digital

11/04

Engineering Drawings

Digital Equipment Corporation

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

FIELD MAINT. PRINT SET 11/Ø4	B-TC-11/Ø4-0-1		
UNIT ASSY 11/Ø4	E-UA-11/Ø4-0-0		
UNIT ASSY 11/Ø4 (PL)	C-PL-11/Ø4-0-0		
UNIBUS TERM BOOT STRAP	D-CS-M93Ø1-YA-1		
UNIBUS TERM	D-CS-M93Ø2-Ø-1		
DRAWING DIRECTORY DD11-C (COMPLETE SET)	B-DD-DD11-C		
DRAWING DIRECTORY DD11-P (COMPLETE SET)	B-DD-DD11-P	NOTE 2	5.25 INCH MOS H777 BA11-L BOX
PRINT SET BA11-L	MPØØØ18		
PRINT SET KY11-LA	MPØØØ17		
PRINT SET MS11-E	MPØØØ21		
PRINT SET KD11-D	MPØØØ2Ø		
PRINT SET MM11-YP	MP00317		
PRINT SET MM11-DP	MPØØØ32		
PRINT SET MM11-CP	B-DD-MM11-C		
DRAWING DIRECTORY 11/Ø4	B-DD-11/Ø4-Ø		
PRINT SET DL11-W	MPØØ1Ø6		
PARITY CONTROL MODULE	B-CS-M785Ø-Ø-1	NOTE 2	5.25 INCH CORE H777 BA11-L BOX
SHIPPING LIST 11/Ø4(5.25)	A-PL-11/Ø4-Ø-2		
SHIPPING LIST 11/Ø4(10.5)	A-PL-11/Ø4-Ø-3		
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MOUNTING BOX	UA-BA11-K DD-BA11-K PL-BA11-K		
UNIBUS TERM BOOT	D-CS-M9312-0-1	NOTE 1	10.5 INCH MOS BA11-K BOX

NOTES:

1. ALL 10.5" VERSIONS OF THE 11/04 COMPUTER WITH SERIAL NUMBERS GREATER THAN _____ CONTAIN 32 AMP., + 5 VOLT REGULATORS AND ARE BATTERY BACK-UP COMPATIBLE. — NOTE 1 — 10.5 INCH CORE BA11-K BOX

2. ALL 5.25" VERSIONS OF THE 11/04 COMPUTER WITH SERIAL NUMBERS GREATER THAN _____ CONTAIN 32 AMP., +5 VOLT REGULATORS. ALL 5.25" VERSIONS ARE BATTERY BACKUP COMPATIBLE. — NOTE 2 — 5.25 INCH MOS H777 BA11-L BOX

UNIT VARIATIONS COVERED BY THIS PRINT SET	UNIT VARIATIONS COVERED BY THIS PRINT SET
11/Ø4-AA	
11/Ø4-AB	
11/Ø4-AC	
11/Ø4-AD	
11/Ø4-BA	
11/Ø4-BB	
11/Ø4-BC	
11/Ø4-BD	
11/Ø4-DA	
11/Ø4-DB	
11/Ø4-DC	
11/Ø4-DD	
11/Ø4-FC	11/Ø4-JC
11/Ø4-FD	11/Ø4-JD
11/Ø4-HC	
11/Ø4-HD	
11/Ø4-MC	
11/Ø4-MD	
11/Ø4-HA	
11/Ø4-HB	
11/Ø4-DH	
11/Ø4-DJ	
11/Ø4-LH	
11/Ø4-LJ	
11/Ø4-DM	
11/Ø4-DN	
11/Ø4-HH	11/Ø4-JH
11/Ø4-HJ	11/Ø4-JJ
11/Ø4-MH	
11/Ø4-MJ	
11/Ø4-HM	
11/Ø4-HN	
11/Ø4-LC	
11/Ø4-LD	

11/04

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ19

REVISIONS	REV.	CHG. NO.	DATE
	A	11/Ø4-3	30MAR76
	B	11/04-4	6JULY76
	C	11/04-7	5-MAY-77
	D	11/04-9	5-DEC-77
	E	11/04-10	2FEB-78

EK-01124-16-NS76-CZ71

DRB 124

USED ON OPTION/MODEL

SHEET 1 OF 1

DRN.	D. HEALY	DATE 9/30/75
CHK'D	D. HEALY	DATE 9/30/75
PROJ. ENG.	B Benstead	DATE 10-22-75
FIELD SERV.	M Grubb	DATE 10-22-75

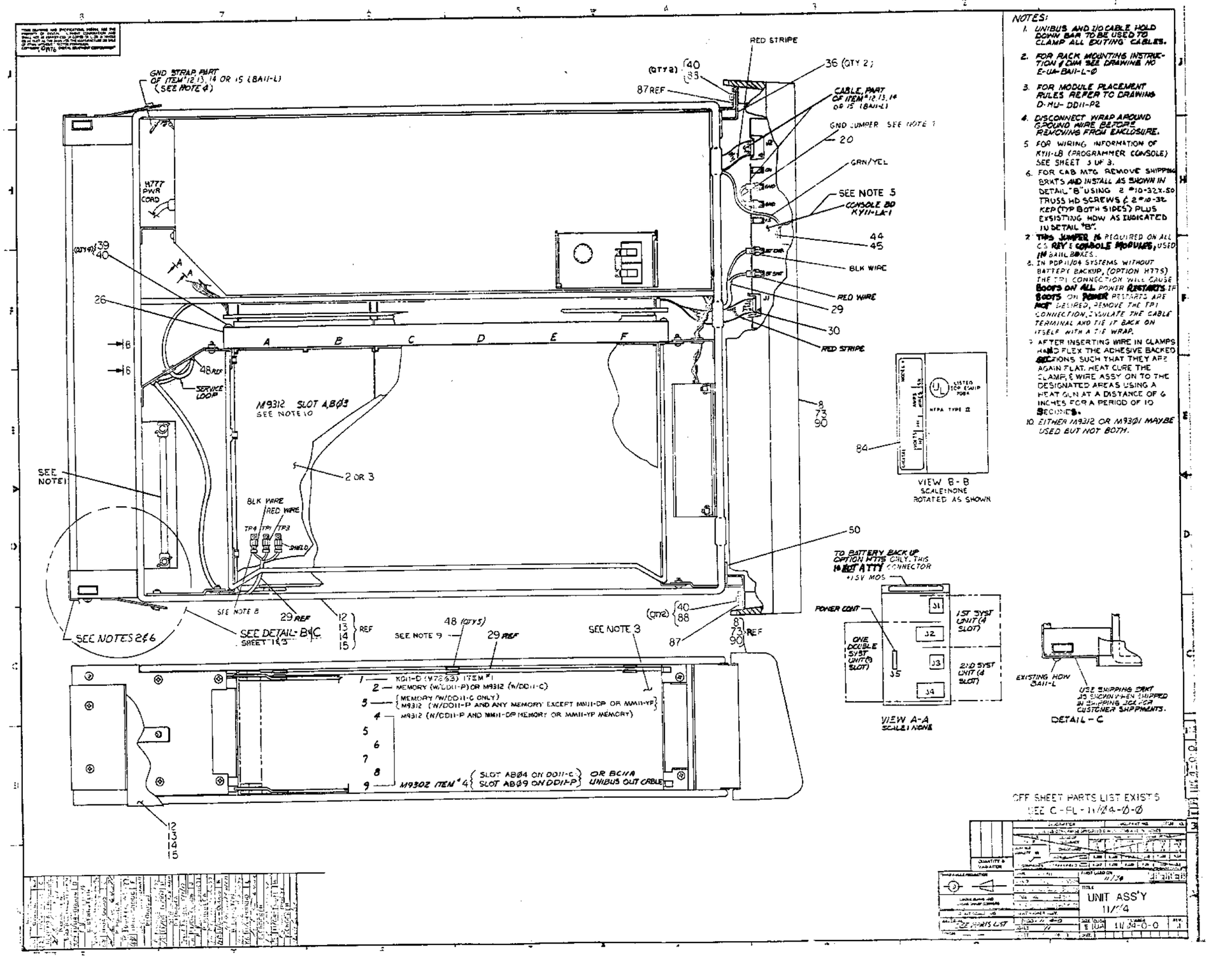
digital

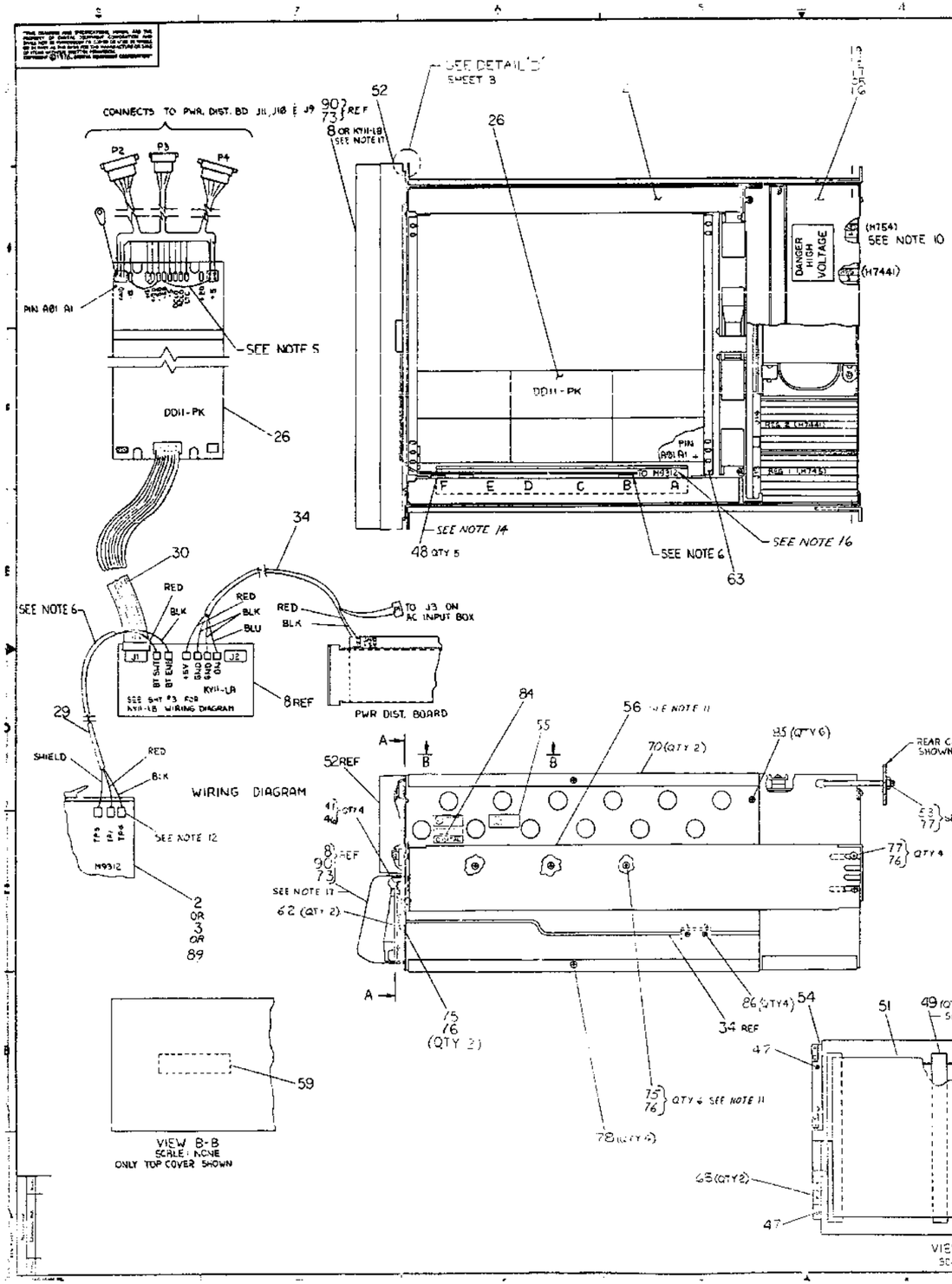
TITLE: FIELD MAINTENANCE PRINT SET 11/Ø4

SIZE	CODE	NUMBER	REV.
B	TC	11/Ø4-0-1	E

DIST.

2



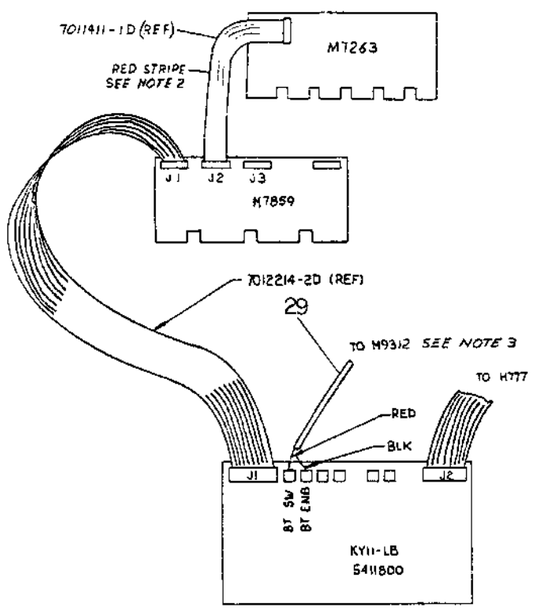


NOTES:

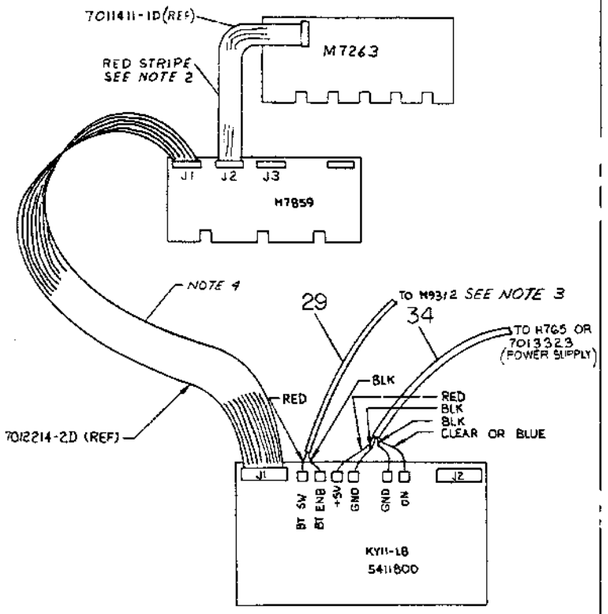
1. CAUTION : OFF SHEET PARTS LIST EXISTS SEE A-PL-11/04-0.
2. SEE DD11-P MODULE UTILIZATION DRAWING FOR MODULE PLACEMENT INFORMATION.
3. FOR ADDITIONAL INFORMATION REFER TO E-UA-BA11-K-0 & E-UA-7013323-0-1
4. TIGHTEN ALL SYSTEM UNIT MOUNTING SCREWS TO 13 IN LBS WITH A TORQUE SCREW DRIVER.
5. WHEN THE DD11-PK IS USED WITH A BA11-K EXPANSION BOX WITHOUT BATTERY BACK UP, INSTALL THE THREE JUMPERS SHOWN:
   - J1 - J5 TO -15B
   - J1 - J5 TO +15B
   - J1 - J5 TO +5B

   USE # 20 INSULATED BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEMORY VOLTAGE RAILS.
6. LOOP THE M9312 CABLE ITEM # 29 UNDER THE CABLE HOLD DOWN BAR. (SERVICE LOOP)
7. TIE DOWN FIG, PART OF ITEM # 16, WITH TWO TIE WRAPS (ITEM #60) WHEN H754 IS NOT USED.
8. ~~GROUND THE BLK CHASSIS GROUND UNDER THE H754 MOUNTING SCREW.~~
9. CUTOUT IN FILTER ITEM # 51 FOR ROUTING OF CABLES ITEM # 34 & 29.
10. H754 REGULATOR AVAILABLE ONLY IN CORE MEMORY SYSTEMS.
11. *THESE ITEMS ARE INSTALLED AT F.A. & T.*
12. *IN PDP11/04 SYSTEMS WITHOUT BATTERY BACKUP (OPTION H775), THE TP4 CONNECTION TO THE M9312 WILL CAUSE BOOTS ON ALL POWER RESTARTS. IF BOOTS ON POWER RESTARTS ARE NOT DESIRED, REMOVE THE TP4 CONNECTION, INSULATE THE CABLE TERMINAL AND TIE IT BACK ON ITSELF WITH A TIE WRAP.*
13. *REPLACE FOAM STRIPS WITH ITEM 49, 2 PLACES, & ADD TWO OUTSIDE STRIPS AS SHOWN.*
14. AFTER INSERTING WIRE IN CLAMPS, HAND FLEX THE ADHESIVE BACKED SECTIONS SUCH THAT THEY ARE AGAIN FLAT HEAT CURE THE CLAMP & WIRE ASSY ON TO DESIGNATED AREAS USING A HEAT GUN AT A DISTANCE OF 6 INCHES FOR A PERIOD OF TEN SECONDS
15. *GND THE GRN W/YELLOW TRACE CHASSIS GND TERMINAL WITH TWO WIRES ON THE STANDOFF GND THE OTHER TERMINAL TO THE STUD ON THE AC INPUT ASSY. GND THE AC INPUT ASSY TO THE STUD ON THE H745 P.S.*
16. *EITHER M9312 OR M9301 MAYBE USED BUT NOT BOTH.*
17. KY11-B CABLE IS TO BE RUN BEHIND THE CONSOLE BUT IN FRONT OF THE FILTER TO THE RIGHT SIDE OF THE MACHINE THEN THRU THE HOLE IN THE FILTER AND UP OVER THE CPU MODULES TO THE M7859.

WIRING DIAGRAMS FOR KYII-LB

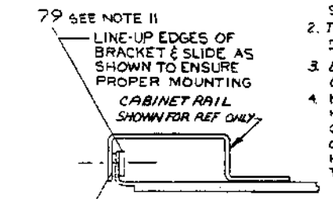


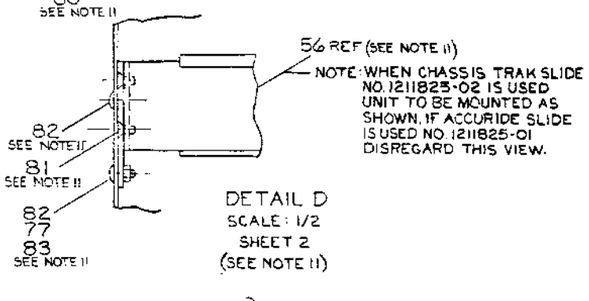
BAII-L
5 1/4" MTG BOX



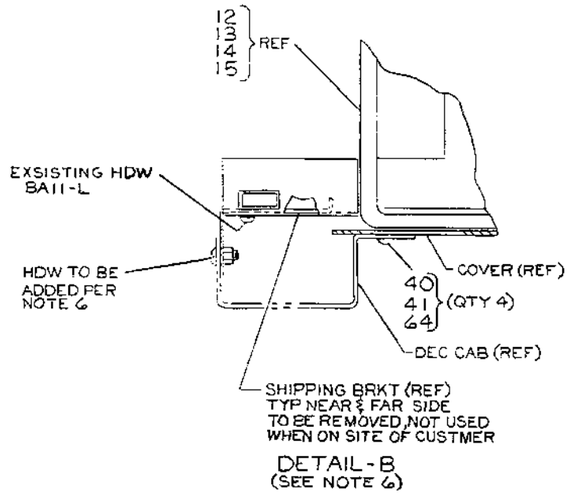
BAII-KA & 7013323
10½" MTG BOX & POWER SUPPLY

NOTES:
1. THE M7859 PROGRAMMERS CONSOLE INTERFACE MODULE, WHEN USED, MUST BE INSTALLED IN THE CPU BACKPLANE. IT IS AN SPC MODULE.
2. THIS CABLE IS TO BE INSTALLED DURING MAINTENANCE ONLY.
3. EITHER M9312 OR M9301 MAYBE USED BUT NOT BOTH.
4. KYII-LB CABLE IS TO BE RUN BEHIND THE CONSOLE BUT IN FRONT OF THE FILTER TO THE RIGHT SIDE OF THE MACHINE THEN THRU THE HOLE IN THE FILTER AND UP OVER THE CPU MODULE TO THE M7859.





DETAIL D
SCALE: 1/2
SHEET 2
(SEE NOTE 11)



DETAIL-B
(SEE NOTE 6)

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIT ASSY 11/04	D	UA	11/04-0-0	A1
SCALE	SHEET 3 OF 3	DIST		

11/04-0-0 DUA

5

ITEM NO.	DRAWING NO.	DESCRIPTION	11/04 AA	11/04 AB	11/04 BA	11/04 BB	11/04 CA	11/04 CB	11/04 AC	11/04 AD	11/04 BC	11/04 BD	11/04 DC	11/04 DD	11/04 AC	11/04 AD	11/04 FC	11/04 FD	11/04 HC	11/04 HD	11/04 MC	11/04 MD	11/04 HA	11/04 HB	11/04 JC	11/04 JD	11/04 JA	11/04 JB	11/04 DA	11/04 DB	11/04 LA	11/04 LB	11/04 FA	11/04 FB	11/04 HJ	11/04 ME	11/04 AA	11/04 JH	11/04 JJ	11/04 DM	11/04 DN	11/04 HM	11/04 HN
1	A-PL-KD11-D-Ø	11/Ø4 CPU (M7263)	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
2	D-CS-M9361-YA-1	TERM/BOOT (OEM) SEE NOTE 2	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	D-CS-M9301-YF-1	TERM/BOOT (END USER) SEE NOTE 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
4	D-CS-M9302-Ø-1	UNIBUS TERMINATOR/SACK TURN AROUND	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
5	B-CS-G727-Ø-1	GRANT CONTINUITY	2	2	2	2	2	2	7	7	7	7	7	7	6	6	7	7	7	7	6	6	7	7	6	6	7	7	6	6	7	7	6	6	6	6	6	6	6	6	6	6
6	A-PL-DL11WA-Ø (SEE NOTE 1)	SERIAL LINE/LINE CLOCK (M7856)/CABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
7	D-CS-M7858-Ø-1	PARITY, MEMORY MODULE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
8	D-UA-KY11-LA-Ø	CONSOLE, OPERATORS	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
9	A-PL-MS11-JP-Ø	MEMORY, MOS 16K X 12 BIT (M7847)	-	-	-	-	1	1	-	-	-	-	1	1	2	2	-	-	-	-	-	-	-	-	-	-	1	1	2	2	-	-	-	-	-	-	-	1	1	-	-
10	D-UA-MM11-DP-Ø	MEMORY, CORE 16K X 18BIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	-	-	-	-	-	-	-	-	1	1	2	2	-	-	-	-	-	1	1
11	D-UA-MM11-CP-Ø	MEMORY, CORE 8K X 18BIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	E-UA-BA11-LM-Ø	MOUNTING BOX 5.25 MOS ONLY 115V	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	E-UA-BA11-LN-Ø	MOUNTING BOX 5.25 MOS ONLY 230V	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	E-UA-BA11-LK-Ø	MOUNTING BOX 5.25, CORE/MOS 115V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	E-UA-BA11-LL-Ø	MOUNTING BOX 5.25, CORE/MOS 230V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	E-UA-7013323-00	POWER SUPPLY ASSY. (MOS ONLY 120V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-	-	-
17	E-UA-7013323-03	POWER SUPPLY ASSY. (MOS ONLY 240V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-	-
18	E-UA-7013323-02	POWER SUPPLY ASSY. (CORE/MOS 120V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1	-
19	E-UA-7013323-05	POWER SUPPLY ASSY. (CORE/MOS 240V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1
20	C-IA-7012752-0-0	CABLE, JUMPER - KY11LA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	D-UA-BA11-KA-Ø	MOUNTING BOX 10.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	-	-	-	1	1	1	1
22	A-PL-MS11-EP-Ø	MEMORY, MOS 4K X 18BIT (M7847)	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	A-PL-MS11-FP-Ø	MEMORY, MOS 8K X 18 BIT (M7847)	-	-	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	D-UA-MM11-C-Ø	MEMORY, CORE 8K X 16 BIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	C-AD-7011528-0-0	BACKPLANE, 4 SLOT	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	A-PL-DD11-PK-Ø	BACKPLANE, 9 SLOT	-	-	-	-	-	-	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
27	B-MU-DD11-C-2	MODULE UTILIZATION (DD11-C)	REF	REF	REF	REF	REF	REF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	B-MU-DD11-P-2	MODULE UTILIZATION (DD11-P)	-	-	-	-	-	-	REF	REF	REF	REF	REF	REF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	C-IA-7011413-3F-Ø	CABLE, EXTERNAL BOOT M9301	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
30	C-IA-7011411-ØJ-Ø	CABLE, CONSOLE/BACKPLANE	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
31	A-PL-11/04-Ø-2	SHIPPING LIST 11/Ø4 (5.25)	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	A-PL-11/Ø4-Ø-3	SHIPPING LIST 11/Ø4 (10.5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	-	-	-	-
33	D-UA-MM11-YP-Ø	MEMORY, CORE 32K x 18 BIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
34	D-IA-7011992-0-0	CONSOLE POWER HARNESS (K BOX)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
~~35~~	~~D-IX-7008360-0-1~~	~~CABLE ASSY FTS (COMM)~~																																							
36	C-MD-7414962-0-0	BRKT, FILTER SUPPORT	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	~~D-IA-7012196-1-0~~	~~MOUNTING BRACKET CONSOLE (LEFT)~~																																							
38	~~D-IA-7012195-0-0~~	~~MOUNTING BRACKET CONSOLE (RIGHT)~~																																							
39	9006043-01	SCR PHIL, PAN HD 8-32 x 1.00	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
40	9008072	WASHER, EXT. TOOTH #8	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
41	9006037-3	SCR PHIL TRUSS HD 8-32 x .38	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
~~42~~	~~9003382~~	~~WASHER, FLAT #8~~																																							
43	9008135	~~NUT, KEP #6~~																																							

NOTE 1, DL11WA CABLE IS ADDED AT FA & T.
2. EITHER M9312 OR M9301 BUT NOT BOTH MAYBE USED.

REVISIONS			
CHK	CHANGE NO.		REV.
VH	11/Ø4-00003	REVISED AND RETYPED	C
E.H.HINSTEIN			
P.C.	11/Ø4-00004	B. BERNSTEIN	D
P. PORRECA	11/Ø4-00005		E
P. PORRECA	11/Ø4-00006		F
P. PORRECA	11/Ø4-00007		H
P. PORRECA	11/Ø4-00008		J
P. PORRECA	11/Ø4-00009	B. BERNSTEIN	K
P.C.	11/Ø4-00010		L
E.C.ROCKER	11/Ø4-00011		M
E.C.ROCKER			

DRN. B. BERNSTEIN	3/8/76	FIRST USED ON 11/Ø4
CHK'D.		TITLE UNIT ASSY 11/Ø4
ENG.		
PROJ. ENG:		
PROG.		
NEXT HIGHER ASSY.		
B-UA-11/04-Ø-Ø		SIZE C, CODE PL, NUMBER 11/Ø4-Ø-Ø, REV. M
SCALE		
SHEET 1 OF 2		DIST.

digital

REV. M

SIZE C

CODE PL

NUMBER 11/Ø4-Ø-Ø

6

ITEM NO.	DRAWING NO.	DESCRIPTION	11/Ø4 AA	11/Ø4 AB	11/Ø4 BA	11/Ø4 BB	11/Ø4 DA	11/Ø4 DB	11/Ø4 AC	11/Ø4 AD	11/Ø4 BC	11/Ø4 BD	11/Ø4 DC	11/Ø4 DD	11/Ø4 EC	11/Ø4 ED	11/Ø4 FC	11/Ø4 FD	11/Ø4 HC	11/Ø4 HD	11/Ø4 MC	11/Ø4 MD	11/Ø4 HA	11/Ø4 HB	11/Ø4 JC	11/Ø4 JD	11/Ø4 DJ	11/Ø4 EJ	11/Ø4 LH	11/Ø4 LJ	11/Ø4 HH	11/Ø4 HJ	11/Ø4 HE	11/Ø4 KJ	11/Ø4 JH	11/Ø4 JJ	11/Ø4 DK	11/Ø4 DR	11/Ø4 HM	11/Ø4 HN
44	9008072	WASHER, EX.TOOTH #8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9009799	SCREW, PHIL FILL HD # 8 - 32 x .31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9006634	WASHER, LOCK #8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4
47	9006070-2	SCREW, PHIL FLAT HD 10 - 32 x .31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	8	8	8	8	8	8
48	9009771-03	CLAMP, CABLE	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3
49	1211336-2	TAPE, 6" LONG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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
50	1212707	AIR FILTER BALL-L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	1212392-02	AIR FILTER BALL-K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
52	D-UA-H950-PB-Ø	COVER, 5.25 BEZEL (SNAP ON)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
53	C-MD-7413659-0-0	SHIPPING BRACKET BALL-K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
54	1209224	LATCH, MOLDING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2
55	A-DC-7409478-0-0	DECAL, PATENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
56	D-PS-1211825-0-0	SLIDE, 3 POS., TILT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
~~57~~	~~A-DC-3309414-0-0~~	~~DECAL, CE~~	~~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~~
~~58~~	~~A-DC-3309413-0-0~~	~~DECAL, VCCI~~	~~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~~
59	B-DC-7415118-0-0	DECAL STICKER 11/Ø4	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
60	9007880	TIE WRAP	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
61	1209340-0-0	CONNECTOR, DUMMY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	1	1	-	-
62	B-MD-7417628-0-0	BRACKET, BEZEL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2
63	A-DC-7415502-0-0	MODULE DECAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
64	9006660	WASH, FL .38 O.D. x .19 I.D. x .03	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	B-MD-7417627-0-0	ADAPTER BRACKET, BEZEL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2
66	A-SP-3700061-0-0	PKG. INST. 11/Ø4 (5.25) CUSTOMER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	A-SP-3700197-0-0	PKG. INST. 11/Ø4 (5.25) INPLANT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	A-SP-3700169-0-0	PKG. INST. 11/Ø4 (10.5) CUSTOMER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
69	A-SP-3700235-0-0	PKG. INST. 11/Ø4 (10.5) INPLANT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70	D-IA-7009768-0-0	COVER, CHASSIS BALLK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2
~~71~~	~~9006622-2~~	~~SCREW, SHTL FLAT HD #6 - 32 x .25~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~
~~72~~	~~9007881~~	~~WASHER, LOCK #6~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~
73	E-MD-7415599-0-0	BEZEL 11/04	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
~~74~~	~~9007691~~	~~WASHER #10 EXT TOOTH~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~
75	9007651	WASHER #10 EXT TOOTH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	8	8	8	8	8	8
76	9006071-3	SCREW PHIL TRUSS HD #10 - 32 x .38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	12	12	12	12	12	12	12	12	12	12	12	12
77	9006565	NUT KEPS #10 -32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	7	7	7	7	7	7	7	7	7	7	7
78	9006020-3	SCREW, PHIL TRULL HD #6-32 x .25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4
79	B-MD-7417882-0-0	NUT PLATE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2
80	B-MD-7417883-0-0	PLATE, SLIDE MOUNTING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2
81	9006071-2	SCREW, PHIL FLAT HD #10-32 x .38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4
82	9006073-03	SCREW, PHIL TRUSS HD #10-32 x .50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4
83	9006664	WASHER, FLAT #10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2
84	A-PS-3613210-0-0	LABEL,ELECTRICAL DATA	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
85	9009599	SCREW, PHIL FLAT HD #10-32 x .50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	6
86	9006020-2	SCREW, PHIL FLAT HD #6-32 x .25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4
87	B-MD-7418979-0-0	STRIP,BEARING	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
88	9006039-03	SCREW, PHL TRUSS HD #8-32 x .50	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
89	D-CS-M9312-0-1	TERM/BOOT SEE NOTE 2 SHT1	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
90	D-MD-7415656-0-0	BEZEL,COVER PROTECTIVE	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

REVISIONS

REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL
11/Ø4

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.	B. BERNSTEIN	13APR76
CHK'D.	L. GILBERT	13 APR 76
ENG.	B. BERNSTEIN	13APR 76
PROJ. ENG.	B. BERNSTEIN	13APR 76
PROD.	K. MacDONALD	13APR 76

NEXT HIGHER ASSY.
2-UA-11/Ø4-Ø-Ø

SCALE

SHEET 2 OF 2

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
UNIT ASSY 11/Ø4

SIZE	CODE	NUMBER	REV.
C	PL	11/Ø4-Ø-Ø	M

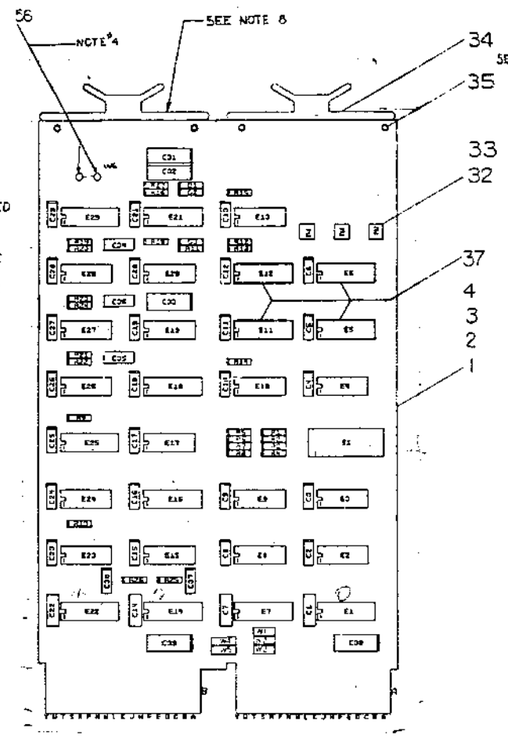
DIST.

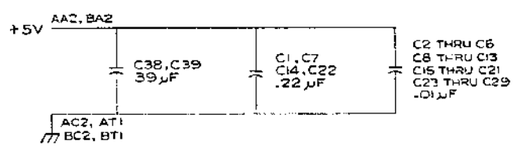
7

M9301-0-1

NOTES:

1. IN PDP11/04, 11/09 AND PDP 11/34, 11/39 SYSTEMS WITHOUT BATTERY BACKUP, TP1 SHOULD NOT BE CONNECTED TO THE POWER SUPPLY BATTERY STATUS SIGNAL UNLESS BOOTS ON ALL POWER RESTARTS ARE DESIRED.
2. IN ALL PDP11 SYSTEM WHOSE PROCESSOR MODULE DOES NOT CONTAIN GRANT PULL-UP RESISTORS, EITHER THE M9301 MUST BE POSITIONED IN THE TERMINATOR SLOT AT THE END OF THE UNIBUS FURTHEST FROM THE PROCESSOR OR JUMPERS W1 THRU W5 MUST BE INSTALLED, SO THE M9301 CAN BE INSERTED IN THE TERMINATOR SLOT NEXT TO THE PROCESSOR.
3. ON PDP11 SYSTEMS CONTAINING A BUS REPEATER OPTION, THE M9301 MUST BE INSTALLED ON THE PROCESSOR SIDE OF THE REPEATER SEE NOTE 2 FOR OTHER RESTRICTIONS.
4. JUMPER W6 SHOULD ONLY BE INSTALLED IN 11/55 AND 11/70 COMPUTERS WHOSE BACKPLANES HAVE BEEN MODIFIED FOR THIS MODULE. CONNECTOR PIN BD1 IN THESE MODIFIED BACKPLANES WILL NOT BE TIED TO GROUND.
5. EARLIER VERSIONS USED PLASTIC SWITCH COVER (PN 1211184-06) TO PREVENT INADVERTENT PROGRAMING OF S1.
6. 11/40'S WITH RK06 REQUIRE CS REVISION P OR LATER.
7. 1001610-00 AND 1001610-01 ARE INTERCHANGEABLE
8. ON THE 'YF' VARIATION THIS HANDLE IS REMOVED.





SEE NOTE 7 (item 6)

M9301-YX	M9301-YJ	M9301-YE	M9301-YH	M9301-YF	M9301-YD	M9301-YC	M9301-YB	M9301-YA	M9301	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF	REF	REF	REF	REF	REF	REF	REF	REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M9301-0-4	1
REF	REF	REF	REF	REF	REF	REF	REF	REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M9301-0-5	2
REF	REF	REF	REF	REF	REF	REF	REF	REF	REF		MODULE ECO HISTORY	B-MH-M9301-0-6	3
1	1	1	1	1	1	1	1	1	1		ETCHED CIRCUIT BOARD	5011228	4
4	4	4	4	4	4	4	4	4	4	C1, C7, C14, C22	CAP .22µF 50V	1012274-01	5
25	25	25	25	25	25	25	25	25	25	C2 THRU C6, C8 THRU C13 C15 THRU C21, C23 THRU C29	CAP .01µF 100V 20%	1001610-01	6
2	2	2	2	2	2	2	2	2	2	C30, C37	CAP .001µF 250V 20%	1000043	7
4	4	4	4	4	4	4	4	4	4	C32, C33, C38, C39	CAP 39µF 10V 10%	1000076	8
3	3	3	3	3	3	3	3	3	3	C34, C35, C36	CAP 270pF 100V 5%	1000022	9
3	3	3	3	3	3	3	3	3	3	D1, D2, D3	DIODE D664 IN3606	1100114	10
8	8	8	8	8	8	8	8	8	8	R1 THRU R8	RES 12K 1/4W 5%	1300473	11
2	2	2	2	2	2	2	2	2	2	R9, R12	RES 1K 1/4W 5%	1300325	12
4	4	4	4	4	4	4	4	4	4	R11, R13, R14, R18	RES 4.7K 1/4W 5%	1300447	13
2	2	2	2	2	2	2	2	2	2	R16, R17	RES 30K 1/4W 5%	1302394	14
3	3	3	3	3	3	3	3	3	3	R19, R21, R23	RES 47Ω 1/4W 5%	1300202	15
3	3	3	3	3	3	3	3	3	3	R20, R22, R24	RES 2K 1/4W 5%	1300388	16
2	2	2	2	2	2	2	2	2	2	R25, R26	RES 383Ω 1/4W 1%	1305125	17
2	2	2	2	2	2	2	2	2	2	E1, E22	28 RES DIVIDER NETWORK	13-12628-00	18
2	2	2	2	2	2	2	2	2	2	E7, E14	25 RES DIVIDER NETWORK	13-12628-01	19
8	8	8	8	8	8	8	8	8	8	E2, E3, E8, E9 E15, E23, E27, E28	I.C. DEC 8881	1909705	20
2	2	2	2	2	2	2	2	2	2	E4, E10	I.C. DEC 7402	1909204	21
1	1	1	1	1	1	1	1	1	1	E13	I.C. DEC 7474	1905547	22
3	3	3	3	3	3	3	3	3	3	E16, E18, E25	I.C. DEC 8837	1911116	23
1	1	1	1	1	1	1	1	1	1	E17	I.C. DEC 7420	1905577	24
2	2	2	2	2	2	2	2	2	2	E19, E24	I.C. DEC 314A	1909704	25
1	1	1	1	1	1	1	1	1	1	E20	I.C. DEC 8640	1911469	26
1	1	1	1	1	1	1	1	1	1	E21	I.C. DEC 9602	1910951	27
1	1	1	1	1	1	1	1	1	1	E26	I.C. DEC 7437	1910091	28
1	1	1	1	1	1	1	1	1	1	E29	I.C. DEC 7476	1905885	29
1	1	1	1	1	1	1	1	1	1	S1	SWITCH, DIP, 10 POLE	1211164-06	30
											~~SWITCH COVER~~	[illegible]	31
3	3	3	3	3	3	3	3	3	3		EYELET (FASTON)	9009200	32
3	3	3	3	3	3	3	3	3	3	TP1, TP2, TP3	TAB (FASTON)	9007112	33
2	2	2	2	1	2	2	2	2	2		HANDLE FLIP/CHIP MAGENTA	9008337-26	34
4	4	4	4	2	4	4	4	4	4		EYELET	9006732	35
1	1	1	1	1	1	1	1	1	1	C31	CAP 1µF 35V 10%	1001776	36

PARTS LIST

IC TYPE	GND	+5V
I.C. DEC 314	1	8
I.C. DEC 7476	13	5
I.C. DEC 8640	1	8
I.C. DEC 8837	5	16
I.C. DEC 9602	8	16

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

IC PIN LOCATIONS

REV. F
CHANGE NO.
REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: 11/04
ETCH BOARD REV. F1

DRN. J. VINCENT DATE 4/9/75
CHK'D R. COOK DATE 5/23/75
ENG. [illegible] DATE [illegible]
PROD. ENG. [illegible] DATE [illegible]
APP'D R. PETERSON DATE [illegible]
NEXT HIGHER ASSY

digital

TITLE UNIBUS TERMINATOR/ BOOTSTRAP

SIZE D
CODE CS
NUMBER M9301-0-1
SCALE
SHEET 1 OF 5
DIST.

8

4	4	4	4	4	4	4	4	4	E5, E6, E11, E12	SOCKET, 16 PIN, I.C.	1211813	37
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	E5	I.C. DEC. TRI-STATE 2048 ROM	23Ø34A9	38
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	E6	I.C. DEC TRI-STATE 2048 ROM	23Ø35A9	39
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	E11	I.C. DEC TRI-STATE 2048 ROM	23Ø36A9	40
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	E12	I.C. DEC TRI-STATE 2048 ROM	23Ø37A9	41
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E5	I.C. DEC TRI-STATE 2048 ROM	23Ø38A9	42
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E6	I.C. DEC TRI-STATE 2048 ROM	2303949	43
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E11	I.C. DEC TRI-STATE 2048 ROM	23Ø40A9	44
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E12	I.C. DEC TRI-STATE 2048 ROM	23Ø41A9	45
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E5	I.C. DEC TRI-STATE 2048 ROM	23Ø42A9	46
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E6	I.C. DEC TRI-STATE 2048 ROM	23Ø43A9	47
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E11	I.C. DEC TRI-STATE 2048 ROM	23Ø44A9	48
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E12	I.C. DEC TRI-STATE 2048 ROM	23Ø45A9	49
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2048 ROM	23Ø46A9	50
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2048 ROM	23Ø47A9	51
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2048 ROM	23123A9	52
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2048 ROM	23Ø49A9	53
Ø	7	7	5	Ø	Ø	Ø	Ø	Ø	W1 THRU W5	JUMPER, WIRE, WHITE INSULATION.	9Ø99185	54
2	2	2	2	2	2	2	2	2	R10-R15	RES 220Ω, 1/4W, 5%	1300271	55
2	2	2	2	2	2	2	2	2		SPLIT LUG	9006735	56
Ø	2	2	2	1	0	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2048 ROM	23480A9	57
Ø	2	Ø	2	1	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2048 ROM	23481A9	58
Ø	2	2	2	1	2	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2048 ROM	23482A9	59
Ø	2	2	2	1	2	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2048 ROM	23483A9	60
Ø	2	2	1	1	Ø	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2048 ROM	23332A9	61
Ø	2	Ø	1	1	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2048 ROM	23333A9	62
Ø	2	2	1	1	Ø	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2048 ROM	23334A9	63
Ø	2	2	1	1	Ø	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2048 ROM	23335A9	64
Ø	2	1	Ø	Ø	2	2	2	2	E5	I.C. DEC. TRI-STATE 2048 ROM	23538A9	65
Ø	2	1	Ø	Ø	Ø	2	2	2	E6	I.C. DEC. TRI-STATE 2048 ROM	23539A9	66
Ø	2	1	Ø	Ø	Ø	Ø	2	2	E11	I.C. DEC TRI-STATE 2048 ROM	23540A9	67
Ø	2	1	Ø	Ø	Ø	Ø	Ø	2	E12	I.C. DEC. TRI-STATE 2048 ROM	23541A9	68
Ø	1	2	2	Ø	2	2	2	2	E5	I.C. DEC. TRI-STATE 2048 ROM	23520A9	69
Ø	1	Ø	Ø	2	2	2	2	2	E6	I.C. DEC. TRI-STATE 2048 ROM	23521A9	70
Ø	1	2	Ø	2	2	2	2	2	E11	I.C. DEC. TRI-STATE 2048 ROM	23522A9	71
Ø	1	Ø	Ø	2	2	2	2	2	E12	I.C. DEC. TRI-STATE 2048 ROM	23523A9	72
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R		WIRE 30 GA.	9105740-55	73
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2048 ROM	23744A9	74
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2048 ROM	23745A9	75
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2048 ROM	23746A9	76
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2048 ROM	23747A9	77
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R		CEMENT PERMABOND	9009157	78

QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
M9301-YX	M9301-YJ	M9301-YE	M9301-YH	M9301-YC	M9301-YD	M9301-YG	M9301-YE	M9301-YA	M9301			

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	UNIBUS TERMINATOR/BOOTSTRAP			
SIZE	CODE	NUMBER	REV	
D	CS	M9301-Ø-1		
SCALE	—	SHEET 2 OF 3	DIST	

M9301-Ø-1

9

EXTERNAL BOOT SWITCH
PWR UP CLR L
POWER UP REBOOT ENABLE
BUS AC LO L
DC LO H
ENAB DATA H
ENAB DATA L
BUS SSYN L
BUS INIT L
PWR UP CLR L
ENAB BOOT ADRS L
ENAB JUMP L
LOW ROM ENABLE
BUS AI7 L
BUS AI6 L
BUS AI5 L
BUS AI4 L
BUS AI3 L
BUS AI2 L
BUS AI1 L
BUS AI0 L
BUS A09 L
BUS A08 L
BUS A07 L
BUS A06 L
BUS A05 L
BUS A04 L
BUS A03 L
BUS A02 L
BUS A01 L
BUS MSYN L
BUS CI L
A08 H
A07 H
A06 H
A05 H
A04 H
A03 H
A02 H
A01 H
765XXX L
* 765XXXL
* 773XXX L

* ADRESS BITS A13-A17 ARE DECODED BY E24

** CAUTION SHOULD BE TAKEN TO GUARANTEE PROPER NOISE FILTERING & LOGIC LEVELS ON THESE INPUTS

*** JUMPER W6 SHOULD ONLY BE INSTALLED IN 11/55 AND 11/70 COMPUTERS WHOSE BACKPLANES HAVE BEEN MODIFIED FOR THIS MODULE.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	UNIBUS TERMINATOR/ BOOTSTRAP	SIZE	CODE	NUMBER / REV.
		D	CS	M9301-0-1 V
SCALE	SHEET 3 OF 5	DIST.		

10

765XXX L
A08 H
A07 H
A06 H
A05 H
A04 H
A03 H
A02 H
A01 H

E12 TRI-STATE D — 04 03 02 01 — ME1
ROM DI5 H
ROM DI4 H
ROM DI3 H
ROM DI2 H

E11 * TRI-STATE C — 04 03 02 01 — ME1
ROM DI1 H
ROM DIØ H
ROM DØ9 H
ROM DØ8 L

E9 * TRI-STATE B — 04 03 02 01 — ME1
ROM DØ7 L
ROM DØ6 L
ROM DØ5 L
ROM DØ4 L

E5 * TRI-STATE A — 04 03 02 01 — ME1
ROM DØ3 L
ROM DØ2 L
ROM DØ1 L
ROM DØØ H

* SEE PARTS LIST FOR PART NO.

TOP VIEW

ADRESS A6	1	16	V_{CC} SUPPLY VOLTAGE
ADRESS A5	2	15	A7 ADRESS
ADRESS A4	3	14	A8 ADRESS
ADRESS A3	4	13	$\overline{CE}$ CHIP ENABLE
ADRESS A0	5	12	O1 OUTPUT
ADRESS A1	6	11	O2 OUTPUT
ADRESS A2	7	10	O3 OUTPUT
GND	8	9	O4 OUTPUT

23-000A9Ø1

3. BLANK PROMS HAVE DEC PART NO. 23-000A9Ø1
4. BIPOLAR 2048 (512 X 4) BIT PROMS PIN COMPATIBLE MAY BE USED WITH TRI-STATE OUTPUTS AND ACCESS TIME < 75 ns @ 70°C (INTERSIL 5624, MMI 6306, SIGNETICS 825131, ETC)

ADRESS RANGE	
765000-765776	LOW ROM
773000-773776	HIGH ROM

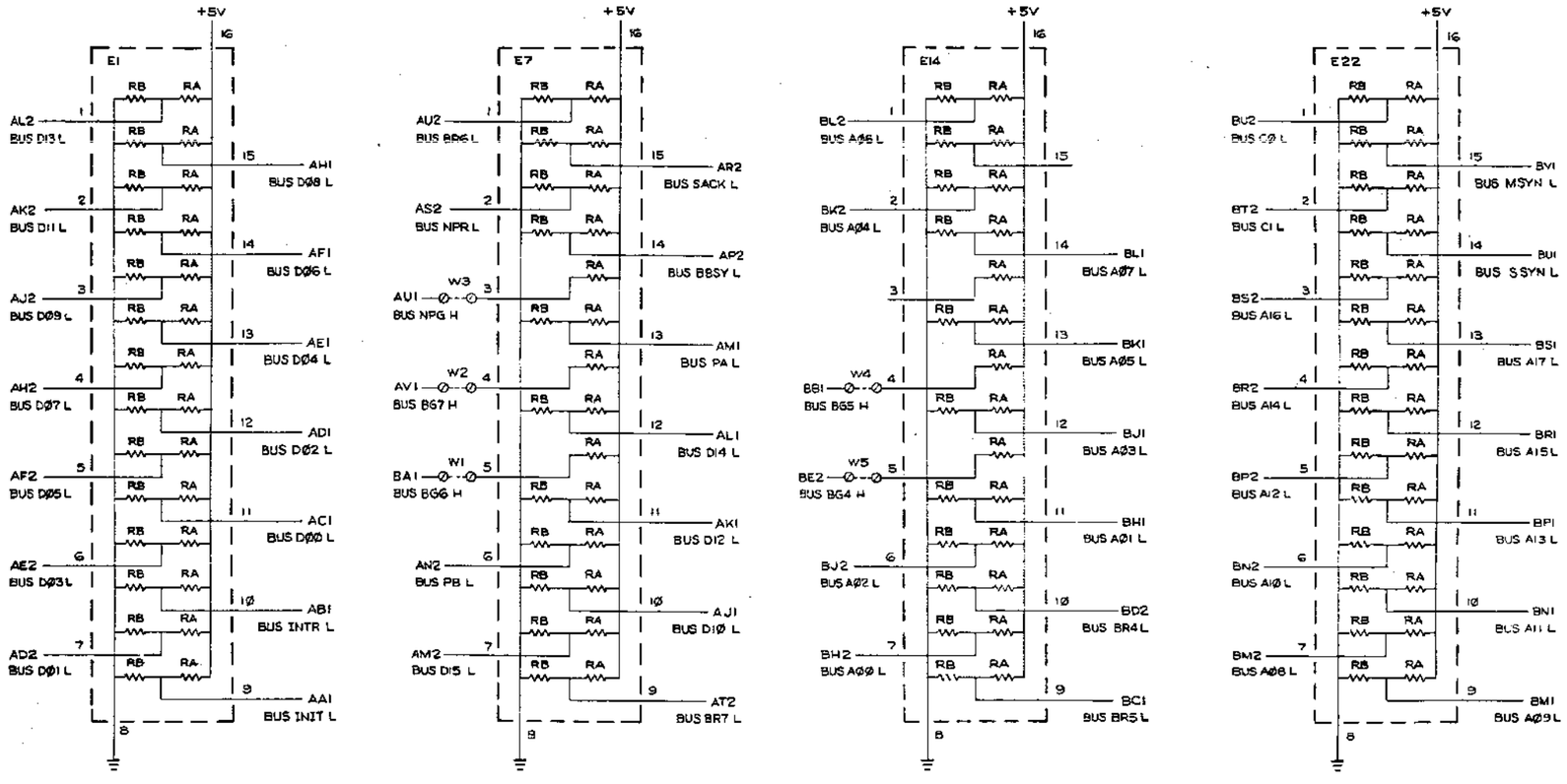
ROM DI5 H — 8881 E8 — AM2 — BUS DI5 L
ROM DI4 H — 8881 E9 — AL1 — BUS DI4 L
ROM DI3 H — 8881 E9 — AL2 — BUS DI3 L
ROM DI2 H — 8881 E8 — AK1 — BUS DI2 L
ROM DI1 H — 8881 E9 — AK2 — BUS DI1 L
ROM DIØ H — 8881 E9 — AJ1 — BUS DIØ L
ROM DØ9 H — 8881 E8 — AJ2 — BUS DØ9 L

+5V

ROM DØ8 L — 7402 E1Ø — S1-3 — R2 1ØK — 8881 E3 — AH1 — BUS DØ8 L
ROM DØ7 L — 7402 E1Ø — S1-4 — R4 1ØK — 8881 E2 — AH2 — BUS DØ7 L
ROM DØ6 L — 7402 E1Ø — S1-5 — R3 1ØK — 8881 E2 — AF1 — BUS DØ6 L
ROM DØ5 L — 7402 E1Ø — S1-6 — R7 1ØK — 8881 E3 — AF2 — BUS DØ5 L
ROM DØ4 L — 7402 E4 — S1-7 — R6 1ØK — 8881 E3 — AE1 — BUS DØ4 L
ROM DØ3 L — 7402 E4 — S1-8 — R5 1ØK — 8881 E2 — AE2 — BUS DØ3 L
ROM DØ2 L — 7402 E4 — S1-9 — R1 12K, R2 12K — 8881 E2 — AD1 — BUS DØ2 L
ROM DØ1 L — 7402 E4 — S1-1Ø — 8881 E3 — AD2 — BUS DØ1 L
ENAB DATA L
ENAB JUMP L
ENAB DATA H — 8881 E8 — AC1 — BUS DØØ L
ROM DØØ H

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	UNIBUS TERMINATOR/BOOTSTRAP	SIZE	CODE	NUMBER	REV.
SCALE	SHEET 4 OF 5	D	CS	M9301-Ø-1	V
		DST.			



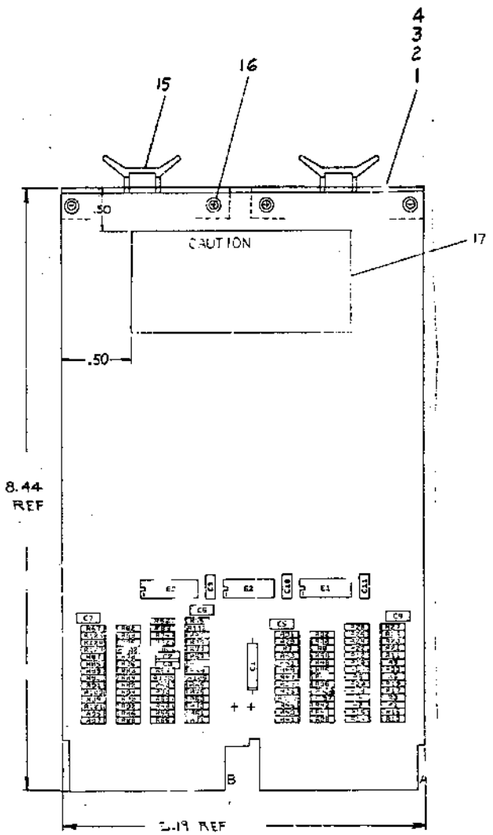
NOTES:
1. ALL RA RESISTORS SHOWN ARE 176.5Ω, ±2%
2. ALL RB RESISTORS SHOWN ARE 375Ω, ±2%
3. JUMPERS W1 THRU W5 ARE ONLY INSERTED ON THE M93Ø1-YC AND M93Ø1-YH IF USED IN AN 11/7Ø COMPUTER.

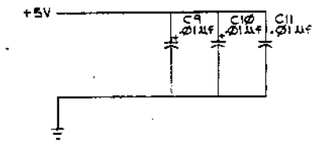
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS TERMINATOR/BOOTSTRAP	D	CS	M9301-YC-1	V
SCALE —/— SHEET 5 OF 5	DIST.			

NOTES:

1. THE FOLLOWING REFERENCE DESIGNATIONS ARE NOT USED: C8, R24, AND R110.





IC DEC 8837	8	16
IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

REF		DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y HOLE COORDINATE HOLE LOCATION	A-CC-M9302-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AM-M9302-0-5	2
REF		MODULE ECO HISTORY	B-MM-M9302-0-6	3
REF		ETCHED CIRCUIT BOARD	5011311	4
3	C9,C10,C11	CAP .01 uf 100V 20% DISC	1001613-01	5
1	C1	CAP 39 uf 10V 10%	1000078	6
~~1~~	~~C8~~	~~CAP 4.7 uf 35V 10%~~	~~1004395~~	~~7~~
4	C4 THRU C7	CAP .22 µf 50V 5%	1010274-01	8
2	C2,C3	CAP .001 µf 200V 20% DISC	1000043	9
56	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,R54,R56,R58,R60 R62,R65,R69,R70,R72,R74,R76 R78,R80,R82,R84,R86,R88,R90 R92,R94,R96,R98,R100,R102,R57,R66,R37,R52,R93,R108,R111	RES 383 OHM 1/4W 1%	1305125	10
54	R1,R3,R5,R7,R9,R11,R13,R15 R17,R19,R21,R23,R25,R27,R29 R31,R33,R35,R39,R41,R43,R45 R47,R49,R51,R53,R55,R59,R61 R63,R65,R67,R71,R73 R75,R77,R79,R81,R85,R87,R89 R91,R93,R95,R97,R99,R101, R103 THRU R107,R109,R112	RES 178 OH 1/4W 1%	1311422	11
1	E2	I.C. DEC 7430	1005578	12
1	E1	I.C. DEC 8881	1005709	13
1	E3	I.C. DEC 8837	1911116	14
2		HANDLE, FLIP-CHIP (MAGENTA)	9008337-6	15
4		EYELETS	9006782	16
1		DECAL	B-CC-7415791-C-1	17

FIRST USED ON OPTION MODEL

ETCH BOARD REV B

SEMICONDUCTOR CONVERSION CHART

DEC NO	EIA NO.	DEC NO	EIA NO.

REV	CHK	CHANGE NO.	REVISIONS
B		M9302-00001	
C		M9302-00002	
D		M9302-00003	

DRN. T. Mack 10/31/74
CHK'D. B. Bernstein 11/5/74
ENG. R. Barry 14 June 76
PROJ. ENG. M. Schwartz 6-11-75
PROD. [illegible] 6-13-75
NEXT HIGHER ASSY

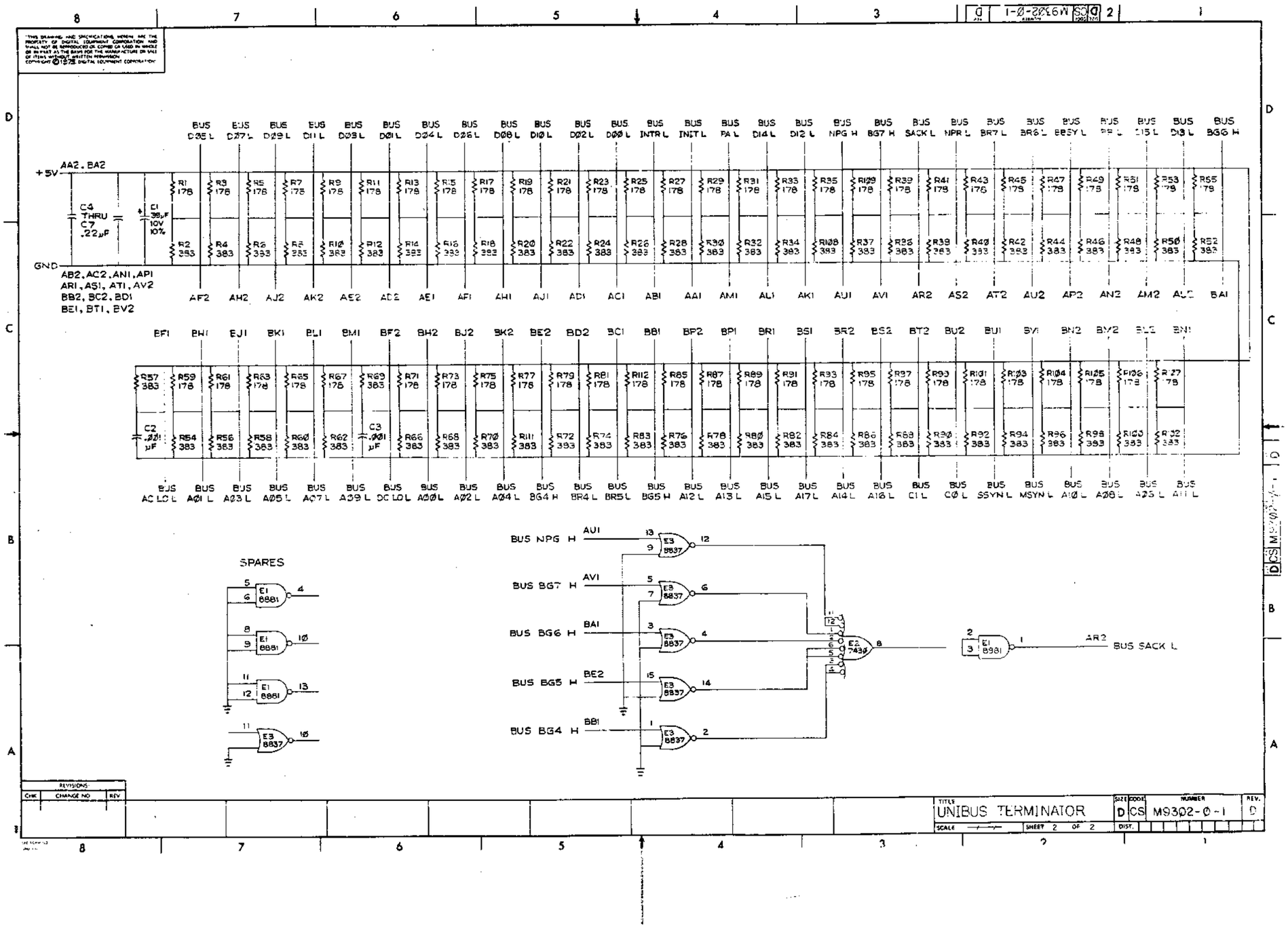
digital EQUIPMENT CORPORATION

TITLE: UNIBUS TERMINATOR

SIZE D | CODE DCS | NO. M9302-0-1 | REV. D

SCALE | SHEET 1 OF 2 | DIST.

DCS M9302-0-1 D



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS TERMINATOR	D	CS	M9302-0-1	0
SCALE —	SHEET 2 OF 2	DIST.		

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY (DD11-C)	B-DD-DD11-C		
BACK PLANE ASSY (DD11-CK)	D-IA-7011528-0-0		
POWER HARNESS (BA11-K,BA11-L)	D-IA-7011127-0-0		
BACK PLANE ASSY (DD11-CF)	D-IA-7012445-0-0		
POWER HARNESS (BA11-F,BA11-P)	E-IA-7011128-0-0		
MODULE UTILIZATION (DD11-C)	D-MU-DD11-C-2		
CIRCUIT SCHEMATIC (DD11-C)	D-CS-5411560-0-1		
WIRE LIST (COMPLETE)	K-WL-DD11-C-1		

NOTE: DD11CK assemblies are electrically incompatible with DD11-CF assemblies. A DD11-CK will work in BA11-L and BA11-K boxes. A DD11-CF will work in BA11-F and BA11-P boxes only.

UNIT VARIATIONS

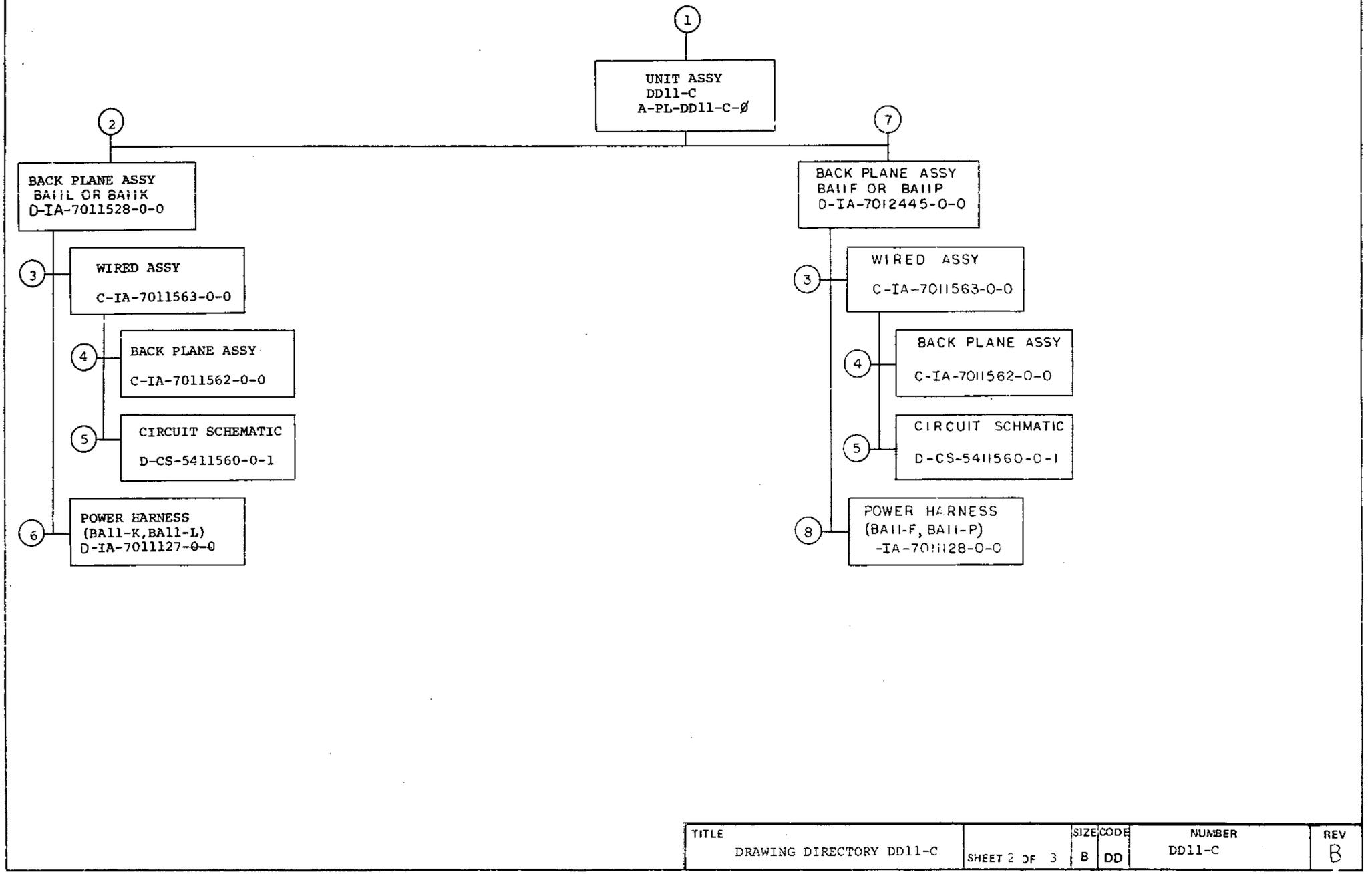
VAR	TITLE	PRINT SET 1
DD11-CK	BACK PLANE ASSY (BA11-L/BA11-K)	X
DD11-CF	BACK PLANE ASSY (BA11-F/BA11-P)	X

REVISIONS		
REV	A	B
CHG. NO.	DD11C-2	DD11C-3
DATE	5-76	5-77

EN-01062-1A-16-R972-(1250)

USED ON OPTION/MODEL		DRN.	DATE	TITLE
		D. HEALY	6/25/75	DRAWING DIRECTORY DD11-C
		CHK'D. D. HEALY	DATE 6/25/75	
		PROJ ENG. R. BARRY	DATE 7/30/75	
		PROD. R.K.	DATE 8/18/75	SIZE B / CODE DD / NUMBER DD11-C / REV B
		FIELD SERV.	DATE	DIST
SHEET 1 OF 3				

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY DD11-C	SHEET 2 OF 3	B	DD	DD11-C	B

DRB 107

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-DD11-C-Ø		1	UNIT ASSY DD11-C	
X			D-MU-DD11-C-2		1	MODULE UTILIZATION	
X		2	D-IA-7011528-0-0		1	BACK PLANE ASSY (BA11L,BA11K)	
		3	C-IA-7011563-0-0		1	WIRED ASSY	
X			K-WL-DD11-C-1		1	WIRE LIST	
			A-WT-7011563-0		1	AWT REV STATUS	
X		5	D-CS-5411560-0-1			CIRCUIT SCHEMATIC	
X		6	D-IA-7011127-0-0		1	POWER HARNESS (BA11-K,BA11-L)	
X		7	D-IA-7012445-0-0		1	BACK PLANE ASSY (BA11-F,BA11-P)	
X		8	E-IA-7011128-0-0		1	POWER HARNESS (BA11-F,BA11-P)	

MECHANICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-DD11-C-Ø		1	UNIT ASSY DD11-C	
		2	D-IA-7011528-0-0		1	BACK PLANE ASSY (BA11-L,BA11-K)	
		3	C-IA-7011563-0-0		1	WIRED ASSY	
			B-DC-5308753-0-0		1	DECAL 21 POINT (LTR)	
			A-DC-7411881-0-0		1	LABEL, AWT REV STATUS	
		4	D-IA-7011562-0-0		1	BACK PLANE ASSY	
		5	D-CS-5411560-0-1			CIRCUIT SCHEMATIC	
			D-AH-5411560-0-4			ASSY/DRILLING HOLE LAYOUT	
			K-CO-5411560-0-5			X-Y COORDINATE HOLE LOCATION	
			B-MH-5411560-0-6			MODULE ECO HISTORY	
			5011559			ETCH CIRCUIT BOARD	
		6	D-IA-7011127-0-0		1	POWER HARNESS (BA11-K,BA11-L)	
		7	D-IA-7012445-0-0		1	BACK PLANE ASSY (BA11-F,BA11-P)	
		8	E-IA-7011128-0-0		1	POWER HARNESS (BA11-F,BA11-P)	

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
DRAWING DIRECTORY DD11-C	SHEET 3 OF 3	3	DD	DD11-C	B

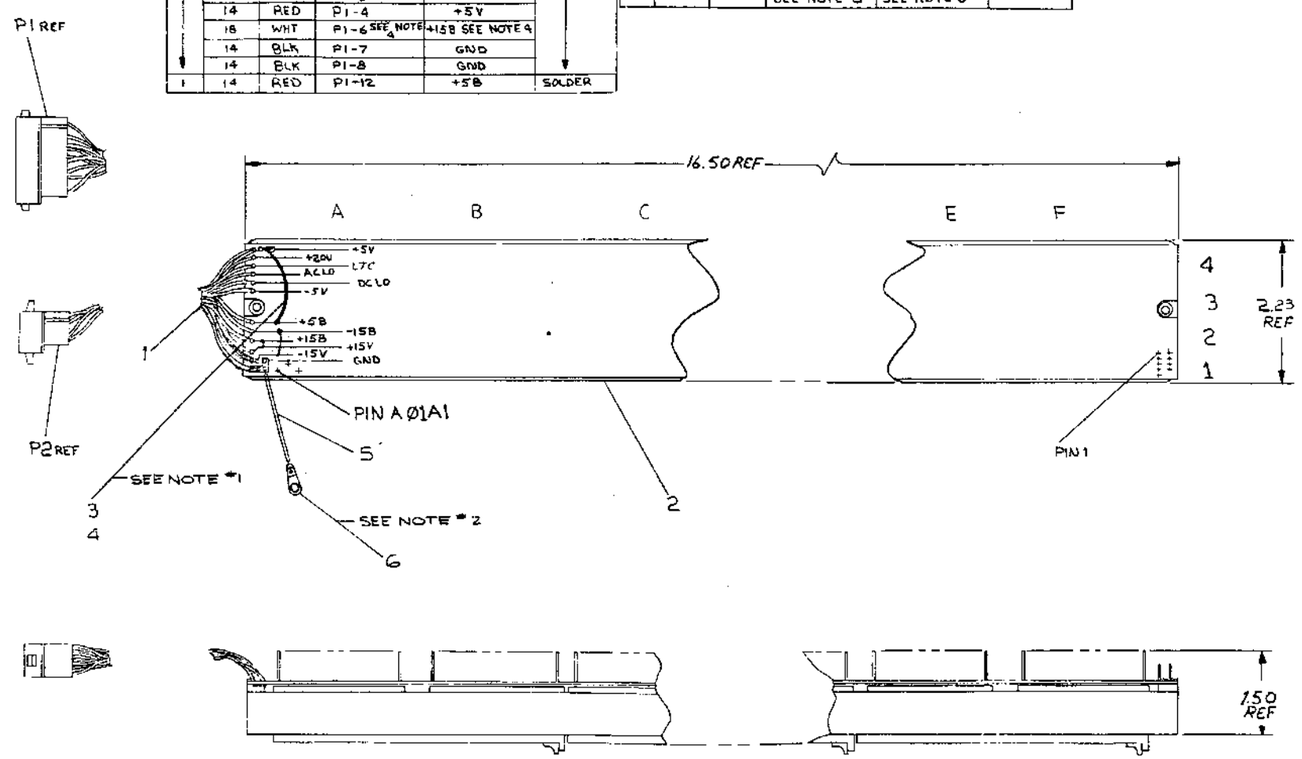
DRB 108

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	WITH
1	18	BLK	P2-1	GND	SOLDER
	18	BRN	P2-2	LTC	
	18	VIO	P2-3	DC LO	
	18	YEL	P2-4	AC LO	
	14	RED	P1-1	+5V	
	18	GRY	P1-2	+15	
	18	ORN	P1-3	+20V	
	14	RED	P1-4	+5V	
	18	WHT	P1-6 SEE NOTE 4	+15B SEE NOTE 4	
	14	BLK	P1-7	GND	
	14	BLK	P1-8	GND	
1	14	RED	P1-12	+5B	SOLDER

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	WITH
1	18	BLU	P1-13	-15V	SOLDER
1	18	BRN	P1-14	-5V	
1	18	GRN	P1-15 SEE NOTE 4	-15B SEE NOTE 4	
1	18	GRN	P1-6 SEE NOTE 5	+15B SEE NOTE 5	
1	18	WHT	P1-15 SEE NOTE 5	-15B SEE NOTE 5	SOLDER



NOTES:

1. WHEN THE DD11-CK'S USED WITH A BA11-K EXPANSION BOX WITHOUT BATTERY BACK-UP (i.e., NO 7857 OR 7850), INSTALL THE FOLLOWING JUMPERS SHOWN:
   1) -15 TO -15B
   2) +15 TO +15B
   3) +5 TO +5B (SEE NOTE 3)
   USE #22 SHIELDED BUS WIRE ON SIDE 2 THIS WILL PROVIDE POWER TO THE MOS MEMORY VOLTAGE RAILS.
2. INSTALL SHAKEPROOF SOLDER LUG (ITEM #6) UNDER THE SYSTEM UNIT MOUNTING SCREW TO PROVIDE A LOGIC GROUND TO CHASSIS GROUND CONNECTION
3. BA11-K'S THAT USE THE 5410869-YA-1 POWER DISTRIBUTION (i.e., 11/34A, 11/34 WITH FP11-AU, AND SOME 11/04'S) AND HAVE MORE THAN ONE DD11-CK (OR AN ADDITIONAL DD11-DK) CAN ONLY HAVE THE +5 TO +5B JUMPER IN ONE OF THE BACK PANELS. IF TWO OF THE BACK PANELS HAVE THE JUMPER IN, THE +5V REGULATORS MAY BE CONNECTED TOGETHER. TYPICALLY THIS JUMPER IS IN THE FIRST BACK PANEL, BUT IT MAY BE PLACED IN ONE OF THE OTHER BACK PANELS IF DEEMED NECESSARY FOR POWER REQUIREMENTS.
4. WHEN USING REV. C HARNESS USE THESE POINT-TO-POINT CONNECTIONS.
5. WHEN USING REV B OR EARLIER HARNESS, USE THESE POINT-TO-POINT CONNECTIONS

1	SHAKEPROOF SOLD. LUG	9008150	6
2"	WIRE #18AWG STRD (BLK)	9107360-00	5
6"	TUBING #22 (BLUE)	9107256-06	4
6"	WIRE, BUS #22	9107560-01	3
1	WIRED ASSY DD11-C	D-IA-7011563-0-0	2
1	HARNESS POWER	D-IA-7011127-0-0	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 0.6	OVER 0.6 TO 2.5	OVER 2.5 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
SURFACE QUALITY 125 ✓	MEDIUM ☐	±.005	±.008	±.012	±.020	±.04
MICROINCHES	PREFERRED ☐	±.010	±.016	±.025	±.04	±.080

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURR AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DRN. M. Boyle 4/18/75
CHK'D. [illegible] 4/18/75
ENG. R. Rooney 7-30-75
PROJ. ENG'R R. Rooney 7-30-75
PROD. [illegible] 8/18/75
NEXT HIGHER ASSY. A-PL-DDII-C-0
SCALE NONE
SHEET 1 OF 1

FIRST USED ON BA11-L,K

digital

TITLE
BACK PLANE ASS'Y
DD11-CK

SIZE	CODE	NUMBER	REV.
D	IA	7011528-0.0	D

DIST.

REVISIONS	DWG/ECO NO.	REV.
DD11C-00001		A
DD11C-00002		B
DD11C-00003		C
DD11-0001		D

DEC FORM NO. DMD 1100-C

WIRE TABLE

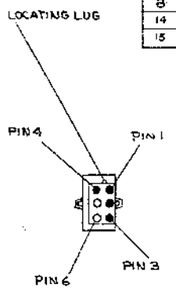
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
7	18	GRN	1	P1-15	ITEM 3	28		STRIP &	-15B
8	18	BRN	2	P1-14	↓	19		TIN	-5V
9	18	BLU	3	P1-13		24			-15V
6	14	RED	4	P1-12		26			+5B
5	14	BLK	5	P1-8		29			GND
5	14	BLK	6	P1-7		27			GND
10	18	WHT	7	P1-6		25			+15B
6	14	RED	8	P1-4		17			+5V
11	18	ORN	9	P1-3		18			+20V
12	18	GRY	10	P1-2		23			+15V
6	14	RED	11	P1-1		16			+5V
13	18	BLK	12	P2-1		20			GND
8	18	BRN	13	P2-2		22			LTC
14	18	VIO	14	P2-3	↓	21		STRIP &	DC LO
15	18	YEL	15	P2-4	ITEM 3	30		TIN	AC LO

NOTES:
1. USE TIE, CABLE (X) WHERE INDICATED.

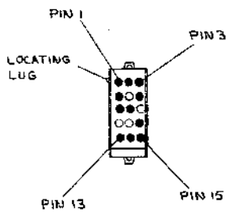
DO NOT REDUCE

0 IN 6 IN 12 IN

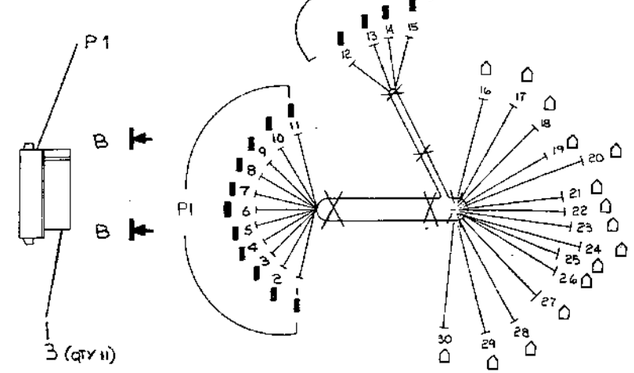
SCALE
FOR MFG PURPOSES ONLY



VIEW A-A
WIRING SIDE
SCALE: NONE



VIEW B-B
WIRING SIDE
SCALE: NONE



	A/R	WIRE #18 STRD YEL	9107360-44	15
	A/R	WIRE #18 STRD VIO	9107360-77	14
	A/R	WIRE #18 STRD BLK	9107360-00	13
	A/R	WIRE #18 STRD GRY	9107360-88	12
	A/R	WIRE #18 STRD ORN	9107360-33	11
	A/R	WIRE #18 STRD GRN	9107360-55	10
	A/R	WIRE #18 STRD BLU	9107360-66	9
	A/R	WIRE #18 STRD BRN	9107360-11	8
	A/R	WIRE #18 STRD WHT	9107360-99	7
	A/R	WIRE #14 STRD RED	9107370-22	6
	A/R	WIRE #14 STRD BLK	9107370-00	5
X	5	TIE WRAP PANDUIT	9007680	4
	15	PIN MALE	1209378-01	3
	1	CONN 6 PIN MAT LOCK	1209351-06	2
	1	CONN 15 PIN MAT LOCK	1209351-15	1

REVISIONS			
ECO NO.	REV.	DESCRIPTION	DATE
7011127-00001	A		
7011127-00002	B		
7011127-00003	C		

DRAWN			
CHK'D			7/11/72
ENG.			7-30-73
PROJ. ENG'R			7-30-73
PROD.			8/1/73
NEXT HIGHER ASSY.			
D-EA-7011228-0-0			
SCALE	1/1		
SHEET	1	OF 1	

QUANTITY & VARIATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
ANGLES ±0°30'
SURFACE QUALITY 125
SHOP OF ACCURACY (CHECK ONE): MEDIUM ☐ PREFERRED ☐
NOMINAL DIMENSIONS ABOVE INCHES

	OVER 0 TO 6	OVER 6 TO 12	OVER 12 TO 24	OVER 24 TO 48	OVER 48 TO 96
MEDIUM	±.005	±.008	±.012	±.016	±.031
PREFERRED	±.012	±.016	±.025	±.04	±.062

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH: —

FIRST USED ON: DD11-CK

digital

TITLE: HARNESS DD11-CK

SIZE: D | CODE: IA | NUMBER: 7011127-0-0 | REV: C

DIST.

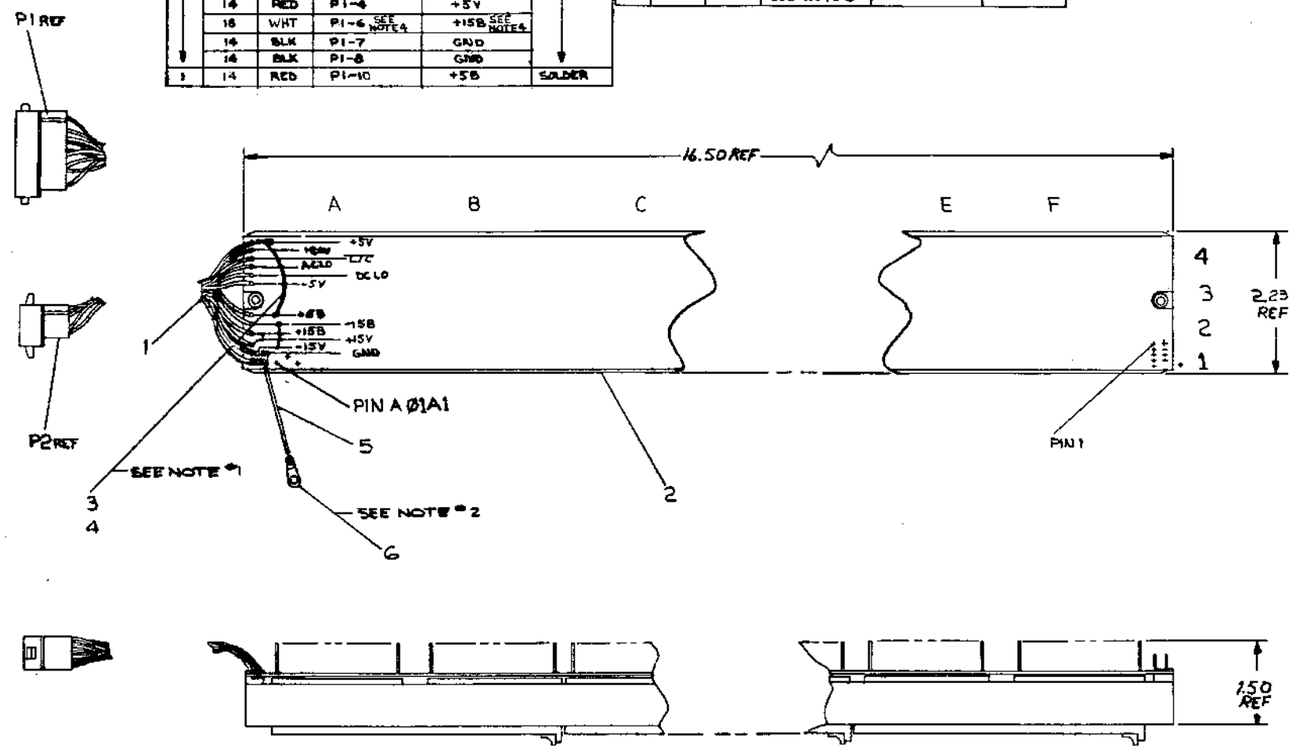
WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	WITH
1	18	BLK	P2-1	GND	SOLDER
1	18	BRN	P2-2	LTC	
1	18	VIO	P2-3	DC LO	
1	18	YEL	P2-4	AC LO	
1	14	RED	P1-1	+5V	
1	18	GRY	P1-2	+15	
1	18	ORN	P1-3	+20V	
1	14	RED	P1-4	+5V	
1	18	WHT	P1-6 SEE NOTE 4	+15B SEE NOTE 4	
1	14	BLK	P1-7	GND	
1	14	BLK	P1-8	GND	
1	14	RED	P1-10	+5B	SOLDER

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	WITH
1	18	BLU	P1-13	-15V	SOLDER
1	18	BRN	P1-14	-5V	
1	18	GRN	P1-15 SEE NOTE 4	-15B SEE NOTE 4	
1	18	GRN	P1-6 SEE NOTE 5	+15B	
1	18	WHT	P-15 SEE NOTE 5	-15B	SOLDER

NOTES:
1. WHEN THE DDII-CF IS USED WITH A BAII-F EXPANSION BOX WITHOUT BATTERY BACK-UP, INSTALL THE THREE JUMPERS SHOWN:
   1) -15 TO -15B
   2) +15 TO +15B
   3) +5 TO +5B
   USE #22 SHIELDED BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEMORY VOLTAGE RAILS.
2. INSTALL SHAKEPROOF SOLDER LUG (ITEM #6) UNDER THE SYSTEM UNIT MOUNTING SCREW TO PROVIDE A LOGIC GROUND TO CHASSIS GROUND CONNECTION
3. THE BAII-F POWER HARNESS ITEM #1 IS NOT ELECTRICALLY COMPATIABLE WITH THE BAII-E OR BAII-K MOUNTING BOX.
4. WHEN USING REV. A HARNESS USE THESE POINT-TO-POINT CONNECTIONS.
5. WHEN USING REV Ø HARNESS USE THESE POINT-TO-POINT CONNECTIONS.



1	SHAKEPROOF SOLD LUG	9008180	6
2'	WIRE #26AWG STRD (BLK)	9107360-00	5
6"	TUBING #22 (BLUE)	9107256-06	4
6"	WIRE, BUS #22	9107560-01	3
1	WIRED ASSY DDII-C	D-IA-7012563-0-01	2
1	HARNESS, POWER F BOX	D-IA-7011228-0-0	1
	DESCRIPTION	DWG/PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCUR. (CHECK ONE)	DECIMALS	.X ±0.1	.XX ±0.01	.XXX ±0.005	.XXXX ±0.0005	FRACT. ±1/64	OVER 40 SQ. IN.
SURFACE QUALITY IN MICROINCHES	MEDIUM		±.004	±.010	±.020	±.050	±.031	±.062
	PREFERRED		±.002	±.005	±.010	±.025	±.015	±.031

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

SEE PARTS LIST

FINISH

DRN F. Smiley 1/22/76
CHK'D D. Mack
ENG E. J. Ramos 2-10-76
PTRL ENG R. Bell 2-10-76
PROJ K. Jones 2-12-76
NEXT HIGHER ASSY.
A-PL-DDII-C-0

FIRST USED ON BAII-F

digital

TITLE BACK PLANE ASS'Y DDII-CF

SIZE D | CODE | NUMBER D IA 7012445-0-0 | REV. A

SCALE NONE
SHEET 1 OF 1
DIST.

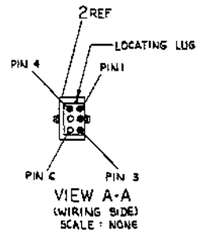
REV.	CHK	CHANGE NO.
A	D. BARRY	ASY DDII-C-00003

ASSY NO.	REV.
7012445-0-0	A

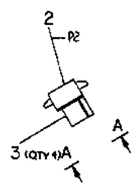
WIRE TABLE

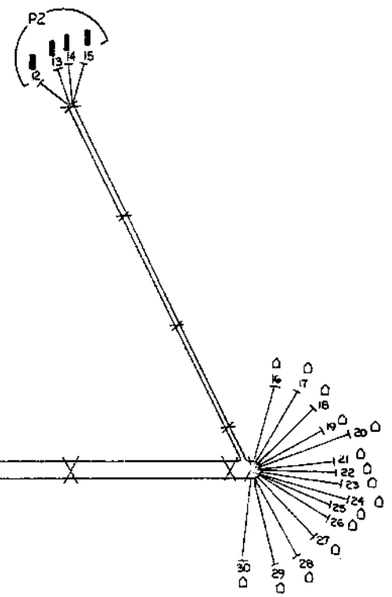
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
7	18	GRN	1	P1-15	ITEM 3	28		STRIP &	-15 B
8	18	BRN	2	P1-14		19		TIN	-5V
9	18	BLU	3	P1-13		24			+15 V
6	14	RED	4	P1-10		26			+ 5B
5	14	BLK	5	P1-9		29			GND
5	14	BLK	6	P1-7		27			GND
10	18	WHT	7	P1-6		25			+15B
6	14	RED	8	P1-4		17			+ 5V
11	18	ORN	9	P1-3		18			+ 20V
12	18	GRY	10	P1-2		23			+15 V
6	14	RED	11	P1-1		16			+ 5V
13	18	BLK	12	P2-1		20			GND
3	18	BRN	13	P2-2		22			LTC
14	18	VIO	14	P2-3		21		STRIP &	DC LO
15	18	YEL	15	P2-4	ITEM 3	30		TIN	AC LO

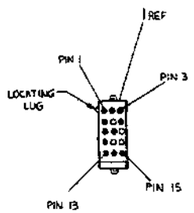
NOTES:
1. USE TIE, CABLE (X) WHERE INDICATED.



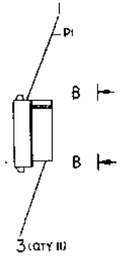
VIEW A-A
(WIRING SIDE)
SCALE : NONE







VIEW B-B
(WIRING SIDE)
SCALE : NONE



DO NOT REDUCE
SCALE
6 IN
0 IN
12 IN
FOR MANUFACTURING PURPOSES ONLY

	0.2	WIRE, #18 STRD YEL	9107360-44	15
	AR	WIRE, #18 STRD VIO	9107360-77	14
	AR	WIRE, #18 STRD BLK	9107360-00	13
	AR	WIRE, #18 STRD GRY	9107360-88	12
	AR	WIRE, #18 STRD ORN	9107360-33	11
	AR	WIRE, #18 STRD GRN	9107360-55	10
	0.2	WIRE, #18 STRD BLU	9107360-66	9
	AR	WIRE, #18 STRD BRN	9107360-11	8
	AR	WIRE, #18 STRD WHT	9107360-99	7
	AR	WIRE, #16 STRD RED	9107370-22	6
	AR	WIRE, #16 STRD BLK	9107370-00	5
X	9	TIE WRAP, PANDUIT	9007390-01	4
	15	PIN, MALE	1209379-01	3
	1	CONN, 6 PIN MAT LOCK	1209351-06	2
	1	CONN, 15 PIN MAT LOCK	1209351-15	1
	QUANTITY	DESCRIPTION	MFG. PART NO.	ITEM NO.

SYMBOL

QUANTITY & VARIATION

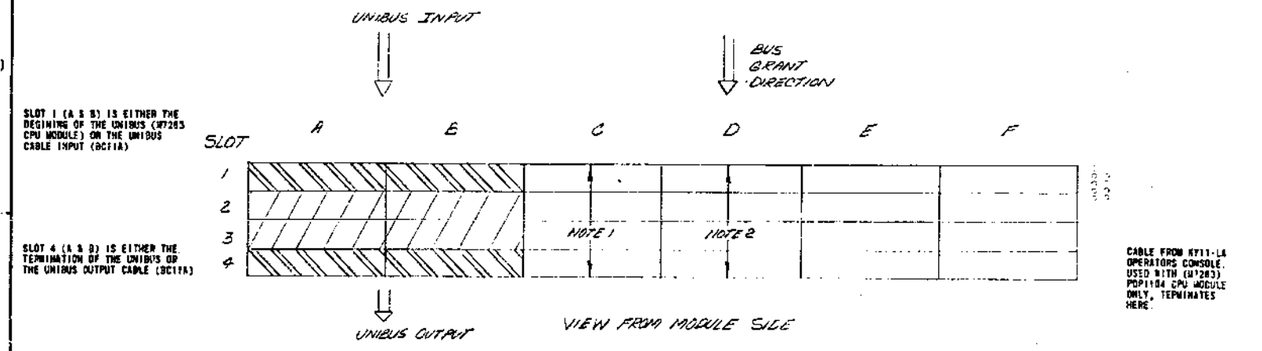
PART NUMBER DD11-CF

TITLE HARNESS DD11-CF

PARTS LIST

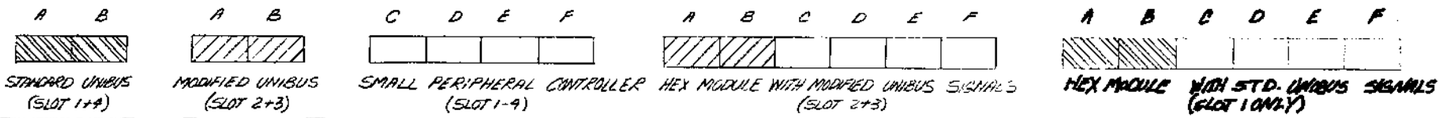
SIZE B | CODE IDENT | NUMBER A1701125-0-0 | REV. A

SCALE 1/1 | SHEET 1 OF 1



NOTES:

1. REMOVE CAI TO CDI WIRE WRAP JUMPER TO INSTALL AN HPR OPTION IN ANY SPC SLOT.
2. G727 REQUIRED IN ANY UNUSED SPC SLOT TO PROVIDE BUS GRANT CONTINUITY.
3. GRANT DIRECTION IS SLOT 1 TO SLOT 4.
4. USE M9202 TO INTERCONNECT SYSTEM UNITS INSTEAD OF M920. M9202 IS A 2 FT. UNIBUS JUMPER CABLE USED TO DISTRIBUTE UNIBUS LOADING.
5. M9302 (SACK/TERM) AND M930 (TERM) MUST NEVER BE INSTALLED IN ANY SLOT OTHER THAN SLOT 4 (A & B). POWER SUPPLY VOLTAGES WILL BE SHORTED OUT IF THESE TERMINATORS ARE MOUNTED IN THE MODIFIED UNIBUS SLOTS.
6. MODIFIED UNIBUS SECTION CARRIES CORE AND MOS MEMORY VOLTAGE RAILS AND MEMORY PARITY CONTROL SIGNALS INSTEAD OF BUS GRANT AND SOME GND SIGNALS THAT ARE CONTAINED IN STANDARD UNIBUS SLOTS.
7. INSTALL M9312 IN SLOT 2 ONLY FOR 1600 UNIBUS TERMINATION.
8. EITHER M9312 OR M9301 MAYBE USED BUT NOT BOTH.



GENERAL

ANY HEX MODULE THAT MEETS THE FOLLOWING REQUIREMENTS CAN BE MOUNTED IN THESE SLOTS.
1. THOSE PINNED TO TAKE SIGNALS FROM MODIFIED UNIBUS (A & B) WITH THE BUS GRANTS TAKEN FROM SPC SLOTS 1 TO 4 ONLY.
2. THOSE PINNED TO TAKE SIGNALS FROM STANDARD SPC PINNING WITH THE EXCEPTION OF POWER FROM (A & B) for SPECIAL OPTIONS

REVISIONS			
DIR	ECO#	REV	
AT	M010-00001	A	
	M010-00002	B	
	M010-00003	C	

DRN	R. GRADY	7-10-75
CHK'D	J. Kay	7-10-75
ENG.	M. Cole	7-10-75
PROJ. ENG.	J. Kay	7-10-75
PROD.		
NEXT HIGHER ASSY.		
MATERIAL		
FINISH		
SCALE		
SHEET	OF	

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES

ANGLES ±0°30'	CLASS OF ACCURACY						
SURFACE QUALITY IN MICROINCHES		OVER 0 TO 0.5	OVER 0.5 TO 2.5	OVER 2.5 TO 10	OVER 10 TO 40	OVER 40 TO 160	
	MEDIUM ☐	±.005	±.005	±.010	±.015	±.020	±.04
	PREFERRED ☐	±.010	±.010	±.025	±.04	±.040	±.10

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

FIRST USED ON: M-DD LDII-C

digital

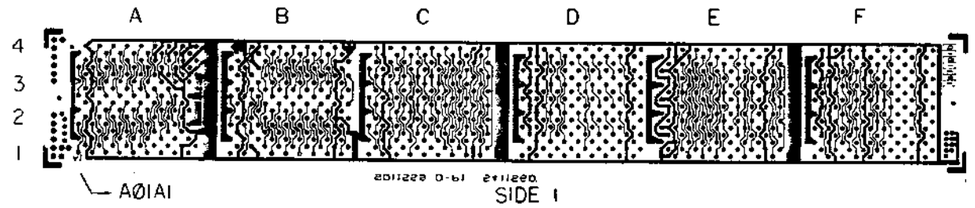
TITLE: MODULE UTILIZATION (DD11-C)

SIZE: D | CODE: MO | NUMBER: DD11-C-2 | REV: C

DIST.

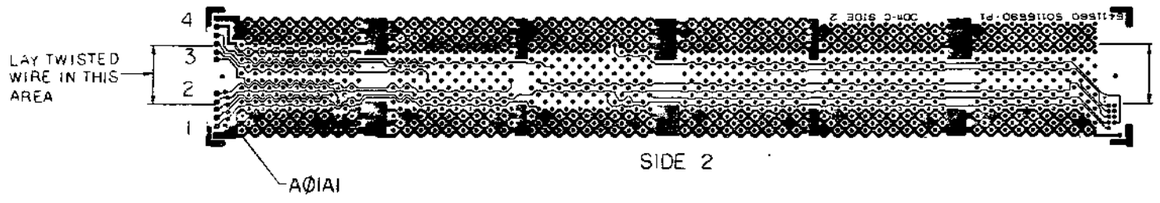
NOTES:

NOTES:
1. AH DRAWING MADE FROM SIDE 1.
2. HORIZON WIRE RUNS 1-20 MUST BE DRESSED INTO CENTER CHANNEL MARKED ON THIS DRAWING.
3. WIRES, (TWISTED PAIRS) ARE GREY AND VIOLET.
4. GREY IS GND. VIOLET IS SIGNAL LINE.
5. SIDE 1 IS DARK. SIDE 2 IS LIGHT.



RUN	FROM	TO	SIGNAL	RUN	FROM	TO	SIGNAL	RUN	FROM	TO	SIGNAL	RUN	FROM	TO	SIGNAL	RUN	FROM	TO	SIGNAL
1	B02U1	E01J1	SSYN L	5	A02P2	F01D1	BBSY L	9	B02F2	C01N1	DCLO	13	B01B1	D01P2	BG5A	17	A01V1	D01K2	BG7A
1	B02T1	E01C2	GND	5	A02T1	F01C2	GND	9	B03C2	C01T1	GND	13	B01C2	D02T1	GND LEV2	17	A01V2	D02C2	GND
2	B03U1	E04J1	SSYN L	6	A03P2	F04D1	BBSY L	10	B03F2	C04N1	DCLO	14	B04B1	D04R2	BG5E	18	A04V1	D04L2	BG7E
2	B03T1	E04C2	GND	6	A03T1	F04C2	GND	10	B03C2	C04T1	GND	14	B04C2	D03T1	GND LEV2	18	A04V2	D03C2	GND
3	B02V1	E01E1	MSYN L	7	A02A1	D01L1	INIT L	11	B01E2	D01S2	BG4A	15	B01A1	D01M2	BG5A	19	A01U1	C01A1	NPGL
3	B02T1	E01C2	GND LEV2	7	A02C2	D01T1	GND	11	B01C2	D01T1	GND	15	B01B2	D02T1	GND	19	A01T1	C01C2	GND
4	B03V1	E04E1	MSYN L	8	A03A1	D04L1	INIT L	12	B04E2	D04T2	BG4E	16	B04A1	D04N2	BG5E	20	A04U1	C04B1	NPGL
4	B03T1	E04C2	GND LEV2	8	A03C2	D04T1	GND	12	B04C2	D04T1	GND	16	B04B2	D03T1	GND	20	A04T1	C04C2	GND

A B C D E F



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

REF			
		AWT REV STATUS	A-WT-7011563 5
REF		MODULE ECO HISTORY	B-MH-5411560-0-6 4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411560-0-5 3
REF		X-Y COORDINATE HOLE LOCATION	X-CO-5411560-0-4 2
1		ETCHED CIRCUIT BOARD	5011559 1
QTY	REF. DESIGNATION	DESCRIPTION	PART NO. ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: DD11-CK
ETCH BOARD REV: DP1

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

SEMICONDUCTOR CONVERSION CHART

DRAWN		DATE 6-12-78
ENGR		DATE 6/26/78
ENGR		DATE 6-26-78
PROJ. ENGR		DATE 7-7-78
PROD. ENGR	R. PETERSON	DATE 9-25-78

NEXT HIGHER ASSY: D-IA-7414831-0-0
SCALE: NONE
SHEET 1 OF 1

digital

TITLE: CIRCUIT SCHEMATIC

SIZE: D | CODE: CS | NUMBER: 5411560-0-1 | REV: D
DIST:

5411560-0-1 D

REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6-12-78	R. BARRY
B	5411560-00002	6-20-78	R. BARRY
C	5411560-00003	7-12-78	R. BARRY
D	5411560-00001	9-25-78	R. BARRY

DIGITAL EQUIP. CORP.

REVISIONS		
CHK	CHANGE NO.	REV.
RH	DD11C-00001	A

R.HARRY 1-13-76

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DD11-C		PARTS LIST		

DRN. [illegible]	DATE 1/2/75	EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS
CHK'D [illegible]	DATE 1-2-1-75	TITLE: WIRE LIST DD11-C
ENG. R. Barry	DATE 2-30-75	
PROJ. ENG. R Barry	DATE 2-2-75	
PROD. [illegible]	DATE 3/18/75	
NEXT HIGHER ASSEMBLY: B-DD-DD11-C		SIZE K, CODE WL, NUMBER DD11-C-1, REV. A
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO DRB 109

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
+15/+9V		C01U1		1-01	H			2		P	H TO WHERE	1
+15/+9V		C02U1		1-02	H			1		P	H TO WHERE	1
+15/+9V		C03U1		1-03	H			2		P	H TO WHERE	1
+15/+9V		C04U1		1-04							TO HERE	1
+15/+9V				1						8-2/8		1
+24V		A02U1		1-01	H			1		P	H TO WHERE	2
+24V		A02V1		1-02	H			2		P	H TO WHERE	2
+24V		A02V2		1-03	H			1		P	H TO WHERE	2
+24V		A03U1		1-04	H			2		P	H TO WHERE	2
+24V		A03V1		1-05	H			1		P	H TO WHERE	2
+24V		A03V2		1-06							TO HERE	2
+24V				1						12-4/8		2
+5V (1)		A01A2		1-01	H			2		P	H TO WHERE	3
+5V (1)		A02A2		1-02	H			1		P	H TO WHERE	3
+5V (1)		A03A2		1-03	H			2		P	H TO WHERE	3
+5V (1)		A04A2		1-04							TO HERE	3
+5V (1)				1						8-2/8		3
+5V (2)		B01A2		1-01	H			2		P	H TO WHERE	4
+5V (2)		B02A2		1-02	H			1		P	H TO WHERE	4
+5V (2)		B03A2		1-03	H			2		P	H TO WHERE	4
+5V (2)		B04A2		1-04							TO HERE	4
+5V (2)				1						8-2/8		4
+5V (3)		C01A2		1-01	H			2		P	H TO WHERE	5
+5V (3)		C02A2		1-02	H			1		P	H TO WHERE	5
+5V (3)		C03A2		1-03	H			2		P	H TO WHERE	5
+5V (3)		C04A2		1-04							TO HERE	5
+5V (3)				1						8-2/8		5
+5V (4)		D01A2		1-01	H			2		P	H TO WHERE	6
+5V (4)		D02A2		1-02	H			1		P	H TO WHERE	6
+5V (4)		D03A2		1-03	H			2		P	H TO WHERE	6
+5V (4)		D04A2		1-04							TO HERE	6
+5V (4)				1						8-2/8		6
+5V (5)		E01A2		1-01	H			2		P	H TO WHERE	7
+5V (5)		E02A2		1-02	H			1		P	H TO WHERE	7
+5V (5)		E03A2		1-03	H			2		P	H TO WHERE	7
+5V (5)		E04A2		1-04							TO HERE	7
+5V (5)				1						8-2/8		7

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
+5V (6)	F01A2		1-01	H						2		P	H TO WHERE	4
+5V (6)	F02A2		1-02	H						1		P	H TO WHERE	6
+5V (6)	F03A2		1-03	H						2		P	H TO WHERE	8
+5V (6)	F04A2		1-04										TO HERE	8
+5V (6)			1									8-2/8		8
-15V	C01B2		1-01	H						3		P	H TO WHERE	9
-15V	C02B2		1-02	H						1		P	H TO WHERE	9
-15V	C03B2		1-03	H						2		P	H TO WHERE	9
-15V	C04B2		1-04	H						1		P	H TO WHERE	9
-15V	D04B2		1-05	H						2		P	H TO WHERE	9
-15V	D03B2		1-06	H						1		P	H TO WHERE	9
-15V	D02B2		1-07	H						3		P	H TO WHERE	9
-15V	D01B2		1-08	H						1		P	H TO WHERE	9
-15V	E01B2		1-09	H						2		P	H TO WHERE	9
-15V	E02B2		1-10	H						1		P	H TO WHERE	9
-15V	E03B2		1-11	H						2		P	H TO WHERE	9
-15V	E04B2		1-12	H						1		P	H TO WHERE	9
-15V	F04B2		1-13	H						2		P	H TO WHERE	9
-15V	F03B2		1-14	H						1		P	H TO WHERE	9
-15V	F02B2		1-15	H						2		P	H TO WHERE	9
-15V	F01B2		1-16										TO HERE	9
-15V			1									47-6/8		9
-5V	B02V2		1-01	H						1		P	H TO WHERE	10
-5V	B03V2		1-02										TO HERE	10
-5V			1									2-6/8		10
A BG IN	D01U2		1-01							1				11
A BG IN	F01B1		1-02											11
A BG IN			1									5-6/8		11
A BG OUT	D01V2		1-01							1				12
A BG OUT	F01A1		1-02											12
A BG OUT			1									5-6/8		12
A BR OUT	D01J2		1-01							1				13
A BR OUT	F01P1		1-02							2				13
A BR OUT	F01U2		1-03											13
A BR OUT			1									11-4/8		13
A IN	D01H1		1-01							1				14
A IN	E01H1		1-02											14
A IN			1									5-2/8		14

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
A INT A	D01H1		1-01							1				15
A INT A	F01U1		1-02											15
A INT A			1									8-2/8		15
A INT B	C01J1		1-01							1				16
A INT B	F01K2		1-02											16
A INT B			1									10-4/8		16
A INT ENA A	D01M1		1-01							1				17
A INT ENA A	F01Y1		1-02											17
A INT ENA A			1									8-4/8		17
A INT ENA B	C01L1		1-01							1				18
A INT ENA B	F01H2		1-02											18
A INT ENA B			1									10-0/8		18
A OUT HIGH	D01K1		1-01							1				19
A OUT HIGH	F01P2		1-02											19
A OUT HIGH			1									5-2/8		19
A OUT LOW	D01G1		1-01							1				20
A OUT LOW	E01K1		1-02											20
A OUT LOW			1									5-6/8		20
A SEL Y	D01F1		1-01							1				21
A SEL Y	E01S2		1-02											21
A SEL Y			1									6-0/8		21
A SEL A	D01E1		1-01							1				22
A SEL A	F01P2		1-02											22
A SEL A			1									6-2/8		22
A SEL B	D01C1		1-01							1				23
A SEL B	E01S1		1-02											23
A SEL B			1									6-2/8		23
A SEL 2	C01J1		1-01							1				24
A SEL 2	F01T2		1-02											24
A SEL 2			1									6-8/8		24
A SSYN IN H	D01V1		1-01							1				25
A SSYN IN H	F01B1		1-02											25
A SSYN IN H			1									2-6/8		25

DRW RV PG Y X Z REMARKS 12-MAR-75 LENGTH B143 EXCEPTIONS PAGE 4 RUN NUMBER

				2		P		HAND WIRE	26
				1				TO HERE	26
				2		P		HAND WIRE	26
				1		P		HAND WIRE	26
				2		P		HAND WIRE	26
				1		P		TO HERE	26
				2		P		HAND WIRE	26
								TO HERE	26
							26-6/8		26
				1					27
							3-6/8		27
				1					28
							3-6/8		28
				1					29
				2					29
							11-4/8		29
				1					30
							5-2/8		30
				1					31
							8-2/8		31
				1					32
							10-6/8		32
				1					33
							8-4/8		33
				1					34
							10-0/8		34
				1					35
							5-2/8		35

A/P PIN NAME ORDER PIN B143 EXCEPTIONS RAY - ORDER

AC	A01F1			1-01 * H
AC	B02F1			1-02 * H
AC	C01V1			1-03 * H
AC	C02V1			1-04 * H
AC	C03V1			1-05 * H
AC	C04V1			1-06 * H
AC	D03F1			1-07 * H
AC	B44F1			1-08 *
AC	GND L			1
B	BG IN	D02U2		1-01
B	BG IN	F02B3		1-02
B	BG IV			1
B	BG OUT	D02V2		1-01
B	BG OUT	F02A1		1-02
B	BG OUT			1
B	BP OUT	D02J2		1-01
B	BP OUT	F02B3		1-02
B	BR OUT	F03U2		1-03
B	BR OUT			1
B	IN	D02H1		1-01
B	IN	E02A3		1-02
B	IV			1
B	INT A	D02N1		1-01
B	INT E	F02U3		1-02
B	INT A			1
B	INT B	C02J1		1-01
B	INT E	F02K2		1-02
B	INT B			1
B	INT FRB A	D02M1		1-01
B	INT ERR A	F02V1		1-02
H	INT ERR A			1
B	INT ERR B	C02L1		1-01
B	INT ERR B	F02M2		1-02
B	INT ERR B			1
B	OUT HIGH	D02K1		1-01
B	OUT HIGH	E02M2		1-02
B	OUT HIGH			1

DRW RV PG Y X Z REMARKS 12-MAR-75 LENGTH B143 EXCEPTIONS PAGE 5 RUN NUMBER

				1					46
							5-6/8		46
				1					47
							6-0/8		47
				1					48
							6-2/8		48
				1					49
							6-2/8		49
				1					50
							6-0/8		50
				1					51
							2-6/8		51
				1		P		H TO HERE	52
							2-6/4	TO HERE	52
				1		P		H TO HERE	53
							2-6/8	TO HERE	53
				1		P		H TO HERE	54
							2-6/8	TO HERE	54
				2		P		HAND WIRE	55
				1				TO HERE	55
				2		P		HAND WIRE	55
				1		P		HAND WIRE	55
				2		P		TO HERE	55
				1		P		HAND WIRE	55
				2				TO HERE	55
							43-2/8		55

A/P PIN NAME ORDER PIN B143 EXCEPTIONS RAY - ORDER

A	B02K3			1-01
B	E02K3			1-02
B				1
B	D02H1			1-01
B	E02B3			1-02
B				1
B	H02K1			1-01
B	F02B3			1-02
B				1
B	D02C1			1-01
B	E02B3			1-02
B				1
B	D02J1			1-01
B	F02T2			1-02
B				1
B	D02V3			1-01
B	F02K1			1-02
B				1
H	A02K1			1-01 * H
H	A03K1			1-02 * H
H				1
B	H02K1			1-01 * H
B	S03D1			1-02 * H
B				1
B	A02S1			1-01 *
B	A03S1			1-02 *
B				1
H	A01P2			1-01 * H
H	A02P2			1-02 * H
H	F01D1			1-03 * H
H	F02D1			1-04 * H
H	F03D1			1-05 * H
H	F04D1			1-06 * H
H	A03W2			1-07 * H
H	A04W2			1-08 * H
H				1

BG1 A		BB1E2	1-01					1						46
BG1 A		DB1B2	1-02											46
BG1 A			1									8-6/8		46
BG1 B		DB1T2	1-01	H				1		P			H TO WHERE	47
BG1 B		DB2S2	1-02										TO HERE	47
BG1 B			1									2-6/8		47
BG1 C		DB2T2	1-01	H				1		P			H TO WHERE	48
BG1 C		DB3S2	1-02										TO HERE	48
BG1 C			1									2-6/8		48
BG1 D		DB3T2	1-01	H				1		P			H TO WHERE	49
BG1 D		DB4S2	1-02										TO HERE	49
BG1 D			1									2-6/8		49
BG1 E		BB4E2	1-01					1						50
BG1 F		DB4T2	1-02											50
BG1 E			1									9-8/8		50
BG5 A		BB1D1	1-01					1						51
BG5 A		DB1P2	1-02											51
BG5 A			1									9-8/8		51
BG5 B		BB1R2	1-01	H				1		P			H TO WHERE	52
BG5 B		DB2P2	1-02										TO HERE	52
BG5 B			1									2-6/8		52
BG5 C		BB2R2	1-01	H				1		P			H TO WHERE	53
BG5 C		DB3P2	1-02										TO HERE	53
BG5 C			1									2-6/8		53
BG5 D		BB3R2	1-01	H				1		P			H TO WHERE	54
BG5 D		DB4P2	1-02										TO HERE	54
BG5 D			1									2-6/8		54
BG5 E		BB4B1	1-01					1						55
BG5 E		DB4P2	1-02											55
BG5 E			1									9-2/8		55
BG6 A		BB1A1	1-01					1						56
BG6 A		DB1M2	1-02											56
BG6 A			1									9-8/8		56
BG6 B		DB1R2	1-01	H				1		P			H TO WHERE	57
BG6 B		DB2M2	1-02										TO HERE	57
BG6 B			1									2-6/8		57

BG6 C		BB2A2	1-01	H				1		P			H TO WHERE	58
BG6 C		DB3M2	1-02										TO HERE	58
BG6 C			1									2-6/8		58
BG6 D		BB2R2	1-01	H				1		P			H TO WHERE	59
BG6 D		DB4M2	1-02										TO HERE	59
BG6 D			1									2-6/8		59
BG6 E		BB3A1	1-01	H				1		P			H TO WHERE	60
BG6 E		DB3R2	1-02										TO HERE	60
BG6 E			1									9-2/8		60
BG7 A		BB1V1	1-01					1						61
BG7 A		DB1A2	1-02											61
BG7 A			1									9-2/8		61
BG7 B		BB1L2	1-01	H				1		P			H TO WHERE	62
BG7 B		DB2A2	1-02										TO HERE	62
BG7 B			1									2-6/8		62
BG7 C		BB2U2	1-01	H				1		P			H TO WHERE	63
BG7 C		DB3K2	1-02										TO HERE	63
BG7 C			1									2-6/8		63
BG7 D		BB3L2	1-01	H				1		P			H TO WHERE	64
BG7 D		DB4K2	1-02										TO HERE	64
BG7 D			1									2-6/8		64
BG7 E		BB4V1	1-01					1						65
BG7 E		DB4L2	1-02											65
BG7 E			1									9-6/8		65
BH4 L		BB1B2	1-01	*	H			2		P			HAND WIRE	66
BH4 L		BB2D2	1-02	*				1					TO HERE	66
BH4 L		DB1H2	1-03	*	H			2		P			HAND WIRE	66
BH4 L		DB2H2	1-04	*	H			1		P			HAND WIRE	66
BH4 L		DB3H2	1-05	*	H			2		P			HAND WIRE	66
BH4 L		DB4H2	1-06	*				1					TO HERE	66
BH4 L		BB3D2	1-07	*	H			2		P			HAND WIRE	66
BH4 L		BB4D2	1-08	*									TO HERE	66
BH4 L			1									30-2/8		66

PG	Y	X	Z	REMARKS	12-MAR-75 LENGTH	9143 EXCEPTIONS	PAGE 6 RUN NUMBER
			2		P	HAND WIRE	67
			1			TO HERE	67
			2		P	HAND WIRE	67
			1		P	HAND WIRE	67
			2			HAND WIRE	67
			1			TO HERE	67
			2		P	HAND WIRE	67
						TO HERE	67
					30-0/8		67
			2				68
			1				68
			2		P	HAND WIRE	68
			1		P	HAND WIRE	68
			2		P	HAND WIRE	68
						TO HERE	68
					31-6/8		68
			2				69
			1		P	HAND WIRE	69
			2			TO HERE	69
			1		P	HAND WIRE	69
			2		P	HAND WIRE	69
			1			TO HERE	69
			2		P	HAND WIRE	69
						TO HERE	69
					31-6/8		69
			2				70
			1		P	HAND WIRE	70
			2			TO HERE	70
			1		P	HAND WIRE	70
			2		P	HAND WIRE	70
			1			TO HERE	70
			2		P	HAND WIRE	70
						TO HERE	70
					34-2/8		70

DCII-C,PN RUN NAME	HND298,V23(23) 05/24/74 A/P PIN NAME	ORDER PIN	8417 ORDER	Q	DRA= RV P
BH5 L	AH5IC1	I-01		*	H
BH5 L	AH2IC1	I-02		*	*
BH5 L	DH1IF2	I-03		*	H
BH5 L	DH2FF2	I-04		*	H
BH5 L	DH3EF2	I-05		*	H
BH5 L	DH4EF2	I-06		*	H
BH5 L	EH3IC1	I-07		*	H
BH5 L	EH4IC1	I-08		*	*
		J			
BH6 L	AH1IH2	I-01		*	*
BH6 L	AH2IH2	I-02		*	*
BH6 L	DH1IH2	I-03		*	H
BH6 L	DH2IH2	I-04		*	H
BH6 L	EH3IH2	I-05		*	H
BH6 L	EH4IH2	I-06		*	H
BH7 L	AH1IH2	I-01		*	H
BH7 L	AH2IH2	I-02		*	H
BH7 L	DH1IH2	I-03		*	H
BH7 L	DH2IH2	I-04		*	H
BH7 L	DH3IH2	I-05		*	H
BH7 L	DH4IH2	I-06		*	H
BH7 L	AH3IH2	I-07		*	H
BH7 L	AH4IH2	I-08		*	*
BH7 L		J			
BH8 L	AH1IH2	I-01		*	H
BH8 L	AH2IH2	I-02		*	*
BH8 L	DH1IH2	I-03		*	H
BH8 L	DH2IH2	I-04		*	H
BH8 L	DH3IH2	I-05		*	H
BH8 L	DH4IH2	I-06		*	H
BH8 L	AH3IH2	I-07		*	H
BH8 L	AH4IH2	I-08		*	*
BH8 L		J			
BH9 L	AH1IH2	I-01		*	H
BH9 L	AH2IH2	I-02		*	*
BH9 L	DH1IH2	I-03		*	H
BH9 L	DH2IH2	I-04		*	H
BH9 L	DH3IH2	I-05		*	H
BH9 L	DH4IH2	I-06		*	H
BH9 L	AH3IH2	I-07		*	H
BH9 L	AH4IH2	I-08		*	*
BH9 L		J			
BH7 L	AH1IH2	I-01		*	H
BH7 L	AH2IH2	I-02		*	*
BH7 L	DH1IH2	I-03		*	H
BH7 L	DH2IH2	I-04		*	H
BH7 L	DH3IH2	I-05		*	H
BH7 L	DH4IH2	I-06		*	H
BH7 L	AH3IH2	I-07		*	H
BH7 L	AH4IH2	I-08		*	*
BH7 L		J			
BH7 L	AH1IH2	I-01		*	H
BH7 L	AH2IH2	I-02		*	*
BH7 L	DH1IH2	I-03		*	H
BH7 L	DH2IH2	I-04		*	H
BH7 L	DH3IH2	I-05		*	H
BH7 L	DH4IH2	I-06		*	H
BH7 L	AH3IH2	I-07		*	H
BH7 L	AH4IH2	I-08		*	*
BH7 L		J			

PG	Y	X	Z	REMARKS	12-MAR-75 LENGTH	9143 EXCEPTIONS	PAGE 9 RUN NUMBER
			2		P	HAND WIRE	71
			1			TO HERE	71
			2		P	HAND WIRE	71
			1		P	HAND WIRE	71
			2			HAND WIRE	71
			1			TO HERE	71
			2		P	HAND WIRE	71
						TO HERE	71
					34-2/8		71
			2		P	HAND WIRE	72
			1			TO HERE	72
			2		P	HAND WIRE	72
			1		P	HAND WIRE	72
			2		P	HAND WIRE	72
			1			TO HERE	72
			2		P	HAND WIRE	72
						TO HERE	72
					34-8/8		72
			2		P	HAND WIRE	73
			1			TO HERE	73
			2		P	HAND WIRE	73
			1		P	HAND WIRE	73
			2		P	HAND WIRE	73
			1			TO HERE	73
			2		P	HAND WIRE	73
						TO HERE	73
					37-0/8		73
			2		P	HAND WIRE	74
			1			TO HERE	74
			2		P	HAND WIRE	74
			1		P	HAND WIRE	74
			2		P	HAND WIRE	74
			1			TO HERE	74
			2		P	HAND WIRE	74
						TO HERE	74
					36-2/8		74

DCII-C,PN RUN NAME	HND298,V23(23) 05/24/74 A/P PIN NAME	ORDER PIN	8417 ORDER	Q	DRA= RV P
BH5 L	AH5IH1	I-01		*	H
BH5 L	AH2IH1	I-02		*	*
BH5 L	EH1IH1	I-03		*	H
BH5 L	EH2IH1	I-04		*	H
BH5 L	EH3IH1	I-05		*	H
BH5 L	EH4IH1	I-06		*	H
BH5 L	AH4IH1	I-07		*	H
BH5 L	BH4IH1	I-08		*	*
		J			
PIN AH2 L	AH1IH2	I-01		*	H
BH5 AH2 L	AH2IH2	I-02		*	*
BH5 AH2 L	AH1IF1	I-03		*	H
BH5 AH2 L	AH2EF1	I-04		*	H
BH5 AH2 L	EH3IF1	I-05		*	H
BH5 AH2 L	EH4IF1	I-06		*	H
BH5 AH2 L	AH3IH2	I-07		*	H
BH5 AH2 L	AH4IH2	I-08		*	*
BH5 AH2 L		J			
BH5 AH3 L	AH1IH1	I-01		*	H
BH5 AH3 L	AH2IH1	I-02		*	*
BH5 AH3 L	EH1IH1	I-03		*	H
BH5 AH3 L	EH2IH1	I-04		*	H
BH5 AH3 L	EH3IH1	I-05		*	H
BH5 AH3 L	EH4IH1	I-06		*	H
BH5 AH3 L	AH4IH1	I-07		*	H
BH5 AH3 L	BH4IH1	I-08		*	*
BH5 AH3 L		J			
BH5 AH4 L	AH1IH2	I-01		*	H
BH5 AH4 L	AH2IH2	I-02		*	*
BH5 AH4 L	EH1IH2	I-03		*	H
BH5 AH4 L	EH2IH2	I-04		*	H
BH5 AH4 L	EH3IH2	I-05		*	H
BH5 AH4 L	EH4IH2	I-06		*	H
BH5 AH4 L	AH3IH2	I-07		*	H
BH5 AH4 L	AH4IH2	I-08		*	*
BH5 AH4 L		J			

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DD11-C,P0              HHC288,V23(23) 05/24/74                                             12-MAR-75    W143      PAGE 10
RUN NAME           A/P  PIN      ORDER   BAY -   O  DRAW RV PG Y   X    Z   REMARKS                LENGTH  EXCEPTIONS  RUN
                        NAME      PIN    ORDER                                                                         NUMBER

BUS A05 L               B01K1            1-01 *  H                      2               P                  HAND WIRE    75
BUS A05 L               B02K1            1-02 *                         1                                  TO HERE      75
BUS A05 L               E01V1            1-03 *  H                      2               P                  HAND WIRE    75
BUS A05 L               E02V1            1-04 *  H                      1               P                  HAND WIRE    75
BUS A05 L               E03V1            1-05 *  H                      2               P                  HAND WIRE    75
BUS A05 L               E04V1            1-06 *                         1                                  TO HERE      75
BUS A05 L               B03K1            1-07 *  H                      2               P                  HAND WIRE    75
BUS A05 L               B04K1            1-08 *                                                            TO HERE      75
BUS A05 L                                1                                                        36-6/0                75

BUS A06 L               B01L2            1-01 *  H                      2               P                  HAND WIRE    76
BUS A06 L               B02L2            1-02 *                         1                                  TO HERE      76
BUS A06 L               E01U1            1-03 *  H                      2               P                  HAND WIRE    76
BUS A06 L               E02U1            1-04 *  H                      1               P                  HAND WIRE    76
BUS A06 L               E03U1            1-05 *  H                      2               P                  HAND WIRE    76
BUS A06 L               E04U1            1-06 *                         1                                  TO HERE      76
BUS A06 L               B03L2            1-07 *  H                      2               P                  HAND WIRE    76
BUS A06 L               B04L2            1-08 *                                                            TO HERE      76
BUS A06 L                                1                                                        36-0/0                76

BUS A07 L               B01L1            1-01 *  H                      2               P                  HAND WIRE    77
BUS A07 L               B02L1            1-02 *                         1                                  TO HERE      77
BUS A07 L               E01P2            1-03 *  H                      2               P                  HAND WIRE    77
BUS A07 L               E02P2            1-04 *  H                      1               P                  HAND WIRE    77
BUS A07 L               E03P2            1-05 *  H                      2               P                  HAND WIRE    77
BUS A07 L               E04P2            1-06 *                         1                                  TO HERE      77
BUS A07 L               B03L1            1-07 *  H                      2               P                  HAND WIRE    77
BUS A07 L               B04L1            1-08 *                                                            TO HERE      77
BUS A07 L                                1                                                        35-2/0                77

BUS A08 L               B01N2            1-01 *  H                      2               P                  HAND WIRE    78
BUS A08 L               B02N2            1-02 *                         1                                  TO HERE      78
BUS A08 L               E01N2            1-03 *  H                      2               P                  HAND WIRE    78
BUS A08 L               E02N2            1-04 *  H                      1               P                  HAND WIRE    78
BUS A08 L               E03N2            1-05 *  H                      2               P                  HAND WIRE    78
BUS A08 L               E04N2            1-06 *                         1                                  TO HERE      78
BUS A08 L               B03N2            1-07 *  H                      2               P                  HAND WIRE    78
BUS A08 L               B04N2            1-08 *                                                            TO HERE      78
BUS A08 L                                1                                                        34-6/0                78
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DD11-C,P0              HHD288,V23(23) 05/24/74                                             12-MAR-75    W143      PAGE 11
RUN NAME           A/P  PIN      ORDER   BAY -   O  DRAW RV PG Y   X    Z   REMARKS                LENGTH  EXCEPTIONS  RUN
                        NAME      PIN    ORDER                                                                         NUMBER

BUS A09 L               B01P1            1-01 *  H                      2               P                  HAND WIRE    79
BUS A09 L               B02P1            1-02 *                         1                                  TO HERE      79
BUS A09 L               E01R1            1-03 *  H                      2               P                  HAND WIRE    79
BUS A09 L               E02R1            1-04 *  H                      1               P                  HAND WIRE    79
BUS A09 L               E03R1            1-05 *  H                      2               P                  HAND WIRE    79
BUS A09 L               E04R1            1-06 *                         1                                  TO HERE      79
BUS A09 L               B03P1            1-07 *  H                      2               P                  HAND WIRE    79
BUS A09 L               B04P1            1-08 *                                                            TO HERE      79
BUS A09 L                                1                                                        35-2/0                79

BUS A10 L               B01N2            1-01 *  H                      2               P                  HAND WIRE    80
BUS A10 L               B02N2            1-02 *                         1                                  TO HERE      80
BUS A10 L               E01P1            1-03 *  H                      2               P                  HAND WIRE    80
BUS A10 L               E02P1            1-04 *  H                      1               P                  HAND WIRE    80
BUS A10 L               E03P1            1-05 *  H                      2               P                  HAND WIRE    80
BUS A10 L               E04P1            1-06 *                         1                                  TO HERE      80
BUS A10 L               B03N2            1-07 *  H                      2               P                  HAND WIRE    80
BUS A10 L               B04N2            1-08 *                                                            TO HERE      80
BUS A10 L                                1                                                        34-4/0                80

BUS A11 L               B01M1            1-01 *  H                      2               P                  HAND WIRE    81
BUS A11 L               B02M1            1-02 *                         1                                  TO HERE      81
BUS A11 L               E01L1            1-03 *  H                      2               P                  HAND WIRE    81
BUS A11 L               E02L1            1-04 *  H                      1               P                  HAND WIRE    81
BUS A11 L               E03L1            1-05 *  H                      2               P                  HAND WIRE    81
BUS A11 L               E04L1            1-06 *                         1                                  TO HERE      81
BUS A11 L               B03M1            1-07 *  H                      2               P                  HAND WIRE    81
BUS A11 L               B04M1            1-08 *                                                            TO HERE      81
BUS A11 L                                1                                                        33-6/0                81

BUS A12 L               B01P2            1-01 *  H                      2               P                  HAND WIRE    82
BUS A12 L               B02P2            1-02 *                         1                                  TO HERE      82
BUS A12 L               E01C1            1-03 *  H                      2               P                  HAND WIRE    82
BUS A12 L               E02C1            1-04 *  H                      1               P                  HAND WIRE    82
BUS A12 L               E03C1            1-05 *  H                      2               P                  HAND WIRE    82
BUS A12 L               E04C1            1-06 *                         1                                  TO HERE      82
BUS A12 L               B03P2            1-07 *  H                      2               P                  HAND WIRE    82
BUS A12 L               B04P2            1-08 *                                                            TO HERE      82
BUS A12 L                                1                                                        32-0/0                82
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BUS NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A13 L		BP1P1		1-01 *	H			2		P	HAND WIRE	83
BUS A13 L		B02P1		1-02 *				1			TO HERE	83
BUS A13 L		E01K2		1-03 *	H			2		P	HAND WIRE	83
BUS A13 L		E#2K2		1-04 *	H			1		P	HAND WIRE	83
BUS A13 L		E03K2		1-05 *	H			2		P	HAND WIRE	83
BUS A13 L		E04K2		1-06 *				1			TO HERE	83
BUS A13 L		B03P1		1-07 *	H			2		P	HAND WIRE	83
BUS A13 L		B04P1		1-08 *							TO HERE	83
BUS A13 L				1						33-4/8		83
BUS A14 L		B01P2		1-01 *	H			2		P	HAND WIRE	84
BUS A14 L		B02P2		1-02 *				1			TO HERE	84
BUS A14 L		E01K1		1-03 *	H			2		P	HAND WIRE	84
BUS A14 L		E02K1		1-04 *	H			1		P	HAND WIRE	84
BUS A14 L		E03K1		1-05 *	H			2		P	HAND WIRE	84
BUS A14 L		E04K1		1-06 *				1			TO HERE	84
BUS A14 L		B03R2		1-07 *	H			2		P	HAND WIRE	84
BUS A14 L		B04R2		1-08 *							TO HERE	84
BUS A14 L				1						33-0/8		84
BUS A15 L		B01K1		1-01 *	H			2		P	HAND WIRE	85
BUS A15 L		B02P1		1-02 *				1			TO HERE	85
BUS A15 L		E01D2		1-03 *	H			2		P	HAND WIRE	85
BUS A15 L		F0202		1-04 *	H			1		P	HAND WIRE	85
BUS A15 L		E03D2		1-05 *	H			2		P	HAND WIRE	85
BUS A15 L		E04D2		1-06 *				1			TO HERE	85
BUS A15 L		B03R1		1-07 *	H			2		P	HAND WIRE	85
BUS A15 L		B04R1		1-08 *							TO HERE	85
BUS A15 L				1						32-0/8		85
BUS A16 L		B01S2		1-01 *	H			2		P	HAND WIRE	86
BUS A16 L		B02S2		1-02 *				1			TO HERE	86
BUS A16 L		E01E2		1-03 *	H			2		P	HAND WIRE	86
BUS A16 L		E02E2		1-04 *	H			1		P	HAND WIRE	86
BUS A16 L		E03E2		1-05 *	H			2		P	HAND WIRE	86
BUS A16 L		E04E2		1-06 *				1			TO HERE	86
BUS A16 L		B03S2		1-07 *	H			2		P	HAND WIRE	86
BUS A16 L		B04S2		1-08 *							TO HERE	86
BUS A16 L				1						31-6/8		86

BUS NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A17 L		BP1S1		1-01 *	H			2		P	HAND WIRE	87
BUS A17 L		B02S1		1-02 *				1			TO HERE	87
BUS A17 L		E01P1		1-03 *	H			2		P	HAND WIRE	87
BUS A17 L		E02D1		1-04 *	H			1		P	HAND WIRE	87
BUS A17 L		E03D1		1-05 *	H			2		P	HAND WIRE	87
BUS A17 L		E04D1		1-06 *				1			TO HERE	87
BUS A17 L		B03S1		1-07 *	H			2		P	HAND WIRE	87
BUS A17 L		B04S1		1-08 *							TO HERE	87
BUS A17 L				1						31-6/8		87
BUS A18 L		A01C1		1-01 *	H			2		P	HAND WIRE	88
BUS A18 L		A02C1		1-02 *				1			TO HERE	88
BUS A18 L		C01S2		1-03 *	H			2		P	HAND WIRE	88
BUS A18 L		C02S2		1-04 *	H			1		P	HAND WIRE	88
BUS A18 L		C03S2		1-05 *	H			2		P	HAND WIRE	88
BUS A18 L		C04S2		1-06 *				1			TO HERE	88
BUS A18 L		A03C1		1-07 *	H			2		P	HAND WIRE	88
BUS A18 L		A04C1		1-08 *							TO HERE	88
BUS A18 L				1						32-4/8		88
BUS A19 L		A01D2		1-01 *	H			2		P	HAND WIRE	89
BUS A19 L		A02D2		1-02 *				1			TO HERE	89
BUS A19 L		C01R2		1-03 *	H			2		P	HAND WIRE	89
BUS A19 L		C02K2		1-04 *	H			1		P	HAND WIRE	89
BUS A19 L		C03K2		1-05 *	H			2		P	HAND WIRE	89
BUS A19 L		C04K2		1-06 *				1			TO HERE	89
BUS A19 L		A03C2		1-07 *	H			2		P	HAND WIRE	89
BUS A19 L		A04C2		1-08 *							TO HERE	89
BUS A19 L				1						31-6/8		89
BUS A20 L		E01E2		1-01	H			2		P	H TO WHERE	90
BUS A20 L		E02K2		1-02	H			1		P	H TO WHERE	90
BUS A20 L		E03E2		1-03	H			2		P	H TO WHERE	90
BUS A20 L		E04E2		1-04							TO HERE	90
BUS A20 L				1						8-2/8		90
BUS A20 L		A01D1		1-01 *	H			2		P	HAND WIRE	91
BUS A20 L		A02D1		1-02 *				1			TO HERE	91
BUS A20 L		C01U2		1-03 *	H			2		P	HAND WIRE	91
BUS A20 L		C02U2		1-04 *	H			1		P	HAND WIRE	91
BUS A20 L		C03U2		1-05 *	H			2		P	HAND WIRE	91
BUS A20 L		C04U2		1-06 *				1			TO HERE	91
BUS A20 L		A03D1		1-07 *	H			2		P	HAND WIRE	91
BUS A20 L		A4401		1-08 *							TO HERE	91
BUS A20 L				1						32-6/8		91

A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS 002 L J#P	CH2U2		1=01							1				92
BUS 002 L J#P	F02F2		1=02											92
BUS 022 L J#P			1									8=6/8		92
BUS 003 L	F01L1		1=01	H						2	P		H TO WHERE	93
BUS 003 L	F02L1		1=02	H						1	P		H TO WHERE	93
BUS 003 L	F03L1		1=03	H						2	P		H TO WHERE	93
BUS 003 L	F04L1		1=04										TO HERE	93
BUS 023 L			1									8=2/8		93
BUS 003 L	AH1F2		1=01 *	H						2	P		HAND WIRE	94
BUS 003 L	AH2E2		1=02 *							1			TO HERE	94
BUS 003 L	CH1T2		1=03 *	H						2	P		HAND WIRE	94
BUS 003 L	CH2T2		1=04 *	H						1	P		HAND WIRE	94
BUS 003 L	CH3T2		1=05 *	H						2	P		HAND WIRE	94
BUS 003 L	CH4I2		1=06 *							1			TO HERE	94
BUS 003 L	AH3E2		1=07 *	H						2	P		HAND WIRE	94
BUS 003 L	AH4E2		1=08 *										TO HERE	94
BUS 003 L			1									32=2/8		94
BUS 003 L J#P	CH2T2		1=01							1				95
BUS 003 L J#P	F02L1		1=02											95
BUS 023 L J#P			1									9=6/8		95
BUS 004 L	F01N2		1=01	H						2			H TO WHERE	96
BUS 004 L	F02N2		1=02	H						1	P		H TO WHERE	96
BUS 004 L	F03N2		1=03	H						2	P		H TO WHERE	96
BUS 044 L	F04N2		1=04										TO HERE	96
BUS 044 L			1									8=2/8		96
BUS 044 L	AH1E1		1=01 *	H						2	P		HAND WIRE	97
BUS 004 L	AH2L1		1=02 *							1			TO HERE	97
BUS 023 L	CH1N2		1=03 *	H						2	P		HAND WIRE	97
BUS 044 L	CH2N2		1=04 *	H						1	P		HAND WIRE	97
BUS 044 L	CH3N2		1=05 *	H						2	P		HAND WIRE	97
BUS 024 L	CH4N2		1=06 *							1			TO HERE	97
BUS 004 L	AH3E1		1=07 *	H						2	P		HAND WIRE	97
BUS 004 L	AH4E1		1=08 *										TO HERE	97
BUS 044 L			1									31=0/8		97
BUS 004 L J#P	CH2N2		1=01							1				98
BUS 004 L J#P	F02N2		1=02											98
BUS 024 L J#P			1									10=2/8		98

A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS 005 L	F01F1		1=01	H						2	P		H TO WHERE	99
BUS 005 L	F02F1		1=02	H						1	P		H TO WHERE	99
BUS 005 L	F03F1		1=03	H						2	P		H TO WHERE	99
BUS 005 L	F04F1		1=04										TO HERE	99
BUS 005 L			1									8=2/8		99
BUS 025 L	AH1F2		1=01 *	H						2	P		HAND WIRE	100
BUS 025 L	AH2E2		1=02 *							1			TO HERE	100
BUS 025 L	CH1P2		1=03 *	H						2	P		HAND WIRE	100
BUS 025 L	CH2P2		1=04 *	H						1	P		HAND WIRE	100
BUS 025 L	CH3P2		1=05 *	H						2	P		HAND WIRE	100
BUS 025 L	CH4P2		1=06 *							1			TO HERE	100
BUS 025 L	AH3F2		1=07 *	H						2	P		HAND WIRE	100
BUS 025 L	AH4F2		1=08 *										TO HERE	100
BUS 025 L			1									31=2/8		100
BUS 025 L J#P	CH2P2		1=01							1				101
BUS 025 L J#P	F02P1		1=02											101
BUS 025 L J#P			1									9=4/8		101
BUS 026 L	F01F2		1=01	H						2	P		H TO WHERE	102
BUS 026 L	F02F2		1=02	H						1	P		H TO WHERE	102
BUS 026 L	F03F2		1=03	H						2	P		H TO WHERE	102
BUS 026 L	F04F2		1=04										TO HERE	102
BUS 026 L			1									8=2/8		102
BUS 026 L	AH1F1		1=01 *	H						2	P		HAND WIRE	103
BUS 026 L	AH2F1		1=02 *							1			TO HERE	103
BUS 026 L	CH1V2		1=03 *	H						2	P		HAND WIRE	103
BUS 026 L	CH2V2		1=04 *	H						1	P		HAND WIRE	103
BUS 026 L	CH3V2		1=05 *	H						2	P		HAND WIRE	103
BUS 026 L	CH4V2		1=06 *							1			TO HERE	103
BUS 026 L	AH3F1		1=07 *	H						2	P		HAND WIRE	103
BUS 026 L	AH4F1		1=08 *										TO HERE	103
BUS 026 L			1									32=4/8		103
BUS 026 L J#P	CH2V2		1=01							1				104
BUS 026 L J#P	F02F2		1=02											104
BUS 026 L J#P			1									8=6/8		104
BUS 027 L	F01H1		1=01	H						2	P		H TO WHERE	105
BUS 027 L	F02H1		1=02	H						1	P		H TO WHERE	105
BUS 027 L	F03H1		1=03	H						2	P		H TO WHERE	105
BUS 027 L	F04H1		1=04										TO HERE	105
BUS 047 L			1									8=2/8		105

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DD11-C,PD                    HND280,V23(23) 05/24/74                                                    12-MAR-75      8143       PAGE 16
BUS NAME          A/P  PIN NAME    ORDER PIN   BAY - ORDER    Q  DRAW RV PG Y   X   Z   REMARKS        LENGTH     EXCEPTIONS     RUN NUMBER

BUS D07 L                  AW1H2              1-01 *  H                          2                    P            HAND WIRE      I06
BUS D07 L                  AW2H2              1-02 *                             1                                 TO HERE        I06
BUS D07 L                  CW1H2              1-03 *  H                          2                    P            HAND WIRE      I06
BUS D07 L                  CW2H2              1-04 *  H                          1                    P            HAND WIRE      I06
BUS D07 L                  CW3H2              1-05 *  H                          2                                 TO HERE        I06
BUS D07 L                  CW4H2              1-06 *                             1                                 HAND WIRE      I06
BUS D07 L                  AW3H2              1-07 *  H                          2                    P            TO HERE        I06
BUS D07 L                  AW4H2              1-08 *                                                                              I06
BUS D07 L                                     1                                                                   30-2/8
                                                                                                                                  I07
BUS D07 L JMP              CW2K2              1-01                               1                                                 I07
BUS D07 L JMP              FW2H1              1-02                                                                                I07
BUS D07 L JMP                                 1                                                                   18-0/8

BUS D08  L                 FW1K1              1-01    H                          2                    P            H TO WHERE     I08
BUS D08  L                 FW2K1              1-02    H                          1                    P            H TO WHERE     I08
BUS D08  L                 FW3K1              1-03    H                          2                    P            H TO WHERE     I08
BUS D08  L                 FW4K1              1-04                                                                TO HERE        I08
BUS D08  L                                    1                                                                   8-2/8          I08

BUS D08  L                 AW1H1              1-01 *  H                          2                    P            HAND WIRE      I09
BUS D08  L                 AW2H1              1-02 *                             1                                 TO HERE        I09
BUS D08  L                 CW1L2              1-03 *  H                          2                    P            HAND WIRE      I09
BUS D08  L                 CW2L2              1-04 *  H                          1                    P            HAND WIRE      I09
BUS D08  L                 CW3L2              1-05 *  H                          2                                 HAND WIRE      I09
BUS D08  L                 CW4L2              1-06 *                             1                                 TO HERE        I09
BUS D08  L                 AW3H1              1-07 *  H                          2                    P            HAND WIRE      I09
BUS D08  L                 AW4H1              1-08 *                                                              TO HERE        I09
BUS D08  L                                    1                                                                   30-0/8         I09
                                                                                                                                  I10
BUS D08  L JMP             CW2L2              1-01                               1                                                 I10
BUS D08  L JMP             FW2K1              1-02                                                                                I10
BUS D08  L JMP                                1                                                                   18-4/8         I10

BUS D09  L                 AW1J2              1-01 *  H                          2                    P            HAND WIRE      I11
BUS D09  L                 AW2J2              1-02 *                             1                                 TO HERE        I11
BUS D09  L                 CW1K2              1-03 *  H                          2                    P            HAND WIRE      I11
BUS D09  L                 CW2K2              1-04 *  H                          1                    P            HAND WIRE      I11
BUS D09  L                 CW3K2              1-05 *  H                          2                                 HAND WIRE      I11
BUS D09  L                 CW4K2              1-06 *                             1                                 TO HERE        I11
BUS D09  L                 AW3J2              1-07 *  H                          2                    P            HAND WIRE      I11
BUS D09  L                 AW4J2              1-08 *                                                              TO HERE        I11
BUS D09  L                                    1                                                                   29-6/8         I11
BUS D09  L
```

```
DD11-C,PD                    HND280,V23(23) 05/24/74                                                    12-MAR-75      8143       PAGE 17
BUS NAME          A/P  PIN NAME    ORDER PIN   BAY - ORDER    Q  DRAW RV PG Y   X   Z   REMARKS        LENGTH     EXCEPTIONS     RUN NUMBER

BUS D10 L                  AW1J1              1-01 *  H                          2                    P            HAND WIRE      I12
BUS D10 L                  AW2J1              1-02 *                             1                                 TO HERE        I12
BUS D10 L                  CW1J2              1-03 *  H                          2                    P            HAND WIRE      I12
BUS D10 L                  CW2J2              1-04 *  H                          1                    P            HAND WIRE      I12
BUS D10 L                  CW3J2              1-05 *  H                          2                    P            HAND WIRE      I12
BUS D10 L                  CW4J2              1-06 *                             1                                 TO HERE        I12
BUS D10 L                  AW3J1              1-07 *  H                          2                                 HAND WIRE      I12
BUS D10 L                  AW4J1              1-08 *                                                              TO HERE        I12
BUS D10 L                                     1                                                                   29-4/8         I12

BUS D11 L                  AW1K2              1-01 *  H                          2                    P            HAND WIRE      I13
BUS D11 L                  AW2K2              1-02 *                             1                                 TO HERE        I13
BUS D11 L                  CW1H1              1-03 *  H                          2                    P            HAND WIRE      I13
BUS D11 L                  CW2H1              1-04 *  H                          1                    P            HAND WIRE      I13
BUS D11 L                  CW3H1              1-05 *  H                          2                    P            HAND WIRE      I13
BUS D11 L                  CW4H1              1-06 *                             1                                 TO HERE        I13
BUS D11 L                  AW3K2              1-07 *  H                          2                                 HAND WIRE      I13
BUS D11 L                  AW4K2              1-08 *                                                              TO HERE        I13
BUS D11 L                                     1                                                                   29-0/8         I13

BUS D12 L                  AW1K1              1-01 *  H                          2                    P            HAND WIRE      I14
BUS D12 L                  AW2K1              1-02 *                             1                                 TO HERE        I14
BUS D12 L                  CW1H2              1-03 *  H                          2                    P            HAND WIRE      I14
BUS D12 L                  CW2H2              1-04 *  H                          1                    P            HAND WIRE      I14
BUS D12 L                  CW3H2              1-05 *  H                          2                    P            HAND WIRE      I14
BUS D12 L                  CW4H2              1-06 *                             1                                 TO HERE        I14
BUS D12 L                  AW3K1              1-07 *  H                          2                                 HAND WIRE      I14
BUS D12 L                  AW4K1              1-08 *                                                              TO HERE        I14
BUS D12 L                                     1                                                                   29-0/8         I14

BUS D13 L                  AW1L2              1-01 *  H                          2                    P            HAND WIRE      I15
BUS D13 L                  AW2L2              1-02 *                             1                                 TO HERE        I15
BUS D13 L                  CW1F2              1-03 *  H                          2                    P            HAND WIRE      I15
BUS D13 L                  CW2F2              1-04 *  H                          1                    P            HAND WIRE      I15
BUS D13 L                  CW3F2              1-05 *  H                          2                    P            HAND WIRE      I15
BUS D13 L                  CW4F2              1-06 *                             1                                 TO HERE        I15
BUS D13 L                  AW3L2              1-07 *  H                          2                                 HAND WIRE      I15
BUS D13 L                  AW4L2              1-08 *                                                              TO HERE        I15
BUS D13 L                                     1                                                                   28-2/8         I15
```

BUS D14 L		A01L1		1-01 *	H			2		P		HAND WIRE	116
BUS D14 L		A02L1		1-02 *				1				TO HERE	116
BUS D14 L		C01E2		1-03 *	H			2		P		HAND WIRE	116
BUS D14 L		C02E2		1-04 *	H			1		P		HAND WIRE	116
BUS D14 L		C03E2		1-05 *	H			2		P		HAND WIRE	116
BUS D14 L		C04E2		1-06 *				1				TO HERE	116
BUS D14 L		A03L1		1-07 *	H			2		P		HAND WIRE	116
BUS D14 L		A04L1		1-08 *								TO HERE	116
BUS D14 L				1							28-2/8		116
BUS D15 L		A01M2		1-01 *	H			2		P		HAND WIRE	117
BUS D15 L		A02M2		1-02 *				1				TO HERE	117
BUS D15 L		C01D2		1-03 *				2					117
BUS D15 L		C02D2		1-04 *				1					117
BUS D15 L		C03D2		1-05 *				2					117
BUS D15 L		C04D2		1-06 *				1					117
BUS D15 L		A03M2		1-07 *	H			2		P		HAND WIRE	117
BUS D15 L		A04M2		1-08 *								TO HERE	117
BUS D15 L				1							27-6/8		117
C AG IN		D03U2		1-01				1					118
C AG IN		F03B1		1-02									118
C AG IN				1							5-6/8		118
C AG OUT		D03V2		1-01				1					119
C AG OUT		F03A1		1-02									119
C AG OUT				1							5-6/8		119
C BR OUT		D01J2		1-01				1					120
C BR OUT		F03P1		1-02				2					120
C BR OUT		F03U2		1-03									120
C BR OUT				1							11-4/8		120
C IN		D01H1		1-01				1					121
C IN		E03H1		1-02									121
C IN				1							5-2/8		121
C INT A		D03N1		1-01				1					122
C INT A		F03U1		1-02									122
C INT A				1							8-2/8		122
C INT B		C03J1		1-01				1					123
C INT B		F03K2		1-02									123
C INT B				1							10-4/8		123

C INT ENB A		D03M1		1-01				1					124
C INT ENB A		F03V1		1-02									124
C INT ENB A				1							8-4/8		124
C INT ENB B		C03L1		1-01				1					125
C INT ENB B		F03H2		1-02									125
C INT ENB B				1							10-6/8		125
C OUT HIGH		D03M1		1-01				1					126
C OUT HIGH		E03M2		1-02									126
C OUT HIGH				1							5-2/8		126
C OUT LOW		D03D1		1-01				1					127
C OUT LOW		E03K1		1-02									127
C OUT LOW				1							5-6/8		127
C SEL M		D03F1		1-01				1					128
C SEL M		F03S2		1-02									128
C SEL M				1							6-0/8		128
C SEL 4		D03E1		1-01				1					129
C SEL 4		E03R2		1-02									129
C SEL 4				1							6-2/8		129
C SEL 6		D03C1		1-01				1					130
C SEL 6		E03S1		1-02									130
C SEL 6				1							6-2/8		130
C SEL 7		D03J1		1-01				1					131
C SEL 7		F03T2		1-02									131
C SEL 7				1							6-0/8		131
C SSEL IN H		D03V3		1-01				1					132
C SSEL IN H		F03H1		1-02									132
C SSEL IN H				1							2-6/8		132
CA L		B01U2		1-01 *				2					133
CA L		B02U2		1-02 *				1					133
CA L		E01J2		1-03 *	H			2		P		HAND WIRE	133
CA L		E02J2		1-04 *	H			1		P		HAND WIRE	133
CA L		F03J2		1-05 *	H			2		P		HAND WIRE	133
CA L		E04J2		1-06 *				1				TO HERE	133
CA L		E03U2		1-07 *				2					133
CA L		B04U2		1-08 *									133
CA L				1							32-2/8		133

V	PG	Y	X	M	REMARKS	12-MAR-79 LENGTH	U143 EXCEPTIONS	PAGE 20 RUN NUMBER
				P				129
							HAND WIRE	129
							TO HERE	129
				P			HAND WIRE	129
				P			HAND WIRE	129
							TO HERE	129
				P			HAND WIRE	129
							TO HERE	129
						31-6/8		129
			1					130
						5-6/8		130
			1					131
						5-6/8		131
			1					132
			2			11-6/8		132
			1					133
			1			5-2/8		133
			1			4-2/8		134
			1			10-4/8		134
			1			8-4/8		135
			1			10-0/8		135
			1			5-2/8		136

V	PG	Y	X	M	REMARKS	12-MAR-79 LENGTH	U143 EXCEPTIONS	PAGE 21 RUN NUMBER
								136
			1					136
						5-6/8		136
			1					137
						6-8/8		137
			1					138
						6-2/8		138
			1					139
						6-2/8		139
			1					140
						6-6/8		140
			1					141
						2-6/8		141
			2	P			NAND WIRE	142
			1				TO HERE	142
			2	P			NAND WIRE	142
			2	P			NAND WIRE	142
			1				TO HERE	142
			2	P			NAND WIRE	142
							TO HERE	142
						23-4/8		143
			2					143
			1			6-2/8		144
			1			4-2/8		144
			1			1-8/8		145

```
DRAW RV PG Y   X   E   REMARKS   12-MAR-75 LENGTH   8143 EXCEPTIONS   PAGE 22 RUN NUMBER

                1                                                      154
                                                                       154
                                    1-0/8                              154
                1                                                      155
                                                                       155
                                    1-4/8                              155
                2                                                      156
                1                                                      156
                                    4-2/8                              156
                1                                                      157
                                                                       157
                                    4-2/8                              157
                1                                                      158
                                                                       158
                                    3-4/8                              158
                1                                                      159
                                                                       159
                                    1-0/8                              159
                1                                                      160
                                                                       160
                                    2-4/8                              160
                2                                                      161
                1                                                      161
                                                                       161
                                    6-2/8                              161
                1                                                      164
                                                                       164
                                    4-2/8                              164
                1                                                      163
                                                                       163
                                    3-0/8                              163
                1                                                      164
                                                                       164
                                    1-0/8                              164

HHP208,V23(23) 05/24/74
A/P  PIN NAME   ORDER PIN   BAY - ORDER

F01P2   1-01
F01S2   1-02
        1
F01P2   1-01
F01S2   1-02
        1
F02D2   1-01
F02D2   1-02
F02D2   1-03
        1
F02E1   1-01
F02V2   1-02
        1
F02L2   1-01
F02R1   1-02
        1
F02W2   1-01
F02W2   1-02
        1
F03P2   1-01
F03S2   1-02
        1
F03D2   1-01
F03H2   1-02
F03H1   1-03
        1
F03E1   1-01
F03V2   1-02
        1
F03L2   1-01
F03R1   1-02
        1
F04P2   1-01
F04S2   1-02
        1

HOD11-C.PM
RUN NAME
F01P2
F01S2
F02D2
F02D2
F02D2
F02E1
F02V2
F02L2
F02R1
F02W2
F02W2
F03P2
F03S2
F03D2
F03H2
F03H1
F03E1
F03V2
F03L2
F03R1
F04P2
F04S2
```

```
DRAW RV PG Y   X   E   REMARKS   12-MAR-75 LENGTH   8143 EXCEPTIONS   PAGE 23 RUN NUMBER

                1                                                      165
                                                                       165
                                    2-4/8                              165
                2                                                      166
                1                                                      166
                                                                       166
                                    6-2/8                              166
                1                                                      167
                                                                       167
                                    4-2/8                              167
                1                                                      164
                                                                       164
                                    3-0/8                              164
                1                                                      169
                                                                       169
                                    3-2/8                              169
                1                                                      170
                                                                       170
                                    2-4/8                              170
                                                                       171
                P                   H TO WHERE                         171
                P                   H TO WHERE                         171
                P                   H TO WHERE                         171
                P                   H TO WHERE                         171
                P                   H TO WHERE                         171
                P                   H TO WHERE                         171
                P                   TO HERE                            171
                                    20-4/8                             171
                                                                       172
                P                   H TO WHERE                         172
                P                   H TO WHERE                         172
                P                   H TO WHERE                         172
                P                   H TO WHERE                         172
                P                   H TO WHERE                         172
                P                   H TO WHERE                         172
                P                   TO HERE                            172
                                    20-4/8                             172

HHP208,V23(23) 05/24/74
A/P  PIN NAME   ORDER PIN   BAY - ORDER

F03P2   1-01
F03S2   1-02
        1
F04D2   1-01
F04H2   1-02
F04H1   1-03
        1
F04E1   1-01
F04V2   1-02
        1
F04L2   1-01
F04R1   1-02
        1
F04W2   1-01
F04S2   1-02
        1
F05P2   1-01
F05S2   1-02
        1
AA1C2   1-01
AA2C2   1-02
AA3C2   1-03
AA4C2   1-04
AA1I1   1-05
AA2I1   1-06
AA3I1   1-07
AA4I1   1-08
        1
BA1C2   1-01
BA2C2   1-02
BA3C2   1-03
BA4C2   1-04
BA1I1   1-05
BA2I1   1-06
BA3I1   1-07
BA4I1   1-08
        1

HOD11-C.PM
RUN NAME
F03P2
F03S2
F04D2
F04D2
F04D2
F04E1
F04V2
F04L2
F04R1
F04W2
F04W2
F05P2
F05S2
AA1C2 (A1)
AA2C2 (A1)
AA3C2 (A1)
AA4C2 (A1)
AA1I1 (A1)
AA2I1 (A1)
AA3I1 (A1)
AA4I1 (A1)
BA1C2 (B1)
BA2C2 (B1)
BA3C2 (B1)
BA4C2 (B1)
BA1I1 (B1)
BA2I1 (B1)
BA3I1 (B1)
BA4I1 (B1)
```

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0D11-C.PU          HND288,V23(23) 05/24/74                                   12-MAR-75     8143     PAGE 24
RUN NAME         A/P  PIN      ORDER  BAY -   O  DRAW RV PG Y   X   Z   REMARKS        LENGTH  EXCEPTIONS  RUN
                      NAME     PIN    ORDER                                                                NUMBER

GND (03)              C01C2           1-01    H                     2              P            H TO WHERE  173
GND (03)              C02C2           1-02    H                     1              P            H TO WHERE  173
GND (03)              C03C2           1-03    H                     2              P            H TO WHERE  173
GND (03)              C04C2           1-04    H                     1              P            H TO WHERE  173
GND (03)              C04T1           1-05    H                     2              P            H TO WHERE  173
GND (03)              C03T1           1-06    H                     1              P            H TO WHERE  173
GND (03)              C02T1           1-07    H                     2              P            H TO WHERE  173
GND (03)              C01T1           1-08                                                      TO HERE     173
GND (03)                              1                                                 20-4/0              173

GND (04)              D01C2           1-01    H                     2              P            H TO WHERE  174
GND (04)              D02C2           1-02    H                     1              P            H TO WHERE  174
GND (04)              D03C2           1-03    H                     2              P            H TO WHERE  174
GND (04)              D04C2           1-04    H                     1              P            H TO WHERE  174
GND (04)              D04T1           1-05    H                     2              P            H TO WHERE  174
GND (04)              D03T1           1-06    H                     1              P            H TO WHERE  174
GND (04)              D02T1           1-07    H                     2              P            H TO WHERE  174
GND (04)              D01T1           1-08                                                      TO HERE     174
GND (04)                              1                                                 20-4/0              174

GND (05)              E01C2           1-01    H                     2              P            H TO WHERE  175
GND (05)              E02C2           1-02    H                     1              P            H TO WHERE  175
GND (05)              E03C2           1-03    H                     2              P            H TO WHERE  175
GND (05)              E04C2           1-04    H                     1              P            H TO WHERE  175
GND (05)              E04T1           1-05    H                     2              P            H TO WHERE  175
GND (05)              E03T1           1-06    H                     1              P            H TO WHERE  175
GND (05)              E02T1           1-07    H                     2              P            H TO WHERE  175
GND (05)              E01T1           1-08                                                      TO HERE     175
GND (05)                              1                                                 20-4/0              175

GND (06)              F01C2           1-01    H                     2              P            H TO WHERE  176
GND (06)              F02C2           1-02    H                     1              P            H TO WHERE  176
GND (06)              F03C2           1-03    H                     2              P            H TO WHERE  176
GND (06)              F04C2           1-04    H                     1              P            H TO WHERE  176
GND (06)              F04T1           1-05    H                     2              P            H TO WHERE  176
GND (06)              F03T1           1-06    H                     1              P            H TO WHERE  176
GND (06)              F02T1           1-07    H                     2              P            H TO WHERE  176
GND (06)              F01T1           1-08                                                      TO HERE     176
GND (06)                              1                                                 20-4/0              176

GND (07)              E01A1           1-01    H                     2              P            H TO WHERE  177
GND (07)              E02A1           1-02    H                     1              P            H TO WHERE  177
GND (07)              F03A1           1-03    H                     2              P            H TO WHERE  177
GND (07)              F04A1           1-04                                                      TO HERE     177
GND (07)                              1                                                  0-2/0              177
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0D11-C.PM          HND268,V23(23) 05/24/74                                   12-MAR-75     8143     PAGE 25
RUN NAME         A/P  PIN      ORDER  BAY -   O  DRAW RV PG Y   X   Z   REMARKS        LENGTH  EXCEPTIONS  RUN
                      NAME     PIN    ORDER                                                                NUMBER

GND (08)              A01B2           1-01    H                     1              P            H TO WHERE  178
GND (08)              A01V2           1-02    H                     2              P            H TO WHERE  178
GND (08)              B01B2           1-03    H                     1              P            H TO WHERE  178
GND (08)              B01V2           1-04                                                      TO HERE     178
GND (08)                              1                                                 11-4/0              178

GND (09)              A04B2           1-01    H                     1              P            H TO WHERE  179
GND (09)              A04V2           1-02    H                     2              P            H TO WHERE  179
GND (09)              B04F2           1-03    H                     1              P            H TO WHERE  179
GND (09)              B04V2           1-04                                                      TO HERE     179
GND (09)                              1                                                 11-4/0              179

GND (10)              A01N1           1-01    H                     1              P            H TO WHERE  180
GND (10)              A01P1           1-02    H                     2              P            H TO WHERE  180
GND (10)              A01R1           1-03    H                     1              P            H TO WHERE  180
GND (10)              A01S1           1-04    H                     2              P            H TO WHERE  180
GND (10)              A04S1           1-05    H                     1              P            H TO WHERE  180
GND (10)              A04R1           1-06    H                     2              P            H TO WHERE  180
GND (10)              A04P1           1-07    H                     1              P            H TO WHERE  180
GND (10)              A04N1           1-08                                                      TO HERE     180
GND (10)                              1                                                 18-6/0              180

GND (11)              B01D1           1-01    H                     1              P            H TO WHERE  181
GND (11)              B01F1           1-02    H                     2              P            H TO WHERE  181
GND (11)              B04F1           1-03    H                     1              P            H TO WHERE  181
GND (11)              B04D1           1-04                                                      TO HERE     181
GND (11)                              1                                                  0-6/0              181

GND (12)              F01J2           1-01    H                     2              P            H TO WHERE  182
GND (12)              F02J2           1-02    H                     1              P            H TO WHERE  182
GND (12)              F03J2           1-03    H                     2              P            H TO WHERE  182
GND (12)              F04J2           1-04                                                      TO HERE     182
GND (12)                              1                                                  0-2/0              182

HALT GRANT            C01R1           1-01    H                     2              P            H TO WHERE  183
HALT GRANT            C02R1           1-02    H                     1              P            H TO WHERE  183
HALT GRANT            C03R1           1-03    H                     2              P            H TO WHERE  183
HALT GRANT            C04R1           1-04                                                      TO HERE     183
HALT GRANT                            1                                                  0-2/0              183

HALT REQ              C01P1           1-01    H                     2              P            H TO WHERE  184
HALT REQ              C02P1           1-02    H                     1              P            H TO WHERE  184
HALT REQ              C03P1           1-03    H                     2              P            H TO WHERE  184
HALT REQ              C04P1           1-04                                                      TO HERE     184
HALT REQ                              1                                                  0-2/0              184
```

HND28N,V23(23) 05/24/74

12-MAR-75

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
	A01A1		1-01 *	H						2		P	HAND WIRE	185
	A02A1		1-02 *							1			TO HERE	185
	D01L1		1-03 *	H						2		P	HAND WIRE	185
	D02L1		1-04 *	H						1		P	HAND WIRE	185
	D03L1		1-05 *	H						2		P	HAND WIRE	185
	D04L1		1-06 *							1			TO HERE	185
	A03A1		1-07 *	H						2		P	HAND WIRE	185
	AP6A1		1-08 *										TO HERE	185
			1									37-2/8		185
	H02E1		1-01	H						1		P	H TO WHERE	186
	E03E1		1-02										TO HERE	186
			1									2-6/8		186
	A01B1		1-01 *	H						2		P	HAND WIRE	187
	A02B1		1-02 *							1			TO HERE	187
	F01H1		1-03 *	H						2		P	HAND WIRE	187
	F02H1		1-04 *	H						1		P	HAND WIRE	187
	F03H1		1-05 *	H						2		P	HAND WIRE	187
	F04N1		1-06 *							1			TO HERE	187
	A03B1		1-07 *	H						2		P	HAND WIRE	187
	A04B1		1-08 *										TO HERE	187
			1									47-6/8		187
	C01D1		1-01	H						2		P	H TO WHERE	188
	C02D1		1-02	H						1		P	H TO WHERE	188
	C03D1		1-03	H						2		P	H TO WHERE	188
	C04D1		1-04										TO HERE	188
			1									8-2/8		188
	B01V1		1-01 *							2				189
	B02V1		1-02 *							1				189
	E01E1		1-03 *	H						2		P	HAND WIRE	189
	E02E1		1-04 *	H						1		P	HAND WIRE	189
	E03E1		1-05 *	H						2		P	HAND WIRE	189
	E04F1		1-06 *							1			TO HERE	189
	H03V1		1-07 *							2				189
	B04V1		1-08 *											189
			1									31-2/8		189

HND28B,V23(23) 05/24/74

12-MAR-75

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
	A01U1		1-01 *							2				190
	C01A1		1-02 *							1				190
	C01P1		1-03 *	H						2		P	HAND WIRE	190
	C02A1		1-04 *							1			TO HERE	190
	C02E1		1-05 *	H						2		P	HAND WIRE	190
	C03A1		1-06 *							1			TO HERE	190
	C03M1		1-07 *	H						2		P	HAND WIRE	190
	C04L1		1-08 *							1			TO HERE	190
	C04N1		1-09 *							2				190
	A04U1		1-10 *											190
			1									29-4/8		190
	A01S2		1-01 *							2				191
	A02S2		1-02 *							1				191
	F01J1		1-03 *	H						2		P	HAND WIRE	191
	F02J1		1-04 *	H						1		P	HAND WIRE	191
	F03J1		1-05 *	H						2		P	HAND WIRE	191
	F04J1		1-06 *							1			TO HERE	191
	A03S2		1-07 *	H						2		P	HAND WIRE	191
	A04S2		1-08 *										TO HERE	191
			1									43-6/8		191
	A01M1		1-01 *	H						2		P	HAND WIRE	192
	A02M1		1-02 *							1			TO HERE	192
	C01C1		1-03 *	H						2		P	HAND WIRE	192
	C02C1		1-04 *							1			TO HERE	192
	C03C1		1-05 *							2				192
	C04C1		1-06 *							1				192
	A03M1		1-07 *							2				192
	A04M1		1-08 *											192
			1									27-2/8		192
	H02E2		1-01	H						1		P	H TO WHERE	193
	H01E2		1-02										TO HERE	193
			1									2-6/8		193
	A02P1		1-01	H						1		P	H TO WHERE	194
	A03P1		1-02										TO HERE	194
			1									2-6/8		194
	A02N1		1-01	H						1		P	H TO WHERE	195
	A03N1		1-02										TO HERE	195
			1									2-6/8		195

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
PB L		A01N2		1-01 *	H			2		P	HAND WIRE	196
PB L		A02N2		1-02 *				1			TO HERE	196
PB L		C01S1		1-03 *	H			2		P	HAND WIRE	196
PB L		C02S1		1-04 *	H			1		P	HAND WIRE	196
PB L		C03S1		1-05 *	H			2		P	HAND WIRE	196
PB L		C04S1		1-06 *				1			TO HERE	196
PB L		A03N2		1-07 *	H			2		P	HAND WIRE	196
PB L		A04N2		1-08 *							TO HERE	196
PB L				1						30-0/8		196
RESERVE BUS		B02A1		1-01	H			1		P	H TO WHERE	197
RESERVE BUS		B03A1		1-02							TO HERE	197
RESERVE BUS				1						2-6/8		197
SACK L		A01R2		1-01 *	H			2		P	HAND WIRE	198
SACK L		A02R2		1-02 *				1			TO HERE	198
SACK L		F01T2		1-03 *	H			2		P	HAND WIRE	198
SACK L		F02T2		1-04 *	H			1		P	HAND WIRE	198
SACK L		F03T2		1-05 *	H			2		P	HAND WIRE	198
SACK L		F04T2		1-06 *				1			TO HERE	198
SACK L		A03R2		1-07 *	H			2		P	HAND WIRE	198
SACK L		A04R2		1-08 *							TO HERE	198
SACK L				1						45-6/8		198
SSYN L		F01C1		1-01 *	H			2		P	HAND WIRE	199
SSYN L		F02C1		1-02 *	H			1		P	HAND WIRE	199
SSYN L		F03C1		1-03 *	H			2		P	HAND WIRE	199
SSYN L		F04C1		1-04 *							TO HERE	199
SSYN L				1						8-2/8		199
SSYN L		B01D1		1-01 *	H			2		P	HAND WIRE	200
SSYN L		A02D1		1-02 *				1			TO HERE	200
SSYN L		E01J1		1-03 *	H			2		P	HAND WIRE	200
SSYN L		E02J1		1-04 *	H			1		P	HAND WIRE	200
SSYN L		E03J1		1-05 *	H			2		P	HAND WIRE	200
SSYN L		E04J1		1-06 *				1			TO HERE	200
SSYN L		A03D1		1-07 *	H			2		P	HAND WIRE	200
SSYN L		A04D1		1-08 *							TO HERE	200
SSYN L				1						32-2/8		200
SSYN L JMP		F02J1		1-01				1				201
SSYN L JMP		F02C1		1-02								201
SSYN L JMP				1						4-4/8		201

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY (DD11-P)	B-DD-DD11-P		
BACK PLANE ASSY (DD11PK)	C-AD-7011523-0-0		
BACK PLANE ASSY (DD11PF)	C-AD-7012307-0-0		
MODULE UTILIZATION (DD11-P)	D-MU-DD11-P-2		
POWER HARNESS (BA11-K,BA11-L)	D-IA-7011108-0-0		
POWER HARNESS (BA11F,BA11-P)	D-IA-7011109-0-0		
CIRCUIT SCHEMATIC (DD11-P)	D-CS-5411660-0-1		
WIRE LIST (COMPLETE)	K-WL-DD11-P-1		

NOTE: DD11PK ASSEMBLIES ARE ELECTRICALLY INCOMPATIBLE WITH DD11PF ASSEMBLIES. A DD11PK WILL WORK IN BA11 L AND BA11-K BOXES ONLY. A DD11PF WILL WORK IN BA11-F AND BA11-P BOXES ONLY

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
DD11-PK	BACK PLANE ASSY (BA11L, BA11K)	X
DD11-PF	BACK PLANE ASSY (BA11F, BA11P)	X

REVISIONS		
DATE	CHG. NO.	REV
2-76	DD11P-2	A
2-3-76 R Barry		
9-76	DD11P-3	B
12-76	DD11P-4	C
2-77	DD11P-5	D

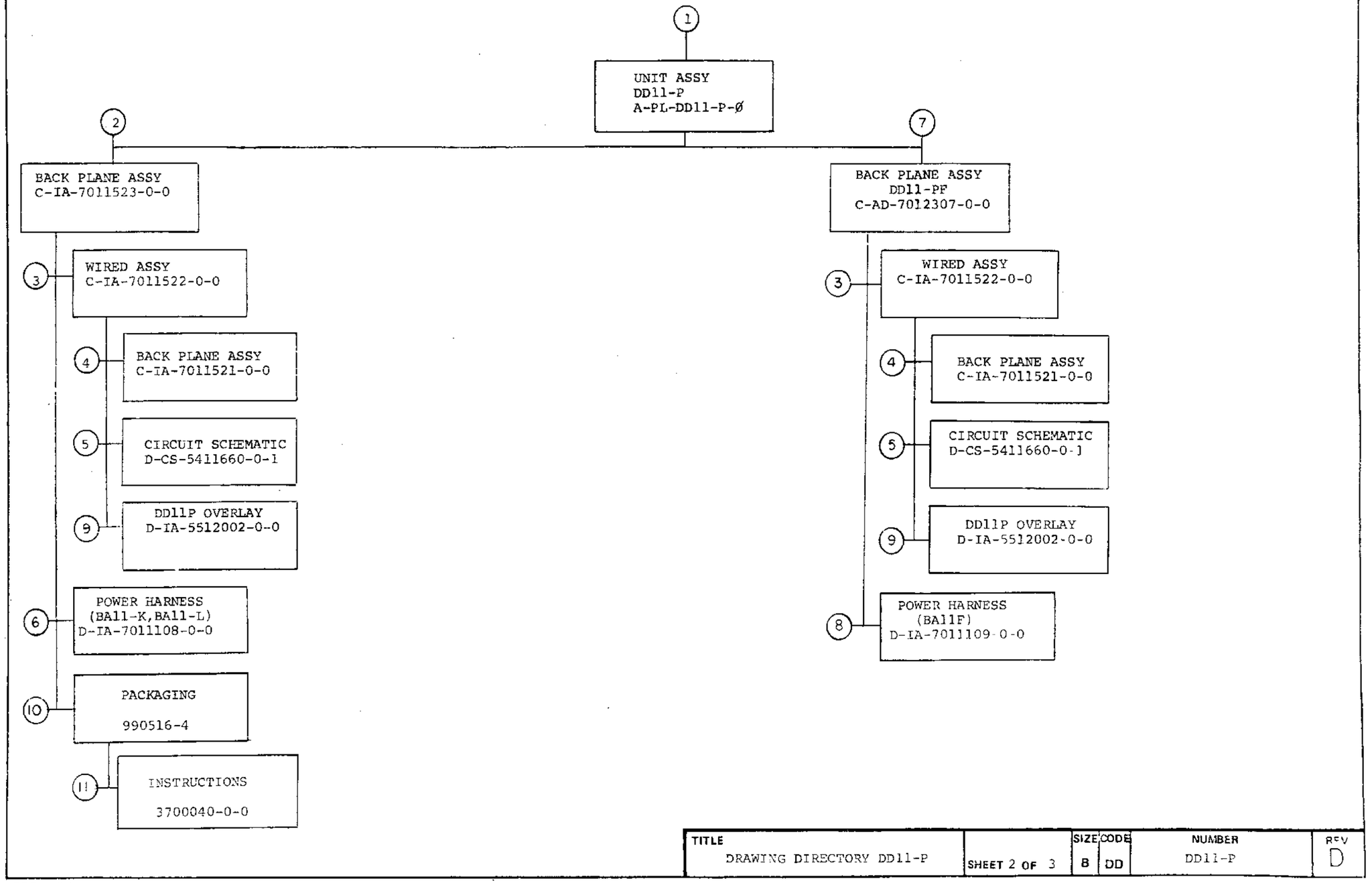
DEC 16-12511-1062-1A-8972

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. D. HEALY	DATE 6/19/75	TITLE: DRAWING DIRECTORY DD11-P
CHK'D. D Hagg	DATE 6/30/75	
PROJ ENG. R Barry	DATE 7-2-75	
PROD. R Peterson	DATE 7/2/75	SIZE B / CODE DD / NUMBER DD11-P / REV D
FIELD SERV.	DATE 7-3-75	DIST

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY DD11-P	SHEET 2 OF 3	B	DD	DD11-P	D

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

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-DD11-P-Ø		1	UNIT ASSY DD11-P	
X			D-MU-DD11-P-2		1	MODULE UTILIZATION	
X		2	C-IA-7011523-0-0		1	BACK PLANE ASSY DD11-PK	
		3	C-IA-7011522-0-0		1	WIRED ASSY	
X			K-WL-DD11-P-1	C	1	WIRE LIST	
			A-WT-7011522-0		1	AWT REV STATUS	
X		5	D-CS-5411660-0-1		1	CIRCUIT SCHEMATIC	
X		6	D-IA-7011108-0-0		1	POWER HARNESS (BA11-K,BA11-L)	
X		7	C-AD-7012307-0-0		1	BACK PLANE ASSY DD11-PF	
X		8	C-IA-7011109-0-0		1	POWER HARNESS(BA11-F,BA11-P)	

MECHANICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-DD11-P-Ø		1	UNIT ASSY DD11-P	
		2	C-IA-7011523-0-0		1	BACK PLANE ASSY DD11-PK	
		3	C-IA-7011522-0-0		1	WIRED ASSY	
			B-DC-5308753-0-0		1	DECAL 21 POINT (LTR)	
			A-DC-7411881-0-0		1	LABEL, AWT REV STATUS	
		4	D-IA-7011521-0-0		1	BACK PLANE ASSY	
		5	D-CS-5411660-0-1			CIRCUTI SCHEMATIC	
			D-AH-5411660-0-4			ASSY/DRILLING HOLE LAYOUT	
			K-CO-5411660-0-5			X-Y COORDINATE HOLE LOCATION	
			B-MH-5411660-0-6			MODULE ECO HISTORY	
			5011659			ETCH CIRCUIT BOARD	
		6	D-IA-7011108-0-0		1	POWER HARNESS (BA11-K,BA11-L)	
		7	C-AD-7012307-0-0		1	BACKPLANE ASSY DD11-PF	
		8	D-IA-7011109-0-0		1	POWER HARNESS (BA11-F,BA11-P)	
		9	D-IA-5512002-0-0		1	OVERLAY, WIRING	
		10	990516			PACKAGING	
		11	3700040-0-0			PACKAGING INSTRUCTIONS	

CUSTOMER PRINT SET CODES

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

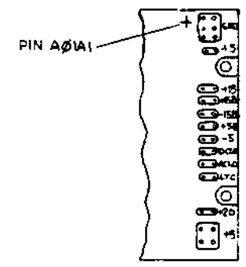
TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY DD11-P	SHEET 3 OF 3	B	DD	DD11-P	D

DPB 108

DEC 16 1325 . 012 28 8972

WIRE TABLE

FROM			TO	FROM			TO
COLOR	POINT	CONNECTION	SIGNAL	COLOR	POINT	CONNECTION	SIGNAL
BLUE	P4-13	SOLDER	-15V	BRN	P2-14	SOLDER	-5V
RED	P4-4		+5V	BLK	P2-8		GND
RED	P4-1		+5V	GRAY	P2-2		+15
BLK	P4-8		GND	ORG	P2-3		+20
ORG	P4-3		+20V	BLK	P2-9		GND
BLK	P4-9		GND	RED	P2-12	SOLDER	+5B
WHT	P4-6		+15B	ITEM 5	ITEM 6	SOLDER	GND
GRN	P4-15		-15B				
YEL	P3-4		ACLO				
BLK	P3-1		GND				
BRN	P3-2		LTC				
VIO	P3-3		DCLO				
RED	P2-4		+5V				
RED	P2-1	SOLDER	+5V				



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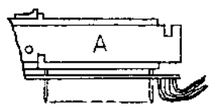
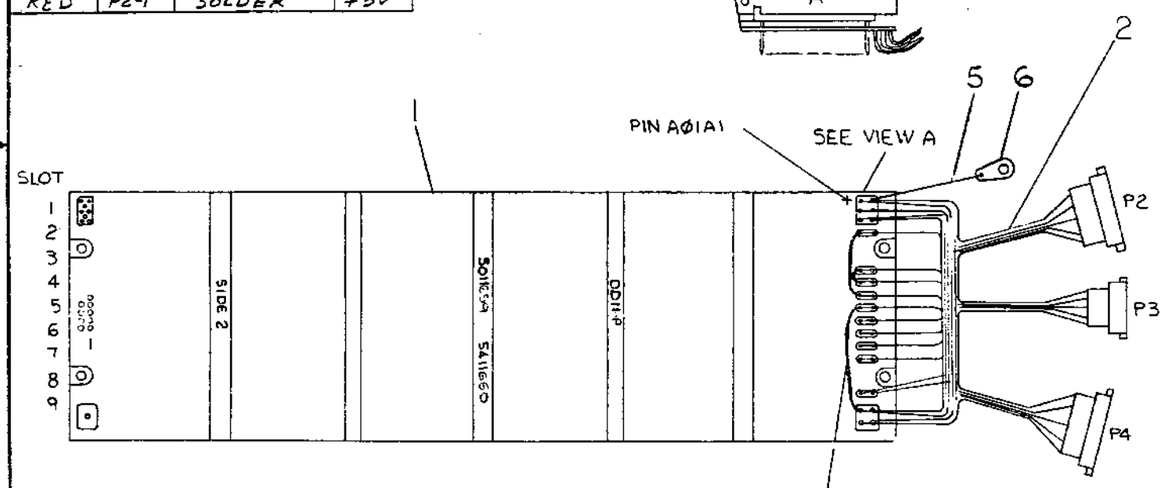




NOTES:

1. WHEN THE DD11-PK'S USED WITH A BA11-K EXPANSION BOX WITHOUT BATTERY BACK UP, *(I.E., NO 785 OR 7850) INSTALL THE THREE JUMPERS SHOWN:*
   A) -15 TO -15B
   B) +15 TO +15B
   C) +5 TO + 5B *(SEE NOTE 3)*
   USE *22 SHIELD BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEMORY VOLTAGE RAILS.
2. INSTALL ITEM# 6 UNDER LOGIC FRAME MOUNTING SCREW TO TIE LOGIC GROUND TO CHASSIS GROUND.
3. BA11-K'S *THAT USE THE 5410864-YA-1 POWER DISTRIBUTION (I.E., 11/34A, 11/34 WITH FP11-AU, AND SOME 11/04'S) AND HAVE MORE THAN ONE DD11-DK (OR AN ADDITIONAL DD11-CK) CAN ONLY HAVE THE +5 TO +5B JUMPER IN ONE OF THE BACK PANELS. IF TWO OF THE BACK PANELS HAVE THE JUMPER IN, THE +5V REGULATORS MAY BE CONNECTED TOGETHER. TYPICALLY THIS JUMPER IS IN THE FIRST BACK PANEL, BUT IT MAY BE PLACED IN ONE OF THE OTHER BACK PANELS IF DEEMED NECESSARY FOR POWER REQUIREMENTS.*

QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	COPRESS-O-CARTON	9905016-4	8
REF.	PACKAGING INSTRUCTIONS	3700040-0-0	7
1	TERMINAL, SOLDER	9008150	6
2"	WIRE, BLK, STRD# 14	9107370-00	5
6"	TUBING #22 (BLUE)	9107256-06	4
6"	WIRE BUS #22	9107560-01	3
1	POWER HARNESS (BA11-K, BA11-L)	D-IA-7011108-0-0	2
1	WIRED ASSY DD11-P	C-IA-7011522-0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: DD11-P

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	L. Miller	5/20/75
CHK'D	D. Neary	7/1/75
ENG	R. Barry	7-2-75
PROJ ENG	R. Barry	7-2-75
PROD	[illegible]	7/2/75

NEXT HIGHER ASSY.: A-PL-DD11-P-Ø
SCALE: ++
SHEET 1 OF 1

digital

TITLE: BACKPLANE ASS'Y (DD11-PK)

SIZE	CODE	NUMBER	REV.
C	IA	7011523-0-0	D

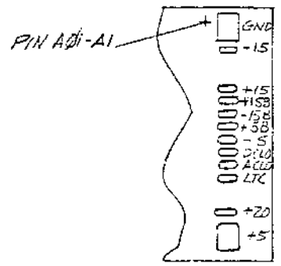
DIST.

REVISIONS			
CHK	CHANGE NO.	REV.	
	7011523-00001	A	R. BARRY 15 OCT 75
	DD11P-00002	B	R. BARRY 24-FEB-76
	DD11-P-00005	C	R. BARRY 17-FEB-77
	7011523-00002	D	D. BARRY 6-MAY-77

SIZE C | CODE IA | 7011523-0-0 | REV. D

WIRE TABLE

FROM			TO	FROM			TO
COLOR	POINT	CONNECTION	SIGNAL	COLOR	POINT	CONNECTION	SIGNAL
BLU	P4-13	SOLDER	-15V	BRN	P2-14	SOLDER	-5V
RED	P4-4	↓	+5V	BLK	P2-8	↓	GND
RED	P4-1		+5V	GRAY	P2-2		+15
BLK	P4-8		GND	ORN	P2-3		+20
GRN	P4-3		+20V	BLK	P2-9		GND
BLK	P4-9		GND	RED	P2-10	SOLDER	+5B
WHT	P4-6		+15B	ITEM #5	ITEM #6	SOLDER	GND
GRN	P4-15		-15B				
YEL	P3-4		ACLO				
BLK	P3-1		GND				
BRN	P3-2		LTC				
VIO	P3-3		DCLO				
RED	P2-4	↓	+5V				
RED	P2-1	SOLDER	+5V				



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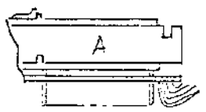

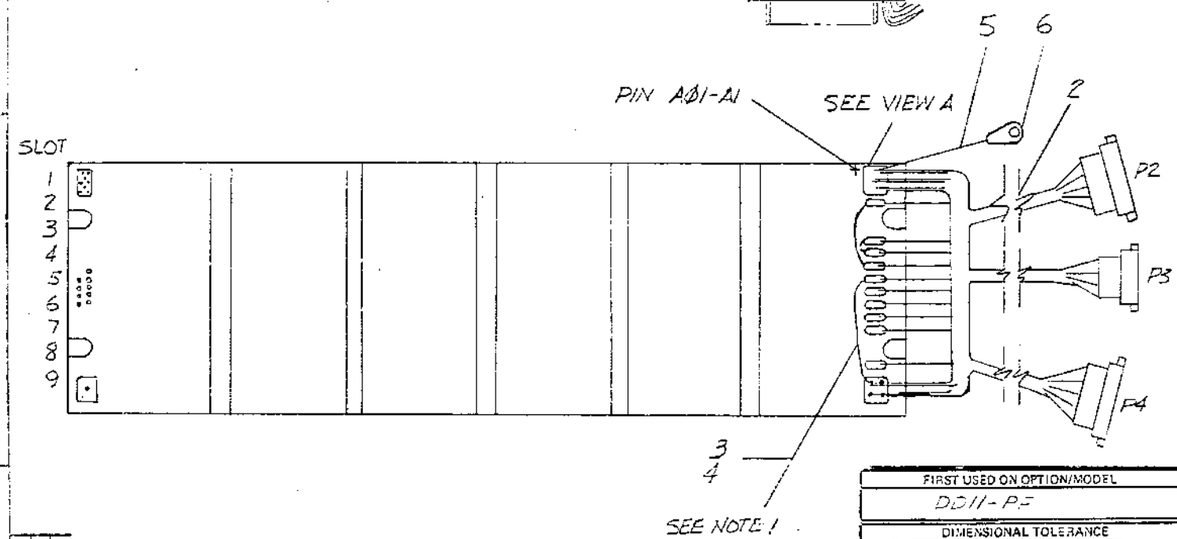

NOTES:

1. WHEN DD11-PF IS USED WITH A BA11-F EXP BOX WITHOUT BATTERY BACK UP INSTALL THE THREE JUMPERS SHOWN:
   1) -15 TO -15B
   2) +15 TO +15B
   3) +5 TO +5B
   USE #20 INSULATED BUS WIRE ON SIDE 2 THIS WILL PROVIDE POWER TO THE MOS MEM VOLTAGE RAILS.
2. INSTALL ITEM #6 UNDER LOGIC FRAME MOUNTING SCREW TO TIE LOGIC GROUND TO CHASSIS GROUND.

ITEM NO.	QTY.	DESCRIPTION	PART NO.
1	1	TERMINAL, SOLDER	9008150
2	A/R	WIRE, BLK STRD #14	9107370-00
3	A/R	TUBING, #20 (CLEAR)	9107267-10
4	A/R	WIRE, BUS #20	9107530-02
5	1	POWER HARNESS BA11-F	[illegible]
6	1	WIRED ASSY DD11-P	6[illegible]70 532 0-0

PARTS LIST

FIRST USED ON OPTION/MODEL: DD11-PF

DIMENSIONAL TOLERANCE
DIMENSIONS ARE ~~MILLIMETERS~~ INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX ±0.10	XXX ±.005	±0° 30'
XX ±0.3	XX ±.02	
X ±1	X ±.1	

REMOVE BURRS AND LEAVE SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST
FINISH: —

NEXT HIGHER ASSY.: A-PL-DD11-PF-Ø

		DATE
DRN.	[illegible]	6/27/75
CHK'D.	[illegible]	12/31/75
ENGR.	[illegible]	12/31/75
PROJ. ENG.	[illegible]	12/31/75
PROD.	[illegible]	12/31/75

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TITLE: BACK PLANE ASSY (DD11-PF)

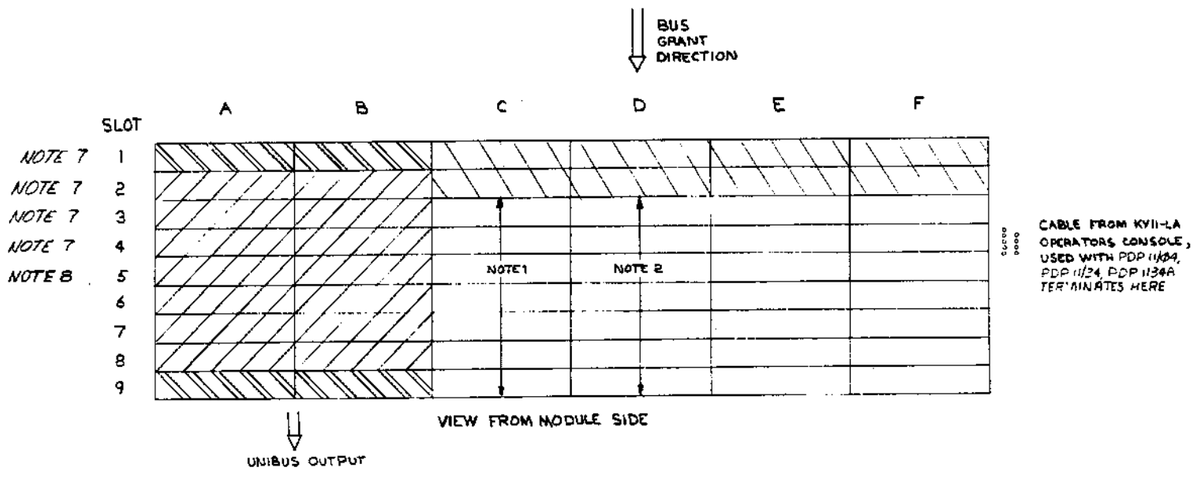
SIZE	CODE	NUMBER	REV.
C	AD	7012307-0-0	

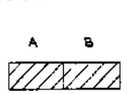
SCALE: NONE
SHEET: OF
DIST.

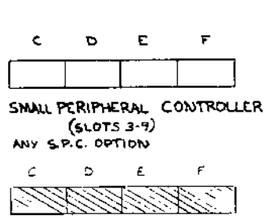
DRAWING NUMBER: C AD 7012307-0-0 REV.

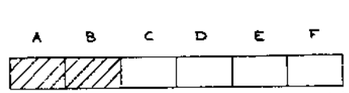
REVISIONS: REV. | CHANGE NO. | CHK

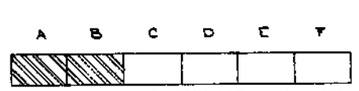
44











GENERAL

ANY HEX MODULE THAT MEETS *EITHER OF THE FOLLOWING* REQUIREMENTS CAN BE MOUNTED IN THESE SLOTS.

1.) THOSE PINNED TO TAKE SIGNALS FROM MODIFIED UNIBUS (A&B) WITH THE BUS GRANTS TAKEN FROM SPC SLOTS 1 THRU 9 ABOVE

2.) THOSE PINNED TO TAKE SIGNALS FROM STANDARD SPC PINNING WITH THE EXCEPTION OF POWER FROM (A&B). IE: SPECIAL OPTIONS

NOTES:

1. REMOVE CA1 TO CB1 WIRE WRAP JUMPER TO INSTALL AN NPR OPTION IN ANY SPC SLOT.
2. G727 REQUIRED IN ANY UNUSED SPC SLOT TO PROVIDE BUS GRANT CONTINUITY
3. GRANT DIRECTION IS SLOT 1 TO SLOT 9.
4. USE M9202 TO INTERCONNECT SYSTEM UNITS INSTEAD OF M920. M9202 IS A 2 FT. UNIBUS JUMPER CABLE USED TO DISTRIBUTE UNIBUS LOADING.
5. M9302 (SACK/TERM) AND M930 (TERM) MUST NEVER BE INSTALLED IN ANY SLOT OTHER THAN SLOT 9 (A & B). POWER SUPPLY VOLTAGES WILL BE SHORTED OUT IF THESE TERMINATORS ARE MOUNTED IN THE MODIFIED UNIBUS SLOTS.
6. MODIFIED UNIBUS SECTION CARRIES CORE AND MOS MEMORY VOLTAGE RAILS AND MEMORY PARITY CONTROL SIGNALS INSTEAD OF BUS GRANT AND SOME GND SIGNALS THAT ARE CONTAINED IN STANDARD UNIBUS SLOTS.
7. REFER TO NEXT PAGE FOR RECOMMENDED UTILIZATION OF THIS SLOT IN STANDARD SYSTEM.
8. THIS SLOT IS RESERVED FOR KK11-A OPTION ON PDP11/34A ONLY. BA11-K BOX ONLY.
9. *SLOT 3 IS TO BE USED FOR EITHER KK11-A OR FP11-A OPTIONS. IF BOTH OPTIONS ARE PRESENT FP11-A MUST GO IN SLOT 3 AND KK11-A IN SLOT 5 THESE CONFIGURATIONS APPLY TO BOTH THE BA11-L (5¼) AND BA11-K (10.5") BOXES.*
10. *EITHER M9312 OR M9301 MAY BE USED BUT NOT BOTH.*

REVISIONS			
	CHANGE NO.	REV.	
DGN	DD11P-00005	A	
DGN	DD11-P-00006	B	
DGN	DD11P-00007	C	
DGN	DD11P-01008	D	

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

QUANTITY & VARIATION	CLASS OF ACCURACY	NOMINAL D MEMBER SIZE
SURFACE	CHECK CHART	
CONCENTRICITIES	MEDIUM	±.005 ±.008 ±.012 ±.016 ±.024
	PREFERRED	±.010 ±.015 ±.020 ±.04 ±.060

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRN 11.3.73
CHK'D 7/11/73
ENG 7-23-73
PROJ. ENG
PROD. MGR
NEXT HIGHER ASSY.
B-DD-DD11-F
SCALE
SHEET 1 OF 2

FIRST USED ON

digital

TITLE
MODULE UTILIZATION
(DD11-D)

SIZE D | CODE MU | NUMBER DD11-F-2 | REV. D

DIST.

RECOMMENDED SLOT UTILIZATION IN STANDARD SYSTEMS

KD11-D W/M9312 & MS11-JP(FP) PDP-11/04

SLOT 1	M7263
2	MS11-JP (FP)
3	M9312
4	
5	
6	
7	
8	
SLOT 9	

KD11-E W/M9312 PDP-11/34

SLOT 1	M7266
2	M7265
3	M9312
4	
5	
6	
7	
8	
SLOT 9	

KD11-D W/M9312 & MM11-DP/OR MM11-YP PDP-11/04

SLOT 1	M7263
2	MM11-DP
3	
4	M9312
5	
6	
7	
8	
SLOT 9	

KD11-EA W/M9312 FP11-A PDP-1134A

SLOT 1	M8266
2	M8265
3	M8267
4	M9312
5	
6	
7	
8	
SLOT 9	

KD11-D W/M9312 & MM11-DP PDP-11/04

SLOT 1	M7263
2	MM11-DP
3	M9312
4	
5	
6	
7	
8	
SLOT 9	

BA11-K 10.5" BOX/BA11-L 5.25"BOX
W/M9312 FP11-A KK11-A

KD11-EA PDP1134A

SLOT 1	M8266
2	M8265
SEE NOTE 9 → 3	M8267
4	M9312
5	M8268
6	
7	
8	
SLOT 9	

KD11-EA W/M9312 PDP-1134A

SLOT 1	M8266
2	M8265
3	M9312
4	
5	
6	
7	
8	
SLOT 9	

BA11-K 10.5 BOX/BA11-L 5.25"BOX

KD11-EA W/M9312 KK11-A OR FP11-A PDP1134A

SLOT 1	M8266
2	M8265
SEE NOTE 9 → 3	M8267 OR M8268
4	M9312
5	
6	
7	
8	
SLOT 9	

A B C D E F

A B C D E F

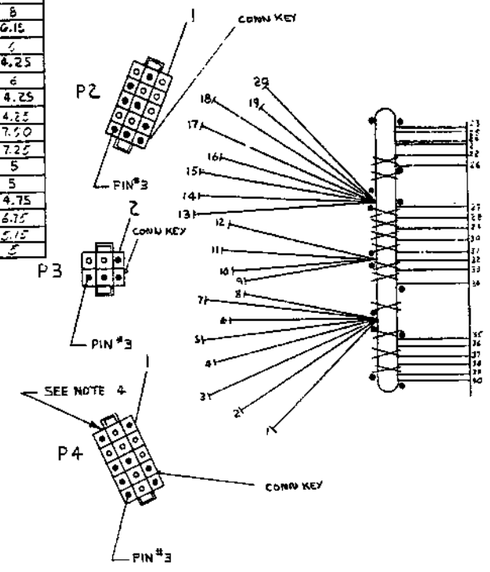
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MODULE UTILIZATION (DD11-P)	SIZE/CODE	D MU
NUMBER	DD11-P-2	REV.	D
SCALE		SHEET	2 OF 2
DIST.			

DD11-P-2 REV D

WIRING TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	WITH	TO POINT	TO CONNECTION	SIGNAL	LENGTH
9	#18	BLUE	1	P4-13	3	26	SOLDER	-15V	7
5	14	RED	2	P4-4		37		+5V	5
5	14	RED	3	P4-1		38		+5V	5
6	14	BLK	4	P4-8		21		GND	7.75
7	14	ORN	5	P4-3		35		+20V	5
6	14	BLK	6	P4-9		22		GND	8
13	18	WHT	7	P4-6		23		+15B	6.15
14	18	GRN	8	P4-15		29		-15B	5
12	18	YEL	9	P3-4		33		RCLO	4.25
6	14	BLK	10	P3-1		23		GND	6
10	18	BRN	11	P3-2		34		LTC	4.25
11	18	VIO	12	P3-3		32		DCLO	4.25
5	14	RED	13	P2-4		39		+5V	7.50
5	14	RED	14	P2-1		40		+5V	7.25
10	18	BRN	15	P2-14		31		-5V	5
6	14	BLK	16	P2-8		24		GND	5
8	18	GREY	17	P2-2		27		+15	4.75
7	14	ORN	18	P2-3		30		+20	6.75
6	14	BLK	19	P2-9		25		GND	5.15
5	14	RED	20	P2-12	3	30	SOLDER	+5B	5



NOTES:
1. USE TIE WRAPS (X) ITEM #9 AT BREAK OUT POINTS SHOWN
2. DOT (•) INDICATES NAIL LOCATION FOR ASS'Y USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.
3. WIRE LENGTH TOLERANCES WILL BE +½ -0 INCHES.
4. ALL CONN. SHOWN FROM WIRING SIDE.

