 1 OF 1

TITLE: MFII-U TIMING DIAGRAM (UNIBUS INTERFACE)

SIZE	CODE	NUMBER	REV.
D	TD	MFII-U-1	A

DIST

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	MFII-U-0 RELEASED	1-17-74	P. DURANT

SIZE D | CODE TD | NUMBER DTD MFII-U-1 | REV A

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS			REMARKS
1	A	B	C	
2	A	B	C	
3	A	B	C	
4	A	B	C	
5	A	B	C	
6	A	B	C	
7	A	B	C	
8	A	B	C	
9	A	B	C	
10	A	B	C	

DATE	ENG. REV.	NO
11/16/72		00002
9/17/73	B	00001
	B	ORIG.

FIRST USED ON OPTION/MODEL

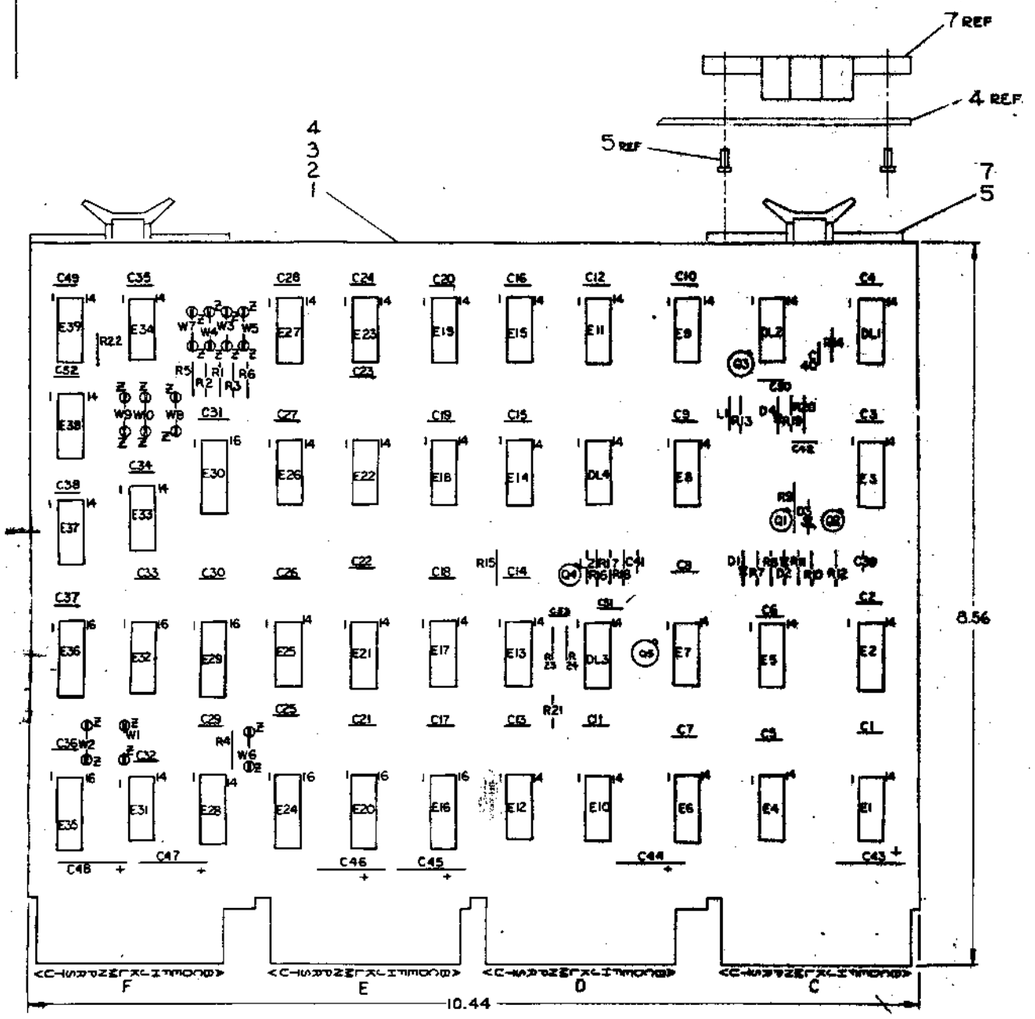
MM11-U

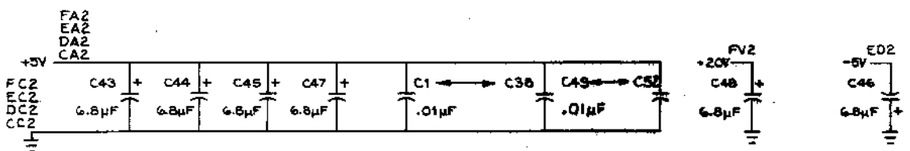
DRN. W. MAJOR	DATE 5/10/73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. W. Major	DATE 5/10/73	
ENG. D. Anderson	DATE 5/14/73	TITLE: 16K UNIBUS TIMING
PROJ. ENG. D. Anderson	DATE 5/14/73	
PROD.	DATE 5/10/73	

NEXT HIGHER ASSY.	SIZE	CODE	NUMBER	REV.
B-DD-MM-11-U	B	CS	M8293-Ø-1	C
SCALE				
SHEET 1 OF 10	DIST.			

ORB 110

NOTES: 1. UNLESS OTHERWISE SPECIFIED:
RESISTANCE IS IN OHMS,
CAPACITANCE IS IN MICROFARADS.





7483	12	5
7485	8	16
380	1	8
7475	12	5
IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8293-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8293-0-5	2
REF		MODULE ECO HISTORY	B-MH-M8293-0-6	3
1		ETCHED CIRCUIT BOARD	5010473	4
8		EYELET GS-4-7	9006732	5
20		SPLIT LUGS	9006735	6
4		HANDLE FLIP-CHIP MAGENTA	9008337-6	7
2	C40, C41	CAP 82 PF 100V ±5% DM	1000015	8
1	C39	CAP 1000 PF 100V ±5% DM	1000042	9
43	C1-→38, 42, 49-52	CAP .01µF 50V ±20%	1001610	10
6	C43-→48	CAP 6.8µF 35V ±10% S.TANT	1005306	11
1	D3	DIODE 1N746A 3.6V±5% ZENER	1104860	12
3	D1, 2, 4	DIODE D672	1105275	13
3	R13, 14, 18	RES 100 1/4 W 5%	1300229	14
1	R17	RES 120 1/4W 5%	1300247	15
1	R9	RES 750 1/2W 5%	1300354	16
1	R16	RES 1K 1/4W 5%	1300369	17
10	R1-→6, 10, 21, 15, 22	RES 2K 1/4W 5%	1302388	18
3	R7, 11, 8	RES 20K 1/4W 5%	1302391	19
2	R19, 12	RES 560 1/4W 5%	1301890	20
1	R20	RES 33K 1/4W 10%	1300510	21
1	Q1	TRANSISTOR DEC 4534 D	1503409	22
4	Q2, 3, 4, 5	TRANSISTOR DEC 3009 B	1503100	23
2	L1, 2	INDUCTOR 100µH	1610662	24
4	DL1, 2, 3, 4	DELAY LINE 250 NS, TAPPED	1611243	25
1	E28	IC DEC 74H40	1905586	26
5	E20, 24, 16, 36, 35	IC DEC 7475	1909050	27
6	E15, 8, 26, 18, 37, 38	IC DEC 74H00	1909056	28
4	E14, 19, 1, 39	IC DEC 74H10	1909057	29
2	E21, 33	IC DEC 74H50	1909060	30
2	E11, 25	IC DEC 74H53	1909062	31
2	E23, 27	IC DEC 74H55	1909063	32
6	E31, 4, 6, 17, 7, 5	IC DEC 380	1909485	33
4	E9, 22, 13, 34	IC DEC 74H04	1909931	34
1	E30	IC DEC 7483	1909932	35
2	E29, 32	IC DEC 7485	1910224	36
2	E3, 10	IC DEC 8885	1910649	37
2	E2, 12	IC DEC 7427	1910878	38
2	R23, 24	RES 330 1/4W 5%	1300295	39
1	C53	CAP 120PF 100V±5% D.M.	1000018	40

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: MM11-U

ETCH BOARD REV: B

CHK	REV	CHANGE NO.	REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN.	B. BALENTINE	1-23-73
CHK'D.	W. Major	5/10/73
ENG.		5/10/73
PROJ. ENG.		5/10/73
PROD.		5/10/73

NEXT HIGHER ASSY: B-DD-MM11-U

SCALE: -

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

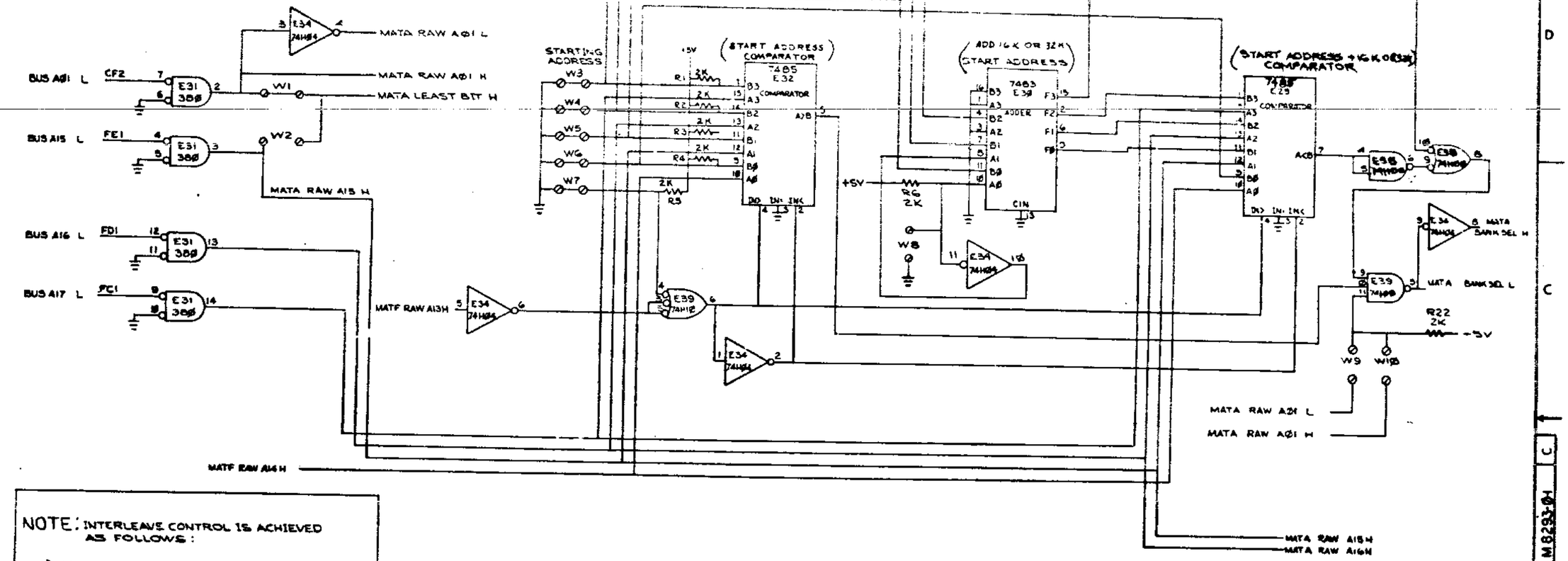
TITLE: 16K UNIBUS TIMING

SIZE	CODE	NUMBER	REV.
D	CS	M8293-0-1	C

DIST.

DEC FORM NO. DRD-135A

DEVICE SELECTION



NOTE: INTERLEAVE CONTROL IS ACHIEVED AS FOLLOWS:

a) NON-INTERLEAVED

W1 IN
W2, W8, W9 & W10 OUT

b) INTERLEAVED

W1 OUT
W2 & W8 IN

W9 IN
W10 OUT } ONE MEMORY

W9 OUT
W10 IN } THE OTHER MEMORY

STARTING ADDRESS FOR THE COMBINED INTERLEAVED MEMORY IS THE SAME AS FOR THE NON-INTERLEAVED CASE (W3 THRU W7 MUST BE CUT THE SAME FOR BOTH INTERLEAVED MEMORIES) BUT THE INTERLEAVED MAX ADDRESS IS INCREASED BY 16K (100000₈)

Ø = IN 1 = OUT

NON-INTERLEAVED START ADDRESS	W3	W4	W5	W6	W7	NON-INTERLEAVED MAX ADDRESS
000000 (0K)	Ø IN	Ø IN	Ø IN	Ø IN	Ø IN	077776
020000 (4K)	Ø IN	Ø IN	Ø IN	Ø IN	1 OUT	117776
040000 (8K)	Ø	Ø	Ø	1	Ø	137776
060000 (12K)	Ø	Ø	Ø	1	1	157776
100000 (16K)	Ø	Ø	1	Ø	Ø	177776
120000 (20K)	Ø	Ø	1	Ø	1	217776
140000 (24K)	Ø	Ø	1	1	Ø	237776
160000 (28K)	Ø	Ø	1	1	1	257776
200000 (32K)	Ø	1	Ø	Ø	Ø	277776
220000 (36K)	Ø	1	Ø	Ø	1	317776
240000 (40K)	Ø	1	Ø	1	Ø	337776
260000 (44K)	Ø	1	Ø	1	1	357776
300000 (48K)	Ø	1	1	Ø	Ø	377776
320000 (52K)	Ø	1	1	Ø	1	417776
340000 (56K)	Ø	1	1	1	Ø	437776
360000 (60K)	Ø	1	1	1	1	457776
400000 (64K)	1	Ø	Ø	Ø	Ø	477776

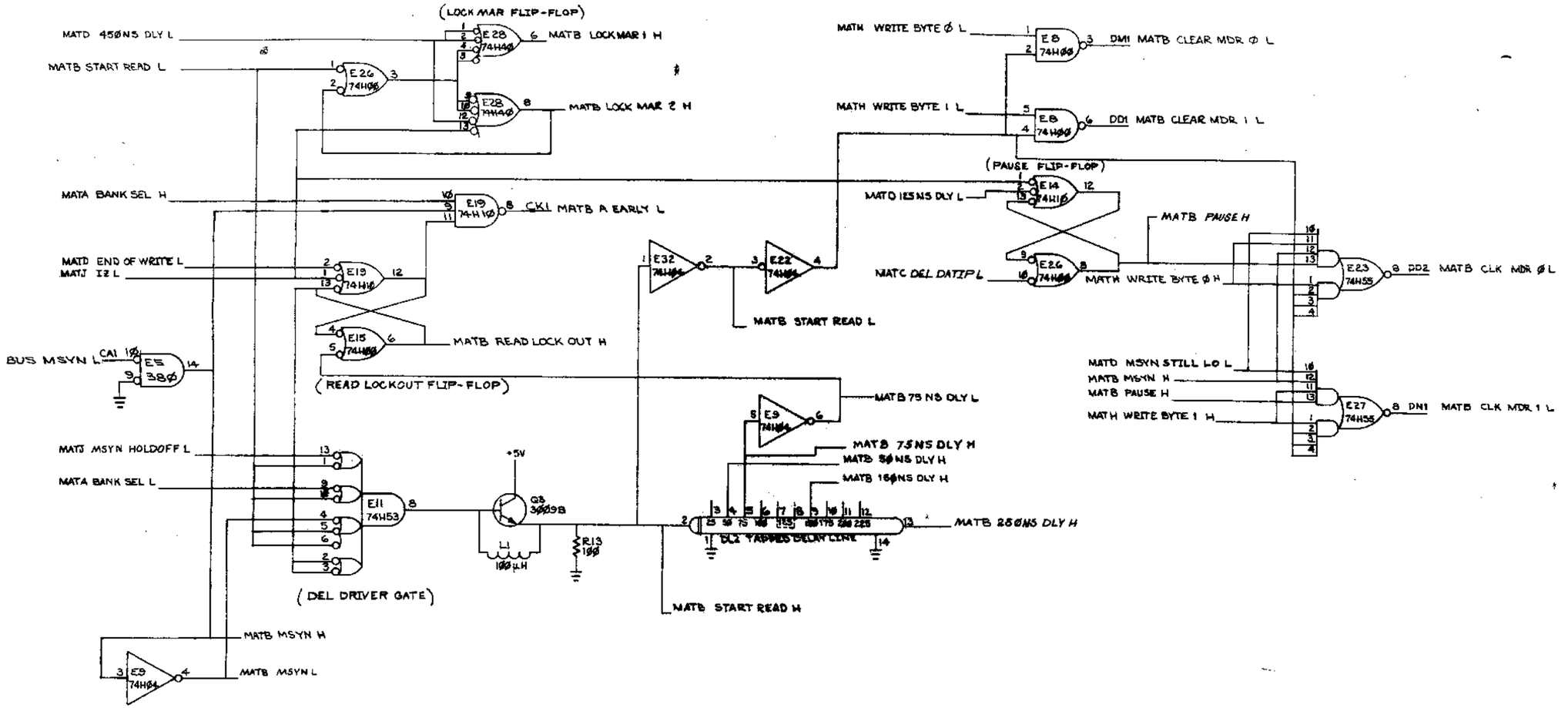
* THE MEMORY WILL NOT RESPOND TO BUS ADDRESSES BETWEEN 124 - 128K

