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FIELD MAINTENANCE PRINT SET

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D-AD-7014211-0-0	RUGGEDIZED UNIBUS CABLE
D-AD-7014002-0-0	INTERNAL UNIBUS CABLE ASSY (I/O BAY)
D-AD-7014246-0-0	INTERNAL UNIBUS CABLE ASSY (DN87S)
C-UA-BCØ5F-Ø-Ø	INTERFACE CABLE (BCØ5F)
D-AD-7010311-0-0	CABLE CONVERSION PLATE ASSY
B-DD-11/40-Ø	BASIC ASSY (11/40) (COMPLETE SET)
B-DD-DN81-Ø-Ø	DDCMP REM CONC. STATION (COMPLETE SET)
D-UA-BCØ3M-Ø-Ø	CABLE, MODEM
B-DD-DTE20-Ø	PDP10/PDP11 INTERFACE (COMPLETE SET)
B-DD-KT11-D	MEMORY MANAGEMENT (COMPLETE SET)
A-SP-DN87S-Ø-5	DN87S-U INSTALLATION PROCEDURE
A-SP-DN87S-Ø-6	DN87S-U PRE-SALES CHECKLIST

UNIT VARIATIONS COVERED BY THIS PRINT SET
DN87S-AA
DN87S-AB
DN87S-U

DN87S
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØ1Ø9

REVISIONS			
REV.	CHG. NO.	DATE	
A	DN87S-MR001	7-SEP-78	REVISED & REDRAWN

USED ON OPTION/MODEL	
DN87S	

SHEET I OF 1

DRN. T.M. Gilbert	DATE 9	
CHK'D	DATE	
PROJ. ENG. Stephen R Hines	DATE 18-May-78	
FIELD SERV. E Yonchak	DATE 18 May 78	

digital

TITLE: UNIVERSAL COMM SYSTEM FRONT END

SIZE	CODE	NUMBER	REV.
B	TC	DN87S-Ø-1	A
DIST.			

N/A

EN 01124 16-NOV-(327)

DRB 124

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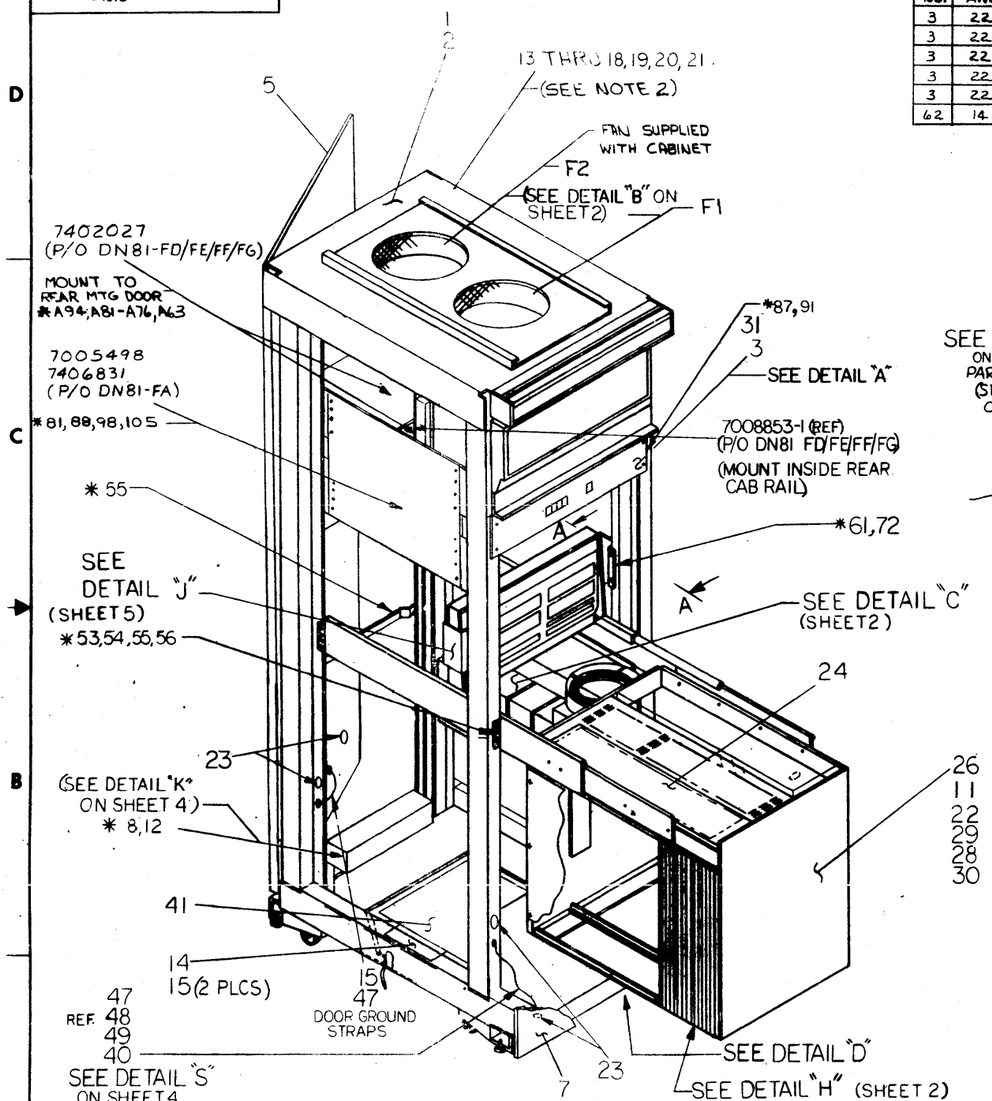
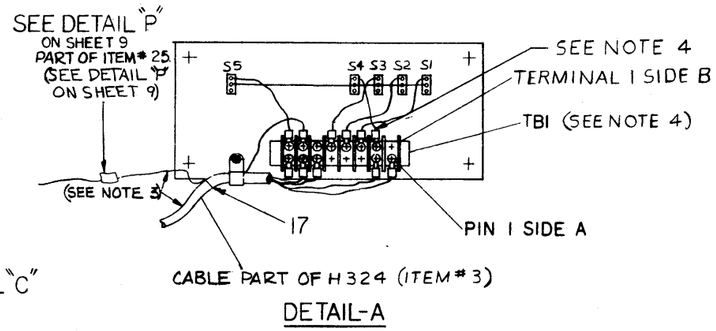
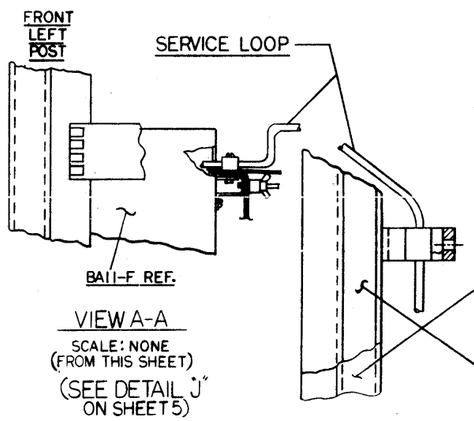


WIRE TABLE (SEE NOTE 4)

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	SIGNAL NAME
3	22	BLK	—	—	TB1-6A	—	NOT USED
3	22	BRN	—	—	TB1-1A	—	NOT USED
3	22	RED	—	—	TB1-2A	—	DLI1 BOOT
3	22	GRN	—	—	TB1-7A	—	DTE BOOT
3	22	WHT	—	—	TB1-8A	—	-15V
62	14	WHT	—	—	TB1-7B	—	ELEC.FINGER

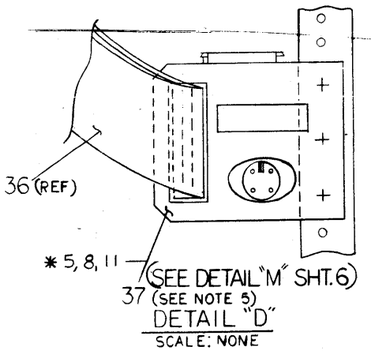


DETAIL-A



VIEW A-A
SCALE: NONE
(FROM THIS SHEET)
(SEE DETAIL "J" ON SHEET 5)

NOTES
1. * DENOTES TINNERMAN NUT LOCATIONS.
2. ITEMS THRU ARE MTG TYPE HARDWARE (NUTS, SCREWS, TIE WRAPS ETC).
3. ROUTE CABLES DOWN LEFT FRONT POST.
4. H324 PANEL IS ORIGINALLY WIRED SUCH THAT SW4 IS CONNECTED TO TB1-B6, THIS WIRE SHOULD BE MOVED TO TB1-A2. AFTER WIRE TABLE CHANGES ARE COMPLETED. THIS CHANGE IS NEEDED TO INSURE COMPATIBILTY WITH THE M873-YJ BOOT STRAP ROM.
5. THIS ITEM (* 37) IS USED IN PLACE OF THE TELEPHONE CABLE ADAPTOR PANEL THAT COMES WITH THE BASIC 70097 ASSY. (ITEM *1 AND *2) CONNECT ITEM *34 TO THE CONNECTOR ON THIS PANEL. RETURN UNUSED PANEL TO STOCK.



DETAIL "D"
SCALE: NONE

CAUTION OFF SHEET PARTS LIST

SEE A-PL-DN87S-Ø-Ø

REVISIONS	REV.	CHK	CHANGE NO.	
	A	MR	DN87S-MR001	REVISED & REDRAWN 2-SEP-78 P. KELLEY

THIRD ANGLE PROJECTION	DRN TM Colvard 23 MAR 78	DESCRIPTION: DN87S	digital
REMOVE BURRS AND BREAK SHARP CORNERS	CHK D.V. 23 MAR 78	TITLE: UNIVERSAL COMM. SYSTEM FRONT END	
DO NOT SCALE DWG	ENG S.F. Holmes 28-MAR-78		
MATERIAL —	PROJ ENG S.F. Holmes 28-MAR-78		
FINISH —	PROD Bob Hall 5 APR 78		
	NEXT HIGHER ASSY B-DD-DN87S-Ø	SIZE D	CODE UA	NUMBER DN87S-Ø-Ø	REV A
	SCALE —	SHEET 1 OF 13	DIST

DEC FORM NO. DRD 100 F

MR

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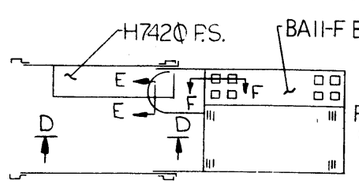
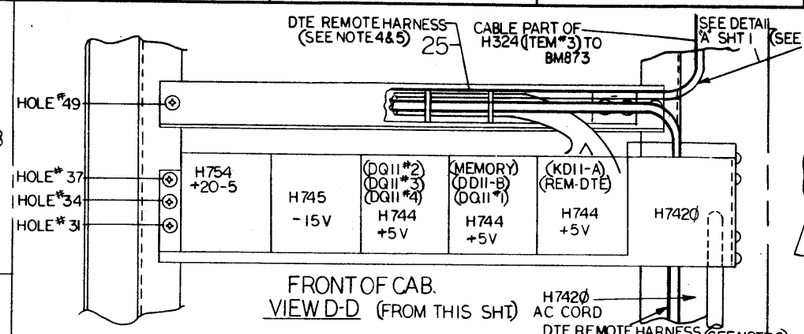
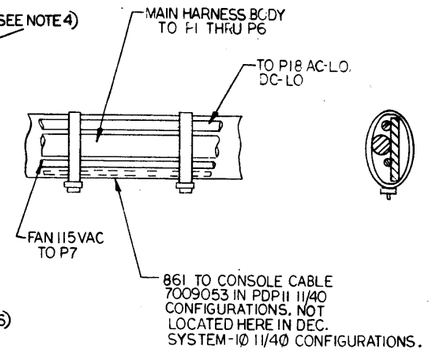


DETAIL "C" (FROM SHT. 1)
TOP VIEW



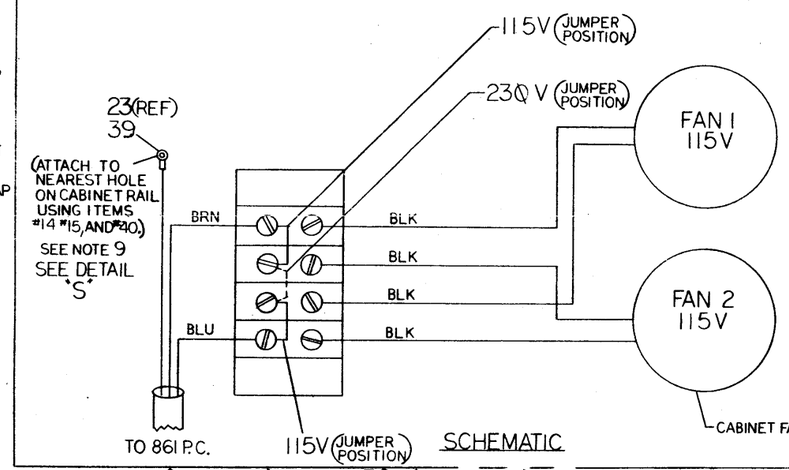
FRONT OF CAB.
VIEW D-D (FROM THIS SHT)



SECTION E-E
(FROM THIS SHT.)

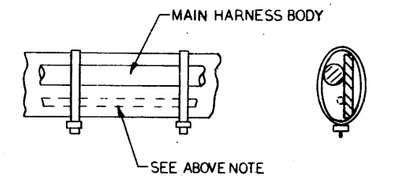
NOTE:

1. THE DQ11'S SHOWN IN THIS DWG ARE FOR EITHER SYNC OR SYNC/ASYNC CONFIGURATIONS. A SYNC ONLY CONFIGURATIONS DO NOT CONTAIN DQ11'S.
2. REMOVE M930 UNIBUS TERMINATOR FROM A809 OF THE MF11-UP REINSTALL ITEM 30.
3. REPLACE WITH M930 FOR TESTING & CHECKOUT PURPOSES.
4. ROUTE ITEM 25 UP LEFT FRONT POST AND TIE WRAP TO FLEXIBLE BAND, TERMINATE ITEM 25 IN POWER HARNESS SOCKET SU3 (SEE SHT. 5) TERMINATE WHITE WIRE OF ITEM 25 ON H324 PANEL (SEE SHT 9) ROUTE WHITE WIRE BACK TO LEFT FRONT POINT AND UP TO H324 PANEL.
5. REFERENCE D-IA-7014495-0-0, CONNECT 4 PIN MATE-N-LOCK IN J2-J4RH20-DTE-20 WIRE ASSY (SEE SHT 8)
6. REFERENCE D-IA-7014495-0-0 CONNECT TO FAST ON TABS ON M9310 (ITEM #12), ORN WIRE TO +5V BLACK WIRE TO GROUND INSERT M9310 IN DTE-20 SLOT HJ07, KL05, OR KL07 FOR 1ST, 2ND, OR 3RD DN87'S RESPECTIVELY, AS SHOWN IN DETAIL "P" ON SHEET 8
7. INSTALL M9202 BETWEEN EACH DQ11 AS SHOWN.
8. SHIP M930 MODULE IN ACCESSORIES BOX.
9. PLACE ITEM 23 NEAR GND COM. TO LAB RAIL.

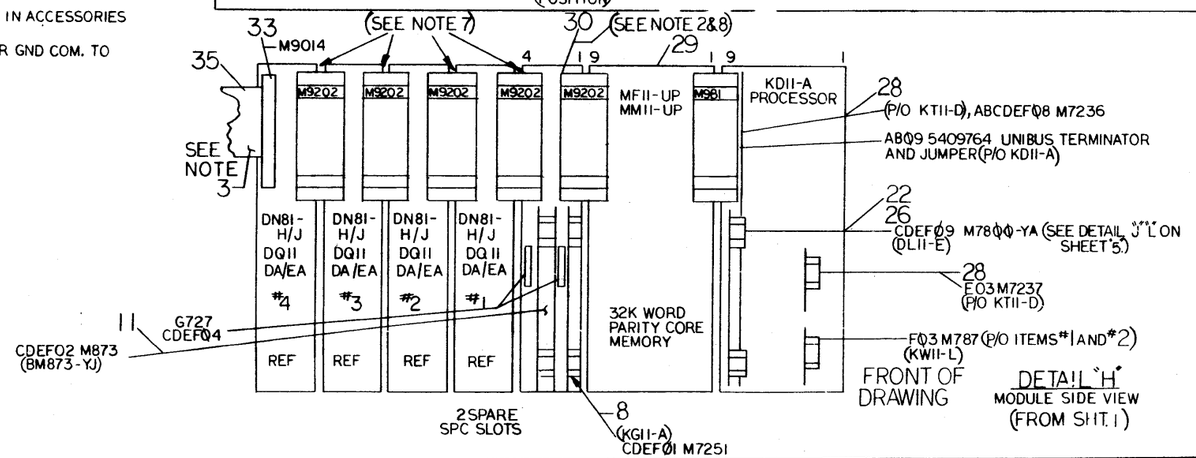


SCHEMATIC

DETAIL "B"
(FROM SHT. 1)

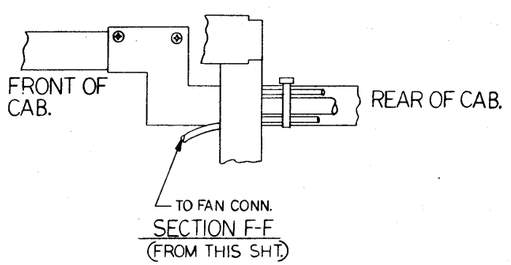


SECTION E-E
(FROM THIS SHT.)



FRONT OF DRAWING

DETAIL "H"
MODULE SIDE VIEW
(FROM SHT. 1)



SECTION F-F
(FROM THIS SHT.)

PDP10 11/40 CABINET ASSY

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIVERSAL COMM SYSTEM FRONT END	D	UA	DN87S-0-0	A

SCALE — SHEET 2 OF 13 DIST.

DEC FORM NO. DRD 137

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DN87S-Ø-Ø REV A CODE UA SIZE D

(VIEW L-L ON SHEET 4)

POWER DISTRIBUTION PNL
D-MD-7411220-0-0

SYSTEM UNIT PWR. DISTRIBUTION 5410590

TYPICAL DQ11 HARNESS
D-IA-7009563-Ø-Ø

MF11-UP HARNESS
D-IA-7009535-0-0

DD11-B HARNESS
D-IA-7009563-0-0

KD11-A HARNESS
D-IA-7009994-0-0

P17

FAN PWR SOCKET

K

K

DW81-H/J (DQ11-DA) (DQ11-EA) #4

DW81-H/J (DQ11-DA) (DQ11-EA) #3

DW81-H/J (DQ11-DA) (DQ11-EA) #2

DW81-H/J (DQ11-DA) (DQ11-EA) #1

P15, P16 NOT USED IN 11/40 CPU

NOTE (STD SYSTEMS)
1. MAIN HARNESS HAS TWO (2) UNUSED 8-PIN PLUGS (P15 & P16). TO PREVENT DAMAGE TO REGULATORS INSERT AN EMPTY MATING CONNECTOR INTO THEM AND TIE THEM OUT OF THE WAY.

P10 P9

J3 (J10) J4 (J9) J3 (J8)

P8

N742Ø

SLOT A N799 +5V BASIC

SLOT B N799 +5V BASIC

SLOT C H744 +5V BASIC

SLOT D N795 -15V BASIC

SLOT E H754 +20V, -5V

E-IA-7009566-0-0
BA11-F 21" BOX HARNESS

ADHESIVE TIE MOUNTS & CABLE TIES (ITEMS #16 AND #17)

LINE 1 SWITCHED OUTLET OF 861 POWER CONTROL

KD11-P POWER HARNESS PLUGS

P1 P3 P2

LOCATE KEY

KD11 POWER HARNESS

1. +5 TO 7.5A - RED	P1-1
2. +15 TO 3.0A - GRY	P1-2
3. +5 TO 7.5A - GRY	P3-1
4. GND - BLK	P1-8
5. -15V - BLU	P1-13
6. LTC - BRN	P2-2
7. GND - BLK	P3-9
8. AC-LO YEL	P2-4
9. DC-LO - VIO	P2-3

OPTION POWER CONNECTOR PIN ASSIGNMENTS (WIRING SIDE)

6 PIN 15 PIN

1. LO GND-BLK	1. +5V TO 7.5A-RED
2. LINE CLOCK-BRN	2. +15V TO 3.0A-GRY
3. DC LO-VIO	3. +20V TO 8A-ORN
4 AC LO-YEL	4. +5V TO 7.5A-RED
5. SPARE 4	5. GROUND - BLK
6. SPARE 5	6 SPARE #1
	7. GROUND - BLK
	8. GROUND - BLK
	9. GROUND - BLK
	10. SPARE #2
	11. GROUND - BLK
	12. SPARE #3
	13. -15V TO 10A-BLU
	14. -5V TO 8A - BRN
	15. SPARE #3

USE #14 WIRE FOR +5, GROUND, ALL OTHERS CAN BE #18. (EXCEPT ON MEMORIES)

FRONT OF BA11-F BOX

KD11-A

32K CORE MEMORY MF11-UP MM11-UP

DD11-B

WIRING SIDE VIEW

BLK RED VIO YEL GRY BRN BLU
GND DC LO AC LO +5 +15 LTC -15

TYP 4 PLACES DC PWR HARNESS FOR DQ11-DA,-EA, (D-IA-7009563-0-0)

ROUTE CABLE IN SPACE BETWEEN SYSTEM UNITS

VIEW K-K

REVISIONS	REV
CHANGE NO.	
DATE	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DN87S	PARTS LIST			

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

DRN [signature] DATE 13 MAR 78
CHK [signature] DATE 13 MAR 78
ENG [signature] DATE 18 MAY 78
PROJ ENG [signature] DATE 18 MAY 78
PROD [signature] DATE 17 MAY 78

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: UNIVERSAL COMM SYSTEM FRONT END

NEXT HIGHER ASSY: B-DD-DN87S-Ø
SCALE
SHEET 3 OF 3

SIZE	CODE	NUMBER	REV
D	UA	DN87S-Ø-Ø	A

DIST.

DEC FORM 240 2240 1024

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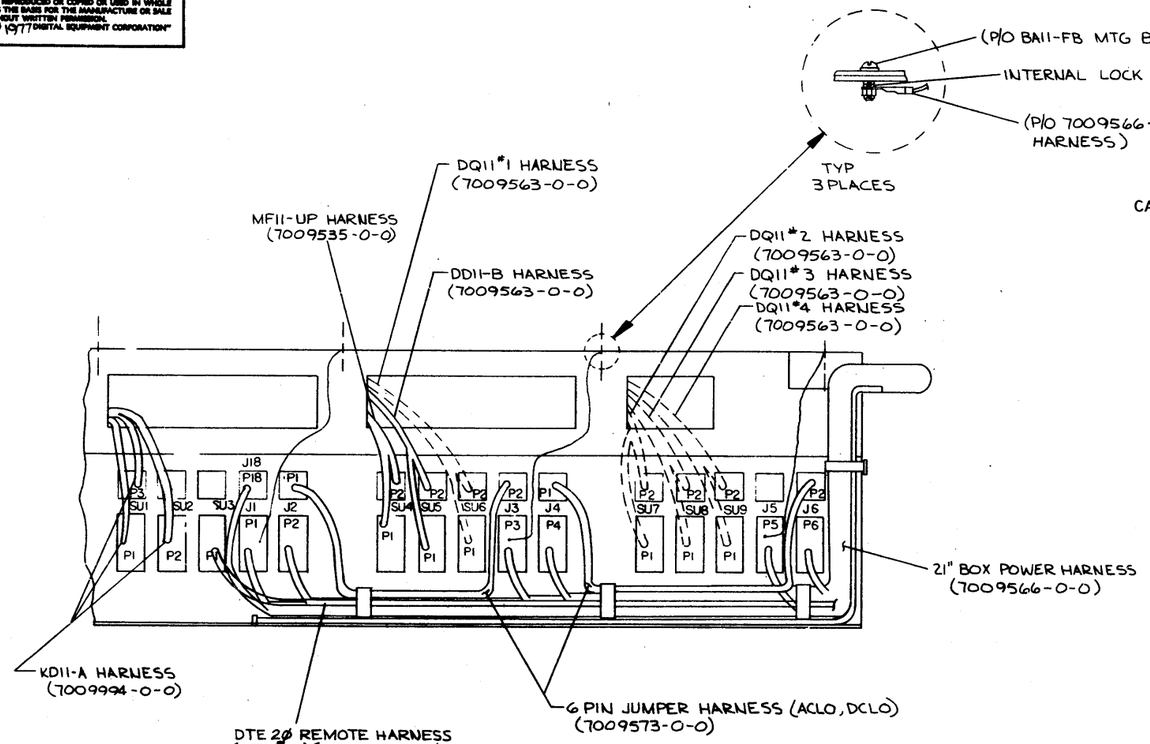
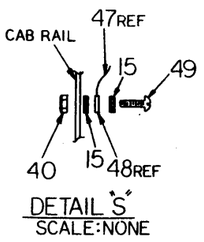
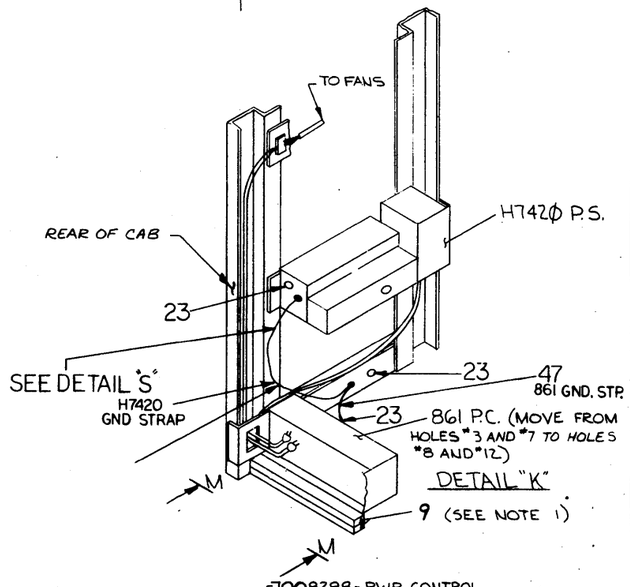


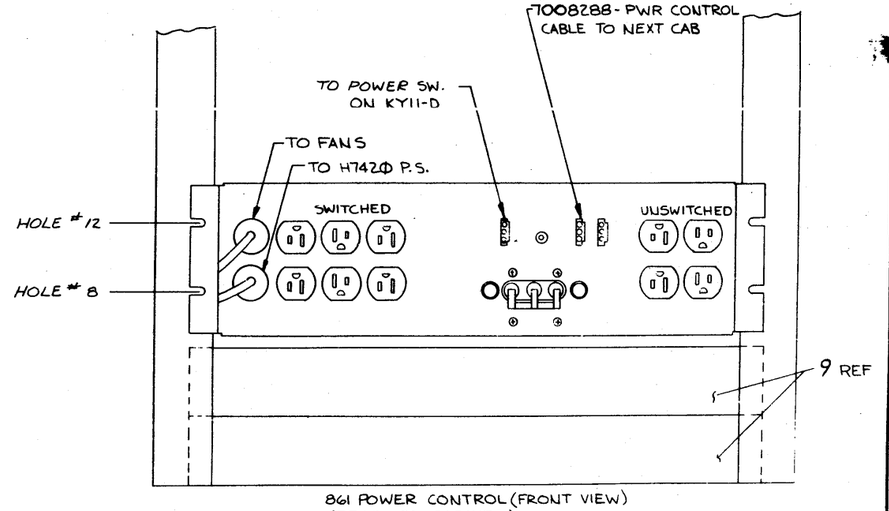
VIEW L-L



DETAIL "S"
SCALE: NONE

NOTES:
1. REMOVE 861 P.C. BEFORE INSTALLING LEAD WEIGHTS. REINSTALL 861 P.C. SIX HOLES ABOVE ORIGINAL POSITION AS SHOWN IN VIEW M-M.





861 POWER CONTROL (FRONT VIEW)
(REAR OF CABINET)

VIEW M-M

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIVERSAL COMM SYSTEM FRONT END	D	UA	DN87S - Ø - Ø	A
SCALE	SHEET 4 OF 13		DIST.	

DEC FORM NO. BRD 137

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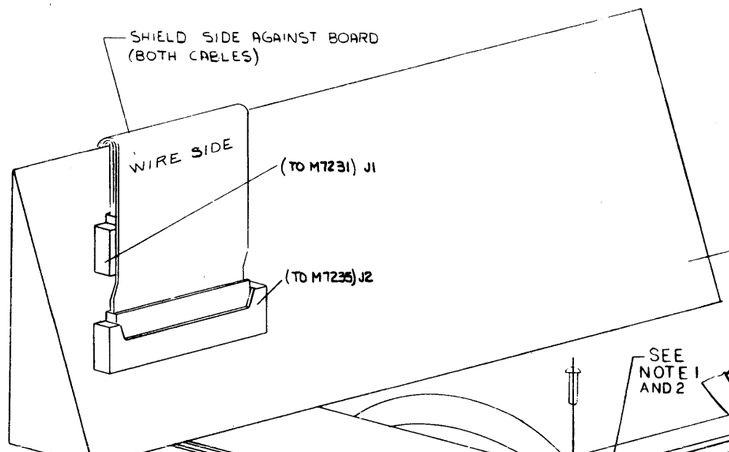
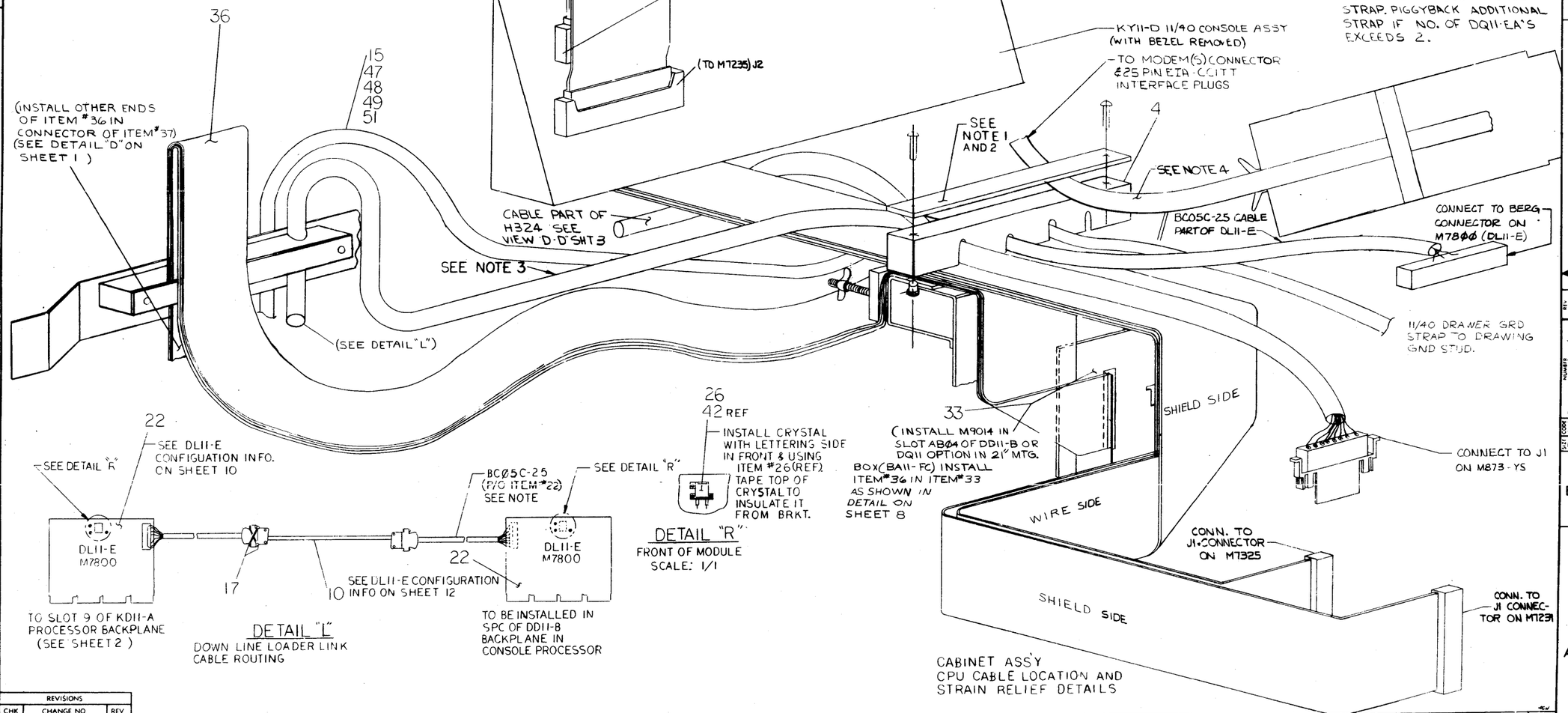
DETAIL "J" (FROM SHT. 1)
(USED ON ALL CONFIGUATION)



NOTES:
1. USE EXISTING STRAIN RELIEF WHEN PLACING A BCØIW CABLE IN UNIT. FOR DETAIL INFO. SEE D-UA-DN87-Ø-Ø SHT 2
2. PIGGYBACK ADDITIONAL CLAMP IF NUMBER OF DQ11 DA'S EXCEED 1
3. LAY EXCESS CABLE IN BOTTOM OF 11/40 CABINET ASSY.
4. BCØI R/W CABLE PADDLE BOARD, PART OF DQ11-DA/EA ASSY. TYP OF 1 TO 4 MAX. ROUTE BCØI-R UNDER CABLE CLAMP. ROUTE BCØI-W UNDER STRAP. PIGGYBACK ADDITIONAL STRAP IF NO. OF DQ11-EA'S EXCEEDS 2.



DETAIL "L"
DOWN LINE LOADER LINK CABLE ROUTING

DETAIL "R"
FRONT OF MODULE
SCALE: 1/1

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIVERSAL COMM SYSTEM FRONT END	D	UA	DN87S-Ø-Ø	A
SCALE —	SHEET 5 OF 13		DIST	

DEC FORM NO. DRD 137

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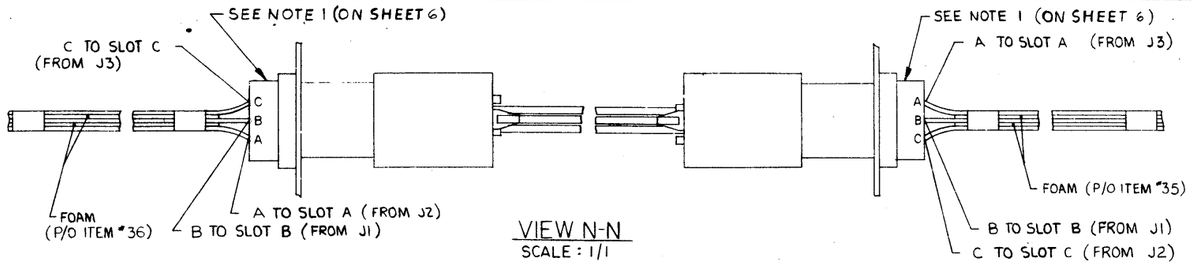
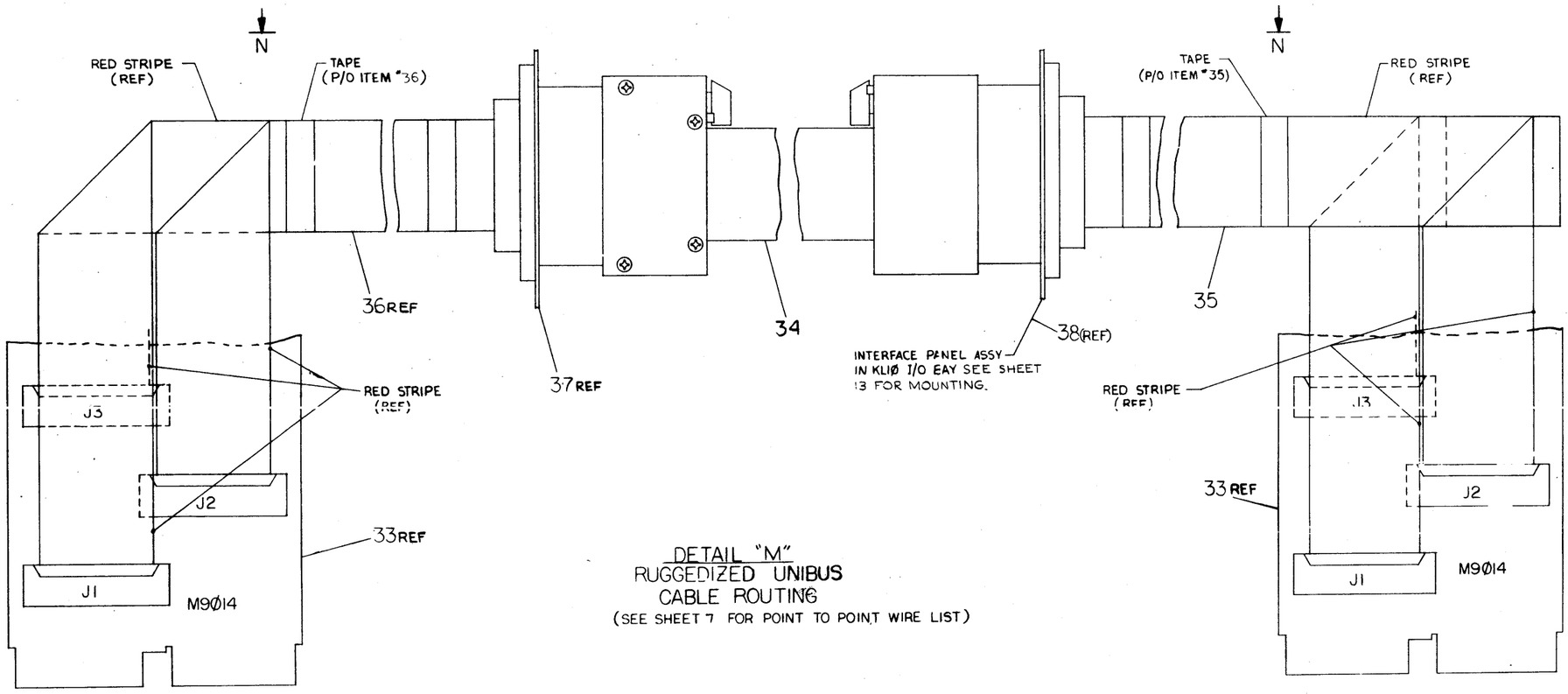


VIEW N-N
SCALE : 1/1

NOTES:
1. THE BERG CONNECTORS ON THE INTERNAL UNIBUS ASSEMBLY CAN EASILY BE INSERTED INTO THE MASS BUS HOUSING INCORRECTLY (EITHER SHIFTED UP OR DOWN ONE ROW OF PINS). CAUTION SHOULD BE EXERCISED WHEN INSERTING THESE CONNECTORS TO GUARANTEE THAT THEY ARE INSERTED CORRECTLY.



DETAIL "M"
RUGGEDIZED UNIBUS
CABLE ROUTING
(SEE SHEET 7 FOR POINT TO POINT WIRE LIST)

TO "UNIBUS OUT" SLOT IN BA11-F DRAWER (SEE SHEET 2)

TO "UNIBUS IN" SLOT FOR DTE20 IN KLIØ I/O BAY (SEE SHEET 8)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	UNIVERSAL COMM SYSTEM, FRONT END			
SCALE	1/1	SHEET 6 OF 13	SIZE D CODE UA	NUMBER DN87S-Ø-Ø REV. A
			DIST.	

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RUGGEDIZED
UNIBUS CABLE ROUTING
POINT TO POINT
WIRE LIST

UNIBUS SIGNAL NAME	FRONT END UNIBUS PIN ASSIGNMENT	FRONT END M9814 CONN. PIN ASSIGNMENT JACK	PIN	FRONT END TRANSITION CONNECTOR (7007098G) PIN ASSIGNMENT SLOT	PIN	KL10 TRANSITION CONNECTOR (7007098I) PIN ASSIGNMENT SLOT	PIN	KL10 M9814 CONN. PIN ASSIGNMENT JACK	PIN	KL10 UNIBUS PIN ASSIGNMENT
A00 L	BH2	J1	D	B	4	B	4	J1	VV	BH2
A01 L	BH1	J1	B	B	2	B	2	J2	TT	BH1
A02 L	BJ2	J1	J	B	8	B	8	J3	DD	BJ2
A03 L	BJ1	J1	F	B	6	B	6	J3	RR	BJ1
A04 L	BK2	J1	N	B	12	B	12	J3	Z	BK2
A05 L	BK1	J1	L	B	10	B	10	J3	FF	BK1
A06 L	BL2	J1	T	B	16	B	16	J3	LL	BL2
A07 L	BL1	J1	R	B	14	B	14	J3	D	BL1
A08 L	BM2	J1	X	B	20	B	20	J3	B	BM2
A09 L	BM1	J1	V	B	18	B	18	J2	LL	BM1
A10 L	BN2	J1	BB	B	24	B	24	J2	RR	BN2
A11 L	BN1	J1	Z	B	22	B	22	—	—	BN1
A12 L	BP2	J1	FF	B	28	B	28	—	—	BP2
A13 L	BP1	J1	DD	B	26	B	26	J3	TT	BP1
A14 L	BR2	J1	LL	B	32	B	32	J3	VV	BR2
A15 L	BR1	J1	JJ	B	30	B	30	J3	JJ	BR1
A16 L	BS2	J1	RR	B	36	B	36			BS2
A17 L	BS1	J1	NN	B	34	B	34			BS1
ACLO L	BF1	J2	VV	A	48	C	48			BF1
BBSY L	AP2	J3	BB	C	24	A	24			AP2
BG4 H	BE2	J3	X	C	28	A	28			BE2
BG5 H	BB1	J3	T	C	16	A	16			BB1
BG6 H	BA1	J3	N	C	12	A	12			BA1
BG7 H	AV1	J3	J	C	8	A	8			AV1
BR4 L	BD2	J3	V	C	18	A	18			BD2
BR5 L	BC1	J3	R	C	14	A	14			BC1
BR6 L	AU2	J3	L	C	10	A	10			AU2
BR7 L	AT2	J3	F	C	6	A	6			AT2
C0 L	BU2	J3	NN	C	34	A	34			BU2
C1 L	BT2	J1	TT	B	38	B	38			BT2
DB0 L	AC1	J2	B	A	2	C	2			AC1
DB1 L	AD2	J2	F	A	6	C	6			AD2
DB2 L	AD1	J2	D	A	4	C	4			AD1
DB3 L	AE2	J2	L	A	10	C	10			AE2
DB4 L	AE1	J2	J	A	8	C	8			AE1
DB5 L	AF2	J2	R	A	14	C	14			AF2
DB6 L	AF1	J2	N	A	12	C	12			AF1
DB7 L	AH2	J2	V	A	18	C	18			AH2
DB8 L	AH1	J2	T	A	16	C	16			AH1
DB9 L	AJ2	J2	Z	A	22	C	22			AJ2
DB10 L	AJ1	J2	X	A	20	C	20			AJ1
DB11 L	AK2	J2	DD	A	26	C	26			AK2
DB12 L	AK1	J2	BB	A	24	C	24			AK1
DB13 L	AL2	J2	JJ	A	30	C	30			AL2
DB14 L	AL1	J2	FF	A	28	C	28			AL1
DB15 L	AM2	J2	NN	A	34	C	34			AM2
GROUND	AB2	THE FOLLOWING PINS ON J1, J2 AND J3 ARE GROUNDED.		THE FOLLOWING PINS ON SLOTS A,B AND C ARE GROUNDED.						AB2
GROUND	AC2									AC2
GROUND	AN1									AN1
GROUND	AP1	A	S HH	1	15 29					AP1
GROUND	AR1	C	U MM	3	17 31					AR1
GROUND	AS1	E	W NN	5	19 33					AS1
GROUND	AT1	H	Y PP	7	21 35					AT1
GROUND	AV2	K	AA SS	9	23 37					AV2
GROUND	BB2	M	CC UU	11	25 39					BB2
GROUND	BC2	P	EE	13	27					BC2
GROUND	BD1			B	49	B	49	J1	VV	BD1
GROUND	BE1			A	38	C	38	J2	TT	BE1
GROUND	BT1			C	26	A	26	J3	DD	BT1
GROUND	BV2			C	36	A	36	J3	RR	BV2
INIT L	AA1			C	22	A	22	J3	Z	AA1
INTR L	AB1			C	20	A	28	J3	FF	AB1
MSYN L	BV1			C	32	A	32	J3	LL	BV1
NPG H	AU1			C	4	A	4	J3	D	AU1
NPR L	AS2			C	2	A	2	J3	B	AS2
PA L	AM1			A	32	C	32	J2	LL	AM1
PB L	AN2			A	36	C	36	J2	RR	AN2
+5V	AA2			—	—	—	—	—	—	AA2
+5V	BA2			—	—	—	—	—	—	BA2
SACK L	AR2	J3	TT	C	38	A	38	J3	TT	AR2
DCLO L	BF2	J3	VV	C	48	A	48	J3	VV	BF2
SSYN L	BU1	J3	JJ	C	30	A	30	J3	JJ	BU1

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIVERSAL COMM SYSTEM, FRONT END	D	UA	DN87S-Ø-Ø	A
SCALE NONE SHEET 7 OF 13	DIST.			

DEC FORM NO. DRD 137

MR

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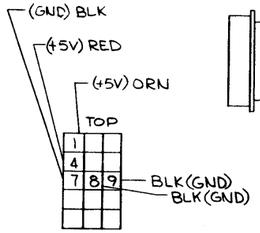
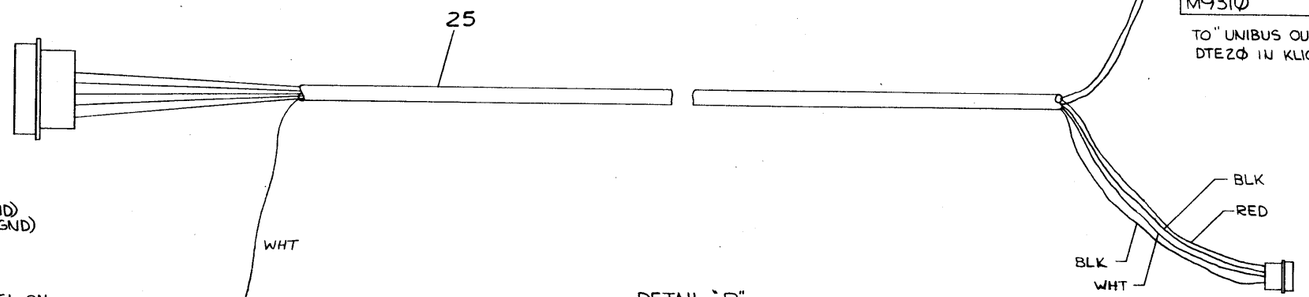
NOTES

1. CHECK J2 THRU J4 IN KLIØ I/O BAY TO MAKE CERTAIN THEY ARE WIRED AS INDICATED HERE BEFORE PLUGGING IN THE MATING CONNECTOR . SOME UNITS MAY BE WIRED INCORRECTLY.



TO SU3 OF POWER DISTRIBUTION PANEL ON DRAWING.(SEE SHEET 4)



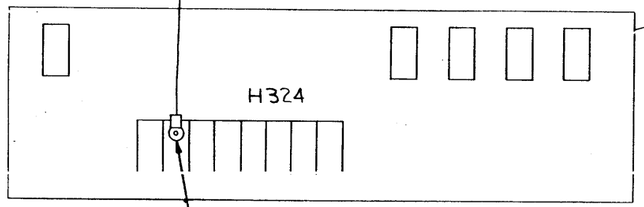
DETAIL "P"
DTE2Ø REMOTE CABLE HARNESS ROUTING

TOP

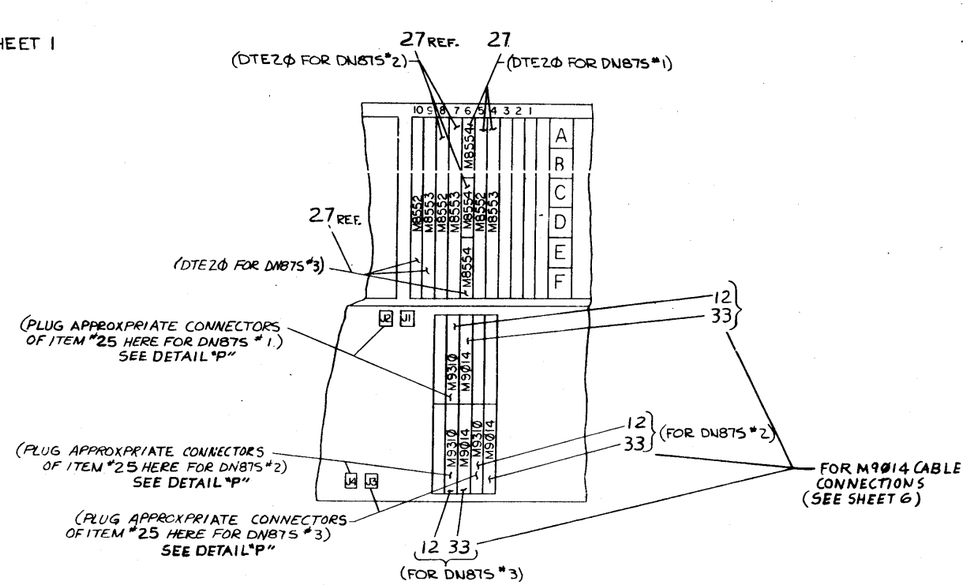
1	RED (+5V)
2	BLK (GND)
3	WHT (ELECT FINGER)
4	BLK (GND)

J2 THRU J4 IN KLIØ I/O BAY CORRECT WIRING DIAGRAM (SEE NOTE 1)

REAR VIEW



CONNECT SPADE TERMINAL OF ITEM #25 TO TB1-B7



KLIØ I/O BAY

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	UNIVERSAL COMM SYSTEM FRONT END			
SIZE	CODE	NUMBER	REV.	
D	UA	DN87S – Ø – Ø	A	
SCALE		SHEET 8 OF 13	DIST.	

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CSR ADDRESSES AND VECTOR VALUES FOR DQ11'S, DH11'S, DM11-BB'S AND DN11'S. ALL CONFIGURATIONS

DQ11 CSR ADDRESSES AND VECTOR VALUES

NUMBER OF DQ11'S	1	2	3	4	5	6	7	8	9	10	11	12
DQ11-DA #1	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520	760230 520
#2		760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530	760240 530
#3			760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540	760250 540
#4				760260 550	760260 550	760260 550	760260 550	760260 550	760260 550	760260 550	760260 550	760260 550
#5					760270 560	760270 560	760270 560	760270 560	760270 560	760270 560	760270 560	760270 560
#6						760300 570	760300 570	760300 570	760300 570	760300 570	760300 570	760300 570
#7							760310 600	760310 600	760310 600	760310 600	760310 600	760310 600
#8								760320 610	760320 610	760320 610	760320 610	760320 610
#9									760330 620	760330 620	760330 620	760330 620
#10										760340 630	760340 630	760340 630
#11											760350 640	760350 640
#12												760360 650

CSR ADDRESS & VECTOR VALUES, JUMPER MODIFICATIONS: ASYNC & SYNC/ASYNC CONFIGURATIONS

FOR DH11-AA, DM11-BB; 115V, W/CAB OR DH11-AC, DM11-BB; 230V, W/CAB AND/OR ADDITIONAL DH11-AA, DM11-BB OR DH11-AC, DM11-BB ASYNC LINE MUX EXPANSIONS.

NUMBER OF DH11'S	1	2	3	4	5	6	7	8
DH11 #1	760020 330	760020 330	760020 330	760020 330	760020 330	760020 330	760020 330	760020 330
#2		760040 350	760040 350	760040 350	760040 350	760040 350	760040 350	760040 350
#3			760060 370	760060 370	760060 370	760060 370	760060 370	760060 370
#4				760100 410	760100 410	760100 410	760100 410	760100 410
#5					760120 430	760120 430	760120 430	760120 430
#6						760140 450	760140 450	760140 450
#7							760160 470	760160 470
#8								760200 510

NUMBER OF DM11-BB'S	1	2	3	4	5	6	7	8
DM11-BB #1	770500 320	770500 320	770500 320	770500 320	770500 320	770500 320	770500 320	770500 320
#2		770510 340	770510 340	770510 340	770510 340	770510 340	770510 340	770510 340
#3			770520 360	770520 360	770520 360	770520 360	770520 360	770520 360
#4				770530 400	770530 400	770530 400	770530 400	770530 400
#5					770540 420	770540 420	770540 420	770540 420
#6						770550 440	770550 440	770550 440
#7							770560 460	770560 460
#8								770570 500

DN11 CSR ADDRESSES AND VECTOR VALUES

NUMBER OF DN11'S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DN11 #1	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660	775200 660
#2		775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664	775210 664
#3			775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670	775220 670
#4				775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674	775230 674
#5					775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700	775240 700
#6						775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704	775250 704
#7							775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710	775260 710
#8								775270 714	775270 714	775270 714	775270 714	775270 714	775270 714	775270 714	775270 714	775270 714
#9									775300 720	775300 720	775300 720	775300 720	775300 720	775300 720	775300 720	775300 720
#10										775310 724	775310 724	775310 724	775310 724	775310 724	775310 724	775310 724
#11											775320 730	775320 730	775320 730	775320 730	775320 730	775320 730
#12												775330 734	775330 734	775330 734	775330 734	775330 734
#13													775340 740	775340 740	775340 740	775340 740
#14														775350 744	775350 744	775350 744
#15															775380 750	775380 750
#16																775370 754

NOTES ON ADDRESS/VECTOR STRAPPING:

1. THE TOTAL NUMBER OF DQ11-DA OPTIONS THAT CAN BE INSTALLED IN A SYNC/ASYNC SYSTEM IS SHOWN BELOW.
2. THE MAXIMUM NUMBER OF DH11-A AND DM11-BB OPTIONS THAT CAN BE INSTALLED IN A SYNC/ASYNC SYSTEM IS SHOWN BELOW.

# DQ11'S	# DH11'S & DM11-BB'S
1-4	4
5-8	2

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIVERSAL COMM. SYSTEM FRONT END	D	UA	DN87S-Ø-Ø	A
SCALE — / — SHEET 9 OF 13	DIST.			

DEC FORM NO ORO 137

DUA DN87S-Ø-Ø A

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PDP11 BIT TO OCTAL DIGIT CORRESPONDENCE

BIT ORDER	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
EXAMPLE	6TH	5TH	4TH	3RD	2ND	1ST
OCTAL DIGIT	7	6	0	0	2	0
BINARY VALUE	1 1 1	1 1 0	0 0 0	0 0 0	0 1 0	0 0 0

OCTAL TO JUMPER CONVERSIONS FOR DH11 AND DM11-BB

M7821 INTERRUPT MODULE

FOR DM11-BB & DH11-AA,AC

MU LOC FOR DM11-BB = F@1; FOR DH11-AA,AC = A@6

	JUMPER ETCH MARKS						
	W8	W7	W6	W5	W4	W3	W2*
320	OUT	IN	IN	OUT	IN	OUT	IN
330	OUT	IN	IN	OUT	IN	IN	IN
340	OUT	IN	IN	IN	OUT	OUT	IN
350	OUT	IN	IN	IN	OUT	IN	IN
360	OUT	IN	IN	IN	IN	OUT	IN
370	OUT	IN	IN	IN	IN	IN	IN
400	IN	OUT	OUT	OUT	OUT	OUT	IN
410	IN	OUT	OUT	OUT	OUT	IN	IN
420	IN	OUT	OUT	OUT	IN	OUT	IN
430	IN	OUT	OUT	OUT	IN	IN	IN
440	IN	OUT	OUT	IN	OUT	OUT	IN
450	IN	OUT	OUT	IN	OUT	IN	IN
460	IN	OUT	OUT	IN	IN	OUT	IN
470	IN	OUT	OUT	IN	IN	IN	IN
500	IN	OUT	IN	OUT	OUT	OUT	IN
510	IN	OUT	IN	OUT	OUT	IN	IN

SEE SHEET 16 FOR DM11-BB & DH11-AA,AC VECTOR VALUES
OUT = 0
IN = 1

NPR CONTROL

ALL JUMPERS ARE "DON'T CARE " (IN OR OUT)

NPR SPEED UP

W9: IN

M7277: MU LOC ABCDEF@4

DH11-A: ADDRESS: OUT = 1 IN = @

	JUMPER ETCH MARKS			
	Z7	Z6	Z5	Z4
760 020	IN	IN	IN	OUT
040	IN	IN	OUT	IN
060	IN	IN	OUT	OUT
100	IN	OUT	IN	IN
120	IN	OUT	IN	OUT
140	IN	OUT	OUT	IN
160	IN	OUT	OUT	OUT
200	OUT	IN	IN	IN

DH11-A: G736@ PRIORITY SEL BOARD: LOC A@7

BR LEVEL SEL PLUGS SHOULD BE P/N 5409778 (LEVEL 5).

M1@5: MU LOC E@1

DM11-BB ADDRESS: OUT = 1 IN = @

BITS 6, 8 & 12 ARE ALL OUT
BITS 7, 9, 10 & 11 ARE ALL IN

	JUMPER ETCH MARKS		
	W5	W4	W3
770 500	IN	IN	IN
510	IN	IN	OUT
520	IN	OUT	IN
530	IN	OUT	OUT
540	OUT	IN	IN
550	OUT	IN	OUT
560	OUT	OUT	IN
570	OUT	OUT	OUT

DQ11-DA OCTAL TO JUMPER CONVERSION, VECTOR VALUES

M7821 (LOC C@4) W9-NPR LATENCY ALWAYS IN

JUMPER ETCH MARKS: OUT = @ IN = 1

W8	W7	W6	W5	W4	W3	W2	DQ11 VECTOR VALUE
IN	OUT	IN	OUT	IN	OUT	IN	520
IN	OUT	IN	OUT	IN	IN	IN	530
IN	OUT	IN	IN	OUT	OUT	IN	540
IN	OUT	IN	IN	OUT	IN	IN	550
IN	OUT	IN	IN	IN	OUT	IN	560
IN	OUT	IN	IN	IN	IN	IN	570
IN	IN	OUT	OUT	OUT	OUT	IN	600
IN	IN	OUT	OUT	OUT	IN	IN	610
IN	IN	OUT	OUT	IN	OUT	IN	620
IN	IN	OUT	OUT	IN	IN	IN	630
IN	IN	OUT	OUT	OUT	OUT	IN	640
IN	IN	OUT	OUT	OUT	IN	IN	650

DQ11-DA/EA SWITCH/STRAP PROTOCOL & INTERFACE OPTIONS SELECTION SYNC,SYNC/ASYNC CONFIGURATION

(SYNC/ASYNC CONFIGURATIONS)

M7812 MODULE (MU LOC ABCDEF@2) (CSR BUS SELECTORS & SHIFT REGISTERS DQ11 DWG D4-3)

SWITCH PACKAGE S1

SW1 — ON (EXT CLOCK TO MODEM INTERFACE)
SW2 — OFF (SCT → SCTE)("ON" IF CONN. TO BELL 308 TI CARRIER IS USED).
SW3 — OFF (÷16; USE WITH DQ11-KA OR DN83 SYNC NULL MODEM; THEN SET TO ON)
SW4 — OFF (÷2; USE WITH DQ11-KA OR DN83 SYNC NULL MODEM, THEN SET TO ON)

SET SW5 — OFF IF DQ11-DA IS CONNECTED TO BELL 201 A/B MODE, OR IF EXT CLOCK
SET SW5 — ON WHEN USING FOR ALL OTHER CONDITIONS. MUST BE SET TO ON WHEN EXECUTING DIAGNOSTICS MD11-DZ@@A THRU MD11-DZ@@F. DQ11-KA OR DN83 IS INSTALLED.

SET SW4 — OFF OR ON: VRC NOT CHECKED FOR ODD/EVEN BITS/BYTES.

M7813 MODULE (MU LOC ABCDEF@3) (CC/BA & SHIFT CONTROL DQ11 DWG D5-7)

SW1 — ON (TWO OR MORE SYNC CHAR FROM FRAMING)
SW2 — ON (RCVR ACTIVE AFTER FRAME)
SW4 — OFF (ODD VRC CHAR)
ON (EVEN VRC CHAR)

INSTALL BR5 PRIORITY PLUG P/N 5409778

M7815 MODULE (MU LOC E@1) (DATSET CONTROL DQ11 DWG D2-1)

W1 — W4 NO CUTS

NO INTERRUPTS ON U@13, U@14

INHIBIT INIT RS AND DTR

INHIBIT INTERRUPTION RING APPEARANCE

M7818 MODULE (LOC EF@4) (8 BIT ASCII, CHAR DETECT & INTERRUPT TRIGGER LOGIC DQ11 DWG D6-1)

S1 SW1 — SW8 — ON (CHAR @, LO BYTE)
S2 SW9 — SW16 — ON (CHAR 1, LO BYTE)
S3 SW17 — SW24 — ON (CHAR 2, LO BYTE)
S4 SW25 — SW32 — OFF,ON,OFF,ON,ON,ON,ON,ON (CHAR @, HI BYTE, ENQ @@5)
S6 SW49 — SW56 — ON,ON,ON,ON,OFF,ON,ON,OFF (CHAR 1, HI BYTE, DLE 220) — HI BYTE CHAR SELECTION & DETECTION FOR DDCMP
S7 SW41 — SW48 — OFF,ON,ON,ON,ON,ON,ON,OFF (CHAR 2, HI BYTE, SOH 201) — COMPATIBILITY
S5 SW33 — ON ENABLES HI BYTE CHAR @
SW34 — ON ENABLES HI BYTE CHAR 1
SW35 — ON ENABLES HI BYTE CHAR 2
SW36 — OFF DISABLES LO BYTE CHAR @
SW37 — OFF DISABLES LO BYTE CHAR 1
SW38 — OFF DISABLES LO BYTE CHAR 2
SW39 — OFF DISABLES SYNC COMPARE WHEN OFF
SW4@ — ON ALLOWS SPEC. CHAR AND SYNC COMPARE INTERRUPTS WHEN ON

DL11-C CONSOLE TERMINAL CONTROLLER

M78@@-YA ASYNC. LINE INTERFACE LOCATION CDEF@@ (KD11-A BACKPLANE)

JUMPER	STATE	COMMENTS
J1	EITHER	EIA REQUEST TO SEND
J2	OUT	EIA FORCE BUSY
J3	EITHER	EIA REQUEST TO SEND CONTROL
J4	EITHER	EIA DATA LEADS ONLY
J5	IN	BREAK
J6	OUT	DATA SET INTERRUPTS
J7	OUT	DATA SET STATUS BITS
J8	IN	ERROR BITS
J9	OUT	STOP BITS
J1@	IN	STOP BITS
J11	OUT	STOP BITS
2SB	IN	STOP BITS
NP	OUT	PARITY BITS
EPS	EITHER	PARITY BITS
NB1	OUT	DATA BITS
NB2	OUT	DATA BITS
N1	IN	NPR LATENCY
A3	IN	ADDRESS BIT @3
A4	OUT	ADDRESS BIT @4
A5	OUT	ADDRESS BIT @5
A6	OUT	ADDRESS BIT @6
A7	IN	ADDRESS BIT @7
A8	OUT	ADDRESS BIT @8
A9	OUT	ADDRESS BIT @9
A1@	OUT	ADDRESS BIT 1@
V3	OUT	VECTOR BIT @3
V4	IN	VECTOR BIT @4
V5	IN	VECTOR BIT @5
V6	OUT	VECTOR BIT @6
V7	OUT	VECTOR BIT @7
V8	OUT	VECTOR BIT @8

1 STOP BIT
NO HARDWARE PARITY
EIGHT DATA BITS
A3-A17 BASE ADDRESS 777560
Y3-Y8 VECTOR ADDRESS 60
OPERATING SPEED: 300 BAUD TX, 300 BAUD RX; SWITCH POSITION: #2 RX=2TX
CRYSTAL 1805501-7 (4.608 MHZ) SPEED GROUP 4
PRIORITY PLUG 5408776-0-0 (BR4)

BM873-YG BOOTSTRAP ROM LOADER (SEE NOTE)

M873-YG RESTART LOADER LOCATION CDEF@2 (DD11-B BACKPLANE)

LOWEST ACCEPTABLE REVISION ETCH REV D, CS REV F
DIODE INSTALLATION TABLE

DIODE	STATE	COMMENTS
D1	OUT	BIT 1, WORD 1
D2	OUT	BIT 1, WORD 2
D3	OUT	BIT 1, WORD 3
D4	OUT	BIT 1, WORD 4
D5	OUT	BIT 2, WORD 1
D6	OUT	BIT 2, WORD 2
D7	OUT	BIT 2, WORD 3
D8	IN	BIT 2, WORD 4
D9	OUT	BIT 3, WORD 1
D1@	IN	BIT 3, WORD 2
D11	OUT	BIT 3, WORD 3
D12	IN	BIT 3, WORD 4
D13	OUT	BIT 4, WORD 1
D14	IN	BIT 4, WORD 2
D15	IN	BIT 4, WORD 3
D16	IN	BIT 4, WORD 4
D17	OUT	BIT 5, WORD 1
D18	OUT	BIT 5, WORD 2
D19	OUT	BIT 5, WORD 3
D2@	IN	BIT 5, WORD 4
D21	OUT	BIT 6, WORD 1
D22	OUT	BIT 6, WORD 2
D23	OUT	BIT 6, WORD 3
D24	IN	BIT 6, WORD 4
D25	OUT	BIT 7, WORD 1
D26	OUT	BIT 7, WORD 2
D27	OUT	BIT 7, WORD 3
D28	OUT	BIT 7, WORD 4
D29	OUT	BIT 8, WORD 1
D30	OUT	BIT 8, WORD 2
D31	OUT	BIT 8, WORD 3
D32	IN	BIT 8, WORD 4

NOTE:
BM873-YG INFORMATION IS FOR REFERENCE PURPOSES ONLY, BM873-YJ INFORMATION AVAILABLE ON SHEET 12. OLDER MACHINES MAY HAVE BM873-YG INSTALLED. SEE LEGEND ON SHEET 2 FOR DETAILS OF DIFFERENCES IF BM873-YJ IS INSTALLED.

CONTINUED ON SHEET 11

REVISIONS

CHK	CHANGE NO	REV

TITLE: UNIVERSAL COMM. SYSTEM FRONT END
SIZE: D | CODE: UA | NUMBER: DN87S-Ø-Ø | REV: A
SCALE: 1/1 | SHEET 10 OF 13 | DIST

DUADN87S-Ø-Ø A

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CONTINUED FROM SHEET 17

M873-YG RESTART LOADER CONTINUED

JUMPER TABLE

JUMPER	STATE	COMMENTS
W1	IN	IN FOR 11/23 USE
W2	OUT	IN FOR 11/05 11/20 AND 11/45 USE
W3	OUT	ENABLE UNIBUS

RESISTOR R3 MUST BE REMOVED

INPUT #1 OFFSET ADDRESS 920 (DIAG. BOOT)
INPUT #2 OFFSET ADDRESS 930 (NOT USED)
INPUT #3 OFFSET ADDRESS 920 (NOT USED)
INPUT #4 OFFSET ADDRESS 574 (DTE20)

DL11-E DOWN LINE LOAD (11/40 CTY DLIFE SEE DETAIL "L") LINK CONTROLLER

M7800 ASYNC. LINE INTERFACE LOCATION CDEF#3 BACKPLANE)

JUMPER	STATE	COMMENTS
J1	IN	EIA REQUEST TO SEND
J2	OUT	EIA FORCE BUSY
J3	IN	EIA REQUEST TO SEND CONTROL
J4	OUT	EIA DATA LEADS ONLY
J5	IN	BREAK
J6	IN	DATA SET INTERRUPTS
J7	IN	DATA SET STATUS BITS
J8	IN	ERROR BITS
J9	OUT	STOP BITS
J10	IN	STOP BITS
J11	OUT	STOP BITS
25B	IN	STOP BITS
NP	OUT	PARITY BITS
EPS	EITHER	PARITY BITS
NB1	OUT	DATA BITS
NB2	OUT	DATA BITS
N1	IN	NPR LATENCY
A3	IN	ADDRESS BIT #3
A4	OUT	ADDRESS BIT #4
A5	OUT	ADDRESS BIT #5
A6	OUT	ADDRESS BIT #6
A7	IN	ADDRESS BIT #7
A8	OUT	ADDRESS BIT #8
A9	OUT	ADDRESS BIT #9
A10	OUT	ADDRESS BIT #10
V3	OUT	VECTOR BIT #3
V4	IN	VECTOR BIT #4
V5	IN	VECTOR BIT #5
V6	OUT	VECTOR BIT #6
V7	OUT	VECTOR BIT #7
V8	OUT	VECTOR BIT #8

1 STOP BIT
NO HARDWARE PARITY
EIGHT DATA BITS
A3-A10 BASE ADDRESS 777560
V3-V8 VECTOR ADDRESS 60
OPERATING SPEED: { R SWITCH=POSITION8 (RECIEVING SPEED= 9600 BAUD)
T SWITCH=POSITION2 (TRANSMITTING SPEED= 300 BAUD)
CRYSTAL: 1805501-7(4.608 MHZ SPEED GROUP 4)
PRIORITY PLUG: 5498776-0-0(BR4)

KG11-A COMMUNICATIONS ARITHMETIC OPTION

M7251 XOR & CRC BLOCK CHECK LOCATION CDEF#1 (DD11-B BACKPLANE)

ADDRESS	REGISTER NAME
770700	STATUS
770702	MCC
770704	DATA

DQ11-DA/EA OCTAL TO JUMPER CONVERSION/CSR VALUES

JUMPER										DEVICE
12	11	10	9	8	7	6	5	4	3	ADDRESS
IN	IN	IN	IN	IN	OUT	IN	IN	OUT	OUT	760230
IN	IN	IN	IN	IN	OUT	IN	OUT	IN	IN	760240
IN	IN	IN	IN	IN	OUT	IN	OUT	IN	OUT	760250
IN	IN	IN	IN	IN	OUT	IN	OUT	OUT	IN	760260
IN	IN	IN	IN	IN	OUT	IN	OUT	OUT	OUT	760270
IN	IN	IN	IN	IN	OUT	OUT	IN	IN	IN	760300
IN	IN	IN	IN	IN	OUT	OUT	IN	IN	OUT	760310
IN	IN	IN	IN	IN	OUT	OUT	IN	OUT	IN	760320
IN	IN	IN	IN	IN	OUT	OUT	IN	OUT	OUT	760330
IN	IN	IN	IN	IN	OUT	OUT	OUT	IN	IN	760340
IN	IN	IN	IN	IN	OUT	OUT	OUT	IN	OUT	760350
IN	IN	IN	IN	IN	OUT	OUT	OUT	OUT	IN	760360

M873-YJ (LOWEST ACCEPTABLE CS REV. H)
THE M873-YJ MODULE SHOULD ALREADY BE CONFIGURED CORRECTLY. HOWEVER, AS A QUICK VERIFY THE MODULE MAY BE COMPARED AGAINST THE FOLLOWING TABLES.

DIODE FIELD

BOOT FUNCTION	STARTING ADDRESS	BIT 8	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1
S/R	773000	D29 OUT	D25* OUT	D21 OUT	D17 OUT	D13* OUT	D9 OUT	D5 OUT	D1 OUT
DISK	773030	D30 OUT	D26 OUT	D22 OUT	D10 OUT	D14 IN	D10 IN	D6 OUT	D2 OUT
RX01 TC11 DL11	773020	D31 OUT	D27 OUT	D23 OUT	D19 OUT	D15 IN	D11 OUT	D7 OUT	D3 OUT
DTE20	773230	D32 OUT	D28 IN	D24 OUT	D20 OUT	D16 IN	D12 IN	D8 OUT	D4 OUT

ROM PART NOS.

LOCATION	PART NUMBER
E16	23412A2
E17	23413A2
E19	23414A2
E20	23415A2

JUMPER CONFIG.
W1 = IN
W2 = OUT
W3 = OUT
RESISTOR R3 SHOULD BE REMOVED.

M7800 (DL11-E) (LOWEST ACCEPTABLE CS REV. P) (LOCATED IN KEIG CONSOLE PROGRAM SEE DETAIL "L")
THE JUMPERS AND SWITCHES FOR THE M7800 (DL11-E) MODULE ARE TO BE CONFIGURED ACCORDING TO THE FOLLOWING TABLE.

JUMPERS
J1 IN (TIES EIA DRIVER TO REQUEST TO SEND LEAD)
J2 OUT (TIES EIA DRIVER TO FORCE BUSY LEAD)
J3 IN (ALLOWS REQUEST TO SEND TO BE CONTROLLED BY BIT 2 OF THE RECEIVER STATUS REGISTER)
J4 OUT (FORCES DATA LEADS ONLY MODE OF EIA OPERATION)
J5 IN (ALLOWS BREAK BIT TO FUNCTION)
J6 IN (ALLOWS DSET INT TO CAUSE INTERRUPTS)
J7 IN (ALLOWS DATA SET CONTROL BIT TO BE READ AS PART OF RECEIVER STATUS REGISTER)
J8 IN (ALLOWS ERROR BITS TO BE READ AS PART OF THE RECEIVER DATA REGISTER)

A3 OUT		A3 IN		A3 OUT	
A4 OUT		A4 IN		A4 IN	
A5 IN		A5 OUT		A5 OUT	
A6 IN	SELECT	A6 IN	SELECT	A6 IN	SELECT
A7 OUT	ADDRESS	A7 OUT	ADDRESS	A7 OUT	ADDRESS
A8 OUT	775630	A8 OUT	775640	A8 OUT	775650
A9 OUT	FOR	A9 OUT	FOR	A9 OUT	FOR
A10 IN	DN87S #1	A10 IN	DN87S #2	A10 IN	DN87S #3

V3 OUT		V3 IN		V3 OUT	
V4 OUT		V4 IN		V4 IN	
V5 IN	SELECT	V5 OUT	SELECT	V5 OUT	SELECT
V6 IN	VECTOR	V6 IN	VECTOR	V6 IN	VECTOR
V7 IN	740	V7 IN	730	V7 IN	720
V8 IN	FOR	V8 IN	FOR	V8 IN	FOR
	DN87S #1		DN87S #2		DN87S #3

N1 IN — ALWAYS IN FOR 11/40 CPU
NB2 OUT, NB1 OUT — 8 BITS
NP OUT, EPS OUT — NO PARITY
25B IN, J9 OUT, J10 IN, J11 OUT — 1 STOP BIT

SWITCHES
R SWITCH = POSITION 2 (RECEIVER SPEED = 300 BAUD)
T SWITCH = POSITION 8 (TRANSMIT SPEED = 9600 BAUD)
SWITCH POSITION = 1 IS THE MOST COUNTER CLOCKWISE POSITION FOR BOTH OF THE ABOVE ROTARY TYPE SWITCHES.
A 4.608 MHZ CRYSTAL (PN 18-05501-7 MUST BE INSTALLED AT POSITION Y1 OF THE MODULE.
BR PRIORITY LEVEL = 4 (PRIORITY JUMPER PN 5498776).

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE UNIVERSAL COMM SYSTEM FRONT END
SIZE D | CODE DUA | NUMBER DN87S-Ø-Ø | REV A
SCALE — | SHEET 11 OF 13 | DIST.

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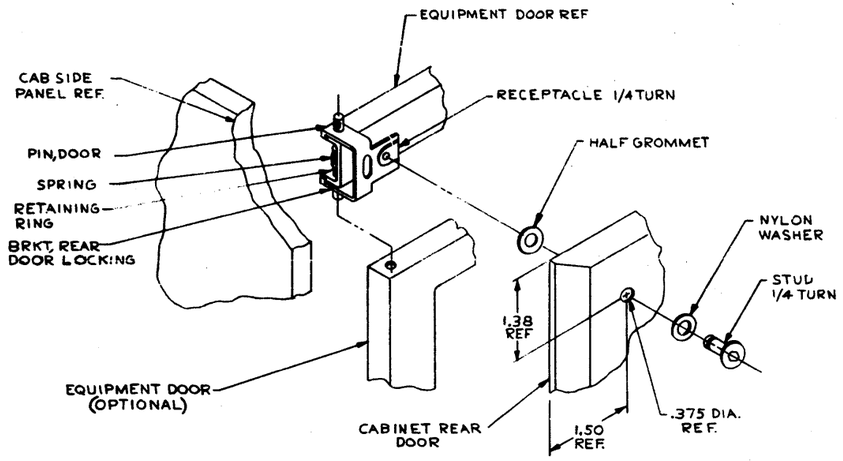
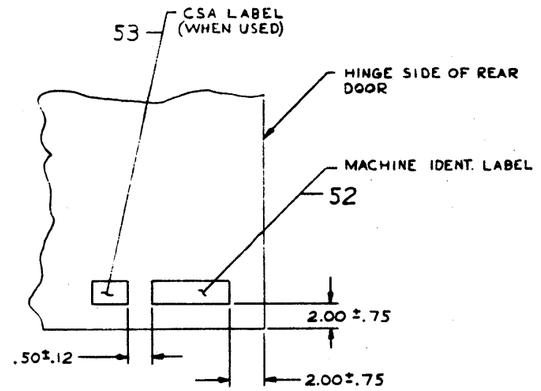


DETAIL B-B
SCALE: NONE



DETAIL A-A
SCALE: NONE

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIVERSAL COMM SYSTEM FRONT END	D	UA	DN87S Ø-Ø	A
SCALE —/— SHEET 12 OF 13	DIST.			

DUA DN87S-Ø-Ø A

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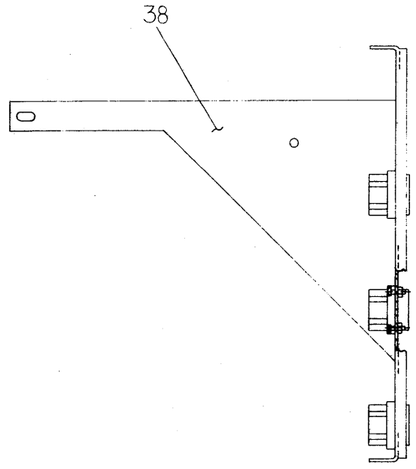
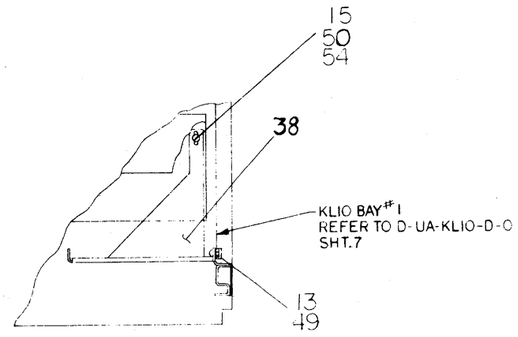


DETAIL T-T
SCALE 1\1
SEE DETAIL "U"
FOR INSTALLATION IN
KLIO BAY # 1 CAB.



DETAIL U
SCALE: NONE

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	UNIVERSAL COMM SYSTEM FRONT END				
SCALE	NT	SHEET 13 OF 13	SIZE D	CODE UA	NUMBER DN87S-D-I REV. A
			DIST.		

DEC FORM NO. DRD 132

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T McCullough	CHECKED	SECTION
DATE 23 mar 78	DATE	1
ENG Stephen R Holmes	PROD Bob Fontaine	ISSUED SECT.
DATE 5-18-78	DATE 5/18/78	1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION DN87S-AA	DN87S-AB	DN87S-U
1	D-AD-7009711-1-Ø	BASIC ASSY 11/40AK-PDP1Ø 115V	1	-	-
2	D-AD-7009711-2-Ø	BASIC ASSY 11/40AL-PDP1Ø 230V	-	1	-
3	D-UA-H324-Ø-Ø	SWITCH PANEL	1	1	1
4	C-PS-1211215-0-0	CABLE CLAMP & STRAP	1	1	-
5	D-UA-H95Ø-BC-Ø	H95Ø-B FULL LENGTH DOOR R.H. (BLAZI BLU)	1	1	-
6	D-UA-H952-AC-Ø	H95Ø-A END PANEL (#68 GREY)	2	2	-
7	D-UA-H956-HJ-Ø	H956-H SHORT DOOR 57.75" (BLASI BLU)	1	1	-
8	A-PL-KG11-A-Ø	X-OR & CRC OPTION	1	1	-
9	C-MD-7413732-0-0	COUNTER WEIGHT, LEAD (REWORK)	2	2	-
10	D-UA-BCØ3M-Ø1-Ø	CABLE MODEM	1	1	1
11	D-CS-M873-YJ-1	ROM RESTART LOADER	1	1	1
12	B-PL-M931Ø-Ø-Ø	UNIBUS TERMINATOR	1	1	1
13	9007786	NUT, TINNERMAN #10-32	10	10	-
14	9006074-1	SCREW, PHL PAN HD #10-32 x .62 LG	12	12	-
15	9007651	WASHER, EXT. TOOTH LOCK #10	42	42	-
16	9008264	MOUNT, CABLE TIE ADHESIVE BACK	30	30	30
17	9007880	CABLE TIES	50	50	50
18	9006077-1	SCREW, PHL PAN HD #10-32 x 1.[illegible] LG	6	6	-
19	9006051-1	SCREW, PHL PAN HD #8-32 x 3.0 LG	2	2	-
20	9007036	GROMMET, CATARPILLAR	1FT	1FT	-
21	9107253-09	WHT ¼" SHRINK SLEEVING	1FT	1FT	-
22	A-PL-DL11-E-Ø	ASYNC LINE INTERFACE	2	2	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
UNIVERSAL COMM SYSTEM FRONT END	D-UA-DN87S-Ø-Ø	A	PL	DN87S-Ø-Ø	A	DN87S-MR001
	SHEET 1 OF 3	DIST.				

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

MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY T McCullough	CHECKED	SECTION
DATE 23 mar 78	DATE	1
ENG Stephen R Holmes	PROD Bob Fontaine	ISSUED SECT.
DATE 5-18-78	DATE 5/18/78	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION DN87S-AA	DN87S-AB	DN87S-U
23	3613272	LABEL GROUND	14	14	-
24	DEC(378)1638-N573	STICKER (11/40 PROC. BOX COFIG.)	1	1	-
25	E-IA-7015831-0-0	DTE REMOTE HARNESS ASSY	1	1	1
26	A-PS-1805501-7-0	CRYSTAL (4.608 MHZ)	2	2	2
27	A-PL-DTE2Ø-Ø-Ø	PDP1Ø/PDP11 INTERFACE	1	1	1
28	A-PL-KT11-D-Ø	MEMORY MANAGEMENT	1	1	1
29	A-PL-MM11-UP-Ø	16K MEMORY EXPANSION	1	1	-
30	D-UA-M92Ø2-Ø-Ø	CABLE, UNIBUS JUMPER	1	1	-
31	1211386	FOP PANEL MTG BRKT	2	2	1
32	9008881	VINYL FOAM	A/R	A/R	A/R
33	D-CS-M9Ø14-Ø-1	UNIBUS TO H854 ADAPTER BOARD	2	2	2
34	D-AD-7014211-24-0	CABLE, RUGGEDIZED UNIBUS	1	1	1
35	D-AD-7014002-4-0	CABLE, ASSY INTERNAL UNIBUS (4 FT)	1	1	1
36	D-AD-7014246-11-0	CABLE ASSY, INTERNAL UNIBUS (11 FT)	1	1	1
37	D-AD-7010311-0-0	PLATE, CABLE CONVERSION ASSY	1	1	1
38	D-AD-7014044-0-0	PANEL ASSY, INTERFACE	1	1	1
39	9007930	TERMINAL, RING TONGUE (22-16) GA	1	1	-
40	9006565	NUT, KEPS #10-32	1	1	-
41	D-MD-7411606-0-0	SCREEN, BOTTOM	1	1	-
42	9008269	TAPE .75 WIDE TRANSPARENT	A/R	A/R	A/R
43	B-CS-KM11-Ø-MB	MAINT. MODULES #1 AND #2	1	1	-
44	B-CS-W982-Ø-1	SINGLE HEIGHT MODULE EXTENDER	1	1	-

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
UNIVERSAL COMM SYSTEM FRONT END	D-UA-DN87S-Ø-Ø	A	PL	DN87S-Ø-Ø	A	
	SHEET 2 OF 3	DIST				

DEC FORM
DRA 110

MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY T McCullough	CHECKED [illegible]	SECTION 1
DATE 23 Mar 78	DATE 3 April 78	
ENG Stephen R Holmes	PROD Carl Johnson	ISSUED SECT. 1
DATE 5-18-78	DATE 5/18/78	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	DN87S-AA	DN87S-AB	DN87S-U
45	C-CS-W9ØØ-Ø-1	DOUBLE HEIGHT MODULE EXTENDER	1	1	–
46	C-CS-W987-Ø-1	QUAD HEIGHT MODULE EXTENDER	1	1	–
47	9107779-54	1Ø AWG GRN/YEL	A/R	A/R	A/R
48	9007926-01	TERMINAL, RING #HOLE	14	14	14
49	9006073-03	SCR, PHL TRUSS HD #10-32 x .50 LG	7	7	7
50	9006676	WASHER,FLAT .281 I.D. X .625 O.D. X.062	1	1	1
51	H952-LB	REAR LOCK DOOR KIT	1	1	–
52	3615180-00	MACHINE IDENT LABEL	2	2	–
53	3613211-00	CSA LABEL	REF	REF	–
54	9006075-03	SCR, TRUSS ~~HD~~ PHL 10-32 X .75	1	1	1
55	9006074-03	SCREWS, 10-32 x .62	2	2	2
56	3612449	U/L LABEL	REF	REF	–
57					
58					
59					
60					

QUANTITY VARIATION

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
UNIVERSAL COMM SYSTEM FRONT END	D-UA-DN87S-Ø-Ø	A	PL	DN87S-Ø-Ø	A	
	SHEET 3 OF 3	DIST				

MR

DEC FORM
DBA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY T McCullough	CHECKED	SECTION 1
DATE 25 May 78	DATE	
ENG Stephen R Hobbs	PROD Bob [illegible]	ISSUED SECT. 1
DATE 5-18-78	DATE 5/[illegible]/78	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION DN87S-AA	DN87S-AB	DN87S-U
1	EK-11/40-TM-002	PDP-11/40 SYSTEMS MANUAL	1	1	-
2	EB-00973-2908	PDP11 PERIPHERALS HANDBOOK	1	1	-
3	EK-KD11A-MM-001	KD11 PROCESSOR MAINT. MANUAL	1	1	-
4	EK-861AB-MM-002	861 POWER CONTROLLER MANUAL	1	1	-
5	EK-KG11A-TM-002	KG11A MAINT. MANUAL	1	1	-
6	EK-MF11U-MM-003	MF11-U/UP MAINT. MANUAL	1	1	-
7	G727	GRANT CONTINUITY CARD	1	1	-
8	B-DD-DD11-B	SMALL PERIPHERALS MTG PANEL	1	1	-
9	EK-KW11-L-TM-002	KW11-L LINE FREQ. MAINT.	1	1	-
10	EK-DL11-TM-002	DL11 MAINT. MANUAL	1	1	-
11	EK-BM873-TM-005	BM873 RESTART LOADER MAINT. MANUAL	1	1	1
12	EK-KT11D-TM-002	MEMORY MAINT. OPTION MANUAL, KT11-D	1	1	1
13	B-DD-KT11-D	KT11-D PRINT SET	1	1	-
14	C-SS-5509081-12	MAINT. MODULE OVERLAY (KD11-A)	1	1	-
15	C-SS-5509081-13	MAINT. MODULE OVERLAY (KD11-D)	1	1	-
16	MP001109	DN87S PRINT SET	1	1	1
17	3700046-00	PACKAGING INSTRUCTIONS, U.S. CANADA	1	1	-
18	3700046-08	PACKAGING INSTRUCTIONS, OVER SEAS	1	1	-
19	3700371-0-0	PACKAGING INSTRUCTIONS, DN87S-U	-	-	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
DN87S ACCESSORY SHIP LIST	B-DD-DN87S-0-0	A	PL	DN87S-0-3	A	DN87S-MR001
	SHEET 1 OF 1	DIST				

DEC FORM DRA 110

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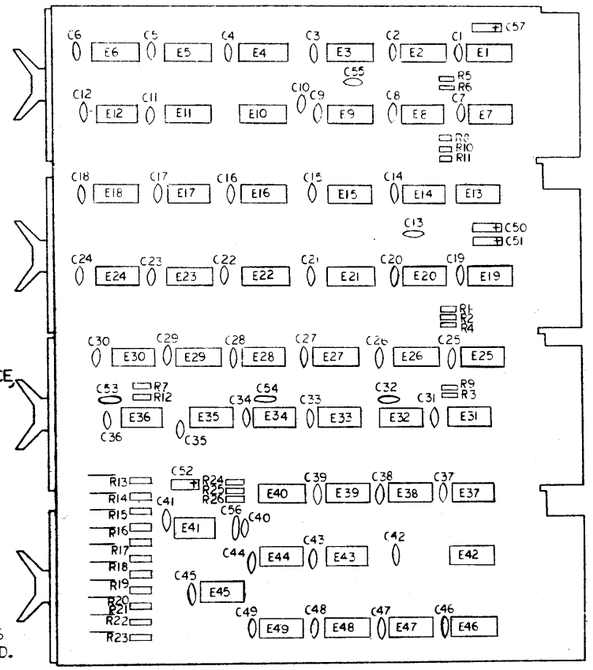
PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1.	E6,E24,E34	IC,DEC 74H50	1909060	3
2.	E2,E8,E14,E20,E30,E37,E38,E19,144,E48	IC,DEC 8640	19-11469	10
3.	E3,E4,E9,E10,E15,E16,E21,E22,1.27	IC,DEC 8271	1909615	9
4.	E36	IC,DEC 74H74	1909567	1
5.	E1,E7,E13,E19,E25,E26,E41	IC,DEC 8881	1909705	7
6.	E40,E45,E49	IC,DEC 8242	1909712	3
7.	E46,E47,	IC,DEC 8815	1909713	2
8.	E29	IC,DEC 7416	1909928	1
9.	E5,E17,E23,E33	IC,DEC 74HC4	1909934	4
10.	E11	IC,DEC 8266	1909934	1
11.	E12,E28	IC,DEC 7486	1910011	2
12.	E32	IC,DEC 74197	1910035	1
13.	E43	IC,DEC 7404	1909904	1
14.	E18,E31,E42	IC,DEC 74H00	1909056	3
15.	E35	IC,DEC 74H10	1909057	1
16.	C53,C54	CAP 120PF 100V 5%	1000018	2
17.	C56	CAP 470PF 100V 5%	1000024	1
18.	C50-C52,C57	CAP .68MF 35V 20%	1000067	4
19.	C1--C49,C55	CAP .01 MF 100V 20%	1001610	50
20.	R26	RES, 100 1/4W 5%	1300229	1
21.	R7,R12	RES, 220 1/4W 5%	1300271	2
22.	R6,R9	RES, 330 1/4W 5%	1300295	2
23.	R13-R25	RES, 1K 1/4W 5%	1300365	13
24.	R1-R5,R8,R10,R11	RES, 750 1/4W 5%	1301401	8

COMPONENT PLACEMENT

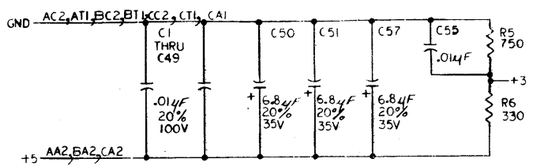


NOTES:

1. DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE, PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM.
2. GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY. EXCEPTIONS ARE:

IC TYPE	GND	+5V
DEC 74H74	PIN 11	PIN 4
DEC 74H50	PIN 11	PIN 4
DEC 74H04	PIN 11	PIN 4
DEC 8271	PIN 8	PIN 16
DEC 8640	PIN 1	PIN 8

3. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS, CAPACITANCE IS IN PICOFARADS. CAPACITORS WITHOUT ANY NOTED VALUES ARE .01 MFD.
4. DEC 8640 REPLACES OBSOLETE DEC 380



PIN NOMENCLATURE

MODULE	LOGIC LOCATION
A	
B	
C	
D	

REVISIONS				
CHK	CHANGE NO	REV		
RL	M7251-00001	D	R.LISEE	6/26/73
RB	M7251-00002	E	R.LISEE	10-26-73

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
KG11-A		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.	M. Pierce	DATE 9/4/71
CHK'D.		DATE 10/19/71
ENG.	R. Lisee	DATE 10-29-71
PROJ. ENG.	R. Lisee	DATE 10-29-71
PROD.		DATE 11/1/71
NEXT HIGHER ASSY		
SCALE	NONE	
SHEET	1 OF 4	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: X-OR & CRC BLOCK CHECK OPTION

SIZE	CODE	NUMBER	REV
D	CS	M7251-Ø-1	E

DIST.

DEC FORM NO DRD 102A

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NOTES:

1. FUNCTION (FUNCTION REG) — DATA BITS

FUNCTION (FUNCTION REG)	DATA BITS
CRC-12 ◇	3 2 1
CRC-16	* 0 0
LRC-8	* 0 /
LRC-16	* 0 /
CRC-CCITT	* 1 /

* ZERO = 8 DATA BITS RIGHT JUSTIFIED
ONE = 16 DATA BITS RIGHT JUSTIFIED
◇ = 6 DATA BITS RIGHT JUSTIFIED

2. DATA FLOW FOR EACH FUNCTION IS NOTED BY A CIRCLED NUMBER AND IS:

LOGIC NOTE	FUNCTION	POLYNOMIAL
①	CRC-CCITT	$X^{16}+X^{12}+X^5+1$
②	CRC-16	$X^{16}+X^{15}+X^2+1$
③	CRC-12	$X^{12}+X^{11}+X^3+X^2+X+1$
④	LRC-8	X^8+1
⑤	LRC-16	$X^{16}+1$

3. SEN = SHIFT ENABLE
DDB = DOUBLE DATA BYTE
CRC I/C = CYCLIC REDUNDANCY CHECK (IBM/CCITT
LRC = LONGITUDINAL REDUNDANCY CHECK)
16 BCC = REFERS TO BCC LENGTH
ONE → 16 BITS
ZERO → 12 BITS (CRC-12)
8 BITS (LRC)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KG11-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

DRN. Margaret Wrightstone DATE 9-22-71
CHK'D DATE
ENG. R. Luce DATE 10-29-71
PROJ. ENG. R. Luce DATE 10-29-71
PROD. DATE 11-1-71
NEXT HIGHER ASSY.
SCALE
SHEET 2 OF 4

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: X-OR & CRC BLOCK CHECK OPTION

SIZE D CODE CS NUMBER M7251-0-1 REV. E
DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100-A

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BUS BQ 7 H (BK2) / BUS BQ 7 H (BL2)
BUS BQ 6 H (BM2) / BUS BQ 6 H (BN2)
BUS BQ 5 H (BP2) / BUS BQ 5 H (BR2)
BUS BQ 4 H (BS2) / BUS BQ 4 H (BT2)

NOTES:
1. SFT = L = PARALLEL ENTER
   SFT = H = SHIFT RIGHT

INI L

L/D SHIFT H — E23 74H04

DONE (1) L

RD DATA REG 8271 E3 / E9 / E15 / E21

CLK

D0 6H — D0 3H — D0 2H — D0 1H — D0 0H

8640 E2 / E8 / E14 / E20

TP (BA1) — 750Ω — +5 — R1

SELECT 2 H (BJ1) — 74H00 E31 — 7416 E29

IN H (BH1)

TP (BB1) — 750Ω — +5 — R2

SELECT ϕ H (BF1) — 74H00 E31 — 7416 E29

D15 L (AD2) — D14 L (AE2) — D13 L (AF2) — D12 L (AH2)

D11 L (AH1) — D10 L (AJ2) — D09 L (AK2) — D08 L (AL2)

D07 L (AM2) — D06 L (AV2) — D05 L (AR2) — D04 L (AV2)

(AT2) — (AU2) — (AR2) — (AS2) — D03 L — D02 L — D01 L — D00 L

8881 E1 / E25 / E7 / E13 / E19 / E26

DONE (1) H — SEN (1) H

DDB (1) H — CRC I/C (1) H

CLEAR BCC L

BCC 17 IN

RD BCC REG 15-12 8271 E4 — BCC MSB — BCC 14 OUT — BCC 13 OUT — BCC 12 OUT

BCC 12 — BCC 13

SHIFT BCC

BCC 10 IN — BCC 11 IN — RD BCC REG 11-8 8271 E10 — BCC 11 OUT — BCC 8 OUT

LRC (1) H

RD BCC REG 7-4 8271 E16 — BCC 6 OUT — BCC 4 OUT

BCC 5 IN

RD BCC REG 3-0 8271 E22 — BCC 1 OUT — BCC LSB

BCC 3 IN — BCC ϕ IN

74H86 E28 — BCC LSB (4) DATA REG

CRC I/C L — 74H04 E23 — 74H00 E18 — LRC (1) L

HIGH FOR LRC-16 LRC AND CCITT

16 BCC (1) H

16 BCC (1) H

HIGH FOR CRC-16, CRC-12 AND LRC-16

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KG11-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 ✓

DRN. Margaret Wanphirnie	DATE 9-28-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 10/5/71	
ENG. R Davis	DATE 10-29-71	TITLE: X-OR & CRC BLOCK CHECK OPTION
PROJ. ENG. R Davis	DATE 10-29-71	
PROD. Paul Fogg	DATE 11-1-71	

MATERIAL — NEXT HIGHER ASSY.
FINISH — SCALE — SHEET 3 OF 4

SIZE D — CODE CS — NUMBER M7251-Ø-1 — REV. E — DIST.

REVISIONS: REV. | CHANGE NO. | CHK.

DEC FORM NO. DEC 105-1

SIZE CODE D CSM7251-Ø-1 REV E

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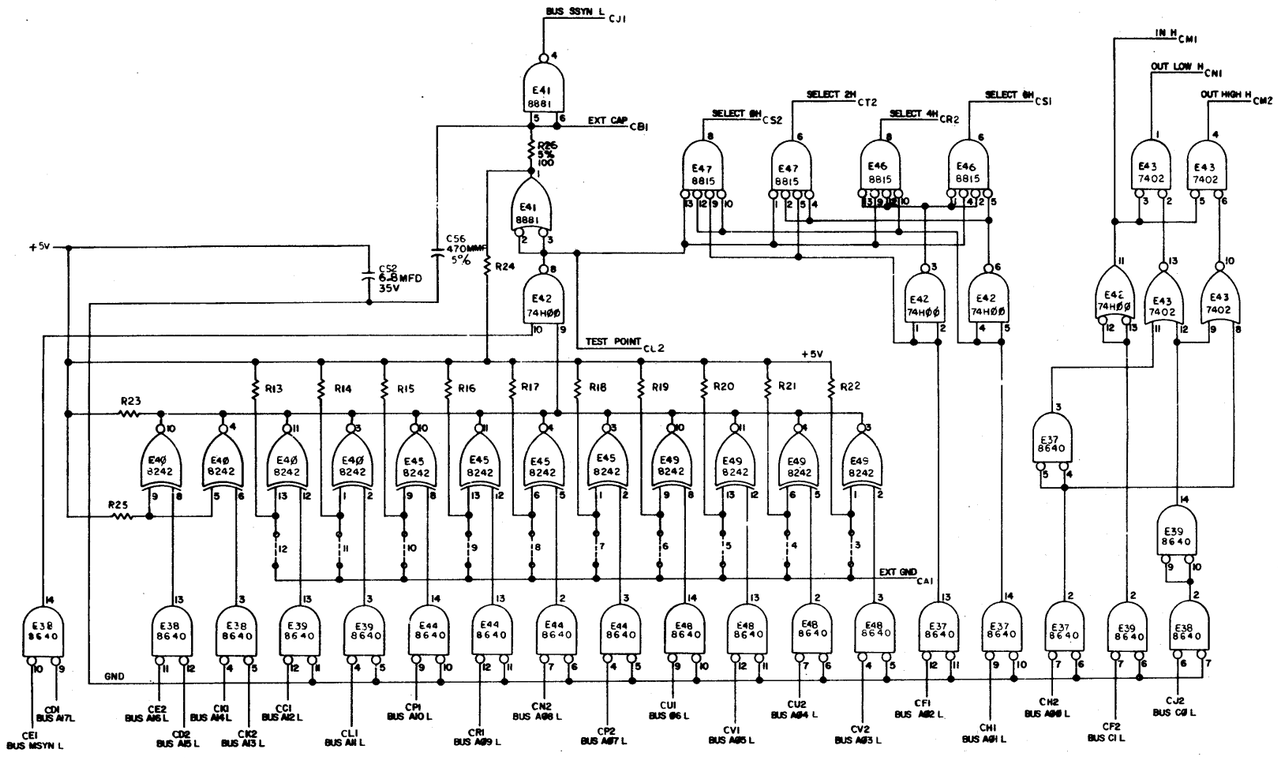

REVISIONS	REV.
CHANGE NO.	
CHK.	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KG11-A		PARTS LIST		

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

DRN. M. Perry	DATE 10/11/71	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. [illegible]	DATE 10-23-71	
ENG. R. Lunn	DATE 10-29-71	TITLE: X-OR & CRC BLOCK CHECK OPTION
PROJ. ENG. R. Lunn	DATE 10-29-71	
MGR. [illegible]	DATE 11-1-71	
NEXT HIGHER ASSY		DRAWING CODE D CS M7251-0-1 REV. E
SCALE		DIST.
SHEET 1 OF 2		

DEC FORM NO. DRD 100

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

	SEQUENCE	
BASIC ASSY (11/4Ø-A)	PDP-1Ø	B-DD-7009711-0
BASIC ASSY (11/4Ø-A)	PDP-1Ø	D-AD-7009711-0-0
BASIC ASSY (11/4Ø-A)	PDP-1Ø(PL)	A-PL-7009711-0-0
CABLE TTY ADAPTER		D-IA-7009717-0-0

THIS IS PRINT SET ☐☐☐☐

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
7009711-1	BASIC ASS'Y(11/40A) PDP-10 115V	X
7009711-2	BASIC ASS'Y(11/40A) PDP-10 230V	X

NOTE: PRINT SETS, MANUALS, AND PROGRAMS FOR THE OPTIONS WHICH ARE CALLED OUT HEREIN ARE PROVIDED WITH THE NEXT HIGHER ASSEMBLY

REVISIONS	DATE	CHG. NO.	REV
	4-23-75	DC76-2	A
Allan Kent 28 APR 75			
	DEC-75	7009711-1	B
Allan Kent 12 Dec 75			

USED ON OPTION/MODEL	
DC76-A TYPE	
DC76-D TYPE	
SHEET 1 OF 7	

DRN. W.HOVEY	DATE 3/8/74	TITLE BASIC ASSY (11/4Ø-A) PDP-1Ø
CHK'D. D. Rood	DATE 3-15-74	
PROJ ENG. Allan Kent	DATE 15 Mar 74	
PROD. R.W. Wales	DATE 3-15-74	SIZE B / CODE DD / NUMBER 7009711-0 / REV B
FIELD SERV. M. Cayer	DATE	DIST

DEC 16-13251-1-0692-1A-R-72

DRB 106

1 — BASIC ASSY(11/4Ø-AC
PDP-1Ø(115V)
D-AD-7009711-1-0
A-PL-7009711-1-0

BASIC ASSY(11/4Ø-AC)
PDP-1Ø(23ØV)
D-AD-7009711-2-0
A-PL-7009711-2-0

2 — BASIC CAB ASSY
19" (H95Ø-AB)
C-PL-7008525-2-0

4 — H95Ø-AB FRAME
W/CASTERS
E-UA-H95Ø-A-0

5 — H952-F LEVELER SET
A-PL-H952-F-Ø
D-DI-H952-Ø-1

6 — H952-D PANEL
FASTENER
A-PL-H952-D-Ø
D-DI-H952-Ø-1

7 — H950-D(R.H.) MTG
PANEL DOOR
D-UA-H95Ø-DA-Ø
D-DI-H95Ø-Ø-1

8 — FAN ASSY (115V)
A-PL-H952-CA-Ø
D-DI-H952-Ø-1

9 — H95Ø-S FILTER
B-UA-H95Ø-SA-Ø
D-DI-H95Ø-Ø-1

10 — H952 FILLER STRIP
REAR
D-UA-H952-GB-Ø
D-DI-H952-Ø-1

11 — POWER SUPPLY H744
E-UA-H744-Ø-Ø
B-DD-H744-Ø

12 — H952-A END PANEL
D-UA-H952-AC-Ø
D-DI-H952-Ø-1

13 — 8K MEMORY WITH
PARITY
A-PL-MF11-LP-Ø
B-DD-MF11-LP

14 — H956-H SHORT DOOR
ASSY
D-UA-H956-HJ-Ø
D-DI-H956-Ø-1

15 — POWER CONTROL 861
(115V)
E-UA-861-C-Ø
B-DD-861-C

POWER CONTROL 861
(23ØV)
E-UA-861-B-0
B-DD-861-B

16 — H95Ø FULL LENGTH
DOOR
D-UA-H95Ø-BC-Ø
D-DI-H95Ø-Ø-1

17 — PANEL INDICATOR
D-IA-7409881-0-0

18 — H956-L PANEL LOGO
D-UA-H956-LA-Ø
D-DI-H956-Ø-1

19 — PANEL INLAY
D-IA-7409224-1-Ø

20 — INDICATOR PANEL
ASSY 19 IN
E-AD-7007189-2-0

21 — BEZEL IND. MACH.
E-IA-7408034-0-0

22 — PANEL INDICATOR
D-IA-7408480-5-0

23 — FAN ASSY (115V)
A-PL-H952-CA-Ø
D-DI-H952-Ø-1

24 — PERIPHERAL MTG PANEL
D-PL-DD11-B-Ø
B-DD-DD11-B

25 — LINE FREQUENCY
CLOCK
A-PL-KW11-L-Ø
D-DD-KW11-L

CONTINUED ON
SHEET 3

TITLE		SIZE	CODE	NUMBER	REV
BASIC ASSY (11/4Ø-A) PDP-1Ø	SHEET 2 OF 7	B	DD	7009711-0	B

CONTINUED FROM SHEET 2

26

BASIC ASSY (PDP11/4Ø)
D-UA-11/4Ø-AK-Ø
A-PL-11/4Ø-AK-Ø

BASIC ASSY
(PDP 11/4Ø)
D-UA-11/4Ø-AL-Ø
A-PL-11/4Ø-AL-Ø

31 KY11-D CONSOLE
A-PL-KY11-D-Ø
B-DD-KY11-D

32 BACK PLANE (MF11-L)
8K MEMORY
A-PL-MF11-L-Ø
B-DD-MF11-L

33 TELETYPE CONTROL
A-PL-DL11-A-Ø
B-DD-DL11-A

34 16K SENSE MOMORY
A-PL-MF11-U
B-DD-MF11-U

27 POWER SUPPLY H742A
E-UA-H742-A-Ø
A-PL-H742-A-Ø

35 H754 +20V REG
E-CS-H754-Ø-Ø

28 MOUNTING BOX ASSY
EXPANDER
E-UA-BA11-FB-Ø
B-DD-BA11-FB

11 POWER SUPPLY H744
E-UA-H744-Ø-Ø
B-DD-H744-Ø

29 KD11-A PROCESSOR
A-PL-KD11-A-Ø
B-DD-KD11-A

30 POWER SUPPLY H745
E-UA-H745-Ø-Ø
B-DD-H745-Ø

TITLE		SIZE	CODE	NUMBER	REV
BASIC ASSY (11/4Ø-A) PDP-1Ø	SHEET 3 OF 7	B	DD	7009711-0	B

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	D-AD-7009711-1-0		4	BASIC ASSY(11/4ØA) PDP-10 115V	
			D-AD-7009711-2-0		4	BASIC ASSY(11/4ØA) PDP-10 230V	
		11	B-DD-H744-0		2	H744 DRAWING DIRECTORY	
		13	B-DD-MF11-LP-Ø		3	MF11-LP DRAWING DIRECTORY	
		15	B-DD-861-Ø		3	861 DRAWING DIRECTORY	
		24	B-DD-DD11-B		3	DD11-B DRAWING DIRECTORY	
		25	B-DD-KW11-L		3	KW11-L DRAWING DIRECTORY	
		26	D-UA-11/40-AC-Ø		6	BASIC ASSY 11/40 115V	
			D-UA-11/40-AD-Ø		6	BASIC ASSY 11/40 230V	
			D-UA-11/40-AE-Ø		6	BASIC ASSY 11/40 115V	
			D-UA-11/40-AF-Ø		6	BASIC ASSY 11/40 230V	
		27	C-CS-H742-Ø-1		1	CIRCUIT SCHEMATIC	
		28	B-DD-BA11-FB		3	BA11-F DRAWING DIRECTORY	
		29	B-DD-KD11-A		3	KD11-A DRAWING DIRECTORY	

ELECTRICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		30	B-DD-H745-Ø		2	H745 DRAWING DIRECTORY	
		31	B-DD-KY11-D		3	KY11-D DRAWING DIRECTORY	
		32	B-DD-MF11-L		3	MF11-L DRAWING DIRECTORY	
		33	B-DD-DL11-A		3	DL11-A DRAWING DIRECTORY	
		34	B-DD-MF11-U		3	16K SENSE MEMORY	
		35	E-CS-H754-Ø-Ø		2	H754+2ØV REGULATOR	

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

TITLE		SIZE	CODE	NUMBER	REV
BASIC ASSY(11/4Ø-A) PDP-1Ø	SHEET 4 OF 7	B	DD	7009711-0	B

CUSTOMER PRINT SET				MFG. SET	MECHANICAL						CUSTOMER PRINT SET				MFG SET	MECHANICAL					
1					FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	1					FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					1	D-AD-7009711-1-0	*	4	BASIC ASSY(11/4Ø-A) PDP-10 115V												
X						A-PL-7009711-1-0	*	4	BASIC ASSY(11/4Ø-A) PDP-10(PL)												
						D-AD-7009711-2-0		4	BASIC ASSY(11/4Ø-A) PDP-10 230V						4	E-UA-H95Ø-AB-Ø			H95Ø-AB FRAME W/CASTERS	
						A-PL-7009711-2-0		4	BASIC ASSY(11/4Ø-A) PDP-10(PL)												
						D-7411583-0-0		1	BEZEL MTG BRKT												
						E-IA-7409305-0-0		1	BEZEL REWORK												
X						D-IA-7009717-0-0	*	1	CABLE TTY ADAPTER												
						C-MD-7409312-0-0		1	BRKT. SHIPPING(BA11-F)												
						C-IA-7409870-0-0		1	BRKT. SHIPPING(IND FNL)						5	A-PL-H952-F-Ø		1	H952-F LEVELER SET	
						C-IA-7410581-0-0		1	BRKT.CABLE HOLD DOWN							D-DI-H952-Ø-1		1	H952 DRAWING INDEX LIST	
						D-IA-7409446-0-0		1	SUPPORT HARNESS												
						B-MD-7409447-0-0		1	PLATE,SUPPORT												
						D-MD-7409445-0-0		1	BRKT.HARNESS SUPPORT												
						E-IA-7008754-0-0		1	HARNESSS POWER EXPANDER												
						E-IA-7009566-0-0		1	POWER HARNESS BOX 21 IN						6	A-PL-H952-D-Ø		1	H952-D PANEL FAST(PL)	
						C-MD-7406707-0-0		1	PLATE TERM STRIP MTG							D-DI-H952-Ø-1		1	H952 DRAWING INDEX LIST	
						C-MD-7408463-4-0		1	COVER,TERM STRIP												
						C-UA-BC08R-Ø6-0		1	BC08R-6 FEET												
															7	D-UA-H950-DA-Ø		1	H950-D MTG PANEL DOOR	
																A-PL-H950-DA-Ø		1	H950-D MTG PANEL DOOR (PL)	
																D-DI-H950-Ø-1		1	H950 DRAWING INDEX LIST	
															8	A-PL-H952-CA-Ø		1	H952-C FAN (PL)	
																D-DI-H952-Ø-1		1	H952 DRAWING INDEX LIST	
					2	C-PL-7008525-2-0		1	BASIC CAB ASSY 19IN(H95Ø-AB)						9	B-UA-H950-SA-Ø		1	H950-S FILTER	
																D-DI-H950-Ø-1		1	H950 DRAWING INDEX LIST	
															10	D-UA-H952-GB-Ø		1	H952-G FILLER STRIP REAR	
																A-PL-H952-GB-Ø		1	H952-G FILLER STRIP REAR(PL)	
																D-DI-H952-Ø-1		1	H952 DRAWING INDEX LIST	

CUSTOMER PRINT SET CODES	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED	TITLE	SHEET	SIZE	CODE	NUMBER	REV
		BASIC ASSY(11/4Ø-A) PDP-1Ø	5 OF 7	B	DD	7009711-0	B

DRB 108

DEC 16-(325)-1062-2B-R972

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MECHANICAL				
		11	E-UA-H744-Ø-Ø		1	H744 POWER SUPPLY	
			B-DD-H744-Ø		2	H744 DRAWING DIRECTORY	
			A-SP-H744-Ø-8		2	MFG SPEC	
		12	D-UA-H952-AC-Ø		2	H952-A END PANEL	
			A-PL-H952-AC-Ø		1	H952-A END PANEL (PL)	
			D-DI-H952-Ø-1		1	H952 DRAWING INDEX LIST	
		13	A-PL-MF11-LP-Ø		1	8K MEM/PARITY (PL)	
			B-DD-MF11-LP		3	MF11-LP DRAWING DIRECTORY	
		14	D-UA-H956-HJ-Ø		4	H956-H SHORT DOOR ASSY	
			A-PL-H956-HJ-Ø		1	H956-H SHORT DOOR ASSY(PL)	
			D-DI-H956-Ø-1		1	H956 DRAWING INDEX LIST	
		15	E-UA-861-C-Ø		1	861 POWER CONTROL(115V)	
			B-DD-861-C		3	861 DRAWING DIRECTORY	
			E-UA-861-B-Ø		1	861 POWER CONTROL (230V)	
			B-DD-861-B		3	861 DRAWING DIRECTORY	
		16	D-UA-H950-BC-Ø		1	H950-B FULL LENGTH DOOR	
			A-PL-H950-BC-Ø		1	H950-B FULL LENGTH DOOR(PL)	
			D-DI-H950-Ø-Ø-1		1	H950 DRAWING INDEX LIST	

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MECHANICAL				
		17	D-IA-7409881-2-0		1	PANEL INDICATOR	
			C-SS-7409881-0-1		1	SILK SCREEN(GRAPE)	
			C-SS-7409881-0-2		1	SILK SCREEN(MAGENTA)	
			C-SS-7409881-0-3		1	SILK SCREEN(BRITE ROSE)	
			C-SS-7409881-0-5		1	SILK SCREEN(BLACK)	
			C-SS-7409881-0-6		1	SILK SCREEN(WHITE)	
		18	D-UA-H956-LA-Ø		1	H956-L PANEL LOGO	
			D-DI-H956-Ø-1		1	H956 DRAWING INDEX LIST	
		19	D-DI-7409224-1-0		1	PANEL INLAY	
			C-SS-7409224-0-1		1	SILK SCREEN(BLUE)	
		20	E-AD-7007189-2-0		1	IND. PANEL ASSY 19IN	
			A-PL-7007189-2-0		1	IND. PANEL ASSY 19IN(PL)	
			E-IA-7408429-0-0		1	PLATE BEZEL MTG	
			C-MD-7407807-0-0		1	SLIDE	
			C-MD-7407820-2-0		1	SUPPORT SLIDE	
			D-MD-7408538-0-0-		1	SUPPORT IMD PANEL	
		21	D-IA-7408034-0-0		1	BEZEL IMD MACH	
			B-MD-7408028-0-0		1	HINGE,IMD BEZEL	
			D-SC-1209836-0-0		1	BEZ L IMD CAST	
		22	D-IA-7408480-5-0		1	PANEL INDICATOR	
			D-SS-7408480-0-5		1	SILK SCREEN (BLACK)	

CUSTOMER PRINT SET CODES		TITLE	SHEET	SIZE	CODE	NUMBER	REV
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED	BASIC ASSY(11/4Ø-A)PDP-1Ø	6 OF 7	B	DD	7009711-0	B

DRB 108

DEC 16-(325)-1062-2B-R972

CUSTOMER PRINT SET	MFG. SET	MECHANICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		23	A-PL-H952-CA-Ø		1	H952-C FAN (PL)	
			D-DI-H952-Ø-1		1	H952 DRAWING INDEX LIST	
		24	A-PL-DD11-B-Ø		1	DD11-B PERIPHERAL MTG PANEL	
			B-DD-DD11-B		3	DD11-B DRAWING DIRECTORY	
		25	A-PL-KW11-L-Ø		1	LINE FREQ. CLOCK(PL)	
			B-DD-KW11-L		3	DRAWING DIRECTORY	
		26	E-IA-7008754-0-0		1	HARNESS POWER (EXPANDER)	
			D-IA-7009103-0-0		1	FIRST MEMORY 11/4Ø POWER HARNESS	
			D-IA-7009046-0-0		1	11/4Ø PROC POWER HARNESS	
			C-IA-7009053-0-0		1	CONS TO POWER CONTROL HARNESS	
			D-UA-11/4Ø-AK-Ø		2	BASIC ASSY 11/4Ø 115V	
			A-PL-11/4Ø-AK-Ø		4	BASIC ASSY 11/4Ø (PL)	
			D-UA-11/4Ø-AL-Ø		6	BASIC ASSY 11/4Ø 230V	
			A-PL-11/4Ø-AL-Ø		4	BASIC ASSY 11/4Ø (PL)	
		27	E-UA-H742-A-Ø		3	H742-A POWER SUPPLY 115V	
			A-PL-H742-A-Ø		3	H742-A POWER SUPPLY (PL)	
		28	E-UA-BA11-FB-Ø			MTG BOX EXPANDER	
			B-DD-BA11-F		3	BA11-F DRAWING DIRECTORY	
		29	A-PL-KD11-A		1	KD11-A PROCESSOR (PL)	
			B-DD-KD11-A		3	KD11-A DRAWING DIRECTORY	

CUSTOMER PRINT SET	MFG SET	MECHANICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		30	E-UA-H745-Ø-Ø		1	H745 POWER SUPPLY	
			B-DD-H745-Ø		2	H745 DRAWING DIRECTORY	
			A-SP-H745-Ø-8		2	MFG SPEC	
		31	A-PL-KY11-D-Ø		1	KY11-D CONSOLE (PL)	
			B-DD-KY11-D		3	KY11-D DRAWING DIRECTORY	
		32	D-UA-MF11-L-Ø		1	MF11-L MEMORY	
			A-PL-MF11-L-Ø		1	MF11-L BK. PLANE 8K MEM PL	
			B-DD-MF11-L		3	MF11-L DRAWING DIRECTORY	
		33	A-PL-DL11-A-Ø		1	TELETYPE CONTROL (PL)	
			B-DD-DL11-A		3	DRAWING DIRECTORY	
		34	D-MU-MF11-U		1	MODULE UTILIZATION (MF11-U)	
			B-DD-MF11-U		3	DRAWING DIRECTORY	
		35	E-CS-H754		2	+20V REGULATOR	

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

TITLE		SIZE	CODE	NUMBER	REV
BASIC ASSY (11/40-A) PDP-10	SHEET 7 OF 7	B	DD	7009711-0	B

DRB 108

DEC 16-(325)-1062-2B-R972

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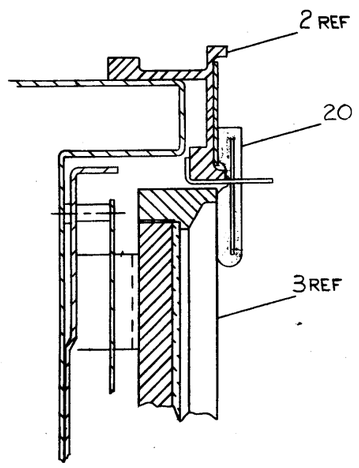
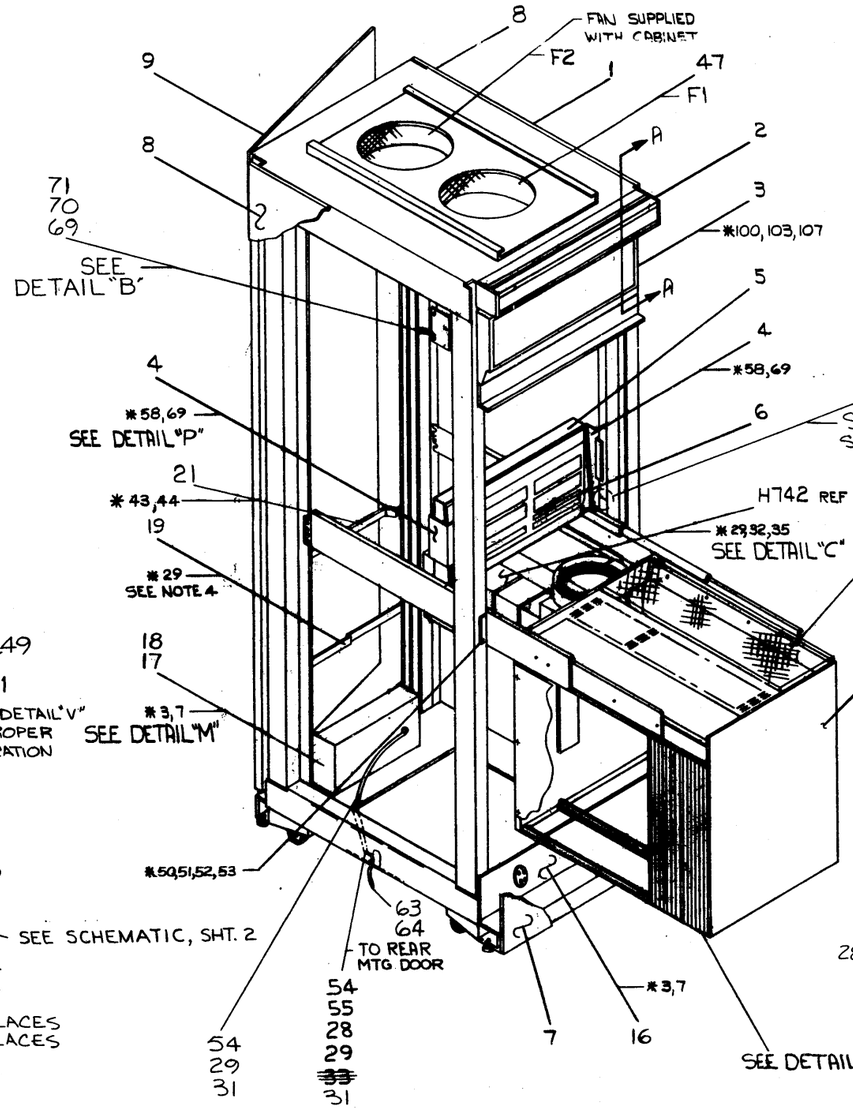
LEGEND	
NUMBER	VARIATION
7009711-1	115V
7009711-2	230V

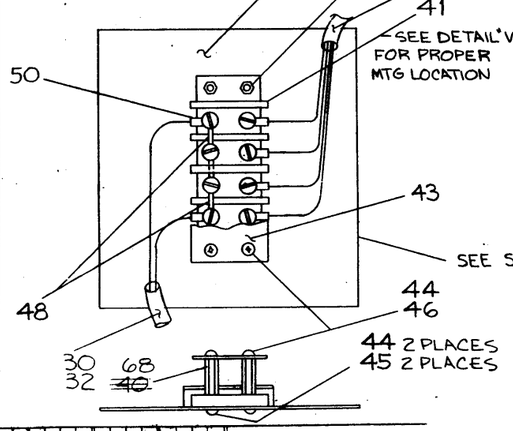
NOTES:
1. FOR DRAWING DIRECTORY REFER TO B-DD-7009711-0.
2. FOR ASSEMBLY INSTRUCTIONS REFER TO D-OC-H950-0-0, D-OC-H952-0-0 & D-OC-H956-0-0
3. SHEETS 8 & 9 ARE "C" SIZE.
4. REMOVE SHIPPING BRK'T AFTER INSTALLATION TO AVOID FOULING OF CABLES.
5. ~~IF CABINET IS SUPPLIED WITH BOTTOM SCREEN, REMOVE SCREEN & RETURN IT TO STOCK ROOM.~~
6. * DENOTES TINNERMAN NUT ITEM#33 LOCATIONS USING MTG. HARDWARE ITEMS#28 AND ITEMS#29.

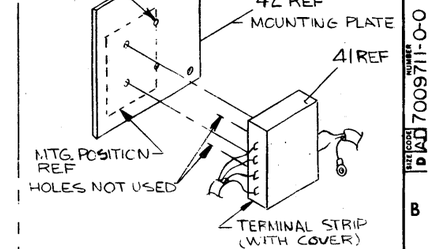


SECTION A-A



VIEW M-M





DETAIL "V"
MTG OF TERMINAL STRIP ON PLATE

REVISIONS	CHK	CHANGE NO.	REV.
		DC76-00002	A
		7009711-00001	B
		7009711-MR002	C

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DC76		PARTS LIST		

SEE A-PL-7009711-0-0

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.	William H. Hough	12-10-73
CHKD.		2-1-74
ENG.	Allen Kent	15 Mar 74
PROJ. ENG.	Allen Kent	15 Mar 74
MOD.		3-15-74

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASIC ASSY 11/40 A, PDP 10

NEXT HIGHER ASSY. D-UA-DC76-0-0

SIZE	CODE	NUMBER	REV.
D	AD	7009711-0-0	C

SCALE NONE
SHEET 1 OF 10
DIST.

DEC FORM NO DRD 109-A

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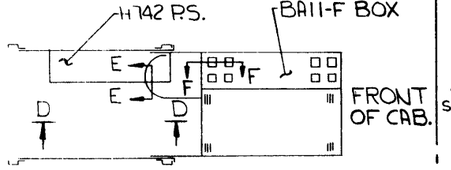
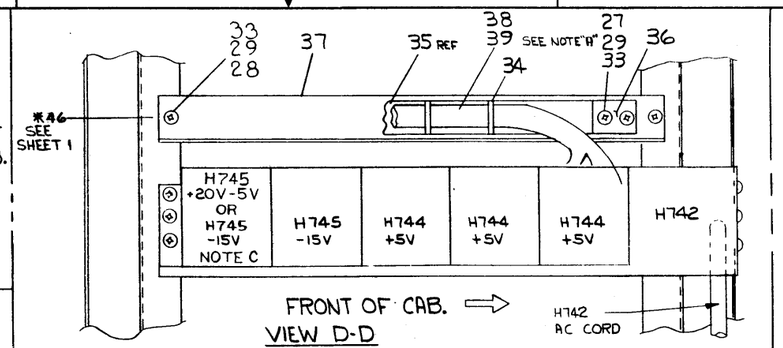
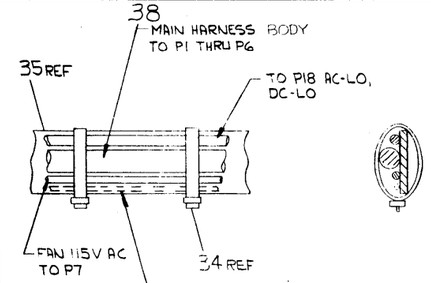


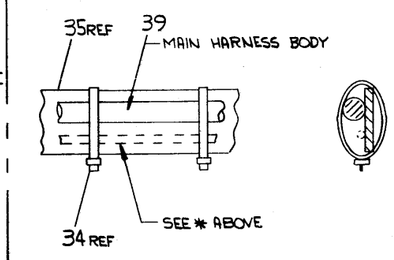
DETAIL "C"
TOP VIEW



VIEW D-D



SECTION E-E
SHOWING ITEM 38



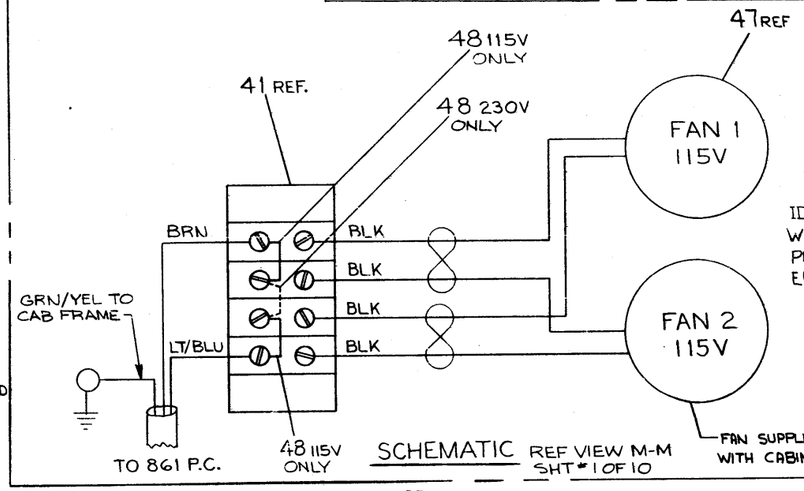
SECTION E-E
SHOWING ITEM 39

NOTES:

A. THE 7008754 HARNESS IS USED WHEN THE BA11-F BOX IS EQUIPED WITH 5409944 EXPANDER BOX POWER DISTRIBUTION BOARDS (9-PIN PLUGS) I.E. 11/40 SERIAL 5999 OR BELOW. THE 7009566 HARNESS IS USED WHEN THE BA11-F BOX IS EQUIPED WITH 5410590 SYSTEM UNIT POWER DISTRIBUTION BOARDS (15 PIN & 6 PIN PLUGS) I.E. 11/40 SERIAL 6000 OR ABOVE.

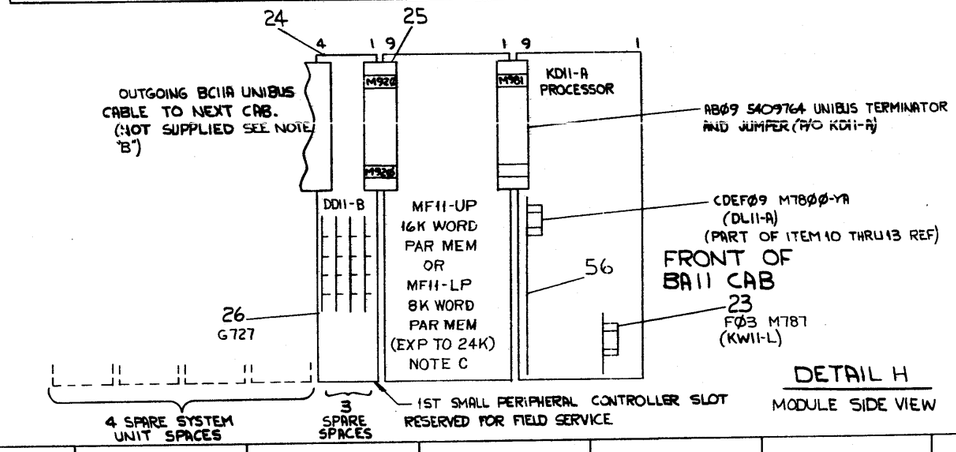
B. REMOVE M930 UNIBUS TERMINATOR FROM SLOT AB09 OF THE MF11-LP/L. INSTALL IN SLOT AB04 OF THE DD11-B WHEN THIS ASSY IS STOCKED OR SHIPPED ALONE. INSTALL AT THE END OF THE UNIBUS, WHEN THIS ASSY IS PART OF A LARGER SYSTEM.

C. MF11-LP CORE MEMORY SYSTEM UNIT AND H754 (+20,-5 VOLT) REGULATOR USED ON LATER MODELS OF THIS ASSY; UNITS BUILT TO REV B OF THIS DWG. MF11-LP CORE MEMORY AND H745 (-15 VOLT) REGULATOR USED ON EARLY MODELS OF THIS ASSY DWG; UNITS BUILT TO REV. A AND EARLIER REVISIONS OF THIS DWG.

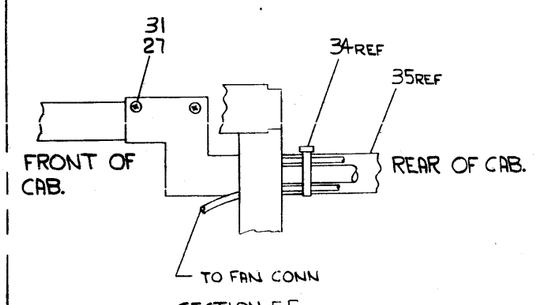


SCHEMATIC REF VIEW M-M SHT # 1 OF 10

IDENTIFY ENDS OF WIRE WITH BRADY MARKERS BEFORE PUTTING ON SLEEVING, FOR EASE OF WIRING.



DETAIL H
MODULE SIDE VIEW



SECTION F-F

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
BASIC ASSY 11/40 A, PDP 10	D	AD	7009711-0-0	C
SCALE ~	SHEET 2 OF 10	DIST		

MK

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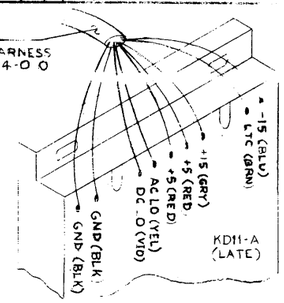
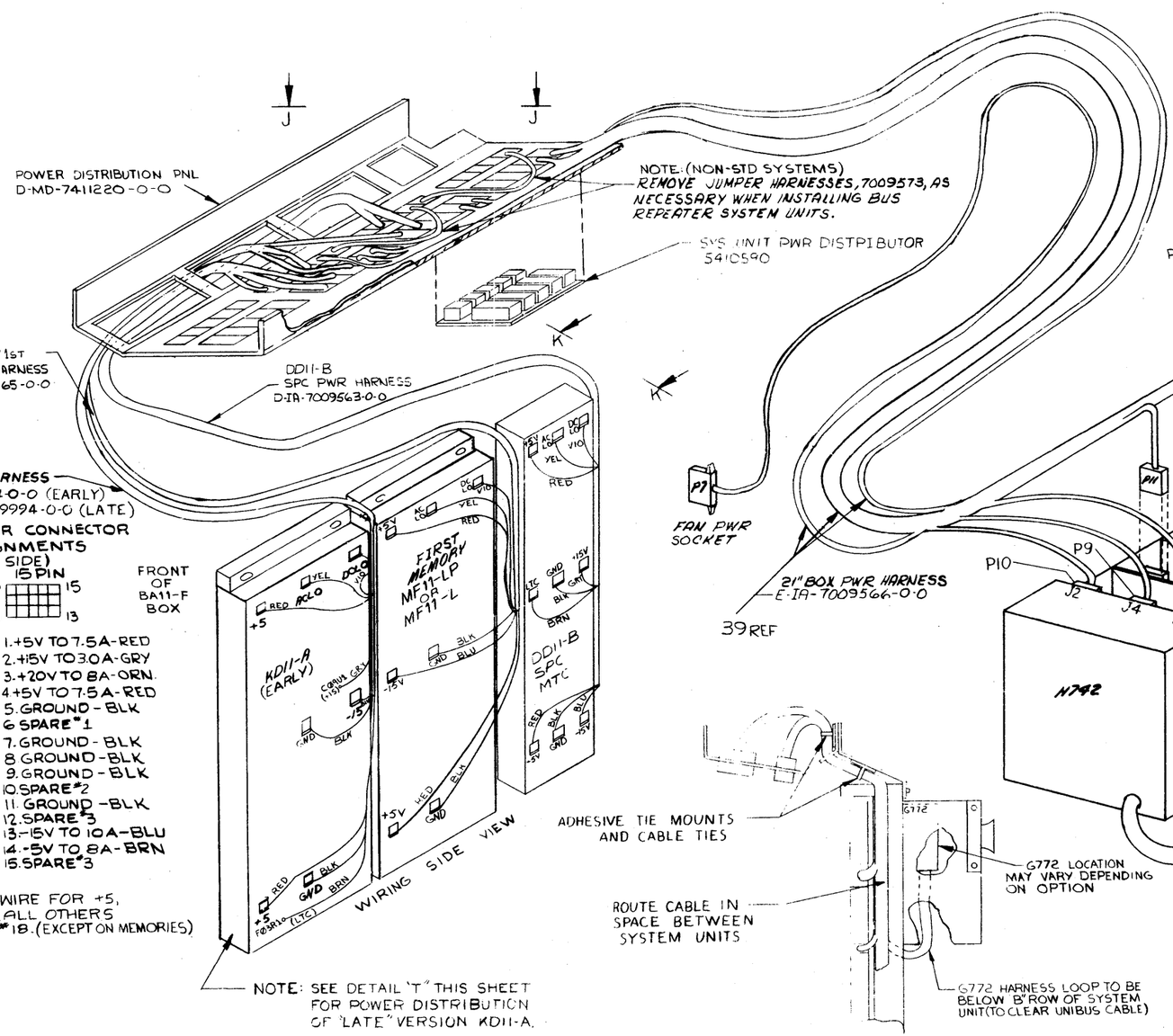


DETAIL "T"



VIEW K-K

NEW PWR DISTRIBUTION VERSION FOR 11/40 SYSTEM SERIAL NUMBERS 6,000 AND GREATER (EARLY MODELS OF THIS ASSY)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DC76		PARTS LIST		

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

		DATE
DRN	K Comeau	4-16-74
CHK'D	D Dingee	1-17-74
ENG	Allan Kent	5-10-74
PROJ ENG	Allan Kent	5-14-74
PROD	R W Weeks	5-15-74

NEXT HIGHER ASSY.
SCALE
SHEET 3 OF 10

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASIC ASS'Y
11/40 A, FD=10

SIZE	CODE	NUMBER	REV
D	AD	7009711-0-0	J

DIST.

REVISIONS	REV.	CHANGE NO.	CHK

DEC FORM NO DRD 100-A

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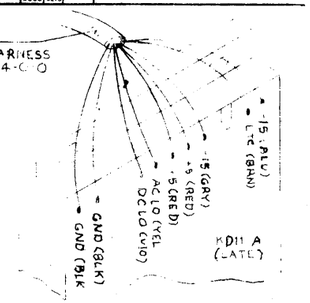
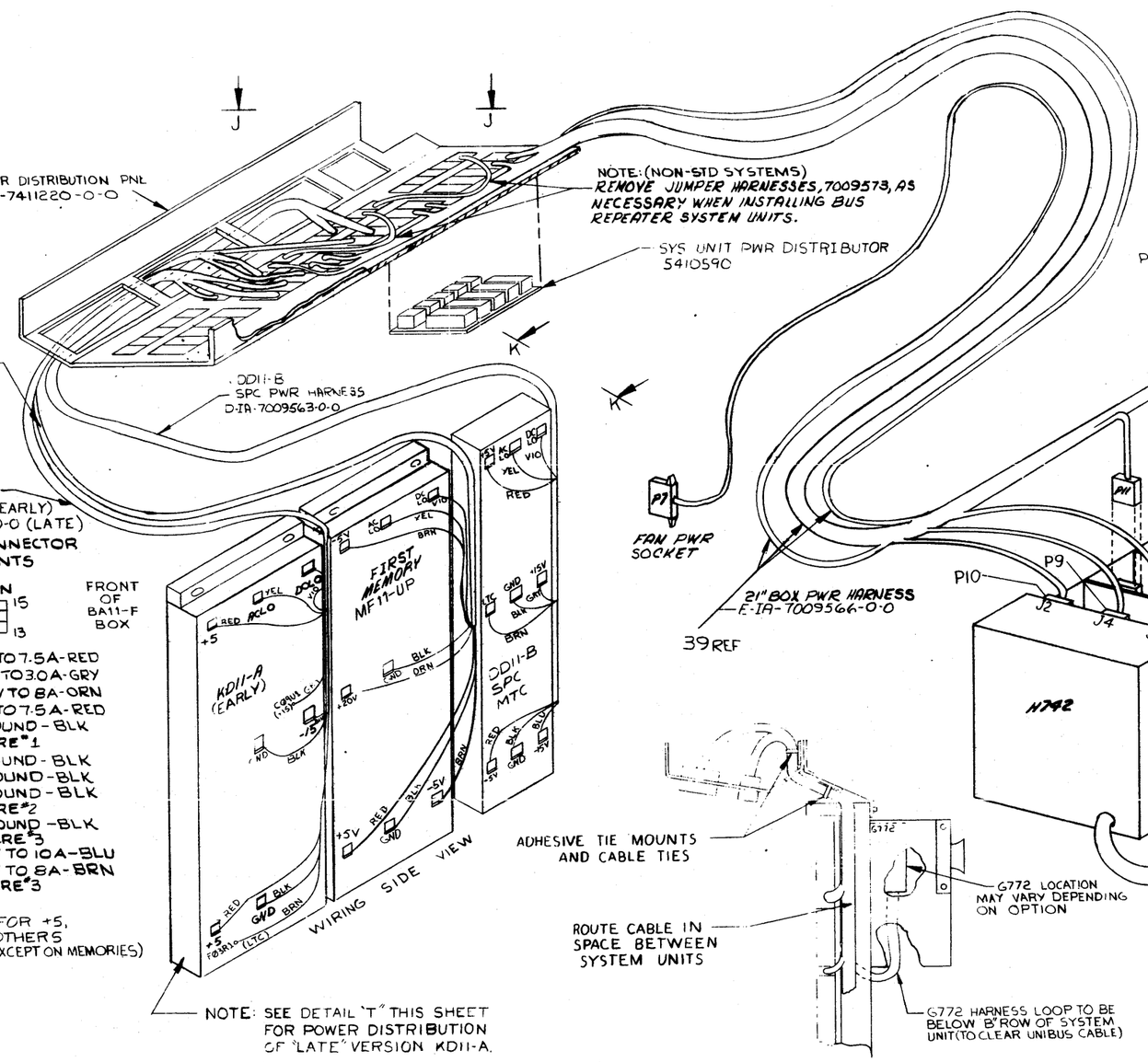
0-0-1176007 | 7009711-0-0 | D | 3000 7715 | 2

KD11-A PWR DIST HARNESS D IA-7009994-C 0



DETAIL "T"



VIEW K-K

NEW PWR DISTRIBUTION VERSION FOR 11/40 SYSTEM SERIAL NUMBERS 6,000 AND GREATER (LATER MODELS OF THIS ASSY)

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
DC76		PARTS LIST		

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

		DATE
DRN	K Comeau	1-16-74
CH'D	Darcy	1-17-74
ENG	Allen Kent	5-10-74
PROJ ENG	Allen Kent	5-10-74
PROD	Bill Weeks	5-15-74

NEXT HIGHER ASSY.
SCALE
SHEET 9 OF 10

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASIC ASS'Y 11/40 A, PDP 10

SIZE	CODE	NUMBER	REV
D	AD	7009711-0-0	C

DIST

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. DBD 189-A

mr

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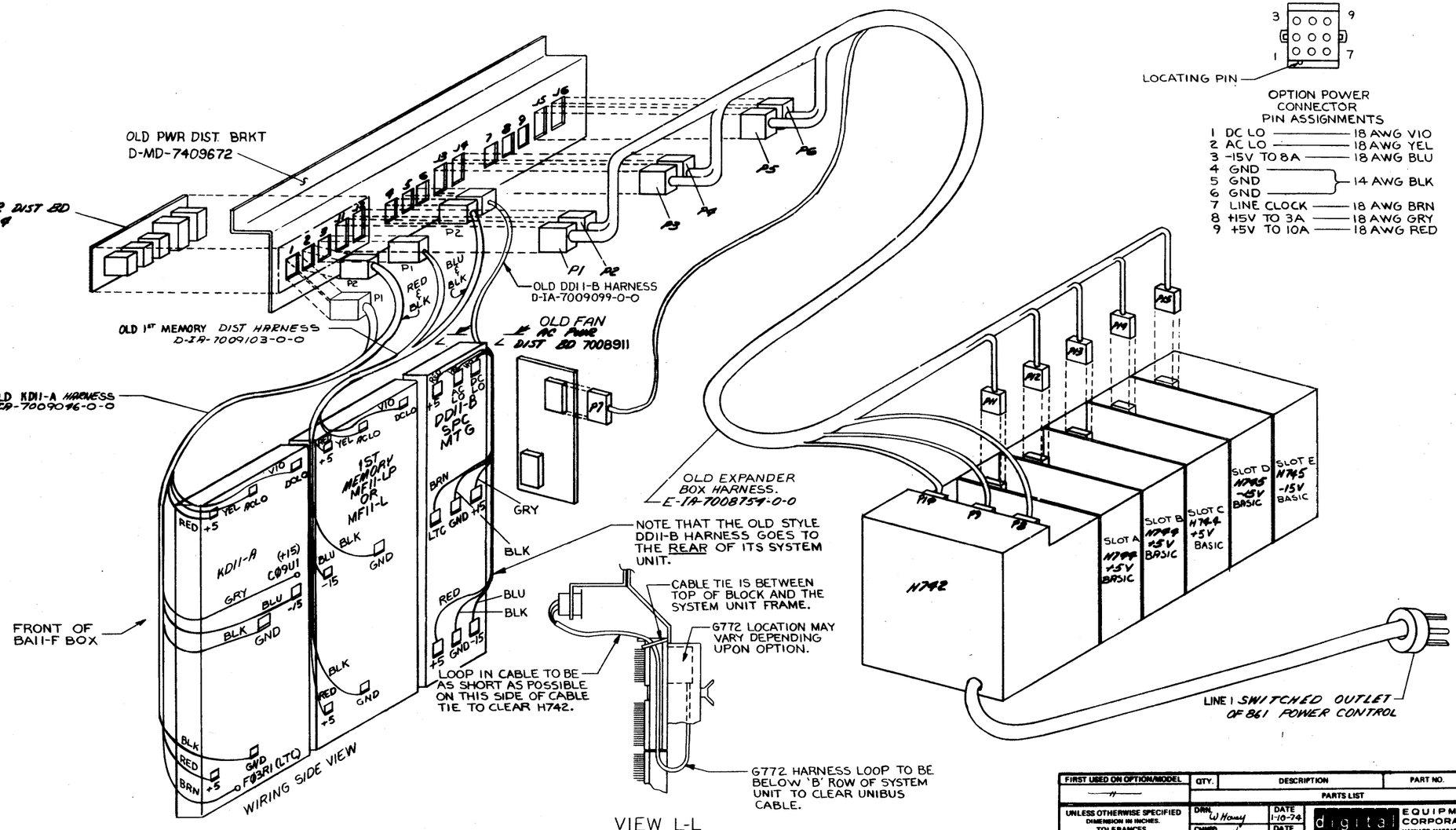
WIRING SIDE

OPTION POWER CONNECTOR PIN ASSIGNMENTS

1	DC LO	18 AWG VIO
2	AC LO	18 AWG YEL
3	-15V TO 8A	18 AWG BLU
4	GND	14 AWG BLK
5	GND	
6	GND	
7	LINE CLOCK	18 AWG BRN
8	+15V TO 3A	18 AWG GRY
9	+5V TO 10A	18 AWG RED



OLD PWR DISTRIBUTION VERSION FOR 11/40
SYSTEM SERIAL NUMBERS 5999 AND LOWER.
(EARLY MODELS OF THIS ASSEMBLY)

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

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

DRN. W Haney	DATE 1-10-74	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD. William Hay	DATE 1-17-74	
ENG. Mac Kent	DATE 6 Mar 74	TITLE: BASIC ASSY 11/40 A, PDP 10
ENG. MGR. Mac Kent	DATE 15 Mar 74	
QUAL. Bob Wade	DATE 3-15-74	

NEXT HIGHER ASSY.
SCALE
SHEET 5 OF 10

SIZE	CODE	NUMBER	REV.
D	AD	7009711-0-0	C

DIST.

REVISIONS		
REV.	CHANGE NO.	CHK

DEC FORM NO DRD 100-A

MR

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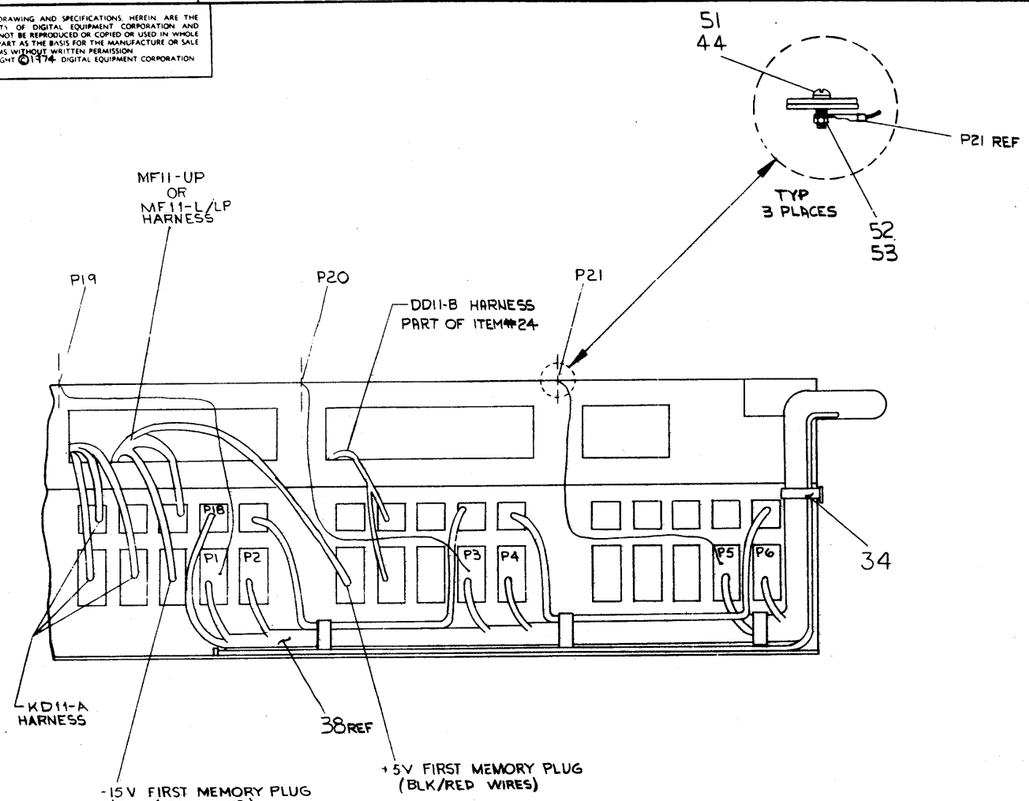
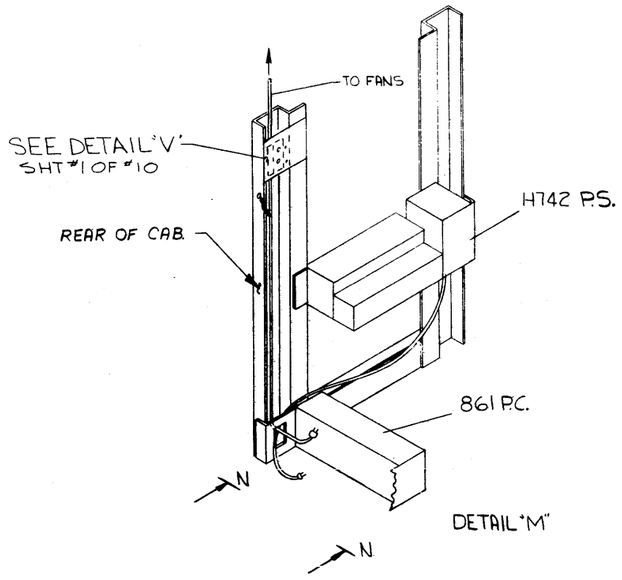
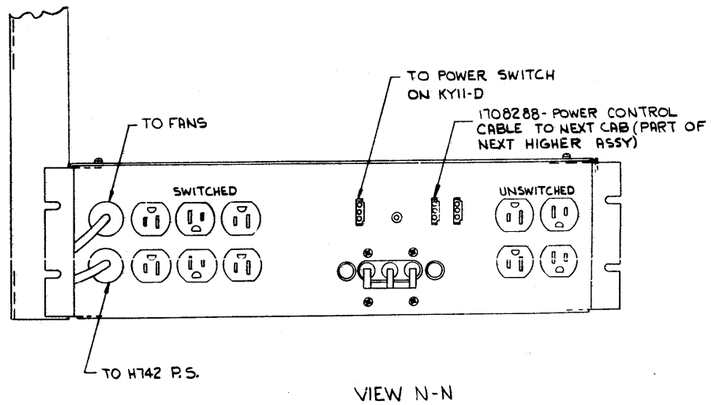


VIEW J-J
(ENLARGED VIEW)

EXCEPT AS NOTED,
ALL PARTS SHOWN
ARE PROVIDED AS PART
OF ITEM#12,13 (11/40-A)



DETAIL "M"



VIEW N-N

REVISIONS		
CHK	CHANGE NO	REV.

TITLE BASIC ASSY 11/40 A, PDP 10		SIZE D	CODE AD	NUMBER 7009711-0-0 REV. C
SCALE	SHEET 6 OF 10	DIST.		

