digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

	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-7010**230-0**
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

THIS IS PRINT SET

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

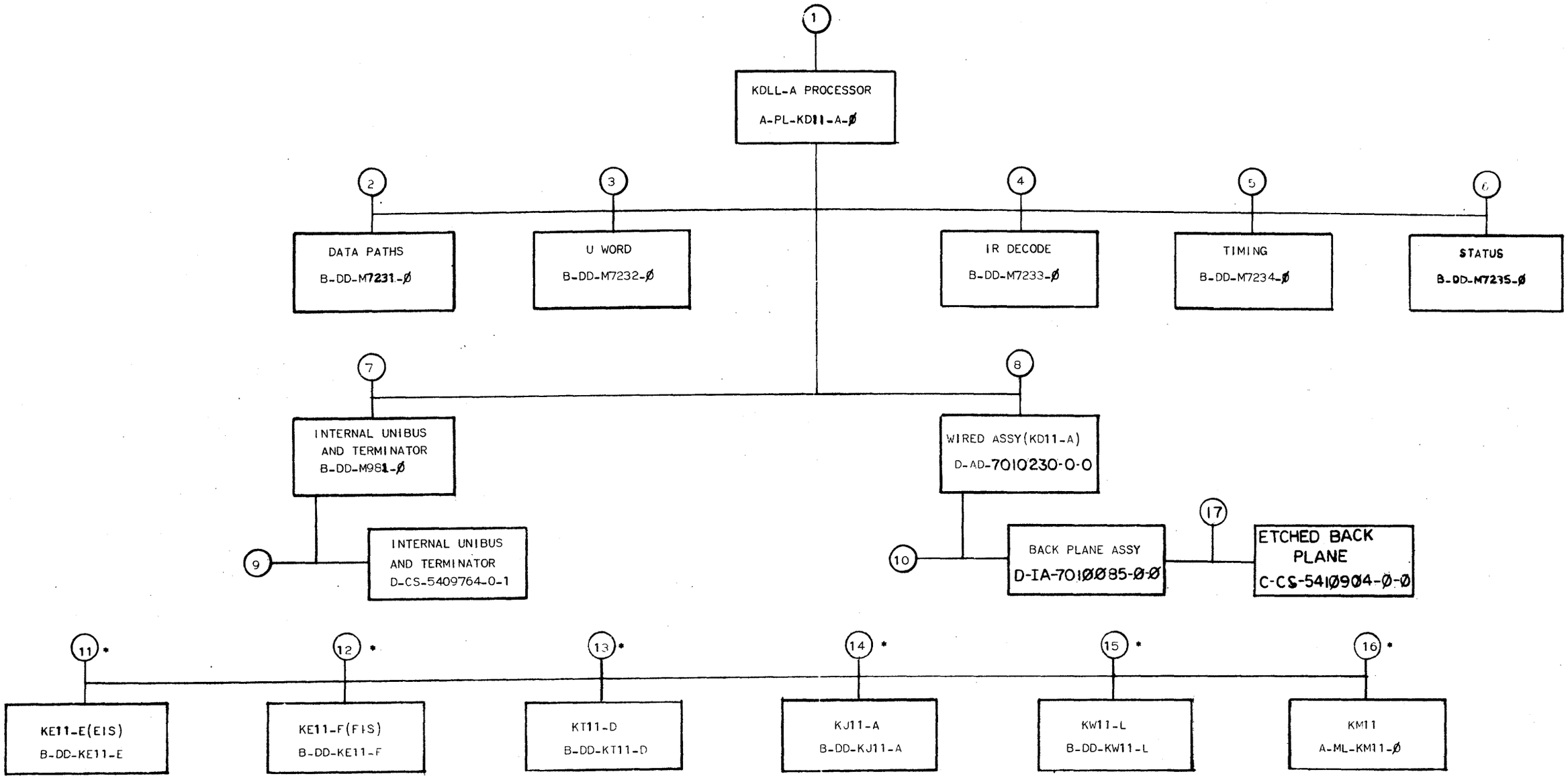
REVISIONS													
REV	A	B	C	D	E	F	H	J	K	L	M	N
Ch. no.	KD11A-C [illegible] 11/21/72	KD11A-00005 [illegible] 12/15/73	KD11A-6 [illegible] 6/15/73	KD11A-00007 [illegible] 1/14/73	KD11A-00008	KD11A-00009	KD11A-00010	KD11A-00011	KD11A-00012	KD11A-00013	KD11A-00014	KD11A-00015
DATE	10-72	2-73	6-73	11-73	5-74	6-74	7-74	8-74	8-75	7-76	5-77	11-77

USED ON OPTION/MODEL			

DRN. [illegible]	DATE 9/21/72	TITLE KD11-A PROCESSOR
CHK'D. [illegible]	DATE 9/27/72	
PROJ ENG. [illegible]	DATE 9/27/72	
PROD. [illegible]	DATE 9-[illegible]	SIZE B · CODE DD · NUMBER KD11-A · REV N
FIELD SERV. [illegible]	DATE 9-[illegible]	
SHEET 1 OF 3		DIST G

DRB 106

DEC 16—[illegible]



* OPTIONS TO KD11-A PROCESSOR

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

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	N	33	WIRE & ETCH LIST (COMPLETE)	
X		17	C-CS-5410904-0-1	#	1	CIRCUIT SCHEMATIC BACK PLANE	
		2	B-DD-M7231-0		2	DATA PATHS	
X			D-CS-M7231-0-1	#	9	DATA PATHS CIRCUIT SCHEMATIC	
		3	B-DD-M7232-0		2	U WORD	
X			D-CS-M7232-0-1	#	12	U WORD CIRCUIT SCHEMATIC	
		4	B-DD-M7233-0		2	IR DECODE	
X			D-CS-M7233-0-1	#	9	IR DECODE CIRCUIT SCHEMATIC	
		5	B-DD-M7234-0		2	TIMING	
X			D-CS-M7234-0-1	#	6	TIMING CIRCUIT SCHEMATIC	
		6	B-DD-M7235-0		2	STATUS	
X			D-CS-M7235-0-1	#	8	STATUS CIRCUIT SCHEMATIC	
		7	B-DD-M981-0		2	INTERNAL UNIBUS AND TERMINATOR	
X		8	D-CS-5409764-0-1	#	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-KM11-0	REF	1	MAINTENANCE PANEL(W130,W131)	
X			D-BS-KM11-0-MB	#	3	MAINTENANCE BOARD (1&2)	
X			A-SS-5509081-0-1	#	1	SILK SCREEN (KD11-A)	
X			A-SS-5509081-0-1	#	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-0	A	1	PARTS LIST	
x		8	A-WF7010230-0	#	1	AWT REVISION STATUS	
			D AD 7010230-0-0	#	1	WIRED ASSY (KD11-A)	
		10	D-1A 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	N

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 [VECT]
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 (I) H
K2-4 SRD (I) H
K2-4 SRBA (I) H
K2-4 SRI (I) H
IR [08:06]
IR [02:00]
BA [03:00]
K2-4 RIF3 (I) H
K2-4 RIF2 (I) H
K2-4 RIF1 (I) H
K2-4 RIF0 (I) H

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

BUS TERMINATOR & CONNECTOR M881

SWITCH REGISTER SR [17:00] KY11-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 (I) H
K2-6 SPS1 (I) H
K2-6 SPS0 (I) 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] KY11-D

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

BUFFER KI

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

U BRANCH CONTROL K3

CONSOLE CONTROL K5-6

D MUX KI
K2-5 SDM1 (I) H
K2-5 SDM0 (I) H

BUBC (BUTXX)

BUT DECODE K5-3

BUT MUX K3-2

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

BUS U [08:00]

BUBC [5:0]

NOT OR K2

JAMUPP LOGIC K4-3

K4-2 CLK (UPP * PUPP) H

U WORD REG

BUS U [56:09]

U WORD [56:09] R2

UPP REGISTER K2

DRIVER K2

KM11 DISPLAY

PUPP REGISTER K2

DRIVER K2

UPP [8:0]

U WORD CONTROL ROM 256 WORDS X 56 BITS

BUPP & SR MATCH KI-9
UPP MATCH
P MATCH

SR [08:00]

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

K4-2 CLK U (56:17) H
K4-2 CLK U (16:09) H

BUS BA [17:00]

BA MUX KI
K2-5 SBAM (I) H

BA REGISTER KI-6
K4-2 CLK BA H

BA [15:00]

D(14:00)

D(C)

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

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

CIN LOGIC K3-8
Ø
1
PS(C)

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

BUS C [1:0] L
BUS MSYN L
BUS SSYN L
BUS RRSYL L
BUS NPR L
BUS NPG H
BUS SACK L
BUS INTR L
BUS BRL (4) H
BUS BGL (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 (I) H
K2-7 CIBUS (I) H
K2-7 CØBUS (I) H
K2-7 BGBUS (I) H

380 KI

8881 KI
K4-5 BUS FM D H
BUS D [15:00]

8881 KI-6
K4-5 BUS FM BA H
BUS BA [17:00]

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

DECODING (ADRS & DATA) KI-7

ADDRESS DISPLAY ADRS [17:00] KY11-D

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

K2-8 CLKLI (I) H
K2-8 CLKLØ (I) H
K2-8 CLKOFF (I) H

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

CLOCK ENABLE GATES K4-2
CLOCK OUTPUTS TO INTERFACE DATA PATHS, AND CONTROL (K4 SIGNALS)

CLOCK PULSE GENERATOR (D1, D2, D3, D4) K4-2

CLOCK CONTROL (CLK, IDLE) K4-2

VARIOUS ASYNCHRONOUS STARTING SIGNALS
KM-2 MCLK L

K4-2 RECLK H

INTERFACE

DATA PATHS

MICROCONTROL

REVISIONS			
REV	CHANGE NO	CHK	
A	KDIIA-00005		

D'LOUGHLIN 2-14-73

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'. REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	DRN. D. Goudlaw	DATE 7-21-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
	CHK'D. T. Hoover	DATE 9-25-72			
	ENG. T. Hoover	DATE 9-25-72			
	PROJ. ENG. T. Hoover	DATE 9-25-72			
	MGR. W. Strange	DATE 9-25-72			
MATERIAL: -/-	NEXT HIGHER ASSY.: B-BD-KDII-A		TITLE: KD11-A PROCESSOR (BLOCK DIAGRAM)		
FINISH: -/-	SCALE: NONE	SIZE D	CODE BD	NUMBER KD11-A-BD	REV. A
	SHEET 1 OF 2	DIST.			

BRUNING 40.522 15840

DEC FORM NO DRD 102-B

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	N	33	WIRE & ETCH LIST (COMPLETE)	
X		17	C-CS-5410904-0-1	#	1	CIRCUIT SCHEMATIC BACK PLANE	
		2	B-DD-M7231-0		2	DATA PATHS	
X			D-CS-M7231-0-1	#	9	DATA PATHS CIRCUIT SCHEMATIC	
		3	B-DD-M7232-0		2	U WORD	
X			D-CS-M7232-0-1	#	12	U WORD CIRCUIT SCHEMATIC	
		4	B-DD-M7233-0		2	IR DECODE	
X			D-CS-M7233-0-1	#	9	IR DECODE CIRCUIT SCHEMATIC	
		5	B-DD-M7234-0		2	TIMING	
X			D-CS-M7234-0-1	#	6	TIMING CIRCUIT SCHEMATIC	
		6	B-DD-M7235-0		2	STATUS	
X			D-CS-M7235-0-1	#	8	STATUS CIRCUIT SCHEMATIC	
		7	B-DD-M981-0		2	INTERNAL UNIBUS AND TERMINATOR	
X		8	D-CS-5409764-0-1	#	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-KM11-0	REF	1	MAINTENANCE PANEL(W130,W131)	
X			D-BS-KM11-0-MB	#	3	MAINTENANCE BOARD (1&2)	
X			A-SS-5509081-0-12	#	1	SILK SCREEN (KD11-A)	
X			A-SS-5509081-0-11	#	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-0	A	1	PARTS LIST	
X		8	A-WF7010230-0	#	1	AWT REVISION STATUS	
			D AD 7010230-0-0	#	1	WIRED ASSY (KD11-A)	
		10	D-1A 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	N

DMUX [15:00]

BUS RD [15:00]

EUBC [8:1]

EUPP [8:0]

BUPP [8:0]

BUS U [08:00]

BUS U [56:09]

UNIBUS

BUS TERMINATOR & CONNECTOR M881

SWITCH REGISTER SR [17:00] KY11-D

BUS D [15:00]

8881 K1-9 — K4-4 BUS FM SR H

BUS D [07:00]

8881 K5-2 — K5-2 BUS FM PS H

REGISTER (REG) K1-8

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 [VECT]
REG 05, R5	REG 15 R [TEMPC]
REG 06, R [SP]	REG 16 R [SP USER]
REG 07, R [PC]	REG 17 R [ADRSC]

K4-2 WR R (15:08) L

K4-2 WR R (07:00) L

REG ADRS INPUTS K1-8

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

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 K1

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]

BUFFER K1

DATA DISPLAY DATA [15:00] KY11-D

K2-5 SBMH1 (1) H
K2-5 SBMH0 (1) H

B MUX K1

K2-5 SBML1 (1) H
K2-5 SBML0 (1) H

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 K1

K2-5 SDM1 (1) H
K2-5 SDM0 (1) H

BUBC (BUTXX)

BUT DECODE K5-3

BUT MUX K3-2

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]

BUBC [5:0]

D (14:00)

D (C)

BUS C [1:0] L
BUS MSYN L
BUS SSYN L
BUS BBSY L
BUS NPR L
BUS NPG H
BUS SACK L
BUS INTR L
BUS BR [7:4] H
BUS BG [7:4] 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 COBUS (1) H
K2-7 BGBUS (1) H

BIN AIN

ARITHMETIC LOGIC UNIT K1

K3-8 ALUS3
K3-8 ALUS2
K3-8 ALUS1
K3-8 ALUS0
K3-8 ALUM H

COUT MUX K1-4

COUT 15
COUT 07
ALU 15

K5-2 PS (C) (1) H

CIN LOGIC K3-8

0
1
PS (C)

NOT OR K2

JAMUPP LOGIC K4-3

K4-2 CLK (UPP * PUPP) H

U WORD REG

K4-2 CLK U (56:17) H
K4-2 CLK U (16:09) H

U WORD [56:09] K2

BUS U [56:09]

DRIVER K2

KM11 DISPLAY

UPP REGISTER K2

PUPP REGISTER K2

UPP [8:0]

U WORD CONTROL ROM 256 WORDS X 56 BITS

DRIVER K2

BUPP & SR MATCH K1-9

UPP MATCH
P MATCH

SR [08:00]

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

380 K1

8881 K1 — K4-5 BUS FM D H

BUS D [15:00]

BA MUX K1

K2-5 SBAM (1) H

BA REGISTER K1-6

K4-2 CLK BA H

K4-2 CLK D H

D REGISTER K1

D [15:00]

BA [15:00]

K1-7 PS ADRS H
K1-7 SLR ADRS H
K1-7 REG ADRS H
K1-7 SR ADRS H
K1-7 D (15:00) = 0 H

DECODING (ADRS & DATA) K1-7

ADDRESS DISPLAY ADRS [17:00] KY11-D

BUS BA [17:00]

8881 K1-6 — K4-5 BUS FM BA H

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 CLKLO (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

K4-2 RECLK H

VARIOUS ASYNCHRONOUS STARTING SIGNALS

KM-2 MCLK L

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

INTERFACE

DATA PATHS

MICROCONTROL

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 7-21-72
CHK'D		DATE 9-25-72
ENG		DATE 9-25-72
PROJ. ENG		DATE 9-25-72
MGR		DATE 9-25-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KD11-A PROCESSOR (BLOCK DIAGRAM)

NEXT HIGHER ASSY: B-BD-KD11-A

SCALE: NONE

SHEET 1 OF 2

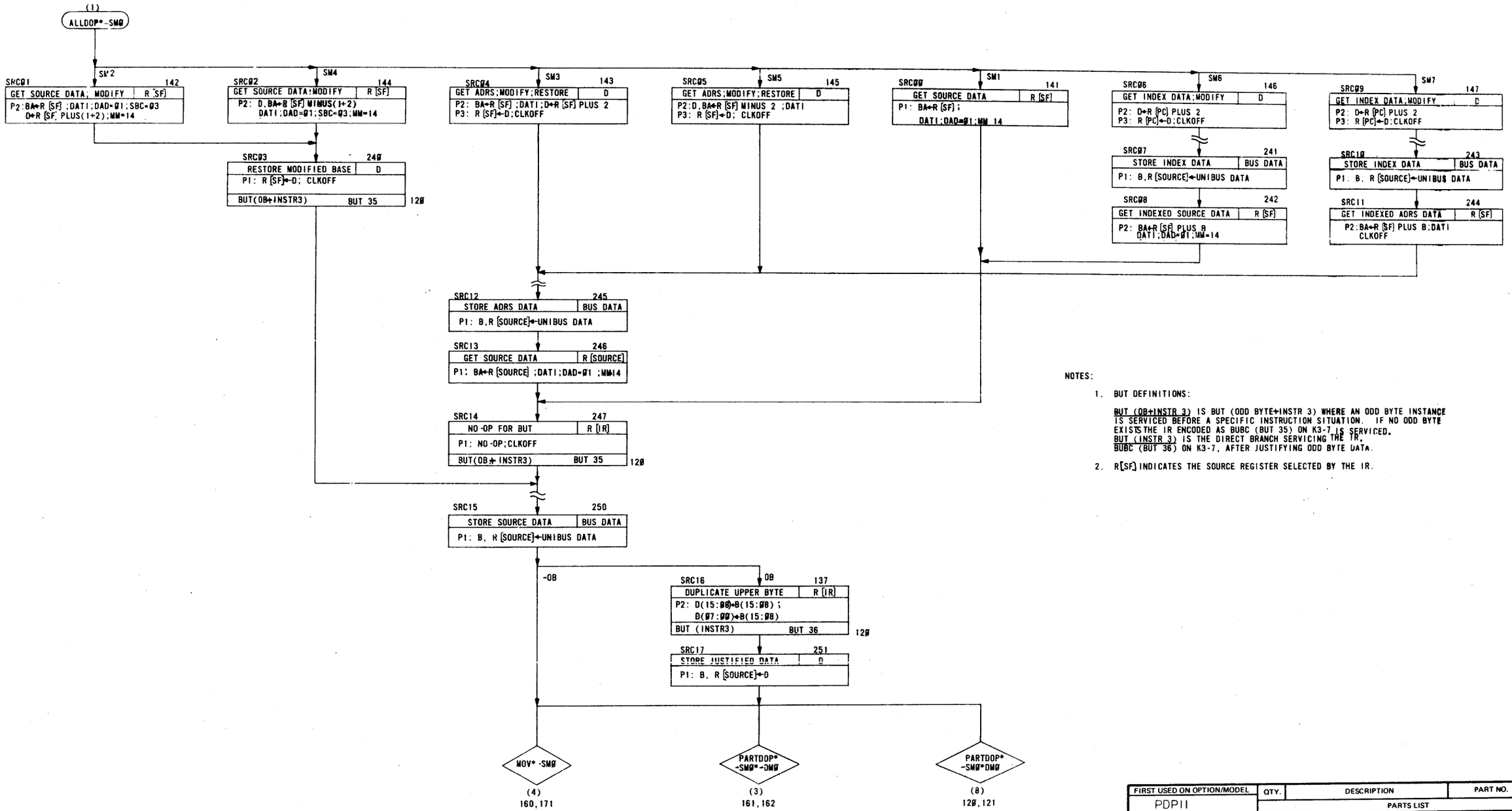
SIZE	CODE	NUMBER	REV.
D	BD	KD11-A-BD	A

DIST

REVISIONS			
CHG NO	CHANGE NO	REV	
CHG	KD11A-00005	A	
	O'LOUGHLIN	2-14-73	

BRUNING 40-522 15840

DEC FORM NO DRD 102-B



NOTES:

1. BUT DEFINITIONS:

   BUT (OB+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 36) ON K3-7, AFTER JUSTIFYING ODD BYTE DATA.

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

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	7-15-72
CHK'D.	DATE	8/25/72
ENG.	DATE	11/3/72
PROJ. ENG.	DATE	12/7/72
PROJ. LDR.	DATE	7-21-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (SOURCE) (2)

MATERIAL
FINISH
NEXT HIGHER ASSY. B-DD-KD11-A
SCALE
SHEET 2 OF 12

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

DIST.

REVISIONS	REV
CHANGE NO	
CHK	

DEC FORM NO
DRD 102-B

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

(1) (PARTDOF+SMØ-ALLSOP)*-DMØ

(2) PARTDOP+SMØ+DMØ

DST01 DM2 — GET DEST DATA:MODIFY | R [DF] | 162
P2: BA←R [DF] :DATIP :DAD=Ø7
D←R [DF] PLUS(1+2);SBC=Ø3;MM=Ø1

DST02 DM4 — GET DEST DATA:MODIFY | R [DF] | 164
P2: D,BA←R [DF] MINUS(1←2)
DATIP;DAD=Ø7;SBC=Ø3:MM=Ø1

DST06 DM(6+7)*-SMØ — GET INDEX DATA:MODIFY | D | 167
P2: BA←PC;DATI;D←R [PC] PLUS 2
P3: R [PC]←D;CLKOFF
BUT(IRØ3) BUT 17 → 262

DST07 DM(6+7)*SMØ — OVERLAP:MODIFY R [PC] | D | 166
P2: D←R [PC] PLUS 2
P3: R [PC]←D; CLKOFF
BUT(IRØ3) BUT 17 → 262

DST00 DM1 — GET DEST DATA | R [DF] | 161
P1 BA←R [DF] DATIP
DAD=Ø7:MM=Ø1

DST03 — RESTORE MODIFIED BASE | D | 260
P1: R [DF]←D;CLKOFF
BUT(OB+INSTR 4) BUT 33 → 220

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

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

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

DST10 -IRØ3 — GET INDEXED DEST DATA | R [DF] | 262
P2. BA←R [DF] PLUS B: DATIP;
DAD=Ø7;MM=Ø1

DST11 IRØ3 — GET INDEXED ADRS | R [DF] | 263
P2: BA←R [DF] PLUS B;DATI;CLKOFF

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

DST13 — GET DEST DATA | R [DEST] | 265
P1: BA←R [DEST] , DATIP;DAD=Ø1;MM=Ø1

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

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

-OB

DST16 OB — DUPLICATE UPPER BYTE | R [IR] | 237
P2 D(15:Ø8)←B(15:Ø8);
D(Ø7:ØØ)←B(15:Ø6)
BUT(INSTR4) BUT 34 → 220

DST17 — STORE JUSTIFIED DATA | D | 270
P1 B.R [DEST]←D

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

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

SXT*-DMØ — (8) 234

ROTSHF(R) *-DMØ — (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 Ø3) 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

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	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D	DATE 12-7	
	ENG	DATE 12-7	TITLE: FLOW DIAGRAM (DECT) (3)
	PROJ ENG	DATE 12-7	
	PROD	DATE 12-7	
MATERIAL	NEXT HIGHER ASSY: KDII-A		SIZE D; CODE FD; NUMBER KDII-A-FD; REV B
FINISH	SCALE		
	SHEET 3 OF 12		DIST

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

(1) MOV*SM0

(2) MOV*-SM0

DM1

MOV00 171
LOAD DEST ADRS | R [DF]
P2 BA←R [DF] ;DAD←07
BUT(BYTE AND SOURCE) BUT 22 200

DM2

MOV01 172
LOAD DEST ADRS;MODIFY | D
P2: BA←R [DF] ;DAD←07;SBC←03
D←R [DF] PLUS(1←2)
BUT(BYTE AND SOURCE) BUT 22 200

DM4

MOV02 174
LOAD DEST ADRS;MODIFY | D
P2:D,BA←R [DF] MINUS(1←2)
DAD←07;SBC←03
BUT(BYTE AND SOURCE) BUT 22 200

DM(6+7)*(-SM0)

MOV05 177
GET INDEX DATA;MODIFY | D
P2:BA←PC,DATI,D←PC PLUS 2
P3:PC←D,CLKOFF
BUT(IR03) BUT 17 212

DM(6+7) SM0

MOV06 176
OVERLAP MODIFY R [PC] | D
P2 D←R [PC PLUS 2
P3 R [PC←D,CLKOFF
BUT(IR03) BUT 17 212

MOV07 257
RESTORE BASE ADRS | D
P1: R [DF]←D

MOV08 206
STORE INDEX DATA | BUS DATA
P1:B,R [DEST]←UNIBUS DATA
BUT(IR03,BYTE AND SOURCE BUT 21 200

DM3

MOV03 173
GET ADRS;MODIFY;RESTORE | D
P2:BA←R [DF] ;D←R [DF] PLUS 2;DATI
P3:R [DF]←D;CLKOFF

DM5

MOV04 175
GET ADRS;MODIFY;RESTORE | D
P2:D,BA←R [DF] MINUS 2;DATI
P3 R [DF]←D;CLKOFF

-IR03

MOV09 212
STORE INDEXED DEST ADRS | R DF
P2 BA←R [DF] PLUS 8;DAD←07

IR03

MOV10 213
GET INDEXED ADRS | R [DF]
P2 BA←R [DF] PLUS 8
DATI ;CLKOFF,DAD←01

DM0*-SM0

MOV18 170
GET DEST DATA | R [SF]
P2: D←R [SF]
BUT(BYTE+SERVICE AND FETCH) BUT 20 000

MOV13 160
GET DEST DATA | R [SOURCE]
P2: D←R [SOURCE]
BUT(BYTE+SERVICE AND FETCH) BUT 20 000

MOV11 207
STORE ADRS DATA | BUS DATA
P1 B,R [DEST]←UNIBUS DATA
BUT(BYTE AND SOURCE) BUT 22 200

MOV12 210
LOAD DEST ADRS | R [DEST]
P2 BA←R [DEST] ,DAD←01

IF OVLAP

MOV20 204
STORE DEST DATA | D
P1:R [DF] ,B←D;SPS←03;MM←1 C
CLKOFF IF OVLAP(1);CLK←0

IF OVLAP

-BYTE

BYTE

MOV21 003
SIGN EXTEND BYTE DATA | D
P2.D(15:08)←B07,D(07:00)←B(07:00)
BUT(SERVICEB+FETCH OVLAP+FETCH B) BUT 27 000

BYTE*SM0

MOV13 203
LOAD BYTE DATA | R [SF]
P1 B←R [SF]

BYTE*-SM0

MOV14 202
LOAD BYTE DATA | R [SOURCE]
P1. B←R [SOURCE]

-SM0*-BYTE

MOV16 200
STORE DATA | R [SOURCE]
P2.D←R [SOURCE]
MM=11 DATO

SM0*-BYTE

MOV17 201
STORE DATA | R [SF]
P2 D←R [SF] PLUS(2+2);SBC=16
DATO MM=11

MOV15 205
STORE JUSTIFIED DATA | D
P2:D(15:00)←B(07:00)
D(07:00)←B(07:00);DATOB
P3:R [SOURCE]←D;MM←01

MOV22 125
ALTER COND CODES | D
P3:ALTER COND CODES
CLKOFF;DAD=12;SPS=3
BUT(SERVICE C←FETCH C) BUT 16

NO-OP
(8)
375

SERVICE B
(10)
002

FETCH OVLAP
(1)
001

FETCH B
(1)
000

NOTE;

1. BUT DEFINTIONS:
BUT (BYTE AND SOURCE)=BUT(BYTE*(SM0+-SM0)+-BYTE(SM0+-SM0) WITH THE BYTE AND SOURCE MODE INTERACTING TO PROVIDE A FOUR WAY BRANCH.
BUT (IR 03) RESPONDS TO DEFERED ADDRESS CALCULATIONS.
BUT (IR 03, BYTE AND SOURCE) COMBINES ABOVE BUTS AS BUBC(BUT21) ON K3-7
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	CHANGE NO	REV
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 ✓
MATERIAL
FINISH

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

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (MOV) (4)

NEXT HIGHER ASSY. B-00-KD11-A
SCALE
SHEET 4 OF 12

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

DIST

DEC FORM NO DRD 102-B

(1) JMP+JSR

JMP00 DM1 151
GET DEST ADRS | R [DF]
P2: D←R [DF]
BUT(JSR-JMP) | BUT 15 | 306

JMP01 DM2 152
POST MODIFICATION | D
P2: D←R [DF] PLUS 2
P3: R [DF]←D

JMP02 235
GET DEST ADRS | R [DF]
P2: D←R [DF] MINUS 2
BUT(JSR+JMP) | BUT 15 | 306

JMP05 DM3 153
GET ADRS;MODIFY;RESTORE | D
P2: BA←R [DF] ;DATI
D←R [DF] PLUS 2
P3: R [DF]←D;CLKOFF
BUT(JSR+JMP) | BUT 15 | 306

JMP03 DM4 154
GET DEST ADRS;MODIFY | D
P2: D R [DF] MINUS 2
P3: R [DF]←D
BUT(JSR+JMP) | BUT 15 | 306

JMP06 DM5 155
GET ADRS;MODIFY;RESTORE | D
P2: D.BA←R [DF] MINUS 2;DATI
P3: R [DF]←D;CLKOFF
BUT(JSR-JMP) | BUT 15 | 306

JMP08 DM6 156
OVERLAP;MODIFY R [PC] | D
P2: D←R [PC] PLUS 2
P3: R [PC]←D;CLKOFF

JMP14 304
STORE INDEX DATA | BUS DATA
P1: B,R [TEMP]←UNIBUS DATA

JMP15 305
GET DEST ADRS | R [DF]
P2: D←R [DF] PLUS B
BUT(JSR+JMP) | BUT 15 | 306

JMP07 DM7 157
OVERLAP;MODIFY R [PC] | D
P2 D←R [PC] PLUS 2
P3. R [PC←D;CLKOFF

JMP09 301
STORE INDEX DATA | BUS DATA
P1 B,R [TEMP]←UNIBUS DATA

JMP10 302
GET INDEXED ADRS | R [DF]
P2: D BA←R [DF] PLUS B
DATI;CLKOFF
BUT(JSR+JMP) | BUT 15 | 306

JMP04 300
STORE DEST ADRS | D
P1: B,R [TEMP]←D

JMP11 303
STORE DEST ADRS | BUS DATA
P1: B,R [TEMP]←UNIBUS DATA

JMP

JSR00 JSR 307
MODIFY STACK POINTER | D
P2: D.BA←R [SP] MINUS2
P3: R [SP]←D;DAD=06

JSR01 310
STACK LINKAGE POINTER | R [SF]
P2: D←R [SF] ;DATO;CLKOFF

JSR02 311
GET NEW LINKAGE | R [PC]
P1: B←R [PC]

JSR03 312
STORE NEW LINKAGE | D
P2: D←B
P3: R [SF]←D

JMP12 306
GET DEST ADRS | R [TEMP]
P2: D←R [TEMP]
BUT(SERVICE C←FETCH C) | BUT 16 | 016

JMP13 313
STORE AS NEW R [PC] | D
P1: R [PC]←D

SERVICE C
(10)
017

FETCH C
(1)
016

(1) MARK

MRK00 112
DOUBLE OFFSET | D
P2: D←B PLUS R [JR]
P3: B←D

MRK01 353
MODIFY PC WITH OFFSET | D
P2: D.BA←R [PC] PLUS SEX8;DATI
P3: R [PC]←D

MRK02 354
FORM NEW STACK POINTER | R [PC]
P2: D←R [PC] PLUS 2

MRK03 355
STACK POINTS TO OLD R5 | D
P1: R [SP]←D;CLKOFF

MRK04 356
LOAD R [05] WITH OLD R5 | BUS DATA
P2: D←R [05]
P3 R 05←UNIBUS DATA
BUT(SERVICE C←FETCH C) | BUT 16 | 016

MRK05 357
LOAD R [PC] WITH OLD PC | D
P1: R [PC]←D

NOTE:

1. BUT DEFINITIONS:
   BUT (JMP+JSR) IMPLEMENTS IR DECODING.
   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 ✓
MATERIAL
FINISH

DRN DATE 1-1-72
CHK'D DATE
ENG DATE
PROJ ENG DATE
PROD DATE

NEXT HIGHER ASSY. B-DD-KDII-A
SCALE
SHEET 5 OF 12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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

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

DEC FORM NO DRD 102-B

(JAMUPP)(RED ZONE +DUBBERR)

TRAP ERR

TRPØØ 336 D
JAM R [SP] TO 4
P2:D←∮(SBC=17)
P3:R [SP]←D

TRPØ1 317 D
FORM,STORE TRAP VECTOR
P2:D←∮(SBC=ØØ*STPM)
P3:R [VECT]←D

-MM FAULT

TRPØ2 215 R [VECT]
GET NEW STATUS
P2:BA←R [VECT] PLUS 2;
DATI;CLKOFF

(1Ø) TRAP A

TRPØ3 Ø1Ø D
FORM,STORE TRAP VECTOR
P2:D←∮(SBC=ØØ*STPM)
P3:R [VECT]←D
BUT(MM FAULT) BUT 11 214

MM FAULT

TRPØ4 216 D
GET MM VECTOR(250)
P2:D←∮(SBC=15)

TRPØ5 214 D
STORE MM VECTOR
P1:R [VECT]←D

(1) TRAP B

TRPØ6 126 D
FORM,STORE TRAP VECTOR
P2:D←∮(SBC=ØØ*STPM)
P3:R [VECT]←D

(1) TRAP C

TRPØ7 150 D
FORM,STORE TRAP VECTOR
P2:D←∮(SBC=ØØ*STPM)
P3:R [VECT]←D

(1Ø) TRAP D

TRPØ8 007 R [VECT]
GET NEW STATUS
P2:BA←R [VECT] PLUS 2
DATI;CLKOFF;MM=Ø4

TRPØ9 115 BUS DATA
STORE NEW STATUS
P1:R [TEMP]←UNIBUS DATA;
MM=Ø6

TRP1Ø 326 D
MODIFY STACK POINTER
P2:D,BA←R [SP] MINUS 2;DAD=6
P3:R [SP]←D;MM=Ø4

TRP11 327 PS
STORE OLD STATUS ON STACK
P2:D←PS;DATO;CLKOFF;MM=Ø4

TRP12 113 BUS DATA
DESKEW WORD FOR DATO
P1:NO-OP;MM=Ø4

TRP13 330 D
MODIFY STACK POINTER
P2:D,BA←R [SP] MINUS 2;DAD=6
P3:R [SP]←D;MM=Ø4

TRP14 331 R [PC]
STORE OLD R [PC] ON STACK
P2:D←R [PC] ;DATO;CLKOFF;
MM=Ø4

TRP15 77 R [TEMP]
ENABLE NEW STATUS
P1:PS←R [TEMP] ;SPS←Ø;MM=Ø6

TRP16 140 R [TEMP]
LOAD NEW STATUS
P1:PS←R [TEMP];SPS=7,MM=Ø2
BUT(REG EXAM) NOTE 1 BUT Ø4

TRP2Ø 332 R [VECT]
GET NEW R [PC]
P1:BA←R [VECT];DATI;
CLKOFF;MM=Ø4
BUT(CBR1) : NOTE 1 BUT Ø1 122

TRP21 333 BUS DATA
STORE NEW R [PC]
P1:R [PC]←UNIBUS DATA
BUT(REG DEP) : NOTE 1 BUT Ø3

-HALT SW → SERVICE D (1Ø) 123
HALT SW → CONSOLE A (11) 122

(JAMUPP)

PWRUP*-HALT

TRP17 337 D
FORM,STORE PWRUP VECTOR
P2:D←∮(SBC=11*JUMPERS)
P3:R [VECT]←D

TRP18 334 R [VECT]
GET NEW STATUS
P2:BA←R [VECT] PLUS 2;
DATI;CLKOFF

TRP19 335 BUS DATA
STORE NEW STATUS
P1:PS←UNIBUS DATA;SPS=7

(1) RESET

RSTØØ 127 D
GET RESET DATA DISPLAY
P1:D←R [ØØ]

RSTØ1 025 D
RESET DELAY AND INIT
P3:CLKOFF;2Ø MILLISECONDS INIT;
7Ø MILLISECONDS DELAY
BUT(CBR2);INIT;DELAY BUT Ø2 Ø42

RSTØ2 040 D
NO-OP FOR BUT
P1:NO-OP

HALT SW

RSTØ3 C42 D
NO-OP FOR CONSOLE ENTRY
P1:NO-OP

-HALT SW

RSTØ4 043 D
NO-OP FOR FETCH ENTRY
P1:NO-OP

CONSOLE B (11) Ø11

(1) RTS

RTSØØ 124 R [DF]
GET NEW R [PC]
P2:D←R [DF]

RTSØ1 323 D
STORE NEW R [PC]
P1:R [PC]←D

RTSØ2 324 D
GET TOP OF STACK;MODIFY
P2:BA←R [SP] ;D←R [SP] PLUS 2;DATI
P3:R [SP]←D;CKLOFF
BUT(SERVICE C+FETCH C) BUT 16 Ø16

RTSØ3 325 BUS DATA
STORE TOP OF STACK
P1:R [DF]←UNIBUS DATA

FETCH C (1) Ø16

(1) RTI+RTT

RTIØØ 101 D
GET NEW R [PC, ,MODIFY
P2:BA←R [SP] ;D←R [SP] PLUS 2;DATI
P3:R [SP]←D;CLKOFF

RTIØ1 320 BUS DATA
STORE NEW R [PC]
P1:R [PC]←UNIBUS DATA;

RTIØ2 321 D
GET NEW STATUS;MODIFY
P2:BA←R [SP] ;D←R [SP] PLUS 2;DATI
P3:R [SP]←D;CLKOFF

RTIØ3 322 BUS DATA
STORE NEW STATUS
P1:PS←UNIBUS DATA;SPS=7

SERVICE C (1Ø) Ø17

NOTES.

1. THESE WORKING BUT'S ARE USED TO SEQUENTIALLY CLEAR VARIOUS TRAP REQUEST FLAGS. EXCEPT FOR BUT (CBR1) THEY DO NOT BRANCH THE FLOW.
2. BUT DEFINITIONS:
   BUT (MM FAULT) IS ACTIVE FOR MEMORY MANAGEMENT FAULTS IN THE KT11-D OPTION.
   BUT (CBR2) SENSES THE HALT SWITCH FOR A CONSOLE BUS REQUEST, A RETURN TO FETCH OCCURS IF THE HALT SWITCH IS NOT ACTIVE. THIS WORKING BUT ACTIVATES THE INIT AND RESTART DELAY.
   BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.
   BUT (CBR1) PROVIDES FOR DIRECT CONSOLE LOOP ENTRY IF THE HALT SWITCH IS ACTIVE. THIS DIFFERS FROM THE USUAL ENTRY INTO SERVICE FROM THE TRAP SEQUENCE. SEE NOTE 1 ALSO.
   BUT (REG EXAM) } SEE NOTE 1.
   BUT (REG DEP) }

REV	CHANGE NO	INITIALS

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	1-11-72
CHK'D	DATE	7/25/72
ENG.	DATE	1/23/72
PROJ. ENG.	DATE	7/25/72
PROD.	DATE	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM TRAPS, PWRUP RESET, RTI, RTS, RTT (K)

NEXT HIGHER ASSY: B-3D-KD11-A

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

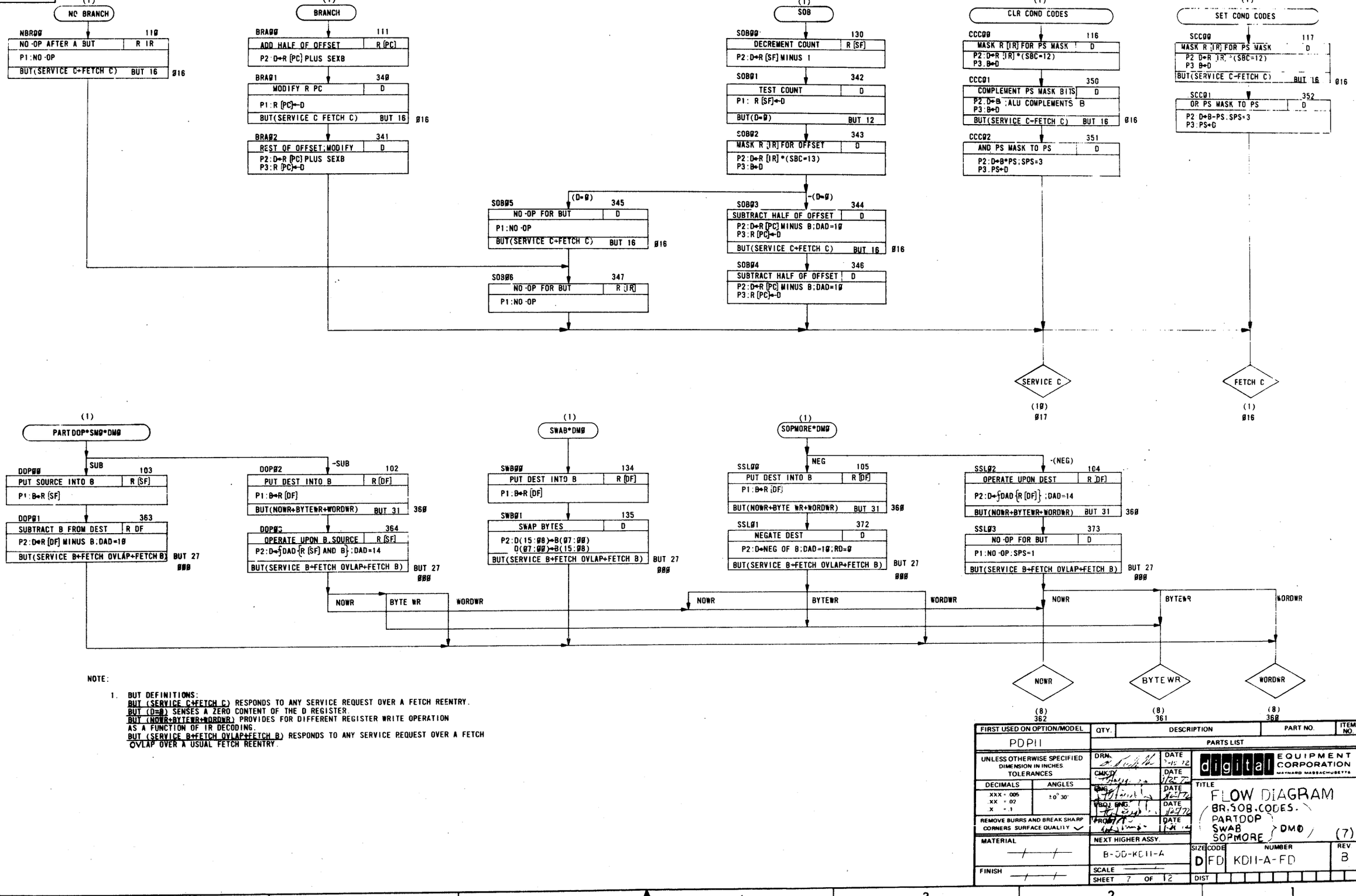
SCALE —

SHEET 5 OF 12

DIST

BRUNING 40 522 (1584)

DEC-11-SMM-NO
DRD 102-B



NOTE:

1. BUT DEFINITIONS:
   BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.
   BUT (D=0) 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	

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	7-15-72
CHK'D	DATE	7/25/72
ENG.	DATE	10-27-72
PROJ. ENG.	DATE	10-27-72
PROJ.	DATE	10-31-72

NEXT HIGHER ASSY. B-DD-KD11-A

SCALE —

SHEET 7 OF 12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
FLOW DIAGRAM
BR.SOB.CODES.
PARTDOP
SWAB
SOPMORE } DMA (7)

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

DIST

DEC-00MX-NO
DRD 102-B

(3) PARTDOP* -DM0

-0B

SUB

SM0

DOP04 226
PUT SOURCE INTO B | R [SF]
P1: B←R [SF]

-SM0

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

(SM0+XOR)

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

-SM0

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

0B

SM0

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

-SM0

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←0;SPS=1

DOP21 074
ALTER CODES | D
P1: B←0;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* -SM0*DM0

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 31 036

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*DM0

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* -DM0

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 | 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 ✓
MATERIAL
FINISH

DRN. R. Kubik DATE 4-15-72
CHK'D J. Holmes DATE 4/25/72
ENG. J. Holmes DATE 4/25/72
PROJ. ENG. J. Holmes DATE 4/25/72
PROD. DATE 4-27-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (PARTDOP, SXT) (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 DRD 102-B

(3)
(SOPMORE+SWAB)* -DM@

-OB

NEG
SSL@4 221
NEGATE DEST;STORE | D
P2:D←NEG OF B (DATO←DATOB);DAD=11 MM=@1

SWAB
SSL05 236
SWAP BYTES;STORE | D
P2:D(15:@8)←B(@7:@@);MM=@1 J(@7:@@)←B(15:@8);DATO

-(NEG+SWAB)
SSL@6 220
OPERATE UPON DEST;STORE | D
P2:D←∫DAD{DEST};MM=@1 (DATO←DATOB);DAD=17

SSL1@ 211
ALTER CODE PS(C) | D
P1:NO-OP;SPS=1

CODES
(8)
367

OB

NEG
SSL@7 223
NEGATE DEST | D
P2:D←NEG OF B DAD=1@

-NEG
SSL@8 222
OPERATE UPON DEST | R [DEST]
P2:D←∫DAD{DEST} DAD=14

SSL12 253
ALTER CODE PS(C) | D
P1:NO-OP;SPS=1

SSL11 075
ALTER CODES | D
P1:B←D;SPS=3

SSL@9 374
DUPLICATE BYTE;STORE | D
P2:D(15:@8)←B(@7:@@);DAD=13 D(@7:@@)←B(@7:@@) DATOB;CLKOFF;MM=@1
BUT(SERVICE C+FETCH C) BUT 16 @16

NO-OP
(8)

(1)
ROTSHF(R)*DM@

-BYTE

RSR@@ 106
OPERATE UPON DEST | D(C),D(15:@1)
P2:D←R [DF] D(C)←∫ROT(PS(C))+∫SHF(ALU15)
P3:PS(C)←D@@;SPS=1 B←D(C),D(15:@1)

RSR@1 271
STORE DEST | D
P2:D←B
P3:R [DF]←D
BUT(SERVICE B+FETCH OVLAP+FETCHB) BUT 27 @@@

BYTE

RSR@2 107
PUT DEST INTO B | R [DF]
P1:B←R [DF]

RSR@3 272
OPERATE UPON DEST | D(C),D(15:@1)
P2:D(15:@8)←B(@7:@@) D(@7:@@)←B(@7:@@) D(C)←∫ROT(PS(C))+∫SHF(ALU15)
P3:PS(C)←D@@;SPS=1;B←D(C),D(15:@1)

RSR@4 273
DUPLICATE BYTE;STORE | D
P2:D(15:@8)←B(15:@8) D(@7:@@)←B(15:@8)
P3:R [DF]←D
BUT(SERVICE B+FETCH OVLAP+FETCH B) BUT 27 @@@

RSR@5 274
ALTER CODES | R [DF]
P1:ALTER COND CODES;SPS=2 CLKOFF IF OVLAP(1);CLK @

SERVICE B (1@) @@2
FETCH OVLAP (1) @@1
FETCH B (1) @@@

(3)
ROTSHF(R)* -DM@

-BYTE

RSR@6 232
OPERATE UPON DEST | D(C),D(15:@1)
P2:D←B D(C)←∫ROT(PS(C))+∫SHF(ALU15)
P3:PS(C)←D@@;SPS=1 B←D(C),D(15:@1)

RSR@7 275
STORE DEST | D
P2:D←B;DATO;MM=@1

RSR1@ 277
ALTER CODES;FINISH STORE | D
P1:ALTER COND CODES;SPS=2 CLKOFF
BUT(SERVICE C+FETCH C) BUT 16 @16

RSR11 376
NO-OP FOR BUT | D
P1:NO-OP

SERVICE C (1@) @17
FETCH C (1) @16

BYTE

RSR@8 233
OPERATE UPON DEST | D(C),D(15:@1)
P2: D(15:@8)←B(@7:@@) D(@7:@@)←B(@7:@@) D(C)←∫ROT(PS(C))+∫SHF(ALU15)
P3:PS(C)←D@@;SPS=1;B←D(C),D(15:@1)

RSR@9 276
DUPLICATE BYTE;STORE | D
P2:D(15:@8)←B(15:@8);MM=@1 D(@7:@@)←B(15:@8);DATOB

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	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 —

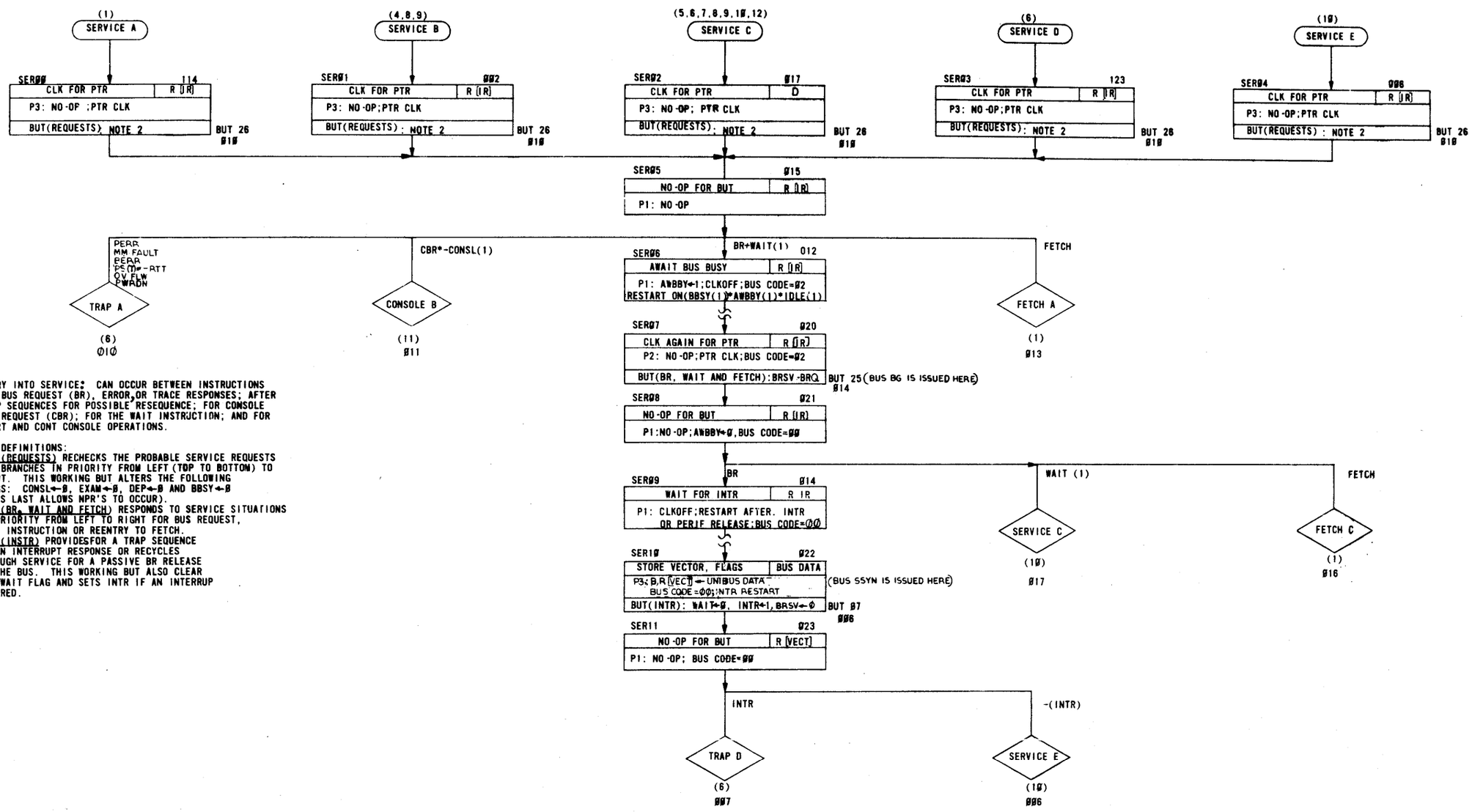
		DATE
DRN		9-15-72
CHK'D		9/25/72
ENG		9/25/72
ENG		9/25/72
PROJ ENG		9-25-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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

NEXT HIGHER ASSY. B-DD-KDII-A
SIZE D | CODE FD | NUMBER KDII-A-FD | REV. B
SCALE —
SHEET 9 OF 12
DIST.

DEC FORM NO DRD 102-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 BOTTON) TO RIGHT. THIS WORKING BUT ALTERS THE FOLLOWING FLAGS: CONSL←0, EXAM←0, DEP←0 AND BBSY←0 (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.

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 —

		DATE
DRN	[illegible]	9-15-72
CHK'D	[illegible]	9/25/72
ENG	[illegible]	9/25/72
PROJ. ENG	[illegible]	9/25/72
PROD. ENG	[illegible]	9/25/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (SERVICE) (10)

NEXT HIGHER ASSY: B-DD-KD11-A

SCALE —

SHEET 10 OF 12

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

DIST.

REVISIONS

REV	CHANGE NO	CHK

DEC FORM NO DRD 102-B

(1,6)
CONSOLE A

CON00 — DISPLAY R[PC] — 122 D
P3: BA ← R[PC]

(6,10)
CONSOLE B

CON01 — DISPLAY R[PC] — 011 D
P3: BA ← R[PC]

CON12 — DISPLAY STATUS — 255 PS
P3: D ← PS ; SPS = 6 ; BUS CODE = 02
BUT(CBR+HALT): CONS ← 1, EXAM ← 0, DEP ← 0 BUT 24 024

CON02 — AWAIT BUS BUSY — 041 D
P3: PS ← D ; CLKOFF; BUS CODE = 02 ; SPS = 7
RESTART ON BBSY(1)*AWBBY(1)*IDLE(1)

CBR (HALT SWITCH)

CON03 — DISPLAY REG — HALT INSTR 024 D
P2: D ← R0

CON04 — TEST FOR SWITCH — 026 D
P3: NO-OP
BUT(SWITCH): CONSL ← 1 BUT 06 026

CON06 — NO-OP FOR BUT — 046 D
P1: NO-OP

~SWITCH

SWITCH

CON07 — CONTACT BOUNCE COUNT — 027 D
P2: D ← (SBC14) WHICH IS ZERO IF SIN CLK

CON08 — TEST COUNT — 044 D
P3: R [TEMPC] ← D
BUT(D=0) BUT 12 044

CON09 — INCREMENT COUNT — 047 D
P2: D ← R[TEMPC] PLUS 1
P3: R [TEMPC] ← D

(D=0)

D=0

CON10 — TEST WHICH SWITCH — 045 R [PC]
P3: NO-OP
BUT(VARIOUS SWITCHES) BUT 30 030

CON11 — LOAD LAST CONS ADRS — 050 R [ADRSC]
P3: D ← R [ADRSC]

LOAD ADRS BEGIN
LOAD ADRS (12) 037
EXAM (12) 035
CONT (12) 036
DEP (12) 034
START(1) (12) 032
NO SWITCH
CONSOLE RECYCLE (11) 030

(POWER UP)
PDRUP*HALT*BEGIN

(11,12)
CONSOLE RECYCLE

(JAMUPP) NODAT = CONSL(1)
START*HALT

CON05 — NO-OP FOR CONSOLE ENTRY — 030 D
P3: NO-OP

CON13 — TEST FOR SWITCH — 315 D
P3: NO-OP
BUT(SWITCH): CONSL ← 1 BUT 06

BUT DEFINITIONS
BUT (CBR+HALT) PROVIDES FOR DIFFERENT DATA DISPLAYS IN THE CONSOLE LOOP: FOR A HALT INSTRUCTION R0 IS SHOWN, OTHERWISE -S 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	CHK
CHANGE: NO		

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 9-15-72
CHK'D — DATE 9/29/72
ENG — DATE 9/25/72
MGR, ENG. — DATE 9/25/72
PROJ. MGR. — DATE 9-21-72

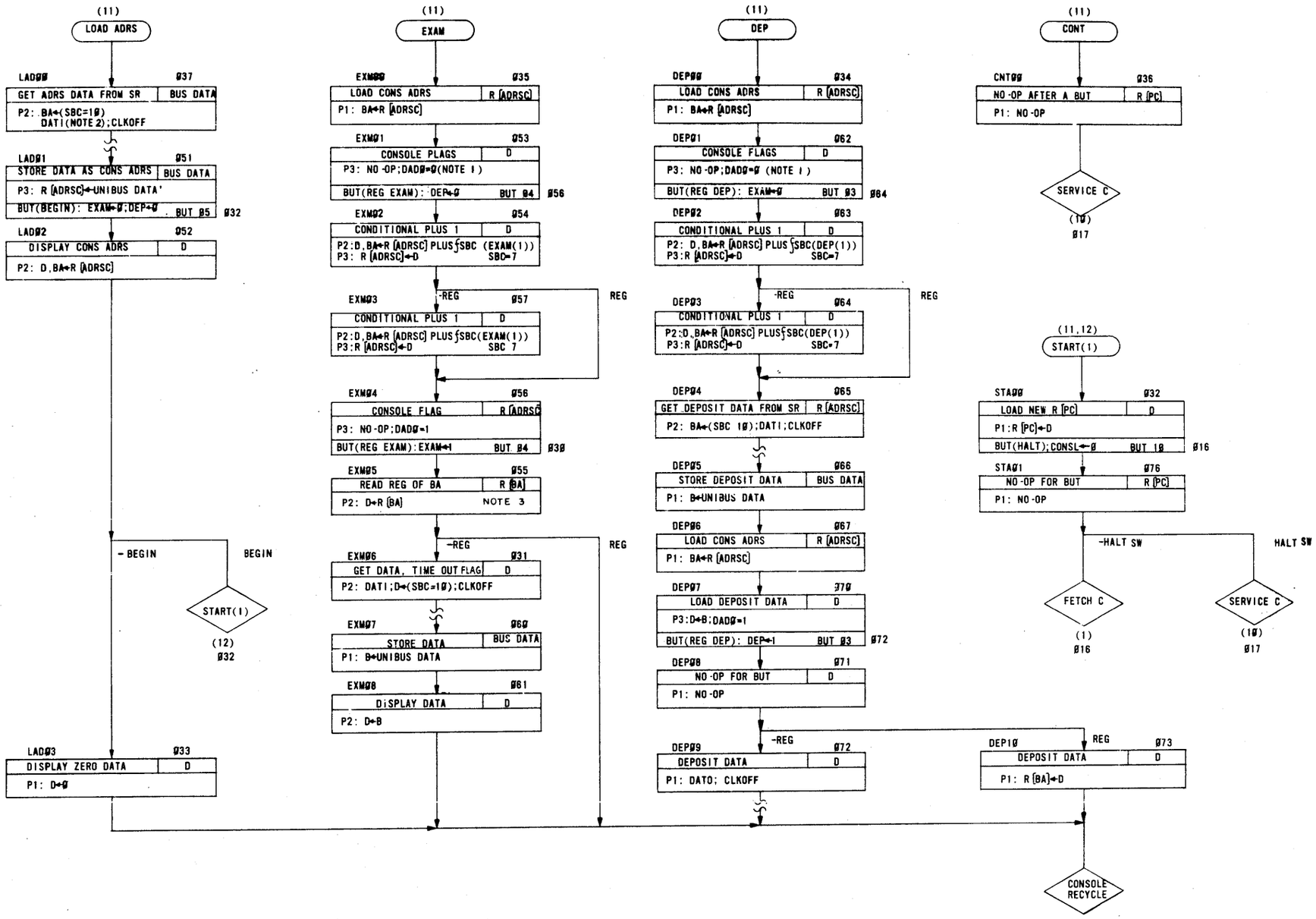
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (CONSOLE LOOP) (11)

NEXT HIGHER ASSY: B-DD-KD11-A
SCALE —
SHEET 11 OF 12

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

DEC FORM NO DRD 102-R



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) RESPONSES 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=10) UNLESS BEGIN SWITCH INPUT IS ACTIVE.
3. REGISTER SELECTION AS A FUNCTION OF BA [03=00].