	W3	W4	W5	W6	W7	
42 0000 (68K)		Ø	Ø	Ø	1	517776
44 0000 (72K)		Ø	Ø	1	Ø	537776
46 0000 (76K)	1	Ø	Ø	1	1	557776
50 0000 (80K)	1	Ø	1	Ø	Ø	577776
52 0000 (84K)	1	Ø	1	Ø	1	617776
54 0000 (88K)	1	Ø	1	1	Ø	637776
56 0000 (92K)	1	Ø	1	1	1	657776
60 0000 (96K)	1	1	Ø	Ø	Ø	677776
62 0000 (100K)	1	1	Ø	Ø	1	717776
64 0000 (104K)	1	1	Ø	1	Ø	737776
66 0000 (108K)	1	1	Ø	1	1	757776
70 0000 (112K)	1	1	1	Ø	Ø	757776 *
72 0000 (116K)	1	1	1	Ø	1	757776 *
74 0000 (120K)	1	1	1	1	Ø	797776 *

DEVICE SELECTION LOGIC

REVISIONS		
ORK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER
16K UNIBUS TIMING (MATA)	D	DCS	M8293-0-1
SCALE —	SHEET 2 OF 10	DIST	



REVISIONS		
SYM	CHANGE NO	REV

READ START TIMING

MATB BUS TIMING

D.C.S. M8293

SIZE D | DRAWING NO. M8293-Ø-1 | REV C

DCS M8293 Ø-1

MATC 300 NS DLY H
MATC 325NS DLY H
MATB START READ H
E2 7427
E3 8885
CJ1 MATC READ EARLY L
(READ EARLY FLIP-FLOP)
MATB 150 NS DLY H
CD1 MATC END STROBE L
(END STROBE FLIP-FLOP)
MATJ IX H
MATC 350NS DLY H
MATB 75NS DLY H
CM1 MATC READ LATE L
(READ LATE FLIP-FLOP)
MATH C1 L
E1 74H10
PCL MSYN DISABLE L
MATB MSYN H
DT2
+5V
R21 2K
DE2 MATC OUTPUT ENABLE H
(OUTPUT ENABLE FLIP-FLOP)
MATC DATIP CYCLE L
MATH C0 H
MATH C1 L
E26 74H00
E22 74H04
MATC DEL DATIP L
MATC 300NS DLY H
MATB 250NS DLY H
(DLI TAPPED DELAY LINE)
R14 100
C41 82 PF
MATC 325 NS DLY H
MATH C1 L
MATB MSYN H
E21 74H50
MATC SSYN L
MATB CLK MDR 0 L
MATB CLK MDR 1 L
E14 74H10
(SSYN FLIP-FLOP)
+5V
R23 330
C53 120 PF
R24 330
CB2 BUS SSYN L *
Q5 3N95B

* THIS SIGNAL IS CALLED
'BUS SSYN L' FOR MF11-U
'SSYN INT BUS L' FOR MF11-UP

REVISIONS		
CHK	CHANGE NO	REV

READ TIMING

TITLE	SIZE	CODE	NUMBER	REV
KK UNIBUS TIMING (MATC)	D	CS	M8293-0-1	C
SCALE	SHEET 5 OF 10		DIST	

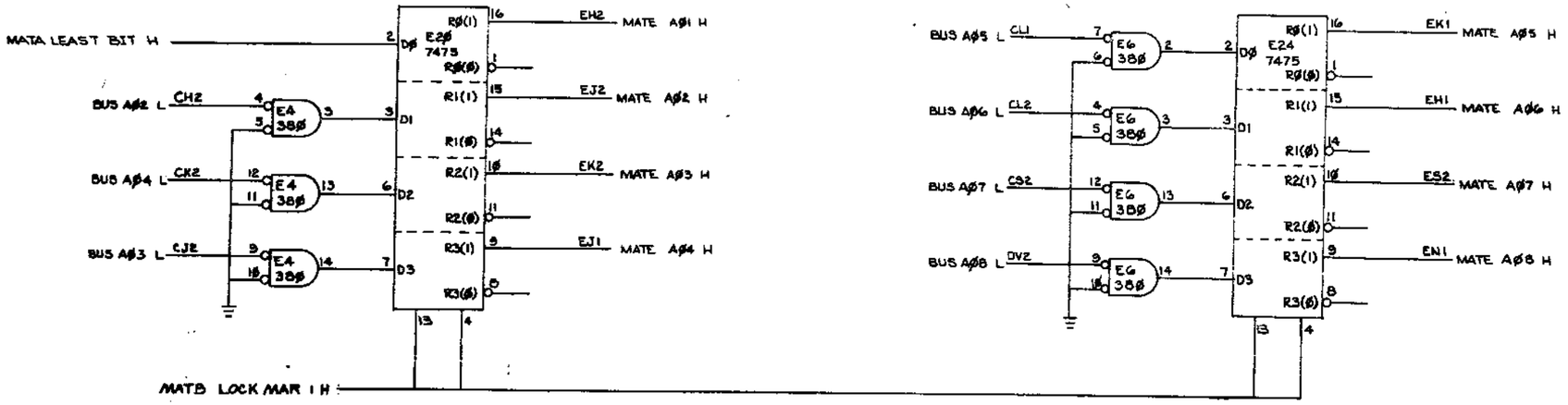
(WRITE DEL DRIVER GATING)

MATC 325 NS DLY H
MATC DATI P CYCLE L
MATB PAUSE H
MATB MSYN H
MATB START READ L
E25 75453
E8 74H64
E8 74H64
MATD MSYN STILL LO L
E13 74H64
+5V
R15 2K
E13 74H64
PC2 DATIP CLR PAUSE 1 L — CE2
ORIGINATES FROM M7259 PARITY CONTROL MODULE (SHEET 3) VIA M9II-UP BACKPLANE
MATD WRITE Ø DLY L
MATD WRITE START H
E21 74H86
MATD WRITE LOCKOUT H
(INH FLIP-FLOP)
MATD 25 NS DLY H
MATJ 12 H
E16 8885
E12 7427
DK2 MATD INH TIME H
E19 8885
(WRITE LATE FLIP-FLOP)
MATD 450 NS DLY H
DM MATD WRITE LATE L
MATD 125 NS DLY L
MATJ 12 L
E13 74H64
E16 74H64
E19 74H16
(WRITE LOCKOUT FLIP-FLOP)
MATD 125 NS DLY H
MATD 350 NS DLY H
MATD 450 NS DLY H
MATD WRITE END DLY H
E13 74H64
E18 74H64
E18 74H64
E18 74H64
MATB START READ L
(END WRITE FLIP-FLOP)
E18 74H64
MATC SSYN L
MATD END OF WRITE L
+5V
R16 1K
Q4 2N3906
L2 100 µH
R17 120
(WRITE DEL DRIVER)
MATD WRITE Ø DLY H
(DL4 TAPPED DELAY LINE)
25 50 75 100 125 150 175 200 225 NS
(DL3 TAPPED DELAY LINE)
275 300 325 350 375 400 425 450 475 NS
R13 100
C41 82 PF
E10 8885
E12 7427
OB2 MATD STACK CHG H
CM2 MATD WRITE EARLY L
MATJ 12 H
(STACK CHG FLIP-FLOP)

REVISIONS		
CHK	CHANGE NO.	REV.

WRITE TIMING

TITLE 16K UNIBUS TIMING (MATD)
SIZE D CODE CS NUMBER M8293-Ø-1 REV
SCALE - SHEET 6 OF 10 DIST

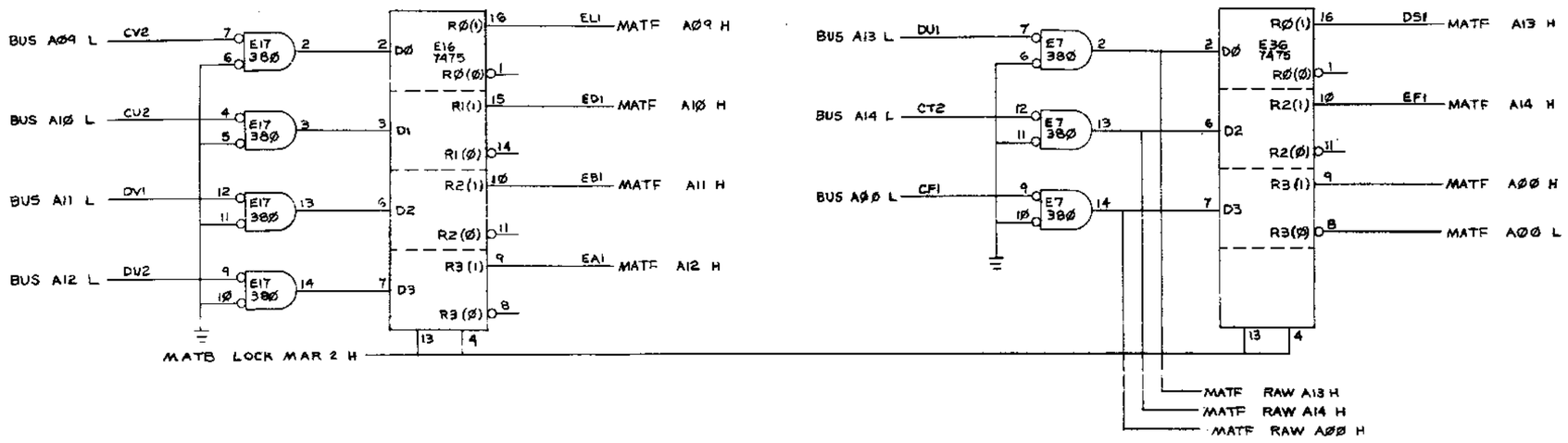


REVISIONS		
CHK	CHANGE NO	REV

AØ1-AØ8 LATCHES

TITLE	SIZE	CODE	NUMBER	REV.
16K UNIBUS TIMING (MATE)	D	CS	M8293-Ø-1	C

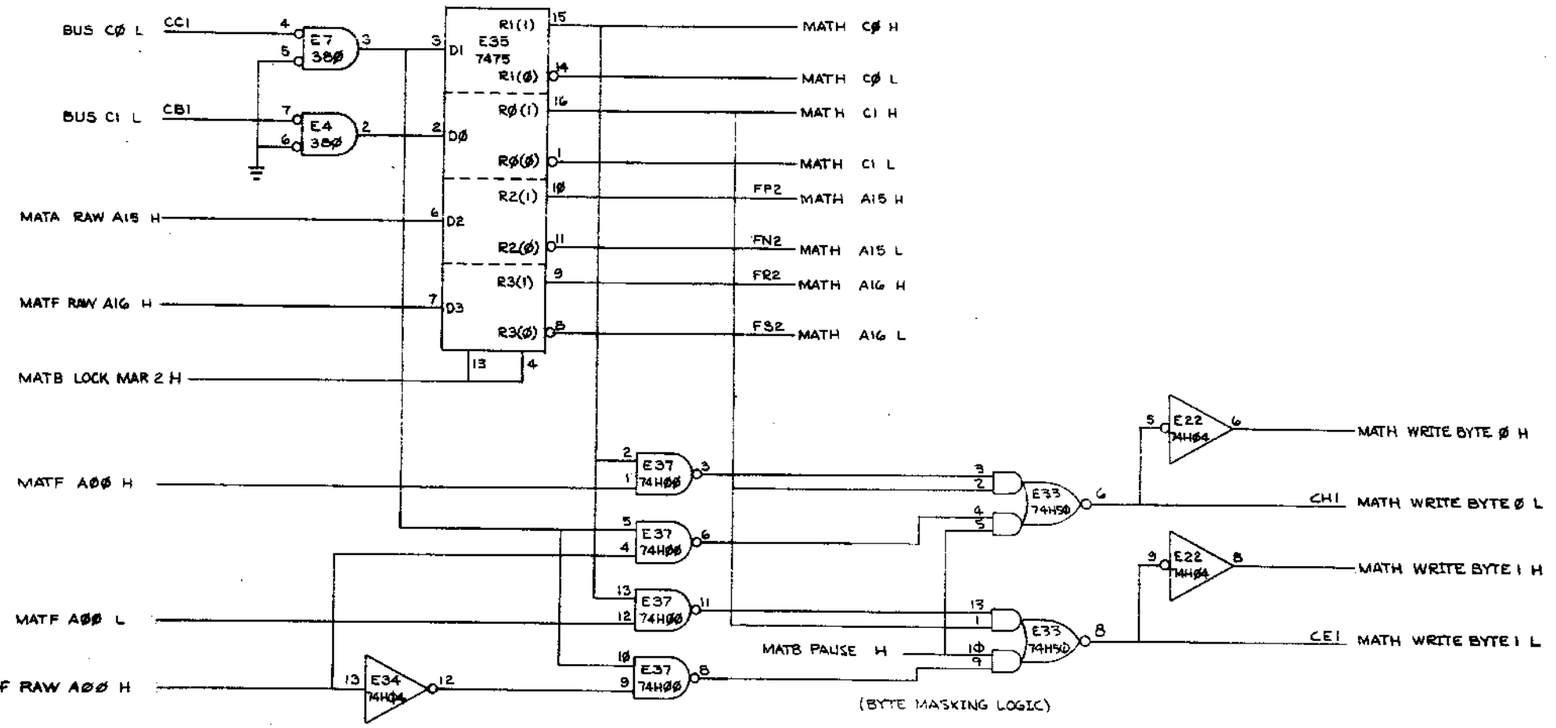
DCS M8293-Ø-1 C



A00 A09 → A13 LATCHES

TITLE 16K UNIBUS TIMING (MATF)		SIZE D	CODE DCS	NUMBER M8293-0-1	REV. C
SCALE	SHEET 3 OF 10	DIST.			

M8293-0-1 C DCS

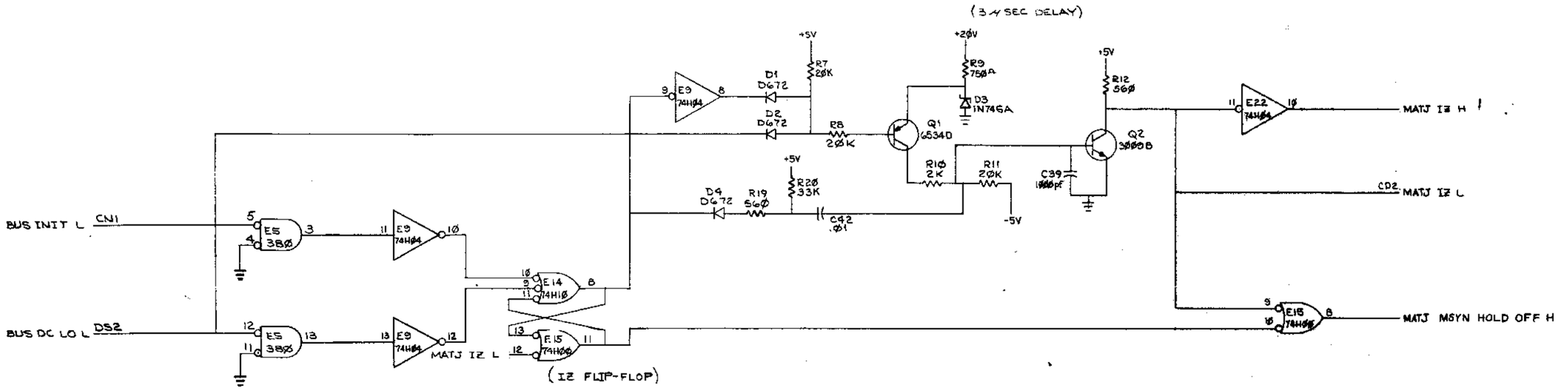


REVISIONS		
CHK	CHANGE NO	REV

LATCHES & BYTE MASKING

FILE	SIZE	CODE	NUMBER	REV
UNIBUS TIMING	D	DCS	M8293-∅-1	C

SHEET 9 OF 20 | DIST



REVISIONS		
CHK	CHANGE NO	REV.

INIT & DCLO INITIALIZING

TITLE	SIZE	CODE	NUMBER	REV.
16K UNIBUS TIMING (MATJ)	D	DCS	M8293-0-1	C
SCALE	SHEET 10 OF 16	DIST.		

NEXT	CODE	NUMBER	REV.
	DCS	M8293-0-1	C

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1	C D E F H J	
2	C D E F H J	
3	C D E F H J	
4	C D E F H J	
5	C D E F H J	
6	C D E F H J	

DATE	ENG.	ETCH REV.	ECO NO.
-	-	D	-
7/23/73	R. Schuler	D	1
8-15-73	P. Durant	D	2
11-16-73	P. Durant	D	3
12-19-73	RKO Drawing	D	4
3/13/74	D. Lindsay	D	5

FIRST USED ON OPTION/MODEL

MF11U & MF11-UP

DRN. B. BALENTINE	DATE 2-6-73	
CHK'D. MARCHAND	DATE 4-4-73	
ENG. D. Lindsay	DATE 4/4/73	
PROJ. ENG. D. Lindsay	DATE 4/4/73	
PROD. R. Schuler	DATE 4/4/73	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE

16K X-Y DRIVE

NEXT HIGHER ASSY.