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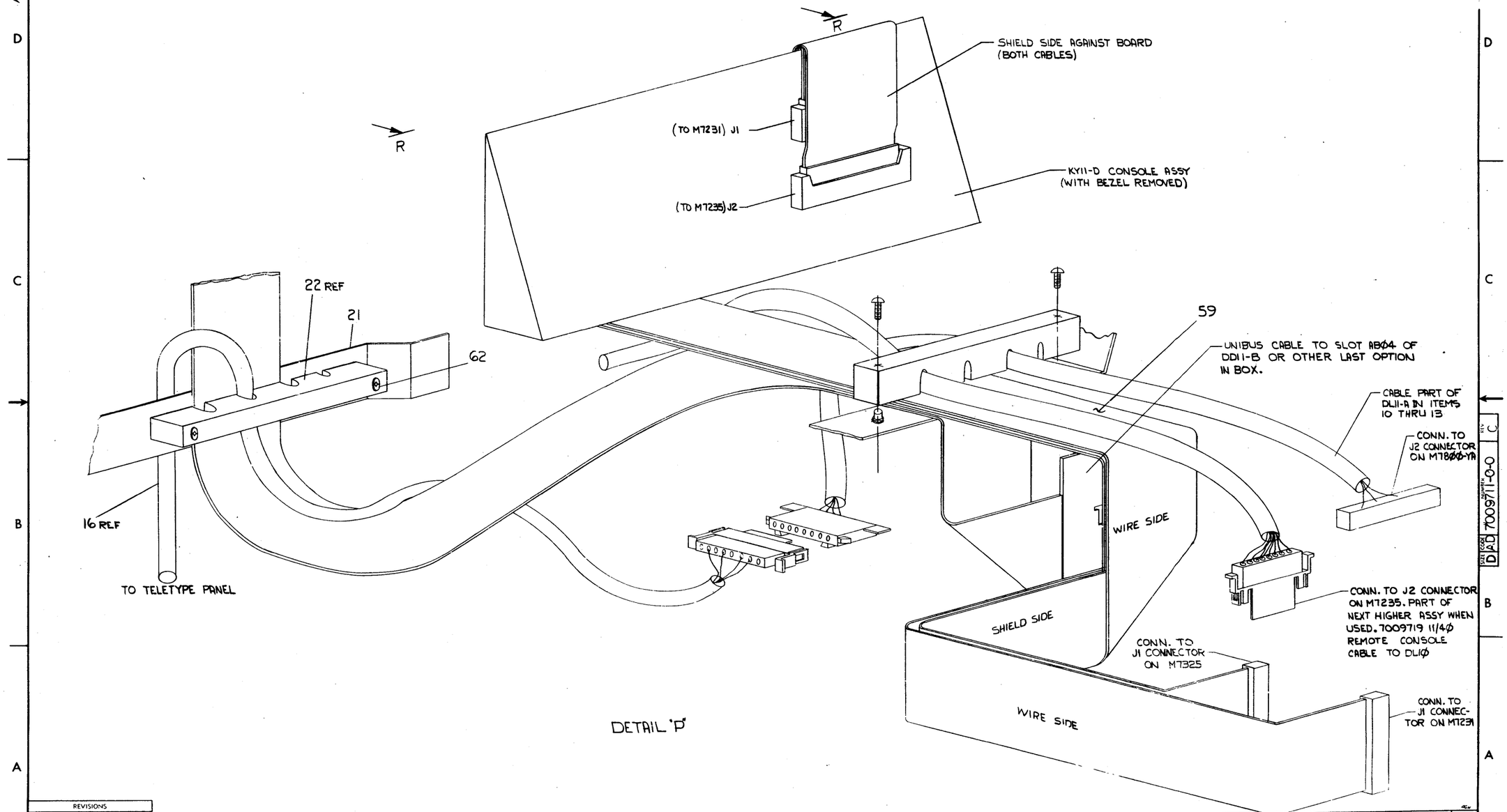

DETAIL 'P'

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
BASIC ASSY 11/4Ø A, MDP 1Ø	D	AD	7009711-0-0	C
SCALE —	SHEET 7 OF 10		DIST.	

DEC FORM NO 080 37

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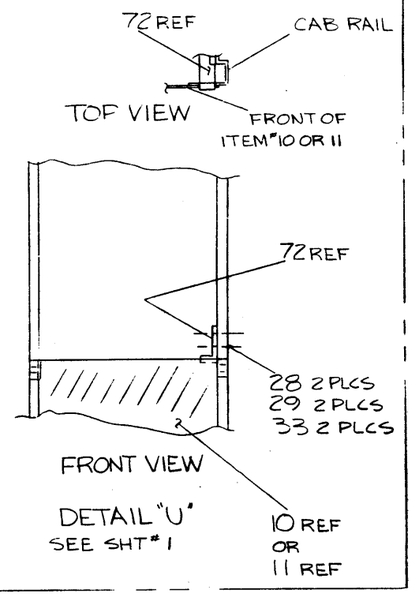
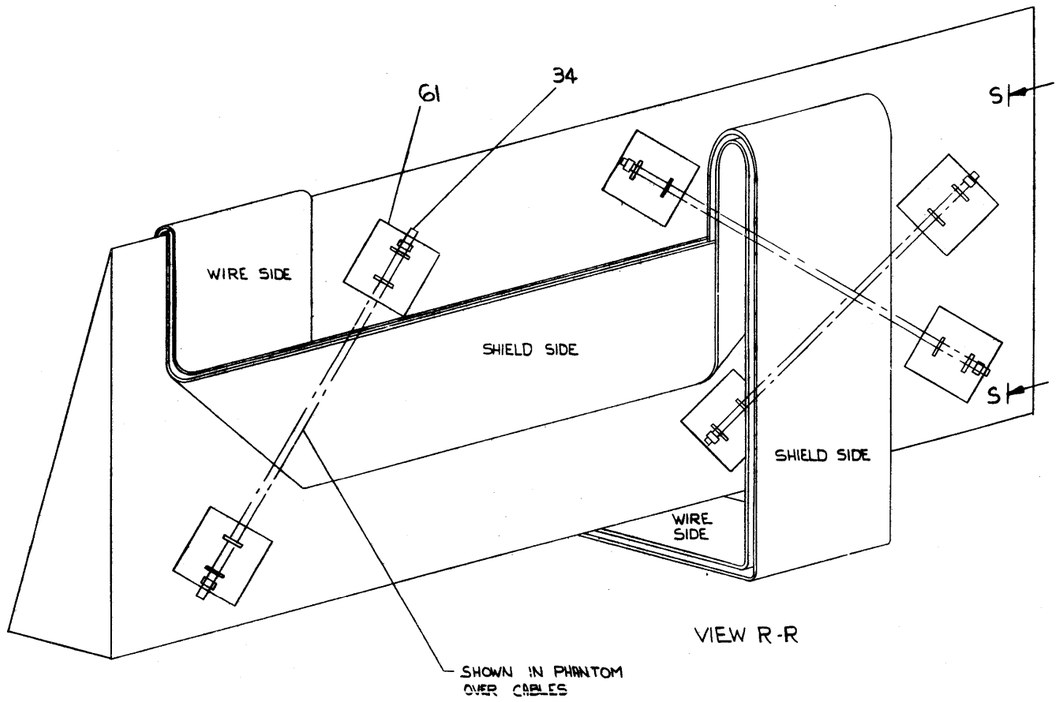
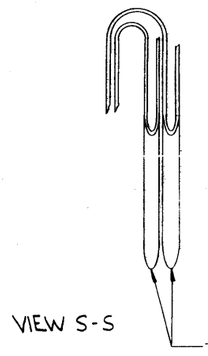




VIEW R-R



VIEW S-S

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE BASIC ASSY 11/40 A, PDP 10		SIZE D	CODE AD	NUMBER 7009711-0-0 REV. C
SCALE	SHEET 3 OF 10	DIST.		

DEC FORM NO 1980 137

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KD11-A 11/40 PROCESSOR
M7231 (CS REV B ETCH REV C) DATA PATHS ABCDEF04

```
NO  KT11-D  OPTION (K1-7)  W1   IN
NO  KT11-D  OPTION (K1-7)  W2   IN TOWARD PINS
NO  KJ11-A  OPTION         }   OUT TOWARD HANDLE
                           {W3  IN
NO  KT11-D  OPTION (K1-7)  {W4  IN
NO  KT11-D  OPTION (K1-8)  W5   IN
NO  KT11-D  OPTION (K1-8)  W6   IN
NO  KT11-D  OPTION (K1-9)  W7   IN
NO  KT11-D  OPTION (K1-9)  W8   IN
NO  KT11-D  OPTION (K1-8)  W9   IN
NO  KT11-D  OPTION (K1-6)  W10  OUT TOWARD PINS
                           }IN TOWARD HANDLE
```

BOARD IS NORMALLY RECEIVED IN CORRECT CONFIGURATION.

M7232 MICRO WORD ABCDEF03
(ETCH REV D CS REV D)
NO JUMPERS
CABLE SOCKETS J1,J2, & J3
ARE EMPTY -- NO EXTENDED
ORDER CODE OPTIONS

M7233 IR DECODE ABCDEF05
(ETCH REV C CS REV C)

```
NO  KE11-E  OPTION (K3-8)  W1  IN
NO  ESALUM INPUT (K3-8)    W2  IN
```

BOARD IS NORMALLY RECEIVED IN CORRECT CONFIGURATION

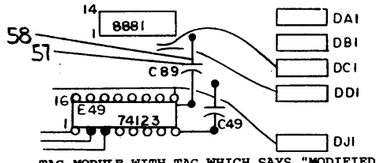
M7234 TIMING ABCDEF07
(ETCH REV D CS REV D)

```
NO  KJ11-A  OPTION (K4-4)  W1  OUT TOWARD PINS
                           }IN TOWARD HANDLE
NO  KT11-D  OPTION (K4-4)  W2  IN TOWARD PINS
                           }OUT TOWARD HANDLE
                           {W3  IN
NOT ON XOR TESTER (K4-2)   {W4  IN
```

NORMALLY RECEIVED IN CORRECT CONFIGURATION

```
PARITY MEMORY (K4-3)       W5 *{IN FOR NO PARITY MEMORIES
                               }OUT FOR ONE OR MORE PARITY MEMORIES
TIMING ADJUSTMENTS (K4-2)  S1   NOT NORMALLY CHANGED
```

SEE CIRCUIT SCHEMATIC
*DOES NOT EXIST ON ETCH REV C OR EARLIER
NOTE: M7234 ETCH REV D OR LATER IS REQUIRED FOR PARITY MEMORY
BUS TIMEOUT 50μs NOMINAL 37μs MINIMUM
REPLACE C89 1200pF ±5% MICA CAPACITOR WITH 5000pF ±20% CERAMIC CAPACITOR
DEC P/N 001765. SLEEVE LEADS.



TAG MODULE WITH TAG WHICH SAYS "MODIFIED MODULE--C89 CHANGED TO 5000pF FOR 50μs BUS TIMEOUT FOR DL10".

M7235 STATUS ABCDEF06
(CS REV C ETCH REV D)

```
NO KJ11-A OPTION  (K5-4)  W1  OUT TOWARD PINS
                          }IN TOWARD HANDLE
                          {IN TOWARD PINS
POWER FAIL                BIT 2   W2  {OUT TOWARD HANDLE
   VECTOR                             {OUT TOWARD PINS
24 STD                    BIT 3   W3  {IN TOWARD HANDLE
   8                                  {IN TOWARD PINS
"1"=IN TOWARD PINS        BIT 4   W4  {OUT TOWARD HANDLE   NORMALLY
   OUT TOWARD HANDLE                  {OUT TOWARD PINS     RECEIVED
                          BIT 5   W5  {IN TOWARD HANDLE    IN CORRECT
"0"=OUT TOWARD PINS       BIT 6   W6  {IN TOWARD HANDLE    FIGURATION
   IN TOWARD HANDLE                   {OUT TOWARD PINS
                          BIT 7   W7  {IN TOWARD HANDLE
PARITY MEMORY (K5-5)              W8  {IN FOR NO PARITY MEMORIES
                                      {OUT FOR ONE OR MORE PARITY MEMORIES
```

KW11-L LINE CLOCK (M787)

```
                REGISTER  INT. VECTOR PRIORITY
CLOCK STATUS (LKS) 777546    100    BR6
  REG.          (FIXED BACKPLANE WIRING)
```

KD11-A BACKPLANE
REMOVE WIRE FROM
F03R2 TO F03V2
(BG 6 H) TO INSTALL CLOCK

PC11 HIGH SPEED READER/PUNCH
(NOT PART OF STANDARD DC76 CONFIGURATION)
INSTALL BR4 PRIORITY PLUG 54-08776
(NORMALLY SUPPLIED)

```
JUMPERS
                A3 OUT
REGISTER        A4 IN   }5
ADDRESSES       A5 OUT
                A6 OUT
 777550         A7 IN   }5
 IN FOR "0"     A8 OUT
OUT FOR "1"     A9 OUT
                A10 OUT }7
                A11 OUT
                A12 OUT }7
VECTOR          V3 IN
ADDRESSES       V4 IN   }7
 0770           V5 IN
OUT FOR "0"     V6 OUT
 IN FOR "1"     V7 OUT  }0
                V8 OUT
NPR SPEEDUP     N1 IN     EXCEPT WHEN 11/15 (KC11) OR
                          11/20 (KA11) PROCESSOR WITHOUT
                          KH11 OPTION IS USED. THEN OUT.
```

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DC76		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx = .005, .xx = .02, .x = .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √

MATERIAL —
FINISH —

DRN. W. Hoey	DATE	6-1-74
CHK'D. William Henry	DATE	6-4-74
ENG. Allan Kent	DATE	15 Mar 74
PROJ. ENG. Allen Kent	DATE	6 Mar 74
PROD. [illegible]	DATE	6-15-74

NEXT HIGHER ASSY.
D-UA-DC76-0-0
SCALE —
SHEET 9 OF 10

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
JUMPER SHEET
11/40 A, PDP10
ASSY

SIZE	CODE	NUMBER	REV.
C	AD	7009711-0-0	C

DIST.

SIZE C CODE AD NUMBER 7009711-0-0 REV C

DEC FORM NO DRC 111

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DL11-A CONSOLE TTY (M7800-YA)

RCVR STATUS	(RCSR)	777560	60	BR4
RCVR DATA	(RBVF)	777562		
TRANS STATUS	(XCSR)	777564	64	BR4
TRANS DATA	(XBUF)	777566		

JUMPERS (REF A-SP-DL11-0-2)

ADDRESS	
A10	OUT
A9	OUT
A8	OUT
A7	IN
A6	OUT
A5	OUT
A4	OUT
A3	IN

VECTOR		PRIORITY PLUG
		BR4
V8	OUT	5408776-0-0
V7	OUT	
V6	OUT	
V5	IN	
V4	IN	
V3	OUT	

OTHERS		
EIA REQ TO SEND	J1	DONT'T CARE
FORCE BUSY	J2	OUT
REQ TO SEND		
CONTROL	J3	DON'T CARE
EIA DATA LEADS		
ONLY	J4	DON'T CARE
BREAK	J5	OUT
DATA SET		
INTERRUPTS	J6	OUT
DATA SET BITS	J7	OUT
ERROR BITS	J8	OUT
SPECIAL NPR	N1	IN EXCEPT IN 11/15 & 11/20 WITHOUT KH11

DATA FORMAT

8 BITS	NB2	OUT
	NB1	OUT
NO PARITY	NP	OUT
	EPS	DON'T CARE
TWO STOP BITS	2SB	OUT
	J9	OUT
	J10	IN
	J11	OUT
110 BAUD	SPEED GROUP 1	
	CRYSTAL=844.8KHZ DEC P.N. 1810245-1* ITEM 56	
	SWITCH POSITION 3	

* USE A OR C CUT CRYSTALS ONLY.
DO NOT USE CRYSTALS MARKED NE-6D

MF11-L OR -LP MEMORY
MM11-L OR -LP

G231

8K STACKS	J3	OUT*
	J4	IN *
CURRENT TEST LOOPS	J5	IN *
	J6	IN *
REFERENCE SUPPLY	J1	ADJUSTED IN*
	J2	MEMORY TEST DO NOT CHANGE

(REF D-BD-MM11-S-2 OR B-BD-MM11-LP-2
*NO CHANGE NORMALLY REQUIRED

G109 OR G110
PARITY NON PARITY

8K STACKS	W5	IN *
	W9	OUT *
	W10	IN *
1st 8K ADDRESSES	A17	W2 IN
	A16	W3 IN
	A15	W4 IN
	A14	W6 IN
2nd 8K ADDRESSES	A17	W2 IN
	A16	W3 IN
	A15	W4 IN
	A14	W6 OUT
NO INTERLEAVING	W8	IN * } STRAIGHT ACCROSS
	W7	IN * }
NO WRITE PROTECT	W11	OUT *
MSEL TEST POINT	W1	IN *

* NO CHANGE NORMALLY REQUIRED

M7259 PARITY CHECKER
REF B-BD-MF11-LP-13
D-CS-M7259-0-1

CSR ADDRESS OF 1st MF11-LP 772100	IN FOR "0"	A04	W1	IN
		A03	W2	IN
	OUT FOR "1"	A02	W3	IN
		A01	W4	IN
LONG TIMING CAPACITOR			W5	OUT
NOT MM11-V MEMORY			W6	OUT
DON'T HANG BUS ON PAR ERR			W7	IN
PC2 SSYN DLY (1) L				
R1 ADJUST TO SPEC SEE 'CS'				

NORMALLY RECEIVED IN CORRECT CONFIGURATION

THE FOLLOWING ECO'S OR INDICATED REVISIONS OR HIGHER ARE REQUIRED IN THE DC76 (FOR PARITY MEMORY)
KD11-A ECOs #E0005 WL REV D (13 ADDS/DELETES)
& #C0006

M7234 ECO	#E0003	CS REV D	ETCH REV D
M7235 ECO	#00002	CS REV C	ETCH REV

MF11-U/UP MEMORY
G235 X-Y DRIVE MODULE (LOC A-F-5,6)
JUMPERS W1 thru W7 are FACTORY ADJUSTED. DO NOT MAKE ANY CHANGES AT SYSTEM TEST OR IN FIELD. RETURN ANY DEFECTIVE MODULE FOR REPAIR OR REPLACEMENT.

M8293 16K UNIBUS TIMING (LOC C-F 09)
ADDRESS DEVICE SELECTION (NON INTERLEAVED)

START ADDRESS (OCTAL)	CORE BANK (OCTAL)	JUMPER W3 (A17)	W4 (A16)	CONVERSION W5 (A15)	W6 (A14)	W7 (A13)
000000	0	IN	IN	IN	IN	IN
100000	1	IN	IN	OUT	IN	IN

NORMALLY RECEIVED WITH ALL JUMPERS IN AND SET UP FOR NON-INTERLEAVED OPERATION. FOR DIFFERENT START ADDRESSES SEE DEC MAINTENANCE MANUAL DEC-11-HMFMA-#-D pgs 2-16 TABLE 2-4.

M7259 PARITY CHECK MODULE

PARITY REG ADDRESS OCTAL	CORE BANK	JUMPER W1	W2	CONVERSION W3	W4
772100	0	IN	IN	IN	IN
772104	1	IN	IN	OUT	IN

R16 PCL SSYN DLY (L) ADJUSTMENT SET FOR 135 NSEC. SEE pp 5-8 & 5-9 OF MAINT. MANUAL DEC-11-HCMFMA-#-D

REVISIONS		
REV	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DC76		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx = .005, .xx = .02, .x = .1 | ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √
MATERIAL —
FINISH —

DRN. W. Hoey	DATE	1-16-74
CHK'D. William Hoey	DATE	1-17-74
ENG. Allan Kent	DATE	15 Mar 74
PROJ. ENG. Allan Kent	DATE	15 Mar 74
PROD. S. B. Weeks	DATE	3-15-74
NEXT HIGHER ASSY.		
D-UA-DC76-0-0		
SCALE —		
SHEET 10 OF 10		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE JUMPER SHEET 11/40 A, PDP10 ASSY

SIZE	CODE	NUMBER	REV.
C	AD	7009711-0-0	C

DIST.

DEC FORM NO. DRC 111

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Bill Hovey	CHECKED W Hovey	SECTION
DATE 1-21-74	DATE 2-12-74	1
ENG Allan Kent	PROD D E Wecks	ISSUED SECT.
DATE 15 March 74	DATE 3-15-74	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION 7009711-1 (115V)	7009711-2 (230V)
1	C-PL-7008525-2-0	BASIC CAB ASSY H950-AB	1	1
2	D-UA-H956-LA-0	PANEL,LOGO H956-LA (PDP-10 BLUE)	1	1
3	E-AD-7007189-2-0	INDICATOR PANEL ASSY 19 IN (BLANK)	1	1
4	D-MD-7411583-0-0	BEZEL MOUNTING BRKT	2	2
5	E-IA-7409305-2-0	BEZEL REWORK	1	1
6	D-IA-7409881-2-0	PANEL,INDICATOR (PDP-11/40)	1	1
7	D-UA-H956-HJ-0	H956 SHORT DOOR ASSY (57.75 IN BLUE)	1*	1*
8	D-UA-H952-AC-0	H952 END PANEL (GREY #68)	2*	2*
9	D-UA-H950-BC-0	FULL DOOR (BLASI BLUE)	1*	1*
10	D-UA-11/40-AK-0	BASIC ASSY 11/40 (16K WITH PARITY 115V)	1	-
11	D-UA-11/40-AL-0	BASIC ASSY 11/40 (16K WITH PARITY 230V)	-	1
~~12~~	~~D-UA-11/40-AC-0~~	~~BASIC ASSY 11/40 (8K W/O PARITY 115V)~~	~~1#~~	-
~~13~~	~~D-UA-11/40-AD-0~~	~~BASIC ASSY 11/40 (8K W/O PARITY 230V)~~	-	~~1#~~
~~14~~	~~A-PL-MF11-LP-0~~	~~8K MEMORY WITH PARITY~~	~~1#~~	~~1#~~
15	E-UA-H744-0-0	REGULATOR +5V (SEE %)	AR	AR
16	D-IA-7009717-0-0	CABLE,TELETYPE ADAPTER	1	1
17	D-UA-861-C-0	POWER CONTROL 115 V-1 PHASE	1	-
18	D-UA-861-B-0	POWER CONTROL 230 V-1 PHASE	-	1
19	C-MD-7409312-0-0	BRACKET SHIPPING (BA11-F)	1	1
20	C-IA-7409870-0-0	BRACKET SHIPPING (INDICATOR PANEL)	1	1
21	C-IA-7410581-0-0	BRACKET,CABLE HOLD-DOWN	1	1
22	D-PS-1211215-0-0	CABLE CLAMP AND STRAP	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
BASIC ASSY(11/40-A) PDP-10	D-AD-7009711-0-0	A	PL	7009711-0-0	C	7009711 MR002
	SHEET 1 OF 5	DIST.				

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

MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Bill Hovey	CHECKED W Hovey	SECTION
DATE 1-21-74	DATE 2-12-74	1
ENG Allan Kent	PROD D E Wecks	ISSUED SECT.
DATE 15 March 74	DATE 3-15-74	1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION 7009711-1 (115V)	7009711-2 (230V)
23	A-PL-KW11-L-0	LINE FREQUENCY CLOCK	1	1
24	A-PL-DD11-B-0	SMALL PERIPHERAL MTG PANEL (11/40)	1	1
25	M920	UNIBUS JUMPER ASSY	1$	1$
26	G727	GRANT CONTINUITY BOARD	4$	4$
27	9006073-1	SCREW,PHL PAN HD #10-32 X .50 LG	4	4
28	9006074-1	SCREW,PHL PAN HD #10-32 X .62 LG	AR	AR
29	9007651	WASHER,EXT TOOTH LOCK #10	AR	AR
30	1700015-9	POWER CORD,3 COND #18 NEMA (9 FT) 5-15 P	1	-
31	9006565	NUT,KEPS #10-32	6	6
32	1700016-9	POWER CORD,3 COND #18 NEMA (9 FT) 6-15 P	-	1
33	9007786	NUT,TINNERMAN #10-32	AR	AR
34	9007880	CABLE TIE,NYLON SST-1.5M	AR	AR
35	D-IA-7409446-0-0	SUPPORT HARNESS	1	1
36	B-MD-7409447-0-0	PLATE,SUPPORT	1	1
37	D-MD-7409445-0-0	BRACKET,HARNESS SUPPORT	1	1
38	E-IA-7008754-0-0	HARNESS,POWER EXPANDER (REF PART OF ITEM #12 & 13)	1&	1&
39	E-IA-7009566-0-0	POWER HARNESS BOX,21 IN(REF PART OF ITEM 12 & 13)	1&	1&
~~40~~	~~9006857~~	~~SPACER,HEX #6-32 X .62 LG~~	~~4~~	~~4~~
41	9006899	TERM STRIP (4 CONTACT)	1	1
42	C-MD-7407607-0-0	PLATE,TERM STRIP MTG	1	1
43	C-MD-7408463-4-0	COVER,TERM STRIP	1	1
44	9006633	WASHER,INT TOOTH LOCK #6	6	6

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
BASIC ASSY (11/40-A) PDP-10	D-AD-7009711-0-0	A	PL	7009711-0-0	C	
	SHEET 2 OF 5	DIST.				

DEC FORM DEC 16 (325)-1031 N870

MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY BILL HOVEY	CHECKED W. Hovey	SECTION
DATE 1/21/74	DATE 2-6-74	1
ENG Allan Kent	PROD B.D. Weeks	ISSUED SECT.
DATE 15 March 74	DATE 3-15-74	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION 7009711-1 (115V)	7009711-2 (230V)
45	9006026-1	SCREW, PHL PAN HD #6-32 X .75 LG	2	2
46	9006022-1	SCREW, PHL PAN HD #6-32 X .38 LG	4	4
47	D-UA-H952-CA-0	FAN ASSY 115V CARAVEL	1	1
48	9009002	JUMPER CINCH 141 J	2	1
49	9107246	TUBING, 1/2 IN. BLACK	AR	AR
50	9007930	CONN, SOLDERLESS #6 HOLE #18-22 AWG (RED)	6	6
51	9006025-1	SCREW, PHL PAN HD 6-32 X .62 LG	3	3
52	9006666	WASHER, FLAT #6	3	3
53	9006558	NUT, HEX #6-32	3	3
54	1205724-00	GROUND STRAP 740F-34-44	1	1
55	9006568	NUT, KEPS 5/16-18	1	1
~~56~~	~~1810245-1~~	~~CRYSTAL 844 .8MHZ~~	~~1+~~	~~1+~~
57	1001765	CAPACITOR, CERAMIC 5000pF ± 20%	1	1
58	9107256-09	TUBING #22, THINWALL (WHT)	A/R	A/R
59	C-UA-BC08R-06	BC08R-6 FEET	2¢	2¢
60	1209340-00	8 PIN MATE-N-LOK FEMALE	2	2
61	9008264	TIE WRAP MOUNT	6	6
62	9008905-1	SCREW, PHL PAN HD #8-32 X 1 1/8 lg	2	2
63	9008888	TERM, BURNDY #QA4C-B7 (FOR #4 AWG)	2	2
64	9107674	#4 AWG	AR	AR
65	9008264	MOUNT, CABLE TIE ADHESIVE BACK	AR	AR
66	9007880	CABLE TIE SST 1.5 M	AR	AR

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
BASIC ASSY (11/40 A) PDP-10	D-AD-7009711-0-0	A	PL	7009711-0-0	C	
	SHEET 3 OF 5	DIST				

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

MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY BILL HOVEY	CHECKED W. HOVEY	SECTION
DATE 1-21-74	DATE 2-12-74	1
ENG ALLAN KENT	PROD B. D. WEEKS	ISSUED SECT.
DATE 3-15-74	DATE 3-15-74	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION 7009711-1 (115V)	7009711-2 (230V)
67	1810245-1	CRYSTAL 1.152MHZ	1+	1+
68	9006851-00	SPACER, HEX #6-32x.50LG	4	4
69	3612680-00	DECAL, GROUND	1	1
70	3610267-00	LABEL, HIGH VOLTAGE	1	1
71	A-DC-7406789-00	DECAL, PWR. MARKING	1	1
72	C-MD-7418889-1-0	BRACKET, LOCKING	1	1
73	D-MD-7420396-0-0	SCREEN	1	1
74	9006999-00	CONN. SOLD. #10 HOLE FOR 18-22 AWG	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
BASIC ASSY (11/40-A) PDP-10	D-AD-7009711-0-0	A	PL	7009711-0-0	C	
	SHEET 4 OF 5	DIST				

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

MR

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* End panels and doors are normally not supplied with this assy but at the next higher assy. Supply these items only when this assy itself is ordered by customer.

~~# Use items 12 and 14 if item 1Ø is not available for 115 V. Use items 13 and 14 if item 11 is not available for 23Ø V. In this case remove the MR11-L from the 11/4Ø-AC or 11/4Ø-AD and return it to the stock room for credit.~~

% If 11/4Ø assy is supplied with only two H744 power supplies a third one must be added in slot "C" of the H742.

$ Items 25 and 26 (M92Ø and G727) are normally supplied with the DD11-B item #24.

& The 7008754 harness is used when the BA11-F box is equiped with 5409944 expander box power distribution boards (9-pin plugs) I.E. 11/4Ø serial 5999 or below. The 7009566 harness is used when the BA11-F box is equiped with 5410590 system unit power distribution boards (15-pin and 6-pin plugs)I.E. 11/4Ø's serial 6ØØØ or above.

+ Use A or C cut Crystals only. Do not use crystals marked NE-6D. Use item 67 for LA36 CTY or later models of this assy.

¢ The 6 foot BCØ8R's are required when the 11/4Ø is supplied with 3 foot cables (after ECO #KY11D-00002).

REV C | SIZE A | CODE PL | NUMBER 7009711-0-0

REVISIONS	REV.	CHANGE NO.	CHK

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. B.HOVEY	DATE 1-21-74	
CHK'D. W. Long	DATE 2-6-74	
ENG. Allan Kent	DATE 15 May 74	
PROJ. ENG. Allan Kent	DATE 15 May 74	
PROD. B.H. Wade	DATE 3-15-74	
FIRST USED ON		
SCALE		
SHEET 5 OF 5		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
BASIC ASSY
(11/4Ø-A) PDP-1Ø

SIZE	CODE	NUMBER	REV.
A	PL	7009711-0-0	C

DIST.

NK

DEC 16-(325)-1080-N572
DRA 100

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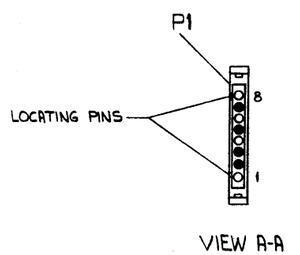
DIGITAL EQUIP. CORP

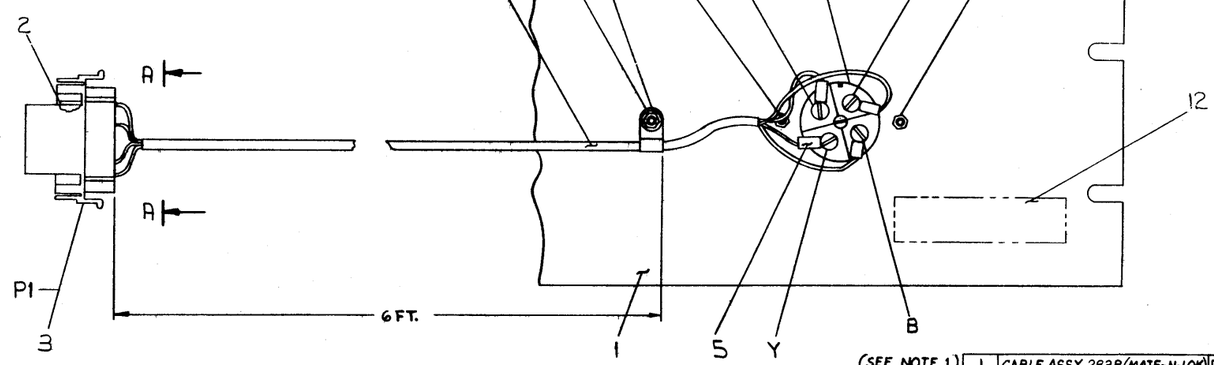
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	SIGNAL
10	22	GRN	J1-G	ITEM 5	P1-7	ITEM 2	KEYBOARD +
10	22	RED	J1-R	ITEM 5	P1-3	ITEM 2	KEYBOARD -
10	22	BLK	J1-B	ITEM 5	P1-5	ITEM 2	PRINTER +
10	22	WHT	J1-Y	ITEM 5	P1-2	ITEM 2	PRINTER -

NOTES:
1. USE ITEM #13 TO CONNECT A TERMINAL WITH STANDARD MATE-N-LOK CONNECTOR TO ITEM #4. ASSEMBLE WITH ITEM #13 CONNECTED TO ITEM #4.



VIEW A-A
WIRING SIDE



(SEE NOTE 1)

ITEM NO.	QTY.	DESCRIPTION	PART NO.
13	1	CABLE ASSY, 283B (MATE-N-LOK)	D-IA-7014490-2-0
12	1	LABEL, PRODUCTION	9009255
11	2	SCREW, PHL FLAT HD 6-32×5/16	9006021-2
10	A/R	CABLE, 4 COND	9107706
9	1	CABLE CLAMP 1/8 ID	9007079
8	1	WASHER, FLAT	9006653
7	3	NUT, KEPS 6-32	9006560
6	1	SCREW, PHL PAN HD 6-32×7/16	9006023-1
5	4	TERMINAL, SOLDERLESS #34142	9006781
4	1	CONN, 548A-50	1205857-3
3	1	HSG, CONNECTOR 8 PIN	1209340-01
2	4	PIN, CONN. MALE	1209378-1
1	1	TELETYPE ADAPTER PANEL	C-MD-7411609-0-0

PARTS LIST

FIRST USED ON OPTION/MODEL: DC76

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

DRN. William Howard DATE 12-19-73
CHK'D. E. A. Read DATE 1-9-74
ENG. Paul H. Allen DATE 2-15-74
PROJ. ENG. Allen Kent DATE 2/6/74
PROD. S. Williams DATE 2/4/74
NEXT HIGHER ASSY. D-AD-7009711-0-0
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CABLE, TELETYPE ADAPTER

SIZE D | CODE IA | NUMBER 7009717-0-0 | REV. B | DIST.

REVISIONS	CHG.	CHANGE NO.	REV.
		7009717-0000	A
		7009717-MR002	B

PROVIDENT 1-7-74
S. HOLMES 1-15-74

DEC FORM NO DRD 188-A

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WIRE TABLE

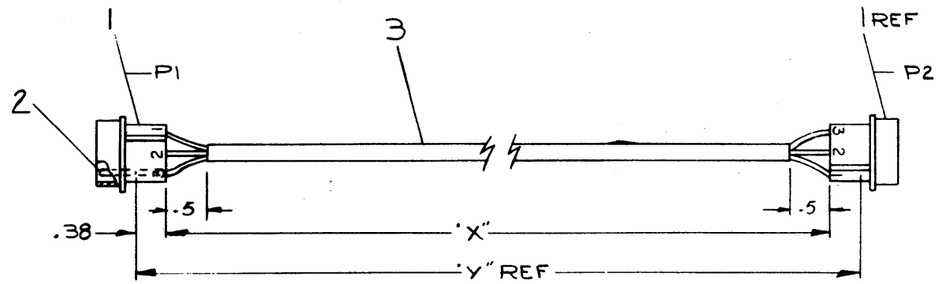
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
3	22	RED	P1-1	2	P2-1	2
3	22	BLK	P1-2	2	P2-2	2
3	22	GRN	P1-3	2	P2-3	2

LEGEND

NUMBER	DIM 'X' VARIATION	DIM 'Y' (PRECUT) REF
7008288-3F	3FT. 6 IN ± 1 IN.	3FT. 6.8 IN ± 1 IN.
7008288-8F	8FT. 6 IN ± 2 IN.	8FT. 6.8 IN ± 2 IN.
7008288-06	6FT. ± 2 IN.	6FT. 0.8 IN ± 2 IN.
7008288-12	12FT. ± 3 IN.	12FT. 0.8 IN ± 3 IN.
7008288-05	5FT. ± 1 IN.	5FT. 0.8 IN ± 2 IN.
7008288-10	10FT. ± 2 IN.	10FT. 0.8 IN ± 3 IN.
7008288-15	15FT. ± 3 IN.	15FT. 0.8 IN ± 3 IN.
7008288-08	8FT. ± 2 IN	8FT. 0.8 IN ± 2 IN.
7008288-30	30FT. ± 7 IN	30FT. 0.8 IN ± 7 IN.
7008288-40	40FT. ± 10 IN.	40FT. 0.8 IN ± 10 IN

NOTES:

~~1. THE REMAINING BLK WIRE IS TO BE CUT BACK AT JACKET (BOTH ENDS.)~~



REVISIONS CHK	CHANGE NO.	REV.	
	7008288-00001	A	R. BURTON 12-15-72
RB	7008288-00002	B	D. LEWIS 7-1-74
RB	7008288-00003	C	B. MINOR 3-27-75
RB	7008288-00004	D	J. PROVIDENT 10-10-75
RB	7008288-00005	E	F. DOLL 5-MAR-76
RB	7008288-00006	F	J. MCINTYRE 23-APR-76
JC	7012401-00003	H	I. MORRIS 24-MAY-77

QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	WIRE, 3 COND #22 AWG	9107756	3
6	PIN MALE #60620-1	1209378-03	2
2	PIN HOUSING #1-480305-0	1209351-03	1

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP/11

UNLESS OTHERWISE SPECIFIED

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

MATERIAL: SEE PARTS LIST

FINISH: —

DRN.	J. Flanders	DATE 3/22/71
CHK'D	D. Lewis	DATE 3-31-71
ENG	K. Blair	DATE 4-7-71
PROJ. ENG	K. Blair	DATE 4-7-71
PROD.	Call	DATE 4-12-71

NEXT HIGHER ASSY: D-UA-RK02-0-0

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CABLE ASSY

SIZE	CODE	NUMBER	REV.
C	IA	7008288-0-0	H

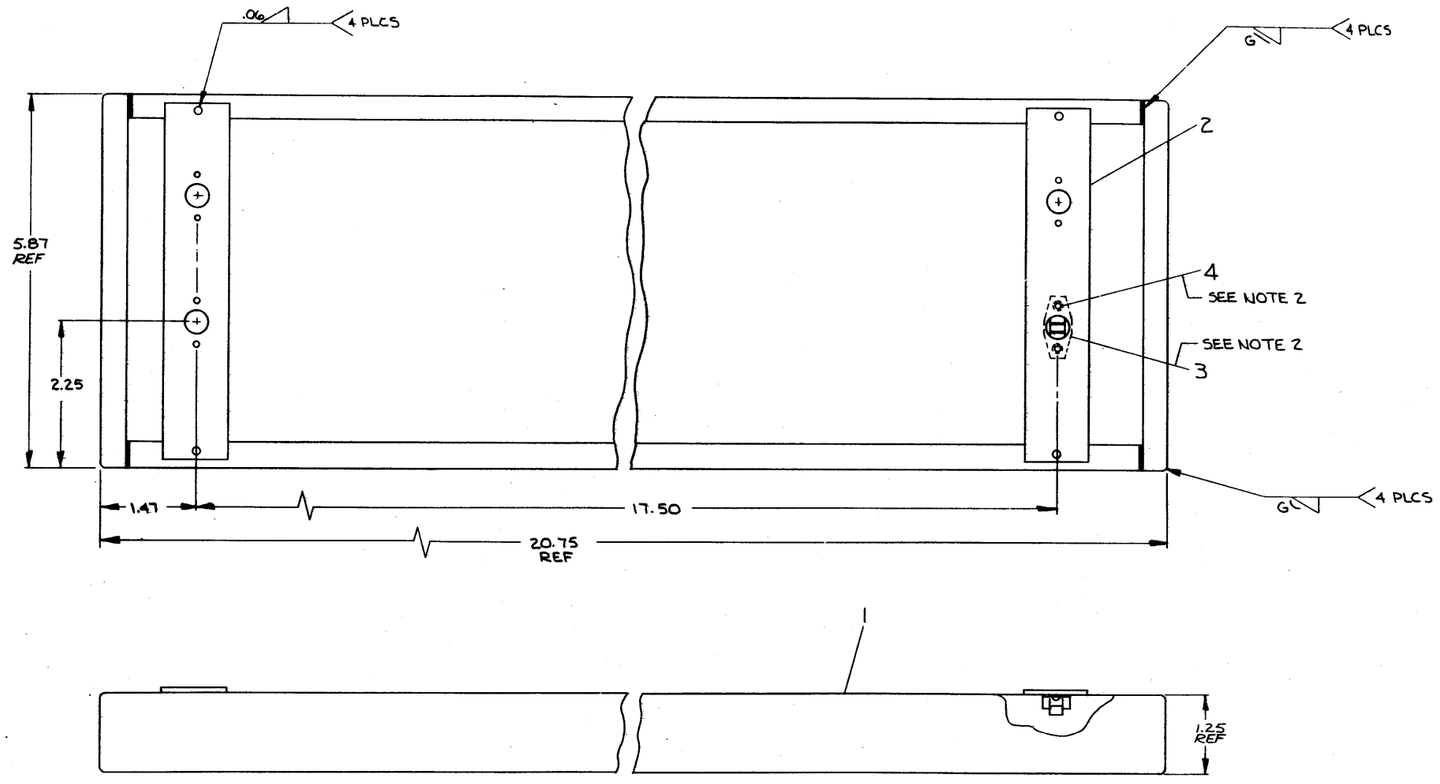
DIST.

FORM NO. A

SIZE C CODE IA NUMBER 7008288-0-0 REV. H

1977

NOTES:
1. WELD PER A.W.S. A2.0-68.
2. INSTALL ITEM "3 + "4 AFTER PAINTING.



8	POP RIVET	9006459	4
4	RETAINER	9007186	3
2	BRACKET	B-MD-7419793-0-0	2
1	PANEL, FILLER (TOP LEFT)	D-MD-7419792-0-0	1
	DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 0.3	OVER 0.3 TO 1.2	OVER 1.2 TO 4.8	OVER 4.8 TO 12.0	OVER 12.0 TO 48.0	OVER 48.0 TO 80.0
SURFACE QUALITY IN ✓ MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED ■	±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH 9200151-47

DRN. [illegible] 10-27-77
CHK'D [illegible] 10-27-77
ENG. J. Bird 10-27-77
PROJ. ENG. J. Bird 10-27-77
PROD. [illegible] 11-1-77

FIRST USED ON PC20

TITLE PANEL FILLER ASSY

NEXT HIGHER ASSY.

D-UA-PC20-0-0

SCALE ///

SHEET / OF /

SIZE	CODE	NUMBER	REV.
D	IA	7014495-0-0	

DIST.

REVISIONS

REV.	CHANGE NO.	CHK.

D IA 7014495-0-0

SIZE	CODE	NUMBER	REV.
B	DD	M9310-0	

DRAWING NO.	NO. OF SHTS	PART NO.	DESCRIPTION	REVISIONS
			MODULE REV	A
D-UA-M9310-0-0	3		UNIBUS TERMINATOR-REM PWR	-
A-PL-M9310-0-0	1		UNIBUS TERMINATOR-REM PWR	-
D-CS-M9310-0-1	1		UNIBUS TERMINATOR-REM PWR	-
D-MD-5012250-0-0	2		DRILL & ETCH DRAWING	-
		5012250	ETCHED CIRCUIT BOARD	A
M9310-0-L			P/C DESIGN DATA BASE	REF
M9310-0-PL			INSERTION P/L DATA BASE	REF
P00-M9310-00			PROCESS SHEETS	REF

NOTES:

REVISIONS	DATE	CHG NO.	REV

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digital

USED ON OPTION/MODEL	
DN87-S	

DRN.	R W Counter	9 AUG 76
CHK'D		9 [illegible] 76
ENG.		9 Aug 76
PROD.	Bill Embry	2 SEPT. 76

TITLE: UNIBUS TERMINATOR-REM PWR

SIZE	CODE	NUMBER	REV.
B	DD	M9310-0	

SHEET 1 OF 1

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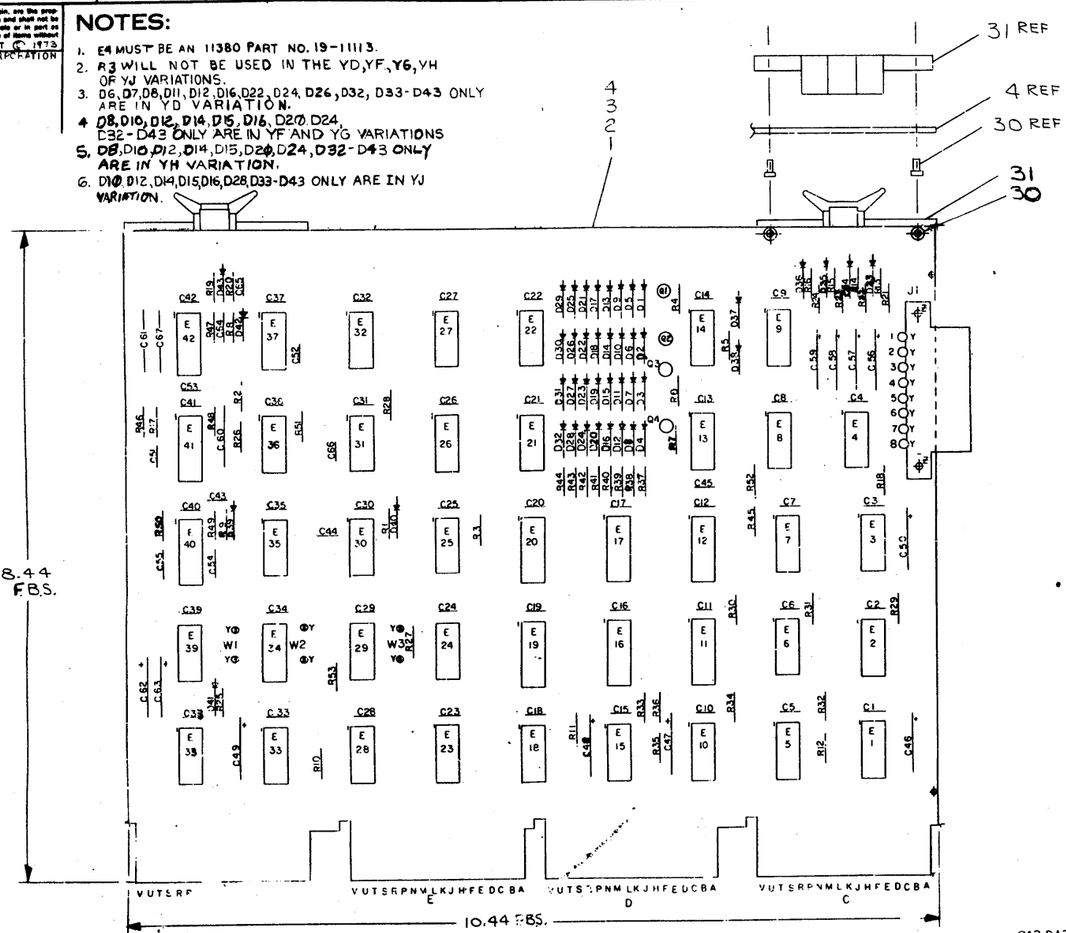
NOTES:

1. E4 MUST BE AN 11380 PART NO. 19-11113.
2. R3 WILL NOT BE USED IN THE YD,YF,Y6,YH OR YJ VARIATIONS.
3. D6,D7,D8,D11,D12,D16,D22,D24,D26,D32, D33-D43 ONLY ARE IN YD VARIATION.
4. D8,D10,D12,D14,D15,D16,D20,D24, D32-D43 ONLY ARE IN YF AND YG VARIATIONS
5. D8,D10,D12,D14,D15,D20,D24,D32-D43 ONLY ARE IN YH VARIATION.
6. D10,D12,D14,D15,D16,D28,D33-D43 ONLY ARE IN YJ VARIATION.



3240	1	8
74175	8	16
1138C	1	8
74123	8	16
74187	8	16
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

M873-YJ	M873-YH	M873-YG	M873-YF	M873-YE	M873-YD	M873-YC	M873-YB	M873-YA	M873-B			
REF	REF	REF	REF	REF	REF	REF	REF	REF			X-Y COORDINATE HOLE LOCATION	K-CO-M873-0-4	1
REF	REF	REF	REF	REF	REF	REF	REF	REF			ASSY/DRILLING HOLE LAYOUT	D-AH-M873-0-5	2
REF	REF	REF	REF	REF	PEF	REF	REF	REF			MODULE ECO HISTORY	8-MH-M873-0-6	3
1	1	1	1	1	1	1	1	1			ETCHED CKT BRD	5010703	4
1	1	1	1	1	1	1	1	1	C51		CAP 33 PF 100V DM	1000009	5
1	1	1	1	1	1	1	1	1	C52		CAP 100 PF 100V DM	1000016	6
2	2	2	2	2	2	2	2	2	C65,C66		CAP 470 PF 100V DM	1000024	7
46	46	46	46	46	46	46	46	46	C1-C45,C53		CAP .01 UF 50V 20% DISC	1001610-01	8
1	1	1	1	1	1	1	1	1	C64		CAP .15 UF 35V 20% TANT	1002180	9
2	2	2	2	2	2	2	2	2	C54,55		CAP 1 UF 35V 10% TANT	1001776	10
4	4	4	4	4	4	4	4	4	C56-C59		CAP 2.2 UF 35V 10% TANT	1002431	11
2	2	2	2	2	2	2	2	2	C60,C61		CAP 3.3 UF 20V 10% TANT	1005334	12
5	5	5	5	5	5	5	5	5	C46-C50		CAP 6.8 UF 35V 10% TANT	1005306	13
3	3	3	3	3	3	3	3	3	C62,C63,C67		CAP 39 UF 10V 10% TANT	1000076	14
17	19	20	20	21	43	43	43	43	D1-D43		DIODE D664(SEE NOTES 3,4,5 & 6)	1100114	15
1	1	1	1	1	1	1	1	1	J1		CONNECTOR	1209340-00	16
5	5	5	5	5	5	5	5	5			PINS CONTACT	1209456-01	17
1	1	1	1	1	1	1	1	1	R51		RES 100 1/4W 5%	1300229	18
9	9	9	9	9	9	9	9	9	R37-R45		RES 220 1/4W 5%	1300271	19
1	1	1	1	1	1	1	1	1	R52		RES 330 1/4W 5%	1300285	20
8	8	8	8	8	8	8	8	8	P29-R36		RES 470 1/4W 5%	1300316	21
12	12	12	12	12	13	13	13	13	R1-R12,R20		RES 1K 1/4W 5% (SEE NOTE 2)	1300365	22
8	8	8	8	8	8	8	8	8	R21-R28		RES 4.7K 1/4W 5%	1300447	23
8	8	8	8	8	8	8	8	8	R13-R19,R53		RES 10K 1/4W 5%	1300479	24
5	5	5	5	5	5	5	5	5	R46-R50		RES 18K 1/4W 5%	1302485	25
4	4	4	4	4	4	4	4	4	Q1-Q4		TRANS MXAA55	1510706	26
2	2	2	2	2	2	2	2	2			SCREW NYLON	9006401-4	27
2	2	2	2	2	2	2	2	2			NUT HEX NYLON	9007992	28
6	6	6	6	6	6	6	6	6			SPLIT LUG	9006735	29
8	8	8	8	8	8	8	8	8			EYELET	9006732	30
4	4	4	4	4	4	4	4	4			HANDLE FLIP/CHIP MAGENTA	9008337-06	31
6	6	6	6	6	6	6	6	6	E6,7,8,9,13,25		I.C. 7400	1905575	32
1	1	1	1	1	1	1	1	1	E34		I.C. 7404	1909686	33
1	1	1	1	1	1	1	1	1	E31		I.C. 7410	1905576	34
1	1	1	1	1	1	1	1	1	E29		I.C. 7430	1905578	35
4	4	4	4	4	4	4	4	4	E14,21,30,37		I.C. 7474	1905547	36
3	3	3	3	3	3	3	3	3	E40,41,42		I.C. 74123	1910436	37
2	2	2	2	2	2	2	2	2	E11,12		I.C. 74175	1910651	38
8	8	8	8	8	8	8	8	8	E1,2,3,5,15,24,28,36		I.C. 8881	1909705	39
5	5	5	5	5	5	5	5	5	E22,26,27,32,35		I.C. 6815	1909713	40
1	1	1	1	1	1	1	1	1	E4,		I.C. 11380	1911113	41
—	—	—	—	—	1	—	1	—	E16		I.C. 74187	23044-A2	42
—	—	—	—	—	1	—	1	—	E17		I.C. 74187	23045-A2	43
—	—	—	—	—	—	—	1	—	E16		IC 74187	23089-A2	44
—	—	—	—	—	—	—	1	—	E17		IC 74187	23090-A2	45
—	—	—	—	—	—	—	1	—	E19		IC 74187	23091-A2	46
QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION		DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST CONTINUED ON SHEET 2

REVISIONS						
REV	CHANGE NO.	CHK				
A	ORIGINATED	S. HOLMES	5-JAN-78			
B	M873-00001	R. DIETER	9-24-77			
C	M873-00002	R. DIETER	9-18-74			
D	M873-00003	R. DIETER	9-24-77			
E	M873-00004	R. DIETER	9-30-75			
F	M873-00005	R. DIETER	11-3-75			
G	M873-00006	R. DIETER	20-Sep-76			
H	M873-00007	R. DIETER	11-May-77			
J	M873-MROOT	R. DIETER	19-May-77			

FIRST USED ON OPTION MODEL: PDP 11

ETCH BOARD REV: D

SEMICONDUCTOR CONVERSION CHART

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

DRN.	K.D.	DATE 10-Nov-77
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASSY: 8-DD-EM873-0

SCALE: NONE

SHEET 1 OF 4

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: RESTART LOADER

SIZE	CODE	NUMBER	REV.
D	CS	M873-0-1	J

DIST.

PARTS LIST

FORM NO GRD 35A

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SEE PARTS LIST

M873-YA	E19, E20	MMI 6300	OPTIONAL
M873-YB	E19, E20	74187 OR EQUIV.	REQUIRED
M873-YC	E19, E20	74187 OR EQUIV.	REQUIRED
M873-YD	E19, E20	74187 OR EQUIV.	REQUIRED
M873-YE			
M873-YF	E19, E20	74187 OR EQUIV	REQUIRED
M873-YG	E19, E20	74187 OR EQUIV	REQUIRED
M873-YH	E19, E20	74187 OR EQUIV	REQUIRED
M873-YJ	E19, E20	74187 OR EQUIV	REQUIRED

M873-YJ	M873-YH	M873-YG	M873-YF	M873-YE	M873-YD	M873-YC	M873-YB	M873-YA	M873-0	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF	–	–	–	–	–	–	–	–	–		ROM LISTING OF 23415A2	A-PS-23415A2-0-0	108
REF	–	–	–	–	–	–	–	–	–		ROM LISTING OF 23414A2	A-PS-23414A2-0-0	107
REF	–	–	–	–	–	–	–	–	–		ROM LISTING OF 23413A2	A-PS-23413A2-0-0	106
REF	–	–	–	–	–	–	–	–	–		ROM LISTING OF 23412A2	A-PS-23412A2-0-0	105
REF	–	–	–	–	–	–	–	–	–		WORD LISTING OF YJ CONTENTS	B-GL-M873-0-35	104
1	–	–	–	–	–	–	–	–	–	E20	IC74187	23415A2	103
1	–	–	–	–	–	–	–	–	–	E19	IC74187	23414A2	102
1	–	–	–	–	–	–	–	–	–	E17	IC74187	23413A2	101
1	–	–	–	–	–	–	–	–	–	E16	IC74187	23412A2	100
–	REF	–	–		–	–	–	–	–		ROM LISTING OF 23330A2	A-PS-23330A2-0-0	99
–	REF	–	–		–	–	–	–	–		ROM LISTING OF 23329A2	A-PS-23329A2-0-0	98
–	REF	–	–		–	–	–	–	–		ROM LISTING OF 23328A2	A-PS-23328A2-0-0	97
–	REF	–	–		–	–	–	–	–		ROM LISTING OF 23327A2	A-PS-23327A2-0-0	96
–	REF	–	–		–	–	–	–	–		WORD LISTING OF YH CONTENTS	B-CS-M873-0-34	95
–	1	–	–		–	–	–	–	–	E20	IC 74187	23330A2	94
–	1	–	–							E19	IC 74187	23329A2	93
–	1	–	–		–	–	–	–	–	E17	IC 74187	23328A2	92
–	1	–	–		–	–	–	–	–	E16	IC 74187	23327A2	91
–	–	REF	–		–	–	–	–			ROM LISTING OF 23341A2	A-PS-23341A2-0-0	90
–	–	REF	–		–	–	–	–			ROM LISTING OF 23340A2	A-PS-23340A2-0-0	89
–	–	REF	–		–	–	–	–			ROM LISTING OF 23339A2	A-PS-23339A2-0-0	88
–	–	REF	–		–	–	–	–			ROM LISTING OF 23338A2	A-PS-23338A2-0-0	87
–	–	REF	–		–	–	–	–			WORD LISTING OF YG CONTENTS	B-CS-M873-0-33	86
–	–	1	–		–	–	–	–		E20	IC 74187	23341A2	85
–	–	1	–		–	–	–	–		E19	IC 74187	23340A2	84
–	–	1	–		–	–	–	–		E17	IC 74187	23339A2	83
–	–	1	–		–	–	–	–		E16	IC 74187	23338A2	82
–	–	–	REF		–	–	–	–			ROM LISTING OF 23218A2	K-CS-M873-0-26	81
–	–	–	REF		–	–	–	–			ROM LISTING OF 23217A2	K-CS-M873-0-25	80
–	–	–	REF		–	–	–	–			ROM LISTING OF 23216A2	K-CS-M873-0-24	79
–	–	–	REF		–	–	–	–			ROM LISTING OF 23215A2	K-CS-M873-0-23	78
–	–	–	REF		–	–	–	–			WORD LISTING OF YF CONTENTS	B-CS-M873-0-27	77
–	–	–	1		–	–	–	–		E20	IC 74187	23218A2	76
–	–	–	1		–	–	–	–		E19	IC 74187	23217A2	75
–	–	–	1		–	–	–	–		E17	IC 74187	23216A2	74
–	–	–	1		–	–	–	–		E16	IC 74187	23215A2	73
–	–	–	–	REF	–	–	–	–			ROM LISTING OF 23098A2	KRL-M873-0-21	72
–	–	–	–	REF	–	–	–	–			ROM LISTING OF 23097A2	KRL-M873-0-20	71
–	–	–	–	REF	–	–	–	–			ROM LISTING OF 23096A2	KRL-M873-0-19	70
–	–	–	–	REF	–	–	–	–			ROM LISTING OF 23095A2	KRL-M873-0-18	69
–	–	–	–	REF	–	–	–	–			WORD LISTING OF YD CONTENTS	B-AP-M873-0-22	68
–	–	–	–	1	–	–	–	–		E20	IC 74187	23098A2	67
–	–	–	–	1	–	–	–	–		E19	IC 74187	23097A2	66
–	–	–	–	1	–	–	–	–		E17	IC 74187	23096A2	65
–	–	–	–	1	–	–	–	–		E16	IC 74187	23095A2	64
–	–	–	–	–	REF	–	–	–			ROM LISTING OF 23110A2	K-RL-M873-0-16	63
–	–	–	–	–	REF	–	–	–			ROM LISTING OF 23109A2	K-RL-M873-0-15	62
–	–	–	–	–	REF	–	–	–			WORD LISTING OF YC CONTENTS	B-AP-M873-0-17	61
–	–	–	–	–	1	–	–	–		E20	IC 74187	23110A2	60
–	–	–	–	–	1	–	–	–		E19	IC 74187	23109A2	59
6	6	6	6	6	6	6	6	6		E10,18,23,33,38,39	IC 8640	1911469	58
1	1	1	1	1	–	–	–	–		W1	JUMPER	9107560-01	57
–	–	–	–	–	–	REF	–	–			WORD LISTING OF YB ROM CONTENTS	B-AP-M873-0-14	56
–	–	–	–	–	–	–	REF	–			WORD LISTING OF YA ROM CONTENTS	B-AP-M873-0-9	55
–	–	–	–	–	–	REF	–	–			ROM LISTING FOR 23092 A2	K-RL-M873-0-13	54
–	–	–	–	–	–	REF	–	–			ROM LISTING FOR 23091 A2	K-RL-M873-0-12	53
–	–	–	–	–	–	REF	–	–			ROM LISTING FOR 23090 A2	K-RL-M873-0-11	52
–	–	–	–	–	–	REF	–	–			ROM LISTING FOR 23089 A2	K-RL-M873-0-10	51
–	–	–	–	–	REF	–	REF	–			ROM LISTING FOR 23045A2	K-RL-M873-0-8	50
–	–	–	–	–	REF	–	REF	–			ROM LISTING FOR 23044A2	K-RL-M873-0-7	49
–	–	–	–	–	A/R	A/R	A/R	–		W1,W2,W3	JUMPER	9107560-1	48
–	–	–	–	–	–	–	1	–		E20	IC 74187	23092-A2	47

PARTS LIST

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	RESTART LOADER	SIZE D	CODE CS	NUMBER M873-0-1	REV. J
SCALE	SHEET 2 OF 4	DIST.			

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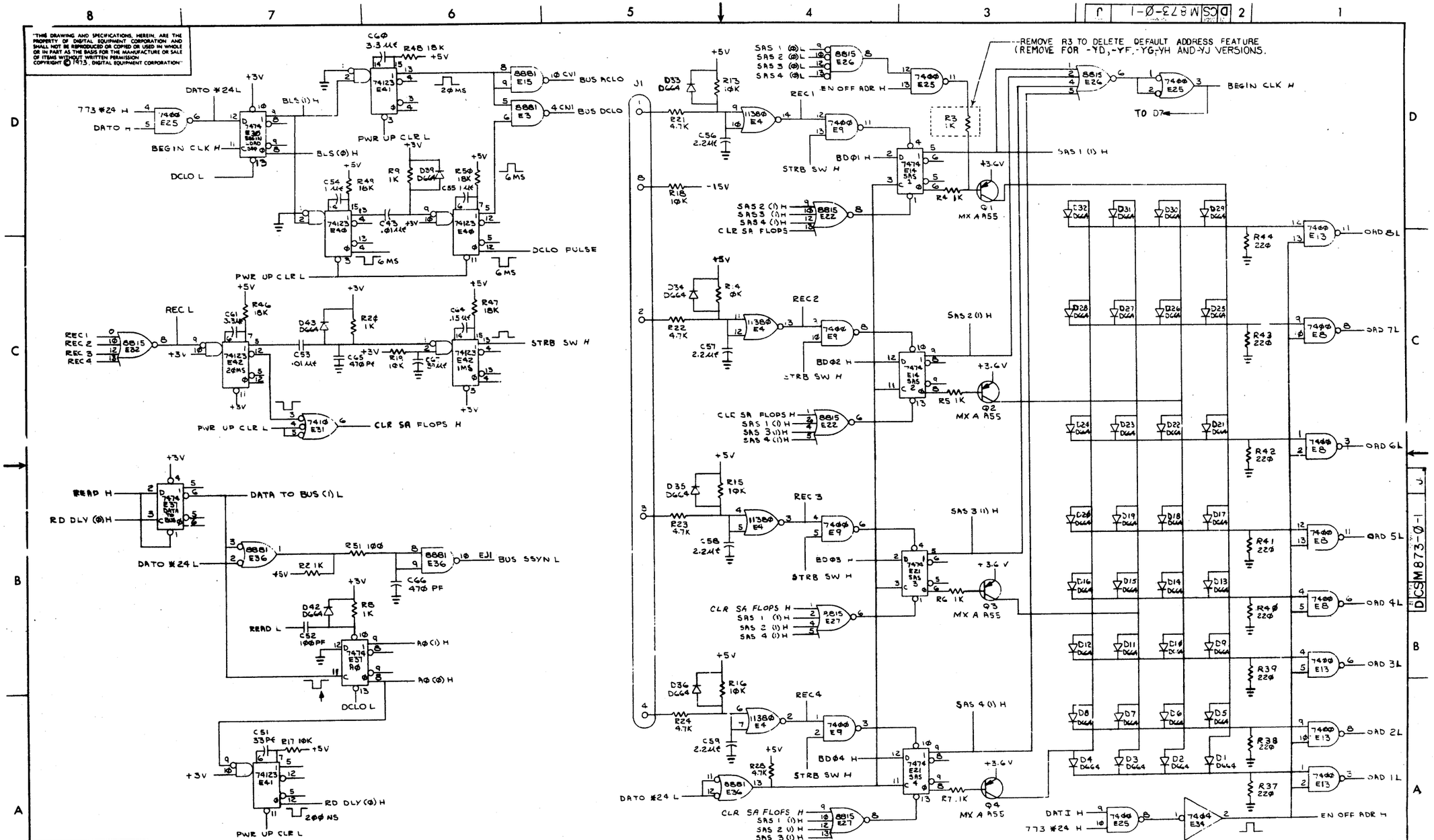

REVISIONS		
CHK	CHANGE NO	REV
		J

TITLE	SIZE	CODE	NUMBER	REV.
RESTART LOADER	D	CS	M873-0-1	J
SCALE	SHEET 3 OF 4	DIST		

MK 1

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DCSM873-Ø-1 J

BUS INIT DL1 — 8640 E39 — PWR UP CLR H — 8881 E36 — PWR UP CLR L
+5V — R25 4.7K — CG3 39.4f — D41 DG64 — R26 4.7K — +5V

+3V — R1 1K — C44 .01 4f — D44 DG64 — DC LO PULSE
CLR AA773 — 7474 E30 AA 773 — REC L — 8640 E39 — R53 10K — CG2 39.4f
CLEARS AA773 AFTER ≈ 300 MS

BUS MSYN EE1 — 8640 E18
BUS A17 ED1 — 8640 E18
BUS A16 EE2 — 8640 E18
BUS A15 ED2 — 8640 E18
BUS A14 EK1 — 8640 E23
BUS A13 EK2 — 8640 E23
BUS A12 EC1 — 8640 E18
BUS A11 EL1 — 8640 F33
BUS A10 EP1 — 8640 E33
BUS A09 ER1 — 8640 E33
BUS A08 EN2 — 8640 E33 — A08 H — 7404 E34 — A08 L
BUS A07 EP2 — 8640 E33 — A07 H
BUS A06 EU1 — 8640 E38 — A06 H
BUS A05 EV1 — 8640 E38 — A05 H
BUS A04 EU2 — 8640 E38 — A04 H
BUS A03 EV2 — 8640 E38 — A03 H
BUS A02 EF1 — 8640 E23 — A02 H
BUS A01 EH1 — 8640 E23 — A01 H — 7404 E34 — A01 L
BUS C1 EF2 — 8640 E23 — DATO H — 7404 E34 — DATI H
BUS DCLO CN1 — 8640 E18 — 7410 E31 — DCLO L

W3 — R27 4.7K — +5V
BLS (Ø) H: REMOVE W3 FOR EXTENDED 128 WORDS ON YA; ALWAYS REMOVE FOR YB, YC, YD, YF YG, YH AND VJ VERSIONS

BUS D04 CN2 — 8640 E18 — B D04 H
BUS D03 CT2 — 8640 E18 — B D03 H
BUS D02 CU2 — 8640 E18 — B D02 H
BUS D01 CR2 — 8640 E18 — B D01 H

DATO H — 8640 E39 — READ H — 8640 E39 — READ L
EL2 DEV SELECTED
NOTE: INSTALL JUMPER W1 FOR 11/40, W2 FOR 11/20, 11/45
W2 | W1
A01 L — 8815 E35 — 773 * 26 H
A01 H — 8815 E35 — 773 * 24 H
* = Ø OR 2

A08 H, A06 H, A05 H, A03 H — 8815 E32 — A04 H, A02 H — 7410 E31

+5V — R11 1K
8881 E15 — 4 ED1 — BUS A17
8881 E24 — 13 EE2 — BUS A16
8881 E24 — 10 ED2 — BUS A15
8881 E24 — 4 EK1 — BUS A14
8881 E24 — 1 EK2 — BUS A13
8881 E15 — 1 EC1 — BUS A12
8881 E28 — 13 EP1 — BUS A10
8881 E28 — 10 ER1 — BUS A09

OPTIONAL ON YA VERSION ONLY
-C- 74187** E19: A07 H, A06 H, A05 H, A04 H, A03 H, A02 H, A01 H, A00(1) H, A08 L → ROM 3/11, ROM 2/10, ROM 1/9, ROM Ø/8
-D- 74187** E20: A07 H, A06 H, A05 H, A04 H, A03 H, A02 H, A01 H, A00(1) H, A08 L → ROM 7/15, ROM 6/14, ROM 5/13, ROM 4/12

-B- 74187** E17
-A- 74187** E16
A07 H, A06 H, A05 H, A04 H, A03 H, A02 H, A01 H, A00(1) H, A08 H
ROM 7/15 — R29 470 — +5V
ROM 6/14 — R30 470 — +5V
ROM 5/13 — R31 470 — +5V
ROM 4/12 — R32 470 — +5V
ROM 3/11 — R33 470 — +5V
ROM 2/10 — R34 470 — +5V
ROM 1/9 — R35 470 — +5V
ROM Ø/8 — R36 470 — +5V

74175 E12: D2 R2(1), R2(Ø); D3 R3(1), R3(Ø); D1 R1(1), R1(Ø); DØ RØ(1), RØ(Ø); CLR CLK; +3V; A00(1) H
74175 E11: D2 R2(1), R2(Ø); D3 R3(1), R3(Ø); D1 R1(1), R1(Ø); DØ RØ(1), RØ(Ø); CLR CLK; +3V; A00(1) H

** OR EQUIVALENT

ROM 7/15 — 8881 E3 — 13 CD2 — BUS D15
ROM 6/14 — 8881 E3 — 10 CE2 — BUS D14
ROM 5/13 — 8881 E3 — 13 CF2 — BUS D13
ROM 4/12 — 8881 E2 — 10 CH2 — BUS D12
ROM 3/11 — 8881 E1 — 13 CH1 — BUS D11
ROM 2/10 — 8881 E1 — 10 CJ2 — BUS D10
+5V — R12 1K
ROM 1/9 — 8881 E1 — 4 CK2 — BUS D9
ROM Ø/8 — 7404 E34 — 8881 E1 — 1 CL2 — BUS D8
DATA TO BUS (1)L — 8881 E28

OAD 7L — 7404 E7 — 8881 E2 — 4 CM2 — BUS D7
OAD 6L — 7404 E7 — 8881 E15 — 13 CV2 — BUS D6
OAD 5L — 7404 E7 — 8881 E3 — 1 CP2 — BUS D5
OAD 4L — 7404 E7 — 8881 E2 — 1 CN2 — BUS D4
OAD 3L — 7404 E6 — 8881 E5 — 4 CT2 — BUS D3
OAD 2L — 7404 E6 — 8881 E5 — 1 CU2 — BUS D2
OAD 1L — 7404 E6 — 8881 E5 — 13 CR2 — BUS D1
8881 E5 — 10 CS2 — BUS D0
EN DATA TO BUS
DATA TO BUS (1)L — 8881 E28 — R10 1K — +5V

GRANT JUMPERS
DK2 — DL2 — DP2 — DR2
DM2 — DN2 — DS2 — DT2

DCSM873-Ø-1 J

REVISIONS		
CHK	CHANGE NO	REV
	P01	A

TITLE: RESTART/LOADER			SIZE: D	CODE: CS
SCALE: —	SHEET 4 OF 4		DIST:	NUMBER: M873-Ø-1
				REV: J

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WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	SIGNAL NAME
19	22	BROWN	TBI-B3	18	S1-1	SOLD	LD.SEL.1
19	↑	↑	TBI-B4	↑	S2-1	↑	LD. SEL.2
19	↓	↓	TBI-B5	↓	S3-1	↓	LD. SEL.3
19			TBI-B6		S4-1		LD. SEL.4
19	22	BROWN	TBI-B8	18	S5-1	SOLD	LOCK-UNLOCK
5	22	BLACK	——	——	TBI-A3	——	LD.SEL.1
5	22	BROWN	——	——	TBI-A4	——	LD.SEL.2

WIRE TABLE

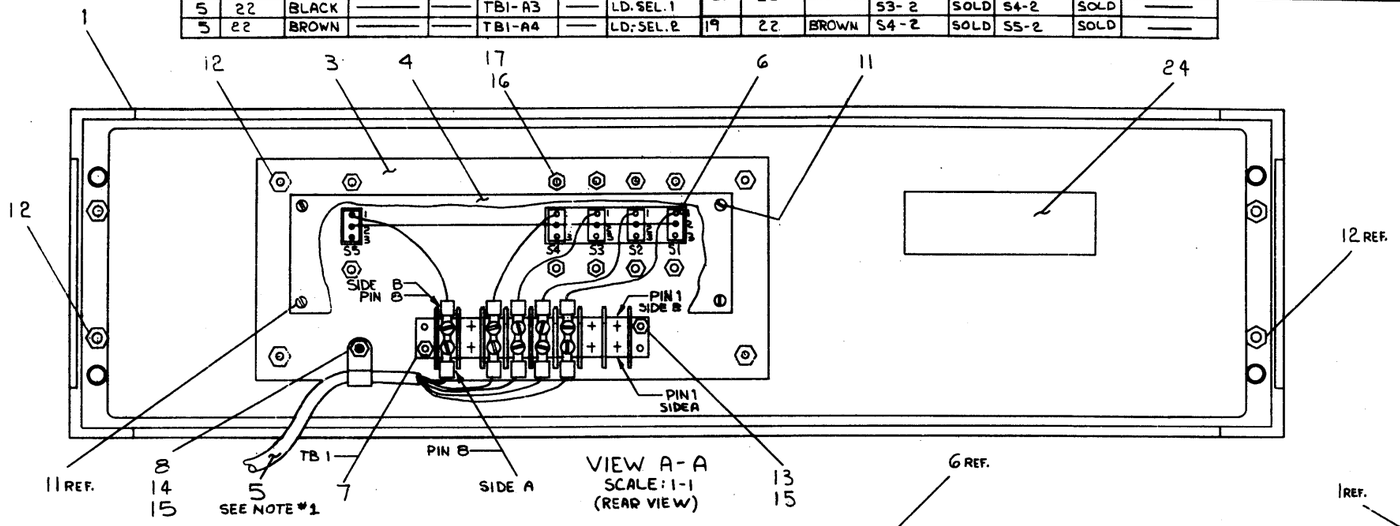
ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	SIGNAL NAME
5	22	RED	——	——	TBI-A5	——	LD. SEL. 3
5	22	GREEN	——	——	TBI-A6	——	LD. SEL. 4
5	22	WHITE	——	——	TBI-A8	——	LOCK-UNLOCK
20	22	BUSWIRE	S1-2	SOLD	S2-2	SOLD	——
			S2-2	SOLD	S3-2	SOLD	——
			S3-2	SOLD	S4-2	SOLD	——
19	22	BROWN	S4-2	SOLD	S5-2	SOLD	——

H324 TEST PROCEDURE

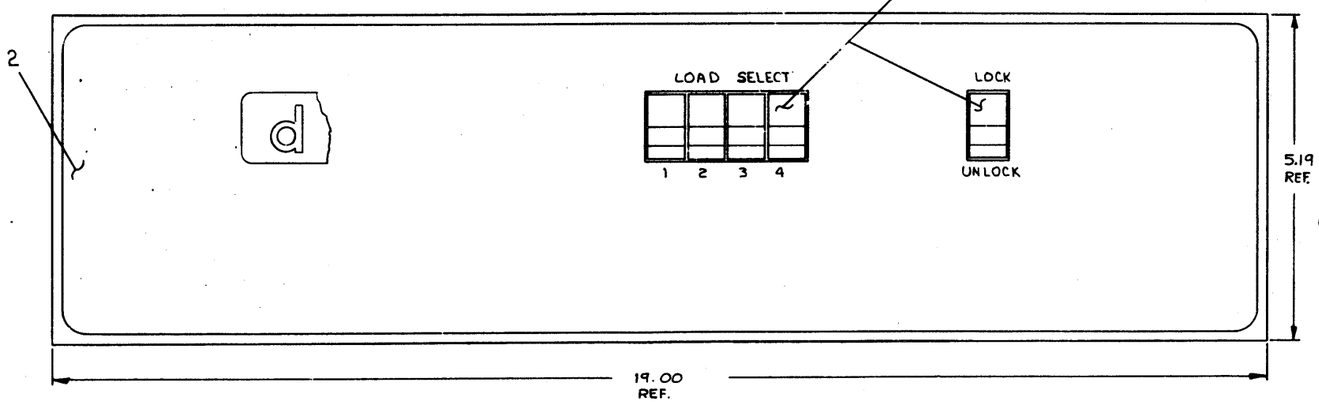
CONNECT OHMMETER TO MATE+LOCK PLUG ON CABLE

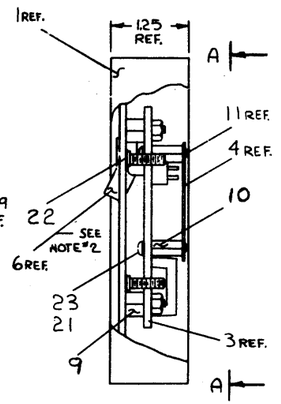
OHMMETER CONNECTIONS PIN	PIN	PRESS SWITCHES	OHMMETER READING
8	1	1 AND 5	SHORT CKT.
8	2	2 AND 5	SHORT CKT.
8	3	3 AND 5	SHORT CKT.
8	4	4 AND 5	SHORT CKT.

NOTES:
1. STANDARD LENGTH FOR ITEM #5 IS 12 FT.
2. SWITCHES (ITEM #6) TO BE INSTALLED AS SHOWN



VIEW A-A
SCALE: 1-1
(REAR VIEW)





ITEM NO	QTY.	DESCRIPTION	PART NO.
1	1	LABEL	9009255
24	4	SCR PHL HD PAN #4-40 X .38	9006011-1
23	4	WASHER SHOULDER (2.156)	9008077
22	4	WASHER INT TOOTH #4	9006632
21	A/R	BUSS WIRE #22 AWG	9107360-01
20	A/R	WIRE #22 AWG I.P.V.C. BRN	9107350-11
19	5	TERMINAL BRASS	9007929
18	10	NUT KEP #4-40	9006557
17	10	SCR PHL HD PAN #4-40 X .31	9006010-1
16	3	NUT KEP #6-32	9008185
15	1	SCR PHL HD PAN #6-32 X .38	9006022-1
14	2	SCR. PHL. HD PAN #6-32 X .56	9007793-1
13	8	NUT KEP #8-32	9006563
12	4	SCREW NYLON 4-40 X .25 LG	9006407-5
11	4	SPACER 1/4 X 1/2 4-40 HOLE	9006849
10	4	SPACER 3/8 X 1/4 #8 HOLE	9006818
9	1	CABLE CLAMP .18	9007080
8	1	TERMINAL STRIP #8-140	9006908
7	5	SWITCH	1210890
6	1	CABLE, RESTART LOADER	D-1A-7004902-0-0
5	1	COVER SW MOUNTING	C-MD-7411915-0-0
4	1	PANEL, SW MOUNTING	C-MD-7411913-0-0
3	1	PANEL, INLAY	D-MD-7411914-0-0
2	1	5.25 SNAP ON BEZEL	D-SC-1209226-0-0
1			

PARTS LIST

FIRST USED ON OPTION/MODEL: H324

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX ±0.13	.XXX ±.005	±0° 30'
.XX ±0.08	.XX ±.02	
X ±.2	.X ±.1	

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DSN.	Kurt Hoffman	4/10/74
CHK'D.	Peter Lemmon	6-12-74
ENG.	Y. Wu Hsu	6-12-74
PROJ. ENG.	L. Porter	6-13-74
PROD.	J. Bowden	6-13-74

NEXT HIGHER ASSY. B-DD-H324-0

SCALE

SHEET OF

digital

TITLE: UNIT ASSY H324

SIZE	CODE	NUMBER	REV.
D	UA	H324-0-0	

DIST.

REVISIONS

REV.	CHANGE NO.	CHK.

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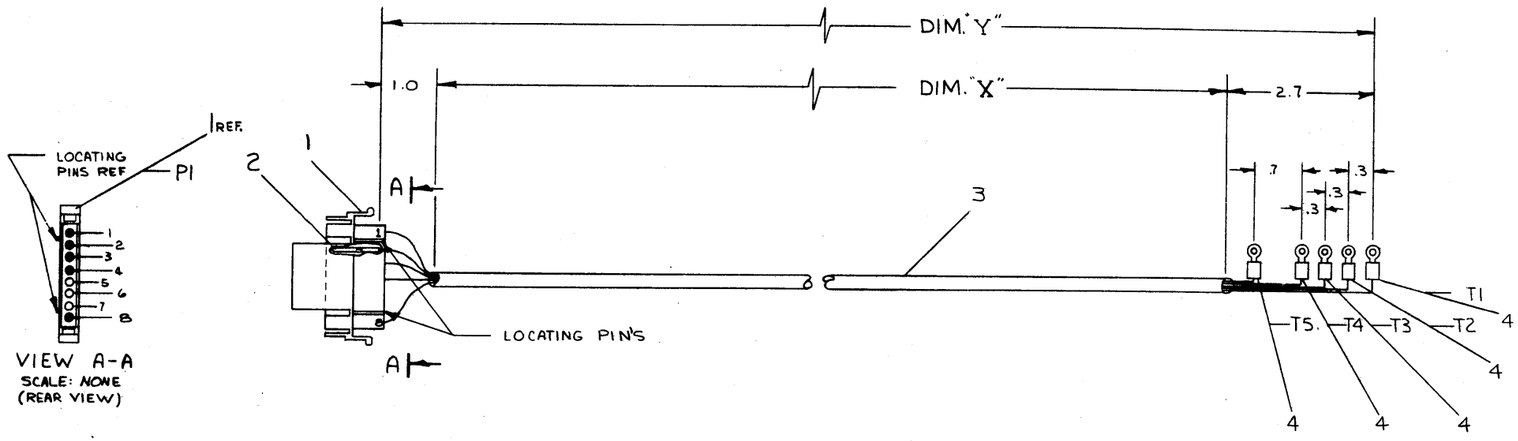
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	REMARKS
3	22	BLACK	P1-1	2	T1	4	
↕	↕	BROWN	P1-2	2	T2	4	
↕	↕	RED	P1-3	2	T3	4	
↕	↕	GREEN	P1-4	2	T4	4	
3	22	WHITE	P1-8	2	T5	4	

LEGEND

NUMBER	DIM X VARIATION	DIM Y (PRECUT) REF
7009902-08	8 FEET	8 FEET-3.75 IN
7009902-12	12 FEET	12 FEET-3.75 IN
7009902-24	24 FEET	24 FEET-3.75 IN

NOTES:
1. STANDARD CABLE FOR H324 IS 7009902-12



VIEW A-A
SCALE: NONE
(REAR VIEW)

REVISIONS		
CHK	CHANGE NO.	REV.
	7009902-00001	A
	N. HACKLER	

ITEM NO.	QTY.	DESCRIPTION	PART NO.
5	5	TERM BRASS	9007929
4	A/R	CABLE 5 COND	9107680
3	5	PIN MALE MATE-N-LOCK	1209378-03
2	1	CONN MALE MATE-N-LOCK	1209340-01
1		PARTS LIST	

FIRST USED ON OPTION/MODEL: H324

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX = ±0,10	XXX = ±.005	±0° 30'
XX = ±0,5	XX = ±.02	
X = ±2,	X = ±.1	

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN.	Scott Gagen	DATE 5/09/74
CHK'D	John Devine	DATE 6/12/74
ENG.	Val Kelly	DATE 6-12-74
PROJ. ENG.	R. Dieter	DATE 6-12-74
PROD.	J. Desmarais	DATE 6-13-74

NEXT HIGHER ASSY.: D-UA-H324-0-0
SCALE
SHEET 1 OF 1

digital

TITLE: RESTART LOADER CABLE

SIZE	CODE	NUMBER	REV.
D	IA	7009902-0-0	A

DIST.

SIZE D CODE IA 7009902-0-0 REV. A

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 24 MAR 78

TITLE DN87S-A, DN81-E UNIT TEST SPECIFICATION

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	REVISED & REDRAWN	DN87S-MR001	SRH	3-24-78	S.R. Hol	5-11-78

ENG	APPD	SIZE	CODE	NUMBER	REV
S.R. Hol	Bob Johnson	A	SP	DN87S-0-2	A

1 of 10 MR

DEC 16-(392)-1079-N971
DRA 107

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE DN87S-A, DN81-E UNIT TEST SPECIFICATION

1.0 INTRODUCTION

The DN87S is a communications front end system on the PDP-10. The system variation designations are given below:

DN87S-AA	PDP-11/40 assembly with 32K parity memory. Includes mainframe (115v, 60Hz), power supply, doors, panels, miscellaneous hardware, a DTE-20, 2-DL11-E, a KG11, BM873-YJ, an H324 ROM switch panel, and a ruggedized Unibus cable assembly.
DN87S-AB	Same as AA except 230v, 50Hz.
DN87S-U	DN87 to DN87S upgrade kit (see DN87S-0-5 for checkout and installation of DN87S-U option).

Asynchronous Options

DN81-EA	Expander cabinet for asynchronous communication interfaces. Includes one DH11, 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.
DN81-EB	Same as EA, except 230v, 50Hz.
DN81-EC	Additional DH11 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.
DN81-ED	Same as EC, except 230v, 50Hz.
DN81-FA	Line adapter for eight 20 ma teletype lines (data only). Includes 2 DM11-DA's, telephone panel connector block and miscellaneous hardware.
DN81-FB	Line adapter for eight EIA/CCITT lines (data only). Includes two DM11-DB's with 25 ft. cables and null modems.
DN81-FC	Line adapter for eight EIA/CCITT - compatible lines equipped with data set control features. Consists of two DM11-DC's.

SIZE	CODE	NUMBER	REV
A	SP	DN87S-0-2	A

DEC FORM NO EN-01022-16-N370-(381)
DRA 108

DN81-FD Eight internal answer/only modems. Converts FSK tone signals to TTL compatible signals. Consists of eight DF11-BB's.

DN81-FE Two intergral originate only modems. Consists of two DF11-BA's.

DN81-FF Automatic calling Unit Interface. Consists of one DN11-AA prewired system unit for up to four Bell 801 Auto Calling Unit Interfaces, and two DN11-DA's (line interfaces for Bell 801 Auto Calling Unit. Consists of two DN11-DA's.

Synchronous Options

DN81-EE Expander cabinet for NPR synchronous line interfaces, includes main frame and power supplies (115v, 60Hz) and one DQ11.

DN81-EF Same as EE, except 230v, 50Hz.

DN81-H NPR Synchronous Line control interface (DQ11-DA) EIA/CCITT up to 10K baud.

DN81-J Same as above except DQ11-EA, TTL to Bell system equivalent modem, up to 1M baud.

This procedure covers the checkout of the DN87S-AA/AB and the DN81-EA/EB. The DN87S-AA/AB will have one DN81-H/J installed assembly at system integration.

2.0 DOCUMENTATION REQUIRED

The following print sets and manuals:

a. 11/40 systems
b. DN87S Universal Communication Systems Front End (prints) (order #MP00109)
c. DL11
d. MF11-UP
e. DD11
f. DB11
g. KW11-L
h. KG11
i. DH11

j. DM11-BB
k. BM873
l. KT11-D

The following diagnostics and listings:

a. MAINDEC-11-DCQKC (11/40 instruction exerciser)
b. MAINDEC-11-DZMMI (Random Data)
c. MAINDEC-11_DZMMG (Worst noise)
d. MAINDEC-11-DCMFA (Parity Memory Test)
e. MAINDEC-11-DBKTA (KT11-D Basic Logic Test)
f. MAINDEC-11-DBKTB (KT11-D Access Keys Test)
g. MAINDEC-11-DBKTD (KT11-D Processor States Test)
h. MAINDEC-11-DBGTG (KT11-D Exerciser)
i. MAINDEC-11-DZDLA (DL11 Test)
j. MAINDEC-11-DXKWA (KW11-L Test)
k. MAINDEC-11-DZKGA (KG11 Test)
l. MAINDEC-11-DZDHA (Static Logic Test)
m. MAINDEC-11-DZDHB (Memory Test)
n. MAINDEC-11-DZDHC (RX and TX Logic Test)
o. MAINDEC-11-DZDHD (Speed Selection Test)
p. MAINDEC-11-DZDHE (Character Length and Data Test)
q. MAINDEC-11-DZDHF (Single Line Data Test)
r. MAINDEC-11-DZDHG (Multi-line Data Test)
s. MAINDEC-11-DZDHH (Auto-Echo Test)
t. MAINDEC-11-DZDHI (Break and Half-duplex Test)
u. MAINDEC-11-DZDHJ (Echo Test)
v. MAINDEC-11-DZDMD (DM11-BB Test)
w. MAINDEC-11-DZDLB (DL11 Test)
x. MAINDEC-11-DBQEA (11/40)
y. MAINDEC-11-DZQMC (Memory Test)
x. MAINDEC-11-DZBMD (BM873 Diagnostic)

3.0 HARDWARE REQUIRED

a. Tektronix 454 scope or better.
b. Digital voltmeter (1% accuracy or better).
c. Console teletype (DEC EIA terminal).
d. W984A extender boards
e. 16 M594 modules
f. 16 H315 test connectors (the H315 must be modified to fit into the distribution panel. This is done by removing the 24 pin cinch connector from the etch board, and then using only the etch in each slot).

4.0 VISUAL INSPECTION AND SET UP

a. Visual

1. Check power supply wiring for correct polarity and any poor connections. Check that the cabs are wired correctly for voltage and frequency.

2. Blow out all logics with an air hose.

3. Check DC wiring on all logics for shorts using a VOM.

4. Check all logics, modules and ECO status sheets to insure they are up to latest rev.

5. Check all remote turn on cables for proper location.

b. KD11 Set Up

Check to see if there is a wire from F03R2 to F03V2 on the KD11 (11/40) logic. This wire must be removed to run KW11-L. Also, install M787 in slot F03 of KD11 (11/40) logic if not already done. See KT11-D setup for additional changes.

c. MF11-UP and MM11-UP Set Up

MF11-UP memory preliminary adjustment and tests.

1. Jumper Selection - M7259 Parity Control Module.

Jumpers W1 thru W7 on the Parity Control Module are normally received from the factory with all jumpers in. These should be left in. Their functions are described in Paragraph 4.4.3 of the MF11-UP, MF11-U Memory Maintenance Manual (DEC-11-HMFMA-#-D).

2. Parity Check Delay (See Paragraph 5.4.3 of MF11-UP Memory Maintenance Manual).

In order to provide sufficient time for the parity check logic on the M7259 module to operate correctly a 135 nano second delay is added to the INT SSYN signal from the core memory indicates that data has been read from core. Using the dual channel display facilities of a Tektronix 453 or 475 oscilloscope, and waveforms shown in Figure 5-4 of the MF11-MM11-UP Memory Maintenance Manual (on page 5.9), adjust R16 on the M7259 module for the requisite delay between the leading edge of SSYN INT and lagging edge of PCL SSYN

at the back plane pins specified in Figure 5-4.

d. DL11 Set Up

Refer to DN87S print set for set up of DL11-E.

e. DH11 Set Up

1. If not already installed, put a 100pf (P/N 10-00016) across the split lugs on the M796.
2. Install DM11-BB modules into DH11 logic refer to print D-MU-DH11-0-3 for correct slots.
3. Cut the address and vector for the DH11 and DM11-BB. Consult prints D-UA-DN87S-0-0 for correct jumpers.
4. Install 16 M594 modules into the distribution panel slots A6 thru A21 and install 16 modified H315's into slots B6 thru B21. NOTE: These are used for test only. Do not ship M594's and modified H315's.

f. KT11-D Set Up

The installation procedure for the KT11-D Memory Management Unit option is included as part of the complete PDP-11 system installation procedure described in Chapter 2 of the PDP-11/40, PDP-11/35 System Manual (21 Inch Chassis). Specific procedures for wiring changes to the Processor are given below with descriptions of operations that require no wiring changes. The M7236 module is installed in slot 8, rows A-F of the CPU backplane assembly. The M7237 module is installed in slot 3, row E of the CPU backplane assembly.

The wiring modifications to the KD11-A Processor that are necessary are as follows:

1. Refer to Processor Block Schematic K1-6, location A-6, and move jumper W10 to the ground inputs of the 8881 gates. This change disables the KD11-A from giving an address to the Unibus (Figure 4-1).

2. Refer to Processor Block Schematic K1-8, location C/D-8 and remove jumpers W5, W6 and W9. This change enables the correct selection of User and Kernel stacks in either explicit or implicit operations (Figure 4-2).

3. Refer to Processor Block Schematic K1-7, location

C/D-3, and remove jumpers W1, W2, W3, and W4. This change enables the KT11-D to use an 18-bit virtual address to decode all internal register addressing (Figure 4-3).

4. Refer to Processor Block Schematic K4-4, location C-5. Remove jumper W2 and connect jumper W2A. This change connects pins 10, 11, and 12 of 74H55 gate at location E-6 to A07H2 (KT-3 FAULT H). This change enables the KT11-D to start a trap sequence for a KT Abort condition (Figure 4-4).

5. Refer to Processor Block Schematic K1-9, location D-5. Remove jumpers W7 and W8. This change disables automatic operation of console address lights BA (17:16) on assertion of K1-6 BA (17:16) from the Processor (Figure 4-5).

6. Refer to Processor Block Schematic K4-4, location C-4. Add capacitor C113 (680 mmf, 100 VDC) DEC Part Number 10-00026). This change extends the CLK MSYN H delay from 150 ns to enable memory management logic to propagate a new address to the Unibus while retaining bus specifications (Figure 4-6).

7. Refer to Processor Block Schematic K4-4, location D-4. Add capacitor C114 (560 mmf, 100 WVDC) DEC Part Number 10-00025. This change increases the delay of fast MSYN in the Processor from 75 ns to 225 ns (Figure 4-6).

8. Refer to Processor Block Schematic K4-4, location C-5. Remove jumper W1 and connect jumper W1A. This change connects pin 10 of 74H50 gate at location E16 to B07F2 (KJ-2 EOVFL STOP H) instead of B07F1. It allows a red stack violation error signal to come from a programmable register in the KJ11-A rather than from a fixed value in the KD11-A.

9. Refer to Processor Block Schematic K5-4, location D-3. Remove jumper W1 and connect jumper W1A. This change connects pin 01 of 7410 gate at location E-5 to D06R2 (KJ-2 EOVFL L) instead of F26S1. It allows a yellow stack violation error signal to come from a programmable register in the KJ11-A rather than from a fixed value in the KD11-A.

10. KG11 Set Up

Install KG11 according to DN87S print set.

11. DTE Remote Harness Assembly/Ruggedized Unibus Cable Assembly Set Up

Install 7010311 Cable Conversion Panel as shown on sheet 2 of D-UA-DN87S-0-0. Insert 7014246-11 Internal Unibus Cable Assembly in an M9014 and the M9014 into the slot AB04 (or AB09) of the last option on the Unibus of the DN87S being configured. Insert other end of 701426-11 Cable Assembly into connector on 7010311 Panel (See Sheet 7 of D-UA-DN87S-0-0). Remove M9014 and install M930 terminator while testing is in process.

Install 12-pin Mate-n-LOK on DTE Remote Harness assembly in SU3 power harness plug on the BA11 power distribution panel. Before turning on power connect fast-on tabs on remote end of cable to M9310 terminator. Connect orange wire to +5v tab and black wire to ground. Turn on power and check for +5v between +5 and ground fastons on M9310. Check for +5 volts between pins 1 and 2 (1 +5, 2 gnd) of 4-pin Mate-n-LOK on remote end of DTE harness assembly. Shut down system power and remove the DTE remote harness assembly power harness plug SU3 from BA11 power distribution panel.

5.0 PROCESSOR AND MEMORY CHECKOUT

The DN87S system does not have any tape loading device other than the console (if an ASR TTY is used for test). Therefore, to speed up checkout, some loading medium must be used. It may be a high speed reader, dectape, or mother-daughter set-up, etc. This loading device is specified by the particular group testing these systems.

* NOTE: To utilize DL11-E (console DL11-E) as a console TTY, connect BC03M cable to a DEC EIA terminal. This method assumes that checkout is being conducted without the use of the console processor or APT10.

a. Power up the processor cab and check that voltages are within 1% of their specified value, adjust if necessary. Leave power off on the expander cab at this

time.

b. Processor and memory test. Load and run the following programs 15 minutes each with iterations. No errors are acceptable.

1. MAINDEC-11-DCMFA
2. MAINDEC-11-DXMMG
3. MAINDEC-11-DZMMI
4. MAINDEC-11-DZKWA
5. MAINDEC-11-DCQKC
6. Check that power fail works by powering down and then turning power back on while running DCQKC. The program should type out the power fail re-start message and continue testing.
7. MAINDEC-11-DZKLA programs 2,4, and 7.
8. MAINDEC-11-DZKGA
9. MAINDEC-11-DBQEA
10. MAINDEC-11-DZQMC
11. MAINDEC-11-DZBMD
12. MAINDEC-11-DZDLB
13. MAINDEC-11-DBKTA
14. MAINDEC-11-DBKTB
15. MAINDEC-11-DBKTD
16. MAINDEC-11-DBKTG

6.0 EXPANDER CAB CHECKOUT

a. Remove the M930 terminator from the DD11 logic and install it at the end of the Unibus.

b. Connect the DH11 slot AB01 in the expander cab to the DD11 slot AB04 in the processor cab with a 15 ft. BC11-A. The ruggedized Unibus may be checked for electrical continuity at this point by substituting the rugged Unibus for the BC11-A cable. If only a DN87S is being checked out it is suggested that one M9202 be substituted with the rugged Unibus to check electrical continuity.

c. Power up the expander cab and check that voltages are within 1% of their specified value, adjust is necessary.

d. Load and run MAINDEC-11-DZDHA thru DZDHI. Run two passes of each test with iterations except DZDHF for one pass with iterations. No errors are acceptable.

e. Load and run MAINDEC-11-DZDMD test group 0 with

iterations for two passes. No errors are acceptable.

7.0 VIBRATION

Load DECX/11 and run with KW11, DH11, DM11-BB, DL11's BM873-YJ and KG11 selected. Vibrate all modules, at least once in each direction, using a teflon rod 8 inches long by 3/8 inches diameter. Six inches of the rod should be exposed while vibrating. Refer to individual device diagnostic for trouble shooting if errors occur.

8.0 RELIABILITY

Load DECX/11 and run with all devices selected. Run for 8 hours error free. Remove M594 modules and modified H315 test connectors from the distribution panel.

END OF TEST.

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 24 MAR 78

TITLE ACCEPTANCE TEST DN87S

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	REVISED & REDRAWN	DN87S-MR001	SRH	3-24-78	S.R. Holmes	5-15-78

ENG	APPD	SIZE	CODE	NUMBER	REV
S.R. Holmes	Bob Johnson	A	SP	DN87S-0-4	A

DEC 16-(302)-1079-N971
DRA 107

1 of 11 MR

1.0 INTRODUCTION

The DN87S is a communications front end system on DECsystem-10. The system variation designations are given below:

DN87S-AA — PDP-11/40 assembly with 32K parity memory. Includes mainframe (115V, 60Hz), power supply, doors, panels, miscellaneous hardware, DTE-20, DL11-E, KG11, BM873-YJ, an H324 ROM switch panel, and a ruggedized Unibus Cable Assy.

DN87S-AB — Same as AA except 230V, 50 Hz.

DN87S-U — DN87 to DN87S upgrade kit (see A-SP-DN87S-0-5 for checkout and installation of DN87S-U option).

Asynchronous Options

DN81-EA — Expander cabinet for asynchronous communication interfaces. Includes one DH11 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.

DN81-EB — Same as EA, except 230V, 50 Hz.

DN81-EC — Additional DH11 16 line multiplexer with distribution panel, power supply and DM11-BB modem control multiplexer.

DN81-ED — Same as EC, except 230V, 50 Hz.

DN81-FA — Line adapter for eight 20 ma Teletype lines (data only). Includes two DM11-DA's,

telephone panel connector block and miscellaneous hardware.

DN81-FB — Line adapter for eight EIA/CCITT lines (data only). Includes two DM11-DB's with 25 ft. cables and null modems.

DN81-FC — Line adapter for eight EIA/CCITT compatible lines equipped with data set control features. Consists of two DM11-DC's.

DN81-FD — Eight internal answer only modems. Converts FSK tone signals to TTL compatible signals. Consists of eight DF11-BB's.

DN81-FE — Two internal originate only modems. Consists of two DF11-BA's.

DN81-FF — Automatic calling Unit interface. Consists of one DN11-AA pre-wired system unit for up to four Bell 801 auto calling unit interfaces, and two DN11-DA's (line interfaces for Bell 801 and 25 ft. cables).

DN81-FG — Two line interfaces for Bell 801 auto, calling unit. Consists of two DN11-DA's.

Synchronous Options

DN81-EE — Expander cabinet for NPR synchronous line interfaces, includes main frame and power supplies (115V, 60 Hz) and one DQ11-DA/EA.

DN81-EF — Same as EE except 230V, 50 Hz.

DN81-H — NPR Synchronous line control interface (DQ11-DA) EIA/CCITT up to 10K baud.

DN81-J — Same as above except DQ11-EA, TTL to Bell system equivalent modem up to 1M baud.

In general three configurations are possible using the above DN87S options:

Asynchronous - PDP-11/40 cabinet and asynchronous expansion cabinets, for up to 128 asynchronous lines.

Synchronous - PDP-11/40 cabinet with up to four synchronous lines and an expansion cabinet with up to eight more synchronous lines.

Synchronous/Asynchronous (Universal) - PDP-11/40 cabinet with synchronous line controllers and expansion cabinets for asynchronous lines and/or more synchronous lines.

This procedure gives the checkout procedures for the Asynchronous and Synchronous configurations. The procedure for checkout of the Universal configuration can be accomplished by performing both procedures mentioned above. This procedure does not cover the checkout of the PDP-11/40 processor, memory, etc. (for this checkout see A-SP-DN87S-0-2). This checkout is performed when the processor cabinet is assembled. This procedure also does not cover the complete checkout of the DTE-20.

2.0 Documentation Required

The following print sets and manuals:

a. 11/40 systems
b. DN87S Universal Communications System (Print Set) (order #MP00109)
c. DH11
d. DM11-BB
e. DTE-20
f. DQ11
g. DN87S-A, DN81-E Unit Test Specification (A-SP-DN87S-0-2)

The following diagnsotic and listings:

a. MAINDEC-11-DZDQG (DQ11 Trial Parameter Program)
b. MAINDEC-11-DZDQA (Basic Logic Test)

c.	MAINDEC-11-DZDQB	(Basic Logic Test, Part 2)
d.	MAINDEC-11-DZDQC	(DQ11 Interrupt Logic Test)
e.	MAINDEC-11-DZDQD	(Receiver and Transmitter Tests)
f.	MAINDEC-11-DZDQE	(Misc. RX/TX and BCC Tests)
g.	MAINDEC-11-DZDQF	(DQ11 Diagnostic)
h.	MAINDEC-11-DZDQH	(DQ11 Diagnostic)
i.	MAINDEC-11-DZDHA (1)	(Static Logic Test)
j.	MAINDEC-11-DZDHB (1)	(Memory Test)
k.	MAINDEC-11-DZDHC (1)	(RX and TX Logic Test)
l.	MAINDEC-11-DZDHD (1)	(Speed Selection Test)
m.	MAINDEC-11-DZDHE (1)	(Character Length and Data Test)
n.	MAINDEC-11-DZDHF (1)	(Single Line Data Test)
o.	MAINDEC-11-DZDHG (1)	(Multi-line Data Test)
p.	MAINDEC-11-DZDHH (1)	(Auto-Echo Test)
q.	MAINDEC-11-DZDHI (1)	(Break and Half-duplex Test)
r.	MAINDEC-11-DZDHJ (1)	(Echo Test)
s.	DEC-11-LPPA-D	(Bootstrap and Absolute Loader)
t.	DEC-11-L2PC-PO	(Absolute Loader V006A)
u.	MAINDEC-10-KLDCP.BIN	(KL10 Diagnostic Console Rev 15)
v.	MAINDEC-10-DGQEA.BIN	(DN2X Bootstrap Loader Program)
w.	MAINDEC-10-DGQDF.A11	(DN2X Front End Loader Utility)
x.	MAINDEC-10-DGQDG.A11	(DN2X Secondary F/E Monitor)

3.0 HARDWARE REQUIRED

a. Console Teletype (EIA DEC terminal)
b. W984A extender boards
c. 16 M594 Modules
d. 16 H315 test connectors (the H315 must be modified to fit into the distribution panel. This is done by removing the 24 pin cinch connector from the etch board, and then using only the etch in each slot).
e. Special test set for DN81-J checkout.

4.0 ASYNCHRONOUS CONFIGURATION CHECKOUT

4.1 Visual Inspection and Setup

a. Check power supply wiring for correct polarity and any bad connections. Check that the cabs are wired correctly for line voltage and frequency.

b. Check all logics, modules, and ECO status sheets to insure they are up to latest rev.

c. Check all remote cables for proper location.

(1) These diagnostics are replaced with DZDHN, DZDHM, DZDHK.

4.2 DH11 Set Up

a. Install 16 M594 modules into the distribution panel slots A6 thru A21 and install 16 modified H315's into slots B6 thru B21. Note: these are used for test only. Do not ship M594's and modified H315's.

4.3 DTE Remote Harness Assembly/Ruggedized Unibus Cable Assembly Set Up.

Perform complete DTE-20 checkout procedures. Insert 12 pin Mate-n-LOK on DTE remote harness assembly in SU3 power harness plug in BA11 power distribution panel. Select appropriate DTE-20 and insert 4 pin Mate-n-LOK on remote end of DTE remote harness assembly in slot J2, J3 or J4 (depending on DTE selection) in RH20-DTE20 wired assembly (7009429). (REF. KL10 print set volume 1). Insert 7014002-4 Internal Unibus Cable Assy into an M9014. Depending on the DTE20 selected, insert the M9014 into slots HJ06, KL04 or KL06 of the RH20-DTE20 assembly. Insert the M9310 Unibus terminator into corresponding slots HJ07, KL05 or KL07 of the same assembly. Make sure orange wire to M9310 is connected to the fast on tab labeled +5 volts,and black wire is connected to the fast on tab labeled GND. Install 7014044 Panel Interface Assembly into the KL10 I/O Bay (if not already installed) and insert other end of 7014002-4 Cable Assy into appropriate connector #1, #2, #3. (See D-MU-KL10-RHDT and D-UA-DN87S-0-0, Sheet 9.) Connect 7014211-24 Ruggedized Unibus Cable Assembly between the 7014044 Panel in the KL10 and the 7010311 Cable Conversion Panel in the DN87S.

4.4 Down Line Load Link Quick Verify Test

To test remote diagnostic loading capability in console front end connect DL11-E cable (with BC03M null modem cable attached) in DN87S to cable from DL11-E (see D-UA-DN87S-0-0) in console processor. All diagnostics for the following tests which run in the DN87S secondary front end are to be loaded into the DN87S communications subsystem via the DL11-E/DL11-E down line load link using the following monitors and loaders.

MAINDEC-10-KLDCP.BIN KL10 Diagnostic Console (minimum Rev 15)

MAINDEC-10-DGQEA.BIN DN2X Bootstrap Loader Program
MAINDEC-10-DGQDF.A11 DN2X Front End Loader Utility
MAINDEC-10-DGQDG.A11 DN2X Secondary Front End Monitor
Refer to the applicable listings for detailed information.

This test manually transmits a character over the DL11-E to DL11-E "Down Line Load Link" in both directions and enables the operator to determine if the character was correctly transmitted. Successful completion of this test will offer some assurance that the the "Down Line Load Link" is operational.

At the 11/40 Console Processor Front End

1. Depress "HLT"
2. Depress "START"

At the 11/40 DN87S Front End

1. Depress "HLT"
2. Depress "START"
3. Enter 777564 Display = 777564
4. Depress "LAD" Display = 777564
5. Depress "EXAM" Display = 000200
6. Depress "EXAM" Display = 000000
7. Enter (any ASCII char) Display = 000XXX}ASCII
8. Depress "DEP" Display = 000XXX}Char

At the 11/40 Console Processor Front End

*1. Enter 775632 (For FE#1)
2. Depress "LOAD ADRS"
3. Depress "EXAM" Display = 000XXX}ASCII Char.
4. Depress "EXAM" Display = 000200
5. Depress "EXAM" Display = 000000
6. Enter (Any ASCII char) Display = 000YYY}ASCII
7. Depress "DEP" Display = 000YYY}Char

At the 11/40 DN87S Front End

1. Enter 777562 Display = 777562
2. Depress "LAD" Display = 00000
3. Depress "EXAM" Display = 000YYY (ASCII Char)

* See the DN87S UA drawings for addresses of DN87S configured other than FE no.1.

NOTE: If a CPU other than an 11/40 is substituted for the console processor front end, then this test must be modified accordingly.

4.5 Loading Secondary Front End Diagnostics via "Downline Load" Link.

Assumptions:
:Exec mode operation; TOPS-10 not running.
:A DN87S system (with BM873-YJ Boot Loader) in operating condition having passed successfully all 11/40 diagnostics.
:KLAD Pack is available to the operator with the following exec mode loaders
DGQEA.BIN 4-May-77
DGQDF.BIN 4-May-77
DGQDG.A11 4-May-77
:KLDCP (Diagnostic Console) has been loaded into the KL10's 11/40 Front End Processor, and the KLAD has been selected as the input device (usually RP0).
:The M8552, the M8553 and the M8554 modules installed in the -10 for second DTE.
:all known DTE and "Doorbell" backplane wiring problems have been corrected.
:The ruggedized Unibus and the doorbell cables are connected from the DN87S to the DTE.

The CTY should prompt:

The operator types: P DGQDF <CR>
The CTY prompts with DGQDF.A11 Ver 0.1 26-JUN-77 .
The operator responds with: SED <CR>
The CTY prompts with: *DGQDF - DN2X Front End Loader program Ver 0.1* Do you wish to boot the secondary front end Y or N
The operator responds with: Y
The CTY prompts with: Load address 773020 into the secondary front end and start. Type an altmode when ready.
The operator responds with: $(altmode key)
The CTY prompts with: DGQEA being loaded

DGQEA being transmitted
DGQDG being transmitted
Transmission completed
Secondary F.E. Monitor M-10-DGQDG-A 28K
Restart ADDR:154134

TYPE: F<CR> to set console fill count
R Filename <CR> to run a program
L Filename <CR> to load a program
S <CR> to start the program just loaded
C Filename <CR> to run a chain
C Filename/QV <CR> to run a chain in quick verify mode
Refer to XXDP user manual MD-11-DZXQA for additional help

The operator responds with:
L DGDTE <CR>
The CTY prompts with:
DGDTE being transmitted
Transmission complete.

At this point, the diagnostic DGDTE has been loaded into the DN20 Front End, but has not been started.

The CTY has prompted with:
.

The operator now responds with:
R KLDCP <CR>

The CTY prompts with:
KLDCP being transmitted
Transmission complete

DECsystem diagnostic console
Version 0.15
SWR = 000000 DTE #1
CMD:
FE1>.

The operator respons with:
SED <CR>
The CTY will now print the identifying header and the diagnostic will begin its testing.

If, at any time the operator wished to return to KLDCP at the secondary front end level, he has two choices; physically restart KLDCP in the DN87S by: stopping the

current program via 11/40 halt SW, loading address 100000 via 11/40 console switches, and starting; or waiting until the current program has stopped and typing a control C (^C) on CTY.

4.6 Diagnostics

Run 15 minutes each, MAINDEC-11-DZDHN, DZDHM, DZDHK on all DH11/DM11s installed. (Refer to diagnostic listings) See section 4.4, 4.5 for diagnostic loading procedures.

4.7 System Tests
Load system software into DN87S. Test each asynchronous line by removing test connector and connecting a terminal. Run SYSDPY on each line. If no failure occurs, test is complete. If a failure occurs, perform DN87S-A, DN81-E Unit Test. Correct malfunction and repeat system test (See Section 4.4, 4.5).

5.0 SYNCHRONOUS CONFIGURATION

5.1 Visual Inspection and Setup

a. check power supply wiring for correct polarity and any bad connections. Check that the cabs are wired correctly for line voltage and frequency.

b. Check all logics, modules and ECO status sheets to insure they are up to the latest rev.

c. Check all remote turn on cables for proper location.

6.0 SYSTEM TESTS

6.1 Preliminary Steps

Connect Unibus jumper module (M9202) or Unibus cable BC11 to adjacent system units.

Before turning power on to the DN87S equipment, connect modem cable to M970 module or plug BC01-R/W paddle board into slot C01 of DQ11-DA/EA and terminate the modem end of cable with an H315 test connector assembly for a DN81-H, or to the special test set for a DN81-J.

6.2 Diagnostics

Load trial parameter program MAINDEC-11-DZDQG . This program permits the operator to specify to the diagnostic program the installed jumper switch-selected options for each DN81-H/J. Illustrative examples of all the following programs are contained in A-SP-DAS78-0-ATP.
Run the following diagnostics:

a.	MAINDEC-11-DZDQG	1 pass
b.	MAINDEC-11-DZDQA	8 passes
c.	MAINDEC-11-DZDQB	8 passes
d.	MAINDEC-11-DZDQC	8 passes
e.	MAINDEC-11-DZDQD	8 passes
f.	MAINDEC-11-DZDQE	8 passes
g.	MAINDEC-11-DZDQH	8 passes
h.	MAINDEC-11-DZDQF	8 passes

Checkout complete if no errors. If errors occur, run A-SP-DN87S-0-2 Test procedures, correct malfunction and rerun System Test.

END OF TEST

SIZE	CODE	NUMBER	REV.
B	DD	M9014-Ø	

DRAWING NO.	NO. OF SHTS	PART NO.	DESCRIPTION	REVISIONS
			MODULE REVISION	A
D-UA-M9Ø14-Ø-Ø	2		UNIBUS TO H854 ADAPTER BOARD	A
B-PL-M9Ø14-Ø-Ø	1		UNIBUS TO H854 ADAPTER BOARD	A
D-CS-M9Ø14-Ø-1	1		UNIBUS TO H854 ADAPTER BOARD	A
D-MD-5011794-0-0	2		DRILL AND ETCH DRAWING	A
	-	5011794	ETCH CIRCUIT BOARD	B
M9Ø14-Ø-L	-		P.C. DESIGN DATA BASE	REF
M9Ø14-Ø-PL	-		INSERTION P/L DATA BASE	REF
PØØ-M9Ø14-ØØ	-		PROCESS SHEET	REF

NOTES:

REVISIONS	REV.	CHG NO.	DATE
		ORIG	

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digital

USED ON OPTION/MODEL	
PDP11	

DRN.	Rmacke	21-FEB-77
CHK'D	R W Carriker	21 Feb 77
ENG.	T.M. Olson	1 MAR 77
PROD.	W. Finley	1 MAR 77

TITLE
UNIBUS TO H854
ADAPTER BOARD

SIZE	CODE	NUMBER	REV.
B	DD	M9Ø14-Ø	

SHEET 1 OF 1

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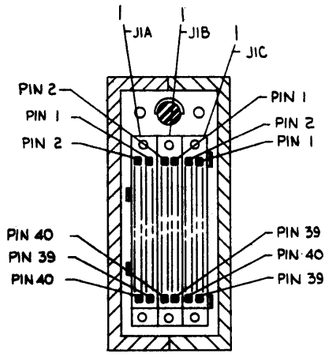
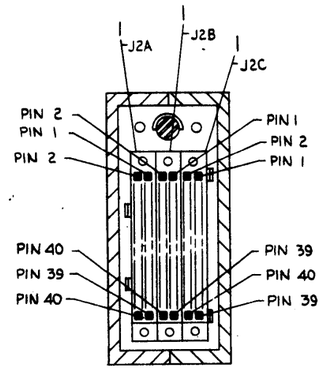
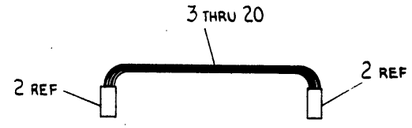


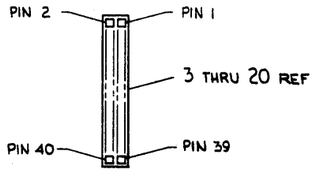
SECTION A-A
SCALE: NONE
(SEE NOTE 1)



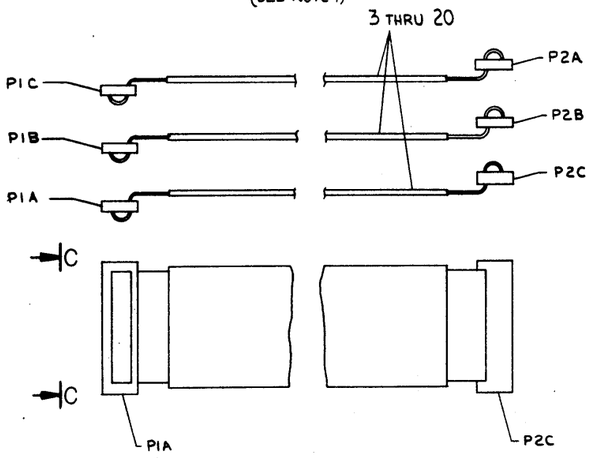
SECTION B-B
SCALE: NONE
(SEE NOTE 1)

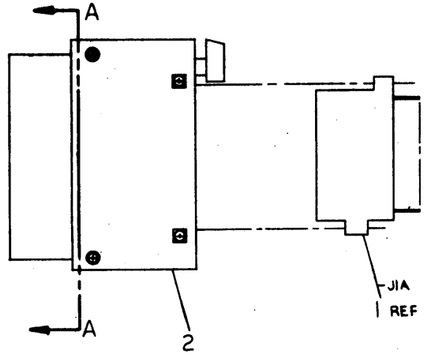


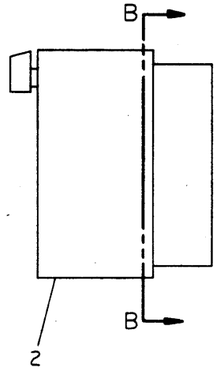
DETAIL "D"
SEE NOTE 2
SCALE: NONE



VIEW C-C
SCALE: NONE
(SEE NOTE 1)
(3 PLACES)







NOTES:

1. CONNECT PLUGS OF BCØ3U I/O CABLE ASSY. (ITEM #3 THRU 20) AS FOLLOWS: P1A TO J1A, P1B TO J1B, P1C TO J1C, P2A TO J2A, P2B TO J2B, P2C TO J2C. VIEW C-C SHOWS THE PIN NO. ON THE BCØ3U CABLE. SHOWN HERE FOR REF ONLY, DO NOT USE THESE NUMBERS THEY ARE DIFFERENT FROM SECTION A-A & B-B.
2. BEFORE FINAL ASSEMBLY "CABLES" (ITEM #3 THRU #20) TO LAY FLAT SO THAT ANY SLACK WILL BE REMOVED BEFORE "CABLE CLAMP" (PART OF ITEM #2) IS TIGHTENED THIS CAUSES A PERMANENT BEND TO OCCUR. (SEE DETAIL "D")
3. "PLUG HOUSING" (-02) & "TERMINATOR PLUG ASSY" (ITEM #1) TO BE ASSEMBLED PRIOR TO THE INSTALLATION OF "CABLES" (ITEM #3 THRU #20)
4. INSERTS PROVIDED IN "CABLE PLUG KIT" (ITEM #2) ARE NOT USED IN THIS ASSY.

CAUTION:
OFF SHEET PARTS LIST EXIST
C-PL-7014211-0-0

REVISIONS	REV.	CHANGE NO.	CHK

DESCRIPTION	DWG./PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE (INCHES)				
		OVER 0 TO 0.5	OVER 0.5 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 48.0	OVER 48.0 TO 80.0
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024
	PREFERRED ☐	±.012	±.016	±.025	±.04	±.062

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

DRN. M Andrus	22 Dec 76	
CHK'D D Gifford	12 Jan 77	
ENG. J Von Rosenberg	7 Jan 77	
PROJ. ENG. P M Gale	7 Jan 77	
PROD. M Andrus	7 Jan 77	

NEXT HIGHER ASSY.

MATERIAL: SEE PARTS LIST

FINISH

D-UA-DN2Ø-Ø-Ø

SCALE: NONE

SHEET 1 OF 2

FIRST USED ON: DN2Ø

digital

TITLE: CABLE, RUGGEDIZED UNIBUS

SIZE	CODE	NUMBER	REV.
D	AD	7014211-0-0	

DIST.

D AD 7014211-0-0

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LEGEND	
NUMBER	VARIATION
7014211 -03	3 FT ± 1 IN
7014211 -06	6 FT ± 2 IN
7014211 -10	10 FT ± 2 IN
7014211 -12	12 FT ± 3 IN
7014211 -14	14 FT ± 3 IN
7014211 -16	16 FT ± 3 IN
7014211 -18	18 FT ± 3 IN
7014211 -20	20 FT ± 3 IN
7014211 -22	22 FT ± 3 IN
7014211 -24	24 FT ± 3 IN
7014211 -26	26 FT ± 2%
7014211 -28	28 FT ± 2%
7014211 -30	30 FT ± 2%
7014211 -32	32 FT ± 2%
7014211 -34	34 FT ± 2%
7014211 -36	36 FT ± 2%
7014211 -38	38 FT ± 2%
7014211 -40	40 FT ± 2%

REVISIONS

CHK	CHANGE NO.	REV.

TITLE	CABLE, RUGGEDIZED UNIBUS
SIZE	D
CODE	AD
NUMBER	7014211 -0 -0
REV.	
SCALE	NONE
SHEET	2 OF 2
DIST.	

NEXT ASSY DAD 7014211 -0 -0 REV.

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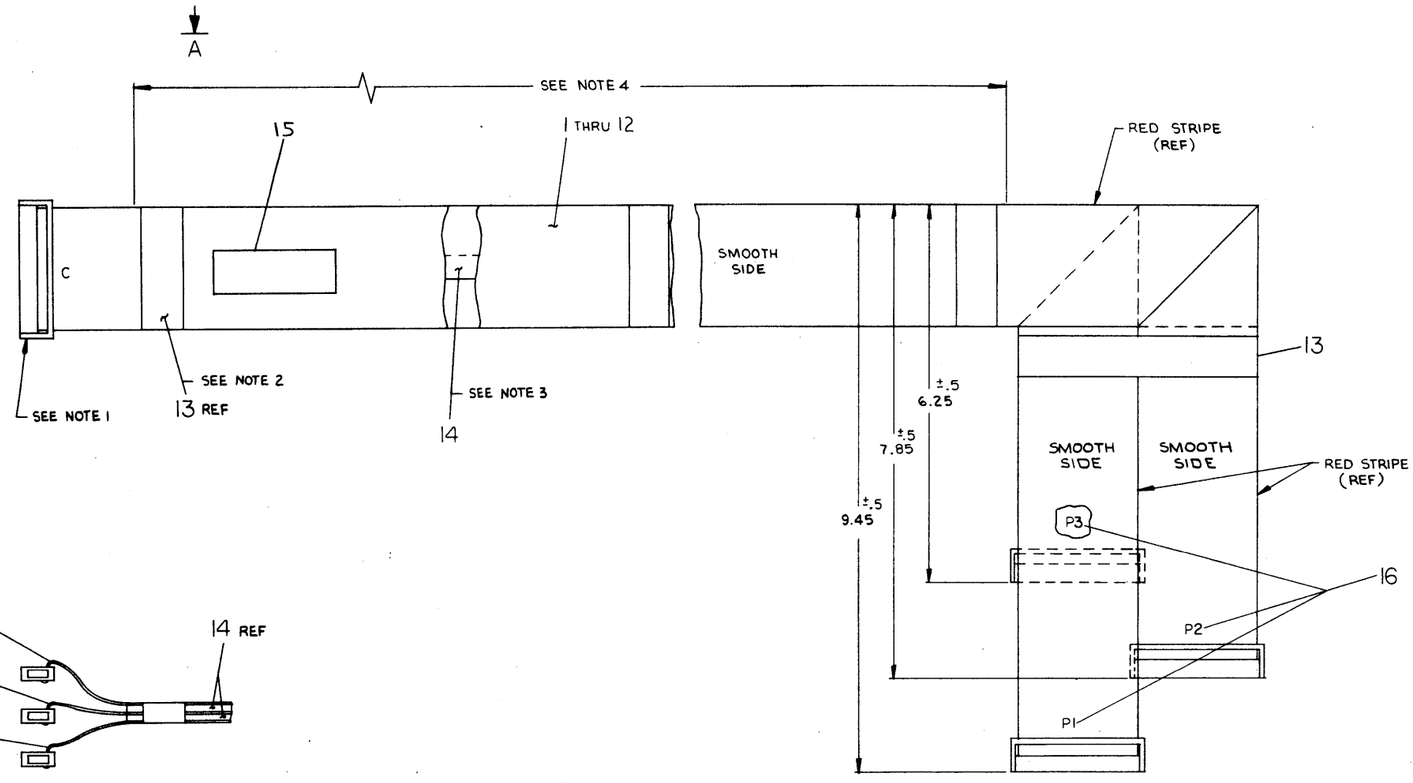
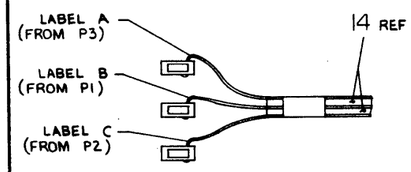
NOTES:
1. ALL CABLES END AT SAME POINT AND ANY CABLE THAT EXCEEDS THIS POINT MAY BE FOLDED OVER TO TAKE UP THE DIFFERENCE.
2. USE TAPE (ITEM #13) APPROX. EVERY 8 INCHES.
3. SHOWING FOAM (ITEM #14) OVERLAPPING.
4. FOAM (ITEM #14.) TO BE USED IN THIS AREA ONLY.





VIEW A-A
SCALE: 1/1

CAUTION:
OFF SHEET PARTS LIST EXIST
C-PL-7014002-0-0

QUANTITY & VARIATION			
THIRD ANGLE PROJECTION	DRN.	4 MAR 77	FIRST USED ON DN2Ø
	CHK'D	7/MAR/77	TITLE CABLE ASSY, INTERNAL UNIBUS
	ENG.	7 Mar 77	
REMOVE BURRS AND BREAK SHARP CORNERS	PROJ. ENG.	7 MAR 77	
	PROD.	7/14/77	
DO NOT SCALE DWG	NEXT HIGHER ASSY.		
MATERIAL SEE PART LIST	D-UA-DN2Ø-Ø-Ø	SIZE D	CODE AD NUMBER 7014002-0-0 REV.
FINISH	SCALE 1/1	DIST.	
	SHEET 1 OF 2		

DESCRIPTION | DWG./PART NO. | ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30' / CLASS OF ACCURACY (CHECK ONE) / SURFACE QUALITY IN MICROINCHES	OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
PREFERRED ☐	±.012	±.018	±.028	±.04	±.060	±0.1

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. 880 100-C

DAD 7014002-0-0 REV.

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LEGEND

NUMBER	VARIATION
7014002-04	4 FT
7014002-05	5 FT
7014002-06	6 FT
7014002-07	7 FT
7014002-08	8 FT
7014002-09	9 FT
7014002-10	10 FT
7014002-11	11 FT
7014002-12	12 FT
7014002-13	13 FT
7014002-14	14 FT
7014002-15	15 FT

REVISIONS

CHK	CHANGE NO.	REV.

TITLE CABLE ASSY, INTERNAL UNIBUS
SCALE
SHEET 2 OF 2
SIZE D CODE AD
DIST.
NUMBER 7014002-0-0
REV.

DEC FORM NO. 046 127

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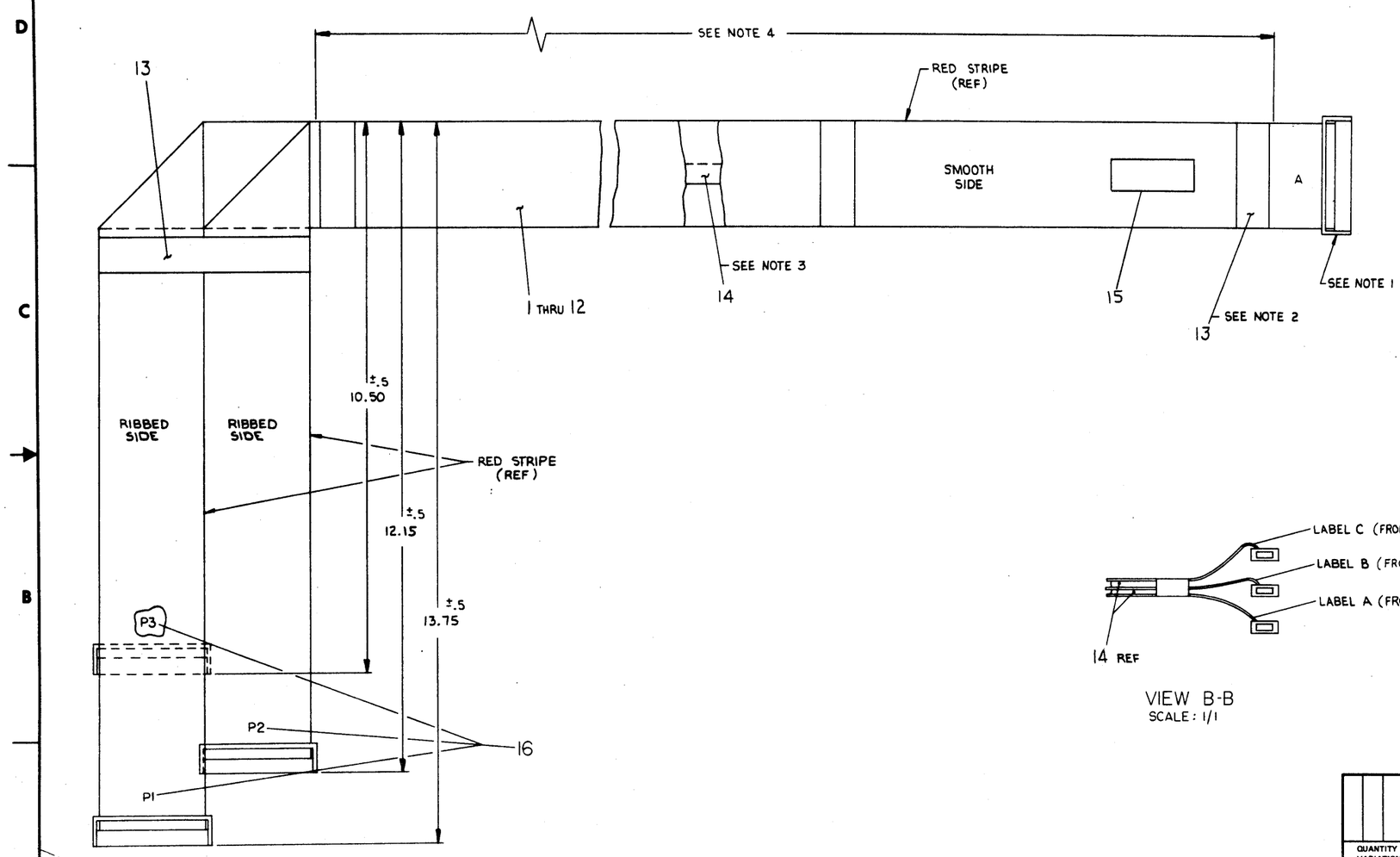
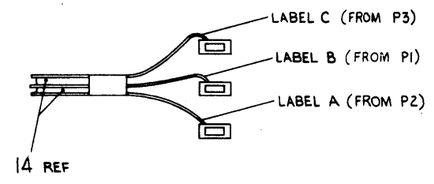
NOTES:
1. ALL CABLES END AT SAME POINT AND ANY CABLE THAT EXCEEDS THIS POINT MAY BE FOLDED OVER TO TAKE UP THE DIFFERENCE.
2. USE TAPE (ITEM #13) APPROX. EVERY 8 INCHES.
3. SHOWING FOAM (ITEM #14) OVERLAPPING.
4. FOAM (ITEM #16) TO BE USED IN THIS AREA ONLY.





VIEW B-B
SCALE: 1/1

CAUTION:
OFF SHEETS PARTS LIST EXIST
C-PL-7014246-0-0

REVISIONS	REV.	CHK	CHANGE NO.

DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 3.0	OVER 3.0 TO 6.0	OVER 6.0 TO 12.0	OVER 12.0 TO 48.0	OVER 48.0 TO 80.0
SURFACE QUALITY IN MICROINCHES	MEDIUM	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED	±.012	±.018	±.025	±.04	±.060	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRN. M Sachse	4 May 77	
CHK'D		
ENG.		
PROJ. ENG.	7 JUNE 77	
PROD.	7 JUN 77	

NEXT HIGHER ASSY.: D-UA-DN20-0-0

SCALE: 1/1

SHEET 1 OF 2

FIRST USED ON: DN20

TITLE: CABLE ASSY, INTERNAL UNIBUS

SIZE	CODE	NUMBER	REV.
D	AD	7014246-0-0	

DIST.

D AD 7014246-0-0

OCC FORM NO 880 100-C

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LEGEND

NUMBER	VARIATION
7014246-04	4 FT
7014246-05	5 FT
7014246-06	6 FT
7014246-07	7 FT
7014246-08	8 FT
7014246-09	9 FT
7014246-10	10 FT
7014246-11	11 FT
7014246-12	12 FT
7014246-13	13 FT
7014246-14	14 FT
7014246-15	15 FT

REVISIONS

CHK	CHANGE NO.	REV.
MDL	1 JUN 77	P01

TITLE	SIZE	CODE	NUMBER	REV.
CABLE ASSY INTERNAL UNIBUS	D	AD	7014246-0-0	
SCALE —/—/— SHEET 2 OF 2	DIST.			

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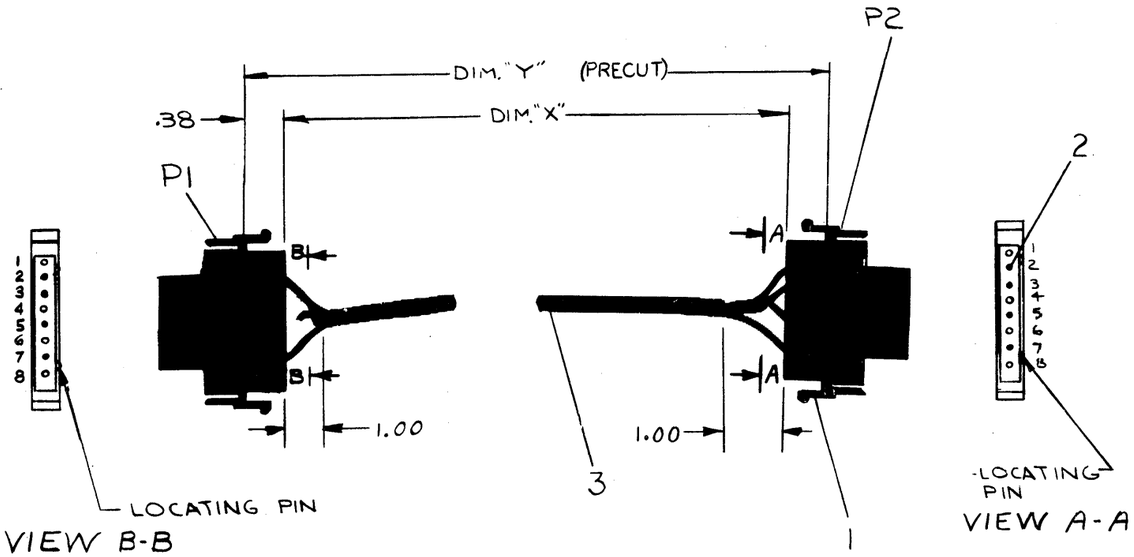
LEGEND

NUMBER	DIM "X" VARIATION	DIM "Y" (PRECUT) REF
BCØ5F-15	15 FT. ± 3 IN.	15 FT. .75 IN. ±3 IN.
BCØ5F-9	9 FT. ± 3 IN	9 FT. .75 IN. ±3 IN.

WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	TO CONNECTION
3	22	BLK	P1-2	P2-3
3	22	RED	P1-3	P2-2
3	22	WHT	P1-5	P2-7
3	22	GRN	P1-7	P2-5



AR	CABLE 4 CONDUCTOR	9107706	3
8	SOCKET (MALE)	1209378-03	2
2	MATE-N-LOCK (MALE)	1209340-01	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: DF11

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

MATERIAL

FINISH

		DATE
DRN	J. Landon	11/6/71
CHK'D	R Milan	11/8/71
ENG	Robert Fitch	11-19-71
PROJ. ENG.	Robert Fitch	11-19-71
PROD	Paul Lizzo	11-22-71

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
CABLE INTERFACE
BCØ5F

SIZE	CODE	NUMBER	REV.
C	UA	BCØ5F-Ø-Ø	C

DIST.

REVISIONS			
CHK	CHANGE NO.		REV.
R.FITCH 11-9-71	BCØ5F-00001	11-8-71	A
R.FITCH 11-9-71	LA36-00119	2-17-75	B
R.FITCH 22 JUN 76	BCØ5F-00002	2/18/75	C

DEC FORM NO. DRC

REV. C
NUMBER BCØ5F-Ø-Ø
SIZE C CODE UA

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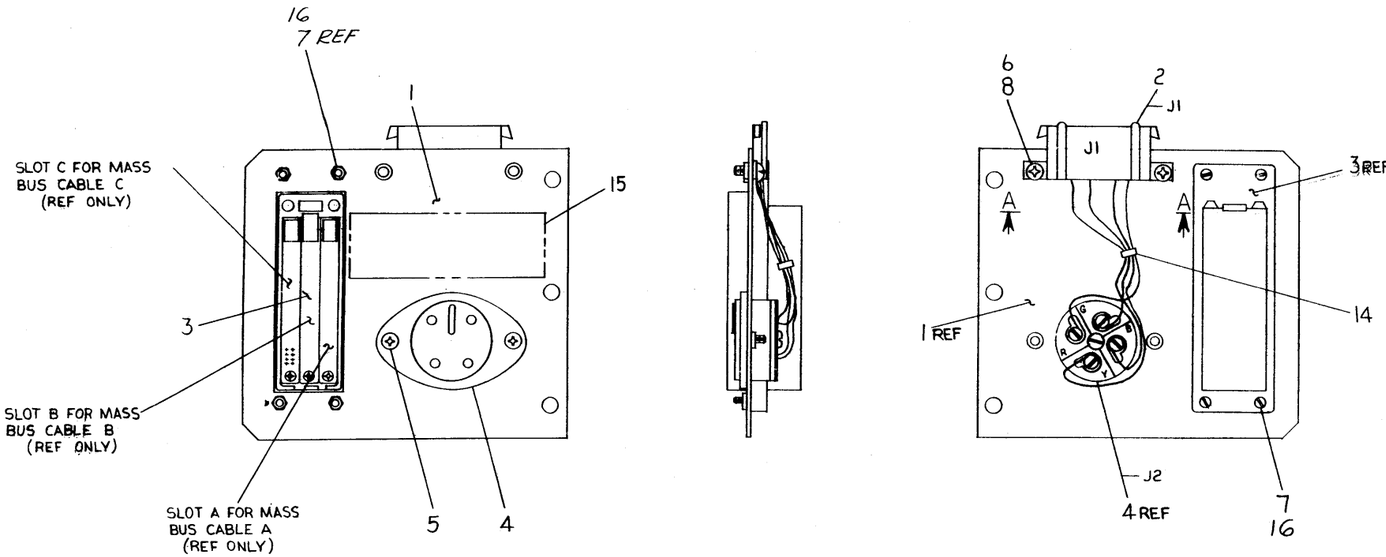
DO NOT SCALE DRAWING

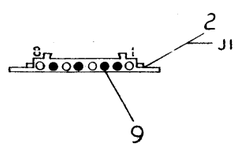
REVISIONS			
REV.	CHANGE NO.	CHK.	
A	7010311 MR001	MC	10-18-74

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
11	22	BLK	J1-7	ITEM #9	J2-B	—	
13	22	RED	J1-2	ITEM #9	J2-R	—	
10	22	WHT	J1-3	ITEM #9	J2-Y	—	
12	22	GRN	J1-5	ITEM #9	J2-G	—	

NOTES:
1. USE ITEM # 17 TO CONNECT A TERMINAL WITH STANDARD MATE'N'LOK CONNECTOR TO ITEM #4. ASSEMBLE WITH ITEM 17 CONNECTED TO ITEM 4.





VIEW A-A
SKT INSERTION SIDE

(SEE NOTE 1)

ITEM NO.	QTY.	DESCRIPTION	PART NO.	SITE CODE
1		CABLE ASSY, 28 3B/MATE'N'LOK	D-IA-7014490-2-0	17
4		NUT, KEPS #4-40	9006557	16
1		LABEL, ADHESIVE BACKED	9009255	15
1		TIE CABLE	9007031-0-0	14
4 IN		WIRE #22 AWG STRD (RED)	9107350-22	13
4 IN		WIRE #22 AWG STRD (GRN)	9107350-55	12
4 IN		WIRE #22 AWG STRD (BLK)	9107350-00	11
4 IN		WIRE #22 AWG STRD (WHT)	9107350-99	10
4		TERMINAL SKT CONTACT	1209379-03	9
2		WASHER, INT. TOOTH LOK #6	9006633	8
4		SCR, SLOTTED FILHD #4-40x.38	9006390-6	7
2		SCR. PHL. PAN HD 6-32x.31	9006021-1	6
2		SCR. PHL. FLAT HD 6-32x.25	9006020-2	5
1		PHONE JACK	1205857-3	4
1		HOUSING ASSY, RECEPTACLE	D-AD-7009866-00	3
1		HSG & SKT MATE-N-LOK	1209340-00	2
1		PLATE, CONN.	C-IA-7412711-0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: KL10

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX ±0.10	XXX ±.005	±0° 30'
XX ±0.5	XX ±.02	
X ±2	X ±.1	

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST
FINISH: —

		DATE
DRN.	M. Gilpin	10-3-74
CHKD.		10-18-74
ENGR.		10/30/74
PROJ. ENG.		10/30/74
PROD.		10/31/74

NEXT HIGHER ASSY.: D-UA-KL10000

SCALE 1/1
SHEET 1 OF 1

digital

TITLE: PLATE, CABLE CONVERSION ASSY.