REVISIONS	CHANGE NO.	REV

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

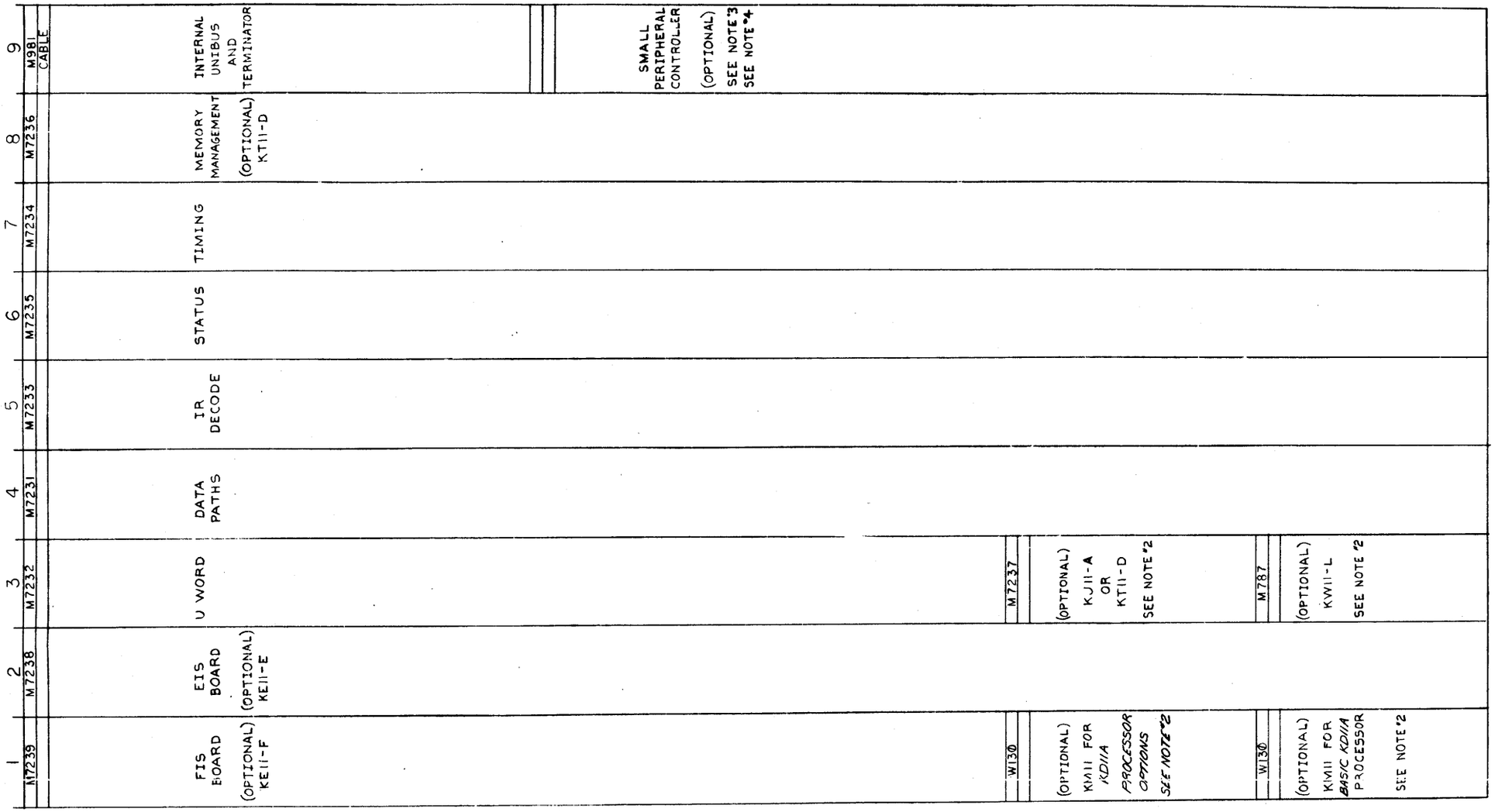
PARTS LIST

MADE BY R. PUDELKO	CHECKED J.F. Loughlin	SECTION
DATE 9/15/72	DATE 9/27/72	
ENG J.F. Loughlin	PROD	ISSUED SECT.
DATE 9/27/72	DATE	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY VARIATION KD11-A
1	D-AD-7010230-0-0	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	SHEET 1 OF 1	A	PL	KD11-A-Ø	A	KD11A-C0011
		DIST	C			

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 VAIRIETY 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 M105 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		
CHK	CHANGE NO.	REV.
TJF	KD11A-00005	A

O'LOUGHLIN 2-15-73

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

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

DRN.		DATE 9-5-72
CHECKED		DATE 9-28-72
ENGR		DATE 9-28-72
PROJ. ENGR		DATE 10-2-72
PROD. ENGR		DATE 9-28-72

NEXT HIGHER ASSY
A-PL-KD11-A-Ø
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

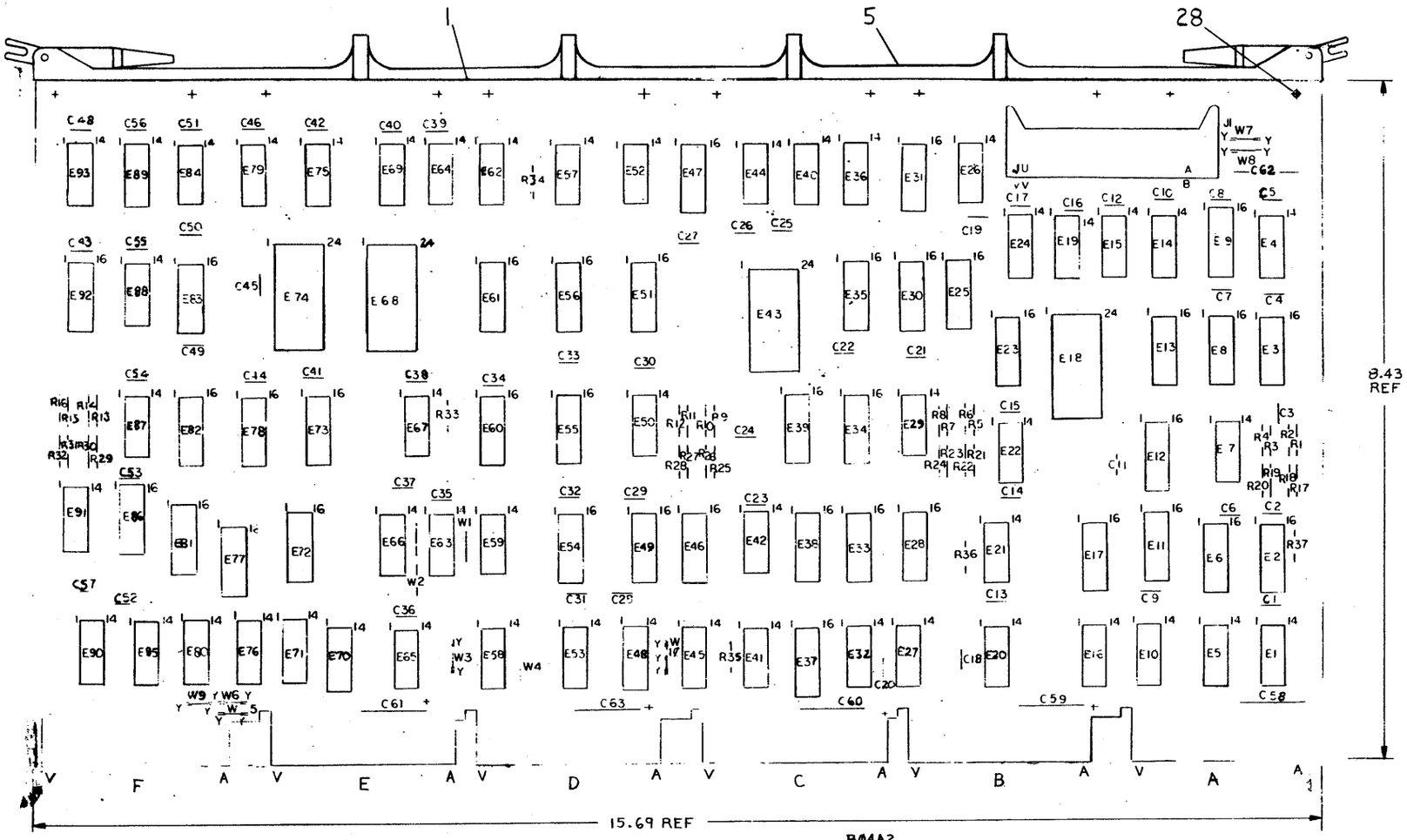
TITLE
MODULE UTILIZATION

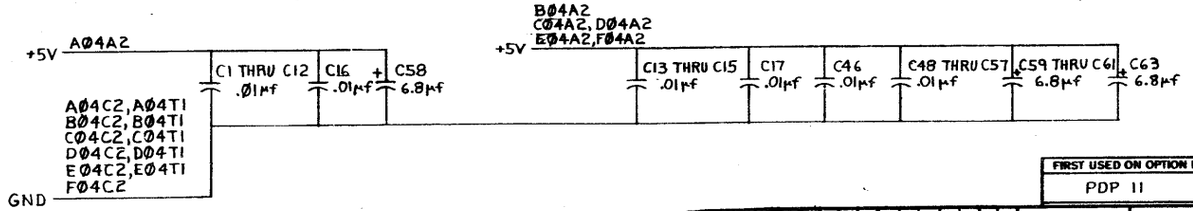
SIZE	CODE	NUMBER	REV.
D	MU	KD11-A-MU	A

DEC FORM NO. DRD 100

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 (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.





AR				
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 8640	1911469	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	1210711-02	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
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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 8640	1	8
IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL: PDP 11

ETCH BOARD REV D

REV	CHANGE NO.	CHK	REVISIONS
A	M7231-00001		ORIGINATED
B			9-26-72
C	M7231-00002		9/27/72
D	M7231-00003		10-11-72

DEC NO. / EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. J. ROGERS 10-28-72
CHKD. J. O'LOUGHLIN 10-11-72
ENGR. J. O'LOUGHLIN 9-22-72
PROJ. ENGR. J. O'LOUGHLIN 9-26-72
PROJECT J. Russell 9/27/72
DATE 7-6-72 / 7/31/72 / 7/31/72 / 7/31/72 / 10-7-72

NEXT HIGHER ASSY KD11-A

SCALE

SHEET 1 OF 9

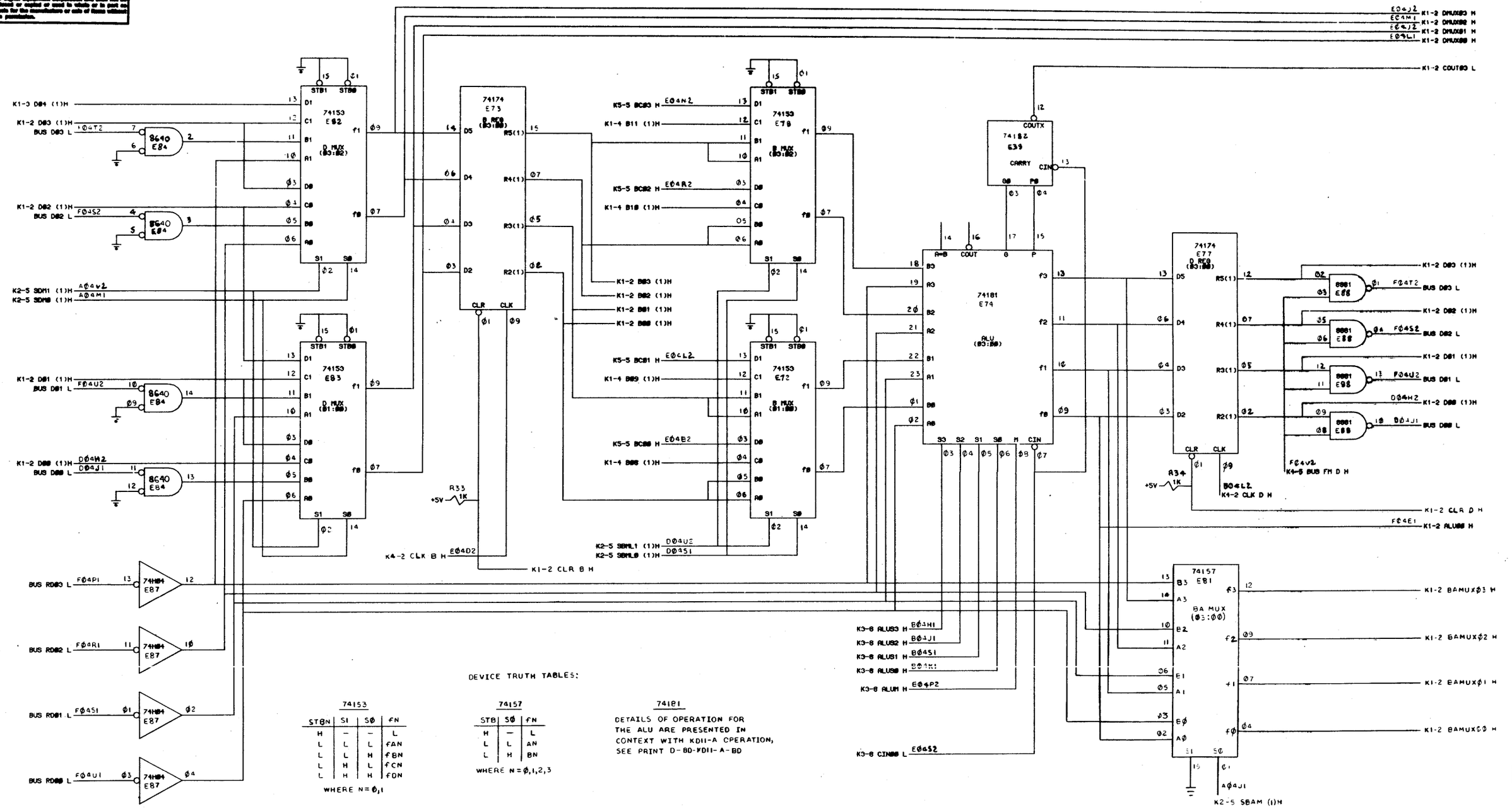
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DATA PATHS KI-1

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

DIST.

DEC FORM NO. SD-135A



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

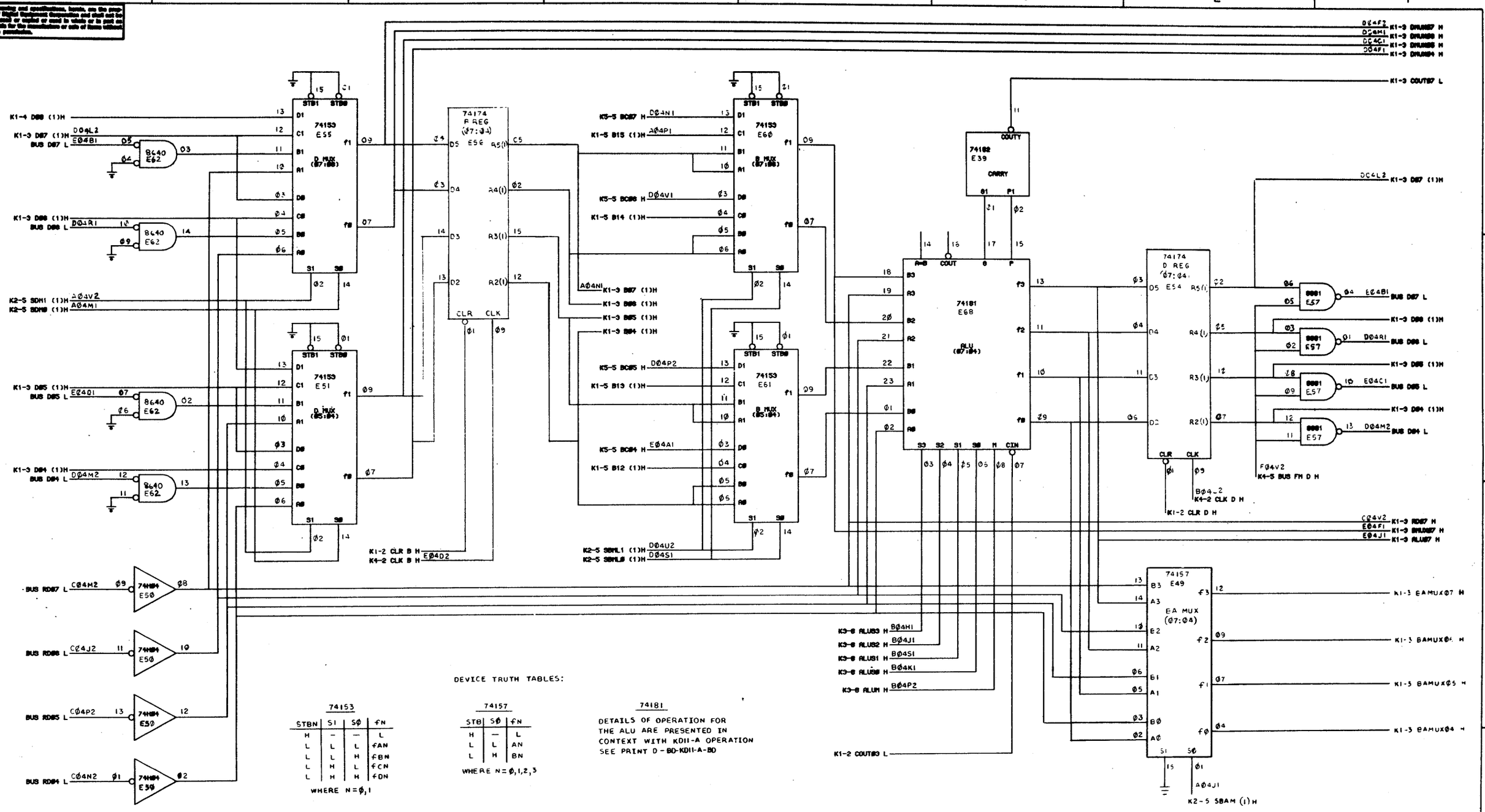
DETAILS OF OPERATION FOR THE ALU ARE PRESENTED IN CONTEXT WITH KDII-A OPERATION, SEE PRINT D-BD-KDII-A-BD

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
BREAK EDGES AND BREAK SHARP CORNERS
MATERIAL
FINISH
DRN
CHK
ENG
MFG
FIRST USED ON
PDP11
SCALE
SHEET 2 OF 9

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DATA PATHS
DATA PATHS (B3:B0) K1-2

CODE D CS NUMBER M7231-0-1 REV. D
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-KDII-A-BD

UNLESS OTHERWISE SPECIFIED	DRAWN	DATE 7-31-72	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
DIMENSIONS IN INCHES	CHECKED	DATE 7/31/72	TITLE: DATA PATHS
TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'	ENGR	DATE 7/31/72	DATA PATHS (Ø7:Ø4) K1-3
FINISH: SURFACE QUALITY ✓	MFG	DATE 7/31/72	SIZE D, CAGE CS, NUMBER M7231-0-1, REV D
MATERIAL	QUAL	DATE 8-1-72	SCALE
FINISH	FIRST USED ON FSP11		SHEET 3 OF 9, DIST.

74153 E34 D MUX (11:10)
74153 E35 D MUX (09:08)
74153 E37 B MUX (09:08)
74153 E38 B MUX (11:10)
74174 E30 B REG (11:08)
74174 E31 D REG (11:08)
74181 E43 ALU (11:00)
74182 E39 CARRY
74157 E28 BA MUX (11:08)
8640 E36
8640 E36
8640 E36
74H64 E29
74H64 E29
74H64 E29
74H64 E29
8881 E40
8881 E40
8881 E40
8881 E40

K1-5 D12 (1)H
K1-4 D11 (1)H
BUS D11 L
K1-4 D10 (1)H
BUS D10 L
K1-4 D09 (1)H
BUS D09 L
K1-4 D08 (1)H
BUS D08 L
K2-5 SDM1 (1)H
K2-5 SDM0 (1)H
BUS RD11 L
BUS RD10 L
BUS RD09 L
BUS RD08 L
K1-2 CLR B H
K4-2 CLK B H
K5-5 BC (11:08)H
K1-2 B09 (1)H
K1-2 B02 (1)H
K1-4 B11 (1)H
K1-4 B10 (1)H
K1-4 B09 (1)H
K1-4 B08 (1)H
K1-2 B01 (1)H
K1-2 B06 (1)H
K1-3 B07 (1)H
K5-5 BC (15:12,10:09)H
K2-5 SBM1 (1)H
K2-5 SBM0 (1)H
K3-6 ALUS3 H
K3-6 ALUS2 H
K3-6 ALUS1 H
K3-6 ALUS0 H
K3-6 ALUM H
K1-3 COUT07 L
K1-4 COUT11 L
K1-2 CLR D H
K4-2 CLK D H
K2-5 SBAM (1) H
K1-4 BAMUX11 H
K1-4 BAMUX10 H
K1-4 BAMUX09 H
K1-4 BAMUX08 H
K1-4 D11 (1)H
SUB D11 L
K1-4 D10 (1)H
SUB D10 L
K1-4 D09 (1)H
SUB D09 L
K1-4 D08 (1)H
SUB D08 L
K1-5 SUB FM D H

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 KD11-A OPERATION SEE PRINT D-BD-KD11-A-BD

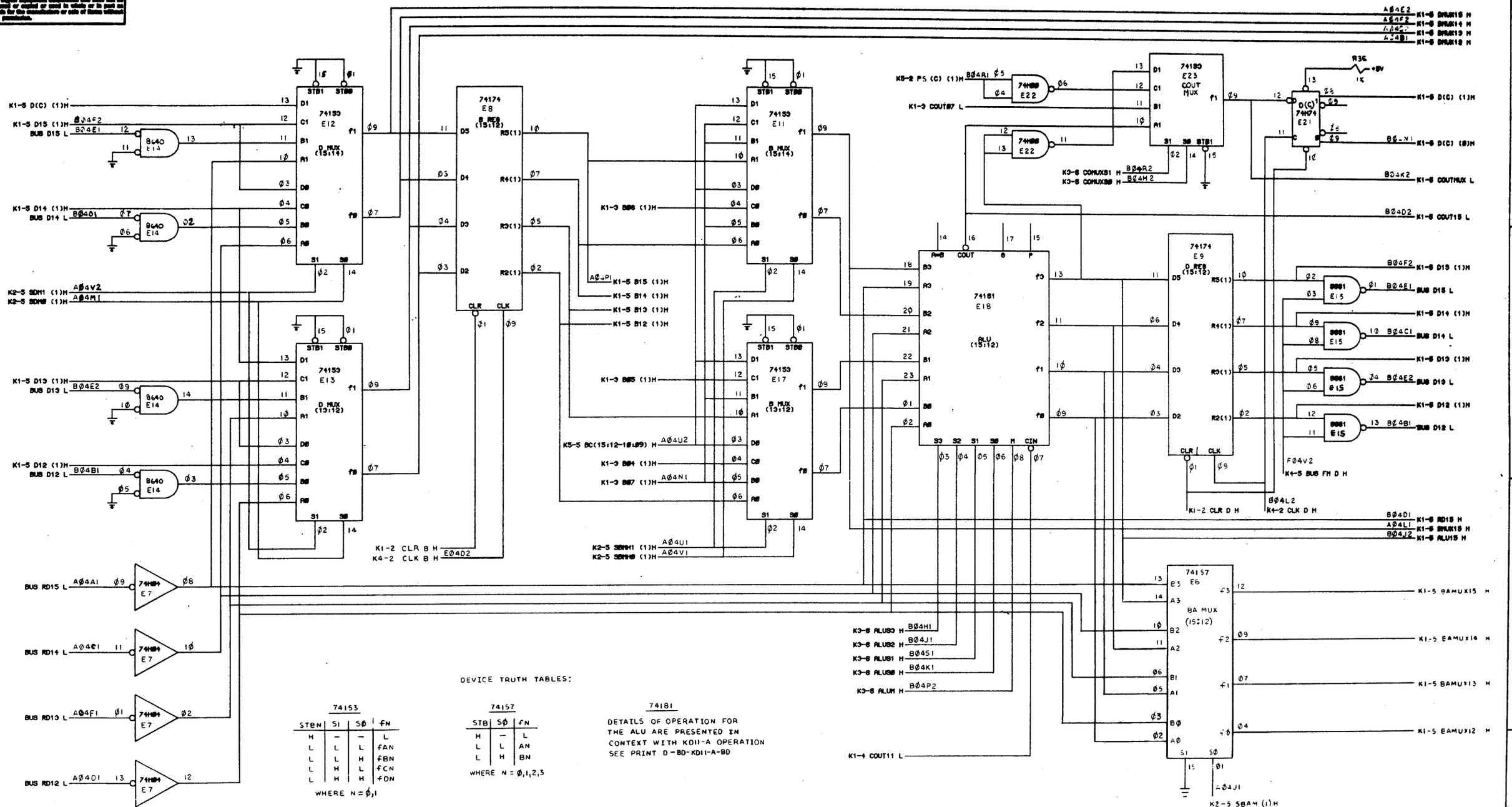
UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH
DES. DATE 1-27-72
CHECK DATE 7/31/72
ENGR DATE 7/31/72
PROJECT DATE 7/31/72
MFG DATE 8-1-72
FIRST USED ON
PDP11
SCALE
SHEET 4 OF 9

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DATA PATHS
DATA PATHS (11:00) K1-4

SIZE	NUMBER	REV.
D	MP391-0-1	D

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 = 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 KD11-A OPERATION SEE PRINT D-BD-KD11-A-BD

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 1-25-72
CHECKED [illegible] DATE 7/31/72
ENGR [illegible] DATE 7/31/72
PROJ. ENGR [illegible] DATE 7/31/72
PROJ. MGR [illegible] DATE 8-7-72

FIRST USED ON
PDP11

SCALE
SHEET 5 OF 9

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DATA PATHS
DATA PATHS (15:08) K1-5

SIZE	CODE	NUMBER	REV.
D	CS	7231-0-1	D

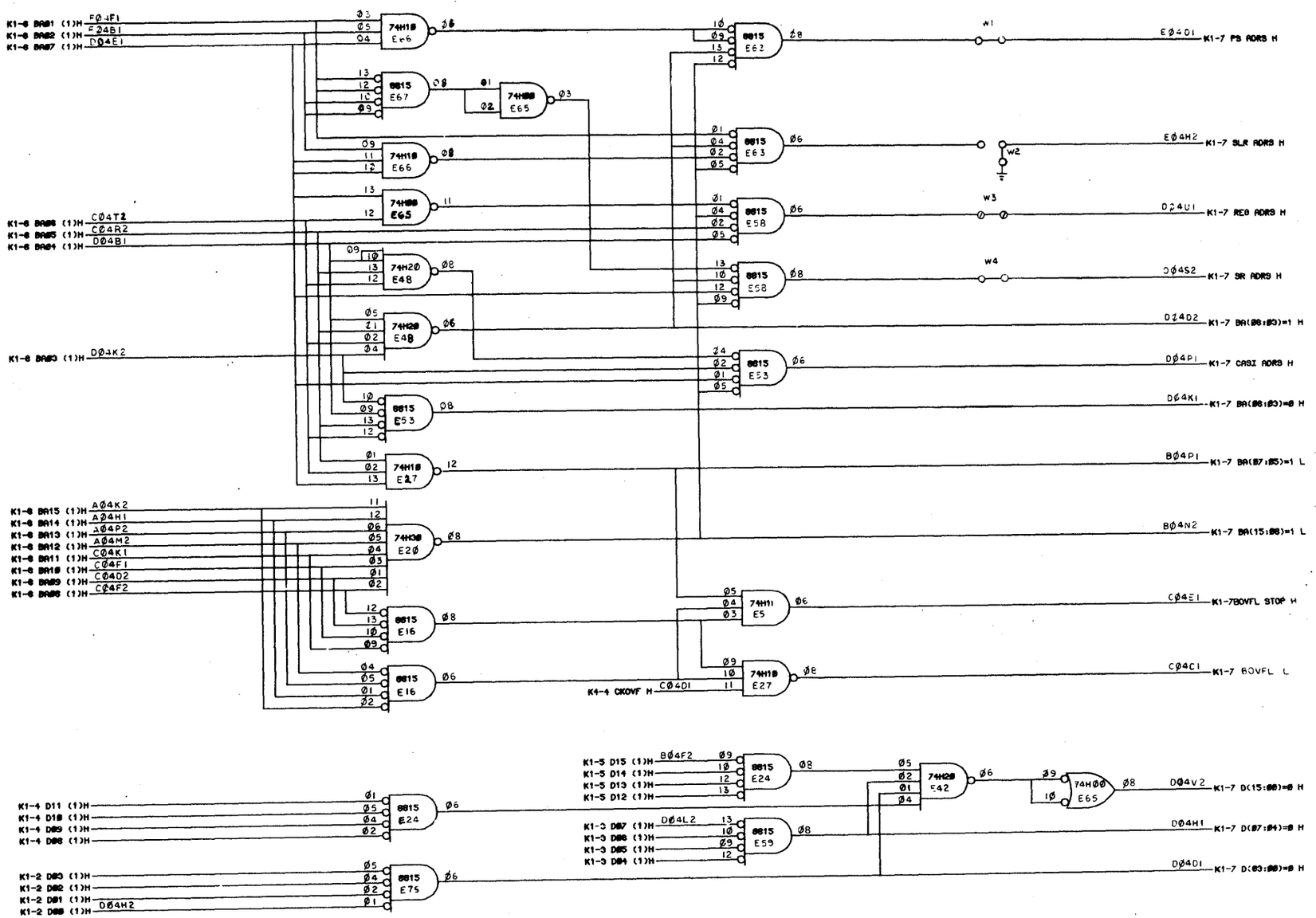
DIST.

74174 E2 BA(15:12)
K1-5 BAMUX15 H
K1-5 BAMUX14 H
K1-5 BAMUX13 H
K1-5 BAMUX12 H
+5V R37 1K
74H11 E5
8881 E10
8881 E1
74174 E33 BA(11:08)
K1-4 BAMUX11 H
K1-4 BAMUX10 H
K1-4 BAMUX09 H
K1-4 BAMUX08 H
8881 E32
74174 E46
K1-3 BAMUX07 H
K1-3 BAMUX06 H
8881 E45
74174 E46 BA(05:04)
K1-3 BAMUX05 H
K1-3 BAMUX04 H
74174 E86 BA(03:00)
K1-2 BAMUX03 H
K1-2 BAMUX02 H
K1-2 BAMUX01 H
K1-2 BAMUX00 H
8881 E91
K5-8 INIT2 L
K4-2 CLK BA H
K4-5 BUS FM BA H
W1Ø
NOTE: JUMPER W1Ø 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 BA1Ø (1) H
CØ4H1 BUS A1Ø L
CØ4D2 K1-6 BAØ9 (1) H
CØ4E2 BUS AØ9 L
CØ4F2 K1-6 BAØ8 (1) H
CØ4J1 BUS AØ8 L
DØ4E1 K1-6 BAØ7 (1) H
DØ4A1 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 DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND SHARP CORNERS
MATERIAL
FINISH
DRN R. Brodeur DATE 2-10-72
CHKD DATE 7/31/72
ENGR DATE 7/31/72
MFG DATE 7/31/72
QA DATE 8-1-72
FIRST USED ON PDP11
SCALE
SHEET 6 OF 9

EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE DATA PATHS BA (15:08) K1-6
SIZE D CODE CS NUMBER M7831-0-1 REV. D
DIST.



PROCESSOR ADDRESSES

NAME & MNEMONICS			(ADRS)8
PROCESSOR STATUS		PS	777776
STACK LIMIT REGISTER		SLR	777774
GENERAL REGISTERS			
REGISTERS USED TO IMPLEMENT MICROFLOW	R [ADAS]	REG 17	777717
	R [GP USER]	REG 16	777716
	R [TEMP]	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 PDP11	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
CONSOLE 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 06 TO E04H2 FOR KJII-A OPTION ALONE. JUMPER IS COMPLETELY REMOVED FOR KTII-D OPTION.

UNLESS OTHERWISE SPECIFIED	DRN		DATE
DIMENSION IN INCHES	CHKD		DATE 7/31/72
TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'	ENGR		DATE 7/31/72
FINISH: SURFACE QUALITY 125 MICRO INCHES AND BREAK SHARP CORNERS	PROJ ENG		DATE 7/31/72
MATERIAL	PROJ		DATE 8-1-72
FINISH	FIRST USED ON: PDP11		
	SCALE		
	SHEET 7 OF 9		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

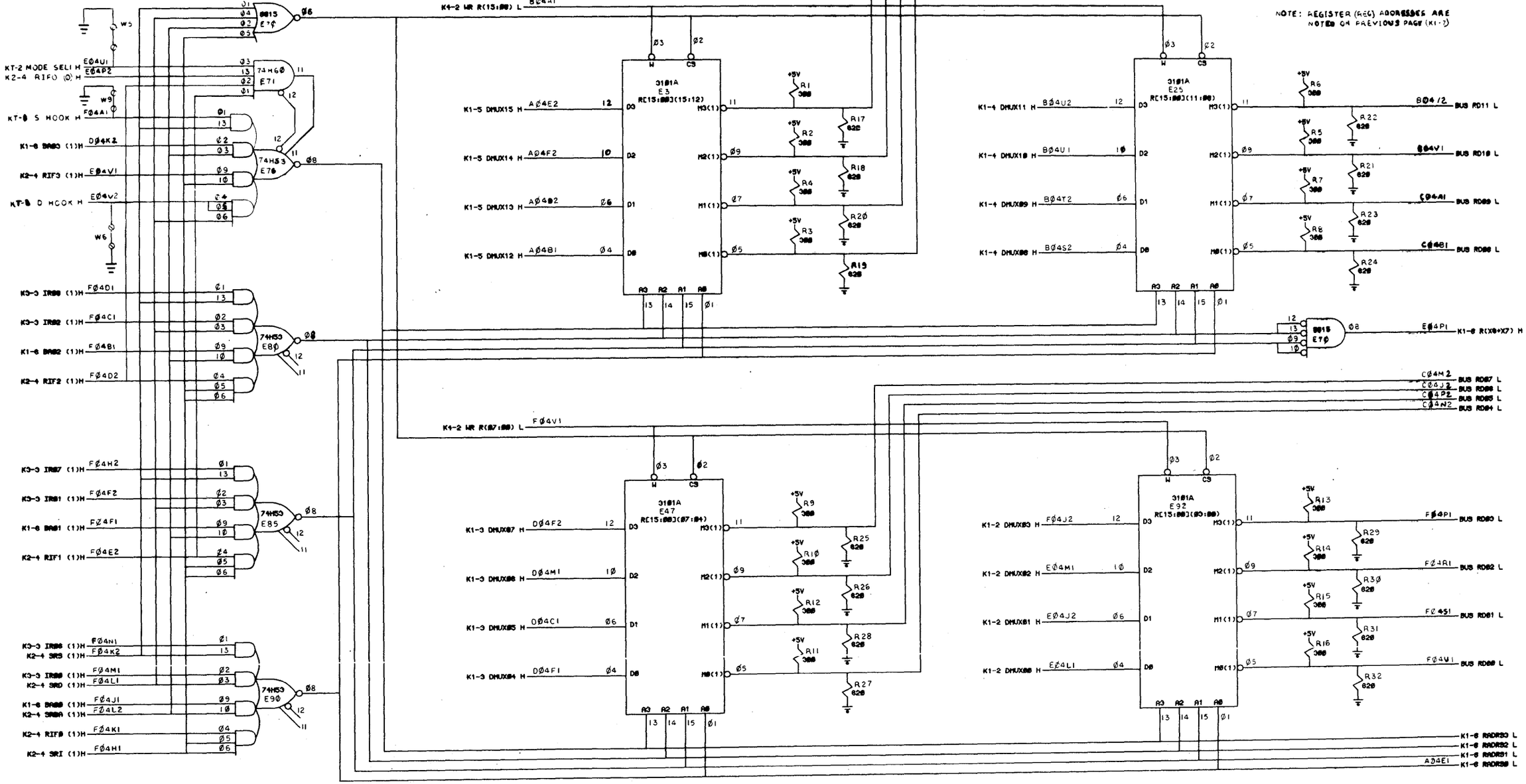
TITLE: DATA PATH
ADRS DECODE K1-7

SIZE	CODE	NUMBER	REV
D	CS	M7231-0-1	D

DIST.

NOTE: JUMPERS W5, W6 AND W9 ARE REMOVED FOR KT11-D OPTION

NOTE: REGISTER (REG) ADDRESSES ARE NOTED ON PREVIOUS PAGE (K1-7)



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. S. Pinchbeck	DATE 1-21-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
MATERIAL	CHK'D.	DATE 7/31/72	TITLE: DATA PATHS REG[15:08](15:00) K1-6	
FINISH	ENGR.	DATE 7/31/72		
	QUAL ENG.	DATE 7/31/72		
	MFG.	DATE 8-1-72		
	FIRST USED ON: PDP11		SIZE D; CODE C9; NUMBER M7231-0-1; REV. D	
	SCALE		DIST.	
	SHEET 8 OF 9			

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

J1 BC08R CABLE, SHIELD TOWARD BOARD, TO J1 OF KYII-D CONSOLE

K1-5 DMUX15 H A04E2 — 8640 E4 — K1-9 DMUX15 L
K1-5 DMUX14 H A04F2 — 8640 E4 — K1-9 DMUX14 L
K1-5 DMUX13 H A04D2 — 8640 E4 — K1-9 DMUX13 L
K1-5 DMUX12 H A04B1 — 8640 E4 — K1-9 DMUX12 L
K1-4 DMUX11 H B04U2 — 8640 E26 — K1-9 DMUX11 L
K1-4 DMUX10 H B04U1 — 8640 E26 — K1-9 DMUX10 L
K1-4 DMUX09 H B04T2 — 8640 E26 — K1-9 DMUX09 L
K1-4 DMUX08 H B04S2 — 8640 E26 — K1-9 DMUX08 L
K1-3 DMUX07 H D04F2 — 8640 E52 — K1-9 DMUX07 L
K1-3 DMUX06 H D04M1 — 8640 E52 — K1-9 DMUX06 L
K1-3 DMUX05 H D04C1 — 8640 E52 — K1-9 DMUX05 L
K1-3 DMUX04 H D04F1 — 8640 E52 — K1-9 DMUX04 L
K1-2 DMUX03 H F04J2 — 8640 E93 — K1-9 DMUX03 L
K1-2 DMUX02 H E04M1 — 8640 E93 — K1-9 DMUX02 L
K1-2 DMUX01 H E04J2 — 8640 E93 — K1-9 DMUX01 L
K1-2 DMUX00 H E04L1 — 8640 E93 — K1-9 DMUX00 L

K1-6 BA(17:16) H A04S2 — 8881 E10 — W7 / W8 — K1-9 BA(17:16) L
KYD-3 SR17 H — B04M1 — K1-9 SR17 H
KYD-3 SR16 H — B04L1 — K1-9 SR16 H

KYD-3 SR15 H — K1-9 DMUX15 L
KYD-3 SR14 H — K1-9 DMUX14 L
KYD-3 SR13 H — K1-9 DMUX13 L
KYD-3 SR12 H — K1-9 DMUX12 L
KYD-3 SR11 H — K1-9 DMUX11 L
KYD-3 SR10 H — K1-9 DMUX10 L
KYD-3 SR09 H — K1-9 DMUX09 L
KYD-3 SR08 H — K1-9 DMUX08 L
KYD-3 SR07 H — K1-9 DMUX07 L
KYD-3 SR06 H — K1-9 DMUX06 L
KYD-3 SR05 H — K1-9 DMUX05 L
KYD-3 SR04 H — K1-9 DMUX04 L
KYD-3 SR03 H — K1-9 DMUX03 L
KYD-3 SR02 H — K1-9 DMUX02 L
KYD-3 SR01 H — K1-9 DMUX01 L
+5V — C62 6.8 MFD
KYD-3 SR00 H — K1-9 DMUX00 L

K1-6 BUS FM SR H B04F1

BUS D15 L — B04E1
BUS D14 L — B04
BUS D13 L — B04E2
BUS D12 L — B04B1
BUS D11 L — C04M2
BUS D10 L — C04N1
BUS D09 L — C04R1
BUS D08 L — C04P1
BUS D07 L — C04B1
BUS D06 L — D04R1
BUS D05 L — E04C1
BUS D04 L — D04M2
BUS D03 L — F04T2
BUS D02 L — F04S2
BUS D01 L — F04U2
BUS D00 L — D04J1

K2-3 BUPP8 H C04K2
K2-3 BUPP7 H E04N1
K2-3 BUPP6 H D04T2
K2-3 BUPP5 H E04K1
K2-3 BUPP4 H E04R1
K2-2 BUPP3 H E04K2
K2-2 BUPP2 H E04M2
K2-2 BUPP1 H E04T2
K2-2 BUPP0 H E04U2
K4-2 P END H E04F2

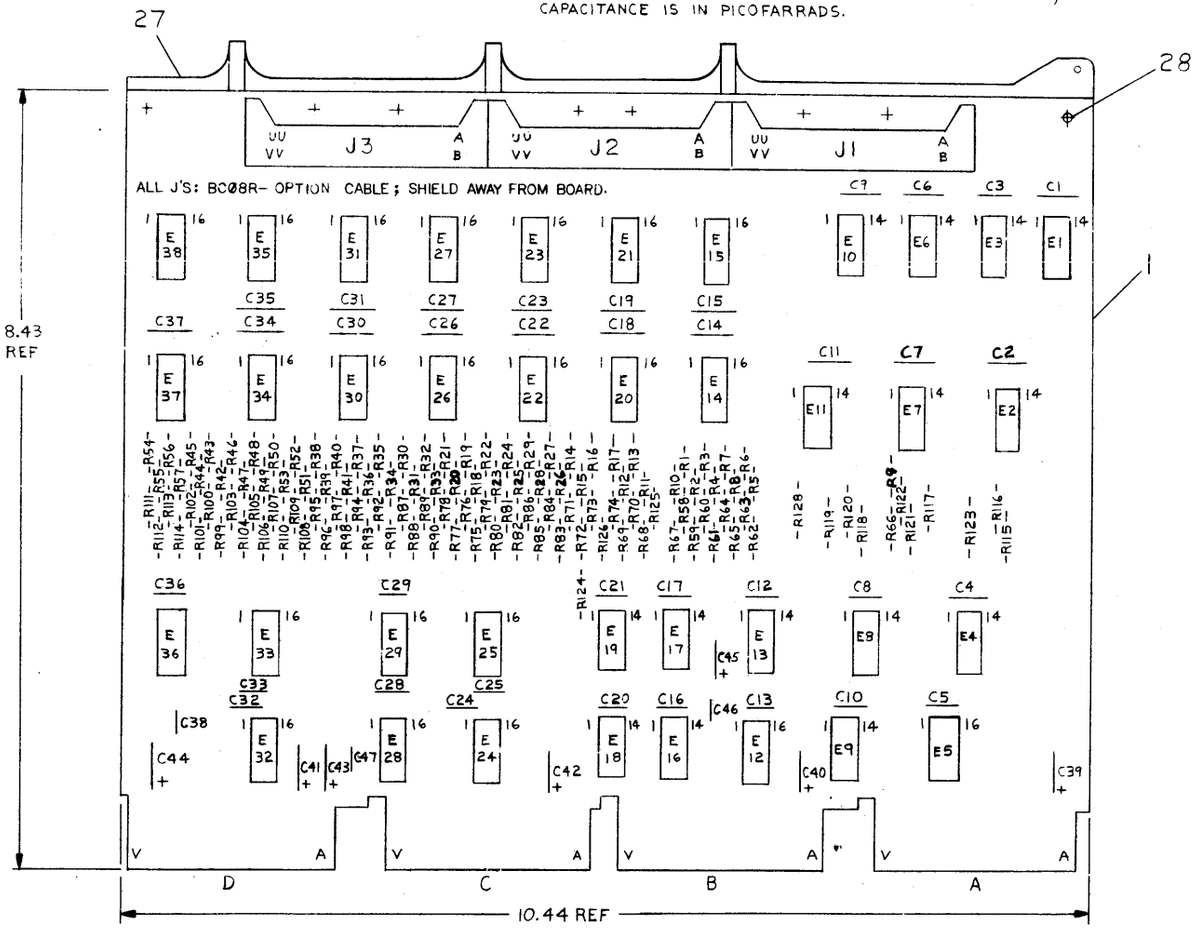
8242 E41 / E69 / E79 — R35 1K +5V
74H08 E65

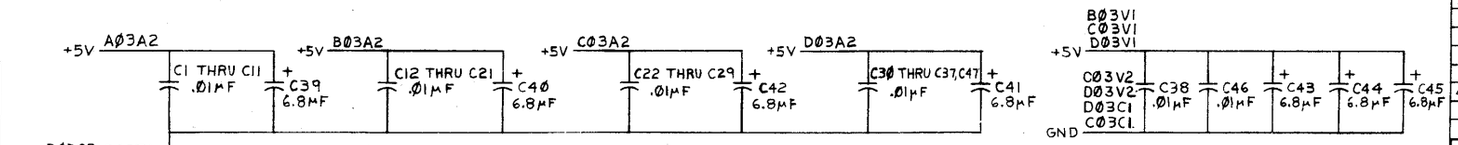
C04L2 — K1-9 UPP MATCH H
E04E2 — K1-9 P MATCH L

UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY ✓; REMOVE BURRS AND BREAK SHARP CORNERS	DRN	DATE 2-9-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				
	CHK	DATE 7/31/72					
	ENGR	DATE 7/31/72	TITLE: DATA PATHS; CONSOLE & MATCH K1-9				
	PROJ. ENGR	DATE 7/31/72					
	MFG	DATE 8-7-72					
MATERIAL	FIRST USED ON: PDP11		SIZE D	CODE CS	NUMBER M7231-0-1	REV. D	
FINISH	SCALE		DIST.				
	SHEET 9 OF 9						

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 (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.
1		ETCHED CIRCUIT BOARD	5009981	1
40	C1 THRU C38, C46, C47	CAP .01MF 100V ±20% DISC	1001610	2
7	C39 THRU C45	CAP 6.8MF 35V ±10% TANT	1005306	3
57	R58 THRU R114	RES. 390 1/4W ±5%	1300309	5
57	R1 THRU R57	RES. 680 1/4W ±5%	1301424	6
13	R115 THRU R126, R128	RES. 1K 1/4W ±5%	1300365	7
3	J1, J2, J3	CONN. 40 PIN	1209941	4
3	E2, E7, E11	I.C. DEC 74H10	1909057	8
9	E1, E3, E6, E9, E10, E18 E19, E16, E17	I.C. DEC 74H74	1909667	9
3	E4, E8, E13	I.C. DEC 74H04	1909931	10
8	E5, E12, E24, E25, E28 E29, E32, E33	I.C. DEC 74174	1910652	11
1	E36	I.C. DEC 74175	1910651	12
1	E15	I.C. DEC 23B00A2	23B00A2	13
1	E14	I.C. DEC 23B01A2	23B01A2	14
1	E20	I.C. DEC 23B02A2	23B02A2	15
1	E27	I.C. DEC 23B03A2	23B03A2	16
1	E26	I.C. DEC 23B41A2	23B41A2	17
1	E23	I.C. DEC 23B42A2	23B42A2	18
1	E22	I.C. DEC 23B06A2	23B06A2	19
1	E27	I.C. DEC 23B07A2	23B07A2	20
1	E30	I.C. DEC 23B08A2	23B08A2	21
1	E31	I.C. DEC 23B35A2	23B35A2	22
1	E34	I.C. DEC 23B12A2	23B12A2	25
1	E35	I.C. DEC 23B11A2	23B11A2	24
1	E37	I.C. DEC 23B10A2	23B10A2	23
1	E38	I.C. DEC 23B40A2	23B40A2	26
1		HANDLE	7409871	27
1		EYELET	9006732	28

PARTS LIST

ETCH BOARD REV E

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

FIRST USED ON OPTION MODEL: PDP 11

REV	CHANGE NO.	CHK	
F			
E	M7232-00003	J.O'LOUGHLIN	11/14/72
D	M7232-00002	J.O'LOUGHLIN	11-17-72
C	M7232-00001	J.O'LOUGHLIN	9/22/72
B	ORIGINATE	J.O'LOUGHLIN	9/9/72

REVISIONS

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.

DRN. J. BUZYNSKI 8-10-73
CHK'D A. FURTADO 8-3-73
ENG. M7232-00004 6/14/73
PROJ. ENG. J.O'LOUGHLIN 9/22/72
PROD. J.O'LOUGHLIN 9/9/72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: U WORD K2-1

NEXT HIGHER ASSY: KD11-A

SCALE

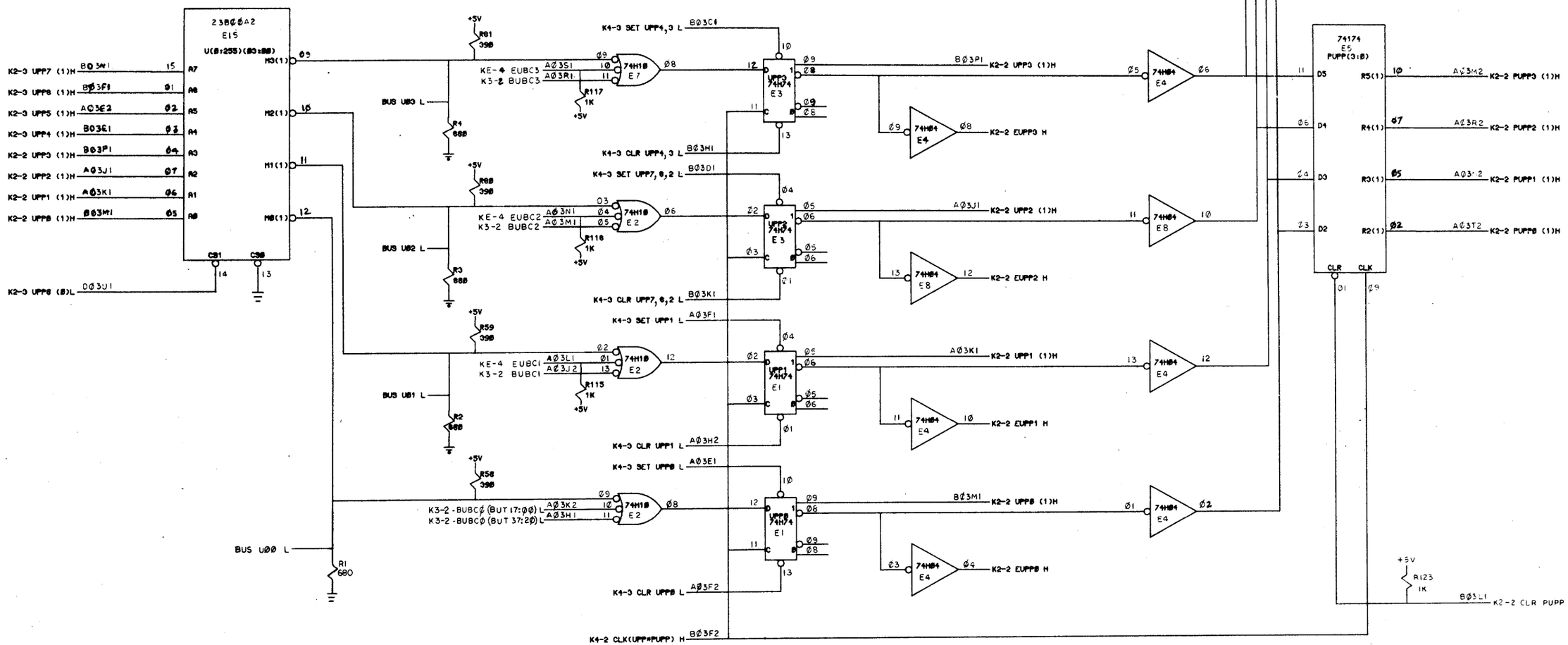
SHEET 1 OF 12

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

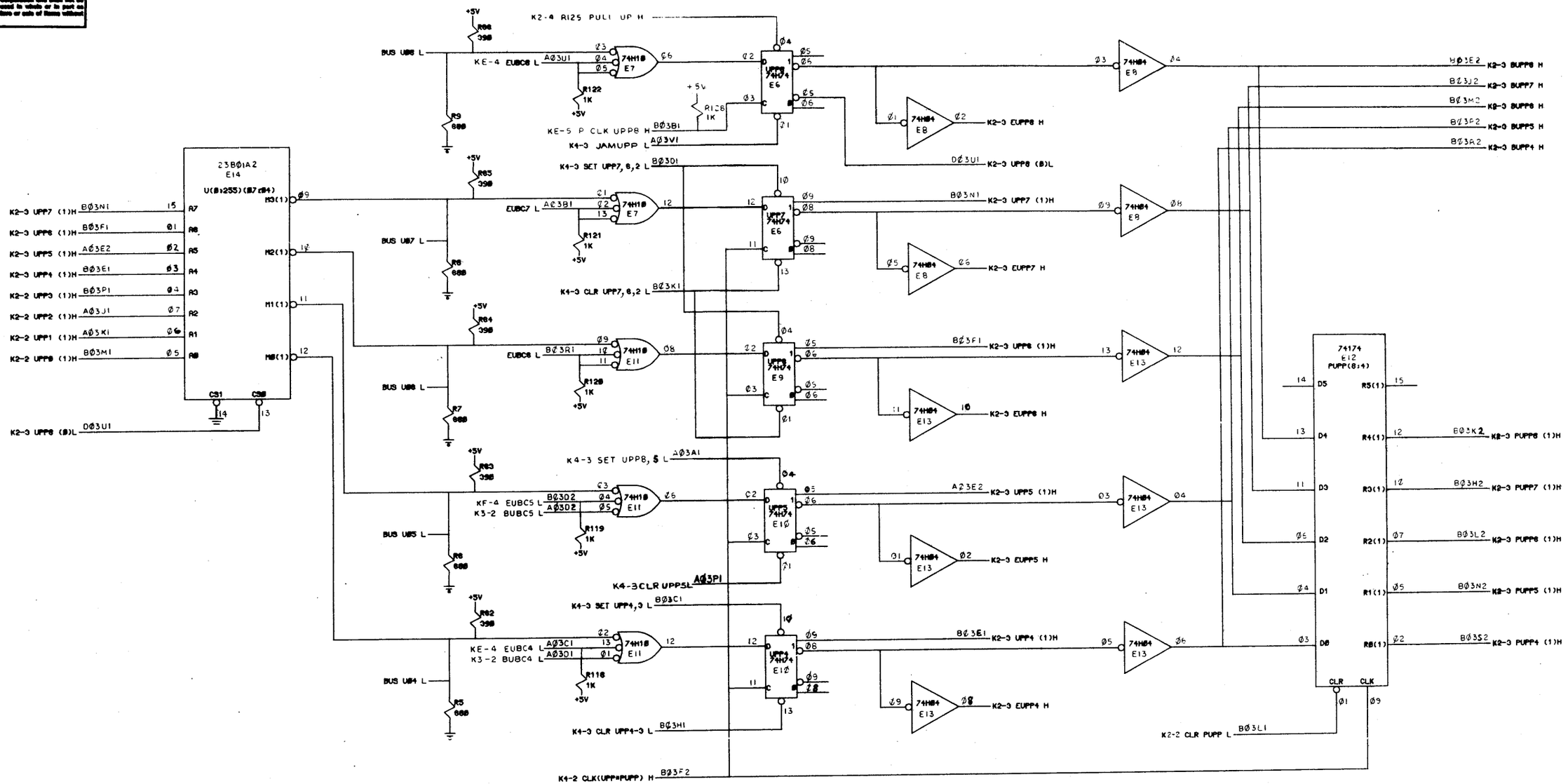
DIST.