FOR WIRE LENGTHS SEE WIRING TABLE

ITEM NO.	DESCRIPTION	DWG. PART NO.	QTY
1	POWER HARNESS DECALS	7409872-2-0	15
A/R	WIRE #18 AWG, GRN	9107360-55	14
A/R	WIRE #18 AWG, WHT	9107360-99	13
A/R	WIRE #18 AWG, YEL	9107360-44	12
A/R	WIRE #18 AWG, VIO	9107360-77	11
A/R	WIRE #18 AWG, BRN	9107360-11	10
A/R	WIRE #18 AWG, BLUE	9107360-66	9
A/R	WIRE #18 AWG, GREY	9107360-88	8
A/R	WIRE #14 AWG, ORN	9107370-33	7
A/R	WIRE #14 AWG, BLK	9107370-00	6
A/R	WIRE #14 AWG, RED	9107370-22	5
12	TIE WRAP	9007031	4
20	PIN MALE	1209378-01	3
1	CONN 5 PIN HOUSING	1209351-06	2
2	CONN 15 PIN HOUSING	1209351-15	1

DO NOT REDUCE
SCALE
0 IN 6 IN 12 IN
FOR MANUFACTURING PURPOSES ONLY

UNLESS OTHERWISE SPECIFIED	DIMENSIONS ARE IN INCHES
TOLERANCES	ANGLES ±0° 30'
	CLASS OF ACCURACY
	SURFACE QUALITY
	MACHINED
	NON-MACHINED PREFERRED
	DECIMAL DIMENSION .X ±.1 .XX ±.02 .XXX ±.005
	FRACTIONAL ±1/64
	MATERIAL SEE PARTS LIST
	FINISH
	DO NOT SCALE DWG
	REMOVE BURRS AND BREAK SHARP CORNERS
	THIRD ANGLE PROJECTION
	QUANTITY & VARIATION
DRN	FIRST USED ON DD11-D
CHK'D	
ENG'G MGR	
PROJ. ENG.	
PROD.	
NEXT HIGHER ASSY.	
CAD-7011108-0-0	
SCALE 1/1	
SHEET OF	

digital

TITLE: POWER HARNESS (BA11-K, BA11-L)

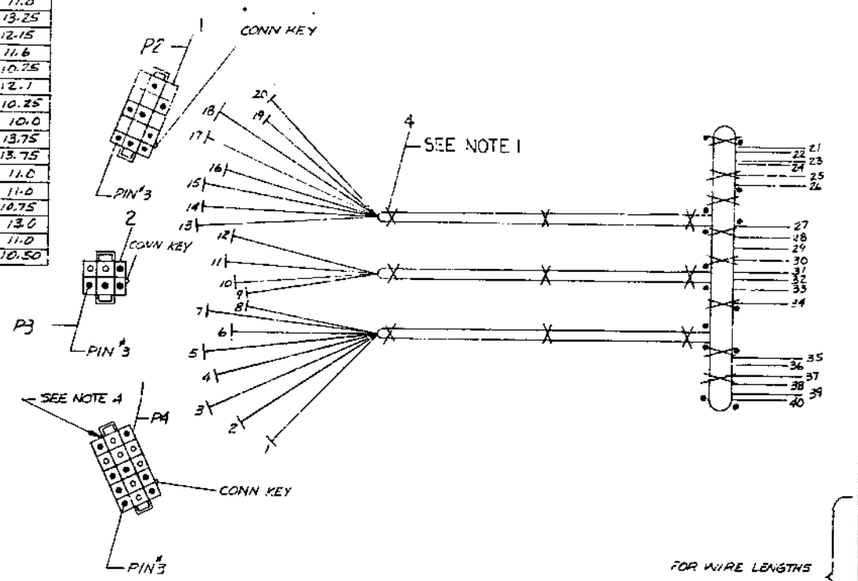
SIZE D | CODE 1A | NUMBER 7011108-0-0 | REV. R

REVISIONS			
DASH	CHANGE NO.	DATE	APPROVED
1	7711	7/11/72	

DRAWN D. MURRAY
TRACED
CHECKED
RELEASED
ENGINEER R. FORBECA

WIRING TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	WITH	TO POINT	TO CONNECTION	SIGNAL	LENGTH
7	18	BLU	1	P4-13	3	26	SOLDER	-15V	12.75
5	14	RED	2	P4-4		37		+5V	11
	14	RED	3	P4-1		38		+5V	11.25
6	14	BLK	4	P4-8		21		GND	13.75
7	14	ORN	5	P4-3		35		+20V	11.0
6	14	BLK	6	P4-9		22		GND	13.25
13	18	WHT	7	P4-6		28		+15B	12.15
14	18	GRN	8	P4-15		29		-15B	11.6
12	18	YEL	9	P3-4		33		ACLO	10.75
6	14	BLK	10	P3-1		23		GND	12.1
10	18	BRN	11	P3-2		34		LTC	10.25
11	18	V.O	12	P3-3		32		DCLO	10.0
5	14	RED	13	P2-4		39		+5V	13.75
5	14	RED	14	P2-1		40		+5V	13.75
15	14	BRN	15	P2-14		31		-5V	11.0
6	14	BLK	16	P2-3		24		GND	11.0
8	18	GRY	17	P2-2		27		+15	10.75
7	14	ORN	18	P2-5		36		+20	13.0
6	14	BLK	19	P2-9		25		GND	11.0
5	14	RED	20	P2-10	3	30	SOLDER	+5B	10.50



DO NOT REDUCE

SCALE

0 IN — 6 IN — 12 IN

FOR MANUFACTURING PURPOSES ONLY

NOTES:
1. USE TIE WRAPS (X) ITEM #4 AT BREAKOUT POINTS SHOWN.
2. DOT (•) INDICATES NAIL LOCATION FOR ASSY USE ONLY. COVER NAILS WITH SHRINK TUBING.
3. WIRE LENGTH TOL WILL BE ± .12 IN
4. ALL CONN SHOWN FROM WIRING SIDE.
5. STRIP 1/8" INSULATION FROM POINTS 21 THRU 40 AND FULL TIN POINTS 21 THRU 40

ITEM			
1	POWER HARNESS DECAL	7409872-2	6
AR	WIRE #14 AWG (BRN)	9107370-11	15
AR	WIRE #18 AWG (GRN)	9107350-55	14
AR	WIRE #18 AWG (WHT)	9107360-99	13
AR	WIRE #18 AWG (YEL)	9107360-44	12
AR	WIRE #18 AWG (VIO)	9107360-77	11
AR	WIRE #18 AWG (BRN)	9107350-11	10
AR	WIRE #18 AWG (BLU)	9107360-66	9
AR	WIRE #18 AWG (GRY)	9107360-88	8
AR	WIRE #14 AWG (ORN)	9107370-33	7
AR	WIRE #14 AWG (BLK)	9107370-00	6
AR	WIRE #14 AWG (RED)	9107370-22	5
17	TIE WRAP	9007031	4
20	PIN MALE	1209378-01	3
1	CONN 6 PIN HOUSING	1209351-06	2
2	CONN 15 PIN HOUSING	1209351-15	1

FOR WIRE LENGTHS SEE WIRING TABLE

REVISIONS		
SYM	DRAWING NO.	REV
K.F.	7011109-0000	A.
	7011109-0000	B.

D. BARRY 4-FEB-77
P. POIRIER 13-MAR-77

DO NOT SCALE DWG.
MATERIAL SEE PARTS LIST
FINISH

DRAWN		11/5/75
CHECKED		12/1/75
ENGR	R. Barry	12/5/75
PROJ. ENGR		12/19/75
PROD		
NEXT HIGHER ASSY.	CAD-7012507-0-C	
SCALE	1/1	
SHEET	1 OF 1	

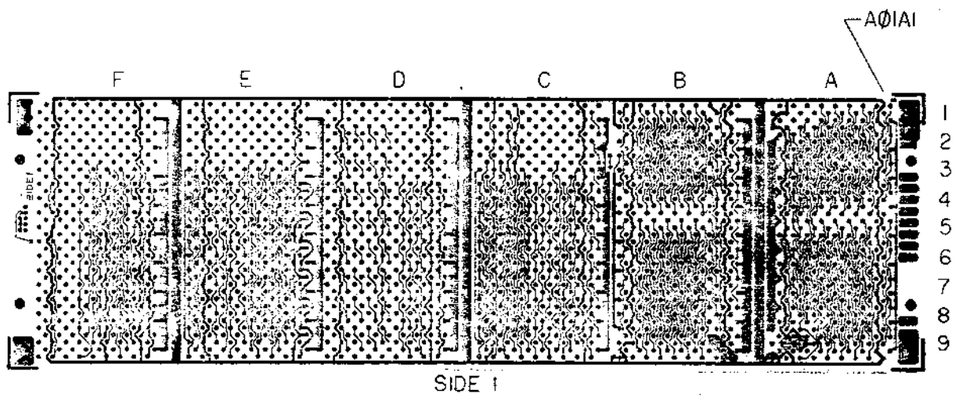
FIRST USED ON: DD11-DF, PF

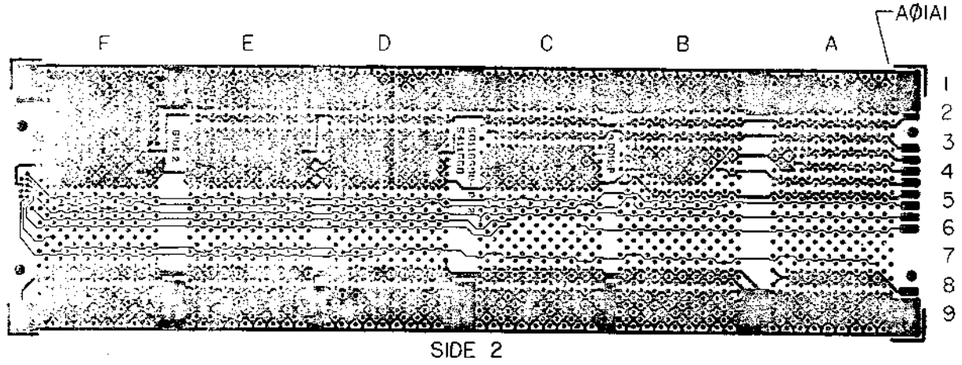
digital

TITLE: POWER HARNESS (BA11-F)

SIZE D | CODE [A] | NUMBER 7011109-0-C | REV. B

NOTES:





REF		AWT REV STATUS	A-WT-701521-0-1	B
REF		MODULE ECO HISTORY	5411660-0-1	A
REF		ASSY/DRILLING HOLE LAYOUT	5411660-0-1	B
REF		X-Y COORDINATE HOLE LOCATION	5411660-0-1	C
1		ETCHED CIRCUIT BOARD	5411660	1
QTY	REF. DESIGNATION	DESCRIPTION	PART NO	ITEM NO

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

DES. NO.	EIA NO.	DES. NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

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

NEXT HIGHER ASSY

C-TA-701521-0-0

SCALE 1/1

SHEET 1 OF 1

digital

TITLE

CIRCUIT SCHEMATIC

SIZE/CODE | NUMBER | REV

CS 5411660-0-1 | E

REV	CHANGE NO.	DESCRIPTION	DATE	CHK
C	5411660-00001	RELEASED	9-11-78	H. BARRY
D	5411660-00002	RELEASED	6-NOV-78	H. BARRY

REVISIONS

DIGITAL EQUIP. CORP.

SIZE	CODE	NUMBER	REV.
K	WL	DD11-P-1	C

REVISIONS			
REV.	CHANGE NO.	CHK	
A	DD11P-00001	RTB	
B	DD11P-00003	RTB	
C	DD11P-00004	RTB	

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DD11-P		PARTS LIST		

DRN.	DATE 6/30/75	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 6/30/75	
ENG. R Barry	DATE 7-2-75	TITLE WIRE LIST DD11-P
PROJ. ENG.	DATE 7/2/75	
PROD.	DATE 7/2/75	
NEXT HIGHER ASSEMBLY: B-DD-DD11-P		SIZE K · CODE WL · NUMBER DD11-P-1 · REV. C
SCALE		DIST.
SHEET OF 1		

DEC FORM NO
DRB 109

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
+15/+8V		C03U1		1-01 *	P						2		0-7/8		1
+15/+8V		C04U1		1-02 *	P						1		0-7/8		1
+15/+8V		C05U1		1-03 *	P						2		0-7/8		1
+15/+8V		C06U1		1-04 *	P						1		0-7/8		1
+15/+8V		C07U1		1-05 *	P						2		0-7/8		1
+15/+8V		C08U1		1-06 *	P						1		0-7/8		1
+15/+8V		C09U1		1-07 *	P										1
+15/+8V				1									5-2/8		1
+20V		A02U1		1-01 *	P						1		0-2/8		2
+20V		A02V1		1-02 *	P						2		0-4/8		2
+20V		A02V2		1-03 *	P						1		0-2/8		2
+20V		A03U1		1-04 *	P						2		0-2/8		2
+20V		A03V1		1-05 *	P						1		0-4/8		2
+20V		A03V2		1-06 *	P						2		0-2/8		2
+20V		A04U1		1-07 *	P						1		0-2/8		2
+20V		A04V1		1-08 *	P						2		0-4/8		2
+20V		A04V2		1-09 *	P						1		0-2/8		2
+20V		A05U1		1-10 *	P						2		0-2/8		2
+20V		A05V1		1-11 *	P						1		0-4/8		2
+20V		A05V2		1-12 *	P						2		0-2/8		2
+20V		A06U1		1-13 *	P						1		0-2/8		2
+20V		A06V1		1-14 *	P						2		0-4/8		2
+20V		A06V2		1-15 *	P						1		0-2/8		2
+20V		A07U1		1-16 *	P						2		0-2/8		2
+20V		A07V1		1-17 *	P						1		0-4/8		2
+20V		A07V2		1-18 *	P						2		0-2/8		2
+20V		A08U1		1-19 *	P						1		0-2/8		2
+20V		A08V1		1-20 *	P						2		0-4/8		2
+20V		A08V2		1-21 *	P										2
+20V				1									6-6/8		2

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
+5V		A01A2		1=01 *	P						2		0=7/8		3
+5V		A02A2		1=02 *	P						1		0=7/8		3
+5V		A03A2		1=03 *	P						2		0=7/8		3
+5V		A04A2		1=04 *	P						1		0=7/8		3
+5V		A05A2		1=05 *	P						2		0=7/8		3
+5V		A06A2		1=06 *	P						1		0=7/8		3
+5V		A07A2		1=07 *	P						2		0=7/8		3
+5V		A08A2		1=08 *	P						1		0=7/8		3
+5V		A09A2		1=09 *	P						2		3=1/8		3
+5V		B09A2		1=10 *	P						1		0=7/8		3
+5V		B08A2		1=11 *	P						2		0=7/8		3
+5V		B07A2		1=12 *	P						1		0=7/8		3
+5V		B06A2		1=13 *	P						2		0=7/8		3
+5V		B05A2		1=14 *	P						1		0=7/8		3
+5V		B04A2		1=15 *	P						2		0=7/8		3
+5V		B03A2		1=16 *	P						1		0=7/8		3
+5V		B02A2		1=17 *	P						2		0=7/8		3
+5V		B01A2		1=18 *	P						1		2=7/8		3
+5V		C01A2		1=19 *	P						2		0=7/8		3
+5V		C02A2		1=20 *	P						1		0=7/8		3
+5V		C03A2		1=21 *	P						2		0=7/8		3
+5V		C04A2		1=22 *	P						1		0=7/8		3
+5V		C05A2		1=23 *	P						2		0=7/8		3
+5V		C06A2		1=24 *	P						1		0=7/8		3
+5V		C07A2		1=25 *	P						2		0=7/8		3
+5V		C08A2		1=26 *	P						1		0=7/8		3
+5V		C09A2		1=27 *	P						2		3=1/8		3
+5V		D09A2		1=28 *	P						1		0=7/8		3
+5V		D08A2		1=29 *	P						2		0=7/8		3
+5V		D07A2		1=30 *	P						1		0=7/8		3
+5V		D06A2		1=31 *	P						2		0=7/8		3
+5V		D05A2		1=32 *	P						1		0=7/8		3
+5V		D04A2		1=33 *	P						2		0=7/8		3
+5V		D03A2		1=34 *	P						1		0=7/8		3
+5V		D02A2		1=35 *	P						2		0=7/8		3
+5V		D01A2		1=36 *	P						1		2=7/8		3
+5V		E01A2		1=37 *	P						2		0=7/8		3
+5V		E02A2		1=38 *	P						1		0=7/8		3
+5V		E03A2		1=39 *	P						2		0=7/8		3
+5V		E04A2		1=40 *	P						1		0=7/8		3
+5V		E05A2		1=41 *	P						2		0=7/8		3
+5V		E06A2		1=42 *	P						1		0=7/8		3
+5V		E07A2		1=43 *	P						2		0=7/8		3
+5V		E08A2		1=44 *	P						1		0=7/8		3
+5V		E09A2		1=45 *	P						2		3=1/8		3
+5V		F09A2		1=46 *	P						1		0=7/8		3
+5V		F08A2		1=47 *	P						2		0=7/8		3
+5V		F07A2		1=48 *	P						1		0=7/8		3
+5V		F06A2		1=49 *	P						2		0=7/8		3
+5V		F05A2		1=50 *	P						1		0=7/8		3
+5V		F04A2		1=51 *	P						2		0=7/8		3
+5V		F03A2		1=52 *	P						1		0=7/8		3
+5V		F02A2		1=53 *	P						2		0=7/8		3
+5V		F01A2		1=54 *	P										3
+5V				1									57=1/8		3

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
•15V		C0JB2		1=01 •	P						2		0=7/8	4
•15V		C04B2		1=02 •	P						1		0=7/8	4
•15V		C05B2		1=03 •	P						2		0=7/8	4
•15V		C06B2		1=04 •	P						1		0=7/8	4
•15V		C07B2		1=05 •	P						2		0=7/8	4
•15V		C08B2		1=06 •	P						1		0=7/8	4
•15V		C09B2		1=07 •	P						2		3=1/8	4
•15V		D09B2		1=08 •	P						1		0=7/8	4
•15V		D08B2		1=09 •	P						2		0=7/8	4
•15V		D07B2		1=10 •	P						1		0=7/8	4
•15V		D06B2		1=11 •	P						2		0=7/8	4
•15V		D05B2		1=12 •	P						1		0=7/8	4
•15V		D04B2		1=13 •	P						2		0=7/8	4
•15V		D03B2		1=14 •	P						1		2=7/8	4
•15V		E03B2		1=15 •	P						2		0=7/8	4
•15V		E04B2		1=16 •	P						1		0=7/8	4
•15V		E05B2		1=17 •	P						2		0=7/8	4
•15V		E06B2		1=18 •	P						1		0=7/8	4
•15V		E07B2		1=19 •	P						2		0=7/8	4
•15V		E08B2		1=20 •	P						1		0=7/8	4
•15V		E09B2		1=21 •	P						2		3=1/8	4
•15V		F09B2		1=22 •	P						1		0=7/8	4
•15V		F08B2		1=23 •	P						2		0=7/8	4
•15V		F07B2		1=24 •	P						1		0=7/8	4
•15V		F06B2		1=25 •	P						2		0=7/8	4
•15V		F05B2		1=26 •	P						1		0=7/8	4
•15V		F04B2		1=27 •	P						2		0=7/8	4
•15V		F03B2		1=28 •	P									4
•15V				1									30=1/8	4
•5V		B02V2		1=01 •	P						2		0=7/8	5
•5V		B03V2		1=02 •	P						1		0=7/8	5
•5V		B04V2		1=03 •	P						2		0=7/8	5
•5V		B05V2		1=04 •	P						1		0=7/8	5
•5V		B06V2		1=05 •	P						2		0=7/8	5
•5V		B07V2		1=06 •	P						1		0=7/8	5
•5V		B08V2		1=07 •	P									5
•5V				1									5=2/8	5
AC LO L		B01F1		1=01 •	P						1		0=7/8	6
AC LO L		B02F1		1=02 •	P						2		0=7/8	6
AC LO L		B03F1		1=03 •	P						1		0=7/8	6
AC LO L		B04F1		1=04 •							2		4=7/8	6
AC LO L		C0JV1		1=05 •	P						1		0=7/8	6
AC LO L		C04V1		1=06 •	P						2		0=7/8	6
AC LO L		C05V1		1=07 •	P						1		0=7/8	6
AC LO L		C06V1		1=08 •	P						2		0=7/8	6
AC LO L		C07V1		1=09 •	P						1		0=7/8	6
AC LO L		C08V1		1=10 •	P						2		0=7/8	6
AC LO L		C09V1		1=11 •							1		6=3/8	6
AC LO L		B05F1		1=12 •	P						2		0=7/8	6
AC LO L		B06F1		1=13 •	P						1		0=7/8	6
AC LO L		B07F1		1=14 •	P						2		0=7/8	6
AC LO L		B09F1		1=15 •	P						1		0=7/8	6
AC LO L		B09F1		1=16 •	P									6
AC LO L				1									22=5/8	6

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
													0-7/8	7
BB+15		A02R1		1-01 *	P						2		0-7/8	7
BB+15		A03R1		1-02 *	P						1		0-7/8	7
BB+15		A04R1		1-03 *	P						2		0-7/8	7
BB+15		A05R1		1-04 *	P						1		0-7/8	7
BB+15		A06R1		1-05 *	P						2		0-7/8	7
BB+15		A07R1		1-06 *	P						1			7
BB+15		A08R1		1-07 *	P								5-2/8	7
BB+15				1										
													0-7/8	8
BB+5		B02D1		1-01 *	P						2		0-7/8	8
BB+5		B03D1		1-02 *	P						1		0-7/8	8
BB+5		B04D1		1-03 *	P						2		0-7/8	8
BB+5		B05D1		1-04 *	P						1		0-7/8	8
BB+5		B06D1		1-05 *	P						2		0-7/8	8
BB+5		B07D1		1-06 *	P						1			8
BB+5		B08D1		1-07 *	P								5-2/8	8
BB+5				1										
													0-7/8	9
BB-15		A02S1		1-01 *	P						2		0-7/8	9
BB-15		A03S1		1-02 *	P						1		0-7/8	9
BB-15		A04S1		1-03 *	P						2		0-7/8	9
BB-15		A05S1		1-04 *	P						1		0-7/8	9
BB-15		A06S1		1-05 *	P						2		0-7/8	9
BB-15		A07S1		1-06 *	P						1			9
BB-15		A08S1		1-07 *	P								5-2/8	9
BB-15				1										
													0-7/8	10
BB8Y L		A01P2		1-01 *	P						2		0-7/8	10
BB8Y L		A02P2		1-02 *	P						1		0-7/8	10
BB8Y L		A03P2		1-03 *	P						2		13-1/8	10
BB8Y L		A04P2		1-04 *	H						1	TWP	0-7/8	10
BB8Y L		F03D1		1-05 *	P						2		0-7/8	10
BB8Y L		F04D1		1-06 *	H						1	2° TWP	0-7/8	10
BB8Y L		F05D1		1-07 *	P						2		0-7/8	10
BB8Y L		F06D1		1-08 *	P						1		0-7/8	10
BB8Y L		F07D1		1-09 *	P						2		0-7/8	10
BB8Y L		F08D1		1-10 *	P						1		14-3/8	10
BB8Y L		F09D1		1-11 *	H						2	TWP	0-7/8	10
BB8Y L		A05P2		1-12 *	P						1		0-7/8	10
BB8Y L		A06P2		1-13 *	P						2		0-7/8	10
BB8Y L		A07P2		1-14 *	P						1		0-7/8	10
BB8Y L		A08P2		1-15 *							2			10
BB8Y L		A09P2		1-16 *									38-7/8	10
BB8Y L				1										
													6-7/8	11
BG4 A		B01E2		1-01 *	H						1	TWP		11
BG4 A		D01S2		1-02 *									6-7/8	11
BG4 A				1										
													0-5/8	12
BG4 B		D01T2		1-01 *	P						1			12
BG4 B		D02S2		1-02 *	P								0-5/8	12
BG4 B				1										

RUN	NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BG4	C		D02T2		1-01 *	P						1			0-5/8	13
BG4	C		D03S2		1-02 *	P										13
BG4	C				1										0-5/8	13
BG4	D		D03T2		1-01 *	P						1			0-5/8	14
BG4	D		D04S2		1-02 *	P										14
BG4	D				1										0-5/8	14
BG4	E		D04T2		1-01 *	P						1			0-5/8	15
BG4	E		D05S2		1-02 *	P										15
BG4	E				1										0-5/8	15
BG4	F		D05T2		1-01 *	P						1			0-5/8	16
BG4	F		D06S2		1-02 *	P										16
BG4	F				1										0-5/8	16
BG4	H		D06T2		1-01 *	P						1			0-5/8	17
BG4	H		D07S2		1-02 *	P										17
BG4	H				1										0-5/8	17
BG4	J		D07T2		1-01 *	P						1			0-5/8	18
BG4	J		D08S2		1-02 *	P										18
BG4	J				1										0-5/8	18
BG4	K		D08T2		1-01 *	P						1			0-5/8	19
BG4	K		D09S2		1-02 *	P										19
BG4	K				1										0-5/8	19
BG4	L		B09E2		1-01 *	H						1	TWP		7-1/8	20
BG4	L		D09T2		1-02 *	X										20
BG4	L				1										7-1/8	20
BG5	A		B01B1		1-01 *	H						1	TWP		7-1/8	21
BG5	A		D01P2		1-02 *	X										21
BG5	A				1										7-1/8	21
BG5	B		D01R2		1-01 *	P						1			0-5/8	22
BG5	B		D02P2		1-02 *	P										22
BG5	B				1										0-5/8	22
BG5	C		D02R2		1-01 *	P						1			0-5/8	23
BG5	C		D03P2		1-02 *	P										23
BG5	C				1										0-5/8	23
BG5	D		D03R2		1-01 *	P						1			0-5/8	24
BG5	D		D04P2		1-02 *	P										24
BG5	D				1										0-5/8	24
BG5	E		D04R2		1-01 *	P						1			0-5/8	25
BG5	E		D05P2		1-02 *	P										25
BG5	E				1										0-5/8	25
BG5	F		D05R2		1-01 *	P						1			0-5/8	26
BG5	F		D06P2		1-02 *	P										26
BG5	F				1										0-5/8	26

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
BG5 H		D06R2		1-01 *	P						1		0-5/8		27
BG5 H		D07P2		1-02 *	P										27
BG5 H				1									0-5/8		27
BG5 J		D07R2		1-01 *	P						1		0-5/8		28
BG5 J		D08P2		1-02 *	P										28
BG5 J				1									0-5/8		28
BG5 K		D08R2		1-01 *	P						1		0-5/8		29
BG5 K		D09P2		1-02 *	P										29
BG5 K				1									0-5/8		29
BG5 L		B09B1		1-01 *	H						1	TWP	7-3/8		30
BG5 L		D09R2		1-02 *	X										30
BG5 L				1									7-3/8		30
BG6 A		B01A1		1-01 *	H						1	TWP	7-1/8		31
BG6 A		D01M2		1-02 *	X										31
BG6 A				1									7-1/8		31
BG6 B		D01N2		1-01 *	P						1		0-5/8		32
BG6 B		D02M2		1-02 *	P										32
BG6 B				1									0-5/8		32
BG6 C		D02N2		1-01 *	P						1		0-5/8		33
BG6 C		D03M2		1-02 *	P										33
BG6 C				1									0-5/8		33
BG6 D		D03N2		1-01 *	P						1		0-5/8		34
BG6 D		D04M2		1-02 *	P										34
BG6 D				1									0-5/8		34
BG6 E		D04N2		1-01 *	P						1		0-5/8		35
BG6 E		D05M2		1-02 *	P										35
BG6 E				1									0-5/8		35
BG6 F		D05N2		1-01 *	P						1		0-5/8		36
BG6 F		D06M2		1-02 *	P										36
BG6 F				1									0-5/8		36
BG6 H		D06N2		1-01 *	P						1		0-5/8		37
BG6 H		D07M2		1-02 *	P										37
BG6 H				1									0-5/8		37
BG6 J		D07N2		1-01 *	P						1		0-5/8		38
BG6 J		D08M2		1-02 *	P										38
BG6 J				1									0-5/8		38
BG6 K		D08N2		1-01 *	P						1		0-5/8		39
BG6 K		D09M2		1-02 *	P										39
BG6 K				1									0-5/8		39
BG6 L		B09A1		1-01 *	H						1	TWP	7-3/8		40
BG6 L		D09N2		1-02 *	X										40
BG6 L				1									7-3/8		40

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
BG7	A		A01V1		1-01 *	H						1	TWP	7-3/8		41
BG7	A		D01K2		1-02 *	X										41
BG7	A				1									7-3/8		41
BG7	B		D01L2		1-01 *	P						1		0-5/8		42
BG7	B		D02K2		1-02 *	P										42
BG7	B				1									0-5/8		42
BG7	C		D02L2		1-01 *	P						1		0-5/8		43
BG7	C		D03K2		1-02 *	P										43
BG7	C				1									0-5/8		43
BG7	D		D03L2		1-01 *	P						1		0-5/8		44
BG7	D		D04K2		1-02 *	P										44
BG7	D				1									0-5/8		44
BG7	E		D04L2		1-01 *	P						1		0-5/8		45
BG7	E		D05K2		1-02 *	P										45
BG7	E				1									0-5/8		45
BG7	F		D05L2		1-01 *	P						1		0-5/8		46
BG7	F		D06K2		1-02 *	P										46
BG7	F				1									0-5/8		46
BG7	H		D06L2		1-01 *	P						1		0-5/8		47
BG7	H		D07K2		1-02 *	X										47
BG7	H				1									0-5/8		47
BG7	J		D07L2		1-01 *	P						1		0-5/8		48
BG7	J		D08K2		1-02 *	P										48
BG7	J				1									0-5/8		48
BG7	K		D08L2		1-01 *	P						1		0-5/8		49
BG7	K		D09K2		1-02 *	P										49
BG7	K				1									0-5/8		49
BG7	L		A09V1		1-01 *	H						1	TWP	7-5/8		50
BG7	L		D09L2		1-02 *	X										50
BG7	L				1									7-5/8		50

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
BR4 L		B01D2		1-01 *							2		0-7/8		51
BR4 L		B02D2		1-02 *							1		0-7/8		51
BR4 L		B03D2		1-03 *							2		0-7/8		51
BR4 L		B04D2		1-04 *							1		6-5/8		51
BR4 L		D03H2		1-05 *	P						2		0-7/8		51
BR4 L		D04H2		1-06 *	P						1		0-7/8		51
BR4 L		D05H2		1-07 *	P						2		0-7/8		51
BR4 L		D06H2		1-08 *	P						1		0-7/8		51
BR4 L		D07H2		1-09 *	P						2		0-7/8		51
BR4 L		D08H2		1-10 *	P						1		0-7/8		51
BR4 L		D09H2		1-11 *							2		7-7/8		51
BR4 L		B05D2		1-12 *							1		0-7/8		51
BR4 L		B06D2		1-13 *							2		0-7/8		51
BR4 L		B07D2		1-14 *							1		0-7/8		51
BR4 L		B08D2		1-15 *							2		0-7/8		51
BR4 L		B09D2		1-16 *											51
BR4 L				1									25-7/8		51
BR5 L		B01C1		1-01 *	P						1		0-7/8		52
BR5 L		B02C1		1-02 *	P						2		0-7/8		52
BR5 L		B03C1		1-03 *	P						1		0-7/8		52
BR5 L		B04C1		1-04 *							2		6-1/8		52
BR5 L		D03F2		1-05 *	P						1		0-7/8		52
BR5 L		D04F2		1-06 *	P						2		0-7/8		52
BR5 L		D05F2		1-07 *	P						1		0-7/8		52
BR5 L		D06F2		1-08 *	P						2		0-7/8		52
BR5 L		D07F2		1-09 *	P						1		0-7/8		52
BR5 L		D08F2		1-10 *	P						2		0-7/8		52
BR5 L		D09F2		1-11 *							1		8-3/8		52
BR5 L		B05C1		1-12 *	P						2		0-7/8		52
BR5 L		B06C1		1-13 *	P						1		0-7/8		52
BR5 L		B07C1		1-14 *	P						2		0-7/8		52
BR5 L		B08C1		1-15 *	P						1		0-7/8		52
BR5 L		B09C1		1-16 *	P										52
BR5 L				1									25-7/8		52
BR6 L		A01U2		1-01 *							2		0-7/8		53
BR6 L		A02U2		1-02 *							1		0-7/8		53
BR6 L		A03U2		1-03 *							2		0-7/8		53
BR6 L		A04U2		1-04 *							1		7-3/8		53
BR6 L		D03E2		1-05 *	P						2		0-7/8		53
BR6 L		D04E2		1-06 *	P						1		0-7/8		53
BR6 L		D05E2		1-07 *	P						2		0-7/8		53
BR6 L		D06E2		1-08 *	P						1		0-7/8		53
BR6 L		D07E2		1-09 *	P						2		0-7/8		53
BR6 L		D08E2		1-10 *	P						1		0-7/8		53
BR6 L		D09E2		1-11 *							2		8-7/8		53
BR6 L		A05U2		1-12 *							1		0-7/8		53
BR6 L		A06U2		1-13 *							2		0-7/8		53
BR6 L		A07U2		1-14 *							1		0-7/8		53
BR6 L		A08U2		1-15 *							2		0-7/8		53
BR6 L		A09U2		1-16 *											53
BR6 L				1									27-5/8		53

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
BR7	L		A01T2		1-01 *	P						2		0-7/8		54
BR7	L		A02T2		1-02 *	P						1		0-7/8		54
BR7	L		A03T2		1-03 *	P						2		0-7/8		54
BR7	L		A04T2		1-04 *							1		7-3/8		54
BR7	L		D03D2		1-05 *	P						2		0-7/8		54
BR7	L		D04D2		1-06 *	P						1		0-7/8		54
BR7	L		D05D2		1-07 *	P						2		0-7/8		54
BR7	L		D06D2		1-08 *	P						1		0-7/8		54
BR7	L		D07D2		1-09 *	P						2		0-7/8		54
BR7	L		D08D2		1-10 *	P						1		0-7/8		54
BR7	L		D09D2		1-11 *							2		0-7/8		54
BR7	L		A05T2		1-12 *	P						1		0-7/8		54
BR7	L		A06T2		1-13 *	P						2		0-7/8		54
BR7	L		A07T2		1-14 *	P						1		0-7/8		54
BR7	L		A08T2		1-15 *							2				54
BR7	L		A09T2		1-16 *									27-5/8		54
BR7	L				1											
BUS	A00 L		B01H2		1-01 *	P						2		0-7/8		55
BUS	A00 L		B02H2		1-02 *	P						1		0-7/8		55
BUS	A00 L		B03H2		1-03 *	P						2		0-7/8		55
BUS	A00 L		B04H2		1-04 *							1		8-5/8		55
BUS	A00 L		E03H2		1-05 *							2		0-7/8		55
BUS	A00 L		E04H2		1-06 *							1		0-7/8		55
BUS	A00 L		E05H2		1-07 *							2		0-7/8		55
BUS	A00 L		E06H2		1-08 *							1		0-7/8		55
BUS	A00 L		E07H2		1-09 *							2		0-7/8		55
BUS	A00 L		E08H2		1-10 *							1		0-7/8		55
BUS	A00 L		E09H2		1-11 *							2		10-1/8		55
BUS	A00 L		B05H2		1-12 *	P						1		0-7/8		55
BUS	A00 L		B06H2		1-13 *	P						2		0-7/8		55
BUS	A00 L		B07H2		1-14 *	P						1		0-7/8		55
BUS	A00 L		B08H2		1-15 *	P						2		0-7/8		55
BUS	A00 L		B09H2		1-16 *	P										55
BUS	A00 L				1									30-1/8		55
BUS	A01 L		B01H1		1-01 *	P						2		0-7/8		56
BUS	A01 L		B02H1		1-02 *	P						1		0-7/8		56
BUS	A01 L		B03H1		1-03 *	P						2		0-7/8		56
BUS	A01 L		B04H1		1-04 *							1		8-5/8		56
BUS	A01 L		E03H1		1-05 *	P						2		0-7/8		56
BUS	A01 L		E04H1		1-06 *	P						1		0-7/8		56
BUS	A01 L		E05H1		1-07 *	P						2		0-7/8		56
BUS	A01 L		E06H1		1-08 *	P						1		0-7/8		56
BUS	A01 L		E07H1		1-09 *	P						2		0-7/8		56
BUS	A01 L		E08H1		1-10 *	P						1		0-7/8		56
BUS	A01 L		E09H1		1-11 *							2		10-1/8		56
BUS	A01 L		B05H1		1-12 *	P						1		0-7/8		56
BUS	A01 L		B06H1		1-13 *	P						2		0-7/8		56
BUS	A01 L		B07H1		1-14 *	P						1		0-7/8		56
BUS	A01 L		B08H1		1-15 *	P						2		0-7/8		56
BUS	A01 L		B09H1		1-16 *	P										56
BUS	A01 L				1									30-1/8		56

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A02 L		B01J2		1=01 *	P						2		0=7/8		57
BUS A02 L		B02J2		1=02 *	P						1		0=7/8		57
BUS A02 L		B03J2		1=03 *	P						2		0=7/8		57
BUS A02 L		B04J2		1=04 *							1		8=5/8		57
BUS A02 L		E03F1		1=05 *	P						2		0=7/8		57
BUS A02 L		E04F1		1=06 *	P						1		0=7/8		57
BUS A02 L		E05F1		1=07 *	P						2		0=7/8		57
BUS A02 L		E06F1		1=08 *	P						1		0=7/8		57
BUS A02 L		E07F1		1=09 *	P						2		0=7/8		57
BUS A02 L		E08F1		1=10 *	P						1		0=7/8		57
BUS A02 L		E09F1		1=11 *							2		9=5/8		57
BUS A02 L		B05J2		1=12 *	P						1		0=7/8		57
BUS A02 L		B06J2		1=13 *	P						2		0=7/8		57
BUS A02 L		B07J2		1=14 *	P						1		0=7/8		57
BUS A02 L		B08J2		1=15 *	P						2		0=7/8		57
BUS A02 L		B09J2		1=16 *	P										57
BUS A02 L				1									29=5/8		57
BUS A03 L		B01J1		1=01 *	P						1		0=7/8		58
BUS A03 L		B02J1		1=02 *	P						2		0=7/8		58
BUS A03 L		B03J1		1=03 *	P						1		0=7/8		58
BUS A03 L		B04J1		1=04 *							2		9=5/8		58
BUS A03 L		E03V2		1=05 *	P						1		0=7/8		58
BUS A03 L		E04V2		1=06 *	P						2		0=7/8		58
BUS A03 L		E05V2		1=07 *	P						1		0=7/8		58
BUS A03 L		E06V2		1=08 *	P						2		0=7/8		58
BUS A03 L		E07V2		1=09 *	P						1		0=7/8		58
BUS A03 L		E08V2		1=10 *	P						2		0=7/8		58
BUS A03 L		E09V2		1=11 *							1		11=5/8		58
BUS A03 L		B05J1		1=12 *	P						2		0=7/8		58
BUS A03 L		B06J1		1=13 *	P						1		0=7/8		58
BUS A03 L		B07J1		1=14 *	P						2		0=7/8		58
BUS A03 L		B08J1		1=15 *	P						1		0=7/8		58
BUS A03 L		B09J1		1=16 *	P										58
BUS A03 L				1									32=5/8		58
BUS A04 L		B01K2		1=01 *	P						2		0=7/8		59
BUS A04 L		B02K2		1=02 *	P						1		0=7/8		59
BUS A04 L		B03K2		1=03 *	P						2		0=7/8		59
BUS A04 L		B04K2		1=04 *							1		9=5/8		59
BUS A04 L		E03U2		1=05 *	P						2		0=7/8		59
BUS A04 L		E04U2		1=06 *	P						1		0=7/8		59
BUS A04 L		E05U2		1=07 *	P						2		0=7/8		59
BUS A04 L		E06U2		1=08 *	P						1		0=7/8		59
BUS A04 L		E07U2		1=09 *	P						2		0=7/8		59
BUS A04 L		E08U2		1=10 *	P						1		0=7/8		59
BUS A04 L		E09U2		1=11 *							2		11=1/8		59
BUS A04 L		B05K2		1=12 *	P						1		0=7/8		59
BUS A04 L		B06K2		1=13 *	P						2		0=7/8		59
BUS A04 L		B07K2		1=14 *	P						1		0=7/8		59
BUS A04 L		B08K2		1=15 *	P						2		0=7/8		59
BUS A04 L		B09K2		1=16 *	P										59
BUS A04 L				1									32=1/8		59

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A05 L		B01K1		1-01 *	P						1		0-7/8		60
BUS A05 L		B02K1		1-02 *	P						2		0-7/8		60
BUS A05 L		B03K1		1-03 *	P						1		0-7/8		60
BUS A05 L		B04K1		1-04 *							2		9-5/8		60
BUS A05 L		E03V1		1-05 *	P						1		0-7/8		60
BUS A05 L		E04V1		1-06 *	P						2		0-7/8		60
BUS A05 L		E05V1		1-07 *	P						1		0-7/8		60
BUS A05 L		E06V1		1-08 *	P						2		0-7/8		60
BUS A05 L		E07V1		1-09 *	P						1		0-7/8		60
BUS A05 L		E08V1		1-10 *	P						2		0-7/8		60
BUS A05 L		E09V1		1-11 *							1		11-3/8		60
BUS A05 L		B05K1		1-12 *	P						2		0-7/8		60
BUS A05 L		B06K1		1-13 *	P						1		0-7/8		60
BUS A05 L		B07K1		1-14 *	P						2		0-7/8		60
BUS A05 L		B08K1		1-15 *	P						1		0-7/8		60
BUS A05 L		B09K1		1-16 *	P										60
BUS A05 L				1									32-3/8		60
BUS A06 L		B01L2		1-01 *	P						2		0-7/8		61
BUS A06 L		B02L2		1-02 *	P						1		0-7/8		61
BUS A06 L		B03L2		1-03 *	P						2		0-7/8		61
BUS A06 L		B04L2		1-04 *							1		9-7/8		61
BUS A06 L		E03U1		1-05 *	P						2		0-7/8		61
BUS A06 L		E04U1		1-06 *	P						1		0-7/8		61
BUS A06 L		E05U1		1-07 *	P						2		0-7/8		61
BUS A06 L		E06U1		1-08 *	P						1		0-7/8		61
BUS A06 L		E07U1		1-09 *	P						2		0-7/8		61
BUS A06 L		E08U1		1-10 *	P						1		0-7/8		61
BUS A06 L		E09U1		1-11 *							2		10-5/8		61
BUS A06 L		B05L2		1-12 *	P						1		0-7/8		61
BUS A06 L		B06L2		1-13 *	P						2		0-7/8		61
BUS A06 L		B07L2		1-14 *	P						1		0-7/8		61
BUS A06 L		B08L2		1-15 *	P						2		0-7/8		61
BUS A06 L		B09L2		1-16 *	P										61
BUS A06 L				1									31-7/8		61
BUS A07 L		B01L1		1-01 *	P						1		0-7/8		62
BUS A07 L		B02L1		1-02 *	P						2		0-7/8		62
BUS A07 L		B03L1		1-03 *	P						1		0-7/8		62
BUS A07 L		B04L1		1-04 *							2		8-7/8		62
BUS A07 L		E03P2		1-05 *	P						1		0-7/8		62
BUS A07 L		E04P2		1-06 *	P						2		0-7/8		62
BUS A07 L		E05P2		1-07 *	P						1		0-7/8		62
BUS A07 L		E06P2		1-08 *	P						2		0-7/8		62
BUS A07 L		E07P2		1-09 *	P						1		0-7/8		62
BUS A07 L		E08P2		1-10 *	P						2		0-7/8		62
BUS A07 L		E09P2		1-11 *							1		10-5/8		62
BUS A07 L		B05L1		1-12 *	P						2		0-7/8		62
BUS A07 L		B06L1		1-13 *	P						1		0-7/8		62
BUS A07 L		B07L1		1-14 *	P						2		0-7/8		62
BUS A07 L		B09L1		1-15 *	P						1		0-7/8		62
BUS A07 L		B09L1		1-16 *	P										62
BUS A07 L				1									30-7/8		62

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A08 L		B01M2		1-01 *	P						1		0-7/8		63
BUS A08 L		B02M2		1-02 *	P						2		0-7/8		63
BUS A08 L		B03M2		1-03 *	P						1		0-7/8		63
BUS A08 L		B04M2		1-04 *							2		8-5/8		63
BUS A08 L		E03N2		1-05 *	P						1		0-7/8		63
BUS A08 L		E04N2		1-06 *	P						2		0-7/8		63
BUS A08 L		E05N2		1-07 *	P						1		0-7/8		63
BUS A08 L		E06N2		1-08 *	P						2		0-7/8		63
BUS A08 L		E07N2		1-09 *	P						1		0-7/8		63
BUS A08 L		E08N2		1-10 *	P						2		0-7/8		63
BUS A08 L		E09N2		1-11 *							1		10-3/8		63
BUS A08 L		B05M2		1-12 *	P						2		0-7/8		63
BUS A08 L		B06M2		1-13 *	P						1		0-7/8		63
BUS A08 L		B07M2		1-14 *	P						2		0-7/8		63
BUS A08 L		B08M2		1-15 *	P						1		0-7/8		63
BUS A08 L		B09M2		1-16 *	P										63
BUS A08 L				1									30-3/8		63
BUS A09 L		B01M1		1-01 *	P						1		0-7/8		64
BUS A09 L		B02M1		1-02 *	P						2		0-7/8		64
BUS A09 L		B03M1		1-03 *	P						1		0-7/8		64
BUS A09 L		B04M1		1-04 *							2		8-7/8		64
BUS A09 L		E03R1		1-05 *	P						1		0-7/8		64
BUS A09 L		E04R1		1-06 *	P						2		0-7/8		64
BUS A09 L		E05R1		1-07 *	P						1		0-7/8		64
BUS A09 L		E06R1		1-08 *	P						2		0-7/8		64
BUS A09 L		E07R1		1-09 *	P						1		0-7/8		64
BUS A09 L		E08R1		1-10 *	P						2		0-7/8		64
BUS A09 L		E09R1		1-11 *							1		10-5/8		64
BUS A09 L		B05M1		1-12 *	P						2		0-7/8		64
BUS A09 L		B06M1		1-13 *	P						1		0-7/8		64
BUS A09 L		B07M1		1-14 *	P						2		0-7/8		64
BUS A09 L		B08M1		1-15 *	P						1		0-7/8		64
BUS A09 L		B09M1		1-16 *	P										64
BUS A09 L				1									30-7/8		64
BUS A10 L		B01N2		1-01 *	P						2		0-7/8		65
BUS A10 L		B02N2		1-02 *	P						1		0-7/8		65
BUS A10 L		B03N2		1-03 *	P						2		0-7/8		65
BUS A10 L		B04N2		1-04 *							1		9-1/8		65
BUS A10 L		E03P1		1-05 *	P						2		0-7/8		65
BUS A10 L		E04P1		1-06 *	P						1		0-7/8		65
BUS A10 L		E05P1		1-07 *	P						2		0-7/8		65
BUS A10 L		E06P1		1-08 *	P						1		0-7/8		65
BUS A10 L		E07P1		1-09 *	P						2		0-7/8		65
BUS A10 L		E08P1		1-10 *	P						1		0-7/8		65
BUS A10 L		E09P1		1-11 *							2		9-7/8		65
BUS A10 L		B05N2		1-12 *	P						1		0-7/8		65
BUS A10 L		B06N2		1-13 *	P						2		0-7/8		65
BUS A10 L		B07N2		1-14 *	P						1		0-7/8		65
BUS A10 L		B08N2		1-15 *	P						2		0-7/8		65
BUS A10 L		B09N2		1-16 *	P										65
BUS A10 L				1									30-3/8		65

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A11 L		B01N1		1-01 *	P						2		0-7/8		66
BUS A11 L		B02N1		1-02 *	P						1		0-7/8		66
BUS A11 L		B03N1		1-03 *	P						2		0-7/8		66
BUS A11 L		B04N1		1-04 *							1		8-3/8		66
BUS A11 L		E03L1		1-05 *	P						2		0-7/8		66
BUS A11 L		E04L1		1-06 *	P						1		0-7/8		66
BUS A11 L		E05L1		1-07 *	P						2		0-7/8		66
BUS A11 L		E06L1		1-08 *	P						1		0-7/8		66
BUS A11 L		E07L1		1-09 *	P						2		0-7/8		66
BUS A11 L		E08L1		1-10 *	P						1		0-7/8		66
BUS A11 L		E09L1		1-11 *							2		9-7/8		66
BUS A11 L		B05N1		1-12 *	P						1		0-7/8		66
BUS A11 L		B06N1		1-13 *	P						2		0-7/8		66
BUS A11 L		B07N1		1-14 *	P						1		0-7/8		66
BUS A11 L		B08N1		1-15 *	P						2		0-7/8		66
BUS A11 L		B09N1		1-16 *	P										66
BUS A11 L				1									29-5/8		66
BUS A12 L		B01P2		1-01 *	P						2		0-7/8		67
BUS A12 L		B02P2		1-02 *	P						1		0-7/8		67
BUS A12 L		B03P2		1-03 *	P						2		0-7/8		67
BUS A12 L		B04P2		1-04 *							1		7-5/8		67
BUS A12 L		E03C1		1-05 *	P						2		0-7/8		67
BUS A12 L		E04C1		1-06 *	P						1		0-7/8		67
BUS A12 L		E05C1		1-07 *	P						2		0-7/8		67
BUS A12 L		E06C1		1-08 *	P						1		0-7/8		67
BUS A12 L		E07C1		1-09 *	P						2		0-7/8		67
BUS A12 L		E08C1		1-10 *	P						1		0-7/8		67
BUS A12 L		E09C1		1-11 *							2		8-5/8		67
BUS A12 L		B05P2		1-12 *	P						1		0-7/8		67
BUS A12 L		B06P2		1-13 *	P						2		0-7/8		67
BUS A12 L		B07P2		1-14 *	P						1		0-7/8		67
BUS A12 L		B08P2		1-15 *	P						2		0-7/8		67
BUS A12 L		B09P2		1-16 *	P										67
BUS A12 L				1									27-5/8		67
BUS A13 L		B01P1		1-01 *	P						1		0-7/8		68
BUS A13 L		B02P1		1-02 *	P						2		0-7/8		68
BUS A13 L		B03P1		1-03 *	P						1		0-7/8		68
BUS A13 L		B04P1		1-04 *							2		7-7/8		68
BUS A13 L		E03K2		1-05 *	P						1		0-7/8		68
BUS A13 L		E04K2		1-06 *	P						2		0-7/8		68
BUS A13 L		E05K2		1-07 *	P						1		0-7/8		68
BUS A13 L		E06K2		1-08 *	P						2		0-7/8		68
BUS A13 L		E07K2		1-09 *	P						1		0-7/8		68
BUS A13 L		E08K2		1-10 *	P						2		0-7/8		68
BUS A13 L		E09K2		1-11 *							1		9-7/8		68
BUS A13 L		B05P1		1-12 *	P						2		0-7/8		68
BUS A13 L		B06P1		1-13 *	P						1		0-7/8		68
BUS A13 L		B07P1		1-14 *	P						2		0-7/8		68
BUS A13 L		B08P1		1-15 *	P						1		0-7/8		68
BUS A13 L		B09P1		1-16 *	P										68
BUS A13 L				1									29-1/8		68

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A14 L		B01R2		1-01 *	P						2		0-7/8		69
BUS A14 L		B02R2		1-02 *	P						1		0-7/8		69
BUS A14 L		B03R2		1-03 *	P						2		0-7/8		69
BUS A14 L		B04R2		1-04 *							1		0-3/8		69
BUS A14 L		E03K1		1-05 *	P						2		0-7/8		69
BUS A14 L		E04K1		1-06 *	P						1		0-7/8		69
BUS A14 L		E05K1		1-07 *	P						2		0-7/8		69
BUS A14 L		E06K1		1-08 *	P						1		0-7/8		69
BUS A14 L		E07K1		1-09 *	P						2		0-7/8		69
BUS A14 L		E08K1		1-10 *	P						1		0-7/8		69
BUS A14 L		E09K1		1-11 *							2		9-1/8		69
BUS A14 L		B05R2		1-12 *	P						1		0-7/8		69
BUS A14 L		B06R2		1-13 *	P						2		0-7/8		69
BUS A14 L		B07R2		1-14 *	P						1		0-7/8		69
BUS A14 L		B08R2		1-15 *	P						2		0-7/8		69
BUS A14 L		B09R2		1-16 *	P										69
BUS A14 L				1									28-7/8		69
BUS A15 L		B01R1		1-01 *	P						1		0-7/8		70
BUS A15 L		B02R1		1-02 *	P						2		0-7/8		70
BUS A15 L		B03R1		1-03 *	P						1		0-7/8		70
BUS A15 L		B04R1		1-04 *							2		7-1/8		70
BUS A15 L		E03D2		1-05 *							1		0-7/8		70
BUS A15 L		E04D2		1-06 *							2		0-7/8		70
BUS A15 L		E05D2		1-07 *							1		0-7/8		70
BUS A15 L		E06D2		1-08 *							2		0-7/8		70
BUS A15 L		E07D2		1-09 *							1		0-7/8		70
BUS A15 L		E08D2		1-10 *							2		0-7/8		70
BUS A15 L		E09D2		1-11 *							1		9-1/8		70
BUS A15 L		B05R1		1-12 *	P						2		0-7/8		70
BUS A15 L		B06R1		1-13 *	P						1		0-7/8		70
BUS A15 L		B07R1		1-14 *	P						2		0-7/8		70
BUS A15 L		B08R1		1-15 *	P						1		0-7/8		70
BUS A15 L		B09R1		1-16 *	P										70
BUS A15 L				1									27-5/8		70
BUS A16 L		B01S2		1-01 *	P						2		0-7/8		71
BUS A16 L		B02S2		1-02 *	P						1		0-7/8		71
BUS A16 L		B03S2		1-03 *	P						2		0-7/8		71
BUS A16 L		B04S2		1-04 *							1		7-3/8		71
BUS A16 L		E03E2		1-05 *	P						2		0-7/8		71
BUS A16 L		E04E2		1-06 *	P						1		0-7/8		71
BUS A16 L		E05E2		1-07 *	P						2		0-7/8		71
BUS A16 L		E06E2		1-08 *	P						1		0-7/8		71
BUS A16 L		E07E2		1-09 *	P						2		0-7/8		71
BUS A16 L		E08E2		1-10 *	P						1		0-7/8		71
BUS A16 L		E09E2		1-11 *							2		8-7/8		71
BUS A16 L		B05S2		1-12 *	P						1		0-7/8		71
BUS A16 L		B06S2		1-13 *	P						2		0-7/8		71
BUS A16 L		B07S2		1-14 *	P						1		0-7/8		71
BUS A16 L		B08S2		1-15 *	P						2		0-7/8		71
BUS A16 L		B09S2		1-16 *	P										71
BUS A16 L				1									27-5/8		71

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS A17 L		B01S1		1=01 *	P						1		0=7/8		72
BUS A17 L		B02S1		1=02 *	P						2		0=7/8		72
BUS A17 L		B03S1		1=03 *	P						1		0=7/8		72
BUS A17 L		B04S1		1=04 *							2		7=1/8		72
BUS A17 L		E03D1		1=05 *	P						1		0=7/8		72
BUS A17 L		E04D1		1=06 *	P						2		0=7/8		72
BUS A17 L		E05D1		1=07 *	P						1		0=7/8		72
BUS A17 L		E06D1		1=08 *	P						2		0=7/8		72
BUS A17 L		E07D1		1=09 *	P						1		0=7/8		72
BUS A17 L		E08D1		1=10 *	P						2		0=7/8		72
BUS A17 L		E09D1		1=11 *							1		8=7/8		72
BUS A17 L		B05S1		1=12 *	P						2		0=7/8		72
BUS A17 L		B06S1		1=13 *	P						1		0=7/8		72
BUS A17 L		B07S1		1=14 *	P						2		0=7/8		72
BUS A17 L		B08S1		1=15 *	P						1		0=7/8		72
BUS A17 L		B09S1		1=16 *	P										72
BUS A17 L				1									27=3/8		72
BUS D00 L		A01C1		1=01 *	P						1		0=7/8		73
BUS D00 L		A02C1		1=02 *							2		0=7/8		73
BUS D00 L		A03C1		1=03 *							1		0=7/8		73
BUS D00 L		A04C1		1=04 *							2		7=3/8		73
BUS D00 L		C03S2		1=05 *							1		0=7/8		73
BUS D00 L		C04S2		1=06 *							2		0=7/8		73
BUS D00 L		C05S2		1=07 *							1		0=7/8		73
BUS D00 L		C06S2		1=08 *							2		0=7/8		73
BUS D00 L		C07S2		1=09 *							1		0=7/8		73
BUS D00 L		C08S2		1=10 *							2		0=7/8		73
BUS D00 L		C09S2		1=11 *							1		9=3/8		73
BUS D00 L		A05C1		1=12 *							2		0=7/8		73
BUS D00 L		A06C1		1=13 *							1		0=7/8		73
BUS D00 L		A07C1		1=14 *							2		0=7/8		73
BUS D00 L		A08C1		1=15 *							1		0=7/8		73
BUS D00 L		A09C1		1=16 *											73
BUS D00 L				1									28=1/8		73
BUS D01 L		A01D2		1=01 *	P						2		0=7/8		74
BUS D01 L		A02D2		1=02 *	P						1		0=7/8		74
BUS D01 L		A03D2		1=03 *	P						2		0=7/8		74
BUS D01 L		A04D2		1=04 *							1		7=3/8		74
BUS D01 L		C03R2		1=05 *	P						2		0=7/8		74
BUS D01 L		C04R2		1=06 *	P						1		0=7/8		74
BUS D01 L		C05R2		1=07 *	P						2		0=7/8		74
BUS D01 L		C06R2		1=08 *	P						1		0=7/8		74
BUS D01 L		C07R2		1=09 *	P						2		0=7/8		74
BUS D01 L		C08R2		1=10 *	P						1		0=7/8		74
BUS D01 L		C09R2		1=11 *							2		8=7/8		74
BUS D01 L		A05D2		1=12 *	P						1		0=7/8		74
BUS D01 L		A06D2		1=13 *	P						2		0=7/8		74
BUS D01 L		A07D2		1=14 *	P						1		0=7/8		74
BUS D01 L		A08D2		1=15 *	P						2		0=7/8		74
BUS D01 L		A09D2		1=16 *	P										74
BUS D01 L				1									27=5/8		74

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS D02 L		A01D1		1-01 *	P						1		0-7/8		75
BUS D02 L		A02D1		1-02 *	P						2		0-7/8		75
BUS D02 L		A03D1		1-03 *	P						1		0-7/8		75
BUS D02 L		A04D1		1-04 *							2		7-5/8		75
BUS D02 L		C03U2		1-05 *	P						1		0-7/8		75
BUS D02 L		C04U2		1-06 *	P						2		0-7/8		75
BUS D02 L		C05U2		1-07 *							1		6-7/8		75
BUS D02 L		F05E2		1-08 *	P						1		1-3/8		75
BUS D02 L		F03E2		1-09 *	P						1		0-7/8		75
BUS D02 L		F04E2		1-10 *	P						2		1-3/8		75
BUS D02 L		F06E2		1-11 *	P						2		0-7/8		75
BUS D02 L		F07E2		1-12 *	P						1		0-7/8		75
BUS D02 L		F08E2		1-13 *	P						2		0-7/8		75
BUS D02 L		F09E2		1-14 *							1		8-3/8		75
BUS D02 L		C06U2		1-15 *	P						2		0-7/8		75
BUS D02 L		C07U2		1-16 *	P						1		0-7/8		75
BUS D02 L		C08U2		1-17 *	P						2		0-7/8		75
BUS D02 L		C09U2		1-18 *							1		9-3/8		75
BUS D02 L		A05D1		1-19 *	P						2		0-7/8		75
BUS D02 L		A06D1		1-20 *	P						1		0-7/8		75
BUS D02 L		A07D1		1-21 *	P						2		0-7/8		75
BUS D02 L		A08D1		1-22 *	P						1		0-7/8		75
BUS D02 L		A09D1		1-23 *											75
BUS D02 L				1									49-0/8		75
BUS D03 L		A01E2		1-01 *	P						1		0-7/8		76
BUS D03 L		A02E2		1-02 *	P						2		0-7/8		76
BUS D03 L		A03E2		1-03 *	P						1		0-7/8		76
BUS D03 L		A04E2		1-04 *							2		7-3/8		76
BUS D03 L		C03T2		1-05 *	P						1		0-7/8		76
BUS D03 L		C04T2		1-06 *	P						2		0-7/8		76
BUS D03 L		C05T2		1-07 *							1		7-7/8		76
BUS D03 L		F05L1		1-08 *	P						1		1-3/8		76
BUS D03 L		F03L1		1-09 *	P						1		0-7/8		76
BUS D03 L		F04L1		1-10 *	P						2		1-3/8		76
BUS D03 L		F06L1		1-11 *	P						2		0-7/8		76
BUS D03 L		F07L1		1-12 *	P						1		0-7/8		76
BUS D03 L		F08L1		1-13 *	P						2		0-7/8		76
BUS D03 L		F09L1		1-14 *							1		8-7/8		76
BUS D03 L		C06T2		1-15 *	P						2		0-7/8		76
BUS D03 L		C07T2		1-16 *	P						1		0-7/8		76
BUS D03 L		C08T2		1-17 *	P						2		0-7/8		76
BUS D03 L		C09T2		1-18 *							1		9-1/8		76
BUS D03 L		A05E2		1-19 *	P						2		0-7/8		76
BUS D03 L		A06E2		1-20 *	P						1		0-7/8		76
BUS D03 L		A07E2		1-21 *	P						2		0-7/8		76
BUS D03 L		A08E2		1-22 *	P						1		0-7/8		76
BUS D03 L		A09E2		1-23 *											76
BUS D03 L				1									50-0/8		76

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG EXCEPTIONS	RUN NUMBER
BUS D04 L		A01E1		1-01 *	P						1		0-7/8	77
BUS D04 L		A02E1		1-02 *	P						2		0-7/8	77
BUS D04 L		A03E1		1-03 *	P						1		0-7/8	77
BUS D04 L		A04E1		1-04 *							2		6-5/8	77
BUS D04 L		C03N2		1-05 *	P						1		0-7/8	77
BUS D04 L		C04N2		1-06 *	P						2		0-7/8	77
BUS D04 L		C05N2		1-07 *							1		8-3/8	77
BUS D04 L		F05N2		1-08 *	P						1		1-3/8	77
BUS D04 L		F03N2		1-09 *	P						1		0-7/8	77
BUS D04 L		F04N2		1-10 *	P						2		1-3/8	77
BUS D04 L		F06N2		1-11 *	P						2		0-7/8	77
BUS D04 L		F07N2		1-12 *	P						1		0-7/8	77
BUS D04 L		F08N2		1-13 *	P						2		0-7/8	77
BUS D04 L		F09N2		1-14 *							1		9-7/8	77
BUS D04 L		C06N2		1-15 *	P						2		0-7/8	77
BUS D04 L		C07N2		1-16 *	P						1		0-7/8	77
BUS D04 L		C08N2		1-17 *	P						2		0-7/8	77
BUS D04 L		C09N2		1-18 *							1		8-7/8	77
BUS D04 L		A05E1		1-19 *	P						2		0-7/8	77
BUS D04 L		A06E1		1-20 *	P						1		0-7/8	77
BUS D04 L		A07E1		1-21 *	P						2		0-7/8	77
BUS D04 L		A08E1		1-22 *	P						1		0-7/8	77
BUS D04 L		A09E1		1-23 *										77
BUS D04 L				1									50-4/8	77
BUS D05 L		A01F2		1-01 *	P						2		0-7/8	78
BUS D05 L		A02F2		1-02 *	P						1		0-7/8	78
BUS D05 L		A03F2		1-03 *	P						2		0-7/8	78
BUS D05 L		A04F2		1-04 *							1		7-1/8	78
BUS D05 L		C03P2		1-05 *	P						2		0-7/8	78
BUS D05 L		C04P2		1-06 *	P						1		0-7/8	78
BUS D05 L		C05P2		1-07 *							2		7-5/8	78
BUS D05 L		F05F1		1-08 *	P						2		1-3/8	78
BUS D05 L		F03F1		1-09 *	P						2		0-7/8	78
BUS D05 L		F04F1		1-10 *	P						1		1-3/8	78
BUS D05 L		F06F1		1-11 *	P						1		0-7/8	78
BUS D05 L		F07F1		1-12 *	P						2		0-7/8	78
BUS D05 L		F08F1		1-13 *	P						1		0-7/8	78
BUS D05 L		F09F1		1-14 *							1		8-7/8	78
BUS D05 L		C06P2		1-15 *	P						1		0-7/8	78
BUS D05 L		C07P2		1-16 *	P						2		0-7/8	78
BUS D05 L		C08P2		1-17 *	P						1		0-7/8	78
BUS D05 L		C09P2		1-18 *							2		8-3/8	78
BUS D05 L		A05F2		1-19 *	P						1		0-7/8	78
BUS D05 L		A06F2		1-20 *	P						2		0-7/8	78
BUS D05 L		A07F2		1-21 *	P						1		0-7/8	78
BUS D05 L		A08F2		1-22 *	P						2		0-7/8	78
BUS D05 L		A09F2		1-23 *										78
BUS D05 L				1									48-6/8	78

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS D06 L		A01F1		1-01 *	P						1		0-7/8		79
BUS D06 L		A02F1		1-02 *	P						2		0-7/8		79
BUS D06 L		A03F1		1-03 *	P						1		0-7/8		79
BUS D06 L		A04F1		1-04 *							2		7-3/8		79
BUS D06 L		C03V2		1-05 *	P						1		0-7/8		79
BUS D06 L		C04V2		1-06 *	P						2		0-7/8		79
BUS D06 L		C05V2		1-07 *							1		6-7/8		79
BUS D06 L		F05F2		1-08 *	P						1		1-3/8		79
BUS D06 L		F03F2		1-09 *	P						1		0-7/8		79
BUS D06 L		F04F2		1-10 *	P						2		1-3/8		79
BUS D06 L		F06F2		1-11 *	P						2		0-7/8		79
BUS D06 L		F07F2		1-12 *	P						1		0-7/8		79
BUS D06 L		F08F2		1-13 *	P						2		0-7/8		79
BUS D06 L		F09F2		1-14 *							1		8-3/8		79
BUS D06 L		C06V2		1-15 *	P						2		0-7/8		79
BUS D06 L		C07V2		1-16 *	P						1		0-7/8		79
BUS D06 L		C08V2		1-17 *	P						2		0-7/8		79
BUS D06 L		C09V2		1-18 *							1		9-3/8		79
BUS D06 L		A05F1		1-19 *	P						2		0-7/8		79
BUS D06 L		A06F1		1-20 *	P						1		0-7/8		79
BUS D06 L		A07F1		1-21 *	P						2		0-7/8		79
BUS D06 L		A08F1		1-22 *	P						1		0-7/8		79
BUS D06 L		A09F1		1-23 *											79
BUS D06 L				1									48-6/8		79
BUS D07 L		A01H2		1-01 *	P						1		0-7/8		80
BUS D07 L		A02H2		1-02 *	P						2		0-7/8		80
BUS D07 L		A03H2		1-03 *	P						1		0-7/8		80
BUS D07 L		A04H2		1-04 *							2		6-5/8		80
BUS D07 L		C03M2		1-05 *	P						1		0-7/8		80
BUS D07 L		C04M2		1-06 *	P						2		0-7/8		80
BUS D07 L		C05M2		1-07 *							1		8-1/8		80
BUS D07 L		F05H1		1-08 *	P						1		1-3/8		80
BUS D07 L		F03H1		1-09 *	P						1		0-7/8		80
BUS D07 L		F04H1		1-10 *	P						2		1-3/8		80
BUS D07 L		F06H1		1-11 *	P						2		0-7/8		80
BUS D07 L		F07H1		1-12 *	P						1		0-7/8		80
BUS D07 L		F08H1		1-13 *	P						2		0-7/8		80
BUS D07 L		F09H1		1-14 *							1		9-1/8		80
BUS D07 L		C06M2		1-15 *	P						2		0-7/8		80
BUS D07 L		C07M2		1-16 *	P						1		0-7/8		80
BUS D07 L		C08M2		1-17 *	P						2		0-7/8		80
BUS D07 L		C09M2		1-18 *							1		8-1/8		80
BUS D07 L		A05H2		1-19 *	P						2		0-7/8		80
BUS D07 L		A06H2		1-20 *	P						1		0-7/8		80
BUS D07 L		A07H2		1-21 *	P						2		0-7/8		80
BUS D07 L		A08H2		1-22 *	P						1		0-7/8		80
BUS D07 L		A09H2		1-23 *											80
BUS D07 L				1									48-6/8		80

RUN	NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG EXCEPTIONS	RUN NUMBER
BUS	D08 L		A01H1		1-01 *	P						1		0-7/8	81
BUS	D08 L		A02H1		1-02 *	P						2		0-7/8	81
BUS	D08 L		A03H1		1-03 *	P						1		0-7/8	81
BUS	D08 L		A04H1		1-04 *							2		6-1/8	81
BUS	D08 L		C03L2		1-05 *	P						1		0-7/8	81
BUS	D08 L		C04L2		1-06 *	P						2		0-7/8	81
BUS	D08 L		C05L2		1-07 *							1		8-5/8	81
BUS	D08 L		F05K1		1-08 *	P						1		1-3/8	81
BUS	D08 L		F03K1		1-09 *	P						1		0-7/8	81
BUS	D08 L		F04K1		1-10 *	P						2		1-3/8	81
BUS	D08 L		F06K1		1-11 *	P						2		0-7/8	81
BUS	D08 L		F07K1		1-12 *	P						1		0-7/8	81
BUS	D08 L		F08K1		1-13 *	P						2		0-7/8	81
BUS	D08 L		F09K1		1-14 *							1		9-3/8	81
BUS	D08 L		C06L2		1-15 *	P						2		0-7/8	81
BUS	D08 L		C07L2		1-16 *	P						1		0-7/8	81
BUS	D08 L		C08L2		1-17 *	P						2		0-7/8	81
BUS	D08 L		C09L2		1-18 *							1		8-3/8	81
BUS	D08 L		A05H1		1-19 *	P						2		0-7/8	81
BUS	D08 L		A06H1		1-20 *	P						1		0-7/8	81
BUS	D08 L		A07H1		1-21 *	P						2		0-7/8	81
BUS	D08 L		A08H1		1-22 *	P						1		0-7/8	81
BUS	D08 L		A09H1		1-23 *										81
BUS	D08 L				1									49-2/8	81
BUS	D09 L		A01J2		1-01 *	P						2		0-7/8	82
BUS	D09 L		A02J2		1-02 *	P						1		0-7/8	82
BUS	D09 L		A03J2		1-03 *	P						2		0-7/8	82
BUS	D09 L		A04J2		1-04 *							1		6-3/8	82
BUS	D09 L		C03K2		1-05 *	P						2		0-7/8	82
BUS	D09 L		C04K2		1-06 *	P						1		0-7/8	82
BUS	D09 L		C05K2		1-07 *	P						2		0-7/8	82
BUS	D09 L		C06K2		1-08 *	P						1		0-7/8	82
BUS	D09 L		C07K2		1-09 *	P						2		0-7/8	82
BUS	D09 L		C08K2		1-10 *	P						1		0-7/8	82
BUS	D09 L		C09K2		1-11 *							2		7-5/8	82
BUS	D09 L		A05J2		1-12 *	P						1		0-7/8	82
BUS	D09 L		A06J2		1-13 *	P						2		0-7/8	82
BUS	D09 L		A07J2		1-14 *	P						1		0-7/8	82
BUS	D09 L		A08J2		1-15 *	P						2		0-7/8	82
BUS	D09 L		A09J2		1-16 *	P									82
BUS	D09 L				1									25-3/8	82

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS D10 L		A01J1		1-01 *	P						1		0-7/8		83
BUS D10 L		A02J1		1-02 *	P						2		0-7/8		83
BUS D10 L		A03J1		1-03 *	P						1		0-7/8		83
BUS D10 L		A04J1		1-04 *							2		5-7/8		83
BUS D10 L		C03J2		1-05 *	P						1		0-7/8		83
BUS D10 L		C04J2		1-06 *	P						2		0-7/8		83
BUS D10 L		C05J2		1-07 *	P						1		0-7/8		83
BUS D10 L		C06J2		1-08 *	P						2		0-7/8		83
BUS D10 L		C07J2		1-09 *	P						1		0-7/8		83
BUS D10 L		C08J2		1-10 *	P						2		0-7/8		83
BUS D10 L		C09J2		1-11 *							1		7-7/8		83
BUS D10 L		A05J1		1-12 *	P						2		0-7/8		83
BUS D10 L		A06J1		1-13 *	P						1		0-7/8		83
BUS D10 L		A07J1		1-14 *	P						2		0-7/8		83
BUS D10 L		A08J1		1-15 *	P						1		0-7/8		83
BUS D10 L		A09J1		1-16 *	P										83
BUS D10 L				1									25-1/8		83
BUS D11 L		A01K2		1-01 *	P						2		0-7/8		84
BUS D11 L		A02K2		1-02 *	P						1		0-7/8		84
BUS D11 L		A03K2		1-03 *	P						2		0-7/8		84
BUS D11 L		A04K2		1-04 *							1		6-1/8		84
BUS D11 L		C03H1		1-05 *	P						2		0-7/8		84
BUS D11 L		C04H1		1-06 *	P						1		0-7/8		84
BUS D11 L		C05H1		1-07 *	P						2		0-7/8		84
BUS D11 L		C06H1		1-08 *	P						1		0-7/8		84
BUS D11 L		C07H1		1-09 *	P						2		0-7/8		84
BUS D11 L		C08H1		1-10 *	P						1		0-7/8		84
BUS D11 L		C09H1		1-11 *							2		7-1/8		84
BUS D11 L		A05K2		1-12 *	P						1		0-7/8		84
BUS D11 L		A06K2		1-13 *	P						2		0-7/8		84
BUS D11 L		A07K2		1-14 *	P						1		0-7/8		84
BUS D11 L		A08K2		1-15 *	P						2		0-7/8		84
BUS D11 L		A09K2		1-16 *	P										84
BUS D11 L				1									24-5/8		84
BUS D12 L		A01K1		1-01 *	P						1		0-7/8		85
BUS D12 L		A02K1		1-02 *	P						2		0-7/8		85
BUS D12 L		A03K1		1-03 *	P						1		0-7/8		85
BUS D12 L		A04K1		1-04 *							2		5-5/8		85
BUS D12 L		C03H2		1-05 *	P						1		0-7/8		85
BUS D12 L		C04H2		1-06 *	P						2		0-7/8		85
BUS D12 L		C05H2		1-07 *	P						1		0-7/8		85
BUS D12 L		C06H2		1-08 *	P						2		0-7/8		85
BUS D12 L		C07H2		1-09 *	P						1		0-7/8		85
BUS D12 L		C08H2		1-10 *	P						2		0-7/8		85
BUS D12 L		C09H2		1-11 *							1		7-5/8		85
BUS D12 L		A05K1		1-12 *	P						2		0-7/8		85
BUS D12 L		A06K1		1-13 *	P						1		0-7/8		85
BUS D12 L		A07K1		1-14 *	P						2		0-7/8		85
BUS D12 L		A08K1		1-15 *	P						1		0-7/8		85
BUS D12 L		A09K1		1-16 *	P										85
BUS D12 L				1									24-5/8		85

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BUS D13 L		A01L2		1=01 *	P						1		0=7/8		86
BUS D13 L		A02L2		1=02 *	P						2		0=7/8		86
BUS D13 L		A03L2		1=03 *	P						1		0=7/8		86
BUS D13 L		A04L2		1=04 *							2		5=5/8		86
BUS D13 L		C03F2		1=05 *	P						1		0=7/8		86
BUS D13 L		C04F2		1=06 *	P						2		0=7/8		86
BUS D13 L		C05F2		1=07 *	P						1		0=7/8		86
BUS D13 L		C06F2		1=08 *	P						2		0=7/8		86
BUS D13 L		C07F2		1=09 *	P						1		0=7/8		86
BUS D13 L		C08F2		1=10 *	P						2		0=7/8		86
BUS D13 L		C09F2		1=11 *							1		7=1/8		86
BUS D13 L		A05L2		1=12 *	P						2		0=7/8		86
BUS D13 L		A06L2		1=13 *	P						1		0=7/8		86
BUS D13 L		A07L2		1=14 *	P						2		0=7/8		86
BUS D13 L		A08L2		1=15 *	P						1		0=7/8		86
BUS D13 L		A09L2		1=16 *	P										86
BUS D13 L				1									24=1/8		86
BUS D14 L		A01L1		1=01 *	P						1		0=7/8		87
BUS D14 L		A02L1		1=02 *	P						2		0=7/8		87
BUS D14 L		A03L1		1=03 *	P						1		0=7/8		87
BUS D14 L		A04L1		1=04 *							2		5=3/8		87
BUS D14 L		C03E2		1=05 *	P						1		0=7/8		87
BUS D14 L		C04E2		1=06 *	P						2		0=7/8		87
BUS D14 L		C05E2		1=07 *	P						1		0=7/8		87
BUS D14 L		C06E2		1=08 *	P						2		0=7/8		87
BUS D14 L		C07E2		1=09 *	P						1		0=7/8		87
BUS D14 L		C08E2		1=10 *	P						2		0=7/8		87
BUS D14 L		C09E2		1=11 *							1		7=1/8		87
BUS D14 L		A05L1		1=12 *	P						2		0=7/8		87
BUS D14 L		A06L1		1=13 *	P						1		0=7/8		87
BUS D14 L		A07L1		1=14 *	P						2		0=7/8		87
BUS D14 L		A08L1		1=15 *	P						1		0=7/8		87
BUS D14 L		A09L1		1=16 *	P										87
BUS D14 L				1									23=7/8		87
BUS D15 L		A01M2		1=01 *	P						1		0=7/8		88
BUS D15 L		A02M2		1=02 *	P						2		0=7/8		88
BUS D15 L		A03M2		1=03 *	P						1		0=7/8		88
BUS D15 L		A04M2		1=04 *							2		5=1/8		88
BUS D15 L		C03D2		1=05 *							1		0=7/8		88
BUS D15 L		C04D2		1=06 *							2		0=7/8		88
BUS D15 L		C05D2		1=07 *							1		0=7/8		88
BUS D15 L		C06D2		1=08 *							2		0=7/8		88
BUS D15 L		C07D2		1=09 *							1		0=7/8		88
BUS D15 L		C08D2		1=10 *							2		0=7/8		88
BUS D15 L		C09D2		1=11 *							1		6=7/8		88
BUS D15 L		A05M2		1=12 *	P						2		0=7/8		88
BUS D15 L		A06M2		1=13 *	P						1		0=7/8		88
BUS D15 L		A07M2		1=14 *	P						2		0=7/8		88
BUS D15 L		A08M2		1=15 *	P						1		0=7/8		88
BUS D15 L		A09M2		1=16 *	P										88
BUS D15 L				1									23=3/8		88

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
C BG IN		D03U2		1-01 *							1		3-7/8	89
C BG IN		F03B1		1-02 *										89
C BG IN				1									3-7/8	89
C BG OUT		D03V2		1-01 *							1		3-7/8	90
C BG OUT		F03A1		1-02 *										90
C BG OUT				1									3-7/8	90
C BR OUT		D03J2		1-01 *							1		6-5/8	91
C BR OUT		F03P1		1-02 *							2		1	91
C BR OUT		F03U2		1-03 *										91
C BR OUT				1									7-5/8	91
C IN		D03H1		1-01 *							1		3-3/8	92
C IN		E03M1		1-02 *										92
C IN				1									3-3/8	92
C INT A		D03N1		1-01 *							1		6-3/8	93
C INT A		F03U1		1-02 *										93
C INT A				1									6-3/8	93
C INT B		C03J1		1-01 *							1		8-5/8	94
C INT B		F03K2		1-02 *										94
C INT B				1									8-5/8	94
C INT ENB A		D03M1		1-01 *							1		6-5/8	95
C INT ENB A		F03V1		1-02 *										95
C INT ENB A				1									6-5/8	95
C INT ENB B		C03L1		1-01 *							1		8-1/8	96
C INT ENB B		F03H2		1-02 *										96
C INT ENB B				1									8-1/8	96
C OUT HIGH		D03K1		1-01 *							1		3-3/8	97
C OUT HIGH		E03M2		1-02 *										97
C OUT HIGH				1									3-3/8	97
C OUT LOW		D03D1		1-01 *							1		3-7/8	98
C OUT LOW		E03N1		1-02 *										98
C OUT LOW				1									3-7/8	98
C SEL 0		D03F1		1-01 *							1		4-1/8	99
C SEL 0		E03S2		1-02 *										99
C SEL 0				1									4-1/8	99
C SEL 4		D03E1		1-01 *							1		4-3/8	100
C SEL 4		E03R2		1-02 *										100
C SEL 4				1									4-3/8	100
C SEL 6		D03C1		1-01 *							1		4-3/8	101
C SEL 6		E03S1		1-02 *										101
C SEL 6				1									4-3/8	101
C SER 2		D03J1		1-01 *							1		4-1/8	102
C SER 2		E03T2		1-02 *										102
C SER 2				1									4-1/8	102

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
C SSYN IN H		D03V1		1-01 *							1		0-7/8		103
C SSYN IN H		E03B1		1-02 *											103
C SSYN IN H				1									0-7/8		103
C0 L		B01U2		1-01 *							1		0-7/8		104
C0 L		B02U2		1-02 *							2		0-7/8		104
C0 L		B03U2		1-03 *							1		0-7/8		104
C0 L		B04U2		1-04 *							2		7-3/8		104
C0 L		E03J2		1-05 *	P						1		0-7/8		104
C0 L		E04J2		1-06 *	P						2		0-7/8		104
C0 L		E05J2		1-07 *	P						1		0-7/8		104
C0 L		E06J2		1-08 *	P						2		0-7/8		104
C0 L		E07J2		1-09 *	P						1		0-7/8		104
C0 L		E08J2		1-10 *	P						2		0-7/8		104
C0 L		E09J2		1-11 *							1		9-1/8		104
C0 L		B05U2		1-12 *							2		0-7/8		104
C0 L		B06U2		1-13 *							1		0-7/8		104
C0 L		B07U2		1-14 *							2		0-7/8		104
C0 L		B08U2		1-15 *							1		0-7/8		104
C0 L		B09U2		1-16 *											104
C0 L				1									27-7/8		104
C1 L		B01T2		1-01 *							2		0-7/8		105
C1 L		B02T2		1-02 *							1		0-7/8		105
C1 L		B03T2		1-03 *							2		0-7/8		105
C1 L		B04T2		1-04 *							1		7-3/8		105
C1 L		E03F2		1-05 *	P						2		0-7/8		105
C1 L		E04F2		1-06 *	P						1		0-7/8		105
C1 L		E05F2		1-07 *	P						2		0-7/8		105
C1 L		E06F2		1-08 *	P						1		0-7/8		105
C1 L		E07F2		1-09 *	P						2		0-7/8		105
C1 L		E08F2		1-10 *	P						1		0-7/8		105
C1 L		E09F2		1-11 *							2		8-7/8		105
C1 L		B05T2		1-12 *							1		0-7/8		105
C1 L		B06T2		1-13 *							2		0-7/8		105
C1 L		B07T2		1-14 *							1		0-7/8		105
C1 L		B08T2		1-15 *							2		0-7/8		105
C1 L		B09T2		1-16 *											105
C1 L				1									27-5/8		105
D BG IN		D04U2		1-01 *							1		3-7/8		106
D BG IN		F04B1		1-02 *											106
D BG IN				1									3-7/8		106
D BG OUT		D04V2		1-01 *							1		3-7/8		107
D BG OUT		F04A1		1-02 *											107
D BG OUT				1									3-7/8		107
D BR OUT		D04J2		1-01 *							1		6-5/8		108
D BR OUT		F04P1		1-02 *							2		1		108
D BR OUT		F04U2		1-03 *											108
D BR OUT				1									7-5/8		108

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
D IN		D04H1		1=01 *							1		3=3/8		109
D IN		E04M1		1=02 *											109
D IN				1									3=3/8		109
D INT A		D04N1		1=01 *							1		6=3/8		110
D INT A		F04U1		1=02 *											110
D INT A				1									6=3/8		110
D INT B		C04J1		1=01 *							1		8=5/8		111
D INT B		F04K2		1=02 *											111
D INT B				1									8=5/8		111
D INT ENB A		D04M1		1=01 *							1		6=5/8		112
D INT ENB A		F04V1		1=02 *											112
D INT ENB A				1									6=5/8		112
D INT ENB B		C04L1		1=01 *							1		8=1/8		113
D INT ENB B		F04H2		1=02 *											113
D INT ENB B				1									8=1/8		113
D OUT HIGH		D04K1		1=01 *							1		3=3/8		114
D OUT HIGH		E04M2		1=02 *											114
D OUT HIGH				1									3=3/8		114
D OUT LOW		D04D1		1=01 *							1		3=7/8		115
D OUT LOW		E04N1		1=02 *											115
D OUT LOW				1									3=7/8		115
D SEL 0		D04F1		1=01 *							1		4=1/8		116
D SEL 0		E04S2		1=02 *											116
D SEL 0				1									4=1/8		116
D SEL 4		D04E1		1=01 *							1		4=3/8		117
D SEL 4		E04R2		1=02 *											117
D SEL 4				1									4=3/8		117
D SEL 6		D04C1		1=01 *							1		4=3/8		118
D SEL 6		E04S1		1=02 *											118
D SEL 6				1									4=3/8		118
D SER 2		D04J1		1=01 *							1		4=1/8		119
D SER 2		E04T2		1=02 *											119
D SER 2				1									4=1/8		119
D SSYN IN H		D04V1		1=01 *							1		0=7/8		120
D SSYN IN H		E04B1		1=02 *											120
D SSYN IN H				1									0=7/8		120

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
DC L		B01F2		1-01 *	P						2		0-7/8		121
DC L		B02F2		1-02 *	P						1		0-7/8		121
DC L		B03F2		1-03 *	P						2		0-7/8		121
DC L		B04F2		1-04 *							1		4-3/8		121
DC L		C03N1		1-05 *	P						2		0-7/8		121
DC L		C04N1		1-06 *	P						1		0-7/8		121
DC L		C05N1		1-07 *	P						2		0-7/8		121
DC L		C06N1		1-08 *	P						1		0-7/8		121
DC L		C07N1		1-09 *	P						2		0-7/8		121
DC L		C08N1		1-10 *	P						1		0-7/8		121
DC L		C09N1		1-11 *							2		5-3/8		121
DC L		B05F2		1-12 *	P						1		0-7/8		121
DC L		B06F2		1-13 *	P						2		0-7/8		121
DC L		B07F2		1-14 *	P						1		0-7/8		121
DC L		B08F2		1-15 *	P						2		0-7/8		121
DC L		B09F2		1-16 *	P										121
DC L				1									21-1/8		121
E BG IN		D05U2		1-01 *							1		3-7/8		122
E BG IN		F05B1		1-02 *											122
E BG IN				1									3-7/8		122
E BG OUT		D05V2		1-01 *							1		3-7/8		123
E BG OUT		F05A1		1-02 *											123
E BG OUT				1									3-7/8		123
E BR OUT		D05J2		1-01 *							1		6-5/8		124
E BR OUT		F05P1		1-02 *							2		1		124
E BR OUT		F05U2		1-03 *											124
E BR OUT				1									7-5/8		124
E IN		D05H1		1-01 *							1		3-3/8		125
E IN		E05M1		1-02 *											125
E IN				1									3-3/8		125
E INT A		D05N1		1-01 *							1		6-3/8		126
E INT A		F05U1		1-02 *											126
E INT A				1									6-3/8		126
E INT B		C05J1		1-01 *							1		8-5/8		127
E INT B		F05K2		1-02 *											127
E INT B				1									8-5/8		127
E INT ENB A		D05M1		1-01 *							1		6-5/8		128
E INT ENB A		F05V1		1-02 *											128
E INT ENB A				1									6-5/8		128
E INT ENB B		C05L1		1-01 *							1		8-1/8		129
E INT ENB B		F05H2		1-02 *											129
E INT ENB B				1									8-1/8		129
E OUT HIGH		D05K1		1-01 *							1		3-3/8		130
E OUT HIGH		E05M2		1-02 *											130
E OUT HIGH				1									3-3/8		130

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
E OUT LOW		D05D1		1-01 *							1		3-7/8		131
E OUT LOW		E05N1		1-02 *											131
E OUT LOW				1									3-7/8		131
E SEL 0		D05F1		1-01 *							1		4-1/8		132
E SEL 0		E05S2		1-02 *											132
E SEL 0				1									4-1/8		132
E SEL 4		D05E1		1-01 *							1		4-3/8		133
E SEL 4		E05R2		1-02 *											133
E SEL 4				1									4-3/8		133
E SEL 6		D05C1		1-01 *							1		4-3/8		134
E SEL 6		E05S1		1-02 *											134
E SEL 6				1									4-3/8		134
E SER 2		D05J1		1-01 *							1		4-1/8		135
E SER 2		E05T2		1-02 *											135
E SER 2				1									4-1/8		135
E SSYN IN H		D05V1		1-01 *							1		0-7/8		136
E SSYN IN H		E05B1		1-02 *											136
E SSYN IN H				1									0-7/8		136
F BG IN		D06U2		1-01 *							1		3-7/8		137
F BG IN		F06B1		1-02 *											137
F BG IN				1									3-7/8		137
F BG OUT		D06V2		1-01 *							1		3-7/8		138
F BG OUT		F06A1		1-02 *											138
F BG OUT				1									3-7/8		138
F BR OUT		D06J2		1-01 *							1		6-5/8		139
F BR OUT		F06P1		1-02 *							2		1		139
F BR OUT		F06U2		1-03 *											139
F BR OUT				1									7-5/8		139
F IN		D06H1		1-01 *							1		3-3/8		140
F IN		E06M1		1-02 *											140
F IN				1									3-3/8		140
F INT A		D06N1		1-01 *							1		6-3/8		141
F INT A		F06U1		1-02 *											141
F INT A				1									6-3/8		141
F INT B		C06J1		1-01 *							1		8-5/8		142
F INT B		F06K2		1-02 *											142
F INT B				1									8-5/8		142
F INT ENB A		D06M1		1-01 *							1		6-5/8		143
F INT ENB A		F06V1		1-02 *											143
F INT ENB A				1									6-5/8		143
F INT ENB B		C06L1		1-01 *							1		8-1/8		144
F INT ENB B		F06H2		1-02 *											144
F INT ENB B				1									8-1/8		144

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
F OUT HIGH		D06K1		1-01 *							1			3-3/8	145
F OUT HIGH		E06M2		1-02 *											145
F OUT HIGH				1										3-3/8	145
F OUT LOW		D06D1		1-01 *							1			3-7/8	146
F OUT LOW		E06N1		1-02 *											146
F OUT LOW				1										3-7/8	146
F SEL 0		D06F1		1-01 *							1			4-1/8	147
F SEL 0		E06S2		1-02 *											147
F SEL 0				1										4-1/8	147
F SEL 4		D06E1		1-01 *							1			4-3/8	148
F SEL 4		E06R2		1-02 *											148
F SEL 4				1										4-3/8	148
F SEL 6		D06C1		1-01 *							1			4-3/8	149
F SEL 6		E06S1		1-02 *											149
F SEL 6				1										4-3/8	149
F SER 2		D06J1		1-01 *							1			4-1/8	150
F SER 2		E06T2		1-02 *											150
F SER 2				1										4-1/8	150
F SSYN IN H		D06V1		1-01 *							1			0-7/8	151
F SSYN IN H		E06B1		1-02 *											151
F SSYN IN H				1										0-7/8	151
F03D2		F03D2		1-01 *							2			1-5/8	152
F03D2		F03R2		1-02 *							1			0-4/8	152
F03D2		F03N1		1-03 *											152
F03D2				1										2-1/8	152
F03E1		F03E1		1-01 *							1			2-3/8	153
F03E1		F03V2		1-02 *											153
F03E1				1										2-3/8	153
F03L2		F03L2		1-01 *							1			1	154
F03L2		F03R1		1-02 *											154
F03L2				1										1-0/8	154
F03M2		F03M2		1-01 *							1			1	155
F03M2		F03S1		1-02 *											155
F03M2				1										1-0/8	155
F03P2		F03P2		1-01 *							1			0-4/8	156
F03P2		F03S2		1-02 *											156
F03P2				1										0-4/8	156
F04D2		F04D2		1-01 *							2			1-5/8	157
F04D2		F04R2		1-02 *							1			0-4/8	157
F04D2		F04N1		1-03 *											157
F04D2				1										2-1/8	157

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
F04E1		F04E1		1-01 *							1		2-3/8		158
F04E1		F04V2		1-02 *											158
F04E1				1									2-3/8		158
F04L2		F04L2		1-01 *							1		1		159
F04L2		F04R1		1-02 *											159
F04L2				1									1-0/8		159
F04M2		F04M2		1-01 *							1		1		160
F04M2		F04S1		1-02 *											160
F04M2				1									1-0/8		160
F04P2		F04P2		1-01 *							1		0-4/8		161
F04P2		F04S2		1-02 *											161
F04P2				1									0-4/8		161
F05D2		F05D2		1-01 *							2		1-5/8		162
F05D2		F05R2		1-02 *							1		0-4/8		162
F05D2		F05N1		1-03 *											162
F05D2				1									2-1/8		162
F05E1		F05E1		1-01 *							1		2-3/8		163
F05E1		F05V2		1-02 *											163
F05E1				1									2-3/8		163
F05L2		F05L2		1-01 *							1		1		164
F05L2		F05R1		1-02 *											164
F05L2				1									1-0/8		164
F05M2		F05M2		1-01 *							1		1		165
F05M2		F05S1		1-02 *											165
F05M2				1									1-0/8		165
F05P2		F05P2		1-01 *							1		0-4/8		166
F05P2		F05S2		1-02 *											166
F05P2				1									0-4/8		166
F06D2		F06D2		1-01 *							2		1-5/8		167
F06D2		F06R2		1-02 *							1		0-4/8		167
F06D2		F06N1		1-03 *											167
F06D2				1									2-1/8		167
F06E1		F06E1		1-01 *							1		2-3/8		168
F06E1		F06V2		1-02 *											168
F06E1				1									2-3/8		168
F06L2		F06L2		1-01 *							1		1		169
F06L2		F06R1		1-02 *											169
F06L2				1									1-0/8		169
F06M2		F06M2		1-01 *							1		1		170
F06M2		F06S1		1-02 *											170
F06M2				1									1-0/8		170

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
F06P2		F06P2		1-01 *							1		0-4/8		171
F06P2		F06S2		1-02 *											171
F06P2				1									0-4/8		171
F07D2		F07D2		1-01 *							2		1-5/8		172
F07D2		F07R2		1-02 *							1		0-4/8		172
F07D2		F07N1		1-03 *											172
F07D2				1									2-1/8		172
F07E1		F07E1		1-01 *							1		2-3/8		173
F07E1		F07V2		1-02 *											173
F07E1				1									2-3/8		173
F07L2		F07L2		1-01 *							1		1		174
F07L2		F07R1		1-02 *											174
F07L2				1									1-0/8		174
F07M2		F07M2		1-01 *							1		1		175
F07M2		F07S1		1-02 *											175
F07M2				1									1-0/8		175
F07P2		F07P2		1-01 *							1		0-4/8		176
F07P2		F07S2		1-02 *											176
F07P2				1									0-4/8		176
F08D2		F08D2		1-01 *							2		1-5/8		177
F08D2		F08R2		1-02 *							1		0-4/8		177
F08D2		F08N1		1-03 *											177
F08D2				1									2-1/8		177
F08E1		F08E1		1-01 *							1		2-3/8		178
F08E1		F08V2		1-02 *											178
F08E1				1									2-3/8		178
F08L2		F08L2		1-01 *							1		1		179
F08L2		F08R1		1-02 *											179
F08L2				1									1-0/8		179
F08M2		F08M2		1-01 *							1		1		180
F08M2		F08S1		1-02 *											180
F08M2				1									1-0/8		180
F08P2		F08P2		1-01 *							1		0-4/8		181
F08P2		F08S2		1-02 *											181
F08P2				1									0-4/8		181
F09D2		F09D2		1-01 *							2		1-5/8		182
F09D2		F09R2		1-02 *							1		0-4/8		182
F09D2		F09N1		1-03 *											182
F09D2				1									2-1/8		182
F09E1		F09E1		1-01 *							1		2-3/8		183
F09E1		F09V2		1-02 *											183
F09E1				1									2-3/8		183

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
F09L2		F09L2		1-01 *							1		1		184
F09L2		F09R1		1-02 *											184
F09L2				1									1-0/8		184
F09M2		F09M2		1-01 *							1		1		185
F09M2		F09S1		1-02 *											185
F09M2				1									1-0/8		185
F09P2		F09P2		1-01 *							1		0-4/8		186
F09P2		F09S2		1-02 *											186
F09P2				1									0-4/8		186
GND (01)		A01C2		1-01 *	P						1		0-7/8		187
GND (01)		A02C2		1-02 *	P						2		0-7/8		187
GND (01)		A03C2		1-03 *	P						1		0-7/8		187
GND (01)		A04C2		1-04 *	P						2		0-7/8		187
GND (01)		A05C2		1-05 *	P						1		0-7/8		187
GND (01)		A06C2		1-06 *	P						2		0-7/8		187
GND (01)		A07C2		1-07 *	P						1		0-7/8		187
GND (01)		A08C2		1-08 *	P						2		0-7/8		187
GND (01)		A09C2		1-09 *	P						1		2-1/8		187
GND (01)		A09T1		1-10 *	P						2		0-7/8		187
GND (01)		A08T1		1-11 *	P						1		0-7/8		187
GND (01)		A07T1		1-12 *	P						2		0-7/8		187
GND (01)		A06T1		1-13 *	P						1		0-7/8		187
GND (01)		A05T1		1-14 *	P						2		0-7/8		187
GND (01)		A04T1		1-15 *	P						1		0-7/8		187
GND (01)		A03T1		1-16 *	P						2		0-7/8		187
GND (01)		A02T1		1-17 *	P						1		0-7/8		187
GND (01)		A01T1		1-18 *	P						2		1-5/8		187
GND (01)		B01C2		1-19 *	P						1		0-7/8		187
GND (01)		B02C2		1-20 *	P						2		0-7/8		187
GND (01)		B03C2		1-21 *	P						1		0-7/8		187
GND (01)		B04C2		1-22 *	P						2		0-7/8		187
GND (01)		B05C2		1-23 *	P						1		0-7/8		187
GND (01)		B06C2		1-24 *	P						2		0-7/8		187
GND (01)		B07C2		1-25 *	P						1		0-7/8		187
GND (01)		B08C2		1-26 *	P						2		0-7/8		187
GND (01)		B09C2		1-27 *	P						1		2-1/8		187
GND (01)		B09T1		1-28 *	P						2		0-7/8		187
GND (01)		B08T1		1-29 *	P						1		0-7/8		187
GND (01)		B07T1		1-30 *	P						2		0-7/8		187
GND (01)		B06T1		1-31 *	P						1		0-7/8		187
GND (01)		B05T1		1-32 *	P						2		0-7/8		187
GND (01)		B04T1		1-33 *	P						1		0-7/8		187
GND (01)		B03T1		1-34 *	P						2		0-7/8		187
GND (01)		B02T1		1-35 *	P						1		0-7/8		187
GND (01)		B01T1		1-36 *	P						2		1-3/8		187
GND (01)		C01C2		1-37 *	P						1		0-7/8		187
GND (01)		C02C2		1-38 *	P						2		0-7/8		187
GND (01)		C03C2		1-39 *	P						1		0-7/8		187
GND (01)		C04C2		1-40 *	P						2		0-7/8		187
GND (01)		C05C2		1-41 *	P						1		0-7/8		187
GND (01)		C06C2		1-42 *	P						2		0-7/8		187
GND (01)		C07C2		1-43 *	P						1		0-7/8		187
GND (01)		C08C2		1-44 *	P						2		0-7/8		187

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
GND (01)		C09C2		1-45 *	P						1		2-1/8		187
GND (01)		C09T1		1-46 *	P						2		0-7/8		187
GND (01)		C08T1		1-47 *	P						1		0-7/8		187
GND (01)		C07T1		1-48 *	P						2		0-7/8		187
GND (01)		C06T1		1-49 *	P						1		0-7/8		187
GND (01)		C05T1		1-50 *	P						2		0-7/8		187
GND (01)		C04T1		1-51 *	P						1		0-7/8		187
GND (01)		C03T1		1-52 *	P						2		0-7/8		187
GND (01)		C02T1		1-53 *	P						1		0-7/8		187
GND (01)		C01T1		1-54 *	P										187
GND (01)				1									51-3/8		187
GND (02)		D01C2		1-01 *	P						1		0-7/8		188
GND (02)		D02C2		1-02 *	P						2		0-7/8		188
GND (02)		D03C2		1-03 *	P						1		0-7/8		188
GND (02)		D04C2		1-04 *	P						2		0-7/8		188
GND (02)		D05C2		1-05 *	P						1		0-7/8		188
GND (02)		D06C2		1-06 *	P						2		0-7/8		188
GND (02)		D07C2		1-07 *	P						1		0-7/8		188
GND (02)		D08C2		1-08 *	P						2		0-7/8		188
GND (02)		D09C2		1-09 *	P						1		2-1/8		188
GND (02)		D09T1		1-10 *	P						2		0-7/8		188
GND (02)		D08T1		1-11 *	P						1		0-7/8		188
GND (02)		D07T1		1-12 *	P						2		0-7/8		188
GND (02)		D06T1		1-13 *	P						1		0-7/8		188
GND (02)		D05T1		1-14 *	P						2		0-7/8		188
GND (02)		D04T1		1-15 *	P						1		0-7/8		188
GND (02)		D03T1		1-16 *	P						2		0-7/8		188
GND (02)		D02T1		1-17 *	P						1		0-7/8		188
GND (02)		D01T1		1-18 *	P						2		1-3/8		188
GND (02)		E01C2		1-19 *	P						1		0-7/8		188
GND (02)		E02C2		1-20 *	P						2		0-7/8		188
GND (02)		E03C2		1-21 *	P						1		0-7/8		188
GND (02)		E04C2		1-22 *	P						2		0-7/8		188
GND (02)		E05C2		1-23 *	P						1		0-7/8		188
GND (02)		E06C2		1-24 *	P						2		0-7/8		188
GND (02)		E07C2		1-25 *	P						1		0-7/8		188
GND (02)		E08C2		1-26 *	P						2		0-7/8		188
GND (02)		E09C2		1-27 *	P						1		2-1/8		188
GND (02)		E09T1		1-28 *	P						2		0-7/8		188
GND (02)		E08T1		1-29 *	P						1		0-7/8		188
GND (02)		E07T1		1-30 *	P						2		0-7/8		188
GND (02)		E06T1		1-31 *	P						1		0-7/8		188
GND (02)		E05T1		1-32 *	P						2		0-7/8		188
GND (02)		E04T1		1-33 *	P						1		0-7/8		188
GND (02)		E03T1		1-34 *	P						2		0-7/8		188
GND (02)		E02T1		1-35 *	P						1		0-7/8		188
GND (02)		E01T1		1-36 *	P						2		1-5/8		188
GND (02)		F01C2		1-37 *	P						1		0-7/8		188
GND (02)		F02C2		1-38 *	P						2		0-7/8		188
GND (02)		F03C2		1-39 *	P						1		0-7/8		188
GND (02)		F04C2		1-40 *	P						2		0-7/8		188
GND (02)		F05C2		1-41 *	P						1		0-7/8		188
GND (02)		F06C2		1-42 *	P						2		0-7/8		188
GND (02)		F07C2		1-43 *	P						1		0-7/8		188
GND (02)		F08C2		1-44 *	P						2		0-7/8		188

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
GND (02)		F09C2		1-45 *	P						1		2-1/8		188
GND (02)		F09T1		1-46 *	P						2		0-7/8		188
GND (02)		F08T1		1-47 *	P						1		0-7/8		188
GND (02)		F07T1		1-48 *	P						2		0-7/8		188
GND (02)		F06T1		1-49 *	P						1		0-7/8		188
GND (02)		F05T1		1-50 *	P						2		0-7/8		188
GND (02)		F04T1		1-51 *	P						1		0-7/8		188
GND (02)		F03T1		1-52 *	P						2		0-7/8		188
GND (02)		F02T1		1-53 *	P						1		0-7/8		188
GND (02)		F01T1		1-54 *	P										188
GND (02)				1									51-3/8		188
GND (03)		B09V2		1-01 *	P						2		2-3/8		189
GND (03)		B09E1		1-02 *	P						1		0-2/8		189
GND (03)		B09D1		1-03 *	P						2		0-4/8		189
GND (03)		B09B2		1-04 *	P						1		1-1/8		189
GND (03)		A09V2		1-05 *	P						2		0-6/8		189
GND (03)		A09S1		1-06 *	P						1		0-2/8		189
GND (03)		A09R1		1-07 *	P						2		0-2/8		189
GND (03)		A09P1		1-08 *	P						1		0-2/8		189
GND (03)		A09N1		1-09 *	P						2		1-7/8		189
GND (03)		A09B2		1-10 *	P						1		4-3/8		189
GND (03)		A01B2		1-11 *	P						2		1-7/8		189
GND (03)		A01N1		1-12 *	P						1		0-2/8		189
GND (03)		A01P1		1-13 *	P						2		0-2/8		189
GND (03)		A01R1		1-14 *	P						1		0-2/8		189
GND (03)		A01S1		1-15 *	P						2		0-6/8		189
GND (03)		A01V2		1-16 *	P						1		1-1/8		189
GND (03)		B01B2		1-17 *	P						2		0-4/8		189
GND (03)		B01D1		1-18 *	P						1		0-2/8		189
GND (03)		B01E1		1-19 *	P						2		2-3/8		189
GND (03)		B01V2		1-20 *	P						1		6-5/8		189
GND (03)		E03A1		1-21 *	P						2		0-7/8		189
GND (03)		E04A1		1-22 *	P						1		0-7/8		189
GND (03)		E05A1		1-23 *	P						2		0-7/8		189
GND (03)		E06A1		1-24 *	P						1		0-7/8		189
GND (03)		E07A1		1-25 *	P						2		0-7/8		189
GND (03)		E08A1		1-26 *	P						1		0-7/8		189
GND (03)		E09A1		1-27 *	P						2		4-3/8		189
GND (03)		F09J2		1-28 *	P						1		0-7/8		189
GND (03)		F08J2		1-29 *	P						2		0-7/8		189
GND (03)		F07J2		1-30 *	P						1		0-7/8		189
GND (03)		F06J2		1-31 *	P						2		0-7/8		189
GND (03)		F05J2		1-32 *	P						1		0-7/8		189
GND (03)		F04J2		1-33 *	P						2		0-7/8		189
GND (03)		F03J2		1-34 *	P										189
GND (03)				1									41-1/8		189
H BG IN		D07U2		1-01 *							1		3-7/8		190
H BG IN		F07B1		1-02 *											190
H BG IN				1									3-7/8		190
H BG OUT		D07V2		1-01 *							1		3-7/8		191
H BG OUT		F07A1		1-02 *											191
H BG OUT				1									3-7/8		191

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
H BR OUT		D07J2		1-01	*						1		6-5/8		192
H BR OUT		F07P1		1-02	*						2		1		192
H BR OUT		F07U2		1-03	*										192
H BR OUT				1									7-5/8		192
H IN		D07H1		1-01	*						1		3-3/8		193
H IN		E07M1		1-02	*										193
H IN				1									3-3/8		193
H INT A		D07N1		1-01	*						1		6-3/8		194
H INT A		F07U1		1-02	*										194
H INT A				1									6-3/8		194
H INT B		C07J1		1-01	*						1		8-5/8		195
H INT B		F07K2		1-02	*										195
H INT B				1									8-5/8		195
H INT ENB A		D07M1		1-01	*						1		6-5/8		196
H INT ENB A		F07V1		1-02	*										196
H INT ENB A				1									6-5/8		196
H INT ENB B		C07L1		1-01	*						1		8-1/8		197
H INT ENB B		F07H2		1-02	*										197
H INT ENB B				1									8-1/8		197
H OUT HIGH		D07K1		1-01	*						1		3-3/8		198
H OUT HIGH		E07M2		1-02	*										198
H OUT HIGH				1									3-3/8		198
H OUT LOW		D07D1		1-01	*						1		3-7/8		199
H OUT LOW		E07N1		1-02	*										199
H OUT LOW				1									3-7/8		199
H SEL 0		D07F1		1-01	*						1		4-1/8		200
H SEL 0		E07S2		1-02	*										200
H SEL 0				1									4-1/8		200
H SEL 4		D07E1		1-01	*						1		4-3/8		201
H SEL 4		E07R2		1-02	*										201
H SEL 4				1									4-3/8		201
H SEL 6		D07C1		1-01	*						1		4-3/8		202
H SEL 6		E07S1		1-02	*										202
H SEL 6				1									4-3/8		202
H SER 2		D07J1		1-01	*						1		4-1/8		203
H SER 2		E07T2		1-02	*										203
H SER 2				1									4-1/8		203
H SSYN IN H		D07V1		1-01	*						1		0-7/8		204
H SSYN IN H		E07B1		1-02	*										204
H SSYN IN H				1									0-7/8		204

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
HALT GRANT		C01R1		1-01 *	P						2		0-7/8		205
HALT GRANT		C02R1		1-02 *	P						1		0-7/8		205
HALT GRANT		C03R1		1-03 *	P						2		0-7/8		205
HALT GRANT		C04R1		1-04 *	P						1		0-7/8		205
HALT GRANT		C05R1		1-05 *	P						2		0-7/8		205
HALT GRANT		C06R1		1-06 *	P						1		0-7/8		205
HALT GRANT		C07R1		1-07 *	P						2		0-7/8		205
HALT GRANT		C08R1		1-08 *	P						1		0-7/8		205
HALT GRANT		C09R1		1-09 *	P										205
HALT GRANT				1									7-0/8		205
HALT REQ		C01P1		1-01 *	P						2		0-7/8		206
HALT REQ		C02P1		1-02 *	P						1		0-7/8		206
HALT REQ		C03P1		1-03 *	P						2		0-7/8		206
HALT REQ		C04P1		1-04 *	P						1		0-7/8		206
HALT REQ		C05P1		1-05 *	P						2		0-7/8		206
HALT REQ		C06P1		1-06 *	P						1		0-7/8		206
HALT REQ		C07P1		1-07 *	P						2		0-7/8		206
HALT REQ		C08P1		1-08 *	P						1		0-7/8		206
HALT REQ		C09P1		1-09 *	P										206
HALT REQ				1									7-0/8		206
INIT L		A01A1		1-01 *	P						1		0-7/8		207
INIT L		A02A1		1-02 *	P						2		0-7/8		207
INIT L		A03A1	A04A1	1-03 *	P						1		0-7/8		207
INIT L		A04A1		1-04 *	H						2	TWPR	9-7/8		207
INIT L		D03L1		1-05 *	P						1		0-7/8		207
INIT L		D04L1		1-06 *	P						2		0-7/8		207
INIT L		D05L1		1-07 *	P						1		0-7/8		207
INIT L		D06L1		1-08 *	P						2		0-7/8		207
INIT L		D07L1		1-09 *	P						1		0-7/8		207
INIT L		D08L1	D09L1	1-10 *	P						2		0-7/8		207
INIT L		D09L1		1-11 *	H						1	TWPR	11-5/8		207
INIT L		A05A1		1-12 *	P						2		0-7/8		207
INIT L		A06A1		1-13 *	P						1		0-7/8		207
INIT L		A07A1		1-14 *	P						2		0-7/8		207
INIT L		A08A1		1-15 *	P						1		0-7/8		207
INIT L		A09A1		1-16 *	P										207
INIT L				1									32-7/8		207
INT SSYN		B02E1		1-01 *	P						2		0-7/8		208
INT SSYN		B03E1		1-02 *	P						1		0-7/8		208
INT SSYN		B04E1		1-03 *	P						2		0-7/8		208
INT SSYN		B05E1		1-04 *	P						1		0-7/8		208
INT SSYN		B06E1		1-05 *	P						2		0-7/8		208
INT SSYN		B07E1		1-06 *	P						1		0-7/8		208
INT SSYN		B08E1		1-07 *	P										208
INT SSYN				1									5-2/8		208

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
INTR L		A01B1		1-01	*	P						2		0-7/8		209
INTR L		A02B1		1-02	*	P						1		0-7/8		209
INTR L		A03B1		1-03	*	P						2		0-7/8		209
INTR L		A04B1		1-04	*							1		15-3/8		209
INTR L		F03M1		1-05	*	P						2		0-7/8		209
INTR L		F04M1		1-06	*							1		0-7/8		209
INTR L		F05M1		1-07	*	P						2		0-7/8		209
INTR L		F06M1		1-08	*	P						1		0-7/8		209
INTR L		F07M1		1-09	*	P						2		0-7/8		209
INTR L		F08M1		1-10	*	P						1		0-7/8		209
INTR L		F09M1		1-11	*							2		16-5/8		209
INTR L		A05B1		1-12	*	P						1		0-7/8		209
INTR L		A06B1		1-13	*	P						2		0-7/8		209
INTR L		A07B1		1-14	*	P						1		0-7/8		209
INTR L		A08B1		1-15	*	P						2		0-7/8		209
INTR L		A09B1		1-16	*	P										209
INTR L				1										43-3/8		209
J A IN		D08H1		1-01	*							1		3-3/8		210
J A IN		E08M1		1-02	*											210
J A IN				1										3-3/8		210
J BG IN		D08U2		1-01	*							1		3-7/8		211
J BG IN		F08B1		1-02	*											211
J BG IN				1										3-7/8		211
J BG OUT		D08V2		1-01	*							1		3-7/8		212
J BG OUT		F08A1		1-02	*											212
J BG OUT				1										3-7/8		212
J BR OUT		D08J2		1-01	*							1		6-5/8		213
J BR OUT		F08P1		1-02	*							2		1		213
J BR OUT		F08U2		1-03	*											213
J BR OUT				1										7-5/8		213
J INT A		D08N1		1-01	*							1		6-3/8		214
J INT A		F08U1		1-02	*											214
J INT A				1										6-3/8		214
J INT B		C08J1		1-01	*							1		8-5/8		215
J INT B		F08K2		1-02	*											215
J INT B				1										8-5/8		215
J INT ENB A		D08M1		1-01	*							1		6-5/8		216
J INT ENB A		F08V1		1-02	*											216
J INT ENB A				1										6-5/8		216
J INT ENB B		C08L1		1-01	*							1		8-1/8		217
J INT ENB B		F08H2		1-02	*											217
J INT ENB B				1										8-1/8		217
J OUT HIGH		D09K1		1-01	*							1		3-3/8		218
J OUT HIGH		E08M2		1-02	*											218
J OUT HIGH				1										3-3/8		218

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
J OUT LOW		D08D1		1-01 *							1		3-7/8		219
J OUT LOW		E08N1		1-02 *											219
J OUT LOW				1									3-7/8		219
J SEL 0		D08F1		1-01 *							1		4-1/8		220
J SEL 0		E08S2		1-02 *											220
J SEL 0				1									4-1/8		220
J SEL 4		D08E1		1-01 *							1		4-3/8		221
J SEL 4		E08R2		1-02 *											221
J SEL 4				1									4-3/8		221
J SEL 6		D08C1		1-01 *							1		4-3/8		222
J SEL 6		E08S1		1-02 *											222
J SEL 6				1									4-3/8		222
J SER 2		D08J1		1-01 *							1		4-1/8		223
J SER 2		E08T2		1-02 *											223
J SER 2				1									4-1/8		223
J SSYN IN H		D08V1		1-01 *							1		0-7/8		224
J SSYN IN H		E08B1		1-02 *											224
J SSYN IN H				1									0-7/8		224
K A IN		D09H1		1-01 *							1		3-3/8		225
K A IN		E09M1		1-02 *											225
K A IN				1									3-3/8		225
K BG IN		D09U2		1-01 *							1		3-7/8		226
K BG IN		F09B1		1-02 *											226
K BG IN				1									3-7/8		226
K BG OUT		D09V2		1-01 *							1		3-7/8		227
K BG OUT		F09A1		1-02 *											227
K BG OUT				1									3-7/8		227
K BR OUT		D09J2		1-01 *							1		6-5/8		228
K BR OUT		F09P1		1-02 *							2		1		228
K BR OUT		F09U2		1-03 *											228
K BR OUT				1									7-5/8		228
K INT A		D09N1		1-01 *							1		6-3/8		229
K INT A		F09U1		1-02 *											229
K INT A				1									6-3/8		229
K INT B		C09J1		1-01 *							1		8-5/8		230
K INT B		F09K2		1-02 *											230
K INT B				1									8-5/8		230
K INT ENB A		D09M1		1-01 *							1		6-5/8		231
K INT ENB A		F09V1		1-02 *											231
K INT ENB A				1									6-5/8		231
K INT ENB B		C09L1		1-01 *							1		8-1/8		232
K INT ENB B		F09H2		1-02 *											232
K INT ENB B				1									8-1/8		232

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
K OUT HIGH		D09K1		1-01 *							1			3-3/8	233
K OUT HIGH		E09M2		1-02 *											233
K OUT HIGH				1										3-3/8	233
K OUT LOW		D09D1		1-01 *							1			3-7/8	234
K OUT LOW		E09N1		1-02 *											234
K OUT LOW				1										3-7/8	234
K SEL 0		D09F1		1-01 *							1			4-1/8	235
K SEL 0		E09S2		1-02 *											235
K SEL 0				1										4-1/8	235
K SEL 4		D09E1		1-01 *							1			4-3/8	236
K SEL 4		E09R2		1-02 *											236
K SEL 4				1										4-3/8	236
K SEL 6		D09C1		1-01 *							1			4-3/8	237
K SEL 6		E09S1		1-02 *											237
K SEL 6				1										4-3/8	237
K SER 2		D09J1		1-01 *							1			4-1/8	238
K SER 2		E09T2		1-02 *											238
K SER 2				1										4-1/8	238
K SSYN IN H		D09V1		1-01 *							1			0-7/8	239
K SSYN IN H		E09B1		1-02 *											239
K SSYN IN H				1										0-7/8	239
K1-1 BERG 00(1) H		D01N1		1-01 *							1			0-5/8	240
K1-1 BERG 00(1) H		D02M1		1-02 *											240
K1-1 BERG 00(1) H				1										0-5/8	240
K1-1 BXREG 00(1) H		C02U1		1-01 *							1			7-7/8	241
K1-1 BXREG 00(1) H		F01K1		1-02 *											241
K1-1 BXREG 00(1) H				1										7-7/8	241
K1-1 BXREG 01(1) H		D02F1		1-01 *							1			5-5/8	242
K1-1 BXREG 01(1) H		F01A1		1-02 *											242
K1-1 BXREG 01(1) H				1										5-5/8	242
K1-1 CBIT(1) H		D01U2		1-01 *							1			0-6/8	243
K1-1 CBIT(1) H		D02V1		1-02 *											243
K1-1 CBIT(1) H				1										0-6/8	243
K1-1 NBIT(1) H		D01L1		1-01 *							1			3-7/8	244
K1-1 NBIT(1) H		E02P2		1-02 *											244
K1-1 NBIT(1) H				1										3-7/8	244
K1-1 SSMUX 00 H		E02B2		1-01 *							1			4-3/8	245
K1-1 SSMUX 00 H		F01F1		1-02 *											245
K1-1 SSMUX 00 H				1										4-3/8	245
K1-1 SSMUX 01 H		D01H1		1-01 *							1			3-1/8	246
K1-1 SSMUX 01 H		E02E1		1-02 *											246
K1-1 SSMUX 01 H				1										3-1/8	246

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
K1-1 SSMUX 02 H		E01B1		1-01	*						1		1-3/8		247
K1-1 SSMUX 02 H		E02D2		1-02	*										247
K1-1 SSMUX 02 H				1									1-3/8		247
K1-1 SSMUX 03 H		D01E1		1-01	*						1		3-3/8		248
K1-1 SSMUX 03 H		E02D1		1-02	*										248
K1-1 SSMUX 03 H				1									3-3/8		248
K1-1 VBIT(1) H		E01D1		1-01	*						1		2-5/8		249
K1-1 VBIT(1) H		E02U2		1-02	*										249
K1-1 VBIT(1) H				1									2-5/8		249
K1-1 ZBIT(1) H		E02V1		1-01	*						1		1-7/8		250
K1-1 ZBIT(1) H		F01F2		1-02	*										250
K1-1 ZBIT(1) H				1									1-7/8		250
K1-10 8-15=0 L		C01J2		1-01	*						1		9-3/8		251
K1-10 8-15=0 L		F02N2		1-02	*										251
K1-10 8-15=0 L				1									9-3/8		251
K1-10 ASSERT SSYN H		E01K2		1-01	*						1		3-1/8		252
K1-10 ASSERT SSYN H		F02F1		1-02	*										252
K1-10 ASSERT SSYN H				1									3-1/8		252
K1-10 CCN H		F01T2		1-01	*						1		1-7/8		253
K1-10 CCN H		F02J2		1-02	*										253
K1-10 CCN H				1									1-7/8		253
K1-10 CCZ H		E01L1		1-01	*						1		2-7/8		254
K1-10 CCZ H		F02B2		1-02	*										254
K1-10 CCZ H				1									2-7/8		254
K1-2 PSW 05(1) H		C01P2		1-01	*						1		6-5/8		255
K1-2 PSW 05(1) H		E02T2		1-02	*										255
K1-2 PSW 05(1) H				1									6-5/8		255
K1-2 PSW 06(1) H		C01M2		1-01	*						1		6-5/8		256
K1-2 PSW 06(1) H		E02U1		1-02	*										256
K1-2 PSW 06(1) H				1									6-5/8		256
K1-2 PSW 07(1) H		E02K2		1-01	*						1		3-3/8		257
K1-2 PSW 07(1) H		F01H2		1-02	*										257
K1-2 PSW 07(1) H				1									3-3/8		257
K1-2 SSMUX 04 H		C02D1		1-01	*						1		3-7/8		258
K1-2 SSMUX 04 H		D01H2		1-02	*										258
K1-2 SSMUX 04 H				1									3-7/8		258
K1-2 SSMUX 05 H		E01E1		1-01	*						1		1-3/8		259
K1-2 SSMUX 05 H		E02H2		1-02	*										259
K1-2 SSMUX 05 H				1									1-3/8		259
K1-2 SSMUX 06 H		C02C1		1-01	*						1		6-7/8		260
K1-2 SSMUX 06 H		E01K1		1-02	*										260
K1-2 SSMUX 06 H				1									6-7/8		260

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
K1-2 SSMUX 07 H		C02E2		1-01 *							1		3-7/8	261
K1-2 SSMUX 07 H		D01J2		1-02 *										261
K1-2 SSMUX 07 H				1									3-7/8	261
K1-2 TBIT(1) H		D01F1		1-01 *							1		0-6/8	262
K1-2 TBIT(1) H		D02K1		1-02 *										262
K1-2 TBIT(1) H				1									0-6/8	262
K1-3 SSMUX 08 H		E01N2		1-01 *							1		0-4/8	263
K1-3 SSMUX 08 H		E02N1		1-02 *										263
K1-3 SSMUX 08 H				1									0-4/8	263
K1-3 SSMUX 09 H		C02J2		1-01 *							1		6-5/8	264
K1-3 SSMUX 09 H		E01M2		1-02 *										264
K1-3 SSMUX 09 H				1									6-5/8	264
K1-3 SSMUX 10 H		C02H2		1-01 *							1		5-1/8	265
K1-3 SSMUX 10 H		D01V1		1-02 *										265
K1-3 SSMUX 10 H				1									5-1/8	265
K1-3 SSMUX 11 H		C02F2		1-01 *							1		5-7/8	266
K1-3 SSMUX 11 H		E01A1		1-02 *										266
K1-3 SSMUX 11 H				1									5-7/8	266
K1-4 ALU COUT H		E01V1		1-01 *							1		2-7/8	267
K1-4 ALU COUT H		F02L2		1-02 *										267
K1-4 ALU COUT H				1									2-7/8	267
K1-4 PSW 15(1) L		D01J1		1-01 *							1		3-1/8	268
K1-4 PSW 15(1) L		E02E2		1-02 *										268
K1-4 PSW 15(1) L				1									3-1/8	268
K1-4 SP15(1) H		C02N1		1-01 *	H						1	TWP	8-1/8	269
K1-4 SP15(1) H		F01E1		1-02 *	X							TWP		269
K1-4 SP15(1) H				1									8-1/8	269
K1-4 SSMUX 12 H		C02J1		1-01 *							1		5-1/8	270
K1-4 SSMUX 12 H		E01B2		1-02 *										270
K1-4 SSMUX 12 H				1									5-1/8	270
K1-4 SSMUX 13 H		C02D2		1-01 *							1		5-3/8	271
K1-4 SSMUX 13 H		D01V2		1-02 *										271
K1-4 SSMUX 13 H				1									5-3/8	271
K1-4 SSMUX 14 H		C02H1		1-01 *							1		6-5/8	272
K1-4 SSMUX 14 H		E01P2		1-02 *										272
K1-4 SSMUX 14 H				1									6-5/8	272
K1-4 SSMUX 15 H		C01D1		1-01 *							1		1-3/8	273
K1-4 SSMUX 15 H		C02B2		1-02 *										273
K1-4 SSMUX 15 H				1									1-3/8	273
K1-5 ALLOW MSYN H		E01V2		1-01 *							1		1-1/8	274
K1-5 ALLOW MSYN H		F02A1		1-02 *										274
K1-5 ALLOW MSYN H				1									1-1/8	274

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
K1-5 MAN CLK ENAB L		F01M1		1-01 *							1		1-2/8		275
K1-5 MAN CLK ENAB L		F02E1		1-02 *											275
K1-5 MAN CLK ENAB L				1									1-2/8		275
K1-5 MAN CLK L		E02S1		1-01 *							1		3-3/8		276
K1-5 MAN CLK L		F01P1		1-02 *											276
K1-5 MAN CLK L				1									3-3/8		276
K1-5 PROC CLK H		E02J2		1-01 *	H						1	TWP	4-3/8		277
K1-5 PROC CLK H		F01P2		1-02 *	X							TWP			277
K1-5 PROC CLK H				1									4-3/8		277
K1-5 PROC CLK L		E01R1		1-01 *							1		0-6/8		278
K1-5 PROC CLK L		E02M1		1-02 *											278
K1-5 PROC CLK L				1									0-6/8		278
K1-5 TAP 30 H		D01E2		1-01 *	H						1	TWP	4-1/8		279
K1-5 TAP 30 H		E02M2		1-02 *	X							TWP			279
K1-5 TAP 30 H				1									4-1/8		279
K1-6 PBA 00 H		C01L2		1-01 *							1		4-7/8		280
K1-6 PBA 00 H		E02C1		1-02 *											280
K1-6 PBA 00 H				1									4-7/8		280
K1-6 PBA 01 H		C01H1		1-01 *							1		5-3/8		281
K1-6 PBA 01 H		D02V2		1-02 *											281
K1-6 PBA 01 H				1									5-3/8		281
K1-6 PBA 02 H		D02U2		1-01 *							1		1-7/8		282
K1-6 PBA 02 H		E01E2		1-02 *											282
K1-6 PBA 02 H				1									1-7/8		282
K1-6 PBA 03 H		D01M1		1-01 *							1		2-3/8		283
K1-6 PBA 03 H		E02B1		1-02 *											283
K1-6 PBA 03 H				1									2-3/8		283
K1-6 VBA 00(1) H		D02H1		1-01 *							1		4-1/8		284
K1-6 VBA 00(1) H		E01T2		1-02 *											284
K1-6 VBA 00(1) H				1									4-1/8		284
K1-8 KT FAULT L		D01D2		1-01 *							1		7-5/8		285
K1-8 KT FAULT L		F02T2		1-02 *											285
K1-8 KT FAULT L				1									7-5/8		285
K2-1 CLK MSYN H		C01J1		1-01 *							1		10-3/8		286
K2-1 CLK MSYN H		F02V2		1-02 *											286
K2-1 CLK MSYN H				1									10-3/8		286
K2-1 DISABLE WBIT L		D01F2		1-01 *							1		6-7/8		287
K2-1 DISABLE WBIT L		F02S1		1-02 *											287
K2-1 DISABLE WBIT L				1									6-7/8		287
K2-1 ENAB ADDR5 L		D02E2		1-01 *							1		5-5/8		288
K2-1 ENAB ADDR5 L		F01B2		1-02 *											288
K2-1 ENAB ADDR5 L				1									5-5/8		288

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
K2=1 INT MSYN H		C01F2		1=01 *							1		2=7/8		289
K2=1 INT MSYN H		D02C1		1=02 *											289
K2=1 INT MSYN H				1									2=7/8		289
K2=1 KTE(1) H		C02M2		1=01 *							1		5=5/8		290
K2=1 KTE(1) H		E01J2		1=02 *											290
K2=1 KTE(1) H				1									5=5/8		290
K2=1 MSYN(1) L		C01H2		1=01 *							1		9=1/8		291
K2=1 MSYN(1) L		F02K2		1=02 *											291
K2=1 MSYN(1) L				1									9=1/8		291
K2=1 PE(1) H		C01T2		1=01 *							1		0=7/8		292
K2=1 PE(1) H		C02T2		1=02 *											292
K2=1 PE(1) H				1									0=7/8		292
K2=1 START TRAN L		C01N2		1=01 *							1		4=3/8		293
K2=1 START TRAN L		E02A1		1=02 *											293
K2=1 START TRAN L				1									4=3/8		293
K2=1 TRAN INH L		C01K2		1=01 *							1		7=7/8		294
K2=1 TRAN INH L		F02C1		1=02 *											294
K2=1 TRAN INH L				1									7=7/8		294
K2=1 UBUS C0(1) H		C01B2		1=01 *							1		4=1/8		295
K2=1 UBUS C0(1) H		D02H2		1=02 *											295
K2=1 UBUS C0(1) H				1									4=1/8		295
K2=1 UBUS C1(1) H		C01C1		1=01 *							1		4=3/8		296
K2=1 UBUS C1(1) H		D02J1		1=02 *											296
K2=1 UBUS C1(1) H				1									4=3/8		296
K2=2 BG INH L		F01R2		1=01 *							1		2=1/8		297
K2=2 BG INH L		F02B1		1=02 *											297
K2=2 BG INH L				1									2=1/8		297
K2=2 PROC INIT L		E01U1		1=01 *							1		1=7/8		298
K2=2 PROC INIT L		F02D2		1=02 *											298
K2=2 PROC INIT L				1									1=7/8		298
K2=2 RCD INIT L		C01E2		1=01 *							1		8=7/8		299
K2=2 RCD INIT L		F02E2		1=02 *											299
K2=2 RCD INIT L				1									8=7/8		299
K2=2 SACK RET(1) H		C01R2		1=01 *							1		5=3/8		300
K2=2 SACK RET(1) H		E02L1		1=02 *											300
K2=2 SACK RET(1) H				1									5=3/8		300
K2=3 C2 H		C02L1		1=01 *							1		2=3/8		301
K2=3 C2 H		D01B2		1=02 *											301
K2=3 C2 H				1									2=3/8		301
K2=3 C3 H		C01V1		1=01 *							1		0=6/8		302
K2=3 C3 H		C02S1		1=02 *											302
K2=3 C3 H				1									0=6/8		302

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
K2-3 C4 H		C01U1		1-01 *							1		1-4/8		303
K2-3 C4 H		C02N2		1-02 *											303
K2-3 C4 H				1									1-4/8		303
K2-3 INT VECTOR L		D01K1		1-01 *							1		7-1/8		304
K2-3 INT VECTOR L		F02U1		1-02 *											304
K2-3 INT VECTOR L				1									7-1/8		304
K2-3 INTR H		C01V2		1-01 *							1		7-1/8		305
K2-3 INTR H		F02H1		1-02 *											305
K2-3 INTR H				1									7-1/8		305
K2-4 SP WRITE L		E02F1		1-01 *							1		4-7/8		306
K2-4 SP WRITE L		F01V2		1-02 *											306
K2-4 SP WRITE L				1									4-7/8		306
K2-4 SPA 00 H		C01D2		1-01 *		H					1	TWP	3-7/8		307
K2-4 SPA 00 H		D02F2		1-02 *		X						TWP			307
K2-4 SPA 00 H				1									3-7/8		307
K2-4 SPA 01 H		C01N1		1-01 *		H					1	TWP	2-5/8		308
K2-4 SPA 01 H		D02B2		1-02 *		X						TWP			308
K2-4 SPA 01 H				1									2-5/8		308
K2-4 SPA 02 H		C01S1		1-01 *		H					1	TWP	3-1/8		309
K2-4 SPA 02 H		D02L1		1-02 *		X						TWP			309
K2-4 SPA 02 H				1									3-1/8		309
K2-4 SPA 03 H		C01U2		1-01 *		H					1	TWP	2		310
K2-4 SPA 03 H		D02D2		1-02 *		X						TWP			310
K2-4 SPA 03 H				1									2-0/8		310
K2-5 BYTE L		E01H2		1-01 *							1		3-7/8		311
K2-5 BYTE L		F02L1		1-02 *											311
K2-5 BYTE L				1									3-7/8		311
K2-5 CC CODE 00 H		F01S1		1-01 *							1		1-4/8		312
K2-5 CC CODE 00 H		F02J1		1-02 *											312
K2-5 CC CODE 00 H				1									1-4/8		312
K2-5 CC CODE 01 H		E01U2		1-01 *							1		2-3/8		313
K2-5 CC CODE 01 H		F02H2		1-02 *											313
K2-5 CC CODE 01 H				1									2-3/8		313
K2-5 CC CODE 02 H		E01C1		1-01 *							1		4-7/8		314
K2-5 CC CODE 02 H		F02M2		1-02 *											314
K2-5 CC CODE 02 H				1									4-7/8		314
K2-5 LOAD IR H		E01D2		1-01 *							1		4-5/8		315
K2-5 LOAD IR H		F02P2		1-02 *											315
K2-5 LOAD IR H				1									4-5/8		315
K2-5 ROT CBIT(1) H		F01R1		1-01 *							1		1-1/8		316
K2-5 ROT CBIT(1) H		F02K1		1-02 *											316
K2-5 ROT CBIT(1) H				1									1-1/8		316

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
K2=5 SERIAL SHIFT H		E01F2		1=01 *							1			4=1/8	317
K2=5 SERIAL SHIFT H		F02N1		1=02 *											317
K2=5 SERIAL SHIFT H				1										4=1/8	317
K2=6 DISAB LOAD PSW H		D01C1		1=01 *							1			7=7/8	318
K2=6 DISAB LOAD PSW H		F02S2		1=02 *											318
K2=6 DISAB LOAD PSW H				1										7=7/8	318
K2=7 LOAD CC L		F01N1		1=01 *							1			1=4/8	319
K2=7 LOAD CC L		F02F2		1=02 *											319
K2=7 LOAD CC L				1										1=4/8	319
K2=7 LOAD PSW L		E02N2		1=01 *							1			3=1/8	320
K2=7 LOAD PSW L		F01J2		1=02 *											320
K2=7 LOAD PSW L				1										3=1/8	320
K2=8 ALU CIN L		C02R2		1=01 *							1			7=7/8	321
K2=8 ALU CIN L		F01E2		1=02 *											321
K2=8 ALU CIN L				1										7=7/8	321
K2=8 ALU MODE H		C02K2		1=01 *							1			8=7/8	322
K2=8 ALU MODE H		F01J1		1=02 *											322
K2=8 ALU MODE H				1										8=7/8	322
K2=8 ALU S0 H		C02V2		1=01 *							1			7=1/8	323
K2=8 ALU S0 H		F01B1		1=02 *											323
K2=8 ALU S0 H				1										7=1/8	323
K2=8 ALU S1 H		D02D1		1=01 *						1				3=7/8	324
K2=8 ALU S1 H		E01H1		1=02 *											324
K2=8 ALU S1 H				1										3=7/8	324
K2=8 ALU S2 H		E01F1		1=01 *						1				0=6/8	325
K2=8 ALU S2 H		E02H1		1=02 *											325
K2=8 ALU S2 H				1										0=6/8	325
K2=8 ALU S3 H		E01R2		1=01 *						1				1=7/8	326
K2=8 ALU S3 H		E02F2		1=02 *											326
K2=8 ALU S3 H				1										1=7/8	326
K2=8 AUX CONTROL(1) L		D01D1		1=01 *						1				4=5/8	327
K2=8 AUX CONTROL(1) L		E02R1		1=02 *											327
K2=8 AUX CONTROL(1) L				1										4=5/8	327
K2=8 BLEG 00 H		C02V1		1=01 *						1				7=1/8	328
K2=8 BLEG 00 H		F01C1		1=02 *											328
K2=8 BLEG 00 H				1										7=1/8	328
K2=8 BLEG 01 H		D02N1		1=01 *						1				5=7/8	329
K2=8 BLEG 01 H		F01M2		1=02 *											329
K2=8 BLEG 01 H				1										5=7/8	329
K2=8 BMODE 00 L		D02E1		1=01 *						1				6=3/8	330
K2=8 BMODE 00 L		F01L2		1=02 *											330
K2=8 BMODE 00 L				1										6=3/8	330

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
K2-8 BMODE 01 L		C02U2		1-01 *							1		8-7/8		331
K2-8 BMODE 01 L		F01U2		1-02 *											331
K2-8 BMODE 01 L				1									8-7/8		331
K2-8 BXMODE 00 L		E01S1		1-01 *							1		1-3/8		332
K2-8 BXMODE 00 L		E02R2		1-02 *											332
K2-8 BXMODE 00 L				1									1-3/8		332
K2-8 BXMODE 01 L		E02S2		1-01 *							1		3-1/8		333
K2-8 BXMODE 01 L		F01L1		1-02 *											333
K2-8 BXMODE 01 L				1									3-1/8		333
K2-8 DIS UPR BTWRT H		E01P1		1-01 *							1		3-7/8		334
K2-8 DIS UPR BTWRT H		F02R1		1-02 *											334
K2-8 DIS UPR BTWRT H				1									3-7/8		334
K2-8 DISABLE MSYN+1 L		C02S2		1-01 *							1		5-7/8		335
K2-8 DISABLE MSYN+1 L		E01M1		1-02 *											335
K2-8 DISABLE MSYN+1 L				1									5-7/8		335
K2-8 ENAB MAINT(1) H		F01S2		1-01 *							1		1		336
K2-8 ENAB MAINT(1) H		F02U2		1-02 *											336
K2-8 ENAB MAINT(1) H				1									1-0/8		336
K2-8 ENAB OVX L		E01N1		1-01 *							1		1-1/8		337
K2-8 ENAB OVX L		E02J1		1-02 *											337
K2-8 ENAB OVX L				1									1-1/8		337
K2-8 LOAD BA(1) H		F01D1		1-01 *							1		0-7/8		338
K2-8 LOAD BA(1) H		F02D1		1-02 *											338
K2-8 LOAD BA(1) H				1									0-7/8		338
K2-8 LONG CYCLE(1) L		E02V2		1-01 *							1		3-7/8		339
K2-8 LONG CYCLE(1) L		F01V1		1-02 *											339
K2-8 LONG CYCLE(1) L				1									3-7/8		339
K2-8 MODE 01 H		E02P1		1-01 *							1		3-1/8		340
K2-8 MODE 01 H		F01N2		1-02 *											340
K2-8 MODE 01 H				1									3-1/8		340
K2-8 SEX H		C02L2		1-01 *							1		6-1/8		341
K2-8 SEX H		E01J1		1-02 *											341
K2-8 SEX H				1									6-1/8		341
K2-8 SHIFT MUX 00 L		F01K2		1-01 *							1		0-4/8		342
K2-8 SHIFT MUX 00 L		F02M1		1-02 *											342
K2-8 SHIFT MUX 00 L				1									0-4/8		342
K2-8 SHIFT MUX 01 L		F01U1		1-01 *							1		1-1/8		343
K2-8 SHIFT MUX 01 L		F02P1		1-02 *											343
K2-8 SHIFT MUX 01 L				1									1-1/8		343
K2-8 SWAP H		C02P2		1-01 *							1		6-3/8		344
K2-8 SWAP H		E01S2		1-02 *											344
K2-8 SWAP H				1									6-3/8		344

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
K2=9 AMUX S0(1) L		F01D2		1=01 *							1		2=3/8		345
K2=9 AMUX S0(1) L		F02V1		1=02 *											345
K2=9 AMUX S0(1) L				1									2=3/8		345
K2=9 AMUX S1(1) L		F01H1		1=01 *							1		1=6/8		346
K2=9 AMUX S1(1) L		F02R2		1=02 *											346
K2=9 AMUX S1(1) L				1									1=6/8		346
K2=9 FORC KERNEL(1) H		C01L1		1=01 *							1		5=7/8		347
K2=9 FORC KERNEL(1) H		E02K1		1=02 *											347
K2=9 FORC KERNEL(1) H				1									5=7/8		347
K2=9 PREV MODE(1) L		C01B2		1=01 *							1		2=7/8		348
K2=9 PREV MODE(1) L		D02J2		1=02 *											348
K2=9 PREV MODE(1) L				1									2=7/8		348
LTC		C03D1		1=01 *		P					2		0=7/8		349
LTC		C04D1		1=02 *		P					1		0=7/8		349
LTC		C05D1		1=03 *		P					2		0=7/8		349
LTC		C06D1		1=04 *		P					1		0=7/8		349
LTC		C07D1		1=05 *		P					2		0=7/8		349
LTC		C08D1		1=06 *		P					1		0=7/8		349
LTC		C09D1		1=07 *		P									349
LTC				1									5=2/8		349
MSYN L (1)		B01V1		1=01 *							2		0=7/8		350
MSYN L (1)		B02V1		1=02 *							1		0=7/8		350
MSYN L (1)		B03V1		1=03 *							2		0=7/8		350
MSYN L (1)		B04V1		1=04 *		H					1	TWP	7=1/8		350
MSYN L (1)		E03E1		1=05 *		P					2		0=7/8		350
MSYN L (1)		E04E1		1=06 *							1		0=7/8		350
MSYN L (1)		E05E1		1=07 *		P					2		0=7/8		350
MSYN L (1)		E06E1		1=08 *		P					1		0=7/8		350
MSYN L (1)		E07E1		1=09 *		P					2		0=7/8		350
MSYN L (1)		E08E1		1=10 *		P									350
MSYN L (1)				1									14=1/8		350
MSYN L (2)		E09E1		1=01 *		H					1	TWP	8=3/8		351
MSYN L (2)		B05V1		1=02 *							2		0=7/8		351
MSYN L (2)		B06V1		1=03 *							1		0=7/8		351
MSYN L (2)		B07V1		1=04 *							2		0=7/8		351
MSYN L (2)		B08V1		1=05 *							1		0=7/8		351
MSYN L (2)		B09V1		1=06 *											351
MSYN L (2)				1									11=7/8		351
MSYN L JMP		E08E1		1=01 *		P					1		0=7/8		352
MSYN L JMP		E09E1		1=02 *											352
MSYN L JMP				1									0=7/8		352

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
NPG	L		A01U1		1-01 *							1		3-5/8		353
NPG	L		C01A1		1-02 *							2		0-2/8		353
NPG	L		C01B1		1-03 *	P						2		0-5/8		353
NPG	L		C02A1		1-04 *							1		0-2/8		353
NPG	L		C02B1		1-05 *	P						2		0-5/8		353
NPG	L		C03A1		1-06 *							1		0-2/8		353
NPG	L		C03B1		1-07 *	P						2		0-5/8		353
NPG	L		C04A1		1-08 *							1		0-2/8		353
NPG	L		C04B1		1-09 *	P						2		0-5/8		353
NPG	L		C05A1		1-10 *							1		0-2/8		353
NPG	L		C05B1		1-11 *	P						2		0-5/8		353
NPG	L		C06A1		1-12 *							1		0-2/8		353
NPG	L		C06B1		1-13 *	P						2		0-5/8		353
NPG	L		C07A1		1-14 *							1		0-2/8		353
NPG	L		C07B1		1-15 *	P						2		0-5/8		353
NPG	L		C08A1		1-16 *							1		0-2/8		353
NPG	L		C08B1		1-17 *	P						2		0-5/8		353
NPG	L		C09A1		1-18 *							1		0-2/8		353
NPG	L		C09B1		1-19 *							2		3-7/8		353
NPG	L		A09U1		1-20 *											353
NPG	L				1									14-6/8		353
NPR	L		A01S2		1-01 *							2		0-7/8		354
NPR	L		A02S2		1-02 *							1		0-7/8		354
NPR	L		A03S2	A04S2	1-03 *							2		0-7/8		354
NPR	L		A04S2		1-04 *	H						1	TWPR	13-3/8		354
NPR	L		F03J1		1-05 *	P						2		0-7/8		354
NPR	L		F04J1		1-06 *	P						1		0-7/8		354
NPR	L		F05J1		1-07 *	P						2		0-7/8		354
NPR	L		F06J1		1-08 *	P						1		0-7/8		354
NPR	L		F07J1		1-09 *	P						2		0-7/8		354
NPR	L		F08J1	F09J1	1-10 *	P						1		0-7/8		354
NPR	L		F09J1		1-11 *	H						2	TWPR	14-5/8		354
NPR	L		A05S2		1-12 *							1		0-7/8		354
NPR	L		A06S2		1-13 *							2		0-7/8		354
NPR	L		A07S2		1-14 *							1		0-7/8		354
NPR	L		A08S2		1-15 *							2		0-7/8		354
NPR	L		A09S2		1-16 *											354
NPR	L				1									39-3/8		354

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
PA L		A01M1		1=01 *	P						1		0=7/8		355
PA L		A02M1		1=02 *	P						2		0=7/8		355
PA L		A03M1		1=03 *	P						1		0=7/8		355
PA L		A04M1		1=04 *							2		5=1/8		355
PA L		C03C1		1=05 *							1		0=7/8		355
PA L		C04C1		1=06 *							2		0=7/8		355
PA L		C05C1		1=07 *							1		0=7/8		355
PA L		C06C1		1=08 *							2		0=7/8		355
PA L		C07C1		1=09 *							1		0=7/8		355
PA L		C08C1		1=10 *							2		0=7/8		355
PA L		C09C1		1=11 *							1		6=5/8		355
PA L		A05M1		1=12 *	P						2		0=7/8		355
PA L		A06M1		1=13 *	P						1		0=7/8		355
PA L		A07M1		1=14 *	P						2		0=7/8		355
PA L		A08M1		1=15 *	P						1		0=7/8		355
PA L		A09M1		1=16 *	P										355
PA L				1									23=1/8		355
PAR DET		B02E2		1=01 *							2		0=7/8		356
PAR DET		B03E2		1=02 *							1		0=7/8		356
PAR DET		B04E2		1=03 *							2		0=7/8		356
PAR DET		B05E2		1=04 *							1		0=7/8		356
PAR DET		B06E2		1=05 *							2		0=7/8		356
PAR DET		B07E2		1=06 *							1		0=7/8		356
PAR DET		B08E2		1=07 *											356
PAR DET				1									5=2/8		356
PAR P0		A02P1		1=01 *	P						2		0=7/8		357
PAR P0		A03P1		1=02 *	P						1		0=7/8		357
PAR P0		A04P1		1=03 *	P						2		0=7/8		357
PAR P0		A05P1		1=04 *	P						1		0=7/8		357
PAR P0		A06P1		1=05 *	P						2		0=7/8		357
PAR P0		A07P1		1=06 *	P						1		0=7/8		357
PAR P0		A08P1		1=07 *	P										357
PAR P0				1									5=2/8		357
PAR P1		A02N1		1=01 *	P						2		0=7/8		358
PAR P1		A03N1		1=02 *	P						1		0=7/8		358
PAR P1		A04N1		1=03 *	P						2		0=7/8		358
PAR P1		A05N1		1=04 *	P						1		0=7/8		358
PAR P1		A06N1		1=05 *	P						2		0=7/8		358
PAR P1		A07N1		1=06 *	P						1		0=7/8		358
PAR P1		A08N1		1=07 *	P										358
PAR P1				1									5=2/8		358

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
PB L		A01N2		1=01 *	P						2		0=7/8		359
PB L		A02N2		1=02 *	P						1		0=7/8		359
PB L		A03N2		1=03 *	P						2		0=7/8		359
PB L		A04N2		1=04 *							1		6=7/8		359
PB L		C03S1		1=05 *	P						2		0=7/8		359
PB L		C04S1		1=06 *	P						1		0=7/8		359
PB L		C05S1		1=07 *	P						2		0=7/8		359
PB L		C06S1		1=08 *	P						1		0=7/8		359
PB L		C07S1		1=09 *	P						2		0=7/8		359
PB L		C08S1		1=10 *	P						1		0=7/8		359
PB L		C09S1		1=11 *							2		7=5/8		359
PB L		A05N2		1=12 *	P						1		0=7/8		359
PB L		A06N2		1=13 *	P						2		0=7/8		359
PB L		A07N2		1=14 *	P						1		0=7/8		359
PB L		A08N2		1=15 *							2		0=7/8		359
PB L		A09N2		1=16 *											359
PB L				1									25=7/8		359
RESERVED M BUS		C01E1		1=01 *							1		3=7/8		360
RESERVED M BUS		B02A1		1=02 *	P						2		0=7/8		360
RESERVED M BUS		B03A1		1=03 *	P						1		0=7/8		360
RESERVED M BUS		B04A1		1=04 *	P						2		0=7/8		360
RESERVED M BUS		B05A1		1=05 *	P						1		0=7/8		360
RESERVED M BUS		B06A1		1=06 *	P						2		0=7/8		360
RESERVED M BUS		B07A1		1=07 *	P						1		0=7/8		360
RESERVED M BUS		B08A1		1=08 *	P										360
RESERVED M BUS				1									9=1/8		360
SACK L		A01R2		1=01 *	P						2		0=7/8		361
SACK L		A02R2		1=02 *	P						1		0=7/8		361
SACK L		A03R2		1=03 *	P						2		0=7/8		361
SACK L		A04R2		1=04 *							1		14=3/8		361
SACK L		F03T2		1=05 *	P						2		0=7/8		361
SACK L		F04T2		1=06 *	H						1	2' TWP	0=7/8		361
SACK L		F05T2		1=07 *	P						2		0=7/8		361
SACK L		F06T2		1=08 *	P						1		0=7/8		361
SACK L		F07T2		1=09 *	P						2		0=7/8		361
SACK L		F08T2		1=10 *	P						1		0=7/8		361
SACK L		F09T2		1=11 *							2		15=7/8		361
SACK L		A05R2		1=12 *	P						1		0=7/8		361
SACK L		A06R2		1=13 *	P						2		0=7/8		361
SACK L		A07R2		1=14 *	P						1		0=7/8		361
SACK L		A08R2		1=15 *	P						2		0=7/8		361
SACK L		A09R2		1=16 *	P										361
SACK L				1									41=5/8		361
SSYN L (1)		B01U1		1=01 *	P						1		0=7/8		362
SSYN L (1)		B02U1		1=02 *	P						2		0=7/8		362
SSYN L (1)		B03U1		1=03 *	P						1		0=7/8		362
SSYN L (1)		B04U1		1=04 *	H						2	TWP	7=3/8		362
SSYN L (1)		E03J1		1=05 *	P						1		0=7/8		362
SSYN L (1)		E04J1		1=06 *							2		2=5/8		362
SSYN L (1)		F04C1		1=07 *	P						2		0=7/8		362
SSYN L (1)		F03C1		1=08 *	P										362
SSYN L (1)				1									14=3/8		362

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
SSYN L (2)		B09U1		1=01 *	P						1		0=7/8		363
SSYN L (2)		B08U1		1=02 *	P						1		0=7/8		363
SSYN L (2)		B07U1		1=03 *	P						2		0=7/8		363
SSYN L (2)		B06U1		1=04 *	P						1		0=7/8		363
SSYN L (2)		B05U1		1=05 *	H						2	TWP	9=1/8		363
SSYN L (2)		E09J1		1=06 *	P						1		0=7/8		363
SSYN L (2)		E08J1		1=07 *	P						2		0=7/8		363
SSYN L (2)		E07J1		1=08 *	P						1		0=7/8		363
SSYN L (2)		E06J1		1=09 *	P						2		0=7/8		363
SSYN L (2)		E05J1		1=10 *							1		2=5/8		363
SSYN L (2)		F05C1		1=11 *	P						1		0=7/8		363
SSYN L (2)		F06C1		1=12 *	P						2		0=7/8		363
SSYN L (2)		F07C1		1=13 *	P						1		0=7/8		363
SSYN L (2)		F08C1		1=14 *	P						2		0=7/8		363
SSYN L (2)		F09C1		1=15 *	P										363
SSYN L (2)				1									22=2/8		363
SSYN L JMP		F05C1		1=01 *	H						1	2' TWP	0=7/8		364
SSYN L JMP		F04C1		1=02 *											364
SSYN L JMP				1									0=7/8		364

FIELD MAINTENANCE PRINT SET

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FIELD MAINT. PRINT SET BA11-L	B-TC-BA11-L-1
BOX 5.25 BA11-L	E-UA-BA11-L-Ø
BOX 5.25 BA11-L(PARTS LIST)	A-PL-BA11-L-Ø
PRINT SET H777-B	MPØØØ16
CONSOLE ASSY. EXPANSION BOX	D-AD-7012540-0-0
INSTALLATION AID	E-AD-7012588-0-0
DRAWING DIRECTORY BA11-L	B-DD-BA11-L
SHIPPING LIST	A-PL-BA11-L-4
PRINT SET H777-VOL 2	MP 00309

UNIT VARIATIONS COVERED BY THIS PRINT SET	
BA11-LA	MANUFACTURING USE ONLY
BA11-LB	
BA11-LC	
BA11-LD	
BA11-LE	EXPANSION BOX
BA11-LF	
BA11-LH	
BA11-LJ	
BA11-LK	MANUFACTURING USE ONLY
BA11-LL	
BA11-LM	
BA11-LN	

BA11-L

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ18

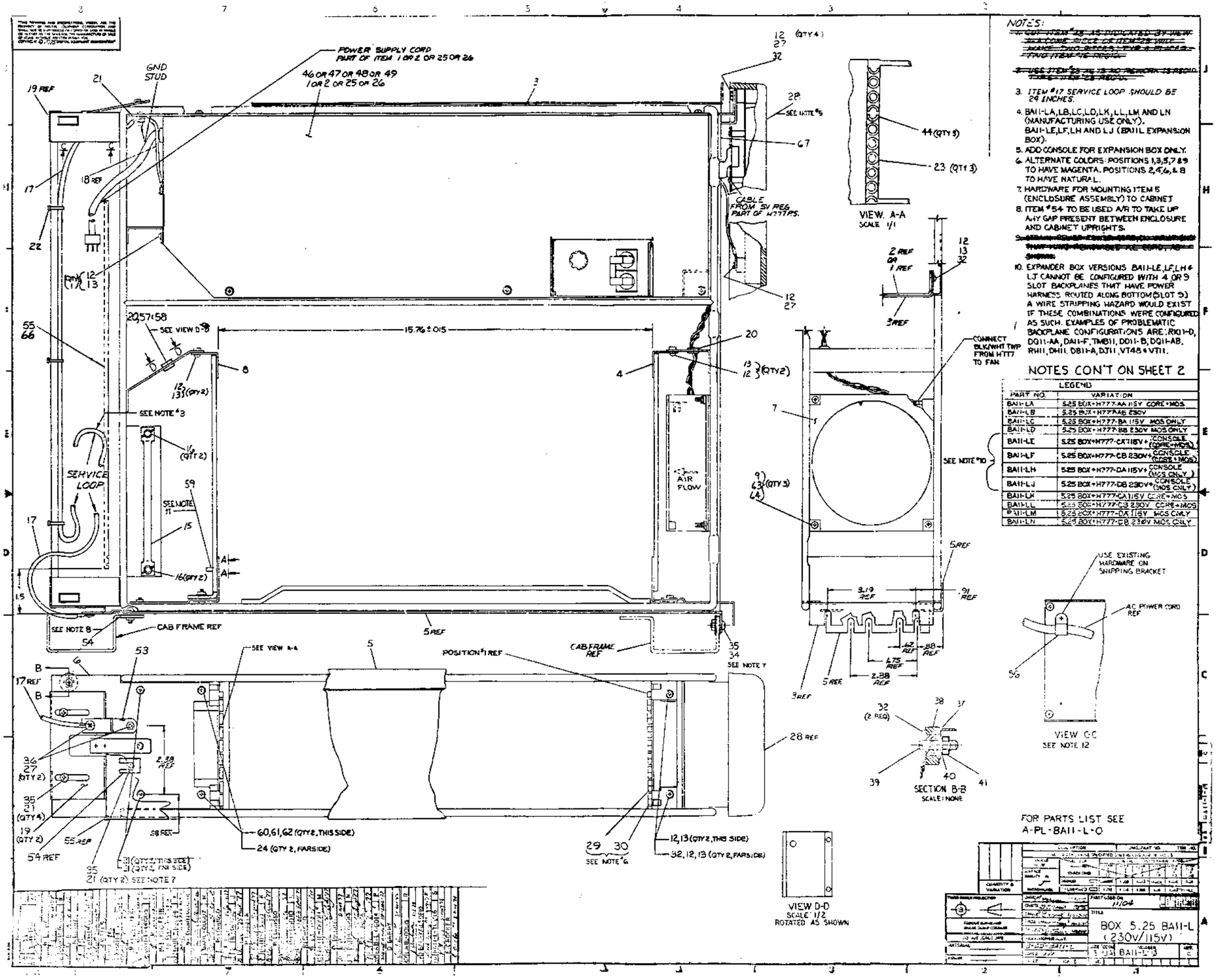
REVISIONS		
DATE	CHG. NO.	REV.
APR-76	BA11-L-4	A
OCT-76	BA11-L-6	B
MAR-77	BA11-L-8	C
APR-77	BA11-L-9	D
JUL-77	BA11-L-11	E
DEC-77	BA11-L-14	F

USED ON OPTION/MODEL	
11/Ø4	
11/34	

SHEET 1 OF 1

DRN. D. HEALY	DATE 9/30/75	digital
CHK'D D. HEALY	DATE 9/30/75	TITLE: FIELD MAINTENANCE PRINT SET BA11-L
PROJ. ENG. R. Barry	DATE 10-22-75	SIZE B / CODE TC / NUMBER BA11-L-1 / REV F
FIELD SERV.	DATE	DIST.

DRB 124



NOTES:

~~1. CUT ITEM #28 AS INDICATED BY VIEW. INSTALL ONE PIECE OF ITEM #28 WITH SMALL END TOWARD TOP & BACK OF CAB. FIND ITEM #16 REQ'D.~~

~~2. USE ITEM #28 AS IS AND MARK LOCATIONS REQ'D. FIND ITEM #16 REQ'D.~~

3. ITEM #17 SERVICE LOOP SHOULD BE 24 INCHES.

4. BAII-LA, LB, LC, LD, LK, LL, LM AND LN (MANUFACTURING USE ONLY). BAII-LE, LF, LH AND LJ (BAIIL EXPANSION BOX).

5. ADD CONSOLE FOR EXPANSION BOX ONLY.

6. ALTERNATE COLORS: POSITIONS 1, 3, 5, 7 & 9 TO HAVE MAGENTA. POSITIONS 2, 4, 6, & 8 TO HAVE NATURAL.

7. HARDWARE FOR MOUNTING ITEM 5 (ENCLOSURE ASSEMBLY) TO CABINET

8. ITEM #54 TO BE USED A/R TO TAKE UP ANY GAP PRESENT BETWEEN ENCLOSURE AND CABINET UPRIGHTS.

~~9. ~~

10. EXPANDER BOX VERSIONS BAII-LE, LF, LH & LJ CANNOT BE CONFIGURED WITH 4 OR 9 SLOT BACKPLANES THAT HAVE POWER HARNESS ROUTED ALONG BOTTOM (SLOT 9). A WIRE STRIPPING HAZARD WOULD EXIST IF THESE COMBINATIONS WERE CONFIGURED AS SUCH. EXAMPLES OF PROBLEMATIC BACKPLANE CONFIGURATIONS ARE: RKII-D, DQII-AA, DAII-F, TMBII, DDII-B, DQII-AB, RHII, DHII, DBII-A, DJII, VT48 & VTII.

NOTES CON'T ON SHEET 2

LEGEND	
PART NO.	VARIATION
BAII-LA	5.25 BOX+H777-AA 115V CORE+MOS
BAII-LB	5.25 BOX+H777-AB 230V
BAII-LC	5.25 BOX+H777-BA 115V MOS ONLY
BAII-LD	5.25 BOX+H777-BB 230V MOS ONLY
BAII-LE	5.25 BOX+H777-CA 115V + CONSOLE (CORE+MOS)
BAII-LF	5.25 BOX+H777-CB 230V + CONSOLE (CORE+MOS)
BAII-LH	5.25 BOX+H777-DA 115V + CONSOLE (MOS ONLY)
BAII-LJ	5.25 BOX+H777-DB 230V + CONSOLE (MOS ONLY)
BAII-LK	5.25 BOX+H777-CA 115V CORE+MOS
BAII-LL	5.25 BOX+H777-CB 230V CORE+MOS
BAII-LM	5.25 BOX+H777-DA 115V MOS ONLY
BAII-LN	5.25 BOX+H777-DB 230V MOS ONLY

FOR PARTS LIST SEE A-PL-BAII-L-O

BOX 5.25 BAII-L (230V/115V)

BAII-L-B

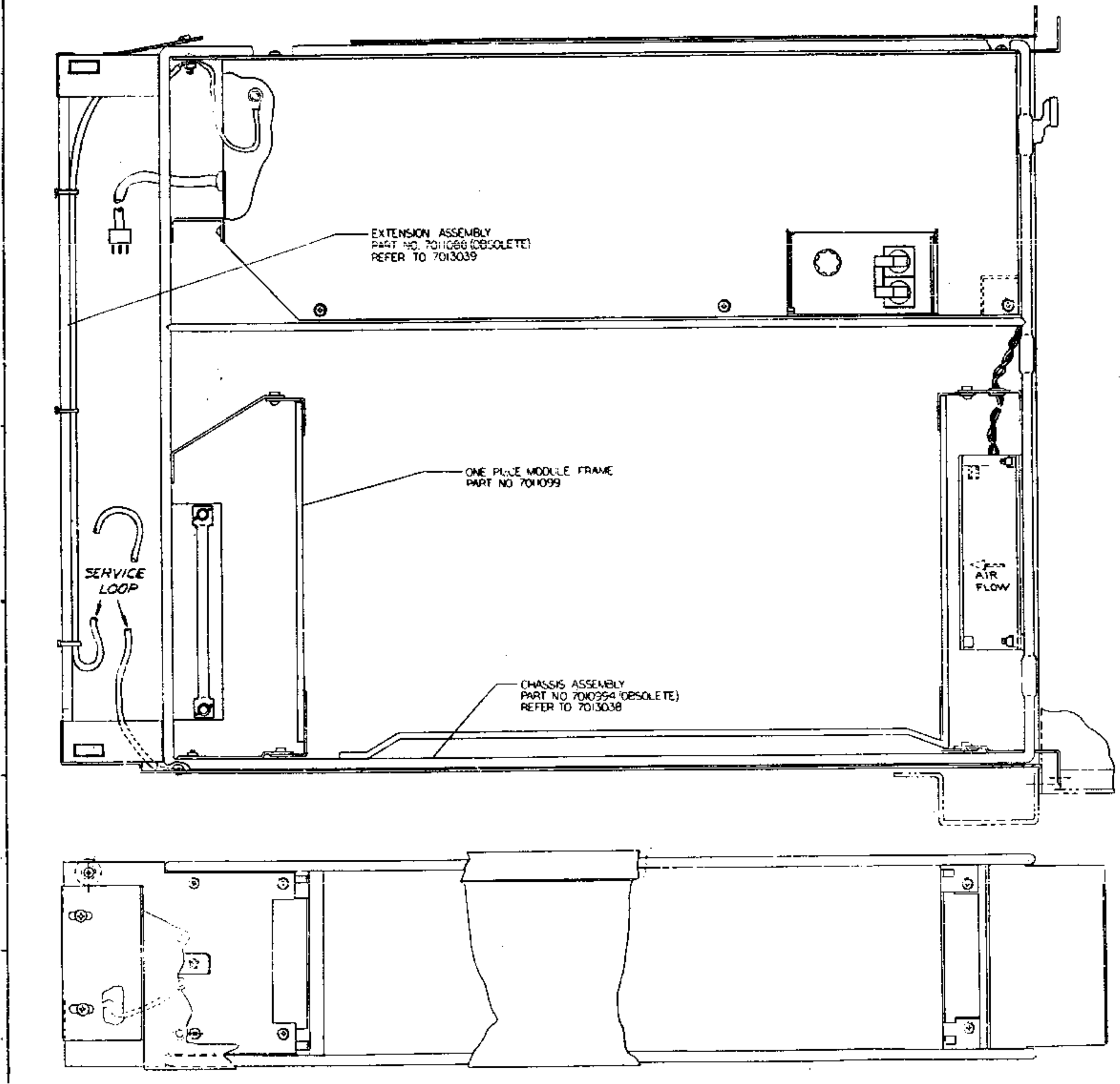
101

NOTES : (CON'T FROM SHEET 1)

11 ITEM NUMBER 59 IS A STIFFENING BRACKET AND MAY BE LEFT IN OR REMOVED AT FINAL DESTINATION AT USERS OPTION. IF LEFT IN IT WILL NOT INHIBIT ANY USER FUNCTIONS. IT IS TO BE PLACED OVER THE THREADED INSERTS IN FRAME BRACKET 7413853 AS SHOWN AND FASTENED BY MEANS OF AN OVER SIZED WASHER AND KEPNUT.

12 ITEM #56 AND THE AC POWER CORD ARE TO BE SHIPPED LOOSE P&CE, AND INSTALLED AT SITE LOCATION.

13 ITEM #68 NOT SHOWN, IT IS USED IN SHIPPING ONLY.



THIS VIEW IS FOR REF ONLY AND
CONTAINS INFORMATION PERTINENT
TO ASSEMBLY REVISIONS - THRU E

QUANTITY & VARIATION

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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL ——

FINISH ——

DRN G. SAARINEN 3-3-75

CHK'D D. HEALY 3-30-75

ENG

PROD. ENG.

PROD

NEXT HIGHER ASSY.

B-DD-BA11-L

SCALE 1/1

SHEET 2 OF 2

FIRST USED ON 11/04

TITLE

BOX 5.25 BA11-L
(230V/115V)

SIZE E CODE UA NUMBER BA11-L-0 REV. 5

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. MARINI | CHECKED D. HEALY | SECTION
DATE 3-SEP-75 | DATE 30-SEP-75
ENG R. BARRY | PROD R.K. PETERSON | ISSUED SECT.
DATE 2-OCT-75 | DATE 2-OCT-75

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
1	B-UA-H777-DA-0	POWER SUPPLY H777(115V)	-	-	-	-	-	-	1	-	-	-	1	-
2	B-UA-H777-DB-0	POWER SUPPLY H777(230V)	-	-	-	-	-	-	-	1	-	-	-	1
3	B-IA-7013038-0-0	CHASSIS ASSY	1	1	1	1	1	1	1	1	1	1	1	1
4	C-IA-7012653-0-0	MODULE FRAME, RIGHT SIDE	1	1	1	1	1	1	1	1	1	1	1	1
5	D-AD-7011132-0-0	ENCLOSURE ASSY	1	1	1	1	1	1	1	1	1	1	1	1
6	D-IA-7013039-0-0	EXTENSION CHASSIS ASSY	1	1	1	1	1	1	1	1	1	1	1	1
7	1213013-0-0	FAN (115V) 50/60HZ	1	1	1	1	1	1	1	1	1	1	1	1
8	C-IA-7012846-0-0	MODULE FRAME, LEFT SIDE	1	1	1	1	1	1	1	1	1	1	1	1
9	9006026-2	SCR, PHL FLAT HD 6-32 .75L	3	3	3	3	3	3	3	3	3	3	3	3
10	9006639	WASHER INT, 7/16ID 5/8OD	2	2	2	2	2	2	2	2	2	2	2	2
11	9009149	CRIS-CROSS #8-32	4	4	4	4	4	4	4	4	4	4	4	4
12	9006037-3	SCR PHL HD TRUSS #8-32 x .38L	11	11	11	11	15	15	15	15	10	10	10	10
13	9006634	WASHER INT TOOTH LOCK #8	10	10	10	10	10	10	10	10	10	10	10	10
14	9006038-2	SCR, PHL HD TRUSS #6-32 x .25	1	1	1	1	2	2	2	2	1	1	1	1
15	B-MD-7413846-0-0	BAR, CABLE STRAIN REL	1	1	1	1	1	1	1	1	1	1	1	1
16	9009711	NUT, WING #6-32	2	2	2	2	2	2	2	2	2	2	2	2
17	C-IA-7011412-03-0	CABLE, CHASSIS GND	1	1	1	1	1	1	1	1	1	1	1	1
18	C-IA-7011412-0F-0	CABLE CHASSIS GND	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
19	C-MD-7414963-0-0	BRKT, SHIPPING & CAB MT	2	2	2	2	2	2	2	2	2	2	2	2
20	9007015	GROMMET .31 ID x .62 O.D.	2	2	2	2	2	2	2	2	2	2	2	2
21	9006565	NUT, KEPS #10-32	7	7	7	7	7	7	7	7	7	7	7	7
22	9007031	TIE WRAP	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/R

TITLE: BOX 5.25 BA11-L (230V/115V) | ASSY NO. E-UA-BA11-L-Ø | SHEET 1 OF 4 | SIZE A | CODE PL | NUMBER BA11-L-Ø | REV. S | ECO NO. 0001

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. MARINI | CHECKED D. HEALY | SECTION
DATE 3-SEP-75 | DATE 30-SEP-75
ENG R. BARRY | PROD R.K. PETERSON | ISSUED SECT.
DATE 2-OCT-75 | DATE 2-OCT-75

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
23	1211630-0	CENTER CARD GUIDE	3	3	3	3	3	3	3	3	3	3	3	3
24	9009836-0	SCREW PHL TRUSS HD #8-32 x .25L LOCKING	2	2	2	2	2	2	2	2	2	2	2	2
25	E-UA-H777-CA-0	POWER SUPPLY H777 (115V)	1	-	-	-	1	-	-	-	1	-	-	-
26	E-UA-H777-CB-0	POWER SUPPLY H777(230V)	-	1	-	-	-	1	-	-	-	1	-	-
27	9008072	WASHER, EXT, TOOTH #8	3	3	3	3	7	7	7	7	3	3	3	3
28	D-AD-7012540-0-0	CONSOLE ASSY	-	-	-	-	1	1	1	1	-	-	-	-
29	1212405-4	CARD GUIDE, SINGLE	4	4	4	4	4	4	4	4	4	4	4	4
30	1212405-5	CARD GUIDE, SINGLE	5	5	5	5	5	5	5	5	5	5	5	5
31	9009836-1	SCR.,PHL.HD. TRUSS #8-32 x .38 (LOCKING)	4	4	4	4	4	4	4	4	4	4	4	4
32	9006666	WASHER, FLAT #8	7	7	7	7	11	11	11	11	7	7	7	7
33	9006664	WASHER, FLAT #10	2	2	2	2	2	2	2	2	2	2	2	2
34	9007786	NUT-10-32 SELF RETAINING	4	4	4	4	4	4	4	4	4	4	4	4
35	9006071-03	SCR.,PHL. TRUSS HD. #10-32 x .38	10	10	10	10	10	10	10	10	10	10	10	10
36	9006035-3	SCR.,PHL. TRUSS HD. #8-32 x .25	2	2	2	2	3	3	3	3	2	2	2	2
37	B-MD-7417606	SLEEVE, ROLLER	2	2	2	2	2	2	2	2	2	2	2	2
38	B-MD-7417607	ROLLER	2	2	2	2	2	2	2	2	2	2	2	2
39	9009383-03	SCR.,PHL. TRUSS HD. #8-32 x .75	2	2	2	2	2	2	2	2	2	2	2	2
40	9006690	WASHER, SPLIT LOCK #8	2	2	2	2	2	2	2	2	2	2	2	2
41	9006561	NUT, HEX #8-32	2	2	2	2	2	2	2	2	2	2	2	2
42	3700061	SHIP. CARTON PKG.	-	-	-	-	1	1	1	1	-	-	-	-
43	3700133	SUPPLIES PACKAGING	-	-	-	-	1	1	1	1	-	-	-	-
44	9009384-04	SCREW, PHL TRUSS HD #8-32 x .50	2	2	2	2	2	2	2	2	2	2	2	2

TITLE: BOX 5.25 BA11-L (230V/115V) | ASSY NO. E-UA-BA11-L-Ø | SHEET 2 OF 4 | SIZE A | CODE PL | NUMBER BA11-L-Ø | REV. S

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. MARINI | CHECKED D. HEALY | SECTION
DATE 3-SEP-75 | DATE 30-SEP-75
ENG R. BARRY | PROD R.K. PETERSON | ISSUED SECT.
DATE 2-OCT-75 | DATE 2-OCT-75

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
44	C-MD-7418077	CARD GUIDE, CENTER	3	3	3	3	3	3	3	3	3	3	3	3
45	1300403-01	FAN (115V) 50/60 HZ	1	1	1	1	1	1	1	1	1	1	1	1
46	E-UA-H777-BA-0	POWER SUPPLY H777 (115V)	-	-	1	-	-	-	-	-	-	-	-	-
47	E-UA-H777-BB-0	POWER SUPPLY H777 (230V)	-	-	-	1	-	-	-	-	-	-	-	-
48	E-UA-H777-AA-0	POWER SUPPLY H777 (115V)	1	-	-	-	-	-	-	-	-	-	-	-
49	E-UA-H777-AB-0	POWER SUPPLY H777 (230V)	-	1	-	-	-	-	-	-	-	-	-	-
50	B-UA-9010004-0-0	CHASSIS ASSY	1	1	1	1	1	1	1	1	1	1	1	1
51	9006741-1155-0-0	CABLE ASSEMBLY	1	1	1	1	1	1	1	1	1	1	1	1
52	B-IA-7011088-0-0	CHASSIS REAR EXTENSION	1	1	1	1	1	1	1	1	1	1	1	1
53	B-IA-7418258	STRAP, GROUND	1	1	1	1	1	1	1	1	1	1	1	1
54	B-MD-7418259	SPACER, ENCLOSURE	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/R
55	9007035	GROMMET CATERPILLAR	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/R
56	9007083	CLAMP, CABLE	-	-	-	-	1	1	1	1	1	1	1	1
57	A-PS-3613211-01	DECAL, CSA	1	1	1	1	1	1	1	1	1	1	1	1
58	A-DC-7416197-01	DECAL, UL/NFPA	1	1	1	1	1	1	1	1	1	1	1	1
59	C-MD-7419019-0-0	BRACKET, MODULE FRAME STIFFENING	1	1	1	1	1	1	1	1	1	1	1	1
60	9006668	WASHER, FLAT	2	2	2	2	2	2	2	2	2	2	2	2
61	9006040-03	SCR, PHL TRUSS HD #8-32 X .625	2	2	2	2	2	2	2	2	2	2	2	2
62	9006563-00	NUT, KEP #8-32	2	2	2	2	2	2	2	2	2	2	2	2
63	9006560-00	NUT, KEP #6-32	3	3	3	3	3	3	3	3	3	3	3	3
64	9006653	WASHER, FLAT	3	3	3	3	3	3	3	3	3	3	3	3
65	D-UA-BC11A-10-0	UNIBUS CABLE 10 FT	-	-	-	-	1	1	1	1	-	-	-	-

TITLE: BOX 5.25 BA11-L (230V/115V) | ASSY NO. E-UA-BA11-L-Ø | SHEET 3 OF 4 | SIZE A | CODE PL | NUMBER BA11-L-Ø | REV. S | ECO NO.

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. MARINI | CHECKED D. HEALY | SECTION
DATE 3-SEP-75 | DATE 30-SEP-75
ENG R. BARRY | PROD R.K. PETERSON | ISSUED SECT.
DATE 2-OCT-75 | DATE 2-OCT-75

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
66	9009157	PERMA BOND 101	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/RA	A/R
67	1212707	AIR FILTER BA11-L	-	-	-	-	1	1	1	-	-	-	-	-
68	9007032	TIE, CABLE, SST2 M	2	2	2	2	2	2	2	2	2	2	2	2

TITLE: BOX 5.25 BA11-L (230V/115V) | ASSY NO. E-UA-BA11-L-Ø | SHEET 4 OF 4 | SIZE A | CODE PL | NUMBER BA11-L-Ø | REV. S | ECO NO.

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

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

FIELD MAINT. PRINT SET H777-0	B-TC-H777-0-1
POWER SUPPLY H777-0 SH1	E-UA-H777-0-0
+5V REGULATOR ASSY	D-AD-7011073-0-0
BOARD, POWER DISTRIBUTION H777	D-CS-5411586-0-1
H777 +5V REGULATOR	D-CS-5411597-0-1
AC INPUT ASSY	D-AD-7011075-0-0
MOS REGULATOR H777	D-CS-5411601-0-1
CORE REGULATOR H777	D-CS-5411599-0-1
POWER SUPPLY H777-0 (PL)	A-PL-H777-0-0

UNIT VARIATIONS COVERED BY THIS PRINT SET
H777-BA (MOS ONLY)
H777-BB (MOS ONLY)
H777-AA (CORE/MOS)
H777-AB (CORE/MOS)

H777-0 VOL.1

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MP00016

REVISIONS			
DATE	CHG. NO.	REV.	
JAN-77	H777-2	D	REVISED & REDRAWN

USED ON OPTION/MODEL	
BA11-LA	
BA11-LB	
BA11-LC	
BA11-LD	
BA11-LE	
BA11-LF	
BA11-LH	
BA11-LJ	

SHEET 1 OF 1

DRN.	D. HEALY	DATE	9/30/76
CHK'D	D. HEALY	DATE	9/30/76
PROJ. ENG.	R. BARRY	DATE	10/22/76
FIELD SERV.		DATE	

digital

TITLE: FIELD MAINTENANCE SET H777-0

SIZE	CODE	NUMBER	REV.
B	TC	H777-0-1	D

DIST.

EN-0114-16-N676-3271

DBB 124

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO ITEM	CONNECTION	WITH	REMARKS
12 OR 13	14	BLK	—	—	3 OR 4	CB1-K1 LINE	—	
	14	WHT	—	—	3 OR 4	CB1-Z1 LINE	—	
	14	GRN	—	—	1	GND CHASSIS	6	
4 OR 5	14	BLU	T1-5	—	8	J1-7 (3D2)	—	
	7IN	BLU/BLK	T1-6	—	8	J1-6 (6D2)	—	
5 OR 4	7IN	BLU	T1-7	—	8	J1-8 (8C2)	—	
3 OR 4	18	GRY	—	—	8	J1-4 (3D1)	—	
	7IN	BLK	—	—	8	J1-5 (8D1)	—	
3 OR 4	18	WHT	—	—	4	FAN-1	—	
	7IN	BLK	—	—	4	FAN-2	—	
3 OR 4	14	GRN/YEL	EMI-3 (REF)	—	8	GND CHASSIS	6	
60	14	GRN/YEL	GND CHASSIS	6				CONSOLE GND
27	14	GRN/YEL	GND CHASSIS	6				CHASSIS GND
	14	BLK	ITEM 29	—	8	J1-3 (3D2)	—	FROM CORE REG (H777-AA, H777-AB ONLY)
	14	GRN	ITEM 29	—	8	J1-2 (3D2)	—	FROM CORE REG (H777-AA, H777-AB ONLY)
	14	BRN	ITEM 29	—	8	J1-1 (3D2)	—	FROM CORE REG (H777-AA, H777-AB ONLY)

LEGEND

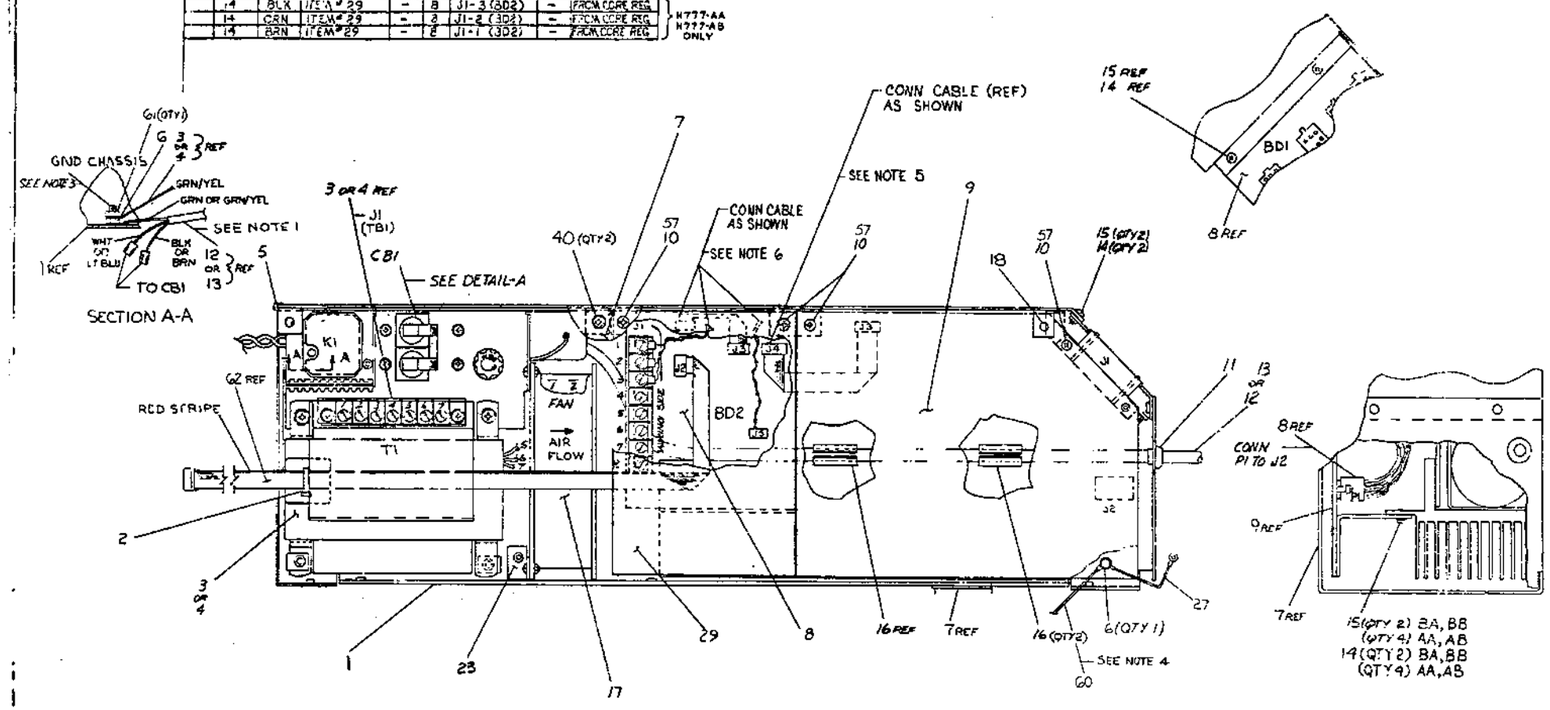
PART NO	VARIATION
H777-JA	PS MOS ONLY 115V
H777-JB	PS MOS ONLY 230V
H777-AA	PS CORE/MOS 115V
H777-AB	PS CORE/MOS 230V

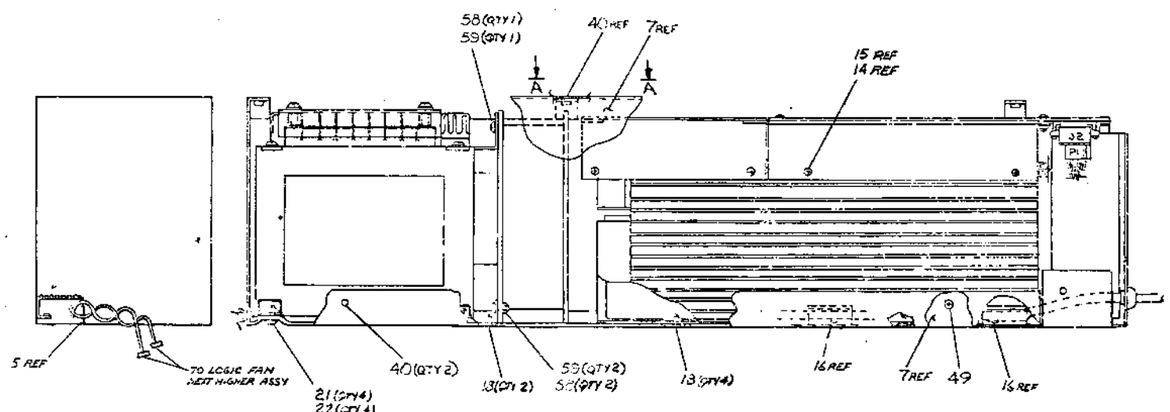
CB-1

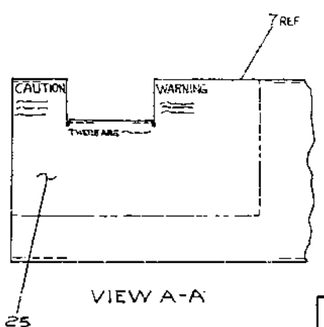
LINE LOAD

DETAIL-A
WIRING SIDE OF CKT BREAKER PART OF ITEM #10

NOTES:
1. MAKE SLACK SERVICE LOOP AT HOOK-UP WIRE.
2. APPLY SELF STICK MS SHEET (ITEM 7A) TO UNDER SIDE OF POWER SUPPLY COVER IN AREA OF HEAT SINKS (CORE & MOS REGS).
3. APPLY SELF STICK ITEM 8G BESIDE THIS GND STUD.
4. ITEM 60 IS A GND CABLE TO GND THE FRONT PANEL CASTINGS FOR MOS AND CORE REGULATORS.
5. CABLE PART OF ITEM #9.
6. CABLE & WIRES ARE PART OF ITEM # 29







CAUTION:
UNIT ASSEMBLY FOR OPTIONS AA, AB, BA, AND BB ONLY

SEE SHEET 2 FOR OPTIONS CA, CB, DA, AND DB

SEE APL-H777-0 FOR PARTS LIST

SIZE	3-171-L
TITLE	POWER SUPPLY ASSY (H777)
DWG NO	H777-0-3
SCALE	NONE
SHEET	1 OF 2

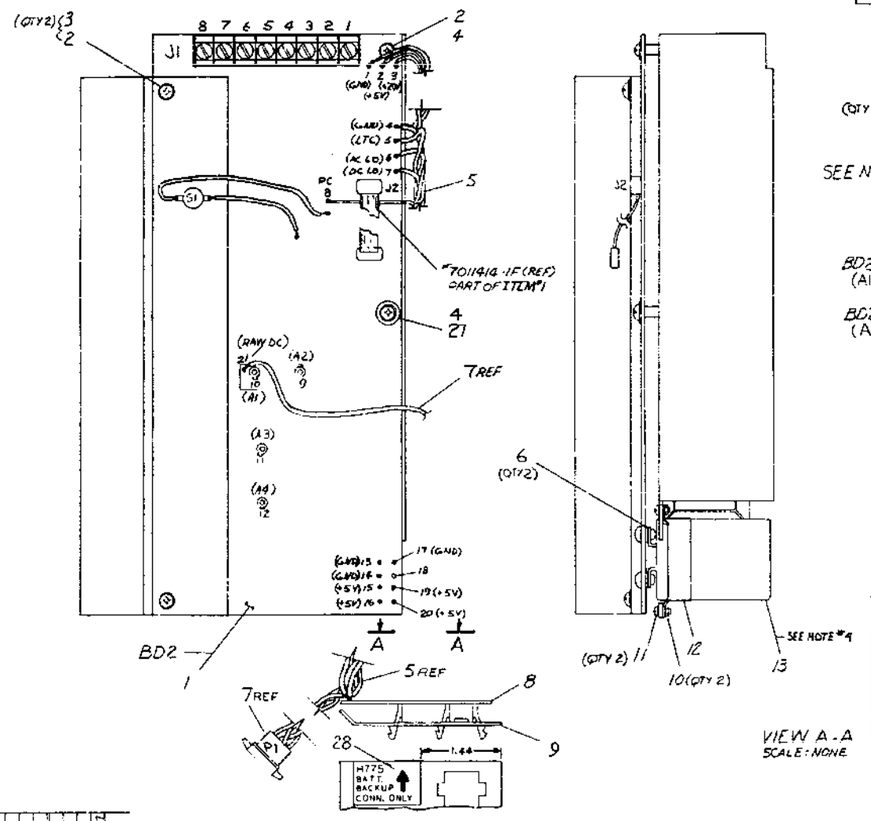
105

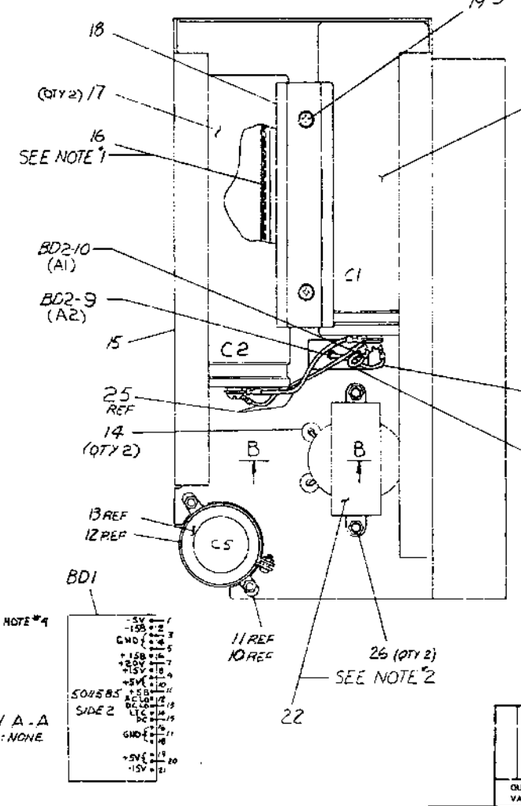
WIRE CHART

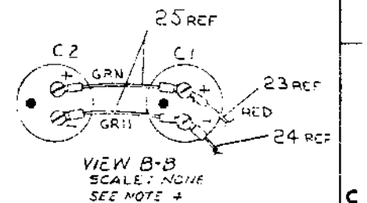
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
5	20	WHT	1	BD2-8	18	BD1-15
	14	BRN	2	2	9	1
	14	BLK	3	1	12	5
	14	ORN	4	3	13	7
	20	BRN	5	5	19	14
	20	BLK	6	4	20	16
	20	YEL	7	6	16	12
	20	VIO	8	7	17	13
	14	BLK	30	BD2-17	10	BD1-3
5	14	BLK	28	BD2-13	11	BD1-4
	14	RED	29	15	14	9
	14	RED	26	19	15	10
	14	BLK	25	14	21	17
	14	RED	24	16	22	19
	14	RED	27	BD2-20	23	BD1-20
7	18	BLU	1	BD1-21	* 11	—
	14	BLK	2	BD1-18	* 8	—
	18	RED	3	BD1-11	* 14	—
7	18	GRY	4	BD1-8	* 3	—
	18	WHT	5	BD1-6	* 10	—
	14	RED	6	BD2-21	* 13	—
	18	GRN	7	BD1-2	12	—
25	14	GRN	—	C1(+)	—	C2(+)
26	14	GRN	—	C1(-)	—	C2(-)
23	14	RED	—	BD2-10	—	C1(+)
24	14	BLK	—	BD2-9	—	C1(-)
22	—	BARE	—	—	—	BD2-11
22	—	BARE	—	—	—	BD2-12

NOTES:

1. USE ITEM *16 (GROMMET) TO COVER RAW METAL EDGES UNDER CAPACITORS.
2. LEADS FROM ITEM 5 *22, 23 & 24 ARE TO BE CUT FLUSH WITH TOP OF CLAMPS ON ITEM *1. A1, A2, A3 & A4
3. * ASTERISK INDICATES THAT THESE CONN ALREADY HAVE BEEN MADE ON PLUG PI ON HARNESS B-IA-7011560-0-0 THEY ARE SHOW FOR REF ONLY
4. ITEMS *17 & *18 ARE TO HAVE THEIR ELECTRICAL CONNECTIONS TORQUED TO 12 IN-LBS (-0, +10) IN-LBS







VIEW B-B
SCALE: NONE
SEE NOTE 4

ITEM	DESCRIPTION	PART NO	QTY
1	DECAL	B-IA-DC-74:6911-0-0	28
1	WASHER NYLON *6	9006707	27
2	NUT KEPS *8-32	9006503	26
2	JUMPER (GRN)	B-IA-7011800-0-0	25
1	JUMPER (BLK,	B-IA-7011802-0-0	24
1	JUMPER (RED)	B-IA-7011801-0-0	23
1	CHOKE	16/2584	22
2	SPACER HEX *8-32 x 1.38L	9008258	21
2	WASHER INT TOOTH LOCK *9	9006634	20
2	SCR PHIL HD PAN *6-32 x .50L	9006037-1	19
1	CLAMP CAPACITOR	C-MD-14MA021-0-0	18
2	CAPACITOR .22 MFD 50V	10:0702	17
NR	GROMMET CATERPILLAR	93070.35	16
1	BRACKET CAPACITOR	C-IA-7413748-0-0	15
2	GROMMET RUBBER	9007317	14
1	CAPACITOR 3900UF (8.0V DC)	10:2780	13
1	CLAMP CAPACITOR	9009052	12
2	SCR PHIL PAN HD *6-32 x .25L	9006020-1	11
2	NUT KEPS *6-32	9006185	10
1	BRACKET CONN	D-IA-74:3782-0-0	9
1	BOARD, PWR DISTR. H777	D-CS-5011586-0-1	8
1	HARNESS BD NOS REG PWR DIST	D-IA-7011560-0-0	7
2	WASH .375 O.D.X.167 I.D.X.036	9006660	6
1	HARNESS H777 +5V REG	D-IA-7011415-0-0	5
2	SCR PHIL HD PAN *6-32 x .31L	9006021-1	4
2	SCR PHIL HD PAN *6-32 X .50L	9006024-1	3
3	WASHER INT TOOTH LOCK *6	9006633	2
1	H777-5V REGULATOR	D-CS-5011557-0-1	1

REVISIONS CHK	CHANGE NO	REV
	7011073-00001	A
	7011073-00002	B
	B. COURTEMANCHE	
	H777-0-0002	C
	B COURTEMANCHE	

DESCRIPTION	DWG. PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL SIZE RANGE (INCHES)					
		OVER 0 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED ☐	±.012	±.016	±.020	±.04	±.060	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

DRAWN	
CHK'D	9-25-75
ENGR	9-25-75
PROJ. ENGR	9-25-75
PROD.	
NEXT HIGHER ASSY.	
MATERIAL	D-IA-H777-0-0
FINISH	

FIRST USED ON: H777

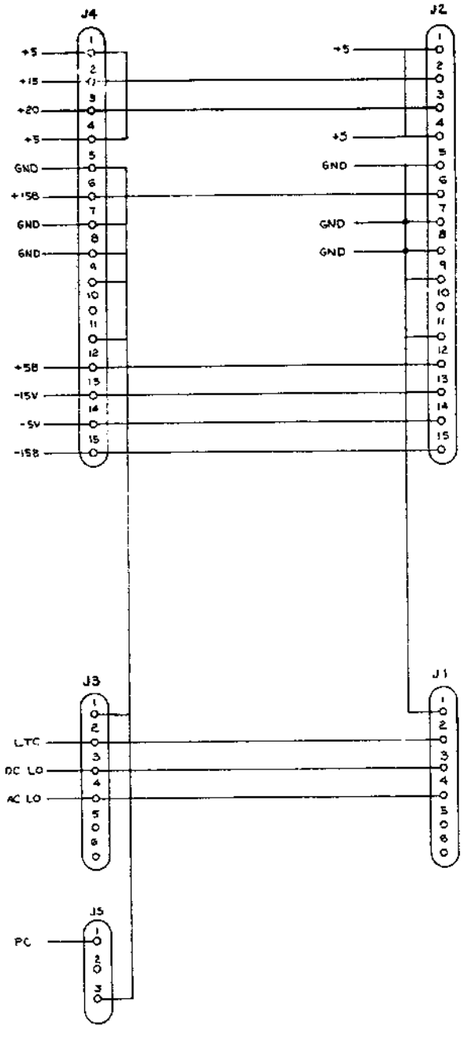
TITLE: +5V REG ASSY

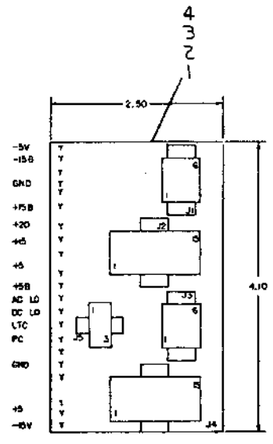
SIZE	CODE	NUMBER	REV
D	AD	7011073-0-0	C

SCALE: —
SHEET 1 OF 1
DIST.

DEC FORM NO.

NOTES:





REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411586-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AN-5411586-0-5	2
REF		MODULE ECO HISTORY	E-MN-5411586-0-6	3
1		ETCHED CIRCUIT BOARD	5011585	4
2	J2,J4	CONN., MATE-N-LOCK, 15 PIN HOUSING	1209350-15	5
2	J1,J3	CONN., MATE-N-LOCK, 6 PIN HOUSING	1209350-06	6
45		PIN CONTACT, MATE-N-LOCK	1209856-01	7
1	J5	CONN., MATE-N-LOCK, 3 PIN HOUSING	1209350-03	8

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
		PARTS LIST		

FIRST USED ON OPTION MODEL: 11Ø4 PWR SUPPLY
ETCH BOARD REV: D

CHANGE NO	REV

REVISIONS

DEC NO.	EIA NO.	DEC NO	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN D Bilton 10/1/75
ENGR Gibson 2-23-76
CHK [illegible] 2-23-76
TECH [illegible] 2-23-76
PROG [illegible]
NEXT HIGHER ASSY
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION

TITLE: BOARD, POWER DISTRIBUTION H777

SIZE	CODE	NUMBER	REV.
D	CS	5411586-0-1	C

DST

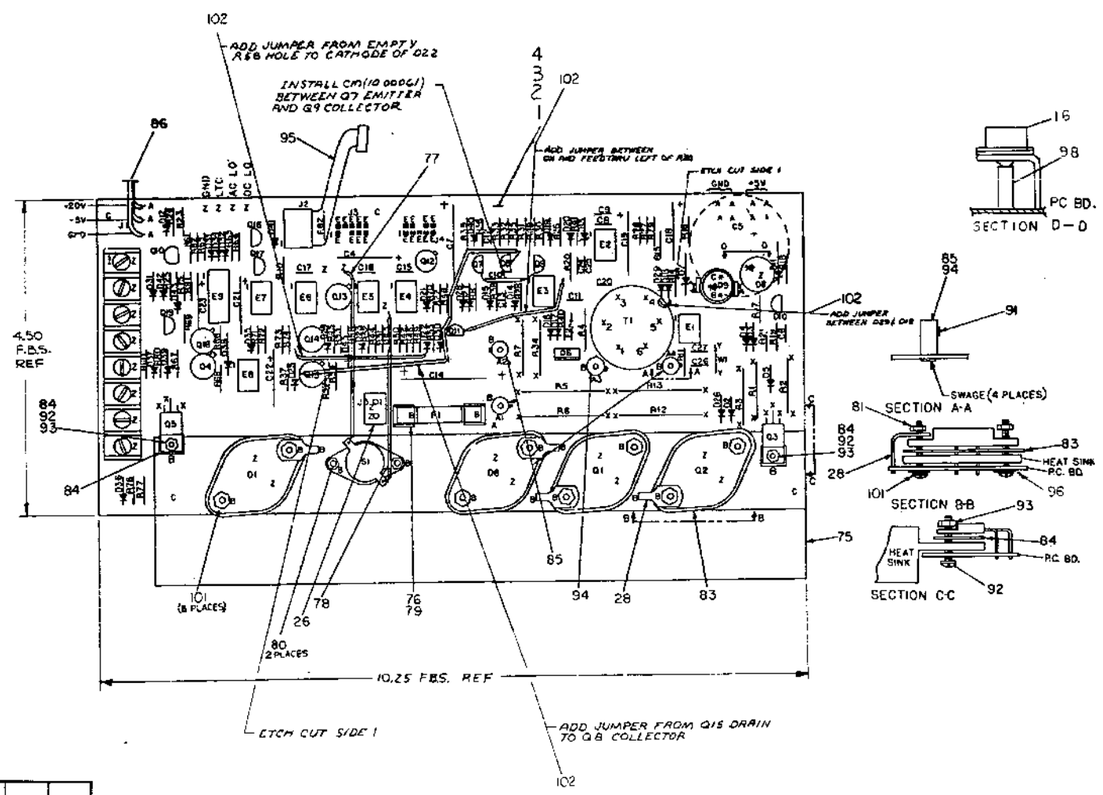
DCS 5411583-0-1 C

107

NOTES:

1. HARDWARE ON D1,Q1,Q2,Q6,S1,C5 MUST BE TORQUED TO 12 IN-LBS (-0,+1)

QTY	REF DESIGNATION	SUBSTITUTION LIST DESCRIPTION	PART NO.	ITEM NO.
1	C19	CAPACITOR, 1.5mf, 50V, POLYCARB	1010031-08	12
1	D1	DIODE	1112723-01	23
8	C6,C9,C11,C20,C24-C27	CAPACITOR, .01mf, 50V	1001610-00	9



QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		X-Y COORDINATE HOLE LOCATION	K-CO-5411597-0-4	1
		ASSY/DRILLING HOLE LAYOUT	D-AM-5411597-0-3	2
		MODULE ECO HISTORY	B-MM-5411597-0-B	3
1		ETCHED CIRCUIT BOARD	5011598	4
1	C42	CAPACITOR, 100pf, 100V, 5% DM	1000018	5
1	C13	CAPACITOR, 470pf, 100V, 5% DM	1000024	6
1	C14	CAPACITOR, 50mf, 50V, AL EL	1000080	7
8	C6,C9,C11,C20,C24-C27	CAPACITOR, .01mf, 100V DISC	1001810-01	8
2	C22,C23	CAPACITOR, 1mf, 35V, 10% TANT	1001776	9
3	C15,C16,C17	CAPACITOR, 5pf, 100V, 5% DM	1002625	10
				11
1	C19	CAPACITOR, 1.5mf, 35V, 10% TANT	1009725	12
2	C4,C18	CAPACITOR, 2.2mf, 20V, 10% TANT	1002627	13
2	C7, C21	CAPACITOR, 10mf, 20V, 10% TANT	1004813	14
1	D11	DIODE 1N752A	1102868	15
1	D8	DIODE MR1033B	1103341	16
28	D3,D4,D12,D14 THRU D20,D22 THRU D25,D27,D30 THRU D37 D40,D42,D5,D39,D28	DIODE D672	1105275	17
3	D21,D41 D29	DIODE 1N4004	1105796	18
1	D13	DIODE ZENER 5.1V [illegible] IZT - 5ma	1110713	19
1	D6	DIODE, T03	1110715	20
1	D10	DIODE 2N5062	1110988	21
3	D7,D43,D45	DIODE 1N751A	1110994	22
1	D1	DIODE, DUAL, T03	1112723-00	23
2	D2,D26	DIODE AT148	1112595-01	24
1	D38	DIODE, ZENER 13V 1N9648	1109988	25
1	J5	CONNECTOR 2 PIN MATE-N-LOC	1211342-2	26
1	J1	TERMINAL BOARD 8 STATION	1212484-01	27
4		SOLDER LUG	9009676	28
18		PINS, STAKING	9009149	29
1	F2	FUSE 5A	1209070	30
2	R18,R15	RESISTOR, 10Ω, 1 4W, 5%	1300229	31
1	R10	RESISTOR, 150, 1 4W, 5%	1300250	32
1	R2	RESISTOR, 150, 1W, 5%	1300255	33
1	R34	RESISTOR, 220, 1W, 10%	1300277	34
2	R78,R81	RESISTOR, 390, 1 4W, 5%	1300309	35
2	R29,R16	RESISTOR, 470, 1 4W, 5%	1300316	36
7	R82,R28 R38,R50,R69,R52,R54	RESISTOR, 1K, 1 4W, 5%	1300365	37
2	R8, R56	RESISTOR, 2.7K, 1 4W, 5%	1300426	38
7	R31,R60,R62,R65,R68,R15,R35	RESISTOR, 4.7K, 1 4W, 5%	1300447	39
13	R63,R25,R32,R35,R39,R37,R80 R55 THRU R57,R67,R10,R77	RESISTOR, 10K, 1 4W, 5%	1300479	40
1	R24	RESISTOR, 12, 1 4W, 5%	1301430	41
1	R4	RESISTOR, 47, 1/2W, 5%	1301695	42
6	R17,R23 R48,R40,R64,R75	RESISTOR, 270, 1 4W, 5%	1301972	43
2	R72,R74	RESISTOR, 150K, 1/4W, 5%	1302396	44
2	R26,R61	RESISTOR, 2K, 1 4W, 5%	1302388	45
4	R22,R71,R41,R73	RESISTOR, 30K, 1/4W, 5%	1302394	46
3	R49,R51,R53	RESISTOR, 56K, 1/4W, 5%	1302355	47
1	R27	RESISTOR, 100K, 1/4W, 5%	1302486	48
2	R17,R21	RESISTOR, 30, 1/4W, 5%	1302751	49
2	R43,R44	RESISTOR, 1.21K, 1/4W, 1%	1302871	50
1	R46	RESISTOR, 1K, 1 4W, 1%	1303114	51
2	R33,R14	RESISTOR, 8.2K, 1/4W, 5%	1303179	52
1	R45	RESISTOR, 10K, 1 8W, 1%	1303212	53

PARTS LIST

IC 555	1	8
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL

ETCH BOARD REV. E

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	REVISIONS
J	5411597-0000?	
H	5411597-0000?	
F	5411597-0000?	