SIZE	CODE	NUMBER	REV.
D	AD	7010311-0-0	A

DIST.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

	SEQUENCE
DRAWING DIRECTORY	B-DD-11/40-0
KD11-A PROCESSOR	B-DD-KD11-A
MF11-L MEMORY	B-DD-MF11-L
KY11-D CONSOLE	B-DD-KY11-D
PARTS LIST (11/40)	A-PL-11/40-0-0
BASIC ASSY (11/40)	D-UA-11/40-0-0
MOUNTING BOX ASSY	E-UA-BA11-F-0
AC DISTRIBUTION (11/40)	D-IC-11/40-0-1
861 CONSOLE TO POWER CONTROL HARNESS	C-IA-7009053-0-0
POWER DISTRIBUTION CABLE	D-IA-7009177-0-0
861 POWER CONTROL	B-DD-861-0
+5V REGULATOR	B-DD-H744-0
-15V REGULATOR	B-DD-H745-0
ASYNCHRONOUS LINE INTERFACE	B-DD-DL11-A
TELETYPERWRITERS LT33	A-ML-LT33-0
ACCESSORY LIST	A-AL-11/40-0-4
SOFTWARE LIST	A-SL-11/40-0-5
ASSEMBLY CONFIGURATION	D-AR-11/40-0-3
EXPANDER BOX, POWER HARNESS (H742 to 11/40)	D-IC-7009566-0-1
WIRELIST (PWR HARNESS)	K-WL-7009566-0-2
POWER HARNESS OLD (M742 to 11/40)	D-IC-7008754-0-3
CHASSIS ASSY H7420	B-DD-H7420-0
KD11-A POWER HARNESS	D-IA-7009994-0-0
MF11-L/LP FIRST MEMORY POWER HARNESS	D-IA-7009565-0-0
6-PIN JUMPER HARNESS	D-IA-7009573-0-0
G772 SYSTEM UNIT POWER HARNESS	D-IA-7009562-0-0
MF11-U MEMORY	B-DD-MF11-U/UP
+20V -5V REGULATOR	E-CS-H754-0-1
MF11-WP MEMORY	B-DD-MF11-WP

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET			
VAR	TITLE	11/40-1	11/40-0	11/40-3	
PDP-11/40	BASIC ASSY (ALL "A" VAR.)		X		
PDP-11/40	ASSY CONFIGURATION (ALL CAB MOUNTED VAR.)			X	

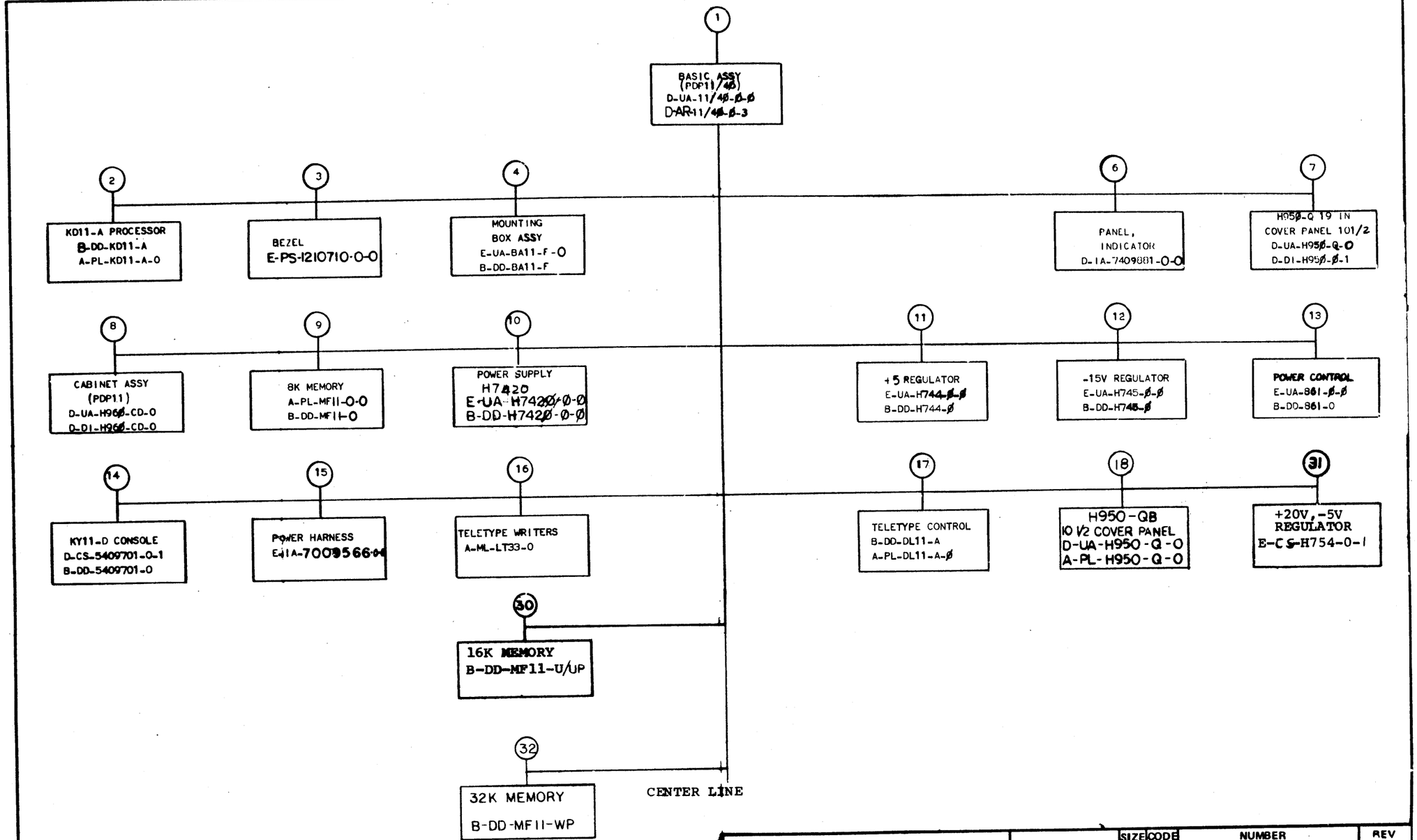
REVISIONS		
REV	CHG. NO.	DATE
A	11/40-2	11/7
B	11/40-3	
C	11/40-4	4/73
D	11/40-5	4/73
E	11/40-7	6/73
F	11/40-8	7/73
H	11/40-9	10/73
J	11/40-10	11/73
K	11/40-11	1/74
L	11/40-12	3/74
M	11/40-13	3/74
N	11/40-14	3/74
P	11/40-15	6/74
R	11/40-16	12/74
S	11/40-17	4/74
T	11/40-18	5/75
U	11/40-19	8/75
V	11/40-20	4/76
W	11/40-21	5-76
Y	11/40-22	11-76
Z	11/40-23	2-77

USED ON OPTION/MODEL	
PDP11/40	
SHEET	OF 6

DRN. J LOUGHLIN	DATE 9-22-72	TITLE BASIC ASSY (11/40)
CHK'D. J LOUGHLIN	DATE 9-22-72	
PROJ ENG. J LOUGHLIN	DATE 9-22-72	
PROD. G STRINGER	DATE 9-26-72	SIZE B / CODE DD / NUMBER 11/40-0 / REV Z
FIELD SERV. G STRINGER	DATE 9-26-72	DIST

DEC 16-12351-1062-1A-8972

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
BASIC ASSY (PDP 11/40)	SHEET 2 OF 6	B	DD	11/40-0	Z

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

Center Line

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

(19) CAB ASSY (H967)
C-PL-7009134-0-0

(27) H957-B
FULL LENGTH DOOR
D-UA-H957-B-Ø

(28) FAN ASSY
E-AD-7009456-0-0

(20) CASTER SET
A-PL-H952-EA-Ø

(29) FILTER
C-UA-H957-SA-Ø

(21) LEVELER SET
A-PL-H952-FA-Ø

(22) 19 IN FRAME ASSY
E-UA-H957-AA-Ø

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

(24) FILLER STRIP ASSY
A-PL-H957-GA-Ø

(25) PAN BOTTOM
D-UA-H958-PA-Ø

(26) SKID 19 IN
D-AD-7605465-0-0

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

CUSTOMER PRINT SET 11/40-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
			ELECTRICAL				
X		1	D-UA-11/40-0-0	U	5	BASIC ASSY (11/40)	
X			C-PL-11/40-0-0	U	1	BASIC ASSY (11/40) P.L.	
X			D-IC-11/40-0-1	A	1	A.C. DISTRIBUTION (11/40)	
X			D AR-11/40-0-3	#	7	ASSY CONFIGURATION (11/40)	
X			A-AL-11/40-0-4	B	1	ACCESSORY LIST (11/40)	
X			A-SL-11/40-0-5	*	1	SOFTWARE LIST (11/40)	
X			C-IA-7009053-0-0	#	1	861 CONSOLE TO PWR CONTROL HARNESS	
	X		A-SP-11/40-0-6	A	43	PDP11/35&11/40 BASIC BUILD AND ACCEPTANCE PROCEDURE	
	X		A-SR11/40-0-7		49	PDP11/35&11/40 SYSTEM BUILD AND ACCEPTANCE PROCEDURE	
X			D-IC-7009566-0-1		1	EXPANDER BOX POWER HARNESS	
X			D-IC-7008754-0-3		1	POWER HANRESS	
X			D-IA-7009994-0-0		1	KD11-A POWER HARNESS	
X			D-IA-7009573-0-0		1	6-PIN JUMPER HARNESS	
C			B-DD-KD11-A	#	2	KD11-A PROCESSOR DRAWING DIRECTORY	
	X	4	B-DD-BA11-F	#	3	MOUNTING BOX ASSY DRAWING DIRECTORY	
X			E-UA-BA11-F-0	#	1	MOUNTING BOX ASSY	
X			D-IA-7009177-0-0	#	1	POWER DISTRIBUTION CABLE	
C		9	B-DD-MF11-L	#	3	8K MEMORY DRAWING DIRECTORY	
X			D-IA-7009565-0-0			MF11-L/LP FIRST MEMORY POWER HARNESS	
C		10	B-DD-H7420-0	*		H7420 POWER SUPPLY DRAWING DIRECTORY	
C		11	B-DD-H744-0	#	3	+5 REGULATOR DRAWING DIRECTORY	

CUSTOMER PRINT SET 11/40-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
			ELECTRICAL				
C		12	B-DD-H745-0	#	3	-15V REGULATOR DRAWING DIRECTORY	
C		13	B-DD-861-0	#	2	POWER CONTROL DRAWING DIRECTORY	
C		14	B-DD-KY11-D	#	2	DRAWING DIRECTORY	
	X		D-CS-5409701-0-1	#	3	KY11-D CONSOLE	
X		15	E-IA-7009566-0-0	#	1	EXPANDER POWER HARNESS	
C			K-WL-7009566-0-2	#	1	WIRE LIST	
C		16	A-ML-LT33-0	#	2	TELETYPE WRITERS	
C		17	B-DD-DL11-A	#	3	ASYNCHRONOUS LINE INTERFACE	
C		30	B-DD-MF11-U/UP			16K MEMORY DRAWING DIRECTORY	
X		31	E-CS-H754-0-1	#		+20V,-5V REGULATOR	
C		32	B-DD-MF11-WP			32K MEMORY DRAWING DIRECTORY	

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

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

CUSTOMER PRINT SET 11/40-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
			MECHANICAL				
		1	D-UA-11/40-0-0	U	5	BASIC ASSY (11/40)	
			C-PL-11/40-0-0	U	1	BASIC ASSY (11/40) P.L.	
			D-IC-11/40-0-1	A	1	A.C. DISTRIBUTION (11/40)	
			D-AR-11/40-0-3	#	7	ASSY CONFIGURATION (11/40)	
			A-AL-11/40-0-4	B	1	ACCESSORY LIST (11/40)	
			A-SL-11/40-0-5	*	1	SOFTWARE LIST (11/40)	
			C-IA-7009053-0-0	#	1	861 CONSOLE TO PWR CONTROL HARNESS	
			A-DC-7409478-0-0		1	DECAL PATENT	
	X		A-PL-7010865-0-0	#	1	BRACKET, SHIPPING	
	X		D-IA-7409289-0-0	#	1	MTG BRACKET 10½ PANEL	
	X		D-MD-7409445-0-0	#	1	BRACKET, HARNESS SUPPORT	
	X		B-MD-7409447-0-0	#	1	PLATE, SUPPORT	
	X		D-MD-7409446-0-0	#	1	SUPPORT, HARNESS	
			C-SC-1209224-0-0		1	LATCH MOLDING	
			A-SP-11/40-0-6	A	43	PDP11/35&11/40 BASIC BUILD AND ACCEPTANCE PROCEDURE	
			A-SP-11/40-0-7		49	PDP11/35&11/40 SYSTEM BUILD AND ACCEPTANCE PROCEDURE	
			D-IA-7009994-0-0		1	KDII-A POWER HARNESS	
			D-IA-7009573-0-0		1	6 PIN JUMPER HARNESS	
			C-MD-7407607-0-0		1	PLATE JONES STRIP	
			A-DC-7409873-0-0		1	DECAL J1-J39	
		2	B-DD-KDII-A	#	2	KDII A PROCESSOR DRAWING DIRECTORY	
		3	E-PS-1210710-0-0		1	BEZEL	
			C-PS-1210270-0-0		1	NAME PLATE	
		4	B-DD-KDIrF		3	MOUNTING BOX ASSY DRAWING DIRECTORY	
	X	6	D-IA-7409881-0-0	#	1	PANEL, INDICATOR	
			C-SS-7409881-0-1		1	SILK SCREEN (GRAPE)	
			C-SS-7409881-0-2		1	SILK SCREEN (MAGENTIA)	
			C-SS-7409881-0-3		1	SILK SCREEN (BRITE ROSE)	
			C-SS-7409881-0-5		1	SILK SCREEN (BLACK)	
			C-SS-7409881-0-6		1	SILK SCREEN (WHITE)	
	X	7	D-UA-H950-Q-0	#	1	H950-Q 19 IN COVER PANEL 10½	
	X		A-PL-H950-Q-0	#	1	H950-Q 19 IN COVER PANEL 10½	
	X		D-DI-H950-0-1	#	1	DRAWING INDEX	
	X	8	D-UA-H960-C-0	#	1	CABINET ASSY (PDP-11)	
	X		A-PL-H960-C-0	#	1	CABINET ASSY (PDP-11)	
	X		D-DI-H960-C-1	#	1	DRAWING INDEX	

CUSTOMER PRINT SET 11/40-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
			MECHANICAL				
		9	B-DD-MF11-L	#	3	8K MEMORY DRAWING DIRECTORY	
			D-IA-7009565-0-0		1	MF11-L/LP FIRST MEMORY POWER HARNESS	
		10	B-DD-H7420-0	#	3	H7420 POWER SUPPLY DRAWING DIRECTORY	
		11	B-DD-H744-0	#	3	+5 REGULATOR DRAWING DIRECTORY	
		12	B-DD-H745-0	#	3	-15V REGULATOR DRAWING DIRECTORY	
		13	B-DD-861-0	#	2	POWER CONTROL DRAWING DIRECTORY	
		14	B-DD-5409701-0	#	2	KY11-D CONSOLE DRAWING DIRECTORY	
		15	E-IA-7009566-0-0		1	EXPANDER BOX POWER HARNESS	
			K-WL-7009566-0-2		1	WIRE LIST	
			D-IC-7009566-0-1			EXPANDER BOX POWER HARNESS	
			D-IC-7008754-0-3			POWER HARNESS (H742 to 11/40-old)	
		16	A-ML-LT33-0	#	2	TELETYPE WRITERS	
		17	B-DD-DL11-A	#	3	ASYNCHRONOUS LINE INTERFACE	
		18	D-UA-H950-QB-0		1	10 1/2 COVER PANEL	
			A-PL-H950-Q-0		1	" " "	
			D-DI-H950-0-1		1	DRAWING INDEX	

TITLE	SIZE	CODE	NUMBER	REV
BASIC ASSY (11/40)	B	DD	11/40-0	Z

SHEET 5 OF 6

CUSTOMER PRINT SET					MFG SET	MECHANICAL					
						FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
						19	C-PL-7009134-0-0		1	CAB ASSY (H967)	
							A-PS-1211442-0-0		1	COUNTER-WEIGHT	
							B-DD-MF11-U			16K MEMORY DRAWING DIRECTORY	
						20	A-PL-H952-EA-Ø		1	CASTER SET	
							B-DD-H754-0			+20V; -5V REGULATOR DRAWING DIRECTORY	
						21	A-PL-H952-FA-Ø		1	LEVELER SET	
						22	E-UA-H957-AA-Ø		4	19 IN FRAME ASSY	
						23	D-UA-H957-DA-Ø		1	DOOR FRAME MTG (R.H.)	
						24	A-PL-H957-CA-Ø		1	FILLER STRIP ASSY	
						25	D-UA-H958-PA-Ø		1	PAN BOTTOM	
						26	D-AD-7605465-0-0		1	SKID 19 IN	
						27	D-UA-H957-B-Ø		1	FULL LENGTH DOOR	
						28	D-AD-7009456-0-0		1	FAN ASSY	
							D-IA-7409126-0-0		1	PANEL FAN	
							A-PS-1210165-0-0		1	FAN (115V)	
							A-PS-1209175-0-0		1	FINGER GUARD	
							A-PS-1209798-0-0		1	FAN CARAVEL (230V)	
						29	C-UA-H957-SA-Ø		1	FILTER	
						30	B-DD-MF11-U			16K MEMORY DRAWING DIRECTORY	
						31	E-CS-H754-0-1			+20V, -5V REGULATOR	
						32	B-DD-MF11-WP			32K MEMORY DRAWING DIRECTORY	

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

TITLE	SHEET	SIZE	CODE	NUMBER	REV
BASIC ASSY (11/4Ø)	6 OF 6	B	DD	11/4Ø-Ø	Z

DRB 108

DEC 16-(325)-1062-2B-R972

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

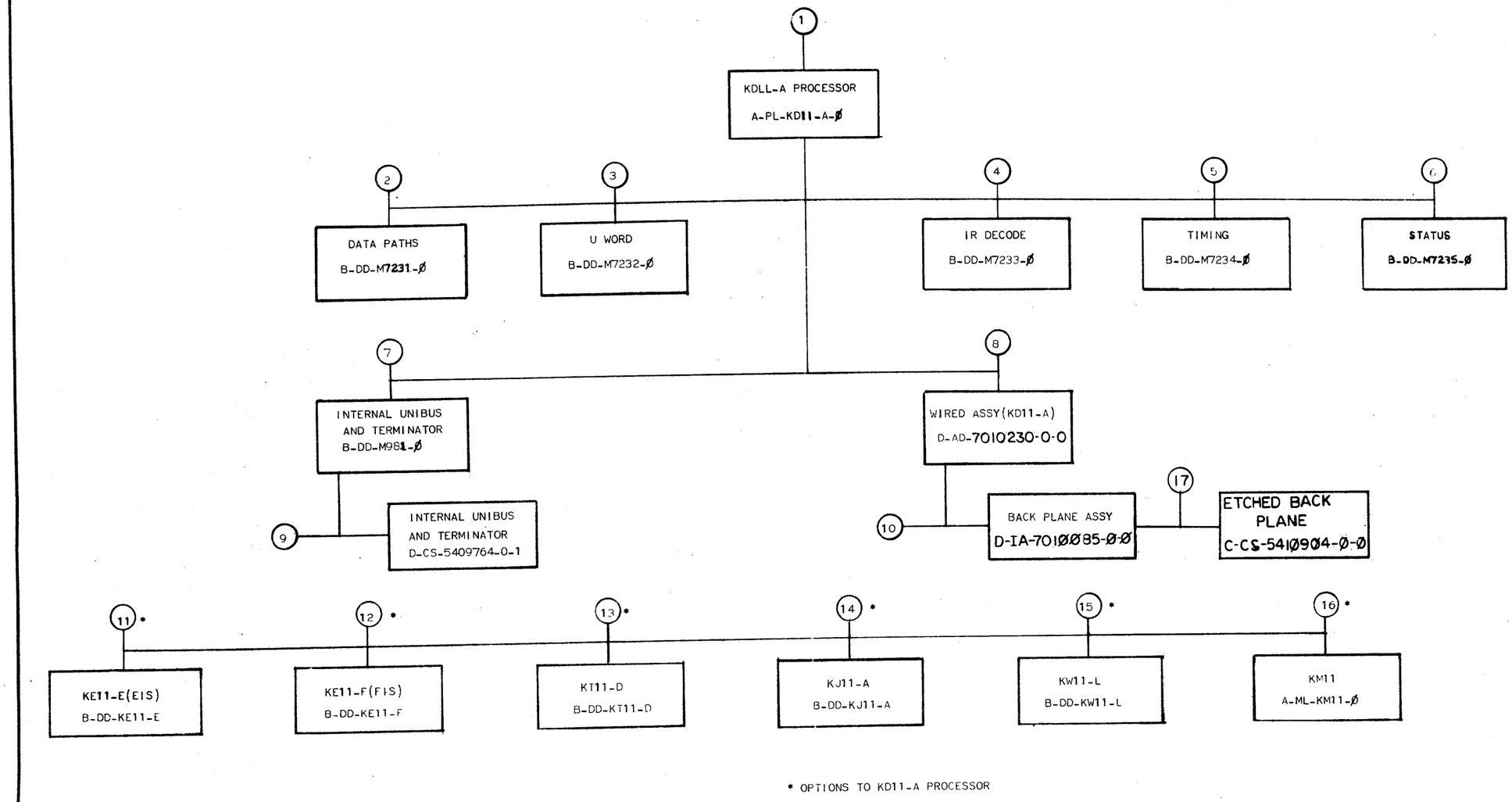
REVISIONS		
REV	Ch. No.	DATE
A	KD11A-C	10-72
B	KD11A-00005	2-73
C	KD11A-6	6-73
D	KD11A-00007	11-73
E	KD11A-00008	5-74
F	KD11A-00009	6-74
H	KD11A-0001C	7-74
J	KD11A-00011	8-74
K	KD11A-00012	8-75
L	KD11A-00013	7-76
M	KD11A-00014	5-77
N	KD11A-00015	11-77

USED ON OPTION/MODEL

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

DRB 106

DEC 16—(3291)—1065—1—NS



* OPTIONS TO KD11-A PROCESSOR

TITLE		SIZE	CODE	NUMBER	REV
KD11-A PROCESSOR	SHEET 2 OF 9	B	DD	KD11-A	N

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

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-WT-7010230-0	#	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

DRB 108
DEC · 16 (325) 1062-2A-R272

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DMUX [15:00]

BUS RD [15:00]

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 (0) H
K2-4 SR1 (1) H
IR [08:06]
IR [02:00]
BA [03:00]
K2-4 RIF3 (1) H
K2-4 RIF2 (1) H
K2-4 RIF1 (1) H
K2-4 RIF0 (1) H

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

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

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

B MUX K1
K2-5 SBMH1 (1) H
K2-5 SBMH0 (0) H
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 K3-3

BUT MUX K3-2

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 L 0 H
BUS BG L 0 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

D(14:00)
D(C)

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)

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]

NOT OR K2

JAMUPP LOGIC K4-3

U WORD REG

K4-2 CLK U (56:17) H
K4-2 CLK U (16:09) H
BUS U [56:09]
U WORD [56:09] K2

K4-2 CLK (UPP * PUPP) H

UPP REGISTER K2

DRIVER K2
DRIVER K2

KM11 DISPLAY

PUPP REGISTER K2

BA MUX K1
K2-5 SBAM (1) H

BA REGISTER K1-6
K4-2 CLK BA H

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

UPP [8:0]

U WORD CONTROL ROM 256 WORDS X 56 BITS

BUPP & SR MATCH K1-9
UPP MATCH
P MATCH
SR [08:00]

380 K1

8881 K1
K4-5 BUS FM D H
BUS D [15:00]

D(C)

D REGISTER K1
K4-2 CLK D H
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

K2-8 CLKIR (1) H
K2-7 WRH (0) 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

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

CLOCK ENABLE GATES K4-2
K4-2 P1 H
K4-2 P2 H
K4-2 P3 H

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

ADDRESS DISPLAY ADRS [17:00] KY11-D

BUS BA [17:00]
8881 K1-6
K4-5 BUS FM BA H

INTERFACE

DATA PATHS

MICROCONTROL

REVISIONS	REV	CHANGE NO	CHK
	A	KDII-00005	O'LOUGHLIN 2-14-73

BRUNING 40-522 11840
DEC FORM NO DRD 102-B

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. Smith DATE 7-21-72
CHK'D T. Vaughan DATE 9-25-72
ENG. T. Vaughan DATE 9-25-72
PROJ. ENG. T. Vaughan DATE 9-25-72
MGR. W. Strange DATE 9-26-72

NEXT HIGHER ASSY. B-CD-KDII-A
SCALE NONE
SHEET OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KDII-A PROCESSOR (BLOCK DIAGRAM)

SIZE D | CODE BD | NUMBER KDII-A-BD | REV. A
DIST.

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-WF-7010230-0	#	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

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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[ADRSC]

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

REG ADRS INPUTS KI-9
K2-4 SRS (I) H
K2-4 SRD (I) H
K2-4 SRBA (I) H
K2-4 SR1 (I) H
IR [08:06]
IR [02:00]
BA [09:00]
K2-4 RIF3 (I) H
K2-4 RIF2 (I) H
K2-4 RIF1 (I) H
K2-4 RIF0 (I) H

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

BUS TERMINATOR & CONNECTOR M881

SWITCH REGISTER SR [17:00] KYII-D

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

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

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

CONDITIONAL CODES INPUT K3-9, K5-2
K2-6 SPS2 (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] KYII-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)

D(14:00)
D(C)

BUT DECODE K3-3

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]

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

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

COUT MUX KI-8
COUT 15
COUT 07
ALU 15
K5-2 PS(C) (I) H

CIN LOGIC K3-8
Ø
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]

UPP REGISTER K2

DRIVER K2

KMII DISPLAY

PUPP REGISTER K2

BA MUX KI
K2-5 SBAM (I) H

BA REGISTER KI-6
K4-2 CLK BA H

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

BA [15:03]

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

UPP [8:0]

U WORD CONTROL ROM 256 WORDS X 56 BITS

DRIVER K2

BUPP & SR MATCH KI-9
UPP MATCH
P MATCH

SR [08:00]

380 KI

8881 KI
K4-5 BUS FM D H
BUS D[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 (15:09)=ØH
DECODING (ADRS & DATA) KI-7

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

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

CLOCK ENABLE GATES K4-2
K4-2 P1 H
K4-2 P2 H
K4-2 P3 H

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

CLOCK CONTROL (CLK, IDLE) K4-2

VARIOUS ASYNCHRONOUS STARTING SIGNALS
KM-2 MCLK L

K4-2 RECLK H

ADDRESS DISPLAY ADRS [17:00] KYII-D

BUS BA [17:00]
8881 K1-6
K4-5 BUS FM BA H

INTERFACE

DATA PATHS

MICROCONTROL

REVISIONS		
CHG	CHANGE NO	REV
DBT	KDIIA-00005	A

D. LOUGHLIN 6-9-73
2-14-73

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

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —//—

FINISH —//—

DRN		DATE 7-21-72
CHKD		DATE 9-25-72
DSG.		DATE 9-25-72
PROJ. ENG.		DATE 9-25-72
PROJ. LDR.		DATE 9-25-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KDII-A PROCESSOR (BLOCK DIAGRAM)

NEXT HIGHER ASSY.: B-DD-KDII-A

SCALE: NONE

SHEET OF

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

DIST

KDII-A-BD REV A

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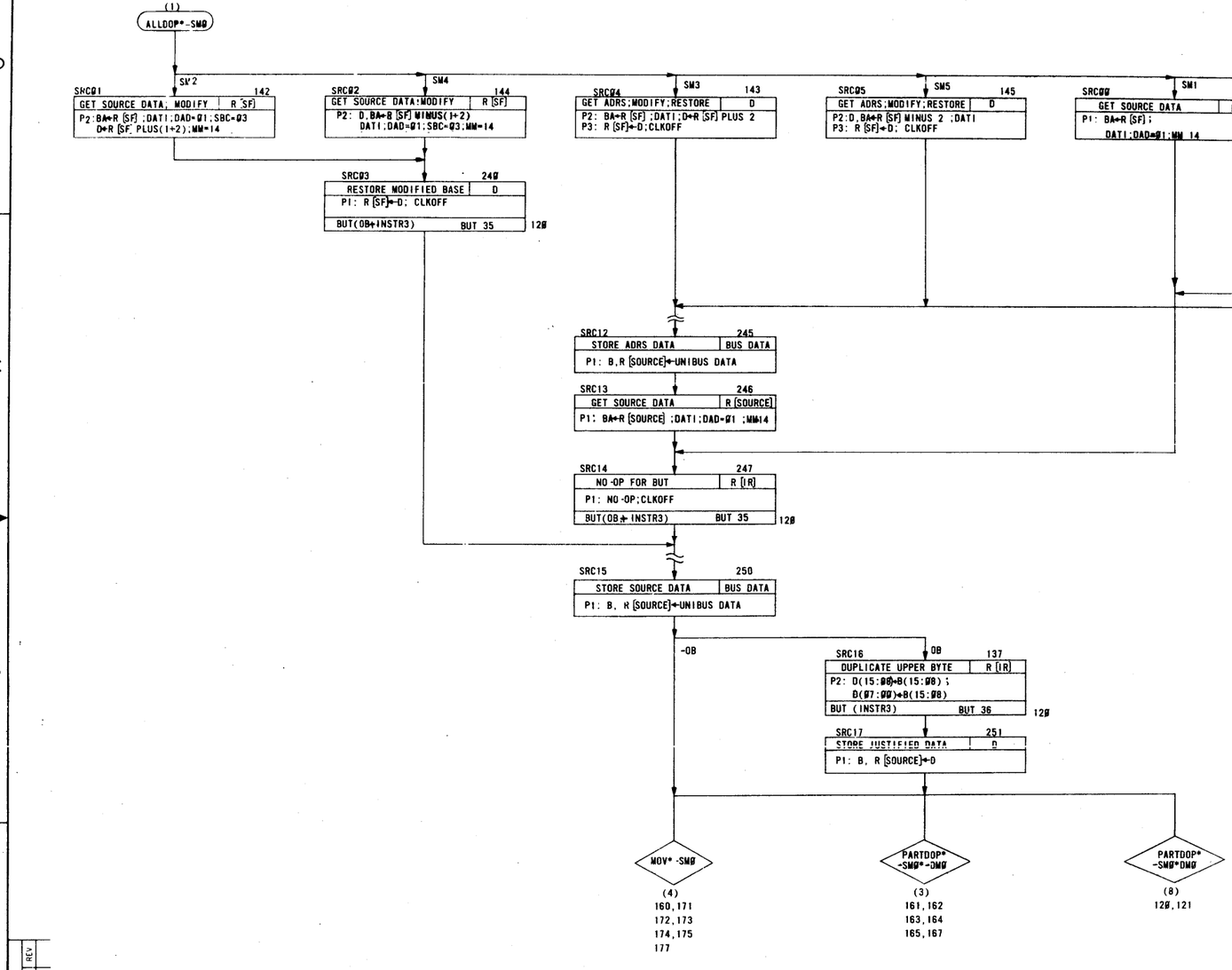

NOTES:

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.

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	1-15-72
CHK'D	DATE	2/25/72
ENG.	DATE	11/27/72
PROJ. ENG.	DATE	12/7/72
MGR.	DATE	2/16/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (SOURCE) (2)

NEXT HIGHER ASSY.: B-DD-KDII-A
SCALE
SHEET 2 OF 12

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

DIST.

DEC FORM NO DRD 102-B

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

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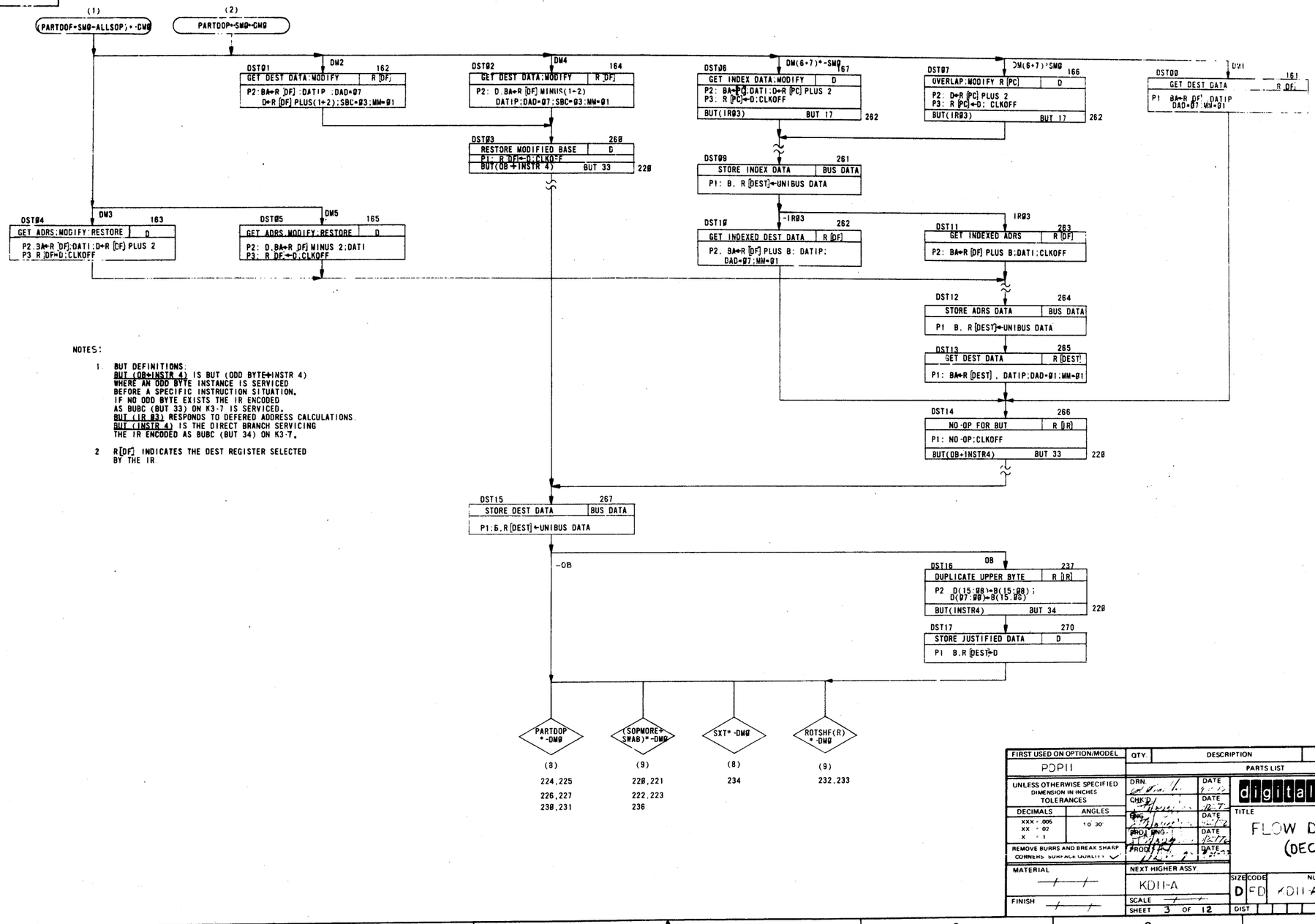

NOTES:

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	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

		DATE
DRN		
CHK'D		
ENG		
PROJ ENG		
PROD ENG		

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TITLE: FLOW DIAGRAM (DECT) (3)

MATERIAL
FINISH
NEXT HIGHER ASSY: KDII-A
SCALE
SHEET 3 OF 12
SIZE D | CODE FD | NUMBER KDII-A-FD | REV B
DIST

REVISIONS	REV.	CHANGE NO.	CHK.

DEC FORM NO DRB 102-B

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(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 12 212

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

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

-IR03

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

IR03

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

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

DM0*SM0

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

IF OVLAP

MOV20 204
STORE DEST DATA | D
P1:R [DF] .B←D:SPS←03:MM←1
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(SERVICE+FETCH OVLAP+FETCH B) BUT 27 000

DM0*-SM0

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

BYTE*SM0

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

MOV15 205
STORE JUSTIFIED DATA | D
P2:D(15:08)←B(07:00)
D(07:00)←B(07:00);DATOB
P3:R [SOURCE]←D:MM←01

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(0+2),SBC=16
DATO MM=11

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

NO-OP
(0)
375

SERVICE B
(10)
002

FETCH OVLAP
(1)
001

FETCH B
(1)
000

NOTE;

1. BUT DEFINITIONS:
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			
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	ANGLES
XXX ± .005 XX ± .02 X ± .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

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

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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

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(1) JMP+JSR

JMP00 DM1 151 — GET DEST ADRS | R [DF]
P2: D←R [DF]
BUT(JSR←JMP) BUT 15 — 3Ø6

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 — 3Ø6

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 — 3Ø6

JMP03 DM4 154 — GET DEST ADRS;MODIFY | D
P2: D R [DF] MINUS 2
P3: R [DF]←D
BUT(JSR+JMP) BUT 15 — 3Ø6

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 — 3Ø6

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 — 3Ø6

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 — 3Ø6

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

JSR00 JSR 307 — MODIFY STACK POINTER | D
P2: D, BA←R [SP] MINUS2
P3: R [SP]←D; DAD←Ø6

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

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

JMP

JMP12 306 — GET DEST ADRS | R [TEMP]
P2: D←R [TEMP]
BUT(SERVICE C←FETCH C) BUT 16 — Ø16

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

SERVICE C (10) Ø17

FETCH C (1) Ø16

(1) MARK

MRKØØ 112 — DOUBLE OFFSET | D
P2: D←B PLUS R [IR]
P3: B←D

MRKØ1 353 — MODIFY PC WITH OFFSET | D
P2: D, BA←R [PC] PLUS SEXB;DATI
P3: R [PC]←D

MRKØ2 354 — FORM NEW STACK POINTER | R [PC]
P2: D←R [PC] PLUS 2

MRKØ3 355 — STACK POINTS TO OLD R5 | D
P1: R [SP]←D;CLKOFF

MRKØ4 356 — LOAD R [Ø5] WITH OLD R5 | BUS DATA
P2: D←R [Ø5]
P3 .R Ø5←UNIBUS DATA
BUT(SERVICE C←FETCH C) BUT 16 — Ø16

MRKØ5 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 1-11-72
CHK'D — DATE 1-20-72
ENG — DATE 2-2-72
PROJ ENG — DATE 1-27-72
PROG — 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

LIST

DEC FORM NO DRD 102-B

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(JAMUPP)(RED ZONE +DUBBERR)

TRAP ERR

TRP@@ 336 — JAM R[SP] TO 4 | D
P2:D←∫(SBC=17)
P3:R[SP]←D

TRP@1 317 — FORM,STORE TRAP VECTOR | D
P2:D←∫(SBC=@@*STPM)
P3:R[VECT]←D

-MM FAULT

TRP@2 215 — GET NEW STATUS | R[VECT]
P2:BA←R[VECT] PLUS 2; DATI;CLKOFF

(10)

TRAP A

TRP@3 @1@ — FORM,STORE TRAP VECTOR | D
P2:D←∫(SBC=@@*STPM)
P3:R[VECT]←D
BUT(MM FAULT) BUT 11 214

TRP@4 216 — GET MM VECTOR(250) | D
P2:D←∫(SBC=15)

MM FAULT

TRP@5 214 — STORE MM VECTOR | D
P1:R[VECT]←D

(1)

TRAP B

TRP@6 126 — FORM,STORE TRAP VECTOR | D
P2:D←∫(SBC=@@*STPM)
P3:R[VECT]←D

(1)

TRAP C

TRP@7 150 — FORM,STORE TRAP VECTOR | D
P2:D←∫(SBC=@@*STPM)
P3:R[VECT]←D

(10)

TRAP D

TRP@8 007 — GET NEW STATUS | R[VECT]
P2:BA←R[VECT] PLUS 2
DATI;CLKOFF;MM=@4

TRP@9 115 — STORE NEW STATUS | BUS DATA
P1:R[TEMP]←UNIBUS DATA;
MM=@6

TRP1@ 326 — MODIFIY STACK POINTER | D
P2:D,BA←R[SP] MINUS 2;DAD=6
P3:R[SP]←D;MM=@4

TRP11 327 — STORE OLD STATUS ON STACK | PS
P2:D←PS;DATO;CLKOFF;MM=@4

TRP12 113 — DESKEW WORD FOR DATO | BUS DATA
P1:NO-OP;MM=@4

TRP13 330 — MODIFY STACK POINTER | D
P2:D,BA←R[SP] MINUS 2;DAD=6
P3:R[SP]←D;MM=@4

TRP14 331 — STORE OLD R[PC] ON STACK | R[PC]
P2:D←R[PC];DATO;CLKOFF;
MM=@4

TRP15 77 — ENABLE NEW STATUS | R[TEMP]
P1:PS←R[TEMP];SPS=@;MM=@6

TRP16 140 — LOAD NEW STATUS | R[TEMP]
P1:PS←R[TEMP];SPS=7,MM=@2
BUT(REG EXAM) NOTE 1 BUT @4

TRP2@ 332 — GET NEW R[PC] | R[VECT]
P1:BA←R[VECT];DATI;
CLKOFF;MM=@4
BUT(CBR1) : NOTE 1 BUT @1 122

TRP21 333 — STORE NEW R[PC] | BUS DATA
P1:R[PC]←UNIBUS DATA
BUT(REG DEP) : NOTE 1 BUT @3

-HALT SW → SERVICE D (10) 123
HALT SW → CONSOLE A (11) 122

(JAMUPP)

PWRUP*-HALT

TRP17 337 — FORM,STORE PWRUP VECTOR | D
P2:D←∫(SBC-11*)JUMPERS)
P3:R[VECT]←D

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

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

(1)

RESET

RST@@ 127 — GET RESET DATA DISPLAY | D
P1:D←R[@@]

RST@1 025 — RESET DELAY AND INIT | D
P3:CLKOFF;20 MILLISECONDS INIT;
@ MILLISECONDS DELAY
BUT(CBR2);INIT;DELAY BUT @2 @42

RST@2 040 — NO-OP FOR BUT | D
P1:NO-OP

HALT SW

RST@3 C42 — NO-OP FOR CONSOLE ENTRY | D
P1:NO-OP

-HALT SW

RST@4 043 — NO-OP FOR FETCH ENTRY | D
P1:NO-OP

CONSOLE B (11) @11

(1)

RTS

RTS@@ 124 — GET NEW R[PC] | R[DF]
P2:D←R[DF]

RTS@1 323 — STORE NEW R[PC] | D
P1:R[PC]←D

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

RTS@3 325 — STORE TOP OF STACK | BUS DATA
P1:R[DF]←UNIBUS DATA

FETCH C (1) @16

(1)

RTI+RTT

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

RTI@1 320 — STORE NEW R[PC] | BUS DATA
P1:R[PC]←UNIBUS DATA;

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

RTI@3 322 — STORE NEW STATUS | BUS DATA
P1:PS←UNIBUS DATA;SPS=7

SERVICE C (10) @17

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) }

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 1-11-72
CHK'D		DATE 12-5-72
ENG		DATE 12-7-72
PROJ. ENG.		DATE 12-7-72
PROG.		DATE 12-7-72

NEXT HIGHER ASSY: E-DB-KD11-A

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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

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

SCALE
SHEET 5 OF 12
DIST

DATE B — NUMBER KD11-A-FD — SIZE/CODE D FD

BRUNING 40 522 1584 — REVISIONS — CHANGE NO — CHK — REV.
DRAWING NO ORD 102-B

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(1) NO BRANCH

NBR@@ 110
NO-OP AFTER A BUT | R IR
P1:NO-OP
BUT(SERVICE C+FETCH C) BUT 16 @16

(1) BRANCH

BRA@@ 111
ADD HALF OF OFFSET | R [PC]
P2:D←R [PC] PLUS SEXB

BRA@1 340
MODIFY R PC | D
P1:R [PC]←D
BUT(SERVICE C FETCH C) BUT 16 @16

BRA@2 341
REST OF OFFSET;MODIFY | D
P2:D←R [PC] PLUS SEXB
P3:R [PC]←D

(1) SOB

SOB@@ 130
DECREMENT COUNT | R [SF]
P2:D←R [SF] MINUS 1

SOB@1 342
TEST COUNT | D
P1: R [SF]←D
BUT(D=@) BUT 12

SOB@2 343
MASK R [IR] FOR OFFSET | D
P2:D←R [IR] *(SBC=13)
P3:B←D

SOB@3 344 -(D=@)
SUBTRACT HALF OF OFFSET | D
P2:D←R [PC] MINUS B;DAD=1@
P3:R [PC]←D
BUT(SERVICE C+FETCH C) BUT 16 @16

SOB@4 346
SUBTRACT HALF OF OFFSET | D
P2:D←R [PC] MINUS B;DAD=1@
P3:R [PC]←D

SOB@5 345 (D=@)
NO-OP FOR BUT | D
P1:NO-OP
BUT(SERVICE C+FETCH C) BUT 16 @16

SOB@6 347
NO-OP FOR BUT | R [IR]
P1:NO-OP

(1) CLR COND CODES

CCC@@ 116
MASK R [IR] FOR PS MASK | D
P2:D←R [IR] *(SBC=12)
P3:B←D

CCC@1 350
COMPLEMENT PS MASK BITS | D
P2:D←B ;ALU COMPLEMENTS B
P3:B←D
BUT(SERVICE C+FETCH C) BUT 16 @16

CCC@2 351
AND PS MASK TO PS | D
P2:D=B*PS;SPS=3
P3.PS←D

SERVICE C (1@) @17

(1) SET COND CODES

SCC@@ 117
MASK R [IR] FOR PS MASK | D
P2 D←R [IR] *(SBC=12)
P3 B←D
BUT(SERVICE C-FETCH C) BUT 16 @16

SCC@1 352
OR PS MASK TO PS | D
P2 D←B-PS.SPS=3
P3:PS←D

FETCH C (1) @16

(1) PARTDOP*SWB*DMB@

DOP@@ 103 SUB
PUT SOURCE INTO B | R [SF]
P1:B←R [SF]

DOP@1 363
SUBTRACT B FROM DEST | R DF
P2:D←R [DF] MINUS B;DAD=1@
BUT(SERVICE B+FETCH OVLAP+FETCH B) BUT 27 @@@

DOP@2 102 -SUB
PUT DEST INTO B | R [DF]
P1:B←R [DF]
BUT(NOWR+BYTEWR+WORDWR) BUT 31 36@

DOP@3 364
OPERATE UPON B.SOURCE | R [SF]
P2:D←½DAD {R [SF] AND B} ;DAD=14
BUT(SERVICE B+FETCH OVLAP+FETCH B) BUT 27 @@@

NOWR | BYTE WR | WORDWR

(1) SWAB*DMB@

SWB@@ 134
PUT DEST INTO B | R [DF]
P1:B←R [DF]

SWB@1 135
SWAP BYTES | D
P2:D(15:@8)←B(@7:@@)
D(@7:@@)←B(15:@8)
BUT(SERVICE B+FETCH OVLAP+FETCH B) BUT 27 @@@

NOWR | BYTEWR | WORDWR

(1) SOPMORE*DMB@

SSL@@ 105 NEG
PUT DEST INTO B | R [DF]
P1:B←R [DF]
BUT(NOWR+BYTE WR+WORDWR) BUT 31 36@

SSL@1 372
NEGATE DEST | D
P2:D←NEG OF B;DAD=1@;RD=@
BUT(SERVICE B+FETCH OVLAP+FETCH B) BUT 27 @@@

SSL@2 104 -(NEG)
OPERATE UPON DEST | R DF
P2:D←½DAD {R [DF]} ;DAD=14
BUT(NOWR+BYTEWR+WORDWR) BUT 31 36@

SSL@3 373
NO-OP FOR BUT | D
P1:NO-OP:SPS=1
BUT(SERVICE B+FETCH OVLAP+FETCH B) BUT 27 @@@

NOWR | BYTEWR | WORDWR

NOWR (8) 362
BYTE WR (8) 361
WORDWR (8) 368

NOTE:

1. BUT DEFINITIONS:
   BUT (SERVICE C+FETCH C) RESPONDS TO ANY SERVICE REQUEST OVER A FETCH REENTRY.
   BUT (D=@) 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 | LTR | 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 7-15-72
CHK'D DATE 11/27/72
ENG DATE 12/7/72
PROJ ENG DATE 12/7/72
PROJ DATE 1-2-73

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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

NEXT HIGHER ASSY. B-5D-KD11-A
SCALE
SHEET 7 OF 12

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

DIST

DEC-DMB-NO DRD 102-B

KD11-A-FD B

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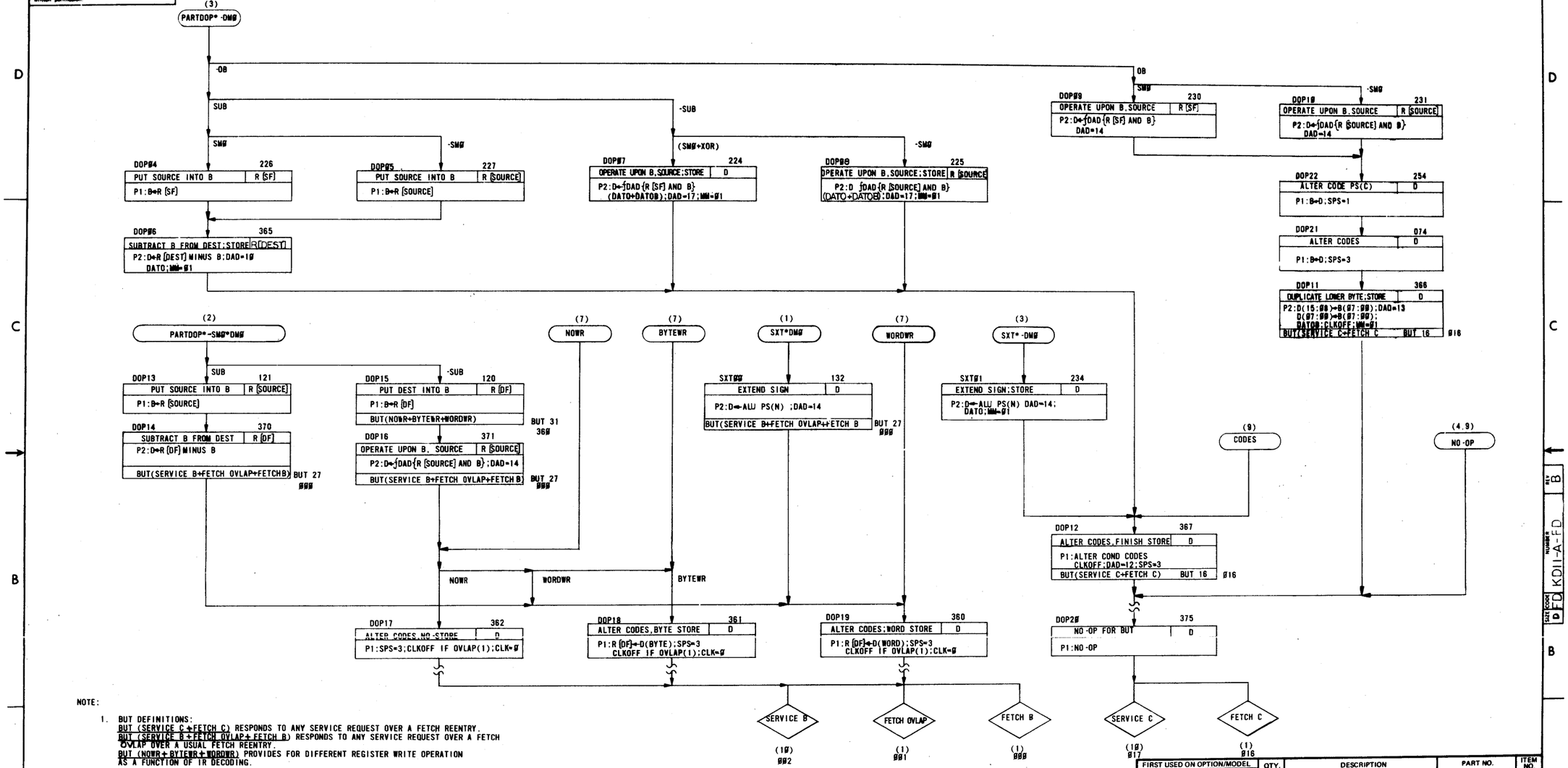

NOTE:

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	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	4-15-72
CHK'D	DATE	4/28/72
ENG.	DATE	4/25/72
PROJ. ENG.	DATE	4/25/72
PROD. ENG.	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

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(3)
(SOPMORE*SWAB)* -DM#

-OB

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(15:08)←B(07:00);MM←#1
J(07:00)←B(15:08);DATO

-(NEG+SWAB)

SSL06 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

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(15:08)←B(07:00);DAD=13
D(07:00)←B(07:00);
DATOB;CLKOFF;MM←#1
BUT(SERVICE C+FETCH C) BUT 16 #16

NO-OP

(8)

(1)
ROTSHF(R)*DM#

-BYTE

RSR#0 106
OPERATE UPON DEST D(C),D(15:#1)
P2:D←R [DF]
D(C)←ƒROT(PS(C))+ƒSHF(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(15:08)←B(07:00)
D(07:00)←B(07:00)
D(C)←ƒROT(PS(C))+ƒSHF(ALU15)
P3:PS(C)←D##;SPS=1;B←D(C),D(15:#1)

RSR#4 273
DUPLICATE BYTE;STORE D
P2:D(15:08)←B(15:08)
D(07:00)←B(15:08)
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) #01
FETCH B (1) ###

(3)
ROTSHF(R)* -DM0

-BYTE

RSR#6 232
OPERATE UPON DEST D(C),D(15:#1)
P2:D←B
D(C)←ƒROT(PS(C))+ƒSHF(ALU15)
P3:PS(C)←D##;SPS=1
B←D(C),D(15:#7)

RSR#7 275
STORE DEST D
P2:D←B;DATO;MM←#1

BYTE

RSR#8 233
OPERATE UPON DEST D(C),D(15:#1)
P2: D(15:08)←B(07:00)
D(07:00)←B(07:00)
D(C)←ƒROT(PS(C))+ƒSHF(ALU15)
P3:PS(C)←D##;SPS=1;B←D(C),D(15:#1)

RSR#9 276
DUPLICATE BYTE;STORE D
P2:D(15:00)←B(15:00);MM←#1
D(07:00)←B(15:00);DATOB

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

NOTE:

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

REVISIONS			
REV	CHANGE NO	CHK	

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN		DATE 9-15-72
CHK		DATE 10-5-72
ENG		DATE 10-27-72
TOOL ENG		DATE 10-27-72
PROJ		DATE 11-15-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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

NEXT HIGHER ASSY.
B-DD-KDII-A

SCALE

SHEET 9 OF 12

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

DIST.

DEC FORM NO
DRD 102-B

B FD KDII-A-FD

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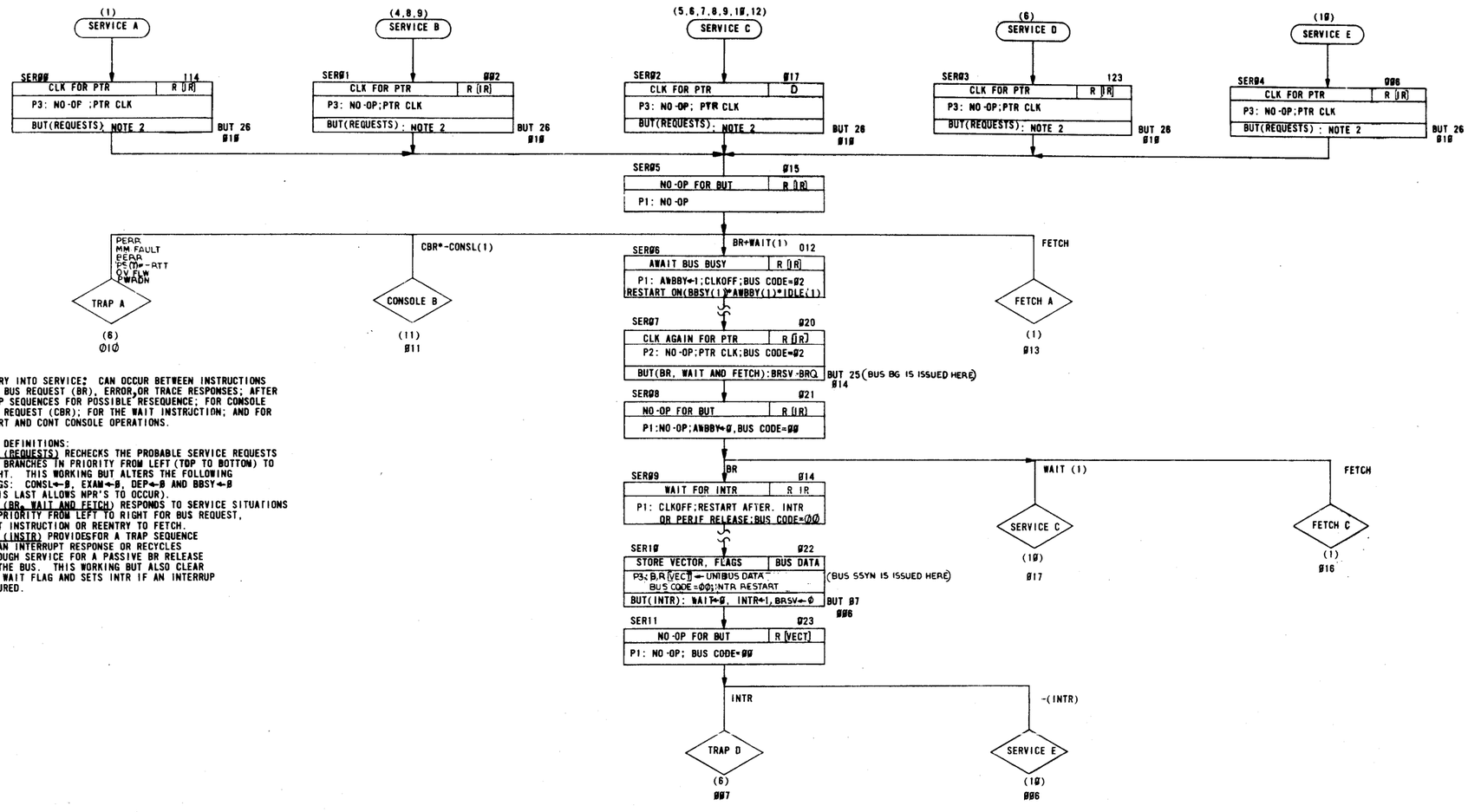

NOTES:

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

2. BUT DEFINITIONS:
   BUT (REQUESTS) RECHECKS THE PROBABLE SERVICE REQUESTS AND BRANCHES IN PRIORITY FROM LEFT (TOP TO BOTTOM) TO RIGHT. THIS WORKING BUT ALTERS THE FOLLOWING FLAGS: CONSL←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.

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

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

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (SERVICE) (10)

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

DIST.

DEC FORM NO DRD 102-B

KD11-A-FD B

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(1,6)
CONSOLE A

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

(6,10)
CONSOLE B

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

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

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

CBR (HALT SWITCH)

HALT INSTR

CON03 024
DISPLAY REG D
P2:D← RB

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

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

-SWITCH

SWITCH

CON07 027
CONTACT BOUNCE COUNT D
P2:D←-5(SBC14)WHICH IS ZERO
IF SIN CLK

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

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

(D=0)

D=0

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

CON11 050
LOAD LAST CONS ADRS 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) 039

(POWER UP)
PWRUP*HALT*BEGIN

(11,12)
CONSOLE RECYCLE

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

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

CON13 315
TEST FOR SWITCH 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 RB 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		
CHK	CHANGE NO	REV

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

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

DRN		DATE 9-15-72
CHK		DATE 9/25/72
ENG		DATE 9/25/72
ADV ENG		DATE 9/25/72
PROJ ENG		DATE 9-21-72

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

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (CONSOLE LOOP) (11)

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

DIST.

DEC FORM NO DRD 102-B

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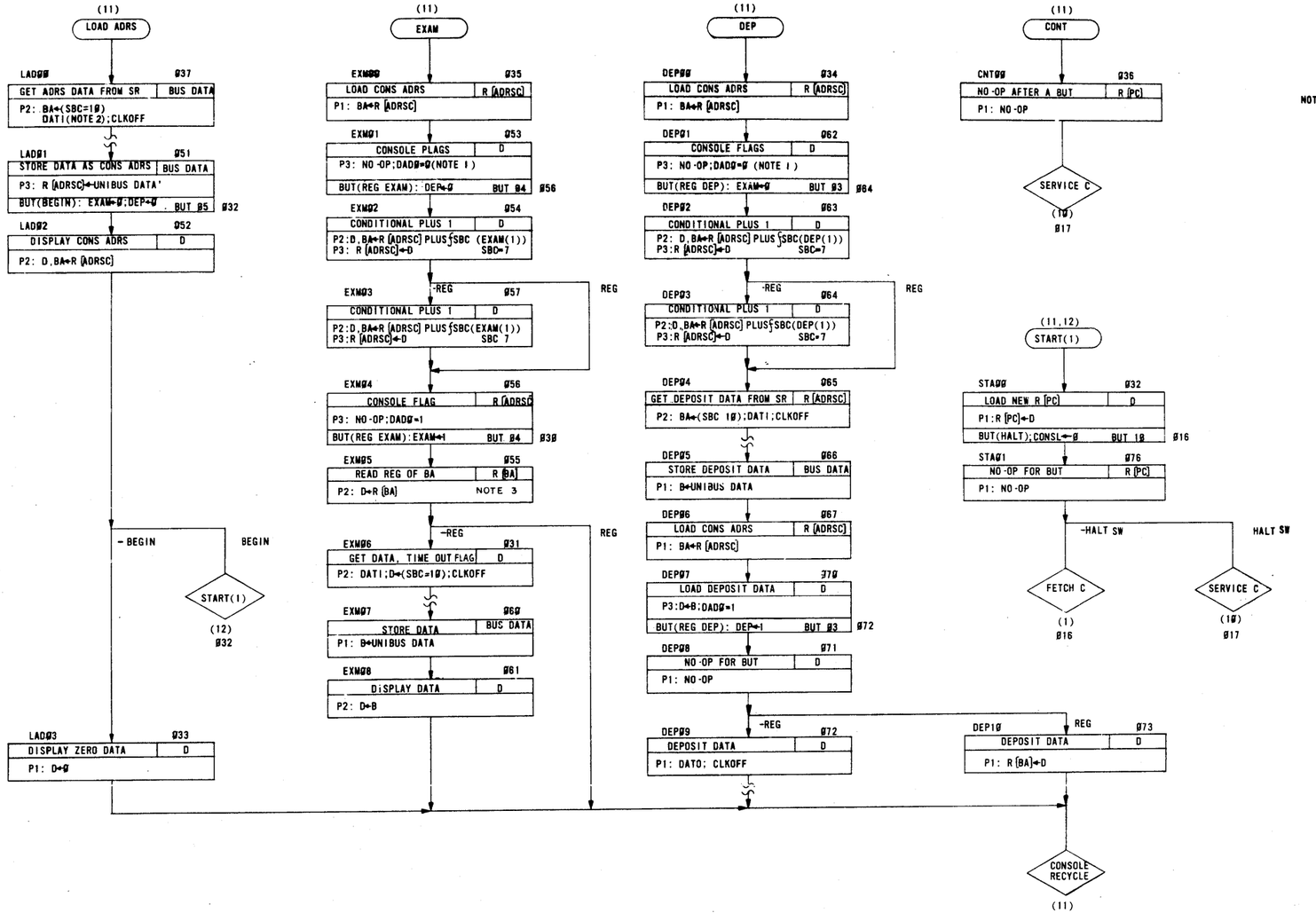

NOTES:

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=1@) UNLESS BEGIN SWITCH INPUT IS ACTIVE.
3. REGISTER SELECTION AS A FUNCTION OF BA[@3=@@].

REVISIONS	REV
CHANGE NO.	
CHK	

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

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

DRN		DATE 9-15-72
CHK'D		DATE 12/5/72
ENG		DATE 12/5/72
ENGR MGR		DATE 12/5/72
PROJ		DATE 12/5/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW DIAGRAM (CONSOLE SWITCHES) (12)

MATERIAL
FINISH
NEXT HIGHER ASSY. B-DD-KD11-A
SCALE
SHEET 12 OF 12
SIZE D | CODE FD | NUMBER KD11-A-FD | REV. B
DIST.

DEC FORM NO ORD 100-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. PUDELKO	CHECKED J.T.Loughlin	SECTION
DATE 9/15/72	DATE 9/27/72	
ENG J.T.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: KD11-A PROCESSOR	ASSY NO. 11	SIZE A	CODE PL	NUMBER KD11-A-Ø	REV A	ECO NO KD11A-C0011
	SHEET 1 OF 1	DIST C				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

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	1	2	3	4	5	6	7	8	9
	M7239	M7238	M7232	M7231	M7233	M7235	M7234	M7236	M981 CABLE
A	FIS BOARD (OPTIONAL) KE11-F	EIS BOARD (OPTIONAL) KE11-E	U WORD	DATA PATHS	IR DECODE	STATUS	TIMING	MEMORY MANAGEMENT (OPTIONAL) KT11-D	INTERNAL UNIBUS AND TERMINATOR
B									
C									
D	W130		M7237						SMALL PERIPHERAL CONTROLLER (OPTIONAL) SEE NOTE *3 SEE NOTE *4
E	(OPTIONAL) KM11 FOR KD11A PROCESSOR OPTIONS SEE NOTE *2		(OPTIONAL) KJ11-A OR KT11-D SEE NOTE *2						
F	W130		M787						
	(OPTIONAL) KM11 FOR BASIC KD11A PROCESSOR SEE NOTE *2		(OPTIONAL) KW11-L SEE NOTE *2						

VIEW FROM WIRING SIDE

NOTES:

1. VIEW OF LOGIC PANEL IS FROM WIRING SIDE.
2. PREWIRED MODULE SLOTS FOR NOTED OPTIONS.
3. THE SMALL PERIPHERAL CONTROLLER SLOT (SLOT 09, 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.	
O'L	KD11A-00005	A	
O'LOUGHLIN 2-15-73			

FIRST USED ON OPTION/MODEL: PDP 11

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DWN DATE 9-5-72
CHECKED DATE 9-20-72
ENGR DATE 9-21-72
PROJ. ENGR DATE 9-22-72
PROD. DATE 9-25-72
NEXT HIGHER ASSY A-PL-KD11-A-Ø
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION

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

DEC FORM NO. DRD 100

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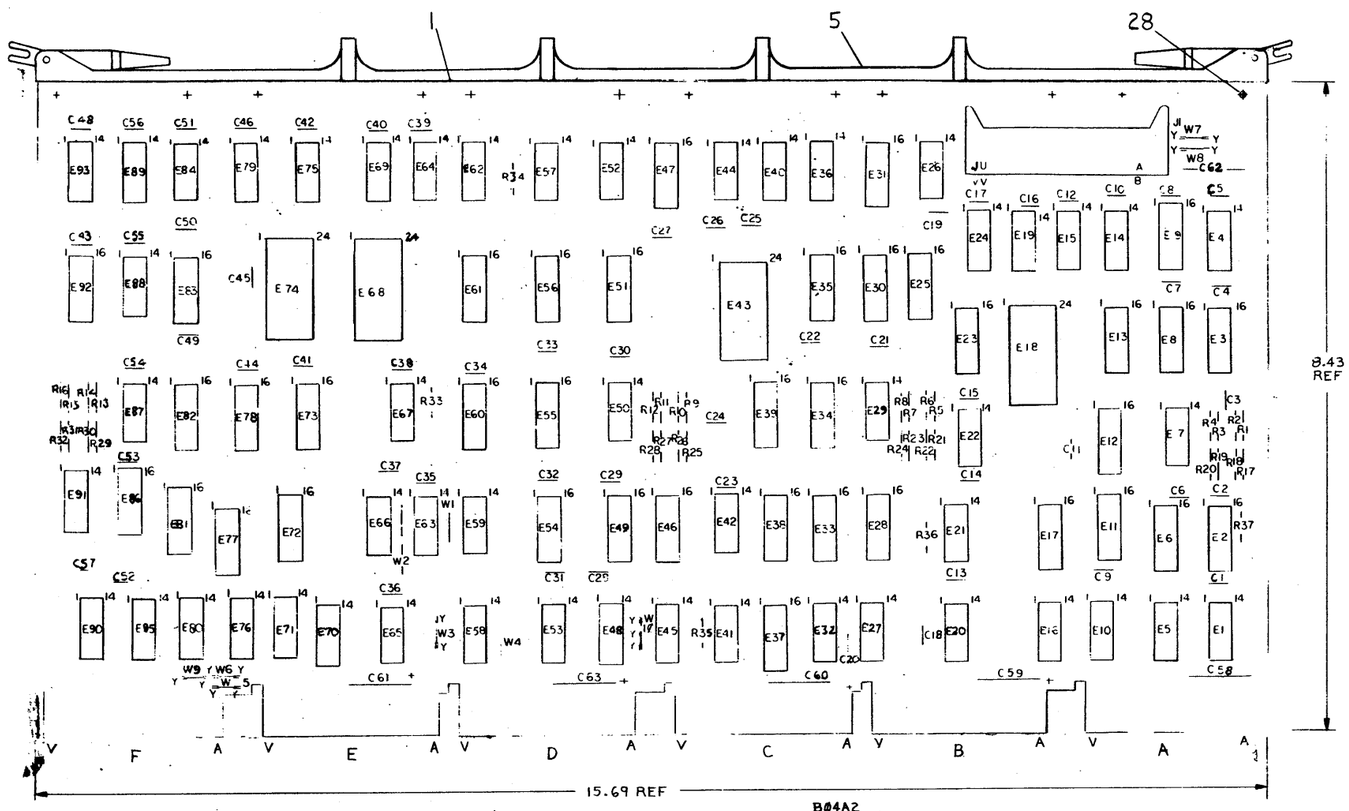
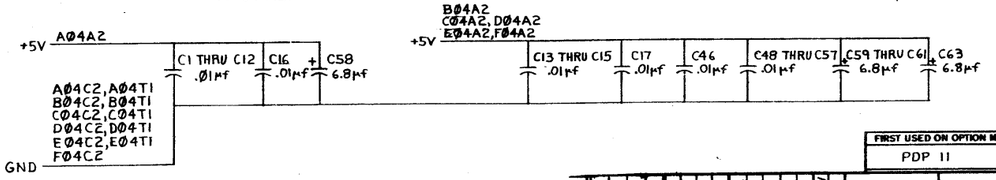
NOTES:

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				
15		INSULATED JUMPER	9009185	30
12		SPLIT LUG	9006735	29
		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	12107II-02	5
1	J1	CONN 40 PIN	1209941	4
6	C58 THRU C63	CAP 6.8μf 35V ±10% TANT	1005306	3
56	C1 THRU C46, C48 THRU C57	CAP .01μf 100V ±20% DISC	1001610	2
1		ETCHED CIRCUIT BOARD	5009980	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV D

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

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.

FIRST USED ON OPTION MODEL: PDP 11

REV	CHANGE NO.	CHK
A	ORIGINATED	J. ROGERS 10-18-71
B	M7231-00001	J. ROGERS 10-11-71
C	M7231-00002	J. O'LOUGHLIN 8/11/72
D	M7231-00003	J. O'LOUGHLIN 8-22-72

DRN. J. Rogers 7-6-72
CHKD. [illegible] 7/31/72
ENG. [illegible] 7/31/72
PROJ. ENG. [illegible] 7/31/72
PROJECT [illegible] 8-1-72
NEXT HIGHER ASSY KD11-A
SCALE —
SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DATA PATHS KI-1

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

DIST.

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

DEC FORM NO. 10-135A

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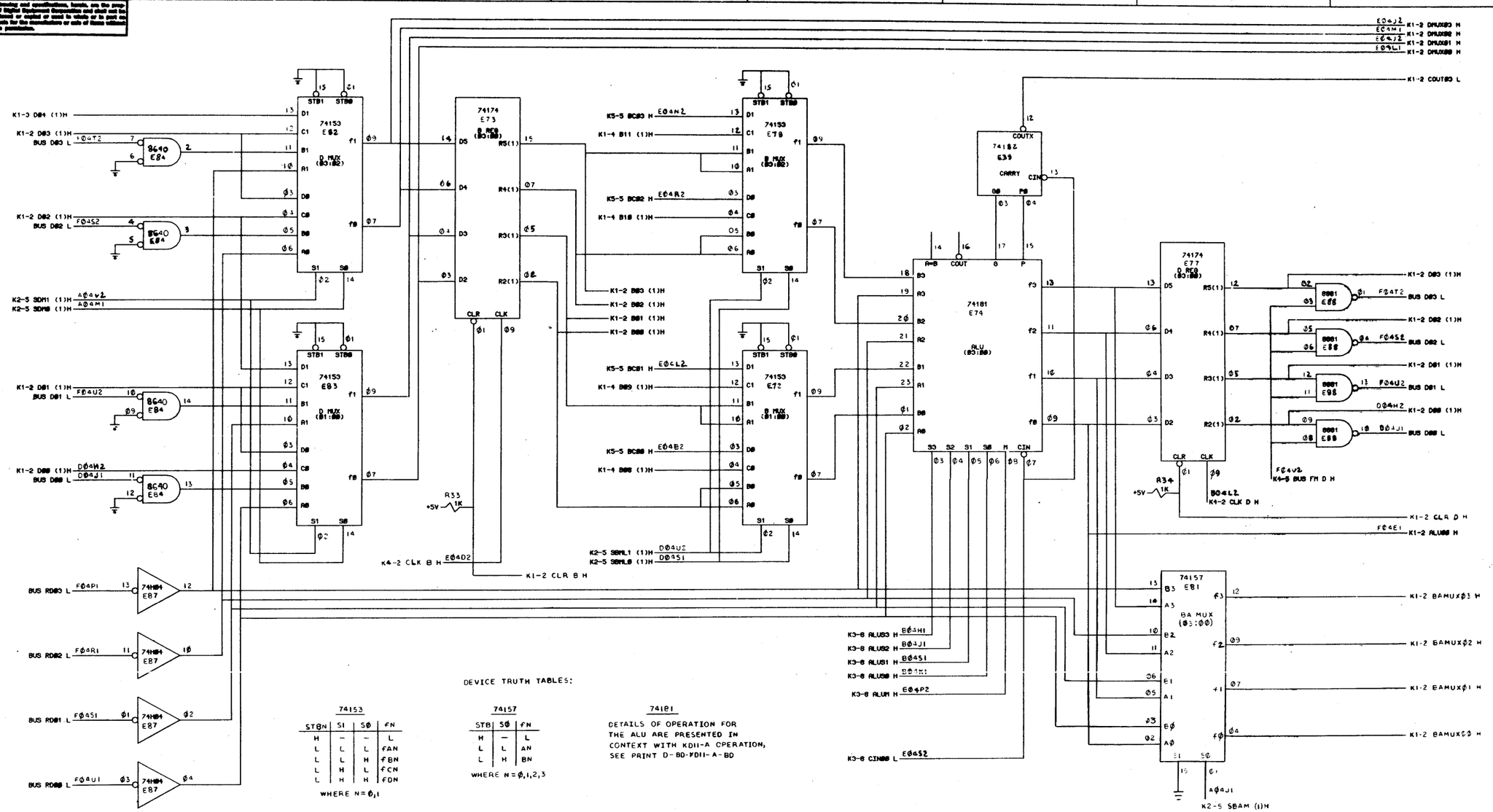

DEVICE TRUTH TABLES:

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 CPERATION, SEE PRINT D-BD-KDII-A-BD

UNLESS OTHERWISE SPECIFIED	DRN.	DATE	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINISH, SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE	TITLE: DATA PATHS DATA PATHS (B3:B0) K1-2
MATERIAL	ENGR	DATE	
FINISH	PROJ. ENG.	DATE	
	MFG	DATE	
	FIRST USED ON: PDP11		
	SCALE	SHEET 2 OF 9	SIZE D CODE CS NUMBER M7231-0-1 REV. D DIST.

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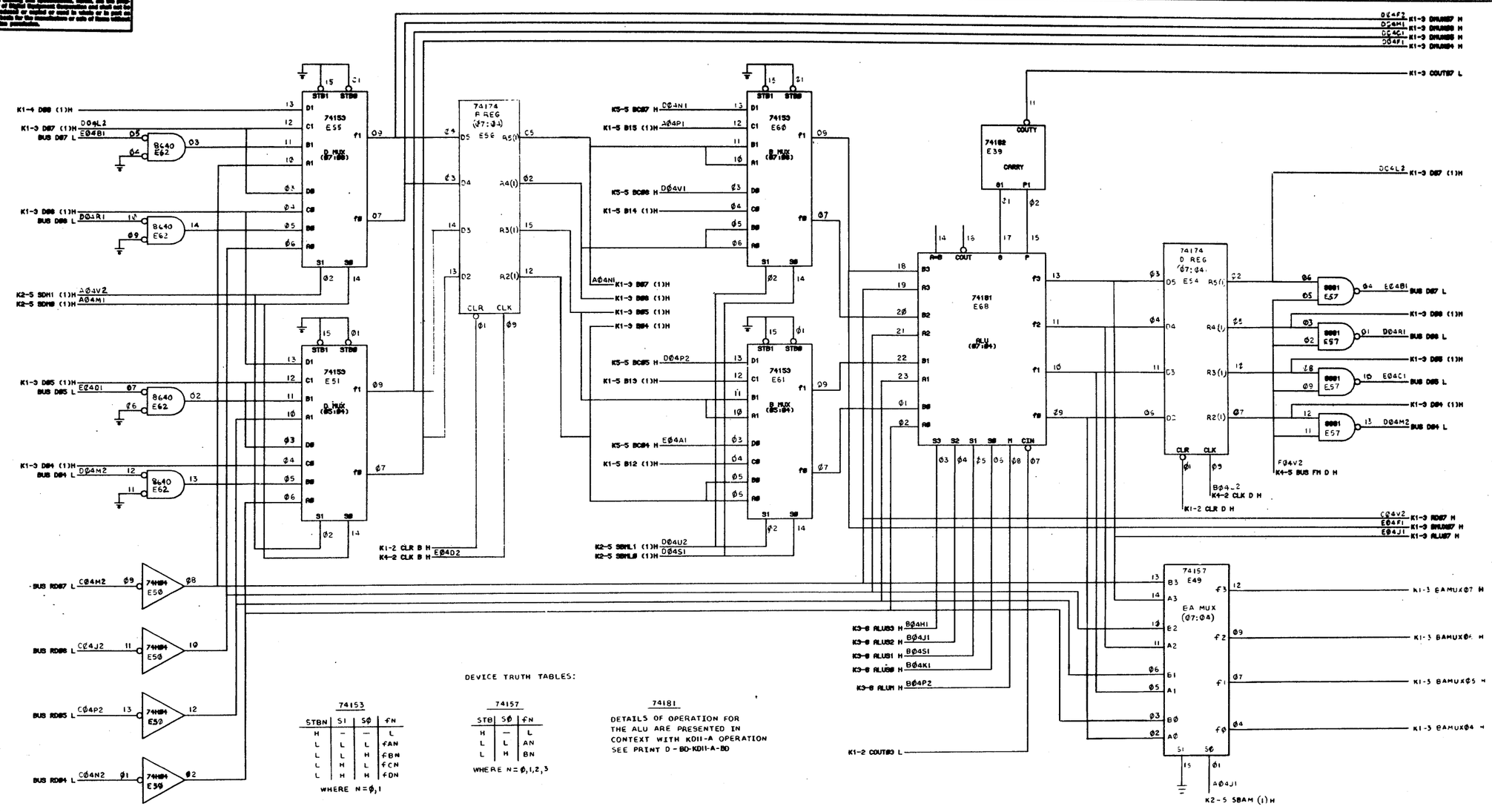

DEVICE TRUTH TABLES:

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	DRN		DATE 7-31-72
DIMENSIONS IN INCHES	CHK		DATE 7/31/72
TOLERANCES	ENG		DATE 7/31/72
DECIMALS ± .005 / FRACTIONS ± 1/64 / ANGLES ± 0°30'	MFG		DATE 7/31/72
FINAL SURFACE QUALITY ✓	QA		DATE 8-1-72
REMOVE BURRS AND SHARP EDGES	MATERIAL		
NEXT ASSY	FINISH		
	FIRST USED ON	PDP11	
	SCALE		
	SHEET 9 OF 9		

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DATA PATHS
DATA PATHS (Ø7:Ø4) K1-3

SIZE	NUMBER	REV
D CS	70321-0-1	D

DIST.

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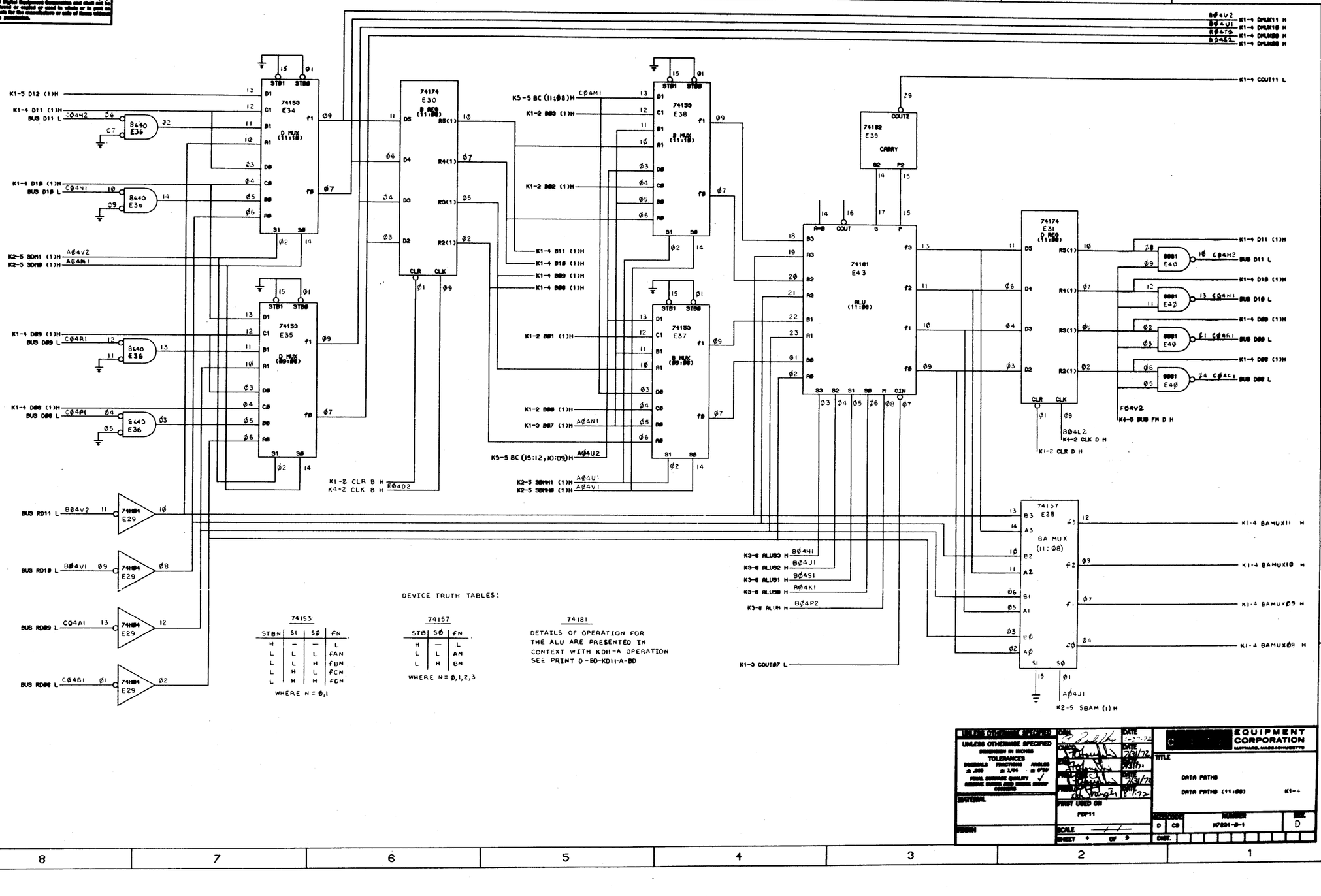

DEVICE TRUTH TABLES:

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
FRACTIONS ± 1/64 ANGLES ± 0°30'
FINISH, SURFACE QUALITY √
REMOVE BURRS AND SHARP CORNERS

MATERIAL

FINISH

DRAWN — DATE 1-27-72
CHECKED — DATE 2/1/72
ENGR — DATE 2/31/72
MFG — DATE 7/31/72
QA — DATE 8-1-72

FIRST USED ON
PDP11

SCALE

SHEET 4 OF 9

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

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

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

DWG.

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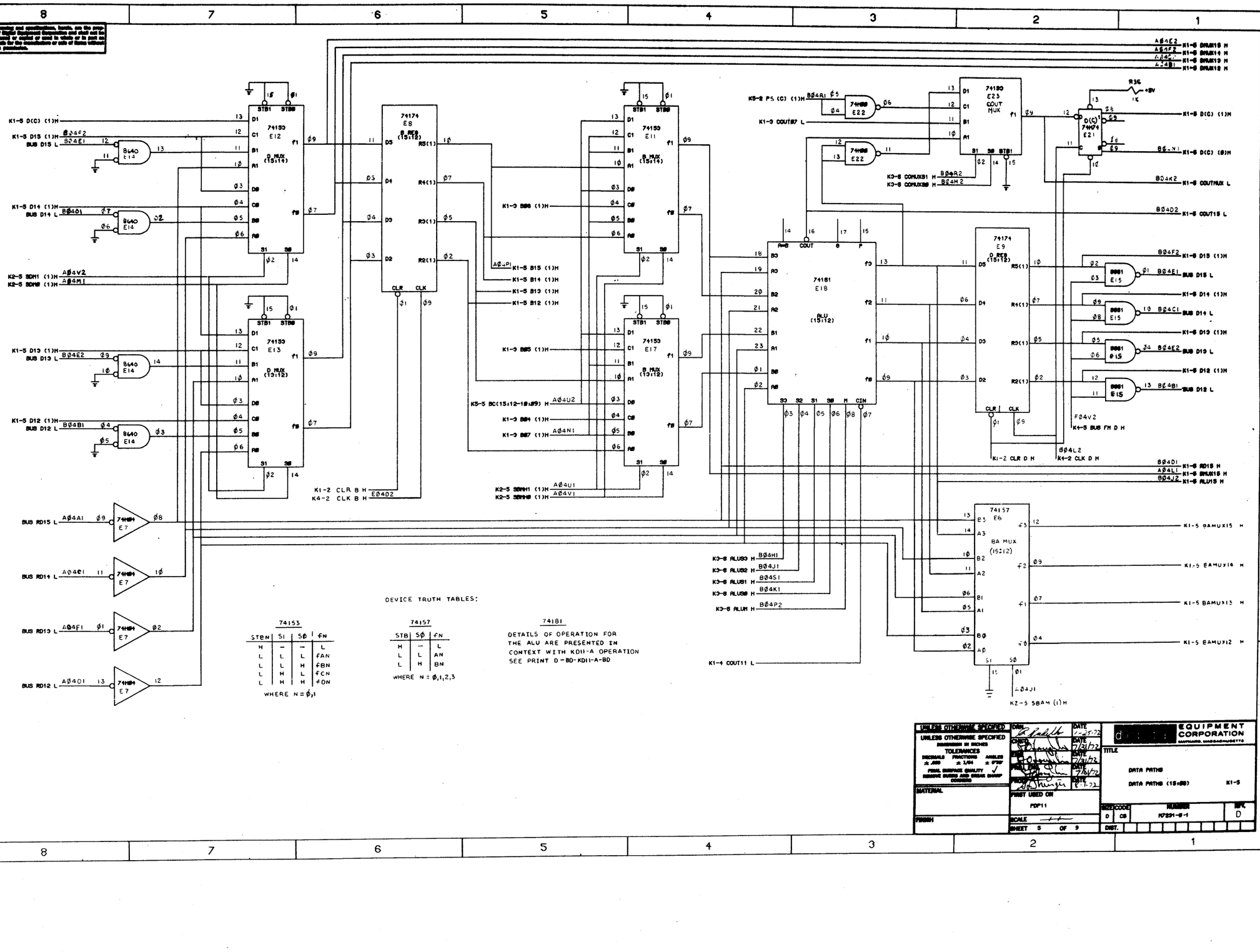

DEVICE TRUTH TABLES:

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
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY 125 MICRO INCH OR BETTER SHARP EDGES
MATERIAL
FINISH

DRAWN R Gaddis DATE 1-25-72
CHECK DATE 7/31/72
ENGR DATE 7/31/72
PROJ DATE 7/31/72
APPD J Munger DATE 8-1-72
FIRST USED ON PDP11
SCALE
SHEET 5 OF 9

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DATA PATHS
DATA PATHS (15:00) K1-5

SIZE D | CODE CB | NUMBER 107221-0-1 | REV. D
DIST.

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74174 E2 BA(15:12)
K1-5 BAMUX15 H
K1-5 BAMUX14 H
K1-5 BAMUX13 H
K1-5 BAMUX12 H
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
74174 E46
K1-3 BAMUX07 H
K1-3 BAMUX06 H
8881 E32
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
+5V
R37 1K
W10
NOTE: JUMPER W10 IS MOVED TO GROUND INPUTS OF 8881 GATES FOR KT11-D OPTION
A04K1 K5-8 INIT2 L
A04H2 K4-2 CLK BA H
D04J2 K4-5 BUS FM BA H
A04S2 K1-6 BA(17:16) H
A04R1 BUS A17 L
A04S1 BUS A16 L
A04K2 K1-6 BA15 (1) H
A04J2 BUS A15 L
A04H1 K1-6 BA14 (1) H
A04L2 BUS A14 L
A04P2 K1-6 BA13 (1) H
A04R2 BUS A13 L
A04M2 K1-6 BA12 (1) H
A04N2 BUS A12 L
C04K1 K1-6 BA11 (1) H
C04L1 BUS A11 L
C04F1 K1-6 BA10 (1) H
C04H1 BUS A10 L
C04D2 K1-6 BA09 (1) H
C04E2 BUS A09 L
C04F2 K1-6 BA08 (1) H
C04J1 BUS A08 L
D04E1 K1-6 BA07 (1) H
D04A1 BUS A07 L
C04T2 K1-6 BA06 (1) H
C04V1 BUS A06 L
C04R2 K1-6 BA05 (1) H
C04S1 BUS A05 L
D04B1 K1-6 BA04 (1) H
C04S2 BUS A04 L
D04K2 K1-6 BA03 (1) H
F04R2 BUS A03 L
F04B1 K1-6 BA02 (1) H
F04M2 BUS A02 L
F04F1 K1-6 BA01 (1) H
F04N2 BUS A01 L
F04J1 K1-6 BA00 (1) H
F04P2 BUS A00 L

UNLESS OTHERWISE SPECIFIED	DRN R. Bardett	DATE 2-10-72
TOLERANCES	CHKD	DATE 7/31/72
	ENGR	DATE 7/31/72
	PROJ MGR	DATE 7/31/72
	PROJ ENGR	DATE 9-1-72
MATERIAL	FIRST USED ON PDP11	
FINISH	SCALE	
	SHEET 9 OF 9	

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DATA PATHS
BA (15:00) K1-6

SIZE	CODE	NUMBER	REV.
D	CS	M7301-0-1	D

DIST.

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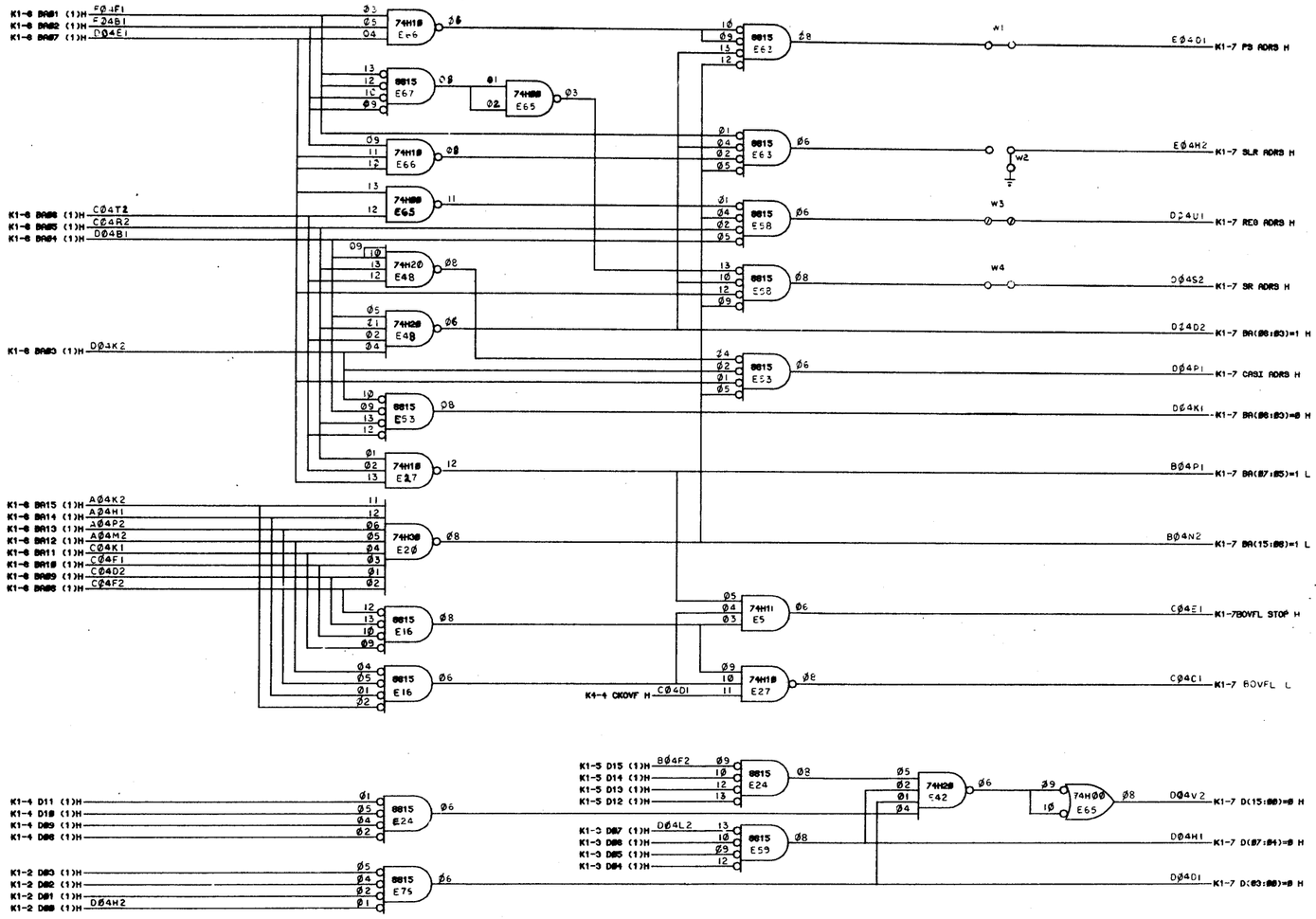

PROCESSOR ADDRESSES

NAME & MNEMONICS			(ADRS)8
PROCESSOR STATUS		PS	777776
STACK LIMIT REGISTER		SLR	777774
GENERAL REGISTERS			
REGISTERS USED TO IMPLEMENT MICROFLOW	R [ADRS]	REG 17	777717
	R [SP USER]	REG 16	777716
	R [TEMPC]	REG 15	777715
	R [VECT]	REG 14	777714
	R [IA]	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 KT11-D OPTION.
2. JUMPER W2 IS MOVED TO CONNECT E63 PIN 06 TO E04H2 FOR KJ11-A OPTION ALONE. JUMPER IS COMPLETELY REMOVED FOR KT11-D OPTION.

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY 125 MICRO INCHES AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN [illegible] DATE 7-31-72
CHKD [illegible] DATE 7/31/72
ENG [illegible] DATE 7/31/72
QUALITY ✓ DATE 7/31/72
PROD [illegible] DATE 8-1-72
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

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

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

K4-2 WR R(15:00) L B04A1

K2-4 WR R(07:00) L F04V1

KT-2 MODE SEL1 H E04U1
K2-4 RIF0 (0) H E04P2
KT-8 S HOOK H F04A1
K1-6 BA03 (1)H D04K2
K2-4 RIF3 (1)H E04V1
KT-8 D HOOK H E04V2
K3-3 IR00 (1)H F04D1
K3-3 IR02 (1)H F04C1
K1-6 BA02 (1)H F04B1
K2-4 RIF2 (1)H F04D2
K3-3 IR07 (1)H F04H2
K3-3 IR01 (1)H F04F2
K1-6 BA01 (1)H F04F1
K2-4 RIF1 (1)H F04E2
K3-3 IR00 (1)H F04N1
K2-4 SR3 (1)H F04K2
K3-3 IR00 (1)H F04M1
K2-4 SR0 (1)H F04L1
K1-6 BA00 (1)H F04J1
K2-4 SR0A (1)H F04L2
K2-4 RIF0 (1)H F04K1
K2-4 SRI (1)H F04H1

K1-5 DMUX15 H A04E2
K1-5 DMUX14 H A04F2
K1-5 DMUX13 H A04B2
K1-5 DMUX12 H A04B1

K1-4 DMUX11 H B04U2
K1-4 DMUX10 H B04U1
K1-4 DMUX09 H B04T2
K1-4 DMUX08 H B04S2

K1-3 DMUX07 H D04F2
K1-3 DMUX06 H D04M1
K1-3 DMUX05 H D04C1
K1-3 DMUX04 H D04F1

K1-2 DMUX03 H F04J2
K1-2 DMUX02 H E04M1
K1-2 DMUX01 H E04J2
K1-2 DMUX00 H E04L1

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

K1-6 R(X0+X7) H
K1-6 RADR30 L
K1-6 RADR32 L
K1-6 RADR31 L
K1-6 RADR30 L

UNLESS OTHERWISE SPECIFIED	DRN	DATE 1-31-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 7/31/72	TITLE DATA PATHS RE0C15:00](15:00) K1-8
MATERIAL	ENGR	DATE 7/31/72	
FINISH	PROJ MGR	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 KYII-D OPTION

J1 BC00R CABLE, SHIELD TOWARD BOARD, TO J1 OF KYII-D CONSOLE

K1-5 DMUX15 H A04E2 — 8640 E4 — 14
K1-5 DMUX14 H A04F2 — 8640 E4 — 13
K1-5 DMUX13 H A04D2 — 8640 E4 — 03
K1-5 DMUX12 H A04B1 — 8640 E4 — 02
K1-4 DMUX11 H B04U2 — 8640 E26 — 14
K1-4 DMUX10 H B04U1 — 8640 E26 — 13
K1-4 DMUX09 H B04T2 — 8640 E26 — 02
K1-4 DMUX08 H B04S2 — 8640 E26 — 03
K1-3 DMUX07 H D04F2 — 8640 E52 — 03
K1-3 DMUX06 H D04M1 — 8640 E52 — 14
K1-3 DMUX05 H D04C1 — 8640 E52 — 13
K1-3 DMUX04 H D04F1 — 8640 E52 — 02
K1-2 DMUX03 H F04J2 — 8640 E93 — 13
K1-2 DMUX02 H E04M1 — 8640 E93 — 14
K1-2 DMUX01 H E04J2 — 8640 E93 — 03
K1-2 DMUX00 H E04L1 — 8640 E93 — 02

K1-9 BA(17#16)H A04S2 — S681 E10 — W7 / W8

KYD-3 SR17 H
KYD-3 SR16 H
KYD-3 SR15 H
KYD-3 SR14 H
KYD-3 SR13 H
KYD-3 SR12 H
KYD-3 SR11 H
KYD-3 SR10 H
KYD-3 SR09 H
KYD-3 SR08 H
KYD-3 SR07 H
KYD-3 SR06 H
KYD-3 SR05 H
KYD-3 SR04 H
+5V — C62 6.8 MFD
KYD-3 SR03 H
KYD-3 SR00 H
KYD-3 SR02 H
KYD-3 SR01 H

K1-9 BA(17#16) L
K1-9 DMUX15 L
K1-9 DMUX14 L
K1-9 DMUX13 L
K1-9 DMUX12 L
K1-9 DMUX11 L
K1-9 DMUX10 L
K1-9 DMUX09 L
K1-9 DMUX08 L
K1-9 DMUX07 L
K1-9 DMUX06 L
K1-9 DMUX05 L
K1-9 DMUX04 L
K1-9 DMUX03 L
K1-9 DMUX02 L
K1-9 DMUX01 L
K1-9 DMUX00 L

K2-3 BUPP8 H C04K2 — 8242 E41 — R35 1K +5V
K2-3 BUPP7 H E04N1 — 8242 E69
K2-3 BUPP6 H D04T2 — 8242 E69
K2-3 BUPP5 H E04K1 — 8242 E69
K2-3 BUPP4 H E04R1 — 8242 E69
K2-2 BUPP3 H E04K2 — 8242 E79
K2-2 BUPP2 H E04M2 — 8242 E79
K2-2 BUPP1 H E04T2 — 8242 E79
K2-2 BUPP0 H E04U2 — 8242 E79
K4-2 P END H E04F2 — 74H00 E65

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

K4-6 BUS PH SR H B04F1

B04M1 — K1-9 SR17 H
B04L1 — K1-9 SR16 H

8881 E19 — B04E1 — BUS D15 L
8881 E19 — B04 — BUS D14 L
8881 E19 — B04E2 — BUS D13 L
8881 E19 — B04B1 — BUS D12 L
8881 E44 — C04M2 — BUS D11 L
8881 E44 — C04M1 — BUS D10 L
8881 E44 — C04R1 — BUS D09 L
8881 E44 — C04P1 — BUS D08 L
8881 E64 — C04B1 — BUS D07 L
8881 E64 — D04R1 — BUS D06 L
8881 E64 — E04C1 — BUS D05 L
8881 E64 — D04M2 — BUS D04 L
8881 E89 — F04T2 — BUS D03 L
8881 E89 — F04S2 — BUS D02 L
8881 E89 — F04U2 — BUS D01 L
8881 E89 — D04J1 — BUS D00 L

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

DWN. R. Bodelle DATE 2-9-72
CHK'D DATE 7/31/72
ENG. DATE 7/31/72
PROJ. LDR DATE 7/31/72
MGR. DATE

FIRST USED ON
PDP11
SCALE
SHEET 9 OF 9

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DATA PATHS
CONSOLE & MATCH K1-9

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

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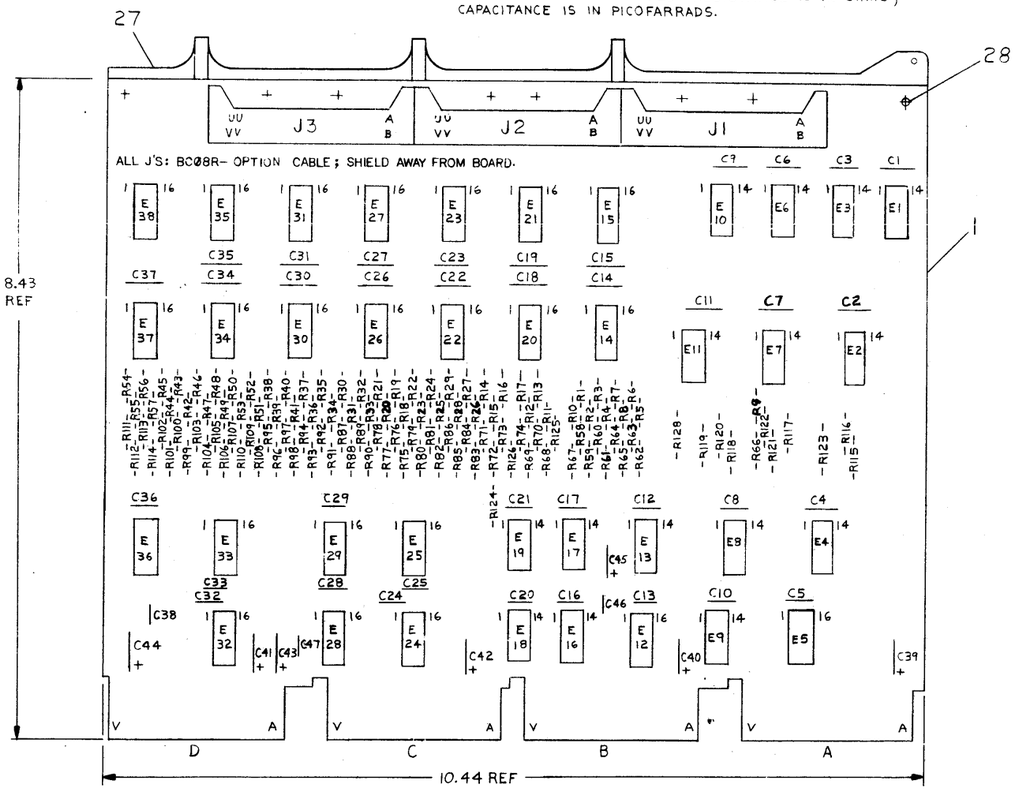
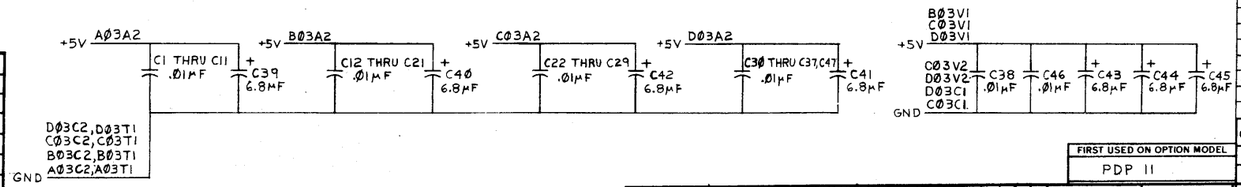
NOTES:

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.





23BØØA2 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

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
8		EYELET	9ØØ6732	28
1		HANDLE	74Ø9871	27
1	E38	I.C. DEC 23B40A2	23B40A2	26
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	E31	I.C. DEC 23B35A2	23B35A2	22
1	E30	I.C. DEC 23B08A2	23B08A2	21
1	E27	I.C. DEC 23B07A2	23B07A2	20
1	E22	I.C. DEC 23B06A2	23B06A2	19
1	E23	I.C. DEC 23B42A2	23B42A2	13
1	E26	I.C. DEC 23B41A2	23B41A2	17
1	E21	I.C. DEC 23B03A2	23B03A2	16
1	E20	I.C. DEC 23B02A2	23B02A2	15
1	E14	I.C. DEC 23B01A2	23B01A2	14
1	E15	I.C. DEC 23B00A2	23B00A2	13
1	E36	I.C. DEC 74175	1910651	12
8	E5,E12,E24,E25,E28 E29,E32,E33	I.C. DEC 74174	1910652	11
3	E4,E8,E13	I.C. DEC 74H04	1909931	10
9	E1,E3,E6,E9,E10,E18 E19,E16,E17	I.C. DEC 74H74	1909667	9
3	E2,E7,E11	I.C. DEC 74H10	1909057	8
13	R115 THRU R126,R128	RES. 1K 1/4W ±5%	1300365	7
57	R1 THRU R57	RES. 680 1/4W ±5%	1301424	6
57	R58 THRU R114	RES. 390 1/4W ±5%	1300309	5
3	J1,J2,J3	CONN. 40 PIN	1209941	4
7	C39 THRU C45	CAP 6.8MF 35V ±10% TANT	1005306	3
40	C1 THRU C38,C46,C47	CAP .01MF 100V ±20% DISC	1001610	2
1		ETCHED CIRCUIT BOARD	5009981	1

PARTS LIST

ETCH BOARD REV E

FIRST USED ON OPTION MODEL: PDP 11

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	DATE	CHK
F	M7232-00004	8-3-73	J. BUZYNSKI
E	M7232-00003	6/14/73	J.O'LOUGHLIN
D	M7232-00002	11/14/72	J.O'LOUGHLIN
C	M7232-00001	9/9/72	J.O'LOUGHLIN
B	ORIGINATE	8/10/72	J.O'LOUGHLIN

DRN. J.O'Loughlin DATE 5-2-72
CHKD. [illegible] DATE 6/16/72
ENG. [illegible] DATE 6/16/72
PROJ. ENG. [illegible] DATE 6/16/72
PROD. [illegible] DATE

NEXT HIGHER ASSY: KD11-A
SCALE
SHEET 1 OF 12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: U WORD
K2-1

SIZE D CODE CS NUMBER M7232-Ø-1 REV. F
DIST.

DEC FORM NO. DRD 135A

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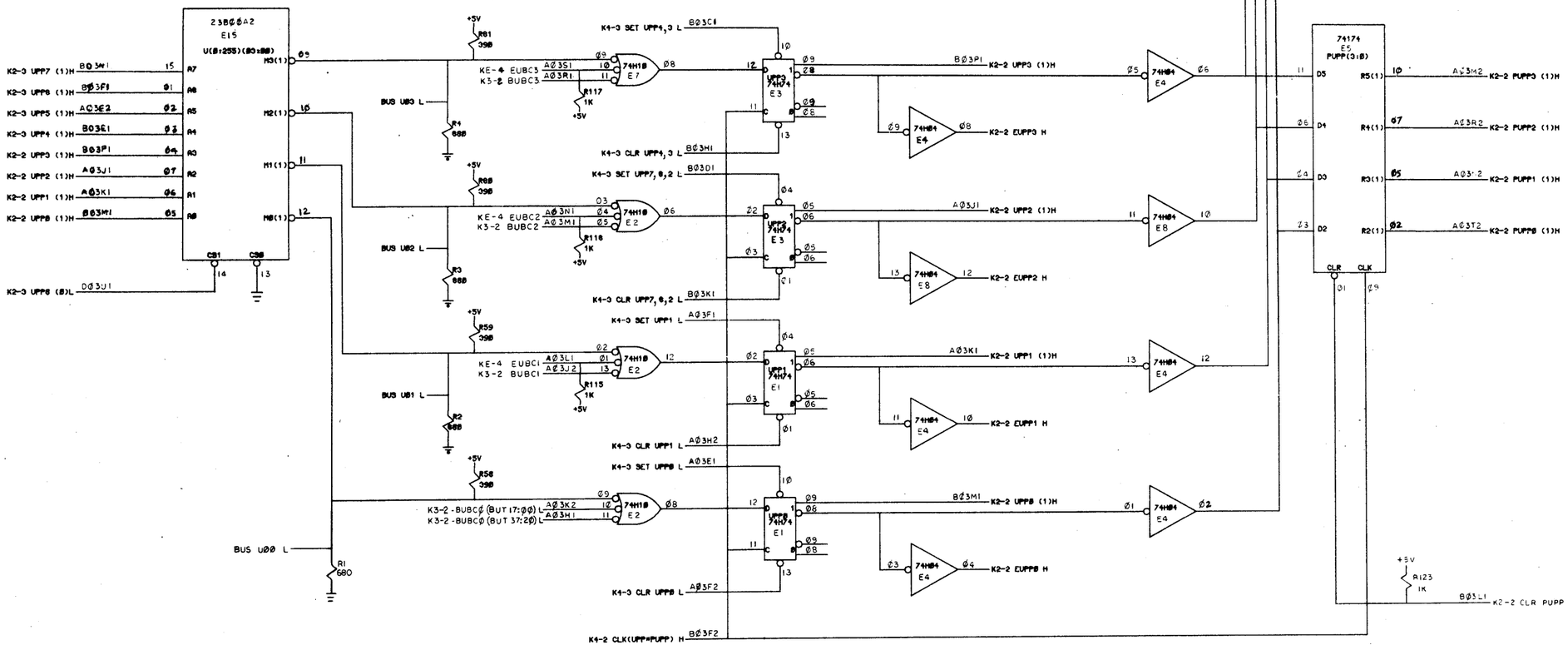

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-27-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 6/16/72	TITLE U WORD U(80:88) K2-2
	ENG	DATE 6/16/72	
	MFG ENG	DATE 7/12/72	
MATERIAL	PROD	DATE 8 5/8/72	
FINISH	FIRST USED ON PDP11		SIZE D CODE CS NUMBER M7232-0-1 REV. F
	SCALE		DIST.
	SHEET 2 OF 12		

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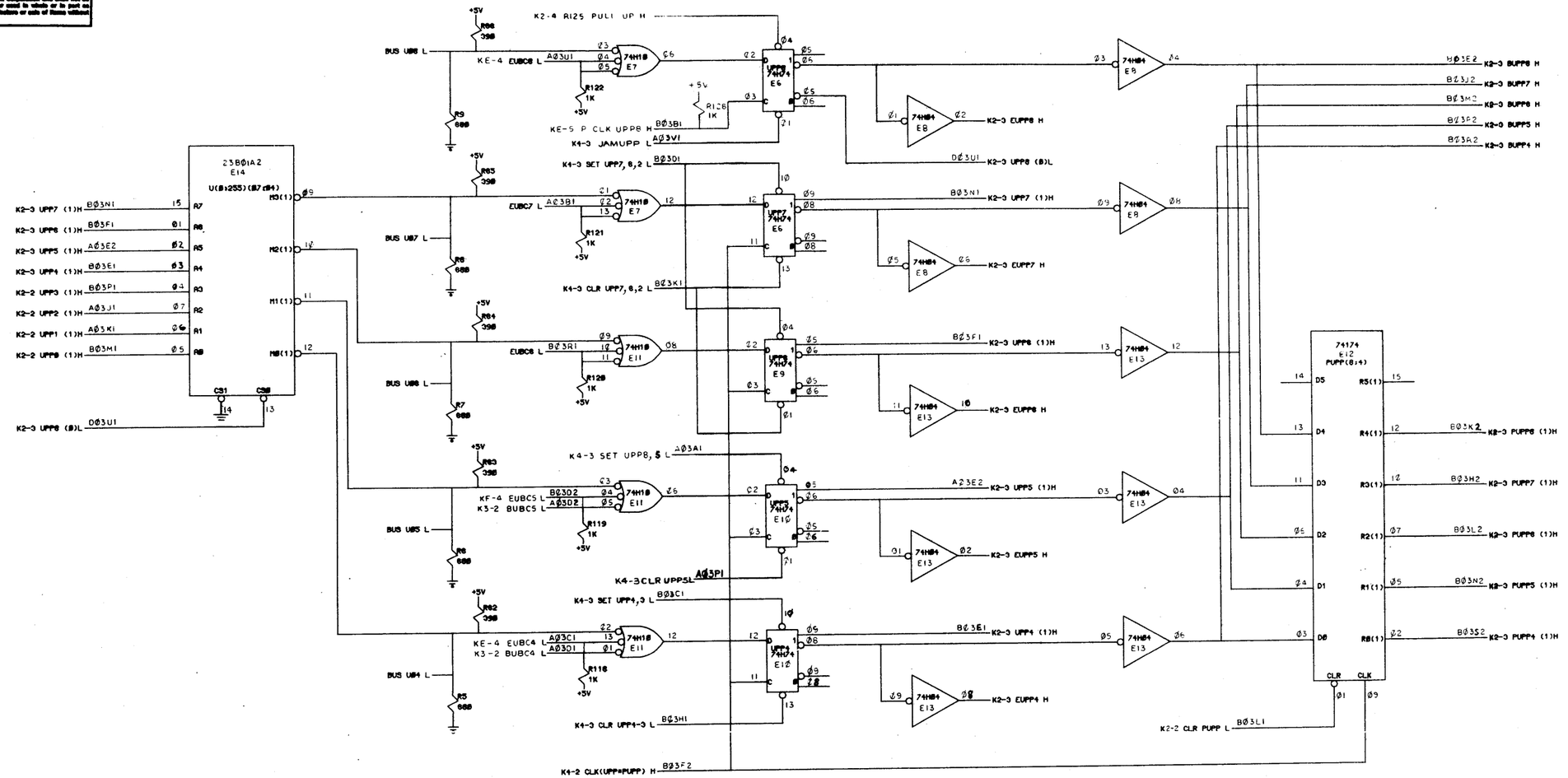

UNLESS OTHERWISE SPECIFIED	DRN	DATE 7-27-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHKD	DATE 8/16/72	TITLE U WORD, U(87:84) K2-3
MATERIAL	ENG	DATE 8/16/72	
FINISH	PROJ. ENG.	DATE 8/16/72	
FIRST USED ON PDP11	PROD.	DATE 6/30/72	SIZE D CODE CS NUMBER M7232-B-1 REV. F
SCALE	SHEET 3 OF 12		DIST.

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8 7 6 5 4 3 2 1

D C B A

+5V R126 1K

+5V R125 1K

+5V R124 1K

83B03A2 E21 U(0:255)(16:13)

23B02A2 E20 U(0:255)(12:09)

BUS U16 L R17 330

BUS U15 L R16 330

BUS U14 L R15 330

BUS U13 L R14 330

BUS U12 L R13 330

BUS U11 L R12 330

BUS U10 L R11 330

BUS U09 L R10 330

BRS 74H74 E18

BRD 74H74 E19

BRDA 74H74 E19

BRI 74H74 E18

RIF3 74H74 E17

RIF2 74H74 E16

RIF1 74H74 E17

RIF0 74H74 E15

C03E1 K2-4 BRS (1)H

C03D2 K2-4 BRD (1)H

C03C2 K2-4 BRDA (1)H

C03B1 K2-4 BRI (1)H

K2-4 R125 PULL UP H

B03S1 K2-4 RIF3 (1)H

B03U1 K2-4 RIF2 (1)H

B03U2 K2-4 RIF1 (1)H

C03A1 K2-4 RIF0 (1)H

C03H1 K2-4 CLR U(16:09) L

K2-3 UPP7 (1)H B03N1

K2-3 UPP6 (1)H B03F1

K2-3 UPP5 (1)H A03E2

K2-3 UPP4 (1)H B03E1

K2-2 UPP3 (1)H B03P1

K2-2 UPP2 (1)H A03J1

K2-2 UPP1 (1)H A03K1

K2-2 UPP0 (1)H B03M1

K2-3 UPP8 (0)L D03U1

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

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

MATERIAL

FINISH

DRN F. Dudley DATE 4-27-72
CHKD DATE 6/6/72
ENG DATE 6/6/72
PROJ. F. Dudley DATE 6/6/72

FIRST USED ON PDP11

SCALE

SHEET 4 OF 12

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
U WORD
U(16:09) K2-4

SIZE CODE: D CS NUMBER M7238-0-1 REV. F

DIST.

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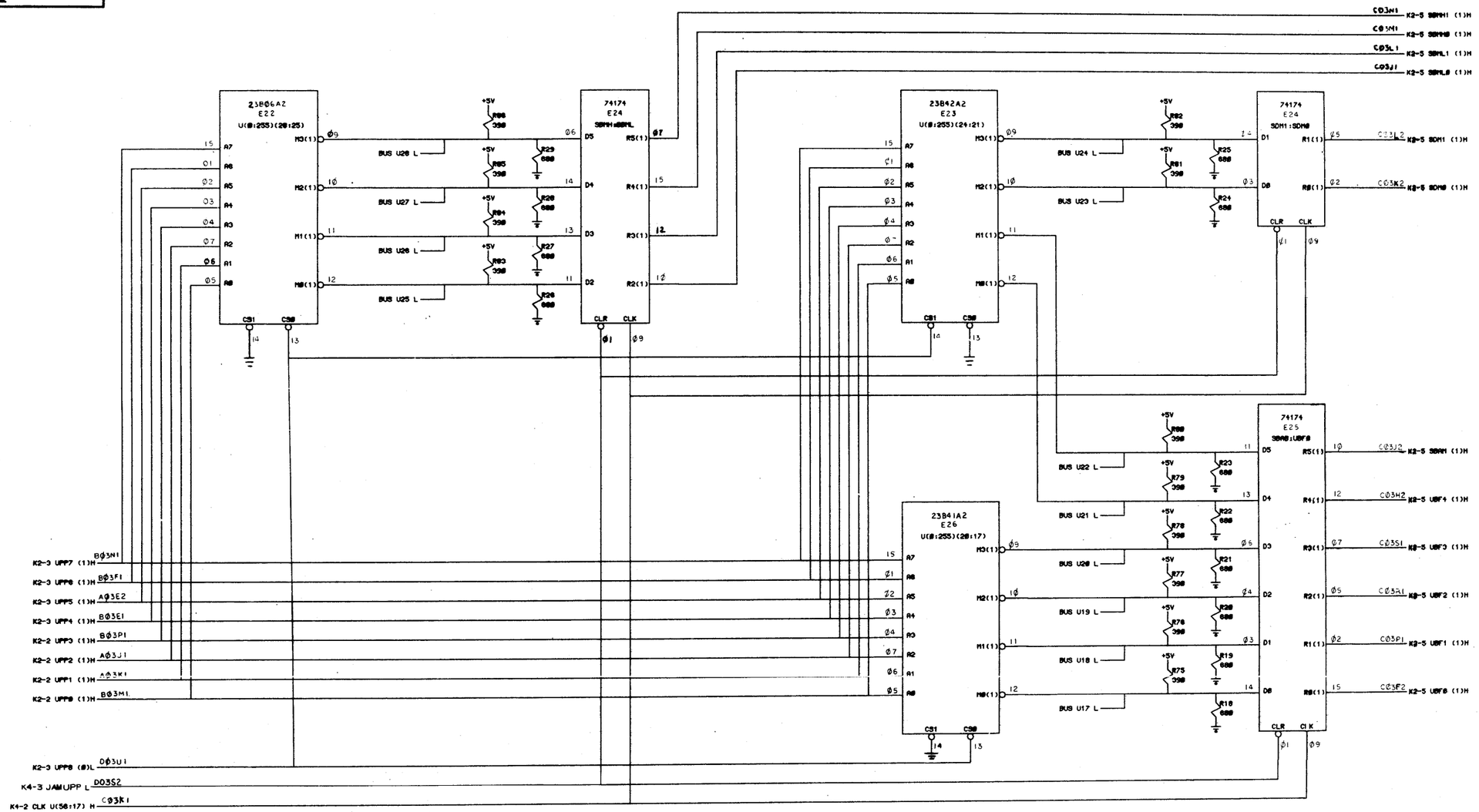

UNLESS OTHERWISE SPECIFIED	DRN. R. Padilla 1-28-72
DIMENSION IN INCHES	CHK'D. [illegible] 2/16/72
TOLERANCES	ENG. [illegible] 2/16/72
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'	PROJ. ENG. [illegible] 2/16/72
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	MGR. R. Dooling 2/16/72
MATERIAL	FIRST USED ON PDP11
FINISH	SCALE 1=1
	SHEET 5 OF 12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: U WORD U(20:17) K2-5

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

DIST.

18-13-71

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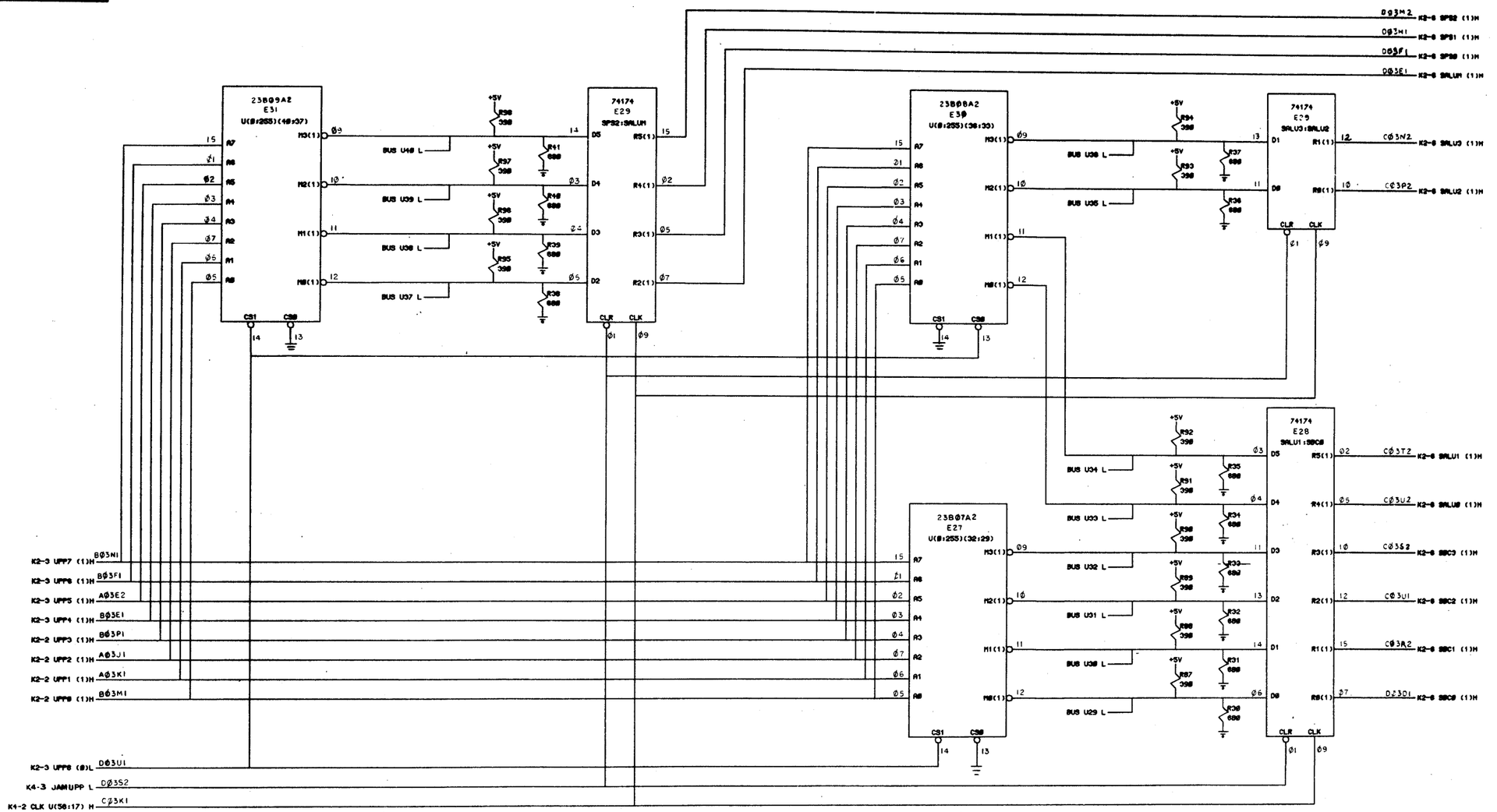

UNLESS OTHERWISE SPECIFIED	DRN. T. Rodrigue DATE 24-7-72
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D. T. Glass DATE 24/8/72
	ENG. T. Glass DATE 24/8/72
	FIRST ERR T. Glass DATE 24/8/72
	PROJ. K. Dorley DATE 8/30/72
MATERIAL	FIRST USED ON PDP11
FINISH	SCALE — SHEET 6 OF 12

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

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

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

DIST.

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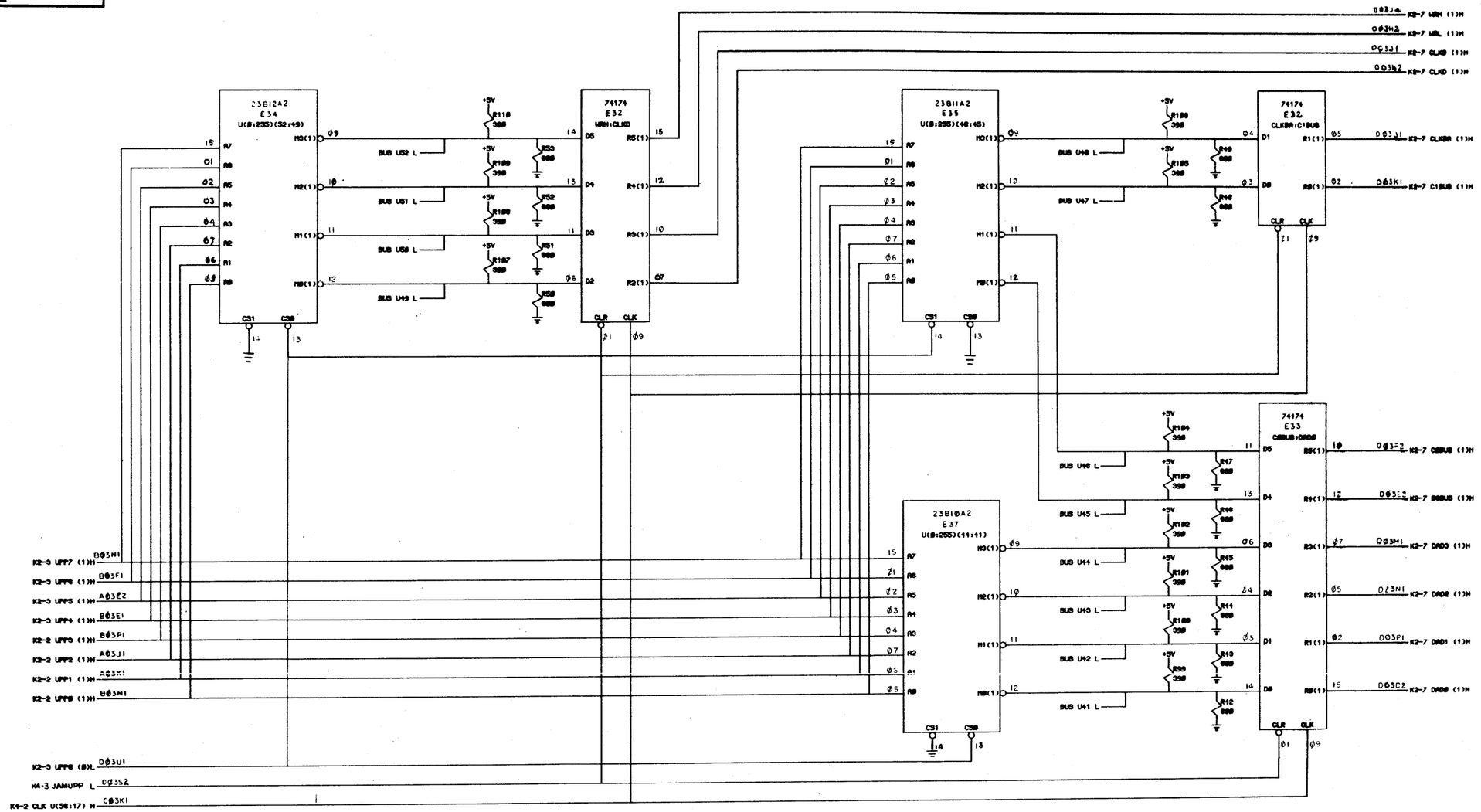

UNLESS OTHERWISE SPECIFIED	DRN. R. Bradley	DATE 1-29-72	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHKD.	DATE 2/14/72	TITLE U WORD U(32:41) K2-7
	ENG.	DATE 2/14/72	
	PROJ.	DATE 2/14/72	
	MFG.	DATE	
MATERIAL	FIRST USED ON PDP11		SIZE D CB NUMBER M7232-0-1 REV. F
FINISH	SCALE		DIST.
	SHEET 7 OF 12		

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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	BUS U00 L
	K	
	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	
	BB	BUS U05 L
	HH	
	Z	BUS U06 L
	KK	
	X	BUS U07 L
	MM	
	F	BUS U08 L
	PP	
	UU	BUS U09 L
	SS	
	W	BUS U10 L
	TT	BUS U12 L
	RR	BUS U11 L

J2 BC08R- , CABLE
SHIELD AWAY FROM BOARD

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	
T	BUS U29 L
MM	
RR	BUS U30 L
PP	
NN	BUS U31 L
SS	
LL	BUS U32 L
JJ	BUS U33 L
VV	BUS U34 L

J3 BC08R- , CABLE
SHIELD AWAY FROM BOARD

A	BUS U35 L
B	BUS U34 L
C	
L	BUS U07 L
E	
J	BUS U06 L
H	
F	BUS U09 L
K	
D	BUS U48 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

23B40A2
E38
U(0:255)(56:63)

K2-3 UPP7 (1)H	B03N1	15	A7
K2-3 UPP6 (1)H	B03F1	01	A6
K2-3 UPP5 (1)H	A03E2	02	A5
K2-3 UPP4 (1)H	B03E1	03	A4
K2-3 UPP3 (1)H	B03P1	04	A3
K2-3 UPP2 (1)H	A03J1	07	A2
K2-3 UPP1 (1)H	A03K1	06	A1
K2-3 UPP0 (1)H	B03M1	05	A0
K2-3 UPP0 (0)H	D03U1	14	CS1
K4-2 JAMUPP L	D03S2		
K4-2 CLK U(56:17) H	C03K1	13	CS0

H3(1)	09	BUS U56 L
H2(1)	10	BUS U55 L
H1(1)	11	BUS U54 L
H0(1)	12	BUS U53 L

+5V R114 330
+5V R113 330
+5V R112 330
+5V R111 330
R57 680
R56 680
R55 680
R54 680

74175
E36
CLKL1:CLKIR

D3	12	R3(1)	15
		R3(0)	11
D2	13	R2(1)	15
		R2(0)	14
D1	04	R1(1)	02
		R1(0)	03
D0	05	R0(1)	07
		R0(0)	06
CLR	01		
CLK	09		

D03N2	K2-8 CLKL1 (1)H
D03M2	K2-8 CLKL1 (0)H
D03L2	K2-8 CLKL0 (1)H
D03J1	K2-8 CLKL0 (0)H
D03U2	K2-8 CLKOFF (1)H
D03T2	K2-8 CLKIR (1)H

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. R. Rudolph DATE 2-10-72
CHK'D. [illegible] DATE 11/6/72
ENG. [illegible] DATE 11/6/72
PROJ. ENG. [illegible] DATE 11/6/72
PROD. E. Dooley DATE 6/26/73
FIRST USED ON PDP11
SCALE
SHEET 8 OF 12

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
U MOD
U(56:63) & CONNECTORS K2-8

SIZE D | CODE CS | NUMBER M7232-8-1 | REV. 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	02	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	02	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	TRP09	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	SER07	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	EXM00	031	5	0	0	0	1	0	1	00	0	32	10	17	2	0	00	00	00	060
12	STA00	032	6	0	3	0	0	0	0	00	0	00	00	00	2	0	10	01	07	076
12	LAD00	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	2	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

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DRN.	DATE 6-15-72	TITLE: U WORD (ADR 000-077)
CHK'D	DATE 7/6/72	
ENG	DATE 7/6/72	
PROJ ENG	DATE 7/6/72	SIZE K; CODE CS; NUMBER M7232-0-1; REV. F
MOD.	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	328
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	348
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	TRP09	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	DOP12	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	20	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	TRP10	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	MOV00	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

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DRN	DATE 6-15-72	TITLE: U WORD (ADR 100-177)
CHK'D	DATE 6/17/72	
ENG	DATE 6/17/72	
ADV 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	MOV19	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	MOV13	203	2	0	0	1	0	0	0	00	0	00	00	00	0	0	00	10	00	205
04	MOV20	204	0	0	3	1	0	0	0	00	3	00	00	00	2	0	00	04	00	000
04	MOV15	205	6	0	3	0	1	0	7	00	0	32	00	10	2	0	00	01	11	125
04	MOV08	206	2	0	3	1	0	0	0	00	0	00	00	00	1	0	21	01	12	212
04	MOV11	207	2	0	3	1	0	0	0	00	0	00	00	00	1	0	22	01	12	210
04	MOV12	210	2	0	0	0	0	1	0	01	0	00	00	00	0	1	00	01	12	200
09	SSL10	211	2	0	0	0	0	0	0	00	1	00	00	00	2	0	00	00	00	367
04	MOV09	212	4	0	0	0	0	1	0	07	0	11	00	00	0	0	00	04	00	200
04	MOV10	213	5	0	0	0	0	1	1	01	0	11	00	00	0	0	00	04	00	207
06	TRP03	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	RSR00	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	SRC08	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

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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	SIZE K / CODE CS / NUMBER M7232-0-1 / REV. F
PROD.	DATE 6/20/72	
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	TRP16	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	SOB05	344	6	0	3	0	1	0	0	10	0	06	00	00	2	0	16	01	07	346
07	SOB00	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	DOP17	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

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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-Ø-1 REV. F
PROD.	DATE 6/16/72	
SHEET 12 OF 12		DIST.

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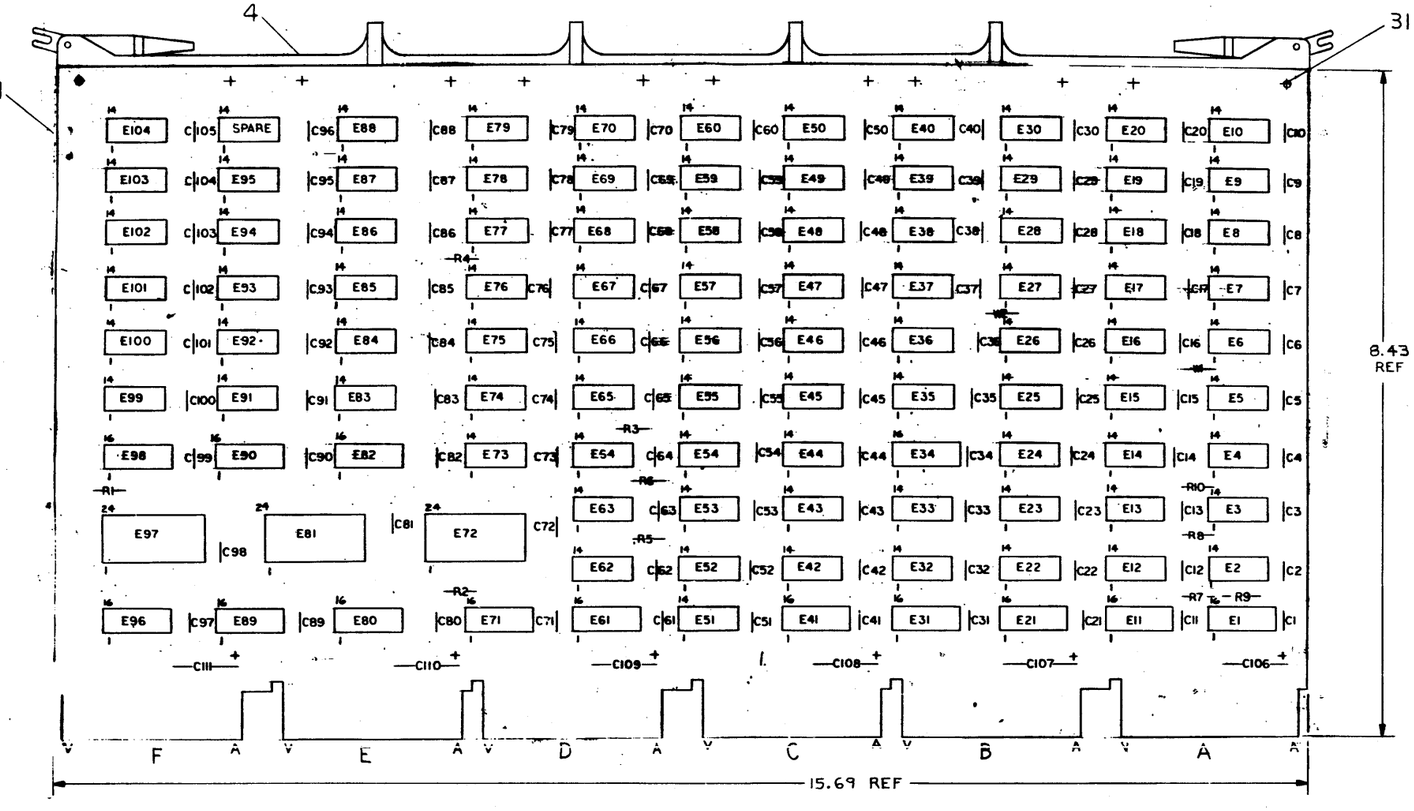
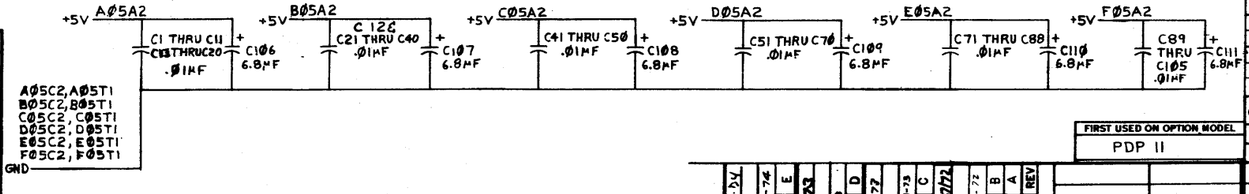
NOTES:

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.





IC TYPE	GND	+ 5V
DEC 74157	8	16
DEC 74175	8	16
DEC 74150	12	24
DEC 74153	8	16
DEC 74151	8	16
DEC 8251	8	16

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

IC PIN LOCATIONS

REVISIONS	REV	CHK	CHANGE NO.	DATE	BY
ORIGINATED	A	J.LOUGHLIN	M7233-00001	8-26-72	
	B	J.LOUGHLIN	M7233-00002	8-28-72	
	C	J.LOUGHLIN	M7233-00003	9-2-72	
	D	J.LOUGHLIN	M7233-00004	4-22-74	
	E	J.SOFIO		5-16-74	

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: PDP 11

ETCH BOARD REV: C D

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	E19, E36, E51, E79, E83 E84, E59	I.C. DEC 74-111	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	E9, 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

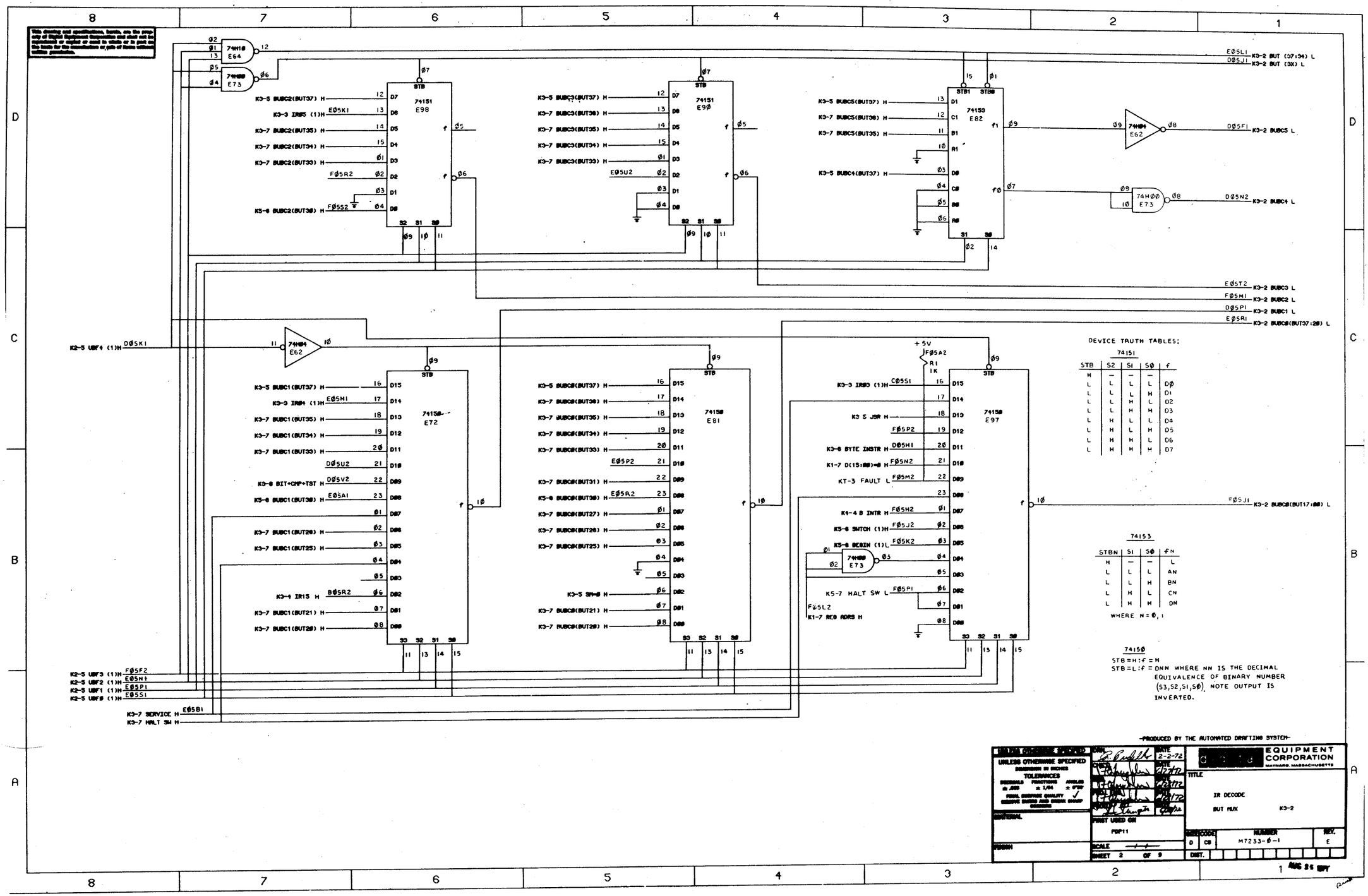
PARTS LIST

DRN: J.Smith 6-13-72
CHK'D: T.Olin 6-13-72
ENGR: T.Olin 6-13-72
PROJ ENGR: R.Swigart 6-13-72
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 DCS NUMBER M7233-0-1 REV E
DIST.


74H18 E64
74H08 E73
74151 E98
74151 E90
74153 E82
74H04 E62
74H00 E73
74158 E72
74158 E81
74158 E97
K3-5 BUBC2(BUT37) H
K3-3 IR05 (1)H
K3-7 BUBC2(BUT35) H
K3-7 BUBC2(BUT34) H
K3-7 BUBC2(BUT33) H
K5-6 BUBC2(BUT38) H
K3-5 BUBC3(BUT37) H
K3-7 BUBC3(BUT36) H
K3-7 BUBC3(BUT35) H
K3-7 BUBC3(BUT34) H
K3-7 BUBC3(BUT33) H
K3-5 BUBC5(BUT37) H
K3-7 BUBC5(BUT36) H
K3-7 BUBC5(BUT35) H
K3-5 BUBC4(BUT37) H
K2-5 UBF4 (1)H
K3-5 BUBC1(BUT37) H
K3-3 IR04 (1)H
K3-7 BUBC1(BUT35) H
K3-7 BUBC1(BUT34) H
K3-7 BUBC1(BUT33) H
K3-8 BIT+CMP+TST H
K5-6 BUBC1(BUT38) H
K3-7 BUBC1(BUT28) H
K3-4 IR15 H
K3-7 BUBC1(BUT21) H
K3-7 BUBC1(BUT28) H
K3-5 BUBC8(BUT37) H
K3-7 BUBC8(BUT36) H
K3-7 BUBC8(BUT35) H
K3-7 BUBC8(BUT34) H
K3-7 BUBC8(BUT33) H
K3-7 BUBC8(BUT31) H
K5-6 BUBC8(BUT38) H
K3-7 BUBC8(BUT27) H
K3-7 BUBC8(BUT26) H
K3-7 BUBC8(BUT25) H
K3-5 SW-8 H
K3-7 BUBC8(BUT21) H
K3-7 BUBC8(BUT28) H
K3-3 IR03 (1)H
K3 5 JSR H
K3-6 BYTE INSTR H
K1-7 D(15:08)=8 H
KT-3 FAULT L
K4-4 8 INTR H
K5-8 SWTCH (1)H
K5-8 BEGIN (1)L
K5-7 HALT SW L
K1-7 RCB ADRS H
K2-5 UBF3 (1)H
K2-5 UBF2 (1)H
K2-5 UBF1 (1)H
K2-5 UBF0 (1)H
K3-7 SERVICE H
K3-7 HALT SW H
+5V
R1 1K
K3-2 BUT (07:04) L
K3-2 BUT (03) L
K3-2 BUBC5 L
K3-2 BUBC4 L
K3-2 BUBC3 L
K3-2 BUBC2 L
K3-2 BUBC1 L
K3-2 BUBC8(BUT37:28) L
K3-2 BUBC8(BUT17:08) L
DEVICE TRUTH TABLES:
74151
STB | S2 | S1 | SØ | f
H | — | — | — | —
L | L | L | L | DØ
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 | SØ | fN
H | — | — | L
L | L | L | AN
L | L | H | BN
L | H | L | CN
L | H | H | DN
WHERE N = Ø, 1
74158Ø
STB=H: f = H
STB=L: f = DNN WHERE NN IS THE DECIMAL EQUIVALENCE OF BINARY NUMBER (S3,S2,S1,SØ). NOTE OUTPUT IS INVERTED.
-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-
UNLESS OTHERWISE SPECIFIED
TOLERANCES
EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
IR DECODE
BUT MUX
K3-2
SIZE D
CODE CB
NUMBER M7233-Ø-1
REV. E
SHEET 2 OF 9
DRAWN R. Budlong 2-2-72
FIRST USED ON PDP11
AUG 24 1972

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74175 E21 IR (15:12)

K1-5 DMUX15 H B05P1 Ø4 D3 R3(1) Ø2
R3(Ø) Ø3 K3-3 IR15 (Ø)H
K1-5 DMUX14 H B05M1 Ø5 D2 R2(1) Ø7
R2(Ø) Ø6 K3-3 IR14 (Ø)H
K1-5 DMUX13 H B05N1 12 D1 R1(1) 10
R1(Ø) 11 K3-3 IR13 (Ø)H
K1-5 DMUX12 H B05R1 13 D0 R0(1) 15
R0(Ø) 14 K3-3 IR12 (Ø)H
+5V E05A2 R2 1K CLR CLK Ø1 Ø9

74175 E41 IR (11:08)

K1-4 DMUX11 H C05F1 Ø5 D3 R3(1) Ø7
R3(Ø) Ø6 K3-3 IR11 (Ø)H
K1-4 DMUX10 H C05E1 12 D2 R2(1) 10
R2(Ø) 11 K3-3 IR10 (Ø)H
K1-4 DMUX09 H C05J1 13 D1 R1(1) 15
R1(Ø) 14 K3-3 IR09 (Ø)H
K1-4 DMUX08 H C05H1 Ø4 D0 R0(1) Ø2
R0(Ø) Ø3 K3-3 IR08 (Ø)H
CLR CLK Ø1 Ø9
K4-2 CLK IR H B05J1

8251 E11 DECODER IR (14:12)

Ø2 D3 D2 Ø1 D1 14 D0 15
f9 f8 f7 Ø5 K3-3 IR (14:12)=7 L
f6 Ø4 K3-3 ADD+SUB L
f5 Ø3 K3-3 BIS L
f4 Ø9 K3-3 BIC L
f3 10 K3-3 BIT L
f2 11 K3-3 CMP L
f1 12 K3-3 MOV L
f0 13

8251 E31 DECODER IR (11:09)

Ø2 D3 D2 Ø1 D1 14 D0 15
f9 Ø7
f8 Ø6
f7 Ø5
f6 Ø4 K3-3 SM=6 L
f5 Ø3 K3-3 SM=5 L
f4 Ø9 K3-3 SM=4 L
f3 10
f2 11
f1 12
f0 13

74175 E71 IR (07:04)

K1-3 DMUX07 H D05R2 12 D3 R3(1) 10
R3(Ø) 11 K3-3 IR07 (Ø)H
K1-3 DMUX06 H D05T2 13 D2 R2(1) 15
R2(Ø) 14 K3-3 IR06 (Ø)H
K1-3 DMUX05 H D05P2 Ø5 D1 R1(1) Ø7
R1(Ø) Ø6 K3-3 IR05 (Ø)H
K1-3 DMUX04 H D05S2 Ø4 D0 R0(1) Ø2
R0(Ø) Ø3 K3-3 IR04 (Ø)H
CLR CLK Ø1 Ø9

74175 E91 IR (03:00)

K1-2 DMUX03 H F05K1 Ø4 D3 R3(1) Ø2
R3(Ø) Ø3 K3-3 IR03 (Ø)H
K1-2 DMUX02 H F05H1 Ø5 D2 R2(1) Ø7
R2(Ø) Ø6 K3-3 IR02 (Ø)H
K1-2 DMUX01 H F05F1 12 D1 R1(1) 10
R1(Ø) 11 K3-3 IR01 (Ø)H
K1-2 DMUX00 H F05L1 13 D0 R0(1) 15
R0(Ø) 14 K3-3 IR00 (Ø)H
CLR CLK Ø1 Ø9

8251 E61 DECODER IR (08:06)

Ø2 D3 Ø1 D2 14 D1 15 D0
f9 17
f8 Ø6
f7 15 K3-3 IR (08:06)=7 L
f6 Ø4 D05F2 K3-3 IR (Ø8:Ø6)=6 L
f5 Ø3 K3-3 IR (Ø8:Ø6)=5 L
f4 Ø9 K3-3 IR (08:06)=4 L
f3 10 K3-3 IR (08:06)=3 L
f2 11 K3-3 IR (08:06)=2 L
f1 12 K3-3 IR (08:06)=1 L
f0 13 D05E2 K3-3 IR (Ø8:Ø6)=Ø L

8251 E81 DECODER IR (05:03)

Ø2 D3 Ø1 D2 14 D1 15 D0
f9 Ø7
f8 Ø6
f7 Ø5 K3-3 DM=7 L
f6 Ø4 K3-3 DM=6 L
f5 Ø3 K3-3 DM=5 L
f4 Ø9 K3-3 DM=4 L
f3 10 K3-3 DM=3 L
f2 11 K3-3 DM=2 L
f1 12 K3-3 DM=1 L
f0 13 E05J2 K3-3 DM=Ø L

C05MI K3-3 IR15 (1)M
B05KI K3-3 IR14 (1)M
B05LI K3-3 IR13 (1)M
B05SI K3-3 IR12 (1)M
C05BI K3-3 IR11 (1)M
C05CI K3-3 IR10 (1)M
C05LI K3-3 IR09 (1)M
C05KI K3-3 IR08 (1)M
A05U2 K3-3 IR (14:12)=Ø L
B05S2 K3-3 SM=3 L
B05T2 K3-3 SM=2 L
B05V2 K3-3 SM=1 L
C05A1 K3-3 SM=Ø L
B05U2 K3-3 SM=7 L

D05M2 K3-3 IR07 (1)M
D05RI K3-3 IR06 (1)M
E05KI K3-3 IR05 (1)M
E05HI K3-3 IR04 (1)M
C05SI K3-3 IR03 (1)M
F05DI K3-3 IR02 (1)M
F05EI K3-3 IR01 (1)M
F05NI K3-3 IR00 (1)M
B05H2 K3-3 CLR IR L

DEVICE TRUTH TABLE:

8251

FOR THE DECIMAL EQUIVALENCE,N,OF THE BINARY NUMBER (D3,D2,D1,DØ),ONLY OUTPUT fN IS ACTIVE (LOW) FOR Ø ≤ N < 10

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

DRN R Brakeley DATE 2-2-72
CHKD DATE 6/27/72
ENG DATE 6/27/72
PROJ DATE 6/27/72
APVD DATE 6/30/72
NEXT USED ON PDP11
SCALE
SHEET 3 OF 9

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
IR & DECODE K3-3

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

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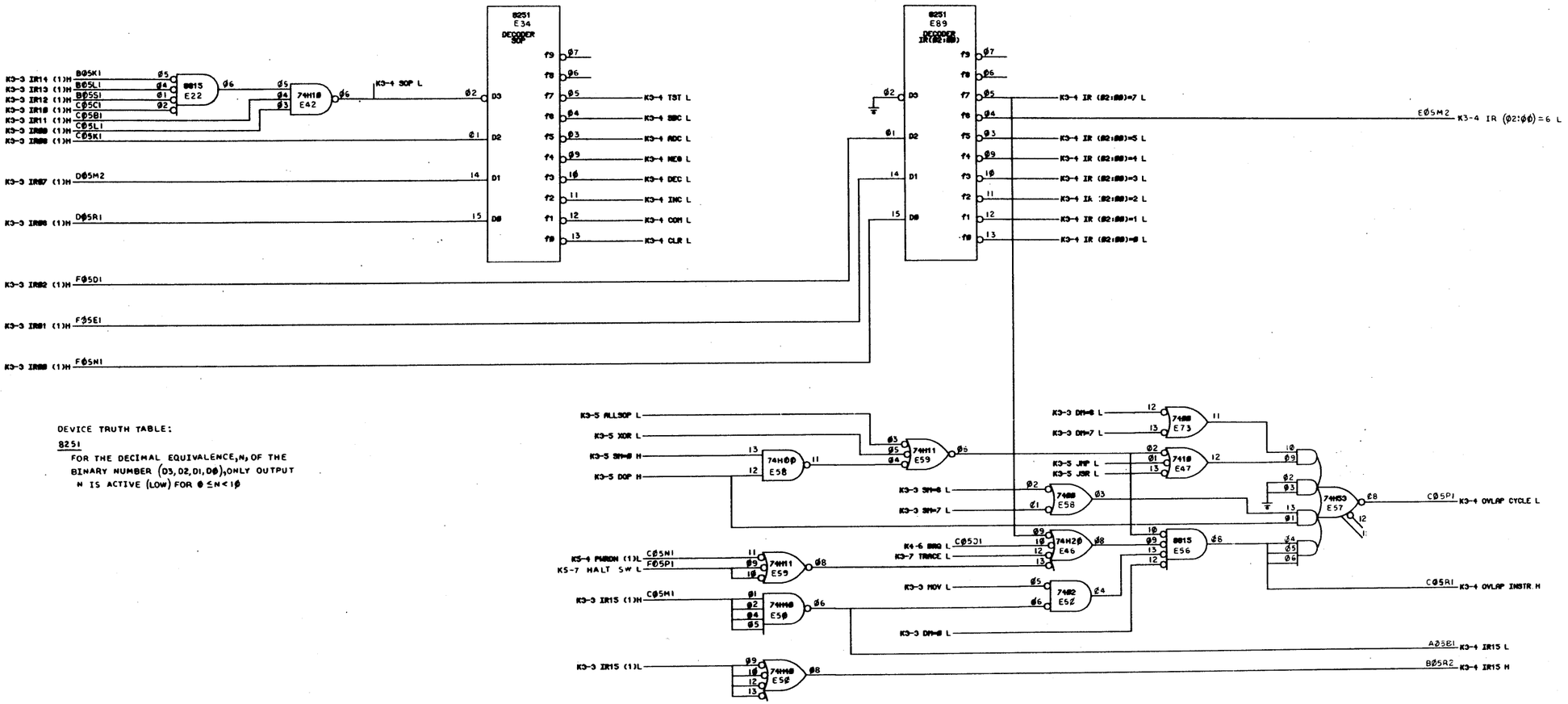
DEVICE TRUTH TABLE:

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'
FINISH, SURFACE QUALITY √
MATERIAL
FINISH

DRN [signature] DATE 2-2-72
CHK'D [signature] DATE 2/7/72
ENG [signature] DATE 2/7/72
QUAL [signature] DATE 2/7/72
MFG [signature] DATE 2/7/72

FIRST USED ON
PDP11
SCALE
SHEET 4 OF 9

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
IRD & OVLAP K3-4

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

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

K3-4 IR15 H
K3-3 IR (14:12)=7 L
K3-3 SM=4 L
B05A2
E32
K3-5 XOR H
K3-5 XOR L
K3-4 SOP L
E33
K3-5 SOP H
K3-5 ALLSOP L
K3-3 IR (14:12)=0 L
K3-3 SM=0 L
A05U2
E23
K3-5 ROTSHF H
K3-3 IR09 (0) L
C05K1
K3-3 IR15 (0) L
C05M1
E22
K3-5 SXT H
K3-5 SXT L
K3-3 IR (08:00)=7 L
E43
K3-5 DOP L
K3-5 SWAB H
K3-3 SM=0 L
C05A1
K3-5 SM=0 H
K3-5 IR (15:09)=0 H
E23
E51
K3-3 IR07 (1)H
K3-3 IR09 (1)H
D05M2
D05R1
K3-3 IR07 (0)H
E42
K3-5 SWAB L
K3-5 JMP L
KT-7 KT INSTR L
D05B1
E33
K3-5 SM=4 H
K3-3 IR15 (0)H
E42
E43
K3-5 JMP+JSR H
K3-5 IR (14:12)=0 H
E45
K3-5 JSR H
E45
K3-5 DOP L
K3-3 MOV L
E43
E44
K3-3 SR INSTR L
K3-0 MARK L
K3-0 WAIT L
K3-0 CC INSTR L
K3-0 SOB L
K3-0 SXT*DMB L
K3-0 SWAB*DMB L
D05N1
+5V
D05A2
R3
1K
E70
K3-0 SOPMOD*DMB L
K3-0 ROTSHF(R)*DMB L
K3-0 RTS L
K3-0 TRAP INSTR L
E69
K3-0 PARTDOP*MEB L
K3-0 HALT*RESET L
E68
K3-3 TRUE BR L
K3-3 FALSE BR L
K3-0 RTI*RTT L
K3-0 I1K0 (CINSTR)
D05L1
D05M1
E66
E67
E35
E46
E45
E44
E29
K3-3 DM=0 L
K3-5 I1K3 L
K3-5 I1K3 H
K3-5 I1K1 H
K3-5 I1K0 H
K3-5 I1K4 L
E55
E35
E55
K3-5 BUBC5(BUT37) H
K3-5 BUBC4(BUT37) H
K3-5 MOV=SM0 L
K3-5 DOP=-SM0 L
K3-5 BUBC3(BUT37) H
K3-3 IR11 (1)H
C05B1
K3-0 RESET H
K3-3 IR05 (1)H
E05K1
K3-3 IR10 (1)H
C05C1
K3-3 IR04 (1)H
E05H1
K3-3 IR09 (1)H
C05L1
K3-3 IR03 (1)H
K3-3 DM=7 L
C05S1
E51
E53
E52
K3-5 BUBC2(BUT37) H
K3-5 BUBC1(BUT37) H
K3-5 BUBC0(BUT37) H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

DRN
DATE 2-2-72
CHK
DATE 2/27/72
ENGR
DATE 2/27/72
PROJ MGR
DATE 2/27/72
FIRST USED ON
PDP11
SCALE
SHEET 5 OF 9

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
BUBC (INSTR 1) KD-E

SIZE D CB
NUMBER M7233-0-1
REV. E
SHEET

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

K3-3 IR07 (1)H
K3-3 IR00 (0)H
K3-5 IR (15:00)=0 H
K3-3 OP=0 L
K3-3 IR05 (1)H
K3-5 ROTSHF H
K3-5 DOP L
K3-4 IR15 H
K3-3 IR00 (1)H
K3-4 SOP L
K3-5 SP=0 H
K3-3 IR07 (0)H
K3-3 IR01 (1)H
K3-3 IR00 (0)H
K3-6 ROTSHF(L) L
K3-6 ROTSHF(R)=ONE L
K3-3 ADD+SUB L
K3-6 ROTSHF L
K3-4 NE0 L
K3-3 IR04 (1)H
K3-3 SUB H
K3-6 RTS L
K3-6 CC INSTR L
K3-6 I1K0 (CINSTR) L
K3-6 SOPHOMORE=ONE L
K3-6 SOPHOMORE H
K3-3 IR02 (1)L
K3-5 BUBC4(BUT37) H
K3-5 BUBC2(BUT37) H
K3-5 BUBC1(BUT37) H
K3-5 BUBC0(BUT37) H
K3-5 BUBC5(BUT37) H
K3-5 BUBC3(BUT37) 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
KT-2 PS15 (0) H
+5V
K3-6 IR (15:03)=0 H
K3-6 RESET L
K3-6 RESET H
K3-6 HALT+RESET L
K3-6 PRIV INSTR L
K3-6 WAIT L
K3-6 DR=1 H
K3-6 IOT L
K3-6 BPT L
K3-6 TRAP INSTR L
K3-6 EMT+TRAP H
K3-6 EMT L
K3-6 TRAP L
K3-6 IR (14:12)=7 H
K3-6 DP=0 H
K3-6 MARK L
K3-6 EMT+TRAP L
K3-6 PARTDOP=ZERO L
K3-6 SXT=ONE L
K3-6 SWAB=ONE L
K3-6 SOB L
K3-6 SP=7 H
K3-4 IR15 L
K3-5 IR (14:12)=0 H
K3-3 SP=0 L
K3-3 IR (00:00)=4 L
K3-5 SP=4 H
K3-5 XOR H
K3-3 MOV L
K3-3 IR (14:12)=0 L
K3-3 IR (14:12)=7 L
K3-5 SXT H
K3-5 SWAB H
K3-3 SP=7 L
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 IR00 (0)H
K3-3 IR00 (1)H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED: DIMENSIONS IN INCHES; TOLERANCES: FRACTIONS ± 1/64, ANGLES ± 0°30', FINISH 125 MICRO INCH	DRAWN	DATE 2-3-72
	CHECKED	DATE 2/27/72
	ENG	DATE 2/27/72
	MFG	DATE 2/27/72
	QUALITY	DATE 2/27/72
MATERIAL	FIRST USED ON: PDP11	
FINISH	SCALE	
	SHEET 9 OF 9	

EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: IR DECODE
IRD DISCRETE K3-6

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

1 AUG 25 1971

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K5-4 OVLAP (1)H — E25D1 — 74H04 E86
K3-3 DM=8 L — E05J2 — 74H08 E93
K1-7 PS ADRS H — E25V2
K4-5 CBR (1)L — E05S2
K5-2 PS(T) (1)H — E25S2 — 74H08 E93
K3-8 RTT L
K5-4 BERR (1)L — F05U2
K5-4 BOVFLW (1)L — E25Y2
K5-4 PWRDN (1)L — C05N1
K5-8 CONSL (1)L — E05W2 — 74H21 E102
K4-6 BRQ L — C05D1
K5-4 WAIT (1)L — E05J1 — 74H08 E85 — 74H04 E86
K1-5 HRPTR (0)H — F05C2 — 74H00 E93 — 74H08 E85
K5-7 HALT SW L — F05P1 — 74H04 E92
K3-3 MOV L
K3-3 IR03(0)H

7402 E103 → K3-7 BUBC0(BUT27) H

K3-4 IR15 H — B05A2 — 74H11 E83 → K3-7 BUBC1(BUT21) H
K3-5 SWAB H — 74H11 E83 → K3-7 BUBC0(BUT21) 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

K1-6 BABB (1)H — D05S1 — 74H08 E76
K3-6 BYTE INSTR H — D05H1

7402 E100 → K3-7 BUBC1(BUT29) H
7402 E100 → K3-7 BUBC0(BUT29) H
K3-8 BIT+CMP+TST H — D05W2 — 7402 E100 → K3-7 BUBC0(BUT31) H
74H04 E92 → K5-5 SWAB L — 74H20 E99 → 7402 E120

K3-6 DM=8 H
K3-9 SUB H
K3-3 DM=6 L
74H02 E99 → 74H10 E101

K3-5 SXT L
K3-8 ROTSHF(R) L
K3-5 SWAB L
K3-5 DOP H
K3-5 XOR L
K3-9 SUB L
K3-6 SOPHORE H
74H04 E75 → 74H00 E76 → 74H27 E66 / 74H20 E65 / 74H10 E101

K3-5 DOP=-SWB L
K3-4 NEG L
K3-8 ROTSHF(R) H
74H00 E99

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

F05S1 — K3-7 TRACE L
E25B1 — K3-7 SERVICE H
F05T2 — K3-7 BYTE CODES H

74H04 E92 → K3-3 IR05 (1)L
74H04 E92 → K3-3 IR04 (1)L

74H11 E93 → 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

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

PRODUCED BY THE AUTOMATED DRAFTING SYSTEM

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

DRN. — DATE 2-2-72
CHKD. — DATE 2/22/72
ENGR. — DATE 2/23/72
PROJ. ENGR. — DATE 2/23/72
PROJ. — DATE 2/29/72
FIRST USED ON PDP11
SCALE
SHEET 7 OF 9

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
BUBC (OTHER) K3-7

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

AUG 24 ...