DEC FORM NO. DRD-135A

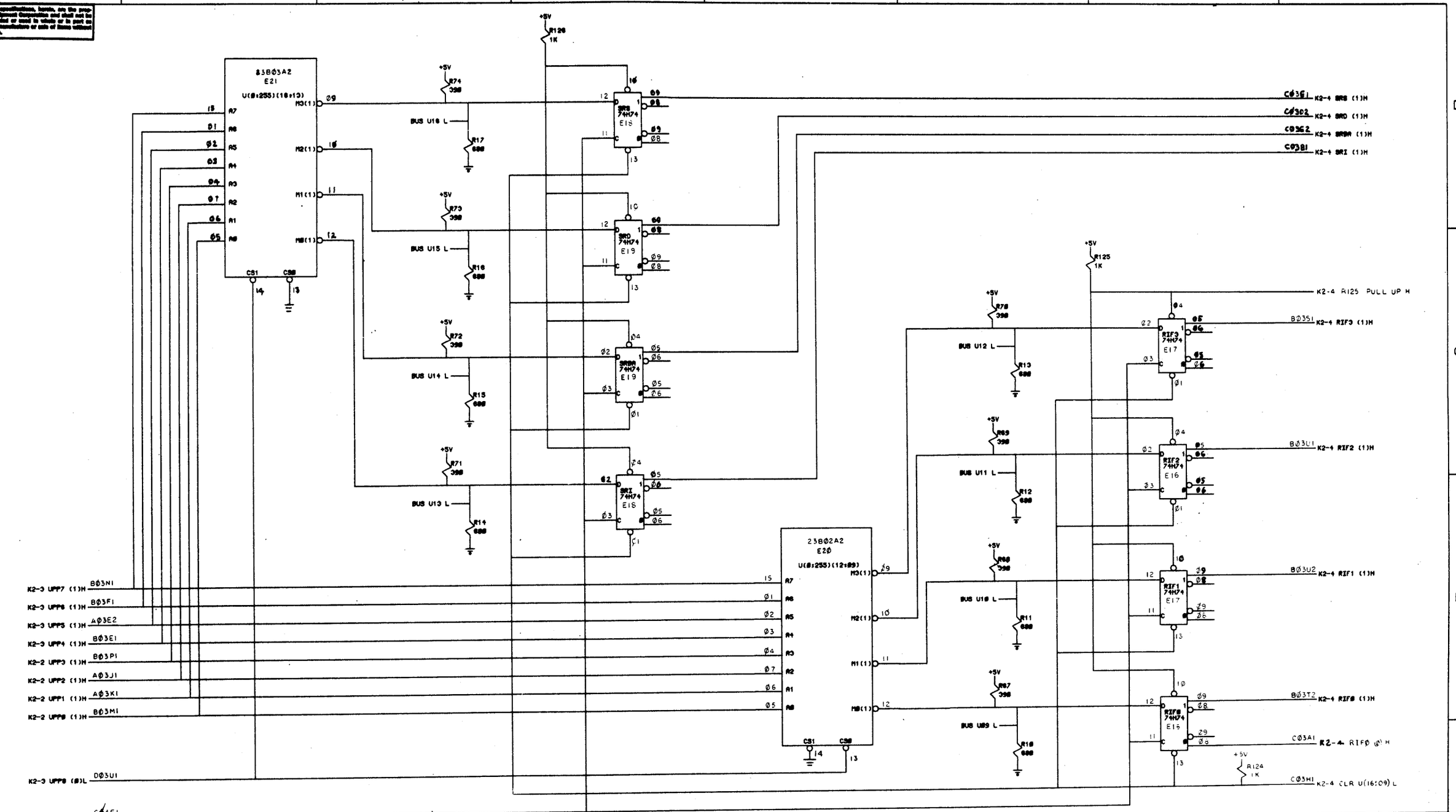
BRUNING 40-522 16699



UNLESS OTHERWISE SPECIFIED	DRN. L. Rudelitz	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 2/11/72	TITLE U WORD U(80:88) K2-2
	ENG.	DATE 2/18/72	
	PROJ. ENG.	DATE 2/21/72	
MATERIAL	PROD.	DATE 2/21/72	
FINISH	FIRST USED ON PDP11		SIZE D CODE CS NUMBER M7232-B-1 REV. F
	SCALE		DIST.
	SHEET 2 OF 12		



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 2/14/72	TITLE U WORD, U(B7:B4) K2-3
MATERIAL	ENG	DATE 2/14/72	
FINISH	FINAL ENG.	DATE 2/16/72	
	PROD.	DATE 6/30/72	
	FIRST USED ON PDP11		SIZE D CODE C3 NUMBER M7232-B-1 REV. F
	SCALE		DIST.
	SHEET 3 OF 12		



UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINISH SURFACE QUALITY REMOVE SHARP EDGES AND BREAK SHARP CORNERS MATERIAL FINISH	DRN	DATE 12-2-72	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
	CHKD	DATE 12/6/72	TITLE U WORD U(16:09) K2-4
	ENGR	DATE 12/6/72	
	MFG	DATE 12/6/72	
	QUAL	DATE 12/6/72	
	FIRST USED ON PDP11		SIZE D CODE CS MODULE M7238-0-1 REV. F
	SCALE —		DIST.
	SHEET 4 OF 12		

23B06A2
E22
U(8:255)(20:25)

74174
E24
SBMH:SBML

23B42A2
E23
U(8:255)(24:21)

74174
E24
SDM1:SDM8

74174
E25
SBM8:UBF8

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

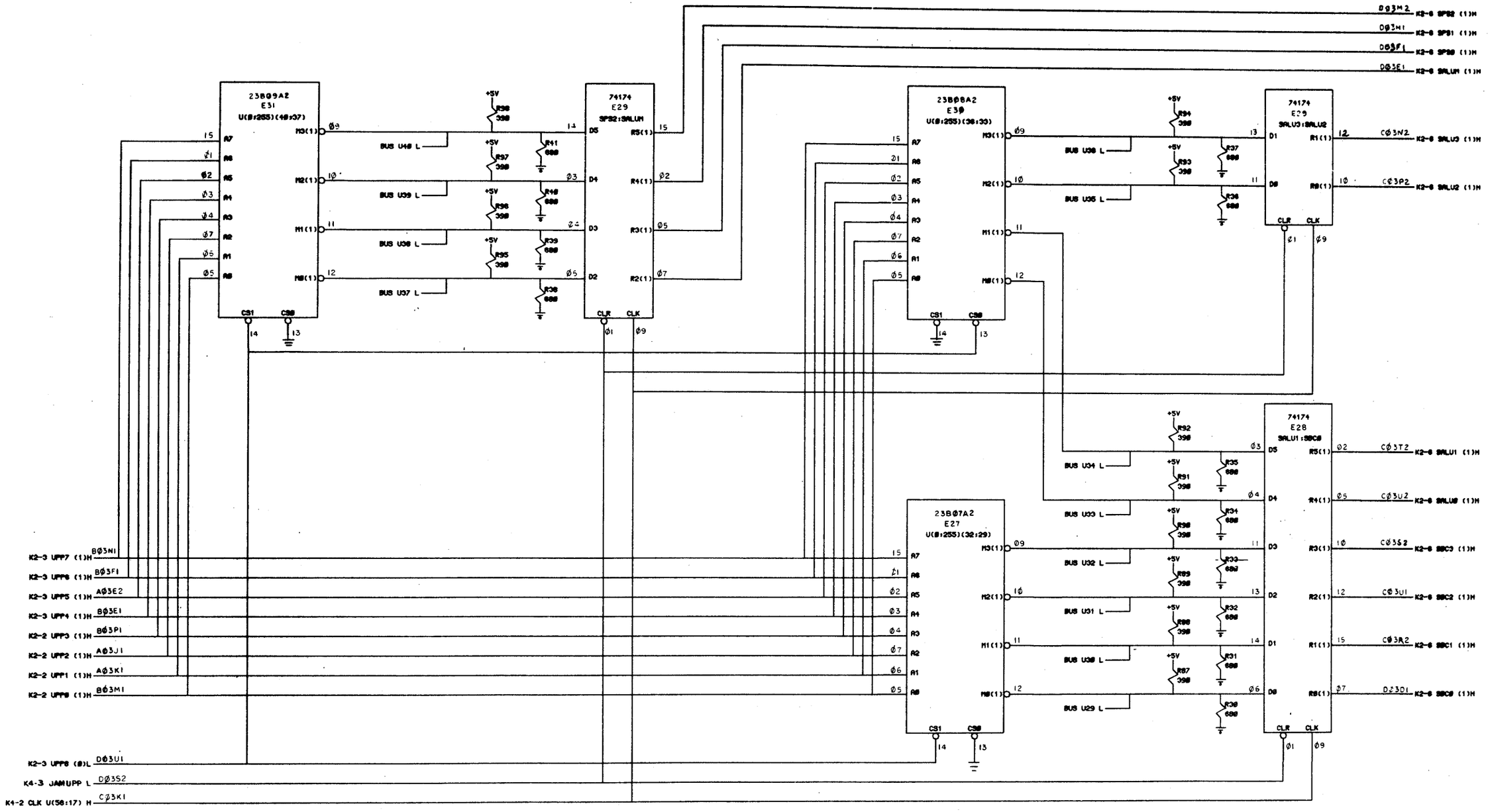
BUS U28 L
BUS U27 L
BUS U26 L
BUS U25 L
BUS U24 L
BUS U23 L
BUS U22 L
BUS U21 L
BUS U20 L
BUS U19 L
BUS U18 L
BUS U17 L

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
K4-3 JAMUPP L D03S2
K4-2 CLK U(58:17) H C03K1

K2-5 SBMH1 (1)H C03N1
K2-5 SBMH8 (1)H C03M1
K2-5 SBML1 (1)H C03L1
K2-5 SBML8 (1)H C03J1
K2-5 SDM1 (1)H C03L2
K2-5 SDM8 (1)H C03K2
K2-5 UBM (1)H C03J2
K2-5 UBF4 (1)H C03H2
K2-5 UBF3 (1)H C03S1
K2-5 UBF2 (1)H C03R1
K2-5 UBF1 (1)H C03P1
K2-5 UBF0 (1)H C03F2

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-28-72	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 6/16/72	TITLE U WORD U(20:17) K2-5
MATERIAL	ENG	DATE 6/16/72	
FINISH	MGR. Dooley	DATE 6/16/72	
	FIRST USED ON PDP11		SIZE D CODE CS NUMBER M7232-0-1 REV. F
	SCALE		DIST.
	SHEET 5 OF 12		18-13-71



8	7	6	5	4	3	2	1	

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 1-24-72
CHK'D		DATE 6/16/72
ENG		DATE 6/16/72
PROJ. ENG		DATE 6/16/72
PROG		DATE 6/30/72

FIRST USED ON
PDP11

SCALE

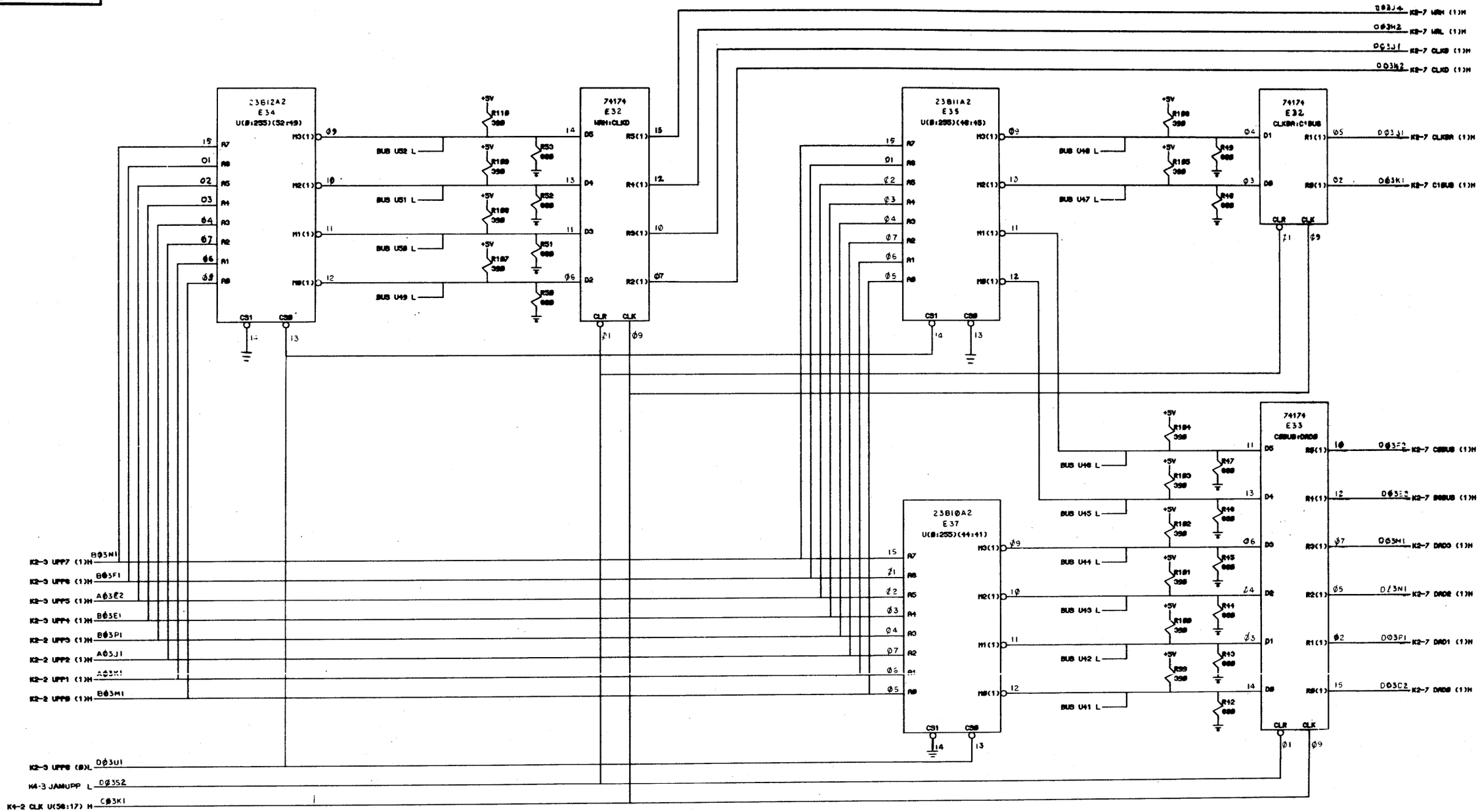
SHEET 6 OF 12

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
U WORD
U(48:29) K2-6

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

DIST.



UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-29-72	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND SHARP CORNERS	CHKD.	DATE 2/4/72	TITLE U WORD U(32:41) K2-7
MATERIAL	ENG.	DATE 2/4/72	
FINISH	PROJ. ENG.	DATE 2/4/72	
	MFG.	DATE	
	FIRST USED ON PDP11		
	SCALE		SIZE D CODE CB NUMBER M7238-0-1 REV. F
	SHEET 7 OF 12		DIST.

J1 BC08R- , CABLE
SHIELD AWAY FROM BOARD

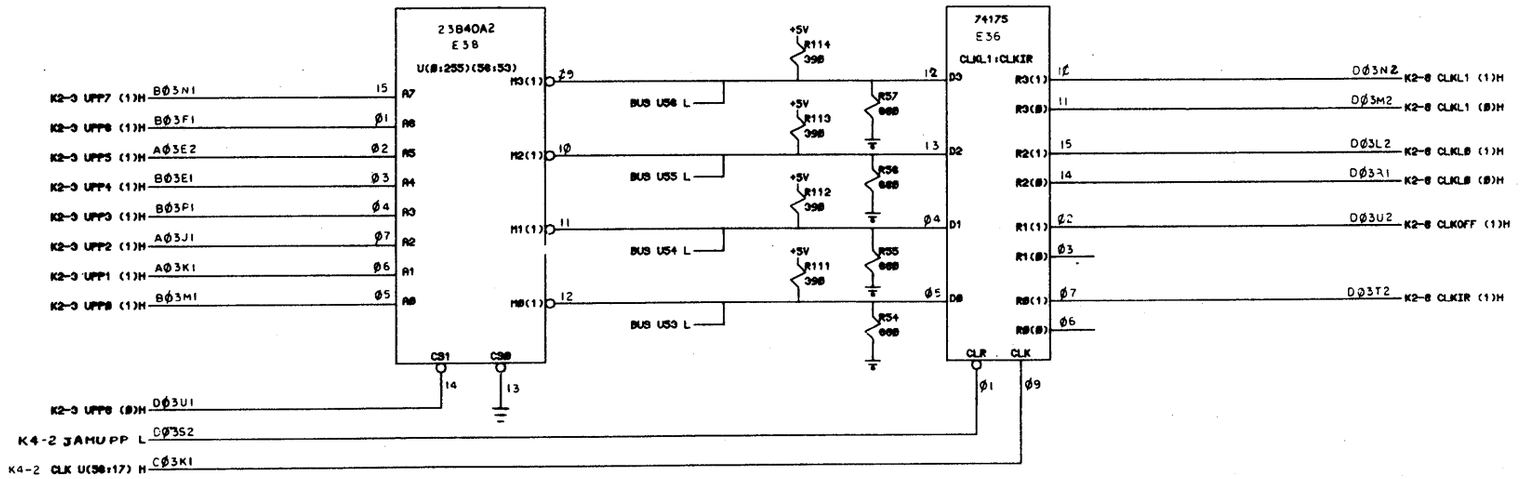
K2-2 EUPP0 H	A		
K2-2 EUPP1 H	B		
	C		
K2-2 EUPP2 H	J		
	E		
K2-2 EUPP3 H	D		
	H		
	NN		
	K	BUS U00 L	
	LL	BUS U01 L	
	M		
	JJ	BUS U02 L	
	P		
	FF	BUS U03 L	
	S		
K2-3 EUPP4 H	R		
	U		
K2-3 EUPP5 H	V		
	W		
K2-3 EUPP6 H	T		
	Y		
K2-3 EUPP7 H	L		
	AA		
K2-3 EUPP8 H	N		
	CC		
	DD	BUS U04 L	
	EE	BUS U05 L	
	BB	BUS U06 L	
	HH	BUS U07 L	
	Z	BUS U08 L	
	KK	BUS U09 L	
	X	BUS U10 L	
	MM	BUS U11 L	
	F	BUS U12 L	
	PP		
	UU		
	SS		
	W		
	TT		
	RR		

J2 BC08R- , CABLE
SHIELD AWAY FROM BOARD

F	BUS U13 L	
D	BUS U14 L	
C		
B	BUS U15 L	
E		
A	BUS U16 L	
H		
JJ	BUS U17 L	
K		
FF	BUS U18 L	
M		
DD	BUS U19 L	
P		
BB	BUS U20 L	
S		
Z	BUS U21 L	
U		
X	BUS U22 L	
W		
V	BUS U23 L	
Y		
T	BUS U24 L	
AA		
R	BUS U25 L	
CC		
N	BUS U26 L	
EE		
L	BUS U27 L	
HH		
J	BUS U28 L	
KK		
TT	BUS U29 L	
MM		
RR	BUS U30 L	
PP		
NN	BUS U31 L	
SS		
LL	BUS U32 L	
UU	BUS U33 L	
VV	BUS U34 L	

J3 BC08R- , CABLE
SHIELD AWAY FROM BOARD

A	BUS U35 L	
B	BUS U36 L	
C		
L	BUS U37 L	
E		
J	BUS U38 L	
H		
F	BUS U39 L	
K		
D	BUS U40 L	
M		
NN	BUS U41 L	
P		
LL	BUS U42 L	
S		
JJ	BUS U43 L	
U		
FF	BUS U44 L	
W		
DD	BUS U45 L	
Y		
BB	BUS U46 L	
AA		
Z	BUS U47 L	
CC		
X	BUS U48 L	
EE		
V	BUS U49 L	
HH		
T	BUS U50 L	
KK		
R	BUS U51 L	
MM		
N	BUS U52 L	
PP		
UU	BUS U53 L	
SS		
/V	BUS U54 L	
TT	BUS U55 L	
RR	BUS U56 L	



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

DRN R. Riddle DATE 2-10-72
CHKD T. Hampton DATE 7/6/72
ENGR T. Hampton DATE 7/6/72
PROJ. SUPV. T. Hampton DATE 7/6/72
PROG. R. Dooley DATE 6/20/72
FIRST USED ON PDP11
SCALE
SHEET 8 OF 12

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
U WORD
U(56:53) & CONNECTORS K2-8

SIZE	CODE	NUMBER	REV.
D	CS	M7232-8-1	F

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	SER06	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	0	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	EXM06	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

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

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	EXM05	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

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
07	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
07	NBR00	110	2	0	0	0	0	0	0	00	0	00	00	00	0	0	16	01	13	347
07	BRA00	111	4	0	0	0	1	0	0	00	0	11	00	05	0	0	00	01	07	340
05	MRK00	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	2	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
06	TRP04	115	2	0	3	0	0	0	0	00	0	00	00	00	1	0	00	01	10	326
07	CCC00	116	6	0	0	1	1	0	0	00	0	33	12	17	2	0	00	01	13	350
07	SCC00	117	6	0	0	1	1	0	0	00	0	33	12	17	2	0	16	01	13	352
08	DOP15	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	00	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

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

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
06	TRP16	140	2	0	0	0	0	0	0	00	7	00	00	30	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	JMP05	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	JMP06	155	7	0	3	0	1	1	1	00	0	06	01	17	2	0	15	04	00	303
05	JMP08	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	DST00	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

DRN	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	SIZE K · CODE CS · NUMBER M7232-0-1 · REV. F
PROD.	DATE 6/20/72	
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	20	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	MOV15	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	MOV13	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	FET00	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	DST10	237	4	0	0	0	1	0	0	00	0	32	00	02	0	0	34	01	13	270

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
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	SRC00	242	4	0	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	02	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	DST03	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

DRN.	DATE 6-15-72	TITLE: U WORD (ADR 200-277)
CHK'D	DATE 6/16/72	
ENG.	DATE 6/16/72	
PROJ. ENG.	DATE 6/16/72	
PROD	DATE 6/20/72	SIZE K · CODE CS · NUMBER M7232-0-1 · REV. F
SHEET 11 OF 12		DIST.

FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
05	JMP04	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	1	00	0	11	00	00	0	0	15	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	11	00	00	0	0	15	04	00	300
05	JMP12	306	4	0	0	0	1	0	0	00	0	00	00	00	0	0	16	01	10	313
05	JSR00	307	6	0	3	0	1	1	0	06	0	06	01	17	2	0	00	01	06	310
05	JSR01	310	5	0	0	0	1	0	5	00	0	00	00	00	0	0	00	10	00	311
05	JSR02	311	2	0	0	1	0	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	32	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	016
		314	0	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	000
11	CON13	315	2	0	0	0	0	0	0	00	0	00	00	00	0	0	06	00	00	046
		316	0	0	0	0	0	0	0	00	0	00	00	00	0	0	00	00	00	000
06	TRP01	317	6	0	3	0	1	0	0	00	0	32	00	17	2	0	00	01	14	215
06	RTI01	320	2	0	3	0	0	0	0	00	0	00	00	00	1	0	00	01	07	321
06	RTI02	321	7	0	3	0	1	1	1	00	0	11	02	17	2	1	00	01	06	322
06	RTI03	322	2	0	0	0	0	0	0	00	7	00	00	00	1	0	00	00	00	017
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	1	1	1	00	0	11	02	17	2	1	16	01	06	325
06	RTS03	325	2	0	3	0	0	0	0	00	0	00	00	00	1	0	00	04	00	016
06	TRP10	326	6	0	3	0	1	1	0	06	0	06	01	17	2	0	00	01	06	327
06	TRP11	327	5	0	0	0	1	0	5	00	6	00	00	00	0	0	00	00	00	113
06	TRP13	330	6	0	3	0	1	1	0	06	0	06	01	17	2	0	00	01	06	331
06	TRP14	331	5	0	0	0	1	0	5	00	0	00	00	00	0	0	00	01	07	077
06	TRP20	332	3	0	0	0	0	1	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	122
06	TRP18	334	5	0	0	0	0	1	1	00	0	11	02	17	0	0	00	01	14	335
06	TRP19	335	2	0	0	0	0	0	0	00	7	00	00	00	1	0	00	00	00	332
06	TRP00	336	6	0	3	0	1	0	0	00	0	32	17	17	2	0	00	01	06	317
06	TRP17	337	6	0	3	0	1	0	0	00	0	32	11	17	2	0	00	01	14	334

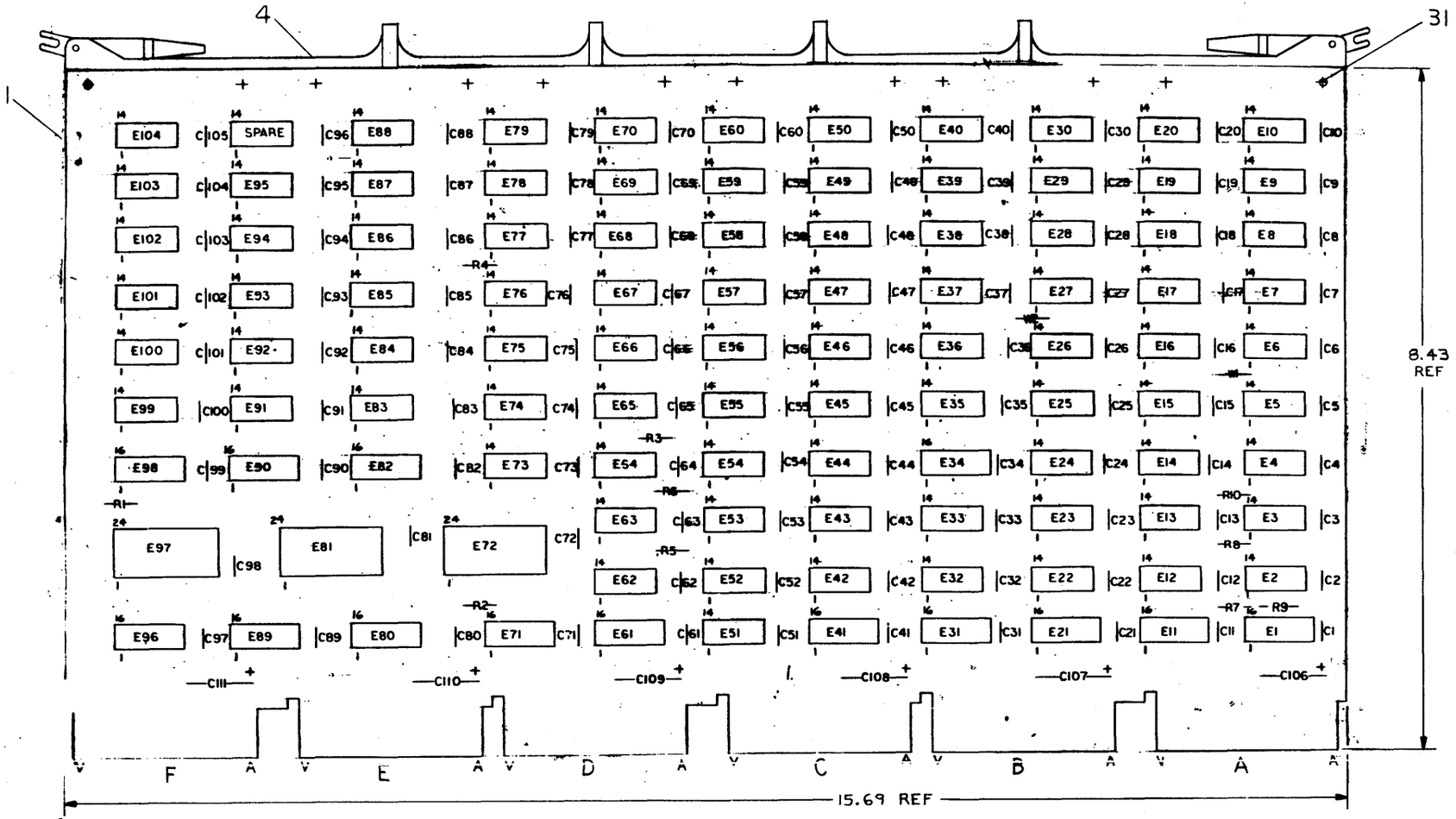
NOTE: THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF FIELD IS LISTED FOR CLARITY.

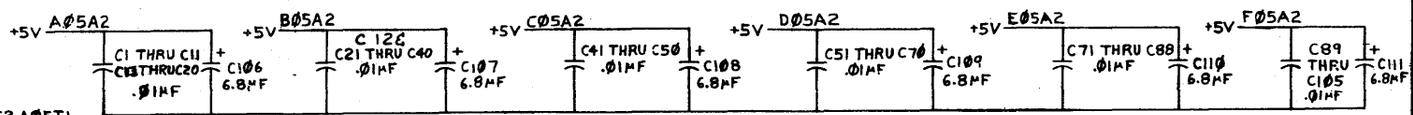
FLOWS	STATE	ADR	CLK	CIR	WR	CB	CD	CBA	BUS	DAD	SPS	ALU	SBC	SBM	SDM	SBA	UBF	SRX	RIF	UPF
07	BRA01	340	2	0	3	0	0	0	0	00	0	00	00	00	2	0	16	01	07	341
07	BRA02	341	6	0	3	0	1	0	0	00	0	11	00	05	2	0	00	01	07	016
07	SOB01	342	2	0	3	0	0	0	0	00	0	00	00	00	2	0	12	10	00	343
07	SOB02	343	6	0	0	1	1	0	0	00	0	33	13	17	2	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	0	0	0	00	0	00	00	00	2	0	16	00	00	347
07	SOB04	346	6	0	3	0	1	0	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	0	0	00	01	13	016
07	CCC01	350	6	0	0	1	1	0	0	00	0	25	00	00	2	0	16	00	00	351
07	CCC02	351	6	0	0	0	1	0	0	00	3	33	00	00	2	0	00	00	00	016
07	SCC01	352	6	0	0	0	1	0	0	00	3	36	00	00	2	0	00	00	00	016
05	MRK01	353	6	0	3	0	1	1	1	00	0	11	02	05	2	0	00	01	07	354
05	MRK02	354	4	0	0	0	1	0	0	00	0	11	02	17	0	0	00	01	07	355
05	MRK03	355	3	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	06	356
05	MRK04	356	6	0	3	0	1	0	0	00	0	00	00	00	1	0	16	01	05	357
05	MRK05	357	2	0	3	0	0	0	0	00	0	00	00	00	2	0	00	01	07	016
08	DOP19	360	0	0	3	0	0	0	0	00	3	00	00	00	2	0	00	04	00	000
08	DOP18	361	0	0	1	0	0	0	0	00	3	00	00	00	2	0	00	04	00	000
08	DOP17	362	0	0	0	0	0	0	0	00	3	00	00	00	2	0	00	00	00	000
07	DOP01	363	4	0	0	0	1	0	0	10	0	06	00	00	0	0	27	04	00	360
08	DOP03	364	4	0	0	0	1	0	0	14	0	00	00	00	0	0	27	10	00	360
08	DOP06	365	4	0	0	0	1	0	5	10	0	06	00	00	0	0	00	01	12	367
08	DOP11	366	5	0	0	0	1	0	7	13	0	32	00	10	2	0	16	00	00	375
08	DOP12	367	3	0	0	0	0	0	0	12	3	00	00	00	2	0	16	00	00	375
08	DOP14	370	4	0	0	0	1	0	0	10	0	06	00	00	0	0	27	04	00	360
08	DOP10	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	06	00	00	2	0	27	00	00	360
07	SSL03	373	2	0	0	0	0	0	0	00	1	00	00	00	2	0	27	00	00	360
09	SSL09	374	5	0	0	0	1	0	7	13	0	32	00	10	2	0	16	00	00	375
08	DOP20	375	2	0	0	0	0	0	0	00	0	00	00	00	2	0	00	00	00	016
09	RSR11	376	2	0	0	0	0	0	0	00	0	00	00	00	2	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 5-5-72	TITLE: U WORD (ADR 300-377)
CHK'D.	DATE 6/16/72	
ENG.	DATE 6/16/72	
PROJ. ENG.	DATE 6/16/72	SIZE K; CODE CS; NUMBER M7232-0-1; REV. F
PROD.	DATE 6/xx/72	
SHEET 12 OF 12		DIST.

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.





DEC 74157	8	16
DEC 74175	8	16
DEC 74150	12	24
DEC 74153	8	16
DEC 74151	8	16
DEC 8251	8	16
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.
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 74151	1909936	26
11	E5, E8, E29, E33, E37, E45 E62, E75, E86, E92, E95	I.C. DEC 74HC4	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 74111	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	1000067	2
1		ETCHED CIRCUIT BOARD	5009982	1

PARTS LIST

ETCH BOARD REV C D

FIRST USED ON OPTION MODEL: PDP 11

REV	CHANGE NO.	CHK.	REVISIONS
E	M7233-00004	J. SOFIO 5-18-74	
D	M7233-00003	J. LOUGHLIN 2-22-74	
C	M7233-00002	J. LOUGHLIN 8-28-73	
B	M7233-00001	J. LOUGHLIN 8-28-73	
A	ORIGINATED		

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

SEMICONDUCTOR CONVERSION CHART

DRN. R. Smith DATE 6-13-72
CHKD. T. Young DATE 6/27/72
ENGR. T. Young DATE 6/27/72
PROJ. ENGR. T. Young DATE 6/27/72
PROD. D. Wingo DATE 6/27/72

NEXT HIGHER ASSY: KD11-A
SCALE: 1/1
SHEET 1 OF 9

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IR DECODE
K3-1

SIZE D CODE CS NUMBER M7233-0-1 REV. E
DIST.

74H10 E64 · 74H08 E73 · 74151 E98 · 74151 E90 · 74153 E82 · 74H04 E62 · 74H00 E73 · 74H04 E62 · 74158 E72 · 74158 E81 · 74158 E97 · 74H08 E73

K3-5 BUBC2(BUT37) H · K3-3 IR#5 (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

E05L1 K3-2 BUT (37:34) L
D05J1 K3-2 BUT (3X) L
D05F1 K3-2 BUBC5 L
D05N2 K3-2 BUBC4 L
E05T2 K3-2 BUBC3 L
F05M1 K3-2 BUBC2 L
D05P1 K3-2 BUBC1 L
E05R1 K3-2 BUBC0(BUT37:20) L

K2-5 UBF4 (1)H D05K1

K3-5 BUBC1(BUT37) H · K3-3 IR#4 (1)H · K3-7 BUBC1(BUT35) H · K3-7 BUBC1(BUT34) H · K3-7 BUBC1(BUT33) H · K3-6 BIT+CMP+TST H · K5-6 BUBC1(BUT38) H · K3-7 BUBC1(BUT20) H · K3-7 BUBC1(BUT25) H · K3-4 IR15 H · K3-7 BUBC1(BUT21) H · K3-7 BUBC1(BUT28) 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 · K5-6 BUBC0(BUT38) H · K3-7 BUBC0(BUT27) H · K3-7 BUBC0(BUT26) H · K3-7 BUBC0(BUT25) H · K3-5 SW=0 H · K3-7 BUBC0(BUT21) H · K3-7 BUBC0(BUT28) H

+5V · F05A2 · R1 1K

C0S5I K3-3 IR#3 (1)H · K3 S JSR H · F05P2 · D05H1 K3-6 BYTE INSTR H · F05N2 K1-7 D(15:08)=0 H · F05M2 KT-3 FAULT L · F05H2 K4-4 B INTR H · F05J2 K5-6 SWITCH (1)H · F05K2 K5-6 BEGIN (1)L · F05P1 K5-7 HALT SW L · F05L2 K1-7 REG ADRS H

F05J1 K3-2 BUBC0(BUT17:08) L

K2-5 UBF3 (1)H F05F2
K2-5 UBF2 (1)H E05N1
K2-5 UBF1 (1)H E05P1
K2-5 UBF0 (1)H E05S1
K3-7 SERVICE H E05B1
K3-7 HALT SW H

DEVICE TRUTH TABLES:

74151

STB	S2	S1	S0	f
H	—	—	—	0
L	L	L	L	D0
L	L	L	H	D1
L	L	H	L	D2
L	L	H	H	D3
L	H	L	L	D4
L	H	L	H	D5
L	H	H	L	D6
L	H	H	H	D7

74153

STBN	S1	S0	fN
H	—	—	L
L	L	L	AN
L	L	H	BN
L	H	L	CN
L	H	H	DN

WHERE N = 0, 1

74158

STB=H: f = H
STB=L: f = DNN WHERE NN IS THE DECIMAL EQUIVALENCE OF BINARY NUMBER (S3,S2,S1,S0). NOTE OUTPUT IS INVERTED.

PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 · FRACTIONS ± 1/64 · ANGLES ± 0°30'
FINISH, SURFACE QUALITY ✓
SURFACE FINISH AND BREAK SHARP
MATERIAL
FINISH

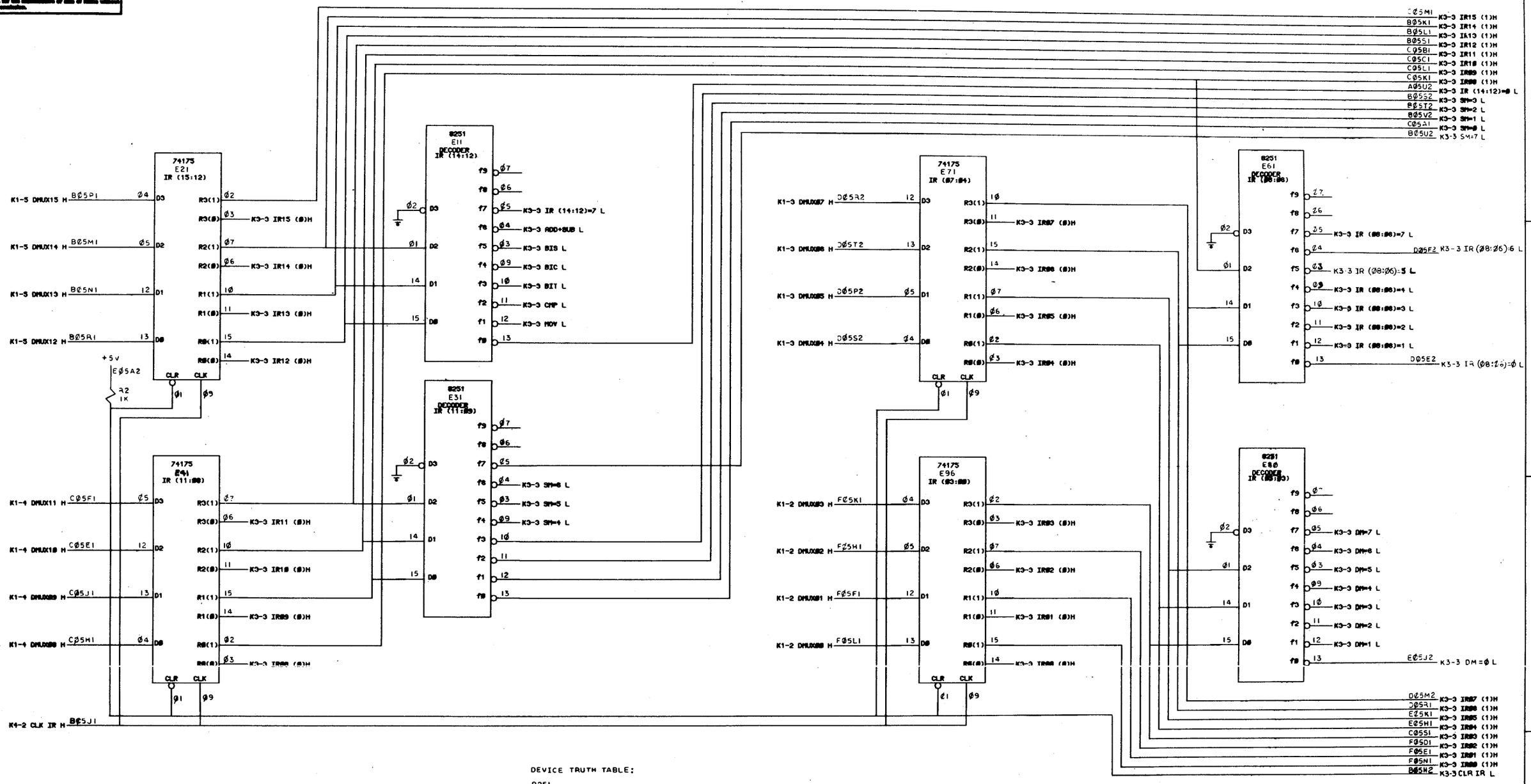
DRN R. Ruffolo 2-2-72
CHKD 2/2/72
ENGR 2/2/72
PROJ ENGR 2/2/72
MFG APPR 2/2/72
FIRST USED ON PDP11
SCALE —
SHEET 2 OF 9

Digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
BUT MUX K3-2

SIZE D · CODE CB · NUMBER M7233-0-1 · REV. E
DIST.

AUG 25 BPY



DEVICE TRUTH TABLE:

8251

FOR THE DECIMAL EQUIVALENCE, N, OF THE BINARY NUMBER (D3,D2,D1,D0), ONLY OUTPUT FN IS ACTIVE (LOW) FOR $0 \leq N < 10$

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

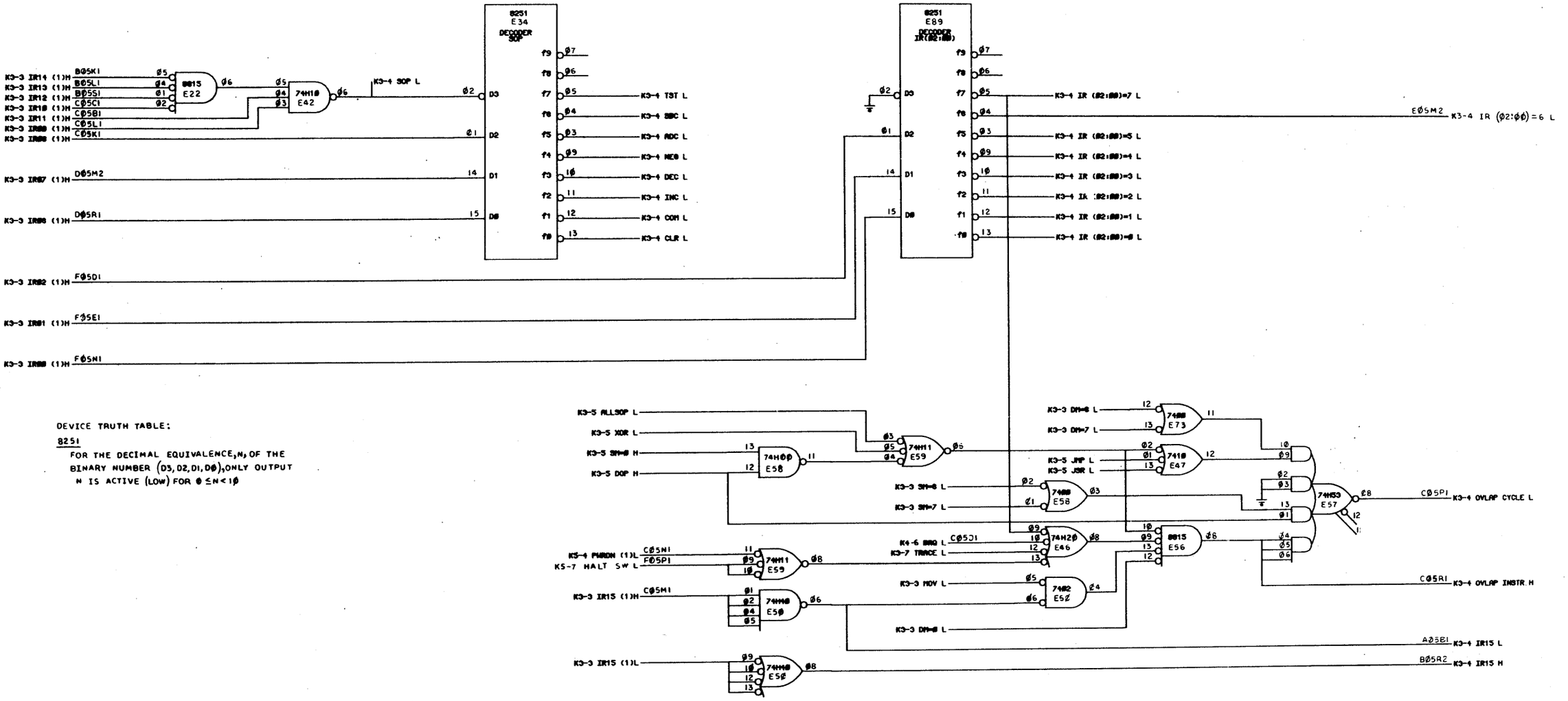
DWN. G. Bubbles DATE 2-2-72
CHKD. [illegible] DATE 2/27/72
ENG. [illegible] DATE 2/27/72
PROJ. ENG. [illegible] DATE 2/28/72
MFG. [illegible] DATE 2/28/72
QA [illegible] DATE 2/28/72

CONFIDENTIAL
FINISH
FIRST USED ON PDP11
SCALE
SHEET 3 OF 9

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
IR & DECODE K3-3

SIZE D CODE CB NUMBER M7233-0-1 REV E
DIST.



DEVICE TRUTH TABLE:

8251

FOR THE DECIMAL EQUIVALENCE, N, OF THE BINARY NUMBER (D3, D2, D1, D0), ONLY OUTPUT N IS ACTIVE (LOW) FOR $0 \leq N < 10$

-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 Puddle DATE 2-2-72
CHK'D DATE
ENG DATE
MFG DATE
QA DATE

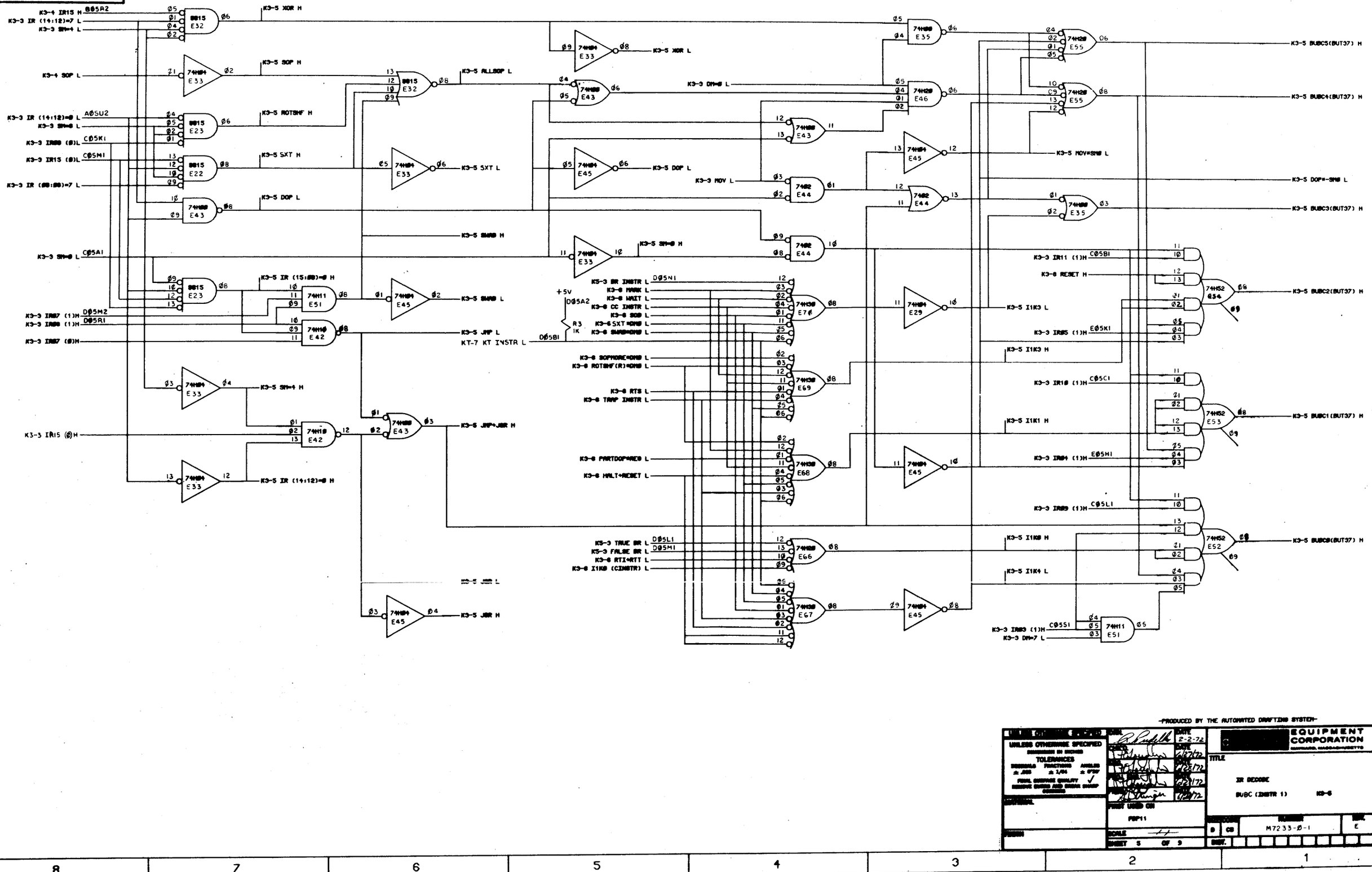
FIRST USED ON
PDP11

SCALE
SHEET 4 OF 9

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
IRD & OVLAP K3-4

CODE D CS NUMBER M7233-0-1 REV E
DIST.



-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

DRAWN R Paddock DATE 2-2-72
CHECKED DATE 2/27/72
ENGR DATE 2/28/72
MFG DATE 2/29/72
APPROVED DATE 3/1/72
FIRST USED ON
PDP11
SCALE
SHEET 5 OF 9

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
BUBC (INSTR 1) KI-6

SIZE B | CAGE CO | NUMBER M7233-0-1 | REV. E
REV.

8 7 6 5 4 3 2 1
D C B A

K3-3 IR07 (1)H
K3-3 IR08 (0)H
K3-5 IR (15:09)=0 H
K3-3 IR09 (1)H
K3-5 IR (15:09)=1 H
K3-3 IR07 (0)H
K3-3 IR08 (1)H
K3-4 IR15 H
K3-5 DOP L
K3-5 ROTSHF H
K3-3 IR05 (1)H
K3-3 DM=0 L
K3-4 IR15 L
K3-5 IR (14:12)=0 H
K3-3 SM=0 L
K3-3 IR (09:08)=4 L
K3-5 SM=4 H
K3-5 XOR H
K3-3 MOV L
K3-3 IR (14:12)=0 L
K3-3 IR (14:12)=7 L
K3-3 SM=7 L
K3-4 SOP L
K3-5 SM=0 H
K3-4 NE0 L
K3-3 ADD+SUB L
K3-6 ROTSHF L
K3-6 ROTSHF(L) L
K3-6 ROTSHF(R)=DM0 L
K3-5 SXT H
K3-5 SWAB H
K3-3 IR01 (1)H
K3-3 IR00 (0)H
K3-3 IR04 (1)H
K3-5 SUBC4(BUT37) H
K3-5 SUBC2(BUT37) H
K3-5 SUBC1(BUT37) H
K3-5 SUBC0(BUT37) H
K3-5 SUBC5(BUT37) H
K3-5 SUBC3(BUT37) H
K3-3 IR02 (1)L
K3-3 IR00 (0)H
K3-3 IR00 (1)H
K3-4 IR (02:00)=5 L
K3-4 IR (02:00)=0 L
K3-4 IR (02:00)=1 L
K3-4 IR (02:00)=4 L
K3-4 IR (02:00)=3 L
K3-3 IR04 (1)H
K3-3 SUB H
K3-3 IR01 (1)H
K3-3 IR00 (0)H
KT-2 PSI5 (0) H
K3-6 IR (15:03)=0 H

K3-6 RTS L
K3-6 CC INSTR L
K3-6 DM=0 H
K3-6 MARK L
K3-6 EMT+TRAP L
K3-6 PARTDOP=RE0 L
K3-6 SXT H0M0 L
K3-6 SWAB=DM0 L
K3-6 SOB L
K3-6 SM=7 H
K3-6 I1K0 (CINSTR) L
K3-6 SOPHORE=DM0 L
K3-6 SOPHORE 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 RTT L
K3-6 RTT H
K3-6 RTI+RTT L
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
+5V

74H11 E36
74H08 E35
74H04 E37
74H10 E47
74H08 E48
74H21 E38
74H10 E124
74H02 E44
74H10 E42
74H10 E40
74H08 E49
74H08 E58
74H21 E36
74H53 E39
74H08 E48
74H11 E36
74H08 E48
74H08 E48
74H04 E37
74H04 E37
74H04 E37
74H04 E37
74H10 E47
74H04 E37
8815 E56
7402 E103
74H08 E78
74H10 E104
74H11 E79
7402 E103
74H04 E95
74H08 E78
74H10 E77
74H04 E86
74H10 E77
74H08 E87
74H10 E77
74H08 E78
74H08 E78
74H11 E79
74H04 E86
74H04 E95
74H04 E86
74H04 E95
74H04 E86
74H08 E88
74H08 E88

A05B1
D05M2
C05K1
B05R2
D05R1
F05E1
E05J2
C05J2
B05U2
D05L2
E05A2
D05H1
B05J2
E05E1
F05R1
D05H2
B05K2
D05J2
E05A1
E05F1
E05E1
B05E2
C05K1

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

MATERIAL
FINISH

DRN R. Goodell DATE 2-3-72
CHK DATE 6/27/72
ENG DATE 6/27/72
MFG DATE 6/27/72
QA DATE 6/27/72
FIRST USED ON PDP11
SCALE
SHEET 8 OF 9

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
IRD DISCRETE K3-6

SIZE D CODE CS NUMBER M7233-0-1 REV. E
DIST.

1 AUG 25 1971

K5-4 OVLAP (1)H E25D1 — 74H04 E86 — K3-7 BUBC0(BUT27) H

K3-3 DM=0 L E05J2 — 74H00 E93
K1-7 PS ADRS H E25V2
K4-5 CBR (1)L E05E2
K5-2 PS(T) (1)H E25S2 — 74H00 E93
K3-6 RTT L

K5-4 BEAR (1)L F25V2
K5-4 BOVFLW (1)L E05E2
K5-4 PWRDN (1)L C05N1
K5-8 CONSL (1)L E05N2 — 74H21 E102 — 74H00 E85 — 74H00 E85 — 74H00 E85 — 74H00 E55

K4-6 BRQ L C05D1
K5-4 WAIT (1)L E05J1 — 74H04 E56

K1-5 MRPTR (0)H F05C2 — 74H00 E93

K5-7 HALT SW L F05P1 — 74H04 E92 — K3-7 HALT SW H

K3-3 MOV L
K3-2 IR03(0)H

74H02 E103 — K3-7 BUBC0(BUT27) H

74H11 E84 — K3-7 BUBC1(BUT26) H
74H11 E84 — K3-7 BUBC0(BUT26) H

74H00 E93 — K3-7 BUBC1(BUT25) H
74H04 E92 — K3-7 BUBC0(BUT25) H

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

74H02 E100 — 74H04 E75 — K3-7 BUBC1(BUT29) H
74H02 E100 — 74H04 E92 — K3-7 BUBC0(BUT29) H

K3-8 BIT+CMP+TST H D05W2 — 74H00 E100 — K3-7 BUBC0(BUT31) H
74H04 E32 — 74H00 E99
K3-5 SWAB L

K3-6 DM=0 H — 74H02 E99
K3-9 SUB H — 74H10 E101
K3-3 DM=6 L

FOSSI K3-7 TRACE L
E25B1 K3-7 SERVICE H

FOSTI K3-7 BYTE CODES H
K3-7 BUBC5(BUT36) H
K3-7 BUBC3(BUT36) H
K3-7 BUBC0(BUT36) H

74H00 E99 — 74H02 E120 — 74H04 E92 — 74H04 E92 — K3-3 IR05 (1)L
K3-3 IR04 (1)L

74H11 E93 — K3-7 BUBC5(BUT35) H
74H00 E91 — K3-7 BUBC3(BUT35) H
74H00 E91 — K3-7 BUBC2(BUT35) H
74H00 E91 — K3-7 BUBC1(BUT35) H
74H00 E91 — K3-7 BUBC0(BUT35) H

K3-7 BUBC3(BUT34) H
K3-7 BUBC2(BUT34) H
K3-7 BUBC1(BUT34) H
K3-7 BUBC0(BUT34) H

K3-5 SXT L
K3-8 ROTSHF(R) L
K3-5 SWAB L
K3-5 DOP H — 74H00 E76 — 74H20 E66 — 74H04 E75
K3-5 XOR L — 74H00 E76 — 74H20 E65 — 74H04 E75
K3-9 SUB L — 74H20 E65 — 74H04 E75
K3-6 SOPMORE H — 74H00 E76 — 74H04 E75
74H04 E73

74H00 E74 — K3-7 BUBC3(BUT33) H
74H00 E74 — K3-7 BUBC2(BUT33) H
74H00 E74 — K3-7 BUBC1(BUT33) H
74H00 E74 — K3-7 BUBC0(BUT33) H

K3-7 ODD BYTE H
K3-7 ODD BYTE L

K1-6 BASB (1)H D05S1 — 74H00 E76
K3-6 BYTE INSTR H D05H1

K3-5 DOP=-SMB L — 74H10 E101
K3-4 NEB L
K3-8 ROTSHF(R) H — 74H00 E99

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 2/27/72
	ENGR	DATE 2/28/72
	PROJ. ENGR	DATE 2/28/72
	APPD.	DATE 2/28/72
MATERIAL	FIRST USED ON PDP11	
FINISH	SCALE 1=1	
	SHEET 7 OF 9	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
BUBC (OTHER) K3-7

SIZE	CODE	NUMBER	REV.
D	CS	47233-0-1	E

DIST.