DRAWN A. BARON 12-79-25
CHECKED G. POTTER 12-79-25
ENGINEER K. BRADY 12-79-25
MANUFACTURING H. STREET 12-79-25
MARKETING J. SOFIO 12-79-25

CAM [illegible] DATE 6-30-75
CHKD [illegible] DATE 6-30-75
ENG [illegible] DATE 7-1-75
PROJ ENG K. Brady DATE 7/1/75
PROD ENG [illegible] DATE 7/1/75
NEXT HIGHER ASSY

digital

TITLE H777 +5V REGULATOR

SIZE D | CODE CS | NUMBER 5411597-0-1 | REV. J

SCALE | SHEET 1 OF 1 | DIST.

DEC FORM NO. GRD 32F-1

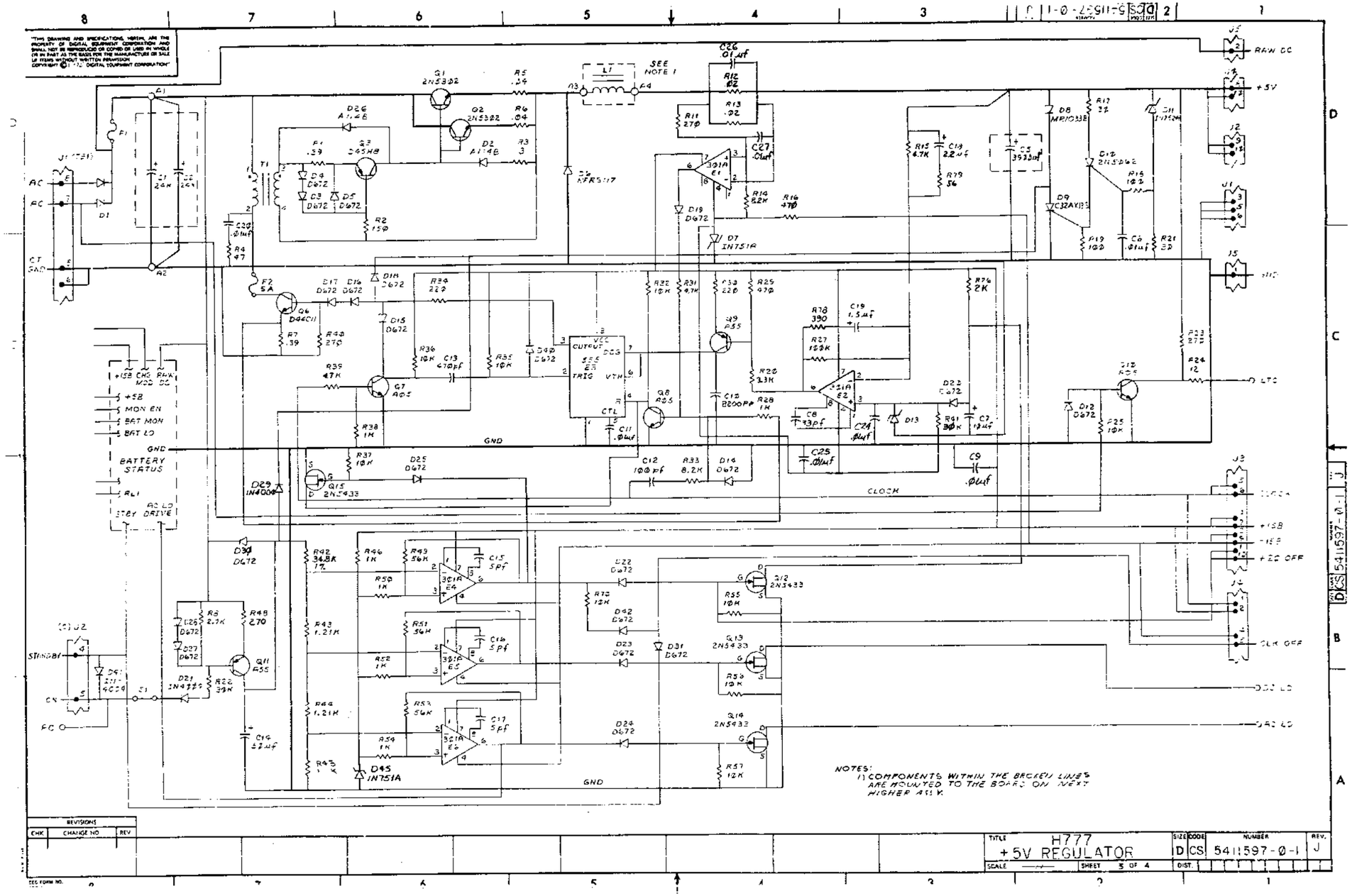
1	R76	RESISTOR, 5.1, 1/4W, 5%	1369422	54
1	R78	RESISTOR, 56 , 1/4W, 5%	1302602	55
1	R42	RESISTOR, 348K, 1/4W, 1%	1303156	56
2	R1,R7	RESISTOR, .25, 2W, 1%	1318060	57
2	R12,R13	RESISTOR, .02, 5W, 1%	1318075	58
2	R5,R6	RESISTOR, .04, 5W,	1311362	59
1	R3	RESISTOR, 3, 2W, 5%	1312682	60
2	Q1,Q2	TRANSISTOR, 2N5302	1518196	81
3	Q7,Q8,Q10	TRANSISTOR, A95	1518705	82
5	Q9,Q11,Q13,Q17,Q16	TRANSISTOR, A55	1518700	83
2	Q3,Q5	TRANSISTOR, D45H4	1510700	84
5	Q4,Q12 THRU Q15	TRANSISTOR, 2N5433	1511000	85
1	Q19	TRANSISTOR, 2N6028	1518077	86
1	Q6	TRANSISTOR, 044C11	1512790	87
1	D8	TRANSISTOR, C32AX135	1518928	88
1	T1	TRANSFORMER PULSE	1612592	89
1	E8	I.C. DEC 7418	1905570	70
5	E1,E2,E4,E5,E6	I.C. DEC 381A	1910282	71
3	E3,E7,E8	I.C. DEC LM555	1911944	72
1	F1	FUSE 15A, 32V	9087226	73
1	S1	THERMOSTAT (ELMWOOD)	1212787	74
1		HEAT SINK	7414236	75
2		EYELET	9006732	76
3		WIRE, #22 AWG STRANDED (WHITE)	9107350-99	77
3		WIRE, #22 AWG STRANDED (WHITE)	9107350-88	78
2		FUSECLIP	9007283	79
2		SCREW, 4-40 x 7/16 lg PHILLIPS HD	9008012-1	80
10		NUT, KEP 4-40	9008557	81
A/R		COMPOUND, THERMAL	9008268	82
4		INSULATOR, TO3	9008419	83
2		INSULATOR, THERM-A-FILM	9009587	84
3	A1,A2,A4	STANDOFF	7414048-B	85
REF		ASSY, HARNESS	7011415-0-0	86
1	B1	WIRE #18 AWG	9009185	87
1	C10	CAPACITOR 8200 PF 100V MYLAR	1000061	88
1	C8	CAPACITOR, 33PF, 100V, 5% D.M.	1000009	89
				90
4		SET SCREW #6-32 X 1/8 LG	9006290-10	91
2		SCREW NYLON #4-40 X 1/2 LG	9006402-4	92
2		NUT NYLON #4-40	8007992	93
1	A3	STANDOFF	7414048-1	94
1	J2	CONTROL CABLE (CONSOLE)	7011414-1F	95
8		WASHER, FLAT	9008172	96
~~2~~		~~[illegible]~~	~~[illegible]~~	~~97~~
1		SPACER, INSULATOR	3007615	98
1	R30	RES 220 , 1/4W, 5%	1300271	99
1	R20	RES 3.3K, 1/4W, 5%	1300439	100
8		SCREW, PHL PAN HD 4-40 x 5/8	9006014-01	101
A/R		JUMPER	9105740-55	102
A/R		WIRE	9107267-09	103

DCS 5411597

REVISIONS

CHK	CHANGE NO	REV

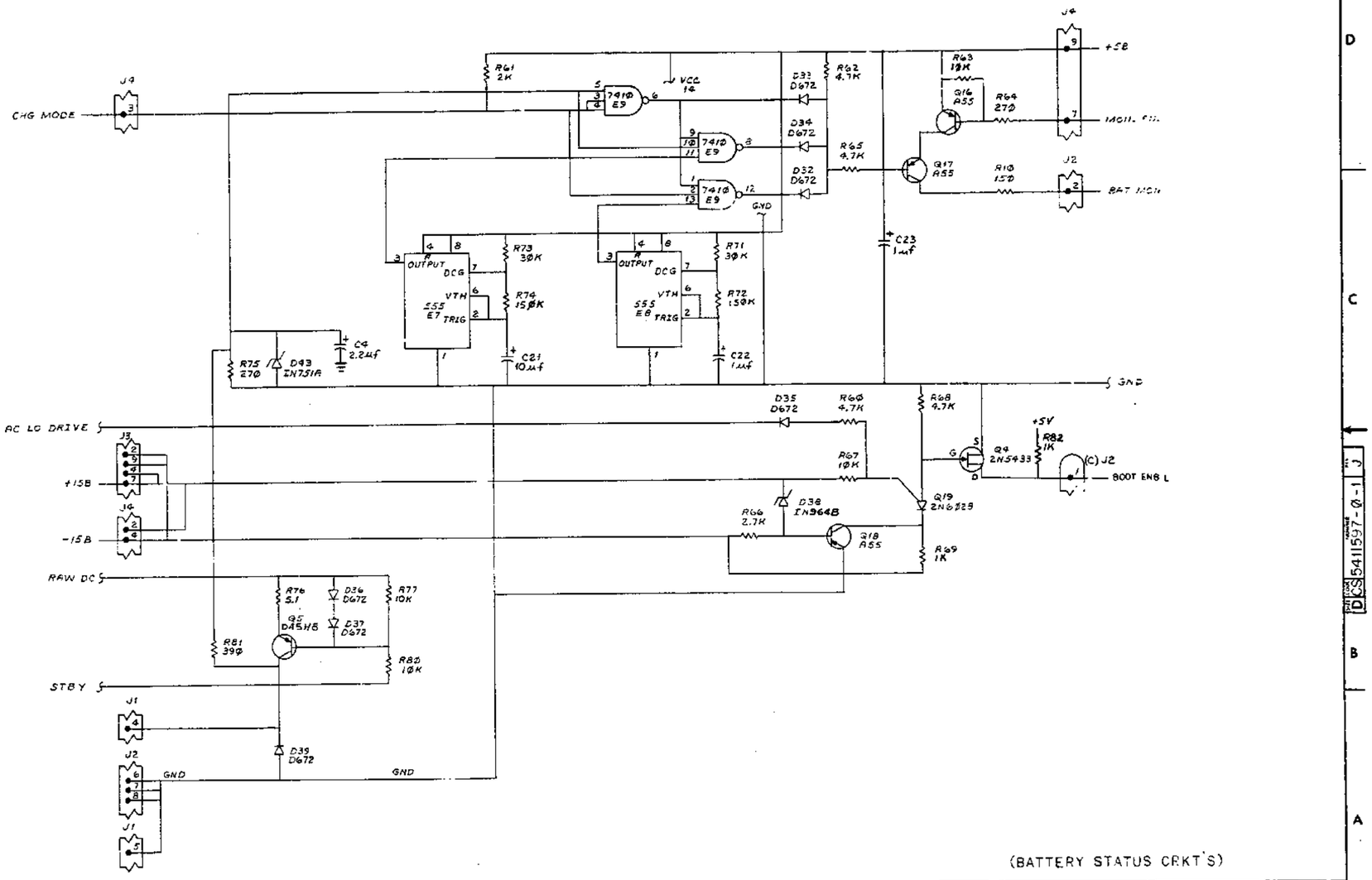
TITLE: H777+5V REGULATOR
SIZE CODE: D
NUMBER: CS 5411597-0-1
REV: J
SCALE: —
SHEET 2 OF 4
DIST



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
H777 +5V REGULATOR	D	CS	5411597-0-1	J
SCALE —— SHEET 3 OF 4	DIST.			

110



(BATTERY STATUS CRKT'S)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	H777 +5V REGULATOR
SIZE	D
CODE	CS
NUMBER	5411597-0-1
REV.	J
SCALE	
SHEET	4 OF 4
DIST.	

PART NO. DCS 5411597-0-1 SOURCE REV. J

LEGEND	
PART NO	VARIATION
7011075-0	120 V
7011075-1	230 V

WIRE CHART

ITEM NO	DESCRIP AWG	DESCRIP COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
22	18	WHT	K1-4	SOLD,31	*TB2-45	SOLD	5 1/2" L
23	18	BLK	K1-6		*TB2-15	SOLD	5" L
24	18	BRN	K1-7		TB2-5H	25,93	6 1/2" L
26	18	BLU	K1-9		TB2-6H	25,93	7 1/2" L
27	18	GRY	K1-A		—	25	
	TWP	BLK	K1-8	SOLD,31	—	25	
26	18	BLU	G2	SOLD	*TB2-65	SOLD	6" L
23	18	BLK	F1-1	SOLD,31	*TB2-15	SOLD	5" L
15	18	BLU	EMI-2 LOAD	—	*TB2-45	SOLD	6" L
	TWP	BRN	EMI-1 LOAD	—	*TB2-65	SOLD	6" L
22	18	WHT	EMI-2	SOLD,31	CB1-2 LOAD	28,41	5" L
23	18	BLK	EMI-1	SOLD,31	CB1-1 LOAD	28,41	5" L
45	18	WHT	*TB2-55	SOLD	J2-1	30,32	6 1/2" L
	TWP	BLK	*TB2-25	SOLD	J2-2	30,32	6 1/2" L
45	18	WHT	*TB2-55	SOLD	J3-1	30,32	15 1/2" L
	TWP	BLK	*TB2-25	SOLD	J3-2	30,32	15 1/2" L

SEE NOTE *2

SEE NOTE *2.

SEE NOTE *2
SEE DETAIL 'C'

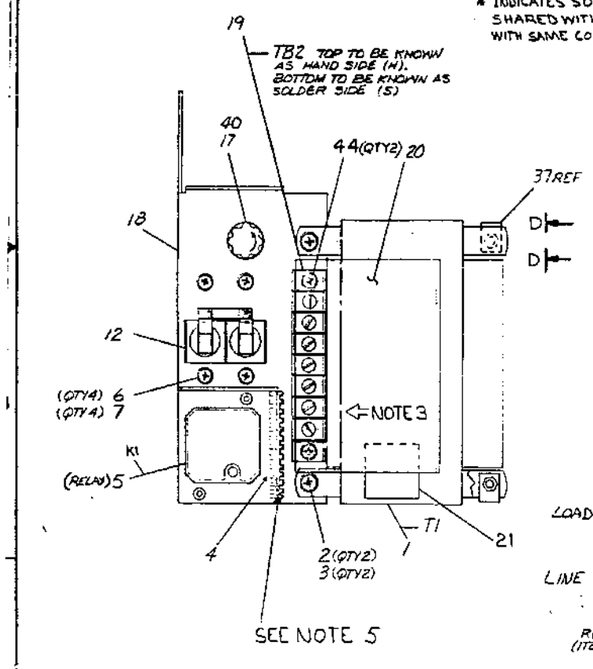
* INDICATES SOLDER CONN. SHARED WITH OTHER CONN. WITH SAME COMMON CONN.

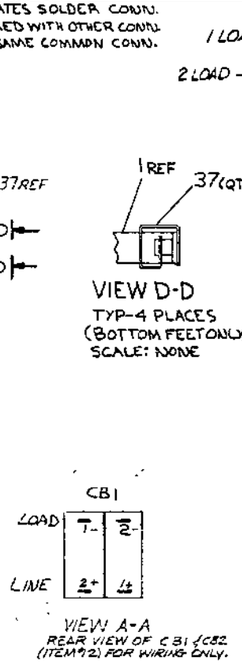
ITEM NO	DESCRIP AWG	DESCRIP COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
1	14	BLK	T1		TB2-1H	—	
	TWP	BRN/WHT			TB2-3H	—	
	14	RED			TB2-2H	—	
	TWP	RD/WHT	T1		TB2-4H	—	
23	18	BLK	G3	SOLD	F1-2	SOLD,31	4" L
34	14	GRN/YEL	EMI-3	SOLD,31	—	42	8" L
35	18	BLK	TB2-1H	—	TB2-2H	—	120V
36	18	WHT	TB2-3H	—	TB2-4H	—	120V
35	18	BLK	TB2-2H	—	TB2-3H	—	230V
13	22	BARE	R1-A	—	G3	SOLD,33	
13	22	BARE	R1-B	—	G2	SOLD,33	

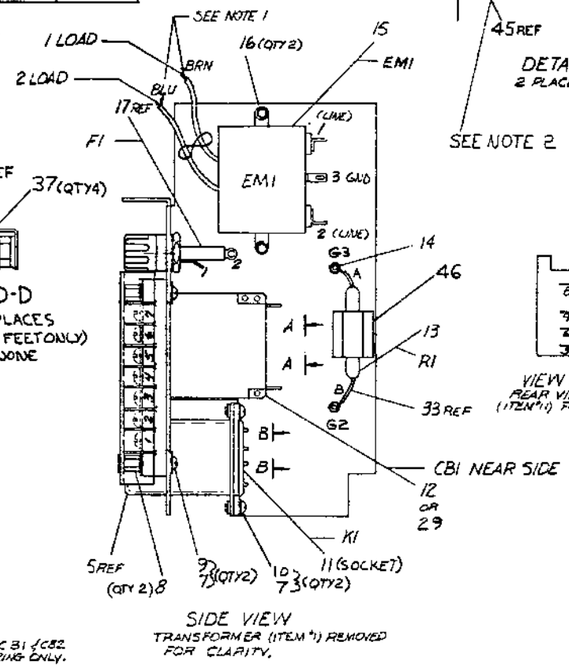
7011075-0	120V
7011075-1	230V

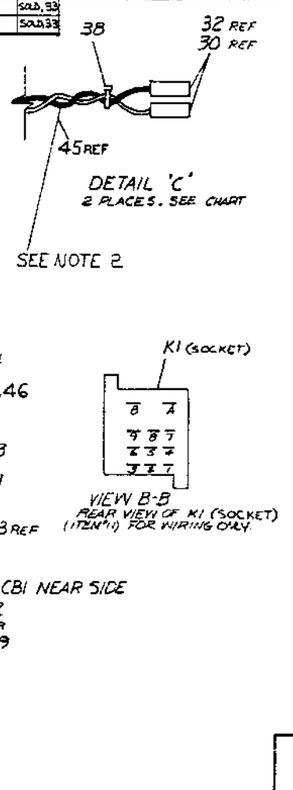
NOTES:

1. SECOND SOURCE FOR ITEM *15 (LINE FILTER) WILL HAVE WHT & BLK LEADS. SUBSTITUTE WHT FOR BLU AND BLK FOR BRN.
2. TWISTED PAIR WIRE TO HAVE A MIN OF 4 TWIST PER INCH AS PER WIRE CHART.
3. ALL CONNECTIONS TO TB2 ARE TO BE MADE FROM SIDE INDICATED BY ARROW.
4. USE TIE WRAPS (ITEM *38) AS NEEDED.
5. T1 PRIMARY WIRES TO TB2 MUST BE ROUTED BY ITEM 4
6. COVER, ITEM *28 WITH ITEM *41 TO COVER EXPOSED PART OF TERMINAL.









CONT. ON SHEET 2 of 2

–	1	JUMPER ASSY (WHT 2")	3-A-7011798-0-01	36
1	1	JUMPER ASSY (BLK 2")	3-A-7011797-0-0	35
A/R	A/R	WIRE *18 AWG TRACER (BRN/YEL)	9107777-54	34
2/0	A/R	TUBING WS (RED)	9107278-02	33
4	4	HOUSING SOCKET FASTAB	1210820-1	32
A/R	A/R	TUBING SHRINK (RED)	9107305-02	31
4	4	HOUSING TERM. FASTAB	1210820-2	30
1	–	CIRCUIT BREAKER, 5A	1210191-1	29
2	2	CONN FASTON (RED WS)	9007970	28
A/R	A/R	WIRE 18 AWG WS (GRY/BLK)	9107430-08	27
A/R	A/R	WIRE 18 AWG WS (BLU)	9107360-66	26
2	2	RING CRIMP (RED WS)	9007929	25
A/R	A/R	WIRE 18 AWG WS (BRN)	9107360-11	24
A/R	A/R	WIRE 18 AWG WS (BLK)	9107360-00	23
A/R	A/R	WIRE *18 AWG WS (WHT)	9107360-99	22
1	1	MOUNT TIE WRAP	9008264	21
1	1	SHIELD TERM	C-A-7011783-0-0	20
1	1	TERMINAL 7 POS	1212788	19
1	1	BRACKET COMPONENT	D-A-7013769-0-0	18
1	1	HOLDER, FUSE	9007242-0	17
2	2	NUT KEPS *6-32	9009243	16
1	1	FILTER LINE (EMI)	1212748	15
2	2	TERMINAL TURRET WS	9006966	14
1	1	RESISTOR 10Ω, 10W	1300173	13
–	1	CIRCUIT BREAKER, 10A	1210191-0	12
1	1	SOCKET, RELAY	1212789	11
2	2	SCR PHIL HD PAN *6-32X.25	9006021-01	10
2	2	SCR PHIL HD PAN *6-32 X.62	9006026-01	9
2	2	SPACER HEX *6-32 X.19	9006842	8
8	8	WASHER INT TOOTH LOCK *6	9006635	7
4	4	SCR PHIL HD PAN *6-32X.19	9006020-01	6
1	1	RELAY 6A/12V 3P 10A	1210683	5
A/R	A/R	GROMMET CATERPILLAR	9007035	4
2	2	WASHER INT TOOTH LOCK *8	9006634	3
2	2	SCR PHIL PAN HD *8-32 X.44	9006033-1	2
1	1	TRANSFORMER ASSY	C-A-7011805-0-0	1

7011075-1	7011075-0	QTY	DESCRIPTION	C/NO. PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

SURFACE QUALITY

UNDIMENSIONED: TOLERANCED | SCRIBED

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRAWN

CHECK

ENG. APPR.

PROD. CONTR.

PROD. A

NEXT HIGHER ASSY. D-A-H777-0-0

SCALE

SHEET 1 OF 2

FIRST USED ON H777

digital

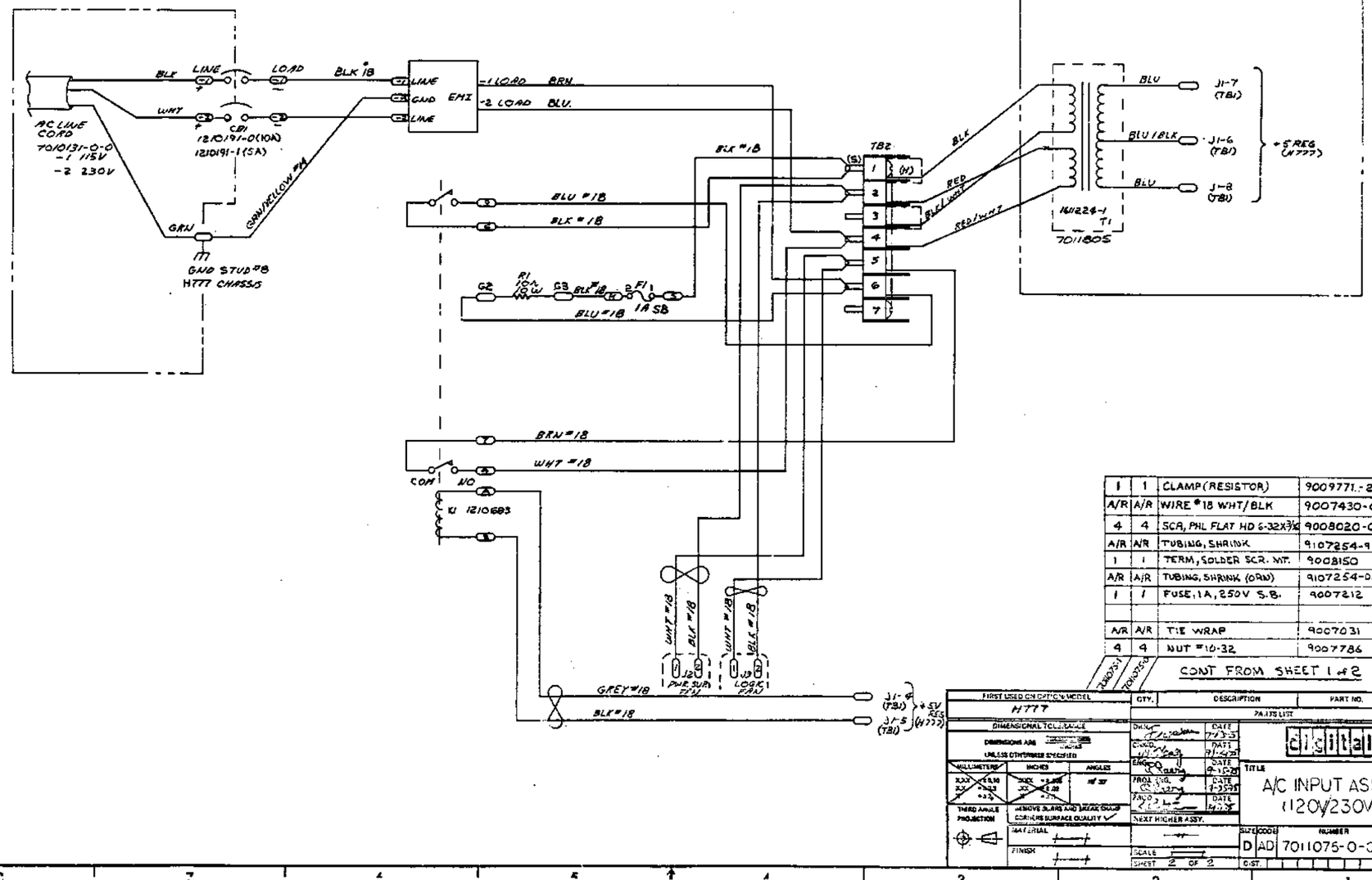
TITLE: A/C INPUT ASSY (120V/230V)

SIZE	CODE	NUMBER	REV.
D	AD	7011075-0-0	C

DIST.

REV		DATE	BY
A	ECO# 7-00301	17-JUL-75	N. BARRY
B	ECO# 7-00402	1-AUG-75	N. BARRY
C	ECO# 7-00503	23 NOV 77	A. EMILIN

112



1	1	CLAMP (RESISTOR)	9009771-2	46
A/R	A/R	WIRE #18 WHT/BLK	9007430-09	45
4	4	SCR, PHL FLAT HD 6-32X3/16	9008020-02	44
A/R	A/R	TUBING, SHRINK	9107254-9	43
1	1	TERM, SOLDER SCR. MT.	9008150	42
A/R	A/R	TUBING, SHRINK (ORN)	9107254-02	41
1	1	FUSE, 1A, 250V S.B.	9007212	40
A/R	A/R	TIE WRAP	9007031	38
4	4	NUT #10-32	9007786	37

CONT FROM SHEET 1 of 2

REVISIONS		
CHG	CHANGE NO.	REV.

FIRST USED ON DATA/MODEL: H777

DIMENSIONAL TOLERANCE
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
MILLIMETERS | INCHES | ANGLES
THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

DRWN 7-13-5
CHKD 7-15-75
ENG 9-15-75
PROJ. ENG. 9-25-75
APVD 10-2-75
NEXT HIGHER ASSY.
SCALE
SHEET 2 OF 2

digital

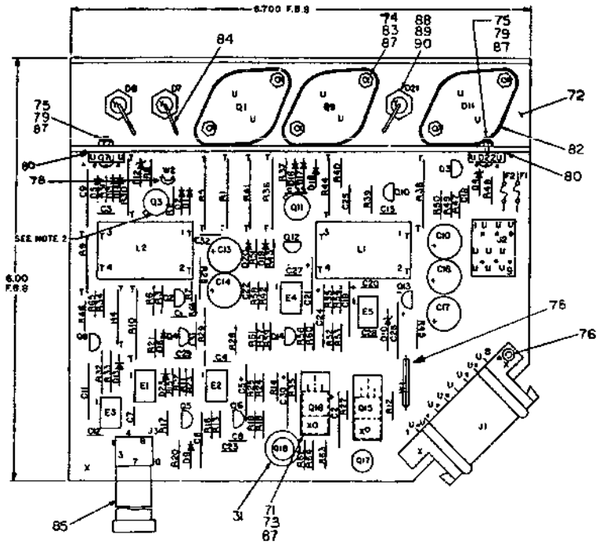
TITLE: A/C INPUT ASSY (120V/230V)

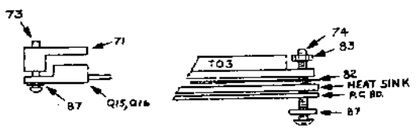
SIZE	CODE	NUMBER	REV.
D	AD	7011075-0-0	C

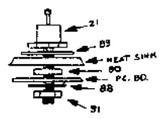
DIST.

NOTES:

1. SEE PARTS LIST FOR CURRENT HDW. D7, D8, D21
2. USE TRANSIPAD DEC #9007201 UNDER Q3, Q11, Q17, Q18
3. TORQUE Q1, Q9, D7, D8, D11, & D21 HARDWARE TO 6-8 IN-LBS.







SIDE VIEW
MOUNTING D7, D8 AND D21

1	R18	RESISTOR, 8.2K, 1/4W, 5%	1303179	51	REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411601-0-A	1
1	R28	RESISTOR, 4.98K, 1/4W, 1% MF	1305324	52	REF		ASST/DRILLING HOLE LAYOUT	B-AH-5411601-0-5	2
2	R7,R36	RESISTOR, 1, 2W, 5% MW	1305429	53	REF		MODULE ECO HISTORY	B-MH-5411601-0-B	3
1	R55	RESISTOR, 5/1, 1/4W, 5%	1309422	54	1		ETCHED CIRCUIT BOARD	5011600	4
2	R5,R38	RESISTOR, .15, 2W, 10%	1310147	55	2	C20,C4	CAPACITOR, 33pf, 100V, 5%	1000009	5
2	R32,R33	RESISTOR, 2.21K, 1/4W, 1%	1310831	56	1	C8	CAPACITOR, 100pf, 100V, 5%	1000018	6
1	D22	DIODE 2N4441 SCR	1505867	57	1	C7	CAPACITOR, 220pf, 100V, 5%	1000021	7
3	Q3,Q11,Q17	TRANSISTOR, 2N4036	1509700	58	1	C25	CAPACITOR, .1mf, 100V, 20% DISC	1000030	8
1	Q18	TRANSISTOR, DEC 3T34	1510082	59	9	C1,C3,C12,C15,C18,C27,C28, C32,C33	CAPACITOR, .01mf, 100V, DISC	1003610-01	9
1	Q7	TRANSISTOR, MJE3055	1510955	60					
1	Q4,Q5,Q6,Q8,Q12 THRU Q14	TRANSISTOR, 2N04	1510785	61	6	C2,C5,C9,C19,C26,C30	CAPACITOR, 1mf, 35V, 10%	1004778	10
2	Q2,Q10	TRANSISTOR, 2N55	1510708	62	2	C29,C31	CAPACITOR, .47mf, 25V, 20%	1010279	11
1	Q16	TRANSISTOR, 045N8	1510708	63	1	C24	CAPACITOR, 10mf, 20V, 10%	1004813	12
2	Q1,Q9	TRANSISTOR, 2N5038	1510988	64	2	C6,C21	CAPACITOR, .01mf, 100V, 10% MYLAR	1005784	13
1	Q15	TRANSISTOR, 044N5	1512722	65	1	C11	CAPACITOR, .015mf, 50V, 2% POLYC	1010646	14
2	L1,L2	INDUCTOR, 500uh	1812593	66	2	C13,C14	CAPACITOR 390mf, 20V	1012807-06	15
2	E7,E5	I.C. L.M. 301A	1910282	67	1	C17	CAPACITOR, 1200mf, 8.3V	1012807-01	16
3	E1,E3,E4	I.C. L.M. 555	1911944	68	2	C10,C16	CAPACITOR, 180mf, 50V	1012807-02	17
1	C22	CAPACITOR, 470pf, 100V, 5%	1000024	69	1	D4	DIODE 1N752A	1102809	18
1	C23	CAPACITOR, 180pf, 100V 5%	1000020	70	11	D1,D2,D6,D13 THRU D17,D19, D20,D23	DIODE D672	1105275	19
2		HEAT SINK	7414765	71					
1		HEAT SINK	7413842	72	1	D9	DIODE 1N4004	1105796	20
2		SCREW #4-40 x 7/16 LG	9006312-1	73	3	D7,D8,D21	DIODE, 1N3989	1109440	21
6		SCREW #4/40 x 1/2 LG.	9006013-1	74	1	D12	DIODE 1N4742	1109582	22
2		SCREW, NYLON #4/40 x .375LG.	9006401-4	75	1	D10	DIODE 12t 5ms 5.1V, 2%	1110713	23
1		EYELET	9009000	76	1	D3	DIODE 2N5062	1110988	24
4		TRANSIPAD	9007201	77	2	D5,D18	DIODE A114B	1112595-01	25
A/R		TUBING	9107256-11	78	1	D11	DIODE DUAL	1112723-00	26
2		NUT, NYLON #4/40	9007592	79	2	F1,F2	FUSE 5A	1209070	27
2		SILPAD TO ZZ	1213071-06	80	1	J1	CONN. 8 PIN MATE-N-LOC	1209340-00	28
A/R		THERMAL COMPOUND	9008288	81	1	J2	CONN. 9 PIN MATE-N-LOC	1209350-09	29
3		SILPAD TO 3	1213071-02	82	17		PINS	1209458-01	30
6		NUT, KEP #4/40	9006557	83	1	(Q18)	HEAT SINK	1210001	31
A/R		WIRE #20 AWG STRANDED	9107480-65	84	5	R2,R3,R37,R47,R50	RESISTOR, 33, 1/4W, 5%	1300197	32
1	J3	CONTROL CABLE	7011414-00	85	2	R12,R14	RESISTOR, 47, 1/4W, 5%	1300202	33
2		WASHER, LOCK, INTERNAL TOOTH #6	9006833	86	8	R6,R27,R35,R39,R48,R49,R63, R64	RESISTOR, 100, 1/4W, 5%	1300229	34
10		WASHER, FLAT	9008172	87					
3		WASHER, FLAT	9006666	88	2	R9,R44	RESISTOR, 150, 1W, 5%	1300232	35
3		SILPAD, STUD MOUNT	1213071-05	89	1	R52	RESISTOR, 390, 1/4W, 5%	1300309	36
3		BUSHING, NYLON	9008440	90	7	R15,R20,R54,R59,R60,R62,R25	RESISTOR, 1K, 1/4W, 5%	1300365	37
3		NUT, HEX #10-32	9006565	91	1	R45	RESISTOR, 1.5K, 1/4W, 5%	1300391	38
					1	R29	RESISTOR, 2.49K, 1/4W, 1%	1300424	39
AR	W1, W2	WIRE, #20 AWG, SOLID	9107560-02	93	5	R11,R43,R61	RESISTOR, 2.7K, 1/4W, 5%	1300426	40
1		LABEL POWER SUPPLY	9009255-00	94	2	R7,R55	RESISTOR, 4.7K, 1/4W, 5%	1300447	41
2		TIE, CABLE	9007031	95	2	R23,R56	RESISTOR, 5.62K, 1/4W, 1%	1305128	42
					11	R13,R15,R16,R17,R21,R22,R42 R46,R51,R57,R58	RESISTOR, 10K, 1/4W, 5%	1300479	43
					2	R53,R24	RESISTOR, 100K, 1/4W, 5%	1302466	44
					3	R8,R31,R40	RESISTOR, 10, 1/4W, 5%	1301317	45
					2	R10,R41	RESISTOR, 336, 2W, 10%	1301961	46
					2	R26,R34	RESISTOR, 2K, 1/4W, 5%	1302388	47
					1	R66	RESISTOR, 180, 1/4W, 5%	1301322	48
					1	R4	RESISTOR, 1.2K, 1W, 10%	1302950	49
					1	R30	RESISTOR, 1.8K, 1W, 5%	1303122	50

ALTERNATE PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		EYELET	9006732	76
9	C1,C3,C12,C15,C18,C27,C28,C32, C33	CAPACITOR .01 MF 50V	1001810-00	9

FIRST USED ON OPTION MODEL

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REV	DESCRIPTION	DATE	APPROVED
E	CHANGE NO. 5411601-00001	12-6-75	RICHARD BARRY
F	5411601-00002	12-10-75	G. POTTER
G	5411601-00003	9/2/76	G. POTTER
H	5411601-00004	2/6/77	G. POTTER
J	5411601-00005	1-11-77	R. DAY
K	5411601-00006	10-12-77	A. BAKER
L	5411601-00007	9 NOV 77	BRUCE CRAMER
M	5411601-00008	2 MAY 78	E. CROCKER

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

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV. E

DRN. J. Hodgett	DATE 9-29-75
CHKD.	DATE
ENG.	DATE
MFG.	DATE 11/24/75
QUAL.	DATE 10/5/76
NEXT HIGHER ASSY	
SCALE	
SHEET 1 OF 2	

digital

TITLE MOS REGULATOR H777

SIZE	CODE	NUMBER	REV.
D	CS	5411601-0-1	M

DIST.

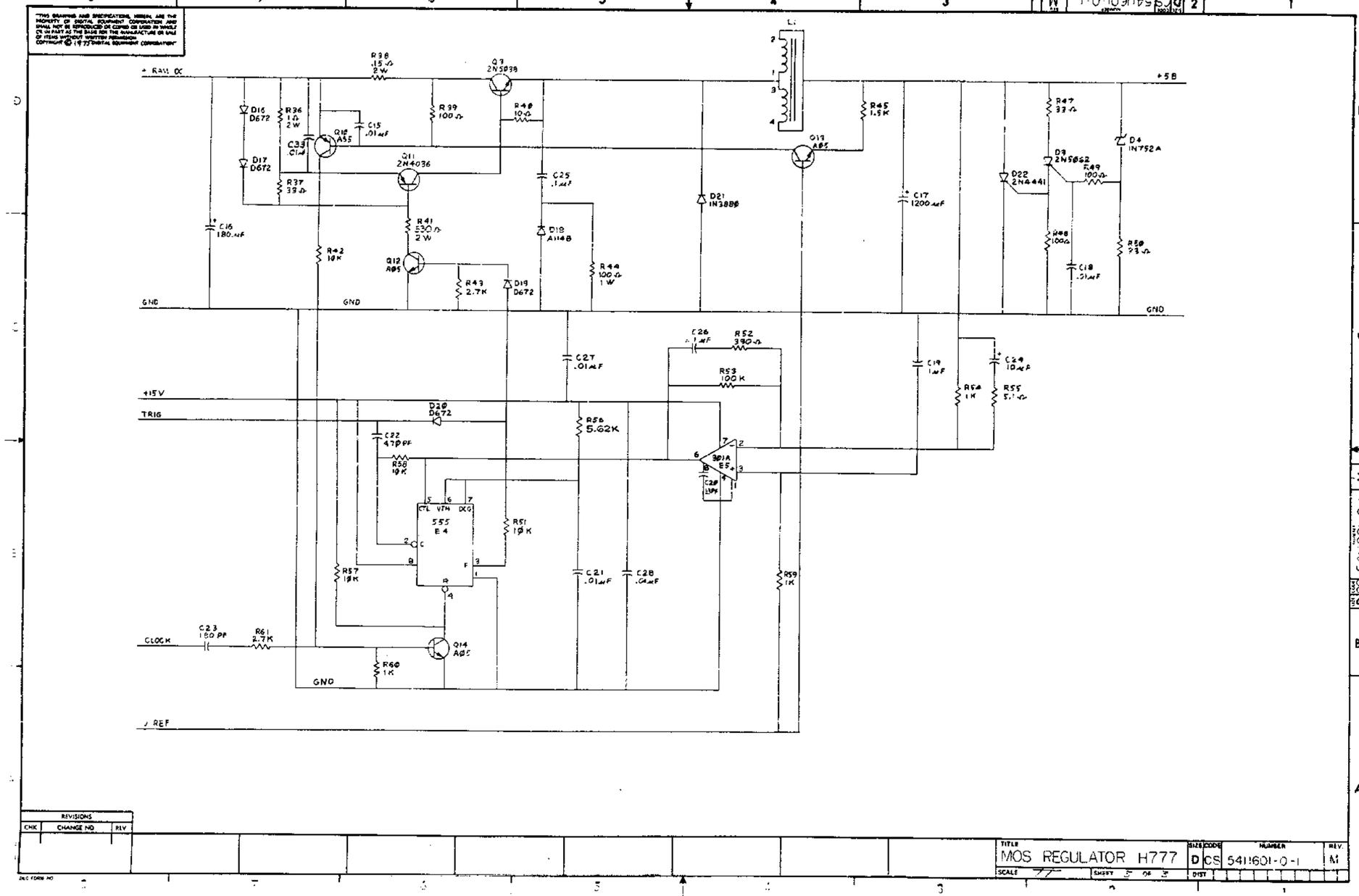
PARTS LIST

114

RAW DC
F1 5A
F2 5A
BAT IN
GND
J1
J2
J3
D11
D1 D672
D2 D672
D14 D672
D15 D672
D12 1N4742
Q7 MJE3055
Q1 2N5038
Q2 A95
Q3 2N4036
Q4 A95
Q5 A95
Q6 A95
Q8 A95
D5 A114B
D6 D672
D7 1N3889
D8 1N3889
D9 1N4004
D13 D672
D23 D672
D10 5.1V 2%
L2
W2
R1 1Ω 2W
R2 330Ω
R3 39Ω
R4 1.2K 1W
R5 15Ω 2W
R6 100Ω
R7 4.7K
R8 10Ω
R9 100Ω
R10 330Ω 2W
R11 2.7K
R12 47Ω
R13 10K
R14 47Ω
R15 10K
R16 10K
R17 10K
R18 8.2K
R19 1K
R20 1K
R21 10K
R22 10K
R23 5.62K
R24 100K
R25 1K
R26 2K
R27 100Ω
R28 4.99K 1/4 W
R29 2.49K 3/4 W 1%
R30 1.8K 1W
R31 10Ω
R32 2.21K 1/2 W
R33 2.21K 1/2W
R34 2K
R35 4.7K
R35 100Ω
R45 10K
R46 100Ω
R62 1K
R63 100Ω
R64 100Ω
C1 .01 μF
C2 1 μF
C3 .01 μF
C4 33 PF
C5 1 μF
C6 .01 μF
C7 220 PF
C8 100 PF
C9 1 μF
C10 180 μF
C11 .015 μF
C12 .01 μF
C13 560 μF
C14 560 μF
C29 0.47 μF
C30 1 μF
C31 .47 μF
C32 .01 μF
555 E3 VTH DCG CLT
555 E1 DCG VTH CTL
301A E2
Q15 D44H5
Q16 D45H8
Q17 2N4036
Q18 DEC 3734
-15 B
+5 B
CLOCK
CLOCK OFF
CHG. MOD
MAIN EN
TRIG
V REF
+15
CLK
+5 B SECTION
RAW DC
GND

REVISIONS		
CHK	CHANGE NO.	REV

TITLE: MOS REGULATOR H777		SIZE	CODE	NUMBER	REV.
SCALE	SHEET 2 OF 3	D	DCS	5411601-0-1	M
		DIST.			



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
MOS REGULATOR H777	D	CS	5411601-0-1	M
SCALE	SHEET 5 OF 5	DIST		

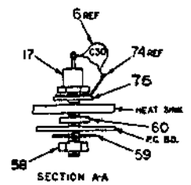
DEC FORM NO

5411601-0-1 M DCS

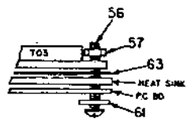
NOTES:

USE TRANSIPAD DEC# 9007201 UNDER Q1&Q8

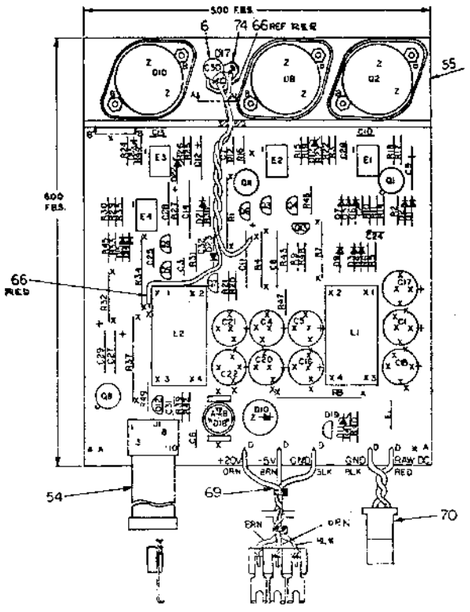
1		HEAT SINK	7416236-0-0	55	
6		SCREW, #4-40 x 1/2 lg PH HD	9006013-1	56	
6		NUT, KEP #4-40	9006557	57	
1		NUT, HEX #10-32	9006584	58	
1		WASHER, FLAT	9006682	59	
1		BUSHING, NYLON	9008440	60	
5		WASHER, FLAT	1008172	61	
A/R		COMPOUND, THERMAL	9006268	62	
3		INSULATOR, TO 3	1213071-02	63	
~~1~~		~~WASHER, THERMAL~~	~~9006434~~	~~64~~	
2		TRANSIPAD	9007201	65	
A/R		WIRE #18 AWG, TWISTED PAIR	9107430-02	66	
1	C29	CAPACITOR 2.2UF 20V	1002627	67	
1	R47	RESISTOR 200, 1/4W, 5%	1311522	68	
1		HARNESS (THREE WIRE)	C-IA 7012547-0-0	69	
1		HARNESS (TWO WIRE)	C-IA 7012546-0-0	70	
1	C12	CAPACITOR, 10uf, 20V, 10%, TANT	1004813	71	
1	D23	DIODE, 1N753A	1102421	72	
1	C26	CAPACITOR, .47uf, Z5V, 20%, CER	1010278	73	
1		SOLDER, TERM, SCREW MTG.	9007815	74	
1		SIL PAD .500 .190 I.D.	1213071-05	75	
1	C32	CAP. 1UF 50V CER.	1010274-02	76	



SECTION A-A



SECTION B-B



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

IC PIN LOCATIONS

REF		DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CC-5411599-0-0	1
REF		ASST/DRILLING HOLE LAYOUT	D-AH-5411599-0-1	2
REF		MODULE ECO HISTORY	B-MH-5411599-0-0	3
1		ETCHED CIRCUIT BOARD	5011598	4
1	C7	CAPACITOR, 100PF, 100V, 5%	1000516	5
6	C2,C3,C6,C30,C24,C25	CAPACITOR, .01uf, 100V DISC	1001810-01	6
3	C9, C27, C28	CAPACITOR, 1uf, 35V, 10% TANT	1001778	7
2	C15,C13	CAPACITOR, 33pf, 100V CM	1000009	8
1	C11	CAPACITOR, 1.5uf, 35V, 10% TANT	1009725	9
2	C8,C14	CAPACITOR, .01uf, 100V, 10% MYLAR	1009764	10
1	C31	CAPACITOR, 220pf, 100V, 5%	1000021	11
2	C5,C16	CAPACITOR, 1200uf, 63V	1012607-01	12
7	C1,C17,C19,C4,C20,C21,C22	CAPACITOR, 100uf, 40V	1012607-02	13
1	D22	DIODE, 1N4742	1109502	14
1	D10	DIODE, MR1033B	1103341	15
10	D1 THRU D7, D14, D15, D21	DIODE, D672	1105275	16
1	D17	DIODE, IN3880	1109440	17
2	D12,D13	DIODE, IN753, 5.1V 2%	1110713	18
1	D9	DIODE	1110715	19
1	D11	DIODE, IN4728	1110848	20
1	D19	DIODE, 2W582	1110968	21
1	D8,	DIODE, A1148	1112595-01	22
1	F1	FUSE, 15A, PICO	1210829	23
1	R46	RESISTOR, 18K, 1/4W, 5%	1302465	24
6	R9,R39,R40,R41,R43,R45	RESISTOR, 100, 1/4W, 5%	1300229	25
1	R7	RESISTOR, 100, 1W, 5%	1300232	26
3	R11, ,R2,R33	RESISTOR, 390, 1/4W, 5%	1300309	27
6	R6,R12,R23,R31,R17,R48	RESISTOR, 1K, 1/4W, 5%	1300385	28
3	R10, ,R14, ,R30	RESISTOR, 2.7K, 1/4W, 5%	1300426	29
4	R42,R44, R15,R27	RESISTOR, 4.7K, 1/4W, 5%	1300447	30
1	R4	RESISTOR 1K, 1W, 5%	1300368	31
3	R16, R29,R38,	RESISTOR, 10K, 1/4W, 5%	1300479	32
2	R3,R35	RESISTOR, 10, 1/4W, 5%	1300317	33
1	,R45	RESISTOR,470, 1/4W, 5%	1300316	34
1	R5	RESISTOR, 27, 1/4W, 5%	1301522	35
1	,R34	RESISTOR, 330, 2W, 10%	1301961	36
1	R19	RESISTOR, 2K, 1/4W, 5%	1302388	37
2	R18,R28	RESISTOR, 100K, 1/4W, 5%	1302468	38
1	R22	RESISTOR, 2.74K, 1/4W, 1%	1304868	39
2	R1,R32	RESISTOR, 1, 2W, 5" W/W	1305428	40
2	R24, R25	RESISTOR, 1.5K, 1/4W 5%	1300391	41
1	R21	RESISTOR, 8.25K, 1/4W, 1%	1305420	42
2	R8,R37	RESISTOR, 08, 5W, 3% W/W	1311603	43
1	R20	RESISTOR, 56, 1/4 W, 5%	1302602	44
2	Q1,Q8	TRANSISTOR, 2N403M	1509709	45
7	Q3,Q5,Q6,Q7,Q9,Q12,Q13	TRANSISTOR, XA85	1510705	46
1	Q4	TRANSISTOR, XA55	1510706	47
1	Q10	TRANSISTOR, C32AX135	1510928	48
2	Q2,Q10	TRANSISTOR, 2N5038	1510989	49
1	Q11	TRANSISTOR, 2N5433	1511686	50
2	L1,L2	INDUCTOR, 500uh	1612593	51
2	E1,E3	I C DEC 301A	1910282	52
2	E2,E4	I C DEC 555	1911944	53
1	J1	CABLE ASSY	7011414-0E	54

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. D

REV	REVISIONS	DWG NO.	DATE
J	B. COUTEMANCHE	5411599-0-0003	AUG 77
H	5411599-0-0002	5411599-0-0001	AUG 76
E			

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

SEMICONDUCTOR CONVERSION CHART

DRN. J. Scott DATE 7-8-77
CHK'D H. Stevenson DATE 7-8-77
ENG. G. Potter DATE 7/28/76
PROJ. DATE
MFG. DATE

NEXT HIGHER ASSY E-UA-H777-0-0

SCALE

SHEET 1 OF 2

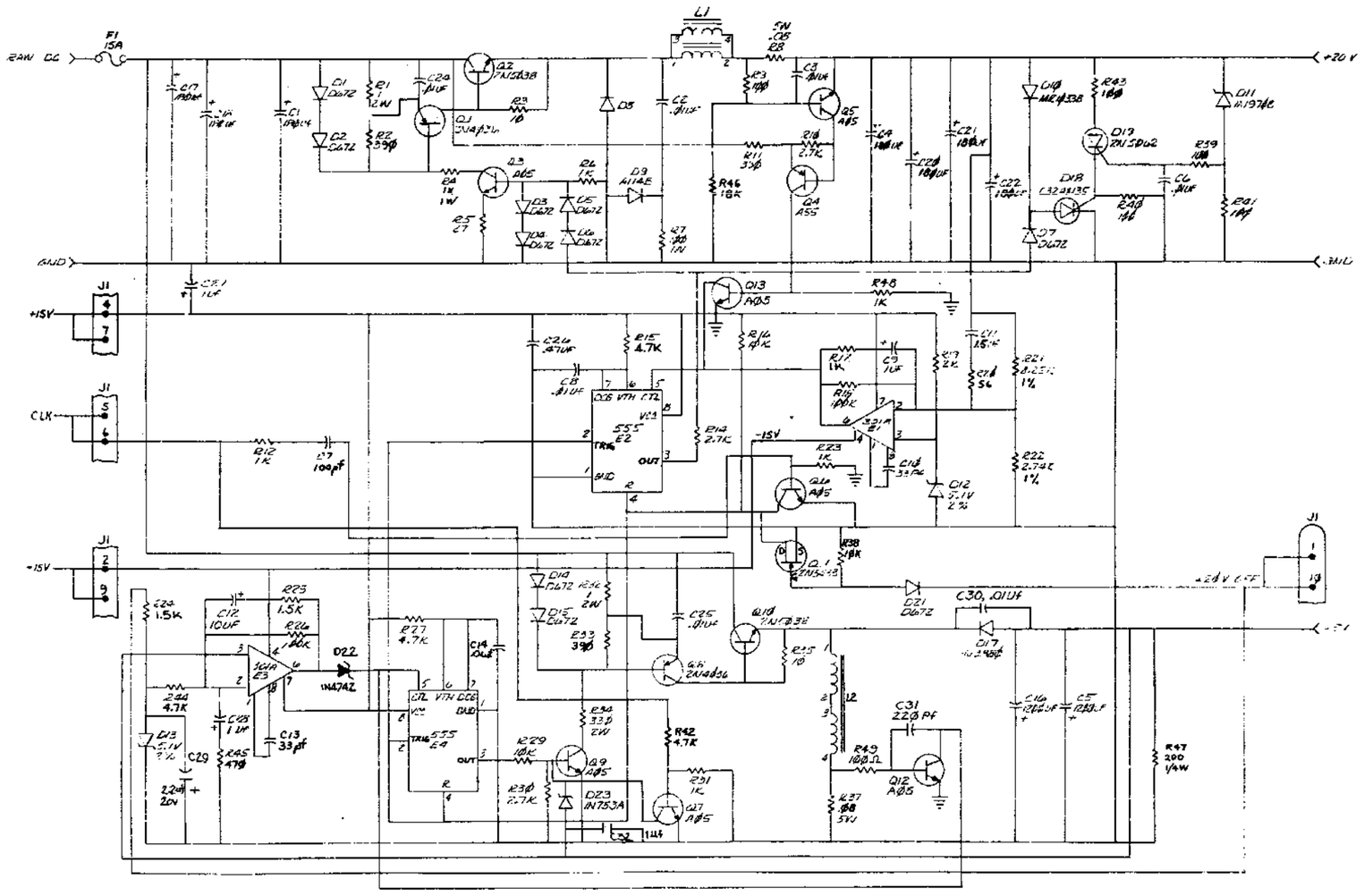
digital

TITLE +20V REGULATOR/H777

SIZE	CODE	NUMBER	REV.
D	CS	5411599-0-1	J

DIST.

5411599 0-1



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
+20V REGULATOR/H777	D	CS	5+11599-0--	J

SCALE — SHEET — OF — DWG.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY — DATE —
CHECKED D. HEALY DATE 29 JUL 76 — SECTION 1
ENG R. Barry DATE 26 Aug 76
PROD RB Kung DATE 26 Aug 76 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	H777-AA	H777-AB	H777-BA	H777-BB	H777-CA	H777-CB	H777-DA	H777-DB
1	D-IA-7011248-0-0	CHASSIS ASSY P.S.	1	1	1	1	-	-	-	-
2	9007031-05	TIE WRAP	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
3	D-AD-7011075-0-0	A/C INPUT ASSY (120V)	1	-	1	-	-	-	-	-
4	D-AD-7011075-1-0	A/C INPUT ASSY (230V)	-	1	-	1	-	-	-	-
5	9007035	GROMMET CAT.	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
6	9006563	NUT, KEPS #8 - 32	2	2	2	2	2	2	2	2
7	E-MD-7413825-0-0	COVER, POWER SUPPLY	1	1	1	1	-	-	-	-
8	D-AD-7011073-0-0	+5V REGULATOR ASSY	1	1	1	1	-	-	-	-
9	D-CS-5411601-0-1	MOS. REG. H777	1	1	1	1	1	1	1	1
10	9006021-01	SCR, PHL HD PAN #6 - 32 x .31	4	4	2	2	3	3	1	1
11	9008509	STRAIN RELIEF	1	1	1	1	-	-	-	-
12	D-IA-7012320-0	POWER CORD (115V)	1	-	1	-	-	-	-	-
13	D-IA-7012320-1	POWER CORD (230V)	-	1	-	1	-	-	-	-
14	9006022-1	SCR, PHIL HD PAN #6-32 x .38	6	6	4	4	-	-	-	-
15	9006633	WASHER, INT. TOOTH #6	10	10	6	6	3	3	1	1
16	9009771-02	CLAMP	2	2	2	2	-	-	-	-
17	1209403-01	FAN, BOXER 115V, 50/60 HZ	1	1	1	1	1	1	1	1
18	9006020-2	SCR, PHIL FLAT HD #6 - 32 x .25	7	7	7	7	-	-	-	-
19	9008185	NUT, KEPS #6 - 32	-	-	-	-	2	2	2	2
20	~~9006022-1~~	~~SCR, PHIL HD PAN #6 - 32 x .44~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~
21	9006074-3	SCR., PHIL TRUSS #10 - 32 x .62	4	4	4	4	4	4	4	4
22	9007651	WASHER, EXT. TOOTH #10	4	4	4	4	4	4	4	4

TITLE: POWER SUPPLY ASSY (H777) — ASSY NO. E-UA-H777-0-0 — SIZE A — CODE PL — NUMBER H777-0-0 — REV M — ECO NO H777-00005
SHEET 1 OF 3 — DIST

DEC FORM DEC 16 (325)-1031-5870
OPA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. Barry DATE 26 Aug 76
CHECKED D. HEALY DATE 29 JUL 76 — SECTION 1
ENG — DATE —
PROD RB Kung DATE 26 Aug 76 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	H777-AA	H777-AB	H777-BA	H777-BB	H777-CA	H777-CB	H777-DA	H777-DB
23	C-IA-7413773-0-0	BRACKET, FAN	2	2	2	2	2	2	2	2
24	1210984-05	INS SHEET 9.0±.1 X 1.5 ±.1	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
25	B-DC-7414744-0-0	DECAL H777 P.S.	1	1	1	1	-	-	-	-
26	A-PS-3612680-0-0	DECAL, CHASSIS GROUND	2	2	2	2	2	2	2	2
27	C-IA-7011412-0F	CABLE, CHASSIS GROUND	1	1	1	1	1	1	1	1
28	C-IA-7011412-1H	CABLE, CONSOLE GROUND	-	-	-	-	1	1	1	1
29	D-CS-5411599-0-1	CCRE REG. H777	1	1	-	-	1	1	-	-
30	9007015	GROMMET	-	-	-	-	1	1	1	1
31	D-IA-7417407-0-0	CHASSIS P.S.	-	-	-	-	1	1	1	1
32	D-AD-7012910-0-0	A/C INPUT ASSY (120V)	-	-	-	-	1	-	1	-
33	D-AD-7012910-1-0	A/C INPUT ASSY (230V)	-	-	-	-	-	1	-	1
34	B-IA-7417018-0-0	COVER, POWER SUPPLY	-	-	-	-	1	1	1	1
35	A-PS-1213773-0-0	AC RECEPTACLE	-	-	-	-	1	1	1	1
36	A-PS-1212877-0-0	FILTER	-	-	-	-	1	1	1	1
37	D-AD-7012909-0-0	+5V REGULATOR ASSY	-	-	-	-	1	1	1	1
38	9009771-1-0	CABLE CLAMP	-	-	-	-	2	2	2	2
39	9006024-01	SCREW, PAN #6 - 32 x .50	-	-	-	-	1	1	1	1
40	9008404-2	SCR PHL FLAT HD #6 - 32 x .31	4	4	4	4	11	11	11	11
41	9107253-02	TUBING, SHRINK (ORN)	-	-	-	-	A/R	A/R	A/R	A/R
42	C-IA-7417288-0-0	WIRE A.C. CONN. HARNESS	-	-	-	-	REF	REF	REF	REF
43	B-DC-7414744-1-0	DECAL H777 P.S.	-	-	-	-	1	1	1	1
44	9006037-1	SCR, PHIL PAN HD #8 - 32 x .38	-	-	-	-	1	1	1	1

TITLE: POWER SUPPLY ASSY (H777) — ASSY NO. E-UA-H777-0-0 — SIZE A — CODE PL — NUMBER H777-0-0 — REV M — ECO NO
SHEET 2 OF 3 — DIST

DEC FORM DEC 16 (325)-1031-5870
OPA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

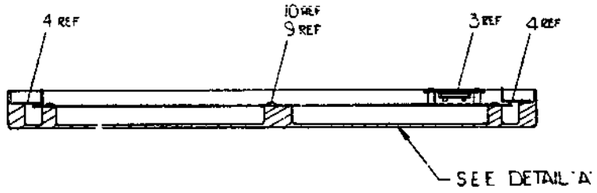
MADE BY — DATE —
CHECKED D. HEALY DATE 29 JUL 76 — SECTION 1
ENG R. Barry DATE 26 Aug 76
PROD RB Kung DATE 26 Aug 76 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	H777-AA	H777-AB	H777-BA	H777-BB	H777-CA	H777-CB	H777-DA	H777-DB
45	9006634	WASHER INT. TOOTH LOCK #8	-	-	-	-	1	1	1	1
~~46~~	~~B-IA-7[illegible]~~	~~[illegible] 230V~~	~~-~~	~~-~~	~~-~~	~~-~~	~~1~~	~~-~~	~~1~~	~~-~~
47	9006011-1	SCR PH HD PAN #4 - 40 x .38	-	-	-	-	2	2	2	2
48	9006632	WASHER INT. TOOTH LOCK #4	-	-	-	-	2	2	2	2
49	9008020-02	SCR, PHIL FLAT HD. #6-32 x .18	1	1	1	1	-	-	-	-
50	7011411-1L	CABLE, CONSOLE CONTROL	-	-	-	-	REF	REF	REF	REF
51	9006022-03	SCR. PHIL. TRUSS #6-32 x .38	-	-	-	-	4	4	2	2
52	C-IA-7013938-1	CABLE JUMPER	-	-	-	-	1	1	1	1
53	C-IA-7013938-0	CABLE JUMPER	-	-	-	-	1	1	1	1
54	C-IA-7013939-0	CABLE GROUNDING	-	-	-	-	1	1	1	1
55	C-IA-7420323-00	AC POWER CORD W/LABLE (120V)	-	-	-	-	1	-	1	-
56	C-IA-7420323-01	AC POWER CORD W/LABLE (240V)	-	-	-	-	-	1	-	1
57	9006656	WASHER, FLAT	4	4	2	2	3	3	1	1
58	9006025-01	SCR, PAN PHIL #6-32 x 5/8	3	3	3	3	3	3	3	3
59	9006560	NUT, KEP #6-32	3	3	3	3	3	3	3	3
60	7011412-3C	CABLE ASSY	1	1	1	1	-	-	-	-
61	9006561	NUT, HEX #8-32	1	1	1	1	-	-	-	-
62	7011414-1F	CABLE, CONSOLE CONTROL	REF	REF	REF	REF	-	-	-	-
63	9009255-00	LABEL	1	1	1	1	1	1	1	1
64	3614833	LABEL, WARNING	-	-	-	-	1	1	1	1

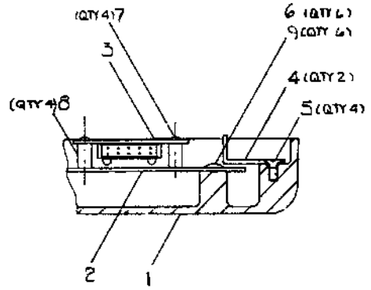
TITLE: POWER SUPPLY ASSY (H777) — ASSY NO. E-UA-H777-0-0 — SIZE A — CODE PL — NUMBER H777-0-0 — REV M — ECO NO
SHEET 3 OF 3 — DIST

DEC FORM DEC 16 (325)-1031-5870
OPA 110

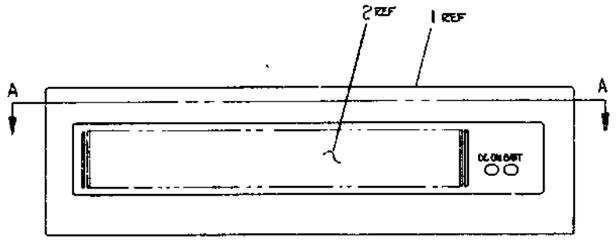
NOTES:
1. TO SELECT STAND BY/MODE, ON MODE OR OFF MODE SEE D-CS-5411501-0-1.



SECTION A-A



DETAIL 'A'
SCALE 1/1



6	SCREW, PAN HD. PHIL #8-32 x .31 LG	9004036-1	9
4	SPACER, .25 O.D. x 6-32 x .44 LG	9004835	8
4	SCREW, PAN HD. PHIL 6-32 x .19 LG	9008020-1	7
6	WASHER, INT. TOOTH #8	9006634	6
4	SCR FLAT HD PHIL #8-32 x .25	9006035-02	5
2	BRACKET SUPPORT FILTER	CMD-7414962-1-0	4
1	CONT. EXP. BOX (BA11-L)	8-IA-5411501-0-0	3
1	PANEL, EXPANDER BOX	8-IA-7013921-0-0	2
1	BEZEL	EXP-7416747-0-0	1
	DESCRIPTION	CMD PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'
SURFACE QUALITY
MICROINCHES

CLASS OF ACCURACY
ECHNICHED
DECIMAL ☐ PREFERRED ☐

NOMINAL DIMENSION RANGE (INCHES)

OVER	0 TO 6	OVER 6 TO 12	OVER 12 TO 48	OVER 48 TO 120	OVER 120 TO 365
ECHNICHED	±.005	±.010	±.015	±.020	±.030
DECIMAL	±.005	±.010	±.015	±.020	±.030
PREFERRED	±.010	±.015	±.020	±.030	±.060

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DRN
CHK'D
ENG
PROJ. ENG
PROD.

NEXT HIGHER ASSY.

MATERIAL: SEE PARTS LIST
FINISH
SCALE 1/2
SHEET 1 OF 1

FIRST USED ON 1104

digital

TITLE: CONSOLE ASSY EXPANDER BOX

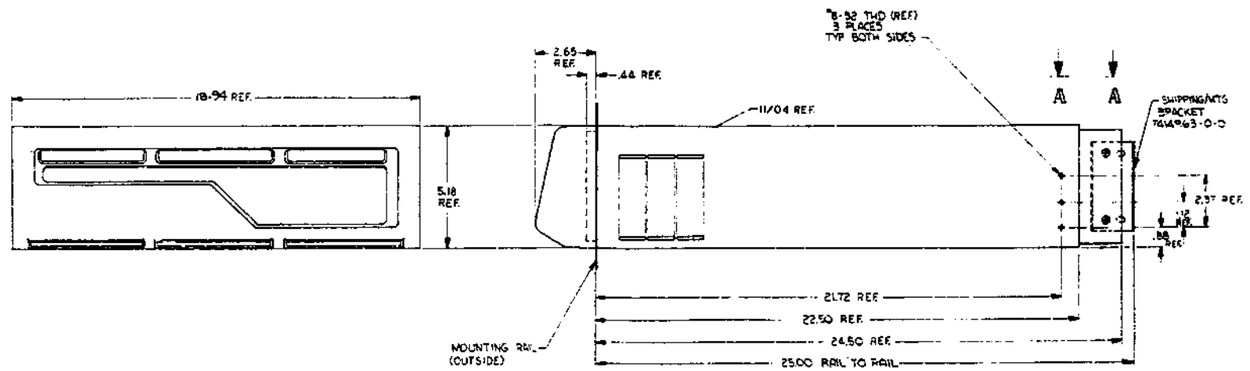
SIZE D | CODE AD | NUMBER 7012540-0-0 | REV. A

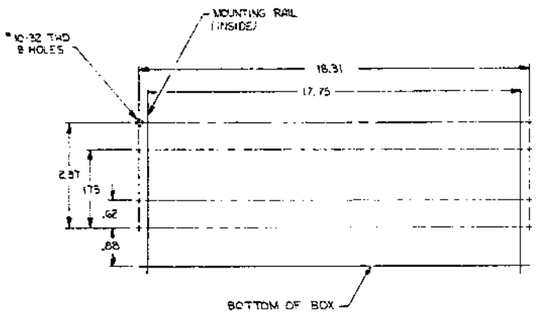
DIST.

REVISIONS			
ECO	Customer No.	DESCRIPTION	REV.
ECO-1410-0-00001			A
PTO#01550			

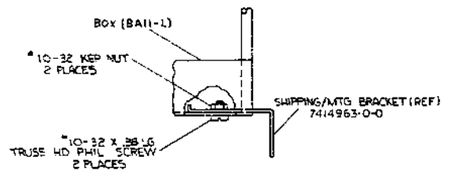
NOTES:

1. SHOWN IN MTG BRACKET POSITION, ALSO SHOWN IN METRIC OF BKT IN MTG POSITION. F SHIPPING POSITION.
2. BECAUSE OF U.L. REQUIREMENTS THE REAR FAN TRAY PIGTAIL SUPPLY MUST BE COVERED. THE GUARD SHOWN IS TO BE INSTALLED ON UNITS THAT DON'T HAVE THE NEW FAN SUPPLY WITH SHIELD ENDS. THERE SHOULD BE APPROX. 500 UNITS THAT WILL REQUIRE THIS RETROFIT.

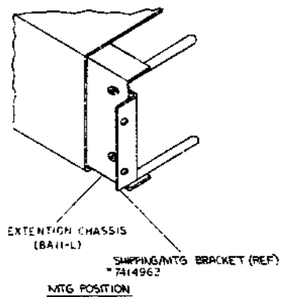




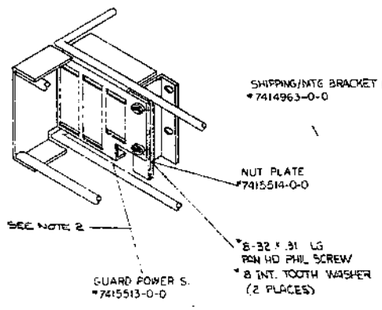
HOLE PATTERN REQ'D

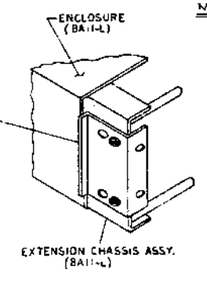


VIEW A-A
NO SCALE
SEE NOTE 1



MTG POSITION





SHIPPING POSITION

QUANTITY & VARIATIONS	DESCRIPTION	DRAWING NO.	ITEM NO.
	TITLE: 11/04 INSTALLATION KIT		
	SIZE: E	CODE IDENT NO: 80009	DRAWING NUMBER: 70-2598-0-0
	SCALE: NO SCALE	SHEET 1 OF 1	REV.

121

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

~~CUSTOMER PRINT SET INDEX~~

SEQUENCE

SEQUENCE

~~THIS IS PRINT SET~~

NOTE:
FOR FIELD MAINTENANCE
PRINT SET REFER TO
B-TC-BA11-L-1

UNIT VARIATIONS

VAR	TITLE	PRINT SET
BA11-LA	5.25 BOX, H777-AA P.S. 115V	
BA11-LB	5.25 BOX, H777-AB P.S. 230V	
BA11-LC	5.25 BOX, H777-BA P. S. 115V	
BA11-LD	5.25 BOX, H777-BB P. S. 230V	
BA11-LE	5.25 EXPANDER BOX, H777-CA P. S. 115V	
BA11-LF	5.25 EXPANDER BOX, H777-CB P. S. 230V	
BA11-LH	5.25 EXPANDER BOX, H777-DA P. S. 115V	
BA11-LJ	5.25 EXPANDER BOX, H777-DB P. S. 230V	
BA11-LK	5.25 BOX & H777CA 115V CORE & MOS	
BA11-LL	5.25 BOX & H777CB 230V CORE & MOS	
BA11-LM	5.25 BOX & H777DA 115V MOS ONLY	
BA11-LN	5 25 BOX & H777DB 230V MOS ONLY	

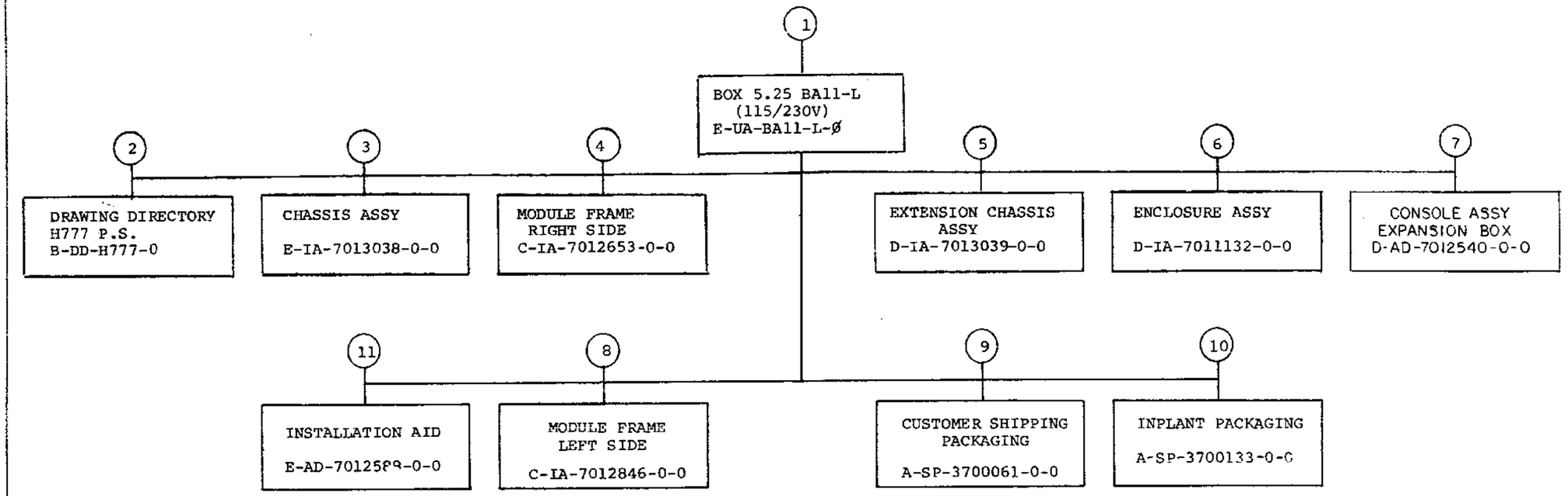
REVISIONS		
DATE	CHG. NO.	REV
4-76	BA11-L-4	A
10-76	BA11-L-6	B
1-77	BA11-L-7	C
3-77	BA11-L-8	D
4-77	BA11-L-9	E
5-77	BA11-L-10	F
7-77	BA11-L-11	H

USED ON OPTION/MODEL
11/Ø4
11/34

SHEET 1 OF 4

DRN. G. MARINI	DATE 9/3/75	TITLE: DRAWING DIRECTORY BA11-L
CHK'D. D. HEALY	DATE 9/30/75	
PROJ ENG. R Bonny	DATE 10-22-75	
PROD. R K Peterson	DATE 10/22/75	SIZE B · CODE DD · NUMBER BA11-L · REV H
~~FIELD SERVICE~~	~~DATE~~	DIST

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY BA11-L	SHEET 2 OF 4	B	DD	BA11-L	H

DRB 107
DEC 16-(325)-1062-3-NS71

ELECTRICAL (SECTION 1)

CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		1	E-UA-BA11-L-Ø		1	BOX 5.25 BA11-L 115/230V	
			A-PL-BA11-L-Ø		3	BOX 5.25 BA11-L 115/230V (PL)	
			D-UA-BC11A-10-0		1	UNIBUS CABLE 10 FT	
			B-CS-M919-0-1		1	BUS CONNECTOR M919	
			B-CS-M929-0-1		1	BUS CONNECTOR M929	
		2	B-DD-H777-B		4	DRAWING DIRECTORY H777	
		7	D-AD-7012540-0-0		1	CONSOLE ASSY, EXPANSION BOX	
			D-CS-5411501-0-0		1	BA11-L EXP. BOX CONTROL	

MECHANICAL (SECTION 2)

CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		1	E-UA-BA11-L-Ø		1	BOX 5.25 BA11-L (115/230V)	
			B-MD-7413846-0-0		1	BAR, CABLE STRAIN RELIEF	
			C-IA-7011412-0-0		1	CABLE, CHASSIS GND	
			C-MD-7414963-0-0		1	BRKT., SHIPPING AND CAB MOUNT	
			A-PL-BA11-L-Ø		3	BOX 5.25 BA11-L 115/230V (PL)	
			A-DC-5309413-0-0		1	DECAL NFPA	
			A-DC-5309414-0-0		1	DECAL UL	
		2	B-DD-H777-B		4	DRAWING DIRECTORY H777 P.S.	
		3	E-IA-7013038-0-0		1	CHASSIS ASSY	
			C-MD-7414236-0-0		1	FRAME, CHASSIS	
			C-MD-7413855-0-0		1	BRACKET MTG (LH)	
			C-MD-7413852-0-0		1	BRACKET MTG (RH)	
			C-MD-7413853-0-0		1	BRACKET, FRAME	
			C-IA-7414442-0-0		1	BRACKET LOGIC SUPPORT (BOT)	
			C-IA-7414441-0-0		1	BRACKET LOGIC SUPPORT (BOT)	
			C-MD-7413857-0-0		1	BRACKET MAIN SUPPORT	
			C-MD-7413858-0-0		1	BRACKET, SUPPORT	
			B-MD-7414237-0-0		1	ROD CONNECTING CHASSIS	
			B-MD-7413856-0-0		1	BRACKET, FAN MOUNTING	
			B-MD-7414235-0-0		1	SUPPORT DIAGONAL ROD	
			C-MD-7413854-0-0		1	BRACKET POWER SUPPLY SUPPORT	
			B-IA-7414443-0-0		1	CLAMP PLATE CABLE	
			C-MD-7417221-0-0		1	ROD MODULE RETAINER	
			C-MD-7419019-0-0		1	BRACKET, MODULE FRAME STIF.	
		4	C-IA-7012653-0-0		1	MODULE FRAME RIGHT HAND	
			C-MD-7414084-0-0		1	BRACKET EJECTOR (MODULE FRAME)	
			C-MD-7414082-0-0		1	BRACKET BACKPLANE (MODULE FRAME)	
			C-MD-7416516-0-0			ROD, MODULE FRAME	
			C-MD-7416517-0-0			BRACKET, CARD GUIDE	

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

TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY BA11-L	SHEET 3 OF 4	B	DD	BA11-L	H

DRB 108

digital EN-01062-2B-16-R972-(325)

MECHANICAL (SECTION 2)

CUSTOMER PRINT SET	SET	FIND NO	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. FILE DATE
		5	D-IA-7013039-0-0		1	EXTENSION CHASSIS ASSY	
			B-MD-7414086-0-0		1	ROD EXTENSION FRAME	
			C-MD-7417220-0-0			PLATE END RIGHT HAND	
			C-MD-7417239-0-0			PLATE END LEFT HAND	
		6	D-IA-7011132-0-0		1	ENCLOSURE ASSY	
			D-IA-7013868-0-0		1	ENCLOSURE BOTTOM	
			D-MD-7413869-0-0		1	ENCLOSURE TOP	
		7	D-AD-7412540-0-0		1	CONSOLE ASSY, EXPANSION BOX	
		8	C-IA-7012846-0-0			MODULE FRAME LEFT SIDE	
			C-MD-7414084-0-0			BRKT. EJECTOR L.H.	
			C-MD-7416517-0-0			BRKT. CARD GUIDE	
			C-MD-7414082-0-0			BRKT. BACKPLANE L.H.	
			C-MD-7416516-0-0			ROD	
		9	A-SP-3700061-0-0			PACKAGING INSTRUCTIONS CUST.	
			A-PS-9905647-0-0			FULL-TELESCOPE CAP	
			A-PS-9905648-0-0			FOAM PAD	
			A-PS-9905646-0-0			FOAM WITH CORRUGATED SIDEWALL ASSEMBLY	
			A-PS-9905734-0-0			STRAPPING (STEEL OR PLASTIC)	

MECHANICAL (SECTION 2)

CUSTOMER PRINT SET	SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. FILE DATE
		10	A-SP-3700133-0-0			PACKAGING IN-PLANT	
			A-PS-9905271-0-0			LAMINATED BUILDUPS SADDLE	
			A-PS-9905184-0-0			BEZEL PROTECTOR	
			A-PS-9905418-0-0			REGULAR SLOTTED CARTON	
			A-PS-9905129-7			POLY BAG	
			A-PS-9905729-0-0			3 IN. WIDE GLASFLEX TAPE	
		11	E-AD-7012588-0-0			INSTALLATION AID	

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
DRAWING DIRECTORY BA11-L	SHEET 4 OF 4	B	DD	BA11-L	H

DRB 108

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY [signature] DATE 7/9/74	CHECKED DATE	SECTION
ENG DATE	PROD DATE	ISSUED SECT.

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			BAIIL-LE	BAIIL-LF	BAIIL-LH	BAIIL-LJ		ALL OTHER	VARIATIONS GET ONLY ITEMS 1+2					
1	EK-BAIIL-MM-PRE	MAINTANCE MANUL	1	1	1	1		1						
2	MP00018	PRINT SET BAII-L	1	1	1	1		1						
3	D-UA-BC11A-10-0	CABLE UNIBUS 10FT	1	1	1	1								

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
SHIPPING LIST	E-UA-BAII-L-0	A	PL	BAII-L-4		
	SHEET 1 OF 1	DIST.				

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

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

FIELD MAINT. PRINT SET H777-0	B-TC-H777-0-2
POWER SUPPLY H777-0 SH2	E-UA-H777-0-0
POWER SUPPLY H777-0 (PL)	A-PL-H777-0-0
+5V REGULATOR ASSY.	D-AD-7012909-0-0
+5V REG. ASSY. (PL)	A-PL-7012909
BOARD, POWER DISTRIBUTION H777	D-CS-5411586-0-1
H777 +5V REGULATOR	D-CS-5412667-0-1
AC INPUT ASSY	D-AD-7012910-0-0
AC INPUT ASSY (PL)	A-PL-7012910-0-0
MOS REGULATOR H777	D-CS-5411601-0-1
CORE REGULATOR H777	D-CS-5411599-0-1

UNIT VARIATIONS COVERED BY THIS PRINT SET
H777-CA (CORE/MOS)
H777-CB (CORE/MOS)
H777-DA (MOS ONLY)
H777-DB (MOS ONLY)

H777-0 VOL.2

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MP00309

REVISIONS	DATE	CHG. NO.	REV.
	JAN-77	H777-2	1
	ORIGINATED		
	3-76	H777-5	E

USED ON OPTION/MODEL	
BA11-LA	BA11-LK
BA11-LB	BA11-LL
BA11-LC	BA11-LM
BA11-LD	BA11-LN
BA11-LE	
BA11-LF	
BA11-LH	
BA11-LJ	

SHEET 1 OF 1

DRN.	W Fisher	DATE 12 Jan 77
CHK'D	KIT	DATE 19 JAN 77
PROJ. ENG.	[signature]	DATE 25 JAN 77
FIELD SERV.	[signature]	DATE 27-Jan '77

digital

TITLE: FIELD MAINTENANCE PRINT SET H777-0

SIZE	CODE	NUMBER	REV.
B	TC	H777-0-2	1
DIST.			

EN-01124-16-N676-(227)

DRB 124

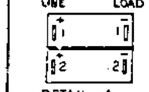
WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	FROM ITEM	TO CONNECTION	TO WITH	REMARKS
33	14	BLU	ITEM 35	SLEEV	¾	EMI LINE - 1	—	AC LINE CORD
32	14	BRN	ITEM 35	SLEEV	¾	EMI LINE - 2	—	AC LINE CORD
34	14	GRN/YEL	ITEM 35	SLEEV	3½	AC GND/CHASSIS	—	AC LINE CORD
4	16	BLU	T1-5	—	8	J1-7 (BD2)	—	SEC VOLTAGE
09	TRPL	BUNDLE	T1-6	—	8	J1-6 (BD2)	—	
3	TWN	BLU	T1-7	—	8	J1-8 (BD2)	—	
3	18	GRY	—	—	8	J1-4 (301)	—	TO RELAY COIL
4	TWP	BLK	—	—	8	J1-5 (301)	—	
3	18	WHT	—	—	4	FAN-1	—	POWER SUPPLY FAN POWER
4	TWP	BLK	—	—	4	FAN-2	—	
28	14	GRN/YEL	GND CHASSIS #2	6	—	—	—	CONSOLE GND
27	14	GRN/YEL	GND CHASSIS #1	6	—	—	—	CHASSIS GND
	14	BLK	ITEM # 29	—	8	J1-3 (BD2)	—	FROM CORE REG. (H777-CA H777-CB ONLY)
	14	ORN	ITEM # 29	—	8	J1-2 (302)	—	FROM CORE REG.
	14	BRN	ITEM # 29	—	8	J1-1 (302)	—	FROM CORE REG.
42	14 TWP	BRN	EMI-2 LOAD	41		CB1-2 LINE	41	
		BLU	EMI-1 LOAD	41		CB1-1 LINE	41	

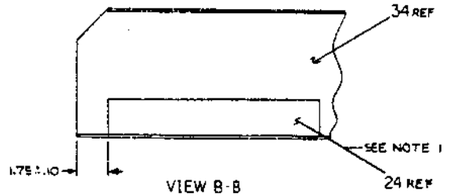
LEGEND

PART NO	VARIATION
H777-DA	P.S. MOS ONLY 115V
H777-DB	P.S. MOS ONLY 230V
H777-CA	P.S. CORE/MOS 115V
H777-CB	P.S. CORE/MOS 230V

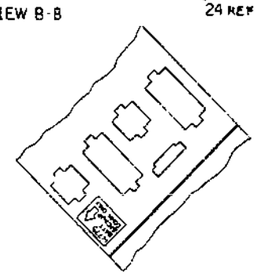
CB1



DETAIL-A
WIRING SIDE OF CKT BREAKER PART OF ITEM #10

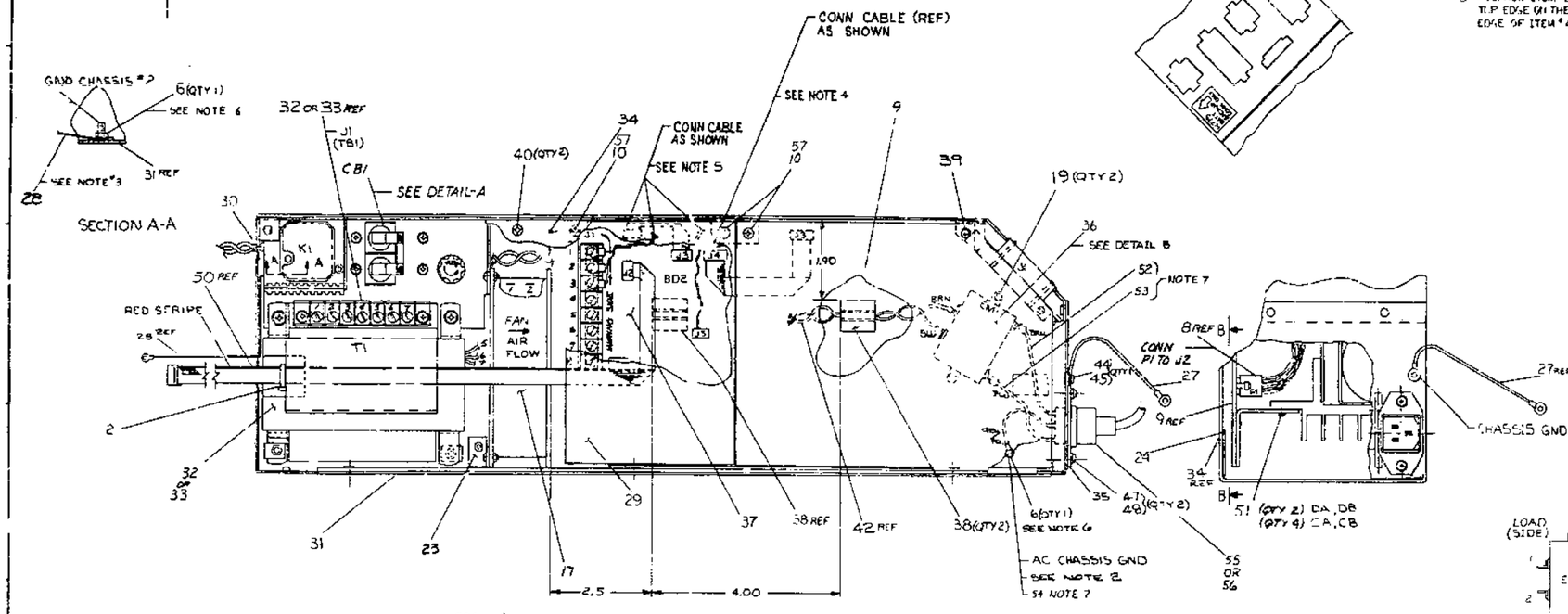


VIEW B-B



NOTES:

1. APPLY SELF STICK MS SHEET (ITEM #24) TO UNDER SIDE OF POWER SUPPLY COVER IN AREA OF HEAT SINKS (CORE & MOS REGS).
2. APPLY SELF STICK ITEM 26 BESIDE THIS GND STUD.
3. ITEM 28 IS A GND CABLE TO GND THE FRONT PANEL CASTINGS FOR MOS AND CORE REGULATORS.
4. CABLE PART OF ITEM #9.
5. CABLE & WIRES ARE PART OF ITEM #20.
6. ITEM #6 (METRIC NUT M4) CAN BE USED AS A REPLACEMENT IN FIELD IF NECESSARY.
7. INSTALL ITEM 41 OVER SOLDER ENDS PRIOR TO SOLDERING
8. POSITION ITEM #24 PARALLEL WITH, AND THE TOP EDGE ON THE SAME PLANE AS, THE TOP EDGE OF ITEM #43.



CAUTION

UNIT ASSEMBLY FOR OPTIONS: CA, CB, DA, AND DB ONLY.

SEE SHEET 1 FOR OPTIONS AA, AB, BA, AND BB.

OFF SHEET PARTS LIST SHEET A-B H777-0-0

QUANTITY & VARIATION	PART NO	DESCRIPTION

NEXT ASSY USED ON: BA1L

TITLE: POWER SUPPLY ASSY (H777)

SIZE: B | CODE: 04 | NUMBER: H777-0-0 | REV: M

128

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY _____ CHECKED D. HEALY SECTION 1
DATE _____ DATE 29 JUL 76
ENG R Barry DATE 26 Aug 76 PROD RB King DATE 26 Aug 76 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	H777-AA	H777-AB	H777-BA	H777-BB	H777-CA	H777-CB	H777-DA	H777-DB
1	D-IA-7011248-0-0	CHASSIS ASSY P.S.	1	1	1	1	-	-	-	-
2	9007031-05	TIE WRAP	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
3	D-AD-7011075-0-0	A/C INPUT ASSY (120V)	1	-	1	-	-	-	-	-
4	D-AD-7011075-1-0	A/C INPUT ASSY (230V)	-	1	-	1	-	-	-	-
5	9007035	GROMMET CAT.	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
6	9006563	NUT, KEPS #8 - 32	2	2	2	2	2	2	2	2
7	E-MD-7413825-0-0	COVER, POWER SUPPLY	1	1	1	1	-	-	-	-
8	D-AD-7011073-0-0	+5V REGULATOR ASSY	1	1	1	1	-	-	-	-
9	D-CS-5411601-0-1	MOS. REG. H777	1	1	1	1	1	1	1	1
10	9006021-01	SCR. PHL HD PAN #6 - 32 x .31	4	4	2	2	3	3	1	1
11	9008509	STRAIN RELIEF	1	1	1	1	-	-	-	-
12	D-IA-7012320-0	POWER CORD (115V)	1	-	1	-	-	-	-	-
13	D-IA-7012320-1	POWER CORD (230V)	-	1	-	1	-	-	-	-
14	9006022-1	SCR. PHIL HD PAN #6-32 x .38	6	6	4	4	-	-	-	-
15	9006633	WASHER, INT. TOOTH #6	10	10	6	6	3	3	1	1
16	9009771-02	CLAMP	2	2	2	2	-	-	-	-
17	1209403-01	FAN, BOXER 115V, 50/60 HZ	1	1	1	1	1	1	1	1
18	9006020-2	SCR, PHIL FLAT HD #6 - 32 x .25	7	7	7	7	-	-	-	-
19	9008185	NUT, KEPS #6 - 32	-	-	-	-	2	2	2	2
~~20~~	~~9006023-1~~	~~SCR, PHIL HD PAN #6 - 32 .44~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~
21	9006074-3	SCR., PHIL TRUSS #10 - 32 x .62	4	4	4	4	4	4	4	4
22	9007651	WASHER, EXT. TOOTH #10	4	4	4	4	4	4	4	4

TITLE: POWER SUPPLY ASSY (H777) | ASSY NO. E-UA-H777-0-0 | SHEET 1 OF 3 | SIZE A | CODE PL | NUMBER H777-0-0 | REV M | ECO NO 1-777-100005 | DIST.

DEC FORM DEC 16 (325)-1031-NS70
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY _____ CHECKED D. HEALY SECTION 1
DATE _____ DATE 29 JUL 76
ENG R. Barry 26 Aug 76 PROD RB King DATE 26 Aug 76 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	H777-AA	H777-AB	H777-BA	H777-BB	H777-CA	H777-CB	H777-DA	H777-DB
45	9006634	WASHER INT., TOOTH LOCK #8	-	-	-	-	1	1	1	1
~~46~~	~~D-IA-70~~	~~AC POWER CORD ASSEMBLY 230V~~								
47	9006011-1	SCR PH HD PAN #4 - 40 x .38	-	-	-	-	2	2	2	2
48	9006632	WASHER INT. TOOTH LOCK #4	-	-	-	-	2	2	2	2
49	9008020-02	SCR. PHIL FLAT HD. #6-32 x .18	1	1	1	1	-	-	-	-
50	7011411-1L	CABLE, CONSOLE CONTROL	-	-	-	-	REF	REF	REF	REF
51	9006022-03	SCR. PHIL. TRUSS #6-32 x .38	-	-	-	-	4	4	2	2
52	C-IA-7013938-1	CABLE JUMPER	-	-	-	-	1	1	1	1
53	C-IA-7013938-0	CABLE JUMPER	-	-	-	-	1	1	1	1
54	C-IA-7013939-0	CABLE GROUNDING	-	-	-	-	1	1	1	1
55	C-IA-7420323-00	AC POWER CORD W/LABLE (120V)	-	-	-	-	1	-	1	-
56	C-IA-7420323-01	AC POWER CORD W/LABLE (240V)	-	-	-	-	-	1	-	1
57	9006656	WASHER, FLAT	4	4	2	2	3	3	1	1
58	9006025-01	SCR, PAN PHIL 6-32 x 5/8	3	3	3	3	3	3	3	3
59	9006560	NUT, KEP 6-32	3	3	3	3	3	3	3	3
60	7011412-3C	CABLE ASSY	1	1	1	1	-	-	-	-
61	9006561	NUT, HEX 8-32	1	1	1	1	-	-	-	-
62	7011414-1F	CABLE, CONSOLE CONTROL	REF	REF	REF	REF	-	-	-	-
63	9009255-00	LABEL	1	1	1	1	1	1	1	1
64	3614833	LABEL, WARNING	-	-	-	-	1	1	1	1

TITLE: POWER SUPPLY ASSY (H777) | ASSY NO. E-UA-H777-0-0 | SHEET 3 OF 3 | SIZE A | CODE PL | NUMBER H777-0-0 | REV M | DIST.

DEC FORM DEC 16 (325) 1031 NS70
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J Rela DATE 19 Dec 76
ENG R. Barry DATE 26 Aug 76
CHECKED D. HEALY DATE 29 JUL 76 SECTION 1
PROD RB King DATE 26 Aug 76 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	H777-AA	H777-AB	H777-BA	H777-BB	H777-CA	H777-CB	H777-DA	H777-DB
23	C-IA-7413773-0-0	BRACKET, FAN	2	2	2	2	2	2	2	2
24	1210984-05	INS SHEET 9.0 ± .1 X 1.5 ± .1	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
25	B-DC-7414744-0-0	DECAL H777 P.S.	1	1	1	1	-	-	-	-
26	A-PS-3612680-0-0	DECAL, CHASSIS GROUND	2	2	2	2	2	2	2	2
27	C-IA-7011412-0F	CABLE, CHASSIS GROUND	1	1	1	1	1	1	1	1
28	C-IA-7011412-1H	CABLE, CONSOLE GROUND	-	-	-	-	1	1	1	1
29	D-CS-5411599-0-1	CORE REG. H777	1	1	-	-	1	1	-	-
30	9007015	GROMMET	-	-	-	-	1	1	1	1
31	D-IA-7417407-0-0	CHASSIS P.S.	-	-	-	-	1	1	1	1
32	D-AD-7012910-0-0	A/C INPUT ASSY (120V)	-	-	-	-	1	-	1	-
33	D-AD-7012910-1-0	A/C INPUT ASSY (230V)	-	-	-	-	-	1	-	1
34	E-IA-7417018-0-0	COVER, POWER SUPPLY	-	-	-	-	1	1	1	1
35	A-PS-1213773-0-0	AC RECEPTACLE	-	-	-	-	1	1	1	1
36	A-PS-1212877-0-0	FILTER	-	-	-	-	1	1	1	1
37	D-AD-7012909-0-0	+5V REGULATOR ASSY	-	-	-	-	1	1	1	1
38	9009771-1-0	CABLE CLAMP	-	-	-	-	2	2	2	2
39	9006024-01	SCREW, PAN #6 - 32 x .50	-	-	-	-	1	1	1	1
40	9008404-2	SCR PHL FLAT HD #6 - 32 x .31	4	4	4	4	11	11	11	11
41	9107253-02	TUBING, SHRINK (ORN)	-	-	-	-	A/R	A/R	A/R	A/R
42	C-IA-7417268-0-0	KIT2 A.C. CONN. HARNESS	-	-	-	-	REF	REF	REF	REF
43	B-DC-7414744-1-0	DECAL H777 P.S.	-	-	-	-	1	1	1	1
44	9006037-1	SCR, PHIL PAN HD #8 - 32 x .38	-	-	-	-	1	1	1	1

TITLE: POWER SUPPLY ASSY (H777) | ASSY NO. E-UA-H777-0-0 | SHEET 2 OF 3 | SIZE A | CODE PL | NUMBER H777-0-0 | REV M | ECO NO | DIST.

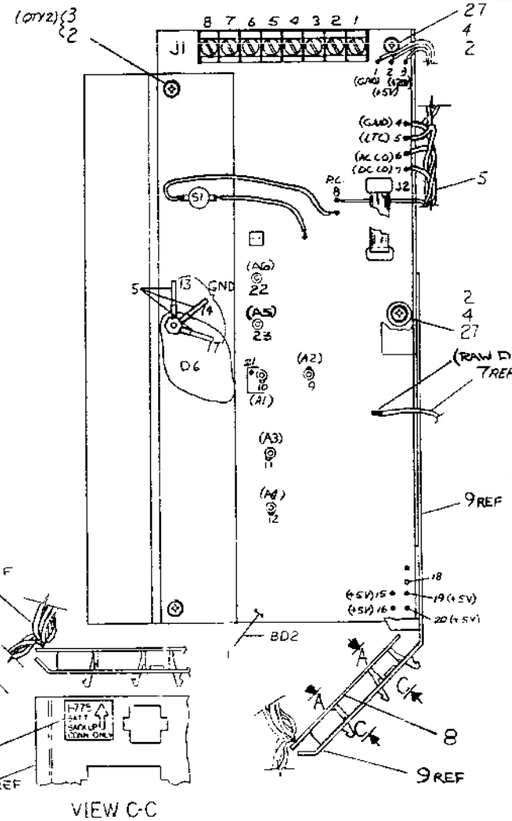
DEC FORM DEC 16 (325) 1031 NS70
DRA 110

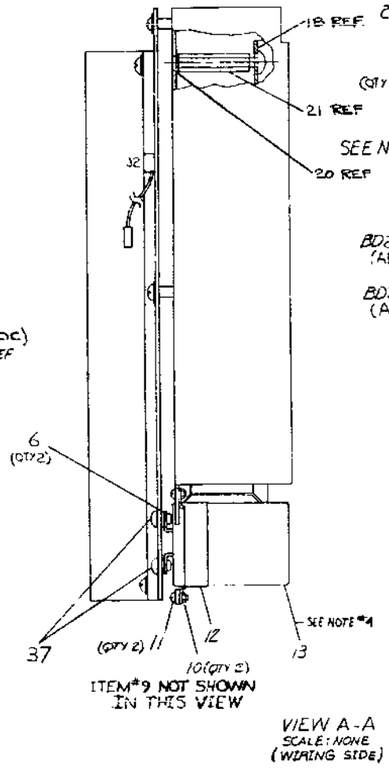
WIRE CHART

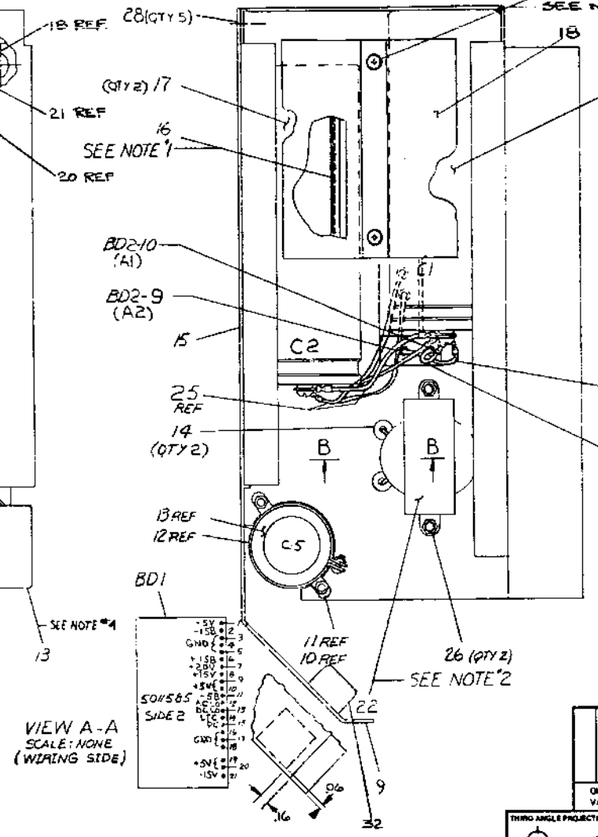
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
5	20	WHT	1	BD2-8	18	BD1-15
	14	BRN	2	2	9	1
	14	BLK	3	1	12	5
	14	ORN	4	3	13	7
	20	BRN	5	5	19	14
	20	BLK	6	4	20	16
	20	YEL	7	6	16	12
	20	VIO	8	7	17	13
	14	BLK	30	BD2-17	10	BD1-3
5	14	BLK	28	BD2-13	11	BD1-4
		RED	29	15	14	9
		RED	26	19	15	10
		BLK	25	14	21	17
		RED	24	16	22	18
7	14	RED	27	BD2-20	23	BD1-20
	18	BLU	1	BD1-21	* 11	—
	14	BLK	2	BD1-18	* 8	—
	18	RED	3	BD1-11	* 14	—
30	14	RED	—	BD2-22	—	C2 (+)
7	18	GRY	4	BD1-8	* 9	—
	18	WHT	5	BD1-6	* 10	—
	14	RED	6	BD2-21	* 13	—
	18	GRN	7	BD1-2	12	—
2:	14	GRN	—	C1(+)	—	C2(+)
2.5	14	GRN	—	C1(-)	—	C2(-)
23	14	RED	—	BD2-10	—	C1(+)
24	14	BLK	—	BD2-9	—	C1(-)
22	—	BARE	—	—	—	BD2-11
32	—	BARE	—	—	—	BD2-12
31	14	BLK	—	BD2-23	—	C2(-)

NOTES:

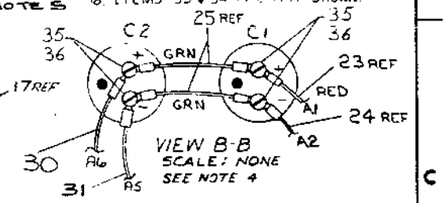
1. USE ITEM *16 (GROMMET) TO COVER RAW METAL EDGES UNDER CAPACITORS.
2. LEADS FROM ITEMS *22, 23 & 24 ARE TO BE CUT FLUSH WITH TOP OF CLAMPS ON ITEM *1, A1, A2, A3 & A4
3. * ASTERISK INDICATES THAT THESE CONN. ALREADY HAVE BEEN MADE ON PLUG P1 ON HARNESS D-IA-7011560-0-0 THEY ARE SHOW FOR REF ONLY.
4. ITEMS *17 & *18 ARE TO HAVE THEIR ELECTRICAL CONNECTIONS TORQUED TO 12 IN-LBS (-0, +12) IN-LBS.
5. BRING SCREW TO A NO SLACK POSITION, THEN TIGHTEN WITH 1/2 TO 3/4 TURN ONLY.
6. ITEMS *33 & *34 ARE NOT SHOWN.







VIEW A-A
SCALE: NONE
(WIRING SIDE)



OFF SHEET PARTS LIST
SEE A-PL-7012909-0-0

1	BUMPER	9009624	32
1	JUMPER, BLK	B-IA-7011802-0-0	31
1	JUMPER, RED	B-IA-7011801-0-0	30
1	DECAL, BATT BACKUP	A-DC-7416911-0-0	29
5	SCR, FLAT HD *6-32 x .25	9006020-2	28
2	WASHER NYLON *8	9006108	27
2	NUT KEPS *8-32	9006568	26
2	JUMPER (GRN)	B-IA-7011800-0-0	25
1	JUMPER (BLK)	B-IA-7011802-0-0	24
1	JUMPER (RED)	B-IA-7011801-0-0	23
1	CHOKE	16/3584	22
2	SPACER HEX *8-32 x 1.25	9009603	21
2	WASHER INT TOOTH LOCK *8	9006634	20
2	SCR PHIL HD TRUSS *8-32 x .38L	9009836-1	19
1	CLAMP CAPACITOR	C-MD-7417465-0-0	18
2	CAPACITOR .22 MFD 50V	1010702	17
4/8	GROMMET CATERPILLAR	9007035	16
1	BRACKET CAPACITOR	E-IA-7413743-1-0	15
2	GROMMET RUBBER	9007071	14
1	CAPACITOR 3900 UF/6.0V (DSF)	7012740-00	13
1	CLAMP CAPACITOR	9009032	12
2	SCR PHIL PAN HD *6-32 X .25L	9006020-1	11
2	NUT KEPS *6-32	9008185	10
1	PLATE, CAPACITOR CONN SIDE	D-IA-7417417-0-0	9
1	BOARD, PWR DIST'R, H777	DCS-5811584-0-1	8
1	HARNESS BD NOS REG PWR DST	D-IA-7011560-2-0	7
2	WASH .375 O.D. X .137 ID X .036	9006660	6
1	HARNESS H777 +5V REG	D-IA-7011415-0-0	5
2	SCR PHIL HD PAN *6-32 X .31L	9006021-1	4
2	SCR PHIL HD PAN *6-32 X .50L	9006024-1	3
2	WASHER, INT TOOTH LOCK *6	9006633	2
1	H777+5V REG (REV E UP)	DCS-5811584-0-1	1

DESCRIPTION	DWG. PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	LOSS OF ACCUTOUCH	NOMINAL DIMENSION RANGE INCHES					
1° 30'		OVER	0	0.2	1.0	4.0	17.0
SURFACE QUALITY	CHECK ONES	TO	0.2	1.0	4.0	17.0	40.0
		OVER	0	1.0	4.0	17.0	40.0
		TO	1.0	4.0	17.0	40.0	85.0
MICROINCHES	MEDIUM		±.001	±.002	±.004	±.008	±.016
	PREFERRED		±.002	±.004	±.008	±.016	±.032

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —

FINISH —

DRAWN — CHK'D — ENG — PROJ. ENG — MFG —

NEXT HIGHER ASSY: D-IA-H777-0-0

SCALE —

SHEET 1 OF 1

FIRST USED ON H777-CE0

digital

TITLE: +5V REG ASSY

SIZE D | CODE AD | NUMBER 7012909-0-0 | REV E

DIST.

REVISIONS				
SYM	CHANGE NO	DATE	BY	APPROVED
E	H777-E-0001-A	15-JUL-77		
	ADDED ITEM 34			
	CHANGED ITEM 33			
	CHANGED ITEM 1			
	CHANGED ITEM 2			
	CHANGED ITEM 3			
	CHANGED ITEM 4			
	CHANGED ITEM 5			
	CHANGED ITEM 6			
	CHANGED ITEM 7			
	CHANGED ITEM 8			
	CHANGED ITEM 9			
	CHANGED ITEM 10			
	CHANGED ITEM 11			
	CHANGED ITEM 12			
	CHANGED ITEM 13			
	CHANGED ITEM 14			
	CHANGED ITEM 15			
	CHANGED ITEM 16			
	CHANGED ITEM 17			
	CHANGED ITEM 18			
	CHANGED ITEM 19			
	CHANGED ITEM 20			
	CHANGED ITEM 21			
	CHANGED ITEM 22			
	CHANGED ITEM 23			
	CHANGED ITEM 24			
	CHANGED ITEM 25			
	CHANGED ITEM 26			
	CHANGED ITEM 27			
	CHANGED ITEM 28			
	CHANGED ITEM 29			
	CHANGED ITEM 30			
	CHANGED ITEM 31			
	CHANGED ITEM 32			
	CHANGED ITEM 33			
	CHANGED ITEM 34			
	E-CO CHECKER			
	E-CO MADE			

130

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY S. ROCHA	CHECKED D. HEALY	SECTION 1
DATE 29 JUL 76	DATE 2 AUG 76	
ENG R. COURTMACHE	PROD R. BARRY	ISSUED SECT. 1
DATE 13 SEP 76	DATE 13 SEP 76	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-CS-5412667-0-1	H777 +5V REG (REV & UP)	1
2	9006633	WASHER, INT TOOTH LOCK #6	4
3	9006025-01	SCR PHIL HD PAN #6-32 x .62L	2
4	9006023-01	SCR PHIL HD PAN #6-32 x .44L	2
5	D-IA-7011415-0-0	HARNESS H777 +5V REG	1
6	9006660	WASH, .375 O.D. x .137 I.D. x .036	2
7	D-IA-7011560-0-0	HARNESS BD MOS REG PWR DIST	1
8	D-CS-5411586-0-1	BOARD, PWR DISTR. H777	1
9	D-IA-7417017-0-0	PLATE, CAPACITOR CONN SIDE	1
10	9008185	NUT KEPS #6-32	2
11	9006020-1	SCR PHIL PAN HD #6-32 x .25L	2
12	9009052	CLAMP CAPACITOR	1
13	1012740-00	CAPACITOR 3900uf 16.0V (65)	1
14	9007017	GROMMET RUBBER	2
15	E-IA-7413743-1-0	BRACKET CAPACITOR	1
16	9007035	GROMMET CATERPILLAR	A/R
17	1010702	CAPACITOR 24Kuf 50V	2
18	C-MD-7417408-0-0	CLAMP CAPACITOR	1
19	9009836-1	SCR PHIL HD TRUSS #8-32 x .38L	2
20	9006634	WASHER INT TOOTH LOCK #8	2
21	9008258	SPACER HEX #8-32 x 1.375	2
22	1612584	CHOKE	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
+5V REG ASSY	D-AD-7012909-0-0	A	PL	7012909-0-0	E	7012909 ML003
	SHEET 1 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

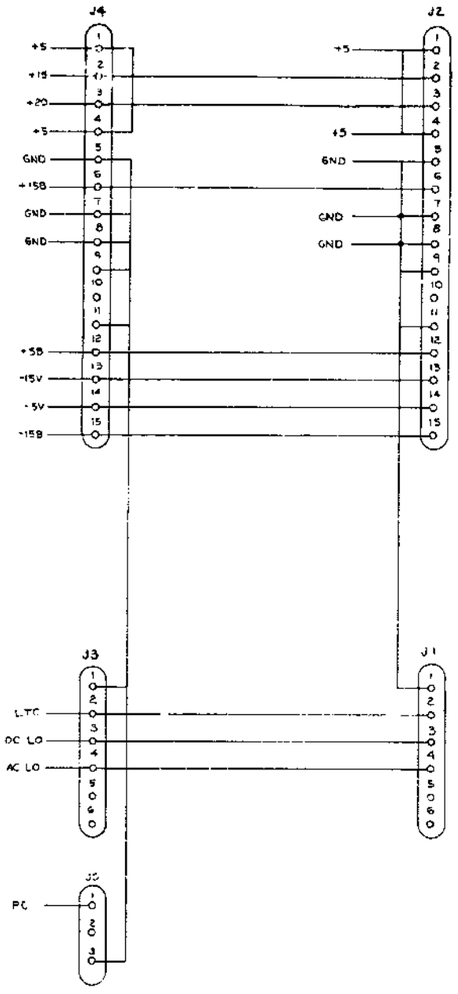
MADE BY S. ROCHA	CHECKED D. HEALY	SECTION 1
DATE 29 JUL 76	DATE 2 AUG 76	
ENG R. COURTMACHE	PROD R. BARRY	ISSUED SECT. 1
DATE 13 SEP 76	DATE 13 SEP 76	

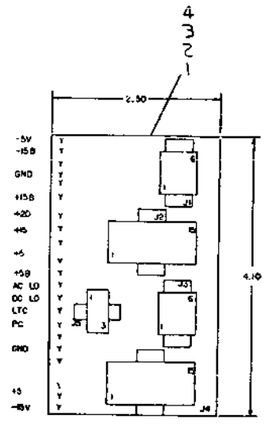
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	B-IA-7011801-0-0	JUMPER (RED)	1
24	B-IA-7011802-0-0	JUMPER (BLK)	1
25	B-IA-7011800-0-0	JUMPER (GRN)	2
26	9006563	NUT KEPS #8-32	2
27	9006707	WASHER NYLON #6	2
28	9000039-07	SCR, FLAT HD #6-32 x .25	5
29	A-DC-7416911-0-0	DECAL, BATT BACKUP	1
30	B-IA-7011801-0-1	JUMPER, RED	1
31	B-IA-7011802-0-1	JUMPER, BLK	1
32	9009624	BUMPER	1
33	9009255-00	LABEL	1
34	9007031	CABLE TIE	2
35	9006071-01	SCR PAN HD #10-32 x .37	4
36	9006636	WASHER LOCK INT .380 OD x .200 ID x .022THK	4
37	9009667	SCR, SEMS, SLOTTED BINDER HD #10-32 x 5/16	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
+5V REG ASSY	D-AD-7012909-0-0	A	PL	7012909-0-0	E	7012909-ML003
	SHEET 2 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 N870

NOTES:





REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411586-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AN-5411586-0-5	2
REF		MODULE ECO HISTORY	B-MH-5411586-0-6	3
1		ETCHED CIRCUIT BOARD	5011585	4
2	J2, J4	CONN., MATE-N-LOCK, 15 PIN HOUSING	1209350-15	5
2	J1 J3	CONN., MATE-N-LOCK, 6 PIN HOUSING	1209350-06	6
45		PIN CONTACT, MATE-N-LOCK	1209456-01	7
1	J5	CONN., MATE-N-LOCK, 3 PIN HOUSING	1209350-03	8

IC TYPE	GND	+ 5V
GND AND 5V ARE USUALLY Pin 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE		

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

FIRST USED ON OPTION MODEL: H974 PWR SUPPLY

ETCH BOARD REV: D

CHANGE NO.	REV

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

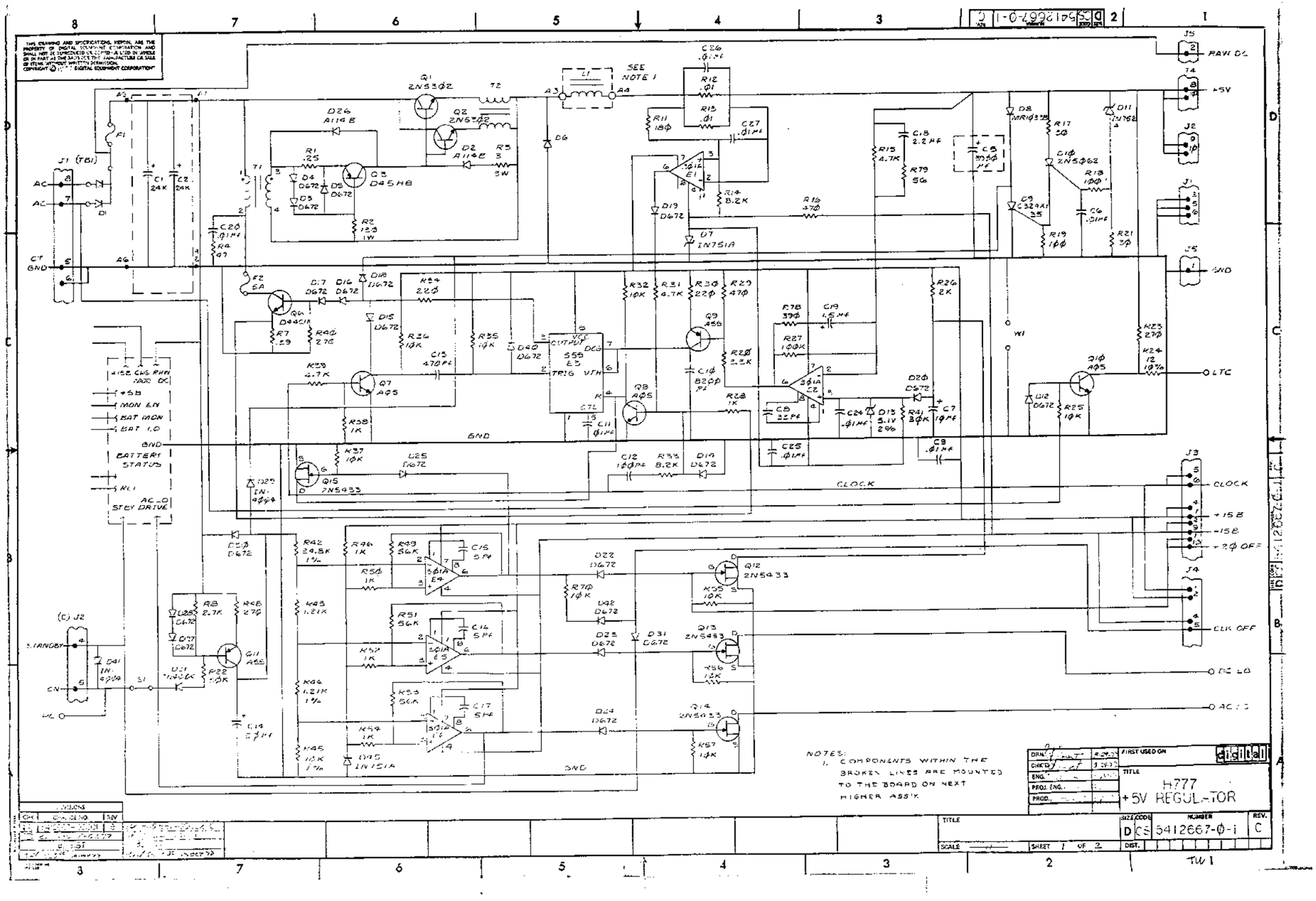
DRAWN 11/7/75
CHK'D 11-23-75
ENGR 12-2-75
PROJ 12-3-75
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION

TITLE: BOARD, POWER DISTRIBUTION H777

SCALE: NONE | SIZE: C | NUMBER: DCS 5411586-0-1 | REV: C | SHEET 1 OF 1 | DIST.

DCS 5411583-0-1


NOTES:
1. COMPONENTS WITHIN THE BROKEN LINES ARE MOUNTED TO THE BOARD ON NEXT HIGHER ASS'Y.
+5V REGULATOR
H777
5412667-0-1
C
D
SCALE
SHEET 1 OF 2
DIST.
FIRST USED ON
digital
+5V
GND
CLOCK
LTC
BATTERY STATUS
STBY DRIVE
+15B
-15B
+24 OFF
CLK OFF
AC LO
AC HI

J4 +5B
MON EN
BAT MON
J2
R61 12K
R62 10K
Q5 A55
R63 10Ø
R75 1K
R64 30K
R65 33ØK
OUTPUT
DCG
YTH
TRIG
555 E7
RB1 4.7K
R73 1K
Q17 AØ5
C21 10ØMF
C22 1MF
R74 1K
Q16 AØ5
R71 82K
R72 1K
D34 DG72
D43 IN4ØØ4
GND
J4 CHS MODE
D35 DG72
R6Ø 4.7K
R68 6.7K
+5V
R82 1K
(C) J2
BOOT ENB L
Q9 2N5433
R67 10K
D38 IN3648
Q19 2N6Ø2B
R66 2.7K
Q18 A55
R69 1K
R85 1K
W2
J3
AC LO DRIVE
J3 +15B
J4 -15B
RAW DC
R76 5.1
Q24 D45HB
D36 DG72
D37 DG72
R77 10K
R80 10K
STBY
J1
D39 DG72
J2
GND
GND

(BATTERY STATUS CRKT'S)

TITLE	H777 +5V REGULATOR				
SIZE	CODE	NUMBER	REV.		
D	CS	5412367-0-1	C		
SCALE		SHEET 2 OF 2	DIST.		

LEGEND

PART NO	VARIATION
7012910-0	120 V
7012910-1	230 V

WIRE CHART

ITEM NO	DESCRIP AWG	DESCRIP COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
22	18	OR/WHT	K1-4	SOLD,31	*TB2-3S	SOLD	5 1/2"L
23	18	BRN/WHT	K1-6	↓	*TB2-4S	SOLD	5"L
24	18	WHT/OR	K1-7	↓	TB2-5H	2S,	9"L
26	18	WHT/GR	K1-9	↓	TB2-6H	2S,	9"L
27	18	GRY	K1-A	—	—	42	13 1/2"L
	TWP	BLK	K1-B	SOLD,31	—		13 1/2"L
46	18	R/OR	G2	SOLD	*TB2-6S	SOLD	6"L
47	18	GR/BL	F1-1	SOLD,31	*TB2-4S	SOLD	3"L
43	18	BRN	CB1(-2) LOAD	28,31	*TB2-6S	SOLD	7 1/2"L
	TWP	BLU	CB1(-1) LOAD	28,31	*TB2-1S	SOLD	7 1/2"L
45	14	BLU	CB1(+1) LINE		NOTE 6	—	17"L
	TWP	BRN	CB1(-2) LINE		NOTE 6	—	17"L
15	18	WHT	*TB2-7S	SOLD	J2-2	30,32	10"L
	TWP	BLK	*TB2-5S	SOLD	J2-1	30,32	9"L
15	18	WHT	*TB2-7S	SOLD	J3-2	30,32	10"L
	TWP	BLK	*TB2-5S	SOLD	J3-1	30,32	15 1/2"L

SEE NOTE 2, SEE DETAIL 'E'

SEE NOTE 2, SEE DETAIL 'C'

ITEM NO	DESCRIP AWG	DESCRIP COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
1	18	BLK	T1	—	TB2-1H	—	—
	TWP	BRN/WHT			TB2-3H	—	—
	18	RED			TB2-2H	—	—
	TWP	RD/WHT	T1		TB2-4H	—	—
40	18	GY/BL	G3	SOLD	F1-2	SOLD,31	4"L

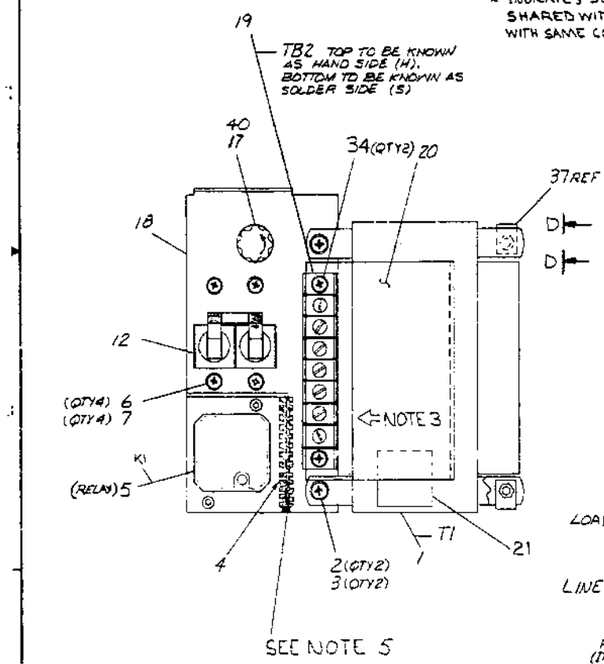
35	18	BLK	TB2-1H	—	TB2-2H	—	120V	7012910-0	120V
36	18	WHT	TB2-3H	—	TB2-4H	—	120V		
35	18	BLK	TB2-2H	—	TB2-3H	—	230V	7012910-1	230V
13	22	BARE	R1-A	—	G3	SOLD,33			
13	22	BARE	R1-B	—	G2	SOLD,33			
48	18	BL/WH	K1-8	SOLD,31	TB2-1S	25	4"L		
49	18	WH/BL	K1-5	SOLD,31	TB2-7H	25	5 1/2"L		

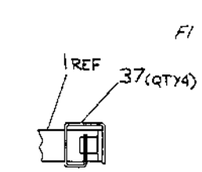
* INDICATES SOLDER CONN. SHARED WITH OTHER CONN. WITH SAME COMMON CONN.

NOTES:

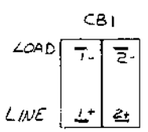
~~1. COVER ITEM 28 WITH ITEMS 31 COVER ENTIRE CONN.~~

2. TWISTED PAIR WIRE TO HAVE A MIN OF 3 TWIST PER FT AS PER WIRE CHART.
3. ALL CONNECTIONS TO TB2 ARE TO BE MADE FROM SIDE INDICATED BY ARROW.
4. USE TIE WRAPS (ITEM 38) AS NEEDED.
5. T1 PRIMARY WIRES TO TB2 MUST BE ROUTED BY ITEM 4
6. NO CONNECTION IS MADE AT THIS ASSY LEVEL REFER TO PRINT E-IIA-H777-0-0

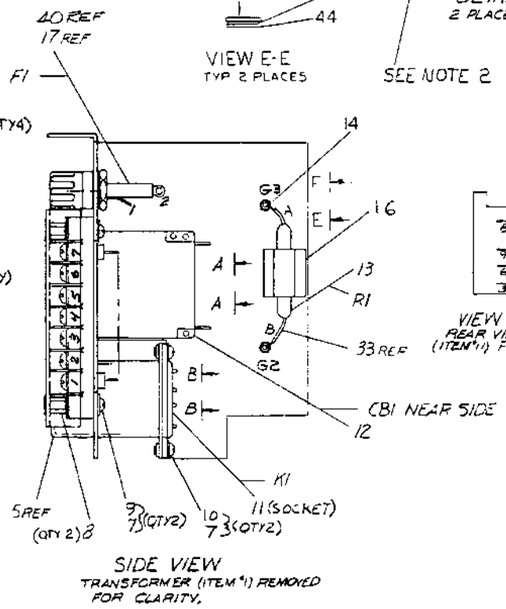




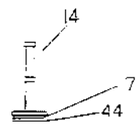
VIEW D-D
TYP-4 PLACES
(BOTTOM FEET ONLY)
SCALE: NONE



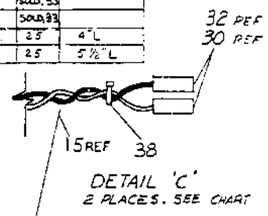
VIEW A-A
REAR VIEW OF CB1 (ITEM 42) FOR WIRING ONLY.



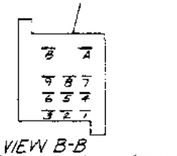
SIDE VIEW
TRANSFORMER (ITEM 1) REMOVED FOR CLARITY.



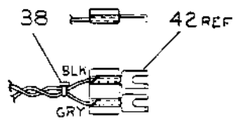
VIEW E-E
TYP 2 PLACES



DETAIL 'C'
2 PLACES. SEE CHART



VIEW B-B
REAR VIEW OF K1 (SOCKET) (ITEM 41) FOR WIRING ONLY.



DETAIL "E"
SEE CHART

OFF SHEET PARTS LIST SEE A-PL-7012910-0-0

REVISIONS			
ORIG.	Consult No.		REV.
A	[illegible]	[illegible]	A
B	[illegible]	[illegible]	B
C	[illegible]	[illegible]	C
D	[illegible]	[illegible]	D
E	[illegible]	[illegible]	E
F	[illegible]	[illegible]	F
G	[illegible]	[illegible]	G
H	[illegible]	[illegible]	H
J	[illegible]	[illegible]	J
K	[illegible]	[illegible]	K
L	[illegible]	[illegible]	L

DESCRIPTION	DWG./PART NO.	ITEM NO.
[illegible]	7012910-0000[illegible]	12
[illegible]	7012910-0000[illegible]	13
[illegible]	7012910-0000[illegible]	14
[illegible]	7012910-0000[illegible]	15
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[illegible]	7012910-0000[illegible]	47
[illegible]	7012910-0000[illegible]	48
[illegible]	7012910-0000[illegible]	49

QUANTITY & VARIATION			
THIRD ANGLE PROJECTION	DRN. [illegible]	FIRST USED ON	
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D [illegible]	H777-C&D	digital
DO NOT SCALE DWG	ENG. [illegible]	TITLE	
MATERIAL --#--	PROJ. ENG. [illegible]	A/C INPUT ASSY (120V/230V)	
FINISH --#--	PROD. [illegible]		
	NEXT HIGHER ASSY.		
	D-IA-H777-0-0	SIZE D CODE AU NUMBER 7012910-0-0 REV. L	
	SCALE		
	SHEET 1 OF 2	DIST.	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	SURFACE QUALITY	MICROINCHES	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: OVER 0 TO 0.12	OVER 0.12 TO 1.2	OVER 1.2 TO 12	OVER 12 TO 120	OVER 120 TO 480
± 30'	✓		MEDIUM	± .008	± .012	± .015	± .024	± .06
			PRECISION	± .002	± .005	± .005	± .01	± .02

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H777 C&D P.S.

BLU
BRN
AC LINE CORD
7012320-0 (115 V)
7012320-1 (230V)
EMI FILTER
1212877
LINE BLUE
LINE BROWN
GRN/YEL
GND STUD #8
H777 CHASSIS
CB1
1210191-0 (5 A)
1210191-1 (3 A)
LOAD BLU
LOAD BRN

WHT/GRN
GRN/WHT
GREY/BLU
G2
R1 10Ω 10W
G3
GREY/BLU
F1 1A SB
GREY/ORN
WHT/BLU
BLU/WHT
WHT/ORN
ORN/WHT
COM
NO
K1 1210683

BLK #18
WHT #18
J12 PWR SUP FAN
BLK #18
WHT #18
J13 LOGIC FAN
BLK #18
GREY #18

12126698-01 REF
J1-5 (TB1) +5V RTN
J1-4 (TB1) (H777)
7012909

T82
(S)
(H)
1
2
3
4
5
6
7
BLK
RED
BLK/WHT
RED/WHT
WHT/GRN
WHT/BLU
WHT/ORN

HN2264-1 T1
7011805 TRANS ASSY
BLU/BLK
BLU
BLU
J1-6 (TB1)
J1-7 (TB1)
J1-3 (TB1)
+5 REG (-777) >012909

H777-C&D P.S.

FIRST USED ON OPTION/MODEL: H777-C&D	QTY.	DESCRIPTION	PART NO. / ITEM NO.
PARTS LIST			

DIMENSIONAL TOLERANCE: DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED
MILLIMETERS: X.X ±0.10; .XX ±0.05; ANGLES ±1°
INCHES: X.X ±.005; .XX ±.002; ANGLES ±0°30'
THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. R. Richa	DATE 29 Jan 76	digital
CHK. D. Healy	DATE 2 Feb 76	
ENG.	DATE 2 Aug 76	
PROJ. ENG. K. Savage	DATE 15 Sep 76	
PROD. ENG. K.K. [illegible]	DATE 15 Sep 76	
NEXT HIGHER ASSY.		
SCALE	SHEET	

TITLE: A/C INPUT ASSY (120V/230V)
SIZE D | CODE AD | NUMBER 7012910-0-0 | REV. L

REVISIONS		
LTR	CHANGE NO.	REV.

DAD 7012910-0-0

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY A. ROCHA | CHECKED D. HEALY | SECTION 1
DATE 19-JULY-76 | DATE 27-JULY-76 |
ENG R. BARRY | PROD R.B. KING | ISSUED SECT. 1
DATE 17-SEPT-76 | DATE 21-SEPT-76 |

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION 7012910-0	7012910-1
1	C-IA-7011805-0-0	TRANSFORMER ASSY	1	1
2	9006037-01	SCR PHIL PAN HD #8 - 32 x .38	2	2
3	9006634	WASHER INT. TOOTH LOCK #8	2	2
4	9007035	GROMMET CATERPILLAR	A/R	A/R
5	1210683-00	RELAY 12V 3P 10A	1	1
6	9006020-01	SCR PHIL HD PAN #6-32 x .25	4	4
7	9006633	WASHER INT. TOOTH LOCK #6	10	10
8	9006842	SPACER HEX #6 - 32 x .31	2	2
9	9007794-01	SCR PHIL HD PAN #6 - 32 x .69	2	2
10	9006021-01	SCR PHIL HD PAN #6 - 32 x .31	2	2
11	1212789	SOCKET, RELAY	1	1
12	1210131-1	CIRCUIT BREAKER, 5A	1	1
13	1300173	RESISTOR, 10 OHM, 10W	1	1
14	9006966	TERMINAL TURRET INS	2	2
15	9107430-09	WIRE #18 AWG INS TW/PR (WHT/BLK)	A/R	A/R
16	9009771-2	CLAMP (RESISTOR) 3/8 I.D. SELF ADH.	1	1
17	1212893-00	HOLDER, FUSE 20A, 300V	1	1
18	D-IA-7417219-0-0	BRACKET, COMPONENT	1	1
19	1212788	BARRIER STRIP 7 POS	1	1
20	B-IA-7414743-1-0	SHIELD, TERM.	1	1
21	9008264	MOUNT TIE WRAP	1	1
22	9107410-39	WIRE #18 AWG INS ORN/WHT	A/R	A/R
45	C-IA-7417288-0-0	A/C CONN HARNESS	1	1
46	9107410-83	WIRE #18 AWG INS GREY/ORN	A/R	A/R
47	9107410-86	WIRE #18 AWG INS GREY/BLU	A/R	A/R
48	9107410-69	WIRE #18 AWG INS BLU/WHT	A/R	A/R
49	9107410-96	WIRE #18 AWG INS WHT/BLU	A/R	A/R

TITLE: A/C INPUT ASSY (120V/230V)
ASSY NO. D-AD-7012910-0-0 SHEET 3 OF 3
SIZE A | CODE PL | NUMBER 7012910-0-0 | REV L | ECO NO 7012910-00005
DIST

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY A. ROCHA | CHECKED D. HEALY | SECTION 1
DATE 19 JULY 76 | DATE 27 JUL 76 |
ENG R. BARRY | PROD R.B. KING | ISSUED SECT. 1
DATE 9-17-76 | DATE 21 SEPT 76 |

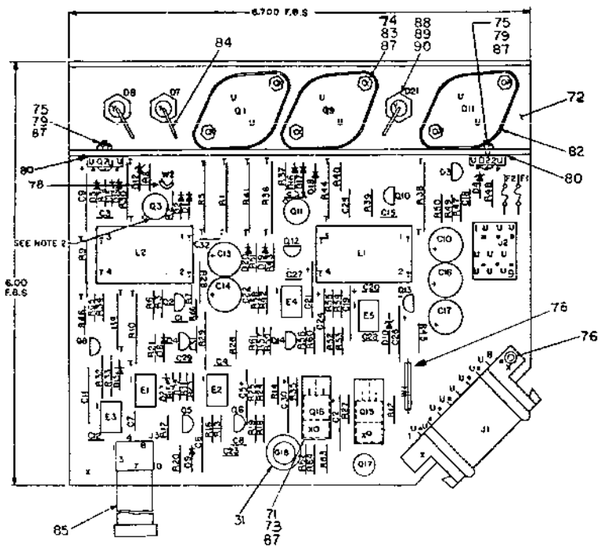
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION 7012910-0	7012910-1
23	9107410-59	WIRE 18 AWG INS GRN/WHT	A/R	A/R
24	9107410-93	WIRE 18 AWG INS WHT/GRN	A/R	A/R
25	9007929	RING CRIMP (RED INS)	2	2
26	9107410-95	WIRE 18 AWG INS WHT/GRN	A/R	A/R
27	9107430-08	WIRE 18 AWG INS (GRY/BLK) TW/PR	A/R	A/R
28	9007970	CONN FASTON (RED INS.)	2	2
~~29~~	~~1210181-2~~	~~CIRCUIT BREAKER, 2.5A~~	~~1~~	
30	1210820-2	HOUSING TERM. FASTAB	4	4
31	9107305-02	TUBING SHRINK (RED)	A/R	A/R
32	1210820-1	HOUSING SOCKET, FASTAB	4	4
33	9107278-02	TUBING INS (RED)	A/R	A/R
34	9008020-02	SCR, PHL, FLAT HD, 6 - 32 x .19	2	2
35	B-IA-7011797-0-0	JUMPER ASSY (BLK 2")	1	1
36	B-IA-7011798-0-0	JUMPER ASSY (WHT 2")	1	–
37	9007786	NUT #10 - 32	4	4
38	9007031	TIE WRAP	A/R	A/R
~~39~~	~~9107250-09~~	~~TUBING, SHRINK (WHT)~~	~~A/R~~	~~A/R~~
40	9007212	FUSE, 1A, 250V S.B.	1	1
~~41~~	~~9107251-03~~	~~TUBING, SHRINK (RED)~~		
42	1212698-01	STRIP, PANNING (2 POSITION)	1	1
43	9107430-16	WIRE #18 AWG INSTWP BRN, BLU	A/R	A/R
44	9006656	WASHER, FLAT	2	2

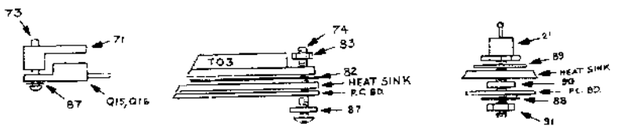
TITLE: A/C INPUT ASSY (120V/230V)
ASSY NO. D-AD-7012910-0-0 SHEET 2 OF 3
SIZE A | CODE PL | NUMBER 7012910-0-0 | REV L | ECO NO
DIST

DEC FORM DEC 16 (325) 1031 N870
DRA 110

NOTES:

1. SEE PARTS LIST FOR CURRENT HDW. D7, D8, D21
2. USE TRANSIPAD DEC#9007201 UNDER Q3, Q11, Q17, Q18
3. TORQUE Q1, Q9, D7, D8, D11, & D21 HARDWARE TO 6-8 IN-LBS.





SIDE VIEW
MOUNTING D7, D8 AND D21

1	R18	RESISTOR, 8.2K, 1/4W, 5%	1303479	51	REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411601-0-A	1
1	R28	RESISTOR, 4.99K, 1/4W, 1% MF	1305324	52	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411601-0-5	2
2	R1,R36	RESISTOR, 1, 2W, 5% WW	1305428	53	REF		MODULE ECO HISTORY	B-MH-5411601-0-B	3
1	R55	RESISTOR, 5/1, 1/4W, 5%	1309422	54	1		ETCHED CIRCUIT BOARD	5011600	4
2	R5,R38	RESISTOR, .15, 2W, 10%	1310147	55	2	C29,C4	CAPACITOR, 33pf, 100V, 5%	1000009	5
2	R32,R33	RESISTOR, 2.21K, 1/4W,1%	1310831	56	1	C8	CAPACITOR, 1000pf, 100V, 5%	1000018	6
1	Q22	DIODE 2N4441 SCR	1505887	57	1	C7,	CAPACITOR, 220pf, 100V, 5%	1000021	7
3	Q3,Q11,Q17	TRANSISTOR, 2N6036	1509700	58	1	C25	CAPACITOR, .1mf, 100V, 20% DISC	1000030	8
1	Q18	TRANSISTOR, DEC 3734	1510062	59	9	C1,C3,C12,C15,C18,C27,C28, C32,C33	CAPACITOR, .01mf, 100V, DISC	1001610-01	9
1	Q7	TRANSISTOR, MJE3055	1510555	60					
7	Q4,Q5,Q6,Q9,Q12 THRU Q14	TRANSISTOR, 2A05	1510705	61	6	C2,C5,C9,C19,C26,C30	CAPACITOR, 1mf, 35V, 10%	1001778	10
2	Q2,Q10	TRANSISTOR, 2A55	1510708	62	2	C29, C31	CAPACITOR, 47mf, 25V, 20%	1010279	11
1	Q16	TRANSISTOR, D45H8	1510708	63	1	C24	CAPACITOR, 10mf, 20V, 10%	1004913	12
2	Q1,Q9	TRANSISTOR, 2N5038	1510989	64	2	C6,C27	CAPACITOR, .01mf, 100V, 10% MYLAR	1005784	13
1	Q15	TRANSISTOR, D44H5	1512722	65	1	C11	CAPACITOR, .015mf, 50V, 2% POLYC	1010648	14
2	L1,L2	INDUCTOR, 500uh	1612593	66	2	C13,C14	CAPACITOR, 390mf, 20V	1012501-05	15
2	E7,E5	I.C. L.M. 301A	1910282	67	1	C17	CAPACITOR, 1200mf, 6.3V	1012501-01	16
3	E1,E3,E4	I.C. L.M. 555	1911944	68	2	C10,C16	CAPACITOR, 180mf, 50V	1012807-02	17
1	C22	CAPACITOR, 470pf, 100V, 5%	1000024	69	1	D4	DIODE IN752A	1102898	18
1	C23	CAPACITOR, 180pf, 100V 5%	1000020	70	11	D1,D2,D6,D13 THRU D17,D19, D20,D23	DIODE D672	1105275	19
1		HEAT SINK	7414765	71					
1		HEAT SINK	7413842	72	1	D9	DIODE IN4004	1105196	20
2		SCREW #4-40 x 7/16 LG	9006013-1	73	3	D7,D8,D21	DIODE, IN3880	1109440	21
6		SCREW #4/40 x 1/2 LG.	9006013-1	74	1	D12	DIODE IN4742	1109502	22
2		SCREW, NYLON #4/40 x .375LG.	9006401-4	75	1	D10	DIODE 12t 5mA 5.1V, 2%	1110713	23
1		EYELET	9009000	76	1	D3	DIODE 2N5062	1110968	24
4		TRANSIPAD	9007201	77	2	D5,D18	DIODE A1148	1112595-01	25
A/R		TUBING	9107256-14	78	1	D11	DIODE DUAL	1112723-00	26
2		NUT, NYLON #4-40	9037592	79	2	F1,F2	FUSE 5A	1209070	27
2		SILPAD TO 2Z	1213071-06	80	1	J1	CONN. 8 PIN MATE-N-LOC	1209360-00	28
A/R		THERMAL COMPOUND	9008288	81	1	J2	CONN. 9 PIN MATE-N-LOC	1209350-09	29
3		SILPAD TO 3	1213071-02	82	17		PINS	1209456-01	30
6		NUT, KEP #4/40	9006557	83	1	Q18	HEAT SINK	1210001	31
A/R		WIRE #20 AWG STRANDED	9107460-65	84	5	R2,R3,R37,R47,R50	RESISTOR, 33, 1/4W, 5%	1300197	32
1	J3	CONTROL CABLE	7014416-00	85	2	R12,R14	RESISTOR, 47, 1/4W, 5%	1300202	33
2		~~WASHER, LOCK, INTERNAL TOOTH~~	~~9008832~~	~~86~~	8	R6,R27,R35,R39,R48,R49,R63, R64	RESISTOR, 100, 1/4W, 5%	1300229	34
10		WASHER, FLAT	9009172	87					
3		WASHER, FLAT	9006686	88	2	R9,R44	RESISTOR, 150, 1W, 5%	1300232	35
3		SILPAD, STUD MOUNT	1213071-05	89	1	R52	RESISTOR, 390, 1/4W, 5%	1300399	36
3		BUSHING, NYLON	9008440	90	7	R19,R20,R54,R59,R60,R62,R25	RESISTOR, 1K, 1/4W, 5%	1300355	37
3		NUT, HEX #10-32	9006565	91	1	R45	RESISTOR, 1.5K, 1/4W, 5%	1300361	38
					1	R29	RESISTOR, 2.49K, 1/4W, 1%	1300424	39
AR	W1,W2	WIRE, #20 AWG. SOLID	9107560-02	93	3	R11,R43,R51	RESISTOR, 2.7K, 1/4W, 5%	1300426	40
1		LABEL POWER SUPPLY	9009255-00	94	2	R7,R65	RESISTOR, 4.7K, 1/4W, 5%	1300447	41
2		TIE, CABLE	9007031	95	2	R23,R56	RESISTOR, 5.62K, 1/4W, 1%	1305128	42
					11	R13,R15,R16,R17,R21,R22,R42, R46,R51,R57,R58	RESISTOR, 10K, 1/4W, 5%	1300479	43
					2	R53,R24	RESISTOR, 100K, 1/4W, 5%	1302466	44
					3	R8,R31,R40	RESISTOR, 10, 1/4W, 5%	1301317	45
					2	R10,R41	RESISTOR, 330, 2W, 10%	1301961	46
					2	R28,R34	RESISTOR, 2K, 1/4W, 5%	1302388	47
					1	R66	RESISTOR, 180, 1/4W, 5%	1301322	48
					1	R4	RESISTOR, 1.2K, 1W, 10%	1302950	49
					1	R30	RESISTOR, 1.8K, 1W, 5%	1303122	50

ALTERNATE PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		EYELET	9009732	76
9	C1,C3,C12,C15,C18,C27,C28,C32,C33	CAPACITOR .01 MF 50V	1001610-00	9

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. E

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

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.	DESCRIPTION	DATE	CHANGE NO.
E	541160I-00001	12-6-75	
F	5411601-00202	12-10-75	
G	5411601-00203	4/1/76	
H	5411601-00204	4/26/76	
J	5411601-00205	5-24-76	
K	5411601-00206	6-22-76	
L	5411601-00207	7-27-76	
M	5411601-00208	9-29-76	

DRN. R. Barry 8-29-75
CHK'D. —
ENG. —
PROJ. ENGR. R. Barry 11-24-75
MFG. R. Barry 12-5-75
NEXT HIGHER ASSY —
SCALE —
SHEET 1 OF 3

digital

TITLE: MOS REGULATOR H777

SIZE D | CODE DCS | NUMBER 5411601-0-1 | REV. M

DIST.

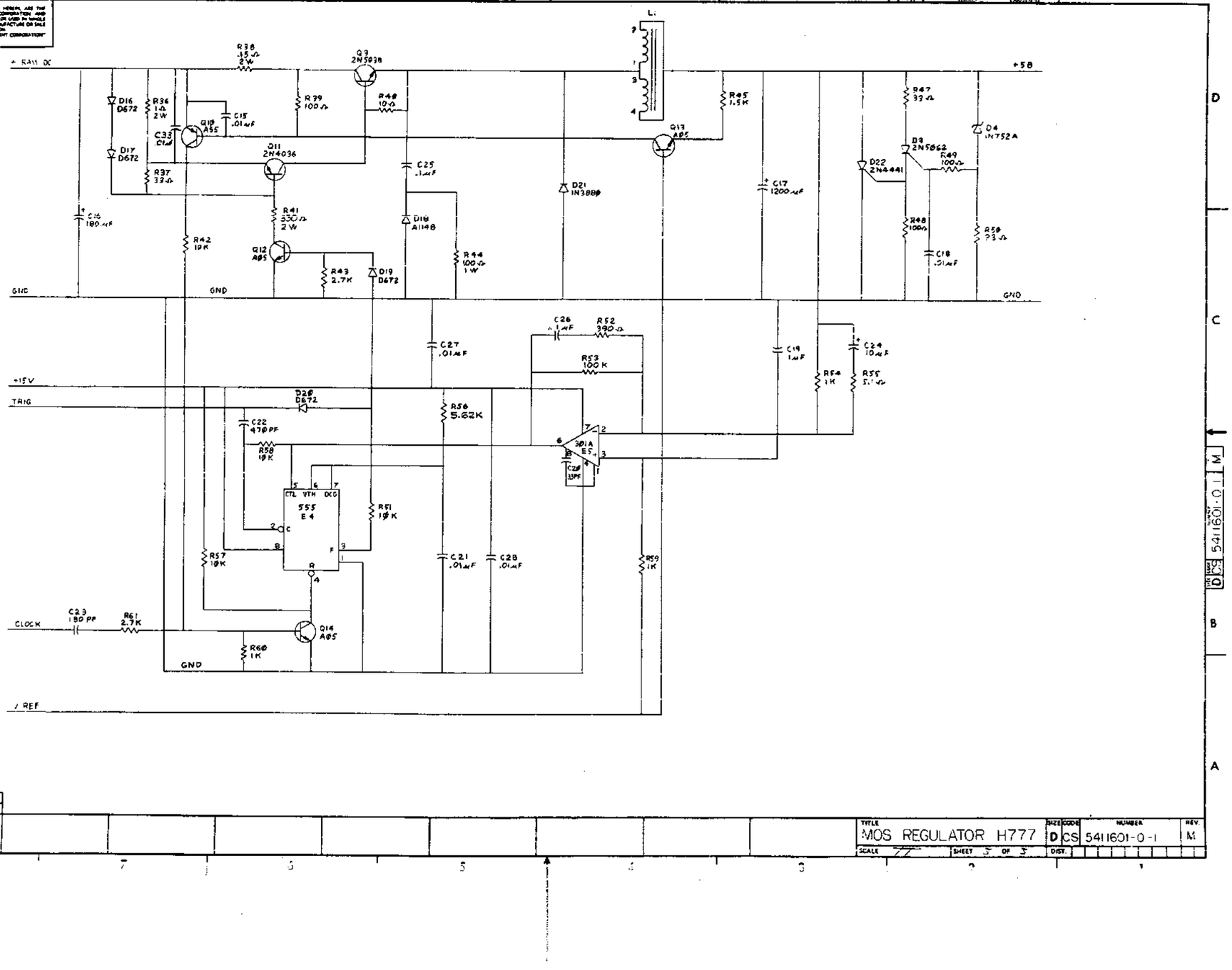
5411601-0-1 M

RAW DC
F1 5A
F2 5A
BAT IN
GND
CLOCK OFF
CHG. MOD
MAN EN
+5B
V REF
+.6
CLOCK
CLK
+5B SECTION
RAW DC
GND
+5B
-15 B
L2
W2
VTH DCG CTL
555 E3
555 E1
301A E2
Q1 2N5038
Q2 A55
Q3 2N4036
Q4 A05
Q5 A05
Q6 A05
Q7 MJE3055
Q8 A05
Q15 D44H5
Q16 D45H8
Q17 2N4036
Q18 DEC 3734
D1 D672
D2 D672
D5 A1148
D6 D672
D7 IN3880
D8 IN3880
D9 IN4004
D10 5.1V 2%
D12 IN4742
D13 D672
D14 D672
D15 D672
D23 D672
R1 10Ω 2W
R2 330
R3 39Ω
R4 1.2K 1W
R5 .33 2W
R6 100Ω
R7 4.7K
R8 10Ω
R9 100Ω
R10 330Ω 2W
R11 2.7K
R12 47Ω
R13 10K
R14 47Ω
R15 10K
R16 10K
R17 10K
R18 8.2K
R19 1K
R20 1K
R21 10K
R22 10K
R23 5.62K
R24 100K
R25 1K
R26 2K
R27 100Ω
R28 4.99K 1/4 W
R29 2.49K 3/4 W 1%
R31 10Ω
R32 2.21K 1/2W
R35 2.21K 1/2W
R35 100Ω
R46 10K
R62 1K
R63 100Ω
R64 100Ω
R65 4.7K
R66 180
R94 2K
C1 .01μF
C2 1μF
C3 .01μF
C4 .93PF
C5 .1μF
C6 .01μF
C7 220PF
C8 100PF
C9 1μF
C10 180μF
C11 .015μF
C12 .01μF
C13 560μF
C14 560μF
C29 0.47μF
C31 47μF
C32 .01μF
C38 1μF

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MCS REGULATOR H777	D	DCS	5411601-0-1	M
SCALE	SHEET 2 OF 3	DIST.		

5411601-0-1 M



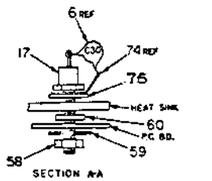
REVISIONS		
CHK	CHANGE NO	REV

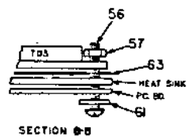
TITLE	SIZE	CODE	NUMBER	REV.
MOS REGULATOR H777	D	CS	5411601-0-1	M
SCALE	SHEET 3 OF 3	DIST.		

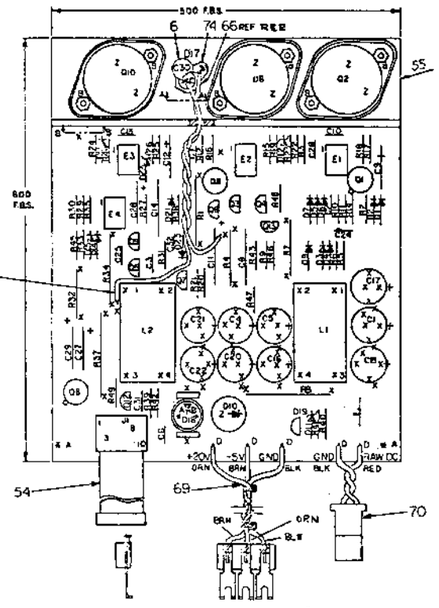
NOTES:

USE TRANSIPAD DEC# 9007201 UNDER Q1 & Q8

1		HEAT SINK	7416236-0-0	55	
6		SCREW, #4-40 x 1/2 lg PH HD	9006813-1	56	
6		NUT, KEP #4-40	9006557	57	
1		NUT, KEP #10-32	9006584	58	
1		WASHER, FLAT	9006862	59	
1		BUSHING, NYLON	9008440	60	
6		WASHER, FLAT	9008132	61	
A/R		COMPOUND, THERMAL	9006268	62	
3		INSULATOR, TO 3	1213071-02	63	
1		~~WASHER, THERMALL~~	~~9008434~~	~~64~~	
2		TRANSIPAD	9007201	65	
A/R		WIRE #18 AWG, TWISTED PAIR	9107430-02	66	
1	C29	CAPACITOR 2.2UF 20V	1002627	67	
1	R47	RESISTOR 200, 1/4W, 5%	1311522	68	
1		HARNESS (THREE WIRE)	C-TA 7012547-0-0	69	
1		HARNESS (TWO WIRE)	C-TA 7012546-0-0	70	
1	C12	CAPACITOR, 10uf, 20V, M.T., TANT	1004813	71	
1	CR3	DIODE, IN753A	1102421	72	
1	C26	CAPACITOR, .47uf, 25V, 20%, CER	1010273	73	
1		SOLDER, TERM, S/SEN MTG.	9007815	74	
1		SIL PAD .800 .190 I.D.	1213071-05	75	
1	C32	CAP. 1 UF 50V CER.	1010274-02	76	







REF		X-Y COORDINATE HOLE LOCATION	X-CC 5411599-0-1	1	
REF		ASSY/DRILLING HOLE LAYOUT	D-AM-5411599-0-1	2	
REF		MODULE ECO HISTORY	B-MM-5411599-0-B	3	
1		ETCHED CIRCUIT BOARD	5011598	4	
1	C1	CAPACITOR, 1000P, 100V, 5%	1000016	5	
6	C2,C3,C8,C30,C24,C25	CAPACITOR, .01uf, 100V DISC	1007610-01	6	
3	C9, C27, C28	CAPACITOR, 1uf, 35V, 10% TANT	1001778	7	D
2	C10,C13	CAPACITOR, 33pf, 100V CM	1000009	8	
1	C11	CAPACITOR, 1.5uf, 35V, 10% TANT	1009725	9	
2	C5,C14	CAPACITOR, .01uf, 100V, 10% MYLAR	1005784	10	
1	C31	CAPACITOR, 220pf, 100V, 5%	1000021	11	
2	C6,C15	CAPACITOR, 1200uf, 63V	1012607-01	12	
7	C1,C17,C19,C4,C2CC21,C22	CAPACITOR, 150uf, 50V	1012607-02	13	
1	D22	DIODE, IN4742	1103502	14	
1	D10	DIODE, MR7038	1103541	15	
10	D1 THRU D7, D14, D15, D21	DIODE, D872	1105275	16	
1	D17	DIODE, IN3860	1109440	17	
2	D12, D13	DIODE, IN751, 5.1V 2%	1110713	18	
1	D9	DIODE	1110315	19	
1	D11	DIODE, IN9128	1110898	20	
1	D19	DIODE, 2N5682	1110968	21	
1	D8,	DIODE, A1148	1112595-01	22	
1	F1	FUSE, 1.5A, PICO	1210929	23	
1	R46	RESISTOR, 18K, 1/4W, 5%	1302865	24	C
6	R9,R39,R40,R41,R43,R45	RESISTOR, 100, 1/4W, 5%	1300229	25	
1	R7	RESISTOR, 100, 1W, 5%	1300232	26	
3	R11, ,R42,R33	RESISTOR, 390, 1/4W, 5%	1300389	27	
6	R6,R12,R23,R31,R17,R48	RESISTOR, 1K, 1/4W, 5%	1300365	28	
3	R16, ,R14, ,R30	RESISTOR, 2.7K, 1/4W, 5%	1300426	29	
4	R42,R44, R15,R27	RESISTOR, 4.7K, 1/4W, 5%	1300447	30	
1	R4	RESISTOR 1K, 1W, 5%	1300368	31	
3	R18, R29,R38,	RESISTOR, 10K, 1/4W, 5%	1300479	32	
2	R3,R35	RESISTOR, 10, 1/4W, 5%	1301317	33	
1	,R45	RESISTOR, 470, 1/4W, 5%	1300316	34	
1	R5	RESISTOR, 27, 1/4W, 5%	1301522	35	
1	,R34	RESISTOR, 330, 2W, 10%	1301981	36	
1	R19	RESISTOR, 2K, 1/4W, 5%	1302388	37	
2	R18,R28	RESISTOR, 100K, 1/4W, 5%	1302458	38	
1	R22	RESISTOR, 2.74K, 1/4W, 1%	1304868	39	
2	R1,R32	RESISTOR, 1, 2W, 5% WW	1305428	40	
2	R24, R25	RESISTOR, 1.5K, 1/4W 5%	1300391	41	
1	R21	RESISTOR, 8.25K, 1/4W, 1%	1309420	42	
2	R8,R37	RESISTOR, 08, 5W, 3% WW	1311603	43	
1	R20	RESISTOR, 56, 1/4 W, 5%	1302802	44	
2	Q1,Q8	TRANSISTOR, 2N4918	1507700	45	
7	Q3,Q5,Q6,Q7,Q9,Q12,Q13	TRANSISTOR, XA85	1510705	46	
1	Q4	TRANSISTOR, XA55	1510706	47	
1	Q10	TRANSISTOR, C32AX135	1510928	48	
2	Q2,Q10	TRANSISTOR, 2N5038	1510969	49	
1	Q11	TRANSISTOR, 2N5433	1511686	50	
2	L1,L2	INDUCTOR, 900uh	1812593	51	
2	E1,E3	I.C DEC 301A	1910282	52	
2	E2,E4	I.C DEC 555	1911944	53	
1	J1	CABLE ASSY	7015474-0E	54	
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.	

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.	DESCRIPTION	CHANGE NO.	DATE
H	W. Hammarlund 2-9-77 J. SCELIC	5411599-00003	
J	B. COUTEMANCHE	5411599-00002	
E	G. POTTER	5411599-00001	

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. D

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

NEXT HIGHER ASSY E-UA-H777-0-0

SCALE

SHEET 1 OF 2

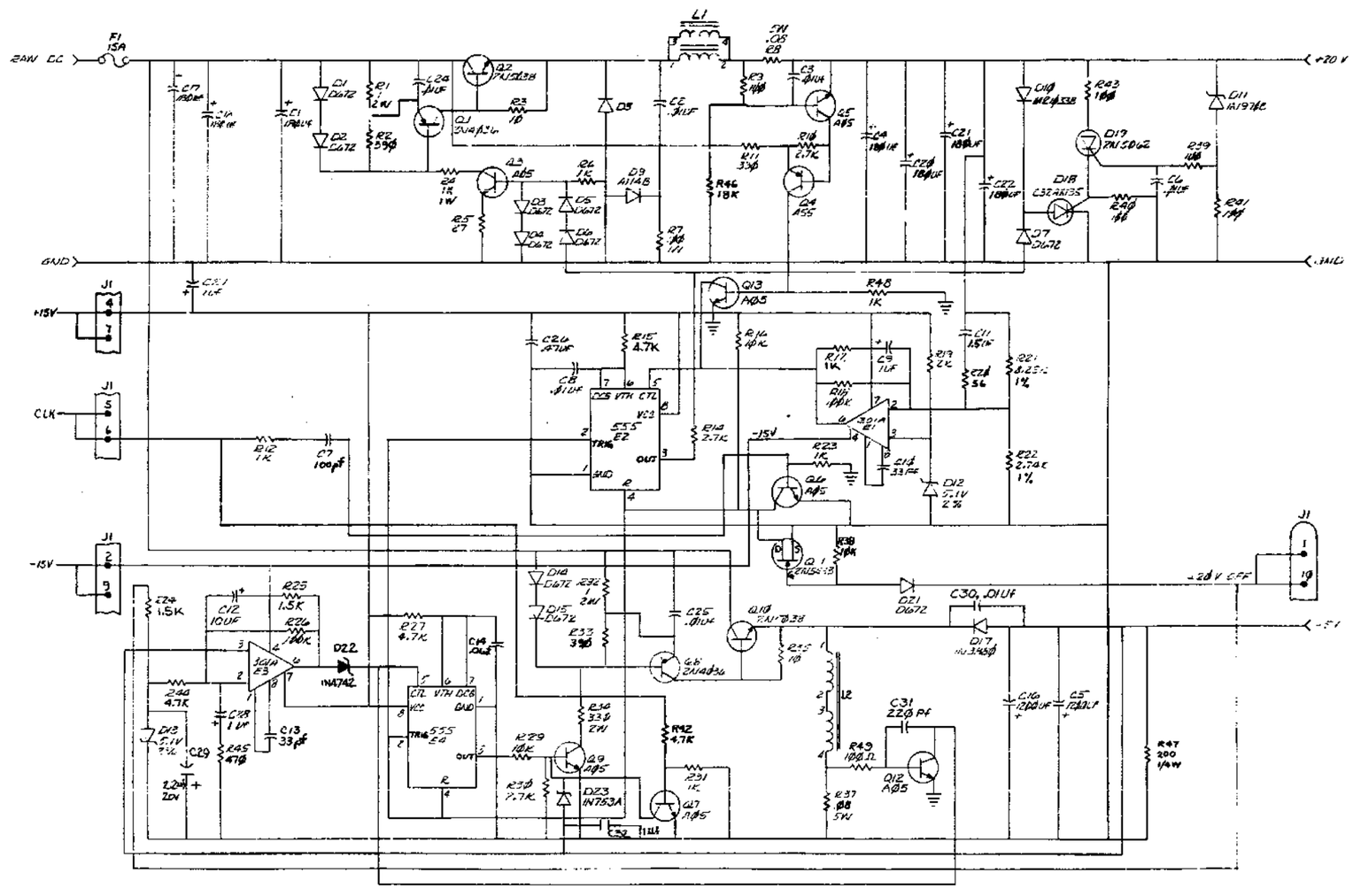
digital

TITLE +20V REGULATOR/H777

SIZE D | CODE | NUMBER CS 5411599-0-1 | REV. J

DIST.

141



REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
+20V REGULATOR/H777	D	DCS	54-11599-0-1	J
SCALE	SHEET	OF	DIST.	

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

FIELD MAINT. PRINT SET KY11-LA	B-TC-KY11-LA-1
CONSOLE OPER. ASSY	D-UA-KY11-LA-Ø
CIRCUIT ETCH BOARD KY11-LA	D-CS-5411497-0-1
DRAWING DIRECTORY	B-DD-KY11-LA

UNIT VARIATIONS COVERED BY THIS PRINT SET
KY11-LA

KY11-LA

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ17

REVISIONS		
REV.	CHG. NO.	DATE
A	KY11-LA-3	5-77

USED ON OPTION/MODEL	
11/Ø4-AA	11/Ø4-DC
11/Ø4-AB	11/Ø4-DD
11/Ø4-AC	11/Ø4-EC
11/Ø4-AD	11/Ø4-ED
11/Ø4-BA	
11/Ø4-BB	
11/Ø4-BC	
11/Ø4-BD	

SHEET 1 OF 1

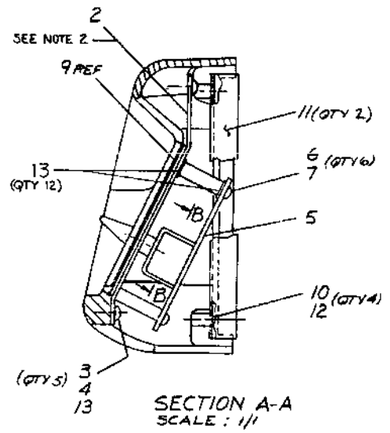
DRN. D. HEALY	DATE 9/29/75	digital
CHK'D D. HEALY	DATE 9/29/75	TITLE: FIELD MAINTENANCE PRINT SET KY11-LA
PROJ. ENG. R. Barry	DATE 10-22-75	SIZE B · CODE TC · NUMBER KY11-LA-1 · REV. 1
FIELD SERV.	DATE 10-22-75	DIST.

E-NO1124 C 1975 (2)

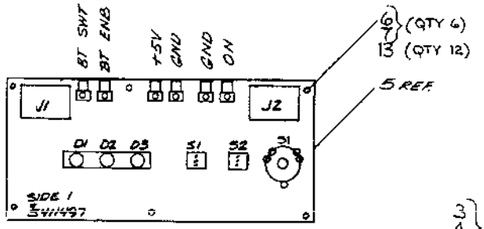
DRB 124

NOTES

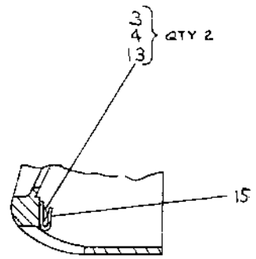
1. PART NO. 7413G57-1-0 MAY BE USED IF 7415599 IS NOT AVAILABLE.
2. PRIOR TO ASSY. OF CONTROL PANEL TO SUPPORT PANEL, CLEAN ITEM 2 THOROUGHLY. AFTER CLEANING, APPLY AN EVEN COAT "3M" BRAND AEROSOL ADHESIVE "77N TO ITEM "2 ONLY. TO AVOID ATTACKING THE SILK SCREENING, POSITION ITEM "9 IN PLACE AND BOND, APPLYING PRESSURE FOR A PERIOD OF 15-30 SECONDS.
3. OVERLAY DECAL TO BE SHIPPED LOOSE PIECE WITH THE UNIT AND ADDED AS SHOWN IF REQUIRED AT F.A.&T.
4. ITEM "16 NOT SHOWN.
5. ITEMS NO'S 1, 11 AND 16 ARE ADDED AT FA&T.



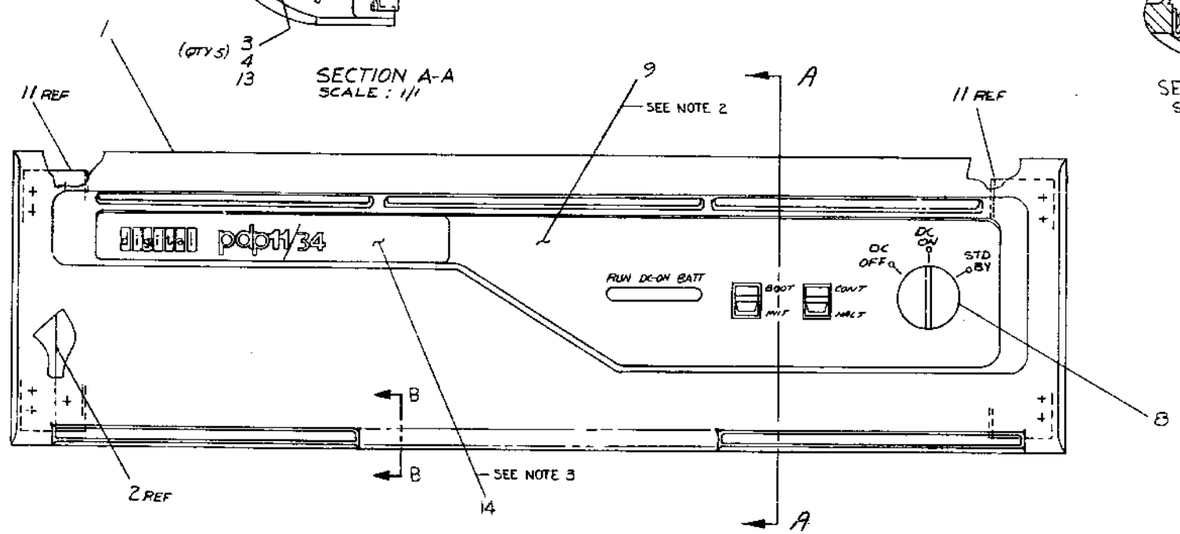
SECTION A-A
SCALE : 1/1



VIEW B-B
SCALE : NONE



SECTION B-B
SCALE : NONE



(SEE NOTE 2)	A/R	ADHESIVE, SPRAY	9008907	17
SEE NOTES 4&5	REF	BEZEL, COVER PROTECTIVE	D-MD-7415656-0-0	16
	1	BRACE, SUPPORT PNL	7419008	15
	1	OVERLAY, DECAL 11/34	A-PS-3613359-0-1	14
	19	WASHER, FLAT .375x.187x.036	9006660	13
	4	SPACER, HEX ¼x.38 LG	9006802	12
SEE NOTE 5	REF	BRKT, FILTER SUPPORT	SMD-7414962-0-0	11
	4	SCR, PHIL FL HD #8-32x.62	9006040-2	10
	1	PANEL, CONTROL, CONSOLE	D-IA-7413502-0-0	9
	1	KNOB, ROTARY SWITCH	12125570	8
	6	SCR PHIL HD PAN #8-32x.38	9006022-1	7
	6	SPACER #6-32x.87	9006861	6
	1	CIRCUIT ETCH BD KYII-LA	D-ES-5411497-0-1	5
	7	SCR FILL HD PAN #8-32x.31	9009799-00	4
	7	WASHER, SPRING LOCK #8	9006690	3
	1	SUPPORT, PANEL	D-MD-7413501-0-0	2
SEE NOTES 1&5	REF	BEZEL 11/04	E-MD-7415599-0-0	1

DESCRIPTION	CAGE/PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'
SURFACE QUALITY IN MICROINCHES (CHECK ONE)
DECIMAL X.X ±.1 | X.XX ±.03 | X.XXX ±.010
FRACTIONS ±1/64 | ±1/32 | ±1/16
MEDIUM | FINE | SUPERFINE

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG.

MATERIAL SEE PARTS LIST

FINISH

NEXT HIGHER ASSY.

DRAWN 11/04/77
CHK
ENG
PROG
QA
MFG
CONTRACT NO.

FIRST USED ON 11/04

TITLE CONSOLE, OPER, ASSEMBLY

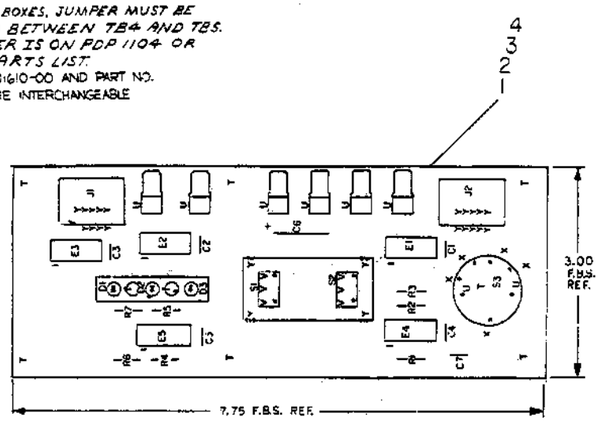
SIZE D | CODE UA | NUMBER KYII-LA-0 | REV. F

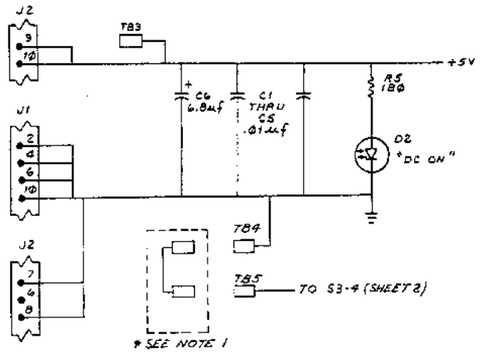
SCALE FULL | SHT 1 OF 1

REV	Released NO	DATE	BY
F	KYII-LA-0-0001	4 Jan 77	P FONSECA
B	KYII-LA-0-0002	4 Jan 77	P FONSECA
C	KYII-LA-0-0003	5 Jan 77	P FONSECA
D	KYII-LA-0-0004	5 Jan 77	P FONSECA
E	KYII-LA-0-0005	8 DEC 77	D BUCKER
F	KYII-LA-0-0006	13 JAN 78	E ROCKER

NOTES:

1. IN BA11-L BOXES, JUMPER MUST BE INSTALLED BETWEEN TB4 AND TB5. THE JUMPER IS ON PDP 1104 OR PDP 1134 PARTS LIST.
2. PART NO. 1001610-00 AND PART NO. 1001610-01 ARE INTERCHANGEABLE





REF				
REF		X-Y COORDINATE HOLE LOCATION	MMCO-5411497-0-1	1
REF		ASSY/DRILLING HOLE LAYOUT	D-FN-5411497-0-1	2
PER		MODULE ECO HISTORY	B-MN-5411497-0-1	3
1		ETCHED CIRCUIT BOARD	5011496	4
5	C1 THRU C5	CAPACITOR, .01mf, 100V	1001610-01	5
1	C6	CAPACITOR, 6.8mf, 35V, 10%	1305906	6
1	C7	CAPACITOR, 1000PF, 100V	1000042	7
3	D1, D2, D3	DIODE, LIGHT EMITTING	1110844	8
1	S2	SWITCH, TOGGLE	1210840	9
1	S1	SWITCH, MOMENTARY	1210841	10
1	S3	SWITCH, ROTARY	1212560	11
1		HOLDER, TRIPLE L.E.D.	1210940-02	12
2	J1, J2	CONNECTOR, 10 PIN	1209941-05	13
2	R4, R6	RESISTOR, 1K, 1/4W, 5%	1300365	14
3	R1, R5, R7	RESISTOR, 180Ω, 1/4W, 5%	1301322	15
1	E5	I.C. DEC 7474	1305547	16
1	E3	I.C. DEC 8640	1311469	17
2	E1, E2	I.C. DEC 8881	1309705	18
1	E4	I.C. DEC 7402	1309304	19
6		TERMINAL, QUICK DISCONNECT	9007112	20
6		EYELET	9003000	21
2		SCREW, SELF-TAPING, #4-40 X .31 LG	9009236	22
1		PLATE, SWITCH MTG.	7413505-0-0	23
2	(S1), (S2)	KNOB	1210786	24
				25
				26
2	R2, R8	RESISTOR 330, 1/4W, 5%	1300295	27
AR		WIRE, AWG #30	9107660-03	28
~~AR~~		~~TUBING, NATURAL #30~~	~~9107807-11~~	29

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: 11/04

ETCH BOARD REV.

I.C. 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.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	REVISIONS	BY	DATE
F	5411497-00001		R. BARRY	24-MAY-74
F	5411497-00002		D. BARRY	6-JUN-74
H	5411497-00003		D. BARRY	9-AUG-74

DRAWN BRUCE CRAMM 11-11-72
PROJECT ENGR. D. BARRY 6-JUN-74
MANUF. ENGR. D. BARRY 9-AUG-74

DRN.	J. Vincent	DATE	4-23-75
CHKD.	[illegible]	DATE	5-12-75
ENG.		DATE	
PROJ. ENGR.		DATE	
PROD.		DATE	

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 2

digital

TITLE: KY11-LA

SIZE D | CODE CS | NUMBER 5411497-0-1 | REV. H

DIST.

DEC FORM NO. DNO 135-0

R3 330
R1 180
C7 1000PF
"INIT"
+5V
"BOOT"
S1
R2 330
7402 E4
+5V
R4 1K
"CONT"
"HALT"
S2
7474 E5
R6 1K
J1
HALT GRANT H
BUS INIT L
BUS DC LO L
8649 E3
8640 E3
7402 E4
8881 E2
8881 E1
D1
R7 180
"RUN"
BUS AC LO L
BOOT SW L
HALT REQUEST L
BUS SACK L
J2
BATT MON.
D3
T83
S3
T86
"OFF"
"ON"
"STANBY"
T82
BOOT ENB L

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
KY11-LA	D	CS	5411497-0-1	H
SCALE	SHEET 2 OF 2	DIST.		

5411497-0-1 H
D CS

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

~~CUSTOMER PRINT SET INDEX~~

~~THIS IS PRINT SET~~

SEQUENCE | SEQUENCE

NOTE:
FOR FIELD MAINTENANCE
PRINT SET REFER TO
B-TC-KY11-LA-1

UNIT VARIATIONS

VAR	TITLE	PRINT SET
KY11-LA	OPER TURNKEY CONSOLE	

REVISIONS		
DATE	CHG. NO.	REV
5-76	KY11-LA-1	A
1-77	KY11-LA-2	B
5-77	KY11-LA-3	C
12-77	KY11-LA-4	D
8-78	KY11-LA-5	E

USED ON OPTION/MODEL	
11/Ø4-AA	11/Ø4-BD
11/Ø4-AB	11/Ø4-DC
11/Ø4-AC	11/Ø4-DD
11/Ø4-AD	11/Ø4-EC
11/Ø4-BA	11/Ø4-ED
11/Ø4-BB	
11/Ø4-BC	

SHEET 1 OF 2

DRN. G. MARINI	DATE 9/16/75	TITLE: DRAWING DIRECTORY KY11-LA
CHK'D. D. HEALY	DATE 9/30/75	
PROJ ENG. R. Barry	DATE 10-22-75	
PROD. R.K. Peterson	DATE 10/22/75	
~~FIELD SERV.~~ //	~~DATE~~ //	

SIZE	CODE	NUMBER	REV
B	DD	KY11-LA	E

DIST

EN-01062-1A-10-R972-(325)

DRB 106

ELECTRICAL (SECTION 1)

CUSTOMER PRINT SET	MFG ECO	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		1	D-UA-KY11-LA-Ø		1	CONSOLE OPER ASSY	
		3	D-CS-5411497-0-1		2	CIRCUIT ETCH BOARD KY11-LA	

MECHANICAL (SECTION 2)

CUSTOMER PRINT SET	MFG ECO	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		1	D-UA-KY11-LA-Ø		1	CONSOLE OPER ASSY	
			D-MD-7413501-0-0		1	SUPPORT, PANEL	
			C-MD-7419008		1	BRACE, SUPPORT PANEL	
		2	D-IA-7413502-0-0		1	PANEL CONTROL CONSOLE	
			D-SS-7413502-0-1		1	SILK SCREEN LIGHT GRAY	
			D-SS-7413502-0-2		1	SILK SCREEN DARK GRAY	
		3	D-CS-5411497-0-1		2	CIRCUIT ETCH BOARD KY11-LA	
			K-CO-5411497-0-4			X-Y COORDINATE HOLE LOCATION	
			D-AH-5411497-0-5			ASSY/DRILLING HOLE LAYOUT	
			B-MH-5411497-0-6			MODULE ECO HISTORY	
			5011496			ETCH CIRCUIT BOARD	
			C-MD-7413505-0-0		1	PLATE, SW MTG	

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

TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY KY11-LA	SHEET 2 OF 2	B	DD	KY11-LA	E

DRB 108

digital EN-01062-2B-16-R972-(325)

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

FIELD MAINT. PRINT SET MS11-E	B-TC-MS11-E-1
MOS RAM (MS11-E)	A-PL-MS11-E-Ø
UNIBUS MOS MEMORY	D-CS-M7847-Ø-1

UNIT VARIATIONS COVERED BY THIS PRINT SET
MS11-E
MS11-EP
MS11-F
MS11-FP
MS11-J
MS11-JP

MS11-E

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ21

REVISIONS	REV.	CHG. NO.	DATE

USED ON OPTION/MODEL	
11/Ø4-AA	11/Ø4-DC
11/Ø4-AB	11/Ø4-DD
11/Ø4-AC	11/Ø4-EC
11/Ø4-AD	11/Ø4-ED
11/Ø4-BA	
11/Ø4-BB	
11/Ø4-BC	
11/Ø4-BD	

SHEET 1 OF 1

DRN.	D. HEALY	DATE	10/1/75
CHK'D	D. HEALY	DATE	10/1/75
PROJ. ENG.	[signature]	DATE	10/22/75
FIELD SERV.	[signature]	DATE	10-22-75

digital

TITLE: FIELD SERVICE MAINTENANCE PRINT SET MS11-E

SIZE	CODE	NUMBER	REV.
B	TC	MS11-E-1	

DIST.

EN-01124-16-NOTE-1227

DRB 124

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D. HEALY	CHECKED D. HEALY	SECTION 1
DATE 10/6/75	DATE 10/6/75	
ENG R. BARRY R Barry	PROD R.W. Peters	ISSUED SECT. 1
DATE 10-22-75	DATE 10/22/75	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
			MS11-E	MS11-EP	MS11-F	MS11-FP	MS11-J	MS11-JP						
	D-CS-M7847-AA-1	UNIBUS MOS MEM	1	-	-	-	-	-						
	D-CS-M7847-AB-1	UNIBUS MOS MEM	-	1	-	-	-	-						
	D-CS-M7847-AC-1	UNIBUS MOS MEM	-	-	1	-	-	-						
	D-CS-M7847-AD-1	UNIBUS MOS MEM	-	-	-	1	-	-						
	D-CS-M7847-AH-1	UNIBUS MOS MEM	-	-	-	-	1	-						
	D-CS-M7847-AJ-1	UNIBUS MOS MEM	-	-	-	-	-	1						

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MOS RAM (MS11-E)	NONE	A	PL	MS11-E-Ø	A	MS11-E-00001
	SHEET 1 OF 1	DIST.				

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

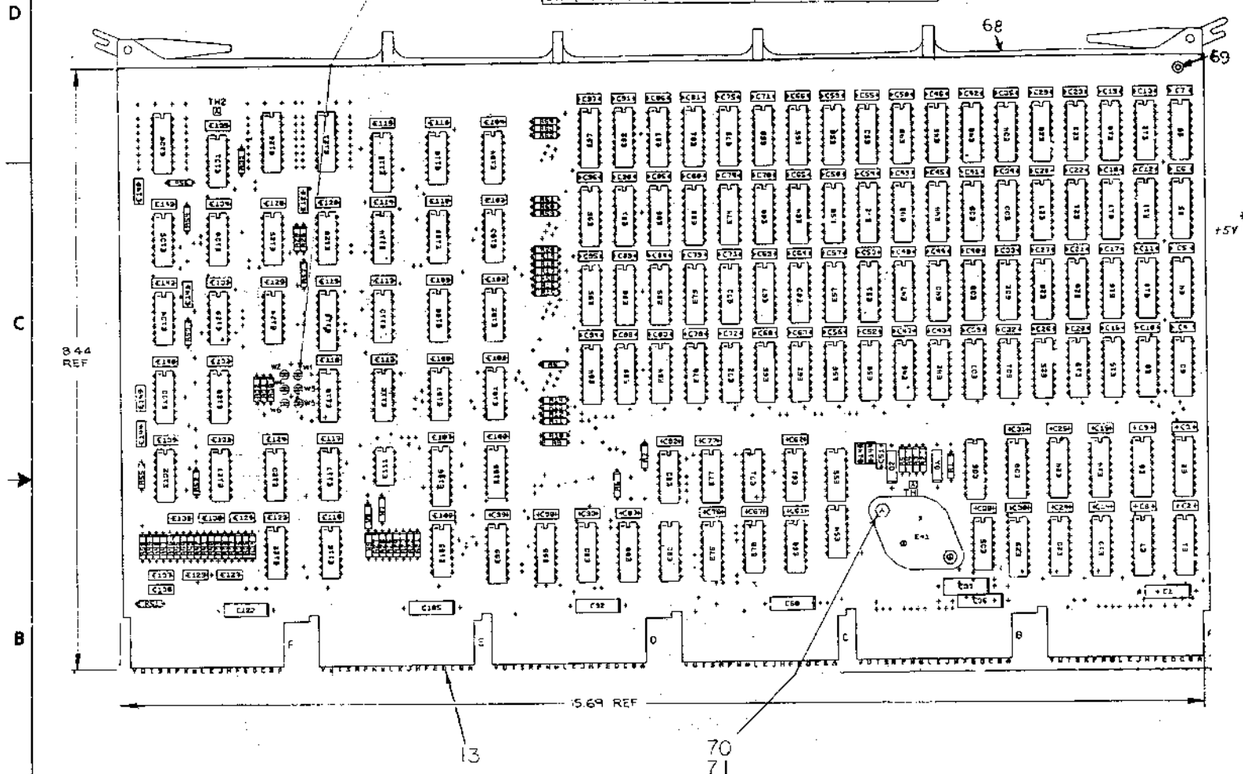
NOTES:

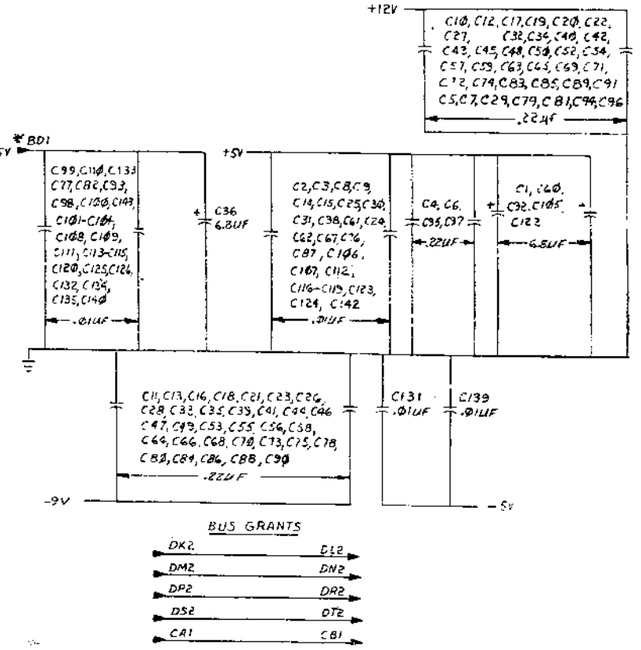
1. THERMAL COMPOUND (ITEM NO. 72) TO BE PLACED UNDER E41.

2. JUMPERS TO BE CONNECTED FOR EACH VARIATION AS FOLLOWS:

BA,CA,DA,EA,BB,CB,DB,EB, YA & YB	W3 TO W4
BC,CC,DC,EC, BD,CD,DD,ED, YC & YD	W1 TO W2 & W3 TO W4
BE,CE,DE,EE,BF,CF,DF,EF,BH,CH,DH,EH, BJ,CJ,DJ,EJ, YE,YF,YH & YJ	W1 TO W2, W3 TO W4, & W5 TO W6

2.(CONT) CONNECTIONS TO BE MADE USING BUS WIRE (ITEM NO. 73).





7475	12	5	—
74S153	8	16	—
7107	7	14	13
74174	8	16	—
8641	8	16	—
8640	1	8	—
7483	12	5	—
IC TYPE	GND	+5V	-5V

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

IC PIN LOCATIONS

REV.	REVISIONS	CHANGE NO.	CHK
K	M7847-00006		J. MANTON 4/1/77
J	M7847-00005		J. MANTON 3/9/77
H	M7847-00004		J. MANTON 2/24/77
G	M7847-00003		J. MANTON 12/13/76
F	M7847-00002		J. MANTON 12-9-76
E	M7847-00001		J. MANTON 10-27-76
D			J. MANTON 9-24-76

FIRST USED ON OPTION MODEL

FOR PARTS LIST REFER TO SHEETS 2 & 3

QTY	REF. DESIGNATION	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

ETCH BOARD REV. E

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

SEMICONDUCTOR CONVERSION CHART

NEXT HIGHER ASSY

DRN	J. MANTON	DATE 9-24-75
CHK'D	[illegible]	DATE 6/18/75
ENG	[illegible]	DATE 6/11/75
PROJ ENG	[illegible]	DATE 6/11/75
PROD	A. Tomey	DATE [illegible]

digital

TITLE: UNIBUS MOS MEMORY

SIZE D | CODE CS | NUMBER M7847-0-1 | REV. K

SCALE | SHEET 1 OF 16

NOTES:
1. DEC PART NO 1001610-00 IS AN ACCEPTABLE REPLACEMENT FOR DEC PART NO 1001610-01 (ITEM 14)
2. VARIATIONS YA THRU YJ. ITEM 21; D1 DIODE ZENER 1N757A, 9.1V 5% (1109990-00)
   ITEM 26; R2 RES 270, 1/4W, 5% CC (1301972-00)
   VARIATIONS BA THRU BJ, CA THRU CJ, DA THRU DJ, EA THRU EJ: D1 DIODE, ZENER 1N751A, 5.1V, 5% (1110594-00)
   R2 560 1/4W, 5%, CC (1301890-00)
   VARIATIONS YA THRU YJ: ITEM 55; 4K16 PIN MOSRAM VSR -5V(21-11749-00)
   VARIATIONS BA THRU BJ: ITEM 65; MOSTEK 4096 (21-12736-00)
   VARIATIONS CA THRU CJ: ITEM 65; FUJITSU 8224 (21-13787-01)
   VARIATIONS DA THRU DJ: ITEM 65; MOSTEK 4027 (21-13735-01)
   VARIATIONS EA THRU EJ: ITEM 65; INTEL 2104A (21-13795-01)
   VARIATIONS FA THRU FJ: ITEM 65; HITACHI (21-13892-01)
   VARIATIONS HA THRU HJ: ITEM 65; DEC 4027 (21-13514-01)
   VARIATIONS JA THRU JJ: ITEM 65; FUJITSU 8227 (21-14475-01)

PARTS LIST

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1		DATA BASE TAPE	5011215-0-0	1
~~1~~		~~DATA BASE TAPE~~	~~M7847-YA-0~~	~~2~~
~~1~~		~~DATA BASE TAPE~~	~~M7847-YB-0~~	~~3~~
~~1~~		~~DATA BASE TAPE~~	~~M7847-YC-0~~	~~4~~
~~1~~		~~DATA BASE TAPE~~	~~M7847-YD-0~~	~~5~~
~~1~~		~~DATA BASE TAPE~~	~~M7847-YE-0~~	~~6~~
~~1~~		~~DATA BASE TAPE~~	~~M7847-YF-0~~	~~7~~
~~1~~		~~DATA BASE TAPE~~	~~M7847-YG-0~~	~~8~~
~~1~~		~~DATA BASE TAPE~~	~~M7847-YH-0~~	~~9~~
REF		UNIT ASSEMBLY	D-UA-M7847-0-0	10
REF		DRILL & ETCH DWG	D-MD-5011215-0-0	11
REF		MODULE ECO HISTORY	B-MH-M7847-0-0	12
1		ETCHED CIRCUIT BOARD	5011215	13
57	C2 C3,C8,C9,C14,C15,C24,C25, C28,C31,C38,C61,C62,C67,C76, C77,C82,C87,C93,C98,C144 C186-C128, C133-C127, C131-C137, C139,C148,C142,C143	CAP .01UF, 100V, 20% DISC	1001610-01 (SEE NOTE 1)	14
~~57~~	C6,C7,C12,C13,C18,C19,C22,C23, C26,C29,C34,C35,C41,C42,C45, C46,C49-C51,C54,C55,C58,C59 C65,C66 C70,C71,C74,C75,C80,C81, C85,C86,C90,C91,C96,C97	CAP .22UF, 50V CER	1010274-01	15
~~73~~	C4-C7,C10-C13 C16-C23 C26-C29 C32-C35, C72-C59, C63-C66, C68-C75 C76-C81,C83-C86,C88-C91, C94-C97			
6	C1,C36 ,C60,C92,C185,C122	CAP 6.8UF, 35V, 10% S. TANT	1005305-00	16
1	C146	CAP 82PF, 100V, 5% CM	1000815-00	17
4	C128-C130, C138	CAP 22PF, 100V, 1% CM	1012121-00	18
2	C121,C141	CAP 22PF, 100V, 5% CM	1000821-00	19
2	C144, C145	CAP 560PF, 100V, 5% CM	1000825-00	20
1	D1	SEE NOTE #2		21
1	D2	DIODE, ZENER 1N751A, 5.1V, 5%	1110594-00	22
21	R9-R28, R57-R65	RES 10, 1/4W, 5%, CC	1302124-00	23
16	R7,R8,R21-R27 R30-R33,R52, R54,R55	RES 1K, 1/4W, 5%, CC	1300365-00	24
5	R3-R5, R28, R29	RES 560, 1/4W, 5%, CC	1301890-00	25
1	R2	SEE NOTE #2		26
~~1~~	~~R66~~	~~RES 270, 1/4W, 5%, CC~~	~~1301972-00~~	~~27~~
1	R1	RES 10K, 1/4W 5%, CC	1300479-00	28
1	R48	RES 30K, 1/4W, 5%, CC	1302394-00	29
7	R37,R38,R41,R45,R47,R49 R50	RES 1K, 1/4W, 1%, MF	1303114-00	30
1	R34	RES 6.81, 1/4W, 1%, MF	1302872-00	31
3	R36 R46, R51	RES 4.1K, 1/4W, 5%, CC	1300447-00	32
2	R56, R53	RES 100, 1/4W, 5%, CC	1300229-00	33
1	R43	RES 1.54K, 1/4W, 1%, MF	1312480-00	34
1	R44	RES 1.05K, 1/4W, 1%, MF	1312479-00	35
1	R35	RES 2.7K, 1/4W, 5%, CC	1300426-00	36
1	R39	RES 6.8K, 1/4W, 5% CC	1301423-00	37
1	R64	RES 12K, 1/4W, 5%, CC	03C0488-CO	38
1	R42	RES 4.3K, 1/4W, 5% CC	1302389-00	39
6	E2,E8,E14,E24,E30 E36	IC 74174	1910652-00	40
5	E1,E7 E13,E23 E29	IC 8641	1911579-00	41

PARTS LIST

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	E35	IC 8881	1909705-00	42
6	E54,E56,E60,E67,E79,E71	IC 8640	1911468-00	43
2	F77, F145	IC 9074	1909547-00	44
1	E83	IC 74197	1910035-00	45
5	E76,E82,F86,E115 E119	IC 7475	1908850-00	46
3	E30, E90, E99	IC 745153	1910547-00	47
6	E100-E103, E107, E109	IC 7451A6	1910546-00	48
2	E104, E105	IC 7426	1905577-00	49
1	E106	IC 7403	1908852-00	50
3	E110 E113 E131	IC 7408	1908575-00	51
3	E112, E118 E123	IC 74S20	1910535-00	52
1	E117	IC 7486	1910041-00	53
1	E124	IC 74S386	1910534-00	54
1	E125	IC 74S03	1910533-00	55
3	E127 E132, E133	IC 7518?	1910288-00	56
1	E128	IC 74S85	1910539-00	57
1	E129	IC 7404	1908866-00	58
2	E114, E122	IC 7440	1908575-00	59
1	E116	IC 74S11	1910537-00	60
1	E108	IC 7437	1910884-00	61
1	E61	IC 7812	1912048-01	62
1	E154	IC 74S18	1910538-00	63
1	E438	IC 74S74	1910546-00	64
-	E12 F10,E22 E28,E34 F40, E45, E49 E50 E55,E63 E75 E81, E83 E92,E97			65
-	E5,E12,E18 E22,E28 E34 E40, E45 E49 E53,E59,E65,E69,E75, E81 E87 E92,E97	SEE NOTE #2		
-	E1,E12,E17 E18,E21,E22, E27,E28,E33,E34,E38 E42 E44, E45,E48,E49,E56,E59 E64 E69, E69,E74 E75,E80 E81,E86, E87,E91 E92,E96 E97			
-	E5,E6,E11,E12,E17,E18 E21 E22, E27,E28,E33,E34,E38 E42 E44, E45,E48,E49,E52,E53,E56 E59, E64 E65 E69 E69 E74 E75 E80 E81 E86 E87 E91 E92 E96 E97			
-	E10-E12,E16-E18,E20-E22, E26-E28,E32-E34,E36-E40 E42-E45, E47-E49 E51-E53 E55-E65 E67-E69, E73-E75,E78-E81 E85-E87 E88-E92, E95-E97			
-	E4-E6,E10-E12 E16-E18,E20-E22, E26-E28,E32-E34,E36-E40 E42-E45 E47-E49 E51-E53 E57-E59,E62-E65, E67-E69 E73-E75 E78-E81,E85-E87 E88-E92 E95-E97			
-	E9-E12 E15-E22 E25-E28 E31-E34 E37-E40 E42-E48,E56-E59, E62-E69 E72-E75,E78-E81 E84-E87 E89-E92,E94-E97			
72	E3-E6,E9-E12,E15-E22 E25-E28, E31-E34,E37-E40,E42-E53 E56-E59, E62-E69 E72-E75,E78-E81,E84-E87 E89-E92,E94-E97			

REVISIONS

CHK	CHANGE NO.	REV

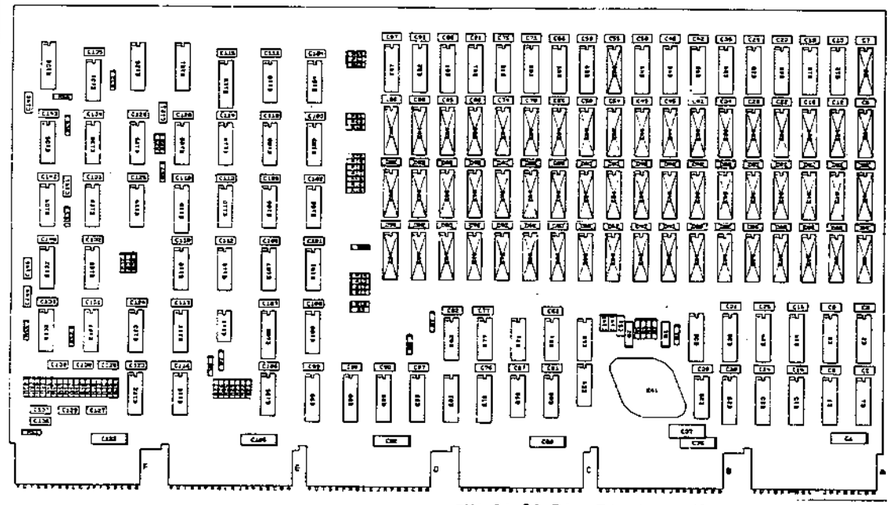
TITLE	SIZE	CODE	NUMBER	REV
UNIBUS MOS MEMORY	D	CS	M7847-0-1	K
SCALE	SHEET 2 OF 16		DIST.	