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

KE-5 ECOMUXS1 L D05E1
KE-5 ECOMUXS0 L D05C1
+5V
R5 1K
R6 1K
D05A2

K3-3 IR05 (0)H
74H04 E62
74H00 E63
K3-8 ROTSHF(R) H
K3-8 ROTSHF(R) L
K3-8 ROT(R) L
K3-8 SHF(R) L

K3-3 IR (08:06)=2 L
74H04 E62
74H00 E63
74H10 E64
K3-3 IR (08:06)=0 L D05E2
74H04 E62
74H00 E63
74H10 E64
K3-8 BYTE INSTR H D05H1
74H00 E63

K3-3 IR (08:06)=1 L
74H04 E62
74H11 E14
K3-8 ROT(L) H
K3-5 ROTSHF H
K3-3 CMP L
K2-7 DAD3 (1)H B05C1
K2-7 DAD2 (1)H A05S1
K2-7 DAD1 (1)H B05B1
K3-4 INC L
K3-4 ADC L
74H02 E16
74H11 E14
74H00 E3
74H02 E16
74H04 E5
K3-8 PS(C) L
K3-2 PS(C) H A05R2
K3-8 CMP+INC H
K3-8 ADC+PS(C) H
74H53 E17

K1-8 R(X8+X7) H A05C1
74H04 E5
74H00 E6
74H00 E7
74H00 E6
K5-5 BCON (1+2) H A05P2
KE-5 ECIN00 H A05S2
K2-6 SALU1 (1)H A05F1
K2-6 SALU0 (1)H A05E2
W1 ECIN00
NOTE: THE W1 JUMPER IS REMOVED IF KE11-E OPTION IS INSTALLED

D05D1 K3-8 COMUXS1 H
A05A1 K3-8 COMUXS0 H
A05P1 K3-8 CIN00 L

KE-5 ESALU3 L A05K2
KE-5 ESALU2 L A05M2
KE-5 ESALU1 L A05L2
KE-5 ESALU0 L A05N2
+5V
R9 1K
R8 1K
R7 1K
R10 1K
A05A2

DEVICE TRUTH TABLE:
74157

STB	S0	FN
H	—	L
L	L	AN
L	H	BN

WHERE N = 0,1,2,3

K3-4 TST L
K3-3 BIT L
74H20 E25
D05V2 K3-8 BIT+CMP+TST H

K3-8 ROTSHF(L) L
K3-3 ADD+SUB L
74H21 E12
74H21 E13

K2-6 SALU3 (1)H A05D2
K2-6 SALU2 (1)H A05E1
74H00 E2
74H00 E3
74H00 E2
74H00 E3
74157 E1 ALU MUX
A05L1 K3-8 ALUS3 H
A05J1 K3-8 ALUS2 H
A05K1 K3-8 ALUS1 H
A05M1 K3-8 ALUS0 H

K3-5 XOR L
K3-3 BIC L
K3-3 BIS L
74H21 E12
74H21 E13
K3-9 DEC+SBC+PS(C) L
K3-4 CLR L
74H11 E14
74H00 E2
K3-8 BIC+BIT H
K3-4 COM L
74H10 E15

K3-5 SXT L
74H00 E2
K3-3 DAD (3*2) H
74H04 E5
K2-6 SALUM (1)H A05N1
74HS2 E4
A05H1 K3-8 ALUM H
K3-5 SXT H
A05T1 K3-8 DAD (3*2) L
K5-2 PS(N) (1)H A05D1
74H04 E5
ESALUM H B05M2
74H81 E26
W2 ESALUM
NOTE: THE W2 JUMPER DISABLES THE PRESENTLY UNUSED ESALUM INPUT.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

DRN.	DATE 2-3-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD.	DATE 6/27/72	
ENGR.	DATE 6/28/72	TITLE: IR DECODE ALU CONTROL K3-8
PROJ. ENGR.	DATE 6/28/72	
PROD. MGR.	DATE 6/30/72	
FIRST USED ON: PDP11		SIZE D CODE CS NUMBER M7233-0-1 REV. E
SCALE		DIST.
SHEET 8 OF 9		AUG 25 1971

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K5-2 LOAD PS L B05K2 — 74H04 E29 — K1-2 DMUX01 H F05F1

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

K3-4 DEC L — 74H04 E8 — K3-9 DEC H

K3-4 ADC L — 74H04 E8

K5-2 N DATA L B05B1 — 74H04 E8

K3-5 ROTSHF H

K5-2 PS(C) H A05R2

K3-8 CMP+INC H, K3-3 CMP L — 8815 E28

K5-2 PASTC (1)L A05A1, K3-4 IR15 L A05B1, K3-3 ADD+SUB L — 7402 E10

K3-9 SUB H — 74H04 E8 — K3-9 SUB L

K3-9 ADD H, K3-4 IR15 H B05A2 — 7402 E10

K5-2 PASTB H A05R1 — 74H00 E18

K3-4 NEG L

K5-2 PASTA (1)H A05V2 — 74H10 E15

74H20 E36

74H50 E19

74H04 E29

74H00 E18

74H50 E19

74H20 E36

8815 E20

7402 E16

7402 E10

8815 E27

K3-9 V DATA L B05H1

K3-9 V (ROTSHF) H

K3-9 V (COMPARE1) H

K3-9 V (COMPARE 2) H

K1-2 DMUX00 H F05L1

K1-5 D(C) (1)L B25L2 — 74H04 E29

8815 E27

74H11 E36

74H11 E59

74H58 E28

K3-9 C DATA H B05F1

K3-4 SBC L

74H81 E26

74H81 E26

K2-6 SPS2 (1)H B05A1, K3-6 DM=0 H — 7402 E16

K2-6 SPS1 (1)H B05F2, K2-6 SPS0 (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 — 74H10 E15 — 74H00 E18

K3-3 MOV L, K3-5 XOR L, K3-5 SXT L, K3-4 INC L, K3-3 BIS L — 74H30 E24

K3-8 ROTSHF (R) H, K1-2 D00 (1)H B35N2

-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

DRAWN E. Puddle DATE 2-3-72
CHECKED [illegible] DATE 6/27/72
APPROVED [illegible] DATE 2-3-72
MANUFACTURING [illegible] DATE 2-3-72
PROJ. ENGR. [illegible] DATE 2/3/72
PROJ. USED ON PDP11
SCALE —
SHEET 9 OF 9

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
IR DECODE
CODES C,V K3-9

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

AUG 25 1971

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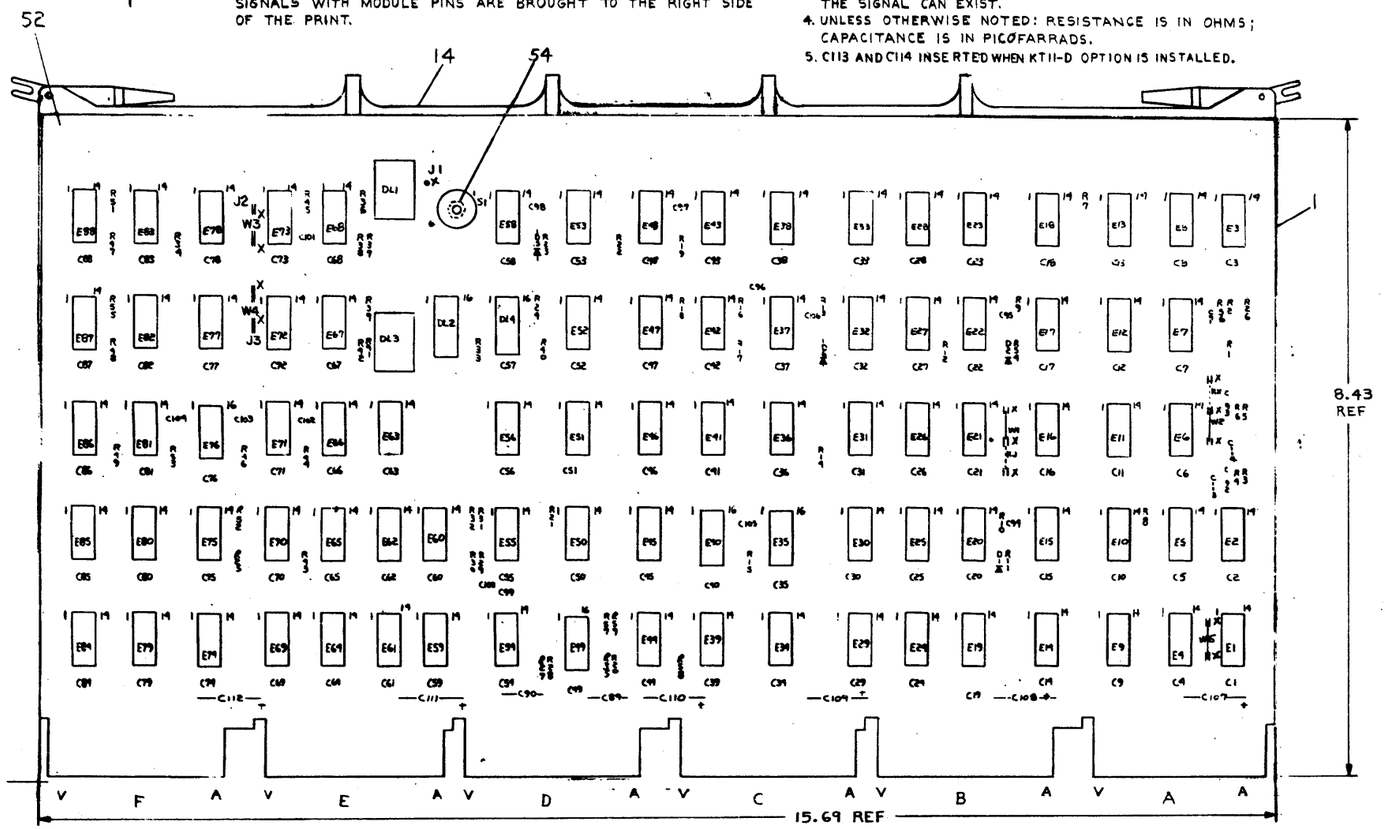
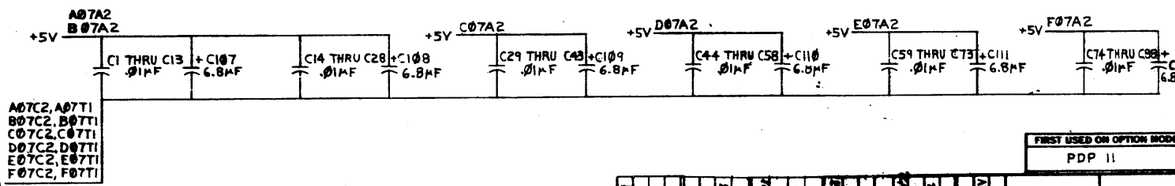
NOTES:

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 KT11-D OPTION IS INSTALLED.





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

ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
55	1	W1,W2,W3,W4,W5	INSULATED JUMPER	5009185
54	1	USED AS A SPACER	HEX NYLON NUT, #4-40	9007992
53	12		SPLIT LUGS	9006735
52	12		EYELET	9006732
51	1	E40	I.C. DEC 74175	1910651
50	3	E35, E49, E76	I.C. DEC 74123	1910436
48	4	E26, E30, E56, E19	I.C. DEC 8815	1909713
47	6	E2, E8, E42, E44, E55, E70	I.C. DEC 8881	1909705
46	7	E7, E15, E29, E32, E53, E75, E58	I.C. DEC 7404	1909686
45	5	E10, E27, E78, E93, E12	I.C. DEC 74H74	1909667
44	4	E1, E3, E37, E39	I.C. DEC 8640	1911469
43	7	E14, E33, E46, E47, E60 E71, E5	I.C. DEC 74H11	1909267
42	1	E89	I.C. DEC 74H55	1909063
41	3	E77, E82, E6	I.C. DEC 74H53	1909062
40	4	E16, E23, E65, E31	I.C. DEC 74H50	1909060
39	2	E34 E51	I.C. DEC 74H21	1909058
38	4	E17, E4, E41, E63	I.C. DEC 74H10	1909057
37	6	E21, E63, E64, E66, E72, E73	I.C. DEC 74H00	1909056
36	3	E22, E43, E86	I.C. DEC 7402	1909004
35	5	E62, E87, E9, E80, E48	I.C. DEC 74H20	1905635
34	5	E59, E67, E68, E61, E25	I.C. DEC 74H40	1905596
33				
32				
31				
30				
29	10	E18, E20, E28, E36, E45, E52 E74, E79, E84, E85	I.C. DEC 7400	1905575
28	7	E11, E13, E38, E50, E54, E81 E24	I.C. DEC 7474	1905547
27	2	DL2, DL4	DELAY LINE 100NS	1610033
26	1	DL3	DELAY LINE 50NS	1609428
25	1	DL1	DELAY LINE 30NS	1609427
24	2	R20, R28	RES 39K 1/4W ±5%	1302514
23	3	R15, R46, R53	RES 5.6K 1/4W ±5%	1301874
22	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
21	4	R35, R57, R58, R59	RES 180 1/4W ±5%	1301322
20	5	R9, R10, R14, R17, R24	RES 470 1/4W ±5%	1300316
19	2	R39, R37	RES 330 1/4W ±5%	1300295
18	6	R11, R13, R23, R33, R40, R54	RES 220 1/4W ±5%	1300271
17	2	R38, R41	RES 150 1/4W ±5%	1300250
16	3	R36, R42, R45	RES 100 1/4W ±5%	1300229
15	8	R4, R6, RT6, R19, R29 R30, R44, R56	RES 47 1/4W ±5%	1300202
14	1		HANDLE, MODULE	1210711-02
13	1	S1	SWITCH, 10 POS	1210042-01
12	4	D1, D2, D5, D6	DIODE D664	1100114
11	6	C107 THRU C112	CAP 6.8μF 35V ±10% TANT	1005306
10	3	C89, C90, C91	CAP 1200PF 100V ±5% D.M.	1002619
9	2	C104, C105	CAP 27PF 100V ±5% D.M.	1001739
8	88	C1 THRU C88	CAP .01μF 100V ±20% DISC	1001610
7	3	C97, C101, C103	CAP 1000PF 100V ±5% D.M.	1000042
6				
5	3	C92, C99, C100	CAP 470PF 100V ±5% D.M.	1000024
4	5	C96, C96, C98, C102, C106	CAP 330PF 100V ±5% D.M.	1000023
3	2	C93, C95	CAP 220PF 100V ±5 D.M.	1000021
2				
1	1		ETCH CIRCUIT BOARD	5009983

PARTS LIST

FIRST USED ON OPTION MODEL: PDP 11

ETCH BOARD REV: D

DEC NO.	EIA NO.
D664	IN3606

SEMICONDUCTOR CONVERSION CHART

REV	DESCRIPTION	ORIGINATED	CHANGE NO.
A	M7234-0001	J. ROGERS 10-28-74	
B	M7234-0002	J. O'LOUGHLIN 2-25-75	
C	M7234-0003	J. O'LOUGHLIN 3/31/75	
D	M7234-0004	S. BUZYNET 6-30-75	
E	M7234-0005	S. BUZYNET 10-15-75	
F	M7234-0006	J. ROGERS 10-11-76	

DRAWN: [illegible] DATE 6-23-72
CHECKED: [illegible] DATE 7/19/72
ENGR. APPR.: [illegible] DATE 7/19/72
PROJ. ENGR.: [illegible] DATE 7/19/72
NEXT HIGHER ASSY: KDII-A
SCALE: —
SHEET 1 OF 6

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TIMING

K4-1

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

DIST.

M7234-0-1 REV F SHEET 1

DRAWING 40-5332 14-08

DEC FORM NO. 0000-1304

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8	7	6	5	4	3	2	1

P ESTART L E07N2
K5-8 P ENDRESET L E07M1
K5-4 BRSV (1)L D07N1
K4-5 PERIF RELEASE H D07A1
K4-6 B TNTR H E07C1
K4-3 P JAM START H D07L1
K5-8 PWR UP INIT L E07R2
K4-5 BBSY (1)H A07M2
K5-4 ABBY (1)H D07L2
K3-6 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 E07A1
K2-8 CLKOFF (1)H E07J1
K4-4 ALLOW CLK L
KM-2 MSTOP L E07S1
K1-9 UPP MATCH H E07K2
K5-4 OVLAP (1)H E07J2
KM-2 MCLK L E07V2
K2-8 CLKL1 (8)H E07A1
K2-8 CLKL8 (8)H E07H1

+5V R55 1K
+5V R48 1K
+5V R52 1K
+5V R51 1K
+5V R47 1K
+5V R3P 150
+5V R3T 330
+5V R41 150
+5V R39 330

7404 E58
7404 E75
74H53 E77
74H74 E78
74H74 E83
74H55 E88
74H11 E71
74H08 E73
74H08 E63
74H08 E68
74H08 E67
74H28 E87
74H28 E82
74H11 E60
74H28 E62
74H08 E59
74H08 E61
74H08 E64
74H08 E54
74H08 E66
74H08 E72
74H50 E65
74H50 E69

DL1 30ns
DL2 100ns
DL3 50ns
DL4 100ns
R36 100
R33 220
R42 100
R40 220
SW1
W3 SEE XOR NOTE
W4 SEE XOR NOTE
J2
J1
J3

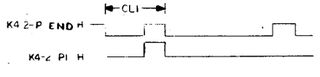
CLK WAVEFORMS:

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, 300 NS, K4-2 P3 H

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

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 (TRIGGERING) ON K4-2 P END H AND THE OTHER CHANNEL ON K4-2 P1 H. THE MACHINE SHOULD BE IN THE CONSOLE LOOP WAITING FOR A SWITCH ACTIVATION. MICRO WORDS CON@4 (026) AND CON@6 (@46). THIS LOOP IS USUAL WHEN IN CONSOLE MODE, OR MAY BE FORCED BY A START IN THE HALT MODE. THE S1 SWITCH IS ADJUSTED (10 NANO SECONDS INCREMENTS) UNTIL THE CLI INTERVAL NOTED BELOW IS ≥ 135 NANO SECONDS AND ≤ 145 NANO SECONDS.



K4-3 JAM CLK H E07B1

D07J2 K4-2 IDLE L
D07F1 K4-2 SET CLK L
K4-2 IDLE (1)H
B07S1 K4-2 ECLK L
D07Q2 K4-2 CLK U(58:17) H
D07T2 K4-2 CLK U(16:09) H
B07V2 K4-2 CLK(UPP+PUPP) H
K4-2 RECLK H
D07P1 K4-2 P END H
D07R1 K4-2 PART P END H
E07D1 K4-2 PS(P1+P3) H
E07J2 K4-2 (P1+P3) H
E07M2 K4-2 CLK B H
E07K2 K4-2 WR R(15:08) L
E07F2 K4-2 WR R(07:00) L
D07C1 K4-2 CLK IR H
E07L1 K4-2 P1 H
E07K1 K4-2 CLK BUS H
E07H1 K4-2 CLK BR H
E07A2 K4-2 P2 H
E07N2 K4-2 CLK D H
E07F1 K4-2 P3 H

K2-7 CLKB (1)H E07L2
K2-7 WRH (1)H E07M2
K2-7 WRL (1)H E07E2
K2-8 CLKIR (1)H E07P1
K2-7 SSBUS (1)H E07E1
K2-7 CLKBR (1)H E07J1
K2-7 CLKD (1)H E07P2
K2-8 CLKL1 (1)H D07U1
K2-8 CLKL8 (1)H E07M1

-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

DSN
CHK
DWG
MFG
ENGR
FIRST USED ON
PDP11
SCALE
SHEET 2 OF 8

DATE 12/8/72
DATE 12/8/72
DATE 12/8/72
DATE 12/8/72

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TIMING
CLOCK K4-2

SIZE D CB
NUMBER M7234-0-1
REV F
DIST.

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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)

NOTE: W5 MUST BE REMOVED WHEN MF11-L P IS INS. ALLED.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

EQUIPMENT CORPORATION

TITLE: TIMING CLK JAM K4-3

SIZE B | CS | NUMBER M7234-0-1 | REV. F

SCALE | SHEET 3 OF 8

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NOTE: C114 INSERTED PER KT11-D INSTALLATION PROCEDURE TO EXTEND δ TO 225NS.

NOTE: C113 INSERTED PER KT11-D INSTALLATION PROCEDURE TO EXTEND δ TO 300NS

NOTE: JUMPER W1 IS MOVED TO CONNECT E16 PIN10 TO B07F2 FOR KJ11-A OPTION.

NOTE: JUMPER W2 IS MOVED TO CONNECT E6 PIN10 TO A07H2 FOR KT11-D OPTION.

BUS TABLE:

C1BUS	COBUS	BGBUS	USE
0	0	1	DATI
0	1	1	DATIP
1	0	1	DATO
1	1	1	DATOB
0	1	0	AWBEY ← 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.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

MATERIAL

FINISH

DRN [redacted] DATE 1-31-72
CHKD [redacted] DATE 2-14-72
ENG [redacted] DATE 7-14-72
PROJ ENGR [redacted] DATE 7-17-72
QUAL [redacted] DATE 7/17/72

FIRST USED ON
PDP11

SCALE

SHEET 4 OF 8

[redacted] EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TIMING
BUS DATA CNTL K4-4

SIZE D | CODE CB | NUMBER M7234-0-1 | REV F

DIST.

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BUS SACK L C07L2 Ø6 — 8640 E37 — Ø2 — 8881 E42 — Ø1 — R17 470 / R15 47 / C96 330 — Ø1 — 7404 E32 — Ø2

T=7.5NS

K4-6 GRANT H
K4-6 B SSYN H
K4-5 B SSYN H
C07A1
B07U2
Ø1 Ø2 Ø4 Ø5 — 8815 E30 — Ø6 — 7404 E32 — Ø6 — Ø5 — 8881 E42 — Ø4

+5V R18 1K / R19 47 / C97 1000 — δ = 200 NS

K5-6 INIT H D07R2

K4-5 NPR (1)L D07B1
K4-2 CLK BUS H E07K1
K4-4 P CLR MSYN L B07K2
74H11 E33 — 74H08 E21 — 7408 E28 — 7402 E43

K4-4 BC1 (1)H
K5-4 BRSV (Ø)H C07N2

K4-6 BRQ H

+5V R22 1K

K5-3 BUT26 H D07K1 Ø5
K4-2 P3 H E07F1 Ø4
7400 E52 — Ø6

BUS INIT L C07H1 1Ø — 8640 E37 — Ø3 — 14 — 7404 E32 — 13 — 12

K4-6 NO SACK (1)L

+5V R14 470 / C106 330 / D6 D664 / R13 220 — τ = 100 NS — 7404 E32

K5-7 HALT SW L C07D1

+5V R34 1K

K4-4 .DATIP L — DATAIP 74H74 E83 — Ø8 Ø9
K4-4 CLK MSYNA H — 8Ø8 Ø9 — 1Ø

PTRD — 74123 E35 — R15 5.6K / C105 27PF — Ø5 Ø6 Ø7 Ø9 1Ø

CBR 7474 E38 — 8Ø8 Ø9

+5V R12 1K — DBR 74H74 E27 — 8Ø8 Ø9

K4-5 NPR (1)H
K4-5 GRANT BR H D07N1
K5-6 B AC LO L B07P2
K5-6 CONBL (1)L C07B1
K2-7 BGBUS (1)H E07E1
K5-4 OVLAP (1)H D07D1
K4-5 P MSYN L D07K2
K4-2 CLK IR H D07C1
K5-4 AHBY (1)H D07L2
K4-2-SET CLK L D07F1
K4-4 B MSYN L

8815 E30 — Ø8 — 7404 E32 — Ø8 — 8640 E37 — 13 — BUS NPR L C07D2

7408 E36 — 11 — 74H11 E33 — 12

NPR 7474 E27 — Ø1 Ø2 Ø3 — Ø6 Ø5 Ø6 Ø5 Ø4 — K4-5 NPR (1)H

Ø6 Ø9 — 8881 E42 — 12 — C07P2 BUS NPG H

7404 E53 — Ø8 — K4-5 OVLAP L

7408 E52 — 11 — 74H00 E73 — Ø8

74H11 E47 — 12 — 7404 E58 — Ø2 — δ = 100 NS — R45 100 / C101 1000 — 74H08 E73 — 11

74H11 E47 — Ø6

74H20 E48 — Ø6

7408 E52 — Ø8 — 7404 E53 — Ø3 — +5V R24 470 / C98 330 / D5 D664 / R23 220 — τ = 100 NS — 7404 E53 — Ø2

C07P1 K4-5 CLK PTRD H
C07C1 K4-5 CLK NPR H
D07K2 K4-5 P MSYN L

7404 E53 — Ø8 — K4-5 P MSYN H

B07S2 K4-6 D BACK H
C07A1 K4-6 PERIF RELEASE H
A07N2 K4-6 PROC RELEASE L
C07N1 K4-5 D PERIF RELEASE L
B07U2 K4-5 B SSYN H
C07M2 BUS SSYN L
A07M2 K4-5 SSYN (1)H
B07N1 K4-5 BUS FM D H
B07L2 K4-5 BUS FM BR H
C07L1 K4-5 PWRT GRANT BR H
D07M1 K4-5 GRANT BR H
C07M1 K4-5 B INIT L
C07J1 K4-5 P NO SACK L
C07F1 K4-6 CBR (1)L
B07V2 K4-5 PTRD(1) H
B07M1 K4-5 BRPTR (1)L
D07H1 K4-5 CLR PTR L
C07E1 K4-5 PTRD (Ø)H
D07B1 K4-5 NPR (1)L

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED — DIMENSIONS ARE IN INCHES — TOLERANCES — FRACTIONS ± 1/64 — .XX ± .03 — .XXX ± .010 — FINISH, MATERIAL QUALITY ASSURANCE, HEAT TREAT AND SURFACE CONDITIONS

MATERIAL

FINISH

NEXT ASSY

USED ON

PDP11

APPLICATION

DRAWN R. Bakke 2-1-72
CHECKED 2/8/72
ENGR 2/8/72
MFG 2/14/72
QA 2/14/72

EQUIPMENT CORPORATION — MAYNARD, MASSACHUSETTS

TITLE

TIMING

BUS OWNERSHIP K4-5

SIZE D — CAGE CS — DRAWING M7234-Ø-1 — REV F

SHEET 5 OF 8

DIST.

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K1-8 PSBT (1)H B07R2
K1-8 PSBG (1)H C07K2
K1-8 PSBS (1)H B07K1
74H50 E31
74H10 E41
7408 E36
BUS BR7 L C07R2
BUS BR6 L C07S2
BUS BR5 L C07T2
BUS BR4 L C07U2
8640 E39
8640 E39
8640 E39
8640 E39
7417S E40
CLR CLK
K4-5 B INIT L C07M1
K4-5 PTRD (1)H B07V2
74H11 E46
74H11 E46
74H21 E51
74H21 E51
K4-5 GRANT BR H D07M1
8815 E56
7408 E45
7408 E45
7408 E45
7408 E45
74H04 E58
8881 E44
8881 E44
8881 E44
8881 E44
R35 180
R57 180
R58 180
R59 180
+5V
D07M2 K4-6 BRQ L
K4-6 BRQ H
D07Q2 K4-6 B07 H
D07P2 K4-6 B06 H
C07V2 K4-6 B05 H
D07E2 K4-6 B04 H
7402 E43
K4-4 B INTR H E07C1
K5-4 INTR (1) H B07J1
7400 E20
8881 E8
R2 1K
C=375MS
R56 47
C91 1200
R1 1K
+5V
8881 E8
9640 E1
7404 E29
A07D2 BUS SSYN L
C07A1 K4-6 B SSYN H
K4-6 B SSYN L
K4-4 BWRIT (1)H A07L2
K4-4 MSYN (1)H B07D1
GND 07 E07C1
K1-7 SLR ADRS H A07V2
K4-4 DOUT LOW H B07K1
K1-7 PS ADRS H A07P2
K4-7 SR ADRS H A07R1
K5-6 BDBIN (1)L A07U2
8815 E19
74H11 E14
74H20 E9
7410 E4
7404 E29
K4-6 PROC RESPOND L
K4-6 PROC ADRS H
7404 E15
7408 E20
C=100NS
R10 470
C94 330
D1 D664
R11 220
7404 E15
7404 E15
E07A1 K4-6 ADRS(7777774) H
B07E1 K4-6 PS (P FM BUS) H
7408 E20
74H10 E17
74H40 E61
A07S1 K4-6 PROC RESPOND H
B07J2 K4-6 BUS FM PS L
E07D2 K4-6 BUS FM SR H
D07J1 K4-6 GRANT H
D07P2 K4-6 TSACK (1)L
D07N2 K4-6 NODACK (1)H
K4-6 TDATA (1)L
K4-6 NODACK (1)L
K4-5 NPR (1)L D07B1
K4-5 GRANT BR H D07M1
DISABLE TSACK L D07H2
7404 E59
7408 E28
+5V R21 1K
+5V R27 1K
TSACK 7474 E50
NODACK 7474 E54
+5V R32 1K
R30 47
C=150NS
C99 470
8881 E55
TIME SACK
74123 E49
R28 39K
C90 1200
K4-6 B SSYN H
K4-3 P JAYSTART H D07L1
K5-8 INIT H D07S2
8815 E56
K4-5 CLR PTR L D07H1
K4-4 MSYN (1) H
E07D1 @3
K4-2 MCLK ENABLE L E07N1
TDATA 7474 E50
NODAT 7474 E54
+5V R31 1K
R29 47
C=150NS
C130 470
8881 E55
TIME DATA
74123 E49
R20 39K
C89 1200
D07S2 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 (D07H2)

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED
TOLERANCES
FRACTIONS ± 1/64 ANGLES ± 0°30'
DIMENSIONS IN INCHES
FINISH
MATERIAL
DRN R Sokolow DATE 2-1-72
CHK DATE 2/8/72
ENGR DATE 2/8/72
PROJ. DATE 2/8/72
FIRST USED ON PDP11
SCALE
SHEET 0 OF 0
EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
TIMING
BUS RESPONSE K4-6
SIZE D CODE CB NUMBER 47234-D-1 REV F
SHT.

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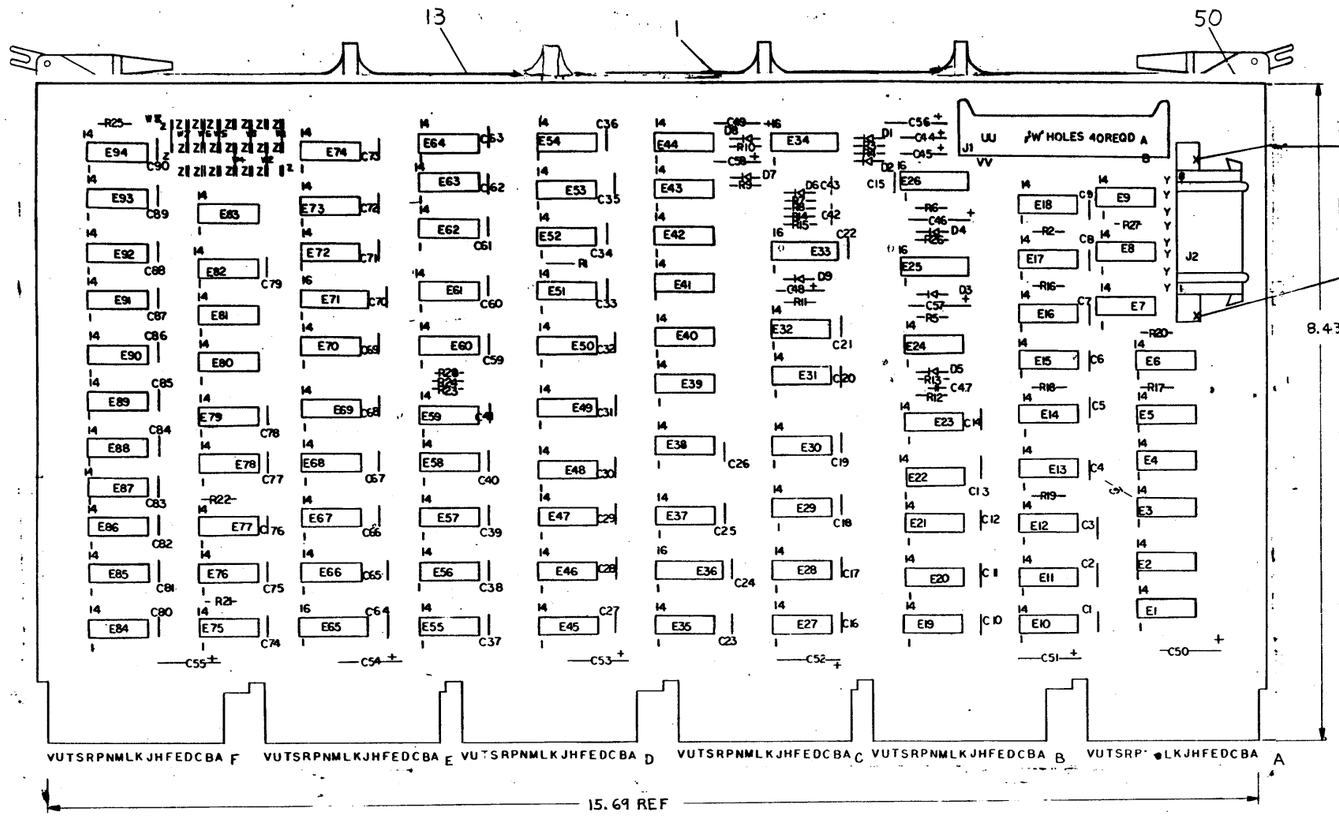
NOTES:

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 PICOFARADS.



AIR				
1	C91	CAP. 270 PF 100V ±5%	1000022	54
8		INSULATED JUMPER L-2007-1	9009185	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, E43, 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
1		HANDLE MODULE	12107II-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
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.
D664	1N3606

FIRST USED ON OPTION MODEL: PDP 11

ETCH BOARD REV: E

NEXT HIGHER ASSY: KDII-A

SCALE: NONE

SHEET 1 OF 8

DRN: J. Saville 7-25-72
CHK: [illegible] 7-26-72
ENG: [illegible] 7/31/72
PROJ: [illegible] 8/1/72
PROG: J. Stringer 8-7-72

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: STATUS K5-1

SIZE: D CODE: CS NUMBER: M7235-0-1 REV: H

DIST:

REVISIONS			
REV	CHANGE NO.	CHK	
A	MY285-0001 ORIGINATED	J. Rogers	10-4-74
B	M7235-00002	J. Rogers	10-11-74
C	M7235-00003	J. Rogers	10-17-74
D	M7235-00004	J. Rogers	10-23-74
E	M7235-00005	J. Rogers	10-31-74
F	M7235-00006	J. Rogers	11-4-74
G	M7235-00007	J. Rogers	11-13-74
H	M7235-00008	J. Rogers	11-18-74

DEC FORM NO. DRD-135A

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K1-3 DMUX87 H E06R2
K1-3 DMUX86 H E06V2
K1-3 DMUX85 H E06R1
K1-3 DMUX84 H E06C1
K5-8 INIT1 L B06A1
KE-5 IMM PS CLK 1 L D26K1
KT-2 IMM PS CLK 2 L D06J1
K2-6 SPS2 (1)H D06N2
K2-6 SPS1 (1)H C06V2
K2-6 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
K3-6 CC INSTR H D06R1
K1-2 DMUX83 H D06N1
K1-2 DMUX82 H D06M1
K1-7 D(15:08)=0 H D06P2
K1-7 D(07:04)=0 H E06D2
K1-7 D(03:00)=0 H E06B1
K1-3 D07(D) H E06F2
K1-5 D15 (D) H E06E2
K1-3 BMUX07 H E06H2
K1-5 BMUX05 H E06J2
K1-3 RD07 H E06M2
K1-5 RD15 H E06L2
K3-7 BYTE CODES H E06A1
K4-2 CLK D H E06N2
K4-6 BUS FM PS L F06F1
K3-9 V DATA L E06U2
K3-9 C DATA H E06K1
K5-2 BUS FM PS H
K5-2 PS(N)(Ø) H
K5-2 PS(Z)(1) L
K5-2 PS(V)(Ø) H
K5-2 PS(C)(1) H
K5-2 PS(C)(1) L
K5-2 CLK PS(Ø7:Ø5) H
K5-2 LOAD PS L
K5-2 CLK PS(N,Z,V) H
K5-2 CLK PS(C) H
K5-2 PS(Ø2:ØØ)=7 H
K5-2 PS07 (1)H
K5-2 PS06 (1)H
K5-2 PS05 (1)H
K5-2 PS04 (1)H
K5-2 PS03 (1)H
K5-2 PS02 (1)H
K5-2 PS01 (1)H
K5-2 PS00 (1)H
K5-2 BUSRD FM PS H
K5-2 MDATA L
K5-2 LOAD PS L
K5-2 PMSTA (1)H
K5-2 PMSTB H
K5-2 PMSTC (1)L
K5-4 P BUT 37 L
BUS RD07 L
BUS RD06 L
BUS RD05 L
BUS RD04 L
BUS RD03 L
BUS RD02 L
BUS RD01 L
BUS RD00 L
BUS DS7 L
BUS DS6 L
BUS DS5 L
BUS DS4 L
BUS DS3 L
BUS DS2 L
BUS DS1 L
BUS DS0 L

SPS TABLE:

(SPS CODE) B	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
FRACTIONS ± 1/64
MATERIAL
FINISH
DRN. DATE 2-4-72
CHK'D DATE
ENG DATE
MFG DATE
APPD DATE 2-7-72
FIRST USED ON
PDP11
SCALE
SHEET 2 OF 9

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
STATUS
PS (07:00) K5-2
SIZE D CODE CS NUMBER M7235-0-1 REV. H
SHT.

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BUT TABLE (NUMERICAL & MNEMONIC CORRESPONDANCE):

BUT@@	NO OP	BUT1@	BUT (HALT)	BUT2@	BUT (BYTE+SERVICE+FFTCH)	BUT3@	BUT (VARIOUS SWITCHES)
BUT@1	BUT (CBR)	BUT11	BUT (MM FAULT)	BUT21	BUT (IR@3, BYTE+SOURCE)	BUT31	BUT (NOWR+BYTEWR+WORDWR)
BUT@2	BUT (CBR2)	BUT12	BUT (D=@)	BUT22	BUT (BYTE+SOURCE)	BUT32	NOT USED
BUT@3	BUT (REG DEP)	BUT13	NOT USED	BUT23	NOT USED	BUT33	BUT (OB+INSTR4)
BUT@4	BUT (REG EXAM)	BUT14	NOT USED	BUT24	BUT (CBR+HALT)	BUT34	BUT (INSTR4)
BUT@5	BUT (BEGIN)	BUT15	BUT (JSR/JMP)	BUT25	BUT (BR, WAIT+FETCH)	BUT35	BUT (OB+INSTR3)
BUT@6	BUT (SWITCH)	BUT16	BUT (SERVICE C+FETCH C)	BUT26	BUT (REQUESTS)	BUT36	BUT (INSTR3)
BUT@7	BUT (INTR)	BUT17	BUT (IP@3)	BUT27	BUT (SERVICE B+FETCH OVLAP+FETCH B)	BUT37	BUT (INSTR1)

K3-3 IR@@ (1)H D@6T2
K3-3 SM=@ L D@6A1 @9 — 74H04 E45 — @8
K3-4 IR15 H D@6L1
K3-4 IR15 L D@6M2
K5-2 PS(N) (1)H F@6H1
K5-2 PS(V) (1)H E@6L1
K5-2 PS(C) (1)H
K5-2 PS(C) (1)L
K5-2 PS(Z) (1)L
K5-2 PS(N) (@)H — 74H58 E87 — @8
K5-2 PS(V) (@)H
K3-3 SM=3 L D@5D1
K3-3 SM=2 L D@6C1
K5-2 PS(Z) (1)H E@6M1
K3-3 SM=1 L D@6B1
K3-3 IR(14:12)=@ L D@6V2 — 74H10 E8@ — 74H10 E8@ — @8
74H08 E57 — 74H04 E45 — 74H08 E57 — 74H08 E57 — 74H20 E46 — 74H32 E67 — @8 — @9
74H08 E47 — @6 — 74H08 E46 — @6
7402 E35 — @1 — 7402 E49 — 13
74H08 E9@ — @6 — 74H08 E9@ — @8 — 74H51 E55 — @9
74H04 E45 — @4 — 74H04 E45 — @2 — 74H51 E55 — @8
74H04 E45 — @6 — 74H51 E55 — 1@
74H04 E45 — 1@
74H08 E9@ — @3 — 74H08 E9@ — @6 — 74H08 E9@ — 74H08 E9@ — @3
8815 E7@ — @6 — 8815 E37 — @8 — 8815 E37 — @6
74H04 E29 — 1@ — 74H04 E23 — @3
74H04 E23 — 12
74H04 E29 — @2
8251 E36

K3-2 BUT3X L C@6D1

K5-3 TRUE BR L D@6E1
K5-3 FALSE BR L F@6N1
K5-3 BR INSTR L F@6P1
K5-3 BUT1@ L
K5-3 BUT37 H C@6B1
K5-3 BUT37 L
K5-3 BUT26 H C@6A1
K5-3 BUT26 L
K5-3 BUT25 H
K5-3 BUT24 H
K5-3 BUT24 L
K5-3 BUT07 H
K5-3 BUT06 H
K5-3 BUT06 L
K5-3 BUT05 H B@6V1
K5-3 BUT05 L
K5-3 BUT04 H
K5-3 BUT04 L
K5-3 BUT03 H
K5-3 BUT03 L
K5-3 BUT02 H C@6E1
K5-3 BUT01 H

K5-3 BUT(@3:@@) H
K5-3 BUT(04:@@) H

K2-5 UBF4 (1)H B@6R2
K2-5 UBF3 (1)H B@6P2
K2-5 UBF2 (1)H C@6P2
K2-5 UBF1 (1)H C@6N2
K2-5 UBF@ (1)H C@6N1

DEVICE TRUTH TABLE:
8251
FOR THE DECIMAL EQUIVALENCE, N, OF THE BINARY NUMBER (D3,D2,D1,D@), ONLY OUTPUT fN IS ACTIVE (LOW) FOR @≤N<1@.

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .@@@ FRACTIONS ± 1/@4 ANGLES ± @°3@'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH
DRN R Schlitt DATE 2-4-72
CHK'D DATE 3/31/72
ENG DATE 3/31/72
PROJ DATE 3/31/72
APPD DATE 4-7-72
FIRST USED ON PDP11
SCALE
SHEET 3 OF 8

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
TITLE
STATUS
BUT & BRANCH K5-3
SIZE D CODE CS NUMBER M7235-@-1 REV H
DIST.

AUG 87 BM1

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K4-6 NODAT (1)L C06D2
K4-4 ODR ERR L C06C1
K4-3 JAMJPP H C26T2
K5-6 CONBL (1)H
K5-5 EXT P CLR TRAP L B06F2
K3-6 TRAP DATA L B06N2
K5-5 INIT L
K5-3 BUT(80:88) H C06N2
K2-5 UBF1 (1)H C06P1
K2-5 UBF0 (1)H
K5-5 STRSKP1 H
K5-4 PWRON (1)H
K4-4 B INTR H D06L2
K4-2 SET CLK L B06K1
K4-2 P1 H D06D2
K4-2 (P1+P3) H B06L2
K2-7 BBSUB (1)H E06H1
K2-7 C1BUB (1)H C06E2
K2-7 C0BUB (1)H B06S1
K4-2 P3 H C06M2
K5-6 P BUT37 H C06R2
+5V R1 1K
R2 1K +5V
K5-4 RI PULLUP H
K5-4 FLAG CLR H
K5-4 P BUT37 L
K5-3 BUT(84:88) H C06P2
K2-5 UBF2 (1)H
K4-2 P2 H C06J2
K5-3 BUT25 H
K4-5 BRPTR (1)L C06U2
K5-3 BUT87 H
K5-3 BUT81 H
K5-7 TRACE L B06M2
KJ-2 EOVFL L D06R2
KI-7 BOVFL L F0651
K4-4 OVFLW ERR L B06M1
NOTE:
JUMPER W1 IS MOVED TO CONNECT E51 PIN 01 TO D06R2 FOR KJ11-A OPTION
K4-4 CLK BOVFLW H 22GF2
K5-8 CLK PWRON H
K5-8 INIT H B06F1
K4-3 JAMJPP L C06L1
K3-6 WAIT L B06P1
K3-4 OVLAP INSTR H D06E2
C06U1 K5-4 CLR BERR L
BC6U2 K5-4 DUBBERR L
K5-4 BERR (1)H
K5-4 BERR (1)L
K5-4 TRAP (1)L
D06K2 K5-4 BOVFLW (1) H
K5-4 BOVFLW (1) L
K5-4 CLR OVFLW L
C06K1 K5-4 INTR (1)H
D06H1 K5-4 TRAP (1)H
C06F2 K5-4 PWRON (1)H
K5-4 PWRON (1)L
C06M1 K5-4 STALL (1)L
B06S2 K5-4 RUBY (1)H
C06P1 K5-4 WAIT (1)L
B06V2 K5-4 BRSV (8)H
K5-4 RI PULLUP H
C06Q1 K5-4 OVLAP (1)H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES FRACTIONS DECIMALS ANGLES ± .005 ± 1/64 ± 1° FINISH CONFORM TO DIGITAL STD. MATERIAL

DRN R. Gallo DATE 2-7-72
CHK
ENGR
PROJ MGR
QUAL ASSUR
PROJ BASED ON PSP11
SCALE
SHEET 4 OF 8

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE STATUS FLAGS K5-4

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

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K3-8 IOT L C06H2
K3-8 TRAP L B06J1
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 D26H1
K5-4 BOVFLW (1)H C06M1
K5-4 STALL (1)L D06J2
K5-4 BERR (1)L D06J2

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 0 0	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	CONST(1+2)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1	POSSIBLE CIND0 MAKESTHIS 2
04	NOT USED	0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0	
05	NOT USED	0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1	
06	NOT USED	0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 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 0 0 0	ALSO DISPLAYED ON A CONS TIME OUT
11	PWR UP	W7 W6 W5 W4 W3 W2 W1 W0	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 1 1 1 1 1 1 1 1	MASK USE IN SOB INSTR
14	SINCLK	0 0 0 0 0 0 0 0 0 0 0 0 0 S 0 0	S=0 FOR SWITCHCOUNT IF SINCLK
15	MM VECTOR	0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0	KT VIOLATION TRAP VECTOR
16	MM CONST	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 M	M=1 IF SM0 IN MFP INSTR
17	STACK 04	0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 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)
0	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 = 114₈.

DEVICE TRUTH TABLE:
B251
FOR THE DECIMAL EQUIVALENCE N, OF THE BINARY NUMBER (D3,D2,D1,D0) ONLY THE OUTPUT #N IS ACTIVE (LOW) FOR 0≤#N<10

PWR FAIL UP
+5V R25 1K
W7 W6 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.

BC(17:10) B251 E71 D3 D2 D1 D0

K4-3 PERR(0)H F06V1
KT-3 MFP SMC D06V1
KM-2 MCLK ENABLE L C0652
K5-6 CONSL INC H
K2-8 SBC3 H F0652
K2-8 SBC2 H C06R1
K2-8 SBC1 H F06R2
K2-8 SBC0 H E06J1

K5-5 STPM4 H
K5-5 STPM3 H
K5-5 STPM2 H
F06U1 K5 5 SBC=10 L
C05L2 K5-5 BC(15:12,10:09) H
B06T2 K5-5 BC(11,08) H
B10L1 K5-5 BC07 H
D06H2 K5-5 BC06 H
C06K2 K5-5 BC05 H
E06J2 K5-5 BC04 H
F06V2 K5-5 BC03 H
F06R1 K5-5 BC02 H
F06T2 K5-5 BC01 H
F06W1 K5-5 BC00 H
F06U2 K5-5 BCON (1+2) H
E06V1 K5-5 SBC=16 L

K5-5 STACK04 H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ± .005 ± 1/64 ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH
DRAWN 2-7-72
CHECKED 7/26/72
ENGR APPROVED 7/26/72
MFG APPROVED 7/27/72
PDP11
SCALE
SHEET 5 OF 8
EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE STATUS CONSTANTS K5-5
SIZE D CS NUMBER M7235-0-1 REV. H
DIST.
AUG 27 1971

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K5-7 BEGIN SW (Ø)H A06A1
K5-7 START SW (Ø)H A06B1
K5-3 BUT18 L
K5-3 BUT37 L
K4-2 PART P END H A06P2
K5-8 INIT H B06F1
K3-2 BUT3X L C06D1
K5-7 LD ADRS SW (1)L
K5-7 EXAM SW (1)L
K5-7 CONT SW (1)L
K5-7 DEP SW (1)L
K5-3 BUT06 L
K5-3 BUT24 L
K5-3 BUT20 L
K5-3 BUT04 H
K5-3 BUT03 L
K2-7 DATA (1)H B06K2
K5-3 BUT03 H
K5-3 BUT05 L
K5-3 BUT04 L
K5-8 INIT1 L B06A1

A06E1 K5-6 SUBC2(BUT38) H
A06U2 K5-6 SUBC1(BUT38) H
E06J2 K5-6 SUBC0(BUT38) H
A06A2 K5-6 SWTCH (1)H
K5-6 START (1)L
A06R1 K5-6 BEGIN (1)L
C06A2 K5-6 P BUT37 H
A06S2 K5-6 CONSL (1)H
K5-6 CONSL(1)L
K5-6 EXAM (1)H
K5-6 CONSL INC H
K5-6 DEP (1)H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

DRAWN R.Smith DATE 2-8-72
CHECK DATE 7/26/72
ENG DATE 7/24/72
PROJ DATE 7/26/72
PROJ
PRINT USED ON PDP11
SCALE
SHEET 8 OF 9

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
CONSOLE K5-8

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

ASS 8.7 1971

FINAL

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

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

J1		
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 BA00 L	
H	K5-7 BA02 L	
J	K5-7 BA09 L	
K	K5-7 BA01 L	
L	K5-7 BA10 L	
M	K5-7 BA08 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	K5-7 VIRTUAL L
AA	KYD-3 LOADRS SW (1)L	K5-7 LDADRS 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 PS15 L C06B2	K5-7 USER L
MM	KT-9 KTSA16 L B06B2	K5-7 KT BA16 L
NN	KT-9 KTSA17 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		

C56 0.8 MFD

+5V — R18 1K, R17 1K, R16 1K

J2

J2		
08	REMOTE STOP L	
07		
06	REMOTE LOAD L	A06A1 K5-7 BEGIN SW (0) H
05	+5V — R27 1K	
04		
03		
02		K5-7 CONSOLE H
01	REMOTE INIT L	A06C1 K5-7 BEGIN INIT L

05 → 7404 E4 → 06

01, 02 → 74H11 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 ± 2°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN R Pelletier DATE 2-8-72
CHK'D [illegible] DATE 7/26/72
ENG [illegible] DATE 7/26/72
PROJ. ENG [illegible] DATE 7/26/72
MGR [illegible] DATE 8-1-72
FIRST USED ON PDP11
SCALE —
SHEET 7 OF 8

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
STATUS
CABLES K5-7

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

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K4-2 JPUP (1)L B06T2

K5-8 CLK PWR DN H

K5-4 PWROW (I)L C06F2

K5-8 INITI L

K4-2 (P1+P3) H B06L2

K5-4 AI PULLUP H

B06H1 K5-8 PWR RESTART H

B06J1 K5-8 P ENDRESET L

K5-8 RESET RESTART L

K5-3 BUT#2 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,#5) 7MS

PULSE DC LO (E33,13) 2MS

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

PWRUP INIT (E26,#4) 20MS

DELAY POWER DOWN (E34,#5) 3MS

POWER RESTART (E25,13) 70MS

A05V2 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

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

B06N1 K5-8 B AC LO L

B06C1 BUS DC LO L

B06E2 BUS AC LO L

BUS AC LO L B06D2

K5-8 B AC LO H

K5-8 DELAY DC L H

-PRODUCED BY THE AUTOMATED DRAFTING SYSTEM-

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

MATERIAL

FINISH

DRAWN R. Bell DATE 2-8-72
CHK'D 7/8/72
ENGR 7/8/72
MFG 7/8/72
QUAL ASSUR 7-7-72
PROJ ENGR ON FSP11
SCALE
SHEET 0 OF 0

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
STATUS
BUS DELAYS K5-8

SIZE D CODE CS DRAWING M7235-8-1 REV H
SHT

AUG 27 1971

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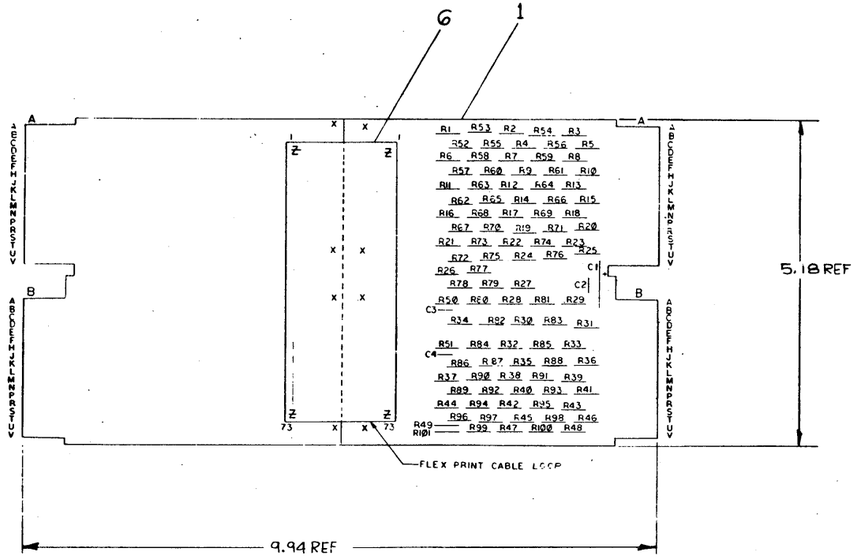
NOTES:

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.



AR		CABLE FLEXPRINT, 2 7/16 LG	9105492-5	6
50	R52 THRU R101	RES. 178 1/4W. 1%	1311422	5
51	R1 THRU R51	RES. 383 1/4W. 1%	1305125	4
1	C1	CAP. 39 MFD 10V 10%	1000076	3
3	C2, C3, C4	CAP. 1000 MMF 1000V 20%	1000043	2
1		ETCHED CIRCUIT BOARD	5009763	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: KDII-A

ETCH BOARD REV: F

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

IC PIN LOCATIONS

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK
E	ORIGINATED 5409764-00001 6-28-73 J. O'TOUGHLIN	
F	5409764-00002 10-22-73 J. BUKYNSKI	
H	5409764-00003 12/27/73 J. BUKYNSKI	
J	5409764-00003 10-28-74 JOHN ROGERS	

REVISIONS

DRAWN: [illegible] 5/14/72
CHECKED: [illegible] 7/4/72
ENGR: [illegible] 7/8/72
PROJ. ENGR: [illegible] 7/14/72
PROD. ENGR: DATE

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

SCALE: — SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: INTERNAL UNIBUS AND TERMINATOR

SIZE/CODE: D CS | NUMBER: 5409764-0-1 | REV: J

DIST:

SHT CODE: D | NUMBER: CS 5409764-0-1

DRUNG 40-322 16699

DEC FORM NO. DRD-135A

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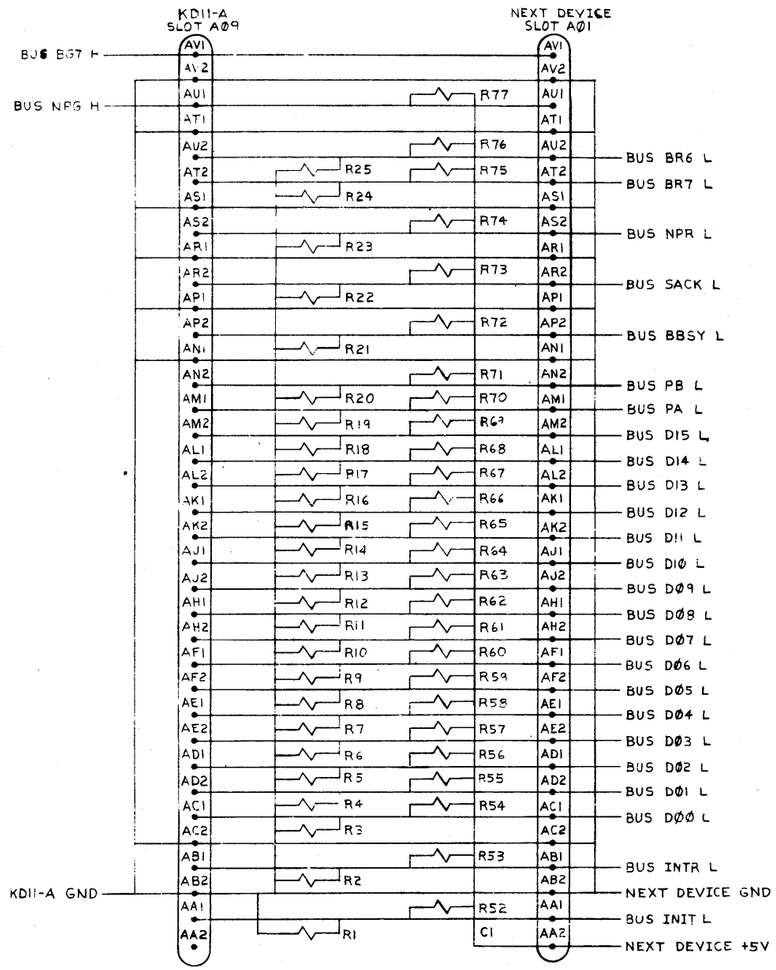

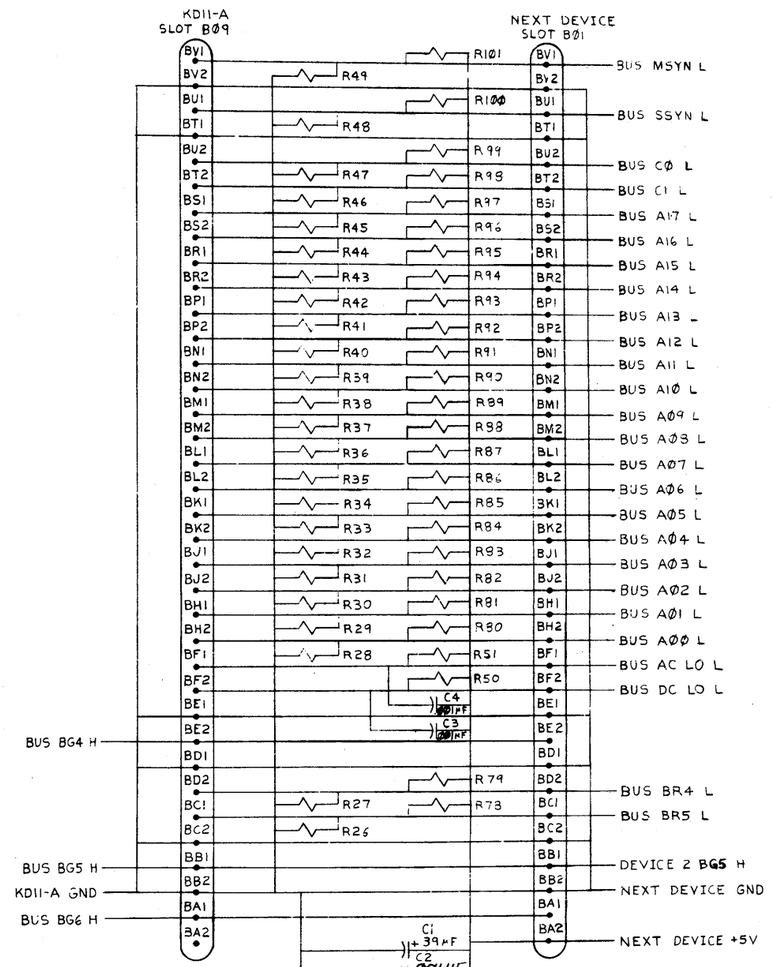

NOTE:
RESISTOR VALUES ARE:
R1 THRU R51 ARE 383Ω
R52 THRU R101 ARE 178Ω

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KD11-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 —

DRN		DATE 6-12-72
CHK'D		DATE 11/6/72
ENGR		DATE 2/16/72
QUAL ENGR		DATE 7/14/72
PROJ ENGR		DATE 7/19/72

NEXT HIGHER ASSY: D-UA-M981-0-0
SCALE NONE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: INTERNAL UNIBUS AND TERMINATOR

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

DIST.

REVISIONS

REV	CHANGE NO	CHK

BRUNING 40-522 18840
DEC FORM NO DRD 102-B

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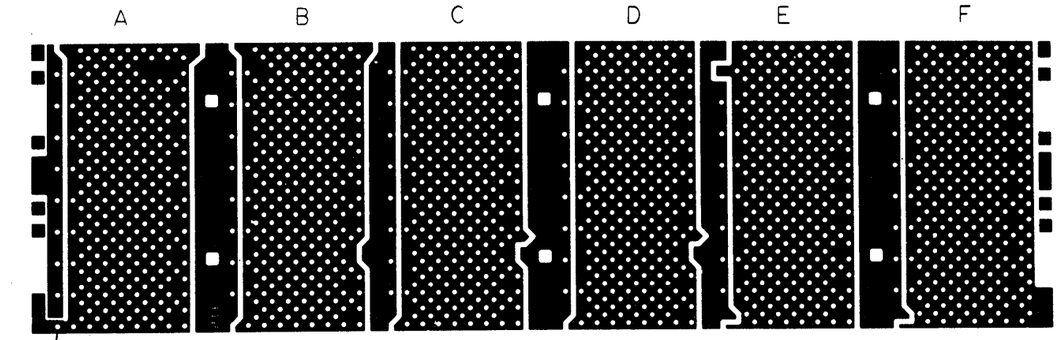
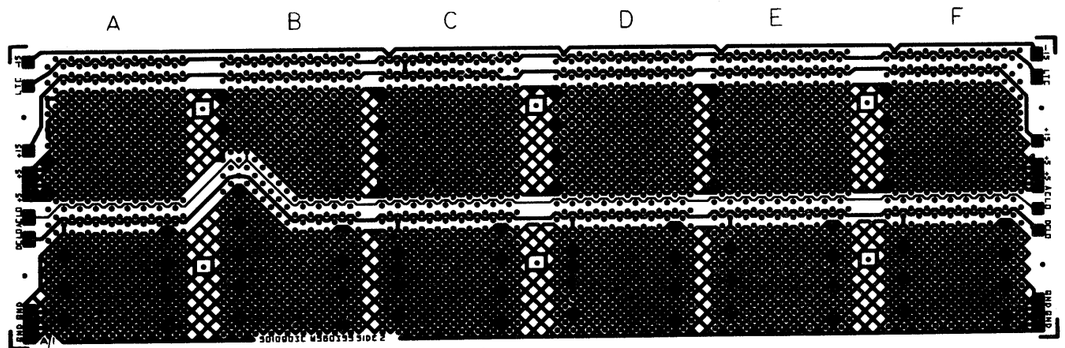
COPYRIGHT ©JUNE, 1974 DIGITAL EQUIPMENT CORPORATION"

NOTES:



SIDE 1



SIDE 2

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REF		KDII-A AWT REV STATUS	A-WT-7010290-0	5
REF		MODULE ECO HISTORY	B-MH-5410909-0-6	4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5410909-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5410909-0-9	2
1		ETCHED CIRCUIT BOARD	5010903	1
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: KDII-A

ETCH BOARD REV. C

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

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO. REVISIONS	CHK
C	5410904-0-1 JOHN ROGERS J. Rogers 6-03-74	

		DATE
DRN	J Vincent	6-21-74
CHK'D	R Healy	7-31-74
ENGR	R C Pano	8-8-74
PROJ. ENGR	R Lowe	8-8-74
MOD.	W Peterson	8/27/74

NEXT HIGHER ASSY: D-AD-7010085-0-0

SCALE: NONE

SHEET 1 OF 1

digital

TITLE: CIRCUIT SCHEMATIC (KDII-A)

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

DIST.

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

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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

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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	3
+5V		C03V1		1-38 *	P						1			1-5/8	3
+5V		D03V1		1-39 *	P						2			3-2/8	3
+5V		E02A2		1-40 *	P						1			0-5/8	3
+5V		E01B1		1-41 *	P						2			1-1/8	3
+5V		E01A2		1-42 *	P						1			0-1/8	3
+5V		E03A2		1-43 *	P						2			1-4/8	3
+5V		E04A2		1-44 *	P						1			1	3
+5V		E05A2		1-45 *	P						2			1	3
+5V		E06A2		1-46 *	P						1			1	3
+5V		E07A2		1-47 *	P						2			1	3
+5V		E08A2		1-48 *	P						1			1	3
+5V		E09A2		1-49 *	P						2			3-2/8	3

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV	RG	Y	NC LENGTH EXCEPTIONS FLAG	Z	X	REMARKS	RUN NUMBER
+5V		F09A2		1-50	*	P				2			3
+5V		F08A2		1-51	*	P				1			3
+5V		F07A2		1-52	*	P				2			3
+5V		F06A2		1-53	*	P				1			3
+5V		F05A2		1-54	*	P				2			3
+5V		F04A2		1-55	*	P				1			3
+5V		F03A2		1-56	*	P				2			3
+5V		F02A2		1-57	*	P							3
+5V		F01A2		1-58	*	P							3
+5V		F01R1		1-59	*								3
				1									
-15V		C09R2		1-01	*	P							4
-15V		D09B2		1-02	*	P				1		3	4
-15V		F09B2		1-03	*	P				2			4
-15V		F09B2		1-04	*					1			4
				1									
A INTR DONE	H	F09L2		1-01	*			DD	N 1			SOURCE	5
A INTR DONE	H	F09R1		1-02	*			DD					5
A INTR DONE	H			1									
A MASTER	L	F09D2		1-01	*			DD	N 1-6/8	2			6
A MASTER	L	F09P2		1-02	*			DD	N 0-4/8	1		SOURCE	6
A MASTER	L	F09N1		1-03	*			DD	2-2/8				6
A MASTER	L			1									
ADRS (777774)	H	B07A1		1-01	*			K4=6	N 12-1/8	1		SOURCE	7
ADRS (777774)	H	E03H1		1-02	*			KJ=2	12-1/8				7
ADRS (777774)	H			1									
ALU00	H	C02P2		1-01	*			KE=26	M 8-1/8	1		SOURCE	8
ALU00	H	F04F1		1-02	*			K1=2					8
ALU00	H			1					8-1/8	1		SOURCE	8
ALU07	H	E04J1						K1=3					9
									1-PIN RUN			SOURCE	9
ALU15	H	B04J2						K1=5					10
									1-PIN RUN			SOURCE	10
ALU14	H	A05H1		1-01	*			K3=8	N 4-1/8	1		SOURCE	11
ALU13	H	B04P2		1-02	*			K1=2345	4-1/8				11
ALU12	H			1									11
ALU11	H	A05M1		1-01	*			K3=8	N 3-3/8	1		SOURCE	12
ALU10	H	B04K1		1-02	*			K1=2345	3-3/8				12
ALU09	H			1									12
ALU01	H	A05K1		1-01	*			K3=8	N 4-3/8	1		SOURCE	13
ALU01	H	B04S1		1-02	*			K1=2345	4-3/8				13
ALU01	H			1									13
ALU02	H	A05J1		1-01	*			K3=8	N 3-5/8	1		SOURCE	14
ALU02	H	B04J1		1-02	*			K1=2345	3-5/8				14
ALU02	H			1									14

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV	RG	Y	NC LENGTH EXCEPTIONS FLAG	Z	X	REMARKS	RUN NUMBER
ALU03	H	A05L1		1-01	*			K3=8	N 3-3/8	1		SOURCE	15
ALU03	H	B04H1		1-02	*			K1=2345	3-3/8				15
ALU03	H			1									15
ARGA (1)	H	A01K1		1-01	*			KF=4	V 9-1/8	1		SOURCE	16
ARGA (1)	H	D02L1		1-02	*			KE=9	9-1/8				16
ARGA (1)	H			1									16
									1-PIN RUN			SOURCE	17
ASH	L	A02P2						KE=4				SOURCE (KE=4)	
									1-PIN RUN			SOURCE	18
ASHC	L	A02P2						KE=24	N 5-5/8	1		SOURCE	19
AWBY (1)	H	B06S2		1-01	*			K5=4	5-5/8				19
AWBY (1)	H	D07L2		1-02	*			K4=25					19
AWBY (1)	H			1					N 1-1/8	2		SOURCE	20
									N 10-7/8	1			20
B AC LO	T	B06N1		1-01	*			K5=8	12-0/8				20
B AC LO	L	B07P2		1-02	*			K4=5	N 4-3/8	1		SOURCE	21
B AC LO	L	F07M1		1-03	*			K4=3	4-3/8				21
B AC LO	L			1									21
B BRSY	H	A06L2		1-01	*			K5=7	N 9-7/8	1		SOURCE	22
H BRSY	H	B07U2		1-02	*			K4=5	9-7/8				22
H BRSY	H			1									22
H DC LO	L	B06E1		1-01	*			K5=8					
B DC LO	L	E07R1		1-02	*			K4=2	1-PIN RUN				23
B DC LO	L			1					N 3-5/8	1		SOURCE	24
B FIPP8A	H	C02R2						KE=4	3-5/8				24
B FLIPP8B	H	D02D2		1-01	*	1							24
B FLIPP8B	H	C01H1		1-02	*			KF=4	N 1-5/8	2		SOURCE	25
B FLIPP8A	H			1					N 7-3/8	1			25
B INIT	L	C08T2		1-01	*			KI=2	9-0/8				25
B INIT	L	C07M1		1-02	*			K4=6					
B INIT	L	E03L1		1-03	*			KJ=2	N 2-1/8	2		SOURCE	26
B INIT	L			1					N 4-3/8	1			26
B INTR	H	D06L2		1-01	*			K5=4	6-4/8				26
B INTR	H	E07C1		1-02	*			K4=24					
B INTR	H	F05H2		1-03	*			K3=2	N 1	1		SOURCE	27
B INTP	H			1					1-0/8				27
B INTP DONE	H	F09M2		1-01	*			DD					27
B INTR DONE	H	F09S1		1-02	*			DD	N 0-4/8	1		SOURCE	28
B INTR DONE	H			1					0-4/8				28
B MASTER	L	F09P2		1-01	*			DD					28
B MASTER	L	F09S2		1-02	*			DD	N 12-5/8	1		SOURCE	29
B MASTER	L			1					12-5/8				29
B MSYN	H	B0781		1-01	*			K4=4					
B MSYN	H	F01E1		1-02	*			KN=2					
B MSYN	H			1									

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
BA01 (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

KD11A,N WRAPD ,V35(102)=1 03-JUN-77

RUN NAME	X	Z	REMARKS	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV	RG	Y
BA15 (1)		2	SOURCE (K1=6)	H	A04K2		1=01 *		K1=67		
BA15 (1)		1		H	A06D1		1=02 *		K5=7		
BA15 (1)		2		H	C08D2		1=03 *		KT=85		
BA15 (1)				H	E03E2		1=04 *		KJ=2		
BA15 (1)				H			1				
BRSY (1)		1	SOURCE (K4=5)	H	A06N1		1=01 *		K5=7		
BRSY (1)				H	A07M2		1=02 *		K4=245		
BRSY (1)				H			1				
BC(11,08)		1	SOURCE	H	C04M1		1=01 *		K1=4		
BC(11,08)				H	E06T2		1=02 *		K5=5		
BC(11,08)				H			1				
BC(15:12,10109)		1	SOURCE	H	A04U2		1=01 *		K1=45		
BC(15:12,10109)				H	C06L2		1=02 *		K5=5		
BC(15:12,10109)				H			1				
BC00		1	SOURCE	P	E04B2		1=01 *		K1=2		
BC00				H	F06A1		1=02 *		K5=5		
BC00				H			1				
BC00 (0)		1	SOURCE	H	B07E2		1=01 *		K4=4		
BC00 (0)				H	B08N1		1=02 *		KT=36		
BC00 (0)				H			1				
BC01		1	SOURCE	H	E04L2		1=01 *		K1=2		
BC01				H	F06T2		1=02 *		K5=5		
BC01				H			1				
BC01 (0)		1	SOURCE	H	A07J1		1=01 *		K4=4		
BC01 (0)				H	B08R2		1=02 *		KT=36		
BC01 (0)				H	E03V2		1=03 *		KJ=2		
BC01 (0)				H			1				
BC02		1	SOURCE	H	E04R2		1=01 *		K1=2		
BC02				H	F06R1		1=02 *		K5=5		
BC02				H			1				
BC03		1	SOURCE	H	E04N2		1=01 *		K1=2		
BC03				H	F06V2		1=02 *		K5=5		
BC03				H			1				
BC04		1	SOURCE	H	E04A1		1=01 *		K1=3		
BC04				H	F06S2		1=02 *		K5=5		
BC04				H			1				
BC05		1	SOURCE	H	C06K2		1=01 *		K5=5		
BC05				H	D04P2		1=02 *		K1=3		
BC05				H			1				
BC06		1	SOURCE	H	D04V1		1=01 *		K1=3		
BC06				H	D06H2		1=02 *		K5=5		
BC06				H			1				

NC LENGTH EXCEPTIONS FLAG

			RUN NUMBER
N	1-5/8		54
N	6-7/8		54
N	8-3/8		54
	16-7/8		54
N	1-1/8		55
	1-1/8		55
N	7-5/8		56
	7-5/8		56
N	5-7/8		57
	5-7/8		57
P	3-5/8		58
	3-5/8		58
N	1-5/8		59
	1-5/8		59
N	4-7/8		60
	4-7/8		60
N	4-5/8		61
N	11-1/8		61
	15-6/8		61
N	3-7/8		62
	3-7/8		62
N	4-7/8		63
	4-7/8		63
N	2-7/8		64
	2-7/8		64
N	4-5/8		65
	4-5/8		65
N	2-2/8		66
	2-2/8		66

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RUN NAME	X	Z	REMARKS	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV	RG	Y
BC47		1	SOURCE	H	B06L1		1=01 *		K5=5		
BC47				H	D04N1		1=02 *		K1=3		
BC47				H			1				
BCON (1+2)				H	A05P2		1=01 *		K3=8		
BCON (1+2)		1	SOURCE	H	F06U2		1=02 *		K5=5		
BCON (1+2)				H			1				
BFGIN (1)				L	A07U2		1=01 *		K4=6		
BEGIN (1)				L	A06R1		1=02 *		K5=6		
BEGIN (1)				L	E05K2		1=03 *		K3=2		
BEGIN (1)				L			1				
BFGIN INIT				L	A06C1				K5=7		
BFGIN SW (0)		1	SOURCE	H	A06A1				K5=7		
BERR (0)				H	D06J2		1=01 *		K5=4		
BERR (0)				H	F05U2		1=02 *		K3=7		
BERR (0)				H			1				
BG BETWEEN				H	F09F1		1=01 *		DD		
BG BETWEEN				H	F09V2		1=02 *		DD		
BG BETWEEN				H			1				
BG IN				H	D09U2		1=01 *		DD		
BG IN				H	F09B1		1=02 *		DD		
BG IN				H			1				
BG OUT				H	D09V2		1=01 *		DD		
BG OUT				H	F09A1		1=02 *		DD		
BG OUT				H			1				
BG4				H	D07E2		1=01 *		K4=6		
BG4				H	D09S2		1=02 *		DD		
BG4				H			1				
BG5				H	C07V2		1=01 *		K4=6		
BG5				H	D09P2		1=02 *		DD		
BG5				H			1				
BG6				H	D07F2		1=01 *		K4=6		
BG6				H	F03R2		1=02 *		KW=2		
BG6				H	F03V2		1=03 *		KW=2		
BG6				H	D09M2		1=04 *		DD		
BG6				H			1				
BG7				H	D07D2		1=01 *		K4=6		
BG7				H	D09K2		1=02 *		DD		
BG7				H			1				
BGBUS (1)				H	D03E2		1=01 * 2		K2=7		
BGBUS (1)				H	E06H1		1=02 *		K5=4		
BGBUS (1)				H	E07E1		1=03 *		K4=25		
BGBUS (1)				H			1				

NC LENGTH EXCEPTIONS FLAG

			RUN NUMBER
N	6-7/8		67
	6-7/8		67
N	14-5/8		68
	14-5/8		68
N	1-2/8		69
N	13-3/8		69
	14-5/8		69
		1-PIN RUN	70
		1-PIN RUN	71
N	7-3/8		72
	7-3/8		72
N	2-3/8		73
	2-3/8		73
N	3-7/8		74
	3-7/8		74
N	3-7/8		75
	3-7/8		75
N	2-1/8		76
	2-1/8		76
N	3-3/8		77
	3-3/8		77
N	8-5/8		78
N	1		78
N	9-3/8		78
	19-0/8		78
N	1-5/8		79
	1-5/8		79
N	4-3/8		80
N	1		80
	5-3/8		80

X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
	1		N 10-5/8	81
		SOURCE (K3=8)	10-5/8	81
				81
	1	SOURCE	N 1-5/8	82
			1-5/8	82
				82
	1	SOURCE	N 11-7/8	83
			11-7/8	83
				83
	1	SOURCE	N 10-7/8	84
			10-7/8	84
				84
	1	SOURCE	N 4-1/8	85
			4-1/8	85
				85
	1	SOURCE	N 7-1/8	86
			7-1/8	86
				86
	1	SOURCE	N 3-3/8	87
			3-3/8	87
				87
	1	SOURCE	N 6-1/8	88
			6-1/8	88
				88
	1	SOURCE (KE=2)	N 1-5/8	89
			1-5/8	89
				89
	1	SOURCE (KE=2)	N 2	90
			2-0/8	90
				90
	1	SOURCE (KE=2)	N 1-4/8	91
			1-4/8	91
				91
	1	SOURCE (KE=2)	N 1-4/8	92
			1-4/8	92
				92
	1	SOURCE (KE=2)	N 7-1/8	93
			7-1/8	93
				93
	1	SOURCE (KE=2)	N 1-3/8	94
			1-3/8	94
				94

KD11A.M RUN NAME	A/P	WRAPD .V35(102)-1 PIN NAME	ORDER PIN	03-JUN-77 BAY - Q ORDER	DRAW OPT	RV RG Y
BIT+CWP+TST	H	A07J2		1-01 *		K4-4
BIT+CWP+TST	H	D05V2		1-02 *		K3-278
BIT+CWP+TST	H			1		
BMUX07	H	E04F1		1-01 *		K1-3
BMUX07	H	E06H2		1-02 *		K5-2
BMUX07	H			1		
BMUX15	H	A04L1		1-01 *		K1-5
BMUX15	H	E06J2		1-02 *		K5-2
BMUX15	H			1		
BOVFL	L	C04C1		1-01 *		K1-7
BOVFL	L	F06S1		1-02 *		K5-4
BOVFL	L			1		
BOVFL STOP	H	B07F1		1-01 *		K4-4
BOVFL STOP	H	C04E1		1-02 *		K1-7
BOVFL STOP	H			1		
BOVFLW (0)	H	D06K2		1-01 *		K5-4
BOVFLW (0)	H	F05V2		1-02 *		K3-7
BOVFLW (0)	H			1		
BPT	L	C06J1		1-01 *		K5-5
BPT	L	D05J2		1-02 *		K3-6
BPT	L			1		
BR INSTP	L	D05N1		1-01 *		K3-5
BR INSTP	L	F06P1		1-02 *		K5-3
BR INSTP	L			1		
BR00 (1)	H	D01A1		1-01 *		KF-2
BR00 (1)	H	D02J1		1-02 *		KE-2346
BR00 (1)	H			1		
BR01 (1)	H	D01B1		1-01 *		KF-2
BR01 (1)	H	D02M2		1-02 *		KE-2346
BR01 (1)	H			1		
BR02 (1)	H	D01C1		1-01 *		KF-2
BR02 (1)	H	D02K2		1-02 *		KE-2346
BR02 (1)	H			1		
BR03 (1)	H	D01D1		1-01 *		KF-2
BR03 (1)	H	D02L2		1-02 *		KE-2346
BR03 (1)	H			1		
BR04 (1)	H	B01J1		1-01 *		KF-2
BR04 (1)	H	D02U1		1-02 *		KE-2346
BR04 (1)	H			1		
BR05 (1)	H	B01K1		1-01 *		KF-2
BR05 (1)	H	B02P2		1-02 *		KE-2346
BR05 (1)	H			1		

X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
	1	SOURCE (KF=2)	N 7-3/8	95
			7-3/8	95
				95
	1	SOURCE (KE=2)	N 11-7/8	96
			11-7/8	96
				96
	1	SOURCE (KE=2)	N 7-1/8	97
			7-1/8	97
				97
	1	SOURCE (KE=2)	N 6-5/8	98
			6-5/8	98
				98
	1	SOURCE (KE=2)	N 6-5/8	99
			6-5/8	99
				99
	1	SOURCE (KE=2)	N 6-5/8	100
			6-5/8	100
				100
	1	SOURCE (KE=2)	N 9-3/8	101
			9-3/8	101
				101
	1	SOURCE (KF=2)	N 9-3/8	102
			9-3/8	102
				102
	1	SOURCE (KE=2)	N 4-1/8	103
			4-1/8	103
				103
	1	SOURCE (KE=2)	N 3-7/8	104
			3-7/8	104
				104
	2	SOURCE	N 3-7/8	105
	1		N 7-1/8	105
			11-0/8	105
	1		N 6-1/8	106
	2	SOURCE	N 5-1/8	106
			11-2/8	106
	2	SOURCE	N 2-5/8	107
	1		N 3-3/8	107
			6-0/8	107

KD11A.M RUN NAME	A/P	WRAPD .V35(102)-1 PIN NAME	ORDER PIN	03-JUN-77 BAY - Q ORDER	DRAW OPT	RV RG Y
BR06 (1)	H	B01L2		1-01 *		KF-2
BR06 (1)	H	E02B1		1-02 *		KE-236
BR06 (1)	H			1		
BR07 (1)	H	B01L1		1-01 *		KF-2
BR07 (1)	H	F02P2		1-02 *		KE-236
BR07 (1)	H			1		
BR08 (1)	H	D01E1		1-01 *		KF-2
BR08 (1)	H	F02L2		1-02 *		KE-23
BR08 (1)	H			1		
BR09 (1)	H	D01F1		1-01 *		KF-2
BR09 (1)	H	F02L1		1-02 *		KE-23
BR09 (1)	H			1		
BR10 (1)	H	D01P1		1-01 *		KF-2
BR10 (1)	H	F02M1		1-02 *		KE-23
BR10 (1)	H			1		
BR11 (1)	H	D01J1		1-01 *		KF-2
BR11 (1)	H	F02P1		1-02 *		KE-23
BR11 (1)	H			1		
BR12 (1)	H	B01M2		1-01 *		KF-2
BR12 (1)	H	F02U2		1-02 *		KE-23
BR12 (1)	H			1		
BR13 (1)	H	B01M1		1-01 *		KF-2
BR13 (1)	H	E02U1		1-02 *		KE-23
BR13 (1)	H			1		
BR14 (1)	H	B01N1		1-01 *		KF-2
BR14 (1)	H	C02T2		1-02 *		KE-236
BR14 (1)	H			1		
BR15 (1)	H	B01P1		1-01 *		KF-2
BR15 (1)	H	C02S2		1-02 *		KE-2346
BR15 (1)	H			1		
BRPTR (0)	H	B07M1		1-01 *		K4-5
BRPTR (0)	H	C06U2		1-02 *		K5-4
BRPTR (0)	H	F05D2		1-03 *		K3-7
BRPTR (0)	H			1		
BRQ	L	A01B2		1-01 *		KF-4
BRQ	L	C05D1		1-02 *		K3-47
BRQ	L	D07M2		1-03 *		K4-6
BRQ	L			1		
BRSV (0)	H	B06V2		1-01 *		K5-4
BRSV (0)	H	C07N2		1-02 *		K4-5
BRSV (0)	H	D07N1		1-03 *		K4-2
BRSV (0)	H			1		

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	PV RG Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
BUBC0 (BUT30)	H	B06J2		1-01 *		K5-6					
BUBC0 (BUT30)	H	E05R2		1-02 *		K3-2	1	1	SOURCE	N 9-3/8	108
BUBC0 (BUT30)	H			1						9-3/8	108
BUBC1	L	A03J2		1-01 *		K2-2					
BUBC1	L	D05P1		1-02 *		K3-2	1	1	SOURCE	N 9-5/8	109
BUBC1	L			1						9-5/8	109
BUBC1 (BUT30)	H	A06U2		1-01 *		K5-6					
BUBC1 (BUT30)	H	E05A1		1-02 *		K3-2	1	1	SOURCE	N 9-5/8	110
BUBC1 (BUT30)	H			1						9-5/8	110
BUBC2	L	A03M1		1-01 *		K2-2					
BUBC2	L	F05M1		1-02 *		K3-2	1	1	SOURCE	N 14-5/8	111
BUBC2	L			1						14-5/8	111
BUBC2 (BUT30)	H	A06S1		1-01 *		K5-6					
BUBC2 (BUT30)	H	F05S2		1-02 *		K3-2	1	1	SOURCE	N 13-7/8	112
BUBC2 (BUT30)	H			1						13-7/8	112
BUBC3	L	A03R1		1-01 *		K2-2					
BUBC3	L	E05T2		1-02 *		K3-2	1	1	SOURCE	N 12-3/8	113
BUBC3	L			1						12-3/8	113
BUBC4	L	A03D1		1-01 *		K2-3					
BUBC4	L	D05N2		1-02 *		K3-2	1	1	SOURCE	N 10-5/8	114
BUBC4	L			1						10-5/8	114
BUBC5	L	A03D2		1-01 *		K2-3					
BUBC5	L	D05F1		1-02 *		K3-2	1	1	SOURCE	N 9-3/8	115
BUBC5	L			1						9-3/8	115
BUBC0 (BUT17_00)	L	A03K2		1-01 *		K2-2					
BUBC0 (BUT17_00)	L	F05J1		1-02 *		K3-2	1	1	SOURCE	N 14-3/8	116
BUBC0 (BUT17_00)	L			1						14-3/8	116
BUBC0 (BUT37_00)	L	A03H1		1-01 *		K2-2					
BUBC0 (BUT37_00)	L	E05R1		1-02 *		K3-2	1	1	SOURCE	N 12-7/8	117
BUBC0 (BUT37_00)	L			1						12-7/8	117
BUPP0	H	C02P1		1-01 *	2	KE-789					
BUPP0	H	A03U2		1-02 *		K2-2				N 5-5/8	118
BUPP0	H	C01K2		1-03 *		KF-4				N 5-5/8	118
BUPP0	H	D08J2		1-04 *		KT-2				N 6-1/8	118
BUPP0	H	E04U2		1-05 *		K1-9				N 6-1/8	118
BUPP0	H	F01N2		1-06 *		KM-2				N 3-6/8	118
BUPP1	H	C02E1		1-01 *	2	KE-789					
BUPP1	H	A03S2		1-02 *		K2-2				27-2/8	118
BUPP1	H	C01M1		1-03 *		KF-4				N 5-1/8	119
BUPP1	H	D08H2		1-04 *		KT-2				N 6-3/8	119
BUPP1	H	E04T2		1-05 *		K1-9				N 6-3/8	119
BUPP1	H	F01D2		1-06 *		KM-2				N 5-7/8	119
BUPP1	H			1						N 2-4/8	119
										26-2/8	119

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	PV RG Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
BUPP2	H	B02S1		1-01 *	2	KE-789					
BUPP2	H	A03P2		1-02 *		K2-2				N 4-1/8	120
BUPP2	H	C01L1		1-03 *		KF-4				N 6-3/8	120
BUPP2	H	D08F2		1-04 *		KT-2				N 6-3/8	120
BUPP2	H	E04M2		1-05 *		K1-9				N 5-3/8	120
BUPP2	H	F01H2		1-06 *		KM-2				N 3-7/8	120
BUPP2	H			1						26-1/8	120
BUPP3	H	D02H1		1-01 *	2	KE-789					
BUPP3	H	A03L2		1-02 *		K2-2				N 8-7/8	121
BUPP3	H	C01D2		1-03 *		KF-4				N 5-7/8	121
BUPP3	H	D08K2		1-04 *		KT-2				N 5-2/8	121
BUPP3	H	E04K2		1-05 *		K1-9				N 4	121
BUPP3	H	F01S1		1-06 *		KM-2				N 5-5/8	121
				1						29-5/8	121
BUPP4	H	B03R2		1-01 *		K2-3					
BUPP4	H	C01E1		1-02 *		KF-4				N 2-3/8	122
BUPP4	H	D08L2		1-03 *		KT-2				N 6	122
BUPP4	H	E04R1		1-04 *		K1-9				N 5	122
BUPP4	H	F01M2	D02K1	1-05 *		KM-2				N 4-1/8	122
BUPP4	H	D02K1		1-06 *		KE-789				N 6-1/8	122
				1						23-5/8	122
BUPP5	H	B03P2	C01E2	1-01 *		K2-3					
BUPP5	H	C01E2		1-02 *		KF-4				N 2-5/8	123
BUPP5	H	D08M2		1-03 *		KT-2				N 5-3/8	123
BUPP5	H	E04K1		1-04 *		K1-9				N 3-5/8	123
BUPP5	H	F01F2	F02E2	1-05 *		KM-2				N 3-7/8	123
BUPP5	H	F02E2		1-06 *		KE-789				N 0-5/8	123
				1						16-1/8	123
BUPP6	H	B03N2		1-01 *		K2-3					
BUPP6	H	C01F1		1-02 *		KF-4				N 3-3/8	124
BUPP6	H	D08N2		1-03 *		KT-2				N 5-5/8	124
BUPP6	H	D04T2		1-04 *		K1-9				N 2-7/8	124
BUPP6	H	F01R1	F02T2	1-05 *		KM-2				N 7-1/8	124
BUPP6	H	F02T2		1-06 *		KE-789				N 1-3/8	124
				1						20-3/8	124
BUPP7	H	B03J2	C01D1	1-01 *		K2-3					
BUPP7	H	C01D1		1-02 *		KF-4				N 3-4/8	125
BUPP7	H	D08R1		1-03 *		KT-2				N 6-1/8	125
BUPP7	H	E04N1		1-04 *		K1-9				N 3-4/8	125
BUPP7	H	F01K1	F02D2	1-05 *		KM-2				N 4-1/8	125
BUPP7	H	F02D2		1-06 *		KE-789				N 1-5/8	125
				1						18-7/8	125
BUPP8	H	A01C1		1-01 *		KF-4					
BUPP8	H	B03E2		1-02 *		K2-3				N 4-5/8	126
BUPP8	H	C04K2		1-03 *		K1-9				N 3-7/8	126
BUPP8	H	D08N1		1-04 *		KT-2				N 5-3/8	126
BUPP8	H	F0102		1-05 *		KM-2				N 9-3/8	126
										23-2/8	126

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OP	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER	REMARKS
BUS (1)	H	A07M1					1=PIN RUN	127	
BUS A00	L	B09H2		1-01	*	N	8-2/8	128	SOURCE
BUS A00	L	E09H2		1-02	*	N	5-7/8	128	SOURCE
BUS A00	L	F04P2		1-03	*		14-1/8	128	SOURCE
BUS A01	L	B09H1		1-01	*	N	8-2/8	129	SOURCE
BUS A01	L	E09H1		1-02	*	N	4-6/8	129	SOURCE
BUS A01	L	F03E1		1-03	*	N	1-6/8	129	SOURCE
BUS A01	L	F04N2		1-04	*		14-6/8	129	SOURCE
BUS A02	L	B09J2	E09F1	1-01	*	N	8-1/8	130	SOURCE
BUS A02	L	E09F1		1-02	*	N	5	130	SOURCE
BUS A02	L	F03L2		1-03	*	N	0-5/8	130	SOURCE
BUS A02	L	F04M2		1-04	*		13-6/8	130	SOURCE
BUS A03	L	B09J1		1-01	*	N	9-5/8	131	SOURCE
BUS A03	L	E09V2		1-02	*	N	3-7/8	131	SOURCE
BUS A03	L	F04R2		1-03	*	N	1-5/8	131	SOURCE
BUS A03	L	F03M1		1-04	*		15-1/8	131	SOURCE
BUS A04	L	B09K2		1-01	*	N	5-2/8	132	SOURCE
BUS A04	L	C04S2		1-02	*	N	7-7/8	132	SOURCE
BUS A04	L	F03J2		1-03	*	N	4-7/8	132	SOURCE
BUS A04	L	E09U2		1-04	*		18-0/8	132	SOURCE
BUS A05	L	B09K1	F03J1	1-01	*	N	5-2/8	133	SOURCE
BUS A05	L	C04S1		1-02	*	N	7-7/8	133	SOURCE
BUS A05	L	F03J1		1-03	*	N	4-7/8	133	SOURCE
BUS A05	L	E09V1		1-04	*		18-0/8	133	SOURCE
BUS A06	L	A08S1		1-01	*	N	3-3/8	134	SOURCE
BUS A06	L	B09L2		1-02	*	N	5-5/8	134	SOURCE
BUS A06	L	C04V1	F03K1	1-03	*	N	7-7/8	134	SOURCE
BUS A06	L	F03K1		1-04	*	N	5-1/8	134	SOURCE
BUS A06	L	F09U1		1-05	*		22-0/8	134	SOURCE
BUS A07	L	A08R2		1-01	*	N	2-7/8	135	SOURCE
BUS A07	L	B09L1		1-02	*	N	7-1/8	135	SOURCE
BUS A07	L	D04A1		1-03	*	N	6-7/8	135	SOURCE
BUS A07	L	F03K2		1-04	*	N	5	135	SOURCE
BUS A07	L	F09P2		1-05	*		21-7/8	135	SOURCE

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OP	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER	REMARKS
BUS A08	L	A08P1		1-01	*	N	3-5/8	136	SOURCE
BUS A08	L	B09M2		1-02	*	N	4-1/8	136	SOURCE
BUS A08	L	C04J1	E09V2	1-03	*	N	8-7/8	136	SOURCE
BUS A08	L	E09N2		1-04	*	N	5-2/8	136	SOURCE
BUS A08	L	F03J1		1-05	*		21-7/8	136	SOURCE
BUS A09	L	A08N2		1-01	*	N	3-1/8	137	SOURCE
BUS A09	L	B09M1		1-02	*	N	3-5/8	137	SOURCE
BUS A09	L	C04F2	E09R1	1-03	*	N	9-1/8	137	SOURCE
BUS A09	L	E09R1		1-04	*	N	4-4/8	137	SOURCE
BUS A09	L	F03V2		1-05	*		20-3/8	137	SOURCE
BUS A10	L	B09N2		1-01	*	N	1-7/8	138	SOURCE
BUS A10	L	B0BD2		1-02	*	N	4-4/8	138	SOURCE
BUS A10	L	C04H1		1-03	*	N	8-1/8	138	SOURCE
BUS A10	L	F03A1		1-04	*	N	4-5/8	138	SOURCE
BUS A10	L	E09P1		1-05	*		19-1/8	138	SOURCE
BUS A11	L	E08C1		1-01	*	N	2	139	SOURCE
BUS A11	L	B09N1		1-02	*	N	3-7/8	139	SOURCE
BUS A11	L	C04L1		1-03	*	N	7-7/8	139	SOURCE
BUS A11	L	F03R1		1-04	*	N	5-1/8	139	SOURCE
BUS A11	L	F09L1		1-05	*		18-7/8	139	SOURCE
BUS A12	L	A04N2		1-01	*	N	2-5/8	140	SOURCE
BUS A12	L	A0BU1		1-02	*	N	3-3/8	140	SOURCE
BUS A12	L	B09P2		1-03	*	N	7-1/8	140	SOURCE
BUS A12	L	E09C1		1-04	*	N	4-5/8	140	SOURCE
BUS A12	L	F03C1		1-05	*		17-6/8	140	SOURCE
BUS A13	L	A04R2		1-01	* 1	N	2-6/8	141	SOURCE
BUS A13	L	B0BA1		1-02	*	N	2-3/8	141	SOURCE
BUS A13	L	B09P1		1-03	*	N	7-7/8	141	SOURCE
BUS A13	L	E09K2		1-04	*	N	5-3/8	141	SOURCE
BUS A13	L	F03D1		1-05	*		18-3/8	141	SOURCE
BUS A14	L	A04L2		1-01	*	N	5-2/8	142	SOURCE
BUS A14	L	B09P2		1-02	*	N	1	142	SOURCE
BUS A14	L	B0BT2	E09K1	1-03	*	N	7-3/8	142	SOURCE
BUS A14	L	E09K1		1-04	*	N	4-3/8	142	SOURCE
BUS A14	L	F03E2		1-05	*		18-0/8	142	SOURCE
BUS A15	L	A04J2		1-01	*	N	6-1/8	143	SOURCE
BUS A15	L	B09R1		1-02	*	N	1-7/8	143	SOURCE
BUS A15	L	C0BB1	E09D2	1-03	*	N	6-5/8	143	SOURCE
BUS A15	L	E09D2		1-04	*	N	4-6/8	143	SOURCE
BUS A15	L	F03F2		1-05	*		19-3/8	143	SOURCE

RUN NAME	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
		2	SOURCE	N	4-3/8	144
		1	SOURCE	N	0-5/8	144
		2	SOURCE	N	6-7/8	144
		1		N	4-6/8	144
					16-5/8	144
		1	SOURCE	N	4-3/8	145
		2	SOURCE	N	1	145
		1	SOURCE	N	6-7/8	145
		2		N	4-3/8	145
					16-5/8	145
		1	SOURCE TWP	N	0-1/8	146
		2	SOURCE,ETCH TO CON		1-7/8	146
					2-0/8	146
		2	SOURCE TWP		6-3/8	147
		1	SOURCE TWP		8-3/8	147
		2	SOURCE TWP		4-5/8	147
			SOURCE		19-3/8	147
		1	TWP		7-1/8	148
			SOURCE			148
					7-1/8	148
		1	TWP		7-3/8	149
			SOURCE			149
					7-3/8	149
		1	TWP		7-3/8	150
			SOURCE			150
					7-3/8	150
		1	TWP		7-5/8	151
			SOURCE			151
					7-5/8	151
		1	SOURCE TWP		5-5/8	152
		2	SOURCE TWP		2-5/8	152
					8-2/8	152
		1	SOURCE TWP		5-1/8	153
		2	SOURCE TWP		2-5/8	153
					7-6/8	153
		1	SOURCE TWP		6-3/8	154
		2	SOURCE TWP		2-5/8	154
		1	SOURCE TWP		10-3/8	154
			SOURCE		19-3/8	154

RUN NAME	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
		1	SOURCE TWP		6-3/8	155
		2	TWP		2-5/8	155
					9-0/8	155
		2	SOURCE TWP		5-5/8	156
		1	SOURCE TWP		7-1/8	156
					12-6/8	156
		2	SOURCE TWP		5-5/8	157
		1	SOURCE TWP		7	157
		2	TWP		5-2/8	157
					17-7/8	157
		2	SOURCE	N	1-3/8	158
		1	SOURCE	N	7-1/8	158
		2	SOURCE (K1=29)	N	4-3/8	158
		1	SOURCE	N	6-7/8 BIN=COD ER	158
					19-6/8	158
		1	SOURCE	N	1-3/8	159
		2	SOURCE	N	7	159
		1	SOURCE	N	9-7/8	159
		2	SOURCE (K1=29)	N	1-7/8	159
					20-1/8	159
		2	SOURCE	N	1-3/8	160
		1	SOURCE	N	6-7/8	160
		2	SOURCE	N	7	160
		1	SOURCE	N	2-5/8	160
		2	SOURCE (K1=29)	N	1-4/8	160
					19-3/8	160
		2	SOURCE	N	1-3/8	161
		1	SOURCE	N	7-1/8	161
		2	SOURCE	N	7-7/8	161
		1	SOURCE	N	2-1/8	161
		2	SOURCE (K1=29)	N	1-6/8	161
					20-2/8	161
		2	SOURCE	N	3-5/8	162
		1	SOURCE	N	4-3/8	162
		2	SOURCE (K1=39)	N	4-1/8	162
		1	SOURCE	N	5-5/8 BIN=COD ER	162
		2	SOURCE	N	3-1/8	162
					20-7/8	162

RUN NAME	A/P	PIN NAME	ORDER PIN ORDER	BAY - O	DRAW OPT	RV RG Y
BUS A16	L	A04S1	1-01	* 2		K1-6
BUS A16	L	B09S2	1-02	*		DD
BUS A16	L	B08V2	1-03	*		KT-4
BUS A16	L	E09F2	1-04	*		DD
BUS A16	L	F03H2	1-05	*		KW-2
	L		1			
BUS A17	L	A04R1	1-01	* 1		K1-6
BUS A17	L	B08P1	1-02	*		KT-4
BUS A17	L	B09S1	1-03	*		DD
BUS A17	L	E09D1	1-04	*		DD
BUS A17	L	F03D2	1-05	*		KW-2
	L		1			
BUS AC LO	L	B06D2	1-01	* H		K5-8
BUS AC LO	L	B06E2	1-02	* H		K5-8
BUS AC LO	L	B09F1	1-03	*		DD
BUS AC LO	L		1			
BUS BRSY	L	A09F2	C07M2	1-01 * H		K4-5
BUS BRSY	L	C07M2		1-02 * H		DD
BUS BRSY	L	F09D1		1-03 * H		KW-2
BUS BRSY	L	F03T2		1-04 *		DD
BUS BRSY	L			1		
BUS BG4	H	B09E2		1-01 * H		DD
BUS BG4	H	D09T2		1-02 *		
BUS BG4	H			1		
BUS BG5	H	B09R1		1-01 * H		DD
BUS BG5	H	D09R2		1-02 *		
BUS BG5	H			1		
BUS BG6	H	B09A1		1-01 * H		DD
BUS BG6	H	D09N2		1-02 *		
BUS BG6	H			1		
BUS BG7	H	A09V1		1-01 * H		DD
BUS BG7	H	D09L2		1-02 *		
BUS BG7	H			1		
BUS BR4	L	B09D2	C07U2	1-01 * H		K4-6
BUS BR4	L	C07U2		1-02 * H		DD
BUS BR4	L	D09H2		1-03 *		
BUS BR4	L			1		
BUS BR5	L	B09C1	C07T2	1-01 * H		K4-6
BUS BR5	L	C07T2		1-02 * H		DD
BUS BR5	L	D09F2		1-03 *		
BUS BR5	L			1		
BUS BR6	L	A09U2	C07S2	1-01 * H		K4-6
BUS BR6	L	C07S2		1-02 * H		DD
BUS BR6	L	D09E2		1-03 * H		KW-2
BUS BR6	L	F03U1		1-04 *		
BUS BR6	L			1		

RUN NAME	A/P	PIN NAME	ORDER PIN ORDER	BAY - O	DRAW OPT	RV RG Y
BUS BR7	L	A09T2	C07R2	1-01 * H		K4-6
BUS BR7	L	C07R2		1-02 * H		DD
BUS BP7	L	D09D2		1-03 *		
BUS BP7	L			1		
BUS C0	L	A07H1		1-01 * H		K4-4
BUS C0	L	B08U2		1-02 * H		
BUS C0	L	E09J2		1-03 *		DD
BUS C0	L			1		
BUS C1	L	A07E2		1-01 * H		K4-4
BUS C1	L	B09T2		1-02 * H		
BUS C1	L	F09F2		1-03 * H		DD
BUS C1	L	F03N1		1-04 *		KW-2
	L			1		
BUS D00	L	A09C1		1-01 *		KT-8
BUS D00	L	A08K1		1-02 *		DD
BUS D00	L	C09S2		1-03 *		K1-29
BUS D00	L	D04J1		1-04 *		K5-2
BUS D00	L	F06L1		1-05 *		
	L			1		
BUS D01	L	A08F1		1-01 *		KT-8
BUS D01	L	A09D2		1-02 *		
BUS D01	L	C09R2		1-03 *		DD
BUS D01	L	F06P2		1-04 *		K5-2
BUS D01	L	F04U2		1-05 *		K1-29
	L			1		
BUS D02	L	A09D1		1-01 *		KT-8
BUS D02	L	A08L2		1-02 *		
BUS D02	L	C09U2		1-03 *		DD
BUS D02	L	F09E2		1-04 *		K5-2
BUS D02	L	F06K1		1-05 *		K1-29
BUS D02	L	F04S2		1-06 *		
	L			1		
BUS D03	L	A08H1		1-01 *		KT-8
BUS D03	L	A09E2		1-02 *		
BUS D03	L	C09T2		1-03 *		DD
BUS D03	L	F09L1		1-04 *		DD
BUS D03	L	F06J1		1-05 *		K5-2
BUS D03	L	F04T2		1-06 *		K1-29
	L			1		
BUS D04	L	A09E1		1-01 *		KT-8
BUS D04	L	B08F1		1-02 *		
BUS D04	L	C09N2		1-03 *		DD
BUS D04	L	D04M2		1-04 *		K1-39
BUS D04	L	F06E1		1-05 *		K5-2
BUS D04	L	F09N2		1-06 *		DD
	L			1		

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS D05	L	A09F2		1-01 *		SOURCE	N 4-1/8		163
BUS D05	L	B08H1		1-02 *		SOURCE	N 4-3/8		163
BUS D05	L	C09P2		1-03 *		SOURCE	N 6-7/8		163
BUS D05	L	E04C1		1-04 *		SOURCE (K1-39)	N 4-3/8	BIN-COD ER	163
BUS D05	L	F06D1		1-05 *		SOURCE	N 2-1/8		163
BUS D05	L	F09F1		1-06 *		SOURCE			163
	L			1			21-7/8		
BUS D06	L	A09F1		1-01 *		SOURCE	N 3-5/8		164
BUS D06	L	B08J2		1-02 *		SOURCE	N 4-5/8		164
BUS D06	L	C09V2		1-03 *		SOURCE	N 4-3/8		164
BUS D06	L	D04R1		1-04 *		SOURCE (K1-39)	N 6-1/8	BIN-COD ER	164
BUS D06	L	E03F1		1-05 *		SOURCE	N 2-4/8		164
BUS D06	L	F06C1		1-06 *		SOURCE	N 2-5/8		164
BUS D06	L	F09F2		1-07 *		SOURCE			164
	L			1			23-7/8		
BUS D07	L	A09H2		1-01 *		SOURCE	N 3-5/8		165
BUS D07	L	B08K2		1-02 *		SOURCE	N 3-7/8		165
BUS D07	L	C09M2		1-03 *		SOURCE	N 7-1/8		165
BUS D07	L	E04A1		1-04 *		SOURCE (K1-39)	N 5-3/8	BIN-COD ER	165
BUS D07	L	F03S1		1-05 *		SOURCE	N 3-3/8		165
BUS D07	L	F06F2		1-06 *		SOURCE	N 1-5/8		165
BUS D07	L	F09H1		1-07 *		SOURCE			165
	L			1			25-0/8		
BUS D08	L	A09H1		1-01 *		SOURCE	N 5-5/8		166
BUS D08	L	C08D1		1-02 *		SOURCE	N 1-4/8		166
BUS D08	L	C09L2		1-03 *		SOURCE	N 3-5/8		166
BUS D08	L	C04P1		1-04 *		SOURCE (K1-49)	N 5-1/8	BIN-COD ER	166
BUS D08	L	E03E1		1-05 *		SOURCE	N 4-7/8		166
BUS D08	L	F09F1		1-06 *		SOURCE			166
	L			1			20-6/8		
BUS D09	L	A09J2		1-01 *		SOURCE	N 4-3/8		167
BUS D09	L	B08P2		1-02 *		SOURCE	N 2-7/8		167
BUS D09	L	C09K2		1-03 *		SOURCE	N 3-5/8		167
BUS D09	L	C04R1		1-04 *		SOURCE (K1-49)	N 5-1/8	BIN-COD EP	167
BUS D09	L	E03F1		1-05 *		SOURCE			167
	L			1			16-0/8		
BUS D10	L	A09J1		1-01 *		SOURCE	N 4-1/8		168
BUS D10	L	B08M1		1-02 *		SOURCE	N 3-3/8		168
BUS D10	L	C09U2		1-03 *		SOURCE	N 3-5/8		168
BUS D10	L	C04N1		1-04 *		SOURCE (K1-49)	N 5-3/8	BIN-COD EP	168
BUS D10	L	E03J2		1-05 *		SOURCE			168
	L			1			16-4/8		
BUS D11	L	A09K2		1-01 *		SOURCE	N 4-3/8		169
BUS D11	L	B08R1		1-02 *		SOURCE	N 2-3/8		169
BUS D11	L	C09H1		1-03 *		SOURCE	N 2-6/8		169
BUS D11	L	C04H2		1-04 *		SOURCE (K1-49)	N 6-1/8	BIN-COD ER	169
BUS D11	L	E03H2		1-05 *		SOURCE			169
	L			1			15-5/8		

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS D12	L	A09K1		1-01 *	2	SOURCE	N 3-7/8		170
BUS D12	L	B04A1		1-02 *		SOURCF (K1-59)	N 4-7/8	BIN-COD ER	170
BUS D12	L	C09M2		1-03 *		SOURCF	N 1-4/8		170
BUS D12	L	C08P1		1-04 *		SOURCE	N 7-7/8		170
BUS D12	L	E03P2		1-05 *		SOURCE			170
	L			1			18-1/8		
BUS D13	L	A09L2		1-01 *		SOURCE	N 4-1/8		171
BUS D13	L	B04E2		1-02 *		SOURCE (K1-59)	N 4-1/8	BIN-COD EP	171
BUS D13	L	C09F2		1-03 *		SOURCF	N 1-3/8		171
BUS D13	L	C08H1		1-04 *		SOURCF	N 6-1/8		171
BUS D13	L	E03K2		1-05 *		SOURCE			171
	L			1			17-6/8		
BUS D14	L	A09E1		1-01 *	2	SOURCE	N 4-3/8		172
BUS D14	L	B04C1		1-02 *		SOURCF (K1-59)	N 4-3/8	BIN-COD ER	172
BUS D14	L	C09F2		1-03 *		SOURCE	N 1-3/8		172
BUS D14	L	C08C1		1-04 *		SOURCE	N 9-3/8		172
BUS D14	L	E03S2		1-05 *		SOURCE			172
	L			1			19-4/8		
BUS D15	L	A09M2		1-01 *		SOURCE	N 4-5/8		173
BUS D15	L	B04E1		1-02 *		SOURCE (K1-59)	N 4-4/8	BIN-COD ER	173
BUS D15	L	C09D2		1-03 *		SOURCE	N 1-3/8		173
BUS D15	L	C08E1		1-04 *		SOURCE	N 8-7/8		173
BUS D15	L	E03P2		1-05 *		SOURCF			173
	L			1			19-3/8		
BUS DC LO	L	B06C1		1-01 *	H	SOURCE TWP	2-5/8		174
BUS DC LO	L	B09F2	C09H1	1-02 *		SOURCE,ETCH TO COM	N 3-7/8	BIN-COD EP	174
BUS DC LO	L	C09N1		1-03 *					174
BUS DC LO	L			1			6-4/8		
BUS FW RA	H	A08S2		1-01 *	2				175
BUS FW RA	H	B07L2		1-02 *		SOURCE	N 2-7/8		175
BUS FW RA	H	D04J2		1-03 *		SOURCE	N 8-7/8		175
BUS FW RA	H			1			9-6/8		175
BUS FW D	H	B07N1		1-01 *		SOURCE	N 12-7/8		176
BUS FW D	H	F04V2		1-02 *					176
BUS FW D	H			1			12-7/8		
BUS FW PS	L	B07J2		1-01 *		SOURCE	N 5-3/8		177
BUS FW PS	L	D06D1		1-02 *		SOURCE	N 6-7/8		177
BUS FW PS	L	F06F1		1-03 *					177
BUS FW PS	L			1			12-2/8		177
BUS FW SR	H	B04F1		1-01 *					178
BUS FW SR	H	E07D2		1-02 *		SOURCE	N 9-5/8		178
BUS FW SP	H			1			9-5/8		178

X	Z	REMARKS	FLAG	RUN NUMBER
	2	TWP	4-7/8	179
	1	SOURCE TWP	3-5/8	179
	2	TWP	4-5/8	179
	1	TWP	8-7/8	179
			22-0/8	179
	2	TWP	1-5/8	180
	1	SOURCE TWP	14-7/8	180
	2	SOURCE	3-7/8	180
			20-3/8	180
	2	SOURCE TWP	5-7/8	181
	1	SOURCE TWP	6-5/8	181
	2	TWP	4-4/8	181
			17-0/8	181
	1	TWP	5-7/8	182
		SOURCE	5-7/8	182
	2	SOURCE TWP	5-1/8	183
	1	TWP	9-5/8	183
			14-6/8	183
	1	SOURCE TWP	1-3/8	184
			1-3/8	184
	1	SOURCE TWP	1-6/8	185
			1-6/8	185
	1		N 8-7/8	186
			8-7/8	186
	1	SOURCE	N 6-1/8	187
	2	SOURCE	N 4-5/8	187
	1	SOURCE (K1=8)	N 1-6/8	187
	2	SOURCE	N 2-1/8	187
		SOURCE	14-5/8	187
	1	SOURCE	N 6-1/8	188
	2	SOURCE	N 4-5/8	188
	1	SOURCE (K1=8)	N 2-1/8	188
	2	SOURCE	N 1-3/8	188
		SOURCE	14-2/8	188

X	Z	REMARKS	FLAG	RUN NUMBER
	1	SOURCE	N 8-1/8	189
	2	SOURCE	N 4-3/8	189
	1	SOURCE (K1=8)	N 1-7/8	189
	2	SOURCE	N 1-7/8	189
			16-2/8	189
	1	SOURCE	N 8-5/8	190
	2	SOURCE	N 3-7/8	190
	1	SOURCE (K1=8)	N 2-1/8	190
	2	SOURCE	N 1-7/8	190
			16-4/8	190
	2	SOURCE	N 6-1/8	191
	1	SOURCE (K1=8)	N 8-3/8	191
	2	SOURCE	N 3-4/8	191
	1	SOURCE	N 1-6/8	191
			19-6/8	191
	2	SOURCE	N 7-1/8	192
	1	SOURCE (K1=8)	N 8-3/8	192
	2	SOURCE	N 3-1/8	192
	1	SOURCE	N 1-3/8	192
		SOURCE	20-0/8	192
	2	SOURCE	N 7-5/8	193
	1	SOURCE (K1=8)	N 9-3/8	193
	2	SOURCE	N 1-3/8	193
	1	SOURCE	N 3-1/8	193
		SOURCE	21-4/8	193
	2	SOURCE	N 8-3/8	194
	1	SOURCE (K1=8)	N 8-5/8	194
	2	SOURCE	N 2-3/8	194
	1	SOURCE	N 1-7/8	194
		SOURCE	21-2/8	194
	2	SOURCE (K1=8)	N 2-2/8	195
	1	SOURCE	N 9-1/8	195
	2	SOURCE	N 4-7/8	195
		SOURCE	16-2/8	195
	2	SOURCE (K1=8)	N 2-5/8	196
	1	SOURCE	N 9-7/8	196
	2	SOURCE	N 4-3/8	196
		SOURCE	16-7/8	196

A/P	PIN NAME	ORDER PIN	BAY - 0 ORDER	DRAW OPT	RV	RG	Y
L	A09A1		1-01 *	H			
L	B06D1		1-02 *	H			K5=8
L	C07H1		1-03 *	H			K4=5
L	D09L1		1-04 *	H			DD
L	F03P2		1-05 *				KW=2
L			1				
L	A07A1	A09B1	1-01 *	H			K4=4
L	A09B1		1-02 *	H			
L	F09M1		1-03 *	H			DD
L	F03U2		1-04 *				KW=2
L			1				
L	A07D1	B09V1	1-01 *	H			K4=4
L	B09V1		1-02 *	H			
L	F09E1		1-03 *	H			DD
L	F03F1		1-04 *				KW=2
L			1				
H	A09U1		1-01 *	H			
H	C07P2		1-02 *				K4=5
H			1				
L	A0952		1-01 *	H			
L	C07D2		1-02 *	H			K4=5
L	F09J1		1-03 *				DD
L			1				
L	A09M1		1-01 *	H			
L	A07L1		1-02 *				K4=3
L			1				
L	A09N2		1-01 *	H			
L	A07F2		1-02 *				K4=3
L			1				
H	C08F2		1-01 *				KT=2
H	F06R2		1-02 *				K5=2
H			1				
L	C01L2		1-01 *				KF=3
L	F02L2		1-02 *				KE=3
L	F04U1		1-03 *				K1=28
L	F06M1		1-04 *				K5=2
L	F08J2		1-05 *				KT=7
L			1				
L	C01J2		1-01 *				KF=3
L	E02L1		1-02 *				KE=3
L	F04S1		1-03 *				K1=28
L	F06N2		1-04 *				K5=2
L	F08R1		1-05 *				KT=7
L			1				

A/P	PIN NAME	ORDER PIN	BAY - 0 ORDER	DRAW OPT	RV	RG	Y
L	B01U1		1-01 *				KF=3
L	E02M2		1-02 *				KE=3
L	F04P1		1-03 *				K1=28
L	F06M2		1-04 *				K5=2
L	F08P2		1-05 *				KT=7
L			1				
L	B01P2		1-01 *				KF=3
L	E02N2		1-02 *				KE=3
L	F04P1		1-03 *				K1=28
L	F06L2		1-04 *				K5=2
L	F08F2		1-05 *				KT=7
L			1				
L	B01A1		1-01 *				KF=3
L	C04N2		1-02 *				K1=28
L	F02A1		1-03 *				KE=3
L	F08A1		1-04 *				KT=7
L	F06F2		1-05 *				K5=2
L			1				
L	A01R1		1-01 *				KF=3
L	C04P2		1-02 *				K1=28
L	F02C1		1-03 *				KE=3
L	F06H2		1-04 *				K5=2
L	F08F1		1-05 *				KT=7
L			1				
L	A01E2		1-01 *				KF=3
L	C04J2		1-02 *				K1=28
L	F08B1		1-03 *				KT=7
L	F06D2		1-04 *				K5=2
L	F02H1		1-05 *				KE=3
L			1				
L	A01R1		1-01 *				KF=3
L	C04M2		1-02 *				K1=28
L	F02F2		1-03 *				KE=3
L	F06F2		1-04 *				K5=2
L	F08K2		1-05 *				KT=7
L			1				
L	C04R1		1-01 *				K1=28
L	C01M2		1-02 *				KF=3
L	F02S1		1-03 *				KE=3
L	F08C1		1-04 *				KT=7
L			1				
L	C04A1		1-01 *				K1=28
L	C01K1		1-02 *				KF=3
L	F02R2		1-03 *				KE=3
L	F08D1		1-04 *				KT=7
L			1				

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Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
		2	SOURCE	N 2	197
		1	SOURCE (K1=8)	N 9-5/8	197
		2	SOURCE	N 4-7/8	197
			SOURCE		197
				16-4/8	197
		2	SOURCE	N 2-5/8	198
		1	SOURCE (K1=8)	N 11-1/8	198
		2	SOURCE	N 4-3/8	198
			SOURCE		198
				18-1/8	198
		2	SOURCE (K1=8)	N 4-3/8	199
		1	SOURCE	N 12-7/8	199
		2	SOURCE	N 4-4/8	199
			SOURCE (KT=27)		199
				21-6/8	199
		1	SOURCE (K1=8)	N 2-6/8	200
		2	SOURCE	N 6-4/8	200
		1	SOURCE	N 12-3/8	200
			SOURCE		200
				21-5/8	200
		2	SOURCE	N 2-1/8	201
		1	SOURCE (K1=8)	N 9-3/8	201
		2	SOURCE	N 11-7/8	201
			SOURCE		201
				23-3/8	201
		2	SOURCE	N 2	202
		1	SOURCE (K1=8)	N 9-5/8	202
		2	SOURCE	N 11-7/8	202
			SOURCE		202
				23-4/8	202
		1	SOURCE	N 6-5/8	203
		2	SOURCE	N 1	203
			SOURCE		203
				7-5/8	203
		2	SOURCE TWP	6-1/8	204
		1	TWP	10-1/8	204
		2	SOURCE TWP	3-5/8	204
			SOURCE		204
				19-7/8	204
		2	SOURCE TWP	5-3/8	205
		1	SOURCE TWP	6-7/8	205
		2	SOURCE TWP	1-3/8	205
		1	SOURCE TWP	2-5/8	205
		2	SOURCE TWP	4-1/8	205
			SOURCE		205
				20-3/8	205

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Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
			SOURCE (K4=4)		
				1-PIN RUN	206
			SOURCE		
				1-PIN RUN	207
		1		N 4-1/8	208
			SOURCE		208
				4-1/8	208
			SOURCF (K5=3)		
				1-PIN RUN	209
		1	SOURCE	N 2-7/8	210
				2-7/8	210
					210
		2	SOURCE	N 1-7/8	211
		1		N 3-7/8	211
					211
				5-6/8	211
		1		N 4-5/8	212
		2	SOURCE	N 3-1/8	212
					212
				7-6/8	212
		1		N 5-1/8	213
			SOURCE		213
				5-1/8	213
		1		N 3-3/8	214
			SOURCE (K3=6)		214
				3-3/8	214
		1	SOURCE	N 8-7/8	215
					215
				8-7/8	215
		1		N 7-7/8	216
		2	SOURCE	N 2	216
					216
				9-7/8	216
		2		N 3-1/8	217
		1	SOURCE	N 5-3/8	217
					217
				8-4/8	217
				1-PIN RUN	
			SOURCE		218
		1	SOURCE	N 9-1/8	219
					219
				9-1/8	219
				1-PIN RUN	
		1	SOURCE	N 6-5/8	220
					220
				6-5/8	220

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A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG
L	B01V1		1-01	*		KF-3
L	B04V1		1-02	*		K1-48
L	E08R1		1-03	*		KT-7
L	F02U1		1-04	*		KE-3
L			1			
L	B01N2		1-01	*		KF-3
L	B04V2		1-02	*		K1-48
L	F08H1		1-03	*		KT-7
L	F02U2		1-04	*		KE-3
L			1			
L	A04D1		1-01	*		K1-58
L	B01R1		1-02	*		KF-3
L	F02R1		1-03	*		KE-3
L	E08P1		1-04	*		KT-27
L			1			
L	A04F1		1-01	*		K1-58
L	A01S1		1-02	*		KF-3
L	C08H2		1-03	*		KT-2
L	F02S2		1-04	*		KE-3
L			1			
L	A01F1		1-01	*		KF-3
L	A04C1		1-02	*		K1-58
L	C08R2		1-03	*		KT-2
L	F02V2		1-04	*		KE-3
L			1			
L	A01A1		1-01	*		KF-3
L	A04A1		1-02	*		K1-58
L	C08S2		1-03	*		KT-2
L	F02V1		1-04	*		KE-3
L			1			
L	D09J2		1-01	*		DD
L	F09P1		1-02	*		DD
L	F09U2		1-03	*		DD
L			1			
L	A09R2		1-01	*	H	K4-5
L	C07E2		1-02	*	H	DD
L	F09T2		1-03	*	H	DD
L	F03S2		1-04	*		KW-2
L			1			
L	A07D2		1-01	*	H	K4-4
L	B09U1		1-02	*	H	
L	E08C1		1-03	*	H	KT-6
L	E09J1		1-04	*	H	DD
L	F09C1		1-05	*	H	DD
L	F03N2		1-06	*	H	KW-2
L			1			

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A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG
H	F07K1					K4-34
L	E05L1					K3-2
L	C06D1		1-01	*		K5-36
L	D05J1		1-02	*		K3-2
L			1			
H	C06F1					K5-38
H	B06V1		1-01	*		K5-3
H	C08N2		1-02	*		KT-9
H			1			
H	C08A1		1-01	*		K5-3
H	C08J1		1-02	*		KT-9
H	D07K1		1-03	*		K4-5
H			1			
H	A07P1		1-01	*		K4-4
H	C06B1		1-02	*		K5-3
H	C02V2		1-03	*		KE-5
H			1			
H	E06A1		1-01	*	1	K5-2
H	F05T2		1-02	*		K3-7
H			1			
H	C07R1		1-01	*		K4-4
H	D05H1		1-02	*		K3-2678
H			1			
H	B05F1		1-01	*		K3-9
H	E06K1		1-02	*		K5-2
H			1			
H	B07D2		1-01	*		K4-4
H	D06B1		1-02	*		K5-4
H	D03F2		1-03	*		K2-7
H			1			
H	B07H2		1-01	*		K4-4
H	C06E2		1-02	*		K5-4
H	D03K1		1-03	*		K2-7
H			1			
H	D04P1					K1-7
H	C07F1		1-01	*		K4-5
H	F05F2		1-02	*		K3-7
H			1			
H	B05J2		1-01	*		K3-6
H	D06R1		1-02	*		K5-2
H			1			

KD11A,N

RUN NAME
BUS RD10
BUS RD10
BUS RD10
BUS RD10
BUS RD10
BUS RD11
BUS RD11
BUS RD11
BUS RD11
BUS RD11
BUS RD12
BUS RD12
BUS RD12
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BUS REQUEST
BUS REQUEST
BUS REQUEST
BUS REQUEST
BUS SACK
BUS SACK
BUS SACK
BUS SACK
BUS SACK
BUS SSYN
BUS SSYN
BUS SSYN
BUS SSYN
BUS SSYN
BUS SSYN
BUS SSYN

KD11A,N

RUN NAME
BUS STUP
BUT (37:34)
BUT (3X)
BUT (3X)
BUT (3X)
BUT 02
BUT 05
BUT 05
BUT 05
BUT 26
BUT 26
BUT 26
BUT 26
BUT 37
BUT 37
BUT 37
BUT 37
BYTE CODES
BYTE CODES
BYTE CODES
BYTE INSTR
BYTE INSTR
BYTE INSTR
C DATA
C DATA
C DATA
C0BUS (1)
C0BUS (1)
C0BUS (1)
C0BUS (1)
C1BUS (1)
C1BUS (1)
C1BUS (1)
C1BUS (1)
CASI ADRS
CBR (0)
CBR (0)
CBR (0)
CC INSTR
CC INSTR
CC INSTR

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
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 LENGTH FLAG	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	EXCEPTIONS FLAG	RUN NUMBER
CLR BERR	L	C06U1				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 UPP7,612	L	B03K1		1-01 *		K2-23				1			N	12-1/8		257
CLR UPP7,612	L	F07C1		1-02 *		K4-3						SOURCE				257
CLR UPP7,612	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
CONSL (0)	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	D02P1		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	EXCEPTIONS FLAG	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	LENGTH	EXCEPTIONS FLAG	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	B05R1		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	LENGTH	EXCEPTIONS FLAG	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	E06P1		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

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RUN NAME	A/P	PIN NAME	ORDER PIN	NC LENGTH FLAG	EXCEPTIONS	BAY - Q ORDER	DRAW OPT	RV RG	RUN NUMBER	REMARKS	X	Y	Z
DMUX08	H	B08J1		N	3-1/8	1-01 *		KT-4	300				1
DMUX08	H	B04S2		N	2-1/8	1-02 *		K1-48	300	SOURCE (K1=4)		9	2
DMUX08	H	C05H1		N	6-5/8	1-03 *		K3=3	300				1
DMUX08	H	E03H1		N	3-7/8	1-04 *		KJ=2	300				2
DMUX08	H	F02N2				1-05 *		KE=2	300				
					15-6/8	1			300				
DMUX09	H	B08K2		N	3-1/8	1-01 *		KT-4	301				1
DMUX09	H	B04T2		N	2-1/8	1-02 *		K1-48	301	SOURCE (K1=4)		9	2
DMUX09	H	C05J1		N	6-5/8	1-03 *		K3=3	301				1
DMUX09	H	E03J1		N	3-3/8	1-04 *		KJ=2	301				2
DMUX09	H	F02J2				1-05 *		KE=2	301				
					15-2/8	1			301				
DMUX10	H	C08J2		N	2-5/8	1-01 *		KT-4	302				1
DMUX10	H	C05E1		N	1-7/8	1-02 *		K3=3	302				2
DMUX10	H	B04U1		N	7-5/8	1-03 *		K1-48	302	SOURCE (K1=4)		9	1
DMUX10	H	E03K1		N	3-5/8	1-04 *		KJ=2	302				2
DMUX10	H	F02K1				1-05 *		KE=2	302				
					15-6/8	1			302				
DMUX11	H	B08L2		N	3-3/8	1-01 *		KT-4	303				1
DMUX11	H	B04U2		N	1-7/8	1-02 *		K1-48	303	SOURCE (K1=4)		9	2
DMUX11	H	C05F1		N	7-3/8	1-03 *		K3=3	303				1
DMUX11	H	E03M1		N	3-1/8	1-04 *		KJ=2	303				2
DMUX11	H	F02K2				1-05 *		KE=2	303				
					15-6/8	1			303				
DMUX12	H	A04B1		N	5-1/8	1-01 *		K1=58	304				1
DMUX12	H	B05P1		N	5+1/8	1-02 *		K3=3	304	SOURCE (K1=5)		9	2
DMUX12	H	C08V2		N	7-5/8	1-03 *		KT=2	304				1
DMUX12	H	E03N1		N	2-5/8	1-04 *		KJ=2	304				2
DMUX12	H	F02D1				1-05 *		KE=2	304				
					20-4/8	1			304				
DMUX13	H	A04D2		N	6-5/8	1-01 *	2	K1=58	305				2
DMUX13	H	B05N1		N	6-3/8	1-02 *		K3=3	305	SOURCE (K1=5) 3=0		9	1
DMUX13	H	D08E2		N	5-5/8	1-03 *		KT=2	305				2
DMUX13	H	E03F1		N	2-5/8	1-04 *		KJ=2	305				1
DMUX13	H	F02E1				1-05 *		KE=2	305				
					21-2/8	1			305				
DMUX14	H	A04F2		N	3-7/8	1-01 *		K1=58	306				2
DMUX14	H	B05M1		N	6-5/8	1-02 *		K3=3	306	SOURCE (K1=5)		9	1
DMUX14	H	D08D2		N	6-4/8	1-03 *		KT=2	306				2
DMUX14	H	E03S1		N	2-3/8	1-04 *		KJ=2	306				1
DMUX14	H	F02F1				1-05 *		KE=2	306				
					19-3/8	1			306				
DMUX15	H	A04E2		N	4-3/8	1-01 *		K1=58	307				2
DMUX15	H	B05P1		N	5-1/8	1-02 *		K3=3	307	SOURCE (K1=5)		9	1
DMUX15	H	C08U2		N	7-7/8	1-03 *		KT=2	307				2
DMUX15	H	E03R1		N	2-1/8	1-04 *		KJ=2	307				1
DMUX15	H	F02B1				1-05 *		KF=2	307				
					19-4/8	1			307				

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RUN NAME	A/P	PIN NAME	ORDER PIN	NC LENGTH FLAG	EXCEPTIONS	BAY - Q ORDER	DRAW OPT	RV RG	RUN NUMBER	REMARKS	X	Y	Z
	H	B07H1		N	8-3/8	1-01 *		K4=4	308				1
	H	E08E1		N	4-1/8	1-02 *		KT-26	308	SOURCE			2
	H	E03V1				1-03 *		KJ=2	308				
	H				12-4/8	1			308				
	H	B07K1		N	8-3/8	1-01 *		K4=4	309				1
	H	E08F1				1-02 *		KT=6	309	SOURCE			
	H				8-3/8	1			309				
	L	A02L1					1*PIN RUN	KE=5	310				
	H	B02R1		N	2-3/8	1-01 *		KE-23	311	SOURCE (KE=2)		456	2
	H	B01P1		N	8-1/8	1-02 *		KF=2	311				1
	H	E01N2				1-03 *		KM=2	311				
	H				10-4/8	1			311				
	H	C01H2		N	6-1/8	1-01 *		KF-3	312	SOURCE (KE=2)			1
	H	E02F2				1-02 *		KE-23	312				
	H				6-1/8	1			312				
	H	C01B1		N	6-5/8	1-01 *		KF-3	313	SOURCE (KE=2)			1
	H	E02F1				1-02 *		KE-23	313				
	H				6-5/8	1			313				
	H	B01S1		N	9-3/8	1-01 *		KF-3	314	SOURCE (KE=2)			1
	H	E02V2				1-02 *		KE-23	314				
	H				9-3/8	1			314				
	H	B01D1		N	9-3/8	1-01 *		KF-3	315	SOURCE (KE=2)			1
	H	E02M1				1-02 *		KE-23	315				
	H				9-3/8	1			315				
	H	A01N1		N	11-5/8	1-01 *		KF-3	316	SOURCE (KE=2)			1
	H	E02R1				1-02 *		KE-23	316				
	H				11-5/8	1			316				
	H	A01F2		N	12-3/8	1-01 *		KF-3	317	SOURCE (KE=2)			1
	H	E02R2				1-02 *		KE-23	317				
	H				12-3/8	1			317				
	H	E02P1					1-PIN RUN	KE-23	318	SOURCE (KE=2)			1
	H	A01P2		N	11-7/8	1-01 *		KF-3	319				
	H	E02V1				1-02 *		KE-23	319	SOURCE (KE=2)			1
	H				11-7/8	1			319				
	H	A01R2		N	9+6/8	1-01 *		KF-4	320				1
	H	E01D2		N	3-7/8	1-02 *		KM=2	320	SOURCE (KE=2)			2
	H	F02J1				1-03 *		KE-23	320				
	H				13-5/8	1			320				
	H	F02H2					1-PIN RUN	KE-23	321	SOURCE (KE=2)			1
	H	E02T2					1-PIN RUN	KE-23	322	SOURCE (KE=2)			1

KM11A.N

RUN NAME
DOUT HIGH
DOUT HIGH
DOUT HIGH
DOUT LOW
DOUT LOW
DOUT LOW
DRAM
DR00 (1)
DR01 (1)
DR02 (1)
DR04 (1)
DR05 (1)
DR06 (1)
DR07 (1)
DR08 (1)
DR09 (1)
DR0A (1)
DR0B (1)
DR0C (1)
DR0D (1)
DR0E (1)
DR0F (1)
DP10 (1)
DP11 (1)

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y
DR12 (1)	H	E02P2					KE-23
DR13 (1)	H	E02S1					KE-23
DP14 (1)	H	E02N1					KE-23
DR15 (1)	H	C02F1					KE-345
DUBBERR	L	B06U2		1-01	*		K5-4
DUBBERR	L	E07T2		1-02	*		K4-3
DUBBERR	L			1			
E(P1+P2)	H	A01M2		1-01	*		KF-2
E(P1+P2)	H	E02S2		1-02	*		KE-25
E(P1+P2)	H			1			
ECIN00	H	A05S2		1-01	*		K3-8
ECIN00	H	B02F2		1-02	*		KE-5
ECIN00	H	E01M2		1-03	*		KM-2
ECIN00	H			1			
ECLK U	L	C02M2		1-01	*		KE-5
ECLK U	L	D07S1		1-02	*		K4-
ECLK U	L			1			
ECOMUXS0	L	D02H2		1-01	*		KE-5
ECOMUXS0	L	D05C1		1-02	*		K3-8
ECOMUXS0	L			1			
ECOMUXS1	L	D02F2		1-01	*		KE-5
ECOMUXS1	L	D05E1		1-02	*		K3-8
ECOMUXS1	L			1			
EMI	L	B06R1		1-01	*		K5-5
EMI	L	E05F1		1-02	*		K3-6
EMI	L			1			
ENPR CLK	L	A02M2		1-01	*		KE-9
ENPP CLK	L	D07E1		1-02	*		K4-5
ENPR CLK	L			1			
EOVFL STOP	H	B07F2		1-01	*		K4-4
EOVFL STOP	H	E03F2		1-02	*		KJ-2
EOVFL STOP	H			1			
EOVFLW	L	D06R2		1-01	*		K5-4
EOVFLW	L	E03T2		1-02	*		KJ-2
EOVFLW	L			1			
EPS(C) (1)	H	C01J1		1-01	*		KF-2
EPS(C) (1)	H	D02V1		1-02	*		KE-356
EPS(C) (1)	H	E01R2		1-03	*		KM-2
EPS(C) (1)	H			1			

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y
EPS(W) (1)	H	A01D1		1-01	*		KF-3
EPS(N) (1)	H	C02K2		1-02	*		KE-346
EPS(N) (1)	H	E01L2		1-03	*		KM-2
EPS(N) (1)	H			1			
EPS(V) (1)	H	C02L1		1-01	*		KE-36
EPS(V) (1)	H	E01E2		1-02	*		KM-2
EPS(V) (1)	H			1			
EPS(Z) (0)	H	A01N2		1-01	*		KF-4
EPS(Z) (0)	H	D02J2		1-02	*		KE-6
EPS(Z) (0)	H			1			
EPS(Z) (1)	H	D02F1		1-01	*		KE-3
EPS(Z) (1)	H	E01H1		1-02	*		KM-2
EPS(Z) (1)	H			1			
ESALU0	L	A02C1		1-01	*		KE-5
ESALU0	L	A05N2		1-02	*		K3-8
ESALU0	L			1			
ESALU1	L	A05L2		1-01	*		K3-8
ESALU1	L	B02E2		1-02	*		KE-5
ESALU1	L			1			
ESALU2	L	A02F1		1-01	*		KE-5
ESALU2	L	A05M2		1-02	*		K3-8
ESALU2	L			1			
ESALU3	L	A02D1		1-01	*		KE-5
ESALU3	L	A05K2		1-02	*		K3-8
ESALU3	L			1			
ESALUM	H	E05M2					K3-8
EUBC1	L	A03L1		1-01	*		K2-2
EUBC1	L	B02F1		1-02	*		KE-4
EUBC1	L			1			
EUBC2	L	A02S2		1-01	*		KE-4
EUBC2	L	A03N1		1-02	*		K2-2
EUBC2	L			1			
EUBC3	L	A03S1		1-01	*		K2-2
EUBC3	L	C02B1		1-02	*		KE-4
EUBC3	L			1			
EUBC4	L	A03C1		1-01	*		K2-3
EUBC4	L	B02T2		1-02	*		KE-6
EUBC4	L			1			
EUBC5	L	B03D2		1-01	*		K2-3
EUBC5	L	C01F2		1-02	*		KF-42
EUBC5	L			1			

X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
		SOURCE (KE-2)		1-PIN RUN	323
		SOURCE (KE-2)		1-PIN RUN	324
		SOURCE (KE-2)		1-PIN RUN	325
		SOURCE (KE-2)		1-PIN RUN	326
1		SOURCE	N 8-5/8		327
			8-5/8		327
1		SOURCE (KE-5)	N 12-3/8		328
			12-3/8		328
2			N 2-5/8		329
1		SOURCE	N 9-3/8		329
			12-0/8		329
1			N 5-4/8		330
			5-4/8		330
1		SOURCE	N 2-1/8		331
			2-1/8		331
1		SOURCE	N 1-5/8		332
			1-5/8		332
1		SOURCE	N 7-5/8		333
			7-5/8		333
1		SOURCE	N 9-7/8		334
			9-7/8		334
1		SOURCE	N 10-1/8		335
			10-1/8		335
1		SOURCE	N 4-5/8		336
			4-5/8		336
1		SOURCE	N 4-7/8		337
2		SOURCE (KE-6)	N 2-5/8		337
			7-4/8		337
1		SOURCE (KE-6)	N 6-7/8		338
2		SOURCE (KE-6)	N 6-1/8		338
			13-0/8		338
1		SOURCE (KE-6)	N 5-3/8		339
			5-3/8		339
1		SOURCE	N 8-5/8		340
			8-5/8		340
1			N 3-5/8		341
			3-5/8		341
1		SOURCE	N 3-3/8		342
			3-3/8		342
1		SOURCE	N 3-4/8		343
			3-4/8		343
1		SOURCE	N 2-5/8		344
			2-5/8		344
1		SOURCE	N 2-5/8		345
			2-5/8		345
				1-PIN RUN	346
1		SOURCE	N 3-1/8		347
			3-1/8		347
1		SOURCE	N 0-5/8		348
			0-5/8		348
1		SOURCE	N 4-3/8		349
			4-3/8		349
1		SOURCE	N 4-7/8		350
			4-7/8		350
1		SOURCE	N 4-1/8		351
			4-1/8		351
1		SOURCE (KF-4)			

X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
			1-PIN RUN	352
			1-PIN RUN	353
	1	SOURCE	N 3-1/8	354
			3-1/8	354
			3-1/8	354
	1	SOURCE (KE-7)	N 2-5/8	355
			2-5/8	355
			2-5/8	355
	1	SOURCE (KE-7)	N 1-7/8	356
			1-7/8	356
			1-7/8	356
	1	SOURCE (KE-7)	N 1-3/8	357
			1-3/8	357
			1-3/8	357
		SOURCE	1-PIN RUN	358
	1	SOURCE	N 0-4/8	359
			0-4/8	359
			0-4/8	359
			1-PIN RUN	360
	1	SOURCE	N 2-5/8	361
			2-5/8	361
			2-5/8	361
	1	SOURCE	N 6-3/8	362
			6-3/8	362
			6-3/8	362
	1	SOURCE	N 6-7/8	363
			6-7/8	363
			6-7/8	363
	1	SOURCE	N 9-3/8	364
			9-3/8	364
			9-3/8	364
	1	SOURCE	N 10-3/8	365
			10-3/8	365
			10-3/8	365
	1	SOURCE	N 7-1/8	366
			7-1/8	366
			7-1/8	366
	1	SOURCE	N 4-1/8	367
			4-1/8	367
			4-1/8	367

X	Y	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
				N 3-1/8	368
		2		N 4-1/8	368
		1	SOURCE		368
				7-2/8	368
				N 1-3/8	369
		1	SOURCE		369
				1-3/8	369
		1	GND AB	1	370
		2	/GND CD	1	370
		1	AND GND EF	1	370
		2	ARE	1	370
		1	PHYSICALLY	1	370
		2	TIED	1	370
		1	TOGETHER	1	370
		2	BY EACH	0-1/8	370
		1		1-7/8	371
		2		0-1/8	371
		1		0-1/8	371
		2		0-1/8	371
		1		0-1/8	371
		2		0-4/8	371
		1		1-2/8	371
		2		0-1/8	371
		1		0-1/8	371
		2		0-1/8	371
		1		0-4/8	371
		2		0-4/8	372
		1		0-4/8	372
		2		0-4/8	372
		1		0-4/8	372
		2		0-4/8	372
		1		1-5/8	372
		2		1	372
		1		1	372
		2		1	372
		1		1	372
		2		1	372
		1		3-2/8	372
		2		1	372
		1		0-4/8	372
		2		1-7/8	372
		1		1	372
		2		1	372
		1		1	372
		2		1	372
		1		1	372
		2		1	372

A/P	PIN NAME	ORDER PIN	BAY - O ORDER	DRAW OPT	RV RG
L	H03R1				K2-3
L	A03R1				K2-3
L	A03D1		1-01	*	K2-3
L	A02P1		1-02	*	KE-5
L			1		
H	A01T2		1-01	*	KF-4
H	B02T1		1-02	*	KE-457
H			1		
H	A01U2		1-01	*	KF-4
H	B02U1		1-02	*	KE-457
H			1		
H	A11V2		1-01	*	KF-4
H	B02V1		1-02	*	KE-47
H			1		
L	[illegible]				KE-7
L	[illegible]				35F
H	B01D2		1-01	*	KF-4
H	B02R1		1-02	*	KE-4
H			1		
L	[illegible]				KE-35
L	B02F2		1-01	*	KE-5
L	H06F2		1-02	*	K5-4
L			1		
L	[illegible]		1-01	*	K3-5
L	F06D1		1-02	*	K5-3
L			1		
H	A07U2		1-01	*	K4-4
H	C08S1		1-02	*	KT-3
H			1		
L	C08P1		1-01	*	KT-3
L	H05V2		1-02	*	K3-2
L			1		
H	A02H1		1-01	*	KE-5
H	D11P1		1-02	*	KF-4
H			1		
H	B02A1		1-01	*	KE-9
H	D02V2		1-02	*	KF-4
H			1		
H	C02F2		1-01	*	KE-2
H	D11L2		1-02	*	KF-4
H			1		

A/P	PIN NAME	ORDER PIN	BAY - O ORDER	DRAW OPT	RV RG
L	H02H2		1-01	*	KE-5
L	C02J1		1-02	*	KE-4
L	D01E2		1-03	*	KF-4
L			1		
H	B01L2		1-1	*	KF-4
H	H02P2		1-02	*	KE-4
H			1		
	A01C2		1-01	*	P
	A02C2		1-02	*	P
	A03C2		1-03	*	P
	A04C2		1-04	*	P
	A05C2		1-05	*	P
	A06C2		1-06	*	P
	A07C2		1-07	*	P
	A08C2		1-08	*	P
	A09C2		1-09	*	P
	A09K2		1-10	*	P
	A09T1		1-11	*	P
	A09P1		1-12	*	P
	A09R1		1-13	*	P
	A09S1		1-14	*	P
	A09T1		1-15	*	P
	A09V2		1-16	*	P
	B09A2		1-17	*	P
	B09C2		1-18	*	P
	B09D1		1-19	*	P
	B09F1		1-20	*	P
	B09R2		1-21	*	P
	B09T2		1-22	*	P
	E07C1		1-23	*	P
	H06C2		1-24	*	P
	E05C2		1-25	*	P
	E04C2		1-26	*	P
	H03C2		1-27	*	P
	H02C2		1-28	*	P
	E01C2		1-29	*	P
	A01T1		1-30	*	P
	A02T1		1-31	*	P
	A03T1		1-32	*	P
	A04T1		1-33	*	P
	A05T1		1-34	*	P
	A06T1		1-35	*	P
	A07T1		1-36	*	P
	A08T1		1-37	*	P
	B06T1		1-38	*	P
	H09T1		1-39	*	P
	H09V2		1-40	*	P
	H07T1		1-41	*	P
	H06T1		1-42	*	P
	B05T1		1-43	*	P
	B04T1		1-44	*	P
	B03T1		1-46	*	P
	E02T1		1-46	*	P
	B01T1		1-47	*	P

RUN NAME	A/F	PIN NAME	ORDER PIN	BAY - 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 FTCH	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		D06C2		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			371
GND CD		D09T1		1-40 *									106-3/8	371
GND CD				1										

RUN NAME	A/F	PIN NAME	ORDER PIN	BAY - 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 FTCH	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		2-1/8	372
GND EF		F01C2		1-28 *	P						1		1	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		1-5/8	372
GND EF		F09T1		1-37 *	P						2			372
GND EF		F09J2		1-38 *									39-4/8	372
GND EF				1										
GPC=1	L	A01N2		1-01 *		KE=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	I	A02F1		1-01 *		KE=5					1	SOURCE	N 9-5/8	374
GPC=2	I	D01N1		1-02 *		KF=4								374
GPC=2	I			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	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS		RUN NUMBER
GPC=7	L	A02J2		1-01 *			KE-5		1	SOURCE	N	9-7/8		377
GPC=7	L	D01T2		1-02 *			KF-4							377
GPC=7	L			1								9-7/8		377
GRANT RR	H	D07N1					K4-56			SOURCE (K4=5)			1-PIN RUN	378
HALT SA	L	B06R1		1-01 *			K5-7		2	SOURCE	N	3-5/8		379
HALT SA	L	C07D1		1-02 *			K4-5		1		N	9-7/8		379
HALT SA	L	E07S1		1-03 *			K4-3		2		N	1-5/8		379
HALT SA	L	E05P1		1-04 *			K3-247							379
HALT SA	L			1								15-1/8		379
HSRQA (1)	H	C01K2	C02S1	1-01 *			KF-2		1	SOURCE	N	0-5/8		380
HSRQA (1)	H	C02S1		1-02 *										380
HSRQA (1)	H			1								0-5/8		380
HSR 1 (1)	H	C01F1					KF-2			SOURCE			1-PIN RUN	381
HSR 2 (1)	H	C01E1					KF-2			SOURCE			1-PIN RUN	382
HSR 3 (1)	H	C01B1					KF-2			SOURCE			1-PIN RUN	383
HSR 4 (1)	H	B01C1					KF-2			SOURCE			1-PIN RUN	384
HSR 5 (1)	H	A01P1					KF-2			SOURCE			1-PIN RUN	385
HSR 6 (1)	H	A01L1					KF-2			SOURCE			1-PIN RUN	386
HSR 7 (1)	H	A01M1					KF-2			SOURCE			1-PIN RUN	387
HSR 8 (1)	H	C01S2					KF-2			SOURCE			1-PIN RUN	388
HSR 9 (1)	H	C01R2					KF-2			SOURCE			1-PIN RUN	389
HSR10 (1)	H	C01F2					KF-2			SOURCE			1-PIN RUN	390
HSR11 (1)	H	C01S1					KF-2			SOURCE			1-PIN RUN	391
HSR12 (1)	H	B01F2					KF-2			SOURCE			1-PIN RUN	392
HSR13 (1)	H	B01E2					KF-2			SOURCE			1-PIN RUN	393
HSR14 (1)	H	B01D2					KF-2			SOURCE			1-PIN RUN	394
HSR15	L	A01M1		1-01 *			KF-2		1	SOURCE	N	5-3/8		395
HSR15	L	C02A1		1-02 *			KF-2							395
HSR15	L			1								5-3/8		395
HSR15 (1)	H	B01E1					KF-2			SOURCE			1-PIN RUN	396
IDLE	L	A06K2		1-01 *			K5-7		1		N	8-5/8		397
IDLE	L	D07J2		1-02 *			K4-24			SOURCE (K4-2)				397
IDLE	L			1								8-5/8		397