AUG 74

KE-5 ECOMUXS1 L DØ5E1
KE-5 ECOMUXSØ L DØ5C1
+5V
R5 1K
R6 1K
DØ5A2

K3-3 IRØ6 (Ø)H
K3-3 IR (Ø6:Ø6)=2 L
K3-3 IR (Ø6:Ø6)=Ø L DØ5E2
K3-8 BYTE INSTR H DØ5H1
K3-3 IR (Ø6:Ø6)=1 L
K3-5 ROTSHF H
K3-3 CMP L
K2-7 DAD3 (1)H BØ5C1
K2-7 DAD2 (1)H AØ5S1
K2-7 DAD1 (1)H BØ5B1
K3-4 INC L
K3-4 ADC L
K3-2 PS(C) H AØ5R2
K2-6 SALU1 (1)H AØ5F1
K2-6 SALUØ (1)H AØ5E2
K1-8 R(X6+X7) H AØ5C1
K5-5 BCON (1+2) H AØ5P2
KE-5 ECINØØ H AØ5S2

74H04 E62
74ØØ E63
74H04 E5
74H11 E14
74Ø2 E16
74Ø8 E3
74H53 E17
74H1Ø E64
74ØØ E63
74H6Ø E6
74H6Ø E7
74H6Ø E6
74HØØ E5

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
K3-8 CMP+INC H
K3-8 ADC*PS(C) H
K3-8 PS(C) L

W1 ECINØØ

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

DØ5D1 K3-8 COMUXS1 H
DØ5A1 K3-8 COMUXSØ H
AØ5P1 K3-8 CINØØ L

KE-5 ESALU3 L AØ5K2
KE-5 ESALU2 L AØ5M2
KE-5 ESALU1 L AØ5L2
KE-5 ESALUØ L AØ5N2
+5V
R9 1K
R8 1K
R7 1K
R1Ø 1K
AØ5A2

DEVICE TRUTH TABLE:
74157

STB	SØ	FN
H	—	L
L	L	AN
L	H	BN

WHERE N = Ø,1,2,3

K3-4 TST L
K3-3 BIT L
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
K3-5 SXT L
K3-5 SXT H
K5-2 PS(N) (1)H AØ5D1
K2-6 SALUM (1)H AØ5N1
K3-8 DAD (3*2) H
ESALUM H BØ5M2

74H2Ø E25
74H21 E12
74H21 E13
74H11 E14
74HØØ E2
74HØØ E3
74HØØ E2
74HØØ E3
74HØØ E2
74H1Ø E15
74HØ4 E5
74HØØ E2
74HS2 E4
74H81 E26

DØ5V2 K3-8 BIT+CMP+TST H
K3-8 BIC+BIT H
AØ5H1 K3-8 ALUM H
AØ5T2 K3-8 DAD (3*2) L

W2 ESALUM

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

K2-6 SALU3 (1) H AØ5D2
K2-6 SALU2 (1) H AØ5E1

74157 E1 ALU MUX
B3 A3 B2 A2 B1 A1 BØ AØ SI SØ
F3 F2 F1 FØ

AØ5L1 K3-8 ALUS3 H
AØ5J1 K3-8 ALUS2 H
AØ5K1 K3-8 ALUS1 H
AØ5M1 K3-8 ALUSØ H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

DRN.	DATE 2-3-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D	DATE 6/27/72	
ENG.	DATE 6/28/72	TITLE: IR DECODE ALU CONTROL K3-8
PROJ. ENG.	DATE 6/28/72	
PROD.	DATE 6/30/72	
FIRST USED ON: PDP11		SIZE D CODE CS NUMBER M7233-Ø-1 REV. E
SCALE		DIST.
SHEET 8 OF 9		AUG 25 1971

K5-2 LOAD PS L B05K2 — 74H04 E29 — 74H04 E29

K1-2 DMUXØ1 H F05F1

K3-8 PS(C) L
K3-4 SBC L — 7402 E9
K3-4 DEC L — 74H04 E8
K5-2 PASTC (1)L A05A1
K3-4 IR15 L A05B1 — 7402 E9
K3-3 ADD+SUB L
K3-4 IR15 H B05A2 — 7402 E10
K3-9 SUB H
K3-9 ADD H
74H04 E8 — K3-9 SUB L
7402 E10 — K3-9 DEC+SBC*PS(C) L
7402 E9 — K3-9 DEC H
K3-4 ADC L — 74H04 E8
K3-8 CMP+INC H
K3-3 CMP L — 74H20 E36
74H00 E18
K5-2 PASTB H A05R1
K3-4 NEG L

K5-2 N DATA L B05B1 — 74H04 E8
K5-2 PS(C) H A05R2 — 74H04 E29
8815 E28
74H50 E19
74H10 E15
K5-2 PASTA (1)H A05V2
7402 E9

K3-5 ROTSHF H
74H00 E18
74H50 E19
74H20 E36
8815 E20
74H04 E29 — 8815 E27 — K3-9 V DATA L
74H02 E16 — K3-9 V (ROTSHF) H
74H02 E10 — K3-9 V (COMPARE1) H
K3-9 V (COMPARE 2) H

K1-5 D(C) (1)L B25L2 — 74H04 E29
8815 E27
74H11 E36
74H11 E59
K1-2 DMUXØ8 H F05L1
K3-4 SBC L
74H58 E28 — K3-9 C DATA H
74H61 E26
74H61 E26

K5-6 SPS2 (1)H B05A1
K3-6 DM=8 H — 7402 E16
K2-6 SPS1 (1)H B05F2
K2-6 SPS2 (1)H B05P2
K3-7 ODD BYTE H — 74H28 E25
K3-4 DEC L
K3-8 BIC+BIT H — 74H04 E8
K3-4 COM L
K3-3 MOV L
K3-5 XOR L
K3-5 SXT L
K3-4 INC L
K3-3 BIS L — 74H10 E15 — 74H08 E10 — 74H30 E24
K3-8 ROTSHF (R) H
K1-2 D08 (1)H B25N2

-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 B. Pudelka DATE 2-3-72
CHECK DATE 6/27/72
ENG DATE
MFG ENG DATE
PROJ ENGR DATE 6/29/72
FIRST USED ON PDP11
SCALE
SHEET 9 OF 9

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

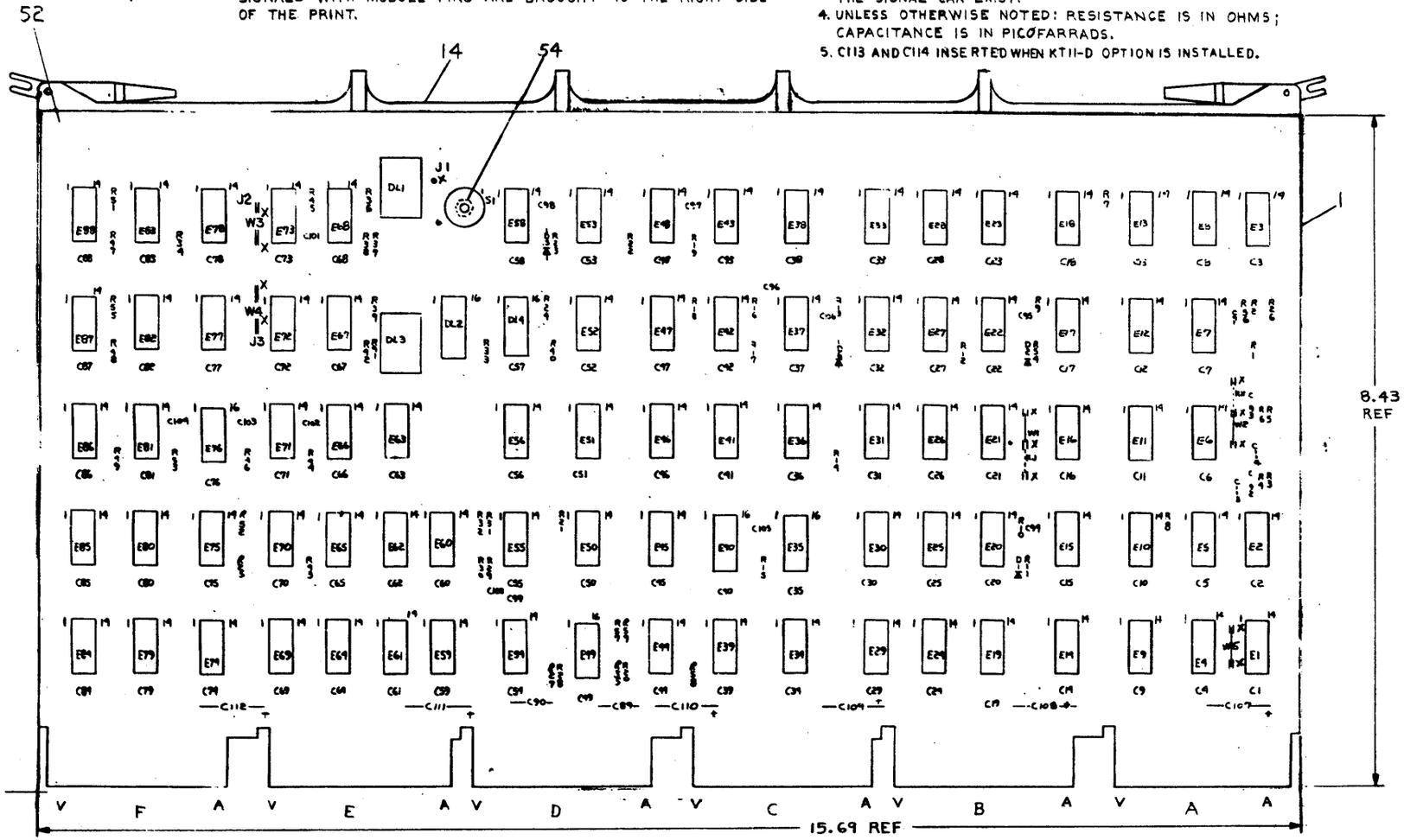
TITLE
IR DECODE
CODES C,V K3-9

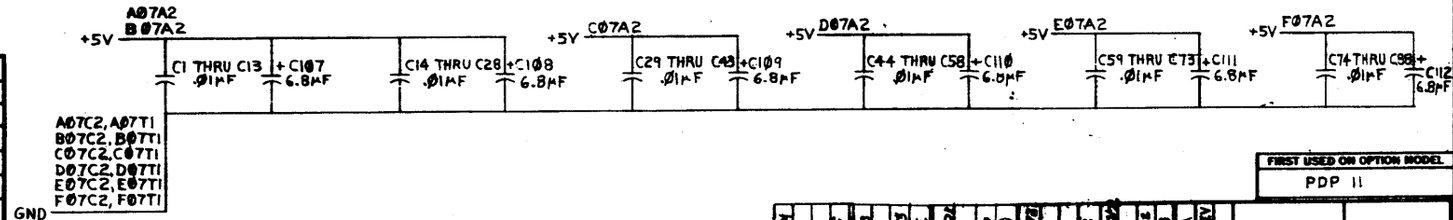
SIZE D CS NUMBER M7233-0-1 REV. E
DIST.

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 (K2-1 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 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.





QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
5	W1,W2,W3,W4,W5	INSULATED JUMPER	9009185	55
1	USED AS A SPACER	HEX NYLON NUT, #4-40	9007992	54
12		SPLIT LUGS	9006735	53
12		EYELET	9006732	52
1	E40	I.C. DEC 74175	1910651	51
3	E35, E49, E76	I.C. DEC 74123	1910436	50
4	E26, E30, E56, E19	I.C. DEC 8815	1909713	48
6	E2, E8, E42, E44, E55, E70	I.C. DEC 8881	1909705	47
7	E7, E15, E29, E32, E53, E75, E58	I.C. DEC 7404	1909686	46
5	E10, E27, E78, E83, E12	I.C. DEC 74H74	1909667	45
4	E1, E3, E37, E39	I.C. DEC 8640	1911469	44
7	E14, E33, E46, E47, E60 E71, E5	I.C. DEC 74H11	1909267	43
1	E88	I.C. DEC 74H55	1909063	42
3	E77, E82, E6	I.C. DEC 74H53	1909062	41
4	E16, E23, E65, E31	I.C. DEC 74H50	1909060	40
2	E34, E51	I.C. DEC 74H21	1909058	39
4	E17, E4, E41, E69	I.C. DEC 74H10	1909057	38
6	E21, E63, E64, E66, E72, E73	I.C. DEC 74H00	1909056	37
3	E22, E43, E86	I.C. DEC 7402	1909004	36
5	E62, E87, E9, E80, E48	I.C. DEC 74H20	1905635	35
5	E59, E67, E68, E61, E25	I.C. DEC 74H40	1905536	34
				33
				32
				31
				30
10	E18, E20, E28, E36, E45, E52 E74, E79, E84, E85	I.C. DEC 7400	1905575	29
7	E11, E13, E38, E50, E54, E81 E24	I.C. DEC 7474	1905547	28
2	DL2, DL4	DELAY LINE 100NS	1610033	27
1	DL3	DELAY LINE 50NS	1609428	26
1	DL1	DELAY LINE 30NS	1609427	25
2	R20, R28	RES 39K 1/4W ±5%	1302514	24
3	R15, R46, R53	RES 5.6K 1/4W ±5%	1301874	23
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%	1300365	22
4	R35, R57, R58, R59	RES 180 1/4W ±5%	1301322	21
5	R9, R10, R14, R17, R24	RES 470 1/4W ±5%	1300316	20
2	R39, R37	RES 330 1/4W ±5%	1300295	19
6	R11, R13, R23, R33, R40, R54	RES 220 1/4W ±5%	1300271	18
2	R38, R41	RES 150 1/4W ±5%	1300250	17
3	R36, R42, R45	RES 100 1/4W ±5%	1300229	16
8	R4, R6, R16, R19, R29 R30, R44, R56	RES 47 1/4W ±5%	1300202	15
1		HANDLE, MODULE	1210711-02	14
1	S1	SWITCH, 10 POS	1210042-01	13
4	D1, D2, D5, D6	DIODE D664	1100114	12
6	C107 THRU C112	CAP 6.8MF 35V ±10% TANT	1005306	11
3	C89, C90, C91	CAP 1200PF 100V ±5% D.M.	1002619	10
2	C104, C105	CAP 27PF 100V ±5% D.M.	1001739	9
88	C1 THRU C88	CAP .01MF 100V ±20% DISC	1001610	8
3	C97, C101, C103	CAP 1000PF 100V ±5% D.M.	1000042	7
				6
3	C92, C99, C100	CAP 470PF 100V ±5% D.M.	1000024	5
5	C94, C96, C98, C102, C106	CAP 330PF 100V ±5% D.M.	1000023	4
2	C93, C95	CAP 220PF 100V ±5 D.M.	1000021	3
				2
1		ETCH CIRCUIT BOARD	5009983	1

PARTS LIST

IC TYPE	GND	+ 5V
DEC 74175	8	16
DEC 74123	8	16
DEC 8640	1	8

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

IC PIN LOCATIONS

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: PDP 11

ETCH BOARD REV: D

DEC NO.	EIA NO.
D664	IN3606

NEXT HIGHER ASSY: KDII-A

SCALE: —

SHEET 1 OF 6

REV	CHANGE NO.	ORIGINATED	CHK
A	0001	9-14-72	J. O'LOUGHLIN
B	0002	10-30-72	J. O'LOUGHLIN
C	0003	2-8-73	J. O'LOUGHLIN
D	0004	2-20-73	J. O'LOUGHLIN
E	0005	3-30-73	J. O'LOUGHLIN
F	0006	10-18-74	J. ROGERS

REVISIONS

DRN: D. Rudolph 6-23-72
CHK: J. O'Loughlin 7/14/72
ENGR: M. Hanlon 7/14/72
PROJ ENGR: J. Ozvnski 7/14/72
MFG: [illegible] 7/14/72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TIMING

K4-1

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

DIST.

BLT CODE D CS | NUMBER M7234-0-1 | REV F

DRAWING 40-8333 10/69

DEC FORM NO. 6900-1356

P ESTART L F07N2
K5-8 P ENDRESET L F07M1
K5-4 BRSV (1)L D07N1
K4-5 PERIF RELEASE H D07A1
K4-4 B XNTR H E07C1
K4-3 P JAM START H D07L1
K5-8 PWR UP INIT L F07R2
K4-5 BBSY (1)H A07M2
K5-4 ABSY (1)H D07L2
K4-6 B SSYN H C07A1
K4-4 MSYN (1)H B07J1
KM-2 MCLK ENABLE L E07N1
K4-2 RECLK H
K5-8 B DC LO L E07R1
K4-3 JAMUPP H F07A1
K2-8 CLKOFF (1)H F07J1
K4-4 ALLOW CLK L
KM-2 MSTOP L E07S1
K1-9 UPP MATCH H F07K2
K5-4 OVLAP (1)H F07J2
KM-2 MCLK L F07V2
K2-8 CLKL1 (0)H E07A1
K2-8 CLKL0 (0)H F07H1

+5V R55 1K
+5V R48 1K
+5V R52 1K
+5V R51 1K
+5V R47 1K
+5V R39 33Ω
+5V R41 5Ω
+5V R38 15Ω
+5V R37 33Ω

7404 E58
7404 E75
74H53 E82
74H28 E87
74H55 E88
74H11 E71
74H08 E73
74H08 E63
74H53 E77
74H74 E78
74H74 E83
74H08 E68
74H08 E67

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

DL1 30ns
DL2 100ns
DL3 50ns
DL4 100 ns
R36 100
R33 220
R42 100
R40 220
W3 J2 SEE XOR NOTE
W4 J3 SEE XOR NOTE
SW1

NOTE:
* SYMBOL ON SCHEMATIC INDICATES NOMINAL SETTING FOR A CLI TIME ≥135 NS ≤145 NS. DETAILS ON CLOCK ADJUSTMENTS NOTED BELOW.

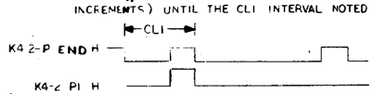
K4-3 JAM CLK H E07B1

74H28 E62
74H11 E60
74H08 E59
74H08 E59
74H08 E61
74H28 E62
74H11 E60
74H08 E63
74H08 E64
74H08 E64
74H08 E64
74H08 E72
74H08 E66
74H08 E65
74H08 E65
74H08 E66
74H08 E64

K4-2 IDLE L D07J2
K4-2 SET CLK L D07F1
K4-2 ECLK L D07S1
K4-2 CLK U(S8:17) H D07Q2
K4-2 CLK U(16:09) H D07T2
K4-2 CLK(UPP=PUPP) H D07V2
K4-2 RECLK H
K4-2 P END H D07P1
K4-2 PART P END H D07R1
K4-2 PS(P1+P3) H E07D1
K4-2 (P1+P3) H E07J2
K4-2 CLK B H E07M2
K4-2 WR R(15:08) L E07K2
K4-2 WR R(07:00) L E07F2
K4-2 CLK IR H D07C1
K4-2 P1 H E07L1
K4-2 CLK BUS H E07K1
K4-2 CLK BR H E07H1
K4-2 P2 H E07R2
K4-2 CLK D H E07N2
K4-2 P3 H E07F1

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

CLOCK ADJUSTMENT:
CLOCK ADJUSTMENT REQUIRES A DUAL-TRACE OSCILLOSCOPE WITH ONE CHANNEL (TRIGGERED 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. MICRO WORDS CON@4 (026) AND CON@6 (046), THIS LOOP IS USUAL WHEN IN CONSOLE MODE, OR MAY BE FORCED BY A START IN THE HALT MODE. THE SI SWITCH IS ADJUSTED (10 NANO SECONDS INCREMENTS) UNTIL THE CLI INTERVAL NOTED BELOW IS ≅ 135 NANO SECONDS AND ≤ 145 NANO SECONDS



-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED
TOLERANCES
MATERIAL
FINISH
DRN. R. Gabbey 4-26-72
CHK'D 7/6/72
ENGR 7/6/72
MGR 7/6/72
FIRST USED ON PDP11
SCALE
SHEET 2 OF 8

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TIMING
CLOCK K4-2

SIZE D CAGE CS NUMBER M7234-0-1 REV. F
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
K5-8 PWRUP INIT L F07R2
K5-6 CONSL (1)L F07P1
K4-6 NODAT (1)H
K4-4 ODA ERR L E07U2
K5-4 DUBBERR L E07T2
K4-4 OVFLW ERR L E07S2
K4-2 PS(P1+P3) H
K4-2 P3 H
K2-5 UBF0 (1)H B07L1
K4-5 B INIT L C07M1
BUS PA L
BUS PB L
A07L1
A07F2
A07K1
E07D1
B07U1 K4-3 PERR(0)H
K4-3 PERJ H

NOTE: W5 MUST BE REMOVED WHEN MF11-LP IS INSTALLED.

JAMUPP ADDRESSES

$(UPP)_8$	USE
377	PWRUP INIT
337	PWR UP *-(HALT)
336	OVFLW ERR (RED ZONE), DUBBERR
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 JBERR (1)L F07J1
K4-3 JAMUPP H F07J1
K4-3 JAM CLK H E07B1
K4-3 P JAMSTART H D07L1
K4-3 P JAMSTART L F07J1
K4-3 JAMUPP L F07E1
K4-3 JPUP (1)L F17T2
K4-3 SET UPP8,6 L F07Q1
K4-3 CLR UPP5 L F07D2
K4-3 SET UPP7, 0,2 L E07V2
K4-3 CLR UPP7, 0,2 L F07C1
K4-3 SET UPP4,3 L F07M2
K4-3 CLR UPP4,3 L F07H2
K4-3 SET UPP1 L F07E2
K4-3 CLR UPP1 L F07F2
K4-3 SET UPP0 L F07R1
K4-3 CLR UPP0 L F07S2

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

EQUIPMENT CORPORATION

TITLE: TIMING CLK JAM K4-3

M7234-0-1 REV. F

K5-3 BUT37 H A07P1
K3-4 OVLAP CYCLE L A07N1
K3-8 BIT+CMP+TST H A07J2
K2-7 DAD3 (1)H B07M2
K2-7 DAD1 (1)H C07F2
K4-4 ALLOW CLK L
K2-7 DAD2 (1)H C07E2
K1-8 RADRSB L C07K1
K1-8 REG(X8+X7) H C07J2
K5-4 STALL (1)L C07H2
K2-7 DAD8 (1)H C07S1
K3-8 BYTE INSTR H C07R1
K4-2 CLK BR H E07H1
K4-2 IDLE L D07J2
K4-2 (P1+P3) H E07J2
K4-6 NO DAT (1)L D07S2
K2-7 C1BUS (1)H B07H2
K2-7 C8BUS (1)H B07D2
K4-2 CLK BUS H E07K1
K5-8 INIT2 L F07F1
K4-5 BBSY (1)H A07M2
K1-7 BRQB (1)H A07F1

+5V R7 1K
+5V R8 1K
+5V R26 1K

K4-5 PROC RELEASE L A07N2
K4-6 B SSYN L A07M2
K4-5 BBSY (1)H

NOTE: C114 INSERTED PER KTII-D INSTALLATION PROCEDURE TO EXTEND δ TO 225NS.
NOTE: C113 INSERTED PER KTII-D INSTALLATION PROCEDURE TO EXTEND δ TO 300NS
NOTE: JUMPER W1 IS MOVED TO CONNECT E16 PIN 10 TO B07F2 FOR KJII-A OPTION.

KT-2 PSIS (0) H A07S2
K4-4 NOT DATI H
KJ-2 EOVFL STOP H B07F2
K1-7 BOVFL STOP H B07F1
K4-6 PROC ADRS H
K5-8 CONSL (1)L A07E1
K4-3 PERJ H
KT-3 FAULT H A07H2
K4-3 JAMUPP L F07E1

δ=75NS
δ=150NS
δ=60NS
560 C114
C93 220
680 C113
C92 470
C95 220
R54 220
D2 D864

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

KT-6 NO MSYN L
BUS INTR L A07A1

A07M1 K4-4 BUS (1)H
F07L2 K4-4 CLK MSYN H
K4-4 CLK MSYNR H
A07K1 K4-4 MSYNR (1)H
A07B1 K4-4 MSYNR L
K4-4 B MSYN L
B07S1 K4-4 B MSYN H
A07D1 BUS MSYN L
B07D1 K4-4 MSYN (1)H
B07K2 K4-4 P CLR MSYN L
E07S2 K4-4 OVFLW ERR L
E07U2 K4-4 ODA ERR L
A07R2 K4-4 CKOVF H
F07K1 K4-4 BUS STOP H

BUS TABLE:

C1 BUS	C0 BUS	BG BUS	USE
0	0	1	DATI
0	1	1	DATIP
1	0	1	DATO
1	1	1	DATOB
0	1	0	AWBBY ← 1 (AWAIT BUS BUSY)
1	1	0	RESTART ON PERIF RELEASE

BUS ORIENATED DAD TABLE:

DAD 3	DAD 2	DAD 1	DAD 0	USE
—	—	—	1	ALLOW ODD ADDRS AND DATO B FOR BYTE INSTR
—	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.

K4-4 BC1 (1)H
A07J1 K4-4 BC1 (1)L
B07E2 K4-4 BC8 (1)L
K4-4 NOT DATI H
A07L2 K4-4 BWAIT (1)H
K4-4 DATIP L
A07E2 K4-4 BUS C1 L
A07H1 K4-4 BUS C8 L
K4-4 BC1 H
K4-4 BC8 H
A07T2 K4-4 CKODA (1)H
E07C1 K4-4 B INTR H
B07H1 K4-4 DOUT HIGH H
B07K1 K4-4 DOUT LOW H
A07K2 K4-4 CLK BOVFLW H
K4-2 P2 H B07B1

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

DRN B. Lindell DATE 1-31-72
CHKD DATE 2-14-72
ENGR DATE 2-14-72
PROJ DATE 2-11-72
MGR DATE 2/14/72
FIRST USED ON PDP11
SCALE
SHEET 4 OF 8

C DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TIMING
BUS DATA CNTL K4-4

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

BUS BACK L C07L2 — 8640 E37 — 9881 E42 — 7404 E32 — T=75NS — R17 47Ω — R15 47 — C95 33P

K4-6 GRANT H — K4-6 B SSYN H C07A1 — K4-5 B BSSY H B07U2 — 8815 E30 — 7404 E32 — R18 1K — R19 47 — C97 1000P — δ = 300NS — 7402 E43 — K4-6 BRQ H

K5-3 BUT26 H D07K1 — K4-2 P3 H E07F1 — 7400 E52

BUS INIT L C07H1 — 8640 E37 — 7404 E32

K4-6 NO SACK (1)L

K5-7 HALT SW L C07D1

K4-4 .DATIP L — K4-4 CLK MSYNA H — DATAIP 74H74 E83 — R34 1K

K4-5 NPR (1)H — K4-5 GRANT BR H D07N1 — 8815 E30

K5-6 B AC LO L B07P2 — 7404 E32

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

K5-4 OVLAP (1)H D07D1 — 7404 E53 — K4-5 OVLAP L

K4-5 P MSYN L D07K2 — 74H00 E73 — 7408 E52 — 74H11 E47

K4-2 CLK IR H D07C1

K5-4 AMBY (1)H D07L2 — 7404 E53 — 7408 E52 — 74H11 E47

K4-2 SET CLK L D07F1 — 7404 E53

K4-4 B MSYN L

K4-5 ENPRCLK D07E1 — R22 1K

K4-2 CLK BUS H — K4-4 P CLR MSYN L B07K2 — 74H00 E21 — 7408 E28 — 7402 E43 — 74H11 E33

K4-4 BC1 (1)H — K5-4 BRSV (0)H C07N2

7400 E36 — R14 47Ω — C106 33P — τ = 100NS — D6 D664 — R13 220 — 7404 E32

PTRD — 74123 E35 — R15 5.6K — C105 27PF

CDR 7474 E38 — DRPTR 74H04 E27 — R12 1K

BUS NPR L C07D2 — 8640 E37 — 7408 E36 — 74H11 E33 — NPR 74H74 E27

δ = 100NS — R45 100Ω — C101 1000P — 7404 E58 — 74H00 E73

74H20 E48 — 7400 E52 — R24 47Ω — C98 33P — D5 D664 — R23 220 — 7404 E53

K4-5 P MSYN H

K4-6 D BACK H B07S2
K4-6 PERIF RELEASE H C07A1
K4-6 PROC RELEASE L A07N2
K4-6 D PERIF RELEASE L C07N1
K4-5 B BSSY H B07U2
BUS BSSY L C07M2
K4-5 BSSY (1)H A07M2
K4-5 BUS FH D H B07N1
K4-5 BUS FH BR H B07L2
K4-5 PART GRANT BR H C07L1
K4-5 GRANT BR H D07M1
K4-5 B INIT L C07J1
K4-5 P NO SACK L C07F1
K4-5 CDR (1)L B07V2
K4-5 PTRD(1) H
K4-5 BRPTR (1)L B07M1
K4-5 CLR PTR L D07H1
K4-5 PTRD (0)H C07E1
K4-5 NPR (1)L D07B1
K4-5 NPR (1)H
BUS NPG H C07P2
K4-5 CLK PTRD H C07P1
K4-5 CLK NPR H C07C1
K4-5 P MSYN L D07K2
K4-5 P MSYN H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED — TOLERANCES — DRAWN R. Pickett 2-1-72 — CHK'D 2/8/72 — ENGR 2/9/72 — MFG 2/11/72 — QUAL ASSUR 2/14/72 — MATERIAL — FINISH — FIRST USED ON PDP11 — SCALE — SHEET 5 OF 6

EQUIPMENT CORPORATION

TITLE: TIMING — BUS CONTROL — K4-5

SIZE D — CAGE CS — NUMBER M7234-0-1 — REV F — SHT

8 7 6 5 4 3 2 1

K1-8 PSØ7 (1)H BØ7R2
K1-8 PSØ6 (1)H CØ7N2
K1-8 PSØ5 (1)H BØ7R1
74H5Ø E31
7400 E36
74H1Ø E41
BUS BR7 L CØ7R2
BUS BR6 L CØ7S2
BUS BR5 L CØ7T2
BUS BR4 L CØ7U2
8640 E39
74175 E4Ø
CLR CLK
K4-5 B INIT L CØ7M1
K4-5 PTRD (1)H BØ7V2
7402 E43
74H11 E46
74H21 E51
K4-5 GRANT BR H DØ7M1
8815 E56
74H04 E58
8881 E44
DØ7M2 K4-6 BRQ L
K4-6 BRQ H
+5V
R35 18Ø
R57 18Ø
R58 18Ø
R59 18Ø
DØ7Ø2 K4-6 BØ7 H
DØ7P2 K4-6 BØ6 H
CØ7V2 K4-6 BØ5 H
DØ7E2 K4-6 BØ4 H

K4-4 BWRIT (1)H AØ7L2
K4-4 MSYN (1)H BØ7Ø1
GND Ø7 EØ7C1
K1-7 SLR ADRS H AØ7V2
K4-4 DOUT LOW H BØ7K1
K1-7 PS ADRS H AØ7P2
K1-7 SR ADRS H AØ7R1
K5-6 BEGIN (1)L AØ7U2
74H11 E14
74H2Ø E9
74H1Ø E4
8815 E19
7404 E29
K4-6 PROC RESPOND L
K4-6 PROC ADRS H
K4-4 B INTR H EØ7C1
K5-4 INTR (1) H BØ7J1
7400 E2Ø
8881 E8
R1 1K
+5V
R2 1K
τ = 375NS
C91 1200
8640 E1
7404 E29
AØ7C2 BUS SSYN L
CØ7A1 K4-6 B SSYN H
K4-6 B SSYN L
BØ7A1 K4-6 ADRS (7777774) H
τ=180NS
R10 470
C94 330
D1 D664
R11 220
7404 E15
BØ7E1 K4-6 PS (P FM BUS) H
AØ7S1 K4-6 PROC RESPOND H
BØ7J2 K4-6 BUS FM PS L
EØ7D2 K4-6 BUS FM SR H
74H4Ø E61
74H11Ø E17

K4-6 GRANT H
DØ7J1 K4-6 TSACK (1)L
DØ7P2 K4-6 NOBACK (1)H
DØ7N2 K4-6 TDATA (1)L
K4-6 NOBACK (1)L
K4-5 NPR (1)L DØ7B1
K4-5 GRANT BR H DØ7M1
DISABLE TSACK L DØ7H2
K4-6 B SSYN H CØ7A1
K4-3 P JAMSTART H DØ7L1
K5-6 INIT H DØ7R2
K4-5 CLR PTR L DØ7H1
R27 1K
R21 1K
TSACK 7474 E55
NOBACK 7474 E54
TDATA 7474 E50
NODAT 7474 E54
8881 E55
R32 1K
R30 47
C99 47Ø
δ=150NS
TIME SACK
15 US 74123 E49
R28 39K
C98 12ØØ
K4-4 MSYN (1) H BØ7D1
K4-2 MCLK ENABLE L EØ7N1
R31 1K
R29 47
C13Ø 47Ø
TIME DATA
R2Ø 39K
C89 12ØØ
DØ7S2 K4-6 NODAT (1) H
K4-6 NODAT (1)L

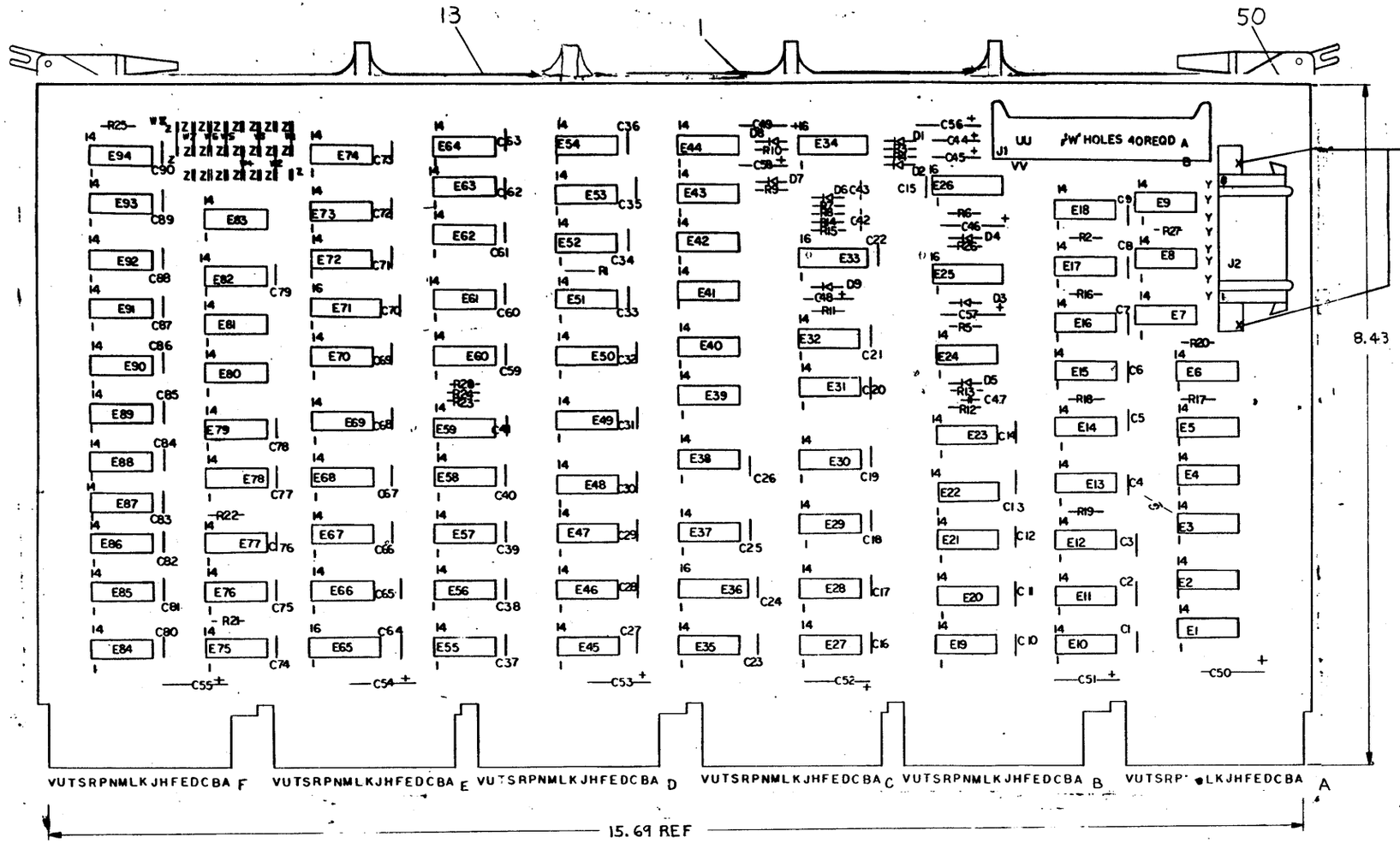
NOTE:
THE TSACK TIMEOUT CIRCUIT CAN BE DISABLED BY GROUNDING THE SIGNAL DISABLE TSACK L (DØ7H2)

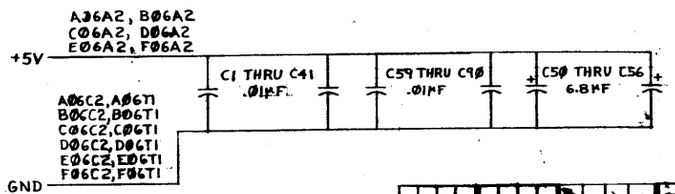
-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINISH, SURFACE QUALITY
MACHINE EDGES AND BREAK SHARP
CORNERS
MATERIAL
FINISH
DRAWN R Fudalla DATE 2-1-72
CHECK DATE 2/8/72
ENGR DATE 2/16/72
MFG DATE 2/16/72
QA DATE 2/16/72
NEXT ASSY
USED ON
PDP11
SCALE
SHEET 0 OF 0
EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
TIMING
BUS RESPONSE K4-6
SIZE D CODE CS NUMBER 47234-Ø-1 REV F
DIST.

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 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.





DEC 74157	8	16
DEC 74123	8	16
DEC 8251	8	16
DEC 8640	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.
		ETCH CIRCUIT BOARD	5009984	1
1		HANDLE MODULE	1210711-02	13
8		PINS SOCKET AMP	1209456	12
1	J1	CONN RIGHT ANGLE HEADER	1209441	11
1	J2	CONN PIN HOUSING	1209340	10
9	D1 THRU D9	DIODE D664	1100114	9
7	C50 THRU C56	CAP 6.8MF 35V ±10% TANT	1005306	8
2	C46, C57	CAP 15MF 20V ±10% TANT	1004812	7
1	C48	CAP 2.2MF 20V ±10% TANT	1002627	6
1	C58	CAP 1MF 35V ±10% TANT	1001776	5
73	C1 THRU C41 C59 THRU C90	CAP .01MF 100V ±20% DISC	1001610	4
3	C44, C45, C49	CAP 3.9MF 10V ±10% TANT	1000064	3
3	C42, C43, C47	CAP 680 PF 100V ±5% D.M.	1000026	2
1		ETCH CIRCUIT BOARD	5009984	1
1		TFE THIN WALL EXTRUDED TUBING	9107256	55
1	C91	CAP. 270 PF 100V ±5%	1000022	54
8		INSULATED JUMPER L-2007-1	9069185	53
2		HEX NUT NYLON	9007992	52
23		SPLIT LUG	9006735	51
12		EYELET	9006732	50
2		SHOULDER WASHER FIBER (BLK)	9006693	49
2		SCREW NYLON	9006401-4	48
1	E65	I.C. DEC 74157	1910655	47
4	E25, E26, E33, E34	I.C. DEC 74123	1910436	46
4	E24, E45, E60, E82	I.C. DEC 74H04	1909931	45
5	E13, E37, E58, E70, E81	I.C. DEC 8815	1909713	44
5	E16, E84, E85, E88, E89	I.C. DEC 8881	1909705	43
7	E1 THRU E4, E20, E29, E41	I.C. DEC 7404	1909686	42
1	E52	I.C. DEC 74H74	1909667	41
2	E36, E71	I.C. DEC 8251	1909594	40
1	E15	I.C. DEC 8640	1911469	39
4	E14, E40, E48, E72	I.C. DEC 74H11	1909267	38
1	E55	I.C. DEC 74H61	1909065	37
1	E66	I.C. DEC 74H60	1909064	36
1	E59	I.C. DEC 74H55	1909063	35
2	E91, E92	I.C. DEC 74H53	1909062	34
2	E63, E67	I.C. DEC 74H52	1909061	33
4	E47, E56, E69, E87	I.C. DEC 74H50	1909060	32
1	E62	I.C. DEC 74H21	1909058	31
4	E7, E68, E80, E83	I.C. DEC 74H10	1909057	30
2	E57, E90	I.C. DEC 74H00	1909056	29
7	E5, E27, E28, E35, E39, E49, E54	I.C. DEC 7402	1909004	28
1	E46	I.C. DEC 74H20	1905635	27
3	E17, E18, E86	I.C. DEC 74H40	1905586	26
2	E31, E64	I.C. DEC 7450	1905580	25
				24
2	E9, E94	I.C. DEC 7430	1905578	23
4	E8, E19, E43, E93	I.C. DEC 7420	1905577	22
3	E38, E51, E53	I.C. DEC 7410	1905576	21
7	E11, E21, E22, E23, E30, E73, E74	I.C. DEC 7400	1905575	20
13	E6, E10, E12, E32, E42, E44 E50, E61, E75 THRU E79	I.C. DEC 7474	1905547	19
4	R3, R4, R5, R6	RES 18K 1/4W ±5%	1302465	18
4	R9, R10, R11, R15	RES 12K 1/4W ±5%	1300488	17
16	R1, R2, R14, R16 THRU R28	RES 1K 1/4W ±5%	1300365	16
2	R8, R12	RES 470Ω 1/4W ±5%	1300316	15
2	R7, R13	RES 220Ω 1/4W ±5%	1300271	14

PARTS LIST

FIRST USED ON OPTION MODEL	
PDP 11	

ETCH BOARD REV	E		
		D664	IN3606
		DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.

REVISIONS			
REV	CHANGE NO.	CHK	
A	ORIGINATED	J.SOLOMON	8-17-72
B	M7235-00001	J.SOLOMON	9-27-72
C	M7235-00002	J.SOLOMON	10-31-72
D	M7235-00003	J.SOLOMON	11-13-72
E	M7235-00004	J. ROGERS	12-11-72
F	M7235-00005	J. ROGERS	1-10-73
G	M7235-00006	J. ROGERS	2-14-73
H	M7235-00007	J. ROGERS	3-14-73

DRN	Jennifer DATE 7-25-72
CHKD	DATE 7/26/72
ENGR	DATE 7/31/72
PROJ MGR	DATE 7/31/72
PROG	J. Stringer DATE 8-1-72
NEXT HIGHER ASSY	KDII-A
SCALE	NONE
SHEET	1 OF 8

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: STATUS K5-1

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

DIST.

K1-3 DMUX87 H E06R2
K1-3 DMUX86 H E06V2
K5-8 INIT1 L B06A1
K1-3 DMUX85 H E06R1
K1-3 DMUX84 H E06C1
K1-2 DMUX83 H D06N1
K1-2 DMUX82 H D06M1
K1-7 D(15:08)=8 H D06P2
K1-7 D(07:04)=8 H E06D2
K1-7 D(03:00)=8 H E06B1
K4-6 BUS FM PS L F06F1
K5-2 BUS FM PS H
K5-2 PS(N) (0) H
K5-2 PS (Z)(1) L
K5-2 PS (V) (0) H
K5-2 PS (C)(1)H
K5-2 PS (C) (1) L
K3-9 V DATA L E06U2
K3-9 C DATA H E06K1
K5-4 P BUT 37 L
K5-2 CLK PS(07:05)H
K5-2 LOAD PS L
K5-2 CLK PS(N,Z,V) H
K5-2 CLK PS(C) H
KE-5 INH PS CLK 1 L D06K1
KT-2 INH PS CLK 2 L D06J1
K2-8 SPS2 (1)H D06N2
K2-8 SPS1 (1)H C06V2
K2-8 SPS0 (1)H D06U2
K1-7 PS ADRS H D06S2
K4-2 PS(P1+P3) H E06J1
K4-4 PS(P FM BUS) H E06E1
K3-8 CC INSTR H D06R1
K1-3 D07(0)H E06F2
K1-5 D15 (0)H E06E2
K1-3 BMUX07 H E06M2
K1-5 BMUX15 H E06J2
K1-3 RD07 H E06M2
K1-5 RD15 H E06L2
K3-7 BYTE CODES H E06A1
K4-2 CLK D H E06N2
K5-2 PSBP2
K5-2 PSB7 (1)H
K5-2 PSB6 (1)H
K5-2 PSB5 (1)H
K5-2 PSB4 (1)H
K5-2 PSB3 (1)H
K5-2 PSB2 (1)H
K5-2 PSB1 (1)H
K5-2 PS(Z) (1)H
K5-2 PS(V) (1)H
K5-2 PS(C) H
K5-2 BUSRD FM PS H
K5-2 NDATA L
K5-2 LOAD PS L
K5-2 PSSTA (1)H
K5-2 PSSTB H
K5-2 PSSTC (1)L
K5-2 SPS (02:00)=7 H
BUS RD87 L
BUS D87 L
BUS RD86 L
BUS D86 L
BUS RD85 L
BUS D85 L
BUS RD84 L
BUS D84 L
BUS RD83 L
BUS D83 L
BUS RD82 L
BUS D82 L
BUS RD81 L
BUS D81 L
BUS RD80 L
BUS D80 L

SPS TABLE:

(SPS CODE) 8	FUNCTION
0	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	S0	FN
H	--	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

NOTES:
1. (SPS=3) #CC INSTR ALSO GATES PS TO BUS RD.
2. SPS0 BIT ALWAYS ENABLES THE CLK PS(C) SIGNAL.
3. SPS1 BIT ALWAYS ENABLES THE CLK PS(N,Z,V) SIGNAL.

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

DRN. [redacted] DATE 2-4-72
CHK'D. DATE 7-7-72
DATE 7-7-72
DATE 7-7-72
DATE 7-7-72
FIRST USED ON
PDP11
SCALE
SHEET 2 OF 8

[redacted] EQUIPMENT CORPORATION

TITLE
STATUS
PS (07:00) K5-2

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

1 AUG 27 1971

BUT TABLE (NUMERICAL & MNEMONIC CORRESPONDANCE):

BUT00	NO OP	BUT10	BUT (HALT)	BUT20	BUT (BYTE+SERVICE+FETCH)	BUT30	BUT (VARIOUS SWITCHES)
BUT01	BUT (CBR)	BUT11	BUT (MM FAULT)	BUT21	BUT (IR03, BYTE+SOURCE)	BUT31	BUT (NOWR+BYTEWR+WORDWP)
BUT02	BUT (CBR2)	BUT12	BUT (D=0)	BUT22	BUT (BYTE+SOURCE)	BUT32	NOT USED
BUT03	BUT (REG DEP)	BUT13	NOT USED	BUT23	NOT USED	BUT33	BUT (OB+INSTR4)
BUT04	BUT (REG EXAM)	BUT14	NOT USED	BUT24	BUT (CBR+HALT)	BUT34	BUT (INSTR4)
BUT05	BUT (BEGIN)	BUT15	BUT (JSR+JMP)	BUT25	BUT (BR, WAIT+FETCH)	BUT35	BUT (OB+INSTR3)
BUT06	BUT (SWITCH)	BUT16	BUT (SERVICE C+FETCH C)	BUT26	BUT (REQUESTS)	BUT36	BUT (INSTR3)
BUT07	BUT (INTR)	BUT17	BUT (IF03)	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 FN IS ACTIVE (LOW) FOR $0 \le N < 10$.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

MATERIAL
FINISH

DRN P. Gribble DATE 2-4-72
CHK DATE 2/21/72
ENG DATE 2/21/72
PROJ. DATE 2/21/72
MFG. DATE 2-17-72
FIRST USED ON
PDP11
SCALE —
SHEET 3 OF 8

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
BUT & BRANCH KS-3

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

AUG 87 EFI

K4-6 NODAT (1)L C06D2
K4-4 ODA ERR L C06O1
K4-3 JAMJPP H C26T2
K5-6 CONBL (1)H
K5-5 EXT P CLR TRAP L B06F2
K3-6 TRAP DATA L B06N2
K5-8 INIT L
K5-3 BUT(00:08) H
K2-5 USF1 (1)H C06N2
K2-5 USF0 (1)H C06P1
K5-5 STACK04 H
K5-4 PWRON (1)H
K4-4 P INTR H D06L2
K4-2 SET CLK L B06K1
K4-2 P1 H D06D2
K4-2 (P1+P3) H B26L2
K2-7 DSBUS (1)H E06H1
K2-7 CISUB (1)H C06E2
K2-7 CSBUS (1)H B06S1
K4-2 P3 H C06M2
K5-6 P BUT37 H C06R2
K4-2 P2 H C06J2
K5-3 BUT25 H
K4-5 BRPTR (1)L C06U2
K5-3 BUT07 H
K5-4 P BUT37 L
K5-4 FLAG CLR H
K5-4 RI PULLUP H
K5-3 BUT01 H
K5-3 BUT(04:08) H
K2-5 USF2 (1)H C06P2
K5-3 BUT25 H
K5-3 TRACE L B06M2
K4-5 BRPTR (1)L C06U2
K4-2 P2 H C06J2
K5-4 P BUT04 H
K5-8 INIT H B06F1
K5-8 CLK PWRON H
K4-3 JAMJPP L C06L1
K5-3 WAIT L B06P1
K3-4 OVLAP INSTR H D06E2
KJ-2 BOVFL L D06R2
KI-7 BOVFL L F06S1
K4-4 OVFLW ERR L B06M1
K4-4 CLK BOVFLW H D26F2
K5-4 CLR BERR L C06U1
K5-4 DUBBERR L BC6U2
K5-4 BERR (1)H
K5-4 BERR (1)L D26J2
K5-4 TRAP (1)L
K5-4 BOVFLW (1)H D06K2
K5-4 BOVFLW (1)L
K5-4 CLR OVFLW L C06K1
K5-4 IMTR (1)H B06H1
K5-4 TRAP (1)H
K5-4 PWRON (1)H C06F2
K5-4 PWRON (1)L
K5-4 STALL (1)L C06M1
K5-4 AMBY (1)H B06S2
K5-4 WAIT (1)L C06P1
K5-4 BRBV (8)H B06V2
K5-4 RI PULLUP H
K5-4 OVLAP (1)H C06S1

NOTE:
JUMPER W1 IS MOVED TO CONNECT E51 PIN 01 TO D06R2 FOR KJ11-A OPTION

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED
TOLERANCES
FINAL MACHINE QUALITY
DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
STATUS
FLAGS
K5-4
SIZE D
CS
M7235-0-1
REV. H
SHEET 4 OF 8
DRAWN R. Rudkin DATE 2-7-72
CHECKED
ENGR
MFG
QA
PDP11
SCALE

K3-8 IOT L C06H2
K3-8 TRAP L B06S1
K3-8 EMT L B05A1
K3-8 RSVD INSTR L C06F1
K3-8 BPT L C06J1
K3-8 ILL INSTR L C26H1
K5-4 PWRDN (1)H
K3-7 TRACE L B26M2
K5-4 TRAP (1)H B26H1
K5-4 BOVFLW (1)H
K5-4 STALL (1)L C06M1
K5-4 BERR (1)L D06J2

7418 E53 · 7418 E53 · 7428 E43 · 7404 E41 · 7402 E54 · 7402 E54 · 7408 E74 · 7418 E53 · 7458 E64 · 7458 E64 · 74H52 E63 · 7402 E54 · 7402 E54

DEVICE TRUTH TABLE:
8251
FOR THE DECIMAL EQUIVALENCE N, OF THE BINARY NUMBER (D3,D2,D1,D0) ONLY THE OUTPUT FN IS ACTIVE (LOW) FOR $0 \le N < 10$

SBC TABLE

(SBC) 8	USE	B CONSTANT 15 14 13 12 11 10 09 08 07 06 05 04 03 02 01 00	NOTES
00	TRAPS	0 0 0 0 0 0 0 0 0 0 0 0 T T T T	T=f(STPM(4:2), SEE BELOW
01	CONST 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1	GENERAL USE
02	CONST 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0	GENERAL USE
03	CCNST(1+2)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1	POSSIBLE CIN00 MAKES THIS 2
04	NOT USED	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
05	NOT USED	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
06	NOT USED	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
07	CONS INC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 C	C IS 1 IF EXAM(1) OR DEP(1) SET
10	SR ADRS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0	ALSO DISPLAYED ON A CONS TIME OUT
11	PWR UP	W7 W6 W5 W4 W3 W2 W1 W0 W7 W6 W5 W4 W3 W2 0 0	PROGRAM ADRS SELECTED BY JUMPERS
12	CC MASK	0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1	MASK USED FOR CONDITION CODE INSTRS
13	SOB MASK	0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1	MASK USE IN SOB INSTR
14	SINCLK	0 0 0 0 0 0 0 0 0 0 0 S 0 0 0 0	S=0 FOR SWITCHCOUNT IF SINCLK
15	MM VECTOR	0 0 0 0 0 0 0 0 1 0 1 0 1 0 0 0	KT VIOLATION TRAP VECTOR
16	MM CONST	0 0 0 0 0 0 0 0 0 0 0 0 0 0 M 0	M=1 IF SM0 IN MFP INSTR
17	STACK 04	0 0 0 0 0 0 0 0 0 0 0 0 1 0 0	PREEMPTIVE STACK POINTER

STPM TABLE:

(STPM) 8	USE
4	BUS ERROR TRAPS (BERR + 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(1) & BERR(1) PRODUCES BC = 114_8.

K2-8 SBC3 H F06S2
K2-8 SBC2 H C06R1
K2-8 SBC1 H F06R2
K2-8 SBC0 H E06J1

7402 E49 · 74H18 E83 · BC(17:10) 8251 E71 · 74H04 E82 · 74H04 E82 · 74H11 E72 · 74H11 E72 · 74H04 E82 · 74H21 E62 · 74H04 E82 · 74H04 E82 · 8815 E81 · 8815 E81 · 7408 E74 · 7408 E74 · 74H11 E72

K4-3 PERR(0)H F06V1
KM-2 MCLK ENABLE L C06S2
KT-9 MFP SMC D06V1
K5-6 CONSL INC H
+5V · R28 1K

PWR FAIL UP
+5V · R25 1K
W7 · WE · W5 · W4 · W3 · W2 · W8

NOTE:
1- CONNECTIONS FOR W7 THRU W2 ARE SHOWN FOR BASIC PWR FAIL UP VECTOR ADDRESS OF $(24)_8$. ON ETCH THE W#'S ARE LOCATED UNDER THESE ORIGINAL JUMPER POSITIONS.
2 REMOVE W8 WHEN MFII-LP IS INSTALLED.

7408 E73 · 74H04 E62 · 7418 E83 · 7418 E83 · 7418 E38 · 7428 E93 · 7438 E94 · 74H04 -93 · 74H53 E91 · 74H53 E92 · 7408 E73 · 7408 E73 · 7408 E74 · 74H04 E62 · 74H04 E62 · 74H04 E82

F06U1 K5 5 SBC = 10 L
C05L2 K5-5 BC(15:12,10:09) H
B06T2 K5-5 BC(11,08) H
B05L1 K5-5 BC07 H
D06H2 K5-5 BC06 H
C06K2 K5-5 BC05 H
E06S2 K5-5 BC04 H
F06V2 K5-5 BC03 H
F06R1 K5-5 BC02 H
F06T2 K5-5 BC01 H
F06W K5-5 BC00 H
F06U2 K5-5 BCON (1+2) H
E06V1 K5-5 SBC = 16 L

K5-5 STPM4 H
K5-5 STPM3 H
K5-5 STPM2 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 SHARP EDGES

DRN R.P. Smith 2-7-72
CHK [illegible] 2/7/72
ENG [illegible] 2/7/72
MGR [illegible] 2/7/72
QA [illegible] 2-7-72

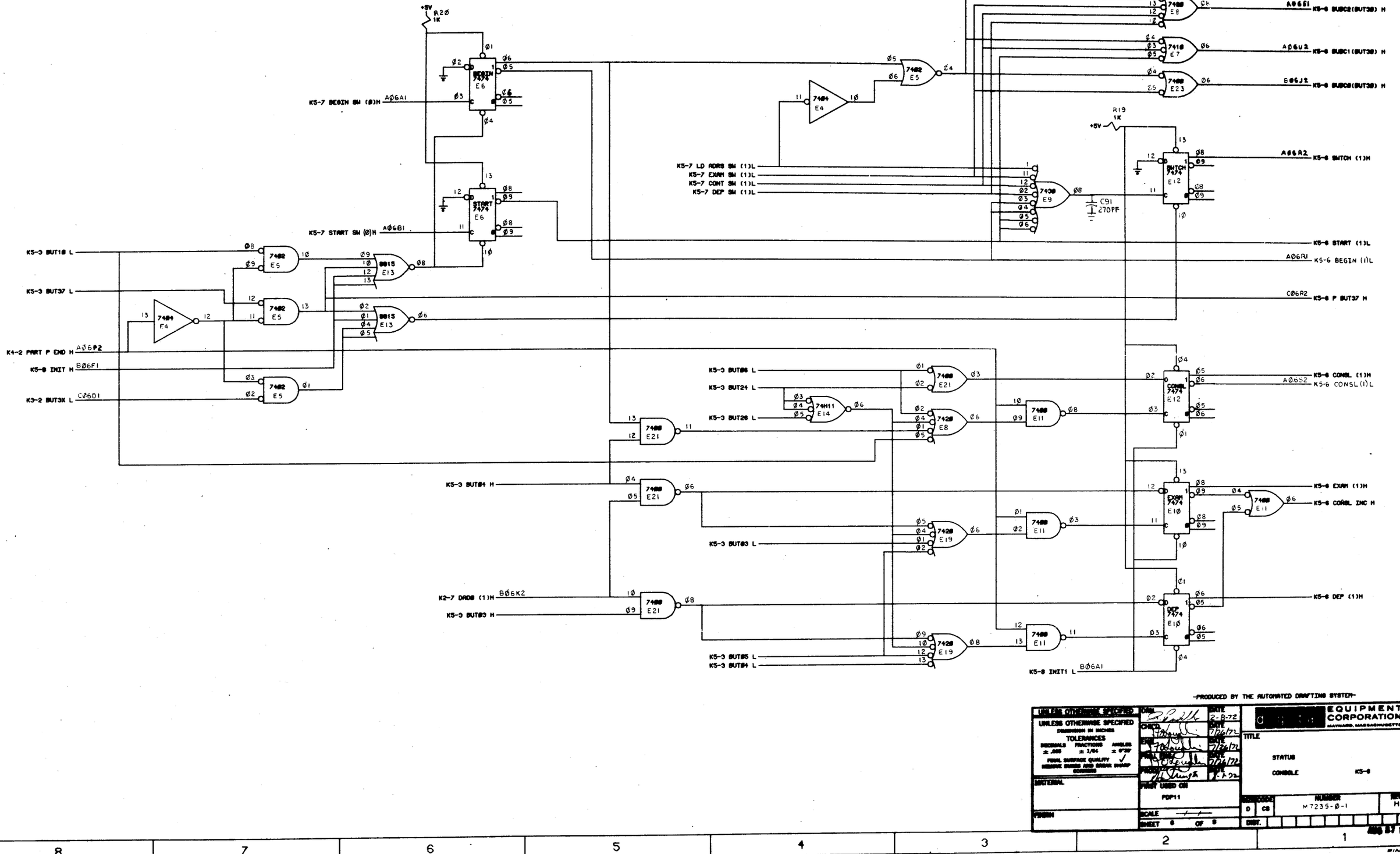
MATERIAL
FINISH
NEXT ASSY
POP11
SCALE
SHEET 5 OF 8

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
CONSTANTS K5-5

SIZE D · CODE CS · NUMBER M7235-0-1 · REV. H
SHST.