JJ	JH	JF	JE	JD	JC	[illegible]	JA				
HJ	HH	HF	HE	HD	HC	HB	HA				
FJ	FH	FF	FE	FD	FC	FB	FA				
EJ	EH	EF	EE	ED	EC	EB	EA				
DJ	DH	DF	DE	DD	DC	DB	DA				
CJ	CH	CF	CE	CD	CC	CB	CA				
BJ	BH	BF	BE	BD	BC	BB	BA				
YJ	YH	YF	YE	YD	YC	YB	YA		PARTS LIST		
QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
1	1	1	1	1	1	1	1	E141	DIP SWITCH	1211184-01	66
5	6	8	6	6	6	6	6		SPLIT LUGS	9008735-00	67
1	1	1	1	1	1	1	1		HANDLE ASSY	1210711-02	68
12	12	12	12	12	12	12	12		EYELET	9006732-00	69
2	2	2	2	2	2	2	2		NUT, KEP #4-40	9006557-00	70
2	2	2	2	2	2	2	2		SCR, PPH, #4-40 x .31	9006010-01	71
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R		THERMAL COMPOUND	9008268-00	72
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R		WIRE, #22 AWG BUS	9107560-01	73
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R		WIRE, #30 AWG WIRE WRAP	9105740-55	74
1	1	1	1	1	1	1	1	C37	CAP 8UF, 25V	1012084-01	75
2	2	2	2	2	2	2	2	C147, C148	CAP .47UF, 25V, CER	1010279-00	76
1	1	1	1	1	1	1	1	W8	JUMPER, WIRE INSULATED	9009185-00	77
1	1	1	1	1	1	1	1	E120	IC 74LS20	1912610-00	78
REF	REF	REF	REF	REF	REF	REF	REF		DRAWING DIRECTORY	B-DD-M7847-0	79

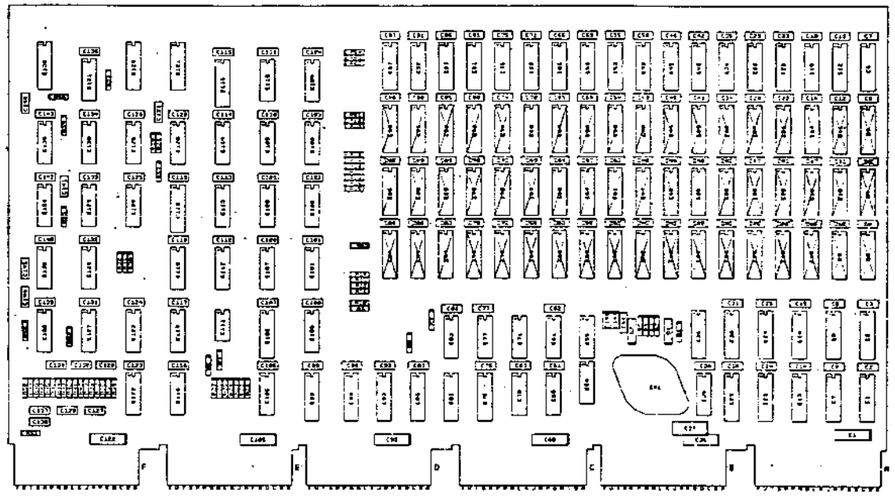
REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	CS	M7847-0-1	K
SCALE	SHEET 3 OF 10	DIST.		

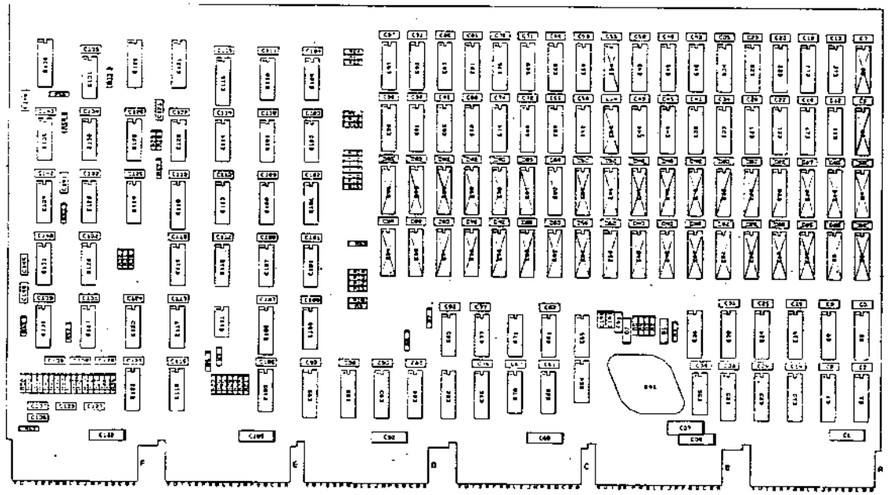
NOTE:
THESE OVERLAYS ONLY TO INDICATE POSITIONS FOR 4K MOS MEMORY IC'S & .22 UF CAPS



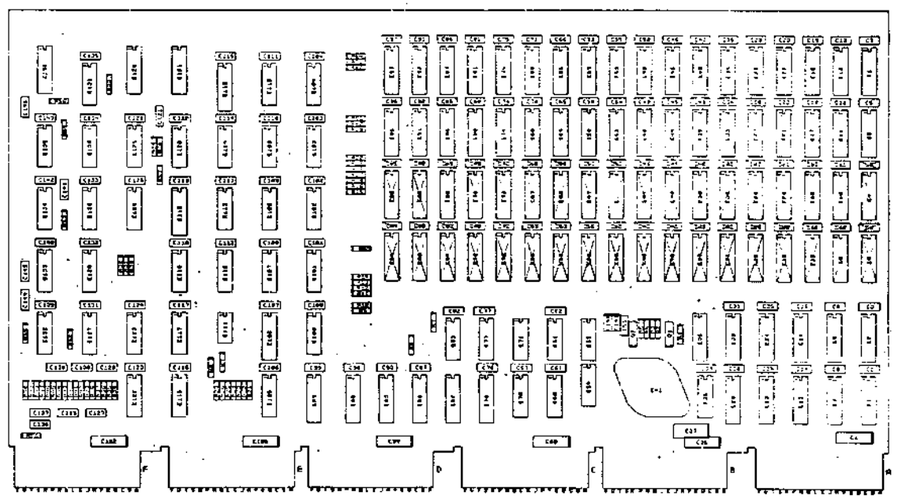
-YA;-BA;-CA;-DA,-EA;-FA;-HA;-JA.



-YB,-BB,-CB,-DB,-EB,-FB,-JB,-HB.



-YC,-BC,-CC,-DC,-EC,-FC,-HC,-JC.

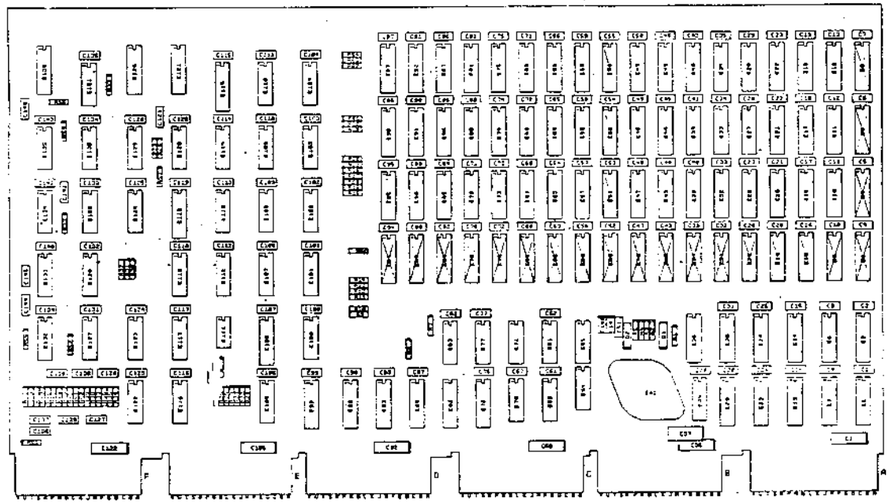


-YD,-BD,-CD,-DD,-ED,-FD,-HD,-JD.

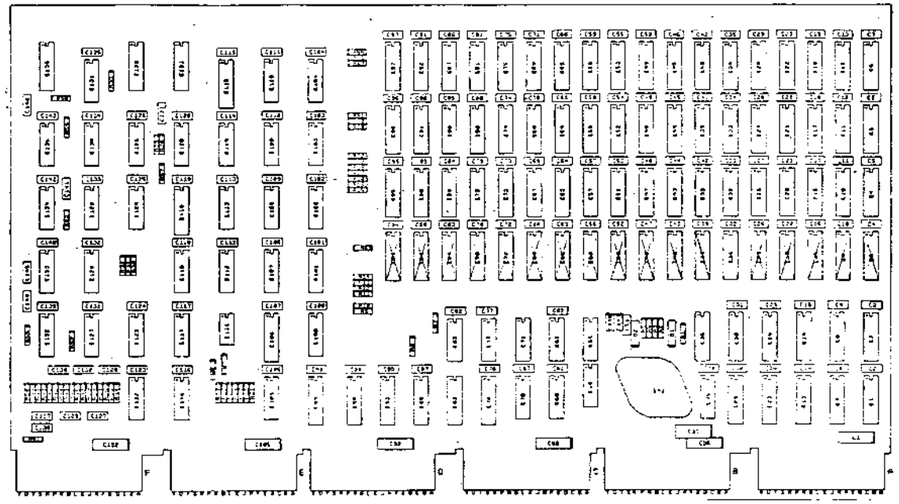
REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	DCS	M7847-0-1	K
SCALE — SHEET 4 OF 16	DIST.			

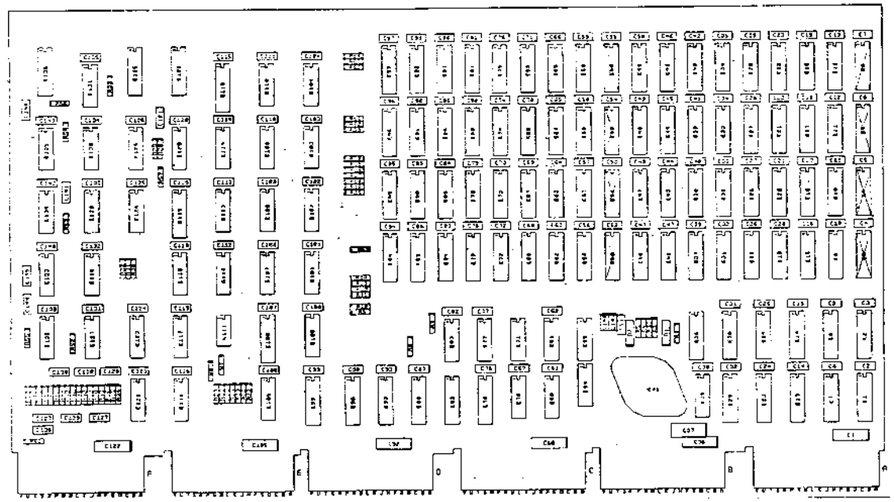
NOTE:
THESE OVERLAYS ONLY TO INDICATE POSITIONS FOR 4K MOS MEMORY IC's AND .22 UF CAPS.



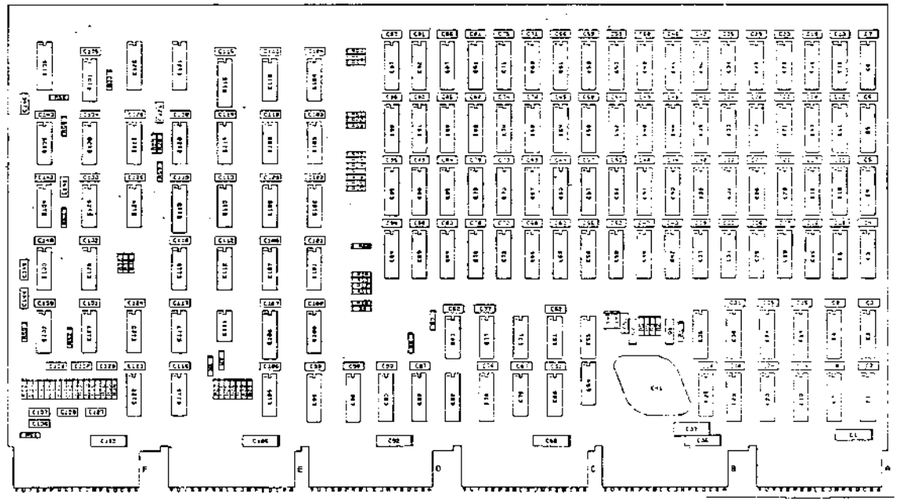
-YE,-BE,-CE,-DE,-EE,-FE,-HE,-JE



-YF,-BF,-CF,-DF,-EF,-FF,-HF,-JF



-YH,-BH,-CH,-DH,-EH,-FH,-HH,-JH



-YJ,-BJ,-CJ,-DJ,-EJ,-FJ,-HJ,-JJ.

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	CS	M7847-0-1	K
SCALE	SHEET 5 OF 7	DIST.		

M7847-0-1 K

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NOTE:
JUMPERS CONNECTED AS FOLLOWS

BA,CA,DA,EA,BB,CB,DB,EB VA,VB,FA,HA,JA,FB,HB,JB	W3 - W4
BC,CC,DC,EC,BD,CD,DD,ED, VC,VD,FC,HC,JC,FD,HD,JD	W1 - W2 W3 - W4
BE,CE,DE,EE,BF,CF,DF,EF, BH,CH,DH,EH,BJ,CJ,DJ, EJ,YE,VF,VH,YJ,FE,HE,JE, FF,HF,JF,FH,HH,JH,FJ,HJ,JJ	W1 - W2 W3 - W4 W5 - W6

SW DIP E111 A B C D E

R21 1K +5V
R22 1K
R23 1K
R24 1K
R27 1K

7400 E117 7486 E117 7451 E116

7483 E106

7404 E129

7420 E105

7427 L135

AMB A12 H
AMB A11 H WT
R26 1K
+5V

BUS BIT BS1 — 8642 E71
BUS A16 BS2 — 8642 E71
BUS A15 BR1 — 8642 E71
BUS A14 BR2 — 8642 E61
BUS A13 BP1 — 8640 E61
BUS C0 L BU2 — 8643 E79 — ADG C0 H [DR9]
BUS MSYN L BV1 — 8643 E78 — ADG MSYN H [TC7]
8640 E71 — ADG C1 L [TC7]
BUS DC LO L BF2 — 8640 E55 — DC LO H
BUS C1 L BT2 — 8640 E76 — ADG C1 H [DR9]
BUS A00 L BH2 — 7640 E54 — ADG A0 H [DR5]

7452 E112 BANK A W3 W4
7452 E112 BANK B W1 W2
7452 E112 BANK C W5 W6
7452 E118 BANK D W5 W9
7452 E123 ADE ADDR PRESENT H [TC7]

R31 1K +5V
R30 1K
R32 1K
R25 1K +5V

7475 E115
D0 R30(12) R31(12) ADG RSA L [DR9]
D2 R30(16) R31(16) ADG RSB L [DR9]
D3 R30(9) R31(8) ADG RSC L [DR5]
D1 R30(15) R31(14) ADG RSD L [DR5]
CNB1 E132

TC7 ADSTR H — E122 7440

ASSEMBLY VARIATION	W7	W8	W9
FA,HA,JA,FB,HB,JB,FC,HC,JC,BA,CA,DA,EA,BC,CC,DC,EC,BD,ED,FD,HD,JD,FE,HE,JE,FF,HF,JF,CD,DD,ED,BE,CE,DE,EE,BF,CF,DF,EF	OUT	OUT	OUT
FA,HA,JA,FB,HB,JB,FC,HC,JC,BA,CA,DA,EA,BH,CH,DH,EH,BJ,CJ,DJ & EJ NORMAL OPERATION	OUT	IN	OUT
FA,HA,JA,FB,HB,JB,FC,HC,JC,BA,CA,DA,EA,BH,CH,DH,EH,BJ,CJ,DJ & EJ 2K I/O PAGE	OUT	OUT	IN
FA,HA,JA,FB,HB,JB,FC,HC,JC,BA,CA,DA,EA,BH,CH,DH,EH,BJ,CJ,DJ & EJ 3K I/O PAGE	IN	OUT	IN

* A-E MUST BE SET FOR STARTING ADDRESS OF 100 000.

SWITCH SETTINGS

STARTING ADDRESS	SWITCH A	B	C	D	E	STARTING ADDRESS	SWITCH A	B	C	D	E	STARTING ADDRESS	SWITCH A	B	C	D	E	STARTING ADDRESS	SWITCH A	B	C	D	E
0	1	1	1	0	0	200,000	1	0	1	0	0	400,000	0	1	1	0	0	600,000	0	0	1	0	0
20 000	1	1	0	1	1	220,000	1	0	0	1	1	420,000	0	1	0	1	1	620,000	0	0	0	1	1
40,000	1	1	0	1	0	240,000	1	0	0	1	0	440,000	0	1	0	1	0	640,000	0	0	0	1	0
60 000	1	1	0	0	1	260,000	1	0	0	0	1	460,000	0	1	0	0	1	660,000	0	0	0	0	1
100,000	1	1	0	0	0	300,000	1	0	0	0	0	500,000	0	1	0	0	0	700,000	0	0	0	0	0
120,000	1	0	1	1	1	320,000	0	1	1	1	1	520,000	0	0	1	1	1	720,000	1	1	1	1	1
140 000	1	0	1	1	0	340,000	0	1	1	1	0	540,000	0	0	1	1	0	740,000	1	1	1	1	0
160,000	1	0	1	0	1	360,000	0	1	1	0	1	560,000	0	0	1	0	1						

0 = ON
1 = OFF

REVISIONS		
CHK	CHANGE NO.	REV.

(ADDRESS DECODE)

TITLE: UNIBUS MOS MEMORY (ADD)
SIZE: D CODE: CS NUMBER: M7847-0-1 REV: K
SCALE: — SHEET 6 OF 16 DIST:

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BB+5V
R29 560
R28 560
R57 18
C121 220PF
74S03 E125
74S03 E125
SRT CLK
REF REQ
*HIGH
TC7 REF WARN L
74S04 E129
74S00 E131
74S74 E132
TC7 RFCY (1) H [TC7, AM8]
TC7 RFCY (1) L [DR9]
TC7 RFCY (0) H [TC7, DR9]
TC7 BUSY L
TC7 SSYN (0) H
ADG MSYN H
ADG ADDR PRESENT H
74S20 E123
R33 1K
8B+5V
TC7 DAT REQ CLR L [DP10, DP11]
74S00 E131
R54 100
C146 82 PF
74S04 E129
74S04 E124
74S74 E132
74S00 E110
TC7 ADSTR H [TC7, AM8, ADG]
74S04 E124
74S04 E124
TC7 RAS H [TC7, DR9]
TP1
DB1
C127 .01UF
R36 4.7K
R38 1K
R37 1K
BB+5V
R34 681 1%
R35 2.7K
74S05 E128
C128 220PF
R40 1.05K 1%
R39 6.8K
74S05 E128
C130 220 PF
*HIGH
*75107 E127
TC7 COLAD H [TC7, AM8 DR9]
TC7 CAS H [TC7, DR9]
REF RST L
BB+5V
R41 1K 1%
R42 4.3K
TC7 RAS H
74S05 E128
C129 220PF
*75107 E133
TC7 BUSY L [TC7, DR9]
*HIGH
74S74 E135
TC7 REF WARN L [TC7]
REF CLK L
TC7 REFINC H [AM8]
BB+5V
R48 30K
TC7 RFCY (1) H
TC7 COLAD H
74S00 E131
74S04 E129
74S05 E128
C144 560PF
C145 560PF
TP2
DA1
C137 .01UF
R46 4.7K
R47 1K 1%
BB+5V
R45 1K 1%
74S74 E132
TC7 ENBUS L [DP10, DP11]
TP3
DU1
C136 .01uf
R50 1K 1%
R51 4.7K
R49 1K 1%
BB+5V
TP4
DS1
R55 1K
+5V
BB+5V
R54 1K
R3 1K
TC7 *A1 [AM8, DR9]
TC7 *HIGH [DR9]
R52 1K
TP5
DP1
*75107 E132
R43 1.54K 1%
R44 12K
TC7 CAL H
74S04 E124
74S05 E128
C138 220PF
*HIGH
CLR STR H
DR9 LOAD (0) H
TC7 RFCY (0) H
74S10 E134
ADG MSYN H
DR9 LOAD (1) H
TC7 COLAD H
74S10 E134
TC7 DLS H [DP10, DP11]
*HIGH
R53 100
C141 220PF
ADG MSYN H
74S74 E135
TC7 SSYNBUS H [TC7]
8881 E35
BE1
INT SSYN
8881 E35
BUS SSYN
PARITY DETECT L
BE2
R1 13K
+5V

NOTES:
1. ALL SIGNAL NAMES WITHOUT PREFIX HAVE AN ASSUMED PREFIX OF TC7.
2. AN IC MARKED WITH AN * INDICATES THAT THE IC IS ON THE BB+5 VOLTAGE BUS.

REVISIONS		
CHK	CHANGE NO	REV

(TIMING CHAIN)

TITLE	UNIBUS MOS MEMORY (TC7)	SIZE/CODE	NUMBER	REV.
SCALE	SHEET 7 OF 18	D CS	M7847-0-1	K
		DIST.		

BUS A12 L — BP2 — 8640 E60 — AMB A12 H [AD6]
BUS A11 L — BN1 — 8640 E60 — AMB A11 H [AD6]
BUS A10 L — BN2 — 8640 E60
BUS A09 L — BN1 — 8640 E60
BUS A08 L — BM2 — 8640 E61
BUS A07 L — BL1 — 8640 E61
BUS A06 L — BL2 — 8640 E55
BUS A05 L — BK1 — 8640 E54
BUS A04 L — BK2 — 8640 E55
BUS A03 L — BJ1 — 8640 E54
BUS A02 L — BJ2 — 8640 E54
BUS A01 L — BH1 — 8640 E55

7475 E76: D1 R1(1) R1(0) → AMB LA12; D0 R2(0) → AMB LA11; D2 R2(1) → AMB LA10; D3 R3(1) R3(0) → AMB LA09; ENB1 ENB2
7475 E88: D0 R1(0) R1(1) → AMB LA08; D1 R2(0) R2(1) → AMB LA07; D3 R3(1) R3(0) → AMB LA06; D2 R2(1) R2(0) → AMB LA05; ENB1 ENB2
7475 E82: D3 R3(1) R3(0) → AMB LA04; D1 R1(1) R1(0) → AMB LA03; D2 R2(1) R2(0) → AMB LA02; D0 R0(1) R0(0) → AMB LA01; ENB1 ENB2

74197 * E83: D1 D2 D3 D0 → AMB RA1 AMB RA2 AMB RA3 AMB RA0; CLR LD CLK0 CLK1
TC7 *H1 — TC7 REF INC H — TP60 — CM1 — 68459 R1 1K
7474 E71 → AMB RA4; 7474 E77 → AMB RA5; 7474 E77
TC7 ADSTR H — 7440 E122

AMB RA5 — AMB LA06 — AMB LA12 — 74S153 E99 * — AMB DA01 [DR5]
AMB RA4 — AMB LA05 — AMB LA11 — 74S153 E99 * — AMB DA00 [DR5]
TC7 RFCY(1) H — TC7 COLAD H
AMB RF — AMB LA04 — AMB LA10 — 74S153 E99 * — AMB DA03 [DR9]
AMB RA1 — AMB LA02 — AMB LA08 — 74S153 E99 * — AMB DA01 [DR9]
AMB RA0 — AMB LA01 — AMB LA07 — 74S153 E98 * — AMB DA00 [DR9]
AMB RA2 — AMB LA03 — AMB LA09 — 74S153 E98 * — AMB DA02 [DR9]

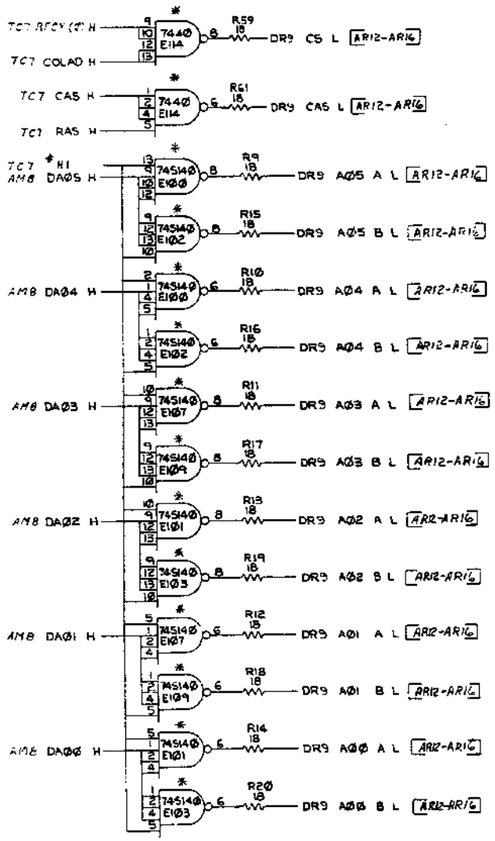
NOTE:
AN IC MARKED WITH AN * INDICATES THAT THE IC IS ON THE BP-5 VOLTAGE BUS.

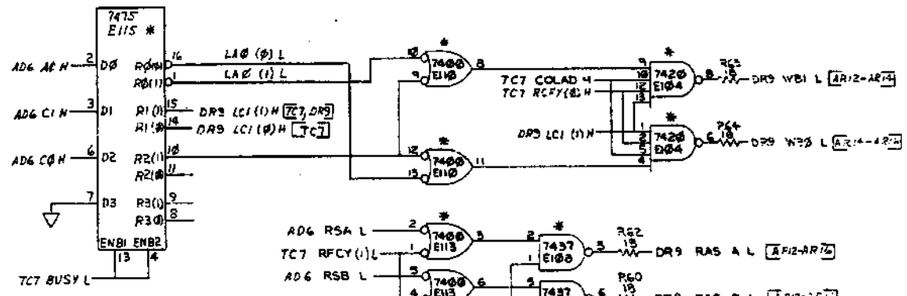
REVISIONS

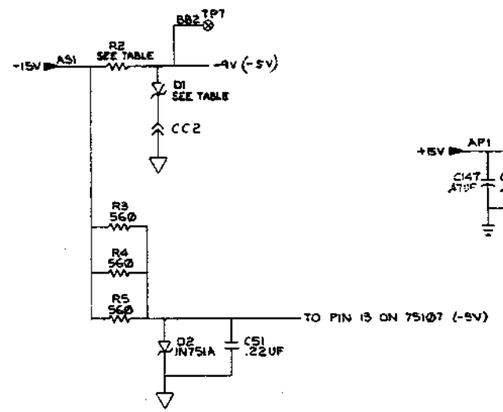
CHK	CHANGE NO.	REV.

(ADDRESS MULTIPLEX)

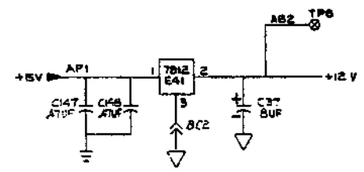
TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (AM8)	D	CS	M7847-0-1	K
SCALE —	SHEET 8 OF 16	DIST.		



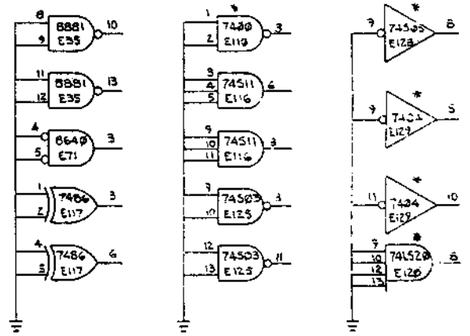




VARIATION	R2 VALUE	D1 VALUE
YA, YB, YC, YD YE, YF, YH, YJ	27Ø	IN 757A 3V
BA, CA, DA, EA, BB, CB, DB, EB, BC CC, DC, EC, BD, CD, DD, ED, BE, CE, DE, EE, BF, CF, DF, EF, BH, CH, DH, EH BJ, CJ, DJ, EJ.	56Ø Ω	IN751A -5V



(SPARES)



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (D29)	D	CS	M7847-2-1	K
SCALE — SHEET 9 OF 16	DIST.			

ARI2 DO 15 H
ARI2 DO 14 H
ARI2 DO 13 H
ARI2 DO 12 H
ARI3 DO 11 H
ARI3 DO 10 H
ARI3 DO 09 H
ARI3 DO 08 H
ARI4 DO PI H
TC7 ENBUS L
TC7 DAT REG CLR L
TC7 DLS H

74174 E36 — D1 R1(I) 5; D5 R5(I) 15; D3 R3(I) 10; CLR CLK 1 9
74174 E30 — D1 R1(I) 5; D5 R5(I) 15; D3 R3(I) 10; CLR CLK 1 9
74174 E24 — D1 R1(I) 5; D5 R5(I) 15; D3 R3(I) 10; CLR CLK 1 9

8641 E29 — AM2 → BUS DI5; AL1 → BUS DI4
8641 E23 — AL2 → BUS DI3; AK1 → BUS DI2; AK2 → BUS DI1; AJ1 → BUS DI0
8641 E13 — AJ2 → BUS DØ9; AH1 → BUS DØ8; AN1 → PI

74174 E36 — D2 R2(I) 7; D0 R0(I) 2; D4 R4(I) 12; CLR CLK 1 9
74174 E30 — D2 R2(I) 7; D0 R0(I) 2; D4 R4(I) 12; CLR CLK 1 9
74174 E24 — D2 R2(I) 7; D0 R0(I) 2; D4 R4(I) 12; CLR CLK 1 9

DPIØ DI 15 H [ARI2]
DPIØ DI 14 H [ARI2]
DPIØ DI 13 H [ARI2]
DPIØ DI 12 H [ARI2]
DPIØ DI 11 H [ARI3]
DPIØ DI 10 H [ARI3]
DPIØ DI Ø9 H [ARI3]
DPIØ DI Ø8 H [ARI3]
DPIØ DI PI H [ARI4]

REVISIONS: CHK | CHANGE NO. | REV.

(DATA PATH)

TITLE: UNIBUS MOS MEMORY (DPIØ) | SIZE D | CODE DCS | NUMBER M7847-Ø-1 | REV. K
SCALE — | SHEET 10 OF 16 | DIST.

160

74179 E14 — ARI4 DO Ø7 H, ARI4 DO Ø6 H, ARI4 DO Ø5 H
74179 E8 — ARI5 DO Ø4 H, ARI5 DO Ø3 H, ARI5 DO Ø2 H
74179 E2 — ARI5 DO Ø1 H, ARI6 DO ØØ H, ARI6 DO PØ H
8641 E13 — ARØ2 BUS DØ7; ARI BUS DØ6; ARØ2 BUS DØ5
8641 E7 — AEI BUS DØ4; AEØ2 BUS DØ3
8641 E1 — ADI BUS DØ2; ADØ2 BUS DØ1; ACI BUS DØØ; API PØ
TC7 ENBUS L
74179 E14 — DPII DI Ø7 H [ARI4]; DPII DI Ø6 H [ARI4]; DPII DI Ø5 H [ARI4]
74179 E8 — DPII DI Ø4 H [ARI5]; DPII DI Ø3 H [ARI5]; DPII DI Ø2 H [ARI5]
74179 E2 — DPII DI Ø1 H [ARI5]; DPII DI ØØ H [ARI6]; DPII DI PØ H [ARI6]
TC7 DAT REG CLR L
TC7 DLS H

REVISIONS		
CHK	CHANGE NO.	REV.

(DATA PATH)

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (DPII)	D	CS	M7847-Ø-1	K
SCALE —	SHEET 11 OF 16	DIST.		

16L

DR9 A05 B L
DR9 A04 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

4096 E97 — DP10 DI 14 H
4096 E92 — DP10 DI 13 H
4096 E87 — DP10 DI 12 H
4096 E81

DP10 DI 15 H

DR9 CS L
DR9 CAS L
DR9 WR L
DR9 RAS A L

4096 E96
4096 E91
4096 E86
4096 E80

DR9 RAS B L
DR9 A05 A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

4096 E95
4096 E90
4096 E85
4096 E79

DR9 RAS C L

4096 E94
4096 E89
4096 E84
4096 E78

AR12 DO 15 H [DP10] — AR12 DO 14 H [DP10] — AR12 DO 13 H [DP10] — AR12 DO 12 H [DP10]

DR9 RAS D L

4096 EXX
A05 A04 A03 A02 A01 A00 DIN CS CAS WR RAS
DOUT
18 11 12 6 5 1 2 13 15 3 4 16

GND PIN 16
(-5V, -5V PIN 1
+12V PIN 8
+5V PIN 9

NOTE:
1. SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

REVISIONS
CHK | CHANGE NO. | REV.

(ARRAY)

TITLE UNIBUS MOS MEMORY (AR12) | SIZE D | CODE CS | NUMBER M7847-0-1 | REV. K
SCALE | SHEET 12 OF 16 | DIST.

DEC M7847-0-1 K

DR9 A05 B L
DR9 A04 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

4096 E75 — DPIØ DI 10 H
4096 E69 — DPIØ DI 09 H
4096 E65 — DPIØ DI 08 H
4096 E59

DPIØ DI 11 H

DR9 CS L
DR9 CAS L
DR9 WRI L
DR9 RAS A L

4096 E74
4096 E68
4096 E64
4096 E58

DR9 RAS B L
DR9 A05 A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

4096 E73
4096 E67
4096 E63
4096 E57

DR9 RAS C L

4096 E72 — AR13 DO 11H [DP16]
4096 E66 — AR13 DO 10H [DP16]
4096 E62 — AR13 DO 09H [DP16]
4096 E56 — AR13 DO 08H [DP17]

DR9 RAS D L

4096 Exx
A05 (10)
A04 (11)
A03 (12)
A02 (6)
A01 (7)
A00 (8)
DIN (5)
DOUT (14)
CS CAS WR RAS
(13) (15) (3) (4)

PIN 16 GND
PIN 1 -9V (-5V)
PIN 8 +12V
PIN 9 +5V

NOTES:
1. SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

REVISIONS		
CHK	CHANGE NO.	REV.

(ARRAY)

TITLE	UNIBUS MOS MEMORY (AR13)	SIZE/CODE	NUMBER / REV.
		D DCS	M7847-Ø-1 K
SCALE	SHEET 13 OF 16	DIST.	

M7847-Ø-1 REV K

DR9 A15 B L
DR9 A14 B L
DR9 A13 B L
DR9 A12 B L
DR9 A11 B L
DR9 A10 B L

4096 E53 — DPII DI 07 H
4096 E49 — DPII DI 06 H
4096 E45 — DPII DI 15 H
4096 E41

DPI0 DI .H

DR9 CS L
DR9 CAS L
DR9 WB1 L
DR9 RAS A L

4096 E52
4096 E48
4096 E44
4096 E39

NOTE:
SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

DR9 RA5 B L
DR9 A05 A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

4096 EXY
10 A05
11 A04
12 A03
6 A02
7 A01
5 A00
2 DIN
CS CLSV/RRAS
DOUT 14
13 15 3 17

4096 E51
4096 E47
4096 E43
4096 E38

DR9 RAS C L

4096 E50
4096 E46
4096 E42
4096 E37

ARI4 DO 11 H [DPI0]
ARI4 DO 07 H [DPII]
ARI4 06 H [DPII]
ARI4 DO 05 H [DPII]

DR9 WB0 L

DR9 RA5 D L

GND PIN 16
(-5V)-9V PIN 1
+12V PIN 8
+5V PIN 9

REVISIONS
CHK | CHANGE NO. | REV.

(ARRAY)
TITLE UNIBUS MOS MEMORY (ARI4)
SIZE/CODE D CS
NUMBER M7847-0 -1
REV. K
SCALE - SHEET 14 OF 16 DIST.

DCS M7847-0-1 K

NOTE:
SOME ICS ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

DR9 AØ5 B L
DR9 AØ4 B L
DR9 AØ3 B L
DR9 AØ2 B L
DR9 AØ1 B L
DR9 AØØ B L

DPII DI Ø4 H
DR9 CS L
DR9 CAS L
DR9 WBØ L
DR9 RAS A L

DR9 RAS B L
DR9 AØ5 A L
DR9 AØ4 A L
DR9 AØ3 A L
DR9 AØ2 A L
DR9 AØ1 A L
DR9 AØØ A L

DR9 RAS C L

DR9 RAS D L

4096 E34 — DPII DI Ø3 H
4096 E28 — DPII DI Ø2 H
4096 E22 — DPII DI Ø1 H
4096 E18

4096 E33
4096 E27
4096 E21
4096 E17

4096 E32
4096 E26
4096 E20
4096 E16

4096 E31
4096 E25
4096 E19
4096 E15

ARI5 DO Ø4 H [DPII]
ARI5 DO Ø3 H [DPII]
ARI5 DO Ø2 H [DPII]
ARI5 DO Ø1 H [DPII]

4096 E4X

10	AØ5
11	AØ4
12	AØ3
6	AØ2
7	AØ1
5	AØ0
2	DIN
	CS CAS WR RAS
	13 15 3 4
K	D OUT

GND PIN 16
(-5V) -5V PIN 1
-12V PIN 8
+5V PIN 9

REVISIONS

CHK	CHANGE NO	REV

(ARRAY)

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (ARI5) (ARRAY)	D	CS	M7847-Ø-1	K

SCALE — SHEET 15 OF 16 — DIST

DCS M7847-Ø-1 K

DR9 A05 B L
DR9 A04 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

DPII DI P0 H

DR9 CS L
DR9 CAS L
DR9 WB0 L
DR9 RAS A L

DR9 RAS B L
DR9 A05 A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

DR9 RAS C L

DR9 RAS D L

4096 E6
4096 E12
4096 E5
4096 E11
4096 E4
4096 E10
4096 E3
4096 E9

DPII DI 00 H

ARIG DO 00 H [DPII]

ARIG DO P0 H [DPII]

4096 EXX

10	A05	
11	A04	
12	A03	
6	A02	DOUT 14
7	A01	
5	A00	
2	DIN	
	CS CAS WR RAS	
	13 15 3 4	

GND PIN 16
(-5V)-9V PIN 1
+12V PIN 8
+5V PIN 9

NOTE:
SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

REVISIONS		
CHK	CHANGE NO	REV

(ARRAY)

TITLE: UNIBUS MOS MEMORY (AR16)
SIZE: D | CODE: DCS | NUMBER: M7847-0-1 | REV: K
SCALE: — | SHEET 16 OF 16 | DIST:

DCS M7847-0-1 K

16

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

FIELD MAINT. PRINT SET KD11-D	B-TC-KD11-D-5
FLOW DIAGRAM	K-MP-KD11-D-2
KD11-D PROCESSOR	A-PL-KD11-D-Ø
KD11-D PROC. MODULE HEX	D-CS-M7263-Ø-1
ROM LISTING	K-CS-KD11-D-3

UNIT VARIATIONS COVERED BY THIS PRINT SET
KD11-D

KD11-D

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ2Ø

REVISIONS		
REV.	CHG. NO.	DATE
A	KD11-D-1	19-JAN-76

USED ON OPTION/MODEL	
11/Ø4-AA	11/Ø4-DC
11/Ø4-AB	11/Ø4-DD
11/Ø4-AC	11/Ø4-EC
11/Ø4-AD	11/Ø4-ED
11/Ø4-BA	
11/Ø4-BB	
11/Ø4-BC	
11/Ø4-BD	

SHEET 1 OF 1

DRN.	D. HEALY	DATE 10/1/75
CHK'D	D. HEALY	DATE 10/1/75
PROJ. ENG.	B BERNSTEIN	DATE 10-22-75
FIELD SERV.		DATE 10-22-75

digital

TITLE: FIELD SERVICE MAINTENANCE PRINT SET KD11-D

SIZE	CODE	NUMBER	REV.
B	TC	KD11-D-5	A

DIST.

EN 01124-16-N675 (327)

DRB 124

PAGE REVISION CONTROL SHEET

SH NO.	PAGE REVISIONS	REMARKS
1		
2		
3		
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34		
35		
36		
ECO NO.		
ETCH REV.		
ENG.		
DATE		FIRST USED ON OPTION/MODEL: KDII-D

DRN. D. Stacy	DATE 10/20/75	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. [illegible]	DATE 10/22/75	
ENG. R. Barry	DATE 10-22-75	TITLE: MICRO PROGRAM FLOW KDII-D
PROJ. ENG. R BERNSTEIN	DATE 10-22-75	
PROD. RK Peters	DATE 10/23/75	

NEXT HIGHER ASSY.	SIZE	CODE	NUMBER	REV.
B-DD-KDII-B	K	MP	KDII-D-2	
SCALE				
SHEET 1 OF 36	DIST.			

```
; 1     ;CONTROL STORE ROM DEFINITIONS FOR THE PDP11/OSL
; 2
; 3     ;FIELDS ARRANGED FOR READABILITY, NOT COMPACTNESS
; 4     ;BIT FIELDS ARE NUMBERED FROM LEFT TO RIGHT
; 5
; 6     ;ALU CONTROL SIGNALS
; 7     ALU/=75,6,29,0          ;BIT 5=CARRY IN
; 8                                     ;BIT 4=ALU MODE
; 9                                     ;BIT 3-0=ALU S0-S3
; 10                                    ;BY DEFAULT ALU/=A
; 11
; 12            ZERO=63
; 13            A + B=71
; 14            A PLUS B=31
; 15            A PLUS B PLUS 1=30
; 16            B=27
; 17            A MINUS B MINUS 1=45
; 18            A(-A)=40
; 19            A PLUS A=15
; 20            A PLUS 1=74
; 21            A=75
; 22
; 23    ; SCRATCH PAD CONTROL
; 24    SPA MUX/=3,2,33,0               ;BIT 0=SPA MUX A1
; 25                                    ;BIT 1=SPA MUX A0
; 26                                    ;BY DEFAULT SPA MUX/=ROM SPA
; 27            AA=0
; 28            BS=1
; 29            RD=2
; 30            ROM SPA=3
; 31    ROM SPA/=4,4,37         ;BIT 0-3=SP A3-A0
; 32            R5=5
; 33            R6=6
; 34            R7=7
; 35            PC=7
; 36            R10=10
; 37            R11=11
; 38            R12=12
; 39            R13=13
; 40            R14=14
; 41            R17=17
; 42            SPAB=17
; 43    ;B REGISTER CONTROL
; 44    B MODE/=3,2,13,0                ;BY DEFAULT B MODE/=HOLD DATA
; 45            LOAD=0
; 46            SHFT L=1
; 47            SHFT R=2
; 48            HOLD=3
; 49    ;BRANCH UBUS MICROCODE TEST (BUT) CONTROL
; 50    BUT/=4,3,16,0           ;BY DEFAULT BUT/=2 OR 10
; 51                                    ;OUTPUT ENABLED
; 52            NONE=0
; 53            BUT DEST=2
; 54            BUS STOP=3
; 55            BUS DBE=1
; 56            LOAD PSW=5
; 57            LOAD CC=3
```

```
; 56    ;UNIBUS GATING CONTROL SIGNALS
; 57    BUS CONTROL/=W,2,19,0   ;BY DEFAULT BUS CONTROL/=
; 58                            ;DATI FORCING A
; 59                            ;UNIBUS READ OPERATION
; 60            DATI=0
; 61            DATIP=1
; 62            DATO=2
; 63            DATOP=3
; 64    ;CPU DATA PATH A-MULTIPLEXER SELECT CONTROL
; 65    AMUX/=W,2,22,0          ;BY DEFAULT AMUX/ALU
; 66                            ;ALLOWING UB INPUTS
; 67                            ;TO PASS THROUGH MULTIPLEXER
; 68            UB=0
; 69            X=1
; 70            ALU=2
; 71            PSW=3
; 72    ;SCRATCH PAD READ/WRITE CONTROL
; 73    SP CONTROL/=W,2,9,0             ;BY DEFAULT SP CONTROL/=READ
; 74                                    ;FORCING SCRATCH PAD TO
; 75                                    ;READ ADDRESSED LOCATION
; 76            READ=0
; 77            WRITE LOW=1             ;LOW BYTE WRITTEN INTO SP
; 78            ENAB=2                  ;SP WRITES A WORD AND
; 79                                    ;B1 IS FORCED ON B LEG OF ALU
; 80            WRITE WORD=3            ;WORD WRITTEN INTO SP
; 81
; 82    ;BRANCH ON BYTE INSTRUCTION CONTROL
; 83    BUT BYTE/=W,1,10,0              ;DEFAULT TO BRANCH DISABLED
; 84            BUT=1                   ;ENABLE BRANCH
; 85
; 86    ;BRANCH TO SERVICE CONTROL
; 87    BUT SERVICE/=W,1,11,0   ;DEFAULT TO BRANCH DISABLED
; 88            SERV=1          ;ENABLE BRANCH
; 89
; 90    ;DATA TRANSFER CONTROL SIGNAL
; 91    DAT TRAN/=W,1,17,0              ;BY DEFAULT DATA TRANSFER DISABLED
; 92            TRAN=1          ;TRANSFER ENABLED
; 93
; 94    ;ALLOW BYTE TRANSFER CONTROL SIGNAL
; 95    ALLOW BYTE/=1,1,24,0            ;BY DEFAULT ALLOW BYTE DISABLED
; 96            BYTE=0          ;ENABLE ALLOW BYTE
; 97
; 98    ;SIGN EXTEND CONTROL
; 99    ENAB SEX/=1,1,23,0              ;B1 DEFAULT SIGN EXTEND DISABLED
; 100           SEX=0                   ;ENABLE SIGN EXTENSION OF
; 101                                   ;DATA IN B REGISTER
; 102
; 103   ;AUXILIARY ROM CONTROL ENABLE
; 104   AUX CONTROL/=W,1,36,0   ;BY DEFAULT AUX CONTROL IS DISABLED
; 105           AUX=1                   ;ENABLE AUXILIARY CONTROL
; 106
; 107   ;NEXT MICRO IC ADDRESS
; 108   J/=W,8,7,4
; 109
; 110   ;LOAD INSTRUCTION REGISTER ENABLE
; 111   LOAD IR/=W,1,39,0
; 112           LOAD=1
; 113
; 114
; 115   ;ROM USED LOCATIONS
```



```
; 116   NIL/=W,2,31,0
; 117
; 118
; 119   ;MACRO DEFINITIONS
; 120   RA_PC                          "ROM SPA/PC,SPA MUX/ROM SPA"
; 121   RA_RS                          "SPA MUX/RS"
; 122   RA_RD                          "SPA MUX/RD"
; 123   RA_R6                          "ROM SPA/R6,SPA MUX/ROM SPA"
; 124   RA_R10                         "ROM SPA/R10,SPA MUX/ROM SPA"
; 125   RA_R12                         "ROM SPA/R12,SPA MUX/ROM SPA"
; 126   RA_R13                         "ROM SPA/R13,SPA MUX/ROM SPA"
; 127   RA_R16                         "ROM SPA/R16,SPA MUX/ROM SPA"
; 128   RS_RS PLUS 2                   "ALU/A PLUS B PLUS 1,SPA MUX/RS,AMUX/ALU,SP CONTROL/ENAB+1,E
NAB SEX/SEX".
; 129   RS_RS MINUS 2                  "SPA MUX/RS,ALU/A MINUS B MINUS 1,SP CONTROL/ENAB+1;AMUX/ALU
,ENAB SEX/SEX"
; 130   PC_PC PLUS 2                   "ROM SPA/PC,ALU/A PLUS B PLUS 1,SP CONTROL/ENAB+1,AMUX/ALU,S
PA MUX/ROM SPA,ENAB SEX
; 131   RD_RD PLUS 2                   "ALU/A PLUS B PLUS 1,SPA MUX/RD,SP CONTROL/ENAB+1,AMUX/ALU,E
NAB SEX/SEX"
; 132   RD_RD MINUS 2                  "SPA MUX/RD,ALU/A MINUS B MINUS 1,SP CONTROL/ENAB+1,AMUX/ALU
,ENAB SEX/SEX"
; 133   R6_R6 PLUS 2                   "ALU/A PLUS B PLUS 1,ROM SPA/R6,SP CONTROL/ENAB+1,AMUX/ALU,S
PA MUX/ROM SPA,ENAB SEX
; 134   R6_R6 MINUS 2                  "ROM SPA/R6,ALU/A MINUS B MINUS 1,SP CONTROL/ENAB+1,AMUX/ALU
,SPA MUX/ROM SPA,ENAB
; 135   R13_R13 PLUS 2                 "ALU/A PLUS B PLUS 1,ROM SPA/R13,SP CONTROL/ENAB+1;AMUX/ALU,
SPA MUX/ROM SPA,ENAB
; 136   R13_R13 PLUS 1                 "ALU/A PLUS 1,ROM SPA/R13,SP CONTROL/WRITE WORD,AMUX/ALU,SPA
 MUX/ROM SPA,ENAB SPA
; 137   B_B PLUS RS                    "ALU/A PLUS B,SPA MUX/RS,B MODE/LOAD,AMUX/ALU"
; 138   B_B PLUS RD                    "ALU/A PLUS B,SPA MUX/RD,B MODE/LOAD,AMUX/ALU"
; 139   PC_PC PLUS B                   "ALU/A PLUS B,ROM SPA/PC,SP CONTROL/WRITE WORD,AMUX/ALU,SPA
 MUX/ROM SPA"
; 140   R13_R13 PLUS R13               "ALU/A PLUS A,ROM SPA/R13,SP CONTROL/WRITE WORD,AMUX/ALU,SPA
 MUX/ROM SPA"
; 141   B_R17                          "ROM SPA/R17,ALU/A,B MODE/LOAD,AMUX/ALU,SPA MUX/ROM SPA"
; 142   B_B                            "ALU/B,B MODE/LOAD,AMUX/ALU"
; 143   B_RS                           "SPA MUX/RS,B MODE/LOAD,AMUX/ALU"
; 144   B_F SEX                        "ALU/B,B MODE/LOAD;ENAB SEX/SEX;AMUX/ALU"
; 145   B_RD                           "SPA MUX/RD,B MODE/LOAD,AMUX/ALU"
; 146   B_PC                           "ROM SPA/PC,B MODE/LOAD;AMUX/ALU,SPA MUX/ROM SPA"
; 147   B_R12                          "ROM SPA/R12,B MODE/LOAD;AMUX/ALU,SPA MUX/ROM SPA"
; 148   B_R11 OR B                     "ROM SPA/R11,B MODE/LOAD;AUX CONTROL/AUX;AMUX/ALU,SPA MUX/RO
M SPA"
; 149   B_R11 OR B SEX                 "ROM SPA/R11,B MODE/LOAD;AUX CONTROL/AUX,ENAB SEX/SEX;AMUX/A
LU,SPA MUX/ROM SPA"
; 150   B_R17 OR B                     "ROM SPA/R17,B MODE/LOAD;AUX CONTROL/AUX,AMUX/ALU, SPA MUX/R
OM SPA"
; 151   RDB_RD OR B                    "SPA MUX/RD,SP CONTROL/WRITE LOW,AUX CONTROL/AUX;AMUX/ALU"
; 152   B_RD OR B                      "SPA MUX/RD,AUX CONTROL/AUX,AMUX/ALU"
; 153   RS_0                           "ROM SPA/R5,ALU/B,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/ROM
 SPA"
; 154   R11_B                          "ROM SPA/R11,ALU/B,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/RO
M SPA"
; 155   R11_B SEX                      "ROM SPA/R11,ALU/B,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/R
OM SPA"
; 156   R17_B (SAME)                   "ALU/B,ROM SPA/SAME,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/R
OM SPA"
; 157   R13_B                          "ALU/B,ROM SPA/R13,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/RO
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M SPA"
                                ; 160   RD_B                    "ALU/D,SPA MUX/RD,SP CONTROL/WRITE WORD,AMUX/ALU"
                                ; 161   ROB_B                   "ALU/D,SPA MUX/RD,SP CONTROL/WRITE LOW,AMUX/ALU"
                                ; 162   R12_B                   "ALU/D,ROM SPA/R12,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/RO
M SPA"
                                ; 163   PC_B                    "ALU/D,ROM SPA/PC,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/ROM
 SPA"
                                ; 164   RS_B                    "ALU/D,SPA MUX/RS,AMUX/ALU,SP CONTROL/WRITE WORD"
                                ; 165   R14_PSW                 "ROM SPA/R14;AMUX/PSW;SP CONTROL/WRITE LOW,SPA MUX/ROM SPA"
                                ; 166   R13_B                   "ALU/D,ROM SPA/R13;SP CONTROL/WRITE WORD;AMUX/ALU,SPA MUX/RO
M SPA"
                                ; 167   R16_A                   "ROM SPA/R16,ALU/ZERO,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX
/ROM SPA"
                                ; 168   R13_A                   "ROM SPA/R13,ALU/ZERO,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX
/ROM SPA"
                                ; 169   ASLB                    "B MODE//SHIFT L"
                                ; 170   CC_R14 ADD =B           "ROM SPA/R14,ALU/A(=B),OUT/LOAD CC;AMUX/ALU,SPA MUX/ROM SPA"
                                ; 171   CC_R14 OR =B            "ALU/F + D,ROM SPA/R14,OUT/LOAD CC;AMUX/ALU,SPA MUX/ROM SPA"
                                ; 172   NOP                     "ALU/D,B MODE/LOAD;AMUX/ALU"
                                ; 173   DATI                    "BUS CONTROL/DATI,DAT IMAR/TRAN"
                                ; 174   DATIP                   "BUS CONTROL/DATIP,DAT IMAR/TRAN"
                                ; 175   DATO                    "BUS CONTROL/DATO,DAT IMAR/TRAN"
                                ; 176   DATOB                   "BUS CONTROL/DATOB,DAT IMAR/TRAN"
                                ; 177   M_IR_UNIBUS DATA        "B MODE/LOAD"
                                ; 178   M_UNIBUS DATA           "B MODE/LOAD"
                                ; 179   PSW_B                   "MODE/LOAD PS=,ALU/B,AMUX/ALU"
                                ; 180   UNIBUS DATA_PSW         "AMUX/PS="
                                ; 181   UNIBUS DATA_B           "AMUX/ALU,ALU/B"
                                ; 182   ALSET                   "ALLOW BYTE/BYTE"
                                ; 183   ENAB DBE                "OUT/ENAB DBE"
                                ; 184   ENABOVER                "OUT/ENAB STOV"
                                ; 185   COND CODES              "OUT/LOAD CC"
                                ; 186   OUT BYTE                "OUT BYTE/OUT"
                                ; 187   OUT DEST                "OUT/OUT DEST"
                                ; 188   OUT IR DECODE           "LOAD IR/LOAD"
                                ; 189   OUT SERVICE             "OUT SERVICE/SERV,B MODE/LOAD,SPA MUX/BA"
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; MACRO.,ASC[142,31421   17126 6-MAY-1984        MICRO CODE FILE PAGE 3<        MICRO 13A(110)
; FLO-S.MIC      17124 6-MAY-1984
                                ; 191   ;BRANCH ON SERVICE MICRO-STEP
                                ; 192   .SI
U 0??A?, 2?41,?011,7585,3???    ; 193   SERV:   M_UNIBUS DATA,OUT SERVICE,J/F1  ;BRANCH ON SERVICE REQUEST
                                ; 194                                           ;LOAD VECTOR INTO BREG
                                ; 195           ;IF SERVICE REQUEST GO TO TRAP=1
                                ; 196           ;IF NOT SERVICE REQUEST GO TO F1
                                ; 197
                                ; 198
                                ; 199
                                ; 200   ;TRAP ROUTINE FROM BRANCH ON SERVICE
                                ; 201   1031
U C1?5, ?416,6015,2716,6???     ; 202   TRAP=11 R13_B,J/TRAP=2          ;MOVE CONTENTS OF B REGISTER
                                ; 203                                   ;TO SP REGISTER 13
                                ; 204
                                ; 205
                                ; 206   ;INSTRUCTION FETCH
                                ; 207   1021
                                ; 208   F11:    PC_PC,DATI,             ;FETCH NEW INSTRUCTION
U 4???, 2403,?111,7515,6???     ; 209           M_IR_UNIBUS DATA,J/F2   ;LOAD INTO IR REGISTER
                                ; 210
                                ; 211
                                ; 212           ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 0
                                ; 213   6F1
                                ; 214   SM0=11  M_RS,                  ;SOURCE OPERAND TO B REGISTER
U ?C??, 2102,6015,7504,?0??     ; 215           BOT BYTE,J/SM0=2        ;BRANCH ON BYTE INSTRUCTION
                                ; 216           ;IF BYTE INSTRUCTION GO TO SBE=1 (MOST OF EVEN ADDRESS)
                                ; 217   1041
                                ; 218   SM0=21  R13_P,                  ;STORE SOURCE OPERAND IN SP  REGISTER 11
U 0???, ?015,6415,2716,2???     ; 219                   BOT DEST,J/SERV ;BRANCH TO DESTINATION ROUTINE
                                ; 220           ;IF MODIFY INSTRUCTION AND IR<5:3>=0 GO TO MDM=1
                                ; 221           ;                                       =1      MDM1=1
                                ; 222           ;                                       =2      MDM2=1
                                ; 223           ;                                       =3      MDM3=1
                                ; 224           ;                                     =4      MDM4=1
                                ; 225           ;                                       =5      MDM5=1
                                ; 226           ;                                       =6      MDM6=1
                                ; 227           ;                                       =7      MDM7=1
                                ; 228           ;IF SOD=MODIFY INSTRUCTION AND IR<5:3>=0 GO TO SDMB=1
                                ; 229           ;                                           =1      MDM1=1
                                ; 230           ;                                           =2      MDM2=1
                                ; 231           ;                                           =3      MDM3=1
                                ; 232           ;                                           =4      MDM4=1
                                ; 233           ;                                           =5      MDM5=1
                                ; 234           ;                                           =6      MDM6=1
                                ; 235           ;                                           =7      MDM7=1
                                ; 236           ;IF MOVE INSTRUCTION DESTINATION MODE 0 GO TO MDV=1
                                ; 237
                                ; 238
                                ; 239   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 1
                                ; 240   611
                                ; 241   SM1=11  M_RS,DATI,ADRET,        ;INPUT SOURCE OPERAND FROM MEMORY
                                ; 242                   M_UNIBUS DATA,  ;ALLOW BYTE TRANSFER
U 0???, 2102,?101,7504,3???     ; 243                   BOT BYTE,J/SM0=2;BRANCH ON BYTE INSTRUCTION
                                ; 244           ;IF ODD BYTE GO TO SB0=1
                                ; 245           ;IF EVEN BYTE GO TO SBE=1
                                ; 246           ;IF NOT BYTE FALL THROUGH TO SB0=2
                                ; 247
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                        ; 248
                        ; 249   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 2
                        ; 250   #2#
                        ; 251   SM2=1#  RA_PS,DATI,.ALBYT,       ;INPUT SOURCE OPERAND FROM MEMORY
                        ; 252                 B_UNIBUS DATA,  ;ALLOW BYTE TRANSFER
U 0062, 2342,0141,7503,0000 ; 253                 BUT BYTE,J/SM2=2;BRANCH ON BYTE INSTRUCTION                    7
                        ; 254           ;IF ODD BYTE GO TO SM8=1
                        ; 255           ;IF EVEN BYTE GO TO SM6=1
                        ; 256           ;IF NOT BYTE FALL THROUGH TO SM2=2
                        ; 257
                        ; 258   1141
U 0114, 2110,6014,3004,4004 ; 259   SM2=21  RS_RS PLUS 2,J/SM0=2          ;ADD TWO TO CONTENTS OF SOURCE REGISTER
                        ; 260
                        ; 261
                        ; 262   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 3
                        ; 263   631
                        ; 264   SM3=1#  RA_PS,DATI,                    ;INPUT ADDRESS OF SOURCE OPERAND
U 0063, 2522,0111,7504,4004 ; 265                 B_UNIBUS DATA,J/SM3=2   ;(MUST BE EVEN ADDRESS)
                        ; 266
                        ; 267
                        ; 268   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 4
                        ; 269   64#
                        ; 270   SM4=1#  RS_RS MINUS 2,ALBYT,     ;SUBTRACT TWO FROM SOURCE REGISTER
U 0064, 1430,7404,4504,0000 ; 271                 ENABOVER,J/SM1=1;IF INSTRUCTION IS NOT A BYTE OP
                        ; 272                                 ;SUBTRACT ONE IF INSTRUCTION
                        ; 273                                 ;IS A BYTE, PERMIT OVERFLOW
                        ; 274
                        ; 275
                        ; 276   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 5
                        ; 277   651
                        ; 278   SM5=1#  RS_RS MINUS 2,ENABOVER,  ;SUBTRACT TWO FROM SOURCE
U 0065, 2630,7414,4504,0000 ; 279                 J/SM5=2           ;REGISTER,PERMIT OVERFLOW
                        ; 280
                        ; 281
                        ; 282   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 6
                        ; 283   661
                        ; 284   SM6=1#  RA_PC,DATI,                  ;INPUT INDEX WORD FROM
U 0066, 2640,0111,7515,6000 ; 285                 B_UNIBUS DATA,J/SM6=2;NEXT MEMORY LOCATION (MUST BE EVEN ADDRESS)
                        ; 286
                        ; 287
                        ; 288   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 7
                        ; 289   671
                        ; 290   SM7=1#  RA_PC,DATI,                  ;INPUT INDEX WORD FROM NEXT
U 0067, 2723,0111,7515,6000 ; 291                 B_UNIBUS DATA,J/SM7=2;MEMORY LOCATION, (MUST BE EVEN ADDRESS)
                        ; 292
                        ; 293
                        ; 294   ;SOURCE ROUTINE FOR EVEN BYTE (EXCEPT FOR SM2) INSTRUCTIONS
                        ; 295   1261
                        ; 296   SBE#=1#  B11_B SEA,                  ;STORE SIGN EXTENDED SOURCE
U 0106, 0414,6414,2716,2000 ; 297                 BUT DEST,J/SEMV;OPERAND IN SP REGISTER 11
                        ; 298                                 ;BRANCH TO DESTINATION ROUTINE
                        ; 299           ;IF MODIFY INSTRUCTION AND IR<5:3>=# GO TO MDM#=1
                        ; 300           ;                                   #1      MDM1=1
                        ; 301           ;                                   #2      MDM2=1
                        ; 302           ;                                   #3      MDM3=1
                        ; 303           ;                                   #4      MDM4=1
                        ; 304           ;                                   #5      MDM5=1
                        ; 305           ;                                   #6      MDM6=1
                        ; 306           ;                                   #7      MDM7=1
                        ; 307           ;IF NON-MODIFY INSTRUCTION AND IR<5:3>=# GO TO NDM#=1
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                        ; 308           ;                                   #1      NDM1=1          8
                        ; 309           ;                                   #2      NDM2=1
                        ; 310           ;                                   #3      NDM3=1
                        ; 311           ;                                   #4      NDM4=1
                        ; 312           ;                                   #5      NDM5=1
                        ; 313           ;                                   #6      NDM6=1
                        ; 314           ;                                   #7      NDM7=1
                        ; 315           ;IF MOVE INSTRUCTION DESTINATION MODE # GO TO MOV=1
                        ; 316
                        ; 317
                        ; 318   ;SOURCE ROUTINE FOR ODD BYTE (EXCEPT FOR SM2) INSTRUCTIONS
                        ; 319   1071
U 0107, 3074,6015,2717,6000 ; 320   SMO=1#  B11_B (SWAB),J/SRC=2     ;SOURCE OPERAND WITH BYTES SWAPPED
                        ; 321                                 ;STORED IN SP REGISTER 17
                        ; 322
                        ; 323
                        ; 324   ;SOURCE ROUTINE FOR SOURCE MODE 2 EVEN BYTE INSTRUCTIONS
                        ; 325   1161
U 0116, 2150,6004,3004,4020 ; 326   SM2E=1# RS_RS PLUS 2,ALBYT,J/SMF=1  ;ADD TWO TO SOURCE REGISTER
                        ; 327                                 ;IF INSTRUCTION IS NOT A BYTE
                        ; 328                                 ;OP ADD ONE IF INSTRUCTION
                        ; 329                                 ;IS A BYTE
                        ; 330
                        ; 331
                        ; 332   ;SOURCE ROUTINE FOR SOURCE MODE 2 ODD BYTE INSTRUCTIONS
                        ; 333   1171
U 0117, 2170,6004,3004,4020 ; 334   SM2O=1# RS_RS PLUS 2,ALBYT,J/SBO=1  ;ADD TWO TO SOURCE REGISTER IF
                        ; 335                                 ;INSTRUCTION IS NOT A BYTE OR
                        ; 336                                 ;ADD ONE IF INSTRUCTION IS
                        ; 337                                 ;A BYTE
                        ; 338
                        ; 339
                        ; 340   ;MODIFY INSTRUCTION DESTINATION MODE #
                        ; 341   4#1
U 0040, 2502,0015,7514,0020 ; 342   MDM#=1# B_RD,                    ;DESTINATION OPERAND TO B REGISTER
                        ; 343                 BUT BYTE,J/MDN#=2  ;BRANCH ON BYTE INSTRUCTION
                        ; 344           ;IF BYTE GO TO MDM#=1
                        ; 345           ;IF NOT BYTE FALL THROUGH TO MDM#=2
                        ; 346   1241
U 0124, 3120,0615,7516,3000 ; 347   MDN#=2# B_R11 OP B,COND CODES,  ;OPERATE ON SOURCE AND DESTINATION
                        ; 348                 J/MDM#=3          ;OPERANDS AND SET CONDITION
                        ; 349                                 ;CODES ACCORDINGLY
                        ; 350
                        ; 351
                        ; 352   ;MODIFY INSTRUCTION DESTINATION MODE 1
                        ; 353   411
U 0041, 2702,0121,7514,0020 ; 354   MDM1=1# RA_RD,DATIP,ALBYT,       ;INPUT DESTINATION OPERAND
                        ; 355                 BUT BYTE,
                        ; 356                 B_UNIBUS DATA,J/MDM1=2;FROM MEMORY
                        ; 357           ;IF ODD BYTE INSTRUCTION GO TO MDM1=1
                        ; 358           ;IF EVEN BYTE INSTRUCTION GO TO MDM1=1
                        ; 359           ;IF NOT BYTE INSTRUCTION FALL THROUGH TO MDM1=2
                        ; 360   1341
U 0134, 3204,0615,7516,3000 ; 361   MDM1=21 B_R11 OP B,COND CODES,  ;OPERATE ON SOURCE AND DESTINATION
                        ; 362                 J/MDM1=3          ;OPERANDS AND SET CONDITION
                        ; 363                                 ;CODES ACCORDINGLY
                        ; 364
                        ; 365
                        ; 366   ;MODIFY INSTRUCTION DESTINATION MODE 2
                        ; 367   421
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                                 MDM2-1: BA_RD,DATIP,ALBYT1,       ;INPUT DESTINATION OPERAND
                                                 B_UNIBUS DATA,    ;FROM MEMORY
U 0042, 3162,0121,7510,0000                      BUT BYTE,J/MDM2-2 ;BRANCH ON BYTE INSTRUCTION
                                         ;IF ODD BYTE GO TO M2OB-1
                                         ;IF EVEN BYTE GO TO M2EB-1
                                         ;IF NOT BYTE FALL THROUGH TO MDM2-2
                                 144:
                                 MDM2-2: R_R11 OP B,COND CODES,    ;OPERATE ON SOURCE AND DESTINATION
U 0144, 3220,0615,7510,3000                      J/MDM2-3          ;OPERANDS AND SET CONDITION
                                                                   ;CODES ACCORDINGLY


                                 ;MODIFY INSTRUCTION DESTINATION MODE 3
                                 43:
                                 MDM3-1: BA_RD,DATI,               ;INPUT ADDRESS OF DESTINATION
U 0043, 3200,0111,7510,0000                B_UNIBUS DATA,J/MDM3-2  ;OPERAND FROM MEMORY


                                 154:
                                 MDM3-5: R_R11 OP B,COND CODES,    ;OPERATE ON SOURCE AND DESTINATION
U 0154, 3120,0615,7510,3000                      J/MDM3-6          ;OPERANDS AND SET CONDITION
                                                                   ;CODES ACCORDINGLY


                                 ;MODIFY INSTRUCTION DESTINATION MODE 4
                                 44:
                                 MDM4-1:RD_RD MINUS 2,ALBYT,ENABOVER,  ;SUBTRACT TWO FROM DESTINATION
U 0044, 1030,7400,4512,0000                      J/MDM4-1          ;REGISTER IF INSTRUCTION IS NOT
                                                                   ;A BYTE OR ONE IF
                                                                   ;INSTRUCTION IS A BYTE,
                                                                   ;PERMIT OVERFLOW


                                 ;MODIFY INSTRUCTION DESTINATION MODE 5
                                 45:
U 0045, 3450,7414,4512,0000      MDM5-1: RD_RD MINUS 2,ENABOVER,J/MDM5-2  ;SUBTRACT TWO FROM CONTENTS
                                                                   ;OF DESTINATION REGISTER,
                                                                   ;PERMIT OVERFLOW


                                 ;MODIFY INSTRUCTION DESTINATION MODE 6
                                 46:
                                 MDM6-1:BA_PC,DATI,
U 0046, 3400,0111,7515,6000             B_UNIBUS DATA,J/MDM6-2


                                 ;MODIFY INSTRUCTION DESTINATION MODE 7
                                 47:
                                 MDM7-1:BA_PC,DATI,                ;INPUT INDEX WORD FROM MEMORY
U 0047, 3600,0111,7515,6000                B_UNIBUS DATA,J/MDM7-2


                                 ;MODIFY INSTRUCTION BYTE ROUTINE FOR DESTINATION MODE 0
                                 126:
U 0126, 3720,0614,7510,3000      MDB-1:R_R11 OP B SEX,COND CODES,J/MDB-2  ;OPERATE ON SOURCE OPERAND AND
                                                                   ;DESTINATION OPERAND SIGN EXTENDED
                                                                   ;SET CONDITION CODES ACCORDING
                                                                   ;TO RESULTS
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                                 ;MODIFY INSTRUCTION ODD BYTE ROUTINE FOR DESTINATION MODE 1
                                 137:
U 0137, 4030,0015,2717,0000      M1OB-1:R17_B (SWAP),J/M1OB-2      ;DESTINATION OPERAND WITH
                                                                   ;BYTES SWAPPED LOADED INTO
                                                                   ;SP REGISTER 17 TO FORM NEW
                                                                   ;DESTINATION OPERAND


                                 ;MODIFY INSTRUCTION EVEN BYTE ROUTINE FOR DESTINATION MODE 1
                                 136:
U 0136, 4000,0614,7510,3000      M1EB-1:R_R11 OP B SEX,COND CODES,J/M1EB-2  ;OPERATE ON SOURCE OPERAND AND
                                                                   ;DESTINATION OPERAND SIGN EXTENDED
                                                                   ;SET CONDITION CODES ACCORDING
                                                                   ;TO RESULTS


                                 ;MODIFY INSTRUCTION EVEN BYTE ROUTINE FOR DESTINATION MODE 2
                                 146:
U 0146, 4100,0614,7510,3000      M2EB-1:R_R11 OP B SEX,COND CODES,J/M2EB-2  ;OPERATE ON SOURCE OPERAND AND
                                                                   ;DESTINATION OPERAND SIGN EXTENDED
                                                                   ;SET CONDITION CODES ACCORDING
                                                                   ;TO RESULTS


                                 ;MODIFY INSTRUCTION ODD BTE ROUTINE FOR DESTINATION MODE 2
                                 147:
U 0147, 4210,0015,2717,0000      M2OB-1: R17_B (SWAP),J/M2OB-2     ;CONTENTS OF B REGISTER WITH
                                                                   ;BYTES SWAPPED LOADED INTO
                                                                   ;SP REGISTER 17 TO FORM NEW
                                                                   ;DESTINATION OPERAND


                                 ;MODIFY INSTRUCTION EVEN BYTE ROUTINE FOR DESTINATION MODE 3
                                 156:
U 0156, 4320,0614,7510,3000      M3EB-1:R_R11 OP B SEX,COND CODES,J/M3EB-2  ;OPERATE ON SOURCE AND
                                                                   ;DESTINATION OPERANDS AND
                                                                   ;SET CONDITION CODES ACCORDING
                                                                   ;TO RESULTS


                                 ;MODIFY INSTRUCTION ODD BYTE ROUTINE FOR DESTINATION MODE 3
                                 157:
U 0157, 4310,0015,2717,0000      M3OB-1: R17_B (SWAP),J/M3OB-2     ;CONTENTS OF B REGISTER WITH
                                                                   ;BYTES SWAPPED LOADED INTO
                                                                   ;SP REGISTER 17 TO FORM NEW
                                                                   ;DESTINATION OPERAND


                                 ;NON-MODIFY INSTRUCTION DESTINATION MODE 0
                                 50:
                                 NDM0-1:R_RD,                      ;DESTINATION OPERAND TO B REGISTER
U 0050, 2502,0215,7510,0000             BUT BYTE,J/NDM0-2          ;BRANCH ON BYTE INSTRUCTION
                                        ;IF BYTE GO TO NDEB-1
                                        ;IF NOT BYTE FALL THROUGH TO NDM0-2
                                 104:
U 0104, 0000,0615,7510,3000      NDM0-2:R_R11 OP B,COND CODES,J/SERV  ;OPERATE ON SOURCE AND DESTINATION
                                                                   ;OPERANDS AND SET CONDITION CODES


                                 ;NON-MODIFY INSTRUCTION DESTINATION MODE 1
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                        ;INPUT DESTINATION OPERAND FROM
                        ;MEMORY
                        ;BRANCH ON BYTE INSTRUCTION
                        ;MODE=1
                        ;MODE=2

;DESTINATION MODE 2

;INPUT DESTINATION OPERAND
;FROM MEMORY
;BRANCH ON BYTE INSTRUCTION
;MODE=1
;MODE=2
;THROUGH TO MODE=2

;ADD 1+0 TO CONTENTS OF DESTINATION
;REGISTER

;DESTINATION MODE 3

;INPUT ADDRESS OF DESTINATION
;OPERAND FROM MEMORY

;DESTINATION MODE 4

;SUBTRACT TWO FROM DESTINATION
;REGISTER IF INSTRUCTION IS NOT
;A BYTE OR ONE IF INSTRUCTION
;IS A BYTE, PERMIT OVERFLOW

;DESTINATION MODE 5

;SUBTRACT 1+0 FROM CONTENTS OF
;DESTINATION REGISTER PERMIT OVERFLOW

;DESTINATION MODE 6

;INPUT INDEX WORD FROM MEMORY

;DESTINATION MODE 7

;INPUT INDEX WORD FROM MEMORY

;ONE BYTE ROUTINE FOR DESTINATION MODES 0 AND 1

;DESTINATION OPERAND WITH
;BYTES SWAPPED LOADED INTO
;ALU REGISTER IF TO FORM
;WORD DESTINATION OPERAND

;ONE BYTE ROUTINE FOR DESTINATION MODE 2

;ADD 1+0 TO CONTENTS OF DESTINATION
;REGISTER IF INSTRUCTION IS NOT
;A BYTE OR ONE IF INSTRUCTION
;IS A BYTE

;ONE BYTE ROUTINE FOR DESTINATION MODE 3

;ADD 1+0 TO CONTENTS OF DESTINATION
;REGISTER IF INSTRUCTION IS NOT
;A BYTE OR ONE IF INSTRUCTION
;IS A BYTE.

;MODE 4

;OPERATE ON SOURCE AND
;DESTINATION OPERANDS, SET
;CONDITION CODES ACCORDING TO
;RESULTS

;DESTINATION MODE 0

;DESTINATION OPERAND TO R REGISTER
;BRANCH ON BYTE INSTRUCTION

;THROUGH TO BYTE=2

;AUXILIARY CONTROL SET-UP,DESTINATION
;OPERAND ADJUSTED WITHOUT
;TRANSFER THROUGH ALU

;DESTINATION MODE 1

;INPUT DESTINATION OPERAND FROM
;MEMORY
;BRANCH ON BYTE INSTRUCTION
;THROUGH TO BYTE=2

;AUXILIARY CONTROL SET-UP,DESTINATION
;OPERAND ADJUSTED WITHOUT
;TRANSFER THROUGH ALU
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                ;DESTINATION MODE 2
                ;
                ;INPUT DESTINATION OPERAND FROM
                ;MEMORY
                ;BRANCH ON BYTE INSTRUCTION
                ;GO TO ROT2=1
                ;GO TO ROT2=2
                ;AND, THROUGH TO ROT2=2

                ;DESTINATION MODE 3

                ;AUXILIARY CONTROL SET-UP/DESTINATION
                ;OPERAND ROTATED WITHOUT
                ;TRANSFER THROUGH ALU

                ;DESTINATION MODE 4

                ;INPUT ADDRESS OF DESTINATION
                ;OPERAND FROM MEMORY

                ;AUXILIARY CONTROL SET-UP,
                ;REGISTER OPERAND
                ;ROTATED WITHOUT TRANSFER
                ;THROUGH ALU

                ;DESTINATION MODE 5

                ;SUBTRACT TWO FROM DESTINATION
                ;REGISTER IF INSTRUCTION IS NOT
                ;A BYTE OR ONE IF INSTRUCTION
                ;IS A BYTE, PERMIT OVERFLOW

                ;DESTINATION MODE 6

                ;INPUT INDEX WORD FROM MEMORY

                ;MODE 7

                ;INPUT INDEX WORD FROM MEMORY

                ;BYTE ROUTINE FOR DESTINATION MODE 0

                                ;AUXILARY CONTROL SET-UP/DESTINATION
                                ;OPERAND ROTATED WITHOUT TRANSFER
                                ;THROUGH ALU

                                                                        13

;ODD BYTE ROUTINE FOR DESTINATION MODE 1

ROT1=2  ;DESTINATION OPERAND WITH
        ;BYTES SWAPPED LOADED INTO
        ;SP REGISTER 17 TO FORM
        ;NEW DESTINATION OPERAND

;EVEN BYTE ROUTINE FOR DESTINATION MODE2

ROT2=2  ;CONTENTS OF R REGISTER WITH
        ;BYTES SWAPPED LOADED INTO
        ;SP REGISTER 17 TO FORM NEW
        ;DESTINATION OPERAND

;EVEN BYTE ROUTINE FOR DESTINATION MODE 2

                ;AUXILIARY CONTROL SET-UP
                ;DESTINATION OPERAND ROTATED
                ;WITHOUT TRANSFER THROUGH ALU

;ODD BYTE ROUTINE FOR DESTINATION MODE 3

ROT3=2  ;CONTENTS OF R REGISTER WITH
        ;BYTES SWAPPED LOADED INTO
        ;SP REGISTER 17 TO FORM NEW
        ;DESTINATION OPERAND

;EVEN BYTE ROUTINE FOR DESTINATION MODE 3

                ;AUXILIARY CONTROL SET-UP
                ;DESTINATION OPERAND ROTATED
                ;WITHOUT TRANSFER THROUGH ALU

;WHERE PC IS CHANGED

ROT2    ;HIGH EXTEND THE CONTENTS
        ;OF THE R REGISTER

;DESTINATION MODE 0

ROT2    ;DESTINATION OPERAND TO R REGISTER

;DESTINATION MODE 1

                ;INPUT DESTINATION OPERAND FROM

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                        B_QUINUS DATA,J/JSB+2
                                                    ;INPUT DESTINATION OPERAND FROM
                                                    ;MEMORY

                        ;SWAP BYTE INSTRUCTION DESTINATION MODE 3

B^81 8A_W0,@#DATA,      ;INPUT ADDRESS OF DESTINATION
        B_QUINUS DATA,J/JSB+2   ;OPERAND FROM MEMORY

                        ;SWAP BYTE INSTRUCTION DESTINATION MODE 4

B^81 8A_W0,@#DATA,      ;INPUT DESTINATION ADDRESS
        B_QUINUS DATA,J/JSB+2   ;INPUT INDEX WORD FROM MEMORY
                        B_QUINUS DATA,J/JSB+2

                        ;SWAP BYTE INSTRUCTION DESTINATION MODE 5

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;SWAP BYTE INSTRUCTION DESTINATION MODE 6

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;SWAP BYTE INSTRUCTION DESTINATION MODE 7

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;JUMP INSTRUCTION DESTINATION MODE 4

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;JUMP INSTRUCTION DESTINATION MODE 5

B^81 8A_W0,@#DATA,      ;INPUT DATA FROM MEMORY ADDRESS
        B_QUINUS DATA,J/JSB+2   ;SPECIFIED BY DESTINATION
                        REGISTER

                        ;TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 4

B^81 8D_PC,@#DATA,      ;INPUT DATA FROM MEMORY ADDRESS
        B_QUINUS DATA,J/JSB+2   ;SPECIFIED BY DESTINATION
                        REGISTER

                        ;TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 5

B^81 8D_PC,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;JUMP TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 6

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;JUMP TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 7

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;JUMP TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 3

B^81 8A_W0,@#DATA,      ;INPUT DATA FROM MEMORY ADDRESS
        B_QUINUS DATA,J/JSB+2   ;SPECIFIED BY DESTINATION
                        REGISTER

                        ;JUMP TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 4

B^81 8D_PC,@#DATA,      ;INPUT DATA FROM MEMORY ADDRESS
        B_QUINUS DATA,J/JSB+2   ;SPECIFIED BY DESTINATION
                        REGISTER

                        ;JUMP TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 5

B^81 8D_PC,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;JUMP TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 6

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2

                        ;JUMP TO SUBROUTINE INSTRUCTION FOR DESTINATION MODE 7

B^81 8A_W0,@#DATA,      ;INPUT INDEX WORD FROM MEMORY
        B_QUINUS DATA,J/JSB+2
                        B_QUINUS DATA,J/JSB+2
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U 0327, 7440,0111,7515,0000     B_UNIBUS DATI,J/JSR7=2

                                ;RETURN FROM SUBROUTINE INSTRUCTION
                                ;
U 0006, 7140,0015,7515,0000     RTS=11  R_R0,J/PTS=2            ;MOVE CONTENTS OF DESTINATION REGISTER
                                                                ;TO REGISTER 8

                                ;RETURN FROM INTERRUPT INSTRUCTION
                                ;
                                RTI=11  R6_R6,DATI,             ;INPUT STORED PC FROM PROCESSOR STACK
U 0003, 7220,0111,7515,0000             B_UNIBUS DATA,J/RTI=2   ;ADDRESS SPECIFIED BY STACK
                                                                ;POINTER

                                ;WAIT INSTRUCTION
                                ;
                                WAT=11  NOT SERVICE,            ;BRANCH ON SERVICE, INPUT
U 0007, 7341,0011,7500,0000             B_UNIBUS DATA,J/WAT=2   ;VECTOR FROM UNIBUS
                                ;IF SERVICE REQUEST GO TO A=3
                                ;IF NO SERVICE REQUEST FALL THROUGH TO A2

                                ;RESET FROM OUT IR DECODE
                                ;
U 0002, 0000,0015,2714,0000     RSET=11 B_P,J/SERV              ;CLOCK MICRO-STEP

                                ;CLEAR CONDITION CODE INSTRUCTION
                                ;
U 0005, 7404,0017,7517,0000     CCC=11  R14_PS,J/CCC=2 ;MOVE PROCESSOR STATUS TO
                                                                ;SP REGISTER 14

                                ;SET CONDITION CODE INSTRUCTION
                                ;
U 0004, 7424,0017,7517,0000     SCC=11  R14_PS,J/SCC=2 ;MOVE PROCESSOR STATUS TO
                                                                ;SP REGISTER 14

                                ;RESTART FROM POWER FAIL
                                ;
U 0001, 7440,0015,7515,0000     REST=11 B_PC,J/REST=2                   ;PROGRAM COUNTER TO B REGISTER


V 0020, 2634,7414,4515,0000     TRAP=2: R6_R6 MINUS 2,B=ARGVER, ;SUBTRACT TWO FROM STACK
                                        J/TRAP=3                ;POINTER,PERMIT OVERFLOW
V 0101, 2124,6357,7515,0000     TRAP=3: BA_R6,DATO,ERAD ERR,    ;OUTPUT PROCESSOR STATUS TO
                                        UNIBUS DATA_PS=,J/TRAP=4        ;STACK,ENABLE DOUBLE
                                                                ;BUS ERRORS
V 0105, 2210,7414,4515,0000     TRAP=4: R6_R6 MINUS 2,B=ARGVER,J/TRAP=5 ;SUBTRACT TWO FROM STACK POINTER
                                                                ;ALLOW OVERFLOW
V 0110, 2220,0015,7515,0000     TRAP=5: B_PC,J/TRAP=6           ;MOVE CONTENTS OF PC TO B REGISTER
                                TRAP=6: BA_R6,DATO,             ;OUTPUT PC TO STACK
V 0111, 2240,6155,2715,0000             UNIBUS DATA=B,J/TRAP=7
V 0112, 2260,0015,2714,0000     TRAP=7: NOP,J/TRAP=8            ;CLOCK MICRO-STEP


                                TRAP=8: R6_R13,DATI,            ;INPUT NEW PC FROM MEMORY
V 0113, 2320,0111,7516,0000             B_UNIBUS DATA,J/TRAP=9  ;ADDRESS SPECIFIED BY SP REGISTER
V 0115, 2410,0014,3019,0000     (TRAP=9) R13_R13 PLUS 2,J/TRAP=10       ;ADD TWO TO SP REGISTER 13
V 0120, 2434,0015,2715,0000     TRAP=10:PC_B,J/TRAP=11  ;LOAD NEW PC
                                TRAP=11:R6_R13,DATI,    ;INPUT NEW PROCESSOR STATUS INTO REGISTER B
V 0121, 2440,0111,7510,0000             B_UNIBUS DATA,J/TRAP=12 ;FROM LOCATION SPECIFIED BY
                                                                ;SP REGISTER 13,
V 0122, 0200,7215,2714,0000     TRAP=12:        PS=B,J/SERV     ;LOAD NEW PROCESSOR STATUS
                                                                ;INTO PS= REGISTER


                                ;21      PC_PC PLUS 2,                  ;INCREMENT PC
V 0123, 0014,6014,3015,6400             NOT IR DECODE,J/SERV    ;BRANCH ON INSTRUCTION DECODE
                                ;IF DOUBLE OPERAND INSTRUCTION GO TO SM=1 THRU SM7=1
                                ;DEPENDING ON SOURCE MODE,
                                ;IF SINGLE OPERAND MODIFY INSTRUCTION GO TO MDM=1 THRU MDM7=1
                                ;DEPENDING ON DESTINATION MODE,
                                ;IF SINGLE OPERAND NON-MODIFY GO TO NDM=1 THRU NDM7=1
                                ;DEPENDING ON DESTINATION MODE,
                                ;IF JUMP TO SUBROUTINE (JSR) INSTRUCTION GO TO JSR=1 THRU JSR7=1
                                ;DEPENDING ON DESTINATION MODE,
                                ;IF SWAP BYTE (SWAB) INSTRUCTION GO TO SWB=1 THRU SWB7=1
                                ;DEPENDING ON DESTINATION MODE,
                                ;IF CLEAR CONDITION CODE INSTRUCTION GO TO CCC=1
                                ;IF SET CONDITION CODE INSTRUCTION GO TO SCC=1
                                ;IF ROTATE INSTRUCTION GO TO ROTR=1 THRU ROT7=1 DEPENDING ON
                                ;DESTINATION MODE
                                ;IF RETURN FROM SUBROUTINE (RTS) INSTRUCTION GO TO RTS=1
                                ;IF BRANCH INSTRUCTION PC UNCHANGE GO TO SERV
                                ;IF RETURN FROM INTERRUPT (RTI) INSTRUCTION GO TO RTI=1
                                ;IF WAIT INSTRUCTION GO TO WAT=1
                                ;IF RESET INSTRUCTION GO TO RSET=1
                                ;ALL OTHER INSTRUCTIONS AND ILLEGAL INSTRUCTIONS GO TO SERV=1


V 0125, 2570,6014,3001,0000     SM3=21: RS_PS PLUS 2,J/SM3=3            ;ADD TWO TO CONTENTS OF SOURCE REGISTER
V 0127, 2614,6015,2716,0000     SM3=31: R1P=B,J/SM3=4                   ;TRANSFER ADDRESS OF SOURCE OPERAND
                                                                ;TO SP REGISTER 14
                                SM3=41: BA_R14,DATI,ADDRT,      ;INPUT SOURCE OPERAND FROM MEMORY
                                        B_UNIBUS DATA,          ;ALLOW BYTE TRANSFER
V 0130, 2102,0101,7516,0000             OUT 0116,J/SM4=2;BRANCH ON BYTE INSTRUCTION
                                ;IF 000 BYTE GO TO SM0=1
                                ;IF EVEN BYTE GO TO SM=1
                                ;IF ODD BYTE GO TO SM=2


                                SM5=21: R7_PS,DATI,             ;INPUT ADDRESS OF SOURCE OPERAND
V 0131, 2560,0111,7504,0000             B_UNIBUS DATA,J/SM3=3;(MUST BE AN EVEN ADDRESS)


V 0132, 2670,6014,3015,0000     SM6=21  PC_PC PLUS 2,J/SM6=3            ;ADD TWO TO PROGRAM COUNTER
V 0133, 2560,0015,2104,0000     SM6=31  B_P PLUS RS,J/SM3=3     ;ADD INDEX WORD TO CONTENTS
                                                                ;OF SOURCE REGISTER TO OBTAIN
                                                                ;SOURCE OPERAND ADDRESS


V 0135, 3410,6014,3015,0000     SM7=21  PC_PC PLUS 2,J/SM7=3    ;ADD TWO TO PROGRAM COUNTER
V 0139, 3420,0015,3104,0000     SM7=31  B_P PLUS RS,J/SM7=4     ;ADD INDEX WORD TO CONTENTS
                                                                ;OF SOURCE REGISTER TO OBTAIN
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                        ; 966                                   ;ADDRESS OF SOURCE OPERAND
                        ; 969                                   ;ADDRESS
V 0141, 3054,6015,2716,0000 ; 970   SM7=41  R12_R,J/SM7=5       ;MOVE ADDRESS OF SOURCE OPERAND
                        ; 971                                   ;ADDRESS TO SP REGISTER 12
                        ; 972   SM7=51  BA_R12,DATI,            ;INPUT ADDRESS OF SOURCE OPERAND
V 0142, 2560,0111,7516,0000 ; 973               B_UNIBUS DATA,J/SM3=3
                        ; 974
                        ; 975
V 0143, 2140,0015,7517,0030 ; 976   SM0=21  B_R17,J/SM8=1        ;MOVE NEW SOURCE OPERAND
                        ; 977                                   ;TO B REGISTER
                        ; 978
                        ; 979
                        ; 980
V 0145, 0014,0015,2714,0000 ; 981   MDM1=31  RD_0,J/SEPV         ;LOAD RESULT OF OPERATION
                        ; 982                                   ;INTO DESTINATION REGISTER
                        ; 983
                        ; 984
                        ; 985   MDM1=31  BA_RD,DATO,     ;OUTPUT RESULT OF OPERATION
V 0150, 0004,0155,2714,3000 ; 986               UNIBUS DATA_B,J/SERV  ;TO ADDRESS SPECIFIED BY
                        ; 987                                   ;DESTINATION REGISTER
                        ; 988
                        ; 989
                        ; 990   MDM2=31  BA_RD,DATO,     ;OUTPUT RESULT OF OPERATION
                        ; 991               UNIBUS DATA_B,  ;TO ADDRESS SPECIFIED BY
V 0151, 3240,0155,2713,0020 ; 992               J/MDM2=4        ;DESTINATION REGISTER
V 0152, 0010,0004,3013,0000 ; 993   MDM2=41  RD_RD PLUS 2,PSWYT,J/SEPV  ;ADD TWO TO CONTENTS OF DESTINATION
                        ; 994                                   ;REGISTER IF INSTRUCTION IS NOT
                        ; 995                                   ;A BYTE OR ODD IF
                        ; 996                                   ;INSTRUCTION IS A BYTE
                        ; 997
                        ; 998
                        ; 999   MDM3=21  RD_RD PLUS 2,          ;ADD TWO TO CONTENTS OF
V 0153, 3330,6014,3014,2000 ; 1000              J/MDM3=3        ;DESTINATION REGISTER
V 0155, 3414,0015,2716,4000 ; 1001  MDM3=31  R12_R,J/MDM3=4     ;TRANSFER ADDRESS OF DESTINATION
                        ; 1002                                  ;OPERAND TO SP REGISTER 12
                        ; 1003  MDM3=41  BA_R12,DATIP,ALBYT,    ;INPUT DESTINATION OPERAND FROM
                        ; 1004              B_UNIBUS DATA,      ;MEMORY
V 0160, 3302,0121,7516,4000 ; 1005              OUT BYTE,J/MDM4=5  ;BRANCH ON BYTE INSTRUCTION
                        ; 1006          ;IF ODD BYTE GO TO M30B=1
                        ; 1007          ;IF EVEN BYTE GO TO M3ER=1
                        ; 1008          ;IF NOT BYTE FALL THROUGH TO MDM3=5
                        ; 1009  MDM3=01  BA_R12,DATO,     ;OUTPUT RESULT OF OPERATION TO
V 0161, 0003,0155,2716,4000 ; 1010              UNIBUS DATA_B,J/SERV  ;ADDRESS SPECIFIED BY THE
                        ; 1011                                  ;SP REGISTER 12
                        ; 1012
                        ; 1013
                        ; 1014  MDM5=21  BA_RD,DATI,            ;INPUT ADDRESS OF DESTINATION
V 0162, 3324,0111,7513,2000 ; 1015              B_UNIBUS DATA,J/MDM3=3  ;OPERAND FROM MEMORY
                        ; 1016
                        ; 1017
V 0163, 3534,6014,3015,6000 ; 1018  MDM6=21  PC_PC PLUS 2,J/MDM=3       ;ADD TWO TO PC
V 0165, 3324,0015,3112,2000 ; 1019  MDM6=31  R_B PLUS RD,J/MDM3=4  ;ADD INDEX WORD TO CONTENTS
                        ; 1020                                  ;OF DESTINATION REGISTER TO
                        ; 1021                                  ;OBTAIN ADDRESS OF DESTINATION
                        ; 1022                                  ;OPERAND
                        ; 1023
                        ; 1024
V 0170, 3534,6014,3015,6000 ; 1025  MDM7=21  PC_PC PLUS 2,J/MDM7=5  ;ADD TWO TO PC
V 0171, 3640,0015,3112,0000 ; 1026  MDM7=31  R_B PLUS RD,J/MDM7=4   ;ADD INDEX WORD TO CONTENTS OF
                        ; 1027                                  ;DESTINATION REGISTER TO OBTAIN
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                        ; 1028                                  ;ADDRESS OF DESTINATION ADDRESS
V 0172, 3674,0015,2716,4000 ; 1029  MDM7=41  R12_R,J/MDM7=5     ;MOVE ADDRESS OF DESTINATION
                        ; 1030                                  ;ADDRESS TO SP REGISTER 12
                        ; 1031  MDM7=51  BA_R12,DATI,           ;INPUT DESTINATION ADDRESS FROM
V 0173, 3324,0111,7516,4000 ; 1032              B_UNIBUS DATA,J/MDM3=3  ;MEMORY
                        ; 1033
                        ; 1034
                        ; 1035
                        ; 1036
V 0175, 0004,0015,2714,0000 ; 1037  MDM=21  MDM_B,J/SEPV                ;MOVE LOW BYTE OF B REGISTER TO
                        ; 1038                                  ;LOW BYTE OF DESTINATION REGISTER
                        ; 1039
                        ; 1040  M1ER=21  BA_RD,DATOB,ALBYT,     ;OUTPUT RESULT OF OPERATION
V 0200, 0004,0165,2714,0000 ; 1041              UNIBUS DATA_B,J/SERV  ;TO ADDRESS SPECIFIED BY
                        ; 1042                                  ;DESTINATION REGISTER
                        ; 1043                                  ;ALLOW BYTE TRANSFERS
                        ; 1044
V 0201, 4048,0015,7517,6000 ; 1045  M10B=21  B_R17,J/S10B=3      ;DESTINATION OPERAND MOVED
                        ; 1046                                  ;TO REGISTER B
                        ; 1047  M10B=31  B_R11 OP B SEX,COND CODES,  ;OPERATE ON SOURCE OPERAND AND
V 0202, 4064,7614,7516,3000 ; 1048              J/S10B=4        ;DESTINATION OPERAND SIGN EXTENDED,
                        ; 1049                                  ;SET CONDITION CODES ACCORDING
                        ; 1050                                  ;TO RESULTS
V 0203, 4134,0015,2717,6000 ; 1051  M10B=41  R17_R (SWAB),J/M10B=5  ;RESULT OF OPERATION WITH BYTES
                        ; 1052                                  ;SWAPPED, MOVED TO SP
                        ; 1053                                  ;REGISTER 17
V 0205, 4000,0015,7517,6000 ; 1054  M10B=51  B_R17,J/M1ER=2      ;CONTENTS OF SP REGISTER 17
                        ; 1055                                  ;MOVED TO REGISTER B
                        ; 1056  M2ER=21  BA_RD,DATOB,ALBYT,     ;OUTPUT RESULT OF OPERATION
V 0207, 3240,0165,2714,0020 ; 1057              UNIBUS DATA_B,J/MDM2=4  ;TO ADDRESS SPECIFIED BY
                        ; 1058                                  ;DESTINATION REGISTER
                        ; 1059                                  ;ALLOW BYTE TRANSFERS
                        ; 1060
                        ; 1061
V 0210, 4720,0015,7517,6000 ; 1062  M20B=21  B_R17,J/M20B=3      ;DESTINATION OPERAND MOVED TO
                        ; 1063                                  ;REGISTER B
                        ; 1064  M20B=31  B_R11 OP B SEX,COND CODES,  ;OPERATE ON SOURCE OPERAND
V 0211, 4240,7614,7516,3000 ; 1065              J/M20B=4        ;AND DESTINATION OPERAND SIGN
                        ; 1066                                  ;EXTENDED, SET CONDITION
                        ; 1067                                  ;CODES ACCORDING TO RESULTS
V 0212, 4274,0015,2717,6000 ; 1068  M20B=41  R17_R (SWAB),J/M20B=5  ;BYTES SWAPPED MOVED TO
                        ; 1069                                  ;SP REGISTER 17
V 0213, 4164,0015,7517,6000 ; 1070  M20B=51  B_R17,J/M2ER=2      ;CONTENTS OF SP REGISTER 17
                        ; 1071                                  ;MOVED TO REGISTER B
                        ; 1072  M3ER=21  BA_R12,DATOB,ALBYT,    ;OUTPUT RESULT OF OPERATION
V 0215, 0003,0165,2716,4000 ; 1073              UNIBUS DATA_B,J/SERV  ;TO ADDRESS SPECIFIED BY THE
                        ; 1074                                  ;SP REGISTER 12
                        ; 1075
                        ; 1076
V 0220, 4420,0015,7517,6000 ; 1077  M30B=21  B_R17,J/M30B=3      ;DESTINATION OPERAND MOVED TO
                        ; 1078                                  ;REGISTER B
                        ; 1079  M30B=31  B_R11 OP B SEX,COND CODES,  ;OPERATE ON SOURCE OPERAND AND
V 0221, 4440,7614,7516,3000 ; 1080              J/M30B=4        ;DESTINATION OPERAND SIGN EXTENDED
                        ; 1081                                  ;SET CONDITION CODES ACCORDING
                        ; 1082                                  ;TO RESULTS
V 0222, 4474,0015,2717,6000 ; 1083  M30B=41  R17_R (SWAB),J/M30B=5  ;RESULT OF OPERATION WITH
                        ; 1084                                  ;BYTES SWAPPED MOVED TO
                        ; 1085                                  ;SP REGISTER 17
V 0223, 4324,0015,7517,6000 ; 1086  M30B=51  B_R17,J/M3ER=2      ;CONTENTS OF SP REGISTER 17
                        ; 1087                                  ;MOVED TO REGISTER B
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                        ; 1088
                        ; 1089
                        ; 1090
                        ; 1091
V 0225, 4610,6014,3013,0000 ; 1092 ADD3=21ADD_PC PLUS 2,J/ADD3=3     ;ADD TAG TO CONTENTS OF DESTINATION
                        ; 1093                                      ;REGISTER
V 0230, 4631,6015,2716,0000 ; 1094 MOV3=31R12_B,J/MOV3=4            ;TRANSFER ADDRESS OF DESTINATION
                        ; 1095                                      ;OPERAND TO SP REGISTER 12
                        ; 1096 ADD3=41BA_R12,DATI,ALBYT,            ;INPUT DESTINATION OPERAND
                        ; 1097         B_BUSING DATA,               ;FROM MEMORY
V 0231, 3502,0101,7516,0000 ; 1098         BOT BYTE,J/ADD3=2        ;BRANCH IF BYTE INSTRUCTION
                        ; 1099         ;IF ODD BYTE GO TO ADD3=1
                        ; 1100         ;IF EVEN BYTE GO TO ADD3=1
                        ; 1101         ;IF NOT BYTE FALL THROUGH TO ADD3=2
                        ; 1102
                        ; 1103
                        ; 1104 ADD3=21 BA_MD,DATI,                  ;INPUT ADDRESS OF DESTINATION
V 0232, 4600,0111,7513,0000 ; 1105         B_BUSING DATA,J/ADD3=3   ;OPERAND
                        ; 1106
                        ; 1107
V 0233, 4730,6014,3015,0000 ; 1108 ADD6=21 PC_PC PLUS 2,J/ADD6=3    ;ADD TAG TO PC
V 0235, 4600,6015,3113,0000 ; 1109 MOV6=31B_R PLUS MD,J/MOV3=4      ;ADD INDEX WORD TO CONTENTS
                        ; 1110                                      ;OF DESTINATION REGISTER TO
                        ; 1111                                      ;OBTAIN ADDRESS OF DESTINATION
                        ; 1112                                      ;OPERAND
                        ; 1113
                        ; 1114
V 0242, 5431,6014,3015,0000 ; 1115 SUB7=21PC_PC PLUS 2,J/SUB7=3     ;ADD TAG TO PC
V 0241, 5040,6015,3113,0000 ; 1116 SUB7=31B_R PLUS MD,J/SUB7=4      ;ADD INDEX WORD TO CONTENTS
                        ; 1117                                      ;OF DESTINATION REGISTER TO OBTAIN
                        ; 1118                                      ;ADDRESS OF DESTINATION ADDRESS
V 0242, 5074,6015,2716,0000 ; 1119 MOV7=41 R12_B,J/MOV7=5           ;MOVE ADDRESS OF DESTINATION
                        ; 1120                                      ;ADDRESS TO SP REGISTER 12
                        ; 1121 MOV7=51BA_R12,DATI,                  ;INPUT DESTINATION ADDRESS
V 0243, 4600,0111,7516,0000 ; 1122         B_BUSING DATA,J/MOV3=3   ;FROM MEMORY
                        ; 1123
                        ; 1124
                        ; 1125
V 0244, 3540,0015,7517,0000 ; 1126 MOV8=21B_R17,J/MOV8=1            ;DESTINATION OPERAND MOVED
                        ; 1127                                      ;TO R REGISTER
                        ; 1128
                        ; 1129
                        ; 1130
                        ; 1131
                        ; 1132
                        ; 1133
                        ; 1134
V 0245, 3120,0015,7514,1000 ; 1135 MOV1=31 B_RD OP B,COND CODES,J/MOV1=3  ;INDX DESTINATION OPERAND
                        ; 1136                                      ;TRANSFERRED THROUGH ALU
                        ; 1137                                      ;ALLOWING CONDITION CODES TO
                        ; 1138                                      ;BE SET ACCORDINGLY
                        ; 1139
                        ; 1140
V 0246, 5170,6014,3012,0000 ; 1141 MOV3=21 PC_PD PLUS 2,J/MOV3=3     ;ADD TAG TO CONTENTS OF DESTINATION
                        ; 1142                                      ;REGISTER
V 0247, 5214,6015,2716,0000 ; 1143 MOV3=31 R12_B,J/MOV3=4           ;TRANSFER ADDRESS OF DESTINATION
                        ; 1144                                      ;OPERAND TO SP REGISTER 12
                        ; 1145 MOV3=41 BA_R12,DATIP,ALBYT,          ;INPUT DESTINATION OPERAND FROM
                        ; 1146         B_BUSING DATA,               ;MEMORY
V 0250, 4702,0121,7515,0000 ; 1147         BOT BYTE,J/MOV3=5        ;BRANCH ON BYTE INSTRUCTION
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                        ; 1148         ;IF ODD BYTE GO TO MOV3=1
                        ; 1149         ;IF EVEN BYTE GO TO MOV3=1
                        ; 1150         ;IF NOT BYTE FALL THROUGH TO MOV3=5
                        ; 1151 MOV5=21 BA_MD,DATI,                  ;INPUT ADDRESS OF DESTINATION
V 0251, 5100,0111,7513,0000 ; 1152         B_BUSING DATA,J/MOV3=3   ;OPERAND FROM MEMORY
                        ; 1153
                        ; 1154
V 0252, 5270,6014,3015,0000 ; 1155 MOV6=21 PC_PC PLUS 2,J/MOV6=3    ;ADD TAG TO PC
V 0253, 5100,6015,3113,0000 ; 1156 MOV6=31B_R PLUS MD,J/MOV3=4      ;ADD INDEX WORD TO CONTENTS
                        ; 1157                                      ;OF DESTINATION REGISTER TO
                        ; 1158                                      ;OBTAIN ADDRESS OF DESTINATION
                        ; 1159                                      ;OPERAND
                        ; 1160
                        ; 1161
V 0254, 5330,6014,3015,0000 ; 1162 MOV7=21 PC_PC PLUS 2,J/MOV7=3    ;ADD TAG TO PC
V 0255, 5340,6015,3113,0000 ; 1163 MOV7=31 B_R PLUS SP,J/MOV7=4     ;ADD INDEX WORD TO CONTENTS OF
                        ; 1164                                      ;DESTINATION REGISTER TO OBTAIN
                        ; 1165                                      ;ADDRESS OF DESTINATION ADDRESS
V 0256, 5374,6015,2716,0000 ; 1166 MOV7=41 R12_B,J/MOV7=5           ;MOVE ADDRESS OF DESTINATION
                        ; 1167                                      ;ADDRESS TO SP REGISTER 12
                        ; 1168 MOV7=51 BA_R12,DATI,                 ;INPUT DESTINATION ADDRESS
V 0257, 5100,0111,7516,0000 ; 1169         B_BUSING DATA,J/MOV3=3   ;FROM MEMORY
                        ; 1170
                        ; 1171
V 0260, 3720,6015,7513,1000 ; 1172 MOV8=21B_RD OP B,COND CODES,J/MOV8=2  ;INDX DESTINATION OPERAND
                        ; 1173                                      ;TRANSFERRED THROUGH ALU TO
                        ; 1174                                      ;HOLD BYTE OF R REGISTER
                        ; 1175                                      ;ALLOWING CONDITION CODES TO
                        ; 1176                                      ;BE SET ACCORDINGLY
                        ; 1177
V 0261, 5440,0015,7517,0000 ; 1178 MOV1=21 B_R17,J/MOV1=3           ;DESTINATION OPERAND MOVED TO
                        ; 1179                                      ;REGISTER R
V 0262, 4040,0015,2711,0000 ; 1180 MOV1=31 B_R,J/MOV1=3             ;AUXILIARY CONTROL SET-UP,
                        ; 1181                                      ;DESTINATION OPERAND ROTATED
                        ; 1182                                      ;WITHOUT TRANSFER THROUGH ALU
                        ; 1183
V 0263, 5500,0015,7517,0000 ; 1184 MOV2=21 B_R17,J/MOV2=3           ;DESTINATION OPERAND MOVED TO
                        ; 1185                                      ;REGISTER B
V 0264, 4220,0015,2711,0000 ; 1186 MOV2=31 B_R,J/MOV2=3             ;AUXILIARY CONTROL SET-UP,
                        ; 1187                                      ;DESTINATION OPERAND ROTATED
                        ; 1188                                      ;WITHOUT TRANSFER THROUGH ALU
                        ; 1189
V 0265, 5540,0015,7517,0000 ; 1190 MOV3=21 B_R17,J/MOV3=3           ;DESTINATION OPERAND MOVED TO
                        ; 1191                                      ;R REGISTER
V 0266, 4420,0015,2711,0000 ; 1192 MOV3=31 B_R,J/MOV3=3             ;AUXILIARY CONTROL SET-UP,
                        ; 1193                                      ;DESTINATION OPERAND ROTATED
                        ; 1194
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                    ; 1195                                  ;WITHOUT TRANSFER THROUGH ALU
                    ; 1196
                    ; 1197
V 0267, 5600,2011,7514,0000 ; 1198  B=21   ASL=B,J/B=3       ;ARITHMETIC SHIFT THE CONTENTS
                    ; 1199                                  ;OF B REGISTER LEFT ONE
V 027A, 0014,6015,3113,0000 ; 1200  B=31   PC_PC PLUS B,J/SERV ;ADD CONTENTS OF B REGISTER
                    ; 1201                                  ;TO PC
                    ; 1202
                    ; 1203
                    ; 1204
V 0271, 5654,0015,2717,0000 ; 1205  SWB4=21 R17_B (SWAB),J/SWAP4=3 ;AUXILIARY CONTROL SET-UP;CONTENTS
                    ; 1206                                  ;OF B REGISTER WITH BYTES
                    ; 1207                                  ;SWAPPED LOADED INTO SP
                    ; 1208                                  ;REGISTER 17 TO OBTAIN
                    ; 1209                                  ;INSTRUCTION RESULT
V 0272, 3124,0015,7517,7000 ; 1210  SWB4=31 B_R17 OR B;COND CODES,J/KDPP=3 ;RESULTING DATA TRANSFERRED
                    ; 1211                                  ;THROUGH ALU ALLOWING CONDITION
                    ; 1212                                  ;CODES TO BE SET ACCORDINGLY
                    ; 1213
                    ; 1214
V 0273, 5714,0015,2717,0000 ; 1215  SWB1=21 R17_B (SWAB),J/SWAP1=3 ;AUXILIARY CONTROL SET-UP,
                    ; 1216                                  ;CONTENTS OF B REGISTER WITH
                    ; 1217                                  ;BYTES SWAPPED LOADED INTO SP
                    ; 1218                                  ;REGISTER 17 TO OBTAIN INSTRUCTION
                    ; 1219                                  ;RESULT
V 0274, 3200,0015,7517,7000 ; 1220  SWB1=31 B_R17 OR B;COND CODES,  ;RESULTING DATA TRANSFERRED
                                  J/JMP1=5                  ;THROUGH ALU ALLOWING CONDITION
                    ; 1221                                  ;CODES TO BE SET ACCORDINGLY
                    ; 1222
                    ; 1223
                    ; 1224
V 0275, 5754,0015,2717,0000 ; 1225  SWB2=21 R17_B (SWAB),J/SWAP2=3 ;AUXILIARY CONTROL SET-UP CONTENTS
                    ; 1226                                  ;OF B REGISTER WITH BYTES
                    ; 1227                                  ;SWAPPED LOADED INTO SP REGISTER
                    ; 1228                                  ;17 TO OBTAIN NEW DESTINATION
                    ; 1229                                  ;OPERAND
V 0276, 5760,0015,7517,7000 ; 1230  SWB2=31 B_R17 OR B;COND CODES,J/SWB2=4  ;DESTINATION OPERAND TRANSFERRED
                    ; 1231                                  ;THROUGH ALU ALLOWING  CONDITION
                    ; 1232                                  ;CODES TO BE SET ACCORDINGLY
                    ; 1233  SWB2=41 MA_RD,DATO,             ;OUTPUT CONTENTS OF REGISTER
V 0277, 6030,6155,2716,0000 ;                 DSTBUS DATA_M,  ;M TO ADDRESS SPECIFIED BY
V 0278, 0012,6014,3013,0002 ;                 J/SWB2=5        ;DESTINATION REGISTER,
                    ; 1234                                  ;ADD TWO TO CONTENTS OF
                    ; 1235  SWB2=51 RD_RD PLUS 2,J/SERV     ;DESTINATION REGISTER,
                    ; 1236
                    ; 1237
                    ; 1238
                    ; 1239
V 0279, 6050,6014,3013,0000 ; 1240  SWB3=21 RD_RD PLUS 2,J/SWB3=3 ;ADD TWO TO CONTENTS OF
                    ; 1241                                  ;DESTINATION REGISTER
V 027A, 6074,6015,2716,0000 ; 1242  SWB3=31 R12_M,J/SWB3=4   ;TRANSFER ADDRESS OF DESTINATION
                    ; 1243                                  ;OPERAND TO SP REGISTER 12
                    ; 1244  SWB3=41 MA_R12,DATI,            ;INPUT DESTINATION OPERAND
V 027B, 6100,0131,7516,4000 ;                 B_DSTBUS DATA,  ;FROM MEMORY
V 027C, 6134,6015,7717,0000 ;                 J/SWB3=5
                    ; 1245                                  ;AUXILIARY CONTROL SET-UP;CONTENTS
                    ; 1246  SWB3=51 R17_M (SWAB),J/SWB3=6   ;OF B REGISTER WITH BYTES SWAPPED
                    ; 1247                                  ;LOADED INTO SP REGISTER 17
                    ; 1248                                  ;TO OBTAIN INSTRUCTION RESULT
                    ; 1249  SWB3=61 B_R17 OR A;COND CODES,  ;RESULT TRANSFERRED THROUGH
                    ; 1250
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                    ; 1251                                  ;ALU ALLOWING CONDITION CODES
V 027D, 3424,0015,7517,7000 ; 1252          J/SWB3=6        ;TO BE SET ACCORDINGLY
                    ; 1253
                    ; 1254
                    ; 1255
                    ; 1256  SWB5=21 MA_RD,DATI,             ;INPUT ADDRESS OF DESTINATION
V 027E, 6040,0111,7516,0000 ;                 B_DSTBUS DATA,J/SWB3=3  ;OPERAND FROM MEMORY
                    ; 1257
                    ; 1258
                    ; 1259
V 027F, 6210,6014,3015,0000 ; 1260  SWB6=21 PC_PC PLUS 2,J/SWB6=3 ;ADD TWO TO PC
V 0280, 0040,0015,3114,0000 ; 1261  SWB6=31 B_B PLUS RD,J/SWB6=4 ;ADD INDEX WORD TO CONTENTS OF
                    ; 1262                                  ;DESTINATION REGISTER TO OBTAIN
                    ; 1263                                  ;ADDRESS OF DESTINATION OPERAND
                    ; 1264
                    ; 1265
V 0281, 6250,6014,3015,0000 ; 1266  SWB7=21 PC_PC PLUS 2,J/SWB7=3 ;ADD TWO TO PC
V 0282, 0260,0015,3114,0000 ; 1267  SWB7=31 B_B PLUS RD,J/SWB7=4 ;ADD INDEX WORD TO CONTENTS OF
                    ; 1268                                  ;DESTINATION REGISTER TO OBTAIN
                    ; 1269                                  ;ADDRESS OF DESTINATION ADDRESS
V 0283, 6314,6015,2716,0000 ; 1270  SWB7=41 R12_M,J/SWB7=5  ;MOVE ADDRESS OF DESTINATION
                    ; 1271                                  ;ADDRESS TO SP REGISTER 12
                    ; 1272  SWB7=51 MA_R12,DATI,            ;INPUT DESTINATION ADDRESS FROM
V 0284, 6040,0111,7516,0000 ;                 B_DSTBUS DATA,J/SWB3=3  ;MEMORY
                    ; 1273
                    ; 1274
                    ; 1275
                    ; 1276
                    ; 1277
V 0285, 0014,6015,7715,0000 ; 1278  JMP1=21 PC_B,J/SERV      ;CONTENTS OF B REGISTER LOADED INTO PC
                    ; 1279
                    ; 1280
V 0286, 6330,6014,3013,0000 ; 1281  JMP2=71 RD_RD PLUS 2,J/JMP1=2;ADD TWO TO CONTENTS OF DESTINATION
                    ; 1282                                  ;REGISTER
                    ; 1283
                    ; 1284
                    ; 1285  JMP5=21 MA_RD,DATI,             ;INPUT JUMP ADDRESS FROM MEMORY
V 0287, 6320,0111,7516,0000 ;                 B_DSTBUS DATA,J/JMP1=2
                    ; 1286
                    ; 1287
V 0288, 6430,6014,3015,0000 ; 1288  JMP6=21 PC_PC PLUS 2,J/JMP6=3 ;ADD TWO TO PC
V 0289, 6320,0015,3114,0000 ; 1289  JMP6=31 B_B PLUS RD,J/JMP1=7 ;ADD INDEX WORD TO CONTENTS OF
                    ; 1290                                  ;DESTINATION WORD TO OBTAIN
                    ; 1291                                  ;JUMP ADDRESS
                    ; 1292
V 028A, 6474,6014,3015,0000 ; 1293  JMP7=21 PC_PC PLUS 2,J/JMP7=3 ;ADD TWO TO PC
V 028B, 6504,0015,3114,0000 ; 1294  JMP7=31 B_B PLUS RD,J/JMP1=4 ;ADD INDEX WORD AND CONTENTS
                    ; 1295                                  ;OF DESTINATION REGISTER TO OBTAIN
                    ; 1296                                  ;ADDRESS OF JUMP ADDRESS
V 028C, 6534,0015,2716,0000 ; 1297  JMP7=41 R12_M,J/JMP7=5  ;MOVE ADDRESS TO JUMP ADDRESS
                    ; 1298                                  ;TO SP REGISTER 12
                    ; 1299  JMP7=51 MA_R12,DATI,            ;INPUT JUMP ADDRESS FROM MEMORY
V 028D, 6320,0111,7516,0000 ;                 B_DSTBUS DATA,J/JMP1=2
                    ; 1300
                    ; 1301
                    ; 1302
                    ; 1303
V 028E, 6574,0015,2716,0000 ; 1304  JSR1=21 R12_B,J/JSR1=3   ;MOVE CONTENTS OF B REGISTER TO
                    ; 1305                                  ;TEMPORARY STORAGE SP REGISTER 12
                    ; 1306  JSR1=31 B6_B6 PLUS 2,SWAB=OVER, ;SUBTRACT TWO FROM STACK
V 028F, 6614,7414,4515,0000 ;                 J/JSR1=4        ;POINTER, PERMIT OVERFLOW
V 0290, 6624,0015,7504,0000 ; 1307  JSR1=41 B_R5,J/JSR1=5   ;MOVE CONTENTS OF SOURCE
                    ; 1308                                  ;REGISTER TO B REGISTER
                    ; 1309
                    ; 1310  JSR1=51 MA_R6,DATO,             ;OUTPUT CONTENTS OF SOURCE REGISTER TO MEMORY
                    ; 1311                 DSTBUS DATA_M,   ;LOCATION SPECIFIED BY STACK POINTER
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V 0331, 6040,0155,2715,4040   ; 1312                    J/USR1=6
V 0332, 6660,0015,7515,0000   ; 1313  JSR1=61 R_PC,J/USR1=7                ;PC MOVED TO R REGISTER
V 0333, 6711,0015,2704,0000   ; 1314  JSR1=71 RS_B,J/USR1=8                ;B REGISTER LOADED INTO SOURCE
                              ; 1315                                      ;REGISTER
V 0334, 0720,0015,7516,4040   ; 1316  JSR1=81 R_R12,J/USR1=9               ;MOVE CONTENTS OF TEMPORARY STORAGE
                              ; 1317                                      ;TO B REGISTER
V 0335, 0014,0015,2715,0000   ; 1318  JSR1=91 PC_B,J/SERV                  ;LOAD CONTENTS OF B REGISTER
                              ; 1319                                      ;INTO PC
                              ; 1320
                              ; 1321
V 0336, 6550,0014,3015,0000   ; 1322  JSR2=21 PC_PC PLUS 2,J/JSR1=2;ADD TWO TO CONTENTS OF DESTINATION
                              ; 1323                                      ;REGISTER
                              ; 1324
                              ; 1325
                              ; 1326  JSR5=21 RA_R6,DATI,                 ;INPUT DATA FROM MEMORY ADDRESS
V 0337, 6540,0111,7514,0000   ; 1327                  B_DUMMUS DATA,J/JSR1=2  ;SPECIFIED BY DESTINATION REGISTER
                              ; 1328
                              ; 1329
V 0340, 7430,0014,3015,0000   ; 1330  JSR6=21 PC_PC PLUS 2,J/JSR6=3        ;ADD TWO TO PC
V 0341, 6540,0015,3114,0000   ; 1331  JSR6=31 B_R PLUS RC,J/JSR1=2         ;ADD INDEX WORD TO CONTENTS OF
                              ; 1332                                      ;DESTINATION REGISTER
                              ; 1333
                              ; 1334
V 0342, 7474,0014,3015,0000   ; 1335  JSR7=21 PC_PC PLUS 2,J/JSR7=3        ;ADD TWO TO PC
V 0343, 7100,0015,3114,0000   ; 1336  JSR7=31 B_R PLUS RC,J/JSR7=4         ;ADD INDEX WORD TO CONTENTS OF
                              ; 1337                                      ;DESTINATION REGISTER
V 0344, 7134,0015,2716,4000   ; 1338  JSR7=41 R12_B,J/JSR7=5               ;MOVE CONTENTS OF R REGISTER
                              ; 1339                                      ;TO TEMPORARY STORAGE
                              ; 1340                                      ;REGISTER
                              ; 1341  JSR7=51 RA_R12,DATI,                ;INPUT DATA FROM MEMORY
V 0345, 6540,0111,7516,4000   ; 1342                  B_DUMMUS DATA,J/JSR1=2  ;ADDRESS SPECIFIED BY
                              ; 1343                                      ;TEMPORARY STORAGE REGISTER
                              ; 1344
                              ; 1345
                              ; 1346
                              ; 1347
V 0346, 7174,0015,2715,0000   ; 1348  RTS=21  PC_B,J/RTS=3                 ;MOVE CONTENTS OF B REGISTER TO PC
                              ; 1349  RTS=31  RA_R6,DATI,                 ;INPUT DATA FROM MEMORY ADDRESS
                              ; 1350                  B_DUMMUS DATA,      ;SPECIFIED BY STACK POINTER
V 0347, 7200,0111,7515,4000   ; 1351                  J/RTS=4
V 0350, 3130,0214,3015,4000   ; 1352  RTS=41  R6_R6 PLUS 2,J/RTS=3;ADD TWO TO CONTENTS OF
                              ; 1353                                      ;STACK POINTER
                              ; 1354
                              ; 1355
                              ; 1356
V 0351, 7250,0014,3415,0000   ; 1357  RTI=21  RA_R6 PLUS 2,J/RTI=3         ;ADD TWO TO STACK POINTER
V 0352, 7274,0015,2715,0000   ; 1358  RTI=31  PC_B,J/RTI=4                 ;RESTORE STORED PC
                              ; 1359  RTI=41  RA_R6,DATI,                 ;RESTORE PROCESSOR STATUS
                              ; 1360                  B_DUMMUS DATA,      ;FROM STACK
V 0353, 7303,0111,7515,4000   ; 1361                  J/RTI=5
V 0354, 7320,7215,2714,0000   ; 1362  RTI=51  PSW_B,J/RTI=6
V 0355, 0410,0014,3015,4000   ; 1363  RTI=61  R6_R6 PLUS 2,J/SERV          ;ADD TWO TO STACK POINTER
                              ; 1364
                              ; 1365
                              ; 1366
V 0356, 0164,0015,2714,0000   ; 1367  X=21    B_R,J/X=1                   ;MOCK MICRO-STEP
V 0357, 0414,0015,2716,0000   ; 1368  X=31    R13_R,J/TRAP=2  ;LOAD CONTENTS OF R REGISTER
                              ; 1369                                      ;INTO SP REGISTER 13
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                              ; 1370
                              ; 1371
                              ; 1372
                              ; 1373
                              ; 1374
                              ; 1375
V 0360, 0000,0015,4017,0000   ; 1376  CCC=21  CC_R14 AND 0,J/SERV          ;LOAD CONTENTS OF SP REGISTER 14
                              ; 1377                                      ;ADDED WITH COMPLEMENT OF
                              ; 1378                                      ;CONTENTS OF R REGISTER INTO
                              ; 1379                                      ;CONDITION CODES
                              ; 1380
                              ; 1381
                              ; 1382
                              ; 1383
V 0361, 0000,0015,7117,0000   ; 1384  SCC=21  CC_R14 OR R,J/SERV           ;LOAD CONDITION CODES WITH RESULT
                              ; 1385                                      ;OF ORING CONTENTS OF SP
                              ; 1386                                      ;REGISTER 14 WITH CONTENTS
                              ; 1387                                      ;OF R REGISTER.
                              ; 1388
                              ; 1389
                              ; 1390
                              ; 1391
V 0362, 7174,0015,2715,2000   ; 1392  REST=21 R5_R,J/REST=3               ;MOVE R REGISTER TO REGISTER 5
V 0363, 7514,0015,0316,0020   ; 1393  REST=31 R13_0,J/REST=4  ;ZERO SP REGISTER
V 0364, 7534,0014,3416,0000   ; 1394  REST=41 R13=R13 PLUS 2,J/REST=5 ;PERFORM NEXT 5 STEPS TO
V 0365, 7554,0415,1516,0000   ; 1395  REST=51 R13=R13 PLUS R13,J/REST=6       ;OBTAIN 24 AS THE CONTENTS
V 0366, 7574,0014,7416,0000   ; 1396  REST=61 R13=R13 PLUS 1,J/REST=7 ;OF SP REGISTER 13
V 0367, 7614,0015,1516,0000   ; 1397  REST=71 R13=R13 PLUS R13,J/REST=0
V 0370, 2274,0015,1514,0000   ; 1398  REST=81 R13=R13 PLUS R13,J/TRAP=0
                              ; 1399
                              ; 1400
                              ; 1401
                              ; 1402  ;UNUSED ROM LOCATIONS
                              ; 1403
                              ; 1404
V 0371, 0000,0011,7514,0000   ; 1405  NG=11  J/SERV
V 0372, 0000,0011,7514,0000   ; 1406  NG=21  J/SERV
V 0373, 0000,0011,7514,0000   ; 1407  NG=31  J/SERV
V 0374, 0000,0011,7514,0000   ; 1408  NG=41  J/SERV
V 0375, 0000,0011,7514,0000   ; 1409  NG=51  J/SERV
V 0376, 0000,0011,7514,0000   ; 1410  NG=61  J/SERV
V 0377, 0000,0011,7514,0000   ; 1411  NG=71  J/SERV
                              ; 1412
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LOCATION / LINE NUMBER INDEX

LOC	2	1	2	3	4	5	6	7
0000	193	491	874	880	885	879	853	867
0010	577	769	775	782	787	793	8[illegible]	[illegible]0
0020	898	811	816	823	829	835	842	848
0030	722	728	734	74[illegible]	745	751	75[illegible]	764
0240	343	356	37[illegible]	363	395	403	411	417
0250	479	491	501	513	51[illegible]	526	533	539
0060	215	243	253	2[illegible]5	271	279	285	291
0070	585	59[illegible]	612	625	[illegible]35	645	652	[illegible]58
0100	715	90[illegible]	209	2[illegible]2	219	9[illegible]2	297	32[illegible]
0110	9[illegible]4	9[illegible]6	90[illegible]	9[illegible]4	259	910	326	334
0120	911	913	915	921	34[illegible]	944	422	945
0130	949	956	959	9[illegible]0	352	965	43[illegible]	43[illegible]
0140	966	97[illegible]	973	976	376	981	445	454
0150	986	992	993	10[illegible]	3[illegible]2	1001	462	47[illegible]
0160	1[illegible]25	101[illegible]	1[illegible]15	1[illegible]18	483	1019	544	552
0170	1025	1026	1029	1032	526	1037	563	560
0200	1041	1045	1[illegible]48	1051	5[illegible]9	1054	[illegible]63	1[illegible]57
0210	1062	1065	1[illegible]64	1[illegible]7[illegible]	[illegible]03	1073	[illegible]7[illegible]	67[illegible]
0220	1077	108[illegible]	1[illegible]83	1[illegible]86	[illegible]17	1092	[illegible]93	[illegible]85
0230	1094	1[illegible]9[illegible]	1105	11[illegible]3	[illegible]29	11[illegible]9	7[illegible]6	7[illegible]0
0240	1115	1115	1119	1122	1126	1135	1141	1143
0250	1147	1152	1155	115[illegible]	11[illegible]2	11[illegible]3	11[illegible]6	1169
0260	1172	117[illegible]	118[illegible]	1184	11[illegible]5	119[illegible]	1192	1198
0270	12[illegible]0	12[illegible]5	121[illegible]	1215	1221	1225	123[illegible]	1235
0300	1236	124[illegible]	1242	1246	1247	1252	1257	12[illegible]0
0310	1261	1266	1267	127[illegible]	1273	1279	1281	1286
0320	1288	12[illegible]9	1293	1294	1297	13[illegible]0	13[illegible]4	13[illegible]7
0330	1306	1312	1313	1314	1316	131[illegible]	1322	1327
0340	133[illegible]	1331	1335	1336	1338	1342	134[illegible]	1351
0350	1352	135[illegible]	1359	1362	13[illegible]3	13[illegible]4	13[illegible]9	137[illegible]
0360	137[illegible]	13[illegible]3	1392	1393	1394	1395	139[illegible]	1397
0370	1398	14[illegible]5	14[illegible]6	14[illegible]7	14[illegible]8	14[illegible]9	141[illegible]	1411

CROSS REFERENCE LISTING

(U) ALLOW BYTE
BYTE

(U) ALU
A
A + B
A MINUS B MINUS 1
A PLUS 1
A PLUS A
A PLUS B
A PLUS B PLUS 1
A(-B)
B
ZERO
(U) ARDA
ALU
X
PSW
LB
(U) AUX CONTROL
AUX
(U) B MODE
HOLD
LOAD
SHIFT L
SHIFT R
(U) BUS CONTROL
DATI
DATIP
DATO
DATOB
(U) BUT
BUT DEST
ENAB OBE
ENAB STOV
LOAD CC
LOAD PSW
NOWR
(U) BYTE
BUT
(U) BYTE SERVICE
SERV
(U) DAT TRAN
TRAN
(U) EXAM SEX
SEX
(U) J
N=1
N=2
N=3
CCCC=1
CCCC=2
F1
F2
JSR1=1
JMP1=1
JMP2=1
JSR2=2
JMP3=1
JMP4=1
JMP5=1
JMP5=2
JMP6=1
JMP6=2
JSR6=3

JSP7=1	845					
JSP7=2	846	1293				
JSP7=3	1293	1294				
JSP7=4	1294	1297				
JSP7=5	1297	1299				
JSR1=1	811	829				
JSR1=2	811	1304	1322	1327	1331	1342
JSR1=3	1304	1306				
JSR1=4	1307	1308				
JSR1=5	1308	1310				
JSR1=6	1312	1313				
JSR1=7	1313	1314				
JSR1=8	1314	1316				
JSR1=9	1316	1318				
JSR2=1	816					
JSR2=2	816	823	1322			
JSR3=1	822					
JSR4=1	829					
JSR5=1	835					
JSR5=2	835	1326				
JSR6=1	841					
JSR6=2	842	1330				
JSR6=3	1330	1331				
JSR7=1	847					
JSP7=2	848	1335				
JSR7=3	1335	1336				
JSR7=4	1336	1338				
JSR7=5	1338	1341				
M1E8=1	436	678				
M1E8=2	438	1049	1054			
M108=1	438					
M108=2	438	1045				
M108=3	1045	1047	1160			
M106=4	1048	1051				
M106=5	1051	1054				
M2E8=1	446	693				
M2E8=2	446	1056	1070			
M208=1	454					
M208=2	454	1062				
M208=3	1062	1064	1180			
M208=4	1065	1068				
M206=5	1068	1070				
M3E8=1	462	708				
M3E8=2	462	1072	1088			
M308=1	470					
M308=2	470	1077				
M308=3	1077	1079	1192			
M308=4	1080	1083				
M308=5	1083	1086				
MDB=1	422					
MDB=2	422	1037	1172			
MDM4=1	343					
MDM4=2	343	347				
MDM4=3	348	577	991	1135	1210	1357
MDN1=1	354	395				
MDM1=2	356	361	643			
MDN1=3	362	985	1221			
MDM2=1	368					
MDM2=2	370	375	617			
MDM2=3	376	990				

MDM2=4	992	993	1057			
MDM3=1	382					
MDM3=2	383	999				
MDM3=3	1000	1001	1015	1019	1332	
MDM3=4	1001	1003				
MDM3=5	387	629	1005			
MDM3=6	388	1009	1252			
MDM4=1	394					
MDM5=1	403					
MDM5=2	403	1014				
MDM6=1	410					
MDM6=2	411	1018				
MDM6=3	1018	1019				
MDM7=1	416					
MDM7=2	417	1025				
MDM7=3	1025	1028				
MDM7=4	1026	1029				
MDM7=5	1029	1031				
MDV=1	576					
MDEM=1	544	568	1126			
MDM8=1	678					
MDM8=2	679	683	691	548	1098	
MDM1=1	489	518				
MDM2=1	499					
MDM2=2	501	506				
MDM3=1	512					
MDM3=2	513	1092				
MDM3=3	1092	1094	1105	1109	1122	
MDM3=4	1094	1096				
MDM4=1	516					
MDM5=1	526					
MDM5=2	526	1104				
MDM6=1	532					
MDM6=2	533	1108				
MDM6=3	1108	1109				
MDM7=1	536					
MDM7=2	539	1115				
MDM7=3	1115	1116				
MDM7=4	1116	1119				
MDM7=5	1119	1121				
MDDR=1	552	567				
MDUM=2	552	1126				
MG=1	1405					
MG=2	1406					
MG=3	1407					
MG=4	1408					
MG=5	1409					
MG=6	1410					
MG=7	1411					
MMEB=1	568					
MMDB=1	568					
MFB1=1	678					
MEB2=1	693					
MEB3=1	708					
MLST=1	691					
MEST=2	691	1392				
MEST=3	1392	1393				
MEST=4	1393	1394				
MEST=5	1394	1395				
MEST=6	1395	1396				

30

31

184

RESET=7	1196	1197										
RESI=8	1197	1198										
ROB1=1	674											
ROB1=2	675	1178										
ROB1=3	1176	1180										
ROB2=1	685											
ROB2=2	686	1184										
ROB2=3	1184	1186										
ROB3=1	704											
ROB3=2	705	1190										
ROB3=3	1190	1192										
ROTD=1	584											
ROTD=2	585	589										
ROTD=3	589	1135										
ROTI=1	596	638										
ROTI=2	599	683										
ROT2=1	616											
ROT2=2	612	617										
ROT4=1	624											
ROT3=2	625	1141										
ROT3=3	1141	1143	1152	1156	1169							
ROT3=4	1143	1145										
ROT3=5	629	1147										
ROT4=1	637											
ROT5=1	645											
ROT5=2	645	1151										
ROT6=1	651											
ROT6=2	652	1155										
ROT6=3	1155	1156										
ROT7=1	657											
ROT7=2	658	1162										
ROT7=3	1162	1163										
ROT7=4	1163	1166										
ROT7=5	1166	1168										
ROT8=1	668											
ROT8=2	668	1172										
RSET=1	874											
RTI=1	859											
RTI=2	860	1358										
RTI=3	1358	1359										
RTI=4	1359	1360										
RTI=5	1362	1363										
RTI=6	1363	1364										
RTS=1	853											
RTS=2	853	1348										
RTS=3	1348	1349										
RTS=4	1351	1352										
SBE=1	296	326	976									
SBO=1	328	334										
SBO=2	326	976										
SCC=1	685											
SCC=2	685	1384										
SERV	193	219	297	483	544	874	915	921	981	986	993	1010
	1037	1041	1074	1200	1236	1278	1318	1364	1376	1384	1405	1406
	1407	1409	1469	1414	1411							
SHO=1	214											
SHV=2	215	218	243	259	949							
SM1=1	241	271										
SN2=1	251											
SN2=2	253	259										

SR3=1	264				
SR3=2	265	944			
SR3=3	944	945	956	969	973
SR3=4	945	947			
SR4=1	270				
SR5=1	276				
SR5=2	279	955			
SR6=1	284				
SR6=2	285	959			
SR6=3	959	960			
SR7=1	290				
SR7=2	291	965			
SR7=3	965	966			
SR7=4	966	976			
SR7=5	970	972			
SRDE=1	326				
SRD0=1	334				
SRB4=1	722				
SRB4=2	722	1205			
SRB4=3	1205	1214			
SRB1=1	727	745			
SRB1=2	728	1215			
SRB1=3	1215	1220			
SRB2=1	733				
SRB2=2	734	1225			
SRB2=3	1225	1230			
SRB2=4	1230	1233			
SRB2=5	1235	1236			
SRB3=1	739				
SRB3=2	740	1240			
SRB3=3	1240	1242	1257	1261	1273
SRB3=4	1242	1244			
SRB3=5	1244	1247			
SRB3=6	1247	1251			
SRB4=1	745				
SRB5=1	751				
SRB5=2	751	1256			
SRB6=1	757				
SRB6=2	758	1260			
SRB6=3	1260	1261			
SRB7=1	763				
SRB7=2	764	1266			
SRB7=3	1266	1267			
SRB7=4	1267	1270			
SRB7=5	1270	1272			
TRAI=1	902				
TRAP=10	910	911			
TRAP=11	911	912			
TRAP=12	913	915			
TRAP=2	892	897	1374		
TRAP=3	898	899			
TRAP=4	900	902			
TRAP=5	902	904			
TRAP=6	904	905			
TRAP=7	906	907			
TRAP=8	907	908	1398		
TRAP=9	909	910			
W=1	866	1369			
W=2	867	1369			
W=3	1370				

READ
WRITE LOW
WRITE WORD

(U) SPA MUX
BA
RO

ROM SPA

RS

```
78
79      879     885     1037
82      242     216     296     320     430     454     470     552     670     685     700
911     945     970     981     1001    1029    1051    1068    1083    1094    1119    1143
1166    1200    1205    1215    1225    1242    1247    1270    1278    1297    1304    1314
1318    1334    1345    1359    1370    1392    1393    1395    1396    1397    1398
24
27      193     866
29      342     354     368     382     394     403     478     489     499     506     512
518     526     540     566     584     596     610     624     637     645     722     727
733     739     745     751     769     775     781     787     793     811     816     822
829     835     853     981     985     990     993     999     1014    1019    1026    1037
1044    1056    1092    1104    1109    1116    1135    1141    1151    1156    1163    1172
1233    1236    1240    1256    1261    1267    1281    1285    1289    1294    1322    1326
1331    1336
3       202     208     218     284     290     296     320     347     361     375     387
410     416     422     430     436     446     454     462     470     483     532     538
544     552     576     651     657     670     685     700     757     763     799     805
841     847     859     879     885     891     897     899     902     904     905     908
910     911     912     920     945     947     959     965     970     972     976     1001
1003    1009    1018    1025    1029    1031    1045    1047    1051    1054    1062    1064
1065    1070    1072    1077    1079    1083    1086    1094    1096    1108    1115    1119
1121    1126    1143    1145    1155    1162    1166    1168    1176    1184    1190    1200
1205    1210    1215    1220    1225    1230    1242    1244    1247    1251    1260    1266
1270    1272    1278    1288    1293    1297    1299    1304    1306    1310    1313    1316
1318    1334    1335    1336    1341    1348    1349    1352    1356    1359    1360    1364
1370    1376    1384    1392    1393    1394    1395    1396    1397    1398
28      214     241     251     259     264     270     276     320     334     944     950
900     906     1308    1314
```

END OF MICRO CODE ASSEMBLY

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D. HEALY	CHECKED D. HEALY	SECTION 1
DATE 10/1/75	DATE 10/1/75	
ENG R. Barry	PROD R. K. Potter	ISSUED SECT. 1
DATE 10-27-75	DATE 10/27/75	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-CS-M7263-Ø-1	KD11-D PROCESSOR MODULE HEX	1
2	K-WL-KD11-D-1	AWT ETCH LIST	REF
3	K-MP-KD11-D-2	FLOW DIAGRAM	REF
4	A-WT-KD11-D	AWT REVISION STATUS	REF
5	K-RL-KD11-D-3	ROM LISTING	REF

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
KD11-D PROCESSOR	NONE	A	PL	KD11-D-Ø		
	SHEET 1 OF 1	DIST.				

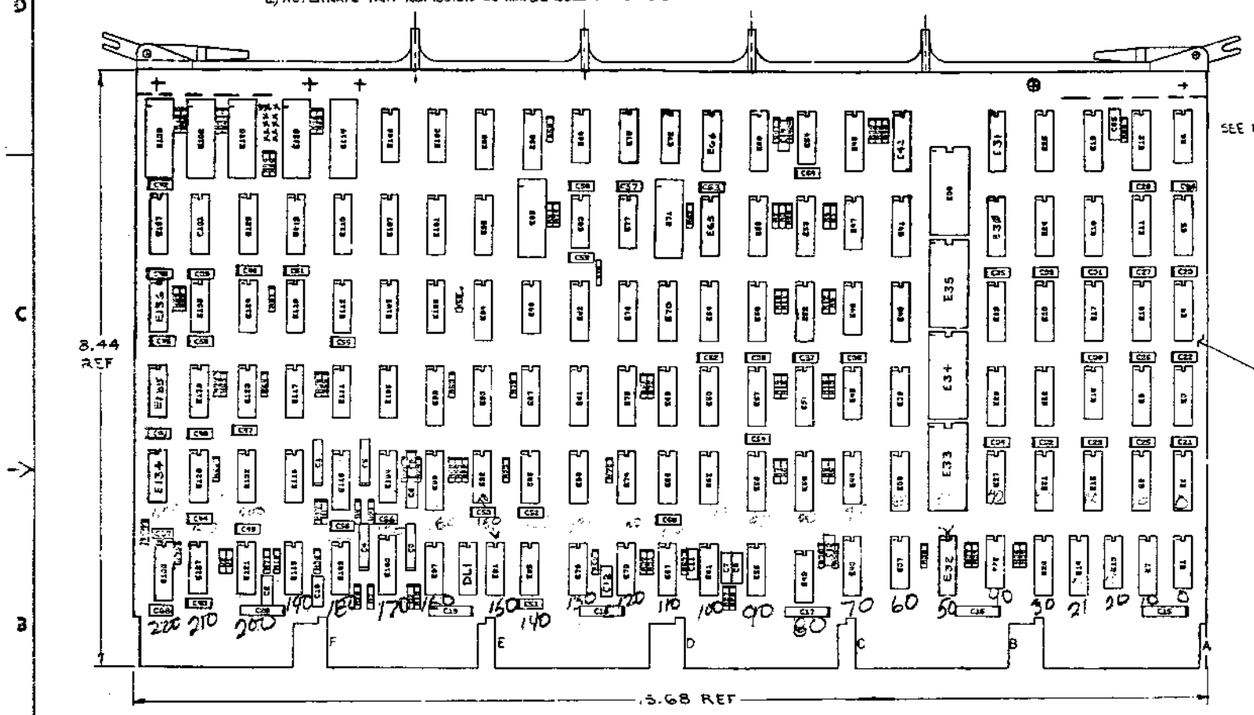
DEC FORM DEC 16-(325)-1031-N870
DRA 110

NOTES:

1) MAINTENANCE CONNECTOR LOCATED BETWEEN E120/E130
PIN ASSIGNMENTS AS FOLLOWS

X9 MPC 04L	X	X	X9 MPC 00L
X9 MPC 01L	X	X	X9 MPC 03L
X9 MPC 02L	X	X	X9 MPC 02L
X9 MPC 03L	X	X	X9 MPC 01L
MAN CHK ENABL	X	X	MAN CLK L

2) ALTERNATE PART NO. 1001610-00 MAYBE USED IN PLACE OF 1001610-01



REF		X-Y COORDINATE HOLE LOCATION	X-CO-M7263-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7263-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7263-0-6	3
1		ETCHED CIRCUIT BOARD	5011244	4
1	C1	CAPACITOR, 22uF, 6V, 10%	1005636	5
6	C2,C8,C11,C12,C13,C85	CAPACITOR, 470pf, 100V, 5%	1000024	6
1	C3	CAPACITOR, .47uf, 35V, 10%	1005965	7
1	C4	CAPACITOR, 1uf, 35V, 10%	1001778	8
1	C5	CAPACITOR, 15uf, 20V, 10%	1004812	9
1	C6	CAPACITOR, 82pf, 100V, 5%	1000815	10
1	C7	CAPACITOR, 100pf, 100V, 5%	1000016	11
1	C9	CAPACITOR, 2200pf, 250V, 20%	1000055	12
1	C14	CAPACITOR, 330pf, 100V, 5%	1000823	13
8	C15,C16,C17,C18,C19,C20	CAPACITOR, 8.8uf, 35V, 10%	1005308	14
44	C21 THRU C84	CAPACITOR, .01uf, 100V, 20%	1001610-01	15
1	C86	CAPACITOR, 1000pf, 250V, 20%	1000043	16
4	D1,D2,D3,D4	DIODE, D864	1100114	17
27	R1 THRU R16,R53,R33,R40,R42 THRU R50	RESISTOR, 330 OHM, 1/4W, 5%	1300295	18
3	R17,R20,R21	RESISTOR, 24K, 1/4W, 5%	1304437	19
2	R18,R30	RESISTOR, 88 OHM, 1/4W, 5%	1300219	20
1	R19	RESISTOR, 12K, 1/4W, 5%	1300488	21
8	R22,R23,R24,R65,R66,R67,R69 R70	RESISTOR, 1K, 1/4W, 5%	1300365	22
2	R24,R78	RESISTOR, 5.62K, 1/4W, 1%	1305124	23
3	R25,R31,R32	RESISTOR, 22Ω, 1/4W, 5%	1300271	24
1	R28	RESISTOR, 34.8K, 1/4W, 1%	1303156	25
2	R27,R29	RESISTOR, 150 OHM, 1/4W, 5%	1300250	26
2	R33,R42	RESISTOR, 47 OHM, 1/4W, 5%	1300202	27
5	R34,R35,R36,R37,R38	RESISTOR, 178 OHM, 1/4W, 1%	1311422	28
1	R41	RESISTOR, 590 OHM, 1/4W, 1%	1301424	29
16	R51,R52,R54 THRU R63,R72 THRU R76,R79	RESISTOR, 470 OHM, 1/4W, 5%	1300316	30
1	R84	RESISTOR, 1.5K, 1/4W, 5%	1300391	31
1	R88	RESISTOR, 180 OHM, 1/4W, 5%	1301322	32
1	R71	RESISTOR, 825 OHM, 1/4W, 1%	1301775	33
1	DL1	DELAY LINE, 150 NSEC.	1512463	34
3	E1,E135	I.C. DEC 7432	1911521	35
10	E2,E3,E4,E5,E17,E38,E39,E40 E41,E43	I.C. DEC 8641	1911579	36
1	E6,E16,E74	I.C. DEC 8819	1909713	37
4	E8,E11,E15,E18	I.C. DEC 74153	1909827	38
4	E9,E10,E12,E28,E29,E30,E88	I.C. DEC 74157	1910655	39
4	E13,E54,E52	I.C. DEC 7420	1905571	40
11	E63,E64,E65,E14,E101,E107, E113,E119,E125,E131,E137	I.C. DEC 74174	1910652	41
2	E20,E32	I.C. DEC ~~9637~~ N8T37N	1911135	42
2	E19,E25	I.C. DEC 74175	1510651	43
4	E21,E22,E23,E24	I.C. DEC 74194	1910823	44
2	E26,E37	I.C. DEC 8881	1908725	45
1	E27,E81	I.C. DEC 7408	1910155	46
1	E31	I.C. DEC 74182	1910019	47
4	E33,E34,E35,E36	I.C. DEC 74181	1909967	48
1	E42	I.C. DEC 745133	1911383	49
4	E44,E45,E46,E47	I.C. DEC 7486	1910911	50
1	E49	I.C. DEC 8640	1911461	51
QTY.	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

IC 9602	8	16
IC 7442	8	16
IC 745135	8	16
IC 74298	8	16
IC 3101A	8	16
IC 8640	1	8
IC 745133	8	16
IC 74181	12	24
IC 74182	8	16
IC 74194	8	16
IC 74175	8	16
IC 3837	8	16
IC 74174	8	16
IC 74157	8	16
IC 74153	8	16
IC 1841	8	16
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

IC 74H103	11	4
16 PIN ROMS	8	16
20 PIN ROMS	10	20
I.C. 74123	8	16
	GND	+5V

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. F

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

SEMICONDUCTOR CONVERSION CHART

DRN		DATE	
CHK		DATE	
ENGR		DATE	4/19/77
PROJ. LDR.		DATE	4/19/77
PROD.		DATE	4/19/77
NEXT HIGHER ASSY			
SCALE			
SHEET 1 OF 1			

digital

TITLE: KDII-D

SIZE D | CODE | NUMBER: DCS M7263-0-1 | REV. M

DIST.

189

GRANT CONTINUITY

DK2 → DL2
DM2 → DN2
DP2 → DR2
DS2 → DT2

	E50,E51,E52,E53	I.C. DEC 3101A	1910853	52
	E55,E73,E97,E109,E115,E121,E123,E129	I.C. DEC 7474	1995947	53
	E58,E57,E58,E59	I.C. DEC 74298	1911271	54
	E62,E66,E79,E85,E105,E118,E117,E124 E68	I.C. DEC 7402	1909804	55
2	E67:E122 E67	I.C. DEC 7414	1911324	56
	E95,E96 E95,E96	I.C. DEC 745153	1910547	57
3	E77,E83,E102	I.C. DEC 74H81	1909845	58
	E78,E106,E127 106	I.C. DEC 7404	1909886	59
6	E80,E100,E104,E116,E108,E125	I.C. DEC 7400	1905575	60
	E84	I.C. DEC 74S82	1912388	61
2	E88,E112 E86	I.C. DEC 7437	1910091	62
	E72	I.C. DEC 74S89	1912389	63
1	E89 E88	I.C. DEC 7427	1910879	64
1	E90	I.C. DEC 7442	1910048	65
1	E91	I.C. DEC 74S08	1910522	66
2	E92,E93 E98	I.C. DEC 8882	1910951	67
2	E103,E110	I.C. DEC 74123	1910436	68
3	E111,E130,E99 E136	I.C. DEC 7405	1909930	69
1	E134 E134	I.C. DEC 74H103	1910409	70
	E7	I.C. DEC 256 x 4 TS	23A31A2-95	71
1	E40	I.C. DEC 256 x 4	23A21A2	72
2	E80,E82	I.C. DEC 256 x 4	23A22A2	73
1	E69	I.C. DEC 256 x 4	23A27A2	74
	E70	I.C. DEC 256 x 4	23A23A2	75
1	E75	I.C. DEC 256 x 4	23A26A2	76
2	E76,E99	I.C. DEC 256 x 4 TS	23A29A2-85	77
1	E87	I.C. DEC 256 x 4	23A25A2	78
1	E97	I.C. DEC 256 x 4	23A24A2	79
1	E93	I.C. DEC 512 x 4 TS	23A81A9	80
1	E94	I.C. DEC 32 x 8 TS	23A75A1-85	81
	E71	I.C. DEC 256 x 8 TS	2380581	82
1	E89	I.C. DEC 256 x 8 TS	2380787	83
1	E114	I.C. DEC 256 x 8 TS	2380581	84
1	E120	I.C. DEC 256 x 8 TS	2380481	85
1	E126	I.C. DEC 256 x 8 TS	2380381	86
1	E132	I.C. DEC 256 x 8 TS	2380681	87
1	E138	I.C. DEC 256 x 8 TS	2380181	88
1		MODULE HANDLE	12L0711-02	89
12		EYELETS	9360024-01	90
1	01	JUMPER, MACH INS	9009185	91
18		PIN, WIRE-WRAP, .025 SQ	9009149	92
1	C10	CAPACITOR 150pf 100V 5%	1003326	93
1	A77	RES, 3.3K, 1/4W, 5%	3123354	94
1	C69	CAP, 1000 pf, 100V, 5%	1003326	95
1	C67	CAP, 220 pf, 100V, 5%	1003326	96
		WIRE, 30 AWG	9012045	97
		TUBING	9012041	98

CHK	CHANGE NO	NV	TITLE	SIZE	CODE	NUMBER	REV
			KDII-D	D	CS	M7263-0-1	M
			SCALE	SHEET 2 OF 14	DIST		

DCS M7263-0-1 M

31Ø1A			
ENB	WR	MEM OP	OUTPUT
H	–	DO NOTHING	H
L	L	WRITE	H
L	H	READ	COMPL OF SEL WORD

K9 SPW LOW H
K5 REG CLK H
7400 E108
K1 SPW LOW L
K10 ENAB REG (1) L
+5V
R1 330 R2 330 R3 330 R4 330
K1 AMUX Ø3 H
K3 AMUX 11 H
K1 AMUX Ø2 H
K3 AMUX 10 H
K1 AMUX Ø1 H
K3 AMUX Ø1 H
K1 AMUX Ø5 H
K3 AMUX 08 H
74298 E59 SP REG
WS CLK
K1 SWAB L
K1 SPW LOW L
WR ENB
3101A E53 5PM
M2(1) M1(1) M0(1) M3(1)
A3 A2 A1 A0
K1 SP ØØ L
K10 INVERT (1) H
K8 SPA Ø3 H
K8 SPA Ø2 H
K8 SPA Ø1 H
K8 SPA ØØ H
7420 E54
K1 SWAB L

K2 BREG Ø4 (1) H
K9 BMODE Ø0 L
K9 BMODE Ø1 L
K1 AMUX Ø3 H
K1 AMUX Ø2 H
K1 AMUX Ø1 H
K1 AMUX ØØ H
51 SØ DSR
74194 E24 8REG
D3 D2 D1 D0
R3(1) R2(1) R1(1) R0(1)
CLR CLK DSL
+3VA
K5 BREG CLK L
K11 SERIAL SHIFT H
K1 BREG Ø3 (1) H
K1 BREG ØØ (1) H
K8 INH H L
74157 E32 BLEG MUX
B0 A0 B3 A3 B1 A1 B2 A2
F0 F3 F1 F2
STB SØ
K9 ENAB H L

K6 ASSERT ADRESS L
8641 E41
BUS A03 L
K1 BA03 H
BUS A02 L
K1 BA02 H
BUS A01 L
K1 BA01 H
BUS A00 L
K1 BA00 H
7486 E47
K1 ALU CIN Ø L
74182 E31
K10 ALU CIN ØØ L
K1 Ø-3 = ØH
8815 E6
K8 C3H
K8 C2H
74181 E36 ALU
A-B COUT G P
B3 A3 B2 A2 B1 A1 Ø1 Ø2 B0 A0
F3 F2 F1 F0
S3 S2 S1 S0 M CIN
K10 ALU S3 H
K10 ALU S2 H
K10 ALU S1 H
K10 ALU S0 H
K10 ALU MODE (1) H
K10 ALU CIN ØØ L

K6 ENAB DATA L
8641 E5
BUS D03 L
BUS D02 L
BUS D01 L
BUS D00 L
AE2
AC1
AD2
AC2
ST81 ST80
74153 E18 AMUX
K1 AMUX Ø3 H
K1 AMUX Ø2 H
74153 E11 AMUX
K1 AMUX Ø1 H
K1 AMUX ØØ H
K10 AMUX S1 L
K10 AMUX S0 L

74194

CLK	S1	SØ	OPERATION
–	L	L	HOLD
↑	L	H	SHIFT RIGHT
↑	H	L	SHIFT LEFT
↑	H	H	LOAD

74157

STB	SØ	DATA
H	–	F=Ø
L	L	F=A
L	H	F=B

74153

S1	SØ	DATA
L	L	F=C0
L	H	F=C1
H	L	F=C2
H	H	F=C3

74175 E19 PSW
D0 D1 D2 D3 CLR CLK
R0(1) R1(1) R2(1) R3(1)
K1 NBIT(1) H
K1 ZBIT(1) H
K1 VBIT(1) H
K1 CBIT(1) H
74157 E12
K1 AMUX Ø3 H
K11 CC N H
K1 AMUX Ø2 H
K11 CC Z H
K1 AMUX Ø1 H
K11 CC V H
K1 AMUX ØØ H
K11 CC C H
K5 REG CLK H
K9 LOAD CC L
K2 PSW LOAD L
7400 E128
7400 E108
K10 AUX CONTROL (1) H
K5 PROC INIT L

DATA PATH 3-3(1)(2)(4)CPU

TITLE	SIZE	CODE	NUMBER	REV.
KD11-D (K1)	D	CS	M7263-0-1	H
SCALE	SHEET 3 OF 14	DIST.		

3121A

BN3	WR	MEMOP	OUTPUT
H	—	DO NOTHING	H
L	L	WRITE	H
L	H	READ	COMPL OF SEL WORD

74194

CLK	S1	S0	OPERATION
—	L	L	HOLD
↑	L	H	SHIFT RIGHT
↑	H	L	SHIFT LEFT
↑	H	H	LOAD

74153

S1	S0	DATA
L	L	FROM C0
L	H	FROM C1
H	L	FROM C2
H	H	FROM C3

DIVISIONS

CHK	CHANGE NO.	REV.

DATA PATH 4-7(11/24) CPU

TITLE		SIZE	CODE	NUMBER	REV.
KD11-D	(K2)	D	CS	M7263-0-1	M

SCALE — SHEET 4 OF 14 DIST.

192

ENB	WR	MEM OP	OUTPUT
H	—	DO NOTHING	H
L	L	WRITE	H
L	H	READ	COMPL OF SEL WORD

74194

CLK	S1	S0	OPERATION
—	L	L	HOLD
↑	L	H	SHIFT RIGHT
↑	H	L	SHIFT LEFT
↑	H	H	LOAD

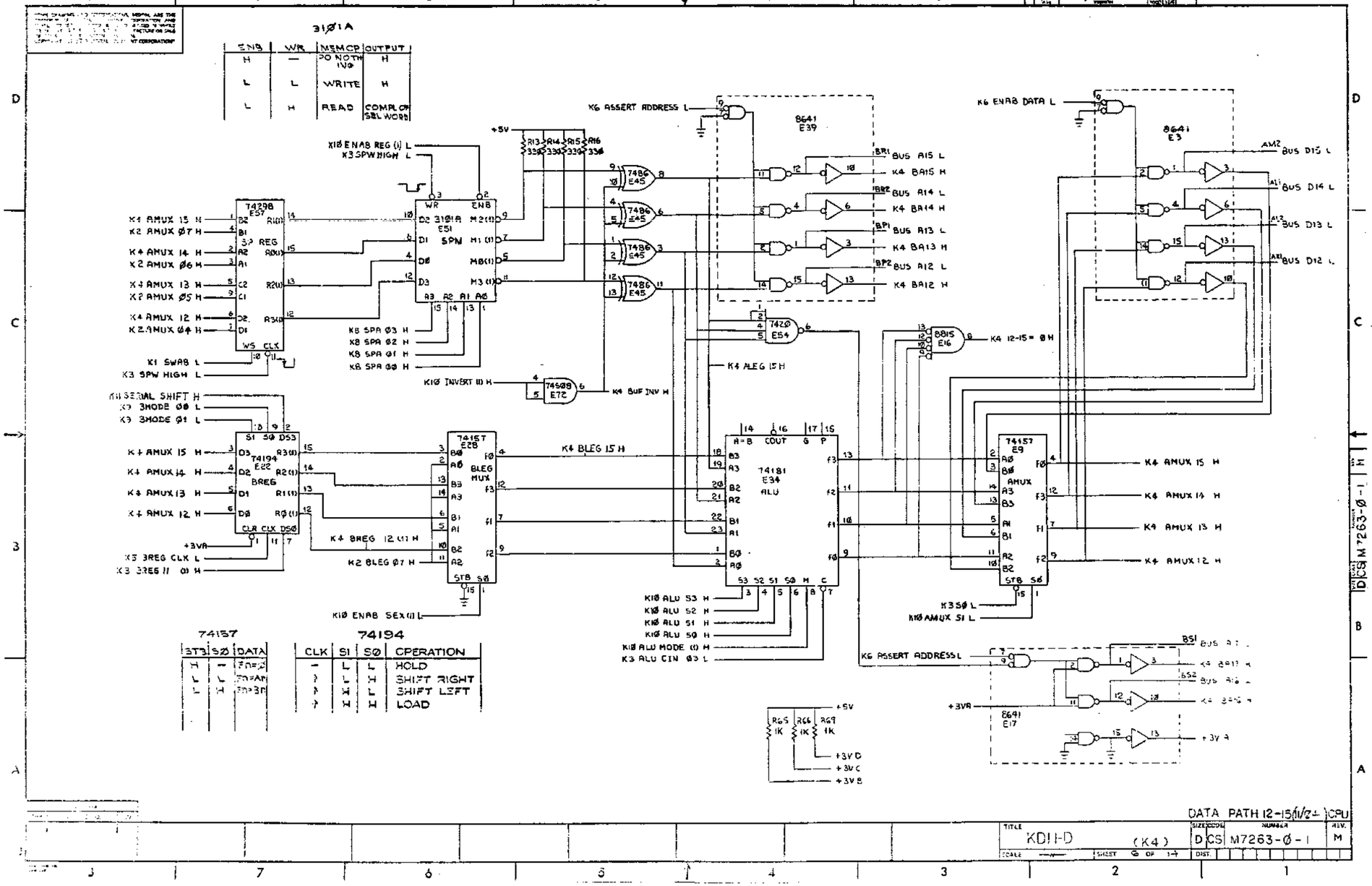
74157

STB	S0	DATA
H	-	FA = 0
L	L	FA = A0
L	H	FA = B0

REVISIONS		
CHK	CHANGE NO.	REV.

DATA PATH 8-11(1)(3).PS

TITLE		SIZE	CODE	NUMBER	REV.
KDII-D	(K3)	D	DS	M7263-0-1	H
SCALE —	SHEET 5 OF 14	DIST.			



DATA PATH 12-15 (V2+) CPU

TITLE	SIZE	CODE	NUMBER	REV.
KDIIHD (K4)	D	CS	M7263-Ø-1	M

SCALE — SHEET 2 OF 14 DIST.

DCS M7263-Ø-1 M

194

BUS AC LO L
BUS DC LO L
BUS INIT L
+5V
+3V B
+3V C
+3V 8
K5 PROC INIT H
K5 PROC INIT L
K5 PFAIL (1) H
K5 PFAIL (1) L
K8 PFAIL SER L
K5 PROC CLK L
K5 POWER CLR L
K12 START RESET L
K5 RESET (1) H
K5 RCD INIT H
K9 MPC ØØ L
K12 HLT RQST L
K7 BG INH L
K6 TRAN INH L
MAN CLK ENAB L
MAN CLK L
K6 TRAN CLK H
K10 DAT TRAN (1) H
K8 INST TRAP SER L
K8 EXT TRAN L
K5 BREG CLK L
K5 PROC CLK H
K5 PROC CLK

POWER UP TIMING (TIMES IN MSEC)

BUS DC LO L
BUS AC LO L
E18Ø PIN 5 (INIT)
E12Ø3 PIN 13 (PUP)
MPC ØØ L
PROC INIT L
PROC CLK L
150
2.2

POWER DOWN TIMING (TIMES IN MSEC)

BUS AC LO L
BUS DC LO L
E123 PIN 5 (PDWN)
PFAIL (1) H
MPC ØØ L
PROC INIT L

CLOCK TIMING DIAGRAM FOR NORMAL OPERATION (NOMINAL TIMES IN NSEC)

E92 PIN 8
E91 PIN 8
E91 PIN 4
E91 PIN 5
E91 PIN 6
70-90
175-185
(WITH MAN CLK ENAB L / MAN CLK BOTH H)

FOR MANUAL CLOCK OPERATION

MAN CLK ENABLE
MAN CLK L
E91 PIN 6

(PFAIL/AUTO RESET/INIT/PROC CLK)

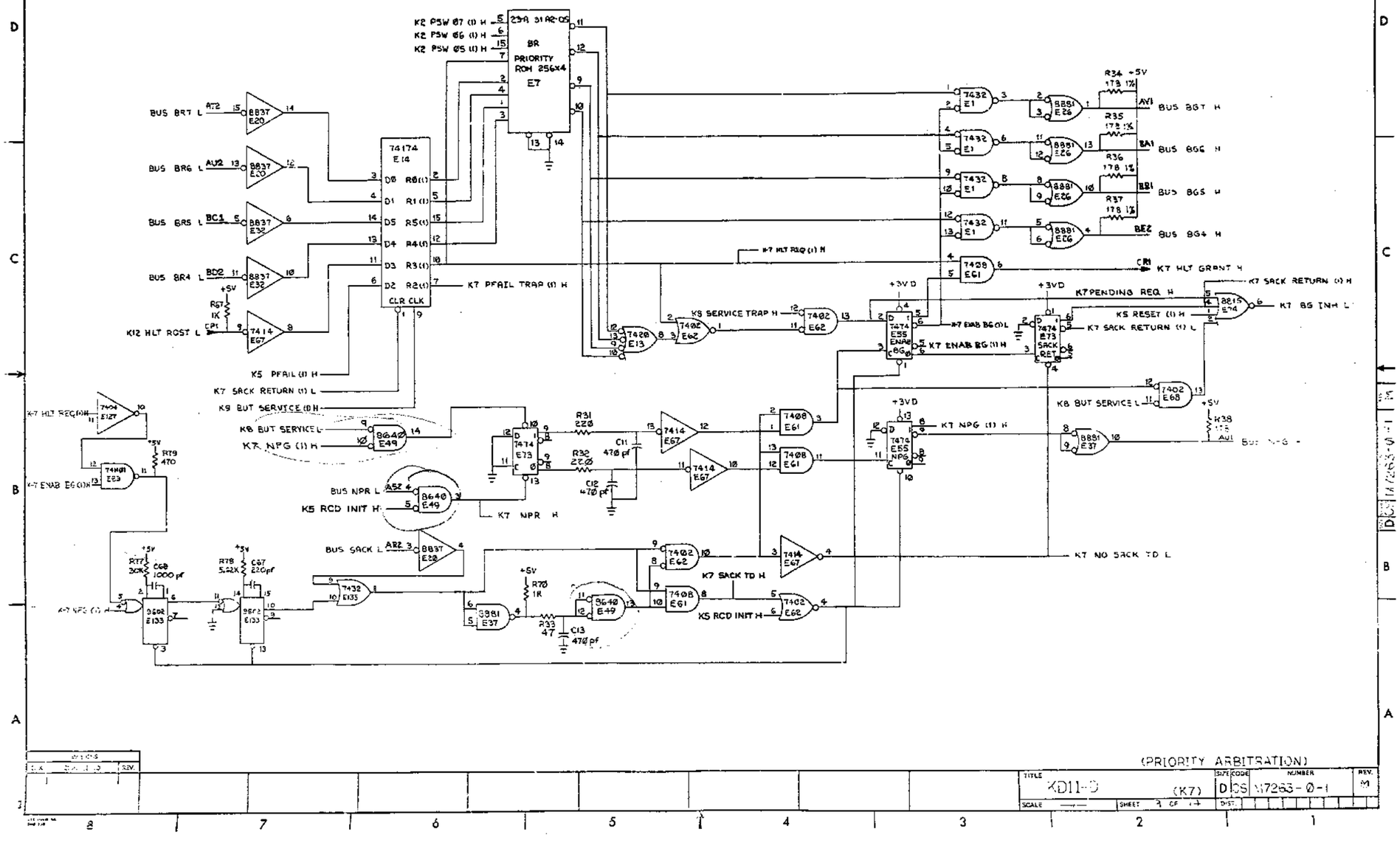
TITLE	KD11-D (KE)	SIZE	CODE	NUMBER	REV
		D	DCS	M7263-0-1	M
SCALE	SHEET 7 OF 14	DIST.			

K6 C1 L
K6 START TRAN H
7402 E85
K6 ASSERT ADDRESS L
KB INIT DATI H
7402 E116
K6 ENAB DATA L
K10 C1 (1) H
7414 E122
K10 C0 (1) H
7438 E104
+3VC
K6 DATIP (1) H
7474 E97 DATIP
K9 CLR MPC L
+5V
R24 5.62K 1%
C6 82pf
BUS SSYN L
BUI
8837 E32
K6 SSYN H
7402 E116
7414 E122
K6 BUS IN USE H
K6 DATIP (1) H
7402 E116
K6 BBSY H
K7 NPR H
K7 NPG H
K7 NO SACK TO L
8815 E74
9602 E98
+3VC
R27 150
C7 100pf
7414 E67
K6 START TRANH
K10 DAT TRAN (1) H
K6 EOT (0) H
7408 E80
K6 TRAN INH L
7402 E85
K5 RCD INIT H
+5V
R26 3.32K 1%
C9 220pf
9602 E98
2215
8641 E43
BUS C1 L
K6 C1 H
BUS C0 L
K6 C0 H
BUS BBSY L
K6 BBSY H
BUS MSYN L
K6 MSYN H
+3VD
K1 SPOB L
K10 ALLOW BYTE H
7402 E68
K6 TRAN CLK H
7414 E122
R29 150
C8 47pf
K6 SSYN H
7414 E67
BUS PA L
BUS PB L
AN1
AN2
8837 E20
8648 E49
K6 C1 L
7408 E104
+3VB
7474 E121 PE
K6 PE (1) H
PARITY ENABLE W1
W2
K10 DAT TRAN (1) H
K6 SSYN H
7474 E115 BE
K6 BE (1) H
K6 BE (1) L
K6 TRAN INH L
7438 E125
K6 FORCE SERV H
+5V
R31 1.5K
R30 68
C10 50pf
7405 E111
7474 E115 EOT
K6 EOT (0) H

(DATA TRAN)

TITLE		SIZE	CODE	NUMBER	REV.
KDII-D	(K6)	D	Cs	M7263-0-1	A1
SCALE —	SHEET 5 OF 14	DIST.			

196



(PRIORITY ARBITRATION)

TITLE		SIZE	CODE	NUMBER	REV.
KD11-D (K7)		D	DCS	M7263-0-1	M
SCALE	SHEET 2 OF 4	DIST.			

K2 TBIT (1) L
K12 ENAB TBIT L
K5 PROC CLK H
K8 TBIT SER H
K5 PROC INIT L
7402 E184
74H20 E134
K8 TBIT FLAG (1) H

INSTRUCTION	K	IR CODE ∅2	∅1	∅∅
ILLEGAL INST	4	H	L	H
RESERVED INST	1∅	H	H	L
BPT	14	H	L	L
IOT	2∅	L	H	H
EMT	3∅	L	H	L
TRAP	34	L	L	H
HLT	1	L	L	L
NONE	1	H	H	H

+5V
R74 R76 R75 R73 R72
470 470 470 470 470
K10 BE FLAG (1) H
K12 IR CODE 02 L
K12 IR CODE 01 L
K12 IR CODE ∅∅ L
K8 TBIT FLAG (1) H
K8 STOV (1) H
K7 PFAIL TRAP (1) H
K10 PE FLAG (1) H
BUT SERVICE 23-∅∅6-81 E71
K8 BUT SERVICE L
K8 C3 H
K8 C4 H
K8 C2 H
K8 STOV SER L
K8 PFAIL SER L
K8 INST TRAP SER L
K8 SERVICE TRAP H
7404 E127
K8 T BIT SER H
74H21 E102
K10 AMUX S∅ L
7432 E135
74H01 E102
K8 INTR H
K9 BUT SERVICE (1) H
K9 MPC ∅∅ L

SERVICE ORDER
HLT INST (FROM C.P.)
BE (SERV TBIT)
INST TRAPS (SERV TBIT)
TBIT
STOV
PFAIL
HALT S/W
INTR (BR7, BR6, BR5, BR4)
NEXT INSTR FETCH

K10 ROM SPA∅3 (1) H
K1 BA∅3 H
K10 ROM SPA∅2 (1) H
K11 IR ∅2 (1) H
K11 IR ∅∅ (1) H
K1 BA∅2 H
STBI STB∅ 74S153 E96
F1
F∅
K8 SPA ∅3 H
K8 SPA ∅2 H
K10 ALLOW BYTE H
7430 E118
K8 INR+1 L
K8 R6+7L
7400 E100
7432 E135
K8 R6L
K11 8-15 = ∅ L
7402 E117
K9 ENAB STOV L
K5 PROC CLK L
K8 STOV (1) H
K5 PROC INIT L
K8 STOV SER L
7474 E129
K8 BUT SERVICE L
K9 BUT SERVICE (1) H
7404 E127
+3V B
K11 IR ∅7 (1) H
K1 BA ∅∅ H
K10 ROM SPA ∅∅ (1) H
K11 IR ∅6 (1) H
K1 BA ∅6 H
K10 SPA MUX ∅1 (1) H
K10 SPA MUX ∅∅ (1) H
K8 SPA ∅1 H
K8 SPA ∅∅ H
SPA MUX

74S153
SI	S∅	DATA
L	L	F∅=A∅
L	H	F∅=B∅
H	L	F∅=C∅
H	H	F∅=D∅

K7 SACK RETURN (1) H
K6 C1 H
K2 BA ∅5 H
K2 BA ∅4 H
K1 BA ∅3 H
K1 BA ∅2 H
K1 BA ∅1 H
K1 BA ∅∅ H
23-A∅A2 E48
K8 EXT LOAD PSW L
K9 SP WRITE L
K8 INIT DAT1 H
R39 330 R40 330 R41 680
R20 1K
R42 47
C14 3∅∅∅pf
74H01 E77
7414 E122
74H01 E102
K10 AMUX S∅ L
K11 AMUX S1 L
K2 BA∅5 H
K9 BA17 H
K8 BA16 H
K6 BA15 H
K8 BA14 H
K5 BA13 H
K4 BA12 H
K3 BA11 H
K3 BA10 H
K3 BA09 H
K3 BA08 H
K2 BA07 H
K2 BA06 H
K6 MSYN L
74S133 E42
INTERNAL ADDRESS DECODE
K7 SACK RETURN (0) H
K6 START TRAN H
7402 E79

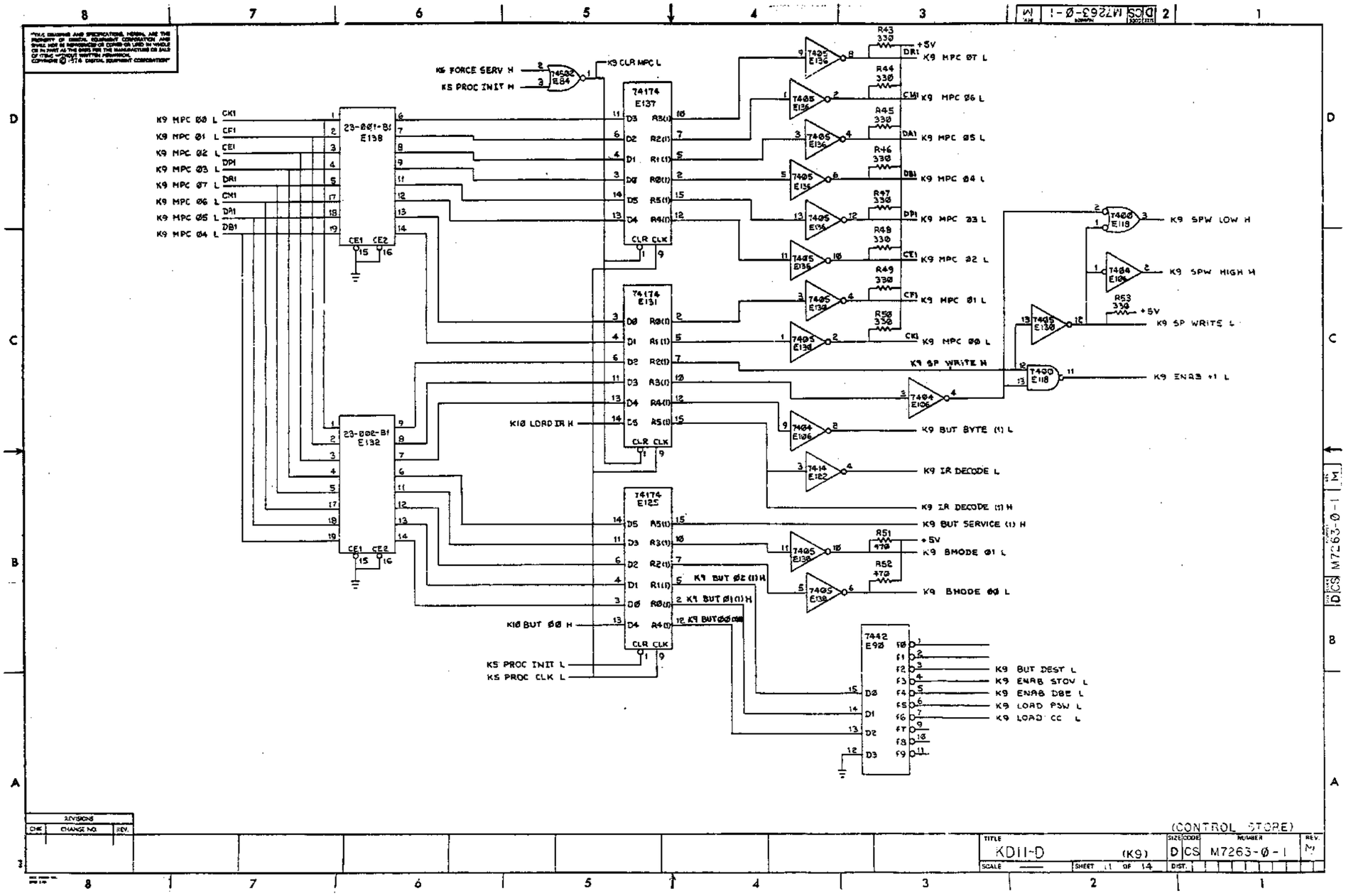
+3V B
K5 PROC CLK L
BUS INTR L A81
8838 E20
K8 INTR H
7474 E123 SSYN
7400 E128
8881 E37
BUS SSYN L
K8 EXT TRAN L
74H04 E18
+5V
74H01 E77
7414 E122
74H01 E102
K10 AMUX S∅ L
7405 E111
K11 AMUX S1 L

(SPA MUX, BUT SERVICE, INTERNAL ADDRESS DECODE)

REVISIONS		
LTR	CHANGE NO.	DIV.

TITLE	SIZE	CODE	NUMBER	REV.
KDII-D (KS)	D	KS	M7263-D-1	A1
SCALE —	SHEET 10 OF 14	DIST.		

198



(CONTROL STORE)

TITLE	SIZE	CODE	NUMBER	REV.
KDII-D (K9)	D	CS	M7263-Ø-1	M

SCALE — SHEET 11 OF 14 DIST.

K9 MPC Ø0 L CX1
K9 MPC Ø1 L CY1
K9 MPC Ø2 L CE1
K9 MPC Ø3 L DP1
K9 MPC Ø7 L DN1
K9 MPC Ø6 L CM1
K9 MPC Ø5 L DA1
K9 MPC Ø4 L DB1

23-003-B1 E126 → K10 BUT Ø0 H

23-004-B1 E128
K10 ROM S3 H
K10 ROM S2 H
K10 ROM S1 H
K10 ROM S0 H
K10 ROM MODE H
K10 ROM CIN L

23-005-B1 E114
K10 AUX SETUP H

74174 E119
D0 R0(1) → K10 DAT TRAN (1) H
D1 R1(1) → K10 C1 (1) H
D2 R2(1) → K10 C0 (1) H
D3 R3(1) → K10 ALLOW BYTE H
D4 R4(1) → K10 AMUX S1 L
D5 R5(1) → K10 AMUX S0 L
CLR CLK

7405 E153 (D4)
7405 E111 (D5)
RS4 470Ω +5V
RS5 470Ω
K11 BYTE L → 7402 E117 (D3)

74174 E113
D0 R0(1) → K10 ENAB SEX (1) L
D1 R1(1) → K10 ALU S3 H
D2 R2(1) → K10 ALU S2 H
D3 R3(1) → K10 ALU S1 H
D4 R4(1) → K10 ALU S0 H
D5 R5(1) → K10 ALU MODE (1) H
CLR CLK

7437 E112 (4 gates)

74174 E107
D0 R0(1) → K10 ALU CIN Ø0 L
D4 R4(1) → K10 INVERT (1) H
D5 R5(1) → K10 ENAB REG (1) L
D3 P3(1) → K10 SPA MUX Ø1 (1) H
D1 R1(1) → K10 SPA MUX Ø0 (1) H
D2 R2(1) → K10 ROM SPA Ø3 (1) H
CLR CLK

K11 INVERT H
K11 ENAB REG L

74174 E101
D1 R1(1) → K10 ROM SPA Ø2 (1) H
D3 R3(1) → K10 ROM SPA Ø1 (1) H
D2 R2(1) → K10 ROM SPA Ø0 (1) H
D0 R0(1) → K10 AUX CONTROL (1) H
D4 R4(1) → K10 PE FLAG (1) H
D5 R5(1) → K10 BE FLAG (1) H
CLR CLK

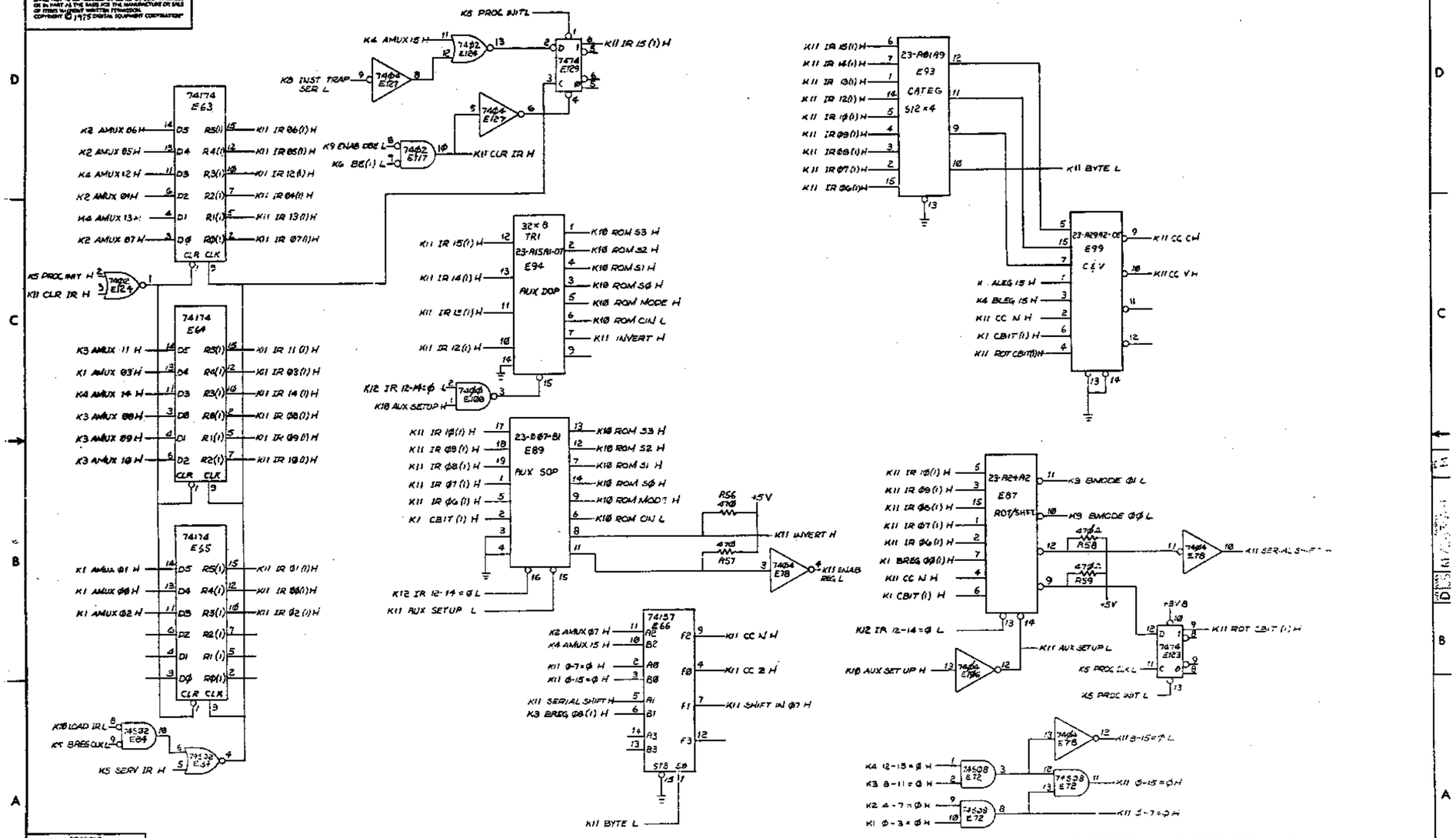
K6 PE (1) H
K6 BE (1) H

7404 E78 → K10 LOAD IRL

K5 PROC INIT L
K5 PROC CLK L
K10 LOAD IR H

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: KDII-D (K10) CONTROL STORE		SIZE: D	CODE: CS	NUMBER: M7263-0-1	REV: A1
SCALE: —	SHEET 12 OF 14	DIST			



(IR, DECODE, AUX CONTROL CONE CODE)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
KD11-D (K11)	D	CS	M7263-0-1	M
SCALE	SHEET 13 OF 14		DIST.	

K11 IR Ø3(1)H, K11 IR Ø4(1)H, K11 IR Ø5(1)H → 7427 E88 → K12 DMØH

K11 IR 14(0)H, K11 IR 13(0)H, K11 IR 12(0)H → 7427 E88 → 7404 E105 → K12 IR 12-14=ØL

→ K12IR12-14=ØH

K11 N BIT(0)H, K11 Z BIT(1)H, K11 V BIT(1)H, K11 C BIT(1)H, K11 IR 15(1)H, K11 IR 10(1)H, K11 IR Ø9(1)H, K11 IR Ø8(1)H → 23-A22A2 E60 BRANCH → K9 MPC ØG L

K9 IR DECODE L

K11 IR 11(1)H, K12 IR 12-14=ØL → 7402 E105, 7404 E126 → K12 IR 11-14=ØL

K11 IR Ø7(1)H, K11 IR Ø6(1)H, K9 IR DECODE L, K12 IR 8-15=ØL, K12 DMØH, K11 IR Ø2(1)H, K11 IR Ø1(1)H, K11 IR ØØ(1)H → 23-A23A2-Ø5 E76 RESET/TRAP → K12 START RESET L, K12 ENABLE BIT L

K11 IR Ø7(1)H, K11 IR Ø6(1)H, K11 IR Ø5(1)H, K11 IR Ø4(1)H, K11 IR Ø3(1)H, K11 IR Ø2(1)H, K11 IR Ø1(1)H, K11 IR ØØ(1)H → 23-A23A2 E70 TRAP DECODE → K12 HLT RQST L, K12 IR CODE Ø2L, K12 IR CODE Ø1L, K12 IR CODE ØØL

K11 IR 10(1)H, K11 IR Ø9(1)H, K11 IR Ø8(1)H → 7427 E88 → 7430 E108

K11 IR 15(1)H, K12 IR 11-14=ØL → 7402 E105 → K12 IR 8-15=ØL

K12 DMØH, K11 IR 14(0)H, K11 IR 13(0)H, K11 IR 12(0)H, K9 IR DECODE(1)H, K9 BUT DEST L → 23-A27A2 E69 DOP DECODE → K12 IR CODE ØØL, K9 MPC Ø5L, K9 MPC Ø4L, K9 MPC Ø3L

+5V → R63 470

K12 DEST L, K9 BUT DEST L → 7400 E100

K11 IR Ø5(0)H → 7400 E85 → K9 MPC Ø2L

K11 IR Ø4(0)H → 74H01 E83 → K9 MPC ØIL

K11 IR Ø3(0)H → 74H01 E83 → K9 MPC ØØL

K1 SP ØØL, K6 ASSERT ADDRESS L → 7438Ø2 E84 → 74H01 E102 → K9 MPC ØØL

K9 BUT BYTE(1)L, K11 BYTE L → 7402 E124 → 7405 E111 → K9 MPC ØIL

K11 IR 11(0)H → 74H01 E77 → K9 MPC Ø2L

K11 IR 10(1)H → 74H01 E77 → K9 MPC ØIL

K11 IR 9(1)H → 74H01 E77 → K9 MPC ØØL

+5V → R62 470

K12 IR 12-14=ØH, K12 IR CODE ØØL, K9 IR DECODE(1)H → 7402 E105, 7400 E128

K11 IR 15(1)H, K11 IR 11(1)H, K11 IR 10(1)H, K11 IR Ø9(1)H, K11 IR Ø8(1)H, K11 IR Ø7(1)H, K11 IR Ø6(1)H, K12 DMØH → 23-A25A2 E81 SOP MICRO BRANCH → K9 MPC Ø5L, K9 MPC Ø4L, K9 MPC Ø3L, K12 DEST L

K12 IR 12-14=ØL, K9 IR DECODE L

K11 IR 15(1)H, K11 IR 11(1)H, K11 IR 10(1)H, K11 IR Ø9(1)H, K11 IR Ø8(1)H, K11 IR 07(1)H, K11 IR 06(1)H, K12 DMØH → 23-A26A2 E75 SOP DECODE → K12 IR CODE Ø2L, K12 IR CODE Ø1L, K12 IR CODE ØØL

+5V → R61 470

K12 IR 12-14=ØL

K11 IR Ø7(1)H, K11 IR Ø6(1)H, K11 IR Ø5(1)H, K11 IR Ø4(1)H, K11 IR Ø3(1)H, K11 IR Ø2(1)H, K11 IR Ø1(1)H, K11 IR ØØ(1)H → 23-A32A2 E82 SOP MICRO BRANCH → K9 MPC Ø2L, K9 MPC ØIL, K9 MPC ØØL

K12 IR 8-15=ØL, K9 IR DECODE L

REVISIONS		
SYM	CHANGE NO.	REV.

IR DECODE, AUX CONTROL AND CODES

TITLE	SIZE	CODE	NUMBER	REV.
KD11-D (K12)	D	DCS	M7263-0-1	M
SCALE —	SHEET 14 OF 14		DIST	

2.02

THIS FACE SHEET CONTAINS THE
FOLLOWING CHIP NUMBERS:

CHIP	SHEET #
23-A01A9	2 - 16
23-A15A1	17
23-A21A2	18 - 25
23-A22A2	26 - 33
23-A23A2	34 - 41
23-A24A2	42 - 49
23-A25A2	50 - 57
23-A26A2	58 - 65
23-A27A2	66 - 73
23-A29A2	74 - 81
23-A31A2	82 - 89
23-001B1	90 - 97
23-002B1	98 - 105
23-003B1	106 - 113
23-004B1	114 - 121
23-005B1	122 - 129
23-006B1	130 - 137
23-007B1	138 - 145

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KDII-D		PARTS LIST		

REVISIONS	REV.	CHANGE NO.	CHK

DRN. D. Hosty	DATE 10/20/75	DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG. R. Barry	DATE 10-22-75	
PROJ. ENG. B BERNSTEIN	DATE 10-22-75	
PROD. R.K. Pitman	DATE 10/22/75	
NEXT HIGHER ASSEMBLY B-DD-KDII-D		TITLE ROM LISTING KDII-D PDP 11/64
SCALE		SIZE C CODE CS NUMBER KDII-D-3 REV.
SHEET 1 OF 145		DIST.

DEC FORM NO. DRB 109

2.03

DEC PART NUMB: 23-A01A9
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 10-28-74

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1111	17
1	001	1100	14
2	002	1111	17
3	003	1000	10
4	004	1111	17
5	005	1111	17
6	006	1011	13
7	007	1011	13
8	010	1101	15
9	011	1111	17
10	012	1001	11
11	013	1111	17
12	014	1111	17
13	015	1111	17
14	016	1011	13
15	017	1011	13
16	020	1111	17
17	021	1111	17
18	022	1111	17
19	023	1111	17
20	024	1111	17
21	025	1111	17
22	026	1011	13
23	027	1011	13
24	030	1110	16
25	031	1111	17
26	032	1010	12
27	033	1111	17
28	034	1111	17
29	035	1111	17
30	036	1011	13
31	037	1011	13
32	040	1111	17
33	041	1100	14
34	042	1111	17
35	043	1000	10

DEC PART NUMBER 23-A913A9
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	1111	17
37	045	1111	17
38	046	1011	13
39	047	1011	13
40	050	0111	07
41	051	1111	17
42	052	0011	03
43	053	1111	17
44	054	1111	17
45	055	1111	17
46	056	1011	13
47	057	1011	13
48	060	1111	17
49	061	1111	17
50	062	1111	17
51	063	1111	17
52	064	1011	13
53	065	1111	17
54	066	1011	13
55	067	1011	13
56	070	0100	04
57	071	1111	17
58	072	0000	00
59	073	1111	17
60	074	1111	17
61	075	1111	17
62	076	1011	13
63	077	1011	13
64	100	1110	16
65	101	1110	16
66	102	1010	12
67	103	1010	12
68	104	0101	05
69	105	0101	05
70	106	0100	04
71	107	0100	04

DEC PART NUMBER 23-A913A9
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1110	16
73	111	1110	16
74	112	1010	12
75	113	1010	12
76	114	0101	05
77	115	0101	05
78	116	0100	04
79	117	0100	04
80	120	1110	16
81	121	1110	16
82	122	1010	12
83	123	1010	12
84	124	0101	05
85	125	0101	05
86	126	0100	04
87	127	0100	04
88	130	1110	16
89	131	1110	16
90	132	1010	12
91	133	1010	12
92	134	0101	05
93	135	0101	05
94	136	0100	04
95	137	0100	04
96	140	1110	16
97	141	1110	16
98	142	1010	12
99	143	1010	12
100	144	0101	05
101	145	0101	05
102	146	0100	04
103	147	0100	04
104	150	1110	16
105	151	1110	16
106	152	1010	12
107	153	1010	12

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ROM PATTERN SPEC

DEC PART NUMBR 23-AH149
ORIGINATOR: JOHN ALBON
DATE OF ORIGIN: 10-29-74

OCTAL DATA	OCTAL LOC	BINARY DATA
05	104	0101
05	105	0101
04	106	0100
04	107	0100
16	110	1110
16	111	1110
12	112	1010
12	113	1010
06	114	0110
06	115	0110
04	116	0100
04	117	0100
16	118	1110
16	119	1110
12	120	1010
12	121	1010
05	122	0101
05	123	0101
04	124	0100
04	125	0100
17	126	1111
17	127	1111
17	130	1111
17	131	1111
17	132	1111
17	133	1111
13	134	1011
13	135	1011
16	136	1110
17	137	1111
17	138	1111
13	139	1011
17	140	1111
17	141	1111
13	142	1011
13	143	1011

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ROM PATTERN SPEC

DEC PART NUMBR 23-AH149
ORIGINATOR: JOHN ALBON
DATE OF ORIGIN: 10-29-74

OCTAL DATA	OCTAL LOC	BINARY DATA
17	220	1111
17	221	1111
17	222	1111
17	223	1111
17	224	1111
17	225	1111
13	226	1011
13	227	1011
05	230	0101
01	231	0001
17	232	1111
17	233	1111
17	234	1111
17	235	1111
13	236	1011
13	237	1011
14	240	1100
10	241	1000
17	242	1111
08	243	1000
17	244	1111
17	245	1111
13	246	1011
13	247	1011
05	250	0101
15	251	1101
01	252	0001
17	253	1111
17	254	1111
17	255	1111
13	256	1011
13	257	1011
17	260	1111
17	261	1111
17	262	1111
17	263	1111

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DEC PART NUMBER 23-A0149
ORIGINATOR JOHN ALEOK
DATE OF ORIGIN 10-28-74

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	1111	17
182	266	1111	17
183	267	1111	17
184	270	1101	15
185	271	1111	17
186	272	1101	15
187	273	1111	17
188	274	1111	17
189	275	1111	17
190	276	1011	13
191	277	1011	13
192	300	1110	16
193	301	1110	16
194	302	1010	12
195	303	1010	12
196	304	0101	05
197	305	0101	05
198	306	0100	04
199	307	0100	04
200	310	1110	16
201	311	1110	16
202	312	1010	12
203	313	1010	12
204	314	0101	05
205	315	0101	05
206	316	0100	04
207	317	0100	04
208	320	1110	16
209	321	1110	16
210	322	1010	12
211	323	1010	12
212	324	0101	05
213	325	0101	05
214	326	0100	04
215	327	0100	04

DEC PART NUMBER 23-A0149
ORIGINATOR JOHN ALEOK
DATE OF ORIGIN 10-28-74

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1110	16
217	331	1110	16
218	332	1010	12
219	333	1010	12
220	334	0101	05
221	335	0101	05
222	336	0100	04
223	337	0100	04
224	340	1110	16
225	341	1110	16
226	342	1010	12
227	343	1010	12
228	344	0101	05
229	345	0101	05
230	346	0100	04
231	347	0100	04
232	350	1110	16
233	351	1110	16
234	352	1010	12
235	353	1010	12
236	354	0101	05
237	355	0101	05
238	356	0100	04
239	357	0100	04
240	360	1110	16
241	361	1110	16
242	362	1010	12
243	363	1010	12
244	364	0101	05
245	365	0101	05
246	366	0100	04
247	367	0100	04
248	370	1110	16
249	371	1110	16
250	372	1010	12
251	373	1010	12

ROM PATTERN SPEC

DEC PART NUMBER 23-801A9
ORIGINATOR: JOHN BLEDSOE
DATE OF ORIGIN: 10-28-71

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0101	05
253	375	0101	05
254	376	0100	04
255	377	0100	04
256	400	1111	17
257	401	1111	17
258	402	1311	13
259	403	1311	13
260	404	1111	17
261	405	1111	17
262	406	1311	13
263	407	1311	13
264	410	1111	17
265	411	1111	17
266	412	1311	13
267	413	1311	13
268	414	1111	17
269	415	1111	17
270	416	1311	13
271	417	1311	13
272	420	1111	17
273	421	1111	17
274	422	1311	13
275	423	1311	13
276	424	1111	17
277	425	1111	17
278	426	1311	13
279	427	1311	13
280	430	1111	17
281	431	1111	17
282	432	1311	13
283	433	1311	13
284	434	1111	17
285	435	1111	17
286	436	1311	13
287	437	1311	13

ROM PATTERN SPEC

DEC PART NUMBER 23-801A9
ORIGINATOR: JOHN BLEDSOE
DATE OF ORIGIN: 10-28-71

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
288	440	1111	17
289	441	1111	17
290	442	1311	13
291	443	1311	13
292	444	1111	17
293	445	1111	17
294	446	1311	13
295	447	1311	13
296	450	1111	17
297	451	1111	17
298	452	1311	13
299	453	1311	13
300	454	1111	17
301	455	1111	17
302	456	1011	13
303	457	1011	13
304	460	1111	17
305	461	1111	17
306	462	1011	13
307	463	1011	13
308	464	1111	17
309	465	1111	17
310	466	1311	13
311	467	1311	13
312	470	1111	17
313	471	1111	17
314	472	1411	13
315	473	1411	13
316	474	1111	17
317	475	1111	17
318	476	1411	13
319	477	1411	13
320	500	1111	17
321	501	1111	17
322	502	1011	13
323	503	1011	13

DEC PART NUMBER 23-A0149
ORIGINATOR: JOHN BLEDSOE
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
326	506	1111	17
325	505	1111	17
326	506	1111	17
327	507	1111	17
328	510	1111	17
329	511	1111	17
330	512	1011	13
331	513	1011	13
332	514	1111	17
333	515	1111	17
334	516	1111	17
335	517	1111	17
336	520	1111	17
337	521	1111	17
338	522	1011	13
339	523	1011	13
340	524	1111	17
341	525	1111	17
342	526	1111	17
343	527	1111	17
344	530	1111	17
345	531	1111	17
346	532	1011	13
347	533	1011	13
348	534	1111	17
349	535	1111	17
350	536	1111	17
351	537	1111	17
352	540	1111	17
353	541	1111	17
354	542	1011	13
355	543	1011	13
356	544	1111	17
357	545	1111	17
358	546	1111	17
359	547	1111	17

DEC PART NUMBER 23-A0149
ORIGINATOR: JOHN BLEDSOE
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
360	550	1111	17
361	551	1111	17
362	552	1011	13
363	553	1011	13
364	554	1111	17
365	555	1111	17
366	556	1111	17
367	557	1111	17
368	560	1111	17
369	561	1111	17
370	562	1011	13
371	563	1011	13
372	564	1111	17
373	565	1111	17
374	566	1111	17
375	567	1111	17
376	570	1111	17
377	571	1111	17
378	572	1011	13
379	573	1011	13
380	574	1111	17
381	575	1111	17
382	576	1111	17
383	577	1111	17
384	600	1111	17
385	601	1111	17
386	602	1011	13
387	603	1011	13
388	604	1111	17
389	605	1111	17
390	606	1011	13
391	607	1011	13
392	610	1111	17
393	611	1111	17
394	612	1011	13
395	613	1011	13

ROM PATTERN SPEC

DEC PART NUMBER 23-00149
ORIGINATOR: JOHN PERRY
DATE OF ORIGIN: 10-28-76

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
396	614	1111	17
397	615	1111	17
398	616	1011	13
399	617	1011	13
400	620	1111	17
401	621	1111	17
402	622	1011	13
403	623	1011	13
404	624	1111	17
405	625	1111	17
406	626	1011	13
407	627	1011	13
408	630	1111	17
409	631	1111	17
410	632	1011	13
411	633	1011	13
412	634	1111	17
413	635	1111	17
414	636	1011	13
415	637	1011	13
416	640	1111	17
417	641	1111	17
418	642	1011	13
419	643	1011	13
420	644	1111	17
421	645	1111	17
422	646	1011	13
423	647	1011	13
424	650	1111	17
425	651	1111	17
426	652	1011	13
427	653	1011	13
428	654	1111	17
429	655	1111	17
430	656	1011	13
431	657	1011	13

ROM PATTERN SPEC

DEC PART NUMBER 23-00126
ORIGINATOR: JOHN PERRY
DATE OF ORIGIN: 10-28-76

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
432	660	1111	17
433	661	1111	17
434	662	1011	13
435	663	1011	13
436	664	1111	17
437	665	1111	17
438	666	1011	13
439	667	1011	13
440	670	1111	17
441	671	1111	17
442	672	1011	13
443	673	1011	13
444	674	1111	17
445	675	1111	17
446	676	1011	13
447	677	1011	13
448	700	1111	17
449	701	1111	17
450	702	1011	13
451	703	1011	13
452	704	1111	17
453	705	1111	17
454	706	1111	17
455	707	1111	17
456	710	1111	17
457	711	1111	17
458	712	1011	13
459	713	1011	13
460	714	1111	17
461	715	1111	17
462	716	1111	17
463	717	1111	17
464	720	1111	17
465	721	1111	17
466	722	1011	13
467	723	1011	13

DEC PART NUMBER: 23-A31A9
ORIGINATOR: JOHN ALSOM
DATE OF ORIGIN: 12-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
468	724	1111	17
469	725	1111	17
470	726	1111	17
471	727	1111	17
472	730	1111	17
473	731	1111	17
474	732	1011	13
475	733	1011	13
476	734	1111	17
477	735	1111	17
478	736	1111	17
479	737	1111	17
480	740	1111	17
481	741	1111	17
482	742	1011	13
483	743	1011	13
484	744	1111	17
485	745	1111	17
486	746	1111	17
487	747	1111	17
488	750	1111	17
489	751	1111	17
490	752	1011	13
491	753	1011	13
492	754	1111	17
493	755	1111	17
494	756	1111	17
495	757	1111	17
496	760	1111	17
497	761	1111	17
498	762	1011	13
499	763	1011	13
500	764	1111	17
501	765	1111	17
502	766	1111	17
503	767	1111	17

DEC PART NUMBER: 23-A31A9
ORIGINATOR: JOHN ALSOM
DATE OF ORIGIN: 12-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
504	770	1111	17
505	771	1111	17
506	772	1011	13
507	773	1011	13
508	774	1111	17
509	775	1111	17
510	776	1111	17
511	777	1111	17

ROM PATTERN SPEC

DEC PART NUMBR 23-A1941
ORIGINATOR: JOHN E BLOCK
DATE OF ORIGIN: 10-25-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	00000000	000
1	01	01117000	160
2	02	01007101	105
3	03	01110212	162
4	04	00000000	000
5	05	01110000	160
6	06	01000101	105
7	07	01110210	162
8	10	01110111	167
9	11	01110102	164
10	12	01101010	152
11	13	00000000	000
12	14	01110111	167
13	15	01110103	164
14	16	00001012	012
15	17	00000000	000
16	20	00000000	000
17	21	00000000	000
18	22	00000000	000
19	23	00000000	000
20	24	00000000	000
21	25	00000000	000
22	26	00000000	000
23	27	00000000	000
24	30	00000000	000
25	31	00000000	000
26	32	00000000	000
27	33	00000000	000
28	34	00000000	000
29	35	00000000	000
30	36	00000000	000
31	37	00000000	000

ROM PATTERN SPEC

DEC PART NUMBR 23-A2142
ORIGINATOR: JOHN BLOCK
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0111	07
1	001	0111	07
2	002	0111	07
3	003	0111	07
4	004	0111	07
5	005	0111	07
6	006	0111	07
7	007	0111	07
8	010	0111	07
9	011	0111	07
10	012	0111	07
11	013	0111	07
12	014	0111	07
13	015	0111	07
14	016	0111	07
15	017	0111	07
16	020	0111	07
17	021	0111	07
18	022	0111	07
19	023	0111	07
20	024	0111	07
21	025	0111	07
22	026	0111	07
23	027	0111	07
24	030	0111	07
25	031	0111	07
26	032	0111	07
27	033	0111	07
28	034	0111	07
29	035	0111	07
30	036	0111	07
31	037	0111	07
32	040	1111	17
33	041	1111	17
34	042	1111	17
35	043	1111	17

PDP PATTERN SPEC

DEC PART NUMBER 23-A2182
ORIGINATOR: JOHN ALDEN
DATE OF ORIGIN: 10-08-74

OCTAL LOC	BINARY DATA	OCTAL DATA
36	1111	17
37	1111	17
38	1111	17
39	1111	17
40	1111	17
41	1111	17
42	1111	17
43	1111	17
44	1111	17
45	1111	17
46	1111	17
47	1111	17
48	1111	17
49	1111	17
50	1111	17
51	1111	17
52	1111	17
53	1111	17
54	1111	17
55	1111	17
56	1111	17
57	1111	17
58	1111	17
59	1111	17
60	1111	17
61	1111	17
62	1111	17
63	1111	17
64	1111	17
65	1111	17
66	1111	17
67	1111	17
68	1111	17
69	1111	17
70	1111	17
71	1111	17

PDP PATTERN SPEC

DEC PART NUMBER 23-A2182
ORIGINATOR: JOHN ALDEN
DATE OF ORIGIN: 10-08-74

OCTAL LOC	BINARY DATA	OCTAL DATA
72	1111	17
73	1111	17
74	1111	17
75	1111	17
76	1111	17
77	1111	17
78	1111	17
79	1111	17
80	1111	17
81	1111	17
82	1111	17
83	1111	17
84	1111	17
85	1111	17
86	1111	17
87	1111	17
88	1111	17
89	1111	17
90	1111	17
91	1111	17
92	1111	17
93	1111	17
94	1111	17
95	1111	17
96	1111	17
97	1111	17
98	1111	17
99	1111	17
100	1111	17
101	1111	17
102	1111	17
103	1111	17
104	1111	17
105	1111	17
106	1111	17
107	1111	17

ROM PATTERN

REG PART NUMBER 23-62142
ORIGINATOR JOHN BLOPS
DATE OF ORIGIN 10-08-74

OCTAL LOC	BINARY DATA	OCTAL DATA
104	1111	17
105	1111	17
106	1111	17
107	0011	03
110	1111	17
111	1111	17
112	1111	17
113	1111	17
114	1111	17
115	1111	17
116	1111	17
117	1111	17
120	1111	17
121	1111	17
122	1111	17
123	0000	00
124	1111	17
125	1111	17
126	1111	17
127	0111	07
130	0110	06
131	0110	06
132	0110	06
133	0101	05
134	0101	05
135	0101	05
136	0100	04
137	0100	04
140	0100	04
141	0101	05
142	0101	05
143	0101	05

ROM PATTERN

REG PART NUMBER 23-62142
ORIGINATOR JOHN BLOPS
DATE OF ORIGIN 10-08-74

OCTAL LOC	BINARY DATA	OCTAL DATA
144	0110	06
145	0110	06
146	0110	06
147	0110	06
150	0101	05
151	0101	05
152	0101	05
153	0101	05
154	0110	06
155	0110	06
156	0110	06
157	0110	06
160	0101	05
161	0101	05
162	0101	05
163	0101	05
164	1111	17
165	1111	17
166	1111	17
167	1111	17
170	1111	17
171	1111	17
172	1111	17
173	1111	17
174	1111	17
175	1111	17
176	1111	17
177	1111	17
178	1111	17
179	1111	17
180	1111	17
181	1111	17
182	1111	17
183	1111	17
184	1111	17
185	1111	17
186	1111	17
187	1111	17
188	1111	17
189	1111	17
190	1111	17
191	1111	17
192	1111	17
193	1111	17
194	1111	17
195	1111	17
196	1111	17
197	1111	17
198	1111	17
199	1111	17
200	1111	17
201	1111	17
202	1111	17
203	1111	17
204	1111	17
205	1111	17
206	1111	17
207	1111	17
208	1111	17
209	1111	17
210	1111	17
211	1111	17
212	1111	17
213	1111	17
214	1111	17
215	1111	17
216	1111	17
217	1111	17

ROM PATTERN SPEC PAGE 23

DEC PART NUMBER 23-A21A2
ORIGINATOR: JOHN BLOOM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	1111	17
182	266	1111	17
183	267	1111	17
184	270	1111	17
185	271	1111	17
186	272	1111	17
187	273	1111	17
188	274	1111	17
189	275	1111	17
190	276	1111	17
191	277	1111	17
192	300	1111	17
193	301	1111	17
194	302	1111	17
195	303	1111	17
196	304	1111	17
197	305	1111	17
198	306	1111	17
199	307	1111	17
200	310	1111	17
201	311	1111	17
202	312	1111	17
203	313	1111	17
204	314	1111	17
205	315	1111	17
206	316	1111	17
207	317	1111	17
208	320	1111	17
209	321	1111	17
210	322	1111	17
211	323	1111	17
212	324	1111	17
213	325	1111	17
214	326	1111	17
215	327	1111	17

ROM PATTERN SPEC PAGE 24

DEC PART NUMBER 23-A21A2
ORIGINATOR: JOHN BLOOM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1111	17
217	331	1111	17
218	332	1111	17
219	333	1111	17
220	334	1111	17
221	335	1111	17
222	336	1111	17
223	337	1111	17
224	340	1111	17
225	341	1111	17
226	342	1111	17
227	343	1111	17
228	344	1111	17
229	345	1111	17
230	346	1111	17
231	347	1111	17
232	350	1111	17
233	351	1111	17
234	352	1111	17
235	353	0111	96
236	354	1111	17
237	355	1111	17
238	356	1111	17
239	357	0111	93
240	360	1111	17
241	361	1111	17
242	362	1111	17
243	363	1111	17
244	364	1111	17
245	365	1111	17
246	366	1111	17
247	367	1111	17
248	370	1111	17
249	371	1111	17
250	372	1111	17
251	373	0111	96

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DEC PART NUMBER 23-A21A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-NOV-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1111	17
253	375	1111	17
254	376	1111	17
255	377	0111	07

DEC PART NUMBER 23-A2742
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 5-MAR-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1111	17
1	001	1110	16
2	002	1110	16
3	003	1111	17
4	004	1110	16
5	005	1111	17
6	006	1110	16
7	007	1111	17
8	010	1000	10
9	011	1111	17
10	012	1110	16
11	013	1111	17
12	014	1110	16
13	015	1111	17
14	016	1110	16
15	017	1111	17
16	020	1111	17
17	021	1110	16
18	022	1110	16
19	023	1111	17
20	024	1111	17
21	025	1110	16
22	026	1111	17
23	027	1110	16
24	030	1110	16
25	031	1111	17
26	032	1110	16
27	033	1111	17
28	034	1111	17
29	035	1110	16
30	036	1110	16
31	037	1111	17
32	040	1111	17
33	041	1110	16
34	042	1111	17
35	043	1110	16

DEC PART NUMBR 23-A22A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 5-MAR-75

OCTAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	1110	16
37	45	1111	17
38	046	1111	17
39	047	1110	16
40	050	1000	10
41	051	1111	17
42	052	1111	17
43	053	1110	16
44	054	1110	16
45	055	1111	17
46	056	1110	16
47	057	1111	17
48	060	1111	17
49	061	1110	16
50	062	1111	17
51	063	1110	16
52	064	1111	17
53	065	1110	16
54	066	1111	17
55	067	1110	16
56	070	1110	16
57	071	1111	17
58	072	1111	17
59	073	1110	16
60	074	1111	17
61	075	1110	16
62	076	1110	16
63	077	1111	17
64	100	0011	03
65	101	1110	16
66	102	1110	16
67	103	0101	05
68	104	1111	17
69	105	1110	16
70	106	1111	17
71	107	0110	06

DEC PART NUMBR 23-A22A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 5-MAR-75

OCTAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0011	03
73	111	0100	04
74	112	1110	16
75	113	0101	05
76	114	1110	16
77	115	0111	07
78	116	1110	16
79	117	0111	07
80	120	1111	17
81	121	1110	16
82	122	1110	16
83	123	1111	17
84	124	1110	16
85	125	1111	17
86	126	1110	16
87	127	1111	17
88	130	1111	17
89	131	1110	16
90	132	1110	16
91	133	1111	17
92	134	1111	17
93	135	1110	16
94	136	1110	16
95	137	1111	17
96	140	0011	03
97	141	0100	04
98	142	1111	17
99	143	0100	04
100	144	1111	17
101	145	0110	06
102	146	1111	17
103	147	0110	06
104	150	0011	03
105	151	0100	04
106	152	1111	17
107	153	0100	04

ROM PATTERN SPEC

DFC PART NUMBER 23-82242
ORIGINATOR JOHN REDFM
DATE OF ORIGIN 5-MAR-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1110	16
109	155	0111	07
110	156	1110	16
111	157	0111	07
112	160	1111	17
113	161	1110	16
114	162	1111	17
115	163	1110	16
116	164	1110	16
117	165	1111	17
118	166	1110	16
119	167	1110	16
120	170	1111	17
121	171	1110	16
122	172	1111	17
123	173	1110	16
124	174	1111	17
125	175	1110	16
126	176	1110	16
127	177	1111	17
128	200	0001	01
129	201	1110	16
130	202	1110	16
131	203	1111	17
132	204	1110	16
133	205	1111	17
134	206	1110	16
135	207	1111	17
136	210	1110	16
137	211	1111	17
138	212	1111	17
139	213	1110	16
140	214	1110	16
141	215	1111	17
142	216	1111	17
143	217	1110	16

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ROM PATTERN SPEC

DFC PART NUMBER 23-82242
ORIGINATOR JOHN REDFM
DATE OF ORIGIN 5-MAR-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1111	17
145	221	1110	16
146	222	1110	16
147	223	1111	17
148	224	1111	17
149	225	1110	16
150	226	1111	17
151	227	1110	16
152	230	1110	16
153	231	1111	17
154	232	1111	17
155	233	1110	16
156	234	1111	17
157	235	1110	16
158	236	1111	17
159	237	1110	16
160	240	1011	13
161	241	1110	16
162	242	1111	17
163	243	1110	16
164	244	1110	16
165	245	1111	17
166	246	1111	17
167	247	1110	16
168	250	1110	16
169	251	1111	17
170	252	1111	17
171	253	1110	16
172	254	1110	16
173	255	1111	17
174	256	1111	17
175	257	1110	16
176	260	1111	17
177	261	1110	16
178	262	1111	17
179	263	1110	16

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DEC PART NUMBR 23-A2242
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 5-MAR-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	1110	16
182	266	1111	17
183	267	1110	16
184	270	1110	16
185	271	1111	17
186	272	1111	17
187	273	1110	16
188	274	1111	17
189	275	1110	16
190	276	1111	17
191	277	1110	16
192	300	0011	03
193	301	0100	04
194	302	1110	16
195	303	0101	05
196	304	1111	17
197	305	0110	06
198	306	1111	17
199	307	0110	06
200	310	0011	03
201	311	0100	04
202	312	1111	17
203	313	0100	04
204	314	1110	16
205	315	0111	07
206	316	1111	17
207	317	0110	06
208	320	1111	17
209	321	1110	16
210	322	1110	16
211	323	1111	17
212	324	1110	16
213	325	1111	17
214	326	1110	16
215	327	1111	17

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DEC PART NUMBR 23-A2242
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 5-MAR-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1111	17
217	331	1110	16
18	332	1111	17
219	333	1110	16
220	334	1111	17
221	335	1110	16
222	336	1111	17
223	337	1110	16
224	340	0011	03
225	341	0100	04
226	342	1111	17
227	343	0100	04
228	344	1111	17
229	345	0110	06
230	346	1111	17
231	347	0110	06
232	350	0011	03
233	351	0100	04
234	352	1111	17
235	353	0100	04
236	354	1110	16
237	355	0111	07
238	356	1111	17
239	357	0110	06
240	360	1111	17
241	361	1110	16
242	362	1111	17
243	363	1110	16
244	364	1110	16
245	365	1111	17
246	366	1111	17
247	367	1110	16
248	370	1111	17
249	371	1110	16
250	372	1111	17
251	373	1110	16

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ROM PATTERN SPEC

DEC PART NUMBR 23-A2242
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 5-MAR-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1111	17
253	375	1110	16
254	376	1111	17
255	377	1110	16

ROM PATTERN SPEC

DEC PART NUMBR 23-12362
ORIGINATOR JOHN E BLOEM
DATE OF ORIGIN 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0000	00
1	001	0111	07
2	002	0111	07
3	003	0111	07
4	004	0111	07
5	005	0111	07
6	006	0111	07
7	007	0111	07
8	010	1111	17
9	011	0111	07
10	012	0111	07
11	013	0111	07
12	014	0111	07
13	015	0111	07
14	016	0111	07
15	017	0111	07
16	020	1110	16
17	021	0111	07
18	022	0111	07
19	023	0111	07
20	024	0111	07
21	025	0111	07
22	026	0111	07
23	027	0111	07
24	030	1111	17
25	031	0111	07
26	032	0111	07
27	033	0111	07
28	034	0111	07
29	035	0111	07
30	036	0111	07
31	037	0111	07
32	040	1111	17
33	041	1111	17
34	042	1111	17
35	043	1111	17

DEC PART NUMBER 23-A2342
ORIGINATOR: JOHN F BLOFM
DATE OF ORIGIN: 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	1111	17
37	045	1111	17
38	046	1111	17
39	047	1111	17
40	050	1111	17
41	051	1111	17
42	052	1111	17
43	053	1111	17
44	054	1111	17
45	055	1111	17
46	056	1111	17
47	057	1111	17
48	060	1111	17
49	061	1111	17
50	062	1111	17
51	063	1111	17
52	064	1111	17
53	065	1111	17
54	066	1111	17
55	067	1111	17
56	070	1111	17
57	071	1111	17
58	072	1111	17
59	073	1111	17
60	074	1111	17
61	075	1111	17
62	076	1111	17
63	077	1111	17
64	100	1111	17
65	101	1111	17
66	102	0111	07
67	103	1110	16
68	104	0111	07
69	105	1111	17
70	106	0111	07
71	107	1111	17

DEC PART NUMBER 23-A2342
ORIGINATOR: JOHN F BLOFM
DATE OF ORIGIN: 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1111	17
73	111	1111	17
74	112	0111	07
75	113	1111	17
76	114	0111	07
77	115	1111	17
78	116	0111	07
79	117	1111	17
80	120	1111	17
81	121	1111	17
82	122	0111	07
83	123	1111	17
84	124	0111	07
85	125	1111	17
86	126	0111	07
87	127	1111	17
88	130	1111	17
89	131	1111	17
90	132	0111	07
91	133	1111	17
92	134	0111	07
93	135	1111	17
94	136	0111	07
95	137	1111	17
96	140	1111	17
97	141	1111	17
98	142	1111	17
99	143	1111	17
100	144	1111	17
101	145	1111	17
102	146	1111	17
103	147	1111	17
104	150	1111	17
105	151	1111	17
106	152	1111	17
107	153	1111	17

DEC PART NUMBER 23-823A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
100	154	1111	17
101	155	1111	17
102	156	1111	17
103	157	1111	17
104	160	1111	17
105	161	1111	17
106	162	1111	17
107	163	1111	17
110	164	1111	17
111	165	1111	17
112	166	1111	17
113	167	1111	17
114	170	1111	17
115	171	1111	17
116	172	1111	17
117	173	1111	17
120	174	1111	17
121	175	1111	17
122	176	1111	17
123	177	1111	17
124	200	0111	07
125	201	0111	07
126	202	0111	07
127	203	0111	07
130	204	0111	07
131	205	0111	07
132	206	0111	07
133	207	0111	07
134	210	0111	07
135	211	0111	07
136	212	0111	07
137	213	0111	07
140	214	0111	07
141	215	0111	07
142	216	0111	07
143	217	0111	07

DEC PART NUMBER 23-823A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1111	17
145	221	0111	07
146	222	0111	07
147	223	0111	07
148	224	0111	07
149	225	0111	07
150	226	0111	07
151	227	0111	07
152	230	0111	07
153	231	0111	07
154	232	0111	07
155	233	0111	07
156	234	0111	07
157	235	0111	07
158	236	0111	07
159	237	0111	07
160	240	1111	17
161	241	1111	17
162	242	1111	17
163	243	1111	17
164	244	1111	17
165	245	1111	17
166	246	1111	17
167	247	1111	17
168	250	1111	17
169	251	1111	17
170	252	1111	17
171	253	1111	17
172	254	1111	17
173	255	1111	17
174	256	1111	17
175	257	1111	17
176	260	1111	17
177	261	1111	17
178	262	1111	17
179	263	1111	17

DEC PART NUMBR 23-A23A2
ORIGINATOR: JOHN E BLOCH
DATE OF ORIGIN: 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	1111	17
182	266	1111	17
183	267	1111	17
184	270	1111	17
185	271	1111	17
186	272	1111	17
187	273	1111	17
188	274	1111	17
189	275	1111	17
190	276	1111	17
191	277	1111	17
192	300	1111	17
193	301	1111	17
194	302	0111	07
195	303	1111	17
196	304	0111	07
197	305	1111	17
198	306	0111	07
199	307	1111	17
200	310	1111	17
201	311	1111	17
202	312	0111	07
203	313	1111	17
204	314	0111	07
205	315	1111	17
206	316	0111	07
207	317	1111	17
208	320	1111	17
209	321	1111	17
210	322	0111	07
211	323	1111	17
212	324	0111	07
213	325	1111	17
214	326	0111	07
215	327	1111	17

DEC PART NUMBR 23-A23A2
ORIGINATOR: JOHN E BLOCH
DATE OF ORIGIN: 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1111	17
217	331	1111	17
218	332	0111	07
219	333	1111	17
220	334	0111	07
221	335	1111	17
222	336	0111	07
223	337	1111	17
224	340	1111	17
225	341	1111	17
226	342	1111	17
227	343	1111	17
228	344	1111	17
229	345	1111	17
230	346	1111	17
231	347	1111	17
232	350	1111	17
233	351	1111	17
234	352	1111	17
235	353	1111	17
236	354	1111	17
237	355	1111	17
238	356	1111	17
239	357	1111	17
240	360	1111	17
241	361	1111	17
242	362	1111	17
243	363	1111	17
244	364	1111	17
245	365	1111	17
246	366	1111	17
247	367	1111	17
248	370	1111	17
249	371	1111	17
250	372	1111	17
251	373	1111	17

DEC PART NUMB. 23-A2382
ORIGINATOR: JOHN E BLOCH
DATE OF ORIGIN: 19-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1111	17
253	375	1111	17
254	376	1111	17
255	377	1111	17

DEC PART NUMB: 23-A2442
ORIGINATOR: JOHN E BLOCH
DATE OF ORIGIN: 10-6-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	0111	07
1	001	0101	05
2	002	0111	07
3	003	0100	04
4	004	0111	07
5	005	1101	15
6	006	0111	07
7	007	1100	14
8	010	0111	07
9	011	0101	05
10	012	0111	07
11	013	0100	04
12	014	0111	07
13	015	1101	15
14	016	0111	07
15	017	1100	14
16	020	0111	07
17	021	0101	05
18	022	0111	07
19	023	0101	05
20	024	0111	07
21	025	0111	07
22	026	0111	07
23	027	0111	07
24	030	0111	07
25	031	0111	07
26	032	0111	07
27	033	0111	07
28	034	0111	07
29	035	0111	07
30	036	0111	07
31	037	0111	07
32	040	0111	07
33	041	0011	03
34	042	0111	07
35	043	0010	02

ROM PATTERN SPEC

DEC PART NUMBR 23-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 18-4-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0111	07
37	045	0011	03
38	046	0111	07
39	047	0010	02
40	050	0111	07
41	051	1011	13
42	052	0111	07
43	053	1010	12
44	054	0111	07
45	055	1011	13
46	056	0111	07
47	057	1010	12
48	060	0111	07
49	061	0111	07
50	062	0111	07
51	063	0111	07
52	064	0111	07
53	065	0111	07
54	066	0111	07
55	067	0111	07
56	070	0111	07
57	071	0111	07
58	072	0111	07
59	073	0111	07
60	074	0111	07
61	075	0111	07
62	076	0111	07
63	077	0111	07
64	100	0111	07
65	101	0101	05
66	102	0111	07
67	103	0101	05
68	104	0111	07
69	105	1101	15
70	106	0111	07
71	107	1101	15

ROM PATTERN SPEC

DEC PART NUMBR 23-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 18-4-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0111	07
73	111	0100	04
74	112	0111	07
75	113	0100	04
76	114	0111	07
77	115	1100	14
78	116	0111	07
79	117	1100	14
80	120	0111	07
81	121	0111	07
82	122	0111	07
83	123	0111	07
84	124	0111	07
85	125	0111	07
86	126	0111	07
87	127	0111	07
88	130	0111	07
89	131	0111	07
90	132	0111	07
91	133	0111	07
92	134	0111	07
93	135	0111	07
94	136	0111	07
95	137	0111	07
96	140	0111	07
97	141	0011	03
98	142	0111	07
99	143	0011	03
100	144	0111	07
101	145	0011	03
102	146	0111	07
103	147	0011	03
104	150	0111	07
105	151	1011	13
106	152	0111	07
107	153	1011	13

DEC PART NUMBER 23-A24A2
ORIGINATOR: JOHN E BLOCH
DATE OF ORIGIN: 10-4-74

ROM PATTERN SPEC

OCTAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	0111	07
109	155	1011	13
110	156	0111	07
111	157	1011	13
112	160	0111	07
113	161	0111	07
114	162	0111	07
115	163	0111	07
116	164	0111	07
117	165	0111	07
118	166	0111	07
119	167	0111	07
120	170	0111	07
121	171	0111	07
122	172	0111	07
123	173	0111	07
124	174	0111	07
125	175	0111	07
126	176	0111	07
127	177	0111	07
128	200	0111	07
129	201	0111	07
130	202	0111	07
131	203	0111	07
132	204	0111	07
133	205	0111	07
134	206	0111	07
135	207	0111	07
136	210	0111	07
137	211	0111	07
138	212	0111	07
139	213	0111	07
140	214	0111	07
141	215	0111	07
142	216	0111	07
143	217	0111	07

DEC PART NUMBER 23-A24A2
ORIGINATOR: JOHN E BLOCH
DATE OF ORIGIN: 10-4-74

ROM PATTERN SPEC

OCTAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	0111	07
145	221	0111	07
146	222	0111	07
147	223	0111	07
148	224	0111	07
149	225	0111	07
150	226	0111	07
151	227	0111	07
152	230	0111	07
153	231	0111	07
154	232	0111	07
155	233	0111	07
156	234	0111	07
157	235	0111	07
158	236	0111	07
159	237	0111	07
160	240	0111	07
161	241	0111	07
162	242	0111	07
163	243	0111	07
164	244	0111	07
165	245	0111	07
166	246	0111	07
167	247	0111	07
168	250	0111	07
169	251	0111	07
170	252	0111	07
171	253	0111	07
172	254	0111	07
173	255	0111	07
174	256	0111	07
175	257	0111	07
176	260	0111	07
177	261	0111	07
178	262	0111	07
179	263	0111	07

ROM PATTERN SPEC 47

DEC PART NUMBR 23-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-4-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0111	07
181	265	0111	07
182	266	0111	07
183	267	0111	07
184	270	0111	07
185	271	0111	07
186	272	0111	07
187	273	0111	07
188	274	0111	07
189	275	0111	07
190	276	0111	07
191	277	0111	07
192	300	0111	07
193	301	0111	07
194	302	0111	07
195	303	0111	07
196	304	0111	07
197	305	0111	07
198	306	0111	07
199	307	0111	07
200	310	0111	07
201	311	0111	07
202	312	0111	07
203	313	0111	07
204	314	0111	07
205	315	0111	07
206	316	0111	07
207	317	0111	07
208	320	0111	07
209	321	0111	07
210	322	0111	07
211	323	0111	07
212	324	0111	07
213	325	0111	07
214	326	0111	07
215	327	0111	07

ROM PATTERN SPEC 48

DEC PART NUMBR 23-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-4-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0111	07
217	331	0111	07
218	332	0111	07
219	333	0111	07
220	334	0111	07
221	335	0111	07
222	336	0111	07
223	337	0111	07
224	340	0111	07
225	341	0111	07
226	342	0111	07
227	343	0111	07
228	344	0111	07
229	345	0111	07
230	346	0111	07
231	347	0111	07
232	350	0111	07
233	351	0111	07
234	352	0111	07
235	353	0111	07
236	354	0111	07
237	355	0111	07
238	356	0111	07
239	357	0111	07
240	360	0111	07
241	361	0111	07
242	362	0111	07
243	363	0111	07
244	364	0111	07
245	365	0111	07
246	366	0111	07
247	367	0111	07
248	370	0111	07
249	371	0111	07
250	372	0111	07
251	373	0111	07

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ROM PATTERN SPEC

DEC PART NUMBER 23-A2542
ORIGINATOR JOHN E KLOOA
DATE OF ORIGIN 10-4-74

OCTAL DATA
87
85
A5
85

OCTAL LOC	BINARY DATA
252	0111
253	0111
254	0111
255	0111
374	0111
375	0111
376	0111
377	0111

50

ROM PATTERN SPEC

DEC PART NUMBER 23-A2542
ORIGINATOR JOHN E KLOOA
DATE OF ORIGIN 10-09-74

OCTAL DATA
17
17
05
04
17
17
17
06
17
17
03
17
17
17
03
17
17
17
05
17
17
17
17
17
17
03
17
17
17
17
03
17
17
17
05
06

OCTAL LOC	BINARY DATA
000	1111
001	1111
002	0101
003	0005
004	1111
005	1111
006	1111
007	0032
010	1111
011	1111
012	0011
013	1111
014	1111
015	1111
016	0011
017	1111
020	1111
021	1111
022	0101
023	1111
024	1111
025	1111
026	1111
027	1111
030	1111
031	1111
032	0051
033	1111
034	1111
035	1111
036	0011
037	1111
040	1111
041	1111
042	0101
043	2225

ROM PATTERN SPEC

DEC PART NUMBER 23-A2542
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

OCTAL LOC	BINARY DATA
044	1111
045	1111
046	1111
047	0000
050	1111
051	1111
052	0011
053	1111
054	1111
055	1111
056	0011
057	1111
060	1111
061	1111
062	0101
063	1111
064	1111
065	1111
066	1111
067	1111
070	1111
071	1111
072	0011
073	1111
074	1111
075	1111
076	0011
077	1111
100	1111
101	1111
102	1111
103	0000
104	1111
105	1111
106	1111
107	0000

ROM PATTERN SPEC

DEC PART NUMBER 23-A2542
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

OCTAL LOC	BINARY DATA
110	1111
111	1111
112	0011
113	1111
114	1111
115	1111
116	0011
117	1111
120	1111
121	1111
122	1111
123	1111
124	1111
125	1111
126	1111
127	1111
130	1111
131	1111
132	0011
133	1111
134	1111
135	1111
136	0011
137	1111
140	1111
141	1111
142	1111
143	0000
144	1111
145	1111
146	1111
147	0000
150	1111
151	1111
152	0011
153	1111

ROM PATTERN SPEC 53

DEC PART NUMBR 23-A25A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1111	17
109	155	1111	17
110	156	0011	03
111	157	1111	17
112	160	1111	17
113	161	1111	17
114	162	1111	17
115	163	1111	17
116	164	1111	17
117	165	1111	17
118	166	1111	17
119	167	1111	17
120	170	1111	17
121	171	1111	17
122	172	0011	03
123	173	1111	17
124	174	1111	17
125	175	1111	17
126	176	0011	03
127	177	1111	17
128	200	0110	06
129	201	1111	17
130	202	0101	05
131	203	0000	00
132	204	1111	17
133	205	1111	17
134	206	1111	17
135	207	0000	00
136	210	1111	17
137	211	1111	17
138	212	0011	03
139	213	1111	17
140	214	1111	17
141	215	1111	17
142	216	0011	03
143	217	1111	17

ROM PATTERN SPEC 54

DEC PART NUMBR 23-A25A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1111	17
145	221	1111	17
146	222	0101	05
147	223	1111	17
148	224	1111	17
149	225	1111	17
150	226	1111	17
151	227	1111	17
152	230	1111	17
153	231	1111	17
154	232	0011	03
155	233	1111	17
156	234	1111	17
157	235	1111	17
158	236	0011	03
159	237	1111	17
160	240	0100	04
161	241	1111	17
162	242	0101	05
163	243	0000	00
164	244	1111	17
165	245	1111	17
166	246	1111	17
167	247	0000	00
168	250	1111	17
169	251	1111	17
170	252	0011	03
171	253	1111	17
172	254	1111	17
173	255	1111	17
174	256	0011	03
175	257	1111	17
176	260	1111	17
177	261	1111	17
178	262	0101	05
179	263	1111	17

ROM PATTERN SPEC PAGE 55

DEC PART NUM#: 23-A25A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	1111	17
182	266	1111	17
183	267	1111	17
184	270	1111	17
185	271	1111	17
186	272	0010	02
187	273	1111	17
188	274	1111	17
189	275	1111	17
190	276	0010	02
191	277	1111	17
192	300	1111	17
193	301	1111	17
194	302	1111	17
195	303	0000	00
196	304	1111	17
197	305	1111	17
198	306	1111	17
199	307	0000	00
200	310	1111	17
201	311	1111	17
202	312	0011	03
203	313	1111	17
204	314	1111	17
205	315	1111	17
206	316	0011	03
207	317	1111	17
208	320	1111	17
209	321	1111	17
210	322	1111	17
211	323	1111	17
212	324	1111	17
213	325	1111	17
214	326	1111	17
215	327	1111	17

ROM PATTERN SPEC PAGE 5 OF 6 56

DEC PART NUM#: 23-A25A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1111	17
217	331	1111	17
218	332	0011	03
219	333	1111	17
220	334	1111	17
221	335	1111	17
222	336	0011	03
223	337	1111	17
224	340	0100	04
225	341	1111	17
226	342	1111	17
227	343	0000	00
228	344	1111	17
229	345	1111	17
230	346	1111	17
231	347	0000	00
232	350	1111	17
233	351	1111	17
234	352	0011	03
235	353	1111	17
236	354	1111	17
237	355	1111	17
238	356	0011	03
239	357	1111	17
240	360	1111	17
241	361	1111	17
242	362	1111	17
243	363	1111	17
244	364	1111	17
245	365	1111	17
246	366	0011	03
247	367	1111	17
248	370	1111	17
249	371	1111	17
250	372	1010	12
251	373	1111	17

ROM PATTERN SPEC

DEC PART NUMBER 23-A29A2
ORIGINATOR JOHN E BLOEM
DATE OF ORIGIN 10-29-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1111	17
253	375	1111	17
254	376	0010	02
255	377	1111	17

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ROM PATTERN SPEC

DEC PART NUMBER 23-A26A2
ORIGINATOR JOHN E BLOEM
DATE OF ORIGIN 10-29-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1110	16
1	001	1110	16
2	002	1110	16
3	003	1110	16
4	004	1110	16
5	005	1110	16
6	006	0100	04
7	007	1110	16
8	010	1110	16
9	011	1110	16
10	012	1110	16
11	013	0110	06
12	014	1110	16
13	015	1110	16
14	016	1110	16
15	017	0110	06
16	020	1110	16
17	021	1110	16
18	022	1110	16
19	023	0110	06
20	024	1110	16
21	025	1110	16
22	026	1000	10
23	027	0110	06
24	030	1110	16
25	031	1110	16
26	032	1110	16
27	033	0110	06
28	034	1110	16
29	035	1110	16
30	036	1110	16
31	037	0110	06
32	040	1110	16
33	041	1110	16
34	042	1110	16
35	043	1110	16

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ROM PATTERN SPEC

~~PAGE 2 OF 4~~ 59

DEC PART NUMBER 23-A26A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	1110	16
37	045	1110	16
38	046	0100	04
39	047	1110	16
40	050	1110	16
41	051	1110	16
42	052	1110	16
43	053	0110	06
44	054	1110	16
45	055	1110	16
46	056	1110	16
47	057	0110	06
48	060	1110	16
49	061	1110	16
50	062	1110	16
51	063	0110	06
52	064	1110	16
53	065	1110	16
54	066	1000	10
55	067	0110	06
56	070	1110	16
57	071	1110	16
58	072	1110	16
59	073	0110	06
60	074	1110	16
61	075	1110	16
62	076	1110	16
63	077	0110	06
64	100	1110	16
65	101	1110	16
66	102	1010	12
67	103	1110	16
68	104	1110	16
69	105	1110	16
70	106	0100	04
71	107	1110	16

ROM PATTERN SPEC

~~PAGE 3 OF 4~~ 60

DEC PART NUMBER 23-A26A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1110	16
73	111	1110	16
74	112	1110	16
75	113	0110	06
76	114	1110	16
77	115	1110	16
78	116	1110	16
79	117	0110	06
80	120	1110	16
81	121	1110	16
82	122	1010	12
83	123	0110	06
84	124	1110	16
85	125	1110	16
86	126	1000	10
87	127	0110	06
88	130	1110	16
89	131	1110	16
90	132	1110	16
91	133	0110	06
92	134	1110	16
93	135	1110	16
94	136	1110	16
95	137	0110	06
96	140	1010	12
97	141	1110	16
98	142	1010	12
99	143	1110	16
100	144	1110	16
101	145	1110	16
102	146	0100	04
103	147	1110	16
104	150	1110	16
105	151	1110	16
106	152	1110	16
107	153	0110	06

ROM PATTERN SPEC 61

DEC PART NUMBR 23-A26A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1110	16
109	155	1110	16
110	156	1110	16
111	157	0110	06
112	160	1110	16
113	161	1110	16
114	162	1010	12
115	163	0110	06
116	164	1110	16
117	165	1110	16
118	166	1000	10
119	167	0110	06
120	170	1110	16
121	171	1110	16
122	172	1110	16
123	173	0110	06
124	174	1110	16
125	175	1110	16
126	176	1110	16
127	177	0110	06
128	200	1110	16
129	201	1110	16
130	202	1110	16
131	203	1110	16
132	204	1110	16
133	205	1110	16
134	206	0100	04
135	207	1110	16
136	210	1110	16
137	211	1110	16
138	212	1110	16
139	213	0110	06
140	214	1110	16
141	215	1110	16
142	216	1110	16
143	217	0110	06

ROM PATTERN SPEC 62

DEC PART NUMBR 23-A26A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1110	16
145	221	1110	16
146	222	1110	16
147	223	0110	06
148	224	1110	16
149	225	1110	16
150	226	1010	12
151	227	0110	06
152	230	1110	16
153	231	1110	16
154	232	1110	16
155	233	0110	06
156	234	1110	16
157	235	1110	16
158	236	1110	16
159	237	0110	06
160	240	1110	16
161	241	1110	16
162	242	1110	16
163	243	1110	16
164	244	1110	16
165	245	1110	16
166	246	0100	04
167	247	1110	16
168	250	1110	16
169	251	1110	16
170	252	1110	16
171	253	0110	06
172	254	1110	16
173	255	1110	16
174	256	1110	16
175	257	0110	06
176	260	1110	16
177	261	1110	16
178	262	1110	16
179	263	0110	06

ROM PATTERN SPEC

DEC PART NUMBR 23-A26A2
ORIGINATOR: JOHN E ALOFN
DATE OF ORIGIN: 10-29-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1110	16
181	265	1110	16
182	266	1000	10
183	267	0110	06
184	270	1110	16
185	271	1110	16
186	272	1110	16
187	273	0110	06
188	274	1110	16
189	275	1110	16
190	276	1110	16
191	277	0110	06
192	300	1110	16
193	301	1110	16
194	302	1010	12
195	303	1110	16
196	304	1110	16
197	305	1110	16
198	306	0100	04
199	307	1110	16
200	310	1110	16
201	311	1110	16
202	312	1110	16
203	313	0110	06
204	314	1110	16
205	315	1110	16
206	316	1110	16
207	317	0110	06
208	320	1110	16
209	321	1110	16
210	322	1010	12
211	323	0110	06
212	324	1110	16
213	325	1110	16
214	326	1000	10
215	327	0110	06

ROM PATTERN SPEC

DEC PART NUMBR 23-A24A2
ORIGINATOR: JOHN E ALOFN
DATE OF ORIGIN: 10-29-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1110	16
217	331	1110	16
218	332	1110	16
219	333	0110	06
220	334	1110	16
221	335	1110	16
222	336	1110	16
223	337	0110	06
224	340	1110	16
225	341	1110	16
226	342	1010	12
227	343	1110	16
228	344	1110	16
229	345	1110	16
230	346	0100	04
231	347	1110	16
232	350	1110	16
233	351	1110	16
234	352	1110	16
235	353	0110	06
236	354	1110	16
237	355	1110	16
238	356	1110	16
239	357	0110	06
240	360	1110	16
241	361	1110	16
242	362	1010	12
243	363	0110	06
244	364	1110	16
245	365	1110	16
246	366	1000	10
247	367	0110	06
248	370	1110	16
249	371	1110	16
250	372	1110	16
251	373	0110	06

ROM PATTERN SPEC

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DEC PART NUMBR 23-A26A2
ORIGINATOR: JOHN F BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1110	16
253	75	1110	16
254	376	1110	16
255	377	0110	06

ROM PATTERN SPEC

66

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1111	17
1	001	0111	07
2	002	0111	07
3	003	0111	07
4	004	1111	17
5	005	1111	17
6	006	1111	17
7	007	1111	17
8	010	0000	00
9	011	0000	00
10	012	0000	00
11	013	0000	00
12	014	0000	00
13	015	0000	00
14	016	0000	00
15	017	0000	00
16	020	0000	00
17	021	0000	00
18	022	0000	00
19	023	0000	00
20	024	0000	00
21	025	0000	00
22	026	0000	00
23	027	0000	00
24	030	0000	00
25	031	0000	00
26	032	0000	00
27	033	0000	00
28	034	0000	00
29	035	0000	00
30	036	0000	00
31	037	0000	00
32	040	1111	17
33	041	1112	16
34	042	0111	07
35	043	0111	07

ROM PATTERN SPEC PAGE 1 OF 4 47

DEC PART NUMBR 23-A27A2
ORIGINATORS JOHN E BLOOM
DATE OF ORIGINS 10-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	1111	17
37	045	1111	17
38	046	1111	17
39	047	1111	17
40	050	0000	00
41	051	0000	00
42	052	0000	00
43	053	0000	00
44	054	0000	00
45	055	0000	00
46	056	0000	00
47	057	0000	00
48	060	0000	00
49	061	0000	00
50	062	0000	00
51	063	0000	00
52	064	0000	00
53	065	0000	00
54	066	0000	00
55	067	0000	00
56	070	0000	00
57	071	0000	00
58	072	0000	00
59	073	0000	00
60	074	0000	00
61	075	0000	00
62	076	0000	00
63	077	0000	00
64	100	1111	17
65	101	1111	17
66	102	1111	17
67	103	1111	17
68	104	1111	17
69	105	0101	05
70	106	0101	05
71	107	0101	05

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DEC PART NUMBR 23-A27A2
ORIGINATORS JOHN E BLOOM
DATE OF ORIGINS 10-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0000	00
73	111	0000	00
74	112	0000	00
75	113	0000	00
76	114	0000	00
77	115	0000	00
78	116	0000	00
79	117	0000	00
80	120	0000	00
81	121	0000	00
82	122	0000	00
83	123	0000	00
84	124	0000	00
85	125	0000	00
86	126	0000	00
87	127	0000	00
88	130	0000	00
89	131	0000	00
90	132	0000	00
91	133	0000	00
92	134	0000	00
93	135	0000	00
94	136	0000	00
95	137	0000	00
96	140	1111	17
97	141	1111	17
98	142	1111	17
99	143	1111	17
100	144	1111	17
101	145	0101	05
102	146	0101	05
103	147	0101	05
104	150	0000	00
105	151	0000	00
106	152	0000	00
107	153	0000	00

ROM PATTERN SPEC

DEC PART NUMBER 23-A27A2
ORIGINATOR JOHN E BLOOM
DATE OF ORIGIN 10-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
128	154	0000	00
129	155	0000	00
130	156	0000	00
131	157	0000	00
132	160	0000	00
133	161	0000	00
134	162	0000	00
135	163	0000	00
136	164	0000	00
137	165	0000	00
138	166	0000	00
139	167	0000	00
140	170	0000	00
141	171	0000	00
142	172	0000	00
143	173	0000	00
144	174	0000	00
145	175	0000	00
146	176	0000	00
147	177	0000	00
148	200	0110	06
149	201	0110	06
150	202	0111	07
151	203	1011	13
152	204	1111	17
153	205	1111	17
154	206	1111	17
155	207	1011	13
156	210	0000	00
157	211	0000	00
158	212	0000	00
159	213	0000	00
160	214	0000	00
161	215	0000	00
162	216	0000	00
163	217	0000	00

ROM PATTERN SPEC

DEC PART NUMBER 23-A27A2
ORIGINATOR JOHN E BLOOM
DATE OF ORIGIN 10-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
164	220	0000	00
165	221	0000	00
166	222	0000	00
167	223	0000	00
168	224	0000	00
169	225	0000	00
170	226	0000	00
171	227	0000	00
172	230	0000	00
173	231	0000	00
174	232	0000	00
175	233	0000	00
176	234	0000	00
177	235	0000	00
178	236	0000	00
179	237	0000	00
180	240	0110	06
181	241	0110	06
182	242	0111	07
183	243	1011	13
184	244	1111	17
185	245	1111	17
186	246	1111	17
187	247	1011	13
188	250	0000	00
189	251	0000	00
190	252	0000	00
191	253	0000	00
192	254	0000	00
193	255	0000	00
194	256	0000	00
195	257	0000	00
196	260	0000	00
197	261	0000	00
198	262	0000	00
199	263	0000	00

ROM PATTERN SPEC [illegible] 71

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-1-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	0000	00
181	265	0000	00
182	266	0000	00
183	267	0000	00
184	270	0000	00
185	271	0000	00
186	272	0000	00
187	273	0000	00
188	274	0000	00
189	275	0000	00
190	276	0000	00
191	277	0000	00
192	300	1111	17
193	301	1111	17
194	302	1111	17
195	303	1011	13
196	304	0101	05
197	305	0101	05
198	306	0101	05
199	307	1011	13
200	310	0000	00
201	311	0000	00
202	312	0000	00
203	313	0000	00
204	314	0000	00
205	315	0000	00
206	316	0000	00
207	317	0000	00
208	320	0000	00
209	321	0000	00
210	322	0000	00
211	323	0000	00
212	324	0000	00
213	325	0000	00
214	326	0000	00
215	327	0000	00

ROM PATTERN SPEC [illegible] 72

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-1-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	0000	00
217	331	0000	00
218	332	0000	00
219	333	0000	00
220	334	0000	00
221	335	0000	00
222	336	0000	00
223	337	0000	00
224	340	1111	17
225	341	1111	17
226	342	1111	17
227	343	1011	13
228	344	0101	05
229	345	0101	05
230	346	0101	05
231	347	1011	13
232	350	0000	00
233	351	0000	00
234	352	0000	00
235	353	0000	00
236	354	0000	00
237	355	0000	00
238	356	0000	00
239	357	0000	00
240	360	0000	00
241	361	0000	00
242	362	0000	00
243	363	0000	00
244	364	0000	00
245	365	0000	00
246	366	0000	00
247	367	0000	00
248	370	0000	00
249	371	0000	00
250	372	0000	00
251	373	0000	00

ROM PATTERN SPEC PAGE 3 OF 6 73

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 14-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	0000	00
253	375	0000	00
254	376	0000	00
255	377	0000	00

ROM PATTERN SPEC PAGE 4 OF 6 74

DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 20-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1010	12
1	001	0011	03
2	002	1010	12
3	003	0011	03
4	004	0010	02
5	005	0011	03
6	006	0010	02
7	007	0011	03
8	010	1010	12
9	011	0011	03
10	012	1010	12
11	013	0011	03
12	014	1110	16
13	015	0011	03
14	016	1110	16
15	017	0011	03
16	020	0010	02
17	021	1011	13
18	022	0010	02
19	023	1011	13
20	024	0010	02
21	025	0011	03
22	026	0010	02
23	027	0011	03
24	030	0010	02
25	031	1011	13
26	032	0011	03
27	033	1011	13
28	034	1110	16
29	035	0011	03
30	036	1110	16
31	037	0011	03
32	040	1110	16
33	041	0111	07
34	042	1110	16
35	043	0111	07

ROM PATTERN SPEC

DEC PART NUMBER 23-A2942
ORIGINATOR: JOHN ALOFN
DATE OF ORIGIN: 28-MAY-75

OCTAL DATA
06
03
06
03
16
03
16
07
12
03
12
03
12
03
10
03
06
03
06
03
12
03
12
03
12
05
12
03
12
01
02
03
02
01

OCTAL LOC	BINARY DATA
044	0110
045	0011
046	0110
047	0011
050	1110
051	0111
052	1110
053	0111
054	1010
055	0011
056	1010
057	0011
060	1010
061	0011
062	1000
063	0011
064	0110
065	0011
066	0110
067	0011
070	1010
071	0011
072	1010
073	0011
074	1010
075	0011
076	1010
077	0011
100	0010
101	1011
102	0010
103	1011
104	0010
105	0011
106	0010
107	0011

ROM PATTERN SPEC

DEC PART NUMBER 23-A2942
ORIGINATOR: JOHN ALOFN
DATE OF ORIGIN: 28-MAY-75

OCTAL DATA
02
13
02
13
16
03
16
03
06
17
06
17
06
17
06
17
16
03
16
03
12
03
12
03
06
01
06
03
12
05
12
03

OCTAL LOC	BINARY DATA
110	0010
111	1011
112	0010
113	1011
114	1110
115	0011
116	1110
117	0011
120	0110
121	1111
122	0110
123	1111
124	0010
125	0011
126	0010
127	0011
130	0110
131	1111
132	0110
133	1111
134	1110
135	0011
136	1110
137	0011
140	1010
141	0011
142	1010
143	0011
144	0110
145	0011
146	1110
147	0011
150	1010
151	0011
152	1010
153	0011

ROM PATTERN SPEC PAGE 6 OF 6 77

DEC PART NUMBR 23-A2982
ORIGINATOR: JOHN BLOCK
DATE OF ORIGIN: 20-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1010	12
109	155	0011	03
110	156	1010	12
111	157	0011	03
112	160	0010	02
113	161	1011	13
114	162	0010	02
115	163	1011	13
116	164	0110	06
117	165	0011	03
118	166	0110	06
119	167	0011	03
120	170	0010	02
121	171	1011	13
122	172	0010	02
123	173	1011	13
124	174	1010	12
125	175	0011	03
126	176	1010	12
127	177	0011	03
128	200	1110	16
129	201	0011	03
130	202	1110	16
131	203	1011	13
132	204	0010	02
133	205	0011	03
134	206	0010	02
135	207	1011	13
136	210	1110	16
137	211	0011	03
138	212	1110	16
139	213	1011	13
140	214	0010	02
141	215	0011	03
142	216	0010	02
143	217	1011	13

ROM PATTERN SPEC PAGE 6 OF 6 78

DEC PART NUMBR 23-A2982
ORIGINATOR: JOHN BLOCK
DATE OF ORIGIN: 20-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1110	16
145	221	0011	03
146	222	1110	16
147	223	1011	13
148	224	1010	12
149	225	0011	03
150	226	1010	12
151	227	1011	13
152	230	1110	16
153	231	0011	03
154	232	1110	16
155	233	1011	13
156	234	1010	12
157	235	0011	03
158	236	1010	12
159	237	1011	13
160	240	1110	16
161	241	0111	07
162	242	1110	16
163	243	1111	17
164	244	1010	12
165	245	0011	03
166	246	1010	12
167	247	1011	13
168	250	1110	16
169	251	0111	07
170	252	1110	16
171	253	1111	17
172	254	1010	12
173	255	0011	03
174	256	1010	12
175	257	1011	13
176	260	1110	16
177	261	0011	03
178	262	1110	16
179	263	1011	13

242

DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 29-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1110	16
181	265	0011	03
182	266	1110	16
183	267	1011	13
184	270	1110	16
185	271	0011	03
186	272	1110	16
187	273	1011	13
188	274	1110	16
189	275	0011	03
190	276	1110	16
191	277	1011	13
192	300	1110	16
193	301	0011	03
194	302	1110	16
195	303	1011	13
196	304	0110	06
197	305	0011	03
198	306	0110	06
199	307	1011	13
200	310	1110	16
201	311	0011	03
202	312	1110	16
203	313	1011	13
204	314	0110	06
205	315	0011	03
206	316	0110	06
207	317	1011	13
208	320	1110	16
209	321	0111	07
210	322	1110	16
211	323	1111	17
212	324	0010	02
213	325	0011	03
214	326	0010	02
215	327	1011	13

DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 29-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1110	16
217	331	0111	07
218	332	1110	16
219	333	1111	17
220	334	0010	02
221	335	0011	03
222	336	0010	02
223	337	1011	13
224	340	1110	16
225	341	0011	03
226	342	1110	16
227	343	1011	13
228	344	0010	02
229	345	0011	03
230	346	0010	02
231	347	1011	13
232	350	1110	16
233	351	0011	03
234	352	1110	16
235	353	1011	13
236	354	0010	02
237	355	0011	03
238	356	0010	02
239	357	1011	13
240	360	1110	16
241	361	0011	03
242	362	1110	16
243	363	1011	13
244	364	1010	12
245	365	0011	03
246	366	1010	12
247	367	1011	13
248	370	1110	16
249	371	0011	03
250	372	1110	16
251	373	1011	13

ROM PATTERN SPEC 81

DEC PART NUMBR 23-A2982
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 20-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1010	12
253	375	0011	03
254	376	1010	12
255	377	1011	13

ROM PATTERN SPEC 82

DEC PART NUMBR 23-A3142
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-20-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	1111	17
1	001	1111	17
2	002	1111	17
3	003	1111	17
4	004	1111	17
5	005	1111	17
6	006	1111	17
7	007	1111	17
8	010	1110	16
9	011	1110	16
10	012	1110	16
11	013	1111	17
12	014	1111	17
13	015	1111	17
14	016	1111	17
15	017	1111	17
16	020	1011	13
17	021	1111	17
18	022	1011	13
19	023	1111	17
20	024	1111	17
21	025	1111	17
22	026	1111	17
23	027	1111	17
24	030	1110	16
25	031	1110	16
26	032	1110	16
27	033	1111	17
28	034	1111	17
29	035	1111	17
30	036	1111	17
31	037	1111	17
32	040	1101	15
33	041	1101	15
34	042	1101	15
35	043	1101	15

ROM PATTERN SPEC

DEC PART NUMBER 23-A31A2
ORIGINATOR: JOHN F. BLOEM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	1111	17
37	045	1111	17
38	046	1111	17
39	047	1111	17
40	050	1101	15
41	051	1101	15
42	052	1101	15
43	053	1101	15
44	054	1111	17
45	055	1111	17
46	056	1111	17
47	057	1111	17
48	060	1101	15
49	061	1101	15
50	062	1101	15
51	063	1101	15
52	064	1111	17
53	065	1111	17
54	066	1111	17
55	067	1111	17
56	070	1101	15
57	071	1101	15
58	072	1101	15
59	073	1101	15
60	074	1111	17
61	075	1111	17
62	076	1111	17
63	077	1111	17
64	100	0111	07
65	101	0111	07
66	102	0111	07
67	103	1111	17
68	104	1111	17
69	105	1111	17
70	106	1111	17
71	107	1111	17

ROM PATTERN SPEC

DEC PART NUMBER 23-A31A2
ORIGINATOR: JOHN F. BLOEM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	1110	16
73	111	1110	16
74	112	1110	16
75	113	1111	17
76	114	1111	17
77	115	1111	17
78	116	1111	17
79	117	1111	17
80	120	0111	07
81	121	0111	07
82	122	0111	07
83	123	1111	17
84	124	1111	17
85	125	1111	17
86	126	1111	17
87	127	1111	17
88	130	1110	16
89	131	1110	16
90	132	1110	16
91	133	1111	17
92	134	1111	17
93	135	1111	17
94	136	1111	17
95	137	1111	17
96	140	1101	15
97	141	1101	15
98	142	1101	15
99	143	1101	15
100	144	1111	17
101	145	1111	17
102	146	1111	17
103	147	1111	17
104	150	1101	15
105	151	1101	15
106	152	1101	15
107	153	1101	15

ROM PATTERN SPEC 85

DEC PART NUMBER 23-A31A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	1111	17
109	155	1111	17
110	156	1111	17
111	157	1111	17
112	160	1101	15
113	161	1101	15
114	162	1101	15
115	163	1101	15
116	164	1111	17
117	165	1111	17
118	166	1111	17
119	167	1111	17
120	170	1101	15
121	171	1101	15
122	172	1101	15
123	173	1101	15
124	174	1111	17
125	175	1111	17
126	176	1111	17
127	177	1111	17
128	200	1111	17
129	201	1111	17
130	202	1111	17
131	203	1111	17
132	204	1111	17
133	205	1111	17
134	206	1111	17
135	207	1111	17
136	210	1110	16
137	211	1110	16
138	212	1110	16
139	213	1111	17
140	214	1111	17
141	215	1111	17
142	216	1111	17
143	217	1111	17

ROM PATTERN SPEC 86

DEC PART NUMBER 23-A31A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	1011	13
145	221	1111	17
146	222	1011	13
147	223	1111	17
148	224	1111	17
149	225	1111	17
150	226	1111	17
151	227	1111	17
152	230	1110	16
153	231	1110	16
154	232	1110	16
155	233	1111	17
156	234	1111	17
157	235	1111	17
158	236	1111	17
159	237	1111	17
160	240	1101	15
161	241	1101	15
162	242	1101	15
163	243	1111	17
164	244	1111	17
165	245	1111	17
166	246	1111	17
167	247	1111	17
168	250	1101	15
169	251	1101	15
170	252	1101	15
171	253	1111	17
172	254	1111	17
173	255	1111	17
174	256	1111	17
175	257	1111	17
176	260	1101	15
177	261	1101	15
178	262	1101	15
179	263	1111	17

ROM PATTERN SPEC 87

DEC PART NUMBR 23-A31A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	1111	17
181	265	1111	17
182	266	1111	17
183	267	1111	17
184	270	1101	15
185	271	1101	15
186	272	1101	15
187	273	1111	17
188	274	1111	17
189	275	1111	17
190	276	1111	17
191	277	1111	17
192	300	0111	07
193	301	1111	17
194	302	0111	07
195	303	1111	17
196	304	1111	17
197	305	1111	17
198	306	1111	17
199	307	1111	17
200	310	1110	16
201	311	1110	16
202	312	1110	16
203	313	1111	17
204	314	1111	17
205	315	1111	17
206	316	1111	17
207	317	1111	17
208	320	0111	07
209	321	1111	17
210	322	0111	07
211	323	1111	17
212	324	1111	17
213	325	1111	17
214	326	1111	17
215	327	1111	17

ROM PATTERN SPEC 88

DEC PART NUMBR 23-A31A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	1110	16
217	331	1110	16
218	332	1110	16
219	333	1111	17
220	334	1111	17
221	335	1111	17
222	336	1111	17
223	337	1111	17
224	340	1101	15
225	341	1101	15
226	342	1101	15
227	343	1111	17
228	344	1111	17
229	345	1111	17
230	346	1111	17
231	347	1111	17
232	350	1101	15
233	351	1101	15
234	352	1101	15
235	353	1111	17
236	354	1111	17
237	355	1111	17
238	356	1111	17
239	357	1111	17
240	360	1101	15
241	361	1101	15
242	362	1101	15
243	363	1111	17
244	364	1111	17
245	365	1111	17
246	366	1111	17
247	367	1111	17
248	370	1101	15
249	371	1101	15
250	372	1101	15
251	373	1111	17

DEC PART NUMBER 23-611A2
ORIGINATOR JOHN E. BLOEM
DATE OF ORIGIN: 10-28-74

BCW PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA
252	374	1111
253	375	1111
254	376	1111
255	377	1111

DEC PART NUMBER 23-611A1
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN: 27-SEP-75

BCW PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA
0	000	0000000000000000
1	001	1111111111111111
2	002	0000000000000000
3	003	1111111111111111
4	004	0000000000000000
5	005	1111111111111111
6	006	0000000000000000
7	007	1111111111111111
8	010	0000000000000000
9	011	1111111111111111
10	012	0000000000000000
11	013	1111111111111111
12	014	0000000000000000
13	015	1111111111111111
14	016	0000000000000000
15	017	1111111111111111
16	020	0000000000000000
17	021	1111111111111111
18	022	0000000000000000
19	023	1111111111111111
20	024	0000000000000000
21	025	1111111111111111
22	026	0000000000000000
23	027	1111111111111111
24	030	0000000000000000
25	031	1111111111111111
26	032	0000000000000000
27	033	1111111111111111
28	034	0000000000000000
29	035	1111111111111111
30	036	0000000000000000
31	037	1111111111111111
32	040	0000000000000001
33	041	1111111111111101
34	042	0000000000000010
35	043	1111111111111101

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                              ROM PATTERN SPEC                  91
DEC PART NUMBER: 23-001[illegible]1
ORIGINATOR: JOHN [illegible]
DATE OF ORIGIN: 27-FEB-75

       DECIMAL         OCTAL          BINARY          OCTAL
         LOC            LOC            DATA            DATA

          36            044          00111101          075
          37            045          10100110          246
          38            046          01011101          135
          39            047          00000000          000

          40            050          00011101          035
          41            051          10001001          211
          42            052          01101101          155
          43            053          10010001          221

          44            054          00101101          055
          45            055          01000001          101
          46            056          01001101          115
          47            057          00000000          000

          48            060          00110101          065
          49            061          01010101          125
          50            062          10010101          225
          51            063          10011100          234

          52            064          01100101          145
          53            065          00101001          051
          54            066          00110001          061
          55            067          00100001          041

          56            070          10111010          272
          57            071          01011010          132
          58            072          10011010          232
          59            073          10001100          214

          60            074          10101010          252
          61            075          00110010          062
          62            076          00100010          042
          63            077          00100010          042

          64            100          01101011          153
          65            101          01101011          153
          66            102          00000000          000
          67            103          10111011          273

          68            104          00111011          073
          69            105          11011011          333
          70            106          01011011          133
          71            107          10011011          233
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                              ROM PATTERN SPEC                  92
DEC PART NUMBER: 23-001[illegible]1
ORIGINATOR: JOHN [illegible]
DATE OF ORIGIN: 27-FEB-75

       DECIMAL         OCTAL          BINARY          OCTAL
         LOC            LOC            DATA            DATA

          72            110          00011011          033
          73            111          11101011          353
          74            112          10110011          263
          75            113          10101011          253

          76            114          00101011          053
          77            115          11001011          313
          78            116          10110011          263
          79            117          10001011          213

          80            120          10000001          201
          81            121          00000001          001
          82            122          00000110          006
          83            123          00010110          026

          84            124          11101010          352
          85            125          11011010          332
          86            126          11101010          352
          87            127          00100010          042

          88            130          00011010          032
          89            131          10111110          276
          90            132          11101010          352
          91            133          10100110          246

          92            134          00000000          000
          93            135          00000000          000
          94            136          01001010          112
          95            137          10001010          212

          96            140          10101101          255
          97            141          01110110          166
          98            142          00011001          031
          99            143          00110110          066

         100            144          10111001          271
         101            145          00011001          031
         102            146          00101110          056
         103            147          10011001          231

         104            150          11001101          315
         105            151          01100110          146
         106            152          00011001          031
         107            153          00100110          046
```

