digital

11/04

Engineering Drawings

Digital Equipment Corporation

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FIELD MAINTENANCE PRINT SET

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UNIBUS TERM	D-CS-M93Ø2-Ø-1		
DRAWING DIRECTORY DD11-C (COMPLETE SET)	B-DD-DD11-C		
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PRINT SET MS11-E	MPØØØ21		
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PRINT SET MM11-YP	MP00317		
PRINT SET MM11-DP	MPØØØ32		
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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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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	2 FEB-78

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 C Smith	DATE 10-22-75	

digital

TITLE: FIELD MAINTENANCE PRINT SET 11/Ø4

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

DIST.

EN-01124-16-N6-15-1327

DRB 124

2

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GND STRAP PART OF ITEM #12,13,14 OR 15 (BA11-L) (SEE NOTE 4)

H777 PWR CORD

(QTY 4) 39 40

26

A A

B

B

48 REF

SERVICE LOOP

M9312 SLOT A,BØ3 SEE NOTE 10

SEE NOTE 1

2 OR 3

BLK WIRE

RED WIRE

TP4 TP1 TP3

SHIELD

SEE NOTE 8

29 REF

12 13 14 15 REF

SEE NOTES 2 & 6

SEE DETAIL B&C SHEET 1 & 3

48 (QTY 5)

SEE NOTE 9

29 REF

SEE NOTE 3

(QTY 2) 40 88

8 73 90 REF

87

12 13 14 15

A B C D E F

RED STRIPE

(QTY 2) 40 88

87 REF

36 (QTY 2)

CABLE, PART OF ITEM #12,13,14 OR 15 (BA11-L)

GND JUMPER SEE NOTE 7

20

GRN/YEL

SEE NOTE 5

CONSOLE BD KY11-LA-1

44 45

BLK WIRE

RED WIRE

29

30

RED STRIPE

8 73 90

84

1 — KD11-D (M7263) ITEM #1
2 — MEMORY (W/DD11-P) OR M9312 (W/DD11-C)
3 — { MEMORY (W/DD11-C ONLY) / M9312 (W/DD11-P AND ANY MEMORY EXCEPT MM11-DP OR MM11-YP) }
4 — M9312 (W/DD11-P AND MM11-DP MEMORY OR MM11-YP MEMORY)
5
6
7
8
9 — M9302 ITEM #4 { SLOT ABØ4 ON DD11-C / SLOT AB09 ON DD11-P } OR BC11A UNIBUS OUT CABLE

VIEW B-B
SCALE: NONE
ROTATED AS SHOWN

50

TO BATTERY BACK UP OPTION H775 ONLY. THIS IS NOT A TTY CONNECTOR
+15V MOS

POWER CONT

ONE DOUBLE SYST UNIT (8 SLOT)

J5

J1 1ST SYST UNIT (4 SLOT)

J2

J3 2ND SYST UNIT (4 SLOT)

J4

VIEW A-A
SCALE: NONE

EXISTING HDW BA11-L

USE SHIPPING PART 23-301 WHEN SHIPPED IN SHIPPING BOX FOR CUSTOMER SHIPMENTS.

DETAIL - C

NOTES:

1. UNIBUS AND I/O CABLE HOLD DOWN BAR TO BE USED TO CLAMP ALL EXITING CABLES.
2. FOR RACK MOUNTING INSTRUCTION & DIM SEE DRAWING NO E-UA-BA11-L-0
3. FOR MODULE PLACEMENT RULES REFER TO DRAWING D-MU-DD11-P2
4. DISCONNECT WRAP AROUND GROUND WIRE BEFORE REMOVING FROM ENCLOSURE.
5. FOR WIRING INFORMATION OF KY11-LB (PROGRAMMER CONSOLE) SEE SHEET 3 OF 3.
6. FOR CAB MTG REMOVE SHIPPING BRKTS AND INSTALL AS SHOWN IN DETAIL "B" USING 2 #10-32 X .50 TRUSS HD SCREWS & 2 #10-32 KEP (TYP BOTH SIDES) PLUS EXISTING HDW AS INDICATED IN DETAIL "B".
7. THIS JUMPER IS REQUIRED ON ALL CS REV E CONSOLE MODULES, USED IN BA11 BOXES.
8. IN PDP11/04 SYSTEMS WITHOUT BATTERY BACKUP, (OPTION H775) THE TP1 CONNECTION WILL CAUSE BOOTS ON ALL POWER RESTARTS. IF BOOTS ON POWER RESTARTS ARE NOT DESIRED, REMOVE THE TP1 CONNECTION, INSULATE THE CABLE TERMINAL AND TIE IT BACK ON ITSELF WITH A TIE WRAP.
9. 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 THE DESIGNATED AREAS USING A HEAT GUN AT A DISTANCE OF 6 INCHES FOR A PERIOD OF 10 SECONDS.
10. EITHER M9312 OR M9301 MAYBE USED BUT NOT BOTH.

OFF SHEET PARTS LIST EXISTS
SEE C-PL-11/04-0-0

SIZE	CODE	DWG NO
E	UA	11/04-0-0

UNIT ASS'Y 11/04

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CONNECTS TO PWR. DIST. BD J11, J10 & J9

P2 P3 P4

PIN A01 A1

SEE NOTE 5

DD11-PK

26

SEE DETAIL 'D' SHEET 3

52

90 73 REF

8 OR KY11-LB SEE NOTE 17

19 17 16

(H754) SEE NOTE 10

(H744)

DANGER HIGH VOLTAGE

DD11-PK

REG 2 (H744)

REG 1 (H745)

PIN A01 A1 +

TO M9312

F E D C B A

SEE NOTE 14

48 QTY 5

SEE NOTE 6

SEE NOTE 16

63

34

30

SEE NOTE 6

RED BLK BLU

RED BLK

TO J3 ON AC INPUT BOX

J1 J2

BT SW BT ENBL +5V GND GND GND

KY11-LA

SEE 5-47 #3 FOR KY11-LB WIRING DIAGRAM

8 REF

PWR DIST. BOARD

29

SHIELD RED BLK

TP3 TP1 TP4

M9312

SEE NOTE 12

2 OR 3 OR 89

WIRING DIAGRAM

84

55

56 SEE NOTE 11

A B

52 REF

70 (QTY 2)

85 (QTY 6)

REAR CABINET RAIL SHOWN FOR REF ONLY

53 77 SEE NOTE 11

41 44 QTY 4

8 REF

90 73

SEE NOTE 17

62 (QTY 2)

77 76 QTY 4 SEE NOTE 11

A

75 76 (QTY. 2)

86 (QTY 4)

34 REF

78 (QTY 4)

75 76 QTY 6 SEE NOTE 11

54

51

49 (QTY 4) SEE NOTE 13

47

SEE NOTE 9

65 (QTY 2)

47

VIEW A-A
SCALE: NONE

59

VIEW B-B
SCALE: NONE
ONLY TOP COVER SHOWN

SEE NOTE 15

60 61 SEE NOTE 7

J8 J2 J7 J1 J6 J5 J4 J3 J12 J11 J10 J9

P13 P14 P15

26

39 40 QTY 4

NOTES:

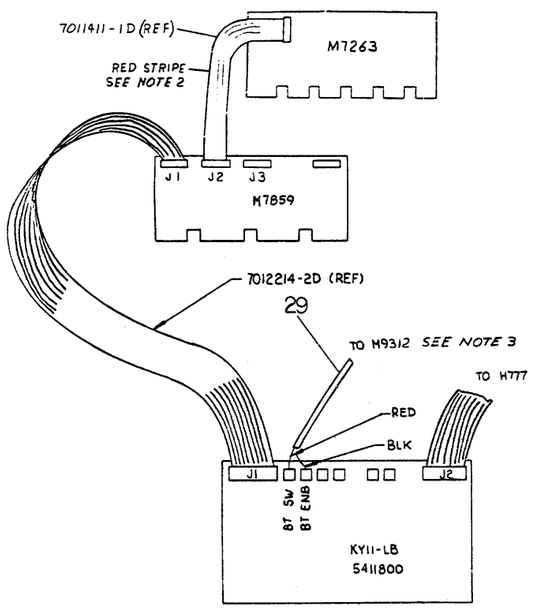
1. CAUTION: OFF SHEET PARTS LIST EXISTS SEE A-PL-11Ø4-Ø.
2. SEE DD11-P MODULE UTILIZATION DRAWING FOR MODULE PLACEMENT INFORMATION.
3. FOR ADDITIONAL INFORMATION REFER TO E-UA-BA11-K-Ø& E-UA-7Ø1332-3-Ø-1
4. TIGHTEN ALL SYSTEM UNIT MOUNTING SCREWS TO 13 IN LBS WITH A TORQUE SCREW DRIVER.
5. WHEN THE DD11-PK IS USED WITH A BA11-K EXPANSION BOX WITHOUT BATTERY BACK UP, INSTALL THE THREE JUMPERS SHOWN:
   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 MEMORY VOLTAGE RAILS.
6. LOOP THE M9312 CABLE ITEM # 29 UNDER THE CABLE HOLD DOWN BAR. (SERVICE LOOP)
7. TIE DOWN F16, PART OF ITEM # 16, WITH TWO TIE WRAPS (ITEM #60) WHEN H754 IS NOT USED.
8. ~~GROUND THE BLK CHASSIS GROUND UNDER THE H744 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.C.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 H765 P.S.
16. EITHER M9312 OR M9301 MAYBE USED BUT NOT BOTH.
17. KY11-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 MODULES TO THE M7859.

QUANTITY & VARIATION	DESCRIPTION	DWG./PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
THIRD ANGLE PROJECTION	DRAWN	FIRST USED ON	digital
	CHK'D		
	ENG		
	PROJ. ENG		
	APPD		
DO NOT SCALE THIS DRAWING	NEXT HIGHER ASSY.		
MATERIAL SEE PARTS LIST	FINISH	SIZE E	CODE UA
	SCALE	NUMBER 11Ø4-0-0	REV.
	SHEET 1 OF 3	DWG. 11Ø4-0-0	SHT.

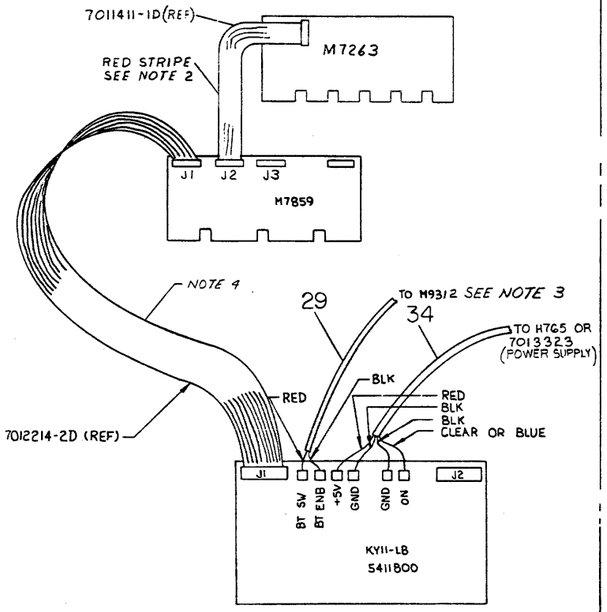
TITLE: UNIT ASSY 11Ø4

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WIRING DIAGRAMS FOR KY11-LB

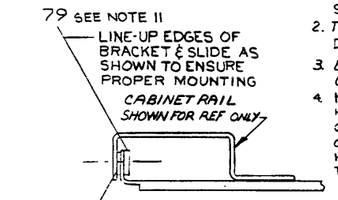


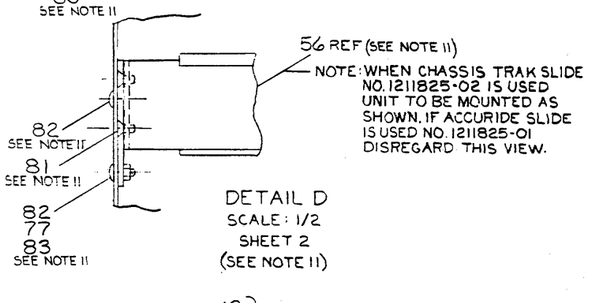
BA11-L
5 1/4" MTG BOX



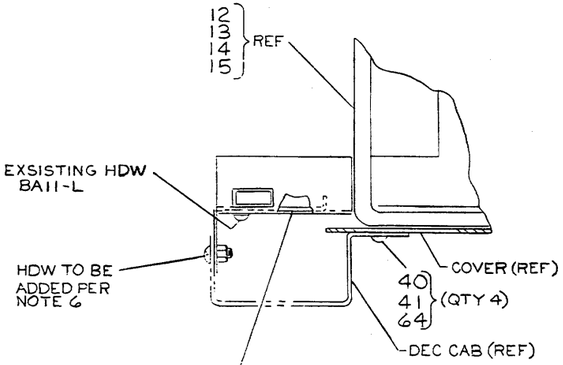
BA11-KA & 7013323
10½" MTG BOX & POWER SUPPLY

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. KY11-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	M
SCALE —	SHEET 3 OF 3	DIST.		

5

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ITEM NO.	DRAWING NO.	DESCRIPTION	11/04 AA	11/04 AB	11/04 BA	11/04 BB	11/04 DA	11/04 DB	11/04 AC	11/04 AD	11/04 BC	11/04 BD	11/04 DC	11/04 DD	11/04 LC	11/04 LD	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 DH	11/04 DJ	11/04 LH	11/04 LJ	11/04 RH	11/04 RJ	11/04 MH	11/04 MJ	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
2	D-CS-M9301-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	-	-	-	-
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
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	A-PL-DL11WA-Ø (SEE NOTE:1)	SERIAL LINE/LINE CLOCK (M7856)/CABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
7	D-CS-M785Ø-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
9	A-PL-MS11-JP-Ø	MEMORY, MOS 16K X 18 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	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-9	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
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	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	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
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
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 (1Ø.5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REF	REF	REF	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
~~35~~	~~D-IA-7008360-0-1~~	~~CABLE ASSY TTY (ZUMA)~~																																						
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-7012195-1-0~~	~~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
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
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
~~42~~	~~9005382~~	~~WASHER, FLAT #8~~																																						
43	9008135	NUT, K22 #6																									2	2	2	2	2	2	2	2	2	2	2	2	2	2

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

REVISIONS	CHK	CHANGE NO.	REV.
REVISED AND RETYPED E.BERNSTEIN 26 Feb 76	P.G.	11/Ø4-00003	C
B.BERNSTEIN 6 JULY 76	P.G.	11/Ø4-00004	D
P.PORRECA 14 Jan 77	Q.C.	11/Ø4-00005	E
P.PORRECA 23 MAR 77	Q.C.	11/Ø4-00006	F
P.PORRECA 1 April 77	J.	11/Ø4-00007	H
P.PORRECA 5/9/77	Paul Porreca	11/Ø4-00008	J
P.PORRECA 29 JUNE 77	P. Porreca	11/Ø4-00009	K
B.BERNSTEIN 5 DEC 77	B.C.	11/Ø4-00010	L
E.CROCKER 2 MAR 78	P.G.	11/Ø4-TW011	M
E.CROCKER 14 AUG 78	P. Green		

DRN. B.BERNSTEIN	3/8/76	FIRST USED ON 11/Ø4
CHK'D.	3/14/76	TITLE UNIT ASSY 11/Ø4
ENG.		
PROJ. ENG.		
PROD.		
NEXT HIGHER ASSY. E-UA-11/Ø4-Ø-Ø		SIZE C / CODE PL / NUMBER 11/Ø4-Ø-Ø / REV. M
SCALE		DIST.
SHEET 1 OF 2		

digital

REV. M
NUMBER 11/04-0-0
CODE PL
SIZE C

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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 LD	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 DH	11/Ø4 DJ	11/Ø4 LH	11/Ø4 LJ	11/Ø4 HH	11/Ø4 HJ	11/Ø4 MH	11/Ø4 MJ	11/Ø4 JH	11/Ø4 JJ	11/Ø4 DM	11/Ø4 DN	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	12111336-2	TAPE, 8" 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-H95Ø-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-3309411-0-0~~	~~DECAL, UL~~	~~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, NFPA~~	~~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~~	~~9006630-2~~	~~SCREW, PHIL FLAT HD #6 – 32 x .25~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~12~~	~~-~~	~~-~~	~~12~~	~~12~~	~~12~~	~~12~~
~~72~~	~~9007801~~	~~WASHER, LOCK #6~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~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~~	~~9007651~~	~~WASHER #10 EXT TOOTH~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~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	13APR76
ENG.	B. BERNSTEIN	13APR76
PROJ. ENG.	B. BERNSTEIN	13APR76
PROD.	K. MacDONALD	13APR76

NEXT HIGHER ASSY.
B-UA-11/Ø4-Ø-Ø

SCALE

SHEET 2 OF 2

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
UNIT ASSY 11/Ø4

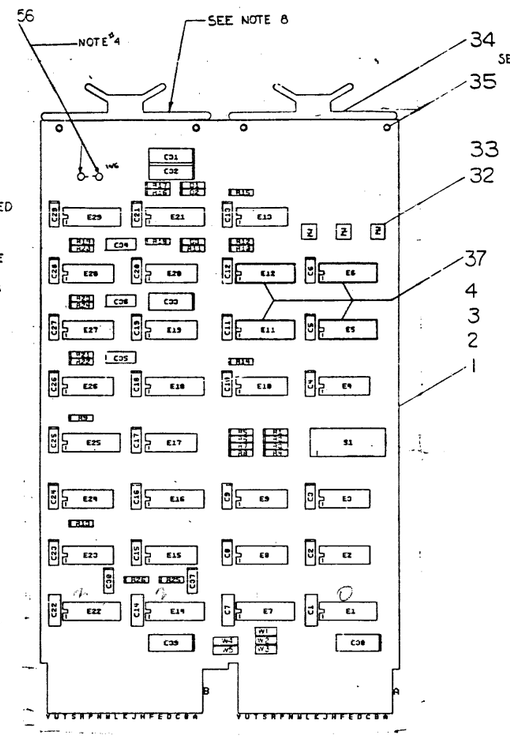
SIZE	CODE	NUMBER	REV.
C	PL	11/Ø4-Ø-Ø	M

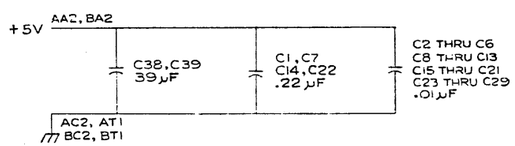
DIST.

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NOTES:

1. IN PDP11/04, 11/09 AND PDP 11/34, 11/35 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 B01 IN THESE MODIFIED BACKPLANES WILL NOT BE TIED TO GROUND.
5. EARLIER VERSIONS USED PLASTIC SWITCH COVER (PN 12111B4-001) TO PREVENT INADVERTENT PROGRAMMING 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.





IC TYPE	GND	+5V
I.C. DEC 314	1	8
I.C. DEC 7476	13	5
I.C. DEC 8540	1	8
I.C. DEC 8837	8	16
I.C. DEC 9602	8	16

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

IC PIN LOCATIONS

REF											QTY	DESCRIPTION	PART NO.	ITEM NO.
												X-Y COORDINATE HOLE LOCATION	K-CO-M9301-0-4	1
												ASSY/DRILLING HOLE LAYOUT	D-AH-M9301-0-5	2
												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 .01 µF 100V 20%	1001610-01	6
2	2	2	2	2	2	2	2	2	2	C30, C37		CAP .221µF 250V 20%	1200043	7
4	4	4	4	4	4	4	4	4	4	C32, C33, C38, C39		CAP 39 µF 10V 10%	1000076	8
3	3	3	3	3	3	3	3	3	3	C34, C35, C36		CAP 270pF 100V 5%	1200022	9
3	3	3	3	3	3	3	3	3	3	D1, D2, D3		DIODE DG24 IN3626	1100114	10
8	8	8	8	8	8	8	8	8	8	R1 THRU R8		RES 12K 1/4W 5%	1320473	11
2	2	2	2	2	2	2	2	2	2	R9, R12		RES 1K 1/4W 5%	1320365	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%	1302388	16
2	2	2	2	2	2	2	2	2	2	R25, R26		RES 383Ω 1/4W 1%	1325125	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	1905585	29
1	1	1	1	1	1	1	1	1	1	S1		SWITCH, DIP, 10 POLE	1211164-06	30
												~~SWITCH COVER~~	~~1211184-03~~	31
3	3	3	3	3	3	3	3	3	3			EYELET (FASTCN)	9009200	32
3	3	3	3	3	3	3	3	3	3	TP1, TP2, TP3		TAB (FASTCN)	9207112	33
2	2	2	2	1	2	2	2	2	2			HANDLE FLIP/CHIP MAGENTA	9028337-06	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

M9301-YK | M9301-YJ | M9301-YE | M9301-YH | M9301-YF | M9301-YD | M9301-YL | M9301-YB | M9301-YA | M9301

FIRST USED ON OPTION MODEL: 11/04

ETCH BOARD REV. F1

PARTS LIST

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

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	REVISIONS
F	0602	ECO M9301-0602 R. GRUDA 31 DEC 77
E	0015	ECO M9301-0015 R. GRUDA 5 August 77
D	0014	ECO M9301-0014 R. GRUDA 5 August 77
C	0013	ECO M9301-0013 R. GRUDA 17 MARCH 77
B	0011	ECO M9301-0011 R. GRUDA 17 MARCH 77
A	0010	ECO M9301-0010 R. GRUDA 17 MARCH 77
P	0009	ECO M9301-0009 R. GRUDA 17 MARCH 77
N	0008	ECO M9301-0008 J. BLOEM 29 DEC 76
M	0007	ECO M9301-0007 J. BLOEM 29 DEC 76
L	0006	ECO M9301-0006 J. BLOEM 29 DEC 76
K	0005	ECO M9301-0005 J. BLOEM 29 DEC 76
J	0004	ECO M9301-0004 J. BLOEM 29 DEC 76
H	0003	ECO M9301-0003 JOHN BLOEM 12-11-75

DRN. J. VINCENT	DATE 4/9/75	digital	
CHKD. R. COOK	DATE 5/13/75		
ENGR. T. DELBANEUR	DATE 5/23/75	TITLE UNIBUS TERMINATOR/ BOOTSTRAP	
PROJ. ENGR. J. BLOEM	DATE 6/19/75		
MFG. R. PETERSEN	DATE 6/30/75		
NEXT HIGHER ASSY		SIZE D	CODE 03509
SCALE		NUMBER M9301-YF-1	REV. F
SHEET 1 OF 5		DIST.	

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4	4	4	4	4	4	4	4	4	E5, E6, E11, E12	SOCKET, 16 PIN, I.C.	1211813	37
Ø	Ø	Ø	3	Ø	Ø	Ø	Ø	1	E5	I.C. DEC. TRI-STATE 2Ø48 ROM	23Ø34A9	38
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø35A9	39
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø36A9	40
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø37A9	41
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø38A9	42
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø39A9	43
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø4ØA9	44
Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø41A9	45
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø42A9	46
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø43A9	47
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø44A9	48
Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø45A9	49
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø46A9	50
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø47A9	51
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23123A9	52
Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø49A9	53
Ø	Ø	Ø	5	Ø	Ø	5	Ø	Ø	W1 THRU W5	JUMPER, WIRE, WHITE INSULATION.	9ØØ9185	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	Ø	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	2348ØA9	57
Ø	2	Ø	2	1	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	2348 1A9	58
Ø	2	2	2	1	Ø	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23482A9	59
Ø	2	Ø	2	1	Ø	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23483A9	60
Ø	Ø	2	1	Ø	Ø	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23332A9	61
Ø	Ø	Ø	1	Ø	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23333A9	62
Ø	Ø	3	1	Ø	Ø	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23334A9	63
Ø	Ø	1	1	Ø	Ø	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23335A9	64
Ø	2	1	Ø	2	2	2	2	2	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23538A9	65
Ø	2	1	Ø	2	2	2	2	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23539A9	66
Ø	2	1	Ø	2	2	2	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23540A9	67
Ø	2	1	Ø	2	2	2	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23541A9	68
Ø	1	2	Ø	2	2	2	2	2	E5	I.C. DEC TRI-STATE 2Ø48 ROM	2352ØA9	69
Ø	1	Ø	Ø	2	2	2	2	2	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23521A9	70
Ø	1	2	Ø	2	2	2	2	2	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23522A9	71
Ø	1	Ø	Ø	2	2	2	2	2	E12	I.C. DEC TRI-STATE 2Ø48 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 2Ø48 ROM	23744A9	74
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23745A9	75
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23746A9	76
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 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-YF	M9301-YD	M9301-YC	M9301-YB	M9301-YA	M9301			

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS TERMINATOR/BOOTSTRAP	D	CS	M9301-Ø-1	A
SCALE —	SHEET 2 OF 5	DIST.		

M9301-Ø-1

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R17 30K +5V — C32 39 µF — D1 DG64 — W6 *** 6D1 ENB BOOT ADRS L

R12 1K +5V

9602 E21 — 8881 E23 — BUS AI7 L / BUS AI6 L / BUS AI5 L

8881 E15 — BUS AI4 L / BUS AI3 L / BUS AI2 L / BUS AIØ L / BUS AØ9 L

R16 30K +5V — C31 1µF — D2 DG64 — R15 220Ω +5V

9602 E21 — TP2 — TP3 — ** EXTERNAL BOOT SWITCH — PWR UP CLR L

7474 E13 — 8881 E28 — BUS AC LO L

BUS DC LO L — 8837 E25 — 7437 E26 — DC LO H

7476 E29 — ENAB DATA H

8640 E20 — BUS AC LO L — +5V — R10 220Ω — TP1 — SI-2 — POWER UP REBOOT ENABLE

R20 2K +5V — R19 47Ω — C34 270pF 150NS — R22 2K — R21 47Ω — C35 270 pF 150NS — 8881 E28 — 8881 E27 — BUS SSYN L

R24 2K +5V — R23 47Ω — C36 270 pF — 8881 E28 — 8640 E20 — 8837 E25 — DC LO H

BUS INIT L — R18 4.7K +5V — C33 39µF — D3 D664 — 8640 E20 — 8881 E28 — R11 4.7K +5V — PWR UP CLR L

BUS AI7 L / BUS AI6 L / BUS AI5 L / BUS AI4 L / BUS AI3 L / BUS MSYN L — 314 E24 — 8881 E27

BUS CI L — 8837 E25

R14 4.7K +5V — R13 4.7K +5V — ENAB DATA L — ENAB DATA H — 8881 E27 — 8881 E27

BUS AØ6 L — BUS AØ8 L — BUS AØ4 L — BUS AØ5 L — BUS AØ3 L — BUS AØ1 L — BUS AØ2 L — BUS AØ7 L — E25-4 DC LO H — 8837 E18 / 8837 E25

AØ8 H / AØ7 H / AØ6 H / AØ5 H / AØ4 H / AØ3 H / AØ2 H / AØ1 H

3-4 E19 — 7437 E26 — ENAB JUMP L — 765XXX L

BUS AI2 L — BUS AI1 L — BUS AIØ L — BUS AØ3 L — 8837 E16 / 8837 E25 — 7420 E17 — 7437 E26

R9 1K +5V — SI-1 — LOW ROM ENABLE — * 765XXXL — * 773XXX L

* ADRESS BITS A13-A17 ARE DECODED BY E24

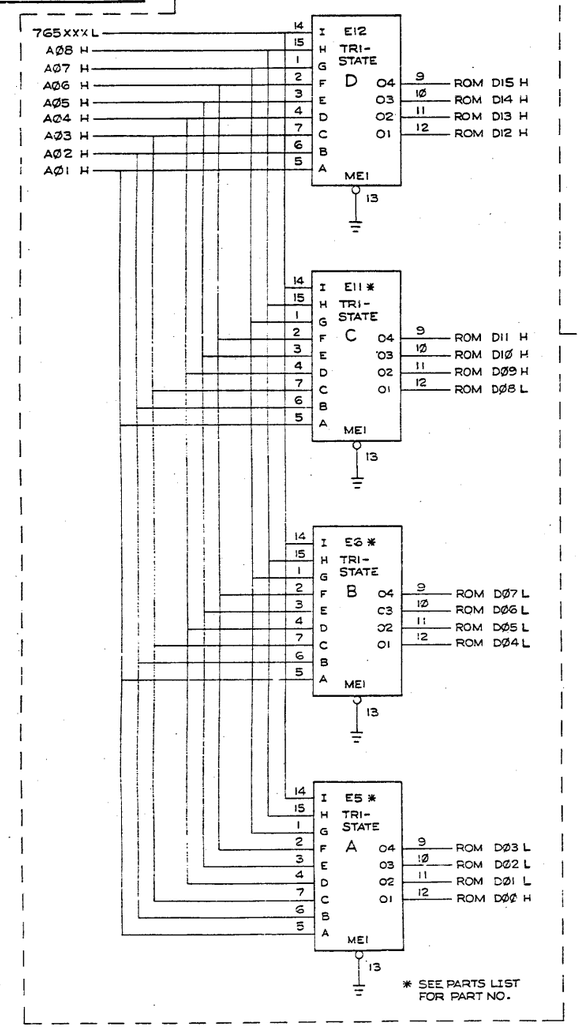
** CAUTION SHOULD BE TAKEN TO GUARANTEE PROPER NOISE FILTERING & LOGIC LEVELS ON THESE INPUTS

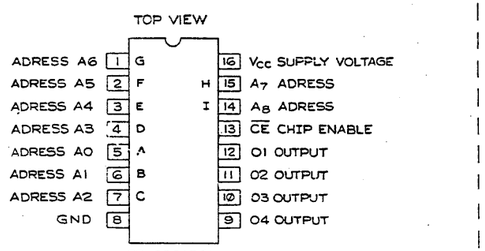
*** JUMPER W6 SHOULD ONLY BE INSTALLED IN 11/55 AND 11/70 COMPUTERS WHOSE BACKPLANES HAVE BEEN MODIFIED FOR THIS MODULE.

REVISIONS		
CHK	CHANGE NO.	REV.

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

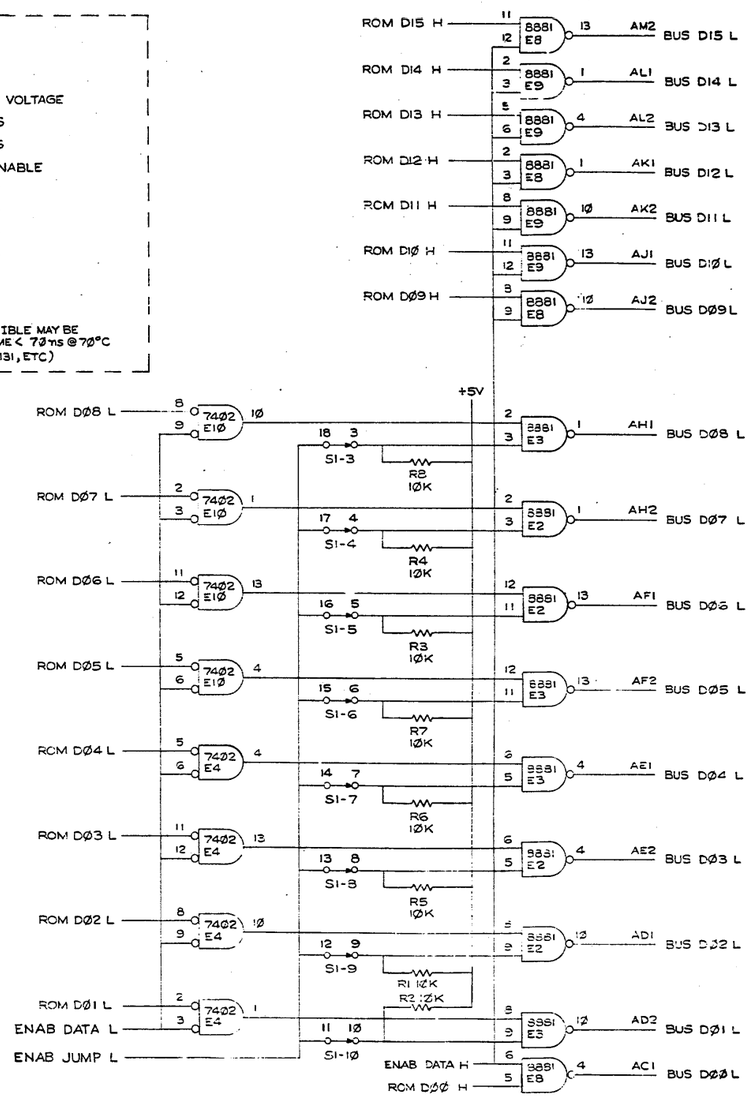
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3. BLANK PROMS HAVE DEC PART NO. 23-000A901
4. BIPOLAR 2048 (512 X 4) BIT PROMS PIN COMPATIBLE MAY BE USED WITH TRI-STATE OUTPUTS AND ACCESS TIME < 70 ns @ 70°C (INTERSIL 5624, MMI 6306, SIGNETICS 825131, ETC)

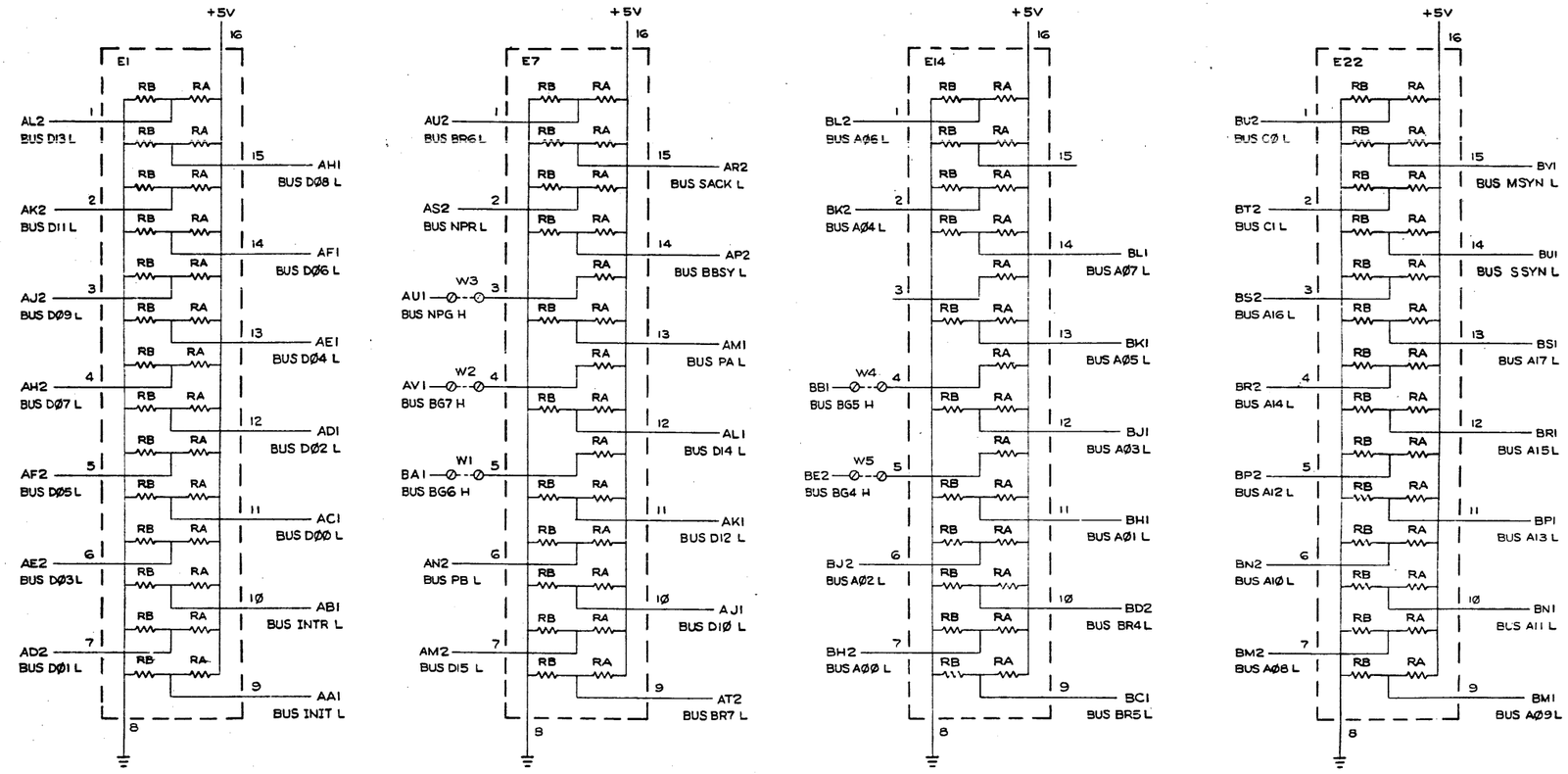
ADRESS RANGE	
765000-765776	LOW ROM
773000-773776	HIGH ROM



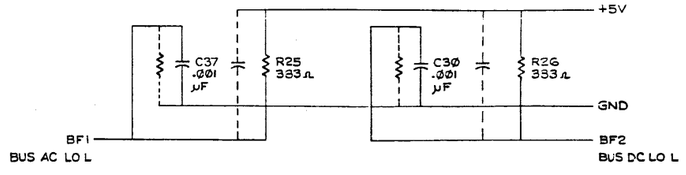
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS TERMINATOR/BOOTSTRAP	D	CS	M9301-0-1	V
SCALE —	SHEET 4 OF 5		DIST.	

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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.



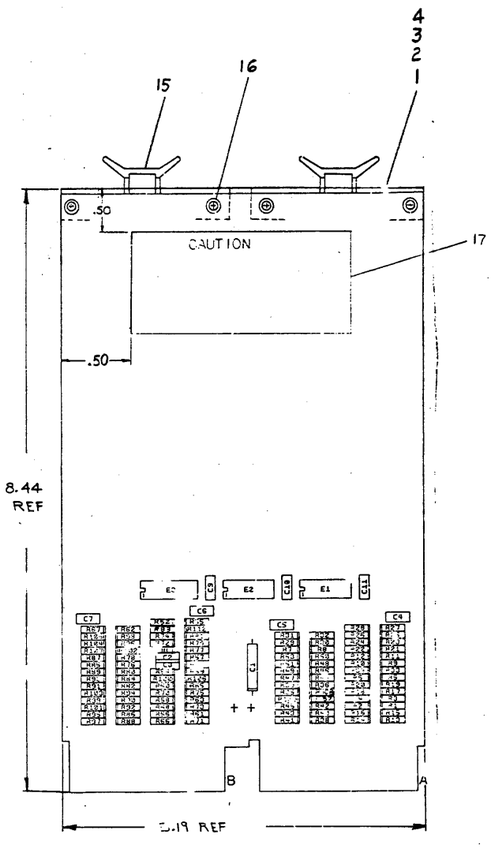
REVISIONS		
CHK	CHANGE NO.	REV.

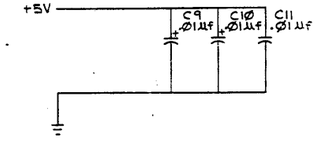
TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS TERMINATOR/BOOTSTRAP	D	CS	M93Ø1-Ø-1	V
SCALE —/—	SHEET 5 OF 5		DIST.	

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NOTES:

1.) THE FOLLOWING REFERENCE DESIGNATIONS ARE NOT USED: C8, R64, 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				
REF		X-Y HOLE COORDINATE HOLE LOCATION	K-CO-M9302-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M9302-0-5	2
REF		MODULE ECO HISTORY	B-MH-M9302-0-6	3
REF		ETCHED CIRCUIT BOARD	5011311	4
3	C9, C10, C11	CAP .01 uf 100V 20% DISC	1001610-01	5
1	C1	CAP 39 µf 10V 10%	1000076	6
~~1~~	~~C8~~	~~CAP 6.8 µf 35V 10%~~	~~1005205~~	~~7~~
4	C4 THRU C7	CAP .22 µf 50V X%	1010274-01	8
2	C2, C3	CAP .001 µf 250V 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, R58, R58, R60, R62, R66, R69, R70, R72, R74, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R96, R98, R100, R102, R57, R63, 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, R56, 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	1905578	12
1	E1	I.C. DEC 8881	1909705	13
1	E3	I.C. DEC 8837	1911116	14
2		HANDLE, FLIP-CHIP (MAGENTA)	9008337-6	15
4		EYELETS	9006732	16
1		DECAL	B-DC-7416791-C-1	17

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV B

SEMICONDUCTOR CONVERSION CHART

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

REV	CHANGE NO.	CHK	REVISIONS
D	M9302-0000?	R. Barry	14 June 76
C	M9302-0000?	T. DUDANIEWICZ	
B	M9302-0001?	T. DUDANIEWICZ	

B. BERNSTEIN 5 Sept 1975

DRN. J. Mays DATE 15/11/75
CHK'D. DATE 1-15-75
ENG. DATE 1-15-75
PROJ. ENG. DATE 3-15-75
PROD. DATE 3/25/75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION

TITLE
UNIBUS™ TERMINATOR

SIZE	CODE	NUMBER	REV.
D	CS	M9302-0-1	D

DIST.

M9302-0-1 D DCS

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+5V

AA2, BA2

C4 THRU C7 .22µF

C1 39µF 10V 10%

GND

AB2, AC2, AN1, AP1
AR1, AS1, AT1, AV2
BB2, BC2, BD1
BE1, BT1, BV2

R1 178 / R2 393 — BUS DØ5 L — AF2
R3 178 / R4 383 — BUS DØ7 L — AH2
R5 178 / R6 383 — BUS DØ9 L — AJ2
R7 178 / R8 383 — BUS DII L — AK2
R9 178 / R10 383 — BUS DØ3 L — AE2
R11 178 / R12 383 — BUS DØI L — AD2
R13 178 / R14 383 — BUS DØ4 L — AE1
R15 178 / R16 383 — BUS DØ6 L — AF1
R17 178 / R18 383 — BUS DØ8 L — AH1
R19 178 / R20 383 — BUS DIØ L — AJ1
R21 178 / R22 383 — BUS DØ2 L — AD1
R23 178 / R24 383 — BUS DØØ L — AC1
R25 178 / R26 383 — BUS INTR L — AB1
R27 178 / R28 383 — BUS INIT L — AA1
R29 178 / R30 383 — BUS PA L — AM1
R31 178 / R32 383 — BUS DI4 L — AL1
R33 178 / R34 383 — BUS DI2 L — AK1
R35 178 / R108 383 — BUS NPG H — AU1
R109 178 / R37 383 — BUS BG7 H — AV1
R38 178 / R36 383 — BUS SACK L — AR2
R41 178 / R38 383 — BUS NPR L — AS2
R43 178 / R40 383 — BUS BR7 L — AT2
R45 178 / R42 383 — BUS BR6 L — AU2
R47 178 / R44 383 — BUS BBSY L — AP2
R49 178 / R46 383 — BUS BR L — AN2
R51 178 / R48 383 — BUS DI5 L — AM2
R53 178 / R50 383 — BUS DI3 L — AL2
R55 178 / R52 383 — BUS BG6 H — BA1

R57 383 / R54 383 — BUS AC LO L — EF1
R59 178 / R56 383 — BUS AØ1 L — BH1
R61 178 / R58 383 — BUS AØ3 L — EJ1
R63 178 / R60 383 — BUS AØ5 L — BK1
R65 178 / R62 383 — BUS AØ7 L — BL1
R67 178 / C2 .ØØ1 µF — BUS AØ9 L — BM1
R69 383 / C3 .ØØ1 µF — BUS DC LO L — BF2
R71 178 / R66 383 — BUS AØØ L — BH2
R73 178 / R68 383 — BUS AØ2 L — BJ2
R75 178 / R70 383 — BUS AØ4 L — BK2
R77 178 / R111 383 — BUS BG4 H — BE2
R79 178 / R72 383 — BUS BR4 L — BD2
R81 178 / R74 383 — BUS BR5 L — BC1
R112 178 / R83 383 — BUS BG5 H — BB1
R85 178 / R76 383 — BUS AI2 L — BP2
R87 178 / R78 383 — BUS AI3 L — BP1
R89 178 / R80 383 — BUS AI5 L — BR1
R91 178 / R82 383 — BUS AI7 L — BS1
R93 178 / R84 383 — BUS AI4 L — BR2
R95 178 / R86 383 — BUS AI6 L — BS2
R97 178 / R88 383 — BUS CI L — BT2
R99 178 / R90 383 — BUS CØ L — BU2
R101 178 / R92 383 — BUS SSYN L — BU1
R103 178 / R94 383 — BUS MSYN L — BV1
R104 178 / R96 383 — BUS AIØ L — BN2
R105 178 / R98 383 — BUS AØ8 L — BM2
R106 178 / R100 383 — BUS AØ9 L — BL2
R107 178 / R102 383 — BUS AII L — BN1

SPARES

E1 8881 (5, 6 → 4)
E1 8881 (8, 9 → 10)
E1 8881 (11, 12 → 13)
E3 8837 (11 → 10)

BUS NPG H — AU1 — E3 8837 (13, 9 → 12)
BUS BG7 H — AV1 — E3 8837 (5, 7 → 6)
BUS BG6 H — BA1 — E3 8837 (3 → 4)
BUS BG5 H — BE2 — E3 8837 (15 → 14)
BUS BG4 H — BB1 — E3 8837 (1 → 2)

E2 7430 (12, 11, 10, 9, 8, 6, 5, 4 → 8)

E1 8881 (2, 3 → 1) — AR2 — BUS SACK L

REVISIONS

CHK	CHANGE NO	REV

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

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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

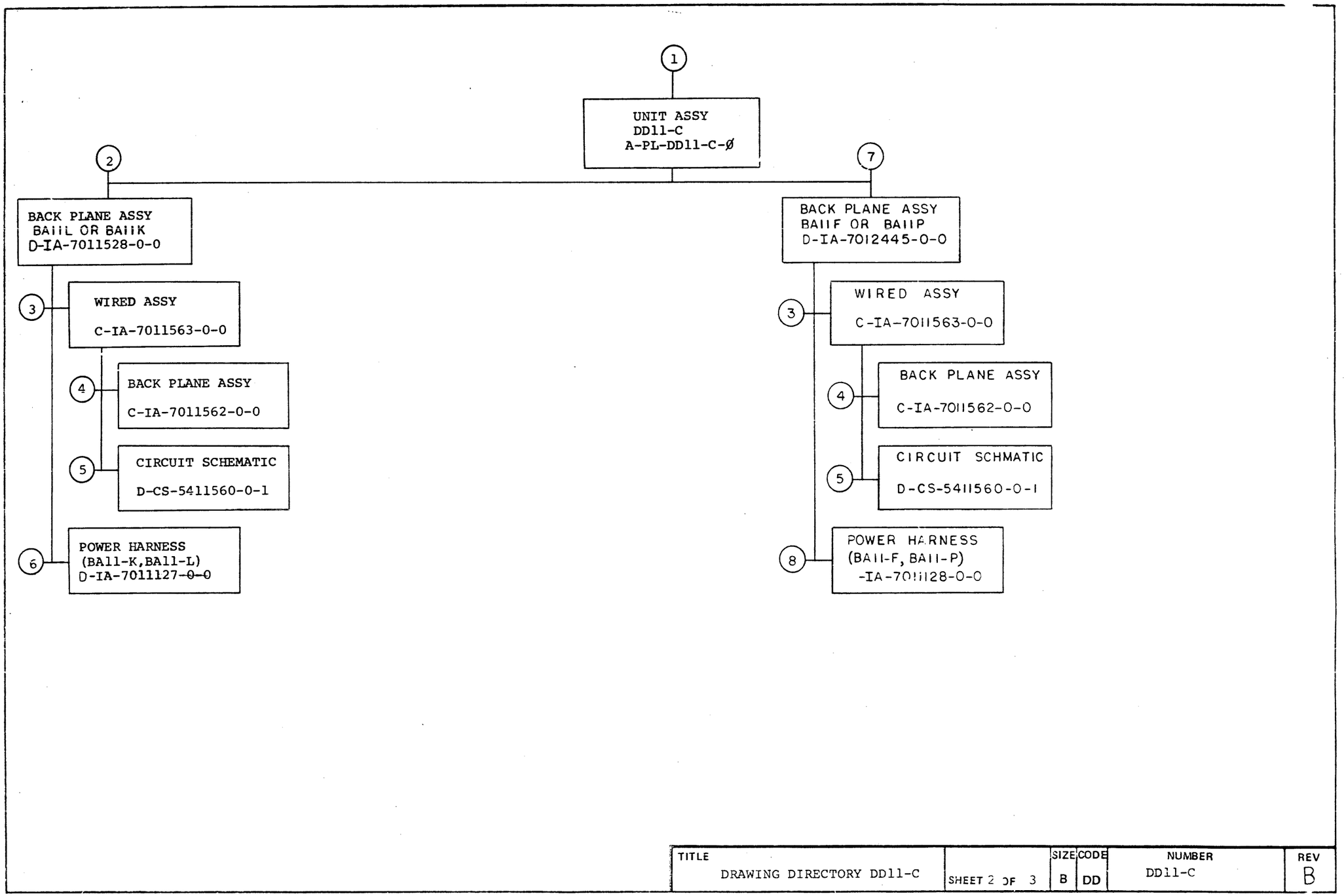
USED ON OPTION/MODEL

DRN. D. HEALY	DATE 6/25/75	TITLE 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

EN-01062-1A-16-R972-(325)

DRB 106



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

DRB 107

CUSTOMER PRINT SET					ELECTIRCAL						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
					1	A-PL-DD11-C-Ø		1	UNIT ASSY DD11-C							1	A-PL-DD11-C-Ø		1	UNIT ASSY DD11-C	
X						D-MU-DD11-C-2		1	MODULE UTILIZATION												
																2	D-IA-7011528-0-0		1	BACK PLANE ASSY (BAII-L, BAII-K)	
X					2	D-IA-7011528-0-0		1	BACK PLANE ASSY (BAIIL, BAIIK)												
																3	C-IA-7011563-0-0		1	WIRED ASSY	
					3	C-IA-7011563-0-0		1	WIRED ASSY								B-DC-5308753-0-0		1	DECAL 21 POINT (LTR)	
X						K-WL-DD11-C-1		1	WIRE LIST								A-DC-7411881-0-0		1	LABEL, AWT REV STATUS	
						A-WT-7011563-0		1	AWT REV STATUS												
																4	D-IA-7011562-0-0		1	BACK PLANE ASSY	
X					5	D-CS-5411560-0-1			CIRCUIT SCHEMATIC							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	
X					6	D-IA-7011127-0-0		1	POWER HARNESS (BA11-K, BA11-L)							6	D-IA-7011127-0-0		1	POWER HARNESS (BA11-K, BA11-L)	
X					7	D-IA-7012445-0-0		1	BACK PLANE ASSY (BAII-F, BAII-P)							7	D-IA-7012445-0-0		1	BACK PLANE ASSY (BAII-F, BAII-P)	
X					8	E-IA-7011128-0-0		1	POWER HARNESS (BAII-F, BAII-P)							8	E-IA-7011128-0-0		1	POWER HARNESS (BAII-F, BAII-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	B	DD	DD11-C	B

DRB 108

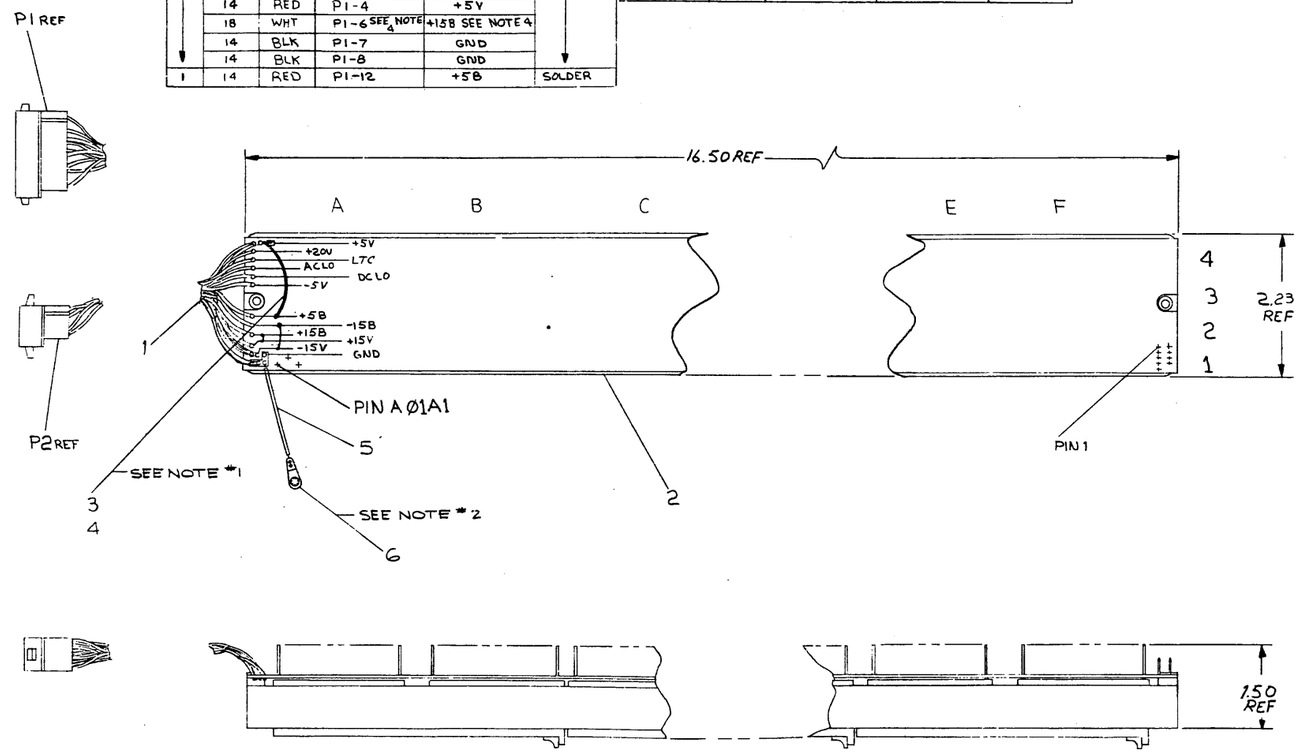
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WIRE TABLE

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 #-REE 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

REVISIONS			
CHG.	CHANGE NO.	REV.	
IS	DD11C-00001	A	21 MAY 76 D.BARRY
	DD11C-00002	B	21 MAY 76 D.BARRY
	DD11C-00003	C	21 MAY 76 D.BARRY
	7011528-0001	D	27 MAY 77 B.CRAMM

1	SHAKEPROOF SOLD. LUG	9008150	6
2"	WIRE #18AWG STRD (BLK)	9107360-00	5
6"	TUBING #22 (BLUE)	9107256-06	4
8"	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

	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
ANGLES 10' 30"							
SURFACE QUALITY IN MICROINCHES	MEDIUM ✓	±.004	±.008	±.012	±.018	±.024	±.04
	PREFERRED	±.012	±.018	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH —

DRN. D. Barry 6/1/77
CHK'D. [illegible] 6/1/77
ENG. R. Rooney 7-10-75
PROJ. ENG. R. Rooney 7-10-75
PROD. [illegible] 6/1/77
NEXT HIGHER ASSY. A-PL-DD11-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.