SCALE 4

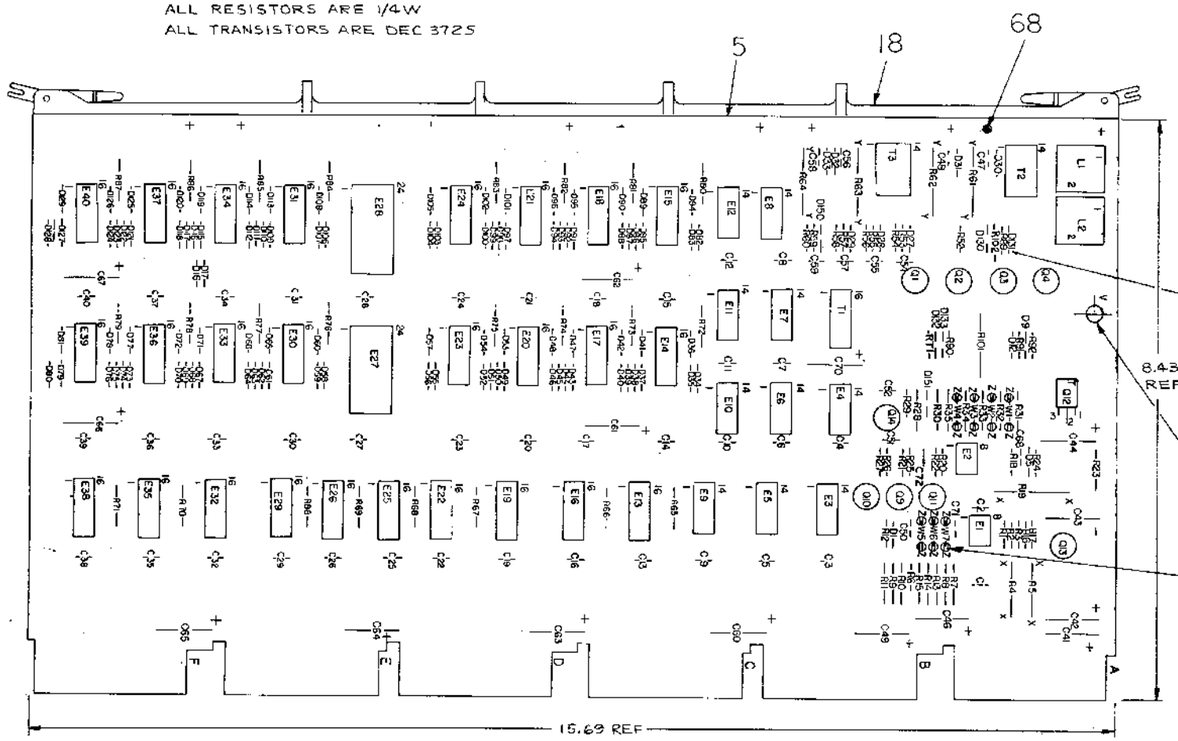
SHEET 1 OF 6

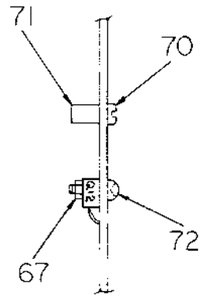
SIZE	CODE	NUMBER	REV.
B	CS	G235-0-1	J

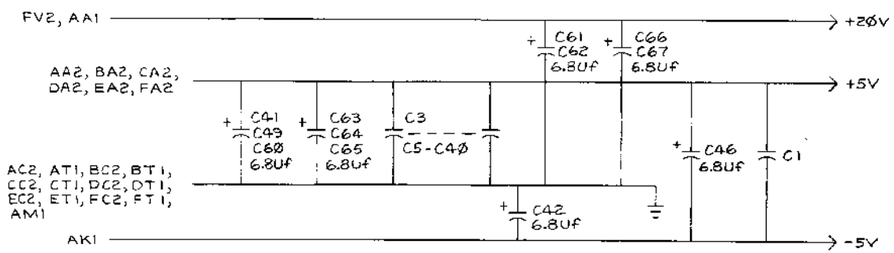
DIST.

NOTES:

1. * INDICATES NOT USED ON MFII-U & MFII-UP (2 PLACES).
2. ** INDICATES NOT USED ON MFII-U & MFII-UP, BUT ARE TIED TO UNUSED TERMINATORS ON THE G114 MODULE, WHICH FORCES THEM TO +3V (5 PLACES).
3. 1 THERMISTOR LOCATED ON H217 STACK MODULE, 1 ON G235
4. UNLESS OTHERWISE INDICATED;
   ALL DIODES ARE D672
   ALL CAPACITORS ARE .01 Uf
   ALL RESISTORS ARE 1/4W
   ALL TRANSISTORS ARE DEC 3725







74121	7	—	—
741	—	—	—
75325	—	9	16
7442	8	16	—
74154	12	24	—
IC TYPE	GND	+5V	+20V

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

IC PIN LOCATIONS

BRUNING 40-522 10699
DEC FORM NO. DRD 135A

FIRST USED ON OPTION MODEL: MF11-U & MF11-UP

ETCH BOARD REV: D

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REV	CHANGE NO.	DEC NO.	EIA NO.
CHK			

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.

DRN.		DATE 4-4-73
CHK'D. MARCHAND		DATE 4-4-73
ENG.		DATE 4/4/73
PROJ. ENG.		DATE 4/4/73
PROD.		DATE 4/4/73

NEXT HIGHER ASSY

SCALE

SHEET 2 OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: 16K X-Y DRIVE

SIZE	CODE	NUMBER	REV.
D	CS	G235-0-1	J

DIST.

SIZE D CODE CS NUMBER G235-0-1 REV J

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	E6	IC DEC/074H04	1910463	62
1	E10	IC DEC/074H10	1910464	63
2	E7 E11	IC DEC/074H40	1910469	64
24	E13-E18 E20-E26 E29-E31 E33-E40	IC DEC 75325	1910980	65
2	E9 E12	IC DEC/074H50	1910512	66
1		KEPNUT 4-40	9006557	67
12		EYELET HANDLE	9006732	68
14		SPLIT LUGS	9006735	69
1		SCREW NYLON 6-32	9008212-1	70
1		STAND OFF 1/4 X 3.8	9008213	71
1		SCREW (PHILLIPS PAN HEAD) 4-40 X 5/16	9006010-1	72
1	R31	RES 10.5K 1/8W 1%	1305419	73
AR	W1-W7	WIRE #22 AWG (SOLID)	9107560-1	74
1	R91,	RES 190Ω 1/4W 5%	1301322	75
1	D133	DIODE ZENER 1N752A 5.6V 5%	1102808	76
1	R92	RES 150Ω 1/4W 5%	1300250	77
2	C47, C56	CAP .022UF 50V	1011683	78
1	RT1	THERMISTER 300Ω 2%	1309785	79
1	R102	RES 330Ω 1/4W 5%	1300295	80
1	Q11	TRANS. DEC 4258	1505321	81
1	E3	IC DEC 1074H20	1910466	82
1	R7	RES. 9.09K 1/8W 1%	1304855	83

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF		X-Y COORDINATE HELP LOCATION	M-CO-0235-0-4	2
REF		ASSY DRILLING HELP LAYOUT	D-AH-0235-0-5	3
REF		ASSY WIRE LIST	B-WH-0235-0-6	4
		ETCHED CIRCUIT BD.	5010145	5
1	C71	CAP 82 PF 100V 5% C.M.	1000911	6
46	C1-C40, C48, C50, C52 C58, C60, C62	CAP .01UF 50V Z5U	1001610	7
4	C54, C55, C57	CAP .005 UF 100V Z5U DISC	1001765	8
1	C51	CAP 18 PF 100V 5% C.M.	1002603	9
2	C43 C44	CAP 47 UF 25V 10% S. TANT	1004614	10
13	C41, C42, C45, C46, C49, C61, C67, C70	CAP 6.8UF 35V 10% S. TANT	1005506	11
1	D1	DIODE ZENER 1N753A 6.2V ± 5%	1102421	12
199	D9-D12 D17 D27-D135 D162-D156	DIODE D372	1105225	13
1	D16	DIODE ZENER 1N5248B 18V ± 10%	1110766	14
1	D5	DIODE ZENER 1N749A 4.3V ± 5%	1109917	15
1	D131	DIODE ZENER 1N754A 6.8V ± 5%	1109991	16
1	D151	DIODE ZENER 1N750A 4.7V ± 5%	1100124	17
1		HANDLE ASSY	1210711-2	18
2	R18,R24	RES 100 1/4W 5%	1300229	19
12	R69-R71, R76-R79, R84-R88	RES 220 1/2W 5%	1300274	20
1	R101	RES 220 2W 10%	1300278	21
12	R65-R68, R72-R75, R80-R83	RES 270 1.2W 5%	1300285	22
2	R21,R27	RES 470 1.4W 5%	1300316	23
3	R3,R16,R20	RES 1K 1/4W 5%	1300365	24
1	R23	RES 1.5K 1.2W 5%	1300394	25
1	R2	RES 4.7K 1.4W 5%	1300447	26
1	R17	RES 10 1/4W 5%	1301317	27
1	R9	RES 82Ω 1/4W 5%	1301477	28
4	R61-R64	RES 10Ω 2W 10%	1300172	29
1	R22	RES 22K 1/4W 5%	1301808	30
1	R12	RES 270 1/4W 5%	1301972	31
4	R54,R56,R58,R60	RES 18 1/4W 5%	1302124	32
4	R53,R55,R57,R59	RES 75 1/4W 5%	1302379	33
3	R25,R26,R52	RES 2K 1/4W 5%	1302388	34
2	R1,R6	RES 470K 1/4W 5%	1302398	35
1	R29	RES 120K 1/4W 5%	1305539	36
2	R32 R8	RES 10K 1/8W 1%	1302886	37
2	R28,R30	RES 14.7K 1/8W 1%	1302941	38
1	R9	RES 287 1/8W 1%	1305124	39
1	R10	RES 198 1/8W 1%	1302956	40
1	R35	RES 3.16K 1/8W 1%	1305045	41
1	R34	RES 34.8K 1/8W 1%	1303158	42
1	R14	RES 249K 1/8W 1%	1304843	43
1	R11	RES 2.61K 1/8W 1%	1305308	44
2	R15,R33,	RES 68.1K 1/8W 1%	1305252	45
1	R13	RES 121K 1/8W 1%	1305255	46
2	R4,R5	RES .25 3W 1%	1310219	47
1	R19	RES .08 5W 3%	1310983	48
1	R90	RES 56Ω 1/4W 5%	1302602	49
1	Q14	TRANS DEC 2904A	1501913	50
1	Q13	TRANS DEC 6534B	1503409-1	51
1	Q12	TRANS DEC 4920	1509805	52
6	Q1-Q4,Q9,Q10	TRANS DEC 3725	1510959	53
1	T1	PULSE TRANSFORMER (DIP)	1609651	54
2	T2,T3	SATURATING THANSFORMER-XY	1610962	55
2	L1,L2	CHOKE 400 UH	1610963	56
2	E27,E28	IC DEC 74154	1909701	57
2	E19,E32	IC DEC 7442	1910046	58
1	E4	IC DEC 74121	1910230	59
2	E1,E2	IC DEC 741	1910298	60
2	E5,E8	IC DEC/074H00	1910462	61

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
16K X-Y DRIVE	D	DCS	G235-Ø-1	J
SCALE	SHEET 1 OF	DIST		

DCS G235-2-1

DRVA Y-READ CURRENT SOURCE

DRVA Y-WRITE CURRENT SOURCE

DRVC Y-WRITE SOURCE TIME H

DRVC X-WRITE SOURCE TIME L

DRVC X-READ SOURCE TIME L

DRVC X-WRITE SINK TIME L

DRVC X-READ SINK TIME L

DRVC X-READ TIME H

MAT D WRITE LATE L

MAT B A EARLY L

MAT B READ EARLY L

DRVC READ TIME H

DRVC X-READ TIME H

A LATE L

MAT C READ LATE L

DRVC READ TIME H

DRVC Y READ SOURCE TIME L

MAT D WRITE EARLY L

DRVC WRITE TIME H

DRVC Y WRITE SINK TIME L

ADA H
ADB H
ADC H
ADD H

DRVC STACK SEL H

DRVC STACK SEL L

DRVC STACK SEL L

MAT F A13 H

MAT F A12 H

MAT F A11 H

MAT F A10 H

DRVC STACK SEL L

DRVC XSØØ

DRVC XSØ1

DRVC XSØ2

DRVC XSØ3

DRVC XSØ4

DRVC XSØ5

DRVC XSØ6

DRVC XSØ7

DRVC XS1Ø

DRVC XS11

DRVC XS12

DRVC XS13

DRVC XS14

DRVC XS15

DRVC XPWDØ

DRVC XNRDØ

DRVC XPWD1

DRVC XNRD1

DRVC XPWD2

DRVC XNRD2

DRVC XPWD3

DRVC XNRD3

DRVC XPWD4

DRVC XNRD4

DRVC XPWD5

DRVC XNRD5

DRVC XPWD6

DRVC XNRD6

DRVC XPWD7

DRVC XNRD7

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
	ETCH BOARD REV D			

PARTS LIST

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

SEMICONDUCTOR CONVERSION CHART

DRWN		DATE 7-19-73
CHK'D.	MARC HAAS	DATE 8-4-73
ENG.		DATE 8/9/73
PROJ. ENG.		DATE 8/9/73
PROD.		DATE 8/9/73
NEXT HIGHER ASSY		
SCALE		
SHEET 4 OF		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: 16K X-Y DRIVE (DRVC)

SIZE D | CODE 05 | NUMBER G235Ø-1 | REV. J

DIST.

DEC FORM NO ORD-135

DRVA Y READ FORMAT SOURCE

DRVC Y-WRITE SINK TIME L
DRVC Y-READ SOURCE TIME L

R72 270 +20V
R80 270
R73 270
R81 270
R74 270 +20V
R82 270
R75 270
R83 270

75325 E14 E15 E16 E17 E18 E13 E23 E24

DRVB YS01 YS02 YS03 YS04 YS05 YS06 YS07
DRVB YS08 YS09 YS10 YS11 YS12 YS13 YS14 YS15

74154 E28 DECODER

MATE A14H EF1 20 D3
MATE A06H EH1 21 D2
MATE A05H EK1 22 D1
MATE A03H EJ1 23 D0

STB1 STB0

DRVC STACK SEL L

DRVC Y-WRITE SOURCE TIME H
DRVC READ TIME H

74H08 E5

74H04 E6
74H00 E8

SPARES

7442 E19 DECODER

DRVC STACK SEL L
MATE A04 H EK2 13
MATE A02 H EJ2 14
MATE A01 H EH2 15

DRVA Y WRITE FORMAT SOURCE

R65 270 +20V
R68 270
R66 270
R67 270

DRVB YPWD0 YNRD0 YPWD1 YNRD1 YPWD2 YNRD2 YPWD3 YNRD3
DRVB YPWD4 YNRD4 YPWD5 YNRD5 YPWD6 YNRD6 YPWD7 YNRD7

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV D

REV	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.
CHK	REVISIONS	SEMICONDUCTOR CONVERSION CHART			

DRN. C. Manchester DATE 7-24-73
CHK'D. [illegible] DATE 7-24-73
ENG. T. Smeltzer DATE 7/24/73
PROJ. ENG. T. Smeltzer DATE 7/24/73
PROD. [illegible] DATE 7/24/73
NEXT HIGHER ASSY
SCALE
SHEET 5 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
16K X-Y DRIVE
(DRVB)

SIZE D CODE CS NUMBER G235-0-1 REV. J
DIST.