DEC PART NUMBR 23-9010I
ORIGINATORS JOB# NAME
DATE OF ORIGIN: 27-FEB-75

KDP PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	10110001	261
109	155	11001001	311
110	156	01001001	111
111	157	10001001	211
112	160	10010011	223
113	161	11100011	343
114	162	01100011	143
115	163	10011000	230
116	164	10000011	203
117	165	10111101	275
118	166	11011101	335
119	167	10011101	235
120	170	01000111	107
121	171	00000111	007
122	172	11110011	373
123	173	10001000	210
124	174	01111011	173
125	175	01111011	173
126	176	01101011	153
127	177	10000010	202
128	200	00001000	010
129	201	11000000	300
130	202	00000000	000
131	203	10110111	267
132	204	00110111	067
133	205	11010111	327
134	206	01010111	127
135	207	10100110	246
136	210	00010111	027
137	211	11000111	307
138	212	01101011	153
139	213	10100111	247
140	214	00100111	047
141	215	11000111	307
142	216	01100011	143
143	217	10000111	207

DEC PART NUMBR 23-9010I
ORIGINATORS JOB# NAME
DATE OF ORIGIN: 27-FEB-75

KDP PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	00001001	011
145	221	10110001	261
146	222	00001110	016
147	223	10001110	216
148	224	10110110	266
149	225	00000000	000
150	226	01010110	126
151	227	00000000	000
152	230	00010001	021
153	231	11100001	341
154	232	00000000	000
155	233	10010110	226
156	234	01100010	142
157	235	11101010	352
158	236	01000110	106
159	237	10000110	206
160	240	11100101	345
161	241	11101101	355
162	242	01110101	165
163	243	10110101	265
164	244	11100101	345
165	245	11010101	325
166	246	11100101	345
167	247	00111001	071
168	250	00010101	025
169	251	11100101	345
170	252	10100110	246
171	253	01101110	156
172	254	00011001	031
173	255	11000101	305
174	256	01000101	105
175	257	10000101	205
176	260	00000101	005
177	261	11011001	331
178	262	01011001	131
179	263	10010110	226

250

BOM PATTERN SPEC [redacted] 95

DEC PART NUMBER 23-00101
ORIGINATOR John Doe
DATE OF ORIGIN 27-Feb-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
196	204	10101001	251
197	205	00111110	076
198	206	00101110	056
199	207	00101110	056
200	210	00011110	036
201	211	11001110	316
202	212	01001110	116
203	213	10000100	204
204	214	11010110	326
205	215	00100110	046
206	216	00111010	072
207	217	00101010	052
208	220	10110011	263
209	221	10110011	263
210	222	00000000	000
211	223	01000011	103
212	224	00110011	063
213	225	11010011	323
214	226	01010011	123
215	227	01000011	103
216	230	00010011	023
217	231	01000011	103
218	232	10001110	216
219	233	10100011	243
220	234	00011010	032
221	235	11000011	303
222	236	01000011	103
223	237	00000000	000
224	240	11010010	322
225	241	01110010	162
226	242	00000000	000
227	243	00110010	062
228	244	11100001	341
229	245	11010001	321
230	246	01010001	121
231	247	10010001	221
232	250	01010117	120
233	251	00001101	015
234	252	00000001	001
235	253	10100101	245
236	254	10100001	241
237	255	11000001	301
238	256	01000001	101
239	257	00000000	000
240	260	01001011	113
241	261	00001011	013
242	262	11110011	363
243	263	10010000	220
244	264	01110011	163
245	265	01110011	163
246	266	10110011	263
247	267	10100110	246
248	270	01110111	167
249	271	01100111	147
250	272	00001111	017
251	273	10001111	217

BOM PATTERN SPEC [redacted] 96

DEC PART NUMBER 23-00101
ORIGINATOR John Doe
DATE OF ORIGIN 27-Feb-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	330	11000110	306
253	331	00000000	000
254	332	00010010	022
255	333	00000000	000
256	334	00001000	010
257	335	10001010	212
258	336	10100010	242
259	337	11101101	355
260	340	10001101	215
261	341	01111010	172
262	342	00000000	000
263	343	00111010	072
264	344	11100001	341
265	345	11010001	321
266	346	01010001	121
267	347	10010001	221
268	350	01010117	120
269	351	00001101	015
270	352	00000001	001
271	353	10100101	245
272	354	10100001	241
273	355	11000001	301
274	356	01000001	101
275	357	00000000	000
276	360	01001011	113
277	361	00001011	013
278	362	11110011	363
279	363	10010000	220
280	364	01110011	163
281	365	01110011	163
282	366	10110011	263
283	367	10100110	246
284	370	01110111	167
285	371	01100111	147
286	372	00001111	017
287	373	10001111	217

DEC PART NUMBER 23-00161
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 27-FEB-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	10010111	227
253	375	00000000	000
254	376	01001111	117
255	377	01000010	102

DEC PART NUMBER 23-00281
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	00110000	060
1	001	00110000	060
2	002	00110000	060
3	003	00110000	060
4	004	00110000	060
5	005	00110000	060
6	006	00110000	060
7	007	00111100	074
8	010	00111100	074
9	011	00111100	074
10	012	00111100	074
11	013	00111000	070
12	014	00111100	074
13	015	00111100	074
14	016	10110000	260
15	017	10110000	260
16	020	00111000	070
17	021	00111000	070
18	022	00110100	064
19	023	00111000	070
20	024	00000000	000
21	025	00111100	074
22	026	00000000	000
23	027	00111000	070
24	030	00111100	074
25	031	10000000	200
26	032	00000000	000
27	033	10000002	202
28	034	00111000	070
29	035	00000000	000
30	036	00110007	060
31	037	00000010	002
32	040	00110000	060
33	041	10000000	200
34	042	00111100	074
35	043	10000200	202

DEC PART NUMBER 23-00281
ORIGINATOR: JOHN ALDEN
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	00111100	074
37	045	10000000	200
38	046	00111100	074
39	047	00111100	074
40	050	00100000	040
41	051	00000000	000
42	052	00000000	000
43	053	00000000	000
44	054	00000000	000
45	055	00000000	000
46	056	00000010	002
47	057	10110000	260
48	060	00000010	002
49	061	00000000	000
50	062	11111000	370
51	063	11111000	370
52	064	00000000	000
53	065	00000010	002
54	066	00000010	002
55	067	00000010	002
56	070	00000010	002
57	071	00000000	000
58	072	11111000	370
59	073	11111000	370
60	074	00000010	002
61	075	00000010	002
62	076	00000010	002
63	077	00000010	002
64	100	00000000	000
65	101	00111000	070
66	102	00111100	074
67	103	00000000	000
68	104	00111100	074
69	105	00000000	000
70	106	00110000	060
71	107	00000000	000

DEC PART NUMBER 23-00281
ORIGINATOR: JOHN ALDEN
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	11111000	370
73	111	00111100	074
74	112	00000000	000
75	113	00111100	074
76	114	00000000	000
77	115	00111000	070
78	116	00000000	000
79	117	00111000	070
80	120	00111100	074
81	121	10000000	200
82	122	00111000	070
83	123	10000000	200
84	124	00000000	000
85	125	00111000	070
86	126	00000000	000
87	127	00000010	002
88	130	00111100	074
89	131	10000000	200
90	132	00111000	070
91	133	10000000	200
92	134	00111000	070
93	135	01110000	160
94	136	00000000	000
95	137	00111100	074
96	140	00111100	074
97	141	00000000	000
98	142	00000000	000
99	143	00000000	000
100	144	00111000	070
101	145	00000000	000
102	146	00000010	002
103	147	00111100	074
104	150	00111100	074
105	151	00000000	000
106	152	00111000	070
107	153	00000000	000

ROM PATTERN SPEC

DEC PART NUMBR 23-802H1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
100	144	00030000
109	155	00111120
110	156	10003000
111	157	00030000
112	160	00030000
113	161	00000000
114	162	11111000
115	163	11111000
116	164	00030000
117	165	00030000
118	166	00030000
119	167	00030000
120	170	00030000
121	171	00000000
122	172	11111000
123	173	11111000
124	174	00033000
125	175	00033000
126	176	00030000
127	177	11111000
128	200	00111130
129	201	00033000
130	202	00111000
131	203	01113000
132	204	00033000
133	205	00111130
134	206	00111220
135	207	00111000
136	210	00030000
137	211	00111130
138	212	00030000
139	213	00111130
140	214	00033000
141	215	00111220
142	216	00000000
143	217	00111000

RFM PATTERN SPEC

DEC PART NUMBR 23-802R1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
144	220	00111130
145	221	10003000
146	222	00111000
147	223	10003000
148	224	00111000
149	225	00111000
150	226	00113000
151	227	00113000
152	230	00111130
153	231	10003000
154	232	00111130
155	233	10003000
156	234	00033000
157	235	00003000
158	236	00111130
159	237	00003000
160	240	00033000
161	241	00111000
162	242	00000000
163	243	00111000
164	244	00003000
165	245	00111000
166	246	02000000
167	247	00000010
168	250	00111100
169	251	00111020
170	252	12113000
171	253	00003000
172	254	00000000
173	255	00111100
174	256	00003000
175	257	00111000
176	260	00003000
177	261	00033000
178	262	11111200
179	263	11111020

ROM PATTERN SPEC 103

DEC PART NUMBI 23-80281
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	00000000	000
181	265	00000010	002
182	266	00000010	002
183	267	00000010	002
184	270	00000000	000
185	271	00000000	000
186	272	11111000	370
187	273	11111000	370
188	274	00000000	000
189	275	00000010	002
190	276	00000010	002
191	277	00000010	002
192	300	00000000	000
193	301	00111000	070
194	302	00111100	074
195	303	00000000	000
196	304	00111100	074
197	305	00000000	000
198	306	00111000	070
199	307	00000000	000
200	310	00111000	070
201	311	00000000	000
202	312	10000000	200
203	313	00111100	074
204	314	00000000	000
205	315	00111100	074
206	316	00111000	070
207	317	00111000	070
208	320	00111000	070
209	321	00111000	070
210	322	00111000	070
211	323	00111000	070
212	324	00000000	000
213	325	00000000	000
214	326	00110000	060
215	327	00000000	000

ROM PATTERN SPEC 104

DEC PART NUMBI 23-80281
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	00111100	074
217	331	10111100	274
218	332	11111000	370
219	333	10111100	274
220	334	00111100	074
221	335	00000000	000
222	336	00110000	060
223	337	00000000	000
224	340	00111100	074
225	341	00000000	000
226	342	00110000	060
227	343	00000000	000
228	344	00000000	000
229	345	00111100	074
230	346	10000000	200
231	347	00000000	000
232	350	00110000	060
233	351	00000000	000
234	352	00000000	000
235	353	00000000	000
236	354	00111100	074
237	355	10000000	200
238	356	00000000	000
239	357	00110000	060
240	360	00000000	000
241	361	00000000	000
242	362	11111000	370
243	363	11111000	370
244	364	00000000	000
245	365	00000000	000
246	366	00000000	000
247	367	10000000	200
248	370	00000001	001
249	371	00000000	000
250	372	00110100	064
251	373	00110100	064

ROM PATTERN SPEC

DEC PART NUMBER 23-00381
ORIGINATOR JOHN ROEM
DATE OF ORIGIN 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
252	374	00000000
253	375	00000000
254	376	00000000
255	377	00000001

OCTAL DATA
000
000
000
001

ROM PATTERN SPEC

DEC PART NUMBER 23-00381
ORIGINATOR JOHN ROEM
DATE OF ORIGIN 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
0	000	01012000
1	001	01012020
2	002	01012000
3	003	01012020
4	004	01012000
5	005	01012000
6	006	01012020
7	007	01112020
8	010	01112000
9	011	00112000
10	012	01112000
11	013	00112000
12	014	01112000
13	015	01112020
14	016	01112020
15	017	01112000
16	020	00120000
17	021	00120000
18	022	01112000
19	023	00112000
20	024	01012001
21	025	01112020
22	026	01112000
23	027	00112020
24	030	01112000
25	031	00112000
26	032	01112000
27	033	01112000
28	034	00112000
29	035	01012021
30	036	01112011
31	037	01012101
32	040	01112011
33	041	01112011
34	042	01112000
35	043	01111020

OCTAL DATA
120
120
120
120
120
120
120
120
160
160
160
170
040
040
160
200
121
161
160
060
160
070
160
170
060
121
161
165
163
170
164
170

ROM PATTERN SPEC [redacted] 107

DEC PART NUM: 23-00361
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	01110000	160
37	045	01111000	170
38	046	01110000	160
39	047	01110000	160
40	050	01010000	120
41	051	01110000	160
42	052	01110000	160
43	053	01110000	160
44	054	01110000	160
45	055	01110000	160
46	056	01110000	160
47	057	01111000	170
48	060	01010001	121
49	061	01010001	121
50	062	00110000	060
51	063	00100000	040
52	064	01010001	121
53	065	01000101	105
54	066	01000101	105
55	067	01110000	160
56	070	01010001	121
57	071	01010001	121
58	072	00110000	060
59	073	00100000	040
60	074	01010001	121
61	075	01000001	101
62	076	01000001	101
63	077	01110000	160
64	100	01010001	121
65	101	00110000	060
66	102	01110000	160
67	103	01110000	160
68	104	01110000	160
69	105	01110000	160
70	106	01110011	163
71	107	01110000	160

ROM PATTERN SPEC [redacted] 108

DEC PART NUM: 23-00361
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	00110000	060
73	111	01110000	160
74	112	01010001	121
75	113	01110000	160
76	114	01110000	160
77	115	00110000	060
78	116	01110000	160
79	117	00110000	060
80	120	01110000	160
81	121	00111000	070
82	122	00110000	060
83	123	01111000	170
84	124	01110000	160
85	125	00110000	060
86	126	01010001	121
87	127	01000001	101
88	130	01110000	160
89	131	00111000	070
90	132	00110000	060
91	133	01111000	170
92	134	00110000	060
93	135	01111000	170
94	136	01010001	121
95	137	01110000	160
96	140	01110000	160
97	141	01110000	160
98	142	01110000	160
99	143	01110000	160
100	144	00110000	060
101	145	01010001	121
102	146	01000001	101
103	147	01110000	160
104	150	01110000	160
105	151	01110000	160
106	152	00110000	060
107	153	01110000	160

DEC PART NUMBER 23-003B1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	01113020	162
109	155	01113008	160
110	156	00111000	070
111	157	01113000	160
112	160	01012001	121
113	161	01012001	121
114	162	00113020	060
115	163	00112020	060
116	164	01012001	121
117	165	01012101	125
118	166	01012101	125
119	167	01112040	160
120	170	01012001	121
121	171	01012001	121
122	172	00112020	060
123	173	00112020	060
124	174	01012001	121
125	175	01113020	160
126	176	01112020	160
127	177	00113020	060
128	200	01113020	160
129	201	01112020	160
130	202	00113020	060
131	203	01111020	170
132	204	01012001	121
133	205	01113020	160
134	206	00112020	060
135	207	01112020	060
136	210	01012001	121
137	211	01113020	160
138	212	01012001	121
139	213	01112020	160
140	214	01113040	160
141	215	00113020	060
142	216	01112020	160
143	217	00112020	060

DEC PART NUMBER 23-003B1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	01113020	160
145	221	00111020	070
146	222	01113020	160
147	223	01111020	170
148	224	00113020	060
149	225	00103030	340
150	226	01110011	163
151	227	01110011	163
152	230	01113020	160
153	231	00111020	070
154	232	01113020	160
155	233	01111040	170
156	234	01113020	160
157	235	01014001	121
158	236	01113020	160
159	237	01113040	160
160	240	01012001	121
161	241	01:14020	160
162	242	01113020	160
163	243	00113020	060
164	244	01113020	160
165	245	00113020	060
166	246	01012001	121
167	247	01008101	105
168	250	01113020	160
169	251	00113020	060
170	252	01111020	170
171	253	01114020	160
172	254	01012001	121
173	255	01113020	160
174	256	01113020	160
175	257	00113020	060
176	260	01012041	121
177	261	01:14041	121
178	262	02113020	260
179	263	00113020	060

ROM PATTERN SPEC 111

DEC PART NUMBI 23-203B1
ORIGINATORI JOHN BLOEM
DATE OF ORIGINI 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	01010001	121
181	265	01000001	101
182	266	01000001	101
183	267	01110000	160
184	270	01010001	121
185	271	01010001	121
186	272	00110000	060
187	273	00100000	040
188	274	01010001	121
189	275	01000101	105
190	276	01000101	105
191	277	01110000	160
192	300	01010001	121
193	301	00110000	060
194	302	01110000	160
195	303	01010001	121
196	304	01110000	160
197	305	01110000	160
198	306	00110000	060
199	307	01110000	160
200	310	00110000	060
201	311	01010001	121
202	312	01111010	172
203	313	01110000	160
204	314	01010101	125
205	315	01110000	160
206	316	00110000	060
207	317	00110000	060
208	320	00100000	040
209	321	00100000	040
210	322	00110000	060
211	323	00110000	060
212	324	01010001	121
213	325	01110000	160
214	326	01100111	163
215	327	01110000	160

ROM PATTERN SPEC PAGE 1 OF 4 112

DEC PART NUMBI 23-203B1
ORIGINATORI JOHN BLOEM
DATE OF ORIGINI 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	01110000	160
217	331	00110000	060
218	332	00110000	060
219	333	01110000	160
220	334	01110000	160
221	335	01010001	121
222	336	11111011	373
223	337	00110000	060
224	340	01110000	160
225	341	01110000	160
226	342	01100111	147
227	343	01110000	160
228	344	01110000	160
229	345	01110000	160
230	346	00111100	074
231	347	01110000	160
232	350	01100111	147
233	351	01110000	160
234	352	01110000	160
235	353	01110000	160
236	354	01110000	160
237	355	00111000	070
238	356	01100000	140
239	357	01100111	147
240	360	01010001	121
241	361	01010001	121
242	362	00110000	060
243	363	00110000	060
244	364	01010001	121
245	365	01110000	160
246	366	01110010	162
247	367	01111000	170
248	370	01010000	120
249	371	01110000	160
250	372	11111110	376
251	373	11110000	360

ROM PATTERN SPEC

113

DEC PART NUMBR 23-00181
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	01010001	121
253	375	01110000	160
254	376	01110000	160
255	377	01012000	120

ROM PATTERN SPEC

114

DEC PART NUMBR 23-00181
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	00101111	057
1	001	00101111	057
2	002	00101111	057
3	003	00101111	057
4	004	00101111	057
5	005	00101111	057
6	006	00101111	057
7	007	00100011	043
8	010	00100011	043
9	011	00101111	057
10	012	00100011	043
11	013	00001010	012
12	014	00111100	074
13	015	00111001	071
14	016	00101110	056
15	017	00000100	004
16	020	00001010	012
17	021	00001010	012
18	022	00111001	071
19	023	00001010	012
20	024	00101111	057
21	025	00111001	071
22	026	00101010	052
23	027	00001010	012
24	030	00111001	071
25	031	00101111	057
26	032	00101010	052
27	033	00101111	057
28	034	00001010	012
29	035	00101111	057
30	036	00111001	071
31	037	00101111	057
32	040	00111001	071
33	041	00101111	057
34	042	00111001	071
35	043	00101111	057

ROM PATTERN SPEC [redacted] 115

DEC PART NUMBR 23-0644A
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	00111001	071
37	045	00101111	057
38	046	00111001	071
39	047	00101010	052
40	050	00101111	057
41	051	00111001	071
42	052	00101111	057
43	053	00111001	071
44	054	00101111	057
45	055	00111001	071
46	056	00101111	057
47	057	00101111	057
48	060	00101111	057
49	061	00101111	057
50	062	00100101	045
51	063	00100101	045
52	064	00101111	057
53	065	00101111	057
54	066	00101111	057
55	067	00101111	057
56	070	00101111	057
57	071	00101111	057
58	072	00100101	045
59	073	00100101	045
60	074	00101111	057
61	075	00101111	057
62	076	00101111	057
63	077	00101111	057
64	100	00101111	057
65	101	00001010	012
66	102	00111001	071
67	103	00101111	057
68	104	00111001	071
69	105	00101111	057
70	106	00111001	071
71	107	00101111	057

ROM PATTERN SPEC [redacted] 116

DEC PART NUMBR 23-0644B1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	00100101	045
73	111	00111001	071
74	112	00101111	057
75	113	00111001	071
76	114	00101010	052
77	115	00001010	012
78	116	00101010	052
79	117	00001010	012
80	120	00111001	071
81	121	00101111	057
82	122	00001010	012
83	123	00101111	057
84	124	00101010	052
85	125	00001010	012
86	126	00101111	057
87	127	00101111	057
88	130	00111001	071
89	131	00101111	057
90	132	00001010	012
91	133	00101111	057
92	134	00001010	012
93	135	00111001	071
94	136	00101111	057
95	137	00111001	071
96	140	00111001	071
97	141	00111001	071
98	142	00101010	052
99	143	00111001	071
100	144	00001010	012
101	145	00101111	057
102	146	00101111	057
103	147	00111001	071
104	150	00111001	071
105	151	00111001	071
106	152	00001010	012
107	153	00111001	071

ROM PATTERN SPEC

DEC PART NUMBER 23-8048A1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	00101111	057
109	155	00111001	071
110	156	00101111	057
111	157	00101111	057
112	160	00101111	057
113	161	00101111	057
114	162	00100101	045
115	163	00100101	045
116	164	00101111	057
117	165	00101111	057
118	166	00101111	057
119	167	00101111	057
120	170	00101111	057
121	171	00101111	057
122	172	00100101	045
123	173	00100101	045
124	174	00101111	057
125	175	00101111	057
126	176	00101111	057
127	177	00100101	045
128	200	00111001	071
129	201	00111001	071
130	202	00001010	012
131	203	00111001	071
132	204	00101111	057
133	205	00111001	071
134	206	00001010	012
135	207	00001010	012
136	210	00101111	057
137	211	00111001	071
138	212	00101111	057
139	213	00111001	071
140	214	00101010	052
141	215	00001010	012
142	216	00101010	052
143	217	00001010	012

ROM PATTERN SPEC

DEC PART NUMBER 23-8048A1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	00111001	071
145	221	00101111	057
146	222	00111001	071
147	223	00101111	057
148	224	00001010	012
149	225	00001010	012
150	226	00111001	071
151	227	00111001	071
152	230	00111001	071
153	231	00101111	057
154	232	00111001	071
155	233	00101111	057
156	234	00101111	057
157	235	00101111	057
158	236	00111001	071
159	237	00101010	052
160	240	00101111	057
161	241	00111001	071
162	242	00101010	052
163	243	00001010	012
164	244	00101010	052
165	245	00001010	012
166	246	00101111	057
167	247	00101111	057
168	250	00111001	071
169	251	00101010	052
170	252	00101111	057
171	253	00101111	057
172	254	00101111	057
173	255	00111001	071
174	256	00101010	052
175	257	00001010	012
176	260	00101111	057
177	261	00101111	057
178	262	00100101	045
179	263	00100101	045

ROM PATTERN SPEC

DEC PART NUMBR 23-804B1
ORIGINATOR: JOHN BLOOM
DATE OF ORIGIN: 12-MAY-75

OCTAL LOC	BINARY DATA	OCTAL DATA
180	00101111	057
181	00101111	057
182	00101111	057
183	00101111	057
184	00101111	057
185	00101111	057
186	00101111	057
187	00101111	057
188	00101111	057
189	00101111	057
190	00101111	057
191	00101111	057
192	00101111	057
193	00101111	057
194	00101111	057
195	00101111	057
196	00101111	057
197	00101111	057
198	00101111	057
199	00101111	057
200	00101111	057
201	00101111	057
202	00101111	057
203	00101111	057
204	00101111	057
205	00101111	057
206	00101111	057
207	00101111	057
208	00101111	057
209	00101111	057
210	00101111	057
211	00101111	057
212	00101111	057
213	00101111	057
214	00101111	057
215	00101111	057

ROM PATTERN SPEC

DEC PART NUMBR 23-804B1
ORIGINATOR: JOHN BLOOM
DATE OF ORIGIN: 12-MAY-75

OCTAL LOC	BINARY DATA	OCTAL DATA
216	00111001	071
217	00111001	071
218	00100101	045
219	00111001	071
220	00111001	071
221	00101111	057
222	00111001	071
223	00111001	071
224	00111001	071
225	00111001	071
226	00111001	071
227	00111001	071
228	00101111	057
229	00111001	071
230	00101111	057
231	00101111	057
232	00111001	071
233	00111001	071
234	00110111	067
235	00111001	071
236	00111001	071
237	00101111	057
238	00111001	071
239	00100101	045
240	00101111	057
241	00101111	057
242	00100101	045
243	00100101	045
244	00101111	057
245	00101111	057
246	00101111	057
247	00101111	057
248	00101111	057
249	00101111	057
250	00100101	045
251	00101111	057

ROM PATTERN SPEC PAGE 1 OF 2 121

DEC PART NUMBI 23-ØR4H1
ORIGINATORI JOHN BLOEM
DATE OF ORIGINI 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	10101111	257
253	375	10111101	275
254	376	10101111	257
255	377	10101111	257

ROM PATTERN SPEC PAGE 1 OF 2 122

DEC PART NUMBI 23-ØR5H1
ORIGINATORI JOHN BLOEM
DATE OF ORIGINI 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	00001010	012
1	001	00001010	012
2	002	00001010	012
3	003	00001010	012
4	004	00001010	012
5	005	00001010	012
6	006	00001010	012
7	007	01101110	156
8	010	01101110	156
9	011	01101110	156
10	012	01101110	156
11	013	01101110	156
12	014	01101110	156
13	015	01001011	113
14	016	00001111	017
15	017	00001111	017
16	020	00001000	010
17	021	00001000	010
18	022	00001000	010
19	023	00001000	010
20	024	00101110	056
21	025	00101110	056
22	026	00001000	010
23	027	01101011	153
24	030	01101111	157
25	031	11001110	316
26	032	00001010	012
27	033	11001110	316
28	034	01101011	153
29	035	00001000	010
30	036	00101110	056
31	037	00101110	056
32	040	00001010	012
33	041	11101111	157
34	042	01101111	157
35	043	11101111	357

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ROM PATTERN SPEC

DEC PART NUMBER 23-00501
ORIGINATOR JOHN ALDEN
DATE OF ORIGIN 12-MAY-75

OCTAL DATA	OCTAL LOC	BINARY DATA
157	044	01101111
357	045	11101111
157	046	01101111
153	047	01101011
212	050	00001010
012	051	00001010
157	052	01101111
212	053	00001010
157	054	01101111
212	055	00001010
157	056	01101111
210	057	00001000
153	060	01101011
153	061	01101011
010	062	00001000
010	063	00001000
010	064	00001000
010	065	00001000
010	066	00001000
010	067	00001000
153	070	01101011
153	071	01101011
002	072	00000010
002	073	00000010
002	074	00000010
002	075	00000010
002	076	00000010
002	077	00000010
010	100	00001000
010	101	00001000
153	102	01101011
156	103	01101110
022	104	00010010
153	105	01101011
052	106	00101010
052	107	00101010

ROM PATTERN SPEC

DEC PART NUMBER 23-00501
ORIGINATOR JOHN ALDEN
DATE OF ORIGIN 12-MAY-75

OCTAL DATA	OCTAL LOC	BINARY DATA
053	110	00101011
056	111	00101110
056	112	00101110
056	113	00101110
010	114	00001000
153	115	01101011
010	116	00001000
153	117	01101011
157	120	01101111
316	121	11001110
153	122	01101011
316	123	11001110
002	124	00000010
153	125	01101011
002	126	00000010
016	127	00001110
016	130	00001110
316	131	11001110
002	132	00000010
316	133	11001110
173	134	01111011
012	135	00001010
156	136	01101110
153	137	01101011
157	140	01101111
212	141	00001010
010	142	00001000
012	143	00001010
153	144	01101011
010	145	00001000
056	146	00101110
056	147	00101110
157	150	01101111
012	151	00001010
010	152	00001000
012	153	00001010

ROM PATTERN SPEC

DEC PART NUMBER 23-8058[illegible]
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	01101111	157
109	155	01101111	157
110	156	11001110	316
111	157	01101111	157
112	160	01101011	153
113	161	01101011	153
114	162	00001000	010
115	163	00001000	010
116	164	00001000	010
117	165	00001000	010
118	166	00001000	010
119	167	00001000	010
120	170	01101011	153
121	171	01101011	153
122	172	00001000	010
123	173	00001000	010
124	174	00001000	010
125	175	00001000	010
126	176	00001000	010
127	177	00101011	053
128	200	01101110	156
129	201	00001010	012
130	202	00101011	053
131	203	00001010	012
132	204	00101011	053
133	205	01101011	153
134	206	00101011	053
135	207	00101011	053
136	210	00101011	053
137	211	01101011	153
138	212	00101110	056
139	213	00101110	056
140	214	00001000	010
141	215	01101011	153
142	216	00001000	010
143	217	01101011	153

ROM PATTERN SPEC

DEC PART NUMBER 23-8058[illegible]
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	01101111	157
145	221	11001110	316
146	222	00101110	056
147	223	11001110	316
148	224	00001000	010
149	225	00001000	010
150	226	00001000	010
151	227	00001000	010
152	230	01101111	157
153	231	11001110	316
154	232	00001000	010
155	233	11001110	316
156	234	01101111	157
157	235	00001110	016
158	236	00001110	016
159	237	00000010	002
160	240	00101110	056
161	241	00101110	056
162	242	00001000	010
163	243	01101011	153
164	244	00001000	010
165	245	01101011	153
166	246	00001000	010
167	247	00101110	056
168	250	00101110	056
169	251	00000000	000
170	252	10001000	210
171	253	01101101	157
172	254	00101110	056
173	255	00101110	056
174	256	00001000	010
175	257	01101011	153
176	260	01101011	153
177	261	01101011	153
178	262	00001000	010
179	263	00001000	010

ROM PATTERN SPEC PAGE 127

DEC PART NUMBER 23-20581
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	00001000	010
181	265	00001000	010
182	266	00001000	010
183	267	00001000	010
184	270	01101011	153
185	271	01101011	153
186	272	00001000	010
187	273	00001000	010
188	274	00001000	010
189	275	00001000	010
190	276	00001000	010
191	277	00001000	010
192	300	00001000	010
193	301	00001000	010
194	302	01101011	153
195	303	00101110	056
196	304	00101110	056
197	305	00001000	010
198	306	01101011	153
199	307	00001000	010
200	310	01101011	153
201	311	00001000	010
202	312	11101111	357
203	313	01101111	157
204	314	00101110	056
205	315	00101110	056
206	316	00001000	010
207	317	00001000	010
208	320	00000010	002
209	321	00000010	002
210	322	01101110	156
211	323	00000010	002
212	324	01101110	156
213	325	00001010	012
214	326	00101011	053
215	327	01101011	153

ROM PATTERN SPEC PAGE 128

DEC PART NUMBER 23-20581
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	01101111	157
217	331	01001110	116
218	332	00101011	053
219	333	01001110	116
220	334	01101110	156
221	335	01101011	153
222	336	00101011	053
223	337	00001010	012
224	340	01101111	157
225	341	00001010	012
226	342	00101110	056
227	343	00001010	012
228	344	01101111	157
229	345	01101111	157
230	346	11001110	316
231	347	01101111	157
232	350	00001000	010
233	351	00001010	012
234	352	01101111	157
235	353	00001010	012
236	354	01101111	157
237	355	11001110	316
238	356	01101111	157
239	357	00001010	012
240	360	01101011	153
241	361	01101011	153
242	362	00001000	010
243	363	00001000	010
244	364	00001000	010
245	365	00001000	010
246	366	00001010	012
247	367	11001110	316
248	370	00000010	002
249	371	00001000	010
250	372	00001111	017
251	373	00001111	017

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ROM PATTERN SPEC

DEC PART NUMBR 23-P3881
ORIGINATOR: JOHN BLOFM
DATE OF ORIGIN: 12-MAY-78

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	10101011	253
253	375	\0001010	012
254	376	01101011	153
255	377	00007000	000

ROM PATTERN SPEC

DEC PART NUMBR 23-P3881
ORIGINATOR: JOHN BLOFM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	00111111	077
1	001	00111111	077
2	002	00110111	067
3	003	00110111	067
4	004	00101111	057
5	005	00101111	057
6	006	00100111	047
7	007	00100111	047
8	010	00111111	077
9	011	00111111	077
10	012	00110111	067
11	013	00110111	067
12	014	00101111	057
13	015	00101111	057
14	016	00100111	047
15	017	00100111	047
16	020	00011111	037
17	021	00011111	037
18	022	00010111	027
19	023	00010111	027
20	024	00001111	017
21	025	00001111	017
22	026	00000111	007
23	027	00000111	007
24	030	00011111	037
25	031	00011111	037
26	032	00010111	027
27	033	00010111	027
28	034	00001111	017
29	035	00001111	017
30	036	00000111	007
31	037	00000111	007
32	040	10111101	275
33	041	10111100	274
34	042	10110101	265
35	043	10110100	264

ROM PATTERN SPEC

DEC PART NUMBR 23-000B1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	10111101	275
37	045	10111100	274
38	046	10110101	265
39	047	10110100	264
40	050	10111101	275
41	051	10111101	275
42	052	10110101	265
43	053	10110101	265
44	054	10111101	275
45	055	10111101	275
46	056	10110101	265
47	057	10110101	265
48	060	10111101	275
49	061	10111100	274
50	062	10110101	265
51	063	10110100	264
52	064	10111101	275
53	065	10111100	274
54	066	10110101	265
55	067	10110100	264
56	070	10111101	275
57	071	10111101	275
58	072	10110101	265
59	073	10110101	265
60	074	10111101	275
61	075	10111101	275
62	076	10110101	265
63	077	10110101	265
64	100	10111011	273
65	101	10111100	274
66	102	10110011	263
67	103	10110100	264
68	104	10111011	273
69	105	10111100	274
70	106	10110011	263
71	107	10110100	264

ROM PATTERN SPEC

DEC PART NUMBR 23-000A1
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	10111011	273
73	111	10111101	275
74	112	10110011	263
75	113	10110101	265
76	114	10111011	273
77	115	10111101	275
78	116	10110011	263
79	117	10110101	265
80	120	10111011	273
81	121	10111100	274
82	122	10110011	263
83	123	10110100	264
84	124	10111011	273
85	125	10111100	274
86	126	10110011	263
87	127	10110100	264
88	130	10111011	273
89	131	10111101	275
90	132	10110011	263
91	133	10110101	265
92	134	10111011	273
93	135	10111101	275
94	136	10110011	263
95	137	10110101	265
96	140	10111001	271
97	141	10111100	274
98	142	10110001	261
99	143	10110100	264
100	144	10111001	271
101	145	10111100	274
102	146	10110001	261
103	147	10110100	264
104	150	10111001	271
105	151	10111101	275
106	152	10110001	261
107	153	10110101	265

DEC PART NUMBR 23-03681
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 16-DEC-74

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
109	154	10111001	271
109	155	10111101	275
113	156	10110001	261
111	157	10110101	265
112	160	10111001	271
113	161	10111100	274
114	162	10110001	261
115	163	10110100	264
116	164	10111001	271
117	165	10111100	274
118	166	10110001	261
119	167	10110100	264
120	170	10111001	271
121	171	10111101	275
122	172	10110001	261
123	173	10110101	265
124	174	10111001	271
125	175	10111101	275
126	176	10110001	261
127	177	10110101	265
128	200	10111111	277
129	201	10111100	274
130	202	10110111	267
131	203	10110100	264
132	204	10111111	277
133	205	10111101	275
134	206	10110111	267
135	207	10110101	265
136	210	10111111	277
137	211	10111101	275
138	212	10110111	267
139	213	10110101	265
140	214	10111111	277
141	215	10111101	275
142	216	10110111	267
143	217	10110101	265

DEC PART NUMBR 23-03681
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 16-DEC-74

ROM PATTERN SPEC

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	10111111	277
145	221	10111100	274
146	222	10110111	267
147	223	10110100	264
148	224	10111111	277
149	225	10111100	274
150	226	10110111	267
151	227	10110100	264
152	230	10111111	277
153	231	10111101	275
154	232	10110111	267
155	233	10110101	265
156	234	10111111	277
157	235	10111101	275
158	236	10110111	267
159	237	10110101	265
160	240	10111100	274
161	241	10111100	274
162	242	10110100	264
163	243	10110100	264
164	244	10111100	274
165	245	10111100	274
166	246	10110100	264
167	247	10110100	264
168	250	10111100	274
169	251	10111101	275
170	252	10110100	264
171	253	10110101	265
172	254	10111100	274
173	255	10111101	275
174	256	10110100	264
175	257	10110101	265
176	260	10111100	274
177	261	10111101	275
178	262	10110100	264
179	263	10110100	264

ROM PATTERN SPEC

DEC PART NUMBR 23-20561
DESIGNATOR: JOHN KLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	10111100	274
181	265	10111101	275
182	266	10111110	276
183	267	10111111	277
184	270	11000000	300
185	271	11000001	301
186	272	11000010	302
187	273	11000011	303
188	274	11000100	304
189	275	11000101	305
190	276	11000110	306
191	277	11000111	307
192	300	11001000	310
193	301	11001001	311
194	302	11001010	312
195	303	11001011	313
196	304	11001100	314
197	305	11001101	315
198	306	11001110	316
199	307	11001111	317
200	310	11010000	320
201	311	11010001	321
202	312	11010010	322
203	313	11010011	323
204	314	11010100	324
205	315	11010101	325
206	316	11010110	326
207	317	11010111	327
208	320	11011000	330
209	321	11011001	331
210	322	11011010	332
211	323	11011011	333
212	324	11011100	334
213	325	11011101	335
214	326	11011110	336
215	327	11011111	337

ROM PATTERN SPEC

DEC PART NUMBR 23-20561
DESIGNATOR: JOHN KLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	11100000	340
217	331	11100001	341
218	332	11100010	342
219	333	11100011	343
220	334	11100100	344
221	335	11100101	345
222	336	11100110	346
223	337	11100111	347
224	340	11101000	350
225	341	11101001	351
226	342	11101010	352
227	343	11101011	353
228	344	11101100	354
229	345	11101101	355
230	346	11101110	356
231	347	11101111	357
232	350	11110000	360
233	351	11110001	361
234	352	11110010	362
235	353	11110011	363
236	354	11110100	364
237	355	11110101	365
238	356	11110110	366
239	357	11110111	367
240	360	11111000	370
241	361	11111001	371
242	362	11111010	372
243	363	11111011	373
244	364	11111100	374
245	365	11111101	375
246	366	11111110	376
247	367	11111111	377
248	370	11001110	316
249	371	11111101	375
250	372	11111011	373
251	373	11110101	365

ROM PATTERN SPEC. [redacted] 137

DEC PART NUMBR 23-00881
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	11101100	354
253	375	11111101	375
254	376	11110101	365
255	377	11111101	365

ROM PATTERN SPEC [redacted] 138

DEC PART NUMBR 23-00781
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	000	00100111	047
1	001	00100111	047
2	002	00100111	047
3	003	00100111	047
4	004	00000000	000
5	005	00000000	000
6	006	00000000	000
7	007	00000000	000
8	010	00000000	000
9	011	00000000	000
10	012	00000000	000
11	013	00000000	000
12	014	00000000	000
13	015	00000000	000
14	016	00000000	000
15	017	00000000	000
16	020	00100111	047
17	021	00011101	035
18	022	00100111	047
19	023	00011101	035
20	024	00000000	000
21	025	00000000	000
22	026	00000000	000
23	027	00000000	000
24	030	00000000	000
25	031	00000000	000
26	032	00000000	000
27	033	00000000	000
28	034	00000000	000
29	035	00000000	000
30	036	00000000	000
31	037	00000000	000
32	040	11111101	375
33	041	11111101	375
34	042	10111101	275
35	043	10111101	275

ROM PATTERN SPEC

DEC PART NUMBR 23-00781
ORIGINATOR: JOHN BLEOM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	00004000	000
37	045	00000000	000
38	046	00000000	000
39	047	00000000	000
40	050	00000000	000
41	051	00000000	000
42	052	00000000	000
43	053	00000000	000
44	054	00000000	000
45	055	00000000	000
46	056	00000000	000
47	057	00000000	000
48	060	10111101	275
49	061	10111101	275
50	062	10111101	275
51	063	10111101	275
52	064	00000000	000
53	065	00000000	000
54	066	00000000	000
55	067	00000000	000
56	070	00000000	000
57	071	00000000	000
58	072	00000000	000
59	073	00000000	000
60	074	00000000	000
61	075	00000000	000
62	076	00000000	000
63	077	00000000	000
64	100	01100100	144
65	101	00100110	046
66	102	01100100	144
67	103	00100110	046
68	104	00000000	000
69	105	00000000	000
70	106	00000000	000
71	107	00000000	000

ROM PATTERN SPEC

DEC PART NUMBR 23-00781
ORIGINATOR: JOHN BLEOM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	00000000	000
73	111	00000000	000
74	112	00000000	000
75	113	00000000	000
76	114	00000000	000
77	115	00000000	000
78	116	00000000	000
79	117	00000000	000
80	120	01001111	117
81	121	00100001	041
82	122	01001111	117
83	123	00100001	041
84	124	00000000	000
85	125	00000000	000
86	126	00000000	000
87	127	00000000	000
88	130	00000000	000
89	131	00000000	000
90	132	00000000	000
91	133	00000000	000
92	134	00000000	000
93	135	00000000	000
94	136	00000000	000
95	137	00000000	000
96	140	00100111	047
97	141	00100111	047
98	142	00100111	047
99	143	00100111	047
100	144	00000000	000
101	145	00000000	000
102	146	00000000	000
103	147	00000000	000
104	150	00000000	000
105	151	00000000	000
106	152	00000000	000
107	153	00000000	000

ROM PATTERN SPEC PAGE 1 OF 4. 141

DEC PART NUMBR 23-03781
ORIGINATOR: JOHN BLEOM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	00032000	000
109	155	00000000	000
110	156	00000000	000
111	157	00020000	000
112	160	00100111	047
113	161	00100111	047
114	162	00100111	047
115	163	00100111	047
116	164	00002000	000
117	165	00000000	000
118	166	00000000	000
119	167	00000000	000
120	170	00000000	000
121	171	00000000	000
122	172	00000000	000
123	173	00002000	000
124	174	00000000	000
125	175	00000000	000
126	176	00000000	000
127	177	00000000	000
128	200	00100111	047
129	201	00100111	047
130	202	00100111	047
131	203	00100111	047
132	204	00000000	000
133	205	00000000	000
134	206	00000000	000
135	207	00000000	000
136	210	00000000	000
137	211	00000000	000
138	212	00000000	000
139	213	00000000	000
140	214	00000000	000
141	215	00000000	000
142	216	00000000	000
143	217	00000000	000

ROM PATTERN SPEC PAGE 2 OF 4. 142

DEC PART NUMBR 23-03781
ORIGINATOR: JOHN BLEOM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	00100111	047
145	221	00100111	047
146	222	00100111	047
147	223	00100111	047
148	224	00000000	000
149	225	00000000	000
150	226	00000000	000
151	227	00000000	000
152	230	00000000	000
153	231	00000000	000
154	232	00000000	000
155	233	00000000	000
156	234	00000000	000
157	235	00000000	000
158	236	00000000	000
159	237	00000000	000
160	240	00100111	047
161	241	00100111	047
162	242	00100111	047
163	243	00100111	047
164	244	00000000	000
165	245	00000000	000
166	246	00000000	000
167	247	00000000	000
168	250	00000000	000
169	251	00000000	000
170	252	00000000	000
171	253	00000000	000
172	254	00000000	000
173	255	00000000	000
174	256	00000000	000
175	257	00000000	000
176	260	00100111	047
177	261	00100111	047
178	262	00100111	047
179	263	00100111	047

225

ROM PATTERN SPEC [illegible] 193

DEC PART NUMBR 23-20781
ORIGINATOR: JOHN BLEDW
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	00000000	000
181	265	00000000	000
182	266	00000000	000
183	267	00000000	000
184	270	00000000	000
185	271	00000000	000
186	272	00000000	000
187	273	00000000	000
188	274	00000000	000
189	275	00000000	000
190	276	00000000	000
191	277	00000000	000
192	300	11000100	304
193	301	01100000	140
194	302	11000100	304
195	303	00100001	041
196	304	00000000	000
197	305	00000000	000
198	306	00000000	000
199	307	00000000	000
200	310	00000000	000
201	311	00000000	000
202	312	00000000	000
203	313	00000000	000
204	314	00000000	000
205	315	00000000	000
206	316	00000000	000
207	317	00000000	000
208	320	00100111	047
209	321	10101101	255
210	322	00100110	046
211	323	10101101	255
212	324	00000000	000
213	325	00000000	000
214	326	00000000	000
215	327	00000000	000

ROM PATTERN SPEC [illegible] 194

DEC PART NUMBR 23-20781
ORIGINATOR: JOHN BLEDW
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	00000000	000
217	331	00000000	000
218	332	00000000	000
219	333	00000000	000
220	334	00000000	000
221	335	00000000	000
222	336	00000000	000
223	337	00000000	000
224	340	00100111	047
225	341	00100111	047
226	342	00100111	047
227	343	00100111	047
228	344	00000000	000
229	345	00000000	000
230	346	00000000	000
231	347	00000000	000
232	350	00000000	000
233	351	00000000	000
234	352	00000000	000
235	353	00000000	000
236	354	00000000	000
237	355	00000000	000
238	356	00000000	000
239	357	00000000	000
240	360	00100111	047
241	361	00100111	047
242	362	00100111	047
243	363	00100111	047
244	364	00000000	000
245	365	00000000	000
246	366	00000000	000
247	367	00000000	000
248	370	00000000	000
249	371	00000000	000
250	372	00000000	000
251	373	00000000	000

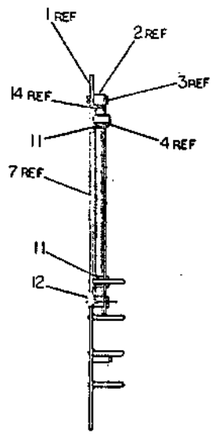
ROM PATTERN SPEC

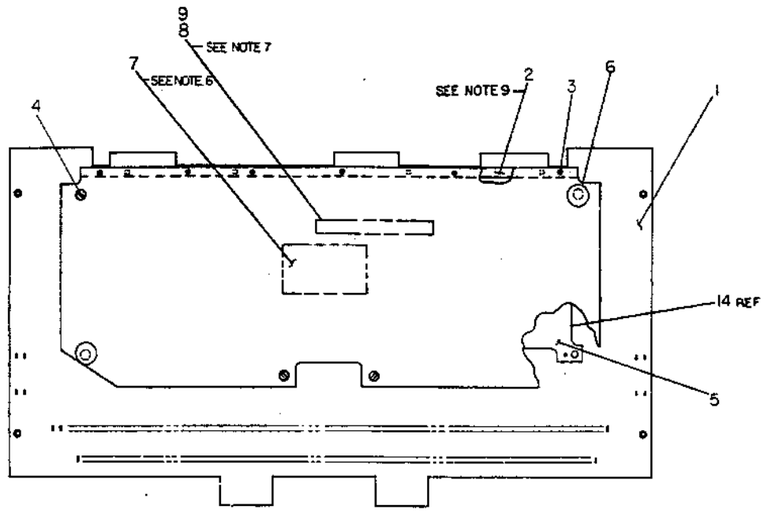
DEC PART NUMB: 23-00781
ORIGINATOR: JOHN BLEOM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	00000000	000
253	375	00000000	000
254	376	00000000	000
255	377	00000000	000

377

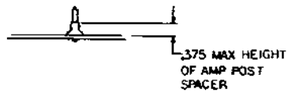
Pages 278-303 Missing From Original Document

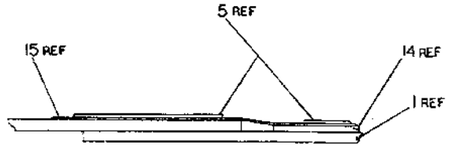


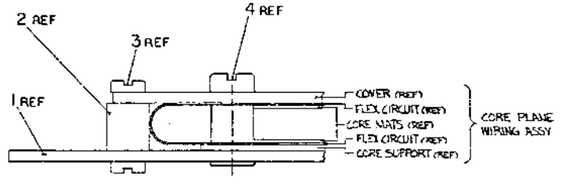


NOTES:

1. BOND CORE PLANE ASS'Y (ITEM NO. 5) TO THE STACK BD. (ITEM NO. 1) WITH ADHESIVE (ITEM NO. 10).
2. INSTALL THREADED CAMBION SPACERS (ITEM NOS. 11 AND 12) THRU STACK BOARD (ITEM NO. 1) AND CLINCH IN PLACE.
3. USE PROTECTIVE COATING (ITEM NO. 13) TO COAT ALL MAGNETIC WIRE TERMINATIONS AFTER ELECTRICAL TEST. REF DWG. E-EA-A013707-0-0
4. CLOSE COVER (PARTS OF ITEM NO. 8) AND SECURE STIFFENER SPACER (ITEM NO. 2) TO STACK BOARD (ITEM NO. 1) WITH FOUR #6 2-56 SCREWS (ITEM NO. 3.)
5. SECURE COVER TO STIFFENER SPACER (ITEM NO. 2) WITH SIX #6 2-56 SCREWS (ITEM NO. 3) AND TO CAMBION SPACERS (ITEM NO. 11 & 12) WITH 6 #6 4-40 SCREWS (ITEM NO. 4)
6. APPLY NAME PLATE (ITEM NO. 7) TO SIDE 2 OF STACK BOARD (ITEM NO. 1) APPROXIMATELY WHERE SHOWN.
7. LABEL STACK BOARD (ITEM NO. 1) ON SIDE 2 WITH THE DEC PART NUMBER SEQUENTIAL SERIAL NUMBER, C.S. REVISION USING INK (ITEM NO. 9) AND EPOXY (ITEM NO. 8) EXAMPLE H228-B- 001.
8. PLACE WARRANTY SEALS (ITEM NO. 6) OVER SCREW HEADS AS SHOWN.
9. STIFFENER SPACER (ITEM NO. 2) ORIENTATION MARK SHOULD BE PLACED ON THIS END.







QTY	DESCRIPTION	PART NO.	ITEM NO.
1	FLEX CIRCUIT ASSY (324-SPC)	70-0541-00 C 01-0-0	15
1	ZBLAT CORE (324-SPC)	70-0541-00-0	14
AR	INSULATIVE COATING AND (7163)	9310043	13
2	STANDOFF COAXIAL 4-40	9310127-01	12
6	STANDOFF COAXIAL 2-56	9310127-00	11
AR	ADHESIVE (RTV 3145)	1601236-00	10
AR	INK, BLACK	4900884-00	9
AR	EPOXY	4901082-00	8
1	NAME PLATE	3614053-00	7
2	WARRANTY SEAL	3613970-00	6
1	CORE PLANE WIRING ASSY	5434-0101107-0-0	5
6	SCR, SLT TRUSS HD, NYLON #4-40	9310233-4	4
10	SCR, SLT TRUSS HD, NYLON #2-56	9310233-2	3
1	STIFFENER SPACER (324-SPC)	70-0541-00-0-0	2
1	STACK BOARD (324-SPC)	70-0541-00-0-0	1

QUANTITY & VARIATION			
PARTS LIST			

MMI-TP

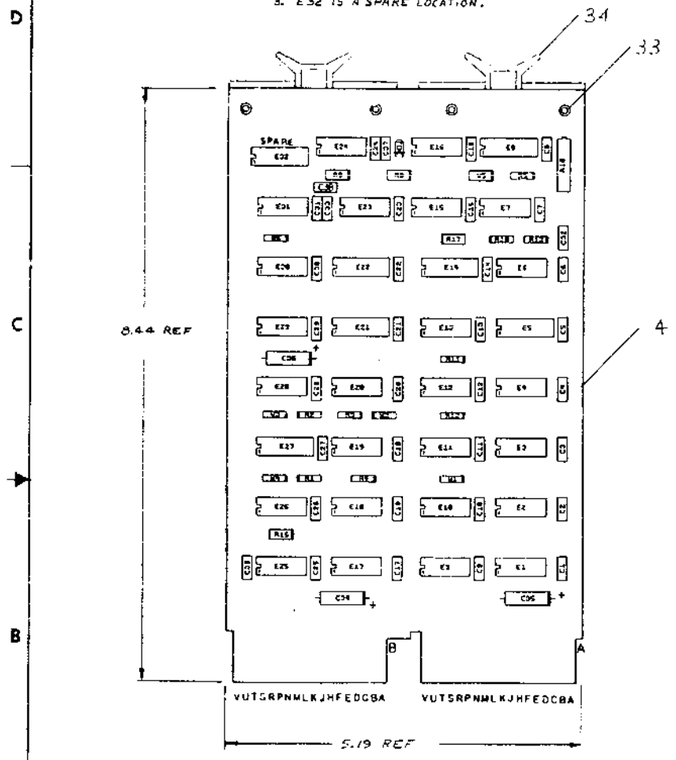
Title H228-B
CORE MEMORY
STACK ASSEMBLY

SIZE B | CODE 04111 | H228-B-0 | REV.

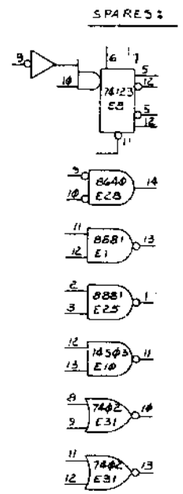
304

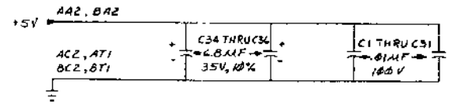
NOTES:

1. ALL RESISTORS 1/4 W. 5% UNLESS OTHERWISE NOTED.
   ALL CAPACITORS ARE 100V, 20% UNLESS OTHERWISE NOTED.
2. JUMPER CONTROL OPERATIONS IS FOLLOWS:
   W1 THRU W4 SELECT CSR ADDRESS, W5 CAPACITOR FOR 5 SYN DLY, NOT USED.
3. E32 IS A SPARE LOCATION.



SPARES:





REF				REF
REF		CIRCUIT SCHEMATIC	D CS-M7850-0-1	REF
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7850-0-6	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH M7850-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7850-0-6	3
1		ETCHED CIRCUIT BOARD	5010651-00	4
1	C39	CAP 470 PF, 100V, 5% (DM)	1000024-00	5
2	C33, C37	CAP 330 PF, 100V, 5% (DM)	1000023-00	6
32	C1 THRU C32	CAP .01 MF, 100 V, 20% DISC	1001610-01	7
3	C34, C35, C36	CAP 6.8 MF, 35 V, 10% STANT	1005306-00	8
1	D1	DIODE, LED	1110324-00	9
5	R1 THRU R5	RES 4.7K 1/4W 5%	1300447-00	10
3	R8, R9, R15	RES 100 1/4W 5%	1300229-00	11
5	R6, R10, R11, R12, R17	RES 470 1/4W 5%	1300316-00	12
1	R13	RES 1K 1/4W 5%	1300365-00	13
1	R16	RES 10K 3/4W 2% (1% PERF)	1303143-10	14
1	E24	I.C. 7400	1905525-00	15
1	E30	I.C. 7430	1905578-00	16
1	E31	I.C. 7402	1909004-00	17
1	E19	IC. 314A	1909704-00	18
1	E23	IC. 7408	1910155-00	19
4	E1, E9, E17, E25	IC. 8881	1909705-00	20
1	E16	I.C. 74H04	1909931-00	21
1	E27	I.C. 7485	1910224-00	22
1	E8	I.C. 74123	1910436-00	23
1	E10	I.C. 74S03	1910533-00	24
1	E15	I.C. 74S74	1910544-00	25
1	E21	I.C. 74174	1910652-00	26
2	E5, E22	I.C. 74157	1910655-00	27
9	E2, E3, E11, E12, E18 E20, E26, E28, E29	I.C. 8640	1911469-00	28
2	E4, E13	I.C. 74S280	1911573-00	29
1	E14	I.C. 8266	1909934-00	30
2	E6, E7	I.C. 7474	1905547-00	31
4	W1 THRU W4	INSULATED JUMPER	9009185-00	32
4		EYELET	9006732-00	33
2		HANDLE, FLIP-CHIP (MAGENTA)	9008337-6	34

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

IC TYPE	GND	+5V
8640	1	8
8266	8	16
74151	8	16
74174	8	16
74123	8	16
7485	8	16
314A	1	8

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

IC PIN LOCATIONS

SEMICONDUCTOR CONVERSION CHART

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

FIRST USED ON OPTION MODEL

ETCH BOARD REV B

REVISIONS			
REV.	CHANGE NO.	CHK	
A	M7850-0-0001	J.MANTON	5/15/75

DRN W.LUFKIN DATE 2-5-75
CHK'D DATE 2/19/75
ENG. DATE 2/19/75
PROJ. ENG. DATE 2/19/75
APPD DATE 2-19-75

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 3

digital

TITLE PARITY MODULE

SIZE D | CODE DCS | NUMBER M7850-0-1 | REV. B

DIST.

PM3 PAR ERR (1) L
PM3 D15 H
PM3 CLK CSR H
PM3 INIT L
7474 E7
R17 470
D1 LED
+5V
PM2 CSR15 (1) H
CSR 15 (0) H

BUS A17 L BS1 — 8640 E29 — A17 H
BUS A16 L BS2 — 8640 E29 — A16 H
BUS A15 L BR1 — 8640 E29 — A15 H
BUS A14 L BR2 — 8640 E29 — A14 H
BUS A13 L BP1 — 8640 E28 — A13 H
BUS A12 L BP2 — 8640 E28 — A12 H
BUS A11 L BN1 — 8640 E28 — A11 H
BUS A10 L BN2 — 8640 E18 — A09 H
BUS A09 L BM1 — 8640 E18 — A08 H
BUS A08 L BM2 — 8640 E18 — A07 H
BUS A07 L BL1 — 8640 E18 — A06 H
BUS A06 L BL2 — 8640 E18 — A05 H
BUS A05 L BK1 — 8640 E18 — A04 H
BUS A04 L BK2 — 8640 E26 — A03 H
BUS A03 L BJ1 — 8640 E26 — A02 H
BUS A02 L BJ2 — 8640 E26 — A01 H
BUS A01 L BH1 — 8640 E26 — A00 H

7430 E36
314A E19

A17 H, PM3 DI1 H, A16 H, PM3 DI0 H, A15 H, PM3 DI9 H, A14 H, PM3 DI8 H → 74157 E22 (A0 B1 A1 B3 A3 B2 A2 STB S0; Q0 Q1 Q3 Q2) → DIR 11, DIR 10, DIR 09, DIR 08, DIR 07, DIR 06
SEL DATA L
74174 E21 (D3 D2 D4 D0 D1 D5; CLR CLK) → PM2 ER A17 H, PM2 ER A16 H, PM2 ER A15 H, PM2 ER A14 H, PM2 ER A13 H, PM2 ER A12 H
PM3 CLK ADRS H

A11 H, PM3 DI5 H, A15 H, PM3 DI7 H, A12 H, PM3 DI6 H → 74157 E5 (B3 A3 B0 A0 B1 A1 B2 A2 STB S0; Q3 Q0 Q1 Q2) → DIR 05, DIR 04, DIR 03, DIR 02
PM3 V H
DIR 05 → 7474 E7 → PM2 ER A11 H
PM3 CLK ADRS H
PM3 DI2 H → 7474 E6 → PM2 CSR 2 (1) H (WRITE WRONG PARITY)
PM3 CLK CSR H
PM3 INIT L
PM3 DI0 H → 7474 E6 → PM2 CSR 0 (1) H (ERR IND ENAB)
PM3 CLK CSR H

ADRS 3 SEL 2 H
7485 E27 (B3 A3 B2 A2 B1 A1 B0 A0; A>B A=B A<B; IN> IN= IN<)
PM3 VH
7400 E24
7402 E31 → PM2 CSR ADRS SEL H
ADRS SEL 1 H
+5V
R4 4.7K, R3 4.7K, R2 4.7K, R1 4.7K
W1 A01, W2 A02, W3 A03, W4 A04

PM3 PAR ERR (1) L
PM3 DATIP L
7402 E31
8881 E25
ETCH CUT, SIGNAL NOT USED
BA1
DATIP CLR PAUSE L

BUS C0 L BU2 — 8640 E23 — PM2 C0 H

NOTES:

THE CSR REGISTER ADDRESS IS LOCATED BETWEEN 772100 AND 772136. IT IS SELECTED WITH JUMPERS W1 THRU W4. REMOVING A JUMPER SELECTS A "ONE" FOR THAT BIT POSITION. (#)

MACHINE ADDRESS (MOMCS3) 8	W4 A4	W3 A3	W2 A2	W1 A1
772140	IN	IN	IN	IN
772142	IN	IN	IN	OUT
772144	IN	IN	OUT	IN
772146	IN	IN	OUT	OUT
772110	IN	OUT	IN	IN
772112	IN	OUT	IN	OUT
772114	IN	OUT	OUT	IN
772116	IN	OUT	OUT	OUT
772120	OUT	IN	IN	IN
772122	OUT	IN	IN	OUT
772124	OUT	IN	OUT	IN
772126	OUT	IN	OUT	OUT
772130	OUT	OUT	IN	IN
772132	OUT	OUT	IN	OUT
772134	OUT	OUT	OUT	IN
772136	OUT	OUT	OUT	OUT

THE "A" INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW. (##)

REVISIONS		
DWR	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM2)	D	DCS	M7850-0-.	B
SCALE	SHEET 2 OF 3		DIST.	

DRAWING DCS M7850-0-1 SHEET B

306

NOTES:
* B INPUTS SELECTED WHEN SEL IS LOW (0)
** SET R16 TO 110 NSEC ± 10NS FROM SIGNAL ON PIN BE1 GOING LOW TO SIGNAL ON PIN BB2 GOING HIGH. (@ 1.5V LEVEL) (* *)

PM2 CSR 15 (1) H
BUS DØ4 L
BUS DØ3 L
BUS DØ2 L
PM2 ER A17 H
PM2 ER A16 H
PM2 ER A15 H
PM2 ER A14 H
PM2 ER A13 H
PM2 ER A12 H
PM2 ER A11 H
BUS DØ4 L
BUS DØ3 L
PM2 CSR 2(0) H
BUS DØ1 L
PM2 CSR Ø(1) H
PM3 READ SEL H
BUS DØ5 L
BUS DØ1 L
BUS DØØ L
BUS DØ7 L
BUS DØ6 L
BUS DØ5 L
BUS DØ4 L
BUS DØ3 L
BUS DØ2 L
BUS DØ1 L
BUS DØØ L
PM3 DØ5 H
PM3 DØ4 H
PM3 DØ3 H
PM3 DØ2 H
PM3 DØ1 H
PM3 DØØ H
PM3 8 BIT GEN H
PM3 A BIT GEN H
PM3 C1 H
PM3 C1 L
PM3 PAR ERR H
PM3 PAR ERR(1) H
PM3 INT SSYN H
PM3 INT SSYN L
PM3 M SYN PULSE L
PM3 VH
PM3 INIT L
PM3 8 BIT GEN H
PM3 A BIT GEN H
PM3 DATIP L
PM3 C1 L
PM3 PAR ERR(1) H
PM3 PAR ERR(1) L
BUS SSYN L
BUS INIT L
BUS C1 L
BUS M SYN L
PM2 CSR ADRS SEL H
PM3 READ SEL H
PM3 CLK CSR H
PM3 CLK ADRS H
PM3 PAR ERR (1) L
S SYNC INH Ø H
ERRCLR INH L
S SYN DLY (Ø) H
INT BUS PA L
INT BUS PB L
INT BUS PMR MOD DET L
+5V
R5 4.7K
R6 47Ø
R9 16Ø
R10 13Ø
R11 42Ø
R12 42Ø
R13 1K
R16 10K
C37 35Ø PF 5%
C38 .01 UF
C39 47Ø PF 5%
C93 33ØPF 5%

REVISIONS		
CHK	CHANGE NO.	REV.

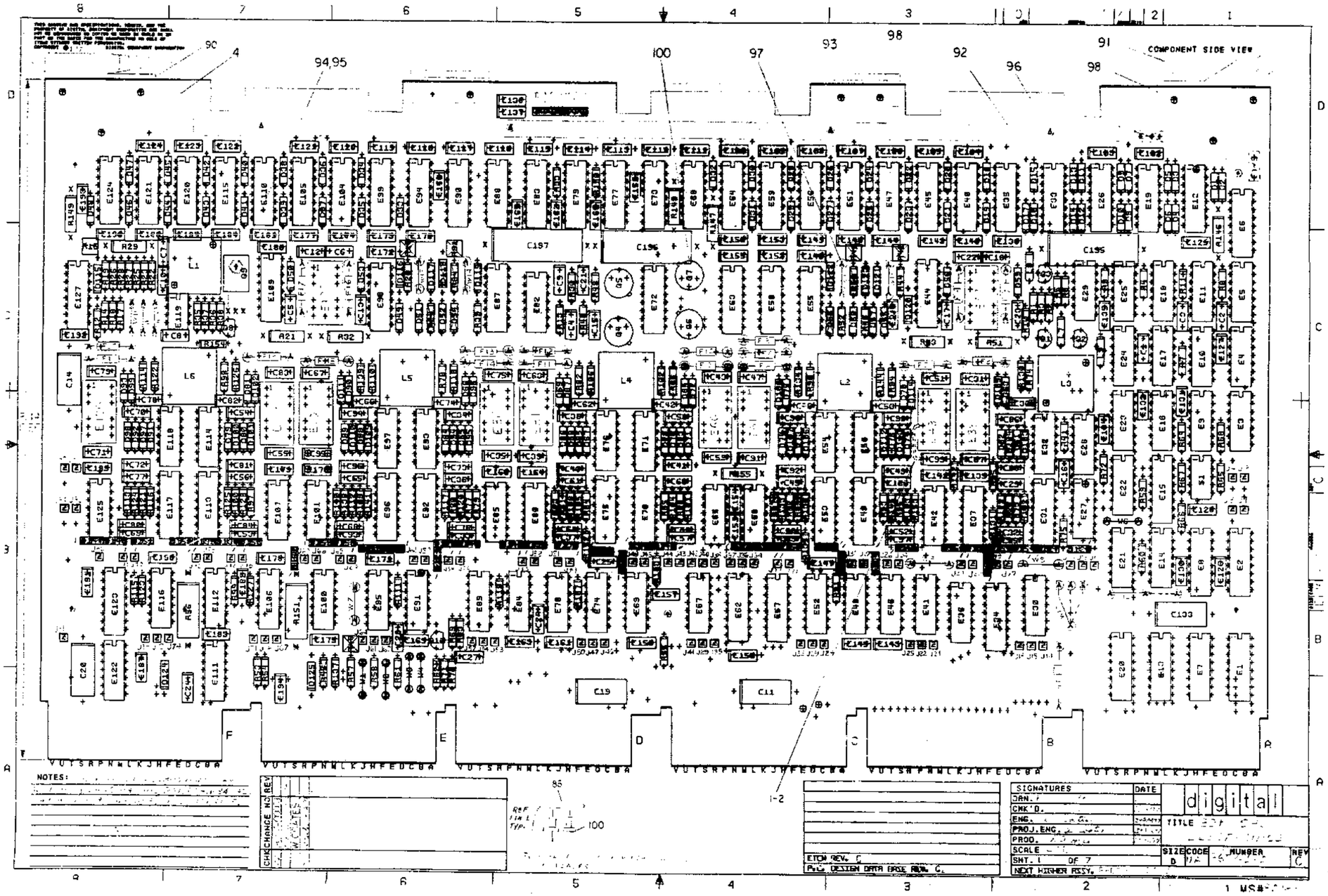
TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM3)	D	DCS	M7850-Ø-1	B
SCALE	SHEET 3 OF 3	DIST		

369

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
102	102		1305128-00	5.62 K 1/4W 1% RN55D-F 100PPM (13-00	1	R33
103	103		1300249-00	150 1/2W 5% CC (13-00	2	R147,R149
104	104		1300247-00	120 1/4W 5% CC (13-00	1	R39
105	105		1303178-00	620 1/4W 5% CC (13-00	1	R46
106	106		1110836-00	1N 759A VZ= 12.0 5% .40W P	1	D120
107	107	SEE NOTE 109	1001610-00	.01 MFD 50V Z5U 309CER/8000PF MIN	110	C4,C7,C9,C10,C15,C21,C24,C25,
					CONT	C27,C29,C32,C33,C36,C37,C40,
					CONT	C41,C44,C45,C48,C49,C56,C57,
					CONT	C60,C61,C64,C65,C68,C69,C72,
					CONT	C73,C76,C77,C80,C81,C84,C85,
					CONT	C88,C89,C92,C93,C96,C97,C100,
					CONT	C52,C53,C126,C128,C130-C132,
					CONT	C134,C135,C138-C166,C168-C192,
					CONT	C194,C210,C127,C129
108	108		9105740-55	WIRE(WRAP)30AWG UL1423 (91-00	A/R	

109 NOTE: 10-01610-01 CAN BE USED IN PLACE OF 10-01610-00

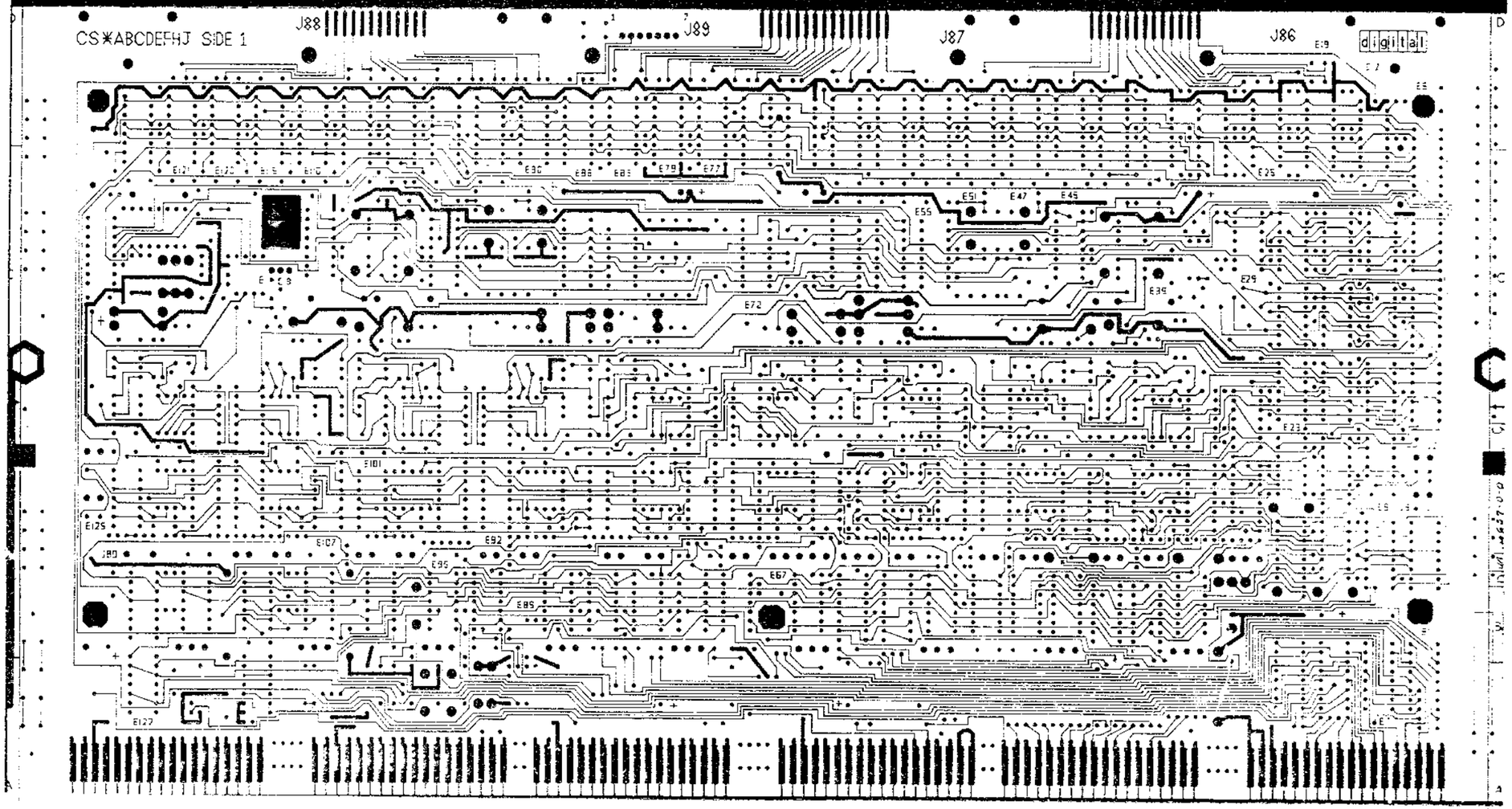
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE PARTS LIST 32K SPC ELECTRONICS	SIZE K	CODE PL	DOCUMENT NUMBER G657-0-0BP	REV C


COMPONENT SIDE VIEW
NOTES:
digital
SIGNATURES
DATE
DRN.
CHK'D.
ENG.
PROJ.ENG.
PROD.
SCALE
SHT. 1 OF 7
NEXT HIGHER ASSY.
SIZE
CODE
NUMBER
REV
D
C
ETCH REV. C
PCB DESIGN DATA BASE REV. C

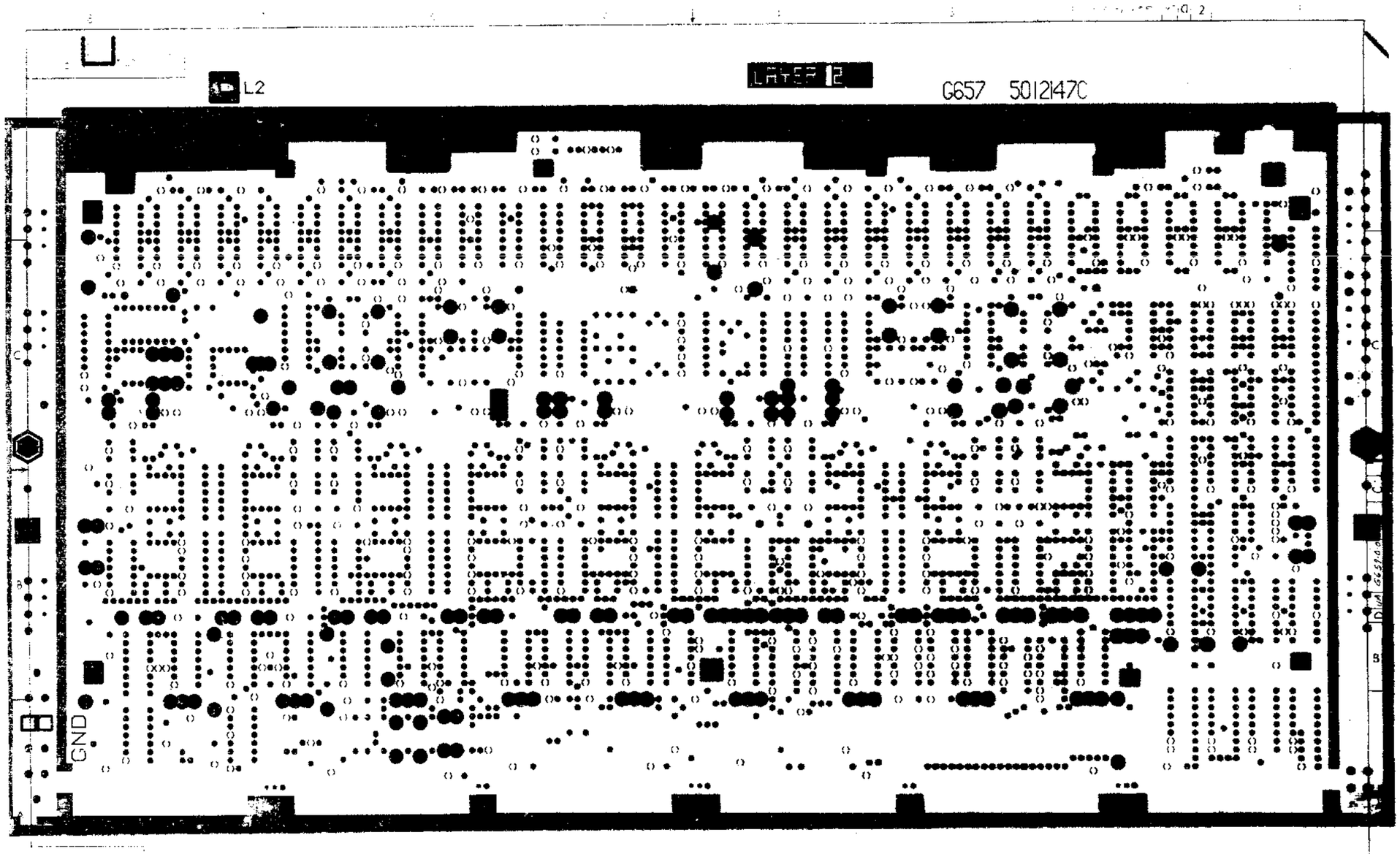
LAYER 1

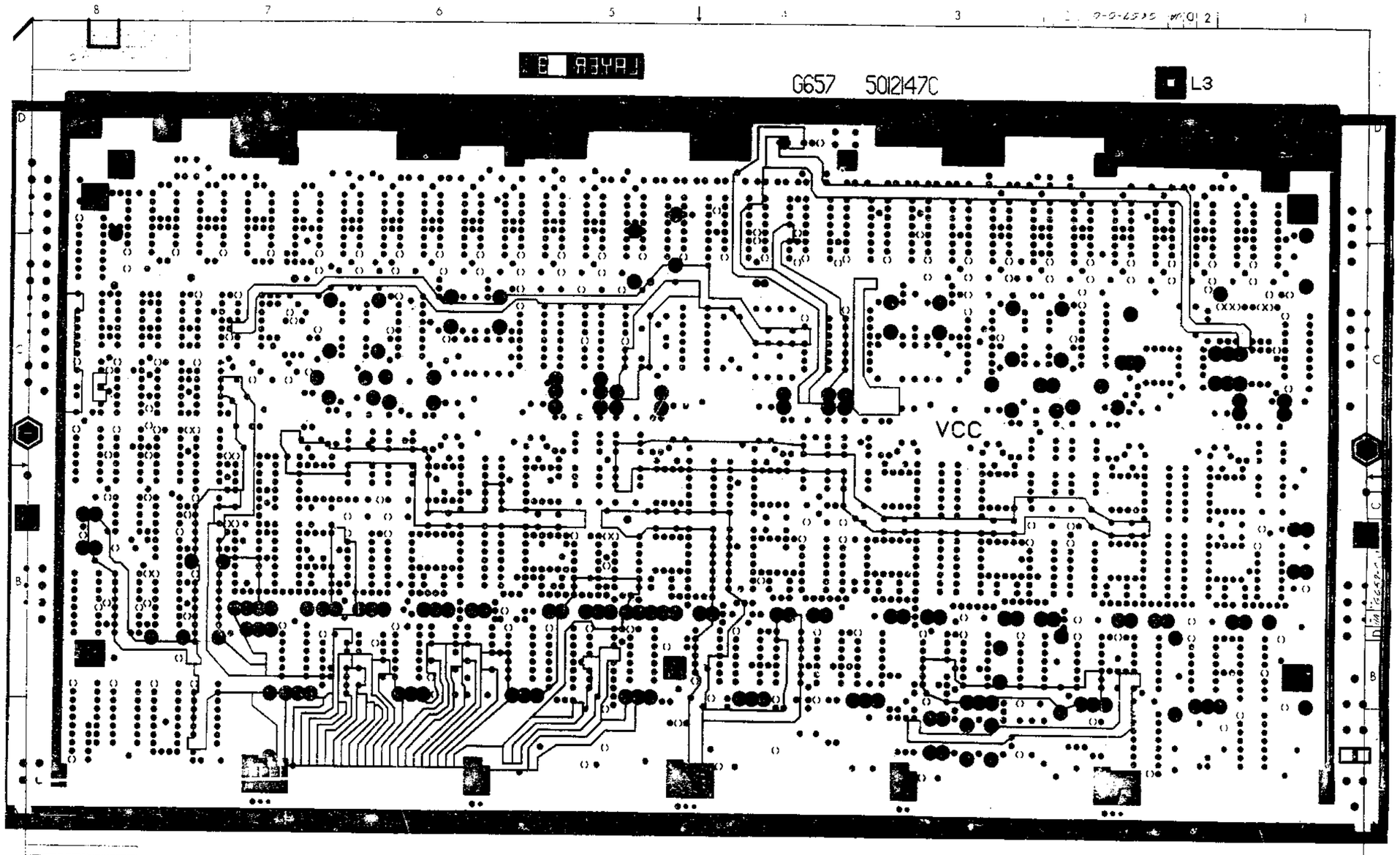
32K SPC ELECTRONICS 5012147C 0657

CS*ABCDEFHJ SIDE 1

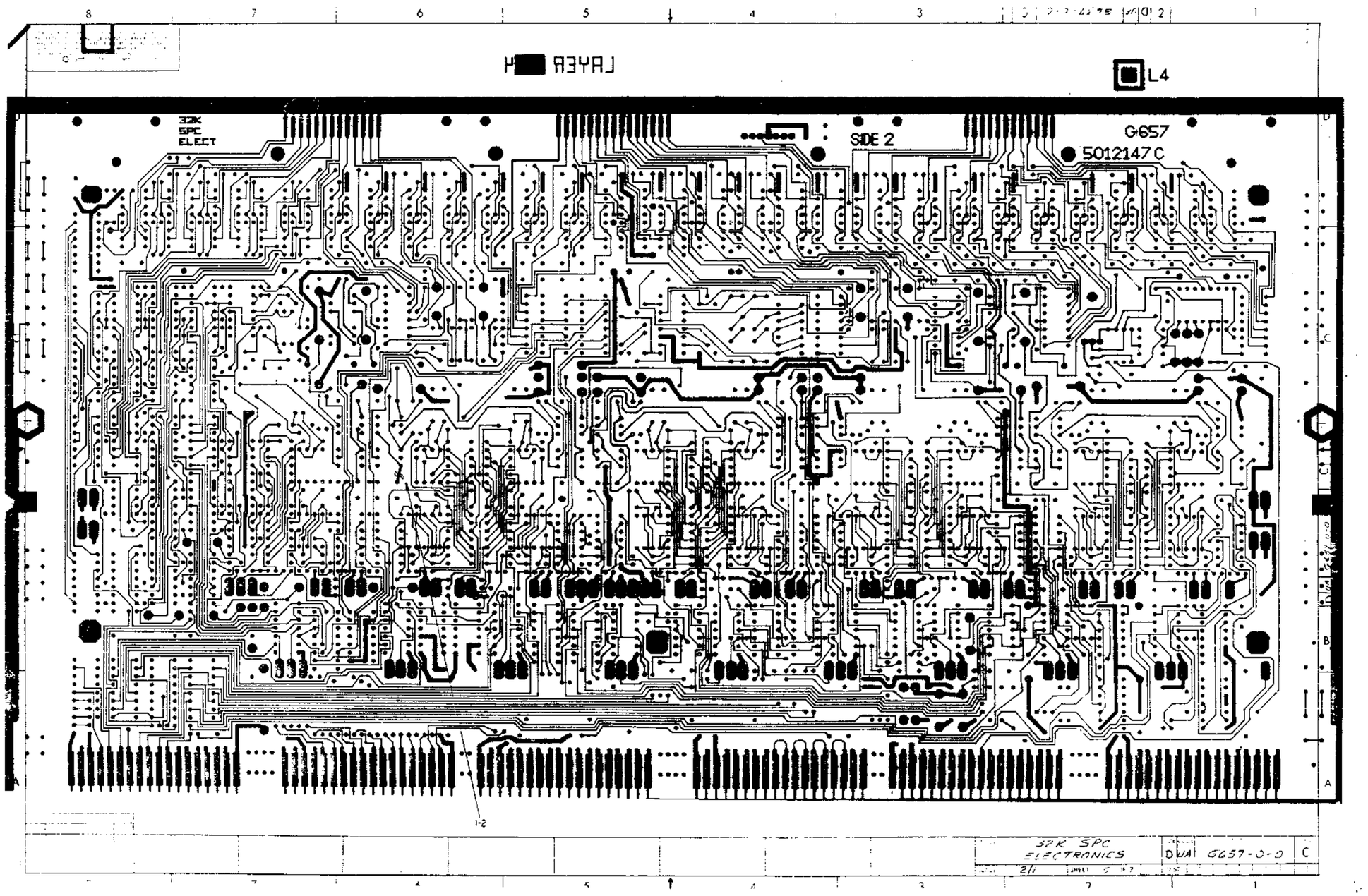


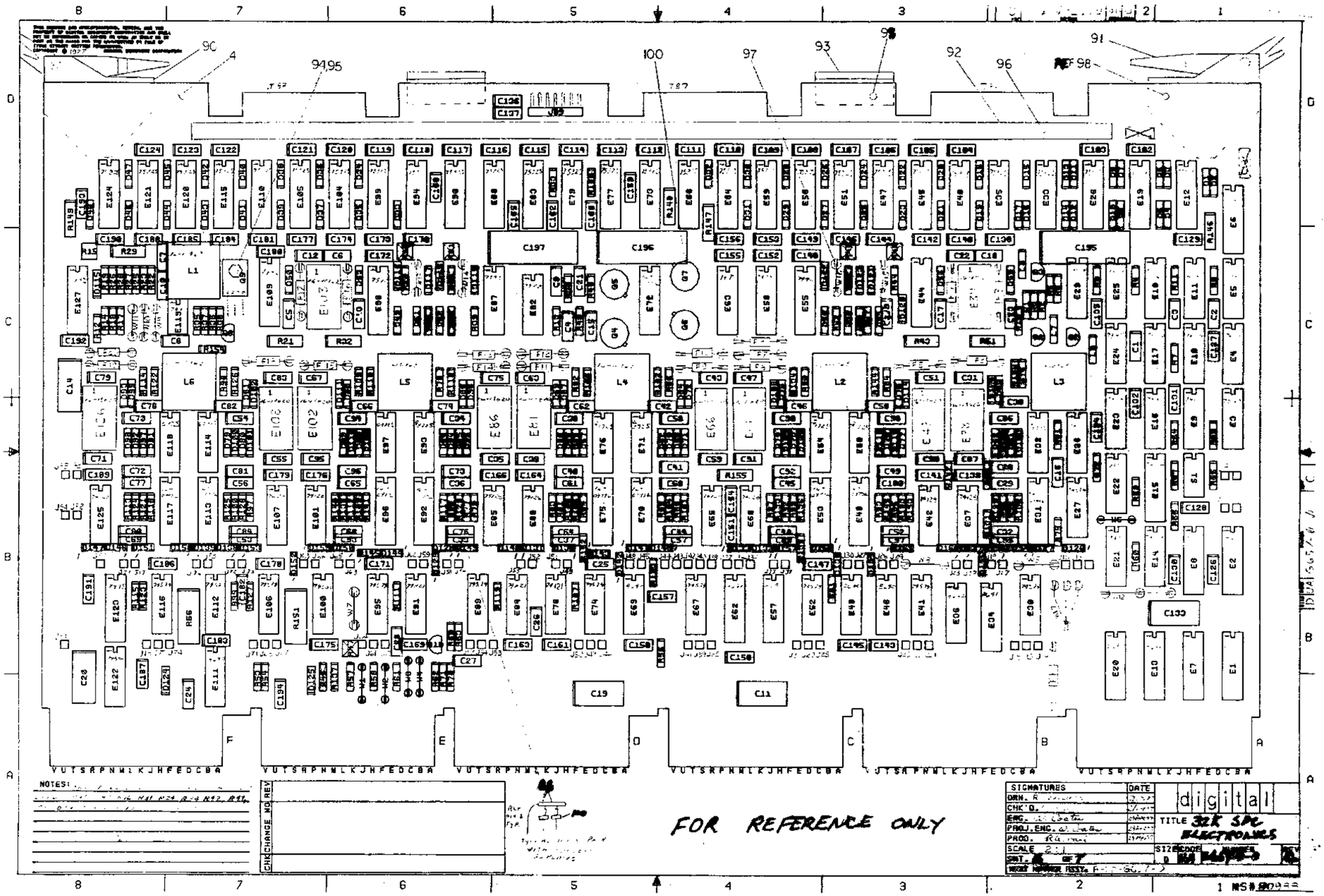
316


L2
G657 5012470
GND
32K SPC
ELECTRONICS
D WG 6657-C-0 1C



32K SPC
ELECTRONICS
DJA G657 C-J C


LAYER 4
L4
32K
SPC
ELECT
SIDE 2
G657
5012147 C
1-2
32K SPC
ELECTRONICS
DWA
G657-0-0
C
2/1


FOR REFERENCE ONLY
digital
TITLE 32K SPC ELECTRONICS
NOTES:
CHK CHANGE NO REV
SIGNATURES
DATE
DRN.
CHK'D.
ENG.
PROJ. ENG.
PROD.
SCALE
SIZE
SHT.
MS# 90022

32

REWORK INSTRUCTIONS

ECO#1

ETCH CUTS SIDE 2:

F-1 CUT ETCH FROM E43-7 TO C99

WIRE ADD SIDE 2

J-2 FROM E43-5 TO C99

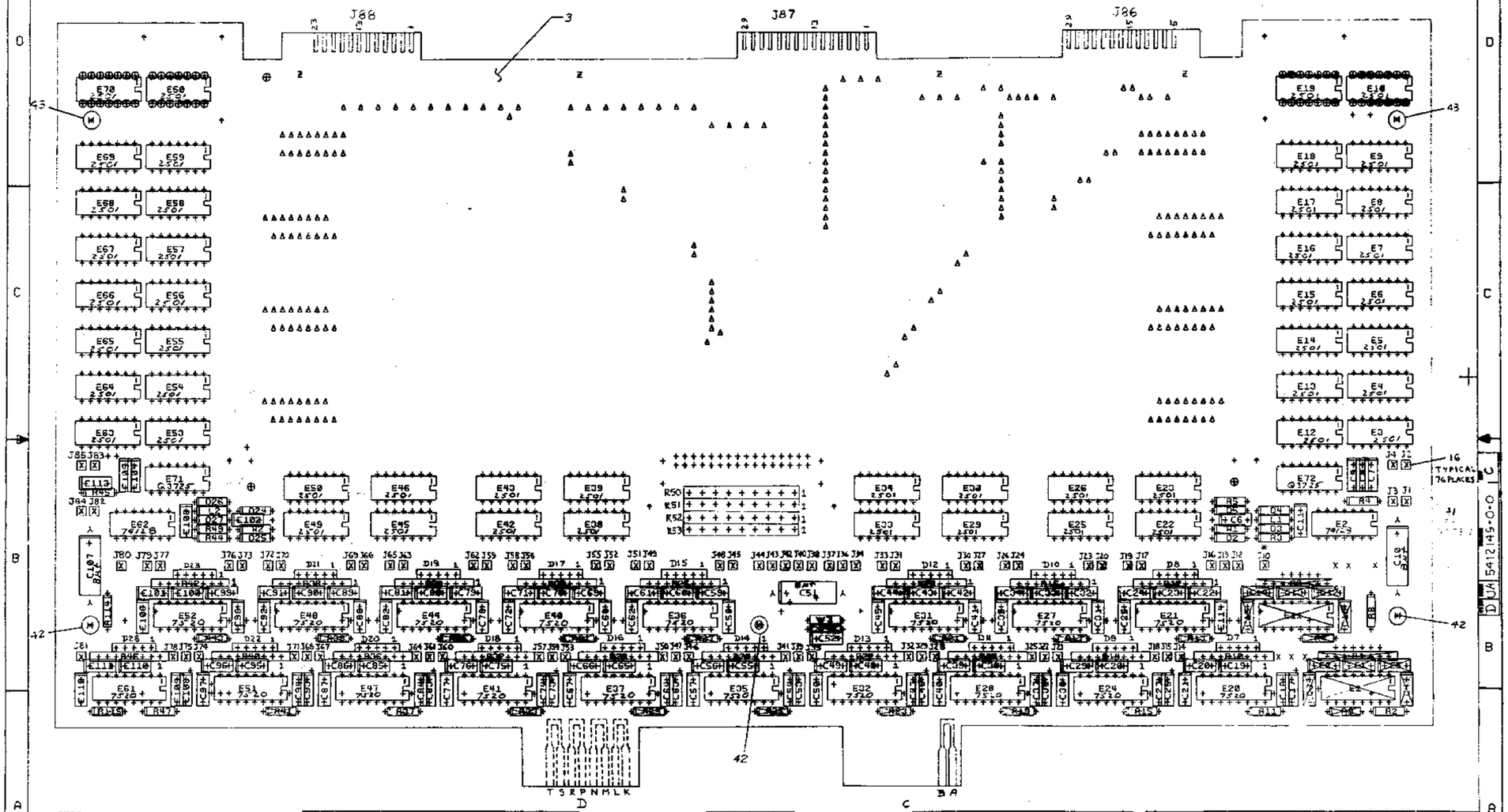
BOND WIRE TO SIDE 2 WITH ADHESIVE

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELETRONICS	D	UA	G657-0-0	C
SCALE	SHEET 7 OF 7	DIST.		

321

COMPONENT SIDE VIEW



NOTES:
1. PINS THAT HAVE AMP POST SPACERS ARE (IN INCHES)
E2,14,21,E3,35,42,37,69,71,72,
AMP #201 SPACER FOR PINS E2 THRU E37 ONLY FOUR PLACES
ALL OTHER PINS ARE #200 SPACERS

CHK	CHANGE NO	REV

SIGNATURES	DATE
DRN. K Shampaine	12-8-76
CHK'D K Shampaine	12-8-76
ENG. [illegible]	[illegible]
PROJ. ENG. [illegible]	[illegible]
PROD.	
SCALE 2/1	
SHT. 1 OF 1	
NEXT HIGHER ASSY. 3-DD-5412149-0	

ETCH REV. D
P.C. DESIGN DATA BASE REV. D/L

digital

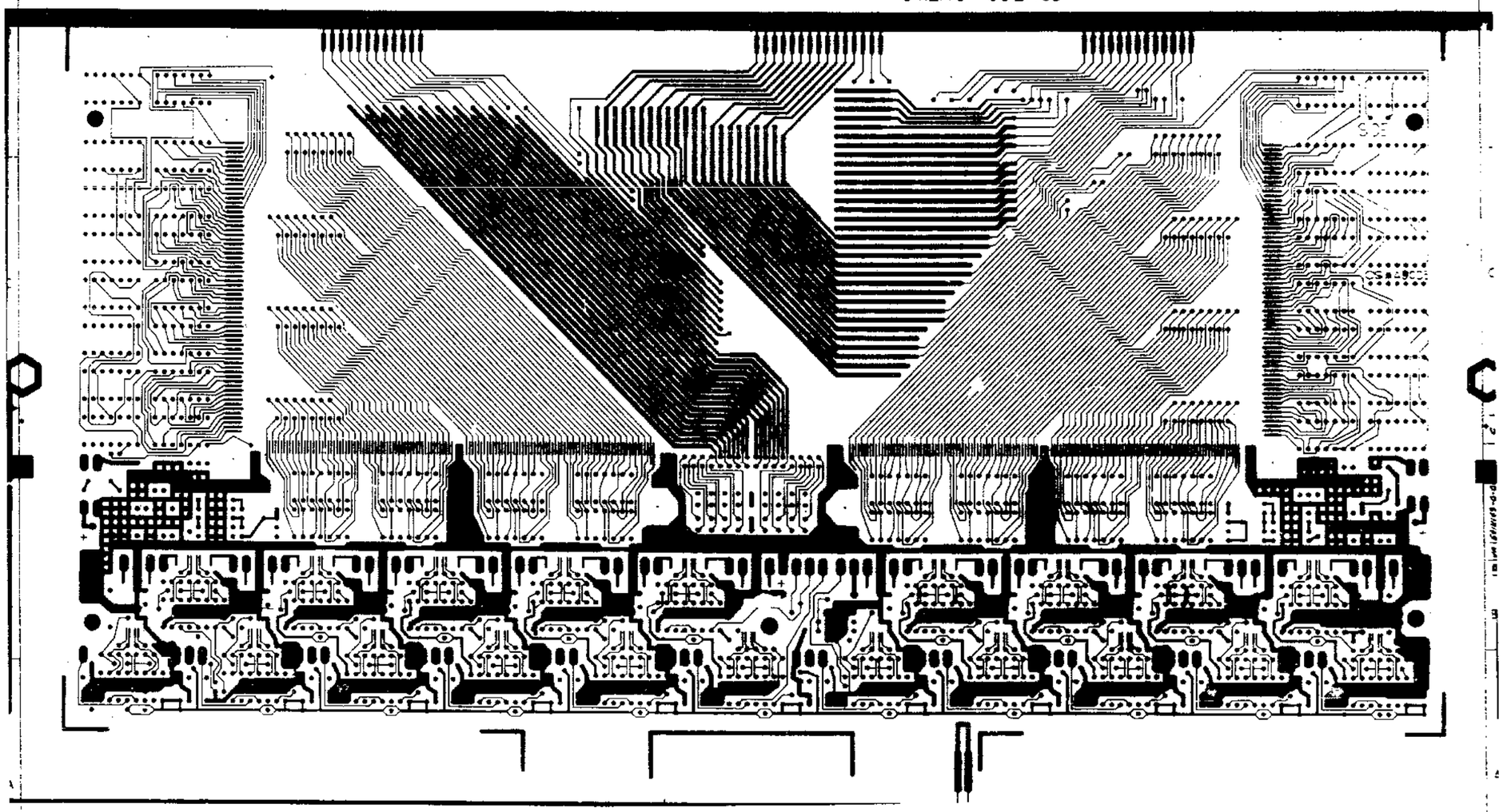
TITLE 32 K SPC MEMORY

SIZE	CODE	NUMBER	REV
D	UA	5412149-0-0	C

1 MS#30989

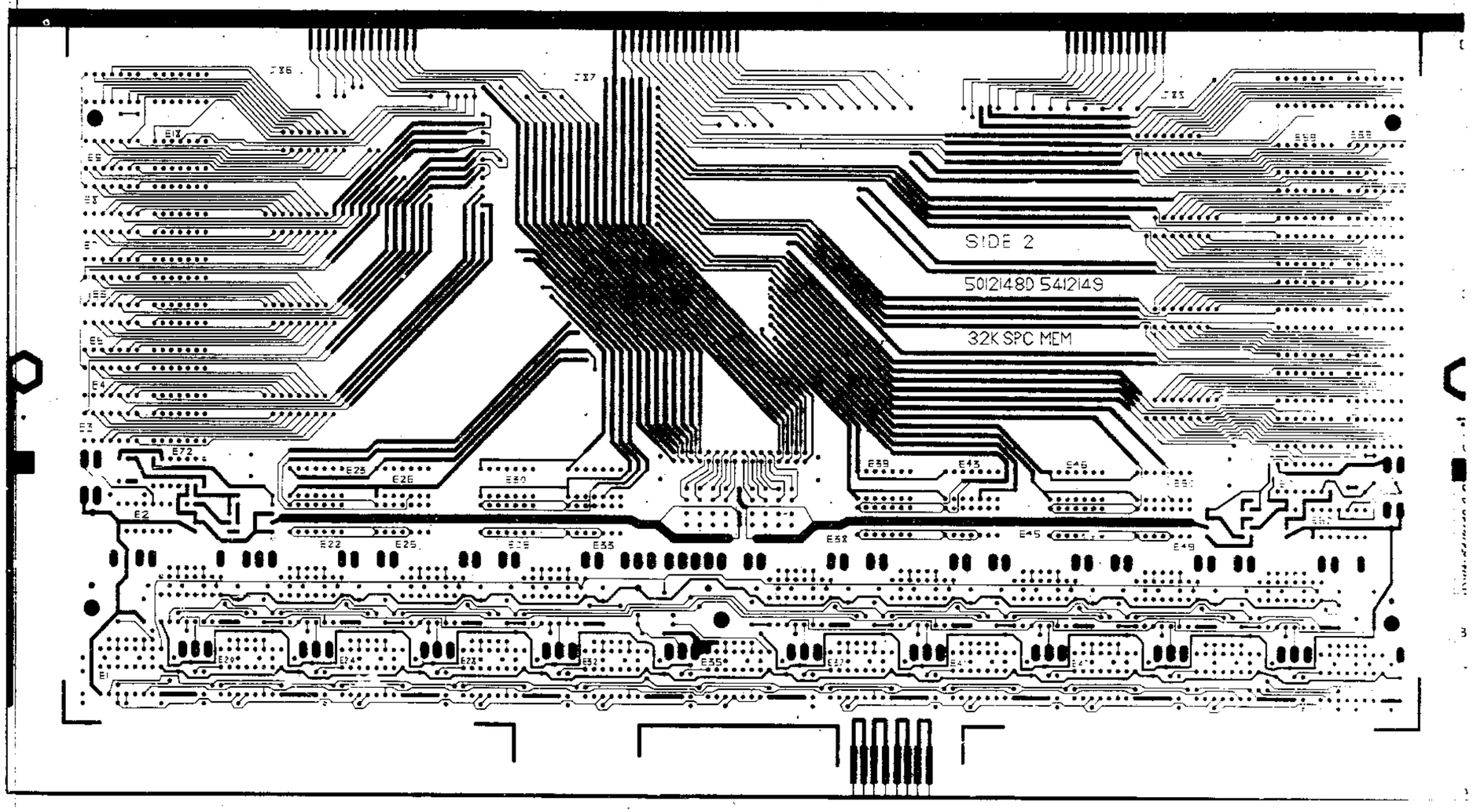
322

5412149 50:2480

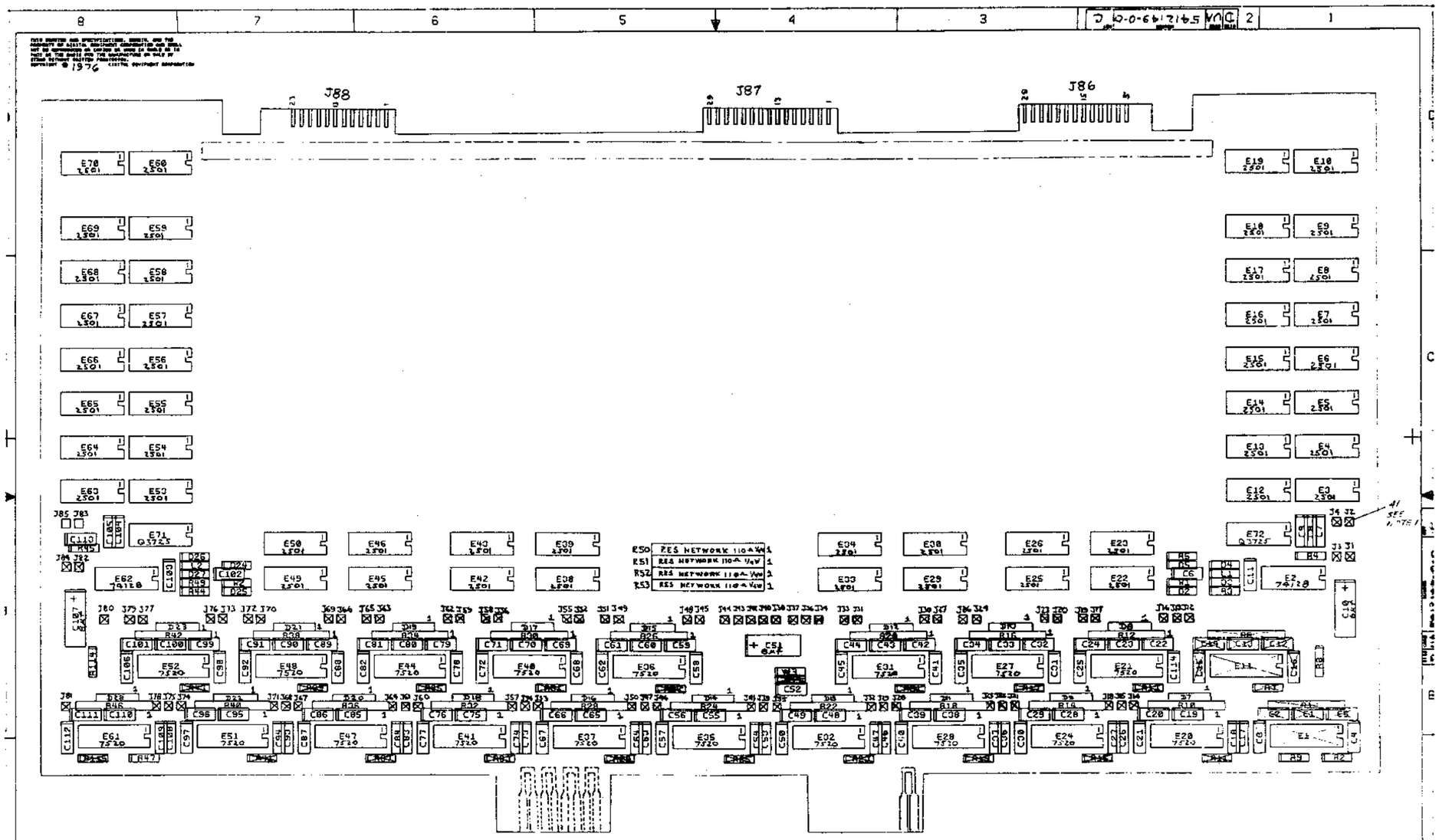


32K SPC MEMORY 5412149-0-0 C

211 2 4



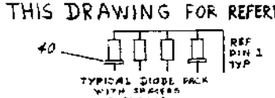
32K SPC MEMORY D UA 5412149-0-0 C



NOTES:
1. PINS J3 & J4 HAVE AMP POST SPACERS APPROXIMATELY .114 LONG ON E1, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25, E26, E27, E28, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E39, E40, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51, E52, E53, E54, E55, E56, E57, E58, E59, E60, E61, E62, E63, E64, E65, E66, E67, E68, E69, E70, E71, E72.
AMP POST SPACERS MUST BE PUT ON BEFORE ELECTRONIC COMPONENTS ARE INSTALLED.

CHG	CHANGE NO	REV

THIS DRAWING FOR REFERENCE ONLY



ETCH REV. D
P.C. DESIGN DATA BASE REV. DL

SIGNATURES	DATE
DRN. K. Hampton	11-1-76
CHK'D. K. Hampton	11-2-76
ENG. W. Coates	MARKETING
PROJ. ENG. W. Coates	MARKETING
PROD.	MFG

digital

TITLE 32K SPC MEMORY

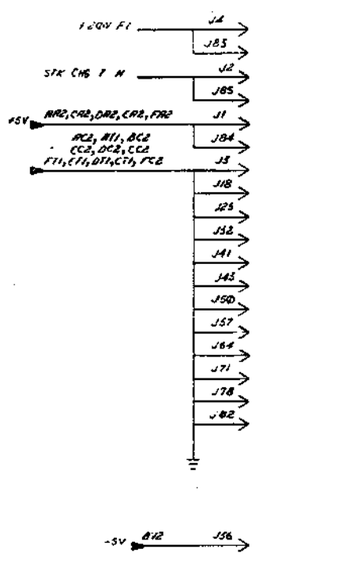
SCALE 2/1 | SIZE D | CODE MA | NUMBER 5412149-0-0 | REV C
SHT. 4 OF 4
NEXT HIGHER ASSY = B-DD-5412149-0

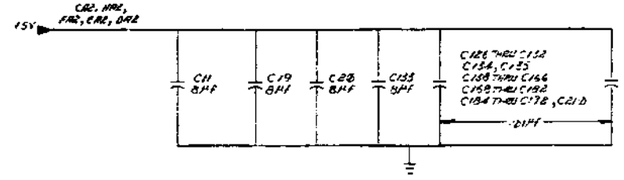
1 MS#80989

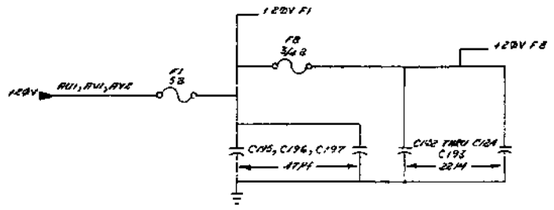
BANK SELECTION

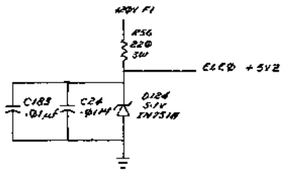
	NON INTERLEAVED	INTERLEAVED	A17	A16	A15	A14	A13
4K	16K	32K	ON	ON	ON	ON	ON
8K	32K	64K	ON	ON	ON	ON	OFF
12K	48K	96K	ON	ON	ON	OFF	ON
16K	64K	128K	ON	ON	OFF	ON	ON
20K	80K	160K	ON	ON	OFF	ON	OFF
24K	96K	192K	ON	ON	OFF	OFF	ON
28K	112K	224K	ON	ON	OFF	OFF	OFF
32K	128K	256K	ON	OFF	ON	ON	ON
36K	144K	288K	ON	OFF	ON	ON	OFF
40K	160K	320K	ON	OFF	ON	OFF	ON
44K	176K	352K	ON	OFF	ON	OFF	OFF
48K	192K	384K	ON	OFF	OFF	ON	ON
52K	208K	416K	ON	OFF	OFF	ON	OFF
56K	224K	448K	ON	OFF	OFF	OFF	ON
60K	240K	480K	ON	OFF	OFF	OFF	OFF
64K	256K	512K	OFF	ON	ON	ON	ON
72K	288K	576K	OFF	ON	ON	ON	OFF
80K	320K	640K	OFF	ON	ON	OFF	ON
88K	352K	704K	OFF	ON	OFF	ON	OFF
96K	384K	768K	OFF	ON	OFF	OFF	ON
104K	416K	832K	OFF	OFF	ON	ON	OFF
112K	448K	896K	OFF	OFF	ON	OFF	ON
120K	480K	960K	OFF	OFF	OFF	ON	ON
128K	512K	1024K	OFF	OFF	OFF	OFF	ON

75325	8	9	16
8640	1	8	
8641	8	16	
7403N	12	5	
7475	12	5	
7442	8	16	
IC TYPE	GND	+5V	+20



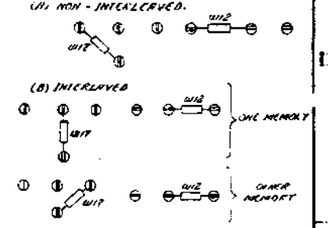






NOTES:

1. INTERLEAVE CONTROL IS ACHIEVED AS FOLLOWS:
   (A) NON - INTERLEAVED.
   (B) INTERLEAVED
   (C) THE BANK SELECTION SWITCH MUST BE SET THE SAME ON BOTH MEMORIES.



2. UNDER NORMAL CONDITIONS (W5, W6 OUT) THE MEMORY WILL NOT RESPOND TO ADDRESS BETWEEN 124K AND 128K, BECAUSE THESE ADDRESS ARE RESERVED FOR PERIPHERAL DEVICES ON THE UNIBUS.
   FOR SPECIAL APPLICATIONS WHERE THE RANGE OF PERIPHERAL ADDRESS IS MORE RESTRICTED THAN THIS ARRANGE THE MEMORY CAN BE CONFIGURED TO INCLUDE THE ADDITIONAL UNIBUS ADDRESSES AS FOLLOWS.
   W5 IN, W6 OUT } 124K TO 126K
   W5 IN, W6 IN } 124K TO 127K
   NOTE THAT FOR SYSTEMS WITHOUT MEMORY MANAGEMENT, THIS MEANS THE USEFUL VIRTUAL ADDRESS SPACE FOR MEMORY CAN BE EXTENDED FROM 28K TO 30K OR 31K. BY SACRIFICING SOME PERIPHERAL SPACE.
   CAUTION:
   SOME DIGITAL SOFTWARE MAY NOT BE COMPATIBLE WITH THE REDUCED PERIPHERAL ADDRESS SPACE. TO ASSURE COMPATIBILITY W5 AND W6 MUST BE OUT.
3. SCHEMATIC FOR M223 MEMORY SWITCH IS SHOWN ON CS-5410149-0-1.

4.

MODE		WR BYTE @L / WR BYTE I L	CLOCK @ H / CLOCK I H	CLEAR @L / CLEAR I L	INTERNAL LAB, BA, LAB, LAN / STATUS LAB, BA, LAB, LAN	OUT EN L
BATE	BUS CB=H	H	L	⊔	⊓	⊔
	BUS CI =H	H	L	⊔	⊓	
DATO	BUS CB=H	L	⊓	H	L	H
	BUS CI =L	L	⊓	H	L	
DATOB	BUS CB=L, BUS CI =L, BUS AB=H (LO BYTE)	L / H	⊓ / L	H / ⊔	L / ⊓	H
	BUS CB=L, BUS CI =L, BUS AB=L (UP BYTE)	H / L	L / ⊓	⊔ / H	⊓ / L	H

5. W1, W2, W3, W4, W9, W10, W11, MUST BE INSTALLED BEFORE MEMORY TEST.
6. W5 AND W6 CONTROL BITS 16 AND 17. (A1) FOR 16 BIT SYSTEM W5 AND W6 IS OUT. (B) FOR 18 BIT SYSTEM W5 AND W6 IN.

DRN.		1/29/77
CHK'D		2/8/77
ENG. W.		2/8/77
PROJ. ENG.		2/8/77
PROD.		2/8/77
NEXT HIGHER ASSY.		
B-DD-G657-0		
SCALE	NONE	
SHEET	1 OF 18	

FIRST USED ON: MM11-YP

digital

TITLE: (ELE0) 32K SPEC ELECTRONICS

SIZE	CODE	NUMBER	REV.
D	CS	G657-0-1	C

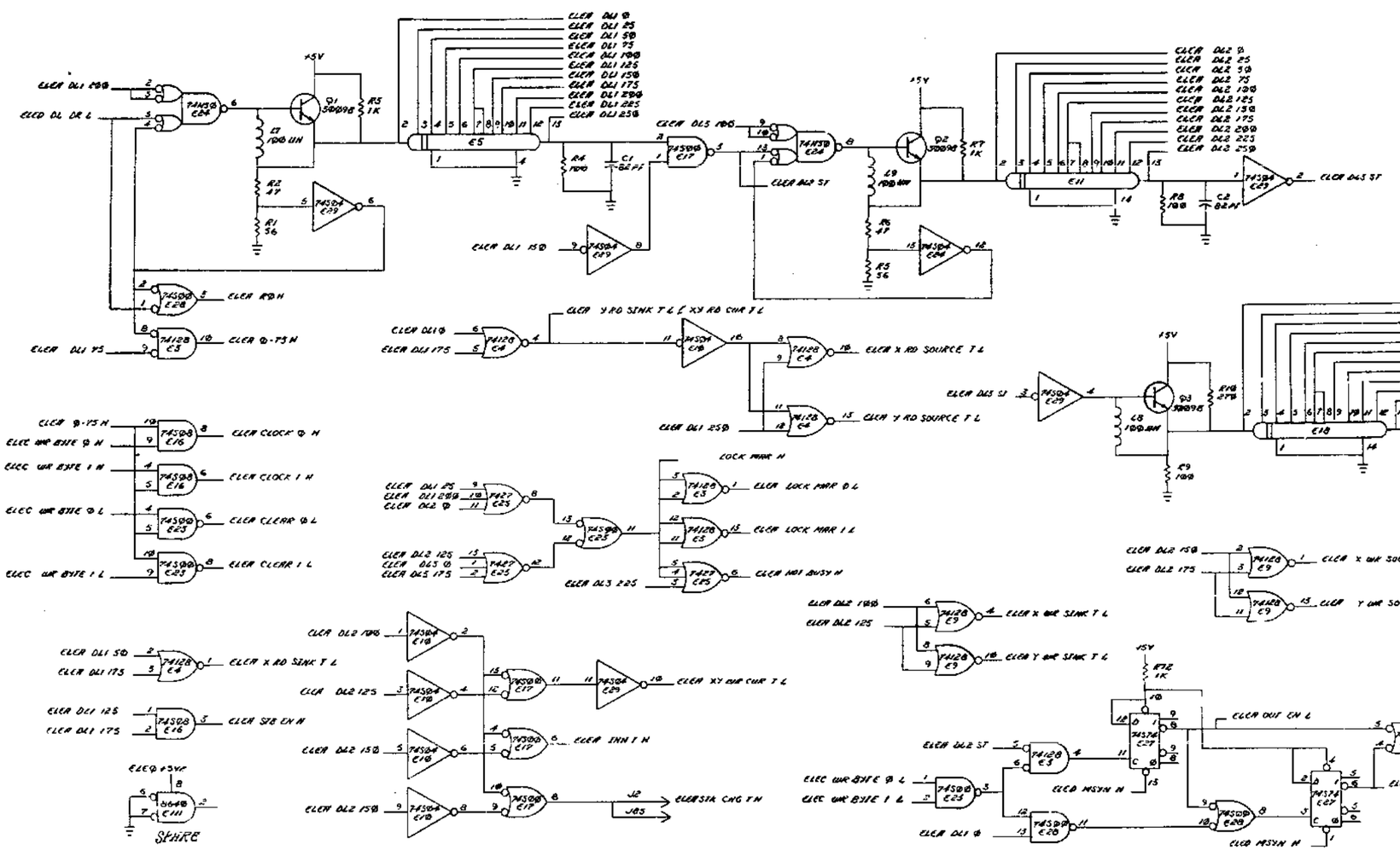
DIST.

REVISIONS	REV.
CHANGE NO.	C
4360	

326

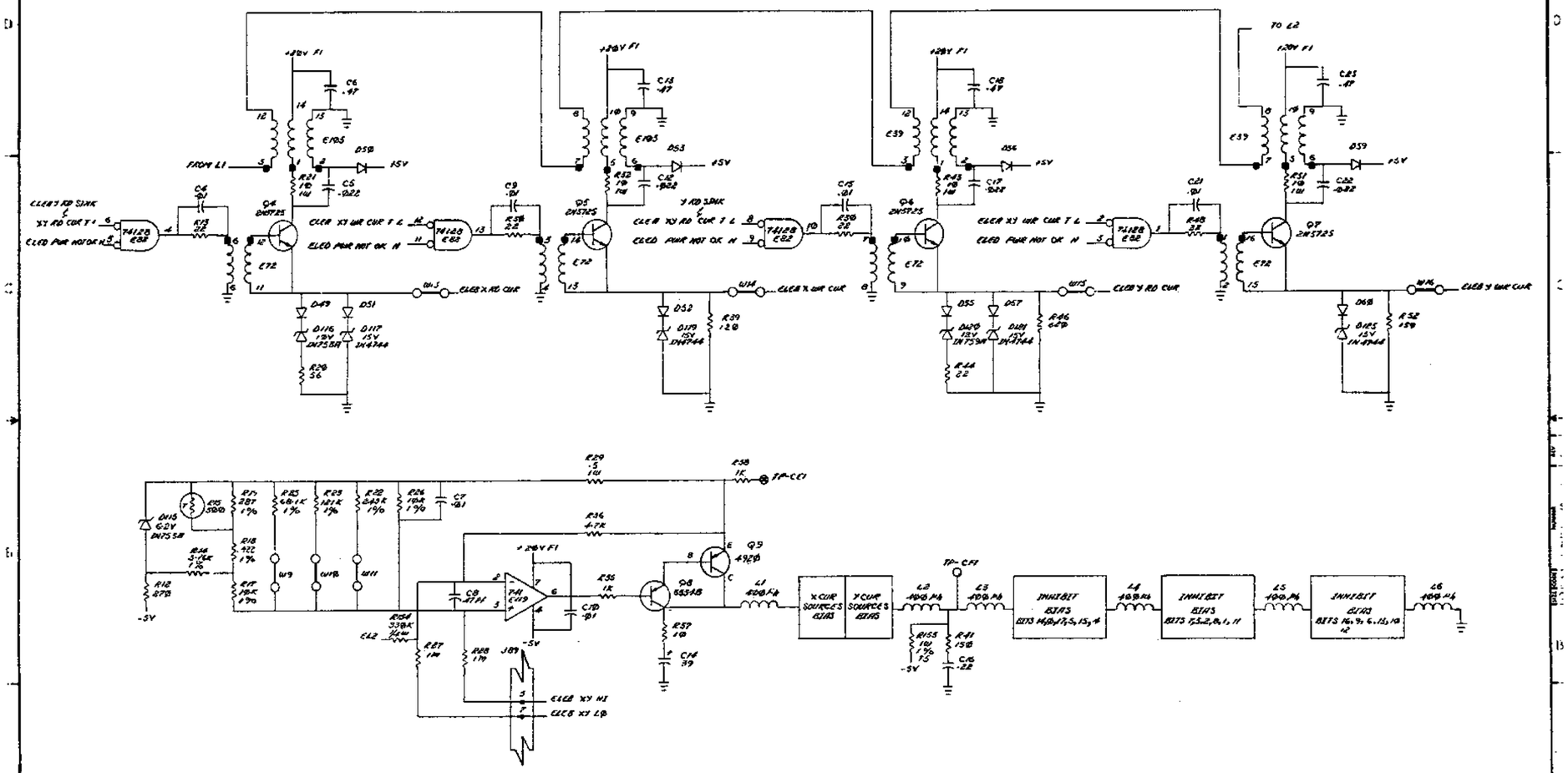
NOTE ALL DIODES D672
UNLESS OTHERWISE SPECIFIED

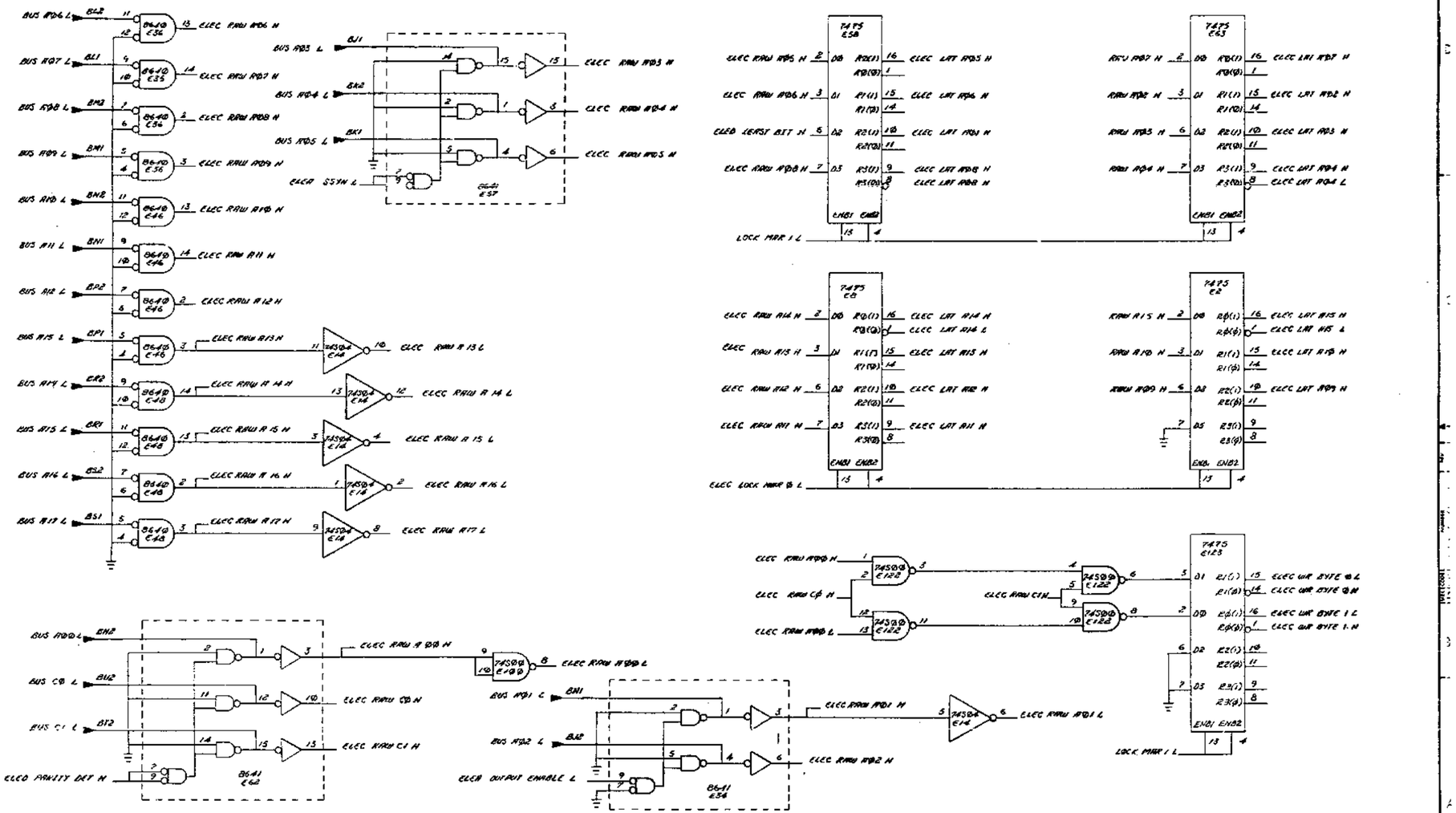
BUS GRANT LINES
DG2 - DL2
DM2 - DN2
DP2 - DR2
DS2 - DT2
CM1 - C61



DIVISIONS		
CHK	CHANGE NO.	DIV

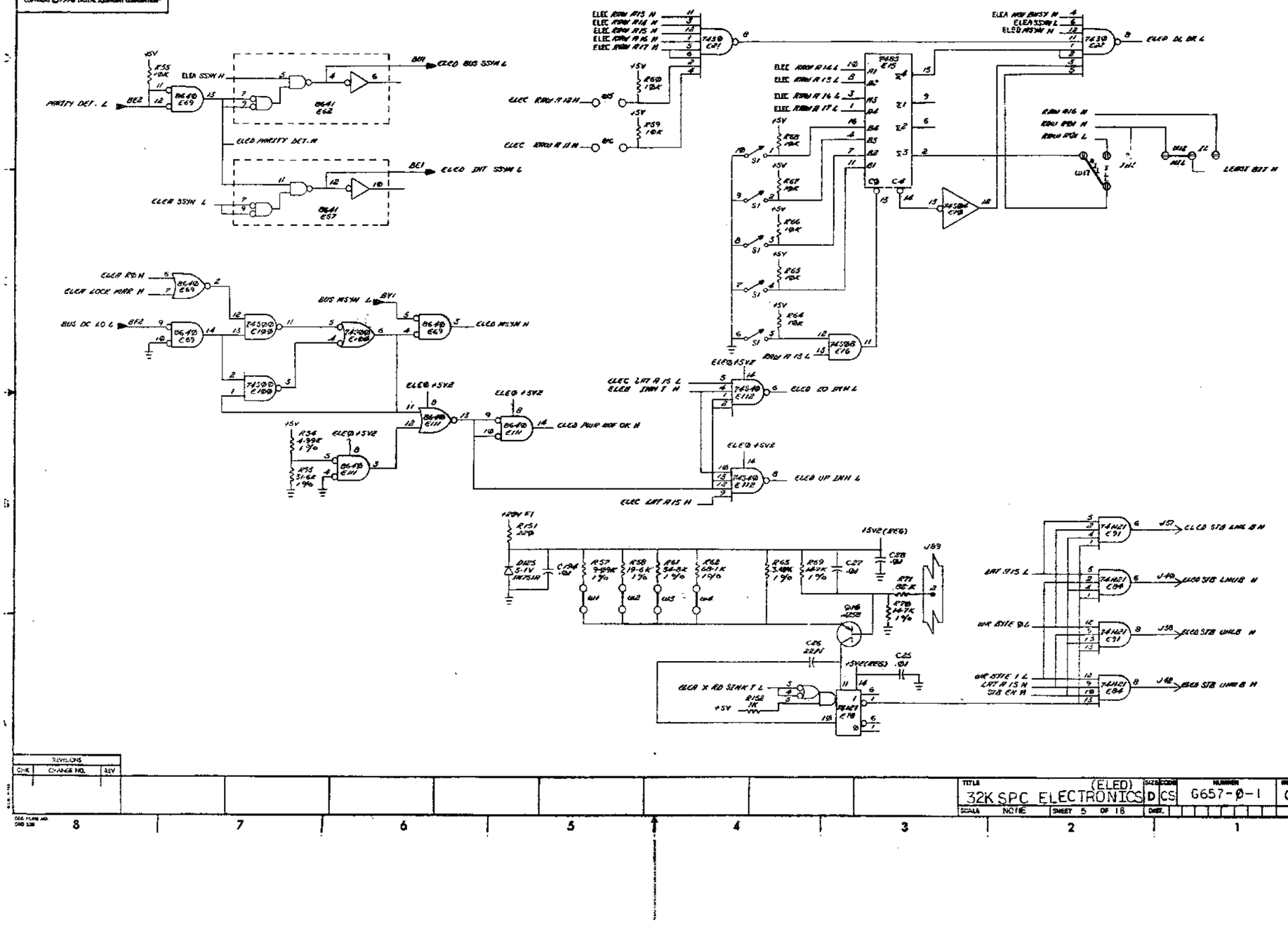
TITLE		SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS	(ELEA)	D	CS	G657-0-1	C
SCALE NONE	SHEET 2 OF 18	DIST			





REVISIONS		
CLK	CHANGE NO.	REV.

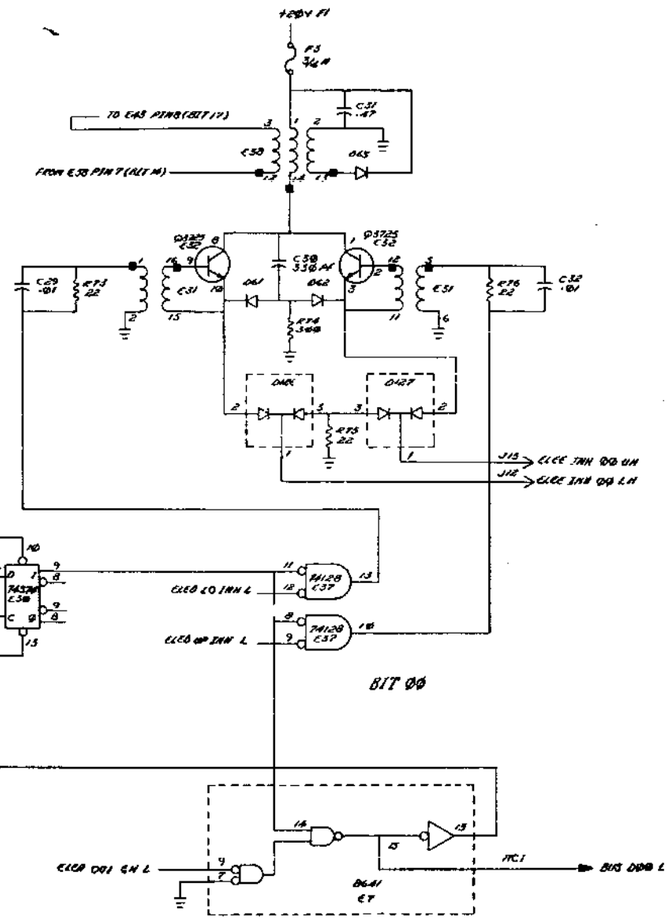
TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEC)	D	CS	G657-0-1	C
SCALE NONE SHEET 4 OF 18	DST.			

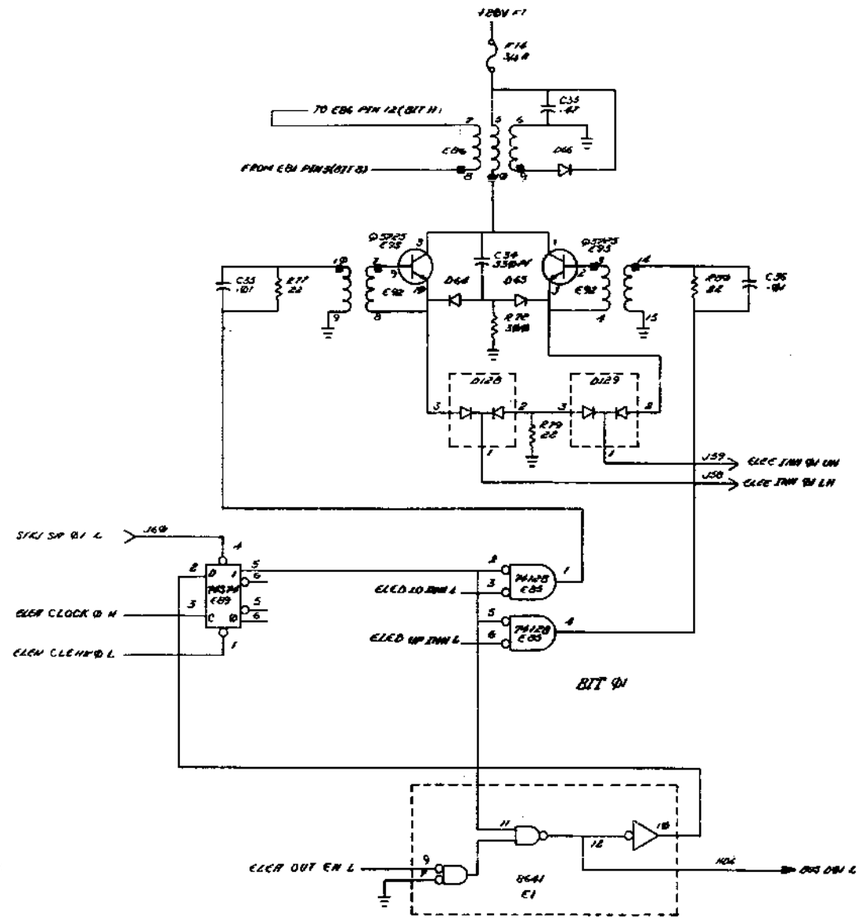


REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELED)	D	CS	6657-0-1	C
SCALE NONE SHEET 5 OF 18	DIST.			

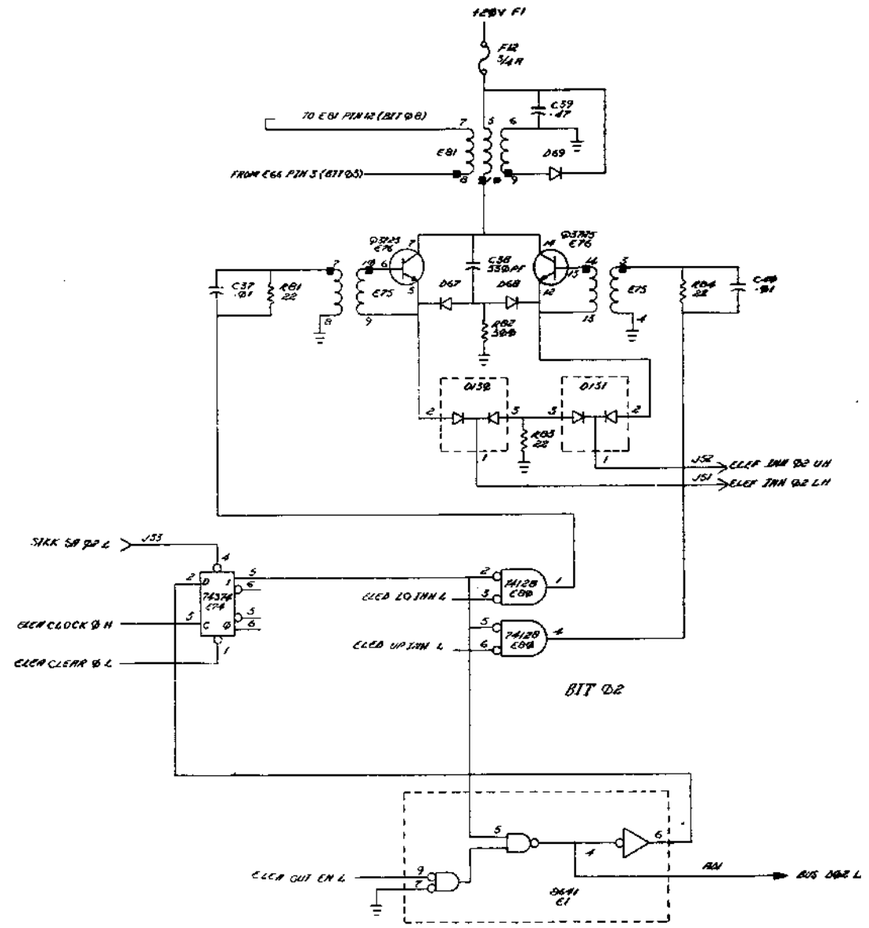
330

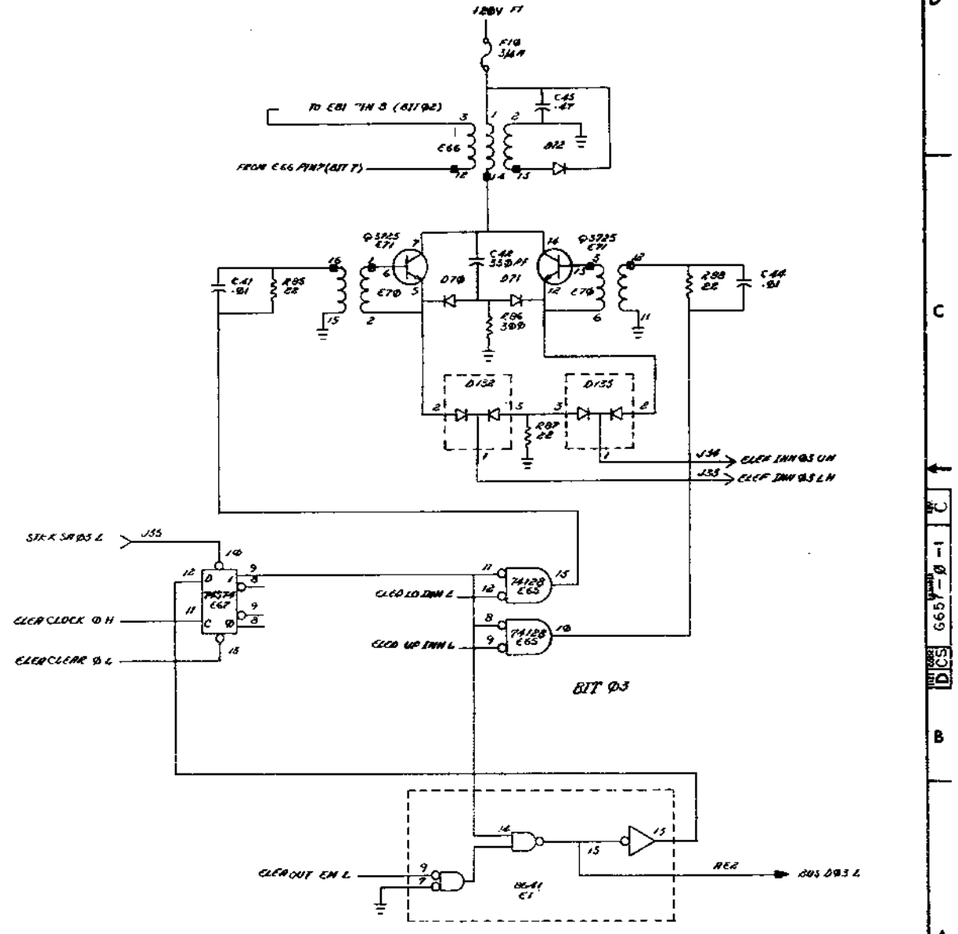




REVISIONS		
DR	CHANGE NO.	REV.