AUG 27 1971



-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED	DRAWN	DATE 2-8-72	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 7/24/72	TITLE STATUS CONSOLE KS-8
MATERIAL	ENGR	DATE 7/24/72	
FINISH	PROJ ENGR	DATE 7/24/72	
	PROD ENGR	DATE 7-24-72	
	FIRST USED ON PDP11		
	SCALE		SIZE D CS NUMBER M7235-0-1 REV. H
	SHEET 8 OF 8		DIST.

K1-6 BA05 (1)H — A06J2 — 11 — 7404 E2 — 10
K1-6 BA06 (1)H — A06J1 — 09 — 7404 E2 — 08
K1-6 BA04 (1)H — A06P1 — 01 — 7404 E2 — 02
K1-6 BA07 (1)H — A06K1 — 13 — 7404 E2 — 12
K1-6 BA03 (1)H — A06L1 — 03 — 7404 E2 — 04
K1-6 BA08 (1)H — A06H1 — 03 — 7404 E3 — 04
K1-6 BA02 (1)H — A06K2 — 05 — 7404 E2 — 06
K1-6 BA09 (1)H — A06E1 — 09 — 7404 E3 — 08
K1-6 BA01 (1)H — A06M1 — 11 — 7404 E1 — 10
K1-6 BA10 (1)H — A06F1 — 13 — 7404 E3 — 12
K1-6 BA00 (1)H — A06N2 — 13 — 7404 E1 — 12
K1-6 BA11 (1)H — A06D2 — 01 — 7404 E4 — 02
K5-6 CONSL (1)H — 09 — 7404 E4 — 08
K1-6 BA12 (1)H — A06F2 — 05 — 7404 E3 — 06
K4-5 B BUSY H — A06L2 — 09 — 7404 E1 — 08
K1-6 BA13 (1)H — A06H2 — 01 — 7404 E3 — 02
K4-2 IDLE L — A06M2 — 05 — 7404 E1 — 04
K1-6 BA14 (1)H — A06E2 — 11 — 7404 E3 — 10
K4-5 BBSY (1)H — A06N1 — 01 — 7404 E1 — 02
K1-6 BA15 (1)H — A06D1 — 03 — 7404 E4 — 04
K5-8 B DC LO H — 05 — 7404 E1 — 06

J1 BC08R - CABLE, SHIELD TOWARD BOARD; TO J2 OF KY11-D CONSOLE

A	K5-7 BA05 L	
B	K5-7 BA06 L	
C	K5-7 BA04 L	
D	K5-7 BA07 L	
E	K5-7 BA03 L	
F	K5-7 BA08 L	
H	K5-7 BA02 L	
J	K5-7 BA09 L	
K	K5-7 BA01 L	
L	K5-7 BA10 L	
M	K5-7 BA00 L	
N	K5-7 BA11 L	
P	K5-7 CONSOLE L	
R	K5-7 BA12 L	
S	K5-7 BUS L	
T	K5-7 BA13 L	
U	K5-7 RUN L	
V	K5-7 BA14 L	
W	K5-7 PROCESSOR L	
X	K5-7 BA15 L	
Y	K5-7 PWR INIT L	
Z	KT-9 RELOCATE ENBL A06V1	
AA	KYD-3 LOADRS SW (1)L	K5-7 VIRTUAL L / K5-7 LOADRS SW (1)L
BB		
CC	KYD-3 EXAM SW (1)L	K5-7 EXAM SW (1)L
DD		
EE	KYD-3 CONT SW (1)L	K5-7 CONT SW (1)L
FF		
HH	KYD-3 HALT SW (1)L	
JJ	KYD-3 DEP SW (1)L	K5-7 DEP SW (1)L
KK		
LL	KT-9 PSI5 L C06B2	K5-7 USER L
MM	KT-9 KTSR16 L B06B2	K5-7 KT BA16 L
NN	KT-9 KTSR17 L A06B2	K5-7 KT BA17 L
PP		
RR	KYD-3 START INIT L	K5-7 START INIT L
SS		
TT	KYD-3 START SW (0)H	A06B1 K5-7 START SW (0)H
UU	+5V	
VV		

CS6 8.0 MFD

+5V — R18 1K — R17 1K — R16 1K

J2

08	REMOTE STOP L	
07		
06	REMOTE LOAD L	A06A1 K5-7 BEGIN SW (0) H
05		
04	+5V — R27 1K	
03		
02		A06C1 K5-7 CONSOLE H
01	REMOTE INIT L	A06C1 K5-7 BEGIN INIT L

05 — 7404 E4 — 06

01 — 7400 E14 — 12 — B06B1 K5-7 HALT SW 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

DRN R. Babb DATE 2-8-72
CHKD T. Bowden DATE 7/24/72
ENG DATE 7/24/72
PROJ. MGR. DATE 7/24/72
PROJECT DATE 9-1-72

FIRST USED ON PDP11

SCALE

SHEET 7 OF 8

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE STATUS CABLES KS-7

SIZE D | CODE CB | NUMBER M7235-0-1 | REV. H

DIST.

K4-2 JPUP (1)L B06T2

K5-8 CLK PWR DN H

K5-4 RI PULLUP H

K5-4 PWRDW (I)L C06F2

K5-8 INITI L

K4-2 (P1+P3) H B06L2

B06H1 K5-8 PWR RESTART H

B06J1 K5-8 P ENDRESET L

K5-8 RESET RESTART L

K5-3 BUT Ø2 H C06E1

K4-2 P3 H C06M2

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,Ø5) — 7MS

PULSE DC LO (E33,13) — 2MS

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

PWRUP INIT (E26,Ø4) — 20MS

DELAY POWER DOWN (E34,Ø5) — 3MS

POWER RESTART (E25,13) — 70MS

K5-8 DELAY DC L H

K5-8 B AC LO H

BUS AC LO L B06D2

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

A06V2 K5-8 INIT*RESET H

B06D1 BUS INIT L

B06A1 K5-8 INIT1 L

A06T2 K5-8 INIT2 L

B06H2 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

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

MATERIAL

FINISH

DRAWN R. Bubb 2-8-72
CHECKED J. Johnson 7/6/72
ENGR J. Johnson 7/6/72
MFG [illegible] 7/6/72
QA [illegible] 7/7/72
FIRST USED ON FSP11
SCALE
SHEET 0 OF 0

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

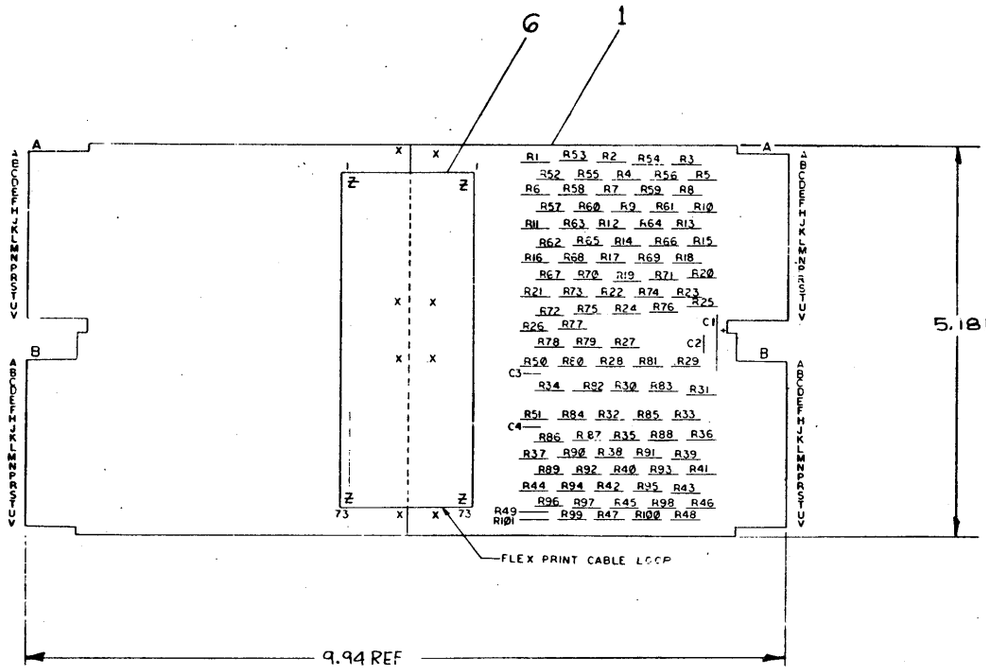
TITLE
STATUS
BUS DELAYS
K5-8

SIZE D CS M7235-0-1 REV H
DWG.

AUG 27 1971

NOTES:

1. CONNECTOR MODULE, M981 INTERCONNECTES 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.



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%	1000093	2
1		ETCHED CIRCUIT BOARD	5009763	1

PARTS LIST

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

DEC FORM NO. DRD-135A

REV	CHANGE NO.	REVISIONS
E	ORIGINATED	5409764-00001 J.O'LOUGHLIN 6/28/73
F		5409764-00002 J BURYNSKI 10/12/73
G		5409764-00003 JOHN ROGERS 12-6-74
J		5409764-00003 J BURYNSKI 12/27/73

FIRST USED ON OPTION MODEL: KDII-A

ETCH BOARD REV F

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRWN J BURYNSKI 5/23/72
CHKD 7/11/72
ENGR 7/11/72
PROJ MGR 7/11/72
PROD 7/11/72

NEXT HIGHER ASSY D-UA-M9881-C-0

SCALE

SHEET 1 OF 2

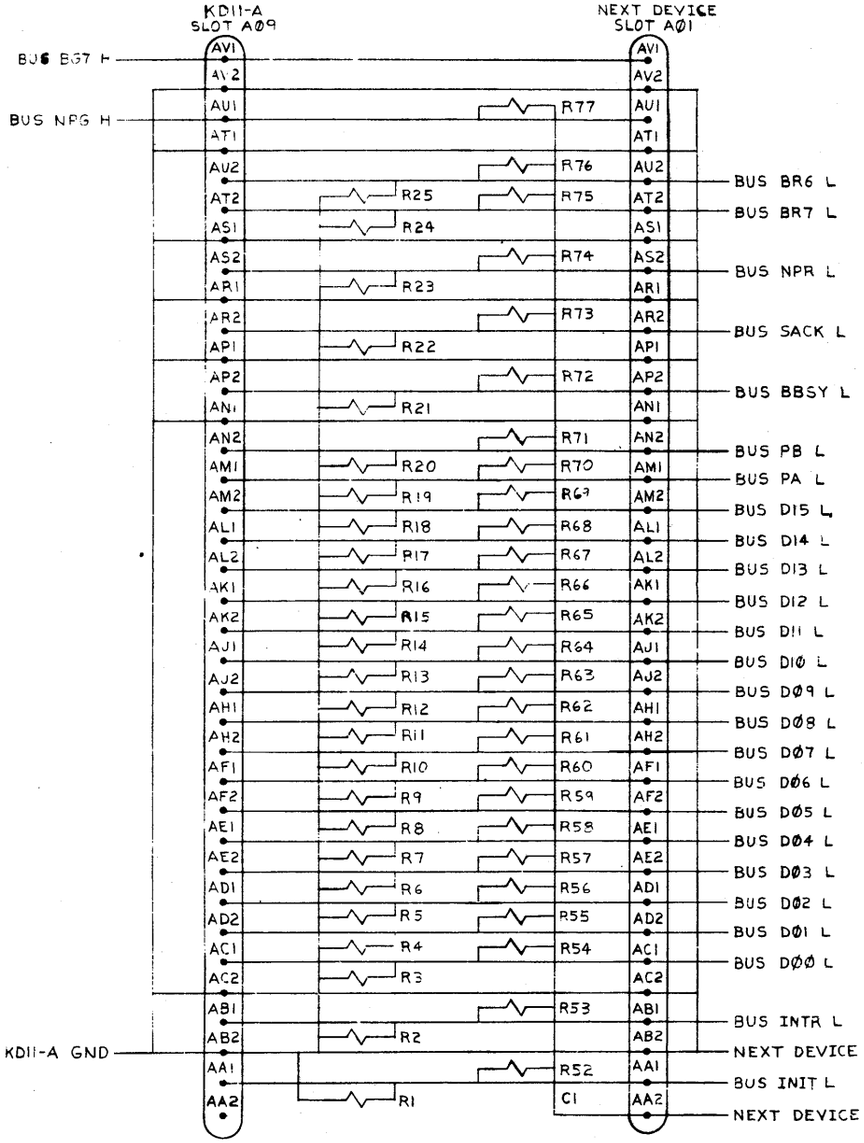
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

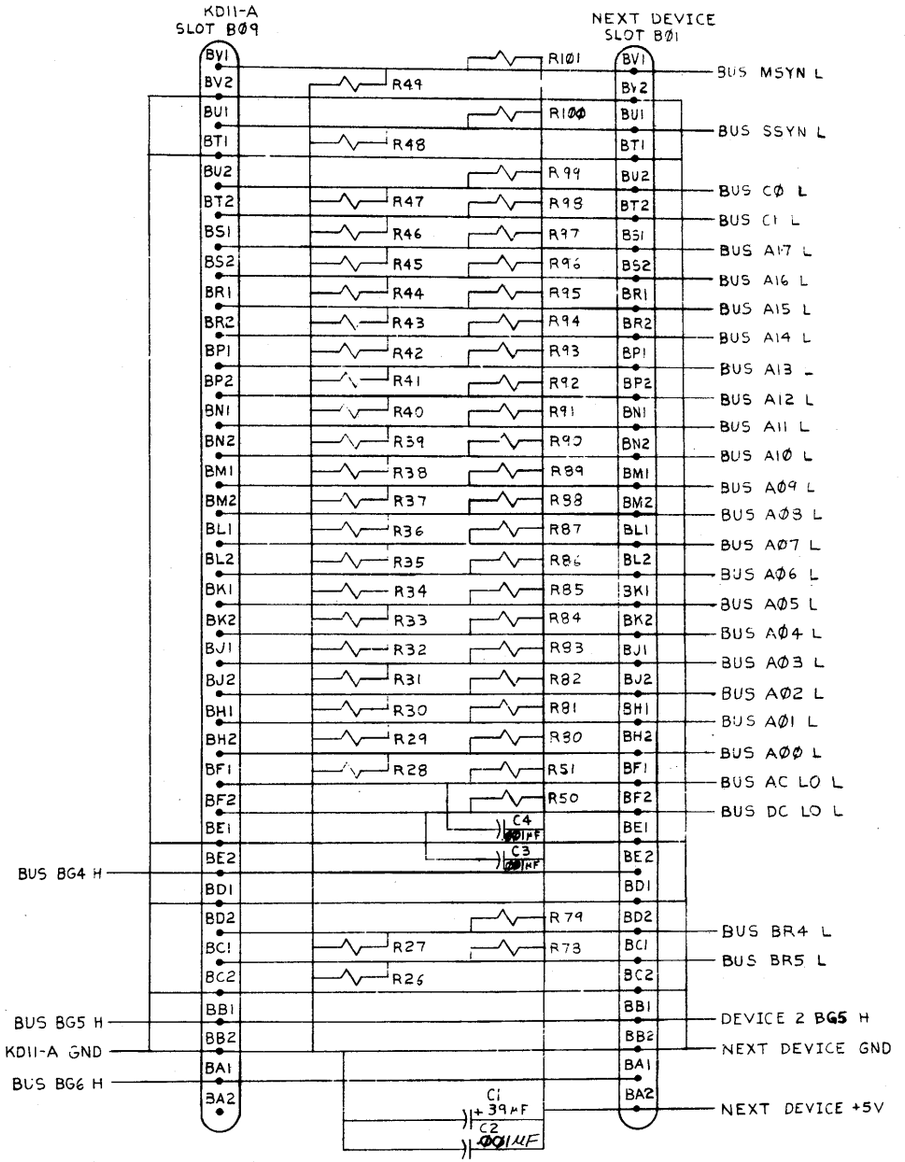
TITLE: INTERNAL UNIBUS AND TERMINATOR

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

DIST

5409764-0-1 J





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		6-12-72
CHKD		7/14/72
ENG		7/14/72
PROJ ENG		7/14/72
QUAL CE		7/14/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: INTERNAL UNIBUS AND TERMINATOR

NEXT HIGHER ASSY: D-UA-M981-Ø-Ø
SCALE NONE
SHEET 2 OF 2

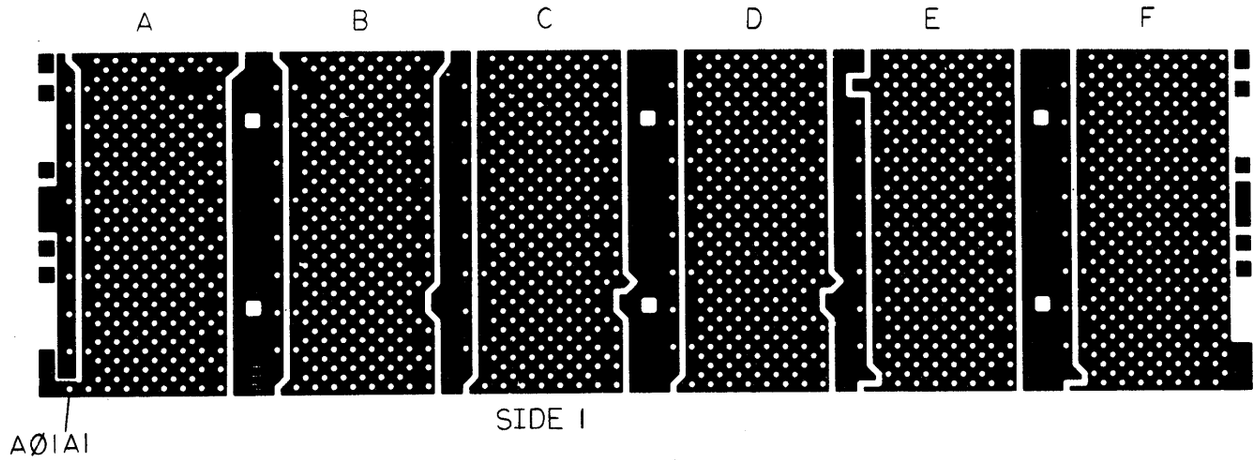
SIZE	CODE	NUMBER	REV.
D	CS	5409764-0-1	J

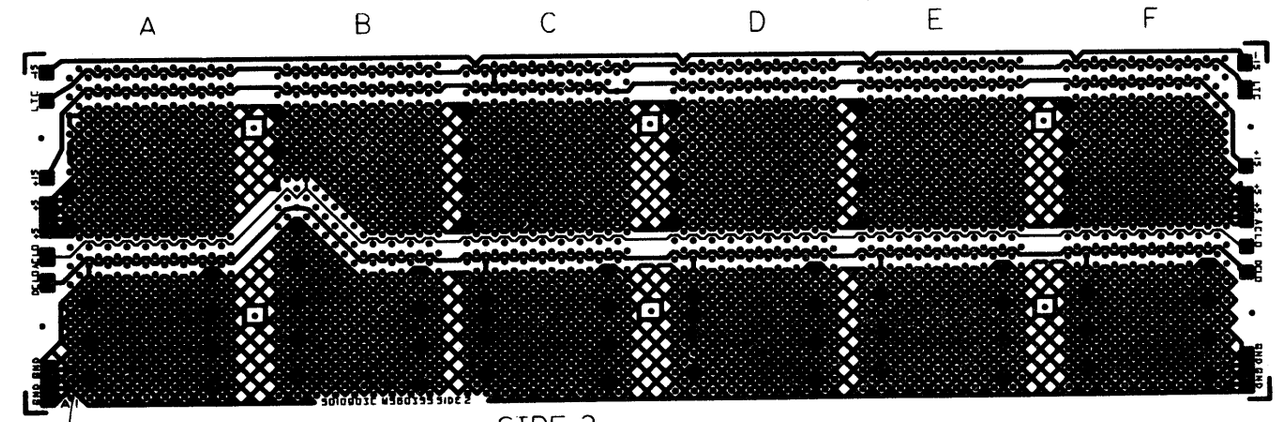
DIST.

REVISIONS		
REV.	CHANGE NO	CHK

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

NOTES:





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

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		KDII-A AWT REV STATUS	A-WT-7010230-0	5
REF		MODULE ECO HISTORY	B-MH-5410909-0-6	4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5410904-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5410904-0-4	2
1		ETCHED CIRCUIT BOARD	5010903	1

PARTS LIST

FIRST USED ON OPTION MODEL: KDII-A

ETCH BOARD REV. C

REVISIONS	CHANGE NO.	REV.
JOHN ROGERS 10-15-74		
J. Rogers 11-03-74	5410904-1	C
CHK		

DEC NO.	EIA NO.	DEC NO.	EIA NO.
SEMICONDUCTOR CONVERSION CHART			

DRN. J. Vincent DATE 6-21-74
CHK'D. E. Healy DATE 7-31-74
ENG. Rob Evans DATE 8-8-74
PROJ. ENG. Rob Evans DATE 8-8-74
MOD. Bill Peterson DATE 8/14/74
NEXT HIGHER ASSY D-AD-7010085-0-0
SCALE NONE
SHEET 1 OF 1

digital

TITLE CIRCUIT SCHEMATIC (KDII-A)

SIZE D | CODE CS | NUMBER 5410904-0-1 | REV. C

DIST.

SIZE D | CODE CS | NUMBER 5410904-0-1 | REV. C

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.
THE WIRE LIST ALSO CONTAINS TWISTED PAIR CONNECTIONS WHICH ARE IDENTIFIED BY AN "H" IN THE "Q" COLUMN AND "TWP" IN THE "REMARKS" COLUMN.

REVISIONS		
CHK	CHANGE NO.	REV.
KP	KDIIA-00013	L
[illegible]	KDIIA-00014	M
[illegible]	KDIIA-00015	N

FIRST USED ON OPTION MODEL: PDP 11

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN. [illegible]	DATE 7/31/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. [illegible]	DATE 7/31/72	
ENG. [illegible]	DATE 7/31/72	TITLE: BACK PLANE (KDII-A PROCESSOR)
PROJ. ENG. [illegible]	DATE 7/31/72	
PROD. [illegible]	DATE 8-2-72	
NEXT HIGHER ASSEMBLY: D-AD-7010230-0-0		SIZE K, CODE WL, NUMBER KDII-A-WL, REV. N
SCALE		DIST.
SHEET 1 OF 1		

DEC FORM NO. DRB 109

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
(P1+P3)	H	B06L2		1-01 *			K5-48				1		N	6-1/8		1
(P1+P3)	H	D08J1		1-02 *			KT-2				2		N	3-1/8		1
(P1+P3)	H	E07J2		1-03 *			K4-24					SOURCE (K4-2)				1
(P1+P3)	H			1										9-2/8		1
+15V		C09U1			P										1-PIN RUN	2
+5V		A01A2		1-01 *	P						1			1		3
+5V		A02A2		1-02 *	P						2			1		3
+5V		A03A2		1-03 *	P						1			1		3
+5V		A04A2		1-04 *	P						2			1		3
+5V		A05A2		1-05 *	P						1			1		3
+5V		A06A2		1-06 *	P						2			1		3
+5V		A07A2		1-07 *	P						1			1		3
+5V		A08A2		1-08 *	P						2			1		3
+5V		A09A2		1-09 *	P						1			3-2/8		3
+5V		B09A2		1-10 *	P						2			1		3
+5V		B08A2		1-11 *	P						1			1		3
+5V		B07A2		1-12 *	P						2			1		3
+5V		B06A2		1-13 *	P						1			1		3
+5V		B05A2		1-14 *	P						2			1		3
+5V		B04A2		1-15 *	P						1			1		3
+5V		B03A2		1-16 *	P						2			1		3
+5V		B02A2		1-17 *	P						1			1		3
+5V		B01A2		1-18 *	P						2			3		3
+5V		C01A2		1-19 *	P						1			1		3
+5V		C02A2		1-20 *	P						2			0-5/8		3
+5V		B03V1		1-21 *	P						1			0-5/8		3
+5V		C03A2		1-22 *	P						2			1		3
+5V		C04A2		1-23 *	P						1			1		3
+5V		C05A2		1-24 *	P						2			1		3
+5V		C06A2		1-25 *	P						1			1		3
+5V		C07A2		1-26 *	P						2			1		3
+5V		C08A2		1-27 *	P						1			1		3
+5V		C09A2		1-28 *	P						2			3-2/8		3
+5V		D09A2		1-29 *	P						1			1		3
+5V		D08A2		1-30 *	P						2			1		3
+5V		D07A2		1-31 *	P						1			1		3
+5V		D06A2		1-32 *	P						2			1		3
+5V		D05A2		1-33 *	P						1			1		3
+5V		D04A2		1-34 *	P						2			1		3
+5V		D03A2		1-35 *	P						1			1		3
+5V		D02A2		1-36 *	P						2			1		3
+5V		D01A2		1-37 *	P						1			1-5/8		3
+5V		C03V1		1-38 *	P						2			3-2/8		3
+5V		D03V1		1-39 *	P						1			0-5/8		3
+5V		E02A2		1-40 *	P						2			1-1/8		3
+5V		E01B1		1-41 *	P						1			0-1/8		3
+5V		E01A2		1-42 *	P						2			1-4/8		3
+5V		E03A2		1-43 *	P						1			1		3
+5V		E04A2		1-44 *	P						2			1		3
+5V		E05A2		1-45 *	P						1			1		3
+5V		E06A2		1-46 *	P						2			1		3
+5V		E07A2		1-47 *	P						1			1		3
+5V		E08A2		1-48 *	P						2			1		3
+5V		E09A2		1-49 *	P						1			3-2/8		3

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
+5V		F09A2		1-50 *	P						2			1		3
+5V		F08A2		1-51 *	P						1			1		3
+5V		F07A2		1-52 *	P						2			1		3
+5V		F06A2		1-53 *	P						1			1		3
+5V		F05A2		1-54 *	P						2			1		3
+5V		F04A2		1-55 *	P						1			1		3
+5V		F03A2		1-56 *	P						2			1		3
+5V		F02A2		1-57 *	P						1			1		3
+5V		F01A2		1-58 *	P						2			0-1/8		3
+5V		F01B1		1-59 *												3
+5V				1										67-3/8		3
-15V		C09B2		1-01 *	P						1			3-2/8		4
-15V		D09B2		1-02 *	P						2			3		4
-15V		F09B2		1-03 *	P						1			3-2/8		4
-15V		F09B2		1-04 *												4
-15V				1										9-4/8		4
A INIR DONE	H	F09L2		1-01 *		DD					1	SOURCE	N	1		5
A INIR DONE	H	F09R1		1-02 *		DD										5
A INIR DONE	H			1										1-0/8		5
A MASTER	L	F09D2		1-01 *		DD					2		N	1-6/8		6
A MASTER	L	F09R2		1-02 *		DD					1		N	0-4/8		6
A MASTER	L	F09N1		1-03 *		DD						SOURCE				6
A MASTER	L			1										2-2/8		6
ADRS (777774)	H	B07A1		1-01 *		K4-6					1	SOURCE	N	12-1/8		7
ADRS (777774)	H	E03U1		1-02 *		KJ-2										7
ADRS (777774)	H			1										12-1/8		7
ALU00	H	C02P2		1-01 *		KE-26					1		N	8-1/8		8
ALU00	H	F04F1		1-02 *		K1-2						SOURCE				8
ALU00	H			1										8-1/8		8
ALU07	H	B04J1				K1-3						SOURCE			1-PIN RUN	9
ALU15	H	B04J2				K1-5						SOURCE			1-PIN RUN	10
ALU04	H	A05H1		1-01 *		K3-8					1	SOURCE	N	4-1/8		11
ALU04	H	B04P2		1-02 *		K1-2345										11
ALU04	H			1										4-1/8		11
ALUS0	H	A05M1		1-01 *		K3-8					1	SOURCE	N	3-3/8		12
ALUS0	H	B04K1		1-02 *		K1-2345										12
ALUS0	H			1										3-3/8		12
ALUS1	H	A05K1		1-01 *		K3-8					1	SOURCE	N	4-3/8		13
ALUS1	H	B04S1		1-02 *		K1-2345										13
ALUS1	H			1										4-3/8		13
ALUS2	H	A05J1		1-01 *		K3-8					1	SOURCE	N	3-5/8		14
ALUS2	H	B04J1		1-02 *		K1-2345										14
ALUS2	H			1										3-5/8		14

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
ALUS3	H	A05L1		1-01 *		K3-8					1	SOURCE	N	3-3/8		15
ALUS3	H	B04H1		1-02 *		K1-2345										15
ALUS3	H			1										3-3/8		15
ARGA (1)	H	A01K1		1-01 *		KF-4					1	SOURCE	N	9-1/8		16
ARGA (1)	H	D02L1		1-02 *		KE-9										16
ARGA (1)	H			1										9-1/8		16
ASH	L	A02P2				KE-4						SOURCE			1-PIN RUN	17
ASHC	L	A02P2				KE-24						SOURCE (KE-4)			1-PIN RUN	18
AWBY (1)	H	B06S2		1-01 *		K5-4					1	SOURCE	N	5-5/8		19
AWBY (1)	H	D07L2		1-02 *		K4-25										19
AWBY (1)	H			1										5-5/8		19
B AC LO	L	B06N1		1-01 *		K5-8					2	SOURCE	N	1-1/8		20
B AC LO	L	B07P2		1-02 *		K4-5					1		N	10-7/8		20
B AC LO	L	F07M1		1-03 *		K4-3										20
B AC LO	L			1										12-0/8		20
B BUSY	H	A06L2		1-01 *		K5-7					1		N	4-3/8		21
B BUSY	H	B07U2		1-02 *		K4-5						SOURCE				21
B BUSY	H			1										4-3/8		21
B DC LO	L	B06E1		1-01 *		K5-8					1	SOURCE	N	9-7/8		22
B DC LO	L	E07R1		1-02 *		K4-2										22
B DC LO	L			1										9-7/8		22
B EUPP8A	H	C02R2				KE-4									1-PIN RUN	23
B EUPP8B	H	D02D2		1-01 *	1						1		N	3-5/8		24
B EUPP8B	H	C01H1		1-02 *		KF-4										24
B EUPP8B	H			1										3-5/8		24
B INIT	L	C08T2		1-01 *		KI-2					2		N	1-5/8		25
B INIT	L	C07M1		1-02 *		K4-6					1	SOURCE	N	7-3/8		25
B INIT	L	E03L1		1-03 *		KJ-2										25
B INIT	L			1										9-0/8		25
B INTR	H	D06L2		1-01 *		K5-4					2		N	2-1/8		26
B INTR	H	E07C1		1-02 *		K4-24					1	SOURCE (K4-4)	N	4-3/8		26
B INTR	H	F05H2		1-03 *		K3-2										26
B INTR	H			1										6-4/8		26
B INTR DONE	H	F09M2		1-01 *		DD					1	SOURCE	N	1		27
B INTR DONE	H	F09S1		1-02 *		DD										27
B INTR DONE	H			1										1-0/8		27
B MASTER	L	F09P2		1-01 *		DD					1		N	0-4/8		28
B MASTER	L	F09S2		1-02 *		DD						SOURCE				28
B MASTER	L			1										0-4/8		28
B MSYN	H	B07S1		1-01 *		K4-4					1	SOURCE	N	12-5/8		29
B MSYN	H	F01E1		1-02 *		KM-2										29
B MSYN	H			1										12-5/8		29

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
B SSYN	H	C07A1		1-01 *			K4-256		1	SOURCE (K4-6)	N	12-5/8		30
B SSYN	H	F01M1		1-02 *			KM-2							30
B SSYN	H			1								12-5/8		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)	N	3-5/8		33
B15 (1)	H	B02M2		1-02 *			KE-45		1		N	5-3/8		33
B15 (1)	H	D01E2		1-03 *			KF-4		2		N	4-3/8		33
B15 (1)	H	E01S1		1-04 *			KM-2							33
B15 (1)	H			1								13-3/8		33
BA(06:03)=0	H	D04K1					K1-7			SOURCE			1-PIN RUN	34
BA(06:03)=1	H	D04D2					K1-7			SOURCE			1-PIN RUN	35
BA(07:05)=1	L	B04P1		1-01 *			K1-7		1	SOURCE	N	7-1/8		36
BA(07:05)=1	L	E03A1		1-02 *			KJ-2							36
BA(07:05)=1	L			1								7-1/8		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)	N	6-7/8		38
BA(17:16)	H	C08K2		1-02 *			KT-9							38
BA(17:16)	H			1								6-7/8		38
BA00 (1)	H	A08F2		1-01 *			KT-8		1		N	1-2/8		39
BA00 (1)	H	A07F1		1-02 *			K4-4		2		N	1-3/8		39
BA00 (1)	H	A06N2		1-03 *			K5-7		1		N	9-5/8		39
BA00 (1)	H	D05S1		1-04 *			K3-7		2		N	5-1/8		39
BA00 (1)	H	F04J1		1-05 *			K1-68			SOURCE (K1-6)				39
BA00 (1)	H			1								17-3/8		39
BA01 (1)	H	A08E2		1-01 *			KT-8		1		N	2-2/8		40
BA01 (1)	H	A06M1		1-02 *			K5-7		2		N	13-7/8		40
BA01 (1)	H	F04F1		1-03 *			K1-678			SOURCE (K1-6)				40
BA01 (1)	H			1								16-1/8		40
BA02 (1)	H	A08H2		1-01 *			KT-8		2		N	1-5/8		41
BA02 (1)	H	A06K2		1-02 *			K5-7		1		N	13-7/8		41
BA02 (1)	H	F04B1		1-03 *			K1-678			SOURCE (K1-6)				41
BA02 (1)	H			1								15-4/8		41
BA03 (1)	H	A08D2		1-01 *			KT-8		2		N	2-2/8		42
BA03 (1)	H	A06L1		1-02 *			K5-7		1		N	9-1/8		42
BA03 (1)	H	D04K2		1-03 *			D1-678			SOURCE (K1-6)				42
BA03 (1)	H			1								11-3/8		42
BA04 (1)	H	A08K2		1-01 *			KT-8		2		N	2-1/8		43
BA04 (1)	H	A06P1		1-02 *			K5-7		1		N	7-7/8		43
BA04 (1)	H	D04B1		1-03 *			K1-67			SOURCE (K1-6)				43
BA04 (1)	H			1								10-0/8		43

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BA05 (1)	H	A08A1		1-01 *			KT-8		2		N	1-5/8		44
BA05 (1)	H	A06J2		1-02 *			K5-7		1		N	7-3/8		44
BA05 (1)	H	C04R2		1-03 *			K1-67			SOURCE (K1-6)				44
BA05 (1)	H			1								9-0/8		44
BA06 (1)	H	A08J2		1-01 *			KT-8		2		N	1-6/8		45
BA06 (1)	H	A06J1		1-02 *			K5-7		1		N	7-3/8		45
BA06 (1)	H	C04T2		1-03 *			K1-67			SOURCE (K1-6)				45
BA06 (1)	H			1								9-1/8		45
BA07 (1)	H	A08B1		1-01 *			KT-8		2		N	1-7/8		46
BA07 (1)	H	A06K1		1-02 *			K5-7		1		N	8-7/8		46
BA07 (1)	H	D04E1		1-03 *			K1-67			SOURCE (K1-6)				46
BA07 (1)	H			1								10-6/8		46
BA08 (1)	H	A06H1		1-01 *			K5-7		1		N	3-7/8		47
BA08 (1)	H	B08E1		1-02 *			KT-8		2		N	4-5/8		47
BA08 (1)	H	C04F2		1-03 *			K1-67		1	SOURCE (K1-6)	N	6-1/8		47
BA08 (1)	H	E03D1		1-04 *			KJ-2							47
BA08 (1)	H			1								14-5/8		47
BA09 (1)	H	A06E1		1-01 *			K5-7		1		N	4-3/8		48
BA09 (1)	H	B08E2		1-02 *			KT-8		2		N	3-7/8		48
BA09 (1)	H	C04D2		1-03 *			K1-67		1	SOURCE (K1-6)	N	6-3/8		48
BA09 (1)	H	E03C1		1-04 *			KJ-2							48
BA09 (1)	H			1								14-5/8		48
BA10 (1)	H	A06F1		1-01 *			K5-7		1		N	4-7/8		49
BA10 (1)	H	B08M2		1-02 *			KT-8		2		N	3-3/8		49
BA10 (1)	H	C04F1		1-03 *			K1-67		1	SOURCE (K1-6)	N	5-5/8		49
BA10 (1)	H	E03B1		1-04 *			KJ-2							49
BA10 (1)	H			1								13-7/8		49
BA11 (1)	H	A06D2		1-01 *			K5-7		1		N	4-3/8		50
BA11 (1)	H	B08K1		1-02 *			KT-8		2		N	4		50
BA11 (1)	H	C04K1		1-03 *			K1-67		1	SOURCE (K1-6)	N	5-1/8		50
BA11 (1)	H	E03D2		1-04 *			KJ-2							50
BA11 (1)	H			1								13-4/8		50
BA12 (1)	H	A06F2	A04M2	1-01 *			K5-7		1		N	2		51
BA12 (1)	H	A04M2		1-02 *			K1-67		2	SOURCE (K1-67)	N	4-6/8	BIN-COD ER	51
BA12 (1)	H	B08N2		1-03 *			KT-8		1		N	10-5/8		51
BA12 (1)	H	E03N2		1-04 *			KJ-2							51
BA12 (1)	H			1								17-3/8		51
BA13 (1)	H	A06H2	A04P2	1-01 *			K5-7		1		N	1-6/8		52
BA13 (1)	H	A04P2		1-02 *			K1-67		2	SOURCE (K1-6)	N	3-7/8		52
BA13 (1)	H	B08L1		1-03 *			KT-85		1		N	10-5/8		52
BA13 (1)	H	E03M2		1-04 *			KJ-2							52
BA13 (1)	H			1								16-2/8		52
BA14 (1)	H	A04H1		1-01 *			K1-67		2	SOURCE (K1-6)	N	1-7/8		53
BA14 (1)	H	A06E2		1-02 *			K5-7		1		N	6-5/8		53
BA14 (1)	H	C08F1		1-03 *			KT-85		2		N	8-3/8		53
BA14 (1)	H	E03L2		1-04 *			KJ-2							53
BA14 (1)	H			1								16-7/8		53

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BA15 (1)	H	A04K2		1-01 *			K1-67				2	SOURCE (K1-6)	N	1-5/8		54
BA15 (1)	H	A06D1		1-02 *			K5-7				1		N	6-7/8		54
BA15 (1)	H	C08D2		1-03 *			KT-85				2		N	8-3/8		54
BA15 (1)	H	E03E2		1-04 *			KJ-2									54
BA15 (1)	H			1										16-7/8		54
BBSY (1)	H	A06N1		1-01 *			K5-7				1		N	1-1/8		55
BBSY (1)	H	A07M2		1-02 *			K4-245					SOURCE (K4-5)				55
BBSY (1)	H			1										1-1/8		55
BC(11,08)	H	C04M1		1-01 *			K1-4				1		N	7-5/8		56
BC(11,08)	H	E06T2		1-02 *			K5-5					SOURCE				56
BC(11,08)	H			1										7-5/8		56
BC(15:12,10:09)	H	A04U2		1-01 *			K1-45				1		N	5-7/8		57
BC(15:12,10:09)	H	C06L2		1-02 *			K5-5					SOURCE				57
BC(15:12,10:09)	H			1										5-7/8		57
BC00	H	E04B2		1-01 *			K1-2				1		N	3-5/8		58
BC00	H	F06A1		1-02 *			K5-5					SOURCE				58
BC00	H			1										3-5/8		58
BC00 (0)	H	B07E2		1-01 *			K4-4				1	SOURCE	N	1-5/8		59
BC00 (0)	H	B08N1		1-02 *			KT-36									59
BC00 (0)	H			1										1-5/8		59
BC01	H	E04L2		1-01 *			K1-2				1		N	4-7/8		60
BC01	H	F06T2		1-02 *			K5-5					SOURCE				60
BC01	H			1										4-7/8		60
BC01 (0)	H	A07J1		1-01 *			K4-4				2	SOURCE	N	4-5/8		61
BC01 (0)	H	B08P2		1-02 *			KT-36				1		N	11-1/8		61
BC01 (0)	H	E03V2		1-03 *			KJ-2									61
BC01 (0)	H			1										15-6/8		61
BC02	H	E04R2		1-01 *			K1-2				1		N	3-7/8		62
BC02	H	F06R1		1-02 *			K5-5					SOURCE				62
BC02	H			1										3-7/8		62
BC03	H	E04N2		1-01 *			K1-2				1		N	4-7/8		63
BC03	H	F06V2		1-02 *			K5-5					SOURCE				63
BC03	H			1										4-7/8		63
BC04	H	E04A1		1-01 *			K1-3				1		N	2-7/8		64
BC04	H	F06S2		1-02 *			K5-5					SOURCE				64
BC04	H			1										2-7/8		64
BC05	H	C06K2		1-01 *			K5-5				1	SOURCE	N	4-5/8		65
BC05	H	D04P2		1-02 *			K1-3									65
BC05	H			1										4-5/8		65
BC06	H	D04V1		1-01 *			K1-3				1		N	2-2/8		66
BC06	H	D06H2		1-02 *			K5-5					SOURCE				66
BC06	H			1										2-2/8		66

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BC07	H	B06L1		1-01 *			K5-5				1	SOURCE	N	6-7/8		67
BC07	H	D04N1		1-02 *			K1-3									67
BC07	H			1										6-7/8		67
BCON (1+2)	H	A05P2		1-01 *			K3-8				1		N	14-5/8		68
BCON (1+2)	H	F06U2		1-02 *			K5-5					SOURCE				68
BCON (1+2)	H			1										14-5/8		68
BEGIN (1)	L	A07U2		1-01 *			K4-6				2		N	1-2/8		69
BEGIN (1)	L	A06R1		1-02 *			K5-6				1	SOURCE	N	13-3/8		69
BEGIN (1)	L	F05K2		1-03 *			K3-2									69
BEGIN (1)	L			1										14-5/8		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	N	7-3/8		72
BERR (0)	H	F05U2		1-02 *			K3-7									72
BERR (0)	H			1										7-3/8		72
BG BETWEEN	H	F09F1		1-01 *			DD				1		N	2-3/8		73
BG BETWEEN	H	F09V2		1-02 *			DD					SOURCE				73
BG BETWEEN	H			1										2-3/8		73
BG IN	H	D09U2		1-01 *			DD				1	SOURCE	N	3-7/8		74
BG IN	H	F09B1		1-02 *			DD									74
BG IN	H			1										3-7/8		74
BG OUT	H	D09V2		1-01 *			DD				1	SOURCE	N	3-7/8		75
BG OUT	H	F09A1		1-02 *			DD					SOURCE				75
BG OUT	H			1										3-7/8		75
BG4	H	D07E2		1-01 *			K4-6				1	SOURCE	N	2-1/8		76
BG4	H	D09S2		1-02 *			DD									76
BG4	H			1										2-1/8		76
BG5	H	C07V2		1-01 *			K4-6				1	SOURCE	N	3-3/8		77
BG5	H	D09P2		1-02 *			DD									77
BG5	H			1										3-3/8		77
BG6	H	D07F2		1-01 *			K4-6				1	SOURCE	N	8-5/8		78
BG6	H	F03R2		1-02 *			KW-2				2		N	1		78
BG6	H	F03V2		1-03 *			KW-2				1	SOURCE	N	9-3/8		78
BG6	H	D09M2		1-04 *			DD									78
BG6	H			1										19-0/8		78
BG7	H	D07D2		1-01 *			K4-6				1	SOURCE	N	1-5/8		79
BG7	H	D09K2		1-02 *			DD									79
BG7	H			1										1-5/8		79
BGBUS (1)	H	D03E2		1-01 *	2		K2-7				2		N	4-3/8		80
BGBUS (1)	H	E06H1		1-02 *			K5-4				1		N	1		80
BGBUS (1)	H	E07E1		1-03 *			K4-25									80
BGBUS (1)	H			1										5-3/8		80

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BII+CMP+TST	H	A07J2		1-01 *			K4-4		1		N	10-5/8	81
BIT+CMP+TST	H	D05V2		1-02 *			K3-278			SOURCE (K3-8)			81
BIT+CMP+TST	H			1								10-5/8	81
BMUX07	H	E04F1		1-01 *			K1-3		1	SOURCE	N	1-5/8	82
BMUX07	H	E06H2		1-02 *			K5-2						82
BMUX07	H			1								1-5/8	82
BMUX15	H	A04L1		1-01 *			K1-5		1	SOURCE	N	11-7/8	83
BMUX15	H	E06J2		1-02 *			K5-2						83
BMUX15	H			1								11-7/8	83
BOVFL	L	C04C1		1-01 *			K1-7		1	SOURCE	N	10-7/8	84
BOVFL	L	F06S1		1-02 *			K5-4						84
BOVFL	L			1								10-7/8	84
BOVFL STOP	H	B07F1		1-01 *			K4-4		1		N	4-1/8	85
BOVFL STOP	H	C04E1		1-02 *			K1-7			SOURCE			85
BOVFL STOP	H			1								4-1/8	85
BOVFLW (0)	H	D06K2		1-01 *			K5-4		1	SOURCE	N	7-1/8	86
BOVFLW (0)	H	F05V2		1-02 *			K3-7						86
BOVFLW (0)	H			1								7-1/8	86
BPT	L	C06J1		1-01 *			K5-5		1		N	3-3/8	87
BPT	L	D05J2		1-02 *			K3-6			SOURCE			87
BPT	L			1								3-3/8	87
BR INSTR	L	D05N1		1-01 *			K3-5		1		N	6-1/8	88
BR INSTR	L	F06P1		1-02 *			K5-3			SOURCE			88
BR INSTR	L			1								6-1/8	88
BR00 (1)	H	D01A1		1-01 *			KF-2		1		N	1-5/8	89
BR00 (1)	H	D02J1		1-02 *			KE-2346			SOURCE (KE-2)			89
BR00 (1)	H			1								1-5/8	89
BR01 (1)	H	D01B1		1-01 *			KF-2		1		N	2	90
BR01 (1)	H	D02M2		1-02 *			KE-2346			SOURCE (KE-2)			90
BR01 (1)	H			1								2-0/8	90
BR02 (1)	H	D01C1		1-01 *			KF-2		1		N	1-4/8	91
BR02 (1)	H	D02K2		1-02 *			KE-2346			SOURCE (KE-2)			91
BR02 (1)	H			1								1-4/8	91
BR03 (1)	H	D01D1		1-01 *			KF-2		1		N	1-4/8	92
BR03 (1)	H	D02L2		1-02 *			KE-2346			SOURCE (KE-2)			92
BR03 (1)	H			1								1-4/8	92
BR04 (1)	H	B01J1		1-01 *			KF-2		1		N	7-1/8	93
BR04 (1)	H	D02U1		1-02 *			KE-2346			SOURCE (KE-2)			93
BR04 (1)	H			1								7-1/8	93
BR05 (1)	H	B01K1		1-01 *			KF-2		1		N	1-3/8	94
BR05 (1)	H	B02P2		1-02 *			KE-2346			SOURCE (KE-2)			94
BR05 (1)	H			1								1-3/8	94

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BR06 (1)	H	B01L2		1-01 *			KF-2		1		N	7-3/8	95
BR06 (1)	H	E02B1		1-02 *			KE-236			SOURCE (KE-2)			95
BR06 (1)	H			1								7-3/8	95
BR07 (1)	H	B01L1		1-01 *			KF-2		1		N	11-7/8	96
BR07 (1)	H	F02P2		1-02 *			KE-236			SOURCE (KE-2)			96
BR07 (1)	H			1								11-7/8	96
BR08 (1)	H	D01E1		1-01 *			KF-2		1		N	7-1/8	97
BR08 (1)	H	F02L2		1-02 *			KE-23			SOURCE (KE-2)			97
BR08 (1)	H			1								7-1/8	97
BR09 (1)	H	D01F1		1-01 *			KF-2		1		N	6-5/8	98
BR09 (1)	H	F02L1		1-02 *			KE-23			SOURCE (KE-2)			98
BR09 (1)	H			1								6-5/8	98
BR10 (1)	H	D01H1		1-01 *			KF-2		1		N	6-5/8	99
BR10 (1)	H	F02M1		1-02 *			KE-23			SOURCE (KE-2)			99
BR10 (1)	H			1								6-5/8	99
BR11 (1)	H	D01J1		1-01 *			KF-2		1		N	6-5/8	100
BR11 (1)	H	F02P1		1-02 *			KE-23			SOURCE (KE-2)			100
BR11 (1)	H			1								6-5/8	100
BR12 (1)	H	B01M2		1-01 *			KF-2		1		N	9-3/8	101
BR12 (1)	H	F02U2		1-02 *			KE-23			SOURCE (KE-2)			101
BR12 (1)	H			1								9-3/8	101
BR13 (1)	H	B01M1		1-01 *			KF-2		1		N	9-3/8	102
BR13 (1)	H	E02U1		1-02 *			KE-23			SOURCE (KE-2)			102
BR13 (1)	H			1								9-3/8	102
BR14 (1)	H	B01N1		1-01 *			KF-2		1		N	4-1/8	103
BR14 (1)	H	C02T2		1-02 *			KE-236			SOURCE (KE-2)			103
BR14 (1)	H			1								4-1/8	103
BR15 (1)	H	B01P1		1-01 *			KF-2		1		N	3-7/8	104
BR15 (1)	H	C02S2		1-02 *			KE-2346			SOURCE (KE-2)			104
BR15 (1)	H			1								3-7/8	104
BRPTR (0)	H	B07M1		1-01 *			K4-5		2	SOURCE	N	3-7/8	105
BRPTR (0)	H	C06U2		1-02 *			K5-4		1		N	7-1/8	105
BRPTR (0)	H	F05D2		1-03 *			K3-7						105
BRPTR (0)	H			1								11-0/8	105
BRQ	L	A01S2		1-01 *			KF-4		1		N	6-1/8	106
BRQ	L	C05D1		1-02 *			K3-47		2		N	5-1/8	106
BRQ	L	D07M2		1-03 *			K4-6			SOURCE			106
BRQ	L			1								11-2/8	106
BRSV (0)	H	B06V2		1-01 *			K5-4		2	SOURCE	N	2-5/8	107
BRSV (0)	H	C07N2		1-02 *			K4-5		1		N	3-3/8	107
BRSV (0)	H	D07N1		1-03 *			K4-2						107
BRSV (0)	H			1								6-0/8	107

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BUBC0 (BUT30)	H	B06J2		1-01 *			K5-6				1	SOURCE	N	9-3/8	108
BUBC0 (BUT30)	H	E05R2		1-02 *			K3-2								108
BUBC0 (BUT30)	H			1										9-3/8	108
BUBC1	L	A03J2		1-01 *			K2-2				1		N	9-5/8	109
BUBC1	L	D05P1		1-02 *			K3-2					SOURCE			109
BUBC1	L			1										9-5/8	109
BUBC1 (BUT30)	H	A06U2		1-01 *			K5-6				1	SOURCE	N	9-5/8	110
BUBC1 (BUT30)	H	E05A1		1-02 *			K3-2								110
BUBC1 (BUT30)	H			1										9-5/8	110
BUBC2	L	A03M1		1-01 *			K2-2				1		N	14-5/8	111
BUBC2	L	F05M1		1-02 *			K3-2					SOURCE			111
BUBC2	L			1										14-5/8	111
BUBC2 (BUT30)	H	A06S1		1-01 *			K5-6				1	SOURCE	N	13-7/8	112
BUBC2 (BUT30)	H	F05S2		1-02 *			K3-2								112
BUBC2 (BUT30)	H			1										13-7/8	112
BUBC3	L	A03R1		1-01 *			K2-2				1		N	12-3/8	113
BUBC3	L	E05T2		1-02 *			K3-2					SOURCE			113
BUBC3	L			1										12-3/8	113
BUBC4	L	A03D1		1-01 *			K2-3				1		N	10-5/8	114
BUBC4	L	D05N2		1-02 *			K3-2					SOURCE			114
BUBC4	L			1										10-5/8	114
BUBC5	L	A03D2		1-01 *			K2-3				1		N	9-3/8	115
BUBC5	L	D05F1		1-02 *			K3-2					SOURCE			115
BUBC5	L			1										9-3/8	115
BUBC0 (BUT17_00)	L	A03K2		1-01 *			K2-2				1		N	14-3/8	116
BUBC0 (BUT17_00)	L	F05J1		1-02 *			K3-2					SOURCE			116
BUBC0 (BUT17_00)	L			1										14-3/8	116
BUBC0 (BUT37_00)	L	A03H1		1-01 *			K2-2				1		N	12-7/8	117
BUBC0 (BUT37_00)	L	E05R1		1-02 *			K3-2					SOURCE			117
BUBC0 (BUT37_00)	L			1										12-7/8	117
BUPP0	H	C02M1		1-01 *	2		KE-789				2		N	5-5/8	118
BUPP0	H	A03U2		1-02 *			K2-2				1	SOURCE	N	5-5/8	118
BUPP0	H	C01K2		1-03 *			KF-4				2		N	6-1/8	118
BUPP0	H	D08J2		1-04 *			KT-2				1		N	6-1/8	118
BUPP0	H	E04U2		1-05 *			K1-9				2		N	3-6/8	118
BUPP0	H	F01N2		1-06 *			KM-2								118
BUPP0	H			1										27-2/8	118
BUPP1	H	C02E1		1-01 *	2		KE-789				2		N	5-1/8	119
BUPP1	H	A03S2		1-02 *			K2-2				1	SOURCE	N	6-3/8	119
BUPP1	H	C01M1		1-03 *			KF-4				2		N	6-3/8	119
BUPP1	H	D08H2		1-04 *			KT-2				1		N	5-7/8	119
BUPP1	H	E04T2		1-05 *			K1-9				2		N	2-4/8	119
BUPP1	H	F01D2		1-06 *			KM-2								119
BUPP1	H			1										26-2/8	119

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BUPP2	H	B02S1		1-01 *	2		KE-789				2		N	4-1/8	120
BUPP2	H	A03P2		1-02 *			K2-2				1	SOURCE	N	6-3/8	120
BUPP2	H	C01L1		1-03 *			KF-4				2		N	6-3/8	120
BUPP2	H	D08F2		1-04 *			KT-2				1		N	5-3/8	120
BUPP2	H	E04M2		1-05 *			K1-9				2		N	3-7/8	120
BUPP2	H	F01H2		1-06 *			KM-2								120
BUPP2	H			1										26-1/8	120
BUPP3	H	D02H1		1-01 *	2		KE-789				2		N	8-7/8	121
BUPP3	H	A03L2		1-02 *			K2-2				1	SOURCE	N	5-7/8	121
BUPP3	H	C01D2		1-03 *			KF-4				2		N	5-2/8	121
BUPP3	H	D08K2		1-04 *			KT-2				1		N	4	121
BUPP3	H	E04K2		1-05 *			K1-9				2		N	5-5/8	121
BUPP3	H	F01S1		1-06 *			KM-2								121
BUPP3	H			1										29-5/8	121
BUPP4	H	B03R2		1-01 *			K2-3				2	SOURCE	N	2-3/8	122
BUPP4	H	C01E1		1-02 *			KF-4				1		N	6	122
BUPP4	H	D08L2		1-03 *			KT-2				2		N	5	122
BUPP4	H	E04R1		1-04 *			K1-9				1		N	4-1/8	122
BUPP4	H	F01M2	D02K1	1-05 *			KM-2				2		N	6-1/8	122
BUPP4	H	D02K1		1-06 *			KE-789								122
BUPP4	H			1										23-5/8	122
BUPP5	H	B03P2	C01E2	1-01 *			K2-3				2	SOURCE	N	2-5/8	123
BUPP5	H	C01E2		1-02 *			KF-4				1		N	5-3/8	123
BUPP5	H	D08M2		1-03 *			KT-2				2		N	3-5/8	123
BUPP5	H	E04K1		1-04 *			K1-9				1		N	3-7/8	123
BUPP5	H	F01F2	F02E2	1-05 *			KM-2				2		N	0-5/8	123
BUPP5	H	F02E2		1-06 *			KE-789								123
BUPP5	H			1										16-1/8	123
BUPP6	H	B03M2		1-01 *			K2-3				2	SOURCE	N	3-3/8	124
BUPP6	H	C01F1		1-02 *			KF-4				1		N	5-5/8	124
BUPP6	H	D08N2		1-03 *			KT-2				2		N	2-7/8	124
BUPP6	H	D04T2		1-04 *			K1-9				1		N	7-1/8	124
BUPP6	H	F01R1	F02T2	1-05 *			KM-2				2		N	1-3/8	124
BUPP6	H	F02T2		1-06 *			KE-789								124
BUPP6	H			1										20-3/8	124
BUPP7	H	B03J2	C01D1	1-01 *			K2-3				2	SOURCE	N	3-4/8	125
BUPP7	H	C01D1		1-02 *			KF-4				1		N	6-1/8	125
BUPP7	H	D08R1		1-03 *			KT-2				2		N	3-4/8	125
BUPP7	H	E04N1		1-04 *			K1-9				1		N	4-1/8	125
BUPP7	H	F01K1	F02D2	1-05 *			KM-2				2		N	1-5/8	125
BUPP7	H	F02D2		1-06 *			KE-789								125
BUPP7	H			1										18-7/8	125
BUPP8	H	A01C1		1-01 *			KF-4				2		N	4-5/8	126
BUPP8	H	B03E2		1-02 *			K2-3				1	SOURCE	N	3-7/8	126
BUPP8	H	C04K2		1-03 *			K1-9				2		N	5-3/8	126
BUPP8	H	D08N1		1-04 *			KT-2				1		N	9-3/8	126
BUPP8	H	F01B2		1-05 *			KM-2								126
BUPP8	H			1										23-2/8	126