DEC FORM NO DRD-135

BIAS CURRENT GENERATOR

SENSE STROBE CONTROL

X & Y CURRENT SOURCES

DRVC STACK SEL H
DRVC READ TIME H
DRVC WRITE TIME H
DRVC X-READ SINK TIME L
DRVA STROBE MARGIN
DRVA DRIVE HIGH MARGIN
DRVA DRIVE LOW MARGIN
SIN A I BIAS RETURN
STKA T1
STKA T2
DRVA PWR OK L
MAT J I2L
DRVC STACK SEL H
* MAT D STACK CHARGE H
* DRVA STACK CHARGE TIME
MAT H WRITE BYTE Ø L
MAT C END STROBE L
MAT H WRITE BYTE 1 L
DRVA SSØ L
DRVA SS1 L
DRVA I BIAS SOURCE
DRVA X-READ CURRENT SOURCE
DRVA Y-READ CURRENT SOURCE
DRVA X-WRITE CURRENT SOURCE
DRVA Y-WRITE CURRENT SOURCE
+5V
+2Ø V
-5V
+2Ø
L1 400 µh
L2 400 µh
T1
T2
T3
Q1 DEC 4258
Q9
Q10
Q11
Q12
Q13
Q3
Q4
Q9
Q10
Q11
Q12
Q13
Q14
Q3
Q4
Q9
Q10
Q11
Q12
Q13
Q14
D1 IN753A 6.2V
D5 IN749A 4.3V
D9
D10
D11
D12
D13
D14
D15
D16 IN3248B 18V
D17
D27
D28
D29
D30
D31 IN752A 5.6V
D32
D33
D38
D91
D93
D131 IN756A 6.8V
D151 IN750A 4.7V
RT 300Ω @ 25°C
ON STACK SEE NOTE 3
TP NOMINALLY .38Ov BELOW +5V @ 25°C
R92 150Ω
R91 180Ω
R99 82Ω
R102 330Ω
R101 220 2W
R23 1.5K 12W
R21 470Ω
R25 2K
R26 2K
R27 470
R24 100Ω
R22 22K
R30 1K
R17 1Ø
R16 1K
R2 47K
R3 1K AK2
R5 25 3W
R4 .25 3W
R1 470K
R6 470K
R11 2.61K 1/8W
R12 270
R8 10K 1/8W
R9 200 1/8W
R10 196 1/8W
R15 68.1K 1/8W
R14 249K 1/8W
R13 121K 1/8W
R7 909K 1/8W
R31 19.6K 1/8W
R32 10K 1/8W
R33 68.1K 1/8W
R34 34.8K 1/8W
R35 3.16K 1/8W
R36 14.7K 1/8W
R39 12.8K
R28 14.7 K 1/8W
R52 2K
R53 75Ω
R54 18Ω
R55 75Ω
R56 18Ω
R57 75Ω
R58 18Ω
R59 75Ω
R60 18Ω
R61 10Ω 2W
R62 10Ω 2W
R63 10Ω 2W
R64 10Ω 2W
C44 47µF
C2
C72 22K
C68
C71 47pF
C48 .022µF
C47 .022µF
C56 .022µF
C58
C59 .005µF
C55 .005µF
C54 .005µF
C57 .005µF
C50
C52
C51 18pF
C70 6.8µF
C4
C48 47µF
74H40 E7
74H40 E11
74H20 E3
74H04 E6
74H10 E16
74H10 E10
74121 E4
741 E2
741 E1
BS1
BU1
AN1
AN2
AV1
AB1
BH1
DRVC STACK SEL H
DRVC READ TIME H
DRVC WRITE TIME H
DRVC X-READ SINK TIME L
DRVA STROBE MARGIN
DRVA DRIVE HIGH MARGIN
DRVA DRIVE LOW MARGIN
SIN A I BIAS RETURN
DRVA PWR OK L
MAT J I2L
DRVC STACK SEL H
MAT D STACK CHARGE H
DRVA STACK CHARGE TIME
MAT H WRITE BYTE Ø L
MAT C END STROBE L
MAT H WRITE BYTE 1 L
DRVA SSØ L
DRVA SS1 L
PULSE WIDTH ≈ 175 NS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST			
	ETCH BOARD REV D			

REV	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.
CHK	REVISIONS	SEMICONDUCTOR CONVERSION CHART			

DRN. [illegible] DATE 7-2-73
CHK'D. MARCHAND DATE 4-4-73
ENG. [illegible] DATE 4/4/73
PROJ. ENG. [illegible] DATE 4/4/73
PROD. [illegible] DATE 4/4/73
NEXT HIGHER ASSY
SCALE —
SHEET 5 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
16K [illegible]
(DRVA)

SIZE D | CODE 08 | NUMBER G235-0-1 | REV. J
DIST.

DEC FORM NO DRD-135

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1	A B C	
2	A B C	
3	A B C	
4	A B C	
5	A B C	
6	A B C	
7	A B C	
8	A B C	
9	A B C	

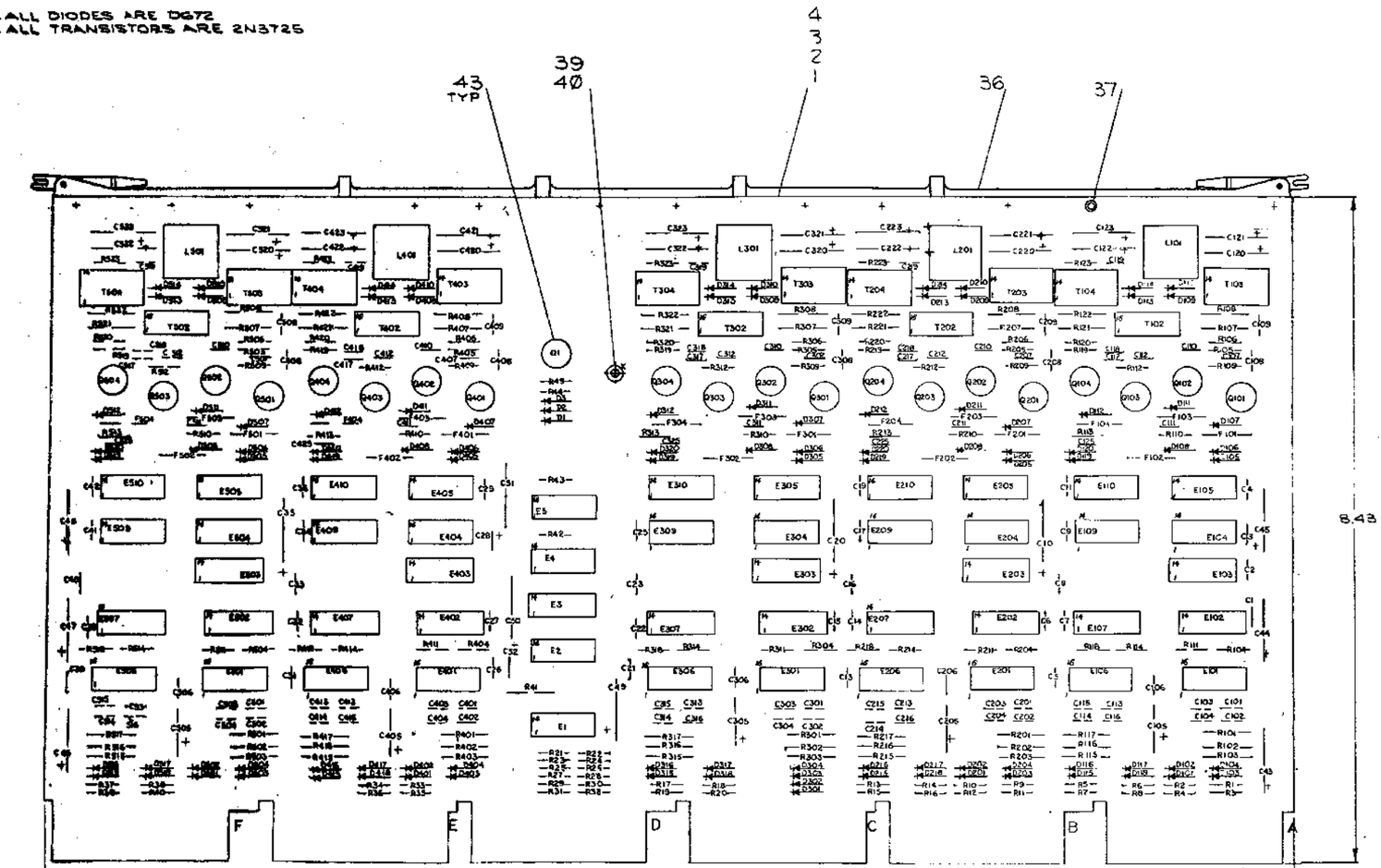
DATE	ENG	ECO REV.	ECO NO.
—	—	—	—
9-4-73	ROP	B	G114-00002

FIRST USED ON OPTION/MODEL
MF11-U

DRN. W. Major	DATE 4/10/73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D W. Major	DATE 4/13/73	
ENG. D. Sweeney	DATE 4/13/73	TITLE 16K SENSE/INHIBIT
PROJ. ENG. D. Sweeney	DATE 4/17/73	
PROD. [illegible]	DATE 4/17/73	
NEXT HIGHER ASSY. B-DD-MM11-U		SIZE B CODE CS NUMBER G114-0-1 REV. C
SCALE —		
SHEET 1 OF 9		DIST.

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS ARE IN OHMS 1/4W
2. ALL CAPACITANCE IS IN MICROFARADS
3. DATA BITS 17 & 18 ARE NOT USED IN 18 BIT SYSTEMS
4. DATA BIT 18 IS NOT USED IN 19 BIT SYSTEMS
5. DATA BITS 16,17,18 & 19 ARE NOT USED IN 16 BIT SYSTEMS
6. ALL DIODES ARE DG72
7. ALL TRANSISTORS ARE 2N3725



IC DEC 7380	1	8	-
IC DEC 380	1	8	-
IC DEC 7528	9	16	8
IC TYPE	GND	+5V	-5V

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

IC PIN LOCATIONS

DEC FORM NO. 060-1754

FIRST USED ON OPTION MODEL: MF 11-U & MF 11-UP

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV B

REV	CHANGE NO.	REVISIONS	CHK	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN.		4-3-73
CHK'D.		4-13-73
ENG.		4/13/73
PROJ. ENG.		4/13/73
PROD.		4/13/73

NEXT HIGHER ASSY

SCALE

SHEET 2 OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: 16K SENSE/INHIBIT

SIZE	CODE	NUMBER	REV.
D	DCS	G114-Ø-1	C

DIST

REV C

SIZE CODE DCS NUMBER G114-Ø-1

1	E1	IC DEC IC 74H00	1910462	30	
14	E2 THRU E5, E105, E110, E205, E210, E305, E310, E405, E410 E505, E510	IC DEC 1074H40	1910469	31	
10	E101, E106, E201, E206, E301, E306, E401, E406, E501, E506	IC DEC. 7525 SENSE AMP	1910687	32	
3	E107, E207, E307, E407 E507	IC DEC 8881	1909735	33	
10	C109, C109 C204 C209 E304 C309 E401 E409 E504, E509	IC DEC 1074H74	1910553	34	
5	L101, L201, L301, L401, L501	CHOKE 400 UH	1610963	35	
1		HANDLE A55-4	12:0711-2	36	
12		EYELET GS-4-7	9006732	37	
20	F101 THRU F104, F201 THRU F204, F301 THRU F304 F401 THRU F404, F501 THRU F504	FUSE PICOFUSE 3/4A	1210929-3	38	
1		STANDOFF 1/4 X 3/8 "6-32 THRU	9008213	39	
1		SCREW, NYLON 6/32 X 1/4 LG	9009341-1	40	
5	E103, E203, E303, E403 E503	I.C. DEC 10 74H04	1910463	41	
4	E102, E202, E402 E502	IC. DEC 380	1909485	42	
21		TRANSIPAD	9007200	43	
1	E302	IC DEC 7380	1910390	44	

1		ETCHED CIRCUIT BOARD	5010478	1
REF		X-Y COORDINATE HOLE LOCATION	A-CO-G114-0-4	2
REF		ASSY/DRILLING HOLE LAYOUT	DAM-G114-0-5	3
REF		MODULE ECO HISTORY	B-MM-G114-0-6	4
55	C1 THRU C9, C11, C13 THRU C17 C19, C21, C22, C23, C25 THRU C29, C31, C32, C33, C34, C36 C38 THRU C42, C52, C104, C106 C108, C114, C204, C206, C208, C214, C304, C306, C308, C314, C404, C406, C408, C414, C504 C506, C508, C514	CAP. CIUF 50V. 20% CER	1001610	5
29	C10, C20, C35, C120 THRU C123, C220 THRU C223, C320 THRU C323 C420 THRU C423, C520 THRU C523, C44, C45, C47 C48, C50, C61	CAP .1 UF 35V. 10% TANT	1003306	6
30	C101, C103, C113, C115, C201, C203 C213, C215, C301, C303, C313 C315, C401, C403, C413, C415, C501, C503, C513, C515 C102, C116, C202, C216, C302 C316, C402, C416, C502, C516	CAP 82 PF 100V 5% D.M.	1000015	7
5	C105, C205, C305, C405, C505	CAP 3.9 NF 10V, ±10% TANT	1000064	8
3	C43, C46, C49	CAP 39 NF 10V ±10% TANT	1000076	9
20	C107, C111, C112, C125, C207, C211, C212, C225, C307, C311, C312, C325, C407, C411, C412 C425, C507, C511, C512, C525	CAP 560 PF 100V. 5% D.M.	1000025	10
20	C109, C110, C117, C118, C209 C210, C217, C218, C309, C310 C317, C318, C409, C410, C417 C418, C509, C510, C517, C518	CAP .005 UF 100V. 20%, DISC	1001765	11
5	C119, C219, C319, C419, C519	CAP .22 UF 50V +80% -20% CER	1010274-0	12
103	D1, D2, D3, D101 THRU D120 D201 THRU D220, D301 THRU D320, D401 THRU D420 D501 THRU D520	DIODE D472	1105275	13
20	R1, R3, R5, R7, R9, R11 R13, R15 R17, R19, R21, R23, R25, R27 R29, R31, R33, R35, R37, R39	RES. 180 1/4W. 5%	1301322	14
1	R41	RES. 196 1/8W. 1% MF	1303256	15
20	R2, R4, R6, R8, R10, R12, R14 R16 R18, R20, R22, R24, R26, R28, R30 R32, R34, R36, R38, R40	RES. 390, 1/4W, 5%	1300309	16
2	R42, R43	RES. 330 1/4W. 5%	1300295	17
1	R44	RES. 4.7K, 1/4W. 5%	1300947	18
20	R101, R102 R106 R117 R201 R202 R216 R217 R301 R302, R316 R317 R401 R402 R416, R417 R501, R502, R516, R517	RES. 19.6, 1/8W, 1% MF	1303110	19
10	R103, R115, R203, R215, R303 R315, R403, R415, R503, R515	RES. 1K 1/8W 1% MF	1303114	20
20	R104 R111, R114 R118 R204 R211, R214 R218 R304 R311 R314 R318 R404, R411 R414 R418, R504 PSIIRSIHRS18	RES. 1K, 1/4W. 5%	1300365	21
20	R103 R110 R112 R113 R209 R210 R212 R213, R309 R310 R312, R313 R409 R410 R412 R413 R509 R510 R512 R513	RES 100 1/4W 5%	1300229	22
20	R105 R106 R119 R120 R205 R206 R219 R220 R305 R306 R319 R320 R405 R406, R419 R420, R505 R506, R519, R520	RES 5.1 1/4W 5%	1300422	23
1	R45	RES 470 1/4W 5%	1300316	24
5	R123 R223, R323 R423 R523	RES 150 1/4W 5%	1300290	25
20	R107 R108, R121, R122 R207 R208 R221 R222 R307 R308 R321, R322 R407 R408, R421 R422, R507 R508 R521, R522	RES 56 1/2W 5%	1309935	26
21	Q1, Q101 THRU Q104, Q201 THRU Q204, Q301 THRU Q304, Q401 THRU Q404 Q501 THRU Q504	TRANS 2N3723 (TO5)	1510353	27
10	T103, T104, T203, T204, T303 T304, T403, T404, T503, T504	TRANSFORMER SATURATING INHIBIT	1610961	28
5	T102, T202, T302, T402, T502	TRANSFORMER, PULSE (DIF)	1603936	29
QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

REVISIONS		
CHK	CHANGE NO	REV

TITLE	16K SENSE/INHIBIT	SIZE D	CODE DCS	NUMBER G114-0-1 REV C
SCALE		SHEET 3 OF	DIST	

+20V AA1 FV2

DRVA I BIAS SOURCE FU1

GND

+5V

C48 6.8

C47 6.8

C46 .39 AH1 ED2 -5V

500 SERIES COMPONENTS (SEE SHEET #5) SINB

SINE I BIAS

400 SERIES COMPONENTS (SEE SHEET #6) SINE

SIND I BIAS

300 SERIES (SEE SHT #9) SIND

+5V

R44 1.7K

SINC I BIAS

DRVA PWR OK L DE1 D1 D2 D3 Q1

R45 470

SIND

C51 6.8

R43 350

+5V

SINC POWER FAIL L

SINA INH TIME L

SINA INH TIME L

DRVC STACK SEL H DK2 74H00 E1

MATD INH TIME H DK2

74H40 E3

SINA CLK MDR Ø H

MATB CLK MDRØ L DD2 74H40 E5

MATB CLK MDR1 L DN1 74H40 E5

SINA CLK MDR1 H

SINA CLR MDR Ø L

SINA CLR MDR 1 L

MATB CLR MDRØ L DM1 74H00 E1 74H40 E4

MATB CLR MDR 1 L DD1 74H00 C1 74H40 E4

SINA OUTPUT ENABLE H

MATC OUTPUT ENABLE H DE2 74H40 E3

+5V

C50 6.8

GND

SINA SENSE STROBE Ø H

SINA SENSE STROBE 1 H

C52 .01 DRVA SSOL DH2 74H40 E2

C49 39

R42 330 DRVA SSTL DF2 74H40 E2

-5V

R41 196 1/8W

SINA V THRESHOLD FR1

SINA V THRESHOLD

SINA

300 SERIES (SEE SHT #9) SIND

200 SERIES COMPONENTS (SEE SHEET #7) SINC

SINC I BIAS

100 SERIES COMPONENTS (SEE SHEET #8) SINB

SINB I BIAS

AE1 SINA I BIAS RETURN

C45 6.8

C44 6.8

C43 .39 -5V

AA2 DA2 EA2 +5V

ET1 CT1 DT1 BC2 AC2 FC2 AT1 BT1 CC2 DC2 AT1 BC2 GND

C1 – C3 .01 | C10 6.8 | C11 .01 | C13=C17 .01 | C19 .01 | +C20 6.8 | C21–C23 .01 | C25–C29 .01 | C31–C34 .01 | +C35 6.8 | C36 .01 | C38–C42 .01

BA2 +5V

CA2 +5V

+5V

AN

R1 180	R3 180	R5 180	R7 180	R9 180	R11 180	R13 180	R15 180	R17 180	R19 180	R21 180	R23 180	R25 180	R27 180	R29 180	R31 180	R33 180	R35 180	R37 180	R39 180
AM1	BB1	BA1	BM1	BM1	CB1	CA1	DB1	DA1	DF1	DL1	DK1	DJ1	DH1	DJ2	EA1	EB1	FP2	FN2	
R2 390	R4 390	R6 390	R8 390	R10 390	R12 390	R14 390	R16 390	R18 390	R20 390	R22 390	R24 390	R26 390	R28 390	R30 390	R32 390	R34 390	R36 390	R38 390	R40 390

GND

74H04 E1Ø3 | 74H04 E2Ø3 | 74H04 E3 Ø3 | 74H04 E4Ø3 | 74H04 E5Ø3

74H02 E1

SINA

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
MF11-U & MF11-UP		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

	NAME	DATE
DRN.	[illegible]	[illegible]
CHK'D.	[illegible]	4-13-73
ENG.	D. Anderson	4/13/73
PROJ. ENG.	R. Lindsay	4/13/73
PROD.	[illegible]	4/13/73

NEXT HIGHER ASSY.