DEC FORM NO. DMD 1100-C

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WIRE TABLE

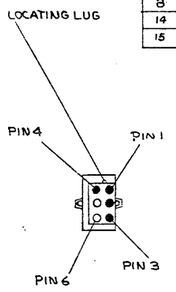
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
7	18	GRN	1	P1-15	ITEM 3	28		STRIP & TIN	-15B
8	18	BRN	2	P1-14		19			-5V
9	18	BLU	3	P1-13		24			-15V
6	14	RED	4	P1-12		26			+5B
5	14	BLK	5	P1-8		29			GND
5	14	BLK	6	P1-7		27			GND
10	18	WHT	7	P1-6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

DO NOT REDUCE

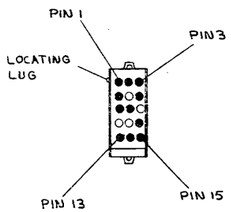
0 IN — 6 IN — 12 IN

SCALE
FOR MFG PURPOSES ONLY

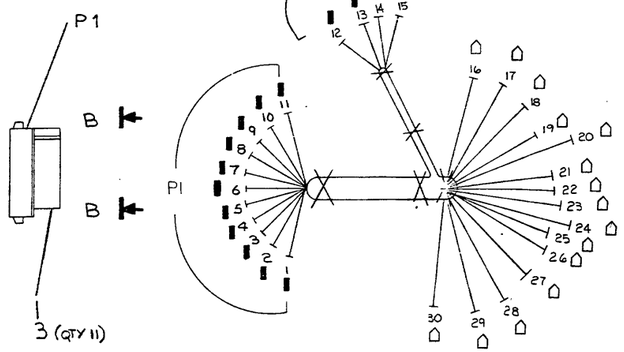
NOTES:
1. USE TIE, CABLE (X) WHERE INDICATED.



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	9007880	4
3	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				REV.
DIM	CHANGE NO.			
Z	7011127-00001	D. BARRY	22-Oct-76	A
A	7011127-00002	D. BARRY	22-Oct-76	B
B	DD11CK00003	D. BARRY	2-Jun-77	C

DEC FORM NO. 8B 1004

SYM	DESCRIPTION	DWG./PART NO.	ITEM NO.
	QUANTITY & VARIATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: OVER 0 TO 0.2	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	±.005	±.008	±.012	±.016	±.024	±.04
	PREFERRED	±.012	±.016	±.025	±.04	±.062	±0.1

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRN	[illegible]	6/15/75
CHK'D	[illegible]	7/1/75
ENG.	[illegible]	7-30-75
PROJ. ENG.	[illegible]	7-30-75
PROD.	[illegible]	31/07

NEXT HIGHER ASSY.

D-IA-7011328-0-0

SCALE 1/1

SHEET 1 OF 1

FIRST USED ON: DD11-CK

digital

TITLE: HARNESS DD11-CK

SIZE D | CODE | NUMBER: IA7011127-0-0 | REV. C | DIST.

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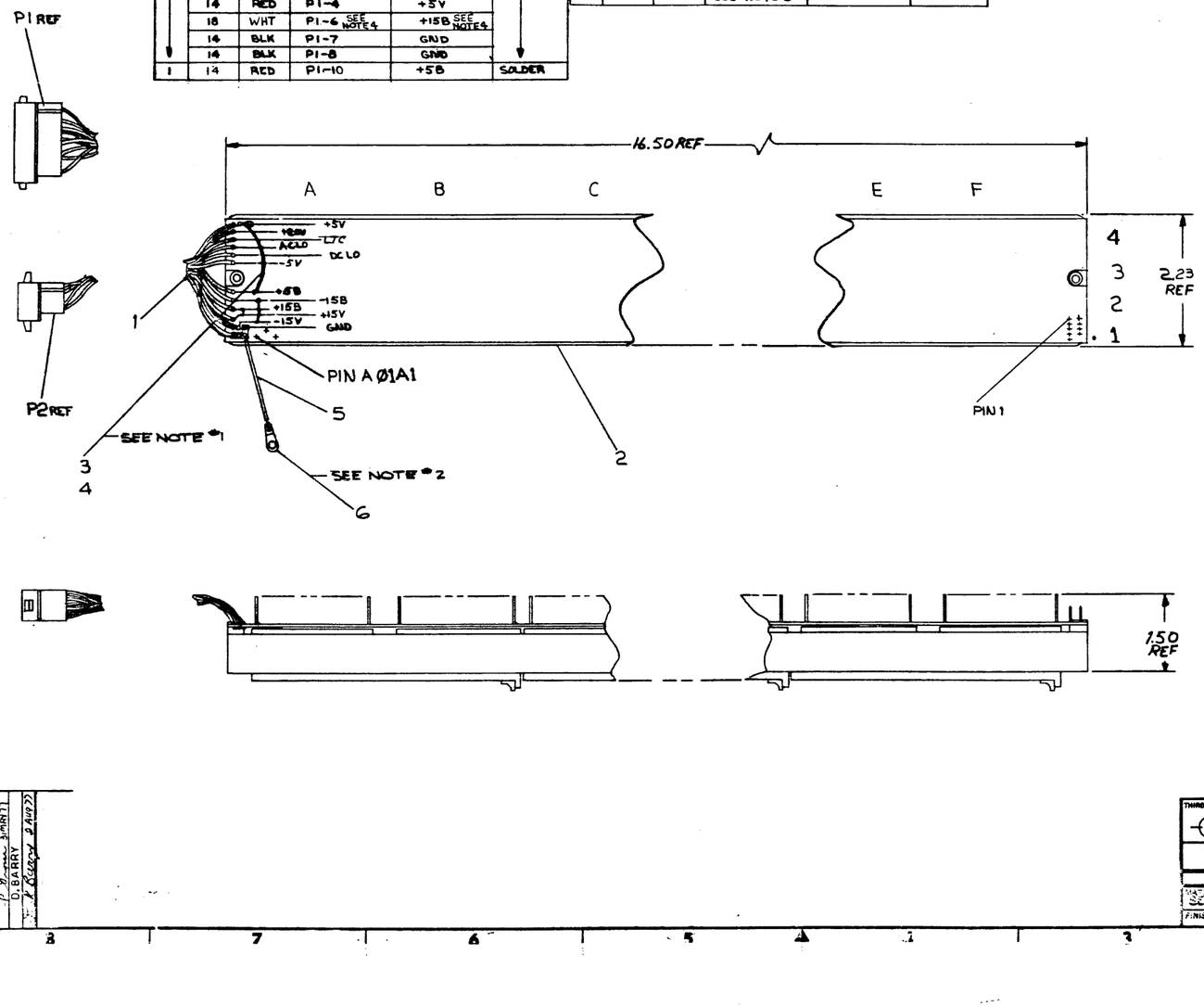
WIRE TABLE

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	P1-10	+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 DD11-CF IS USED WITH A BA11-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 SIDE2. 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 BA11-F POWER HARNESS ITEM #1 IS NOT ELECTRICALLY COMPATIABLE WITH THE BA11-L OR BA11-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.



ITEM NO	DESCRIPTION	DWG./PART NO.	QTY
7	SHAKEPROOF SOLDR 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 F BOX	D-IA-7011123-0-0	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCUP (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 0.3	OVER 0.3 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	±.005	±.012	±.020	±.031	±.05
	PREFERRED ☐	±.002	±.010	±.025	±.06	±.060	±.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DRN E. Seeley 1-22-76
CHK'D D. Mosby 24 FEB 76
ENG Richard Lary 3-10-76
PROJ. ENG'R R. Lary 3-10-76
PROG J. McCord 3-10-76
NEXT HIGHER ASSY. A-PL-DD11-C-0
SCALE NONE
SHEET 1 OF 1

FIRST USED ON BA11-F

digital

TITLE BACK PLANE ASS'Y DD11-CF

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

DIST.

REVISIONS		
CHK	CHANGE NO.	REV.
ASY	DD11C-00003	A
	D. BARRY 3/MAY/77	
	K. Rasch 24 MAY 77	

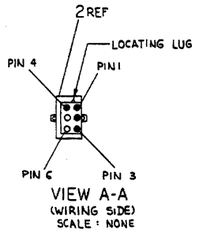
SIZE D | CODE IA | NUMBER 7012445-0-0 | REV. A

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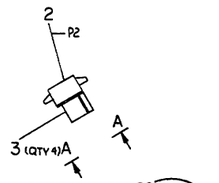
WIRE TABLE

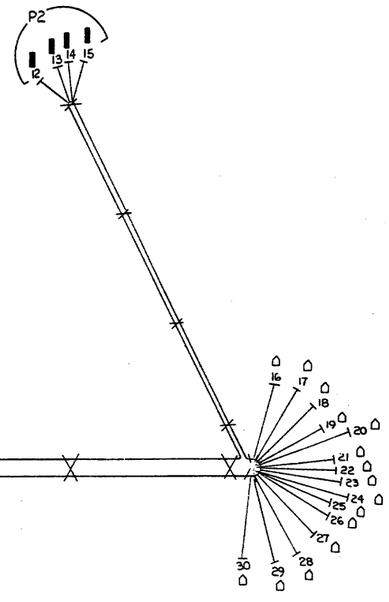
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	SIGNAL
7	18	GRN	1	P1-15	ITEM 3	28		STRIP & TIN	-15 B
8	18	BRN	2	P1-14		19			-5V
9	18	BLU	3	P1-13		24			-15 V
6	14	RED	4	P1-10		26			+ 5 B
5	14	BLK	5	P1-8		29			GND
8	14	BLK	6	P1-7		27			GND
10	18	WHT	7	P1-6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

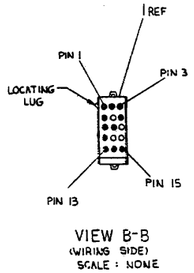
NOTES:
1. USE TIE, CABLE (X) WHERE INDICATED.



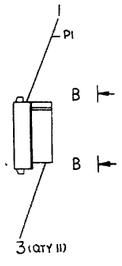
VIEW A-A
(WIRING SIDE)
SCALE : NONE







VIEW B-B
(WIRING SIDE)
SCALE : NONE



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

	AR	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
	AR	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, #14 STRD RED	9107370-22	6
	AR	WIRE, #14 STRD BLK	9107370-00	5
X	9	TIE WRAP, PANDUIT	9007380-01	4
	15	PIN, MALE	1209379-01	3
	1	CONN, 6 PIN MAT LOCK	1209331-06	2
	1	CONN, 15 PIN MAT LOCK	1209331-15	1
		DESCRIPTION	DWG. PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

SYMBOL	ANGLES ±0° 30'	LINEAR ADD'L DEC	NOMINAL DIAMETER RANGE (INCHES)				
	SURFACE QUALITY µin	(CHECK ONE)	OVER 0 TO 0.12	OVER 0.12 TO 1.20	OVER 1.20 TO 3.15	OVER 3.15 TO 6.30	OVER 6.30 TO 10.00
		.X ±0.2					
		.XX ±0.05					
	MEDIUM 125	.XXX ±0.010	±0.008	±0.012	±0.016	±0.020	±0.024
	MICROINCHES	STANDARD ☐	±0.002	±0.010	±0.015	±0.020	±0.031
QUANTITY & VARIATION							

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

DRN. C. Sweeney 4 FEB 77
CHK'D. [illegible]
ENG. [illegible]
MANUF. [illegible]
MODEL [illegible]
NEXT HIGHER ASSY.

PART USED ON: DD11-CF

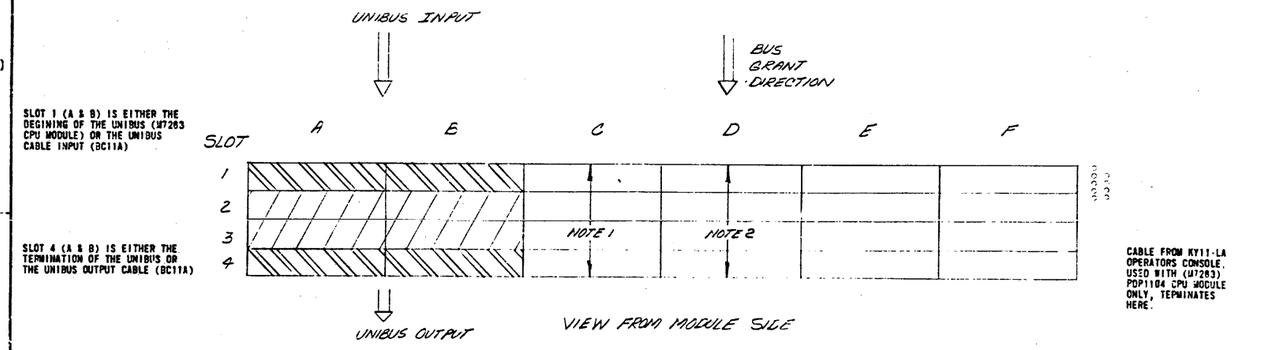
TITLE: HARNESS DD11-CF

SIZE: E | CODE: [illegible] | NUMBER: [A]701128-0-0 | REV: A

SCALE: 1/1 | SHEET 1 OF 1 | DIST.

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SLOT 1 (A & B) IS EITHER THE BEGINING OF THE UNIBUS (M7263 CPU MODULE) OR THE UNIBUS CABLE INPUT (BC11A)

SLOT 4 (A & B) IS EITHER THE TERMINATION OF THE UNIBUS OR THE UNIBUS OUTPUT CABLE (BC11A)

CABLE FROM KY11-LA OPERATORS CONSOLE. USED WITH (U7283) PDP1104 CPU MODULE ONLY, TERMINATES HERE.

NOTES:

1. REMOVE CAI TO CDI WIRE WRAP JUMPER TO INSTALL AN NPR OPTION IN ANY SPC SLOT.
2. G727 REQUIRED IN ANY UNUSED SPC SLOT TO PROVIDE BHS 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 GOOD UNIBUS TERMINATION.
8. EITHER M9312 OR M9301 MAYBE USED BUT NOT BOTH.

A B

STANDARD UNIBUS (SLOT 1-9)

DUAL MODULES WHICH PLUG INTO STANDARD UNIBUS SLOTS ONLY:
BC11A UNIBUS CABLE
M9302 SACK/TERM. (NOTE5)
M920 (NOTE 4)
M930 (NOTE 5)
M9202 (NOTE 4)

A B

MODIFIED UNIBUS (SLOT 2-3)

DUAL MODULES WHICH PLUG INTO THE MODIFIED UNIBUS ONLY:
M9312 BOOT/TERM. (SLOT 2 ONLY)
M9308 TERM.
M7950 PARITY CONT.

C D E F

SMALL PERIPHERAL CONTROLLER (SLOT 1-9)

ANY S.P.C. OPTION

A B C D E F

HEX MODULE WITH MODIFIED UNIBUS SIGNALS (SLOT 2-3)

HEX MODULES THAT PLUG INTO MODIFIED UNIBUS ONLY:
M7847 MOS MEMORY (MS11-EP-JP)
MX11-BP,CP,DP OR YP CORE MEMORY CORE

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

A B C D E F

HEX MODULE WITH STD. UNIBUS SIGNALS (SLOT 1 ONLY)

M7263 PDP1104 CPU MODULE

REVISIONS			
DIR	CHANGE NO.	REV.	
AW	DD11C-00001	A	7-6-76 R. BARRY
AW	DD11-C-00004	B	1-24-77 B. BERNSTEIN
AW	DD11C-00005	C	3-22-77 J. FOLLO

DEC FORM NO. JD 1005

DESCRIPTION	DWG PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
ANGLES ±0°30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSIONS RANGE (INCHES)
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	OVER 0 TO 4 ±.004; OVER 4 TO 12 ±.008; OVER 12 TO 40 ±.012; OVER 40 TO 72 ±.016; OVER 72 TO 120 ±.024
	PREFERRED ☐	OVER 0 TO 4 ±.002; OVER 4 TO 12 ±.004; OVER 12 TO 40 ±.008; OVER 40 TO 72 ±.012; OVER 72 TO 120 ±.016

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRN.

CHK'D

ENG.

PROJ. ENG.

PROD.

NEXT HIGHER ASSY.

SCALE

SHEET / OF /

FIRST USED ON B-DD-DD11-C

digital

TITLE MODULE UTILIZATION (DD11-C)

SIZE D CODE MU NUMBER DD11-C-2 REV. C

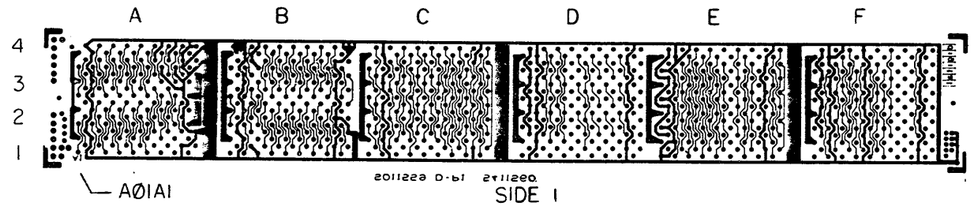
DIST.

22

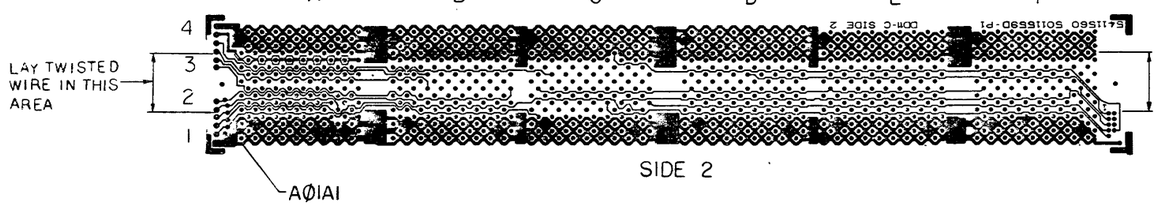
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NOTES:

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	B02C2	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	BG6A	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	BG6E	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



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: DDII-CK
ETCH BOARD REV. DPI

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

REV	CHANGE NO.	CHK
B1	5411560-00001	
C	5411560-00002	
D	5411560-00003	

REVISIONS

DRAWN D. FRANKLIN 12-12-74
ENGINEER N. BROWNE 12 DEC 75
PROJ. ENG. R. BARRY 1-12-76
PROD. ENG. R. BARRY 2-25-75
QUALITY A. BARRY 8-20-75

DRAWN: D. Franklin 6-12-74
SUPV: D. Seavey 8/26/75
ENG: L.S.C. 6-26-75
PROJ. ENG: L. Barry 7-7-75
PROD: R. PETERSON 4-25-76
NEXT HIGHER ASSY: D-IA-7414331-0-0
SCALE: NONE
SHEET 1 OF 1

digital

TITLE: CIRCUIT SCHEMATIC

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

DIST.

REAR CODE D CS 5411560-0-1 REV D

DEC FORM NO DRD 175 B

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DIGITAL EQUIP. CORP.

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

REVISIONS			
REV.	CHANGE NO.	CHK	
A	DD11C-00001	SW	1-13-76

R. BARRY 1-13-76

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

DRN. [illegible]	DATE 1/10/75	
CHK'D [illegible]	DATE 1/21/75	
ENG. R. Barry	DATE 2-26-75	
PROJ. ENG. R Barry	DATE 2-2-75	
PROD. [illegible]	DATE 3/13/75	
NEXT HIGHER ASSEMBLY: B-DD-DD11-C		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE:
WIRE LIST
DD11-C

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

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/+8V		C01U1		1-01	H						2		P	H TO WHERE	1
+15/+8V		C02U1		1-02	H						1		P	H TO WHERE	1
+15/+8V		C03U1		1-03	H						2		P	H TO WHERE	1
+15/+8V		C04U1		1-04										TO HERE	1
+15/+8V				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	8
+5V (6)	F02A2		1-02	H			1		P	H TO WHERE	8
+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	C01B3		1-01	H			2		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			2		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	E01M1		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	D01M1		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 ENB A	D01M1		1-01				1				17
A INT ENB A	F01V1		1-02								17
A INT ENB A			1						8-4/8		17
A INT ENB B	C01L1		1-01				1				18
A INT ENB B	F01H2		1-02								18
A INT ENB 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	D01D1		1-01				1				20
A OUT LOW	E01M1		1-02								20
A OUT LOW			1						5-6/8		20
A SEL 4	D01F1		1-01				1				21
A SEL 4	E01S2		1-02								21
A SEL 4			1						6-0/8		21
A SEL 4	D01E1		1-01				1				22
A SEL 4	F01P2		1-02								22
A SEL 4			1						6-2/8		22
A SEL 5	D01C1		1-01				1				23
A SEL 5	E01S1		1-02								23
A SEL 5			1						6-2/8		23
A SEL 2	C01J1		1-01				1				24
A SEL 2	F01T2		1-02								24
A SEL 2			1						6-0/8		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

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
AC LO L	B01F1		1-01 *	H						2		P	HAND WIRE	26
AC LO L	B02F1		1-02 *							1			TO HERE	26
AC LO L	C01V1		1-03 *	H						2		P	HAND WIRE	26
AC LO L	C02V1		1-04 *	H						1		P	HAND WIRE	26
AC LO L	C03V1		1-05 *	H						2		P	HAND WIRE	26
AC LO L	C04V1		1-06 *							1			TO HERE	26
AC LO L	B03F1		1-07 *	h						2		P	HAND WIRE	26
AC LO L	B04F1		1-08 *										TO HERE	26
AC LO L			1									26-6/8		26
B BG IN	D02U2		1-01							1				27
B BG IN	F02B1		1-02											27
B BG IN			1									5-6/8		27
B BG OUT	D02V2		1-01							1				28
B BG OUT	F02A1		1-02											28
B BG OUT			1									5-6/8		28
B BR OUT	D02J2		1-01							1				29
B BR OUT	F02P1		1-02							2				29
B BR OUT	F02U2		1-03											29
B BR OUT			1									11-4/8		29
B IN	D02H1		1-01							1				30
B IN	E02K1		1-02											30
B IN			1									5-2/8		30
B INT A	D02N1		1-01							1				31
B INT A	F02U1		1-02											31
B INT A			1									8-2/8		31
B INT B	C02J1		1-01							1				32
B INT B	F02K2		1-02											32
B INT B			1									10-4/8		32
B INT ENB A	D02M1		1-01							1				33
B INT ENB A	F02V1		1-02											33
B INT ENB A			1									8-4/8		33
B INT ENB B	C02L1		1-01							1				34
B INT ENB B	F02M2		1-02											34
B INT ENB B			1									10-0/8		34
B OUT HIGH	D02K1		1-01							1				35
B OUT HIGH	E02M2		1-02											35
B OUT HIGH			1									5-2/8		35

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
B OUT LOW	D02L1		1-01							1				36
B OUT LOW	E02N1		1-02											36
B OUT LOW			1									5-6/8		36
B SEL A	D02K1		1-01							1				37
B SEL A	E02S2		1-02											37
B SEL A			1									6-0/8		37
B SEL B	D02E1		1-01							1				38
B SEL B	E02R2		1-02											38
B SEL B			1									6-2/8		38
B SEL C	D02C1		1-01							1				39
B SEL C	E02S1		1-02											39
B SEL C			1									6-2/8		39
B SEL 2	D02J1		1-01							1				40
B SEL 2	E02T2		1-02											40
B SEL 2			1									6-0/8		40
B SSYN IN H	D02V1		1-01							1				41
B SSYN IN H	E02R1		1-02											41
B SSYN IN H			1									2-6/8		41
BB+15	A02S1		1-01	H						1		P	H TO WHERE	42
BB+15	A03R1		1-02										TO HERE	42
BB+15			1									2-6/8		42
BB+5	B02D1		1-01	H						1		P	H TO WHERE	43
BB+5	B03D1		1-02										TO HERE	43
BB+5			1									2-6/8		43
BB-15	A02S1		1-01							1		P	H TO WHERE	44
BB-15	A03S1		1-02										TO HERE	44
BB-15			1									2-6/8		44
BBSY I	A01P2		1-01 *	H						2		P	HAND WIRE	45
BBSY I	A02P2		1-02 *							1			TO HERE	45
BBSY I	F01D1		1-03 *	H						2		P	HAND WIRE	45
BBSY I	F02D1		1-04 *	H						1		P	HAND WIRE	45
BBSY I	F03D1		1-05 *	H						2		P	HAND WIRE	45
BBSY I	F04D1		1-06 *							1			TO HERE	45
BBSY I	A03P2		1-07 *	H						2		P	HAND WIRE	45
BBSY I	A04P2		1-08 *										TO HERE	45
BBSY I			1									43-2/8		45

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BG4 A	B01E2		1-01				1				46
BG4 A	D01B2		1-02								46
BG4 A			1						8-6/8		46
BG4 B	D01T2		1-01	H			1		P	H TO WHERE	47
BG4 B	D02S2		1-02							TO HERE	47
BG4 B			1						2-6/8		47
BG4 C	D02T2		1-01	H			1		P	H TO WHERE	48
BG4 C	D03S2		1-02							TO HERE	48
BG4 C			1						2-6/8		48
BG4 D	D03T2		1-01	H			1		P	H TO WHERE	49
BG4 D	D04S2		1-02							TO HERE	49
BG4 D			1						2-6/8		49
BG4 E	B04E2		1-01				1				50
BG4 E	D04T2		1-02								50
BG4 E			1						9-0/8		50
BG5 A	B01B1		1-01				1				51
BG5 A	D01P2		1-02								51
BG5 A			1						9-0/8		51
BG5 B	D01R2		1-01	H			1		P	H TO WHERE	52
BG5 B	D02P2		1-02							TO HERE	52
BG5 B			1						2-6/8		52
BG5 C	D02P2		1-01	H			1		P	H TO WHERE	53
BG5 C	D03P2		1-02							TO HERE	53
BG5 C			1						2-6/8		53
BG5 D	D03R2		1-01	H			1		P	H TO WHERE	54
BG5 D	D04P2		1-02							TO HERE	54
BG5 D			1						2-6/8		54
BG5 E	B04A1		1-01				1				55
BG5 E	D04P2		1-02								55
BG5 E			1						9-2/8		55
BG6 A	B01A1		1-01				1				56
BG6 A	D01M2		1-02								56
BG6 A			1						9-0/8		56
BG6 B	D01N2		1-01	H			1		P	H TO WHERE	57
BG6 B	D02M2		1-02							TO HERE	57
BG6 B			1						2-6/8		57

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BG6 C	D02N2		1-01	H			1		P	H TO WHERE	58
BG6 C	D03M2		1-02							TO HERE	58
BG6 C			1						2-6/8		58
BG6 D	D03N2		1-01	H			1		P	H TO WHERE	59
BG6 D	D04M2		1-02							TO HERE	59
BG6 D			1						2-6/8		59
BG6 E	B03A1		1-01	H			1		P	H TO WHERE	60
BG6 E	D04M2		1-02							TO HERE	60
BG6 E			1						9-2/8		60
BG7 A	A01V1		1-01				1				61
BG7 A	D01K2		1-02								61
BG7 A			1						9-2/8		61
BG7 B	D01L2		1-01	H			1		P	H TO WHERE	62
BG7 B	D02K2		1-02							TO HERE	62
BG7 B			1						2-6/8		62
BG7 C	D02L2		1-01	H			1		P	H TO WHERE	63
BG7 C	D03K2		1-02							TO HERE	63
BG7 C			1						2-6/8		63
BG7 D	D03L2		1-01	H			1		P	H TO WHERE	64
BG7 D	D04K2		1-02							TO HERE	64
BG7 D			1						2-6/8		64
BG7 E	A04V1		1-01				1				65
BG7 E	D04L2		1-02								65
BG7 E			1						9-4/8		65
BR4 L	B01D2		1-01 *	H			2		P	HAND WIRE	66
BR4 L	B02D2		1-02 *				1			TO HERE	66
BR4 L	D01B2		1-03 *	H			2		P	HAND WIRE	66
BR4 L	D02K2		1-04 *	H			1		P	HAND WIRE	66
BR4 L	D03N2		1-05 *	H			2		P	HAND WIRE	66
BR4 L	D04K2		1-06 *				1			TO HERE	66
BR4 L	B03D2		1-07 *	H			2		P	HAND WIRE	66
BR4 L	B04D2		1-08 *							TO HERE	66
BR4 L			1						30-2/8		66

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DD11-C,PW                    12-MAR-75          8143          PAGE 8
BUS NAME                     LENGTH          EXCEPTIONS       RUN
                                                              NUMBER
```

PG	Y	X	Z	REMARKS			
					P		
			2			HAND WIRE	67
			1			TO HERE	67
			2		P	HAND WIRE	67
			1		P	HAND WIRE	67
			2			TO HERE	67
			1		P	HAND WIRE	67
			2			TO HERE	67
						30-0/0	
			2				
			1		P	HAND WIRE	68
			2		P	HAND WIRE	68
			1		P	HAND WIRE	68
			2			TO HERE	68
						31-6/8	
			2		P	HAND WIRE	69
			1			TO HERE	69
			2		P	HAND WIRE	69
			1		P	HAND WIRE	69
			2		P	HAND WIRE	69
			1			TO HERE	69
			2		P	HAND WIRE	69
						31-6/8	
			2		P	HAND WIRE	70
			1			TO HERE	70
			2		P	HAND WIRE	70
			1		P	HAND WIRE	70
			2		P	HAND WIRE	70
			1			TO HERE	70
			2		P	HAND WIRE	70
						34-2/8	
						TO HERE	70

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HND288,V23(23) 05/24/74      8143          PAGE 8
A/P  PIN       ORDER         RUN
     NAME      PIN           ORDER
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BH5	AH1C1	1-01	* * H
BH5	AH2C1	1-02	* * H
BH5	UH1F2	1-03	* * H
BH5	UH2F2	1-04	* * H
BH5	UH3F2	1-05	* * H
BH5	UH4F2	1-06	* * H
BH5	EH3C1	1-07	* * H
BH5	BH4C1	1-08	* * H
		J	
BH6	AH1U2	1-01	* *
BH6	AH2U2	1-02	* *
BH6	UH1E2	1-03	* * H
BH6	UH3E2	1-04	* * H
BH6	UH4E2	1-05	* * H
BH6	AH3U2	1-06	* *
BH6	AH4U2	1-07	* *
		1-08	* *
		J	
BH7	AH1T2	1-01	* * H
BH7	AH2T2	1-02	* * H
BH7	DH1D2	1-03	* * H
BH7	DH2D2	1-04	* * H
BH7	DH3D2	1-05	* * H
BH7	DH4D2	1-06	* * H
BH7	AH3T2	1-07	* * H
BH7	AH4T2	1-08	* *
		J	
BH7	BH1H2	1-01	* * H
BH7	BH2H2	1-02	* * H
BH7	EH1H2	1-03	* * H
BH7	EH2H2	1-04	* * H
BH7	EJ3H2	1-05	* * H
BH7	EJ4H2	1-06	* * H
BH7	BH3H2	1-07	* * H
BH7	BH4H2	1-08	* *
		J	

```
DD11-C,PW                    12-MAR-75          8143          PAGE 9
BUS NAME                     LENGTH          EXCEPTIONS       RUN
                                                              NUMBER
```

PG	Y	X	Z	REMARKS			
					P		
			2			HAND WIRE	71
			1			TO HERE	71
			2		P	HAND WIRE	71
			1		P	HAND WIRE	71
			2		P	HAND WIRE	71
			1			TO HERE	71
			2		P	HAND WIRE	71
						TO HERE	71
						34-2/8	
			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
						34-0/8	
			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
						37-0/8	
			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
						36-2/8	
						TO HERE	74

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HND288,V23(23) 05/24/74      8143          PAGE 9
A/P  PIN       ORDER         RUN
     NAME      PIN           ORDER
```

BH5	AH1J1	1-01	* * H
BH5	AH2J1	1-02	* * H
BH5	EJ1F1	1-03	* * H
BH5	EJ2F1	1-04	* * H
BH5	EJ3F1	1-05	* * H
BH5	EJ4F1	1-06	* * H
BH5	AH3J1	1-07	* * H
BH5	AH4J1	1-08	* *
		J	
BH6	AH1J2	1-01	* * H
BH6	AH2J2	1-02	* * H
BH6	EJ1F2	1-03	* * H
BH6	EJ2F2	1-04	* * H
BH6	EJ3F2	1-05	* * H
BH6	EJ4F2	1-06	* * H
BH6	AH3J2	1-07	* * H
BH6	AH4J2	1-08	* *
		J	
BH7	AH1J1	1-01	* * H
BH7	AH2J1	1-02	* * H
BH7	EJ1V2	1-03	* * H
BH7	EH2V2	1-04	* * H
BH7	EJ3V2	1-05	* * H
BH7	EH4V2	1-06	* * H
BH7	AH3J1	1-07	* * H
BH7	AH4J1	1-08	* *
		J	
BH7	AH1J2	1-01	* * H
BH7	AH2J2	1-02	* * H
BH7	EJ1U2	1-03	* * H
BH7	EH2U2	1-04	* * H
BH7	EH3U2	1-05	* * H
BH7	EH4U2	1-06	* * H
BH7	AH3J2	1-07	* * H
BH7	AH4K2	1-08	* *
		J	

HND200,V23(23) 05/24/74

MOD NAME	A/P	PIN NAME	ORDER PIN	HAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A05 L		B01K1	1-01	*	H						2		P	HAND WIRE	/5
BUS A05 L		B02K1	1-02	*							1			TO HERE	/5
BUS A05 L		E01V1	1-03	*	H						2		P	HAND WIRE	/5
BUS A05 L		E02V1	1-04	*	H						1			TO HERE	/5
BUS A05 L		E03V1	1-05	*	H						2		P	HAND WIRE	/5
BUS A05 L		E04V1	1-06	*	H						1			TO HERE	/5
BUS A05 L		H03K1	1-07	*	H						2		P	HAND WIRE	/5
BUS A05 L		H04K1	1-08	*							1			TO HERE	/5
			1										36-6/8		
BUS A06 L		B01K2	1-01	*	H						2		P	HAND WIRE	/6
BUS A06 L		B02K2	1-02	*							1			TO HERE	/6
BUS A06 L		E01U1	1-03	*	H						2		P	HAND WIRE	/6
BUS A06 L		E02U1	1-04	*	H						1			TO HERE	/6
BUS A06 L		E03U1	1-05	*	H						2		P	HAND WIRE	/6
BUS A06 L		E04U1	1-06	*	H						1			TO HERE	/6
BUS A06 L		H03K2	1-07	*	H						2		P	HAND WIRE	/6
BUS A06 L		H04K2	1-08	*							1			TO HERE	/6
			1										36-0/8		
BUS A07 L		H01L1	1-01	*	H						2		P	HAND WIRE	/7
BUS A07 L		H02L1	1-02	*	H						1			TO HERE	/7
BUS A07 L		F01P2	1-03	*	H						2		P	HAND WIRE	/7
BUS A07 L		E02P2	1-04	*	H						1			TO HERE	/7
BUS A07 L		E03P2	1-05	*	H						2		P	HAND WIRE	/7
BUS A07 L		E04P2	1-06	*	H						1			TO HERE	/7
BUS A07 L		H03L1	1-07	*	H						2		P	HAND WIRE	/7
BUS A07 L		H04L1	1-08	*	H						1			TO HERE	/7
			1										35-2/8		
BUS A08 L		H01M2	1-01	*	H						2		P	HAND WIRE	/8
BUS A08 L		H02M2	1-02	*	H						1			TO HERE	/8
BUS A08 L		F01M2	1-03	*	H						2		P	HAND WIRE	/8
BUS A08 L		E02N2	1-04	*	H						1			TO HERE	/8
BUS A08 L		E03N2	1-05	*	H						2		P	HAND WIRE	/8
BUS A08 L		E04N2	1-06	*	H						1			TO HERE	/8
BUS A08 L		H03M2	1-07	*	H						2		P	HAND WIRE	/8
BUS A08 L		H04M2	1-08	*							1			TO HERE	/8
			1										34-6/8		

HND2##,V23(23) 05/24/74

MOD NAME	A/P	PIN NAME	ORDER PIN	HAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A09 L		B01K1	1-01	*	H						2		P	HAND WIRE	/9
BUS A09 L		B02K1	1-02	*							1			TO HERE	/9
BUS A09 L		E01K1	1-03	*	H						2		P	HAND WIRE	/9
BUS A09 L		E02K1	1-04	*	H						1			TO HERE	/9
BUS A09 L		E03K1	1-05	*	H						2		P	HAND WIRE	/9
BUS A09 L		E04P1	1-06	*	H						1			TO HERE	/9
BUS A09 L		H03K1	1-07	*	H						2		P	HAND WIRE	/9
BUS A09 L		H04K1	1-08	*							1			TO HERE	/9
			1										35-2/8		
BUS A10 L		H01K2	1-01	*	H						2		P	HAND WIRE	80
BUS A10 L		H02N2	1-02	*	H						1			TO HERE	80
BUS A10 L		E01P1	1-03	*	H						2		P	HAND WIRE	80
BUS A10 L		E02P1	1-04	*	H						1			TO HERE	80
BUS A10 L		E03P1	1-05	*	H						2		P	HAND WIRE	80
BUS A10 L		E04P1	1-06	*	H						1			TO HERE	80
BUS A10 L		H03N2	1-07	*	H						2		P	HAND WIRE	80
BUS A10 L		H04N2	1-08	*							1			TO HERE	80
			1										34-4/8		
BUS A11 L		B01L1	1-01	*	H						2		P	HAND WIRE	81
BUS A11 L		B02N1	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			TO HERE	81
BUS A11 L		E03L1	1-05	*	H						2		P	HAND WIRE	81
BUS A11 L		E04L1	1-06	*	H						1			TO HERE	81
BUS A11 L		H03L1	1-07	*	H						2		P	HAND WIRE	81
BUS A11 L		H04L1	1-08	*							1			TO HERE	81
			1										33-6/8		
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			TO HERE	82
BUS A12 L		E03C1	1-05	*	H						2		P	HAND WIRE	82
BUS A12 L		E04C1	1-06	*	H						1			TO HERE	82
BUS A12 L		H03P2	1-07	*	H						2		P	HAND WIRE	82
BUS A12 L		H04P2	1-08	*							1			TO HERE	82
			1										32-0/8		

BUS A13 L		B01P1		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		E02K2		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		B01R2		1-01 *	H			2		P		HAND WIRE	84
BUS A14 L		B02R2		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		B01P1		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		E02D2		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 A17 L		B01S1		1-01 *	H			2		P		HAND WIRE	87
BUS A17 L		B02S1		1-02 *				1				TO HERE	87
BUS A17 L		E01D1		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 B88 L		A01C1		1-01 *	H			2		P		HAND WIRE	88
BUS B88 L		A02C1		1-02 *				1				TO HERE	88
BUS B88 L		C01S2		1-03 *	H			2		P		HAND WIRE	88
BUS B88 L		C02S2		1-04 *	H			1		P		HAND WIRE	88
BUS B88 L		C03S2		1-05 *	H			2		P		HAND WIRE	88
BUS B88 L		C04S2		1-06 *				1				TO HERE	88
BUS B88 L		A03C1		1-07 *	H			2		P		HAND WIRE	88
BUS B88 L		A04C1		1-08 *								TO HERE	88
BUS B88 L				1							32-4/8		88
BUS B91 L		A01D2		1-01 *	H			2		P		HAND WIRE	89
BUS B91 L		A02D2		1-02 *				1				TO HERE	89
BUS B91 L		C01R2		1-03 *	H			2		P		HAND WIRE	89
BUS B91 L		C02R2		1-04 *	H			1		P		HAND WIRE	89
BUS B91 L		C03R2		1-05 *	H			2		P		HAND WIRE	89
BUS B91 L		C04R2		1-06 *				1				TO HERE	89
BUS B91 L		A03D2		1-07 *	H			2		P		HAND WIRE	89
BUS B91 L		A04D2		1-08 *								TO HERE	89
BUS B91 L				1							31-6/8		89
BUS B92 L		B01E2		1-01	H			2		P		H TO WHERE	90
BUS B92 L		E01E2		1-02	H			1		P		H TO WHERE	90
BUS B92 L		E03E2		1-03	H			2		P		H TO WHERE	90
BUS B92 L		E04E2		1-04								TO HERE	90
BUS B92 L				1							8-2/8		90
BUS B92 L		A01D1		1-01 *	H			2		P		HAND WIRE	91
BUS B92 L		A02D1		1-02 *				1				TO HERE	91
BUS B92 L		C01U2		1-03 *	H			2		P		HAND WIRE	91
BUS B92 L		C02U2		1-04 *	H			1		P		HAND WIRE	91
BUS B92 L		C03U2		1-05 *	H			2		P		HAND WIRE	91
BUS B92 L		C04U2		1-06 *				1				TO HERE	91
BUS B92 L		A03D1		1-07 *	H			2		P		HAND WIRE	91
BUS B92 L		A04D1		1-08 *								TO HERE	91
BUS B92 L				1							32-6/8		91

BUS 002 L JMP		CH2U2	1-01					1					92
BUS 002 L JMP		F02F2	1-02										92
BUS 002 L JMP			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 003 L			1								8-2/8		93
BUS 003 L		A01F2	1-01 *	H				2		P		HAND WIRE	94
BUS 003 L		A02E2	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		CH4T2	1-06 *					1				TO HERE	94
BUS 003 L		A03E2	1-07 *	H				2		P		HAND WIRE	94
BUS 003 L		A04E2	1-08 *									TO HERE	94
BUS 003 L			1								32-2/8		94
BUS 003 L JMP		CH2T2	1-01					1					95
BUS 003 L JMP		F02L1	1-02										95
BUS 003 L JMP			1								9-6/8		95
BUS 004 L		F01N2	1-01	H				2		P		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 004 L		F04N2	1-04									TO HERE	96
BUS 004 L			1								8-2/8		96
BUS 004 L		A01E1	1-01 *	H				2		P		HAND WIRE	97
BUS 004 L		A02L1	1-02 *					1				TO HERE	97
BUS 004 L		CH1N2	1-03 *	H				2		P		HAND WIRE	97
BUS 004 L		CH2N2	1-04 *	H				1		P		HAND WIRE	97
BUS 004 L		CH3N2	1-05 *	H				2		P		HAND WIRE	97
BUS 004 L		CH4N2	1-06 *					1				TO HERE	97
BUS 004 L		A03E1	1-07 *	H				2		P		HAND WIRE	97
BUS 004 L		A04E1	1-08 *									TO HERE	97
BUS 004 L			1								31-0/8		97
BUS 004 L JMP		CH2N2	1-01					1					98
BUS 004 L JMP		F02N2	1-02										98
BUS 004 L JMP			1								10-2/8		98

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 005 L		A01F2	1-01 *	H				2		P		HAND WIRE	100
BUS 005 L		A02F2	1-02 *					1				TO HERE	100
BUS 005 L		CH1P2	1-03 *	H				2		P		HAND WIRE	100
BUS 005 L		CH2P2	1-04 *	H				1		P		HAND WIRE	100
BUS 005 L		CH3P2	1-05 *	H				2		P		HAND WIRE	100
BUS 005 L		CH4P2	1-06 *					1				TO HERE	100
BUS 005 L		A03F2	1-07 *	H				2		P		HAND WIRE	100
BUS 005 L		A04F2	1-08 *									TO HERE	100
BUS 005 L			1								31-2/8		100
BUS 005 L JMP		CH2P2	1-01					1					101
BUS 005 L JMP		F02F1	1-02										101
BUS 005 L JMP			1								9-4/8		101
BUS 006 L		F01F2	1-01	H				2		P		H TO WHERE	102
BUS 006 L		F02F2	1-02	H				1		P		H TO WHERE	102
BUS 006 L		F03F2	1-03	H				2		P		H TO WHERE	102
BUS 006 L		F04F2	1-04									TO HERE	102
BUS 006 L			1								8-2/8		102
BUS 006 L		A01F1	1-01 *	H				2		P		HAND WIRE	103
BUS 006 L		A02F1	1-02 *					1				TO HERE	103
BUS 006 L		CH1V2	1-03 *	H				2		P		HAND WIRE	103
BUS 006 L		CH2V2	1-04 *	H				1		P		HAND WIRE	103
BUS 006 L		CH3V2	1-05 *	H				2		P		HAND WIRE	103
BUS 006 L		CH4V2	1-06 *					1				TO HERE	103
BUS 006 L		A03F1	1-07 *	H				2		P		HAND WIRE	103
BUS 006 L		A04F1	1-08 *									TO HERE	103
BUS 006 L			1								32-4/8		103
BUS 006 L JMP		CH2V2	1-01					1					104
BUS 006 L JMP		F02F2	1-02										104
BUS 006 L JMP			1								8-6/8		104
BUS 007 L		F01H1	1-01	H				2		P		H TO WHERE	105
BUS 007 L		F02H1	1-02	H				1		P		H TO WHERE	105
BUS 007 L		F03H1	1-03	H				2		P		H TO WHERE	105
BUS 007 L		F04H1	1-04									TO HERE	105
BUS 007 L			1								8-2/8		105