TITLE	32K SPC ELECTRONICS (ELEE)	SIZE/CODE	NUMBER / REV.
		D CS	G657-0-1 C
SCALE NONE	SHEET 6 OF 18	DWN.	

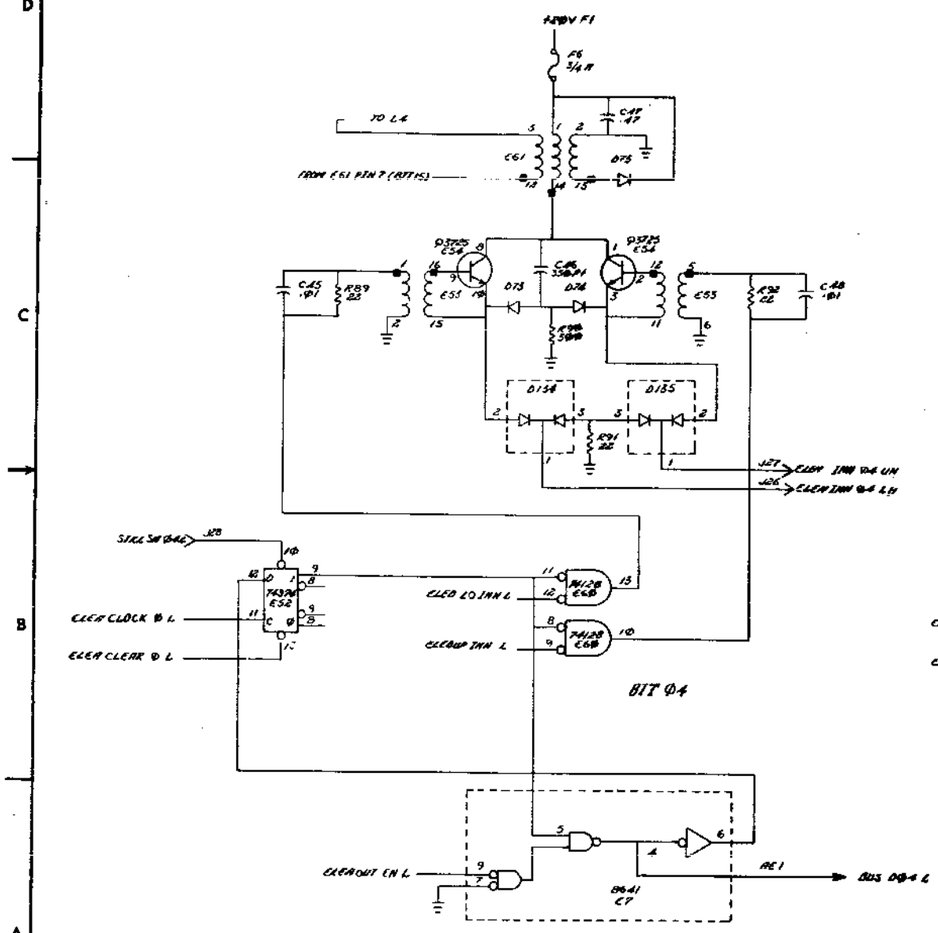


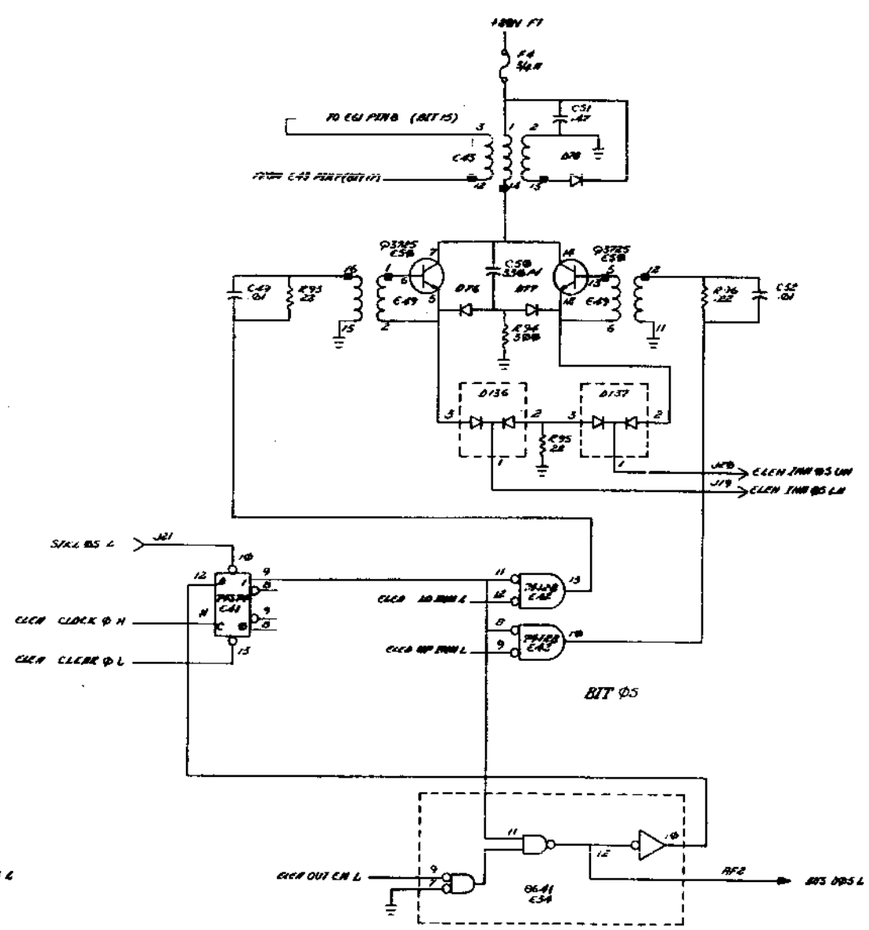


CHK	CHANGE NO.	LEVEL

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEF)	D	CS	G657-Ø-1	C
SCALE: NONE	SHEET 7 OF 18		DIST.	

332

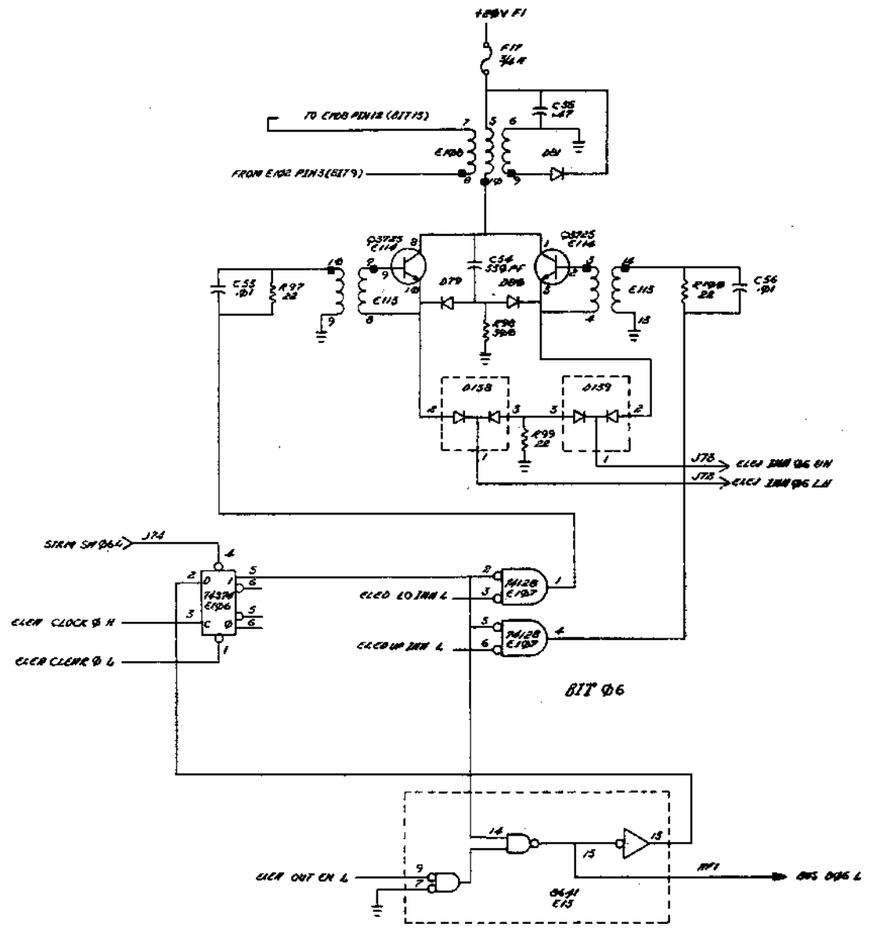




REVISIONS

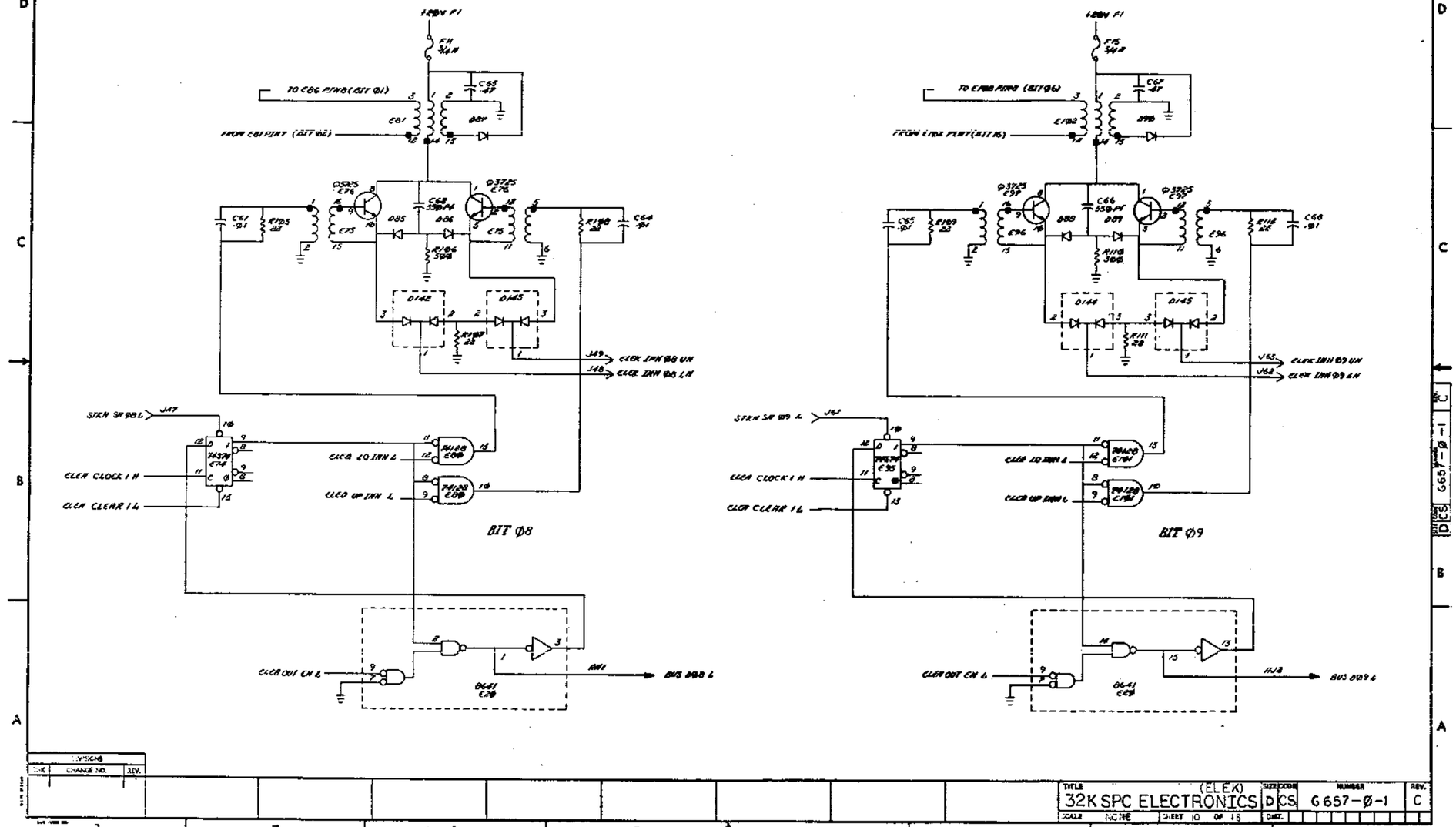
CHK	CHANGE NO.	REV.

TITLE (ELEH)
32K SPC ELECTRONICS
SIZE D CODE CS NUMBER G657-0-1 REV. C
SCALE NONE SHEET 8 OF 18
DIST.



REVISIONS		
CHK	CHANGE NO	REV.

TITLE		SIZE/CODE	NUMBER	REV.
32K SPC ELECTRONICS	(ELEJ)	D CS	G657-Ø-1	C
SCALE NONE	SHEET 9 OF 18	DIST.		

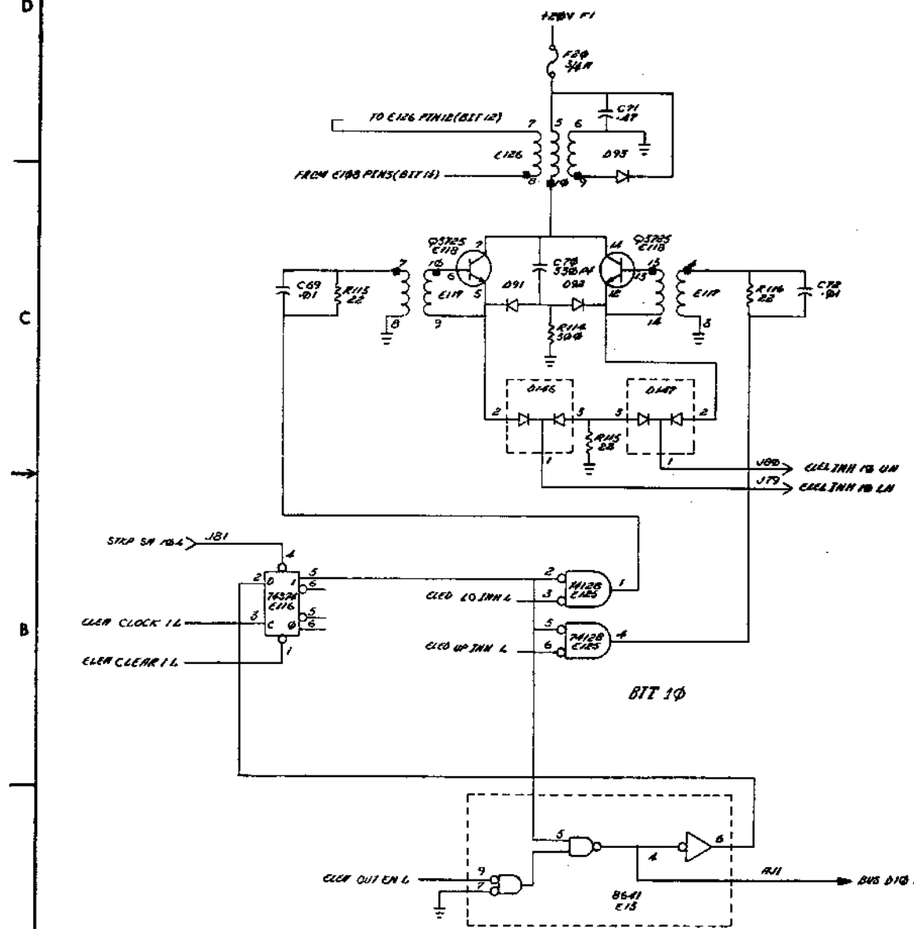


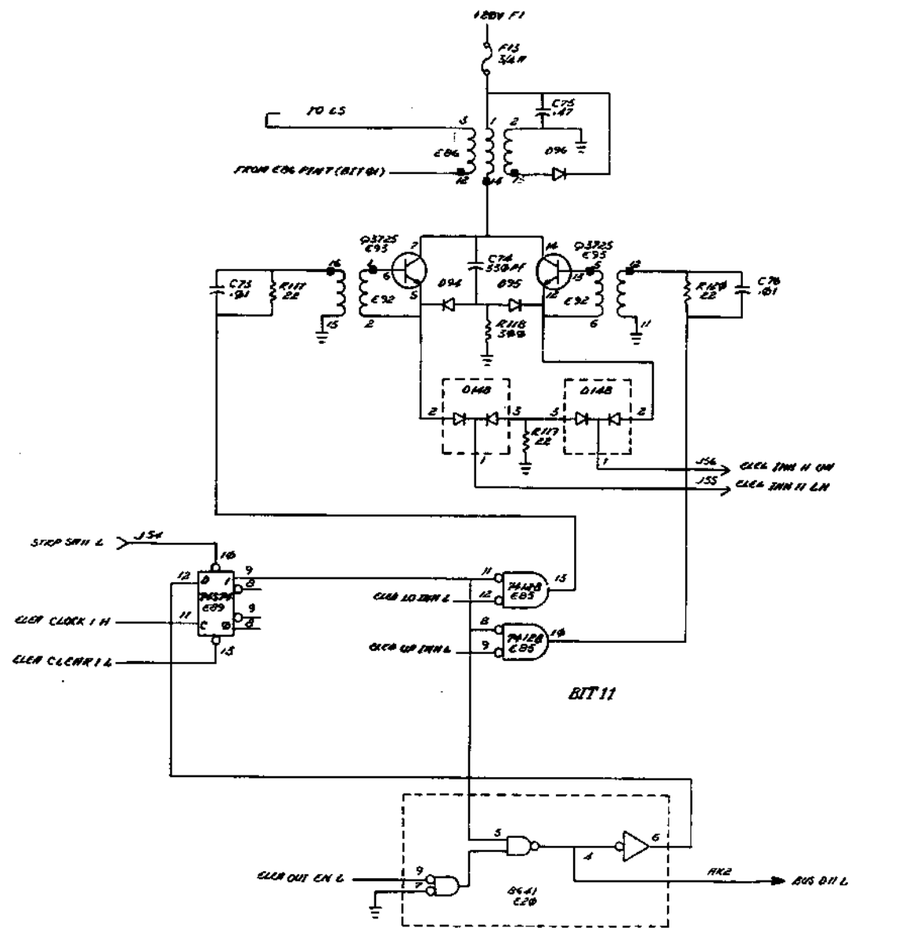
DIVISIONS		
SYM	CHANGE NO.	DIV.

TITLE: 32K SPC ELECTRONICS (ELEK)		SIZE/CODE: D CS	NUMBER: G657-Ø-1	REV: C
CALL:	NOTE:	SHEET 10 OF 16	DIST:	

G657-Ø-1 DES

335

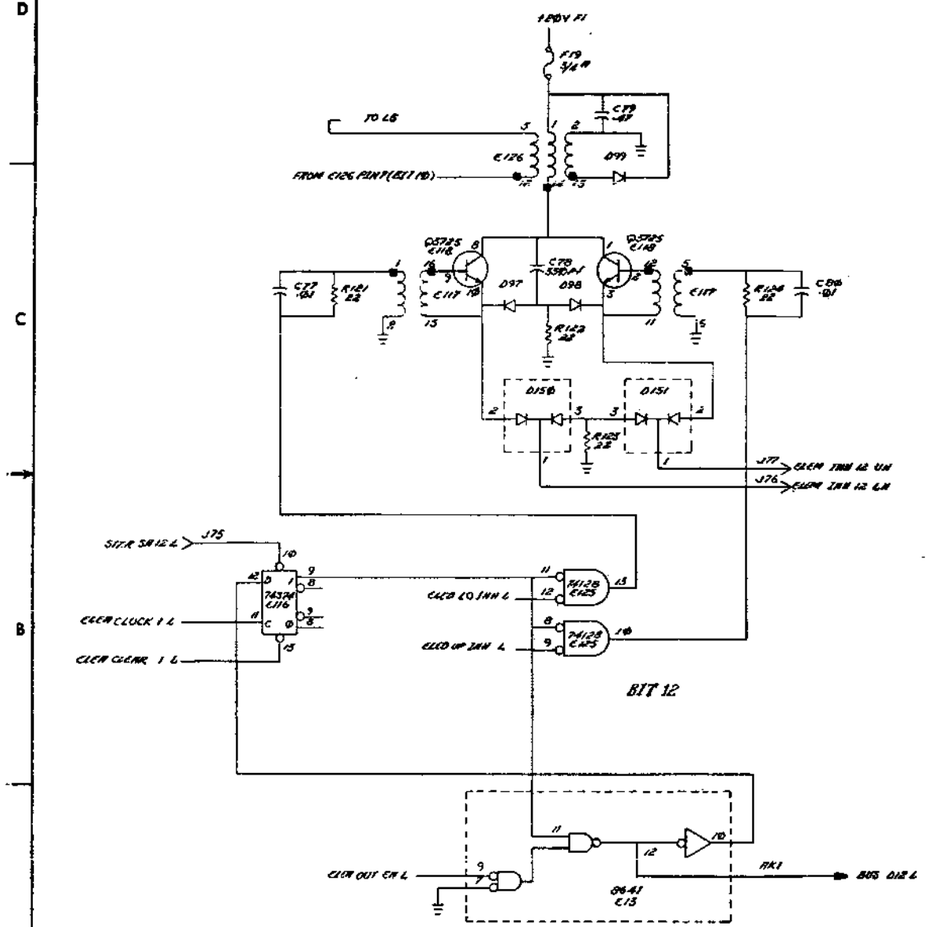


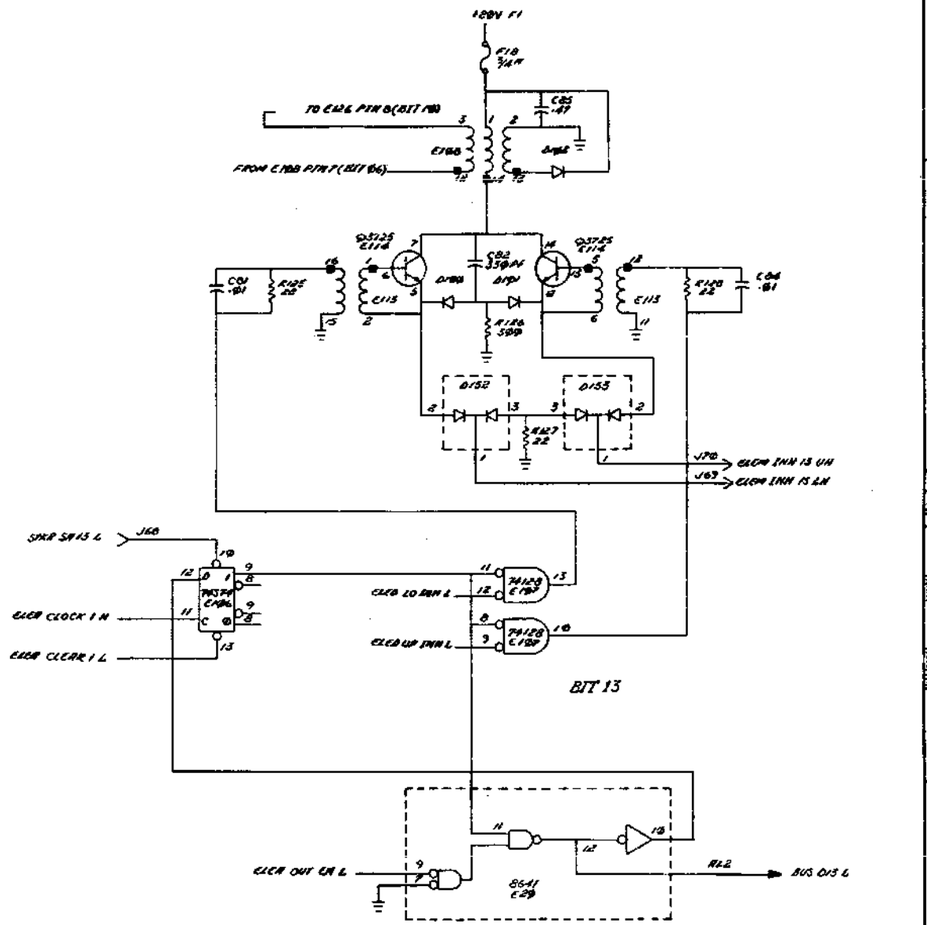


REVISIONS		
SYM	CHANGE NO.	REV.

TITLE		SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEL)		D	CS	G657-Ø-1	C
SCALE NONE	SHEET 11 OF 18	DIST.			

336

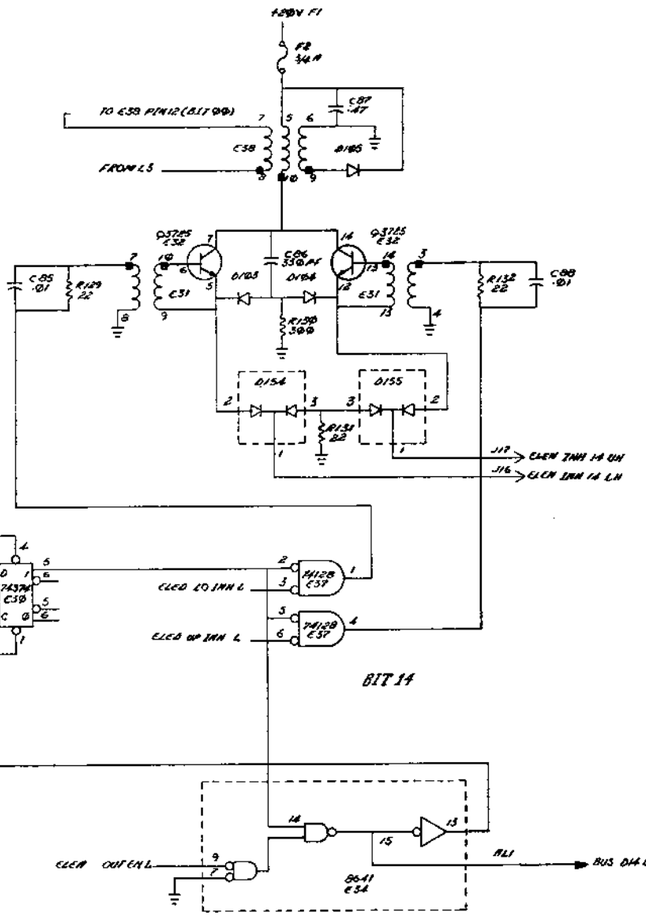


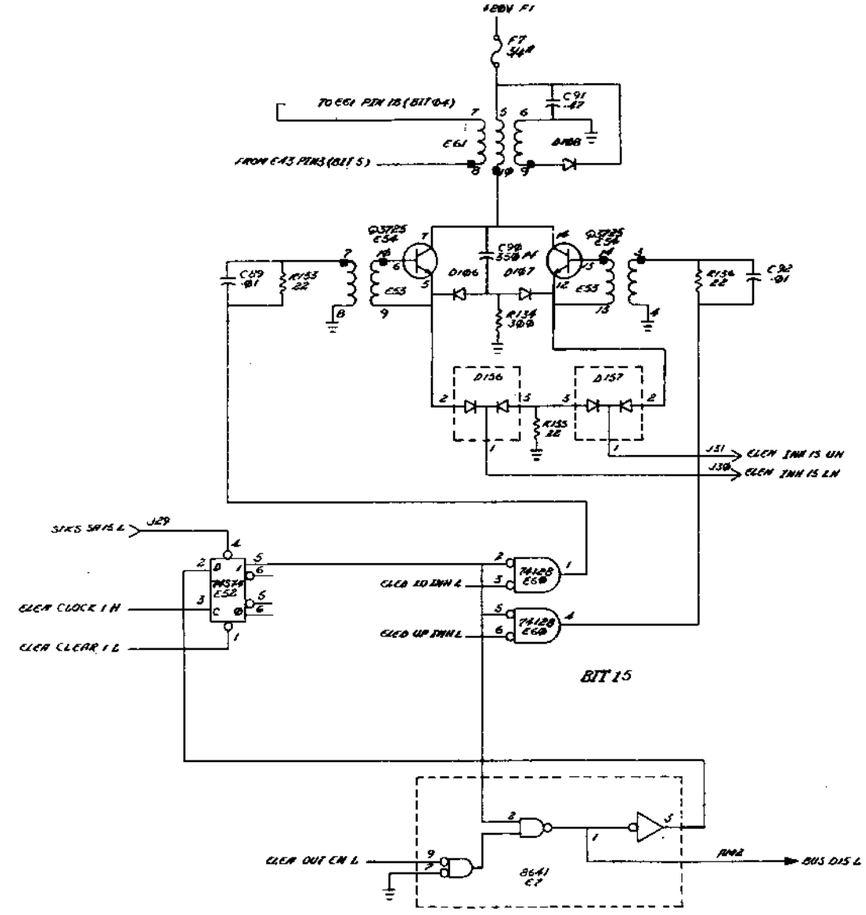


REVISIONS		
CHK	CHANGE NO.	REV.

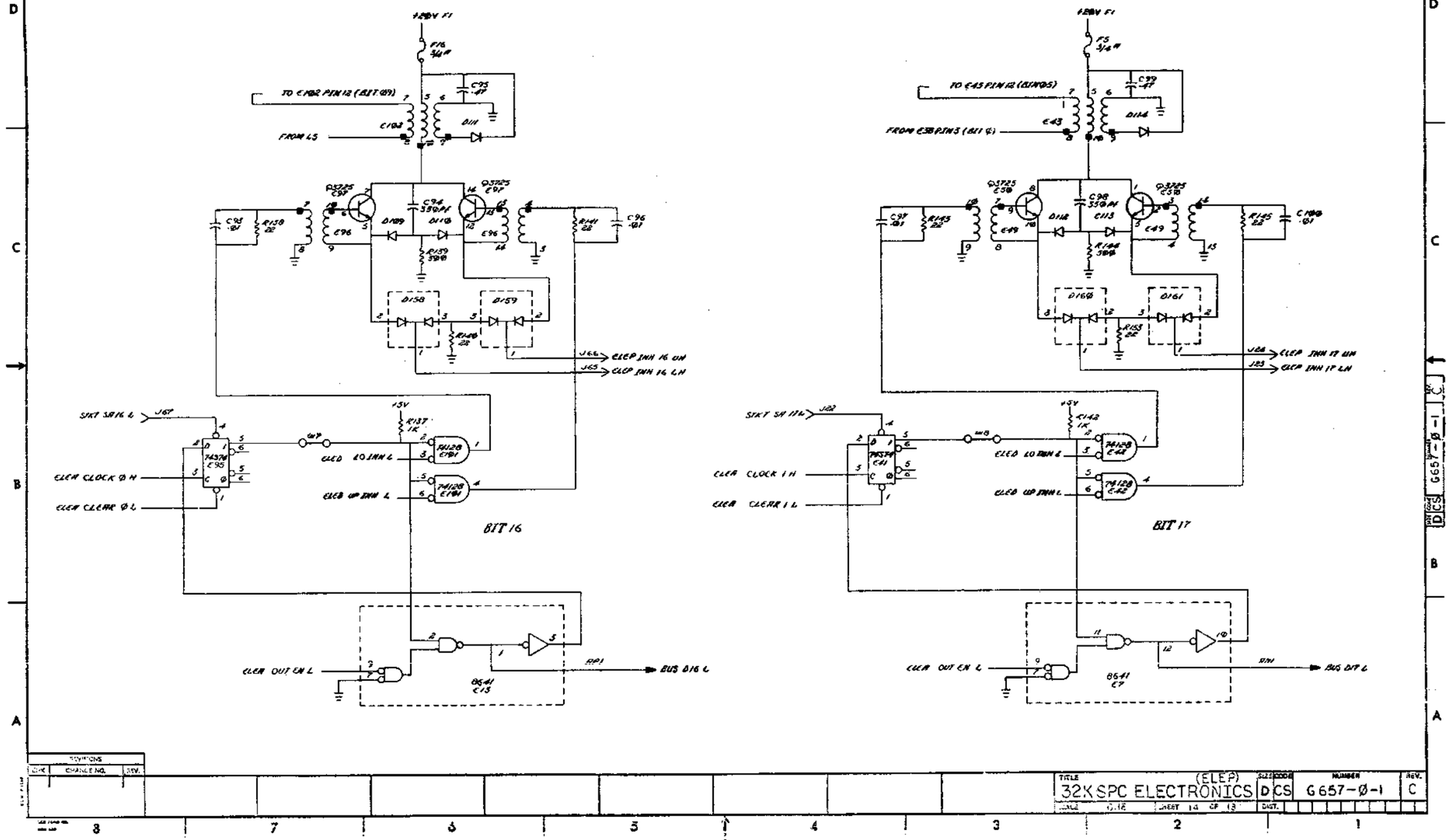
TITLE		SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS	(ELEM)	D	CS	G657-Ø-1	C
SCALE NONE	SHEET 12 OF 18	DIST.			

337





TITLE 32K SPC ELECTRONICS (ELEN)	SIZE D	CODE CS	NUMBER G657-0-1	REV. C
SCALE NONE	SHEET 13 OF 18	DIST.		



REVISIONS		
DR	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEP)	D	CS	G657-Ø-1	C
SCALE 0.12 SHEET 14 OF 13	DIST.			

G657-Ø-1 DICS D C

ELEC "Y" READ CLK

ELEC "Y" RD SOURCE T L
ELEC "Y" WR SINK T L

75325 C55 — J86 — D17 — ELEC Y10Ø
75325 C40 — D18 — ELEC Y11Ø
75325 C43 — D19 — ELEC Y12Ø
75325 C47 — D20 — ELEC Y13Ø
75325 C44 — D21 — ELEC Y14Ø
75325 C56 — D22 — ELEC Y15Ø
75325 C59 — D23 — ELEC Y16Ø
75325 C51 — D24 — ELEC Y17Ø

7442 C44 — ELEC LAT R 14 L — 03
ELEC LAT R 13 H — 02
ELEC LAT R 12 H — 01
ELEC LAT R 11 H — 00

12DV 1Ø — R147 — 15Ø — 1/4W — 5% — J87

75325 C64 — D32 — ELEC YØØØ
75325 C60 — D31 — ELEC YØ1Ø
75325 C59 — D30 — ELEC YØ2Ø
75325 C53 — D29 — ELEC YØ3Ø
75325 C56 — D28 — ELEC YØ4Ø
75325 C52 — D27 — ELEC YØ5Ø
75325 C51 — D26 — ELEC YØ6Ø
75325 C57 — D25 — ELEC YØ7Ø

7442 C55 — ELEC LAT R14 H — 03
ELEC LAT R15 H — 02
ELEC LAT R16 H — 01
ELEC LAT R11 H — 00

REVISIONS		
C-K	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELER)	D	CS	G657-Ø-1	C
SCALE NONE SHEET 15 OF 15	DIST.			

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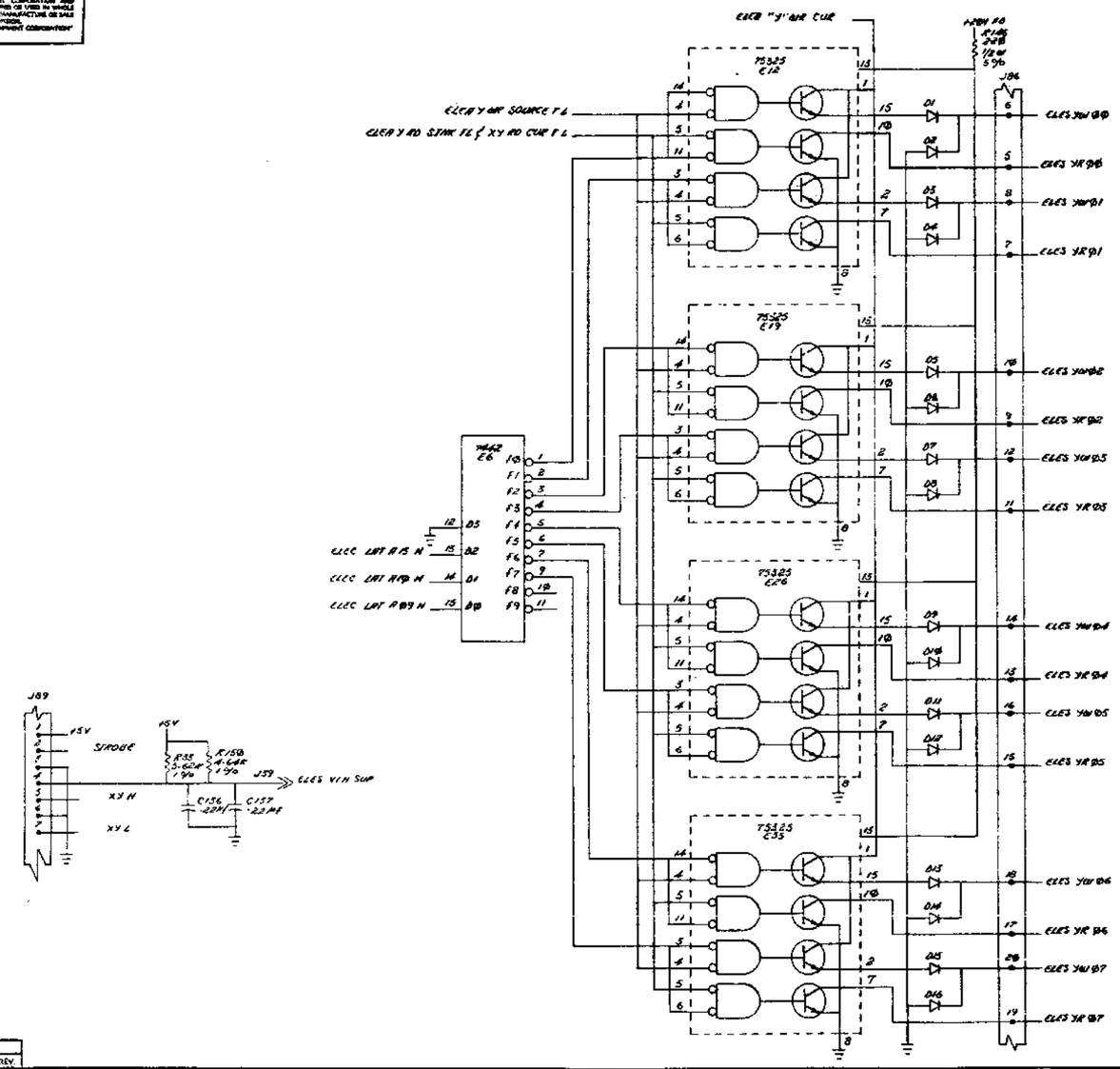

REVISIONS		
ENG	CHANGE NO.	REV.

TITLE		SIZE/CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELES)		D CS	G657-0-1	C
SCALE NONE	SHEET 15 OF 15	DIST.		

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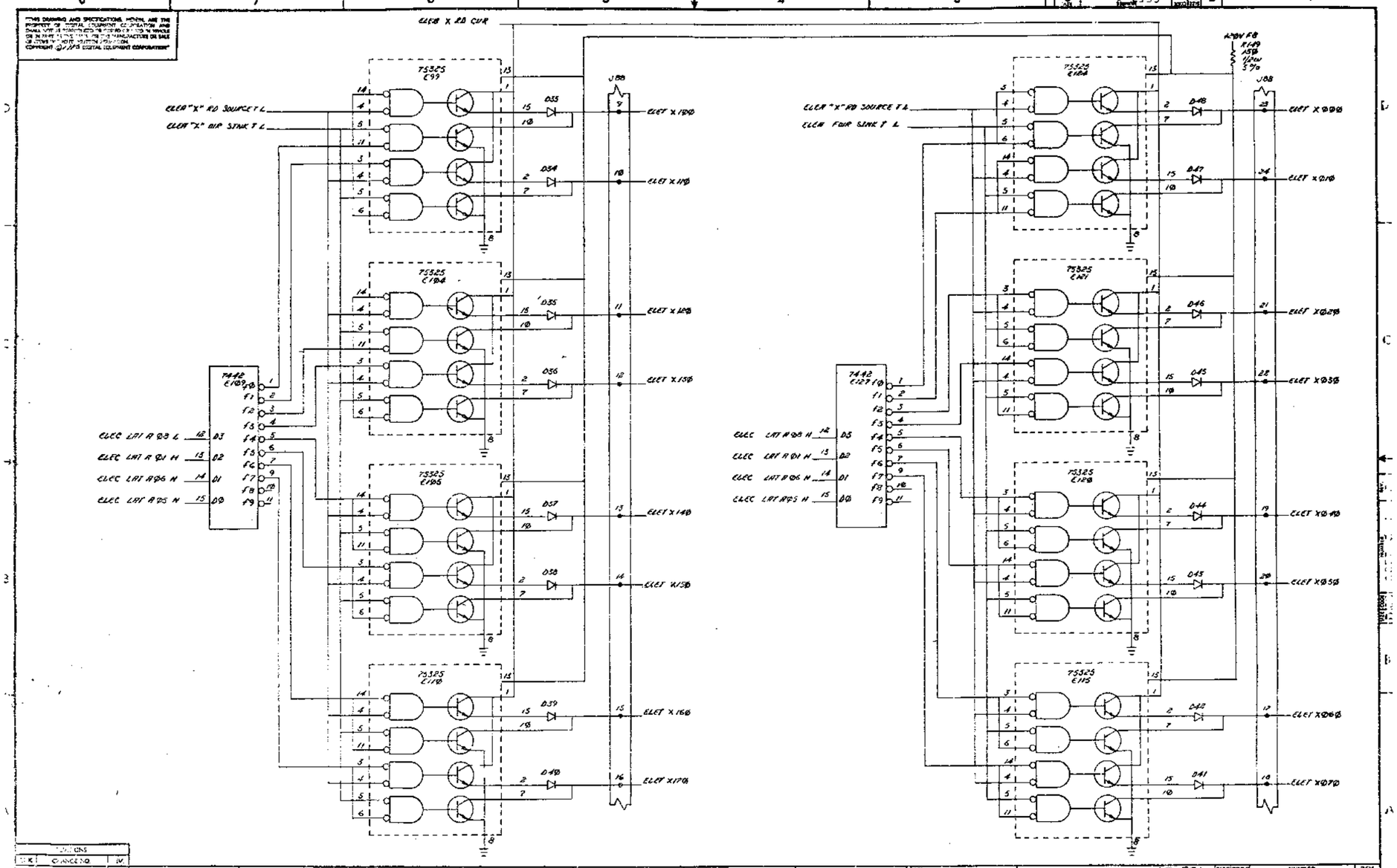
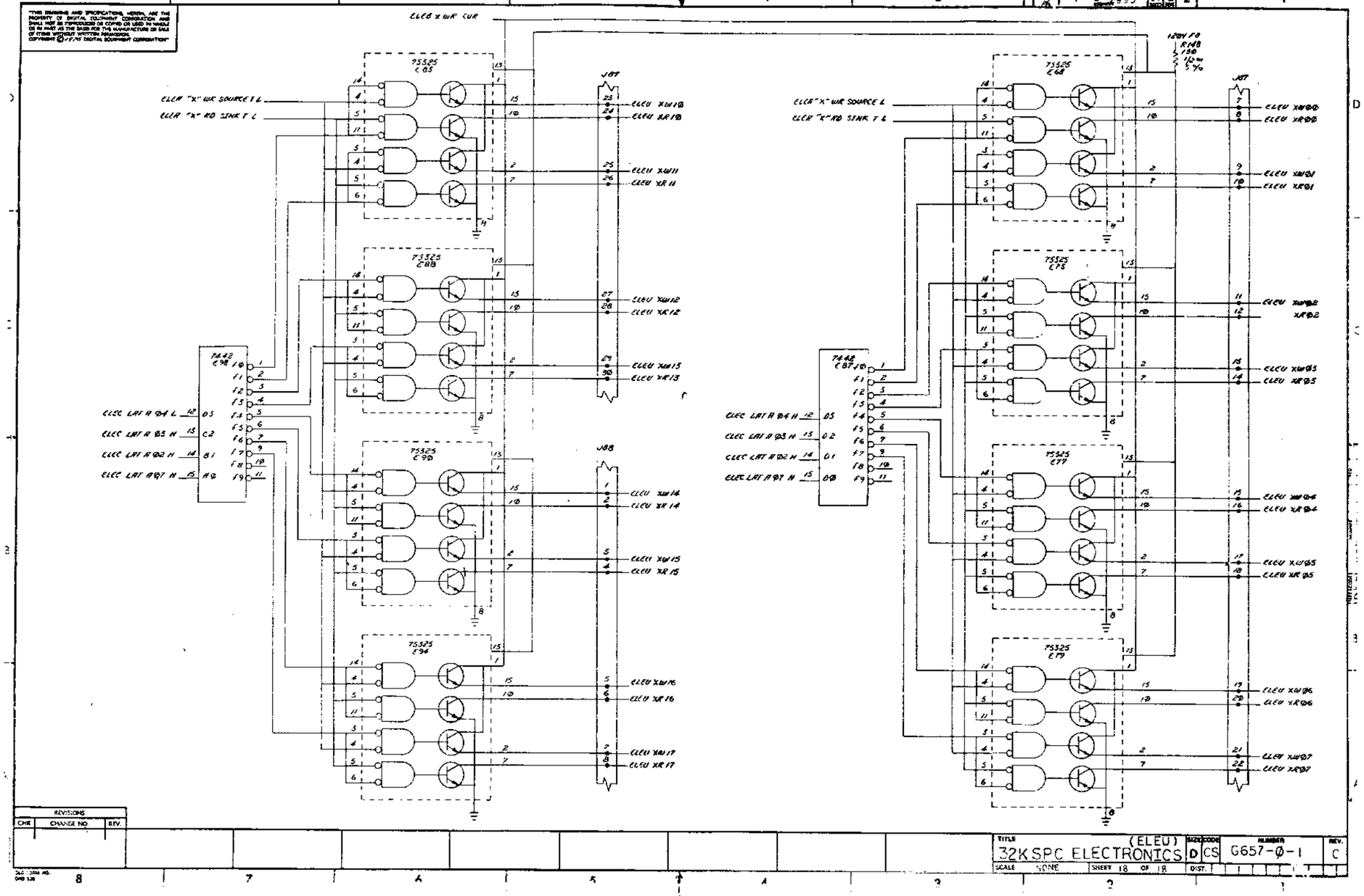


REVISIONS		
LTR	CHANGE NO.	BY

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELET)	D	CS	G657-0-1	C
SCALE NONE SHEET 17 OF 19	DIST.			

342



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEU)	D	CS	G657-0-1	C
SCALE NONE SHEET 18 OF 18	DIST.			

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FIELD MAINTENANCE PRINT SET

B-TC-MM11-DP-3

TABLE OF CONTENTS

MM11-DP PRINT SET
TABLE OF CONTENTS

B-DD-MM11-DP	DRAWING DIRECTORY
D-CS-G652-Ø-1	16K X 18 BIT CORE MEMORY
D-TD-MM11-DP-2	TIMING DIAGRAM
D-UA-MM11-DP-Ø	MM11-DP MEMORY MODULE ASSY
B-DD-H222-Ø	DRAWING DIRECTORY
D-CS-5411554-Ø-1	H222 STACK BOARD
D-UA-H222-A-Ø	H222 CORE MEMORY STACK ASSY
D-CS-M785Ø-0-1	PARITY CONTROLLER
D-UA-5411554-0-0	16K MEMORY STACK
A-PL-5411554-0-0	16K MEM. STK. PARTS LIST

UNIT VARIATIONS COVERED BY THIS PRINT SET
MM11-DP
MM11-D

MM11-DP

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MP 00032

REVISIONS	REV.	CHG. NO.	DATE
	A	MM11DP-1	MAY-76
	B	MM11DP-2	FEB-77

USED ON OPTION/MODEL

SHEET I OF 1

DRN.	W. LUFKIN	DATE 24/oct/75
CHK'D		DATE 24/oct/75
PROJ. ENG.		DATE 10/23/75
FIELD SERV.		DATE 10/29/75

digital

TITLE: MM11-DP MEMORY MODULE

SIZE	CODE	NUMBER	REV.
B	TC	MM11-DP-3	B
DIST.			

EN-01124-18-8676-0227

DRB 124

344

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE SEQUENCE

NOTE: FOR FIELD MAINTENANCE PRINT SET SEE:

B-TC-MM11-DP-3

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET
MM11-DP	16K X 18 BIT MEMORY/MODULE	
MM11-D	16K X 16 BIT MEMORY/MODULE	

REVISIONS		
DATE	CHG. NO.	REV
MAY-76	MM11DP-1	A
FEB-77	MM11DP-2	B

DEC 19-[illegible]-1052-1/4-R92

USED ON OPTION/MODEL

DRN. W. LUFKIN	DATE 24 Oct 75	TITLE
CHK'D W Lufkin	DATE 24 Oct 75	MM11-DP MEMORY MODULE
PROJ. ENG. [illegible]	DATE 10/29/75	
ENG. LDR. K.A. Hill	DATE 10/29/75	SIZE B · CODE CD · NUMBER MM11-DP · REV B
RELEASED [illegible]	DATE 11/4/75	DIST

SHEET 1 OF 2

DRB 106

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ELECTRICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			B-TC-MM11-DP -3	#		MM11-DP FIELD MAINT. PRINT SET	
			MPØØØ32			MM11-DP PRINT SET	
			B-DD-MM11-DP			MM11-DP DRAWING DIRECTORY	
			D-TD-MM11-DP-2		2	MM11-DP TIMING DIAGRAM	
			D-CS-G652-Ø-1			16K X 18 BIT CORE MEMORY	

MECHANICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			D-UA-MM11-DP-Ø		1	MM11-DP MEMORY MODULE ASSY	
			D-UA-H222-A-Ø		1	H222 MEMORY STACK ASSY	

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
MM11-DP MEMORY MODULE	SHEET 2 OF 2	B	DD	MM11-DP	S

DRB 108

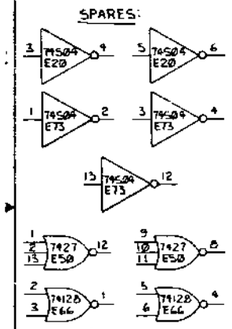
NOTES:

1. INTERLEAVE CONTROL IS ACHIEVED AS FOLLOWS:
   (A) NON-INTERLEAVED
   W5,W6 OUT
   (B) INTERLEAVED
   W5 IN, W6 OUT } ONE MEMORY
   W5 OUT, W6 IN } THE OTHER MEMORY
   (C) ADDRESS JUMPERS FOR THE COMBINED INTERLEAVED MEMORY ARE NOT THE SAME AS FOR THE NON-INTERLEAVED CASE (W1 THRU W4 MUST BE CUT THE SAME FOR BOTH INTERLEAVED MEMORIES). SEE BANK SELECTION CHART AT LEFT FOR BOTH INTERLEAVED AND NON-INTERLEAVED CASES.
2. UNDER NORMAL CONDITIONS (W8 OUT) THE MEMORY WILL NOT RESPOND TO ADDRESSES BETWEEN 124K AND 128K, BECAUSE THESE ADDRESSES ARE RESERVED FOR PERIPHERAL DEVICES ON THE UNIBUS. FOR SPECIAL APPLICATIONS WHERE THE RANGE OF PERIPHERAL ADDRESSES IS MORE RESTRICTED THAN THIS 4K RANGE, THE MEMORY CAN BE CONFIGURED TO INCLUDE THE ADDITIONAL UNIBUS ADDRESSES AS FOLLOWS:
   W8 IN, W7 OUT } 124K TO 126K
   W8 IN, W7 IN } 124K TO 127K
   NOTE THAT FOR SYSTEMS WITHOUT MEMORY MANAGEMENT THIS MEANS THE USEFUL VIRTUAL ADDRESS SPACE FOR MEMORY CAN BE EXTENDED FROM 28K TO 30K OR 31K, BY SACRIFICING SOME PERIPHERAL SPACE.
   CAUTION
   SOME DIGITAL SOFTWARE MAY NOT BE COMPATABLE WITH THE REDUCED PERIPHERAL ADDRESS SPACE. TO ASSURE COMPATIBILITY W8 MUST BE OUT.
3. SCHEMATIC FOR M222 MEMORY STACK IS SHOWN ON CS 5411554-0-1.
   NOTES CONTINUED ON SHEET 2

BANK SELECTION

S.A.	EA11	W1	W2	W3	W4
—	0 16K	OUT	OUT	OUT	IN
—	8K 24K	OUT	OUT	IN	OUT
⊕	16K 32K	OUT	OUT	IN	IN
8K	24K 40K	OUT	IN	OUT	OUT
16K	32K 48K	OUT	IN	OUT	IN
24K	40K 56K	OUT	IN	IN	OUT
32K	48K 64K	OUT	IN	IN	IN
40K	56K 72K	IN	OUT	OUT	OUT
48K	64K 80K	IN	OUT	OUT	IN
56K	72K 88K	IN	OUT	IN	OUT
64K	80K 96K	IN	OUT	IN	IN
72K	88K 104K	IN	IN	OUT	OUT
80K	96K 112K	IN	IN	OUT	IN
88K	104K 120K	IN	IN	IN	OUT
96K	112K 124K	IN	IN	IN	IN

SPARES:



J180-1 +5V
J180-2 STROBE
J180-3 GND
J180-4 VTH
J180-5 STACK XY HI
J180-6 GND
J180-7 STACK XY LO

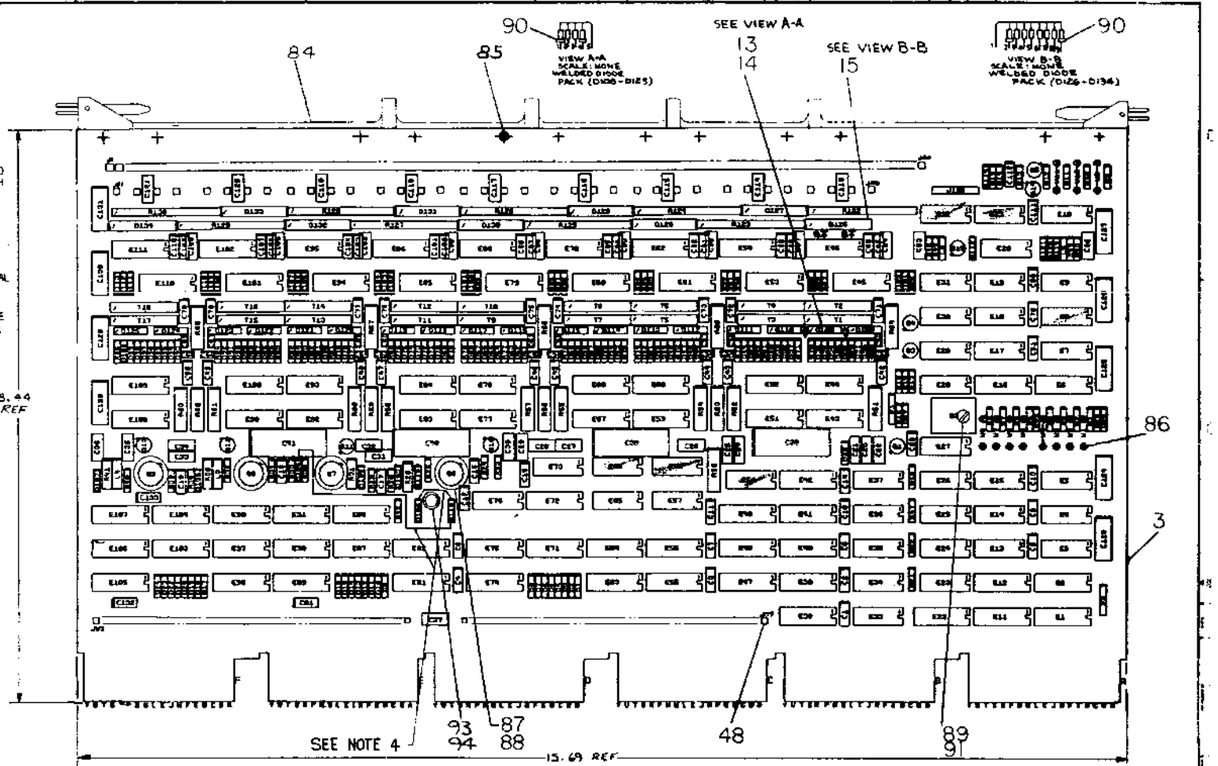
8690	1	8
8691	8	16
75325	8	9
7520	9	16
74157	8	16
74153	8	16
7983	12	5
7475	12	5
7442	8	16
IC TYPE	GND	+5V

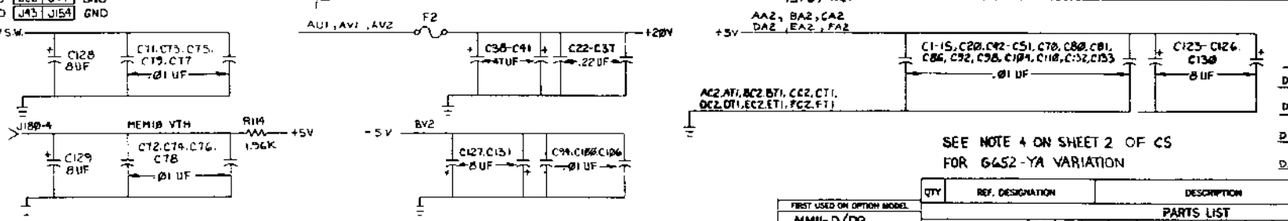
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE.
IC PIN LOCATIONS

+20V SW

MEM9 BIT 16 E17 LOCK OUT J18
B82 J152 STACK XY
J188-7 J179 STACK XY LO
J188-5 J180 STACK XY HI
+20V J153
+5V J155
MEM1 X STACK CHG H J149
MEM2 Y STACK CHG H J150
CE1 J151 STACK V REF
GND J9 J60 GND
GND J26 J77 GND
GND J43 J154 GND

8.44 REF





BUS GRANT LINES

DK2	DL2
DM2	DN2
DP2	DR2
DS2	DT2

SEE NOTE 4 ON SHEET 2 OF CS FOR G652-YA VARIATION

FIRST USED ON OPTION MODEL: MMII-D/DP

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO

PARTS LIST

ETCH BOARD REV D

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK	REVISIONS
C	G652-00001	D. SMELSER	3/9/76
D	G652-00002	D. SMELSER	3/31/76
E	G652-00003	D. SMELSER	5/3/76
F	G652-00004	D. SMELSER	11/1/77

DRWN Robert Kimmell DATE 6-9-75
CHKD D. Smelser DATE 7/10/75
ENGR L. Schuler DATE 7/24/75
PROJ. ENGR L. Schuler DATE 7/24/75
PROD. R.A. Hite DATE 7/31/75
NEXT HIGHER ASSY —H—
SCALE —H—
SHEET 1 OF 11

digital

TITLE 16K X 18 MEMORY ELECTRONICS

SIZE D | CODE CS | NUMBER G652-0-1 | REV. F

DIST.

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PARTS LIST

QTY	QTY	REF. DESIGNATIONS	DESCRIPTION	PART NO	ITEM NO.
REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-G652-0-5	1
REF	REF		MODULE ECO HISTORY	B-MH-G652-0-6	2
1	1		ETCHED CIRCUIT BOARD	5011492	3
2	2	C82,C83	CAPACITOR, 82 pf, 100V, 5%, DM	1000015-08	4
1	1	C111	CAPACITOR, 22 pf, 100V, 5%, DM	1005820-00	5
22	22	C16 THRU C19,C84,C87,C90,C93 C96,C99,C102,C105,C108,C113 THRU C121	CAPACITOR, 120 pf, 100V, 5%, DM	1000018-00	6
18	18	C52 THRU C69	CAPACITOR, 5600 pf, 50V, 10%, CER	1011740-00	7
4	4	C38 THRU C41	CAPACITOR, 47 uf, 30V, AL EL	1012219-00	8
60	60	C1 THRU C15,C20,C21,C42 THRU C51,C70 THRU C81,C86,C88,C89 C91,C92,C94,C95,C97,C98,C100 C101,C103,C104,C106,C107,C85, C109,C110,C112,C132,C133	CAPACITOR, .01 uf, 50V, 20%, CER	1001810-00	9
18	18	C22 THRU C37	CAPACITOR, 22 uf, 50V +80%, -20%, CER	1010214-00	10
9	9	C123 THRU C131	CAPACITOR, 8 uf, 25V, AL EL	1012084-01	11
1	1	D26	DIODE ZENER 1N751A 5.1V, 5%	1110894-00	12
5	9	D109,D111,D113,D115,D117, D119,D121,D123,D125	DIODE PACK COMMON CATHODE	7010918-0-0	13
9	9	D108,D110,D112,D114,D116, D118,D120,D122,D124	DIODE PACK COMMON ANODE	7010918-0-1	14
9	9	D126 THRU D134	DIODE PACK COMMON CATHODE	7010918-0-2	15
105	105	D1 THRU D27,D29 THRU D104, D107, D135	DIODE D872	1105275-00	16
1	1	D106	DIODE ZENER 1N756A, 8.2V, 1%	1103441-01	17
1	1	D105	DIODE ZENER 1N4742, 12V, 10%, 1W	1109502-00	18
18	18	R51 THRU R68	RESISTOR, 21, 3W, 1% WW	1311738-01	19
2	2	R18,R17	RESISTOR, 75, 1/4W, 5%	1302379-00	20
6	6	R25,R30,R35,R40,R43,R46	RESISTOR, 100, 1/4W, 5%	1300229-00	21
1	1	R50	RESISTOR, 220, 3W, 1%, WW	1312123-00	22
24	24	R23,R28,R33,R38,R87,R88,R91 THRU R94,R97 THRU R100,R103 THRU R106,R109 THRU R112, R115,R116	RESISTOR, 1K, 1/4W, 5%	1300365-00	23
1	1	R114	RESISTOR, 1.56K, 1/4W, 1%	1304833-00	24
1	1	R47	RESISTOR, 3.16K, 1/8W, 1%	1303845-00	25
1	1	R49	RESISTOR, 3.3K, 1/4W, 5%	1300439-00	26
1	1	R19	RESISTOR, 4.7K, 1/4W, 5%	1300447-00	27
1	1	R48	RESISTOR, 4.99K, 1/8W, 1%	1305324-00	28
9	9	R89,R90,R95,R96,R101,R102, R107,R108,R113	RESISTOR, 9.09K, 1/8W, 1%	1304855-00	29
16	16	R1 THRU R8,R18,R20,R21,R22, R24,R29,R34,R39	RESISTOR, 10K, 1/4W, 5%	1300479-00	30
2	2	R13,R14	RESISTOR, 14.7K, 1/8W, 1%	1302941-00	31
1	1	R10	RESISTOR, 27K, 1/4W, 5%	1305346-00	32
1	1	R9	RESISTOR, 56K, 1/4W, 5%	1302395-00	33
1	1	R15	RESISTOR, 120K, 1/4W, 5%	1300539-00	34
1	1	R11	RESISTOR, 15K, 1/4W, 5%	1300496-00	35
18	18	R69 THRU R86	RESISTOR, 150, 1/4W, 5%	1300250-00	36
3	3	R45,R44,R115	RESISTOR, 47, 1/4W, 5%	1300292-00	37
2	2	R120,R121	RESISTOR, 56, 1/4W, 5%	1302602-00	38
1	1	R31	RESISTOR, 13, 1W, 1%, WW	1312466-03	39
~~1~~	~~1~~	~~R118~~	~~RESISTOR, 750, 1/4W, 5%~~	~~1301401-00~~	~~40~~
1	1	R42	RESISTOR, 30, 1/4W, 5%	1302751-00	41
1	1	R12	RESISTOR, 8.60K, 1/8W, 1%	1304856-00	42
1	1	R28	RESISTOR, 11, 1W, WW	1312466-01	43
1	1	R38	RESISTOR, 12, 1W, WW	1312466-02	44
9	9	R122 THRU R130	RESISTOR PACK, 100, 1/8W, 1%	1311741-00	45
1	1	F1	FUSE, PICO 1 AMPERE	1210929-02	46
1	1	F2	FUSE, PICO 5 AMPERE	1205747-00	47

G652-YA
G652

PARTS LIST

QTY	QTY	REF. DESIGNATIONS	DESCRIPTION	PART NO.	ITEM NO.
179	179	J1 THRU J179	RECEPTACLE, SINGLE	1211728-00	48
1	1	J180	CONNECTOR, 7 PIN	1212164-00	49
2	2	Q14,Q15	TRANSISTOR, 3009B	1503700-00	50
2	2	Q3,Q4	TRANSISTOR, 8534B	1503409-01	51
5	5	Q5, Q10 THRU Q13	TRANSISTOR, 4258	1503321-00	52
1	1	Q1	TRANSISTOR, 8531B	1503338-00	53
4	4	Q6 THRU Q9	TRANSISTOR, 3182	1503849-01	54
1	1	Q2	TRANSISTOR, MJE 3055	1510555-00	55
18	18	T1 THRU T18	TRANSFORMER, INHIBIT DUAL	1612119-00	56
2	2	L3,L4	INDUCTOR, 0.47 uh, 10%	1610999-00	57
2	2	L5,L6	INDUCTOR, 100 uh	1610882-00	58
2	2	E9,E31	DELAY LINE, 250 NS	1611243-00	59
2	2	E26,E37	I.C. DEC 7400	1905375-00	60
1	1	E76	I.C. DEC 7406	1910743-00	61
1	1	E50	I.C. DEC 7427	1910878-00	62
1	1	E7	I.C. DEC 7430	1905578-00	63
2	2	E32,E65	I.C. DEC 7437	1910091-00	64
5	5	E49,E64,E82,E88,E97	I.C. DEC 7442	1910048-00	65
4	4	E39 THRU E42	I.C. DEC 7475	1909050-00	66
1	1	E6	I.C. DEC 7483	1909932-00	67
1	1	E10	I.C. DEC 74121	1910230-00	68
3	3	E8,E30,E98	I.C. DEC 74128	1912068-00	69
1	1	E16	I.C. DEC 74153	1909931-00	70
1	1	E72	I.C. DEC 74157	1910855-00	71
1	1	E19	I.C. DEC 74H50	1909060-00	72
3	3	E18,E27,E57	I.C. DEC 74S00	1910532-00	73
5	5	E3,E4,E13,E14,E23	I.C. DEC 74S03	1910533-00	74
6	6	E5,E15,E17,E20,E24,E73	I.C. DEC 74S04	1910534-00	75
1	1	E21	I.C. DEC 74S10	1910535-00	76
1	1	E28	I.C. DEC 74S20	1910539-00	77
1	1	E58	I.C. DEC 74S74	1910544-00	78
18	18	E45,E46,E53,E54,E81,E62,E69 E70,E79,E80,E85,E86,E94,E95 E101,E102,E110,E111	I.C. DEC 7520	1911748-00	79
38	38	E43,E44,E47,E48,E51,E52,E55 E56,E59,E60,E63,E87,E68,E71 E74,E75,E77,E78,E91,E83,E84, E87,E89 THRU E93,E96,E98 THRU E100,E103 THRU E109	I.C. DEC 75325	1910980-00	80
5	5	E25,E33 THRU E36	I.C. DEC 8640	1911468-00	81
6	6	E1,E2,E11,E12,E22,E38	I.C. DEC 8641	1911579-00	82
1	1	E29	I.C. DEC 8685	1910849-00	83
1	1		HANDLE	1210711-02	84
12	12		EYELET (HANDLE)	9008732-00	85
22	22		EYELET (SPLIT LUGS)	9008735-00	86
4	4	(USE WITH Q6 THRU Q9)	HEAT SINK, RED	1210091-00	87
4	4	(USE WITH Q5 THRU Q9)	TRANSIPAD	9007201-00	88
1	1		SCREW, PPN #4-40 x 3/8	9008011-01	89
54	54		DIODE ASSEMBLY SPACER	9107771-00	90
1	1		NUT, KEP #4-40	9006557-00	91
		(SEE NOTES AND CHART SHEET #1)	WIRE, #22 AWG (SOLID)	9007580-01	92
1	1		SPACER, THD, ROUND #4-40 X 3/8	9006968-00	93
1	1		SCREW, NYLON, BINDER HD #4-40 X 3/8	9006401-04	94
—	1	R118	RESISTOR 750 1/4W 5%	1301401-00	95
1	—	R118	RESISTOR 22 1/4W 5%	1301969-00	96
A/R	—		WIRE #30 AWG GRN	9105740-55	97
	1	R4	RESISTOR 11, 1W, 1%	1312466-01	98
1		R41	RESISTOR 12, 1W, 1%	1312466-02	99

G652-YA
G652

NOTES:
4. G652-YA VARIATION:
ETCH CUT #1 SIDE 1 BETWEEN BOTTOM OF R118 AND FEEDTHRU.
ETCH CUT #2 SIDE 2 BETWEEN TOP OF R118 AND E76 PIN 10.
ETCH CUT #3 SIDE 2 BETWEEN CATHODE OF DI04 AND CATHODE OF DI05.
COMPONENT CHANGE, RESISTOR, R118 CHANGED FROM 750Ω TO 22Ω 1/4W 5%
RESISTOR, R41 CHANGED FROM 11Ω TO 12Ω 1W, 1%.
JUMPER #1 FROM CATHODE OF DI04 TO BOTTOM OF R118
JUMPER #2 FROM CATHODE OF DI06 TO TOP OF R18
JUMPER WIRE PART # 30 AWG GRY 9105740-55
5. G652-YA WILL NOT OPERATE WITH H222-A'S & B'S
G652 WILL NOT OPERATE WITH H222-YA'S & YB'S

TITLE	16K X 18 MEMORY ELECTRONICS			
SIZE	CODE	NUMBER		REV.
D	CS	G652-Y& -1		T
SCALE	—	SHEET 2 OF 11	DIST.	

348

MEM2 RAW AI2 H
MEM2 RAW AI1 H
MEM1 AI7 H
MEM1 AI5 H
MEM2 RAW AI3 H
MEM2 RAW AI4 H
MEM1 AI6 H
MEM1 SSYN L
MEM1 MSYN H
MEM1 NOT BUSY H
READ
WRITE
MEM1 AI6 H
MEM1 AI7 H
MEM1 AI5 H
MEM2 RAW AI4 H
MEM1 RAW AØI H
MEM1 RAW AØI L
MEM1 AI5 H
MEM1 LEAST BIT H
INTERLEAVE
BUS AI7 L
BUS AI6 L
BUS AI5 L
BUS AØI L
BUS DCLØ L
MEM1 RØ H
MEM1 LOCK MAR H
BUS MSYN L
MEM1 MSYN H
MEM1 RAW AØI H
MEM1 RAW AØI L
BANK SEL H
RØL
MEM1 RØ H
MEM1 X READ SOURCE T L
MEM1 READ SINK T L
MEM1 X READ I SOURCE T H
MEM2 WR BYTEØ L
MEM2 WR BYTE1 L
MEM1 STROBE EN L
MEM2 WR BYTEØ L
MEM2 WR BYTE1 L
MEM1 INPUT MDSØ H
MEM1 INPUT MDS1 H
MEM1 CURMDR L
MEM1 SSYN H
MEM1 SSYN L
MEM1 OUTPUT EN L
MEM1 MSYN H
MEM1 INH ØT L
MEM1 INH 1T L
MEM1 X WRITE SINK T L
MEM1 X WRITE I SOURCE H
MEM1 X STACK CHG H
MEM1 X WRITE SOURCE T L
MEM1 INH RT L
MEM1 NOT BUSY H
MEM1 LOCK MAR H
MEM1 LOCK MAR L
MEM1 LOCK MAR2 L
MEM1 STBØ H
MEM1 STB1 H
+20V SW
(TIMING & CONTROL)

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	16K X18 MEMORY ELECTRONICS (MEM1)	SIZE	CODE	NUMBER	REV.
SCALE	SHEET 3 OF 11	D	CS	G652-0-1	E
		DIST.			

T475 E30 — MEM1 LEAST BIT H; BUS A04 L (BK2, 8640 E33); BUS A03 L (BJ1, 8641 E22); BUS A02 L (BJ2, 8641 E22); MEM1 OUTPUT EN L; D1 D0 D2 D3; R1(1) R1(0) R2(1) R2(0) R3(1) R3(0); ENB1 ENB2 → MEM2 A01 H, MEM2 A04 H, MEM2 A03 H, MEM2 A02 H

T475 E40 — BUS A08 L (BM2, 8640 E34); BUS A06 L (BL1, 8640 E33); BUS A05 L (BK1, 8640 E33); BUS A07 L (BL1, 8640 E33); MEM1 LOCK MAR 1 L; D7 D1 D2 D3; R2(0) R1(1) R1(0) R2(1) R2(0) R3(1) R3(0); ENB1 ENB2 → MEM2 A08 H, MEM2 A06 H, MEM2 A05 H, MEM2 A07 H

T475 E41 — MEM2 RAW 12 H; BUS A12 L (BP2, 8640 E35); BUS A09 L (BM1, 8640 E34); BUS A10 L (BN2, 8640 E34); BUS A11 L (BN1, 8640 E34); MEM2 RAW 11 H; D0 D1 D2 D3; R0(1) R0(0) R1(1) R1(0) R2(1) R2(0) R3(1) R3(0); ENB1 ENB2 → MEM2 A12 H, MEM2 A09 H, MEM2 A10 H, MEM2 A11 H

T475 E42 — MEM2 RAW A0 H; MEM2 RAW C0 H; MEM2 RAW C1 H; BUS A14 L (ER2); BUS A13 L (EP1); MEM2 RAW 14 H; MEM2 RAW 13 H; MEM1 LOCK MAR 2 L; D0 D1 D2 D3; R0(1) R0(0) R1(1) R1(0) R2(1) R2(0) R3(1) R3(0); ENB1 ENB2 → MEM2 WR BYTE 0 L, MEM2 WR BYTE 1 L, MEM2 A13 H, MEM2 A13 L

7400 E37; 7452 E37; 8640 E35; 8690 F35

7437 E65 — MEM2 A14 B0 L; MEM2 A14 B1 L; MEM2 A14 B0 H; MEM2 A14 B1 H

T475T E72 — MEM2 A14 B0 H; MEM1 X WRITE SINK T L; MEM1 X READ SINK T L; MEM1 X WRITE SOURCE T L; MEM1 X READ SOURCE T L; B3 A3 B2 A2 B1 A1 B0 A0 STB S0; F3 F2 F1 F0 → MEM2 Y I SOURCE DIODE END T H; MEM2 Y STACK CHG H; MEM2 Y COMMON SINK T L; MEM2 Y DIODE SOURCE T L; MEM2 Y I SOURCE COMMON END T H; MEM2 Y DIODE SINK T L; MEM2 Y COMMON SOURCE T L

74S04 E73; J150

BUS SSYN L (BU1); MEM1 SSYN H; BUS C0 L (BU2); BUS C1 L (BT2); BUS A0 L (BH2); 8641 E38 → MEM2 RAW C0 H, MEM2 RAW C1 H, MEM2 RAW A0 H

+3V; R22 10K; R21 10K; PARITY DETECT L (BE2); 74S03 E23 → INT SSYN L (BE1)

MEM1 X READ I SOURCE T H; MEM2 Y I SOURCE COMMON END T H; MEM1 X WRITE I SOURCE T H; MEM2 Y I SOURCE DIODE END T H; MEM1 X READ I SOURCE T H; 7406 E76; +20V; R38 1K; C19 120PF; R39 10K; R23 1K; C16 120PF; R24 10K; R33 1K; C18 120PF; R34 10K; C37 0.22 UF; R28 1K; C17 120PF; R29 10K

Q13 4258; Q9 2N3762; R40 100; L4 0.47 UH; R41 SEE NOTE 4 1W; D107 D672 X-READ I.G.; R42 36 1W; R26 11 1W

Q10 4258; Q6 2N3762; R25 100; D103 D672 Y-COMMON END I.G.

Q12 4258; Q8 2N3762; R35 100; L3 0.47UH; R36 12 1W; D135 D672 X-WRITE I.G.; J151 CE1 STACK V REF; R31 13 1W

Q11 4258; Q7 2N3762; R30 100; D104 D672 Y-DIODE END I.G.; R118; CUT STUB; CUT ETCH; ADD JUMPER; FOR YA VARIATION SEE NOTE 4; D105 IN4742 12V; R119 47; D106 IN756A 8.2V

(MAR & CURRENT SOURCES)

TITLE	SIZE/CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM2)	D CS	G652-0-1	F
SCALE	SHEET 4 OF 11	DIST.	

CHK	CHANGE NO	REV.

350

MEM2 A07 H
MEM2 A08 H
MEM2 A09 H
MEM2 A10 H
MEM2 A11 H
MEM2 A12 H
MEM2 A13 H
MEM2 A13 L

MEM1 X READ SINK T L
MEM1 X WRITE SOURCE T L
MEM2 X WRITE I-G.

MEM1 X WRITE SINK T L
MEM1 X READ SOURCE T L
MEM2 X READ I-G.

MEM3 XPWD0 / MEM3 XNRD0
MEM3 XPWD1 / MEM3 XNRD1
MEM3 XPWD2 / MEM3 XNRD2
MEM3 XPWD3 / MEM3 XNRD3
MEM3 XPWD4 / MEM3 XNRD4
MEM3 XPWD5 / MEM3 XNRD5
MEM3 XPWD6 / MEM3 XNRD6
MEM3 XPWD7 / MEM3 XNRD7

MEM3 XS00
MEM3 XS01
MEM3 XS02
MEM3 XS03
MEM3 XS04
MEM3 XS05
MEM3 XS06
MEM3 XS07

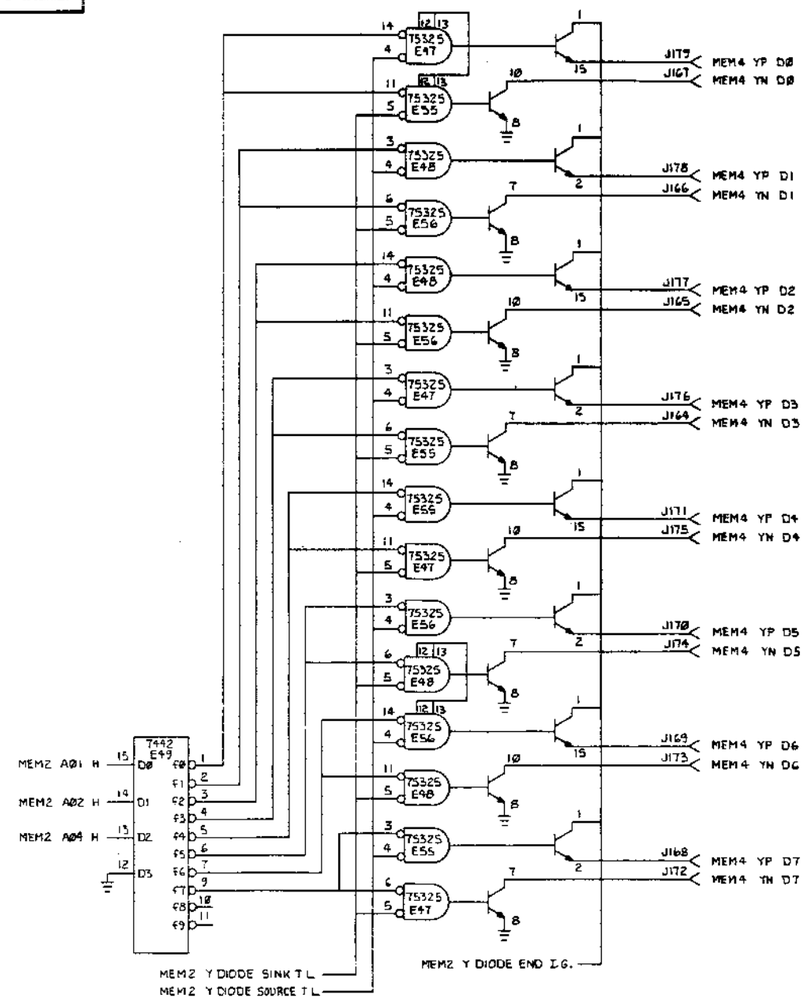
MEM3 XS08
MEM3 XS09
MEM3 XS10
MEM3 XS11
MEM3 XS12
MEM3 XS13
MEM3 XS14
MEM3 XS15

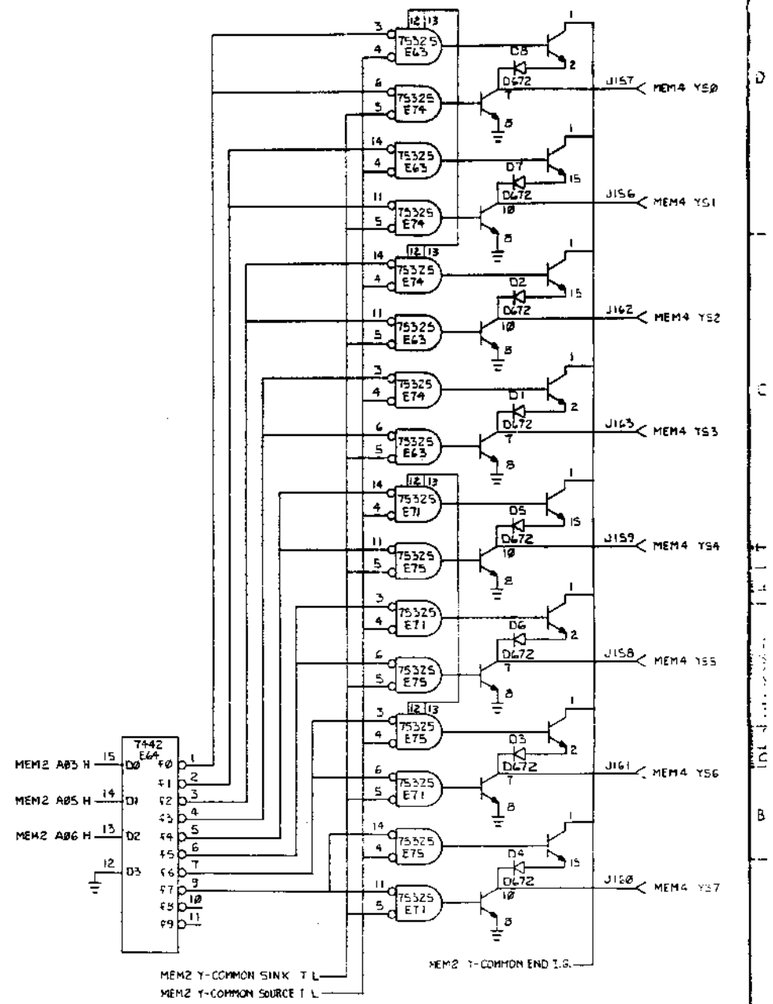
REVISIONS		
CHK	CHANGE NO.	REV.

(X DRIVE)

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM3)	D	CS	G652-0-1	F

SCALE — | SHEET 5 OF 11 | DIST.



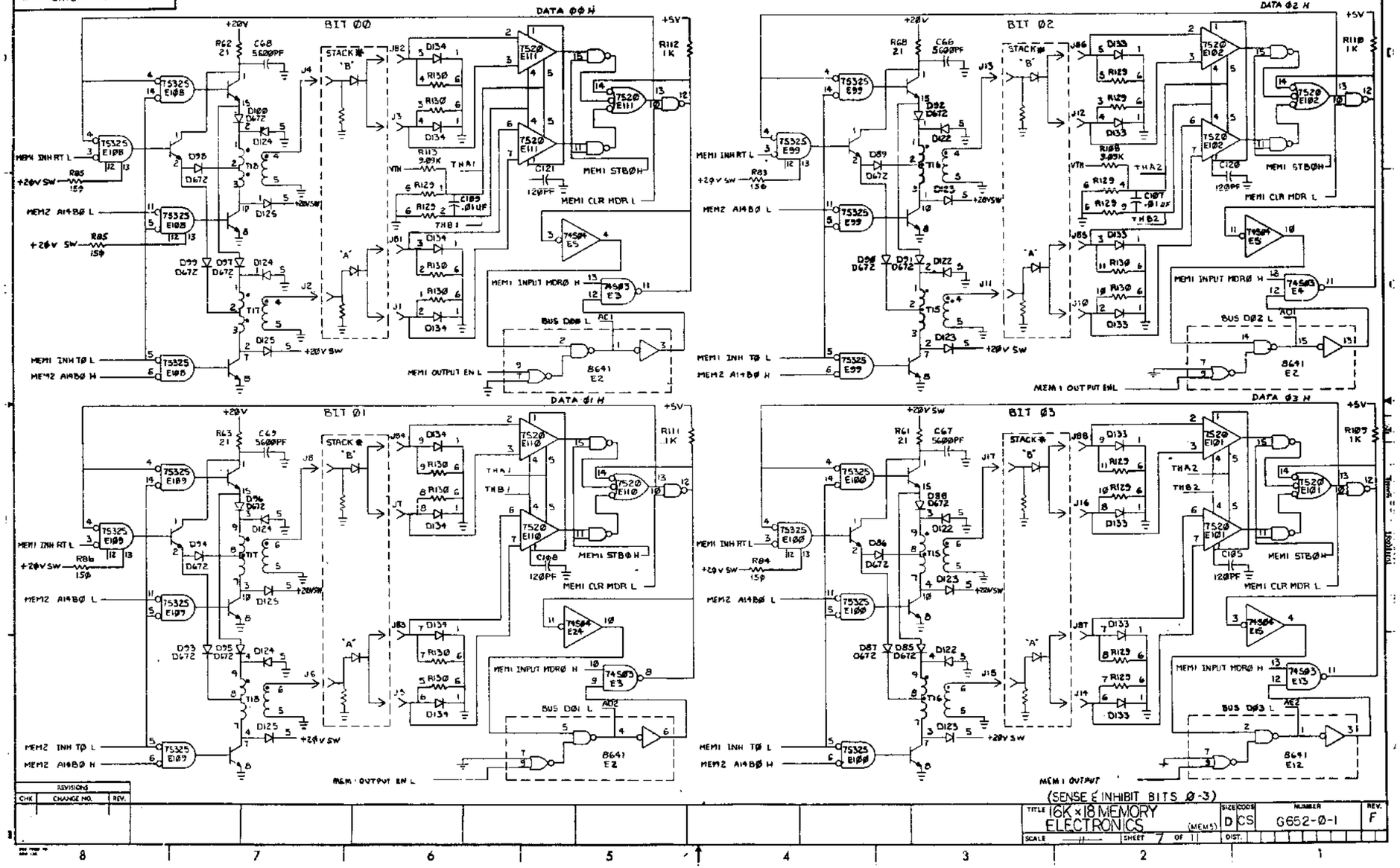


REVISIONS		
CHK	CHANGE NO.	REV.

(Y DRIVE)

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM4)	D	CS	G652-0-1	F
SCALE —	SHEET 6 OF 11	DIST.		

* MOUNTED ON M222 BD:



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	16K x 18 MEMORY ELECTRONICS (MEM5)	SIZE/CODE	D CS	NUMBER	G652-Ø-1
SCALE	#	SHEET 7 OF 11	DIST.		REV. F

MOUNTED ON MEZZ BD

BIT Ø4

DATA Ø4 H

+2ØV SW

MEM1 INH RT L

MEM2 A14BØ L

MEM1 INH TØ L

MEM2 A14BØ H

MEM1 OUTPUT EN L

MEM1 INPUT MDRØ H

BUS DØ4 L

MEM1 STBØ H

MEM1 CLR MDR L

BIT Ø5

DATA Ø5 H

BUS DØ5 L

BIT Ø6

DATA Ø6 H

BUS DØ6 L

BIT Ø7

DATA Ø7 H

BUS DØ7 L

(SENSE & INHIBIT BITS 4-7)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM6)	D	CS	G652-Ø-1	F
SCALE —	SHEET Ø OF 11	DIST.		

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MOUNTED ON M222 BD :

BIT Ø8 — DATA Ø8 H — MEM1 INH RT L — MEM2 A14BI L — MEM1 INH TI L — MEM2 A14BI H — MEM1 STB1 H — MEM1 CLR MDR L — MEM1 INPUT MDR1 H — BUS D08 L — MEM1 OUTPUT EN L

BIT Ø9 — DATA Ø9 H — MEM1 INH RT L — MEM2 A14BI L — MEM1 INH TI L — MEM2 A14BI H — MEM1 STB1 H — MEM1 CLR MDR L — MEM1 INPUT MDR1 H — BUS D09 L — MEM1 OUTPUT EN L

BIT 10 — DATA 10 H — MEM1 INH RT L — MEM2 A14BI L — MEM1 INH TI L — MEM2 A14BI H — MEM1 STB1 H — MEM1 CLR MDR L — MEM1 INPUT MDR1 H — BUS D10 L — MEM1 OUTPUT EN L

BIT 11 — DATA 11 H — MEM1 INH RT L — MEM2 A14BI L — MEM1 INH TI L — MEM2 A14BI H — MEM1 STB1 H — MEM1 CLR MDR L — MEM1 INPUT MDR1 H — BUS D11 L — MEM1 OUTPUT EN L

(SENSE & INHIBIT BITS 8-11)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: 16K x 18 MEMORY ELECTRONICS (MEM7)		SIZE: D	CODE: CS	NUMBER: G652-0-1
SCALE: —	SHEET 9 OF 11	DIST		REV.

* MOUNTED ON M222 BD

BIT 12 — DATA 12 H — STACK * 'B' — 'A' — MEM1 INH RT L — MEM1 INH TI L — MEM2 A14 BI L — MEM2 A14 BI H — +20V SW — MEM1 STB I H — MEM1 CLR MDR L — MEM1 INPUT MDR I H — BUS DI2 L — MEM1 OUTPUT EN L — DATA 13 H

BIT 13 — DATA 13 H — STACK * 'B' — 'A' — MEM1 INH RT L — MEM1 INH TI L — MEM2 A14 BI L — MEM2 A14 BI H — +20V SW — MEM1 STB I H — MEM1 CLR MDR L — MEM1 INPUT MDR I H — BUS DI3 L — MEM1 OUTPUT EN L — DATA 14 H

BIT 14 — DATA 14 H — STACK * 'B' — 'A' — MEM1 INH RT L — MEM1 INH TI L — MEM2 A14 BI L — MEM2 A14 BI H — +20V SW — MEM1 STB I H — MEM1 CLR MDR L — MEM1 INPUT MDR I H — BUS DI4 L — MEM1 OUTPUT EN L — DATA 15 H

BIT 15 — DATA 15 H — STACK * 'B' — 'A' — MEM1 INH RT L — MEM1 INH TI L — MEM2 A14 BI L — MEM2 A14 BI H — +20V SW — MEM1 STB I H — MEM1 CLR MDR L — MEM1 INPUT MDR I H — BUS DI5 L — MEM1 OUTPUT EN L

REVISIONS		
CHK	CHANGE NO.	REV.

(SENSE & INHIBIT BITS 12-15)

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM1)	D	CS	G652-0-1	F
SCALE —	SHEET 10 OF 11	DIST.		

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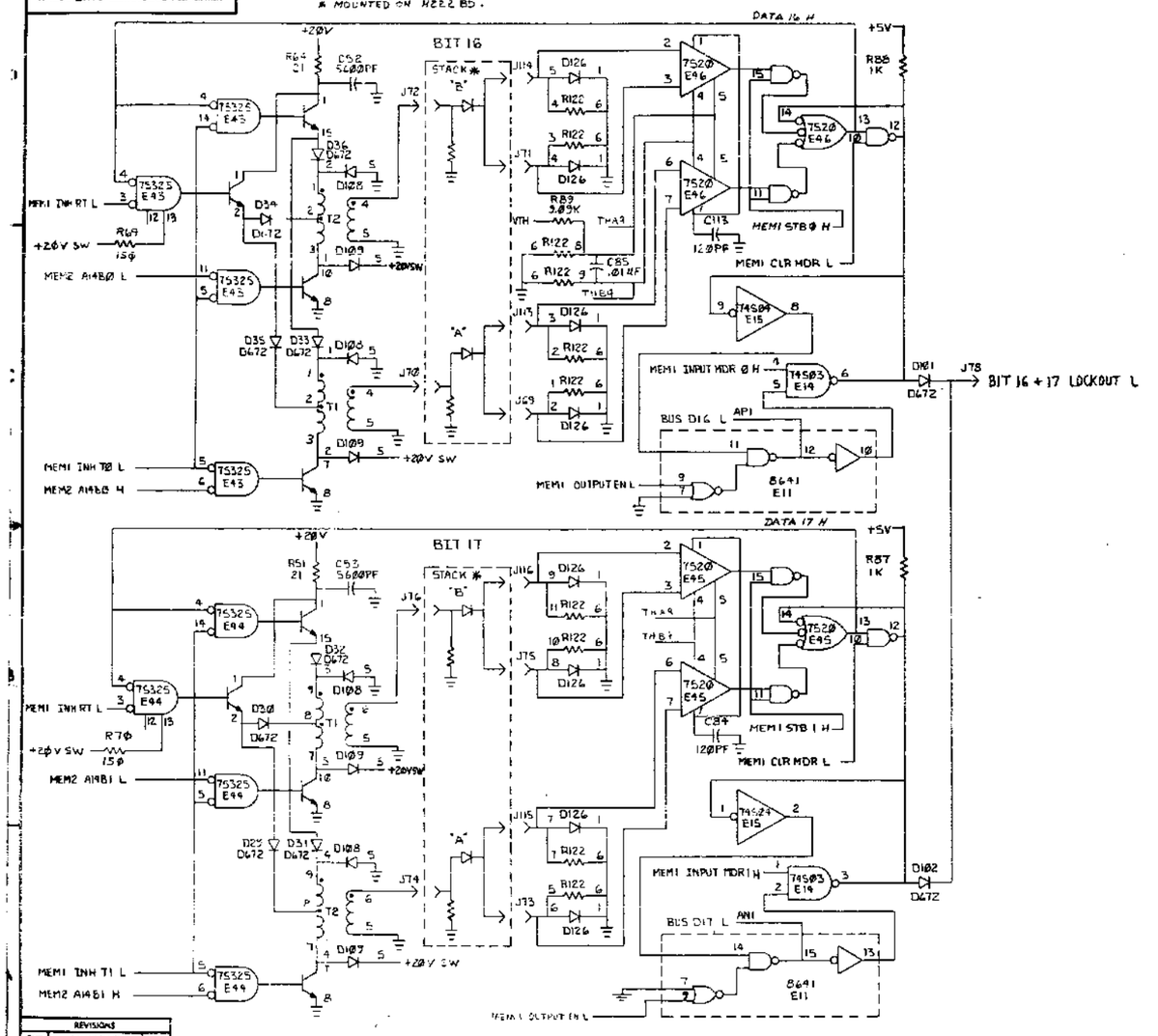
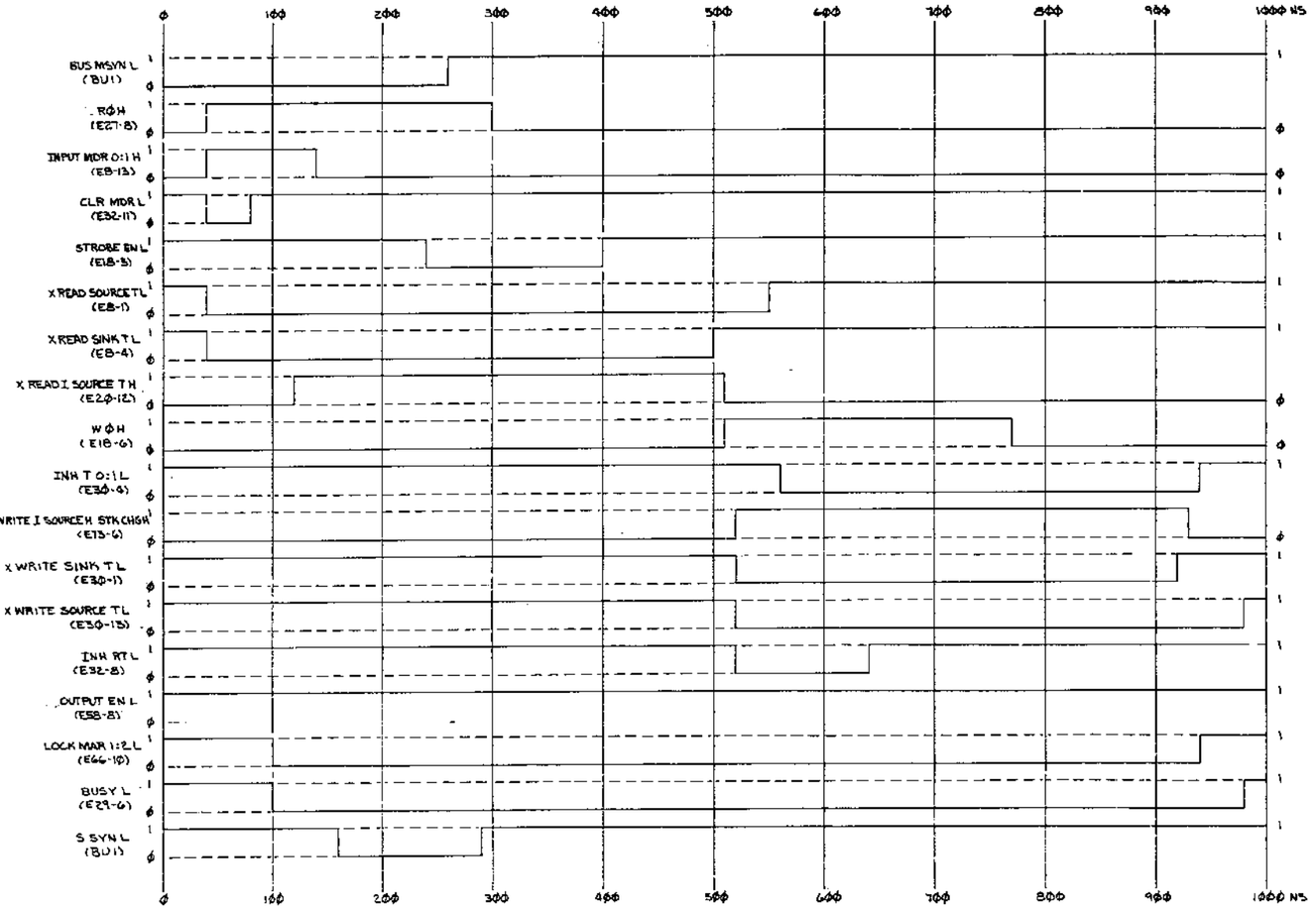
* MOUNTED ON M222 BD.



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE 16K x 18 MEMORY ELECTRONICS (MEM9)
SIZE D CODE DCS NUMBER G652-0-1 REV F
SCALE — SHEET 11 OF 11 DIST.

DAT O



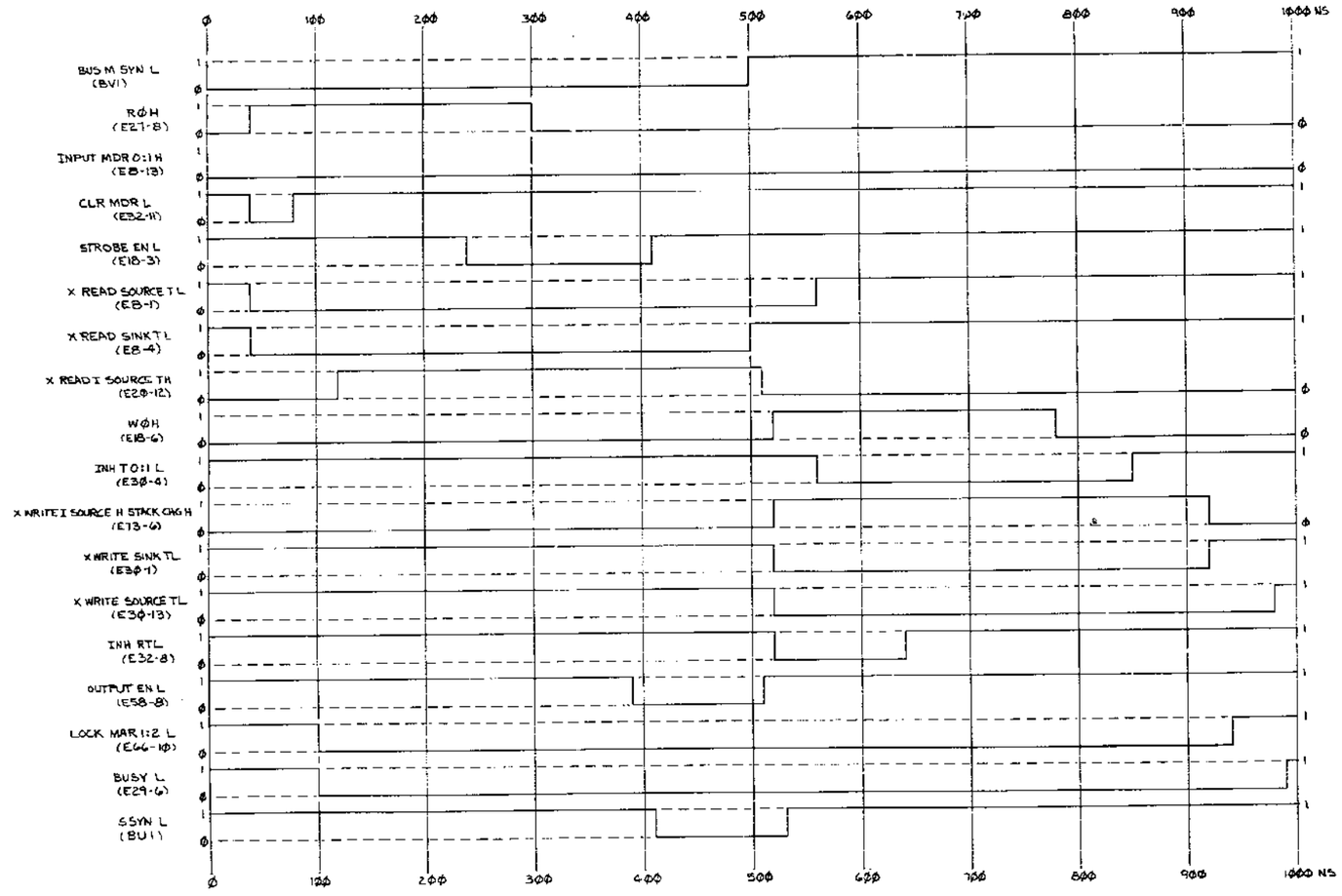
DRN W. LUFKIN	10/24/75	FIRST USED ON MMII-DP	digital
CHK'D W. Lufkin	10/24/75	TITLE MMII-DP TIMING DIAGRAM	
ENG D. Lee	10/24/75		
PROJ ENG(S) T.D.	10/24/75		
PROD. ENG. H.L.S.	23 OCT 75		
NEXT HIGHER ASSY. B-DD-MMII-DP		SIZE D CODE TC NUMBER MMII-DP-2 REV.	
SCALE		DIST.	
SHEET 1 OF 2			

REVISIONS		
DATE	CHANGE NO.	REV.

MMII-DP-2 REV. D

358

DAT I



REVISIONS		
CHGE	CHANGE NO.	REV

TITLE: MMII-DP TIMING DIAGRAM	SIZE: D	CODE: TD	NUMBER: MMII-DP-2
SCALE: —	SHEET 2 OF 2	DIST.	REV.

MMII-DP-2

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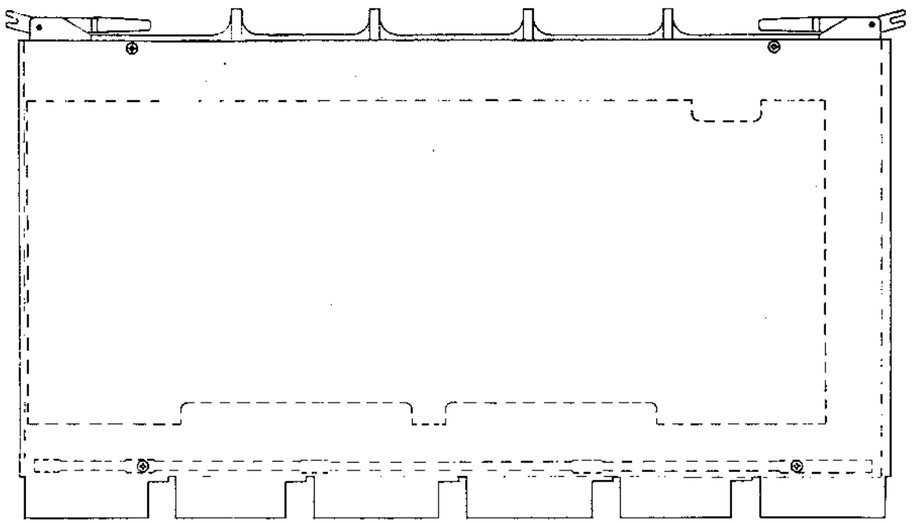
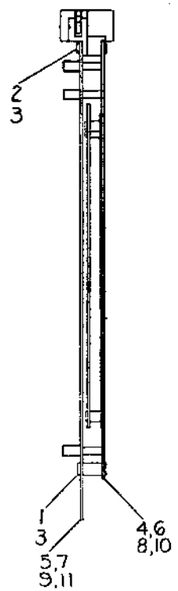
LEGEND

VARIATION		DESCRIPTION	DWG. NUMBER
MMII-D WILL INCLUDE MODULE COMBINATION C OR D	D	G652-YA 16K x 18 CORE MEM.	D-CS-G652-0-1
		H222-YB STACK BOARD (16BIT)	D-UA-H222-B-0
	C	G652 16K x 18 CORE MEM.	D-CS-G652-0-1
		H222-B STACK BOARD (16BIT)	D-UA-H222-B-0
MMII DP WILL INCLUDE MODULE COMBINATION A OR B	B	G652-YA 16K x 18 CORE MEM.	D-CS-G652-0-1
		H222-YA STACK BOARD (8BIT)	D-UA-H222-A-0
	A	G652 16K x 18 CORE MEM.	D-CS-G652-0-1
		H222-A STACK BOARD (8 BIT)	D-UA-H222-A-0

NOTE :
1. MMII-DP MEMORY MODULE ASSEMBLY (16K X 18 BIT) MAY BE SUBSTITUTED FOR MMII-D MODULE ASSEMBLY (16K x 16 BIT).
2. G652-YA'S WILL NOT OPERATE WITH H222'S.
3. H222-YA'S & YB'S WILL NOT OPERATE WITH G652'S.





4	4	WASHER, LOCK #2 INT TOOTH	9006631-00	6
2	2	SCR, PHL PAN HD SS #2-56 x .3116	9006002-01	5
2	2	SCR, PHL PAN HD, SS #2-56 X .19	9006000-01	4
1	1	16K X 18 CORE MEMORY (G652	D-CS-G652-0-1	3
1		H222 STACK BOARD (16 BIT)	D-UA-H222-B-0	2
	1	H222 STACK BOARD (18 BIT)	D-UA-H222-A-0	1
DESCRIPTION			CUST. PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ± DP	DECIMALS OF ACCURACY	FRACTIONAL ± MINIMUM RANGE INCHES					
		UP TO 2	OVER 2 TO 4	OVER 4 TO 7.5	OVER 7.5 TO 13.5	OVER 13.5 TO 40.0	OVER 40.0 TO 72.0
SURFACE QUALITY ✓	.XX ± .03	.03	.03	.03	.03	.03	.03
	.XXX ± .010	.010	.010	.010	.010	.010	.010
MICROINCHES	MEDIUM	2.286	2.008	2.012	1.816	2.024	2.048
	PREFERRED	2.063	2.016	2.025	1.78	2.063	150.1

MMII-D

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

DRN [illegible] 7/24/72
CHK'D
ENG. A
PROJ. ENG.
PROD. CONTROL

NEXT HIGHER ASSY.
D-DD-MMII-DP
SCALE 1/1
SHEET 1 OF 1

FIRST USED ON: MMII-DP

digital

TITLE: MMII-DP MEMORY MODULE ASSEMBLY

SIZE D | CODE UA | NUMBER MMII-DP-0 | REV. A

D UA MMII-DP-0 A

REV	DESCRIPTION	DATE	APPROVED
A	MMIIDP-0002	22 FEB 72	

Shelser 3/16/72

DIGITAL EQUIPMENT CORP. MAYNARD, MASS.

360

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE

SEQUENCE

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET
VAR	TITLE	
H222-A	16K X 18 BIT DEC	
H222-B	16K X 16 BIT DEC	
H222-YA	16K X 18 BIT CONTROL DATA	
H222-YB	16K X 16 BIT CONTROL DATA	

REVISIONS		
DATE	CHG. NO.	REV
5-76	H222-1	A
2-77	H222-2	B

USED ON OPTION/MODEL

DRN. W LUFKIN	DATE 24/OCT/75	TITLE: H222 MEMORY STACK
CHK'D. W Lufkin	DATE 24/OCT/75	
PROJ ENG. R J Smith	DATE 10/28/75	
PROD. RA Hill	DATE 10/29/75	SIZE B · CODE DD · NUMBER H222-Ø · REV B
FIELD SERV.	DATE 11/4/75	DIST

SHEET 1 OF 2

DEC 16-12351-1063-1-R4-2

DRB 106

361

ELECTRICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			B-DD-H222-Ø		2	DRAWING DIRECTORY	
			D-CS-5411554-0-1			H222 STACK BOARD	
			E-IA-7011661-0-0		2	CORE PLANE WIRING ASSEMBLY	

MECHANICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			D-UA-H222-A-0		1	H222 CORE MEMORY STACK ASSY	
			D-PA-1211725-0-0		1	STIFFENER, FINGER END	
			D-PS-1211726-0-0		1	STIFFENER, HANDLE END	
			D-MD-5511796-0-0		1	CORE SUPPORT (16K x 16/18 BIT)	
			D-MD-5511797-0-0		1	COVER (16K X 16/18 BIT)	
			A-PL-5411554-C-C			PARTS LIST	
			D-AH-5411554-C-5			MEMORY STACK SUB	

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
H222 MEMORY STACK	2 OF 2	B	DD	H222-Ø	B

DRB 108

"Y" DICDE MATRIX

NOTE:
PREFIX FOR J158-J179 IS MEMC.

J163 Y57 · J161 Y56 · J152 Y55 · J159 Y54 · J163 Y53 · J162 Y52 · J156 Y51 · J157 Y50

D16 · D52 · D60 · D54 · D62 · D56 · D64 · D58 · D66

J179 YP D0 · YN D0 J167
J178 YP D1 · YN D1 J166
J177 YP D2 · YN D2 J165
J176 YP D3 · YN D3 J164
J171 YP D4 · YN D4 J175
J170 YP D5 · YN D5 J174
J169 YP D6 · YN D6 J173
J168 YP D7 · YN D7 J172

C8 .22 UF 50V · D14 D672 · R56 82 1/2 W · +5V

+20V J153 · C4 .22 UF · Q2 3736 · L1 120 UH · D6 D672 · D4 D672 · D79 D672 · D2 D672 · R54 47 · J155 +5V · C9 .01 UF · W4

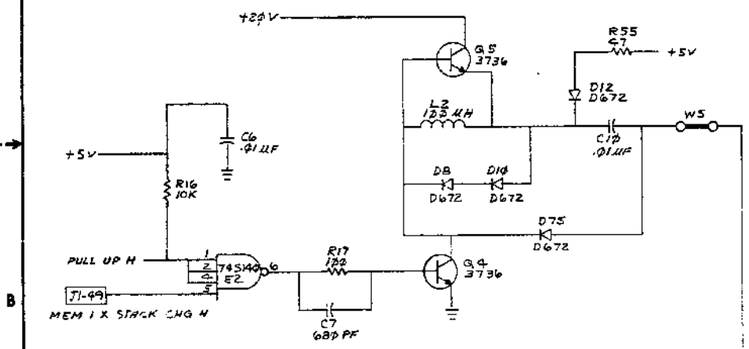
PULL UP H · J150 MEMORY STACK CHG H · 74S140 E2 · R15 100 · Q3 3736 · C5 680 PF

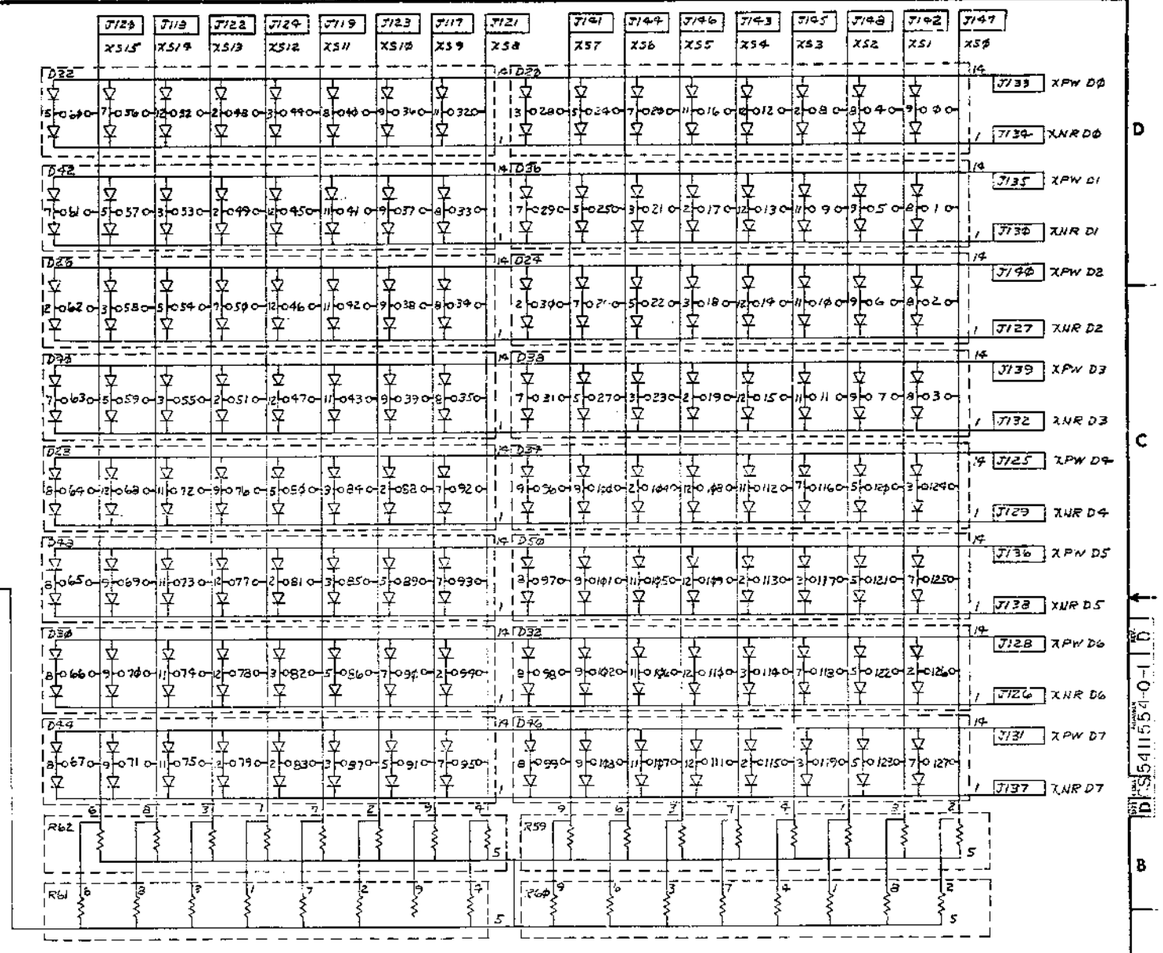
R57 · R58

DRN		6-23-75	FIRST USED ON: MMIID/DP
CHK'D		7/3/75	digital
ENG		7/4/75	TITLE: 16K X 16, 18 MEMORY STACK
PROJ. ENG		7/4/75	
PROD. SERVICES		7/4/75	
NEXT HIGHER ASSY.			
D-UA-H222-0			SIZE D · CODE CS · NUMBER 5411554-0-1 · REV. D
SCALE			
SHEET 1 OF 3			SIZE

"X" DIODE MATRIX

NOTE:
PREFIX FOR J117-J148 IS MEM 3.





DIVISIONS		
SYM	CHANGE NO.	DIV.

TITLE: 16K X 16, 18 MEMORY STACK		SIZE: D	CODE: CS	NUMBER: 5411554-0-1
SCALE: —	SHEET 2 OF 3	DIST.		REV: D

NOTES:
1. R18 THRU R53 ARE 1K, 1/4W ±5%.
2. UNLESS OTHERWISE SPECIFIED: ALL DIODES ARE D672.
3. W3 MUST BE INSTALLED FOR A 16 BIT MEMORY -- M222B, OR M222A USED WITHOUT A PARITY CONTROLLER (M7850).
4. W1 & W2 ARE USED TO ADJUST VREF

BIT 00 A: J1 SB00A, J81 SA00A, J2 I00A — R53, D73
BIT 00 B: J3 SB00B, J82 SA00B, J4 I00B — R52, D71
BIT 01 A: J5 SB01A, J83 SA01A, J6 I01A — R51, D69
BIT 01 B: J7 SB01B, J84 SA01B, J8 I01B — R50, D67
BIT 02 A: J10 SB02A, J85 SA02A, J11 I02A — R49, D65
BIT 02 B: J12 SB02B, J86 SA02B, J13 I02B — R48, D63
BIT 03 A: J14 SB03A, J87 SA03A, J15 I02A — R47, D61
BIT 03 B: J16 SB03B, J88 SA03B, J17 I03B — R46, D59
BIT 04 A: J18 SB04A, J89 SA04A, J19 I04A — R45, D57
BIT 04 B: J20 SB04B, J90 SA04B, J21 I04B — R44, D55
BIT 05 A: J22 SB05A, J91 SA05A, J23 I05A — R43, D53
BIT 05 B: J24 SB05B, J92 SA05B, J25 I05B — R42, D51
BIT 06 A: J27 SB06A, J93 SA06A, J28 I06A — R41, D49
BIT 06 B: J29 SB06B, J94 SA06B, J30 I06B — R40, D47
BIT 07 A: J31 SB07A, J95 SA07A, J32 I07A — R39, D45
BIT 07 B: J33 SB07B, J96 SA07B, J34 I07B — R38, D43
BIT 08 A: J35 SB08A, J97 SA08A, J36 I08A — R37, D41
BIT 08 B: J37 SB08B, J98 SA08B, J38 I08B — R36, D39
BIT 09 A: J34 SB09A, J99 SA09A, J96 I09A — R35, D37
BIT 09 B: J41 SB09B, J100 SA09B, J42 I09B — R34, D35
BIT 10 A: J99 SB10A, J101 SA10A, J95 I10A — R33, D33
BIT 10 B: J96 SB10B, J102 SA10B, J97 I10B — R32, D31
BIT 11 A: J98 SB11A, J103 SA11A, J99 I11A — R31, D29
BIT 11 B: J100 SB11B, J104 SA11B, J101 I11B — R30, D27
BIT 12 A: J52 SB12A, J105 SA12A, J53 I12A — R29, D25
BIT 12 B: J54 SB12B, J106 SA12B, J55 I12B — R28, D23
BIT 13 A: J56 SB13A, J107 SA13A, J57 I13A — R27, D21
BIT 13 B: J58 SB13B, J108 SA13B, J59 I13B — R26, D19
BIT 14 A: J61 SB14A, J109 SA14A, J62 I14A — R25, D17
BIT 14 B: J63 SB14B, J110 SA14B, J64 I14B — R24, D15
BIT 15 A: J65 SB15A, J111 SA15A, J66 I15A — R23, D13
BIT 15 B: J67 SB15B, J112 SA15B, J68 I15B — R22, D11
BIT 16 A: J69 SB16A, J113 SA16A, J70 I16A — R21, D9
BIT 16 B: J71 SB16B, J114 SA16B, J72 I16B — R20, D7
BIT 17 A: J73 SB17A, J115 SA17A, J74 I17A — R19, D5
BIT 17 B: J75 SB17B, J116 SA17B, J76 I17B — R18, D3

W3 (SEE NOTE 3) — J78 BIT 16&17 LOCK OUT

+20 — D1 1N757A 9.1V — R3 1.21K — R14 1K — R5 10K — R6 21.5K — W1 — W2 (SEE NOTE 4) — C1 .01 MF — R10 3.48K — R8 1.50K — R9 1.50K — R4 1.62K — R2 3.16K — R1 82Ω — R7 1K — C2 .22 MF — R13 100 — R11 470 — C3 .01 MF — R12 1.96K — Q1 D534B — J151 V REF

J9, J26, J43, J60, J77, J154

XY J152 — XY LO J79 — XY HI J80

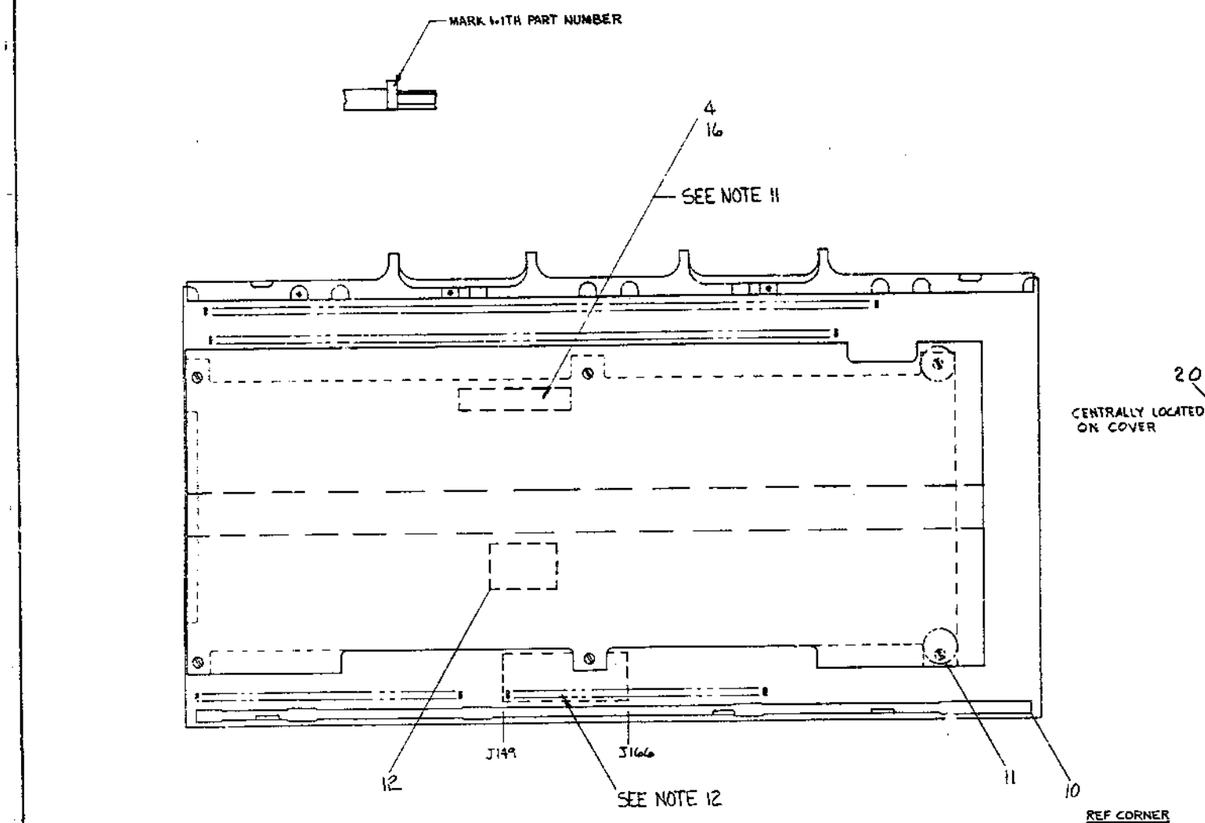
REVISIONS		
CH-K	CHANGE NO. -	REV.

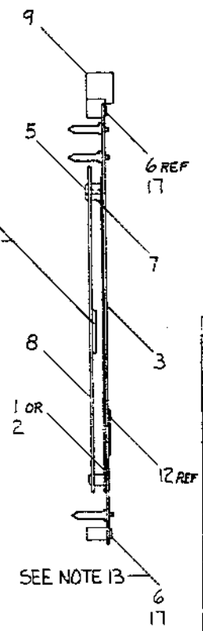
TITLE: ISK X-16, 18 MEMORY STACK		SIZE/CODE: D CS5411554-0-1	NUMBER	REV. D
SCALE	SHEET 3 OF 3	DIST.		

LEGEND			
NUMBER	NUMBER	VARIATION	USED ON
H222-YA	H222-A	16K X 18 BIT	MM11-DP
H222-YB	H222-B	16K X 16 BIT	MM11-D

NOTES:

1. BOND ITEM 1 (CORE PLANE) TO ITEM 3 (STACK BOARD) WITH ITEM 14 (ADHESIVE).
2. SWAGE ITEM 1 (CORE PLANE) AND ITEM 3 (STACK BOARD) TOGETHER WITH ITEM 7 (STANDOFF).
3. USE ITEM 15 (PROTECTIVE COATING) TO COAT ALL MAGNETIC WIRE TERMINATIONS AFTER ELECTRICAL TEST. (REF E-IA-7011661-0-0)
4. BOND TWISTED CABLES TO ITEM 1 (CORE PLANE) WITH ITEM 13 (ADHESIVE). SEE E-IA-7011661-0-0.
5. BOND X & Y DRIVE LOOPS IN PLACE WITH ITEM 13 (ADHESIVE). SEE E-IA-7011661-0-0 NOTES
6. REFER TO E-IA-7011661-0-0 WHEN SOLDERING WIRE TERMINATIONS TO ITEM 3 (STACK BOARD).
7. ASSEMBLE ITEMS 9 & 10 (STIFFENERS) TO ITEM 3 (STACK BOARD) USING ITEMS [illegible].
8. ATTACH ITEM 8 (COVER) TO ITEM 3 (STACK BOARD) USING ITEM 5 (NYLON SCREW).
9. APPLY ITEM 11 (WARRANTY SEAL) WHERE SHOWN.
10. APPLY ITEM 12 (NAME PLATE) TO SIDE 2 OF ITEM 3 (STACK BOARD) AS SHOWN.
11. MARK ITEM 3 (STACK BOARD) ON SIDE 2 WITH DEC PART NUMBER, SEQUENTIAL SERIAL NUMBER, AND CIRCUIT SCHEMATIC REVISION USING ITEM 4 (INK) AND ITEM 16 (EPOXY). EXAMPLE: H222-A-001-C5-B.
12. TRIM AMP POSTS AND COMPONENT LEADS TO BE <5 IN THIS AREA OF SIDE 2.
13. INSTALL ITEM 17 (LOCKWASHER) "TORQUE HAND TIGHT".





1	1	1	1	TAPE FOAM ADHESIVE 1/4"X3.5"	9008436-01	20
1	–	–	–	CORE PLANE WIRING ASSY	E-IA-7011661-3-A	19
1	1	–	–	CORE PLANE WIRING ASSY	E-IA-7011661-2-0	18
8	8	8	8	WASHER, LOCK, #2 INT TOOTH	9006631-00	17
AR	AR	AR	AR	EPOXY	4901082-00	16
AR	AR	AR	AR	PROTECTIVE COATING (F145)	4901083-00	15
AR	AR	AR	AR	ADHESIVE (RTV 3145)	4901084-00	14
AR	AR	AR	AR	ADHESIVE (RTV 3140)	4901085-00	13
1	1	1	1	NAME PLATE	[illegible]	12
2	2	2	2	WARRANTY SEAL		11
1	1	1	1	STIFFENER, FINGER END	D-PS-1211725-0-0	10
1	1	1	1	STIFFENER, HANDLE END	D-PS-1211726-0-0	9
1	1	1	1	COVER	D-MD-5511791-0-0	8
6	6	6	6	STANDOFF .25 DIA X .19 LG	9009677-00	7
8	8	8	8	SCR, PHL PAN HD SS 2-56 X .19	9006000-01	6
6	6	6	6	SCR, SLT BNDR HD NYLON 4-40 X .19	9009233-04	5
AR	AR	AR	AR	INK, BLACK	4901084-00	4
1	1	1	1	H222 STACK BOARD	541554	3
–	–	1	–	CORE PLANE WIRING ASSY	E-IA-7011661-1-0	2
–	–	–	1	CORE PLANE WIRING ASSY	E-IA-7011661-0-0	1
H222-YB	H222-YA	H222-B	H222-A	DESCRIPTION	ENG. PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

CLASS OF ACCURACY (CHECK ONE): MEDIUM ☐ PREFERRED ☐

OVER TO	.0 TO 3.0	3.0 TO 12	12 TO 48	48 TO 120	120 TO 315	OVER 315 TO 500
MEDIUM	±.004	±.008	±.012	±.016	±.024	±.04
PREFERRED	±.002	±.004	±.008	±.01	±.015	±.02

SURFACE QUALITY IN MICROINCHES

THIRD ANGLE PROJECTION

REMOVE BURRS AND SHARP EDGES

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DRAWN J.LUPKIN 7/17/75

CHK'D

ENG'G

PROJ. LDR.

PROD.

NEXT HIGHER ASSY. D-IA-MM11-D-0-1

SCALE 1/1

SHEET 1 OF 1

FIRST USED ON MM11-DP

TITLE H222 CORE MEMORY STACK ASSEMBLY

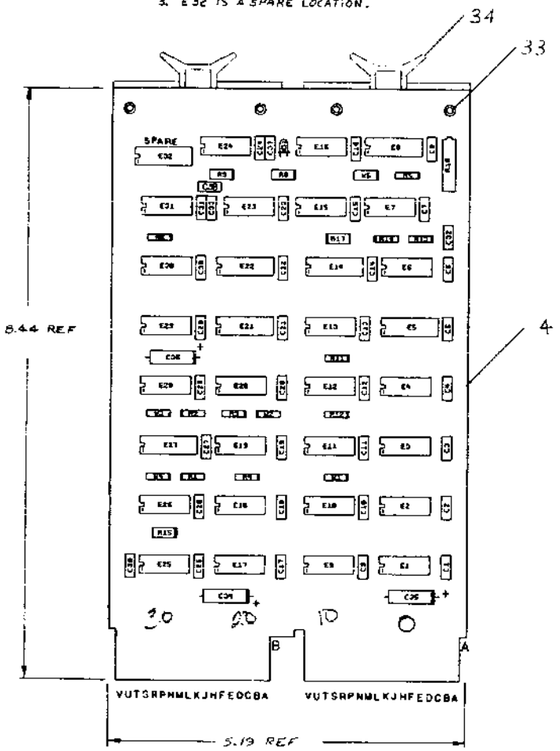
SIZE D CODE 04939 NUMBER H222-3-0 REV. S

DIST

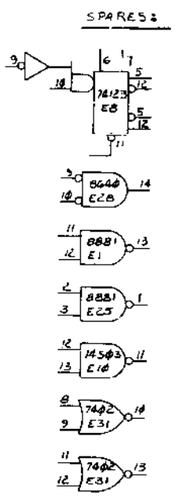
366

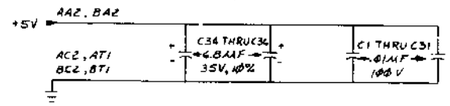
NOTES:

1. ALL RESISTORS 1/4 W, 5% UNLESS OTHERWISE NOTED.
   ALL CAPACITORS ARE 100V, 20% UNLESS OTHERWISE NOTED.
2. JUMPER CONTROL OPERATIONS AS FOLLOWS:
   W1 THRU W4 SELECT CSR ADDRESS, W5 CAPACITOR FOR 5 SYN DLY, NOT USED.
3. E32 IS A SPARE LOCATION.



SPARES:





8640	1	8
8266	8	16
74151	8	16
74174	8	16
74123	8	16
7485	8	16
314A	1	8
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REF				
REF		CIRCUIT SCHEMATIC	D-CS-M7850-0-1	REF
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7850-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7850-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7850-0-6	3
1		ETCHED CIRCUIT BOARD	5010651-00	4
1	C39	CAP 470 PF, 100V, 5% (DM)	1000024-00	5
2	C33, C37	CAP 330 PF, 100V, 5% (DM)	1000023-00	6
32	C1 THRU C32	CAP .01 MF, 100 V, 20% DISC	1001610-01	7
3	C34, C35, C36	CAP 6.8 MF, 35 V, 10% STANT	1005306-00	8
1	D1	DIODE, L.E.D.	1110324-00	9
5	R1 THRU R5	RES 4.7K 1/4W 5%	1306447-00	10
3	R8, R9, R15	RES 100 1/4W 5%	1300229-00	11
5	R6, R10, R11, R12, R17	RES 470 1/4W 5%	1300316-00	12
1	R13	RES 1K 1/4W 5%	1300365-00	13
1	R16	RES 10K 3/4W 2% (TEMPERA	1303143-10	14
1	E24	I.C. 7400	1905575-00	15
1	E30	I.C. 7430	1905578-00	16
1	E31	I.C. 7402	1903004-00	17
1	E19	IC. 314A	1909704-00	18
1	E23	IC. 7408	1910155-00	19
4	E1, E9, E17, E25	IC. 8881	1909705-00	20
1	E16	I.C. 74H04	1909931-00	21
1	E27	I.C. 7485	1910224-00	22
1	E8	I.C. 74123	1910836-00	23
1	E10	I.C. 74S03	1910533-00	24
1	E15	I.C. 74S74	1910544-00	25
1	E21	I.C. 74174	1910652-00	26
2	E5, E22	I.C. 74157	1910655-00	27
9	E2, E3, E11, E12, E18 E20, E26, E28, E29	I.C. 8640	1911469-00	28
2	E4, E13	I.C. 74S280	1911573-00	29
1	E14	I.C. 8266	1909934-00	30
2	E6, E7	I.C. 7474	1905547-00	31
4	W1 THRU W4	INSULATED JUMPER	9009185-00	32
4		EYELET	9004732-00	33
2		HANDLE, FLIPCHIP (MAGENTA)	9008337-6	34

QTY	REF. DESIGNATION	DESCRIPTION	PART NO	ITEM NO.

FIRST USED ON OPTION MODEL

PARTS LIST

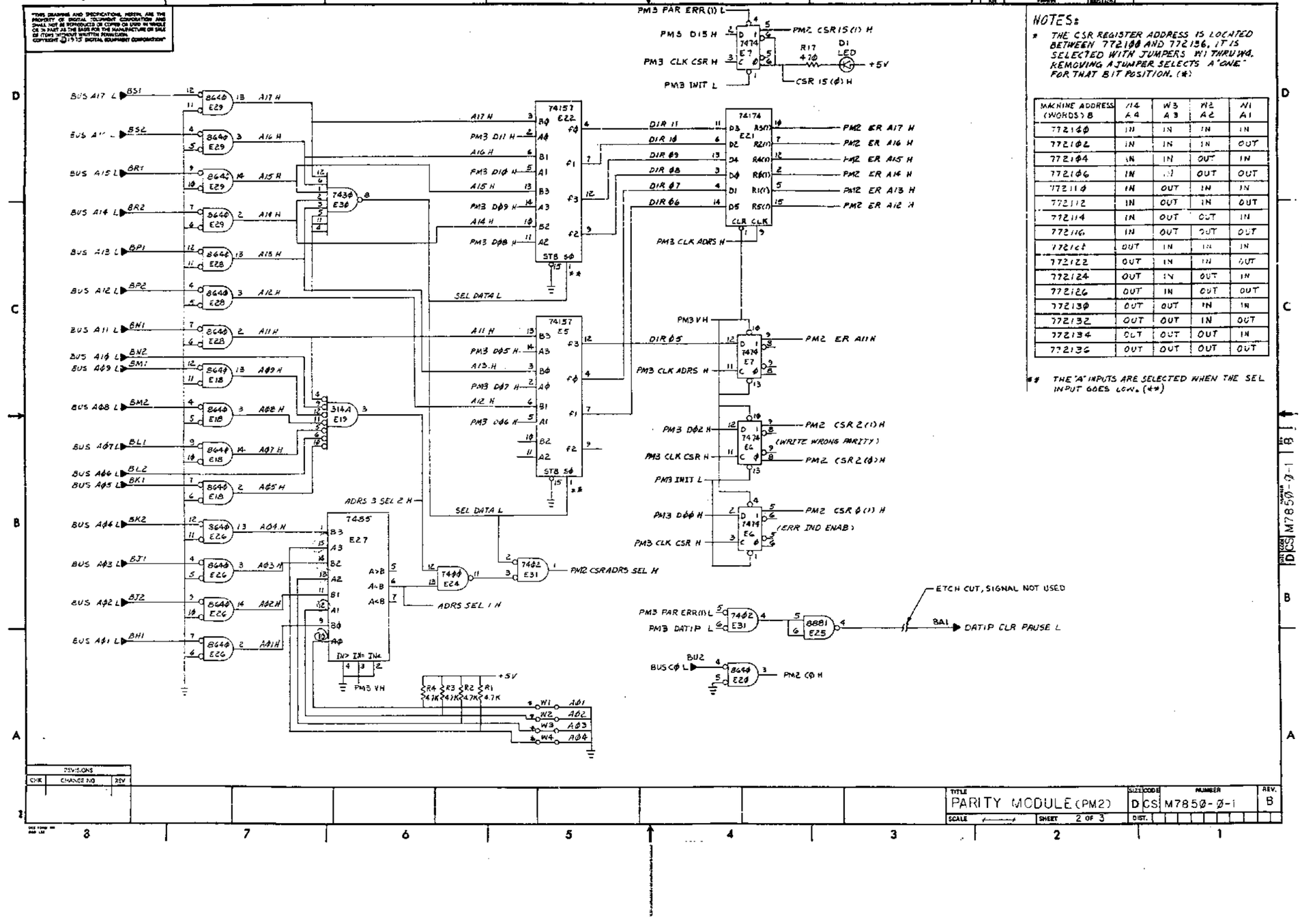
ETCH BOARD REV. B

SEMICONDUCTOR CONVERSION CHART

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

DRN. W. LUFKIN	DATE 2-5-75	digital
CHK'D	DATE 2/17/75	
ENG.	DATE 2/13/75	
PROJ. ENG.	DATE 2/13/75	TITLE PARITY MODULE
PROD. ENG.	DATE 2/13/75	
NEXT HIGHER ASSY		SIZE D / CODE CS / NUMBER M7850-0-1 / REV. B
SCALE		DIST.
SHEET 1 OF 3		

M7850-0-1 REV B



NOTES:

* THE CSR REGISTER ADDRESS IS LOCATED BETWEEN 772100 AND 772136, IT IS SELECTED WITH JUMPERS W1 THRU W4. REMOVING A JUMPER SELECTS A "ONE" FOR THAT BIT POSITION. (*)

MACHINE ADDRESS (WORDS) 8	W4 A4	W3 A3	W2 A2	W1 A1
772100	IN	IN	IN	IN
772102	IN	IN	IN	OUT
772104	IN	IN	OUT	IN
772106	IN	IN	OUT	OUT
772110	IN	OUT	IN	IN
772112	IN	OUT	IN	OUT
772114	IN	OUT	OUT	IN
772116	IN	OUT	OUT	OUT
772120	OUT	IN	IN	IN
772122	OUT	IN	IN	OUT
772124	OUT	IN	OUT	IN
772126	OUT	IN	OUT	OUT
772130	OUT	OUT	IN	IN
772132	OUT	OUT	IN	OUT
772134	OUT	OUT	OUT	IN
772136	OUT	OUT	OUT	OUT

** THE "A" INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW. (**)

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM2)	D	DCS	M7850-Ø-1	B
SCALE	SHEET 2 OF 3	DIST.		

M7850-Ø-1

DCS M7850-0-1

NOTES:
1. B INPUTS SELECTED WHEN SEL IS LOW (0)
2. SET R6 TO 110 NSEC ± 10 NS. FROM SIGNAL ON PIN BE1 GOING LOW TO SIGNAL ON PIN BB2 GOING HIGH. (@ 1.5V LEVEL.) (1 0)

PM2 CSR 15 (1) H
BUS DI4 L
BUS DI3 L
BUS DI2 L
PM2 ER A11 H
PM2 ER A10 H
PM2 ER A9 H
PM2 ER A8 H
PM2 ER A13 H
PM2 ER A12 H
PM2 ER A11 H
BUS DØ4 L
BUS DØ3 L
PM2 CSR 2 (1) H
BUS DØ1 L
PM2 CSR Ø (1) H
PM3 READ SEL H

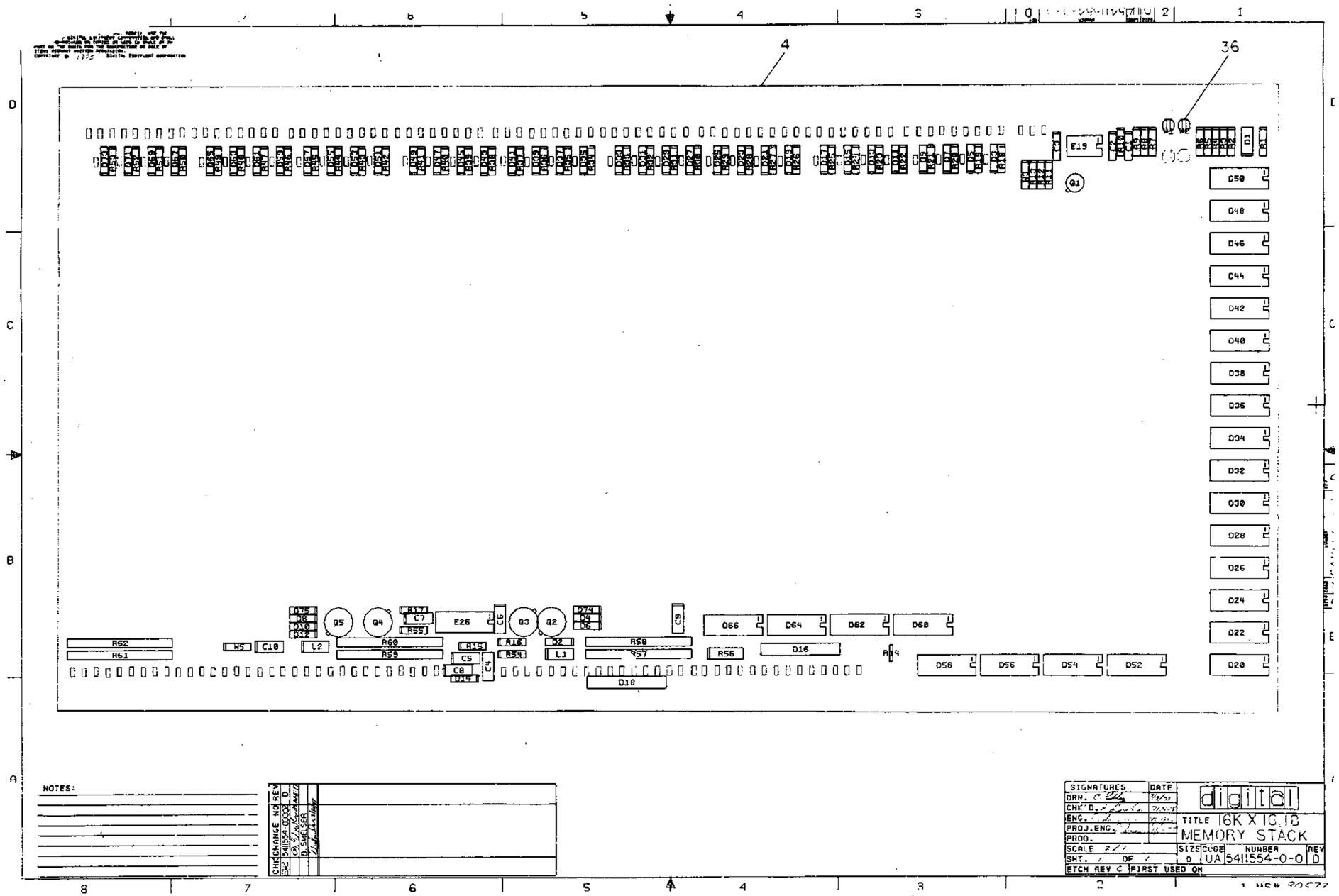
8881 E9, E17, E1
8640 E12, E11, E2, E3
74S280 E13, E4
74S03 E10, E18
8266 E14
74S74 E15
74H23 E8
74H04 E16
7400 E24, E23
8640 E20
8881 E25, E28

PM3 C1 H
INT BUS P1 L
INT BUS PØ L
PM3 PAR ERR H
PM3 VH
PM2 CØH
PM3 INT SYN H
PM3 C1 L
PM3 8 BIT GEN H
PM3 A BIT GEN H
PM3 DATIP L
INT BUS SSYN L
PM3 WIT L
PM3 INT SSYN H
PM3 M SYN PULSE L
PM3 PAR ERR H
S SYNC INH Ø H
BUS SSYN L
BUS INIT L
PM3 INIT L
BUS C1 L
PM3 M SYN PULSE L
BUS M SYN L
PM2 CSR ADRS SEL H
PM3 CLR CSR H
CLK CSR L
PM3 CLR ADRS H
PM3 PAR ERR (1) L
INT BUS PAR MOD DET L

R5 4.7K +5V
R6 470 +5V
R7 470
R8 470
R9 100
R13 1K +5V
R15 100
R16 10K
C32 .1UF
C37 330 PF 5%
C38 330 PF 5%
C39 330 PF 5%

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: PARITY MODULE (PM3)
SIZE CODE: D
DCS M7850-0-1
REV. B
SCALE
SHEET 3 OF 3
DIST



NOTES:

CHK	CHANGE NO	REV
		D
	5411554-0000	
	Ch'd Schubert MAY 12	
	D. SMELSER	
	Mike Lavoie	

SIGNATURES	DATE
DRN. C Day	5/5/82
CHK'D. [illegible]	5/10/82
ENG. [illegible]	[illegible]
PROJ.ENG. [illegible]	[illegible]
PROD.	
SCALE 2/1	
SHT. 1 OF 1	
ETCH REV C	FIRST USED ON

digital

TITLE 16K X 16,18
MEMORY STACK

SIZE	CODE	NUMBER	REV
D	UA	5411554-0-0	D

370

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M. Poirier DATE 7/7/75
CHECKED DATE 7/7/75 SECTION
ENG D DATE 7/14/75
PROD R Q Hall DATE 7/14/75 ISSUED SECT.

ITEM NO	DWG NO./PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATIONS
1	D-CS-5411554-0-1	CIRCUIT SCHEMATIC	REF	
2	D-AH-5411554-0-5	ASSY/DRILLING HOLE LAYOUT	REF	
3	B-MH-5411554-0-6	MODULE ECO HISTORY	REF	
4	5011493	ETCHED CIRCUIT BOARD	1	
5	1000026-00	CAP 680 PF 100V 5% DM	2	C5,C7
6	1001610-01	CAP .01UF 100V CER	5	C1,C3,C6,C9,C10
7	1010274-00	CAP .22UF 50V CER	3	C4,C8,C2
8	1105275-00	DIODE D672	44	D2-D15,D17,D19,D21,D23,D25,D27
				D29,D31,D33,D35,D37,D39,D41,
				D43,D45,D47,D49,D51,D53,D55,D59
				D61,D63,D65,D67,D69,D71,D73,D74
				D75
9	1109990-00	DIODE,ZENER 1N757A 9.1V 5%	1	D1
10	7010918-3-0	DIODE NETWORK	2	D16,D18
11	1910010-00	DIODE PACK 2501	24	D20,D22,D24,D26,D28,D30,D32,D34
				D36,D38,D40,D42,D44,D46,D48,D50
				D52,D54,D56,D58,D60,D62,D64,D66
12	1300229-00	RES 100 1/4W 5%	3	R13,R15,R17
13	1301775-00	RES 820 1/4W 5%	1	R1
14	1304862-00	RES 1.62K 1/8W 1%	1	R4
15	1302871-00	RES 1.21K 1/8W 1%	1	R3
16	1304833-00	RES 1.96K 1/8W 1%	1	R12,

TITLE: 16K x 16, 18 MEMORY STACK
ASSY NO. D-UA-5411554-0-0 SHEET 1 OF 2
SIZE A CODE PL NUMBER 5411554-0-0 REV. D ECO NO. 00002 DIST.

DEC FORM DEC 16 (325) 1031 NS70
DRA

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M. Poirier DATE 7/7/75
CHECKED DATE 7/7/75 SECTION
ENG D DATE 7/14/75
PROD R Q Hall DATE 7/14/75 ISSUED SECT.

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATIONS
17	1303045-00	RES 3.16K 1/4W 1%	1	R2
18	1300479-00	RES 10K 1/4W 5%	1	R16
19	1303312-00	RES 10K 1/8W 1%	1	R5
20	1300316-00	RES 470 1/4W 5%	1	R11
21	1303155-00	RES 21.5K 1/8W 1%	1	R6
22	1302396-00	RES 150K 1/4W 5%	2	R8,R9
23	1301781-00	RES 82 1/2W 5%	1	R56
24	1300202-00	RES 47 1/4W 5%	2	R54,R55
25	1300365-00	RES 1K 1/4W 5%	37	R18-R53,R7
26	1310071-00	RES 1K 1% THERMISTER	1	R14
27	1311742-00	RES NETWORK 220 1/4W 1%	6	R57-R62
28	1503366-00	TRANS 2N3736	4	Q2-Q5
29	1503409-01	TRANS 6534B	1	Q1
30	1610662-00	INDUCTOR 100UH	2	L1,L2
31	1910298-00	I.C. 72741	1	E1
32	1910546-00	I.C. 74S140	1	E2
33	1211727-00	CONTACT, MALE	179	J1-J179
34	9009185-00	JUMPER, INSULATED (.4 LONG)	1	W5
35	9107560-01	JUMPER, BUSS WIRE (#22 AWG)	4	W1-W4 (OPTIONAL)
36	9006735-00	EYELET (SPLIT LUG)	4	
37	1305114-00	RES 3.48K 1/8W 1%	1	R10

TITLE: 16K x 16, 18 MEMORY STACK

ASSY NO. D-UA-5411554-0-0 SHEET 2 OF 2

SIZE A CODE PL NUMBER 5411554-0-0 REV. D ECO NO. DIST.

DEC FORM DEC 16 (325) 1031 NS70
DRA

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-MM11-C		
H221 CORE MEM STACK	B-DD-H221-Ø		
8K MEMORY	D-CS-G651-Ø-1		
MEMORY SYSTEM MODULE ASSEMBLY	D-UA-MM11-C-Ø		

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
MM11-C	8K x 16 BIT MEM SYSTEM	X
MM11-CP	8K x 18 BIT MEM SYSTEM	X
MM11-B	4K x 16 BIT MEM SYSTEM	X
MM11-BP	4K x 18 BIT MEM SYSTEM	X

REVISIONS	DATE	CHG. NO.	REV
	9-75	MM11-C-1	A
	9-75	MM11-C-2	B
	12-75	MM11-C-3	C

DEC 16 1325 1062 1A 4942

USED ON OPTION/MODEL	
MM11-C	
SHEET 1 OF 2	

DRN. W. MAJOR	DATE 2/12/75	TITLE MEMORY SYSTEM MODULE
CHK'D.	DATE	
PROJ ENG.	DATE	
PROD.	DATE	SIZE B / CODE DD / NUMBER MM11-C / REV
FIELD SERV.	DATE	DIST

DRB 106

392

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	B-DD-MM11-C	C	2	DRAWING DIRECTORY	
X			D-CS-G651-Ø-1	#		8K MEMORY	
			D-TD-G651-Ø-9		1	MM11B-C TIMING DIAGRAM	
						DATI MODE	
			D-TD-G651-Ø-10		1	MM11B-C TIMING DIAGRAM	
						DATO, DATOB MODE	
			D-TD-G651-Ø-11		1	MM11B,2P,C,CP	
						BLOCK DIAGRAM	

MECHANICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X			D-UA-H221-Ø-Ø	#	1	H221 CORE MEM STACK ASSY	
X			D-UA-MM11-C-Ø	C	1	MEMORY SYSTEM MODULE ASSY	

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
MEMORY SYSTEM MODULE	SHEET 2 OF 2	B	DD	MM11-C	C

DRB 108

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

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET 7

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H221-Ø		
H221 STACK BOARD	D-CS-5411246-0-1		
H221 CORE MEMORY STACK ASSY	D-UA-H221-Ø-Ø		

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
H221-B	8K x 16 BIT MEMORY STACK	X
H221-A	8K x 18 BIT MEMORY STACK	X
H221-D	4K x 16 BIT MEMORY STACK	X
H221-C	4K x 18 BIT MEMORY STACK	X

REVISIONS	DATE	CHG. NO.	REV
	0 75	1221.2	A

USED ON OPTION/MODEL	
MM11-C	
SHEET 1 OF 2	

DRN. W. MAJOR	DATE 1/22/75	TITLE H221 CORE MEMORY STACK
CHK'D.	DATE	
PROJ ENG.	DATE	
PROD.	DATE 2/18/75	SIZE B / CODE DD / NUMBER H221-Ø / REV A
FIELD SERV.	DATE 3-18-75	DIST

DRB 106

DEC 18-[illegible]-1042-1A-N942

3A

CUSTOMER PRINT SET					ELECTRICAL						CUSTOMER PRINT SET					MECHANICAL					
1				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	1				MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					1	B-DD-H221-Ø	A	2	DRAWING DIRECTORY		X						D-UA-H221-Ø-Ø	B	1	H221 CORE MEMORY STACK ASSY	
X						D-CS-5411246-0-1	#	3	H221 STACK BOARD								D-MD-7413449-0-0		1	STIFFENER	
						E-IA-7010839-0-0		2	CORE PLANE WIRING ASSY								B-MD-5511584-0-0		1	COVER, CORE MEMORY	
																	B-MD-5511533-0-0		1	STAND OFF	

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
		H221 CORE MEMORY STACK	SHEET 2 OF 2	B	DD	H221-Ø	A

DRB 108

NOTES:

1. * INDICATES HAND INSERTED POWER RESISTORS TO BE RAISED FROM BOARD. (R18, R55, R76, R134, R60, R91, R84, R65, R64, R85, R8C, R91, R107, R108, R113, R114, R130, R131, R135, R136, R148, R149 R39)

SPARES:

74H04 E4 — 74H04 E4
74H04 E19 — 74H04 E19
74H04 E16 — 74H04 E16
7406 E68 — 7406 E68
74H04 E29
8641 E25
74H74 E21
74H00 E19
RP1 100
74H08 E59 — 74H08 E59

DETAIL A

SEE NOTE 1

SEE DETAIL A

8.99 REF

15.69 REF

+5V BA2 BB2 CA2 DA2 FA2 — J0-1, J3-18
C1-C12, C14, C15, C18-C21, C24, C26-C30, C32, C33, C34, C43, C44, C50-C54, C68, C61, C67-C71, C77, C78, C84-C88, C91-C96, C105, C106, C111-C115
C49, C66, C117, C119, C236 — 8 µF 25V
C47, C64, C81, C98, C110 — .22 µF 50V
C118 — 8 µF 25V
C62, C79, C99, C107 — .01 µF
C98, C65, C82, C103 — 47 µF
C42, C61, C73, C100 — 8 µF 25V
C36, C55, C72, C89 — .01 µF
C46, C58, C63, C76, C80, C83, C97, C106, C109 — .22 µF 50V
-5V BV2
+20V AH1 AV1 AV2 — J3-19
AC2 AT1 BC2 CC2 CT1 DC2 DT1 EC2 ET1 FC2 FT1 — J0-3, J0-6, J3-17, J3-40, J4-19, J4-27, J4-53

BG 4 IN H — DS2 — DT2 — BG 4 OUT H
BG 5 IN H — DP2 — DR2 — BG 5 OUT H
BG 6 IN H — DM2 — DN2 — BG 6 OUT H
BG 7 IN H — DK2 — DL2 — BG 7 OUT H

IC-TYPE	-5V	GND	+5V	+20V
75325		8	9	16
8885		8	16	
8641		8	16	
8640		1	8	
7528	8	9		
7485		8	16	
7475		12	5	
741		4		7

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.

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. D

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

SEMICONDUCTOR CONVERSION CHART

NEXT HIGHER ASSY

REVISIONS				
REV.	CHANGE NO.			
D	66J-00002	J. MANTON	11-14-75	
E	66J-00003	J. MANTON	11-26-75	
F	66J-00004	J. MANTON	12-16-75	
H	66J-00006	J. MANTON	1-5-76	

DRN. M. LUFKIN 4-30-75
CHKD. 5/5/75
ENGR. 5/13/75
ENGR. 5/13/75
PROD. 5/13/75

digital

TITLE: UNIBUS 8K MEMORY

SIZE D | CODE DCS | NUMBER G651-0-1 | REV. J

SCALE — SHEET 1 OF 13

SIZE	CODE	NUMBER	REV.
D	DCS	G651-0-1	J

DIST.

326

PARTS LIST

	REF DES	DESCRIPTION	PART NUMBER	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-DD-6851-D-4	1
REF		ASSY/DRILL HOLE LAYOUT	D-AH-6851-D-5	2
REF		MODULE ECO HISTORY	B-MH-6851-D-6	3
1		ETCHED CIRCUIT BOARD	5011155	4
2	C56 C74	CAP 100 PF 100V 5% CM	1700018-00	5
5	C218,C220,C224,C225 C228,C230,C232,C234,C222	CAP 120 PF 100V 5% CM	1800018-00	9
1	C22	CAP 680 PF 100V 5%	1000026-00	7
81	C1-C12,C14,C15,C18-C21,C23 C24,C26-C36,C40,C43-C45, C50-C55,C58-C62,C37-C72,C77-C79,C83-C88,C90-C96,C98, C104,C105,C107,C109,C111, C115,C219,C221,C225,C229, C233	CAP .01 UF 50V 20%	1001810-01	8
10	C42,C49,C57,C96,C100,C117, C118,C119,C226,C73	CAP 8 UF 25V TOS ALUM	1012084-01	9
1	C39	CAP 27 PF 100V 5% CM	1001739-00	10
4	C13,C25,C97,C101	CAP 62 PF 100V 5% CM	1000075-00	11
19	C38,C41,C46,C47,C58 C59,C63 C64,C75,C76,C80,C81,C89,C97,C98, C102,C106,C109,C110	CAP .22UF 50V 20% CER	1010274-00	12
18	C200-C217	CAP 33000PF 50V 10% CER	1011740-01	13
4	C78,C26,C32,C103	CAP 47 UF AL EL	4012229-00	14
18	F1-F18	1/4 A PICO FUSE	1210229-04	15
1	D2	DIODE IN5314 9.1V 1% ZENER	1100390-00	16
1	D1	DIODE IN5314 9.1V 5% ZENER	1110294-00	17
1	R29	RES 100 1/4 W 5%	1301725-00	18
1	R159	RES 100 1/4 W 5%	1000224-00	19
3	R157,R158,R160	RES 270 1/4 W 5%	1000236-00	20
9	R25,R26,R93,R97,R127,R37,R74,R89 R128	RES 470 1/4 W 5%	1000318-00	21
1	R48	RES 1.5K 1/4 W 5%	1000391-00	22
18	R31,R82,R90,R38,R37,R28,R87,R92 R83,R109,R110,R115,R116,R132,R133 R137,R151,R152,R150	RES 1.0K 1/4 W 5%	1000395-00	23
2	R27,R28	RES 2.7K 1/4 W 5%	1000426-00	24
3	R22,R46,R48	RES 3.09K 1/4 W 1%	1004833-00	25
1	R20	RES 2.91K 1/4 W 1%	1005310-00	26
1	R153	RES 2K 1/4 W 5%	1002238-00	27
1	R21	RES 10K 1/4 W 5%	1000479-00	28
1	R24	RES 30K 1/4 W 5%	1002319-00	29
1	R51	RES 2.37K 1/4 W 1%	1004868	30
1	R84	RES 150 1/4 W 5%	1001350-00	31
1	R43	RES 21.5K 1/4 W 1%	1003155-00	32
18	R59,R58,R59,R83,R88,R104,R105,R111 R112,R121,R123,R129,R130,R145,R147 R132,R99,R84	RES 19 1/4 W 5%	1002334-00	33
4	R24,R71,R95,R125	RES 75 1/4 W 5%	1002079-00	34
2	R49,R32	RES 100K 1/4 W 5%	1000468-00	35
1	R41	RES 825 1/4 W 1%	1005143-00	36
1	R42	RES 1.47K 1/4 W 1%	1005153-00	37
2	R26,R28	RES 14.7K 1/4 W 1%	1002041-00	38
5	R33,R32,R105,R122,R116	RES 9.09K 1/4 W 1%	1005135-00	39
1	R30	RES 4.02K 1/4 W 1%	1004853-00	40
4	R13,R35,R75,R124	RES 10 1/4 W 5%	1000002-01	41
18	R30,R81,R94,R8,R54,R5,R10,R91, R137,R158,R113,R114,R130,R131,R129 R135,R148,R149	RES 21.5K 1/4W 1%	1311733-01	42

PARTS LIST

	REF DES	DESCRIPTION	PART NUMBER	ITEM NO
5	R151-R155	RESISTOR NETWORK 100	1311741-00	43
1	R39	RES 220 3W 1% WW	1312123-00	44
9	R47,R4,R6,R7,R23,R35,R72, R36,R126	RES 100 1/4W 5%	1300229-00	45
9	R8,R12,R13,R14,R15,R40,R18, R138,R158	RES 4.7K 1/4W 5%	1300447-00	46
18	R56,R57,R77-R80,R120-R103, R117-R120,R141-R144	RES 5.6K 1/4 5%	1301874-00	47
2	R44,R2	RES 10K 1/4 1%	1303312-00	48
1	R19	RES 10 1/4 5%	1301317-00	49
1	R1	RES 3.83K 1/4 1%	1309413-00	50
1	R54	RES 24.3K 1/4 1%	1309418-00	51
1	R52	RES 12.1K 1/4 1%	1303313-00	52
1	R53	RES 47K 1/4W 5%	1302177-00	53
1	R124	RES 330 1/4W 5%	1300295-00	54
1	Q5	TRANSISTOR 2904-A	1501813-00	55
9	Q1-Q4,Q15,Q17,Q18,Q21	TRANSISTOR 3009-B	1503100-00	56
4	Q11,Q12,Q13,Q14	TRANSISTOR 6534B	1503489-01	57
4	Q19,Q18,Q20,Q22	TRANSISTOR 4258	1505321-00	58
5	E1,E2,E13,E14,E25	IC 8641	1911579-00	59
4	Q7,Q8,Q9,Q10	TRANSISTOR 3734	1510062-00	60
18	Q41-Q58	TRANSISTOR 3725	1510959-00	61
2	L1,L2	INDUCTOR 100 UH	1510862-00	62
4	E11,E12,E54,E55	DELAY LINE 250 NS TAPPED	1611243-00	83
9	T1-T9	TRANSFORMER INHIBIT (3W-LINE)	1612119-00	64
1	E40	IC 7450	1905580-00	65
4	E37,E38,E48,E49	IC 7425	1909050-00	66
2	E10,E43	IC 74H20	1909056-00	67
2	E42,E52	IC 74H50	1909060-00	68
1	E33	IC 74H53	1909062-00	69
5	E59,E69,E79,E83,E104	IC 74H08	1912400-00	70
1	E21	IC 74H74	1909667-00	71
1	E27	IC 8881	1909705-00	72
14	E3,E5,E6,E8,E15,E39,E29,E61 E70,E80,E84,E105,E17,E45	IC 74H01-1	1909849-00	73
6	E4,E7,E16,E19,E29,E76	IC 74H04	1909991-00	74
5	E66,E76,E96,E92,E103	IC 7442	1910048-00	75
1	E31	IC 7435	1910224-00	76
1	E87	IC 74121	1910230-00	77
1	E60	IC 741	1910238-00	78
5	E24,E34,E45,E57,E26	IC 8035	1910648-00	79
9	E67,E71,E77,E81,E37,E95,E97 E98,E106	IC 7528	1910687-00	80
1	E98	IC 7406	1910741-00	81
2	E44,E56	IC 7427	1910378-00	82
20	E52-E55,E72-E75,E82-E85,E88-E91,E93-E102	IC 75325	1910660-00	83
5	E28,E35,E36,E46,E47,E50	IC 8640	1911469-00	84
4	USE WITH Q7-Q10	HEAT SINK 2201 RED	1210001-00	85
1		HANDLE ASSY (HEX)	7413102-00	86
111	D3,D6-D11,D18-D33,D35-D42, D47-D50,D53-D73,D31-D124, D128-D115,D121-D133,D138-D144 D147-D157	DIODE D872	1105275-00	87

PARTS LIST

	REF DES	DESCRIPTION	PART NUMBER	ITEM NO
121	J1 (1-17),J2(1-10), J3 (1-19),J4(1-59), J5 (1-16)	RECEPTACLE (AMP)	1211728-00	86
1	J0	CONN, MALE 7 PIN	1212104-00	89
1	E39	SWITCH DIP PACKAGE	1211184-04	90
12		EYELET	9006732-00	91
5	W35,W18,W17,W18,W8,W2	JUMPER, INSULATED	9009185-00	92
22	(USE WITH Q5,Q7-Q10 Q49-Q58)	TRANSPAD	9007201-00	93
1		STANDOFF 4 D.O. X 3/8 LG X 4/8-32 TAP	9008213-00	94
1		SCREW, NYLON #8-32 X ¼	9009041-01	95
1	R87	RES 270 1/4W 5%	1301972-00	96
4	R38,R75,R99,R129	RES 680 1/4W 5%	1301424	97
1	R50	RES 3.16K 1/4 W 1%	1303045	98

REF DES NOT USED	
CAP	C16,C17,C116,C120 – C199 C223, C231,C235, C227
DIODES	D4,D5,D12-D15,E31-D34,D43-D48, D81-C84,D88-D89,D105-D108,D116-D120, D134-D137,D145,D148
RES	R3,R5,R9,R10,R11,R17,R154
TRANS	C8,Q23-940
I.C.	E22,E23,E30,E32,E41,E51,E58

REVISIONS		
ZONE	CHANGE NO	REV

TITLE	UNIBUS PK MEMORY	SIZE,CLOG	NUMBER	REV
		D DCS	C65-0-1	J
SCALE	— / —	SHEET 2 OF 3	DIST.	

DCS 3651-4

377

MTC A 13 H
BUS C0 L
BUS C1 L
BUS A6 0 L
BUS MSYN L
BUS A17 L
BUS A16 L
BUS A15 L
BUS A14 L
BUS A0 1L
BUS A13 L
7475 E48
MTC LA13 H
MTC LA13 L
MTC C0 L
MTC C1 L
MTC A0 0 H
MTC A0 0 L
MTC ADD CONT 0(1) L
MTC MSYN H
MTC A0 1 H
7485 E31
W0
W1
W2
W3
W4
W5
W6
W7
W8
W9
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
E39
+5V
R14 4.7K
R13 4.7K
R12 4.7K
R15 4.7K
R16 4.7K
MTC C1 H
MTC BYTE 1 L
MTC BYTE 1 H
MTC LOAD 1 H
MTC LOAD 0 H
MTC BYTE 0 H
MTC BYTE 0 L
MTC RT 25 H
MTC C1 L
MTC RT 300 H
MTC C1 H
MTC RT 75 H
M SYNH
MTC S SYN L
MTC S SYN H
MTC M SEL L
MSP LOCKOUT L
MTC S SYN L
MTC ADD SEL H
MTC M SYN H
MSP M RESET L
MTC TIM ST L
MTC WRITE LATE L
MTC ADD CONT 0(1) L
MSP M RESET L
MTC ADD CONT 3 L
MTC ADD CONT 2 L
MTC ADD CONT 1 L
MTC M SEL L
MTC WT 375 H
MTC TIM ST H
MTC RT 50 H
MTC CLR 0 L
MTC CLR 1 L
+5V
3A98 Q1
L1 100 µH
E12 READ DL 0-250 NS
E11 READ DL 250-500 NS
R6 100
R4 100
C13 82 PF
MTC RT 225 H
MTC RT 150 H
MTC RT 75 H
MTC RT 25 H
MTC RT 425
MTC RT 375 H
MTC RT 350 H
MTC RT 325 H
MTC RT 300 H
MTC RT 250
MTC TIM ST H
MSP M RESET L
MTC RT 325 H
MTC READ EARLY L
MTC READ EARLY H
MTC RT 150 H
MTC RT 225 H
MTC END STROBE H
MTC RT 25 H
MTC READ LATE L
MTC RT 350 H
MSP M RESET H
MTC READ LATE H
MTC WT 0 0 H
MTC WRITE EARLY L
MTC WT 375 H
MSP M RESET H
MTC WRITE EARLY H
MTC WT 75 H
MTC WRITE LATE L
MTC WT 450 H
MSP M RESET H
MTC WRITE LATE H
MSP INH PROT H
MSP V5
MTC INH TIM 0 H
MTC INH TIM 1 H
MTC WT 0 0 H
MTC WT 75 H
MTC WT 150 H
MTC WT 225 H
MTC RT 375 H
MTC RT 425
MTC WT 100 H
3A93 Q2
L2 100 µH
R7 100
E55 WRITE DL 0-250 NS
E54 WRITE DL 250-500 NS
MTC WT 425
MTC WT 300 H
MTC WT 375 H
MTC WT 345
R23 150
C25 82 PF

MEMORY BANK	MACHINE ADDRESS	A17 SW2,3	A16 SW5,6	A15 SW3,4	A14 SW1,2
0-8K	000000-017776	0	0	0	0
8K-16K	020000-037776	0	0	0	1
16K-24K	040000-057776	0	0	1	0
24K-32K	060000-077776	0	0	1	1
32K-40K	100000-117776	0	1	0	0
40K-48K	120000-137776	0	1	0	1
48K-56K	140000-157776	0	1	1	0
56K-64K	160000-177776	0	1	1	1
64K-72K	200000-217776	1	0	0	0
72K-80K	220000-237776	1	0	0	1
80K-88K	240000-257776	1	0	1	0
88K-96K	260000-277776	1	0	1	1
96K-104K	300000-317776	1	1	0	0
104K-112K	320000-337776	1	1	0	1
112K-120K	340000-357776	1	1	1	0
120K-128K	360000-377776	1	1	1	1

0 = SWITCH ON
1 = SWITCH OFF

TO SELECT 8K - W8 & W9 OUT.
TO SELECT LOWER 4K OF EACH INCREMENT - W8 IN & W9 OUT.
TO SELECT UPPER 4K OF EACH INCREMENT - W8 OUT & W9 IN.

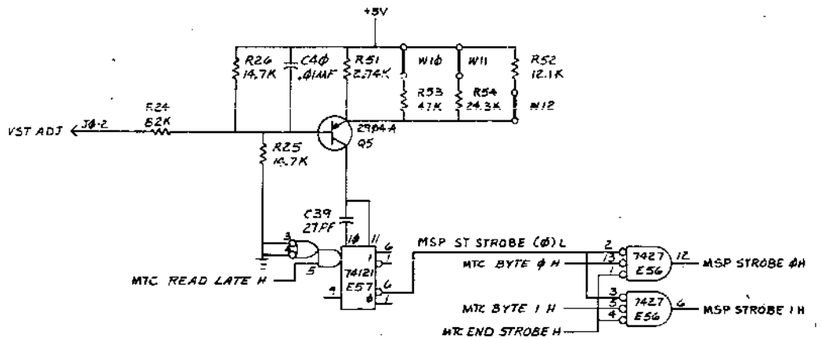
INTERLEAVE CONTROL
NON INTERLEAVE : W0 IN W2 IN
W1 OUT W3 OUT
INTERLEAVE : W0 OUT W2 OUT
W1 IN W3 IN

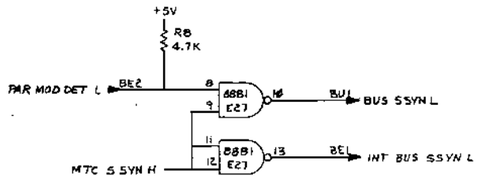
SW 1,2 (W4) ON } ONE MEMORY
SW 1,2 (W4) OFF } OTHER MEMORY

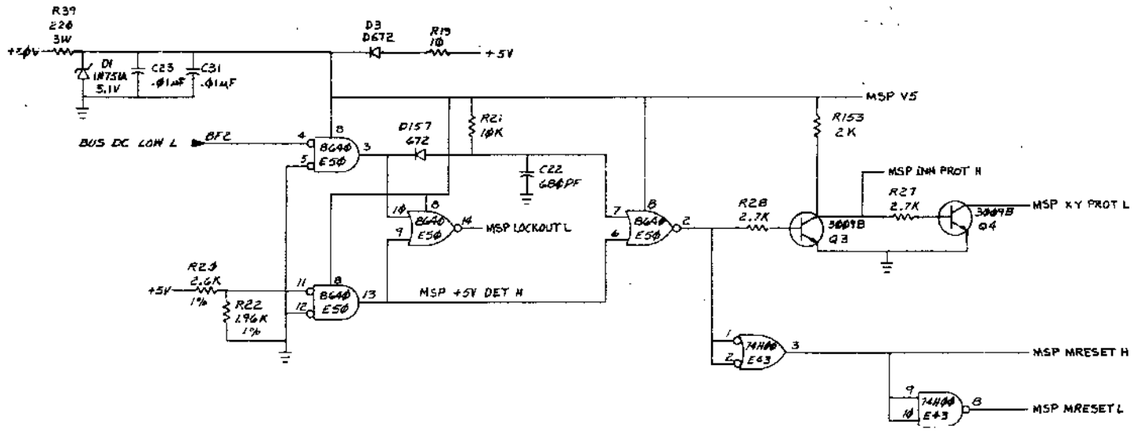
REVISIONS		
CHK	CHANGE NO.	REV.

TIMING AND CONTROL

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MTC)	D	CS	G651-0-1	J
SCALE	SHEET 3 OF 13	DIST.		





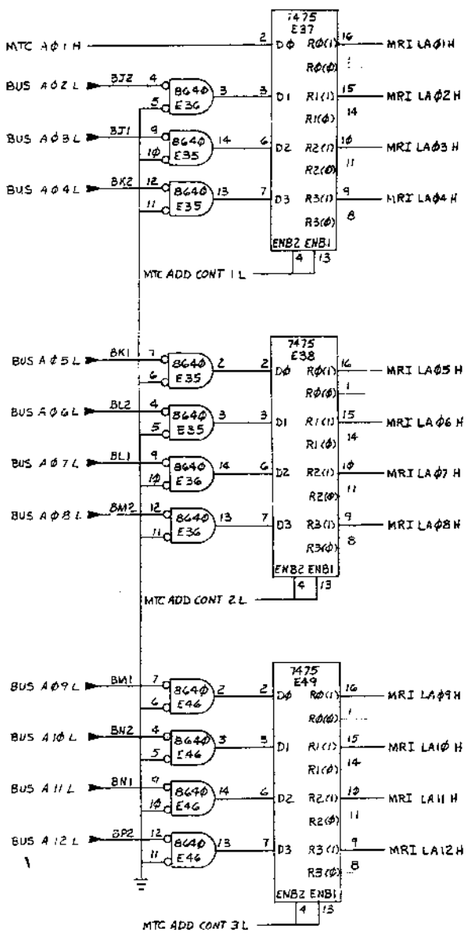


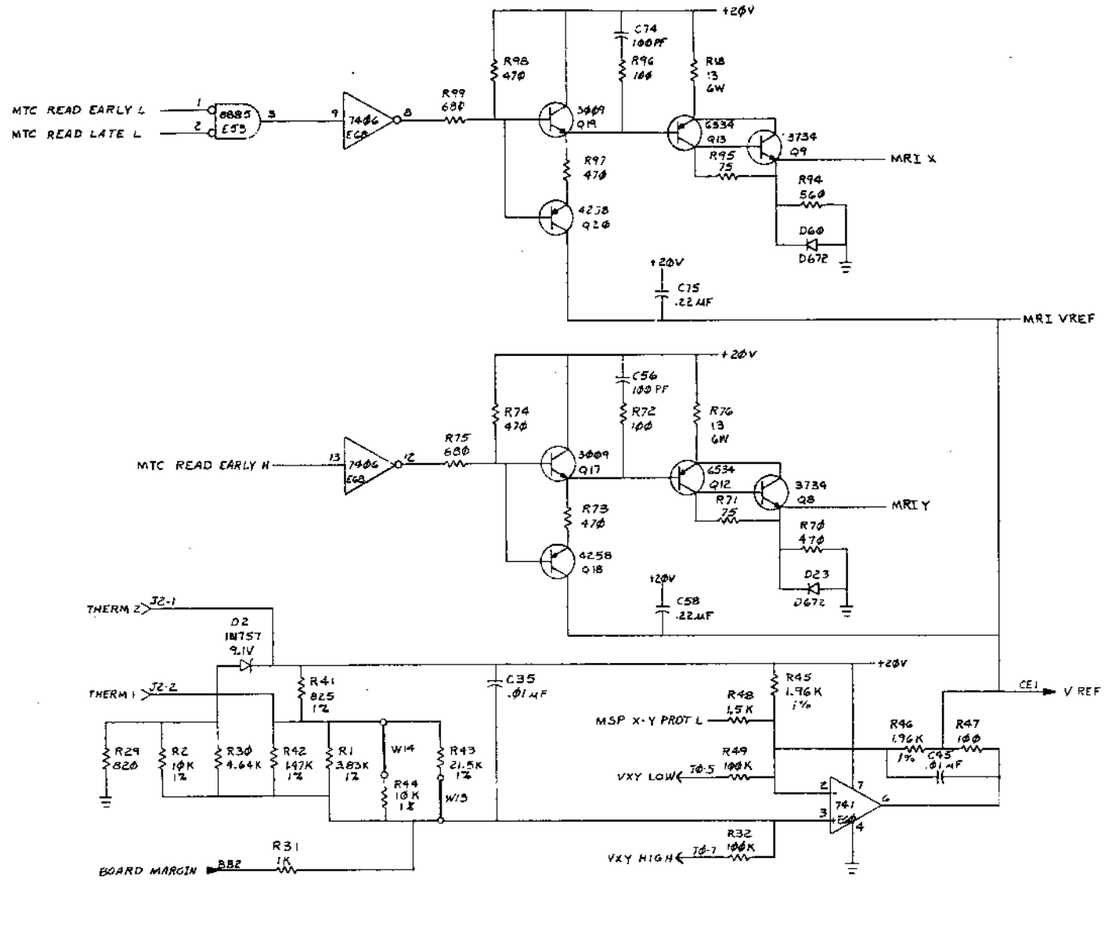
REVISIONS		
CHK	CHANGE NO	REV

STROBE AND PROTECT

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MSP)	D	CS	G651-Ø-1	J
SCALE	SHEET 4 OF 13	DIST.		

379





X,Y READ CURRENT SOURCES (ADD LATCH)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MRI)	D	DCS	G651-Ø-1	J
SCALE	SHEET 5 OF 13	DIST.		

360

MTC READ EARLY H
MTC READ LATE H
8885 E96
MWI X RD SC 1L
MWI XRD SCΦL
MWI Y RD SCL
74H04 E18
MWI Y RD SKL
MWI X RD SKL
MTC WRITE LATE H
MWI X WT SCL
MWI Y WT SCL
MTC WRITE EARLY H
MWI X WT SK 1L
MWI X WT SK ΦL
MWI Y WT SK L
71-1
(TO STACK RECOVERY CIRCUIT)
MTC WRITE EARLY L
MTC WRITE LATE L
8885 E53
7406 E48
R129 680
+20V
C101 82 PF
R128 47Φ
R126 1ΦΦ
R134 15 6W
3689 Q21
6534 Q14
3734 Q10
R125 75
R127 47Φ
R124 33Φ
4258 Q22
MWI "X"
C102 .22MF
MR1 V REF
C37 82 PF
R37 47Φ
R35 1ΦΦ
R55 13 6W
R38 68Φ
3689 Q15
6534 Q11
3734 Q7
R34 75
R36 47Φ
R33 27Φ
4258 Q16
C38 .22MF
MWI Y

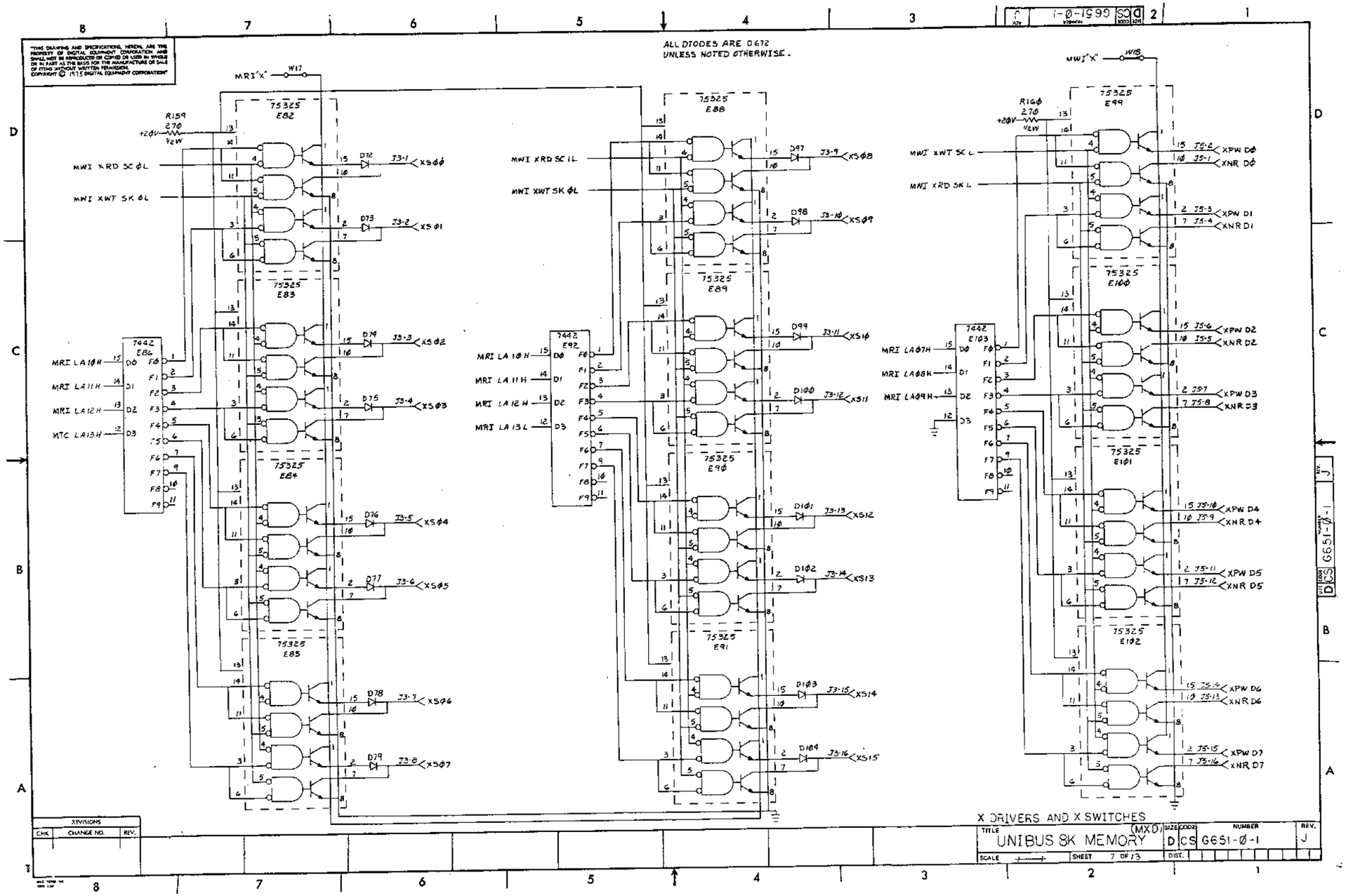
REVISIONS
CHK | CHANGE NO. | REV.

X,Y WRITE CURRENT SOURCES

TITLE UNIBUS 8K MEMORY (MWI)
SIZE D | CODE DCS | NUMBER G651-Ø-1 | REV. J
SCALE | SHEET 6 OF 13 | DIST.

DATE CODE DCS | NUMBER G651-Ø-1

ALL DIODES ARE D672
UNLESS NOTED OTHERWISE.



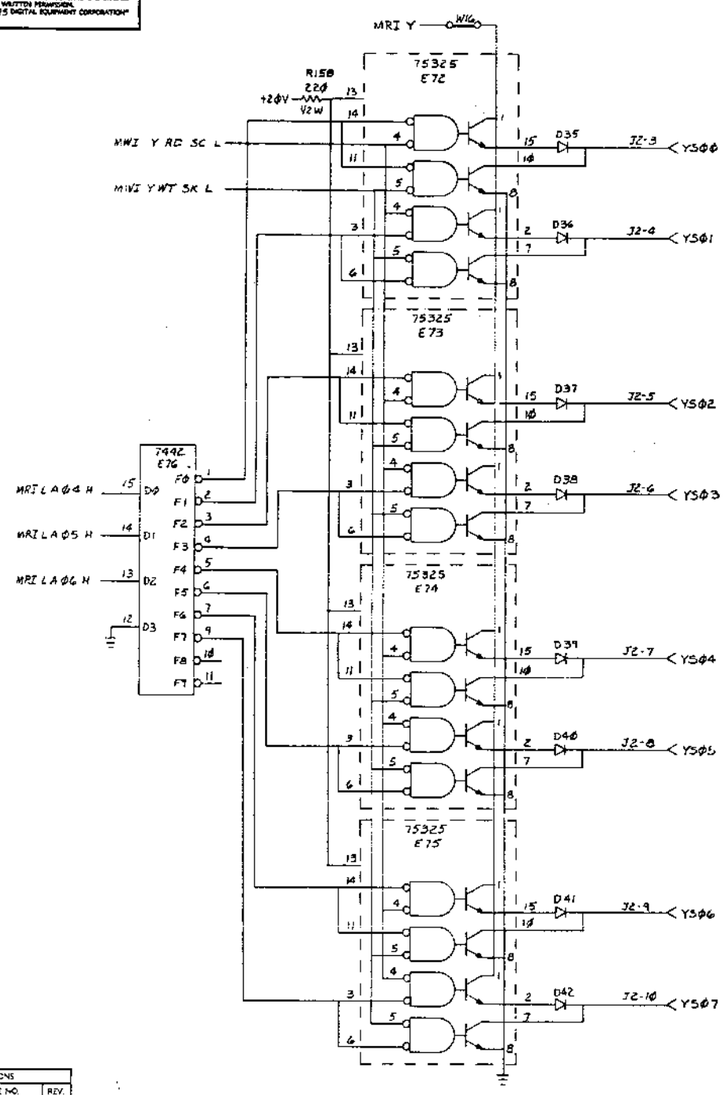
X DRIVERS AND X SWITCHES (MXD)

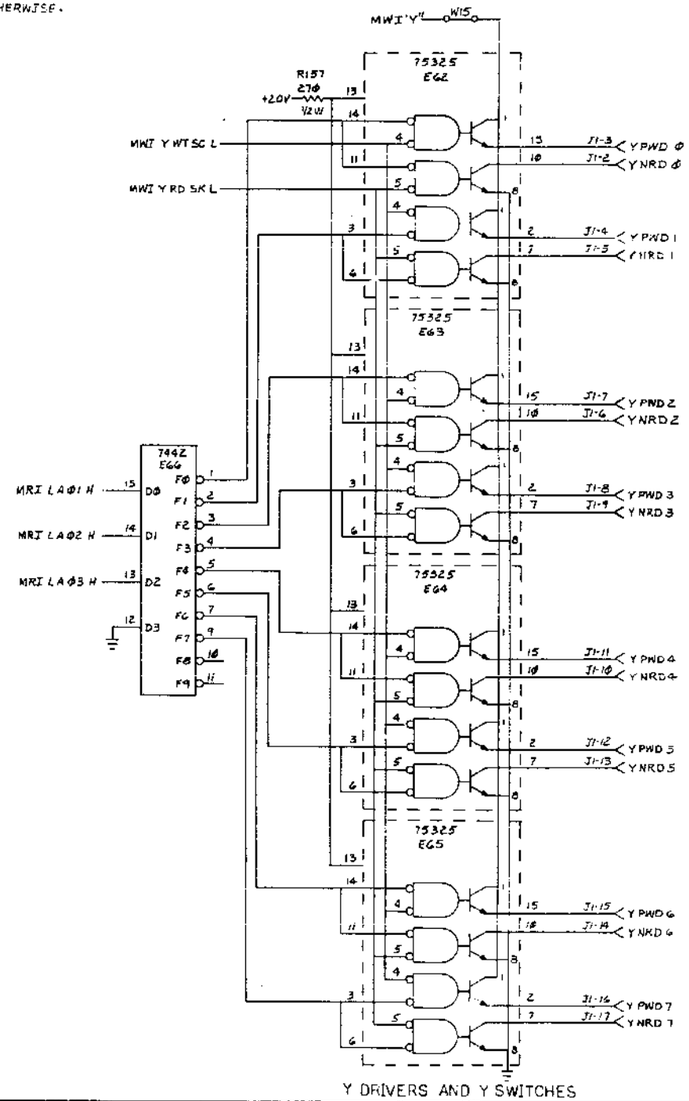
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY	D	DCS	G651-Ø-1	J
SCALE —	SHEET 7 OF 13	DIST.		

362

ALL DIODES ARE DG72
UNLESS NOTED OTHERWISE.





Y DRIVERS AND Y SWITCHES

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MYD)	D	CS	G651-Ø-1	J
SCALE	SHEET 8 OF 13	DIST.		

BIT ØØ

BIT Ø1

BIT Ø2

BIT Ø3

DATA LATCHES SENSE/INHIBIT

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MDA)	D	CS	G651-Ø-1	J
SCALE — //	SHEET 9 OF 13	DIST.		

BIT Ø4

BIT Ø5

BIT Ø6

BIT Ø7

MTC CLR ØL
MTC C1H
MTC S SYNL
BUS DØ4L
AF1
MTC LOAD Ø H
MDB VTH B1
MDB VTH B2
SAØ4
SBØ4
J4-45
J4-44
R162
7528 E97
MSP STROBE Ø H
+5V
R133 1K
MTC INH Ø H
+20V
R131
F14
D124
D123
J4-46
INH Ø4
R119 5.6K
C213 330Ø PF
T7
R139

SAØ5
SBØ5
J4-42
J4-43
BUS DØ5L
AF2
R132 1K
J4-41
INH Ø5
R120 5.6K
C212 330Ø PF
R123

SAØ6
SBØ6
J4-38
J4-37
BUS DØ6L
AF1
R116 1K
J4-39
INH Ø6
R117 5.6K
C211 330Ø PF
R121

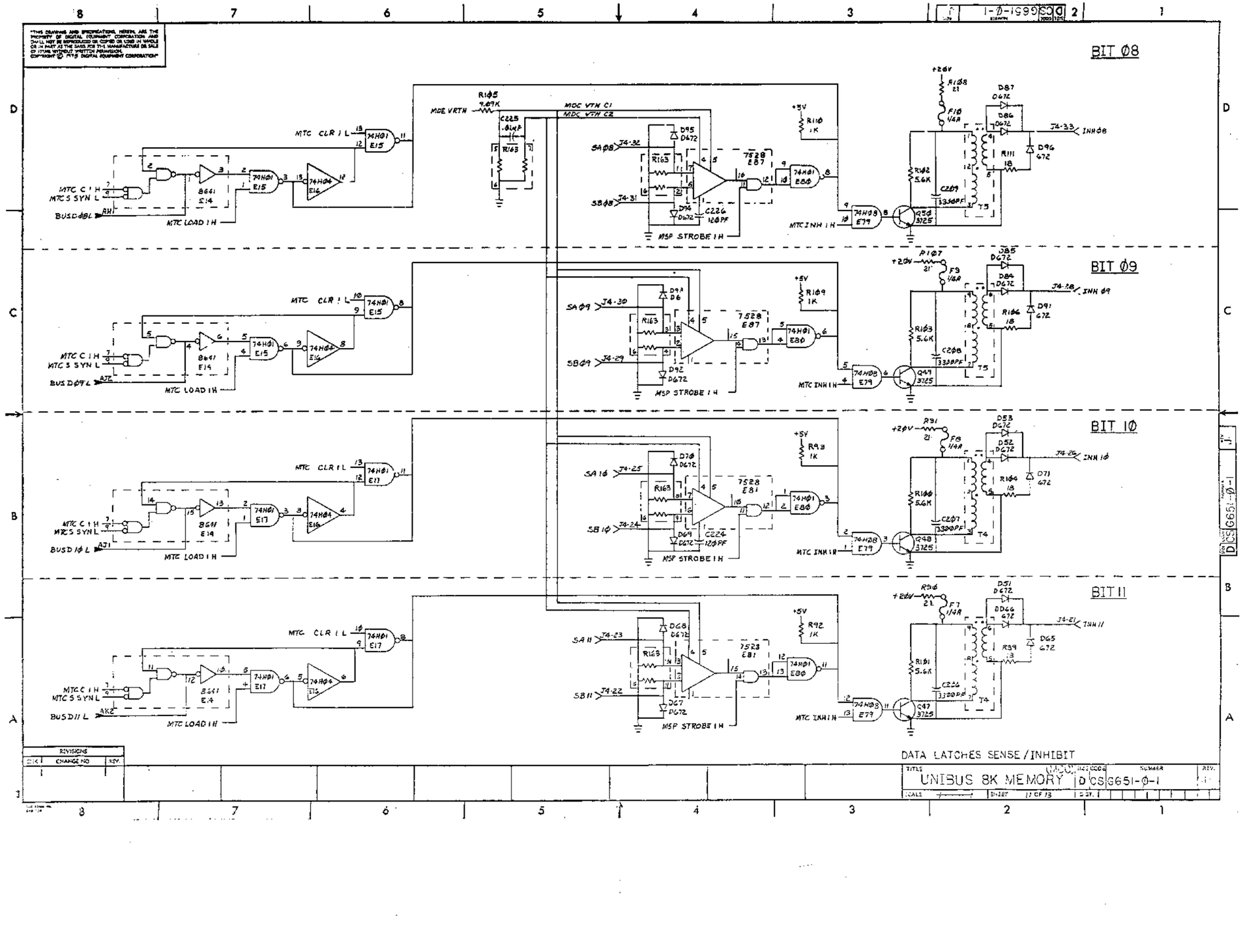
SAØ7
SBØ7
J4-35
J4-36
BUS DØ7L
AH2
R115 1K
J4-34
INH Ø7
R118 5.6K
C210 330Ø PF
R112

74H01 E6
74H04 E7
8641 E1
74H01 E8
74H01 E94
74H08 E93
Q54 3125
T6

REVISIONS
CHK | CHANGE NO. | REV

DATA LATCHES SENSE /INHIBIT

TITLE: UNIBUS 8K MEMORY (MDB)
SIZE: D | CODE: CS | NUMBER: G651-Ø-1 | REV: J
SCALE: — | SHEET 10 OF 13 | DIST



BIT 12

MTC CLR I L
MTC C I H
MTC S SYN L
BUS D 12 L
MTC LOAD I H
MDE VRTH
MDD VTH D1
MDD VTH D2
SA 12
SB 12
MSP STROBE I H
INH 12
INH I H
MTC INH I H

BIT 13

MTC CLR I L
MTC C I H
MTC S SYN L
BUS D 13 L
MTC LOAD I H
SA 13
SB 13
MSP STROBE I H
INH 13
MTC INH I H

BIT 14

MTC CLR I L
MTC C I H
MTC S SYN L
BUS D 14 L
MTC LOAD I H
SA 14
SB 14
MSP STROBE I H
INH 14
MTC INH I H

BIT 15

MTC CLR I L
MTC C I H
MTC S SYN L
BUS D 15 L
MTC LOAD I H
SA 15
SB 15
MSP STROBE I H
INH 15
MTC INH I H

REVISIONS		
CHK	CHANGE NO	REV.

DATA LATCHES SENSE/INHIBIT

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MDD)	D	CS	G651-Ø-1	J
SCALE —— / SHEET 12 OF 13	DIST.			

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NOTES:

*) PARITY INHIBIT HIGH (PAR INH H) GROUNDED BY 18 BIT STACK THUS ENABLING PARITY INHIBIT CIRCUITS. UNCONNECTED WITH 16 BIT STACK THUS DISABLING PARITY INHIBIT CIRCUITS.
R165 IS A 100Ω, 10 RESISTOR NETWORK

BIT PØ

BIT P1

MSP STROBE ØH

MSP STROBE 1H

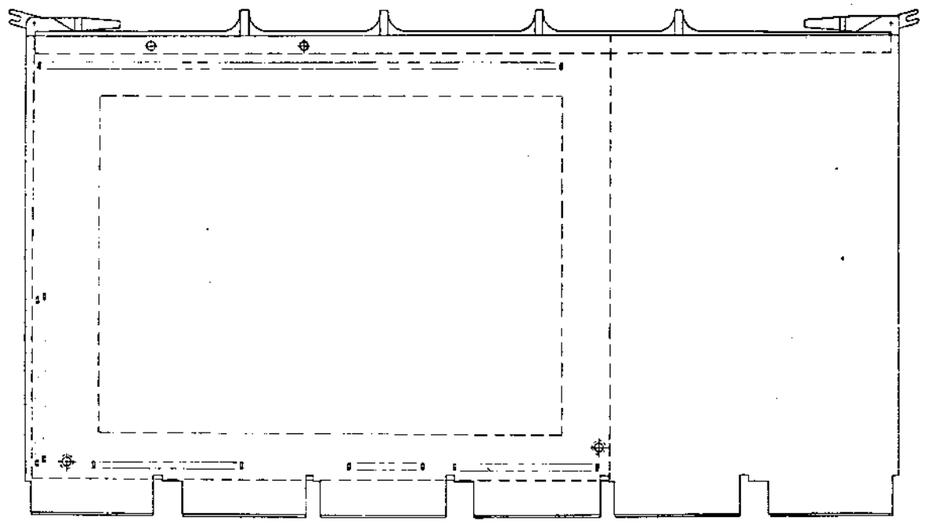
SENSE/INHIBIT (PØ, P1) DATA LATCHES

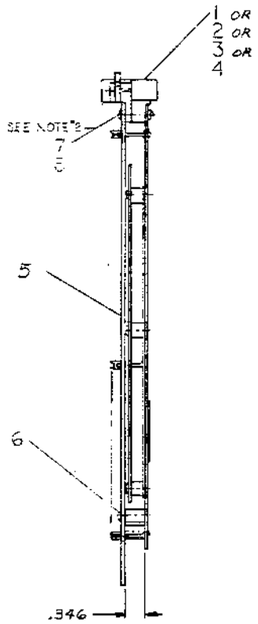
REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MDE)	D	CS	G651-Ø-1	J
SCALE	SHEET 13 OF 13	DIST.		