SCALE

SHEET 4 OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 16K SENSE/INHIBIT (SINA)

SIZE	CODE	NUMBER	REV.
D	05	G114-[illegible]	C

DIST

REVISIONS: REV | CHANGE NO | CHK

G114-0-1

DRC 102-B

DRVA I BIAS SOURCE

L501 400uH

C519 .22

R523 150

R519 5.1

SINF INH TIME 2H

SINA INH TIME L

74H04 E503

R522 56 1/2W

C517 .0005

+5V

D520

T5Ø2

Q504

SINF IN0 FJ1

C525 560PF

F504 3/4 A

SINA POWER FAIL L

74H40 E510

D512

R513 100

T5Ø4

D514

C522 6.8

+20V

R520 5.1

C518 .0005

R521 56 1/2W

D519

SINF IN1 FJ2

Q503

C512 560PF

D511

R512 100

T5Ø4

D513

C523 6.8

C508 .01

R506 5.1

C509 .0005

R508 56 1/2W

D508

74H43 E505

Q502

C511 560PF

SINF IN2 EK2

F502 3/4A

D508

R510 100

T5Ø3

D509

C521 6.8

SINE I BIAS

R505 5.1

C510 .0005

R507 56 1/2W

D505

Q501

C507 560PF

SINF IN3 EN2

F501 3/4A

D507

R509 100

T5Ø3

D510

C520 6.8

SINA OUTPUT ENABLE H

74S81 E507

74S38 E502

74H74 E509

SINA CLK MDRØH

SINA CLEAR MDRØL

FT2 BUS DØØ L

FS2 BUS DØ1 L

EV1 BUS DØ2 L

FB1 BUS DØ3 L

SINA SENSE STROBEØH

C516 82PF

C515 82PF

7528 E506

R518 1K

74H04 E503

E506

C514 .01

STKA SAØ FK1

STKA SBØ FK2

D515

D516

R517 19.6 1/8W

R516 19.6 1/8W

R515 1K ±1% 1/8W

SINA V THRESHOLD

C506 8.9

C513 82PF

STKA SB1 FH2

STKA SA1 FH1

D517

D518

R514 1K

-5V

C502 82 PF

C503 82PF

7528 E501

C504 .01

STKA SB2 EP2

STKA SA2 EP1

D501

D502

R502 19.6 1/8W

R501 19.6 1/8W

R503 1K ±1% 1/8W

R511 1K

C506 .01

E501

C501 82PF

STKA SB3 EM2

STKA SA3 EM1

D504

D503

R504 1K

500 SERIES SINF

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
ROM SEQ/INH DIAGRAM	D	DCS	6114-01	C

SINE I BIAS
L401
400uh
C419 .22
R423 150
R419 5.1
SINE INH TIME 2H
SINA INH TIME L
74H04 E403
R422 56 1/2W
C417 .0005
D420
T402
Q404
C425 560PF
F404 3/4A
SINA POWER FAIL L
74H40 E415
D412
R413 100
+20V
T404
D414
C422 6.8
SINE IN4 EJ2
SINE INH TIME 2H
R420 5.1
R421 56 1/2W
C418 .0005
D419
Q403
C412 560PF
F403 3/4A
SINE IN5 EL2
D411
R412 100
T406
D413
C423 6.8
C408 .01
R406 5.1
C409 .0005
D406
Q402
C411 560PF
F402 3/4A
SINE IN6 DT2
D408
R410 100
T403
D409
C421 6.8
R405 5.1
C410 .0005
D405
Q401
C407 560PF
F401 3/4A
SINE IN7 DR2
D407
R409 100
T402
D410
C420 6.8
SINE I BIAS

SINA OUTPUT ENABLE H
SINA CLK MDRØH
SINA CLEAR MDRØL
SINA SENSE STROBEØH
C416 82 PF
C415 82 PF
7528 E406
E406
R418 1K
74H04 E403
C414 .01
STKA SA4
STKA SA4
D415
D416
R417 19.6 1/8W
R416 19.6 1/8W
R415 1K ±1% 1/8W
SINA V THRESHOLD
C408 3.9
BUS DØ4 L
BUS DØ5L
SINA OUTPUT ENABLE H
SINA CLK MDRØH
SINA CLEAR MDRØL
SINA SENSE STROBEØH
C413 82 PF
7528 E406
L406
R414 1K
STKA SA5
STKA SA5
D417
D418
BUS DØ6L
SINA OUTPUT ENABLE H
SINA CLK MDRØH
SINA CLEAR MDRØL
SINA SENSE STROBEØH
C402 82 PF
C403 82PF
7528 E401
E401
R411 1K
C406 .01
-5V
C404 .01
STKA SA6
STKA SA6
D401
D402
R402 19.6 1/8W
R401 19.6 1/8W
R408 1K
SINA V THRESHOLD
BUS DØ7 L
SINA OUTPUT ENABLE H
SINA CLK MDRØH
SINA CLEAR MDRØL
SINA SENSE STROBEØH
C401 82PF
7528 E401
E401
R404 1K
STKA SA7
STKA SA7
D404
D403

REVISIONS		
CHK	CHANGE NO	REV.

SINC I BIAS
L201 400 uh
C219 .22
R223 150
R219 5.1
SINC INH TIME 2H
SINA INH TIME L
74H04 E203
+5V R222 56 1/2W
C217 .005
T202
D220
SINA POWER FAIL L
74H40 E215
+20V
T204
D214
C222 6.8
SINC INB BT2
Q204
C225 560 PF
F204 3/4 A
D212
R213 100
SINC INH TIME 2H
74H40 E215
+5V R221 56 1/2W
C218 .005
D219
T202
Q203
C212 560 PF
F203 3/4 A
SINA POWER FAIL L
D211
R212 100
+20V
T204
D213
C223 6.8
SINC IN9 BP1
SINC INH TIME 2H
74H40 E205
C208 .01
R206 5.1
+5V
R208 56 1/2W
C209 .005
T202
Q202
C211 560PF
F202 3/4 A
SINA POWER FAIL L
D208
R210 100
+20V
T203
D209
C221 6.8
SINC IN10 BJ2
SINC INH TIME 2H
74H40 E205
R205 5.1
+5V R207 56 1/2W
C210 .005
D205
T202
Q201
C207 560 PF
F201 3/4A
SINC IN11 BH2
D207
R209 100
+20V
SIN3 I BIAS
T203
D210
C220 6.8

SINA OUTPUT ENABLE H
88B1 E207
CC1 BUS D08L
380 E202
SINA CLK MDR1 H
74H74 E209
SINA CLEAR MDR1 L
+5V
SINA SENSE STROBE 1H
C216 82PF
C215 82PF
7528 E206
C214 .01
R218 1K
74H04 E203
E206
STKA SA8 BV2
STKA SB8 BU2
D215
D216
R217 19.6 1/8W
R216 19.6 1/8W
R215 1K ±1% 1/8W
C205 3.9
SINA V THRESHOLD

CD1 BUS D09L
SINA OUTPUT ENABLE H
SINA CLK MDR1 H
74H74 E209
SINA CLEAR MDR1 L
+5V
SINA SENSE STROBE 1H
R214 1K
C213 82PF
7528 E206
E206
STKA SA9 BS2
STKA SB9 BR2
D217
D218

BD2 BUS D10L
SINA OUTPUT ENABLE H
88B1 E207
380 E202
SINA CLK MDR1 H
74H74 E204
SINA CLEAR MDR1 L
+5V
SINA SENSE STROBE 1H
C202 82 PF
R211 1K
C206 .01
-5V
7528 E201
C203 82PF
C204 .01
R202 19.6 1/8W
R201 19.6 1/8W
R203 1K ±1% 1/8 W
E201
74H04 E203
STKA SA10 BK1
STKA SB10 BL1
D201
D202
SINA V THRESHOLD

BE2 BUS D11 L
SINA OUTPUT ENABLE H
88B1 E207
380 E202
SINA CLK MDR1 H
74H74 E204
SINA CLEAR MDR1 L
+5V
SINA SENSE STROBE 1H
R204 1K
C201 82PF
7528 E201
E201
74H04 E203
STKA SA11 BF1
STKA SB11 BF2
D204
D203

200 SERIES SINC

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV
10K SENSE/INHIBIT	D	DCS	G114-0-1	C
SCALE	WEIGHT		SHT	

SINB I BIAS
L101
C119 .22
R123 150
R119 5.1
SINB INH TIME 2H
SINA INH TIME L
74H04 E103
+5V
R122 56 1/2W
C117 .0005
D120
74H40 E110
SINA POWER FAIL L
T104
+20V
D114
C122 6.8
SINB IN12
AU2
Q104
C125 560PF
F104 3/4A
D112
R113 100
BC1
BUS D12 L
SINA OUTPUT ENABLE H
8881 E107
380 E102
74H74 E109
SINA CLK MDR1 H
SINA CLEAR MDR1 L
SINA SENSE STROBE 1H
C116 82 PF
7528 E106
C115 82PF
C114 .01
STKA SA12
AV1
D115
R117 19.6 1/8W
STKA SB12
AV2
D116
R116 19.6 1/8W
R115 1K ±1% 1/8W
SINA V THRESHOLD
C105 3.9
R118 1K
E106
74H04 E103
R120 5.1
R121 56 1/2W
C118 .0005
.1002
D119
SINB IN13
AP2
Q103
C112 560PF
F103 3/4 A
D111
R112 100
BD1
BUS D13 L
STKA SA13
AS2
D117
STKA SB13
AR2
D118
C113 82PF
R114 1K
T103
D113
C123 6.8
C108 .01
R106 5.1
C109 .0005
R108 56 1/2W
D106
SINB IN14
AL2
Q102
C111 560PF
F102 3/4 A
D108
R110 100
AD2
BUS D14 L
STKA SB14
AJ1
D101
R102 19.6 1/8W
STKA SA14
AH1
D102
R101 19.6 1/8W
R103 1K ±1% 1/8W
R111 1K
C106 .01
-5V
T102
D109
C121 6.8
R105 5.1
R107 56 1/2W
C110 .0005
D105
SINB IN15
AH2
Q101
C107 560PF
F101 3/4A
D107
R109 100
AE2
BUS D15 L
STKA SA15
AF1
D104
STKA SB15
AF2
D103
R104 1K
C101 82PF
SINA I BIAS RETURN

100 SERIES SINB

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER
100K SENSE/INHIBIT	C	DCS	6114-0-1

SINA INH TIME L
SINA POWER FAIL L
SINA OUTPUT ENABLE H
SINA CLK MOR ØH
SINA CLEAR MOR ØL
SINA SENSE STROBE ØH
SINA V THRESHOLD
SIND I BIAS
SIND INH TIME 2H
SIND IN 6
SIND IN7
SIND IN8
SIND IN9
SINC I BIAS
INT BUS DI6 L
INT BUS DI7L
INT BUS DI8L
INT BUS DI9 L
SINA CLK MOR I H
SINA CLEAR MOR I L
SINA SENSE STROBE I H
STKA SB15
STKA SB16
STKA SB17
STKA SB18
STKA SB19

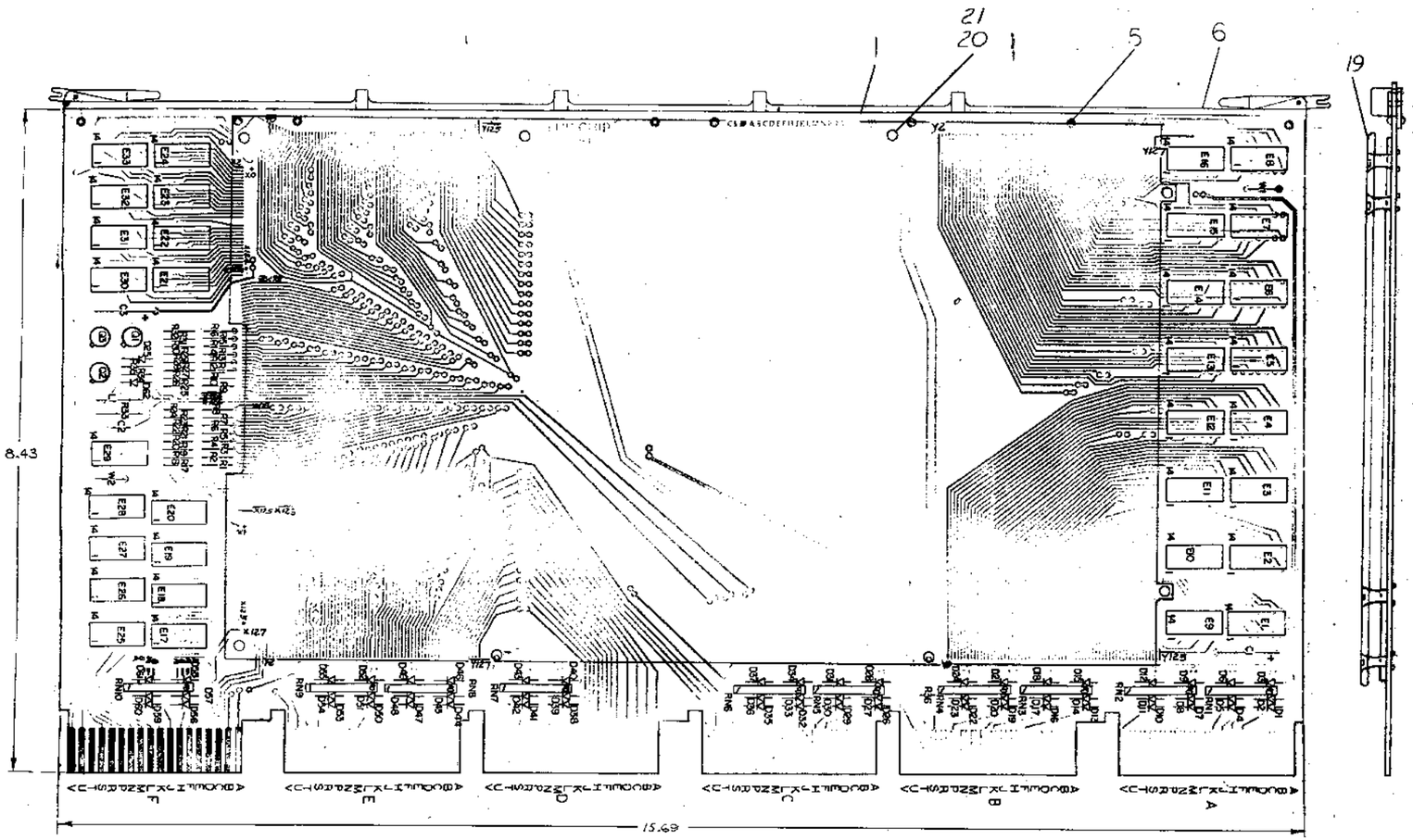
REVISIONS		
CHK	CHANGE NO	REV

300 SERIES SILD

TITLE	SIZE	CODE	NUMBER	REV.
16K SENSE/INHIBIT (SILD)	D	CS	G114-Ø-1	C
SCALE	SHEET 9 OF		DOT	

NOTES:

1. —o XØ THRU X127 o— ⏚ —o YØ THRU Y127 o— INDICATES MAGNET WIRE TERMINATION (SOLDERED TO PRINTED CIRCUIT PAD).
2. FOR ASSEMBLY INFORMATION & PART NO'S OF ITEMS NOT CALLED OUT ON THIS DRAWING REFER TO E-AD-9305680-0-0 (MEMORY STACK ASSY).