BUS NAME	A/P	PIN NAME	ORDER PIN	BAY * ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS 007 L		A01H2		1-01 *	H						2		P	HAND WIRE	106
BUS 007 L		A02H2		1-02 *							1			TO HERE	106
BUS 007 L		C01H2		1-03 *	H						2		P	HAND WIRE	106
BUS 007 L		C02H2		1-04 *	H						1		P	HAND WIRE	106
BUS 007 L		C03H2		1-05 *	H						2		P	HAND WIRE	106
BUS 007 L		C04H2		1-06 *							1			TO HERE	106
BUS 007 L		A03H2		1-07 *	H						2		P	HAND WIRE	106
BUS 007 L		A04H2		1-08 *										TO HERE	106
BUS 007 L				1									30-2/8		106
															107
BUS 007 L JMP		C02H2		1-01							1				107
BUS 007 L JMP		F02H1		1-02											107
BUS 007 L JMP				1									10-0/8		107
BUS 008 L		F01K1		1-01	H						2		P	H TO WHERE	108
BUS 008 L		F02K1		1-02	H						1		P	H TO WHERE	108
BUS 008 L		F03K1		1-03	H						2		P	H TO WHERE	108
BUS 008 L		F04K1		1-04										TO HERE	108
BUS 008 L				1									8-2/8		108
BUS 008 L		A01H1		1-01 *	H						2		P	HAND WIRE	109
BUS 008 L		A02H1		1-02 *							1			TO HERE	109
BUS 008 L		C01L2		1-03 *	H						2		P	HAND WIRE	109
BUS 008 L		C02L2		1-04 *	H						1		P	HAND WIRE	109
BUS 008 L		C03L2		1-05 *	H						2		P	HAND WIRE	109
BUS 008 L		C04L2		1-06 *							1			TO HERE	109
BUS 008 L		A03H1		1-07 *	H						2		P	HAND WIRE	109
BUS 008 L		A04H1		1-08 *										TO HERE	109
BUS 008 L				1									30-0/8		109
															110
BUS 008 L JMP		C02L2		1-01							1				110
BUS 008 L JMP		F02K1		1-02											110
BUS 008 L JMP				1									10-4/8		110
BUS 009 L		A01J2		1-01 *	H						2		P	HAND WIRE	111
BUS 009 L		A02J2		1-02 *							1			TO HERE	111
BUS 009 L		C01K2		1-03 *	H						2		P	HAND WIRE	111
BUS 009 L		C02K2		1-04 *	H						1		P	HAND WIRE	111
BUS 009 L		C03K2		1-05 *	H						2		P	HAND WIRE	111
BUS 009 L		C04K2		1-06 *							1			TO HERE	111
BUS 009 L		A03J2		1-07 *	H						2		P	HAND WIRE	111
BUS 009 L		A04J2		1-08 *										TO HERE	111
BUS 009 L				1									29-6/8		111

BUS NAME	A/P	PIN NAME	ORDER PIN	BAY * ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS 010 L		A01J1		1-01 *	H						2		P	HAND WIRE	112
BUS 010 L		A02J1		1-02 *							1			TO HERE	112
BUS 010 L		C01J2		1-03 *	H						2		P	HAND WIRE	112
BUS 010 L		C02J2		1-04 *	H						1		P	HAND WIRE	112
BUS 010 L		C03J2		1-05 *	H						2		P	HAND WIRE	112
BUS 010 L		C04J2		1-06 *							1			TO HERE	112
BUS 010 L		A03J1		1-07 *	H						2		P	HAND WIRE	112
BUS 010 L		A04J1		1-08 *										TO HERE	112
BUS 010 L				1									29-4/8		112
BUS 011 L		A01K2		1-01 *	H						2		P	HAND WIRE	113
BUS 011 L		A02K2		1-02 *							1			TO HERE	113
BUS 011 L		C01H1		1-03 *	H						2		P	HAND WIRE	113
BUS 011 L		C02H1		1-04 *	H						1		P	HAND WIRE	113
BUS 011 L		C03H1		1-05 *	H						2		P	HAND WIRE	113
BUS 011 L		C04H1		1-06 *							1			TO HERE	113
BUS 011 L		A03K2		1-07 *	H						2		P	HAND WIRE	113
BUS 011 L		A04K2		1-08 *										TO HERE	113
BUS 011 L				1									29-0/8		113
BUS 012 L		A01K1		1-01 *	H						2		P	HAND WIRE	114
BUS 012 L		A02K1		1-02 *							1			TO HERE	114
BUS 012 L		C01H2		1-03 *	H						2		P	HAND WIRE	114
BUS 012 L		C02H2		1-04 *	H						1		P	HAND WIRE	114
BUS 012 L		C03H2		1-05 *	H						2		P	HAND WIRE	114
BUS 012 L		C04H2		1-06 *							1			TO HERE	114
BUS 012 L		A03K1		1-07 *	F						2		P	HAND WIRE	114
BUS 012 L		A04K1		1-08 *										TO HERE	114
BUS 012 L				1									29-0/8		114
BUS 013 L		A01L2		1-01 *	H						2		P	HAND WIRE	115
BUS 013 L		A02L2		1-02 *							1			TO HERE	115
BUS 013 L		C01F2		1-03 *	H						2		P	HAND WIRE	115
BUS 013 L		C02F2		1-04 *	H						1		P	HAND WIRE	115
BUS 013 L		C03F2		1-05 *	H						2		P	HAND WIRE	115
BUS 013 L		C04F2		1-06 *							1			TO HERE	115
BUS 013 L		A03L2		1-07 *	H						2		P	HAND WIRE	115
BUS 013 L		A04L2		1-08 *										TO HERE	115
BUS 013 L				1									28-2/8		115

BUS NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
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		C02F2		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 BG IN		D03U2		1-01				1				118
C BG IN		F03B1		1-02								118
C BG IN				1						5-6/8		118
C BG OUT		D03V2		1-01				1				119
C BG OUT		F03A1		1-02								119
C BG OUT				1						5-6/8		119
C BR OUT		D03J2		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 I :		D03H1		1-01				1				121
C I/		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

BUS NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
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						10-0/8		125
C OUT HIGH		D03K1		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		E03N1		1-02								127
C OUT LOW				1						5-6/8		127
C SEL W		D03F1		1-01				1				128
C SEL W		F03S2		1-02								128
C SEL W				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 5		D03C1		1-01				1				130
C SEL 5		E03S1		1-02								130
C SEL 5				1						6-2/8		130
C SEL 7		D03J1		1-01				1				131
C SEL 7		E03T2		1-02								131
C SEL 7				1						6-0/8		131
C SSYN IN H		D03V1		1-01				1				132
C SSYN IN H		E03H1		1-02								132
C SSYN 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		E03J2		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

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
C1 L	B01I2		1-01 *	H						2		P	HAND WIRE	134
C1 L	B02I2		1-02 *							1			TO HERE	134
C1 L	E01F2		1-03 *	H						2		P	HAND WIRE	134
C1 L	E02F2		1-04 *	H						1		P	HAND WIRE	134
C1 L	F03F2		1-05 *	H						2		P	HAND WIRE	134
C1 L	E04F2		1-06 *							1			TO HERE	134
C1 L	H03I2		1-07 *	H						2		P	HAND WIRE	134
C1 L	B04I2		1-08 *										TO HERE	134
C1 L			1									31-6/8		134
D BG IN	D04U2		1-01							1				135
D BG IN	F04B1		1-02											135
D BG IN			1									5-6/8		135
D BG OUT	D04V2		1-01							1				136
D BG OUT	F04A1		1-02											136
D BG OUT			1									5-6/8		136
D BR OUT	D04J2		1-01							1				137
D BR OUT	F04P1		1-02							2				137
D BR OUT	F04U2		1-03											137
D BR OUT			1									11-4/8		137
D IN	D04H1		1-01							1				138
D IN	E04M1		1-02											138
D IN			1									5-2/8		138
D INT A	D04N1		1-01							1				139
D INT A	F04U1		1-02											139
D INT A			1									8-2/8		139
D INT B	C04J1		1-01							1				140
D INT B	F04K2		1-02											140
D INT B			1									10-4/8		140
D INT ENB A	D04M1		1-01							1				141
D INT ENB A	F04V1		1-02											141
D INT ENB A			1									8-4/8		141
D INT ENB B	C04L1		1-01							1				142
D INT ENB B	F04H2		1-02											142
D INT ENB B			1									10-0/8		142
D OUT HIGH	D04K1		1-01							1				143
D OUT HIGH	E04M2		1-02											143
D OUT HIGH			1									5-2/8		143

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D OUT LOW	D04D1		1-01							1				144
D OUT LOW	E04N1		1-02											144
D OUT LOW			1									5-6/8		144
D SEL 4	D04K1		1-01							1				145
D SEL 4	F04S2		1-02											145
D SEL 4			1									6-0/8		145
D SEL 1	D04E1		1-01							1				146
D SEL 1	E04R2		1-02											146
D SEL 1			1									6-2/8		146
D SEL 0	D04C1		1-01							1				147
D SEL 0	E04S1		1-02											147
D SEL 0			1									6-2/8		147
D SEL 2	D04J1		1-01							1				148
D SEL 2	E04T2		1-02											148
D SEL 2			1									6-0/8		148
D SSYN IN H	D04V1		1-01							1				149
D SSYN IN H	E04R1		1-02											149
D SSYN IN H			1									2-6/8		149
DC L	B01F2		1-01 *	H						2		P	HAND WIRE	150
DC L	B02F2		1-02 *							1			TO HERE	150
DC L	C01N1		1-03 *	H						2		P	HAND WIRE	150
DC L	C02N1		1-04 *	H						1		P	HAND WIRE	150
DC L	C03N1		1-05 *	H						2		P	HAND WIRE	150
DC L	C04M1		1-06 *							1			TO HERE	150
DC L	H03F2		1-07 *	H						2		P	HAND WIRE	150
DC L	H04F2		1-08 *										TO HERE	150
DC L			1									25-4/8		150
F01D2	F01D2		1-01							2				151
F01D2	F01R2		1-02							1				151
F01D2	F01N1		1-03											151
F01D2			1									6-2/8		151
F01E1	F01E1		1-01							1				152
F01E1	F01V2		1-02											152
F01E1			1									4-2/8		152
F01L2	F01L2		1-01							1				153
F01L2	F01R1		1-02											153
F01L2			1									3-0/8		153

DD11-C.PM HHD208,V23(23) 05/24/74 Q
RUN NAME A/P PIN NAME ORDER PIN BAY - ORDER DRAW RV PG Y X Z REMARKS 12-MAR-75 LENGTH 8143 EXCEPTIONS PAGE 22 RUN NUMBER

A/P PIN NAME	ORDER PIN	BAY - ORDER	DRAW	RV	PG	Y	X	Z	REMARKS	12-MAR-75 LENGTH	8143 EXCEPTIONS	PAGE 22 RUN NUMBER
F01H2	1	1-01						1				154
F01S2	1	1-02										154
F01H2	1	1										154
F01P2	1	1-01						1		1-0/6		155
F01S2	1	1-02										155
F01P2	1	1										155
F02D2	1	1-01						2		2-4/8		156
F02D2	1	1-02						1				156
F02D2	1	1										156
F02E1	1	1-01						1		6-2/8		157
F02V2	1	1-02										157
F02E1	1	1										157
F02L2	1	1-01						1		6-2/8		158
F02R1	1	1-02										158
F02L2	1	1										158
F02H2	1	1-01						1		3-4/8		159
F02S2	1	1-02										159
F02H2	1	1										159
F02P2	1	1-01						1		3-0/8		160
F02S2	1	1-02										160
F02P2	1	1										160
F03D2	1	1-01						2		2-4/8		161
F03H2	2	1-02										161
F03R1	1	1										161
F03E1	1	1-01						1		6-2/8		162
F03V2	1	1-02										162
F03E1	1	1										162
F03L2	1	1-01						1		4-2/8		163
F03R1	1	1-02										163
F03L2	1	1										163
F03H2	1	1-01						1		3-0/8		164
F03S2	1	1-02										164
F03H2	1	1										164

HHD208,V23(23) 05/24/74 Q
A/P PIN NAME ORDER PIN BAY - ORDER DRAW RV PG Y X Z REMARKS 12-MAR-75 LENGTH 8143 EXCEPTIONS PAGE 23 RUN NUMBER

A/P PIN NAME	ORDER PIN	BAY - ORDER	DRAW	RV	PG	Y	X	Z	REMARKS	12-MAR-75 LENGTH	8143 EXCEPTIONS	PAGE 23 RUN NUMBER
F03P2	1	1-01						1				165
F03S2	1	1-02										165
F03P2	1	1								2-4/8		165
F04D2	1	1-01						2				166
F04H2	2	1-02						1				166
F04R1	1	1								6-2/8		166
F04E1	1	1-01						1				167
F04V2	1	1-02								4-2/8		167
F04E1	1	1										167
F04L2	1	1-01						1				168
F04R1	1	1-02								3-0/8		168
F04L2	1	1										168
F04H2	1	1-01						1				169
F04S2	1	1-02								3-0/8		169
F04H2	1	1										169
F04P2	1	1-01						1				170
F04S2	1	1-02								2-4/8		170
F04P2	1	1										170
A41C2	1	1-01	P					2	H TO WHERE			171
A42C2	1	1-02	P					1	H TO WHERE			171
A43C2	2	1-03	P						H TO WHERE			171
A44C2	1	1-04	P						H TO WHERE			171
A41T1	2	1-05	P						H TO WHERE			171
A42T1	1	1-06	P						H TO WHERE			171
A42T1	2	1-07	P						H TO WHERE			171
A41T1	1	1-08	P						TO HERE			171
A41T1	1	1								20-4/8		171
B41C2	2	1-01	P					2	H TO WHERE			172
B42C2	1	1-02	P					1	H TO WHERE			172
B43C2	2	1-03	P						H TO WHERE			172
B44C2	1	1-04	P						H TO WHERE			172
B41T1	2	1-05	P						H TO WHERE			172
B42T1	1	1-06	P						H TO WHERE			172
B42T1	2	1-07	P						H TO WHERE			172
B41T1	1	1-08	P						TO HERE			172
B41T1	1	1								20-4/8		172

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DD11-C.PO                HND288,V23(23) 05/24/74                                                
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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
INIT L		AC1A1		1-01 *	H						2		P	HAND WIRE	185
INIT L		A02A1		1-02 *							1			TO HERE	185
INIT L		D01L1		1-03 *	H						2		P	HAND WIRE	185
INIT L		D02L1		1-04 *	H						1		P	HAND WIRE	185
INIT L		D03L1		1-05 *	H						2		P	HAND WIRE	185
INIT L		D04L1		1-06 *							1			TO HERE	185
INIT L		A03A1		1-07 *	H						2		P	HAND WIRE	185
INIT L		A04A1		1-08 *										TO HERE	185
INIT L				1									37-2/8		185
INT SSYN		H02E1		1-01	H						1		P	H TO WHERE	186
INT SSYN		H03E1		1-02										TO HERE	186
INT SSYN				1									2-6/8		186
INTR L		A01B1		1-01 *	H						2		P	HAND WIRE	187
INTR L		A02B1		1-02 *							1			TO HERE	187
INTR L		F01M1		1-03 *	H						2		P	HAND WIRE	187
INTR L		F02M1		1-04 *	H						1		P	HAND WIRE	187
INTR L		F03M1		1-05 *	H						2		P	HAND WIRE	187
INTR L		F04M1		1-06 *							1			TO HERE	187
INTR L		A03B1		1-07 *	H						2		P	HAND WIRE	187
INTR L		A04B1		1-08 *										TO HERE	187
INTR L				1									47-6/8		187
LTC		C01D1		1-01	H						2		P	H TO WHERE	188
LTC		C02D1		1-02	H						1		P	H TO WHERE	188
LTC		C03D1		1-03	H						2		P	H TO WHERE	188
LTC		C04D1		1-04										TO HERE	188
LTC				1									8-2/8		188
MSYN L		B01V1		1-01 *							2				189
MSYN L		B02V1		1-02 *							1				189
MSYN L		B01E1		1-03 *	H						2		P	HAND WIRE	189
MSYN L		B02E1		1-04 *	H						1		P	HAND WIRE	189
MSYN L		B03E1		1-05 *	H						2		P	HAND WIRE	189
MSYN L		B04F1		1-06 *							1			TO HERE	189
MSYN L		H03V1		1-07 *							2				189
MSYN L		B04V1		1-08 *											189
MSYN L				1									31-2/8		189

PIN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
NPG L		A01U1		1-01 *							2				190
NPG L		C01A1		1-02 *							1				190
NPG L		C01P1		1-03 *	H						2		P	HAND WIRE	190
NPG L		C02A1		1-04 *							1			TO HERE	190
NPG L		C02E1		1-05 *	H						2		P	HAND WIRE	190
NPG L		C03A1		1-06 *							1			TO HERE	190
NPG L		C03M1		1-07 *	H						2		P	HAND WIRE	190
NPG L		C04A1		1-08 *							1			TO HERE	190
NPG L		C04B1		1-09 *							2				190
NPG L		A04U1		1-10 *											190
NPG L				1									29-4/8		190
NPR L		A01S2		1-01 *							2				191
NPR L		A02S2		1-02 *							1				191
NPR L		F01J1		1-03 *	H						2		P	HAND WIRE	191
NPR L		F02J1		1-04 *	H						1		P	HAND WIRE	191
NPR L		F03J1		1-05 *	H						2		P	HAND WIRE	191
NPR L		F04J1		1-06 *							1			TO HERE	191
NPR L		A03S2		1-07 *	H						2		P	HAND WIRE	191
NPR L		A04S2		1-08 *										TO HERE	191
NPR L				1									43-6/8		191
PA L		A01M1		1-01 *	H						2		P	HAND WIRE	192
PA L		A02M1		1-02 *							1			TO HERE	192
PA L		C01C1		1-03 *	H						2		P	HAND WIRE	192
PA L		C02C1		1-04 *							1			TO HERE	192
PA L		C03C1		1-05 *							2				192
PA L		C04C1		1-06 *							1				192
PA L		A03M1		1-07 *							2				192
PA L		A04M1		1-08 *											192
PA L				1									27-2/8		192
PAR DET		B02E2		1-01	H						1		P	H TO WHERE	193
PAR DET		B03E2		1-02										TO HERE	193
PAR DET				1									2-6/8		193
PAR PA		A02P1		1-01	H						1		P	H TO WHERE	194
PAR PA		A03P1		1-02										TO HERE	194
PAR PA				1									2-6/8		194
PAR PI		A02N1		1-01	H						1		P	H TO WHERE	195
PAR PI		A03N1		1-02										TO HERE	195
PAR PI				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		A01K2		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		F02D1		1-02 *				1			TO HERE	200
SSYN L		F01J1		1-03 *	H			2		P	HAND WIRE	200
SSYN L		F02J1		1-04 *	H			1		P	HAND WIRE	200
SSYN L		F03J1		1-05 *	H			2		P	HAND WIRE	200
SSYN L		B04J1		1-06 *				1			TO HERE	200
SSYN L		F03D1		1-07 *	H			2		P	HAND WIRE	200
SSYN L		F04D1		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

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CUSTOMER PRINT SET INDEX

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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	DDIIP-2	A
	2-3-76	R. Barry	
	9-76	DDIIP-3	B
	12-76	DDIIP-4	C
	2-77	DDIIP-5	D

DEC 16-12325-1962-1A-R972

USED ON OPTION/MODEL		DRN.	DATE
		D. HEALY	6/19/75
		CHK'D.	DATE
		D. Healy	6/30/75
		PROJ ENG.	DATE
		R Barry	7-2-75
		PROD.	DATE
		R.K. Peterson	7/2/75
		FIELD SERV.	DATE
			7-3-75

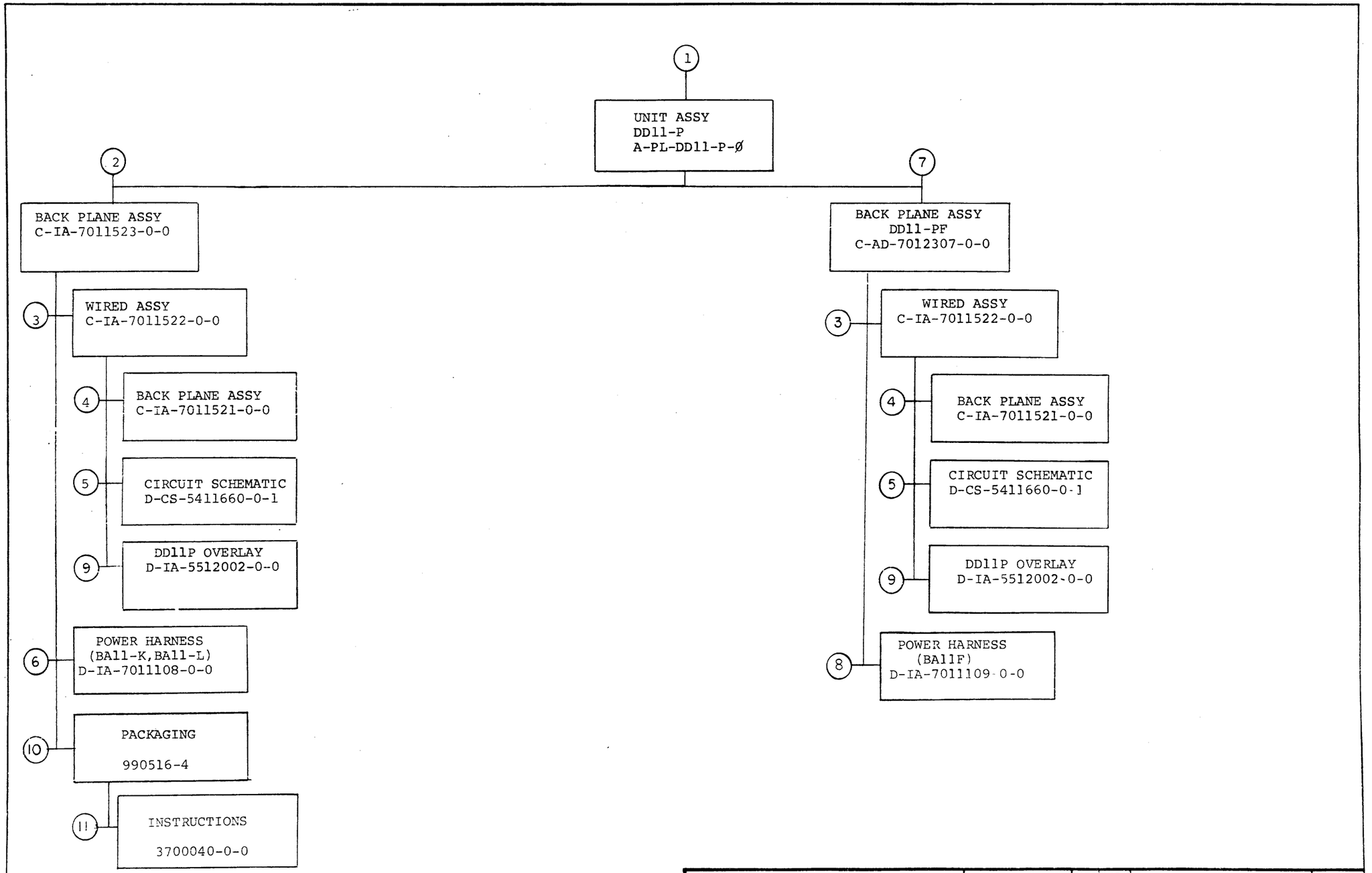
SHEET 1 OF 3

TITLE: DRAWING DIRECTORY DD11-P

SIZE	CODE	NUMBER	REV
B	DD	DD11-P	D

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

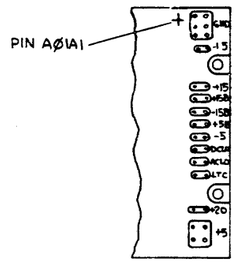
DPB 108

DEC 16-13251-062-2B-A972

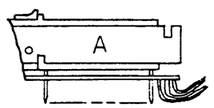
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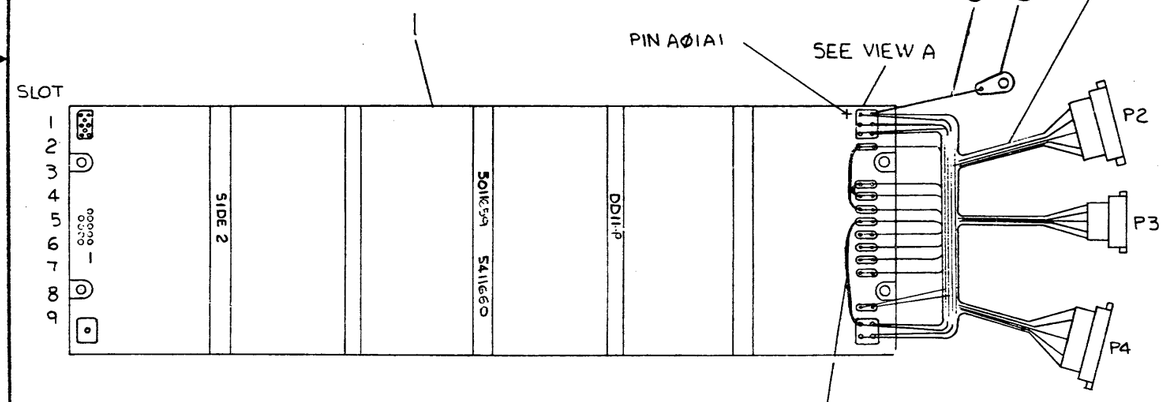
WIRE TABLE

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				



VIEW A





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.

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
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS			
CHK	CHANGE NO.		REV.
	7011523-00001		A
	DD11P-00002		B
	DD11-P-00005		C
	7011523-00002		D

FIRST USED ON OPTION/MODEL: DD11-P

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

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

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: + +

DRN	R. Miller	DATE 5/20/75
CHK'D	D. Casey	DATE 7/1/75
ENG	R. Barry	DATE 7-9-75
PROJ ENG	R. Barry	DATE 7-9-75
PROD	R. Peterson	DATE 7/21/75

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.

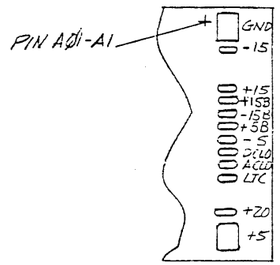
SIZE	CODE	NUMBER	REV.
C	IA	7011523-0-0	D

DEC FORM NO. DMC 100-B

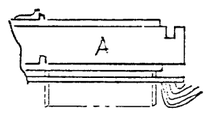
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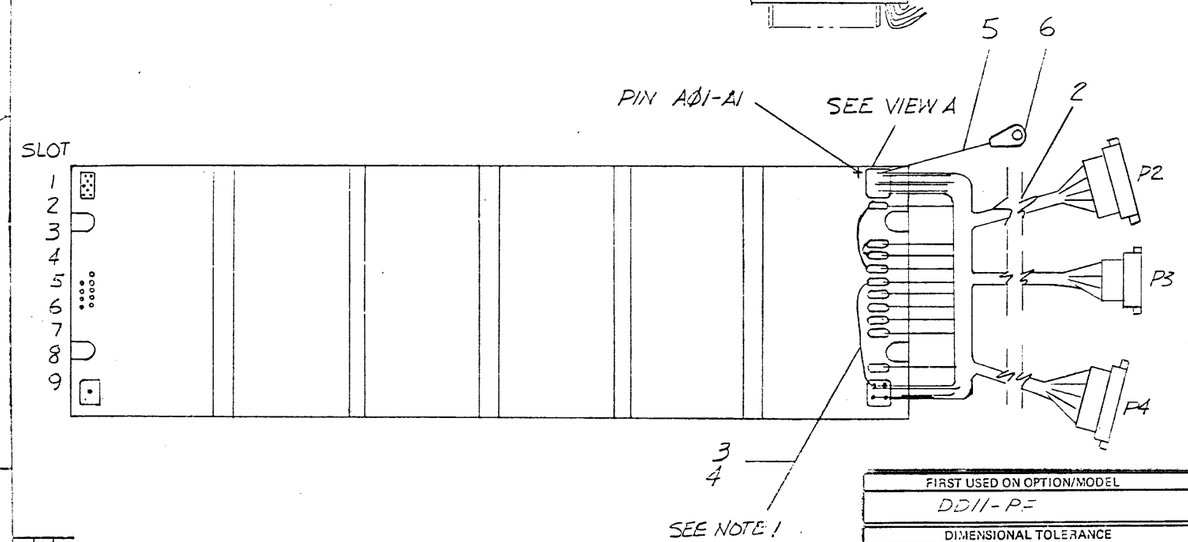
WIRE TABLE

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
ORN	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				



VIEW "A"





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.	DESCRIPTION	PART NO.	QTY.
1	TERMINAL, SOLDER	9008150	6
#12	WIRE, BLK STRD #14	9107370-00	5
A/R	TUBING, #20 (CLEAR)	9107267-10	4
A/R	WIRE, BUS #20	9107560-02	3
1	POWER HARNESS BA11-F	17-17470-39-00	2
1	WIRED ASSY DD11-P	6J-17D 522 0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: DD11-PF

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

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

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: —

	NAME	DATE
DRN.	[illegible]	12/12/75
CHK'D	[illegible]	12/13/75
ENG.	R Barry	12/13/75
PROJ. ENG.	R Barry	12/13/75
PROD.	[illegible]	12-19-75

NEXT HIGHER ASSY.: A-PL-DD11-PF-Ø

SCALE: NONE

SHEET 1 OF 1

digital

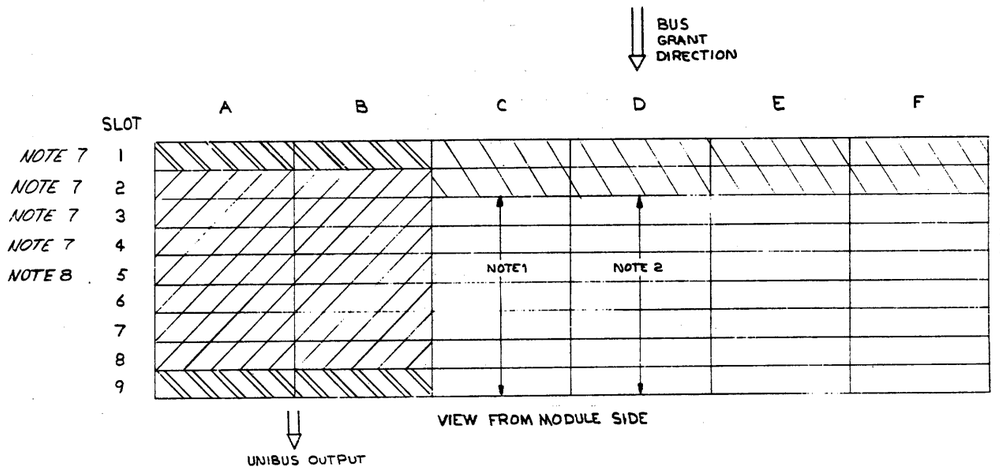
TITLE: BACK PLANE ASSY (DD11-PF)

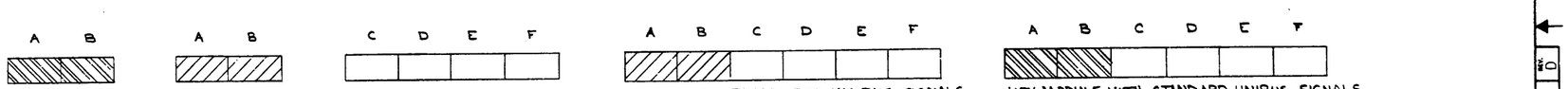
SIZE	CODE	NUMBER	REV.
C	AD	7012307-0-0	

DIST.

REVISIONS: REV. | CHANGE NO. | DATE

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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 1E: ABOVE

2.) THOSE PINNED TO TAKE SIGNALS FROM STANDARD SPC PINNING WITH THE EXCEPTION OF POWER FROM (A&B). 1E: 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 PDP1134A 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 (5 1/4") AND BA11-K (10.5") BOXES.
10. EITHER M9312 OR M9301 MAY BE USED BUT NOT BOTH.

REVISIONS			
SYM	CHANGE NO.	REV.	
TC	DD11P-00005	A	4-FEB-77
	(as planned)		
	D. HANEY		
TC	TC per ECO 2-FEB-77	B	
TC	DD11-P-00006	B	
	STATUS ACTIVE 6 DEC 77		
	J. SOFIO		
TC	DD11P-0007	C	2 FEB 78
	V. Updated 2 Feb 78		
	J. SOFIO		
TC	DD11P-00008	D	22 FEB 78
	V. Updated 22 Feb 78		
	J. SOFIO		
	Add Note 10		12 JUN 78

	DESCRIPTION	DWG./PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
QUANTITY & VARIATION	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE (INCHES)	
	SURFACE QUALITY IN MICROINCHES: MEDIUM ☐	OVER 0 TO 0.2: ±.005	OVER 0.2 TO 1.2: ±.008
	PREFERRED ☐	±.010	±.016

THIRD ANGLE PROJECTION	DRN.	11.31.76	FIRST USED ON: digital
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	7/1/77	TITLE: MODULE UTILIZATION (DD11-P)
DO NOT SCALE DWG	ENG.	7-25-77	
	PROJ. ENG.	7-25-77	
	PROD.	7/25/77	
	NEXT HIGHER ASSY.		
MATERIAL	B-DD-DD11-P	SIZE D	CODE MU
FINISH	SCALE	NUMBER DD11-P-2	REV. D
	SHEET 1 OF 2	DIST.	

DEC 1-CRM NO. DRW 100-C

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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-CP PDP-11/04

SLOT 1	M7263
2	MM11-CP
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	

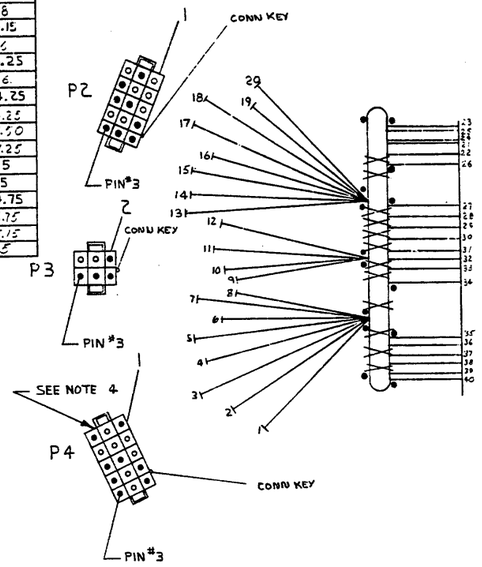
REVISIONS		
CHK	CHANGE NO.	REV.

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

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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		28		+15B	6.15
14	18	GRN	8	P4-15		29		-15B	6
12	18	YEL	9	P3-4		33		ACLO	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#4 AT BREAKOUT 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.

ITEM	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

FOR WIRE LENGTHS SEE WIRING TABLE

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

REVISIONS			
CHK	CHANGE NO.	REV.	
JVE	7011108-0-0	A	
		B	

DEC FORM NO. DRD 100-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE (INCHES) 0 TO .12	.12 TO .72	.72 TO 1.20	1.20 TO 2.60	2.60 TO 4.00
SURFACE QUALITY IN MICROINCHES	SPECIFIED ☐	±.004	±.008	±.012	±.016	±.024
	PREFERRED ☐	±.012	±.018	±.025	±.04	±.060

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRN. [illegible] 9/11/75
CHK'D [illegible] 9/11/75
ENG'R [illegible] 9/24/75
PROJ. ENG. [illegible] 9/24/75
PROD. [illegible] 9/30/75

NEXT HIGHER ASSY.

CAD-7011184-0-0

SCALE 1/1

SHEET 1 OF 1

FIRST USED ON: DD11-D

digital

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

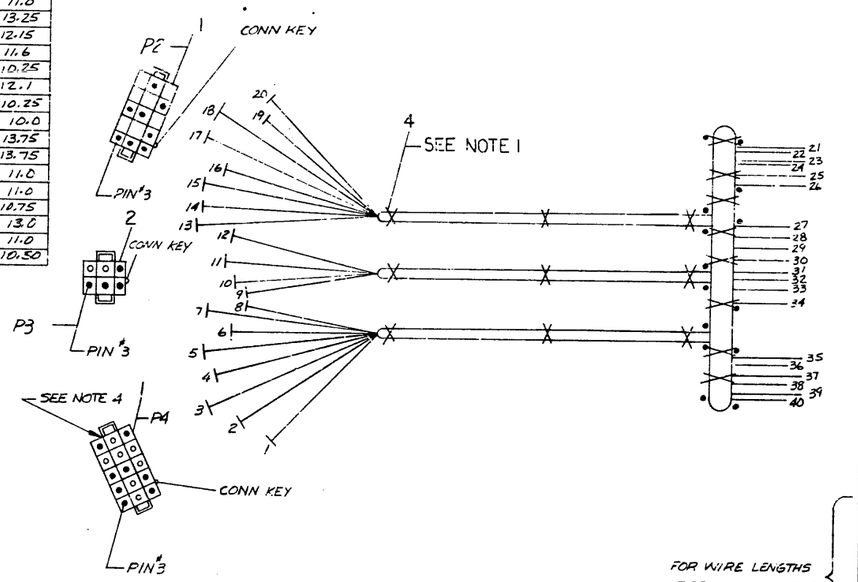
SIZE: D | CODE: IA | NUMBER: 7011108-0-0 | REV: B

DIST.

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WIRING TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	WITH	TO POINT	TO CONNECTION	SIGNAL	LENGTH
1	18	BLU	1	P4-13	3	26	SOLDER	-15V	12.75
5	14	RED	2	P4-4		37		+5V	11
5	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	10.25
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	P2-8		24		GND	11.0
8	18	GRY	17	P2-2		27		+15	10.75
7	14	ORN	18	P2-3		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.

FOR WIRE LENGTHS SEE WIRING TABLE

ITEM	DESCRIPTION	DWG./PART NO.	QTY
1	POWER HARNESS DECAL	7409972-2	16
AR	WIRE #14 AWG (BRN)	9107370-11	15
AR	WIRE #18 AWG (GRN)	9107360-55	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)	9107360-11	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

REVISIONS		
CUST	CHANGE NO.	REV
KIT	7011109-00001	A
	P. Porreca 15FEB77	
	D.BARRY 4FEB77	
	7011109-00002	B
	P. PORRECA 31MAR77	

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG.

MATERIAL: SEE PARTS LIST

FINISH: —

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	SURFACE QUALITY IN MICROINCHES	OVER 0 TO 6	OVER 6 TO 12	OVER 12 TO 40	OVER 40 TO 120	OVER 120 TO 400	OVER 400 TO 800
	MEDIUM ☐	✓	±.004	±.008	±.012	±.016	±.024	±.26
	PREFERRED ☐		±.012	±.016	±.020	±.04	±.060	±0.1

DRAWN		11/3/75
CHK'D		12/1/75
ENG.		12/5/75
PROJ. ENG.		12/12/75
PROD.		
NEXT HIGHER ASSY.	CAD-7012307-0-C	

FIRST USED ON: DD11-DF, PF

digital

TITLE: POWER HARNESS (BA11-F)

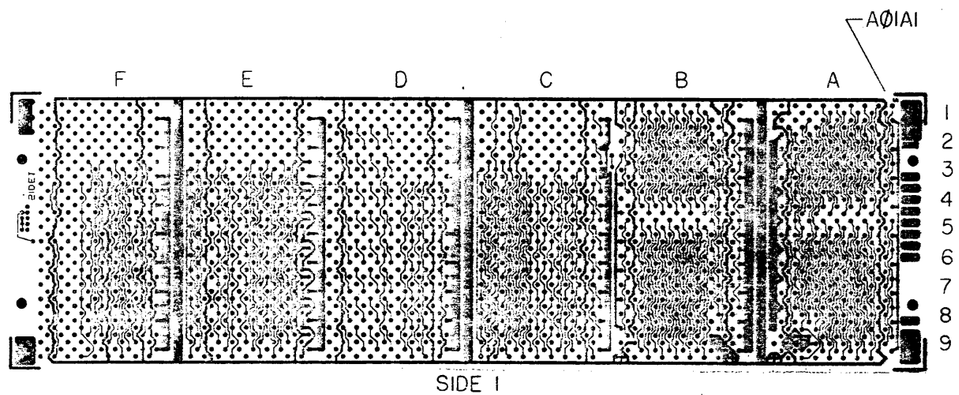
SIZE	CODE	NUMBER	REV.
D	1A	7011109-0-C	F

SCALE 1/1 — SHEET 1 OF 1 — DIST.

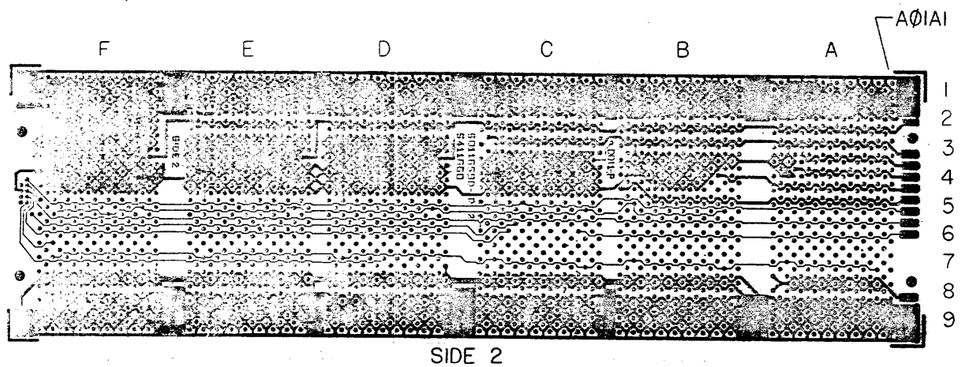
DEC FORM NO. DRD 100-C

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NOTES:



SIDE 1



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

IC PIN LOCATIONS

REF			
REF		AWT REV STATUS	A-WT-7011522-0-C 5
REF		MODULE ECO HISTORY	B-MH-5411660-0-6 4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411660-0-5 3
REF		X-Y COORDINATE HOLE LOCATION	X-C0-5411660-0-4 2
1		ETCHED CIRCUIT BOARD	5011659 1
QTY	REF. DESIGNATION	DESCRIPTION	PART NO ITEM NO

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV. D

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

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	CHK	
C	5411660-0000		R.GARRY 9-11-75
D	5411660-0000		R.GRAY 6-NOV-75

REVISIONS

DRN. A. Hodgett 6-20-75
CHKD. [illegible] DATE 7/16/75
ENG. K. Barry DATE 7-2-75
PROJ. ENG. [illegible] DATE 7-2-75
PROD. DATE
NEXT HIGHER ASSY C-TA-7011521-0-0
SCALE 1/1
SHEET 1 OF 1

digital

TITLE CIRCUIT SCHEMATIC

SIZE D CODE 03216 NUMBER CS 5411660-0-1 REV. E

DIST.

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DIGITAL EQUIP. CORP.

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

REVISIONS			
REV.	CHANGE NO.	CHK	
A	DD11P-00001	RTB	7/2/75
B	DD11P-00003	RTB	7/2/75
C	DD11P-00004	RTB	7/2/75

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

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

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		C03B2		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		C03V1		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		B08F1		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
BBSY L		A01P2		1-01 *	P						2		0-7/8	10
BBSY L		A02P2		1-02 *	P						1		0-7/8	10
BBSY L		A03P2		1-03 *	P						2		13-1/8	10
BBSY L		A04P2		1-04 *	H						1	TWP	0-7/8	10
BBSY L		F03D1		1-05 *	P						2		0-7/8	10
BBSY L		F04D1		1-06 *	H						1	2° TWP	0-7/8	10
BBSY L		F05D1		1-07 *	P						2		0-7/8	10
BBSY L		F06D1		1-08 *	P						1		0-7/8	10
BBSY L		F07D1		1-09 *	P						2		0-7/8	10
BBSY L		F08D1		1-10 *	P						1		14-3/8	10
BBSY L		F09D1		1-11 *	H						2	TWP	0-7/8	10
BBSY L		A05P2		1-12 *	P						1		0-7/8	10
BBSY L		A06P2		1-13 *	P						2		0-7/8	10
BBSY L		A07P2		1-14 *	P						1		0-7/8	10
BBSY L		A08P2		1-15 *							2			10
BBSY L		A09P2		1-16 *									38-7/8	10
BBSY 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	Q	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 LENGTH FLAG	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		8-7/8		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		0-7/8		54
BR7	L		A09T2		1-16 *											54
BR7	L				1									27-5/8		54
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		0-7/8		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 A00 L		B01M2		1-01 *	P						1		0-7/8		63
BUS A00 L		B02M2		1-02 *	P						2		0-7/8		63
BUS A00 L		B03M2		1-03 *	P						1		0-7/8		63
BUS A00 L		B04M2		1-04 *							2		8-5/8		63
BUS A00 L		E03N2		1-05 *	P						1		0-7/8		63
BUS A00 L		E04N2		1-06 *	P						2		0-7/8		63
BUS A00 L		E05N2		1-07 *	P						1		0-7/8		63
BUS A00 L		E06N2		1-08 *	P						2		0-7/8		63
BUS A00 L		E07N2		1-09 *	P						1		0-7/8		63
BUS A00 L		E08N2		1-10 *	P						2		0-7/8		63
BUS A00 L		E09N2		1-11 *							1		10-3/8		63
BUS A00 L		B05M2		1-12 *	P						2		0-7/8		63
BUS A00 L		B06M2		1-13 *	P						1		0-7/8		63
BUS A00 L		B07M2		1-14 *	P						2		0-7/8		63
BUS A00 L		B08M2		1-15 *	P						1		0-7/8		63
BUS A00 L		B09M2		1-16 *	P										63
BUS A00 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		8-3/8		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 FLAG	LENGTH 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 LENGTH FLAG 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 FLAG	LENGTH 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 LENGTH FLAG	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		D08K1		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 LENGTH FLAG	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 LENGTH FLAG	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		C0182		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

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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	BA11L-6	B
MAR-77	BA11L-8	C
APR-77	BA11L-9	D
JUL-77	BA11L-11	E
DEC-77	BA11L-14	F

USED ON OPTION/MODEL	
11/Ø4	
11/34	

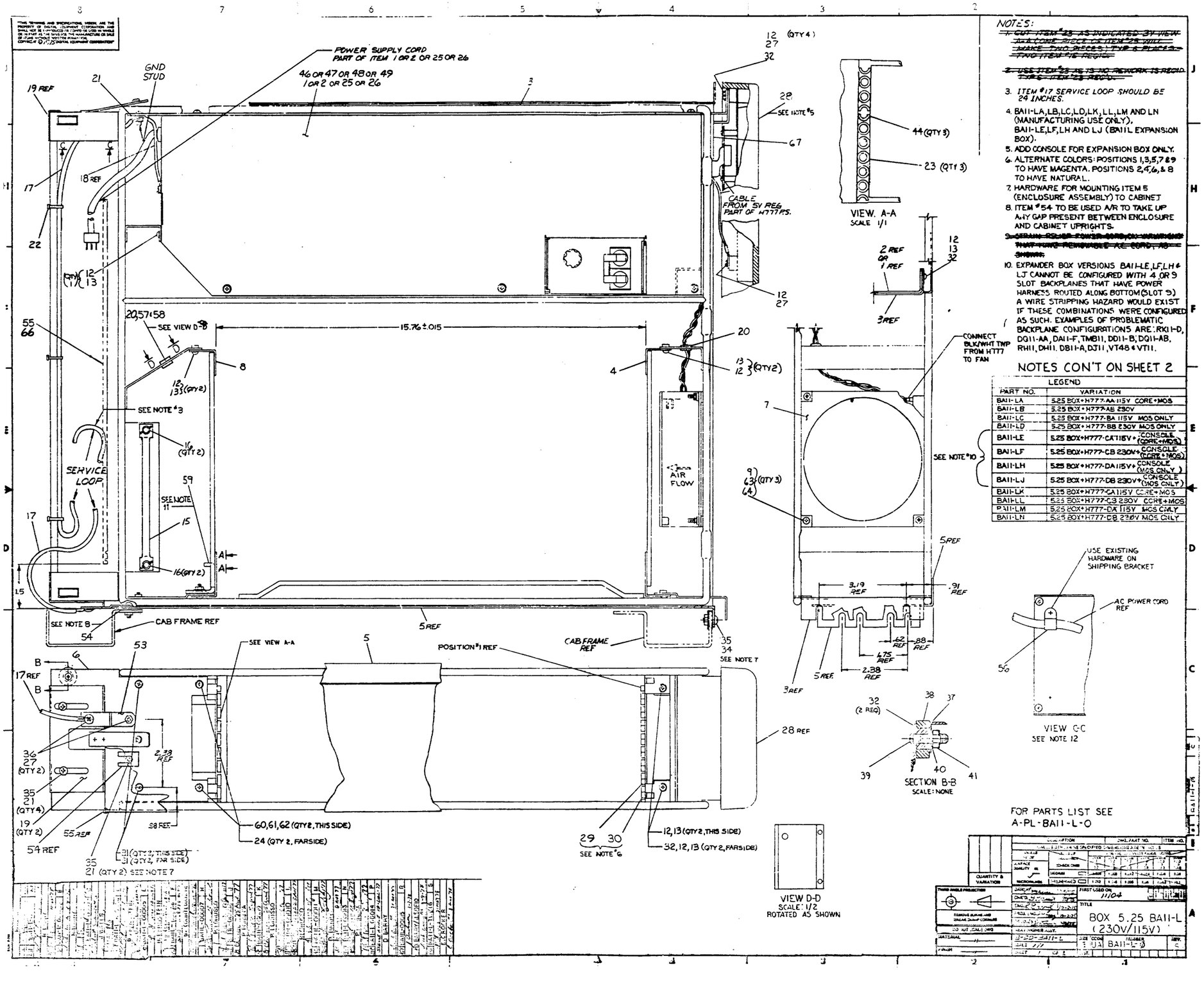
SHEET 1 OF 1

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 10-22-75	DIST.

EK-011Z4-TC-NS-1(27)

DRB 124

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NOTES:

~~1. CUT ITEM #25 AS INDICATED BY VIEW. A FLOME PIECE OF ITEM 25 WILL MAKE TWO 2.50 LONG PIECES. FIND ITEM #16 REQ'D.~~

~~2. USE ITEM #25 AS IS NO REWORK IS REQ'D. FIND ITEM #16 REQ'D.~~

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

4. BA11-LA, LB, LC, LD, LK, LL, LM AND LN (MANUFACTURING USE ONLY), BA11-LE, LF, LH AND LJ (BA11L 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. CERAIN RS-11B POWER CORDS (W/ GRAY END THAT HAVE REMOVABLE AC CORD, AS SHOWN.~~

10. EXPANDER BOX VERSIONS BA11-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: RK11-D, DQ11-AA, DA11-F, TM811, DD11-B, DQ11-AB, RH11, DH11, DB11-A, DJ11, VT48 & VT11.