LEGEND	
NUMBER	VARIATION
MM11-C	8K x 16 BIT
MM11-CP	8K x 18 BIT
MM11-B	4K x 16 BIT
MM11-BP	4K x 18 BIT

NOTE
1. MM11CP (8K×18) MEMORY MODULE ASSEMBLY MAY BE SUBSTITUTED FOR MM11C (8K×16). MM11BF (4K×18) MAY BE SUBSTITUTED FOR MM11B (4K×16).
2. INSTALL ITEM* 7 (*2 INT TOOTH LOCK WASHERS) TORQUE HAND TIGHT





2	2	2	2	SCR, PHIL PAN HD 55*2-56 X 31	9006032-01	5
2	2	2	2	WASHER INT. *2	9006631	7
2	2	2	2	SCR, SLOTTED, NYLON 6-32 X .25 LG	9006407-05	6
1	1	1	1	8K MEMORY	D-CS-G651-0-1	5
1	-	-	-	H221 CORE MEM STACK ASSY	D-UA-H221-C	4
-	1	-	-	H221 CORE MEM STACK ASSY	D-UA-H221-D	3
-	-	1	-	H221 CORE MEM STACK ASSY	D-UA-H221-A	2
-	-	-	1	H221 CORE MEM STACK ASSY	D-UA-H221-B	1
				DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±1°	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO .79	OVER .79 TO 2.5	OVER 2.5 TO 12	OVER 12 TO 40	OVER 40 TO 120	OVER 120 TO 300
SURFACE QUALITY ✓ MICROINCHES	MEDIUM	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED	±.012	±.018	±.025	±.04	±.063	±.1

QUANTITY & VARIATION

MM11-BP | MM11-B | MM11-CP | MM11-C

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH:

DRN. R. [illegible] 7-16-75
CHK'D
ENG.
PROJ. ENG.
PROD.
NEXT HIGHER ASSY: B-20-MM11-C
SCALE: 1/1
SHEET 1 OF 1

FIRST USED ON: MM11-C

digital

TITLE: MEMORY SYSTEM MODULE ASSEMBLY

SIZE: D | CODE: UA | NUMBER: MM11-C-0 | REV: C

DIST:

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	[illegible]	[illegible]	[illegible]
B	[illegible]	[illegible]	[illegible]
C	[illegible]	[illegible]	[illegible]

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digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

~~CUSTOMER PRINT SET INDEX~~

SEQUENCE

SEQUENCE

~~THIS IS PRINT SET~~

NOTE:
1. FOR FIELD MAINTENANCE PRINT SET REFER TO B-TC-11/Ø4-Ø-/
2. SEE C-PL-11/04-0-0 FOR USE OF M93Ø1 IN PLACE OF M9312

5.25 BOX
BA11-L

UNIT VARIATIONS

VAR	TITLE	PRINT SET
11/Ø4-AA	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-E, DD11-C, BA11-LM 115V	
11/Ø4-AB	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-E, DD11-C, BA11-LN 230V	
11/Ø4-AC	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-E, DD11-P, BA11-LM 115V	
11/Ø4-AD	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-E, DD11-P, BA11-LN 230V	
11/Ø4-BA	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-FP, DD11-C, BA11-LM 115V	
11/Ø4-BB	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-FP, DD11-C, BA11-LN, 230V	
11/Ø4-BC	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-FP, DD11-P, BA11-LM 115V	
11/Ø4-BD	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-FP, DD11-P, BA11-LN 230V	
11/Ø4-DA	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-JP, DD11-C, BA11-LM 115V	
11/Ø4-DB	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-JP, DD11-C, BA11-LN 230V	
11/Ø4-DC	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-JP, DD11-P, BA11-LM 115V	
11/Ø4-DD	KD11-D, KY11-LA, M9312 , M93Ø2,	
	MS11-JP, DD11-P, BA11-LN, 230V	
11/Ø4-LC	KD11-D KV11-LA M9312 , M93Ø2	
	MS11JP(2) DD11-P BA11-LM 115V	
11/Ø4-LD	KD11-D KY11-LA M9312 , M93Ø2	
	MS11JP(2) DD11-P BA11-LN 230V	
11/Ø4-FC	KD11-D KY11-L M9312 , M93Ø2	
	MM11-CP DD11-P BA11-LK 115V	
11/Ø4-FD	KD11-D KY11-L M9312 , M93Ø2	
	MM11-CP DD11-P BA11-LE 230V	

REVISIONS	DATE	CHG. NO.	REV
	8/77	11/04-1	A
	11/04-3		B
	11/04-4		C
	11/04-5		D
	11/04-6		E
	11/04-7		F
	6-77	11/04-8	H
	2-77	11/04-9	J
	3 78	11/04-10	K

EN-0102-2(1-69)-22(25)

DRB 106

USED ON OPTION/MODEL	

SHEET 1 OF 7

DRN. G. MARINI	DATE 9/25/75	TITLE DRAWING DIRECTORY 11/Ø4
CHK'D. D. HEALY	DATE 9/30/75	
PROJ ENG. R. Baum	DATE 10-22-75	
PROD R.J. Peterson	DATE 10/27/75	SIZE B / CODE DD / NUMBER 11/Ø4-0 / REV K
~~FIELD SVC~~ —	~~DATE~~ —	DIST

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE SEQUENCE

~~THIS IS PRINT SET~~

5.25 BOX
BA11-L

10.5 BOX
BA11-KA

UNIT VARIATIONS		PRINT SET
VAR	TITLE	
11/Ø4-HC	KD11-D, KY11-LA, M9312 M9302.	
	MM11-DP DD11-P BA11-LK, 115V	
11/Ø4 HD	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP, DD11-P, BA11-LL, 230V	
11/Ø4 MC	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP(2), DD11-P, BA11-LK, 115V	
11/Ø4-MD	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP(2), DP11-P, BA11-LL, 230V	
11/Ø4-HA	KD11-D, KY11-LA, M9312 , M9302	
	MM11-C, DD11-P, BA11-LK, 115V	
11/Ø4-HB	KD11-D, KY11-LA, M9312 , M9302	
	MM11-C, DD11-P, BA11-LL, 230V	
11/Ø4-DH	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP, DD11-P, 7013323-0, 115V	
11/Ø4-DJ	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP, DD11-P, 7013323-3, 230V	
11/Ø4-LH	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP(2), DD11-P, 7013323-0, 115V	
11/Ø4-LJ	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP(2), DD11-P, 7013323-3, 230V	
11/Ø4-HH	KD11-D, KY11-LA M9312 , M9302	
	MM11-DP, DD11-P 7013323-2, 115V	
11/Ø4-HJ	KD11-D, KY11-LA M9312 , M9302	
	MM11-DP-DD11-P 7013323-5, 230V	
11/Ø4-MH	KD11-D, KY11-LA M9312 , M9302	
	MM11-DP(2) DD11-P 7013323-2, 115V	
11/Ø4-MJ	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP(2), DD11-P 7013323-5, 230V	
11/Ø4-DM	KD11-D, KY11-LA M9312 , M9302	
	MS11-JP, M7850, DL11-W DD11-P	
	7013323-0, 115V	

REVISIONS: REV | CHG. NO. | DATE

USED ON OPTION/MODEL

DRN. G.MARINI	DATE 9-25-75	TITLE DRAWING DIRECTORY 11/04	
CHK'D. D.HEALY	DATE 9-30-75		
PROJ ENG. R HARRY	DATE 10-22-75		
PROD. R.K.PETERSON	DATE 10-22-75	SIZE B / CODE CD / NUMBER 11/04 Ø	REV K
FIELD SERV. —//—	DATE —/—/—	DIST	

SHEET 2 OF 7

EN-01062-1A1-16-R92-1251

DRB 106

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digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE

SEQUENCE

~~THIS IS PRINT SET~~

UNIT VARIATIONS

	VAR	TITLE	PRINT SET
10.5 BOX BA11-KA	11/Ø4-DN	KD11-D KY11-LA M9312 , M9302	
		MS11-JP,M7850 DL11-W DD11-P	
		7013323-3, 230V	
	11/Ø4-HM	KD11-D KY11-LA M9312 , M9302	
		MM11 DP M7850 DL11 W DD11 P	
		7013323-2, 115V	
	11/Ø4-HN	KD11-D.KY11-LA.M9312 , M9302	
		MM11-DP.M7850 DL11-W DD11-P.	
		7013323-5, 230V	
5.25 BOX BA11-L	11/Ø4-JC	KD11-D, KY11-LA,M9312 ,M93Ø2,	
		MM11-YP,DD11-P, BA11-LK, 115V	
	11/Ø4-JD	KD11-D, KY11-LA,M9312 ,M93Ø2,	
		MM11-YP,DD11-P, BA11-LL, 23ØV	
10.5 BOX BA11-KA	11/Ø4-JH	KD11-D, KY11-LA,M9312 ,M93Ø2,	
		MM11-YP,DD11-P,7Ø13323-2, 115V	
	11/Ø4-JJ	KD11-D, KY11-LA,M9312 ,M93Ø2,	
		MM11-YP,DD11-P, 7Ø13323-5, 23ØV	

REVISIONS	REV	CHG. NO.	DATE

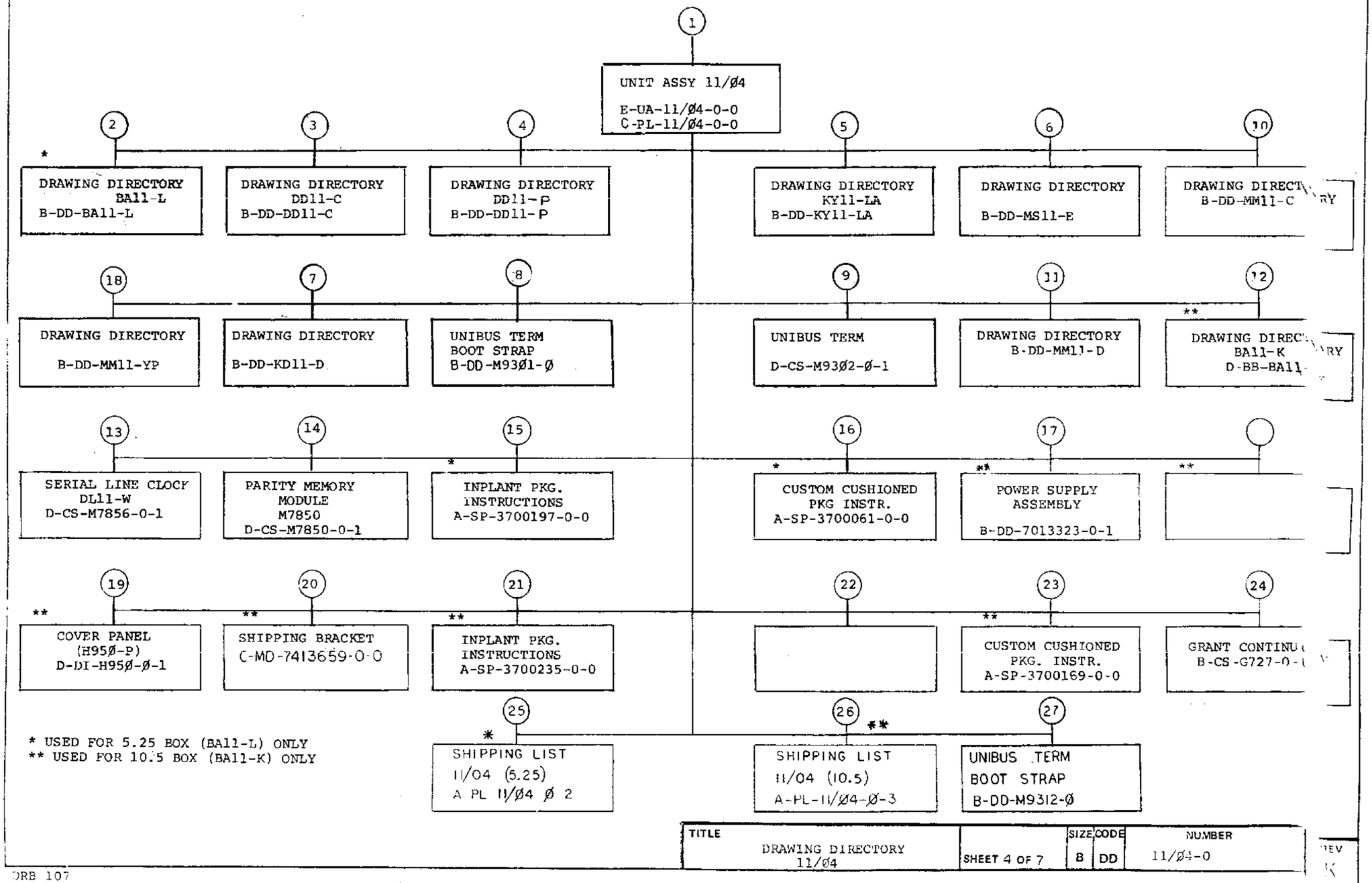
USED ON OPTION/MODEL		DRN.	DATE
		G MARINI	9-25-75
		CHK'D.	DATE
		D HEALY	9-30-75
		PROJ ENG.	DATE
		R BARRY	10-22-75
		PRCD.	DATE
		R K PETERSON	10-22-75
		FIELD SERV.	DATE
		— // —	— // —

TITLE: DRAWING DIRECTORY 11 04

SIZE	CODE	NUMBER	REV
B	DD	11/04 Ø	K

DIST

EN-01082-1A-36-R97-(325)


1
UNIT ASSY 11/Ø4
E-UA-11/Ø4-0-0
C-PL-11/Ø4-0-0
2
*
DRAWING DIRECTORY
BA11-L
B-DD-BA11-L
3
DRAWING DIRECTORY
DD11-C
B-DD-DD11-C
4
DRAWING DIRECTORY
DD11-P
B-DD-DD11-P
5
DRAWING DIRECTORY
KY11-LA
B-DD-KY11-LA
6
DRAWING DIRECTORY
B-DD-MS11-E
10
DRAWING DIRECTORY
B-DD-MM11-C
18
DRAWING DIRECTORY
B-DD-MM11-YP
7
DRAWING DIRECTORY
B-DD-KD11-D
8
UNIBUS TERM
BOOT STRAP
B-DD-M93Ø1-Ø
9
UNIBUS TERM
D-CS-M93Ø2-Ø-1
11
DRAWING DIRECTORY
B-DD-MM11-D
12
**
DRAWING DIRECTORY
BA11-K
D-BB-BA11-
13
SERIAL LINE CLOCK
DL11-W
D-CS-M7856-0-1
14
PARITY MEMORY
MODULE
M7850
D-CS-M7850-0-1
15
*
INPLANT PKG.
INSTRUCTIONS
A-SP-3700197-0-0
16
*
CUSTOM CUSHIONED
PKG INSTR.
A-SP-3700061-0-0
17
**
POWER SUPPLY
ASSEMBLY
B-DD-7013323-0-1
**
19
**
COVER PANEL
(H95Ø-P)
D-DI-H95Ø-Ø-1
20
**
SHIPPING BRACKET
C-MD-7413659-0-0
21
**
INPLANT PKG.
INSTRUCTIONS
A-SP-3700235-0-0
22
23
**
CUSTOM CUSHIONED
PKG. INSTR.
A-SP-3700169-0-0
24
25
*
SHIPPING LIST
11/04 (5.25)
A PL 11/Ø4 Ø 2
26
**
SHIPPING LIST
11/04 (10.5)
A-PL-11/Ø4-Ø-3
27
UNIBUS TERM
BOOT STRAP
B-DD-M9312-Ø
* USED FOR 5.25 BOX (BA11-L) ONLY
** USED FOR 10.5 BOX (BA11-K) ONLY
TITLE
DRAWING DIRECTORY
11/Ø4
SHEET 4 OF 7
SIZE
B
CODE
DD
NUMBER
11/Ø4-0
DRB 107

ELECTRICAL (SECTION 1)

CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		1	E-UA-11/Ø4-0-0		1	UNIT ASSY 11/Ø4	
			C-PL-11/Ø4-0-0		2	UNIT ASSY 11/Ø4 PL	
			C-IA-7011413-0-0		1	CABLE, EXTERNAL BOOT	
			D-IA-7011411-0-0		1	CABLE, CONSOLE TO BACKPLANE	
			D-MU-DD11-C-2		REF	MODULE UTILIZATION DD11-C	
			D-MU-DD11-P-2		REF	MODULE UTILIZATION DD11-P	
		2	B-DD-BA11-L		4	DRAWING DIRECTORY BA11-L	
		3	B-DD-DD11-C		3	DRAWING DIRECTORY DD11-C	
		4	B-DD-DD11-P		3	DRAWING DIRECTORY DD11-P	
		5	B-DD-KY11-LA		3	DRAWING DIRECTORY KY11-LA	
		6	B-DD-MS11-EP		2	DRAWING DIRECTORY MS11-EP	
		7	B-DD-KD11-D		2	DRAWING DIRECTORY KD11-D	
		8	B-DD-M93Ø1-0		5	UNIBUS TERM BOOT STRAP (M9301)	
		9	D-CS-M93Ø2-Ø-1		2	UNIBUS TERM (M9302)	
		10	B-DD-MM11-C		2	DRAWING DIRECTORY MM11-C	
		11	B-DD-MM11-D		2	DRAWING DIRECTORY MM11-D	
		12	B-DD-BA11-K		4	DRAWING DIRECTORY BA11-K	
		27	B-DD-MS312-0		1	UNIBUS TERM BOOT STRAP (M9312)	

MECHANICAL (SECTION 2)

CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		1	E-UA-11/Ø4-0-0		1	UNIT ASSY 11/Ø4	
			C-PL-11/Ø4-0-0		2	UNIT ASSY 11/Ø4 PL	
			C-IA-7011413-0-0		1	CABLE, EXTERNAL BOOT	
			D-IA-7011411-0-0		1	CABLE, CONSOLE TO BACKPLANE	
		2	B-DD-BA11-L		4	DRAWING DIRECTORY BA11-L	
		3	B-DD-DD11-C		3	DRAWING DIRECTORY DD11-C	
		4	B-DD-DD11-P		3	DRAWING DIRECTORY DD11-P	
		5	B-DD-KY11-LA		3	DRAWING DIRECTORY KY11-LA	
		6	B-DD-MS11-EP		2	DRAWING DIRECTORY MS11-E	

CUSTOMER PRINT SET CODES
* = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = INCLUDED PER PARTS INDICATED ON DOCUMENT
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY 11/Ø4	SHEET 5 OF 7	3	DD	11/Ø4-0	K

DRB 108

ELECTRICAL (SECTION 1)

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		13	D-CS-M7856-0-1		9	SERIAL LINE/LINE CLOCK (DL11W)	
		14	D-CS-M7850-0-1		3	PARITY MEMORY MODULE (M7850)	
		17	B-DD-7013323-0-1		3	POWER SUPPLY ASSEMBLY	
		24	B-CS-G727-0-1		1	GRANT CONTINUITY	
		25	A-PL-11/Ø4-Ø-2		1	SHIPPING LIST 11/04 (5.25)	
		26	A-PL-11/Ø4-Ø-3		1	SHIPPING LIST 11/04 (10.5)	
		18	B-DD-MM11-YP		2	DRAWING DIRECTORY MM11-YP	

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

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
	SHEET 6 OF 7	B	DD	11/Ø4-0	K

DRB 108

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

MECHANICAL (SECTION 2)

CUSTOMER PRINT SET	DEC	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO / FILE DATE
			7	B-DD-KD11-D		2	DRAWING DIRECTORY KD11-D	
			8	B-DD-M9301-0		1	UNIBUS TERM BOOT STRAP	
			9	D-CS-M9302-0-1		2	UNIBUS TERM	
				K-CO-M9302-0-4			X-Y COORDINATE HOLE LOCATION	
				D-AH-M9302-0-5			ASSY/DRILLING HOLE LAYOUT	
				B-MH-M9302-0-6			MODULE ECO HISTORY	
				5011311			ETCHED CIRCUIT BOARD	
			10	B-DD-MM11-C		2	MEMORY, CORE 8K MM11-C	
			11	B-DD-MM11-D		2	MEMORY, CORE 16K, MM11-D	
			12	B-DD-BA11-K		4	MTG BOX 10.5	
			13	D-CS-M7856-0-1		9	SERIAL LINE CLOCK (DL11W)	
				K-CO-M7856-0-4		-	X-Y COORDINATE HOLE LOCATION	
				D-AH-M7856-0-5		1	ASSY/DRILLING HOLE LAYOUT	
				B-MH-M7856-0-6		1	MODULE ECO HISTORY	
				5011464		REF	ETCHED CIRCUIT BOARD	
			14	D-CS-M7850-0-1		3	PARITY MEMORY MODULE (M7850)	
				K-CO-M7850-0-4		-	X-Y COORDINATE HOLE LOCATION	
				D-AH-M7850-0-5		1	ASSY/DRILLING HOLE LAYOUT	
				B-MH-M7850-0-6		1	MODULE ECO HISTORY	
				5010651		REF	ETCHED CIRCUIT BOARD	
			27	B-DD-M9312-0		1	UNIBUS TERM BOOT STRAP	

MECHANICAL (SECTION 2)

CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO / FILE DATE
		15	A-SP-3700197-0-0		3	INPLANT PKG. INSTRUCTIONS	
			A-PS-9905418-0-0		2	REGULAR SLOTTED CARTON	
			A-PS-9905754-0-0		2	BEZEL PROTECTOR	
			A-PS-9905755-0-0		2	LAMINATED SADDLE	
			A-PS-9905129-0-7		1	POLY BAG	
			A-PS-9905729-0-0		1	TAPE	
		16	A-SP-3700061-0-0		4	CUSTOM CUSHIONED PKG. INSTR.	
			A-PS-9905647-0-0		2	FULL TELESCOPE CAP	
			A-PS-9905648-0-0		2	FOAM PAD	
			A-PS-9905646-0-0		2	FOAM WITH CORRUGATED SIDEWALL	
			A-PS-9905734-0-0		2	PLASTIC STRAPPING	
			B-MD-7418879-0-0			STRIP, BEARING	
		17	B-DD-7013323-0-1		3	POWER SUPPLY ASSY	
		19	D-DI-H950-0-1		1	COVER PANEL 5 25 (H950 P)	
		20	C-MD-7413659-0-0		1	SHIPPING BRACKET	
		21	A-SP-3700235-0-0		3	INPLANT PKG. INSTRUCTIONS	
			A-PS-9905650-0-0		2	REGULAR SLOTTED CARTON	
			A-PS-9905889-0-0		2	BEZEL PROTECTOR	
			A-PS-9905644-0-0		2	REAR PAD	
			A-PS-9905323-0-0		2	LAMINATED SADDLE	
			A-PS-9905129-0-0		4	POLY BAG	
		18	B-DD-MM11-YP		2	DRAWING DIRECTORY MM11-YP	
		23	A-SP-3700169-0-0		2	CUSTOM CUSHIONED PKG. INSTR.	
			A-PS-9905645-0-0		2	FULL TELESCOPE	
			A-PS-9905642-0-0		2	FOAM PAD	
			A PS-9905643-0-0		2	FOAM/CORRUGATED SIDE WALL ASSY	
		24	B-CS-G727-0-1		1	GRANT CONTINUITY	
		25	A-PL-11/04-0-2		1	SHIPPING LIST 11/04 (5.25)	
		26	A-PL-11/04-0-3		1	SHIPPING LIST 11/04 (10.5)	

CUSTOMER PRINT SET CODES
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = MICRO FILM INDICATED ON DOCUMENT
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY 11/04	SHEET 7 OF 7	B	DD	11/04-0	K

DRB 108

EN-01062-28-16-R972-(325)

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

FIELD MAINTENANCE PRINT SET DL11-W	B-TC-DL11-W-1
SERIAL LINE/LINE CLOCK	A-PL-DL11-W-Ø
SLU/RTC OPTION	D-CS-M7856-Ø-1
SLU/RTC OPTION	K-CS-M7856-Ø-9
CABLE ASSY (KL8-E)	D-IA-7008360-0-0
CABLE MODEM BCØ5C	D-UA-BCØ5C-Ø-Ø
CABLE ASSY	D-UA-BC03L-0-0
INSTALLATION PROCEDURE	A-SP-DL11-W-2

UNIT VARIATIONS COVERED BY THIS PRINT SET
DL11-W
DL11-WA
DL11-WB
DL11-WC

DL11-W

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØ1Ø6

REVISIONS		
REV.	CHG. NO.	DATE
A	DL11W-1	8-77
B	DL11-W-2	

USED ON OPTION/MODEL	DRN.	DATE
	CHK'D	DATE
	PROJ. ENG.	DATE
	FIELD SERV.	DATE

SHEET 1 OF 1

digital

TITLE:
FIELD MAINTENANCE PRINT SET
DL11-W

SIZE	CODE	NUMBER	REV.
B	TC	DL11-W-1	D

DIST.

DRB 124

397

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	D. HEALY	CHECKED	D. HEALY	SECTION	1
DATE	25 MAR 76	DATE	25 MAR 76		
ENG	R.E. BRATT	PROD	K. MACDONALD	ISSUED SECT.	1
DATE	1 APR 76	DATE	7-APR-76		

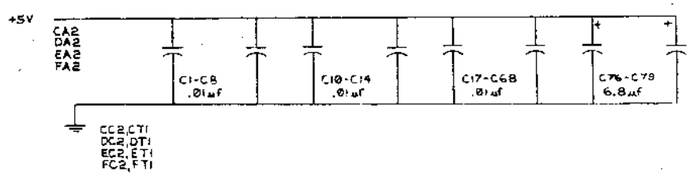
ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-W	DL11-WA	DL11-WB	DL11-WC
1	D-CS-M7856-Ø=1	SLU/RTC OPTION	1	1	1	1
2	D-1A-7008360-1-0	CABLE ASSY (KL8-E)	-	1	-	-
3	D-UA-BCØ5C-25-0	CABLE MODEM BCØ5C	-	-	1	-
4	D-UA-BC03L-10-0	CABLE ASSY	-	-	-	1
5	23760A9 *	BOOTSTRAP ROM	1	1	-	1
6	9906228 *	BOX ROM	1	1	-	1

* 1. THE ROM AND ROM BOX WILL BE ADDED AT FA+T.
2. THE ROM AND ROM BOX ARE TO BE SHIPPED ONLY IF AN LT33 OPTION IS SHIPPED WITH A UNIBUS 11 SYSTEM.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
SERIAL LINE/LINE CLOCK DL11-W	NONE	A	PL	DL11-W-Ø	C	DL11W 00004
	SHEET 1 OF 1	DIST.				

DEC FORM DEC 10 (SEP) [illegible]
DBA 110

NOTES:



IC TYPE.	GND	+5V
IC 8641	8	16
IC 8334	1	2
IC 8537	8	16
IC 8T4A	1	8
IC 74 LS	5	16
IC 74107	5	14
IC 74153	5	16
IC 7483	12	5
IC 7432	10	5
IC 74151	8	16
IC 74175	5	13
IC UART	1	3
IC 8057	8	16

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

IC PIN LOCATIONS

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. E

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

SEMICONDUCTOR CONVERSION CHART

REV.	DESCRIPTION	CHANGE NO.	CHK.
H	ADDED C76-C79 6.8µf	M7856-00004	B. GRAHAM 9/29/78

DRN. D. Dwyer DATE 2/23/79
CHK'D. DATE 3-7-79
ENG. DATE 3-7-79
PROJ. ENG. DATE 3-7-79
PROD. DATE 3-7-79
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 8

digital

TITLE SLU/RTC OPTION

SIZE D | CODE C5 | NUMBER M7856-0-1 | REV. H
DIST.

CHANGE NO. M7856-0-1

399

DL-1 RCVR INTR RQST H

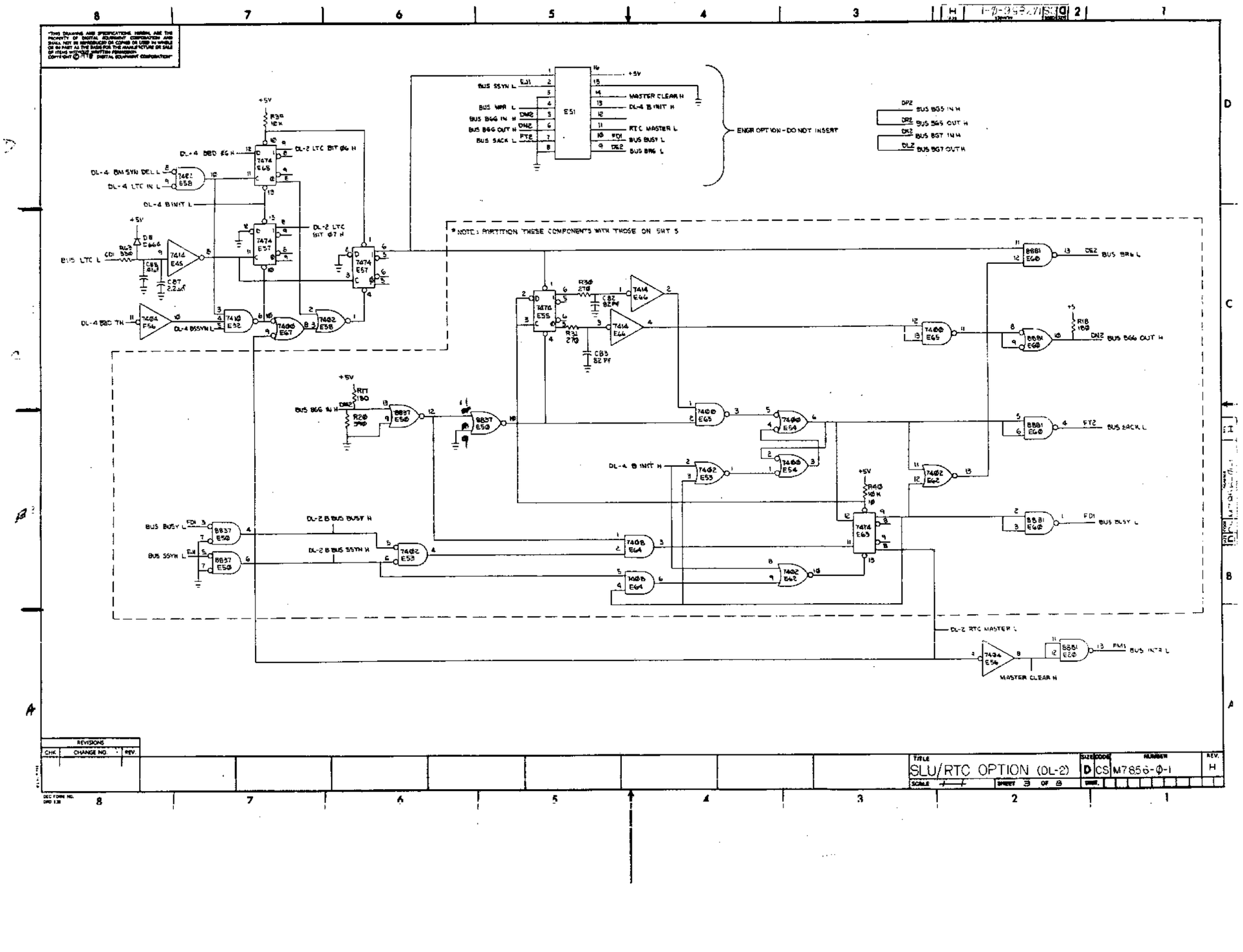
DL-3 RCVR SEL H
DL-3 MASTER H
DL-1 RCVR INTR ENB (I) H
DL-1 RCVR DONE H
DL-1 RCVR BUSY(I)H
DL-1 RDR ENB (I)L
DL-4 BBD 6 H
DL-4 BBD 8 H
DL-4 B INIT L
DL-4 SEL 2L
DL-4 B INIT H
DL-1 OR ERR H
DL-1 FR ERR H
DL-1 P ERR H
DL-1 XMIT RDY H
DL-1 ERROR H
XMIT INTR ENB(I)L
DL-1 XMIT INTR RQST H
DL-6 XMIT CLK H
DL-6 RCVR CLK H
DL-5 TTL SERIAL DATA IN
DL-5 SERIAL OUT H
FR ERR H
RCVR DONE H
TB-1 BOOT SW L
(FASTON TAB)
XMIT INTR ENB (I) L
DL-1 XMIT INTR ENB (I) H
DL-4 BBD 7 H
DL-4 BBD 5 H
DL-4 BBD 4 H
DL-4 BBD 3 H
DL-4 BBD 2 H
DL-4 BBD 1 H
DL-4 LD X DEL L
DL-4 XCSR CLK H
DL-1 MAINT (I) H
DL-1 MAINT (I)L
DL-1 SERIAL OUT L
DL-1 BREAK (I) H
S4-1
R45 10K
R46 10K
R47 10K
R32 270
R33 270
C84 .02μF
C85 .02μF
+5V
-12V
U ART B7
SPARE LOGIC

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-1)	D	CS	M7858-0-1	H
SCALE	SHEET 2 OF 8	DIST.		

SCC FORM NO. 5140 1/26

400



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-2)	D	CS	M7856-Ø-1	H
SCALE —	SHEET 3 OF 8			

DEC FORM NO. DND 130

401

BUS SACK L — FY2
BUS BG4 OUT H — DT2
BUS BG4 IN H — DS2
BUS NPR L — FJ1
BUS SSYN L — EJ1
ES2 — BUS BR4 L, BUS BUSY L, MASTER L, SACK H, DL-4 B INIT H, MASTER H, +5V
ENGR OPTION DO NOT INSERT

*NOTE: PARTITION THESE COMPONENTS WITH THOSE NOTED ON SHT. 4

DL-1 XMIT INTR RQST H
DL-1 RCVR INTR RQST H
BUS BG4 IN H
DL-4 B INIT H
DL-2 BUS BUSY H
BBUS SSYN H
DL-2 RTC MASTER L
MASTER L
DL-3 MASTER H
SACK H
DL-3 RCVR SEL H
DL-3 XMIT SEL H

DK2 BUS BR4 L
DT2 BUS BG4 OUT H
FT2 BUS SACK L
FD1 BUS BUSY L
CT2 BUS DD3 L
CM2 BUS DD7 L
CL2 BUS DD6 L
CK2 BUS DD6 L
FM1 BUS INTR L
CP2 BUS DD5 L
CN2 BUS DD4 L
CV2 BUS DD2 L

S2-4* S2-7* S2-8* S2-5* S2-3* S2-6*

* VECTOR ADDRESS SWITCHES - ON=1 OFF=0

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-3)	D	CS	M7356-0-1	H
SCALE — SHEET 4 OF 8	DIST.			

402

BUS MSYN L
DL-4 BMSYN DEL L
DL-7 SSYN EN L
DL-4 BSSYN L
BUS SSYN L
BUS INIT L
DL-4 B INIT L
DL-4 B INIT H
DL-7 LD XBUF H
DL-4 LDXDEL L
DL-7 RBUF → BUS H
DL-4 SEL 2 L
DL-7 RCSR CLK ENB L
DL-4 RCSR CLK H
DL-7 XCSR CLK ENBL
DL-4 XCSR CLK H
DL-1 RDØ1 H
DL-1 RDØ3 H
DL-1 RDØ4 H
DL-1 RDØ5 H
DL-7 E4 ENL
DL-1 BREAK (I) H
DL-1 RDØ0 H
DL-1 MAINT (I) H
DL-1 RDØ2 H
DL-7 E22 SB H
DL-7 E22 STB L
DL-1 RDØ6 H
DL-1 XMIT INTR ENB (I) H
DL-1 RCVR INTR ENB (I) H
DL-2 LTC BIT Ø6 H
DL-1 RDØ7 H
DL-1 XMIT READY H
DL-1 RCVR DONE H
DL-2 LTC BIT Ø7 H
DL-7 E21 SI H
DL-7 E21 SB H
DL-7 E6 EN L
DL-1 RCVR BUSY (I) H
DL-7 E23 EN L
DL-1 P ERR H
DL-1 FR ERR H
DL-1 OR ERR H
DL-1 ERROR H
DL-7 RX ERR L
BUS DØ1 L
BUS DØ3 L
BUS DØ4 L
BUS DØ5 L
BUS DØØ L
BUS DØ2 L
BUS DØ6 L
BUS DØ7 L
BUS DI2 L
BUS DI3 L
BUS DI4 L
BUS DI5 L
BUS DI1 L
DL-4 BBD 1 H
DL-4 BBD 3 H
DL-4 BBD 4 H
DL-4 BBD 5 H
DL-4 BBD ØH
DL-4 BBD 2 H
DL-4 BBD 6 H
DL-4 BBD 7 H

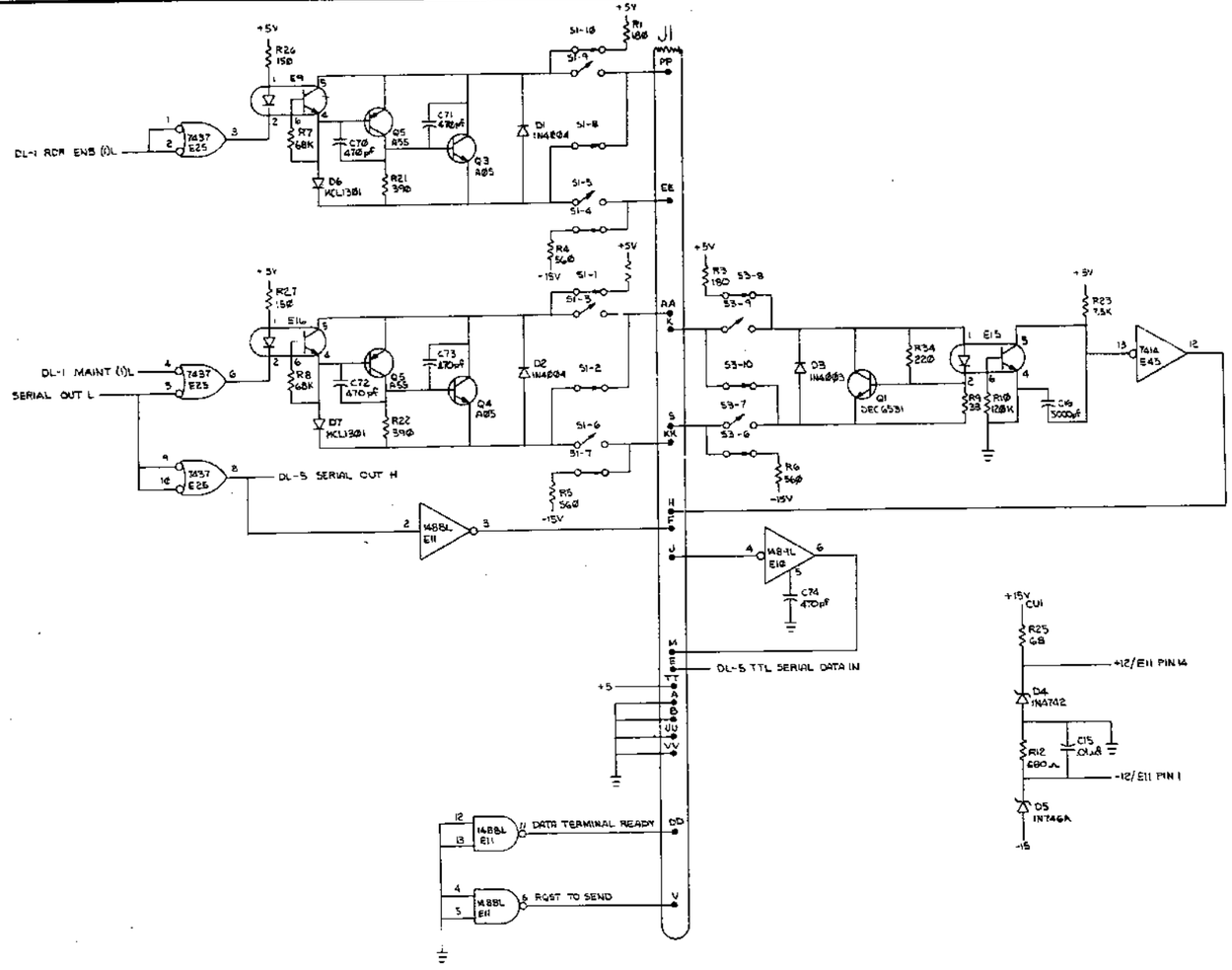
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: SLU/RTC OPTION (DL-4)
SIZE: D | CODE: CS | NUMBER: M7856-0-1 | REV: H
SCALE | SHEET 5 OF 8 | DIST.

DEC FORM NO. 340 1-78

403

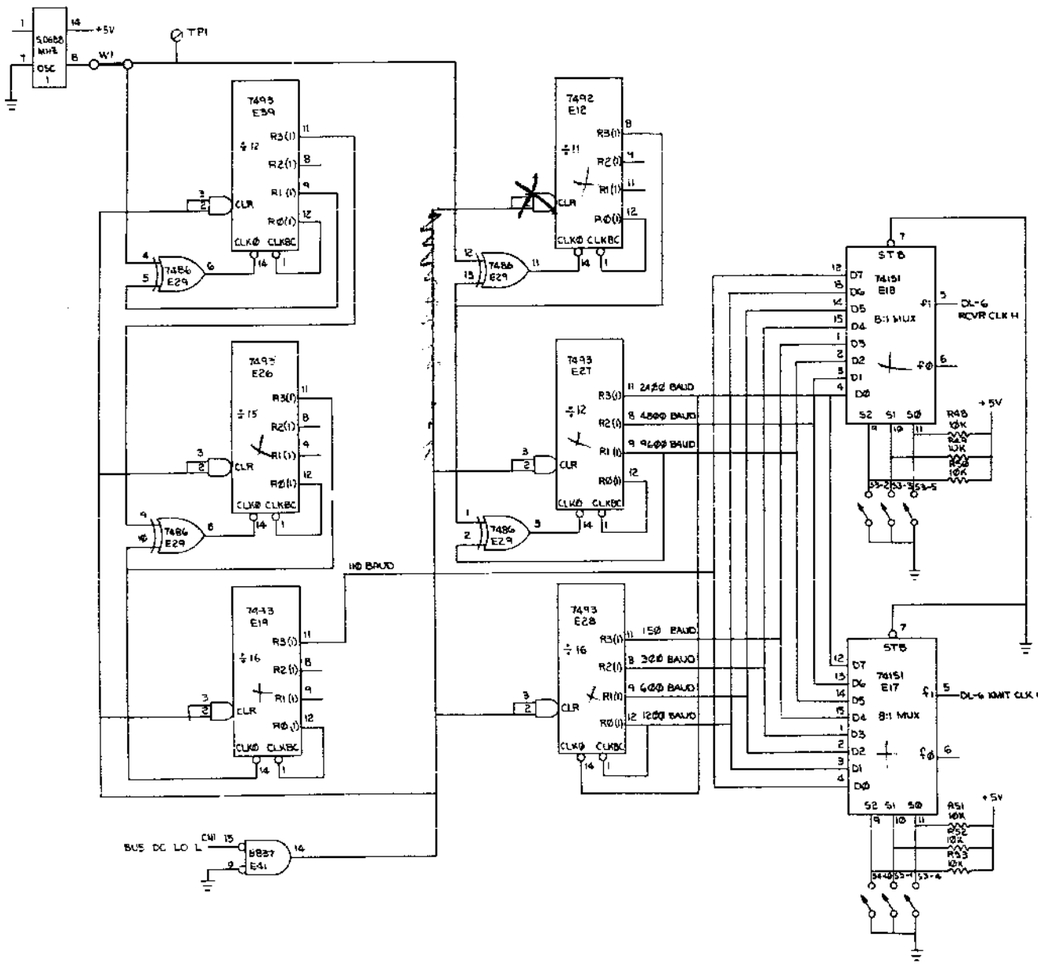
NOTE:
1. SWITCHES ARE SHOWN IN ACTIVE MODE.
2. D7, D6 ARE MCL1301 1 MA CONSTANT CURRENT DIODES.



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-5)	D	CS	M7856-0-1	H
SCALE —	SHEET 6 OF 8	DIST.		

DEC FORM NO D40 138

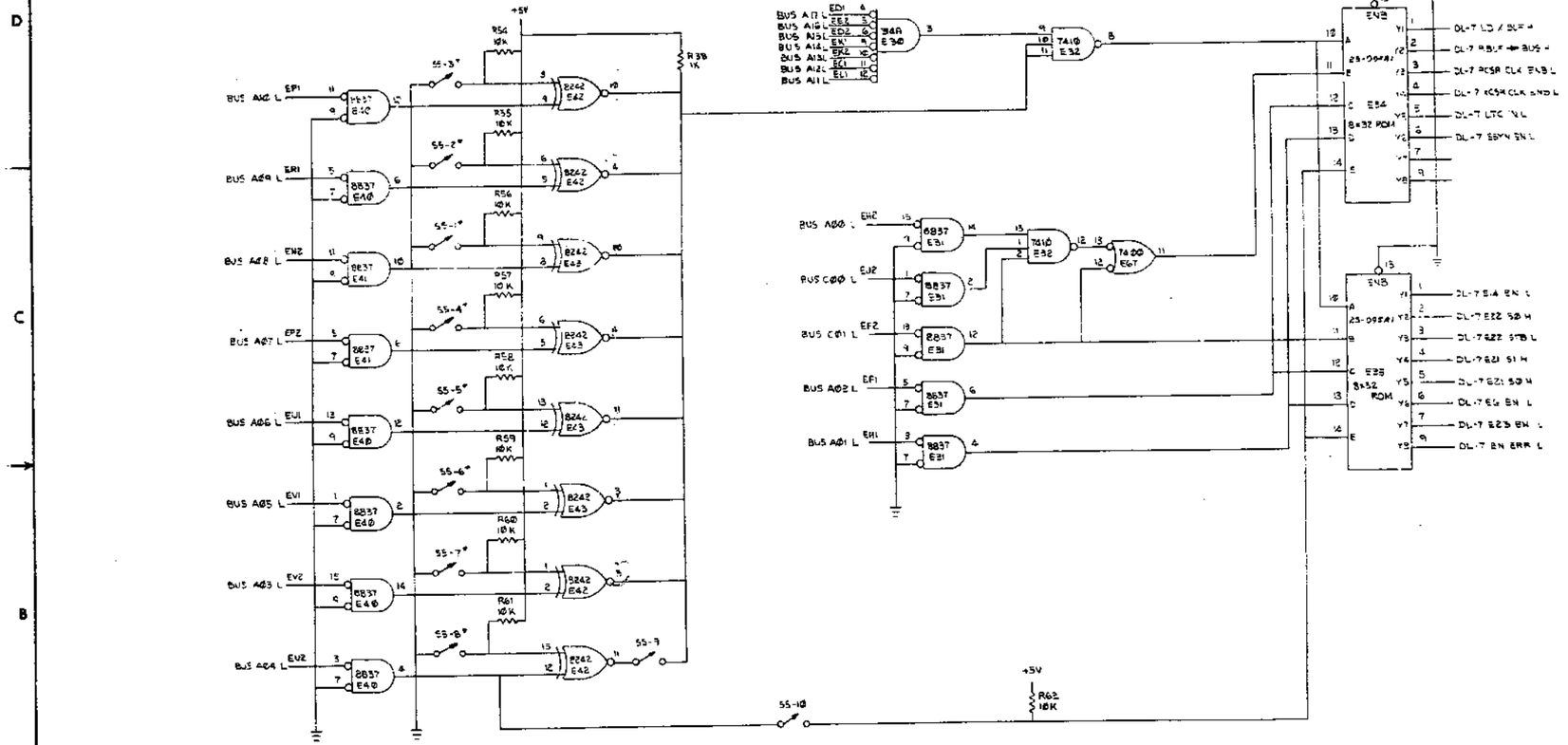


BAUD RATE	RCVR S3-2	RCVR S3-3	RCVR S3-5	XMIT S4-10	XMIT S3-1	XMIT S3-4
110	OFF	OFF	OFF	ON	ON	ON
150	ON	OFF	OFF	OFF	ON	ON
300	OFF	ON	ON	ON	OFF	OFF
600	OFF	ON	OFF	ON	OFF	ON
1200	OFF	OFF	ON	ON	ON	OFF
2400	ON	ON	ON	OFF	OFF	OFF
4800	ON	ON	OFF	OFF	OFF	ON
9600	ON	OFF	ON	OFF	ON	OFF

REVISIONS			
CHK	CHANGE NO.		REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-6)	D	CS	M7856-0-1	H
SCALE	SHEET 7 OF 8	DIST.		

405



"ADDRESS SELECTION SWITCHES" OFF=1 ON=0

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-7)	D	CS	M7858-0-1	H
SCALE	SHEET 9 OF 9	DIST.		

406

REV. | NUMBER M7856-0-9 | SIZE K | CODE CS

(FOR 23094A1-A07 & 23095A1-A07)

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. SY 9-23-75
CHK'D 9-23-75
ENG. 9-23-75
PROJ. ENG. 9-23-75
PROD. 9-23-75

NEXT HIGHER ASSY. D-CS-M7856-0-1

SCALE

SHEET 1 OF 3

FIRST USED ON DL11-W

digital

TITLE ROM LISTING

SIZE	CODE	NUMBER	REV.
K	CS	M7856-0-9	

DIST.

REVISIONS: REV. | CHANGE NO. | Date

DEC 15-(329)-1030-18-R275
DRN 100A

4 3 2 1

A07

DEC PART NUMB: 23094A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	00111100	074
1	01	00111100	074
2	02	00111100	074
3	03	00111100	074
4	04	00111100	074
5	05	00111100	074
6	06	00111100	074
7	07	00111100	074
8	10	00111100	074
9	11	00111100	074
10	12	00111100	074
11	13	00111100	074
12	14	00001100	014
13	15	00111100	074
14	16	00011100	034
15	17	00111100	074
16	20	00011000	030
17	21	00111100	074
18	22	00011100	034
19	23	00111100	074
20	24	00010100	024
21	25	00111100	074
22	26	00011100	034
23	27	00111100	074
24	30	00011100	034
25	31	00111100	074
26	32	00011110	036
27	33	00111100	074
28	34	00011101	035
29	35	00111100	074
30	36	00011100	034
31	37	00111100	074

DEC PART NUMB: 23-095A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	11111111	377
1	01	11111111	377
2	02	11111111	377
3	03	11111111	377
4	04	11111111	377
5	05	11111111	377
6	06	11111111	377
7	07	11111111	377
8	10	11111111	377
9	11	11111111	377
10	12	11111111	377
11	13	11111111	377
12	14	11011111	337
13	15	11111111	377
14	16	11111111	377
15	17	11111111	377
16	20	10001111	217
17	21	11111111	377
18	22	11111111	377
19	23	11111111	377
20	24	11010001	321
21	25	11111111	377
22	26	11111111	377
23	27	11111111	377
24	30	01000010	102
25	31	11111111	377
26	32	11111111	377
27	33	11111111	377
28	34	11111111	377
29	35	11111111	377
30	36	11111111	377
31	37	11111111	377

WIRE TABLE

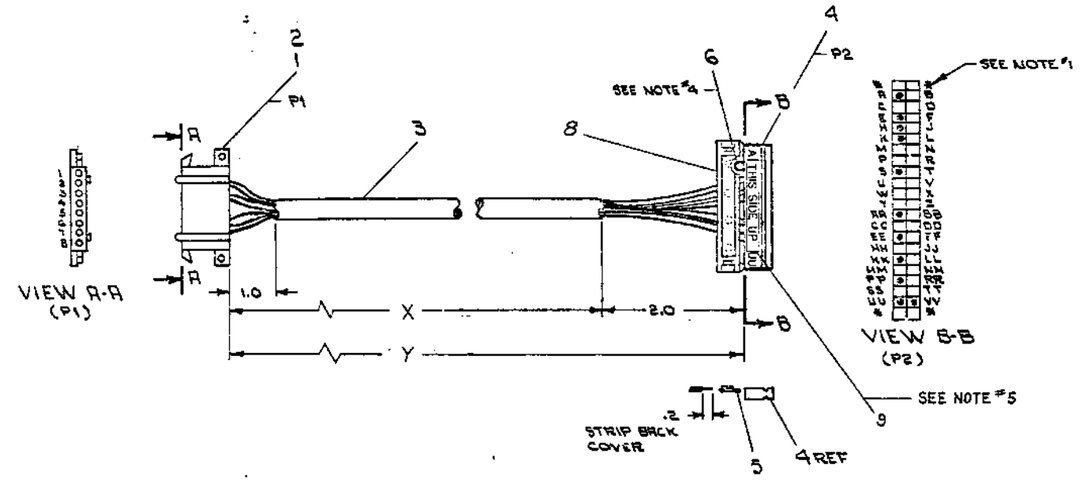
ITEM NO.	DESCRIPTION AWG	COLOR	PAIR NO.	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	1	P1-2	2	P2-KK	5
3		RED		P1-3	2	P2-S	
3,7		SHIELD		SEE NOTE #2	—	P2-R(NOTE #3)	
3		BLK	2	P1-4	2	P2-EE	
3		WHT		P1-5	2	P2-RR	
3,7		SHIELD		SEE NOTE #2	—	P2-UU(NOTE #3)	
3		BLK	3	P1-6	2	P2-PP	
3		GRN		P1-7	2	P2-K	
3,7		SHIELD		SEE NOTE #2	—	P2-VV(NOTE #3)	
6	22	BLK	—	P2-E	5	P2-H	5

LEGEND

VARIATION	LENGTH X	LENGTH Y
7008360-0	25IN±1.0	27IN±1.0
7008360-1	42IN±1.0	48IN±1.0
7008360-9	9FT±2IN	9FT2IN±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	DESCRIPTION	PART NO.	QTY
1	LABEL, THIS SIDE UP	361567	9
1	STRAIN RELIEF	12.11166	8
AR	TUB.#18 TEF. THINWALL WHT	9107278-11	7
AR	WIRE,#22 RING STRD TEF BLK	9107350-00	6
11	SOCKET, CRIMP# 47216	1210089-07	5
1	HOUSING,BERG #650 22-0415	1210318-15	4
AR	CBL,#24,2,BELDEN/STRIP,SHLD	9107723-0	3
5	CONTACT MATE-N-LOCK(FEMALE)	1203579-09	2
1	CONN. MATE-N-LOCK(FEMALE)	2087410-00	1

QTY	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REV	DIA	CHANGE NO	DATE	APPROVED
A		N.C.O. - 00002		
B		N.C.O. - 00001	10-29-70	
C		N.C.O. - 00000	11-19-70	
D		N.C.O. - 00000	12-4-70	
E	7008360	N.C.O. - 00003	1-15-71	
F	7008360	N.C.O. - 00000	1-19-71	
G	7008360	N.C.O. - 00000	1-25-71	
H	7008360	N.C.O. - 00001	1-29-71	

	NAME	DATE
DRAWN	K. CLARK	10-29-70
TRACED	K. CLARK	10-29-70
CHECKED	E. HALL	10-29-70
ENGINEER	R. FRENCH	10-29-70
PROJECT ENGR	R. FRENCH	10-29-70
MANUFACTURING	M. LEVANDOWSKI	10-29-70
QUALITY ASSURANCE	M. LEVANDOWSKI	10-29-70
PROJECT MANAGER	V. MCNAMARA	10-29-70

FIRST USED ON OPTION/MODEL: PDP-8E

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
FRACTIONS ±1/32 ANGLES ±1°00'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST
FINISH:

NEXT HIGHER ASSY: A-ML-KL8-E-0

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: CABLE ASSEMBLY (KL8E)

SIZE: D | NUMBER: DIA7008360-0-0 | REV: H

SCALE: NONE | SHEET: OF | DIST:

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
1	26	BLU/WHT	P1-1 *	12	J1-VV	7
		WHT/BLU	P1-2	8	J1-F	
		ORN/WHT	P1-3		J1-J	
		WHT/ORN	P1-4		J1-V	
		GRN/WHT	P1-5		J1-T	
		WHT/GRN	P1-6	9	J1-Z	
		BRN/WHT	P1-7 **	12	J1-UU	
		WHT/BRN	P1-8	8	J1-BB	
		SLA/WHT	P1-9		J1-Y	
		WHT/SLA	P1-10		J1-W	
		BLU/RED	P1-11		J1-FF	
		RED/BLU	P1-12		J1-JJ	
		ORN/RED	P1-13		J1-D	
		SLA/RED	P1-14		J1-LL	
1	26	SLA/GRN	P1-15	9	J1-N	7

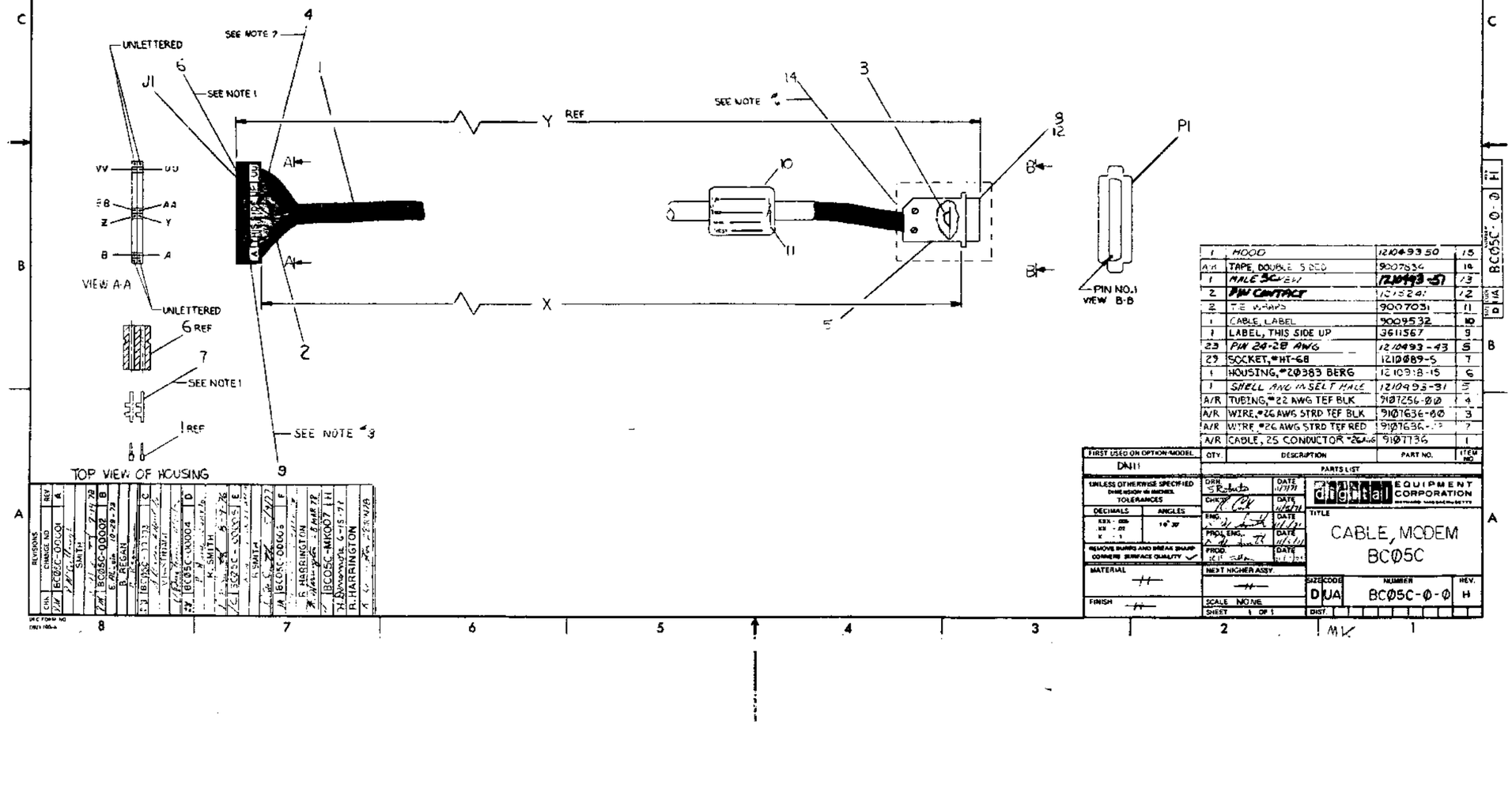
ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
1	26	RED/BRN	P1-16	8	J1-NN	7
		SLA	P1-17		J1-R	
		RED/SLA	P1-18		J1-U	
		BLU/BLK	P1-19		J1-P	
		BLK/BLU	P1-20		J1-DD	
		ORN/BLK	P1-21		J1-MM	
		BLK/ORN	P1-22		J1-X	
		GRN/BLK	P1-23		J1-RR	
		BRN/RED	P1-24		J1-L	
		RED/ORN	P1-25	8	J1-C	
1		SHIELD	P1-1 *	12	J1-A	
1		SHIELD	P1-7 **	12	J1-B	7
3		BLK	P1-1 *	12	P1-7 **	12
2	26	RED	J1-E	7	J1-M	7

NOTES:
* DENOTES THREE WIRES ARE SOLDERED INTO THE P1-1 SOLDER CUP
** DENOTES THREE WIRES ARE SOLDERED INTO THE P1-7 SOLDER CUP

LEGEND

NUMBER	VARIATION DIM X	DIM Y (PRECUT)
BCØ5C-25	25'±3"	25'1.8"
BCØ5C-5Ø	5Ø'±2%	5Ø'1.8"
BCØ5C-Ø9	9'±3"	9'1.8"
BCØ5C-1F	18"±1"	19.8"

NOTES:
1. MANUFACTURING SHOULD USE MACHINE CRIMPER TOOL FOR CRIMPING PINS (ITEM #7) MUST BE HT68 FROM BERG ELECT
2. ONLY DEC PART #1210918-15 MAY BE USED AS J1.
3. PLACE ITEM #9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM #6 (BERG HOUSING) AS SHOWN.
4. ~~USE STRAIN RELIEF (9107302-01) ON BOTH CABLES (P1-1 TO P1-7) TO PREVENT SHORTING~~
5. ~~USE TAN #12 (9107253-01) ON ALL CRIMPING SOLDER CUPS TO PREVENT SHORTING.~~
6. DUE TO ± TOLERANCES WITH DIFFERENT ~~BOOTS~~ THE HOOD (ITEM #1) MAY VARY IN OUTSIDE DIAMETER CAUSING POTENTIAL STRAIN RELIEF GRIPPING PROBLEM SHOULD THIS CONDITION BE PRESENT USE ITEM #14 (9107834) AT JUNCTION OF CABLE AND HOOD
7. PLACE ITEM #4 (9107256) OVER SHIELD WIRE J1-A, J1-B, P1-1, P1-7



1	HOOD	1210Ø93 50	15
A/R	TAPE, DOUBLE SIDED	9007836	14
1	MALE SCREW	(1209Ø3-5)	13
2	PIN CONTACT	12075241	12
2	TIE WRAPS	9007031	11
1	CABLE, LABEL	9009532	10
1	LABEL, THIS SIDE UP	3611567	9
23	PIN 24-28 AWG	12104Ø3-03	8
23	SOCKET, #HT-68	1210089-5	7
1	HOUSING, #2Ø383 BERG	12109Ø8-15	6
1	SHELL AND INSERT MALE	1210993-31	5
A/R	TUBING, #22 AWG TEF BLK	9107256-ØØ	4
A/R	WIRE, #26 AWG STRD TEF BLK	9107636-ØØ	3
A/R	WIRE, #26 AWG STRD TEF RED	9107636-02	2
A/R	CABLE, 25 CONDUCTOR #26 AWG	9107736	1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DA11		PARTS LIST		

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

DRN S Roberts DATE 11/7/71; CHK'D DATE 11/8/71; ENG. DATE 11/9/71; PROJ. ENG. DATE 11/11/71; PROD. DATE 11/11/71; NEXT HIGHER ASSY. —; SCALE NONE; SHEET 1 OF 1

digital EQUIPMENT CORPORATION

TITLE: CABLE, MODEM BCØ5C

SIZE D; CODE DUA; NUMBER BCØ5C-Ø-Ø; REV. H

DIST

REVISIONS	CHNG. NO	REV
1M	EC0BSE-00010	A
1M	EC0BSE-00020	B
1M	BC05C-00002	B
1M	BC05C-00003	C
1M	BC05C-00004	D
1M	EC0BSC-00006	F
1M	BC05C-MK0007	H

SMITH 2-14-72; E. MELVIN 10-29-73; B. REGAN; K. SMITH 5-7-76; R. SMITH; R. HARRINGTON; R. HARRINGTON; M. DUNNAVAL 6-15-77; R. HARRINGTON

WIRE TABLE

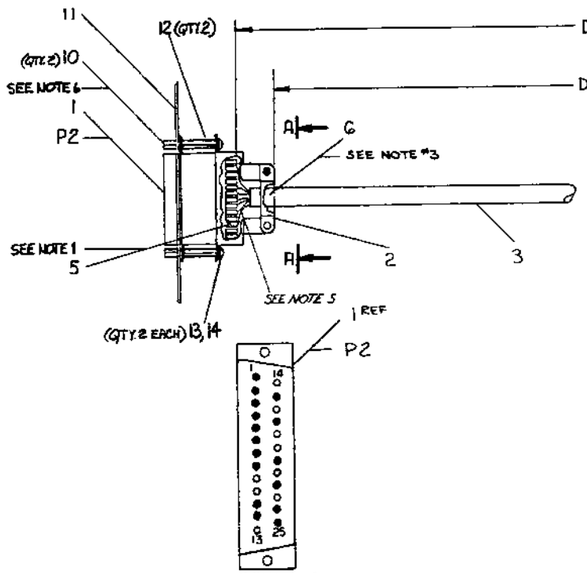
ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	P1-VV	7	P2-7	SOLDER
↓	↓	GRN/WHT	P1-C	↓	P2-25	↓
		GRN/BLK	P1-JJ		P2-12	
		ORN/BLK	P1-FF		P2-11	
		RED	P1-DD		P2-20	
		GRN	P1-BB		P2-8	
		BLU/WHT	P1-Z		P2-6	
		ORN	P1-X		P2-22	
		BLU	P1-V		P2-4	
		WHT	P1-T		P2-5	
		BLU/BLK	P1-R		P2-17	
		BLK/WHT	P1-N		P2-15	
		RED/WHT	P1-L		P2-24	
↓		WHT/BLK	P1-J		P2-3	↓
3		RED/BLK	P1-F	↓	P2-2	SOLDER
8	↓	BLK	P1-E	7	P1-M	7
8	22	BLK	P2-1	SOLDER	P2-7	SOLDER

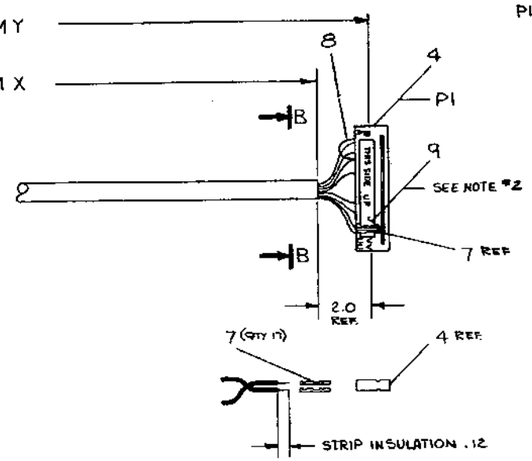
LEGEND

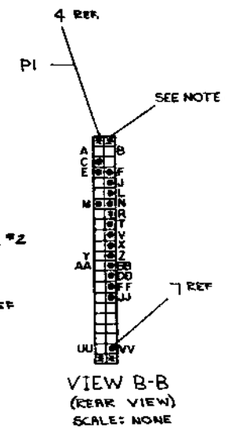
NUMBER	VARIATION DIM "X"	VARIATION DIM "Y" PRECUT
BCØ3L-10	10FT ± 2IN	10FT, 5IN
BCØ3L-5	5FT ± 2IN	5FT, 5IN
BCØ3L-1K	1FT 9IN ± 1IN	2FT
BCØ3L-Ø1	1FT ±1IN	1FT, 3IN

NOTES:

1. EACH SOLDERED CONN ON P2 SHALL BE INSULATED WITH A .25 PIECE OF SHRINK TUBING (ITEM #5)
2. PLACE ITEM #9 (THIS SIDE UP STICKER) ON LETTERED SIDE OF ITEM #4 (CONN HOUSING) AS SHOWN.
3. FOR STRAIN RELIEF WRAP 2 TURNS OF TAPE (ITEM #6) AROUND CABLE (ITEM #3) AS SHOWN.
4. PINS MARKED * IN VIEW B-B ARE NOT USEABLE
5. WIRES COMING FROM CENTER OF PLUG CONN SHOULD BE 1/8 LG., ALL OTHERS SHOULD BE CONFINED INTO HOOD OF CONN. SO THAT THEY'RE NOT BUNCHED.
6. PLACE LOCKWASHER (SUPPLIED WITH ITEM #10) BETWEEN SPACER AND CONNECTOR FLANGE. DISCARD NUT (QTY 2) SUPPLIED WITH ITEM #10.







QTY	DESCRIPTION	DWG/PART NO	ITEM NO
2	WASHER, LOCK #4	9006488	14
2	SCR, PHL PAN HD #4-40 X .25	9008301-1	13
2	SPACER, THREADED, HEX	9008833	12
1	PLATE, CONN. MTG.	B-MD-7414072-0011	11
2	SCREW LOCK ASSY	9008451-00	10
1	LABEL (THIS SIDE UP)	3611567	9
33IN	WIRE, STRANDED #22 AWG IPVC (BLK)	9107350-00	8
17	SOCKET, CRIMP	12100819-07	7
AR	TAPE, DOUBLE SIDED .50 W.D.	9007834	6
16	TUBING, HEAT SHRINK .12	9107253-09	5
1	CONN, 44 POS, HSG.	12109918-15	4
AR	CABLE, 15 COND, 22 AWG.	9107672-00	3
1	HOOD, CONN.	12121516-00	2
1	CONNECTOR, PLUG, FILTERED	12140311-00	1

DESCRIPTION — DWG/PART NO — ITEM NO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30' — CLASS OF ACCURACY (CHECK ONE) — NOMINAL LENGTH IN 1/2 INCH INCREMENTS: OVER 0 TO 1/2, OVER 1/2 TO 1, OVER 1 TO 2, OVER 2 TO 4, OVER 4 TO 8, OVER 8 TO 12, OVER 12 TO 20, OVER 20 TO 32

SURFACE QUALITY 125 — MEDIUM ±.030 ±.005 ±.010 ±.015 ±.020 ±.025 ±.030 ±.035 — PREFERRED ±.010 ±.010 ±.010 ±.010 ±.010 ±.015 ±.020 ±.025

MICROINCHES — QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

NEXT HIGHER ASSY.

USED ON

FINISH

MATERIAL

SEE PARTS LIST

NEXT ASSY

FIRST USED ON

digital

TITLE: FILTERED CABLE ASSY BCØ3L

SIZE D — CODE UA — NUMBER BCØ3L-Ø Ø — REV F

SCALE 1/1 — SHEET 1 OF 1 — D.T.

REVISIONS					
LTR	DESCRIPTION	DATE	APPROVED		
A	ECO-00002	10-15-75			
B	ECO-00003	10-15-75			
C	ECO-00004	11-4-75			
D	ECO-00005	11-4-75			
E	ECO-00006	12-8-75			
F	BCØ3L-MK0827	1-22-76			

Handwritten: 4/2

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 2-28-77

TITLE DL11-W Installation Procedure

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	00002	B. CRAMM	8-77	B. Pratt	8-77

ENG	APPD	SIZE	CODE	NUMBER	REV
Bob Pratt		A	SP	DL11-W-2	A

DEC FORM NO DEC 16-(392)-1078 N971
DRA 107

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE DL11-W Installation Procedure

DL11-W Installation Procedure

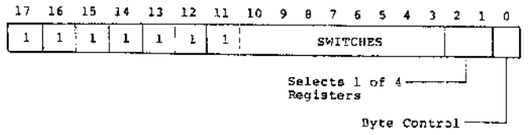
Installation of the M7856 module consists of the following preparations:

1) Switch selection of the address mode and register addresses.
2) Switch selection of vector address.
3) Switch selection of data format.
4) Switch selection of receiver and transmitter baud rates.
5) Switch selection of operation mode for the current loops.
6) Additional switch selections for compatability.
7) Installation of G8900 in systems where +15V is not available.

NOTE: The notation used to indicate a particular switch is as follows: SX-Y where X denotes the particular switch pack and Y denotes the individual switch in the pack. The switch pack is labeled on the P. C. board with an SX(ieS2) and the individual switches are labeled on the switch pack as are the on-off positions.

A. Register Address Assignments:

The DL11-W can respond to addresses with the following format:



The DL11-W can be operated in one of three different address selection modes. Normally, a DL11-W used as console terminal control would operate in the first mode, whereas additional DL11-W's would be operated in the second mode. The third mode is not normally used, but is included here for completeness.

SIZE	CODE	NUMBER	REV
A	SP	DL11-W-2	A

DEC FORM NO DEC 16-(363)-1077-N370
DRA 108

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE DL11-W Installation Procedure

Mode 1: Both the serial line unit and the real-time clock sections can be addressed. Due to common address selection logic, operation in this mode requires that the serial line unit addresses be restricted to 77756X. The line clock address is 777546.

Mode 2: Only the serial line unit section can be addressed. Address selection ranges from 74000 to 777777. Line clock is disabled and does not respond to address 777546.

Mode 3: Only the line clock section can be addressed at 777546. The serial line unit section does not respond to any address.

ADDRESS AND MODE SELECTION

Address Bit	A10	A09	A08	A07	A06	A05	A04	A03	N/A	N/A
Switch	S5-3	S5-2	S5-1	S5-4	S5-5	S5-6	S5-8	S5-7	S5-9	S5-10
Mode 1	Off	Off	Off	On	Off	Off	Off	On	Off	On
Mode 2*	Off	Off	Off	On	Off	Off	Off	On	On	Off
Mode 3	Off	Off	Off	On	Off	Off	On	On	On	On

*Address 77756X selected for serial line interface. Other addresses may be selected using SWITCH-OFF = 1 and SWITCH-ON = 0.

Note: Remove R63 from DL11-W's operated in Mode 2 to allow proper operation of a line frequency clock or DL11-W operated in Mode 1 or Mode 3.

Address assignments for serial lines are normally made in the ranges from 77650X to 77667X and from 77561X to 77617X.

B. Vector Address Assignments:

The line clock, if enabled, has a fixed vector address of 100 and cannot be changed. The serial line assignments are to floating vectors produced in the form XX0 (Receiver) and XX4 (Transmitter) where XX ranges from 00 to 77.

For a DL11-W used as the console device, the vector is 060/064. Additional DL11-W's vector addresses are floating.

SIZE	CODE	NUMBER	REV
A	SP	DL11-W-2	A

DEC FORM NO DEC 16-(363)-1022-N370
DRA 108

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE DL11-W Installation Procedure

V8	V7	V6	V5	V4	V3	V2	V1	V0
						0/1	0	0

Switch Selectable for Serial Line

Vector Bit	V8	V7	V6	V5	V4	V3
Switch	S2-8	S2-7	S2-5	S2-3	S2-6	S2-4
060/064	Off	Off	Off	On	On	Off

On = 1, Off = 0

C. Selection of Data Format:

1. Data Bits

Switches S4-3 and S4-4 control the number of data bits in the serial character as follows:

S4-4	S4-3	# of Data Bits
On	On	5
On	Off	6
Off	On	7
Off	Off	8

2. Parity

Parity is controlled by switches S4-2 and S4-6 as follows:

S4-2	S4-6	Parity
Off	Off	Off
On	Off	Off
Off	On	Even
On	On	Odd

3. Stop Bits

Switch S4-5 controls the number of stop bits selected in the serial character as follows:

SIZE	CODE	NUMBER	REV
A	SP	DL11-W-2	A

DEC FORM NO DEC 16-(363)-1022-N370
DRA 108

A3

S3-5 # of Stop Bits

On 1

Off 2 (or 1.5 if 5 data bits are selected)

D. Baud Rate Selection:

Receiver and Transmitter baud rates are independent, so any combination may be selected.

Baud Rate Switch Selections

Baud Rate	Receiver			Transmitter		
	S3-2	S3-3	S3-5	S4-10	S3-1	S3-4
110	Off	Off	Off	On	On	On
150	On	Off	Off	Off	On	On
300	Off	On	On	On	Off	Off
600	Off	On	Off	On	Off	On
1200	Off	Off	On	On	On	Off
2400	On	On	On	Off	Off	Off
4800	On	On	Off	Off	Off	On
9600	On	Off	On	Off	On	Off

E. Current Loop Operation Mode:

Normally, current loops should be in active mode, unless interfaced to another active loop, such as to another DL11.

Active - Passive Mode Selection

Transmitter	S1-1	S1-2	S1-3	S1-6	S1-7
Active	On	On	Off	Off	On
Passive	Off	Off	On	On	Off
Receiver	S3-6	S3-7	S3-8	S3-9	S3-10
Active	On	Off	On	Off	On
Passive	Off	On	Off	On	Off
Reader Enable	S1-4	S1-5	S1-8	S1-9	S1-10
Active	On	Off	On	Off	On
Passive	Off	On	Off	On	Off

F. Compatability Selection:

Switches S4-1 and S4-7 allow the DL11-W to be configured to replace DL11-A, B, C, and D options in most applications.

DL11-W Compatability Switches

Selectable	Switch	Description
Break Bit	S4-1	Enabled in the ON position. Should be disabled (switch OFF) if replacing a DL11-A, or DL11-A should be enabled (switch ON) if replacing a DL11-C or DL11-D.
Error Bits	S4-7	Error bit reporting is enabled in the ON position. Should be disabled if replacing DL11-A or DL11-B, and should be enabled if replacing DL11-C or DL11-D.

Note: Both EIA level and current loop signals are available at the berg connector on the module. No selection is necessary. The proper cable will pick up the correct signals.

G. G8000 Installation:

For DL11-W EIA operation, 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 A02 or DD11-A.
2. Wire A03V2 to A02V2.
3. Wire A02N2 to CXXU1 where XX is the slot location of the M7856.

H. DL11-W Systems with +15V Available Using DD11-A

There is a special situation of using a DD11-A to mount a DL11-W in systems with +15V available. These systems have +15V available, and it appears at pin A03V2 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 A03V2 to CXXU1, where XX is the slot number of the DL11.

I. When using the DL11-W in an 11/05 processor pin CXXU1 has +15V available on it so no G8000 or no jumpers are required.

J. INSTALLATION

The DL11-W module plugs into an SPC slot. A wire must be installed to pick up the LTC L signal from the power supply and apply it to the line frequency input of the DL11-W.

When installed, the LTC L input to the DL11-W is located on pin CD1. Connect a length of 30 AWG wire from pin CD1 on the backplane to the pin on the backplane, as designated in Table 1-1, for each application.

Table 1-1 LTC L Connection

PDP Computer	Processor	Pin Number
11/04	KD11-D (4 slot)	C02D1,C03D1,C04D1
11/04	KD11-D (9 slot)	C02D1,C03D1,C04D1,C05D1, C06D1,C07D1,C08D1, or C09D1
11/05	KA11-A w/8K Memory	C01D1,C02D1,C03D1,C04D1, or F08V2
11/05	KD11-A w/16K Memory	C01D1 or F08V2
11/20	KA11	A13P2 or B12R1
11/34	KD11-E	C03D1,C04D1,C05D1,C06D1, C07D1,C08D1, or C09D1
11/35	KD11-A	F03R1 or C09D1
11/40	KD11-A	F03R1 or C09D1
11/45	KB11-A	C26D1,C27D1, or C28D1
11/55	KB11-D	C26D1,C27D1, or C28D1
11/70	KB11-B	C40D1,C41D1,C42D1,C43D1, or C44D1
11/70	KB11-C	C40D1, C41D1,C42D1,C43D1, or C44D1
DD11-B Peripheral Mounting Panel		C01D1,C02D1,C03D1, or C04D1
DD11-D Peripheral Mounting Panel		C01D1,C02D1,C03D1,C04D1, C05D1,C06D1,C07D1,C08D1,C09D1
DD11-A Peripheral Mounting Panel		A03P2

NOTE: A wire connection is not necessary for backplane pin numbers ending in D1. LTC L is already connected to the line frequency input of the DL11-W.

K. Installation

The DL11-W module plugs into an SPC slot. A wire must be installed to pick up the DCLOL signal from the power supply and apply it to the DCLOL input of the DL11-W.

When installed, the DCLOL input to the DL11-W is located on pin CN1. Connect a length of 30 AWG wire from pin CN1 on the backplane to the pin on the backplane, as designated in Table 1-2 for each application.

Table 1-2 DCLOL Connection

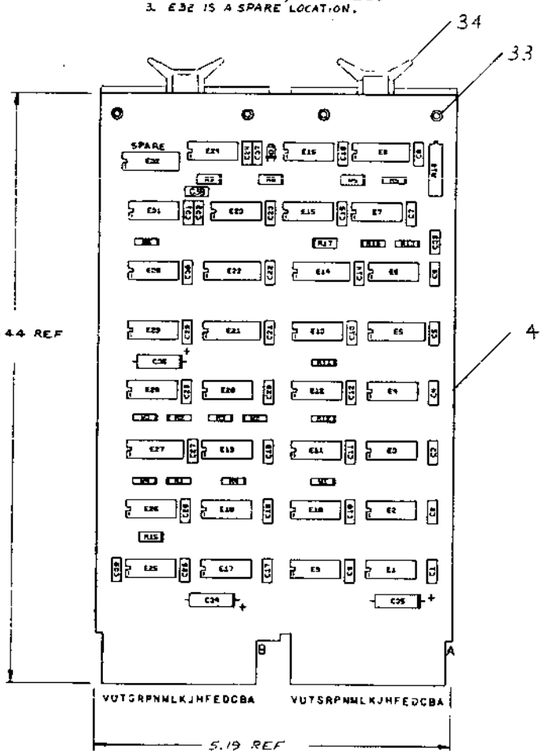
PDP Computer	Processor	Pin Number
11/04*	KD11-D (4 slot)	C03N1, C04N1
11/04*	KD11-D (9 slot)	C03N1 thru C09N1
11/05*	KA11-A w/8K Memory	C01N1, C02N1, C03N1, C04N1
11/05*	KD11-A w/16K Memory	C01N1
11/20	KA11	B11F2, B14F2, A13S2, A08S2, A03S2, B04D2, F06B2
11/34*	KD11-E	C03N1 thru C09N1
11/35	KD11-A	B09F2
11/40	KD11-A	B09F2
11/45*	KB11-A	C26N1, C26N1, C28N1
11/55*	KB11-D	C26N1, C26N1, C28N1
11/70*	KB11-B	C40N1, C41N1, C42N1, C43N1, C44N1
11/70*	KB11-C	C40N1, C41N1, C42N1, C43N1, C44N1
DD11-B Peripheral Mounting Panel		C01N1 thru C04N1
DD11-D Peripheral Mounting Panel		C01N1 thru C09N1
DD11-A Peripheral Mounting Panel		B01F2, B04F2, A03S2

*NOTE: A wire connection is not necessary for backplane pin numbers ending in N1 DCLOL. Is already connected to the input of the DL11-W.

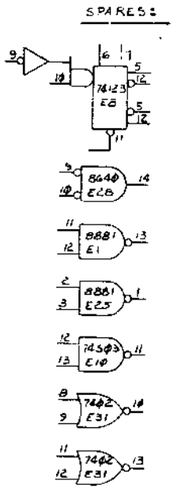
A14

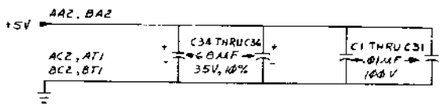
NOTES:

1. ALL RESISTORS 1/4 W, 5% UNLESS OTHERWISE NOTED.
   ALL CAPACITORS ARE 100V, 20% UNLESS OTHERWISE NOTED.
2. JUMPER CONTROL OPERATIONS AS FOLLOWS:
   W1 THRU W4 SELECT CSR ADDRESS, W5 CAPACITOR FOR 5 SYN DLY, NOT USED.
3. E32 IS A SPARE LOCATION.



SPARES:





8640	1	8
8266	8	16
74157	8	16
74174	8	16
74123	8	16
7885	8	16
314A	1	8
IC TYPE	GND	+5V

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

IC Pin LOCATIONS

REF				REF
REF		CIRCUIT SCHEMATIC	D-CS-M7850-0-1	REF
REF		X-Y COORDINATE HOLE LOCATION	X-CO-M7850-0-1	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7850-0-1	2
REF		MODULE ECO HISTORY	D-MH-M7850-0-1	3
1		ETCHED CIRCUIT BOARD	5010651-00	4
1	C39	CAP 470 PF, 100V, 5% (DM)	1000024-00	5
2	C33, C37	CAP 330 PF, 100V, 5% (DM)	1000023-00	6
32	C1 THRU C32	CAP .01 MF, 100 V, 20% DISC	1001610-01	7
3	C34, C35, C36	CAP 6.8 MF, 35 V, 10% S.TANT	1005306-00	8
1	D1	DIODE, LED.	1110324-00	9
5	R1 THRU R5	RES 4.7K 1/4W 5%	1300447-00	10
3	R8, R9, R15	RES 100 1/4W 5%	1300229-00	11
5	R6, R10, R11, R12, R17	RES 470 1/4W 5%	1300316-00	12
1	R13	RES 1K 1/4W 5%	1300365-00	13
1	R16	RES 10K 3/4W 2% (1% PERF)	1303143-10	14
1	E24	I.C. 7400	1905575-00	15
1	E30	I.C. 7430	1905578-00	16
1	E31	I.C. 7402	1909004-00	17
1	E19	IC. 314A	1909704-00	18
1	E23	IC. 7408	1910155-00	19
4	E1, E9, E17, E25	IC. 8881	1909705-00	20
1	E16	I.C. 74H04	1909931-00	21
1	E27	I.C. 7485	1910224-00	22
1	E8	I.C. 74123	1910436-00	23
1	E10	I.C. 74S03	1910533-00	24
1	E15	I.C. 74S74	1910544-00	25
1	E21	I.C. 74174	1910652-00	26
2	E5, E22	I.C. 74157	1910655-00	27
9	E2, E3, E11, E12, E18 E20, E26, E28, E29	I.C. 8640	1911469-00	28
2	E6, E13	I.C. 74S280	1911573-00	29
1	E14	I.C. 8266	1909934-00	30
2	E6, E7	I.C. 7474	1905547-00	31
4	W1 THRU W4	INSULATED JUMPER	9009185-00	32
4		EYELET	9006732-00	33
2		HANDLE, FLIP CHIP (MAGENTA)	9008337-6	34

QTY	REF. DESIGNATION	DESCRIPTION	PART NO	ITEM NO

FIRST USED ON OPTION MODEL

ETCH BOARD REV. B

PARTS LIST

SEMICONDUCTOR CONVERSION CHART

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

REVISIONS	REV	CHG	CHANGE NO.
ECO M7850-0-1	B		

DRN H. LUFKIN DATE 2.5.75
CHK'D DATE 2/17/75
ENG. DATE 2/21/75
PROJ. ENG. DATE 2/13/75
PROD. ENG. DATE 2.19.75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 3

digital

TITLE PARITY MODULE

SIZE D | CODE DCS | NUMBER M7850-0-1 | REV B

DIST.

416

PM3 PAR ERR(1) L
PM3 D15 H
PM3 CLK CSR H
PM3 INIT L
PM2 CSR15(1) H
R17 470Ω
D1 LED
+5V
CSR 15(Ø) H

BUS A17 L — BS1 — 8640 E29 — A17 H
BUS A16 L — BS2 — 8640 E29 — A16 H
BUS A15 L — BR1 — 8640 E29 — A15 H
BUS A14 L — BR2 — 8640 E29 — A14 H
BUS A13 L — BP1 — 8640 E28 — A13 H
BUS A12 L — BP2 — 8640 E28 — A12 H
BUS A11 L — BN1 — 8640 E28 — A11 H
BUS A10 L — BN2 — 8640 E28 — A10 H
BUS A09 L — BM1 — 8640 E18 — A09 H
BUS A08 L — BM2 — 8640 E18 — A08 H
BUS A07 L — BL1 — 8640 E18 — A07 H
BUS A06 L — BL2 — 8640 E18 — A06 H
BUS A05 L — BK1 — 8640 E18 — A05 H
BUS A04 L — BK2 — 8640 E26 — A04 H
BUS A03 L — BJ1 — 8640 E26 — A03 H
BUS A02 L — BJ2 — 8640 E26 — A02 H
BUS A01 L — BH1 — 8640 E26 — A01 H

7430 E30 — 8
314A E19 — 3

74157 E22: A17 H, PM3 D11 H, A16 H, PM3 D10 H, A15 H, PM3 D09 H, A14 H, PM3 D08 H → F0, F1, F3, F2; STB S0; SEL DATA L; **
74157 E5: A11 H, PM3 D05 H, A15 H, PM3 D07 H, A12 H, PM3 D06 H → F3, F0, F1, F2; STB S0; SEL DATA L; **

74174 E21: DIR 11 → PM2 ER A17 H; DIR 10 → PM2 ER A16 H; DIR 09 → PM2 ER A15 H; DIR 08 → PM2 ER A14 H; DIR 07 → PM2 ER A13 H; DIR 06 → PM2 ER A12 H; CLR CLK; PM3 CLK ADRS H
PM3 V H
DIR 05 → PM2 ER A11 H
PM3 CLK ADRS H
7474 E7
PM3 D02 H → PM2 CSR 2(1) H (WRITE WRONG PARITY)
PM3 CLK CSR H → PM2 (SR 2(0) H
PM3 INIT L
7474 E6
PM3 D00 H → PM2 CSR 0(1) H (ERR IND ENAB)
PM3 CLK CSR H

ADRS 3 SEL 2 H
SEL DATA L
7485 E27: B3 A3 B2 A2 B1 A1 B0 A0; IN> IN= IN<; A>B A=B A<B
7400 E24
7402 E31 → PM2 CSRADRS SEL H
ADRS SEL 1 H
PM3 V H

+5V
R4 470K, R3 470K, R2 470K, R1 4.7K
W1 A01, W2 A02, W3 A03, W4 A04

PM3 PAR ERR(0) L
PM3 DATIP L
7402 E31
8881 E25 — BA1 → DATIP CLR PAUSE L
ETCH CUT, SIGNAL NOT USED

BUS C0 L — BU2 — 8640 E20 — PM2 C0 H

NOTES:

* THE CSR REGISTER ADDRESS IS LOCATED BETWEEN 772100 AND 772136. IT IS SELECTED WITH JUMPERS W1 THRU W4. REMOVING A JUMPER SELECTS A "ONE" FOR THAT BIT POSITION. (*)

MACHINE ADDRESS (WORDS) 8	W4 A04	W3 A03	W2 A02	W1 A01
772100	IN	IN	IN	IN
772102	IN	IN	IN	OUT
772104	IN	IN	OUT	IN
772106	IN	IN	OUT	OUT
772110	IN	OUT	IN	IN
772112	IN	OUT	IN	OUT
772114	IN	OUT	OUT	IN
772116	IN	OUT	OUT	OUT
772120	OUT	IN	IN	IN
772122	OUT	IN	IN	OUT
772124	OUT	IN	OUT	IN
772126	OUT	IN	OUT	OUT
772130	OUT	OUT	IN	IN
772132	OUT	OUT	IN	OUT
772134	OUT	OUT	OUT	IN
772136	OUT	OUT	OUT	OUT

** THE "A" INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW. (**)

REVISIONS		
LTR	DESCRIPTION	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM2)	D	CS	M7850-Z-1	B
SCALE	SHEET 2 OF 3	DIST.		

4(6

NOTES:
* B INPUTS SELECTED WHEN SEL IS LOW (@)
** SET R&S TO 110 NSEC ± 10 NS FROM SIGNAL ON PIN BE1 GOING LOW TO SIGNAL ON PIN BB2 GOING HIGH. (@ 1.5V LEVEL) (@)

PM2 CSR 15 (1) H
BUS DI4 L
BUS DI5 L
BUS DI2 L
PM2 ER A17 H
PM2 ER A16 H
PM2 ER A15 H
PM2 ER A14 H
PM2 ER A13 H
PM2 ER A12 H
PM2 ER A11 H
BUS DØ4 L
BUS DØ3 L
PM2 CSR 2(1) H
BUS DØ1 L
PM2 CSR Ø(1) H
PM3 READ SEL H

BUS DI5 L
BUS DI4 L
BUS DI1 L
BUS DIØ L
BUS DØ9 L
BUS DØ8 L
BUS DØ7 L
BUS DØ6 L
BUS DØ5 L
BUS DØ4 L
BUS DØ3 L
BUS DØ2 L
BUS DØ1 L
BUS DØØ L

PM3 DI5 H
PM3 DI4 H
PM3 DI3 H
PM3 DI2 H
PM3 DI1 H
PM3 DIØ H
PM3 DØ9 H
PM3 DØ8 H
PM3 8 BIT GEN H
PM3 DØ7 H
PM3 DØ6 H
PM3 DØ5 H
PM3 A BIT GEN H
PM3 DØ6 H
PM3 DØ5 H
PM3 DØ2 H
PM3 DØØ H

PM3 C1 H
INT BUS PI L
INT BUS PØ L
PM3 PAR ERR H
PM3 VH
PM2 CØ H
PM3 INT SSYN H
PM3 C1 L
PM3 8 BIT GEN H
PM3 A BIT GEN H
PM3 DATIP L

INT BUS SSYN L
PM3 C1 L
PM3 INIT L
PM3 INT SSYN H
PM3 M SYN PULSE L
PM3 PAR ERR H
PM3 PAR ERR(1) H
PM3 PAR ERR(1) L
PM2 CSR Ø(1) H
BUS PB L
BUS SSYN L
S SYN DLY (6) H
S SYNC INH Ø H
ERRCLR IN@ L
PM3 A BIT GEN H
PM3 PAR ERR(1) H

BUS INIT L
INIT H
PM3 INIT L
BUS C1 L
PA 3 C1 H
PM3 C1 L
PM3 M SYN PULSE L
BUS M SYN L
PM2 CSR ADRS SEL H
PM3 READ SEL H
PM3 CLK CSR H
CLK CSR L
PM3 CLK ADRS H
PM3 C1 H
PM3 PAR ERR (1) L
INT BUS PAR MOD DET L

REVISIONS		
CLK	CHANGE NO.	REV.

TITLE	PARITY MODULE (PM3)		
SIZE/CODE	NUMBER	REV.	
D	DCS M7850-0-1	B	
SCALE	SHEET 3 OF 3	D-ST.	

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY BRUCE CRAMM	CHECKED BRUCE CRAMM	SECTION
DATE 17 NOV 77	DATE 17 NOV 77	
ENG BILL BERNSTEIN	PROD	ISSUED SECT.
DATE 11 NOV 77	DATE	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION AA,AB,BA,BB,DA	DB,AC,AD,BC,BD	DC,DD,LC,LD	FC,FD	HC,HD,MC,MD	HA,HB	JC,JD
	EK-11004-OP	11/04 SYSTEM USERS GUIDE	1	1	1	1	1	1	1
	ZJ009-RB	SOFTWARE LIB KIT (PAPER TAPE)	1	1	1	1	1	1	1
	B-TC-11/04-0-1	11/04 PRINT SER (ORDER #MPØØ19)	1	1	1	1	1	1	1
	EK-KD11-D-TM	KD11-D MANUAL	1	1	1	1	1	1	1
	EK-MS11E-MM	MS11-E-J MANUAL	1	1	1	0	0	0	0
	EK-MM11B-TM	MM11-B,BP,C,CP MANUAL	0	0	0	1	0	0	0
	EK-MM11D-TM	MM11-D,DP MANUAL	0	0	0	0	1	1	0
	EK-BA11L-MM	BA11-L MANUAL	1	1	1	1	1	1	1
	EK-BA11K-MM	BA11-K MANUAL	0	0	0	0	0	0	0
	EK-M7850-MM	M7850 MANUAL	0	0	0	0	0	0	0
		DL11-W PRINT SET	0	0	0	0	0	0	0
	EK-DL11W-MM	DL11-W MANUAL	0	0	0	0	0	0	0
		DL11-W SOFTWARE LIB KIT	0	0	0	0	0	0	0
		DL11-W CABLES							
	70-08360-1	DL11-WA (20MP)	0	0	0	0	0	0	0
	BC05C-25	DL11-WB (E1A)	0	0	0	0	0	0	0
	EK-M9301-MM	M9301 MANUAL NOTE 1	1	1	1	1	1	1	1
	EK-MM11-YP-TM	MM11-YP MANUAL	0	0	0	0	0	0	1
	EK-M9312-TM	M9312 MANUAL NOTE 1	1	1	1	1	1	1	1
	23248F1	ROM CONSOLE EMULATOR NOTE 2	1	1	1	1	1	1	1
	9906228	BOX ROM NOTE 2	1	1	1	1	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
SHIPPING LIST 11/04 (5¼" BA11-L)	SHEET 1 OF 2	A	PL	11/04-0-2	B	11/04-00011
		DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY B. CRAMM	CHECKED B. CRAMM	SECTION
DATE 17 NOV 77	DATE 17 NOV 77	
ENG B. BERNSTEIN	PROD	ISSUED SECT.
DATE 11 NOV 77	DATE	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION
	NOTE 1:	Manual shipped to be consistent with module shipped in machine.
	NOTE 2:	To be shipped only if M9312 is shipped.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
SHIPPING LIST 11/04 (5¼" BA11-L)	SHEET 2 OF 2	A	PL	11/04-0-2	B	
		DIST				

DEC FORM
DRA 110

A18

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY BRUCE CRAMM	CHECKED BRUCE CRAMM	SECTION
DATE 17 NOV 77	DATE 17 NOV 77	
ENG BILL BERNSTEIN	PROD	ISSUED SECT.
DATE 17 NOV 77	DATE	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION DH,DJ,LH,LJ	HH,HJ,MH,MJ	DM,DN	HM,HN	JH,JJ
	EK-11004-OP	11/04 SYSTEM USERS GUIDE	1	1	1	1	1
	ZJ009-RB	SOFTWARE LIB KIT (PAPER TAPE)	1	1	1	1	1
	B-TC-11/04-0-1	11/04 PRINT SET (ORDER #MPØØ19)	1	1	1	1	1
	EK-KD11-D-TM	KD11-D MANUAL	1	1	1	1	1
	EK-MS11E-MM	MS11-E-J MANUAL	1	0	1	0	0
	EK-MM11B-TM	MM11-B,BP,C,CP MANUAL	0	0	0	0	0
	EK-MM11D-TM	MM11-D,DP MANUAL	0	1	0	1	0
	EK-BA11L-MM	BA11-L MANUAL	0	0	0	0	0
	EK-BA11K-MM	BA11-K MANUAL	1	1	1	1	1
	EK-M7850-MM	M7850 MANUAL	0	0	1	1	0
		DL11-W PRINT SET	0	0	1	1	0
	EK-DL11W-MM	DL11-W MANUAL	0	0	1	1	0
		DL11-W SOFTWARE LIB KIT	0	0	1	1	0
		DL11-W CABLES					
	70-08360-1	DL11-WA (20MP)	0	0	1	1	0
	BC05C-25	DL11-W3 (E1A)	0	0	0	0	0
	EK-M9301-MM	M9301 MANUAL - NOTE 1	1	1	1	1	1
	12-11825	CHASSIS TRACKS AND MOUNTING HDWR	1	1	1	1	1
	70-10059	SHIPPING BRACKET	1	1	1	1	1
	EK-MM11YP-TM	MM11-YP MANUAL	0	0	0	0	1
	EK-M9312-TM	M9312 MANUAL - NOTE 1	1	1	1	1	1
	23248F1	ROM, CONSOLE EMULATOR NOTE 2	1	1	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
SHIPPING LIST 11/04 (10½" BA11-K)	SHEET 1 OF 2	A	PL	11/04-0-3	B	11/04-00011
		DIST.				

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Bruce Cramm	CHECKED Bruce Cramm	SECTION
DATE 17 NOV 77	DATE 17 NOV 77	
ENG Bill Bernstein	PROD	ISSUED SECT.
DATE 17 NOV 77	DATE	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION DH,DJ,LH,LJ	HH,HJ,MH,MJ	DM,DN	HM,HN	JH,JJ
	9906228	BOX ROM NOTE 2	1	1	1	1	1
		NOTE 1: MANUAL SHIPPED TO BE CONSISTENT					
		WITH MODULE SHIPPED IN MACHINE.					
		NOTE 2: TO BE SHIPPED ONLY IF M9312					
		IS SHIPPED.					

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
SHIPPING LIST 11/04 (10½" BA11-K)	SHEET 2 OF 2	A	PL	11/04-0-3	B	
		DIST				

DEC FORM

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

B-TC-7013323-0-1	POWER SUPPLY ASSY (TC)
E-UA-7013323-0-0	POWER SUPPLY ASSY
A-PL-7013323-0-0	POWER SUPPLY ASSY (PL)
B-DD-H765-Ø	H765 DRAWING DIRECTORY (COMPLETE SET)
D-CS-5410864-0-1	POWER DISTRIBUITON BOARD
D-CS-5411086-0-1	POWER LINE MONITOR +15V REGULATOR
MPØØ271	H7441 PRINT SET (COMPLETE SET)
B-DD-H745-Ø	H745 DRAWING DIRECTORY (COMPLETE SET)
B-DD-H754-Ø	H754 DRAWING DIRECTORY (COMPLETE SET)
MPØØ272	H785 PRINT SET (COMPLETE SET)

UNIT VARIATIONS COVERED BY THIS PRINT SET
7013323-0
7013323-1
7013323-2
7013323-3
7013323-4
7013323-5

7013323

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØ27Ø

REVISIONS	REV.	CHG. NO.	DATE

USED ON OPTION/MODEL
1134A

SHEET I OF 1

DRN.	D. HEALY	DATE DEC 76
CHK'D	D. HEALY	DATE DEC 76
PROJ. ENG.		DATE 13 JAN 77
FIELD SERV.		DATE 13-JAN-77

digital

TITLE: POWER SUPPLY ASSY

SIZE	CODE	NUMBER	REV.
B	TC	7013323-0-1	

DIST.

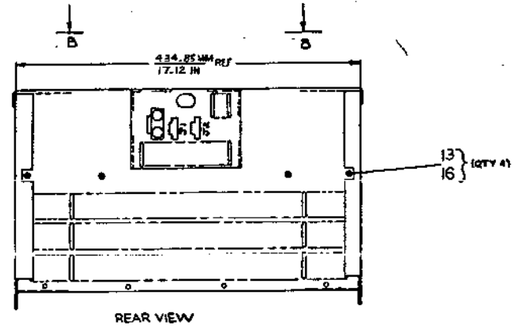
EN-01124-16-N675-(327)

DRB 124

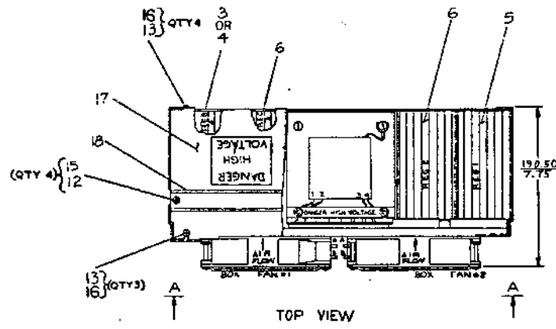
LEGEND	
NUMBER	VARIATION
7013323-0	120V H765-P, 5411086, 5410864-YA, TWO H7441, H745
7013323-1	120V H765-P, 5411086, 5410864-YA, TWO H7441, H745, H785
7013323-2	120V H765-P, 5411086, 5410864-YA, TWO H7441, H745, H754
7013323-3	240 V H765-R, 5411086, 5410864-YA TWO H7441, H745
7013323-4	240V H765-R, 5411086, 5410864-YA, TWO H7441, H745, H785
7013323-5	240V H765-R, 5411086, 5410864-YA, TWO H7441, H745, H754

NOTES

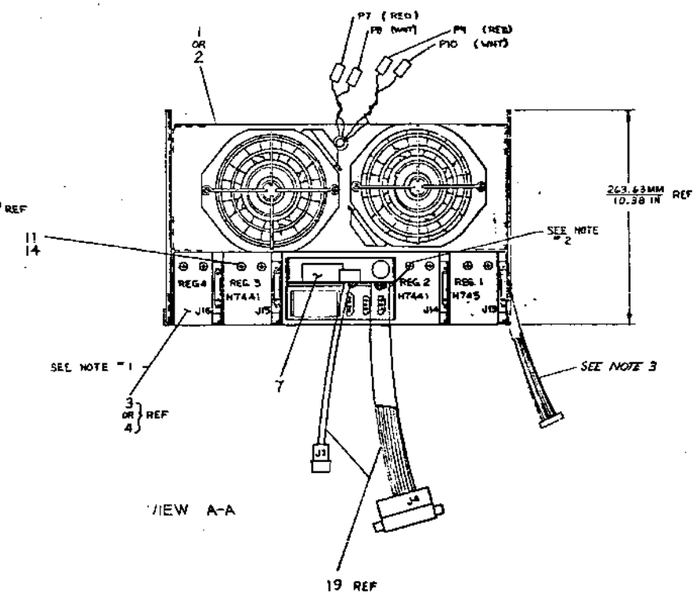
1. REGULATOR #4 IS DETERMINED BY THE VARIATION REQUIRED - SEE LEGEND AND PARTS LIST.
2. GREEN/YELLOW GROUND WIRE FROM TRANSFORMERS TO BE FASTENED UNDER REGULATOR #2 MOUNTING SCREW.
3. CONSOLE CABLE 70114II-2J FROM KY11-LB. THIS CABLE IS USED ONLY TO CONNECT THE H785/H7850 BATTERY BACK-UP REGULATOR IN REGULATOR SLOT #4.



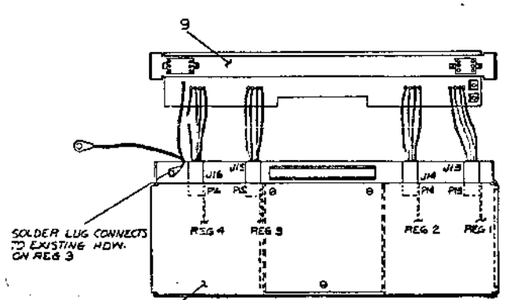
REAR VIEW



TOP VIEW



VIEW A-A



VIEW B-B
BOTTOM VIEW
FANS REMOVED FOR CLARITY

CAUTION: OFF SHEET PARTS LIST EXSISTS
SEE A-PL-7013323-0-0

1134A	digital
SEE PARTS LIST	1134A POWER SUPPLY ASSY
B-DD-7013323-0	
SCALE NONE	SIZE F/UA DWG NO 7013323-0-0 REV A

7013323-0-0 A

421

CONNECTION TABLE		
FROM CONNECTION	TO CONNECTION	SIGNALS
P2 FROM TRANS. ASSY	J2 FROM +15V REG.	28 VAC
J16 FROM PWR. DIST. BD.	P16 LOCATED ON REG.#4 (H754) OR (H785)	GND, -5V, +20V 28 VAC*4VA-15VA
J15 FROM PWR. DIST. BD	P15 LOCATED ON REG.#3 (H744)	GND, +5V, 28VAC
J14 FROM PWR DIST. BD	P14 LOCATED ON REG.#2 (H744)	GND, +5V, 28VAC
J13 FROM PWR DIST. BD	P13 LOCATED ON REG.#1 (H745)	GND, +15V, -15V .28 VAC
GND LUG LOCATED ON PWR. DIST. BD.	REG. #4 MOUNTING SCREW	GROUND CHASSIS
P1 FROM TRANS ASSY	J1 LOCATED ON PWR. DIST. BD	28 VAC

CONNECTION TABLE		
FROM CONNECTION	TO CONNECTION	SIGNALS
P4 FROM +15V REG.	J2 LOCATED ON PWR DIST BD	-15 V, LTC L, AC LO L, DC LO L, GND
P5 FROM TRANS. ASSY	J5 LOCATED ON AC INPUT BOX	120/240 VAC
P7 (RED)	FAN #1-A	120 VAC - HOT
P8 (WHT)	FAN #1-B	120 VAC - NEUTRAL
P9 (RED)	FAN #2-A	120 VAC - HOT
P10 (WHT)	FAN #2-B	120 VAC - NEUTRAL
#1 P14 GRN/YEL WIRE	SEE NOTE 3	CHASSIS GROUND

240 V
7009811-2
AC INPUT BOX

FASTON TABS LOCATED ON 5410993

120 V
7009811-1
AC INPUT BOX

TRANS ASSY
7011486

7011751
CAP MOV BOARD ASSY

5411683
CAP MOV ASSEMBLY

AC POWER CONTROL
5410993

REMOTE POWER CONTROL
1-3 : ON
2-3 : OFF

CPU CONSOLE POWER SWITCH
1-3 : ON

COMMON SIGNAL NAMES FOR 6 PIN AND 15-PIN MATE-N-LOKS ON POWER DISTRIBUTION BOARD

6-PIN	15 PIN
1 - GND	1 - +5V
2 - LTC L	2 - +15V
3 - DC LO L	3 - +20V
4 - AC LO L	4 - -5V
5 - SPARE 4	5 - GND
6 - SPARE 5	6 - SPARE 1
	7 - GND
	8 - GND
	9 - GND
	10 - SPARE 2
	11 - GND
	12 - SPARE 3
	13 - -15V
	14 - -5V
	15 - SPARE 3

SEE NOTE 3

REG #4 H754 OR H785

REG #3 H744

REG #2 H744

REG #1 H745

POWER DISTRIBUTION BOARD 5410864-YA

7010128 HARNESS

+15V DC REGULATOR 5411086

PWR FOR CONSOLE

CHASSIS GROUND

SIZE A	TITLE J1424 POWER SUPPLY ASSY	EDP# 7013323-0-0	REV A
DATE	UNIT 2 OF 3	DWG	

COPY

422

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	R. PELLERIN	CHECKED	D. HEALY	SECTION 1
DATE	23 NOV 76	DATE	15 DEC 76	
ENG	[signature]	PROD	[signature]	ISSUED SECT. 1
DATE	16-FEB-77	DATE	16-FEB-77	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
			7013323-00	7013323-01	7013323-02	7013323-03	7013323-04	7013323-05						
1	E-UA-H765-P-Ø	H765-P POWER SUPPLY 115V	1	1	1	-	-	-						
2	E-UA-H765-R-Ø	H765-R POWER SUPPLY 23ØV	-	-	-	1	1	1						
3	D-UA-H785-Ø-Ø	REGULATOR, BATTERY BACK UP (H785)	-	1	-	-	1	-						
4	D-UA-H754-Ø-Ø	+20V REGULATOR (H754)	-	-	1	-	-	1						
5	D-UA-H745-Ø-Ø	-15V REGULATOR (H745)	1	1	1	1	1	1						
6	D-UA-H7441-Ø-Ø	+5V REGULATOR (H7441)	2	2	2	2	2	2						
7	E-IA-5411086-0-0	+15V REGULATOR (5411086)	1	1	1	1	1	1						
8														
9	D-CS-5410864-YA-1	POWER DISTRIBUTION BOARD (5411864-YA)	1	1	1	1	1	1						
10														
11	9008007-3	SCR, PH HD TRUSS #10 - 32 x .25	6	8	8	6	8	8						
12	9006040-3	SCR, PH HD TRUSS #8 - 32 x .62	4	4	4	4	4	4						
13	9006020-3	SCR, PH HD TRUSS #6 - 32 x .25	10	11	11	10	11	11						
14	9006635	WASHER INT. TOOTH #10	6	8	8	6	8	8						
15	9006634	WASHER INT. TOOTH #8	4	4	4	4	4	4						
16	9006633	WASHER INT. TOOTH #6	10	11	11	10	11	11						
17	D-IA-7009949-0-0	COVER, POWER SUPPLY	1	1	1	1	1	1						
18	D-IA-7009950-0-0	TROUGH, WIRE	1	1	1	1	1	1						
19	D-IA-7010138-0-0	HARNESS INTERCONNECT	1	1	1	1	1	1						
20	9007880	TIE WRAP 1/8 w	4	4	4	4	4	4						
21	A-CS-H765-TA-1	TESTER CIRCUIT SCHEMATIC	REF	REF	REF	REF	REF	REF						
22	A-SP-H765-Ø-1	TEST PROCEDURE	REF	REF	REF	REF	REF	REF						

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
POWER SUPPLY ASSY	E-UA-7013323-0-0	A	PL	7013323-0-0	A	1134A-00002
	SHEET 1 OF 1	DIST.				

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

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY H765	B-DD-H765-Ø	MFG. PRINT SET	
UNIT ASSY H765	E-UA-H765-Ø-Ø	PACKAGING INSTRUCTIONS	A-SP-3700174-0-0
AC INPUT BOX ASSY	D-AD-7014420-Ø-Ø		
AC PWR CONTROL BOARD	D-UA-5413089-Ø-1		
DRAWING DIRECTORY H744	B-DD-H744-Ø		
DRAWING DIRECTORY H745	B-DD-H745-Ø		
DRAWING DIRECTORY H754	B-DD-H754-Ø		
PWR DISTRIBUTION BOARD	D-CS-5410864-0-1		
AC POWER CORD	D-AD-7012500-0-0		
PWR LINE MONITOR/15V REG	D-CS-5411086-0-1		
TRANSFORMER ASSEMBLY	E-AD-7011486-0-0		

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
H765-A	120V 50/60 HZ	X
H765-B	240V 50/60 HZ	X
H765-C	120V 50/60 HZ NO H754 NO B.B.	X
H765-D	240V 50/60 HZ NO H754 NO B.B.	X
H765-P	120V 50/60 HZ NO REG	X
H765-R	240V 50/60 HZ NO REG.	X

REVISIONS		
DATE	CHG. NO.	REV
CN	H765-3	A
SN	H765 4	B
SL	H765-6	C
SL	H765-7	D
RK	H765-8	E
RTB	H765-9	F
RJP	H765-10	H
RJP	H765-11	J
KM	H765-12	K
[illegible]	H765-13	L
[illegible]	H765-14	M
KM	H765-15	N
9-77	H765-16	P
9-77	H765-17	R

USED ON OPTION/MODEL	
BA11-K	
11/35-S	
SHEET 1 OF 5	

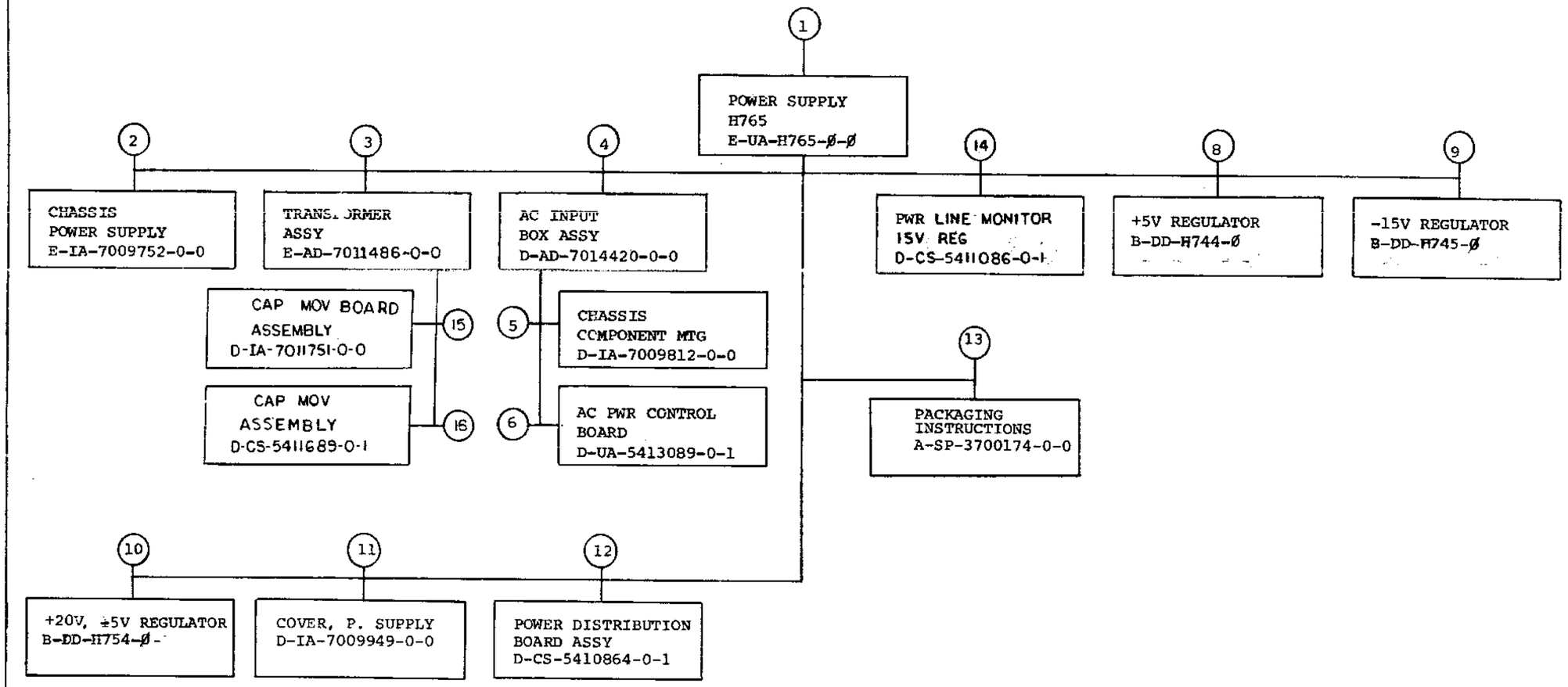
DRN. J. FERGUSON	DATE 6/25/74	TITLE
CHK'D. D. HEALY	DATE 7/3/74	DRAWING DIRECTORY POWER SUPPLY H765
PROJ ENG. [illegible]	DATE 8/4/74	
PROD. RV Peterson	DATE 8/17/74	
FIELD SERV R. L. [illegible]	DATE 8/13/74	

SIZE	CODE	NUMBER	REV
B	DD	H765-Ø	R
DIST			

DEC 1961-1223-1062-1A-R92

DRB 106

424



TITLE			SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY POWER SUPPLY H765	SHEET 2 OF 5		8	DD	H765-Ø	R

DRB 107

CUSTOMER PRINT SET				MFG. SET	ELECTRICAL						OPTION NO./FILE DATE
1					FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION		
X					1	E-UA-H765-Ø-Ø	R	2	POWER SUPPLY H765		
						A-SP-H765-0-9			H765 POWER SUPPLY ASSEMBLY PROCEDURE		
X					3	E-AD-7011486-0-0	#		TRANSFORMER ASSY		
						A-SP-7010014-0-8	A		TEST PROCEDURE		
						A-CS-7010014-TA-1	A		TESTER C.S.		
						A-UA-7010014-TA-0			TESTER U.A.		
						A-PL-7010014-TA-0	A		TESTER P.L.		
						A-SP-7011486-0-9			TRANSFORMER ASSY PROCEDURE		
X					4	D-AD-7014420-0-0	#	2	AC INPUT BOX ASSY		
						A-SP-7009811-0-8			TEST PROCEDURE		
						A-CS-7009811-TA-1			TESTER C.S.		
						A-UA-7009811-TA-0			TESTER U. A.		
						A-PL-7009811-TA-0			TESTER P.L.		
						A-SP-7009811-0-9			AC INPUT BOX ASSY PROCEDURE		
X					6	D-UA-5413089-0-0			PILOT CONTROL BOARD		
C					8	B-DD-H744-0	#	2	DRAWING DIRECTORY H744		
C					9	B-DD-H745-0	#	2	DRAWING DIRECTORY H745		
C					10	B-DD-H754-0	#	3	DRAWING DIRECTORY H754		

CUSTOMER PRINT SET				MFG SET	ELECTRICAL					
1					FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO / FILE DATE
X					12	D-CS-5410864-0-1	#	3	POWER DIST. BD. ASSY	
						D-IA-5010863-0-0	#	1	ETCHED CIRCUIT BOARD	
						A-SP-5410864-0-8			TEST PROCEDURE	
						A-SP-5410864-0-9			ASSEMBLY PROCEDURE	
X					14	D-CS-5411086-0-1	#	4	PWR LINE MONITOR/15V REG	
						A-SP-11/45-TA-2			TEST PROCEDURE	
						A-SP-5411086-0-3			ENGINEERING SPECIFICATION	
						D-IA-7010138-0-0			HARNESS INTERCONNECTION	
					15	D-IA-7011751-0-0			CAP MOV BOARD ASSY	
					16	D-CS-5411689-0-1			CAP MOV ASSY	

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	DRAWING DIRECTORY POWER SUPPLY H765	SHEET 3 OF 5	B	DD	H765-Ø	R

DRB 108

DEC 16-(325)-1062-28-R972

4-10

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MECHANICAL				
		1	E-UA-H765-Ø-Ø	R	2	POWER SUPPLY H765	
			D-IA-7009950-0-0		1	THROUGH WIRE	
		2	E-IA-7009752-0-0		1	CHASSIS, POWER SUPPLY	
			E-IA-7411682-0-0		1	CHASSIS, POWER SUPPLY	
			D-MD-7411685-0-0		1	SIDE, POWER SUPPLY	
			D-MD-7411684-0-0		1	HOUSING COMP. CHASSIS	
		3	E-AD-7011486-0-0		2	TRANSFORMER ASSY	
			C-MD-7414301-0-0		1	COVER	
		4	D-AD-7014420-0-0		2	AC INPUT BOX ASSY	
			A-DC-7412303-0-1		1	DECAL 115V	
X			D-AD-7012500-0-0		1	POWER CORD	
			A-DC-7412380-0-1		1	DECAL 230V	
		5	D-IA-7009812-0-0	A	1	CHASSIS COMPONENT MTG.	
			D-IA-7411765-0-0		1	PLATE SWITCH	
			D-IA-7411766-0-0	B	1	PLATE COMPONENT MTG.	

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			MECHANICAL				
		6	D-UA-5413089-0-0			PILOT CONTROL BOARD	
		8	B-DD-H744-Ø		2	DRAWING DIRECTORY H744	
		9	B-DD-H745-Ø		2	DRAWING DIRECTORY H745	
		10	B-DD-H754-Ø		3	DRAWING DIRECTORY H754	
		11	D-IA-7009949-0-0		1	COVER, POWER SUPPLY	
			C-MD-7412473-0-0		1	STRIP, CLAMP	

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
DRAWING DIRECTORY POWER SUPPLY H765	4 OF 5	B	DD	H765-Ø	R

DPB 108

DEC 16-(325)-1062-28-R972

MECHANICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
1		12	D-CS-5410864-0-1		3	POWER DIST. BD. ASSY	
			C-MD-7412192-0-0		1	SHIELD	
			D-MD-7411704-0-0		1	BRACKET, CONN. MTG.	
			C-IA-9305937-0-0			MATE-N-LOK FIXTURES	
			D-IA-5010863-0-0		1	ETCHED CIRCUIT BD.	
			K-CO-5410864-0-4			X-Y COORDINATE HOLE LOC.	
			D-AH-5410864-0-5		1	ASSY DRILLING HOLE LAYOUT	
			B-MH-5410864-0-6		1	MODULE ECC HISTORY	
			5010863		REF	ETCH CIRCUIT BOARD	
	X	13	A-SP-3700174-0-0	-	2	PACKAGING INSTRUCTIONS	
			A-PS-9905664-0-0	-	2	REGULAR SLOTTED CARTON	
			A-PS-9905665-0-0	-	2	LAMINATED BUILDUP	
		14	D-AH-5411086-0-5		1	ASSY DRILLING HOLE LAYOUT	
			B-MH-5411086-0-6		1	MODULE ECO HISTORY	
		15	D-AD-7011486-0-0		1	ASSEMBLY DRAWING	
		16	D-AH-5411689-0-5		1	ASSY DRILLING HOLE LAYOUT	
			D-MH-5411689-0-6		1	MODULE ECO HISTORY	

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

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: DRAWING DIRECTORY
POWER SUPPLY H765

SHEET 5 OF 5 | SIZE: B | CODE: DD | NUMBER: H765-Ø | REV: R

DRB 108

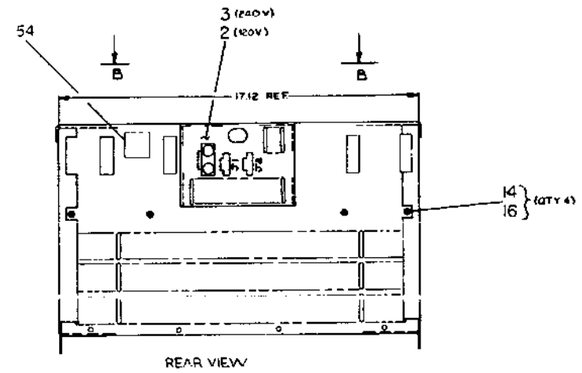
LEGEND	
NUMBER	VARIATION
H765-A	120 V 50/60 HZ
H765-B	240 V 50/60 HZ
H765-C	120V 50/60HZ NO H754
H765-D	240V 50/60HZ NO H754
H765-P	120 V 50/60 HZ NO REG
H765-R	240 V 50/60 HZ NO REG

NOTES CON'T.

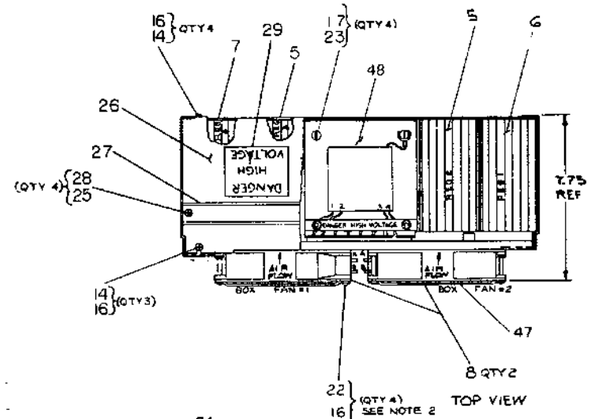
10. ITEM 16 (SCREW) & (WASHER) TO BE USED TO MOUNT 54 (ITEM 4) IN AC INPUT BOX (ITEM 2 OR 3) IN A,B,C,C VERSION. IN P&R VERSION INSTALL SCREW & WASHER IN MOUNTING HOLES. THEY WILL BE USED ON A HIGHER ASSEMBLY.

NOTES

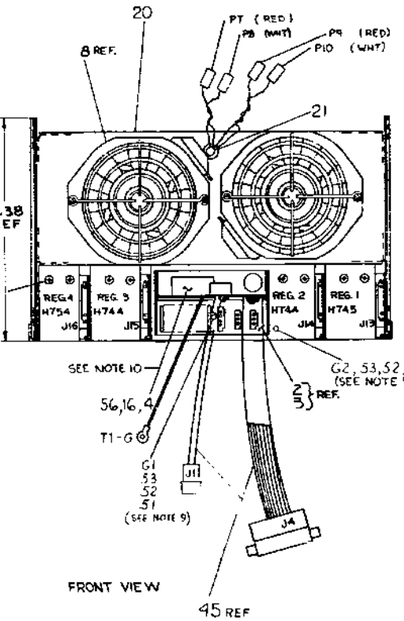
1. ~~SEE TRANSFORMER ASSY C-XFMR-H765-A SHEET 2 FOR SCHEMATIC ORIENTATION OF CLAMP & LEAD WIRES.~~
2. TIGHTEN FAN SCREWS TO 10 IN-LBS WITH A TORQUE SCREW DRIVER.
3. ~~USE ITEM 54A IN PLACE OF ITEM 54 WHEN USING ROUND BASE.~~
4. INSTALL A.B.S. VINYL, VIEW B-B ITEM #42 AND #43, CENTER 1/4 INCH FROM BOTTOM AND SIDES ON INSIDE WALL.
5. ~~USE ITEM 54A IN PLACE OF ITEM 54 WHEN USING HIGHER UNDER HEAD SCREW HEAD OF BOLD TRANSFORMERS ONLY.~~
6. ~~GREEN WIRE OF MOUNTING STRAP TERMINATIONS TO BE FASTENED UNDER REGULATOR MOUNTING SCREW.~~
7. ~~IN EARLIER VERSIONS OF THE TRANSFORMER ASSEMBLY A CABLE CLAMP WAS USED IN PLACE OF ONE OF THE WAYS TO DRESS THE TRANSFORMER WIRES ALONG THE TRANSFORMER BODY.~~
8. ITEM 7 - H754 IS NOT USED IN VARIATIONS C & D.
9. ITEM 53 IS TO BE USED TO PREVENT CORROSION OF CHASSIS AT GROUND STUD.



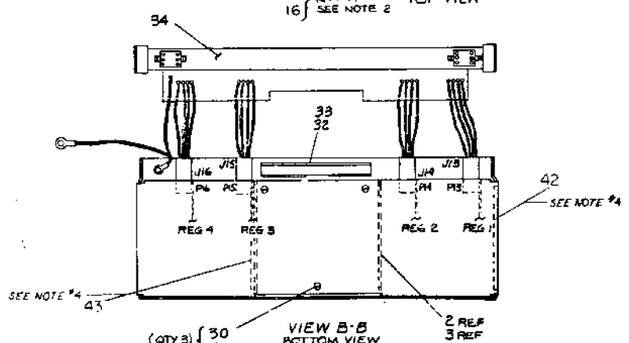
REAR VIEW



TOP VIEW



FRONT VIEW



VIEW B-B
BOTTOM VIEW
FANS REMOVED
FOR CLARITY

4	4	4	4	4	4	SCR PH HD 6-32X1/4	9006080-1	56
1	1	1	1	1	1	CABLE GND.	70-482 5-02	53
1	1	–	–	–	–	DECAL	A-DC-74/826H-0-0	54
A/R	A/R	A/R	A/R	A/R	A/R	GREASE CONDUCTOR	4901173-01	53
2	2	2	2	2	2	WASHER .XX# EXT TOOTH #8-32	9008032	52
2	2	2	2	2	2	NUT REP #8-32	9006543	51
~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~WASHER .XX# INT TOOTH #8~~	~~9006633~~	~~50~~
~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~WIRE MARKER 1234567890~~	~~9003379-01~~	~~49~~
1	1	1	1	1	1	TRANSFORMER ASSEMBLY	E-AD-20H486-0-0	48
2	2	2	2	2	2	FAN GUARD	1212561	47
~~–~~	~~–~~	~~–~~	~~–~~	~~REF~~	~~REF~~	~~HARNESS ASSEMBLY~~	~~9007001~~	~~46~~
1	1	1	1	1	1	HARNESS INTERCONN.	D-TA-700459-0-0	45
–	–	–	–	REF	REF	HARNESS ASSEMBLY	9007001	44
1	1	1	1	1	1	A.B.S. VINYL 4.75 X 35	1210984-03	43
1	1	1	1	1	1	A.B.S. VINYL 4.75 X 6	1210984-04	42
–	–	–	–	REF	REF	CABLE ASSEMBLY	9007000	41
REF	REF	REF	REF	REF	REF	TEST PROCEDURE	A-SP-H765-0-1	40
REF	REF	REF	REF	REF	REF	TESTER C.S.	A-CS-H765-TA-1	39
REF	REF	REF	REF	REF	REF	TESTER U.A.	E-UA-H765-TA-1	38
REF	REF	REF	REF	REF	REF	TESTER P.L.	A-PL-H765-TA-0	37
REF	REF	REF	REF	REF	REF	H765 POWER SUPPLY ASSEMBLY PROCEDURE	A-SP-H765-0-9	36
REF	REF	REF	REF	REF	REF	PACKAGING INSTRUCTIONS	A-SP-3700-H-00	35
–	–	1	1	1	1	PWR DIST'N BUTTON BOOT	C-CP-540-BM-0-1	34
A/R	A/R	A/R	A/R	A/R	A/R	PERMA BOND	9300187	33
A/R	A/R	A/R	A/R	A/R	A/R	GROMMET STRIP	9006291	32
4	4	4	4	4	4	TIE WRAP 1/8W	9007680	31
3	3	3	3	3	3	WASH, CSK #6	9002270	30
–	–	–	–	1	1	STICKER DANGER HIGH VOLTAGE	3610267	29
4	4	4	4	4	4	WASH, INT TOOTH LOCK #8	9006634	28
–	–	–	–	1	1	TROUGH, WIRE	D-EA-700448-0-0	27
–	–	–	–	1	1	COVER, POWER SUPPLY	D-EA-700449-0-0	26
4	4	4	4	4	4	SCR, PH HD TRUSS #8-32X1/2	9006040-3	25
–	–	–	–	~~4~~	~~4~~	~~REPLACED BY 9006545~~	~~9006545~~	~~24~~
4	4	4	4	4	4	SCR PH HD TRUSS 10-32X.50	9006079-3	23
4	4	4	4	4	4	SCR PH HD TRUSS 6-32X1.75	9005031-3	22
1	1	1	1	1	1	GROMMET .501 D	9007016	21
1	1	1	1	1	1	CHASSIS, POWER SUPPLY	E-AA-700475-0-0	20
–	–	–	–	REF	REF	CLAMP, CABLE	D-EA-540-BB-0-0	19
–	–	–	–	~~2~~	~~2~~	~~SCR PH HD TRUSS 6-32X.50~~	~~9006035-0~~	~~18~~
10	10	10	10	12	12	WASH INT TOOTH #10	9006635	17
17	17	17	17	17	17	WASH INT TOOTH #6	9006633	16
6	6	6	6	8	8	SCR PH HD TRUSS 10-32X.75	9006007-3	15
11	11	11	11	11	11	SCR PH HD TRUSS 6-32X.25	9006020-3	14
–	–	–	–	–	–	~~SCR PH HD TRUSS 6-32X.75~~	~~9006023-3~~	~~13~~
–	–	–	–	–	–	~~SCR PH HD TRUSS 6-32X.50~~	~~9006021-3~~	~~12~~
–	–	–	–	–	–	~~SCR PH HD TRUSS 6-32X.38~~	~~9006020-3~~	~~11~~
3	3	3	3	3	3	SCR, PHILPLTHD 6-32X.31	9008404-2	10
–	–	–	–	~~3~~	~~3~~	~~NUTS, CLIP~~	~~9007009~~	~~9~~
2	2	2	2	2	2	FAN, 115 V AC 50/60HZ	1211714	8
–	–	–	–	1	1	+20V REGULATOR (H754)	D-DD-H754-0	7
–	–	1	1	1	1	-15 V REGULATOR (H745)	D-DD-H745-0	6
–	–	2	2	2	2	+5 V REGULATOR (H744)	D-DD-H744-0	5
–	–	1	1	1	1	PWR BD. (+15V REG)	EDA-6411084	4
1	1	–	–	1	–	AC INPUT BOX ASSY (115V)	D-AE-730420-0-0	3
–	–	1	1	–	–	AC INPUT BOX ASSY (115/230V)	D-AE-H420-0-0	2
–	–	–	–	–	–	~~SCR PH HD TRUSS 6-32X.38~~	~~9006020-3~~	~~1~~
H765-R	H765-P	H765-D	H765-C	H765-B	H765-A			

REV.	DESCRIPTION	PART NO.	ECO
	PARTS LIST		

DIGITAL EQUIPMENT CORPORATION	
8A11-K	
DRAWN	DATE
CHECKED	DATE
ENGR	DATE
MFG	DATE
TEST PROGRAM APPV.	DATE
QUALITY ASSURANCE	DATE
MATERIAL SEE PARTS LIST	SIZE B
FINISH	SCALE NONE

digital

TITLE
POWER SUPPLY, H765

CUSTOMER	NUMBER	REV.
E UA	H765-0-0	C

429

CONNECTION TABLE		
FROM CONNECTION	TO CONNECTION	SIGNALS
P2 FROM TRANS. ASSY	J2 FROM +15V REG.	28 VAC
J16 FROM PWR. DIST. BD.	P16 LOCATED ON REG.#4 (H754)	GND, -5V, +20V 28 VAC
J15 FROM PWR. DIST. BD	P15 LOCATED ON REG.#3 (H744)	GND +5V, 28VAC
J14 FROM PWR DIST. BD	P14 LOCATED ON REG.#2 (H744)	GND, +5V, 28VAC
J13 FROM PWR DIST. BD	P13 LOCATED ON REG.#1 (H745)	GND, +15V, -15V 28 VAC
GND LUG LOCATED ON PWR. DIST. BD. G3	G1 YEL LUG	SAFTY GROUND
P1 FROM TRANS ASSY	J1 LOCATED ON PWR. DIST. BD	28 VAC

CONNECTION TABLE		
FROM CONNECTION	TO CONNECTION	SIGNALS
P4 FROM +15V REG.	J2 LOCATED ON PWR DIST BD	-15 V, LTC L, AC LO L, DC LO L, GND
P5 FROM TRANS. 035V	J5 LOCATED ON AC INPUT BOX	120/240 VAC
P7 (RED)	FAN #1 - A	120 VAC - HOT
P8 (WHT)	FAN #1 - B	120 VAC - NEUTRAL
P9 (RED)	FAN #2 - A	120 VAC - HOT
P10 (WHT)	FAN #2 - B	120 VAC - NEUTRAL
T1-G	G1	SAFETY GROUND
G1	G2	ITEM 55

240 V
7014420-2
AC INPUT BOX

120 V
7C1442C-1
AC INPUT BOX

7011751
CAP MOV BOARD ASSY

5411689
CAP MOV ASSEMBLY

TRANS ASSY
7011486

AC POWER CONTROL
54-13089

12,14330
K1

REMOTE POWER CONTROL
1-3 : ON
2-3 : OFF

CPU CONSOLE POWER SWITCH
1-3 : ON

I/OS-2 CONSOLE PWR.

COMMON SIGNAL NAMES FOR 6 PIN AND 15-PIN MATE-N-LOKS ON POWER DISTRIBUTION BOARD

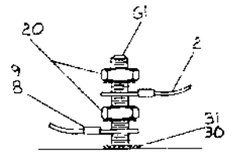
6-PIN	15 PIN
1 - GND	1 - +5V
2 - LTC L	2 - +15V
3 - DC LO L	3 - +20V
4 - AC LO L	4 - +5V
5 - SPARE 4	5 - GND
6 - SPARE 5	6 - SPARE 1
	7 - GND
	8 - GND
	9 - GND
	10 - SPARE 2
	11 - GND
	12 - SPARE 3
	13 - +15V
	14 - +5V
	15 - SPARE 3

TITLE	NUMBER
POWER SUPPLY H765	EUA H765-0-0
SCALE	SHEET OF

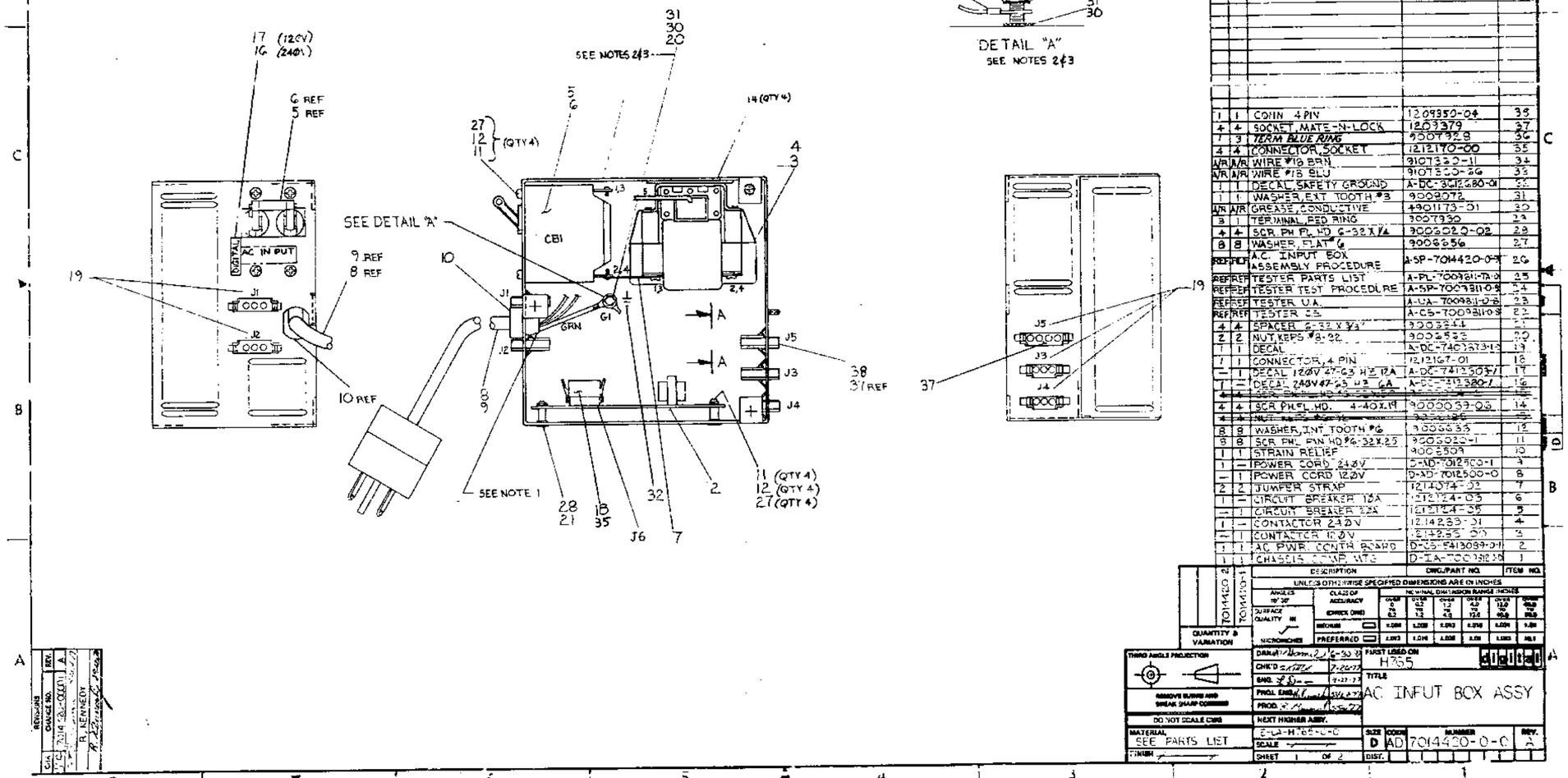
A36

NOTES:
1. LEAVE .5 IN ±.2 IN OF OUTER INSULATION OF LINE CORD INSIDE BOX.
2. REMOVE PAINT MASK FROM G1 ONLY AND APPLY CONDUCTIVE GREASE TO AREA AROUND STUD G1 BEFORE INSTALLING ITEMS #31 (LOCKWASHER) LUG ON GRN/YEL WIRE AND #20 (KEPNUT).
3. ENSURE THAT LUG CONNECTED TO GRN/YEL WIRE FROM LINE CORD, WASHER ITEM #31, AND KEPNUT ITEM #20 ARE THE FIRST ITEMS INSTALLED ON G1. SEE DETAIL "A".
4. STRIP LENGTH FOR ITEM #36 AND ITEM #29 SHALL BE .250 ± .015.
5. STRIP LENGTH FOR ITEM #37
   A. HAND CRIMP .187 ± .015
   B. AUTOMATIC STRIP .156 ± .015
6. STRIP LENGTH FOR ITEM #35
   A. HAND CRIMP .203 ± .015
   B. AUTOMATIC STRIP .182 ± .015

LEGEND	
NUMBER	VARIATION
7014420-1	120V 47-63HZ 12A
7014420-2	240V 47-63HZ 6A



DETAIL "A"
SEE NOTES 2&3



ITEM NO.	QTY	DESCRIPTION	ORG./PART NO.
39	1	CONN 4 PIN	12 09350-04
38	4	SOCKET MATE-N-LOCK	1203379
37	3	TERM BLUE RING	9007328
36	4	CONNECTOR, SOCKET	12121 10-00
35	A/R	WIRE #16 BRN	9107330-11
34	A/R	WIRE #18 BLU	9107830-36
33	1	DECAL, SAFETY GROUND	A-DC-3612680-01
32	1	WASHER, EXT TOOTH #8	9009078
31	A/R	GREASE, CONDUCTIVE	9011173-01
30	3	TERMINAL, RED RING	9007930
29	4	SCR PH FL HD 6-32 X 1/4	9009020-02
28	8	WASHER, FLAT #6	9008656
27	REF	A.C. INPUT BOX ASSEMBLY PROCEDURE	A-SP-7014420-0-0
26	REF	TESTER PARTS LIST	A-PL-7009811-0-0
25	REF	TESTER TEST PROCEDURE	A-SP-7009811-0-0
24	REF	TESTER U.A.	A-UA-7009811-0-0
23	REF	TESTER C.S.	A-CS-7009811-0-0
22	4	SPACER 6-32 X 3/8"	9003244
21	2	NUT, KEPS #8-32	9002532
20	1	DECAL	A-DC-7401383-15
19	1	CONNECTOR, 4 PIN	12,12167-01
18	1	DECAL 120V 47-63 HZ 12A	A-DC-7413503-1
17	1	DECAL 240V 47-63 HZ 6A	A-DC-7413380-1
16	4	SCR PH FL HD 4-40 X 3/8	9009
15	4	NUT KEPS #4-40	9002
14	4	SCR PH FL HD 4-40 X.19	9009039-06
13	8	WASHER, INT TOOTH #6	9009535
12	8	SCR PHL PAN HD #6-32 X.25	9009020-1
11	1	STRAIN RELIEF	9005509
10	1	POWER CORD 240V	D-AD-7012500-1
9	1	POWER CORD 120V	D-AD-7012500-0
8	2	JUMPER STRAP	12,14074-02
7	1	CIRCUIT BREAKER 15A	12,12124-03
6	1	CIRCUIT BREAKER 6A	12,12124-05
5	1	CONTACTOR 240V	12,14233-01
4	1	CONTACTOR 120V	12,14233-00
3	1	AC PWR CONTR BOARD	D-CS-5413089-0-0
2	1	CHASSIS, A.C. INPUT	D-EA-7009318-0-0
1	1		

7014420 SHT 2 REV 1 / 7014420 SHT 1 REV A

QUANTITY & VARIATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 0.6	OVER 0.6 TO 1.2	OVER 1.2 TO 4.2	OVER 4.2 TO 12.6	OVER 12.6 TO 40.0	OVER 40.0 TO 100
SURFACE QUALITY 63 MICROINCHES	MACHINE	±.004	±.008	±.012	±.016	±.024	±.04
✓	PREFERRED	±.002	±.016	±.008	±.01	±.015	±.03

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRAWN: [illegible] 2/6-30 77
CHK'D: [illegible] 7-20-77
ENG: [illegible] 7-27-77
PROD. ENG: [illegible] 7-27-77
PROD: [illegible] 7-27-77
NEXT HIGHER ASSY: E-EA-H765-0-0

FIRST USED ON: H765

TITLE: AC INPUT BOX ASSY

SIZE: D | CODE: AD | NUMBER: 7014420-0-0 | REV: A

SCALE:

SHEET 1 OF 2 | DIST.

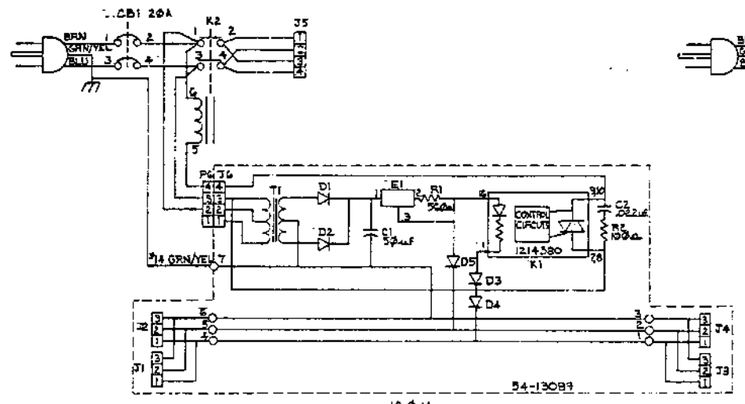
REVISIONS			
LTR	CHANGE NO.	REV.	
A	2314 (28-OCT-77)	A	R. KENNEDY

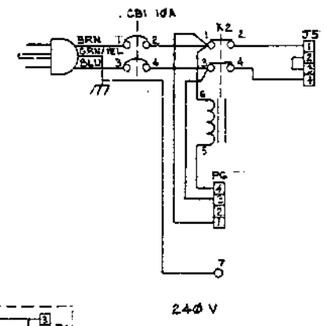
WIRE TABLE-1 VAR 120V

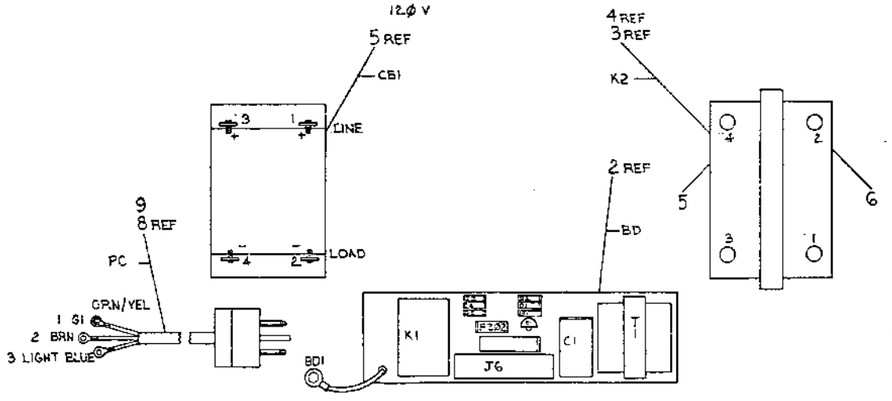
ITEM NO	DESCRIPTION AWG.	COLOR	FROM STRIP LENGTH	CONN.	WITH	TO STRIP LENGTH	CONN.	WITH	PRECUT WIRE LENGTH
8	14	GRN/YEL	SEE NOTE 3	PC-1			G1		
8	14	BRN		PC-2			CB1-1		
8	14	BLU		PC-3			CB1-3		
33	18	BLU	SEE NOTE4	K2-4	36	SEE NOTE 5	J5-2	37	3.0 ± 0.25
							J5-4	37	3.0 ± 0.25
							J5-1	37	3.0 ± 0.25
34	18	BRN	SEE NOTE4	K2-2	36	SEE NOTE 5	J5-3	37	3.0 ± 0.25
34	18	BRN	SEE NOTE4	K2-1	36	SEE NOTE 6	P6-2	35	3.5 ± 0.25
3	18	YEL					K2-6	—	3.5 ± 0.25
7	—	—		K2-1	—		CB1-2	—	STRAP
33	18	BLU	SEE NOTE4	K2-3	29	SEE NOTE 6	P6-3	35	3.0 ± 0.25
7	—	—		K2-3	—		CB1-4	—	STRAP
3	18	YEL	SEE NOTE4	K2-5	—	SEE NOTE 6	P6-4	35	4.75 ± 0.25
2	18	GRN/YEL	SEE NOTE 6	BD-1			G1		

WIRE TABLE-2VAR 240V

ITEM NO	DESCRIPTION AWG	COLOR	FROM STRIP LENGTH	CONN	WITH	TO STRIP LENGTH	CONN	WITH	PRECUT WIRE LENGTH
9	14	GRN/YEL	SEE NOTE 3	PC-1			G1		
9	14	BRN		PC-2			CB1-1		
9	14	BLU		PC-3			CB1-3		
33	18	BLU	SEE NOTE4	K2-4	29	SEE NOTE 5	J5-4	37	3.0±0.25
34	18	BRN	SEE NOTE 4	K2-2	29	SEE NOTE 5	J5-1	37	3.0±0.25
34	18	BRN	SEE NOTE 5	J5-2	37	SEE NOTE 5	J5-3	37	3.0±0.25
34	18	BRN	SEE NOTE 4	K2-1	36	SEE NOTE 6	P6-1	35	3.5±0.25
4	18	YEL					K2-5	—	3.5±0.25
7	—	—		K2-1	—		CB1-2	—	STRAP
33	18	BLU	SEE NOTE4	K2-3	29	SEE NOTE 6	P6-3	35	3.0±0.25
7	—	—		K2-3	—		CB1-4	—	STRAP
4	18	YEL		K2-5	—	SEE NOTE 6	P6-4	35	4.75±0.25
2	18	GRN/YEL	SEE NOTE 6	BD-1			G1		

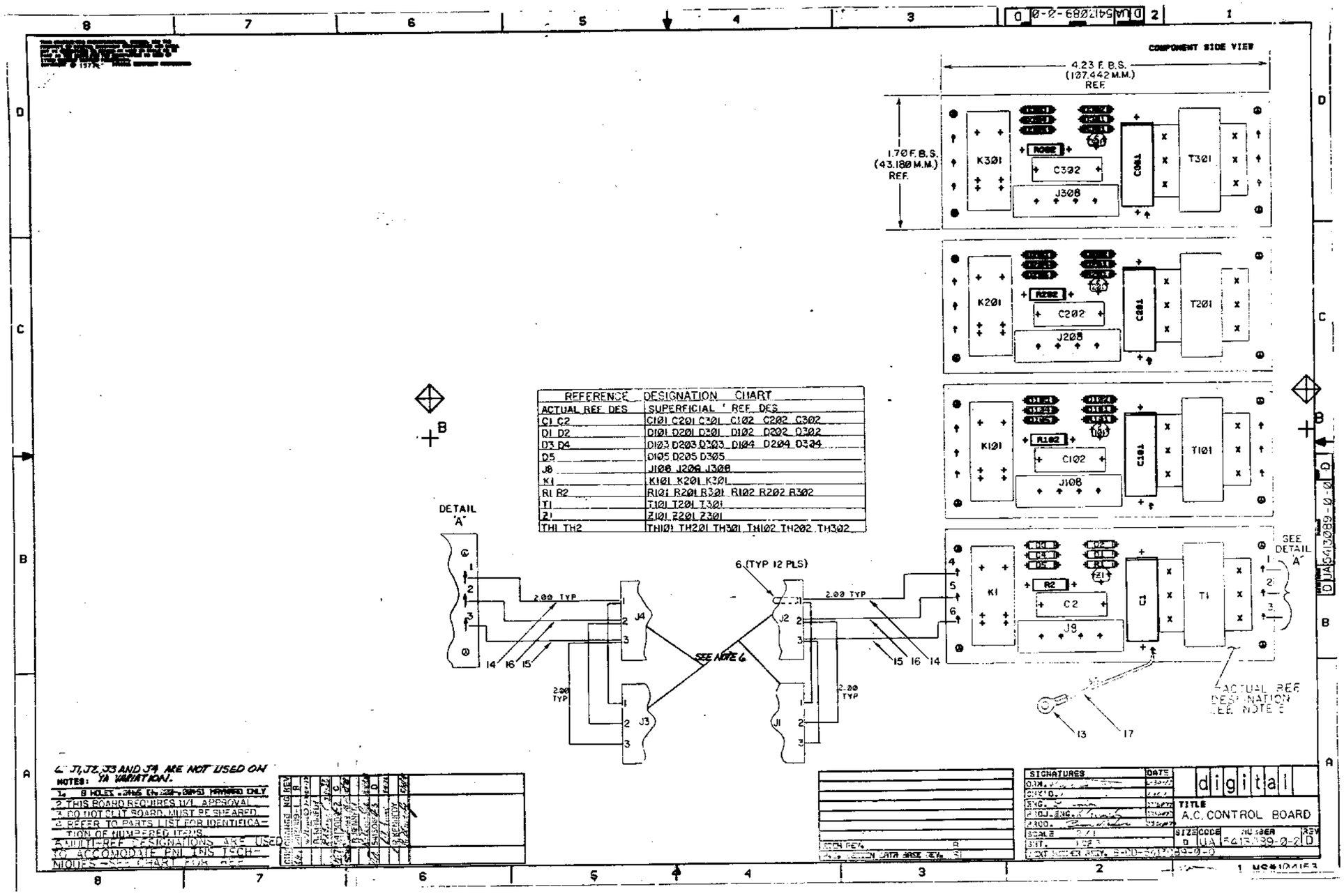






REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
AC INPUT BOX ASSY.	D	AD	7014420-0-0	A



REFERENCE DESIGNATION CHART	
ACTUAL REF DES	SUPERFICIAL REF DES
C1 C2	C101 C201 C301 C102 C202 C302
D1 D2	D101 D201 D301 D102 D202 D302
D3 D4	D103 D203 D303 D104 D204 D304
D5	D105 D205 D305
J8	J108 J208 J308
K1	K101 K201 K301
R1 R2	R101 R201 R301 R102 R202 R302
T1	T101 T201 T301
Z1	Z101 Z201 Z301
TH1 TH2	TH101 TH201 TH301 TH102 TH202 TH302

NOTES: 'A' VARIATION.
1. 8 HOLES .246 DIA. (6.248-6.350 M.M.) PLATED ONLY
2. THIS BOARD REQUIRES U/L APPROVAL
3. DO NOT CUT BOARD, MUST BE SHEARED
4. REFER TO PARTS LIST FOR IDENTIFICATION OF NUMBERED ITEMS
5. MULTI-REF DESIGNATIONS ARE USED TO ACCOMODATE PINS IN THIS TECHNOLOGIES - SEE CHART FOR DETAILS
6. J1, J2, J3 AND J4 ARE NOT USED ON 'A' VARIATION.

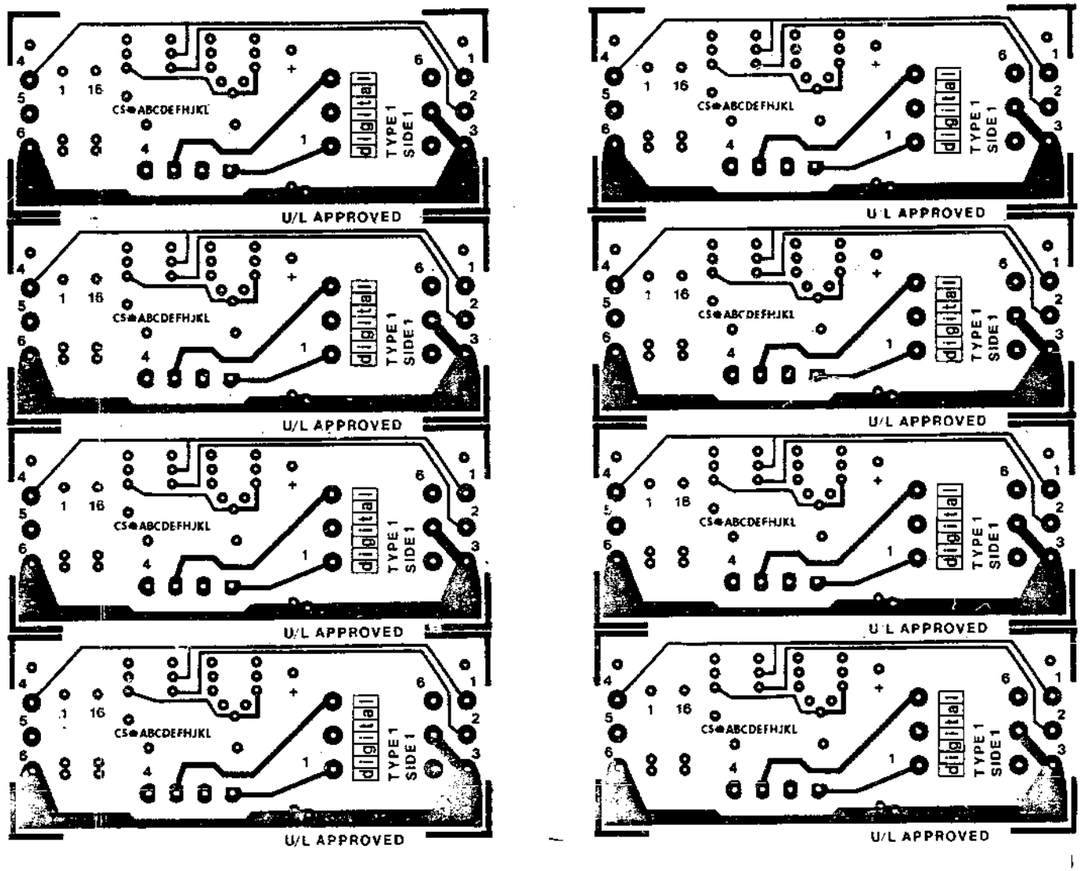
REV	DESCRIPTION	DATE	APPROVED
A			
B			
C			
D			

SIGNATURES	DATES
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	
SCALE	
SHT.	

digital

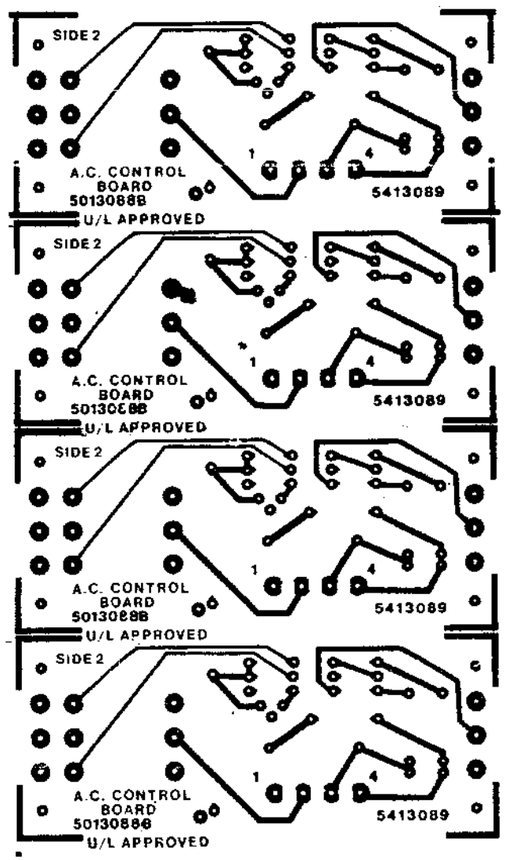
TITLE A.C. CONTROL BOARD

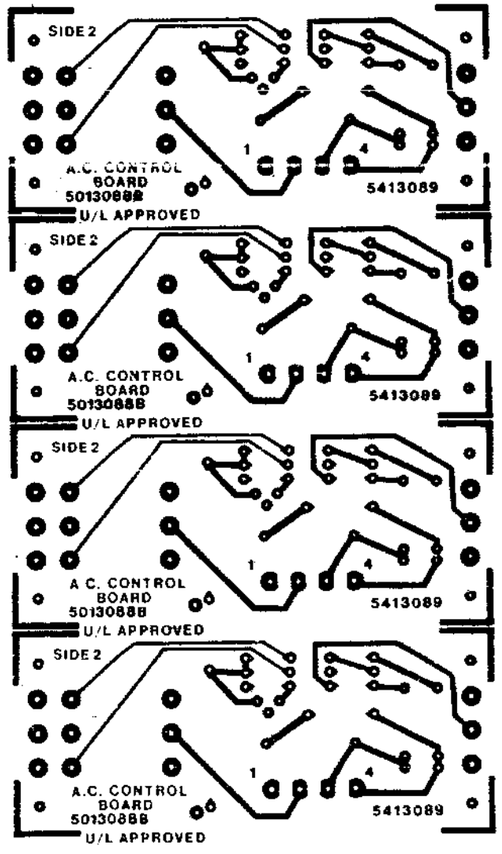
SIZE D | CODE 04 | NUMBER 54-17089-0-2 | REV D



VIEWED FROM SIDE 1

AC CONTROL BOARD D1UA E41E089-0-0 D





VIEWED FROM SIDE 2

A.C. CONTROL BOARD D UA 5413089-0-0 0

SIZE 2 SHEET 3 OF 3

A35

DRAWING DIRECTORY

CUSTOMER PRINT SET

DRAWING DIRECTORY	B-DD$_E$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.
	GP	00019	R
	JA	00020	S

USED ON OPTION/MODEL: 11/45

SHEET 1 OF 4

DRN.	D. FONTAINE	DATE 2-4-72
CHK'D.	D. FONTAINE	DATE 2-4-72
PROJ. ENG.	G. POTTER	DATE 2-24-72
PROD.	A. HIRSCH	DATE 2-24-72

TITLE: +5V REGULATOR

digital

SIZE	CODE	NUMBER	REV
B	DD	H744-0	S

DIST.

A36

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	00019	S	
	00020		

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

ORP 126 EN-01148-16-N1176/225

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	REV	CHG NO	DATE
	R	00017	2-77
		00019	

digital

USED ON OPTION/MODEL			
11/45			
	DRN. D. FONTAINE	2-4-72	TITLE +5V REGULATOR
	CHK'D D. FONTAINE	2-4-72	
	ENG. G. POTTER	2-24-72	SIZE B CODE DD NUMBER H744-Ø REV. S
	PROD. A. HIRSCH	2-24-72	SHEET 3 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	V V1
D-CS-H744-Ø-1	1		CIRCUIT SCHEMATIC	W W1
B-MH-H744-Ø-6	4		MODULE ECO HISTORY	AB 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			
DATE	CHG NO	REV	
2-77	00019	R	
	00016		

digital

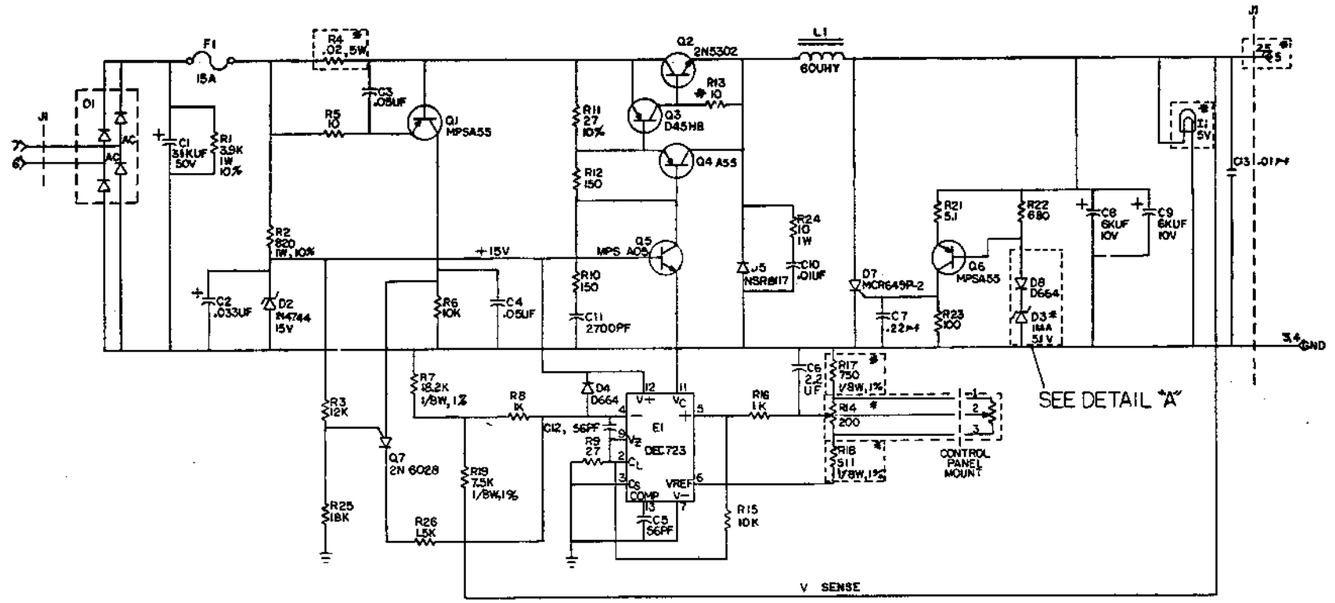
USED ON OPTION/MODEL	
11/45	

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 4 OF 4



*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 - +20-8.0V

D9 - D664 ADDED FOR YA VARIATION ONLY

UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.
	PARTS LIST		
	STCH BOARD REV F H		

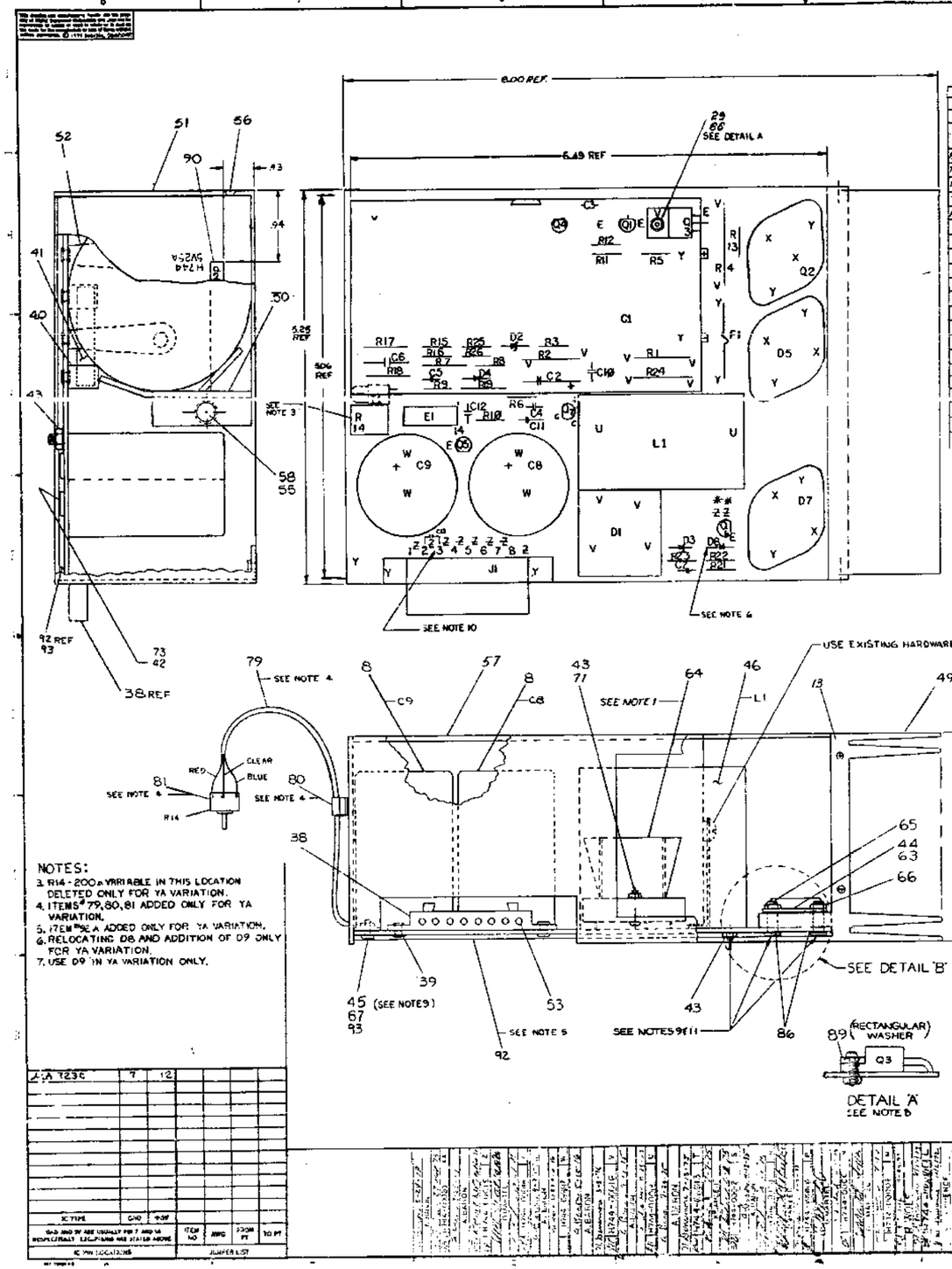
SEMICONDUCTOR CONVERSION CHART

IN964A	SAME	MPSA55
D664	IN606	2N3302
MCR649P2		D45H8
IN754A	SAME	MPSA05
IN754	SAME	
IN5817		
BYSC28		

EQUIPMENT CORPORATION

TITLE: 5V REGULATOR

DWG H74-4-1-1



NOTES:

3. R14 - 200Ω VARIABLE IN THIS LOCATION DELETED ONLY FOR YA VARIATION.
4. ITEMS #79, 80, 81 ADDED ONLY FOR YA VARIATION.
5. ITEM #9E,A ADDED ONLY FOR YA VARIATION.
6. RELOCATING D8 AND ADDITION OF D9 ONLY FOR YA VARIATION.
7. USE D9 IN YA VARIATION ONLY.

NOTES:

1. APPLY ITEM #63 (COMPOUND) BETWEEN TRANSISTOR (Q2), DIODES (D5, D7) AND ITEM #44 (WASHER) ALSO BETWEEN ITEM #44 (WASHER) AND HEAT SINK (ITEM #90). 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 #6 HARDWARE EXCEPT Q3.
(2) APPLY 12 INCH LBS OF TORQUE TO #6 HARDWARE ON L1.
(3) APPLY 16 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

744-YA	744-YB							
1	1	REE	RES 680 1/8W 5%	1301424	69	8	1	T1	5 VOLT LAMP	12-052/9-1	68
1	1		PACKING INSTRUCTIONS	AP: 3700074-0000	70	2	2		L WASHER #4	9006632	67
1	1		SCR, PHL PAN HD 6-32 x 5/8 LG	9006025-1	71	7	7		NUT, KEPS #6-40	9006897	66
1	0	I1	15 VOLT LAMP	1209169	72	6	6		SCR, PHL PAN HD #6-32 x 5/16 LG	9008031-1	65
4	4		LOCKWASHER #10 INT	9006618	73	1	1		HEAT SINK BRIDGE	1210907	64
[illegible]			[illegible]	[illegible]	74	AR	AR		COMPOUND THERMAL JOINT	9008848	63
[illegible]			[illegible]	[illegible]	75	1	1	R26	RESISTOR 1.5Ω 1/4W 5%	1300391	62
[illegible]			[illegible]	[illegible]	76	1	1	R19	RESISTOR 7.5Ω 1/2W 1%	1305322	61
[illegible]			[illegible]	[illegible]	77	1	1	R3	RESISTOR 1Ω 1/4W 5%	1300488	60
[illegible]			[illegible]	[illegible]	78	1	1	D7	TRANSISTOR, RECTIFIER BRIDGE	1910877	59
1	0	12 IN	WIRE, HOOKUP	1700014	79	1	1		SCR, PHL PAN HD 6-32 x 1/4 LG	9006020-1	58
1	0		CLAMP, CABLE	9007079	80	1	0		COVER	2-MD-530782-0002	57
1	0	R14	POT, 10 TURN, 1K Ω	1309532-04	81	1	1		SCR, PHL FLT HD 6-32 x 3/8 LG	9008020-8	56
1	0	R17	RES, 300Ω 1/4W 5%	1301425	82	1	1		WASHER, LOCK #6	9006633	55
1	0	R18	RES, 150Ω 1/4W 5%	1300250	83	1	1		SCR, PHL FLT HD #6-32 x 1/4 LG	9006020-6	54
1	0	R4	RES, 86Ω 5W 3%	1310876-02	84	0	B		CONTACT, FEMALE	1209456	53
1	0	D3	DIODE ZENER IN754	1109991	85	2	2		STRAP, CAPACITOR	C-MD-530978-0002	52
6	6	-	WASHER, INT TOOTH #4	9006632	86	1	1		BRACKET, REGULATOR	D-YA-530978-0001	51
1	1	C7	CAP .22μF 50V	1010274	87	1	1		HOLDER, CAPACITOR 2.5	C-YA-123681-0001	50
1	1	R13	RES 10 1/4W 5% FUSIBLE	1312496	88	1	1		HEAT SINK, REGULATOR	D-PS-120737-0001	49
1	1	-	WASHER, RECTANGULAR	9009789	89	2	2	C5, C12	CAP 56 PF	1000018	48
1	1	-	DECAL (H744)	AD0746945-1-0000	90	1	1	R24	RESISTOR 10Ω 1W	1300171	47
1	1	-	JUMPER	1214074	91	1	1	L1	REACTOR 40 MHY MMC4547	1610850	46
1	0	-	COVER, BOTTOM	7819952	92	2	2		SCR, PHL PAN HD #4-40 x 1/4 LG	9006401-1	45
2	0	-	WASHER, FIBER	9008848	93	3	3		WASHER, INSULATOR	9006721	44
						3	3		NUT, KEPS 6-32	9006186	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	9007203	40
						6	6		EYELET GS-4-3	9009000	39
						1	1	J1	MATE-N-LOK CONN, 8 PIN	1209340	38
						1	1	E1	INTEGRATED CIRCUIT MFC 723C	1910419	37
						1	1	Q3	TRANSISTOR A05	1510705	36
						1	1	Q5	TRANSISTOR D45H8	1510708-1	35
						3	3	Q1, Q6, Q4	TRANSISTOR MPSA55 MOT	1910708	34
						1	1	Q2	TRANSISTOR 2N6302	1510196	33
						0	1	R16	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 1/2	9006011-4	29
						1	1	R11	RES 27 1/4W 10%	1301420	28
						0	1	R17	RES 750 1/8W 1%	1305955	27
						1	1	R9	RES 27 1/4W 5%	1301522	26
						1	1	R7	RES 18.2K 1/8W 1%	1309412	25
						2	2	R8, R16	RES 1K 1/4W 5%	1300595	24
						0	1	R18	RES 511 1/8W 1%	1302411	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%	1300450	16
						0	1	D3	DIODE ZENER 1 MA. 5.1V	1110935	15
						1	1	D7	SCR MCR 6497-2	1109463	14
						4	4		SCR, PPH #6-32 x 5/16 LG SELF TAP	9009442	13
						1	1	D5	DIODE PWR MSP 8HT	1110715	12
						3	2	D4, D8 D9*	DIODE PWR D6G4	1100114	11
						1	1	D2	DIODE ZENER IN4744	HC5648	10
						1	1	D1	DIODE BRIDGE	1110716	9
						2	2	C8, C9	CAP 6MFD 10V	1100704	8
						1	1	C1	CAP 31 MFD 50V	1010858	7
						2	2	C4, C3	CAP .05MF 25V	1001774	6
						1	1	C2	CAP .033 MF 100V 10%	1000050	5
						1	1	C11	CAP 2700PF 100V 5% DM	1001937	4
						2	2	C10, C13	CAP .01 MF 100V 20% DISC	1001040	3
						1	1	C6	CAP 2.2 MF, 20V, 10%	1002627	2
						1	1		ETCHED CIRCUIT BOARD	5009728	1
									ASSY/DRILLING HOLE LAYOUT	D-AH-H744-B-S	
									X-Y COORDINATE HOLE LOCATIONS	XCOH744-B-4	REF
									MODULE ECO HISTORY	D-MH-H744-B-6	REF
									CIRCUIT SCHEMATIC	SCH-H744-B-1	REF

QTY | REF DESIGNATION | DESCRIPTION | PART NO. | ITEM

PARTS LIST

D664	1N3606		
1N4744			

DEF NO. | ECA NO. | DEC NO. | ECA NO.

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON ASSY/MOD D-DA-H742A-B-B

ETCH BOARD REV H

EQUIPMENT CORPORATION

TITLE: 5V REGULATOR

SIZE E | DWG NO DA-H744-B-B | REV AA

SCALE 2/1 | SHEET 1 OF 1

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

ITEM NO	AWG	JUMPER FT	NO PT

JUMPER LIST

441

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H745-Ø		
CIRCUIT SCHEMATIC	D-CS-H745-Ø-1	MFG. SET	
UNIT ASS'Y	E-UA-H745-Ø-Ø		
		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
		11745-16	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		
PRCD. A.HUSCH	DATE 2-25-72	SIZE B / CODE DD / NUMBER H745-Ø	REV R
FIELD SERV. A. ZINS	DATE 2-25-72	DIST	

DEC 16 12:31:10 62 LN-NV2

DPR 106

442

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

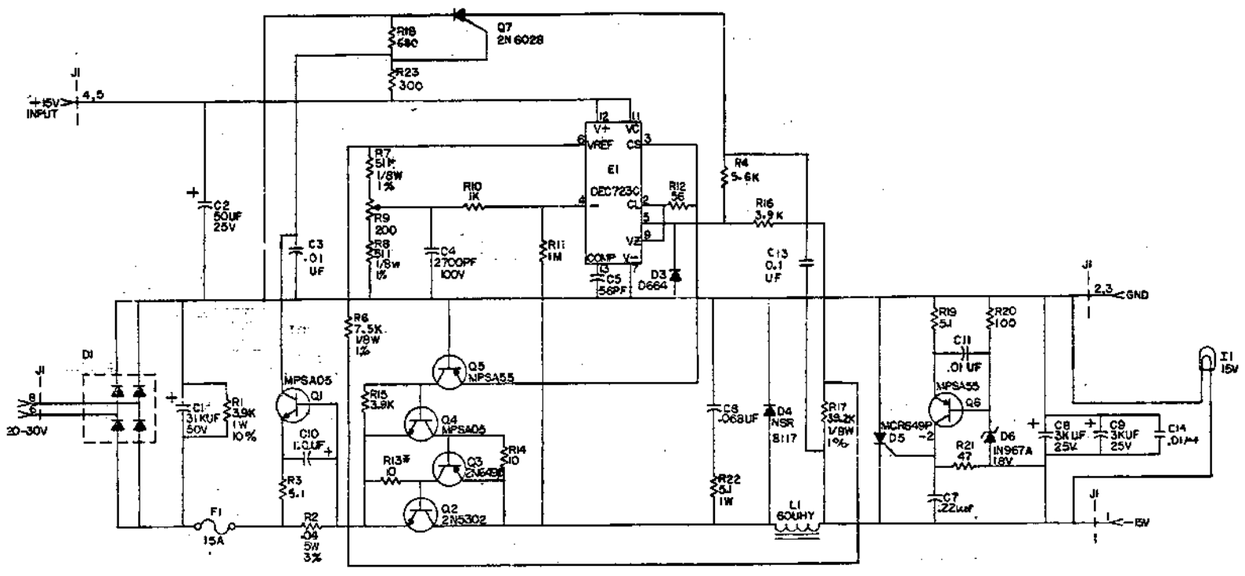
TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

TITLE -15V REGULATOR

SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER H745-Ø | REV R

DRB 108A



* FUSIBLE
UNLESS OTHERWISE INDICATED:
RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV E

D664	IN 3606	D45H8	
NSR 8117		2N 6028	
MCR 649P – 2			
IN 967A	SAME		
2N 5302			
MPS A05			
MPS A55			
DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN.	DATE 11-5-71
CHK'D.	DATE 1-4-71
ENG.	DATE 1/1/72
PROJ.	DATE 1/1/72
PROG.	DATE 1/1/72
NEXT HIGHER ASSY	
SCALE	
SHEET 1 OF 1	

EQUIPMENT CORPORATION

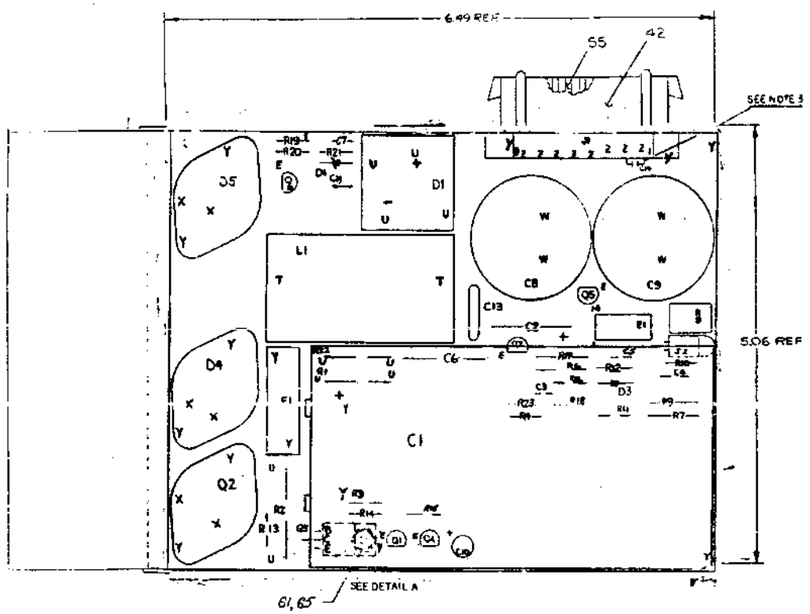
TITLE: -15V REG.

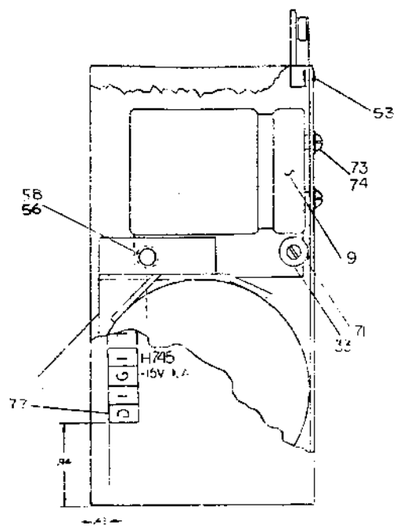
SIZE D | CODE | NUMBER H745-0-1 | REV

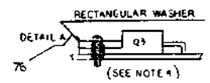
DIST.

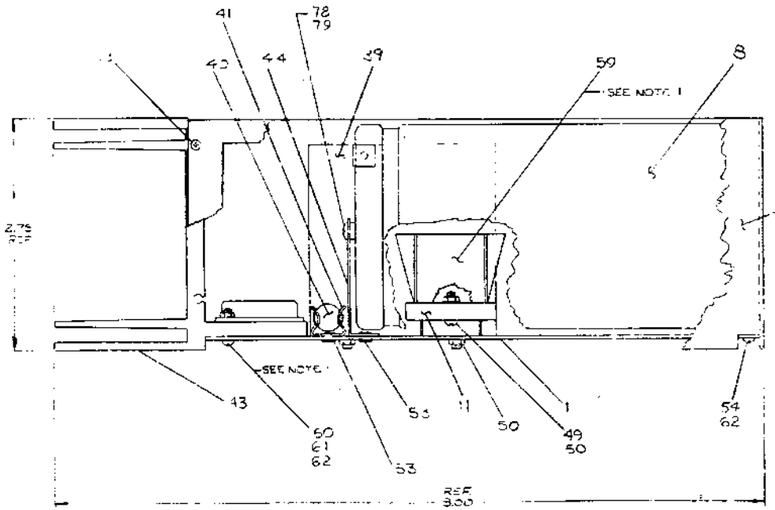
REVISIONS: REV. | CHANGE NO. | DWN | APPD | DATE
A DAHON 11-5-71 0002

H745-0-1









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 #6 HARDWARE EXCEPT Q3.
(2) APPLY 16 INCH LBS. OF TORQUE TO ALL #8 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 AND Q5 ALSO APPLY ITEM #51 (COMPOUND) BETWEEN ITEM #11 (D1 & D2, BRIDGE ASY.) (ITEM #59 (HEAT SINK).
2. 1010011 MAY BE SUBSTITUTED FOR C13 (1000030).

		ASSY/DRILLING HOLE LAYOUT	D-HM-H745-0-5	70
1		PACKING INSTRUCTIONS	APH-3700076-0-0	69
1	R18	RES. 680 ½W 5%	1301424	68
1	R23	RES. 100 ½W 5%	1301424	67
1	C14 (SEE NOTE 2)	CAP. 0.1 uF 100V 20 %	1000030	66
1		SCR PH 6-32 X 5/8 LG	9009010-1	65
1	J1	LAMP 28V	1214356	64
6		SCR, PPH 6-32 X 5/16 LG., SELF TAPPING	9009098	63
6		LOCKWASHER #6	9006632	62
7		NUT HEX #6-32	9006651	61
8		SCR PH, PAN HD #6-32 X 3/16 LG	9006629-01	60
1		HEAT SINK BRIDGE REC.	1216897	59
1		SCR PH, PAN HD #8-32 X 1 LG.	9009028-1	58
1		SCR PH, FLT HD #8-32 X 1/4 LG	9004020-02	57
1		WASHER LOCK #8	9004633	56
8		CONTACT RIVET	1300650	55
2		SCR PH, PAN HD #4-40 X 1/4 LG	9003911-1	54
6		RIVELET GS-4-3	1009500	53
3		INSULATOR WASHER	9008771	52
AR		THERMAL COMPOUND	9010008	51
1		NUT HEX #10	9009114	50
1		SCREW PH, PAN HD 6-32 X 5/8 LG	9006625-01	49
4		WASHER-INSULATOR #6 DIA.	9-00-1008-0	48
1		HEAT SINK	3-16-1208938-0	47
1		3.3 VOLTAGE REGULATOR	6-16-1208938-0-0	46
2		TERMINAL CONNECTOR	6-40-1208938-0-0	45
1		HEAT SINK	6-45-1210735-0-0	44
1	J1	TERM. RECT-0.062 X .250	1208938	43
2		NUT CLIP	9007201	42
1	F1	FUSE	1215237-01	41
1	L1	INDUCTOR 50 UH	1210268	40
1	L2	INTERFERENCE CHOKE ASSY.	1210645	39
1	D5	RECTIFIER 2-PIN-STUD	1214452-01	38
2	D3, D4	RECTIFIER ASS.	1218205	37
2	D1, D2	RECTIFIER ASS.	1218206	36
1	D6	TRANSISTOR 2N3055	1212838	35
1	D5	DIO. RECT-HALF 200 A, 600V	1216882	34
1	D10	DIO. 1KV 6 A.	1200229	33
1	R11	RES 1 KΩ ½ W 5%	1209114	32
1	R4	RES. 5.6Ω ½W 5%	1212124	31
2	R15, R16	RES 3.3K ½W 5%	1202644	30
2	R19, R3	RES 5.1 ½ W 5.	1208622	29
1	R12	RES 18 ½ W 5%	1208809	28
1	R21	RES 47 ½ W 5%	1208297	27
2	R17	RES 33 Ω ½W 1%	1215263	26
1	R18	RES 68 Ω ½ W 5%	1208685	25
1	R24	RES 10 Ω ½ W 5%	1201031	24
1	R6	RES 7.5K 1 W 1%	1206132	23
2	R7, R8	RES 511 Ω 1 W 1%	1202441	22
1	R22	RES 5.1 K 1%	1202138	21
		RES 680 Ω 1%	1208679	20
1	R2	RES 1.24K Ω 1%	1211262-05	19
1	R1	RES 3.3K 1% 1W.	1208282	18
1	C8	SCR 10-32 X 1/2	1210268	17
1	C5	SCR 10-24 X 1/2	1210952	16
1	C6	HEX NUT 8-32	1210212	15
2	C7	CLAMP DIA.	1200114	14
1	C9	TRANSISTOR 1W 10K 10% 2N4298	1210211	13
1	C1	DIODE 1N1202	1210214	12
2		CAP. 2200 .2200 10%	1206402	11
2	C2, C3	CAP 5.6K UF 25V	1210208	10
1	C4	CAP 33K UF 50V	1210208	9
1	C10	CAP 1.0 UF 25V	1210668-01	8
1	C12	CAP 50 UF 25V 10%	1210218	7
1	C11	CAP 200 UF 1 KV 10%	1210682	6
1	C14	CAP 2700PF 10KV 5%	1201631	5
3	C15, C16	CAP 0.1 UF 100V 20%	1201000	4
1	C13	CAP 33K 100V	1201000	3
		CAP 0.01 UF 1KV 20%	1201000	2
		CAP 0.01 UF 1KV	1201000	1
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

1		DECAL (H745)	7416945-02	80
2		WASHER INT. TOOTH #10	9006635	79
2		SCREW, PAN 10-32 x 5/8 LG	9009449-01	78
1	C7	CAP. .22 uF 50V	1010274	77
1		WASHER, RECTANGULAR	9009768	76
1	R13	RES 10Ω/2W, FUSIBLE	1312496-00	75
4		LOCKWASHER #10 INT	9006635	74
4		SCR #10-32X3/4 SLOTTED PAN HD.	9009469-01	73
				72
1		TRANSPAD	9008206	71

ETCH BOARD REV E

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

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

0664 IN3506

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.

EQUIPMENT CORPORATION

TITLE: -15 REGULATOR

SIZE A | NUMBER H745-0-0 | REV

DATE

H745

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H754-Ø		
+20 VOLT REGULATOR	E-CS-H754-0-1		

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
H754-0	+20 VOLT REGULATOR	X

REVISIONS		
DATE	CHG. NO.	REV
10-75	H754-9	A
11-3	H754-10	B

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. J.Fleming	DATE 2/21/74	TITLE +20 VOLT REGULATOR
CHK'D. J.Fleming	DATE 2/21/74	
PROJ ENG. E. Wilcox	DATE 3-13-74	
PROD. Jack Norman	DATE 3-14-74	SIZE B · CODE DD · NUMBER H754-Ø · REV B
FIELD SERV. Walt Aubee	DATE 7/25/74	DIST

DEC 16-12231-1DS2-1AR-8912

DRB 106

446

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	B-DD-H754-Ø	#	3	DRAWING DIRECTORY	
X			E-CS-H754-Ø-1	#	2	+20 VOLT REGULATOR	
			K-CO-H754-Ø-4		-	X-Y COORDINATE HOLE LOCATION	
			D-AH-H754-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-H754-Ø-6		1	MODULE ECO HISTORY	
			5010531		-	ETCHED CIRCUIT BOARD	
			A-SP-H754-Ø-8		3	MANUFACTURING SPEC	

MECHANICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-CS-H754-0-1	#	2	+20 VOLT REGULATOR	
			D-PS-1210737-0-0		1	HEAT SINK REGULATOR	
			C-IA-5309758-0-0		1	CAPACITOR BRACKET	
		2	D-IA-5409756-0-0		1	BRACKET REGULATOR	
			A-SS-5309756-0-1		1	SILK SCREEN	
			A-SS-5309756-0-2		1	SILK SCREEN	
			A-SS-5309756-0-3		1	SILK SCREEN	

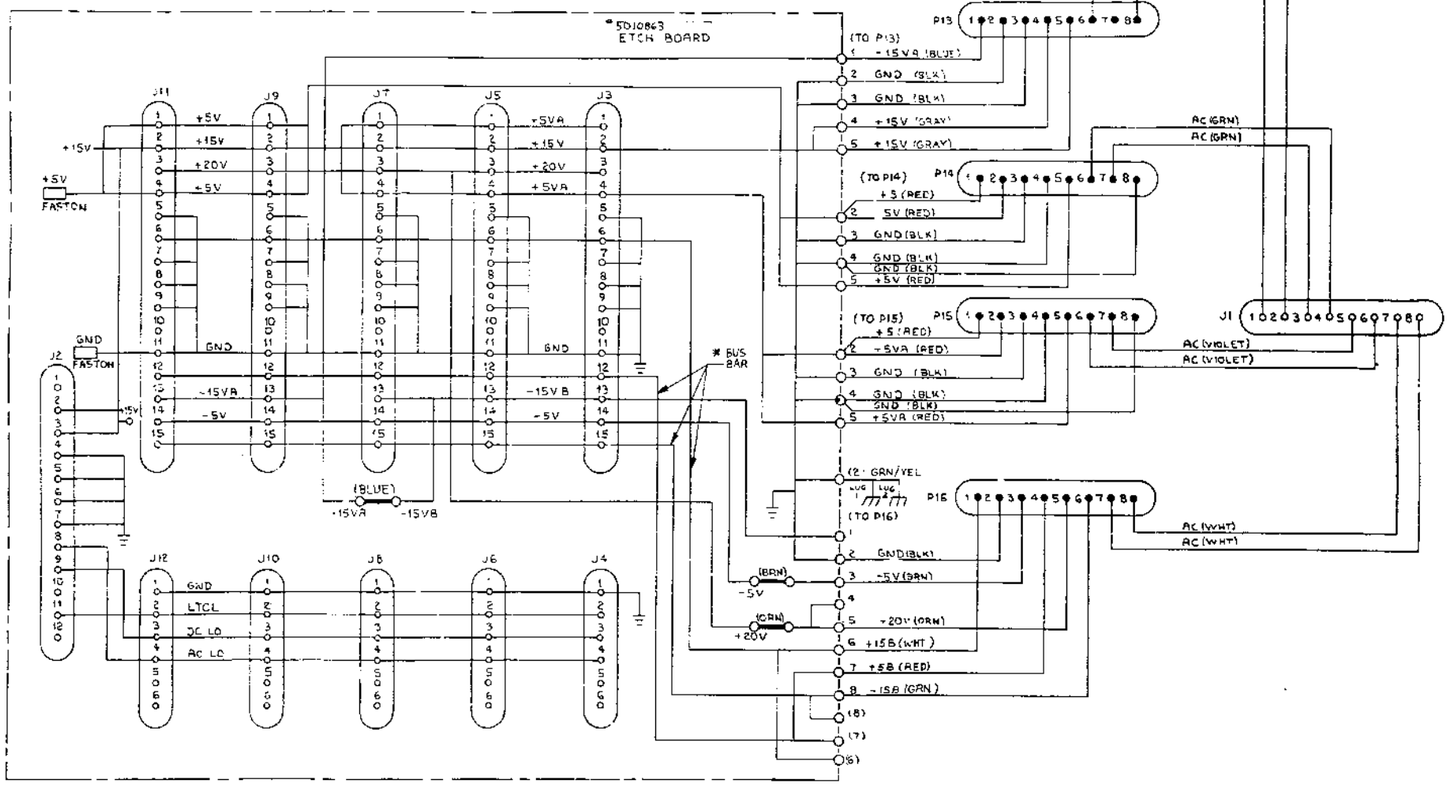
CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
+20 VOLT REGULATOR	SHEET 2 OF 3	B	DD	H754-Ø	B

DRB 108

DEC 16-325J-1062-28-R972

447



* BUS BAR USED IN THE YA VARIATION ONLY

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
PWR DIST BOARD	D	CS	5410864-0-1	L
SCALE NONE SHEET 2 OF 3	DIST			

A52

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	LENGTH	SIGNAL NAME
24	14	YEL	J1-1	8	P13-8	7	12.5"	AC/H745
24	↓	YEL	J1-2	↓	P13-6	↓	12.5"	AC/H745
25		GRN	J1-3		P14-7		11"	AC/H744-1
25		GRN	J1-4		P14-6		11"	AC/H744-1
26		VIO	J1-5		P15-7		8.75"	AC/H744-2
26		VIO	J1-6		P15-6		8.75"	AC/H744-2
27		WHT	J1-7	↓	P16-8		11.25"	AC/H754
27		WHT	J1-8	8	P16-7		11.25"	AC/H754
23		BLU	PDBP13-1	SOLDER	P13-1		5"	-15V
22		BLK	PDBP13-2	↓	P13-2		↓	GND
22		BLK	PDBP13-3		P13-3			GND
21		GRY	PDBP13-4		P13-4			+15V
21		GRY	PDBP13-5		P13-5			+15V
20		RED	PDBP14-2		P14-2			+5V
22		BLK	PDBP14-3		P14-3			GND
[illegible]		[illegible]	[illegible]		P14-4			GND
20		RED	PDBP14-5		P14-5			+5V
20		RED	PDBP15-2		P15-2			+5V
22		BLK	PDBP15-3		P15-3			GND
22		BLK	PDBP15-4		P15-4			GND
20		RED	PDBP15-5		P15-5			+5V
22		BLK	PDBP16-2		P16-2			GND
19		BRN	PDBP16-3		P16-3			-5V
							↓	
18		ORN	PDBP16-5		P16-5	7	5"	+20V
23		BLU	PDP-15A		PDB-15B	SOLDER	1.75	-15V
18		ORN	PDBP16-5	↓	PDB +20V	↓	5"	+20V
19		BRN	PDBP16-3	SOLDER	PDB -5V		2"	-5V
33		GRN/YEL	LUG 1	35	PDBP16-2	SOLDER	11"	SAFETY GND
33					LUG 2	34	15"	SAFETY GND
20		RED	PDBP16-7	SOLDER	P16-4	7	5.5"	+5B
20		RED	PDBP15-1	↓	P15-1	↓	5"	+5V
20		RED	PDBP14-1		P14-1		5"	+5V
22		BLK	PDBP15-4		P15-8		5.5"	GND
22		BLK	PDBP14-4		P14-8		↓	GND
27	↓	WHT	PDBP16-6	↓	P16-1	↓	↓	+15B
25	14	GRN	PDBP16-8	SOLDER	P16-6	7	5.5"	-15B

YA VARIATION ONLY.

SEE NOTE 1

BUS BAR CONNECTIONS FOR YA VARIATION

LEVEL A	PDBP16-6 J11,J9,J7,J5,J3 ALL PIN #6	+15V.B
LEVEL B	PDBP16-7 J11,J9,J7,J5,J3 ALL PIN #12	+5V
LEVEL C	PDBP16-8 J11,J9,J7,J5,J3 ALL PIN #15	-15V.B

NOTES:

1. CS REV. K AND EARLIER PWR DISTRIBUTION BOARDS HAD THE GREEN AND WHITE WIRES REVERSED IN COLOR ONLY. THE POINT-TO-POINT CONNECTIONS REMAIN THE SAME.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
PWR DIST BOARD	D	CS	5410864-0-1	L
SCALE NONE SHEET 3 OF 3	DIST			

DCS 5410864-0-1 L

A53

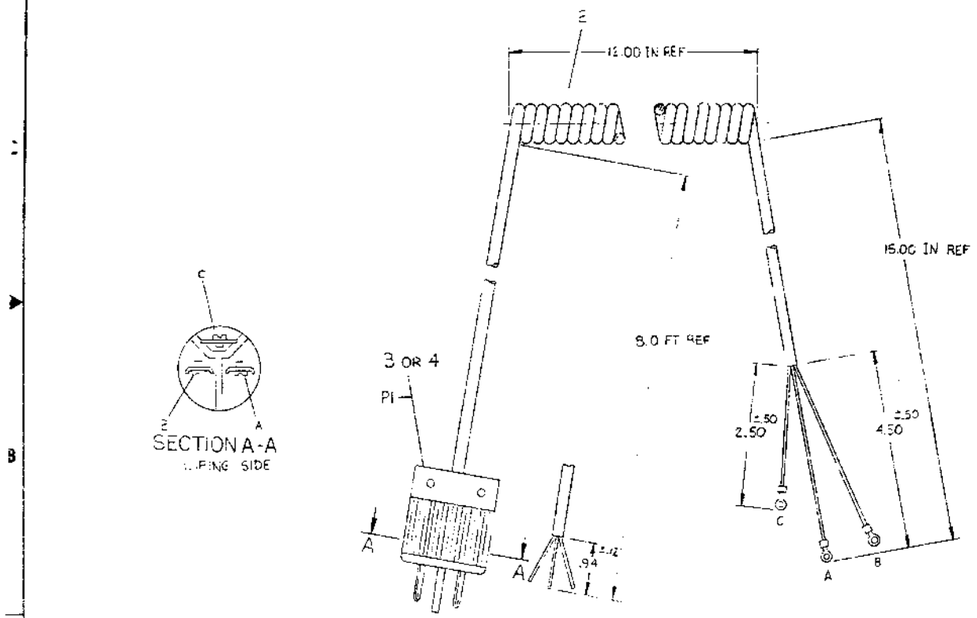
LEGEND	
NUMBER	VARIATION
70125C0-0	120V
70125C0-1	240V

WIRE TABLE (7012500-0)

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	REMARKS
3	14	BRN	P1-B	—	B	6	AC LINE
2	14	LT BLU	P1-A	—	A	6	AC NEUTRAL
2	14	GRN/YEL	P1-C	—	C	6	AC SAFETY GND

WIRE TABLE (7012500-1)

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	REMARKS
2	14	BRN	P1-B	—	B	6	LINE
2	14	LT BLU	P1-A	—	A	6	NEUTRAL
2	14	GRN/YEL	P1-C	—	C	6	AC SAFETY GND



ITEM	QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
3	3	TERMINAL RING TONGUE	9-17235	5
2	2	TERMINAL, QUICK CONNECT	9007917-0	5
1	–	PLUG, 240 V	9008853	4
–	1	PLUG 120 V	9003938	3
1	1	POWER CORD	7200869-0	2
–	1	POWER CORD	70005[illegible]	[illegible]

70125C0-1
70125C0-0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: OVER 0 TO 0.6	OVER 0.6 TO 2.0	OVER 2.0 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	MACHINE	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED	±.012	±.016	±.025	±.04	±.06	±.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG.

MATERIAL SEE PARTS LIST

FINISH

DRN. Z. Bradley 2-7-76
CHK'D [illegible] 2-9-76
ENG. [illegible] 2-10-76
PROJ. ENG. [illegible] 2-6-76
PROD. [illegible] 2-6-76

FIRST USED ON 3AH-K

digital

TITLE
POWER CORD
120V 240V

NEXT HIGHER ASSY. 7009811-0-0

SCALE NONE

SIZE D | CODE IA | NUMBER 70125C0-0-0 | REV. B

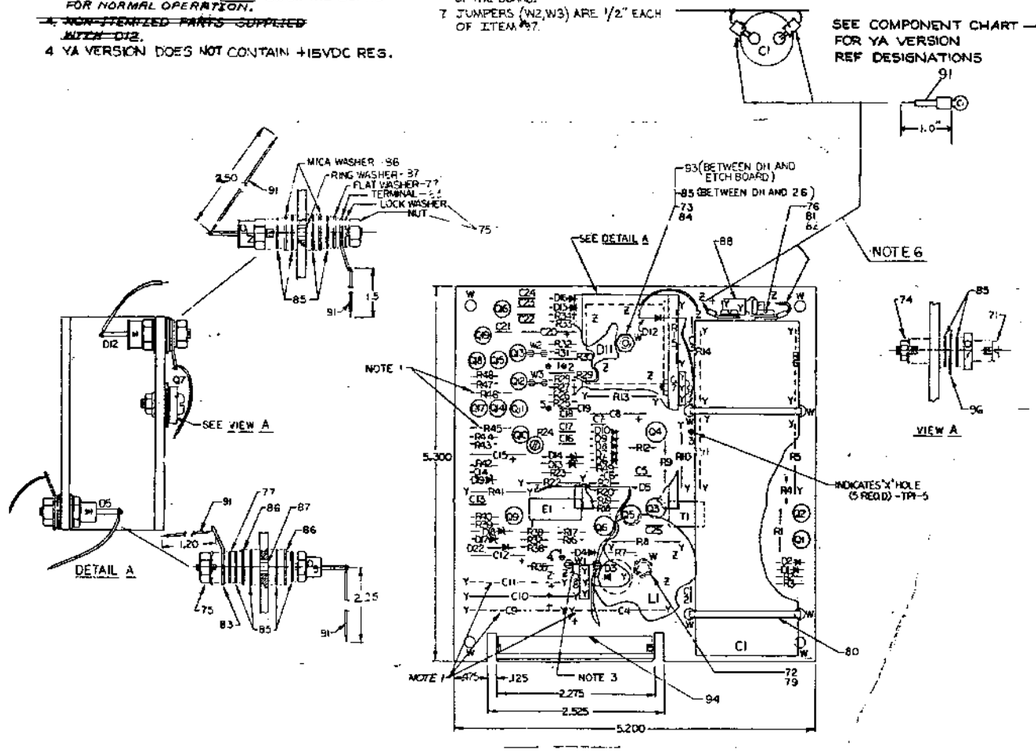
SHEET 1 OF 1

DIST.