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
3		TRANSPADS	9007200	23
2	W1, W2	WIRE, BUS #22 AWG	9107560-1	22
8		SCREWS, NYLON FLATHEAD 4-40 X 1/4	9009234-2	21
8		RIVNUT	9009531	20
1		COVER	D-MD-5010559-00	19
1	R36	RES 300 2% THERMAL DISC	1309785	18
1	L1	CHOKE 1001uh 10%	16 10662	17
3	Q1,Q2,Q3	TRANSISTOR DEC 3734	15 10062	16
32	R1 THRU R32	RES. 22Ø, 1/4W 5%	13 00271	15
2	R34, R35	RES. 68, 1/4W 5%	13 00219	14
1	R33	RES. 39, 1/2W 5%	13 02336	13
10	RN1 THRU RN10	RES NETWORK 2-5K, 4-1K	13 10964	12
1	E29	IC DEC. 74H40	19 05586	11
32	E1 THRU E28, E30 THRU E33	IC DEC. 2501 (16 DIODE)	19 10010	10
62	D1 THRU D62	DIODE D672	11 05275	9
2	C1,C3	CAP .1 BLK. 35V 10% S.TANT	18 05306	8
1	C2	CAP .01 μF 50 V. 20%	18 01610-00	7
1		HANDLE, MODULE	12 10711	6
12		EYELET	90 06732	5
REF		MODULE ECO HISTORY	B-MH-H217-0-6	4
REF		ASSY/DRILLING HOLE LOCATION	D-AH-H217-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-H217-0-4	2
1		ETCH CKT BOARD (G647)	5010023	1

PARTS LIST

ETCH BOARD REV E

FIRST USED ON OPTION MODEL: MF11-U/UP

DEC NO.	EIA NO.	DEC NO.	EIA NO.
		DEC 3134	NONE
		D672	IN3653

SEMICONDUCTOR CONVERSION CHART

DEC 2501	N/A	N/A
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

CHK	CHANGE NO.	REVISIONS

DRN. — DATE 11-72
CHKD. — DATE 12/73
ENG. — DATE 11/16/73
PROJ. ENG. — DATE 11/16/73
PROD. — DATE 8/16/73
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: STACK BOARD

SIZE: D | CODE | NUMBER: H217 | REV: *

SCALE

SHEET 1 OF 3

DIST.

H217-0-1 REV *

BRUNING 40X32 16699

DEC FORM NO ORD 1.15A

H217-D SCALE 2

STKA CHG

SINF IN0 FJ1 D60 D672 — BIT 0 — FK1 STKA SA0 / FK2 STKA SB0
SINF IN1 FJ2 D57 D672 — BIT 1 — FH1 STKA SA1 / FH2 STKA SB1
SINF IN2 ER2 D54 D672 — BIT 2 — EP1 STKA SA2 / EP2 STKA SB2
SINF IN3 EN2 D58 D672 — BIT 3 — EM1 STKA SA3 / EM2 STKA SB3
SINE IN4 EJ2 D48 D672 — BIT 4 — EL2 STKA SA4 / EK2 STKA SB4
SINE IN5 EE2 D45 D672 — BIT 5 — EH2 STKA SA5 / EF2 STKA SB5
SINE IN6 DT2 D42 D672 — BIT 6 — DS1 STKA SA6 / DS2 STKA SB6
SINE IN7 DR2 D38 D672 — BIT 7 — DP1 STKA SA7 / DP2 STKA SB7
SINO IN16 CN2 D36 D672 — BIT 16 (PA) — CM1 STKA SA16 / CM2 STKA SB16
SINO IN17 C-11 D32 D672 — BIT 17 — CL2 STKA SA17 / CK2 STKA SB17
SINO IN18 CJ2 D29 D672 — BIT 18 — CH1 STKA SA18 / CH2 STKA SB18
SINO IN19 CE2 D26 D672 — BIT 19 (PB) — CF1 STKA SA19 / CF2 STKA SB19
SINC IN8 BT2 D22 D672 — BIT 8 — BV2 STKA SA8 / BU2 STKA SB8
SINC IN9 BP1 D19 D672 — BIT 9 — BS2 STKA SA9 / BR2 STKA SB9
SINC IN10 BJ2 D16 D672 — BIT 10 — BL1 STKA SA10 / BK1 STKA SB10
SINC IN11 BH2 D13 D672 — BIT 11 — BF1 STKA SA11 / BF2 STKA SB11
SINE IN12 AU2 D10 D672 — BIT 12 — AV1 STKA SA12 / AV2 STKA SB12
SINE IN13 AP2 D7 D672 — BIT 13 — AS2 STKA SA13 / AR2 STKA SB13
SINB IN14 A-2 D4 D672 — BIT 14 — AJ1 STKA SA14 / AH1 STKA SB14
SINB IN15 AI2 D1 D672 — BIT 15 — AF1 STKA SA15 / AF2 STKA SB15

SEE NOTES 3 & 4

+5V AK1 — RN10 D61 D58 D55 D52 — RN9 D49 D46 D43 D40 — RN8 D37 D34 D31 D28 — RN7 D25 D22 D19 D16 — RN6 D13 D10 D7 D4 — RN5 D27 D24 D21 D18 — RN4 D15 D12 D9 D6 — RN3 D14 D11 D8 D5 — RN2 D3 D2 D1 — RN1 — C1 6-BUF

+20V 4A1 — Q1 DEC 3734 — L1 100 MH — D62 D672 — R33 39 — D63 D672 — C3 68 UF — C2 .01UF — Q2 DEC 3734 — Q3 DEC 3734 — R34 68 — R35 68 — 74H40 E29 — MATD STACK CMG H DB2 — AC2, BT1 DC2, ET1

R36 RT — BSL — BUL — STKA T1 — STKA T2 — SEE NOTE 1

R8 200 R2 220 R1 200 R24 220 R23 200 R7 200 R6 220 R22 200 R21 200 R5 200 R20 220 R4 220 R19 220 R12 220 R3 220 R18 200

DRVC FS1 XJRD0 — DRVC XFMD3 — DRVC FU2 XJRD2 — DRVC XFMD2 — DRVC FPI XJRD4 — DRVC XFMC4 — DRVC FS2 XJRD6 — DRVC XFME4 — DRVC FM1 XJRC1 — DRVC XENDI — DRVC FP2 XJRD3 — DRVC XFMC3 — DRVC FM2 XJRD5 — DRVC XFMD5 — DRVC FM3 XJRD7 — DRVC XFME5

DRVC EV1 XS00 — DRVC FF2 XS01 — DRVC FA1 XS02 — DRVC FC1 XS03 — DRVC EU2 XS04 — DRVC FB1 XS05 — DRVC EV2 XS06 — DRVC EU1 XS07 — DRVC ET2 XS08 — DRVC FB2 XS09 — DRVC ES1 XS10 — DRVC FD2 XS11 — DRVC FF1 XS12 — DRVC FE1 XS13 — DRVC FE2 XS14 — DRVC FD1 XS15

X AXIS

NOTES:
1. THERMISTOR FOR TEMPERATURE COMPENSATION
2. JUMPER W2 IS A CURRENT LOOP FOR TEST USE ONLY
3. FOR H217-D (16 BIT STACK) THE FOLLOWING COMPONENTS MAY BE DELETED: RN5, RN6 D26 THRU D37
4. FOR H217-B AND H217-C, NO COMPONENTS MAY BE DELETED; AND FOR UNUSED BITS THE FOUR MAGNET WIRE TERMINATION PADS (IA, IB, SA, SB) MUST BE SHORTED TOGETHER.

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

ETCH BOARD REV E

REV	CHANGE NO	REVISIONS	DEC NO	EIA NO	DEC NO	EIA NO
D	1					

SEMICONDUCTOR CONVERSION CHART

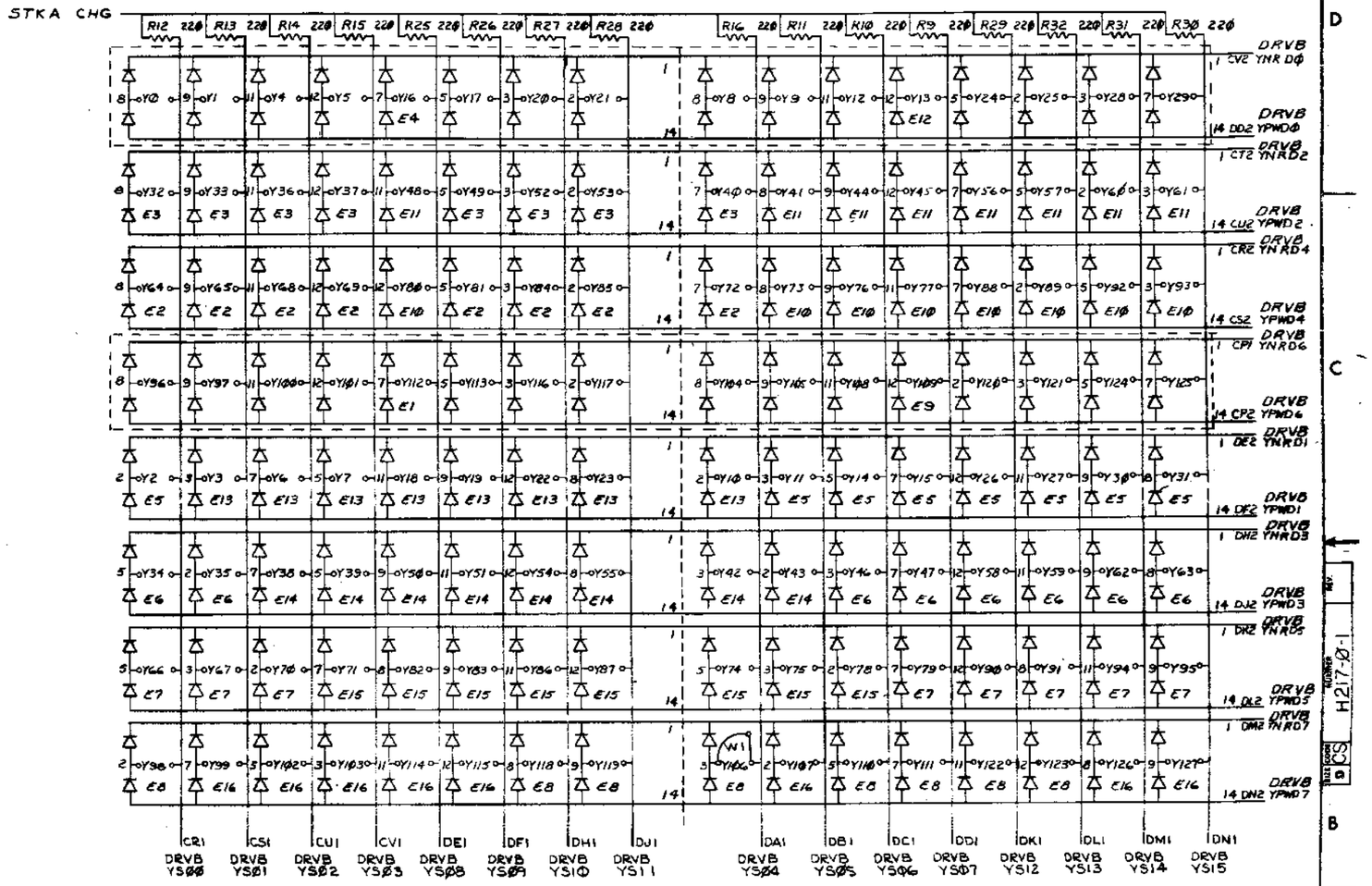
DRAWN — DATE — CHK'D 1 — DATE — ENG. — DATE — PROJ. ENG. — DATE — MFG. — DATE — NEXT HIGHER ASSY — SCALE — SHEET

DIGITAL EQUIPMENT CORPORATION

TITLE: STACK BOARD (STKA)

SIZE/CODE D — NUMBER H217-B — REV

DEC Form No DRD-113



Y AXIS

NOTE: JUMPER W1 IS A CURRENT LOOP FOR TEST USE ONLY

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV E

REV	CHANGE NO.	REVISIONS

CHK

DES. M. Manchester DATE 9-10-73
CHKD. T. Bloom DATE 9/10/73
ENG. R. Lindsay DATE 11/19/73
PROJ. ENG. R. Lindsay DATE 11/19/73
PROG. S. Maginnis DATE 5/16/73

NEXT HIGHER ASSY

SCALE

SHEET 3 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

STACK BOARD (STKB)

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

SEMICONDUCTOR CONVERSION CHART

SIZE	CODE	NUMBER	REV.
D	CS	H217-0-1	

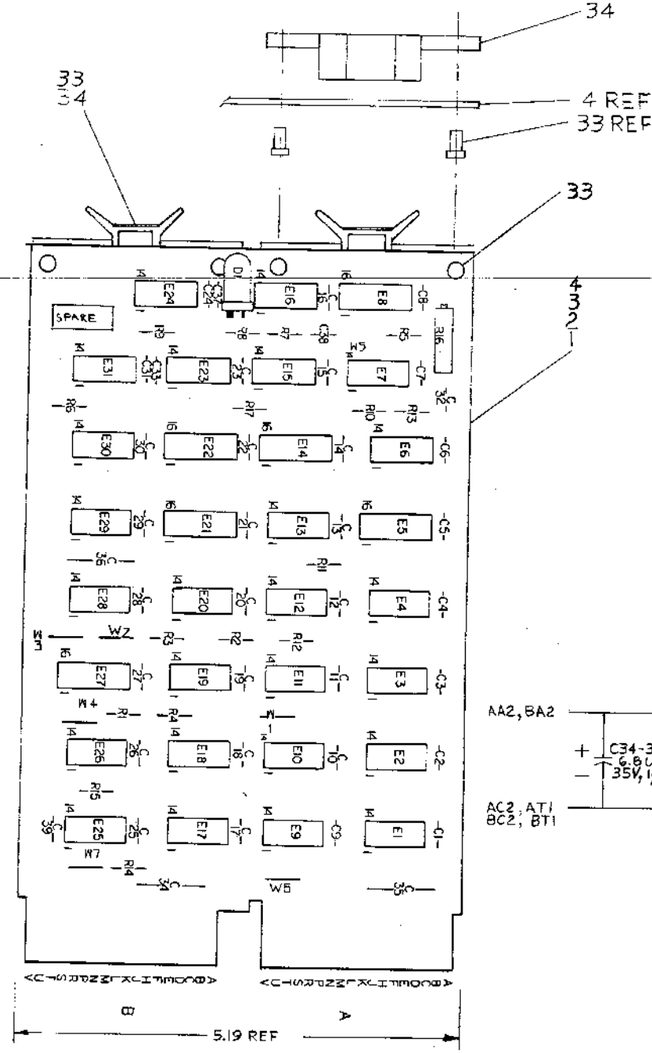
DIST.

H217-0-1 REV. SIZE SCALE D CS

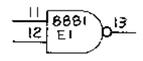
DEC FORM NO FRD-135

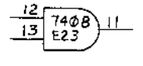
NOTES:

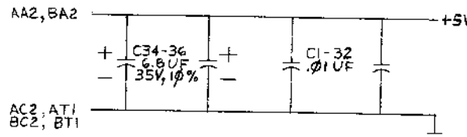
1. UNLESS OTHERWISE SPECIFIED: RESISTORS ARE 1/4 W, 5 % CAPACITORS ARE 100 V, 20 %
2. JUMPERS CONTROL OPERATIONS AS FOLLOWS:
   W1-W4 SELECT CSR ADDRESS
   W5 CAPACITOR FOR SSYN DLY; NEVER USED
   W6 OUT FOR MFII-LP IN FOR MFII-UP
   W7 OUT TO HANG BUS ON PARITY ERROR.



SPARES







REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7259-Ø-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7259-Ø-5	2
REF		MODULE ECO HISTORY	S-MH-M7259-Ø-6	3
1		ETCHED CKT. BD.	5010314	4
1	C39	CAP 47Ø PF., 1ØØ V 5% D.M.	1000024	5
2	C33, C37	CAP 330 PF., 1ØØ V, 5% DM	1000023	6
32	C1-C32	CAP .01UF., 1ØØV 20% DISC	1001610	7
3	C34, C35, C36	CAP 6.8UF 35V 10% S.TA	1005306	8
1	C38	CAP 220PF, 100V, 5% DM	1000021	9
3	R8, R9, R15	RES 1ØØ, 1/4W, 5%	1300229	10
8	R1-R4, R7, R14	RES 4.7K, 1/4W 5%	1300447	11
5	R6, R10, R11, R12, R17	RES 47Ø, 1/4W, 5%	1300316	12
1	R13	RES 1K, 1/4W, 5%	1300365	13
1	R16	RES 2ØK 3/4W 10% 7Ø P.R. POT	1309143-11	14
1	E24	IC DEC 74ØØ	1905575	15
1	E30	IC DEC 7430	1905578	16
1	E31	IC DEC 7402	1909004	17
1	E19	IC DEC 314A	1909704	18
1	E23	IC DEC 7408	1910155	19
4	E1, E9, E17, E25	IC DEC 8881	1909705	20
1	E16	IC DEC 74H54	1909831	21
1	E27	IC DEC 7495	1910224	22
1	E8	IC DEC 74123	1910436	23
1	E10	IC DEC 74S03	1910533	24
1	E15	IC DEC 74S74	1910544	25
1	E21	IC DEC 74S174	1910550	26
2	E5, E22	IC DEC 74157	1910555	27
9	E2, E3, E11, E12, E18, E24, E26, E28 E29	IC DEC 38ØA	1909485	28
2	E4, E13	DEC 82962	1911291	29
1	E14	IC DEC 8266	1909934	30
2	E6, E7	IC DEC 7474	1905547	31
6	W1-W4, W7, W6	JUMPER, INSULATED GETIG ENG L-2887-1	9909185	32
4		EYELET (GS-4-7)	9908732	33
2		HANDLE, FLIP CHIP (MAGNETA)	9908337-6	34
1	R5	RES 5.6K, 1/4 W, 5 %	1301874	35
1	D1	LIGHT EMITTING DIODE	1110324	36

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

IC DEC 38ØA	1	8
IC DEC 8266	8	16
IC DEC 74123	8	16
IC DEC 74174	8	16
IC DEC 74157	8	16
IC DEC 7485	8	16
IC DEC 314A	1	8
IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

BRUNING 40-522 16690

DEC FORM NO ORD-135A

REV	CHANGE NO.	DRAWN	CHK	DATE
E	M7259-00005	S. ROTHMAN		12/15/72
D	M7259-00004	J. MANGIAFICO		1/15/73
C	M7259-00003	R. MOORE		2/16/73
B	M7259-00002	R. MOORE	R.D. MOORE	5/10/73

REVISIONS

FIRST USED ON OPTION MODEL: MFII-LP

ETCH BOARD REV: D

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

SEMICONDUCTOR CONVERSION CHART

DRN.	M. PIERCE	DATE 12/16/72
CHK'D	K. GLEEZEN	DATE 1/17/73
ENG.		DATE 3/14/73
PROJ ENG.		DATE 3/14/73
PROD.		DATE 3/21/73

NEXT HIGHER ASSY: B-DD-MFII-LP

SCALE: NONE

SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PARITY CONTROL MFII-LP

SIZE	CODE	NUMBER	REV.
D	CS	M7259-Ø-1	E

DIST.