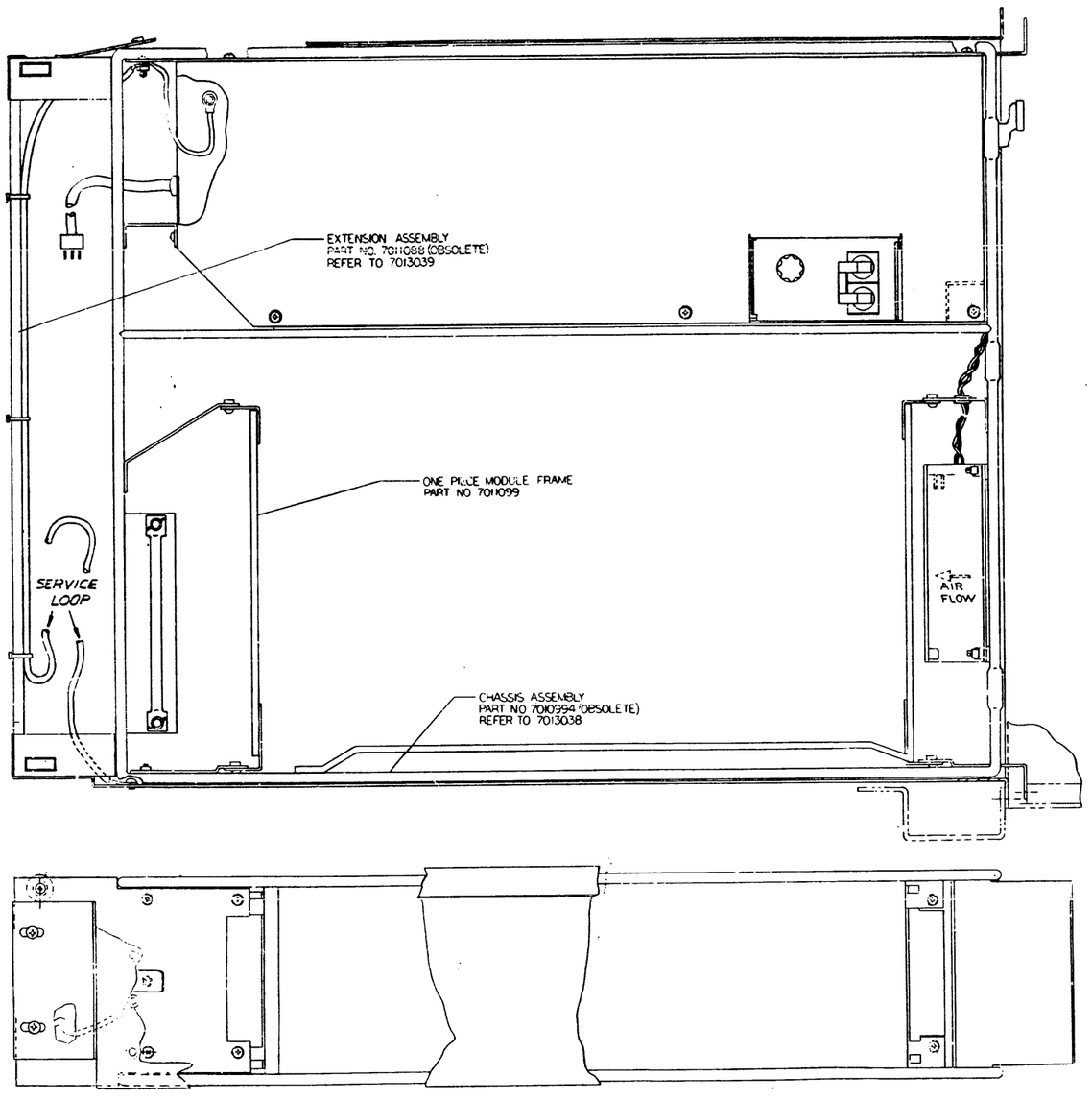
NOTES CON'T ON SHEET 2

LEGEND	
PART NO.	VARIATION
BA11-LA	5.25 BOX + H777-AA 115V CORE + MOS
BA11-LB	5.25 BOX + H777-AB 230V
BA11-LC	5.25 BOX + H777-BA 115V MOS ONLY
BA11-LD	5.25 BOX + H777-BB 230V MOS ONLY
BA11-LE	5.25 BOX + H777-CA 115V + CONSOLE (CORE + MOS)
BA11-LF	5.25 BOX + H777-CB 230V + CONSOLE (CORE + MOS)
BA11-LH	5.25 BOX + H777-DA 115V + CONSOLE (MOS ONLY)
BA11-LJ	5.25 BOX + H777-DB 230V + CONSOLE (MOS ONLY)
BA11-LK	5.25 BOX + H777-CA 115V CORE + MOS
BA11-LL	5.25 BOX + H777-CB 230V CORE + MOS
BA11-LM	5.25 BOX + H777-DA 115V MOS ONLY
BA11-LN	5.25 BOX + H777-DB 230V MOS ONLY

FOR PARTS LIST SEE A-PL-BA11-L-0

FIRST USED ON	11104
TITLE	BOX 5.25 BA11-L (230V/115V)
SIZE	D
CODE	10 U4
DWG NO.	BA11-L-0
REV.	C

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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 FROM, AND INSTALLED AT SITE LOCATION.
13. ITEM #68 NOT SHOWN, IT IS USED IN SHIPPING ONLY.

DRWN	C. MARINI	9-3-75	FIRST LSAD ON 11104
CHK'D	D. HEALY	9 30 75	
ENG			TITLE
PROJ. ENG.			BOX 5.25 BA11-L (230V/115V)
PROD			
NEXT HIGHER ASSY.			
	B-DD-BA11-L		SIZE E CODE UA NUMBER BA11-L-Ø REV. S
SCALE	1/1		
SHEET	2 OF 2		DIST.

THIRD ANGLE PROJECTION — REMOVE BURRS AND BREAK SHARP CORNERS — DO NOT SCALE DWG — MATERIAL — FINISH

QUANTITY & VARIATION — DESCRIPTION — DWG./PART NO. — ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±° SURFACE QUALITY ▽▽ VALUE OF ACCUMULATIVE ERROR ONES — MACHINED / MEDIUM / PRESSWORK — MICROINCHES

	DECIMAL PLACES				FRACTIONS
	.X	.XX	.XXX	.XXXX	
MACHINED	±.1	±.02	±.005	±.0005	±1/64
MEDIUM	±.05	±.015	±.010	±.005	±1/32
PRESSWORK	±.012	±.010	±.005	±.003	±1/64

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	BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
			QUANTITY/VARIATION											
1	E-UA-H777-DA-0	POWER SUPPLY H777(115V)	-	-	-	-	-	-	1	-	-	-	1	-
2	E-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. TOOTH LOCK~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~	~~3~~
~~11~~	~~9009169~~	~~CRIP MOD #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~~	~~9006038-1~~	~~SCR, PHL HD PAN #6-32 x .25~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~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/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R

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

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	BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
			QUANTITY/VARIATION											
44	C-MD-7418077	CARD GUIDE. CENTER	3	3	3	3	3	3	3	3	3	3	3	3
~~45~~	~~1200403-01~~	~~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-IA-9010984-0-0~~	~~CHASSIS ASSY~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~
~~51~~	~~B-IA-7011985-0-0~~	~~CABLE ASSY~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~
~~52~~	~~B-IA-7011988-0-0~~	~~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/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
55	9007035	GROMMET CATERPILLAR	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	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 | SIZE A | CODE PL | NUMBER BA11-L-Ø | REV. S | ECO NO.
SHEET 3 OF 4 | DIST.

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	BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
			QUANTITY/VARIATION											
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	-	-	-
26	E-UA-H777-CB-0	POWER SUPPLY H777(230V)	-	-	-	-	-	1	-	-	-	1	-	-
27	9008072	WASHER, EXT. TOOTH #8	3	3	3	3	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~~	~~9003881~~	~~WASHER, FLAT #10~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~	~~4~~
34	9007736	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	2	2	2	2	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	9009483-03	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	9006551	NUT, HEX #8-32	2	2	2	2	2	2	2	2	2	2	2	2
42	3700061	CUST. SHIPPING PKG.	-	-	-	-	1	1	1	1	-	-	-	-
43	3700133	SUPPLIES PACKAGING	-	-	-	-	1	1	1	1	-	-	-	-
~~44~~	~~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 | SIZE A | CODE PL | NUMBER BA11-L-Ø | REV. S | ECO NO.
SHEET 2 OF 4 | DIST.

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.
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ITEM NO.	DWG NO./PART NO.	DESCRIPTION	BA11-LA	BA11-LB	BA11-LC	BA11-LD	BA11-LE	BA11-LF	BA11-LH	BA11-LJ	BA11-LK	BA11-LL	BA11-LM	BA11-LN
			QUANTITY/VARIATION											
66	9009157	PERMA BOND 101	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	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 | SIZE A | CODE PL | NUMBER BA11-L-Ø | REV. S | ECO NO.
SHEET 4 OF 4 | DIST.

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

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FIELD MAINTENANCE PRINT SET

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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			
REV.	CHG. NO.	DATE	
D	H777-2	JAN-77	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	9/30/75
CHK'D	D. HEALY	DATE	9/30/75
PROJ. ENG.	R. BARRY	DATE	10/22/75
FIELD SERV.		DATE	

digital

TITLE: FIELD MAINTENANCE SET H777-0

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

DIST.

EN-01124-16-N675(327)

DBB 124

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CB-1

LINE LOAD

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

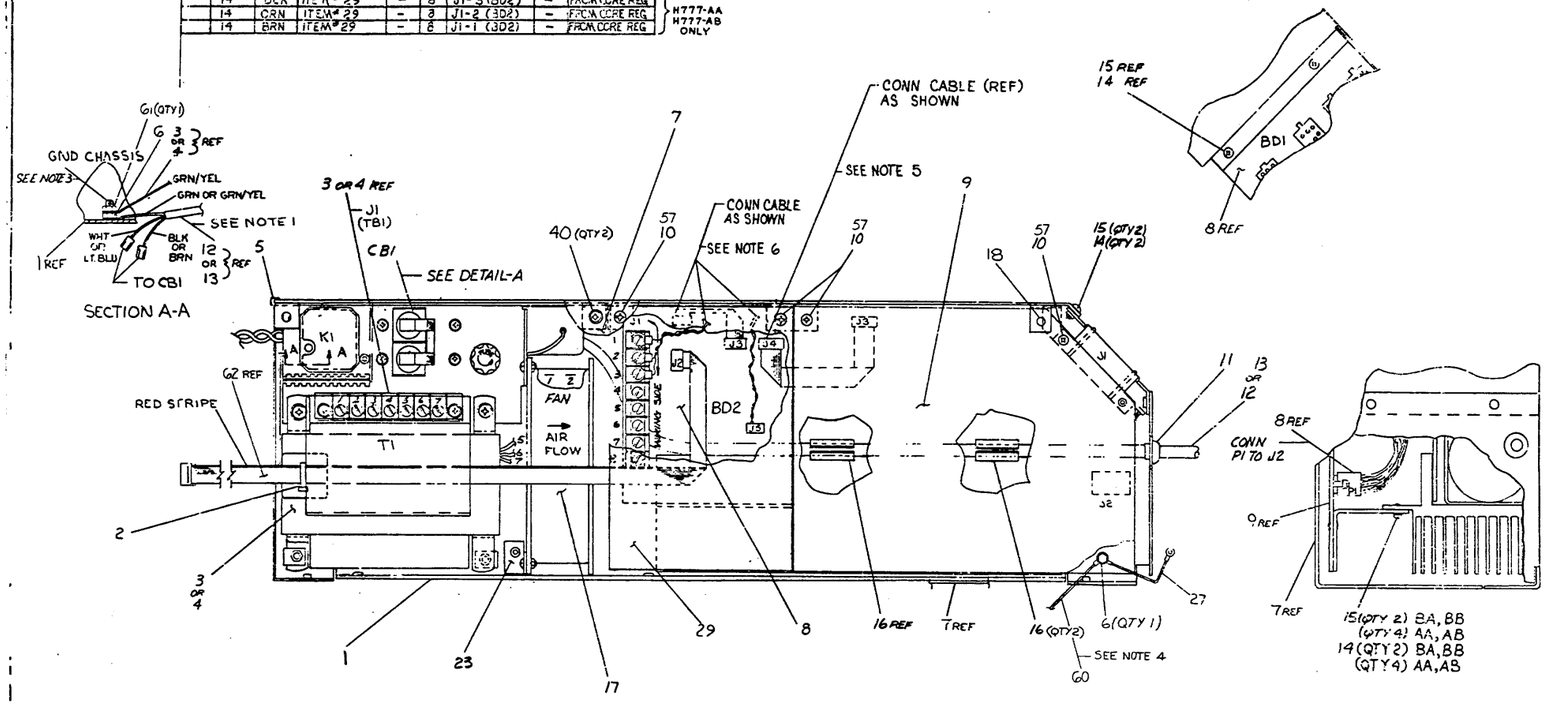
WIRE TABLE

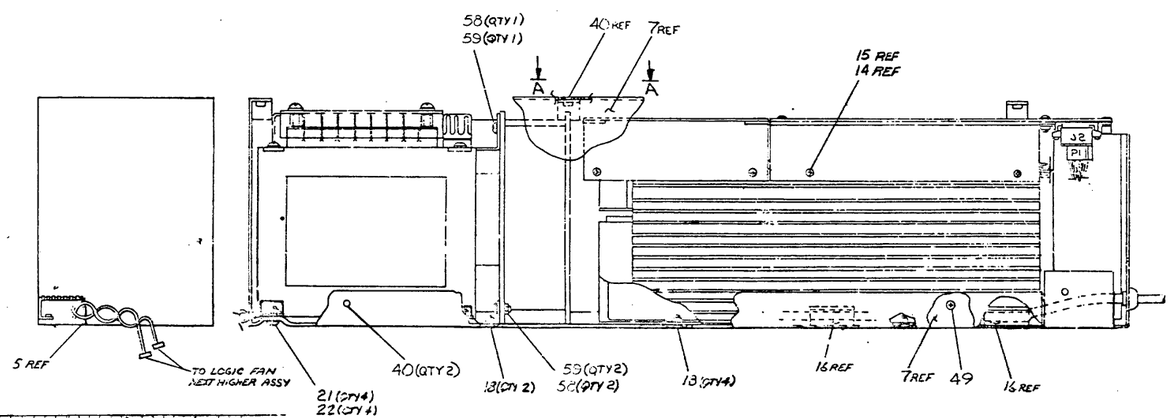
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO ITEM	CONNECTION	WITH	REMARKS
12 OR 13	14	BLK	—	—	3OR4	CB1-K1 LINE	—	
	14	WHT	—	—	3OR4	CB: -2(+) LINE	—	
	14	GRN	—	—	1	GND CHASSIS	6	
4 OR 5	14 TWP	BLU/BLK	T1-5	—	8	J1- 7 (BD2)	—	
		BLU/BLK	T1-6	—	8	J1- 6 (BD2)	—	
		BLU	T1-7	—	8	J1- 8 (BC2)	—	
3 OR 4	18 TWP	GRY	—	—	8	J1- 4 (BD1)	—	
		BLK	—	—	8	J1- 5 (BD1)	—	
3 OR 4	12 TWP	WHT	—	—	4	FAN-1	—	
		BLK	—	—	4	FAN-2	—	
3OR4	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 ONLY)
	14	ORN	ITEM # 29	—	8	J1-2 (3D2)	—	FROM CORE REG (H777-AB ONLY)
	14	BRN	ITEM # 29	—	8	J1-1 (3D2)	—	FROM CORE REG (H777-AB ONLY)

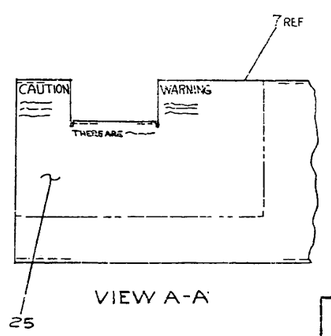
LEGEND

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

NOTES:
1. MAKE SLACK SERVICE LOOP AT HOOK UP END.
2. APPLY SELF STICK INS SHEET (ITEM 2A, TO UNDER SIDE OF POWER SUPPLY COVER IN AREA OF HEAT SINKS (CORE & MOS REGS).
3. APPLY SELF STICK ITEM 2G 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.







VIEW A-A

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

TITLE	POWER SUPPLY ASSY (H777)
SIZE	D
CODE	03
NUMBER	H777-0-0
REV	
SCALE	NONE
SHEET	1 OF 2
DRAWN	3/11-L

105

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WIRE CHART

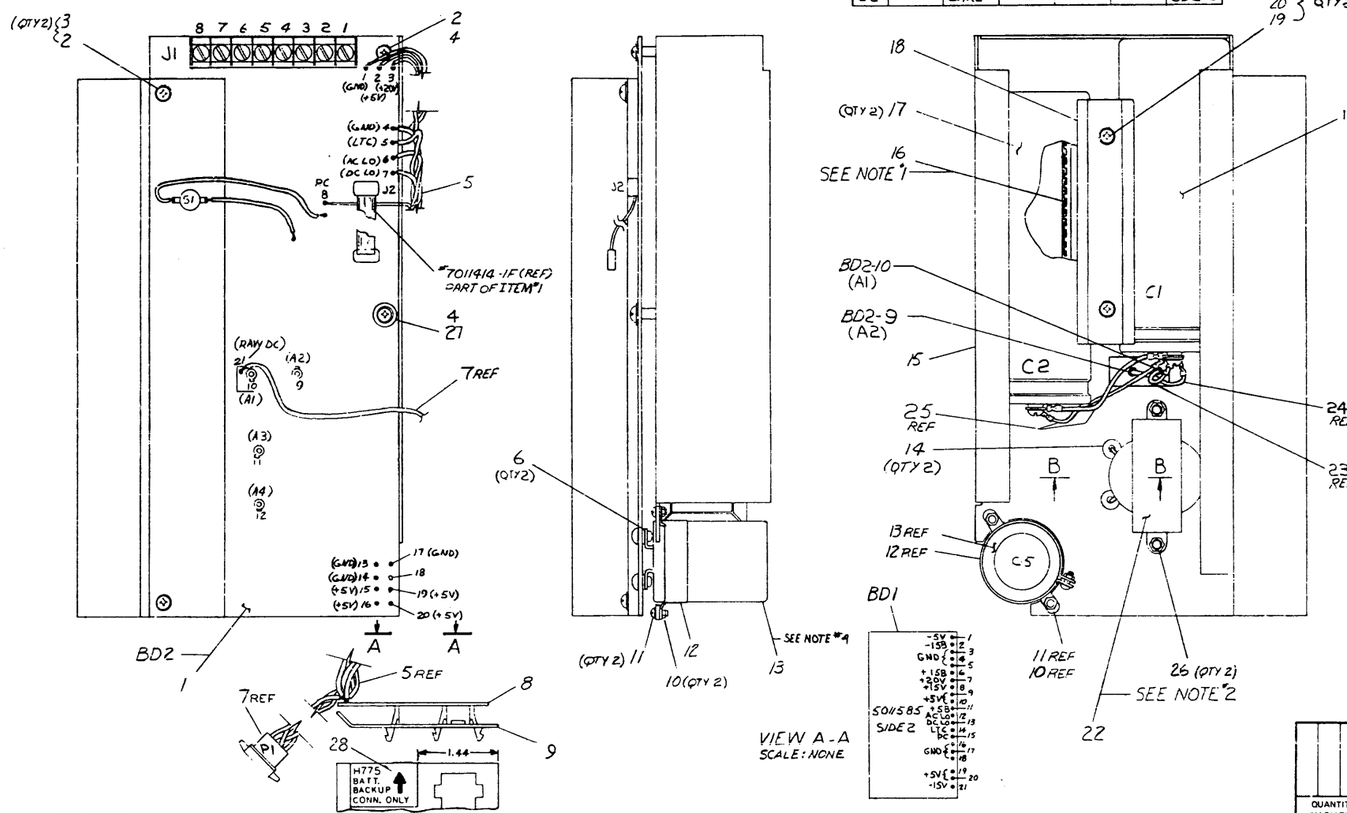
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
5	20	WHT	1	BD2-8	18	BD1-15
	14	BRN	2	2	9	1
	14	BLK	3	1	12	5
	14	ORN	4	3	13	7
	20	BRN	5	5	19	14
	20	BLK	6	4	20	16
	20	YEL	7	6	16	12
	20	VIO	8	7	17	13
	14	BLK	30	BD2-17	10	BD1-3

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
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	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	—

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
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(+)
25	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 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 PI ON HARNESS D-IA-7011560-0-0 THEY ARE SHOW FOR REF ONLY.
4. ITEMS #12 & #13 ARE TO HAVE THEIR ELECTRICAL CONNECTIONS TORQUED TO 12 IN-LBS (-0, +10) IN-LBS



ITEM NO	DESCRIPTION	DWG. PART NO.
1	DECAL	A-DC-74:6911-0-0
1	WASHER NYLON #6	9006707
2	NUT KEPS #8-32	9006563
2	JUMPER (GRN)	B-IA-7011800-0-0
1	JUMPER (BLK)	B-IA-7011802-0-0
1	JUMPER (RED)	B-IA-7011801-0-0
1	CHOKE	16/2584
2	SPACER HEX #8-32 x 1.38L	9008258
2	WASHER INT TOOTH LOCK #9	9006534
2	SCR PHIL HD PAN #8-32 x .50L	9006037-1
1	CLAMP CAPACITOR	C-MD-74M021-0-0
2	CAPACITOR .22 MFD 50V	10:0702
A/R	GROMMET CATERPILLAR	9007035
1	BRACKET CAPACITOR	E-IA-7413743-0-0
2	GROMMET RUBBER	9007017
1	CAPACITOR 3900 MF (6.0V (6S)	10:2790
1	CLAMP CAPACITOR	9009052
2	SCR PHIL PAN HD #6-32 x .25L	9006020-1
2	NUT KEPS #6-32	9006185
1	BRACKET CONN	D-IA-7413752-0-0
1	BOARD, PWR DISTR. H777	D-CS-5911586-0-1
1	HARNESS BD NOS REG PWR DIST	D-IA-7011560-0-0
2	WASH, .375 O.D. X .167 I.D. X .036	9006660
1	HARNESS H777 +5V REG	D-IA-7011415-0-0
2	SCR PHIL HD PAN #6-32 x .31L	9006021-1
2	SCR PHIL HD PAN #6-32 x .50L	9006024-1
3	WASHER, INT TOOTH LOCK #6	9006633
1	H777 + 5V REGULATOR	D-CS-5911597-0-1

QUANTITY & VARIATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: OVER 0 TO .3	OVER .3 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	± .1

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —

FINISH —

DRN R. Barry 9/24/75
CHK'D R. Barry 9/24/75
ENG B. Courtemanche 9-25-75
PROJ. ENG. [illegible] 9-25-75
PROD. [illegible]
NEXT HIGHER ASSY. D-IA-H777-0-0
SCALE —
SHEET 1 OF 1

FIPS* USED ON H777

digital

TITLE +5V REG ASSY

SIZE D | CODE AD | NUMBER 7011073-0-0 | REV. C | DIST.

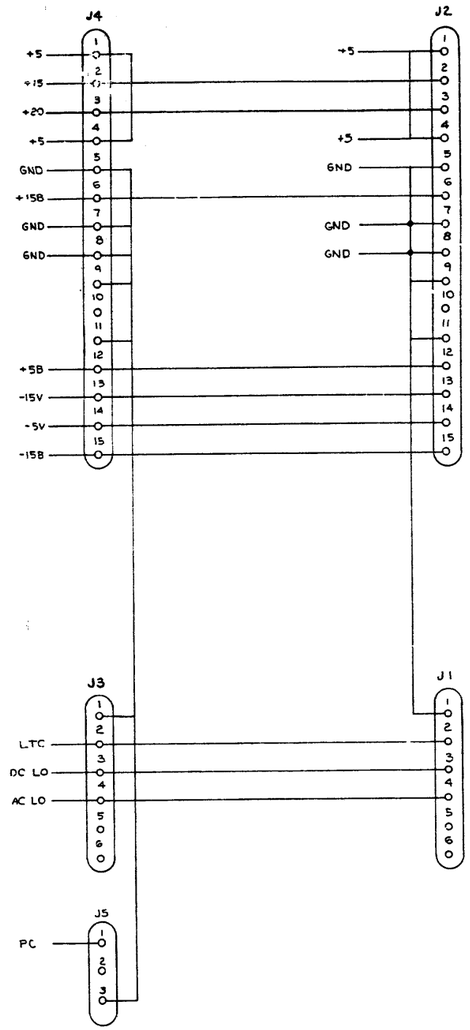
REVISIONS CHK	CHANGE NO.	REV.
[illegible]	7011073-00001	A
R. Barry 11-25-75	7011073-00002	B
B. Courtemanche 29 JULY 76	H777-00002	C
B. Courtemanche 24 JAN 77		

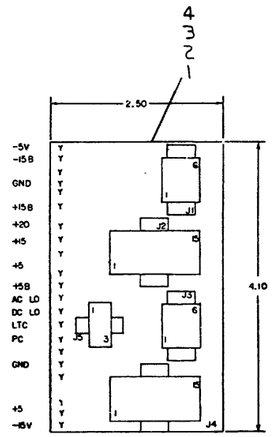
DEC FORM NO.

106

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NOTES:





REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411586-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AH-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

FIRST USED ON OPTION MODEL: 1104 PWR. SUPPLY

PARTS LIST

ETCH BOARD REV: D

REV	CHANGE NO	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN B Elston DATE 7/10/75
CHKD [illegible] DATE 7-23-75
ENGR [illegible] DATE 7-2-75
DSGN [illegible] DATE 7-2-75
PROD [illegible] DATE

NEXT HIGHER ASSY

SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BOARD, POWER DISTRIBUTION H777

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

DIST.

DCS 5411583-0-1

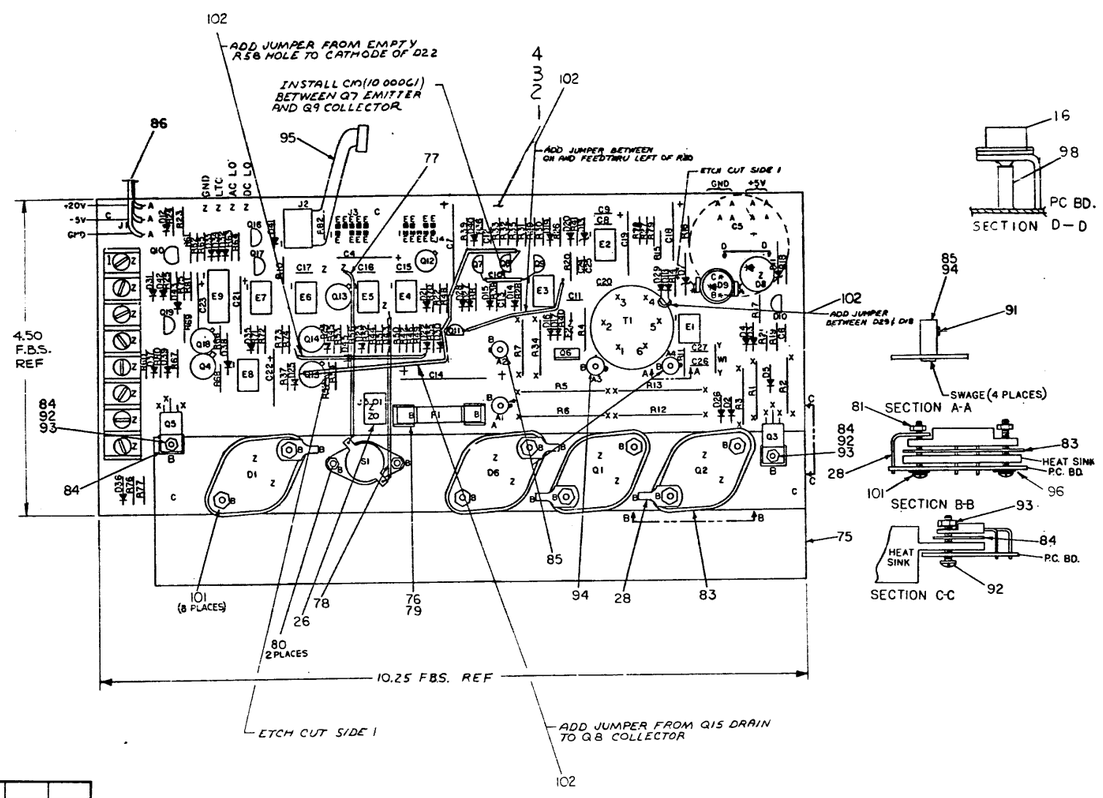
107

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NOTES:

1. HARDWARE ON D1,Q1,Q2,D6,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-AH-5411597-0-5	2
		MODULE ECO HISTORY	B-MH-5411597-0-8	3
1		ETCHED CIRCUIT BOARD	5011598	4
1	C12	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	1001610-01	8
2	C22,C23	CAPACITOR, 1mf, 35V, 10% TANT	1001776	9
3	C15,C16,C17	CAPACITOR, 5pf, 100V, 5% DM	1002425	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 IN752A	1102808	15
1	D8	DIODE MR1033B	1103341	16
29	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 IN4004	1105796	18
1	D13	DIODE,ZENER,5.1V,5% IZT-5ma	1110713	19
1	D6	DIODE,T03	1110715	20
1	D10	DIODE 2N5062	1110968	21
3	D7,D43,D45	DIODE IN751A	1110994	22
1	D1	DIODE,DUAL,T03	1112723-00	23
2	D2,D26	DIODE A1148	1112595-01	24
1	D38	DIODE,ZENER 13V IN964B	1109988	25
1	J5	CONNECTOR 2 PIN MATE-IN-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,R19	RESISTOR, 100, 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, R66	RESISTOR, 2 7K, 1 4W, 5%	1300426	38
7	R31,R60,R62,P65,R69,R15,R33	RESISTOR, 4.7K, 1 4W, 5%	1300447	39
13	R63 R25,R32,R35,R36,R37,R80 R55 THRU R57,R67,R70,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	R11,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%	1302466	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%	1303312	53

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. E

IC 555		
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REV.	REVISIONS	CHANGE NO.	CHK
J	Deleted R58	5411597-00001	
H	Changed R5 to 1K	5411597-00003	
F	Changed R5 to 2K	5411597-00002	

DRN. A. Baron 26 Jul 73
P.C. 5411597-0004 J
G. Potter 26 Jul 73
P.C. 5411597-0003 H
R. Baird 12-19-73
P.C. 5411597-0002 F
J. Soffio 12-13-73
P.C. 5411597-0001 E
J. Soffio 11-26-73

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

SEMICONDUCTOR CONVERSION CHART

DRN. [illegible] DATE 6-30-75
CHK'D. [illegible] DATE 7-14-75
ENG. [illegible] DATE 7/18/75
PROJ. ENG. J.C. Barry DATE 7/18/75
PROD. [illegible] DATE 7/30/75
NEXT HIGHER ASSY

digital

TITLE H777 +5V REGULATOR

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

SCALE — SHEET 1 OF 4 DIST.

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1	R76	RESISTOR, 5.1, 1/4W, 5%	1309422	54
1	R78	RESISTOR, 56, 1/4W, 5%	1302602	55
1	R42	RESISTOR, 34.8K, 1/4W, 1%	1303156	56
2	R1,R7	RESISTOR, .39, 2W, 3%	1318060	57
2	R12,R13	RESISTOR, .02, 5W, 3%	1310078	58
2	R5,R6	RESISTOR, .04, 5W,	1311362	59
1	R3	RESISTOR, 3, 3W, 5%	1312682	60
2	Q1,Q2	TRANSISTOR, 2N5302	1510196	61
3	Q7,Q8,Q10	TRANSISTOR, A05	1510705	62
5	Q9,Q11,Q18,Q17,Q18	TRANSISTOR, A55	1510706	63
2	Q3,Q5	TRANSISTOR, D45H8	1510700	64
5	Q4,Q12 THRU Q15	TRANSISTOR, 2N5433	1511686	65
1	Q19	TRANSISTOR, 2N6028	1510077	66
1	Q6	TRANSISTOR, D44C11	1512790	67
1	D9	TRANSISTOR, C32AX135	1510928	68
1	T1	TRANSFORMER PULSE	1612592	69
1	E8	I.C. DEC 7410	1905576	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	9007226	73
1	S1	THERMOSTAT (ELMWOOD)	1212787	74
1		HEAT SINK	7414238	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	9007203	79
2		SCREW, #4-40 x 7/16 lg PHILLIPS HD	9008012-1	80
10		NUT, KEP #4-40	9006557	81
A/R		COMPOUND, THERMAL	9008268	82
4		INSULATOR, TO3	9008419	83
2		INSULATOR, THERMA-FILM	9009597	84
3	A1,A2,A4	STANDOFF	7414048-0	85
REF		ASSY, HARNESS	7011415-0-0	86
1	W1	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	9007992	93
1	A3	STANDOFF	7414048-1	94
1	J2	CONTROL CABLE (CONSOLE)	7011414-1F	95
8		WASHER, FLAT	9008172	96
~~2~~		~~WIRE, CABLE FOR T1~~	~~9004633~~	~~97~~
1		SPACER, INSULATOR	9007615	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

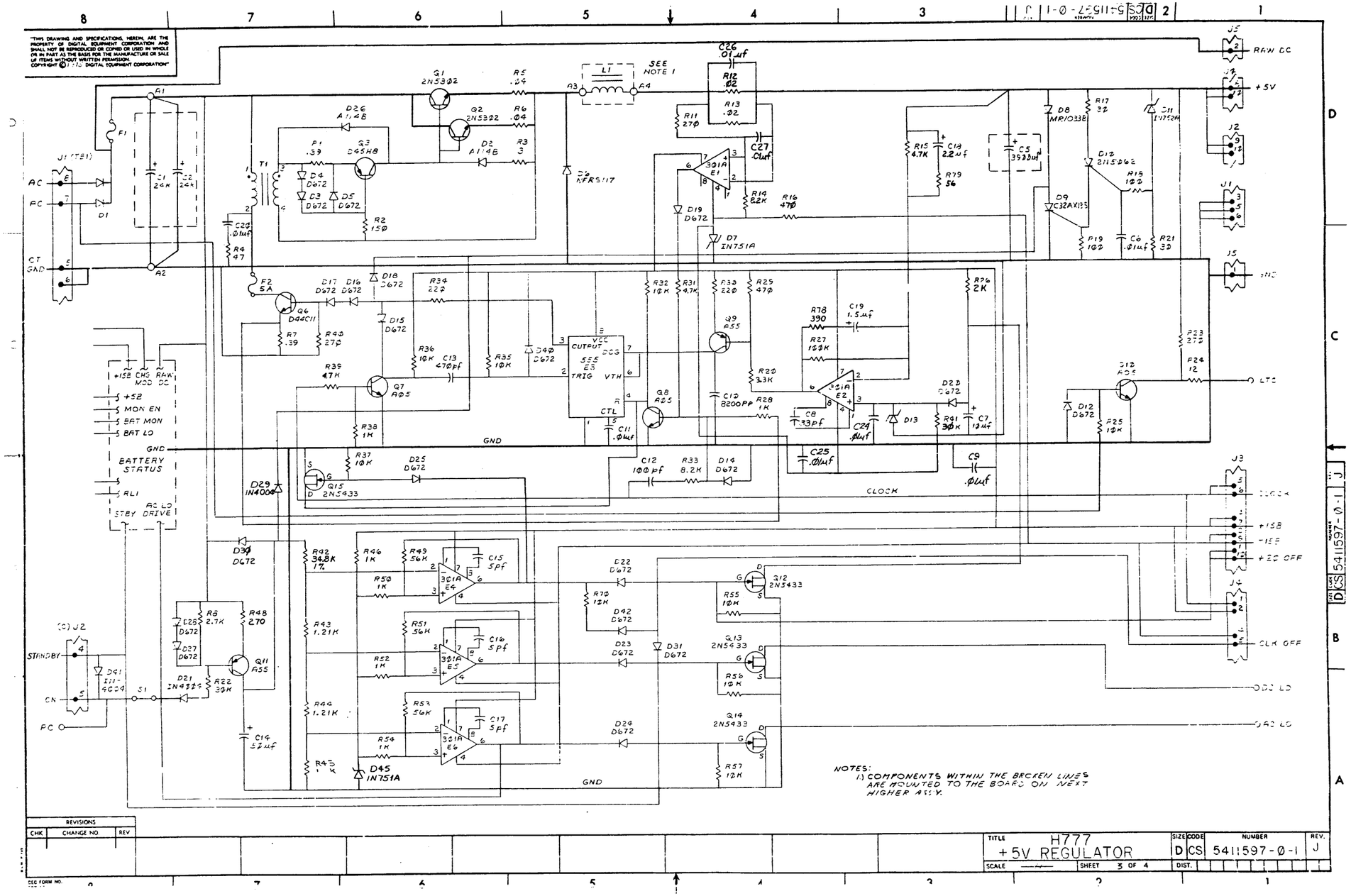
DCS 5411597 REV J

REVISIONS

CHK	CHANGE NO	REV

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

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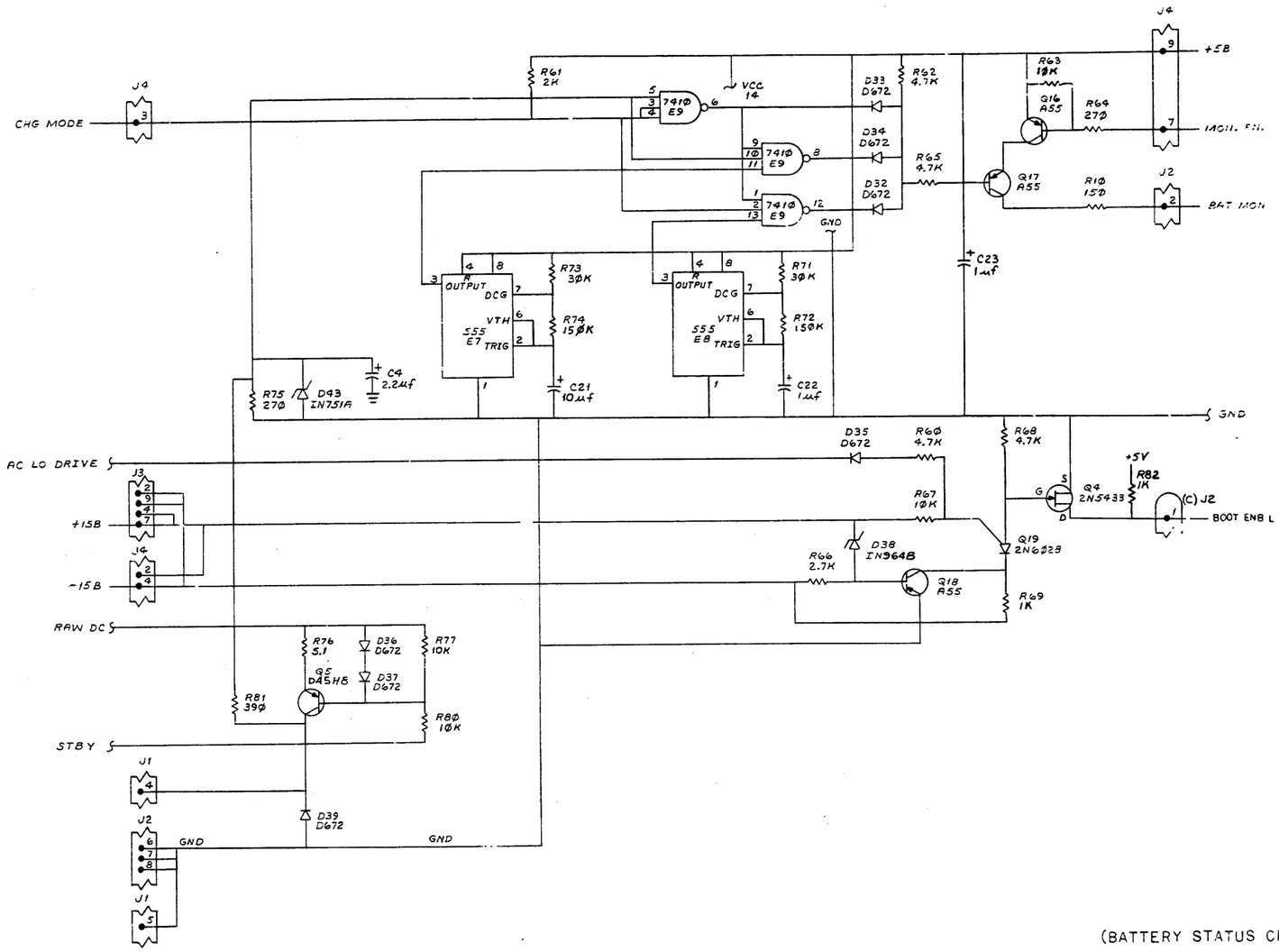


REVISIONS		
CHK	CHANGE NO	REV

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

DEC FORM NO.

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(BATTERY STATUS CRKT'S)

REVISIONS		
CHK	CHANGE NO.	REV.

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

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

WIRE CHART

ITEM NO	AWG	COLOR	FROM CONN	WITH	TO CONN	WITH	REMARKS
22	18	WHT	K1-4	SOLD,3I	*TB2-4S	SOLD	5 1/2"L
23	13	BLK	K1-6	↓	*TB2-1S	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
SEE NOTE 2 { 27	18	GRY	K1-A		—	25	
	TWP	BLK	K1-B	SOLD,3I	—	25	
26	18	BLU	G2	SOLD	*TB2-6S	SOLD	6"L
23	18	BLK	F1-1	SOLD,3I	*TB2-1S	SOLD	5"L
SEE NOTE 2 & 2. { 15	18	BLU	EMI-2 LOAD	—	*TB2-4S	SOLD	6"L
	TWP	BRN	EMI-1 LOAD	—	*TB2-6S	SOLD	6"L
22	18	WHT	EMI-2	SOLD,3I	CBI-2 LOAD	28,41	5"L
23	18	BLK	EMI-1	SOLD,3I	CBI-1 LOAD	28,41	5"L
SEE NOTE 2 SEE DETAIL 'C' { 45	18	WHT	*TB2-5S	SOLD	J2-1	30,32	6 1/2"L
	TWP	BLK	*TB2-2S	SOLD	J2-2	30,32	6 1/2"L
45	18	WHT	*TB2-5S	SOLD	J3-1	30,32	15 1/2"L
	TWP	BLK	*TB2-2S	SOLD	J3-2	30,32	15 1/2"L

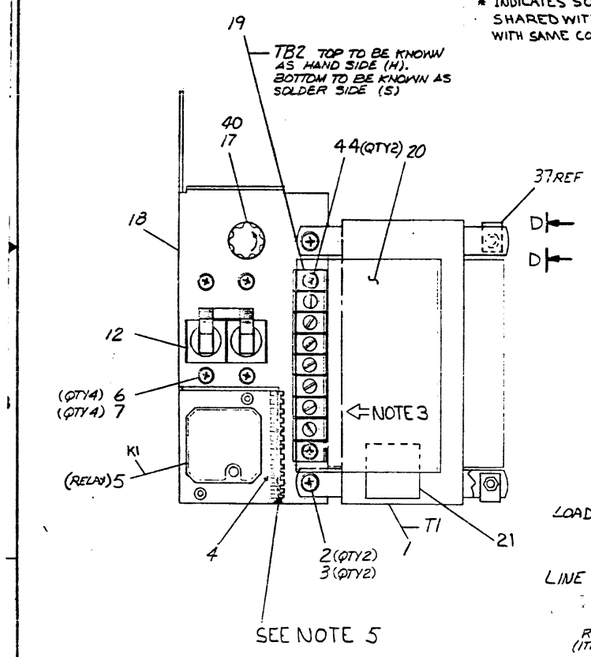
* INDICATES SOLDER CONN. SHARED WITH OTHER CONN. WITH SAME COMMON CONN.

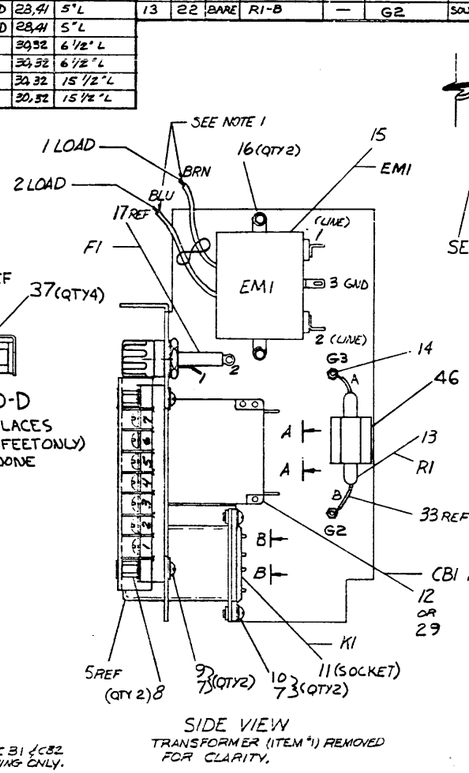
ITEM NO	AWG	COLOR	FROM CONN	WITH	TO CONN	WITH	REMARKS
1	14	BLK	T1	43	TB2-1H	—	——
	THP	BRN/WHT	↓		TB2-3H	—	——
	14	RED	↓		TB2-2H	—	——
	THP	RD/WHT	T1		TB2-4H	—	——
23	18	BLK	G3	SOLD	F1-2	SOLD,3I	4"L
34	14	GRN/YEL	EMI-3	SOLD,3I	—	42	8"L
35	18	BLK	TB2-1H	—	TB2-2H	—	120V
36	18	WHT	TB2-3H	—	TB2-4H	—	120V
35	18	BLK	TB2-2H	—	TB2-3H	—	230V
13	22	BARE	R1-A	—	G3	SOLD,33	
13	22	BARE	R1-B	—	G2	SOLD,33	

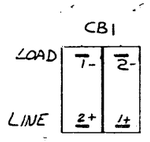
7011075-0	120V
7011075-1	230V

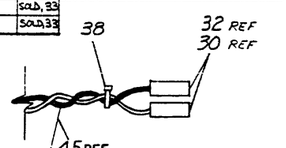
NOTES:

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.

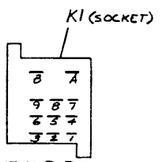








DETAIL 'C'
2 PLACES. SEE CHART



VIEW B-B
REAR VIEW OF K1 (SOCKET)
(ITEM #1) FOR WIRING ONLY.

		COAT ON SHEET 2 of 2		
—	1	JUMPER ASSY (WHT 2")	B-A-7011798-0-01	36
1	1	JUMPER ASSY (BLK 2")	B-A-7011797-0-0	35
A/R	A/R	WIRE (18 AWG TRACER (BRN)/YEL)	9107777-54	34
2/0	A/R	TUBING INS (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 INS)	9007970	28
A/R	A/R	WIRE 18 AWG INS (GRY/BLK)	9107430-08	27
A/R	A/R	WIRE 18 AWG INS (BLU)	9107360-66	26
2	2	RING CRIMP (RED INS)	9007929	25
A/R	A/R	WIRE 18 AWG INS (BRN)	9107360-11	24
A/R	A/R	WIRE 18 AWG INS (BLK)	9107360-00	23
A/R	A/R	WIRE 18 AWG INS (WHT)	9107360-99	22
1	1	MOUNT TIE WRAP	9008264	21
1	1	SHIELD TERM	C-A-7414743-0-0	20
1	1	TERMINAL 7 POS	1212788	19
1	1	BRACKET COMPONENT	D-A-7413769-0-0	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 INS	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 #6-32 X.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	9006633	7
4	4	SCR PHIL HD PAN #6-32 X.19	9006020-01	6
1	1	RELAY 6 & 12 V 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	9006038-1	2
1	1	TRANSFORMER ASSY	C-A-7011805-0-0	1
		DESCRIPTION	DWG. PART NO.	ITEM NO.