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BUS (1)	H	A07M1				K4-4						SOURCE			1-PIN RUN	127
BUS A00	L	B09H2		1-01 *		DD					1	SOURCE	N	8-2/8		128
BUS A00	L	E09H2		1-02 *		DD					2		N	5-7/8		128
BUS A00	L	F04P2		1-03 *		K1-6						SOURCE				128
BUS A00	L			1										14-1/8		128
BUS A01	L	B09H1		1-01 *		DD					1	SOURCE	N	8-2/8		129
BUS A01	L	E09H1		1-02 *		DD					2		N	4-6/8		129
BUS A01	L	F03E1		1-03 *		KW-2					1		N	1-6/8		129
BUS A01	L	F04N2		1-04 *		K1-6						SOURCE				129
BUS A01	L			1										14-6/8		129
BUS A02	L	B09J2	E09F1	1-01 *		DD					1	SOURCE	N	8-1/8		130
BUS A02	L	E09F1		1-02 *		DD					2		N	5		130
BUS A02	L	F03L2		1-03 *		KW-2					1		N	0-5/8		130
BUS A02	L	F04M2		1-04 *		K1-6						SOURCE				130
BUS A02	L			1										13-6/8		130
BUS A03	L	B09J1		1-01 *		DD					1	SOURCE	N	9-5/8		131
BUS A03	L	E09V2		1-02 *		DD					2		N	3-7/8		131
BUS A03	L	F04R2		1-03 *		K1-6					1	SOURCE	N	1-5/8		131
BUS A03	L	F03M1		1-04 *		KW-2										131
BUS A03	L			1										15-1/8		131
BUS A04	L	B09K2		1-01 *		DD					2	SOURCE	N	5-2/8		132
BUS A04	L	C04S2		1-02 *		K1-6					1	SOURCE	N	7-7/8		132
BUS A04	L	F03J2		1-03 *		KW-2					2		N	4-7/8		132
BUS A04	L	E09U2		1-04 *		DD										132
BUS A04	L			1										18-0/8		132
BUS A05	L	B09K1		1-01 *		DD					2	SOURCE	N	5-2/8		133
BUS A05	L	C04S1	F03J1	1-02 *		K1-6					1	SOURCE	N	7-7/8		133
BUS A05	L	F03J1		1-03 *		KW-2					2		N	4-7/8		133
BUS A05	L	E09V1		1-04 *		DD										133
BUS A05	L			1										18-0/8		133
BUS A06	L	A08S1		1-01 *		KT-4					1	SOURCE	N	3-3/8		134
BUS A06	L	B09L2		1-02 *		DD					2	SOURCE	N	5-5/8		134
BUS A06	L	C04V1	F03K1	1-03 *		K1-6					1	SOURCE	N	7-7/8		134
BUS A06	L	F03K1		1-04 *		KW-2					2		N	5-1/8		134
BUS A06	L	F09U1		1-05 *		DD										134
BUS A06	L			1										22-0/8		134
BUS A07	L	A08R2		1-01 *		KT-4					2	SOURCE	N	2-7/8		135
BUS A07	L	B09I1		1-02 *		DD					1	SOURCE	N	7-1/8		135
BUS A07	L	D04A1		1-03 *		K1-6					2	SOURCE	N	6-7/8		135
BUS A07	L	F03K2		1-04 *		KW-2					1		N	5		135
BUS A07	L	F09P2		1-05 *		DD										135
BUS A07	L			1										21-7/8		135

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A08	L	A06P1		1-01 *		KT-4					1	SOURCE	N	3-5/8		136
BUS A08	L	B09M2		1-02 *		DD					2	SOURCE	N	4-1/8		136
BUS A08	L	C04J1	E09N2	1-03 *		K1-6					1	SOURCE	N	8-7/8		136
BUS A08	L	E09N2		1-04 *		DD					2		N	5-2/8		136
BUS A08	L	F03L1		1-05 *		KW-2										136
BUS A08	L			1										21-7/8		136
BUS A09	L	A08N2		1-01 *		KT-4					1	SOURCE	N	3-1/8		137
BUS A09	L	B09M1		1-02 *		DD					2	SOURCE	N	3-5/8		137
BUS A09	L	C04F2	E09R1	1-03 *		K1-6					1	SOURCE	N	9-1/8		137
BUS A09	L	E09R1		1-04 *		DD					2		N	4-4/8		137
BUS A09	L	F03N2		1-05 *		KW-2										137
BUS A09	L			1										20-3/8		137
BUS A10	L	B09N2		1-01 *		DD					1	SOURCE	N	1-7/8		138
BUS A10	L	B08D2		1-02 *		KT-4					2	SOURCE	N	4-4/8		138
BUS A10	L	C04H1		1-03 *		K1-6					1	SOURCE	N	8-1/8		138
BUS A10	L	F03A1		1-04 *		KW-2					2		N	4-5/8		138
BUS A10	L	E09P1		1-05 *		DD										138
BUS A10	L			1										19-1/8		138
BUS A11	L	B08C1		1-01 *		KT-4					1	SOURCE	N	2		139
BUS A11	L	B09N1		1-02 *		DD					2	SOURCE	N	3-7/8		139
BUS A11	L	C04L1		1-03 *		K1-6					1	SOURCE	N	7-7/8		139
BUS A11	L	F03P1		1-04 *		KW-2					2		N	5-1/8		139
BUS A11	L	E09L1		1-05 *		DD										139
BUS A11	L			1										18-7/8		139
BUS A12	L	A04N2		1-01 *		K1-6					1	SOURCE	N	2-5/8		140
BUS A12	L	A08U1		1-02 *		KT-4					2	SOURCE	N	3-3/8		140
BUS A12	L	B09P2		1-03 *		DD					1	SOURCE	N	7-1/8		140
BUS A12	L	E09C1		1-04 *		DD					2		N	4-5/8		140
BUS A12	L	F03C1		1-05 *		KW-2										140
BUS A12	L			1										17-6/8		140
BUS A13	L	A04R2		1-01 *	1	K1-6					1	SOURCE	N	2-6/8		141
BUS A13	L	B08A1		1-02 *		KT-4					2	SOURCE	N	2-3/8		141
BUS A13	L	B09P1		1-03 *		DD					1	SOURCE	N	7-7/8		141
BUS A13	L	E09K2		1-04 *		DD					2		N	5-3/8		141
BUS A13	L	F03D1		1-05 *		KW-2										141
BUS A13	L			1										18-3/8		141
BUS A14	L	A04L2		1-01 *		K1-6					1	SOURCE	N	5-2/8		142
BUS A14	L	B09R2		1-02 *		DD					2	SOURCE	N	1		142
BUS A14	L	B08T2	E09K1	1-03 *		KT-4					1	SOURCE	N	7-3/8		142
BUS A14	L	E09K1		1-04 *		DD					2		N	4-3/8		142
BUS A14	L	F03E2		1-05 *		KW-2										142
BUS A14	L			1										18-0/8		142
BUS A15	L	A04J2		1-01 *		K1-6					1	SOURCE	N	6-1/8		143
BUS A15	L	B09R1		1-02 *		DD					2	SOURCE	N	1-7/8		143
BUS A15	L	C08B1	E09D2	1-03 *		KT-4					1	SOURCE	N	6-5/8		143
BUS A15	L	E09D2		1-04 *		DD					2		N	4-6/8		143
BUS A15	L	F03F2		1-05 *		KW-2										143
BUS A15	L			1										19-3/8		143

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A16	L	A04S1		1-01 *	2		K1-6		2	SOURCE	N 4-3/8		144
BUS A16	L	B09S2		1-02 *			DD		1	SOURCE	N 0-5/8		144
BUS A16	L	B08V2	E09E2	1-03 *			KT-4		2	SOURCE	N 6-7/8		144
BUS A16	L	E09E2		1-04 *			DD		1		N 4-6/8		144
BUS A16	L	F03H2		1-05 *			KW-2						144
BUS A16	L			1							16-5/8		144
BUS A17	L	A04R1		1-01 *	1		K1-6		1	SOURCE	N 4-3/8		145
BUS A17	L	B08P1		1-02 *			KT-4		2	SOURCE	N 1		145
BUS A17	L	B09S1		1-03 *			DD		1	SOURCE	N 6-7/8		145
BUS A17	L	E09D1		1-04 *			DD		2		N 4-3/8		145
BUS A17	L	F03D2		1-05 *			KW-2						145
BUS A17	L			1							16-5/8		145
BUS AC LO	L	B06D2		1-01 *			K5-8		1		N 0-1/8		146
BUS AC LO	L	B06E2		1-02 *	H		K5-8		2	SOURCE TWP	1-7/8		146
BUS AC LO	L	B09F1		1-03 *			DD			SOURCE,ETCH TO CON			146
BUS AC LO	L			1							2-0/8		146
BUS BRSY	L	A09P2	C07M2	1-01 *	H				2	SOURCE TWP	6-3/8		147
BUS BRSY	L	C07M2		1-02 *	H		K4-5		1	SOURCE TWP	8-3/8		147
BUS BRSY	L	F09D1		1-03 *	H		DD		2	SOURCE TWP	4-5/8		147
BUS BRSY	L	F03T2		1-04 *			KW-2			SOURCE			147
BUS BRSY	L			1							19-3/8		147
BUS BG4	H	B09E2		1-01 *	H				1	TWP	7-1/8		148
BUS BG4	H	D09T2		1-02 *			DD			SOURCE			148
BUS BG4	H			1							7-1/8		148
BUS BG5	H	B09R1		1-01 *	H				1	TWP	7-3/8		149
BUS BG5	H	D09R2		1-02 *			DD			SOURCE			149
BUS BG5	H			1							7-3/8		149
BUS BG6	H	B09A1		1-01 *	H				1	TWP	7-3/8		150
BUS BG6	H	D09N2		1-02 *			DD			SOURCE			150
BUS BG6	H			1							7-3/8		150
BUS BG7	H	A09V1		1-01 *	H				1	TWP	7-5/8		151
BUS BG7	H	D09L2		1-02 *			DD			SOURCE			151
BUS BG7	H			1							7-5/8		151
BUS BR4	L	B09D2	C07U2	1-01 *	H				1	SOURCE TWP	5-5/8		152
BUS BR4	L	C07U2		1-02 *	H		K4-6		2	SOURCE TWP	2-5/8		152
BUS BR4	L	D09H2		1-03 *			DD						152
BUS BR4	L			1							8-2/8		152
BUS BR5	L	B09C1	C07T2	1-01 *	H				1	SOURCE TWP	5-1/8		153
BUS BR5	L	C07T2		1-02 *	H		K4-6		2	SOURCE TWP	2-5/8		153
BUS BR5	L	D09F2		1-03 *			DD						153
BUS BR5	L			1							7-6/8		153
BUS BR6	L	A09U2	C07S2	1-01 *	H				1	SOURCE TWP	6-3/8		154
BUS BR6	L	C07S2		1-02 *	H		K4-6		2	SOURCE TWP	2-5/8		154
BUS BR6	L	D09E2		1-03 *	H		DD		1	SOURCE TWP	10-3/8		154
BUS BR6	L	F03U1		1-04 *			KW-2			SOURCE			154
BUS BR6	L			1							19-3/8		154

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS BR7	L	A09T2	C07R2	1-01 *	H				1	SOURCE TWP	6-3/8		155
BUS BR7	L	C07R2		1-02 *	H		K4-6		2	TWP	2-5/8		155
BUS BR7	L	D09D2		1-03 *			DD						155
BUS BR7	L			1							9-0/8		155
BUS C0	L	A07H1		1-01 *	H		K4-4		2	SOURCE TWP	5-5/8		156
BUS C0	L	B09U2		1-02 *	H				1	SOURCE TWP	7-1/8		156
BUS C0	L	E09J2		1-03 *			DD						156
BUS C0	L			1							12-6/8		156
BUS C1	L	A07E2		1-01 *	H		K4-4		2	SOURCE TWP	5-5/8		157
BUS C1	L	B09T2		1-02 *	H				1	SOURCE TWP	7		157
BUS C1	L	E09F2		1-03 *	H		DD		2	TWP	5-2/8		157
BUS C1	L	F03N1		1-04 *			KW-2						157
BUS C1	L			1							17-7/8		157
BUS D00	L	A09C1		1-01 *					2	SOURCE	N 1-3/8		158
BUS D00	L	A08K1		1-02 *			KT-8		1	SOURCE	N 7-1/8		158
BUS D00	L	C09S2		1-03 *			DD		2	SOURCE	N 4-3/8		158
BUS D00	L	D04J1		1-04 *			K1-29		1	SOURCE (K1-29)	N 6-7/8	BIN-COD ER	158
BUS D00	L	F06L1		1-05 *			K5-2			SOURCE			158
BUS D00	L			1							19-6/8		158
BUS D01	L	A08F1		1-01 *			KT-8		1	SOURCE	N 1-3/8		159
BUS D01	L	A09D2		1-02 *					2	SOURCE	N 7		159
BUS D01	L	C09R2		1-03 *			DD		1	SOURCE	N 9-7/8		159
BUS D01	L	F06P2		1-04 *			K5-2		2	SOURCE	N 1-7/8		159
BUS D01	L	F04U2		1-05 *			K1-29			SOURCE (K1-29)			159
BUS D01	L			1							20-1/8		159
BUS D02	L	A09D1		1-01 *					2	SOURCE	N 1-3/8		160
BUS D02	L	A08L2		1-02 *			KT-8		1	SOURCE	N 6-7/8		160
BUS D02	L	C09U2		1-03 *			DD		2	SOURCE	N 7		160
BUS D02	L	E09E2		1-04 *			DD		1	SOURCE	N 2-5/8		160
BUS D02	L	F06K1		1-05 *			K5-2		2	SOURCE	N 1-4/8		160
BUS D02	L	F04S2		1-06 *			K1-29			SOURCE (K1-29)			160
BUS D02	L			1							19-3/8		160
BUS D03	L	A08H1		1-01 *			KT-8		2	SOURCE	N 1-3/8		161
BUS D03	L	A09E2		1-02 *					1	SOURCE	N 7-1/8		161
BUS D03	L	C09T2		1-03 *			DD		2	SOURCE	N 7-7/8		161
BUS D03	L	F09L1		1-04 *			DD		1	SOURCE	N 2-1/8		161
BUS D03	L	F06J1		1-05 *			K5-2		2	SOURCE	N 1-6/8		161
BUS D03	L	F04T2		1-06 *			K1-29			SOURCE (K1-29)			161
BUS D03	L			1							20-2/8		161
BUS D04	L	A09E1		1-01 *					2	SOURCE	N 3-5/8		162
BUS D04	L	B08F1		1-02 *			KT-8		1	SOURCE	N 4-3/8		162
BUS D04	L	C09N2		1-03 *			DD		2	SOURCE	N 4-1/8		162
BUS D04	L	D04M2		1-04 *			K1-39		1	SOURCE (K1-39)	N 5-5/8	BIN-COD ER	162
BUS D04	L	F06E1		1-05 *			K5-2		2	SOURCE	N 3-1/8		162
BUS D04	L	F09N2		1-06 *			DD			SOURCE			162
BUS D04	L			1							20-7/8		162

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D05	L	A09F2		1-01 *							1	SOURCE	N	4-1/8		163
BUS D05	L	B08H1		1-02 *			KT-8				2	SOURCE	N	4-3/8		163
BUS D05	L	C09P2		1-03 *			DD				1	SOURCE	N	6-7/8		163
BUS D05	L	E04C1		1-04 *			K1-39				2	SOURCE (K1-39)	N	4-3/8	BIN-COD ER	163
BUS D05	L	F06D1		1-05 *			K5-2				1	SOURCE	N	2-1/8		163
BUS D05	L	F09F1		1-06 *			DD					SOURCE				163
BUS D05	L			1										21-7/8		163
BUS D06	L	A09F1		1-01 *							2	SOURCE	N	3-5/8		164
BUS D06	L	B08J2		1-02 *			KT-8				1	SOURCE	N	4-5/8		164
BUS D06	L	C09V2		1-03 *			DD				2	SOURCE	N	4-3/8		164
BUS D06	L	D04R1		1-04 *			K1-39				1	SOURCE (K1-39)	N	6-1/8	BIN-COD ER	164
BUS D06	L	F03P1		1-05 *			KW-2				2	SOURCE	N	2-4/8		164
BUS D06	L	F06C1		1-06 *			K5-2				1		N	2-5/8		164
BUS D06	L	F09F2		1-07 *			DD					SOURCE				164
BUS D06	L			1										23-7/8		164
BUS D07	L	A09H2		1-01 *							1	SOURCE	N	3-5/8		165
BUS D07	L	B08H2		1-02 *			KT-8				2	SOURCE	N	3-7/8		165
BUS D07	L	C09M2		1-03 *			DD				1	SOURCE	N	7-1/8		165
BUS D07	L	E04B1		1-04 *			K1-39				2	SOURCE (K1-39)	N	5-3/8	BIN-COD ER	165
BUS D07	L	F03S1		1-05 *			KW-2				1	SOURCE	N	3-3/8		165
BUS D07	L	F06F2		1-06 *			K5-2				2	SOURCE	N	1-5/8		165
BUS D07	L	F09H1		1-07 *			DD					SOURCE				165
BUS D07	L			1										25-0/8		165
BUS D08	L	A09H1		1-01 *							1	SOURCE	N	5-5/8		166
BUS D08	L	C08D1		1-02 *			KT-9				2	SOURCE	N	1-4/8		166
BUS D08	L	C09L2		1-03 *			DD				1	SOURCE	N	3-5/8		166
BUS D08	L	C04P1		1-04 *			K1-49				2	SOURCE (K1-49)	N	5-1/8	BIN-COD ER	166
BUS D08	L	E03E1		1-05 *			KJ-2				1	SOURCE	N	4-7/8		166
BUS D08	L	F09K1		1-06 *			DD					SOURCE				166
BUS D08	L			1										20-6/8		166
BUS D09	L	A09J2		1-01 *							2	SOURCE	N	4-3/8		167
BUS D09	L	B08P2		1-02 *			KT-9				1	SOURCE	N	2-7/8		167
BUS D09	L	C09K2		1-03 *			DD				2	SOURCE	N	3-5/8		167
BUS D09	L	C04R1		1-04 *			K1-49				1	SOURCE (K1-49)	N	5-1/8	BIN-COD ER	167
BUS D09	L	E03F1		1-05 *			KJ-2					SOURCE				167
BUS D09	L			1										16-0/8		167
BUS D10	L	A09J1		1-01 *							2	SOURCE	N	4-1/8		168
BUS D10	L	B08M1		1-02 *			KT-9				1	SOURCE	N	3-3/8		168
BUS D10	L	C09J2		1-03 *			DD				2	SOURCE	N	3-5/8		168
BUS D10	L	C04N1		1-04 *			K1-49				1	SOURCE (K1-49)	N	5-3/8	BIN-COD ER	168
BUS D10	L	E03J2		1-05 *			KJ-2					SOURCE				168
BUS D10	L			1										16-4/8		168
BUS D11	L	A09K2		1-01 *							2	SOURCE	N	4-3/8		169
BUS D11	L	B08R1		1-02 *			KT-9				1	SOURCE	N	2-3/8		169
BUS D11	L	C09H1		1-03 *			DD				2	SOURCE	N	2-6/8		169
BUS D11	L	C04H2		1-04 *			K1-49				1	SOURCE (K1-49)	N	6-1/8	BIN-COD ER	169
BUS D11	L	E03H2		1-05 *			KJ-2					SOURCE				169
BUS D11	L			1										15-5/8		169

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D12	L	A09K1		1-01 *	2						2	SOURCE	N	3-7/8		170
BUS D12	L	B04B1		1-02 *			K1-59				1	SOURCE (K1-59)	N	4-7/8	BIN-COD ER	170
BUS D12	L	C09H2		1-03 *			DD				2	SOURCE	N	1-4/8		170
BUS D12	L	C08P1		1-04 *			KT-29				1	SOURCE	N	7-7/8		170
BUS D12	L	F03P2		1-05 *			KJ-2					SOURCE				170
BUS D12	L			1										18-1/8		170
BUS D13	L	A09L2		1-01 *							2	SOURCE	N	4-1/8		171
BUS D13	L	B04E2		1-02 *			K1-59				1	SOURCE (K1-59)	N	4-1/8	BIN-COD ER	171
BUS D13	L	C09F2		1-03 *			DD				2	SOURCE	N	1-3/8		171
BUS D13	L	C08H1		1-04 *			KT-29				1	SOURCE	N	8-1/8		171
BUS D13	L	E03K2		1-05 *			KJ-2					SOURCE				171
BUS D13	L			1										17-6/8		171
BUS D14	L	A09L1		1-01 *	2						2	SOURCE	N	4-3/8		172
BUS D14	L	B04C1		1-02 *			K1-59				1	SOURCE (K1-59)	N	4-3/8	BIN-COD ER	172
BUS D14	L	C09E2		1-03 *			DD				2	SOURCE	N	1-3/8		172
BUS D14	L	C08C1		1-04 *			KT-29				1	SOURCE	N	9-3/8		172
BUS D14	L	E03S2		1-05 *			KJ-2					SOURCE				172
BUS D14	L			1										19-4/8		172
BUS D15	L	A09M2		1-01 *							2		N	4-5/8		173
BUS D15	L	B04F1		1-02 *			K1-59				1	SOURCE (K1-59)	N	4-4/8	BIN-COD ER	173
BUS D15	L	C09D2		1-03 *			DD				2	SOURCE	N	1-3/8		173
BUS D15	L	C08E1		1-04 *			KT-29				1	SOURCE	N	8-7/8		173
BUS D15	L	E03P2		1-05 *			KJ-2					SOURCE				173
BUS D15	L			1										19-3/8		173
BUS DC LO	L	B06C1		1-01 *		H	K5-8				1	SOURCE TWP		2-5/8		174
BUS DC LO	L	B09F2	C09N1	1-02 *							2	SOURCE,ETCH TO COM	N	3-7/8	BIN-COD ER	174
BUS DC LO	L	C09N1		1-03 *												174
BUS DC LO	L			1										6-4/8		174
BUS FM BA	H	A08S2		1-01 *	2		KT-4				2		N	2-7/8		175
BUS FM BA	H	B07L2		1-02 *			K4-5				1	SOURCE	N	6-7/8		175
BUS FM BA	H	D04J2		1-03 *			K1-6									175
BUS FM BA	H			1										9-6/8		175
BUS FM D	H	B07N1		1-01 *			K4-5				1	SOURCE	N	12-7/8		176
BUS FM D	H	F04V2		1-02 *			K1- 2345									176
BUS FM D	H			1										12-7/8		176
BUS FM PS	L	B07J2		1-01 *			K4-6				2	SOURCE	N	5-3/8		177
BUS FM PS	L	D08D1		1-02 *			KT-2				1		N	6-7/8		177
BUS FM PS	L	F06F1		1-03 *			K5-2									177
BUS FM PS	L			1										12-2/8		177
BUS FM SR	H	B04F1		1-01 *			K1-9				1		N	9-5/8		178
BUS FM SR	H	E07D2		1-02 *			K4-6					SOURCE				178
BUS FM SR	H			1										9-5/8		178

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG	Y	X	Z	REMARKS	NC	LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS INIT	L	A09A1		1-01 *	H					2	TWP		4-7/8		179
BUS INIT	L	B06D1		1-02 *	H		K5-8			1	SOURCE TWP		3-5/8		179
BUS INIT	L	C07H1		1-03 *	H		K4-5			2	TWP		4-5/8		179
BUS INIT	L	D09L1		1-04 *	H		DD			1	TWP		8-7/8		179
BUS INIT	L	F03P2		1-05 *			KW-2								179
BUS INIT	L			1									22-0/8		179
BUS INTR	L	A07A1	A09B1	1-01 *	H		K4-4			2	TWP		1-5/8		180
BUS INTR	L	A09B1		1-02 *	H					1	SOURCE TWP		14-7/8		180
BUS INTR	L	F09M1		1-03 *	H		DD			2	SOURCE TWP		3-7/8		180
BUS INTR	L	F03U2		1-04 *			KW-2				SOURCE				180
BUS INTR	L			1									20-3/8		180
BUS MSYN	L	A07D1	B09V1	1-01 *	H		K4-4			2	SOURCE TWP		5-7/8		181
BUS MSYN	L	B09V1		1-02 *	H					1	SOURCE TWP		6-5/8		181
BUS MSYN	L	F09E1		1-03 *	H		DD			2	TWP		4-4/8		181
BUS MSYN	L	F03F1		1-04 *			KW-2								181
BUS MSYN	L			1									17-0/8		181
BUS NPG	H	A09U1		1-01 *	H					1	TWP		5-7/8		182
BUS NPG	H	C07P2		1-02 *			K4-5				SOURCE				182
BUS NPG	H			1									5-7/8		182
BUS NPR	L	A09S2		1-01 *	H					2	SOURCE TWP		5-1/8		183
BUS NPR	L	C07D2		1-02 *	H		K4-5			1	TWP		9-5/8		183
BUS NPR	L	F09J1		1-03 *			DD								183
BUS NPR	L			1									14-6/8		183
BUS PA	L	A09M1		1-01 *	H					1	SOURCE TWP		1-3/8		184
BUS PA	L	A07L1		1-02 *			K4-3								184
BUS PA	L			1									1-3/8		184
BUS PB	L	A09N2		1-01 *	H					1	SOURCE TWP		1-6/8		185
BUS PB	L	A07F2		1-02 *			K4-3								185
BUS PB	L			1									1-6/8		185
BUS RD FM PS	H	C08F2		1-01 *			KT-2			1		N	8-7/8		186
BUS RD FM PS	H	F06B2		1-02 *			K5-2								186
BUS RD FM PS	H			1									8-7/8		186
BUS RD00	L	C01L2		1-01 *			KF-3			1	SOURCE	N	6-1/8		187
BUS RD00	L	E02L2		1-02 *			KE-3			2	SOURCE	N	4-5/8		187
BUS RD00	L	F04U1		1-03 *			K1-28			1	SOURCE (K1-8)	N	1-6/8		187
BUS RD00	L	F06M1		1-04 *			K5-2			2	SOURCE	N	2-1/8		187
BUS RD00	L	F08J2		1-05 *			KT-7				SOURCE				187
BUS RD00	L			1									14-5/8		187
BUS RD01	L	C01J2		1-01 *			KF-3			1	SOURCE	N	6-1/8		188
BUS RD01	L	E02L1		1-02 *			KE-3			2	SOURCE	N	4-5/8		188
BUS RD01	L	F04S1		1-03 *			K1-28			1	SOURCE (K1-8)	N	2-1/8		188
BUS RD01	L	F06N2		1-04 *			K5-2			2	SOURCE	N	1-3/8		188
BUS RD01	L	F08R1		1-05 *			KT-7				SOURCE				188
BUS RD01	L			1									14-2/8		188

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG	Y	X	Z	REMARKS	NC	LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS RD02	L	B01U1		1-01 *			KF-3			1	SOURCE	N	8-1/8		189
BUS RD02	L	E02M2		1-02 *			KE-3			2	SOURCE	N	4-3/8		189
BUS RD02	L	F04R1		1-03 *			K1-28			1	SOURCE (K1-8)	N	1-7/8		189
BUS RD02	L	F06M2		1-04 *			K5-2			2	SOURCE	N	1-7/8		189
BUS RD02	L	F08D2		1-05 *			KT-7				SOURCE				189
BUS RD02	L			1									16-2/8		189
BUS RD03	L	B01P2		1-01 *			KF-3			1	SOURCE	N	8-5/8		190
BUS RD03	L	E02N2		1-02 *			KE-3			2	SOURCE	N	3-7/8		190
BUS RD03	L	F04P1		1-03 *			K1-28			1	SOURCE (K1-8)	N	2-1/8		190
BUS RD03	L	F06L2		1-04 *			K5-2			2	SOURCE	N	1-7/8		190
BUS RD03	L	F08F2		1-05 *			KT-7				SOURCE				190
BUS RD03	L			1									16-4/8		190
BUS RD04	L	B01A1		1-01 *			KF-3			2	SOURCE	N	6-1/8		191
BUS RD04	L	C04N2		1-02 *			K1-38			1	SOURCE (K1-8)	N	8-3/8		191
BUS RD04	L	F02A1		1-03 *			KE-3			2	SOURCE	N	3-4/8		191
BUS RD04	L	F08A1		1-04 *			KT-7			1	SOURCE	N	1-6/8		191
BUS RD04	L	F06K2		1-05 *			K5-2				SOURCE				191
BUS RD04	L			1									19-6/8		191
BUS RD05	L	A01R1		1-01 *			KF-3			2	SOURCE	N	7-1/8		192
BUS RD05	L	C04P2		1-02 *			K1-38			1	SOURCE (K1-8)	N	8-3/8		192
BUS RD05	L	F02C1		1-03 *			KE-3			2	SOURCE	N	3-1/8		192
BUS RD05	L	F06H2		1-04 *			K5-2			1	SOURCE	N	1-3/8		192
BUS RD05	L	F08F1		1-05 *			KT-7				SOURCE				192
BUS RD05	L			1									20-0/8		192
BUS RD06	L	A01E2		1-01 *			KF-3			2	SOURCE	N	7-5/8		193
BUS RD06	L	C04J2		1-02 *			K1-38			1	SOURCE (K1-8)	N	9-3/8		193
BUS RD06	L	F08B1		1-03 *			KT-7			2	SOURCE	N	1-3/8		193
BUS RD06	L	F06D2		1-04 *			K5-2			1	SOURCE	N	3-1/8		193
BUS RD06	L	F02H1		1-05 *			KE-3				SOURCE				193
BUS RD06	L			1									21-4/8		193
BUS RD07	L	A01P1		1-01 *			KF-3			2	SOURCE	N	8-3/8		194
BUS RD07	L	C04M2		1-02 *			K1-38			1	SOURCE (K1-8)	N	8-5/8		194
BUS RD07	L	F02F2		1-03 *			KE-3			2	SOURCE	N	2-3/8		194
BUS RD07	L	F06E2		1-04 *			K5-2			1	SOURCE	N	1-7/8		194
BUS RD07	L	F08K2		1-05 *			KT-7				SOURCE				194
BUS RD07	L			1									21-2/8		194
BUS RD08	L	C04B1		1-01 *			K1-48			2	SOURCE (K1-8)	N	2-2/8		195
BUS RD08	L	C01M2		1-02 *			KF-3			1	SOURCE	N	9-1/8		195
BUS RD08	L	F02S1		1-03 *			KE-3			2	SOURCE	N	4-7/8		195
BUS RD08	L	F08C1		1-04 *			KT-7				SOURCE				195
BUS RD08	L			1									16-2/8		195
BUS RD09	L	C04A1		1-01 *			K1-48			2	SOURCE (K1-8)	N	2-5/8		196
BUS RD09	L	C01K1		1-02 *			KF-3			1	SOURCE	N	9-7/8		196
BUS RD09	L	F02R2		1-03 *			KE-3			2	SOURCE	N	4-3/8		196
BUS RD09	L	F08D1		1-04 *			KT-7				SOURCE				196
BUS RD09	L			1									16-7/8		196

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BUS RD10	L	B01V1		1-01	*		KF-3				2	SOURCE	N	2		197
BUS RD10	L	B04V1		1-02	*		K1-48				1	SOURCE (K1-8)	N	9-5/8		197
BUS RD10	L	E08R1		1-03	*		KT-7				2	SOURCE	N	4-7/8		197
BUS RD10	L	F02U1		1-04	*		KE-3					SOURCE				197
BUS RD10	L			1										16-4/8		197
BUS RD11	L	B01N2		1-01	*		KF-3				2	SOURCE	N	2-5/8		198
BUS RD11	L	B04V2		1-02	*		K1-48				1	SOURCE (K1-8)	N	11-1/8		198
BUS RD11	L	F08H1		1-03	*		KT-7				2	SOURCE	N	4-3/8		198
BUS RD11	L	F02U2		1-04	*		KE-3					SOURCE				198
BUS RD11	L			1										18-1/8		198
BUS RD12	L	A04D1		1-01	*		K1-58				2	SOURCE (K1-8)	N	4-3/8		199
BUS RD12	L	B01B1		1-02	*		KF-3				1	SOURCE	N	12-7/8		199
BUS RD12	L	F02R1		1-03	*		KE-3				2	SOURCE	N	4-4/8		199
BUS RD12	L	E08P1		1-04	*		KT-27					SOURCE (KT-27)				199
BUS RD12	L			1										21-6/8		199
BUS RD13	L	A04F1		1-01	*		K1-58				1	SOURCE (K1-8)	N	2-6/8		200
BUS RD13	L	A01S1		1-02	*		KF-3				2	SOURCE	N	6-4/8		200
BUS RD13	L	C08H2		1-03	*		KT-2				1	SOURCE	N	12-3/8		200
BUS RD13	L	F02S2		1-04	*		KE-3					SOURCE				200
BUS RD13	L			1										21-5/8		200
BUS RD14	L	A01F1		1-01	*		KF-3				2	SOURCE	N	2-1/8		201
BUS RD14	L	A04C1		1-02	*		K1-58				1	SOURCE (K1-8)	N	9-3/8		201
BUS RD14	L	C08R2		1-03	*		KT-2				2	SOURCE	N	11-7/8		201
BUS RD14	L	F02V2		1-04	*		KE-3					SOURCE				201
BUS RD14	L			1										23-3/8		201
BUS RD15	L	A01A1		1-01	*		KF-3				2	SOURCE	N	2		202
BUS RD15	L	A04A1		1-02	*		K1-58				1	SOURCE (K1-8)	N	9-5/8		202
BUS RD15	L	C08S2		1-03	*		KT-2				2	SOURCE	N	11-7/8		202
BUS RD15	L	F02V1		1-04	*		KE-3					SOURCE				202
BUS RD15	L			1										23-4/8		202
BUS REQUEST	L	D09J2		1-01	*		DD				1	SOURCE	N	6-5/8		203
BUS REQUEST	L	F09P1		1-02	*		DD				2	SOURCE	N	1		203
BUS REQUEST	L	F09U2		1-03	*		DD					SOURCE				203
BUS REQUEST	L			1										7-5/8		203
BUS SACK	L	A09R2		1-01	*	H					2	SOURCE TWP		6-1/8		204
BUS SACK	L	C07L2		1-02	*	H	K4-5				1	TWP		10-1/8		204
BUS SACK	L	F09T2		1-03	*	H	DD				2	SOURCE TWP		3-5/8		204
BUS SACK	L	F03S2		1-04	*		KW-2					SOURCE				204
BUS SACK	L			1										19-7/8		204
BUS SSYN	L	A07D2		1-01	*	H	K4-4				2	SOURCE TWP		5-3/8		205
BUS SSYN	L	B09U1		1-02	*	H					1	SOURCE TWP		6-7/8		205
BUS SSYN	L	E08C1		1-03	*	H	KT-6				2	SOURCE TWP		1-3/8		205
BUS SSYN	L	E09J1		1-04	*	H	DD				1	SOURCE TWP		2-5/8		205
BUS SSYN	L	F09C1		1-05	*	H	DD				2	SOURCE TWP		4-1/8		205
BUS SSYN	L	F03N2		1-06	*		KW-2					SOURCE				205
BUS SSYN	L			1										20-3/8		205

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BUS STUP	H	F07K1					K4-34					SOURCE (K4-4)			1-PIN RUN	206
BUT (37:34)	L	E05L1					K3-2					SOURCE			1-PIN RUN	207
BUT (3X)	L	C06D1		1-01	*		K5-36				1		N	4-1/8		208
BUT (3X)	L	D05J1		1-02	*		K3-2					SOURCE				208
BUT (3X)	L			1										4-1/8		208
BUT 02	H	C06E1					K5-38					SOURCE (K5-3)			1-PIN RUN	209
BUT 05	H	B06V1		1-01	*		K5-3				1	SOURCE	N	2-7/8		210
BUT 05	H	C08N2		1-02	*		KT-9									210
BUT 05	H			1										2-7/8		210
BUT 26	H	C06A1		1-01	*		K5-3				2	SOURCE	N	1-7/8		211
BUT 26	H	C08J1		1-02	*		KT-9				1		N	3-7/8		211
BUT 26	H	D07K1		1-03	*		K4-5									211
BUT 26	H			1										5-6/8		211
BUT 37	H	A07P1		1-01	*		K4-4				1		N	4-5/8		212
BUT 37	H	C06B1		1-02	*		K5-3				2	SOURCE	N	3-1/8		212
BUT 37	H	C02V2		1-03	*		KE-5									212
BUT 37	H			1										7-6/8		212
BYTE CODES	H	E06A1		1-01	*	1	K5-2				1		N	5-1/8		213
BYTE CODES	H	F05T2		1-02	*		K3-7					SOURCE				213
BYTE CODES	H			1										5-1/8		213
BYTE INSTR	H	C07R1		1-01	*		K4-4				1		N	3-3/8		214
BYTE INSTR	H	D05H1		1-02	*		K3-2678					SOURCE (K3-6)				214
BYTE INSTR	H			1										3-3/8		214
C DATA	H	B05F1		1-01	*		K3-9				1	SOURCE	N	8-7/8		215
C DATA	H	E06K1		1-02	*		K5-2									215
C DATA	H			1										8-7/8		215
C0BUS (1)	H	B07D2		1-01	*		K4-4				1		N	7-7/8		216
C0BUS (1)	H	D06S1		1-02	*		K5-4				2		N	2		216
C0BUS (1)	H	D03F2		1-03	*		K2-7					SOURCE				216
C0BUS (1)	H			1										9-7/8		216
C1BUS (1)	H	B07H2		1-01	*		K4-4				2		N	3-1/8		217
C1BUS (1)	H	C06F2		1-02	*		K5-4				1		N	5-3/8		217
C1BUS (1)	H	D03K1		1-03	*		K2-7					SOURCE				217
C1BUS (1)	H			1										8-4/8		217
CASI ADRS	H	D04P1					K1-7					SOURCE			1-PIN RUN	218
CBR (0)	H	C07F1		1-01	*		K4-5				1	SOURCE	N	9-1/8		219
CBR (0)	H	F05F2		1-02	*		K3-7									219
CBR (0)	H			1										9-1/8		219
CC INSTR	H	B05J2		1-01	*		K3-6				1	SOURCE	N	6-5/8		220
CC INSTR	H	D06R1		1-02	*		K5-2									220
CC INSTR	H			1										6-5/8		220

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
CIN00	L	A05P1		1-01 *			K3-8		1	SOURCE	N	11-3/8		221
CIN00	L	E04S2		1-02 *			K1-2							221
CIN00	L			1								11-3/8		221
CKODA (1)	H	A07T2		1-01 *			K4-4		1		N	14-3/8		222
CKODA (1)	H	F08V2		1-02 *			KT-3							222
CKODA (1)	H			1								14-3/8		222
CKOVF	H	A07R2		1-01 *			K4-4		2	SOURCE	N	6-1/8		223
CKOVF	H	C04D1		1-02 *			K1-7		1		N	7-5/8		223
CKOVF	H	E03U2		1-03 *			KJ-2							223
CKOVF	H			1								13-6/8		223
CLK (UPP*PUPP)	H	B03F2		1-01 *			K2-23		1		N	9-1/8		224
CLK (UPP*PUPP)	H	D07V2		1-02 *			K4-2			SOURCE				224
CLK (UPP*PUPP)	H			1								9-1/8		224
CLK B	H	E04D2		1-01 *			K1-2345		1		N	2-3/8		225
CLK B	H	E07M2		1-02 *			K4-2			SOURCE				225
CLK B	H			1								2-3/8		225
CLK B (1)	H	D03J1		1-01 *			K2-7		1	SOURCE	N	4-3/8		226
CLK B (1)	H	E07L2		1-02 *			K4-2							226
CLK B (1)	H			1								4-3/8		226
CLK BA	H	A04H2		1-01 *			K1-6		1		N	12-1/8		227
CLK BA	H	E07H1		1-02 *			K4-24			SOURCE (K4-2)				227
CLK BA	H			1								12-1/8		227
CLK BA (1)	H	B08U1		1-01 *	2		KT-9		2		N	7-1/8		228
CLK BA (1)	H	D03L1		1-02 *			K2-7		1	SOURCE	N	3-4/8		228
CLK BA (1)	H	E07J1		1-03 *			K4-2							228
CLK BA (1)	H			1								10-5/8		228
CLK BOVFLW	H	A07K2		1-01 *	1		K4-4		1	SOURCE	N	8-3/8		229
CLK BOVFLW	H	D06F2		1-02 *			K5-4							229
CLK BOVFLW	H			1								8-3/8		229
CLK BUS	H	D08H1		1-01 *			KT-3		1		N	3-5/8		230
CLK BUS	H	E07K1		1-02 *			K4-245			SOURCE (K4-2)				230
CLK BUS	H			1								3-5/8		230
CLK D	H	B04L2		1-01 *			K1-2345		1		N	9-3/8		231
CLK D	H	E06N2		1-02 *			K5-2		2		N	1		231
CLK D	H	E07N2		1-03 *			K4-2			SOURCE				231
CLK D	H			1								10-3/8		231
CLK D (1)	H	A01K2		1-01 *			KF-4		1		N	9-3/8		232
CLK D (1)	H	D03K2		1-02 *			K2-7		2	SOURCE	N	5-2/8		232
CLK D (1)	H	E07P2		1-03 *			K4-2							232
CLK D (1)	H			1								14-5/8		232
CLK EPS(C)	H	B02S2					KE-5			SOURCE			1-PIN RUN	233

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
CLK EPS(N,Z)	H	A01D2		1-01 *			KF-4		1		N	8-1/8		234
CLK EPS(N,Z)	H	D02A1		1-02 *			KE-5			SOURCE				234
CLK EPS(N,Z)	H			1								8-1/8		234
CLK EPS(V)	H	C02L2					KE-6						1-PIN RUN	235
CLK EU(86:57)	H	C01U2		1-01 *			KF-4		1		N	1-3/8		236
CLK EU(88:57)	H	C02N2		1-02 *			KE-457			SOURCE (KE-5)				236
CLK EU(88:57)	H			1								1-3/8		236
CLK IR	H	B05J1		1-01 *			K3-3		2		N	5-7/8		237
CLK IR	H	D07C1		1-02 *			K4-25		1	SOURCE	N	7-7/8		237
CLK IR	H	F08R2		1-03 *			KT-78							237
CLK IR	H			1								13-6/8		237
CLK MSYN	H	E08M1		1-01 *			KT-56		1		N	3-1/8		238
CLK MSYN	H	F07L2		1-02 *			K4-34			SOURCE (K4-4)				238
CLK MSYN	H			1								3-1/8		238
CLK NPR	H	C07C1					K4-5			SOURCE			1-PIN RUN	239
CLK PTRD	H	C07P1					K4-5			SOURCE			1-PIN RUN	240
CLK U(16:09)	H	C03F1		1-01 *			K2-4		1		N	6-5/8		241
CLK U(16:09)	H	D07T2		1-02 *			K4-2			SOURCE				241
CLK U(16:09)	H			1								6-5/8		241
CLK U(56:17)	H	C03K1		1-01 *			K2-5678		1		N	4-2/8		242
CLK U(56:17)	H	D08K1		1-02 *			KT-2		2		N	1-5/8		242
CLK U(56:17)	H	D07U2		1-03 *			K4-2			SOURCE				242
CLK U(56:17)	H			1								5-7/8		242
CLKIR (1)	H	D03T2		1-01 *			K2-8		1	SOURCE	N	3-4/8		243
CLKIR (1)	H	E07P1		1-02 *			K4-2		2		N	3-1/8		243
CLKIR (1)	H	F08K1		1-03 *			KT-7							243
CLKIR (1)	H			1								6-5/8		243
CLKL1 (0)	H	D03M2		1-01 *			K2-8		1	SOURCE	N	2-7/8		244
CLKL1 (0)	H	E07A1		1-02 *			K4-2							244
CLKL1 (0)	H			1								2-7/8		244
CLKL1 (1)	H	D03N2		1-01 *			K2-8		1	SOURCE	N	2-5/8		245
CLKL1 (1)	H	D07U1		1-02 *			K4-2							245
CLKL1 (1)	H			1								2-5/8		245
CLKLO (0)	H	D03R1		1-01 *			K2-8		1	SOURCE	N	6-5/8		246
CLKLO (0)	H	F07H1		1-02 *			K4-2							246
CLKLO (0)	H			1								6-5/8		246
CLKLO (1)	H	D03L2		1-01 *			K2-8		1	SOURCE	N	4-5/8		247
CLKLO (1)	H	E07M1		1-02 *			K4-2							247
CLKLO (1)	H			1								4-5/8		247
CLKOFF (1)	H	D03U2		1-01 *			K5-8		1	SOURCE	N	6-3/8		248
CLKOFF (1)	H	F07J1		1-02 *			K4-2							248
CLKOFF (1)	H			1								6-3/8		248

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
CLR BERR	L	C06N1				K5-4						SOURCE		1-PIN RUN	249
CLR IR	L	B05H2				K3-3						SOURCE		1-PIN RUN	250
CLR PTR	L	D07H1				K4-56						SOURCE (K4-5)		1-PIN RUN	251
CLR PUPP	L	B03L1				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			N 16-5/8		254
CLR UPP0	L	F07S2		1-02 *		K4-3						SOURCE			254
CLR UPP0	L			1									16-5/8		254
CLR UPP1	L	A03H2		1-01 *		K2-2				1			N 15-5/8		255
CLR UPP1	L	F07F2		1-02 *		K4-3						SOURCE			255
CLR UPP1	L			1									15-5/8		255
CLR UPP4,3	L	B03H1		1-01 *		K2-23				1			N 13-1/8		256
CLR UPP4,3	L	F07H2		1-02 *		K4-3						SOURCE			256
CLR UPP4,3	L			1									13-1/8		256
CLR UPP7,6:2	L	B03K1		1-01 *		K2-23				1			N 12-1/8		257
CLR UPP7,6:2	L	F07C1		1-02 *		K4-3						SOURCE			257
CLR UPP7,6:2	L			1									12-1/8		257
CLR UPP8,5	L	A03P1		1-01 *		K2-3				1			N 14-7/8		258
CLR UPP8,5	L	F07D2		1-02 *		K4-3						SOURCE			258
CLR UPP8,5	L			1									14-7/8		258
COMUXS0	H	B04H2		1-01 *		K1-5				1			N 5-1/8		259
COMUXS0	H	D05A1		1-02 *		K3-8						SOURCE			259
COMUXS0	H			1									5-1/8		259
COMUXS1	H	B04R2		1-01 *		K1-5				1			N 4-5/8		260
COMUXS1	H	D05D1		1-02 *		K3-8						SOURCE			260
COMUXS1	H			1									4-5/8		260
CONSL (0)	H	A07E1		1-01 *		K4-4				2			N 1-7/8		261
CONSL (0)	H	A06S2		1-02 *		K5-6				1		SOURCE	N 4-3/8		261
CONSL (0)	H	C07R1		1-03 *		K4-5				2			N 2-3/8		261
CONSL (0)	H	C08P2		1-04 *		KT-39				1			N 6-7/8		261
CONSL (0)	H	E05N2		1-05 *		K3-7				2			N 3-7/8		261
CONSL (0)	H	F07P1		1-06 *		K4-3									261
	H			1									19-3/8		261
COUNT0 (1)	H	B01H2	D02R2	1-01 *		KF-4				1			N 7-1/8		262
COUNT0 (1)	H	D02R2		1-02 *		KE-6						SOURCE			262
COUNT0 (1)	H			1									7-1/8		262
COUNT1 (1)	H	B01H1	D02R1	1-01 *		KF-4				1			N 7-1/8		263
COUNT1 (1)	H	D02R1		1-02 *		KE-6						SOURCE			263
COUNT1 (1)	H			1									7-1/8		263

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
COUNT2 (1)	H	B01F1		1-01 *		KF-4				1			N 6-7/8		264
COUNT2 (1)	H	D02N1		1-02 *		KE-6						SOURCE			264
COUNT2 (1)	H			1									6-7/8		264
COUNT3 (1)	H	B01R2		1-01 *		KF-4				1			N 5-7/8		265
COUNT3 (1)	H	D02N2		1-02 *		KE-6						SOURCE			265
COUNT3 (1)	H			1									5-7/8		265
COUNT4 (1)	H	B01S2		1-01 *		KF-4				1			N 7-3/8		266
COUNT4 (1)	H	E02D2		1-02 *		KE-6						SOURCE			266
COUNT4 (1)	H			1									7-3/8		266
COUNT5 (1)	H	B01T2		1-01 *		KF-4				1			N 6-5/8		267
COUNT5 (1)	H	E02C1		1-02 *		KE-6						SOURCE			267
COUNT5 (1)	H			1									6-5/8		267
COUNT6 (1)	H	B01U2		1-01 *		KF-4				1			N 7-1/8		268
COUNT6 (1)	H	E02E2		1-02 *		KE-6						SOURCE			268
COUNT6 (1)	H			1									7-1/8		268
COUNT7 (1)	H	B01V2		1-01 *		KF-4				1			N 6-5/8		269
COUNT7 (1)	H	E02D1		1-02 *		KE-6						SOURCE			269
COUNT7 (1)	H			1									6-5/8		269
COUNT=0	H	D02P2				KE-6						SOURCE		1-PIN RUN	270
COUT 15	L	B04D2		1-01 *		K1-5				1		SOURCE	N 5-1/8		271
COUT 15	L	C02N1		1-02 *		KE-6									271
COUT 15	L			1									5-1/8		271
COUT MUX	L	B04K2				K1-5						SOURCE		1-PIN RUN	272
D HOOK	H	E04V2		1-01 *		K1-8				1			N 3-4/8		273
D HOOK	H	E08J2		1-02 *		KT-9						SOURCE			273
D HOOK	H			1									3-4/8		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	N 3-5/8		276
D(03:00)=0	H	E06B1		1-02 *		K5-2									276
D(03:00)=0	H			1									3-5/8		276
D(07:04)=0	H	D04H1		1-01 *		K1-7				1		SOURCE	N 3-6/8		277
D(07:04)=0	H	E06D2		1-02 *		K5-2									277
D(07:04)=0	H			1									3-6/8		277
D(15:00)=0	H	B02U2		1-01 *		KE-46				2		SOURCE	N 4-5/8		278
D(15:00)=0	H	D01F2		1-02 *		KF-4				1			N 2-5/8		278
D(15:00)=0	H	D04V2		1-03 *		K1-7				2		SOURCE	N 1-5/8		278
D(15:00)=0	H	D06P2		1-04 *		K5-2				1			N 5-7/8		278
D(15:00)=0	H	F05N2		1-05 *		K3-2									278
D(15:00)=0	H			1									14-6/8		278

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
D(15:00)=0	L	B02U1					KE-4			SOURCE			1-PIN RUN	279
D(C) (0)	H	B04N1		1-01	*		K1-5		1	SOURCE	N	1-3/8		280
D(C) (0)	H	B05L2		1-02	*		K3-9							280
D(C) (0)	H			1								1-3/8		280
D00 (1)	H	B05N2		1-01	*		K3-9		1		N	5-5/8		281
D00 (1)	H	D04H2		1-02	*		K1-27			SOURCE (K1=2)				281
D00 (1)	H			1								5-5/8		281
D07 (1)	H	D04L2		1-01	*		K1-37		1	SOURCE (K1=3)	N	3-3/8		282
D07 (1)	H	E06F2		1-02	*		K5-2							282
D07 (1)	H			1								3-3/8		282
D15 (1)	H	B04F2		1-01	*		K1-57		2	SOURCE (K1=5)	N	4-5/8		283
D15 (1)	H	C02K1		1-02	*		KE-4		1		N	7-3/8		283
D15 (1)	H	E06E2		1-03	*		K5-2							283
D15 (1)	H			1								12-0/8		283
DAD(3*2)	L	A05T2		1-01	*		K3-8		2	SOURCE	N	3-3/8		284
DAD(3*2)	L	B02C1		1-02	*		KE-5		1		N	7-1/8		284
DAD(3*2)	L	D01M1		1-03	*		KF-4							284
DAD(3*2)	L			1								10-4/8		284
DAD0 (1)	H	B06K2	C07S1	1-01	*		K5-6		1		N	3-7/8		285
DAD0 (1)	H	C07S1		1-02	*		K4-4		2		N	2-5/8		285
DAD0 (1)	H	D03D2		1-03	*		K2-7			SOURCE				285
DAD0 (1)	H			1								6-4/8		285
DAD1 (1)	H	B05B1		1-01	*		K3-8		2		N	4-5/8		286
DAD1 (1)	H	C07F2		1-02	*		K4-4		1		N	5-1/8		286
DAD1 (1)	H	D03P1		1-03	*		K2-7			SOURCE				286
DAD1 (1)	H			1								9-6/8		286
DAD2 (1)	H	A05S1		1-01	*		K3-8		2		N	5-5/8		287
DAD2 (1)	H	C07E2		1-02	*		K4-4		1		N	6-1/8		287
DAD2 (1)	H	D03N1		1-03	*		K2-7			SOURCE				287
DAD2 (1)	H			1								11-6/8		287
DAD3 (1)	H	B07M2		1-01	*		K4-4		2		N	2-1/8		288
DAD3 (1)	H	B05C1		1-02	*		K3-8		1		N	7-5/8		288
DAD3 (1)	H	D03M1		1-03	*		K2-7			SOURCE				288
DAD3 (1)	H			1								9-6/8		288
DISABLE TSACH	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		N	2-1/8		291
DM=0	L	E08D1		1-02	*		KT-9							291
DM=0	L			1								2-1/8		291

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
DMUX00	H	A08E1		1-01	*		KT-4		1		N	14-3/8		292
DMUX00	H	E02K1		1-02	*		KE-2		2		N	1-5/8		292
DMUX00	H	E04L1		1-03	*		K1-289		1	SOURCE (K1=2)	N	3-5/8		292
DMUX00	H	F05L1		1-04	*		K3-39							292
DMUX00	H			1								19-5/8		292
DMUX01	H	A08D1		1-01	*		KT-4		1		N	13-1/8		293
DMUX01	H	E04J2		1-02	*		K1-289		2	SOURCE (K1=2)	N	1-4/8		293
DMUX01	H	E02J2		1-03	*		KE-2		1		N	4-1/8		293
DMUX01	H	F05F1		1-04	*		K3-39							293
DMUX01	H			1								18-6/8		293
DMUX02	H	A08C1		1-01	*		KT-4		1		N	10-3/8		294
DMUX02	H	D06M1		1-02	*		K5-2		2		N	3-5/8		294
DMUX02	H	E02K2		1-03	*		KE-2		1		N	1-3/8		294
DMUX02	H	E04M1		1-04	*		K1-289		2	SOURCE (K1=2)	N	3-1/8		294
DMUX02	H	F05H1		1-05	*		K3-3							294
DMUX02	H			1								18-4/8		294
DMUX03	H	A08J1		1-01	*		KT-4		2		N	9-7/8		295
DMUX03	H	D06N1		1-02	*		K5-2		1		N	3-2/8		295
DMUX03	H	E02J1		1-03	*		KE-2		2		N	4-3/8		295
DMUX03	H	F04J2		1-04	*		K1-289		1	SOURCE (K1=2)	N	0-1/8		295
DMUX03	H	F05K1		1-05	*		K3-3							295
DMUX03	H			1								17-5/8		295
DMUX04	H	A08M1		1-01	*		KT-4		1		N	9-5/8		296
DMUX04	H	D04F1		1-02	*		K1-389		2	SOURCE (K1=3)	N	2		296
DMUX04	H	D05S2		1-03	*		K3-3		1		N	1-5/8		296
DMUX04	H	E06C1		1-04	*		K5-2		2		N	2-7/8		296
DMUX04	H	F02H1		1-05	*		KE-2							296
DMUX04	H			1								16-1/8		296
DMUX05	H	A08L1		1-01	*		KT-4		1		N	9-5/8		297
DMUX05	H	D04C1		1-02	*		K1-389		2	SOURCE (K1=3)	N	2-2/8		297
DMUX05	H	D05P2		1-03	*		K3-3		1		N	2-6/8		297
DMUX05	H	E02H2		1-04	*		KE-2		2		N	3-1/8		297
DMUX05	H	E06R1		1-05	*		K5-2							297
DMUX05	H			1								17-6/8		297
DMUX06	H	B08D1		1-01	*		KT-4		1		N	8-5/8		298
DMUX06	H	D04M1		1-02	*		K1-389		2	SOURCE (K1=3)	N	1-5/8		298
DMUX06	H	D05T2	E06V2	1-03	*		K3-3		1		N	3-5/8		298
DMUX06	H	E06V2		1-04	*		K5-2		2		N	3-4/8		298
DMUX06	H	F02N1		1-05	*		KE-2							298
DMUX06	H			1								17-3/8		298
DMUX07	H	B08F2		1-01	*		KT-4		1		N	7-5/8		299
DMUX07	H	D04F2		1-02	*		K1-389		2	SOURCE (K1=3)	N	1-7/8		299
DMUX07	H	D05R2		1-03	*		K3-3		1		N	3-3/8		299
DMUX07	H	E06R2		1-04	*		K5-2		2		N	3-6/8		299
DMUX07	H	F02M2		1-05	*		KE-2							299
DMUX07	H			1								16-5/8		299