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
ILL INSTR	L	C06H1		1-01 *			K5-5		1		N	9-5/8		398
ILL INSTR	L	E05R1		1-02 *			K3-6			SOURCE				398
ILL INSTR	L			1								9-5/8		398
IN	H	D09H1		1-01 *			DD		1	SOURCE	N	3-4/8		399
IN	H	E09M1		1-02 *			DD			SOURCE				399
IN	H			1								3-4/8		399
INA RS CLK 1	L	D02E2	D06K1	1-01 *			KE-5		2	SOURCE	N	2-5/8		400
INA RS CLK 1	L	D06K1		1-02 *					1		N	4-7/8		400
INA RS CLK 1	L	E08P2		1-03 *			KI-2							400
INA RS CLK 1	L			1								7-4/8		400
INA RS CLK 2	L	C08M2	D06J1	1-01 *			KI-2		1	SOURCE	N	3-7/8		401
INA RS CLK 2	L	D06J1		1-02 *										401
INA RS CLK 2	L			1								3-7/8		401
INIT	H	B06F1		1-01 *			K5-468		1	SOURCE (K5=8)	N	7-3/8		402
INIT	H	D07B2		1-02 *			K4-35							402
INIT	H			1								7-3/8		402
INIT*PRESET	H	A06V2					K5-8			SOURCE			1-PIN RUN	403
INIT1	L	B06A1					K5-2468			SOURCE (K5=8)			1-PIN RUN	404
INIT2	L	A04K1	A06T2	1-01 *	2		K4-3		2		N	2-3/8		405
INIT2	L	A06T2		1-02 *			K5-8		1	SOURCE	N	12-5/8		405
INIT2	L	E07F1		1-03 *			K4-4							405
INIT2	L			1								15-0/8		405
INTA (1)	H	B07J1		1-01 *			K4-4		1		N	3-5/8		406
INTA (1)	H	C06K1		1-02 *			K5-4			SOURCE				406
INTA (1)	H			1								3-5/8		406
INTA A	H	D09G1		1-01 *			DD		1	SOURCE	N	6-3/8		407
INTA A	H	E09H1		1-02 *			DD							407
INTA A	H			1								6-3/8		407
INTA B	H	C09J1		1-01 *			DD		1	SOURCE	N	8-5/8		408
INTA B	H	E09K2		1-02 *			DD							408
INTA B	H			1								8-5/8		408
INTA ENA A	H	D09M1		1-01 *			DD		1	SOURCE	N	6-5/8		409
INTA ENA A	H	E09V1		1-02 *			DD							409
INTA ENA A	H			1								6-5/8		409
INTA ENA B	H	C09L1		1-01 *			DD		1	SOURCE	N	8-1/8		410
INTA ENA B	H	E09B2		1-02 *			DD							410
INTA ENA B	H			1								8-1/8		410
IOI	L	C06H2		1-01 *			K5-5		1		N	3-7/8		411
IOI	L	D05K2		1-02 *			K3-6			SOURCE				411
IOI	L			1								3-7/8		411

Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
		N 1-7/8		412
1				412
		1-7/8		412
1				
	SOURCE	N 5		413
		5-0/8		413
1	SOURCE	N 4-1/8		414
		4-1/8		414
1	SOURCE	N 9-1/8		415
		9-1/8		415
1		N 4-7/8		416
		4-7/8		416
2		N 1-1/8		417
1	SOURCE	V 2-3/8		417
		3-4/8		417
1		N 0-1/8		418
2	SOURCE	N 2		418
		2-1/8		418
2		N 1-1/8		419
1	SOURCE	N 2-1/8		419
		3-2/8		419
1		N 1-7/8		420
2	SOURCE (K3=3)	N 3-1/8		420
1		N 8-7/8		420
		11-7/8		420
1		N 6-1/8		421
2		N 4-1/8		421
1	SOURCE (K3=3)	N 5-3/8		421
		15-5/8		421
1		N 6-3/8		422
2		N 4		422
1	SOURCE (K3=3)	N 4-5/8		422
		15-0/8		422

KDJ1A.A		ARAFD .V35(1022)-1 03-JUN-77						
RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - O ORDER	DRAW OPT	RV	RG	Y X
IR(2:0)=6	L	E05M2		1-01 *		K3=4		
IR(2:0)=6	L	E08L1		1-02 *		KT=9		
IR(2:0)=6	L			1				
IR(4:6)=3	L	C01C1		1-01 *		KF=4		
IR(4:6)=3	L	D05E2		1-02 *		K3=3		
IR(4:6)=3	L			1				
IR(6:6)=6	L	D05F2		1-01 * 1		K3=3		
IR(6:6)=6	L	E08H1		1-02 *		KT=9		
IR(6:6)=6	L			1				
IR(8:12)=4	T	A05D2		1-01 *		K3=356		
IR(8:12)=4	T	D06V2		1-02 * .		K5=3		
IR(8:12)=4	L			1				
IR(11:12)=7	H	H05E2		1-01 *		K3=6		
IR(11:12)=7	H	C02H1		1-02 *		KE=4		
IR(11:12)=7	H			1				
IR(1) (1)	H	E04M1		1-01 *		K1=8		
IR(1) (1)	H	E05N1		1-02 *		K3=34		
IR(1) (1)	H	E08R2		1-03 *		KT=7		
IR(1) (1)	H			1				
IR(1) (1)	H	E04F2		1-01 *		K1=8		
IR(1) (1)	H	E05E1		1-02 *		K3=346		
IR(1) (1)	H	E08F1		1-03 *		KT=7		
IR(1) (1)	H			1				
IR(2) (1)	H	E04C1		1-01 *		K1=6		
IR(2) (1)	H	E05D1		1-02 *		K3=34		
IR(2) (1)	H	E08E2		1-03 *		KT=7		
IR(2) (1)	H			1				
IR(3) (1)	H	C02J2		1-01 *		KE=4		
IR(3) (1)	H	C05S1		1-02 *		K3=235		
IR(3) (1)	H	D01K2		1-03 *		KF=4		
IR(3) (1)	H	E08M2		1-04 *		YT=7		
IR(3) (1)	H			1				
IR(4) (1)	H	H02J2		1-01 *		KE=4		
IR(4) (1)	H	D01J2		1-02 *		KF=4		
IR(4) (1)	H	E05H1		1-03 *		K3=2356		
IR(4) (1)	H	E08M2		1-04 *		K1=7		
IR(4) (1)	H			1				
IR(5) (1)	H	E02J1		1-01 *		KF=4		
IR(5) (1)	H	D01K1		1-02 *		KF=4		
IR(5) (1)	H	E05K1		1-03 *		K3=2356		
IR(5) (1)	H	E08J1		1-04 *		KT=7		
IR(5) (1)	H			1				

Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
1	SOURCE (K3=3)	N 5-7/8		423
2		N 2-4/8		423
				423
		8-3/8		423
1	SOURCE (K3=3)	N 5-5/8		424
2		N 2-5/8		424
		8-2/8		424
2	SOURCE (K3=3)	N 4-7/8		425
1		N 5-3/8		425
2		N 3-6/8		425
		14-0/8		425
2		N 4-1/8		426
1	SOURCE (K3=3)	N 9-7/8		426
		14-0/8		426
2		N 5-5/8		427
1	SOURCE (K3=3)	N 11-7/8		427
		17-4/8		427
2		N 5-1/8		428
1	SOURCE (K3=3)	N 11-7/8		428
		17-0/8		428
1	SOURCE (K3=3)	N 12-3/8		429
		12-3/8		429
1	SOURCE (K3=3)	N 12-7/8		430
		12-7/8		430
1	SOURCE (K3=3)	N 11-1/8		431
		11-1/8		431
1	SOURCE (K3=4)	N 5-3/8		432
		5-3/8		432
1	SOURCE (K3=4)	N 7-5/8		433
2		N 5-5/8		433
		13-2/8		433
	SOURCE (K3=3)		1-PIN RUN	434

KDJ1A.A		ARAFD .V35(1022)-1 03-JUN-77						
RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - O ORDER	DRAW OPT	RV	RG	Y X
IR(2) (1)	H	D05R1		1-01 *		K3=3456		
IR(2) (1)	H	E04B1		1-02 *		K1=8		
IR(2) (1)	H	E08N1		1-03 *		KT=7		
IR(2) (1)	H			1				
IR(3) (1)	H	D05M2		1-01 *		K3=3456		
IR(3) (1)	H	E04H2		1-02 *		K1=8		
IR(3) (1)	H	E08M1		1-03 *		KT=7		
IR(3) (1)	H			1				
IR(6) (1)	H	C05K1		1-01 *		K3=3456		
IR(6) (1)	H	D05T2		1-02 *		K5=3		
IR(6) (1)	H	E04B1		1-03 *		K1=8		
IR(6) (1)	H	E08B2		1-04 *		KT=7		
IR(6) (1)	H			1				
IR(7) (1)	H	E02E2		1-01 *		KE=4		
IR(7) (1)	H	C05L1		1-02 *		K3=345		
IR(7) (1)	H	E08F1		1-03 *		KT=7		
IR(7) (1)	H			1				
IR(8) (1)	H	A02A2		1-01 *		KE=4		
IR(8) (1)	H	C05C1		1-02 *		K3=345		
IR(8) (1)	H	E08T2		1-03 *		KT=7		
IR(8) (1)	H			1				
IR(9) (1)	H	A02T2		1-01 *		KE=4		
IR(9) (1)	H	C05A1		1-02 *		K3=345		
IR(9) (1)	H	E08D2		1-03 *		KT=7		
IR(9) (1)	H			1				
IR(10) (1)	H	H05S1		1-01 * 1		K3=34		
IR(10) (1)	H	E08V2		1-02 *		KT=7		
IR(10) (1)	H			1				
IR(11) (1)	H	H05L1		1-01 *		K3=34		
IR(11) (1)	H	E08F2		1-02 *		KT=7		
IR(11) (1)	H			1				
IR(12) (1)	H	H05K1		1-01 *		K3=34		
IR(12) (1)	H	E08V2		1-02 *		KT=7		
IR(12) (1)	H			1				
IR(13)	H	H05P2		1-01 *		K3=2479		
IR(13)	H	E08L1		1-02 *		K5=3		
IR(13)	H			1				
IR(14) (1)	L	A05P1		1-01 *		K3=469		
IR(14) (1)	L	C02H2		1-02 *		KE=4		
IR(14) (1)	L	E06M2		1-03 *		K5=3		
IR(14) (1)	L			1				
IR(15) (1)	H	C05M1				K3=345		

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
IR=V75XXX	L	A02U2		1-01 *			KE-4		1	SOURCE	N	8-1/8		435
IR=V75XXX	L	D01L1		1-02 *			KF-4							435
IR=V75XXX	L			1								8-1/8		435
JAM CLK	H	E07R1					K4-23			SOURCE (K4=3)			1-PIN RUN	436
JAMPER	H	C06T2		1-01 *			K5-4		1		N	6-5/8		437
JAMPER	H	E07A1		1-02 *			K4-23			SOURCE (K4-3)				437
JAMPER	H			1								6-5/8		437
JAMPER	L	D03S2	A03V1	1-01 *	1		K2-5678		1		N	8-1/8		438
JAMPER	L	A03V1		1-02 *			K2-3		2		N	6-1/8		438
JAMPER	L	C06L1		1-03 *			K5-4		1		N	8-1/8		438
JAMPER	L	E07E1		1-04 *			K4-3			SOURCE				438
JAMPER	L			1								22-3/8		438
JBREM (0)	H	E07L1					K4-3			SOURCE			1-PIN RUN	439
JPUP (0)	H	E06T2		1-01 *			K5-8		1		N	11-3/8		440
JPUP (1)	H	E07T2		1-02 *			K4-3			SOURCE				440
JPUP (V)	H			1								11-3/8		440
KT INSTR	L	D05R1		1-01 *			K3-5		1		N	5-5/8		441
KT INSTR	L	E08N1		1-02 *			KI-7			SOURCE				441
KT INSTR	L			1								5-5/8		441
KTSR16	L	B06B2		1-01 *			K5-7		1		N	4-3/8		442
KTSR16	L	C08K1		1-02 *			KI-9			SOURCE				442
KTSR16	L			1								4-3/8		442
KTSR17	L	A06P2		1-01 *			K5-7		1		N	7-5/8		443
KTSR17	L	C08D2		1-02 *			KI-9			SOURCE				443
KTSR17	L			1								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			1								6-3/8		444
LTC	L	E03R1	C09D1	1-01 *	1		KW-2		1		N	12-5/8		445
LTC	L	C09D1		1-02 *			DD							445
LTC	L			1								12-5/8		445
MCLK	L	F01D1		1-01 *	1		KM-2		1	SOURCE	N	3-7/8		446
MCLK	L	E07V2		1-02 *			K4-2							446
MCLK	L			1								3-7/8		446
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			1								11-2/8		447
MFP SW0	L	D06V1		1-01 *			K5-5		1		N	3-1/8		448
MFP SW0	L	E08C1		1-02 *			KI-9			SOURCE				448
MFP SW0	L			1								3-1/8		448

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
MFP1 (1)	H	E08U2					KI-7			SOURCE			1-PIN RUN	449
MODE SEL1	H	E04U1		1-01 *	1		K1-8		1		N	3-2/8		450
MODE SEL1	H	E08A1		1-02 *			KI-2			SOURCE				450
MODE SEL1	H			1								3-2/8		450
MSR<0>	L	A12L2		1-01 *			KE-5		1		N	9-1/8		451
MSR<0>	L	D01M2		1-02 *			KF-2			SOURCE				451
MSR<0>	L			1								9-1/8		451
MSR<1> (1)	H	A12F2		1-01 *			KE-5		1		N	9-7/8		452
MSR<1> (1)	H	D01P2		1-02 *			KF-2		2	SOURCE	N	2-2/8		452
MSR<1> (1)	H	E01H2		1-03 *			KM-2							452
MSR<1> (1)	H			1								12-1/8		452
MSR<1> (1)	H	E01K2		1-01 *			KF-24		1	SOURCE (KF-2)	N	8-1/8		453
MSR<1> (1)	H	E01J2		1-02 *			KM-2							453
MSR<1> (1)	H			1								8-1/8		453
MSR<2> (1)	H	E07D1		1-01 *			K4-246		2	SOURCE (K4=4)	N	9-7/8		454
MSR<2> (1)	H	E08B2		1-02 *			KI-2		1		N	0-1/8		454
MSR<2> (1)	H	E08N2		1-03 *			KT-256							454
MSR<2> (1)	H			1								10-0/8		454
MSR<3>	L	A07R1					K4-4			SOURCE			1-PIN RUN	455
MSR<3> (1)	H	A07K1					K4-4			SOURCE			1-PIN RUN	456
MTR1 (1)	H	E08K2					KT-7			SOURCE			1-PIN RUN	457
NBG	L	C02F1					KE-245			SOURCE (KF=4)			1-PIN RUN	458
N DATA	L	B05D1		1-01 *			K3-9		1		N	9-7/8		459
N DATA	L	D06S1		1-02 *			K5-2			SOURCE				459
N DATA	L			1								9-7/8		459
NO STOP	L	E07S1		1-01 *			K4-2		1		N	4-1/8		460
NO STOP	L	F01R2		1-02 *			KM-2			SOURCE				460
NO STOP	L			1								4-1/8		460
NO SYN	L	A07C1		1-01 *			K4-4		1		N	10-5/8		461
NO SYN	L	D08R2		1-02 *			KI-6			SOURCE				461
NO SYN	L			1								10-5/8		461
NODET (0)	H	C06D2		1-01 *			K5-4		1		N	4-7/8		462
NODET (0)	H	D07S2		1-02 *			K4-346			SOURCE (K4=6)				462
NODET (0)	H			1								4-7/8		462
NOSAC (1)	H	D07P2					K4-6			SOURCE			1-PIN RUN	463
NPR (0)	H	D07R1					K4-56			SOURCE (K4=5)			1-PIN RUN	464
ODA ERR	L	C06C1		1-01 *			K5-4		1		N	8-1/8		465
ODA ERR	L	E07U2		1-02 *			K4-34			SOURCE (K4=4)				465
ODA ERR	L			1								8-1/8		465

NET NAME	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
OUT HIGH		1	SOURCE	N 3-3/8	466
OUT HIGH			SOURCE		466
OUT HIGH				3-3/8	466
OUT LOW		1	SOURCE	N 4	467
OUT LOW			SOURCE		467
OUT LOW				4-0/8	467
OVFL		1		N 7-5/8	468
OVFL		2	SOURCE	N 2-7/8	468
OVFL				10-4/8	468
OVFL		1	SOURCE (K4=4)	N 9-3/8	469
OVFL				9-3/8	469
OVFL					469
OVFLW EPR				1-PIN RUN	470
OVFLW PRV					
OVFLW EPR					
OVLAP (1)		2	SOURCE	N 2-3/8	471
OVLAP (1)		1	SOURCE	N 3-7/8	471
OVLAP (1)		2	SOURCE	N 4-7/8	471
OVLAP (1)				11-1/8	471
OVLAP (1)		1	SOURCE	N 6-7/8	472
OVLAP (1)			SOURCE		472
OVLAP (1)				6-7/8	472
OVLAP CYCTR		1	SOURCE	N 2-5/8	473
OVLAP CYCTR			SOURCE		473
OVLAP CYCTR				2-5/8	473
OVLAP INSTR			SOURCE (K5=6)	1-PIN RUN	474
OVLAP INSTR					
OVLAP INSTR					
P BIT 37		1	SOURCE	N 5-3/8	475
P CLK UPPR			SOURCE		475
P CLK UPPR				5-3/8	475
P CLK MSYN		1	SOURCE (K4=4)	N 7-1/8	476
P CLK MSYN					476
P CLK MSYN				7-1/8	476
P END		1	SOURCE	N 4	477
P END		2	SOURCE	N 2-6/8	477
P END					477
P END				6-6/8	477
P ENDRESET		1	SOURCE	N 11-7/8	478
P ENDRESET					478
P ENDRESET				11-7/8	478
P ESTART				1-PIN RUN	479
P ESTART			SOURCE (K4=3)	1-PIN RUN	480
P JAMSTART					

NET NAME	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
P JAMSTART			SOURCE (K4=3)	1-PIN RUN	481
P MATCH			SOURCE		482
P MATCH				1-PIN RUN	482
P MSYN				1-PIN RUN	483
P MSYN				1-PIN RUN	484
P1		2	SOURCE	N 4-7/8	485
P1		1		N 5-7/8	485
P1		2	SOURCE	N 3-7/8	485
P1				14-5/8	485
P2		2		N 3-7/8	486
P2		1		N 6-7/8	486
P2		2	SOURCE	N 9-7/8	486
P2		1		N 7-7/8	486
P2				28-4/8	486
P3		2		N 3-5/8	487
P3		1		N 5-3/8	487
P3			SOURCE (K4=2)	9-0/8	487
PART CHKT MI			SOURCE	1-PIN RUN	488
PART D ENB		1		N 8-1/8	489
PART D ENB		2	SOURCE	N 3-7/8	489
PART D ENB				12-0/8	489
PASTA (1)		1	SOURCE	N 10-3/8	490
PASTA (1)				10-3/8	490
PASTA (1)		1	SOURCE	N 10-7/8	491
PASTA				10-7/8	491
PASTA		1	SOURCE	N 12-7/8	492
PASTA				12-7/8	492
PASTC (0)		1	SOURCE	N 9-7/8	493
PASTC (0)		2		N 5-1/8	493
PASTC (0)				15-0/8	493
PASTC				N 10-5/8	494
PASTC				N 4-3/8	494
PASTC				15-0/8	494

NET NAME	A/E	PIN NAME	ORDER PIN	RAY = Q ORDER	DRAW OPT	PV RG Y
OUT HIGH	H	D09K1		1-01 *		DD
OUT HIGH	H	E09M2		1-02 *		DD
OUT HIGH	H			1		
OUT LOW	H	D09D1		1-01 *		DD
OUT LOW	H	E09N1		1-02 *		DD
OUT LOW	H			1		
OVFL	H	A02V2		1-01 *		KE-4
OVFL	H	D01H2	E01E1	1-02 *		KF-4
OVFL	H	E01E1		1-03 *		KM-2
OVFL	H			1		
OVFLW EPR	L	E06M1		1-01 *		K5-4
OVFLW PRV	L	E07S2		1-02 *		K4-34
OVFLW EPR	L			1		
OVFLW ITR	T	E03R2				KJ-2
OVLAP (1)	H	C06S1		1-01 *		K5-4
OVLAP (1)	H	D07D1		1-02 *		K4-5
OVLAP (1)	H	E05D1		1-03 *		K3-7
OVLAP (1)	H	E07J2		1-04 *		K4-2
OVLAP (1)				1		
OVLAP CYCTR	E	A07N1		1-01 *		K4-4
OVLAP CYCTR	L	C05P1		1-02 *		K3-4
OVLAP CYCTR	L			1		
OVLAP INSTR	H	C05F1		1-01 *		K3-4
OVLAP INSTR	H	D06F2		1-02 *		K5-4
OVLAP INSTR	H			1		
P BIT 37	H	C06P2				K5-46
P CLK UPPR	H	E03R1		1-01 *		K4-2
P CLK UPPR	H	C02V1		1-02 *		KE-5
P CLK UPPR	H			1		
P CLK MSYN	T	E07K2		1-01 * 1		K4-45
P CLK MSYN	T	D08V1		1-02 *		KT-9
P CLK MSYN	T			1		
P END	H	C02P1		1-01 *		KE-59
P END	H	L07P1	E04F2	1-02 *		K4-2
P END	H	E04F2		1-03 *		K1-9
P END	H			1		
P ENDRESET	L	H06T1		1-01 *		K5-8
P ENDRESET	T	E07N1		1-02 *		K4-2
P ENDRESET	T			1		
P ESTART	T	E07K2				K4-2
P JAMSTART	H	D07T1				K4-236

NET NAME	A/E	PIN NAME	ORDER PIN	RAY = Q ORDER	DRAW OPT	PV RG Y
P JAMSTART	T	E07F1				K4-3
P MATCH	L	E04F2				K1-9
P MSYN	T	D07K2				K4-5
P MSYN	T	C07J1				K4-5
P1	H	A01J2		1-01 *		KF-4
P1	H	B02V2		1-02 *		KE-5
P1	H	D06D2		1-03 *		K5-4
P1	H	E07D1		1-04 *		K4-2
P1	H			1		
P2	H	B02V1		1-01 *		KE-5
P2	H	C06J2		1-02 *		K5-4
P2	H	E07R2	E07H1	1-03 *		K4-2
P2	H	B07F1	D08D1	1-04 *		K4-4
P2	H	D08H1		1-05 *		KT-9
P2	H			1		
P3	H	C02C1		1-01 *		KE-5
P3	H	C06M2		1-02 *		K5-48
P3	H	E07F1		1-03 *		K4-25
P3	H			1		
PART CHKT MI	H	C07J1				K4-5
PART D ENB	H	A06P2		1-01 *		K5-6
PART D ENB	H	C02J2		1-02 *		KE-5
PART D ENB	H	D07R1		1-03 *		K4-2
PART D ENB	H			1		
PASTA (1)	H	A05V2		1-01 *		K3-9
PASTA (1)	H	E06P1		1-02 *		K5-2
PASTA (1)	H			1		
PASTA	H	A05F1		1-01 *		K3-9
PASTA	H	E06K2		1-02 *		K5-2
PASTA	H			1		
PASTC (0)	H	A05A1		1-01 *		K3-9
PASTC (0)	H	E06M1		1-02 *		K5-2
PASTC (0)	H			1		
PASTC	H	A08P1		1-01 *		KT-4
PASTC	H	E08K2		1-02 *		KT-6
PASTC	H	B01P1		1-03 *		KM-2
PASTC	H			1		
PASTC	H	A08P2		1-01 * 1		KT-4
PASTC	H	E08L2		1-02 *		KT-6
PASTC	H	E01K1		1-03 *		KM-2
PASTC	H			1		

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	PV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
PRA08	H	A08N1		1-01 *	1		KT=4			1		SOURCE	N	10-1/8		495
PRA08	H	E08D2		1-02 *			KT=6			2			N	5-3/8		495
PRA08	H	E01S2		1-03 *			KM=2									495
PRA08	H			1										15-4/8		495
PRA09	H	A08M2		1-01 *	1		KT=4			1		SOURCE	N	9-3/8		496
PRA09	H	D08V2		1-02 *			KT=6			2			N	6-1/8		496
PRA09	H	E01P1		1-03 *			KM=2									496
PRA09	H			1										15-4/8		496
PRA10	H	B08R1		1-01 *			KT=4			1		SOURCE	N	12-5/8		497
PRA10	H	E01T1		1-02 *			KM=2									497
PRA10	H			1										12-5/8		497
PRA11	H	A08V2		1-01 *			KT=4			1		SOURCE	N	8-3/8		498
PRA11	H	D08P2		1-02 *			KT=6			2			N	5-1/8		498
PRA11	H	E01F1		1-03 *			KM=2									498
PRA11	H			1										13-4/8		498
PRA12	H	A08T2		1-01 *			KT=4			1		SOURCE	N	13-5/8		499
PRA12	H	E01J1		1-02 *			KM=2									499
PRA12	H			1										13-5/8		499
PRA13	H	A08D2		1-01 *			KT=4			1		SOURCE	N	12-7/8		500
PRA13	H	E01C1		1-02 *			KM=2									500
PRA13	H			1										12-7/8		500
PRA14	H	B08S1		1-01 *			KT=4			1		SOURCE	N	11-3/8		501
PRA14	H	E01T2		1-02 *			KM=2									501
PRA14	H			1										11-3/8		501
PRA15	H	C08A1		1-01 *			KT=4			1		SOURCE	N	9-7/8		502
PRA15	H	E01K2		1-02 *			KM=2									502
PRA15	H			1										9-7/8		502
PRA16	H	B08U2		1-01 *			KT=4			1		SOURCE	N	11-1/8		503
PRA16	H	E01M1		1-02 *			KM=2									503
PRA16	H			1										11-1/8		503
PRA17	H	B08S2		1-01 *			KT=4			1		SOURCE	N	12-1/8		504
PRA17	H	E01V1		1-02 *			KM=2									504
PRA17	H			1										12-1/8		504
PERIP RELEASE	H	D07A1					K4=25					SOURCE (K4=5)			1=PIN RUN	505
PERE (M)	H	B07H1		1-01 *			K4=3			1		SOURCE	N	11-3/8		506
PERE (M)	H	E06V1		1-02 *			K5=5									506
PERE (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 FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
PROC RESCAN	H	A07S1					K4=6					SOURCE			1=PIN RUN	509
PS ADRS	H	A07E2		1-01 *			K4=6			1			N	9-1/8		510
PS ADRS	H	D06S2		1-02 *			K5=2			2			N	2		510
PS ADRS	H	E04D1		1-03 *			K1=7			1		SOURCE	N	2-7/8		510
PS ADRS	H	E08E2		1-04 *			KT=6			2		SOURCE	N	2-5/8		510
PS ADRS	H	E05V2		1-05 *			K3=7									510
PS ADRS	H			1										16-5/8		510
PS(C)	H	A05P2		1-01 *			K3=89			1			N	3-7/8		511
PS(C)	H	E04R1		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(C PR BUS)	H	B07E1		1-01 *			K4=6			1		SOURCE	N	8-5/8		513
PS(C PR BUS)	H	E06F1		1-02 *			K5=2									513
PS(C PR BUS)	H			1										8-5/8		513
PS(C14+P3)	H	E07D1		1-01 *			K4=2			2		SOURCE	N	1		514
PS(C14+P3)	H	E06C1		1-02 *			K5=2			1			N	2-2/8		514
PS(C14+P3)	H	E08S2		1-03 *			KT=29									514
PS(C14+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	C06E2		1-01	*		K5=7			1			N 2-2/8	524
PS15	L	C08N1		1-02	*		KT=9					SOURCE	2-2/8	524
PS15	L			1										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
PTR0 (0)	H	C07E1					K4=5					SOURCE	1=PIN RUN	526
PTR0 (1)	H	B07V2					K4=56					SOURCE (K4=5)	1=PIN RUN	527
PUPF0 (1)	H	A03T2		1-01	*		K2=2			1		SOURCE	N 14-5/8	526
PUPF0 (1)	H	F01P1		1-02	*		KM=2							528
PUPF0 (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	F03S2		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	B03L2		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	B03H2		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	B03K2		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	F07P2		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
PWRUP (0)	H	C05N1		1-01	*		K3=47			1			N 1-4/8	538
PWRUP (0)	H	C06F2		1-02	*		K5=48					SOURCE (K5=4)		538
PWRUP (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	F07R2		1-02	*		K4=3							539
PWRUP INIT	L			1									12-3/8	539
R(A5+X7)	H	A05C1		1-01	*		K3=8			2			N 7-5/8	540
R(A5+X7)	H	C07J2		1-02	*		K4=4			1			N 8-1/8	540
R(A5+X7)	H	F04P1		1-03	*		K1=8					SOURCE		540
R(A5+X7)	H			1									15-6/8	540
RADR5A	L	A04F1		1-01	*		K1=8			1		SOURCE	N 7-5/8	541
RADR5A	L	C07K1		1-02	*		K4=4							541
RADR5A	L			1									7-5/8	541
RDA7	H	C04V2		1-01	*	1	K1=3			1		SOURCE	N 5-5/8	542
RDA7	H	E06M2		1-02	*		K5=2							542
RDA7	H			1									5-5/8	542
RDI5	H	A04D1		1-01	*		K1=5			1		SOURCE	N 10-1/8	543
RDI5	H	E06L2		1-02	*		K5=2							543
RDI5	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	F05L2		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	F04P2		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	F04R1		1-02	*		K1=8							547
RIF0 (1)	H			1									10-1/8	547
RIF1 (1)	H	B03U2		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	B03U1		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	B03S1		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
ROMB (1)	H	E01P2		1-02 *			KM=2								551
ROMA (1)	H			1										5-2/8	551
ROME (1)	H	D08M1		1-01 *			KT=2				1	SOURCE	N	5	552
ROMF (1)	H	E01U2		1-02 *			KM=2								552
ROME (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
ROMG (1)	H	D08S1		1-01 *			KT=2				1	SOURCE	N	5-7/8	554
ROMH (1)	H	E01M1		1-02 *			KM=2								554
ROMG (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	E08H2		1-01 *			KT=9				1	SOURCE	N	3-4/8	556
S HOOK	H	E04A1		1-02 *			K1=8								556
S HOOK	H			1										3-4/8	556
SALUM (1)	H	A05F2		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
SALM1 (1)	H	A05F1		1-01 *			K3=8				1		N	7-5/8	558
SALM1 (1)	H	C03T2		1-02 *			K2=6					SOURCE			558
SALM1 (1)	H			1										7-5/8	558
SALM2 (1)	H	A05E1		1-01 *			K3=8				1		N	7-3/8	559
SALM2 (1)	H	C03P2		1-02 *			K2=6					SOURCE			559
SALM2 (1)	H			1										7-3/8	559
SALM3 (1)	H	A05D2		1-01 *			K3=8				1		N	7-5/8	560
SALM3 (1)	H	C03N2		1-02 *			K2=6								560
SALM3 (1)	H			1										7-5/8	560
SALM4 (1)	H	A05N1		1-01 *			K3=8				1		N	8-5/8	561
SALM4 (1)	H	E03E1		1-02 *			K2=6					SOURCE			561
SALM4 (1)	H			1										8-5/8	561
SRAM (1)	H	A04J1		1-01 *			K1=2345				1		N	5-7/8	562
SRAM (1)	H	C03J2		1-02 *			K2=5					SOURCE			562
SRAM (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	C08V1		1-02 *			KT=9								567
SRC=10	I			1										9-3/8	567
SRC=11	I	E06V1		1-01 *			K5=5				1	SOURCE	N	2-1/8	568
SRC=11	L	E08J1		1-02 *			KT=9								568
SRC=11	I			1										2-1/8	568
SRAM (1)	H	A04V1		1-01 *			K1=45				1		N	5-3/8	569
SRAM (1)	H	C03K1		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	C03A1		1-02 *			K2=5					SOURCE			570
SRAM (1)	H			1										5-3/8	570
SRAM (1)	H	C03J1		1-01 *			K2=5				1	SOURCE	N	4-3/8	571
SRAM (1)	H	D04S1		1-02 *			K1=23								571
SRAM (1)	H			1										4-3/8	571
SRAM (1)	H	C03T1		1-01 *			K2=5				1	SOURCE	N	4-5/8	572
SRAM (1)	H	D04U2		1-02 *			K1=23								572
SRAM (1)	H			1										4-5/8	572
SDAT (1)	H	A04M1		1-01 *			K1=2345				1		N	5-5/8	573
SDAT (1)	H	C03K2		1-02 *			K2=5					SOURCE			573
SDAT (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

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RUN NAME A/P PIN NAME ORDER PIN BAY - Q ORDER DRAW OPT RV RG Y X REMARKS 27-Oct-77 16117 NC LENGTH EXCEPTIONS FLAG RUN NUMBER

													SOURCE (K3-7)
												1-PIN RUN	579
												N 5-7/8	580
1													SOURCE (K4-2)
												5-7/8	580
												N 16-7/8	581
1													SOURCE
												16-7/8	581
												N 15-5/8	582
1													SOURCE
												15-5/8	582
												N 14-1/8	583
1													SOURCE
												14-1/8	583
												N 12-1/8	584
1													SOURCE
												12-1/8	584
												N 10-1/8	585
1													SOURCE
												10-1/8	585
												N 8-5/8	586
1													SOURCE
2													SOURCE
												12-3/8	586
2												N 3-5/8	587
1												N 4-7/8	587
													SOURCE (K3-3)
												8-4/8	587
												N 3-7/8	588
1													SOURCE
												3-7/8	588
												N 4-1/8	589
1													SOURCE
												4-1/8	589
												N 4-5/8	590
1													SOURCE
												4-5/8	590
													SOURCE (K3-3)
												1-PIN RUN	591
1												N 4-7/8	592
													SOURCE
												4-7/8	592
													SOURCE
												4-7/8	592

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RUN NAME A/P PIN NAME ORDER PIN BAY - Q ORDER DRAW OPT RV RG Y X REMARKS 27-OCT-77 16117 NC LENGTH EXCEPTIONS FLAG RUN NUMBER

1												N 5-7/8	593
2												N 2-5/8	593
													SOURCE
												8-4/8	593
1												N 4-7/8	594
2												N 3-1/8	594
													SOURCE
												8-0/8	594
2												N 4-7/8	595
1												N 4-7/8	595
													SOURCE
												9-6/8	595
1												N 8-7/8	596
2												N 2-5/8	596
													SOURCE
												11-4/8	596
1												N 3-3/8	597
													SOURCE
												3-3/8	597
1												N 4	598
													SOURCE
												4-0/8	598
1												N 9-5/8	599
													SOURCE
												9-5/8	599
1												N 9-3/8	600
													SOURCE
												9-3/8	600
1												N 1-3/8	601
													SOURCE (KF-7)
												1-3/8	601
1												N 1-1/8	602
													SOURCE (KE-7)
												1-1/8	602
1												N 9-3/8	603
													SOURCE
												9-3/8	603
1												N 9-5/8	604
													SOURCE
												9-5/8	604
1												N 1	605
													SOURCE
												1-0/8	605

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X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV RG Y	RUN NUMBER
	2	SOURCE	N 1-3/8	H	C06M1		1-01 *		K5-4	606
	1		N 3-3/8	H	C07M2		1-02 *		K4-4	606
				H	D08F1		1-03 *		KT-3	606
			4-6/8	P			1			606
	1	SOURCE	N 15-7/8	H	A06R1		1-01 *		K5-7	607
				H	F07U1		1-02 *		K4-3	607
			15-7/8	H			1			607
	1	SOURCE	N 13-3/8	H	A10R2		1-01 *		K5-6	608
				H	F05J2		1-02 *		K3-2	608
			13-3/8	H			1			608
		SOURCE	1-PIN RUN	H	D08A1				KT-2	609
		SOURCE	1-PIN RUN	H	D08F1				KT-2	610
		SOURCE	1-PIN RUN	H	D07N2				K4-6	611
	1	SOURCE	N 12-1/8	L	H06M2		1-01 *		K5-45	612
				L	F05S1		1-02 *		K3-7	612
			12-1/8	T			1			612
	1	SOURCE	N 7-3/8	L	B06S1		1-01 *		K5-5	613
				T	E05E1		1-02 *		K3-6	613
			7-3/8	L			1			613
	1	SOURCE	N 7-5/8	H	D06M1		1-01 *		K5-4	614
				H	F01D1		1-02 *		KM-2	614
			7-5/8	H			1			614
	1	SOURCE	N 5-5/8	L	B06M2		1-01 *		K5-4	615
				L	D05H2		1-02 *		K3-6	615
			5-5/8	L			1			615
	1	SOURCE	N 1-2/8	L	D05L1		1-01 *		K3-5	616
				L	D06F1		1-02 *		K5-3	616
			1-2/8	L			1			616
		SOURCE	1-PIN RUN	H	D07J1				K4-6	617
	2	SOURCE	N 2-2/8	H	C03F2		1-01 *		K2-5	618
	1		N 6-5/8	H	C06N1		1-02 *		K5-34	618
	2		N 9-7/8	H	F05S1	B07L1	1-03 *		K3-2	618
			18-6/8	P	B07L1		1-04 *		K4-3	618
	2	SOURCE	N 2-3/8	H	C03P1		1-01 *		K2-5	619
	1		N 6-5/8	H	C06M2		1-02 *		K5-34	619
				H	E05P1		1-03 *		K3-2	619
			9-0/8	H			1			619
	2	SOURCE	N 2-1/8	H	C03H1		1-01 *		K2-5	620
	1		N 6-1/8	H	C06F2		1-02 *		K5-34	620
				H	F05N1		1-03 *		K3-2	620
			8-2/8	H			1			620

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X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV RG Y	RUN NUMBER
	2	SOURCE	N 4-7/8	H	E06P2		1-01 *		K5/3	621
	1		N 8-5/8	H	C03E1		1-02 *		K2-5	621
				H	F05F2		1-03 *		K3-2	621
			13-4/8	H			1			621
	2	SOURCE	N 2-6/8	H	E06P2		1-01 *		K5-3	622
	1		N 4-1/8	H	C03H2		1-02 *		K2-5	622
				H	E05K1		1-03 *		K3-2	622
			6-7/8	H			1			622
	1	SOURCE	N 3-7/8	H	A01L2		1-01 *		KF-4	623
	2		N 7-7/8	H	B02P2	E01F2	1-02 *		KE-4	623
				H	E01F2		1-03 *		KM-2	623
			11-6/8	H			1			623
	1	SOURCE	N 9-5/8	H	C04T2		1-01 *		K1-9	624
				H	F07K2		1-02 *		K4-2	624
			9-5/8	L			1			624
	1	SOURCE	N 10-1/8	L	B05H1		1-01 *		K3-9	625
				L	E06U2		1-02 *		K5-2	625
			10-1/8	L			1			625
	1	SOURCE	N 1-7/8	L	H05F1		1-01 *		K3-6	626
				L	E06P1		1-02 *		K5-4	626
			1-7/8	L			1			626
	1	SOURCE	N 5-3/8	H	C06P1		1-01 *		K5-4	627
				H	E05J1		1-02 *		K3-7	627
			5-3/8	H			1			627
	1	SOURCE	N 6-3/8	H	E07P2		1-01 *		K4-2	628
				H	F04V1		1-02 *		K1-8	628
			6-3/8	H			1			628
	1	SOURCE	N 10-7/8	L	B04A1		1-01 *		K1-8	629
				L	E07M2		1-02 *		K4-2	629
			10-7/8	L			1			629
	1	SOURCE	N 3-7/8	H	D03J2		1-01 *		K2-7	630
				H	E07H2		1-02 *		K4-2	630
			3-7/8	H			1			630
	1	SOURCE	N 3-4/8	H	D03H2		1-01 *		K2-7	631
				H	E07E2		1-02 *		K4-2	631
			3-4/8	H			1			631
	1	SOURCE	N 1-3/8	H	A01F1		1-01 *		KF-4	632
				H	A02P1		1-02 *		KE-4	632
			1-3/8	H			1			632
	1	SOURCE	N 3-7/8	H	A01J1		1-01 *		KF-4	633
				H	B02K2		1-02 *		KE-4	633
			3-7/8	H			1			633

KDIIA.N — GRAED .V35(102)-1 — 03-JUN-77

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - Q ORDER	DRAW OPT	RV RG Y
START SW (0)	H	A06R1		1-01 *		K5-7
START SW (0)	H	F07U1		1-02 *		K4-3
START SW (0)	H			1		
SWITCH (1)	H	A10R2		1-01 *		K5-6
SWITCH (1)	H	F05J2		1-02 *		K3-2
SWITCH (1)	H			1		
T14 (1)	H	D08A1				KT-2
T15 (1)	H	D08F1				KT-2
TDATA (0)	H	D07N2				K4-6
TRACE	L	H06M2		1-01 *		K5-45
TRACE	L	F05S1		1-02 *		K3-7
TRACE	T			1		
TRAP	L	B06S1		1-01 *		K5-5
TRAP	T	E05E1		1-02 *		K3-6
TRAP	L			1		
TRAP (1)	H	D06M1		1-01 *		K5-4
TRAP (1)	H	F01D1		1-02 *		KM-2
TRAP (1)	H			1		
TRAPS DATA	L	B06M2		1-01 *		K5-4
TRAPS DATA	L	D05H2		1-02 *		K3-6
TRAPS DATA	L			1		
TRUE RH	L	D05L1		1-01 *		K3-5
TRUE RH	I	D06F1		1-02 *		K5-3
TRUE RH	L			1		
TSACK (0)	H	D07J1				K4-6
URF3 (1)	H	C03F2		1-01 *		K2-5
URF3 (1)	H	C06N1		1-02 *		K5-34
URF3 (1)	H	F05S1	B07L1	1-03 *		K3-2
URF3 (1)	H	B07L1		1-04 *		K4-3
URF3 (1)	H			1		
URF4 (1)	H	E06P2		1-01 *		K5-3
URF4 (1)	H	C03H2		1-02 *		K2-5
URF4 (1)	H	E05K1		1-03 *		K3-2
URF4 (1)	H			1		
URF1 (1)	H	C03P1		1-01 *		K2-5
URF1 (1)	H	C06M2		1-02 *		K5-34
URF1 (1)	H	E05P1		1-03 *		K3-2
URF1 (1)	H			1		
URF2 (1)	H	C03H1		1-01 *		K2-5
URF2 (1)	H	C06F2		1-02 *		K5-34
URF2 (1)	H	E05N1		1-03 *		K3-2
URF2 (1)	H			1		
UNF1	H	A01L2		1-01 *		KF-4
UNF1	H	B02P2	E01F2	1-02 *		KE-4
UNF1	H	E01F2		1-03 *		KM-2
UNF1	H			1		
UPP MATCH	H	C04T2		1-01 *		K1-9
UPP MATCH	H	F07K2		1-02 *		K4-2
UPP MATCH	L			1		
V DATA	L	B05H1		1-01 *		K3-9
V DATA	L	E06U2		1-02 *		K5-2
V DATA	L			1		
WAIT	L	H05F1		1-01 *		K3-6
WAIT	L	E06P1		1-02 *		K5-4
WAIT	L			1		
WAIT (0)	H	C06P1		1-01 *		K5-4
WAIT (0)	H	E05J1		1-02 *		K3-7
WAIT (0)	H			1		
WR E(15:00)	L	E07P2		1-01 *		K4-2
WR E(15:00)	L	F04V1		1-02 *		K1-8
WR E(15:00)	L			1		
WR H(15:00)	L	B04A1		1-01 *		K1-8
WR H(15:00)	L	E07M2		1-02 *		K4-2
WR H(15:00)	L			1		
WRH (1)	H	D03J2		1-01 *		K2-7
WRH (1)	H	E07H2		1-02 *		K4-2
WRH (1)	H			1		
WRL (1)	H	D03H2		1-01 *		K2-7
WRL (1)	H	E07E2		1-02 *		K4-2
WRL (1)	H			1		
ZA (1)	H	A01F1		1-01 *		KF-4
ZA (1)	H	A02P1		1-02 *		KE-4
ZA (1)	H			1		
ZA*FPS(Z)	H	A01J1		1-01 *		KF-4
ZA*FPS(Z)	H	B02K2		1-02 *		KE-4
ZA*FPS(Z)	H			1		

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DRAWING NUMBER	INIT REL	AUTOMATIC WIRE TESTER (AWT) REVISION STATUS						
	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	CHANGE NO.	REV.	CHK
ORIGINATED	KD11A-00011	J	—
	5410904-1	K	—
	KD11A-00012	L	
	KD11A-00013	M	KP
	KD11A-00014	N	K.T
	KD11A-00015	P	B.C.

DRN. E. KENNEY	DATE 8-29-74
CHK'D. R. Gilbert	DATE 8-29-74
ENG. [illegible]	DATE 9-5-74
PROJ. ENG. [illegible]	DATE 9-5-74
PROD. [illegible]	DATE 9-5-74
FIRST USED ON KD11-A	
SCALE —	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

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

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

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

THIS IS PRINT SET [x]

UNIT VARIATIONS

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

REVISIONS		
REV	CHG. NO.	DATE
A	KJ11A-1	9-74

USED ON OPTION/MODEL
KD11-A

DRN. J Kavanaugh	DATE 9/26/72	TITLE: STACK LIMIT REGISTER
CHK'D. J Kavanaugh	DATE 9/27/72	
PROJ ENG. J Kavanaugh	DATE 9/27/72	
PROD.	DATE	SIZE B / CODE DD / NUMBER KJ11-A / REV A
FIELD SERV.	DATE	
SHEET 1 OF 2		DIST

DRB 106

DEC 16—(325)—1062—1—N871

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J.F.Dougherty DATE 9/26/72	CHECKED J.F.Dougherty DATE 9/27/72	SECTION
ENG J.F.Dougherty DATE 9/27/72	PROD [illegible] DATE 9-28-72	ISSUED SECT.

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

DEC FORM DEC 16 (325) 1031 N870
DRA 110

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PARTS REFERENCE

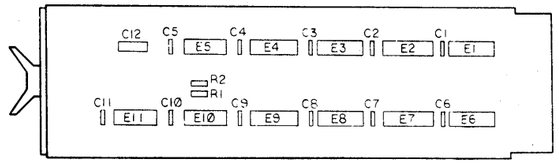
ITEM NO	DRAWING REFERENCE	DESCRIPTION		PART NUMBER	QUANTITY
1	E1,E6	DEC 5384	IC	1910394	2
2	E2,E7	DEC 74175	IC	1910651	2
3	E5,E8	DEC 8881	IC	1909705	2
4	E4,E9	DEC 7486	IC	1910224	2
5	E3	DEC 7440	IC	1909056	1
6	E10	DEC 74H20	IC	1905635	1
7	E11	DEC 7402	IC	1910155	1
8	C1 THRU C11	.01 MFD 100V 20%	CAP	1001610	11
9	C12	6.8 MFD 35V 20%	CAP	1000057	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. KJII 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:

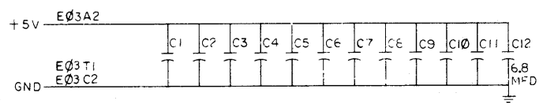
IC TYPE	GND	+5V
DEC 5384	PIN 1	PIN 8
DEC 74175	PIN 8	PIN 16

COMPONENT PLACEMENT



PIN NOMENCLATURE

MODULE	PROCESSOR
A	EØ3



REVISIONS			
REV	CHANGE NO.	CHK	
B	M7237-00001	H. Stevens	9-15-76
		J. ROGERS	
		[illegible]	10-2-74

FIRST USED ON OPTION / MODEL: PDP 11/35

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINISH SURFACE QUALITY 7
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

NEXT HIGHER ASSY: A-ML-KJII-A

SCALE

SHEET 1 OF 2

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DRN	W. MAJOR	DATE 9/22/71
CHK'D	[illegible]	DATE 2/72
ENG	[illegible]	DATE 5-22-72
MFG ENG	[illegible]	DATE 5-22-72
PROD	[illegible]	DATE 5/22/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: STACK LIMIT REGISTER

M7237 KJ-1

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

DIST.

M7237-Ø-1 CS B

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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 BA10 (1)H EΦ3B1
K1-6 BA09 (1)H EΦ3C1
K1-6 BA08 (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 DMUX10 H EΦ3K1
K1-4 DMUX09 H EΦ3J1
K1-4 DMUX08 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

74175 EΦ7
74175 EΦ2
5384 EΦ6
5384 EΦ1
8881 EΦ8
8881 EΦ3
74S08 E11
74S85 EΦ9
74S85 EΦ4

K4-4 CKOVF H EΦ3U2
K1-7 BA(Φ7:Φ5)=1 L EΦ3A1
+5V R2 1K
74H20 E10
74H00 E05
EΦ3T2 KJ-2 EOWFLW L (TO K5-4)
EΦ3F2 KJ-2 EOVFLSTOP H (TO K4-4)

+5V R1 1K

EΦ3R2 BUS DI5 L
EΦ3S2 BUS DI4 L
EΦ3K2 BUS DI3 L
EΦ3P2 BUS DI2 L
EΦ3H2 BUS DI1 L
EΦ3J2 BUS DI0 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 —

DRN. W. MAJOR DATE 7/22/71
CHK'D DATE 8-2-72
ENG DATE 8-31-72
PROJ ENG DATE 8-31-72
PROD'N DATE 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

SIZE D | CODE CS | NUMBER M7237-Ø-1 | REV B
DIST

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY J.F.Doughty	CHECKED J.F.Doughty	SECTION
DATE 9/26/72	DATE 9/27/72	
ENG J.F.Doughty	PROD B.E.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. [illegible]	DATE 2 MAY 72	TITLE: LINE FREQUENCY CLOCK (KW11-L)
CHKD. M. Bourgeault	DATE 6-13-72	
PROJ. ENG. M. Bourgeault	DATE 6-14-72	
PROJ. M. Stangel	DATE 6-14-72	
FIELD SERV. W. Schmidt	DATE 6-14-72	SIZE B; CODE DD; NUMBER KW11-L-Ø; REV *
SHEET 1 OF 2		DIST

DRB 106

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

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

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

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

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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

KAII BUSY

KWII BUSY

KAII BUSY

INTERRUPT MODE

NON-INTERRUPT MODE

FIRST USED ON NEXT ASSY/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KWII-L		PARTS LIST		

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

DRAWN	[redacted]	7/6/70
CHECKED	[redacted]	7/7/70
ENGR	[redacted]	7/11/70
ENGR MGR	[redacted]	7/14/70
QUAL MGR	[redacted]	7/14/70

NEXT HIGHER ASSY
A-ML-KWII-L
SCALE
SHEET 1 OF 1

[redacted] EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TIMING DIAGRAM
(KWII-L)

SIZE D | CODE TD | NUMBER KWII-L-Ø2 | REV.
DIST.

REVISIONS	REV.	CHANGE NO.	CHK

D-KWII-L-Ø2

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PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	R1 R3	300 Ω 1/4 W 5% CC	1300309	2
2	R2 R6 - R11	1K 1/4 W 5% CC	1300385	7
3	R4 R5	180 Ω 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 E18	I.C. DEC 380	1908495	5
9	E2	I.C. DEC 7430	1905578	1
10	E3	I.C. DEC 8815	1908713	1
11	E4	I.C. DEC 7400	1905575	1
12	E6 E7 E13	I.C. DEC 7474	1905547	3
13	E11	I.C. DEC 7404	1908888	1
14	E12 E14 E15	I.C. DEC 8881	1908705	3

INSTALLATION PROCEDURE

1. REMOVE JUMPER FROM B12V2 TO B12Q2
2. INSTALL M787 LINE FREQUENCY CLOCK MODULE IN KAII SLOT B12
3. RUN MAINDEC DEC-11-D2DA LINE FREQUENCY CLOCK TEST

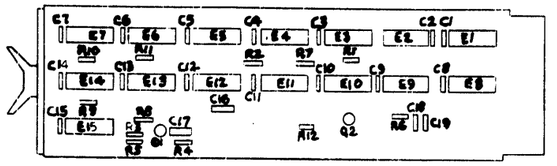
NOTES

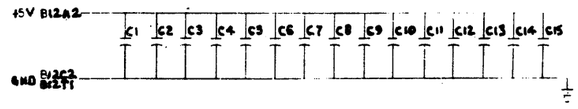
1. PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KAII PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
2. ALL SIGNALS THAT HAVE MODULE PINS ARE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

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

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

COMPONENT PLACEMENT





PIN NOMENCLATURE

MODULE	PROCESSOR
A	B

REVISIONS			
CHK	CHANGE NO		REV
	KWII-0	7-1-71	A
	M787	7-1-71	

DEC FORM NO DRD 100

FIRST USED ON OPTION/MODEL: KWII-L

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY: 63
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DRN. C. Hendrie DATE 7/1/70
CHK'D. D. Bass DATE 7/7/70
ENG. M. Fad DATE 7/7/70
PROJ. ENG. M. Fad DATE 7/7/70
PROD. MacDonald DATE 7/7/70
NEXT HIGHER ASSY A-M_-KWII-L
SCALE —
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINE FREQUENCY INTERVAL CLOCK

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

DIST.

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

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BUS A17 L BI2D2 — E1 380 — 3
BUS A16 L BI2H2 — E1 380 — 5
BUS A15 L BI2F2 — E1 380 — 6
BUS A14 L BI2E2 — E1 380 — 2
BUS A13 L BI2D1 — E1 380 — 9
BUS A12 L BI2C1 — E1 380 — 14
BUS A11 L BI2B1 — E1 380 — 11
BUS A10 L BI2A1 — E1 380 — 13
BUS A09 L BI2M2 — E8 380 — 4
BUS A08 L BI2L1 — E8 380 — 3
BUS A06 L BI2K1 — E8 380 — 6
BUS A05 L BI2J1 — E8 380 — 2
BUS A02 L BI2L2 — E8 380 — 9
BUS A01 L BI2E1 — E8 380 — 14
BUS MSYN L BI2F1 — E8 380 — 11
BUS A07 L BI2K2 — E9 380 — 10
BUS A04 L BI2J2 — E9 380 — 14
BUS A03 L BI2M1 — E9 380 — 13

E1 380 pins 3, 2, 14, 13 → E2 7430 pins 5, 6, 11, 12 → 8
E8 380 pins 3, 2, 14, 13 → E2 7430 pins 1, 2, 4, 5
E9 380 pins 14, 13, 2 → E2 7430 pin 3

E2 7430 → 8 → E3 8815 pins 9, 10, 13 → 8

ADRS H
BUS C01 L BI2N1 — E9 380 — 3
E4 7400 pins 12, 13 → 11
E10 380 pins 2, 6 → E11 7404 pin 5 → 6 → ADRS L

BUS INIT L BI2P2
BUS D06 L BI2P1 — E5 380 — 5
E11 7404 pins 11 → 10
E5 380 pins 2, 7 → E11 7404 pin 3 → 4
BIT 6
BIT 7
+5V R8 1K
E13 7474 pins 12, 9, 11, 13
E12 8881 pins 8, 10 BI2P1 → BUS D06 L
E12 8881 pins 2, 3 → 1 BI2P1 → BUS D07 L

K14-2 LTC L BI2R1
+5V R12 2.4K
+5V R7 1K
R6 1K
C18
C19
Q2 DEC 3009B-S
E11 7404 pins 1 → 2
E13 7474 pins 2, 3, 6, 5, 4
-5V R11 1K
E6 7438 pins 2, 3, 6, 5, 4

E5 380 pins 12, 11 → 13
E11 7404 pins 13 → 12
E4 7400 pins 1, 2 → 3

+5V R2 1K
E12 8881 pins 11, 12 → 13
E12 8881 pins 5, 6 → 4
C16 560
E10 380 pins 5, 4 → 3
E4 7400 pins 5, 4 → 6
E4 7400 pins 10, 2 → 8
E5 380 pins 9, 10 → 14

BUS SSYN L BI2U1
E14 8881 pins 12, 11 → 13 BI2U1 → BUS BR06 L
E15 8881 pins 9, 8 → 10
E14 8881 pins 2, 3 → 1 BI2U2 → BUS INTR L
E14 8881 pins 9, 8 → 10 BI2S2 → BUS SACK L
E14 8881 pins 5, 6 → 1 BI2T2 → BUS BBSY L
BI2V2 BG06 OUT H

BG06 IN H BI2R2
R1 390
E10 380 pins 12, 11 → 13
E11 7404 pins 9 → 8

+5V R9 1K
E7 FF1 7474 pins 2, 6, 3, 5, 4
+5V R10 1K
E7 FF2 7474 pins 12, 9, 11, 8, 13

BUS BBSY L BI2T2
E10 380 pins 9, 10 → 14

E3 8815 pins 2, 4, 5 → 6
+5V R3 390
Q1 3009B-S δ = 100 NS
E15 8881 pins 11, 12 → 13
R4 180
C17 560

+5V R5 180
E15 8881 pins 3, 2 → 1
E15 8881 pins 5, 6 → 4

REVISIONS		
REV	CHANGE NO.	CHK

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

NEXT USED ON / DEVICE/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	H Fleming	6/2/70
CHK'D	K Dees	7/2/70
ENG	H Fad	7/8/70
PROJ ENG	H Fad	7/17/70
APVD	Mac Orwell	7/17/70
PROJECT 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-01 | REV. A | DIST.

DEC FORM NO ORD 102A

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY
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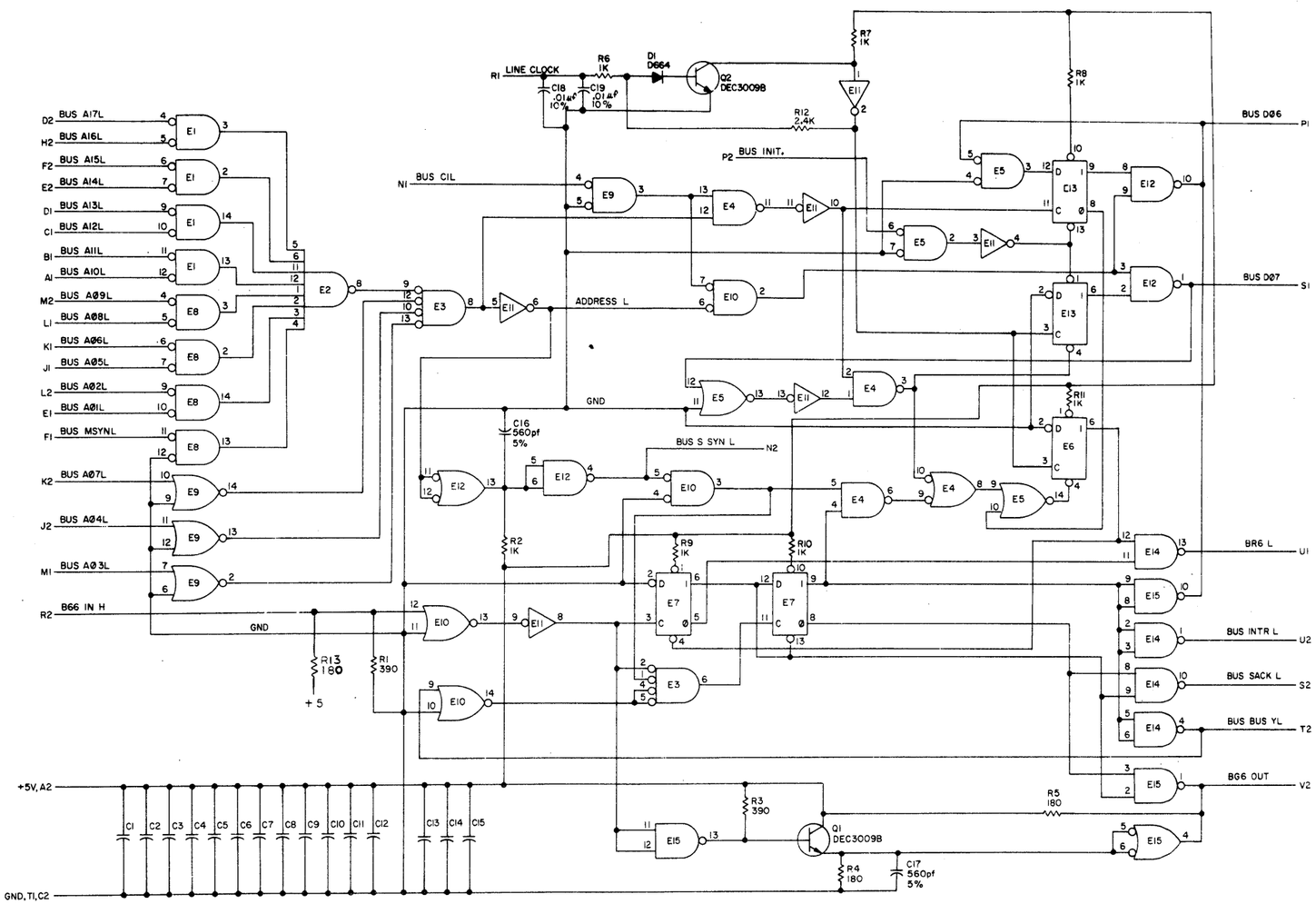

UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W,5%
CAPACITORS ARE .01uf, 100V, 20%
DEC8640=E1, E5, E8, E10, E9
DEC7430=E2
DEC8815=E3
DEC7400=E4
DEC7404=E11
DEC8881=E15, E12, E14
DEC7474=E6, E7, E13

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			
CODE	CHG NO.	REV	
	20001	A	
	20002	B	
	20003	C	
	20004	D	
	20005	E	

DRN BUTLER DATE 4-2-70
CHKD DATE 4-23-70
ENGR DATE 5-9-70
PROD DATE 5/14/70

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA
DEC3009B	2N3009B	8864	111.3606

EQUIPMENT CORPORATION — MAYNARD, MASSACHUSETTS

TITLE LINE TIME CLOCK INTERRUPT M787

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

PRINTED CIRCUIT REV. CDE E

DEC FORM NO. 960 116

M787-0-1

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

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

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

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

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY	M.Buczynski	CHECKED	SECTION
DATE	6-15-72	DATE 7/5/72	
ENG	M.Buczynski	PROD W.L.Stimpson	ISSUED SECT.
DATE	6-15-72	DATE 6/15/72	

LEGEND

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

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

KIT CHECK BY _____ DATE _____

INSTALLATION CHECK BY _____ DATE _____

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

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

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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.	130496	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.	130316	28
3	Q1-Q56	DEC 30098 TRANSISTOR	150300	56
4	P1	H807 BLOCK, CONNECTOR	120923	1

W131 PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	E1	DEC 7400N LC.	190557	1
2	C1	.01 MFD, 100V, 20% DC CAP.	100161	1
3	C2	6.8 MFD, 35V, 20% ST CAP.	100067	1
4	R1,R2,R3,R4,R5	3K, 1/4W, 5% RES.	130432	5
5	R6	330, 1/4W, 5% RES.	130295	1
6	Q1	DEC 30098 TRANSISTOR	150300	1
7	I1-I28	LAMP, HUDSON, BLUE #2309G	120921	28
8	S1-S4	SWITCH, TOGGLE, SPST, 6AT-T2	120116	4

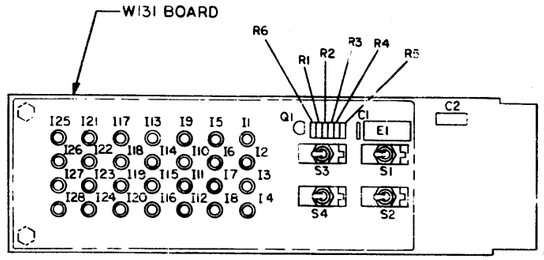
NOTES:
1. THE KM11 IS A TWO MODULE (W130, W131) OPTION TO THE KA11 TO AID MAINTENANCE. THIS PREWIRED OPTION IS INSTALLED BY INSERTING THE W130 MODULE INTO LOCATION B02 AND INSERTING THE W131 MODULE INTO THE W130. NOTE THAT THE SWITCHES AND LIGHTS FACE TOWARD AND EXTEND BELOW THE CONSOLE. THE BOTTOM COVER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

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

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

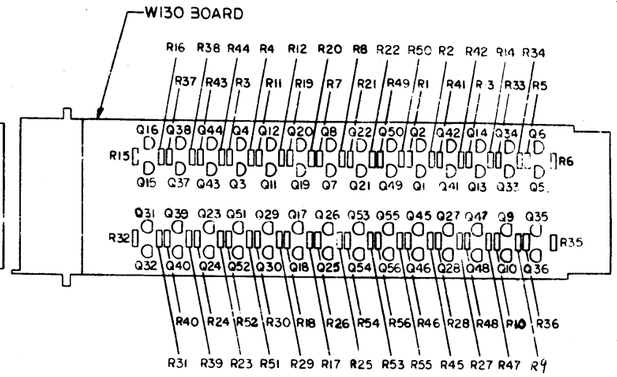
4. "NO TIME OUT" AND "SSYN" PROVIDE A MANUAL BUS RESPONSE TO THE PROCESSOR. IT IS USED WHEN OTHER DEVICES ARE NOT AVAILABLE. "NO TIME OUT" IS ACTIVATED, WHILE THE PROCESSOR IS HALTED, TO ELIMINATE AN ERROR TRAP ON MANUAL "SSYN". AT THE APPROPRIATE TIMES IN A BUS TRANSFER "SSYN" IS ACTIVATED AND DEACTIVATED.

W131 BOARD



COMPONENT PLACEMENT

W130 BOARD



PIN NOMENCLATURE

MODULE	PROCESSOR
A	B

REVISIONS	CHANGE NO.	CHK	REV.

FIRST USED ON OPTION/MODEL	DO NOT SCALE DRAWING	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	PARTS LIST			

MATERIAL	NEXT HIGHER ASSY
	A-ML-KM11-Ø

FINISH	SCALE	SHEET
	1/1	1 OF 3

DRN	DATE
	12-22-69
CHK'D	DATE
	12/31/70
ENG	DATE
	5/1/70
PROJ. ENG	DATE
	5/1/70
	DATE
	5/5/70

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MAINTENANCE BOARD (182) KM-1

SIZE	CODE	NUMBER	REV.
D	BS	KM11-Ø-MB	

DIST.

FILE CODE	NUMBER	REV.
DBS	KM11-Ø-MB	

DEC FORM NO. DRD 100

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CONNECTOR AT REAR OF MODULE TO EXTEND MAINTENANCE BOARD 2, W131 (KM-3).

+5V B02A2 — A2 — +5V
~+8V B02B1 — B1 — +8V
KM-3 M CLK ENABLE L — V2 — B02V2 — KM-2 M CLK ENABLE L
KM-3 M CLK L — V1 — B02U1 — KM-2 M CLK L
KI3-2 TIME OUT (1) H B02B2 — K2 — KM-2 TIME OUT (1)H
BUS SSYN L — N1 — B02A1 — BUS SSYN L

GND — C2,T1 — C2 — GND

KI-3 BSR Ø H B02R2 — R29 15K — Q29 Q30 — R30 470Ø
KI-3 BSR 1 H B02E2 — R21 15K — Q21 Q22 — R22 470Ø
KI-3 BSR 3 H B02H1 — R1 15K — Q1 Q2 — R2 470Ø
KI-3 BSR 7 H B02L2 — R43 15K — Q43 Q44 — R44 470Ø
U1 — KM-2 LAMP BSRØ L
V1 — KM-2 LAMP BSR 1 L
R2 — KM-2 LAMP BSR 3 L
H2 — KM-2 LAMP BSR 7 L

KI-3 BSR 15 H B02N2 — R39 15K — Q39 Q40 — R40 470Ø
KI-3 BSR 14 H B02D2 — R49 15K — Q49 Q50 — R50 470Ø
KI-3 BSR 12 H B02H2 — R19 15K — Q19 Q20 — R20 470Ø
KI-3 BSR 8 H B02J2 — R11 15K — Q11 Q12 — R12 470Ø
D1 — KM-2 LAMP BSR 15 L
E1 — KM-2 LAMP BSR 14 L
F1 — KM-2 LAMP BSR 12 L
H1 — KM-2 LAMP BSR 8 L

KI-3 ISR Ø H B02S1 — R55 15K — Q55 Q56 — R56 470
KI-3 ISR 1 H B02M2 — R37 15K — Q37 Q38 — R38 470Ø
KI-3 ISR 3 H B02F2 — R7 15K — Q7 Q8 — R8 470Ø
KI-3 ISR 7 H B02E1 — R33 15K — Q33 Q34 — R34 470Ø
D1 — KM-2 LAMP ISR Ø L
E1 — KM-2 LAMP ISR 1 L
F1 — KM-2 LAMP ISR 3 L
H1 — KM-2 LAMP ISR 7 L

KI-3 ISR 15 H B02R1 — R45 15K — Q45 Q46 — R46 470Ø
KI-3 ISR 14 H B02K1 — R31 15K — Q31 Q32 — R32 470Ø
KI-3 ISR 12 H B02S2 — R17 15K — Q17 Q18 — R18 470Ø
KI-3 ISR 8 H B02M1 — R9 5K — Q9 Q10 — R10 470Ø
N1 — KM-2 LAMP ISR 15 L
P1 — KM-2 LAMP ISR 14 L
R1 — KM-2 LAMP ISR 12 L
K1 — KM-2 LAMP ISR 8 L

K9-5 N (1)H B02P1 — R27 15K — Q27 Q28 — R28 470Ø
K9-5 Z (1)H B02L1 — R51 15K — Q51 Q52 — R52 470Ø
K9-5 V (1)H B02F1 — R5 15K — Q5 Q6 — R6 470Ø
K9-5 C (1)H B02D1 — R13 15K — Q13 Q14 — R14 470Ø
V1 — KM-2 LAMP N (1)L
Z1 — KM-2 LAMP Z (1)L
V1 — KM-2 LAMP V (1)L
C1 — KM-2 LAMP C (1)L

K9-4 T (1)H B02J1 — R15 15K — Q15 Q16 — R16 470Ø
KI2-3 TRAPS H B02C1 — R41 15K — Q41 Q42 — R42 470Ø
KI3-3 B MSYN H B02T2 — R35 15K — Q35 Q36 — R36 470Ø
KI-3 B SSYN H B02U2 — R53 15K — Q53 Q54 — R54 470Ø
T1 — KM-2 LAMP T (1)L
TRAPS1 — KM-2 LAMP TRAPS L
N2 — KM-2 LAMP B MSYN L
T2 — KM-2 LAMP B SSYN L

KI-2 R/W2 H B02K2 — R3 15K — Q3 Q4 — R4 470Ø
KM-2 TST1 H B02N1 — R47 15K — Q47 Q48 — R48 470Ø
KM-2 TST2 H B02V1 — R25 15K — Q25 Q26 — R26 470Ø
KI-3 ISR 2 H B02F2 — R23 15K — Q23 Q24 — R24 470Ø
D2 — KM-2 LAMP R/W2 L
E2 — KM-2 LAMP TST1 L
F2 — KM-2 LAMP TST2 L
H2 — KM-2 LAMP ISR 2 L

REVISIONS		
REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL: PDP11	QTY	DESCRIPTION	PART NO / ITEM NO
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY; REMOVE BURRS AND BREAK SHARP CORNERS	DRN: F. Phillips	DATE: 12-18-69	digital EQUIPMENT CORPORATION
	CHK'D	DATE	
	ENG	DATE: 5-5-70	
	PROJ ENG	DATE: 5-5-70	TITLE: MAINTENANCE BOARD (1)
MATERIAL	PROD: Steve Gould	DATE: 5/5/70	W130 KM-2
FINISH	NEXT HIGHER ASSY: A-ML-KM11-Ø		SIZE D CODE BS NUMBER KM11-Ø-MB REV
	SCALE: NONE		DIST
	SHEET 2 OF 3		

DEC FORM NO ORD 1024 A

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+8V B1

I1 BSRØ — KM-2 LAMP BSR Ø L U1
I2 BSR1 — KM-2 LAMP BSR 1 L J1
I3 BSR3 — KM-2 LAMP BSR 3 L C1
I4 BSR7 — KM-2 LAMP BSR 7 L F2

I5 BSR15 — KM-2 LAMP BSR 15 L R1
I6 BSR14 — KM-2 LAMP BSR 14 L H1
I7 BSR12 — KM-2 LAMP BSR 12 L D2
I8 BSR8 — KM-2 LAMP BSR 8 L H2

I9 ISRØ — KM-2 LAMP ISR Ø L P1
I10 ISR1 — KM-2 LAMP ISR 1 L F1
I11 ISR3 — KM-2 LAMP ISR 3 L E2
I12 ISR7 — KM-2 LAMP ISR 7 L J2

I13 ISR15 — KM-2 LAMP ISR 15 L N1
I14 ISR14 — KM-2 LAMP ISR 14 L T2
I15 ISR12 — KM-2 LAMP ISR 12 L U2
I16 ISR8 — KM-2 LAMP ISR 8 L K2

I17 N — KM-2 LAMP N (I)L M1
I18 Z — KM-2 LAMP Z (I)L S1
I19 V — KM-2 LAMP V (I)L L2
I20 C — KM-2 LAMP C (I)L M2

I21 T — KM-2 LAMP T (I)L E1
I22 TRAPS — KM-2 LAMP TRAPS L K1
I23 MSYN — KM-2 LAMP B MSYN L N2
I24 SSYN — KM-2 LAMP B SSYN L D2

I25 R/W2 — KM-2 LAMP R/W2 L D1
I26 TST1 — KM-2 LAMP TST1 L L1
I27 TST2 — KM-2 LAMP TST2 L R2
I28 ISR2 — KM-2 LAMP ISR2 L S2

+5V A2

C2 6.8MF 35V 10% (+) — C1 ØIMFD — GND C2T1

BUS SSYN: R1 3K, S3 OFF
M CLK TOGGLE: R2 3K, S4 OFF
R3 3K, R4 3K

E1 7400 (1, 2, 3)
E1 7400 (4, 5, 6) → V1 KM-3 M CLK L

M CLK ENABLE: R7 3K, S2 OFF → V2 KM-3 M CLK ENABLE L

E1 7400 (13, 12, 11)
E1 7400 (10, 9, 8)

R8 330 → Q1 DEC 3ØØ9B → A1 BUS SSYN L

NO TIME OUT: S1 OFF → B2 KM-2 TIME OUT (I) H

REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP:1		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. A. Giudice	DATE	2-7-69
CHK'D.	DATE	4/29/70
ENG.	DATE	3-6-70
PROJ. ENG.	DATE	3-6-70
PROD. MacDonald	DATE	3/5/70

NEXT HIGHER ASSEMBLY: A-ML-KMII-Ø

SCALE NONE

SHEET 3 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MAINTENANCE BOARD(2)

W131 KM-3

SIZE	CODE	NUMBER	REV
D	8S	KMII-Ø-MB	

DIST.

DEC FORM 10 DRD 102A

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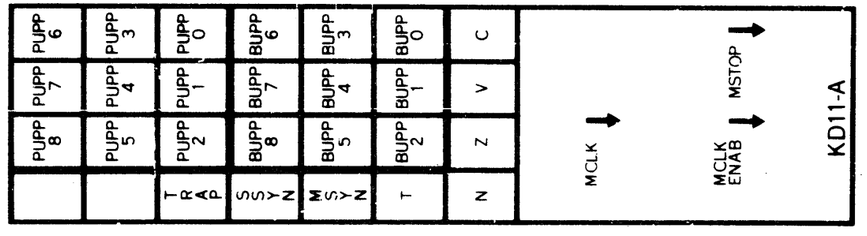

FIRST USED ON OPT / MOD
KD11A

REVISIONS	REV.	CHANGE NO.	CHK

SPEC# 9200100-94 (BLACK)

DRN. D. Mattson	DATE 6-9-72
CHK'D. BW	DATE 7/7/72
ENG.	DATE 7/7/72
PROJ. ENG.	DATE 7/7/72
PROD.	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.

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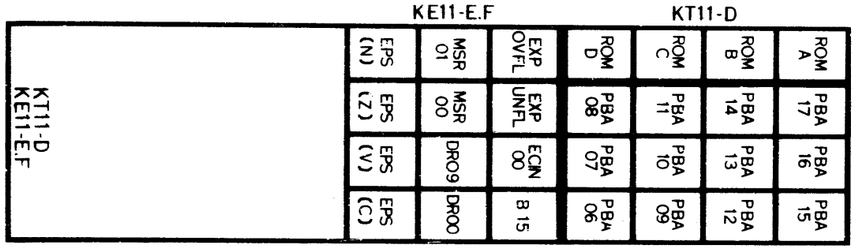


First used on opt/mod
KT11-D
KE11-E,F

REVISIONS	REV.	CHANGE NO.	CHK

SPEC # 9200101-94 (Black)

DRN. J Downs	DATE 7-12-72
CHK'D. BW	DATE 7-12-72
ENG. J Houghton	DATE 7/25/72
PROJ. ENG. [illegible]	DATE 7/25/72
PROD. [illegible]	DATE 7/31/72
NEXT HIGHER ASSY. C-MD-5509081-0-0	
SCALE	
SHEET OF	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

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

SIZE	CODE	NUMBER	REV.
A	SS	5509081-013	

DIST. G

EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

	SEQUENCE
DRAWING DIRECTORY	B-DD-MF11-L
MODULE UTILIZATION	D-MU-MF11-L-MU
16 BIT 18 MIL MEMORY	B-DD-MM11-L
CIRCUIT SCHEMATIC	C-CS-5410331-Ø-0
PARTS LIST	A-PL-MF11-L-Ø
MF11-L/LP OPTION HARNESS	D-IA-7009560-0-0
UNIT ASSEMBLY	D-UA-MF11-L-0

THIS IS PRINT SET

UNIT VARIATIONS

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

REVISIONS	REV	CHG. NO.	DATE
	A	11/40-2	11/1/72
	B	MF11L-1	11/5/72
	C	MF11L-2	3-14-73
	D	MF11L-3	3/73
	E	MF11L-4	4/73
	F	MF11L-5	5/73
	H	MF11L-6	11-73
	J	MF11L-7	
	K	MF11L-8	9-74
	L	MF11L-9	11-74
	M	MF11L-10	5-75

USED ON OPTION/MODEL
PDP-11/40

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

SHEET 1 OF 3

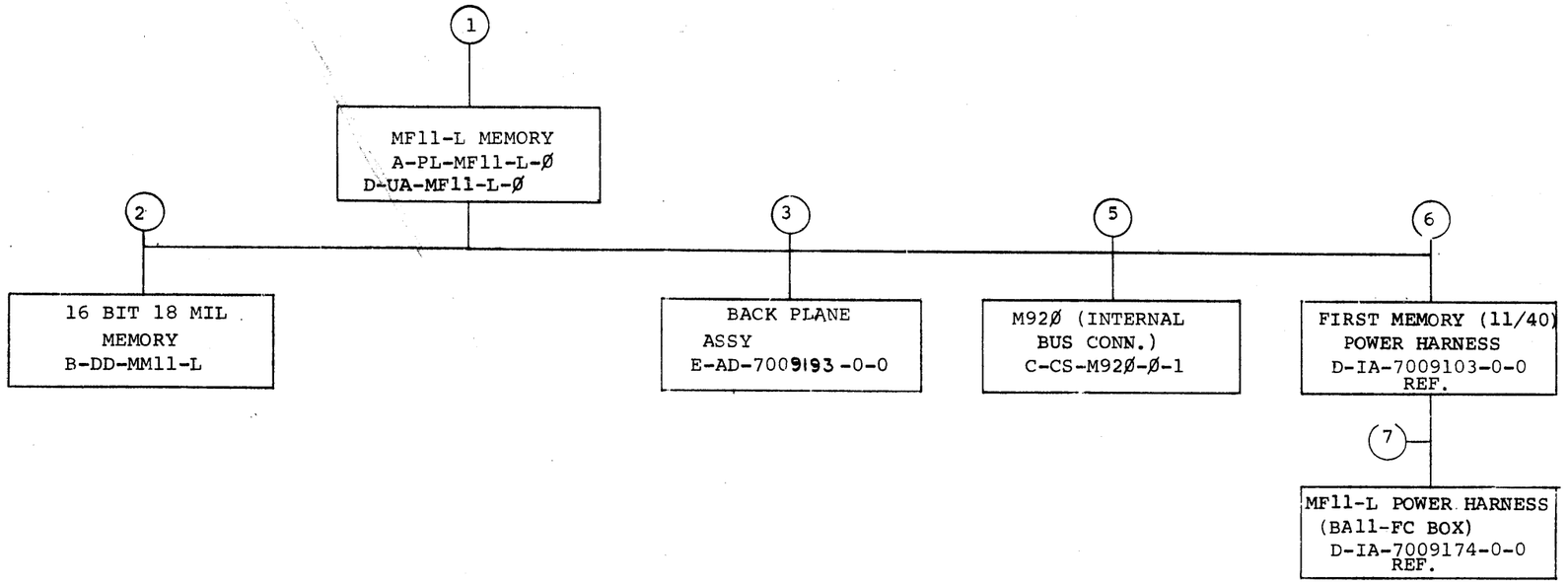
TITLE: MF11-L MEMORY (8K TO 24K, 16 BIT)

SIZE	CODE	NUMBER	REV
B	DD	MF11-L	M

DIST

DRB 106

DEC 16-(325)-1062-1-NA71



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

DRB 107
DEC 16—(325)—1062—3—N871

ELECTRICAL

CUSTOMER PRINT SET MF11-L	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	A-PL-MF11-L-0	E	1	MF11-L MEMORY (PL)	
x			D-UA-MF11-L-0	E	1	MF11-L MEMORY	
x			D-MU-MF11-L-MU	C	1	MODULE UTILIZATION	
x			D-IA-7009560-0-0	#	1	MF11-L/LP OPTION HARNESS	
C		2	B-DD-MM11-L	#	3	16 BIT 18 MIL MEMORY	
X		3	E-AD-7009193-0-0		1	BACK PLANE ASSY	
C			K-WL-7009193-0-1		1	ETCH/WIRE LIST	
			A-WT-7009193-0		1	AWT REVISION STATUS	
x		4	D-CS-5410331-0-1	#	2	BACK PANEL ASSY	
			K-CO-5410331-0-4			X-Y COORDINATE HOLE LOC.	
			D-AH-5410331-0-5			ASSY/DRILLING HOLE LAYOUT	
			B-MH-5410331-0-6			MODULE ECO HISTORY	
			K-WL-7009193-0-1	#	1	ETCH/WIRE LIST	
		5	C-CS-M920-0-1		1	CIRCUIT SCHEMATIC (INTERNAL BUS CONN)	
		6	D-IA-7009103-0-0	#	1	FIRST MEMORY (11/40) POWER HARNESS (OLD-REF.)	
		7	D-IA-7009174-0-0	#	1	MF11-L POWER HARNESS (BA11-FC BOX) (OLD-REF)	
		8	D-IA-7009565-0-0	#	1	FIRST MEMORY - 11/40 HARNESS (REF.)	

MECHANICAL

CUSTOMER PRINT SET MF11-L	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-MF11-L-Ø	E	1	MF11 L MEMORY (PL)	
			D-UA-MF11 L Ø	E	1	MF11 L MEMORY	
			C-PS-1210698-0-0		1	GUIDE CARD CENTER	
			D-IA-7009560-0-0	#	1	MF11 L/LP OPTION HARNESS	
		2	B-DD-MM11-L	#	3	16 BIT 18 MEL MEMORY	
		3	E-AD-7009193 0-0		1	BACK PLANE ASSY	
			E PS 1210258 0-0		1	288 PIN CONN (H863)	
			D-SC 1210834 0-0		1	360 PIN CONN	
			E-PS 1211459 0-0		1	LOGIC FRAME	
		5	C-CS-M92Ø-Ø-1		1	CIRCUIT SCHEMATIC	
		6	D-IA-7009103-0-0		1	FIRST MEMORY (11/40) POWER HARNESS (OLD REF)	
		7	D-IA-7009174-0-0		1	MF11-L POWER HARNESS (BA11 FC BOX) (OLD REF)	
		8	D-IA-7009565-0-0	#	1	First Memory 11/40 HARNESS (REF)	

CUSTOMER PRINT SET CODES

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

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

DRB 108
DEC 16-(325)-1062-2B-R972

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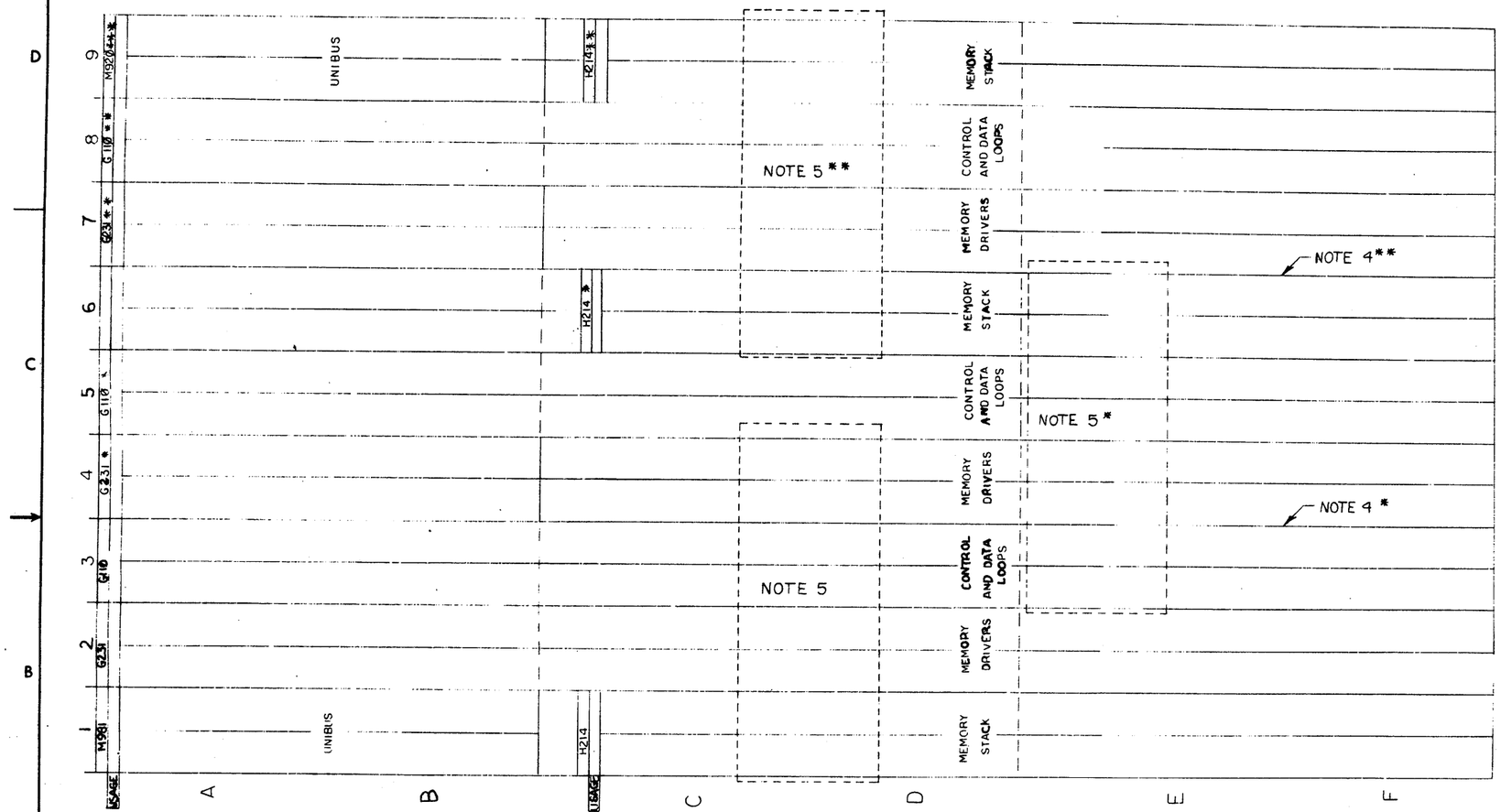


VIEW FROM WIRING SIDE

NOTES:

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

REVISIONS			
CHK	CHANGE NO.	REV	
	MFII-00001	A	3-22-72 J.F. O'LOUGHLIN
	MFII-00003	B	3-22-72 J.F. O'LOUGHLIN
	MFII-00005	C	6-2-72 O LOUGHLIN

DEC FORM NO DRD 100

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: MFII-L

DO NOT SCALE DRAWING

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

MATERIAL —

FINISH —

DRN.	J Flanders	DATE 8/16/72
CHK'D.	J Loughlin	DATE 8/21/72
ENGR.	[illegible]	DATE 8/29/72
PROJ. ENGR.	[illegible]	DATE 8/29/72
MGR.	[illegible]	DATE 8/29/72

NEXT HIGHER ASSY: A-PL-MFII-Ø-Ø

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION

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

DIST.

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

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

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

SEQUENCE

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

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

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

REVISIONS		
DATE	CHG. NO.	REV
9/72	MM11L-00001	A
11-72	MM11L-00002	B
1-73	MISC-00107	C
2-73	MISC-00111	D
2-73	MISC-00112	E
2-73	MISC-00113	F
1-74	MM11L-3	H
6-75	MM11L-5	J

USED ON OPTION/MODEL	
MM11_K	
MM11_L	

DRN.	K. Balagha	DATE 1-25-72
CHK'D.	T. Blake	DATE 1-25-72
PROJ ENG.	T. Dobyns	DATE 1-25-72
PROD.	K. Nelson	DATE 1-26-72
FIELD SERV.	W. Hendry	DATE 1-27-

SHEET 1 OF 3

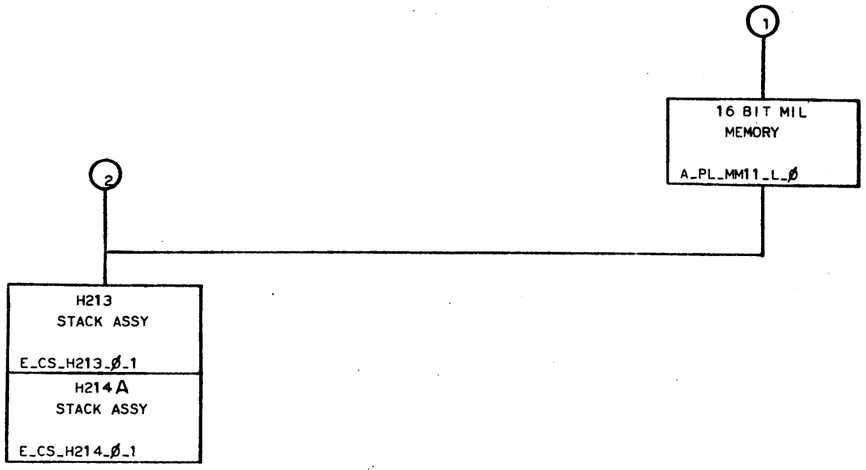
TITLE: 16 BIT 18 MIL MEMORY

SIZE	CODE	NUMBER	REV
B	DD	MM11_L	J

DIST

DRB 106

DEC 16-(325) 1062 1-N871



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

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

ELECTRICAL

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

MECHANICAL

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

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

DRB 108

DEC 16 (325) 1062--2--N871

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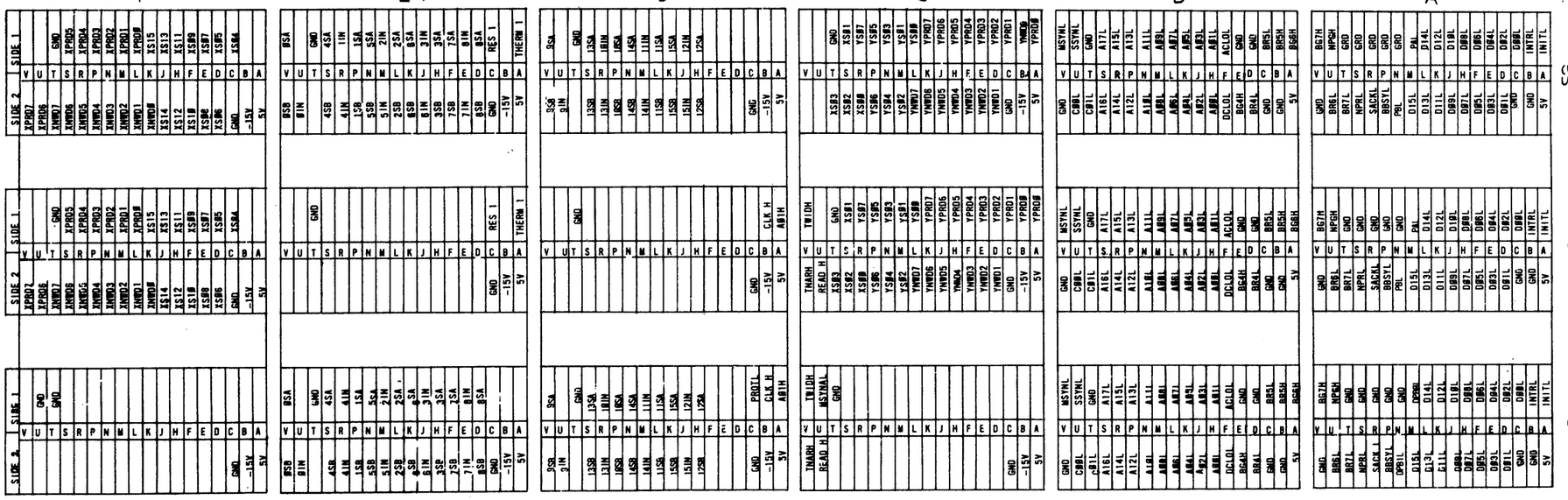
PIN SIDE VIEW OF BACKPLANE

THESE 2 SLOTS ARE UNIBUS WIRED ON ALL 3 CONNECTORS



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

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

		DATE
DRN	Ed Adams	1/29/72
CHK'D	P Durant	-4-72
ENG.	P Durant	-24-72
PROJ. ENG.	P Durant	-25-72
PROD.	R.K. Peterson	2-1-72

NEXT HIGHER ASSY.: B-DD-MM11-L
SCALE —
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION

SIZE	CODE	NUMBER	REV.
D	MU	MM11-L-1	A

DIST.

REVISIONS			
CHK	CHANGE NO		REV
PD	MM11L-00005		A
	P. Durant 6-Oct-75		
	P DURANT		
	P Durant 10-15-75		

DRAWING 40-533 1M69
DEC FORM NO DRD 107-B

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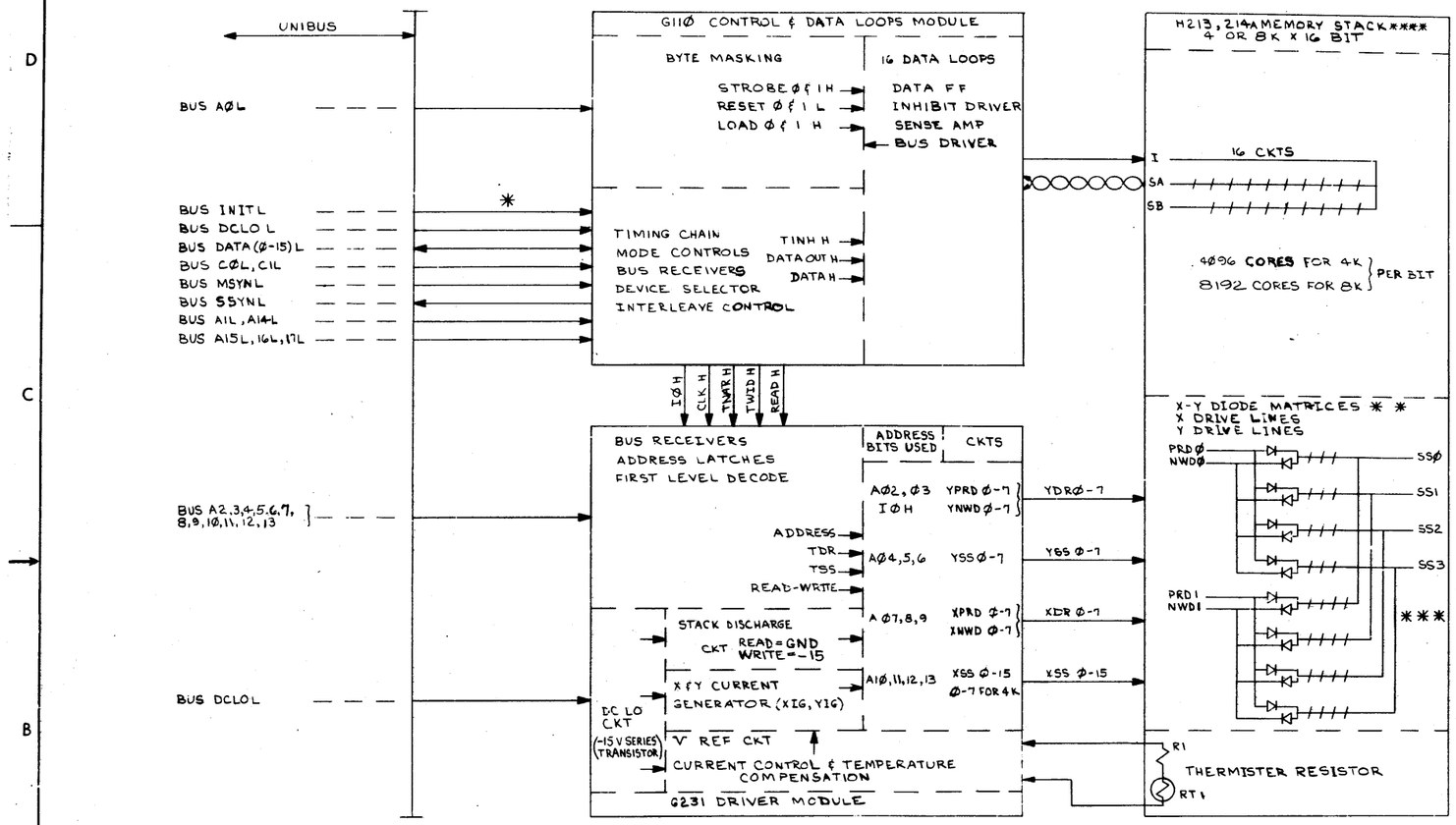
NOTES:
1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.
2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.
3. ACTUAL MATRIX HAS { Y AXIS 8 PRD, 8 NRD, 8SS; X AXIS 4K 8 PRD, 8 NRD, 8SS; X AXIS 8K 8 PRD, 8 NRD, 16SS
4. H214A IS A DESIGNATOR FOR EITHER AN H214 OR H215 MEMORY STACK, SEE E-CS-H214-0-1



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

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

DRN.	DATE	11/69
CHK'D.	DATE	1-25-72
ENG.	DATE	1-25-71
PROJ. ENG.	DATE	1-25-71
PROD. K.K. Peterson	DATE	1-26-72

NEXT HIGHER ASSY. B-DD-MM11-L

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BLOCK DIAGRAM (MM11-L)

SIZE D | CODE BD | NUMBER MM11-L-2 | REV. A

SCALE
SHEET 1 OF 1
DIST.

REVISIONS			
CHK	CHANGE NO		REV
[illegible]	MM11L-00005		A
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]	

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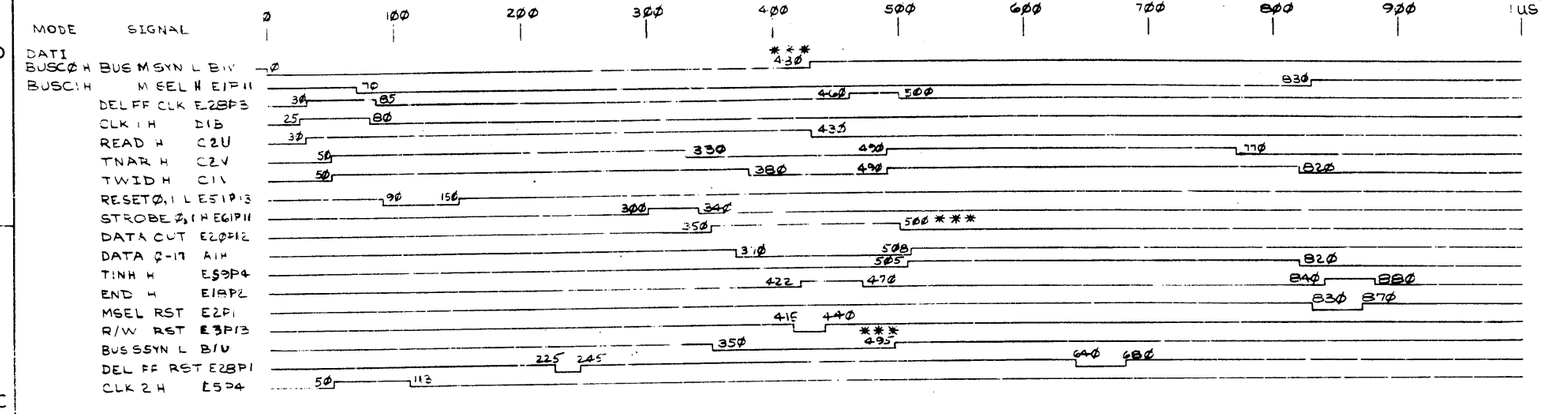
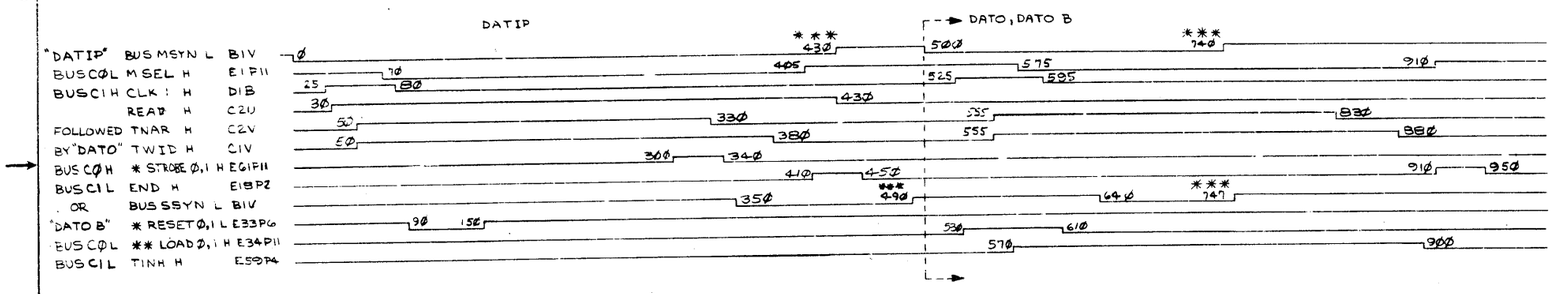
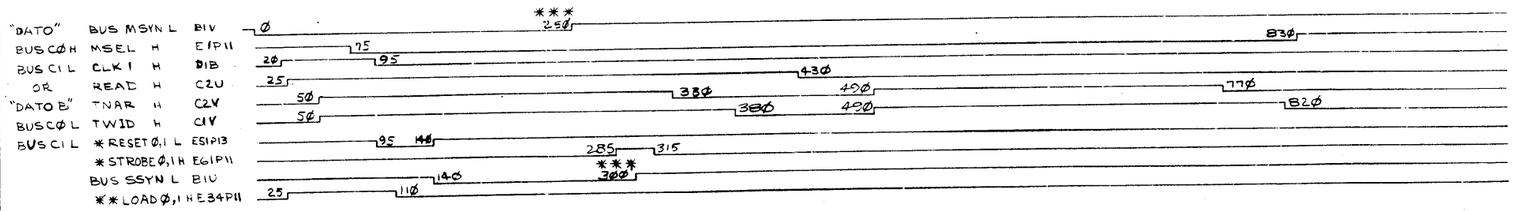
NOTES:
1. ANY SIGNALS NOT SHOWN ON DATIP, DATO OR DATO B ARE AS SHOWN ON DATI TIMING.
* 2. RESET L AND STROBE - DO NOT OCCUR IN DATO MODE. THEY ONLY OCCUR FOR THE BYTE NOT BEING ADDRESSED IN DATO B MODE.
** 3. LOAD H OCCURS FOR BOTH BITS IN DATO MODE AND ONLY FOR THE ADDRESSED BYTE IN THE DATO B MODE.
*** 4. ACTUAL TIME DEPENDS ON BUS AND PROCESSOR DELAYS.
5. ALL SIGNALS ON G109 OR G 10 MODULE







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

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

DRN		DATE 12/3/71
CHK'D		DATE 1-27-72
ENG		DATE 1-25-72
PROJ ENG		DATE 1-25-72
PROD		DATE 1-27-72
NEXT HIGHER ASSY	B-DD-MMII-L	
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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

SIZE	CODE	NUMBER	REV
D	TD	MMII-L-3	

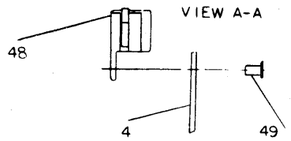
DIST

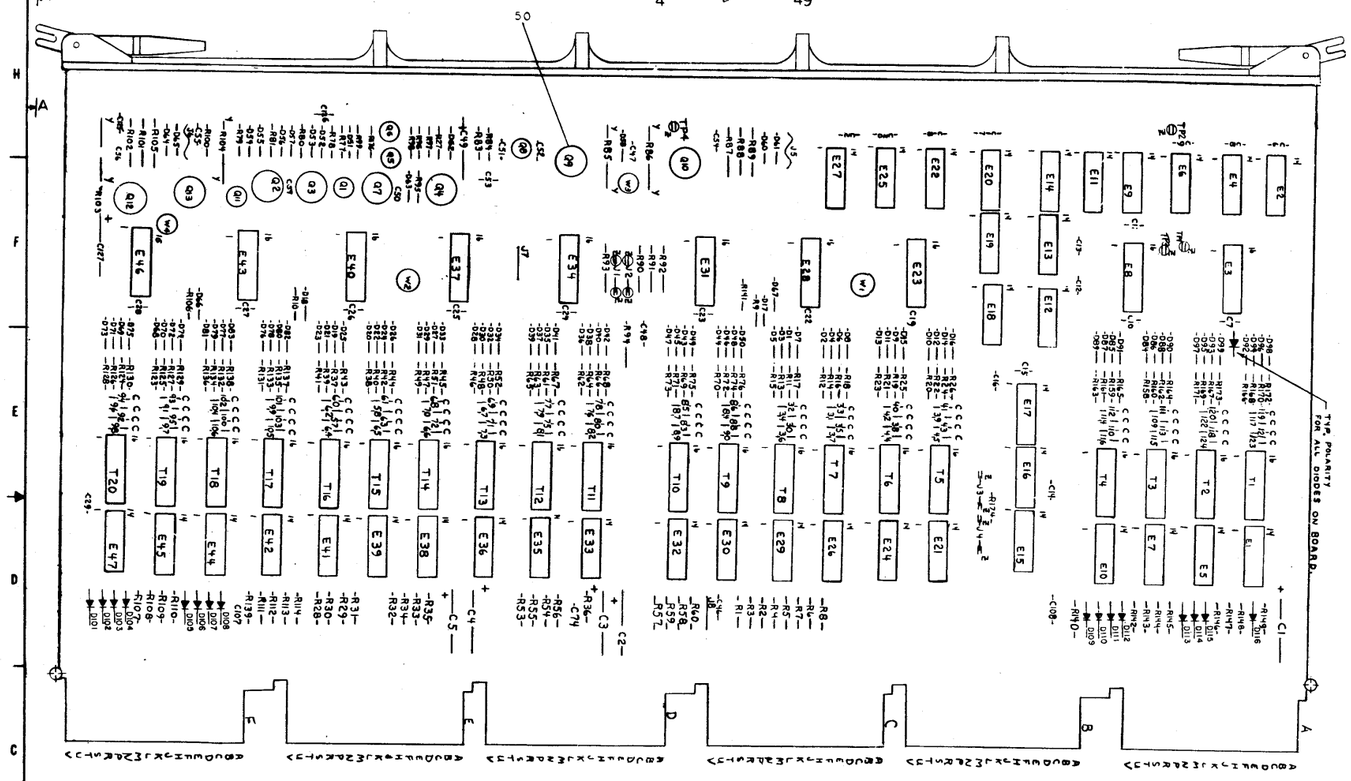
REVISIONS: REV | CHANGE NO | CHK

BRUNING 40 322 1540

NOTE:
1. IC 4008 TO BE MARKED 4008X OR 4008°—WHITE DOT

VIEW A-A





COMPONENT SUBSTITUTION LIST

ITEM NO.	ORIGINAL PART DESCRIPTION	PART NO.	SUBSTITUTE PART DESCRIPTION	PART NO.
SEE NOTE 2 38	IC 4011 QUAD TRANSISTOR	1511102	DL4000 QUAD TRANSISTOR	1510015 P
42	IC 1074H00	1910462	IC 74H00	1909054 P
44	IC 1074H04	1910465	IC 74H04	1909931 P

16	36-A	36-B
16	35-A	35-B
6	34-A	34-B
6	33-A	33-B
6	32-A	32-B
6	31-A	31-B

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

IC PIN LOCATIONS

ITEM NO	ABBR	FROM PT	TO PT

JUMPER LIST

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.
	ETCH BOARD REV. E		
		2N4258	GAME
		G5340	NONE
		3689-B	2N3646
		2249	2N2219
		IN 823	NONE
		DG72	IN 3633
1008	NONE	DG64	IN 3686
		2N3762	GAME
		DEC NO.	EUR NO

SEMICONDUCTOR CONVERSION CHART

DRAWN	M.F.McGrath	10-72
CHECKED	P.Durant	10-72
ENG APPD	P.Durant	10-72
MFG APPD	K.Ashe	10-72
NEXT HIGHER ASSY	B-DD-MMII-L	
SIZE	D	
SHEET	1 OF 5	

EQUIPMENT CORPORATION.

TITLE: PDP-11 MEMORY DRIVER

DIGITAL G231-0-1 REV R

2N4258	GAME		
G5340	NONE		
3689-B	2N3646		
2249	2N2219		
IN 823	NONE		
DG72	IN 3633		
DG64	IN 3686		
DEC NO.	EUR NO		

SEMICONDUCTOR CONVERSION CHART

DRAWN	M.F.McGrath	10-72	
CHECKED	P.Durant	10-72	
ENG APPD	P.Durant	10-72	
MFG APPD	K.Ashe	10-72	
NEXT HIGHER ASSY	B-DD-MMII-L		
SIZE	D		
SHEET	1 OF 5		

EQUIPMENT CORPORATION.

TITLE: PDP-11 MEMORY DRIVER

DIGITAL G231-0-1 REV R

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QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
4		SCREW, NYLON, #6 - 32	9008212	55
1	C127	CAP., 39 UF, 10V	1000076	56
1	C56	CAP , 680 PF, 100V, 5%	1000026	57
1	C52	CAP , 470 PF, 100V, 5%	1000024	58
2	J7, J8	JUMPER MACH. INSERTED	9009185	59
1	R176	RES., 4.7K, ¼W, 5%	1300447	60
2	J5, J6	#22 AWG., STRANDED TEFLON INSULATED	1700035-00	61

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-G231-B4	1
REF		ASSY/DRILLING HOLE LAYOUT	E-AH-G231-B5	2
REF		MODULE ECO HISTORY	B-MH-G231-B6	3
1		ETCHED CIRCUIT BOARD	5009788	4
2	C51, C55	CAP., 39PF, 100W, 5% DM	1009010	5
A/R		WIRE JUMPER AWG. #22 SOLID	9107560-01	6
80	C36-C45, C57, C58, C68-C73 C75-C106, C109-C124	CAP 1000PF, 100 5% DM	1000042	7
36	C8-C29, C46, C47, C48, C50, C53, C54, C74, C107 C108, C125, C126, C59	CAP., 22UF, 50V, -20%, 80%	1010274	8
6	C1-C5, C49	CAP , 6 8 MFD. 35V. 20%	1000067	9
88	D1-D16, D19-D54, D56, D57, D62, D63, D68-D99	DIODE, D664	1100114	10
25	D17, D18, D55, D60, D61, D64-D67, D101-D116	DIODE, D672	1105275	11
1	D58	DIODE, 1N823, ZENOR	1105508	12
				13
41	R1-R8, R28-R35, R53-R80, R96, R107-R114, R142-R149	RES , 150, ¼W, 5%	1300250	14
3	R78, R89, R98	RES., 330, ¼W, 5%	1300295	15
1	Q6	TRANS, 6534C	1503409-2	16
1	R93	RES , 470 ¼W, 5%	1300315	17
3	R84, R99, R100	RES , 1 5K, ¼W, 5%	1300391	18
1	R79	RES , 470 ¼W, 10%	1300317	19
4	R87, R88, R101, R102	RES., 1.5K, ¼W, 5%	1300394	20
1	R95	RES , 2.2K, ¼W, 5%	1300417	21
1	R174	RES , 10K, ¼W, 5%	1300479	22
1	R97	RES., 15K, ¼W, 5%	1300496	23
3	R36, R139, R148	RES , 5 1, ¼W, 5%	1309422	24
1	R83	RES , 750, ¼W, 5%	1301401	25
4	R9, R10, R106, R141	RES , 680 ¼W, 5%	1301424	26
2	R89, R105	RES , 2K, ¼W 5%	1302387	27
2	R90, R94	RES , 147, 1/8W, 1%	1302874	28
1	R91	RES , 909 1/8W, 1%	1302685	29
1	R92	RES., 1.78K, 1/8W, 1%	1302612	30
4	R85, R86, R 104 R103	RES., 16.9 6W, 1%	1310032	31
1	Q4	TRANSISTOR, 2219	1501881	32
3	Q2, Q3, Q7	TRANSISTOR, 1098	1502155	33
1	Q5	TRANSISTOR, 3009 B	1503100	34
1	U1	TRANSISTOR, 6534 D	1503409	35
2	U8, Q11	TRANSISTOR, 2N4258	1505321	36
4	Q9, Q10, Q12, Q13	TRANSISTOR, 2N3762	1509649	37
20	E1, E5, E7, E10, E21, E24, E26, E29, E30, E32, E33, E35, E36, E38, E39, E41, E42, E44, E45, E47	IC, 4011 QUAD TRANSISTOR	1511102 *	38
4	E9, E15, E16, E17	IC, DEC, 8640	1911469	39
20	T1-T20	TRANSFORMER	1609996	40
2	E22, E25	IC, 74H10	1909057	41
3	E2, E4, E27	IC, 1074H00	1918462 *	42
10	E3, E8, E23, E28, E31, E34, E37, E40, E43, E46	IC, 8251-1	1909854	43
1	L6	IC, 1074H04	1910463 *	44
7	E11-E14, E18, E19, E20	IC, 74H74	1909667	45
4		HEAT SINK	1210001	46
12		SPLIT LUGS	9006735	47
1		HANDLE	1210711-02	48
12		EYELET, #GS4-7, E B. STIMPSON	9006732	49
4		TRANSIPAD	9007200	50
				51
				52
83	R11-R26, R37-R52, R61-R76, R123-R138, R158-R173, R77, R81, R27	RES 100 ¼W, 5%	1300229	53
4	W1-W4	STANDOFF THREADED, INSULATED ¼ X 3 8 LG.	9008213	54

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PDP-11 MEMORY DRIVER	D	CS	G231-Ø-1	R
SCALE —	SHEET 2 OF 5	DIST.		

DEC FORM NO. DRD 137

DCS G231-Ø-1 R

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BUS A10 L BN2 — BUS A11 L BN1 — BUS A09 L BM — BUS A08 L BM2 — BUS A07 L BL1 — BUS A03 L BJ1 — BUS A02 L BJ2

CDL2 A01 H DA1

CDL2 CLK 1 H DB1

MD2 A10 H — MD2 A11 H — MD2 A09 H — MD2 A08 H — MD2 A07 H — MD2 A03 H — MD2 A02 H — MD2 A01 H

MD2 A09 L — MD2 A03 L

BUS A13 L BP1 — BUS A12 L BP2 — BUS A06 L BL2 — BUS A05 L BK1 — BUS A04 L BK2

MD2 A05 H — MD2 A04 H

+5V — 10K R174 — J4

SPARE — SPARE

WRITE H — CDL2 READ H CU2 — CDL2 TNAR H CU2 — TNAR H — TWIDH — TSSH — 10174H00 (4 CKTS)

TP3

MD2YS1L — MD2YS0L — MD2XS3L — MD2XS2L — MD2XS1L — MD2XS0L

	J3	J4
4K	IN	OUT
8K	OUT	IN

*** ALL INPUTS ARE FROM UNIBUS (BUS xxxL) OR G109 OR G110 (CDL2XXXL)

*** CDL2 TWID H CV1 — CDL2 READ H CU2 — CDL2 TNAR H CV2 — WRITE H — 10174H00 (3 CKTS.) — T.P.2 — MD2 TDR H

+5V — DS1 — Q1 6534 — DS2 — DS3 — DS4 — DS5 — Q2 — STACK DISCHARGE MD2SD — DS6 — DS7 — Q3 — RB1 — C59 .22UF — TWID H

EC1 — EA1 — V REF — 6.2V DS8 — C48 .22UF — R94 147Ω — C49 6.8 — C47 .22UF — R91 909Ω — J31 1.78K — R92 — J2 — R93 470Ω — Q4 2219 — R95 2.2K — C58 .22UF — -15V — X-Y REFFERENCE SUPPLY

BF2L — R96 150Ω — Q5 3004B — R97 15K — R98 33Ω — Q6 6534C — R176 4.7K — Q7 1008

CDL2 TWID H CV1 — T.P. — 10174H04 — 750Ω R83 — 1.5K R84 — C51 39 PF — 4258 — +5V — C52 470 PF — R85 16.9Ω — R86 16.9Ω — Q9 — Q10 — 3762 — T.P.4 — MD2IY Y AXIS TO WRITE SWITCHES AND READ DRIVERS — J5 — R87 1.5K — R88 1.5K — DG0 — R89 1K — D61 — -15V

DG2 — .22 UF C53 — .22 UF C54 — DG3 — C56 680PF — 1.5K R100 — Q11 4258 — C55 39PF — R101 1.5K — R102 1.5K

CDL2 READ H CV2 — T.P.1 — MD2 READ L — 10H174H04

R103 16.9Ω — R104 16.9Ω — Q12 — Q13 3762 — MD2IX X AXIS TO WRITE SWITCHES AND READ DRIVERS — J6 — DG4 — R105 1K — DG5 — -15V — J7

* THIS CIRCUIT IS ON STACK BOARD

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

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

DRN F. Carberry DATE 9-24-71 — CHK'D DATE 1-21-72 — ENG. P.D Lagnaut DATE 1-25-72 — PROJ. ENG. P.D Lagnaut DATE 1-25-72 — PROD. R.E Peterson DATE 1-26-72

NEXT HIGHER ASSY. — SCALE — SHEET 3 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PDP-11 MEMORY DRIVER

SIZE D — CODE CS — NUMBER G231-0-1 — REV. R — DIST.

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 109-B

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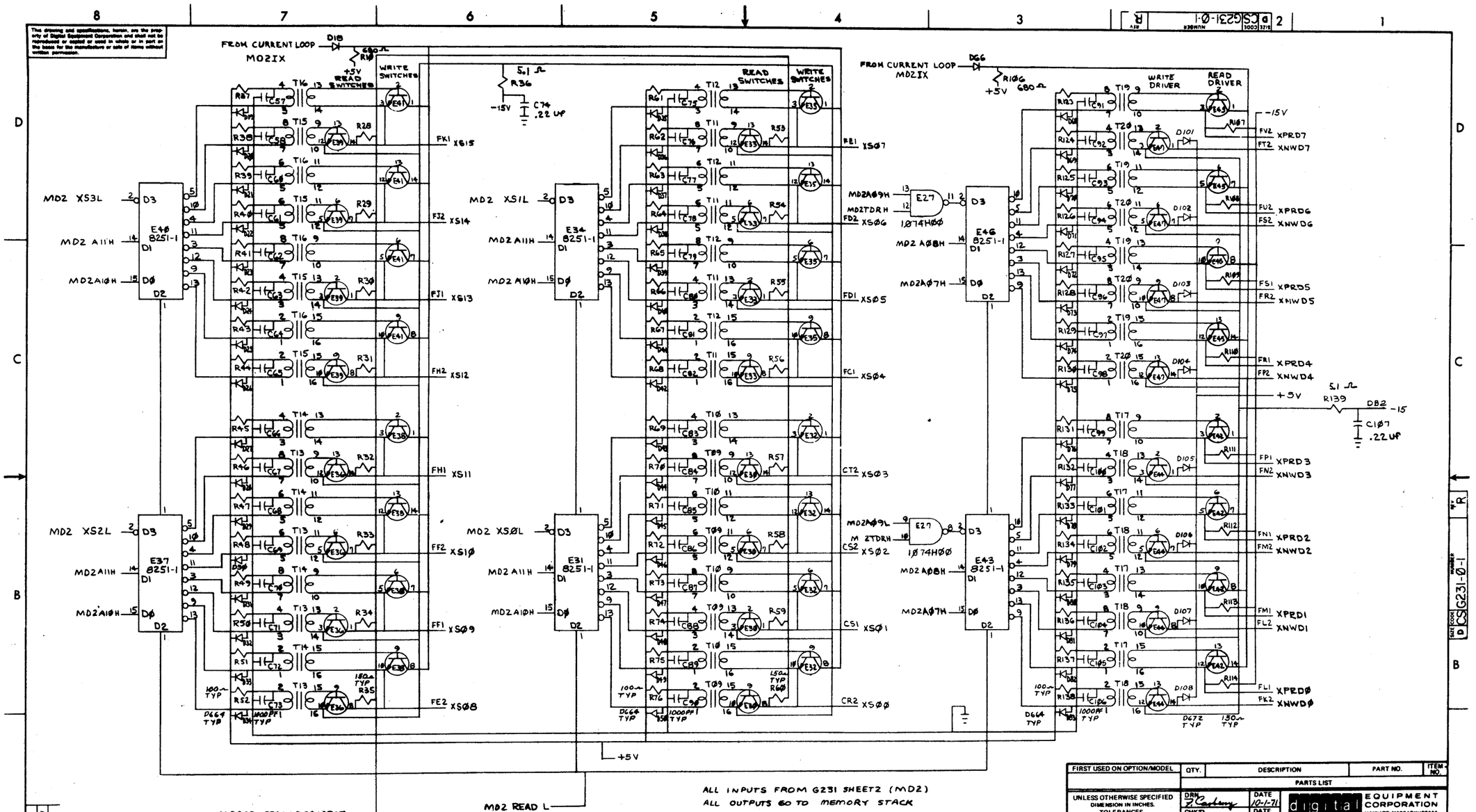

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

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

DRN.	DATE	10-1-71
CHK'D.	DATE	1-21-72
ENG.	DATE	1-25-72
PROJ. ENG.	DATE	1-25-72
PROD.	DATE	1-26-72
NEXT HIGHER ASSY.		
SCALE		
SHEET	4 OF 5	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PDP-11 MEMORY DRIVER

SIZE D | CODE DCS | NUMBER G231-0-1 | REV R | DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 103-B

LAST CHANGE R | NUMBER DCSG231-0-1

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FROM CURRENT LOOP MD2 IY — D17 — R9 680Ω — +5V

FROM CURENT LOOP MD2 IY — D67 — R141 680Ω — +5V

READ SWITCHES — WRITE SWITCHES — WRITE DRIVER — READ DRIVER

MD2 YS1L
MD2 A05H
MD2 A04H
E28 8251-1
D3 D1 D0 D2

MD2 YS0L
MD2 A05H
MD2 A04H
E23 8251-1
D3 D1 D0 D2

MD2 TDRH
MD2 A03H
1074H00
E27
MD2 A02H
MD2 A01H
E8 8251-1

MD2 TDRH
MD2 A03L
1074H00
E27
MD2 A02H
MD2 A01H
E3 8251-1

R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16
C30 C31 C32 C33 C34 C35 C36 C37 C38 C39 C40 C41 C42 C43 C44 C45
100Ω TYP — 1000PF TYP — D66 TYP

R1 R2 R3 R4 R5 R6 R7 R8 — 150Ω TYP

CR1 YS07
CP2 YS06
CP1 YS05
CN2 YS04
CN1 YS03
CM2 YS02
CM1 YS01
CL1 YS00

J8 — −15V — C46 .22 uF

R158 R159 R160 R161 R162 R163 R164 R165 R166 R167 R168 R169 R170 R171 R172 R173
D84 D85 D86 D87 D88 D89 D90 D91 D92 D93 D94 D95 D96 D97 D98 D99
C109 C110 C111 C112 C113 C114 C115 C116 C117 C118 C119 C120 C121 C122 C123 C124
100Ω TYP — 1000PF TYP — D66 TYP

D109 D110 D111 D112 D113 D114 D115 D116 — D672 TYP

R142 R143 R144 R145 R146 R147 R148 R149 — 150Ω TYP

−15V
CK1 YPRD7
CL2 YNWD7
CJ1 YPRD6
CK2 YNWD6
CH1 YPRD5
CJ2 YNWD5
CF1 YPRD4
CH2 YNWD4
+5V
CE1 YPRD3
CF2 YNWD3
CD1 YPRD2
CE2 YNWD2
CC1 YPRD1
CD2 YNWD1
CA1 YPRD0
CB1 YNWD0

5.1Ω R140 — −15V — C108 .22 uF

MD2 READ L — +5V

MD2 SD — STACK DISCHARGE

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

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

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

DRN. R Casberry	DATE 10/5/71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD.	DATE 1-21-72	
ENG. P.D.Durant	DATE 1-25-72	TITLE PDP-11 MEMORY DRIVER
PROJ. ENG. P.D.Durant	DATE 1-25-72	
PROD. R.K.Peterson	DATE 1-26-72	
NEXT HIGHER ASSY.		SIZE D CODE CS NUMBER G231-0-1 REV. R
SCALE —"		
SHEET 5 OF 5		DIST.

REVISIONS — REV. — CHANGE NO. — CHK

DEC FORM NO DRD 105-B

COMPONENT SUBSTITUTION LIST				
ORIGINAL PART DESCRIPTION	PART NO	SUBSTITUTE PART DESCRIPTION	PART NO	NS
CAP .001 C/CER	1008400 00	CAP .01 MFD 100V DISC	1008400 01	18
IC DEC 74H04	1931764	IC DEC 74L04	1931768	19

NOTES:
1. R115 AND R125 MAY BE CHANGED AT FINAL TEST. RESISTANCE RANGE WILL BE FROM 5.11K TO 14.7K.
2. TO TWISTED WIRE PAIR WILL RUN UNDER THE THREE BLK-WHT JUMPER WIRES. THE RUN SHOULD BE LAYED BETWEEN THE LINE OF 06725 088 THROUGH 093 AND THE LINE OF 4.99K RESISTORS, R58 R60 AND R61.
3. USE SLEEVING 9107274-00 OVER PIN 1 OF DL1
4. DEC 7438 IC (1911218-01) MAY BE SUBSTITUTED FOR 7438 WARNING: DO NOT USE 7438 IN PLACE OF DEC 7438
5. TRANSIPADS USED UNDER Q1 THRU Q16 Q19, Q22.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
		SLEEVING BLACK	9107278-00	75
		SLEEVING WHITE TUBE	9107278-03	74
AR	SEE NOTE 2	22 AWG WIRE WHITE	9107278-03	73
2	E15, E35	IC DEC 74H04	1309932	77
2	R115, R125	RES 5.23K 1/8W 1% SEE NOTE 1	1304955	76
1	R128	RES 15K 1/2 W 5%	1300396	69
1	R127	RES 150 1/2 W 5%	1300249	68
1	C153	CAP 27 MF 100V	1001779	67
9	C133,134,24,29,31,33,35,154	CAP 3.4UF, 10V, 10% S. TANT	1000064	66
1	C155	CAP .1MFF 100V	1001568	65
16	R37-R52	RES 2K 1/4W 5%	1302388	64
1	E64	" DEC 74123	1931436	63
2	R116, R118	RES 220 1/4W 5%	1302271	62
AR		WIRE JUMPER #22 AWG SEE ATTACHMENT	1200869	61
41		SPLIT LUGS	5000235	60
4		SCREW NYLON 4-40 x 3/8	3006401-04	59
1		HANDLE ASST	1710111-2	58
1	E33	IC DEC 74H40	1909588	57
1	E27	IC DEC 74H18	1909587	56
1	E38	IC DEC 7475	1908060	55
1	E9	IC DEC 3001-P	1909514	54
1	E1	IC DEC 74155	1909083	53
1	E26	IC DEC 7402	1908004	52
1	E36	IC DEC 74121	1910230	51
2	E13 E24	IC DEC 8242	1908712	50
7	E41, E47, E53, E59, E14 E34, E38	IC DEC 7437	1910091	49
1	E32	IC DEC 74H11	1908287	48
1	E18	IC DEC 74H52	1909852	47
8	E40, E43, E46, E49. E52, E55, E58, E61	IC DEC 7520	1910887	46
4	E44, E56 E56, E62	IC DEC 74C42	1909686	45
11	E39, E42, E45 E51, E54, E57 E60, E63, E3, E4, E48	IC DEC 74H74	1909687	44
8	E18-E22, E5	IC DEC 74155	1910849-01	43
8	E8 THRU 12, E23, E7, E29	IC DEC 9614	1911469	42
3	E17, E25, E31	IC DEC 7400	1909513	41
4	14, T6, T8, T10	X FMR 5 22 DUAL LINE	1609996	40
4	T3, T5, T7, T9	XFMR (T773)	1608418-1	39
2	E2, E28	IC DEC 7476	1909547	38
1	DL1	DELAY LINE DL5183	1605528	37
1	DL2	DELAY LINE DO130	1609427	36
16	Q1 THRU Q16	XSTR 2N3734	1510982	35
2	Q18, Q21	XSTR DEC 30098	1503160	34
2	Q19, Q22	XSTR 2N3762	1509649	33
6	R107 THRU R112	RES 4.7K 1/8 5%	1300447	32
2	R105, R106	RES 100 1/8 5%	1300232	31
2	R103, R113	RES 330 1/8 5%	1300295	30
16	R65 THRU R80	RES 13.0 0.5W 1%	1310032-0-1	29
32	R1 THRU R32	RES 75 1/8W 1% MF	1303084	28
1	R181	RES 210 1/8 5%	1301872	27
1	R102	RES 560 1/8 5%	1301880	26
4	R58, R59, R60, R61	RES 4.99K 1/8W 1% MF	1303404	25
3	R121, R122, R124	RES 1K 1/8 5%	1300385	24
2	R104, R123, R130	RES 300 1/8 5%	1300369	23
4		SCREW 4-40 x 1/4	9006780	22
2	R117, R129	RES 100 1/4W 5%	1300229	21
16	R83 THRU R98	RES 82 1/4W 5%	1301781	20
4	R55, R57, R59, R62	RES 13.6 1/8W 1% MF	1303310	19
1	R119	RES 3.16K 1/8W 1% MF	1303045	18
1	R120	RES 5K 1/2 W, 10% POT	1309143-09	17
1	D12	DIODE D812	1106812	16
50	D1 THRU D32, D37-D52, D54, 55	DIODE D872	1105275	15
16	D55 THRU D70	DIODE D884	1100114	14
19	C58, C102 THRU C109 C120 THRU C124 C126, C127, C128	CAP .01 UF 100V 20% TER	10-01810-00	13
29	C139 THRU C142, C143, C45, C87 THRU C88, C125, C127, C129, C130 THRU C133, C145, C147, C150, C151, C152, C154	CAP .22 UF 50V +80% -20% CERAMIC	1010274	12
16	C48 THRU C64	CAP 3300 PF 50V ± 8% CERAMIC	1010878-0-0	11
10	C67 THRU C82	CAP 1000PF 100V 5% MICA	10-00842	10
8	C21 C23 C25 C30 C32 C34 C36, C14	CAP 120 PF 100V 5% DM	10-00018	9
6	C20 THRU C84	CAP 47MF 20V 10% TANT	10-06814	8
9	C144 C129 C147 C148 C85 C37 C28, C96, C152	CAP 68UF 35V 10% TANT	10-05306	7
17	C43, C77 C78	CAP 39PF 100V 5% DM	1800510	6
12		EYELET GS-4-7	9006732	5
REF		MODULE ECO HISTORY	B-BH-511B-0-5	4
REF		ASSY DRILLING HOLE LAYOUT	B-BB-511B-0-3	3
REF		X-Y COORDINATE HOLE LAYOUT	B-CB-511B-0-4	2
REF		ETCHED CIRCUIT BOARD	5009708	1

ETCH BOARD REV 14

IC TYPE	GND	+5V
7475	12	5
5328	9	16
8pin	1	8

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

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

DEC NO.	EIA NO.
1N751A2	SAME
D672	1N 3653
DGG4	1N 3606

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPT/MOD MMII-L

DRAWN	DATE
CHECKED	
PROJ ENG	
PROD ENG	
APPROVED	

NEXT HIGHER ASSY B-DD-MMII-L

SCALE 2/1 SHEET 1 OF 4

EQUIPMENT CORPORATION

TITLE CONTROL & DATA LOOPS

CDL 1

CODE IDENT NUMBER REV

E CS GII0-0-1

DIST.

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	W9	W10
4K	IN	OUT
8K	OUT	IN

MEMORY BANK SIZE

W's 2,3,4,5,6 PROGRAM MEMORY BANK LOCATION. CUT JUMPER FOR BUS A LINE LOW (ASSERTED) WHEN BANK SELECTED. W5 MUST BE IN WHEN USED AS 8K BANK

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

DEVICE SELECT CIRCUIT (DSELH)

HIGH WHEN MEMORY BANK IS SELECTED

250 NS TOTAL DELAY
25NS/TAP

BYTE MASKING LOGIC

	W12	W13	W14	W15	W16	W17
G110	OUT	OUT	OUT	OUT	IN	IN

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

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

DRN. F Carberry DATE 1/20/72
CHK'D. J Dalaghe DATE 1-25-72
ENG. P Durant DATE 1/25/72
PROJ. ENG. P Durant DATE 1/25/72
PROD. R.R. Peters DATE 1-31-72
NEXT HIGHER ASSY. B-DD-MMII-L
SCALE
SHEET 2 OF 4

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL & DATA LOOPS CDL 2

SIZE D | CODE DCS | NUMBER G110-0-1 | REV. S | DIST.

REVISIONS: REV. | CHANGE NO | CHK

DEC FORM NO

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CDL2 -5V
+5V
CDL2 RESET ØL
CDL2 LOAD ØH
-15V
+5V

ØØSB EV2
ØØSA EV1
Ø4SB ES2
Ø4SA ES1
Ø1SB EP2
Ø1SA EP1
Ø5SB EN2
Ø5SA EN1
Ø2SB EL2
Ø2SA EL1
Ø6SB EK2
Ø6SA EK1
Ø3SB EH2
Ø3SA EH1
Ø7SB EF2
Ø7SA EF1

SENSE TERMINATIONS (FROM CORES)
SENSE AMPS
INVERTERS
BUS RECEIVERS
DATA LATCHES
BUS DRIVERS
INH BASE DRIVERS
INHIBIT DRIVERS (TO CORES)

JUMPER W16 (#30 TWP) CDL2 STROBE Ø H
+5 REF FA2

BUSDØØL
BUSDØ4L
BUSDØ1L
BUSDØ5L
BUSDØ2L
BUSDØ6L
BUSDØ3L
BUSDØ7L

ØØIN EV2 R66 Q1 D57 AC1
Ø4IN ER2 R65 Q2 D58 AE1
Ø1IN ER1 R67 Q4 D56 AD2
Ø5IN EM2 R68 Q8 D55 AF2
Ø2IN EM1 R70 Q3 D62 AD1
Ø6IN EJ2 R69 Q6 D62 AF1
Ø3IN EJ1 R71 Q8 D60 AE2
Ø7IN EE2 R72 Q7 D59 AH2

AMI BUS PAL

CDL 2 DATA OUT H
CDL 2 TINH ØH

NOTE
1 ALL SIGNALS FROM UNIBUS (BUS DØØL TO BUS D07L), G110 SHEET 2 (CDL2) OR STACK (ØØSA,E TO Ø7SA,B AND ØØIN TO Ø7IN)

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

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

DRN. F Carlson DATE 11/18/72
CHK'D. [illegible] DATE 1-25-72
ENG. F Dullard DATE 12/7/72
ENGR. ENG. PDuggan DATE 12/7/72
PROD. K K Peters DATE 1/31/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL & DATA LOOPS CDL3

NEXT HIGHER ASSY. B-DD-MM11-L
SCALE —
SHEET 3 OF 4

SIZE D | CODE CS | NUMBER G110-Ø-1 | REV. S
DIST.

REVISIONS: REV. | CHANGE NO | CHK.

DEC FORM NO

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NOTE

1 ALL SIGNALS FROM UNIBUS (BUS DOBL DISL) G110 SHEET 2 (CDL 2) OR STACK (ØBSA,B TO 15SA,B AND ØBIN TO 15IN)

CDL 2 −5V +5V

CDL2LOAD1H

CDL2RESET1L

ØBSB ED2 D28 ØBSA ED1 D19 — 1ØSB DP2 D22 1ØSA DP1 D21 — 12SB DH2 D30 12SA DH1 D29 — 13SB DS2 D24 13SA DS1 D23 — 14SB DN2 D28 14SA DN1 D27 — 15SB DK2 D32 15SA DK1 D31 — 11SB DL2 D26 11SA DL1 D25 — ØASB DV2 D18 ØASA DV1 D17

SENSE TERMINATIONS (FROM CORES) SENSE AMPS

JUMPER

CDL 2 STROBE 1 H

+5REF FA2

INVERTERS BUS RECEIVERS DATA LATCHES BUS DRIVERS

CDL 2 DATA OUT H

CDL 2 TINH 1H

BUSDØBL BUSDØ9L BUSD13L BUSDØL BUSD14L BUSD11L BUSD15L BUSD12L

ØBIN EE1 9IN DU2 13IN DR2 1ØIN DR1 14IN DM2 11IN DM1 15IN DF2 12IN DJ1

AH1 AJ2 AL2 AJ1 AL1 AK2 AM2 AK1

INHIBIT DRIVERS (TO CORES)

AN2 BUS PBL INH BASE DRIVERS

−15V +5V

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

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

MATERIAL — FINISH —

DRN P. Cadorette DATE 11/17/72
CHKD V. Ralph DATE 12-12-72
ENG. P. Durant DATE 1/25/72
PROJ. ENG. J. Durant DATE 1/25/72
PROG. K. K. Peters DATE 1-31-72

NEXT HIGHER ASSY. B-DD-MM11-L
SCALE —
SHEET 4 OF 4

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE CONTROL & DATA LOOPS CDL 4

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

REVISIONS REV. CHANGE NO. CHK

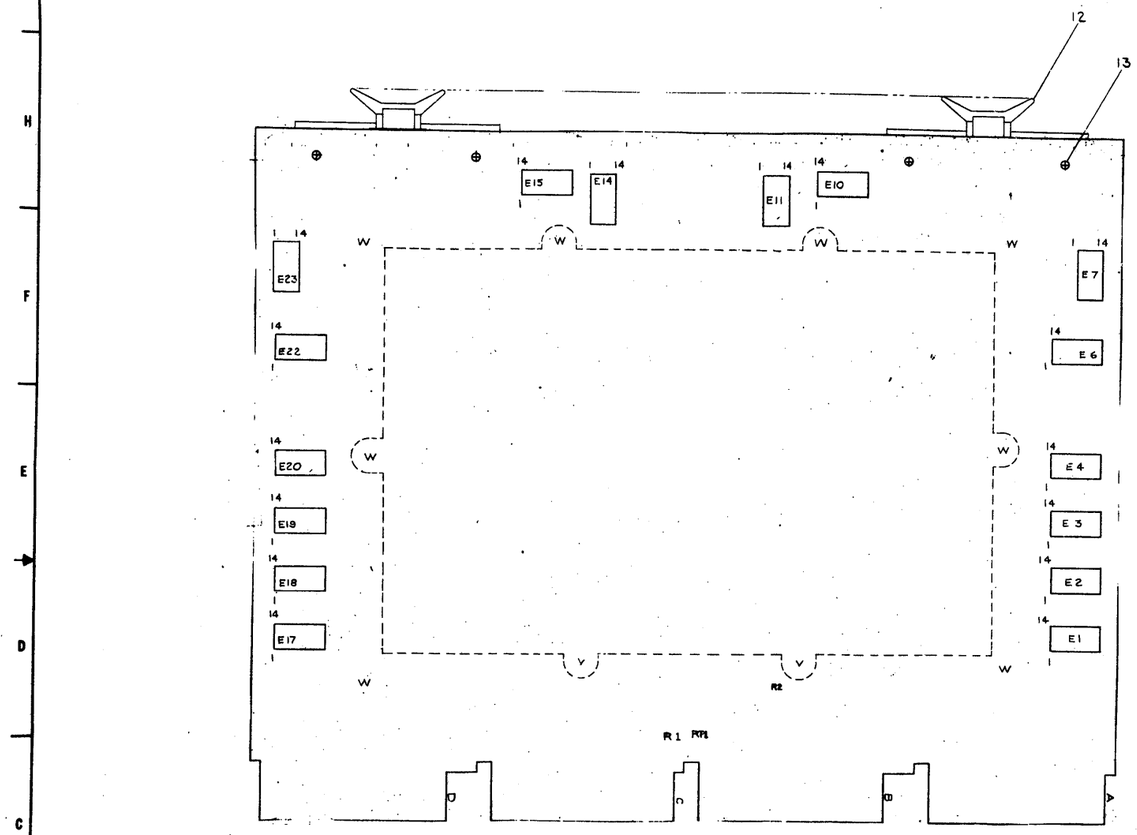
DEC FORM NO DRD MM-B

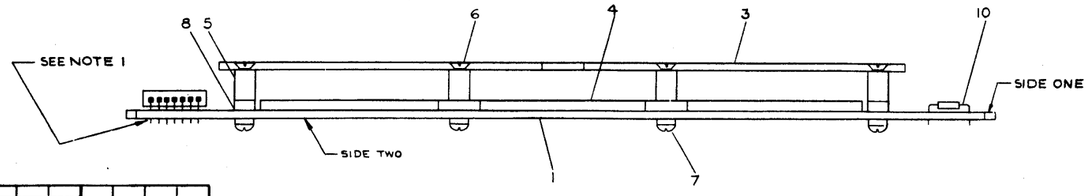
NOTES:

1. ALL COMPONENT LEADS TO BE LESS THAN 1/16 INCHES LONG ON SIDE TWO OF MODULE
2. ON REPAIR MODULES IF CORE TYPE USED IS 175 REPLACEMENT MUST BE 175 CORE. IF 375 CORE TYPE IS USED REPLACEMENT MUST BE 375 CORE.

* COMPONENT SUBSTITUTION LIST

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





LEGEND

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

ITEM NO	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
16	1	AT1	THERMISTOR 300 2%	1309185
15	1	R2	RESISTOR 5.1 1/4W 5%	1309422
14	1	R1	RESISTOR 196 1/8W 1%	1302856
13	8		EYELET	9006732
12	4		HANDLE, GREEN	9008337-01
11	1		NAME PLATE	9009238
10	2		JUMPER	9009239
9	16		4096-CORE MATS (STRUNG)	DBM3-75
8				
7	10		SCREW, NYLON FILISTER HD 4-40X.19 LG.	9009233
6	10		SCREW, F.H. NYLON #4-40X.19 LG.	9009234
5	10		STANDOFF, THREADED 4-40	9009237
4	1		SUBSTRATE	50-10296
3	1		COVER PLATE	55-10201-02
2	16	E14, E15, E17-E20, E22, E23 E1-E4, E6, E7, E10, E11,	I.C DIODE 2501	1910010 *
1	1		PLANER MEMORY BOARD	5009713

PARTS LIST

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

IC PIN LOCATIONS

ITEM NO	ASSY	FROM PT	TO PT

JUMPER LIST

ETCH BOARD REV			
DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

MM11-L

8-DD-MM11-L-B

REV	DESCRIPTION	DATE	APPROVED
A	ORIGINATED	7-10-72	P. DURANT
B	#PM1213-00001	7-10-72	P. DURANT
C	#PM1213-00002	1-27-73	P. DURANT
D	#PM1213-00003	2-15-73	P. DURANT
E	#PM1213-00004	3-1-73	P. DURANT
F	#PM1213-00005	3-15-73	P. DURANT
G	#PM1213-00006	4-13-73	R. COATES
H	#PM1213-00007	4-20-73	R. COATES
J	#PM1213-00008	5-3-73	P. DURANT

[redacted] EQUIPMENT CORPORATION

TITLE: STACK SCHEMATIC (4K 16 BIT)

SIZE J | E CS H213-0-1 | J

SHEET 1 OF 2

CS H213-0-1

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

EA1 TOG 231
EB1
EC1 TO G231
R1 1/8W 196 Ω
RT1 300Ω 25°C
REF G645

R2 5.1Ω
SUBSTRATE
BC2 BT1 CT1 CC2

NOTES
1. UNLESS OTHERWISE SPECIFIED: IC'S ARE TO BE DEC PART # 19100 10
2. INDICATES STACK LINE NUMBER. (TYP)
3. INDICATES CURRENT LOOP.
4. INDICATES MAGNET WIRE TERMINATION (SOLDERED TO P.C. PAD).

SEE NOTE 4

EU2 EV2 EV1 — BIT Ø
ER2 ES2 ES1 — BIT 4
EP2 EP1 — BIT 1
EM2 EN2 EN1 — BIT 5
EM1 EL2 EL1 — BIT 2
EJ2 EK2 EK1 — BIT 6
EJ1 EH2 EH1 — BIT 3
EE2 EF2 EF1 — BIT 7
EE1 ED2 ED1 — BIT 8
DU2 DV2 DV1 — BIT 9
DR2 DS2 DS1 — BIT 13
DP2 DP1 — BIT Ø
DM2 DN2 DN1 — BIT 14
DM1 DL2 DL1 — BIT 11
DJ2 DK2 DK1 — BIT 15
DJ1 DH2 DH1 — BIT 12

FE1 XSØ7 | FD2 XSØ6 | FD1 XSØ5 | FC1 XSØ4 | CT2 XSØ3 | CS2 XSØ2 | CS1 XSØ1 | CE2 XSØØ

E7: 11-035 12-039 9-043 8-047 2-051 3-055 5-059 7-063 → FT2 XNWD7 XPRD7 FV2
E6: 7-034 5-038 3-042 2-046 2-050 11-054 12-058 8-062 → FS2 XNWD6 XPRD6 FU2
E15: 2-033 3-037 12-041 5-045 11-049 7-053 9-057 8-061 → FR2 XNWD5 XPRD5 FS1
E14: 12-032 11-036 8-040 9-044 2-048 3-052 7-056 5-060 → FP2 XNWD4 XPRD4 FR1
E10: 8-031 7-027 9-023 5-019 11-015 3-011 2-007 12-003 → FN2 XNWD3 XPRD3 FP1
E11: 5-030 7-026 3-022 2-018 9-014 8-010 11-006 12-002 → FM2 XNWD2 XPRD2 FN1
E23: 3-029 2-025 5-021 7-017 12-013 11-009 9-005 8-001 → FL2 XNWD1 XPRD1 FM1
E22: 2-028 3-024 7-020 5-016 12-012 11-008 8-004 9-000 → FK2 XNWDØ XPRDØ FL1

CL1 YSØØ | CM1 YSØ1 | CM2 YSØ2 | CN1 YSØ3 | CN2 YSØ4 | CP1 YSØ5 | CP2 YSØ6 | CR1 YSØ7 — DATA RAM STACK ONLY
CR1 YSØ7 | CP2 YSØ6 | CP1 YSØ5 | CN2 YSØ4 | CN1 YSØ3 | CM2 YSØ2 | CM1 YSØ1 | CL1 YSØØ — ALL OTHER STACKS

E3: 3-063 2-059 5-055 7-051 11-047 12-043 9-039 8-035 → CL2 YNWD7 YPRD7 CK1
E19: 2-061 3-057 7-053 5-049 12-045 11-041 8-037 9-033 → CK2 YNWD6 YPRD6 CJ1
E4: 5-031 3-027 2-023 7-019 9-015 11-011 12-007 8-003 → CJ2 YNWD5 YPRD5 CH1
E20: 2-029 3-025 7-021 5-017 12-013 11-009 8-005 9-001 → CH2 YNWD4 YPRD4 CF1
E2: 8-062 9-058 11-054 12-050 3-046 2-042 5-038 7-034 → CF2 YNWD3 YPRD3 CE1
E18: 9-060 8-056 11-052 12-048 5-044 7-040 3-036 2-032 → CE2 YNWD2 YPRD2 CD1
E1: 8-030 9-026 11-022 12-018 2-014 3-010 5-006 7-002 → CD2 YNWD1 YPRD1 CC1
E17: 9-028 8-024 11-020 12-016 5-012 7-008 3-004 2-000 → CB1 YNWDØ YPRDØ CA1

REVISIONS	CHANGE NO	CHK	REV
BRUNING 40-833 19840			
DEC FORM NO DRD 109-B			

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

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

DBM P. Maloney DATE 12/1/71
CHK'D E. Klagh DATE 1-25-72
ENG. P.Durant DATE 1-25-72
PROJ. ENG. P.Durant DATE 1-25-72
PROD. K.K. Peterson DATE 1-26-72
NEXT HIGHER ASSY. B-DD-MM11-L-Ø
SCALE —
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

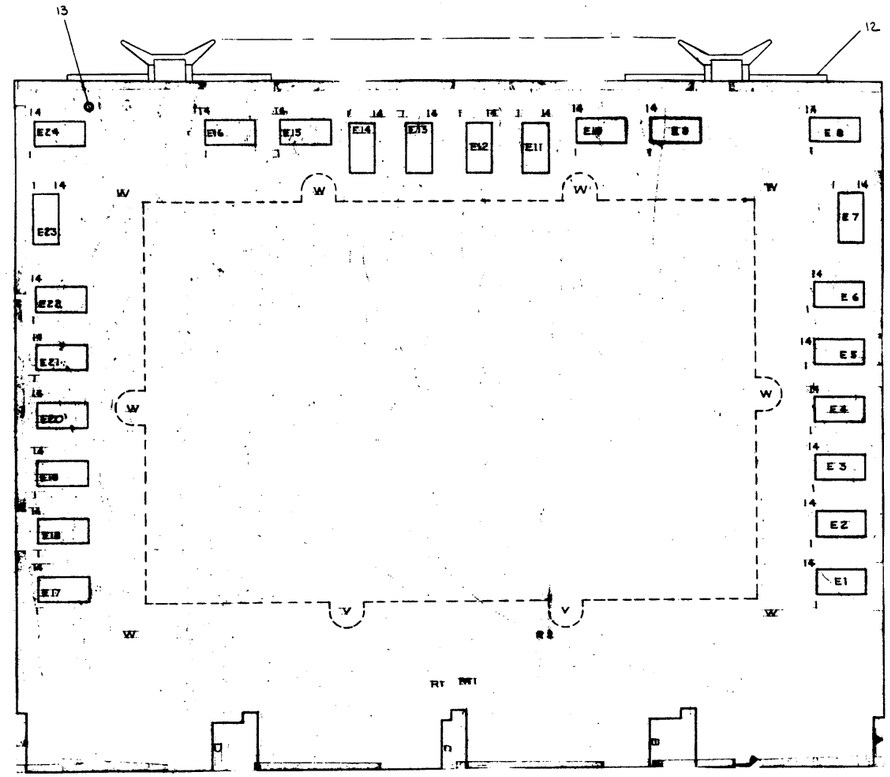
TITLE: STACK SCHEMATIC 4K X 16 BIT

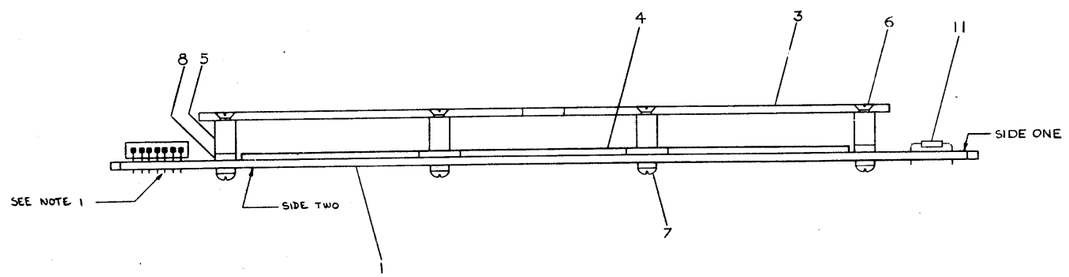
SIZE D | CODE CS | NUMBER H213-Ø-1 | REV. J | DIST.

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

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

2: FOR AMFEX STACKS H214, H215, AND H216 WITH CORE TYPE 324-1899, R1 SHOULD BE 121 OHMS.
3 ON REPAIR MODULES, IF 175 CORE TYPE IS USED - REPLACEMENT CORE MUST BE 175 TYPE. IF 375 CORE TYPE IS USED, - REPLACEMENT CORE MUST BE 375 TYPE.





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

H216	H215	H214 (SEE NOTE 3)	SHEET 2			
-	-	1		RT1	THERMISTOR 300 2%	13099785	16
-	-	1		R2	RESISTOR 5.1 1/4W 5%	13094422	15
-	-	1		R1 (SEE NOTE 2)	RESISTOR 196 1/8W 1%	13025956	14
8	8	8			EYELET	9006732	13
4	4	4			HANDLE, GREEN	8008337-0-1	12
2	2	2			JUMPER,	9009239	11
-	-	1			NAME PLATE	9009236	10
3	16	16			8192-CORE MATS (STRUNG)	DIBM3-75	9
							8
10	10	10			SCREW, NYLON PILISTER #4-40 X .187 LG	90092235	7
10	10	10			SCREW, FLAT HEAD NYLON #4-40 X .187 LG	90092234	6
10	10	10			STANDOFF, THREADED #4-40 X INTER # LG	90092237	5
-	-	1			SUBSTRATE	50-70236	4
-	-	1			COVER PLATE	85-10201-02	3
24	24	24		E1 THRU E24	I.C. DIODE 2501	19-10010	2
-	-	1			PLANER MEMORY BOARD	5009713	1
QTY	QTY	QTY.		REF DESIGNATION	DESCRIPTION	PART NO.	ITEM

PARTS LIST

IC TYPE	GND	+5V
GND AND 5V ARE NORMALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE		

IC PIN LOCATIONS

ITEM NO	WIRE	FROM PT	TO PT

JUMPER LIST

MM11-L

ETCH BOARD REV

DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.