REV.	DESCRIPTION	DRAWN	DATE
A	7011075-00301		27-JAN-75
B	7011075-00002	K. BARRY	17-FEB-75
C	7011075-00003	K. BARRY	12-9-75
		A. BARON	23 NOV 77

7011075-1	7011075-0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	FRACTIONAL	DECIMAL	MACHINED SURFACE
±1°	±1/64	±.005	125
±30'	±1/32	±.010	63
±15'	±1/64	±.020	32
	±1/128	±.030	16
		±.040	8
		±.060	4
		±.080	2
		±.100	1

SURFACE QUALITY IN MICROINCHES	ALL OF ABOVE ACCURACY (CHECK ONES)						
	0.5	1	2	4	8	16	32
MEDIUM	±.004	±.008	±.012	±.016	±.024	±.04	
PREFERRED	±.012	±.016	±.020	±.04	±.060	±0.1	

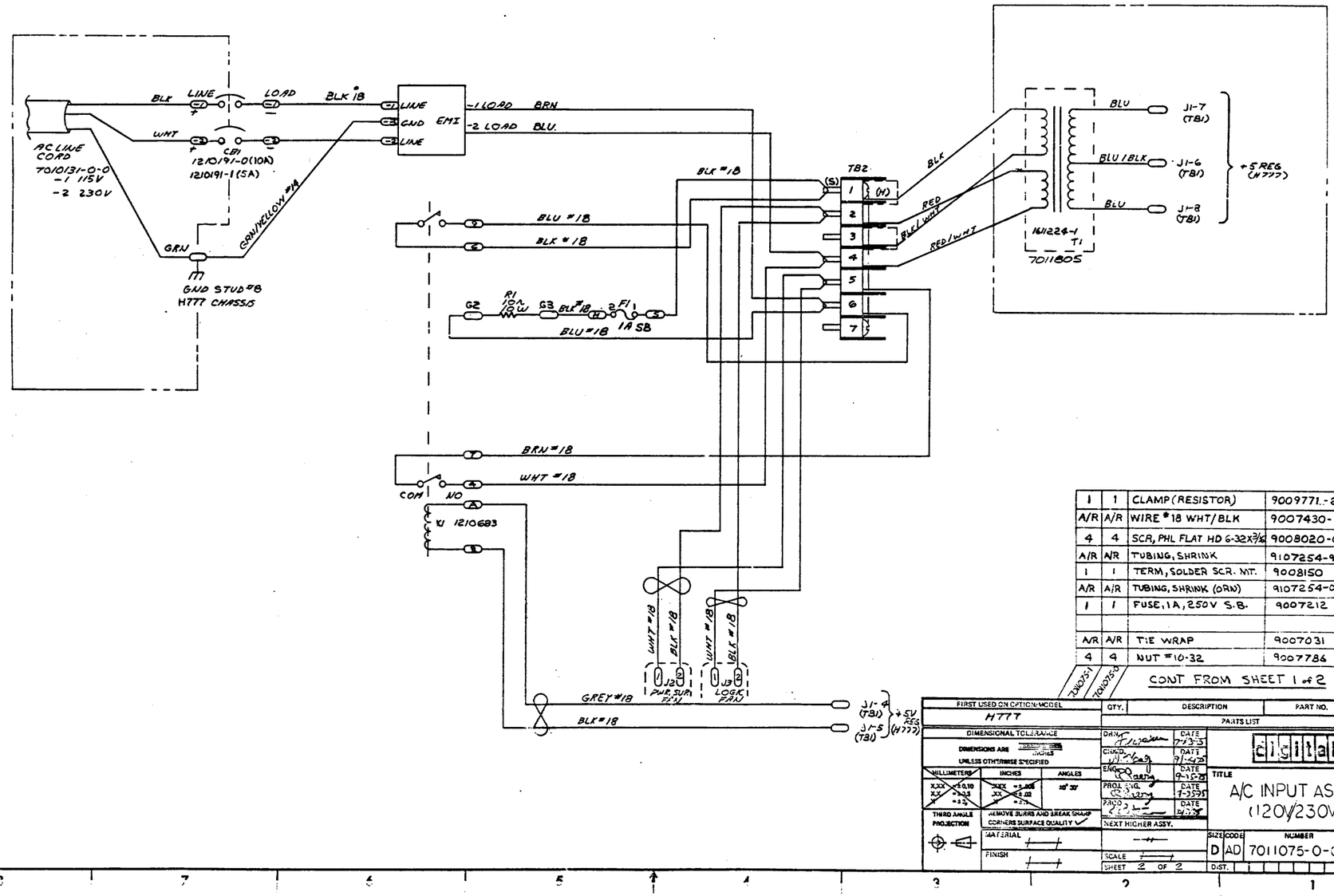
QUANTITY & VARIATION	
THIRD ANGLE PROJECTION	
REMOVE BURRS AND BREAK SHARP CORNERS	
DO NOT SCALE DWG	
MATERIAL	D-A-H777-0-0
FINISH	
DRAWN	
CHK'D	
ENG.	7-1-75
PROJ. ENG.	7-25-75
PROD. A	7-28-75
NEXT HIGHER ASSY.	
SCALE	///
SHEET 1 OF 2	
FIRST USED ON	H777
TITLE	A/C INPUT ASSY (120V/230V)
SIZE	D
CODE	AD
NUMBER	7011075-0-0
REV.	C
DIST.	

digital

DEC FORM NO.

112

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1	1	CLAMP (RESISTOR)	9009771-2	46
A/R	A/R	WIRE #18 WHT/BLK	9007430-09	45
4	4	SCR, PHL FLAT HD 6-32X3/8	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

7011075-1 7011075-0

CONT FROM SHEET 1 of 2

REVISIONS		
ECO	CHANGE NO.	REV.

FIRST USED ON CATION/MODEL: H777	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

DIMENSIONAL TOLERANCE
DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX ±0.10	XXX ±.005	±0° 30'
XX ±0.5	XX ±.02	
±1	±.04	

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN		DATE 7-13-75
CHKD	W. Lang	DATE 9-15-75
ENG	Gary	DATE 9-15-75
PROJ ENG	[illegible]	DATE 7-25-75
PROD	[illegible]	DATE 9-15-75

NEXT HIGHER ASSY.

SCALE

SHEET 2 OF 2

digital

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

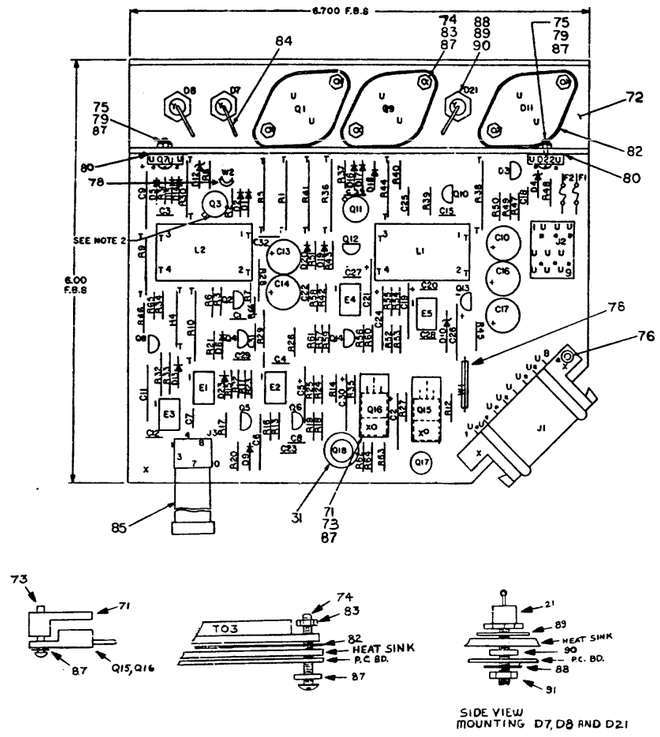
SIZE	CODE	NUMBER	REV.
D	AD	7011075-0-0	C

DIST.

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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-5411601-0-4	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-5411601-0-6	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%	1000019	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 3734	1510082	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,Q8,Q12 THRU Q14	TRANSISTOR, XA06	1510785	61	6	C2,C5,C9,C19,C26,C30	CAPACITOR, 1mf, 35V, 10%	1001776	10
2	Q2,Q10	TRANSISTOR, XA55	1510706	62	2	C29,C31	CAPACITOR, .47mf, 25V, 20%	1010279	11
1	Q16	TRANSISTOR, D45H8	1510708	63	1	C24	CAPACITOR, 10mf, 20V, 10%	1004813	12
2	Q1,Q9	TRANSISTOR, 2N5038	1510969	64	2	C6,C21	CAPACITOR, .01mf, 100V, 10% MYLAR	1005784	13
1	Q15	TRANSISTOR, D44H5	1512722	65	1	C11	CAPACITOR, .015mf, 50V, 2% POLYC	1010646	14
2	L1,L2	INDUCTOR, 500uh	1612593	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	1102808	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	9006012-1	73	3	D7,D8,D21	DIODE, 1N3880	1109440	21
6		SCREW #4/40 x 1/2 LG.	9005013-1	74	1	D12	DIODE 1N4742	1109502	22
2		SCREW, NYLON #4/40 x.375LG.	9006401-4	75	1	D10	DIODE Izt 5ma 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 22	1213071-06	80	1	J1	CONN. 8 PIN MATE-N-LOC	1209340-00	28
A/R		THERMAL COMPOUND	9008268	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	7011414-0D	85	2	R12,R14	RESISTOR, 47, 1/4W, 5%	1300202	33
~~2~~		~~WASHER, LOCK, INTERNAL TOOTH #~~	~~9006832~~	~~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	R19,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	3	R11,R43,R61	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	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	1001610-00	9

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

REV	CHANGE NO.	DATE	APPROVED
E	5411601-00001	12-6-75	RICHARD BARRY
F	5411601-00002	12-10-75	Richard Barry
H	5411601-00003	6/1/76	G. POTTER
J	5411601-00004	21-JUL-76	G. POTTER
K	5411601-00005	27-OCT-76	R. BAY
L	5411601-00006	9 NOV 77	BRUCE CRAWFORD
M	5411601-00007	7 MAR 78	E. CROCKER

FIRST USED ON OPTION MODEL

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

ETCH BOARD REV. E

PARTS LIST

DRN. J. Hodgett	DATE 3-29-75	digital
CHK'D.	DATE	TITLE MOS REGULATOR H777
ENG.	DATE	
PROJ. ENG.	DATE 7/22/75	
QCD	DATE 4/5/76	
NEXT HIGHER ASSY		SIZE D CODE CS NUMBER 5411601-0-1 REV. M
SCALE		DIST.
SHEET 1 OF 3		

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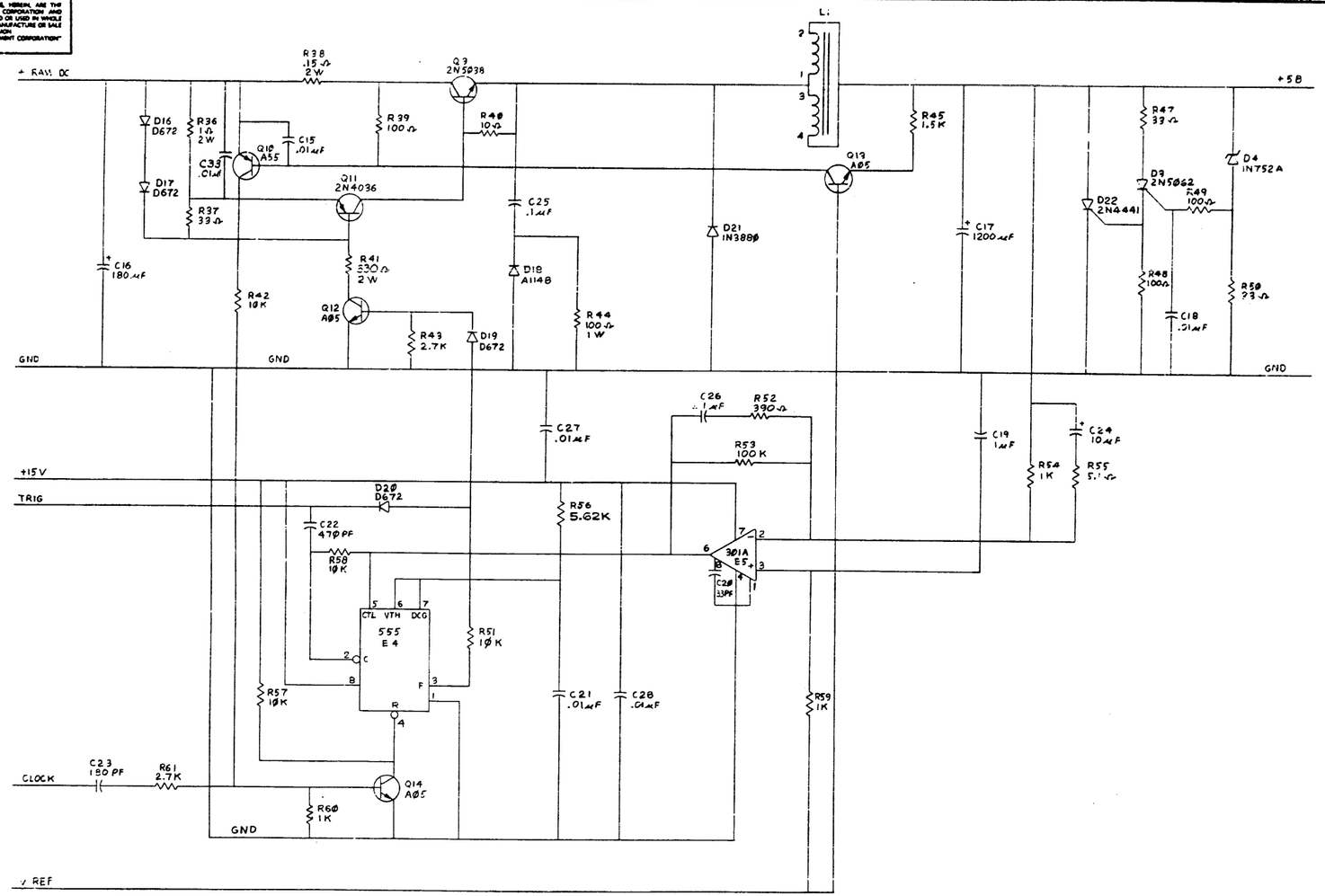
RAW DC
F1 5A
F2 5A
BAT IN
GND
-15 B
+5 B SECTION
RAW DC
CLOCK OFF
CHG. MOD
MON EN
CLOCK
TRIG
V REF
+15
CLK
+5B
L2
555 E3
555 E1
301A E2
VTH DCG CLT
DCG VTH CTL
Q7 MJE3055
Q15 D44H5
Q16 D45H8
Q17 2N4036
Q18 DEC 3734
D5 A1148
D7 IN3880
D8 IN3880
D9 IN4004
D10 5.1V 2%
D11
D12 IN4742
Q1 2N5038
Q2 A95
Q3 2N4036
Q4 A95
Q5 A95
Q6 A95
Q8 A95

REVISIONS		
CHK	CHANGE NO.	REV

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

115

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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		

DLC FORM NO.

5411601-0-1

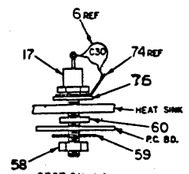
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NOTES:

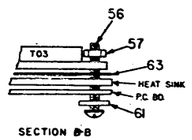
USE TRANSIPAD DEC# 9007201 UNDER Q1&Q8

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	5008440	60	
6		WASHER, FLAT	9008172	61	
A/R		COMPOUND, THERMAL	9008268	62	
3		INSULATOR, TO 3	1213071-02	63	
1		~~WASHER, THERMAFILM~~	~~9008424~~	~~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, IN753A	1102421	72	
1	C26	CAPACITOR, .47uf, Z5V, 20%, CER	1010279	73	
:		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	

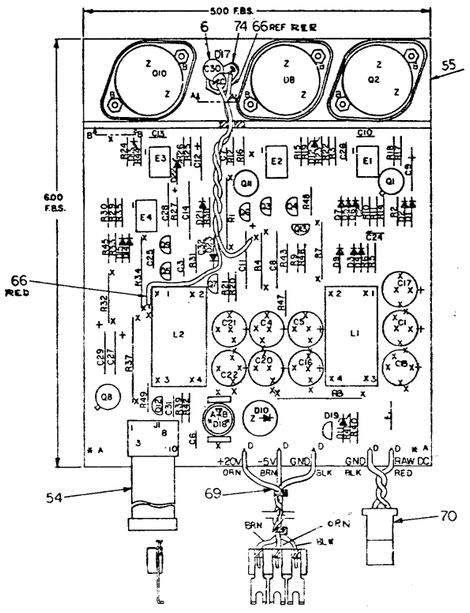
REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CC-5411599-0-0	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411599-0-5	2
REF		MODULE ECO HISTORY	B-MH-5411599-0-0	3
1		ETCHED CIRCUIT BOARD	5011598	4
1	C7	CAPACITOR, 100PF, 100V, 5%,	1000016	5
6	C2,C3,C6,C30,C24,C25	CAPACITOR, .01uf, 100V DISC	1001610-01	6
3	C9, C27,C28	CAPACITOR, 1uf, 35V, 10% TANT	1001778	7
2	C10,C13	CAPACITOR, 33pf, 100V CM	1000009	8
1	C11	CAPACITOR, 15uf, 35V, 10% TANT	1009725	9
2	C8,C14	CAPACITOR, .01uf, 100V, 10% MYLAR	1005784	10
1	C31	CAPACITOR, 220pf, 100V, 5%	1000021	11
2	C5,C16	CAPACITOR, 1200uf, 63V	1012607-01	12
7	C1,C17,C15,C4,C20,C21,C22	CAPACITOR, 180uf, 50V	1012607-02	13
1	D22	DIODE, IN4742	1109502	14
1	D10	DIODE, MR1033B	1103341	15
10	D1 THRU D7, D14, D15, D21	DIODE, D872	1105275	16
1	D17	DIODE, IN3880	1109440	17
2	D12,D13	DIODE, IN751, 5.1V 2%	1110713	18
1	D9	DIODE	1110715	19
1	D11	DIODE, IN978B	1110856	20
1	D19	DIODE, 2N5962	1110968	21
1	D8,	DIODE, A114B	1112595-01	22
1	F1	FUSE, 15A, PICO	1210329	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%	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%	1301961	36
1	R19	RESISTOR, 2K, 1/4W, 5%	1302388	37
2	R18,R26	RESISTOR, 100K, 1/4W, 5%	1302456	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%	1302602	44
2	Q1,Q8	TRANSISTOR, 2N4036	1509700	45
7	Q3,Q5,Q6,Q7,Q9,QIZ,Q13	TRANSISTOR, XA85	1510705	46
1	Q4	TRANSISTOR, XA55	1510706	47
1	D18	TRANSISTOR, C32AX135	1510928	48
2	Q2,Q10	TRANSISTOR, 2N5038	1510969	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.



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		

REV.	REVISIONS	CHK	CHANGE NO.	DATE
J	J. SCELZI 5411599-00003			2-9-77
H	B. COUNTEMANCHE 5411599-00002			7 JAN 77
E	G. POTTER		5411599-00001	6 AUG 76

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL

ETCH BOARD REV. D

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

SCALE

SHEET 1 OF 2

DRN. J. SCELZI 11/7/77
CHK'D DATE
ENG. DATE
PROJ. DATE
DATE

digital

TITLE: +20V REGULATOR/H777

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

DIST.

PD CS 5411599-0-1 REV J

117

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RAW DC
F1 15A
L1
+20 V
GND
-15V
J1
+15V
CLK
-15V
-20V OFF
-5V
Q1 2N4931A
Q2 2N1613B
Q3 A05
Q4 A55
Q5 A05
Q6 2N4036
Q7 A05
Q9 A05
Q10 2N5838
Q12 A05
Q13 A05
Q.1 2N5243
D1 D672
D2 D672
D3 D672
D4 D672
D5 D672
D6 D672
D7 D672
D8
D9 A114E
D10 MR4338
D11 1N1976
D12 5.1V 2%
D13 5.1V 2%
D14 D672
D15 D672
D17 2N5062
D18 C32AX135
D21 D672
D22 1N4742
D23 1N753A
555 E2
555 E3
555 E4
QUAD VTH CTL
321A E1
C1 1FD/10K
C2 .01UF
C3 .01UF
C4 100UF
C5 1200.F
C6 .01UF
C7 100pf
C8 .01UF
C9 1UF
C10 33PF
C11 .15UF
C12 10UF
C13 33pf
C17 1FD/10K
C18 1FD/10K
C19 .01UF
C20 100UF
C21 100UF
C22 100UF
C23 1 UF
C24 .01UF
C25 .01UF
C26 .47UF
C27 1UF
C29 2.2UF 20V
C30 .01UF
C31 220 PF
R1 1 1/2W
R2 39Ø
R3 1Ø
R4 1K 1W
R5 27
R6 1K
R7 1ØØ 1W
R9 1ØØ
R10 2.7K
R11 39Ø
R12 1K
R13 2K
R14 2.7K
R15 4.7K
R16 1ØK
R17 1K
R18 1ØØK
R19 56
R20 1ØØ
R21 1ØØ
R22 8.25K 1%
R23 1K
R24 4.7K
R25 1.5K
R26 1ØØK
R27 4.7K
R29 1ØK
R30 2.7K
R31 1K
R33 39Ø
R34 33Ø 2W
R35 1Ø
R36 2W
R37 .Ø8 5W
R38 1ØK
R39 1ØØ
R40 1ØØ
R41 1ØØ
R42 4.7K
R43 1ØØ
R44 4.7K
R45 47Ø
R46 18K
R47 200 1/4W
R48 1K
R49 1ØØΩ
L2
1UF
2.2UF 20V

REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO.

TITLE	SIZE	CODE	NUMBER	REV.
+20V REGULATOR/H777	D	CS	54-11599-0-1	J
SCALE	SHEET 2 OF 2	DIST. 1		

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 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 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
SHEET 1 OF 3
SIZE A | CODE PL | NUMBER H777-0-0 | REV M | ECO NO -777-00005
DIST.

DEC FORM DEC 16 (325)-1031-N870
DRA 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 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-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
SHEET 2 OF 3
SIZE A | CODE PL | NUMBER H777-0-0 | REV M | ECO NO
DIST.

DEC FORM DEC 16 (325) 1031 N870
DRA 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 King DATE 26 Aug 76
ISSUED SECT. 1

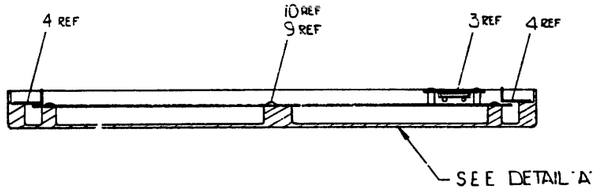
ITEM NO	DWG NO. / PART NO.	DESCRIPTION	H777-AA	H777-AB	H777-BA	H777-BB	H777-CA	H777-CB	H777-DA	H777-DB
45	9006634	WASHER INT. TOOTH LOCK #8	-	-	-	-	1	1	1	1
~~46~~	~~D-IA-7011248-1-0 H777~~	~~AC POWER CORD ASSEMBLY 230V~~	~~-~~	~~-~~	~~-~~	~~-~~	~~1~~	~~-~~	~~1~~	~~-~~
47	9006011-1	SCR PH HD PAN #4 - 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
SHEET 3 OF 3
SIZE A | CODE PL | NUMBER H777-0-0 | REV M | ECO NO
DIST.

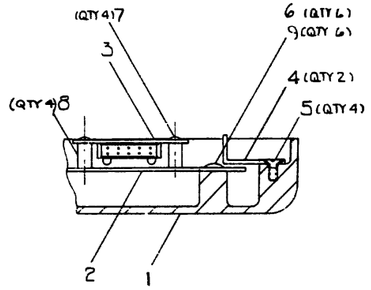
DEC FORM DEC 16 (325) 1031 N870
DRA 110

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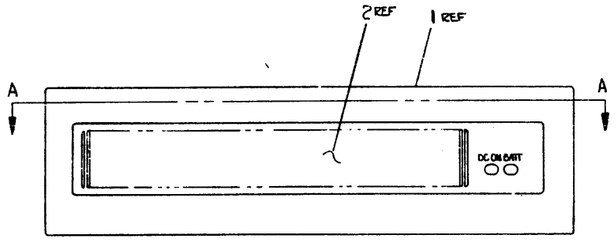
NOTES:
1. TO SELECT STAND BY/MODE, ON MODE OR OFF MODE SEE D-CS-5411501-0-1.



SECTION A-A



DETAIL "A"
SCALE 1/1



ITEM NO.	DESCRIPTION	CAGE PART NO.	QTY
1	BEZEL	E-AID-7416747-0-0	1
2	PANEL, EXPANDER BOX	8-IA-7017321-0-0	1
3	CONT. EXP. BOX (BA11-L)	D-UA-SA11501-0-0	1
4	BRACKET SUPPORT FILTER	C-MD-7414962-1-0	2
5	SCR FLAT HD PHIL #8-32 x .25	9006035-02	4
6	WASHER, INT. TOOTH #8	9006634	6
7	SCR. PAN HD. PHIL 6-32 X .19 LG	9008020-1	4
8	SPACER, .250 LG 6-32 X .44 LG	9009835	4
9	SCREW, PAN HD. PHIL #8-32 X .31 LG	9006036-1	6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES OVER 0 TO 0.3	OVER 0.3 TO 1.3	OVER 1.3 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 SEE PARTS LIST

FINISH

DRN
CHK'D
ENG
PROJ. ENG.
PROD.
NEXT HIGHER ASSY.
E-ID-7411-L-0
SCALE 1/2
SHEET 1 OF 1

FIRST USED ON 1104

digital

TITLE
CONSOLE ASSY
EXPANDER BOX

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

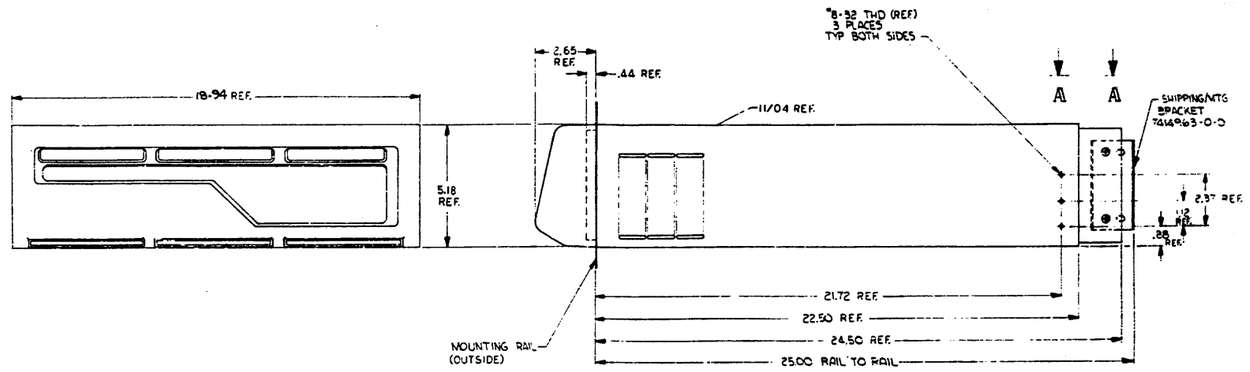
DIST.

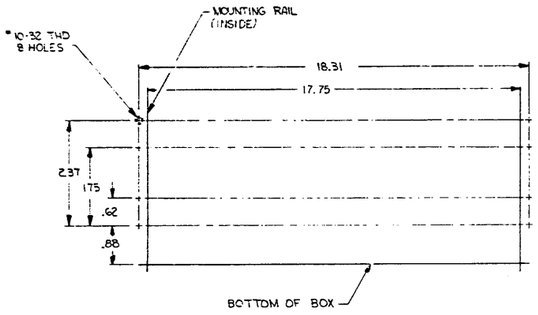
Rev.	Change No.	Date	By
A	ECO-0-00001	2-SEP-77	PTOMUSSO

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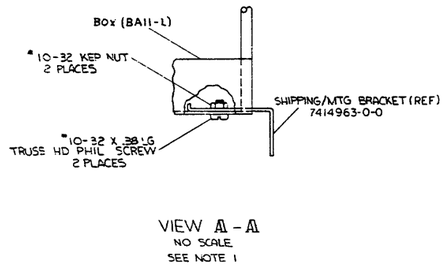
NOTES:

1. SHOWN IN MTG BRACKET POSITION, ALSO SHOWN IN VERTICAL OR BKT IN MTG POSITION & SHIPPING POSITION.
2. BECAUSE OF U.L. REQUIREMENTS THE REAR OF THE POWER SUPPLY MUST BE COVERED, THE GUARD SHOWN IS TO BE INSTALLED ON UNITS THAT DON'T HAVE THE NEW PWR SUPPLY WITH SIDED ENDS. THERE SHOULD BE APPROX. 500 UNITS THAT WILL REQUIRE THIS RETROFIT.

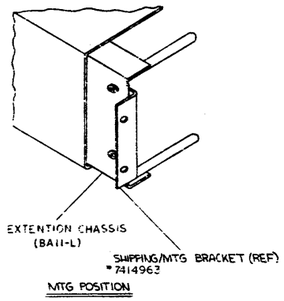




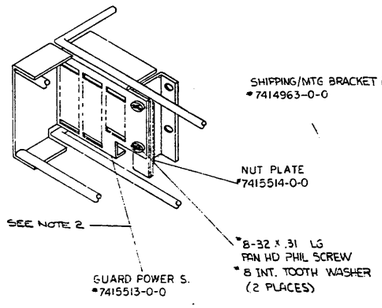
HOLE PATTERN REQ'D

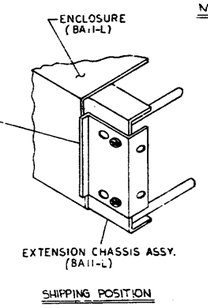


VIEW A-A
NO SCALE
SEE NOTE 1



MTG POSITION





SHIPPING POSITION

DESCRIPTION		DIG.PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
ANGLES ±1°	CLASS OF ACCURACY	DECIMALS ± TOLERANCE ABOVE ABOVE	
SURFACE QUALITY ▽▽	MEDIUM ☐	.X ±.1	.XX ±.02
MICROINCHES	PRECISION ☐	.XXX ±.005	.XXXX ±.0005
QUANTITY & VARIATION	DRAWN [illegible]	FIRST USED ON	11/04
THIRD ANGLE PROJECTION	CHECKED [illegible]	TITLE	INSTALLATION SD
REMOVE BURRS AND BREAK SHARP CORNERS	ENGR APPR [illegible]		
DO NOT SCALE DWG	PROJ [illegible]		
	NEXT HIGHER ASSY.		
MATERIAL	ENGR APPR [illegible]	SIZE E	CODE NUMBER AD 7012588-0-0
FINISH	SCALE NO SCALE	REV.	
	SHEET 1 OF 1		

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digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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~~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	

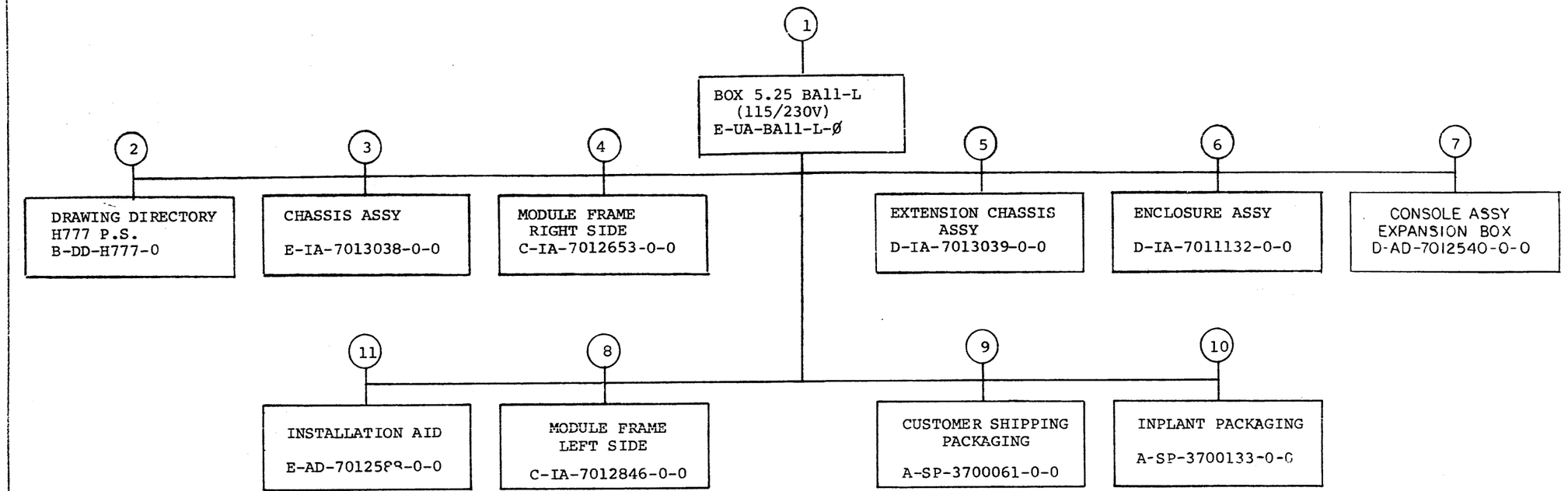
REVISIONS		
DATE	CHG. NO.	REV
4-76	BA11-L-4	A
10-76	BA11L-6	B
1-77	BA11L-7	C
3-77	BA11L-8	D
4-77	BA11L-9	E
5-77	BA11-L-10	F
7-77	BA11L-11	H

USED ON OPTION/MODEL	
11/04	
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 Barry	DATE 10-22-75	
~~PROD~~ RX Peterson	DATE 10/22/75	SIZE B · CODE DD · NUMBER BA11-L · REV H
~~FIELD SERV.~~	~~DATE~~	DIST

DRB 106



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

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

DRB 108

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

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-BCIIA-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
DRA 110

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FIELD MAINTENANCE PRINT SET

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TABLE OF CONTENTS

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+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	-
	ORIGINATED		
	3-78	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 18 Jan 77	TITLE: FIELD MAINTENANCE PRINT SET H777-0
CHK'D KIT	DATE 19 JAN 77	
PROJ. ENG.	DATE 25 JAN 77	
FIELD SERV.	DATE 27-Jan 79	

digital

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

EN-01124-16-N675-(327)

DRB 124

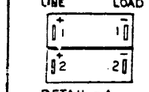
WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	FROM ITEM	TO CONNECTION	TO WITH	REMARKS
53	14	BLU	ITEM 35	SLDR	36	EMI LINE - 1	--	AC LINE CORD
52	14	BRN	ITEM 35	SLDR	34	EMI LINE - 2	--	AC LINE CORD
54	14	GRN/YEL	ITEM 35	SLDR	31	AC GND/CHASSIS	--	AC LINE CORD
1 OR 3	16 TRPL TAP	BLU BLU/BLK	T1-5 T1-6	-- --	8 8	J1-7 (3D3) J1-6 (3D3)	-- --	SEC VOLTAGE
3 OR 4	18 TWP	BLU BLK	T1-7 --	-- --	8 8	J1-8 (3D3) J1-4 (3D1)	-- --	TO RELAY COIL
3 OR 4	18 TWP	GRY WHT BLK	-- -- --	-- -- --	8 4 8	J1-5 (3D1) FAN-1 FAN-2	-- -- --	POWER SUPPLY FAN POWER
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 (3D2)	--	FROM CORE REG (H777-CA H777-CB ONLY)
	14	ORN	ITEM #29	--	8	J1-2 (3D2)	--	FROM CORE REG (H777-CA H777-CB ONLY)
	14	BRN	ITEM #29	--	8	J1-1 (3D2)	--	FROM CORE REG (H777-CA H777-CB ONLY)
42	14 TWP	BRN BLU	EMI-2 LOAD EMI-1 LOAD	41 41		CB(+2) LINE CB(+1) LINE	41 41	

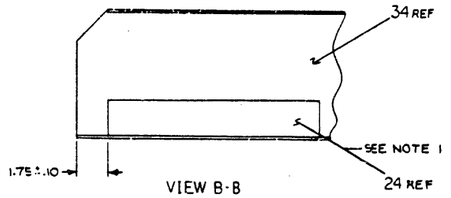
LEGEND

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

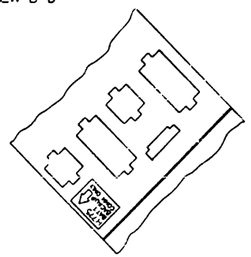
CB1



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

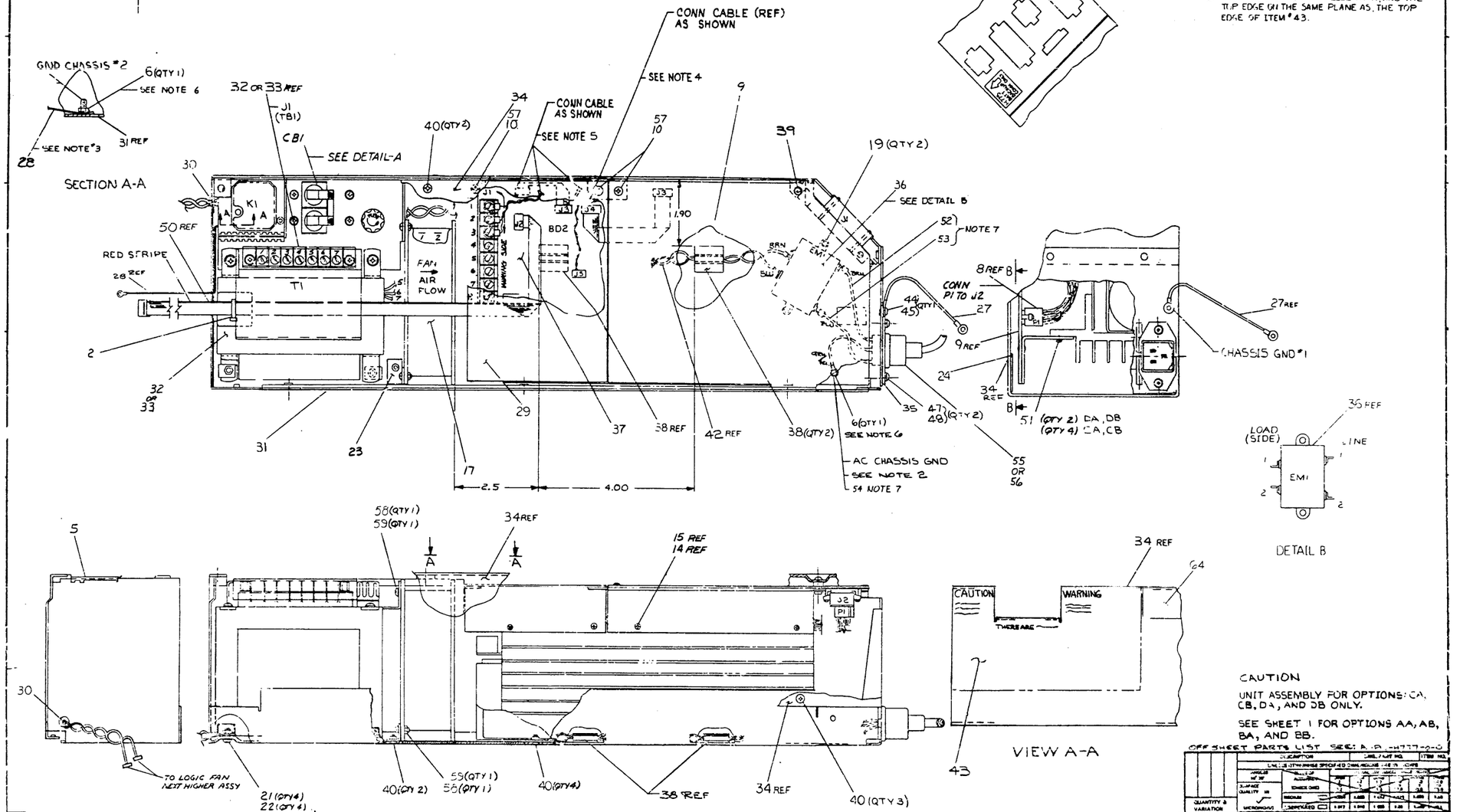


VIEW B-B



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 #64 PARALLEL WITH, AND THE TOP EDGE ON THE SAME PLANE AS, THE TOP EDGE OF ITEM #43.



DETAIL B

VIEW A-A

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 SEE: A-D H777-00-0

TITLE	POWER SUPPLY ASSY (H777)
SIZE	E
CODE	1JA
NUMBER	H777-0-0
REV	M

128

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 R.B. 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 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 — SHEET 1 OF 3 — SIZE A — CODE PL — NUMBER H777-0-0 — REV M — ECO NO -777-000005 — DIST.

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. Riela DATE 19 JULY 76
CHECKED D. HEALY DATE 29 JUL 76 — SECTION 1
ENG R. Barry DATE 26 Aug 76
PROD R.B. 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 7.0 ± .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-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 — SHEET 2 OF 3 — SIZE A — CODE PL — NUMBER H777-0-0 — REV M — ECO NO — DIST.

DEC FORM DEC 16 (325) 1031 N870
DRA 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 R.B. 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
~~45~~	~~B-IA-7417411-1~~	~~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 — ECO NO — DIST.

DEC FORM DEC 16 (325) 1031 N870
DRA 110

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WIRE CHART

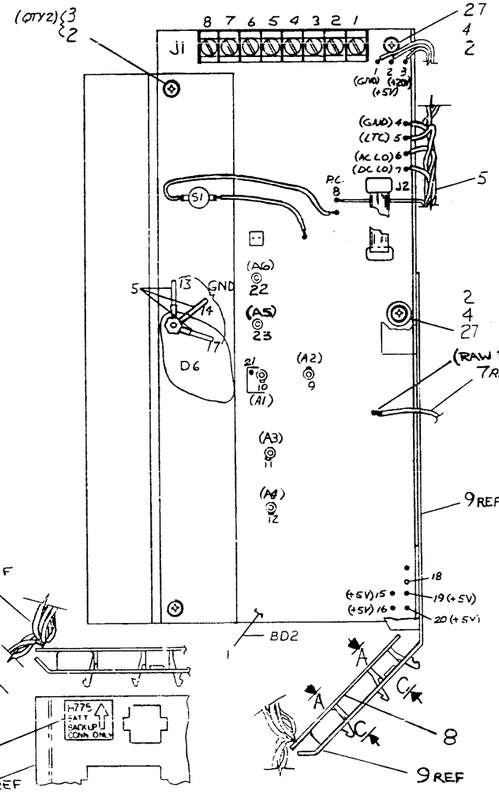
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
5	20	WHT	1	BD2-8	18	BD1-15
	14	BRN	2	2	9	1
	14	BLK	3	1	12	5
	14	ORN	4	3	13	7
	20	BRN	5	5	19	14
	20	BLK	6	4	20	16
	20	YEL	7	6	16	12
	20	VIO	8	7	17	13
	14	BLK	30	BD2-17	10	BD1-3

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
5	14	BLK	28	BD2-13	11	BD1-4
		RED	29		15	
		RED	26		19	
		BLK	25		14	
		RED	24		16	
	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	—
30	14	RED	—	BD2-22	—	C2 (+)

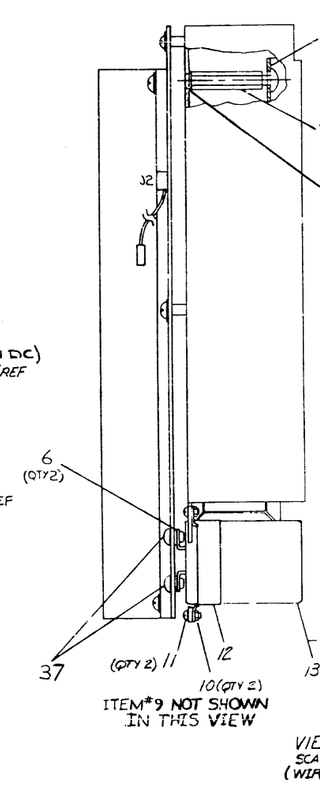
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
7	18	GRY	4	BD1-8	*3	—
	18	WHT	5	BD1-6	*10	—
	14	RED	6	BD2-21	*13	—
	18	GRN	7	BD1-2	12	—
25	14	GRN	—	C1(+)	—	C2(+)
25	14	GRN	—	C1(-)	—	C2(-)
23	14	RED	—	BD2-10	—	C1(+)
24	14	BLK	—	BD2-9	—	C1(-)
22	—	BARE	—	—	—	BD2-11
32	—	BARE	—	—	—	BD2-12
31	14	BLK	—	BD2-23	—	C2(-)

NOTES:

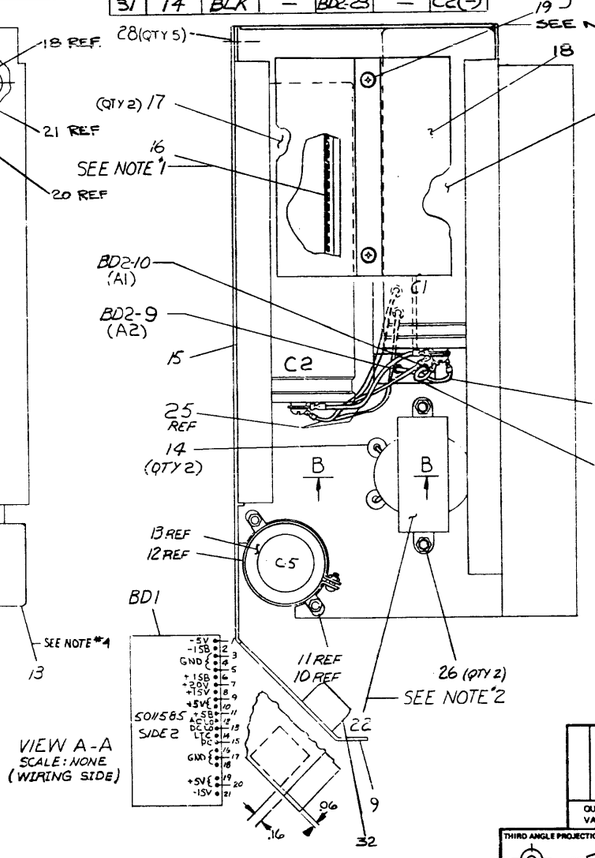
1. USE ITEM #16 (GROMMET) TO COVER RAW METAL EDGES UNDER CAPACITORS.
2. LEADS FROM ITEMS #22, 23 & 24 ARE TO BE CUT FLUSH WITH TOP OF CLAMPS ON ITEM #1, A1, A2, A3 & A4
3. * ASTERISK INDICATES THAT THESE CONN. ALREADY HAVE BEEN MADE ON PLUG P1 ON HARNESS D-IA-7011560-0-0 THEY ARE SHOW FOR REF ONLY.
4. ITEMS #17 & #13 ARE TO HAVE THEIR ELECTRICAL CONNECTIONS TORQUED TO 12 IN-LBS (-0, +10) IN-LBS.
5. BEING SCREW TO A NO SLACK POSITION, THEN TIGHTEN WITH 1/2 TO 3/4 TURN ONLY.
6. ITEMS #33 & #34 ARE NOT SHOWN.



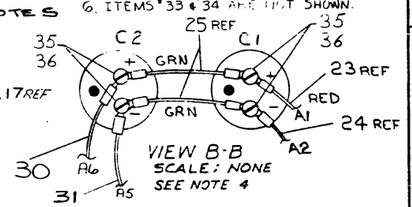
VIEW C-C



ITEM *9 NOT SHOWN IN THIS VIEW



VIEW A-A
SCALE: NONE
(WIRING SIDE)



VIEW B-B
SCALE: NONE
SEE NOTE 4

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	9006708	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	16J358A	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-7417468-0-0	18
2	CAPACITOR .22 KUF 50V	1010702	17
4/R	GROMMET CATERPILLAR	9007035	16
1	BRACKET CAPACITOR	E-IA-7413743-1-0	15
2	GROMMET RUBBER	9007017	14
1	CAPACITOR 39000UF/16.0V (CST)	7012790-00	13
1	CLAMP CAPACITOR	9009052	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-7417917-0-0	9
1	BOARD, PWR DISTR. H777	D-CS-5911586-0-1	8
1	HARNESS BD NOS REG PWR DST	D-IA-7011560-0-0	7
2	WASH .375 O.D. x .137 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	9005024-1	3
2	WASHER, INT TOOTH LOCK #6	9006633	2
1	H777+5V REG (REV E UP)	D-CS-5912[illegible]-0-1	1
	DESCRIPTION	DWG. PART NO.	ITEM NO.

REVISIONS			
DIM	CHANGE NO.		REV.
	H777 P. WHITE		A
	11. CLAMP MACHINE		
	11. CLAMP MACHINE		C
	1. DAY		D
	B. GIST		E
	E. CROCKER		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	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
10' 30'							
SURFACE QUALITY IN MICROINCHES	MEDIUM	±.005	±.008	±.012	±.018	±.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

DRAWN — 13 MAR 76
CHK'D D. Moody 2 AUG 76
ENG — 17 MAR 76
PROJ. ENG T. King 31 MAR 76
PROD. — 17 MAR 76

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

SCALE —

SHEET 1 OF 1

FIRST USED ON H777-CED

digital

TITLE: +5V REG ASSY

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

DIST.

130

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

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

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.	
+5V REG ASSY	D-AD-7012909-0-0	A	PL	7012909-0-0	E	7012909 ML00#3
	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 DATE 29 JUL 76	CHECKED D. HEALY DATE 2 AUG 76	SECTION 1
ENG R. COURTMACHE DATE 13 SEP 76	PROD R. BARRY DATE 13 SEP 76	ISSUED SECT. 1

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

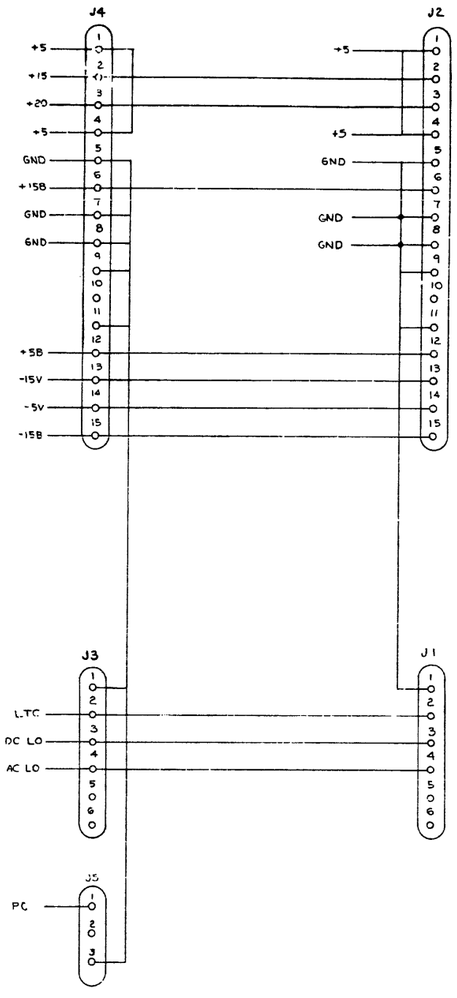
TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
+5V REG ASSY	D-AD-7012909-0-0	A	PL	7012909-0-0	E	7012909-ML00#3
	SHEET 2 OF 2	DIST.				

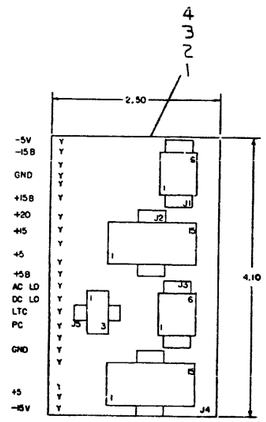
DEC FORM DEC 16 (325) 1031 N870

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NOTES:

REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411586-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AH-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

CHANGE NO	REV

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL
1104 PWR SUPPLY

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

ETCH BOARD REV D

DSN	D Bilden	DATE 12/75
C.M.D.	[illegible]	DATE 4-23-75
ENGR	[illegible]	DATE 2-7-75
PROJ. MG.	[illegible]	DATE 2-7-75
P.C.D.		DATE

NEXT HIGHER ASSY

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BOARD, POWER DISTRIBUTION H777

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

DIST.