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
DMUX00	H	B08J1		1-01 *			KT-4		1		N	3-1/8		300
DMUX00	H	B04S2		1-02 *			K1-489		2	SOURCE (K1-4)	N	2-1/8		300
DMUX00	H	C05H1		1-03 *			K3-3		1		N	6-5/8		300
DMUX00	H	E03H1		1-04 *			KJ-2		2		N	3-7/8		300
DMUX00	H	F02N2		1-05 *			KE-2							300
DMUX00	H			1								15-6/8		300
DMUX09	H	B08K2		1-01 *			KT-4		1		N	3-1/8		301
DMUX09	H	B04T2		1-02 *			K1-489		2	SOURCE (K1-4)	N	2-1/8		301
DMUX09	H	C05J1		1-03 *			K3-3		1		N	6-5/8		301
DMUX09	H	E03J1		1-04 *			KJ-2		2		N	3-3/8		301
DMUX09	H	F02J2		1-05 *			KE-2							301
DMUX09	H			1								15-2/8		301
DMUX10	H	C08J2		1-01 *			KT-4		1		N	2-5/8		302
DMUX10	H	C05E1		1-02 *			K3-3		2		N	1-7/8		302
DMUX10	H	B04U1		1-03 *			K1-489		1	SOURCE (K1-4)	N	7-5/8		302
DMUX10	H	E03K1		1-04 *			KJ-2		2		N	3-5/8		302
DMUX10	H	F02K1		1-05 *			KE-2							302
DMUX10	H			1								15-6/8		302
DMUX11	H	B08L2		1-01 *			KT-4		1		N	3-3/8		303
DMUX11	H	B04U2		1-02 *			K1-489		2	SOURCE (K1-4)	N	1-7/8		303
DMUX11	H	C05F1		1-03 *			K3-3		1		N	7-3/8		303
DMUX11	H	E03M1		1-04 *			KJ-2		2		N	3-1/8		303
DMUX11	H	F02K2		1-05 *			KE-2							303
DMUX11	H			1								15-6/8		303
DMUX12	H	A04B1		1-01 *			K1-589		1	SOURCE (K1-5)	N	5-1/8		304
DMUX12	H	B05P1		1-02 *			K3-3		2		N	5-1/8		304
DMUX12	H	C08V2		1-03 *			KT-2		1		N	7-5/8		304
DMUX12	H	E03N1		1-04 *			KJ-2		2		N	2-5/8		304
DMUX12	H	F02D1		1-05 *			KE-2							304
DMUX12	H			1								20-4/8		304
DMUX13	H	A04D2		1-01 *	2		K1-589		2	SOURCE (K1-5) 3-0	N	6-5/8		305
DMUX13	H	B05N1		1-02 *			K3-3		1		N	6-3/8		305
DMUX13	H	D08E2		1-03 *			KT-2		2		N	5-5/8		305
DMUX13	H	E03F1		1-04 *			KJ-2		1		N	2-5/8		305
DMUX13	H	F02E1		1-05 *			KE-2							305
DMUX13	H			1								21-2/8		305
DMUX14	H	A04F2		1-01 *			K1-589		2	SOURCE (K1-5)	N	3-7/8		306
DMUX14	H	B05M1		1-02 *			K3-3		1		N	6-5/8		306
DMUX14	H	D08D2		1-03 *			KT-2		2		N	6-4/8		306
DMUX14	H	E03S1		1-04 *			KJ-2		1		N	2-3/8		306
DMUX14	H	F02F1		1-05 *			KE-2							306
DMUX14	H			1								19-3/8		306
DMUX15	H	A04E2		1-01 *			K1-589		1	SOURCE (K1-5)	N	4-3/8		307
DMUX15	H	B05P1		1-02 *			K3-3		2		N	5-1/8		307
DMUX15	H	C08U2		1-03 *			KT-2		1		N	7-7/8		307
DMUX15	H	E03R1		1-04 *			KJ-2		2		N	2-1/8		307
DMUX15	H	F02B1		1-05 *			KE-2							307
DMUX15	H			1								19-4/8		307

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
DOUT HIGH	H	B07H1		1-01 *			K4-4		1	SOURCE	N	8-3/8		308
DOUT HIGH	H	E08E1		1-02 *			KT-26		2		N	4-1/8		308
DOUT HIGH	H	E03V1		1-03 *			KJ-2							308
DOUT HIGH	H			1								12-4/8		308
DOUT LOW	H	B07K1		1-01 *			K4-4		1	SOURCE	N	8-3/8		309
DOUT LOW	H	E08F1		1-02 *			KT-6							309
DOUT LOW	H			1								8-3/8		309
DR00	L	A02L1					KE-5			SOURCE			1-PIN RUN	310
DR00 (1)	H	B02B1		1-01 *			KE-23456		2	SOURCE (KE-2)	N	2-3/8		311
DR00 (1)	H	B01R1		1-02 *			KF-2		1		N	8-1/8		311
DR00 (1)	H	E01N2		1-03 *			KM-2							311
DR00 (1)	H			1								10-4/8		311
DR01 (1)	H	C01H2		1-01 *			KF-3		1		N	6-1/8		312
DR01 (1)	H	E02F2		1-02 *			KE-23			SOURCE (KE-2)				312
DR01 (1)	H			1								6-1/8		312
DR02 (1)	H	C01B1		1-01 *			KF-3		1		N	6-5/8		313
DR02 (1)	H	E02F1		1-02 *			KE-23			SOURCE (KE-2)				313
DR02 (1)	H			1								6-5/8		313
DR03 (1)	H	B01S1		1-01 *			KF-3		1		N	9-3/8		314
DR03 (1)	H	E02V2		1-02 *			KE-23			SOURCE (KE-2)				314
DR03 (1)	H			1								9-3/8		314
DR04 (1)	H	B01D1		1-01 *			KF-3		1		N	9-3/8		315
DR04 (1)	H	E02M1		1-02 *			KE-23			SOURCE (KE-2)				315
DR04 (1)	H			1								9-3/8		315
DR05 (1)	H	A01N1		1-01 *			KF-3		1		N	11-5/8		316
DR05 (1)	H	E02R1		1-02 *			KE-23			SOURCE (KE-2)				316
DR05 (1)	H			1								11-5/8		316
DR06 (1)	H	A01F2		1-01 *			KF-3		1		N	12-3/8		317
DR06 (1)	H	E02R2		1-02 *			KE-23			SOURCE (KE-2)				317
DR06 (1)	H			1								12-3/8		317
DR07 (1)	H	E02P1					KE-23			SOURCE (KE-2)			1-PIN RUN	318
DR08 (1)	H	A01P2		1-01 *			KF-4		1		N	11-7/8		319
DR08 (1)	H	E02V1		1-02 *			KE-23			SOURCE (KE-2)				319
DR08 (1)	H			1								11-7/8		319
DR09 (1)	H	A01R2		1-01 *			KF-4		1		N	9-6/8		320
DR09 (1)	H	E01D2		1-02 *			KM-2		2		N	3-7/8		320
DR09 (1)	H	F02J1		1-03 *			KE-23			SOURCE (KE-2)				320
DR09 (1)	H			1								13-5/8		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

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
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	N	8-5/8		327
DUBBERR	L	E07T2		1-02 *			K4-3							327
DUBBERR	L			1								8-5/8		327
E(P1+P2)	H	A01H2		1-01 *			KF-2	1			N	12-3/8		328
E(P1+P2)	H	E02S2		1-02 *			KE-25			SOURCE (KE-5)				328
E(P1+P2)	H			1								12-3/8		328
ECIN00	H	A05S2		1-01 *			K3-8	2			N	2-5/8		329
ECIN00	H	B02F2		1-02 *			KE-5	1		SOURCE	N	9-3/8		329
ECIN00	H	E01M2		1-03 *			KM-2							329
ECIN00	H			1								12-0/8		329
ECLK U	L	C02M2		1-01 *			KE-5	1			N	5-4/8		330
ECLK U	L	D07S1		1-02 *			K4-							330
ECLK U	L			1								5-4/8		330
ECOMUXS0	L	D02H2		1-01 *			KE-5	1		SOURCE	N	2-1/8		331
ECOMUXS0	L	D05C1		1-02 *			K3-8							331
ECOMUXS0	L			1								2-1/8		331
ECOMUXS1	L	D02F2		1-01 *			KE-5	1		SOURCE	N	1-5/8		332
ECOMUXS1	L	D05E1		1-02 *			K3-8							332
ECOMUXS1	L			1								1-5/8		332
EMT	L	B06R1		1-01 *			K5-5	1			N	7-5/8		333
EMT	L	E05F1		1-02 *			K3-6			SOURCE				333
EMT	L			1								7-5/8		333
ENPR CLK	L	A02M2		1-01 *			KE-9	1		SOURCE	N	9-7/8		334
ENPP CLK	L	D07E1		1-02 *			K4-5							334
ENPR CLK	L			1								9-7/8		334
EOVFL STOP	H	B07F2		1-01 *			K4-4	1			N	10-1/8		335
EOVFL STOP	H	E03F2		1-02 *			KJ-2			SOURCE				335
EOVFL STOP	H			1								10-1/8		335
EOVFLW	L	D06R2		1-01 *			K5-4	1			N	4-5/8		336
EOVFLW	L	E03T2		1-02 *			KJ-2			SOURCE				336
EOVFLW	L			1								4-5/8		336
EPS(C) (1)	H	C01J1		1-01 *			KF-2	1			N	4-7/8		337
EPS(C) (1)	H	D02V1		1-02 *			KE-356	2		SOURCE (KE-6)	N	2-5/8		337
EPS(C) (1)	H	E01R2		1-03 *			KM-2							337
EPS(C) (1)	H			1								7-4/8		337

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
EPS(N) (1)	H	A01D1		1-01 *			KF-3	1			N	6-7/8		338
EPS(N) (1)	H	C02K2		1-02 *			KE-346	2		SOURCE (KE-6)	N	6-1/8		338
EPS(N) (1)	H	E01L2		1-03 *			KM-2							338
EPS(N) (1)	H			1								13-0/8		338
EPS(V) (1)	H	C02L1		1-01 *			KE-36	1		SOURCE (KE-6)	N	5-3/8		339
EPS(V) (1)	H	E01E2		1-02 *			KM-2							339
EPS(V) (1)	H			1								5-3/8		339
EPS(Z) (0)	H	A01M2		1-01 *			KF-4	1			N	8-5/8		340
EPS(Z) (0)	H	D02J2		1-02 *			KE-6			SOURCE				340
EPS(Z) (0)	H			1								8-5/8		340
EPS(Z) (1)	H	D02F1		1-01 *			KE-3	1			N	3-5/8		341
EPS(Z) (1)	H	E01H1		1-02 *			KM-2							341
EPS(Z) (1)	H			1								3-5/8		341
ESALU0	L	A02C1		1-01 *			KE-5	1		SOURCE	N	3-3/8		342
ESALU0	L	A05N2		1-02 *			K3-8							342
ESALU0	L			1								3-3/8		342
ESALU1	L	A05L2		1-01 *			K3-8	1			N	3-4/8		343
ESALU1	L	B02E2		1-02 *			KE-5			SOURCE				343
ESALU1	L			1								3-4/8		343
ESALU2	L	A02F1		1-01 *			KE-5	1		SOURCE	N	2-5/8		344
ESALU2	L	A05M2		1-02 *			K3-8							344
ESALU2	L			1								2-5/8		344
ESALU3	L	A02D1		1-01 *			KE-5	1		SOURCE	N	2-5/8		345
ESALU3	L	A05K2		1-02 *			K3-8							345
ESALU3	L			1								2-5/8		345
ESALUM	H	B05M2					K3-8						1-PIN RUN	346
EUBC1	L	A03L1		1-01 *			K2-2	1			N	3-1/8		347
EUBC1	L	B02F1		1-02 *			KE-4			SOURCE				347
EUBC1	L			1								3-1/8		347
EUBC2	L	A02S2		1-01 *			KE-4	1		SOURCE	N	0-5/8		348
EUBC2	L	A03N1		1-02 *			K2-2							348
EUBC2	L			1								0-5/8		348
EUBC3	L	A03S1		1-01 *			K2-2	1			N	4-3/8		349
EUBC3	L	C02B1		1-02 *			KE-4			SOURCE				349
EUBC3	L			1								4-3/8		349
EUBC4	L	A03C1		1-01 *			K2-3	1			N	4-7/8		350
EUBC4	L	B02T2		1-02 *			KE-4			SOURCE				350
EUBC4	L			1								4-7/8		350
EUBC5	L	B03D2		1-01 *			K2-3	1			N	4-1/8		351
EUBC5	L	C01F2		1-02 *			KF-42			SOURCE (KF-4)				351
EUBC5	L			1								4-1/8		351

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
											1-PIN RUN	352
L	B03R1					K2-3					1-PIN RUN	353
L	A03R1					K2-3						
L	A03B1		1-01 *			K2-3		1		N	3-1/8	354
L	B02R1		1-02 *			KE-5			SOURCE			354
L			1								3-1/8	354
H	A01T2		1-01 *			KF-4		1		N	2-5/8	355
H	B02T1		1-02 *			KE-457			SOURCE (KF=7)			355
H			1								2-5/8	355
H	A01D2		1-01 *			KF-4		1		N	1-7/8	356
H	B02D1		1-02 *			KE-457			SOURCE (KF=7)			356
H			1								1-7/8	356
H	A01V2		1-01 *			KF-4		1		N	1-3/8	357
H	A02N1		1-02 *			KE-47			SOURCE (KE=7)			357
H			1								1-3/8	357
H	C02S2					KE-7			SOURCE		1-PIN RUN	358
H	D01D2		1-01 *			KF-4		1	SOURCE	N	0-4/8	359
H	D02B1		1-02 *			KE-4						359
H			1								0-4/8	359
H	C02S2					KE-35					1-PIN RUN	360
I	B02D2		1-01 *			KE-5		1	SOURCE	N	2-5/8	361
I	B06F2		1-02 *			K5-4						361
I			1								2-5/8	361
L	C05M1		1-01 *			K3-5		1		N	6-3/8	362
L	B06N1		1-02 *			K5-3			SOURCE			362
L			1								6-3/8	362
H	A07H2		1-01 *			K4-4		1		N	6-7/8	363
H	C08S1		1-02 *			KT-3			SOURCE			363
H			1								6-7/8	363
L	C08R1		1-01 *			KT-3		1	SOURCE	N	9-3/8	364
L	B05N2		1-02 *			K3-2						364
L			1								9-3/8	364
H	A02R1		1-01 *			KE-5		1		N	10-3/8	365
H	B01P1		1-02 *			KF-4			SOURCE			365
H			1								10-3/8	365
H	B02A1		1-01 *			KE-9		1		N	7-1/8	366
H	B01N2		1-02 *			KF-4			SOURCE			366
H			1								7-1/8	366
H	C02P2		1-01 *			KE-2		1		N	4-1/8	367
H	B01L2		1-02 *			KF-4			SOURCE			367
H			1								4-1/8	367

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
I	B02P2		1-01 *			KE-5		2		N	3-1/8	368
I	C02J1		1-02 *			KE-4		1		N	4-1/8	368
I	D01P2		1-03 *			KF-4			SOURCE			368
I			1								7-2/8	368
I	B01J2		1-01 *			KF-4		1	SOURCE	N	1-3/8	369
I	B02P2		1-02 *			KE-4						369
I			1								1-3/8	369
	A01C2		1-01 *	P				1	GND AB		1	370
	A02C2		1-02 *	P				2	,GND CD		1	370
	A03C2		1-03 *	P				1	AND GND EF		1	370
	A04C2		1-04 *	P				2	ARE		1	370
	A05C2		1-05 *	P				1	PHYSICALLY		1	370
	A06C2		1-06 *	P				2	TIED		1	370
	A07C2		1-07 *	P				1	TOGETHER		1	370
	A08C2		1-08 *	P				2	BY EICH		1	370
	A09C2		1-09 *	P				1			0-1/8	370
	A09B2		1-10 *	P				2			1-7/8	370
	A09N1		1-11 *	P				1			0-1/8	370
	A09P1		1-12 *	P				2			0-1/8	370
	A09R1		1-13 *	P				1			0-1/8	370
	A09S1		1-14 *	P				2			0-1/8	370
	A09T1		1-15 *	P				1			0-4/8	370
	A09V2		1-16 *	P				2			1-2/8	370
	B09B2		1-17 *	P				1			0-1/8	370
	B09C2		1-18 *	P				2			0-1/8	370
	B09D1		1-19 *	P				1			0-1/8	370
	B09F1		1-20 *	P				2			0-4/8	370
	B08C2		1-21 *	P				1			1	370
	B07C2		1-22 *	P				2			0-4/8	370
	B07C1		1-23 *	P				1			0-4/8	370
	B06C2		1-24 *	P				2			1	370
	B05C2		1-25 *	P				1			1	370
	B04C2		1-26 *	P				2			1	370
	B03C2		1-27 *	P				1			1	370
	B02C2		1-28 *	P				2			1	370
	B01C2		1-29 *	P				1			1-5/8	370
	A01T1		1-30 *	P				2			1	370
	A02T1		1-31 *	P				1			1	370
	A03T1		1-32 *	P				2			1	370
	A04T1		1-33 *	P				1			1	370
	A05T1		1-34 *	P				2			1	370
	A06T1		1-35 *	P				1			1	370
	A07T1		1-36 *	P				2			1	370
	A08T1		1-37 *	P				1			3-2/8	370
	B08T1		1-38 *	P				2			1	370
	B09T1		1-39 *	P				1			0-4/8	370
	B09V2		1-40 *	P				2			1-7/8	370
	B07T1		1-41 *	P				1			1	370
	B06T1		1-42 *	P				2			1	370
	B05T1		1-43 *	P				1			1	370
	B04T1		1-44 *	P				2			1	370
	B03T1		1-45 *	P				1			1	370
	B02T1		1-46 *	P				2			1	370
	B01T1		1-47 *									370

RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - ORDER	Q	DRAW OPT	PV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
GND AB				1									41-3/8	370
GND CD		C01C2		1-01 *	P						2	GND AB	1	371
GND CD		C02C2		1-02 *	P						1	,GND CD,EF	0-4/8	371
GND CD		C03C1		1-03 *	P						2	ARE	0-4/8	371
GND CD		C03C2		1-04 *	P						1	PHYSICALLY	1	371
GND CD		C04C2		1-05 *	P						2	TIED	1	371
GND CD		C05C2		1-06 *	P						1	TOGETHER	1-4/8	371
GND CD		C07C2		1-07 *	P						2	BY ETCH	1	371
GND CD		C06C2		1-08 *	P						1		2-1/8	371
GND CD		C06T1		1-09 *	P						2		1	371
GND CD		C05T1		1-10 *	P						1		1	371
GND CD		C04T1		1-11 *	P						2		1	371
GND CD		C03T1		1-12 *	P						1		0-4/8	371
GND CD		C03V2		1-13 *	P						2		1-3/8	371
GND CD		C02T1		1-14 *	P						1		1	371
GND CD		C01T1		1-15 *	P						2		5-5/8	371
GND CD		C08C2		1-16 *	P						1		1	371
GND CD		C09C2		1-17 *	P						2		2-1/8	371
GND CD		C09T1		1-18 *	P						1		1	371
GND CD		C08T1		1-19 *	P						2		1	371
GND CD		C07T1		1-20 *	P						1		2	371
GND CD		D09C2		1-21 *	P						2		1	371
GND CD		D08C2		1-22 *	P						1		1	371
GND CD		D07C2		1-23 *	P						2		31	371
GND CD		D69C2		1-24 *	P						1		32	371
GND CD		D05C2		1-25 *	P						2		1	371
GND CD		D04C2		1-26 *	P						1		1	371
GND CD		D03C2		1-27 *	P						2		0-4/8	371
GND CD		D03C1		1-28 *	P						1		0-4/8	371
GND CD		D02C2		1-29 *	P						2		1	371
GND CD		D01C2		1-30 *	P						1		2-1/8	371
GND CD		D01T1		1-31 *	P						2		1	371
GND CD		D02T1		1-32 *	P						1		1	371
GND CD		D03T1		1-33 *	P						2		0-4/8	371
GND CD		D03V2		1-34 *	P						1		0-4/8	371
GND CD		D04T1		1-35 *	P						2		1	371
GND CD		D05T1		1-36 *	P						1		1	371
GND CD		D06T1		1-37 *	P						2		1	371
GND CD		D07T1		1-38 *	P						1		1	371
GND CD		D08T1		1-39 *	P						2		1	371
GND CD		D09T1		1-40 *										371
GND CD				1									106-3/8	371

RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - ORDER	Q	DRAW OPT	PV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
GND EF		E09C2		1-01 *	P						2	GND AB	0-4/8	372
GND EF		E09A1		1-02 *	P						1	,GND CD	0-4/8	372
GND EF		E08C2		1-03 *	P						2	AND GND EF	1	372
GND EF		E07C2		1-04 *	P						1	ARE	1	372
GND EF		E06C2		1-05 *	P						2	PHYSICALLY	1	372
GND EF		E05C2		1-06 *	P						1	TIED	1	372
GND EF		E04C2		1-07 *	P						2	TOGETHER	1	372
GND EF		E03C2		1-08 *	P						1	BY ETCH	1	372
GND EF		E02C2		1-09 *	P						2		1	372
GND EF		E01C2		1-10 *	P						1		2-1/8	372
GND EF		E01T1		1-11 *	P						2		1	372
GND EF		E02T1		1-12 *	P						1		1	372
GND EF		E03T1		1-13 *	P						2		1	372
GND EF		E04T1		1-14 *	P						1		1	372
GND EF		E05T1		1-15 *	P						2		1	372
GND EF		E06T1		1-16 *	P						1		1	372
GND EF		E07T1		1-17 *	P						2		1	372
GND EF		E08T1		1-18 *	P						1		1-5/8	372
GND EF		E09T1		1-19 *	P						2		1	372
GND EF		F09C2		1-20 *	P						1		1	372
GND EF		F08C2		1-21 *	P						2		1	372
GND EF		F07C2		1-22 *	P						1		1	372
GND EF		F06C2		1-23 *	P						2		1	372
GND EF		F05C2		1-24 *	P						1		1	372
GND EF		F04C2		1-25 *	P						2		1	372
GND EF		F03C2		1-26 *	P						1		1	372
GND EF		F02C2		1-27 *	P						2		1	372
GND EF		F01C2		1-28 *	P						1		2-1/8	372
GND EF		F01T1		1-29 *	P						2		1	372
GND EF		F02T1		1-30 *	P						1		1	372
GND EF		F03T1		1-31 *	P						2		1	372
GND EF		F04T1		1-32 *	P						1		1	372
GND EF		F05T1		1-33 *	P						2		1	372
GND EF		F06T1		1-34 *	P						1		1	372
GND EF		F07T1		1-35 *	P						2		1	372
GND EF		F08T1		1-36 *	P						1		1	372
GND EF		F09T1		1-37 *	P						2		1-5/8	372
GND EF		F09J2		1-38 *										372
GND EF				1									39-4/8	372
GPC=1	L	A01N2		1-01 *		KF-4					1		N 1-7/8	373
GPC=1	L	A02A1		1-02 *		KE-5								373
GPC=1	L			1									1-7/8	373
GPC=2	L	A02F1		1-01 *		KE-5					1	SOURCE	N 9-5/8	374
GPC=2	L	D01N1		1-02 *		KF-4								374
GPC=2	L			1									9-5/8	374
GPC=5	L	A02J1		1-01 *		KE-25					1	SOURCE (KF-5)	N 6-7/8	375
GPC=5	L	C01T2		1-02 *		KF-2								375
GPC=5	L			1									6-7/8	375
GPC=6	L	A02K2		1-01 *		KE-5					1	SOURCE	N 9-5/8	376
GPC=6	L	D01R1		1-02 *		KF-4								376
GPC=6	L			1									9-5/8	376

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW	RV	RG	Y	X	Z	REMARKS	NC	LENGTH	EXCEPTIONS	RUN NUMBER
				OPT									FLAG			
GPC=7	L	AD2J2		1-N1 * KE-5	1	SOURCE							N	9-7/8		377
GPC=7	L	DN1T2		1-Ø2 * KF-4												377
GPC=7	L			1										9-7/8		377
GPA:1 HF	H	DU7M1		K4-56		SOURCE (K4-5)									1-PIN RUN	378
HALT SX	L	RM6R1		1-N1 * K5-7	2	SOURCE							N	3-5/8		379
HALT SX	L	CN7D1		1-Ø2 * K4-5	1								N	9-7/8		379
HALT SX	I	FN7S1		1-N3 * K4-3	2								N	1-5/8		379
HALT SX	L	FN5P1		1-N4 * K3-247												379
HALT SX	T			1										15-1/8		379
HSH(9 (1)	H	CN1N2	CØ2S1	1-Ø1 * KF-2	1	SOURCE							N	Ø-5/8		380
HSH(9 (1)	H	CØ2S1		1-Ø2 *												380
HSH(9 (1)	H			1										Ø-5/8		380
HSH(8 (1)	H	CØ1F1		KF-2		SOURCE									1-PIN RUN	381
HSH(2 (1)	H	CØ1F1		KF-2		SOURCE									1-PIN RUN	382
HSH(3 (1)	H	CØ1R1		KF-2		SOURCE									1-PIN RUN	383
HSH(4 (1)	H	AØ1C1		KF-2		SOURCE									1-PIN RUN	384
HSH(5 (1)	H	A31P1		KF-2		SOURCE									1-PIN RUN	385
HSH(6 (1)	H	AØ1L1		KF-2		SOURCE									1-PIN RUN	386
HSH(7 (1)	H	AN1M1		KF-2		SOURCE									1-PIN RUN	387
HSH(8 (1)	H	CØ1S2		KF-2		SOURCE									1-PIN RUN	388
HSH(9 (1)	H	CØ1R2		KF-2		SOURCE									1-PIN RUN	389
HSH(A (1)	H	CØ1F2		KF-2		SOURCE									1-PIN RUN	390
HSH(B (1)	H	AN1L1		KF-2		SOURCE									1-PIN RUN	391
HSH(C (1)	H	AØ1E2		KF-2		SOURCE									1-PIN RUN	392
HSH(D (1)	H	AØ1E1		KF-2		SOURCE									1-PIN RUN	393
HSH(E (1)	H	BM6A1		KF-2		SOURCE									1-PIN RUN	394
HSH1S	L	CØ2A1		1-N1 * KF-2	1	SOURCE							N	5-3/8		395
HSH1S	L			1-Ø2 * KF-2												395
HSH1S	L			1										5-3/8		395
IDLE	I	AØ6M2		1-N1 * K5-7	1	SOURCE (K4-2)							N	Ø-5/8		397
IDLE	I	DN7J2		1-Ø2 * K4-24												397
IDLE	I			1										8-5/8		397
IN	H	CØ9M1		1-Ø1 * KE-5	1	SOURCE							N	3-4/8		399
IN	H	EN9M1		1-Ø2 * DD		SOURCE										399
IN	H			1										3-4/8		399
ILL INSTR	L	CØ6H1		1-Ø1 * K5-5	1	SOURCE							N	9-5/8		399
ILL INSTR	L	FN5R1		1-Ø2 * K3-6												399
ILL INSTR	L			1										9-5/8		399
IN	H	CØ9M1		1-Ø1 * DD	1	SOURCE							N	3-4/8		399
IN	H	EN9M1		1-Ø2 * DD		SOURCE										399
IN	H			1										3-4/8		399
IN1A PS CLK 1	L	CN2E2	DØ6K1	1-N1 * KE-5	2	SOURCE							N	2-5/8		400
IN1A PS CLK 1	T	FØ6K1		1-Ø2 *	1								N	4-7/8		400
IN2 PS CLK 1	L	EC8P2		1-Ø3 * KI-2												400
IN2 PS CLK 1	T			1										7-4/8		400
IN4 PS CLK 2	T	CN8M2	DØ6J1	1-Ø1 * KI-2	1	SOURCE							N	3-7/8		401
IN4 PS CLK 2	L	DM6J1		1-Ø2 *												401
IN4 PS CLK 2	L			1										3-7/8		401
IN1	H	BM6F1		1-N1 * K5-468	1	SOURCE (K5-8)							N	7-3/8		402
IN1	H	DN7F2		1-Ø2 * K4-35												402
IN1	H			1										7-3/8		402
IN1	H	CØ1F2		KF-2		SOURCE									1-PIN RUN	390
HSH1A (1)	H	CØ1R2		KF-2		SOURCE									1-PIN RUN	389
HSH1B (1)	H	CN1S2		KF-2		SOURCE									1-PIN RUN	388
HSH1C (1)	H	AN1M1		KF-2		SOURCE									1-PIN RUN	387
HSH1D (1)	H	AM1L1		KF-2		SOURCE									1-PIN RUN	386
HSH1E (1)	H	A31P1		KF-2		SOURCE									1-PIN RUN	385
HSH1F (1)	H	BM1C1		KF-2		SOURCE									1-PIN RUN	384
HSH1G (1)	H	CN1R1		KF-2		SOURCE									1-PIN RUN	383
HSH1H (1)	H	CN1F1		KF-2		SOURCE									1-PIN RUN	382
HSH1J (1)	H	CN1C1		KF-2		SOURCE									1-PIN RUN	381
HSH1K (1)	H			1												
IN1 *PESET	H	AN6V2		K5-8		SOURCE									1-PIN RUN	403
IN111	T	BM6A1		K5-2468		SOURCE (K5-8)									1-PIN RUN	404
IN112	L	AM4K1	AM6T2	1-N1 * K4-3	2								R	2-3/8		405
IN112	I	AN6T2		1-Ø2 * K5-8	1	SOURCE							N	12-5/8		405
IN112	T	FN7F1		1-Ø3 * K4-4												405
IN112	L			1										15-Ø/8		405
IN1:A (1)	H	BM7J1		1-N1 * K4-4	1	SOURCE							N	3-5/8		406
IN1:B (1)	H	CN6K1		1-Ø2 * K5-4		SOURCE										406
IN1:C (1)	T			1										3-5/8		406
IN1:A	H	EN9J1		1-N1 * DD	1	SOURCE							N	6-3/8		407
IN1:A	H	FN9J1		1-N2 * DD												407
IN1:A	H			1										6-3/8		407
IN1:B	H	CN9J1		1-N1 * DD	1	SOURCE							N	8-5/8		408
IN1:B	H	FN9K2		1-N2 * DD												408
IN1:B	H			1										8-5/8		408
IN1F	H	CN9M1		1-N1 * DD	1	SOURCE							N	9-5/8		409
IN1F	H	FC9V1		1-N2 * DD												409
IN1F	H			1										6-5/8		409
IN1G	H	CN9M1		1-N1 * DD	1	SOURCE							N	8-1/8		410
IN1G	H	FN9N2		1-N2 * DD												410
IN1G	H			1										8-1/8		410
IN1H	H	CN9J1		1-N1 * DD	1	SOURCE							N	3-7/8		411
IN1H	L	DN5X2		1-Ø2 * K3-6		SOURCE										411
IN1I	L			1										3-7/8		411

RUN NAME	A/P	PIN NAME	ORDER PIN	MAY = 0 OPDER	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH FLAG	EXCEPTIONS	PUN NUMBER
IP(02:00)=6	L	EN5M2	1-01 *	K3-4						1		N	1-7/8		412
IR(02:06)=6	L	E0BL1	1-02 *	KT-9											417
IR(04:06)=0	L	C01C1	1-01 *	KF-4	1						SOURCE	N	5		413
IR(08:06)=0	L	D05E2	1-02 *	K3-3											413
IF(0A:06)=0	L				1								5-0/8		413
IR(0A:06)=6	L	D05F2	1-N1 *	K3-3	1					1	SOURCE	N	4-1/8		414
IP(0A:06)=6	L	E0BH1	1-02 *	KT-9											414
IR(0C:06)=6	L				1								4-1/8		414
IF(14:12)=0	T	A05D2	1-01 *	K3-356	1						SOURCE	N	9-1/8		415
IF(14:12)=N	T	D06V2	1-02 *	K5-3											415
IR(14:12)=N	L				1								9-1/8		415
IR(14:12)=7	H	C02H1	1-02 *	KE-4											416
IP(14:12)=7	H				1								4-7/8		416
IR(14:12)=7	U	H05E2	1-01 *	K3-6	1							N	4-7/8		416
IRM1 (1)	H	F04P2	1-01 *	K1-8	2							N	0-1/8		418
IPM1 (1)	H	F05E1	1-02 *	K3-346	2						SOURCE	N	2		418
IR01 (1)	H	F08E1	1-03 *	KT-7											418
IP01 (1)	H				1								2-1/8		418
IP02 (1)	H	F04C1	1-01 *	K1-8	2							N	1-1/8		419
IR02 (1)	H	F05D1	1-02 *	K3-34	1						SOURCE	N	2-1/4		419
IR03 (1)	H	F08E2	1-03 *	KT-7											419
IP03 (1)	H				1								3-2/8		419
IRM4 (1)	4	F04M1	1-01 *	K1-8	2							N	1-1/8		417
IP04 (1)	H	F05N1	1-02 *	K3-34	1						SOURCE	V	2-3/8		417
IR04 (1)	H	F08I2	1-03 *	KT-7											417
IP04 (1)	H				1								3-4/8		417
IR05 (1)	H	B02J1	1-01 *	KF-4	1							N	6-3/8		422
IR05 (1)	D	D01K1	1-02 *	KF-4	2							N	4		422
IR05 (1)	H	F45K1	1-03 *	K3-2356	1						SOURCE	N	4-5/8		422
IP05 (1)	D	F08J1	1-04 *	KT-7											422
IR05 (1)	H				1								15-0/8		422
IR06 (1)	H	D05F1	1-01 *	K3-3456	1						SOURCE	N	5-7/8		423
IP06 (1)	H	F04N1	1-02 *	K1-8	2							N	2-4/8		423
IPM6 (1)	H	F08M1	1-03 *	KT-7											423
IR06 (1)	H				1								8-3/8		423
IP07 (1)	H	D05M2	1-01 *	K3-3456	1						SOURCE	N	5-5/8		424
IF07 (1)	H	F04H2	1-02 *	K1-8	2							N	2-5/8		424
IP07 (1)	H	F08M1	1-03 *	KT-7											424
IR07 (1)	H				1								8-2/8		424
IRM5 (1)	M	CM5K1	1-01 *	K3-3456	2						SOURCE	N	4-7/8		425
IRP5 (1)	H	D06T2	1-02 *	K5-3	1							N	5-3/8		425
IRP3 (1)	H	F04D1	1-03 *	K1-8	2							N	3-6/8		425
IRM4 (1)	H	F08S2	1-04 *	KT-7											425
IP04 (1)	H				1								14-0/8		425
IRM2 (1)	H	F02L2	1-01 *	KE-4	2							N	4-1/8		426
IR02 (1)	H	C05I1	1-02 *	K3-345	1						SOURCE	N	9-7/8		426
IR03 (1)	H	F08I1	1-03 *	KT-7											426
IP03 (1)	H				1								14-0/8		426
IRM3 (1)	H	C02J2	1-01 *	KE-4	1							N	3-1/8		420
IR03 (1)	H	C05S1	1-02 *	K3-235	2						SOURCE	N	6-7/8		420
IR04 (1)	H	D01K2	1-03 *	KF-4	1							N	1-7/8		420
IR04 (1)	H	F08H2	1-04 *	KT-7											420
IR03 (1)	H				1								11-7/8		420
IRM4 (1)	H	C02J2	1-01 *	KE-4	1							N	6-1/8		421
IR04 (1)	H	D01J2	1-02 *	KF-4	2							N	4-1/8		421
IR05 (1)	H	F05H1	1-03 *	K3-2356	1						SOURCE	N	5-3/8		421
IR04 (1)	H	F08M2	1-04 *	K1-7											421
IR03 (1)	H				1								15-5/8		421
IR05 (1)	H	B02J1	1-01 *	KF-4	1							N	6-3/8		422
IR05 (1)	D	D01K1	1-02 *	KF-4	2							N	4		422
IR05 (1)	H	F45K1	1-03 *	K3-2356	1						SOURCE	N	4-5/8		422
IP05 (1)	D	F08J1	1-04 *	KT-7											422
IR05 (1)	H				1								15-0/8		422
IRM1 (1)	H	B02J2	1-01 *	KE-4	1							N	6-1/8		421
IP04 (1)	H	D01J2	1-02 *	KF-4	2							N	4-1/8		421
IR01 (1)	H	F05H1	1-03 *	K3-2356	1						SOURCE	N	5-3/8		421
IR04 (1)	H	F08M2	1-04 *	K1-7											421
IR03 (1)	H				1								15-5/8		421
IRM3 (1)	H	C02J2	1-01 *	KE-4	1							N	1-7/8		420
IR03 (1)	H	C05S1	1-02 *	K3-235	2						SOURCE	N	3-1/8		420
IR04 (1)	H	D01K2	1-03 *	KF-4	1							N	6-7/8		420
IR04 (1)	H	F08H2	1-04 *	KT-7											420
IR03 (1)	H				1								11-7/8		420
IRM1 (1)	H	F04F2	1-01 *	K1-8	2							N	0-1/8		418
IP01 (1)	H	F05E1	1-02 *	K3-346	2						SOURCE	N	2		418
IR01 (1)	H	F08E1	1-03 *	KT-7											418
IP01 (1)	H				1								2-1/8		418
IP02 (1)	H	F04C1	1-01 *	K1-8	2							N	1-1/8		419
IR02 (1)	H	F05D1	1-02 *	K3-34	1						SOURCE	N	2-1/4		419
IR03 (1)	H	F08E2	1-03 *	KT-7											419
IP03 (1)	H				1								3-2/8		419

RUN NAME	A/P	PIN NAME	ORDER PIN	MAY = 0 OPDER	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH FLAG	EXCEPTIONS	PUN NUMBER
IRM1 (1)	H	C02J2	1-01 *	KE-4	1							N	1-7/8		420
IR01 (1)	H	C05S1	1-02 *	K3-235	2						SOURCE	N	3-1/8		420
IR02 (1)	H	D01K2	1-03 *	KF-4	1							N	6-7/8		420
IR02 (1)	H	F08H2	1-04 *	KT-7											420
IR01 (1)	H				1								11-7/8		420
IRM2 (1)	H	B02J2	1-01 *	KE-4	1							N	6-1/8		421
IP02 (1)	H	D01J2	1-02 *	KF-4	2							N	4-1/8		421
IR01 (1)	H	F05H1	1-03 *	K3-2356	1						SOURCE	N	5-3/8		421
IR02 (1)	H	F08M2	1-04 *	K1-7											421
IR01 (1)	H				1								15-5/8		421
IRM2 (1)	H	H05S1	1-01 *	K3-34	1					1	SOURCE	N	12-3/8		429
IP12 (1)	H	F08N2	1-02 *	KT-7											429
IR12 (1)	H				1								12-3/8		429
IRM3 (1)	H	H05S1	1-01 *	K3-34	1						SOURCE	N	12-7/8		430
IP13 (1)	H	F08P2	1-02 *	KT-7											430
IR13 (1)	H				1								12-7/8		430
IRM4 (1)	H	H05K1	1-01 *	K3-34	1						SOURCE	N	11-1/8		431
IP13 (1)	H	F08V2	1-02 *	KT-7											431
IR11 (1)	H				1								11-1/8		431
IRM5 (1)	H	H05P2	1-01 *	K3-2479	1						SOURCE	N	5-3/8		432
IP15 (1)	H	F06L1	1-02 *	K5-3											432
IR15 (1)	H				1								5-3/8		432
IRM6 (1)	L	A05P1	1-01 *	K3-469	1						SOURCE	N	7-5/8		433
IP16 (1)	L	C02H2	1-02 *	KE-4	2							N	5-5/8		433
IP15 (1)	L	D06N2	1-03 *	K5-3											433
IR15 (1)	L				1								13-2/8		433
IRM7 (1)	H	C05M1		K3-345							SOURCE (K3-3)		1-PIN RUN		434

RUN NAME	A/P	PIN NAME	ORDER PIN	ORDER RAY -	0	DRAW	RV	RG	Y	X	Z	OPT REMARKS	NC	LENGTH FLAG	EXCEPTIONS	RUN NUMBER
IR=.75XXX	L	A07U2	1-01 *	KE-4								1 SOURCE	N	8-1/8		435
IR=.75XXX	L	D011	1-02 *	KF-4												435
IR=.75XXX	L			K4-2										8-1/8		435
JAS CLK	H	E07R1		K4-23								SOURCE (K4-3)			1-PIN RUN	436
JA HPP	H	C06T2	1-01 *	K5-4								1	N	6-5/8		437
JA HPP	H	F07A1	1-02 *	K4-23								SOURCE (K4-3)				437
JA HPP	H			K4-3										6-5/8		437
JAMPP	L	D43S2	A03V1 1-01 *	K2-5678								1	N	8-1/8		438
JAMPP	L	A03V1	1-02 *	K2-3								2	N	6-1/8		438
JAMPP	L	C06L1	1-03 *	K5-4								1				438
JAMPP	L	F07E1	1-04 *	K4-3								SOURCE	N	8-1/8		438
JAMPP	L			K4-3										22-3/8		438
JBEEH (C)	H	F07L1		K4-3								SOURCE			1-PIN RUN	439
JPLF (C)	H	F06T2	1-01 *	K5-8								1	N	11-3/8		440
JPUE (C)	H	F07T2	1-02 *	K4-3								SOURCE				440
JPUP (C)	H			I										11-3/8		440
KT INSTP	L	D5R1	1-01 *	K3-5								1	N	5-5/8		441
KT INSTP	L	E08N1	1-02 *	KI-7								SOURCE				441
KT INSTP	I			I										5-5/8		441
KTSP16	L	B06B2	1-01 *	K5-7								1	N	4-3/8		442
KTSP16	L	C08K1	1-02 *	KI-9								SOURCE				442
KTSP16	L			I										4-3/8		442
KTSP17	L	A06P2	1-01 *	K5-7								1	N	7-5/8		443
KTSP17	L	C08L2	1-02 *	KI-9								SOURCE				443
KTSP17	L			I										7-5/8		443
LOAD PS	L	B05K2	1-01 *	K3-9								1	N	6-3/8		444
LOAD PS	L	D06P1	1-02 *	K5-2								SOURCE				444
LOAD PS	L			I										6-3/8		444
MFP 3V0	L	D06V1	1-01 *	K5-5								1	N	3-1/8		448
MFP 3V0	L	I08C1	1-02 *	KI-9								SOURCE				448
MFP 3V0	L			I										3-1/8		448
MCLK ENABLE	L	C06S2	E07N1 1-01 *	K5-5								2	N	5-5/8		447
MCLK ENABLE	L	E07N1	1-02 *	K4-26								1	N	5-5/8		447
MCLK ENABLE	L	F01V2	1-03 *	KM-2								SOURCE				447
MCLK ENABLE	L			I										11-2/8		447
MCLK	L	F01N1	1-01 *	I	KM-2							1 SOURCE	N	3-7/8		446
MCLK	L	F07V2	1-02 *		K4-2											446
MCLK	L			I										3-7/8		446
MFP1 (1)	H	E08R2		K4-24								SOURCE			1-PIN RUN	449
MODE SEL1	H	E04U1	1-01 *	I	KI-8							1	N	3-2/8		450
MODE SEL1	H	F08A1	1-02 *		KI-2							SOURCE				450
MODE SEL1	H			I										3-2/8		450
MSHIFT	I	A12L2	1-01 *		KE-5							1	N	9-1/8		451
MSHIFT	I	D01M2	1-02 *		KF-2							SOURCE				451
MSHIFT	L			I										9-1/8		451
MSHIFT	H	A42F2	1-01 *		KE-5							1	N	9-7/8		452
MSHIFT	H	D01P2	1-02 *		KF-2							2 SOURCE	N	2-2/8		452
MSHIFT	H	E01H2	1-03 *		KM-2											452
MSHIFT	H			I										12-1/8		452
MSHIFT	H	B4K2	1-01 *		KF-24							1 SOURCE (KF-2)	N	8-1/8		453
MSHIFT	H	E41J2	1-02 *		KM-2											453
MSHIFT	H			I										8-1/8		453
MSHIFT	H	B07T1	1-01 *		K4-246							2 SOURCE (K4-4)	N	9-7/8		454
MSHIFT	H	F06P2	1-02 *		KT-2							1	N	0-1/8		454
MSHIFT	H	E08U2	1-03 *		KT-256											454
MSHIFT	H			I										10-0/8		454
MSHIFT	H	A07B1		K4-4								SOURCE			1-PIN RUN	455
MSHIFT	H	A07K1		K4-4								SOURCE			1-PIN RUN	456
MTF1 (1)	H	E0H12		KT-7								SOURCE			1-PIN RUN	457
NCLK	L	C02F1		KE-245								SOURCE (KF-4)			1-PIN RUN	45F
N DATA	L	B05F1	1-01 *	K3-9								1	N	9-7/8		459
N DATA	L	E06S1	1-02 *	K5-2								SOURCE				459
N DATA	L			I										9-7/8		459
NO STOP	L	D07S1	1-01 *	K4-2								1	N	4-1/8		46F
NO STOP	L	F01R2	1-02 *	KM-2								SOURCE				46G
NO STOP	L			I										4-1/8		46G
NO SYN	I	A07C1	1-01 *	K4-4								1	N	10-5/8		461
NO SYN	L	D08R2	1-02 *	KT-6								SOURCE				461
NO SYN	L			I										10-5/8		461
NOSYNC (2)	H	C06D2	1-01 *	K5-4								1	N	4-7/8		462
NOSYNC (2)	H	D07S2	1-02 *	K4-346								SOURCE (K4-6)				462
NOSYNC (2)	H			I										4-7/8		462
NOSYNC (1)	H	D07P2		K4-6								SOURCE			1-PIN RUN	463
NPR (2)	H	L07H1		K4-56								SOURCE (K4-5)			1-PIN RUN	464
ODA EPR	L	C06C1	1-01 *	K5-4								1	N	8-1/8		465
ODA EPR	L	E07U2	1-02 *	K4-34								SOURCE (K4-4)				465
ODA EPR	L			I										8-1/8		465

RUN NAME	A/F	PIN NAME	ORDER PIN	PAY - ORDER	O	DRAW OPT	PV	RG	Y	X	Z	REMARKS	NC	LENGTH FLAG	EXCEPTIONS	PUN NUMBER
OUT HIGH	H	D09K1		1-01 *		DD					1	SOURCE	N	3-3/8		466
OUT HIGH	H	E09M2		1-P2 *		DD						SOURCE				466
OUT HIGH	H													3-3/8		466
OUT LOW	H	D09D1		1-01 *		DD					1	SOURCE	N	4		467
OUT LOW	H	F09N1		1-02 *		DD						SOURCE				467
OUT LOW	H													4-0/8		467
OVFL	H	A02V2		1-01 *		KE-4					1		N	7-5/8		468
OVFL	H	D01H2	E01E1	1-02 *		KF-4					2	SOURCE	N	2-7/8		468
OVFL	H	F01E1		1-03 *		KM-2										468
OVFL	H													10-4/8		468
OVFLW EPR	L	H06M1		1-01 *		K5-4					1		N	9-3/8		469
OVFLW EPR	L	E07S2		1-02 *		K4-34						SOURCE (K4-4)				469
OVFLW EPR	L													9-3/8		469
OVFLW ITH	L	F03R2				KJ-2									1-PIN RUN	470
OVLAP (1)	H	C06S1		1-01 *		K5-4					2	SOURCE	N	2-3/8		471
OVLAP (1)	H	D07D1		1-02 *		K4-5					1		N	3-7/8		471
OVLAP (1)	H	E05D1		1-03 *		K3-7					2		N	4-7/8		471
OVLAP (1)	H	F07J2		1-04 *		K4-2										471
OVLAP (1)	H													11-1/8		471
OVLP CYCLE	L	A07N1		1-01 *		K4-4					1		N	6-7/8		472
OVLAP CYCLE	L	C05F1		1-02 *		K3-4						SOURCE				472
OVLAP CYCLE	L													6-7/8		472
OVLAP INSTR	H	C05F1		1-01 *		K3-4					1	SOURCE	N	2-5/8		473
OVLAP INSTR	H	D06F2		1-P2 *		K5-4										473
OVLAP INSTR	H													2-5/8		473
P HUT 37	H	C06P2				K5-46						SOURCE (K5-6)			1-PIN MUN	474
P JAMSTART	H	D07J1				K4-236						SOURCE (K4-3)			1-PIN RUN	480
P KSTART	L	F07K2				K4-2									1-PIN RUN	479
P KNOBEST	T													11-7/8		479
P KNOBEST	L	F07N1		1-02 *		K4-2										478
P KNOBEST	L	H07J1		1-01 *		K5-8					1	SOURCE	N	11-7/8		478
P END	H													6-6/8		477
P END	H	E04F2		1-03 *		K1-9										477
P END	H	C07P1	E04F2	1-02 *		K4-2					2	SOURCE	N	2-6/8		477
P END	H	C02P1		1-01 *		KE-59					1		N	4		477
P CLK MSYN	L													7-1/8		476
P CLK MSYN	L	D08V1		1-02 *		KT-9										476
P CLK MSYN	L	F07K2		1-01 *		K4-45					1	SOURCE (K4-4)	N	7-1/8		476
P CLK UPPR	H													5-3/8		475
P CLK UPPR	H	C02V1		1-02 *		KE-5						SOURCE				475
P CLK UPPR	H	F03R1		1-01 *		K4-2					1		N	5-3/8		475
P HSTART	L	F07K2				K4-2									1-PIN RUN	479
P JAMSTART	H	D07J1				K4-236						SOURCE (K4-3)			1-PIN RUN	480

RUN NAME	A/F	PIN NAME	ORDER PIN	PAY - ORDER	O	DRAW OPT	PV	RG	Y	X	Z	REMARKS	NC	LENGTH FLAG	EXCEPTIONS	PUN NUMBER
P JSTART	L	F07M2				K4-3						SOURCE (K4-3)			1-PIN RUN	481
P MSTCH	L	F04E2				K1-9						SOURCE			1-PIN RUN	482
P MSYN	L	D07K2				K4-5						SOURCE			1-PIN RUN	483
P NC SACK	L	C07J1				K4-5						SOURCE			1-PIN RUN	484
P1	H	A01J2		1-01 *		KF-4					2		N	4-7/8		485
P1	H	B02V2		1-02 *		KE-5					1		N	5-7/8		485
P1	H	D06D2		1-03 *		K5-4					2		N	3-7/8		485
P1	H	E07D1		1-04 *		K4-2						SOURCE				485
P1	H													14-5/8		485
P2	H	B02V1		1-01 *		KE-5					2		N	3-7/8		486
P2	H	C06J2		1-02 *		K5-4					1		N	6-7/8		486
P2	H	E07R2	B07H1	1-03 *		K4-2					2	SOURCE	N	9-7/8		486
P2	H	B07F1	D08U1	1-04 *		K4-4					1		N	7-7/8		486
P2	H	D48U1		1-05 *		KT-9										486
P2	H													28-4/8		486
P3	H	C02C1		1-01 *		KE-5					2		N	3-5/8		487
P3	H	C06M2		1-02 *		K5-48					1		N	5-3/8		487
P3	H	E07F1		1-03 *		K4-25						SOURCE (K4-2)				487
P3	H													9-0/8		487
PART CHANT BY	H	C07L1				K4-5						SOURCE			1-PIN RUN	488
PART P FNC	H	A06P2		1-01 *		K5-6					1		N	8-1/8		489
PART P SYN	H	C02U2		1-02 *		KE-5					2		N	3-7/8		489
PART P FNC	H	D07H1		1-03 *		K4-2						SOURCE				489
PART P FNC	H													12-0/8		489
PASTA (1)	H	A05V2		1-01 *		K3-9					1		N	10-3/8		490
PASTA (1)	H	E06P1		1-02 *		K5-2						SOURCE				490
PASTA (1)	H													10-3/8		490
PASTB	H	A05F1		1-01 *		K3-9					1		N	10-7/8		491
PASTB	H	F06K2		1-02 *		K5-2						SOURCE				491
PASTB	H													10-7/8		491
PASTC (0)	H	A05A1		1-01 *		K3-9					1		N	12-7/8		492
PASTC (0)	H	E06N1		1-02 *		K5-2						SOURCE				492
PASTC (0)	H													12-7/8		492
PBA*6	H	A08P1		1-01 *		KT-4					1		N	9-7/8		493
PBA*6	H	F08E2		1-02 *		KT-6					2	SOURCE	N	5-1/8		493
PBA*6	H	E01P1		1-03 *		KM-2										493
PBA*6	H													15-0/8		493
PBA*7	H	A08P2		1-01 *		KT-4					1		N	10-5/8		494
PBA*7	H	E08L2		1-02 *		KT-6					2	SOURCE	N	4-3/8		494
PBA*7	H	E01K1		1-03 *		KM-2										494
PBA*7	H													15-0/8		494

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	PV RG Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
PBA08	H	A08N1		1-01 *	1		KT-4		1	SOURCE	N 10-1/8		495
PBA08	H	E08D2		1-02 *			KT-6		2		N 5-3/8		495
PBA08	H	E01S2		1-03 *			KM-2						495
PBA08	H			1							15-4/8		495
PBA09	H	A08M2		1-01 *	1		KT-4		1	SOURCE	N 9-3/8		496
PBA09	H	D08V2		1-02 *			KT-6		2		N 6-1/8		496
PBA09	H	E01P1		1-03 *			KM-2						496
PBA09	H			1							15-4/8		496
PBA10	H	B08R1		1-01 *			KT-4		1	SOURCE	N 12-5/8		497
PBA10	H	E01T1		1-02 *			KM-2						497
PBA10	H			1							12-5/8		497
PBA11	H	A08V2		1-01 *			KT-4		1	SOURCE	N 8-3/8		498
PBA11	H	D08U2		1-02 *			KT-6		2		N 5-1/8		498
PBA11	H	E01P1		1-03 *			KM-2						498
PBA11	H			1							13-4/8		498
PBA12	H	A08T2		1-01 *			KT-4		1	SOURCE	N 13-5/8		499
PBA12	H	E01J1		1-02 *			KM-2						499
PBA12	H			1							13-5/8		499
PBA13	H	A08U2		1-01 *			KT-4		1	SOURCE	N 12-7/8		500
PBA13	H	E01C1		1-02 *			KM-2						500
PBA13	H			1							12-7/8		500
PBA14	H	B08S1		1-01 *			KT-4		1	SOURCE	N 11-3/8		501
PBA14	H	E01T2		1-02 *			KM-2						501
PBA14	H			1							11-3/8		501
PBA15	H	C08A1		1-01 *			KT-4		1	SOURCE	N 9-7/8		502
PBA15	H	E01K2		1-02 *			KM-2						502
PBA15	H			1							9-7/8		502
PBA16	H	B08U2		1-01 *			KT-4		1	SOURCE	N 11-1/8		503
PBA16	H	E01N1		1-02 *			KM-2						503
PBA16	H			1							11-1/8		503
PBA17	H	B08S2		1-01 *			KT-4		1	SOURCE	N 12-1/8		504
PBA17	H	E01V1		1-02 *			KM-2						504
PBA17	H			1							12-1/8		504
PERIF RELEASE	H	D07A1					K4-25			SOURCE (K4=5)		1-PIN RUN	505
PERR (M)	H	B07U1		1-01 *			K4-3		1	SOURCE	N 11-3/8		506
PERR (M)	H	E06V1		1-02 *			K5-5						506
PERR (M)	H			1							11-3/8		506
PRIV INSTR	H	E05N1		1-01 *			K3-6		1	SOURCE	N 4-7/8		507
PRIV INSTR	H	E08P1		1-02 *			KT-7						507
PRIV INSTR	H			1							4-7/8		507
PROC RELEASE	H	A07N2					K4-45			SOURCE (K4=5)		1-PIN RUN	508

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	PV RG Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
PROC RESCAN	H	A07S1					K4-6			SOURCE		1-PIN RUN	509
PS MORS	H	A07E2		1-01 *			K4-6		1		N 9-1/8		510
PS MORS	H	D06S2		1-02 *			K5-2		2		N 2		510
PS MORS	H	B04D1		1-03 *			K1-7		1	SOURCE	N 2-7/8		510
PS MORS	H	E08E2		1-04 *			KI-6		2	SOURCE	N 2-5/8		510
PS MORS	H	E05V2		1-05 *			K3-7						510
PS MORS	H			1							16-5/8		510
PS(C)	H	A05E2		1-01 *			K3-89		1		N 3-7/8		511
PS(C)	H	B04R1		1-02 *			K1-5		2		N 5-5/8		511
PS(C)	H	D06F1		1-03 *			K5-2		1	SOURCE	N 8-7/8		511
PS(C)	H	E01P2		1-04 *			KM-2						511
PS(C)	H			1							18-3/8		511
PS(C) (1)	H	A05D1		1-01 *			K3-8		1		N 14-3/8		512
PS(C) (1)	H	E06H1		1-02 *			K5-23		2	SOURCE (K5=2)	N 2-7/8		512
PS(C) (1)	H	E01E2		1-03 *			KM-2						512
PS(C) (1)	H			1							17-2/8		512
PS(D FM BUS)	H	B07D1		1-01 *			K4-6		1	SOURCE	N 8-5/8		513
PS(D FM BUS)	H	E06F1		1-02 *			K5-2						513
PS(D FM BUS)	H			1							8-5/8		513
PS(D1+P3)	H	E07D1		1-01 *			K4-2		2	SOURCE	N 1		514
PS(D1+P3)	H	E06D1		1-02 *			K5-2		1		N 2-2/8		514
PS(D1+P3)	H	E08S2		1-03 *			KT-29						514
PS(D1+P3)	H			1							3-2/8		514
PS(I) (1)	H	E05S2		1-01 *			K3-7		2		N 2-7/8		515
PS(I) (1)	H	E06J2		1-02 *			K5-2		1	SOURCE	N 3		515
PS(I) (1)	H	E01J2		1-03 *			KM-2						515
PS(I) (1)	H			1							5-7/8		515
PS(V) (1)	H	E06L1		1-01 *			K5-23		1	SOURCE (K5=2)	N 3-6/8		516
PS(V) (1)	H	E01F2		1-02 *			KM-2						516
PS(V) (1)	H			1							3-6/8		516
PS(Z) (1)	H	E06M1		1-01 *			K5-23		1	SOURCE (K5=2)	N 3-7/8		517
PS(Z) (1)	H	E01B1		1-02 *			KM-2						517
PS(Z) (1)	H			1							3-7/8		517
PS05 (1)	H	B07F1		1-01 *			K4-6		1		N 7-5/8		518
PS05 (1)	H	E06F1		1-02 *			K5-2			SOURCE			518
PS05 (1)	H			1							7-5/8		518
PS06 (1)	H	C07K2		1-01 *			K4-6		1		N 8-1/8		519
PS06 (1)	H	E06R1		1-02 *			K5-2			SOURCE			519
PS06 (1)	H			1							8-1/8		519
PS07 (1)	H	B07R2		1-01 *			K4-6		1		N 8-5/8		520
PS07 (1)	H	E06P2		1-02 *			K5-2			SOURCE			520
PS07 (1)	H			1							8-5/8		520
PS12 (1)	H	C08D1					KT-2			SOURCE		1-PIN RUN	521