B-DD-MM11-L-0

[redacted] EQUIPMENT CORPORATION

STACK SCHEMATIC (H214-8K X 16BIT) (H214A-8K X 16BIT) (H215-8K X 18BIT) (H216-8K X 18BIT)

E CS H214-0-1

SIZE A

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EV2 EV2 EV1 — BIT Ø
ER2 ES2 ES1 — BIT 4
ER1 EP2 EP1 — BIT 1
EM2 EN2 EN1 — BIT 5
EM1 EL2 EL1 — BIT 2
EJ2 EK2 EK1 — BIT 6
EJ1 EH2 EH1 — BIT 3
EE2 EF2 EF1 — BIT 7
EE1 ED2 ED1 — BIT 8
DU2 DV2 DV1 — BIT 9
DR2 DS2 DS1 — BIT 13
DR1 DP2 DP1 — BIT 10
DM2 DN2 DN1 — BIT 14
DM1 DL2 DL1 — BIT 11
DJ2 DK2 DK1 — BIT 15
DJ1 DH2 DH1 — BIT 12
DE2 DF2 DF1 — BIT PØ*
DE1 DD2 DD1 — BIT P1*
DB1 DA2 DA1 — BIT 18**

EA1 TO G231
EB1
EC1 TO G231
R1 196 Ω (REFER TO NOTE 7)
RT1 3ØØΩ @ 25°C
REF G645

R2 5.1Ω — BC2 BT1 CT1 CC2 — SUBSTRATE

SEE NOTE 4

FK1 XSI5 | FJ2 XSI4 | FJ1 XSI3 | FH2 XSI2 | FH1 XSI1 | FF2 XSIØ | FF1 XSØ9 | FE2 XSØ8 | FE1 XSØ7 | FD2 XSØ6 | FD1 XSØ5 | FC1 XSØ4 | CT2 XSØ3 | CS2 XSØ2 | CS1 XSØ1 | CR2 XSØØ

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

CL1 IYSØØ | CM1 IYSØ1 | CM2 IYSØ2 | CN1 IYSØ3 | CN2 IYSØ4 | CP1 IYSØ5 | CP2 IYSØ6 | CR1 IYSØ7 — DATA RAM STACK ONLY
CR1 YSØ7 | CP2 YSØ6 | CP1 YSØ5 | CN2 YSØ4 | CN1 YSØ3 | CM2 YSØ2 | CM1 YSØ1 | CL1 YSØØ — ALL OTHERS STACK

CL2 YNWD7 / YPRD7 CK1
CK2 YNWD6 / YPRD6 CJ1
CJ2 YNWD5 / YPRD5 CH1
CH2 YNWD4 / YPRD4 CF1
CF2 YNWD3 / YPRD3 CE1
CE2 YNWD2 / YPRD2 CD1
CD2 YNWD1 / YPRD1 CC1
CB1 YNWDØ / YPRDØ CA1

7: FOR AMPEX STACKS H214, H215, AND H216 WITH CORE TYPE 324-1899, R1 SHOULD BE 121 OHMS.

8: AN H214A IS DEFINED TO BE EITHER AN H214 OR H215 MODULE.

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

REVISIONS	REV.	CHANGE NO	CHK
DRAWING 42-553 1960			

DEC FORM NO DRD 105-B

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

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

DRN. F Cooney	DATE 11/22/71	
CHK'D. J Fidgett	DATE 1-25-72	
ENG. P D Durant	DATE 12/1/72	
PROJ. ENG. P D Durant	DATE 1/25/72	
PROD. R K Peterson	DATE 1-26-72	

NEXT HIGHER ASSY. B-DD-MMII-L-Ø
SCALE —"—
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: STACK SCHEMTIC
(H214-8K X 16 BIT)
(H214A-8K X 16 BIT)
(H215-8K X 18 BIT)
(H216-8K X 19 BIT)

SIZE D | CODE | NUMBER DCS H214-Ø-1 | REV. L
DIST.

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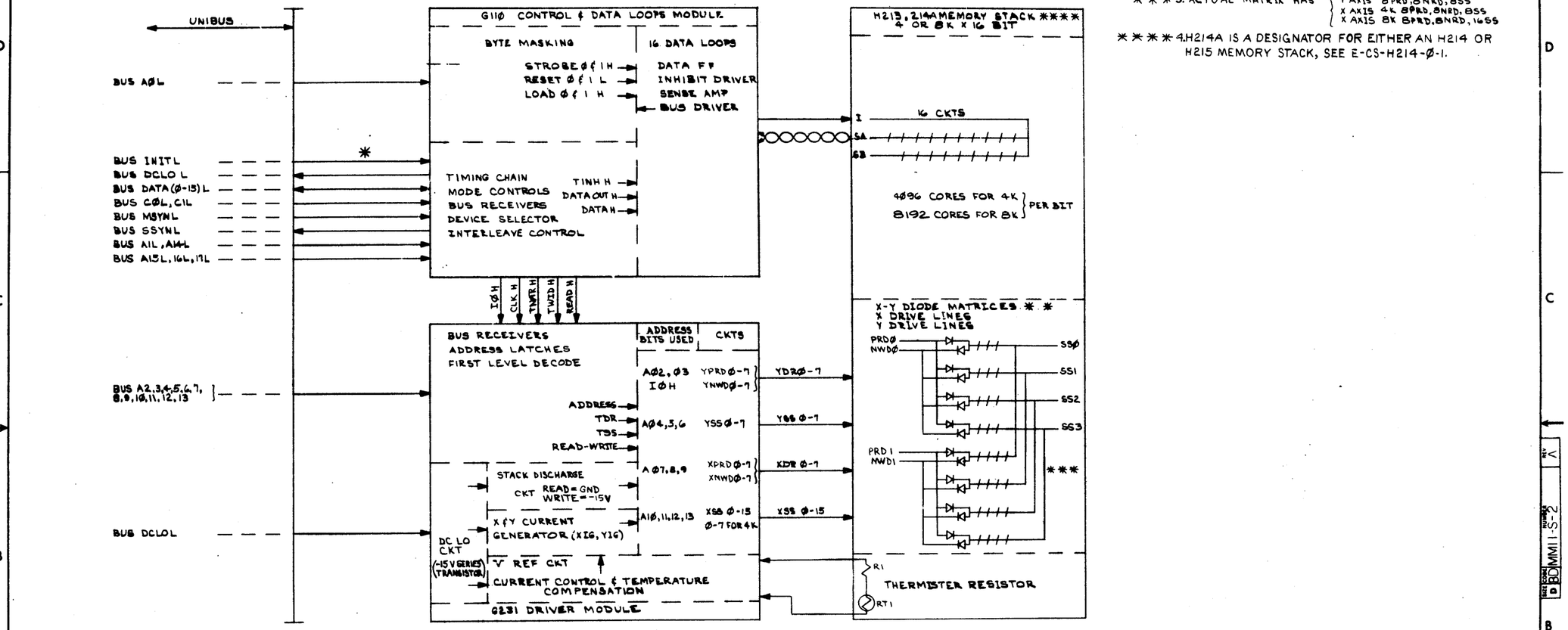
NOTES:
1. ALL ARROWS SHOW SIGNAL FLOW DIRECTION.
2. MATRIX SHOWN IS FOR ILLUSTRATION ONLY.
3. ACTUAL MATRIX HAS { Y AXIS 8 PRD, 8 NRD, 8 SS; X AXIS 4K 8 PRD, 8 NRD, 8 SS; X AXIS 8K 8 PRD, 8 NRD, 16 SS
4. H214A IS A DESIGNATOR FOR EITHER AN H214 OR H215 MEMORY STACK, SEE E-CS-H214-0-1.



REVISIONS			
CHK	CHANGE NO.	REV.	
CW	MM11L-00005	A	
C.B. Hunt 6 Oct 72			
P DURANT			
P. Kilcullen 10 NOV 72			

DEC FORM NO 6200 MR-0

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

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

DRN		DATE 1/14/72
CHKD		DATE 2-14-72
ENG		DATE 3-30-72
PROJ. ENG.		DATE 3-31-72
PROD.		DATE 6-2-72

NEXT HIGHER ASSY: B-DD-MM11-S
SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BLOCK DIAGRAM

SIZE D | CODE BD | NUMBER MM11-S-2 | REV. A | DIST.

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MEMORY BANK	MACHINE ADDRESS	W1 ✳	W5 A13 △	W6 □ A14 OR A01	W4 A15	W3 A16	W2 A17L	△ W9 4K-8K	W10	W7-8 INTER LEAVE □	W11 PROTECT
0-4K	000000-017776	IN	IN	IN	IN	IN	IN				
4-8K	020000-037776		OUT	IN	IN	IN	IN				
8-12K	040000-057776		IN	OUT	IN	IN	IN			WHEN USED AS A 4K OR A NON INTER-LEAVED 8K JUMPERS ARE	WHEN W11 IS INSTALLED IT MAKES THE MEMORY DO A DATI RE-GARDLESS OF THE STATE OF THE C00 AND C01 LINES
12-16K	060000-077776		OUT	OUT	IN	IN	IN				
16-20K	100000-117776		IN	IN	OUT	IN	IN				
20-24K	120000-137776		OUT	IN	OUT	IN	IN				
24-28K	140000-157776		IN	OUT	OUT	IN	IN				
28-32K	160000-177776		OUT	OUT	OUT	IN	IN				
32-36K	200000-217776		IN	IN	IN	OUT	IN				
36-40K	220000-237776		OUT	IN	IN	OUT	IN				
40-44K	240000-257776		IN	OUT	IN	OUT	IN				
44-48K	260000-277776		OUT	OUT	IN	OUT	IN				
48-52K	300000-317776		IN	IN	OUT	OUT	IN			WHEN USED AS AN 8K INTERLEAVED (2-8K BANKS REQUIRED) JUMPERS ARE	
52-56K	320000-337776		OUT	IN	OUT	OUT	IN				
56-60K	340000-357776	IN	IN	OUT	OUT	OUT	IN				
60-64K	360000-377776		OUT	OUT	OUT	OUT	IN				
64-68K	400000-417776		IN	IN	IN	IN	OUT				
68-72K	420000-437776		OUT	IN	IN	IN	OUT				
72-76K	440000-457776		IN	OUT	IN	IN	OUT				
76-80K	460000-477776		OUT	OUT	IN	IN	OUT				
80-84K	500000-517776		IN	IN	OUT	IN	OUT				
84-88K	520000-537776		OUT	IN	OUT	IN	OUT				
88-92K	540000-557776		IN	OUT	OUT	IN	OUT				
92-96K	560000-577776		OUT	OUT	OUT	IN	OUT				
96-100K	600000-617776		IN	IN	IN	OUT	OUT				
100-104K	620000-637776		OUT	IN	IN	OUT	OUT				
104-108K	640000-657776		IN	OUT	IN	OUT	OUT				
108-112K	660000-677776		OUT	OUT	IN	OUT	OUT				
112-116K	700000-717776		IN	IN	OUT	OUT	OUT				
116-120K	720000-737776		OUT	IN	OUT	OUT	OUT				
120-124K	740000-757776		IN	OUT	OUT	OUT	OUT				
DEVICE USED AS 4K MEMORY △		IN	X	X	X	X	X	IN	OUT		

NOTES:

✳1. W1 IS FOR TEST PURPOSES ONLY

△2. WHEN USED AS AN 8K BANK, W5 AND W10 MUST BE INSTALLED AND W9 MUST BE OUT.
WHEN USED AS A 4K BANK W10 MUST BE OUT. W9 MUST BE IN AND W5 DETERMINES THE BANKS LOCATION ON THE BUS.

□3. THIS MEMORY CAN ONLY BE INTERLEAVED AS 16K (TWO ADJACENT, CONTIGUOUS ADDRESS 8K BANKS). WHEN NOT INTER-LEAVED (SOLID JUMPERS ON W7 AND W8) THE DEVICE SELECT IS AS SHOWN IN TABLE 1 USING A14. WHEN TWO 8K BANKS ARE INTER-LEAVED W7 AND W8 MUST BE AS SHOWN IN DOTTED LINES IN TABLE 1. ALSO IN TABLE 1, A01 NOW GOES TO THE DEVICE SELECTOR GATE CONTROLLED BY W6. THE TWO BANKS MUST HAVE W6 IN ON ONE BANK AND OUT ON THE OTHER.

4. FIGURE 1 SHOWS THE PHYSICAL LOCATION OF THE JUMPERS ON THE G110 IF THE MODULE WERE LYING ON THE PRINT WITH COMPONENTS UP AND CONNECTORS TOWARD BOTTOM OF PRINT. W7 & W8 ARE AS SHOWN SCHEMATICALLY ON D-CS-G110-0-1.*

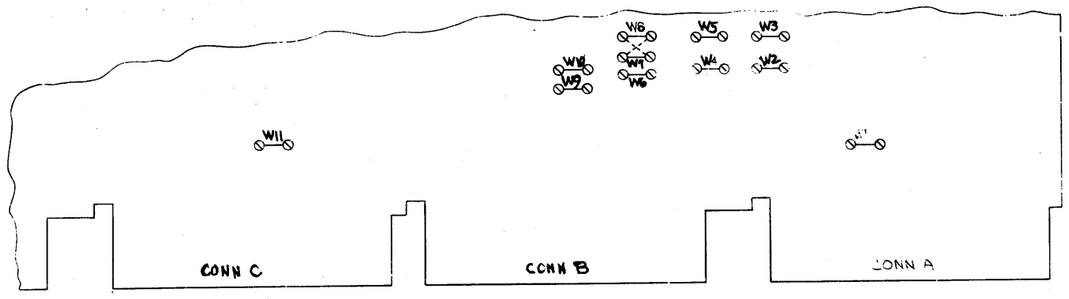

FIGURE 1
G110 JUMPER PHYSICAL LOCATION
SEE NOTE 4

REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL: MM11-S	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS XXX ±.005, .XX ±.02, X ±.1; ANGLES ±0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓			
MATERIAL: —			
FINISH: —			

DRN. L. Carlson	DATE 5/15/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. L. Kalagher	DATE 5-25-72	
ENG.	DATE	TITLE: BLOCK DIAGRAM (DEVICE DECODING)
PROJ. ENG.	DATE	
PROD.	DATE	
NEXT HIGHER ASSY. F-DD-MM11-S-0		SIZE D / CODE BD / NUMBER MM11-S-2 / REV A
SCALE —		DIST.
SHEET 2 OF 2		

DEC FORM NO 1099-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY: F. CARBERRY	CHECKED	SECTION
DATE 1/5/72	DATE 1-25-72	
ENG	PROD	ISSUED SECT.
DATE	DATE 1-26-72	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION MM11-L	MM11-K
1	B-DD H213-Ø	H213 MEMORY STACK (4K X 16)		1
2	E-CS-G231-Ø-1	MEMORY DRIVER	1	1
3	E-CS-G110-Ø-1	CONTROL & DATA LOOPS	1	1
4	E-CS-H214-Ø-1	H214A MEMORY STACK (8K X16)	1	

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
MEMORY, MM11	//	A	PL	MM11-L-Ø	A	MM11-00005
	SHEET 1 OF 1	DIST				

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

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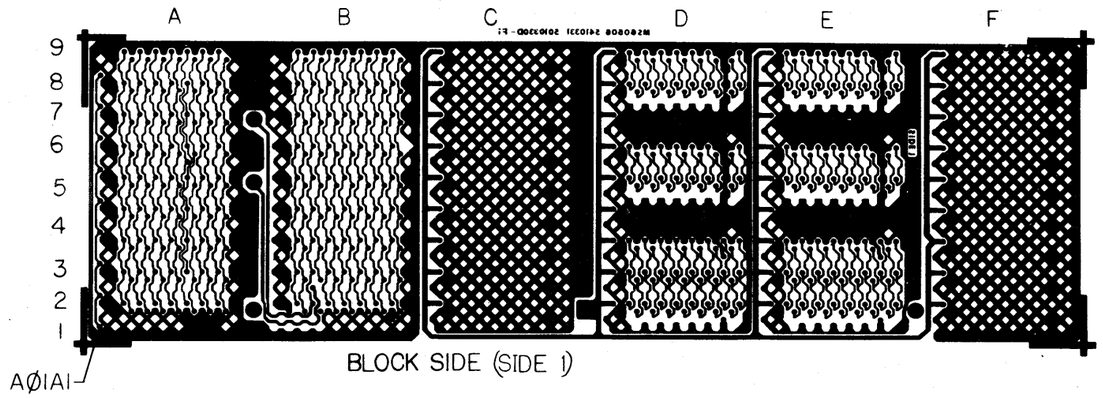
NOTES:



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

REF		PARITY HANDWIRE LIST	A-WL-7009193-0-1	6
REF		AWT REV STATUS	A-WT-7009193-0	5
REF		MODULE ECO HISTORY	B-MH-5410331-0-6	4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5410331-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5410331-0-4	2
1		ETCHED CIRCUIT BOARD	5010330	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: MFII-LP

ETCH BOARD REV: D

REV	CHANGE NO	ORIG	CHK
A	5410331-00001	JMG	
B	5410331-00002	R.MOORE	R.MOORE
C	5410331-00003	J.CARTER 1-12-76	B.CRAMM

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

DRN: M Bapties DATE: 9/12/74
CHK'D: J. Grady DATE: 10/4/74
ENG. DATE: 9/20/74
PROJ. ENG. DATE: 10/4/74
PROD. DATE:

NEXT HIGHER ASSY: E-AD-7009193-00
SCALE: 1/1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CIRCUIT SCHEMATIC

SIZE	CODE	NUMBER	REV.
D	CS	5410331-0-1	C

DIST.

DCS 5410331-0-1 C

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	L. D. ANDERSON	CHECKED	J. O'LOUGHLIN	SECTION	1
DATE	9-29-72	DATE	9-29-72		
ENG	J. O'LOUGHLIN	PROD	G.L. STRINGER	ISSUED SECT.	1
DATE	9-29-72	DATE	9-29-72		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION MFII-L
1	A-PL-MM11-L-0	16 BIT 18 MIL MEMORY	1
2	E-AD-7008872-0-0	BACK PLANE ASSY	1
3	A-PL-M920-0-0	INTERNAL BUS CONN ASSY	1
4	9009168	SCREW, PAN HD. "NYLOC" #6-32	1
~~5~~	~~C-MD-7410871-0-0~~	~~SUPPORT BAR, RIGHT~~	~~1~~
~~6~~	~~C-MD-7410870-0-0~~	~~BRKT, CONN BLOCK TOP~~	~~1~~
7	C-PS-120698-0	GUIDE CARD CENTER	6
8	9009070	SCR PHIL FLAT HD #8-32 X .81	12
9	9107688-0-0	24 AWG SOLID WIRE BLK.	A/R
10	9006766	LOCKING TERMINAL	1
11	1209856-02	MODULE HOLDER	A/R
12	1700021-02	ELECTRO MAGNETIC SHIELD	A/R
13*	D-IA-7009560	MF11-L/LP OPTION HARNESS *	1
14	D-IA-7010167-0-0	SUPPORT, HARNESS	1
15	9006037-1	SCREW PAN HD PHL 8-32 x 3/8	4
16	9008072	EXTC LK WASHER #8	4

NOTE: * IF FIRST MEMORY IN 11/35-11/40 USE 7009565.
FOR 11/45-11/50 WITH SERIAL NO. LESS THAN 2000 USE HARNESS 7009242. FOR 11/35-11/40 WITH SERIAL NO. LESS THAN 6000 USE 7009103(FIRST MEMORY) OR 7009174. FOR H960-D,E WITH NO. LESS THAN 7000 USE HARNESS 7009174.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MF11-L MEMORY (PL)	D-UA-MF11-L-0	A	PL	MF11-L-0	E	MF11L-00009
	SHEET 1 OF 1	DIST.				

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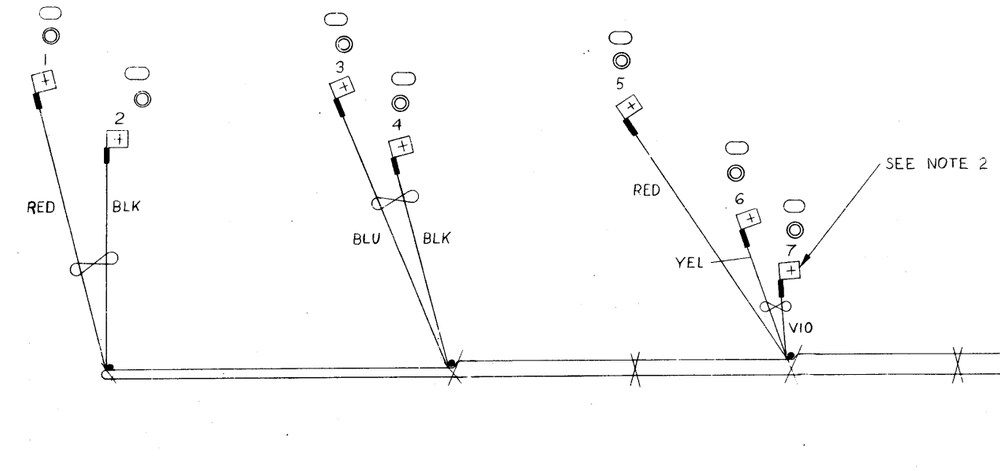
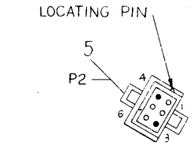
WIRE TABLE

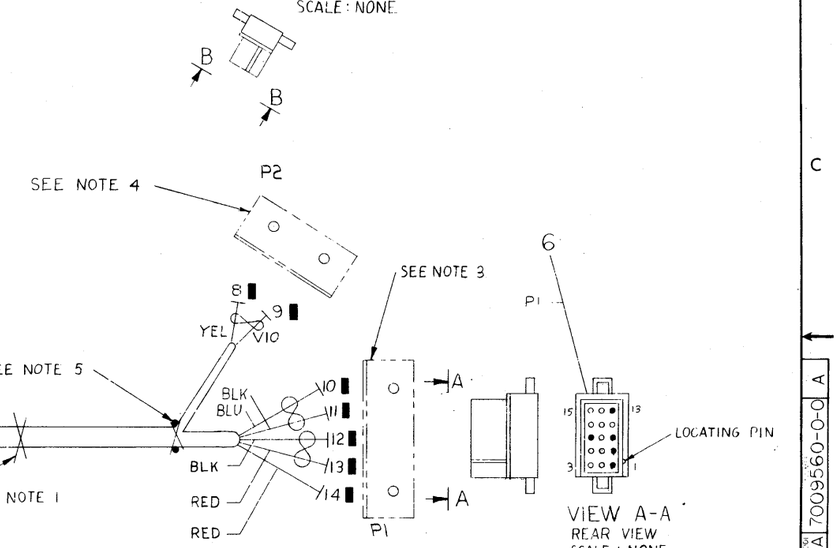
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
3	14	RED	1		8,10	13	P1-4	7	+5
TWP	14	BLK	2		↑	12	P1-7	↑	GND
2	14	BLU	3			10	P1-13		-15
TWP	14	BLK	4			11	P1-9		GND
4	14	RED	5			14	P1-1		+5
1	18	YEL	6		↓	8	P2-4	↓	AC LO
TWP	18	VIO	7		8,10	9	P2-3	7	DC LO

NOTES:
1. USE TIE WRAPS ITEM #9 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAKOUT POINT.
2. ATTACH MALE FASTON DEC # (9008219-0) WITH #4 WOOD SCREWS (7 PLACES).
3. USE CONN. BRKT. #C-MD-9305761-H15-0, MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-15.
4. USE CONN. BRKT. #C-MD-9305761-H6-0, MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-06.
5. DOT (●) INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS





VIEW B-B
REAR VIEW
SCALE: NONE



VIEW A-A
REAR VIEW
SCALE: NONE

SCALE
0 INCHES — 6 INCHES — 12 INCHES

DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

ITEM NO	QTY.	DESCRIPTION	PART NO.
10	A/R	TUBING, SHRINKABLE 3/16 ID x 9/16	9107305-02
9	A/R	WRAP, TIE	9007031
8	7	CONN, SOLDERLESS	9009262-0
7	7	PIN, MALE	1209378-00
6	1	HOUSING, CONN 15 PIN	1209351-15
5	1	HOUSING, CONN 6 PIN	1209351-06
4	A/R	WIRE #14 AWG RED	9107370-22
3	A/R	WIRE #14 AWG TWP BLK/RED	9107440-02
2	A/R	WIRE #14 AWG TWP BLK/BLU	9107440-06
1	A/R	WIRE #18 AWG TWP YEL/VIO	9107430-47

PARTS LIST

FIRST USED ON OPT / MOD SYM

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx = .005, .xx = .02, .x = .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ▽

MATERIAL: SEE PARTS LIST
FINISH

DRN. B. Wright DATE 9-26-73
CHK. [illegible] DATE 10/2/73
ENG. DATE
PROJ. ENG. DATE
PROD. [illegible] DATE 10/5/73
NEXT HIGHER ASSY.
SCALE 1 / 1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: MFII-L/LP POWER HARNESS

SIZE D | CODE 1A | NUMBER 7009560-0-0 | REV. A
DIST.

REVISIONS	CHK	CHANGE NO	REV
	TJV	7009560 00001	A
		B. MINOR 8-22-74	

DEC FORM 140
DRD 10L B

7009560-0-0 A
D 1A

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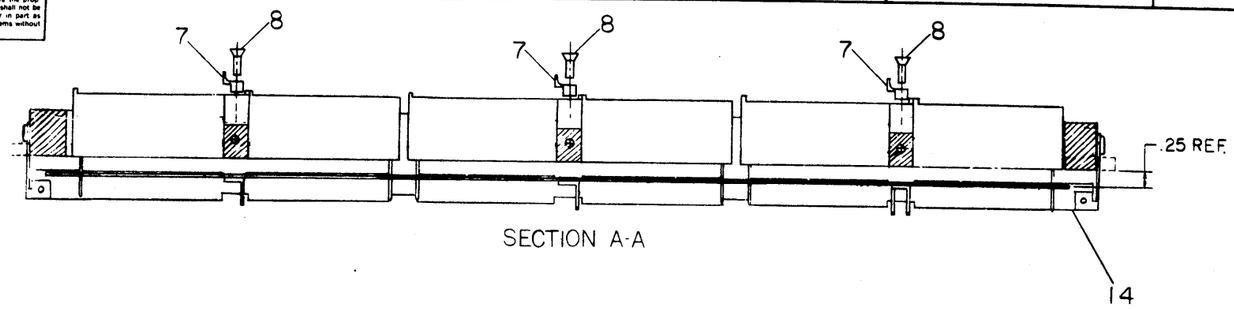
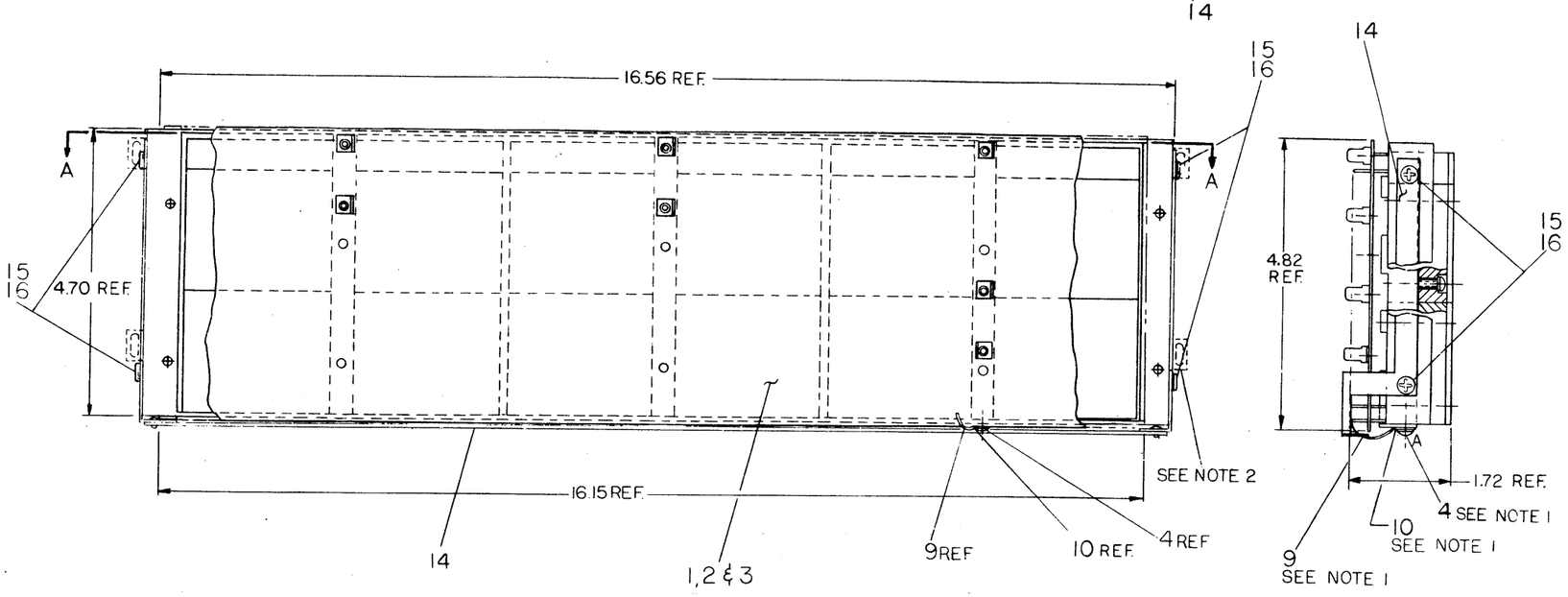
NOTES:

1. WIRE WRAP ONE END OF ITEM #9 TO PIN B09C2 AND SOLDER THE OTHER END TO ITEM #10 WHICH IS MOUNTED AS SHOWN.
2. IF LOGIC FRAMES DEC P/N 1210103 OR 1210991 ARE USED, THE MOUNTING EARS ARE TO BE MACHINED OFF FLUSH WITH THE SIDES OF THE CASTING.



SECTION A-A



REVISIONS			
CHK	CHANGE NO	REV	
	MFIL-00002	A	
	ORIGINATED		
PM	MFIL 00003	B	
	J.F. O'LOUGHLIN		
PM	MFIL 00006	C	
	B. MINOR		
PD	MFIL-00007	D	
	P. DURANT		
PD	MFIL-00009	E	
	B. MINOR		

BRUNING 40-107 15960
DFI FORM NO
DRI 100-A

FIRST USED ON OPTION/MODEL: MFII-L	QTY	DESCRIPTION: PARTS LIST	PART NO. / ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS XXX ± .005, XX ± .02, X ± .1; ANGLES ± 0° 30'	DRN. [illegible] DATE 2-28-73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
	CHK'D. DATE	TITLE: MFII-L MEMORY	
	ENG. DATE 3-14-73		
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓	PROJ. ENG. DATE 3-14-73		
	PROD. DATE 3-16-73		
MATERIAL: —	NEXT HIGHER ASSY.: B-DD-MFII-L	SIZE D / CODE UA / NUMBER MFII-L-0 / REV. E	
FINISH: —	SCALE 1/1		
	SHEET 1 OF 1	DIST	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-KY11-D	(SHEET 1 ONLY)	
PARTS LIST	A-PL-KY11-D-Ø		
KY11-D CONSOLE	D-CS-54Ø97Ø1-Ø-1		
I/O CABLES (BCØ8R)	C-UA-BCØ8R-Ø3-Ø		

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET TYPE					
VARIATION	TITLE	KY11-D	KY11-DJ	KY11-DK			
KY11-D	KY11-D CONSOLE	X					
KY11-DJ	INDUSTRIAL CONSOLE		X				
KY11-DK	KLIØ CONSOLE			X			

REVISIONS		
REV	CHG. NO.	DATE
A	KY11D-1	11-73
B	KY11D-2	1/74
C	KY11D-3	4/75

USED ON OPTION/MODEL

PDP-11/40

DRN.		DATE 9/26/72
CHK'D		DATE 9/27/72
PROJ. ENG.		DATE 9/27/72
PROD.		DATE
FIELD SERV.		DATE
SHEET 1 OF 2		

TITLE: KY11-D CONSOLE

SIZE	CODE	NUMBER	REV
B	DD	KY11-D	C

DIST

DRB 106

DEC 16-(325)-1062-1-NA71

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J7 Oboughlin DATE 9/26/72	CHECKED J7 Oboughlin DATE 9/27/72	SECTION
ENG J7 Oboughlin DATE 9/27/72	PROD [illegible] DATE 9-28-72	ISSUED SECT.

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION KY11-D	KY11-DJ	KY11-DK
1	D-CS-54Ø97Ø1-Ø-1	KY11-D CONSOLE	1	—	—
2	C-UA-BCØ8R-Ø3-Ø	I/O CABLES (BCØ8R)	2	2	2
3	D-IA-7411317-Ø-Ø	INDICATOR PANEL INDUSTRIAL	—	1	—
4	D-CS-54Ø97Ø1-1-1	KY11-DJ CONSOLE	—	1	—
5	D-IA-7412935-Ø-Ø	INDICATOR PANEL, KLIØ	—	—	1
6	D-CS-54Ø97Ø1-2-1	KY11-DK CONSOLE	—	—	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
KY11-D CONSOLE (PL)		A	PL	KY11-D-Ø	C	KY11D-00003
	SHEET 1 OF 1	DIST.				

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

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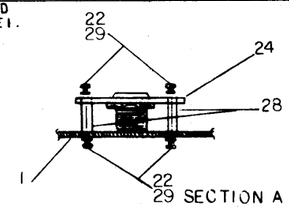
NOTES:

1. KYII-D CONSOLE IS CONNECTED TO THE KDII-A BY MEANS OF TWO BCØ8R CABLES TO CONNECTORS J1 AND J2. BOTH LOGIC SIGNALS AND POWER ARE SO CONDUCTED. INSTALLATION INFORMATION IS NOTED ON SCHEMATIC AND ETCHED CIRCUIT BOARD.
2. AC POWER CONTROL IS PROVIDED BY SWITCH CLOSURE ON CONNECTORS J3 AND J4.
3. PROCESSOR SIGNAL PREFIX NOTATION (K5-7 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENTS A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST. THE KYD PREFIX INDICATES SIGNALS ORIGINATING ON THE KYII-D CONSOLE BOARD.
4. PANEL INFORMATION ON SWITCH AND LIGHT FUNCTIONS ARE NOTED IN THE SCHEMATIC IN PARENTHESIS ( ) AND ON ETCHED CIRCUIT BOARD
5. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS: CAPACITANCE IS IN PICOFARADS.
6. FOR SWITCH HANDLE REMOVAL TOOL, SEE C-MD-9606145-0-0

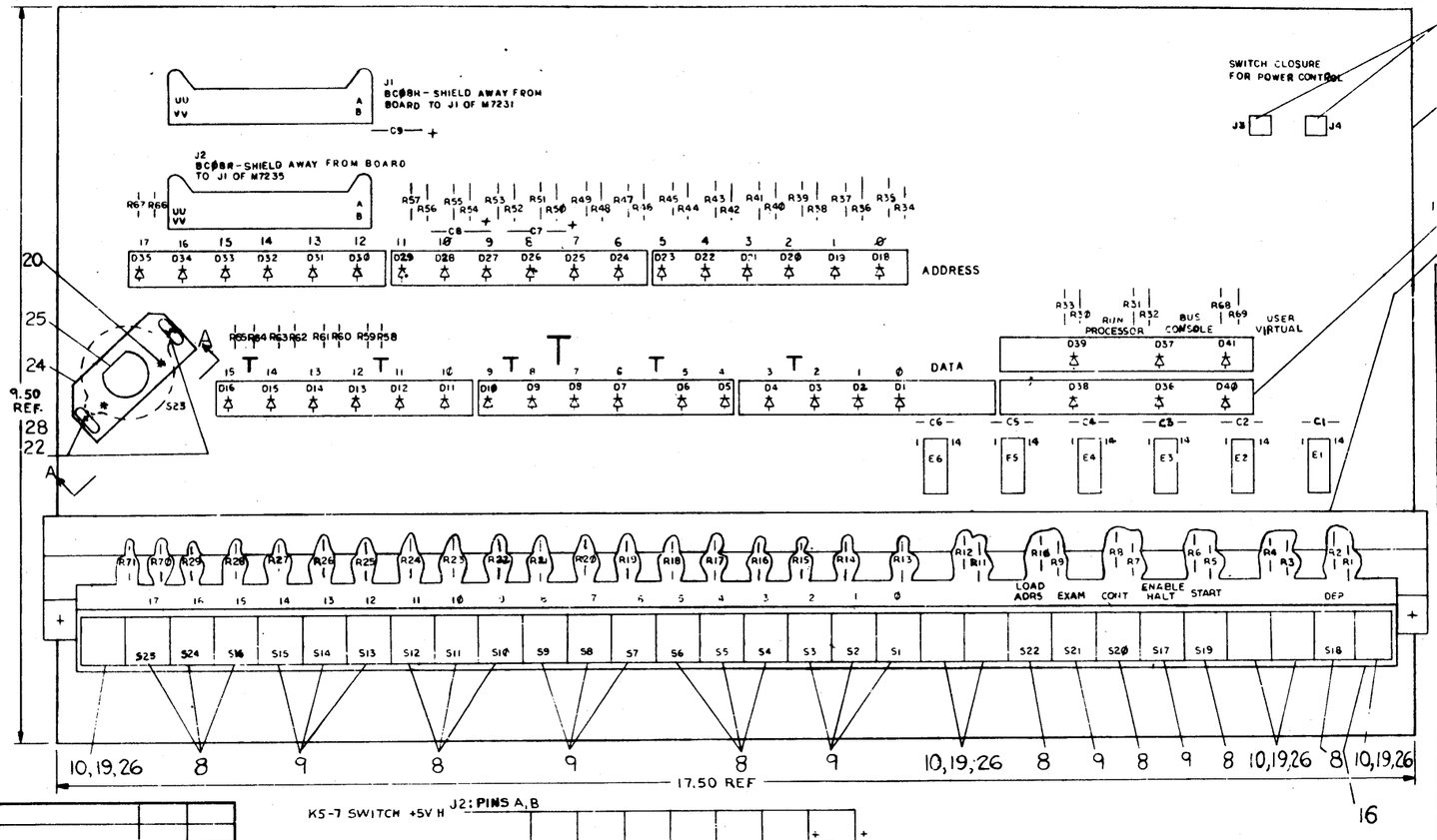
LEGEND

VARIATION	ITEM 8	ITEM 9	USED ON
5409701-0	1210796-01, ROSE	1210796-02, MAGENTA	KYII-D
5409701-1	1210796-08, DC BLUE	1210796-09, AC RED	KYII-DJ
5409701-2	1210796-05 COPEN BLUE	1210796-10 BLAZE BLUE	KYII-DK

* ITEM 23, KEPS NUT, 15 MOUNTED AGAINST BRACKETS ON SIDE 1.



SECTION A A



K5-7 SWITCH +5V H — J2: PINS A, B

K5-7 GND L — J2: PINS D, F, L, P, S, U

C1 .01MF, C2 .01MF, C3 .01MF, C4 .01MF, C5 .01MF, C6 .01MF, C7 6.8MF, C8 6.8MF

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
4		#6 INT. TOOTH LOCKWASHER	9006633	29
2		1/4 AF x 11/16 #6-32 HEX SPACER	9006858	28
2		EYELET G 54-5	9009000	27
6		LOCKWASHER #8 INT. TOOTH	9006634	26
1	S23	LOCK - 3 POS - 90° - INDEX	1210754	25
1	S23	BRACKET, SWITCH (LOCK)	7411613	24
4		NUT, #6-32 KEPS	9006560	23
8		SCREW, SLOTTED BINDER HD, 6-32 x 5/16	9006021-4	22
1		BRACKET, SUPPORT	7409895	21
2		NUT, 4-40 x 3/16 AF x 1/16 THK	9009280	20
4		SCR 8-32 X 5/16 SELF-TAP	9009540	19
16		SCR #4 x 5/16 LG SELF TAPPING	9009236	18
2	J3, J4	TAB, FASTON	9007112	17
1		SWITCH BRACKET	7409270-01	16
6	E1 THRU E6	I.C. DEC 7410	1905576	15
40	R30 THRU R69	RES 180, 1/4W ±5%	1301322	14
31	R1 THRU R29, R70, R71	RES 1K, 1/4W ±5%	1300365	13
5	S18 THRU S22	SWITCH, SPDT, MOMENTARY	1210841	12
19	S1 THRU S17, S24, S25	SWITCH, SPDT, SUSTAINED	1210840	11
6		KNOB, GREY	1210825	10
11		KNOB	SEE LEGEND	9
13		KNOB	SEE LEGEND	8
8		LED, HOLDER, LONG	1210795-02	7
1	S23	SWITCH ROTARY	1210753	6
2	J1, J2	CONN 40 PIN	1209941	5
40	D1 THRU D16, D18 THRU D41	DIODE LIGHT EMITTING SSL-22L2	1110864	4
3	C7, C8, C9	CAP 6.8MF 35V, ±10% TANT	1005306	3
6	C1 THRU C6	CAP .01MF 100V, ±20%	1001610	2
1		ETCHED CIRCUIT BOARD	5009700	1

PARTS LIST

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	ETCH BOARD REV
PDP 11/40	F

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	REVISIONS
B		ORIGINATED
C	5409701-00001	J.O'LOUGHLIN 11/28/72
D	5409701-00002	J.O'LOUGHLIN 8/31/72
E	5409701-00003	R.D. HALE 10/30/72
F	5409701-00004	J.O'LOUGHLIN 11/6/72
G	5409701-00005	F.ELIA 1-10-74
H	5409701-00006	W. MINOR 1-12-74
J	5409701-00007	W. MINOR 2-18-74
K	5409701-00008	R.OLSEN 2-11-74
L	5409701-00009	R.OLSEN 2-11-74

DRN. R.OLSEN 7-15-72
CHK'D H.SPENCER 8/24/72
ENG. J.O'LOUGHLIN 8/24/72
PROJ. ENG. R.D. HALE 8/24/72
PROG. J.O'LOUGHLIN 8/24/72
NEXT HIGHER ASSY: KYII-D
SCALE
SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: KYII-D CONSOLE

SIZE D | CODE CS | NUMBER 5409701-0-1 | REV. L | DIST.

DRAWING 40-321 16499
DEC FORM NO DRD 1354

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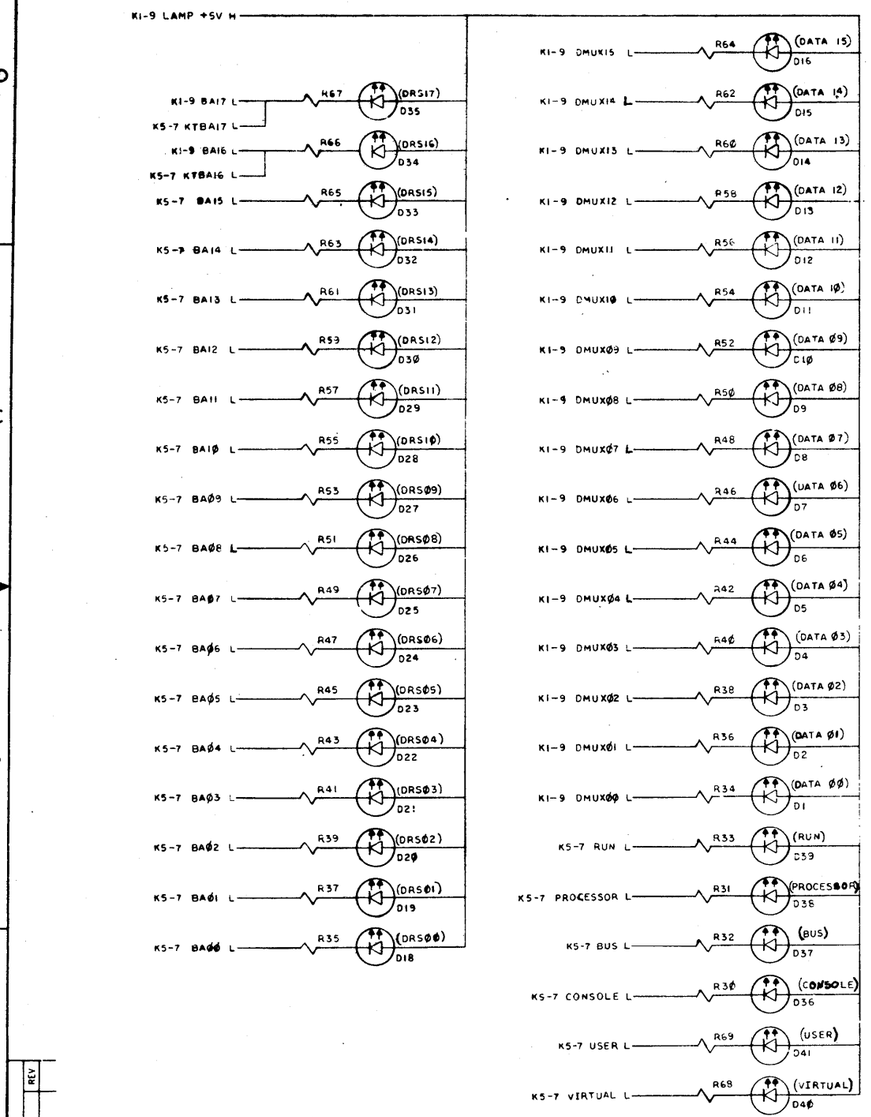

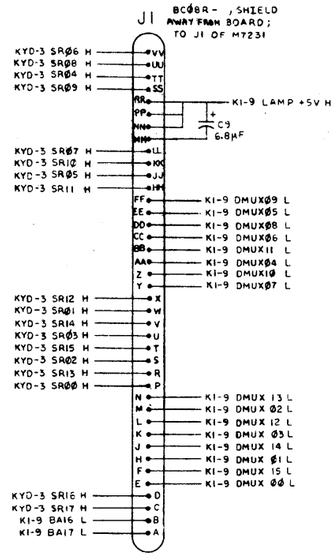

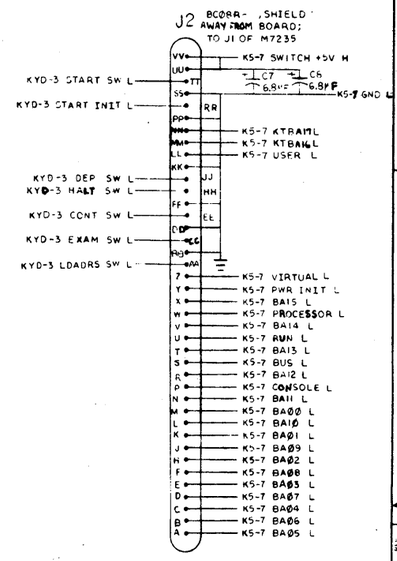

NOTES:

1. CONSOLE LABELS ARE NOTED IN PARENTHESIS.
2. CABLE CONNECTION INFORMATION IS NOTED ON SCHEMATIC AND ETCHED BOARD, CABLES MUST BE CONNECTED WITH SHIELD AWAY FROM BOARD.

REVISIONS		
REV	CHANGE NO	CHK

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

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —/—/—

FINISH —/—/—

DRN		DATE 2-20-72
CHK		DATE 6/27/72
ENG		DATE 6/27/72
PROJ ENG		DATE 6/27/72
QA		DATE 6/28/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
KYII-D CONSOLE
DISPLAY
KYD-2

NEXT HIGHER ASSY
KYII-D

SCALE —/—/—

SHEET 2 OF 3

SIZE	CODE	NUMBER	REV
D	CS	54C9701-0-1	L

DIST

NO	REVISION	BY	DATE	APPROVED
L	ECO 10760		1003	3715

NUMBER 54C9701-0-1
SIZE D CODE CS REV L

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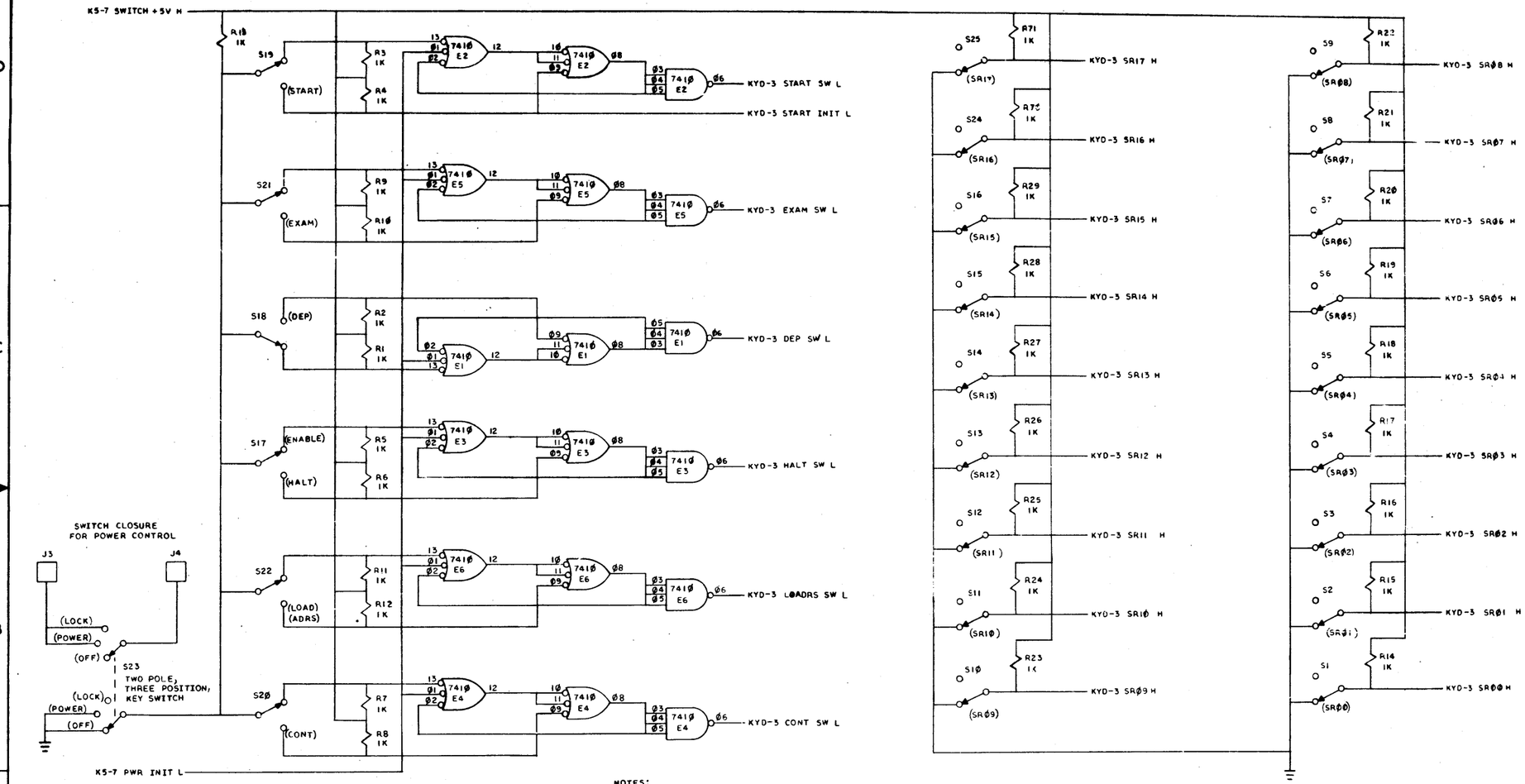

NOTES:
1. SWITCHES ARE SHOWN IN THEIR NON-ACTIVE OR ZERO POSITION: FOR ALL DATA SWITCHES (SR) THIS IS DOWN; FOR ALL CONTROL SWITCHES, EXCEPT DEP, THIS IS UP.
2. CONSOLE LABELS ARE SHOWN IN PARENTHESIS

FIRST USED ON OPTION/MODEL: PDP 11	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS .XXX ± .005, .XX ± .02, .X ± .1; ANGLES ±0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	DRN.	DATE 2-15-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHKD	DATE 6/27/72	
		DATE 6/27/72	TITLE: KY11-D CONSOLE SWITCHES KYD-3
	PROJ. ENGR	DATE 6/27/72	
	PROD. ENGR	DATE 6/27/72	
MATERIAL	NEXT HIGHER ASSY. KY11-D	SIZE D	CODE CS	NUMBER 5409701-0-1	REV. L
FINISH	SCALE		
	SHEET 3 OF 3	DIST.	

REVISIONS: REV | CHANGE NO. | CHK

BRUNING 40-522 10840
DEC FORM NO DRD 103-B

REV L | 5409701-0-1 | SIZE D | CODE CS | SHEET 2

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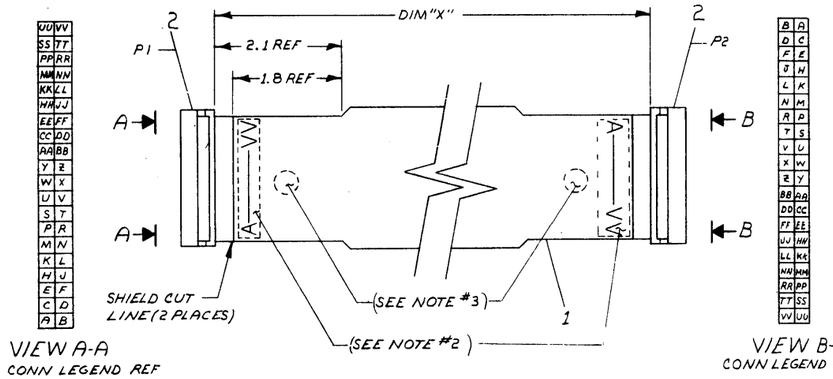
WIRE TABLE

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

LEGEND

NUMBER	DIM "X"	PRECUT LENGTH
BCØBR-Ø1	1.00 FT.	1.00FT±1.5IN=100IN
BCØBR-Ø2	2.00 FT.	2.00FT±1.5IN=100IN
BCØBR-Ø3	3.00 FT.	3.00FT±1.5IN=100IN
BCØBR-Ø4	4.00 FT.	4.00FT±1.5IN=100IN
BCØBR-Ø5	5.00 FT.	5.00FT±1.5IN=100IN
BCØBR-Ø6	6.00 FT.	6.00FT±1.5IN=200IN
BCØBR-Ø7	7.00 FT.	7.00FT±1.5IN=200IN
BCØBR-Ø8	8.00 FT.	8.00FT±1.5IN=200IN
BCØBR-Ø9	9.00 FT.	9.00FT±1.5IN=200IN
BCØBR-1Ø	10.00 FT.	10.00FT±1.5IN=200IN
BCØBR-11	11.00 FT.	11.00FT±1.5IN=300IN
BCØBR-12	12.00 FT.	12.00FT±1.5IN=300IN
BCØBR-13	13.00 FT	13.00FT±1.5IN=300IN
BCØBR-14	14.00 FT	14.00FT±1.5IN=300IN
BCØBR-15	15.00 FT	15.00FT±1.5IN=300IN
BCØBR-16	16.00 FT	16.00FT±1.5IN=300IN
BCØBR-17	17.00 FT	17.00FT±1.5IN=300IN
BCØBR-18	18.00 FT	18.00FT±1.5IN=300IN
BCØBR-19	19.00 FT	19.00FT±1.5IN=300IN
BCØBR-2Ø	20.00 FT	20.00FT±1.5IN=300IN
BCØBR-25	25.00 FT	25.00FT±1.5IN=300IN
BCØBR-3Ø	30.00 FT	30.00FT±1.5IN=0.40FT
BCØBR-35	35.00 FT	35.00FT±1.5IN=0.70FT
BCØBR-5Ø	50.00 FT	50.00FT±1.5IN=1.00FT
BCØBR-6Ø	60.00 FT	60.00FT±1.5IN=1.20FT
BCØBR-75	75.00 FT	75.00FT±1.5IN=1.50FT
BCØBR-AØ	100.00FT	100.00FT±1.5IN=2.00FT
BCØBR-A3	130.00FT	130.00FT±1.5IN=2.00FT
BCØBR-A6	160.00FT	160.00FT±1.5IN=2.00FT

1. ASSEMBLE THIS CABLE PER PROCESS SPEC #7606485-Ø-Ø.
2. CONNECTOR LEGEND IDENTIFICATION TO BE PLACED ON SHIELD SIDE OF CABLE IN THIS AREA AS SHOWN.
3. INSPECTION & TEST STAMPS TO BE PLACED AT EACH END OF THE CABLE ASSY.
4. STRIP LENGTH SHOULD BE .62 ± 4/32.



VIEW A-A
CONN LEGEND REF

VIEW B-B
CONN LEGEND REF.

REVISIONS			
CHK	CHANGE NO.	REV.	
PJ	BCØ8R-ØØØ05	L	REVISED & REDRAWN
			S. HOLMES
	BCØ8R-ØØØØ7	M	P. GARDNER

2	CONNECTOR, 4Ø SOCKET	1211206	2
AR	CABLE, 4Ø COND. FLAT W/SHIELD	17ØØØØ4	1
	DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±Ø° 3Ø'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: OVER Ø TO Ø.2	OVER Ø.2 TO 1.2	OVER 1.2 TO 4.Ø	OVER 4.Ø TO 12.Ø	OVER 12.Ø TO 4ØØ.Ø	OVER 4ØØ.Ø TO 8ØØ.Ø
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±.ØØ4	±.ØØ8	±.Ø12	±.Ø16	±.Ø24	±.Ø4
	PREFERRED ☐	±.Ø12	±.Ø16	±.Ø25	±.Ø4	±.Ø63	±Ø.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRN D. FONTAINE 5-28-76
CHK'D J. FLEMING
ENG. P. GARDNER
PROJ. ENG. C. CANNON
PROD. D. WELLS

NEXT HIGHER ASSY.

SCALE

SHEET 1 OF 1

FIRST USED ON

digital

TITLE BCØ8R I/O CABLE

SIZE D | CODE JA | NUMBER BCØ8R ØØ | REV. M | DIST. 1

REV. M | NUMBER BCØ8R-Ø-Ø | CODE JA | SIZE D

DEC FORM NO. DRD 100-C

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ITEM NO.	DWG. NO./PART NO,	DESCRIPTION	QUANTITY/VARIATIONS															
			11/40AC	11/40AD	11/40AE	11/40AF	11/40AH	11/40AJ	11/40AK	11/40AL	11/40AM	11/40AN	11/40AP	11/40AR	~~11/40AS~~	~~11/40AT~~	11/40AU	11/40AV
1.	A-PL-KD11-A-0	KD11-A PROCESSOR	1	1	1	1	1	1	1	1	1	1	1	1	-	-	1	1
2.	E-UA-H742Ø-A-Ø	POWER SUPPLY (115V)	1	-	1	-	1	-	1	-	1	-	1	-	-	-	1	-
3.	E-UA-H742Ø-B-Ø	POWER SUPPLY (23ØV)	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	1
4.	E-UA-H744-0-0	+5 REGULATOR	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
5.	E-UA-H745-0-0	-15 REGULATOR	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
6.	E-UA-BA11-FC-0	MOUNTING BOX ASSY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7.	A-PL-KY11-D-0	KY11-D CONSOLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8.	E-IA-7009566-0-0	EXPANDER, BOX POWER HARNESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9.	C-IA-7009053-0-0	CONSOLE TO POWER CONTROL HARNESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10.	D-IA-7009573-0-0	6 - PIN JUMPER HARNESS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11.	D-IA-7009994-0-0	KD11-A POWER HARNESS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12.	D-IA-7009565-0-0	MF11-L/LP FIRST MEMORY PWR. HARNESS	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
13.	A-PL-MF11-L-0	BACK PLANE 8K MEMORY	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.	A-PL-MF11-LP-0	8K PAR. MEMORY W/WIRED ASSY	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
15.	A-PL-MF11-U-0	16K SENSE MEMORY W/WIRED ASSY	-	-	-	-	1	1	-	-	1	1	-	-	-	-	-	-
16.	A-PL-MF11-UP-0	16K PAR. MEMORY W/WIRED ASSY	-	-	-	-	-	-	1	1	-	-	1	1	-	-	-	-
17.	A-PL-MM11-UP-0	16K PAR MEMORY EXPANSION	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
18.	A-PL-MM11-U-0	16K NON PAR MEMORY EXPANSION	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
19.	A-DC-7411323-0-0	DECAL-11/40 REGULATOR CONFIGURATION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20.	A-DC-7409478-0-0	DECAL PATENT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21.	A-DC-7409873-0-0	DECAL J1-J40 WHITE or CLEAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22.	E-UA-H754-0-0	+20V; -5V REGULATOR	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1
23.	1209340	8-PIN MATE-N-LOK FEMALE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
~~24.~~	~~12012064~~	~~CABLE GUIDE~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	-	-
25.	9006633	LOCK WASHER #6 INT TOOTH	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
26.	9009120-1	SPACER HEX SPECIAL	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
27.	9006634	LOCK WASHER #8 INT TOOTH	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
28.	9007880	TIE WRAPS	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
29.	9007867	TIE MOUNTS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
30.	9006043-1	SCR. PHL PAND HD #8-32 x 1.00 lg	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
31.	9008264	ADHESIVE TIE MOUNT	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
~~32.~~	~~9008263~~	~~WASHER FLAT NYLON #6~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	-	-
33.	9007036	CATERPILLAR GROMMET	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
34.	9006022-3	SCR. PHL TRUSS HD #6.32 x .38 LG	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
35.	9006071-1	SCR. PHL PAN HD. #10.32 x .38	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
36.	9006565	KEP NUTS # 10-32	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
37.	9006404-2	SCR. SLOTTED FLAT HD NYLON #6-32 x .38	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
~~38.~~	~~D-AR-11/40-0-3~~	~~ASSEMBLY CONFIGURATION~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	~~REF~~	-	-
~~39.~~	~~E-UA-H742Ø-A-Ø~~	~~POWER SUPPLY (115V)~~	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
~~40.~~	~~E-UA-H742Ø-B-Ø~~	~~POWER SUPPLY (230V)~~	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
41.	A-PL-MF11-WP-0	MEMORY, 32K PAR W/WIRED ASSY	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
~~42.~~	~~B-DD-H96Ø-0~~	~~H960-CA~~	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
~~43.~~	~~B-DJ-H967-0~~	~~H967-CA~~	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-

REVISIONS			
CHK	CHANGE NO.		REV.
[illegible]	11/40-00021	REVISED AND REDRAWN	S
[illegible]	11 40-00022	[illegible]	T
K. POON	11/40-00023	R. VowLes 8-FEB-77 K. POON	U

DRN. FLANDERS	9-15-7_	FIRST USED ON — digital
CHK'D TESCHNER	9-22-72	
ENG. MINOR	9-22-72	TITLE: BASIC ASSEBLY
PROJ. ENG. MINOR	9-22-72	
PROD. STRINGER	9-22-72	
NEXT HIGHER ASSY.		
D-UA-11/40-0-0		SIZE C / CODE PL / NUMBER 11/40-0-0 / REV. U
SCALE —		DIST.
SHEET 1 OF 1		

REV. U | NUMBER 11/40-0-0 | SIZE CODE C PL

DEC FORM NO. DRC 110 A

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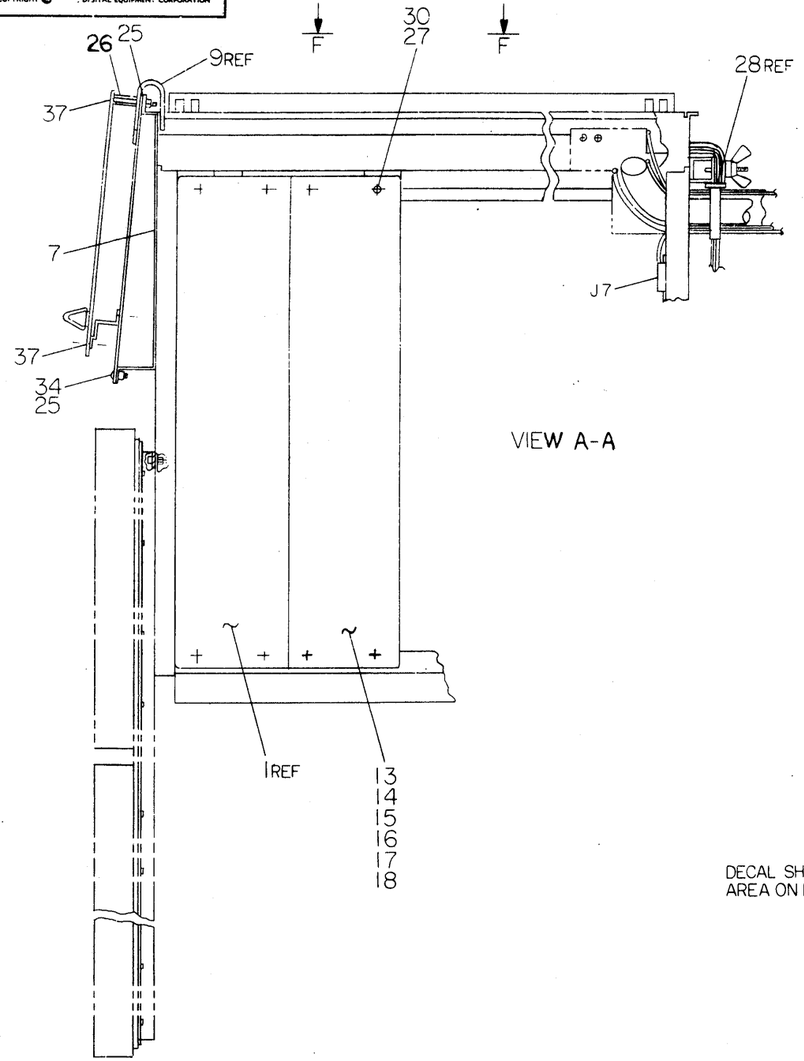
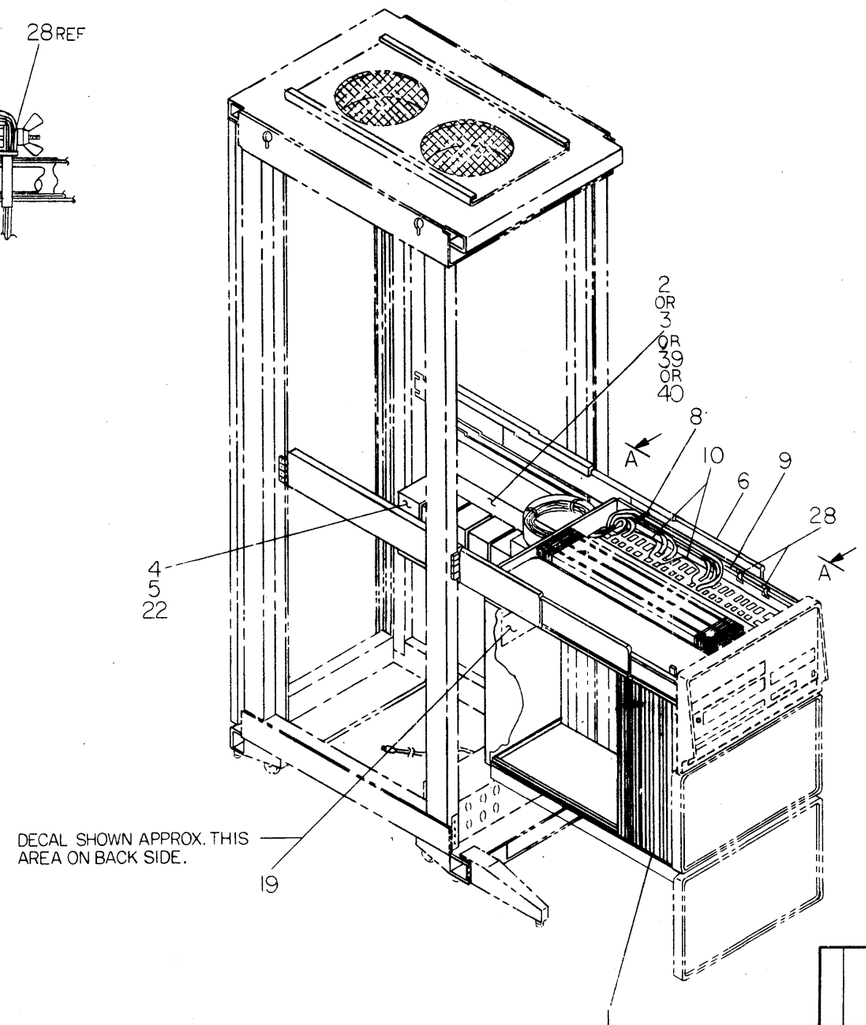


VIEW A-A



DECAL SHOWN APPROX. THIS AREA ON BACK SIDE.

NOTES

1. MAIN HARNESS (ITEM 8) HAS TWO (2) UNUSED 8-PIN PLUGS (P16 AND EITHER P15 OR P17). TO PREVENT DAMAGE TO REGULATORS INSERT AN EMPTY MATING CONN (ITEM 23) INTO THEM AND TIE THEM OUT OF THE WAY. ALSO ADD OR REMOVE JUMPERS PER D-IC-7009566-0-1.
2. PARTS SHOWN IN PHANTOM LINES ARE NOT PART OF THIS ASSEMBLY AND ARE SHOWN FOR REFERANCE ONLY.

REVISIONS			
CHK	CHANGE NO.	REV.	
	11/40-00017	M	REVISED AND REDRAWN
	11/40-00018	N	B. MINOR
	11/40-00019	P	B. MINOR
	11/40-00020	R	B. MINOR
	11/40-00021	S	K. POON
	11/40-00022	T	K. POON
	11/40-00023	U	K. POON

DESCRIPTION	DWG./PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 0.9	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED ☐	±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

DRN. G F LANDER	7-19-72
CHK'D C TESCHNER	9-22-72
ENG. C K BLASI	9-22-72
PROJ. ENG. J F L	9-22-72
PROD. G STRINGER	9-26-72
NEXT HIGHER ASSY.	
MATERIAL	D-AR-11/40-S
FINISH	
SCALE	
SHEET 1 OF 5	

FIRST USED ON

digital

TITLE

BASIC ASSY (11/40)

SIZE	CODE	NUMBER	REV.
D	UA	11/40-00	U

DIST

DEC FORM NO. DRD 100-C

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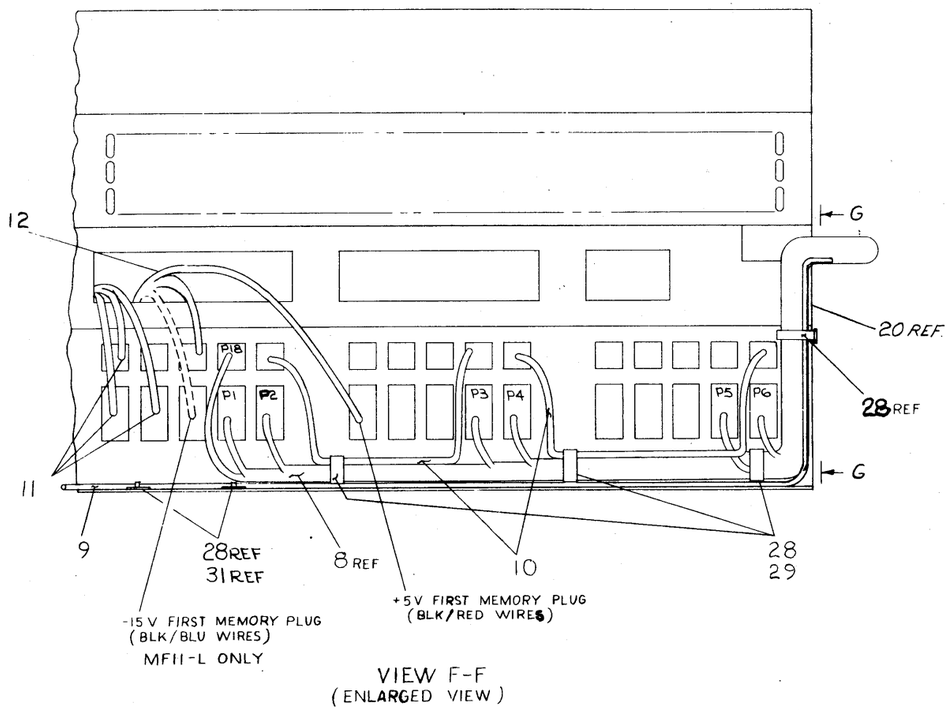
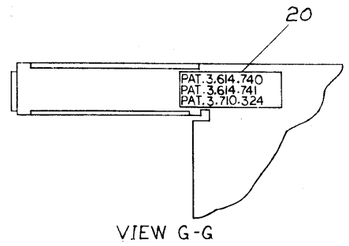


VIEW F-F
(ENLARGED VIEW)



VIEW G-G

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

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

DRN. G.FLANDER	DATE 7-19-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. C.TESCHNER	DATE 9-22-72	
ENG. C.K.BLASI	DATE 9-22-72	TITLE: BASIC ASSY (11/40)
PROJ. ENG. J.F.LOUGHLIN	DATE 9-22-72	
PROD. G.STRINGER	DATE 9-26-72	
NEXT HIGHER ASSY.		SIZE D CODE UA NUMBER 11/40-0-0 REV. U
SCALE		DIST.
SHEET 2 OF 5		

MATERIAL
FINISH

REVISIONS: REV. | CHANGE NO | CHK

DEC FORM NO DRD 1156 B

SIZE D CODE UA NUMBER 11/40-0-0 REV U

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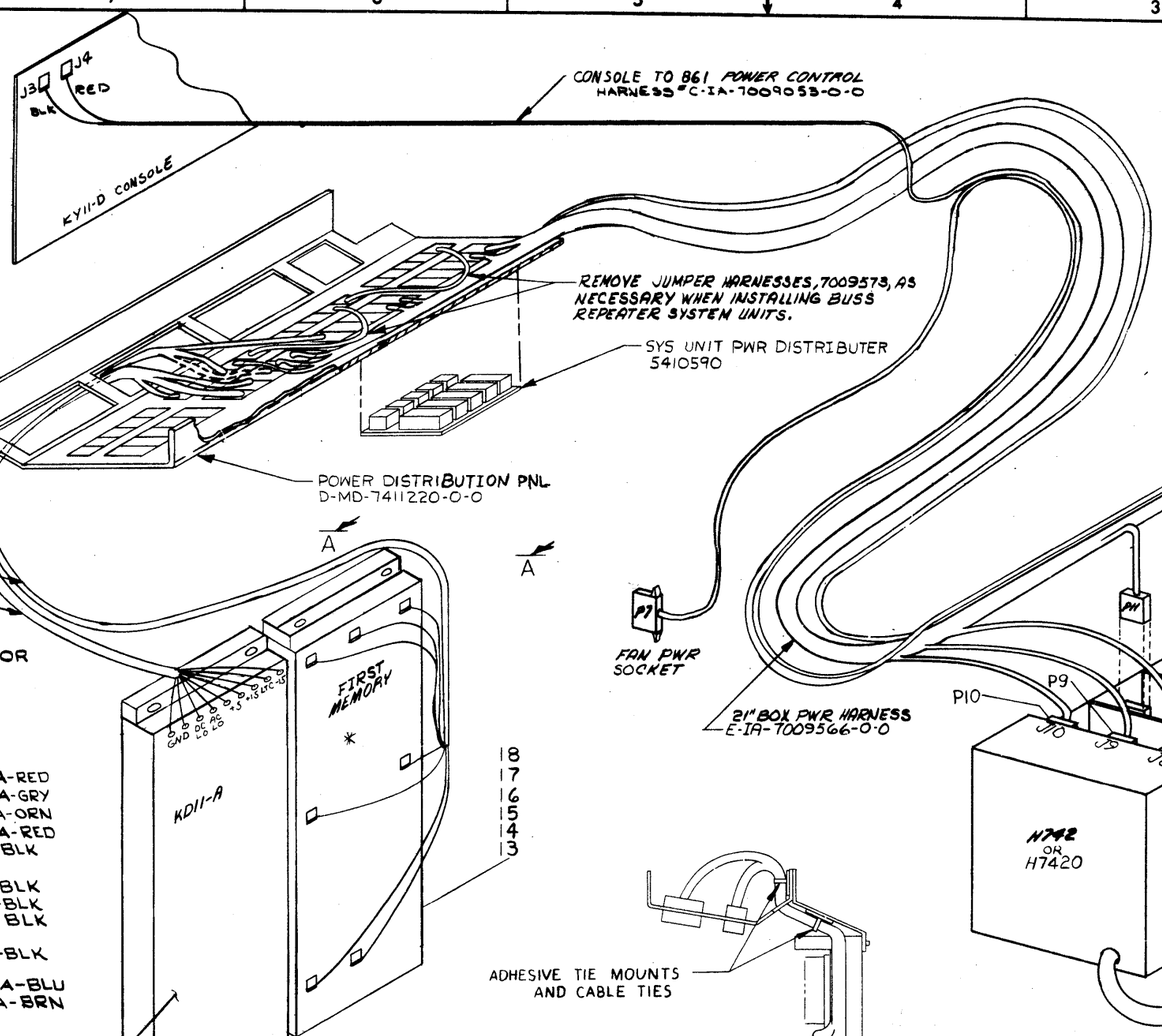
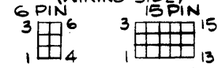


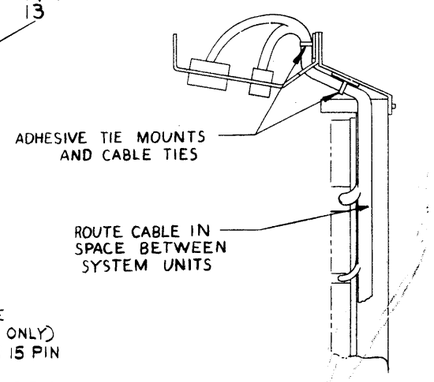
NOTE:
IF USING AN H745 IN SLOT E USE P15.
IF USING AN H754 IN SLOT E USE P17, TRANSFER RED & WHT AC WIRES FROM P15 TO P17 AND INSTALL OR REMOVE JUMPERS PER DWG # D-IC-7009566-0-1

OPTION POWER CONNECTOR PIN ASSIGNMENTS (WIRING SIDE)



1. LO GND-BLK	1. +5V TO 7.5A-RED
2. LINE CLOCK-BRN	2. +15V TO 3.0A-GRY
3. DC LO-VIO	3. +20V TO 8A-ORN
4. AC LO-YEL	4. +5V TO 7.5A-RED
5. SPARE 4	5. GROUND-BLK
6. SPARE 5	6. SPARE *1
	7. GROUND-BLK
	8. GROUND-BLK
	9. GROUND-BLK
	10. SPARE *2
	11. GROUND-BLK
	12. SPARE *3
	13. -15V TO 10A-BLU
	14. -5V TO 8A-BRN
	15. SPARE *3

USE #14 WIRE FOR +5, GROUND, ALL OTHERS CAN BE #18.



VIEW A-A

*NOTE: IF FIRST MEMORY IS MF11-L/LP THE -15V. PLUG (BLUE AND BLACK WIRES ONLY) CONNECTS TO SU3 JACK. THE OTHER 15 PIN PLUG CONNECTS TO SU4 JACK.
IF FIRST MEMORY IS MF11-U/UP THE 15 PIN PLUG CONNECTS TO SU4 JACK.

NEW PWR. DISTRIBUTION VERSION FOR SYSTEM SERIAL NUMBERS 6 000 AND GREATER WITH NEW KD11-A BACKPLANE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

FIRST USED ON OPTION/MODEL

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

		DATE
DRN.	FLANDER	7-19-72
CHK'D	C TESCHNER	9-22-72
ENG.	C K BLISI	9-22-72
PROJ ENG.	J F O'LOUGHLIN	9-22-72
PROG.	STRINGER	9-25-72

NEXT HIGHER ASSY.
SCALE
SHEET 3 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASIC ASS'Y (11/40)

SIZE	CODE	NUMBER	REV.
D	UA	11/40-0-0	U

DIST

REVISIONS	REV.	CHANGE NO.	CHK

DEC FORM NO DRD 169-A

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DIGITAL EQUIP. CORP.

CONSOLE TO 861 POWER CONTROL HARNESS #C-IA-7009053-0-0

J3 J4 RED BLK

KY11-D CONSOLE

REMOVE JUMPER HARNESSES, 7009578, AS NECESSARY WHEN INSTALLING BUSS REPEATER SYSTEM UNITS.

SYS UNIT PWR DISTRIBUTER 5410590

POWER DISTRIBUTION PNL D-MD-7411220-0-0

A

A

MEMORY HARNESS KD11-A PWR DIST HARNESS D-IA-7009994-0-0

OPTION POWER CONNECTOR PIN ASSIGNMENTS (WIRING SIDE)

6 PIN

3 6
1 4

15 PIN

3 15
1 13

1. LO GND-BLK	1. +5V TO 7.5A-RED
2. LINE CLOCK-BRN	2. +15V TO 3.0A-GRY
3. DC LO-VIO	3. +20V TO 8A-ORN
4. AC LO-YEL	4. +5V TO 7.5A-RED
5. SPARE 4	5. GROUND - BLK
6. SPARE 5	6. SPARE *1
	7. GROUND - BLK
	8. GROUND - BLK
	9. GROUND - BLK
	10. SPARE *2
	11. GROUND - BLK
	12. SPARE *3
	13. -15V TO 10A-BLU
	14. -5V TO 8A-BRN
	15. SPARE *3

USE #14 WIRE FOR +5, GROUND, ALL OTHERS CAN BE #18.

KD11-A

FIRST MEMORY *

8 7 6 5 4 3

1 REF

* NOTE: IF FIRST MEMORY IS A MF11-L/LP THE -15V PLUG (BLUE AND BLACK WIRES ONLY) CONNECTS TO THE SU3 JACK. THE OTHER 15 PIN PLUG CONNECTS TO SU4 JACK.
IF FIRST MEMORY IS MF11-U/UP THE 15 PIN PLUG CONNECTS TO SU4 JACK.

ADHESIVE TIE MOUNTS AND CABLE TIES

ROUTE CABLE IN SPACE BETWEEN SYSTEM UNITS

VIEW A-A

NEW PWR. DISTRIBUTION VERSION FOR SYSTEM SERIAL NUMBERS 6,000 AND GREATER

P7 FAN PWR SOCKET

21" BOX PWR HARNESS E-IA-7009566-0-0

P10 P9 P8

J10 J9 J8

N742 OR H7420

SLOT A N799 +5V BASIC

SLOT B N799 +5V BASIC

SLOT C H744 +5V BASIC

SLOT D H745 -15V BASIC

SLOT E H745 -15V OR H754 +20, -5V OPTIONAL

J11 J12 J13 J14 J15

5 OR 22

LINE 1 SWITCHED OUTLET OF 861 POWER CONTROL

P16 NOT USED IN 11/40 CPU

CONSOLE TO 861 POWER CONTROL HARNESS #C-IA-7009053-0-0

23

SEE NOTE *1 ON SHT. 1

21

J4 J5

861 P.C

NOTE:
IF USING AN H745 IN SLOT E USE P15.
IF USING AN H754 IN SLOT E USE P17, TRANSFER RED & WHT AC WIRES FROM P15 TO P17 AND INSTALL OR REMOVE JUMPERS PER DWG # D-IC-7009566-0-1

REVISIONS	REV.	CHANGE NO.	CHK.

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DRN.	FLANDER	7-19-72
CHK'D	C. TESCHNER	9-22-72
ENG.	C.K. BLISI	9-22-72
PROJ. ENG.	J.F. OLOUGHLIN	9-22-72
PROG.	STRINGER	9-25-72

NEXT HIGHER ASSY.

SCALE

SHEET 4 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BASIC ASS'Y (11/40)

SIZE D | CODE | NUMBER: DUA11/40-0-0 | REV. U

DIST.

SEC FORM NO. D260 MD-A

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CONSOLE TO 861 POWER CONTROL HARNESS #C-IA-7009053-0-0

J3 BLK J4 RED

KY11-D CONSOLE

OLD PWR DIST BRKT D-MD-7409672

OLD EXP Box PWR DIST BD 5409949

OLD 1ST MEMORY DIST HARNESS D-IA-7009103-0-0

OLD FAN AC PWR DIST BD 7008911

OLD KDII-A HARNESS D-IA-7009046-0-0

KDII-A

MF11-L MEMORY

ACLO DCLO +5 -15 GND

1 REF

14 13

E-IA-7008754-0-0

21

861 P.C

CONSOLE TO 861 POWER CONTROL HARNESS #C-IA-7009053-0-0

N792

SLOT A N792 +5V BASIC

SLOT B N792 +5V BASIC

SLOT C N792 +5V BASIC

SLOT D N795 -15V BASIC

SLOT E N795 -15V BASIC

LINE 1 SWITCHED OUTLET OF 861 POWER CONTROL

OLD PWR DISTRIBUTION VERSION FOR SYSTEM SERIAL NUMBERS 5999 AND LOWER.

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DRN.		11/72
CHK'D		9/22/72
ENG.		9/22/72
QUAL/ENG.		9/22/72
PROD.		9/22/72

NEXT HIGHER ASSY

SCALE

SHEET 5 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE BASIC ASSY (11/40)

SIZE D CODE LA11-C-0 NUMBER C REV

DIST

REVISIONS	REV.	CHANGE NO.	CHK

SIZE D CODE LA11/40-0-0 NUMBER REV U

DEC FORM NO DRD 188-A

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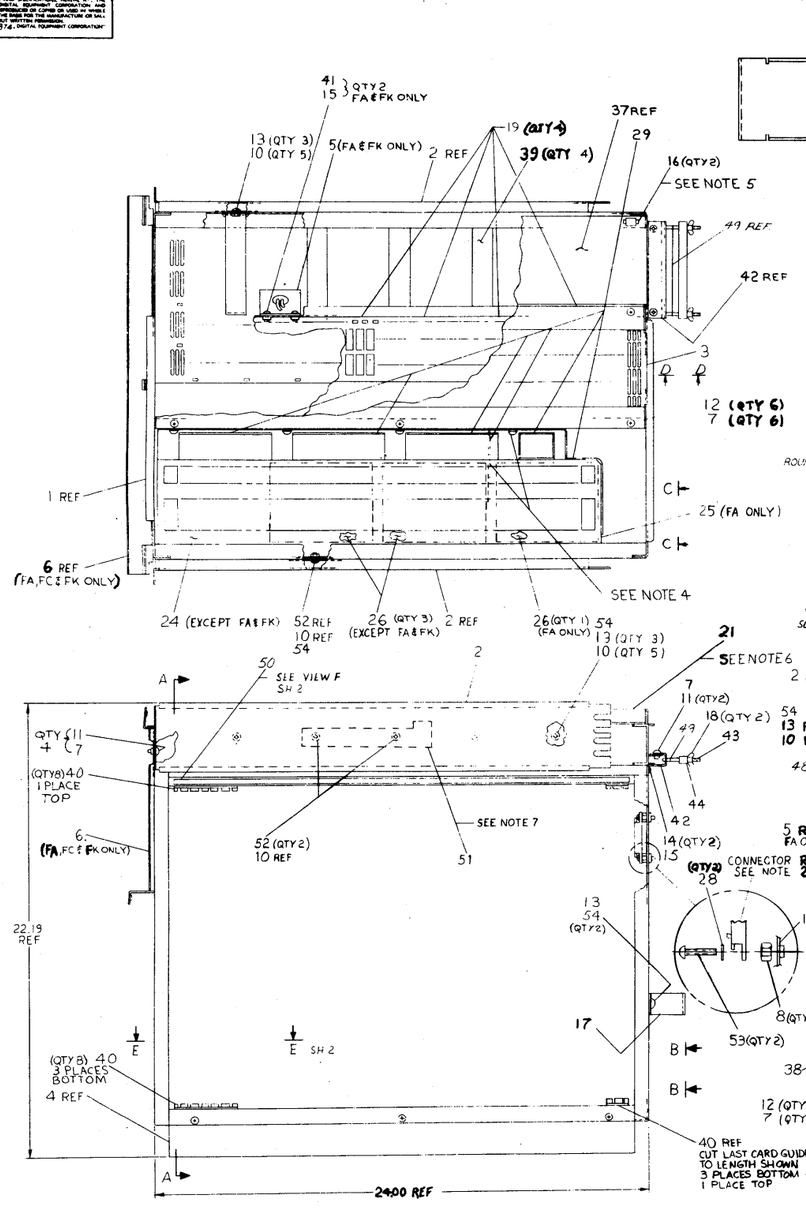
LEGEND	
NUMBER	VARIATION
BA11-FA	BASIC 11/45
BA11-FB	EXPANDER
BA11-FC	BASIC 11/40
BA11-FD	FIELD EXPANSION BOX ASSY 115 V
BA11-FE	FIELD EXPANSION BOX ASSY 230 V
BA11-FH	FIELD EXPANSION BA11-FD WITH +20V DC REGULATOR
BA11-FJ	FIELD EXPANSION BA11-FE WITH +20V DC REGULATOR
BA11-FK	BASIC 11/70

NOTES:
1. MECHANICAL STATUS DECAL MUST SHOW BOX VARIATION AND REVISION.
2. CONNECTOR P13 PART OF HARNESS 7009540 IS INSTALLED AT NEXT HIGHER ASSY 11/45 OR 11/70 IT IS SHOWN FOR REF ONLY, ABOVE INFO IS FOR BA11-FA & FK ONLY
3. CONN J7 SHOWN FOR REF ONLY MATES WITH P7 PART OF HARNESS #7009566 THEY ARE INSTALLED AT NEXT HIGHER ASSY D-AR-BA11-F-01, ABOVE INFO IS FOR BA11-FD, FE, FH & FJ ONLY
4. ITEM #240R25 USING PARTS #7 & 11 TO BE MOUNTED TO LOCATION INDICATED (FOR FA ONLY)
5. INSTALL ITEM #16 BY PUSHING IT INTO COVER ITEM #37. WHEN COVER IS CLOSED #16 WILL AUTOMATICLLY LOCK TO CHASSIS ITEM #
6. ITEM #21 D-AR-BA11-F-0 ON THIS PARTS LIST IS FOR EXPANSION UNIT
7. ASSEMBLE ITEM #51 WHEN SLIDE IS IN HALF EXTENDED POSITION. FOR RIGHT HAND SIDE, TIP OF ITEM #51 IS FACE UP (AS SHOWN). FOR LEFT HAND SIDE, TIP OF ITEM #51 IS FACE DOWN.



OFF SHEET PARTS LIST SEE A-PL-BA11-F-0

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

DIMENSIONAL TOLERANCE: DIMENSIONS ARE MILLIMETRE (INCH) UNLESS OTHERWISE SPECIFIED

MILLIMETRE	HIGHER	ANGLES
XXX ±0.10	XXX ±.005	10' 30'
XX ±0.5	XX ±.01	
X ±2.	X ±.1	

THIRD ANGLE PROJECTION — REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY — MATERIAL — FINISH

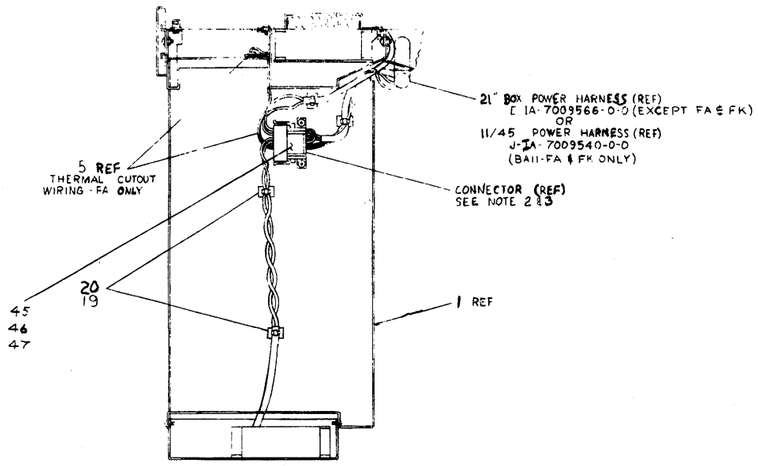
DRN. — DATE
CHK. — DATE
ENG. — DATE
PROJ. ENG. — DATE
PROD. — DATE
NEXT HIGHER ASSY. D-UA-11/45-0-0
SCALE 1/2
SHEET 1 OF 2

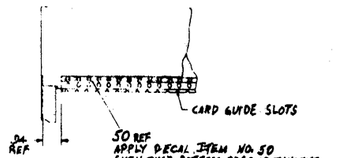
digital

TITLE: MOUNTING BOX ASSY

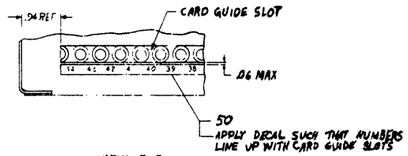
SIZE/CODE E UA | NUMBER BA11-F-0 | REV. AH | DIST.

REVISIONS	CHANGE NO.	DATE	BY	CHK
A	1	18 JAN 77	A. VANLAS	
B	2	8 FEB 77	A. VANLAS	
C	3	22 DEC 77	A. KOMA	
D	4	18 JAN 78	A. VANLAS	
E	5	6 APR 78	A. VANLAS	
F	6	26 JUL 78	A. VANLAS	
G	7	6 SEP 78	A. VANLAS	
H	8	6 OCT 78	A. VANLAS	
J	9	6 NOV 78	A. VANLAS	
K	10	6 DEC 78	A. VANLAS	
L	11	6 JAN 79	A. VANLAS	
M	12	6 FEB 79	A. VANLAS	
N	13	6 MAR 79	A. VANLAS	
P	14	6 APR 79	A. VANLAS	
R	15	6 MAY 79	A. VANLAS	
S	16	6 JUN 79	A. VANLAS	
T	17	6 JUL 79	A. VANLAS	
U	18	6 AUG 79	A. VANLAS	
V	19	6 SEP 79	A. VANLAS	
W	20	6 OCT 79	A. VANLAS	
X	21	6 NOV 79	A. VANLAS	
Y	22	6 DEC 79	A. VANLAS	
Z	23	6 JAN 80	A. VANLAS	
AA	24	6 FEB 80	A. VANLAS	
AB	25	6 MAR 80	A. VANLAS	
AC	26	6 APR 80	A. VANLAS	
AD	27	6 MAY 80	A. VANLAS	
AE	28	6 JUN 80	A. VANLAS	
AF	29	6 JUL 80	A. VANLAS	
AG	30	6 AUG 80	A. VANLAS	
AH	31	6 SEP 80	A. VANLAS	

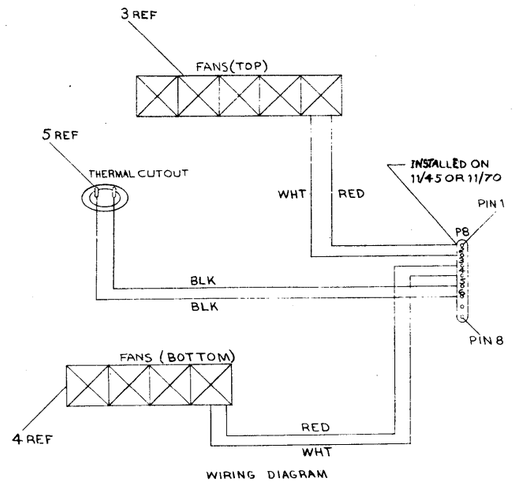




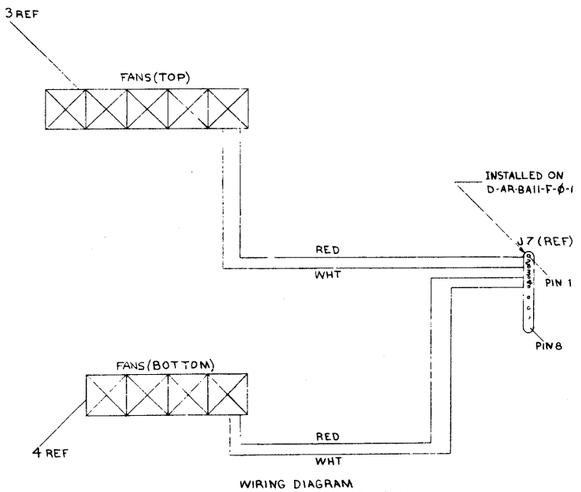
VIEW F
SCALE 1/2
SHEET 1



VIEW E-E
SCALE 1/1
SHEET 1



WIRING DIAGRAM
FOR FA & FK ONLY
USED ON SERIAL
NUMBER 2000 & GREATER



WIRING DIAGRAM
FOR ALL EXCEPT FA & FK
USED ON SERIAL NUMBERS
2000 & GREATER

REVISIONS		
DWG	CHANGE NO	REV.

TITLE	SIZE	DRAWING NUMBER	REV
MOUNTING BOX ASSY	E	4 BA11-	AN
SCALE 2	SHEET 2		
	CUST		

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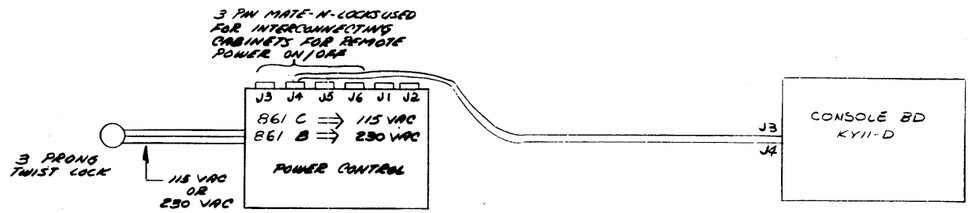

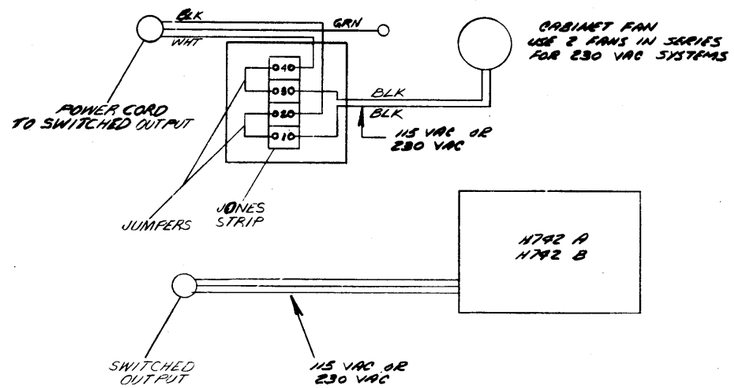

REVISIONS		
CHK	CHANGE NO.	REV.
[illegible]	11/40-00004	A
[illegible]	W. MINOR	

DEC FORM NO DRD 100-A

FIRST USED ON OPTION/MODEL
11/40

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 —"—

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DRN. [illegible]	DATE 9/22	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. C Troseluk	DATE 9/23/72	
ENG. C R B [illegible]	DATE 9/21/72	
PROJ. ENG. [illegible]	DATE 9/23/72	
PROD. [illegible]	DATE 9 26 72	

NEXT HIGHER ASSY. B-DD-11/40-*

SCALE —"—

SHEET 1 OF 1

TITLE: AC DISTRIBUTION (11/40)

SIZE	CODE	NUMBER	REV.
D	IC	11/40-0-1	A

DIST.

REV	NUMBER	SIZE	CODE
A	11/40-0-1	D	IC

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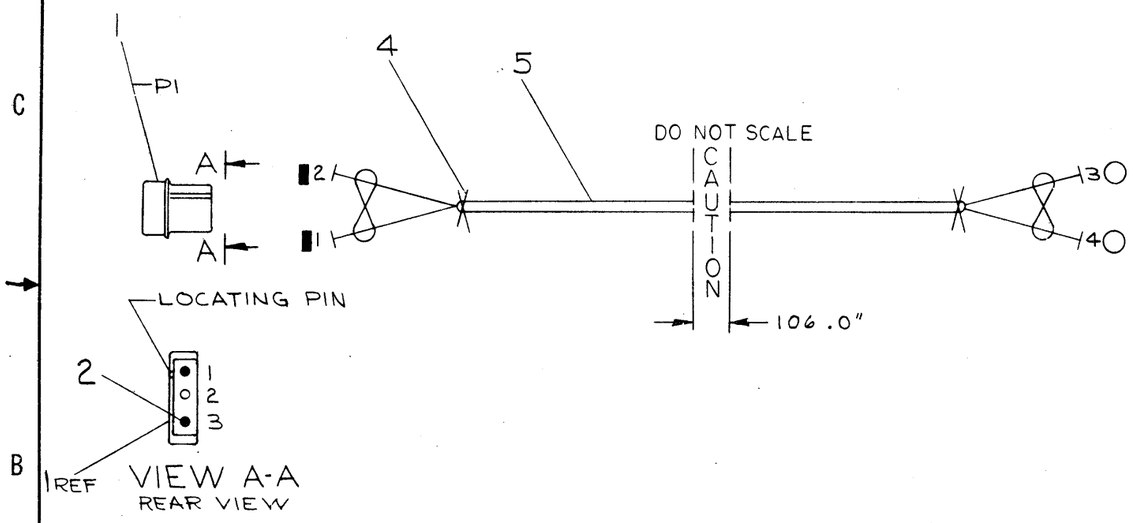
WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO PIONT	TO CONNECTION	TO TERM
5	18	BLK	1	P1-3	2	3	—	3
		RED	2	P1-1	2	4	—	3

NOTES:

1. USE TIE WRAPS(X) ITEM #4 AT END BREAKOUT POINTS.



0" 6" 12"

SCALE

DO NOT REDUCE

	A/R	WIRE #18 AWG TWP BLK/RED	9107430-02	5
X	A/R	TIE-WRAP SST 1.5M	9007880	4
○	2	CONN SOLDERLESS #50902	9007917	3
▮	2	MATE-N-LOCK TERM (MALE)	1209378-01	2
SYM	1	CONN MATE-N-LOCK (3 PIN)	1209351-03	1

PARTS LIST

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/40				

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: —

DRN.		DATE 8/11/72
CHK'D.		DATE 9/22/72
ENG.	C.R. Blasi	DATE 9/22/72
PROJ. ENG.		DATE 9/22/72
PROD.		DATE 9-26-72

NEXT HIGHER ASSY. D-UA-11/40-0-0

SCALE 1/1

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONSOLE TO POWER CONTROL HARNESS

SIZE	CODE	NUMBER	REV.
C	IA	7009053-0-0	C

DIST.

REVISIONS			
CHK	CHANGE NO.		REV.
[illegible]	7009053-00001	C. F. Bracey 4.3.73	A
[illegible]	7009053-00002	C.R. BLASI 4-12-74	B
[illegible]	7009053-00003	B. MINOR 2-3-74	C
		B. MINOR 11/14/74	

BRUNING 40-107 15968

DEC FORM NO.

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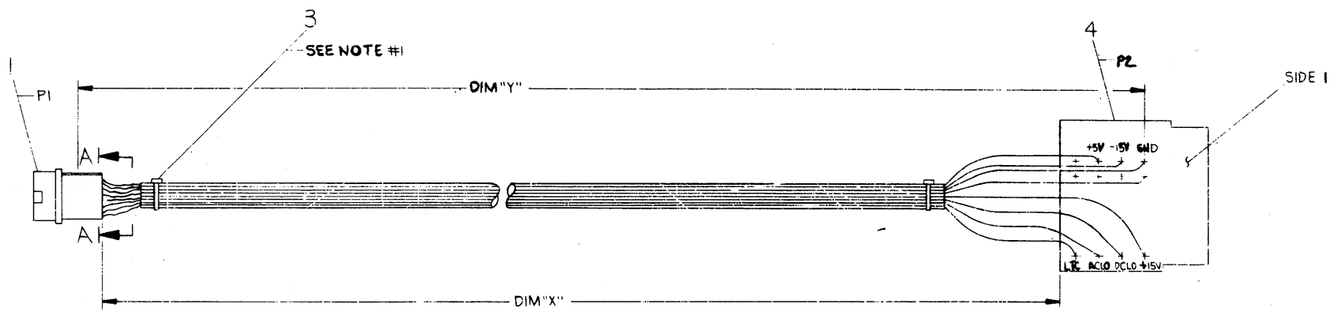
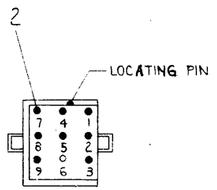
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	REMARKS
5	18	VIO	P1-1	P2-DCLO	
6	14	BLK	P1-4	P2-GND	
7	18	BRN	P1-7	P2-LTC	
8	18	YEL	P1-2	P2-ACLO	
9	14	BLK	P1-5	P2-GND	
10	14	GRY	P1-8	P2-+15V	
11	18	BLU	P1-3	P2--15V	
12	14	RED	P1-9	P2-+5V	

NUMBER	DIM "X" VARIATION	DIM "Y" (PRECUT) REF.
7009177-02	2 FEET	2 FEET 2 INCHES

NOTES:
1. USE TIE WRAPS ITEM #3 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAKOUT POINT





SECTION A-A
RIGHT-HAND VIEW
P1

ITEM NO	PART NO	QTY	DESCRIPTION
11	9107370-22	A/R	WIRE, #14 AWG RED
10	9107360-66	A/R	WIRE, #18 AWG BLU
9	9107370-33	A/R	WIRE, #14 AWG GRY
8	9107360-44	A/R	WIRE, #18 AWG YEL
7	9107360-11	A/R	WIRE, #18 AWG BRN
6	9107370-00	A/R	WIRE, #14 AWG BLK
5	9107360-77	A/R	WIRE #18 AWG VIO
4	A-PL-6772-0-0	1	POWER CONN. 6772
3	9007880	A/R	TIE WRAP SST1.5M
2	1209378-01	B	MATE-N-LOC TERM. (MALE)
1	1209351-09	1	CONN., MATE-N-LOC (9 PIN)

PARTS LIST

FIRST USED ON OPTION/MODEL: 11/40

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

DRN: [illegible] DATE 10/16/72
CHK'D C. Teschner DATE 10/23/72
ENG C.R. Lee DATE 11/27/72
PROJ ENG C.R. Lee DATE 11/27/72
PROG [illegible] DATE 4/19/73

MATERIAL: SEE PARTS LIST
FINISH: —
NEXT HIGHER ASSY: D-JA-7009177-0
SCALE: —
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: POWER DISTRIBUTION CABLE

SIZE D | CODE 1A7 | NUMBER 7009177-0-0 | REV
DIST

REV	REVISIONS	CHK
	CHANGE NO	

DRAWING 40-107 1968
DEC FORM NO 11683 105-A

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-861-0		
POWER CONTROL, 861	E-UA-861-0-0		
PILOT CONTROL	D-CS-5411522-0-1		
CIRCUIT SCHEMATIC 861	D-CS-861-A-1		
CIRCUIT SCHEMATIC 861	D-CS-861-B-1		
CIRCUIT SCHEMATIC 861	D-CS-861-C-1		
PACKAGING INSTRUCTION	A-PI-3700083-0-0		
CIRCUIT SCHEMATIC 861	D-CS-861-F-1		

THIS IS PRINT SET ☐☐☐☐

UNIT VARIATIONS		PRINT SET
VAR	TITLE	
861-A	POWER CONTROL, 861-A	
861-B	POWER CONTROL, 861-B	
861-C	POWER CONTROL, 861-C	
861-F	POWER CONTROL, 861-F	

REVISIONS		
DATE	CHG. NO.	REV
2/73	861-3	A
8/74	861-4	B
12-74	861-6	C
4-75	861-7	D
7-75	861-8	E
2-76	861-9	F
4-76	861-10	H
8-76	861-11	J
9-76	861-12	K
1-77	861-13	L
10-77	861-14	M

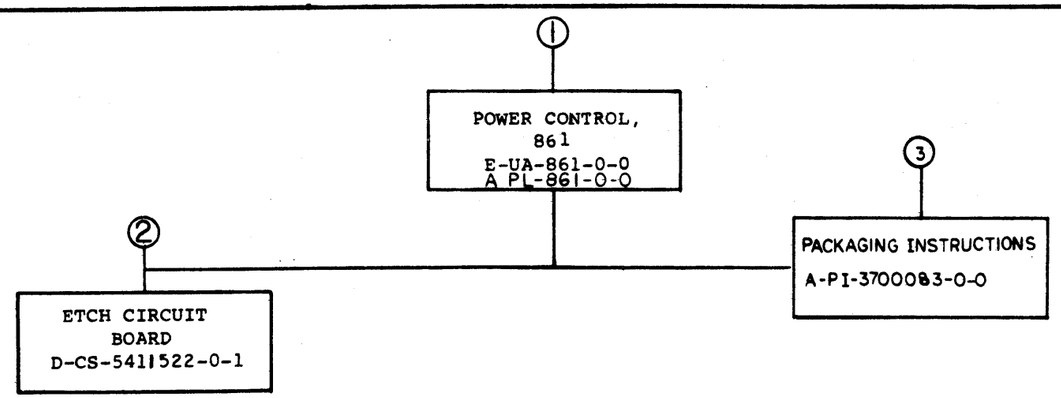
USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. SCHMIDT	DATE 9/13/72	TITLE 861 POWER CONTROL
CHK'D. B. ALLEN	DATE 9/13/72	
PROJ ENG. JIM KALAGHER	DATE 9/13/72	
PROD. Fazio Paul	DATE 9/25/72	SIZE B / CODE DD / NUMBER 861-0 / REV M
FIELD SERV. Paton Irving	DATE 9/25/72	DIST

DEC 16 1335 1082 1A 8972

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
POWER CONTROL	SHEET 2 OF 3	B	DD	861-0	M

DRB 107
DEC 16—(325)—1062—3—N871

ELECTRICAL

CUSTOMER PRINT SET 861-1				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x					1	D-CS-861-A-1	E	1	CIRCUIT SCHEMATIC, 861 P.C.	
x						D-CS-861-B-1	E	1	CIRCUIT SCHEMATIC, 861 P.C.	
x						D-CS-861-C-1	E	1	CIRCUIT SCHEMATIC, 861 P.C.	
						~~A-SP-861-0-1~~	~~-~~	~~2~~	~~TEST AND INSPECTION PRO.~~	
X						D-CS-861-F-1	D	1	CIRCUIT SCHEMATIC, 861 P.C.	
						A-SP-861-Ø-3	*		ENGINEERING SPEC 861/866	
X					2	D-CS-5411522-0-1	A	1	PILOT CONTROL	
						PC-5011522			ETCH CIRCUIT BOARD	
						K-CO-5411522-0-4			X Y COORDINATE HOLE LOCATION	
						D-AH-5411522-0-5			ASSY DRILLING HOLE LAYOUT	
						B-MH-5411522-0-6			MODULE ECO HISTORY	

MECHANICAL

CUSTOMER PRINT SET 861-1				MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x					1	E-UA-861-0-0	K	2	POWER CONTROL, 861	
						E-IA-7410567-0-0	C	1	CHASSIS, 861 PC	
						D-IA-7410568-0-0	C	2	COVER, 861 P.C.	
						A-PS-3611216-0-0			NAME PLATE 861-A	
						C-SS-3611216-0-1		1	NAME PLATE 861-A ARTWORK	
						A-PS-3611217-0-0			NAME PLATE 861-B	
						C-SS-3611217-0-1		1	NAME PLATE 861-B ARTWORK	
						A-PS-3611218-0-0			NAME PLATE 861-C	
						C-SS-3611218-0-1		1	NAME PLATE 861-C ARTWORK	
						A-PS-3612382-0-0			NAME PLATE 861-F	
						C-SS-3612382-0-1		1	NAME PLATE 861-F ARTWORK	
						A-PL-861-0-0	J	4	POWER CONTROL 861	
						A-SP-861-Ø-2	*	10	TEST AND INSPECTION PROCEDURE	
					3	A-PI-3700083-0-0		2	PACKAGING INSTRUCTIONS	
						A-PS-9905229-0-0		2	FULL OVER LAP CARTON	
						A-PS-9905228-0-0		2	EXPANDER POLYSTYRENE FOAM INSERT	

CUSTOMER PRINT SET CODES

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

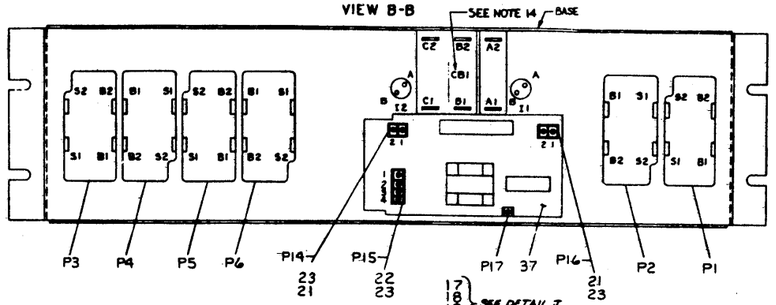
TITLE		SIZE	CODE	NUMBER	REV
POWER CONTROL, 861	SHEET 3 OF 3	B	DD	861-0	M

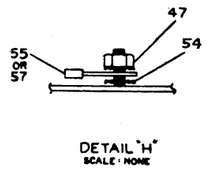
DRB 108

DEC 16-(325)-1062-2B-R972

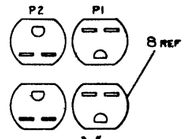
LEGEND			
DWG. NO.	VARIATION		
	VAC OUT	PHASES	AMP OUT
861-A	120	2	32
861-B	240	1	16
861-C	120	1	24
861-F	120	1	12

VIEW B-B

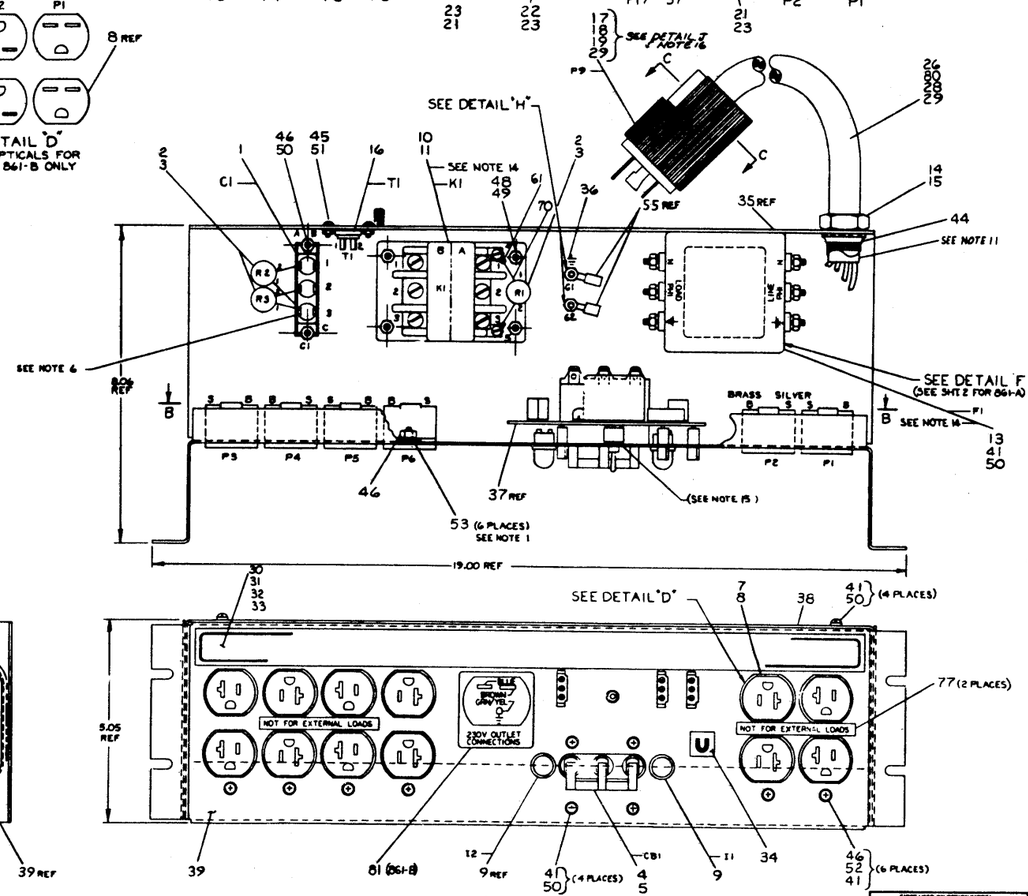


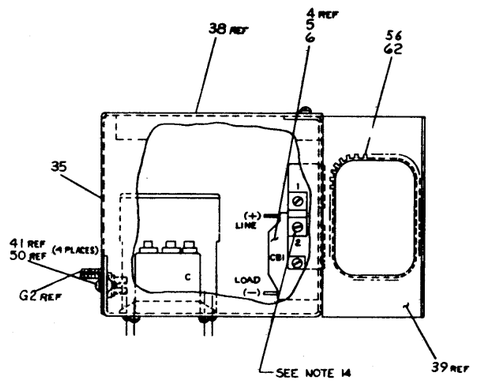


DETAIL "H"
SCALE: NONE



DETAIL "D"
RECEPTICALS FOR VAR. 861-B ONLY





NOTES:

1. ITEM 53 #6 EXT WASHER MUST BE BETWEEN CHASSIS AND MOUNTING TAB OF RECEPTACLE (P1-P6).
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. C1-3 IS THE COMMON(C) SIDE OF C1.
7. [illegible]
8. [illegible]
9. USE TIE WRAPS (ITEM 43) A/R.
10. [illegible]
11. POWER CORD TO EXTEND APPROX. .50IN. BEYOND LOCKNUT (ITEM 44) FOR ITEMS 27 & 29. ITEMS 26 & 28 TO REMAIN FLUSH WITH LOCKNUT.
12. [illegible]
13. REF. WIRE LIST. THESE CONNECTIONS HAVE THREE RING TERMINALS AND REQUIRE (ITEM 82) SCREW 8-32 x 1/4" WITH (ITEM 40) LOCKWASHER.
14. REQUIRED TORQUE LEVELS FOR CERTAIN ELECTRO-MECHANICAL CONNECTIONS.
    A. 18±2 IN-LBS. FOR TERMINALS ON F1 (ITEMS 12 & 13), THE G LUG BOXES ON K1 (ITEMS 10 & 11) AND NUTS ON GROUND STUD G1.
    B. 16±2 IN-LBS FOR 8-32 SCREW CONNECTIONS ON OUTLETS P1 THRU P6 (ITEMS 7 & 8).
    C. 12±2 IN-LBS ON 8-32 SCREW CONNECTIONS ON CIRCUIT BREAKER CONNECTIONS CB1 (ITEMS 4, 5 & 6).
15. USE NO MOUNTING HARDWARE FOR SWITCH.
16. STRAIN RELIEF SPACING: (L)

861 A	18"
861 B	0
861 C	18"
861 F	0

FOR PARTS LIST SEE A-PL-861-0-0

FIRST USED ON (PT NUMBER)	861-PC		
DIMENSIONAL TOLERANCE			
DRN	D SCHWANT	DATE	digital
CHK'D	J. W. ALLEN	DATE	
ENG		DATE	
PROJ ENG	ALLEN	DATE	TITLE: POWER CONTROL 861
RADIO		DATE	
P. CAT'G		DATE	
TEST ENGINEER APPV.			
MATERIAL	SEE PARTS LIST	B DD-861-0-0	SIZE E / CODE UA / NUMBER 861-0-0 / REV M
FINISH			SHEET 1 OF 2

WIRE TABLE, 861-A

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONN	FROM POINT	FROM WITH	TO CONN	TO POINT	TO WITH	REMARKS
2	—	—	RI-1		—	KI-4		70,61	1. IN
	—	—	RI-2		—	KI-5		70,61	1. IN
3	14	BLU	KI-B3		X	P6-S1		60	5. IN
↑	↑	↑			↑	P4-S1		↑	4.25 IN
			KI-B3		X	C1-3B		63	4.5 IN
↑		↑	P6-S1		60	P6-B1		60	4.5 IN
73		BLU	P4-S1		60	P5-S1		60	4.5 IN
72		BRN	KI-B2		X	C1-2B		63	4.5 IN
72		BRN			↑	P6-B1		60	6. IN
73		BRN	P6-B2		60	P6-B2		60	3. IN
71		BLK	KI-B1		X	C1-1B		63	3.5 IN
71		BLK	P4-B2		60	P5-B1		60	3. IN
73	14	BLU	CBI-C2		55	PI-S1		60	9. IN
66	12	↑				KI-A3		X	5. IN
73	14	↑	KI-A3		X	P15-2		23,22	3.75 IN
73	14	BLU	P15-2		23,22	KI-A3		X	6.5 IN
63	12	BRN				KI-A2		X	6.75 IN
72	14	BRN	CBI-B2		55	PI-B1		60	10.5 IN
64	12	BLK				KI-A1		X	7.5 IN
71	14	BLK	CBI-A2		55	P2-B1		60	6. IN
71	↑	BLK	KI-A1		X	P15-3		23,22	3.5IN
72		BRN	KI-A2		X	KI-4		63	4. IN
72	↑	BRN	P16-1		23,21	KI-5		63	7.5 IN
73	14	BLU	PI-S2		60	P2-S1		60	4. IN
66	12.	BLU	CBI-C1	SEE NOTE 13	55	FI-N	LOAD	55	5.5 IN
9	—	RED	1-A		—	CBI-C1	SEE NOTE 13	58	5.75 IN
9	—	RED	12-A		—	CBI-C1		58	4. IN
9	—	BLK	1-B		—	CBI-A1		58	3.75 IN
64	12	BLK	FI-PHI	LOAD	55	CBI-A1		55	3. IN
9	—	BLK	12-B		—	CBI-B1		58	4.75 IN
65	12	BRN	FI-PH2	LOAD	55	CBI-B1		55	5.25 IN
74	14	ORN	PI4-1		23,21	TI-1		63	10. IN
74	14	ORN	PI4-2		23,21	TI-2		63	10. IN
68	12	GRN/YEL	FI-⏚	LOAD	55	GI	SEE DETAIL H	55	4.75 IN
67	14	GRN/YEL	PI7		SOLD	G2		57	7.75 IN
2	—	—	R2-1		70	C1-3A		59	1.1 IN
1	—	—	R3-1		↑			↑	
1	—	—	R2-2		↑	C1-1A		58	1.25 IN
2	—	—	R3-2		70	C1-2A		59	1. IN
26	12	BLK	P9-Y		17	FI-PHI	LINE	55	15. FT
1	1	WHT	P9-S		↑	FI-N	↑	55	↑
1	1	RED	P9-X		↑	FI PH2	↑	55	↑
26	12	GRN	P9-G		17	FI-⏚	LINE	55	15. FT

WIRE TABLE, 861-B

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONN	FROM POINT	FROM WITH	TO CONN	TO POINT	TO WITH	REMARKS
3	—	—	RI-1		—	KI-4		70,61	1. IN
	—	—	RI-2		—	KI-5		70,61	1. IN
73	14	BLU	KI-B3		X	P6-S1		60	5.5 IN
↑	↑	↑			↑	P4-S1		↑	4.5 IN
			KI-B3		X	C1-3B		63	5.5 IN
↑		↑	P6-S2		60	P6-S1		60	4.5 IN
73		BLU	P4-S2		60	P5-S1		↑	4.5 IN
72		BRN	KI-B1		X	P6-B1		↑	6.5 IN
↑	↑	↑			X	P4-B1		60	6.5 IN
			KI-B1		X	C1-1B		63	8.0 IN
			P6-B2		60	P5-B1		60	3. IN
			P4-B2		60	P5-B1		60	3. IN
			KI-A1		X	KI-4		63	4.25 IN
			KI-A1		X	P6-4		23,22	6.IN
↑	↑	↑	CBI-A2		55	PI-B2		60	10. IN
72		BRN				KI-A1		X	7.5 IN
73		BLU	CBI-C2		55	KI-A3		X	5.5 IN
↑	↑	↑			↑	KI-A2		↑	8. IN
			KI-A3		X	P15-2		23,21	6. IN
↑	↑	↑	KI-A3		X	P15-3		23,22	4. IN
73	↑	BLU	PI-S1		60	P2-S2		60	3. IN
72	14	BRN	PI-B1		60	P2-S2		60	4.5IN
9	—	BLK	1-B		—	CBI-B2		58	4. IN
↑	—	BLK	1-B		—	CBI-B2		58	4. IN
1	—	RED	1-A		—	CBI-B2		58	5. IN
9	—	RED	12-A		—	CBI-C1		58	5. IN
72	14	BRN	CBI A1		57	FI PHI	LOAD	57	3. IN
73	↑	BLU	CBI C1		57	FI N	LOAD	57	4.75 IN
74		ORN	PI4 1		23,21	TI 1		63	10.1 N
74		ORN	PI4 2		23,21	TI 2		63	10. IN
67	↑	GRN/YEL	FI ⏚	LOAD	57	GI	SEE DETAIL "H"	57	4.75 IN
67	14	GRN/YEL	PI7		SOLD	G2		57	7.75 IN
3	—	—	R2-1		70	C1-3A		59	1. IN
↑	—	—	R2-2		70	C1-1A		58	1. IN
72	14	BRN	P16-1		23,21	KI-5		63	7. IN
80	↑	GRN/YEL	P9-6		18	FI-⏚	LINE	57	15. FT
80	↑	BRN	P9-Y		18	FI-PHI	LINE	57	15. FT
80	14	BLU	P9-X		18	FI-N	LINE	57	15. FT

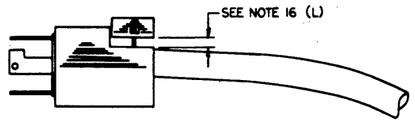
WIRE TABLE, 861-C

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONN	FROM POINT	FROM WITH	TO CONN	TO POINT	TO WITH	REMARKS
2	—	—	RI-1		—	KI-4		70,61	1. IN
	—	—	RI-2		—	KI-5		70,61	1. IN
73	14	BLU	KI-B3		X	P6-S1		60	6.5
↑	↑	BLU			↑	P4-S1		↑	4.5 IN
72		BRN	KI-B2		X	P6-B1		↑	5.75 IN
↑		BRN			↑	P5-B2		↑	6. IN
71		BLK	KI-B1		X	P4-B1		↑	7.5 IN
↑		BLK			↑	P5-B1		↑	6.0 IN
73		BLU	P6-S2		60	P5-S1		↑	6.0 IN
73		BLU	P5-S1		60	P4-S2		60	4.5 IN
73		BLU	KI-B3		X	C1-3B		63	4.5 IN
72		BRN	KI-B2		X	C1-2B		63	4.5 IN
71		BLK	KI-B1		X	C1-1B		63	4.5 IN
72		BRN	CBI-B2		55	PI-B2		60	9.5 IN
		BRN				KI-A2		X	6.75 IN
72		BRN	KI-A2		63	KI-A2		X	4.25 IN
71		BLK	CBI-C2		55	P2-B1		60	8.0 IN
		BLK				KI-A2		X	5.75 IN
71		BLK	KI-A1		X	P15-3		23,22	5.5 IN
73		BLU	CBI-A2		55	PI-B2		60	7.5 IN
						KI-A3		X	7. IN
			PI-B1		60	P2-B2		60	3. IN
			P15-2		23,33	KI-A3		X	3.75 IN
73	BLU		P16-2		23,21	KI-A3		X	6.5 IN
73		BRN	PI6-1			KI-B		63	6.75 IN
74		ORN	PI4-1			TI-1		63	10. IN
74	14	ORN	PI4-2		23,21	TI-2		63	10. IN
8	—	—	R2-1		70	C1-3A		59	1. IN
1	—	—	R3-1		↑			↑	
1	—	—	R2-2		↑	C1-1A		58	1.25 IN
2	—	—	R3-2		70	C1-2A		59	1.1N
68	12	GRN/YEL	FI-⏚	LOAD	55	GI	SEE DETAIL "H"	55	4.75 IN
67	14	GRN/YEL	PI7		SOLDER	G2		57	7.75 IN
65	12	BRN	CBI-B1	SEE NOTE 13	55	FI-PHI	LOAD	55	5.IN
64	12	BLK	CBI-C1		55	FI-PHI	LOAD	55	5.25 IN
9	—	RED	1-A			CBI-B1	SEE NOTE 13	57	4.25 IN
1	—	RED	12-A			CBI-B1			4.75 IN
1	—	BLK	1-B			CBI-A1			3.00 IN
9	—	BLK	12-B			CBI-A1	SEE NOTE 13	57	5.75 IN
66	12	BLU	CBI-A1	SEE NOTE 13	55	FI-N	LOAD	55	4.5 IN
29	1	GRN	P9-G		19	FI-⏚	LINE	55	15. FT
29	1	BLK	P9-B		19	FI-PHI	LINE	55	15. FT
29	12	WHT	P9-S		19	FI-N	LINE	55	15. FT

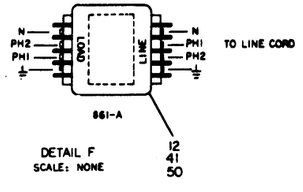
* STRIP WIRE .38 IN

WIRE TABLE, 861-F

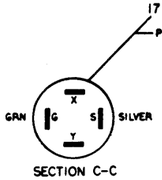
ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONN	FROM POINT	FROM WITH	TO CONN	TO POINT	TO WITH	REMARKS
2	—	—	RI-1		—	KI-4		70,61	1. IN
	—	—	RI-2		—	KI-5		70,61	1. IN
73	14	BLU	KI-B5		X	P6-S1		60	5.25 IN
73	↑	BLU			↑	P4-S1		↑	4. IN
72		BRN	KI-B2			P6-B1			5.25 IN
72		BRN				P5-B2			5.25 IN
71		BLK	KI-B1			P4-B1		↑	6.25 IN
71		BLK				P5-B2		60	6.25 IN
73		BLU	KI-B5			C1-3B		63	3.5 IN
72		BRN	KI-B2			C1-2B		63	3.5 IN
71	14	BLK	KI-B1		X	C1-1B		63	3.5 IN
2	—	—	R2-2		70	C1-1A		59	1. IN
	—	—	A2-1		↑	C1-3A		59	1. IN
2	—	—	R3-1		↑			↑	1. IN
	—	—	R3-2		70	C1-2A		59	1.25 IN
73	14	BLU	KI-A3		X	P15-A		23,22	4.25 IN
↑	↑	↑	KI-A3		X	P16-2		23,21	5.75 IN
						KI-A3		X	6.75 IN
↑	↑	↑	CBI-A2		55	PI-S2		60	8. IN
72		BRN	KI-A2		X	KI-4		63	4.75 IN
↑	↑	↑	CBI-B2		55	KI-A2		X	6.5 IN
↑	↑	↑			↑	PI-B2		60	8.25 IN
72		BRN	KI-5		63	P16-1		23,21	6.75 IN
71		BLK	KI-A1		X	P15-3		23,22	6. IN
71		BLK	CBI-C2		55	P2-B1		60	8. IN
71	↑	BLK				KI-A1		X	7. IN
73	14	BLU	PI-S1		60	P2-S2		60	3. IN
9	—	BLK	1-B		—	CBI-C1		58	4. 5 IN
1	—	BLK	12-B		—	CBI-B1		58	4. 5 IN
1	—	RED	1-A		—	CBI-A1	SEE NOTE 13	58	3. 5 IN
9	—	RED	12-A		—	CBI-A1		58	4. 5 IN
73	14	BLU	CBI-A1	SEE NOTE 13	57	FI-N	LOAD	57	4. 5 IN
71	↑	BLK	CBI-C1		57	CBI-B1		55	3. IN
71		BLK	FI-PHI	LOAD		CBI-B1			4. 5 IN
67		GRN/YEL	FI-⏚	LOAD	57	GI	SEE DETAIL H	57	4. 75 IN
67		GRN/YEL	PI7		SOLD	G2		57	7. 75 IN
74		ORN	PI4-1		23,22	TI-1		63	10. IN
74		ORN	PI4-2		23,21	TI-2		63	10. IN
73	1	BLU	P5-S1		60	P4-S2		60	4. 5 IN
73	14	BLU	P5-S1		60	P6-S2		60	4. 5 IN
29	16	GRN	P9-6		—	FI-⏚	LINE	—	9. FT
29	16	BLK	P9-X		—	FI-PHI	LINE	57	9. FT
29.	16	WHT	P9-Y		—	FI-N	LINE	57	9. FT



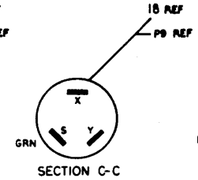
DETAIL J
SCALE: NONE



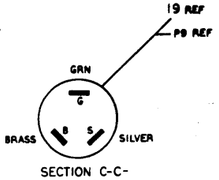
DETAIL F
SCALE: NONE



SECTION C-C
861-A
SCALE: NONE



SECTION C-C
861-B
SCALE: NONE



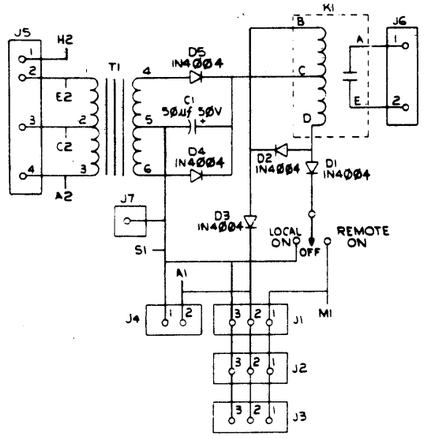
SECTION C-C-
861-C
SCALE: NONE

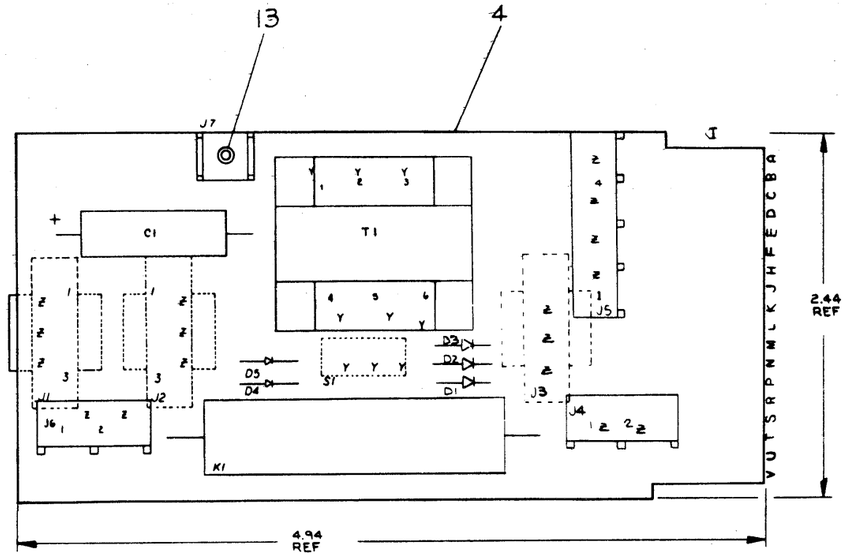
REAR VIEW

REVISIONS		
ZONE	CHANGE NO.	REV.

TITLE	POWER CONTROL, 861		
SCALE 1/1	SHEET 2 OF 2		
DESIGNATION	8 UA	861-0-0	REV. M
SHEET	1		

NOTES:





REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411522-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411522-0-5	2
REF		MODULE ECO HISTORY	B-MH-5411522-0-6	3
1		ETCHED CIRCUIT BOARD	30111521	4
1	K1	RELAY, REED, 48 V COIL, 2.5 A CONT.	12122647-00	5
1	T1	TRANSFORMER MMC 5415	16122342-00	6
1	C1	CAP 50 MFD 50V TANT	10000080-00	7
5	D1-D5	DIODE IN4004	11057796-00	8
1	S1	SWITCH	12111180-00	9
3	J1-J3	HOUSING, SOCKET	1209350-03	10
1	J5	CONN, UNIVERSAL, 4 PIN HEADER	12122297-01	11
2	J4, J6	CONN, UNIVERSAL, 2 PIN HEADER	12122297-00	12
1		EYELET	9006732-00	13
9		TERMINAL, SOCKET CONTACT	1209456-01	14
1	J7	TERMINAL, SOLDERLESS	9007113-00	15

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

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

IC PIN LOCATIONS

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO	CHK
B	5411522-00002	

REVISIONS

FIRST USED ON OPTION MODEL: 861-D / 861-E

ETCH BOARD REV: C

NEXT HIGHER ASSY: E-UA-861-D-0

SCALE: NONE

SHEET: 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PILOT CONTROL

SIZE: D CODE: DCS5411522-0-1 NUMBER: B REV: B

DIST

DCS5411522-0-1 B

8 7 6 5 4 3 2 1

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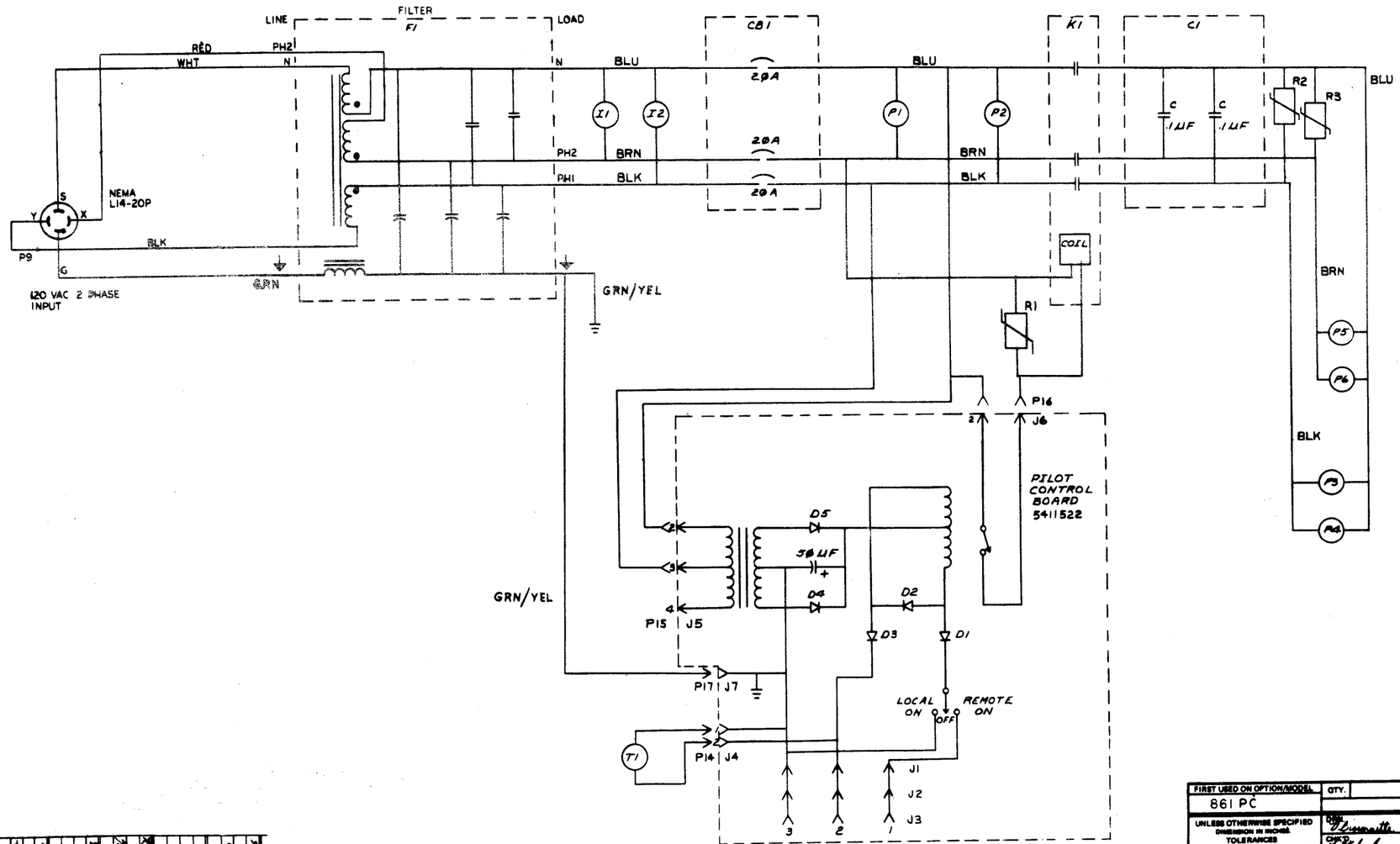
NOTE :
1. R1, R2, + R3 ARE MOV VARISTOR SPIKE SURPRESSORS.



REVISIONS				
DWR	CHANGE NO	REV		
	861-00006	A	LOVA	12-Dec-72
	861-00009	B	R. KENNEDY	12-Mar-73
	861-00010	C	R. KENNEDY	16 Apr 73
	861-00011	D	S. CARTER	16AUG73
	861-00012	E	S. CARTER	17 Sept. 73

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION / PART NO.
861 PC		PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'		
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓		
MATERIAL	NEXT HIGHER ASSY.	B-DD-861-0
FINISH	SCALE	
	SHEET	1 OF 1

DRAWN 9-11-72 — CHK'D 10-5-72 — ENG 10-5-72 — MFG 10-5-72 — QUAL 10-5-72

EQUIPMENT CORPORATION

TITLE: CIRCUIT SCHEMATIC (861-A PC.)

SIZE D | CODE CS | NUMBER 861-A-1 | REV E | SHT

DEC FORM NO MB-A

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NOTE :
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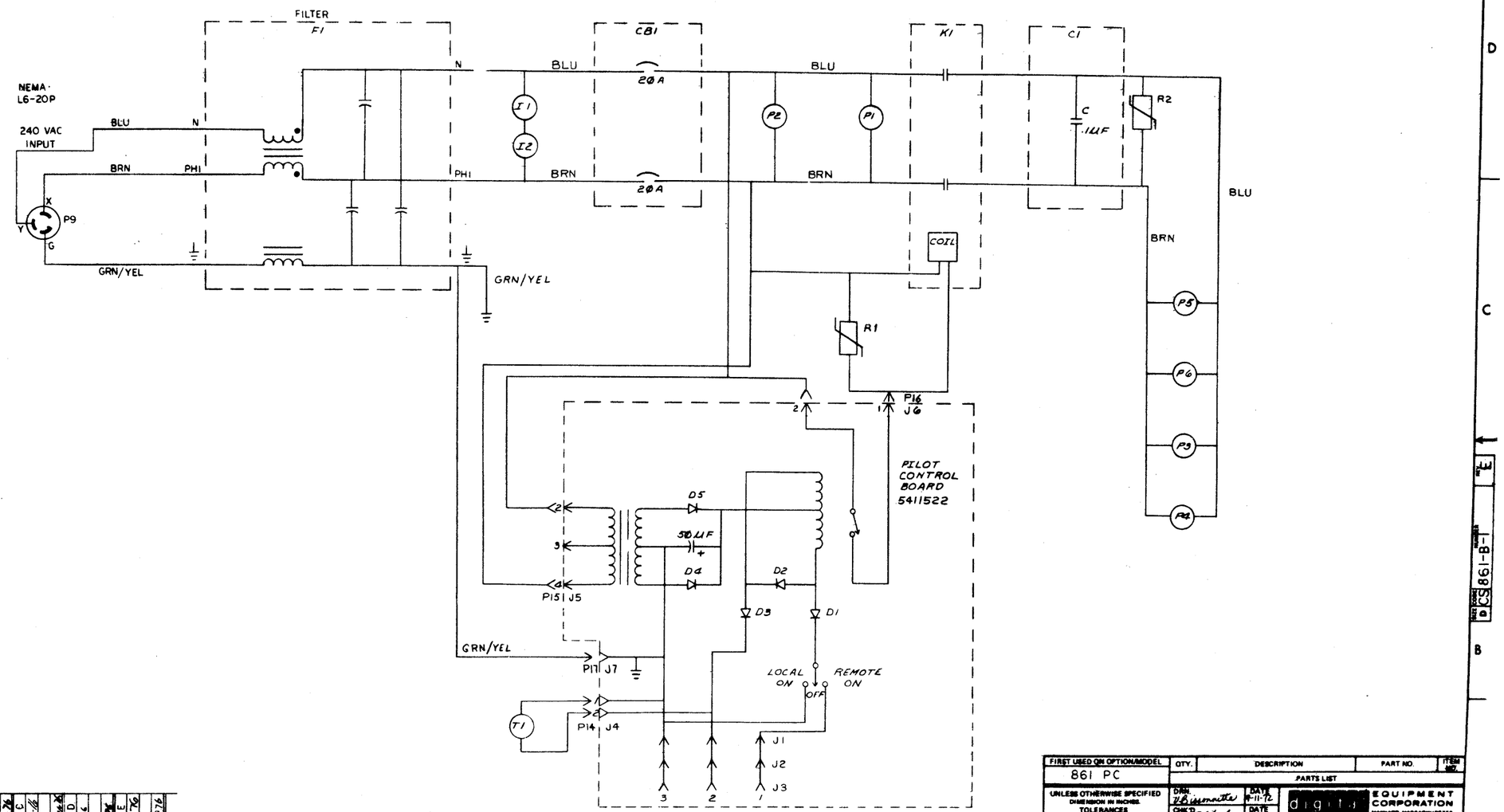

REVISIONS					
SYM	CHANGE NO	REV			
1	861-00006	A	L. Loya	12-11-76	
2	861-00009	B	R. KENNEDY	12-FEB-76	
3	861-00010	C	R. KENNEDY	13 FEB 76	
4	861-00011	D	R. KENNEDY	16 AUG 76	
5	861-00012	E	S. CARTER	23 SEP 76	

FIRST USED ON OPTION/MODEL: 861 PC	QTY.	DESCRIPTION	PART NO. / ITEM SEQ.
		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. V.B. Wasmuth	DATE 9-11-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D L. Loya	DATE 11-4-72	
	ENG. R. Kennedy	DATE 12-FEB-76	TITLE: CIRCUIT SCHEMATIC (861-BPC)
	PROJ. ENG. [illegible]	DATE 13 FEB 76	
	PROD. [illegible]	DATE 16-AUG-76	
MATERIAL	NEXT HIGHER ASSY. B-DD-861-0		SIZE D / CODE CS / NUMBER 861-B-1 / REV. E
FINISH	SCALE		
	SHEET OF		DIST.

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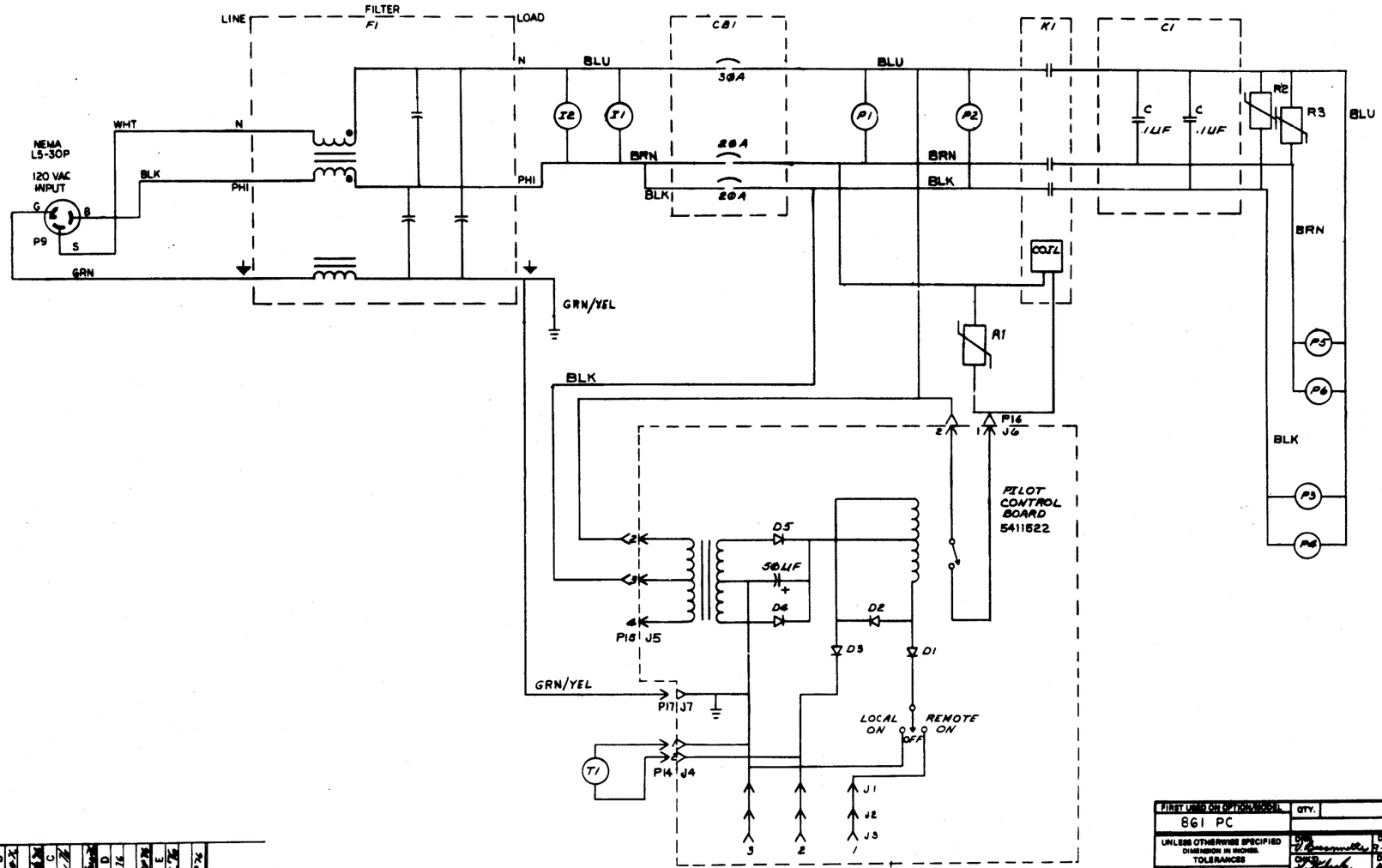
NOTE :
1. R1,R2+R3 ARE MOV VARISTOR SPIKE SURPRESSORS.



REVISIONS				
ORIG	29	861-00006	A	12-10-76
			B	12-29-76
		861-00009	C	1-28-77
		861-00010	D	2-24-77
		861-00011	E	3-15-77
		861-00012		

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

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

DRAWN R. Kennedy 9-13-76
CHK'D 9-13-76
ENGR 10-4-76
MFG 10-4-76
QA 10-4-76

EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
CIRCUIT SCHEMATIC 861-C P.C.

NEXT HIGHER ASSY. B-DD-861-0
SCALE
SHEET OF
SIZE DCS
NUMBER 861-C-1
REV. E
DIST.

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DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

PACKAGING INSTRUCTION	REV: A / B	DATE: 4/73 / 8/78
TITLE: INSTR PKG POWER CONTROL 861, ATR 16		

MATERIAL REQUIREMENTS

QUANTITY	PURCHASE SPECIFICATIONS NO.	DESCRIPTION
1	9905229	Full Overlap Carton
2	9905228	Expanded Polystyrene Foam Insert
A/R		3-inch wide Glasflex Tape

PACKAGING INSTRUCTIONS

STEP — PROCEDURE

1. Set up the Full Overlap Carton (9905229) using one strip of tape across the bottom and extending up the sides approximately three inches. See Figure 1.
2. Place one expanded Polystyrene Foam Insert (9905228) in each end of the carton with the slots in the foam facing inward.
3. Place the 861 or ATR 16 Power Control in the carton with the ears of the upright sliding into the slots in the foam.
4. Coil the Power Cord so that it fits into the cavity in the rear of the Power Control.
5. Close and seal the carton with one piece of tape across the top of the carton and extending down the sides approximately three inches.

ENG	APPD	SIZE	CODE	NUMBER	REV
[illegible]	21/APR/78 Rick Bunnell	A	SP	3700083-0-0	B

DEC 8-(551)-1031-1-R671
DRA - 129

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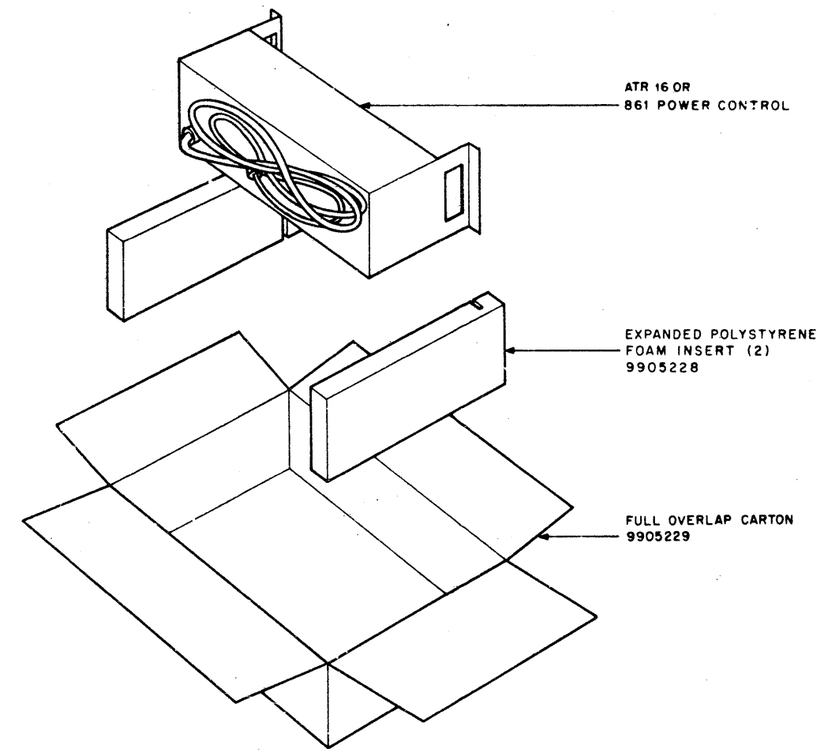
PACKAGING INSTRUCTION	REV: A / B	DATE: 4/73 / 8/78
TITLE: INSTR PKG POWER CONTROL 861, ATR 16		

FIGURE 1



NOTE
Make changes to the "C" size original only and rephotograph.