D CS M7259-Ø-1 E

PC2 CSR15 (1) H — 8881 E9
PC1 ER A17 H — 8881 E9
PC1 ER A16 H — 8881 E9
PC1 ER A15 H — 8881 E9
PC1 ER A14 H — 8881 E17
PC1 ER A13 H — 8881 E17
PC1 ER A12 H — 8881 E17
PC1 ER A11 H — 8881 E17
PC2 CSR2 (1) H — 8881 E1
PC2 CSR Ø (1) H — 8881 E1
PC2 READ SEL H — 8881 E1

BUS		PC1
BUS D15 L	AM2	PC1 D15 H
BUS D14 L	AL1	PC1 D14 H
BUS D13 L	AL2	PC1 D13 H
BUS D12 L	AK1	PC1 D12 H
BUS D11 L	AK2	PC1 D11 H
BUS D1Ø L	AJ1	PC1 D1Ø H
BUS DØ9 L	AJ2	PC1 DØ9 H
BUS DØ8 L	AH1	PC1 DØ8 H
BUS DØ7 L	AH2	PC1 DØ7 H
BUS DØ6 L	AF1	PC1 DØ6 H
BUS DØ5 L	AF2	PC1 DØ5 H
BUS DØ4 L	AE1	PC1 DØ4 H
BUS DØ3 L	AE2	PC1 DØ3 H
BUS DØ2 L	AD1	PC1 DØ2 H
BUS DØ1 L	AD2	PC1 DØ1 H
BUS DØØ L	AC1	PC1 DØØ H

All 38ØA: E12, E11, E12, E12, E2, E2, E2, E2, E3, E3, E3, E3

BUS		PC1
BUS A17 L	BS1	PC1 A17 H
BUS A16 L	BS2	PC1 A16 H
BUS A15 L	BR1	PC1 A15 H
BUS A14 L	BR2	PC1 A14 H
BUS A13 L	BP1	PC1 A13 H
BUS A12 L	BP2	PC1 A12 H
BUS A11 L	BN1	PC1 A11 H
BUS AØ9 L	BM1	PC1 AØ9 H
BUS AØ8 L	BM2	PC1 AØ8 H
BUS AØ7 L	BL1	PC1 AØ7 H
BUS AØ5 L	BK1	PC1 AØ5 H
BUS AØ4 L	BK2	PC1 AØ4 H
BUS AØ3 L	BJ1	PC1 AØ3 H
BUS AØ2 L	BJ2	PC1 AØ2 H
BUS AØ1 L	BH1	PC1 AØ1 H

All 38ØA: E29, E29, E29, E29, E28, E28, E18, E18, E18, E26, E26, E26, E26

74157 E22: PC1 A17 H, PC1 D11 H, PC1 A16 H, PC1 DØ1 H, PC1 A15 H, PC1 DØ9 H, PC1 A14 H, PC1 DØ8 H; ENAB SEL; **

74157 E5: PC1 A13 H, PC1 DØ7 H, PC1 A12 H, PC1 DØ6 H, PC1 A11 H, PC1 DØ5 H; ENAB SEL; **

74S174 E2: D4 Q4, D3 Q3, D5 Q5, D1 Q1, D2 Q2, D6 Q6; CLR CLK; 1Ø; 9

PC2 CLK ADRS H

7474 E7: D, C, Ø, 1Ø; PC1 ER A11 H; PC2 +3V

PC1 CSR ADRS SEL L

PC1 A17 H, PC1 A16 H, PC1 A15 H, PC1 A14 H, PC1 A13 H, PC1 A12 H — 743Ø E3Ø

PC1 ADRS SEL 1 H

PC1 ADRS SEL 2 H

PC1 A11 H, BUS AØ1 L BN2, PC1 AØ9 H, PC1 AØ8 H, PC1 AØ7 H, BUS AØ6 L BL2, PC1 AØ5 H — 314A E19

7485 E27: B3, A3, B2, A2, B1, A1, BØ, AØ; A>B, A=B, A<B; IN> IN= IN<; PC2 +3V

BUS		PC1
BUS INIT L	AA1	PC1 INIT H
BUS CØ L	BU2	PC1 CØ H
BUS C1 L	BT2	PC1 C1 H
BUS MSYN	BV1	PC1 MSYN H

38ØA E2Ø; 74H04 E16

+5V — R1 4.7K, R2 4.7K, R3 4.7K, R4 4.7K

GND — *W4 AØ4, *W3 AØ3, *W2 AØ2, *W1 AØ1

NOTES:

* THE ADDRESS OF THE CSR REGISTER IS LOCATED BETWEEN 772100 AND 772136. IT IS SELECTED WITH JUMPERS W1 THRU W4. REMOVING A JUMPER SELECTS A 'ONE' FOR THAT BIT POSITION.

** THE 'B' INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW.

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PARITY CONTROL-M7111-LP (PC)	D	CS	M7259-Ø-1	E
SCALE NONE SHEET 2 OF 3	DIST.			

D CS M7259-Ø-1 E

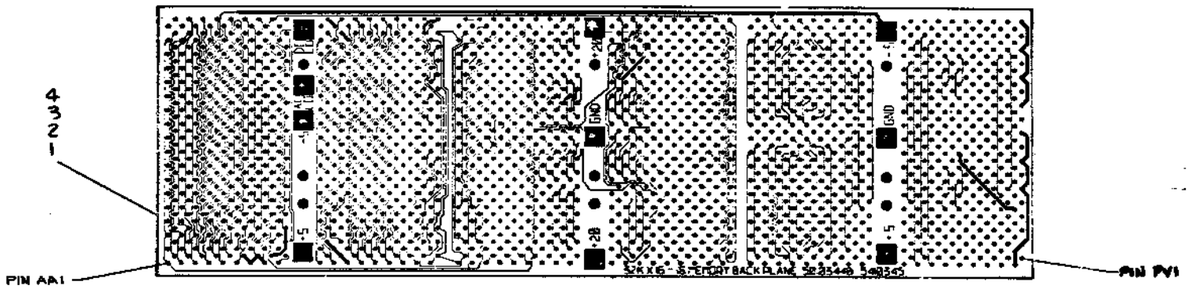
+5V
R11 470
R12 470
AM1
AN2
PC2 B GEN H OR ER L
PC1 C1 H
PB INT BUS L
PA INT BUS L
PC2 CSR2 (Ø) H
PC1 C0 H
PC2 +3V
PC1 C1 L
PC2 B BIT GEN H
PC2 A BIT GEN H
PC2 DATIP L
82S62 E13
82S62 E4
PC1 D15 H
PC1 D14 H
PC1 D13 H
PC1 D12 H
PC1 D11 H
PC1 D10 H
PC1 D09 H
PC1 D08 H
PC2 B BIT GEN H
PC1 D07 H
PC1 D06 H
PC1 D05 H
PC1 D04 H
PC1 D03 H
PC1 D02 H
PC1 D01 H
PC1 D00 H
PC2 A BIT GEN H
ODD
EVEN
ENABLE
R10 470
PC2 PARITY ERROR H
PC1 MSYN H
PC2 A GEN H OR ER L
PC2 MSYN L
PC2 MSYN PULSE L
R9 100
C33 330PF 5%
PC2 DATO L
PC2 ERROR CLR INH L
PC2 SSYN INH (I) H
PC2 SSYN INH (Ø) H
PC1 CSR ADRS SEL L
PC2 SSYN H
R13 1K
C32 .01UF
R14 4.7K
W7
PC2 PARITY ERROR (I) H
PC2 CSRØ (I) H
BUS PB L
BUS SSYN L
R15 100
C34 470PF 5%
PC2 READ SEL H
PC2 CLK CSR H
PC2 CLK CSR L
PC2 CLK ADRS H
PC1 CI H
PC2 PARITY ERROR (I) L
R6 470
SSYN INT BUS L
PC2 SSYN DLY (Ø) H
R5 5.6K
R16 20K 3/4W 10%
PC1 INIT L
C37 330PF
R8 100
C38 220PF 5%
PC2 PARITY ER DLY (I) H
PC2 DATIP CLR PAUSE H
DATIP CLR PAUSE L
DATIP CLR PAUSE I L
W6
PC1 INIT H
PC2 DATIP L
PC2 DATO L
PC1 D15 H
PC1 D02 H
PC1 D00 H
PC2 CLK CSR H
PC1 INIT L
PC2 PARITY ERROR (I) L
D1
R17 470
PC2 CSR15 (I) H
(PARITY ERROR)
PC2 CSR15 (Ø) H
PC2 CSR2 (I) H
(WRITE WRONG PARITY)
PC2 CSR2 (Ø) H
PC2 CSRØ (I) H
(ERROR INDICATION ENABLE)
PC2 CSRØ (Ø) H

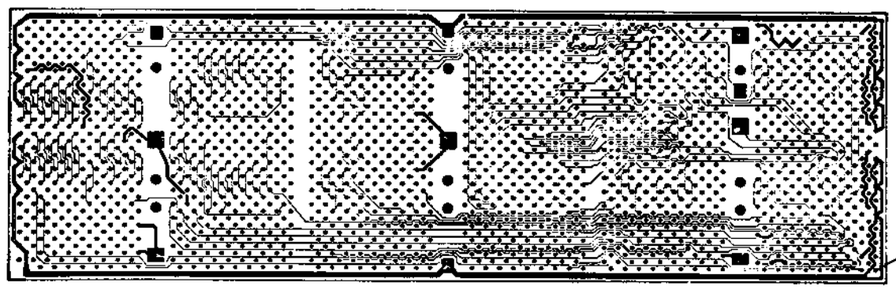
NOTES:
* THIS MUST BE SET FOR 125 NS FOR MF11-LP OR 135 NS FOR MF11-UP BETWEEN PIN BØ6U1 GOING LOW TO PIN A06S2 GOING HIGH. MEASURE AT 1 VOLT OF THE RISE AND FALL.
** THE "B" INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW.

REVISIONS		
CHK	CHANGE NO	REV.

TITLE: PARITY CONTROL-MF11-LP (PC2)	SIZE: D	CODE: DCS	NUMBER: M7259-Ø-1	REV: E
SCALE: NONE	SHEET 3 OF 3	DIST:		

NOTES:
1. THIS IS A MULTILAYER BOARD
2. +5V PINS AA2 BB2 CA2 DA2 EA2 FA2 ARE CONNECTED TOGETHER THROUGH LAYER 3.
3. GND PINS AC2 ATI BC2 BTI CC2 CTI DC2 DTI EC2 ETI FC2 FTI ARE CONNECTED TOGETHER THROUGH LAYER 2





IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
1		ETCHED CIRCUIT BOARD	5010344	4
REF		MODULE ECO HISTORY	8-VM-5410345-0-1	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AM-5410345-0-1	2
REF		X-Y COORDINATE HOLE LOCATION	D-DD-5410345-0-1	1

PARTS LIST

ETCH BOARD REV B

FIRST USED ON OPTION MODEL: MM11-U

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

SEMICONDUCTOR CONVERSION CHART

REV	REVISIONS	CHANGE NO.	CHK	DATE
B	DRAWING RELEASE	5410344-50001	H. Blanchard	9-18-78
			P. DURANT	9-14-78

digital EQUIPMENT CORPORATION

TITLE: 32K X 16-18 MEMORY BACK PLANE

NEXT HIGHER ASSY: D-AD-7003296-0-0

SCALE

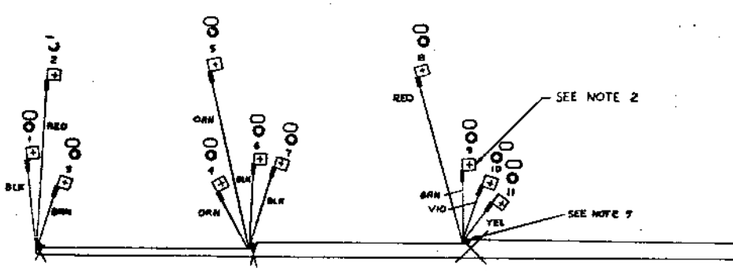
SHEET 1 OF 1

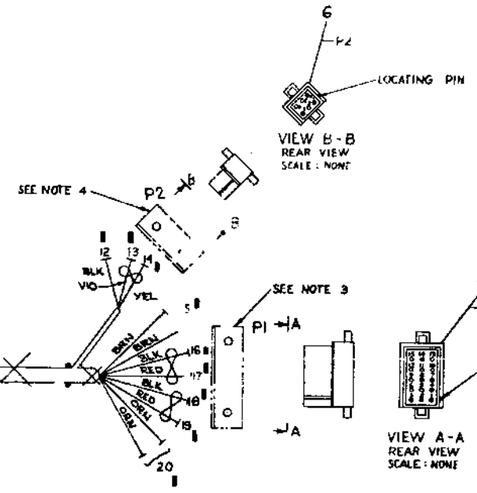
SIZE CODE: DCS | NUMBER: 5410345-0-1 | REV: B

ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
1	14	BLK	1		9,11	16	P1-7	B	GND
	TWP	RED	2			17	P1-4		+5V
3	18	BRN	3			19	P1-14		-5V
3	18	BRN	9						
2	18	ORN	4			20	P1-3		+20
2	18	ORN	5						
4	18	BLK	6			12	P2-1		LO GND
1	14	BLK	7			18	P1-8		GND
	TWP	RED	8			19	P1-1		+5V
5	18	VIO	10			13	P2-3		DC LO
	TWP	YEL	11		9,11	14	P2-4	B	AC LO

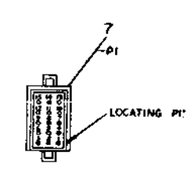
NOTES:

1. USE TIE WRAPS (2) ITEM "10 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAKOUT POINT.
2. ATTACH MALE FASTON DEC # (9008219-0) WITH #4 WOOD SCREWS (11 PLACES).
3. USE CONN. BRKT. "C-MO-9305761-H15-0, MOUNT WITH 6 WOOD SCREWS USE MATING CONN. "1209350-15.
4. USE CONN. BRKT. "C-MO-9305761-H6-0, MOUNT WITH "6 WOOD SCREWS, USE MATING CONN. "1209350-06.
5. DOT "•" INDICATES WIRE LOCATIONS FOR ASSEMBLY. USE SHRINK COVER WIRES WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.