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH	EXCEPTIONS FLAG	RUN NUMBER
PS13 (1)	H	E08K2					KT-2					SOURCE			1-PIN RUN	522
PS14 (1)	H	E08B1					KT-2					SOURCE			1-PIN RUN	523
PS15	L	C06B2		1-01 *			K5-7			1			N	2-2/8		524
PS15	L	C08N1		1-02 *			KT-9					SOURCE				524
PS15	L			1										2-2/8		524
PS15 (0)	H	A07S2		1-01 *			K4-4			1			N	7-3/8		525
PS15 (0)	H	D08E1		1-02 *			KT-2			2		SOURCE	N	2		525
PS15 (0)	H	D05L2		1-03 *			K3-6									525
PS15 (0)	H			1										9-3/8		525
PTRD (0)	H	C07E1					K4-5					SOURCE			1-PIN RUN	526
PTRD (1)	H	B07V2					K4-56					SOURCE (K4-5)			1-PIN RUN	527
PUPPF (1)	H	A03T2		1-01 *			K2-2			1		SOURCE	N	14-5/8		526
PUPPF (1)	H	F01P1		1-02 *			KM-2									528
PUPPF (1)	H			1										14-5/8		528
PUPF1 (1)	H	A03M2		1-01 *			K2-2			1		SOURCE	N	14-5/8		529
PUPF1 (1)	H	F01L1		1-02 *			KM-2									529
PUPF1 (1)	H			1										14-5/8		529
PUPF2 (1)	H	A03R2		1-01 *			K2-2			1		SOURCE	N	13-7/8		530
PUPF2 (1)	H	F01F1		1-02 *			KM-2									530
PUPF2 (1)	H			1										13-7/8		530
PUPF3 (1)	H	A03M2		1-01 *			K2-2			1		SOURCE	N	14-3/8		531
PUPF3 (1)	H	F01J1		1-02 *			KM-2									531
PUPF3 (1)	H			1										14-3/8		531
PUPF4 (1)	H	A03S2		1-01 *			K2-3			1		SOURCE	N	10-5/8		532
PUPF4 (1)	H	F01C1		1-02 *			KM-2									532
PUPF4 (1)	H			1										10-5/8		532
PUPF5 (1)	H	F03N2		1-01 *			K2-3			1		SOURCE	N	12-3/8		533
PUPF5 (1)	H	F01T2		1-02 *			KM-2									533
PUPF5 (1)	H			1										12-3/8		533
PUPF6 (1)	H	A03L2		1-01 *			K2-3			1		SOURCE	N	11-7/8		534
PUPF6 (1)	H	F01K2		1-02 *			KM-2									534
PUPF6 (1)	H			1										11-7/8		534
PUPF7 (1)	H	A03H2		1-01 *			K2-3			1		SOURCE	N	12-5/8		535
PUPF7 (1)	H	F01N1		1-02 *			KM-2									535
PUPF7 (1)	H			1										12-5/8		535
PUPF8 (1)	H	A03K2		1-01 *			K2-3			1		SOURCE	N	13-1/8		536
PUPF8 (1)	H	F01V1		1-02 *			KM-2									536
PUPF8 (1)	H			1										13-1/8		536
PWR RESTART	H	E06H1		1-01 *			K5-8			1		SOURCE	N	12-3/8		537
PWR RESTART	H	E07F2		1-02 *			K4-3									537
PWR RESTART	H			1										12-3/8		537

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH	EXCEPTIONS FLAG	RUN NUMBER
PWRDN (0)	H	C05N1		1-01 *			K3-47			1			N	1-4/8		538
PWRDN (0)	H	C06F2		1-02 *			K5-48					SOURCE (K5-4)				538
PWRDN (0)	H			1										1-4/8		538
PWRUP INIT	L	E06H2		1-01 *			K5-8			1		SOURCE	N	12-3/8		539
PWRUP INIT	L	E07R2		1-02 *			K4-3									539
PWRUP INIT	L			1										12-3/8		539
R(X6+X7)	H	A05C1		1-01 *			K3-8			2			N	7-5/8		540
R(X6+X7)	H	C07J2		1-02 *			K4-4			1			N	8-1/8		540
R(X6+X7)	H	F04P1		1-03 *			K1-8					SOURCE				540
R(X6+X7)	H			1										15-6/8		540
RADRSW	L	A04F1		1-01 *			K1-8			1		SOURCE	N	7-5/8		541
RADRSW	L	C07K1		1-02 *			K4-4									541
RADRSW	L			1										7-5/8		541
RD07	H	C04V2		1-01 *	1		K1-3			1		SOURCE	N	5-5/8		542
RD07	H	E06M2		1-02 *			K5-2									542
RD07	H			1										5-5/8		542
RD15	H	E04D1		1-01 *			K1-5			1		SOURCE	N	10-1/8		543
RD15	H	E06L2		1-02 *			K5-2									543
RD15	H			1										10-1/8		543
REG ADRS	H	D08S2		1-01 *			KT-6			2		SOURCE	N	2-7/8		544
REG ADRS	H	D04U1		1-02 *			K1-7			1		SOURCE	N	5-5/8		544
REG ADRS	H	E05L2		1-03 *			K3-2									544
REG ADRS	H			1										8-4/8		544
RELOCATE ENB	L	A06V1		1-01 *			K5-7			1			N	5-5/8		545
RELOCATE ENB	L	C08L1		1-02 *			KT-9					SOURCE				545
RELOCATE ENB	L			1										5-5/8		545
RIF0 (0)	H	C03A1		1-01 *			K2-4			1		SOURCE	N	7-7/8		546
RIF0 (0)	H	E04P2		1-02 *			K1-8									546
RIF0 (0)	H			1										7-7/8		546
RIF0 (1)	H	E03T2		1-01 *			K2-4			1		SOURCE	N	10-1/8		547
RIF0 (1)	H	F04K1		1-02 *			K1-8									547
RIF0 (1)	H			1										10-1/8		547
RIF1 (1)	H	E03U2		1-01 *			K2-4			1		SOURCE	N	9-7/8		548
RIF1 (1)	H	F04E2		1-02 *			K1-8									548
RIF1 (1)	H			1										9-7/8		548
RIF2 (1)	H	E03U1		1-01 *			K2-4			1		SOURCE	N	10-1/8		549
RIF2 (1)	H	F04D2		1-02 *			K1-8									549
RIF2 (1)	H			1										10-1/8		549
RIF3 (1)	H	E03S1		1-01 *			K2-4			1		SOURCE	N	9-1/8		550
RIF3 (1)	H	F04V1		1-02 *			K1-8									550
RIF3 (1)	H			1										9-1/8		550

RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
ROMA (1)	H	D08L1		1-01 *			KT-2				1	SOURCE	N	5-2/8	551
ROMA (1)	H	E01P2		1-02 *			KM-2								551
ROMA (1)	H			1										5-2/8	551
ROMB (1)	H	D08M1		1-01 *			KT-2				1	SOURCE	N	5	552
ROMB (1)	H	E01U2		1-02 *			KM-2								552
ROMB (1)	H			1										5-0/8	552
ROMC (1)	H	D08P1		1-01 *			KT-2				1	SOURCE	N	5-1/8	553
ROMC (1)	H	E01D1		1-02 *			KM-2								553
ROMC (1)	H			1										5-1/8	553
ROMD (1)	H	D08S1		1-01 *			KT-2				1	SOURCE	N	5-7/8	554
ROMD (1)	H	E01M1		1-02 *			KM-2								554
ROMD (1)	H			1										5-7/8	554
RSVD INSTR	L	C06F1		1-01 *			K5-5				2		N	3-6/8	555
RSVD INSTR	L	D02C1		1-02 *			KE-5				1		N	4-3/8	555
RSVD INSTR	L	E05C1		1-03 *			K3-6					SOURCE			555
RSVD INSTR	L			1										8-1/8	555
S HOOK	H	F08H2		1-01 *			KT-9				1	SOURCE	N	3-4/8	556
S HOOK	H	F04A1		1-02 *			K1-8								556
S HOOK	H			1										3-4/8	556
SALUM (1)	H	A05E2		1-01 *			K3-8				1		N	8-1/8	557
SALUM (1)	H	C03U2		1-02 *			K2-6					SOURCE			557
SALUM (1)	H			1										8-1/8	557
SALUL (1)	H	A05F1		1-01 *			K3-8				1		N	7-5/8	558
SALUL (1)	H	C03T2		1-02 *			K2-6					SOURCE			558
SALUL (1)	H			1										7-5/8	558
SALU2 (1)	H	A05E1		1-01 *			K3-8				1		N	7-3/8	559
SALU2 (1)	H	C03P2		1-02 *			K2-6					SOURCE			559
SALU2 (1)	H			1										7-3/8	559
SALU3 (1)	H	A05D2		1-01 *			K3-8				1		N	7-5/8	560
SALU3 (1)	H	C03N2		1-02 *			K2-6								560
SALU3 (1)	H			1										7-5/8	560
SALUM (1)	H	A05N1		1-01 *			K3-8				1		N	8-5/8	561
SALUM (1)	H	D03E1		1-02 *			K2-6					SOURCE			561
SALUM (1)	H			1										8-5/8	561
SBAM (1)	H	A04J1		1-01 *			K1-2345				1		N	5-7/8	562
SBAM (1)	H	C03J2		1-02 *			K2-5					SOURCE			562
SBAM (1)	H			1										5-7/8	562
SRC0 (1)	H	D03D1		1-01 *			K2-6				1	SOURCE	N	4-7/8	563
SRC0 (1)	H	E06J1		1-02 *			K5-5								563
SRC0 (1)	H			1										4-7/8	563
SRC1 (1)	H	C03R2		1-01 *			K2-6				1	SOURCE	N	9-7/8	564
SRC1 (1)	H	E06R2		1-02 *			K5-5								564
SRC1 (1)	H			1										9-7/8	564

RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
SRC2 (1)	H	C03U1		1-01 *			K2-6				1	SOURCE	N	2-3/8	565
SRC2 (1)	H	C06P1		1-02 *			K5-5								565
SRC2 (1)	H			1										2-3/8	565
SRC3 (1)	H	C03S2		1-01 *			K2-6				1	SOURCE	N	9-7/8	566
SRC3 (1)	H	E06S2		1-02 *			K5-5								566
SRC3 (1)	H			1										9-7/8	566
SRC=10	I	E06U1		1-01 *	1		K5-5				1		N	9-3/8	567
SRC=10	I	C04V1		1-02 *			KT-9								567
SRC=10	L			1										9-3/8	567
SRC=16	I	E06V1		1-01 *			K5-5				1	SOURCE	N	2-1/8	568
SRC=16	L	E08J1		1-02 *			KT-9								568
SRC=16	I			1										2-1/8	568
SRAM (1)	H	A04V1		1-01 *			K1-45				1		N	5-3/8	569
SRAM (1)	H	C03M1		1-02 *			K2-5					SOURCE			569
SRAM (1)	H			1										5-3/8	569
SRAM (1)	H	A04U1		1-01 *			K1-45				1		N	5-3/8	570
SRAM (1)	H	C03M1		1-02 *			K2-5					SOURCE			570
SRAM (1)	H			1										5-3/8	570
SRAT (1)	H	C03J1		1-01 *			K2-5				1	SOURCE	N	4-3/8	571
SRAT (1)	H	D04S1		1-02 *			K1-23								571
SRAT (1)	H			1										4-3/8	571
SRAT1 (1)	H	C03T1		1-01 *			K2-5				1	SOURCE	N	4-5/8	572
SRAT1 (1)	H	D04U2		1-02 *			K1-23								572
SRAT1 (1)	H			1										4-5/8	572
SDAM (1)	H	A04M1		1-01 *			K1-2345				1		N	5-5/8	573
SDAM (1)	H	C03K2		1-02 *			K2-5					SOURCE			573
SDAM (1)	H			1										5-5/8	573
SDAT (1)	H	A04V2		1-01 *			K1-2345				1		N	5-1/8	574
SDAT (1)	H	C03T2		1-02 *			K2-5					SOURCE			574
SDAT (1)	H			1										5-1/8	574
SELECT 0	H	D09F1		1-01 *			DD				1		N	4-1/8	575
SELECT 0	H	E09S2		1-02 *			DD					SOURCE			575
SELECT 0	H			1										4-1/8	575
SELECT 2	H	D09J1		1-01 *			DD				1		N	4-1/8	576
SELECT 2	H	E09T2		1-02 *			DD					SOURCE			576
SELECT 2	H			1										4-1/8	576
SELECT 4	H	D09F1		1-01 *			DD				1		N	4-3/8	577
SELECT 4	H	E09R2		1-02 *			DD					SOURCE			577
SELECT 4	H			1										4-3/8	577
SELECT 6	H	D09C1		1-01 *			DD				1		N	4-4/8	578
SELECT 6	H	E09S1		1-02 *			DD					SOURCE			578
SELECT 6	H			1										4-4/8	578

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
SERVICE	H	E05B1					K3-27					SOURCE (K3-7)			1-PIN RUN	579
SET CLK	L	B06K1		1-01 *			K5-4			1			N	5-7/8		580
SET CLK	L	D07F1		1-02 *			K4-25					SOURCE (K4-2)				580
SET CLK	L			1										5-7/8		580
SET UPP0	L	A03F1		1-01 *	1		K2-2			1			N	16-7/8		581
SET UPP0	L	B07R1		1-02 *			K4-3					SOURCE				581
SET UPP0	L			1										16-7/8		581
SET UPP1	L	A03F1		1-01 *			K2-2			1			N	15-5/8		582
SET UPP1	L	B07E2		1-02 *			K4-3					SOURCE				582
SET UPP1	L			1										15-5/8		582
SET UPP4,3	L	B03C1		1-01 *			K2-23			1			N	14-1/8		583
SET UPP4,3	L	B07M2		1-02 *			K4-3					SOURCE				583
SET UPP4,3	L			1										14-1/8		583
SET UPP7,6,2	L	B03D1		1-01 *			K2-3			1			N	12-1/8		584
SET UPP7,6,2	L	B07V2		1-02 *			K4-3					SOURCE				584
SET UPP7,6,2	L			1										12-1/8		584
SET UPP8,5	L	A03A1		1-01 *			K2-3			1			N	16-1/8		585
SET UPP8,5	L	B07D1		1-02 *			K4-3					SOURCE				585
SET UPP8,5	L			1										16-1/8		585
SLR ADRS	H	A07V2		1-01 *			K4-6			1			N	8-5/8		586
SLR ADRS	H	D08T2		1-02 *			KT-6			2		SOURCE	N	3-6/8		586
SLR ADRS	H	B04H2		1-03 *			K1-7					SOURCE				586
SLR ADRS	H			1										12-3/8		586
SM=0	L	C05A1		1-01 *			K3-35			2		SOURCE (K3-3)	N	3-5/8		587
SM=0	L	D06A1		1-02 *			K5-3			1			N	4-7/8		587
SM=0	L	B08K1		1-03 *			KT-9									587
SM=0	L			1										8-4/8		587
SM=1	L	B05V2		1-01 *			K3-3			1		SOURCE	N	3-7/8		588
SM=1	L	D06B1		1-02 *			K5-3									588
SM=1	L			1										3-7/8		588
SM=2	L	B05T2		1-01 *			K3-3			1		SOURCE	N	4-1/8		589
SM=2	L	D06C1		1-02 *			K5-3									589
SM=2	L			1										4-1/8		589
SM=3	L	B05S2		1-01 *			D3-3			1		SOURCE	N	4-5/8		590
SM=3	L	D06D1		1-02 *			K5-3									590
SM=3	L			1										4-5/8		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			N	4-7/8		592
SPS(02:00)=7	H	B08V2		1-02 *			KT-2									592
SPS(02:00)=7	H			1										4-7/8		592

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
SPS0 (1)	H	B05P2		1-01 *			K3-9			1			N	5-7/8		593
SPS0 (1)	H	D03F1		1-02 *			K2-6			2		SOURCE	N	2-5/8		593
SPS0 (1)	H	D06U2		1-03 *			K5-2									593
SPS0 (1)	H			1										8-4/8		593
SPS1 (1)	H	B05F2	C06V2	1-01 *			K3-9			1			N	4-7/8		594
SPS1 (1)	H	C06V2		1-02 *			K5-2			2			N	3-1/8		594
SPS1 (1)	H	D03H1		1-03 *			K2-6					SOURCE				594
SPS1 (1)	H			1										8-0/8		594
SPS2 (1)	H	B05A1	C03M2	1-01 *			K3-9			2			N	4-7/8		595
SPS2 (1)	H	C03M2		1-02 *			K2-6			1		SOURCE	N	4-7/8		595
SPS2 (1)	H	D06N2		1-03 *			K5-2									595
SPS2 (1)	H			1										9-6/8		595
SR ADRS	H	A07R1		1-01 *			K4-6			1			N	8-7/8		596
SR ADRS	H	D08P2		1-02 *			KT-6			2		SOURCE	N	2-5/8		596
SR ADRS	H	D04S2		1-03 *			K1-7					SOURCE				596
SR ADRS	H			1										11-4/8		596
SR15	H	B04L1		1-01 *			K1-9			1		SOURCE	N	3-3/8		597
SR16	H	C08F2		1-02 *			KT-9									597
SR16	H			1										3-3/8		597
SR17	H	B04M1		1-01 *			K1-9			1		SOURCE	N	4		598
SR17	H	C08M1		1-02 *			KT-9									598
SR17	H			1										4-0/8		598
SRB4 (1)	H	C03E2		1-01 *			K2-4			1		SOURCE	N	9-5/8		599
SRB4 (1)	H	F04L2		1-02 *			K1-8									599
SRB4 (1)	H			1										9-5/8		599
SRD (1)	H	C03D2		1-01 *			K2-4			1		SOURCE	N	9-3/8		600
SRD (1)	H	F04L1		1-02 *			K1-8									600
SRD (1)	H			1										9-3/8		600
SRDM0 (1)	H	D01V2		1-01 *			KF-3			1			N	1-3/8		601
SRDM0 (1)	H	E02F1		1-02 *			KE-37					SOURCE (KF-7)				601
SRDM0 (1)	H			1										1-3/8		601
SRDM1 (1)	H	D01U2		1-01 *			KF-3			1			N	1-1/8		602
SRDM1 (1)	H	D02T2		1-02 *			KE-37					SOURCE (KE-7)				602
SRDM1 (1)	H			1										1-1/8		602
SRI (1)	H	C03B1		1-01 *			K2-4			1		SOURCE	N	9-3/8		603
SRI (1)	H	F04H1		1-02 *			K1-8									603
SRI (1)	H			1										9-3/8		603
SRS (1)	H	C03F1		1-01 *			K2-4			1		SOURCE	N	9-5/8		604
SRS (1)	H	F04K2		1-02 *			K1-8									604
SRS (1)	H			1										9-5/8		604
SSYN INHIBIT	L	D09V1		1-01 *			DD			1			N	1		605
SSYN INHIBIT	L	E09B1		1-02 *			DD					SOURCE				605
SSYN INHIBIT	L			1										1-0/8		605

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
STALL (0)	H	C06M1		1-01 *			K5-4		2			SOURCE	N	1-3/8		606
STALL (0)	H	C07H2		1-02 *			K4-4		1				N	3-3/8		606
STALL (0)	H	D08F1		1-03 *			KT-3									606
STALL (0)	H			1										4-6/8		606
START SW (0)	H	A06R1		1-01 *			K5-7		1			SOURCE	N	15-7/8		607
START SW (0)	H	F07U1		1-02 *			K4-3									607
START SW (0)	H			1										15-7/8		607
SWITCH (1)	H	A06R2		1-01 *			K5-6		1			SOURCE	N	13-3/8		608
SWITCH (1)	H	F05J2		1-02 *			K3-2									608
SWITCH (1)	H			1										13-3/8		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			SOURCE	N	12-1/8		612
TRACE	L	F05S1		1-02 *			K3-7									612
TRACE	L			1										12-1/8		612
TRAP	L	B06S1		1-01 *			K5-5		1			SOURCE	N	7-3/8		613
TRAP	L	E05E1		1-02 *			K3-6									613
TRAP	L			1										7-3/8		613
TRAP (1)	H	D06H1		1-01 *			K5-4		1			SOURCE	N	7-5/8		614
TRAP (1)	H	F01D1		1-02 *			KM-2									614
TRAP (1)	H			1										7-5/8		614
TRAPS DATA	L	B06N2		1-01 *			K5-4		1			SOURCE	N	5-5/8		615
TRAPS DATA	L	D05H2		1-02 *			K3-6									615
TRAPS DATA	L			1										5-5/8		615
TRUE BR	L	D05L1		1-01 *			K3-5		1			SOURCE	N	1-2/8		616
TRUE BR	L	D06F1		1-02 *			K5-3									616
TRUE BR	L			1										1-2/8		616
TSACK (0)	H	D07J1					K4-6					SOURCE			1-PIN RUN	617
UBF0 (1)	H	C03F2		1-01 *			K2-5		2			SOURCE	N	2-2/8		618
UBF0 (1)	H	C06N1		1-02 *			K5-34		1				N	6-5/8		618
UBF0 (1)	H	F05S1	B07L1	1-03 *			K3-2		2				N	9-7/8		618
UBF0 (1)	H	B07L1		1-04 *			K4-3									618
UBF0 (1)	H			1										18-6/8		618
UBF1 (1)	H	C03P1		1-01 *			K2-5		2			SOURCE	N	2-3/8		619
UBF1 (1)	H	C06N2		1-02 *			K5-34		1				N	6-5/8		619
UBF1 (1)	H	E05P1		1-03 *			K3-2									619
UBF1 (1)	H			1										9-0/8		619
UBF2 (1)	H	C03R1		1-01 *			K2-5		2			SOURCE	N	2-1/8		620
UBF2 (1)	H	C06P2		1-02 *			K5-34		1				N	6-1/8		620
UBF2 (1)	H	F05N1		1-03 *			K3-2									620
UBF2 (1)	H			1										8-2/8		620

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
UBF3 (1)	H	B06P2		1-01 *			K5/3		2			SOURCE	N	4-7/8		621
UBF3 (1)	H	C03S1		1-02 *			K2-5		1				N	8-5/8		621
UBF3 (1)	H	F05F2		1-03 *			K3-2									621
UBF3 (1)	H			1										13-4/8		621
UBF4 (1)	H	B06P2		1-01 *			K5-3		2			SOURCE	N	2-6/8		622
UBF4 (1)	H	C03H2		1-02 *			K2-5		1				N	4-1/8		622
UBF4 (1)	H	D05K1		1-03 *			K3-2									622
UBF4 (1)	H			1										6-7/8		622
UNFI	H	A01L2		1-01 *			KF-4		1			SOURCE	N	3-7/8		623
UNFI	H	B02M2	E01F2	1-02 *			KE-4		2				N	7-7/8		623
UNFI	H	E01F2		1-03 *			KM-2									623
UNFI	H			1										11-6/8		623
UPP MATCH	H	C04L2		1-01 *			K1-9		1			SOURCE	N	9-5/8		624
UPP MATCH	H	F07K2		1-02 *			K4-2									624
UPP MATCH	H			1										9-5/8		624
V DATA	L	B05H1		1-01 *			K3-9		1			SOURCE	N	10-1/8		625
V DATA	L	E06U2		1-02 *			K5-2									625
V DATA	L			1										10-1/8		625
WAIT	L	B05F1		1-01 *			K3-6		1			SOURCE	N	1-7/8		626
WAIT	L	B06P1		1-02 *			K5-4									626
WAIT	L			1										1-7/8		626
WAIT (0)	H	C06P1		1-01 *			K5-4		1			SOURCE	N	5-3/8		627
WAIT (0)	H	E05J1		1-02 *			K3-7									627
WAIT (0)	H			1										5-3/8		627
WR B(07:00)	L	E07F2		1-01 *			K4-2		1			SOURCE	N	6-3/8		628
WR B(07:00)	L	E04V1		1-02 *			K1-8									628
WR B(07:00)	L			1										6-3/8		628
WR B(15:08)	L	E04A1		1-01 *			K1-8		1			SOURCE	N	10-7/8		629
WR B(15:08)	L	E07K2		1-02 *			K4-2									629
WR B(15:08)	L			1										10-7/8		629
WRH (1)	H	D03J2		1-01 *			K2-7		1			SOURCE	N	3-7/8		630
WRH (1)	H	E07H2		1-02 *			K4-2									630
WRH (1)	H			1										3-7/8		630
WRL (1)	H	D03H2		1-01 *			K2-7		1			SOURCE	N	3-4/8		631
WRL (1)	H	E07E2		1-02 *			K4-2									631
WRL (1)	H			1										3-4/8		631
ZB (1)	H	A01F1		1-01 *			KF-4		1			SOURCE	N	1-3/8		632
ZB (1)	H	A02M1		1-02 *			KE-4									632
ZB (1)	H			1										1-3/8		632
ZB+EPS(Z)	H	A01J1		1-01 *			KF-4		1			SOURCE	N	3-7/8		633
ZB+EPS(Z)	H	B02K2		1-02 *			KE-4									633
ZB+EPS(Z)	H			1										3-7/8		633

AUTOMATIC WIRE TESTER (AWT) REVISION STATUS

DRAWING NUMBER	INIT REL	H	J	K	L	M	N	P
K-WL-KD11-A-WL		H	J	J	K	L	M	N
D-AD-7010230-0-0			*	*	A	B	B	C
C-CS-5410904-0-1		B	B	C	C	C	C	C

REV P

SIZE A | CODE WT | NUMBER 7010230-0

REVISIONS	CHK	CHANGE NO.	REV.
ORIGINATED	—	KD11A-00011	J
	—	5410904-1	K
		KD11A-00012	L
	KP	KD11A-00013	M
	K.T	KD11A-00014	N
	B.C.	KD11A-00015	P

DRN. E. KELLIHER	DATE 8-29-74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. Gilbert	DATE 8-29-74	
ENG.	DATE 9-5-74	
PROJ. ENG.	DATE 9-5-74	
PROD.	DATE 9-5-74	
FIRST USED ON KD11-A		
SCALE —		
SHEET 1 OF 1		

TITLE

KD11-A

AWT REVISION STATUS

SIZE	CODE	NUMBER	REV.
A	WT	7010230-0	P

DIST.

DRA 123

DEC 16-(325)-1097-N174

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J.T.O'Loughlin	CHECKED J.T.O'Loughlin	SECTION
DATE 9/26/72	DATE 9/27/72	
ENG J.T.O'Loughlin	PROD [illegible]	ISSUED SECT.
DATE 9/27/72	DATE 9-27-72	

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

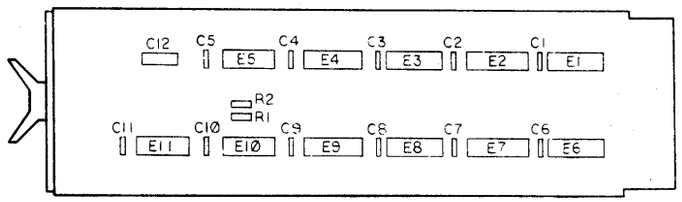
ITEM NO	DRAWING REFERENCE	DESCRIPTION		PART NUMBER	QUANTITY
1	E1 E6	DEC 5384	IC	1910394	2
2	E2 E7	DEC 74175	IC	1910651	2
3	E3 E8	DEC 8881	IC	1909705	2
4	E4 E9	DEC 7485	IC	1910224	2
5	E5	DEC 74H00	IC	1909056	1
6	E10	DEC 74H20	IC	1905635	1
7	E11	DEC 7403	IC	1910155	1
8	C1 THRU C11	.01 MFD 100V 20%	CAP	1001510	11
9	C12	6.8 MFD 35V 20%	CAP	1000067	1
10	R1 R2	1K 1/4W 5%	RES	1300365	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. KJ11 SIGNAL SOURCE NOTATION (K1-2, 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:

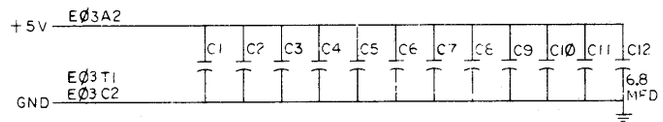
IC TYPE	GND	+5V
DEC 5384	PIN 1	PIN 8
DEC 74175	PIN 8	PIN 16

COMPONENT PLACEMENT



PIN NOMENCLATURE

MODULE	PROCESSOR
A	EØ3



REVISIONS	REV	CHANGE NO	CHK
	B	M7237-00001	N. Benanson 9-25-74

J. ROGERS
R. Gamber 10-2-74

FIRST USED ON OPTION / MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 11/35		PARTS LIST		

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

MATERIAL

FINISH

		DATE
DRN.	W. MAJOR	9/22/71
CHK'D		9/24/72
ENG.		5-23-72
PROJ. ENG.		5-23-72
PROD.		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	M7237-0-1	B

DIST.

D CS M7237-0-1 B

BEU FORM NO 1088A

K1-6 BA15 (1)H — EΦ3E2
K1-6 BA14 (1)H — EΦ3L2
K1-6 BA13 (1)H — EΦ3M2
K1-6 BA12 (1)H — EΦ3N2
K1-6 BA11 (1)H — EΦ3D2
K1-6 BA1Φ (1)H — EΦ3B1
K1-6 BAΦ9 (1)H — EΦ3C1
K1-6 BAΦ8 (1)H — EΦ3D1

K1-5 DMUX15 H — EΦ3R1
K1-5 DMUX14 H — EΦ3S1
K1-5 DMUX13 H — EΦ3P1
K1-5 DMUX12 H — EΦ3N1
K1-4 DMUX11 H — EΦ3M1
K1-4 DMUX1Φ H — EΦ3K1
K1-4 DMUXΦ9 H — EΦ3J1
K1-4 DMUXΦ8 H — EΦ3H1
K4-5 B INIT L — EΦ3L1
K4-4 DOUT HIGH H — EΦ3V1
K4-6 ADRS(777774) H — EΦ3U1
K4-4 BC1 (0)H — EΦ3V2

5384 EΦ06
5384 EΦ01
74175 EΦ7
74175 EΦ2
8881 EΦ8
8881 EΦ3
74ΦB E11
7485 EΦ9
7485 EΦ4

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

K4-4 CKOVF H — EΦ3U2
K1-7 BA(Φ7:Φ5)=1 L — EΦ3A1
74H2Φ E1Φ
74HΦΦ EΦ5
EΦ3T2 KJ-2 EOWFLW L (TO K5-4)
EΦ3F2 KJ-2 EOVFLSTOP H (TO K4-4)

EΦ3R2 BUS DI5 L
EΦ3S2 BUS DI4 L
EΦ3K2 BUS DI3 L
EΦ3P2 BUS DI2 L
EΦ3H2 BUS DI1 L
EΦ3J2 BUS DIΦ L
EΦ3F1 BUS DΦ9 L
EΦ3F1 BUS DΦ8 L

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 11/35		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	W. MAJOR	7/22/71
CHK'D		2-7-72
ENG		8-23-72
PROJ ENG		8-23-72
PROJ MGR		8/29/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: STACK LIMIT REGISTER
M7237 KJ-2

NEXT HIGHER ASSY: A-ML-KJ11-A
SCALE —
SHEET 2 OF 2
DIST

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

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY J Toughan	CHECKED J Toughan	SECTION
DATE 9/26/72	DATE 9/27/72	
ENG J Toughan	PROD G Langer	ISSUED SECT.
DATE 9/27/72	DATE 7-28-72	

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 KJ11-A
1	MAINDEC-11-DCKBF-A-D	STACK LIMIT TEST	1
2	MAINDEC-11-DCKBF-A-PB	STACK LIMIT TEST	1

KIT CHECK BY _____ DATE _____

INSTALLATION CHECK BY _____ DATE _____

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
STACK LIMIT REGISTER	SHEET 1 OF 1	A	SL	KJ11-A-SL		
		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-PI-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. Robinson	DATE 2 14 72
CHK'D. M Bugnacki	DATE 6-19-72
PROJ. ENG. M Bugnacki	DATE 6-19-72
PROJ. H. Stringer	DATE 6/19/72
FIELD SERV. W Schmidt	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							DEPOT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
KW11-L													
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

BRØ6 L

BGØ6 H

BUS SACK L

BUS BBSY L

BUS INTR L

BUS SSYN L

BIT 6

BIT 7

BUS MSYN L

BUS CØI L

BUS DØ7 L

BUS SSYN L

KWII BUSY

KAII BUSY

KAII BUSY

INTERRUPT MODE

NON-INTERRUPT MODE

REVISIONS		
REV.	CHANGE NO.	OK

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

LAST USED ON ASSY OR MODEL: KWII-L

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

MATERIAL —

FINISH —

DRAWN	A Hopkins	11/20/70
CHECKED	J Berry	12/3/70
ENGR.	Fitz	12/7/70
APPD.		12/7/70
MFG.	Alan Drake	12/7/70

NEXT HIGHER ASSY: A-ML-KWII-L

SCALE —

SHEET 1 OF 1

EQUIPMENT CORPORATION
[redacted], MASSACHUSETTS

TITLE: TIMING DIAGRAM (KWII-L)

SIZE	CODE	NUMBER	REV.
D	TD	KWII-L-Ø2	

DIST.

PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	R1 R3	300Ω 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, E6, E9, E10	I.C. DEC 380	1909485	5
9	E2	I.C. DEC 7430	1905578	1
10	E3	I.C. DEC 8815	1909713	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	1909888	1
14	E12 E14 E15	I.C. DEC 8881	1909705	3

INSTALLATION PROCEDURE

1. REMOVE JUMPER FROM B12V2 TO B12A2
2. INSTALL M787 LINE FREQUENCY CLOCK MODULE IN KAII SLOT B12
3. RUN MAINDEC DEC-11-D2DA LINE FREQUENCY CLOCK TEST

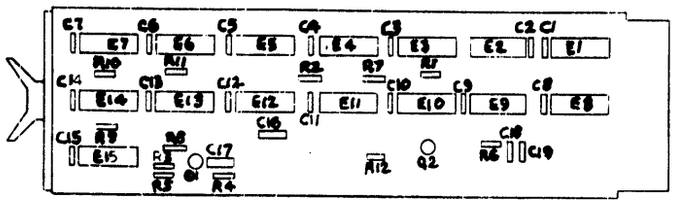
NOTES

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

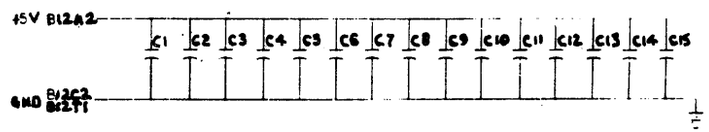
6. UNLESS OTHERWISE NOTED - RESISTANCE IS IN OHMS; CAPACITANCE IS IN MICRO MICRO FARADS. CAPACITORS WITHOUT ANY NOTED VALUES ARE .01 MFD.

COMPONENT PLACEMENT



PIN NOMENCLATURE

MODULE	PROCESSOR
A	B



REVISIONS		
CHK	CHANGE NO	REV
RAB	KWIL-0101	A

M. FRITZ 3-27-70

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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 —

DRN.		DATE 4/1/70
CHK'D	R Russ	DATE 7/7/70
ENG.	M Fritz	DATE 7/4/70
PROJ. ENG.	M Fritz	DATE 7/4/70
PROD.	Marc Duell	DATE 7/7/70

NEXT HIGHER ASSY: A-M7-KWII-L

SCALE —

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINE FREQUENCY INTERVAL CLOCK

SIZE	CODE	NUMBER	REV.
D	BS	KWII-L-01	A

DIST.

DEC FORM NO DRD 100

BIT 6

BUS INIT L BI2P2

BUS DØ6 L BI2P1

BUS CØ1 L BI2N1

ADRS H

ADRS L

BIT 7

K14-2 LTC L BI2R1

BUS MSYN L BI2F1

BUS SSYN L BI2N2

BUS BRØ6 L BI2V1

BUS INTR L BI2V2

BUS SACK L BI2S2

BUS BBSY L BI2T2

BGØ6 IN H BI2R2

BGØ6 OUT H BI2V2

BUS DØ7 L BI2S1

BUS A17 L	BI2D2	E1	3
BUS A16 L	BI2H2	380	
BUS A15 L	BI2F2	E1	2
BUS A14 L	BI2E2	380	
BUS A13 L	BI2D1	E1	14
BUS A12 L	BI2C1	380	
BUS A11 L	BI2B1	E1	13
BUS A10 L	BI2A1	380	
BUS A09 L	BI2M2	E8	3
BUS A08 L	BI2L1	380	
BUS A06 L	BI2K1	E8	2
BUS A05 L	BI2J1	380	
BUS A02 L	BI2L2	E8	14
BUS A01 L	BI2E1	380	
BUS A07 L	BI2K2	E9	14
BUS A04 L	BI2J2	E9	13
BUS A03 L	BI2M1	E9	2

E2 7430 — E3 8815 — E4 7400 — E5 380 — E6 7400 — E7 FF1 7474 — E7 FF2 7474 — E8 380 — E9 380 — E10 380 — E11 7404 — E12 8881 — E13 7474 — E14 8881 — E15 8881

R1 390 — R2 1K — R3 390 — R4 180 — R5 180 — R6 1K — R7 1K — R8 1K — R9 1K — R10 1K — R11 1K — R12 2.4K

C16 560 — C17 560 — C18 — C19

Q1 3009B-S δ = 100 NS — G2 DEC 3009B-S

+5V

REVISIONS	REV	CHANGE NO.	CHK

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

NEXT USED ASSY/OPT/MODULE: KWII-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: R. Lindsay 6/7/70
CHK'D: K. Peters 7/7/70
ENGR: [illegible] 7/8/70
PROJ LDR: [illegible] 7/8/70
QA: [illegible] 7/8/70
APPV: MacDonald 7/8/70
NEXT HIGHER ASSY: A-ML-KWII-L
SCALE
SHEET 2 OF 2

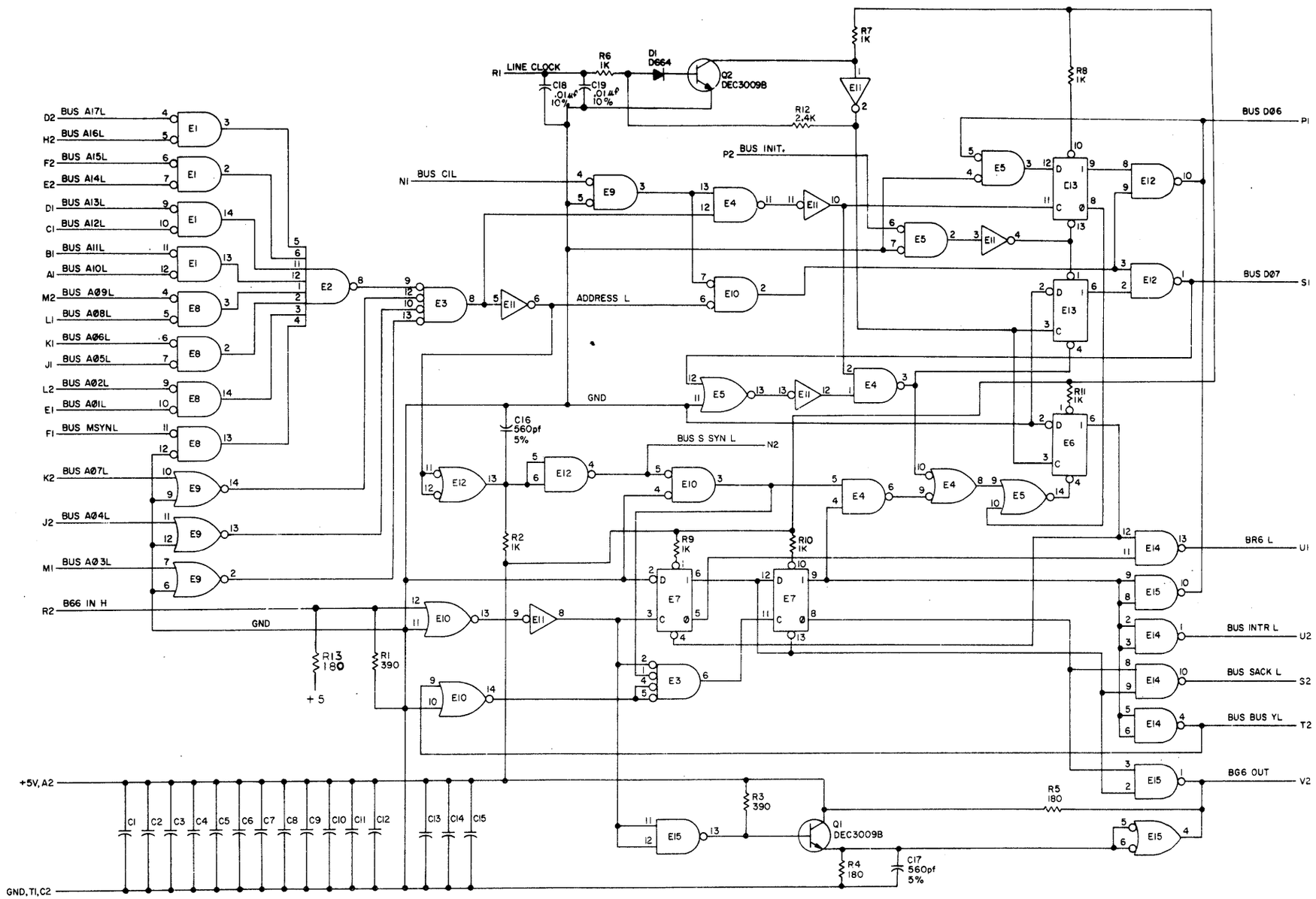
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINE FREQUENCY INTERVAL CLOCK

SIZE D | CODE BS | NUMBER KWII-L-Ø1 | REV. A

DIST.

DEC FORM NO DRD 102A



UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W, 5%
CAPACITORS ARE .01uf, 100V, 20%
DEC8640: E1, E5, E8, E10, E9
DEC7430 = E2
DEC8815 = E3
DEC7400 = E4
DEC7404 = E11
DEC8881 = E15, 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

NOTES

1 DEC 8640 REPLACES THE OBSOLETE DEC 380

REVISIONS			
CHG NO	REV		
00001	A		
00002	B		
00003	C		
00004	D		
00005	E		

CARLSON
K. POON

DRN BUTLER 4-2-70
CHKD
ENG 7/4/70
PROD

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
DEC30098	2N3009B	8881	IN3606

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE LINE TIME CLOCK INTERRUPT M787

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

DEC FORM NO. 869 116

M787-0-1

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M.Buczynski	CHECKED	SECTION	
DATE 6-15-72	DATE 6/15/72		
ENG M. Buczynski	PROD R 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 7/28/72	
ENG	M.Buczynski	PROD	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

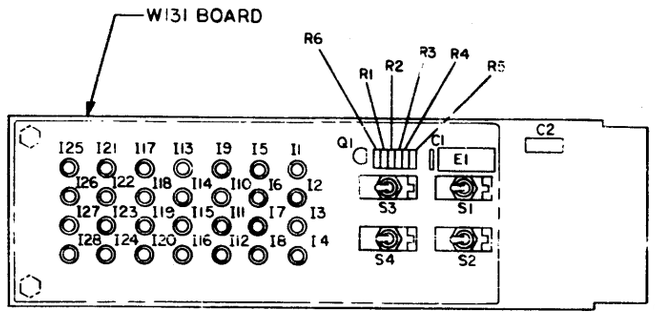
ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	R1,R3,R5,R7,R9,R11,R13,R15,R17,R19,R21,R23, R25,R27,R29,R31,R33,R35,R37,R39,R41,R43, R45,R47,R49,R51,R53,R55	15K, 1/4W, 5% RES.	130Ø496	28
2	R2,R4,R6,R8,R10,R12,R14,R16,R18,R20,R22, R24,R26,R28,R30,R32,R34,R36,R38,R40, R42,R44,R46,R48,R50,R52,R54,R56	470, 1/4W, 5% RES.	130Ø316	28
3	Q1-Q56	DEC 3ØØ9B TRANSISTOR	1503100	56
4	P1	H807 BLOCK, CONNECTOR	1209123	1

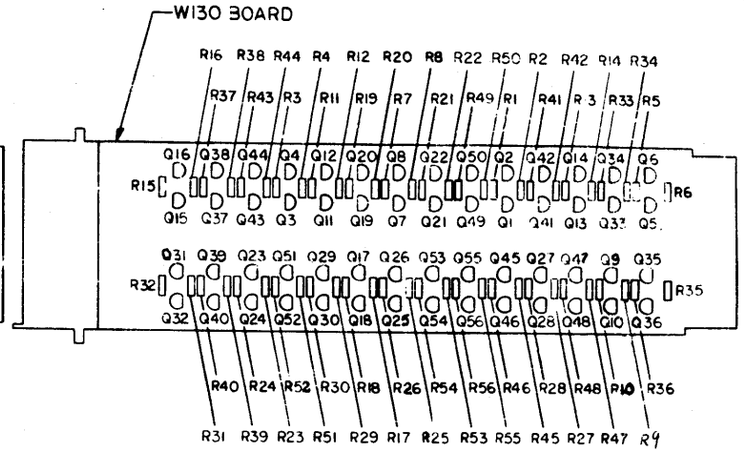
W131 PARTS REFERENCE

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.	1020067	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, 6ATH2	1201168	4

NOTES:
1. THE KM11 IS A TWO MODULE (#13Ø, W131) OPTION TO THE KA11 TO AID MAINTENANCE. THIS PREWIRED OPTION IS INSTALLED BY INSERTING THE W13Ø MODULE INTO LOCATION B#2 AND INSERTING THE W131 MODULE INTO THE W13Ø. 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		
REV.	CHANGE NO.	CHK'D

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 125; REMOVE BURRS AND BREAK SHARP CORNERS		PARTS LIST		

MATERIAL	DRN.	DATE 4-25-70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
FINISH	CHK'D	DATE 5/4/70	TITLE: MAINTENANCE BOARD (182) KM-1
NEXT HIGHER ASSY: A-ML-KM11-Ø	ENG.	DATE 5/4/70	SIZE D CODE BS NUMBER KM11-Ø-MB REV.
SCALE 1/1	PROJ. ENG.	DATE 5/14/70	
SHEET 1 OF 3	MGR.	DATE 5/5/70	DIST.

DEC FORM NO. DRD 100

SIZE D CODE BS NUMBER KM11-Ø-MB REV.

CONNECTOR AT REAR OF MODULE TO EXTEND MAINTENANCE BOARD 2, W131 (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		N1	BØ2A1 BUS SSYN L

KM-3 BSR Ø H — BØ2R2 — R29 15K — Q29 Q30 — R30 47Ø — KM-3 BSR 1 H — BØ2E2 — R21 15K — Q21 Q22 — R22 47Ø — KM-3 BSR 3 H — BØ2H1 — R1 15K — Q1 Q2 — R2 47Ø — KM-3 BSR 7 H — BØ2L2 — R43 15K — Q43 Q44 — R44 47Ø

U1 — KM-2 LAMP BSRØ L
J1 — KM-2 LAMP BSR 1 L
C1 — KM-2 LAMP BSR 3 L
E2 — KM-2 LAMP BSR 7 L

GND — C2,T1 — C2 — GND

R1 — KM-2 LAMP BSR 15 L
H1 — KM-2 LAMP BSR 14 L
D2 — KM-2 LAMP BSR 12 L
H2 — KM-2 LAMP BSR 8 L

KM-3 BSR 15 H — BØ2N2 — R35 15K — Q39 Q40 — R40 47Ø — KM-3 BSR 14 H — BØ2D2 — R49 15K — Q49 Q50 — R50 47Ø — KM-3 BSR 12 H — BØ2H2 — R19 15K — Q19 Q20 — R20 47Ø — KM-3 BSR 8 H — BØ2J2 — R11 15K — Q11 Q12 — R12 47Ø

D1 — KM-2 LAMP ISR Ø L
T1 — KM-2 LAMP ISR 1 L
E2 — KM-2 LAMP ISR 3 L
N2 — KM-2 LAMP ISR 7 L

KM-3 ISR Ø H — BØ2S1 — R55 15K — Q55 Q56 — R56 47Ø — KM-3 ISR 1 H — BØ2M2 — R37 15K — Q37 Q38 — R38 47Ø — KM-3 ISR 3 H — BØ2F2 — R7 15K — Q7 Q8 — R8 47Ø — KM-3 ISR 7 H — BØ2E1 — R33 15K — Q33 Q34 — R34 47Ø

N1 — KM-2 LAMP ISR 15 L
T2 — KM-2 LAMP ISR 14 L
N2 — KM-2 LAMP ISR 12 L
S2 — KM-2 LAMP ISR 8 L

KM-3 ISR 15 H — BØ2R1 — R45 15K — Q45 Q46 — R46 47Ø — KM-3 ISR 14 H — BØ2K1 — R31 15K — Q31 Q32 — R32 47Ø — KM-3 ISR 12 H — BØ2S2 — R17 15K — Q17 Q18 — R18 47Ø — KM-3 ISR 8 H — BØ2M1 — R9 5K — Q9 Q10 — R10 47Ø

V1 — KM-2 LAMP N (1)L
S1 — KM-2 LAMP Z (1)L
L2 — KM-2 LAMP V (1)L
M2 — KM-2 LAMP C (1)L

K9-5 N (1)H — BØ2P1 — R27 15K — Q27 Q28 — R28 47Ø — K9-5 Z (1)H — BØ2L1 — R51 15K — Q51 Q52 — R52 47Ø — K9-5 V (1)H — BØ2F1 — R5 15K — Q5 Q6 — R6 47Ø — K9-5 C (1)H — BØ2D1 — R13 15K — Q13 Q14 — R14 47Ø

E1 — KM-2 LAMP T (1)L
K1 — KM-2 LAMP TRAPS L
N2 — KM-2 LAMP B MSYN L
P2 — KM-2 LAMP B SSYN L

K9-4 T (1)H — BØ2J1 — R15 15K — Q15 Q16 — R16 47Ø — KM-3 TRAPS H — BØ2C1 — R41 15K — Q41 Q42 — R42 47Ø — KM-3 B MSYN H — BØ2T2 — R35 15K — Q35 Q36 — R36 47Ø — KM-3 B SSYN H — BØ2U2 — R53 15K — Q53 Q54 — R54 47Ø

D1 — KM-2 LAMP R/W2 L
L1 — KM-2 LAMP TST1 L
R1 — KM-2 LAMP TST2 L
S2 — KM-2 LAMP TSR 2 L

KM-1 R/W2 H — BØ2K2 — R3 15K — Q3 Q4 — R4 47Ø — KM-2 TST1 H — BØ2N1 — R47 15K — Q47 Q48 — R48 47Ø — KM-2 TST2 H — BØ2V1 — R25 15K — Q25 Q26 — R26 47Ø — KM-3 ISR 2 H — BØ2F2 — R23 15K — Q23 Q24 — R24 47Ø

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO / ITEM NO
PDP11		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 T. Phillips	DATE 12-18-69
CHK'D	DATE 3/2/70
ENG	DATE 3-6-70
PROJ ENG	DATE 3-6-70
PROD Maurice Litwack	DATE 5/5/70

NEXT HIGHER ASSY A-ML-KM11-Ø
SCALE NONE
SHEET 2 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

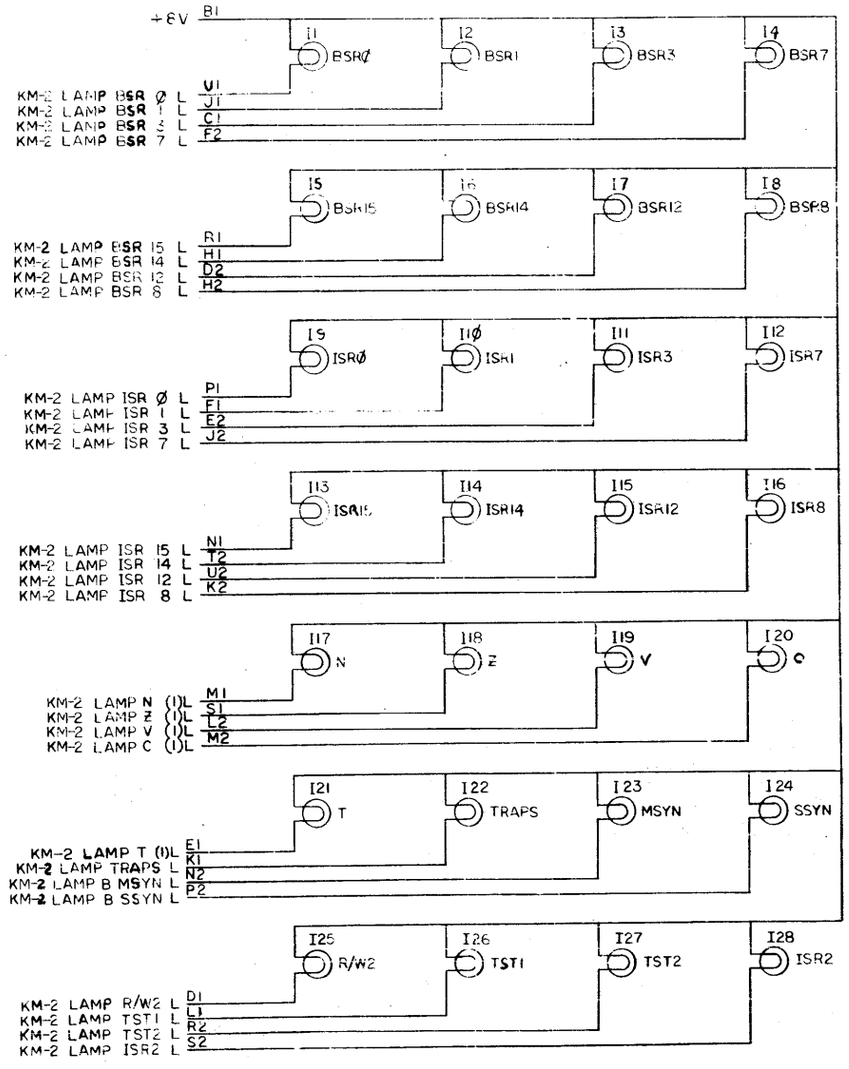
TITLE
MAINTENANCE BOARD (1)
W13Ø KM-2

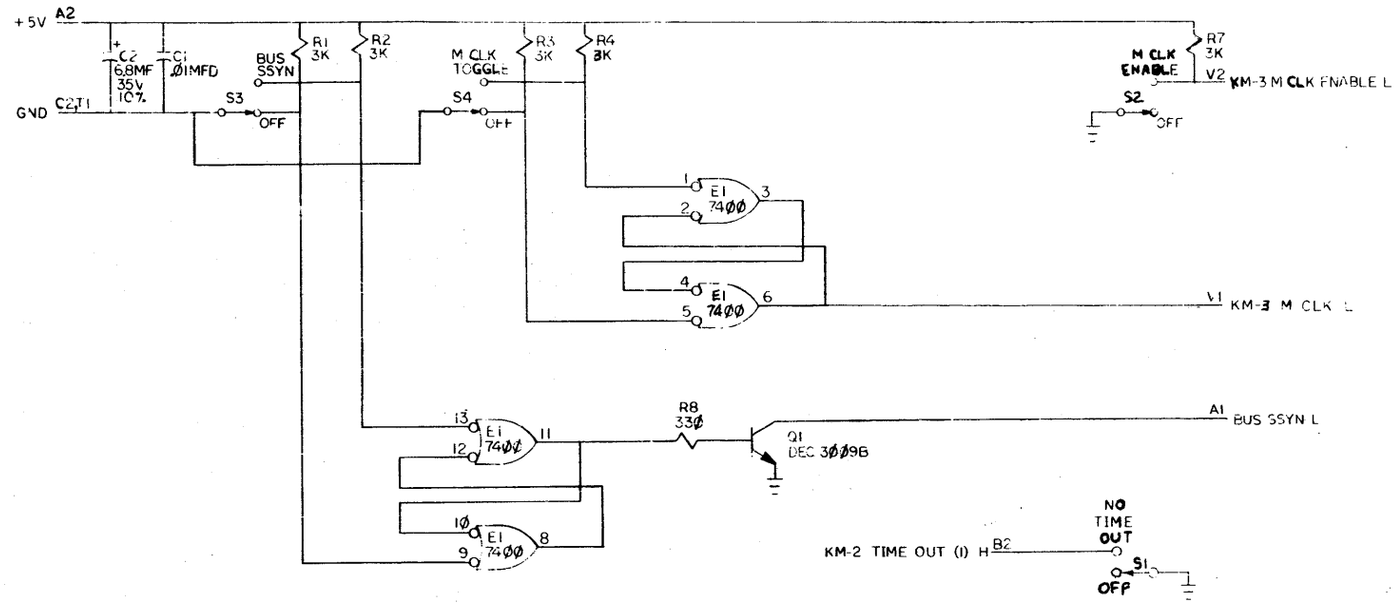
SIZE	CODE	NUMBER	REV
D	BS	KM11-Ø-MB	

DIST

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO 2ND 102A





REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-11		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	J. Gaudio	DATE 2-17-69
CHK'D		DATE 4/29/70
ENG.		DATE 3-6-70
PROJ. ENG.		DATE 3-6-70
PROD.		DATE 3/3/70

NEXT HIGHER ASSEMBLY
A-ML-KM11-0
SCALE NONE
SHEET 3 OF 3

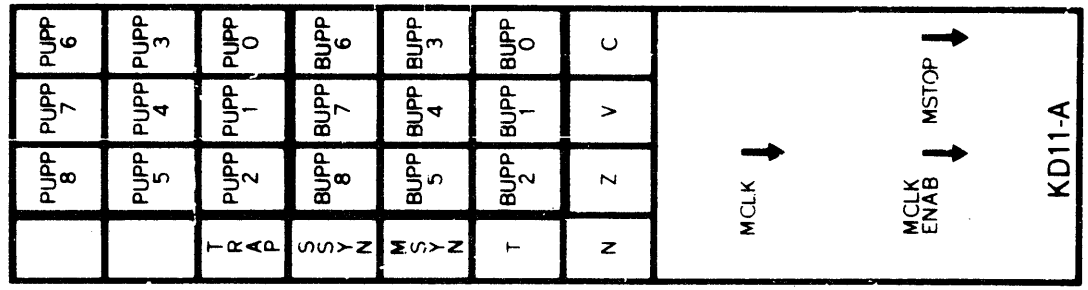
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
MAINTENANCE BOARD(2)
W131 KM-3

SIZE	CODE	NUMBER	REV
D	BS	KM11-0-MB	

DIST.

DEC FORM 10
DRD 102A



FIRST USED ON OPT / MOD

KD11A

REVISIONS

REV.	CHANGE NO.	CHK

SPEC # 9200100-94 (BLACK)

DRN. D. Mattson	DATE 6-9-72
CHK'D. BW	DATE 7/7/72
ENG. E. Frank	DATE 7/7/72
PROJ. ENG. R. Gourlay	DATE 7-7-72
PROD. A. Singh	DATE 7/31/72
NEXT HIGHER ASSY C-MD-5509081-0-C	
SCALE	
SHEET OF	

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 Dumas	DATE 7-12-72
CHK'D. BW	DATE 7-12-72
ENG. T Houghton	DATE 7/25/72
PROJ. ENG. R Brown	DATE 7/25/72
PROD. A Stanger	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. G