ENG.	APPD.	SIZE	CODE	NUMBER	REV
[illegible]	[illegible]	A	SP	3700083-0-0	B

DRC-107

NOTE :
1 R1 R2 + R3 ARE MOV VARISTOR SPIKE SURPRESSORS.

NEMA 5-15P 120 VAC INPUT

LINE FILTER F1 LOAD

WHT N

P9 S G BLK

PHI

GRN

GRN/YEL

N BLU

I2 I1

PHI BRN BLK

CB1 15A 10A 10A

BLU

P1 P2

K1 COIL

C1 C .1UF C .1UF

BLU

R2 R3

BRN

BRN BLK

R1

P5 P6

BLK

P3 P4

P16 J6

PILOT CONTROL BOARD 5411522

D5 50 UF D4 D2 D3 D1

P15 J5

GRN/YEL P17 J7

T1

P14 J4

LOCAL ON REMOTE OFF ON

J1 J2 J3

3 2 1

CHK	CHANGE NO.	REV.
—	861-00007	*
	ORIGINATED	
	861-00009	A
	561-00010	B
	861-00011	C
	861-00012	D

DESCRIPTION	DWG./PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

NEXT HIGHER ASSY.

B-DD-861-0

SCALE

SHEET OF

FIRST USED ON 861 P.C.

TITLE CIRCUIT SCHEMATIC 861-F P.C.

SIZE D CODE CS NUMBER 861-F-1 REV. D

DIST.

861-F-1

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CUSTOMER PRINT SET

DRAWING DIRECTORY	B-DD-H744-0
CIRCUIT SCHEMATIC	D-CS-H744-0-1
UNIT ASSY	E-UA-H744-0-0

MFG SET

TEST PROCEDURE	A-SP-H744-0-3
MFG SPEC	A-SP-H744-0-8
PACKAGING INST	A-PI-3700074-0-0

UNIT VARIATIONS

VAR	TITLE
H744	+5V REGULATOR
H744-YA	2.0 - 8.0V VARIABLE REGULATOR

REVISIONS			
CHK	CHANGE NO.	REV.	
G.P.	00019	R	S
JA	00020		

USED ON OPTION/MODEL	
11/45	

SHEET 1 OF 4

DRN. D. FONTAINE	DATE 2-4-72	TITLE digital	
CHK'D. D. FONTAINE	DATE 2-4-72	+5V REGULATOR	
PROJ. ENG. G. POTTER	DATE 2-24-72	SIZE B / CODE DD / NUMBER H744-0	REV S
PROD. A. HIRSCH	DATE 2-24-72	DIST.	

DRB 106A

SIZE	CODE	NUMBER	REV.
B	DD	H744-Ø	S

DRAWING NO.	NO. OF SHTS	PART NO.	DESCRIPTION	REVISIONS
D-AH-H744-Ø-5			ASSY DRILLING/HOLE LAYOUT	Y Y Y
E-UA-H744-Ø-Ø	1		UNIT ASSY	Y Z AA
D-CS-H744-Ø-1	1		CIRCUIT SCHEMATIC	Y Y Y
B-MH-H744-Ø-6	4		MODULE ECO HISTORY	AD AE AE
		5009725	ETCHED BOARD	H H H
A-SP-H744-Ø-3			TEST PROCEDURE	REF REF
A-SP-H744-Ø-8			MFG SPEC	REF REF
D-PS-1210737-Ø-Ø	1		HEAT SINK	REF REF
D-IA-5309756-Ø-Ø	1		REGULATOR BRK'T	REF REF
C-MD-5309760-Ø-Ø	1		COMPONENT COVER	REF REF
C-MD-5309759-Ø-Ø	1		CAPACITOR STRAP	REF REF
A-PI-3700074-Ø-Ø	2		PACKAGING INSTRUCTION	REF REF
A-PS-9905211-Ø-Ø	2		OUTER CARTON	REF REF
A-PS-9905212-Ø-Ø	2		INNER PACKAGING	REF REF
C-IA-7412388-Ø-Ø			2.5 CAP HOLDER	REF REF
C-MD-7419952-Ø-Ø			COMPONENT COVER	REF

NOTES:

REVISIONS			
DATE	CHG NO.	REV	
2-77	00018	R	
3-78	00020	S	

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digital

USED ON OPTION/MODEL	
11/45	

DRN.	D. FONTAINE	2-4-72
CHK'D	D. FONTAINE	2-4-72
ENG.	G. POTTER	2-24-72
PROD.	A. HIRSCH	2-24-72

TITLE
+5V REGULATOR

SIZE	CODE	NUMBER	REV.
B	DD	H744-Ø	S

SHEET 2 OF 4

SIZE	CODE	NUMBER	REV.
B	DD	H744-Ø	S

DRAWING NO.	NO. OF SHTS	PART NO.	DESCRIPTION	REVISIONS
D-AH-H744-Ø-5			ASSY DRILLING/HOLE LAYOUT	Y Y
E-UA-H744-Ø-Ø	1		UNIT ASSY	W W1
D-CS-H744-Ø-1	1		CIRCUIT SCHEMATIC	W W1
B-MH-H744-Ø-6	4		MODULE ECO HISTORY	AC AE
		5009725	ETCHED BOARD	H H
A-SP-H744-Ø-3			TEST PROCEDURE	REF
A-SP-H744-Ø-8			MFG SPEC	REF
D-PS-1210737-Ø-Ø	1		HEAT SINK	REF
D-IA-5309756-Ø-Ø	1		REGULATOR BRK'T	REF
C-MD-5309760-Ø-Ø	1		COMPONENT COVER	REF
C-MD-5309759-Ø-Ø	1		CAPACITOR STRAP	REF
A-PI-3700074-Ø-Ø	2		PACKAGING INSTRUCTION	REF
A-PS-9905211-Ø-Ø	2		OUTER CARTON	REF
A-PS-9905212-Ø-Ø	2		INNER PACKAGING	REF
C-IA-7412388-Ø-Ø			2.5 CAP HOLDER	REF
C-MD-7419952-Ø-Ø			COMPONENT COVER	REF

NOTES:

REVISIONS	CHG NO	REV
2-77	00017	R
	00019	

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digital

USED ON OPTION/MODEL	
11/45	

DRN.	D. FONTAINE	2-4-72
CHK'D	D. FONTAINE	2-4-72
ENG.	G. POTTER	2-24-72
PROD.	A. HIRSCH	2-24-72

TITLE: +5V REGULATOR

SIZE	CODE	NUMBER	REV.
B	DD	H744-Ø	S

SHEET 3 OF 4

SIZE	CODE	NUMBER	REV.
B	DD	H744-Ø	S

DRAWING NO.	NO. OF SHTS	PART NO.	DESCRIPTION
D-AH-H744-Ø-5			ASSY DRILLING/HOLE LAYOUT
E-UA-H744-Ø-Ø	1		UNIT ASSY
D-CS-H744-Ø-1	1		CIRCUIT SCHEMATIC
B-MH-H744-Ø-6	4		MODULE ECO HISTORY
		5009725	ETCHED BOARD
A-SP-H744-Ø-3			TEST PROCEDURE
A-SP-H744-Ø-8			MFG SPEC
D-PS-1210737-Ø-Ø	1		HEAT SINK
D-IA-5309756-Ø-Ø	1		REGULATOR BRK'T
C-MD-5309760-Ø-Ø	1		COMPONENT COVER
C-MD-5309759-Ø-Ø	1		CAPACITOR STRAP
A-PI-3700074-Ø-Ø	2		PACKAGING INSTRUCTION
A-PS-9905211-Ø-Ø	2		OUTER CARTON
A-PS-9905212-Ø-Ø	2		INNER PACKAGING
C-IA-7412388-Ø-Ø			2.5 CAP HOLDER
C-MD-7419952-Ø-Ø			COMPONENT COVER

REVISIONS

| | | |

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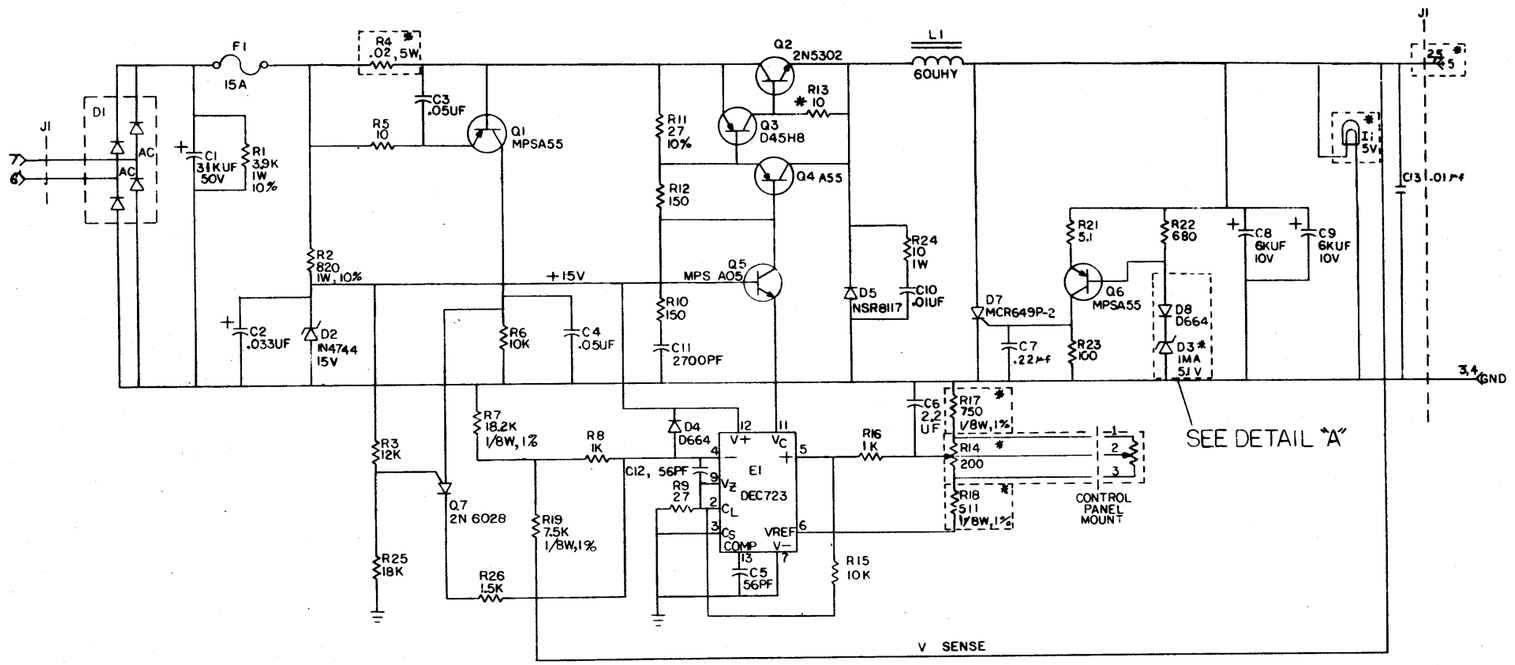
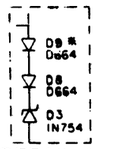




DETAIL A
FOR YA VARIATION ONLY

*FUSIBLE RESISTOR

[*] FOR YA VARIATION COMPONENT VALUES ARE AS FOLLOWS:
R4 - .06 5W
R14 - 1K 10 TURN
R17 - 300 1/8W 1%
R19 - 150 1/4W 5%
D3 - IN754
I1 - 15V
J1-2,5 - +2.0-8.0V

* D9 - D664 ADDED FOR YA VARIATION ONLY

UNLESS OTHERWISE INDICATED:

RESISTORS ARE 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV F H

SEMICONDUCTOR CONVERSION CHART			
IN964A	SAME	MPSA55	
D664	IN3606	2N5302	
MCR649P-2		D45H8	
IN751A	SAME	MPSA05	
IN4744	SAME		
NSR8117			
2N6028			
DEC NO.	EIA NO.	DEC NO.	EIA NO.

REVISIONS			
REV	CHANGE NO.	CHK	
E	H744-00001		
F	H744-00002	G. POTTER	2-23-72
H	H744-00003	G. POTTER	3-3-72
K	H744-00005	G. POTTER	5-11-72
L	H744-00006	G. POTTER	5-19-72
M	H744-00007	G. POTTER	6-14-72
N	H744-00009	R. WOLF	8-24-73
P	H744-00010	D. MARTEL	9-17-74
R	H744-00011	A. BARON	5-14-75
S	H744-00012	A. BARON	6-3-75
T	H744-00013	R. SARGENT	7-2-75
U	H744-00014	A. BARON	9-4-75
V	H744-00015	A. BARON	9-18-75
W	H744-00016	A. BARON	5-4-76
Y	H744-00018	D. MARTEL	5-20-76

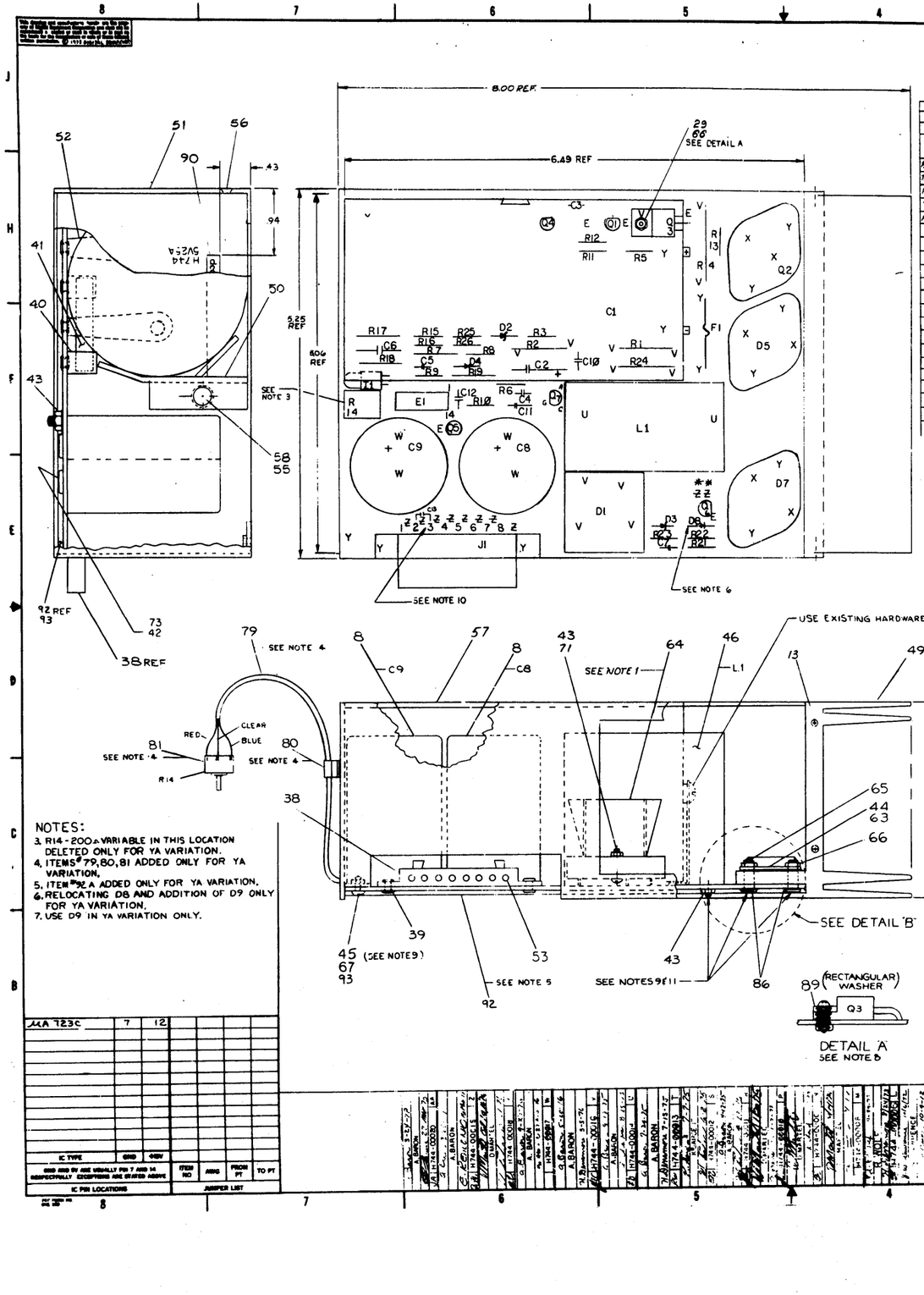
DRWN A. Baron 12-1-71
CHK'D WALLY HAGEE 12-3-71
ENG 12/7/71
PROJ 12/7/71
MFG 12/7/71
NEXT HIGHER ASSY

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
5V REGULATOR

SIZE C CODE DCS NUMBER H744-0-1 REV Y
SCALE
SHEET 1 OF 1
DIST.

H744-0-1 REV Y



NOTES:

1. APPLY ITEM #63 (COMPOUND) BETWEEN TRANSISTOR (Q2), DIODES (D5, D7) AND ITEM #64 (WASHER) ALSO BETWEEN ITEM #64 (WASHER) AND HEAT SINK (ITEM #49). ALSO APPLY ITEM #63 (COMPOUND) BETWEEN ITEM #9 (DIODE BRIDGE) AND ITEM #64 (HEAT SINK BRIDGE).

NOTES CONT:

NOTE 8:
(1) Q3 SCREW HEAD SHOULD BE ON TOP OF FLAT RECTANGULAR WASHER AS SHOWN. APPLY 6 INCH LBS. OF TORQUE WHEN SECURING Q3 TO CKT. BOARD BEFORE SOLDERING.

NOTE 9: TORQUE APPLICATION
(1) APPLY 12 INCH LBS. OF TORQUE TO THE SCREWHEAD OF #4 HARDWARE EXCEPT Q3.
(2) APPLY 12 INCH LBS OF TORQUE TO #6 HARDWARE ON L1.
(3) APPLY 8 INCH LBS. OF TORQUE TO ALL #6 AND #10 HARDWARE EXCEPT ON L1.
(4) ALL HARDWARE TO BE TORQUED BEFORE SOLDERING.

NOTE 10
INSERT C13 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS, 2-3.

NOTE 11:
MIN TORQUE REQUIRED FOR QC INSPECTION:
8 INCH LBS. FOR #4 HARDWARE;
12 INCH LBS. FOR #6 AND #10 HARDWARE

* SEE NOTE 7

NOTES:
3. R14 - 200Δ VARIABLE IN THIS LOCATION DELETED ONLY FOR YA VARIATION.
4. ITEMS #79, 80, 81 ADDED ONLY FOR YA VARIATION.
5. ITEM #92 ADDED ONLY FOR YA VARIATION.
6. RELOCATING D8 AND ADDITION OF D9 ONLY FOR YA VARIATION.
7. USE D9 IN YA VARIATION ONLY.

744-YA	744-BB				
1	1		I1	5 VOLT LAMP	12-09218-1	68
2	2			L WASHER #4	9006632	67
7	7			NUT KEPS #4-40	9006897	66
6	6			SCR PHL PAN HD #4-40 X 3/16 LG	9008031-1	65
1	1			HEAT SINK BRIDGE	1210907	64
AR	AR			COMPOUND THERMAL JOINT	8008888	63
1	1		R26	RESISTOR 1.5K 1/4W 5%	1809381	62
1	1		R19	RESISTOR 7.5K 1/8W 1%	1805362	61
1	1		R3	RESISTOR 1EK 1/4W 5%	1809488	60
1	1		Q7	TRANSISTOR, UNIJUNCTION 2N6027	1510877	59
1	1			SCR PHL PAN HD #6-32 X 1/4 LG	9006020-1	58
1	1			COVER	Z-MD-530778-04	57
1	1			SCR PHL FLT HD #6-32 x 3/16 LG	9008020-2	56
1	1			WASHER, LOCK #6	9006633	55
1	1			SCR PHL FLT HD #4-40 X 1/4 LG	9008020-3	54
2	2		J1, J3	CONTACT FEMALE	1209456	53
2	2			STRAP, CAPACITOR	C-MD-530779-04	52
1	1			BRACKET, REGULATOR	D-IA-530976-04	51
1	1			HOLDER, CAPACITOR 2.5	C-IA-12388-04	50
1	1			HEAT SINK REGULATOR	D-PS-1210737-0-04	49
2	2		C5, C12	CAP 56 PF	1000012	48
1	1		R24	RESISTOR 10 1W	1300171	47
1	1		L1	REACTOR 60 MHY MMC 4347	1610850	46
2	2			SCR, PHL PAN HD #4-40 1/4 LG	9008801-1	45
3	3			WASHER, INSULATOR	9006721	44
3	3			NUT, KEPS #6-32	9006185	43
4	4			SCR #10-32 x 3/4 SLOTTED PAN HD	9009869-01	42
1	1		F1	FUSE 15 AMP	1213237-01	41
2	2			FUSE CLIP	9007205	40
6	6			EYELET 6S-4-5	9009000	39
1	1		J1	MATE-N-LOK CONN, 8 PIN	1209340	38
1	1		E1	INTEGRATED CIRCUIT DEC 723C	1910418	37
1	1		Q5	TRANSISTOR A05	1510705	36
1	1		Q3	TRANSISTOR D45H8	1510708-1	35
3	3		Q1, Q6, Q4	TRANSISTOR MPSA55 MOT	1510706	34
1	1		Q2	TRANSISTOR 2N6302	1510196	33
0	1		R14	RES VARIABLE 200	1310852	32
1	1		R21	RES 5.1 1/4W 5%	1309422	31
1	1		R23	RES 100 1/4W 5%	1300229	30
1	1			SCR, PPH #4-40 X 3/8	9008011-1	29
1	1		R11	RES 27 1/4W 10%	1301420	28
0	1		R17	RES 750 1/8W 1%	1308955	27
1	1		R9	RES 27 1/4W 5%	1301322	26
1	1		R7	RES 18.2K 1/8W 1%	1309412	25
2	2		R8, R16	RES 1K 1/4W 5%	1300393	24
0	1		R18	RES 511 1/8W 1%	1308411	23
1	1		R25	RES 18K 1/4W 5%	1302465	22
2	2		R6, R15	RES 10K 1/4W 5%	1300479	21
0	1		R4	RES .02 5W 3%	1310876	20
1	1		R2	RES 820 1W 10%	1300358	19
1	1		R1	RES 3.9K 1W 10%	1302927	18
1	1		R5	RES 10 1/4W 5%	1301317	17
2	2		R12, R10	RES 150 1/4W 5%	1300350	16
0	1		D3	DIODE ZENER 1 MA. 5.1V	1110925	15
1	1		D7	SCR MCR G49P-2	1109465	14
4	4			SCR, PPH #4-5/16 LG SELF TAP	9009142	13
1	1		D5	DIODE PWR NSP 8117	1110715	12
3	2		D4, D8 D9*	DIODE PWR D66G	1100114	11
1	1		D2	DIODE ZENER IN4744	11C 5648	10
1	1		D1	DIODE BRIDGE	1110716	9
2	2		C8, C9	CAP 6K MF 10V	1010704	8
1	1		C1	CAP 31 K MF 50V	1010858	7
2	2		C4, C3	CAP .068 MF 25 V	1001774	6
1	1		C2	CAP .033 MF 100 V 10%	1000050	5
1	1		C11	CAP 2700 PF 100V 5% DM	1001637	4
2	2		C10, C13	CAP .01 MF 100V 20% DISC	1001610	3
1	1		C6	CAP 2.2 MF, 20V, 10%	1002627	2
1	1			ETCHED CIRCUIT BOARD	5009725	1
				ASSY/DRILLING HOLE LAYOUT	D-AH-H744-B-S	
				X-Y COORDINATE HOLE LOCATION	X-CO-H744-B-4	REF
				MODULE ECO HISTORY	D-MH-H744-B-G	REF
				CIRCUIT SCHEMATIC	D-SC-H744-B-1	REF

QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	

μA 723C	7	12	

IC TYPE | GND | +6V

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

IC PIN LOCATIONS

ITEM NO	WIRE	FROM PT	TO PT

JUMPER LIST

D664	IN3606		
IN4744			

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTIMOD D-UA-H742A-0-0

ETCH BOARD REV H

PARTS LIST

REV	DATE	BY
A	8/5/74	
B	10/3/74	
C	10/7/74	
D	10/7/74	
E	11/7/74	

[redacted] EQUIPMENT CORPORATION

TITLE: 5V REGULATOR

SIZE: E | NUMBER: UA H744-B-0 | REV: AA

SCALE: 2/1 | SHEET: 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H745-Ø		
CIRCUIT SCHEMATIC	D-CS-H745-Ø-1		
UNIT ASS'Y	E-UA-H745-Ø-Ø		
		MFG. SET	
		TEST PROCEDURE	A-SP-11/45 TA 2
		MFG. SPEC.	A-SP-H745 Ø 8
		PACKAGING INSTRUCTION	A-PI-3700074-0-0

UNIT VARIATIONS

VAR	TITLE	PRINT SET H745-1
H745	-15V REGULATOR	X

REVISIONS		
DATE	CHG. NO.	REV
	H745-16	K
	H745-17	L
	H745-18	M
9-76	H745-19	N
10-76	H745-20	P
7-77	H745-22	R

USED ON OPTION/MODEL	
11/45	
SHEET 1 OF 2	

DRN. D.FONTAINE	DATE 2-7-72	TITLE -15V REGULATOR	
CHK'D. J GAUDETTE	DATE 2-17-72		
PROJ ENG. G POTTER	DATE 2-25-72		
PROD. A HUSCH	DATE 2-25-72	SIZE B	CODE DD
FIELD SERV. A. ZINS	DATE 2 25 72	NUMBER H745-Ø	REV R
		DIST	

DEC-16-2251-1062-V1-0972

DRB 106

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	E-UA-H745-Ø-Ø	UNIT ASSY	E/M
	D-CS-H745-Ø-1	CIRCUIT SCHEMATIC	E
	D-AH-H745-Ø-5	ASSY/DRILLING HOLE LAYOUT	E
	B-MH-H745-Ø-6	MODULE ECO HISTORY	E
	A-SP-H745-Ø-8	MFG SPEC	E
	A-SP-11/45-TA-2	TEST PROCEDURE	E
	D-PS-1210737-0-0	HEAT SINK	M
	D-IA-5309756-0-0	REGULATOR BRACKET	M
	C-IA-5309761-0-0	2-5 CAP BRACKET	M
	C-MD-5309759-0-0	CAPACITOR STRAP	M
2	A-PI-3700074-0-0	PACKAGING INSTRUCTIONS	M
	A-PS-9905211-0-0	OUTER CARTON	M
	A-PS-9905212-0-0	INNER PACKAGE	M

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

TITLE: -15V REGULATOR

SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER H745-Ø | REV R

DRB 108A

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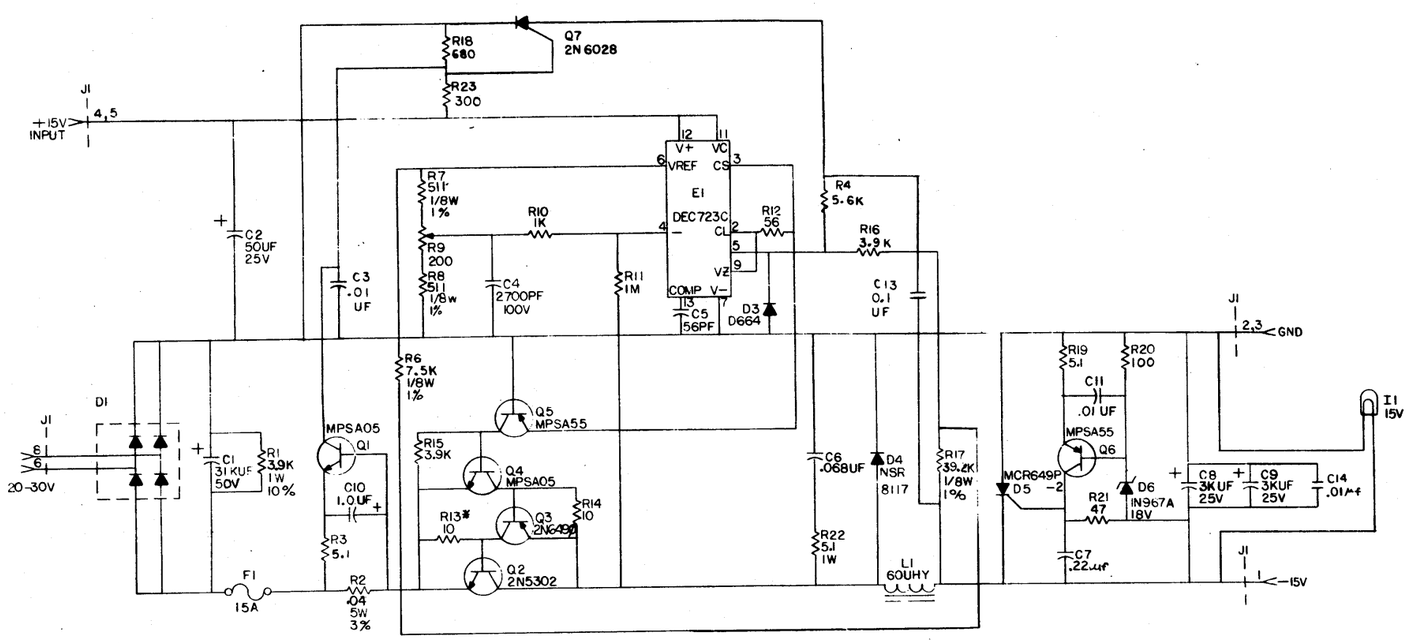


* FUSIBLE
UNLESS OTHERWISE INDICATED:
RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
	ETCH BOARD REV E			

SEMICONDUCTOR CONVERSION CHART			
DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	IN 3606	D45H8	
NSR 8117		2N 6028	
MCR 649P – 2			
IN 967A	SAME		
2N 5302			
MPS A05			
MPS A55			

REVISIONS			
CHK	CHANGE NO.	DATE	REV
A. BARON	H745 - 00021	12-JAN-72	E

DRN. Roger J Poulin DATE 11-4-71
CHK'D. MARC-I MORE DATE 11-9-71
ENG. DATE 11/72
PROJ. DATE 11/72
PROD. DATE 11/3/72
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 1

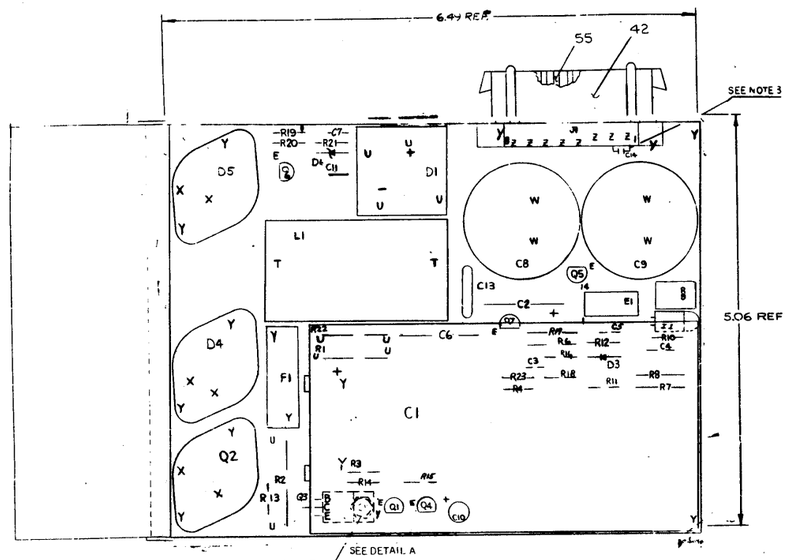
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

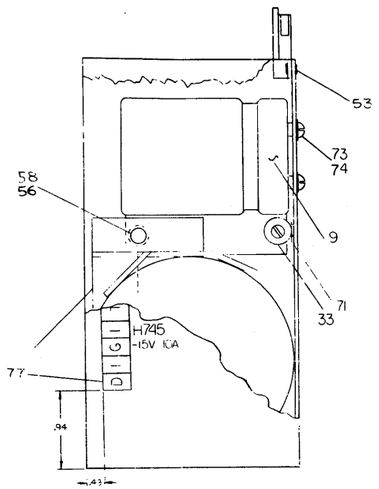
TITLE: –15V REG.

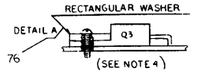
SIZE D | CODE CS | NUMBER H745 -0-1 | REV E

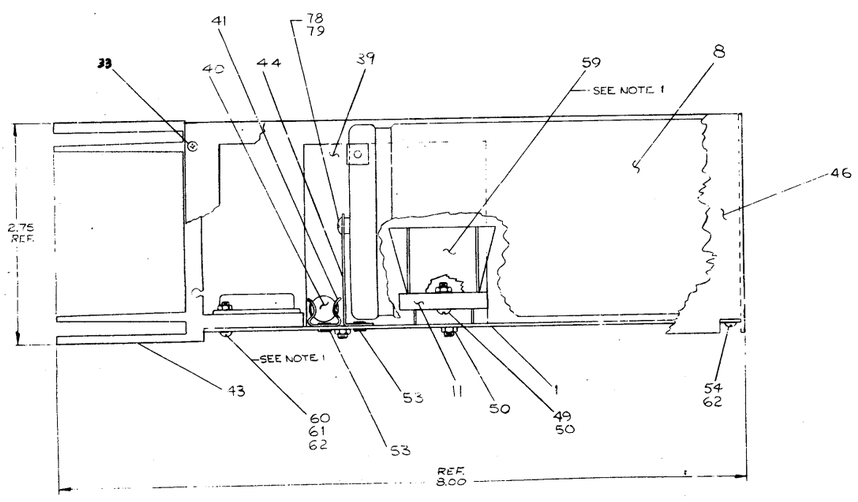
DIST.

DEC FORM NO. DRD-135









NOTE:
3. INSERT C14 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS 1-2.

NOTE 4:
Q3 SCREW HEAD SHOULD BE ON TOP OF FLAT RECTANGULAR WASHER AS SHOWN. APPLY 6 INCH LBS. OF TORQUE WHEN SECURING Q3 TO CKT. BOARD BEFORE SOLDERING.

NOTE 5: TORQUE APPLICATION
(1) APPLY 12 INCH LBS. OF TORQUE TO ALL #4 HARDWARE EXCEPT Q3.
(2) APPLY 16 INCH LBS. OF TORQUE TO ALL #6 AND #10 HARDWARE.
(3) ALL HARDWARE TO BE TORQUED BEFORE SOLDERING.

NOTE:
1. APPLY ITEM #5 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND INSULATOR, WASHER (ITEM #52 ALSO BETWEEN WASHER & HEAT SINK FOR Q2, Q4 & D5. ALSO APPLY ITEM #51 (COMPOUND) BETWEEN ITEM #11 (DIODE BRIDGE AND ITEM #59 (HEAT SINK).
2. 1010621 MAY BE SUBSTITUTED FOR C13 (1000030).

		ASSY/DRILLING HOLE LAYOUT	D-AM-H745-0-S	70
1		PACKING INSTRUCTIONS	API-3700074-0-0	69
1	R18	RES. 68Ω ¼W 5%	1301424	68
1	R23	RES 30Ω ¼W 5%	1301425	67
1	C13 (SEE NOTE 2)	CAP. 0.1 UF 100V 20%	1000060	66
1		SCR PH #4-40 X 5/16 LG	9006010-1	65
1	I1	LAMP 15V	1214356	64
4		SCR, PPH #4 X 5/16 LG., SELF TAPPING	9008942	63
5		I. WASHER #4	9008832	62
7		NUT KEPS #4-40	9008057	61
8		SCR PHL PAN HD #4-40 X 3/16 LG	9008033-1	60
1		HEAT SINK BRIDGE RECT	1210007	59
1		SCR P/L PAN HD #4-32 X 1/4 LG	9008020-1	58
1		SCR PHL FLT HD #4-32 X 1/4 LG	9006020-02	57
1		WASHER LOCK #4	9006633	56
8		CONTACT FEMALE	1209458	55
2		SCR PHL PAN HD 4-40 X 1/4 LG	9006304-1	54
6		EYELET 05-4-5	9008000	53
3		INSULATOR WASHER	9006721	52
4/R		THERMAL COMPOUND	9006268	51
3		NUT KEPS 8-32	9008135	50
1		SCREW PHL PAN HD 8-32 X 3/8 LG	9006085-01	49
4		WASHER-FHL-FLTHD-#8-SAE-S-18-8	9006008-8	48
4		SCR/WASHER/FLTHD	9-48-9008980-8-S	47
1		REGULATOR BRKT	D-AR-1308758-S	46
1		2.5 HOLDER CAPACITOR	C-AR-1308738-S	45
2		STRAP CAPACITOR	C-AR-5308738-S-S	44
1		HEAT SINK	D-PS-1218737-S-S	43
1	J1	CONN. HDR.—W-LOCK 8 PIN	1308348	42
2		FUSE CLIP	9007201	41
1	F1	FUSE	1213237-01	40
1	L1	REACTOR 60 UHY	1210059	39
1	E1	INTEGRATED CIRCUIT UA723C	1210415	38
1	Q3	TRANSISTOR 2N4998	1312652-01	37
2	Q5, Q6	TRANSISTOR 2N5	1510708	36
2	Q1, Q4	TRANSISTOR 2N5	1510706	35
1	Q2	TRANSISTOR 2N5302	1510838	34
1	R8	RES VARIABLE 250 Ω, 20%	1310852	33
1	R20	RES 100Ω ¼W 5%	1308229	32
1	R11	RES 1.65Ω ½W 5%	1305586	31
1	R4	RES. 5.6 K ¼ W 5%	1304824	30
2	R15, R16	RES 3.3K ½W 5%	1305644	29
2	R19, R3	RES 5.1 ½W 5%	1306422	28
1	R12	RES 5Ω ½W 5%	1303802	27
1	R21	RES 47 ½W 5%	1309202	26
1	R17	RES 39.2K ½W 1%	1305529	25
1	R10	RES 1K ½W 5%	1305086	24
1	R14	RES 10 ½W 5%	1303417	23
1	R6	RES 7.5K 1/8W 1%	1305522	22
2	R7, R9	RES 511 1/8W 1%	1305641	21
1	R22	RES 5.1 1/4 5%	1302435	20
1	R24	RES 750Ω ½W 5%	1308202	19
1	R2	RES 68.5Ω ½W 1%	1311362-00	18
1	R1	RES 3.3K 1/4 10%	1303827	17
1	D8	DIODE 1N4817	1110888	16
1	D5	SCR MCR4DP-2	1108685	15
1	D4	DIODE MDA2117	1110215	14
1	D3	DIODE 1N64	1108114	13
1	Q7	TRANSISTOR UNI JUNCTION 2N5028	1510827	12
1	D1	DIODE BRIDGE	1110214	11
1	C12	CAP .02Ω .20KV 10%	1304502	10
2	C8, C9	CAP 3.3M UF 25V	1010780	9
1	C1	CAP 33K UF 50V	1010850	8
1	C10	CAP 1.0 UF 25V	1010866-01	7
1	C2	CAP 50 UF 25V -10+75%	1001298	6
1	C6	CAP .068 UF 1KV 10%	1009052	5
1	C4	CAP 2200PF 1KV 5%	1001637	4
3	C11, C3, C14	CAP .22 UF 50V 20%	1010810	3
1	C5	CAP .47 UF 50V 20%	1010811	2
1	C7	CAP .22 UF 50V 20%	1010274	1

1		DECAL (H745)	7416945-02	80
2		WASHER INT. TOOTH #10	9006635	79
2		SCREW PAN 10-32 X 5/16 LG	9009669-01	78
1	C7	CAP .22 UF 50V	1010274	77
1		WASHER, RECTANGULAR	9009759	76
1	R13	RES 10Ω 1/4W, FUSIBLE	1312496-00	75
4		LOCKWASHER #10 INT	9006635	74
4		SCR #10-32 X .31 SLOTTED PIN HD.	9009669-01	73
				72
1		TRANSIPAD	9008206	71

QTY. | REF DESIGNATION | DESCRIPTION | PART NO.

PARTS LIST

ETCH BOARD REV E

0669 IN3606

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

ITEM NO | AWG | FROM PT | TO PT
JUMPER LIST

SEC NO. | ECA NO. | SEC NO. | ECA NO.
SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION.

-15 REGULATOR

ECA H745-0-0

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

PRINT SET #1

SEQUENCE	
DRAWING DIRECTORY	B-DD-DL11-Ø
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE (PL)	A-PL-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	E-CS-M78ØØ-YA-1
CABLE ASSEMBLY (KL8/E)	D-IA-7008360-Ø-Ø
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

PRINT SET #2

SEQUENCE	
DRAWING DIRECTORY	B-DD-DL11-Ø
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE (PL)	A-PL-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	E-CS-M78ØØ-Ø-1
CABLE, MODEM BCØ5C	D-UA-BCØ5C-Ø-Ø
FILTER NETWORK	B-CS-G8ØØØ-Ø-1
MODEM TEST CONN	D-CS-H315-Ø-1
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

PRINT SET #3

SEQUENCE	
DRAWING DIRECTORY	B-DD-DL11-Ø
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE (PL)	A-PL-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	E-CS-M78ØØ-Ø-1
CABLE, MODEM BCØ5C	D-UA-BCØ5C-Ø-Ø
CABLE ASSEMBLY (KL81E)	D-IA-7008360-Ø-Ø
MODEM TEST CONN.	D-CS-H315-Ø-1
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

UNIT VARIATIONS

VAR	TITLE	PRINT SET DL11-1	PRINT SET DL11-2
DL11-A	ASYNC LINE INTERFACE, CURRENT LOOP	1	0
DL11-B	ASYNC LINE INTERFACE, EIA	0	1
DL11-C	ASYNC LINE INTERFACE, CURRENT LOOP	1	0
DL11-D	ASYNC LINE INTERFACE, EIA	0	1
DL11 E	ASYNC LINE INTERFACE, DATA SET	0	1

REVISIONS			
REV	K	L	
CHG. NO.	REDRAWN DL11-00009	DL11-10	
DATE	2-76	3/78	

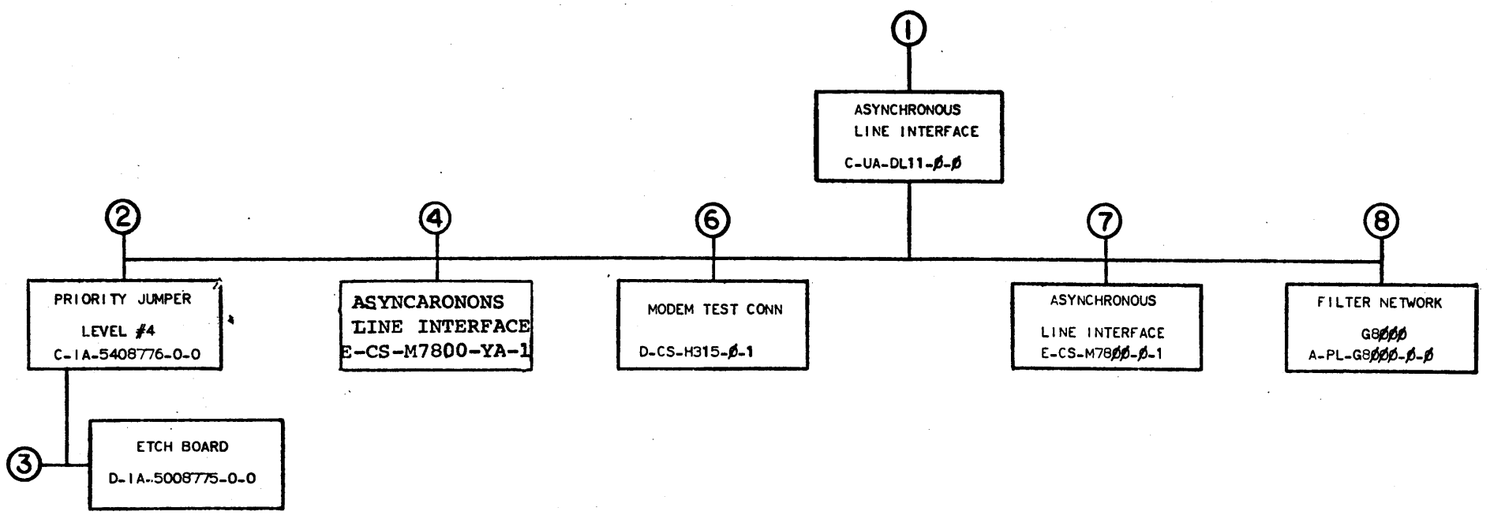
USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. M. Pierce	DATE 4-28-72	TITLE ASYNCHRONOUS LINE INTERFACE
CHK'D. R. Cook	DATE 5-9-72	
PROJ ENG. P.E.Janson	DATE 5-11-72	
PROD. J.McIntyre	DATE 5-15-72	SIZE B / CODE DD / NUMBER DL11-Ø / REV L
FIELD SERV. R. Evans	DATE 5-15-72	DIST

EN-01062-1A-16-6972-(325)

DRB 106



TITLE			SIZE	CODE	NUMBER	REV
	ASYNCHRONOUS LINE INTERFACE	SHEET 2 OF 3	B	DD	DLII - Ø	L

062-3-N871

G

ELECTRICAL

CUSTOMER PRINT SET DL11-1	DL11-2	DL11-3	DEPOT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X	X	X		1.	C-UA-DL11-Ø-Ø	F	1	ASYNCHRONOUS LINE INTERFACE	
X	X	X			A-PL-DL11-Ø-Ø	H	1	ASYNCHRONOUS LINE INTERFACE (PL)	
	X	X			D-UA-BCØ5C-Ø-Ø	#	1	CABEE. MODEM. BCØ5C	
X		X			D-IA-7008360-0-0	#	1	CABLE. ASSEMBLY (KL8/E)	
					A-SP-DL11-Ø-1	*	11	ENGINEERING SPECIFICATION	
X	X	X			A-SP-DL11-Ø-2	H	11	INSTALLATION PROCEDURE	
					A-SP-DL11-Ø-3	B	8	TEST PRODEDURE (TEST & ACCEPTANCE)	
X	X				A-SL-DL11-Ø-4	*	1	SOFTWARE LIST	
X	X				A-AL-DL11-Ø-5	D	1	ACCESSORY LIST	
				2.	C-IA-5408776-0-0		1	PRIORITY JUMPER LEVEL #4	
					B-CS-5408776-0-1		1	CIRCUIT SCHEMATIC	
					K-CO-5408776-0-4		1	X-Y COORDINATE HOLE LOC	
					B-MH-5408776-0-6		1	MODULE ECO HISTORY	
				3.	C-AH-5408776-0-5		1	ASSY/DRILLING HOLE LAYOUT	
X				4	E-CS-M7800-YA-1	#	6	ASYNCHRONOUS LINE INTERFACE	
					K-CO-M7800-YA-4		1	X-Y COORDINATE HOLE LOCATION	
					D-AH-M7800-YA-5		1	ASSY DRILLING HOLE LAYOUT	
					B-MH-M7800-YA-6		1	MODULE ECO HISTORY	
	X	X		6.	D-CS-H315-Ø-1	#	1	MODEM TEST CONN	
					K-CO-H315-Ø-4		1	X-Y COORDINATE HOLE LOC	
					D-AH-H315-Ø-5		1	ASSY DRILLING HOLE LAYOUT	
					B-MH-H315-Ø-6		1	MODULE ECO HISTORY	
X	X	X		7.	E-CS-M7800-Ø-1	#	7	ASYNCHRONOUS LINE INTERFACE	
					K-CO-M7800-Ø-4		1	X-Y COORDINATE HOLE LOC	
					D-AH-M7800-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-M7800-Ø-6		1	MODULE ECO HISTORY	
	X			8.	A-PL-G8000-Ø-Ø		1	FILTER NETWORK	
					B-CS-G8000-Ø-1	#	1	CIRCUIT SCHEMATIC	
					K-CO-G8000-Ø-4		1	X-Y COORINATE HOLE LOC	
					C-AH-G8000-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-G8000-Ø-6		1	MODULE ECO HISTORY	

MECHANICAL

CUSTOMER PRINT SET DL11-1	DL11-2	DL11-3	DEPOT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
				1.	C-UA-DL11-Ø-Ø	F	1	ASYNCHRONOUS LINE INTERFACE	
					A-PL-DL11-Ø-Ø	F	1	ASYNCHRONOUS LINE INTERFACE (PL)	
					D-UA-BCØ5C-Ø-Ø		1	CABLE, MODEM BCØ5C	
					D-IA-7008360-0-0		1	CABLE ASSEMBLY (KL8/E)	
				2.	C-IA-5408776-0-0		1	PRIORITY JUMPER LEVEL #4	
					K-CO-5408776-0-4		1	X-Y COORDINATE HOLE LOC	
					B-MH-5408776-0-6		1	ASSY/DRILLING HOLE LAYOUT	
				3.	D-IA-5008775-0-0		1	ETCH BOARD	
					C-AH-5408776-0-5		1	ASSY/DRILLING HOLE LAYOUT	
				6.	D-CS-H315-Ø-1		1	MODEM TEST CONN	
					K-CO-H315-Ø-4		1	X-Y COORDINATE HOLE LOC	
					C-AH-H315-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-H315-Ø-6		1	MODULE ECO HISTORY	
				7.	E-CS-M7800-Ø-1		7	ASYNCHRONOUS LINE INTERFACE	
					K-CO-M7800-Ø-4		1	X-Y COORDINATE HOLE LOC	
					D-AH-M7800-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-M7800-Ø-6		1	MODULE ECO HISTORY	
				8.	A-PL-G8000-Ø-Ø		1	FILTER NETWORK	
					K-CO-G8000-Ø-4		1	X-Y COORDINATE HOLE LOC	
					C-AH-G8000-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
					B-MH-G8000-Ø-6		1	MODULE ECO HISTORY	

TITLE	SHEET	SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	3 OF 3	B	DD	DL11-Ø	L

DRB 108

DEC 16-(32S)-1062-2-N871

G

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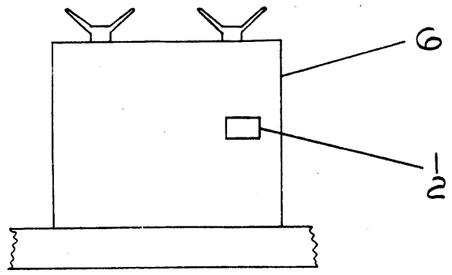
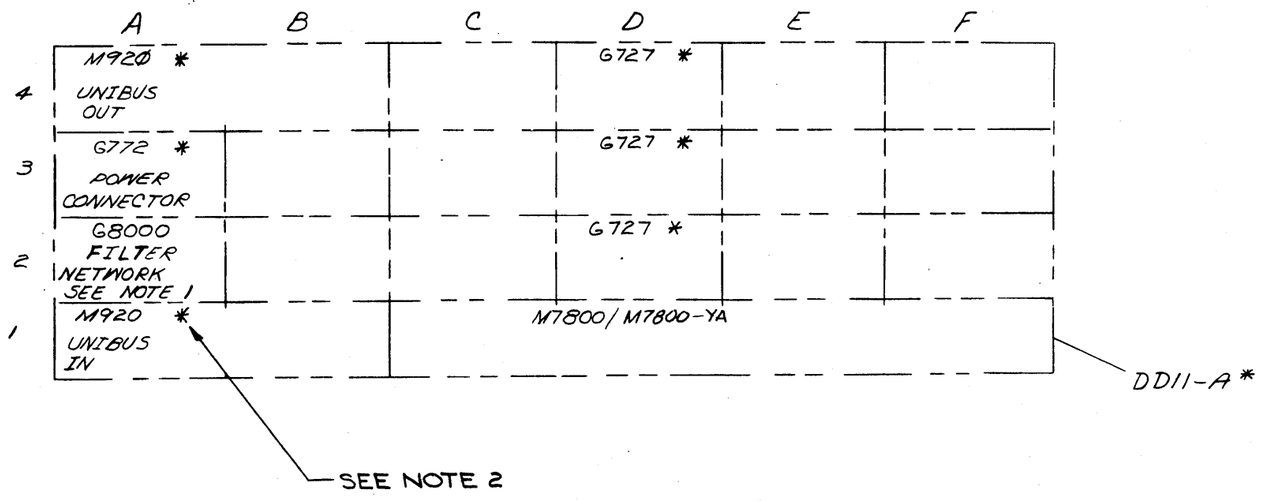


NOTES:

1. G 8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. THE INSTALATION REQUIRES 2 WIRES TO BE ADDED.
   A03V2 - A02V2
   A02N2 - CXXU1
   WHERE (XX) IS THE SLOT NUMBER CONTAINING THE DL11.
2. ITEMS INDICATED WITH ASTERISK (*) ARE SHOWN FOR REFERENCE ONLY AND ARE NOT PART OF THIS UNIT.



| REVISIONS | | |

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M. PIERCE DATE 4/27/72	CHECKED J. FERGUSON DATE 4/27/72	SECTION 1
ENG P. E. JANSON DATE 5/11/72	PROD J. Mc Daly DATE 5/15/72	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION DL11-A	DL11-B	DL11-C	DL11 D	DL11-E
1	C-IA-5408776-0-0	PRIORITY JUMPER LEVEL #4	1	1	1	1	1
3	D-UA-BCØ5C-25	CABLE MODEM BCØ5C	-	1	-	1	1
4	D-IA-7008360-0-0	CABLE ASSEMBLY (KL8E)	1	-	1	-	-
~~5~~	~~D-CS-H315-Ø-1~~	~~MODEM TEST CONNECTOR~~	~~A/R See Note 2~~				
6	E-CS-M7800-Ø-1	ASYNCHRONOUS LINE INTERFACE	-	1	-	1	1
7	~~A-PL-G8ØØØ-Ø-Ø~~	~~FILTER NETWORK~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R See Note 1~~
8		CRYSTAL	A/R	A/R	A/R	A/R	A/R See Note 3
9	E-CS-M7800-YA-1	ASYNCHRONOUS LINE INTERFACE	1	-	1	-	-
10	9008269	TRANSPARENT VINYL TAPE	A/R				

NOTES:

1. G8000 IS REQUIRED ONLY IN PDP11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A
2. ~~ONE H315 PER PDP11 SYSTEM~~
3. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE OR BY THE DOCUMENTATION OF AN OPTION WHICH USES THE DL11.
4. APPLY TAPE TO TOP SURFACES OF CRYSTAL AND MOUNTING BRACKETS TO INSULATE FROM ADJACENT MODULES.
5. PRIORIY LEVELS 5.6, or 7 MAY BE SPECIFIED BY THE CUSTOMER OR THE DOCUMENTATION OF AN OPTION WHICH USES THE DL11.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø	A	PL	DL11-Ø-Ø	H	DL11-DCC10
	SHEET 1 OF 1	DIST.				

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

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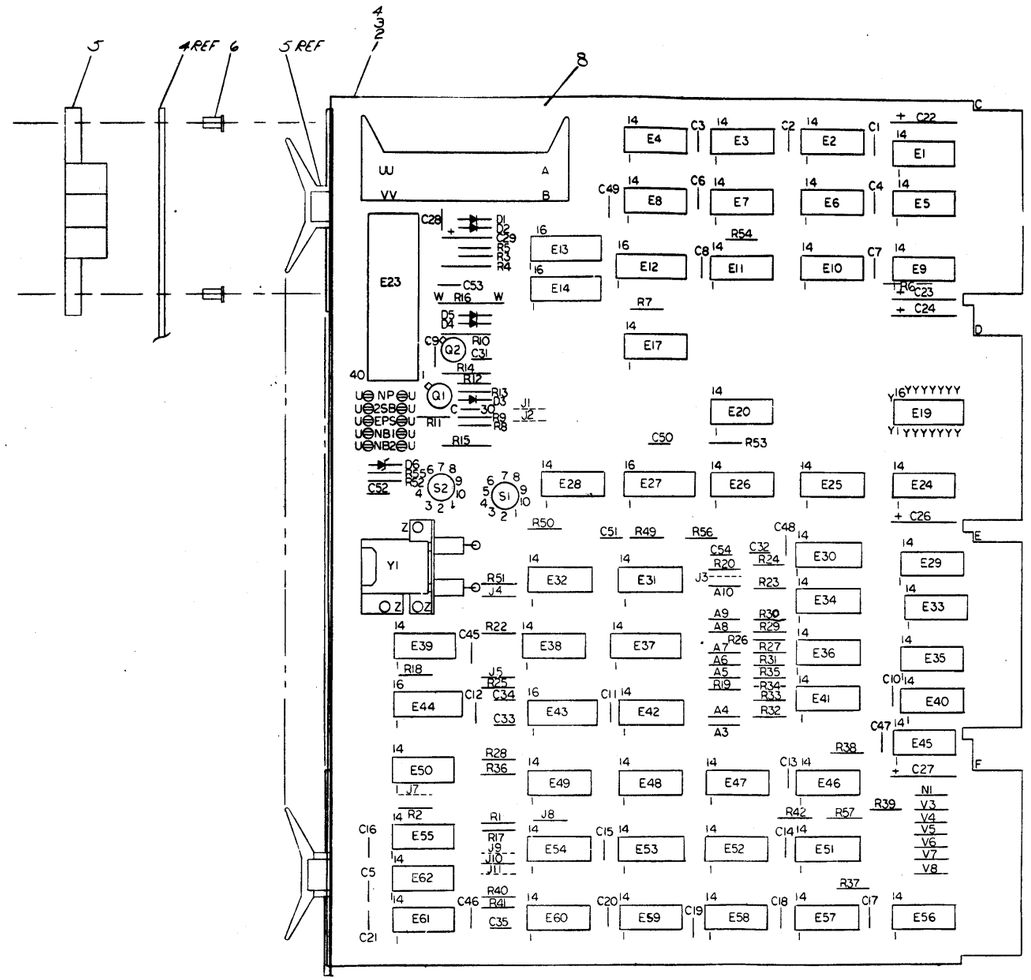
DIGITAL EQUIPMENT CORPORATION

NOTES:
1.) PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE SYSTEM UNIT. MODULE REFERENCE ALONE IS OBTAINED BY CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT THE LEFT.
2.) JUMPERS TO BE USED AT CONNECTIONS A3-A10, J4-J5, J8, J10, V3-V8, AND N1.
3.) LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X).
4.) DEC B640'S WERE PHASED INAS 380 REPLACEMENTS ANY 380 FAILURES SHOULD BE REPLACED BY B640'S, EXCEPT E28. E25 MUST BE REPLACED WITH A 7380 CHIP.

PIN NOMENCLATURE MODULE	PIN NOMENCLATURE SYSTEM UNIT
A	C
B	D
C	E
D	F



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
3		WASHERS, INTERNAL TOOTH LOCK	9006631	70
1	E28	IC DEC 7380	1910390	69
19	J1 THRU J19	JUMPER, INSULATED	9009185	68
1	R3	RES 750Ω 1/4W 5%	1301401	67
1	R38	RES 390 Ω 1/4W, 5	1300309	66
1	D6	DIODE IN746A	1104860	65
2	Q1,Q2	TRANSISTOR 2N5245	1503459-00	64
1	C53	CAP 100PF 100V 5% MICA	1000516	63
1	C54	CAP 560PF 100V 5% MICA	1000525	62
2	C50, C51	CAP .047MF CERAMIC	1009678	61
1	E27	IC DEC 7416	1910650	60
5	C32, C35	CAP 330PF 100V 5% DIPPED MICA	1000229	59
1	C52	CAP 910PF 100V 5% DIPPED MICA	1000249	58
1	C31	CAP 1000PF 100V 5% DIPPED MICA	1000252	57
29	C1 THRU C28, C30 THRU C49, C53	CAP .01UF 100V 20% CERAMIC DISC	1001640	56
1	C29	CAP 4.7UF 35V 10% TANT	1007965	55
5	C22, C23, C26, C27	CAP 6.8 UF 35V 20% TANT	1000267	54
1	C33	CAP 150PF 100V 5% DIPPED MICA	1000219	53
2	R14, R15	RES 1.5K 1/2W 5%	1300396	52
5	R23, R24, R40, R52, R53	RES 1K 1/4W 5%	1300365	51
1	R41	RES 47Ω 1/4W 5%	1300282	50
1	R10	RES 68Ω 1/2W 5%	1309405	49
1	R5	RES 82Ω 1/4W 5%	1301477	48
1	R34	RES 100Ω 1/4W 5%	1303229	47
1	R11	RES 150Ω 1/4W 5%	1300350	46
1	R42, R57	RES 180Ω 1/4W 5%	1301322	45
1	R33	RES 220Ω 1/4W 5%	1300237	44
5	D1-D5	DIODE D664 2V 400MA	1101114	43
5	R9, R13, R51	RES 470Ω 1/4W 5%	1300376	42
1	R4	RES 560Ω 1/2W 5%	1300398	41
3		NUT HEX 2-56	9006655	40
1	R16	RES 750Ω 1W 5%	1303385	39
26	R1, R2, R6, R7, R11-R24, R27, R31-R33, R37, R49, R50, R22 R56, R26	RESISTOR 1/4W 5%	1300479	38
2	R25, R42	RES 1.5K 1/4W 5%	1300391	37
1	E23	IC UART	2114137-50	36
4	E32, E33, E61, E62	IC DEC 7474	1903549	35
2	E36, E41	IC DEC 8242	1909712	34
3	E3, E45, E37	IC DEC 7408	1910135	33
3		SCR PHIL HD PAN 2-56 X 25LG	9006620-01	32
5	E20, E26	IC DEC 7420	1909031	31
11	E1, E2, E5, E7-E9, E11, E30, E47, E54, E56	IC DEC 8881	1909705	30
2		ALSAT 2000 Ω	1202812	29
1	E43	IC DEC 74153	1903436	28
3	E48, E57, E58	IC DEC 7474	1909467	27
3	E22, E34, E38	IC DEC 7400	1903573	26
1	E10	IC DEC 7473	1909989	25
2	E35, E53	IC DEC 7402	1909004	24
11	E3, E6, E33, E35, E40, E42, E46	IC DEC 8640	1911489	23
1	E42	IC DEC 74153	1903133	22
1	E60	IC DEC 74104	1909937	21
1	E25	IC DEC 7492	1909053	20
4	E6, E17, E28, E59	IC DEC 7404	1903686	19
1	E24	IC DEC 7493	1909054	18
1	E36	IC DEC 7410	1903576	17
1	E29	IC DEC 374	1909704	16
1	E37	IC DEC 7442	1903044	15
1	E44	IC DEC 8277	1909645	14
8	E13, E14	IC DEC 7475	1910451	13
1		BRACKET CRYSTAL HOLDER	3302825	12
1		SPACER CRYSTAL HOLDER	3303134	11
1	E19	IC SOCKET	1209838	10
2	S1, S2	SWITCH, SINGLE POLE, 10 POS	1210042-1	9
1		40 PIN CONNECTOR BERG	1209981-02	8
10		SPLIT LUGS	9003338	7
31		WIRE-WRAP #30-7 E.B.STIMSON	9006238	6
9		HANDLE, FLIP-CHIP, MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	3009978	4
REF		MODULE ECO HISTORY	9486-M1800-G	3
REF		ASSY/DRILLING HOLE LAYOUT	D-40-M1800-0-1	2
REF		X-Y COORDINATE HOLE	K-CO-M1800-0-1	1

PARTS LIST

ETCH BOARD REV. H

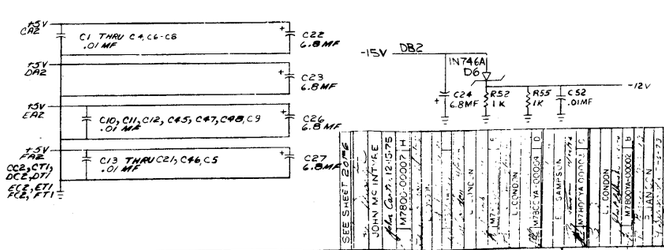
		GS34D	MPS6539
		IN746A	1N4333A
		DG64	1N3606
DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DEC 74161	8	16	—	—
DEC 7380	1	8	—	—
DEC UART	3	1	—	2
DEC 74175	8	16	—	—
DEC 8271	8	16	—	—
DEC 7442	8	16	—	—
DEC 374	1	8	—	—
DEC 7493	10	5	—	—
DEC 7492	10	5	—	—
DEC 74153	8	16	--	—
DEC 8640	1	8	—	—
DEC 7490	10	5	—	—
DEC 74123	8	16	—	—
IC TYPE	GND	+5V	+V	-12V

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

IC PIN LOCATIONS



REV	CHANGE NO.	REVISIONS	CHK	DATE
		SEE SHEET 2		
		ADDED IN746A DIODE		
		MPS6521 CHANGED TO MPS6539		
		ADDED 1N3606 DIODE		
		CHANGED TO 74LS175		
		CHANGED TO 74LS123		
		CHANGED TO 74LS374		
		CHANGED TO 74LS161		
		CHANGED TO 74LS153		
		CHANGED TO 74LS492		
		CHANGED TO 74LS493		
		CHANGED TO 74LS442		
		CHANGED TO 74LS175		
		CHANGED TO 74LS374		
		CHANGED TO 74LS492		
		CHANGED TO 74LS493		
		CHANGED TO 74LS442		

ORIG.		DATE	10-24-78
DRAWN		DATE	10-24-78
CHK		DATE	
PROJ		DATE	
NEXT HIGHER ASSY			
SCALE		SHEET	OF 6

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE

SIZE CODE: E | NUMBER: CS M7800-YA-1 | REV: K | DST:

CS M7800-YA-1 K

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DIGITAL EQUIPMENT CORPORATION.

DL-2 BINIT H
DL1 BUS INIT L
DL-2 BUNIT L

DL-2 BD07 H
DL-2 BD06 H
DL-2 BD05 H
DL-2 BD04 H
DL-2 BD03 H
DL-2 BD02 H
DL-2 BD01 H
DL-2 BD00 H

DL-4 RD7 H
DL-4 RD6 H
DL-4 RD5 H
DL-4 RD4 H
DL-4 RD3 H
DL-4 RD2 H
DL-4 RD1 H
DL-4 RD0 H
DL-5 RBUF TO BUS H

DL-4 XMIT READY H
DL-4 XMIT INT ENB (1)H
DL-4 MAINT (1)H
DL-4 BREAK (1)H
DL-5 XCSR TO BUS H

DL-4 RCVR DONE H
DL-4 RCVR INT ENB (1)H
DL-4 DATASET INT ENB (1)H
DL-4 SEC XMIT (1)H CKI
DL-4 REQ TO SEND (1)H CMI
DL-4 DATA TERMINAL READY (1)H CFI

CN2 BUS D07 L
CV2 BUS D06 L
CP2 BUS D05 L
CN2 BUS D04 L
CT2 BUS D03 L
CV2 BUS D02 L
CR2 BUS D01 L
CS2 BUS D00 L

+5V R1 10K — J8 — DL-5 RBUF TO BUS L
+5V R2 10K — J7 — DL-5 RCSR TO BUS L

DL-4 OR ERR H
DL-4 FR ERR H
DL-4 P ERR H

ERROR H

DL-5 RCSR TO BUS H
DL-4 RCVR BUSY (1)H

CD2 BUS D15 L
CE2 BUS D14 L
CF2 BUS D13 L
CH2 BUS D12 L
CH1 BUS D11 L
CJ2 BUS D10 L

REVISIONS		
CHK.	CHANGE NO.	REV.
DW	M7800-YA-00008 80 - Harnell 18-OCT-76 S. MASAND S Masand 11/7/76	J
DT	M7800YA-MK009 L Sullivan 21/11/13 R HARRINGTON R. Harrington 2 AUG 76	K

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

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

DRAWN — DATE 10/31/76
CHECKED — DATE 11/1/76
ENGINEERING — DATE 11/6/76
PROD. — DATE 11/6/76
NEXT HIGHER ASSY. —
SCALE —
SHEET 2 OF 6

[redacted] EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE (BUS RECEIVERS & DRIVERS) DL-2

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	K

DIST.

1 MK

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SEE NOTE 3

Y1	844.8 KHZ		1Ø3296 MHZ		1.152 MHZ		4.608MHZ	
	BAUD	µSEC	BAUD	µSEC	BAUD	µSEC	BAUD	µSEC
1	36.7	1700	44.8	1342	50	1250	200	312
2	55	1135	67.3	928	75	833	300	208
3	110	567	134.5	464	150	417	600	104
4	220	284	269	232	300	208	1200	52
5	440	142	538	116	600	104	2400	26
6	880	71	1076	58	1200	52	4800	13
7	1320	47.4	1614	38.7	1800	34.6	7200	8.7
8	1760	35.5	2152	29	2400	26	9600	6.5
9	BERG CLOCK INPUT - COMMON TO RCVR AND XMIT							
10	EXTERNAL CLOCK INPUT - RCVR: DSI ; XMIT DRI							

SWITCH POS.

NOTES:
1. LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE (X)
2. NUMBERS WITHIN TRIANGLES REFER TO PINS ON THE FEMALE MATE-N-LOCK CONNECTOR WHEN USING THE 7008360 CABLE. THIS CABLE ALSO CONNECTS BERG PINS H TO E.
3. ALTHOUGH THE ABOVE TABLE INCLUDES ONLY THE STANDARD DLII CRYSTALS OTHER VALUES MAY BE SPECIFIED BY THE CUSTOMER OR BY OTHER DOCUMENTATION OF AN OPTION WHICH USES THE DLII.
4. REMOVE C29 AND C31 FOR OPERATION AT FREQUENCIES ABOVE 150 BAUD.

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	TYPE REF.
DLII		PARTS LIST		

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

DRWN DATE
DES'D DATE
ENG DATE
PROJ DATE
MGR DATE
NEXT HIGHER ASSY.
SCALE
SHEET 3 OF 6

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (CLOCK & CURRENT LOOPS) DL-3

SIZE D | CODE CS | NUMBER M78ØØ-YA-I | REV. K
DIST.

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DL-2 BINIT L

DL-5 SEL 2 L

DL-5 BUS TO XCSR H

DL-4 XMIT READY H

DL-4 RCVR DONE H

DL-4 RCVR BUSY (1)H

DL-2 BINIT H

DL-4 SERIAL OUT H

DL-3 XMIT CLK H

DL-3 RCLK H FRI

FSI DL-3 SI H

DL-5 BUS TO RCSR H

DL-4 DATA LEADS ONLY L

REVISIONS		
CHK.	CHANGE NO.	REV.

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

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

DSN — DATE
CHK'D — DATE
ENG — DATE
PROJ ENG — DATE
PROD — DATE
NEXT HIGHER ASSY. —
SCALE —
SHEET 4 OF 6

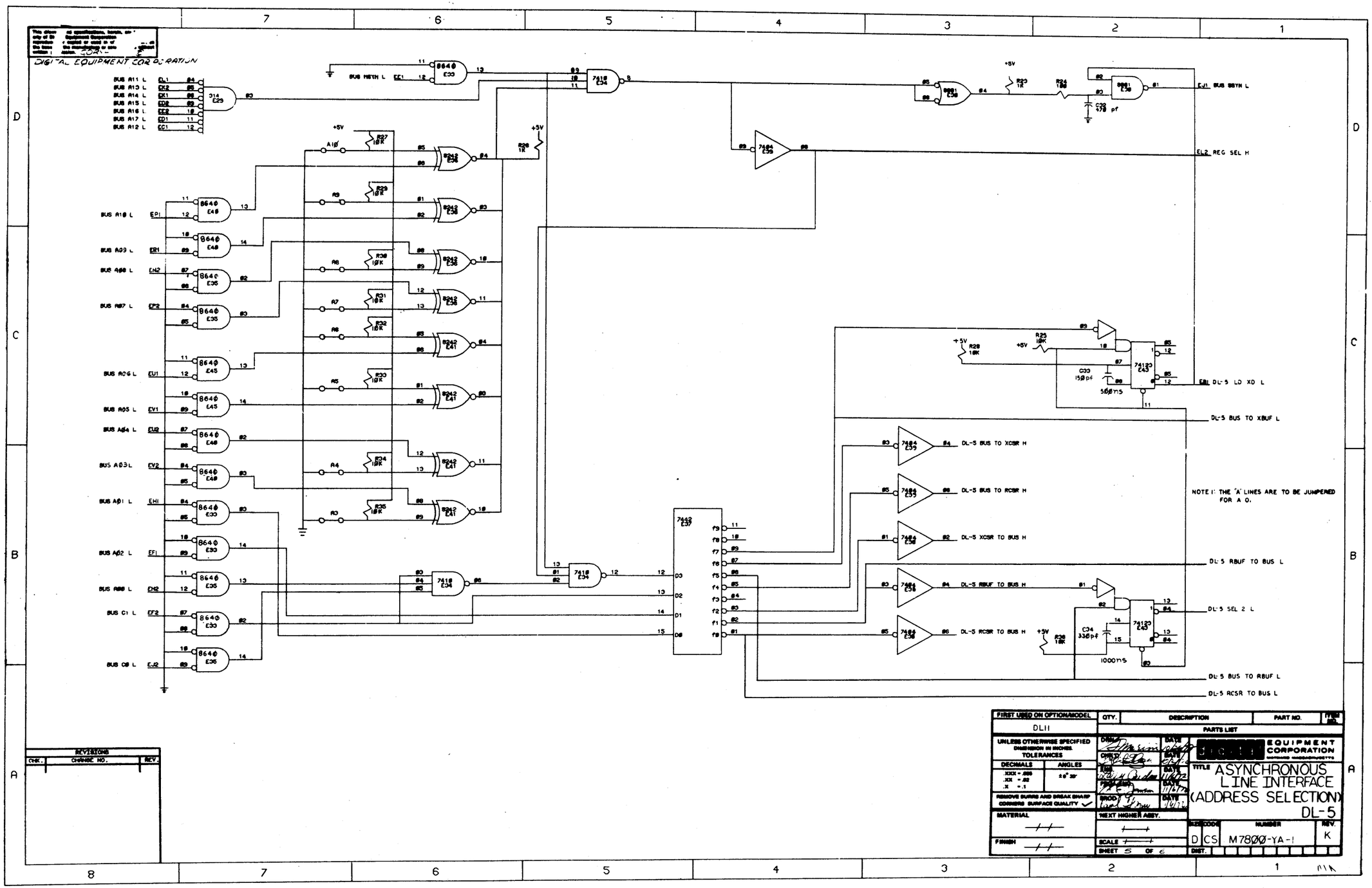
[redacted] EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE ASYNCHRONOUS LINE INTERFACE (UART & STATUS) DL-4

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	K

DIST.

MK 1


DIGITAL EQUIPMENT CORPORATION
BUS A11 L
BUS A13 L
BUS A14 L
BUS A15 L
BUS A16 L
BUS A17 L
BUS A12 L
E29
BUS MSYN L
E33
7418 E34
+5V
R23 1K
R24 180
C33 470 pf
8881 E30
EJ1 BUS SSYN L
7404 E39
EL2 REG SEL H
A10
A9
A8
A7
A6
A5
A4
A3
R27 10K
R29 10K
R30 10K
R31 10K
R32 10K
R33 10K
R34 10K
R35 10K
8212 E41
8640 E48
BUS A10 L
BUS A09 L
BUS A08 L
BUS A07 L
BUS A06 L
BUS A05 L
BUS A04 L
BUS A03 L
BUS A01 L
BUS A02 L
BUS A00 L
BUS C1 L
BUS C0 L
R28 10K
R25 10K
C30 150pf
50875
74123 E43
EBL DL-5 LD XD L
DL-5 BUS TO XBUF L
7404 E39
DL-5 BUS TO XCSR H
DL-5 BUS TO RCSR H
DL-5 XCSR TO BUS H
DL-5 RBUF TO BUS L
DL-5 RBUF TO BUS H
DL-5 RCSR TO BUS H
C34 330pf
100075
DL-5 SEL 2 L
DL-5 BUS TO RBUF L
DL-5 RCSR TO BUS L
NOTE 1: THE 'A' LINES ARE TO BE JUMPERED FOR A 0.
7442 E37
REVISIONS
CHK. | CHANGE NO. | REV.
FIRST USED ON OPTION/MODEL
DL11
QTY. | DESCRIPTION | PART NO. | ITEM NO.
PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS | ANGLES
.XXX ± .005
.XX ± .02
.X ± .1
± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
DRAWN | DATE
CHK'D | DATE
ENGR | DATE
MFG | DATE
PROD | DATE
NEXT HIGHER ASSY.
SCALE
SHEET 5 OF 6
DIGITAL EQUIPMENT CORPORATION
TITLE ASYNCHRONOUS LINE INTERFACE (ADDRESS SELECTION) DL-5
SIZE | CODE | NUMBER | REV.
D | CS | M7800-YA-1 | K
DIST.

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DL-4 RCVR INT H FLH
DL-4 XMIT INT H FV1
DL-3 BG IN H FBI
BUS NPR L FJ1
BUS BUSY L FD1
BUS SSYN L FC1
+5V R37 10K
+5 180 R57
R38 390
+5V R39 10K
+5V R40 1K
R41 47
C35 330pF
+5V R42 180
NOTE: THE 'V' LINES ARE TO BE JUMPERED FOR A 1.

FP1 DL-6 REQUEST L
FA1 DL-6 BUS OUT H
FT2 BUS BACK L
FM1 BUS INTR L
FF2 BUS D06 L
FM1 BUS D07 L
FK1 BUS D08 L
FE2 BUS D02 L
FL1 BUS D03 L
FN2 BUS D04 L
FF1 BUS D05 L

REVISIONS		
CHK.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL: DL11	QTY.	DESCRIPTION	PART NO. / ITEM NO.
	PARTS LIST		

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

DRWN — DATE
CHK'D — DATE
ENG. — DATE
PROJECT — DATE
PROD. — DATE
NEXT HIGHER ASSY. —
SCALE —
SHEET 6 OF 6

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ASYNCHRONOUS LINE INTERFACE (INTERRUPT CONTROL) DL-6

SIZE	CODE	NUMBER	REV.
D	CS	M7800-YA-1	K

DIST.

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WIRE TABLE

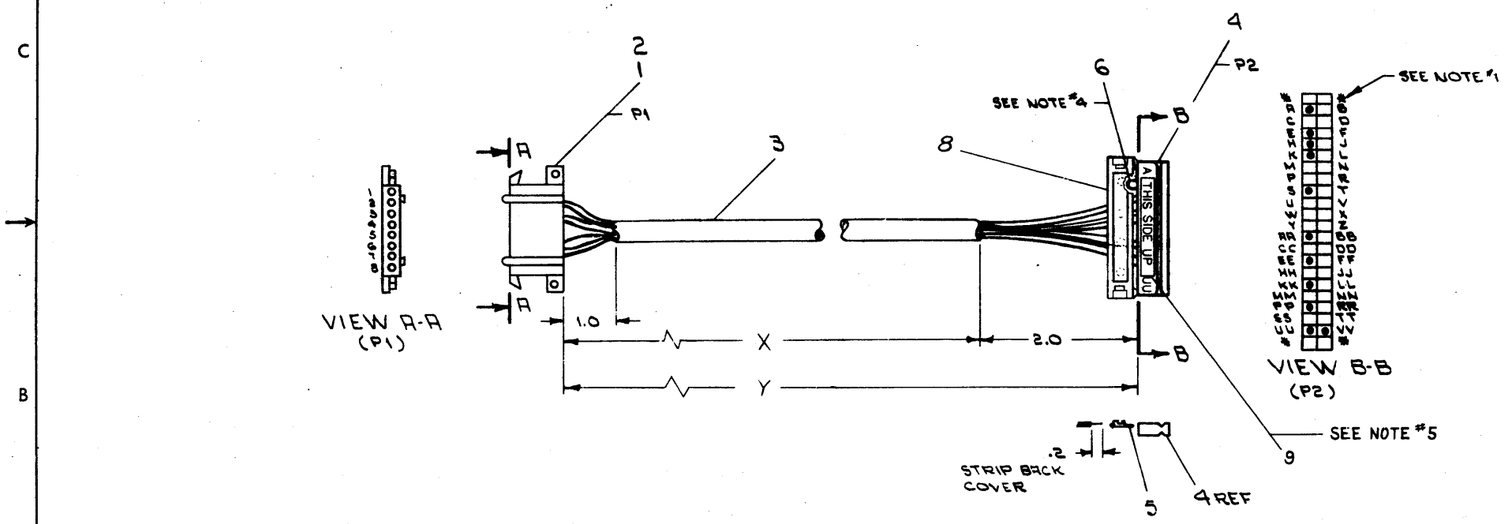
ITEM NO.	DESCRIPTION AWG	COLOR	PAIR NO.	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	1	P1-2	2	P2-KK	5
3	↑	RED	↑	P1-3	2	P2-S	↑
3,7	↑	SHIELD	↑	SEE NOTE #2	—	P2-A(NOTE #3)	↑
3	↑	BLK	2	P1-4	2	P2-EE	↑
3	↑	WHT	↑	P1-5	2	P2-RR	↑
3,7	↑	SHIELD	↑	SEE NOTE #2	—	P2-UU(NOTE #3)	↑
3	↑	BLK	3	P1-6	2	P2-PP	↑
3	↑	GRN	↑	P1-7	2	P2-K	↑
3,7	↑	SHIELD	↑	SEE NOTE #2	—	P2-VV(NOTE #3)	↑
6	22	BLK	—	P2-E	5	P2-H	5

LEGEND

VARIATION	LENGTH X	LENGTH Y
7008360-0	25IN±1.0	27IN±1.0
7008360-1	46IN±1.0	48IN±1.0
7008360-9	9FT±2IN	9FT 2IN ± 2IN

NOTES:

1. # ASTERISKS INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
2. DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLES.
3. DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM #7 (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
4. ITEM #6 (WIRE) TO BE APPROXIMATELY ONE(1) INCH LONG.
5. PLACE ITEM #9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM #4 (BERG HOUSING) AS SHOWN.



ITEM NO	QTY	DESCRIPTION	PART NO.
9	1	LABEL, THIS SIDE UP	3611567
8	1	STRAIN RELIEF	1211166
7	A/R	TUB. #18 TEF. THINWALL WHT	9107278-11
6	A/R	WIRE, #22 AWG STRD TEF BLK	9107550-00
5	11	SOCKET, CRIMP# 47216	1210089-07
4	1	HOUSING, BERG #65043-015	1210918-15
3	A/R	CABLE, BELDEN #8777-3PR SHLD	9107725-0
2	6	CONTACT MATE-N-LOCK (FEMALE)	1209379-03
1	1	CONN. MATE-N-LOCK (FEMALE)	1209340-00

PARTS LIST

REVISIONS	CHANGE NO	REV
CHK	K 8E-00000	A
	[illegible]	B
	KL8E-00000	C
	7008360-00001	D
	7008360-00002	E
	[illegible]	F
	[illegible]	G
	[illegible]	H

DRWN	M. MCNAMARA	5/27/71
CHK'D	E. CLARK	5/27/71
ENG APP	B. REGAN	10-28-73
MFG APP	B. REGAN	10-28-73
DES	REGAN	3/12/74
TRACED	BCOSMOWSKI	7/1/74
CHK'D	M.E. LEWANDOWSKI	7/16/74
ENG APP	J. MCNAMARA	7/16/74

FIRST USED ON OPTION/MODEL: PDP-8E

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES
TOLERANCES .XX ±.01 .XXX ±.005 ANGLES ±0°30'
FINAL SURFACE QUALITY 63 REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: SEE PARTS LIST
FINISH

DRWN	J. Regan	DATE APR 71
CHK'D	[illegible]	DATE 4-8-71
ENG APP	[illegible]	DATE 4-8-71
MFG APP	[illegible]	DATE 4-8-74
PROD. CONT.	[illegible]	DATE 4/16/74

NEXT HIGHER ASSY: A ML KL8-E-0
SCALE: NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CABLE ASSEMBLY (KL8E)

CAGE CODE: D1A | NUMBER: 7008360-0-0 | REV: H | DIST:

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY EMPellegrini	CHECKED P. Janson	SECTION
DATE 8/29/72	DATE 8-30-72	
ENG P. Janson	PROD J. Thibeault	ISSUED SECT.
DATE 8/29/72	DATE 8-31-72	

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-A	DL11-B	DL11-C	DL11-D	DL11-E			KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	LIBKIT-11-KL11-Ø4	KL11 MAINDEC	1	1	0	0	0				
2	LIBKIT-11-DL11Ø-A-K	DL11 MAINDEC	0	0	1	1	0				
3	LIBKIT-11-DL11E-A-K	DL11 MAINDEC	0	0	0	0	1				

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
DL11 SOFTWARE LIST	SHEET 1 OF 1	A	SL	DL11-0-4		
		DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY E.PELLEGRINI DATE JUNE 26, 1972	CHECKED P.JANSON DATE 8-8-72	SECTION
ENG PAUL JANSON DATE JUNE 26, 1972	PROD DATE 8-8-72	ISSUED SECT.

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-A	DL11-B	DL11-C	DL11-D	DL11-E			KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	M78ØØ	ASYNCHRONOUS LINE INTERFACE (EIA)	-	1	-	1	1				
2	G8ØØØ	FILTER NETWORK	0	A/R	0	A/R	A/R				
3	M78ØØ-YA	ASYNCHRONOUS LINE INTERFACE (CURRENT LOOP)	1	0	1	0	0				
4	5408776	PRIORITY JUMPER LEVEL #4	1	1	1	1	1				
5	BCØ5-C-25	MODEM CABLE	0	1	0	1	1				
6	7008360	TTY CABLE	1	0	1	0	0				
7		CRYSTAL	1	1	1	1	1				
8		DL11 ENGINEERING DRAWINGS	1	1	1	1	1				
9	DEC-11-HDLAA-A-D	DL11 ASYNCHRONOUS LINE INTERFACE MANUAL	1	1	1	1	1				
10	LIBKIT-11-KL11-Ø4	KL11 MAINDEC	1	1	0	0	0				
11	LIBKIT-11-DL11C-A-K	DL11 MAINDEC	0	0	1	1	0				
12	LIBKIT-11-DL11E-A-K	DL11 MAINDEC	0	0	0	0	1				
13	H315	MODEM TEST CONNECTOR	0	A/R	0	A/R	A/R	SEE	NOTE #3		

NOTES:
1. G8ØØØ IS REQUIRED ONLY IN PDP-11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A.
2. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE.
3. ONE H315 PER PDP11 SYS. OR ONE PER DL11 B D OR E LOOSE PIECE/ADD ON.
4. INSURE THAT TRANSPARENT VINYL TAPE HAS BEEN APPLIED TO THE TOP SURFACE OF THE CRYSTAL AND MOUNTING BRACKET.

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
DL11 CHECK LIST	SHEET 1 OF 1	A	AL	DL11-Ø-5	D	DL11-CCØ1C
		DIST.				

DEC FORM NO.
DRA 121

MK

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MAYNARD, MASSACHUSETTS

DATE 6-21-72

TITLE DL11 INSTALLATION PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
C	CHANGE PER ECO	DL11-4	JANSON	3/73	P. Janson	4-6-73
D	CHANGE PER ECO	DL11-5	CONDON	7/73	L. Condon	[illegible]3
E	CHANGE PER ECO	DL11-7	CONDON	8/74	[illegible]	[illegible]/74
F	CHANGE PER ECO	DL11-8	CONDON	4-75	L. Condon	4/8/75
H	CHANGE PER ECO	DL11-10	HARRINGTON	3-76	R. Harrington	25APR76

ENG	APPD	SIZE	CODE	NUMBER	REV
Paul F. Janson	Paul F. Janson	A	SP	DL11-0-2	H

DEC FORM NO DRA 107A

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

DL11 INSTALLATION PROCEDURE:

Installation of the M7800 module or its variation as a DL11-A through DL11-E option consists of the following preparations:

1. Jumper insertion/deletion for selection of operation mode (A, B, C, D, or E, TO MEET CUSTOMER'S REQUIREMENT'S).
2. Register address assignment.
3. Vector address assignment.
4. Priority assignment.
5. Special NPR jumper insertion/deletion.
6. Selection of data format (data bits, stop bits, parity).
7. Selection of crystal for baud rate.
8. Installation of G8000 in systems where +15v is not available.
9. Filter capacitor selection for high baud rate current-loop.
A. OPERATION MODE:

The following describes the jumpers associated with controlling the mode of operation (A,B,C,D, or E):

J1. Ties EIA driver to REQUEST-TO-SEND lead (pin 4) of dataset cable. IN for DL11-B,D, and E; does not affect DL11-A and C. Drawing DL-7.

J2. Ties EIA driver, normally used for the REQUEST-TO-SEND lead, to FORCE BUSY lead (pin 25) for use with Bell 103E. This is a customer option. If not specified, jumper is OUT for all DL11's. Drawing DL-7.

J3. When inserted, allows REQUEST-TO-SEND lead (pin 4) to be controlled by bit 2 of the receiver status register. OUT for DL11-B and D; IN for DL11-E; does not affect DL11-A and C. Drawing DL-4.

J4. When inserted, forces "DATA LEADS ONLY" mode of EIA operation. Turns DATA TERMINAL READY (pin 20) and REQUEST-TO-SEND (pin 4) on. IN for DL11-B and D; OUT for DL11-E; does not affect DL11-A and C. Drawing DL-4.

J5. When inserted, allows the BREAK bit to function. OUT for DL11-A and B; IN for DL11-C,D, and E. Drawing DL-4.

J6. When inserted, allows DSET INT to cause interrupts. OUT for DL11-A,B,C and D; IN for DL11-E. Drawing DL-4.

J7. When inserted, allows dataset control bits to be read as part of the receiver status register.

	SIZE	CODE	NUMBER	REV
	A	SP	DL11-0-2	H

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

J7. (con't)

OUT for DL11-A,B,C and D; IN for DL11-E. Drawing DL-2.

J8. When inserted, allows error bits to be read as part of the receiver data register. OUT for DL11-A and B; IN for DL11-C,D and E. Drawing DL-2.

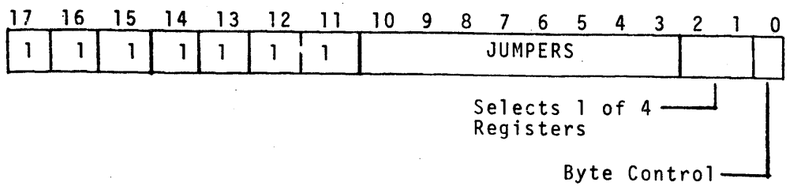
Summary of mode control jumpers:

JUMPER	A	B	C	D	E	DRAWING
J1	*	IN	*	IN	IN	DL-7
J2	OUT	OUT	OUT	OUT	OUT	DL-7
J3	*	OUT	*	OUT	IN	DL-4
J4	*	IN	*	IN	OUT	DL-4
J5	OUT	OUT	IN	IN	IN	DL-4
J6	OUT	OUT	OUT	OUT	IN	DL-4
J7	OUT	OUT	OUT	OUT	IN	DL-2
J8	OUT	OUT	IN	IN	IN	DL-2

*= don't care

B. REGISTER ADDRESS ASSIGNMENTS:

The DL11 can respond to addresses with the following format:



Bits 10 through 3 are controlled by jumpers A1Ø to A3. A jumper inserted indicates a zero.

For the DL11-A and B used as the console device, address 777560 is assigned. For additional units, assign 776XXO, where XX=50 for the first additional unit and XX=67 for the 16th unit.

For the DL11-C,D and E assign address 77XXXO, where XXX=561 for the first line, and XXX=617 for the 31st line. Assign all C's first, then D's, and then E's.

C. VECTOR ADDRESS ASSIGNMENT:

Jumpers V8 through V3 control the interrupt vector. A jumper inserted provides a vector bit of one. Vectors can be produced in the form XXØ and XX4 where XX ranges from ØØ to 77.

For the DL11-A and B used as a console device the vector address is 060/064. For additional units vectors are floating.

For the DL11-C,D, and E vector addresses are floating. Assign all C's first, then D's then E's.

D. PRIORITY ASSIGNMENT:

Interrupt priority is established by inserting a "priority plug" in the socket at IC location E19. For DL11-A B,C,D and E use level 4, for the standard assignment or level 5-7 as specified by the customer or the documentation of an option which uses the DL11.

SUMMARY OF REGISTER, VECTOR AND PRIORITY ASSIGNMENTS:

	ADDRESS	VECTOR	PRIORITY
DL11-A,B CONSOLE	777560 777562 777564 777566	60/64	BR4
DL11-A,B ADDITIONAL UNITS	776XXØ 776XX2 776XX4 776XX6	FLOATING	BR4

Where XX= 50 for line #1
and XX= 67 for line #16

	ADDRESS	VECTOR	PRIORITY
DL11-C,D,E	77XXXØ 77XXX2 77XXX4 77XXX6	Floating	4

Where XXX= 561 for line #1
and XXX= 617 for line #31

E. SPECIAL NPR JUMPER:

Jumper N1, shown on drawing DL-6, controls the response of the interrupt circuit to an NPR request. The jumper should normally be IN, except for 11/20 and 11/15 systems without the KH11 option.

F. SELECTION OF DATA FORMAT:

1. Data Bits

Split lug pairs NB2 and NB1 control the number of data bits in the serial character as follows:

NB2	NB1	# OF DATA BITS
OUT	OUT	8
OUT	IN	7
IN	OUT	6
IN	IN	5

2. Parity

Parity is controlled by split lug pairs NP and EPS as follows:

NP	EPS	PARITY
OUT	OUT	OFF
OUT	IN	OFF
IN	OUT	EVEN
IN	IN	ODD

3. Stop Bits

Split lug pair 2SB and jumpers J9, J10 and J11 control the number of stop bits in the serial character as follows:

2SB	J9	J10	J11	# OF STOP BITS
OUT	OUT	IN	OUT	2
IN	OUT	IN	OUT	1
IN	OUT	OUT	IN	1.5 for TI, GI, and SMC UARTS
IN	IN	OUT	OUT	1.5 for WD UARTS

SEE FIGURE 1 PAGE 11

G. CRYSTAL SELECTION:

The clocking scheme of the DL11 consists of a single crystal oscillator feeding a divider network, with two 10-position switches tapping various points to feed into the UART's

G. Con't

transmitter and receiver sections. Thus, for a given crystal frequency, 8 baud rates are independently selectable for transmit and receive. The two addition switch positions select external clocks.

SPEED GROUP		1	2	3	4
		CRYSTAL (HZ)			
POSITION	FACTOR	844.8K	1.03296M	1.152M	4.608M
1*	23040	36.7	44.8	50	200
2	15360	55	67.3	75	300
3	7680	110	134.5	150	600
4	3840	220	269	300	1200
5	1920	440	538	600	2400
6	960	880	1076	1200	4800
7	640	1320	1614	1800	7200
8	480	1760	2152	2400	9600

*Most counter-clock wise position.

To determine a crystal frequency for a non-standard baud rate, pick the position of the closest baud rate in the 1.152MHz column, and then multiply the non-standard baud rate by the factor for that position. For example, if the customer specifies 1050 baud. this is closest to 1200 baud, position 6.

1050 X 960 = 10080000 = 1.008MHz.

The crystal frequency should not fall outside the range of the standard crystals. Although the above table included only the standard DL11 crystals other values may be specified by the customer or by other documentation of an option which uses the DL11.

DEC part number for the standard crystals are as follows:

844.8 KHz	18-10245-1*
1.03296 MHz	18-05501-6
1.152 MHz	18-05501-5
4.608 MHz	18-05501-7

*Use A or C cut crystals only. Do not use crystals marked NE-6D.

When ordering a special crystal, refer to purchase specification 18-05501 for crystal specification.

Insure that transparent vinyl tape (9008269) is applied to the top surfaces of the crystal and mounting brackets to insulate from adjacent modules.

H. G8000 INSTALLATION:

For DL11-B, D, and E a positive voltage is required between 9 and 15 volts to operate the EIA drivers. For PDP-11/20 and PDP-11/15 systems with the H720 power supply, a G8000 module must be installed to provide this voltage. Using a filter network, this module converts the full-wave rectified "+8V" signal to a positive DC voltage.

1. Install G8000 into slot AØ2 of DD11-A.
2. Wire AØ3V2 to AØ2V2.
3. Wire AØ2N2 to CXXU1 where XX is the slot location of the M7800.

Refer to diagram 1.

I. FILTER CAPACITOR SELECTION:

For DL11-A's and DL11-C's, which operate with 20ma current loops, capacitors are used to filter the receive line and slow the switching time of the transmit line. To avoid excessive distortion above 150 baud, the capacitance in each of these two circuits must be reduced. This is accomplished by clipping C29 (.47 mfd) and C31 (1000 pf), both shown on drawing DL-3.

J. DL11-B,D,E in Systems with +15V available using DD11-A

There is a special situation of using a DD11-A to mount a DL11-B, D, Or E in systems with +15V available. These systems have +15V available and it appears at pin AØ3V2 of the DD11-A when using power harness such as 7009177, 7008855, or 7008909. In this situation, no G8000 is necessary, and +15V can be wired directly from AØ3V2 to CXXU1, where XX is the slot number of the DL11. NOTE: this does not apply to DL11-A or C or DD11-B.

K. When using the DL11-B,D,E in an 11/05 processor pin CXXU1 has +15V available on it so no G8000 or no jumpers are required.

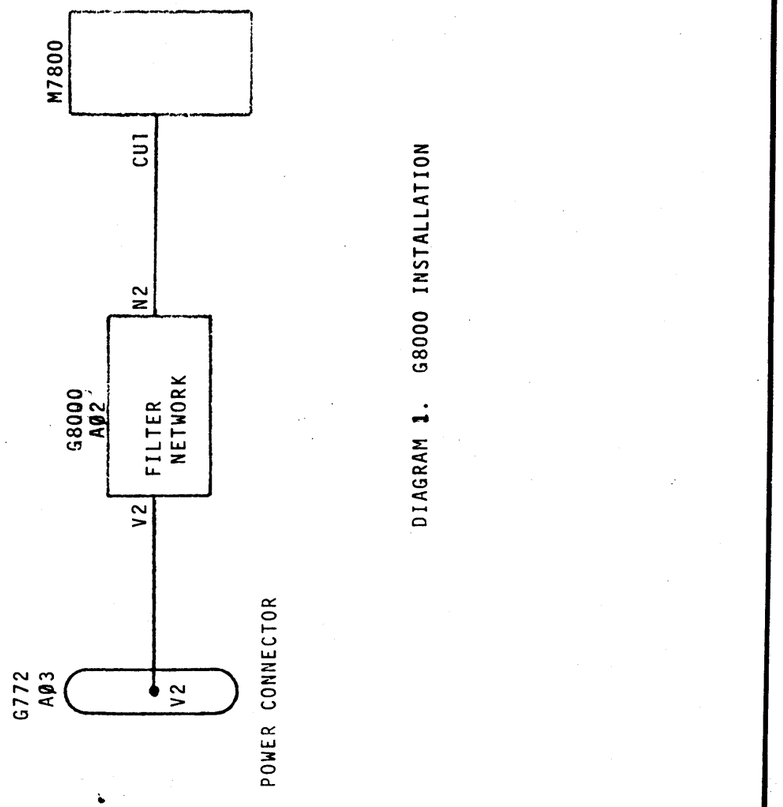
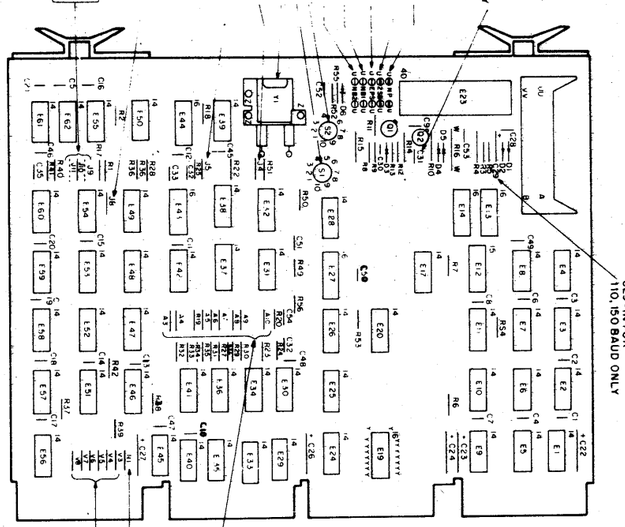


DIAGRAM 1. G8000 INSTALLATION



NOTES:

1. For further information on the DL11-A configuration or the installation of DL11-B, DL11-C, DL11-D or DL11-E refer to
   a. DL11 Asynchronous Line Interface Manual
   b. ASP-DL11-D-2 (DL11 installation procedures) in the DL11 Engineering Drawings.
2. Position 1 is most counterclockwise position.

SPEED GROUP	1	2	3	4
CRYSTAL FREQ (HZ)	844.8K	1.0137M	1.152M	4.608M
S1, S2 POS.	BAUD RATE			
1	36.7	44.8	50	200
2	55	67.3	75	300
3	110	134.5	150	600
4	220	269	300	1200
5	440	538	600	2400
6	880	1076	1200	4800
7	1320	1614	1800	7200
8	1760	2152	2400	9600

11-2454

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

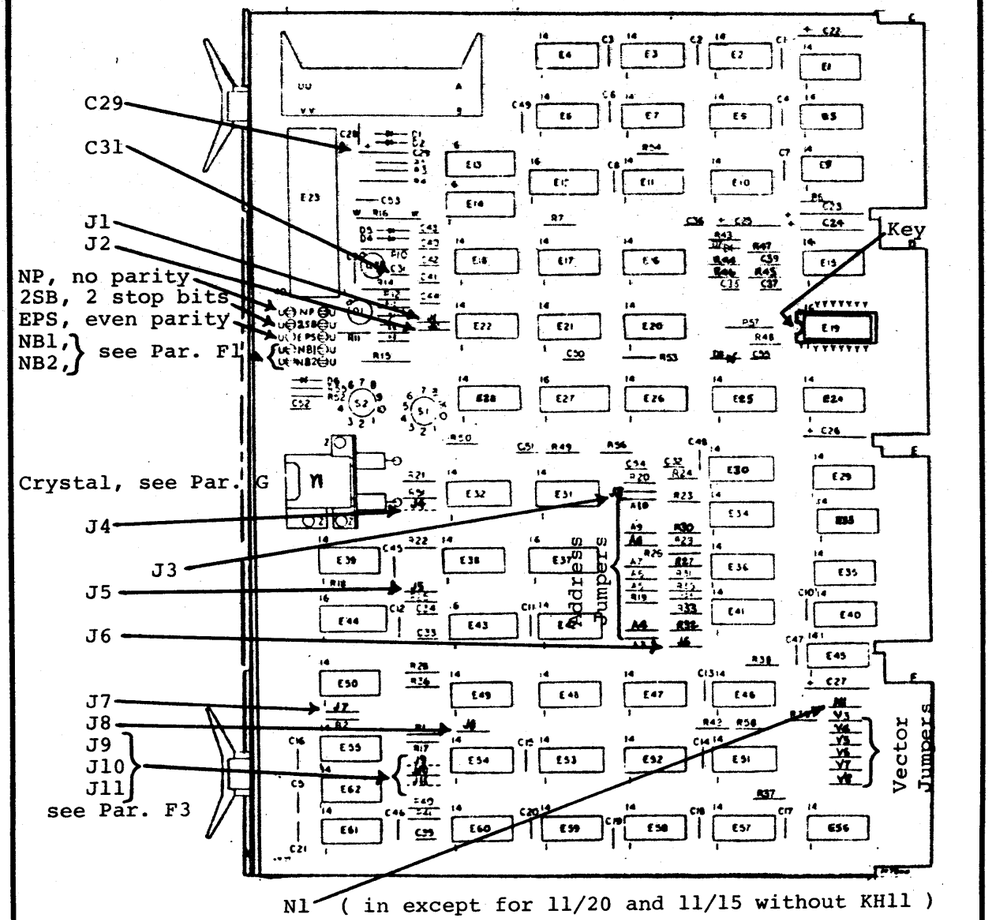
DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

mk

DL11-B/D/E
(M7800)

NOTE: For jumper configuration of DL11-B/D/E refer to page 3&5.

C29 and C31 are required for DL11-A and C at 150 BAUD or less, DL11-B,D&E don't care.



SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

DEC FORM NO EN-01022-16-N370-(381)
DRA 108

mk

Figure 1
Identifying Marks for UART (19 10459) Vendors

STANDARD MICROSYSTEMS

GENERAL INSTRUMENT

TEXAS INSTRUMENTS

ADVANCED MICRO DEVICES

WESTERN DIGITAL

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE
DRAWING DIRECTORY LT33 Series	B-DD-LT33-Ø
SETUP & REWORK PROC. FOR 33ØØ SERIES TTY WRITERS (PL)	C-PL-LT33-Ø-Ø
SETUP & REWORK PROC. FOR 33ØØ SERIES TTY WRITERS	D-UA-LT33-Ø-Ø
ACCESSORY LIST LT33 Series	A-AL-LT33-Ø-12
RECOMMENDED SPARE PARTS	A-PL-LT33-SB-Ø
MAINTENANCE TOOL KIT	A-PL-LT33-ST-Ø
PACKING PROCEDURE	A-SP-LT33-Ø-1Ø
INSTALLATION PROCEDURE	A-SP-LT33-Ø-11
TELETYPE INSPECTION PROC. & ADJ.	A-SP-LT33-Ø-13
TELETYPE READER CONTROL	B-CS-4915-Ø-1
READER CONTROL CIRCUITS	D-BS-LT33-B-CONT
PDP1Ø TELETYPE MODEL 33KSR	D-IC-LT33A-Ø-1

UNIT VARIATIONS

VAR	TITLE	PRINT SET
LT33-AA	KSR 115 V 6Ø Hz 4-PIN PLUG	XX
-AB	KSR 24Ø V 5Ø Hz 4-PIN PLUG	X
-BC	ASR 115 V 6Ø Hz 4-PIN X-ON	X
-BD	ASR 24Ø V 5Ø Hz 4-PIN X-ON	X
-CC	KSR 115 V 6Ø Hz MATE-N-LOK PLUG	X
-CD	KSR 24Ø V 5Ø Hz MATE-N-LOK PLUG	X
-CE	KSR 1ØØ V 5Ø Hz MATE-N-LOK PLUG	X
-DC	ASR 115 V 6Ø Hz MATE READER RUN	X
-DD	ASR 24Ø V 5Ø Hz MATE READER RUN	X
-DE	ASR 1ØØ V 5Ø Hz MATE READER RUN	X
-EA	ASR 115 V 6Ø Hz MATE MAN READER	X
-EB	ASR 24Ø V 5Ø Hz MATE MAN READER	X
-HC	ASR 115 V 6Ø Hz MATE X-ON	X
-HD	ASR 24Ø V 5Ø Hz MATE X-ON	X
-RA	ASR 115 V 6Ø Hz BURNDY READER RUN	X
-RB	ASR 24Ø V 5Ø Hz BURNDY READER RUN	X
-SB	SPARE PARTS KIT, ASR	X
-ST	TCOL KIT	X
-MA	MOD KIT ASR WØ76 READER RUN	X
-MB	MOD KIT ASR MATE READER RUN	X
-MC	MOD KIT KSR WØ76	X
-MD	MOD KIT KSR MATE-N-LOK PLUG	X

REVISIONS	DATE	CHG. NO.	REV
	6/73	REVISED & REDRAWN LT33-8	J
	1/74	LT33-9	K
Allan Kent 19 Feb 74			
	6/74	LT33-10	L
Allan Kent 3 July 74			

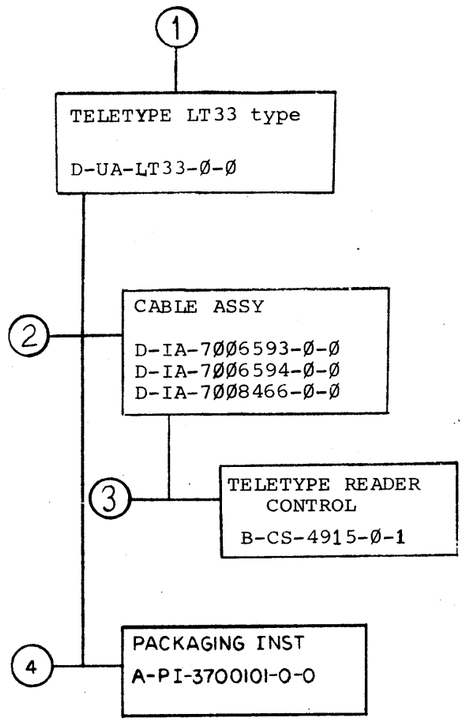
DEC 16-12251-1042-1A-0912

DRB 106

USED ON OPTION/MODEL
SEE "VAR" ABOVE

SHEET 1 OF 3

DRN. ArKENT	DATE 21AUG73	TITLE TELETYPEWRITERS LT33
CHK'D. Allan Kent	DATE 21 Aug 73	
PROJ ENG. Allan Kent	DATE 21 Aug 73	
PROD.	DATE	SIZE B / CODE DD / NUMBER LT33 - Ø / REV
FIELD SERV. Walter McKenzie	DATE 8-22-73	DIST



TITLE	SHEET	SIZE	CODE	NUMBER	REV
TELETYPEWRITERS LT33	2 OF 3	B	DD	LT33 - Ø	L

ELECTRICAL

CUSTOMER PRINT SET				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					1	C-PL-LT33-Ø-Ø	E	3	SETUP & REWORK PROC. FOR 33ØØ	
X						D-UA-LT33-Ø-Ø	B	8	SETUP & REWORK PROC. FOR 33ØØ	
X						A-AL-LT33-Ø-12	C	1	ACCESSORY LIST LT33 SERIES	
X						A-PL-LT33-SB-Ø	*	1	RECOMMENDED SPARE PARTS	
X						A-PL-LT33-ST-Ø	A	2	MAINTENANCE TOOL KIT LT33	
X						A-SP-LT33-Ø-1Ø	B	1	PACKING PROCEDURE	
X						A-SP-LT33-Ø-11	B	1	INSTALLATION PROCEDURE	
X						A-SP-LT33-Ø-13	A	7	INSPECTION PROCEDURES & ADJUST.	
						A-PS-3Ø11294-Ø-Ø		22	PURCHASE SPEC. 33ØØ TELETYPES	
X					3	B-CS-4915-Ø-1	#	1	TELETYPE READER CONTROL	
X						D-BS-LT33-B-CONT	B	1	READER CONTROL CIRCUITS	
X						D-IC-LT33A-Ø-1	A	1	PDP1Ø TELETYPE MODEL 33KSR	
						THE FOLLOWING SPECIFICATION IS TO BE SUPPLIED UPON CUSTOMER REQUEST.				
						A-SP-LT33-Ø-14	*	44	LT33 TYPE PROGRAMMING SPEC.	
						THE FOLLOWING DRAWINGS ARE "INACTIVE" AND ARE LISTED HERE FOR HISTORIC REFERENCE. THE DRAWINGS LISTED ABOVE REPLACE THESE DRAWINGS.				
						D-IA-75Ø5Ø38-Ø-Ø	D	2	TELETYPE MODIFICATIONS (LT33)	
						D-IA-75Ø5Ø39-Ø-Ø	D	1	TELETYPE MODIFICATIONS (5ØHz&24ØV)	
						D-IA-75Ø5Ø41-Ø-Ø	B	1	TELETYPE MODIFICATIONS (33KSR)	
						D-UA-LT33A-Ø-Ø	A	1	PDP1Ø TELETYPE 33KSR	
						A-PL-LT33A-Ø-Ø	A	1	PDP1Ø TELETYP E 33KSR (PL)	
						D-UA-LT33-B-Ø	B	1	DEC MODIFIED TELETYPE 33ASR	
						A-PL-LT33-B-Ø	B	1	DEC MODIFIED TELETYPE 33ASR (PL)	

MECHANICAL

CUSTOMER PRINT SET				MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
					1	D-UA-LT33-Ø-Ø	B	8	SETUP & REWORK PROC. FOR 33ØØ	
						C-PL-LT33-Ø-Ø	B	3	SETUP & REWORK PROC. FOR 33ØØ	
						A-DC-74Ø9Ø45-Ø-2		1	DECAL VOLATAGE SPEC	
					2	D-IA-7ØØ6593-Ø-Ø	#		4915 TO MATE-N-LOK ASSY	
						D-IA-7ØØ6594-Ø-Ø	#		TTY TO MATE-N-LOK ASSY 4 COND	
						D-IA-7ØØ8466-Ø-Ø	#		4915 TO BURNDY CABLE ASSY	
						THE FOLLOWING CABLE IS USED ON THE OBSOLETE LT33-DA and -DB.				
						D-AD-7ØØ5676-Ø-Ø	#		4915 TO WØ76 CABLE ASSY	
					4	A-PI-3700101-0-0			PACKAGING INSTRUCTIONS	
						A-PS-9905147			REGULAR SLOTTED CARTON	
						A-PS-9905347			SPECIAL DIE CUT SPACER	

CUSTOMER PRINT SET CODES

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

TITLE	SHEET	SIZE	CODE	NUMBER	REV
TELETYPEWRITERS LT33	3 OF 3	B	DD	LT33 - Ø	L

DRB 108

DEC 16-(325)-1062-2B-R972

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	FEATURES		-AA	-AB		-BA**	-BB**	-BC	-BD		-CA (OBS	-CB (OBS	-CC	-CD	-CE		-DA (OBS	-DB (OBS	-DC	-DD	-DE		-EA ✝	-EB ✝			-FA (OBS	-FB (OBS		-HA**	-HB**	-HC	-HD					-RA	-RB	
	LINE VOLTAGE	1=115V 60HZ 2=230V 50HZ Ø=100V 50HZ	1	2		1	2	1	2		1	2	1	2	Ø		1	2	1	2	Ø		1	2			1	2		1	2	1	2					1	2	
	INTERFACE CONNECTOR	4=WECO 283B,W=WØ76, M=MATE-N-LOCK, B=BUNDY	4	4		4	4	4	4		W	W	M	M	M		W	W	M	M	M		M	M			[illegible]	[illegible]		M	M	M	M					B	B	
D	KEYBOARD (UPPERCASE)	E=EVEN PARITY N=NO PARITY(8TH BIT MARKING)	E	E		E	E	E	E		N	N	E	E	E		N	N	N	N	N		E	E			N	N		E	E	E	E					N	N	D
	PRINTER	F=FRICTION FEED S=SPROCKET FEED	F	F		S	S	F	F		F	F	F	F	F		F	F	F	F	F		F	F			S	S		S	S	F	F					F	F	
	PAPER TAPE RDR/PUNCH	Ø=NONE,R=RDR RUN MOD,A=AUTO,M=MANUAL	Ø	Ø		A	A	A	A		Ø	Ø	Ø	Ø	Ø		R	R	R	R	R		M	M			R	R		A	A	A	A					R	R	
	ANSWERBACK	Ø=NONE,D=DISABLED,A=ANSWERBACK	A	A		A	A	A	A		D	D	A	A	A		D	D	D	D	D		A	A			D	D		A	A	A	A					D	D	
1	A-PS-3Ø11294-Ø1	TELETYPE CAT.NO. 331Ø/3EA KSR 6Ø HZ	1	-				-	-				1	-	-				-	-	-		-	-								-	-						-	-	
1	A-PS-3Ø11294-Ø2	TELETYPE CAT.NO. 331Ø/3SA KSR 5Ø HZ	-	1				-	-				-	1	1				-	-	-		-	-								-	-					SEE NOTE 1	-	-	
1	A-PS-3Ø11294-Ø3	TELETYPE CAT.NO. 3321/3JA MAN ASR 6Ø HZ	-	-				-	-				-	-	-				1	-	-		1	-								-	-					1	-	
1	A-PS-3Ø11294-Ø4	TELETYPE CAT.NO. 3321/3WD MAN ASR 5Ø HZ	-	-				-	-				-	-	-				-	1	1		-	1								-	-					SEE NOTE 1	-	1	
1	A-PS-3Ø11294-Ø5	TELETYPE CAT.NO. 332Ø/3JA MAN ASR 6Ø HZ	-	-				-	-				-	-	-				*	-	-		*	-								-	-					SEE NOTE 2	*	-	
1	A-PS-3Ø11294-Ø6	TELETYPE CAT.NO. 332Ø/3WA MAN ASR 5Ø HZ	-	-				-	-				-	-	-				-	*	*		-	*								-	-					SEE NOTE 1&2	-	*	
1	A-PS-3Ø11294-Ø7	TELETYPE CAT.NO. 332Ø/5JA AUTO ASR 6Ø HZ	-	-				1	-				-	-	-				-	-	-		-	-								1	-						-	-	
1	A-PS-3Ø11294-Ø8	TELETYPE CAT.NO. 332Ø/5WA AUTO ASR 5Ø HZ	-	-				-	1				-	-	-				-	-	-		-	-								-	1					SEE NOTE 1	-	-	
1A	1211394	"TD" TYPEWHEEL TELETYPE P.N. 185508	1	1				1	1				1	1	1				*	*	*		*	*								1	1						*	*	
2	A-PS-1205693	CORD 4 COND	1	1				1	1				-	-	-				-	-	-		-	-								-	-						-	-	
3	A-PS-1205857-01	TELEPHONE PLUG 283B-5Ø	1	1				1	1				-	-	-				-	-	-		-	-								-	-						-	-	
4	A-PS-1205857-02	TELEPHONE JACK 4Ø4B-5Ø	1	1				1	1				-	-	-				-	-	-		-	-								-	-						-	-	
5	D-IA-7ØØ6593-1-Ø	4915 TO MATE-N-LOCK ASSY (12 FT) 6 COND	-	-				-	-				-	-	-				1	1	1		-	-								-	-						-	-	
5	D-IA-7ØØ8466-12-Ø	4915 TO BURNDY CABLE ASSY (12 FT)	-	-				-	-				-	-	-				-	-	-		-	-								-	-						1	1	
5	D-IA-7ØØ6594-1-Ø	TTY TO MATE-N-LOCK ASSY (12 FT) 4 COND	-	-				-	-				1	1	1				-	-	-		1	1								1	1						-	-	
6	2911459	PIN TELETYPE 182644	-	-				-	-				-	-	-				1	1	1		-	-								-	-						1	1	
7	9ØØ7929	SOLDERLESS TERM #6 RING 18-22 AWG	5	5				5	5				3	3	3				5	5	5		3	3								3	3						5	5	
8	11ØØ1Ø6	THYRECTOR G.E. 6RS2ØSP4B4	2	2				2	2				2	2	2				2	2	2		2	2								2	2						2	2	
9	1ØØØØ63	CAPACITOR 1UF ± 10% 15ØV	1	1				1	1				-	-	-				-	-	-		-	-								-	-						-	-	
10	9ØØ6Ø2Ø-1	SCREW PH.HD PAN 6-32 x 1/4	-	-				-	-				-	-	-				2	2	2		-	-								-	-						2	2	
11	9ØØ7Ø32	CABLE TIE 3/16 x 6-½ LG SST2-M	-	-				-	-				2	2	2				2	2	2		2	2								2	2						2	2	
12	9ØØ7Ø31	CABLE TIE 3/32 x 3-3/4 LG SST1-M	-	-				-	-				-	-	-				15	15	15		-	-								-	-						15	15	
13	A-PS-16Ø9313	AUTOTRANSFORMER 3 AMP	-	1				-	1				-	1	1				-	1	1		-	1								-	1						-	1	
14	9ØØ6Ø37-1	SCREW PH. HD. PAN 8-32 x 3/8	-	4				-	4				-	4	4				-	4	4		-	4								-	4						-	4	
15	9ØØ669Ø	LOCK WASHER #8	-	4				-	4				-	4	4				-	4	4		-	4								-	4						-	4	
16	9ØØ6661	FLAT WASHER #8	-	4				-	4				-	4	4				-	4	4		-	4								-	4						-	4	
17	9ØØ6561	HEX NUT 8-32 x 5/16 x 1/8	-	4				-	4				-	4	4				-	4	4		-	4								-	4						-	4	
18	91Ø7673-12	CORD SET 12 FT	-	1				-	1				-	1	1				-	1	1		-	1								-	1						-	1	
19	9ØØ7928	SOLDERLESS TERM #1Ø RING 14-16 AWG	-	2				-	2				-	2	2				-	2	2		-	2								-	2						-	2	
2Ø	9ØØ8853	CAP 23ØV NEMA 6-15P	-	1				-	1				-	1	-				-	1	-		-	1								-	1						-	-	
2Ø	A-PS-121Ø561	CAP HUBBELL #7594 (115V)	-	-				-	-				-	-	-				-	-	-		-	-								-	-						-	-	
2Ø	A-PS-121Ø564	CAP HUBBELL #7485 (23ØV)	-	-				-	-				-	-	-				-	-	-		-	-								-	-						-	1	

✝ NO KNOWN USAGE
** WILL BECOME OBSOLETE WHEN PRESENT STOCK IS EXHAUSTED (SPROCKET FEED)
* SEE NOTE 2

REVISIONS			
CHK	CHANGE NO.	REV.	
—	LT33-00008	—	ORIGINATED
[illegible]	LT33-00009	A	R. Glowacka 1-29-74 A. KENT Allen Kent 19 Feb 74
[illegible]	LT33-00010	B	J. Charter 6-25-74 KENT Allen Kent 3 July 74

FIRST USED ON OPTION/MODEL

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

MATERIAL —

FINISH —

		DATE
DRN.	J Charter	4-20-73
CHK'D.	[illegible]	8/22/73
ENG.	Allen Kent	11 June 73
PROJ. ENG.	Allen Kent	22 Aug 73
PROD.	[illegible]	8-27-73

NEXT HIGHER ASSY. D-UA-LT33 Ø

SCALE —

SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS

SIZE	CODE	NUMBER	REV.
C	PL	LT33-Ø-Ø	B

DIST.

DEC FORM NO. DNC 110

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ITEM	DWG/PART NO.	DESCRIPTION	-AA	-AB	-BA**	-BB**	-BC	-BD	-CA (OBS)	-CB (OBS)	-CC	-CD	-CE	-DA (OBS)	-DB (OBS)	-DC	-DD	-DE	-EA	-EB	-FA (OBS)	-FA (OBS)	-HA**	-HB**	-HC	-HD	-RA	-RB	
21	121Ø563	RUBBER CAP COVER HUBBELL 744Ø	-	-			-	-			-	-	-			-	-	-	-	-					-	-	1	1	
22	A-DC-74Ø9Ø45-0-2	DECAL VOLTAGE SPEC	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	
23	1211375	FUNCTION LEVER STOP CLIP (SHORT) 186781	-	-			-	-			-	-	-			1	1	1	-	-					-	-	1	1	
24	91Ø7278-Ø2	TUBING RED #18 TEF	A/R	A/R			A/R	A/R			A/R	A/R	A/R			A/R	A/R	A/R	A/R	A/R					A/R	A/R	A/R	A/R	
28	A-PI-37ØØ1Ø1-Ø-Ø	CONSOLIDATED SHIPPING PACKAGE	1	1			1	1			1	1	1			1	1	1	1	1					1	1	1	1	
3Ø	12Ø4789	MOTOR 5Ø HZ TELETYPE 182267	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	
31	12Ø485Ø	DRIVE GEAR 50 HZ TELETYPE 181855	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	
32	12Ø4849	PINION GEAR 5Ø HZ TELETYPE 181851	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	SEE NOTE 1
33	12Ø4848	PLATE W/STUD TELETYPE 18185Ø	-	A/R			-	A/R			-	A/R	A/R			-	A/R	A/R	-	A/R					-	A/R	-	A/R	
34	2911553	AIR DEFLECTOR TELETYPE 182183	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	
35	2911554	FAN 3 INCH TELETYPE 182181	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	
36	1211423	FUSE 1.8 AMP SLO-BLO TELETYPE 32Ø246	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	
37	1211396	FUSE IDENT PLATE 1.8A TELETYPE 182Ø69	-	1			-	1			-	1	1			-	1	1	-	1					-	1	-	1	
	PROCEDURE I	CONVERT 6Ø HZ MACHINE TO 5Ø HZ	-	A/R			-	A/R			-	A/R	A/R			-	A/R	A/R	-	A/R					-	A/R	-	A/R	SEE NOTE 1
	PROCEDURE IIa.	MODIFY LINE VOLTAGE TO 24ØV	-	X			-	X			-	X	-			-	X	-	-	X					-	X	-	X	
	PROCEDURE IIb.	MODIFY LINE VOLTAGE TO 1ØØV	-	-			-	-			-	-	X			-	-	X	-	-					-	-	-	-	
	PROCEDURE III	INSTALL DIFFERENT LINE PLUG (CAP)	-	X			-	X			-	X	-			-	X	-	-	X					-	X	X	X	
	PROCEDURE IV	INSTALL THYRECTORS	X	X			X	X			X	X	X			X	X	X	X	X					X	X	X	X	
	PROCEDURE V	ACTIVATE AUTO PUNCH	-	-			X	X			-	-	-			-	-	-	-	-					X	X	-	-	
	PROCEDURE VI	CONVERT KEYBOARD TO 8" BIT "1"	-	-			-	-			-	-	-			X	X	X	-	-					-	-	X	X	
	PROCEDURE VII	INHIBIT ANSWER BACK BY ENQ (WRU)	-	-			-	-			-	-	-			X	X	X	-	-					-	-	X	X	
	PROCEDURE VIII	INSTALL "TD" TYPEWHEEL	X	X			X	X			X	X	X			SEE NOTE 2			SEE NOTE 2					X	X	SEE NOTE 2		
	PROCEDURE IX	ARRANGE FOR 2Ø mA FULL DUPLEX	X	X			X	X			X	X	X			X	X	X	X	X					X	X	X	X	
	PROCEDURE X	INSTALL 1UF CAPACITOR	X	X			X	X			-	-	-			-	-	-	-	-					-	-	-	-	
	PROCEDURE XI	INSTALL READER RUN ASSY (4915) AND CABLE	-	-			-	-			-	-	-			X	X	X	-	-					-	-	X	X	
	PROCEDURE XII	INSTALL MATE-N-LOK INTERFACE CABLE	-	-			-	-			X	X	X			-	-	-	X	X					X	X	-	-	
	PROCEDURE XIII	INSTALL TELEPHONE PLUG, JACK & CABLE	X	X			X	X			-	-	-			-	-	-	-	-					-	-	-	-	
	PROCEDURE XIV	INSTALLATION ON, STAND	X	X			X	X			X	X	X			X	X	X	X	X					X	X	X	X	

REVISIONS | REV. | CHANGE NO. | CHK

FIRST USED ON OPTION/MODEL

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. Chartier DATE 9-20-73
CHK'D D. Jeans DATE 9-21-73
ENG. Alan Kent DATE 14 June 73
PROJ. ENG. Alan Kent DATE 21 Aug 73
PROD. [signature] DATE 8-21-73

NEXT HIGHER ASSY. D-UA-LT33-Ø-Ø

SCALE

SHEET 2 OF 3

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS

SIZE C | CODE PL | NUMBER LT33-Ø-Ø | REV. B

DIST.

DEC FORM NO. DRC 110

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NOTES TO PARTS LIST

1. IN ALL CASES 60 HZ MACHINES CAN BE REWORKED FOR 50 HZ OPERATION INSTEAD OF STOCKING 50 HZ UNITS. ON THE BASIS OF EXPECTED VOLUME, INITIAL 50 HZ STOCKING IS EXPECTED TO BE AS FOLLOWS (REWORK PROCEDURE I)

DESC	50 HZ P.N.	STATUS	ALTERNATIVE
KSR	3011294-02	REWORK 3011294-01	STOCK
MAN ASR(TD	3011294-04	STOCK	REWORK 3011294-03
MAN ASR(TV	3011294-06	REWORK 3011294-05	SEE NOTE 2
AUTO ASR	3011294-08	REWORK 3011294-07	STOCK

2. WITH THE EXCEPTION OF 3011294-03 (60 HZ) AND 3011294-04 (50 HZ) (BOTH MANUAL ASR WITH "TD" TYPEWHEEL) ALL UNITS MUST BE REWORKED BY REPLACING THE "TV" TYPEWHEEL SUPPLIED WITH A "TD" TYPEWHEEL. THE -03 AND -04 MACHINES ARE SPECIALS AND MAY SOMETIMES BE IN SHORT SUPPLY. THE -05 AND -06 MACHINES MAY BE SUBSTITUTED AS FOLLOWS:

DESCRIPTION	PART NO. NEEDED	ALTERNATIVES
MAN ASR (TD) 60 HZ	3011294-03	REWORK (IX) 3011294-05
MAN ASR (TD) 50 HZ	3011294-04	REWORK (IX) 3011294-06 OR REWORK (I & IX) 3011294-05

MODIFICATION KITS

LT33-MA "ASR for 8, 8/I, 8/L, 8/S"
USE PARTS LIST FOR LT33-DC OMITTING ITEMS 1, 1A, AND 5. IN ADDITION, ONE CABLE ASSY 4915 TO W076 P.N. 7005676-1 IS REQUIRED. FOLLOW PROCEDURES FOR LT33-DC.

LT33-MB "ASR for 8/E, 11, 15"
USE PARTS LIST FOR LT33-DC OMITTING ITEMS 1 AND 1A. FOLLOW PROCEDURES FOR LT33-DC.

LT33-MC "KSR for 8, 8/I, 8/L, 8/S"
USE PARTS LIST FOR LT33-CC OMITTING ITEMS 1, 1A, AND 5. IN ADDITION, ONE CABLE ASSY TTY TO W076 P.N. 7005011-1 IS REQUIRED. FOLLOW PROCEDURES FOR LT33-CC.

LT33-MD "KSR for 8/E, 11, 15"
(Also for LT33-E or -H type.)
USE PARTS LIST FOR LT33-CC OMITTING ITEMS 1 AND 1A. FOLLOW PROCEDURES FOR LT33-CC.

ALTERNATIVELY, A W078 ADAPTER MODULE ADDED TO AN LT33-MB OR LT33-MD KIT CAN BE USED WHEN AN LT33-MA OR LT33-MC KIT IS REQUIRED.

REVISIONS | REV. | CHANGE NO. | CHK

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

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

DRN. J. Chartier DATE 4-20-73
CHK'D D. Mears DATE 5/24/73
ENG. Allen Kent DATE 14 June 73
PROJ. ENG. Allen Kent DATE 22 June 73
PROD. [illegible] DATE 8-23-73

NEXT HIGHER ASSY. D-UA-LT33-0-0
SCALE
SHEET 3 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS

SIZE	CODE	NUMBER	REV.
C	PL	LT33-0-0	B

DIST.

REV. B | NUMBER LT33-0-0 | SIZE CODE C

DEC FORM NO. DRC 100-A

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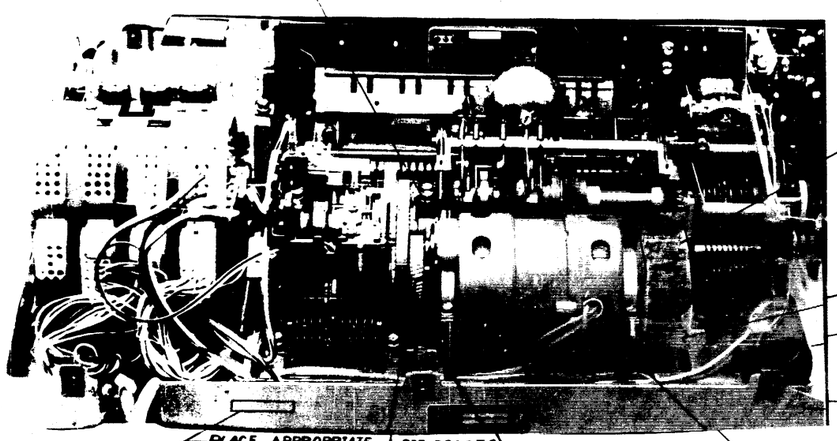
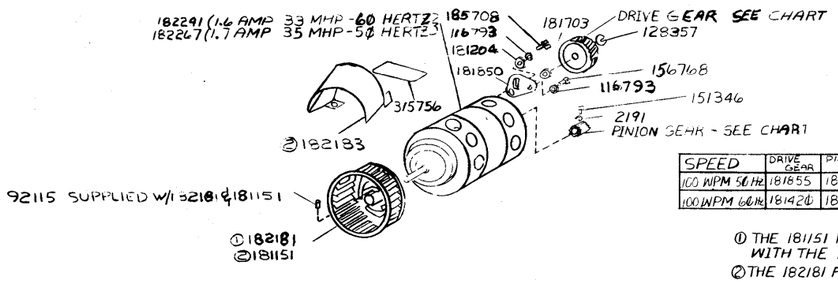


DETAIL "A"
(REAR VIEW WITH COVER REMOVED)



SPEED	DRIVE GEAR	PINION GEAR
100 WPM 50 HZ	181855	181851
100 WPM 60 HZ	181420	181411

① THE 181151 FAN (2 1/2" DIA.) IS USED WITH THE 181870 AND 182241 MOTORS.
② THE 182181 FAN (3" DIA.) AND THE 182183 AIR DEFLECTOR ARE USED WITH THE 182267 MOTOR.

DETAIL "B"
MOTOR ASSY EXPLODED VIEW
(TAKEN FROM TELETYPE
SEC. 574-122-8007C
ISS. 7 PAGE 35)

PROCEDURE I

CONVERT 60 Hz MACHINE TO 50 Hz
SEE DETAIL A&B)

A. REMOVE 182241 SPLIT-PHASE START MOTOR AND REPLACE WITH ITEM #30 (NOT NECESSARY IF MOTOR IS ALREAD RATED 50/60 Hz ON NAME PLATE) IF 181870 CAPACITOR START MOTOR IS ENCOUNTERED MOTOR START CAPACITOR MUST ALSO BE REMOVED WHEN INSTALLING ITEM #30. SEE 1180 SD-810 AND 4905 WD. (TELETYPE DRAWINGS)
B. REMOVE 181416 PLATE WITH STUD AND REPLACE WITH ITEM #33 (NOT NECESSARY WHEN 181850 PLATE WITH STUD (UNIVERSAL) IS SUPPLED (NOW STANDARD). 181850 PART IS IDENTIFIED BY LONG ADJUSTMENT SLOT.)
C. REMOVE 181420 DRIVE GEAR AND REPLACE WITH ITEM #31
D. REMOVE 181411 PINION GEAR AND REPLACE WITH ITEM #32.
E. REMOVE 181151 FAN (2 1/2 INCH DIA) AND REPLACE WITH ITEM #35 (3 INCH DIA. FAN). (NOT NECESSARY) IF 3 INCH DIA. FAN ALREADY SUPPLIED.)
F. ADD AIR DEFLECTOR ITEM #34 OVER FAN
G. REPLACE MOTOR FUSE (2 OR 2 1/4 AMP) WITH 1.8 AMP SLO-BLO ITEM #36. CHANGE FUSE LABEL TO ITEM #37.
H. PLACE APPROPRIATE FREQUENCY DECAL ITEM #22 ON REAR OF MACHINE

REVISIONS	REV.		
CHK	CHANGE NO.		
—	LT33-00008	ORIGINATED	—
✓✓	LT33-00009	G. Vander 1-30-74	A
✓✓		A. KENT	
✓✓	LT33-00010	J. Anderson 6-25-74	B
		KENT 3 July 74	

NEXT HIGHER ASSY	QTY.	DESCRIPTION	PART NO.	ITEM NO.
B-DD-LT33-Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY 7
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL —//—
FINISH —//—

DRN. R. Cassetta DATE 4-30-73
CH'K'D. D. Bosz DATE 5/24/73
ENG. Allan Kent DATE 14 June 73
PROJ. ENG. Allan Kent DATE 21 Aug 73
PROG. [illegible] DATE 8-23-73
FIRST USED ON LT33 TYPE
SCALE NONE
SHEET 1 OF 8

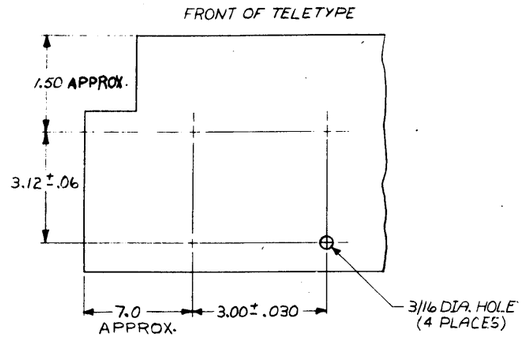
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE SET-UP & REWORK PROCEDURE FOR TTY 3300 SERIES TTY WRITERS

SIZE/CODE D/UA NUMBER LT33-Ø-Ø REV. B
DIST.

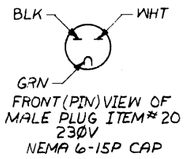
LT33-Ø-Ø REV B SIZE/CODE D/UA

© DEC

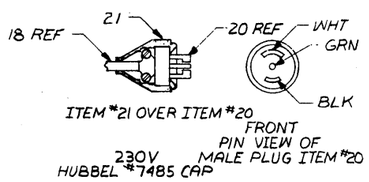


HOLE DRILLING DIAGRAM FOR MOUNTING OF TRANSFORMER, ITEM #5, TO PLATE INSIDE BOTTOM OF BASE. (PROC. II-A)

DETAIL "C"

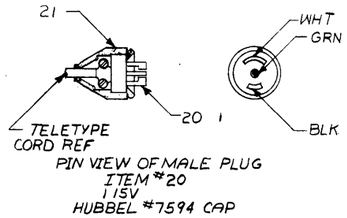


FRONT (PIN) VIEW OF MALE PLUG ITEM # 20
230V
NEMA 6-15P CAP



ITEM #21 OVER ITEM #20
FRONT
PIN VIEW OF MALE PLUG ITEM #20
230V
HUBBEL #7485 CAP

DETAIL "E"
CORD CAP WIRING
(PROC III)



PIN VIEW OF MALE PLUG ITEM #20
115V
HUBBEL #7594 CAP

PROCEDURE II
MODIFY LINE VOLTAGE (INSTALL TRANSFORMER)

SEE DETAIL A, C, AND D

FOR OPERATION ON VOLTAGES OTHER THAN 115V PERFORM THE FOLLOWING OPERATIONS:

A. DRILL FOUR 3/16 INCH DIA. HOLES IN BASE MOUNTING PLATE AS SHOWN IN DETAIL "C"
B. MOUNT TRANSFORMER ITEM #13 WITH ITEM #14 THRU ITEM #17.
C. CUT CORDSET ITEM #18 AS SHOWN AND WIRE PER TABLE AND DETAIL "D" USING ITEM #19.
D. PLUG TELETYPE'S CORD INTO FEMALE RECEPTACLE PART OF ITEM #18
E. PLACE APPROPRIATE VOLTAGE DECAL ITEM #22 AS SHOWN IN DETAIL "A".

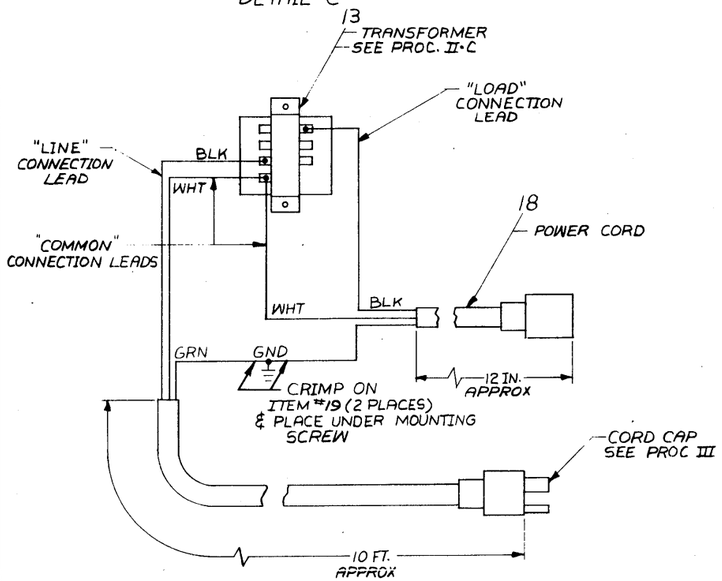
PROCEDURE III
CHANGE MALE CORD CAP

SEE DETAIL "D" AND "E"

A. DETERMINE FROM PARTS LIST WHICH CAP IS TO BE PUT ON.
B. IF TRANSFORMER ITEM #13 IS INSTALLED CUT OFF THE MALE CAP FROM THE CORDSET ITEM #18, OTHERWISE CUT OFF THE MALE CAP FROM THE TELETYPE'S CORD.
C. SLIDE THE COVER ITEM #21 IF REQUIRED ONTO THE CORD AND WIRE THE CAP ITEM #20 AS SHOWN IN DETAIL "E".
D. FIT THE COVER IF USED OVER THE CAP AS SHOWN IN DETAIL "E".

NOTE:

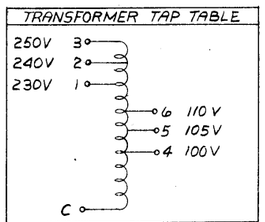
PDP-9 AND EARLY PDP10 TELETYPES WERE SUPPLIED WITH A NEMA 5-15P (115V) CAP PAINTED RED WHEN WIRED FOR 190 TO 250 VOLTS



TRANSFORMER MOUNTING & WIRING

DETAIL "D"

TRANSFORMER TAP TABLE



VOLTAGE	LINE	LOAD	COMMON
126	6	4	C
121	5	4	C
115	6	6	C
110	5	4	1
106	6	4	1
100*	1	3	4
96	C	1	5
90	C	2	5
85	C	3	6
82	C	2	4
77	C	3	4

VOLTAGE	LINE	LOAD	COMMON
287	3	4	C
275	2	4	C
274	3	5	C
265	1	4	C
263	2	5	C
260	3	6	C
252	1	5	C
250	2	6	C
240*	1	6	C
220	C	6	1
213	C	6	2
213	C	5	1
206	C	6	3
204	C	5	2
203	C	4	1
198	C	5	3
197	C	4	2
193	C	4	3

b. a.

* INDICATES STD FACTORY CONNECTIONS

THIS TABLE PROVIDES 115V TO THE LOAD AT THE NORMAL LINE VOLTAGE

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
SET UP & REWORK PROCEDURE FOR TTY 3300 SERIES TTY WRITERS	D	UA	LT33-0-0	B
SCALE NONE	SHEET 2 OF 8		DIST	

DEC FORM NO. ORD 437

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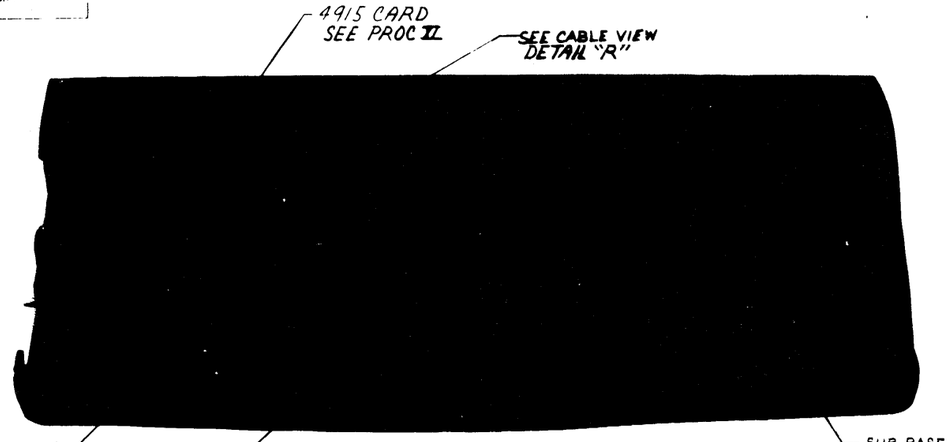
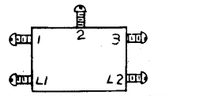
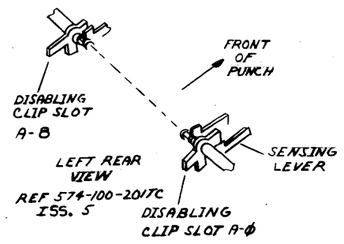


DETAIL "F"
(RIGHT SIDE VIEW)



TERMINAL LOCATION
REAR VIEW OF
ON-OFF-LOCAL
SWITCH
SEE PROC II
DETAIL "G"

FROM	TERMINAL	COMPONENT	TO	TERMINAL
L2	ITEM#7	THYRECTOR ITEM#8	2	ITEM#7
1	ITEM#7	THYRECTOR ITEM #8		



DETAIL "H"
SEE PROC. V

PROCEDURE IV
INSTALL THYRECTORS
SEE DETAILS "F" & "G"

A. CUT TUBING ITEM #24 AND PLACE ON LEADS OF THYRECTORS ITEM #8
B. PULL BACK THE RUBBER BOOT WHICH COVERS THE TERMINALS ON THE LINE OFF-LOCAL SWITCH
C. INSTALL THYRECTORS USING TERMINAL ITEM #7 PER TABLE IN DETAIL "G"
D. IF RELAY CONTROLLED READER (READER RUN) MODIFICATION IS NOT GOING TO BE INSTALLED (PROCEDURE DII) REPLACE RUBBER BOOT SO ALL TERMINALS ARE COVERED.

PROCEDURE V
ACTIVATE AUTOMATIC PUNCH
(CONTROLLED BY DC2 & DC4)
SEE DETAIL "H"

A. TO ACTIVATE THE AUTOMATIC PUNCH FEATURE (PUNCH CONTROLLED BY DC2 & DC4) REMOVE THE TWO DISABLING CLIPS SHOWN IN DETAIL "H"

NOTE:
TO INACTIVATE AUTO PUNCH FEATURE INSTALL TWO TELETYPE P.N. 187001 CLIPS, ONE IN EACH SLOT SHOWN IN DETAIL "H". (RECEIVED WITH AUTO PUNCH INACTIVATED)

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SET-UP & REWORK PROCEDURE FOR TTY 3300 SERIES TTY WRITERS	D	UA	LT33-0-0	B
SCALE	SHEET 3 OF 8	DIST.		

DEC FORM NO DRD 137

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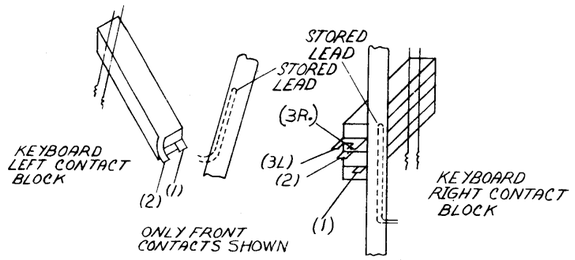
KEYBOARD PARITY MODIFICATIONS



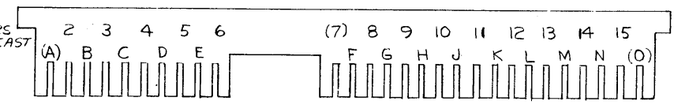
OPTION	LEFT CONTACT BLOCK TERM1	TERM2	SLEEVE&STORE	RIGHT CONTACT BLOCK TERM1	TERM2	TERM3R	TERM 3L	SLEEVE & STORE
EVEN PARITY (AS RECEIVED)	WHT-BLK	RED-GRN	GRN	YEL	WHT-SLATE	WHT-BLK	—	GRN
8TH BIT MARKING	WHT-BLK	GRN	RED-GRN	YEL	WHT-SLATE	WHT-BLK	GRN	—
8TH BIT SPACING (NOT USED BY DEC)	WHT-BLK	RED-GRN	GRN	YEL	—	WHT-BLK	—	WHT SLATE GRN

REFERENCES
SEC 574-100-201 TC ISS:5
9334 WD ISS:1

DETAIL "J"
SEE PROC. VI

FUNCTION BOX CASTING (REF)

(NUMBERS/LETTERS IN ( ) ARE NOT CAST INTO CASTING



TELETYPE P.N. 186782 STOP CLIP IN A SLOT TO DISABLE AUTO CR LF ON 72ND CHAR (RECEIVED DISABLED)

REFERENCE
SECTION 574-100-101TC ISS 2

FRONT SCHEMATIC VIEW OF CODE BAR TIE BAR

NO CLIP IN "F" SLOT ENABLES RIGHT MARGIN BELL AND END-OF-LINE BELL (RECEIVED ENABLED)

TELETYPE P.N. 186781 STOP CLIP IN "S" SLOT TO DISABLE WRU (ENQ) ACTIVATED ANSWERBACK

NOTE: IT IS NOT NECESSARY TO REMOVE THE WRU STUNT BOX PAWL OR SPRING

DETAIL "K"
SEE PROC. VII

PROCEDURE VI

CONVERT KEYBOARD TO 8TH BIT MARKING ("1")
SEE DETAIL "J"

A. LOCATE THE FRONT TAB CONNECTIONS ON THE CONTACT BLOCKS AT THE LEFT AND RIGHT ENDS OF THE KEYBOARD.
B. REMOVE THE RED-GRN LEAD FROM TERMINAL 2 OF THE LEFT CONTACT BLOCK. SLEEVE (INSULATE) THIS WIRE.
C. UNTIE AND UNSLEEVE THE GRN LEAD NEAR THE LEFT CONTACT BLOCK AND CONNECT TO TERMINAL 2
D. TIE THE SLEEVED RED-GRN LEAD TO THE NEARBY BAR.
E. UNTIE AND UNSLEEVE THE GRN LEAD NEAR THE RIGHT CONTACT BLOCK AND CONNECT TERMINAL 3L.

NOTE:
TO INSTALL PARITY OR 8TH BIT SPACING FOLLOW CHART IN DETAIL "J".

PROCEDURE VII

INHIBIT ANSWERBACK CAUSED BY ENQ (WRU)
SEE DETAIL "K"

A. DO NOT REMOVE ENQ (WRU) STUNT BOX PAWL OR SPRING
B. LOCATE SLOT "S" IN CODEBAR BASKET TIE BAR
C. INSTALL SHORT FUNCTION LEVER STOP CLIP ITEM #23 IN SLOT 'S' TO INHIBIT ENQ (WRU) INITIATED ANSWERBACK

NOTE:
ALSO VERIFY THAT SLOT "A" CONTAINS A LONG STOP CLIP TELETYPE P.N. 186782 AND THAT SLOT "F" DOES NOT CONTAIN A STOP CLIP.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS	SIZE / CODE	D / DUA
		NUMBER	LT33-0-0
SCALE	NONE	SHEET 4 OF 8	DIST
		REV	E

DUA LT33-0-0 E

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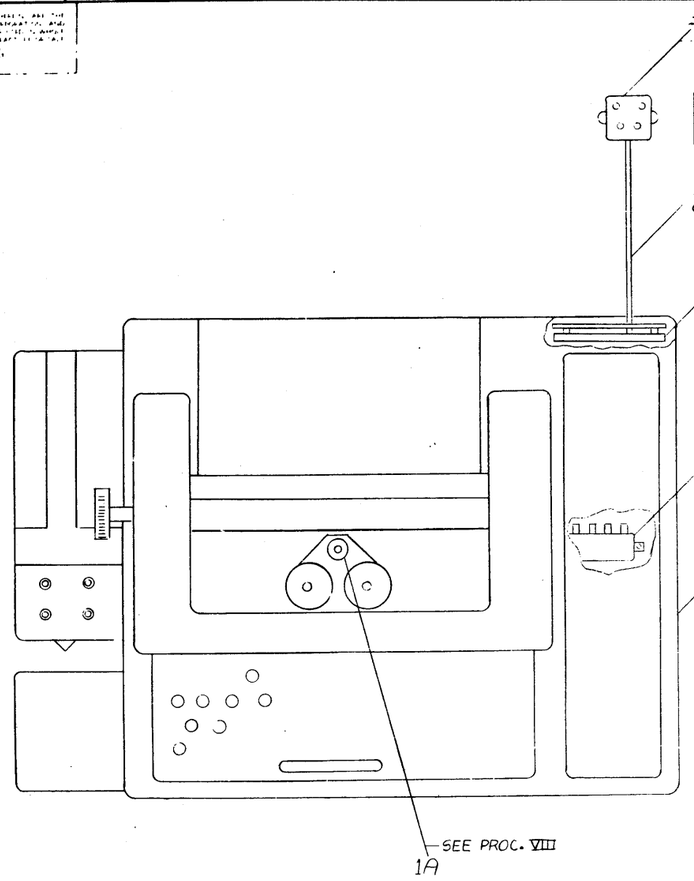
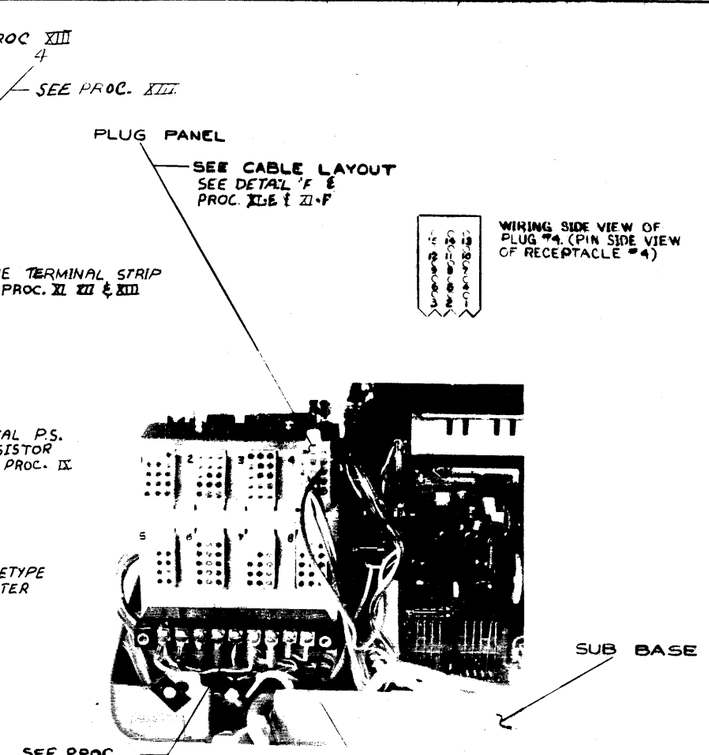
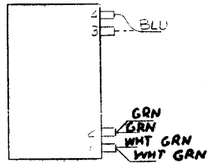


DETAIL "L"



DETAIL "M"



LOCAL PWR SUPPLY
POWER RESISTOR
SEE PROC IX-D

DETAIL "N"

PROCEDURE VIII

INSTALL "TD" TYPEWHEEL
SEE DETAIL "L"

A. REMOVE "TV" TYPEWHEEL SUPPLIED (□ = LETTER OH; 0 = NUMERAL ZERO)
B. INSTALL "TD" TYPEWHEEL USING ADJUSTING TOOL TELETYPE P.N. 180588 (O = LETTER OH, Ø = NUMERAL ZERO)
C. CHECK "FINAL PRINTING ALIGNMENT" AS SPECIFIED IN SECT. 574-122-700 TC AND REFINE ADJUSTMENTS AS NEEDED.