REVISIONS			
ZONE	CHANGE NO.	DESCRIPTION	DATE
		[illegible]	

NOTES:

1. ~~R45,R46,C8,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. W1 RES MUST NOT EXTEND BEYOND THE DIMENSIONS OF THE BOARD.
7. JUMPERS (W2,W3) ARE 1/2" EACH OF ITEM #97.



REF	REF				
REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411086-0-1	1
REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411086-0-5	2
REF	REF		MODULE ECO HISTORY	B-MH-5411086-0-6	3
1	1		ETCHED CIRCUIT BOARD	5011085	4
0	1	C2	CAPACITOR 58PF 100V 5%	1000012	5
4	4	C18,C17,C10,C21	CAPACITOR 33PF 100V 5%	1000023	6
3	5	C3,C13,C19,C22,C23	CAPACITOR .01uf 100V 20%	1001810-01	7
1	3	C9,C12,C16	CAPACITOR 2.2uf 25V 10%	1002431	8
2	2	C6,C25	CAPACITOR 18PF 100V 5%	1002808	9
1	1	C28	CAPACITOR 1.5uf 35V 10%	1003725	10
4	4	C5,C7,C14,C24	CAPACITOR .22uf 50V -20%+80%	1010274-01	11
0	1	C19	CAPACITOR 500uf 25V -10%+75%	1010509-01	12
1	1	C1	CAPACITOR 8400uf 50V -10%+75%	1010951	13
1	2	D2,D19	DIODE IN748A	1100122	14
0	1	D5	DIODE IN2970B	1100134	15
0	1	D3	DIODE MR1838B	1103341	16
7	8	D1,D6,D7,D8,D9,D15,D18,D22	DIODE D872	1105275	17
1	2	D16,D17	DIODE IN4744	1105648	18
0	1	D4	DIODE IN4994	1105798	19
0	1	D12	DIODE IN3888	1106[illegible]2	20
[illegible]		[illegible]	DIODE IN5817A	[illegible]	[illegible]
~~2~~	~~2~~	~~D20,D21~~	~~DIODE MV3854-1 (CHG-DAT-1145)~~	~~1110124~~	~~22~~
1	1	D11	DIODE BRIDGE 200V 2BA	1110714	23
2	2	D13,D14	DIODE 1TTZ429	1110925	24
0	1	F1	FUSE PICO 5A	1205747	25
0	1		HEAT SINK	1211986	26
0	1	R23	RESISTOR 47 1/4W 5%	1300282	27
0	2	R7,R49	RESISTOR 100 1/4W 5%	1300229	28
0	1	R41	RESISTOR 100 1W 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,R28	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%	1300428	35
1	1	R15,	RESISTOR 3.3K 1W 10%	1300437	36
0	1	R3	RESISTOR 3.3K 1/4W 5%	1300439	37
2	2	R45,R47	RESISTOR 10K 1/4W 5%	1300479	38
0	1	R37	RESISTOR 10 1/4W 5%	1301317	39
2	3	R2,R44,R48	RESISTOR 750 1/2W 5%	1301401	40
0	1	R38	RESISTOR 910 1/4W 5%	1301624	41
0	1	R16	RESISTOR 22K 1/4W 5%	1301838	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	R35	RESISTOR 511 1/4W 1%	1302411	46
0	1	R39	RESISTOR 909 1/4W 1%	1302685	47
1	1	R25	RESISTOR 3.15K 1/4W 1%	1303045	48
1	1	R8	RESISTOR 470 2W 5%	1303082	49
1	2	R17,R26	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	R32	RESISTOR 9.03K 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

FIRST USED ON OPTION MODEL

ETCH BOARD REV. D

DEC NO.	ETA NO.	DEC NO.	ETA NO.

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN	[illegible]	10-7-74
D		DATE
		DATE
		DATE
NEXT HIGHER ASSY		
SCALE		
SHEET 1 OF		

digital

TITLE: PWR. LINE MONITOR/15V REG.

CODE	NUMBER	REV.
DCS	5411086-0-1	L

DIST.

NOTES:

YA	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	1	R29	RESISTOR 3.48K 1/4W 1%	1305114	55
1	1	R28	RESISTOR 5.92K 1/4W 1%	1305128	56
1	1	R27	RESISTOR 4.12K 1/4W 1%	1305324	57
0	1	R25	RESISTOR 24.3K 1/4W 1%	1305405	58
0	1	R24	RESISTOR 2SB 20% 62PR	1309180 10	59
1	1	R22	RESISTOR 18.2K 1/4W 1%	1305412	60
0	2	R5,R6	RESISTOR 2 5W 5% WW	1309084	61
0	1	Q7	TRANSISTOR MJE3055	1510155	62
4	9	Q2,Q3,Q5,Q8,Q10,Q19	TRANSISTOR MPSA05	1510705	63
0	2	Q4,Q9	TRANSISTOR MPS A55	1510706	64
0	1	Q6	TRANSISTOR 2N 4441	1505887	65
4	9	Q1,Q11,Q12,Q13,Q16	TRANSISTOR 2N 4258	1509142	66
4	4	Q14,Q15,Q17,Q18	TRANSISTOR 2N 5433	1511686	67
0	1	L1	INDUCTOR, 500 uh	1511958	68
1	1	T1	TRANSFORMER	1512026	69
0	1	E1	I.C. DEC 723	1910415	70
0	1		SCREW, PHM #4-48 X 3/16 LG.	9008012-1	71
0	1		SCREW, PHM #6-32 X 1/4 LG.	9008020-1	72
0	1		SCREW, PHM #8-32 X 2/8 LG.	9006027-1	73
0	1		KEP NUT #4-40	9008557	74
0	2		KEP NUT #10-32	9008568	75
2	2		WASHER, ITTLKER #10	9008635	76
0	2		WASHER, FLAT	9008686	77
0	2	(W1)	SPLIT LUG	9006735	78
0	1		SPACER, 1/4AF X 1/2	9006884	79
4	4		CABLE TIE	9007880	80
2	2		TERMINAL	9007320	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	9008165	84
0	A/R		COMPOUND, THERMAL JOINT	9008268	85
0	4		WASHER, THERMA FILM	9008424	86
0	2		WASHER, RING	9008440	87
0	1		FUSE HOLDER	9009141	88
1	1	R22	RESISTOR,330, 2W 10%	1301880	89
0	1	W1	JUMPER	9009185	90
2	.72		WIRE #18 STRANDED BLK	9107360-0-2	91
REF	REF		MODULE TEST PROCEDURE	A-SP-1145-20-2	92
1	1		WASHER RING	9006713	93
1	1		.010 INCH SHIM	7413721-P10	94
REF	REF		ENG. SPEC AND TEST PROC.	A-SP-5411086-00	95
0	1		INSULATOR, THERMA FILM	9003597	96
A/R	A/R	W2,W3	WIRE #22 BLK	9107360-0-1	97

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV D

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

IC TYPE APPLICATIONS

REV	CHANGE NO	REVISIONS

DEC NO.	ETA NO.	DEC NO.	ETA NO.

SEMICONDUCTOR CONVERSION CHART

DRN	J.D'Amour	DATE 10-7-74
DSN		DATE
ENG		DATE 10/24
QA		DATE 10/24
MFG		DATE 10/24
NEXT HIGHER ASSY		

digital EQUIPMENT CORPORATION

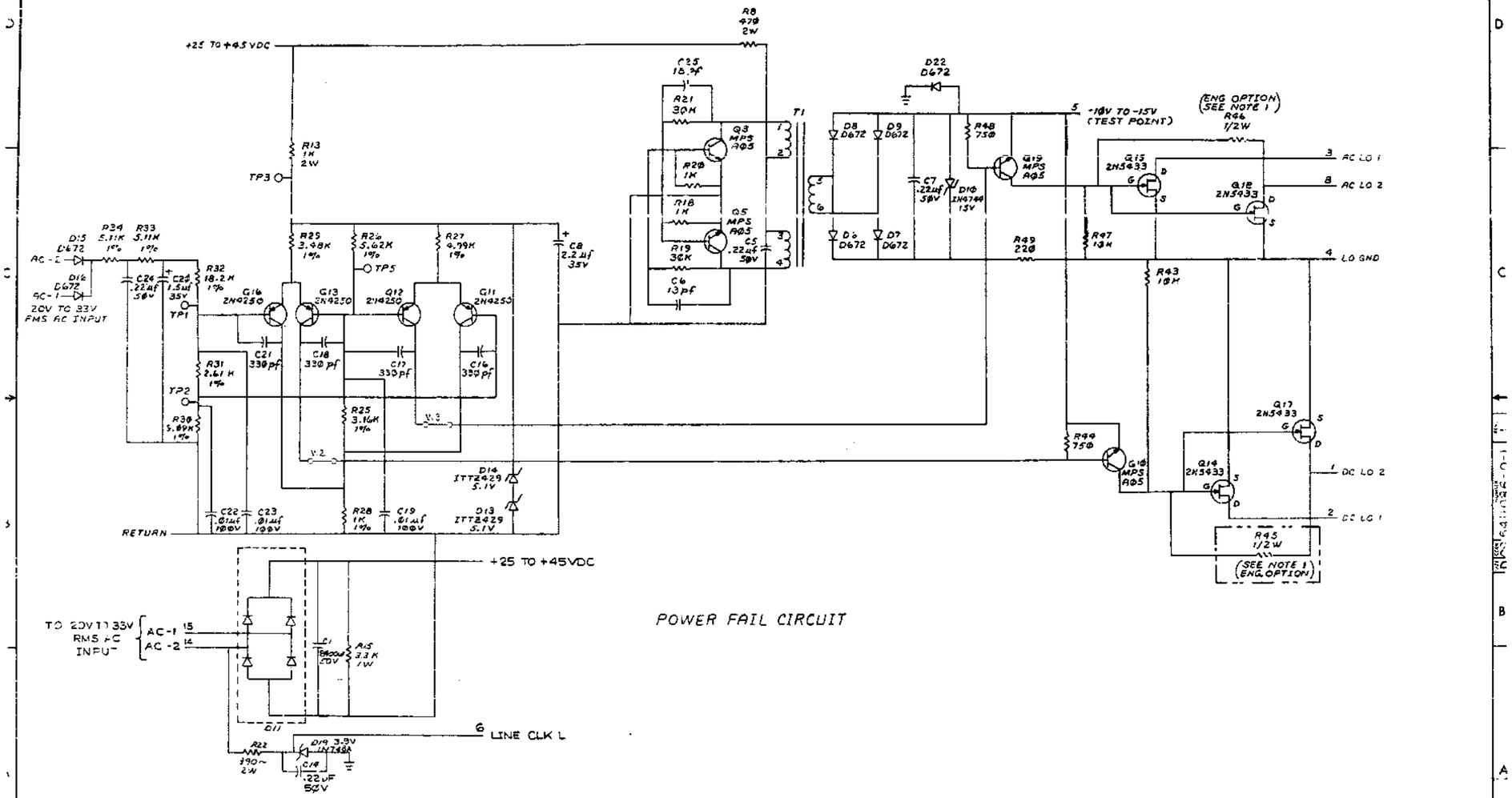
TITLE PWR. LINE MONITOR/15V REG.

DEPT/CODE	NUMBER	REV.
DCS	5411086-0-1	L

DIST.

SHEET 2 OF 4

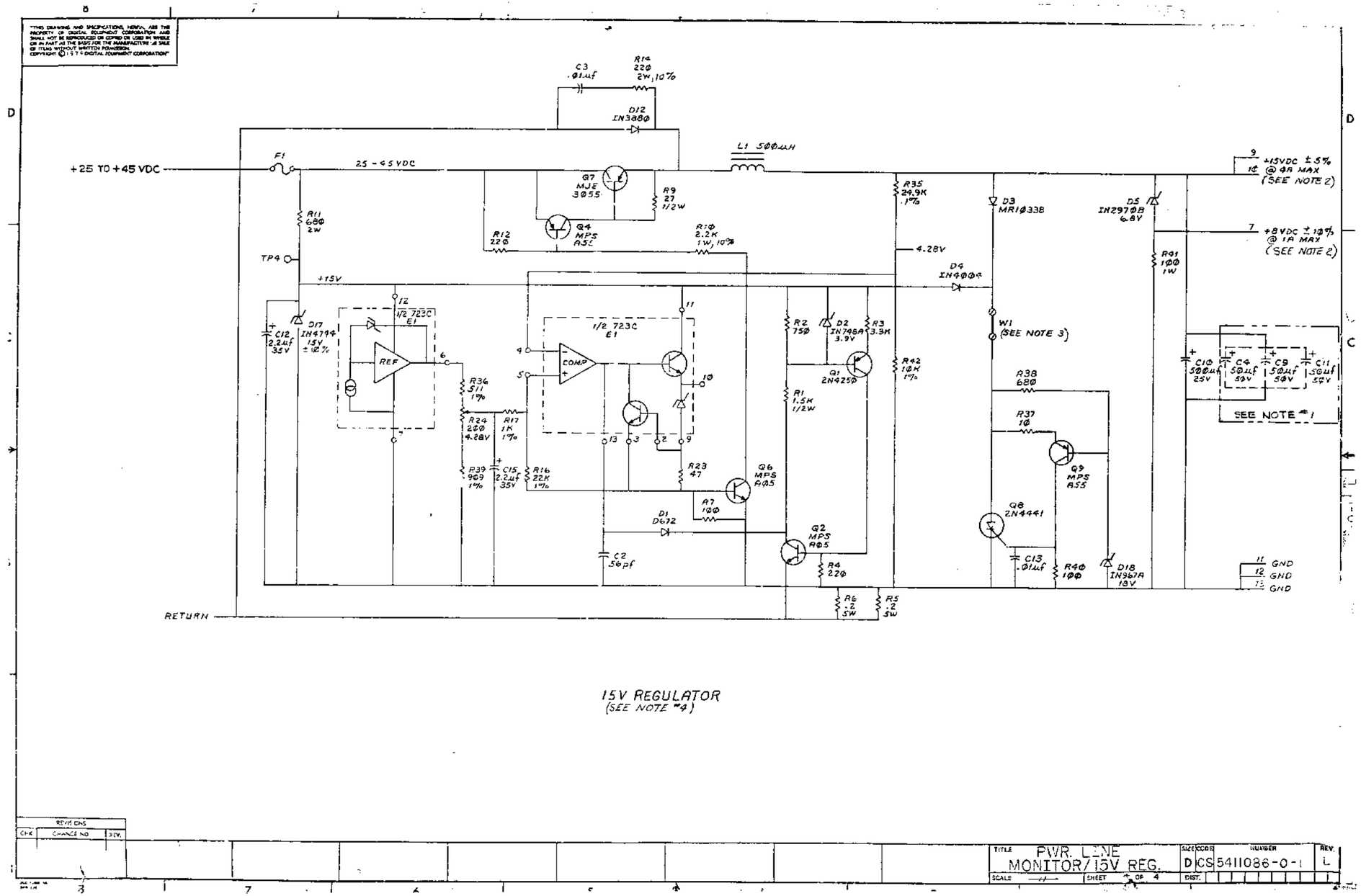
454



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 7		DIST.	

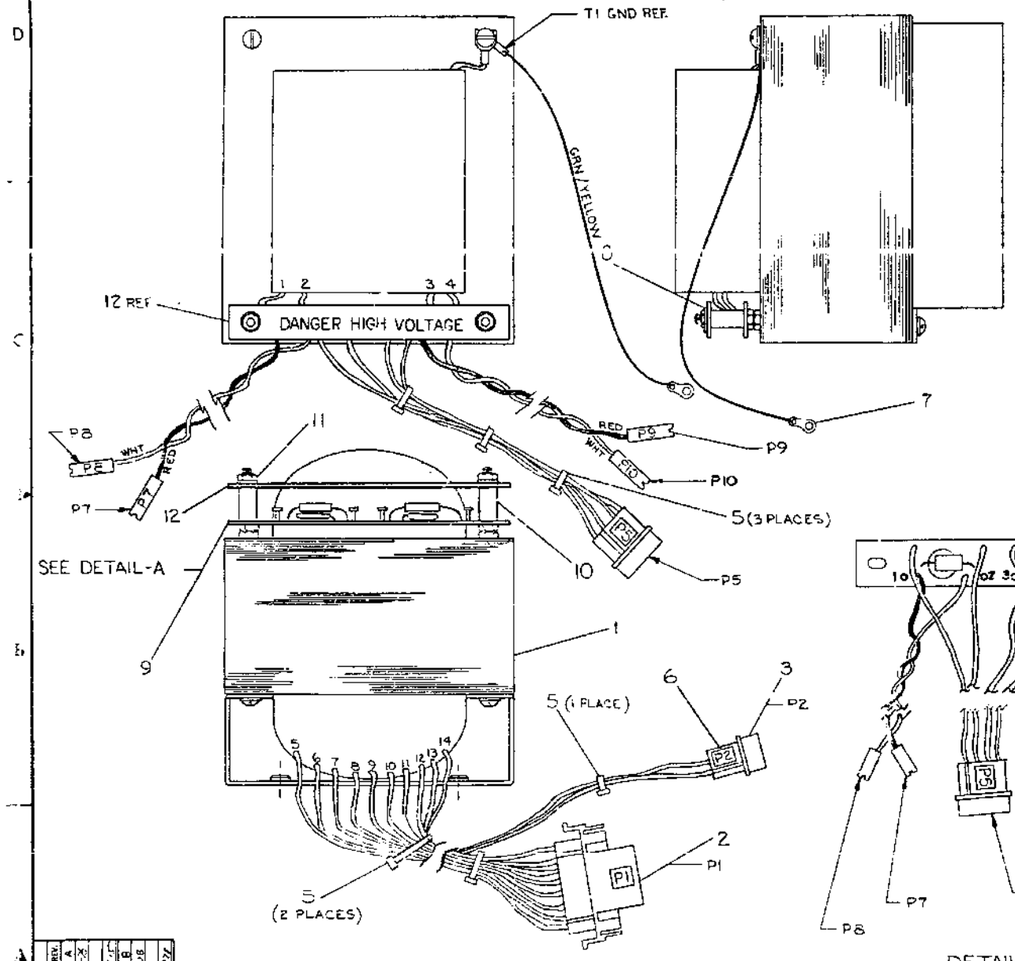


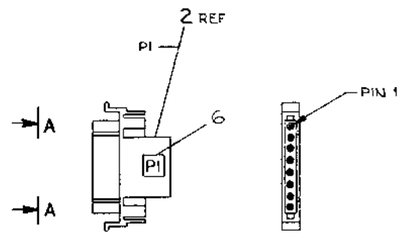
15V REGULATOR
(SEE NOTE #4)

REVISIONS		
CHK	CHANGE NO.	REV.

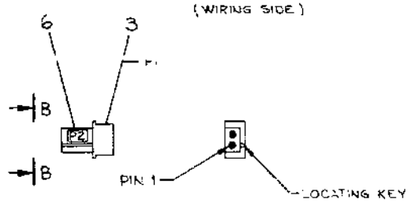
TITLE PWR. LINE MONITOR/15V REG.		SIZE D	CODE CS	NUMBER 5411086-0-1
SCALE	SHEET 4 OF 4	DIST.		REV. L

458

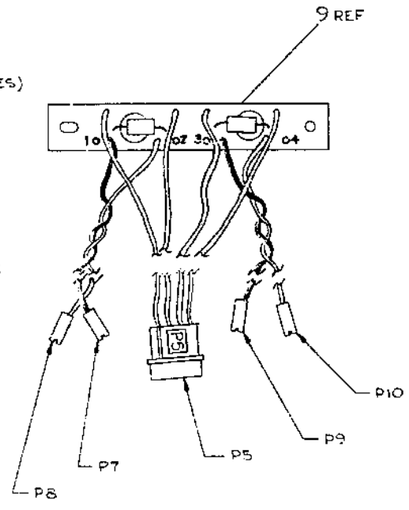




VIEW A-A
(WIRING SIDE)



VIEW B-B
(WIRING SIDE)



DETAIL-A
ITEM-9

REF	DESCRIPTION	DWG/PART NO.	ITEM NO.
1	TRANSFORMER ASSY	A-SP-7011486-0-0	13
1	COVER	70-14301-0-0	12
2	NUT, KEP 6-32	90038	11
2	SPACER, 3/8 OD x 1/2 LG	9008831	10
1	CAP MOV BOARD ASSY	54-7017[illegible]	9
2	WASHER, FLAT .437 x .218 ID	9008664	8
1	GROUND LUG	9008150	7
1	DECAL	A-DC-7409678-0-0	6
A/R	CABLE TIES 5 1/4 L x 1/8 W	9007880	5
10	PIN, MALE	209378-1	4
1	CONN., 2 PIN	1210822-2	3
1	CONN., 8 PIN	209340-01	2
1	TRANSFORMER	16125-24	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
ANGLES ±0°30' | SURFACE QUALITY 125 MICROINCHES | CLASS OF ACCURACY (CHECK ONE): MEDIUM, PREFERRED | NOMINAL DIMENSION RANGE INCHES: OVER 0 TO 3 ±.031 ±.012; OVER .3 TO 1.2 ±.008 ±.016; OVER 1.2 TO 4.0 ±.012 ±.020; OVER 4.0 TO 12.0 ±.016 ±.024; OVER 12.0 TO 48.0 ±.024 ±.04; OVER 48.0 TO 96.0 ±.063 ±.01
QUANTITY & VARIATION
THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS
DO NOT SCALE DWG
MATERIAL: SEE PARTS LIST
FINISH
DRN: B. WOLF
CHK'D: R. KENNEDY
ENG: [illegible]
PROJ. ENG.: [illegible]
PROD: [illegible]
NEXT HIGHER ASSY.
FIRST USED ON: H-852
digital
TITLE: TRANSFORMER ASS'Y
SIZE: D | CODE: 80009 | NUMBER: 7011486-0-0 | REV: B
SCALE: 1/1
SHEET 1 OF 2
DIST.

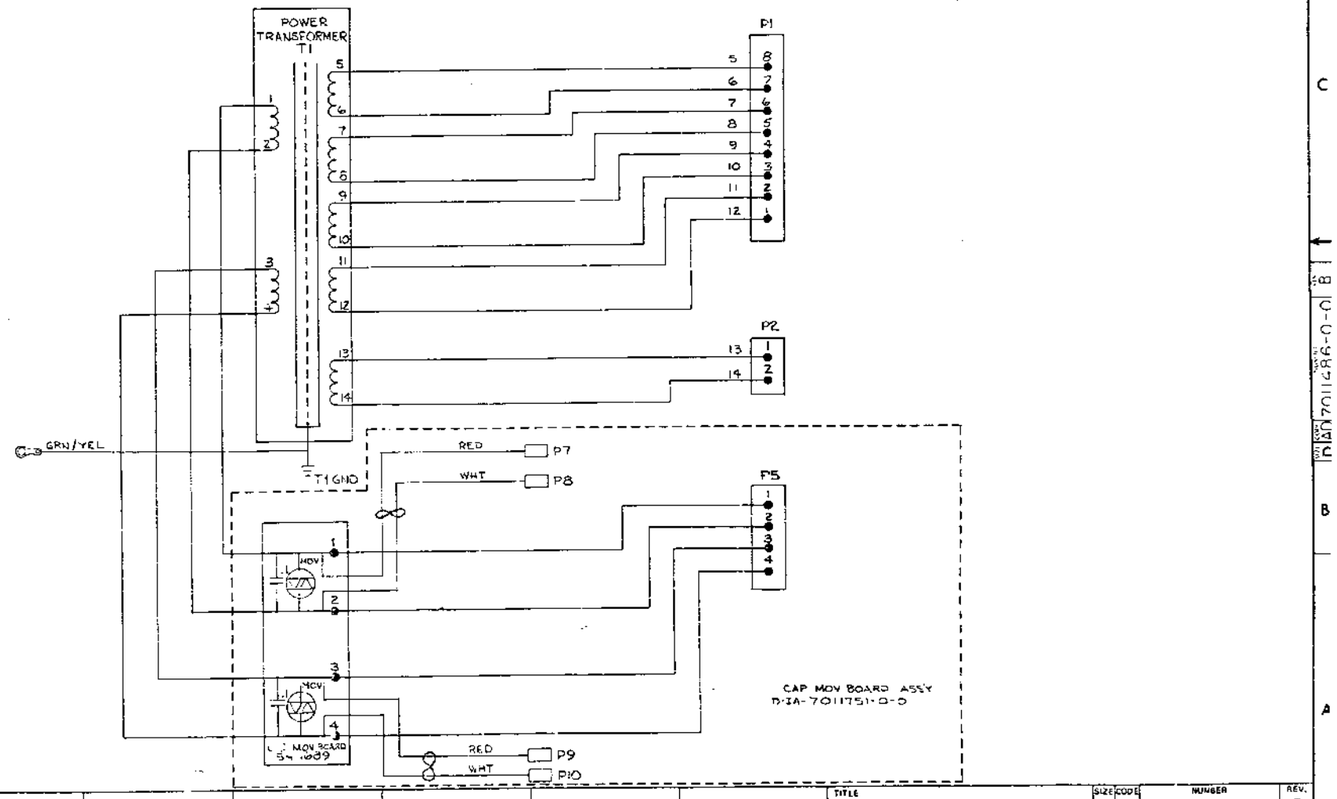
REVISIONS	DWG NO.	REV.
INIT. RELEASE	7011486-00001	A
ADDED ITEM 13	7011486-00002	B

JA 12-Jun-75
B. WOLF
R. KENNEDY

459

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	WIRE LENGTH
1	14	BLK	T1-1	—	CAP MOV BD-1	SOLDER	1.5 IN
↓	↓	↓	T1-2	—	CAP MOV BD-2	SOLDER	2.0 IN
			T1-3	—	CAP MOV BD-3	SOLDER	2.0 IN
			T1-4	—	CAP MOV BD-4	SOLDER	1.5 IN
			T1-5	—	P1-8	ITEM 9	12.0 IN
			T1-6	—	P1-7	↓	↓
			T1-7	—	P1-6		
			T1-8	—	P1-5		
			T1-9	—	P1-4		
			T1-10	—	P1-3		
			T1-11	—	P1-2	↓	
			T1-12	—	P1-1	ITEM 4	
↓	↓	↓	T1-13	—	P2-1	ITEM 4	↓
1	14	BLK	T1-14	—	P2-2	ITEM 4	12.0 IN
1	14	GRN/YEL	T1-GND	—	GND LUG (ITEM 7)	SOLDER	16.0 IN



REVISIONS

CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
TRANSFORMER ASSY	D	AD	7011486-0-0	B

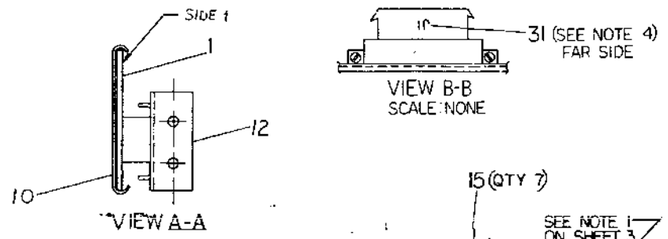
SCALE — SHEET 2 OF 2 DIST.

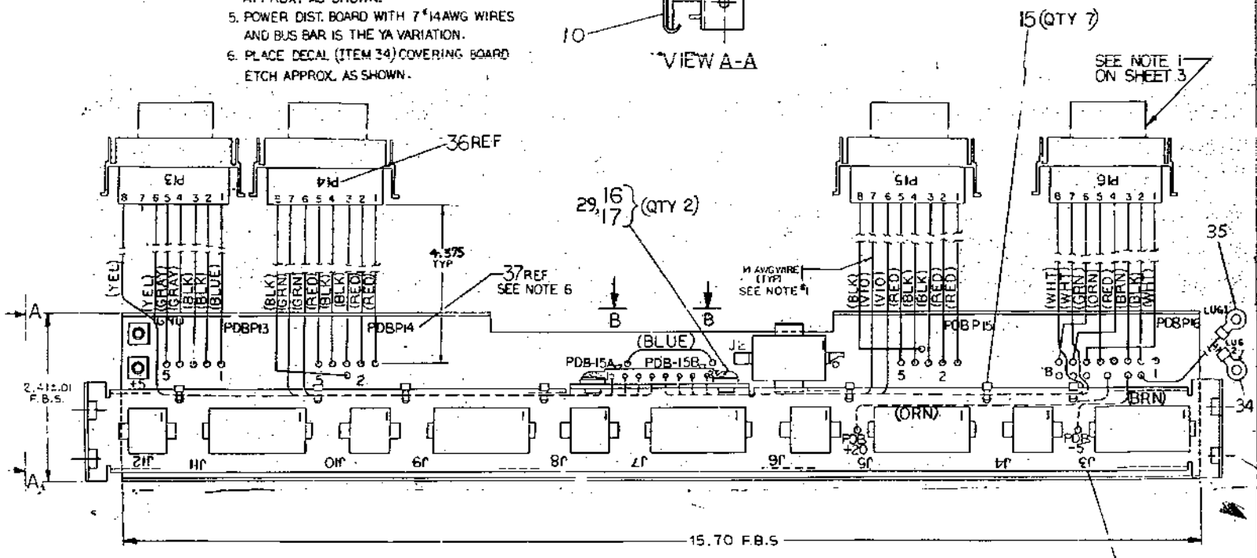
7011486-0-0 B

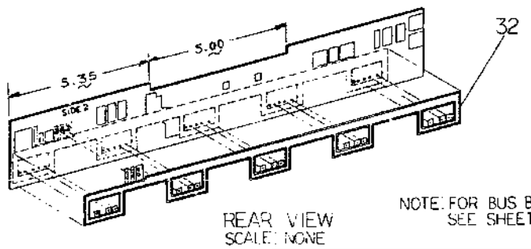
40

NOTES:

1. FOR HAND WIRING INFORMATION SEE WIRE TABLE ON SHEET 3
2. MATE-N-LOK FIXTURES (ITEM 28) MUST BE USED DURING WAVE SOLDERING OF J2, J3-J12
3. WIRE JUMPERS ON CIRCUIT BOARD ARE PART OF SIGNAL PATHS. THEY ARE NOT FOR OPTIONS
4. PLACE DECALS (ITEM 30, 31 & 36) APPROX. AS SHOWN.
5. POWER DIST. BOARD WITH 7' 14 AWG WIRES AND BUS BAR IS THE YA VARIATION.
6. PLACE DECAL (ITEM 34) COVERING BOARD ETCH APPROX. AS SHOWN.







NOTE: FOR BUS BAR CONNECTIONS SEE SHEET 3 OF 3

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

QTY	QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
			ETCHED CIRCUIT BOARD	D-UA-5010863-0-0	1
5	5	J4, J6, J8, J10, J12	CONN, 6 PIN MATE-N-LOK (FEMALE)	1209350-06	2
1	1	J1	CONN, 8 PIN MATE-N-LOK (FEMALE)	1209340-00	3
5	5	J3, J5, J7, J9, J11	CONN, 15 PIN MATE-N-LOK (FEMALE)	1209350-15	4
1	1	J2	CONN, 12 PIN MATE-N-LOK (FEMALE)	1209350-12	5
4	4	P13 THRU P16	CONN, 8 PIN MATE-N-LOK (MALE)	1209340-01	6
31	24	(P13 THRU P16)	PIN, MATE-N-LOK	1209378-01	7
8	8	(J1)	PIN, MATE-N-LOK	1209379-01	8
117	117		PIN, MATE-N-LOK PC MOUNT	1209456	9
1	1		SHIELD	C-MD-7412192-0-0	10
~~2~~	~~2~~		~~GROUND CLIP~~	~~9008150~~	~~11~~
1	1		BRACKET, CONN MTG	D-MD-7411704-00	12
2	2		EYELET	9009000	13
2	2		FASTON TAB	9008219-0	14
7	7		CABLE TIE .12 WIDE	9007880	15
2	2		SCREW, PHHD TRUSS 6-32 (.375)	9006021-07	16
2	2		WASHER, INT TOOTH #6	9006633	17
~~A/R~~	~~A/R~~		~~WIRE #14 AWG STRD (ORN)~~	~~9107370-33~~	~~18~~
A/R	A/R		WIRE #14 AWG STRD (BRN)	9107370-11	19
A/R	A/R		WIRE #14 AWG STRD (RED)	9107370-22	20
A/R	A/R		WIRE #14 AWG STRD (GRY)	9107370-88	21
A/R	A/R		WIRE #14 AWG STRD (BLK)	9107370-00	22
A/R	A/R		WIRE #14 AWG STRD (BLU)	9107370-66	23
A/R	A/R		WIRE #14 AWG STRD (YEL)	9107370-44	24
A/R	A/R		WIRE #14 AWG STRD (GRN)	9107370-55	25
A/R	A/R		WIRE #14 AWG STRD (VIO)	9107370-77	26
A/R	A/R		WIRE #14 AWG STRD (WHT)	9107370-99	27
REF	REF		MATE-N-LOK FIXTURES	C-IA-9305957-0-0	28
2	2		FLAT WASHER #6	9006686	29
A/R	A/R	J3 THRU J12	DECAL, PWR CONN.	A-DC-7409873-01	30
A/R	A/R	J1	DECAL, PWR CONN.	A-DC-7409873-00	31
1	~		BAR, BUS, BATTERY BACKUP	1213497	32
A/R	A/R		WIRE #14 AWG GRN/YEL	9107777-54	33
1	1		TERMINAL, RING BLU	9007928	34
1	1		TERMINAL, RING YEL	9007926-01	35
A/R	A/R	P13 THRU P16	DECAL, PWR CONN.	A-DC-7409872-2	36
A/R	A/R	P13 THRU P16	DECAL, PWR BOARD	A-DC-7417991-0-0	37

5410864-YA | 5410864

PARTS LIST

ETCH BOARD REV. D

FIRST USED ON OPTION MODEL: BAII-K

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

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	DESCRIPTION	DATE	APPROVED
D		ORIGINATED	3-MAY-77	M. CARRAFIELLO
C			3-MAY-77	M. CARRAFIELLO
B			3-MAY-77	M. CARRAFIELLO
A			3-MAY-77	M. CARRAFIELLO

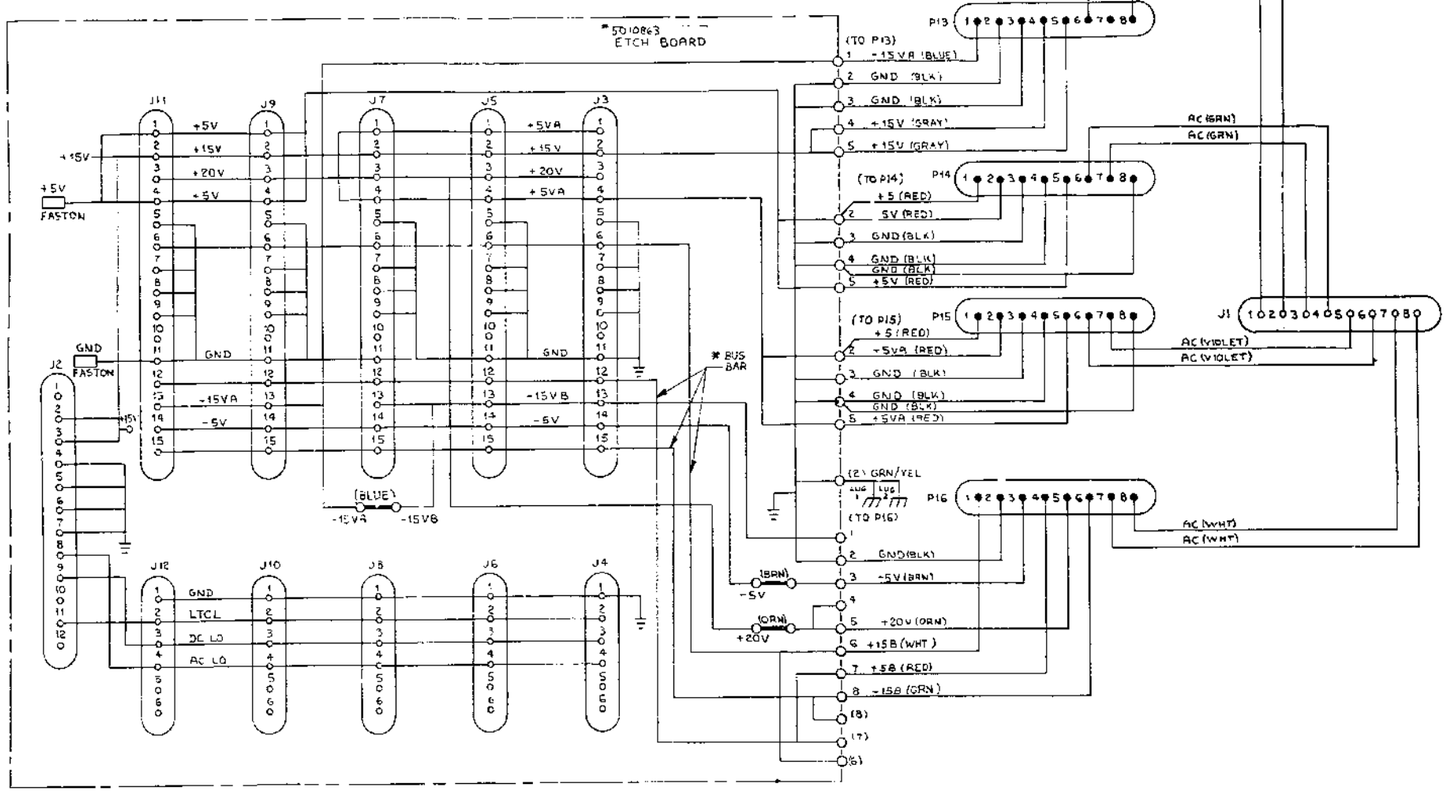
DRN R. Bagley DATE 6/14/76
CHK DATE
ENGR DATE
PROJ DATE
PROG DATE
NEXT HIGHER ASSY 0-UA-BAII-K-Ø
SCALE 1=ONE
SHEET 1 OF 3

digital

TITLE: POWER DISTRIBUTION BOARD

SIZE D | CODE CS | NUMBER 5410864-0-1 | REV. E
DIST.

461



* BUS BAR USED IN THE YA VARIATION ONLY

REVISIONS		
CHK	CHANGE NO	REV

TITLE PWR DIST BOARD
SIZE D
CODE CS
NUMBER 5410864-C-1
REV. L
SCALE NONE
SHEET 2 OF 3
DIST.

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WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	LENGTH	SIGNAL NAME
24	14	YEL	J1-1	8	P13-8	7	12.5"	AC/H745
24		YEL	J1-2		P13-6		12.5"	AC/H745
25		GRN	J1-3		P14-7		11"	AC/H744-1
25		GRN	J1-4		P14-6		11"	AC/H744-1
26		VIO	J1-5		P15-7		8.75"	AC/H744-2
26		VIO	J1-6		P15-6		8.75"	AC/H744-2
27		WHT	J1-7		P16-8		11.25"	AC/H754
27		WHT	J1-8	8	P16-7		11.25"	AC/H754
23		BLU	PDBP13-1	SOLDER	P13-1		5"	-15V
22		BLK	PDBP13-2		P13-2			GND
22		BLK	PDBP13-3		P13-3			GND
21		GRY	PDBP13-4		P13-4			+15V
21		GRY	PDBP13-5		P13-5			+15V
20		RED	PDBP14-2		P14-2			+5V
22		BLK	PDBP14-3		P14-3			GND
22		BLK	PDBP14-4		P14-4			GND
20		RED	PDBP14-5		P14-5			+5V
20		RED	PDBP15-2		P15-2			+5V
22		BLK	PDBP15-3		P15-3			GND
22		BLK	PDBP15-4		P15-4			GND
20		RED	PDBP15-5		P15-5			+5V
22		BLK	PDBP16-2		P16-2			GND
19		BRN	PDBP16-3		P16-3			-5V
18		ORN	PDBP16-5		P16-5	7	5"	+20V
23		BLU	PDP-15A		PDB-15B	SOLDER	1.75	-15V
18		ORN	PDBP16-5		PDB +20V		5"	+20V
19		BRN	PDBP16-3	SOLDER	PDB-5V		2"	-5V
33		GRN/YEL	LUG 1	35	PDBP16-2	SOLDER	11"	SAFETY GND
33					LUG 2	34	15"	SAFETY GND
20		RED	PDBP16-7	SOLDER	P16-4	7	5.5"	+5B
20		RED	PDBP15-1		P15-1		5"	+5V
20		RED	PDBP14-1		P14-1		5"	+5V
22		BLK	PDBP15-4		P15-8		5.5"	GND
22		BLK	PDBP14-4		P14-8			GND
27		WHT	PDBP16-6		P16-1			+15B
25	14	GRN	PDBP16-8	SOLDER	P16-6	7	5.5"	-15B

YA VARIATION ONLY. — SEE NOTE 1

BUS BAR CONNECTIONS FOR YA VARIATION		
LEVEL A	PDBP16-6 J11,J9,J7,J5,J3 ALL PIN #6	+15V.B
LEVEL B	PDBP16-7 J11,J9,J7,J5,J3 ALL PIN #12	+5V
LEVEL C	PDBP16-8 J11,J9,J7,J5,J3 ALL PIN #15	-15V.B

NOTES:

1. CS REV. K AND EARLIER PWR DISTRIBUTION BOARDS HAD THE GREEN AND WHITE WIRES REVERSED IN COLOR ONLY. THE POINT-TO-POINT CONNECTIONS REMAIN THE SAME.

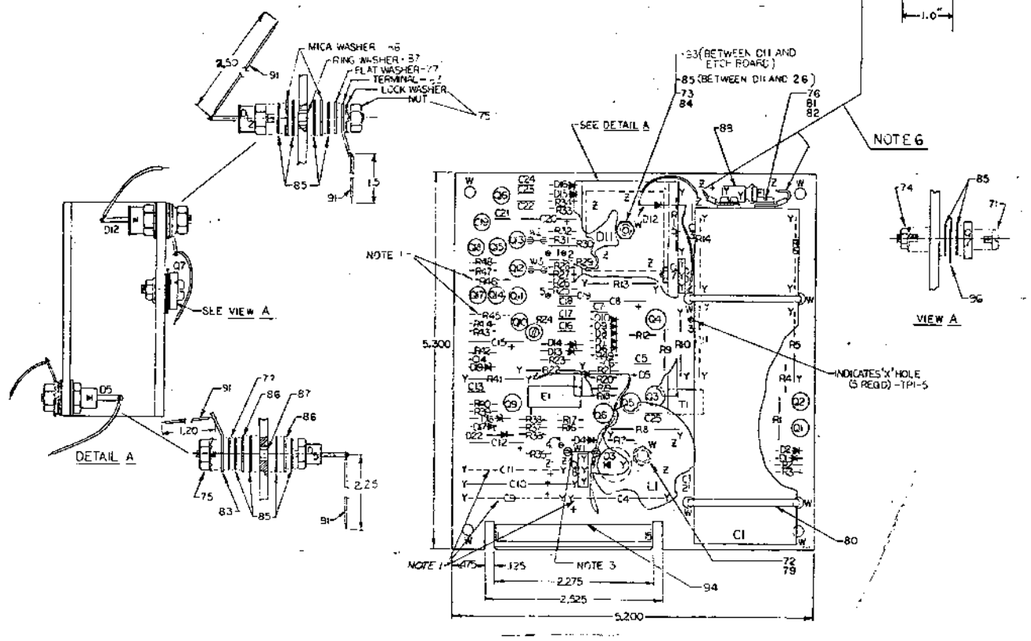
REVISIONS		
CHR	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
PWR DIST BOARD	D	CS	5410864-0-1	L
SCALE NONE	SHEET 3 OF 3	DIST.		

DCS 5410864-0-1 L

NOTES:

1. P45,P46,C6,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 +5V IS DUE TO CROWBAR 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 97.



REF	REF		I-Y COORDINATE HOLE LOCATION	K-CO-5411086-0-1	1
REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411086-0-5	2
REF	REF		MODULE ECO HISTORY	S-MH-5411086-0-0	3
1	1		ETCHED CIRCUIT BOARD	5011085	4
0	1	C2	CAPACITOR 56PF 100V 5%	1000012	5
4	4	C18,C17,C16,C21	CAPACITOR 330PF 100V 5%	1000023	6
3	5	C3,C13,C19,C22,C23	CAPACITOR .01uf 100V 20%	1001615-01	7
1	3	C8,C12,C15	CAPACITOR 2.2uf 35V 10%	1002431	8
2	2	C8,C25	CAPACITOR 18PF 100V 5%	1002608	9
1	1	C24	CAPACITOR 1.5uf 35V 10%	1003725	10
4	4	C5,C7,C14,C24	CAPACITOR .22uf 50V -20% +80%	1010274-01	11
0	1	C10	CAPACITOR 500uf 25V -10% +75%	1010509-01	12
1	1	C1	CAPACITOR 6400uf 50V -10% +75%	1010851	13
1	2	D2,D19	DIODE IN748A	1100122	14
0	1	D5	DIODE IN2970B	1100134	15
0	1	D3	DIODE MR1133B	1103341	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	1105798	19
0	1	D12	DIODE IN3589	1109440	20
0	1	D13	DIODE IN967A	1110088	21
~~2~~	~~2~~	~~D20,D21~~	~~DIODE MV5054-1 (LIGHT EMITTING)~~	~~1110224~~	~~22~~
1	1	D11	DIODE BRIDGE 200V 2A	1110714	23
2	2	D13,D14	DIODE 1TTZ429	1110525	24
0	1	F1	FUSE PICO 5A	1205747	25
0	1		HEAT SINK	12111986	26
0	1	R23	RESISTOR 47 1/4W 5%	1300202	27
0	2	R7,R46	RESISTOR 100 1/4W 5%	1300229	28
0	1	R41	RESISTOR 100 1W 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,R28	RESISTOR 1K 1/4W 5%	1300365	33
0	1	R1	RESISTOR 1.5K 1/2W 5%	1300394	34
0	1	R16	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
2	3	R2,R44,R48	RESISTOR 750 1/4W 5%	1301401	40
0	1	R38	RESISTOR 880 1/4W 5%	1301424	41
0	1	R10	RESISTOR 22K 1/4W 5%	1301808	42
1	1	R13	RESISTOR 1K 2W 5%	1301552	43
0	1	R9	RESISTOR 27 1/2W 5%	1302253	44
2	2	R19,R21	RESISTOR 36K 1/4W 5%	1302394	45
0	1	R35	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%	1303082	49
1	2	R17,R22	RESISTOR 1K 1/4W 1%	1303114	50
1	1	R31	RESISTOR 2.81K1/4W 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,F48	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	DESCRIPTION	CHANGE NO	DATE	APPROVED
A	ORIGINAL RELEASE	5411086-00001	2-14-72	G. Brown
B	CHANGED P45 TO P46	5411086-00004	4-17-72	A. Baron
C	ADDED W1	5411086-00006	4-26-72	G. Brown
D	ADDED W2,W3	5411086-00007	5-4-72	E. Carter
E	ADDED W2,W3	5411086-00005	5/15/72	E. Lora
F	ADDED W2,W3	5411086-00008	6-14-72	V. Rosen
G	ADDED W2,W3	5411086-00009	6-14-72	V. Rosen
H	ADDED W2,W3	5411086-00010	6-14-72	V. Rosen
J	ADDED W2,W3	5411086-00003	6-14-72	V. Rosen
K	ADDED W2,W3	5411086-00011	6-14-72	V. Rosen

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED IN OPTION MODEL

ETCH BOARD REV. D

		DATE
DRN.	G. Brown	10-9-72
CHK'D.	Tom	10/9/72
SYS. ENG.	[illegible]	10/13/72
PROJ. ENG.	[illegible]	10/13/72
PROD. ENG.	[illegible]	10/13/72
NEXT HIGHER ASSY		

SCALE

SHEET 1 OF 4

digital

TITLE: PWR. LINE MONITOR/15V REG.

SIZE: D | CODE | NUMBER: DCS 5411086-0-1 | REV: E

DIST.

464

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 5.82K 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	1309159-10	59
1	1	R32	RESISTOR 19.2K 1/4W 1%	1309412	60
0	2	R5,R6	RESISTOR .2 5W 5% WW	1309804	61
0	1	Q7	TRANSISTOR NJE3055	1510555	62
4	8	Q2,3,9,Q0,Q18,Q19	TRANSISTOR MPSA05	1510705	63
0	2	Q4,Q6	TRANSISTOR MPS A55	1510706	64
0	1	Q8	TRANSISTOR 2N 4441	1505867	65
4	5	Q1,Q11,Q12,Q13,Q16	TRANSISTOR 2N 4258	1505142	66
4	4	Q14,Q15,Q17,Q18	TRANSISTOR 2N 5433	1511606	67
0	1	L1	INDUCTOR, 500 uh	1611868	68
1	1	T1	TRANSFORMER	1612028	69
0	1	E8	I.C. DEC 723	1910415	70
0	1		SCREW, PHH #4-40 X 7/16 LG.	9008012-1	71
0	1		SCREW, PHH #8-32 X 1/4 LG.	9008020-1	72
0	1		SCREW, PHH #8-32 X 7/8 LG.	9008027-1	73
0	1		KEP NUT #4-48	9008551	74
0	2		KEP NUT #10-32	9008588	75
2	2		WASHER, ITTLWR #10	9008635	76
0	2		WASHER, FLAT	9008596	77
0	2	(W1)	SPLIT LOK	9008735	78
0	1		SPACER, 1/4AF X 1/2	9008861	79
4	4		CABLE TIE	9007880	80
2	2		TERMINAL	9008230	81
2	2		SCREW, PHH #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	9008258	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%	1301890	89
0	1	W1	JUMPER	9009185	90
2	W2		WIRE #18 STRANDED BLK	9107350-0-0	91
REF	REF		MODULE TEST PROCEDURE	A-SP-5411086-TP-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-SP-5411086-0-0	95
0	1		INSULATOR, THERMA FILM	9009597	96
A/R	A/R	W2,W3	WIRE #22 B.E.	310-5[illegible]-[illegible]	97

FIRST USED ON OPTION MODEL

PARTS LIST

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

CHG	CHANGE NO	REV

REVISIONS

DEC NO.	EIA NO	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

DRN. F. Vincent DATE 10-7-74
CHK D. [illegible] DATE 10-10-74
E/A J. Brown DATE 10/11/74
PE3I E/E Paul Brown DATE 10/11/74
PROJ. E/E [illegible] DATE 11/4/74
NEXT HIGHER ASSY

SCALE —
SHEET 2 OF 4

digital EQUIPMENT CORPORATION

TITLE PWR. LINE MONITOR/15V REG.

SIZE D CODE CS NUMBER 5411086-0-1 REV. L

DIST.

465

+25 TO +45 VDC

R8 470 2W

R13 1K 2W

TP3

C25 18 pf

R21 30K

Q3 MPS A05

R20 1K

R18 1K

Q5 MPS A05

R19 30K

C6 13pf

T1

C8 2.2 µf 35V

D22 D672

D8 D672 D9 D672

D2 D672 D7 D672

C7 .22µf 50V

D10 1N4744 13V

5 -10V TO -15V (TEST POINT)

R48 750

Q19 MPS A05

R49 220

R47 13K

R43 10K

(ENG OPTION SEE NOTE 1) R46 1/2W

Q15 2N5433

Q16 2N5433

3 AC LO 1

8 AC LO 2

4 LO GND

D15 D672 AC-2

D16 D672 AC-1

20V TO 33V RMS AC INPUT

P34 5.11K 1%

R33 5.11K 1%

C24 .22µf 50V

C24 1.5µf 35V

R32 18.2K 1%

TP1

TP2

R31 2.61K 1%

R30 5.89K 1%

Q16 2N4250

Q13 2N4250

Q12 2N4250

Q11 2N4250

R23 3.48K 1%

R26 5.62K 1%

TP5

R27 6.99K 1%

C21 330 pf

C18 330 pf

C17 330 pf

C16 330 pf

R25 3.16K 1%

W5

W2

D14 ITT2429 5.1V

D13 ITT2429 5.1V

C22 C24µf 100V

C23 .01µf 100V

R28 1K 1%

C19 .01µf 100V

RETURN

R44 750

Q18 MPS A05

Q14 2N5433

Q17 2N5433

1 DC LO 2

2 DC LO 1

R45 1/2W (SEE NOTE 1 (ENG. OPTION))

+25 TO +45VDC

TO 20V TO 33V RMS AC INPUT: AC-1 15, AC-2 14

C11 8400µf 50V

R15 3.3K 1W

D11

D19 3.9V 1N748A

R22 390Ω 2W

C18 .22µF 50V

LINE CLK L

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.		

Q66

+25 TO +45 VDC

F1

25 - 45 VDC

C3 .01uf

R14 22Ω 2W ±10%

D12 IN3880

L1 500uH

Q7 MJE 3055

Q4 MPS A51

R9 27 1/2W

R11 6.8Ω 2W

R12 22Ω

R10 2.2K 1W ±10%

TP4

+15V

4.28V

D4 TN4004

R35 24.9K 1%

D3 MR1033B

D5 IN2975B 6.8V

R41 120Ω 1W

9 10 +15VDC ± 5% @ 4A MAX (SEE NOTE 2)

7 +8VDC ± 10% @ 1A MAX (SEE NOTE 2)

D17 IN4794 15V ± 10%

C12 2.2uf 35V

1/2 723C E1

REF

R34 511 1%

R24 200 4.28V

R17 1K 1%

R39 909 1%

C15 2.2uf 35V

R16 22K 1%

1/2 723C E1

COMP

R23 47

Q6 MPS A05

R7 100

D1 D672

C2 56pf

R2 75Ω

D2 IN748A 3.9V

R3 3.3K

Q1 2N4250

R1 1.5K 1/2W

R42 10K 1%

W1 (SEE NOTE 3)

R38 68Ω

R37 1Ω

Q5 MPS A55

Q8 2N4441

C13 .01uf

R40 10Ω

D18 IN967A 18V

C13 500uf 25V

C8 50uf 50V

C9 50uf 50V

C11 50uf 50V

SEE NOTE 1

Q2 MPS A05

R4 22Ω

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 —/4— SHEET 1 OF 4	DIST.			

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

B-TC-H7441-Ø-1	H7441 UNIT ASSY (FIELD MAINT. PR. SET)
D-UA-H7441-Ø-Ø	H7441 UNIT ASSY
D-UA-5412441-0-0	REGULATOR +5V 32A
B-PL-5412441-0-0	REGULATOR +5V 32A (PL)
D-CS-5412441-0-1	REGULATOR +5V 32A (CS)

UNIT VARIATIONS COVERED BY THIS PRINT SET
H7441-Ø

H7441
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØ271

REVISIONS	REV.	CHG. NO.	DATE

USED ON OPTION/MODEL	
7013323	
1134A	

SHEET 1 OF 1

DRN.	D. Healy	DATE NOV 76
CHK'D	D. Healy	DATE NOV 76
PROJ. ENG.		DATE 12-20-76
FIELD SERV.		DATE 12-20-76

digital

TITLE: H7441 UNIT ASSY

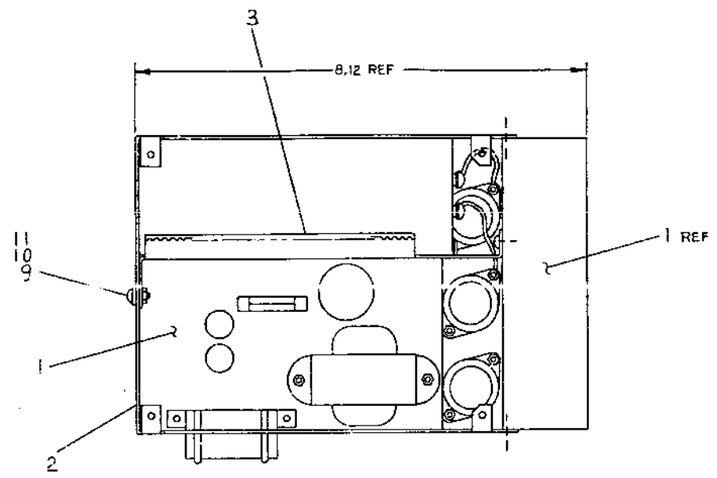
SIZE	CODE	NUMBER	REV.
B	TC	H7441-Ø-1	

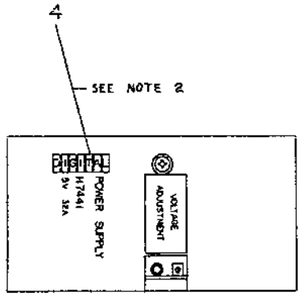
DIST.

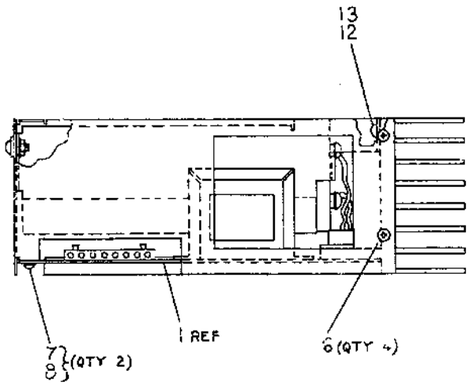
NOTES:

~~1. ATTACH (RED) WIRE FROM ITEM (5) R26 TO POSITIVE (+) TERM OF CAPACITOR ITEM (5). ATTACH REMAINING (BLK) WIRE TO THE (-) TERMINAL OF THE CAP (ITEM 5).~~

2. PEEL AND ATTACH ITEM 4 TO ITEM 2 AS SHOWN.







1	WASHER, LOCK INT. TOOTH #6	9006633	13
1	SCR, PHL PAN HD. #6-32X.38	9006022-01	12
1	NUT, KEPS #6-32X.31	9006560	11
1	WASHER, FLAT #6	9006659	10
1	SCR, PHL PAN HD. #6-32X.31	9006021-01	9
2	WASHER FLAT #4	9008172	8
2	SCR, PHL. PAN HD #4-40X.25	9008301-01	7
4	SCR, SELF TAPPING #4-40X.31	9009142-2	6
~~1~~	~~CAPACITOR, 24K, ±, 50 VDC~~	~~10107103-00~~	~~5~~
1	DECAL	B-1A-7416945-10	4
1	BRACKET, CAPACITOR	D-1A-7417543-0-0	3
1	BRACKET, REGULATOR	D-1A-5309756-09	2
1	REGULATOR, +5V, 32 A	D-UA-5412441-0-0	1
	DESCRIPTION	DWG/PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (UNLESS OTHD)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 0.2	OVER 0.2 TO 1.0	OVER 1.0 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 100.0
SURFACE QUALITY IN MICROINCHES	MEDIUM	±.005	±.008	±.012	±.015	±.008	±.04
	PREFERRED	±.012	±.016	±.020	±.04	±.020	±.1

QUANTITY IN VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG.

MATERIAL: SEE PARTS LIST

FINISH

DRN. Schlapp March 76
CHK. [illegible] March 76
ENG. [illegible] March 76
PROJ. ENG. [illegible] 4-1-76
PROD. [illegible] 4-1-76
NEXT HIGHER ASSY.
B-00-H7441-0
SCALE NONE
SHEET 1 OF 1

FIRST USED ON 1130 A

digital

TITLE: H7441 UNIT ASSY

SIZE D | CODE UA | NUMBER H7441-0-0 | REV.

DIST.

REVISIONS			
SYM	DRAWING NO.	REV.	
U	H7441-00001	A	
V	[illegible]		
W	[illegible]		
X	[illegible]		
Y	H7441-00003	B	
Z	[illegible]		
A	[illegible]		
B	[illegible]		
C	[illegible]		
D	[illegible]		
E	[illegible]		

WIRE & BUS STRAP RUNS

NO	FROM	TO	WIRE OR BUS LENGTH
①	FEEDTHRU AT F1	TERMINAL D1	#14 AWG 4" SEE NOTE 3
②	S1	FEEDTHRU SHOWN	#18 AWG 3"
③	S1	FEEDTHRU SHOWN	#18 AWG 2.5"
④	D12	FEEDTHRU SHOWN	DEC PT #12-14074-05 SEE NOTE 4
⑤	TERMINAL D1	D12	#14 AWG 5" SEE NOTE 5
⑥	TERMINAL D1	Q2	#14 AWG 2" SEE NOTE 6
⑦	Q2	Q1	DEC PT #12-14074-04 SEE NOTE 7
⑧	TERMINAL D1	FEEDTHRU SHOWN	#14 AWG 2.75" SEE NOTE 2

NOTES: 1. MOUNT WIRES PER IA DRAWING NO. IA 7013274. RED WIRE TO CASE Q2 AND POSITIVE TERMINAL C1 & BLACK WIRE TO CASE D12 AND NEGATIVE TERMINAL C1.
2. WIRE RUN ⑧ IS SOLDERED AT D1
3. WIRE RUN ① IS SOLDERED AT D1
4. STRAP ④ (ITEM #86) IS SOLDERED AT FEEDTHROUGH SHOWN AND MOUNTED UNDER RING LUG OF D12.
5. WIRE RUN ⑤ IS SOLDERED AT D1 AND CRIMPED TO RING LUG ITEM #87 OF D12
6. WIRE RUN ⑥ IS SOLDERED AT D1 AND CRIMPED TO RING LUG ITEM #87 OF Q2
7. BUS STRAP ⑦ (ITEM #85) IS MOUNTED UNDER RING LUG OF Q2 AND ON CASE OF Q1.
8. TORQUE HARDWARE ON Q1, Q2, S4 AND D12 TO 8 INCH-LBS. FROM NUT SIDE ONLY. TORQUE OTHER HARDWARE TO DEC STD VALUES
9. APPLY THERMAL COMPOUND TO D1 (ITEM 19) ONLY.

VIEW C-C

VIEW D-D

VIEW E-E

VIEW B-B

VIEW A-A

COMPONENT SIDE VIEW

REFER TO NOTE 1

FLAT SIDE

NOTES:
1. INDICATED DRILL POINTS AT C11 AND C16 SHOULD NOT BE USED FOR DRILL ALIGNMENT DURING MANUFACTURE. THESE OVERSIZED PADS WILL NOT CENTER WITH DRILL BORING.

CHANGE NO	REV
DESIGNED AT DIGITAL	H
TO CAD	J
RADIATION	J
RELEASED	J

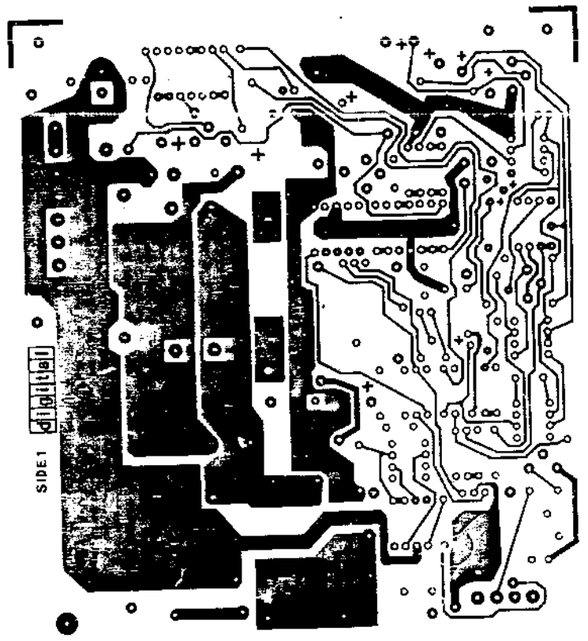
ETCH REV. F
P.C. DESIGN DATA BASE REV. 5-F4

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	
SCALE 2/1	
SHT. 1 OF 3	
NEXT HIGHER ASSY. B-00-54244-00	

digital

TITLE +5V, 32 AMP REGULATOR

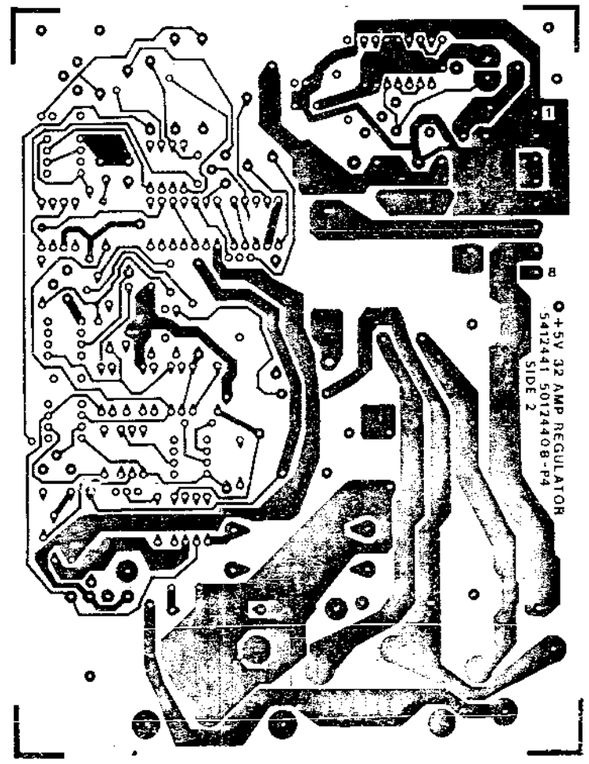
SIZE	CODE	NUMBER	REV
D	UA	54-12441-00	J



REVISIONS		
CHK	ENGINEER NO	REV

5V. 32AMP REGULATOR DUA 5412441-2-Ø

471



REVISIONS		
SYM	CHANGE NO	REV

+5V/32AMP REGULATOR D-A-64-244-00-2

2/ 3

472

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
1	1	D-MD-5012440-0-0	5012440-00	5412441	1	
2	2		1000009-00	33.0 MMF 100V 5%200PPM DM15S (10-00	1	C20
3	3		1000021-00	220.0 MMF 100V 5%200PPM DM15S (10-00	1	C9
4	4		1001610-01	.01 MFD 100V OR 50V Z5U DISC/800PF MIN	5	C4,C5,C17,C18,C21
5	5		1002627-00	2.2MFD 20V 10% 150D S.TA (10	2	C2,C7
6	6		1004813-00	10 MFD 20V 10% 150D S.TA (10-00	1	C8
7	7		1010279-00	.47 MFD 25V 20% 2C023 CER.	1	C19
8	8		1010646-00	.015 MFD 50V 2% M.POLYCARB	2	C3,C10
9	9		1010702-00	24,000 MFD 50V G% 36D AL EL	1	C1
10	10		1012607-00	560 MFD 20V H% 672D AL EL	1	C11
11	11		1012607-01	1200 MFD 6.3V H% 672D AL EL	1	C16
12	12		1009964-00	.68 MFD 35V 10% 150D S.TA	1	C12
13	13		1001776-00	1 MFD 35V 10% 150D S.TA (10-00	3	C13,C14,C22
14	14		1000024-00	470.0 MMF 100V 5%200PPM DM15S (10-00	1	C6
15	15		1105508-00	1N 823 VZ= 6.2 5% .40W Y	1	D18
16	16		1102808-00	1N 752A VZ= 5.6 5% .40W P	1	D22
17	17		1103341-00	MR1033B PIV=300 I= 3A Z44 SM	1	D19
18	18		1105275-00	D 672 TR= 15NS PIV= 60V SP	15	D3-D6,D9-D11,D13-D17,D23,D25,
					CONT	D27
19	19		1110051-00	DM 16 ASSY@200V & 25A #990-3	1	D1
20	20		1110324-00	LED 1MCD@10MA #MV5054-1#HP4882	1	D26
21	21		1110836-00	1N 759A VZ= 12.0 5% .40W P	1	D2
22	22		1110968-00	2N 5062 SCR@100V I=.8A T092	1	D20
23	23		1112595-01	A114B PIV=200 I= 1A	2	D7,D8
24	24		1113496-00	UES602R PIV=100 I=30A T03	1	D12
25	25		1214074-04	STRAP,THERMAL 2 HOLE	1	
26	26		1214074-05	STRAP,THERMAL LUG .815	1	
27	27		1209070-00	FUSE, SUB-MINI, 5.000A, 125V, RADIAL LEAD	1	F2
28	28		1209340-00	MATE-N-LOK 8PIN,HOUSING,SKT	1	J1
29	29		1209456-01	MATE-N-LOK SKT PCB TAB LOOSE	8	

REVISION HISTORY			VARIATIONS FOR THIS ASSY.
CHK	ECO NO	REV	
			00
SC	00008	J	

FIRST USED ON:

MADE BY:	D.SIREEN	DATE: 10-MAR-78
CHECKED:	F.GAROFALO	DATE: 10-MAR-78
DSN.ENG.:	R.DAY	DATE: 10-MAR-78
PROD.:	R.B.KING	DATE: 10-MAR-78
RESP.ENG.:	R.DAY	DATE: 10-MAR-78

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PARTS LIST

+5V 32 AMP REGULATOR

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	5412441-0-0	J

EDIT# 6

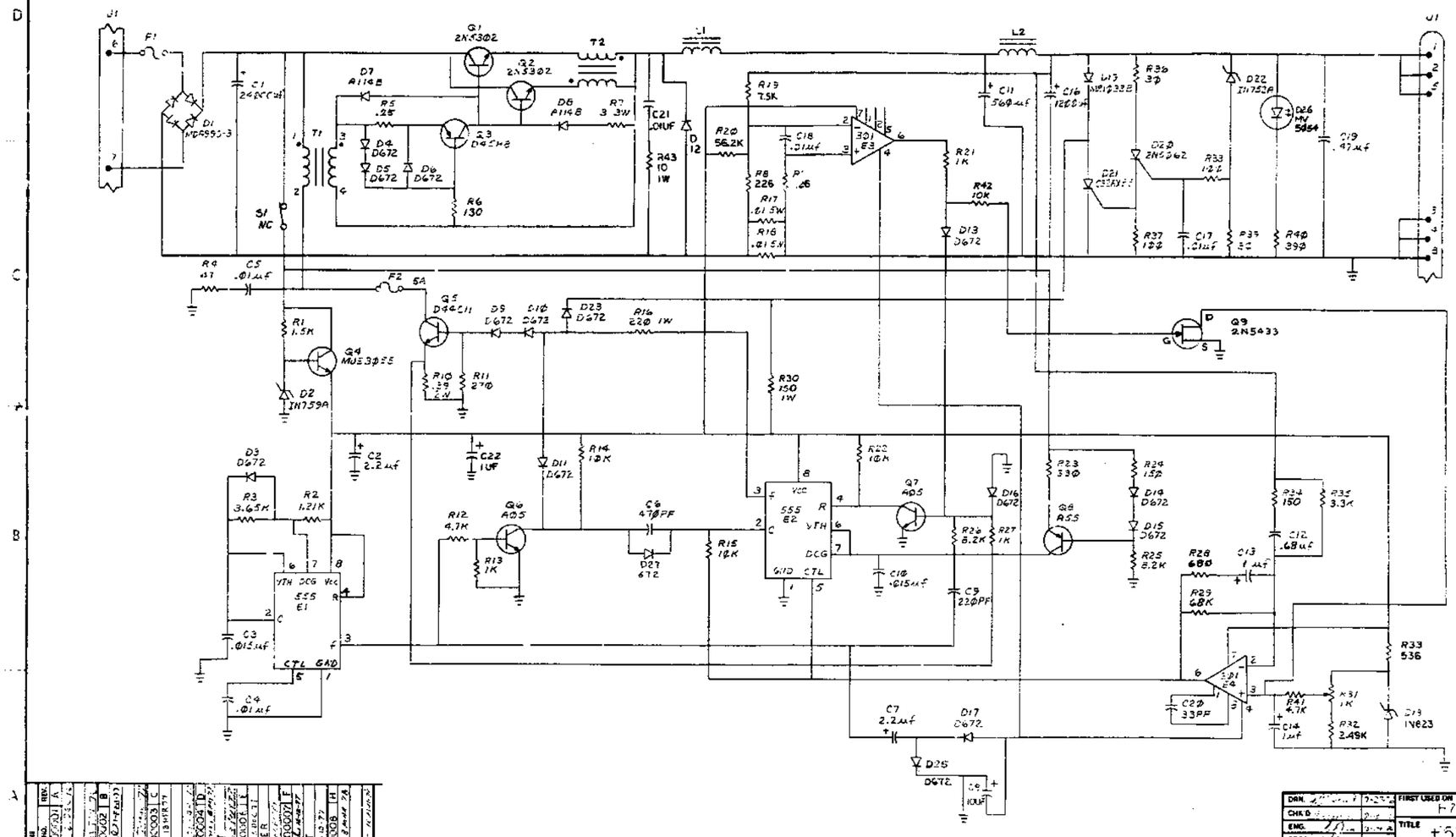
ASSY.NO.: D-UA-5412441-0-0

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
30	30		1213071-02	INSULATOR,RUBBER SILICONE SM	3	
31	31		1212787-00	THERMOSTAT,O@212,C@182,NC	1	S1
32	32		1210737-02	HEAT SINK,REGULATOR	1	
33	33		1213071-06	INSULATOR,RUBBER SILICONE	1	
34	34		1312626-00	2.49 K 1/4W 1% RN55D-F 100PPM (13-00	1	R32
35	35		1300229-00	100 1/4W 5% CC (13-00	2	R37,R38
36	36		1300250-00	150 1/4W 5% CC (13-00	2	R24,R34
37	37		1305322-00	7.5 K 1/4W 1% RN55D-F 100PPM (13-00	1	R19
38	38		1300295-00	330 1/4W 5% CC (13-00	1	R23
39	39		1301424-00	680 1/4W 5% CC (13-00	1	R28
40	40		1301327-00	68 K 1/4W 5% CC (13-00	1	R29
41	41		1300439-00	3.3 K 1/4W 5% CC (13-00	1	R35
42	42		1310219-00	.25 3W 1% WW (13-00	1	R5
43	43		1300248-00	130 1W 5% CC (13-00	1	R6
44	44		1302644-00	226 1/4W 1% RN55D-F 100PPM (13-00	2	R8,R9
45	45		1300277-00	220 1W 10% CC (13-00	1	R16
46	46		1300309-00	390 1/4W 5% CC (13-00	1	R40
47	47		1312922-00	536 1/4W 1% RN55D-F 100PPM (13-00	1	R33
48	48		1300365-00	1 K 1/4W 5% CC (13-00	3	R13,R21,R27
49	49		1300394-00	1.5 K 1/2W 5% CC (13-00	1	R1
50	50		1300447-00	4.7 K 1/4W 5% CC (13-00	2	R12,R41
51	51		1300479-00	10 K 1/4W 5% CC (13-00	4	R14,R15,R22,R42
52	52		1301695-00	47 1/2W 5% CC (13-00	1	R4
53	53		1301972-00	270 1/4W 5% CC (13-00	1	R11
54	54		1312747-00	56.2 K 1/4W 1% RN55D-F 100PPM (13-00	1	R20
55	55		1302751-00	30 1/4W 5% CC (13-00	2	R36,R39
56	56		1302871-00	1.21 K 1/4W 1% RN55D-F 100PPM (13-00	1	R2
57	57		1303179-00	8.2 K 1/4W 5% CC (13-00	2	R25,R26
58	58		1305337-00	3.65 K 1/4W 1% RN55D-F 100PPM (13-00	1	R3
59	59		1309143-07	1 K 3/4W10% POT 100PPM	1	R31
60	60		1310868-00	.39 2W 5% WW (13-00	1	R10
61	61		1313712-00	.01 5W 3% WW (13-00	2	R17,R18
62	62		1312682-00	3 3W 5% (13-00	1	R7
63	63		1300256-00	150 1W 10% CC (13-00	1	R30
64	64		1300171-00	10 1W 5% CC (13-00	1	R43
65	65		1510196-00	2N 5302/HSNPN 200WC SI 60 40 M	2	Q1,Q2
66	66		1510555-00	MJE3055 NPN 90WC SI 60 20 Y	1	Q4
67	67		1510705-00	XA 05 NPN 500MW SI 60 50 P	2	Q6,Q7
68	68		1510706-00	XA 55 PNP 500MW SI 60 50 P	1	Q8
69	69		1510708-00	D 45H8 PNP 50WT SI 60 60 Y	1	Q3
70	70		1510928-00	C32AX135 SCR@100V I=25A	1	D21
71	71		1512790-00	D 44C11 NPN 30W SI 80 40	1	Q5
72	72		1511686-00	DEC5433 FET N 350MW 10 25 1A 20U	1	Q9
73	73		1612584-00	50 UH 30A	1	L1
74	74		1612592-00	PULSE XFMR,RATIO 4:1	1	T1
75	75		1613713-00	CHOKE, 5 UH 32A	1	L2
76	76		1613714-00	2 UH 20A	1	T2
77	77		1910282-00	301AN OR AMP	2	E3,E4

	TITLE	SIZE	CODE	DOCUMENT NUMBER	REV
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	PARTS LIST +5V 32 AMP REGULATOR	K	PL	5412441-0-0	J

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
78	78		1911944-00	555CN TIMER,FUNCT.BLOCK	2	E1,E2
79	79		7013274-00	JUMPER CAP TRAWS	1	
80	80		7013274-01	JUMPER CAP TRAWS	1	
81	81		7414765-00	HEATSINK	1	
82	82		9006633-00	WASHER,LOCK,INT,.280OD X .146ID X .018 THK	3	
83	83		9008172-00	WASHER, FLAT,SS .250 OD X .125 ID X .022 T	3	
84	84		9006660-00	WASHER, FLAT, .375 O.D. X .187 I.D. X .036	2	
85	85		9006653-00	WASHER, FLAT, .375 O.D. X .156 I.D. X .036	1	
86	86		9008082-00	WASHER, FLAT, FIBER OD. 1/2	2	
87	87		9007927-00	TERM RING 1POS INSULATED,16-14AWG,ROLL	2	
88	88		9006037-03	SCREW,TRUS,PHIL, 8-32X 3/8 SS/PAS	2	
89	89		9006557-00	NUT,KEP , 4-40X 1/4 AF CS	1	
90	90		9006563-00	NUT,KEP , 8-32 X11/32AF CS	2	
91	91		9007203-00	CLIP, FUSE, WITH STOP, SCREW MOUNTED	2	
92	92		9007226-00	FUSE, REG BLOW, 15.000A, 32V, GLASS	1	F1
93	93		9008268-00	COMPOUND, THERMAL JOINT	A/R	
94	94		9006012-01	SCREW,PAN ,PHIL, 4-40X 7/16 SS/PAS	2	
95	95		9009000-00	EYELET, ROLLED FLANGE, .121 OD X .156 LG	4	
96	96		9009769-00	WASHER, RECTANGULAR .405X.225X.060	1	
97	97		9006021-01	SCREW,PAN ,PHIL, 6-32X 5/16 SS/PAS	2	
98	98		9007660-00	SPACER, FIBER, RND, 4-40, .250 X .500 LG	1	
99	99		9007801-00	WASHER, LOCK, S.S. #6	7	
100	100		9008957-00	NUT,HEX , 6-32X 1/4 AF X 3/32 THK SS	7	
101	101		9007793-01	SCREW,PAN ,PHIL, 6-32X 9/16 SS/PAS	8	
102	102		9006010-01	SCREW,PAN ,PHIL, 4-40X 5/16 SS/PAS	1	
103	103		9107360-99	WIRE,STRND,18AWG,IPVC UL1429	(91-00 A/R	
104	104		9107370-00	WIRE,STRND,14AWG,IPVC UL1534	(91-00 A/R	

	TITLE	SIZE	CODE	DOCUMENT NUMBER	REV
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	PARTS LIST				
		K	PL	5412441-0-0	J



DRAWING NO.	REV.	DESCRIPTION
54124411-00001	A	
54124411-00002	B	
54124411-00003	C	
54124411-00004	D	
54124411-00005	E	
54124411-00006	F	
54124411-00007	G	
54124411-00008	H	

DRN.		
CHK'D		
ENG.		
PROJ. ENG.		
PROD.		
NEXT HIGHER ASSY.		
SCALE		
SHEET	1 OF 1	

FIRST USED ON: H7441

digital

TITLE: +5V 32 AMP REGULATOR

SIZE	CODE	NUMBER	REV.
D	CS	54124411-0-1	H

DIST.

476

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H745-Ø		
CIRCUIT SCHEMATIC	D-CS-H745-Ø-1	MFG. SET	
UNIT ASS'Y	E-UA-H745-Ø-Ø		
		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	
	11745-16	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 16-13251-1062-1A-MY3

DRB 106

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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

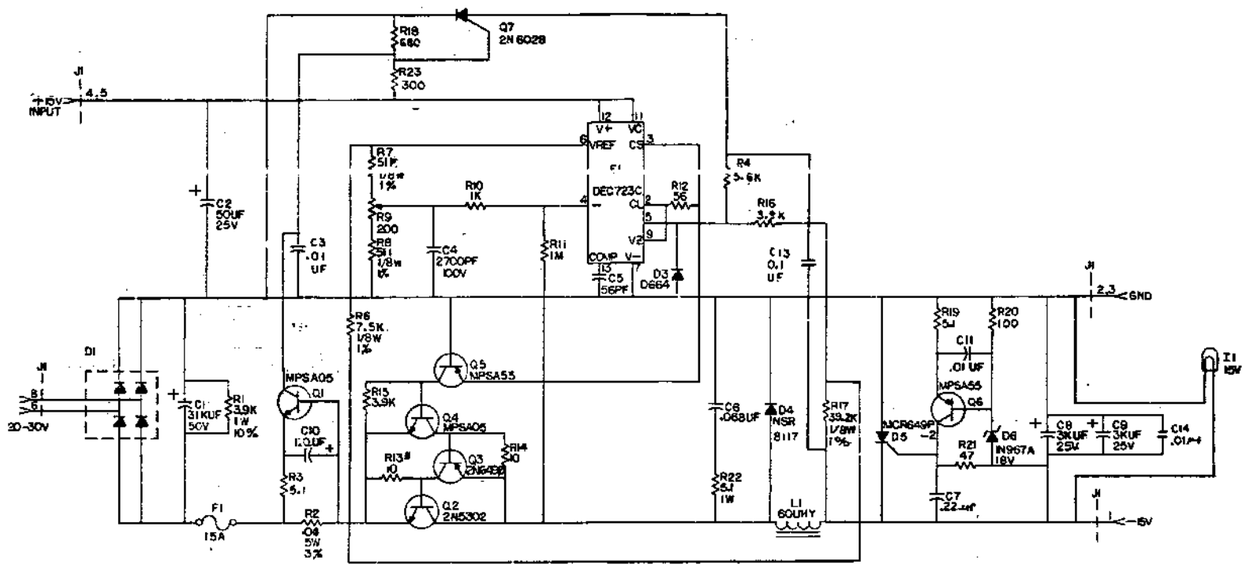
TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

TITLE -15V REGULATOR

SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER H745-Ø | REV R

DRB 108A



* FUSIBLE
UNLESS OTHERWISE INDICATED:
RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
		ETCH BOARD REV E		

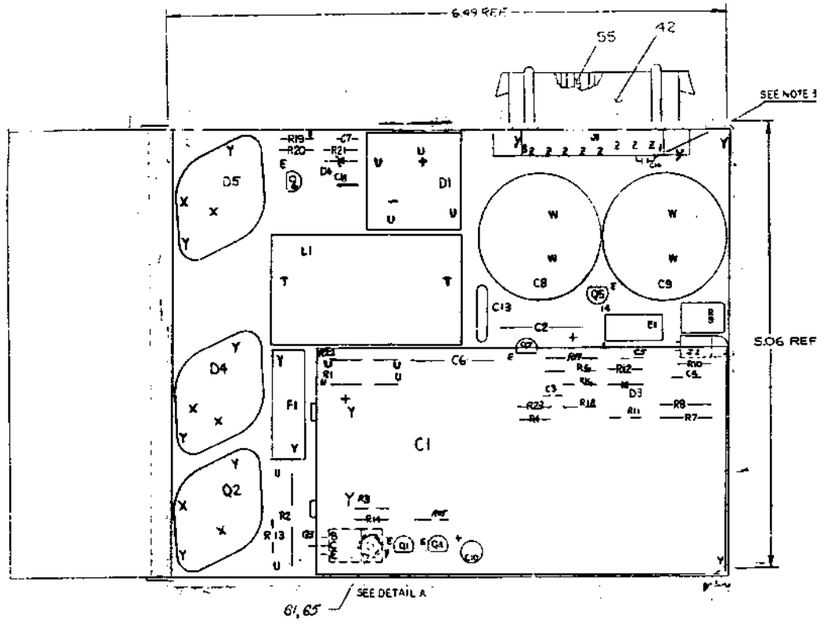
SEMICONDUCTOR CONVERSION CHART

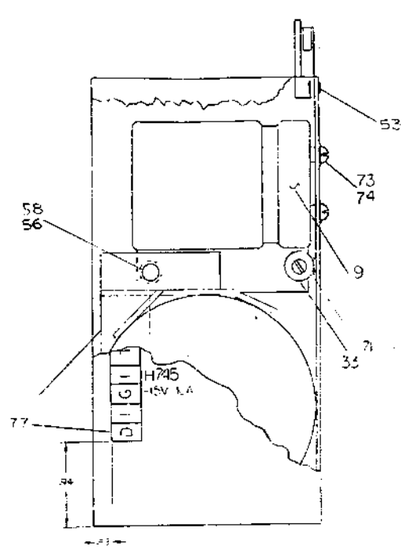
DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	IN 3606	045H8	
NSR 8117		2N 6028	
MCR 849P-2			
IN 967A	SAME		
2N 5302			
MPS A05			
MPS A55			

DRN. Roger J. DATE 11-8-71
CHK'D Ronald Moore DATE 11-9-71
ENG. APPR. DATE 11/72
PROJ. MGR. DATE 1/3/72
PROD. CONTROL DATE 1/9/72
NEXT HIGHER ASSY

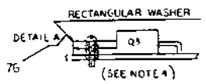
DIGITAL EQUIPMENT CORPORATION
TITLE: -15V REG.
SIZE D CODE CS NUMBER H7451-0-1
SCALE SHEET 1 OF 1

479





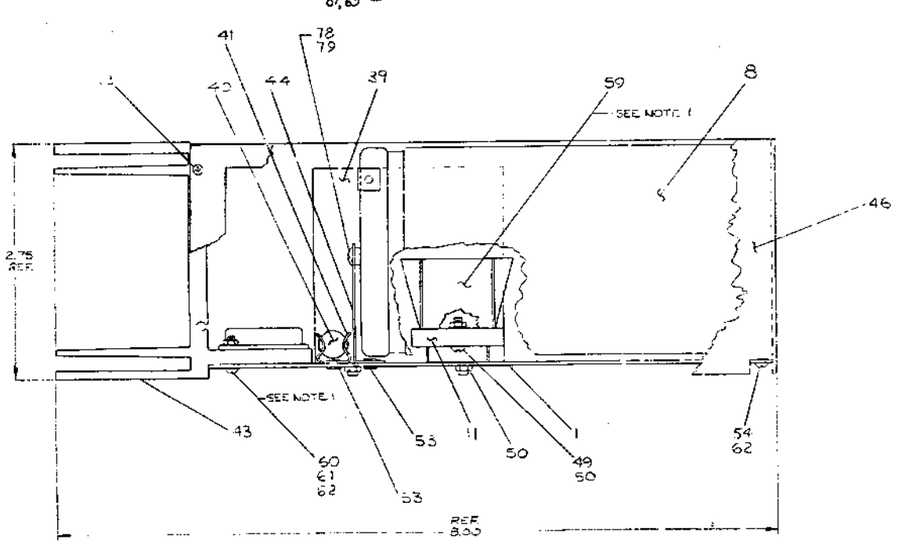
NOTE:
3. INSERT C14 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS 1-2.



DETAIL A

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 #51 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND INSULATOR, WASHER (ITEM #52) ALSO BETWEEN WASHER & HEAT SINK FOR Q2 Q4 & D5. ALSO APPLY ITEM #51 (COMPOUND) BETWEEN ITEM #11 (DIODE BRIDGE) AND ITEM #59 (HEAT SINK).
2. 1010[illegible] MAY BE SUBSTITUTED FOR C13 (1000030).

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		DECAL (H745)	7416945-02	80
2		WASHER INT. TOOTH #10	9006635	79
2		SCREW PAN 10-32 x 5/16 LG	9003469-01	78
1	C7	CAP .22 µF 50V	1010274	77
1		WASHER, RECTANGULAR	9009769	76
1	R13	RES 10Ω ½W, FUSIBLE	1312496-00	75
4		LOCKWASHER #10 INT	9006635	74
4		SCR #10-32X31 SLOTTED FIN HD.	9003669-01	73
				72
1		TRANSIPAD	9008206	71
		ASST/DRILLING HOLE LAYOUT	D-AM-H745-0-5	70
1		PACKING INSTRUCTIONS	API-3700070-0-0	69
1	R18	RES 680 ¼W 5%	1301424	68
1	R23	RES 300 ¼W 5%	1301425	67
1	C13 (SEE NOTE 2)	CAP 0.1 UF 100V 20%	1000030	66
1		SCR PN HD 4-40 X 3/8 LG	900[illegible]	65
1	I1	LAMP 10V	1214356	64
4		SCR, PPH #4X5/16LG. SELF TAPPING	[illegible]	63
6		WASHER #4	9006652	62
7		NUT KEPS 4-40	[illegible]	61
8		SCR PNL PHN HD 4-40 X 7/16 LG	9006072-1	60
1		HEAT SINK BRIDGE RECT	121[illegible]	59
1		SCR PNL PHN HD 10-32 X ½ LG	[illegible]	58
1		SCR PNL FLT HD #4-32 X 1/4 LG	9004020-02	57
1		WASHER LOCK #8	9006623	56
8		CONTACT FEMALE	[illegible]	55
2		SCR PNL PHN HD #4-40 X ¼ LG	9006301-1	54
6		EYELET 00-4-5	9007550	53
3		INSULATOR WASHER	[illegible]	52
A/R		THERMAL COMPOUND	[illegible]	51
3		NUT KEPS 6-32	[illegible]	50
1		SCREW PNL PHN HD 6-32 1⅜ LG	9006525-01	49
~~4~~		~~[illegible]~~	~~[illegible]~~	~~48~~
~~1~~		~~[illegible]~~	~~[illegible]~~	~~47~~
1		REGULATOR UNIT	D-IA-[illegible]	46
1		7.5 [illegible] CAPACITOR	C-IA-7416-2[illegible]	[illegible]
2		STRAP CAPACITOR	C-MD-[illegible]	[illegible]
1		HEAT SINK	D-PS-[illegible]	[illegible]
1	J1	CONN. [illegible]	[illegible]	[illegible]
2		FUSE CLIP	[illegible]	42
1	F1	FUSE	1212237-01	[illegible]
1	L1	INDUCTOR [illegible]	[illegible]	[illegible]
1	E1	INTEGRATED CIRCUIT [illegible]	[illegible]	[illegible]
1	Q3	TRANSISTOR 2N6492	1512652-01	37
2	Q1, Q4	TRANSISTOR [illegible]	[illegible]	[illegible]
2	Q5, [illegible]	TRANSISTOR [illegible]	[illegible]	[illegible]
1	Q2	TRANSISTOR [illegible]	[illegible]	[illegible]
1	R3	RES VARIABLE 300Ω 20%	[illegible]	[illegible]
1	R20	RES 3000 ¼W 5%	[illegible]	32
1	R19	RES 1.1K ¼W 5%	[illegible]	31
1	R4	RES 5.6K ¼W 5%	130[illegible]274	30
2	R5, R16	RES 3.9K ¼W 5%	[illegible]	29
2	[illegible], R3	RES 5.1 ¼W 5%	[illegible]	28
1	R12	RES 56 ¼W 5%	[illegible]	27
1	R21	RES 47 ¼W 5%	[illegible]	26
1	R17	RES 38.3K ⅛W 1%	1305295	25
2	[illegible]	RES 2K ¼W 5%	[illegible]	24
1	R14	RES 10 ¼W 5%	[illegible]	23
1	R6	RES 7.5K 1/8W 1%	1305122	22
2	R7, R8	RES [illegible] 1/8W 1%	[illegible]	21
1	R22	RES 5.1 ½W 5%	[illegible]	20
~~1~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~19~~
1	R2	RES .04Ω 2W 3%	1311262-00	18
1	R1	RES 3.9K 1W 10%	[illegible]	17
1	D3	DIODE [illegible]	[illegible]	16
1	D5	SCR [illegible]	[illegible]	15
1	D4	DIODE [illegible]	1110715	14
2	D2	DIODE D664	[illegible]	13
1	Q[illegible]	TRANSISTOR UNI JUNCTION [illegible]	[illegible]	12
1	D1	DIODE BRIDGE	[illegible]	11
~~1~~	~~[illegible]~~	~~CAP [illegible]~~	~~[illegible]~~	~~10~~
2	C8, C9	CAP 3.[illegible] UF 25V	[illegible]	9
1	C[illegible]	CAP [illegible] UF 50V	[illegible]	8
1	C10	CAP 1.0 UF 25V	1010866-01	7
1	C2	CAP 56 UF 25V -10+75%	[illegible]	6
1	C6	CAP [illegible] UF 100V 10%	[illegible]	5
1	C[illegible]	CAP 2200PF 100V 5%	[illegible]	4
3	C11, C5, C14	CAP .01 UF [illegible] 20%	[illegible]	3
1	C1	CAP [illegible]	[illegible]	2
1		ETCHED CIRCUIT BOARD	[illegible]	1
		[illegible]	[illegible]	[illegible]
		CIRCUIT SCHEMATIC	CS-H745-0-1	[illegible]
		[illegible]	[illegible]	[illegible]

PARTS LIST

ETCH BOARD REV E

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	1N3606		

SEMICONDUCTOR CONVERSION CHART

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

DIGITAL EQUIPMENT CORPORATION

TITLE: -15 REGULATOR

SIZE: E CODE: A NUMBER: H745-0-0

SHEET 1 OF 1

480

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H754-Ø		
+20 VOLT REGULATOR	E-CS-H754-0-1		

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
H754-0	+20 VOLT REGULATOR	X

REVISIONS		
DATE	CHG. NO.	REV
10-75	H754-9	A
11-3	H754-10	B

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. J.Fleming	DATE 2/21/74	TITLE +20 VOLT REGULATOR
CHK'D. J.Fleming	DATE 2/21/74	
PROJ ENG. E. Williams	DATE 3-13-74	
PROD. Jack Hamm	DATE 3-14-74	SIZE B / CODE DD / NUMBER H754-Ø / REV B
FIELD SERV. Walt Aubrey	DATE 7/25/74	DIST

DEC 16-12231-10K2-1A-R972

DRB 106

481

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	B-DD-H754-Ø	#	3	DRAWING DIRECTORY	
X			E-CS-H754-Ø-1	#	2	+20 VOLT REGULATOR	
			K-CO-H754-Ø-4		-	X-Y COORDINATE HOLE LOCATION	
			D-AH-H754-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-H754-Ø-6		1	MODULE ECO HISTORY	
			5010531		-	ETCHED CIRCUIT BOARD	
			A-SP-H754-Ø-8		3	MANUFACTURING SPEC	

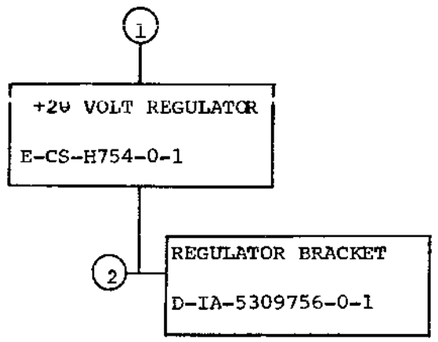
MECHANICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-CS-H754-0-1	#	2	+20 VOLT REGULATOR	
			D-PS-1210737-0-0		1	HEAT SINK REGULATOR	
			C-IA-5309758-0-0		1	CAPACITOR BRACKET	
		2	D-IA-5409756-0-0		1	BRACKET REGULATOR	
			A-SS-5309756-0-1		1	SILK SCREEN	
			A-SS-5309756-0-2		1	SILK SCREEN	
			A-SS-5309756-0-3		1	SILK SCREEN	

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

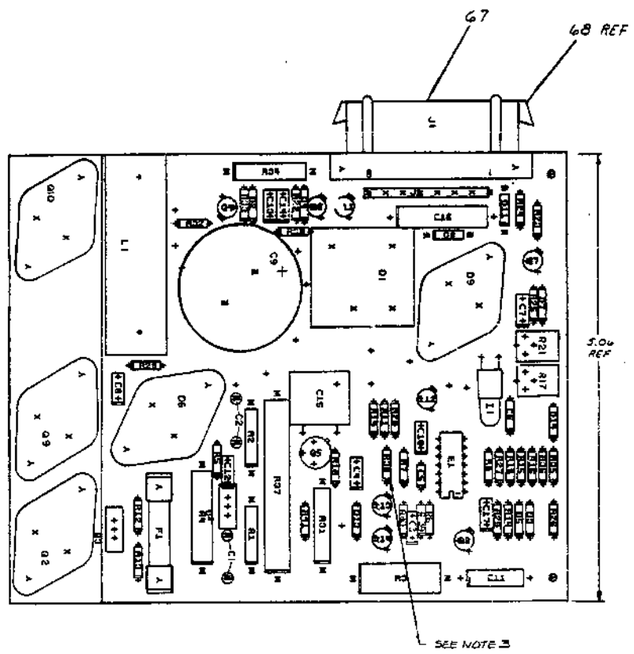
TITLE	SHEET	SIZE	CODE	NUMBER	REV
+20 VOLT REGULATOR	2 OF 3	B	DD	H754-Ø	B

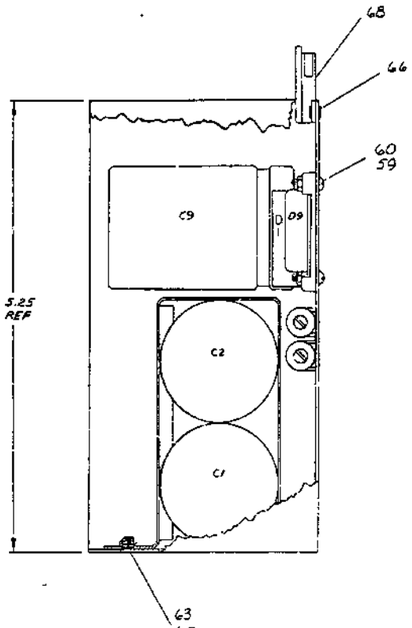
DRB 108
DEC 16-3251-1062-2B-R972



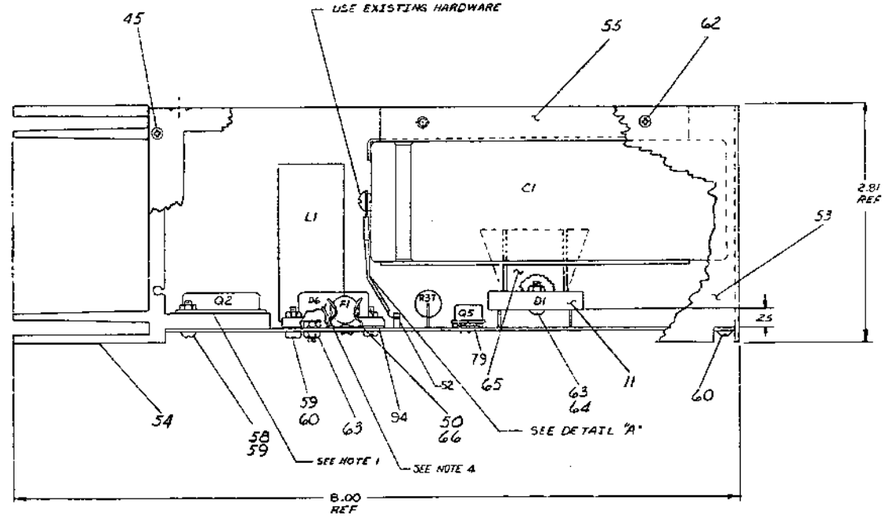
TITLE		SIZE	CODE	NUMBER	REV
+20 VOLT REGULATOR	SHEET 3 OF 3	B	DD	H754-Ø	5

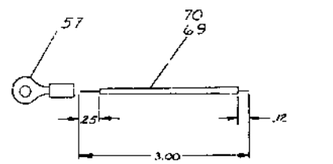
DRB 107





NOTES:
1. APPLY ITEM #71 (COMPOUND) ON BOTH SIDES OF ITEM #72 (INSULATOR WASHER) FOR Q2,Q9, Q10. ALSO APPLY BETWEEN ITEM # 11(DIODE BRIDGE D1), AND ITEM # 65(HEAT SINK, BRIDGE RECT.)
2. UNLESS OTHERWISE INDICATED: RESISTORS ARE 1/4 W, ±5%. CAPACITORS ARE 100 V, ±7%.
3. ADD INSULATION (9107256-11) TO BOTH LEADS OF R38 TO AVOID SHORT TO ETCH.
4. APPLY ITEM #71(COMPOUND) ON BOTH SIDES OF ITEM #94 (MICA WASHER) FOR Q6.





DETAIL "A"
SCALE : NONE
RED WIRE GOES TO POSITIVE TERMINAL
BLK WIRE GOES TO NEGATIVE TERMINAL

DELETED COMPONENTS	
RESISTORS	R9
DIODES	D10,D12

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1		WASHER, MICA	9009863	94
1	C7	CAP .22 uF 80V	1010274	93
1	Q1	TRANSISTOR 2N4920-1	1509405-1	92
1	R13	RES.27Ω 1/4W 5% FUSIBLE	1312496-01	91
A/R		INSULATION	9107256-11	90
1	R39	RES 220 1/4W 5%	1302271	89
1	R37	RES. 1 10W 1%	1309106	88
1	R36	RES.1K 5% THERMISTOR	1310071	87
1	C16	CAP. 1000uF 25V	1002781	86
1	Q10	TRANSISTOR MJ900	1316772	85
1	Q9	TRANSISTOR MJ3000	1511449	84
1	C13	CAP. 150 PF 100V ±5% DM	1009018	83
				82
2	Q6, Q14	TRANSISTOR MPS A63	1310785	81
1	D2	DIODE 0035	1150100	80
2	(UNDER Q6 & Q14)	TRANSPAD	9048295	79
1	R31	RES .15Ω 2W 10%	1316147	78
2	C14, C17	CAP. 1000 uF, 100V, ±5% DM	1009842	77
1	R22	RES. 3892Ω 1/8W 1%	1303125	76
2	R32, R8	RES. 178K 1/8 W 1%	1303216.12	75
1	R11	RES 1.5K 1/2W 5%	1300596	74
1	R20	RES 470Ω 1/4W 5%	1300416	73
				72
3		WASHER INSULATOR	9006781	71
A/R		COMPOUND, THERMAL	9003862-03	70
A/R		WIRE "BRAID STRD .1MIC 1MS (BLK	9107388-00	69
A/R		WIRE "BRAID STRD .1MIC 1MS (RED)	9107388-22	68
1	J1	MINI-B-LOK CONN 8 PIN	1208548	67
8		PIN, SOCKET, MATE-N-LOCK	1208688	66
4		SPACER #4-40	9008220	65
1		HEAT SINK, BRIDGE RECTIFIER	1312207	64
1		SCR PKG, PWR MO B-32 E	9008024-1	63
4		SCPS NUT 8-32 SS	9009180	62
2		SCR PKG, FLAT HD, 8-32 X 5/8	9008021-2	61
2		SCR PKG, PWR HD 4-40 X 3/8	9008021-1	60
6		SCR PKG, PWR HD 4-40 X 1/4	9008021-1	59
10		SCPS NUT 4-40	9009041	58
5		SCR PKG, PWR HD 4-40 X 1/4	9008021-1	57
4		TERMINAL, SOLDERLESS, #10	9007330	56
				55
1		1.5 CAP ASSY	C-19-9208708-0-0	54
1		HEAT SINK REGULATED	A-PS-1210131-0-0	53
1		BRACKET REG	A-14-9208718-A-0	52
4		SPLIT LUG	9006736	51
1	Q8	TRANSISTOR 2N6284	13-11877	50
2		FUSE CLIP	9007203	49
1	F1	FUSE 15 AMP	13-12232-008	48
1	L1	REACTOR 170 MMF	14-12969	47
1	U1	INTEGRATED CIRCUIT 723	14-10815	46
6	Q5,Q6,Q11,Q12, Q13	TRANSISTOR MPS A55	13-10108	45
4		SCR. PKG, FLAT HD #6-32 SELF TAPPING	9008142-03	44
1	Q6	TRANSISTOR 2N6288	13-10308	43
1	Q2	TRANSISTOR 2N6284	13-11883	42
1	Q3	TRANSISTOR 2N6496	13-13704	41
2	R17, R21	RES VARIABLE 25Ω ±20% WOT	13-10862	40
2	R23, R26	RES 5.1 Ω 5%	13-12403	39
1	R18	RES 237 1/2W 1%	1304857	38
				37
2	R24, R5	RES 13 5% 2T	13-11432	36
1	R10	RES 150 Ω 5%	13-10256	35
REF		ASSY/DRILLING HOLE LAYOUT	D-AN-H754-0-5	34
2	R7,R40	RES 2K 1/2W 5%	1302768	33
2	R6,R19	RES 10K Ω 5%	13-10468	32
6	R15,R25,R30,R24,R35,R41	RES 100 Ω 5%	13-10276	31
1	R12	RES 68 Ω 1/4W 5% FUS. BLE	1312496-09	30
				29
1	R27	RES 10K Ω 1/2W 1%	1303312	28
1	R33	RES.3K 1/4W 5%	13-10444	27
1	R16	RES.287Ω 1/2W 1%	13-03184	26
1	R29	RES 10K Ω 5%	13-10461	25
1	C11	CAP .1 Ø 50 VDC S. TANT	19-12421	24
1	R4	RES 28 2Ω .01%	1312976-7	23
1	R3	RES 1.5K 5W 5%	13-01697	22
1	R34	RES 47 Ω 5%	13-10278	21
1	R28	RES 1.2K Ω 5%	13-10581	20
2	R1, R2	RES 3.01K 1% 1/2W	13-12671	19
1	R13	RES 100Ω, 1/2W, 5%	13-01117	18
2	D11,D8	DIODE 1N5624	1110420	17
				16
1	D14	DIODE 752A ZENER	1102908	15
1	D9	DIODE 1N 5622	11-12483	14
1	D7	DIODE 1N5 Z4V	11-10868	13
1	D6	DIODE 20 AMP FAST REC	11-10715	12
1	D3	DIODE 1N4744 ZENER 15V	11-10848	11
1	D1	DIODE 1N5 3614	11-10734	10
3	D5 D13 D4	DIODE 1586	11-08184	9
1	C45	CAP .1 UF 100 V 20% DISC	1000030	8
1	C8	CAP 2.2K UF 20V 10% AL. EL.	19-10858	7
4	C5,C9 &C10,	CAP .01UF 100V 20% DISC.	19 01618-08	6
1	C6	CAP .01UF 100V 5% DM	19-01803	5
1	C15	CAP 10uF 100V 5% DM	19-12021	4
1	I1	LAMP 28V 40 MA	17-11259	3
1	C12	CAP .1MF 75V DISC	19-01276	2
1	C1 C2	CAP 4,500 UF 50V 10% AL. EL.	19-11883	1
		SPACER SCREW 2MFR	9010134	
		WIRE 20 AWG TEF	B-WIRE754-0-6	
		B.P. (2010)-475 NOE (7.11-21)	H-CO-H754-0-4	

PARTS LIST

ETCH BOARD REV			
D354	IN3505		

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

SEMICONDUCTOR CONVERSION CHART

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

DIGITAL EQUIPMENT CORPORATION

TITLE: +20 VOLT REGULATOR

NEXT HIGHER ASSY

DRAWING NO. M7754 | REV. U

SCALE 2 | SHEET 1 OF 2 | SIZE C | CUT

484

J1-8 AC
J1-7 AC
F1 10A
D1 NSS 3514
C1 5600UF 50V
C2 5600UF 50V
R1 3.9K 1W 10%
R2 3.9K 1W 10%
R4 .03Ω 5W, 3%
R5 27Ω
R3 1.5K 5W, 5%
C12 .05UF 25V
Q1 2N4920-1
Q2 2N5038
Q3 2N6491
R13 *27Ω
R12 *68Ω
R28 10Ω
C8 .01UF 20% 50V
L1 170 UHY
D6 20AMP
D11 1N5624
R23 5.1Ω
R24 10Ω
C16 1000uF 25V
C9 2200uF 30V
Q7 MPSA55
J1-5 +20V
J1-3 -5V
J1-2 GND
D13 D664
C3 .01UF
R39 220Ω
R40 2K
Q13 MPS A55
Q5 DEC 3500
Q14 MPS A05
R37 *1 10W 1%
R41 100Ω
D9 MCR 6499-2
C7 .22uF 50V
R25 10Ω
C11 2.2UF 35V 10%
D3 1N4744 15V
R6 12K
1000PF 100V C17
R29 18K
Q8 2N6028
R7 2K
R38 1K THERM.
R10 150Ω
C4 .01UF 50V 20%
C15 .1UF 20%
R11 15K
R20 470Ω
Q12 MPS A55
D14 7.52A
R36 5.1Ω
R35 100Ω
D8 1N5624
D7 1N978B 24V
R26 1.5K
D5 D464
R8 1.78K Ω 1/8W, 1%
R27 10K 1/8W, 1%
R14 27Ω
C18 .01UF 20% 50V
R19 12K
C6 2700 PF
R15 100Ω
R18 237Ω 1/8W 1%
R17 200Ω 2% 1/2W
R16 237Ω 1/8W 1%
U3 723 DEC 723C
VCC INV VZ CL CS COMP VC NON INV VREF GND
C5 56PF
R33 1.78K 1/8W 1%
C13 100PF
R34 .47Ω 2W 5%
Q11 MPS A55
Q10 MJ900
R32 3.9K
MPS A05 Q4
D2 D003
R31 .13Ω 2W 10%
D4 D664
MPS A55 Q6
C14 1000 PF
Q9 MJ3000
R22 383Ω 1/8W 1%
R38 100Ω
R21 200Ω 2% 1/2W

* FUSIBLE RESISTOR

DRN. BISSONNETTE	9-29-72	FIRST USED ON H754	digital
CHK'D R.WORLES	12-17-72	TITLE +20 VOLT REGULATOR	
ENG. R. HUNTON	5-7-73		
PROJ. ENG. R. [illegible]	5-7-73		
PROD. [illegible]	5-9-73		
NEXT HIGHER ASSY.			
SCALE		SIZE D CODE DCS NUMBER H754-0-1 REV. U	
SHEET 2 OF 2		DIST.	

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

B-TC-H785-Ø-1	H785 REGULATOR BATTERY BACKUP (TC)
E-UA-H785-Ø-Ø	H785 UNIT ASSY
D-UA-5412343-0-0	H785 BATTERY BACKUP REGULATOR
B-PL-5412343-0-0	H785 BATTERY BACKUP REGULATOR (PL)
D-CS-5412343-0-1	H785 BATTERY BACKUP REGULATOR (CS)
D-UA-5412385-0-0	H785 CONTROL BOARD
B-PL-5412385-0-0	H785 CONTROL BOARD (PL)
D-CS-5412385-0-1	H785 CONTROL BOARD (CS)
D-UA-5412411-0-0	INPUT RECTIFIER BOARD
B-PL-5412411-0-0	INPUT RECTIFIER BOARD (PL)
D-CS-5412411-0-1	INPUT RECTIFIER BOARD (CS)

UNIT VARIATIONS COVERED BY THIS PRINT SET
H785-Ø

H785

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØ272

REVISIONS		
REV.	CHG. NO.	DATE
A	H785-3	2-78

USED ON OPTION/MODEL	
7013323	
1134A	

SHEET 1 OF 1

DRN. D. HEALY	DATE NOV 76	
CHK'D D. HEALY	DATE NOV 76	
PROJ. ENG. Joe Mercuri	DATE 12-19-76	
FIELD SERV.	DATE 12-20-76	

digital

TITLE: H785 REGULATOR BATTERY BACKUP

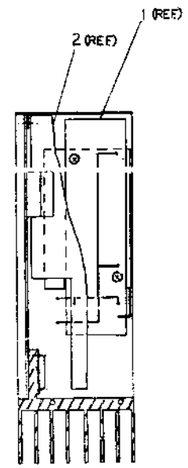
SIZE	CODE	NUMBER	REV.
B	TC	H785-Ø-1	A

DIST.

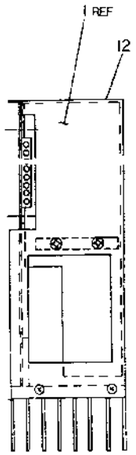
EN 01124-16-N6752-71

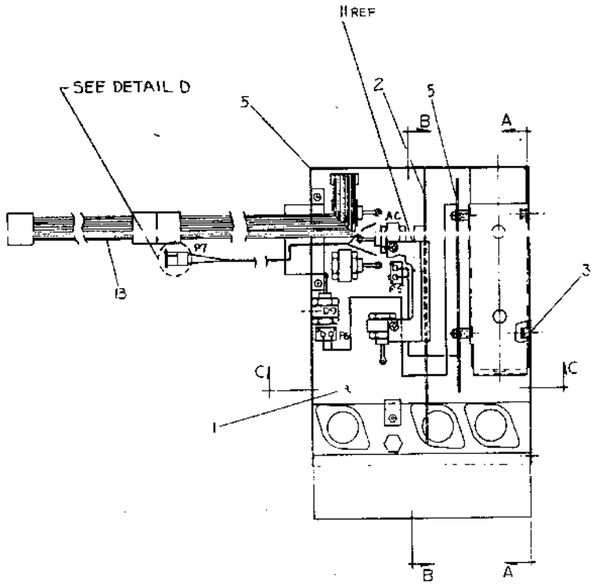
DRB 124

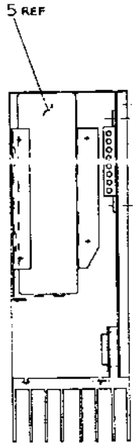
486



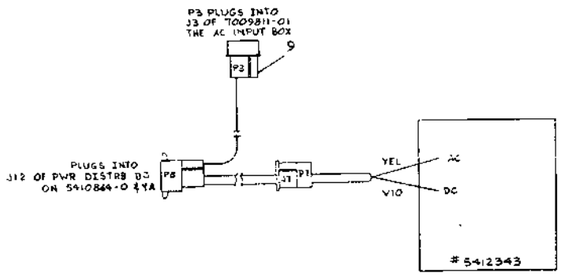
SECTION B-B



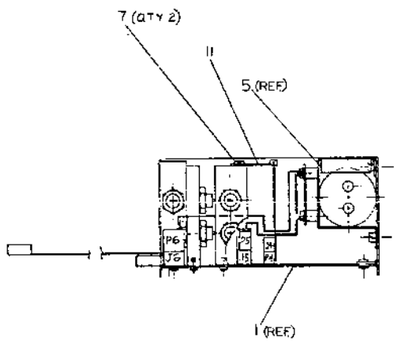




SECTION A-A



DETAIL D



SECTION C-C

1	CABLE, CONSOLE	7011411-23	13
1	UCCAL N785-N785B	7116945-06	12
1	RETAINER, CARD	8-MD-7413124-04	11
1	CABLE, AC, DC/LO	C-SA-7013676-0-0	9
2	SCR. PN.HD. PAN #4-40X.25	9008301-01	7
1	CAPACITOR BRKT. ASSY	C-AD-7013722-0-0	5
4	SCR. PN.FL.HD. #6-32 X.19	9008020-2	3
1	N785 CONTROL BOARD	D-UA-5413385-0-0	2
1	N785 BATTERY BACKUP REGULATOR	D-UA-5412343-0-0	1

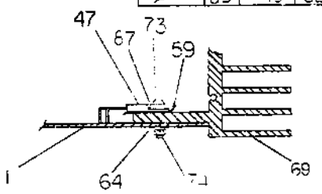
QUANTITY & VARIATION		FIRST USED ON	1134A
		TITLE	REGULATOR BATTERY BACKUP
		SIZE	H785-0-0
		REV	C

481

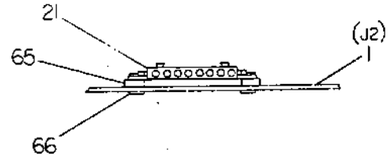
WIRE TABLE

ITEM NO	WIRE NO	DESCRIPT. AWG	COLOR	FROM	TO H785	TO H7850	LENGTH
77	75	18TWP	BLK	D11 ANODE	PAD 1	PAD 1	4.50
	76		RED	D10 ANODE	PAD 2	PAD 2	4.50
	77	18	RED	D 9 CATHODE	PAD 3	PAD 3	3.00
	78	18	RED	D12 CATHODE	PAD 10	PAD 10	3.75
77	79	18TWP	BLK	D16 ANODE	PAD 11	PAD 11	1.50
	80		RED	D15 ANODE	PAD 6	PAD 6	2.00
77	81	18TWP	BLK	D17 CATHODE	PAD 8	PAD 7	2.75
	82		RED	D18 CATHODE	PAD 4	PAD 5	2.75
77	83	18TWP	RED	D13 ANODE	D18 CATHODE	D18 CAT.	3.50
	84		BLK	D14 ANODE	D17 CATHODE	D17 CAT.	3.50
	85	18	BLK	D9 ANODE	PAD 9	PAD 9	3.00

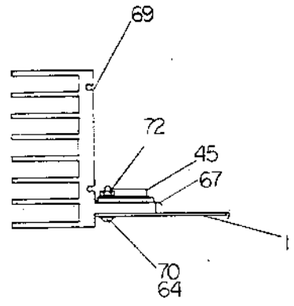
UNTWIST ITEM NO 77 AND USE PROPER COLOR.



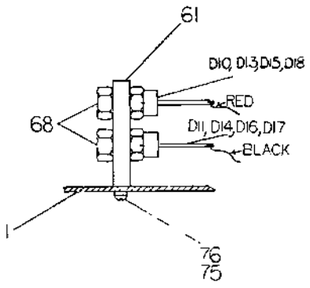
VIEW D-D
SCALE: NONE



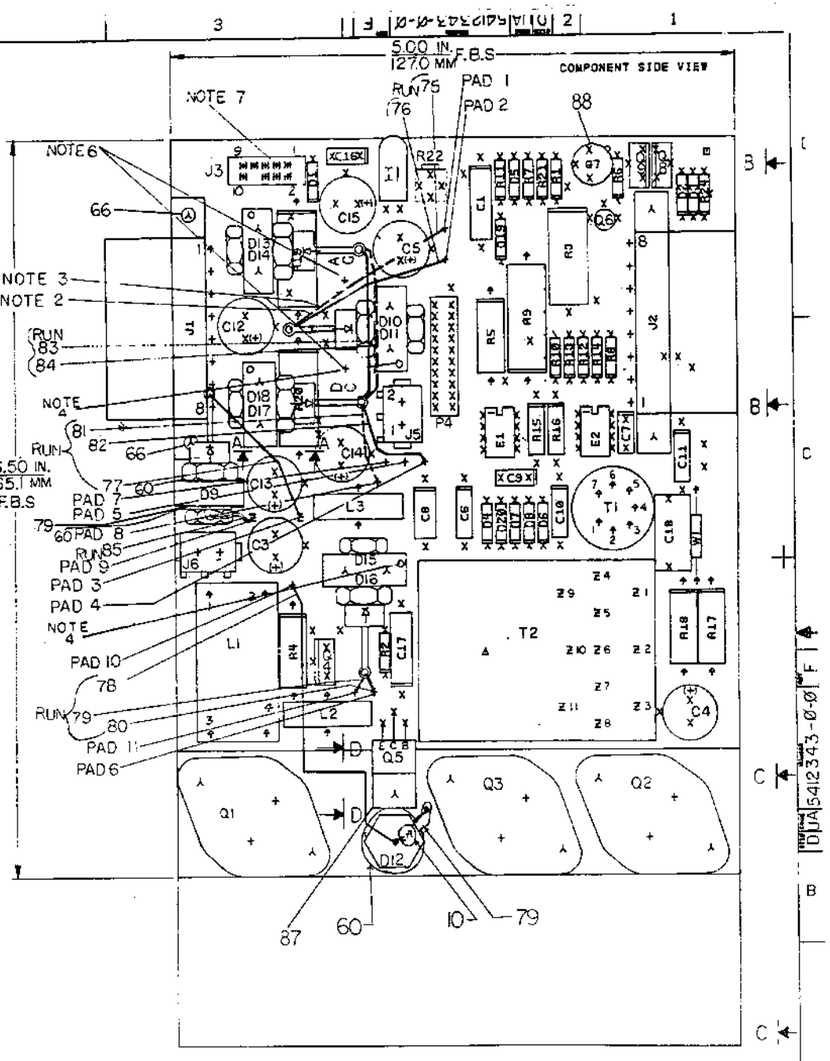
VIEW B-B
SCALE: NONE



VIEW C-C
SCALE: NONE



VIEW A-A
SCALE: NONE
TYP. 4 PLACES



NOTES:
1. SEE SHEET 4 OF 4 FOR DIODE WIRING.
2. SOLID LINE INDICATES WIRE FROM THE TOP DIODE.
3. DASHED LINE INDICATES WIRE FROM BOTTOM DIODE.
4. TURRET HOLE AT TOP OF HEATSINKS MUST FACE PROPER WAY TO ALLOW INSERTION OF CARD GUIDE.
5. TORQUE SPECIFICATIONS:
   - #6-32 SCREWS IN HEATSINKS 10 IN-OZ ± 1 IN-OZ
   - #6-32 SCREW HEAD
   - SEE SHEET 4 OF 4 FOR MOUNTING TORQUE FROM SIDE OF HEAD
   - SEE SHEET 4 OF 4 FOR INSERTION TORQUE FROM NOT SIDE

NOTES:
6. SOLDER ITEM NO 55 DC DC CABLE TO REGULATOR BOARD RED WIRE TO PTH MARKED DC BLACK WIRE TO PTH MARKED AC
7. INSERT ON TO J3 ITEM NO. 58

REV	CHANGE NO	DESCRIPTION	DATE	CHK
A		ECO 5412343-00001	2-1-77	
B		ECO 5412343-00002	2-15-77	
C		ECO 5412343-00003	3-1-77	

ETCH REV. C
P.C. ASSEMBLY DATA BASE REV. C

SIGNATURES	DATE
DRAFT	2-8-77
CHK'D	3-1
ENG.	3-3-77
PROJ. ENG.	3-3-77
PROD. ENG.	3-9-77

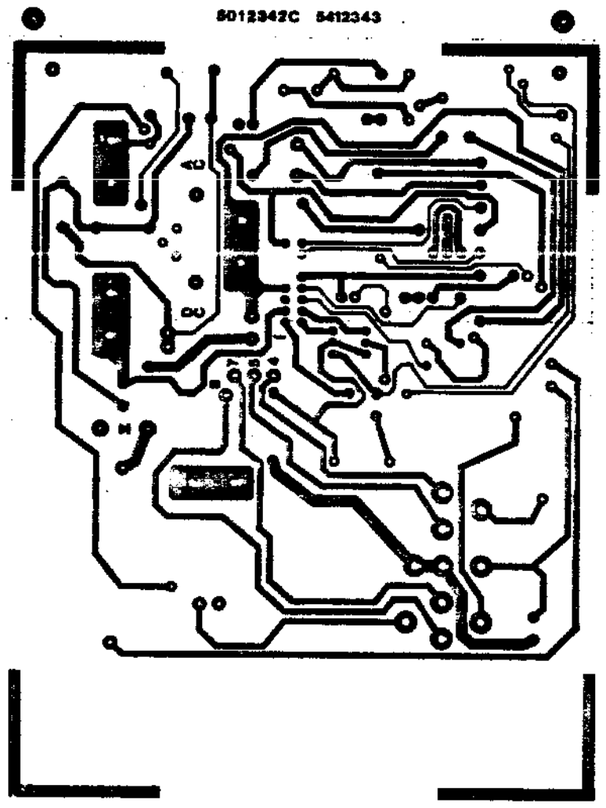
digital

TITLE: H785 BATTERY BACKUP REGULATOR

SCALE 2-1 | SHT. 1 OF 5 | NEXT HIGHER ASSY. B-DD-5412343-0

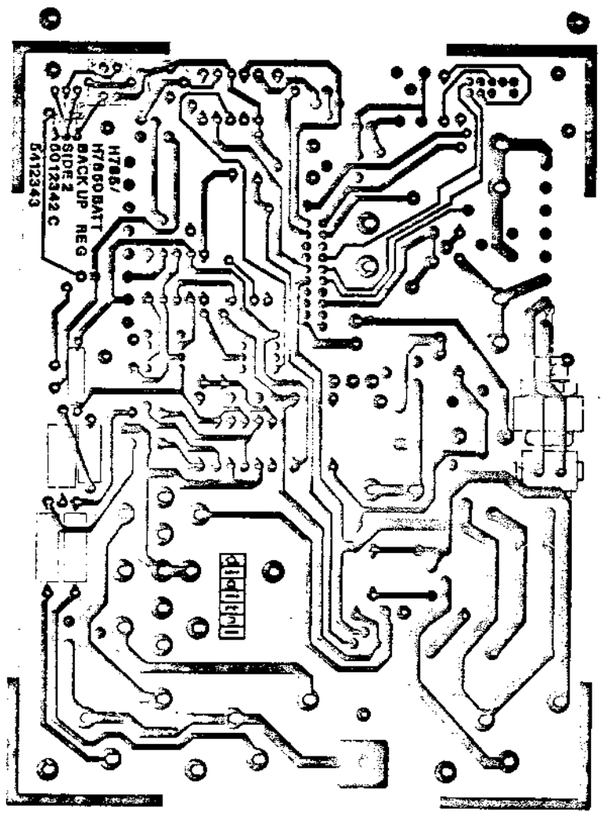
SIZE	CODE	NUMBER	REV
D	0	UA 5412343-0-01	F

MS#60929



TITLE	H785 BATTERY BACKUP REGULATOR	SIZE D	CODE LIA	NUMBER 5412343-0-0 REV F
SCALE 2/1	SHEET 2 OF 5			

DUA 5412343-0-0 F

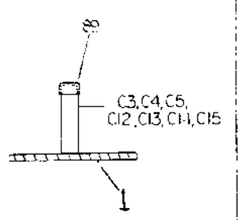


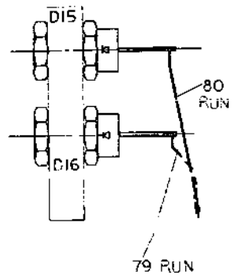
REVISIONS		
CHK	CHANGE NO	REV

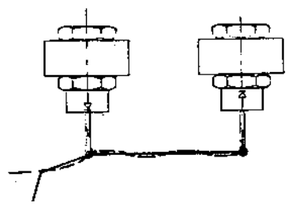
TITLE	H785 BATTERY BACKUP REGULATOR		
SCALE 2/1	SHEET 3 OF 5	SIZE/CODE D UA	NUMBER 5412343-Ø-Ø
DIST			REV. F

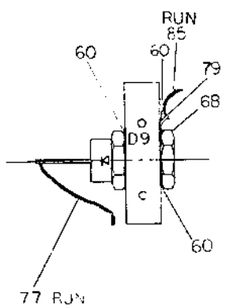
NOTES:
1. WIRING INFORMATION IS ON SHEET 1 OF 4.

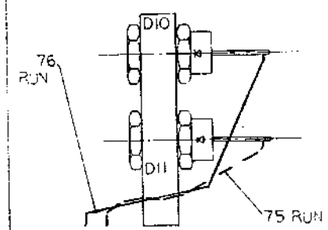
2. DIODES TO BE ASSEMBLED TO HEAT-SINKS AND WIRED AS SHOWN BEFORE INSTALLING TO BOARD.

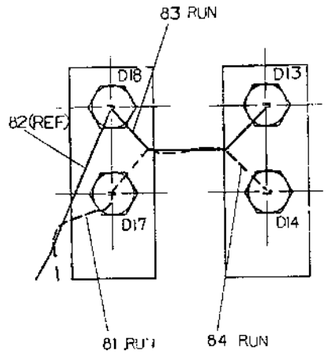








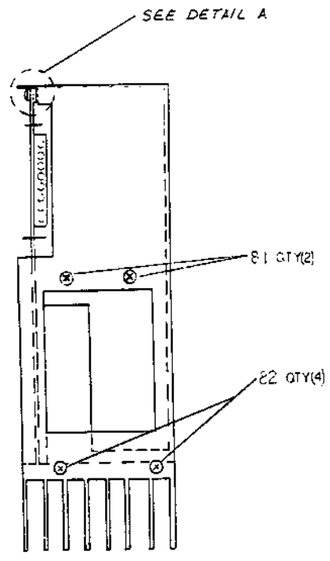


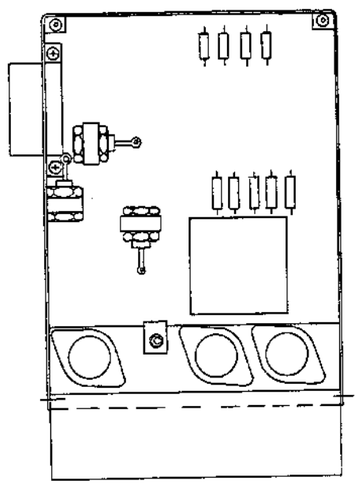


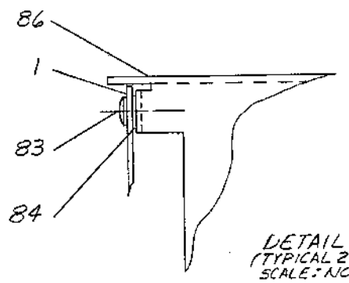
REVISIONS		
DATE	CHANGE NO.	APPVD

TITLE	SIZE	CODE	NUMBER	REV
H785 BATTERY BACKUP REGULATOR	D	UA	5412343-0-6	F
SCALE 2/1	SHEET 4 OF 5			

491







DETAIL A
(TYPICAL 2 PLACES)
SCALE: NONE

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
H785 BATTERY BACKUP REGULATOR	D	UA	5412343-0-0	F
SCALE 1-1 SHEET 5 OF 5	DIST.			

492

AUTOPARTS BY PRTLST 2F(2)

P A R T S L I S T

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
1	1	5-00-5012342-0-0	5012342-00	ETCH BRD 54-12343	1	
2	2		1002431-00	2.2MFD 35V 10% 150S S.TA (10-00	1	C10
3	3		1012607-02	180 MFD 50V H% 672D AL EL	3	C3-C5
4	4		1000042-00	1000.0 MMF 100V 5%200PPM DM15S (10-00	1	C7
5	5		1010646-00	.015 MFD 50V 2% M.POLYCARB	1	C8
6	6		1000024-00	470.0 MMF 100V 5%200PPM DM15S (10-00	1	C9
7	7		1001776-00	1 MFD 35V 10% 150D S.TA (10-00	2	C6,C11
8	8		1012607-00	560 MFD 20V H% 672D AL EL	3	C12-C14
9	9		1012607-01	1200 MFD 6.3V H% 672D AL EL	1	C15
10	10		1010621-00	.1 MFD 50V 20% Z5U DISC	2	C16,C19
11	11		1004813-00	10 MFD 20V 10% 150D S.TA (10-00	2	C1,C17
12	12		1000030-00	.1 MFD 100V 20% Z5U DISC	1	C18
13	13	BLANK				
14	14		1100125-00	1N 758A VZ= 10.0 5% .400W PPER S.A.V.E(	2	D2,D3
15	15		1105275-00	D 672 TR= 15MS PIV= 60V SP	7	D1,D4-D8,D20
16	16		1103440-00	1N 3880 PIV=100 I= 6A D04 SM	6	D10,D11,D13-D16
17	17		1103366-00	IN 3880R PIV=100 I=6A S	4	D17,D18,D9,D12
18	18		1105648-00	1N 4744 VZ= 15.0 10% 1W Y	1	D19
19	19	BLANK				
20	20		1211004-02	SOCKET,100 22POS EDGE MOUNT	1	P4
21	21		1209340-00	MATE-N-LOK 22PIN,HOUSING,SKT	2	J1,J2
22	22		1209456-01	MATE-N-LOK SKT PCB TAB LOOSE	16	
23	23		1211342-02	MATE-N-LOK 2PIN PC TYPE	2	J5,J6
24	24		1209219-01	LAMP 6V@200MA,T1-3/4PINS#2319	1	I1
25	25	BLANK				
26	26		1300202-00	47 1/4W 5% CC (13-00	1	R2
27	27		1309639-00	200 5W 5% WW (13-00	1	R3
28	28		1312682-00	3 3W 5% (13-00	1	R4
29	29		1302954-00	1.2 K 1W 10% CC (13-00	1	R5
30	30		1300426-00	2.7 K 1/4W 5% CC (13-00	2	R6,R7

REVISION HISTORY			VARIATIONS FOR THIS ASSY.
CHK	ECO NO	REV	
B.M	00004	F	0%

FIRST USED ON:

MADE BY:	D FIDDEAU	DATE: 31-JUL-78
CHECKED:	R PUZZO	DATE: 31-JUL-78
DSN.ENG.:	J MERCURI	DATE: 31-JUL-78
PROJ.:	R KING	DATE: 31-JUL-78
RESP.ENG.:	J MERCURI	DATE: 31-JUL-78

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PARTS LIST
H785 BATTERY BACKUP REGULATOR

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	5012343-0-0BP	F

ASSY. O.: 5-00A-5012343-0-0 EDIT# 3

LINE ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION			QTY	REFERENCE DESIGNATORS
31	31	1309680-00	2.7 K 1/4W 5%	CC	(13-00	1	R8
32	32	1313712-00	.01 5W 3%	WW	(13-00	1	R9
33	33	1300365-00	1 K 1/4W 5%	CC	(13-00	2	R1,R11
34	34	1300229-00	100 1/4W 5%	CC	(13-00	1	R12
35	35	1302466-00	100 K 1/4W 5%	CC	(13-00	2	R13,R14
36	36	1312404-00	2.21 K 1/2W 1% RN60D-F 100PPM		(13-00	2	R15,R16
37	37	1313579-00	1.5 3W 5%	WW	(13-00	2	R17,R18
38	38	1309855-00	300 2W 5%	CC	(13-00	2	R19,R20
39	39	1300479-00	10 K 1/4W 5%	CC	(13-00	1	R21
40	40	1310852-00	200 20% POT S			1	R22
41	41	1300391-00	1.5 K 1/4W 5%	CC	(13-00	1	R10
42	42	1300316-00	470 1/4W 5%	CC	(13-00	1	R24
43	43	BLANK				0	
44	44	BLANK				0	
45	45	1510969-00	2N 5038 NPN 140WC SI 90 50 Y			3	Q1-Q3
46	46	1510708-00	D 45HR PNP 50WT SI 60 60 Y			2	Q4,Q8
47	47	1512790-00	D 44C11 NPN 30W SI 80 40			2	Q5,Q9
48	48	1511686-00	DEC5433 FET N 350MW 10 25 1A 20U			1	Q6
49	49	1510959-00	2N 3725 NPN 3.5WC SI 50 60 P			1	Q7
50	50	BLANK				0	
51	51	1612590-00	500 UH 6A S			1	L1
52	52	1613874-00	CHOKE,15UH 4A			2	L2,L3
53	53	1613875-00	XFMR,POWER,RATIO 1:2 7PIN S			1	T1
54	54	1613876-00	XFMR,POWER,RATIO 1:2:3 100UH			1	T2
55	55	7013690-00	CABLE 2 PIN AC DC LOW			1	
56	56	1911944-00	555CN TIMER,FUNCT,BLOCK			1	E1
57	57	1910282-00	301AN OP AMP			1	E2
58	58	7013384-10	10 CONDUCTOR EXTENDER CABLE			1	
59	59	1213071-06	INSULATOR,RUBBER SILICONE			1	
60	60	1213071-05	INSULATOR,RUBBER THERMAL			3	
61	61	7417414-00	HEAT SINK (DUAL)			4	
62	62	7417413-00	HEAT SINK (SINGLE)			1	
63	63	9006655-02	WASHER, FLAT, .312 O.D. X .125 ID X .025 T			1	
64	64	9006656-10	WASHER, FLAT, .312 O.D. X .156 I.D. X .027			6	
65	65	9007706-05	WASHER, NYLON, FLAT #4 .375 OD X .031 THK			2	
66	66	9006745-00	EYELET, ROLLED FLANGE, .120 OD X .200 LG			4	
67	67	1213071-02	INSULATOR,RUBBER SILICONE SM			5	
68	68	9006505-00	NUT,KEP , 10-32X 3/8 AF CS/			10	
69	69	1210737-04	HEAT SINK,REGULATOR			1	
70	70	9007793-00	SCREW,RIND,SLOT, 6-32X 9/16 SS/PAS			5	
71	71	9007649-00	******** THIS ITEM IS NOT USED *********			*	
72	72	9008185-00	NUT,KEP , 6-32X1/4 AF CS/			6	
73	73	9008033-01	SCREW,PAN ,PHIL, 4-40X 9/16 SS/PAS			1	
74	74	9006557-02	NUT,KEP , 4-40X 1/4 AF CS			1	
75	75	9006632-00	WASHER,LOCK,INT,.260OD X .120ID X .015 THK			5	
76	76	9006115-04	SCREW,RIND,SLOT, 4-40X 5/16 SS/PAS			9	
77	77	9107437-02	WIRE,STRND,18AWG,IPVC (UL1429) (91-00 A/R				
78	78	9009185-00	JUMPER, WIRE, INSULATED, BLACK BAND			1	W1

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE: PARTS LIST H785 BATTERY BACKUP REGULATOR	SIZE: A	CODE: 80	DOCUMENT NUMBER: 5412343-0-0BP	REV: F

AUTOMATED BY PRTLST 2E(2)

P A R T S L I S T

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
79	79		9026506-00	TERM LUG 1POS SOLDER,FLAT	2	
80	80		9009149-00	PIN, STAKING, P.C. BOARD, .025 X .025	9	J3
81	81		9008404-02	SCREW,FLAT,PHIL, 6-32X 5/16 SS/PAS 100D	2	
82	82		9009142-02	SCREW, PHILLIPS FLAT HEAD, SELF TAP, 4-40	4	
83	83		9026010-01	SCREW,PAN ,PHIL, 4-40X 5/16 SS/PAS	2	
84	84		9008079-00	WASHER, FLAT FIBER OD. 1/4	2	
85	85		9005212-00	CARTON, DIE CUT 2412 100	1	
86	86	D-IA-7417410-0-00	7417410-00	REGULATOR BRACKET	1	
87	87		9009769-00	WASHER, RECTANGULAR .405X.225X.060	1	
88	88		9007201-00	TRANSIPADS #10253	1	
89	69		9009731-03	CAP,PLASTIC	7	

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE: PARTS LIST H785 BATTERY BACKUP REGULATOR	SIZE: A	CODE: PL	DOCUMENT NUMBER: 5412343-0-0BP	REV: F

REVISIONS			
Cust	Change No.	Rev.	
M/S 5412343-00101		C	6-Oct-77
M/S 5412343-00201		D	7-Dec-77
M/S 5412343-00301		E	22-Dec-77
M/S 5412343-00401		F	21-Mar-78

DRWN		8-20-77
CHK'D		9-24-77
ENGR		9-29-77
PROG. ENGR		9-29-77
PROD. ENGR		9-29-77
NEXT HIGHER ASSY.		
SCALE		
SHEET 1 OF 1		

FIRST USED ON: BI8PLUS

TITLE: H785 BATTERY BACKUP REGULATOR

SIZE B | CODE CS | 5412343-0-1 | REV F | DIST.

REWORK INSTRUCTIONS

ECO #1

1-1 CUT ETCH BETWEEN R41 AND D16. (THIS ETCH LINE RUNS OVER TO THE DRAIN OF Q10) SIDE 1.

1-2 CUT ETCH ON RIGHT SIDE OF C14, ON THE ETCH LINE THAT HAS PREVIOUSLY BEEN CUT, SIDE 1.

1-3 INSERT ECO WIRE FROM THE DRAIN OF Q10 TO THE LEFT SIDE OF C14, TACK SOLDER TO ETCH LINE ON THE LEFT SIDE OF C14, SIDE 1. (THIS IS THE SAME ETCH LINE THAT WAS CUT ON THE RIGHT SIDE OF C14). ECO WIRE IS TO BE ROUTED TO THE TOP OF THE BOARD FROM THE DRAIN OF Q10 THEN RUN ALONG THE BOARD AND COME DOWN TO THE LAND OF ETCH THAT IT HAS TO BE SOLDERED TO THE LEFT SIDE OF C14.

1-4 DRILL A .0635 DIA. HOLE (DRILL #52) BENEATH R32 (SIDE 1) MAKING SURE THE ONLY ETCH DRILLED IS THE ONE WITH BOTH ITS ENDS CUT (SEE STEPS 1 AND 2 OF REWORK INSTRUCTIONS). THIS HOLE HAS TO HOLD DEC. 12-12416-02. BE SURE OF SPACING BEFORE DRILLING.

1-5 DRILL A .0635 DIA. HOLE (DRILL #52) ABOVE Q1 TO THE LEFT SIDE OF R1, SIDE 1. BE SURE OF SPACING. THIS HOLE MUST HOLD DEC. 12-12416-02. DO NOT PIERCE ETCH ON SIDE 2.

1-6 ON SIDE 2, CUT ETCH LEADING AWAY FROM PIN 9 OF J4.

1-7 INSERT DEC. 12-12416-02 IN BOTH HOLES PREVIOUSLY DRILLED. DO NOT INSERT FULLY. INSERT SO THAT ENOUGH OF THE LEAD IS THROUGH THE BOARD THAT WILL PERMIT A COUPLE WRAPS OF AN ECO WIRE. THEN GLUE IN PLACE WITH DEC. 9009157. MAKE SURE THAT TABS ON DEC. 12-12416-02 ARE FACING EACH OTHER ON SIDE 1. (S1 AND S2)

1-8 ON DEC PART 12-12416-02 THE ONE THAT IS LOCATED CLOSEST TO J4 ON SIDE 1, CONNECT THE LEAD THAT GOES THROUGH THE BOARD, TO PIN J4-9 ON SIDE 2. THIS IS DONE WITH AN ECO WIRE INSTALLED ON SIDE 2.

1-9 WITH AN ECO WIRE, CONNECT BOTH CASE TABS OF DEC. 12-12416-02 ON SIDE 1 TOGETHER.

1-10 DEC. PART 12-12416-02 THAT HAS BEEN INSTALLED BENEATH R32 ON SIDE 1. CONNECT AN ECO WIRE FROM THIS PART'S PIN ON SIDE 2 WITH THE OTHER END OF THE ECO WIRE GOING TO THE P.T.H. BETWEEN R41 AND D16. (THIS P.T.H. HAS AN ETCH RUN CONNECTING THE ANODE OF D16 TO IT ON SIDE 2.)

1-11 CHANGE R10 FROM 13-13151 3.6K OHM TO 1300391 1.5K OHM

1-12 CHANGE R11 FROM 13-00316 470 OHM TO 13-00439 3.3K OHM.

1-13 CHANGE R4 FROM 13-00309 390 OHM TO 13-01322 180 OHM.

1-14 REMOVE W2 INSULATED JUMPER 90-09185.

1-15 REMOVE D17, IN 758A 11-00125

1-16 GLUE ALL ECO WIRES DOWN WITH DEC. 90-09157.

ECO #2

COMPONENT DELETES SIDE 1:

2-1. C15 (P/N 1000021)

2-2. D16 (P/N 1110068)

COMPONENT ADDS SIDE 1:

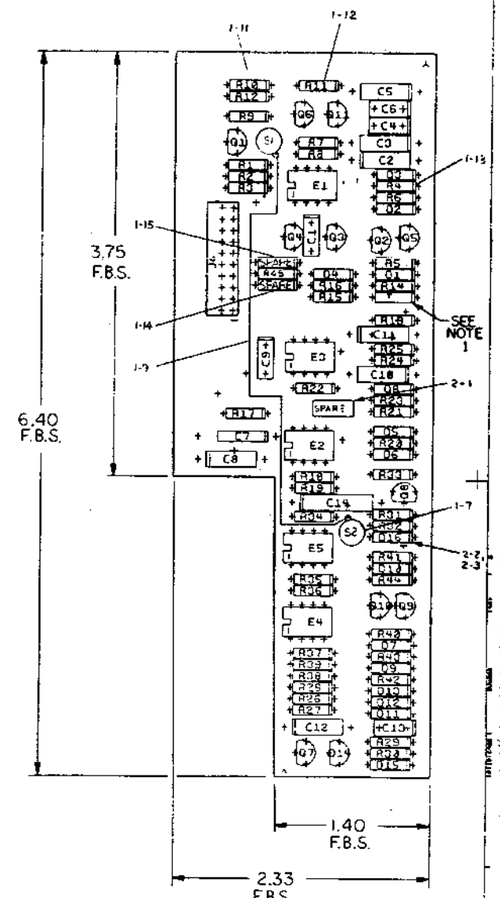
2-3. D16 (ZENER BI-DIRECTIONAL P/N 1114913-00)

NOTES:

1. COMPONENT NOT INSERTED

CHG	CHANGE NO	REV
Ø	5412385-1	C
	5412385-2	D
	5412385-3	E

COMPONENT SIDE VIEW



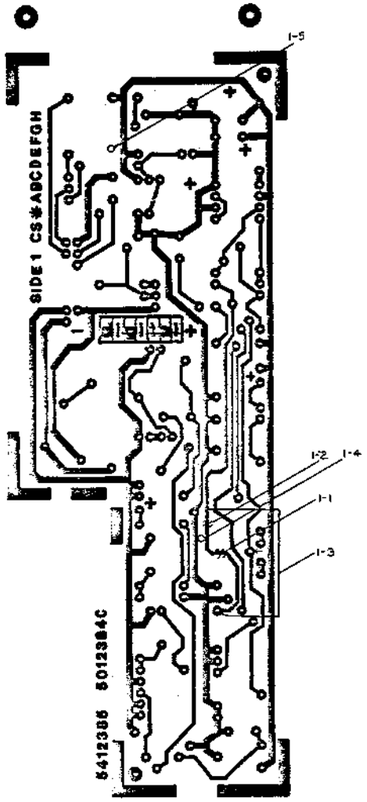
ETCH REV. C
P.C. DESIGN DATA BASE REV. C

SIGNATURES	DATE
DRN. F GAROFALO	12-9-76
CHK'D. F SEIDMAN	12-9-76
ENG.	12-16-76
PROJ. ENG.	12-16-76
PROD.	12-16-76
SCALE 2/1	
SHT. 1 OF 3	
NEXT HIGHER ASSY. B-DD-5412365-Ø	

digital

TITLE H785 CONTROL BD

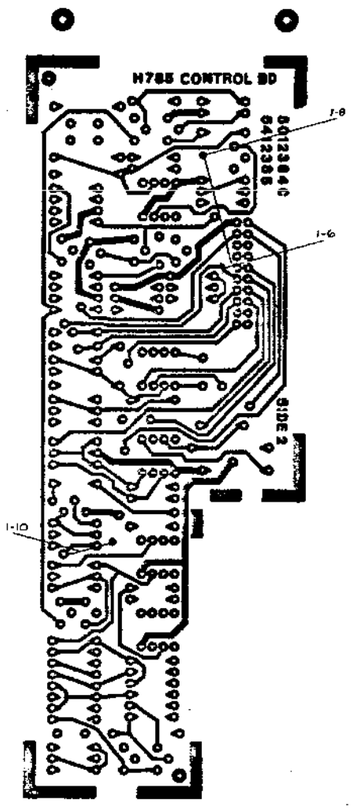
SIZE D | CODE | NUMBER UA 5412385-Ø-Ø | REV E



REVISIONS		
CHK	CHANGE NO	REV

TITLE: H785 CONTROL BD	SIZE: D	CODE: DUA	NUMBER: 5412385-0-0
SCALE: 2/1	SHEET: 2 OF 3	DIST:	REV: E

DUA 5412385-0-0 E



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
H785 CONTROL BD	D	LIA	5412385-0-Ø	E
SCALE 2/1 SHEET 3 OF 3	DIST			

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
1	1	D-MD-5012384-0-0	5012384-00	5412385	1	
2	2		1001610-01	.01 MFD 100V OR 50V Z5U DISC/800PF MIN	4	C1,C4,C6,C13
3	3		1004813-00	10 MFD 20V 10% 150D S.TA (10-00	1	C2
4	4		1001776-00	1 MFD 35V 10% 150D S.TA (10-00	3	C3,C5,C11
5	5		1000061-00	8200.0 MMF 100V 10% 663UW MYLR (10-00	1	C7
6	6		1005965-00	.47 MFD 35V 10% 150D S.TA (10-00	2	C8,C12
7	7		1000009-00	33.0 MMF 100V 5%200PPM DM15S (10-00	1	C9
8	8		1005306-00	6.8MFD 35V 10% 150D S.TA (10-00	1	C14
9	9		1105275-00	D 672 TR= 15NS PIV= 60V SP	9	D1,D2,D3,D5,D6,D9,D10,D12,D13
10	10		1109988-00	1N 964B VZ= 13.0 5% .40W Y	1	D4
11	11		1102808-00	1N 752A VZ= 5.6 5% .40W P	2	D11,D15
12	12		1110968-00	2N 5062 SCR@100V I=.8A T092	1	D14
13	13		1110713-00	SZ710910 VZ= 5.1 2% M	1	D7
14	14		1114913-00	VZ= 18.0 10% 1W	1	D16
15	15		1300398-00	1.8 K 1/4W 5% CC (13-00	2	R32,R38
16	16		1300479-00	10 K 1/4W 5% CC (13-00	11	R1,R13,R18,R19,R20,R21,R28,
					CONT	R31,R42-R44
17	17		1300229-00	100 1/4W 5% CC (13-00	5	R3,R5,R25,R29,R45
18	18		1301322-00	180 1/4W 5% CC (13-00	1	R4
19	19		1302177-00	47 K 1/4W 5% CC (13-00	1	R6
20	20		1302394-00	30 K 1/4W 5% CC (13-00	1	R7
21	21		1302091-00	330 K 1/4W 5% CC (13-00	1	R8
22	22		1300365-00	1 K 1/4W 5% CC (13-00	6	R2,R9,R12,R14,R37,R40
23	23		1300426-00	2.7 K 1/4W 5% CC (13-00	1	R16
24	24		1302092-00	220 K 1/4W 5% CC (13-00	1	R15
25	25		1301423-00	6.8 K 1/4W 5% CC (13-00	1	R17
26	26		1302871-00	1.21 K 1/4W 1% RN55D-F 100PPM (13-00	1	R35
27	27		1302955-00	750 1/4W 1% RN55D-F 100PPM (13-00	1	R34
28	28		1303312-00	10.0 K 1/4W 1% RN55D-F 100PPM (13-00	1	R36
29	29		1302466-00	100 K 1/4W 5% CC (13-00	3	R22,R39,R4[illegible]

REVISION HISTORY			VARIATIONS FOR THIS ASSY.
CHK	ECO NO	REV	
W.H	00003	E	00

FIRST USED ON:

MADE BY:	F.MALANSON	DATE: 21-FEB-78
CHECKED:	F.SEIDMAN	DATE: 21-FEB-78
DSN.ENG.:	J.MERCURI	DATE: 21-FEB-78
PROD.:	R.B.KING	DATE: 21-FEB-78
RESP.ENG.:	J.MERCURI	DATE: 21-FEB-78

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PARTS LIST

H785 CONTROL BOARD

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	5412385-0-0	E

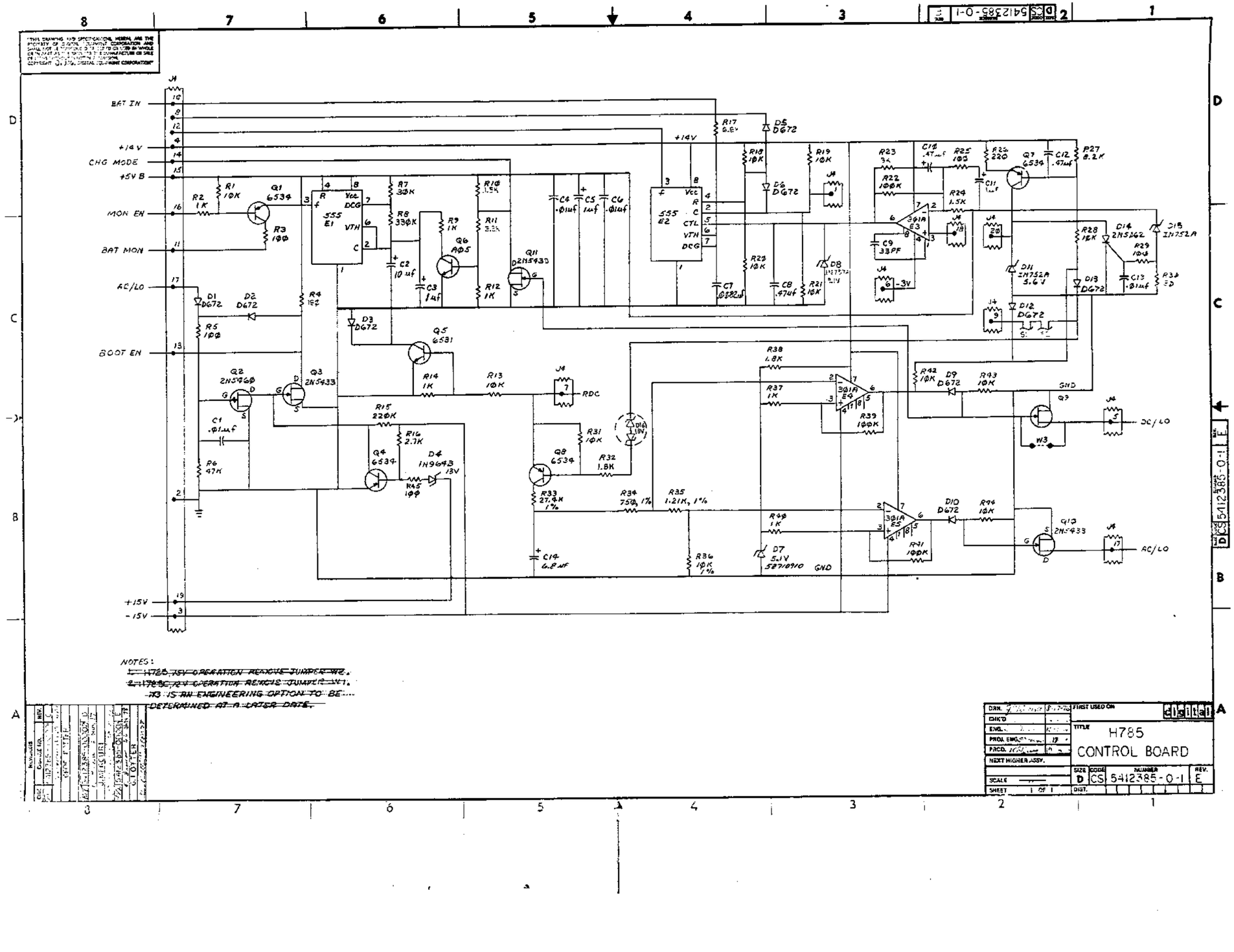
EDIT# 4

ASSY.NO.: D-UA-5412385-0-0

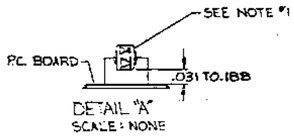
500

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
30	30		1300271-00	220 1/4W 5% CC (13-00	1	R26
31	31		1303179-00	8.2 K 1/4W 5% CC (13-00	1	R27
32	32		1302751-00	30 1/4W 5% CC (13-00	1	R30
33	33		1309417-00	27.4 K 1/4W 1% RN55D-F 100PPM (13-00	1	R33
34	34		1503409-00	DEC6534D PNP 310MW SI 40 90 P	4	Q1,Q4,Q7,Q8
35	35		1510233-00	2N 5460 FET 310MW SIP CHNNL	1	Q2
36	36		1511686-00	DEC5433 FET N 350MW 10 25 1A 20U	4	Q3,Q9,Q10,Q11
37	37		1509338-00	DEC6531B NPN 310MW SI 40 90 P	1	Q5
38	38		1510705-00	XA 05 NPN 500MW SI 60 50 P	1	Q6
39	39		1911944-00	555CN TIMER,FUNCT.BLOCK	2	E1,E2
40	40		1910282-00	301AN OP AMP	3	E3,E4,E5
41	41		1300391-00	1.5 K 1/4W 5% CC (13-00	2	R10,R24
42	42		1213335-00	HEADER 20POS RT ANGLE FOR 12-13334	1	J4
43	43		1300439-00	3.3 K 1/4W 5% CC (13-00	1	R11
44	44		1212416-02	THERMOSTAT,@@160,N/C,SPST,AUTO RESET	2	S1,S2
45	45		1300432-00	3 K 1/4W 5% CC (13-00	1	R23
46	46		1109990-00	1N 757A VZ= 9.1 5% .40W P	1	D8
47	47		1005965-00	.47 MFD 35V 10% 150D S.TA (10-00	1	C10
48	48		9009157-00	ADHESIVE, PERMABOND #101	A/R	
49	49		9105740-55	WIRE(WRAP)30AWG UL1423 (91-00	A/R	

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE: PARTS LIST H785 CONTROL BOARD	SIZE: K	CODE: PL	DOCUMENT NUMBER: 5412385-0-0	REV: E


BAT IN
+14 V
CHG MODE
+5V B
MON EN
BAT MON
AC/LO
BOOT EN
+15V
-15V
RDC
DC/LO
AC/LO
GND
555 E1
555 E2
3301A E3
3301A E4
3301A E5
Q1 6534
Q2 2N5960
Q3 2N5433
Q4 6534
Q5 6531
Q6 AD5
Q7 6534
Q8 6534
Q9
Q10 2N5433
Q11 2N5433
D1 DG72
D2 DG72
D3 DG72
D4 IN9643 18V
D5 DG72
D6 DG72
D7 5.1V 5871-0910
D8 IN757A 8.2V
D9 DG72
D10 DG72
D11 IN752A 5.6 V
D12 DG72
D13 DG72
D14 2N5962
D15 IN752A
D16 18V
R1 10K
R2 1K
R3 100
R4 1K
R5 100
R6 47K
R7 33K
R8 330K
R9 1K
R10 1.5K
R11 3.3K
R12 1K
R13 10K
R14 1K
R15 220K
R16 2.7K
R17 6.8K
R18 10K
R19 10K
R20 10K
R21 10K
R22 100K
R23 3K
R24 1.5K
R25 100
R26 220
R27 8.2K
R28 1K
R29 100
R30 3.9
R31 10K
R32 1.8K
R33 27.4K 1%
R34 750, 1%
R35 1.21K, 1%
R36 10K 1%
R37 1K
R38 4.8K
R39 100K
R40 1K
R41 100K
R42 10K
R43 10K
R44 10K
R45 100
C1 .01uf
C2 10 uf
C3 1uf
C4 .01uf
C5 1uf
C6 .01uf
C7 .0082uf
C8 .47uf
C9 33PF
C10 .47uf
C11 1uf
C12 .47uf
C13 .01uf
C14 6.8 uf
W3
NOTES:
1. H785 ISV OPERATION REMOVE JUMPER W2.
2. H785C, R+ OPERATION REMOVE JUMPER W1.
X3 IS AN ENGINEERING OPTION TO BE DETERMINED AT A LATER DATE.
DRN.
CHK'D
ENGR.
PROJ. ENGR.
PROD. MGR.
NEXT HIGHER ASSY.
SCALE
SHEET 1 OF 1
FIRST USED ON
digital
TITLE
H785
CONTROL BOARD
SIZE D
CODE CS
NUMBER 5412385-0-1
REV. E
DIST.

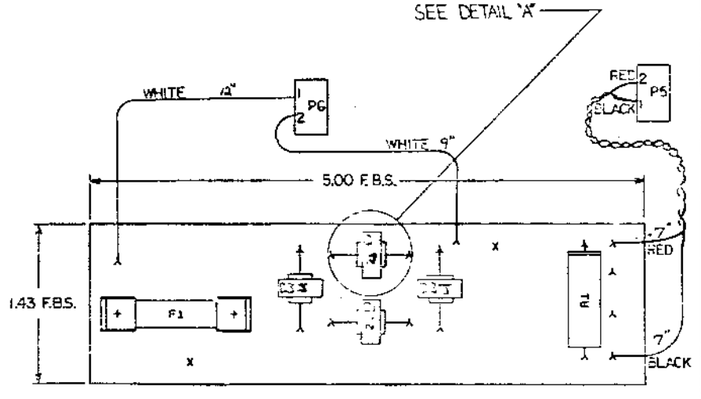
502



DETAIL "A"
SCALE: NONE

COMPONENT SIDE VIEW

NOTES:
1. DIODES D1 THRU D4 MUST BE RAISED FROM THE P.C. BOARD .031 TO .188



NOTES:

digital

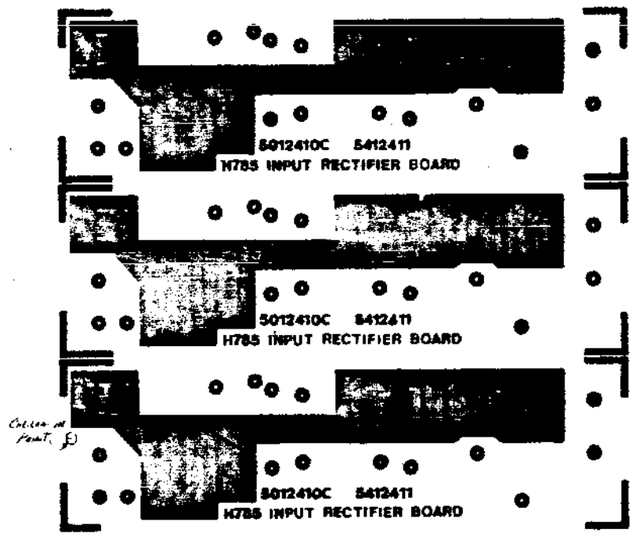
TITLE INPUT
SECTOR BOARD

503

REVISIONS		
CHR	CHANGE NO	REV

TITLE	SIZE	NUMBER	REV
INPUT RECTIFIER BOARD	D	541241I-0-0	E
SCALE 2/1	SHEET 2 OF 3		

504



REVISIONS			
CHG	CHANGE NO	BY	

TITLE	SIZE	CODE	NUMBER	REV
INPUT RETIFIER BOARD	D	JA	5412411-0 Ø	E
SCALE 2/1 SHEET 2 OF 2	DIST			

505

AUTOMATED BY PRTLST 1D(11) P A R T S L I S T SHEET 1 OF 1

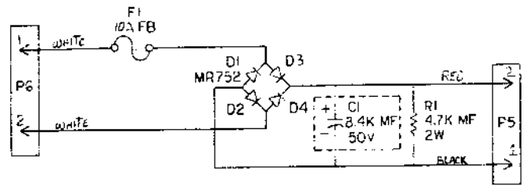
LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
1	1	D-MD-5012410-0-0	5012410-00	5412411	1	
2	2		1110615-00	MR 752 PIV=200 I=22A A264 SM	4	D1-D4
3	3		1210821-02	MATE-N-LOK 2PIN,HOUSING,SKT	2	P5,P6
4	4		1209379-01	MATE-N-LOK PIN 20-14AWG LOOSE	4	
5	5		1302609-00	4.7 K 2W 10% CC (13-00	1	R1
6	6		9009000-00	EYELET, ROLLED FLANGE, .121 OD X .156 LG	2	
7	7		9008390-00	FUSE, REG BLOW, 10.000A, 250V, CERAMIC	1	
8	8		9007203-00	CLIP, FUSE, WITH STOP, SCREW MOUNTED	2	
9	9		9107360-99	WIRE,STRND,18AWG,IPVC UL1429 (91-00	A/R	
10	10		9107430-02	WIRE,STRND,18AWG,IPVC (UL1429) (91-00	A/R	

11 NOTE: MS60954 ETCH REV C CS REV B

REVISION HISTORY			VARIATIONS FOR THIS ASSY.	FIRST USED ON:		DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			
CHK	ECO NO	REV	00			TITLE: PARTS LIST — INPUT RECTIFIER BOARD			
---	00003	E		MADE BY: D.BILODEAU	DATE: 08-MAR-78				
				CHECKED: F.GAROFALO	DATE: 08-MAR-78				
				DSN.ENG.: J.MERCURI	DATE: 08-MAR-78	SIZE: K	CODE: PL	DOCUMENT NUMBER: 5412411-0-0	REV: E
				PROD.: R.B.KING	DATE: 08-MAR-78				
				RESP.ENG.: J.MERCURI	DATE: 08-MAR-78	ASSY.NO.: D-UA-5412411-0-0			EDIT: 3

NOTES:

1. C1 WILL BE CONNECTED TO BOARD AT NEXT HIGHER ASSEMBLY.



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

QTY	REF. DESIGNATION	DESCRIPTION	PART NO	ITEM NO

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. C

REV.	REVISIONS	CHANGE NO.	
C	MOVED C1 & MOUNT PER	1-0003	
B		1-0002	
A		1-0001	

MERCURY

DRWN [illegible] DATE 12-72
CHKR DATE
ENGR DATE 12-3-72
PROJ. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY

digital

TITLE: INPUT RECTIFIER BOARD

SIZE D | CODE CS | NUMBER 541241-0-1 | REV. C

SCALE — | SHEET OF | DIST.

DEC FORM NO. BMD 1358

5-09

8 7 6 5 4 3 2 1

#FOR MFG USE ONLY

LEGEND	
NUMBER	VARIATION
BA11-KE	115V 50/60 HZ
BA11-KF	230V 50/60 HZ
BA11-KH #	115V 50/60 HZ
BA11-KJ #	230V 50/60 HZ
BA11-KK #	115V 50/60 HZ
BA11-KL #	230/50/60 HZ
BA11-KA #	NO POWER SUPPLY

NOTES:
1. CAUTION: OPT SHEET PARTS LISTS EXISTS SEE A-PL-BA11-K-0
2. GROUND LUG OF PWR DISTRIBUTION BD. ATTACHES TO GND STANDOFF ON CHASSIS.
3. TIGHTEN ALL SYSTEM UNIT MOUNTING SCREWS TO 8 IN-LBS WITH A TORQUE SCREW DRIVER.
4. ATTACH SHIPPING BRACKETS TO POWER SUPPLY AND BOLT THROUGH HOLE IN CABINET RAILS.
5. INSTALL CARD GUIDES, ITEM NOS 5 & 36 USING TOOL NO. 9412610-2.
6. DISASSEMBLE ITEM NO. 37 USING EXISTING HARDWARE.

.125 DIA ORIENTATION HOLE REF

5 (REQ'D FOR ALL VARIATIONS) LOCATE AS SHOWN USING ¼ HOLE AS A STARTING PLACE. LOCAL MAY BE PLACED CLOSER TO CARD GUIDES FOR EASE OF APPLICATION. 2 PLACES.

36 (QTY 24) NOTE 5 LOCATE VIOLENTA CARD GUIDES IN EVEN NUMBERED SLOTS, BOTH SIDES.

5 (QTY 24) LOCATE WHITE CARD GUIDES IN ODD NUMBERED SLOTS, BOTH SIDES.

1 REF

NO CARD GUIDES IN FIRST AND LAST SLOTS

VIEW A-A
SCALE: NONE

36 REF
5 REF
36 REF
5 REF

35 (REQ'D FOR KE & KF VARIATIONS ONLY)

VIEW E-E
SCALE: NONE

4
10 (SEE NOTE 2)
32
14
B
REF
A
E
35 REF
E
(H754)
(H785)
(H744)
DANGER HIGH VOLTAGE
5 REF
18
A
14
SEE NOTE 4
10
11 QTY 4
4
32
REF
30
31
25.00 REF.

TOP VIEW
(CHASSIS COVER REMOVED)

4 REF
4 REF
37 SEE NOTE 6
A.C. POWER CORD

VIEW B-B

34 (230V)
33 (115V)
17 (230V)
9 (115V)
10 (QTY 4)
22 QTY 8
C
C
1
2
13 (QTY 6)
D
14 REF
32 REF
REF
15
21 QTY 4
28
8
29
14 (QTY 4)
6 (QTY 1)
D
2
4 REF
10 (REF)
6 (QTY 6)
12 (QTY 6)
7 (QTY 4)
3 REF
26.53 REF.

RIGHT SIDE VIEW

VIEW C-C
SCALE: NONE
ONLY TOP COVER ITEM #2 SHOWN

19.00 REF.
10.44 REF.
SEE NOTE 2
CONNECT LUG TO G1 (REF.)
J9
J2
J12
J11
J10
J8
J1
J6
J5
J4
J3
2 REF
G1 (REF)
3 REF

VIEW D-D
REAR VIEW
(POWER SUPPLY AND CHASSIS SLIDES REMOVED)

ITEM NO	QTY.	DESCRIPTION	PART NO
		PARTS LIST	
		BA11-K	

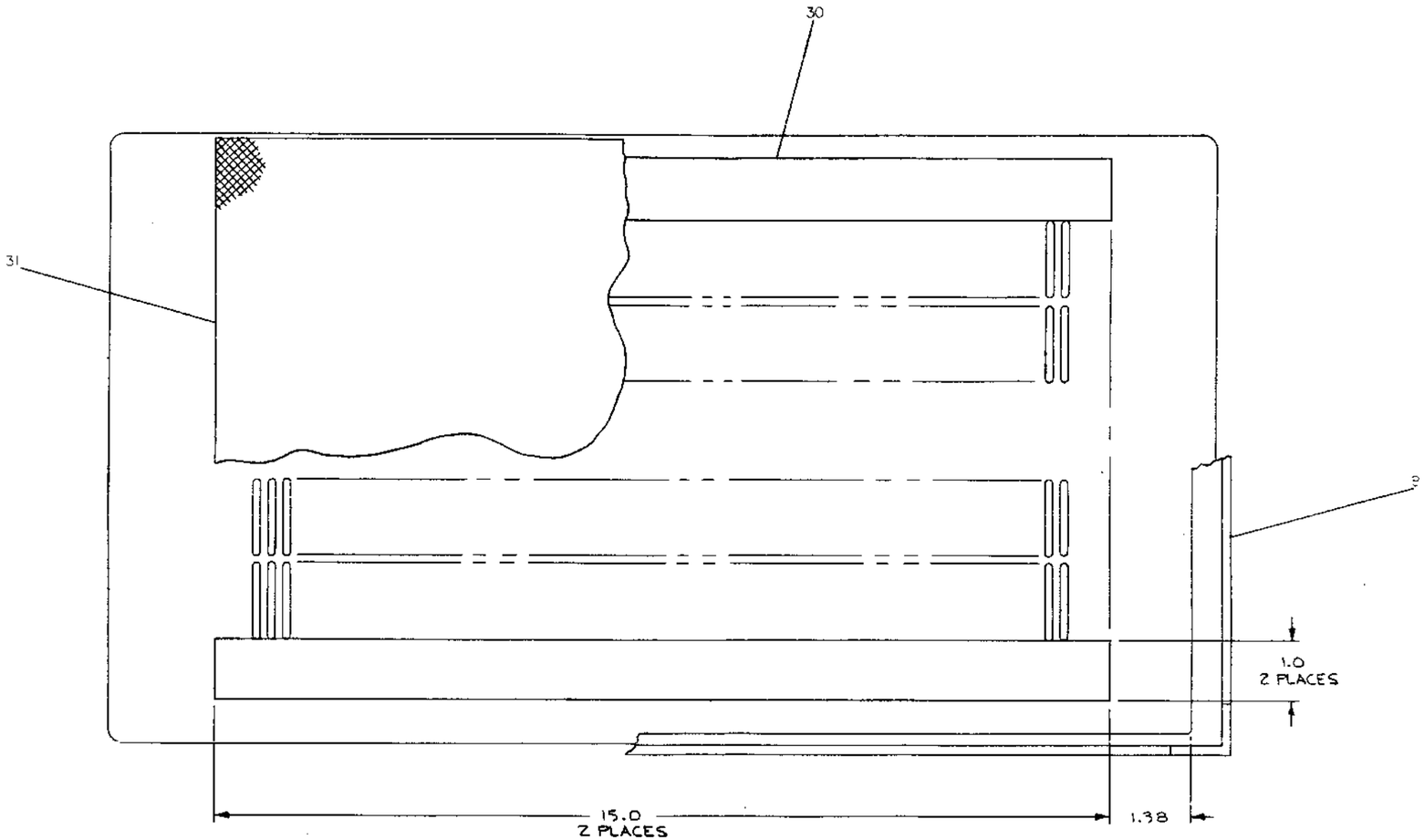
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

DRAWN Cudney
CHECKED
ENGINEER
PROJECT MANAGER

TITLE
UNIT ASS'Y
BA11-K

SIZE D
DRAWING NUMBER 3-DD-BA11-K
SIZE A
DOCUMENT NUMBER BA11-K-0
REV N

5 of 6



REAR VIEW

TITLE: UNIT ASSY BA11-K-0	SIZE: E	CODE: 04	DRAWING: BA11-K-0	REV: N
SCALE:	SHEET 2 OF 2		DIST:		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET 1

SEQUENCE	
DRAWING DIRECTORY BA11-K	B-DD-BA11-K
UNIT ASSY BA11-K	E-UA-BA11-K-Ø
UNIT ASSY BA11-K P.L.	A-PL-BA11-K-Ø
DRAWING DIRECTORY H765	B-DD-H765-Ø
UNIT ASSY BC11A	D-UA-BC11A-1Ø-Ø
BC11A UNIBUS CABLE, M919	B-CS-M919-0-1
BC11A UNIBUS CABLE, M929	B-CS-M929-0-1

SEQUENCE	
MFG. PRINT SET	
IN PLANT PACK. INST.	A-SP-3700167-0-0
SKID LOAD PACK. INST.	A-SP-3700165-0-0
CUST. CUSHIONED PACK. INST.	A-SP-3700169-0-0

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
BA11-KE	115 VAC 50/60 HZ	X
BA11-KF	230 VAC 50/60 HZ	X
BA11-KH	115 VAC 50/60 HZ (MANUF. ONLY)	X
BA11-KJ	230 VAC 50/60 HZ (MANUF. ONLY)	X
BA11-KK	115VAC 50/60 HZ(NO H754)(MANUF ONLY)	X
BA11-KL	230 VAC 50/60 HZ(NO H754)(MANUF ONLY)	X
BA11-KA	NO POWER SUPPLY (MANUF ONLY)	X

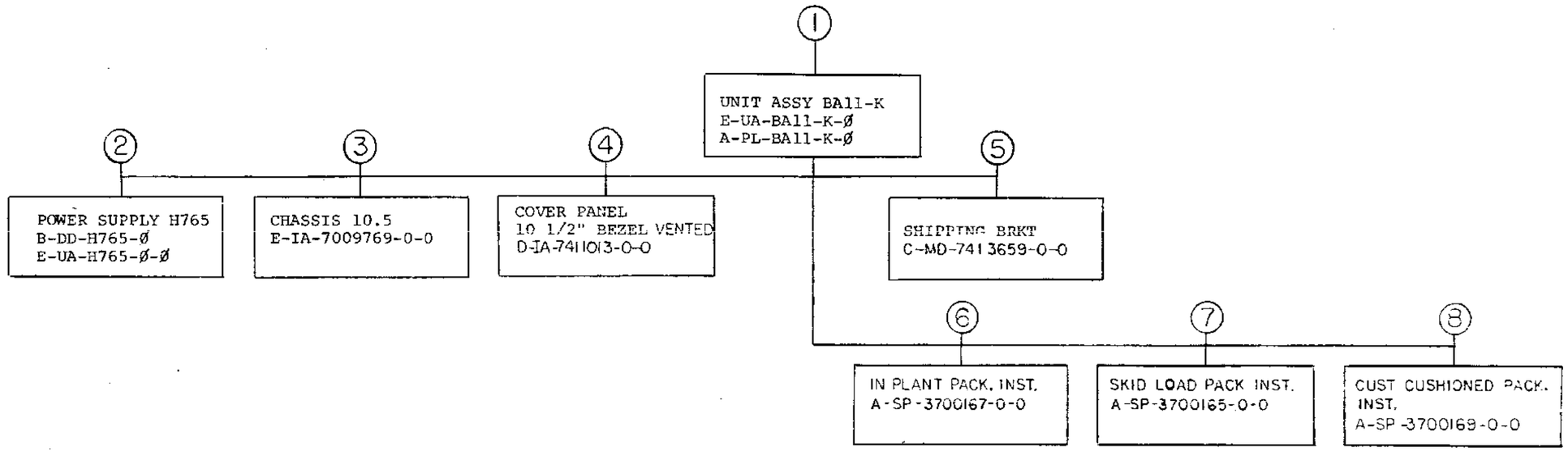
REVISIONS		
DATE	CHG. NO.	REV
E.A.	BA11K-4	A
E.A.	BA11K-5	B
[illegible]	BA11K-7	C
B.M.	BA11K-8	D
[illegible]	BA11K-9	E
[illegible]	BA11K-10	F
[illegible]	BA11K-11	H
R.L.P.	BA11K-12	J
[illegible]	BA11K-13	K
3-77	BA11K-14	L
11-77	BA11K-15	M

USED ON OPTION/MODEL	
11/05-S	
11/35-S	
SHEET 1 OF 4	

DRN. J. FERGUSEN	DATE 6/22/74	TITLE DRAWING DIRECTORY BA11-K
CHK'D. D. HEALY	DATE 7/3/74	
PROJ ENG. S. Antm	DATE 9/4/74	
PROD. [signature]	DATE 10/1/74	SIZE B / CODE DD / NUMBER BA11-K / REV M
FIELD SERV. R.L. Gates	DATE 9/3/74	DIST

DRB 106

510



TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY BA11-K	SHEET 2 OF 4	B	DD	BA11-K	M

DPE 107

511

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO / FILE DATE
X		1	E-UA-BA11-K-Ø	M	2	UNIT ASSY BA11-K	
X			A-PL-BA11-K-Ø	M	2	UNIT ASSY BA11-K PL	
			A-SP-BA11-K-6		8	BA11-K BASIC CHECKOUT AND ACCEPTANCE PROCEDURE	
			A-SP-BA11-K-7		10	BA11-K BASIC ASSEMBLY PROCEDURE	
C		2	B-DD-H765-Ø	※	5	POWER SUPPLY H765	

ELECTRICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO / FILE DATE

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
DRAWING DIRECTORY BA11-K	3 OF 4	B	DD	BA11-K	M

DRB 108

DEC 16-(325)-1063-29-R972

CUSTOMER PRINT SET				MECHANICAL														MECHANICAL					
1			MFG.	SET FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	1				MFG	SET FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO / FILE DATE
				1	E-UA-BA11-K-Ø	M	2	UNIT ASSY BA11-K						X	6	A-SP-3700167-0-0	-	3	IN PLANT PACK. INST.	
					A-PL-BA11-K-Ø	M	2	UNIT ASSY BA11-K PL								A-PS-9905650-0-0	-	2	REGULAR SLOTTED CARTON	
					D-IA-7009768-0-0		1	COVER, CHASSIS								A-PS-9905335-0-0	-	2	BEZEL PROTECTOR	
					D-PS-1211825-0-0		3	SLIDE, 3 POS TILT								A-PS-9905644-0-0	-	2	REAR PROTECTOR	
					D-MD-7412184-0-0		1	CABLE, TROUGH CHASSIS								A-PS-9905323-0-0	A	2	SIDE PROTECTOR	
X					D-UA-BC11A-10-Ø		1	UNIBUS, CABLE, 10 FT								A-PS-9905129-0-0	A	4	POLY BAG 20 x 13 x 40in 1-1/2 mil.	
X					B-CS-M919-Ø-1	#	1	BUS CONNECTOR M919												
X					B-CS-M929-0-1	#	1	BUS CONNECTOR M929												
					D-PS-1212405-00		1	CARD GUIDE						X	7	A-SP-3700165-0-0	-	4	SKID LOAD PACK. INST.	
					A-DC-5309414-0		1	DECAL UL								A-PS-1210568-0-0	-	2	CUSHIONED SKID	
					A-DC-5309413-0		1	DECAL NFPA								A-PS-9905445-0-0	-	2	HALF OVERLAP SLOTTED CARTON (TOP)	
					A-PS-3613281-0-0		1	DECAL								A-PS-9905419-0-0	-	2	FLANGED TUBE (BOTTOM)	
														X	8	A-SP-3700169-0-0	-	2	CUST. CUSHIONED PACK. INST.	
																A-PS-9905645-0-0	-	2	FULL TELESCOPE CAP	
				2	B-DD-H765-Ø		5	DWG DIRECTORY H765								A-PS-9905642-0-0	-	2	FOAM PAD	
					B-UA-H765-Ø-Ø		2	POWER SUPPLY H765								A-PS-9905643-0-0	-	2	FOAM WITH CORRUGATED SIDE WALL ASSEMBLY	
				3	E-IA-7009769-0-0		1	CHASSIS, 10.5												
					E-IA-7411703-0-0		1	CHASSIS, FRONT												
					E-IA-7411707-0-0		1	CHASSIS, SIDE												
					D-MD-7411706-0-0		1	BRACKET, HAT												
					D-MD-7411705-0-0		1	BRACKET, CARD GUIDE												
					C-MD-7412185-0-0		1	PLATE CABLE												
				4	D-IA-7411703-0-0		1	COVER PANEL 10 1/2 BEZEL												
				5	C-MD-7413859-0-0		1	SHIPPING BRKT												

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
DRAWING DIRECTORY BA11-K	SHEET 4 OF 4	B	DD	BA11-K	M

DRB 108

DEC 16-13251-1067-ZH-R977

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY BILL BLODGET	CHECKED D. HEALY	SECTION 1
DATE 6/26/74	DATE 6/27/74	
ENG P. E. JANSON	PROD W. LUCAS	ISSUED SECT. 1
DATE 8-23-74	DATE 8-23-74	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION												
			BA11-KE	BA11-KF	BA11-KH	BA11-KJ	BA11-KK	BA11-KL	BA11-KA						
1	E-IA-7009769-0-0	CHASSIS 10.5	1	1	1	1	1	1	1						
2	D-IA-7008768-0-0	COVER, CHASSIS	2	2	–	–	–	–	–						
3	D-CS-541086-0-1	POWER DISTRIBUTION BOARD	REF	REF	REF	REF	REF	REF	–						
4	D-PS-1211865-0-0	SLIDE, 3 POS TILT	1pr	1pr	–	–	–	–	–						
5	D-PS-1212405-0	CARD GUIDE, SINGLE	24	24	24	24	24	24	24						
6	9006071-3	SCREW, PHL TRUSS HD #10-32 X .38	10	10	–	–	–	4	–						
7	9003020-2	SCREW, PHL FLAT HD #6-32 X .25	4	4	4	4	4	4	–						
8	D-IA-7411013-0-0	COVER, PANEL 10 1/2 BEZEL (SNAP-ON VENTED)	1	1	–	–	–	–	–						
9	B-DD-H765-A	POWER SUPPLY H765-A 115V 50/60 HZ	1	–	1	–	–	–	–						
10	9006030-3	SCREW, PHL. TRUSS HD #6-32 X .25	9	9	5	5	5	5	5						
11	~~9006033~~	~~WASHER INTERNAL TOOTH LOCK #6~~	~~4~~	~~4~~	~~4~~	~~4~~	–	–	–						
12	9007651	WASHER EXTERNAL TOOTH #10	6	6	–	–	–	–	–						
13	9009599	SCREW, PHL FLAT HD (SPECIAL)	6	6	6	6	6	6	–						
14	9000565	NUT, KEPS, #10-32	6	6	–	–	–	–	–						
15	DEC-3-(374)-1625 N1174	STICKER, "CONFIGURATION"	1	1	–	–	–	–	–						
16	~~D-IA-7010059-0-0~~	~~SHIPPING BRKT. ASSY~~	~~1~~	~~1~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~						
17	B-DD-H765-B	POWER SUPPLY H765-B, 230V 50/60 HZ	–	1	–	1	–	–	–						
18	D-MD-7412184-0-0	CABLE TROUGH CHASSIS	–	–	1	1	1	1	1						
19	9008408-1	SCR, PH. HD SELF TAP #6-32 X .25	1	1	5	5	–	–	–						
20	D-UA-BC11A-10-0	UNIBUS CABLE, 10 FT	1	1	–	–	–	–	–						
21	1209224	LATCH MOLDING	4	4	–	–	–	–	–						
22	9008007-2	SCR PH HD FLT #10-32 X .25	8	8	–	–	–	–	–						

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
UNIT ASSY BA11-K	E-UA-BA11-K-Ø	A	PL	BA11-K-Ø	N	BA11-K 00016
	SHEET 1 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

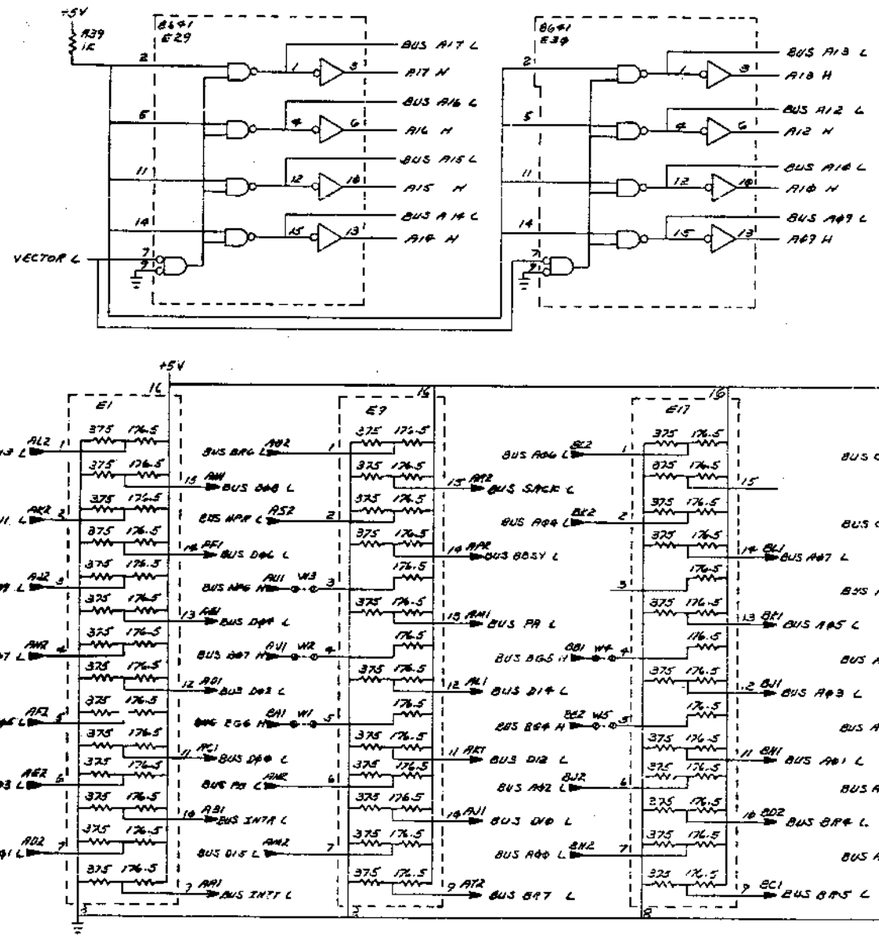
MADE BY BILL BLODGET	CHECKED D. HEALY	SECTION 1
DATE 6/26/74	DATE 6/27/74	
ENG P. E. JANSON	PROD W. LUCAS	ISSUED SECT. 1
DATE 8-23-74	DATE 8-23-74	

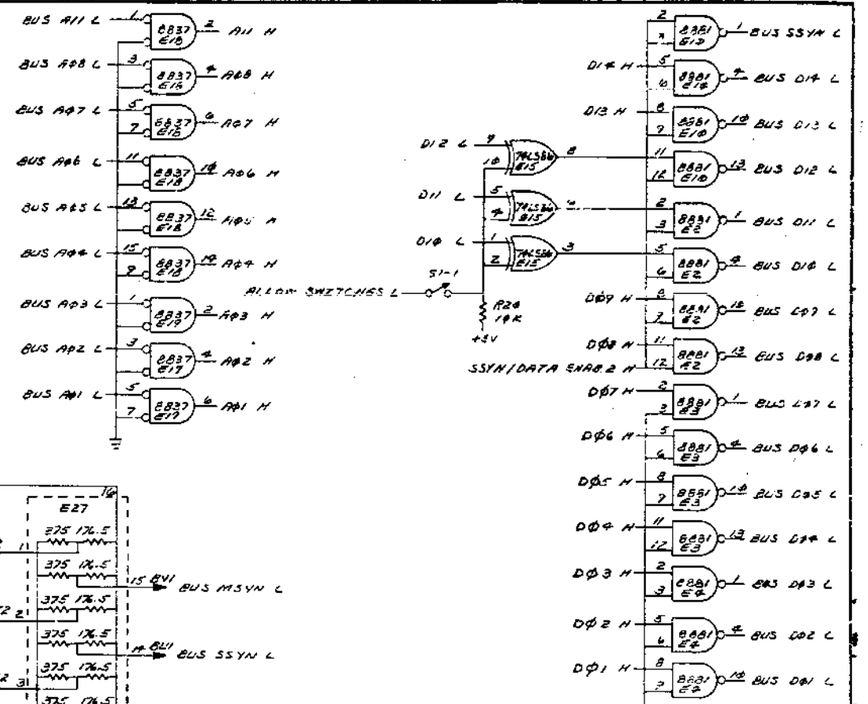
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION												
			BA11-KE	BA11-KF	BA11-KH	BA11-KJ	BA11-KK	BA11-KL	BA11-KA						
23	A-SP-3700167-0-0	IN PLANT PACK. INST.	REF	REF	REF	REF	REF	REF	REF						
24	A-SP-3700165-0-0	SKID LOAD PACK INST.	REF	REF	REF	REF	REF	REF	REF						
25	A-SP-3700169-0-0	CUST. CUSHIONED PACK. INST.	REF	REF	REF	REF	REF	REF	REF						
26	A-SP-BA11-K-6	BA11-K BASIC CHECKOUT AND ACCEPTANCE PROCEDURE	REF	REF	REF	REF	REF	REF	REF						
27	A-SP-BA11-K-7	BA11-K BASIC ASSEMBLY PROCEDURE	REF	REF	REF	REF	REF	REF	REF						
28	A-DC-5309414-0	DECAL, UL	1	1	–	–	–	–	–						
29	A-DC-5309413-0	DECAL, NFPA	1	1	–	–	–	–	–						
30	1211356-02	TAPE	A/R	A/R	–	–	–	–	–						
31	1211265-0-0	PRE FILTER	1	1	–	–	–	–	–						
32	C-MD-7413659-0-0	SHIPPING BRACKET	2	2	–	–	–	–	–						
33	B-DD-H765-C	POWER SUPPLY H765-C 115VAC 50/60HZ NO H754	–	–	–	–	1	–	–						
34	B-DD-H765-D	POWER SUPPLY H765-D 230VAC 50/60HZ NO H754	–	–	–	–	–	1	–						
35	A-PS-3613281-00	DECAL, ADHESIVE BACKED, BA11-K	2	2	1	1	1	1	1						
36	D-PS-1212405-1	CARD GUIDE, SINGLE	24	24	24	24	24	24	24						
37	9007086-00	CLAMP, CABLE	1	1	1	1	1	1	–						

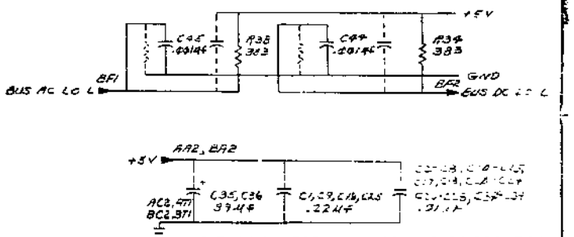
TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
UNIT ASSY BA11-K	E-UA-BA11-K-Ø	A	PL	BA11-K-Ø	N	
	SHEET 2 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

514



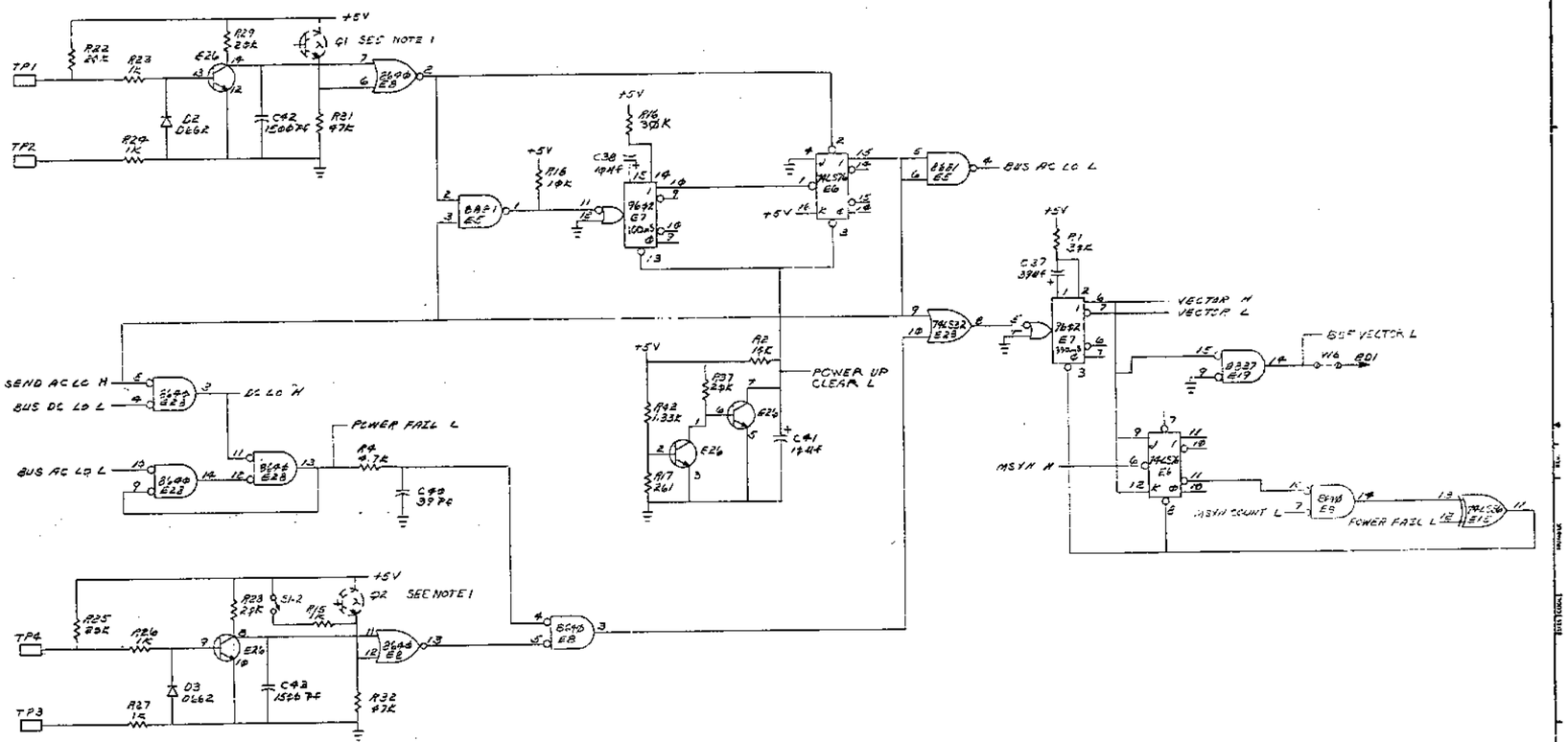




(BUS TERMINATOR, DRIVERS AND RECEIVERS)

DRN.		FIRST USED ON	
CHK'D			digital
ENG.		TITLE	BOOTSTRAP TERMINATOR
PROJ. ENG.			
PROD.			
NEXT HIGHER ASSY.		SIZE D	CODE CS
SCALE		NUMBER M9312-0-1	REV. B
SHEET 1 OF 4		DIST.	

515



NOTES: 1. PHOTO TRANSISTORS Q1 AND Q2 DO NOT APPEAR ON THE PARTS LIST, THEY ARE INTENDED FOR FUTURE APPLICATIONS.

REVISIONS		
CHK	CHANGE NO.	REV.

(SWITCH FILTERS AND AC LO GENERATION)

TITLE	SIZE	CODE	NUMBER	REV.
BOOTSTRAP TERMINATOR	D	CS	M9312-0-1	B
SCALE	SHEET 2 OF 4	DIST.		

BYTE ADR 0 H
BYTE ADR 1 H
A01 H
A02 H
A03 H
A04 H
A05 H
A06 H
A07 H
A08 H

HI-LO ROM DECODER

A17-09	LO ROM ENA H	BOOT SEL N	LOW ROM L	HIGH ROM N
765 XXX	H	H	L	L
765 XXX	L	L	H	L
775 XXX	X	H	H	H
DEFAULT	X	L	H	L

ALLOW SWITCHES ROM

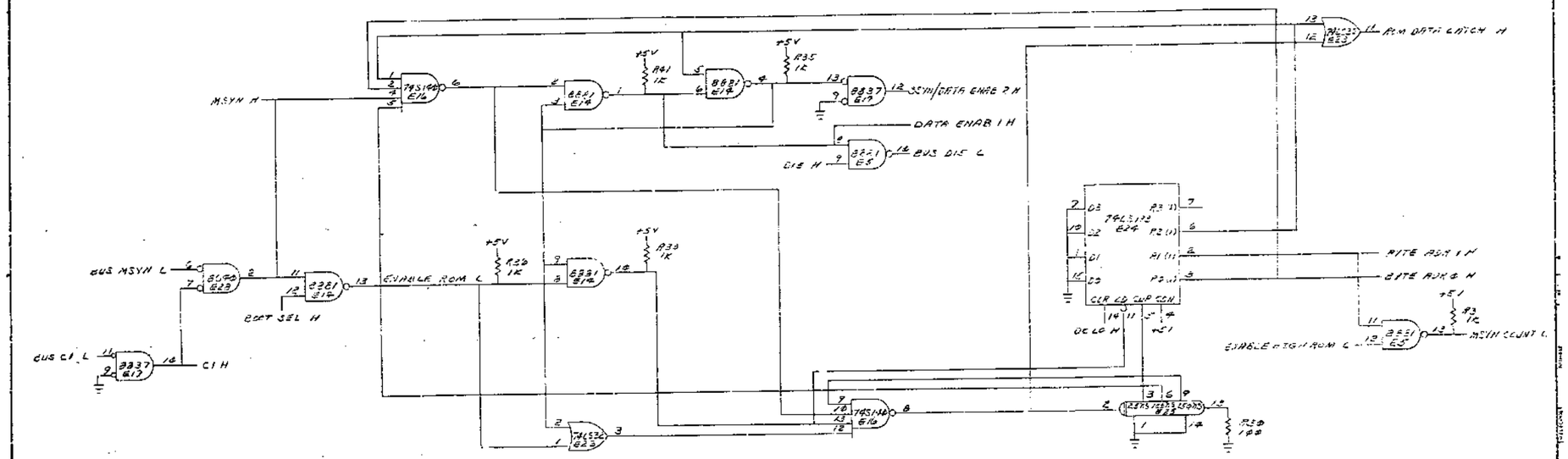
ADR-09 (OCTAL)	HIGH ROM H	ENABLE ROM L	A11, W13	W11, W12	ALLOW SWITCHES L	ALLOW SWITCHES H
XXX	X	H	X	X	H	H
XXX	L	L	IN	OUT	H	L
XXX	L	L	OUT	IN	H	L
024	H	L	IN	OUT	L	H
DEFAULT	X	L	IN	OUT	H	L
224	H	L	OUT	IN	L	H
DEFAULT	X	L	OUT	IN	H	L

ALLOW SWITCHES H
ALLOW SWITCHES L
BOOT 3L
BOOT 1L
BOOT 2L
BOOT 4L
ROM DATA LATCH H
DATA ENAB 1 H
ENABLE ROM L
ENABLE HIGH ROM L

			BOOT 1 L	BOOT 2 L	BOOT 3 L	BOOT 4 L
L	L	L	H	L	H	H
L	H	L	H	H	L	H
H	L	L	H	H	H	L
H	H	L	H	H	H	H
X	X	H	H	H	H	H
X	X	L	L	H	H	H

(ADDRESS DECODE AND BOOT ROMS)

TITLE	SIZE	NUMBER	REV.
BOOTSTRAP TERMINATOR	D	CS M9312-0-1	E
SCALE	SHEET 3 OF 3	DIST.	



(TIMING AND CONTROL)

REVISIONS		
CHR	CHANGE NO.	DIV.

TITLE	SIZE	CODE	NUMBER	REV.
BOOTSTRAP TERMINATOR	D		MS812-D-1	B
SCALE	SHEET 4 OF 4		DIST.	