DCS 5411583-0-1

132

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J5 2 RAW DC
T4 8 9 10 +5V
J2 9 10
J1 3 5 6
J5 1 GND
J3 5 6 CLOCK
4 7 2 9 +15B
1 3 -15B
+24 OFF
J4 1 2
4 5 CLK OFF
DC LO
AC LO
LTC
W1

Q1 2N5302 T2 L1 SEE NOTE 1 A3 A4 C26 .01MF R12 .01 R13 .01 C27 .01MF R11 18Ω D6 D26 A114B Q2 2N5302 D2 A114B R3 3W R1 .25 D4 D672 D5 D672 D3 D672 Q3 D45H8 R2 13Ω 1W T1 C20 .01MF R4 47 A5 A1 F1 J1 (TB1) AC AC CT GND C1 24K C2 24K D1 A6 A2 F2 5A

D19 D672 D7 IN751A R14 8.2K R16 47Ω C18 2.2 MF R15 4.7K R79 56 C8 330Ω MF D8 MR1030 R17 2Ω D10 2N5062 R18 100Ω C9 CS29A1 35 C6 .01MF D11 IN752A R19 10Ω R21 3Ω

D17 D672 D16 D672 D18 D672 R34 22Ω R32 10K R31 4.7K R30 22Ω R29 47Ω R26 2K R78 39Ω C19 1.5 MF R27 100K R23 27Ω R24 12 1% Q6 D44C11 R7 .39 R40 27Ω D15 D672 R36 10K R35 1K D40 D672 C13 470PF K39 4.7K Q7 A95 R38 1K GND Q9 A55 R20 3.3K C10 82PF R28 1K R8 A95 C11 .01MF 555 TIMER DCS E3 OUTPUT VCC TRIG VTH CTL Q10 A95 D12 D672 R25 10K

+15B CLK RHM MOD DC +5B MON EN BAT MON BAT LO GND BATTERY STATUS RLI AC LO STBY DRIVE

3Ø1A E2 C8 33PF C24 .01MF D13 5.1V 2% R41 30K D20 D672 C7 10MF C9 .01MF C25 .01MF

D29 IN4004 Q15 2N5433 K37 10K D25 D672 C12 100PF R33 8.2K D14 D672 CLOCK

D28 D672 R42 24.8K 1% R43 1.21K R44 1.21K 1% R46 10K 1% R40 27Ω R96 1K R49 56K C15 5PF R50 1K 3Ø1A E4 R51 56K C16 5PF R52 1K 3Ø1A E5 R53 56K C17 5PF R54 1K 3Ø1A E6 D45 IN751A

D27 D672 D41 IN4004 D21 IN4148 R22 10K Q11 A55 C14 .47MF (C) J2 STANDBY CN VC S1

D22 D672 R70 10K D42 D672 D23 D672 D31 D672 D24 D672 Q12 2N5433 R55 10K Q13 2N5433 R56 10K Q14 2N5433 R57 10K

SND

NOTES:
1. COMPONENTS WITHIN THE BROKEN LINES ARE MOUNTED TO THE BOARD ON NEXT HIGHER ASS'Y.

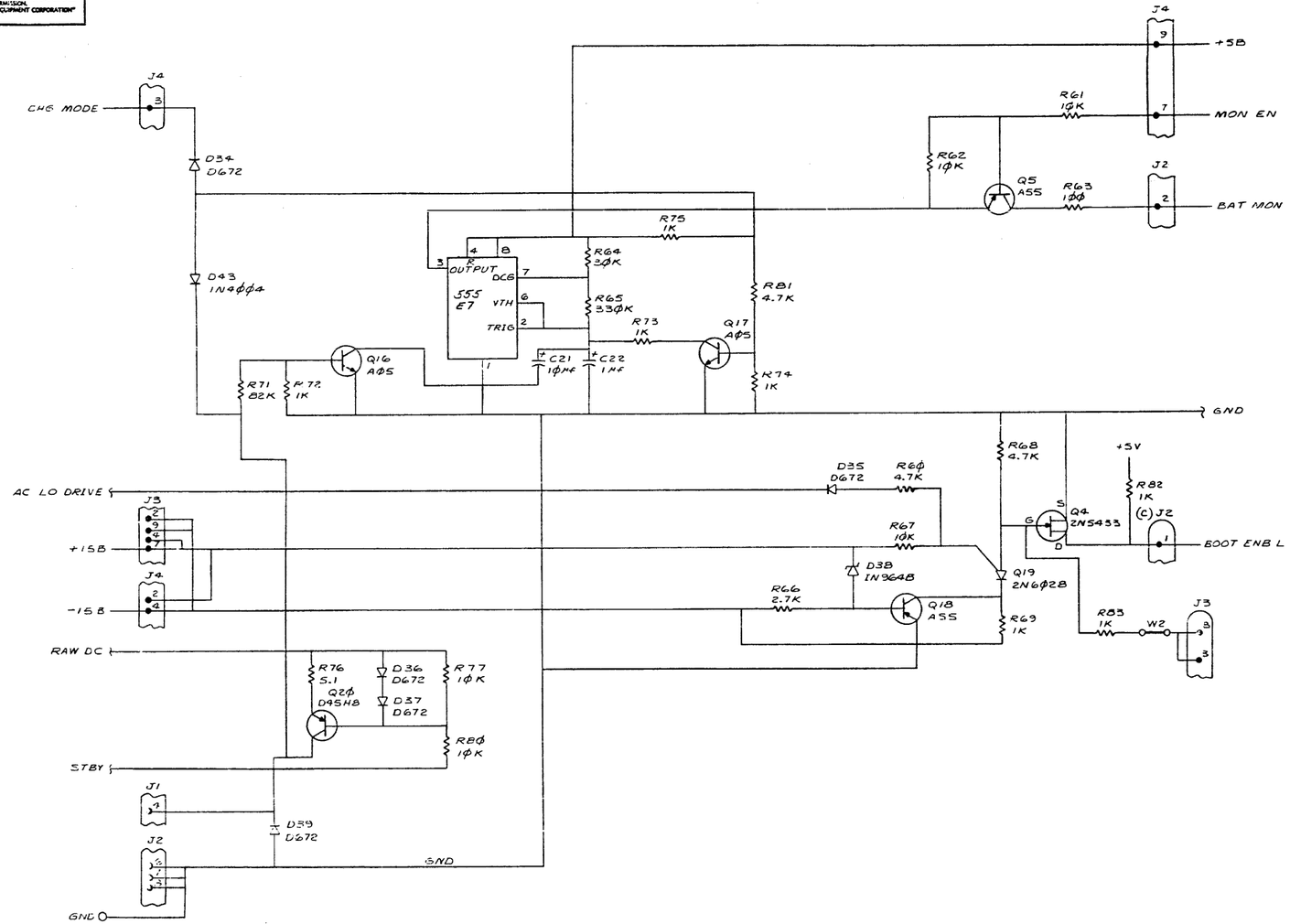
DIVISIONS		
CHK	CHANGE NO.	REV.
		B

DRN.		FIRST USED ON
CHK'D		digital
ENG.		TITLE
PROJ. ENG.		H777
PROD.		+5V REGULATOR

SIZE	CODE	NUMBER	REV.
D	CS	5412667-0-1	C

SCALE — SHEET 1 OF 2 DIST.

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DIVISIONS		
CHK	CHANGE NO.	REV.

(BATTERY STATUS CRKT'S)

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

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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/WH	K1-4	SOLD,31	*TB2-3S	SOLD	5 1/2"L
23	18	GR/WH	K1-6	↓	*TB2-4S	SOLD	5"L
24	18	WH/OR	K1-7	↓	TB2-5H	25,	9"L
26	18	WH/GR	K1-9	↓	TB2-6H	25,	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'

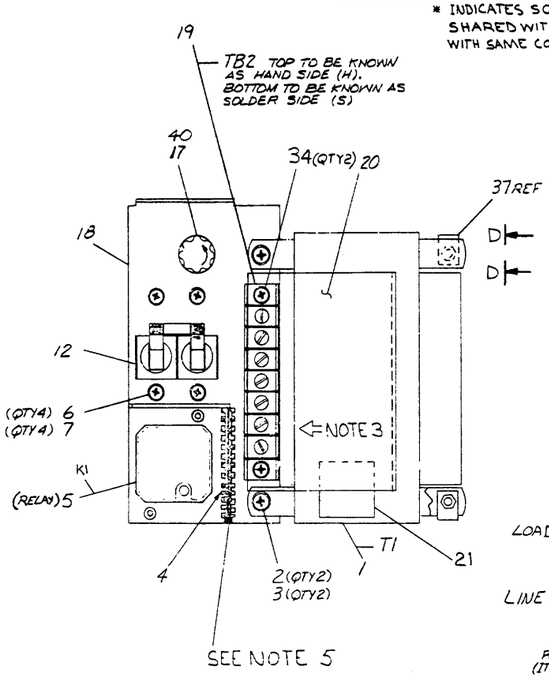
ITEM NO	DESCRIP AWG	DESCRIP COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
1	18	BLK	T1	—	TB2-1H	—	—
	TWP	BK/WH			TB2-3H	—	—
	18	RED			TB2-2H	—	—
	TWP	RD/WH	T1		TB2-4H	—	—
47	18	GY/BL	G3	SOLD	F1-2	SOLD,31	4"L
35	18	BLK	TB2-1H	—	TB2-2H	—	120V
36	18	WHT	TB2-3H	—	TB2-4H	—	120V
35	18	BLK	TB2-2H	—	TB2-3H	—	230V
13	22	BARE	R1-A	—	G3	SOLD,33	
13	22	BARE	R1-B	—	G2	SOLD,33	
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

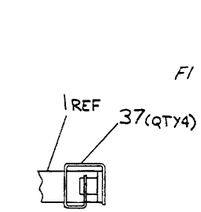
7012910-0	120V
7012910-1	230V

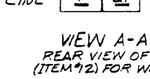
* INDICATES SOLDER CONN. SHARED WITH OTHER CONN. WITH SAME COMMON CONN.

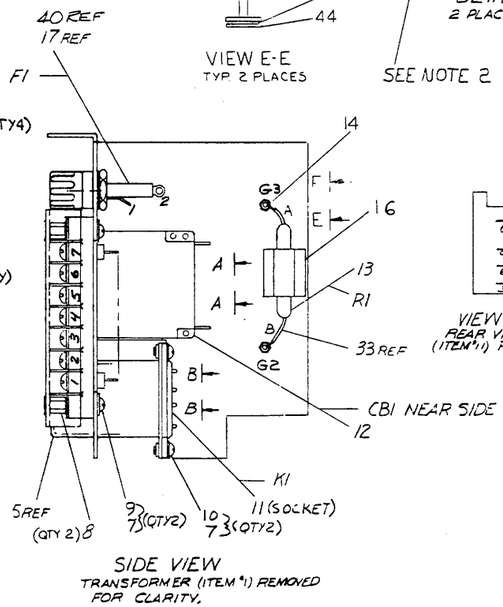
NOTES:

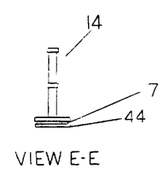
1. ~~COVER ITEM #28 WITH ITEM #31 COVER ENTIRE CONN.~~
2. TWISTED PAIR WIRE TO HAVE A MIN OF 5 TWIST PER FT AS PER WIRE CHART.
3. ALL CONNECTIONS TO TB2 ARE TO BE MADE FROM SIDE INDICATED BY ARROW.
4. USE TIE WRAPS (ITEM #38) AS NEEDED.
5. T1 PRIMARY WIRES TO TB2 MUST BE ROUTED BY ITEM 4
6. NO CONNECTION IS MADE AT THIS ASSY LEVEL REFER TO PRINT E-11A-H777-0-0

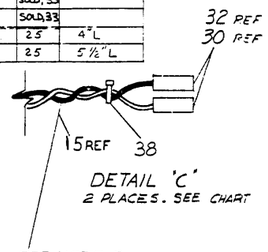


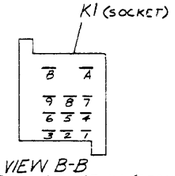


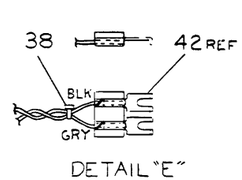












OFF SHEET PARTS LIST SEE A-PL-7012910-0-0

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.		29 JUL 76
CHK'D		2 AUG 76
ENG.		2 AUG 76
PROJ. ENG.		2 AUG 76
PROD.		2 AUG 76

NEXT HIGHER ASSY.

D-UA-H777-0-0

SCALE 1/1

SHEET 1 OF 2

FIRST USED ON H777-C & D

digital

TITLE

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

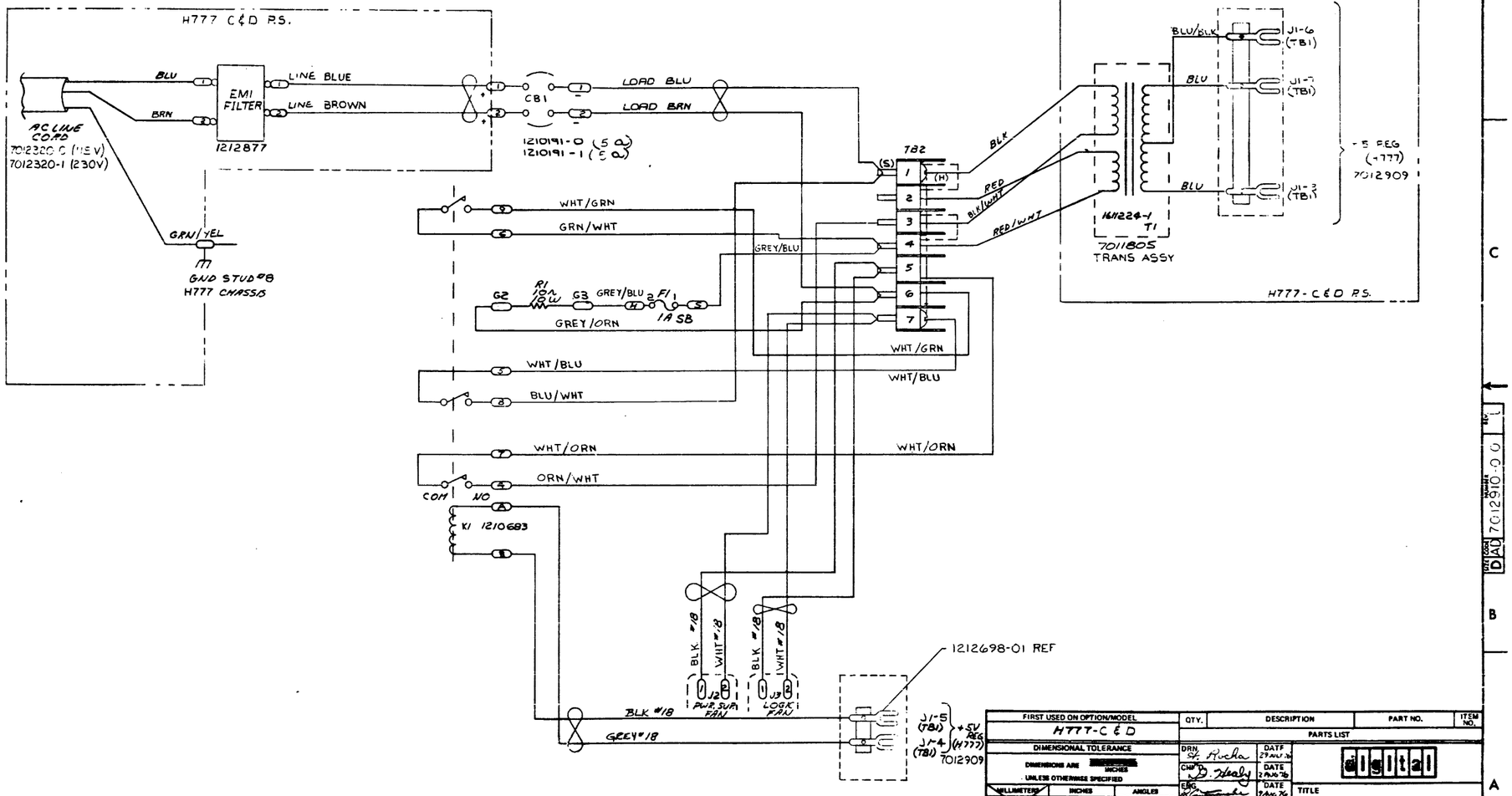
SIZE	CODE	NUMBER	REV.
D	AD	7012910-0-0	L

DIST.

DIC	CHANGE NO.	REV.
	INITIAL RELEASE	-
YC	7012910-00001	A
MM	7012910-00002	B
MM	7012910-00003	C
MM	7012910-00004	D
MM	7012910-00005	E
MM	7012910-00006	F
MM	7012910-00007	G
MM	7012910-00008	H
MM	7012910-00009	J
MM	7012910-00010	K
MM	7012910-00011	L

135

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FIRST USED ON OPTION/MODEL	H777-C&D
DIMENSIONAL TOLERANCE	DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED
MILLIMETERS / INCHES / ANGLES	XXX ±0.10 XX ±0.5 X ±0.4 / XXX ±.005 .XX ±.02 / 1/2°
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL	
FINISH	
NEXT HIGHER ASSY.	
DRN. S. Rucha DATE 29 AUG 76	
CHK. D. Healy DATE 2 SEP 76	
ENG. DATE 9 Aug 76	
PROJ. ENG. DATE 13 SEP 76	
PROD. DATE 13 Sept 76	
SCALE	
SHEET 0 OF 0	

digital

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

SIZE	CODE	NUMBER	REV.
D	AD	7012910-0-0	L

USED ON DAD 7012910-0-0 NEXT ASSY

REVISIONS: REV. L — CHANGE NO. 5146

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY [illegible] | 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
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	1210191-1	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

TITLE: A/C INPUT ASSY (120V/230V) | ASSY NO. D-AD-7012910-0-0 | SHEET 1 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-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
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 | DIST.

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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY [illegible] | 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~~	~~1210191-3~~	~~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~~	~~9107253-09~~	~~TUBING, SHRINK (WHT)~~	~~A/R~~	~~A/R~~
40	9007212	FUSE, 1A, 250V S.B.	1	1
~~41~~	~~9107253-03~~	~~TUBING, SHRINK (ORN)~~	~~A/R~~	~~A/R~~
42	1212698-01	STRIP, FANNING (2 POSITION)	1	1
43	9107430-16	WIRE #18 AWG INSTWP BRN, BLU	A/R	A/R
44	9006656	WASHER, FLAT	2	2

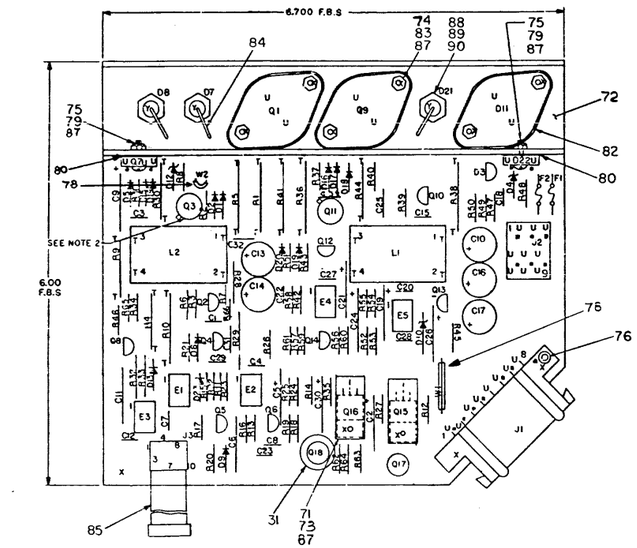
TITLE: A/C INPUT ASSY (120V/230V) | ASSY NO. D-AD-7012910-0-0 | SHEET 2 OF 3 | SIZE A | CODE PL | NUMBER 7012910-0-0 | REV. L | ECO NO | DIST.

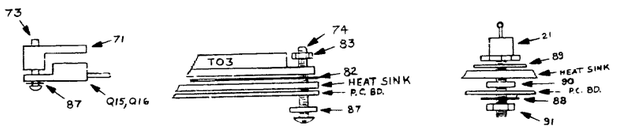
DEC FORM DEC 16 (325) 1031 N870

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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-5411601-0-4	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-5411601-0-6	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%	1310631	56	1	C8	CAPACITOR, 100pf, 100V, 5%	1000016	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, CEC 3734	1510082	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,Q8,Q12 THRU Q14	TRANSISTOR, XA05	1510705	61	6	C2,C5,C9,C19,C26,C30	CAPACITOR, 1mf, 35V, 10%	1001776	10
2	Q2,Q10	TRANSISTOR, XA55	1510706	62	2	C29,C31	CAPACITOR, .47mf, 25V, 20%	1010279	11
1	Q16	TRANSISTOR, D45H8	1510708	63	1	C24	CAPACITOR, 10mf, 20V, 10%	1004813	12
2	Q1,Q9	TRANSISTOR, 2N5038	1510989	64	2	C6,C21	CAPACITOR, .01mf, 100V, 10% MYLAR	1005784	13
1	Q15	TRANSISTOR, D44H5	1512722	65	1	C11	CAPACITOR, .015mf, 50V, 2% POLYC	1010848	14
2	L1,L2	INDUCTOR, 500uh	1612593	66	2	C13,C14	CAPACITOR, 390mf, 20V	1012607-05	15
2	E2,E5	I.C. L.M. 301A	1910282	67	1	C17	CAPACITOR, 1200mf, 6.3V	1012507-01	16
3	E1,E3,E4	I.C. L.M. 555	1911944	68	2	C10,C16	CAPACITOR, 180mf, 50V	1012607-02	17
1	C22	CAPACITOR, 47pf, 100V, 5%	1000024	69	1	D4	DIODE IN752A	1102808	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 IN4004	1105796	20
2		SCREW #4-40 x 7/16 LG	9006012-1	73	3	D7,D8,D21	DIODE, IN3880	1109440	21
6		SCREW #4/40 x 1/2 LG.	9005013-1	74	1	D12	DIODE IN4742	1109502	22
2		SCREW, NYLON #4/40 x.375LG.	9006401-4	75	1	D10	DIODE Izt 5ma 5.1V, 2%	1110713	23
1		EYELET	9009000	76	1	D3	DIODE 2N5062	1110968	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	9008268	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	7011414-DD	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	9008172	87					
3		WASHER, FLAT	9006666	88	2	R9,R44	RESISTOR, 130, 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	R19,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, 3/4W, 1%	1300424	39
AR	W1,W2	WIRE, #20 AWG. SOLID	9107560-02	93	3	R11,R43,R61	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, 33G, 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	1001610-00	9

FIRST USED ON OPTION MODEL

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R30	RESISTOR, 1.8K, 1W, 5%	1303122	50
1	R4	RESISTOR, 1.2K, 1W, 10%	1302950	49
1	R66	RESISTOR, 180, 1/4W, 5%	1301322	48
2	R26,R34	RESISTOR, 2K, 1/4W, 5%	1302388	47
2	R10,R41	RESISTOR, 33G, 2W, 10%	1301961	46
3	R8,R31,R40	RESISTOR, 10, 1/4W, 5%	1301317	45
2	R53,R24	RESISTOR, 100K, 1/4W, 5%	1302466	44
11	R13,R15,R16,R17,R21,R22,R42, R46,R51,R57,R58	RESISTOR, 10K, 1/4W, 5%	1300479	43
2	R23,R56	RESISTOR, 5.62K, 1/4W, 1%	1305128	42
2	R7,R65	RESISTOR, 4.7K, 1/4W, 5%	1300447	41
3	R11,R43,R61	RESISTOR, 2.7K, 1/4W, 5%	1300426	40
1	R29	RESISTOR, 2.49K, 3/4W, 1%	1300424	39
1	R45	RESISTOR, 1.5K, 1/4W, 5%	1300391	38
7	R19,R20,R54,R59,R60,R62,R25	RESISTOR, 1K, 1/4W, 5%	1300365	37
1	R52	RESISTOR, 390, 1/4W, 5%	1300309	36
2	R9,R44	RESISTOR, 130, 1W, 5%	1300232	35
8	R6,R27,R35,R39,R48,R49,R63, R64	RESISTOR, 100, 1/4W, 5%	1300229	34
1	(Q18)	HEAT SINK	1210001	31
17		PINS	1209456-01	30
2	J2	CONN. 9 PIN MATE-N-LOC	1209350-09	29
1	J1	CONN. 8 PIN MATE-N-LOC	1209340-00	28
2	F1,F2	FUSE 5A	1209070	27
1	D11	DIODE DUAL	1112723-00	26
2	D5,D18	DIODE A114B	1112595-01	25
1	D3	DIODE 2N5062	1110968	24
1	D12	DIODE IN4742	1109502	22
3	D7,D8,D21	DIODE, IN3880	1109440	21
1	D9	DIODE IN4004	1105796	20
11	D1,D2,D6,D13 THRU D17,D19, D20,D23	DIODE D672	1105275	19
1	C29,C31	CAPACITOR, .47mf, 25V, 20%	1010279	11
6	C2,C5,C9,C19,C26,C30	CAPACITOR, 1mf, 35V, 10%	1001776	10
9	C1,C3,C12,C15,C18,C27,C28,C32,C33	CAPACITOR, .01mf, 100V, DISC	1001610-01	9
1	C25	CAPACITOR, .1mf, 100V, 20% DISC	1000030	8
1	C7,	CAPACITOR, 220pf, 100V, 5%	1000021	7
1	C8	CAPACITOR, 100pf, 100V, 5%	1000016	6
2	C20,C4	CAPACITOR, 33pf, 100V, 5%	1000009	5
		ETCHED CIRCUIT BOARD	5011600	4
		MODULE ECO HISTORY	B-MH-5411601-0-6	3
		ASSY/DRILLING HOLE LAYOUT	D-AH-5411601-0-5	2
		X-Y COORDINATE HOLE LOCATION	K-CO-5411601-0-4	1

PARTS LIST

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REV.	DESCRIPTION	DATE	CHGR
M	ERUCE CRAMM:	9 NOV 77	
L	5411601-00006	21-JUL-77	
K	5411601-00005	7-JUL-77	
J	5411601-00004	21-JUL-76	
H	5411601-00003	6/1/76	
F	5411601-00002	2-10-75	
E	5411601-00001	12-6-75	

E. CROCKER — J. Titus — 2 Mar 77 — M — 5411601-00007
R. DAY — J. Titus — 7 JUL 77 — K
J. Titus — 21-JUL-76 — J
G. POTTER — 6/1/76 — H
A. Fraser — 2-10-75 — F
Richard Barry — John Carter 12-6-75 — E
RICHARD BARRY

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

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV. E

DRN. J. J. Day — DATE 5-29-75
CHKD. — DATE
ENG. — DATE 7/24/75
PROJ. ENG. R. Barry — DATE 7/24/75
PROD. ENG. — DATE 5/29/75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 3

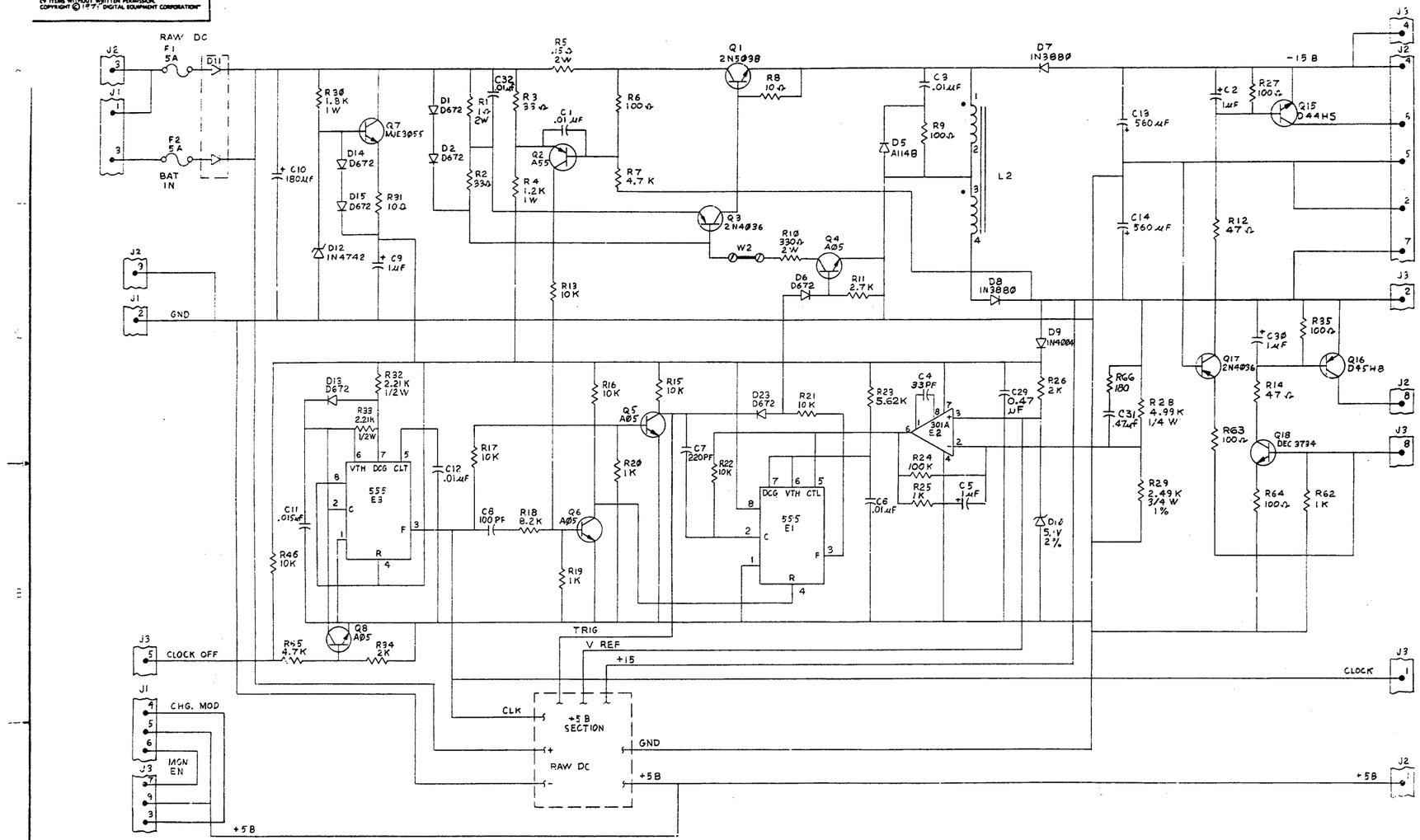
digital

TITLE MOS REGULATOR H777

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

DIST.

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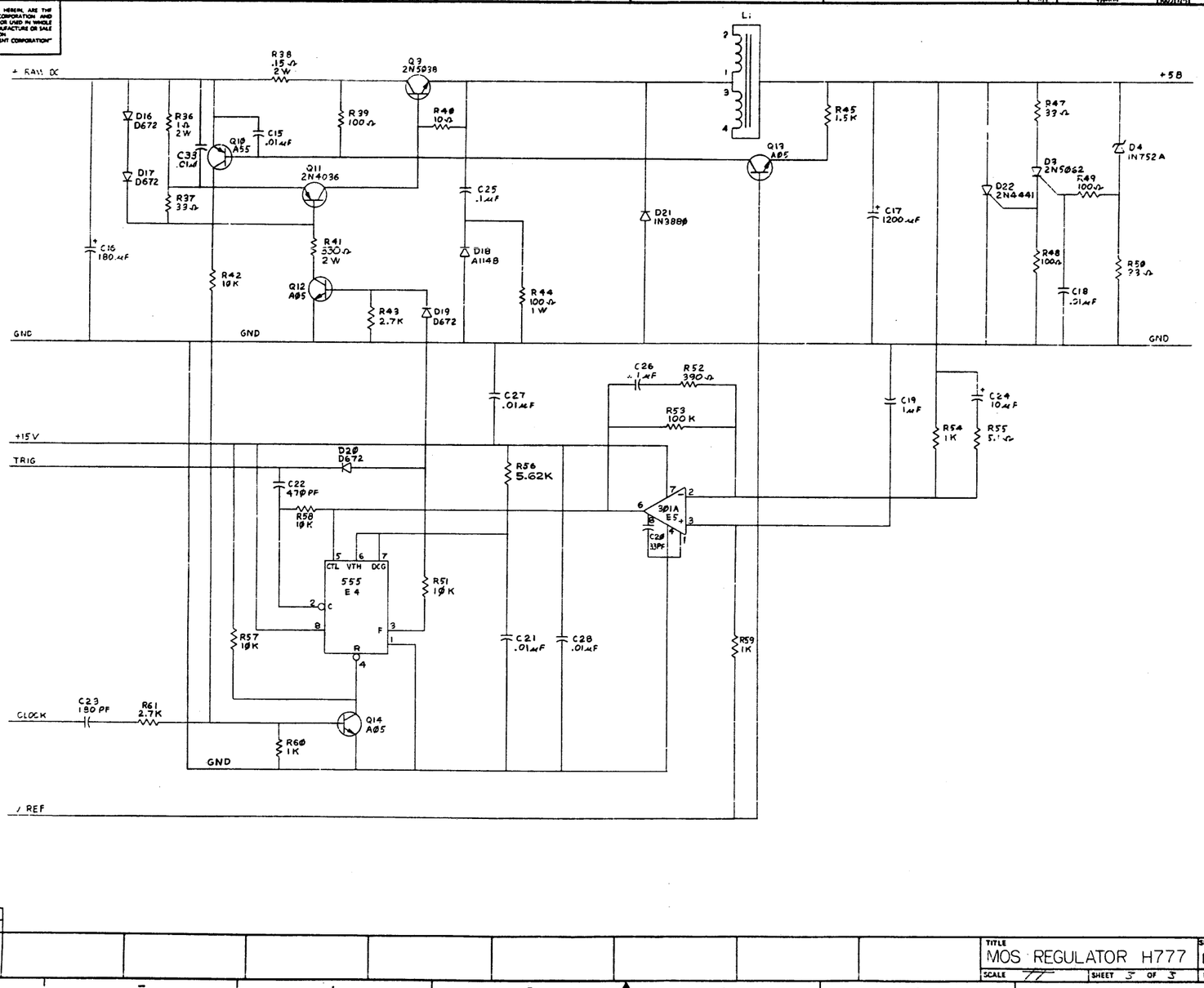


REVISIONS		
CHK	CHANGE NO	REV.

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

5411601-0-1 M

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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.		

DLC FORM NO.

140

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NOTES:

USE TRANSIPAD DEC# 9007201 UNDER Q1&Q8

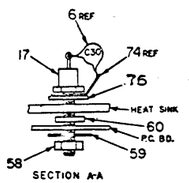
1		HEAT SINK	7416236-0-0	55	
6		SCREW, #4-40 x 1/2 lg PH HD	9006013-1	56	
6		NUT, KEP #4-40	9006557	57	
1		NUT, HEX #10-32	9006584	58	
1		WASHER, FLAT	9006682	59	
1		BUSHING, NYLON	9008440	60	
6		WASHER, FLAT	9008172	61	
A/R		COMPOUND, THERMAL	9006268	62	
3		INSULATOR, TO 3	1213071-02	63	
1		~~WASHER, THERAFILM~~	~~9008424~~	~~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, IN753A	1102421	72	
1	C26	CAPACITOR, .47uf, 25V, 20%, CER	1010279	73	
1		SOLDER, TERM, SCREW MTG.	9007815	74	
1		SIL PAD .800 .190 I.D.	1213071-05	75	
1	C32	CAP. 1UF 50V CER.	1010274-02	76	

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CC 5411599-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411599-0-5	2
REF		MODULE ECO HISTORY	B-MH-5411599-0-8	3
1		ETCHED CIRCUIT BOARD	5011598	4
1	C7	CAPACITOR, 100PF, 100V, 5%	1000016	5
6	C2,C3,C8,C30,C24,C25	CAPACITOR, .01uf, 100V DISC	1001610-01	6
3	C9, C27, C28	CAPACITOR, 1uf, 35V, 10% TANT	1001776	7
2	C10,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	1005784	10
1	C31	CAPACITOR, 220pf, 100V, 5%	1000021	11
2	C5,C16	CAPACITOR, 1200uf, 63V	1012607-01	12
7	C1,C17,C18,C4,C20,C21,C22	CAPACITOR, 150uf, 50V	1012607-02	13
1	D22	DIODE, IN4742	1105502	14
1	D10	DIODE, MR1033B	1103341	15
10	D1 THRU D7, D14, D15, D21	DIODE, D872	1105275	16
1	D17	DIODE, IN3880	1109440	17
2	D12,D13	DIODE, IN751, 5.1V 2%	1110713	18
1	D8	DIODE	1110715	19
1	D11	DIODE, IN979B	1110858	20
1	D19	DIODE, 2N5682	1110968	21
1	D9,	DIODE, A1140	1112595-01	22
1	F1	FUSE, 15A, PICO	1210929	23
1	R46	RESISTOR, 18K, 1/4W, 5%	1302465	24
6	R9,R39,R40,R41,R43,R49	RESISTOR, 100, 1/4W, 5%	1300229	25
1	R7	RESISTOR, 100, 1W, 5%	1300232	26
3	R11, .R42,R33	RESISTOR, 390, 1/4W, 5%	1300309	27
6	R6,R12,R23,R31,R17,R48	RESISTOR, 1K, 1/4W, 5%	1300365	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%	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%	1301961	36
1	R19	RESISTOR, 2K, 1/4W, 5%	1302388	37
2	R18,R26	RESISTOR, 100K, 1/4W, 5%	1302456	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%	1302602	44
2	Q1,Q8	TRANSISTOR, 2N4033R	1509700	45
7	Q3,Q5,Q6,Q7,Q9,Q12,Q13	TRANSISTOR, XA85	1510705	46
1	Q4	TRANSISTOR, XA55	1510706	47
1	D18	TRANSISTOR, C32AX135	1510928	48
2	Q2,Q10	TRANSISTOR, 2N5038	1510969	49
1	Q11	TRANSISTOR, 2N5433	1511686	50
2	L1,L2	INDUCTOR, 400uh	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

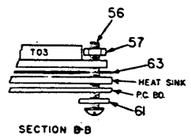
PARTS LIST

FIRST USED ON OPTION MODEL

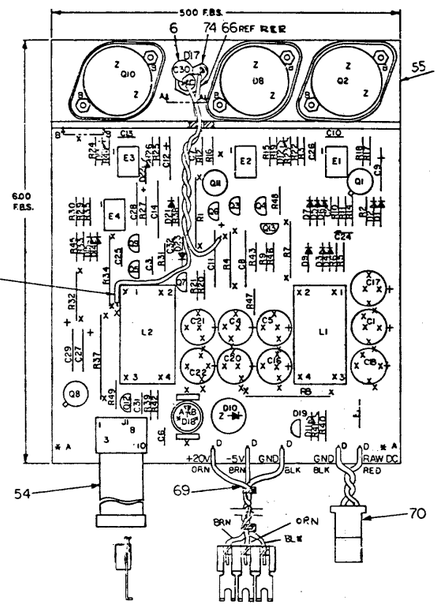
ETCH BOARD REV. D



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		

REV.	REVISIONS	CHK	DATE
J	5411599-00003	J. SCELO	2-9-77
H	5411599-00002	G. POTTER	7 JAN 77
E	5411599-00001	P. Hunter	6 AUG 76

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

SEMICONDUCTOR CONVERSION CHART

DRN. J. Scelo DATE 2-9-77
CHK'D DATE
ENG. DATE
PROJ. DATE
PROD. DATE
NEXT HIGHER ASSY E-UA-H777-0-0
SCALE
SHEET 1 OF 2

digital

TITLE +20V REGULATOR/H777

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

DIST.

MAT'L 5411599-0-1 J

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RAW DC
F1 15A
L1
5W .05 E8
+20 V
GND
-15V
+15V
CLK
+20V OFF
-5V
Q1 2N4240
Q2 2N5138
Q3 A05
Q4 A55
Q5 A05
Q6 2N4036
Q7 A05
Q9 A05
Q10 2N4038
Q12 A05
Q13 A05
Q14 A05
Q1 2N5243
D1 D672
D2 D672
D3 D672
D4 D672
D5 D672
D6 D672
D7 D672
D9 A114B
D10 MR4338
D11 IN1976
D12 5.1V 2%
D14 D672
D15 D672
D17 2N5062
D18 C32AR135
D21 D672
D22 1N4742
D23 IN753A
D13 5.1V 2%
DCS VTH CTL
555 E2
555 E4
3014 E3
321A E1
VCC
VTH DCB
CTL
GND
TRIG
OUT
RST
DISCH
THRES
R1 1 1/2W
R2 390
R3 10
R4 1K 1W
R5 27
R6 1K
R7 2.7K 1W
R9 1K
R10 2.7K
R11 33Ω
R46 18K
R12 1K
R13 10K
R14 2.7K
R15 4.7K
R16 10K
R17 1K
R18 100K
R19 2K
R20 56
R21 8.25K 1%
R22 2.74K 1%
R23 1K
R24 1.5K
R25 1.5K
R26 100K
R27 4.7K
R28 10K
R29 10K
R30 2.7K
R31 1K
R32 4.7K
R33 390
R34 330 2W
R35 10
R36 2.7K
R37 .08 5W
R38 10K
R39 100
R40 100
R41 1MΩ
R42 4.7K
R43 100
R44 1K
R45 470
R47 200 1/4W
R48 1K
C1 1200UF
C2 .01UF
C3 .01UF
C4 100UF
C5 1200UF
C6 .01UF
C7 100pf
C8 .01UF
C9 1UF
C10 33pf
C11 15UF
C12 10UF
C13 33pf
C14 1UF
C16 1200UF
C17 1200UF
C18 100UF
C19 10UF
C20 100UF
C21 100UF
C22 100UF
C24 .01UF
C25 .01UF
C26 .47UF
C28 1UF
C29 2.2UF 20V
C30 .01UF
C31 220 PF
L2
J1
1
10
2
9
4
7
5
6
3
8
REVISIONS
CHK | CHANGE NO. | REV.
DEC FORM NO.
TITLE +20V REGULATOR/H777
SIZE D | CODE CS | NUMBER 54 11599-0-1 | REV. J
SCALE | SHEET 2 OF 2 | DIST.

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FIELD MAINTENANCE PRINT SET

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

EN-01124-16 N675 (327)

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 I OF 1

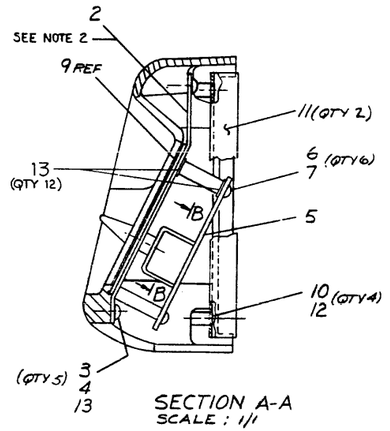
DRN. D. HEALY	DATE 9/29/75	digital
CHK'D D. HEALY	DATE 9/29/75	TITLE: FIELD MAINTENANCE PRINT SET KY11-LA
PROJ. ENG. R. Barry	DATE 10-22-75	SIZE B / CODE TC / NUMBER KY11-LA-1 / REV. A
FIELD SERV.	DATE 10-22-75	DIST.

DRB 124

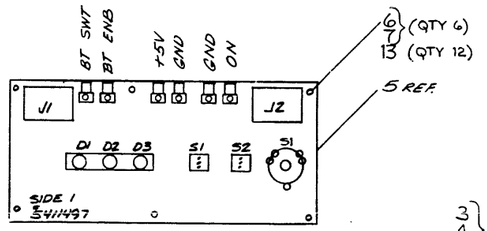
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NOTES

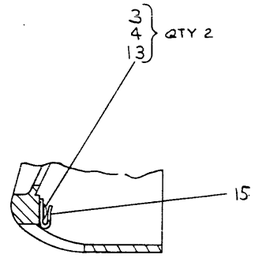
1. PART NO. 7413657-1-0 MAY BE USED IF 7415599 IS NOT AVAILABLE.
2. PRIOR TO ASSY. OF CONTROL PANEL TO SUPPORT PANEL, CLEAN ITEM 2 THOROUGHLY. AFTER CLEANING, APPLY AN EVEN COAT "3M" BRAND AEROSOL ADHESIVE #77N TO ITEM #2 ONLY TO AVOID ATTACKING THE SILK SCREENING. POSITION ITEM #9 IN PLACE AND BOND, 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.



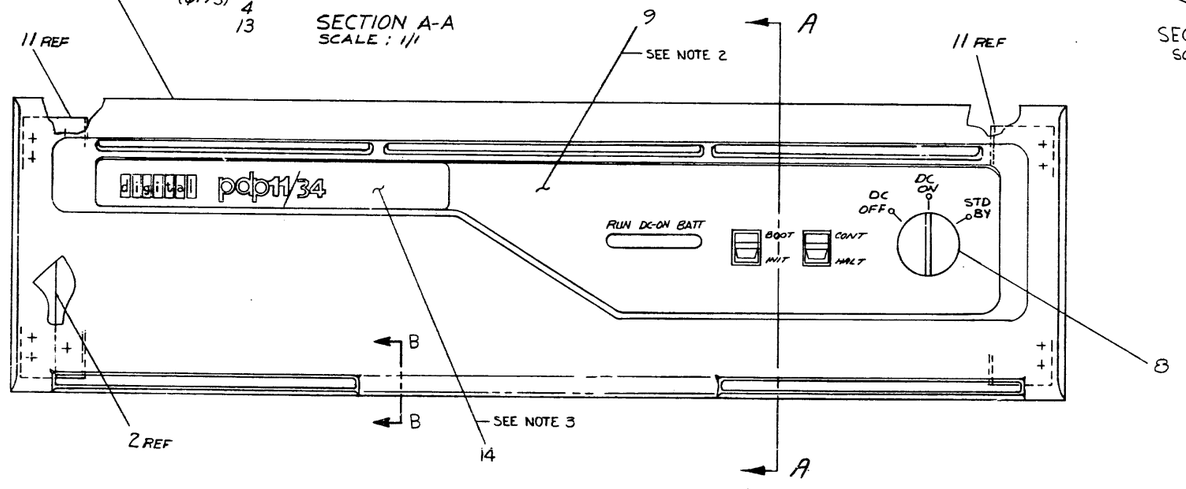
SECTION A-A
SCALE : 1/1



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-7415656-00	16
	1	BRACE, SUPPORT PNL	7419008	15
	1	OVERLAY, DECAL 11/34	A-PS-3613359-01	14
	19	WASHER, FLAT .375x.87x.036	9006660	13
	4	SPACER, HEX 1/4x.38 LG	9006802	12
SEE NOTE 5	REF	BRKT, FILTER SUPPORT	C-MD-7414962-00	11
	4	SCR, PNL FL HD #8-32x.62	9006040-2	10
	1	PANEL, CONTROL, CONSOLE	D-MD-7413502-00	9
	1	KNOB, ROTARY SWITCH	12/2570	8
	6	SCR PNL HD PAN #8-32x.38	9006022-1	7
	6	SPACER #6-32x.87	9006861	6
	1	CIRCUIT ETCH BD KYII-LA	D-ES-5411997-01	5
	7	SCR FILL HD PAN #8-32x.31	9009799-00	4
	7	WASHER, SPRING LOCK #8	9006690	3
	1	SUPPORT, PANEL	D-MD-7413501-00	2
SEE NOTES 1&5	REF	BEZEL 11/04	E-MD-7415599-00	1

QUANTITY & VARIATION	DESCRIPTION	DWG/PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	SURFACE QUALITY IN MICROINCHES	CLASS OF ACCURACY (CHECK ONE)	OVER 0 TO 3	OVER 3 TO 6	OVER 6 TO 12	OVER 12 TO 24	OVER 24 TO 48
		MEDIUM	±.005	±.008	±.012	±.018	±.024
	125	PREFERRED	±.012	±.018	±.025	±.06	±.093

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

NEXT HIGHER ASSY.

MATERIAL SEE PARTS LIST

FINISH

DRAWN
CHK
ENGR
PROGRMG
APVD

FIRST USED ON 11/04

TITLE CONSOLE, OPER, ASSEMBLY

SIZE	CODE	NUMBER	REV.
D	UA	KYII-LA-Ø	F

DRAWING NO. KYII-LA-Ø

SCALE FULL

SHEET 1 OF 1

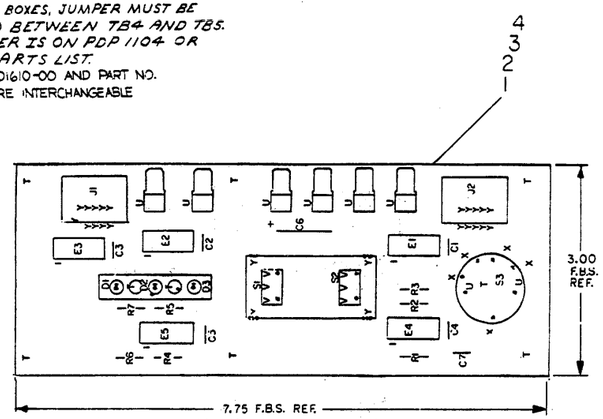
DIST.