VIEW B-B
REAR VIEW
SCALE: NONE



VIEW A-A
REAR VIEW
SCALE: NONE

SCALE
0 IN 6 IN 12 IN

DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

REF. DESIGNATION	STK	QTY	DESCRIPTION	PART NO.	REV
		A/R	TUBING, SHRINKABLE 3/16 I.D. X 3/8	9107305-02	H
		X A/R	TIE WRAPS	9007031	10
		O 11	90° FAST ON TABS	9009262-0	9
		B 9	PIN, MALE	1209378-01	7
P1		1	HOUSING, 15 PIN	1209351-15	7
P2		1	HOUSING, 6 PIN	1209351-06	6
		A/R	WIRE #18 AWG TWPTEFL/ VIO	9107430-47	5
		B/R	WIRE #18 AWG BLK	9107360-00	4
		B/R	WIRE #18 AWG BRN	9107360-11	3
		B/R	WIRE #18 AWG ORN	9107360-33	2
		B/R	WIRE #16 AWG TWP BLK/RED	9107640-02	1

PARTS LIST

FIRST USED ON GPT/MFD 11/45

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES FRACTIONAL ± 1/64 ANGULAR ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MACHINED SURFACES 63 MICRO INCH FINISH UNLESS OTHERWISE SPECIFIED

MATERIAL: SEE PARTS LIST

FINISH:

DRAWN 10/63 CHECKED 10/63 ENGR APPR 10/63 MFG APPR 10/63 QUALITY ASSURANCE 10/63 COMMERCIAL APPR 10/63 PROJECT ENGR 10/63

NEXT HIGHER ASSY

SCALE 1/1 SHT 1

GARRETT AIRESEARCH EQUIPMENT CORPORATION

TITLE: OPTION HARNESS MF11-U

DRAWING NUMBER: E A 7009535-0-0 REV

A 7009535-0-0

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY W.MAJOR DATE 5/11/73	CHECKED W.MAJOR DATE 5/11/73	SECTION 1
ENG DATE D. Lawler 5/29/73	PROD DATE R. Lloyd 6/13/73	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
			MF11-U	MM11-U	MF11-UP	MM11-UP								
1	D-CS-G114-Ø-1	16K SENSE INHIBIT	1	1	1	1								
2	D-CS-G235-Ø-1	16K X-Y DRIVE	1	1	1	1								
3	D-CS-M8293-Ø-1	16K UNIBUS TIMING	1	1	1	1								
4	D-AD-7009295-1	BACK PLANE ASSY	1	-	-	-								
5	D-CS-H217-D-1	MEMORY STACK (16K X 16)	1	1	-	-								
6	D-CS-H217-C-1	MEMORY STACK (16K X 18)	-	-	1	1								
7	D-AD-7009295-2	BACK PLANE ASSY	-	-	1	-								
REF	D-MU-MF11-U-MU	MODULE UTILIZATION												
8	D-CS-M7259-Ø-1	Parity(SAME AS MF11-LP)	-	-	1	-								
9	E-IA-7009535-0-0	OPTION HARNESS	1	-	1	-								

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
16K SENSE MEMORY	NONE	A	PL	MF11-U-Ø	A	MF11U-00001
	SHEET 1 OF 1	DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DATE 9/7/73

TITLE MF11-U/UP CUSTOMER ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
P. Durant	12-5-73	A	SP	MF11-U-3	

DEC FORM NO. DRA 107A

ENGINEERING SPECIFICATION — CONTINUATION SHEET

1.0 Overview

1.1 This procedure contains directions pertaining to field assurance of the correct operation of an MF11-U/UP.

1.2 Prior to this acceptance, the option will have been installed, inspected, and connected and have power applied. Generally the memories shipped as add ons will have been configured and tested at the factory with their addresses beginning at 000000. Prior to running diagnostics, these memories must be re-configured for the customers system, as directed in the MF11-U/UP Customer Print Set. (See M8293 MAT A)

1.3 If this option is part of a PDP-11/40-11/45 installation, as opposed to an add on, then the system acceptance procedures provided with those systems should be utilized in place of this procedure.

2.0 Inspection

2.1 Assure presence of the following documentation:

2.1.1 Customer Acceptance Form

2.1.2 Keysheets (2)

2.1.3 Accessory Checklist

2.1.4 LIBKIT list for MF11-U/UP

2.1.5 ECO Status Sticker (for mounting in expansion box)

2.1.6 Waiver Sheet (if applicable)

2.1.7 Documentation Update Card (if applicable).

2.2 Utilize the accessory checklist, and LIBKIT list to verify that all items are present.

3.0 Diagnostic Testing:

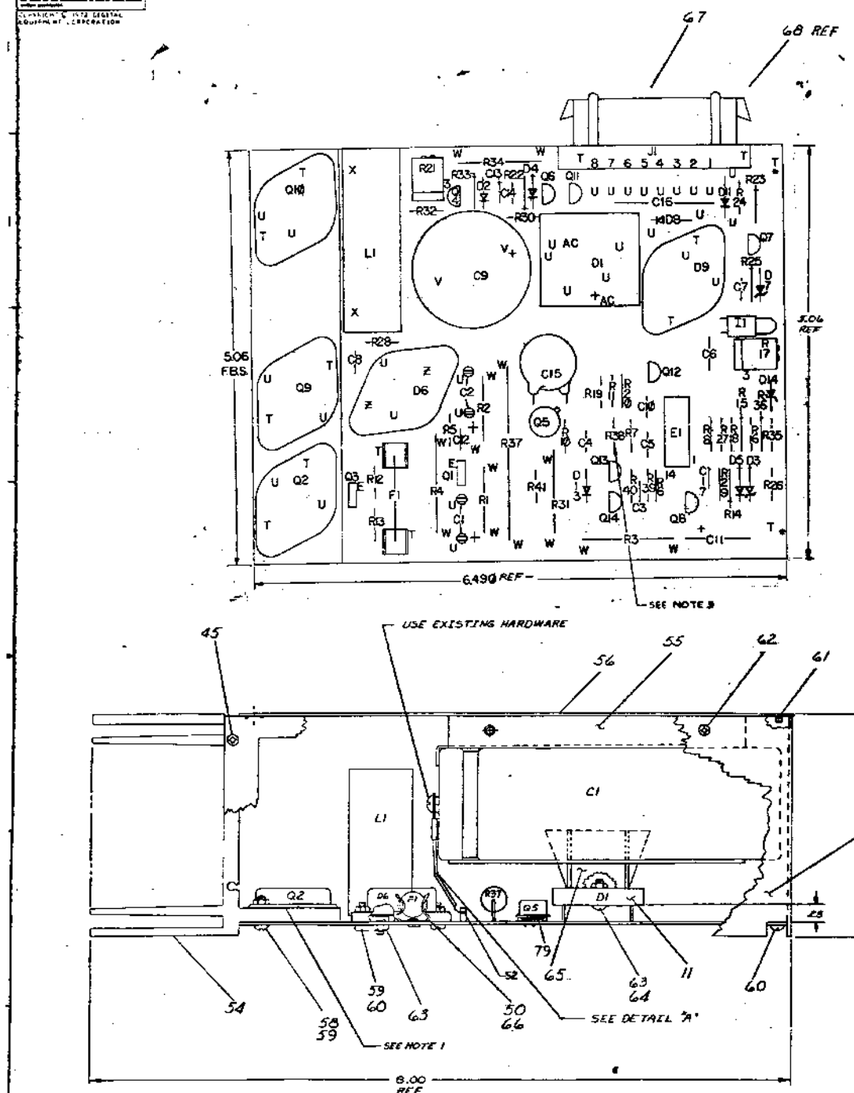
3.1 The following tests must be run without error for the times specified:

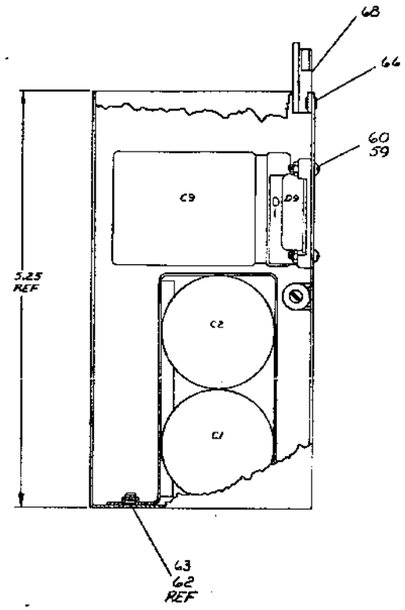
*Maindec-11-DZQMA Memory I/O	5 min/MF11-U/UP
Maindec-11-DZQMB Memory Exerciser	5 min/MF11-U/UP
Maindec-11-DCMFA Parity Test	2 passes/MF11-U/UP (MF11-UP Memory Only)

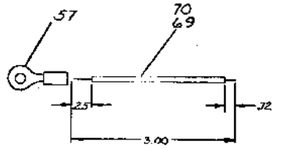
*Only for add-on memories in systems with NPR devices.

SIZE	CODE	NUMBER	REV
A	SP	MF11-U-3	

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







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) AND ITEM # 65 (HEAT SINK, BRIDGE RECT.)
2. UNLESS OTHERWISE INDICATED: RESISTORS ARE 1/4W, ±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.
A/R		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 1% THERMISTOR	1310071	87
1	C16	CAP. 100UF 25V	1002781	86
1	Q10	TRANSISTOR MJ500	1510712	85
1	Q9	TRANSISTOR MJ3000	1511349	84
1	C13	CAP. 100 PF 100V ±5% DM	1000016	83
				82
2	Q4, Q14	TRANSISTOR MPS A05	1510705	81
1	D2	DIODE D003	1100100	80
2	(UNDER Q2 & Q9)	TRANSIPAD	9007208	79
1	R31	RES .15Ω 2W 10%	1310117	78
2	C14, C17	CAP. 1000 PF 100V ±5% DM	1000042	77
1	R22	RES 383Ω 1/8W ±1%	1305125	76
2	R33, R8	RES 1.78K 1/8W ±1%	1302612	75
1	R11	RES 15K 1/4W ±5%	1300496	74
1	R20	RES 470Ω 1/4W ±5%	1300316	73
				REF
3		WASHER INSULATOR	[illegible]	72
A/R		COMPOUND, THERMAL	[illegible]	71
A/R		WIRE, #18AWG, STRD. TFE, INS (BLK)	[illegible]	70
A/R		WIRE #18AWG, STRD. TFE, INS (RED)	[illegible]	69
1	J1	MATE-N-LOCK CONN 8 PIN	[illegible]	68
8		PIN, SOCKET, MATE-N-LOCK	[illegible]	67
4		EYELET [illegible]	[illegible]	66
1		HEAT SINK, BRIDGE RECTIFIER	[illegible]	65
1		SCR PHL PAN HD 6-32 X [illegible]	[illegible]	64
5		KEPS NUT 6-32 SS	[illegible]	63
2		SCR PHL FLAT HD. 6-32 X 5/16	[illegible]	62
4		SCR PHL FLAT HD. 4-40 X 1/4	[illegible]	61
6		SCR PHL PAN HD. 4-40 X 3/8	[illegible]	60
10		KEPS NUT 4-40	[illegible]	59
8		SCR PHL PAN HD 4-40 X [illegible]	[illegible]	58
4		TERMINAL SOLDERLESS, #10	[illegible]	57
1		COVER, COMP	[illegible]	56
1		1.5 CAP. BRKT	[illegible]	55
1		HEAT SINK, REGULATOR	[illegible]	54
1		BRACKET, REG.	[illegible]	53
4		SPLIT LUG	[illegible]	52
1	[illegible]	TRANSISTOR [illegible]	[illegible]	51
2		FUSE CLIP	[illegible]	50
1	F1	FUSE 10 AMP	[illegible]	49
1	L1	REACTOR 170 UHY	[illegible]	48
1	E1	INTEGRATED CIRCUIT 723	[illegible]	47
6	[illegible]	TRANSISTOR MPS A55	[illegible]	46
4		SCR, PHL FLAT HD [illegible] SELF TAPPING	[illegible]	45
1	[illegible]	TRANSISTOR [illegible]	[illegible]	44
1	[illegible]	TRANSISTOR [illegible]	[illegible]	43
2	[illegible]	TRANSISTOR [illegible]	[illegible]	42
2	R17 R21	RES VARIABLE 200 ±20% POT	[illegible]	41
2	[illegible], R36	RES 5.1 [illegible]	[illegible]	40
1	R16	RES 237 1/8W 1%	1304867	39
REF		ELECTRICAL SCHEMATIC	E-CS-H754-0-1	38
3	R4, R13, R5	RES [illegible]	[illegible]	37
1	[illegible]	RES [illegible]	[illegible]	36
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-H754-0-5	35
2	[illegible], R40	RES. 2K 1/4W 5%	1302388	34
2	[illegible], R19	RES [illegible]	[illegible]	33
6	R15, [illegible], R30, R24, R35, R41	RES [illegible]	[illegible]	32
1	R12	RES [illegible] 1/4W 5%	13-00219	31
				30
1	[illegible]	RES 10K 1/8W 1%	1303392	29
1	R32	RES 3K [illegible]	13-10644	28
1	[illegible]	RES 267Ω 1/8W 1%	13-05124	27
1	[illegible]	RES [illegible]	[illegible]	26
1	C11	CAP 2.2 UF [illegible] S TANT	[illegible]	25
1	[illegible]	RES [illegible] .04Ω	1311362	24
1	[illegible]	RES 1.5K 5W 5%	13-01897	23
1	R34	RES 47 [illegible]	13-05258	22
1	[illegible]	RES 1.5K [illegible]	[illegible]	21
2	[illegible]	RES [illegible]	[illegible]	20
1	[illegible]	RES [illegible]	[illegible]	19
2	D11, D6	DIODE 1N5624	1110420	18
				17
1	D14	DIODE 752A ZENER	1102808	16
1	[illegible]	DIODE [illegible]	[illegible]	15
1	[illegible]	DIODE [illegible] 24V	[illegible]	14
1	[illegible]	DIODE, 20 AMP FAST REC	11-10715	13
1	[illegible]	DIODE [illegible], ZENER, 15V	[illegible]	12
1	[illegible]	DIODE [illegible]	[illegible]	11
3	D5, [illegible], D4	DIODE [illegible]	[illegible]	10
1	C15	CAP. 1UF 100V 20% DISC	1000030	9
1	[illegible]	CAP 2.[illegible] UF [illegible] 5% AL. EL.	[illegible]	8
5	[illegible], C10, C7	CAP .01UF 50V [illegible] DISC.	[illegible]	7
1	[illegible]	CAP 2700PF 100V 5% DM	[illegible]	6
1	[illegible]	CAP 560PF 100V [illegible] DM	[illegible]	5
1	I1	LAMP 28V 40MA	12-11239	4
1	C12	CAP [illegible] DISC	[illegible]	3
2	C1 C2	CAP [illegible] 50V 5% AL. EL.	[illegible]	2
1		ETCHED CIRCUIT BOARD	5010471	1
		MODULE ECO HISTORY	[illegible]	REF
		X-Y COORDINATE HOLE LOCATION	[illegible]	REF

PARTS LIST

ETCH BOARD REV F

IC TYPE	GND	+ 5V	ITEM NO.	AWG	FROM PT	TO PT

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

IC PIN LOCATIONS

JUMPER LIST

REV	CHANGE NO.			
F	H7454[illegible]00005	[illegible]	WHITCOMB	[illegible]
E	H754-00004	[illegible]	G. WHITCOMB	[illegible]
D	H754-00003	[illegible]	[illegible]	[illegible]
C	H754-00002	[illegible]	R. BURTON	[illegible]
B	H754-00001	4/13/73	R. BURTON	[illegible]

REVISIONS

DEC NO.	EIA NO	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION

TITLE
+20 VOLT
REGULATOR

NEXT HIGHER ASSY

SIZE E CODE CS NUMBER H754-7-1 REV F

F1 10 A

D1 NSS 3514

C1 5800UF 50V

C2 5800UF 50V

R1 3.9 K 1W 10%

R2 3.9 K 1W 10%

J1-8 AC

J1-7 AC

R4 .04Ω 5W, 3%

R5 2.7Ω

R3 1.5K 5W 5%

C12 .05 UF 25V

Q1 2N4920

Q2 2N5038

R13 27Ω

Q3 2N4920

R12 68Ω

L1 170 UHY,

R28 47Ω

D6 20AMP

D11 IN5624

C8 .01UF 20% 50V

R23 5.1Ω

R24 100Ω

Q7 MPSA55

C9 2200UF 30V

C16 100UF 25V

J1-5 +20V

J1-3 -5V

J1-2 GND

R33 1.78K 1/8W 1%

C13 100 PF

R34 47Ω 2W 5%

Q11 MPS A55

Q10 MJ900

R32 3.9K

MPS A05 Q4

D2 D003

D4 D664

R31 .15Ω 2W 10%

MPS A55 Q6

C14 1000 PF

Q9 MJ3000

R30 100Ω

R22 383Ω 1/8W 1%

R21 2000Ω 20% 1/2W

D13 D664

Q5 DEC 3500

C3 .01UF

R39 220Ω

R40 2K

Q13 MPS A55

Q8 2N6028

C11 2.2UF 35V 10%

D3 IN4744 15V

R6 12K

R29 18K

1000PF 100V C17

R7 2K

R38 1K THERM.

R10 150Ω

C4 .01 UF 50V 20%

C15 .1UF 20%

R11 15K

R20 470Ω

Q14 MPS A05

R41 100Ω

R37 .1 10W 1%

D9 MCR 649P-2

C7 .01 UF 20% 50V

Q12 MPS A55

R36 5.1Ω

R35 100Ω

D14 752A

D8 IN5624

D7 IN 970B 24V

R26 1.5K

D5 D664

R8 1.78K Ω 1/8W 1%

R27 10K 1/8W 1%

R14 27Ω

R19 12K

C10 .01UF 20% 50V

C6 2700 PF

R15 100Ω

R16 28Ω 1/8W 1%

R18 237Ω 1/8W 1%

R17 200Ω 20% 1/2W

DEC 723C

VCC INV NON INV VZ CL CS COMP VC NON INV E1 V REF GND

C5 56PF

REVISIONS			
CHK	CHANGE NO	REV	
	H754 00005	F	4-24-73
	G.W. HITCOMB		

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
H754		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 —

NEXT HIGHER ASSY —

	NAME	DATE
DSN	W. Kuzmiak	9-28-72
CHK'D	JBL	10-11
ENG.	R. Houle	5-7-73
PROJ. ENG.	R. Houle	5-7-73
PROD.	R. B. Pinto	5-7-73

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE +20 VOLT REGULATOR

SIZE D | CODE | NUMBER 2CS,H754-0-1 | REV F

SCALE | SHEET 2 OF 2 | DIST

BRUNING 40-522 15840

CUST-DRW NO. DMD 102-R