PROCEDURE IX

ARRANGE FOR 20mA FULL DUPLEX OPERATION
SEE DETAILS "F", "L", "M" AND "N"

A. REMOVE BRN/YEL WIRE FROM TERMINAL 3 OF THE LINE TERMINAL STRIP AND MOVE IT TO TERMINAL 5.
B. REMOVE BLU/WHT WIRE FROM TERMINAL 4 AND MOVE TO TERMINAL 5.
C. REMOVE PURPLE WIRE FROM TERMINAL 8 AND MOVE TO TERMINAL 9.
D. MOVE THE BLUE WIRE FROM TERMINAL 3 OF THE LOCAL POWER SUPPLY POWER RESISTOR TO TERMINAL 4.

PROCEDURE X

INSTALL 1μF CAPACITOR
SEE DETAIL "M"

A. CUT TUBING ITEM #24 AND PLACE ON LEADS OF CAPACITOR ITEM #9.
B. INSTALL CAPACITOR BETWEEN TERMINALS 3 & 4 OF THE LINE TERMINAL STRIP USING TERMINAL LUGS ITEM #7.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SET-UP & REWORK PROCEDURE FOR TTY 3300 SERIES TTYWRITERS	D	UA	LT33ØØ	B
SCALE	SHEET 5 OF 8	DIST.		

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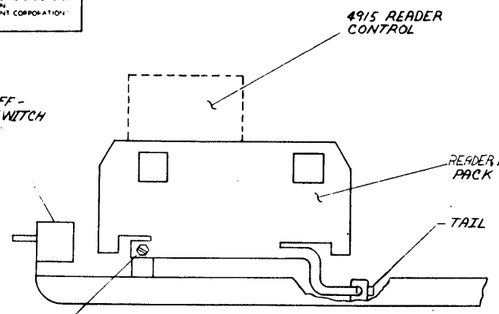
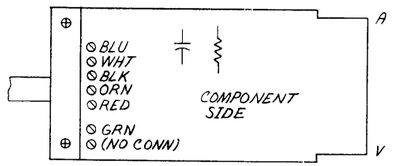
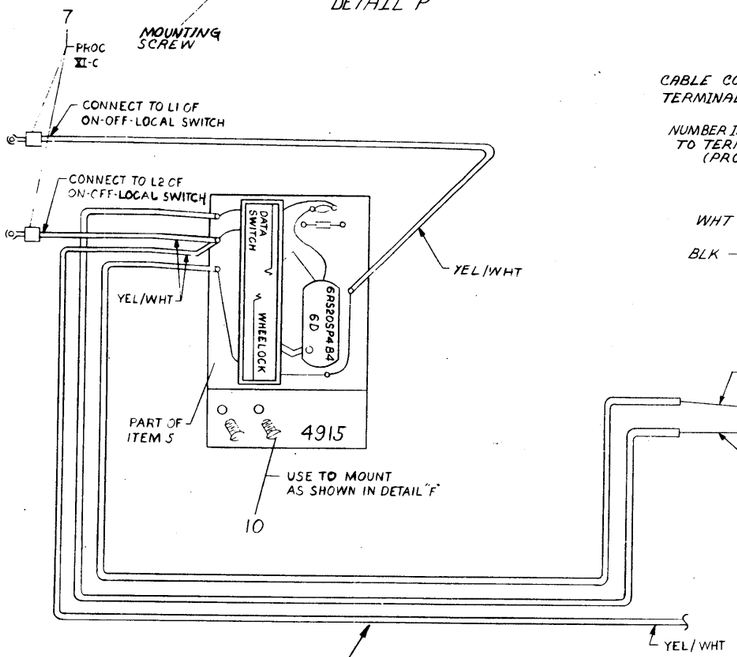


DETAIL "P"

4915
READER CONTROL
INSTALLATION
(RIGHT SIDE VIEW WITH COVER REMOVED)



W076 REV "D" CONN (7005676)
NOTE: YELLOW IS SOMETIMES USED INSTEAD OF WHITE
GRAY IS SOMETIMES USED INSTEAD OF GREEN

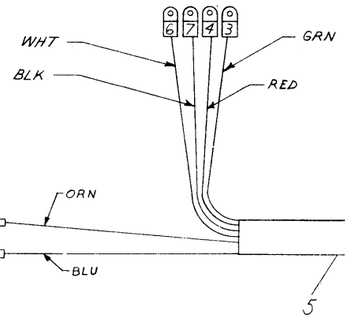


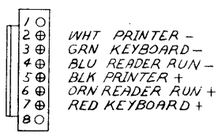
DETAIL "Q"

CONNECT TO LOCATION #7 OF RECEPTACLE #4 ON THE PLUG PANEL USING #3 (MATES WITH BROWN WIRE MOVED BY PROC XI-F) SEE DETAIL M)

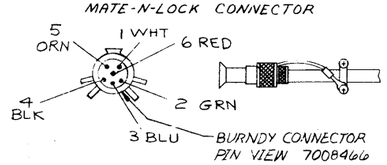
CABLE CONNECTIONS TO TERMINAL BOARD

NUMBER IN LUG CORRESPONDS TO TERMINAL BOARD NUMBERS (PROC XI-G)





PIN VIEW 7006593
MATE-N-LOCK CONNECTOR



TOOLS FOR BURNDY CONNECTOR
EXTRACTION TOOL RX24-3
INSERTION TOOL RTM24-3
CRIMPING TOOL M10S-1
W/DIE SET ~~549~~ & STOP BUSHING SL81

PROCEDURE XI

INSTALL READER RUN CONTROL (4915) AND INTERFACE CABLE ASSY
SEE DETAILS "F,L,N,"P"Q

A. REMOVE READER POWER PACK AND SET ASIDE AS FOLLOWS (DETAIL "P"):
  i. REMOVE MOUNTING SCREW (SAVE)
  ii. LIFT READER PACK AND UNHOOK TAIL
  iii. SET POWER PACK ASIDE (UNPLUG IF DESIRED)
B. INSTALL 4915 MODULE (PART OF ITEM #5) ON CALL CONTROL UNIT BRACKET AS SHOWN IN DETAIL "F" USING SCREWS ITEM #9
C. INSTALL TWO YEL/WHT WIRES FROM 4915 ON LINE-OFF-LOCAL SWITCH AS INDICATED IN DETAIL "Q" USING TERMINAL LUG ITEM #7
D. REPLACE RUBBER BOOT ON LINE-OFF-LOCAL SWITCH SO ALL TERMINALS ARE COVERED
E. CONNECT YEL/WHT WIRE FROM 4915 TO LOCATION #7 OF RECEPTACLE #4 ON THE CALL CONTROL PANEL AS INDICATED IN DETAIL "Q" USING PIN ITEM #6
F. MOVE BROWN WIRE FROM LOCATION #11 TO LOCATION #7 OF PLUG #4 (SEE DETAIL "M")
G. INSTALL FOUR WIRES OF INTERFACE CABLE ON LINE TERMINAL STRIP:

GRN	TERM #3
RED	TERM #4
BLK	TERM #7
WHT	TERM #6

REPLACE TERMINAL STRIP COVER
H. USING TIES ITEMS #11 AND #12 TIE WIRING AS SHOWN IN DETAIL "M" AND "R"
J. REINSTALL READER POWER PACK AS FOLLOWS (DETAIL "P"):
  i. PLUG POWER PACK CABLE INTO PACK IF REMOVED.
  ii. HOOK TAIL OF POWER PACK INTO BRACKET
  iii. INSTALL MOUNTING SCREW PREVIOUSLY REMOVED.

ENGINEERING NOTE:

TELETYPE DRAWINGS 6353WL (33TU) AND 7933WD (33TY) SPECIFY THAT TERMINAL 3 ON LINE TERMINAL STRIP IS - (NEGATIVE) AND TERMINAL 4 IS + (POSITIVE). TELETYPE DRAWING 1180SD (33300) DOES NOT SPECIFY. IN LOCAL AND IN HALF DUPLEX OPERATION THE KEYBOARD IS OPERATED AS IF 3 WERE + (POS) AND 4 WERE - (NEG). SINCE NOTHING IN THE KEYBOARD, READER, DISTRIBUTOR AREA IS POLARITY SENSITIVE THE CHOICE OF POLARITY DOES NOT MATTER.
PROCEDURES XI AND XII ARE NOT CONSISTENT WITH PROCEDURE XIII IN THIS RESPECT.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SET UP & REWORK PROCEDURE FOR TTY 5300 SERIES TTY WRITERS	SIZE	CODE	NUMBER / REV
		D	UA	LT33-0-0 / B
SCALE NONE	SHEET 6 OF 8	DIST		

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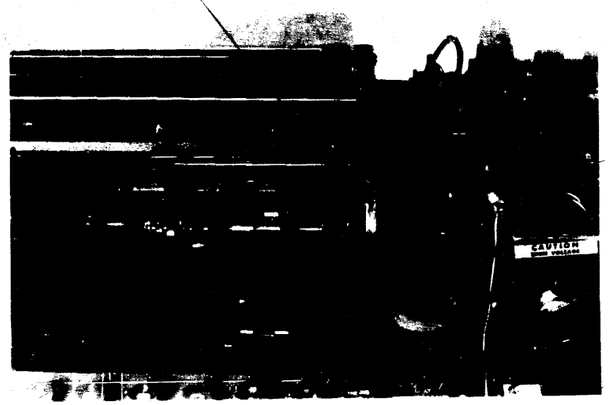
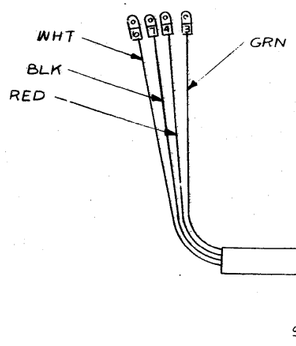
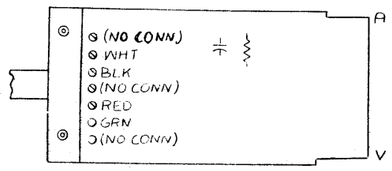


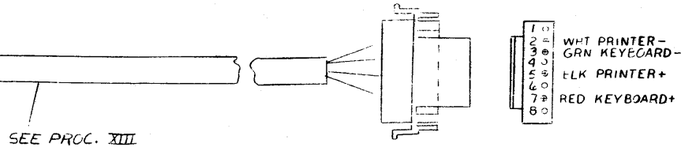
DETAIL "R"

CABLE CONNECTIONS TO
TERMINAL BOARD NUMBER IN
LUG CORRESPONDS TO TERMINAL
BOARD NUMBER





W076 REV D CONN



DETAIL "S"

PROCEDURE XII

INSTALL "MATE-N-LOCK" INTERFACE CABLE

SEE DETAILS M & S

A. INSTALL FOUR WIRES OF INTERFACE CABLE ITEM #5 ON LINE TERMINAL STRIP.

GRN	TERM # 3
RED	TERM # 4
BLK	TERM # 7
WHT	TERM # 6

B. REPLACE TERMINAL STRIP COVER.
C. USING TIES ITEM #11 TIE INTERFACE CABLE AS SHOWN IN DETAIL "M"

PROCEDURE XIII

INSTALL TELEPHONE PLUG & JACK

SEE DETAIL 'L M & T

A. ASSEMBLE TELEPHONE CORDSET ITEM #2 TO TELEPHONE PLUG ITEM #3 BY WIRING THE SHORT WIRE END OF THE CORDSET AS FOLLOWS:

CORDSET WIRE	PLUG TERMINAL	SIGNAL
GREEN	GN	KEYBOARD +
RED	R	KEYBOARD -
BLACK	BK	PRINTER +
YELLOW	Y	PRINTER -

B. BEND TERMINAL LUGS UP AND INSERT EARBAND HOOK TAB INTO CENTER HOLE OF PLUG (SEE VIEW A-A OF DETAIL T)
C. ARRANGE WIRES TO CLEAR COVER MOUNTING POSTS AND PLACE COVER ON PLUG WITH RIDGE BETWEEN "R" & GN TERMINALS
D. INSERT AND TIGHTEN THE TWO LONG SCREWS SUPPLIED WITH THE PLUG (DISCARD THE SHORT SCREW ALSO SUPPLIED)
E. WIRE THE LONG WIRE END OF THE CORDSET ITEM #2 TO THE LINE TERMINAL STRIP (DETAIL 'M') AS FOLLOWS

GREEN	TERM # 3
RED	TERM # 4
BLACK	TERM # 7
YELLOW	TERM # 6

F. PLACE S-HOOK UNDER SCREW NEAR LINE TERMINAL STRIP TO STRAIN RELIEVE CORDSET.
G. AFTER TESTING INSERT TELEPHONE PLUG ITEM #3 INTO TELEPHONE JACK ITEM #4 AND PACK SO THAT THE JACK CANNOT BE DISLODGED.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SET-UP & REWORK PROCEDURE FOR TTY 33 Ø Ø SERIES TTY WRITERS	SIZE / CODE	NUMBER / REV.
		D UA	LT33-Ø-Ø / B
SCALE	SHEET 7 OF 8	DIST.	

DEC FORM NO. DRD 137

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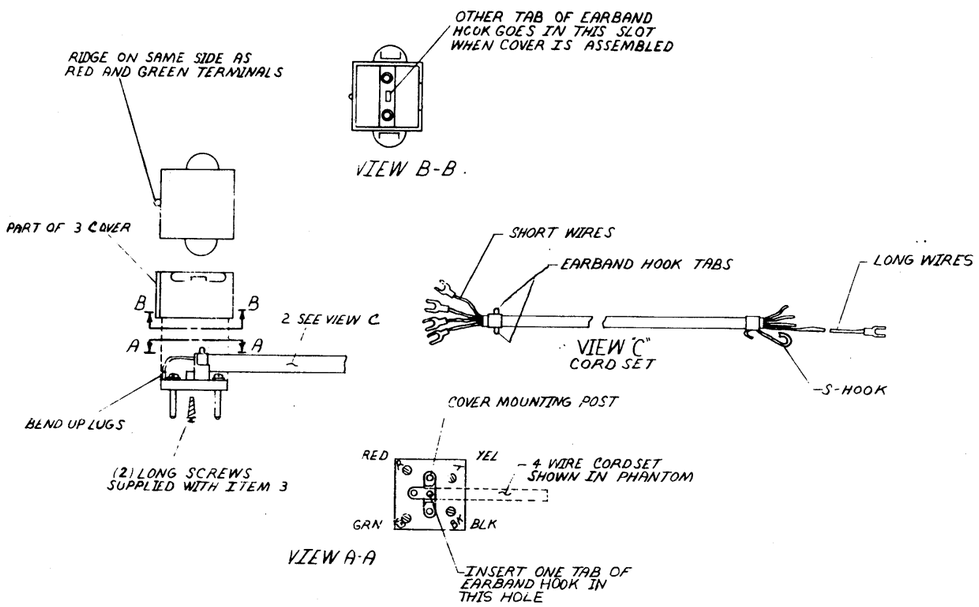

PROCEDURE XIV

INSTALLATION ON STAND WHEN INSTALLING ON STAND (AFTER SHIPMENT.)

A. FOLLOW "UNPACKING" "PREPARATION FOR INSTALLATION," "MOUNTING TYPING UNIT ON STAND" AND "FINAL ASSEMBLY" PORTIONS OF SECT 5 (4-100-201 TC I 55.5)

B. CONNECT GREEN WIRE SUPPLIED BETWEEN SUB-BASE AND STAND FRAME GROUND TERMINALS.

NOTE PACKING

A. PREPARE FOR SHIPMENT BY SECURING MACHINE IN ACCORDANCE WITH A-SP-LT33-0-10

B. PACK "SOFTWARE" LISTED ON SHIPPING LIST A-AL-LT33-0-12 IN ACCORDANCE WITH PACKAGING PROCEDURE A-PT-37001(1)-0-0.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SET UP & REWORK PROCEDURE FOR TTY3300 SERIES TTY WRITERS	SIZE / CODE	D / UA
SCALE	NONE	SHEET	8 OF 8
NUMBER	LT33-0-0	REV	B
DIST			

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY J. CUDMORE	CHECKED PFYFFER	SECTION
DATE 7/21/69	DATE 7/25/69	1
ENG [signature]	PROD [signature]	ISSUED SECT.
DATE 7/28/69	DATE 7/29/69	1

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION: LT33-B,-D,-E,-F,	-H, TYPES		LT33-AA,-AB,	-CA, -CB, -CC,	-CD, -CE		KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	36-5360	ROLLS, ROLLED OILED PAPER TAPE	—			-					
2	36-5365	ROLL, TWX PAPER	1			1					
3	BULLETIN 273B	TTY MANUAL VOL #1 (VENDOR)	1			1					
4	BULLETIN 310B	TTY MANUAL VOL #2 (VENDOR)	1			1					
5	BULLETIN 1184B	TTY MANUAL PARTS (VENDOR)	1			1					
6	18-9137	ROLL TTY RIBBON	1			1					

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
TELETYPE WRITERS LT33 SERIES	SHEET 1 OF 1	A	AL	LT33-0-12	C	LT33-00009
		DIST.				

DEC FORM NO.
DRA 121

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FERGUSON	CHECKED K. GULICK	SECTION
DATE 11-18-70	DATE 11-18-70	1
ENG [illegible]	PROD Tom Boylan	ISSUED SECT.
DATE 11-18-70	DATE 11/18/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	29 11424	CIRCUIT BOARD #181821 TTY CORP	1
2	29 11495	TAPE FEED SPROCKET #183071 TTY CORP	2
3	29 11443	LEVER UNIVERSAL #182240 TTY CORP	2
4	29 11144	FUSE (3.2 AMP) #120167 TTY CORP	2
5	29 11367	DISTRIBUTOR BRUSH # 180979 TTY CORP	2
6	29 11412	DRIVE GEAR #181411 TTY CORP	1
7	29 11417	DRIVEN GEAR #181420 TTY CORP	1
8	29 11411	BELT #181409 TTY CORP	2
9	29 11376	SHAFT #181007 TTY CORP	1
10	29 11376	BEARINGS #181002 TTY CORP	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
LT33-B TELETYPE RECOMMENDED SPARE PARTS	SHEET 1 OF 1	A	PL	LT33-SB-0		
		DIST.				

DEC FORM NO. 16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J.FERGUSON	CHECKED K GULICK	SECTION
DATE 11-18=70	DATE 11-18-70	1
ENG D. Chatham	PROD Leroy Baylor	ISSUED SECT.
DATE 11-19-70	DATE 11/19/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	29-12521	SCALE, 8OZ #110443 TTY CORP	1
2	29-12522	SCALE, 32 OZ #110444 TTY CORP	1
3	29-12602	SCALE, 64 OZ #82711 TTY CORP	1
4	29-12520	GAGE SET #117781 TTY CORP	1
5	29-12532	SCREWDRIVER, OFFSET #94644 TTY CORP	1
6	29-12524	SCREWDRIVER, OFFSET #94645 TTY CORP	1
7	29-12525	CROCHET HOOK, NO. 8 #151351 TTY CORP	1
8	29-12526	CROCHET HOOK, NO. 12 #151959 TTY CORP	1
9	29-12527	SPRING HOOK PUSH #142555 TTY CORP	1
10	29-12528	SPRING HOOK PULL #142554 TTY CORP	1
11	29-12529	SCREW HOLDER #151384 TTY CORP	1
12	29-12530	HAND WHEEL ADAPTOR #181465 TTY CORP	1
13	29-12540	HANDWHEEL #161430 TTY CORP	1
14	29-12553	CONTACT ADJUSTMENT TOOL #172060 TTY CORP	1
15	29-12554	GAGE #180587 TTY CORP	1
16	29-12555	GAGE #180588 TTY CORP	1
17	29-12556	BENDING TOOL #180993 TTY CORP	1
18	29-12557	GAGE #183103 TTY CORP	1
19	29-12558	EXTRACTOR #182697 TTY CORP	1
20	29-12559	TWEEZER #151392 TTY CORP	1
21	29-12560	TOMMY WRENCH #6617 TTY CORP	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
LT33 TELETYPE MAINTENANCE TOOL KIT	SHEET 1 OF 2	A	PL	LT33-ST-0	A	LT33-00002
		DIST.				

DEC FORM NO.16-1031
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J.FERGUSON	CHECKED K GULICK	SECTION
DATE 11-18-70	DATE 11-18-70	1
ENG D. Chatham	PROD Leroy Baylor	ISSUED SECT.
DATE 11-19-70	DATE 11/19/70	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
22	29-12561	TOMMY WRENCH #73404 TTY CORP	1
23	29-12562	KEY LEVER REMOVER #151383 TTY CORP	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ASR 33 TELETYPE MAINTENANCE TOOL KIT	SHEET 2 OF 2	A	PL	LT33-ST-0	A	
		DIST.				

DEC FORM NO.16-1031
DRA 110

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 5/3/68

TITLE PACKING PROCEDURE FOR TELETYPE WRITERS LT33 SERIES

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED ECO	LT33-00002	A KENT	7-6-71	A. KENT	7-26-71
B	ECO CHANGE	LT33-00009	A KENT	11-73	Allan Kent	19 Feb 74

DISREGARD READER AND PUNCH INSTRUCTIONS ON KSR UNITS.

1. Put reader clip in holder; reader pins in upward position as originally received.

2. Use one tie wrap to hold carriage at left margin.

3. Mount printer unit to fiberboard platform with the eight (8) mounting screws and three (3) studs, originally provided.

4. Put chad box and copy holder in the box provided. On units where reader power pack is not already mounted inside of Teletype, also place reader power pack in the box provided.

5. Teletypes should have transformer (if previously mounted) left in base stand.

6. The four (4) mounting screws that mount the printer to the base stand should be put in a bag along with the on/off knob and the platen knob and then tied to the base stand.

7. Teletype AC cable and signal cable should be placed on the plastic cover where paper roll normally goes and wrapped in kim pack.

8. Tape down printer cover, punch paper-roller, printer paper-roller and cables of item 7 above. Additional tape should be used to secure whole cover to base.

9. Make sure that there are three (3) thumbscrews that hold teletype cover on, and four (4) screws in the front of the machine, also a screw in reader cover and one (1) face-plate for each machine.

ENG	APPD	SIZE	CODE	NUMBER	REV
K. E. FITZGERALD		A	SP	LT33-0-10	B

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 5/3/68

TITLE INSTALLATION PROCEDURE FOR TELETYPE MODEL LT33 SERIES

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED ECO	LT33-00002	A.KENT	7-6-71	A KENT	7-26-71
B	ECO CHANGE	LT33-00009	A. KENT	11-73	Allan Kent	19 Feb 74

DISREGARD READER AND PUNCH INSTRUCTIONS ON KSR UNITS.

1. Remove all tape holding covers and cables.

2. Remove the whole cover and in the reader, remove clip which holds reader pins in an upward position before turning machine on.

3. On units with reader power pack shipped separately in the box, mount power supply for reader on basic stand and plug connector cable in. (Other Teletypes have reader power pack already mounted inside in the machine.)

4. Remove tie wrap being used to hold carriage at left hand margin.

5. Mount base to bottom of unit with screws provided.

6. Replace cover being sure that three (3) thumbscrews, four (4) panhead screws and one (1) special screw (for reader) are correctly installed before attaching face plate and knobs.

ENG	APPD	SIZE	CODE	NUMBER	REV
K. E. FITZGERALD		A	SP	LT33-0-11	B

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 3/18/71

TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGE PER ECO	LT33-7	KENT	2/73	Allen Kent	11 Apr 73

ENG	APPD	SIZE	CODE	NUMBER	REV
W Miller	W Miller	A	SP	LT33-0-13	A

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION digital CONTINUATION SHEET

TITLE TELETYPE INSPECTION PROCEDURES AND ADJUSTMENTS

1.0 SCOPE

This procedure outlines the procedures for inspection and acceptance of the ASR 33 Teletypes. By ignoring references to the reader and punch, it may also be used for KSR 33 Teletypes.

1.1 These instructions specifically outline the requirements for DEC production standards and will be used as the basis for acceptance or rejection of vendor supplied equipment.

2.0 EQUIPMENT REQUIRED

2.1 Feeler gauges type TTY #117781, DEC 29-12520 or similar.

2.2 DEC tape gauge type T18118.

2.3 Reader gauge type TTY #TP183103.

→ ALL CHECKS ARE MADE WITH POWER OFF ←

3.0 KEYBOARD

Section 574-121-700TC, ISSUE 3, JUNE 1969, VOL. 2, Technical Manual Type ASR33 Teletypewriter.

3.1 Universal lever clearance. (Ref. Page 21)

3.1.1 The three shipping bolts that tie down the shipping pallet and printer should be loosened due to a change of condition when making the "H" lever adjustment. The bolts in question cause a compressing of the four rubber feet that the printer rests on. When the linkage to the keyboard is made, a change of .015 of an inch or more in relationship to the universal reset lever. In correction to this problem, the teletype unpacker should loosen all three bolts and, after completion of the teletype checkout, should retighten prior to reinsertion into the packing box.

3.1.2 Minimum .014", maxium .030" clearance between latch lever and universal lever.

4.0 TYPING UNIT

Section 574-122-700TC, Issue 4, August 1969, Vol. 2, Technical Manual Type ASR33 Teletypewriter.

★ 4.1 Distributor shaft and play (Ref. Page 11)

4.1.1 Minimum .001", maximum .012" clearance between left bearing and clutch gear assembly.

	SIZE	CODE	NUMBER	REV
	A	SP	LT33-0-13	A

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

* 4.2 Distributor clutch adjustment. (Ref. Page 13)

4.2.1 With clutch released, leading edge of trip lever should come approximately in the center of the shoe lever.

4.2.2 With clutch latched, shoe lever should be minimum flush, maximum .015" beyond rearmost surface of trip lever.

4.2.3 With clutch latched, advance distributor brush holder in its driving direction until it stops and releases. It should restore to normal position.

4.3 Selector cam end play. (Ref. Page 18)

4.3.1 Disengage selector clutch, move mainshaft toward the right, minimum .002", maximum .012" clearance measured between left end bearing and collar.

* 4.4 Code bar and function clutch adjustment. (Ref. Pages 22 to 24)

4.4.1 When disengaged, the upper surface of the trip lever and shoe lever should be approximately flush. When released, the leading edge of the shoe lever should come to the center of the notch on the trip lever.

* 4.5 Selector clutch adjustment. (Ref. Page 27)

4.5.1 When disengaged, the upper surface of the trip lever and shoe lever should be approximately flush. When released, the leading edge of the shoe lever should come to the center of the notch on the trip lever.

* NOTE: When all clutches are adjusted, reverse the rotation of the mainshaft by hand, with all clutches latched. The mainshaft should rotate freely, if it does not, the clutch adjustments must be measured according to the teletype manual.

4.6 Blocking lever adjustment. (Ref. Page 39)

4.6.1 Set range finder to 72, set up an all marking code combination in selector. Release code bar clutch, cycle by hand, all code bars should go marking and a slight vertical movement of some blocking levers should occur as the code bars pass beneath the blocking levers

4.7 Print Suppression. (Ref. Pages 37 and 47)

4.7.1 Print suppression latch horizontal clearance between right side of print suppression latch and print suppression code bar should be min. .010", max. .025" (machine in restored position.)

4.7.2 Print suppression latch vertical clearance between upper part of print suppression latch and print suppression code bar should be min. .005", max. .020". (mach.in rest, pos).

4.8 Carriage freedom of horizontal movement. (Ref. Page 51)

4.8.1 The carriage should move freely side to side with no binding. Make any necessary roller and belt adjustments. (Ref. Pages 51, 52, 54 and 57)

4.9 Rear rail adjustments. (Ref. Page 53)

4.9.1 Set up number one code bar in marking position and move carriage side to side. There should be no visible difference between the number one shift slide and the right reset guide plate when in the right or left margins.

4.10 Front rail and print hammer trip lever release adjustments. (Ref. Page 62)

4.10.1 Clearance should be minimum .030", maximum .060" measured between print hammer trip lever and print bail.

4.10.2 Adjustments should remain constant in both margins to within .010".

4.11 Dash pot adjustment. (Ref. Page 80)

4.11.1 Typing unit piston should return freely into the dash pot cylinder from any position when moved toward the right margin and released by hand.

4.12 Line feed adjustment. (Ref. Pages 84 to 92)

4.12.1 Set up a line feed code in the selector. Release the code bar and clutch. Cycle by hand, while holding the platen detent pawl away from the ratchet until the platen is fully advanced by the feed pawl. At this point slowly release the detent pawl into the ratched gear. There should be very little rotation of the ratched gear as the pawl seats into the gear.

4.12.2 If adjustments are necessary, refer to Pages 84 to 92.

→ APPLY POWER ←

4.13 Answer back mechanism, operation under power. (Ref. Pages 132 to 146)

4.13.1 Turn on punch, press "here is" key, see that punch punches blank tape. If not, refer to adjustments Pages 132 to 146.

→ TURN POWER OFF ←

5.0 READER

Section 524-124-700TC, Issue 3, June 1969, Vol. 2, Technical Manual Type ASR33 Teletypewriter.

5.1 Horizontal and vertical clearance between trip lever and armature extension. (Ref. Pages 6 and 7)

5.1.1 With reader trip lever fully forward, clearance between reader trip lever and armature extension, should be minimum .008", maximum .020".

5.1.2 With the armature held all the way down, clearance between reader trip lever and upper part of the armature, should be minimum .001", maximum .010" as the reader trip lever passes over the armature extension.

5.2 Reader trip contacts. (Ref. Page 8)

5.2.1 The clearance should be minimum .025", maximum .040" when measured between the contacts when they are open.

5.3 Feed pawl and blocking pawl adjustments. (Ref. Pages 13 and 15)

5.3.1 With the machine power on, energize reader armature by tripping reader trip solonoid. Insert TP183103 Gauge between upstop bracket and upstop shoulder screw. Gauge should enter friction tight, if not follow Teletype Manual for adjusting sequence.

5.3.2 With the reader in the rest position, the clearance should be minimum .001", maximum .008" when measured between the feed pawl and the ratchet tooth.

5.3.3 With the reader in rest position the clearance should be minimum .001", maximum .003" when measured between blocking pawl and the ratchet tooth.

6.0 PUNCH

Section 574-125-700TC, Issue 4, June 1969, Vol 2, Technical Manual Type ASR33 Teletypewriter.

6.1 Sensing lever down stop.

6.1.1 Check screws securing the punch drive arm assembly to the rocker shaft are tight.

6.1.2 Push sensing levers down by hand, see that they limit on the down stop before they leave the guide post. Position guide post as required to attain this condition.

6.2 Tape nudger adjustments. (Ref. Page 8)

6.2.1 Two screws that couple the rocker shaft and punch drive bail must be tightened during the checkout period and also be a quality control check item.

6.2.2 Manually rotate the main shaft until the tape nudger is in the fully driven position, the clearance between the tape nudger and the rear roller should be minimum .030" and maximum .080".

6.3 Total punch operation in static state. (Ref. Pages 5 to 12)

6.3.1 Put an all marking code in selector, cycle by hand until the feed pawl is fully rearward, at this point check the following:

A. With the feed wheel ratchet fully detented, move the feed pawl out of engagement with the gear, release slowly and see that it re-enters the gear with no perceptable clearance.

B. The clearance between the sensing levers and the function pawl should be minimum .005", maximum .020".

6.3.2 Continue to cycle by hand until the punch drive link is fully forward. The clearance between the punch pin drive levers and the bottom surface of the punch die block assembly, should be minimum .017", maximum .037". (Ref. Page 9)

6.3.3 Complete the cycle by hand, the clearance between the stripper bail and sensing pawl should be minimum .001", maximum .012". (Ref. Page 7)

6.4 Turn the power on, punch some tape and check for proper registration with DEC tape gauge T18118.

6.4.1 Adjust spring to obtain proper registration within one half hole over entire gauge. (Ref. Page 12)

SIZE	CODE	NUMBER	REV.
B	CS	4915-0-1	B

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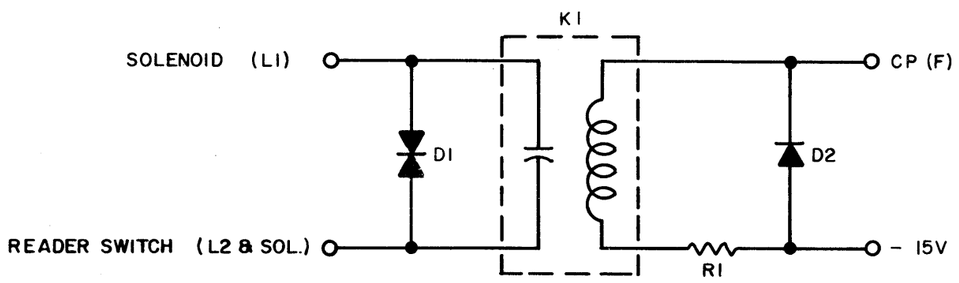

NOTE:
K1 HAS NO OUTER SHIELD

QTY	REFERENCE DESIGNATION	DESCRIPTION	PART NO.
4		LUG, SPLIT	9006735-0-0
	K1	RELAY, REED 12VDC #30002 1D1	1203193
	R1	RES. 120 1/4W 10% CC	1301418
	D2	DIODE D664	1100114
	D1	DIODE 6RS 20SP4B4	1100106
		PARTS LIST	A-PL-4915-0-0

PARTS LIST

REVISIONS			
CHK	CHG NO.	REV.	A
REV. B REDR.	6886		B
Rev C	000001		

DRN. I.HAHN	DATE 5-11-65	
CHK'D R.SILVERMAN	DATE 6-24-65	
ENG. D.A.WHITE	DATE 5-24-65	
PROD.	DATE	

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
D664	IN3606		
20SP4B4	SAME		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE TELETYPE READER CONTROL 4915

SIZE	CODE	NUMBER	REV.
B	CS	4915-0-1	B

PRINTED CIRCUIT REV. D

PINK

DIST. 324 434 435 31

DEC FORM NO.
DRB 102

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115 V LINE (HOT) — 3A — F3

F2 3/8 A

DOTTED LINES SHOW PDP8 CONSOLE TELETYPE MODIFICATION FOR REFERENCE

LOCAL L2 — LINE LOCAL L1 — LINE

LINE RELAY

48 V

F7

780 TD READER TRIP MAGNET

TIGHT TAPE

F4 2A 60 Hz 1.8A 50 Hz

MOTOR & MOTOR RELAY

34 V — TD — SELECTOR MAGNET DRIVER

FORM OUT — FORM FEED

115 V LINE (RETURN)

READER FEED — DC READER FEED — 100 — 200 μF — 56K — .22 μF — 12K — 9 μF — DG 950

22

48 V AC — 470 — TDC 21K — 10K — TD OFF — READER TAPE OUT — 20 μF — TDC1 — TDC2 — X-OFF — (NOT USED) — WRU (ENG) — X-ON (DC1) — READER ON — 48 V RETURN

FOR CUSTOMER SUPPLIED ALARM (NOT USED) — PAPER OUT ALARM

(NOT USED)

240 V TRANSFORMER TAP TABLE				CONNECTOR CORRESPONDENCE			
250 V 3 / 240 V 2 / 230 V 1 — 6 110 V, 5 105 V, 4 100 V				MARKED: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	FIXED HALF: C, CC, DD, Z	CABLE HALF: A, B, —, DB	
VOLTAGE	LINE	LOAD	COMMON	VOLTAGE	LINE	LOAD	COMMON
287	3	4	C	126	6	4	C
275	3	4	C				
274	3	5	C	121	5	4	C
265	1	4	C				
				115	6	6	C
263	2	5	C	110	5	4	1
260	3	6	C				
252	1	5	C	106	6	4	1
250	2	6	C				
240	1	6	C	100	1	3	4
220	3	6	1	96	C	1	5
213	3	6	2	90	C	2	5
213	C	5	1				
206	C	6	3	85	C	3	6
204	C	5	2				
203	C	4	1	52	C	2	4
198	C	5	3				
197	C	4	2	77	C	3	4
193	C	4	3				

THIS TABLE PROVIDES 115 V TO THE LOAD AT THE NOMINAL LINE VOLTAGE

FIRST USED ON OPTION/MODEL: PDP10

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	Stephenson	2-23-70
CHK'D	M.A.	1-1-70
ENG	Allen Kent	30 Jan 70
PROJ. ENG	Allen Kent	30 Jan 70
PROD	M. Allen	2-9-70

NEXT HIGHER ASSY: A-ML-LT33-BA-0

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: READER CONTROL CIRCUITS (ISOLATED DIAGRAM) [TIMESHARING ASR 33]

SIZE D | CODE BS | NUMBER LT33-B-CONT | REV B

DIST.

REVISIONS			
CHK	CHANGE NO		REV
[illegible]	LT33-00002	A.KENT	A
[illegible]	LT33-00003	A.KENT	B

DEC FORM NO BRD 102A

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SEL MAG DRIVE CARD 181819

TRANSISTOR IS CUT-OFF FOR MARK

470 135 420 .82 6V (EQUIV)

P P

9 8

BL W-BR W-BK W-BL BR-Y W BREAK W-S BR-Y

L

(1) (2) (3) (4)

(2) 750 1450 240 μF 2K

(1) POWER RESISTOR CH 181816

KEYBOARD & READER DISTRIBUTOR

TERMINAL STRIP X

WESTERN ELECTRIC D4BK-3 9 FOOT CORDSET OR EQUAL DEC P.N. 1205693

BLACK YELLOW GREEN RED

7 + 6 − 4 + 3 −

B Y G R

PRINTER (RECEIVE) LOOP (FULL DUPLEX) NO CONNEXION (HALF DUPLEX)

KEYBOARD (TRANSMIT) LOOP (FULL DUPLEX) TTY LOOP (HALF DUPLEX)

WESTERN ELECTRIC 2838-50 IVORY PORTABLE TELEPHONE JACK OR EQUAL DEC P.N. 1205857-1

NOTES:

1. ABSTRACTED FROM TELETYPE CORP. G353WD ISSUE 20.
2. THE YEL AND BLK WIRES OF THE TTY LINE CORD SHOULD BE INSULATED WITH A PIECE OF GLASS TAPE (SCOTCH 27) IN HALF DUPLEX SERVICE.
3. L RELAY IS PICKED UP IN LINE, DROPPED OUT IN OFF AND LOCAL
   - ⊣×⊢ CLOSED WHEN PICKED UP
   - ⊣⊢ CLOSED WHEN DROPPED OUT.
4. WITHOUT AUTO MOTOR CONTROL
   - (1) 60 MA
   - (2) 20 MA
   - (3) HALF DUPLEX
   - (4) FULL DUPLEX

REVISIONS			
CHK	CHANGE NO.	REV.	
	LT33 - 00003	A	M Lyons 10-21-71
	A. KENT		Allen Kent 28 OCT 71

QTY.	DESCRIPTION	PART NO	ITEM NO
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

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

MATERIAL

FINISH

DSN		DATE 1-1-71
CHKD	D Hall	DATE 3/19/68
ENG	Allen Kent	DATE 25 MAR 68
PROJ ENG	Allen Kent	DATE 25 MAR 68
PROJ	M. L. Vi	DATE 1 MAR 68

FIRST USED ON D-UA-LT33A-0-0

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE PDP 10 TELETYPE MODEL 33KSR

SIZE D | CODE 1C | NUMBER LT33A-0-1 | REV A

DIST G

DEC FORM NO DRD 102A

SYM DSN D | NUMBER LT33A-0-1 | REV A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY J.Houghton DATE 9/28/72	CHECKED J.Houghton DATE 9/28/72	SECTION
ENG J.Houghton DATE 9/28/72	PROD DATE	ISSUED SECT.

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION: ALL MODELS	OPTIONAL						KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	LIBKIT-11/40-BASE-A-K	PDP-11/40 PROGRAM LIBRARY CHECK LIST AND KIT	1								
2	DEC-11-H40SA-A-D	PDP-11/40 SYSTEMS MANUAL	1								
3	DEC-11-HKDAA-A-D	KD11-A PROCESSOR MANUAL	1								
4	DEC-11-HKEFA-A-D	KE11 INSTRUCTION SET OPTIONS MANUAL		1							
5	DEC-11-HKTDA-A-D	KT11-D MEMORY MANAGEMENT OPTION MANUAL		1							
6	DEC-11-HMELA-A-D	ME11-L CORE MEMORY MANUAL	1								
7	DEC-11-HDLAA-A-D	DL11 ASYNCHRONOUS LINE INTERFACE MANUAL	1								
8	B-DD-11/40-0	PDP-11/40 PRINT SET	1								
9	B-DD-KE11-E	KE11-E PRINT SET		1							
10	B-DD-KE11-F	KE11-F PRINT SET		1							
11	B-DD-KT11-D	KT11-D PRINT SET		1							
~~12~~	~~D-IA-7009177-0-0~~	~~POWER DISTRIBUTION CABLES FOR UNUSED SYSTEM~~		~~*~~							
		~~UNIT PLACES IN BOX~~									

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
ACCESSORY LIST (PDP-11/40)	SHEET 1 OF 1	A	AL	11/40-0-4	B	11/40 00013
		DIST.				

DEC 16-(325)-1075-N172 DRA 121

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY J.T. Coughlin DATE 9/28/72	CHECKED T. Hurst DATE 9/28/72	SECTION
ENG P.C. Lauchlin DATE 9/28/72	PROD J. Sturgeon DATE 9/28/72	ISSUED SECT.

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION ALL MODELS	KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	LIBKIT-11/40-BASE	PDP-11/40 PROGRAM LIBRARY CHECK LIST	*		
		(DIAGNOSTIC AND SYSTEM SOFTWARE)			
		*THIS LIST SUPERCEEDS THE INDIVIDUAL SOFTWARE			
		LISTS NOTED FOR KJ11-A, KW11-L, AND MF11-L			
		(MM11-L) IN THE PDP-11/40 DOCUMENTATION.			
		SOFTWARE FOR THESE DEVICES IS INCLUDED ONCE			
		IN THE ABOVE LIBKIT.			

TITLE SOFTWARE LIST (PDP-11/40)	ASSY. NO. -11	SIZE A	CODE SL	NUMBER 11/40-0-5	REV. / ECO NO
	SHEET 1 OF 1	DIST.			

DEC FORM NO.
DRA 120

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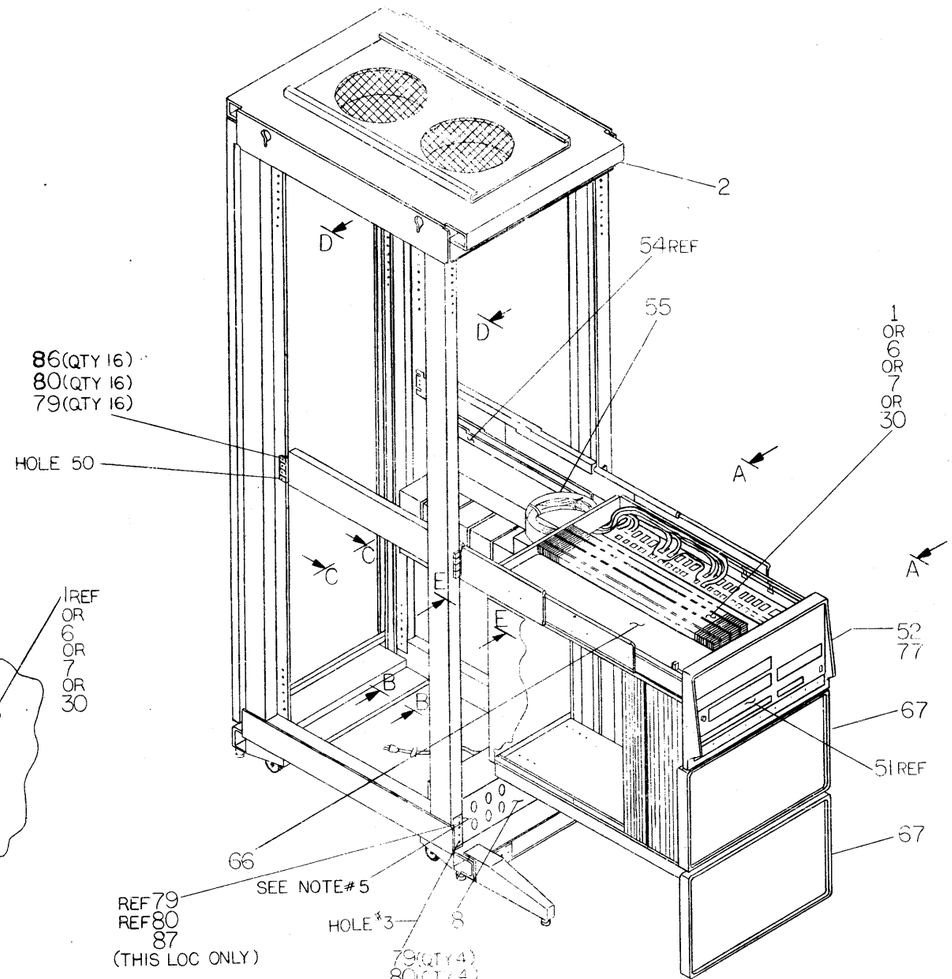
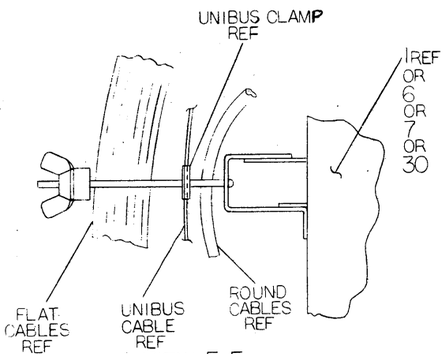
NOTES

1. A.C. CONNECTION FOR CABINET FAN MAYBE ON BRACKET (VIEW D-D) OR ON JONES STRIP ON INTERIOR OF REAR SIDE OF CABINET MOUNTING CHANNEL.
2. FOR SYSTEMS CONFIGURATIONS REFER TO SHEETS 4,5,6 AND 7.
3. BEHIND EACH 10½" PANEL INSTALL (4) 3/8" SPACERS.
4. FOR SHORT CABINET VARIATIONS SEE SHEET "3.
5. TOP OF CABINET FAN AND H742 OR H7420 POWER SUPPLY MUST BE PLUGGED INTO LINE 1 OUTLETS ON THE 861 POWER CONTROL.
6. USE CABLE GUIDE (P/N 1212064) WHERE NECESSARY
7. WHEN MTG CABLES IN THE CABLE CLAMP THEY SHALL BE MTD AGAINST CLAMP WALL IN THIS ORDER ONLY. ROUND CABLES FIRST, UNIBUS CABLE SECOND, & FLAT CABLES LAST. ANY DEVIATION COULD CAUSE FRACTURE OF UNIBUS CABLE, SEE VIEW E-E.



VARIATION TALL CAB (ONLY)



VIEW E-E
SCALE: NONE
SEE NOTE #7

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	11/40-00017	D	REVISED AND REDRAWN. B. MINOR
[illegible]	11/40-00018	E	E. Lemmo 5-8-75 B. MINOR
[illegible]	11/40-00019	F	B. MINOR
[illegible]	11/40-00020	H	B. MINOR
[illegible]	11/40-00022	J	K. POON

DESCRIPTION								DWG./PART NO.		ITEM NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES											
ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)		NOMINAL DIMENSION RANGE INCHES								
			OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
SURFACE QUALITY IN MICROINCHES ✓	MEDIUM		±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED		±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRN. G. FLANDER	7-9-72	FIRST USED ON
CHK'D C. TESCHNER	9-22-72	
ENG. CK. BLASI	9-22-72	
PROJ. ENG. J. FL	9-22-72	
PROD. STRING. R. [illegible]	9-26-72	
NEXT HIGHER ASSY. B-DU-11/40		
SCALE		
SHEET 1 OF 7		

digital

TITLE ASSEMBLY CONFIGURATION (11/40)

SIZE	CODE	NUMBER	REV.
D	AR	11/40-0-3	J

DIST.

DEC FORM NO. DRD 100-C

REV. J
NUMBER 11/40-0-3
SIZE CODE D AR

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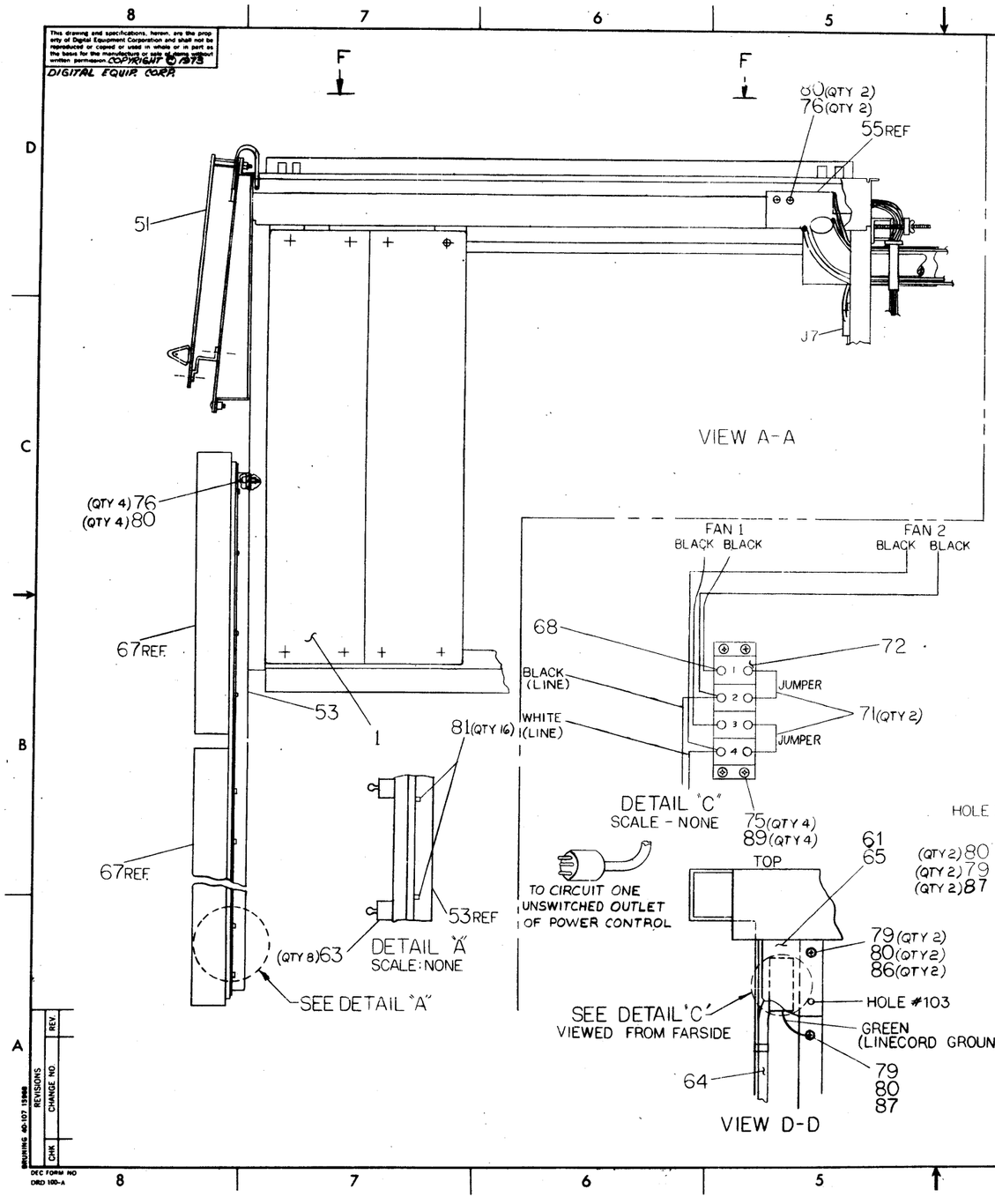

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

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

DRN	G.F.LANDER	DATE 7-19-72
CHK'D	C.TESCHNER	DATE 9-22-72
ENG	C.K.BLASI	DATE 9-22-72
PROJ ENG	J.F.LOUGHLIN	DATE 9-22-72
PROD	G.STRINGER	DATE 9-26-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ASSEMBLY CONFIGURATION (11/40)

MATERIAL — NEXT HIGHER ASSY. — FINISH — SCALE — SHEET 2 OF 7

SIZE D | CODE AR | NUMBER 11/40-0-3 | REV J | DIST.

REV.	REVISIONS	CHANGE NO.	CHK
J	DRAWING 40-107 13988		

DEC FORM NO DRD 100-A

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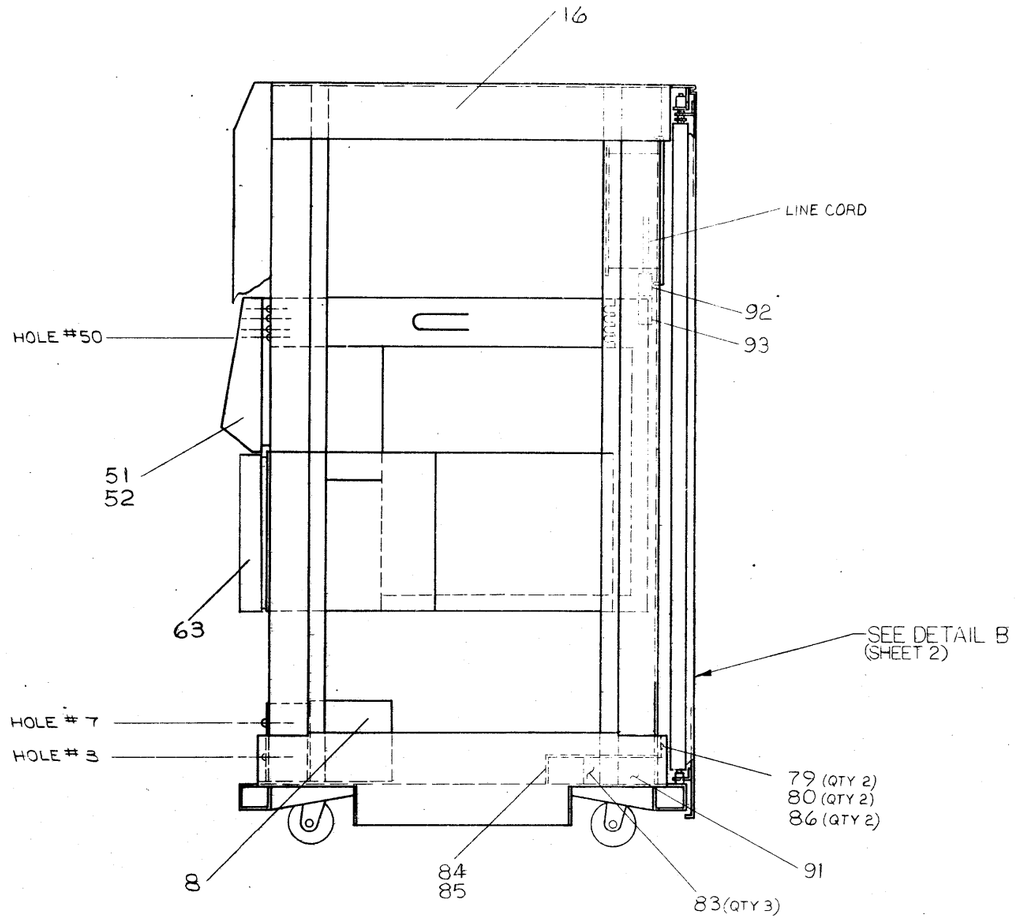

VARIATION SHORT CAB (ONLY)

REVISIONS		
REV.	CHANGE NO.	CHK

BRUNING 40-107 15968
DEC FORM NO
DRD 100-A

FIRST USED ON OPTION/MODEL: PDP 11/40	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS .XXX ± .005, .XX ± .02, .X ± .1; ANGLES ±0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓	DRN FLANDER	DATE 7-19-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D C TESCHNER	DATE 9-22-72	TITLE ASSEMBLY CONFIGURATION 11/40
	ENG. BLASI	DATE 9-22-72	
	PROJ. ENG. J F OLOUGHLIN	DATE 9-22-72	
	PROD. STRINGER	DATE 9-26-72	
MATERIAL: //	NEXT HIGHER ASSY. B-DD-11/40		SIZE D / CODE AR / NUMBER 11/40-0-3 / REV J
FINISH: //	SCALE //		DIST.
	SHEET 3 OF 7		

SIZE D / CODE AR / NUMBER 11/40-0-3 / REV J

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** OEM

ITEM NO.	PART NO	DESCRIPTION	BA	BC	BE	BH	BK	BM	BP	BS	CA	CC	CE	CH	CK **	CM	CP	CS	CU	DA	DC	DE	DH	DK	DM	DP	DS	DU	DW	EA	EC	EE	EH	EK	EM	EP	FA **	FE **	HE	HH	HK	JC	JE	JH	JK	LT	MP	MR	P3	P5	PE	PH	PK	PM	PP	PS	RA	RC	RE	RH	RK	RM	RP	RS	RU	RW	SA	SC	HU	JU
1	D-UA-11/40-AH-Ø	BASIC ASSY 60HZ	1	1	1				1						1	1			1																																																														
2	D-UA-H960-CD-Ø	CABINET ASSY PDP11 (TALL CAB)	1	1	1	1	1	1	1	1	1	1	1	1		1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	A-ML-LT33-DC-Ø	TELETYPE WRITERS	1				1					1	1																								1																																								
4	D-UA-LA36-CA-Ø	DECWRITER ASSY		1				1	1																																																																					
5	A-PL-VT05B-AA-Ø	GRAPHIC DISPLAY		1				1																																																																			
6	D-UA-11/40-AK-Ø	BASIC ASSY 60HZ			1		1			1																																																																	
7	D-UA-11/40-AC-Ø	BASIC ASSY 60 HZ				1					1																																																															
8	E-UA-B6I-C-Ø	CONTROL POWER	1	1	1		1		1																																																																		
9	D-UA-LA36-Ø	LA36 DECWRITER ASSY																																																																									
10	A-PL-PC11-Ø-Ø	PC11 CONTROL										1	1																																																												
11	D-UA-RK05-AA-Ø	DECPACK														1			2																																																						
12	A-PL-M792-YB-Ø	BOOTSTRAP LOADER														1			1																																																					
13	D-UA-DD11-A-Ø	PERIPHERAL MOUNTING PANEL										1				1			1																																																				
14	A-PL-LC11-A-Ø	LA30 CONTROL										1				1			1																																																				
15	A-PL-MM11-L-Ø	MEMORY																	1																																																			
16	E-UA-H967-HA-Ø	CABINET ASSY 115V (SHORT CAB)										1				1			1																																																	
17	D-CS-M792-YH-1	CASSETTE BOOTSTRAP															1																																																		
18	D-UA-RK11-DE-Ø	DISK CONTROL																	1																																																
19	A-PL-VT11-Ø-Ø	DISPLAY PROCESSOR																	1																																															
20	A-PL-DL11-A-Ø	TELETYPE CONTROL	1	1	1	1	1	1	1	1	1																											1																																				
21	D-UA-RF11-Ø-Ø	DISK CONTROL																		1																																																				
22	D-UA-RS11-Ø-Ø	DISK DRIVE																		1																																																			
23	D-UA-TC11-GA-Ø	DECTAPE CONTROL & TRANSPORT																			1																																																
24	D-UA-TM11-A-Ø	MAGTAPE CONTROL																				1																																																
25	D-UA-TU10-EA-Ø	TRANSPORT (MAGTAPE) 9 TRACK																				1																																														
26	D-UA-TU10-FA-Ø	TRANSPORT (MAGTAPE) 7 TRACK																				1																																														
27	A-PL-MR11-DB-Ø	BOOTSTRAP LOADER																				1																																														
28	A-PL-RC11-Ø-Ø	DISK CONTROL																					1																																												
29	A-PL-RS64-A-Ø	DISK FILE																					1																																											
30	D-UA-11/40-AE-Ø	BASIC ASSY 60HZ																																																															
31	A-PL-KW11-L-Ø	LINE FREQ CLOCK																																																														
32	A-PL-CR11-Ø-Ø	CARD READER (60HZ)																																																													
33	QJ250	SOFTWARE LIST (BATCH)																																																													
34	QJ400	SOFTWARE LIST (RSTS)																																																												
35	D-UA-PR11-Ø-Ø	H.S. READER																																																												
36	QJ400AE	SOFTWARE LIST (RSTS-DECPACK)																																																											
37	A-PL-MM11-U	MEMORY																																																											
38	A-PL-KE11-E-Ø	EXPANDED INSTRUCTION SET																																																											
39	A-PL-MF1-UP	MEMORY																																																										
40	A-PL-KT11-D-Ø	MEMORY MANAGEMENT																																																										
41	D-UA-DH11-AA-Ø	BASIC ASSY DH11 IN H960																																																									
42	A-PL-BA11-ES-Ø	CHASSIS ASSY BA11-ES																																																								
43	QR430AE	SOFTWARE LIST (RSTS-DECPACK)																																																								
44	A-PL-MM11-LP	MEMORY																																																								
45	QJ180-AN	SOFTWARE (CAPS-11)																																																							
46	D-UA-H720E	POWER SUPPLY																																																						
47	D-UA-RK11-CA-Ø	DECPACK (CONTROL)																																																						
48	A-PL-11/40-Ø-Ø	BASIC ASSY 11/40	REF																																																						
49	A-PL-MF11-L	MEMORY																																																							
50	A-PL-MM11-UP	MEMORY 16K																																																						
51	D-IA-7409881-2	PANEL INDICATOR	1																																																					
52	E-PS-1210710-0-0	BEZEL	1																																																				
53	D-IA-7409289-0-0	MTG BRKT 10½ PANEL	2																																																				
54	D-MD-7409445-0-0	BRKT HARNESS SUPPORT	1																																																				
55	D-MD-7409446-0-0	SUPPORT HARNESS	1																																																				
56	B-MD-7409447-0-0	PLATE SUPPORT	1																																																				
57	A-PL-7010665-0-0	BRKT SHIPPING	1																																																				
58	C-IA-7410581-0-0	BRKT CABLE HOLDDOWN	1																																																				
~~59~~	~~D-PS-1121810-0-0~~	~~CABLE CLAMP/STRAP~~	1																																																			
60	D-IA-7009177-0-0	POWER DISTRIBUTION CABLE	A/R																																																			
61	C-MD-7407607-0-0	PLATE JONES STRIP	1																																																			
~~62~~	~~B-MD-7404781-0-0~~	~~PROTECTION COVER 541~~	1																																																		
63	C-SC-1209224-0-0	LATCH MOLDING	8																																																		

REVISIONS		
CHK	CHANGE NO	REV

TITLE	ASSY CONFIGURATION 11/40 (60HZ)			SIZE	CODE	NUMBER	REV.
SCALE		SHEET 4 OF 7		D	AR	11/40 03	J
				DIST.			

REC NUMBER 11/40-C-3 REV D/H

DEC FORM NO

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** OEM

ITEM NO	PART NO.	DESCRIPTION	BA	BC	BE	BH	BK	BM	BP	BS	CA	CC	CE	CH	CK **	CM	CP	CS	CU	DA	DC	DE	DH	DK	DM	DF	DS	DU	DW	EA	EC	EE	EH	EK	EM	EP	FA **	FE **	HE	HH	HK	JC	JE	JH	JK	LT	MP	MR	PA	PC	PE	PH	PK	PM	PP	FS	RA	RC	RE	RH	RK	RM	RP	RS	RU	RW	SA	SC	H	JU
64	1700006-9	LINE CORD	1		

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** OEM

ITEM NO	DWG NO/PART NO	DESCRIPTION
1	D-UA-11/40-AJ-0	BASIC ASSY 50 HZ
2	D-UA-H960-CE-0	CABINET ASSY DPD11 (TALL)
3	A-ML-LT33-DD-0	TELETYPE WRITERS
4	D-UA-LA36-CD-0	DECWRITER ASSY
5	A-PL-VT05B-AD-0	GRAPHIC DISPLAY
6	D-UA-11/40-AL-0	BASIC ASSY 50 HZ
7	D-UA-11/40-AD-0	BASIC ASSY 50 HZ
8	E-UA-B61-B-0	CONTROL, POWER
9	D-UA-LA36-0	LA36 DECWRITER ASSY
10	A-PL-PC11-A-0	PC11 CONTROL
11	D-UA-RK05-BB-0	DEC PACK
12	A-PL-M792-YB-0	BOOT STRAP LOADER
13	D-UA-DD11-A-0	PERIPHERAL MOUNTING PANEL
14	A-PL-LC11-A-0	LA30 CONTROL
15	A-PL-MM11-L-0	MEMORY
16	E-UA-H967-HB-0	CABINET ASSY 230 V
17	D-CS-M792-YH-1	CASSETTE BOOTSTRAP
18	D-UA-RK11-DE-0	DISK CONTROL
19	A-PL-VT11-0-0	DISPLAY PROCESSOR
20	A-PL-DL11-A-0	TELETYPE CONTROL
21	D-UA-RF11-0-0	DISK CONTROL
22	D-UA-RS11-A-0	DISK DRIVE
23	D-UA-TC11-GB-0	DECTAPE CONTROL & TRANSPORT
24	D-UA-TM11-B-0	MAGTAPE CONTROL
25	D-UA-TU10-FD-0	TRANSPORT (MAGTAPE) 9 TRACK
26	D-UA-TU10-FD-0	TRANSPORT (MAGTAPE) 7 TRACK
27	A-PL-MR11-DB-0	BOOTSTRAP LOADER
28	A-PL-RC11-0-0	DISK CONTROL
29	A-PL-RS64-B-0	DISK FILE
30	D-UA-11/40-AF-0	BASIC ASSY 50 HZ
31	A-PL-KW11-L-0	LINE FREQ. CLOCK
32	A-PL-CR11-0-0	CARD READER (50 HZ)
33	QJ250	SOFTWARE LIST (BATCH)
34	QJ400	SOFTWARE LIST (RSTS)
35	D-UA-PR11-A-0	H.S. READER
36	QJ400AE	SOFTWARE LIST (RSTS-DECPACK)
37	A-PL-MM11-U	MEMORY
38	A-PL-KE11-E-0	EXPANDED INSTRUCTION SET
39	A-PL-MM11-UP	MEMORY
40	A-PL-KT11-D-0	MEMORY MANAGEMENT
41	D-UA-DH11-AC-0	BASIC ASSY DH11 IN H960
42	A-PL-BA11-E5-0	CHASSIS ASSY BA11
43	QR430AE	SOFTWARE LIST (RSTS-DECPACK)
44	A-PL-MM11-LP	MEMORY
45	QJ180-AN	SOFTWARE (CAPS-11)
46	D-UA-H720-F	POWER SUPPLY
47	D-UA-RK11-CB-0	DEC PACK (CONTROL)
48	A-PL-11/40-0-0	BASIC ASSY 11/40
49	A-PL-MF11-L	MEMORY
50	A-PL-MF11-UP	MEMORY
51	D-IA-7409881-2	PANEL INDICATOR
52	E-PS-1210710-0-0	BEZEL
53	D-IA-7409289-0-0	MTG BRKT 10½" PANEL
54	D-MD-7409445-0-0	BRACKET HARNESS SUPPORT
55	D-MD-7409446-0-0	SUPPORT, HARNESS
56	B-MD-7409447-0-0	PLATE, SUPPORT
57	A-PL-7010865-0-0	BRACKET, SHIPPING
~~58~~	~~C-IA-7410681-0-0~~	~~BRKT, CABLE HOLDDOWN~~
~~59~~	~~D-MS-12-11215-0-0~~	~~CABLE CLAMP & STRAP~~
60	D-IA-7009177-0-0	POWER DISTRIBUTION CABLE
61	C-MD-7407607-0-0	PLATE, JONES STRIP
~~62~~	~~B-MD-7404721-0-0~~	~~PROTECTION COVER 541~~

REVISIONS		
CHK	CHANGE NO	REV

TITLE ASSY CONFIGURATION 11/40 (50 HZ)
SIZE D CODE AR NUMBER 11/40-0-3 REV J
SCALE — SHEET 5 OF 7 DIST.

DIST CODE D AR NUMBER 11/40-0-3 REV J

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** OEM

ITEM NO	DWG NO /PART NO	DESCRIPTION	BB	BD
63	6-SC-209224 * 0	LATCH MOULDING	8	
64	1700016-2	LINE CORD	1	
65	100104-7	230 VAC DECAL (WHITE)	1	
66	3-378-14-4-H272	DECAL	1	
67	H950-QB-0	10½" COVER PANEL	2	
68	9007930	CONN SOLDERLESS	4	
~~69~~	~~9006857~~	~~SPACER HEX THD #6-32x.62~~	~~4~~	
~~70~~	~~9006020-1~~	~~SCR PHL PAN HD #6-32x.38LG~~	~~4~~	
71	9009022	CHINCH JONES JUMPER	2	
72	9009033	CHINCH JONES TERM STRIP	1	
73	9006990	GROUND STRAP	1	
74	9007928	CONN SOLDERLESS ARKLESS	3	
75	9006025-1	SCR PHL PAN HD #6-32X.62	4	
76	9006071-3	SCR PHL TRUSS HD #10-32X.38LG	6	
~~77~~	~~9006022-1~~	~~SCR PHL PAN HD #6-32x.38LG~~	~~4~~	
~~78~~	~~9006074-3~~	~~SCR PHL TRUSS HD #10-32x.75LG~~	~~2~~	
79	9006073-3	SCR PHL TRUSS HD #10-32x.50LG	35	
80	9007651	LOCK WASHER #10 EXT TOOTH	41	
81	9006071-2	SCR PHL FLAT HD #10-32x.38LG	16	
82	9107246	½" TUBING (6" PER UNIT)	AR	
83	1211442 *	COUNTER WEIGHT		
84	7411156-1 *	COUNTER WEIGHT BRACKET		
85	7411156-2 *	COUNTER WEIGHT BRACKET		
86	9007786	NUT, TINNERMAN	29	
87	9006565	NUT, KEPS #10-32	6	
~~88~~	~~9006555~~	~~WASHER #6 INT TOOTH~~	~~6~~	
89	9006560	NUT, KEPS, #6-32	4	
90	3007880	TIE WRAP	AR	
91	7413732	COUNTER WEIGHT REWORK		
92	1210821-2	MATE-N-LOCK 2-PIN		
93	1210822-2	MATE-N-LOCK 2-PIN		
94	B-DD-H960-0	CAB, BASIC H960-CB 230V		
95	B-DD-H967-0	CAB, BASIC H967-CB 230V		
96	D-UA-11/40-AY-0	BASIC ASSY 50 HZ		

* USED ON SHORT CABS ONLY

REVISIONS		
CHK	CHANGE NO.	REV.

| | | |

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H742 BULK SUPPLY REF. ONLY

SECONDARY- H742

TB2

5409730 POWER CONTROL+8V BOARD

J1 | J4 P9

+15V1
+15V2
GND1
GND2
GND 3
LO GND
AC LO 1
DC LO 2
AC LO 2
LINE CLOCK
DC LO 1

P5-2 GRY
P14-5 GRY
P14-2 BLK
P15-3 BLK
P5-5 BLK
P18-1 3HLD
P18-4 RED
P18-2 BLK
P18-3 CLR

20-30 VAC
15-24 VAC
20-30 VAC
20-30 VAC
20-30 VAC
20-30 VAC

J3 P8

AC1 P12-6 RED
AC2 P12-7 WHT
AC3 P14-6 (P17-7*) RED
AC4 P14-8 (P17-8*) WHT

J2 P10

AC5 P11-6 RED
AC6 P11-7 WHT
AC7 P13-6 RED
AC8 P13-7 WHT
AC9 P15-6 RED
AC10 P15-8 WHT

115 VAC
115 VAC
CHASSIS GROUND

RED
WHT
LINE 1 P7-1
LINE 2 P7-2
SHLD

115 VAC TO H742 FANS

CABLE DEC# 9107761

P11 H-744 +5V SLOT A

RED P10-1
WHT P10-2
AC1
AC2
+5VA1
GND A1
GND A2
+5VA2

P11-1 RED
P11-7 BLK
P2-7 BLK
P2-1 RED

P12 H-744 +5V SLOT B

RED P8-1
WHT P8-2
AC5
AC6
+5VB1
GND B1
GND B2
+5VB2

P3-1 RED
P3-7 BLK
P4-7 BLK
P4-1 RED

P13 H-744 +5V SLOT C

RED P10-8
WHT P10-10
AC7
AC8
+5VC1
GND C1
GND C2
+5V C2

P5-1 RED
P5-7 BLK
P6-7 BLK
P6-1 RED

P14 H-745 -15V SLOT D

RED P8-7
WHT P8-8
BLK P9-4
GRY P15-4
GRY P9-3
AC3
AC4
GND D1
+15V3
+15V2

P5-13 BLU
P5-11 BLK

P15 H-745 -15V SLOT E

WHT P10-9
RED P10-12
BLK P9-5
GRY P14-4
AC9
AC10
GND E1
GND 2
+5V3

P2-13 BLU
P2-11 BLK

P16

BLK P3-11 — GND 10
BRN P3-14 — -5V1
ORN P3-3 — +20V1
TWP
P8-7 OR P10-8 — AC7
P8-8 OR P10-10 — AC8

P17

BLK P1-11 — GND 11
BRN P1-14 — -5V2
ORN P1-3 — +20V2
TWP
P10-9 — AC9
P10-12 — AC10

P16 & P17 SEE ITEMS B*C OF TABLE

P5

RED P13-2 — +5V C1
GRY P9-2 — +15V1
ORN P2-3 — +20V J2
BLK P9-6 — GND 3
BLK P13-3 — GND C1
P21 BLK — GND
GND
SPARE*2
GND D1
BLK P14-3 — SPARE*3
BLU P14-1 — -15V D1
BRN P2-14 — -5V J3
SPARE*3

P6

RED P13-5 — +5V C2
GRY P4-2 — +15V5
ORN P4-3 — +20V3
BLK P4-5 — +5V
GND 4
SPARE*1
BLK P13-4 — GND C2
BLK P2-8 — GND 5
BLK P2-9 — GND 6
BLK P4-11 — SPARE*2
GND 7
BLU P4-13 — SPARE*3
BRN P4-14 — -15V2
-5V3
SPARE*3

P7 (FEMALE HOUSING)

P10-5 RED — LINE 1
P10-6 18GA RED — LINE 2 (115 VAC TO FANS)
WHT 18 GA — WHT

P3

RED P12-2 — +5V B1
GRY P1-2 — +15V4
ORN P16-5 — +20V1
P20 BLK — +5V
GND
SPARE*1
BLK P12-3 — GND B1
BLK P1-8 — GND 8
BLK P1-9 — GND 9
BLK P16-2 — SPARE*2
GND 10
* BLU P1-13 — SPARE*3
BRN P16-3 — -15V J1 SEE TABLE
-5V1
SPARE*3

TWP

P4

RED P12-5 — +5VB2
GRY P6-2 — +15V 5
ORN P6-3 — +20V3
+5V
BLK P6-5 — GND 4
BLK P12-4 — SPARE*1
GND B2
GND
BLK P6-11 — SPARE*2
GND 7
BLU P6-13 — SPARE*3
BRN P6-14 — -15V2
-5V3
SPARE*3

P1

RED P11-2 — +5VA1
GRY P3-2 — +15V4
ORN P17-5 — +20V2
P19 BLK — +5V
GND
SPARE*1
BLK P11-3 — GND A1
BLK P3-8 — GND 8
BLK P3-9 — GND 9
BLK P17-2 — SPARE*2
GND 11
* BLU P3-13 — SPARE*3
BRN P17-3 — -15V J1 SEE TABLE
-5V2
SPARE*3

TWP

P2

RED P11-5 — +5VA2
* ORN P5-3 — +15V
+20V J2
+5V
SPARE*1
BLK P11-4 — GND A2
BLK P6-8 — GND 5
BLK P6-9 — GND 6
BLK P15-2 — SPARE*2
GND E1
BLU P15-1 — SPARE*3
* BRN P5-14 — -15V E1
-5V3
SPARE*3

P18

CABLE DEC# 9107574

P9-11 — LINE CLOCK
BLK
P9-12 — DC LO 1
CLR
P9-8 — AC LO 1
RED
P9-7 — LO GND
SHLD

NOTES:
1. ALL WIRES ARE 14 AWG UNLESS OTHERWISE SPECIFIED.
2. TO DETERMINE POWER SUPPLY CONFIGURATION REQUIREMENTS. REFER TO TABLE BELOW.
WARNING: TABLE MUST BE FOLLOWED TO PREVENT REGULATOR DAMAGE.

MEMORY	REGULATORS SLOT D	REGULATORS SLOT E	JUMPERS FROM	JUMPERS TO		* WHEN REMOVING JUMPERS, REMOVE MALE PINS AT EACH END AND COVER WITH SHRINK TUBING. FOLD THE WIRE BACK AT LEAST AN INCH AND THEN TIE WRAP IT TO THE HARNESS.
A MF11-UKJP	H745 (-15V)	H745 (-15V)	P1-13	P3-13	OUT*	
			P2-3	P5-3	—	
			P2-14	P5-14	—	
B MF11-UKJP UP TO 64K	H745 (-15V)	H754 (-5, +20)	P1-13	P3-13	IN	REPLACE P15 WITH P17
			P2-3	P5-3	IN	TRANSFER AC WIRES FROM
			P2-14	P5-14	IN	P15/6+8 TO P17/7+8
C MF11-UKJP GREATER THAN 64K	H754 (-5, +20)	H754 (-5, +20)	P1-13	P3-13	—	REPLACE P14 WITH P16 TRANSFER AC WIRES FROM P14/6+8 TO P16/7+8
			P2-3	P5-3	OUT*	REPLACE P15 WITH P17 TRANSFER AC WIRES FROM P15/6+8 TO P17/7+8
			P2-14	P5-14	OUT*	

3. CAUTION: IF 2 H754 REGULATORS ARE INSTALLED THERE IS NO -15V. AVAILABLE FOR OPTIONS THAT MAY REQUIRED IT.

REVISIONS	CHANGE NO	REV	CHK
	7009566-00001	A	
	7009566-00003	B	
	7009566-00004	C	
	7009566-00005	D	

FIRST USED ON OPTION/MODEL: H960-D/E

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

DRN. R Counter — DATE 7-19-73
CHKD. — DATE 8-2-73
ENG. — DATE 8-2-73
PROJ. ENG. — DATE 8/6/73
PROD. — DATE 9/6/73
NEXT HIGHER ASSY. —
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 21" BOX POWER HARNESS

SIZE D | CODE IC | NUMBER 7009566-0-1 | REV D | DIST

DEC FORM NO DRD 150-B

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DIGITAL EQUIP. CORP.

SIZE K | CODE WL | NUMBER 7009566-0-2 | REV. B

REVISIONS				
CHK	CHANGE NO.	REV.		
RD	7009566-00002	A	V. Boaen	12-19-73
EZ	7009566-00005	B	V. Boaen	12-26-73
	& Change	5-22-75	K. Ranker	
	K. Ranker (DS)	5-27-75		

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
H960-D/E		PARTS LIST		

DRN. P.S. LeBlanc	DATE 9-10-73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. V. Boaen	DATE 1-17-73	TITLE	
ENG.	DATE	WIRE LIST	
PROJ. ENG. Veikelli Bowen JIB	DATE 9-19-73		
PROD. Jose Flores	DATE 9/19/73		
NEXT HIGHER ASSEMBLY E-IA-7009566-0-0		SIZE K | CODE WL | NUMBER 7009566-0-2	REV. B
SCALE —		DIST.	
SHEET 1 OF 1			

DEC FORM NO. DRB 109

NAME SORT

21-MAY-75 XRL2W.SAV(20) 27-FEB-75 27-MAY-75 15:16 PAGE 1

BUS NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW	RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
SEE NOTE		NOTE									ALL WIRES #14 AWG	X	1
SEE NOTE		NOTE									UNLESS OTHERWISE NOTED		1
SEE NOTE		NOTE									WIRE LENGTH IS APROX.		1
+15 V1		P5-2					GRY					X	2
+15 V1		P9-2											2
+15 V2		P14-5										X	3
+15 V2		P9-3					GRY						3
+15 V3		P14-4	1				GRY					X	4
+15 V3		P15-4											4
+15 V4		P1-2					GRY					X	5
+15 V4		P3-2											5
+15 V5		P4-2	13				GRY					X	6
+15 V5		P6-2											6
+24 V1		P16-5										X	7
+24 V1		P3-3					ORN				ORN-BLK TWP(GND 10)		7
+24 V2		P1-3					ORN				ORN-BLK TWP(GND 11)	X	8
+24 V2		P17-5											8
+24 V3		P4-3	1				ORN					X	9
+24 V3		P6-3											9
+24 VJ2		P2-3					ORN					X	10
+24 VJ2		P5-3											10
+5V A1		P1-1	6				RED					X	11
+5V A1		P11-2											11
+5V A2		P11-5										X	12
+5V A2		P2-1					RED						12
+5V B1		P12-2										X	13
+5V B1		P3-1					RED						13
+5V B2		P12-5										X	14
+5V B2		P4-1					RED						14
+5V C1		P13-2										X	15
+5V C1		P5-1					RED						15
+5V C2		P13-5										X	16
+5V C2		P6-1					RED						16
-15 V2		P1-13					BLU					X	17
-15 V2		P6-13											17
-15V V1		P14-1										X	18
-15V V1		P5-13					BLU						18

PCB NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW	RV	PG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
-15V E1		P15-1										X	19
-15V E1		P2-13					BLU						19
-15VJ1		P1-13	1				BLU					X	20
-15VJ1		P3-13											20
-5V1		P16-3										X	21
-5V1		P3-14					BRN						21
-5V2		P1-14	7				BRN					X	22
-5V2		P17-3											22
-5V3		P1-14	12				BRN					X	23
-5V3		P6-14											23
-5VJ3		P2-14					BRN					X	24
-5VJ3		P5-14											24
AC 1		P12-6										X	25
AC 1		P8-1	10				RED				RED=WHT TWP(AC2)		25
AC 2		P12-7										X	26
AC 2		P8-2	10				WHT				WHT=RED TWP(AC1)		26
AC 4		P14-6										X	27
AC 4		P8-7					RED				RED=WHT TWP(AC4)		27
AC 3		P14-8										X	28
AC 3		P8-8					WHT				WHT=RED TWP(AC3)		28
AC 6		P10-1					RED				RED=WHT TWP(AC6)	X	29
AC 6		P11-6											29
AC 5		P10-2					WHT				WHT=RED TWP(AC5)	X	30
AC 5		P11-7											30
AC 7		P16-8	12				RED				RED=WHT TWP(AC8)	X	31
AC 7		P13-6											31
AC 8		P10-10					WHT				WHT=RED TWP(AC7)	X	32
AC 8		P13-7	12										32
AC 9		P10-9	1				RED				RED=WHT TWP(AC10)	X	33
AC 9		P15-6											33
AC 10		P10-12	1				WHT				WHT=RED TWP(AC9)	X	34
AC 10		P15-8											34
AC EQ 1		P18-4										X	35
AC EQ 1		P9-8	6				RED				CABLE PN 9107574		35
DC EQ 1		P18-3										X	36
DC EQ 1		P9-12	6				CLR				CABLE PN 9107574		36

PCB NAME	A/P	PIN LOCATION	BAY ORDER	Q	DRAW	RV	PG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
GND		P21										X	37
GND		P5-8					BLK						37
GND *		P1-5					BLK					X	38
GND *		P19											38
GND **		P20										X	39
GND **		P3-5					BLK						39
GND 1		P14-2										X	40
GND 1		P9-4	1				BLK						40
GND 2		P15-3										X	41
GND 2		P9-5					BLK						41
GND 3		P5-5					BLK					X	42
GND 3		P9-6											42
GND 4		P4-5					BLK					X	43
GND 4		P6-5											43
GND 5		P2-8					BLK					X	44
GND 5		P6-8											44
GND 6		P2-9	1				BLK					X	45
GND 6		P6-9											45
GND 7		P4-11					BLK					X	46
GND 7		P6-11											46
GND 8		P1-8					BLK					X	47
GND 8		P3-8											47
GND 9		P1-9	1				BLK					X	48
GND 9		P3-9											48
GND 10		P16-2										X	49
GND 10		P3-11					BLK				BLK=ORN TWP(+20 V1)		49
GND 11		P1-11					BLK				BLK=ORN TWP(+20 V2)	X	50
GND 11		P17-2											50
GND A1		P1-7					BLK					X	51
GND A1		P11-3											51
GND A2		P11-4										X	52
GND A2		P2-7					BLK						52
GND B1		P12-3										X	53
GND B1		P3-7	5				BLK						53
GND B2		P12-4										X	54
GND B2		P4-7					BLK						54

POS NAME	A/P PIN LOCATION	BAY ORDER	Q	DRAW	RV	PG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
GND C1	P13=3											
GND C1	P5=7					BLK					X	55
												55
GND C2	P13=4											
GND C2	P6=7					BLK					X	56
												56
GND P1	P14=3											
GND P1	P5=11	56				BLK					X	57
												57
GND P1	P15=2											
GND P1	P2=11	6				BLK					X	58
												58
LINE 1	P7=1					RED				#18 AWG		
LINE 1	P7=3										X	59
												59
LINE 2	P7=2											
LINE 2	P7=4					WHT				#18 AWG	X	60
												60
LINE 1	P10=5											
LINE 1	P7=1					RED				CABLE PN 9107761	X	61
												61
LINE 2	P10=6											
LINE 2	P7=2					WHT				CABLE PN 9107761	X	62
												62
LINE CLOCK	P18=2											
LINE CLOCK	P9=11	6				BLK				CABLE PN 9107574	X	63
												63
LO GND	P18=1											
LO GND	P9=7	6				SHLD				CABLE PN 9107574	X	64
												64
SHIELD	P10=4					SHLD				CABLE PN 9107761	X	65

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H792
BULK SUPPLY

P8
1 P11-6
2 P11-7
7 P14-6
8 P14-8

P9
2 P5-11
3 P14-5
4 P14-2
5 P15-3
6 P5-6
7 P6-6
8 P6-12
10 P6-7
11 P6-2

P10
1 P12-6
2 P12-7
5 P7-1
6 P7-2
8 P13-6
9 P15-6
10 P13-7
12 P15-8

P11 — BASIC H744 +5V REGULATOR — SLOT A
P8-1 6
P8-2 7
2 P11-7
3 P11-8
4 P11-9
5 P11-10

P12 — BASIC H744 +5V REGULATOR — SLOT B
P10-1 6
P10-2 7
2 P13-7
3 P13-8
4 P13-9
5 P13-10

P13 — OPTIONAL H744 +5V REGULATOR SLOT C
P10-8 6
P10-10 7
2 P5-7
3 P5-8
4 P5-9
5 P5-10

P14 — BASIC N795 -15V REGULATOR — SLOT D
P8-7 6
P8-8 8
1 P5-1
2 P9-4
3 P5-3
4 P15-10
5 P9-3

P15 — BASIC H745 -15V REGULATOR — SLOT E
P10-9 6
P10-12 8
1 P4-1
2 P1-3
3 P9-5
4 P14-4

P5
P14-1 1 -15V D REG
P13-1 2 -15V D REG
P14-3 3 GND
P13-4 4 GND
P13-6 5 GND
P9-6 6 GND
P13-2 7 +5V C REG
P13-3 8 GND
P13-4 9 GND
P13-5 10 +5V C REG
P9-2 11 +15V
P9-11 12 +15V

P6
P9-11 1 LCLK
P4-2 2 LCLK
P4-6 3 GND
P9-7 4 GND
P9-12 5 DCLO
P4-7 7 DCLO
P13-3 8 ACLO
P9-8 9 ACLO

P3
P5-2 1 -15V D REG
P5-9 2 GND
P1-6 3 GND
P5-5 4 GND
P12-2 5 GND
P12-3 6 +5V B REG
P12-4 7 GND
P12-5 8 GND
P13-5 9 +5V B REG
P13-12 10 +15V
P1-11 11 +15V
12 +15V

P4
P4-3 1 LCLK
P2-2 2 LCLK
P4-6 3 GND
P5-5 4 GND
P6-10 5 GND
P4-7 6 DCLO
P2-7 7 DCLO
P13-12 8 DCLO
P6-11 9 ACLO
10 ACLO
11 ACLO
12 ACLO

P1
P15-1 1 -15V C REG
P15-2 2 GND
P3-5 3 GND
P11-2 4 +5V A REG
P4-3 5 GND
P11-8 6 GND
P11-5 7 +15V A REG
P3-12 8 +15V
9
10
11
12

P2
P4-3 1 LCLK
2
P4-5 3 GND
P15-10 4 DCLO
5
6
7
8
9
10
P4-11 11 ACLO
12

P7
P10-5 1 115V AC TO
P10-6 2 LOGIC FANS

HARNESS POWER
(EXPANDER)
E-IA-7008754-0-0

OLD STYLE HARNESS FOR SYSTEMS
WITH SERIAL NUMBERS 5999 AND LOWER

REVISIONS			
REV	CHANGE NO	CHK	
—	11/40-00010		ORIGINATED

DEC FORM NO 11R3 100-A

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/40		PARTS LIST		

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

	NAME	DATE
DRN	A.E. Gardner	1/72
CHK'D	C. Taschner	9/21/72
ENG		
PROJ ENG		1/22/72
PROD MGR		9/26/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: POWER HARNESS

NEXT HIGHER ASSY: B-DD-11/40-*

SIZE	CODE	NUMBER	REV
D	IC	7008754 0-3	

SCALE — SHEET 1 OF 1 — DIST

PRINT CODE D IC 7 0087542 3 NUMBER REV

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H742Ø-Ø		
WIRING DIAGRAM	D-CS-H742Ø-Ø-Ø		
POWER LINE MONITOR	D-CS-5411086-0-1		
H742Ø POWER SUPPLY	E-UA-H742Ø-Ø-Ø		
H7420 POWER SUPPLY (P.L.)	A-PL-H742Ø-Ø-Ø		

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
H742Ø-A	H742Ø POWER SUPPLY (120V)	
H742Ø-B	H742Ø POWER SUPPLY (240V)	
H742Ø-H	H742Ø POWER SUPPLY (120V)	

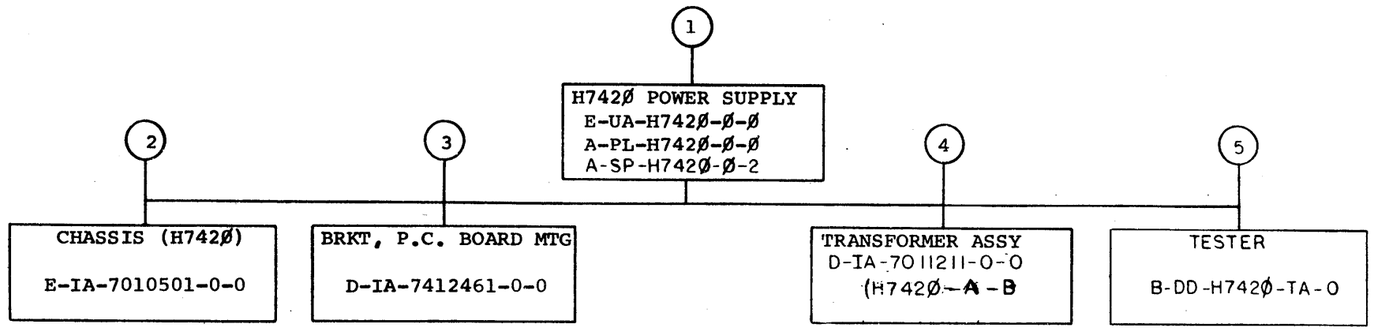
REVISIONS		
DATE	CHG. NO.	REV
6-75	H7420-1	A
7-75	H7420-2	B
3-76	H7420-3	C
4-76	H7420-4	D
9-76	H7420-5	E
7-77	H742Ø-6	F
9-77	7013791-1	H
3-78	7013791-1	J

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. R.E.Thellen	DATE 1/29/75	TITLE: H742Ø POWER SUPPLY
CHK'D. P.Caggiano	DATE 2/3/75	
PROJ ENG. R.A.W.U	DATE 2/3/75	
PROD. J.Boverat	DATE 2/3/75	SIZE B · CODE DD · NUMBER H742Ø-Ø · REV J.
FIELD SERV. W.Sweeney	DATE 2-19-75	DIST

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
H742Ø POWER SUPPLY	SHEET 2 OF 3	B	DD	H742Ø-Ø	J

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	B-DD-H742Ø-Ø	J	3	DRAWING DIRECTORY	
X			D-CS-H742Ø-Ø-1	A	2	WIRING DIAGRAM	
X			D-CS-5411086-0-1	#	4	POWER LINE MONITOR	
			A-SP-H742Ø-Ø-2	#	16	ENGINEERING SPEC.	
		5	B-DD-H742Ø-TA		1	TESTER DRAWING DIRECTORY	
			B-CS-H742Ø-TA-1	A	1	TESTER WIRING DIAGRAM	
			A-UA-H742Ø-TA-Ø		1	H7420 TESTER	
			A-PL-H742Ø-TA-Ø		2	TESTER PARTS LIST	
			A-SP-H742Ø-Ø-3		2	TEST PROCEDURE	

MECHANICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-UA-H742Ø-Ø-Ø	H	4	H7420 POWER SUPPLY	
X			A-PL-H742Ø-Ø-Ø	H	1	H7420 POWER SUPPLY	
			D-MD-7412459-0-0	A	1	COVER, CONTROL BOX	
			C-IA-7010730-0-0		1	POWER INDICATOR ASSY	
			D-IA-7010729-0-0	A	1	CABLE, REGULATOR BOARD	
			D-IA-7010728-0-0	A	1	CABLE, FAN POWER	
			C-IA-7010727-0-0	C	1	POWER CORD, ASSEMBLY	
			A-DC-7413184-0-0		1	POWER SUPPLY DECAL (H742Ø)	
			A-DC-7413966-0-0		1	POWER SUPPLY DECAL (H7420A)	
			A-DC-7413967-0-0		1	POWER SUPPLY DECAL (H7420B)	
		2	E-IA-7010501-0-0		1	CHASSIS (H742Ø)	
			E-IA-7412948-0-0		2	PLATE, BASE	
			E-IA-7412949-0-0		2	HOUSING, REGULATOR	
		3	D-IA-7412461-0-0		1	BRKT, P.C. BOARD MTG.	
			B-SS-7412461-0-1		1	BRKT, P.C. BOARD MTG. (SS)	
		4	D-IA-7011211-0-0	B	2	TRANSFORMER ASSY (H7420A&B)	
			C-IA-7010813-0-0		1	CAP/VAR ASSEMBLY	

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

TITLE	SHEET	SIZE	CODE	NUMBER	REV
H742Ø POWER SUPPLY	3 OF 3	B	DD	H742Ø-Ø	J

DRB 108

DEC 16-(3251-1062-2B-R972

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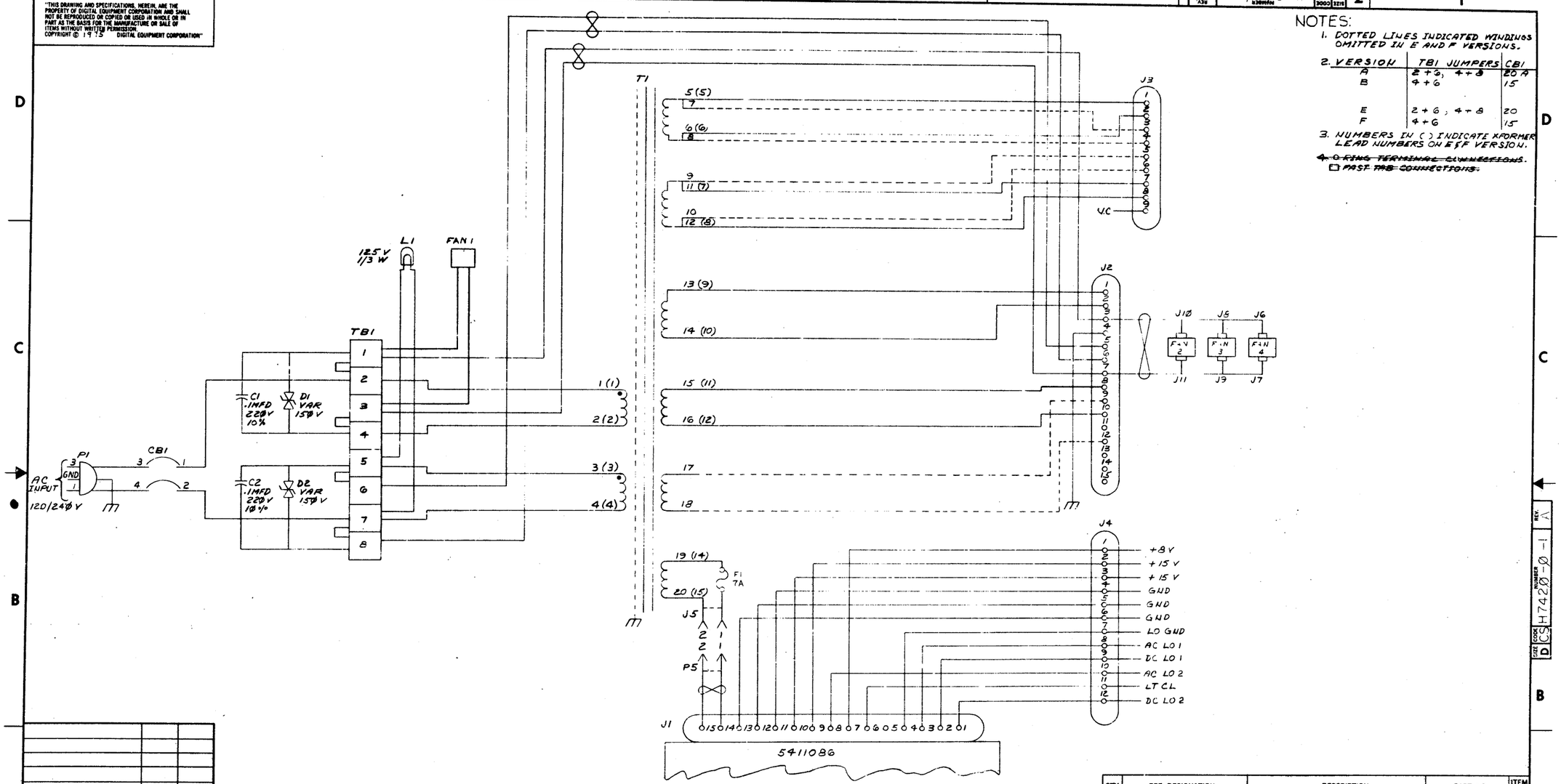
NOTES:

1. DOTTED LINES INDICATED WINDINGS OMITTED IN E AND F VERSIONS.
2. VERSION / TB1 JUMPERS / CB1

VERSION	TB1 JUMPERS	CB1
A	2+6, 4+8	20 A
B	4+6	15
E	2+6 ; 4+8	20
F	4+6	15

3. NUMBERS IN ( ) INDICATE XFORMER LEAD NUMBERS ON E&F VERSION.
4. ~~O RING TERMINAL CONNECTIONS.~~
5. ~~FAST TAB CONNECTIONS.~~



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: H7420

PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

SEMICONDUCTOR CONVERSION CHART

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

REVISIONS

REV.	CHANGE NO.	CHK
A	H7420-30001	G. Peirce 6-20-75

DRN. G. Peirce 1-17-75
C.K.D. L. Lapachinska 1-22-75
ENG. [illegible] 2/[illegible]
PROJ. ENG. [illegible] 2/[illegible]
PROD. [illegible] 2/3/75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 1

digital

TITLE: WIRING DIAGRAM

SIZE D | CODE CS | NUMBER H7420-0-1 | REV. A | DIST.

SIZE D | CODE DCS | NUMBER H7420-0-1 | REV. A

DEC FORM NO. DOD 139.8

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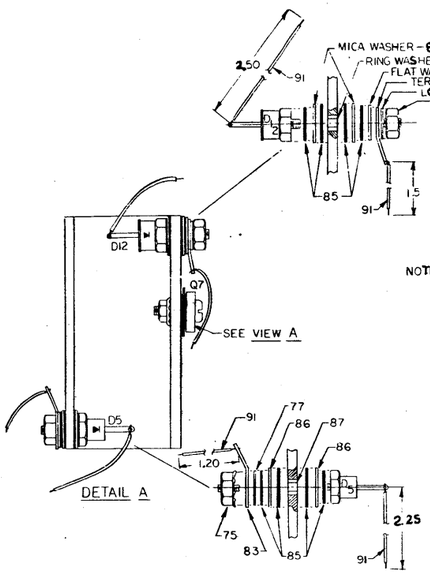
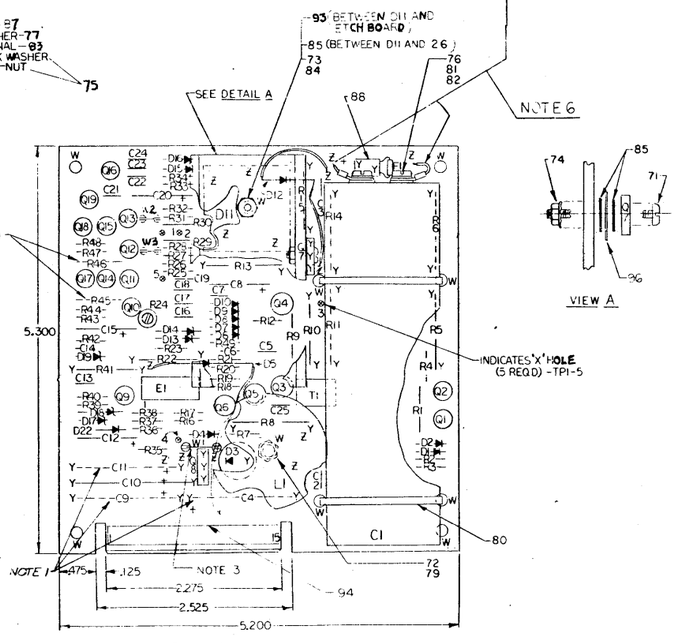
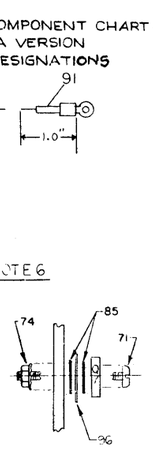
NOTES:

1. ~~R45,R46,C4,C9,&C11 ARE NOT USED ON BASIC 5411086 BUT ARE RESERVED FOR PLANNED FUTURE MODULE VARIATIONS.~~
2. ** TOTAL +15V AND +8V CURRENT NOT TO EXCEED 4.0 AMPERES.
3. W1 (TEST JUMPER) MAYBE TEMPORARILY REMOVED WHILE TROUBLE-SHOOTING TO DETERMINE IF LOSS OF 15V IS DUE TO CROW-BAR CIRCUITRY. BUT MUST BE IN THE BOARD FOR NORMAL OPERATION.
4. ~~NON-ITEMIZED PARTS SUPPLIED WITH D12.~~
4 YA VERSION DOES NOT CONTAIN +15VDC REG.
5. A) FOR STANDARD VERSION USE SHEETS 1,2,3,&4 OF THIS DWG.
   B) FOR YA VERSION USE SHEETS 1,2,&3 OF THIS DWG.
6. WIRES MUST NOT EXTEND BEYOND THE DIMENSIONS OF THE BOARD.
7. JUMPERS (W2,W3) ARE 1/2" EACH OF ITEM 95.







REF	REF				
REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411086-0-*	1
REF	REF		ASSY DRILLING HOLE LAYOUT	D-AH-5411086-0-S	2
REF	REF		MODULE ECO HISTORY	B-MH-5411086-0-E	3
1	1		ETCHED CIRCUIT BOARD	5011085	4
0	1	C2	CAPACITOR 56PF 100V 5%	1000012	5
4	4	C16,C17,C19,C21	CAPACITOR 33PF 100V 5%	1000023	6
3	5	C3,C13,C19,C22,C23	CAPACITOR .01uf 100V 20%	1001610-01	7
1	3	C6,C12,C15	CAPACITOR 2.2uf 35V 10%	1002431	8
2	2	C6,C25	CAPACITOR 18PF 100V 5%	1002608	9
1	1	C20	CAPACITOR 1.5uf 35V 10%	1009725	10
4	4	C5,C7,C14,C24	CAPACITOR .22uf 50V -20% +80%	1010274-01	11
0	1	C18	CAPACITOR 5000pf 25V -10% +75%	1010509-01	12
1	1	C1	CAPACITOR 8400uf 50V -10% +75%	1010851	13
1	2	D2,D19	DIODE IN748A	1100122	14
0	1	D5	DIODE IN2070B	1100134	15
0	1	D3	DIODE MR1338	1102341	16
7	8	D1,D6,D7,D8,D9,D15,D16,D22	DIODE D672	1105275	17
1	2	D18,D17	DIODE IN4744	1105648	18
0	1	D4	DIODE IN4004	1105796	19
0	1	D12	DIODE IN3888	1109440	20
0	1	D18	DIODE IN967A	1110068	21
~~2~~	~~2~~	~~D20,D21~~	~~DIODE MV5054-1 (LIGHT EMITTING)~~	~~1110324~~	~~22~~
1	1	D11	DIODE BRIDGE 200V 20A	1110714	23
2	2	D13,D14	DIODE 1TT2429	1110925	24
0	1	F1	FUSE PICO 5A	1205747	25
0	1		HEAT SINK	1211986	26
0	1	R23	RESISTOR 47 1/4W 5%	1300202	27
0	2	R7,R40	RESISTOR 100 1/4W 5%	1300229	28
0	1	R41	RESISTOR 100 1% 5%	1300232	29
1	3	R4,R12,R49	RESISTOR 220 1/4W 5%	1300271	30
0	1	R14	RESISTOR 220 2W 10%	1300278	31
0	1	R11	RESISTOR 680 2W 5%	1300348	32
2	2	R18,R20	RESISTOR 1K 1/4W 5%	1300365	33
0	1	R1	RESISTOR 1.5K 1/2W 5%	1300394	34
0	1	R10	RESISTOR 2.2K 1W 10%	1300420	35
1	1	R15	RESISTOR 3.3K 1W 10%	1300437	36
0	1	R3	RESISTOR 3.3K 1/4W 5%	1300439	37
2	2	R43,R47	RESISTOR 10K 1/4W 5%	1300479	38
0	1	R37	RESISTOR 10 1/4W 5%	1301317	39
3	3	R2,R44,R49	RESISTOR 750 1/4W 5%	1301401	40
0	1	R38	RESISTOR 680 1.4W 5%	1301424	41
0	1	R16	RESISTOR 22K 1/4W 5%	1301808	42
1	1	R13	RESISTOR 1K 2W 5%	1301952	43
0	1	R9	RESISTOR 27 1 2W 5%	1302253	44
2	2	R19,R21	RESISTOR 30K 1/4W 5%	1302394	45
0	1	R36	RESISTOR 511 1 4W 1%	1302411	46
0	1	R39	RESISTOR 909 1 4W 1%	1302685	47
1	1	R25	RESISTOR 3 16K 1/4W 1%	1303045	48
1	1	R8	RESISTOR 470 2W 5%	1303062	49
1	2	R17,R28	RESISTOR 1K 1 4W 1%	1303114	50
1	1	R31	RESISTOR 2.61K 1/4W 1%	1303303	51
0	1	R42	RESISTOR 10K 1 4W 1%	1303312	52
2	2	R33,R34	RESISTOR 5.11K 1 4W 1%	1304854	53
1	1	R30	RESISTOR 9.09K 1 4W 1%	1304855	54
YA	QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

COMPONENT CHART - YA VERSION		
3	C19,C22,C23	7
1	C8	8
1	D19	14
7	D6,D7,D8,D9,D15,D16,D22	17
1	D10	18
1	R49	30
2	R44,R48	40
1	R28	50
4	Q3,Q5,Q10,Q19	63
4	Q11,Q12,Q13,Q16	66
QTY	REF. DESIGNATION	ITEM

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REV.	CHANGE NO.	CHK	DATE	ORIGINATED
C	5411086-00001		6/8/73	A. Baron
D	5411086-00003		6/8/73	V. Boden
E	5411086-00002		6/8/73	V. Boden
F	5411086-00003		6/8/73	V. Boden
G	5411086-00004		6/8/73	V. Boden
H	5411086-00005		6/8/73	V. Boden
J	5411086-00006		6/8/73	S. Carter
K	5411086-00007		6/8/73	V. Boden

REVISIONS

FIRST USED ON OPTION MODEL

ETCH BOARD REV. C

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

SEMICONDUCTOR CONVERSION CHART

DRN. DATE 7-24-72
CHKD. DATE
ENG. DATE 6/8/73
PROJ. ENG. DATE 6/8/73
PROD. DATE 6/8/73
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 4

digital

TITLE PWR LINE MONITOR/15V REG.

SIZE D | CODE CS | NUMBER 5411086-0-1 | REV. L

DIST.

DEC FORM NO. DRO 135.8

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NOTES:

YA	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	1	R29	RESISTOR 3.48K 1/4W 1%	1305114	55
1	1	R26	RESISTOR 5.62K 1/4W 1%	1305128	56
1	1	R27	RESISTOR 4.99K 1/4W 1%	1305324	57
0	1	R35	RESISTOR 24.9K 1/4W 1%	1305405	58
0	1	R24	RESISTOR 200 20% 62PR	1309150-10	59
1	1	R32	RESISTOR 10.2K 1/4W 1%	1309412	60
0	2	R5,R6	RESISTOR .2 5W 5% WW	1309884	61
0	1	Q7	TRANSISTOR MJE3055	1510555	62
4	6	Q2,Q3,Q5,Q6,Q18,Q19	TRANSISTOR MPSA05	1510705	63
0	2	Q4,Q9	TRANSISTOR MPS A55	1510706	64
0	1	Q8	TRANSISTOR 2N 4441	1505867	65
4	5	Q1,Q11,Q12,Q13,Q16	TRANSISTOR 2N 4250	1509142	66
4	4	Q14,Q15,Q17,Q18	TRANSISTOR 2N 5433	1511686	67
0	1	L1	INDUCTOR, 500 uh	1611868	68
1	1	T1	TRANSFORMER	1612026	69
0	1	E1	I.C. DEC 723	1910415	70
0	1		SCREW, PHM #4-40 X 7/16 LG.	9006012-1	71
0	1		SCREW, PHM #6-32 X 1/4 LG.	9006020-1	72
0	1		SCREW, PHM #6-32 X 7/8 LG.	9006027-1	73
0	1		KEP NUT #4-40	9006557	74
0	2		KEP NUT #10-32	9006565	75
2	2		WASHER, ITTLKWR #10	9006635	76
0	2		WASHER, FLAT	9006666	77
0	2	(W1)	SPLIT LUG	9006735	78
0	1		SPACER, 1/4AF X 1/2	9006861	79
4	4		CABLE TIE	9007880	80
2	2		TERMINAL	9007930	81
2	2		SCREW, PHM #10-32 X 1/4 LG.	9008007-1	82
0	2		TERMINAL	9008150	83
0	1		KEP NUT #6-32	9008185	84
0	A/R		COMPOUND, THERMAL JOINT	9009258	85
0	4		WASHER, THERMA FILM	9008424	86
0	2		WASHER, RING	9008440	87
0	1		FUSE HOLDER	9009141	88
1	1	R22	RESISTOR, 390, 2W 10%	1301880	89
0	1	W1	JUMPER	9009185	90
2	12		WIRE #18 STRANDED BLK	9107360-0-0	91
REF	REF		MODULE TEST PROCEDURE	A-SP-11/45-TA-2	92
1	1		WASHER, RING	9006713	93
1	1		.010 INCH SHIM	7413721-0-0	94
REF	REF		ENG. SPEC AND TEST PROC.	A-SP5411086-0-3	95
0	1		INSULATOR, THERMA FILM	9009597	96
A/R	A/R	W2,W3	WIRE #22 BUS	9107560-01	97

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV D

IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

REV	CHANGE NO	DEC NO	EIA NO	DEC NO	EIA NO

REVISIONS

CHK

SEMICONDUCTOR CONVERSION CHART

DRN J. Vincent DATE 12-9-74
CHK D. DATE
ENG. Russell Boone DATE 12/12/74
PROJ. ENG. Russell Boone DATE 12/12/74
PROD. K.K. Peterson DATE 12/9/74
NEXT HIGHER ASSY
SCALE
SHEET 2 OF 4

digital EQUIPMENT CORPORATION

TITLE PWR. LINE MONITOR/15V REG.

SIZE D | CODE DCS | NUMBER 5411086-0-1 | REV. L

DIST

DCS 5411086-0-1

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+25 TO +45 VDC

R8 470 2W

C25 18pf

R21 30K

Q3 MPS A05

R20 1K

R18 1K

Q5 MPS A05

R19 30K

C6 18pf

T1

C5 .22uf 50V

C8 2.2uf 35V

D22 D672

D8 D672 D9 D672 D6 D672 D7 D672

C7 .22uf 50V

D10 IN4744 15V

R48 75Ø

Q19 MPS A05

5 -10V TO -15V (TEST POINT)

(ENG OPTION SEE NOTE 1) R46 1/2W

Q15 2N5433

Q18 2N5433

3 AC LO 1

8 AC LO 2

4 LO GND

R49 220

R47 10K

R43 10K

R13 1K 2W

TP3

D15 D672 R34 5.11K 1% R33 5.11K 1%

AC-2

D16 D672

AC-1

20V TO 33V RMS AC INPUT

C24 .22uf 50V

C20 1.5uf 35V

TP1

R32 18.2K 1%

Q16 2N4250

Q13 2N4250

Q12 2N4250

Q11 2N4250

R29 3.48K 1%

R26 5.62K 1%

TP5

R27 4.99K 1%

C21 330pf

C18 330pf

C17 330pf

C16 330pf

R31 2.61K 1%

TP2

R30 5.09K 1%

W3

R25 3.16K 1%

W2

R44 75Ø

Q10 MPS A05

Q17 2N5433

Q14 2N5433

1 DC LO 2

2 DC LO 1

R45 1/2W (SEE NOTE 1 (ENG. OPTION))

D14 ITT2429 5.1V

D13 ITT2429 5.1V

C22 .01uf 100V

C23 .01uf 100V

R28 1K 1%

C19 .01uf 100V

RETURN

+25 TO +45VDC

TO 20V TO 33V RMS AC INPUT

AC-1 15

AC-2 14

C1 5000uf 20V

A15 3.3K 1W

D11

6 LINE CLK L

R22 390Ω 2W

D19 3.9V 1N748A

C14 .22uF 50V

POWER FAIL CIRCUIT

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PWR. LINE MONITOR/15V REG.	D	CS	5411086-0-1	L
SCALE	SHEET 3 OF 4	DIST.		

DEC FORM NO. DND 130

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+25 TO +45 VDC

F1

25 - 45 VDC

C3 .01uf

R14 22Ø 2W, 10%

D12 IN3880

L1 500uH

Q7 MJE 3055

Q4 MPS A55

R9 27 1/2W

R12 22Ø

R1Ø 2.2K 1W, 10%

R11 68Ø 2W

TP4

+15V

R35 24.9K 1%

4.28V

D4 IN4004

D3 MR1Ø33B

D5 IN2970B 6.8V

R91 1ØØ 1W

9 1Ø +15VDC ± 5% @ 4A MAX (SEE NOTE 2)

7 +8VDC ± 1Ø% @ 1A MAX (SEE NOTE 2)

W1 (SEE NOTE 3)

C1Ø 500uf 25V

C4 50uf 50V

C9 50uf 50V

C11 50uf 50V

SEE NOTE #1

D17 IN4794 15V ± 1Ø%

C12 2.2uf 35V

1/2 723C E1

REF

R36 511 1%

R24 2ØØ 4.28V

R17 1K 1%

R39 9Ø9 1%

C15 2.2uf 35V

R16 22K 1%

1/2 723C E1

COMP

R23 47

Q6 MPS AØ5

R7 1ØØ

D1 D672

C2 56pf

R2 75Ø

D2 IN748A 3.9V

R3 3.3K

Q1 2N4250

R1 1.5K 1/2W

R42 1ØK 1%

R38 68Ø

R37 1Ø

Q9 MPS A55

Q8 2N4441

C13 .01uf

R4Ø 1ØØ

D18 IN967A 18V

Q2 MPS AØ5

R4 22Ø

R6 .2 5W

R5 .2 5W

11 GND

12 GND

13 GND

RETURN

15V REGULATOR
(SEE NOTE #4)

REVISIONS

CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PWR. LINE MONITOR/15V REG.	D	CS	5411086-0-1	L
SCALE —	SHEET 4 OF 4	DIST.		

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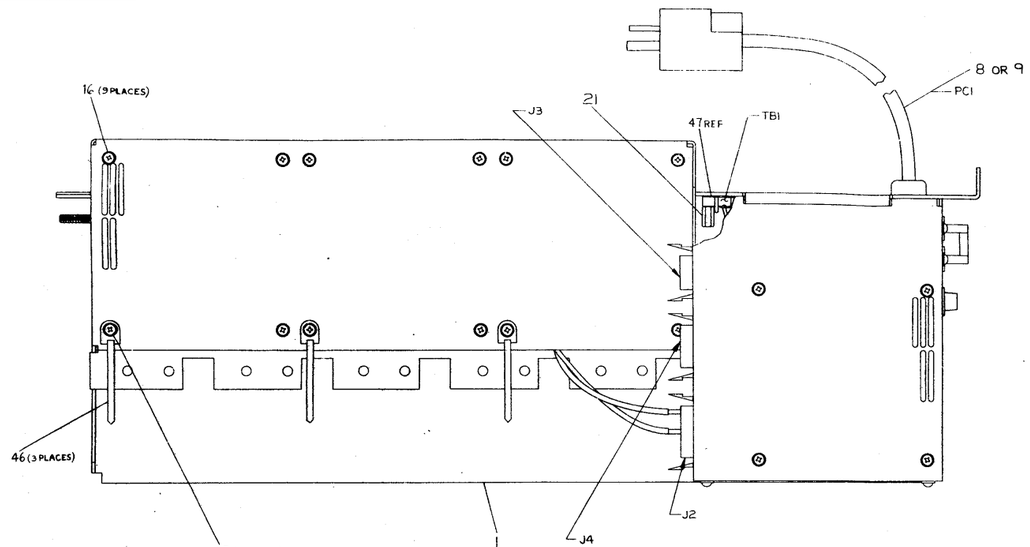
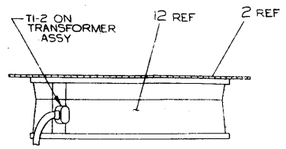
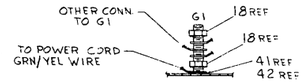




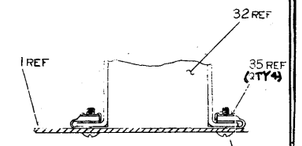
SECTION D-D
SCALE: NONE



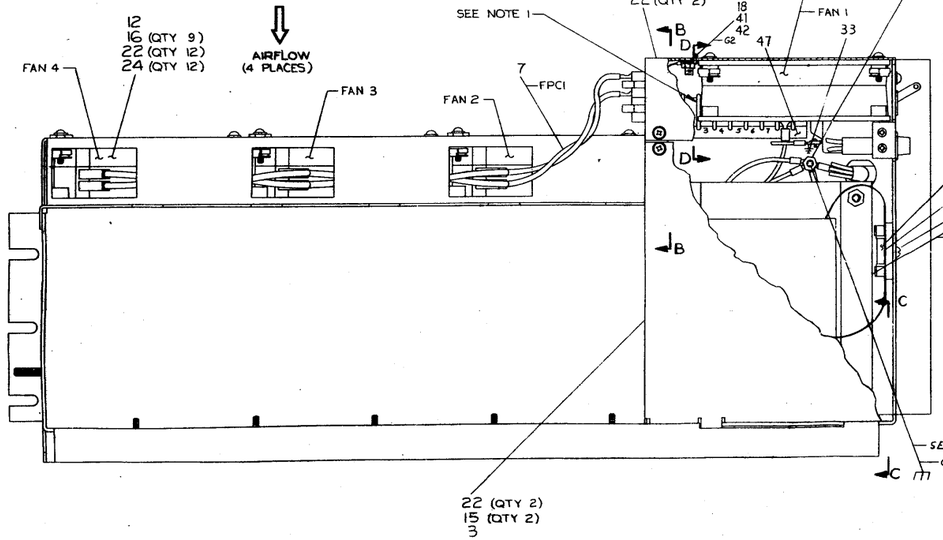
DETAIL B
SCALE: NONE

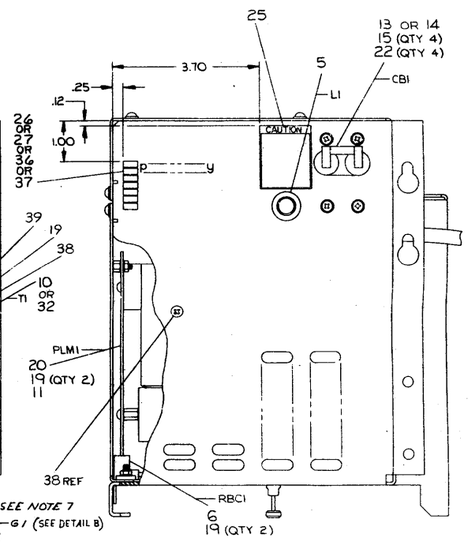
NOTES:

1. AFTER TERMINAL BLOCK (PART OF TRANSFORMER ASSEMBLY) IS MOUNTED TO CHASSIS, CAPACITOR AND VARISTOR SHOULD BE BENT FORWARD TO ALLOW CLEARANCE FOR COVER.
2. ~~REV D AND EARLIER TRANSFORMERS DO NOT HAVE THIS WIRE. H7420 E+F ONLY.~~
3. FILLER PANELS (D-IA-7413405-0-0) MAY BE USED IN UNFILLED REGULATOR SLOTS (REF).
4. CABLE TIE MOUNTS TO BE MOUNTED AFTER TRANSFORMER ASSEMBLY IS INSTALLED.
5. ~~H7420-A+B ONLY.~~
6. ~~H7420 E+F ONLY.~~
7. REMOVE PAINT MASK, APPLY CONDUCTIVE GREASE ITEM #2, PLACE ITEM #1 8-32 EXT TOOTH WASHER NEXT TO CHASSIS BEFORE INSTALLING REMAINING HARDWARE. DO THIS AT G1 AND G2. MAKE SAFTEY GROUND CONNECTIONS PER DETAIL B.



SECTION C-C
SCALE: NONE





FOR PARTS LIST REFER TO A-F H7420-*-0

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

DES.	DATE 1-15-80	digital	
CHK'D	DATE 2/7/80		
MFG	DATE 2/7/80		
PROJ. ENG.	DATE	TITLE	
PROD.	DATE	H7420 POWER SUPPLY	
NEXT HIGHER ASSY.			
MATERIAL SEE PARTS LIST	B-DD-H7420-0	SIZE E	CODE UA
FINISH	SCALE 1/1	NUMBER H7420-0-0	REV. H
	SHEET 1 OF 2	DIST.	

FIRST USED ON OPTION/MODEL: H7420

DIMENSIONAL TOLERANCE: DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

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

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS/SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: —

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
	A	ECO H7420-00001	4-19-78
	B	ECO H7420-00002	7-27-78
	C	ECO H7420-00003	9-5-78
	D	ECO H7420-00004	11-17-78
	E	ECO H7420-00005	1-10-79
	F	ECO H7420-00006	8-10-79
	G	ECO H7420-00007	3-26-82
	H	ECO H7420-00008	4-19-82

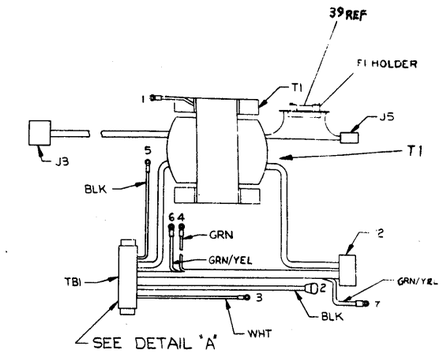
DO NOT SCALE DRAWING

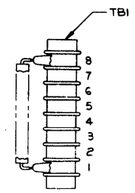
WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	REMARKS
10	↓	↓	T1-J5	RBC1-P5	
	14	GRN	T1-1	G1	SEE NOTE 2 & 7
	↓	BLK	T1-2	FAN 1-1 & 2	
	14	WHT	T1-3	CB1-1	
	14	GRN	T1-4	G1	SEE NOTE 7
10	14	BLK	T1-5	CB1-2	
5	22	BLK	L1-1	TB1-5	
5	22	BLK	L1-2	TB1-7	
7	18	RED	FPC1-J6	FAN 4-1	
↓	↓	WHT	FPC1-J7	FAN 4-2	
		RED	FPC1-J8	FAN 3-1	
		WHT	FPC1-J9	FAN 3-2	
		RED	FPC1-J10	FAN 2-1	
		WHT	FPC1-J11	FAN 2-2	
↓	↓	RED	FPC1-1	J2-3	
7	18	WHT	FPC1-2	J2-7	
8/9	14	BRN	PC1-1	CB1-4	
8/9	14	GRN/YEL	PC1-2	G1	SEE NOTE 7
8/9	14	BLU	PC1-3	CB1-3	
11	↓	↓	PLM1	RBC1-J1	
10	14	GRN/YEL	T1-6	G1	SEE NOTE 7
10	14	GRN/YEL	T1-7	G2	SEE NOTE 7

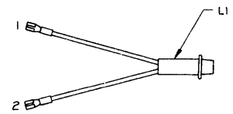
JUMPER TABLE

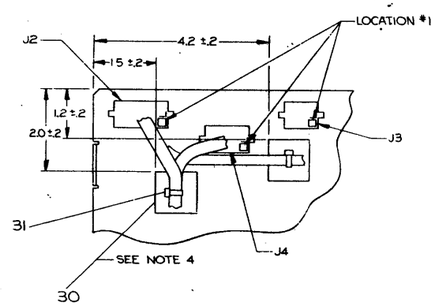
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	VARIATION
29	14	BLK	TB1-2		TB1-6		H742ØE & A
29	14	BLK	TB1-4		TB1-8		
29	14	BLK	TB1-4		TB1-6		H742ØF & B



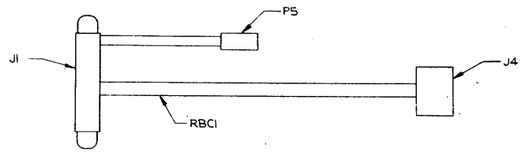


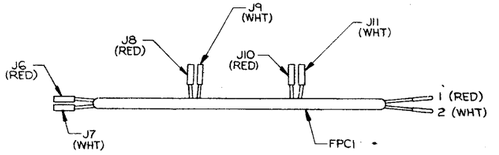
DETAIL "A"
SCALE: NONE

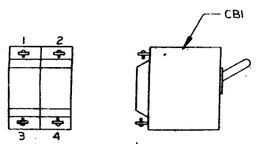


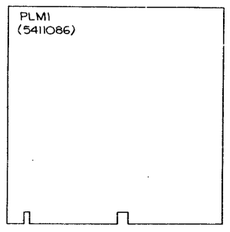


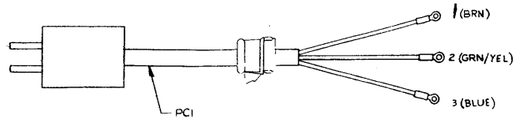
SECTION B-B
SCALE: NONE

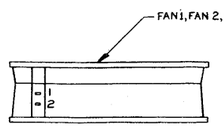












REVISIONS CHK	CHANGE NO.	REV.

TITLE	SIZE	NUMBER	REV
H742Ø POWER SUPPLY	E	H742Ø-Ø-Ø	H
SCALE NONE SHEET 2 OF 2		DWT	

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. THELLEN	CHECKED P. CAPPABIANCA	SECTION
DATE 1/17/75	DATE 2/3/75	1
ENG R. WOLF	PROD J. BORENSTEIN	ISSUED SECT.
DATE 2/3/75	DATE 2/3/75	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H7420-A	H7420-B	H7420-H
1	E-IA-7010501-0-0	CHASSIS (H742Ø)	1	1	1
2	D-MD-7412459-0-0	COVER, CONTROL BOX	1	1	1
3	D-IA-7412461-0-0	BRKT, P.C. BOARD MTG.	1	1	1
~~4~~	~~C-IA-7413125-0-0~~	~~PLATE, ADAPTER (H742Ø)~~	~~-~~	~~-~~	
5	C-IA-7010730-0-0	POWER INDICATOR ASSEMBLY	1	1	1
6	D-IA-7010729-0-0	CABLE, REGULATOR BOARD	1	1	1
7	D-IA-7010728-0-0	CABLE, FAN POWER	1	1	1
8	C-IA-7010727-1-0	POWER CORD ASSY (120V)	1	-	-
9	C-IA-7010727-2-0	POWER CORD ASSY (240V)	-	1	-
10	C-IA-7010727-5-0	POWER CORD ASSY (120V)	-	-	1
11	D-CS-5411086-0-1	POWER LINE MONITOR	1	1	1
12	1209403-01	FAN	4	4	4
~~13~~	~~1210191-06~~	~~CIRCUIT BREAKER (20A)~~	~~1~~	~~-~~	
~~14~~	~~1210191-03~~	~~CIRCUIT BREAKER (15A)~~	~~-~~	~~1~~	
15	9006020-01	SCR,PHL PAN HAD #6-32 x .25	8	8	8
16	9006025-01	SCR,PHL PAN HD #6-32 x .62	13	13	13
~~17~~	~~9006565-00~~	~~NUT,KEP #10-32~~	~~-~~	~~-~~	
18	9006563-00	NUT,KEP #8-32	3	3	3
19	9006185-00	NUT,KEP #6-32	5	5	5
20	9006840-00	SPACER, #6-32 x .19	2	2	2
21	9006851-00	SPACER, #6-32 x .50	2	2	2
22	9006633-00	WASHER, INT. TOOTH LOCK #6	24	24	24

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY H742Ø	E-UA-H742Ø-Ø-Ø	A	PL	H742Ø-Ø-Ø	H	H7420-00057
	SHEET 1 OF 3	DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. THELLEN	CHECKED P. CAPPABIANCA	SECTION
DATE 1/17/75	DATE 2/3/75	1
ENG R. WOLF	PROD J. BORENSTEIN	ISSUED SECT.
DATE 2/3/75	DATE 2/3/75	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION H742Ø-A	H742Ø-B	H742Ø-H
~~23~~	~~9008589-00~~	~~RELIEF, STRAIN~~	~~1~~	~~1~~	
24	9009165-00	CLIP, FAN MOUNTING	16	16	16
25	A-DC-7413184-0-0	POWER SUPPLY DECAL (H742Ø)	1	1	1
26	7420763-0-0	POWER SUPPLY DECAL (H742ØH)	-	-	1
~~27~~	~~A-DC-7413185-0-0~~	~~POWER SUPPLY DECAL (H742ØF)~~	~~-~~	~~-~~	
~~28~~	~~9007963-00~~	~~TERMINAL, QUICK CONNECT~~	~~4~~	~~2~~	
29	7014353	JUMPER	2	1	2
30	9008264-00	MOUNT, CABLE TIE, ADHESIVE	2	2	2
31	9007880-00	TIE, CABLE	2	2	2
32	D-IA-7011211-0-0	TRANSFORMER ASSY	1	1	1
33	3612680-01	SAFETY GROUND DECAL	1	1	1
34	9006074-3	SCR, PH. HD. TRUSS 10x32x5/8	4	4	4
35	9006586	TINNERMAN SPEED NUT 10-32	4	4	4
36	A-DC-7413966-0-0	POWER SUPPLY DECAL (H742ØA)	1	-	-
37	A-DC-7413967-0-0	POWER SUPPLY DECAL (H742ØB)	-	1	-
38	9006021-1	SCR. PAN HD. 6-32x5/16	1	1	1
39	9007224	FUSE 7 AMP SLOW BLOW	1	1	1
~~40~~	~~9009768-01~~	~~RELIEF, STRAIN~~	~~1~~	~~1~~	
41	9008072	8-32 WASHER EXT. TOOTH	1	1	1
42	4901173-01	CONDUCTIVE GREASE	A/R	A/R	A/R
43	1212124-01	CIRCUIT BREAKER (20A)SCREW TERM	1	-	1
44	1212124-02	CIRCUIT BREAKER (15A)SCREW TERM	-	1	-

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY H742Ø	E-UA-H742Ø-Ø-Ø	A	PL	H742Ø-Ø-Ø	H	
	SHEET 2 OF 3	DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. THELLEN	CHECKED P.CAPPABIANCA	SECTION
DATE 17-JAN-75	DATE 3-FEB-75	1
ENG R. WOLF	PROD J. BORENSTEIN	ISSUED SECT.
DATE 3-FEB-75	DATE 3-FEB-75	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION H7420-A	H7420-B					H7420-H					
45	9006026-1	SCR PH PAN HD #6-32 x 3/4	3	3					3					
46	9007033	TIE CABLE	3	3					3					
47	9006933	BLOCK, TERM MARKER STRIP	1	1					1					

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY H742Ø	E-UA-H742Ø-Ø-Ø	A	PL	H742Ø-Ø-Ø	H	
	SHEET 3 OF 3	DIST.				

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

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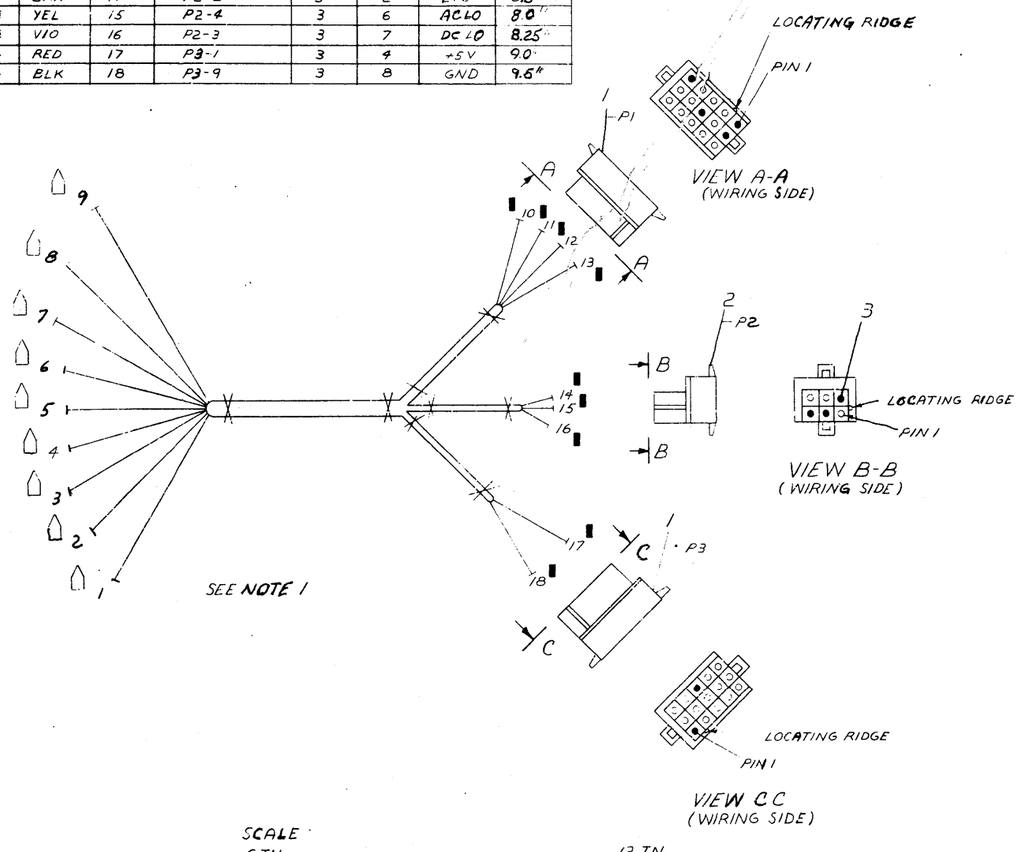
WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	SIGNAL	WIRE LENGTHS
6	14	BLU	10	P1-13	3	1	-15V	10.0"
5	14	BLK	11	P1-8	3	9	GND	10.5"
4	14	RED	12	P1-1	3	5	+5V	9.0"
9	18	GRY	13	P1-2	3	3	+15V	9.25"
10	18	BRN	14	P2-2	3	2	LTC	8.5"
8	18	YEL	15	P2-4	3	6	ACLO	8.0"
7	18	VIO	16	P2-3	3	7	DCLO	8.25"
4	14	RED	17	P3-1	3	4	+5V	9.0"
5	14	BLK	18	P3-9	3	8	GND	9.5"

NOTES:
1. INSULATION AT POINT 1 THRU 9 SHOULD BE STRIPPED BACK .18 INCHS AND WIRES SOLDER TINNED.



ITEM NO	SYM	QTY.	DESCRIPTION	PART NO.
X	8		TIE WRAP	9007031
	2.75FT		WIRE, 18 AWG BRN	9107360-11
	.083FT		WIRE, 18 AWG GRY	9107360-88
	.266FT		WIRE, 18 AWG YEL	9107360-44
	.075FT		WIRE, 18 AWG VIO	9107360-77
	1.0FT		WIRE, 14 AWG BLU	9107370-66
	.175FT		WIRE, 14 AWG BLK	9107370-00
	.15FT		WIRE, 14 AWG RED	9107370-22
	9		PIN, MALE	1209378-01
	1		HOUSING, CONN, 6 PIN	1209351-06
	2		HOUSING, CONN 15 PIN	1209351-15

PARTS LIST

REV	CHANGE NO	CHK
A	4	

ORIGINAL

FIRST USED ON ORT/ECO: 11/40

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 1

		DATE
DRN.	S Watson	5-5-78
CHK'D.		
ENG.		
PROJ. ENG.		
PROD.		

MATERIAL: SEE PARTS LIST
FINISH:
NEXT HIGHER ASSY.: D-UA-11/4C-C-0
SCALE:
SHEET 1 OF 1

digital EQUIPMENT CORPORATION

TITLE: 11/40 CPU POWER HARNESS

SIZE D | CODE IA | NUMBER 7009994-0-0 | REV B
DIST.

DIA 7009994-0-0 B

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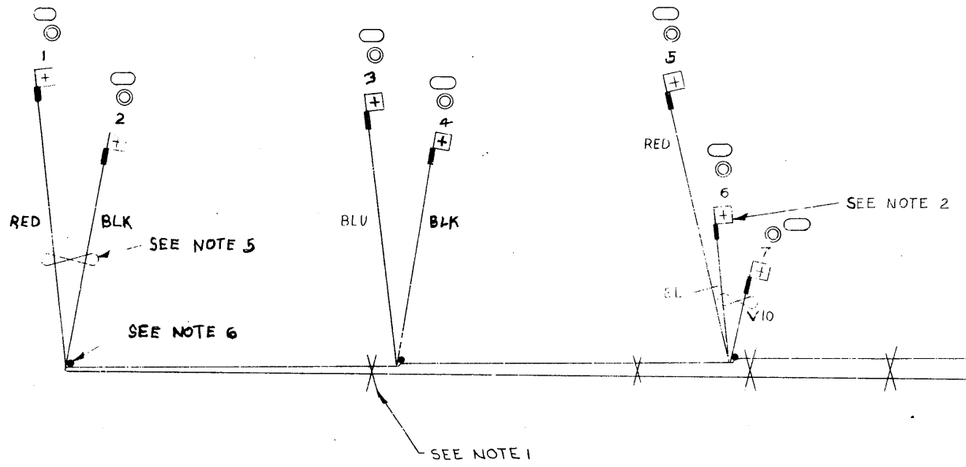
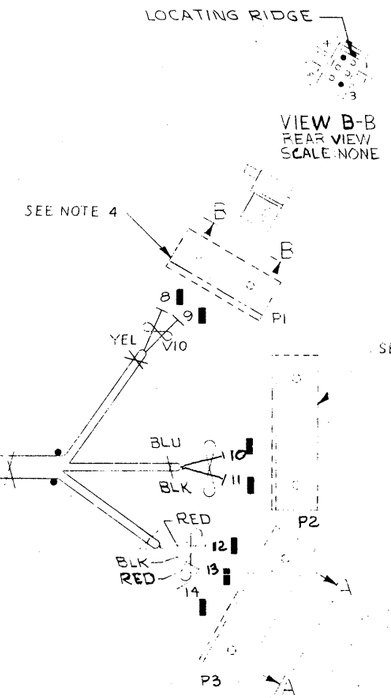
WIRE LIST

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH	SIGNAL
4	14 TWP	RED	1	——	8,9	12	P3-1	3	+5V
		BLK	2	——	8,9	13	P3-8	3	GND
5	14 TWP	BLU	3	——	8,9	10	P2-13	3	-15V
		BLK	4	——	8,9	11	P2-8	3	GND
6	14	RED	5	——	8,9	14	P3-4	3	+5V
7	18 TWP	YEL	6	——	8,9	8	P1-4	3	AC LO
		VIO	7	——	8,9	9	P1-3	3	DC LO

NOTES:
1. USE TIE WRAPS (X) ITEM 10 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAK-OUT POINT.
2. ATTACH MALE FASTON DEC # (9008219-0) WITH # 4 WOOD SCREWS (7 PLACES).
3. USE CONN. BRKT C-MD-9305761-H15-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-15
4. USE CONN. BRKT C-MD-9305761-H6-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-06
5. AT POINTS 1-7 UNTWIST WIRES BACK TO NAIL
6. DOT (•) DENOTES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.





DO NOT REDUCE
SCALE
0 IN. 6 IN. 12 IN.
DO NOT BUILD FROM REDUCED PRINT

QTY	SYM	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		A/R	WRAP TIE	90070 31	10
		A/R	TUBING, SHRINK	9107305-02	9
		7	CONN., SOLDERLESS	9009262-0	8
		A/R	WIRE, #18 TWP YEL/VIO	9107430-07	7
		A/R	WIRE, #14 AWG RED	9107370-22	6
		A/R	WIRE, #14 TWP BLK/BLU	9107490-06	5
		A/R	WIRE #14 TWP BLK/RED	9107490-02	4
		7	PIN, MALE	1209378-01	3
		2	HOUSING CONN. 15 PIN	1209351-15	2
		1	HOUSING CONN. 6 PIN	1209351-06	1

PARTS LIST

FIRST USED ON OPTION MODEL: MFII-L

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

MATERIAL: SEE PARTS LIST
FINISH:

DRN. [signature] DATE 3/24/77
CHK'D [signature] DATE 3/24/77
ENG. DATE
PROJ. ENG. DATE
PROG. DATE
NEXT HIGHER ASSY.
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION

TITLE: MFII-L 1ST MEMORY (POWER HARNESS)

SIZE: D | CODE: 1A | NUMBER: 7009565-0-0 | REV: A

DIST

REVISIONS			
LTR	CHANGE NO	DESCRIPTION	DATE
A	20	RELEASED	11/4/23

CAUTION — DRAWING SIZE AND SCALE REDUCED FOR MICROFILM NOT TO BE USED FOR PRODUCTION

D1A 7009565-0-0

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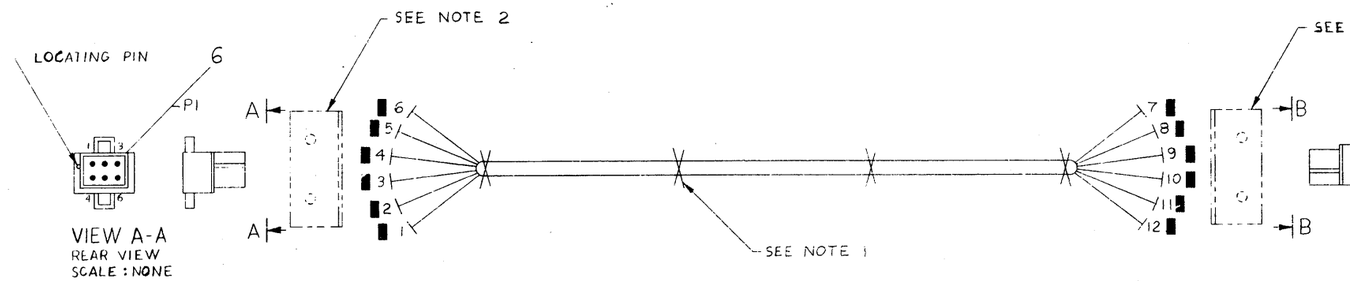
WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL	LENGTH
1	18	WHT	1	P1-6	7	7	P2-6	7	SPARE-2	12 IN
1	↑	WHT	2	P1-5	↑	8	P2-5	↑	SPARE-1	↑
3	↓	YEL	3	P1-4	↓	9	P2-4	↓	AC LO	↓
2	↓	VIO	4	P1-3	↓	10	P2-3	↓	DC LO	↓
4	↓	BRN	5	P1-2	↓	11	P2-2	↓	LINE CLOCK	↓
5	18	BLK	6	P1-1	7	12	P2-1	7	LO GND	12 IN

NOTES:
1. USE TIE WRAPS ITEM 8 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. USE CONN. BRKT. C-MD-9305761-H6-0. MOUNT WITH WOOD SCREWS. USE MATING CONN. 1209350-06.



VIEW A-A
REAR VIEW
SCALE : NONE

VIEW B-B
REAR VIEW
SCALE : NONE

SCALE
0 IN — 6 IN — 12 IN

DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

SYM	QTY.	DESCRIPTION	PART NO.	ITEM NO.
X	4	WRAP, TIE	9007031	8
▮	12	PIN, MALE	1209378-00	7
	2	HOUSING, CONN. 6 PIN	1209351-06	6
	12 IN	WIRE #18 AWG BLK	9107360-00	5
	12 IN	WIRE #18 AWG BRN	9107360-11	4
	12 IN	WIRE #18 AWG YEL	9107360-44	3
	12 IN	WIRE #18 AWG VIO	9107360-77	2
	24 IN	WIRE #18 AWG WHT	9107360-99	1

PARTS LIST

FIRST USED ON OPT/MOD

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx ± .005, xx ± .02, x ± .1
ANGLES: ± 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ▽

DRN. B. M. Morgan DATE 12-15-73
CHK'D DATE 12/17/73
ENG. DATE 12/18/73
PROJ. ENG. DATE 1-4-74
PROD. DATE 1/7/74
NEXT HIGHER ASSY.

MATERIAL: SEE PARTS LIST
FINISH
SCALE 1 / 1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: 6 PIN JUMPER HARNESS

SIZE D | CODE 1A | NUMBER 7009573-0-0 | REV.
DIST.

REVISIONS | REV. | CHANGE NO | CHK

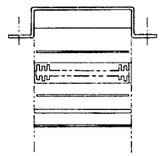
CAUTION – DRAWING SIZE AND SCALE REDUCED FOR MICROFILM NOT TO BE USED FOR PRODUCTION

D 1A 7009573-0-0

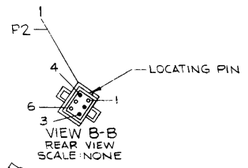
WIRE TABLE

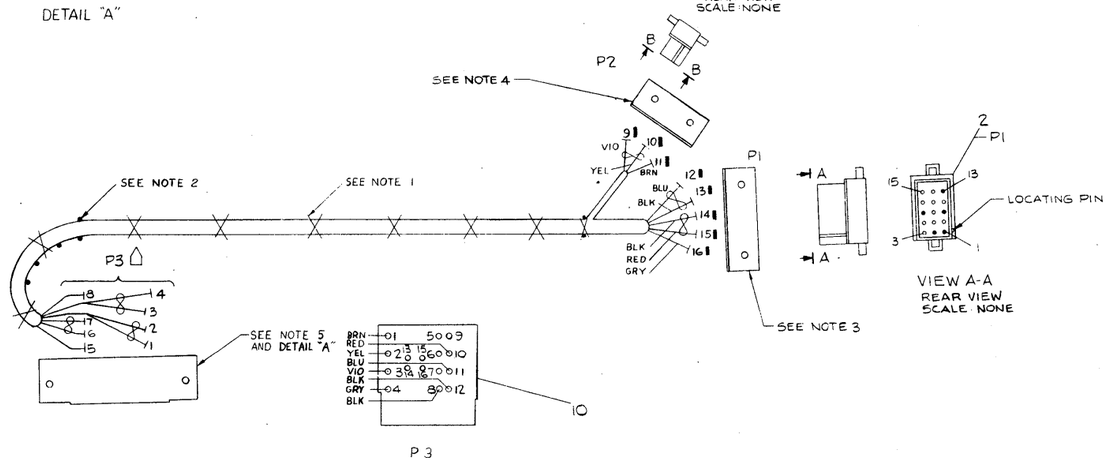
ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
5	14 TWP	RED	3	P3-10	SOLD	15	P1-1	3	+5V
		BLK	4	P3-8	SOLD	14	P1-7	3	GND
9	14	GRY	5	P3-4	SOLD	16	P1-2	3	+15V
6	14 TWP	BLK	1	P3-12	SOLD	13	P1-9	3	GND
		BLU	2	P3-11	SOLD	12	P1-13	3	-15V
8	18	BRN	8	P3-1	SOLD	11	P2-2	3	LTc
7	18 TWP	VIO	6	P3-3	SOLD	9	P2-3	3	DcLo
		YEL	7	P3-2	SOLD	10	P2-4	3	AcLo
11	22	-	-	P3-13	SOLD	-	P3-14	SOLD	DcLo
11	22	-	-	P3-15	SOLD	-	P3-16	SOLD	AcLo

NOTES:
1. USE TIE WRAPS (X) ITEM #4 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. DOT (●) INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY, COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.
3. USE CONN BRKT G-MD-9305761-H15-0 MOUNT WITH WOOD SCREWS USE MATING CONN 1209350-15.
4. USE CONN BRKT G-MD-9305761-H6-0 MOUNT WITH WOOD SCREWS USE MATING CONN 1209350-06
5. USE CONN. HOLD DOWN B-MD-9305767-0-0 WITH PLATE B-MD-9305767-0-1, USE TAPE DEC #9008734 (CONN H897 DEC# 1209123) REMOVE PINS & FLANGES AS SHOWN IN DETAIL "A". MOUNT WITH WOOD SCREWS.



DETAIL "A"





SCALE
0 IN. 6 IN. 12 IN.

DO NOT REDUCE
DO NOT BUILD FROM REDUCED PRINT

SYM	QTY	DESCRIPTION	PART NO	ITEM NO.
	A/R	BUSS WIRE #22 AWG	9107560-01	11
	1	POWER CONN	G772	10
	A/R	WIRE #14AWG GRY	9107370-88	9
	A/R	WIRE #18AWG BRN	9107360-11	8
	A/R	WIRE #18TWP YEL/VIO	9107430-47	7
	A/R	WIRE #14TWP BLK/BLU	9107440-06	6
	A/R	WIRE #14TWP BLK/RED	9107440-02	5
X	A/R	WRAP TIE	9007031	4
	8	PIN, MALE	1209378-00	3
	1	HOUSING, CONN. 15 PIN	1209351-15	2
	1	HOUSING, CONN. 6 PIN	1209351-06	1

PARTS LIST

FIRST USED ON OPTION/MODEL

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

DRAWN — DATE
CHECKED DATE
ENGR DATE
MFG DATE

[redacted] EQUIPMENT CORPORATION

TITLE G772 SYSTEM UNIT HARNESS

SIZE E | CODE IA | NUMBER 7009562-0-0 | REV.

SCALE 1/1 SHEET 1 OF 1

DWG NO. 7009562-0-0 REV. A

DO NOT SCALE DRAWING

DEC FORM NO. DRE 300