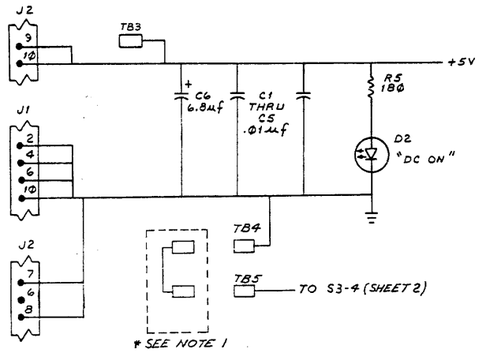
REV.	DESCRIPTION	DATE	APPROVED
A	ECO 7415599	4 Jan 77	P. POPPIECA
B	ECO 7415599	5 Jan 77	P. POPPIECA
C	ECO KY11B-00003	5 Jan 77	P. LOUSSO
D	ECO KY11-LA-00003	7 Jan 77	P. POPPIECA
E	ECO KY11-LA-00004	8 DEC 77	D. BARRY
F	ECO KY11-LA-W0165	15 MAR 78	E.C. ROCKER

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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	H-CO-5411497-0-1	1
REF		ASSY/DRILLING HOLE LAYOUT	D-FA-5411497-0-1	2
REF		MODULE ECO HISTORY	B-MH-5411497-0-1	3
1		ETCHED CIRCUIT BOARD	5011496	4
5	C1 THRU C5	CAPACITOR, .01uf, 100V	1001610-01	5
1	C6	CAPACITOR, 6.8uf, 35V, 10%	1205306	6
1	C7	CAPACITOR, 1000PF, 100V	1000042	7
3	D1,D2,D3	DIODE, LIGHT EMITTING	1110864	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	1911469	17
2	E1, E2	I.C. DEC 8881	1909705	18
1	E4	I.C. DEC 7402	1909004	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, R3	RESISTOR 330, 1/4W, 5%	1300295	27
A/R		~~WIRE, BUS #20~~	~~9107560-03~~	28
A/R		~~TUBING, NATURAL #20~~	~~9107C7-11~~	29
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV. =

FIRST USED ON OPTION MODEL: 11/04

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

SEMICONDUCTOR CONVERSION CHART

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

REV.	REVISIONS	CHANGE NO.	DWK
F	11.11.72 BRUCE CRAMM Point Out ECO#T1	5411497-00002	CS
H	2.19.73 R. Barry Point Out ECO#24-40976	5411497-00003	CS
	11.11.72 D. Barry	5411497-00001	CS

DRN. J. Clement DATE 4-23-75
CHKD. [illegible] DATE 8-12-75
ENG. DATE
PROJ. ENGR. DATE
PROD. DATE
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 2

digital

TITLE: KY11-LA

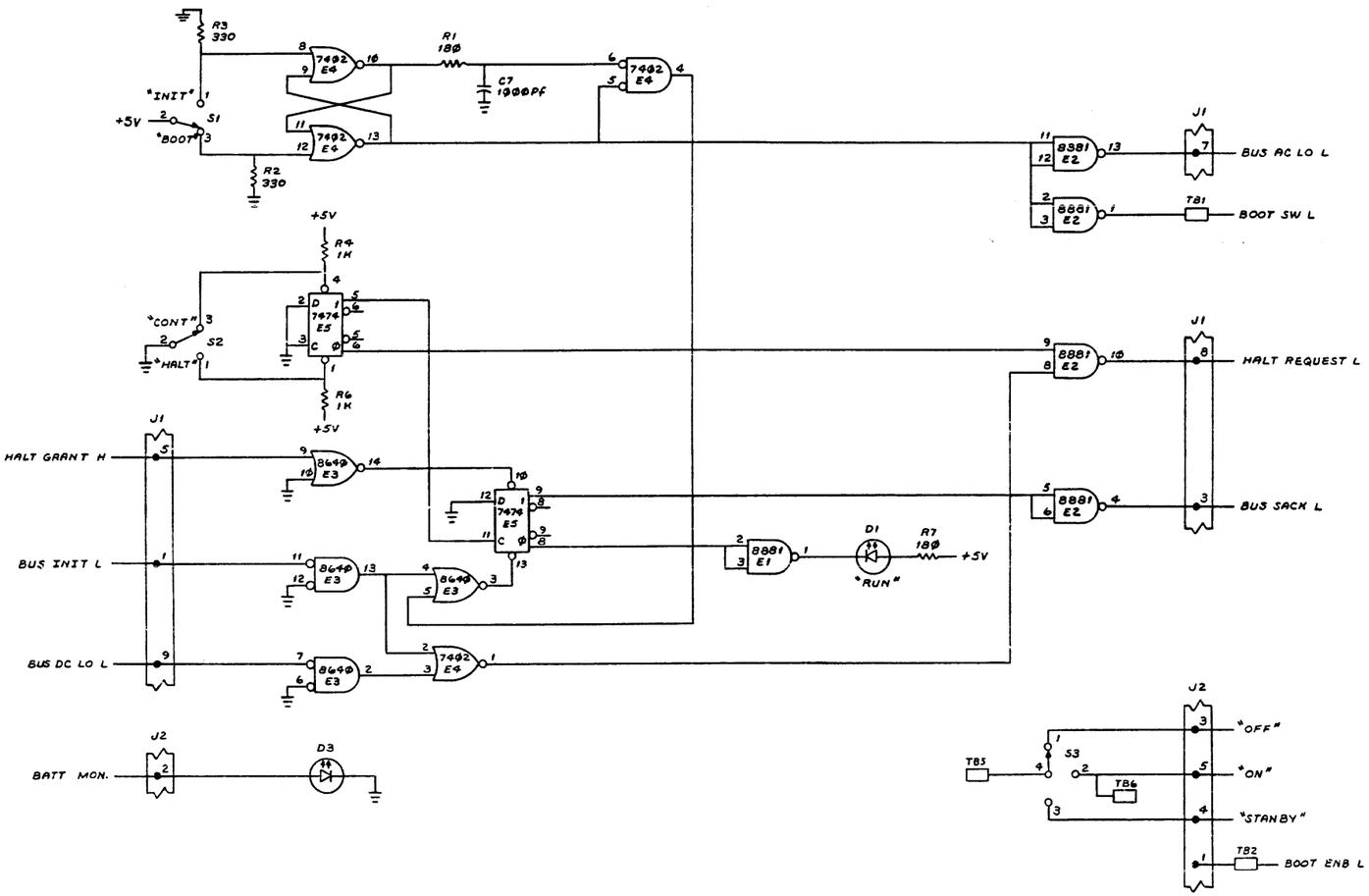
SIZE D | CODE CS | NUMBER 5411497-0-1 | REV. H

DIST.

DEC FORM NO. DNO 135-II

145

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REVISIONS		
CHK	CHANGE NO.	REV.

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

DEC FORM NO. D40 138

5411497-0-1 H

146

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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~~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	SIZE B / CODE DD / NUMBER KY11-LA / REV E
~~FIELD SERVC~~ //	~~DATE~~ //	DIST

EN-01062-1A-16-R972-(325)

DRB 106

ELECTRICAL (SECTION 1)

CUSTOMER PRINT SET	MFG SET	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 SET	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

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 KY11-LA	SHEET 2 OF 2	B	DD	KY11-LA	E

DRB 108

"THE MATERIAL HEREIN IS FOR INFORMATION PURPOSES ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE. DIGITAL EQUIPMENT CORPORATION ASSUMES NO RESPONSIBILITY FOR ANY ERRORS WHICH MAY APPEAR HEREIN."

FIELD MAINTENANCE PRINT SET

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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 I OF 1

DRN. D. HEALY	DATE 10/1/75	digital
CHK'D D. HEALY	DATE 10/1/75	TITLE: FIELD SERVICE MAINTENANCE PRINT SET MS11-E
PROJ. ENG.	DATE 10/22/75	SIZE B · CODE TC · NUMBER MS11-E-1 · REV.
FIELD SERV.	DATE 10-22-75	DIST.

EN-01124-16-NOTE(327)

DRB 124

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

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

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

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DCS M7847-0-1 REV K

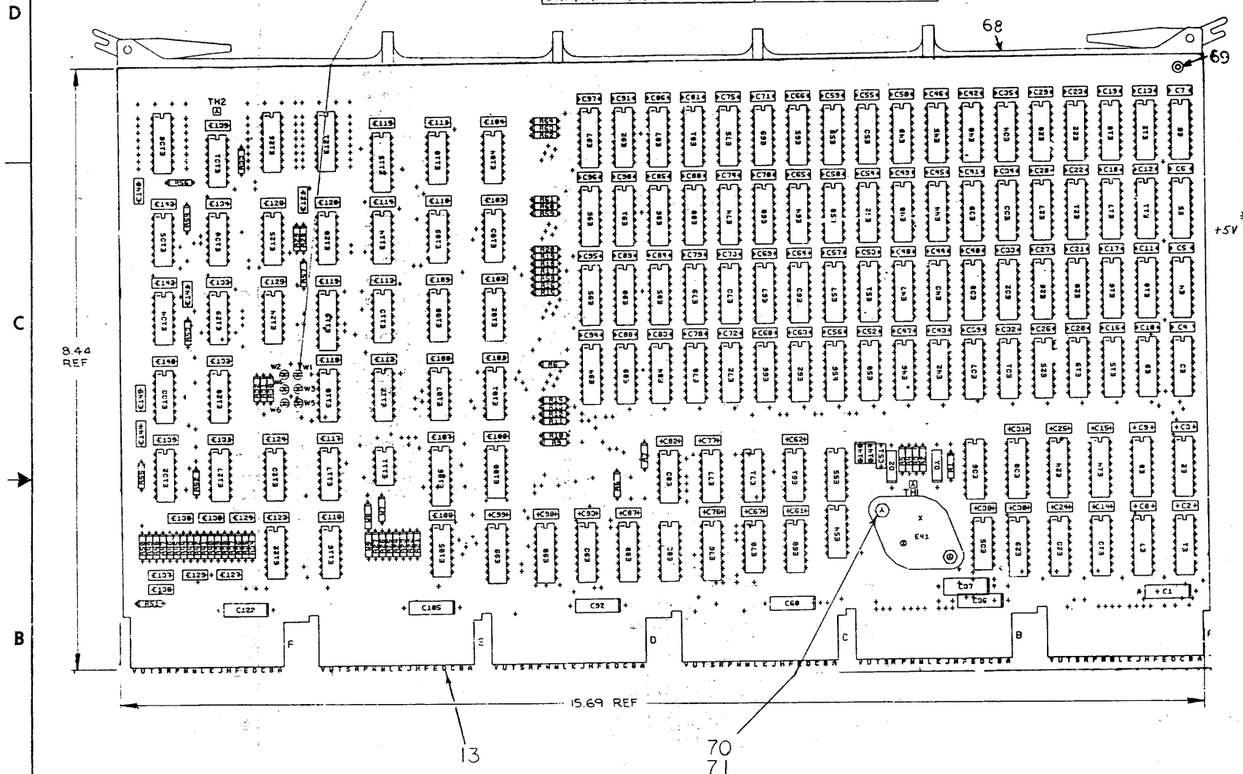
NOTES:

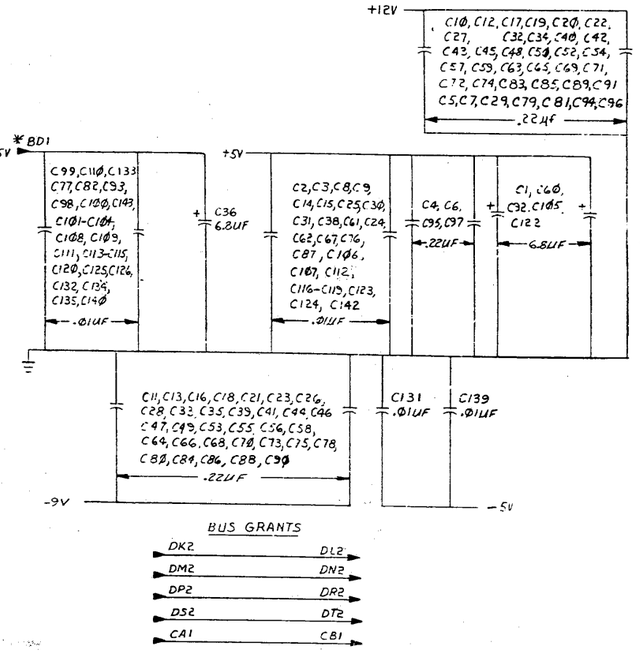
1. THERMAL COMPOUND (ITEM NO. 72) TO BE PLACED UNDER E41.

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).





BUS GRANTS

DK2	DL2
DM2	DN2
DP2	DR2
DS2	DT2
CA1	CB1

7475	12	5	—
74S153	8	16	—
75107	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
D	J. MANTON 5-19-76	M7847-00006	K
E	J. MANTON 9-7-76	M7847-00002	
F	J. MANTON 4-1-77	M7847-00005	J
G	J. MANTON 3-10-76	M7847-00003	F
H	J.C. MANTON 9-7-77	M7847-00004	
J	J. MANTON 12-9-75	M7847-00001	
K	J. MANTON 10-27-77	M7847-00007	

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

DRN 9/24/75
CHKD 6/16/75
ENG 6/11/75
PROJ. ENG 6/11/75
PROD. 6/11/75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 16

digital

TITLE: UNIBUS MOS MEMORY

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

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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; DI DIODE, ZENER IN757A, 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: DI DIODE, ZENER IN751A, 5.1V, 5% (1110994-00)
   R2 560 1/4W, 5%, CC (1301890-00)

VARIATIONS YA THRU YJ — ITEM 55; 4K16 PIN MOSRAM Y6B -5V(21-11749-00)
VARIATIONS BA THRU BJ — ITEM 65; MOSTEK 4096 (21-12726-00)
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 (21-13914-01)
VARIATIONS JA THRU JJ — ITEM 65; FUJITSU 8227 (21-14475-01)

PARTS LIST											
YJ	YH	YF	YE	YD	YC	YB	YA				
QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	1	1	1	1	1	1	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-YH-0~~	~~8~~
~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~1~~		~~DATA BASE TAPE~~	~~M7847-YJ-0~~	~~9~~
REF	REF	REF	REF	REF	REF	REF	REF		UNIT ASSEMBLY	D-UA-M7847-0-0	10
REF	REF	REF	REF	REF	REF	REF	REF		DRILL & ETCH DWG	D-MD-5011215-0-0	11
REF	REF	REF	REF	REF	REF	REF	REF		MODULE ECO HISTORY	B-MI-M7847-0-6	12
1	1	1	1	1	1	1	1		ETCHED CIRCUIT BOARD	5011215	13
57	57	57	57	57	57	57	57	C2,C3,C8,C9,C14,C15,C24,C25, C28,C31,C36,C61,C62,C67,C76, C77,C82,C87,C93,C98-C104, C106-C120, C123-C127, C131-C137, C139,C140,C142,C143	CAP .01UF, 100V, 20% DISC	1001610-01 (SEE NOTE 1)	14
-	-	-	-	37	37	37	37	C5,C7,C12,C13,C16,C19,C22,C23, C26,C29,C34,C35,C41,C42,C45, C46,C49-C51,C54,C55,C58,C59 C65,C66,C78,C71,C74,C75,C80,C81, C85,C86,C88,C91,C96,C97	CAP .22UF, 50V CER	1010274-01	15
73	73	73	73	-	-	-	-	C4-C7,C10-C13,C16-C23,C26-C29 C32-C35,C37-C59,C63-C66, C68-C75,C78-C81,C83-C86,C88-C91, C96-C97			
6	6	6	6	6	6	6	6	C1,C36 ,C60,C92,C105,C122	CAP 6.8UF, 35V, 10% S. TANT	1005306-00	16
1	1	1	1	1	1	1	1	C146	CAP 82PF, 100V, 5% DM	1000015-00	17
4	4	4	4	4	4	4	4	C126-C129, C138	CAP 22PF, 100V, 1% DM	1012121-00	18
2	2	2	2	2	2	2	2	C121,C141	CAP 22PF, 100V, 5% DM	1000021-00	19
2	2	2	2	2	2	2	2	C144, C145	CAP 56PF, 100V, 5% DM	1000025-00	20
1	1	1	1	1	1	1	1	D1	SEE NOTE #2		21
1	1	1	1	1	1	1	1	DZ	DIODE, ZENER IN751A, 5.1V, 5%	1110994-00	22
21	21	21	21	21	21	21	21	R9-R29, R57-R65	RES 18, 1/4W, 5%, CC	1302124-00	23
16	16	16	16	16	16	16	16	R7,R8,R21-R27 R30-R33,R52, R54,R55	RES 1K, 1/4W, 5%, CC	1300365-00	24
5	5	5	5	5	5	5	5	R3-R5, R28, R29	RES 560, 1/4W, 5%, CC	1301890-00	25
1	1	1	1	1	1	1	1	R2	SEE NOTE #2		26
~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~R83~~	~~RES 330, 1/4W, 5%, CC~~	~~1300309-00~~	~~27~~
1	1	1	1	1	1	1	1	R1	RES 10K, 1/4W 5%, CC	1300479-00	28
1	1	1	1	1	1	1	1	R48	RES 36K, 1/4W, 5%, CC	1302394-00	29
7	7	7	7	7	7	7	7	R37,R38,R41,R45,R47,R49,R50	RES 1K, 1/4W, 1%, MF	1303114-00	30
1	1	1	1	1	1	1	1	R34	RES 681, 1/4W, 1%, MF	1302872-00	31
3	3	3	3	3	3	3	3	R36, R46, R51	RES 4.7K, 1/4W, 5%, CC	1300447-00	32
2	2	2	2	2	2	2	2	R56, R53	RES 100, 1/4W, 5%, CC	1300229-00	33
1	1	1	1	1	1	1	1	R43	RES 1.54K, 1/4W, 1%, MF	1312480-00	34
1	1	1	1	1	1	1	1	R40	RES 1.05K, 1/4W, 1%, MF	1312479-00	35
1	1	1	1	1	1	1	1	R35	RES 2.7K, 1/4W, 5%, CC	1300426-00	36
1	1	1	1	1	1	1	1	R39	RES 6.8K, 1/4W, 5%, CC	1301423-00	37
1	1	1	1	1	1	1	1	R44	RES 12K, 1/4W, 5%, CC	13C0488-CO	38
1	1	1	1	1	1	1	1	R42	RES 4.3K, 1/4W, 5%, CC	1302389-00	39
6	6	6	6	6	6	6	6	E2,E8,E14,E24,E30 E36	IC 74174	1910652-00	40
5	5	5	5	5	5	5	5	E1,E7 E13,E23 E29	IC 8641	1911579-00	41

PARTS LIST											
YJ	YH	YF	YE	YD	YC	YB	YA				
QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	1	1	1	1	1	1	1	E35	IC 8881	1909705-00	42
6	6	6	6	6	6	6	6	E54,E56,E60,F61,E79,E71	IC 8640	1911469-00	43
2	2	2	2	2	2	2	2	E77, E1x5	IC 7474	1905567-00	44
1	1	1	1	1	1	1	1	E83	IC 74197	1910035-00	45
5	5	5	5	5	5	5	5	E76,E82,F88,E115 E119	IC 7475	1909050-00	46
3	3	3	3	3	3	3	3	E93, E98, E99	IC 745153	1910547-00	47
6	6	6	6	6	6	6	6	E100-E103, E107, E109	IC 745148	1910548-00	48
2	2	2	2	2	2	2	2	E104, E105	IC 7420	1905577-00	49
1	1	1	1	1	1	1	1	E106	IC 7483	1909932-00	50
3	3	3	3	3	3	3	3	E110, E113 E131	IC 7400	1905575-00	51
3	3	3	3	3	3	3	3	E112, E118 E123	IC 74S20	1910539-00	52
1	1	1	1	1	1	1	1	E117	IC 7486	1910011-00	53
1	1	1	1	1	1	1	1	E124	IC74S84	1910534-00	54
1	1	1	1	1	1	1	1	E125	IC 74S03	1910533-00	55
3	3	3	3	3	3	3	3	E127, E132, E133	IC 7517	1912268-00	56
1	1	1	1	1	1	1	1	E128	IC 74S85	1910535-00	57
1	1	1	1	1	1	1	1	E129	IC 7404	1909886-00	58
2	2	2	2	2	2	2	2	E114, E122	IC 7440	1905579-00	59
1	1	1	1	1	1	1	1	E116	IC 74S11	1910537-00	60
1	1	1	1	1	1	1	1	E108	IC 7437	1910081-00	61
1	1	1	1	1	1	1	1	E41	IC 7812	1912049-01	62
1	1	1	1	1	1	1	1	E134	IC 74S10	1910536-00	63
1	1	1	1	1	1	1	1	E130	IC 74S74	1910544-00	64
-	-	-	-	-	-	-	16	E12 F10,E22 E28,E34 F40, E45, E49, E50 E55,E63,E75 E81, E87,E92,E97	SEE NOTE #2		65
-	-	-	-	-	-	18	-	E6,E12,E18 E22,E28,E34 E40, E45,E49,E53,E59 E65,E69,E75, E81,E87 E92,E97			
-	-	-	-	-	32	-	-	E11,E12,E17,E18,E21 E22, E27,E28,E33,E34,E38 E40,E44, E45,E48,E49,E58,E59,E64,E65, E68,E69,E74,F75,E80 E81,E86, E87,E91 E92,E96,E97			
-	-	-	-	36	-	-	-	E5,E8,E11,E12,E17,E18 E21 E22, E27,E28,E33,E34,E38 E40,E44, E45,E48,E49,E52,E53,E58,E59, E64,E65,E68,E69,E74,E75 E80 E81,E86,E87,E91 E92,E96,E97			
-	-	-	40	-	-	-	-	E10-E12,E16-E18,E20-E22, E26-E28,E32-E34,E36-E40 E43-E45, E47-E49,E57-E59 E63-E65 E67-E69, E74-E75,E79-E81,E85-E87,E90-E92, E96-E97			
-	-	54	-	-	-	-	-	E4-E6,E10-E12,E16-E18,E20-E22, E26-E28,E32-E34 E38-E40 E42-E45 E47-E49,E51-E53 E57-E59,E62-E65, E67-E69,E73-E75 E79-E81,E85-E87, E90-E92 E95-E97			
-	64	-	-	-	-	-	-	E9-E12 E15-E22 E25-E28 E31-E34 E37-E40 E42-E49,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.		

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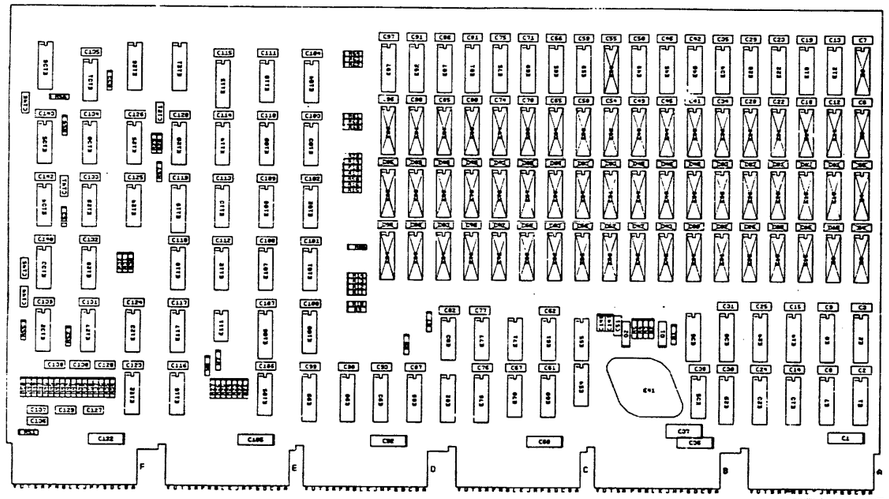
YJ	YH	YF	YE	YD	YC	YB	YA	PARTS LIST			
QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
1	1	1	1	1	1	1	1	E111	DIP SWITCH	1211164-01	66
6	6	6	6	6	6	6	6		SPLIT LUGS	9006735-00	67
1	1	1	1	1	1	1	1		HANDLE ASSY	1210711-02	68
12	12	12	12	12	12	12	12		EYELET	9006732-00	69
2	2	2	2	2	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 .1µF, 25V	1012084-01	75
2	2	2	2	2	2	2	2	C147, C148	CAP .47µF, 25V, CER	1010273-00	76
1	1	1	1	1	1	1	1	W8	JUMPER, WIRE INSULATED	9009185-00	77
1	1	1	1	1	1	1	1	E110	IC 74LS20	1912618-03	78
REF	REF	REF	REF	REF	REF	REF	REF		DRAWING DIRECTORY	B-DD-M7847-0	79

REVISIONS		
CHK	CHANGE NO.	REV

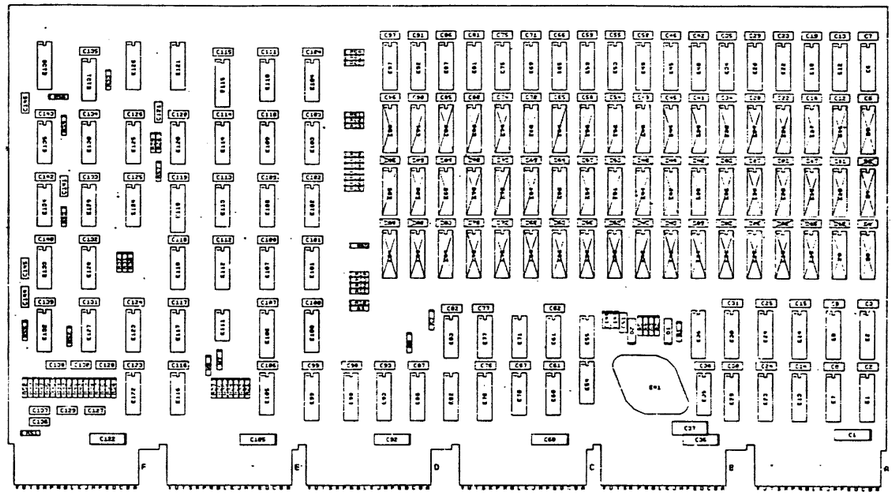
TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	CS	M7847-0-1	K
SCALE	SHEET 3 OF 16	DIST.		

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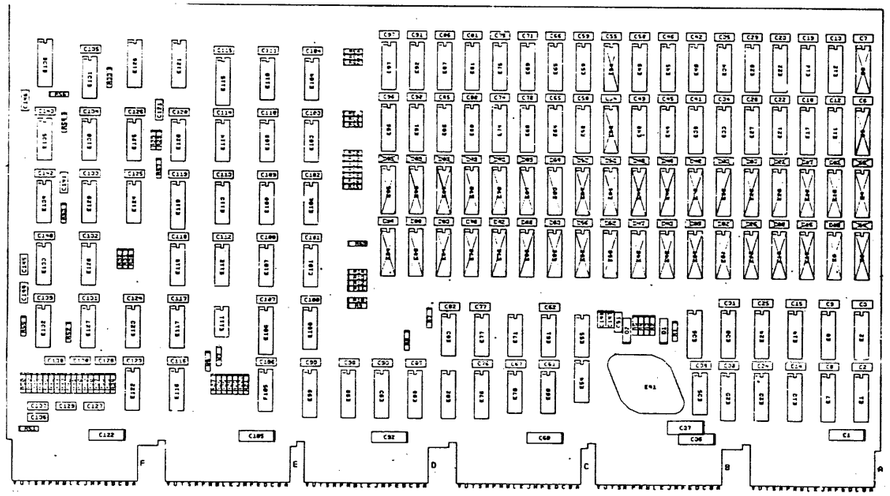
NOTE:
THESE OVERLAYS ONLY TO INDICATE POSITIONS FOR 4K MOS MEMORY IC's & .22 UF CAPS



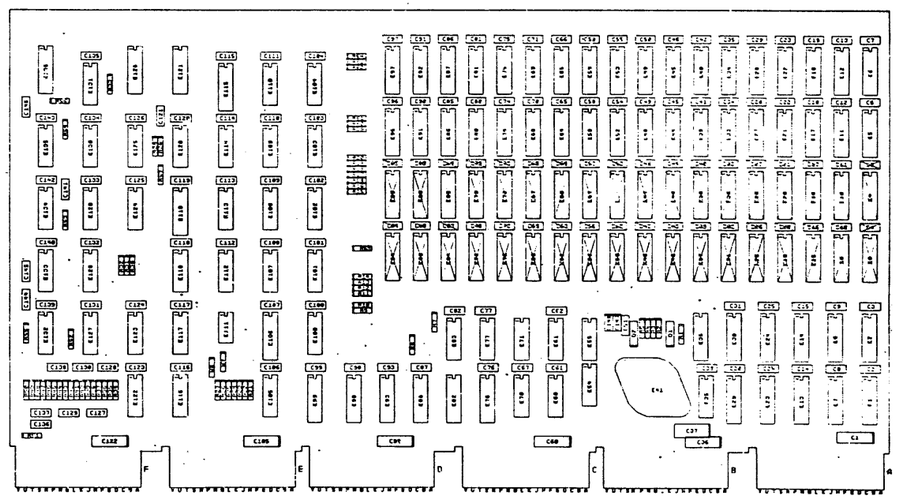
-YA;-BA;-CA;-DA,-EA;-FA;-HA;-JA.



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



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



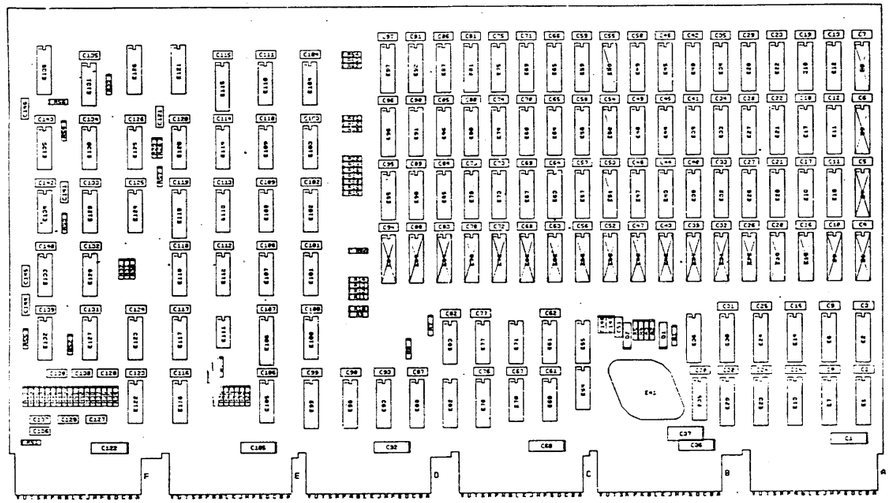
-YD,-BD,-CD,-DD,-ED,-FD,-HD,-JD.

REVISIONS		
CHK	CHANGE NO	REV.

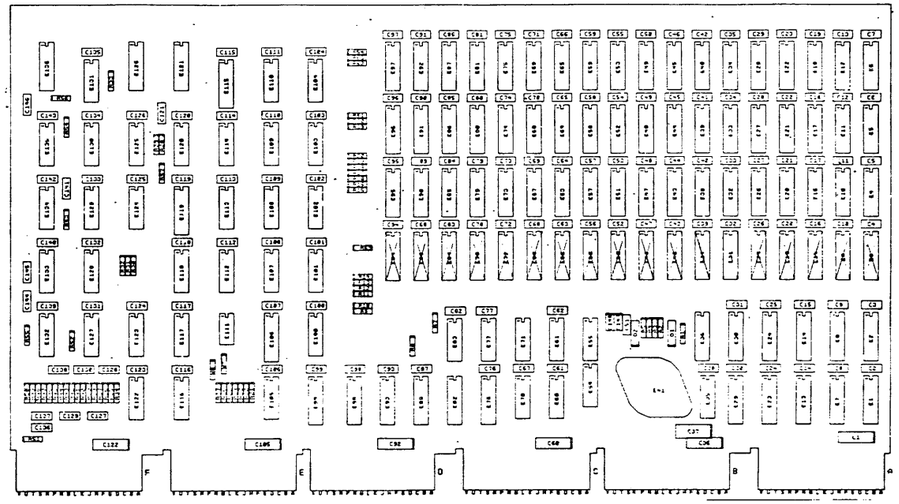
TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	DCS	M7847-Ø-1	K
SCALE — SHEET 4 OF 16	DIST.			

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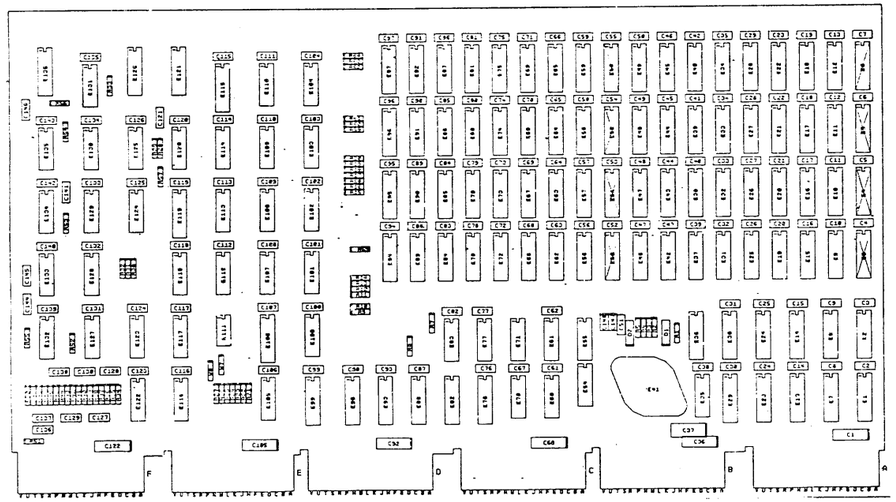
NOTE:
THESE OVERLAYS ONLY TO INDICATE PO ITIONS
FOR 4K MOS MEMORY IC's AND .22 uF CAPS.



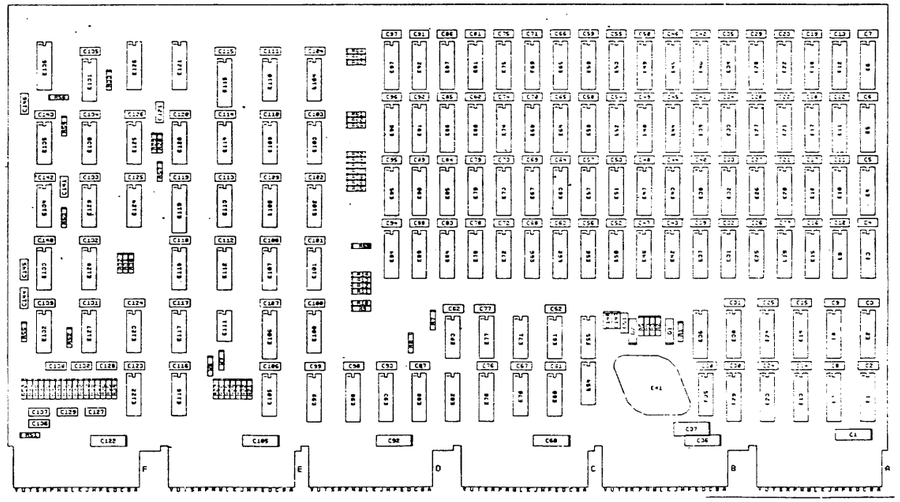
-YE,-BE,-CE,-DE,-EE,-FE,-HE,-JE



-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 1/1 SHEET 5 OF 12	DIST.			

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NOTE:
JUMPERS CONNECTED AS FOLLOWS

BA,CA,DA,EA,BB,CB,DB,EB, VA,YB,FA,HA,JA,FB,HB,JB	W3 - W4
BC,CC,DC,EC,BD,CD,DD,ED, YC,YD,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,YF,VH,YJ,FE,HE,JE, FF,HF,JF,FH,HH,JH,FJ,HJ,JJ	W1 - W2 W3 - W4 W5 - W6

SW DIP E111 — R21 1K, R22 1K, R23 1K, R24 1K, R27 1K — +5V

BUS A17 BS1 — BUS A16 BS2 — BUS A15 BR1 — BUS A14 BR2 — BUS A13 BP1 — BUS C0 L BU2 — BUS MSYN L BV1 — BUS DC LO L BF2 — BUS CI L BT2 — BUS A20 L BH2

8640 E79 — 8642 E71 — 8642 E71 — 8640 E61 — 8640 E61 — 8640 E79 — ADG C0 H [DR9] — 8640 E78 — ADG MSYN H [TC7] — 8640 E71 — ADG CI L [TC7] — 8640 E55 — DC LO H — 8640 E78 — ADG CI H [DR9] — 8640 E54 — ADG A0 H [DR9]

7486 E117 — 7483 E106 (C4, A4, B3, A3, B2, A2, A1, B1, C0; Σ4, Σ3, Σ2, Σ1) — 7451 E116 — 7404 E124 — 7404 E129 — 7420 L195 — 7404 E129 — DC LO L

AM8 A12 H — 7420 E105 — AM8 A11 H — W7 — R26 1K — +5V

7451 E116 — 7420 E112 — BANK A — W3 W4
7404 E124 — 7420 E112 — BANK B — W1 W2
7404 E129 — 7420 E112 — BANK C — W5 W6
7420 E118 — BANK D — W8 W9

R31 1K — R30 1K — R32 1K — +5V
7420 E123 — ADG ADDR PREDECIT H [TC7]
R25 1K — +5V

7475 E115
D0 — R3(1) K3(2) — ADG RSA L [DR9]
D2 — R2(1) R2(2) — ADG RSB L [DR9]
D3 — R3(2) R3(1) — ADG RTC L [DR9]
D1 — R1(1) R1(2) — ADG MSY L [DR9]
ENB1 ENB2

TC7 ADSTR H — E122 7440

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

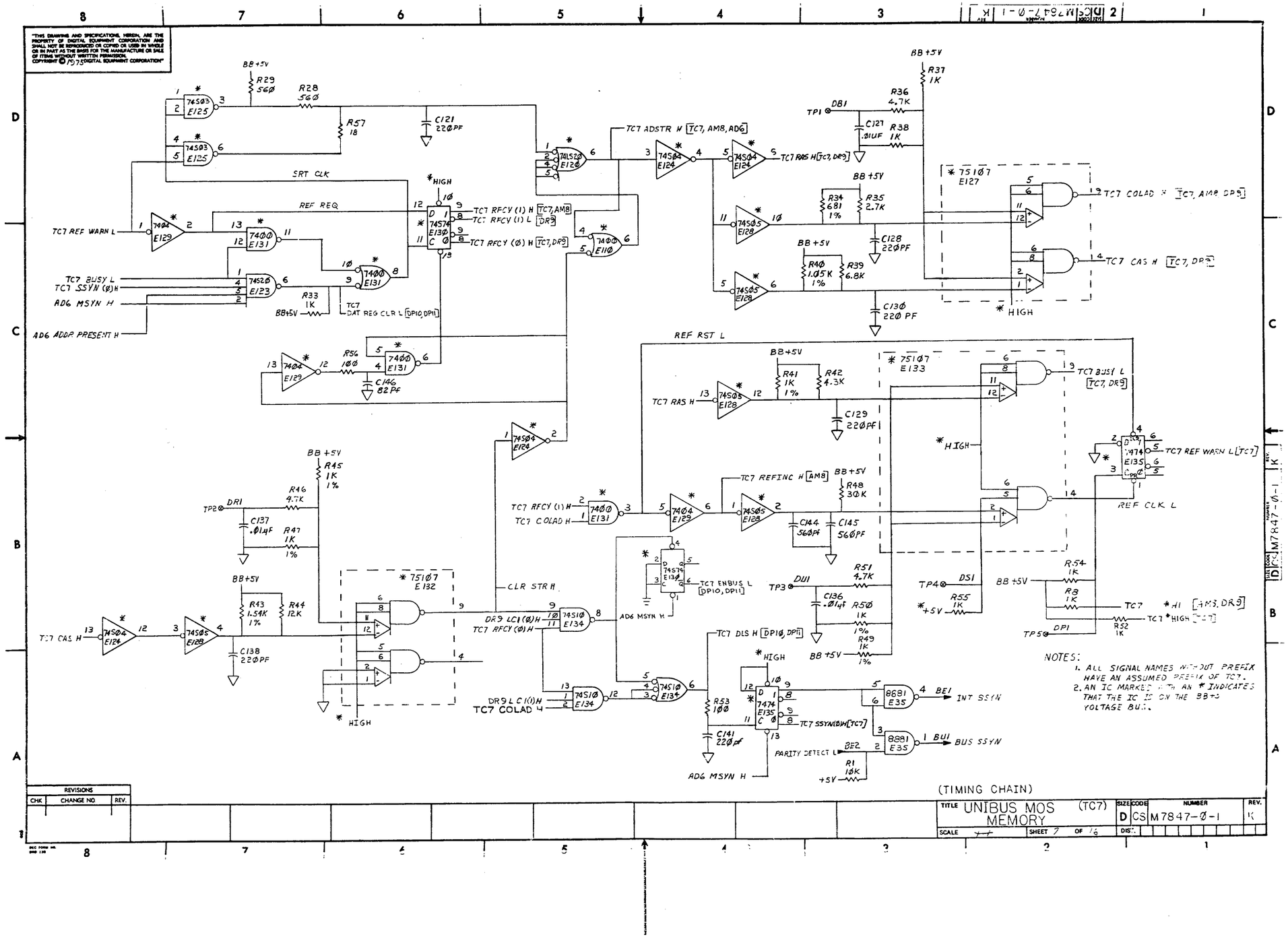
(ADDRESS DECODE)

TITLE: UNIBUS MOS MEMORY (AD6)
SIZE: D | CODE: CS | NUMBER: M7847-0-1 | REV: K
SCALE: — | SHEET 6 OF 16 | DIST.

DCS M7847-0-1 K

156

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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.

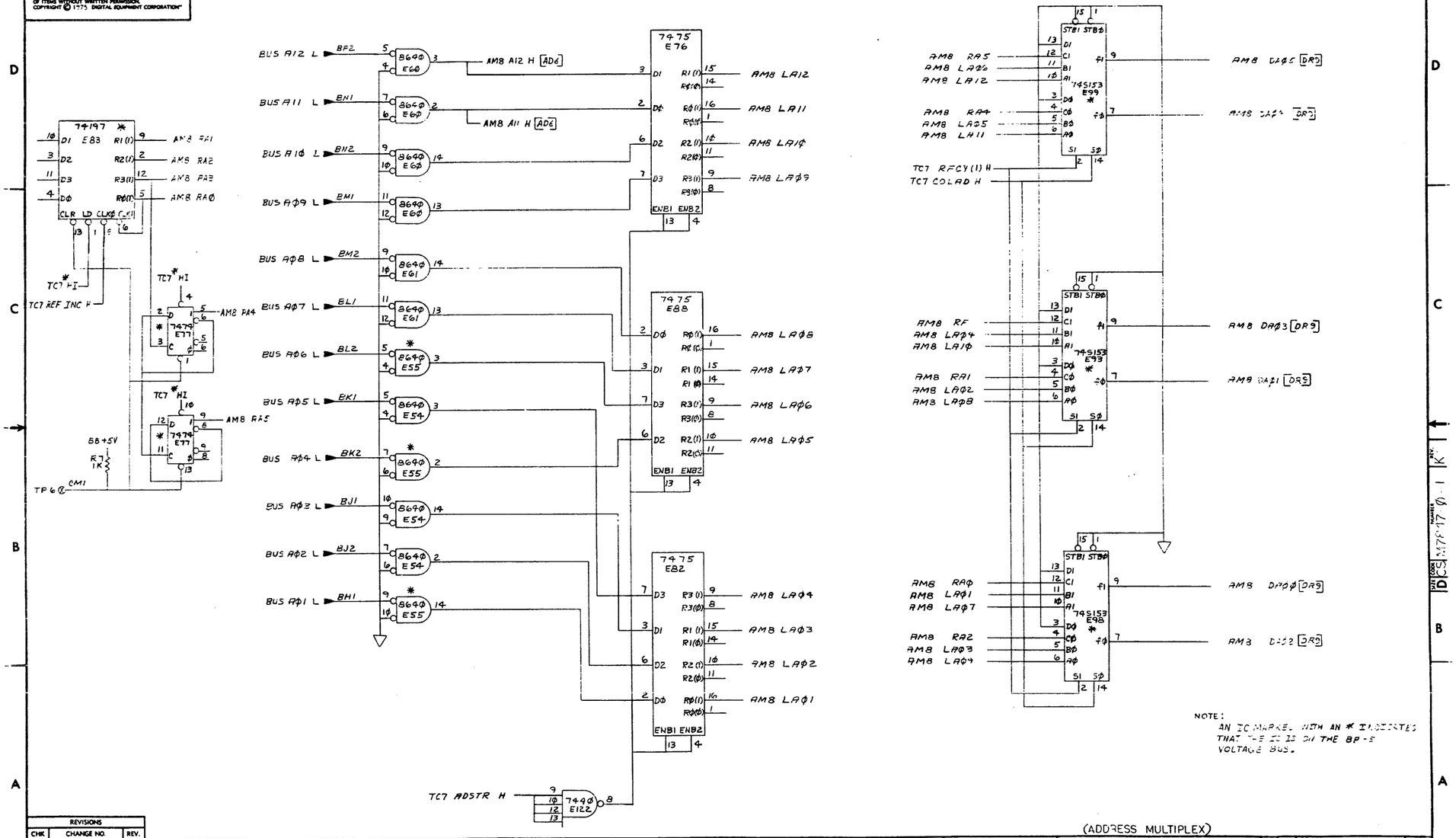
(TIMING CHAIN)

REVISIONS		
CHK	CHANGE NO	REV.

TITLE		SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	(TC7)	D	CS	M7847-Ø-1	K
SCALE	SHEET 7 OF 16	DIST.			

157

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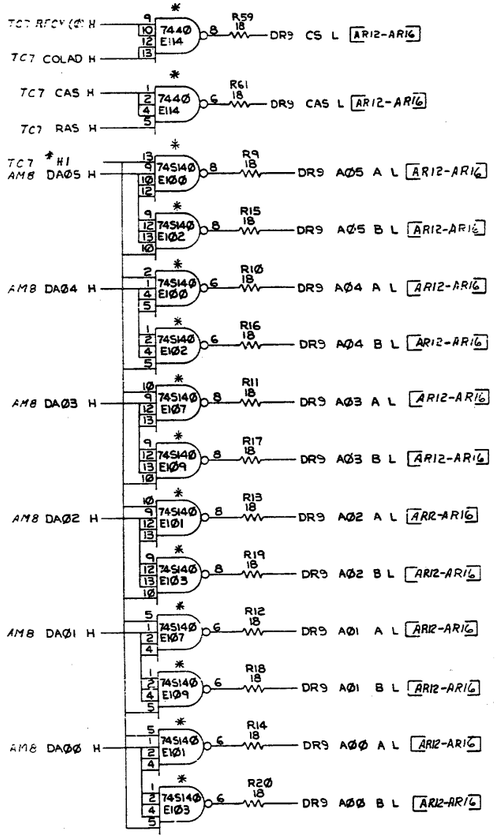
NOTE:
AN IC MARKED WITH AN * INDICATES THAT THE IC IS ON THE BP-5 VOLTAGE BUS.

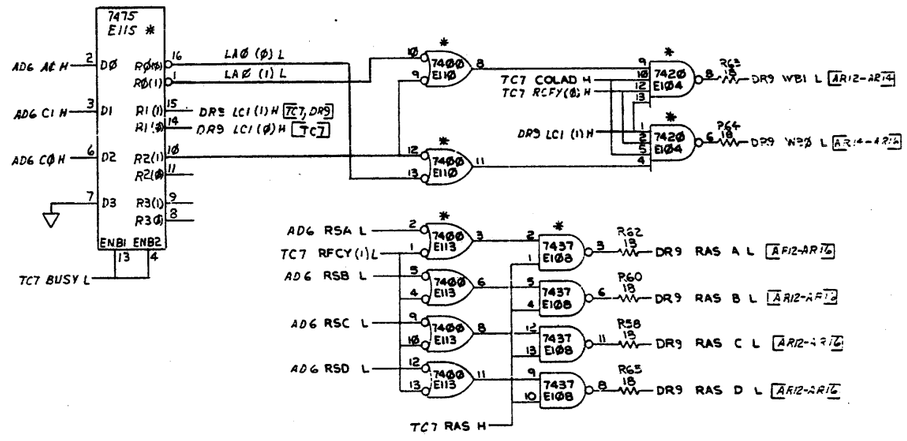
REVISIONS		
CHK	CHANGE NO.	REV.

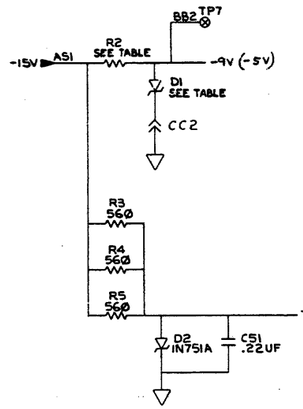
(ADDRESS MULTIPLEX)

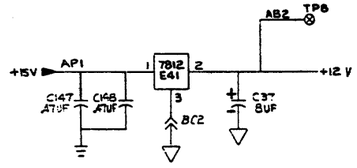
TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (AM8)	D	CS	M7847-0-1	K
SCALE —	SHEET 8 OF 16	DIST.		

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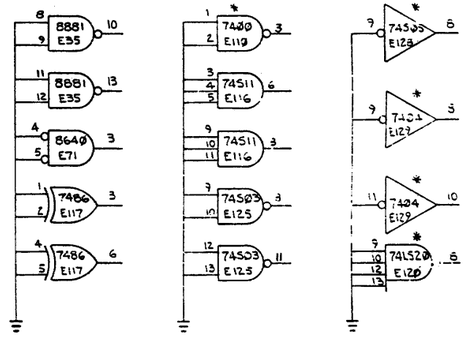






VARIATION	R2 VALUE	D1 VALUE
YA, YB, YC, YD YE, YF, YH, YJ	27Ø	IN 757A 9V
BA, CA, DA, EA, BB, CB, DB, EB, BC, CC, DC, EC, BD, CD, DD, ED, BE, CE, DE, EE, BF, CF, DF, EF, BH, CH, DH, EH, BJ, CJ, DJ & EJ.	56Ø Ω	IN751A -5V

(SPARES)



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: UNIBUS MOS MEMORY (D99)
SIZE: D | CODE: CS | NUMBER: M7847-D-1 | REV: K
SCALE: — | SHEET 9 OF 16 | DIST.

DEC FORM 36 D00 130

DIGITAL | DOCUMENT NUMBER: M7847-D-1 | REV: K

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AR12 DO 15 H
AR12 DO 14 H
AR12 DO 13 H
AR13 DO 12 H
AR13 DO 11 H
AR13 DO 10 H
AR13 DO 09 H
AR13 DO 08 H
AR14 DO P1 H

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

8641 E29 — 11 12 10; 5 4 6; 2 1 3; 14 15 13; 7 9
8641 E23 — 5 4 6; 2 1 3; 14 15 13; 11 12 10; 7 9
8641 E13 — 5 4 6; 2 1 3; 11 12 10; 7 9

AM2 → BUS DI5
AL1 → BUS DI4
AL2 → BUS DI3
AK1 → BUS DI2
AK2 → BUS DI1
AJ1 → BUS DI0
AJ2 → BUS DØ9
AH1 → BUS DØ8
AN1 → P1

TC7 ENBUS L
TC7 DAT REG CLR L
TC7 DLS H

74174 E36 — D2 R2(1) 6 7; DØ RØ(1) 3 2; D4 R4(1) 13 12; CLR CLK 1 9
74174 E30 — D2 R2(1) 6 7; DØ RØ(1) 3 2; D4 R4(1) 13 12; CLR CLK 1 9
74174 E24 — D2 R2(1) 6 7; DØ RØ(1) 3 2; D4 R4(1) 13 12; CLR CLK 1 9

DPIØ DI 15 H [AR12]
DPIØ DI 14 H [AR12]
DPIØ DI 13 H [AR12]
DPIØ DI 12 H [AR12]
DPIØ DI 11 H [AR13]
DPIØ DI 10 H [AR13]
DPIØ DI 09 H [AR13]
DPIØ DI 08 H [AR13]
DPIØ DI P1 H [AR14]

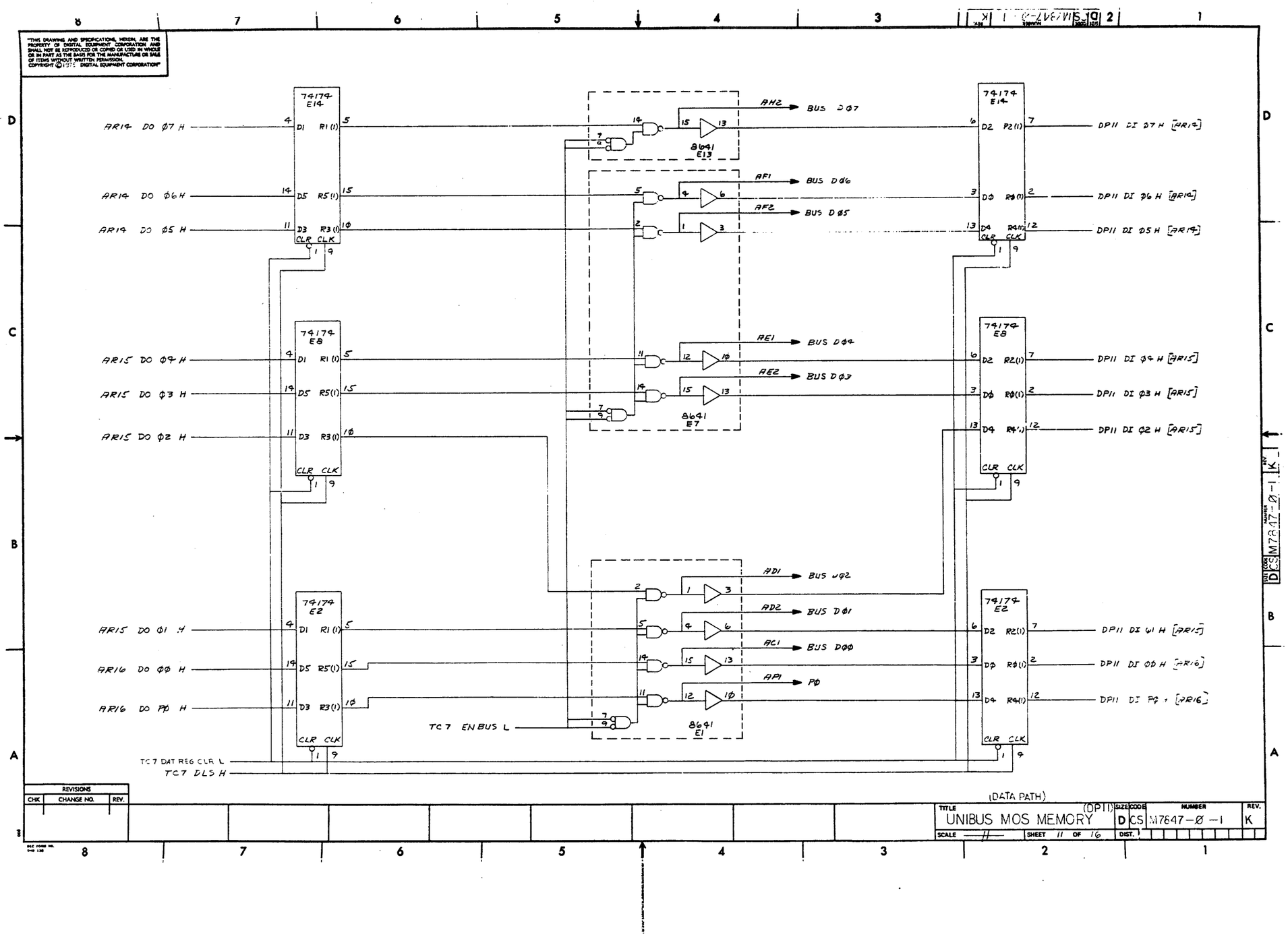
REVISIONS		
CHK	CHANGE NO.	REV.

(DATA PATH)

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

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REVISIONS		
CHK	CHANGE NO.	REV.

(DATA PATH)

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (DPII)	D	CS	M7647-Ø-1	K
SCALE —	SHEET 11 OF 16	DIST.		

16L

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

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

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

DPIØ DI 11H

DR9 CS L
DR9 CAS L
DR9 WBI L
DR9 PAS 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

E75	DPIØ DI 10H
E74	
E73	
E72	AR13 DO 11H [DP10]
E69	DPIØ DI Ø9H
E68	
E67	
E66	AR13 DO 10H [DP10]
E65	DPIØ DI ØBH
E64	
E63	
E62	AR13 DO Ø9H [DP12]
E59	
E58	
E57	
E56	AR13 DO ØBH [DP13]

4096 EXX
10 AØ5
11 AØ4
12 AØ3
6 AØ2
5 AØ1
4 AØØ
9 DIN
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	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (AR13)	D	CS	M7847-Ø-1	K
SCALE	SHEET 13 OF 16	DIST.		

DEC FORM NO. SMB 1.30

M7847-Ø-1 REV K

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DR9 A15 B L
DR9 A07 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

4096 E53 — DP11 DI 07 H
4096 E49 — DP11 DI 06 H
4096 E45 — DP11 DI 05 H
4096 E41

DP10 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 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 E51
4096 E47
4096 E43
4096 E38

DR9 RAS C L

4096 E50
4096 E46
4096 E42
4096 E37

AR19 DO 01 H [DP10] — AR19 DO 07 H [DP11] — AR19 06 H [DP11] — AR19 DO 05 H [DP11]

DR9 WB 0 L

DR9 RAS D L

4096 EXY
10 A05
11 A04
12 A03
6 A02
7 A01
5 A00
2 DIN
14 DOUT
CS CLSV/RRAS
13 15 3 9

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

REVISIONS		
CHK	CHANGE NO.	REV.

(ARRAY)

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY (AR19)	D	CS	M7847-0 -1	K
SCALE — // — SHEET 14 OF 16	DIST.			

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

DR9 A Ø5 B L
DR9 A Ø4 B L
DR9 A Ø3 B L
DR9 A Ø2 B L
DR9 A Ø1 B L
DR9 A ØØ B L

DP11 DI Ø4 H
DR9 CS L
DR9 CAS L
DR9 WB Ø L
DR9 RAS A L

DR9 RAS B L
DR9 A Ø5 A L
DR9 A Ø4 A L
DR9 A Ø3 A L
DR9 A Ø2 A L
DR9 A Ø1 A L
DR9 A ØØ A L

DR9 RAS C L

DR9 RAS D L

4Ø96 E34 — DP11 DI Ø3 H
4Ø96 E28 — DP11 DI Ø2 H
4Ø96 E22 — DP11 DI Ø1 H
4Ø96 E18
4Ø96 E33
4Ø96 E27
4Ø96 E21
4Ø96 E17
4Ø96 E32
4Ø96 E26
4Ø96 E20
4Ø96 E16
4Ø96 E31 — ARI5 DO Ø4 H [DP11]
4Ø96 E25 — ARI5 DO Ø3 H [DP11]
4Ø96 E19 — ARI5 DO Ø2 H [DP11]
4Ø96 E15 — ARI5 DO Ø1 H [DP11]

4Ø96 E4X
1Ø A Ø5
11 A Ø4
12 A Ø3
6 A Ø2
7 A Ø1
5 A ØØ
2 DIN
D OUT
14
CS CAS WR RAS
13 15 3 4

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

REVISIONS		
CHK	CHANGE NO	REV

(ARRAY)
(ARI5)

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	CS	M7847-Ø-1	K
SCALE	SHEET 15 OF 16	DIST.		

DCS M7847-Ø-1 K

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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 PØ H

DR9 CS L
DR9 CAS L
DR9 WBØ 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 — DPII DI ØØ H
4096 E12
4096 E5
4096 E11
4096 E4
4096 E1Ø
4096 E3
4096 E9

ARIG DO ØØ H [DPII]
ARIG DO PØ H [DPII]

4096 EXX

10	A05	
11	A04	
12	A03	
6	A02	DOUT 14
7	A01	
5	A00	
2	DIN	
	CS CLS 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-Ø-1 | REV: K
SCALE: +—+ | SHEET 16 OF 16 | DIST.

DEC FORM NO D80 137

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FIELD MAINTENANCE PRINT SET

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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	19JAN76

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	digital
CHK'D D. HEALY	DATE 10/1/75	TITLE: FIELD SERVICE MAINTENANCE PRINT SET KD11-D
PROJ. ENG. B. BERNSTEIN	DATE 10-22-75	
FIELD SERV.	DATE 10-22-75	

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		
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36		
ECO NO.		
ETCH REV.		
ENG.		
DATE		FIRST USED ON OPTION/MODEL: KDII-D

DRN. D. Sdao	DATE 10/20/75	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. D. Woody	DATE 10/22/75	
ENG. R. Barry	DATE 10-22-75	TITLE: MICRO PROGRAM FLOW KDII-D
PROJ. ENG. B BERNSTEIN	DATE 10-22-75	
PROD. R.K Peters	DATE 10/23/75	

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

```
; 1     ;CONTROL STORE ROM DEFINITIONS FOR THE PDP11/OSI
; 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(-F)=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 W1
; 25                                    ;BIT 1=SPA MUX W0
; 26                                    ;BY DEFAULT SPA MUX/=ROM SPA
; 27            RA=0
; 28            RS=1
; 29            RD=2
; 30            ROM SPA=3
; 31    ROM SPA/=0,4,37         ;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            SPA0=17
; 43    ;B REGISTER CONTROL
; 44    B MODE/=3,2,13,0                ;BY DEFAULT BMODE/=HOLD DATA
; 45            LOAD=0
; 46            SHFT L=1
; 47            SHFT R=2
; 48            HOLD=3
; 49    ;BRANCH UPON MICROCODE TEST (BUT) CONTROL
; 50    BUT/=0,3,16,0           ;BY DEFAULT BUT/=2 OR 40
; 51                                    ;OUTPUT ENABLED
; 52            NONE=0
; 53            BUT DEST=2
; 54            BUS STOV=0
; 55            BUS DBE=1
; 56            LOAD PSW=5
; 57            LOAD CC=3
```

```
; 56    ;UNIBUS GATING CONTROL SIGNALS
; 59    BUS CONTROL/=0,2,19,0   ;BY DEFAULT BUS CONTROL/=
; 60                            ;DATI FORCING A
; 61                            ;UNIBUS READ OPERATION
; 62            DATI=0
; 63            DATIP=1
; 64            DATO=2
; 65            DATOB=3
; 66    ;CPU DATA PATH A-MULTIPLEXER SELECT CONTROL
; 67    AMUX/=0,2,22,0          ;BY DEFAULT AMUX/ALU
; 68                            ;ALLOWING UB INPUTS
; 69                            ;TO PASS THROUGH MULTIPLEXER
; 70            UB=0
; 71            K=1
; 72            ALU=2
; 73            FSV=3
; 74    ;SCRATCH PAD READ/WRITE CONTROL
; 75    SP CONTROL/=0,2,9,0             ;BY DEFAULT SP CONTROL/=READ
; 76                                    ;FORCING SCRATCH PAD TO
; 77                                    ;READ ADDRESSED LOCATION
; 78            READ=0
; 79            WRITE LOW=1             ;LOW BYTE WRITTEN INTO SP
; 80            ENAB+1=2                ;SP WRITES A WORD AND
; 81                                    ;+1 IS FORCED ON B LEG OF ALU
; 82            WRITE WORD=3            ;WORD WRITTEN INTO SP
; 83
; 84    ;BRANCH ON BYTE INSTRUCTION CONTROL
; 85    BUT BYTE/=0,1,10,0              ;DEFAULT TO BRANCH DISABLED
; 86            BUT=1                   ;ENABLE BRANCH
; 87
; 88    ;BRANCH TO SERVICE CONTROL
; 89    BUT SERVICE/=0,1,11,0   ;DEFAULT TO BRANCH DISABLED
; 90            SERV=1          ;ENABLE BRANCH
; 91
; 92    ;DATA TRANSFER CONTROL SIGNAL
; 93    DAT TRAN/=0,1,17,0              ;BY DEFAULT DATA TRANSFER DISABLED
; 94            TRAN=1          ;TRANSFER ENABLED
; 95
; 96    ;ALLOW BYTE TRANSFER CONTROL SIGNAL
; 97    ALLOW BYTE/=1,1,24,0            ;BY DEFAULT ALLOW BYTE DISABLED
; 98            BYTE=0          ;ENABLE ALLOW BYTE
; 99
; 100   ;SIGN EXTEND CONTROL
; 101   ENAB SEX/=1,1,23,0             ;BY DEFAULT SIGN EXTEND DISABLED
; 102           SEX=0                   ;ENABLE SIGN EXTENSION OF
; 103                                   ;DATA IN B REGISTER
; 104
; 105   ;AUXILIARY ROM CONTROL ENABLE
; 106   AUX CONTROL/=0,1,36,0   ;BY DEFAULT AUX CONTROL IS DISABLED
; 107           AUX=1                   ;ENABLE AUXILIARY CONTROL
; 108
; 109   ;NEXT MICRO PC ADDRESS
; 110   J/=0,8,7,+
; 111
; 112   ;LOAD INSTRUCTION REGISTER ENABLE
; 113   LOAD IR/=0,1,39,0
; 114           LOAD=1
; 115
; 116
; 117   ;ROM USED LOCATIONS
```



```
; 118   NIL/=0,2,31,0
; 119
; 120
; 121   ;MACRO DEFINITIONS
; 122   BA_PC                          "ROM SPA/PC,SPA MUX/ROM SPA"
; 123   BA_RS                          "SPA MUX/RS"
; 124   BA_RD                          "SPA MUX/RD"
; 125   BA_R6                          "ROM SPA/R6,SPA MUX/ROM SPA"
; 126   BA_R10                         "ROM SPA/R10,SPA MUX/ROM SPA"
; 127   BA_R12                         "ROM SPA/R12,SPA MUX/ROM SPA"
; 128   BA_R13                         "ROM SPA/R13,SPA MUX/ROM SPA"
; 129   BA_R16                         "ROM SPA/R16,SPA MUX/ROM SPA"
; 130   RS_RS PLUS 2                   "ALU/A PLUS B PLUS 1,SPA MUX/RS,AMUX/ALU,SP CONTROL/ENAB+1,E
NAB SEX/SEX"
; 131   RS_RS MINUS 2                  "SPA MUX/RS,ALU/A MINUS B MINUS 1,SP CONTROL/ENAB+1,AMUX/ALU
,ENAB SEX/SEX"
; 132   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
; 133   RD_RD PLUS 2                   "ALU/A PLUS B PLUS 1,SPA MUX/RD,SP CONTROL/ENAB+1,AMUX/ALU,E
NAB SEX/SEX"
; 134   RD_RD MINUS 2                  "SPA MUX/RD,ALU/A MINUS B MINUS 1,SP CONTROL/ENAB+1,AMUX/ALU
,ENAB SEX/SEX"
; 135   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
; 136   R6_R6 MINUS 2                  "ROM SPA/R6,ALU/A MINUS B MINUS 1,SP CONTROL/ENAB+1,AMUX/ALU
,SPA MUX/ROM SPA,ENAB
; 137   R13_R13 PLUS 2                 "ALU/A PLUS B PLUS 1,ROM SPA/R13,SP CONTROL/ENAB+1,AMUX/ALU,
SPA MUX/ROM SPA,ENAB
; 138   R13_R13 PLUS 1                 "ALU/A PLUS 1,ROM SPA/R13,SP CONTROL/WRITE WORD,AMUX/ALU,SPA
 MUX/ROM SPA,ENAB SEX
; 139   B_B PLUS RS                    "ALU/A PLUS B,SPA MUX/RS,B MODE/LOAD,AMUX/ALU"
; 140   B_B PLUS RD                    "ALU/A PLUS B,SPA MUX/RD,B MODE/LOAD,AMUX/ALU"
; 141   PC_PC PLUS B                   "ALU/A PLUS B,ROM SPA/PC,SP CONTROL/WRITE WORD,AMUX/ALU,SPA
MUX/ROM SPA"
; 142   R13_R13 PLUS R13               "ALU/A PLUS A,ROM SPA/R13,SP CONTROL/WRITE WORD,AMUX/ALU,SPA
 MUX/ROM SPA"
; 143   B_R17                          "ROM SPA/R17,ALU/A,B MODE/LOAD,AMUX/ALU,SPA MUX/ROM SPA"
; 144   B_B                           "ALU/B,B MODE/LOAD,AMUX/ALU"
; 145   B_RS                          "SPA MUX/RS,B MODE/LOAD,AMUX/ALU"
; 146   B_B SEX                       "ALU/B,B MODE/LOAD,ENAB SEX/SEX,AMUX/ALU"
; 147   B_RD                          "SPA MUX/RD,B MODE/LOAD,AMUX/ALU"
; 148   B_PC                          "ROM SPA/PC,B MODE/LOAD,AMUX/ALU,SPA MUX/ROM SPA"
; 149   B_R12                         "ROM SPA/R12,B MODE/LOAD,AMUX/ALU,SPA MUX/ROM SPA"
; 150   B_R11 OP B                    "ROM SPA/R11,B MODE/LOAD,AUX CONTROL/AUX,AMUX/ALU,SPA MUX/RO
M SPA"
; 151   B_R11 OP B SEX                "ROM SPA/R11,B MODE/LOAD,AUX CONTROL/AUX,ENAB SEX/SEX,AMUX/A
LU,SPA MUX/ROM SPA"
; 152   B_R17 OP B                    "ROM SPA/R17,B MODE/LOAD,AUX CONTROL/AUX,AMUX/ALU, SPA MUX/R
OM SPA"
; 153   RDB_RD OP B                   "SPA MUX/RD,SP CONTROL/WRITE LOW,AUX CONTROL/AUX,AMUX/ALU"
; 154   B_RD OP B                     "SPA MUX/RD,AUX CONTROL/AUX,AMUX/ALU"
; 155   RS_0                          "ROM SPA/RS,ALU/0,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/ROM
 SPA"
; 156   R11_B                         "ROM SPA/R11,ALU/B,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/RO
M SPA"
; 157   R11_B SEX                     "ROM SPA/R11,ALU/B,SP CONTROL/WRITE WORD,ENAB SEX/SEX,AMUX/A
LU,SPA MUX/ROM SPA"
; 158   R17_B (SAME)                  "ALU/B,ROM SPA/SAME,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/R
OM SPA"
; 159   R10_B                         "ALU/B,ROM SPA/R10,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/RO
```

```
M SPA"
                        ; 160   RD_B                    "ALU/B,SPA MUX/RD,SP CONTROL/WRITE WORD,AMUX/ALU"
                        ; 161   RDB_B                   "ALU/B,SPA MUX/RD,SP CONTROL/WRITE LOW,AMUX/ALU"
M SPA"                  ; 162   R12_B                   "ALU/B,ROM SPA/R12,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/RO
 SPA"                   ; 163   PC_B                    "ALU/B,ROM SPA/PC,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/ROM
                        ; 164   RS_B                    "ALU/B,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"
M SPA"                  ; 166   R13_B                   "ALU/B,ROM SPA/R13,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX/RO
/ROM SPA"               ; 167   R16_0                   "ROM SPA/R16,ALU/ZERO,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX
/ROM SPA"               ; 168   R13_0                   "ROM SPA/R13,ALU/ZERO,SP CONTROL/WRITE WORD,AMUX/ALU,SPA MUX
                        ; 169   ASLB                    "B MODE/SHIFT L"
                        ; 170   CC_R14 AND B            "ROM SPA/R14,ALU/A(=B),OUT/LOAD CC,AMUX/ALU,SPA MUX/ROM SPA"
                        ; 171   CC_R14 OR B             "ALU/B + 0,ROM SPA/R14,OUT/LOAD CC,AMUX/ALU,SPA MUX/ROM SPA"
                        ; 172   NOP                     "ALU/B,B MODE/LOAD,AMUX/ALU"
                        ; 173   DATI                    "BUS CONTROL/DATI,DAT TRAN/TRAN"
                        ; 174   DATIP                   "BUS CONTROL/DATIP,DAT TRAN/TRAN"
                        ; 175   DATO                    "BUS CONTROL/DATO,DAT TRAN/TRAN"
                        ; 176   DATOB                   "BUS CONTROL/DATOB,DAT TRAN/TRAN"
                        ; 177   M_IR_UNIBUS DATA        "M MODE/LOAD"
                        ; 178   M_UNIBUS DATA           "M MODE/LOAD"
                        ; 179   PSW_B                   "MUX/LOAD PSW,ALU/B,AMUX/ALU"
                        ; 180   UNIBUS DATA_PSW         "AMUX/PS"
                        ; 181   UNIBUS DATA_B           "AMUX/ALU,ALU/B"
                        ; 182   ALBYT                   "ALLOW BYTE/BYTE"
                        ; 183   ENAB DBE                "BUT/ENAB DBE"
                        ; 184   ENABOVER                "BUT/ENAB STOV"
                        ; 185   COND CODES              "BUT/LOAD CC"
                        ; 186   BUT BYTE                "BUT BYTE/BUT"
                        ; 187   BUT DEST                "BUT/BUT DEST"
                        ; 188   BUT IR DECODE           "LOAD IR/LOAD"
                        ; 189   BUT SERVICE             "BUT SERVICE/SERV,B MODE/LOAD,SPA MUX/BA"
                        ; 190
```

```
; RABIN,SAC[142,31021   17:26 8-MAY-1984        MICRO CODE FILE PAGE 3        MICRO 13A(130)
; FLOWS.MIC     17:24 8-MAY-1984
                        ; 191   ;BRANCH ON SERVICE MICRO-STEP
                        ; 192   ;1
U 0000, 2000,0011,7500,0000 ; 193   SERV:  M_UNIBUS DATA,BUT 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 0100, 0416,0015,2716,0000 ; 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:    MA_PC,DATI,             ;FETCH NEW INSTRUCTION
U 0102, 2400,0111,7515,0000 ; 209           M_IR_UNIBUS DATA,J/F2   ;LOAD INTO IR REGISTER
                        ; 210
                        ; 211
                        ; 212           ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 0
                        ; 213   601
                        ; 214   SM0=11  R_RS,                   ;SOURCE OPERAND TO B REGISTER
U 0601, 2102,0015,7504,0000 ; 215           BUT BYTE,J/SM0=2        ;BRANCH ON BYTE INSTRUCTION
                        ; 216           ;IF BYTE INSTRUCTION GO TO SBE=1 (MUST BE EVEN ADDRESS)
                        ; 217   1041
                        ; 218   SM0=21  F11_B,                  ;STORE SOURCE OPERAND IN SP  REGISTER 11
U 0104, 0014,0415,2716,2000 ; 219                   BUT DEST,J/SERV ;BRANCH TO DESTINATION ROUTINE
                        ; 220           ;IF MODIFY INSTRUCTION AND IR<5:3>=0 GO TO MDM0=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 MOD=MODIFY INSTRUCTION AND IR<5:3>=0 GO TO MDM0=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 MOV=1
                        ; 237
                        ; 238
                        ; 239   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 1
                        ; 240   611
                        ; 241   SM1=11  MA_RS,DATI,ALBYT,       ;INPUT SOURCE OPERAND FROM MEMORY
                        ; 242                   R_UNIBUS DATA,  ;ALLOW BYTE TRANSFER
U 0601, 2102,0101,7504,0000 ; 243                   BUT BYTE,J/SM0=2;BRANCH ON BYTE INSTRUCTION
                        ; 244           ;IF ODD BYTE GO TO SM0=1
                        ; 245           ;IF EVEN BYTE GO TO SBE=1
                        ; 246           ;IF NOT BYTE FALL THROUGH TO SM0=2
                        ; 247
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                        ; 248
                        ; 249   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 2
                        ; 250   021
                        ; 251   SM2=11  RA_PS,DATI,ALBYT,       ;INPUT SOURCE OPERAND FROM MEMORY
                        ; 252           B_UNIBUS DATA,  ;ALLOW BYTE TRANSFER
U 0062, 2302,0101,7504,0000 ; 253           BUT BYTE,J/SM2=2;BRANCH ON BYTE INSTRUCTION                    7
                        ; 254         ;IF ODD BYTE GO TO SM80=1
                        ; 255         ;IF EVEN BYTE GO TO SM8=1
                        ; 256         ;IF NOT BYTE FALL THROUGH TO SM2=2
                        ; 257
                        ; 258   1141
U 0114, 2110,6014,3004,0004 ; 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   031
                        ; 264   SM3=11  RA_PS,DATI,                     ;INPUT ADDRESS OF SOURCE OPERAND
U 0063, 2520,0111,7504,0000 ; 265           B_UNIBUS DATA,J/SM3=2   ;(MUST BE EVEN ADDRESS)
                        ; 266
                        ; 267
                        ; 268   ;DOUBLE OPERAND INSTRUCTION SOURCE MODE 4
                        ; 269   041
                        ; 270   SM4=11  RS_PS 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   051
                        ; 278   SM5=11  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   061
                        ; 284   SM6=11  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   071
                        ; 290   SM7=11  RA_PC,DATI,              ;INPUT INDEX WORD FROM NEXT
U 0067, 2720,0111,7515,6000 ; 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   1061
                        ; 296   SME=11  B11_B SEX,               ;STORE SIGN EXTENDED SOURCE
U 0106, 0014,6414,2716,2000 ; 297           BUT DEST,J/SERV;OPERAND IN SP REGISTER 11
                        ; 298                                   ;BRANCH TO DESTINATION ROUTINE
                        ; 299         ;IF MODIFY INSTRUCTION AND IR<5:3>=0 GO TO MDM0=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>=0 GO TO NDM0=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 0 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   SM0=11  B17_B (SWAB),J/SB0=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, 2150,6004,3004,0020 ; 326   SM2E=11 RS_RS PLUS 2,ALBYT,J/SME=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, 2170,6004,3004,0020 ; 334   SM2O=11 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 0
                        ; 341   401
                        ; 342   MDM0=11 B_RD,                   ;DESTINATION OPERAND TO B REGISTER
U 0040, 2502,0015,7512,0000 ; 343           BUT BYTE,J/MDM0=2  ;BRANCH ON BYTE INSTRUCTION
                        ; 344         ;IF BYTE GO TO MDM=1
                        ; 345         ;IF NOT BYTE FALL THROUGH TO MDM0=2
                        ; 346   1241
                        ; 347   MDM0=21 B_R11 OP B,COND CODES,  ;OPERATE ON SOURCE AND DESTINATION
U 0124, 3120,0615,7516,3000 ; 348           J/MDM0=3            ;OPERANDS AND SET CONDITION
                        ; 349                                   ;CODES ACCORDINGLY
                        ; 350
                        ; 351
                        ; 352   ;MODIFY INSTRUCTION DESTINATION MODE 1
                        ; 353   411
                        ; 354   MDM1=11 RA_RD,PATIP,ALBYT,      ;INPUT DESTINATION OPERAND
                        ; 355           BUT BYTE,
U 0041, 2702,0121,7514,0000 ; 356           B_UNIBUS DATA,J/MDM1=2;FROM MEMORY
                        ; 357         ;IF ODD BYTE INSTRUCTION GO TO M10B=1
                        ; 358         ;IF EVEN BYTE INSTRUCTION GO TO M1EN=1
                        ; 359         ;IF NOT BYTE INSTRUCTION FALL THROUGH TO MD41=2
                        ; 360   1341
U 0134, 3200,0615,7516,3000 ; 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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                                    ;INPUT DESTINATION OPERAND FROM
                                    ;MEMORY
                                    ;BRANCH ON BYTE INSTRUCTION
                                      GO TO MODE=1
                                    ; GO TO MODE=1
                                    ; GO TO MODE=2

                                    ;ION DESTINATION MODE 2

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

                                    ;ADD 1+0 TO CONTENTS OF DESTINATION
                                    ;REGISTER

                                    ;ION DESTINATION MODE 3

                                    ;INPUT ADDRESS OF DESTINATION
                                    ;OPERAND FROM MEMORY

                                    ;ION DESTINATION MODE 4

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

                                    ;ION DESTINATION MODE 5

                                    ;SUBTRACT TWO FROM CONTENTS OF
                                    ;DESTINATION REGISTER PERMIT OVERFLOW

                                    ;ION DESTINATION MODE 6

                                    ;INPUT INDEX WORD FROM MEMORY

                                    ;ION DESTINATION MODE 7

                                    ;INPUT INDEX WORD FROM MEMORY

                                    ;ION EVEN BYTE ROUTINE FOR DESTINATION MODES 0 AND 1

                                    ;OND CODES,J/SERV  ;OPERATE ON SOURCE OPERAND AND
                                    ;DESTINATION OPERAND SIGN EXTENDED
                                    ;SET CONDITION CODES ACCORDING TO
                                    ;RESULTS

                                    ;ION ODD BYTE ROUTINE FOR DESTINATION MODE 1

                                    ;DESTINATION OPERAND WITH
                                    ;BYTES SWAPPED LOADED INTO
                                    ;SP REGISTER 17 TO FORM
                                    ;DATA DESTINATION OPERAND

                                    ;ION ODD BYTE ROUTINE FOR DESTINATION MODE 2

                                    ;ADD TWO TO CONTENTS OF DESTINATION
                                    ;REGISTER IF INSTRUCTION IS NOT
                                    ;A BYTE OR ONE IF INSTRUCTION
                                    ;IS A BYTE

                                    ;ION EVEN BYTE ROUTINE FOR DESTINATION MODE 2

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

                                    ;DESTINATION MODE 0

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

                                    ;OPERATE INSTRUCTION DESTINATION MODE 0

                                    ;DESTINATION OPERAND TO B REGISTER
                                    ;BRANCH ON BYTE INSTRUCTION

                                    ;BYTE,J/ROT0=2
                                    ; IF BYTE GO TO ROT0=2
                                    ; IF NOT BYTE FALL THROUGH TO ROT0=2

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

                                    ;ROTATE DESTINATION MODE 1

                                    ;INPUT DESTINATION OPERAND FROM
                                    ;MEMORY
                                    ;BYTE,J/ROT1=2 ;BRANCH ON BYTE INSTRUCTION
                                    ; IF BYTE GO TO ROT1=2
                                    ; IF NOT BYTE GO TO ROT1=1
                                    ; FALL THROUGH TO ROT1=1

                                    ;AUXILIARY CONTROL SET-UP,DESTINATION
                                    ;OPERAND ROTATED WITHOUT
                                    ;TRANSFER THROUGH ALU
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                ;ROTATE INSTRUCTION DESTINATION MODE 2
                ;
                ;
                ;
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U 0027, 7440,0111,7515,0000   ; 848                 B_UNIBUS DATI,J/JSR7=2
                              ; 849
                              ; 850
                              ; 851   ;RETURN FROM SUBROUTINE INSTRUCTION                                    17
                              ; 852   RTS:
U 0006, 7140,0015,7510,0000   ; 853   RTS=11:  B_RD,J/RTS=2          ;MOVE CONTENTS OF DESTINATION REGISTER
                              ; 854                                 ;TO REGISTER B
                              ; 855
                              ; 856
                              ; 857   ;RETURN FROM INTERRUPT INSTRUCTION
                              ; 858   RTI:
                              ; 859   RTI=11:  RS_R6,DATI,          ;INPUT STORED PC FROM PROCESSOR STACK
U 0003, 7220,0111,7515,0000   ; 860                 B_UNIBUS DATA,J/RTI=2 ;ADDRESS SPECIFIED BY STACK
                              ; 861                                 ;POINTER
                              ; 862
                              ; 863
                              ; 864   ;WAIT INSTRUCTION
                              ; 865   WT:
                              ; 866   WT=11:    BUT SERVICE,        ;BRANCH ON SERVICE, INPUT
U 0007, 7341,0011,7500,0000   ; 867                 B_UNIBUS DATA,J/WT=2  ;VECTOR FROM UNIBUS
                              ; 868           ;IF SERVICE REQUEST GO TO A=3
                              ; 869           ;IF NO SERVICE REQUEST FALL THROUGH TO A2
                              ; 870
                              ; 871
                              ; 872   ;RESET FROM BUT IR DECODE
                              ; 873   RSET:
U 0002, 0000,0015,2714,0000   ; 874   RSET=11: B_P,J/SERV             ;KICK MICRO-STEP
                              ; 875
                              ; 876
                              ; 877   ;CLEAR CONDITION CODE INSTRUCTION
                              ; 878   CCC:
U 0005, 7464,0017,7517,0000   ; 879   CCC=11:  R14_PSW,J/CCC=2 ;MOVE PROCESSOR STATUS TO
                              ; 880                                 ;SP REGISTER 14
                              ; 881
                              ; 882
                              ; 883   ;SET CONDITION CODE INSTRUCTION
                              ; 884   SCC:
U 0004, 7424,0017,7517,0000   ; 885   SCC=11:  R14_PSW,J/SCC=2 ;MOVE PROCESSOR STATUS TO
                              ; 886                                 ;SP REGISTER 14
                              ; 887
                              ; 888
                              ; 889   ;RESTART FROM POWER FAIL
                              ; 890   REST:
U 0001, 7440,0015,7515,0000   ; 891   REST=11: B_PC,J/REST=2                  ;PROGRAM COUNTER TO B REGISTER
                              ; 892
                              ; 893
                              ; 894
                              ; 895
                              ; 896
                              ; 897   TRAP=2: R6_R6 MINUS 2,ERROVER, ;SUBTRACT TWO FROM STACK
V 0020, 2230,7414,4515,0000   ; 898                 J/TRAP=3          ;POINTER,PERMIT OVERFLOW
                              ; 899   TRAP=3: BA_R6,DATO,EHAB DBE,   ;OUTPUT PROCESSOR STATUS TO
V 0101, 2120,6357,7515,4000   ; 900           UNIBUS DATA_PSW,J/TRAP=4  ;STACK,ENABLE DOUBLE
                              ; 901                                 ;BUS ERRORS
V 0105, 2210,7414,4515,4020   ; 902   TRAP=4: R6_R6 MINUS 2,ERROVER,J/TRAP=5 ;SUBTRACT TWO FROM STACK POINTER
                              ; 903                                 ;ALLOW OVERFLOW
V 0110, 2220,0015,7515,6000   ; 904   TRAP=5: B_PC,J/TRAP=6          ;MOVE CONTENTS OF PC TO B REGISTER
                              ; 905   TRAP=6: BA_R6,DATO,           ;OUTPUT PC TO STACK
V 0111, 2240,6155,2715,4030   ; 906                 UNIBUS DATA_B,J/TRAP=7
V 0112, 2260,0015,2714,0000   ; 907   TRAP=7: NOP,J/TRAP=8           ;KICK MICRO-STEP
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                              ; 908   TRAP=8: RA_R13,DATI,          ;INPUT NEW PC FROM MEMORY                  19
                              ; 909                 B_UNIBUS DATA,J/TRAP=9  ;ADDRESS SPECIFIED BY SP REGISTER
V 0113, 2320,0111,7516,6000   ; 910   TRAP=9: R13_R13 PLUS 2,J/TRAP=10    ;ADD TWO TO SP REGISTER 13
V 0115, 2410,6014,3216,0000   ; 911   TRAP=10:PC_B,J/TRAP=11  ;LOAD NEW PC
V 0120, 2434,6015,2715,6000   ; 912   TRAP=11:RA_R13,DATI,    ;INPUT NEW PROCESSOR STATUS INTO REGISTER B
                              ; 913                 B_UNIBUS DATA,J/TRAP=12 ;FROM LOCATION SPECIFIED BY
V 0121, 2440,0111,7516,6000   ; 914                 ;SP REGISTER 13,
                              ; 915   TRAP=12:        PSW_B,J/SERV    ;LOAD NEW PROCESSOR STATUS
V 0122, 0200,7215,2714,0000   ; 916                 ;INTO PSW REGISTER
                              ; 917
                              ; 918
                              ; 919
                              ; 920   P2:     PC_PC PLUS 2,           ;INCREMENT PC
V 0123, 0010,6014,3015,6000   ; 921                 BUT IR DECODE,J/SERV    ;BRANCH ON INSTRUCTION DECODE
                              ; 922           ;IF DOUBLE OPERAND INSTRUCTION GO TO SM8=1 THRU SM7=1
                              ; 923           ;DEPENDING ON SOURCE MODE,
                              ; 924           ;IF SINGLE OPERAND MODIFY INSTRUCTION GO TO MDM8=1 THRU MDM7=1
                              ; 925           ;DEPENDING ON DESTINATION MODE,
                              ; 926           ;IF SINGLE OPERAND NON-MODIFY GO TO MDN8=1 THRU MDN7=1
                              ; 927           ;DEPENDING ON DESTINATION MODE,
                              ; 928           ;IF JUMP TO SUBROUTINE (JSR) INSTRUCTION GO TO JSR8=1 THRU JSR7=1
                              ; 929           ;DEPENDING ON DESTINATION MODE,
                              ; 930           ;IF SWAP BYTE (SWAB) INSTRUCTION GO TO SWB8=1 THRU SWB7=1
                              ; 931           ;DEPENDING ON DESTINATION MODE,
                              ; 932           ;IF CLEAR CONDITION CODE INSTRUCTION GO TO CCC=1
                              ; 933           ;IF SET CONDITION CODE INSTRUCTION GO TO SCC=1
                              ; 934           ;IF ROTATE INSTRUCTION GO TO ROT8=1 THRU ROT7=1 DEPENDING ON
                              ; 935           ;DESTINATION MODE
                              ; 936           ;IF RETURN FROM SUBROUTINE (RTS) INSTRUCTION GO TO RTS=1
                              ; 937           ;IF BRANCH INSTRUCTION PC UNCHANGE GO TO SERV
                              ; 938           ;IF RETURN FROM INTERRUPT (RTI) INSTRUCTION GO TO RTI=1
                              ; 939           ;IF WAIT INSTRUCTION GO TO W=1
                              ; 940           ;IF RESET INSTRUCTION GO TO RSET=1
                              ; 941           ;ALL OTHER INSTRUCTIONS AND ILLEGAL INSTRUCTIONS GO TO SERV=1
                              ; 942
                              ; 943
V 0125, 2570,6014,3001,0000   ; 944   SM3=2:  RS_PS PLUS 2,J/SM3=3          ;ADD TWO TO CONTENTS OF SOURCE REGISTER
V 0127, 2614,6015,2716,0000   ; 945   SM3=3:  R15_B,J/SM3=4                ;TRANSFER ADDRESS OF SOURCE OPERAND
                              ; 946                                 ;TO SP REGISTER 15
                              ; 947   SM3=4:  RA_R15,DATI,ALBYT,    ;INPUT SOURCE OPERAND FROM MEMORY
                              ; 948                 B_UNIBUS DATA,  ;ALLOW BYTE TRANSFER
V 0130, 2102,0101,7516,0000   ; 949                 BUT BYTE,J/SM4=2;BRANCH ON BYTE INSTRUCTION
                              ; 950           ;IF ODD BYTE GO TO SB0=1
                              ; 951           ;IF EVEN BYTE GO TO SB8=1
                              ; 952           ;IF NOT BYTE GO TO SM4=2
                              ; 953
                              ; 954
                              ; 955   SM5=2:  RA_PS,DATI,           ;INPUT ADDRESS OF SOURCE OPERAND
V 0131, 2560,0111,7504,0000   ; 956                 B_UNIBUS DATA,J/SM3=3;(MUST BE AN EVEN ADDRESS)
                              ; 957
                              ; 958
V 0132, 2670,6014,3015,0000   ; 959   SM6=2:  PC_PC PLUS 2,J/SM6=3          ;ADD TWO TO PROGRAM COUNTER
V 0133, 2560,0015,2104,0000   ; 960   SM6=3:  B_P PLUS RS,J/SM3=3     ;ADD INDEX WORD TO CONTENTS
                              ; 961                                 ;OF SOURCE REGISTER TO OBTAIN
                              ; 962                                 ;SOURCE OPERAND ADDRESS
                              ; 963
                              ; 964
V 0135, 3010,6014,3015,0000   ; 965   SM7=2:  PC_PC PLUS 2,J/SM7=3     ;ADD TWO TO PROGRAM COUNTER
V 0140, 3020,0015,3104,0000   ; 966   SM7=3:  B_P PLUS RS,J/SM7=4       ;ADD INDEX WORD TO CONTENTS
                              ; 967                                 ;OF SOURCE REGISTER TO OBTAIN
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                                                ;ADDRESS OF SOURCE OPERAND
                                                ;ADDRESS
                                                ;ADDRESS OF SOURCE OPERAND
                                                ;ADDRESS TO SP REGISTER 12
                                                ;INPUT ADDRESS OF SOURCE OPERAND
V 0141,  3454,6015,2710,4000    R_LOAD,R_DATA,R_STORE,R_ADDRESS,R_SOURCE,R_OPERAND,R_INPUT,R_ADDRESS,R_OF,R_SOURCE,R_OPERAND,
                                  R_DATA,J/SERV,J/SP+3
                                                ;MOVE NEW SOURCE OPERAND
V 0147,  0000,0000,0000,0000    R_MOVE,R_NEW,R_SOURCE,R_OPERAND,
                                  J/SHIFT-1
                                                ;TO B REGISTER

                                                ;LOAD RESULT OF OPERATION
V 0149,  0000,0000,0000,0000    R_LOAD,R_RESULT,R_OF,R_OPERATION,
                                  J/STEP4
                                                ;INTO DESTINATION REGISTER

                                                ;OUTPUT RESULT OF OPERATION
V 0150,  0000,0155,2710,4000    R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/SERV
                                                ;TO ADDRESS SPECIFIED BY
                                                ;DESTINATION REGISTER

                                                ;OUTPUT RESULT OF OPERATION
V 0151,  3240,0155,2712,4000    R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/SERV
                                                ;TO ADDRESS SPECIFIED BY
V 0152,  0000,0000,3013,4000    R_ADD,R_TWO,R_TO,R_CONTENTS,R_OF,R_DESTINATION,
                                  J/SERV+2
                                                ;ADD TWO TO CONTENTS OF
                                                ;DESTINATION REGISTER
V 0153,  3330,6014,3014,4000    R_TRANSFER,R_ADDRESS,R_OF,R_DESTINATION,
                                  R_DATA,J/SERV
                                                ;TRANSFER ADDRESS OF DESTINATION
V 0155,  3414,6015,2716,4000    R_OPERAND,R_TO,R_SP,R_REGISTER,R_12,
                                  R_DATA,J/SERV
                                                ;OPERAND TO SP REGISTER 12
V 0160,  3322,0121,7516,4000    R_INPUT,R_DESTINATION,R_OPERAND,R_FROM,
                                  R_MEMORY,R_BRANCH,R_ON,R_BYTE,R_INSTRUCTION,
                                  R_DATA,J/SERV
                                                ;INPUT DESTINATION OPERAND FROM
                                                ;MEMORY
                                  R_BYTE,J/MEM+5
                                                ;BRANCH ON BYTE INSTRUCTION
                                  R_BYTE,J/MEM+1
                                                ;IF ODD BYTE GO TO MEM+1
                                                ;IF EVEN BYTE FALL THROUGH TO MEM+5
                                                ;IF NOT BYTE GO TO MEM+1
V 0161,  0000,0155,2716,4000    R_OUTPUT,R_RESULT,R_OF,R_OPERATION,R_TO,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION TO
                                                ;SP REGISTER 12

                                                ;INPUT ADDRESS OF DESTINATION
V 0162,  3324,0111,7513,4000    R_INPUT,R_ADDRESS,R_OF,R_DESTINATION,
                                  R_DATA,J/MEM+3
                                                ;OPERAND FROM MEMORY

                                                ;ADD TWO TO PC
V 0163,  3534,6014,3015,4000    R_ADD,R_TWO,R_TO,R_CONTENTS,R_OF,
                                  R_DESTINATION,R_REGISTER,R_TO,R_OBTAIN,
                                  R_DATA,J/MEM+3
                                                ;ADD INDEX WORD TO CONTENTS OF
                                                ;DESTINATION REGISTER TO OBTAIN
                                                ;ADDRESS OF DESTINATION OPERAND
V 0170,  3632,6014,3015,4000    R_ADDRESS,R_OF,R_DESTINATION,R_ADDRESS,
                                  R_MOVE,R_ADDRESS,R_TO,R_SP,R_REGISTER,
                                  R_DATA,J/MEM+5
                                                ;ADDRESS TO SP REGISTER 12
V 0171,  3640,6015,3110,4000    R_INPUT,R_DESTINATION,R_ADDRESS,R_OPERAND,
                                  R_MEMORY,R_DATA,J/MEM+3
                                                ;INPUT DESTINATION ADDRESS FROM
                                                ;MEMORY
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                                                ;MOVE LOW BYTE OF B REGISTER TO
                                                ;HIGH BYTE OF DESTINATION REGISTER
                                  R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY
                                                ;DESTINATION REGISTER
                                                ;FALLOW BYTE TRANSFERS
V 0172,  3674,6015,2716,4000    R_ADDRESS,R_OF,R_DESTINATION,R_ADDRESS,
                                  R_MOVE,R_ADDRESS,R_TO,R_SP,R_REGISTER,
                                  R_12,R_DATA,J/MEM+5
                                                ;ADDRESS OF DESTINATION ADDRESS
                                                ;MOVE ADDRESS TO SP REGISTER 12
V 0173,  3320,0111,7516,4000    R_INPUT,R_DESTINATION,R_OPERAND,R_FROM,
                                  R_MEMORY,R_DATA,J/MEM+3
                                                ;INPUT DESTINATION ADDRESS FROM
                                                ;MEMORY

                                                ;DESTINATION OPERAND MOVED
V 0175,  0000,6015,2712,4000    R_TO,R_REGISTER,R_B,R_SOURCE,R_OPERAND,R_AND,
                                  R_DESTINATION,R_OPERAND,R_SIGN,R_EXTENDED,
                                  R_SET,R_CONDITION,R_CODES,R_ACCORDING,
                                  R_TO,R_RESULTS
                                                ;RESULT OF OPERATION WITH BYTES
                                                ;SWAPPED, MOVED TO SP
                                                ;REGISTER 17
V 0200,  0000,6165,2714,4000    R_CONTENTS,R_OF,R_SP,R_REGISTER,R_17,
                                  R_MOVED,R_TO,R_REGISTER,R_B,
                                  R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/MEM+3
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY
                                                ;DESTINATION REGISTER
                                                ;FALLOW BYTE TRANSFERS
V 0201,  4140,6015,7517,6000    R_DESTINATION,R_OPERAND,R_MOVED,R_TO,
                                  R_REGISTER,R_B,
                                  R_B,R_SOURCE,R_OPERAND,R_AND,
                                  R_DESTINATION,R_OPERAND,R_SIGN,R_EXTENDED,
                                  R_SET,R_CONDITION,R_CODES,R_ACCORDING,
                                  R_TO,R_RESULTS
V 0202,  4056,2614,7516,4000    R_BYTES,R_SWAPPED,R_MOVED,R_TO,
                                  R_SP,R_REGISTER,R_17,
                                  R_CONTENTS,R_OF,R_SP,R_REGISTER,R_17,
                                  R_MOVED,R_TO,R_REGISTER,R_B,
                                  R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY THE
                                                ;SP REGISTER 12
V 0203,  4131,6015,2717,6000    R_DESTINATION,R_OPERAND,R_MOVED,R_TO,
                                  R_REGISTER,R_B,
                                  R_B,R_SOURCE,R_OPERAND,R_AND,
                                  R_DESTINATION,R_OPERAND,R_SIGN,R_EXTENDED,
                                  R_SET,R_CONDITION,R_CODES,R_ACCORDING,
                                  R_TO,R_RESULTS
V 0205,  4040,6015,7517,6000    R_BYTES,R_SWAPPED,R_MOVED,R_TO,
                                  R_SP,R_REGISTER,R_17,
                                  R_CONTENTS,R_OF,R_SP,R_REGISTER,R_17,
                                  R_MOVED,R_TO,R_REGISTER,R_B,
                                  R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/MEM+3
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY
                                                ;DESTINATION REGISTER
                                                ;FALLOW BYTE TRANSFERS
V 0207,  3240,6165,2714,4000    R_OUTPUT,R_RESULT,R_OF,R_OPERATION,R_TO,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY THE
                                                ;SP REGISTER 12

                                                ;DESTINATION OPERAND MOVED TO
V 0210,  4220,6015,7517,6000    R_B,R_REGISTER,R_17,
                                  R_B,R_SOURCE,R_OPERAND,R_AND,
                                  R_DESTINATION,R_OPERAND,R_SIGN,R_EXTENDED,
                                  R_SET,R_CONDITION,R_CODES,R_ACCORDING,
                                  R_TO,R_RESULTS
                                                ;REGISTER B
V 0211,  4240,2614,7516,4000    R_DESTINATION,R_OPERAND,R_MOVED,R_TO,
                                  R_B,R_REGISTER,R_11,R_OP,R_B,R_SOURCE,R_CODES,
                                  R_BYTES,R_SWAPPED,R_MOVED,R_TO,
                                  R_SP,R_REGISTER,R_17,
                                  R_CONTENTS,R_OF,R_SP,R_REGISTER,R_17,
                                  R_MOVED,R_TO,R_REGISTER,R_B,
                                  R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY THE
                                                ;SP REGISTER 12
V 0212,  4274,6015,2717,6000    R_DESTINATION,R_OPERAND,R_MOVED,R_TO,
                                  R_REGISTER,R_B,
                                  R_B,R_SOURCE,R_OPERAND,R_AND,
                                  R_DESTINATION,R_OPERAND,R_SIGN,R_EXTENDED,
                                  R_SET,R_CONDITION,R_CODES,R_ACCORDING,
                                  R_TO,R_RESULTS
V 0213,  4160,2614,7516,4000    R_BYTES,R_SWAPPED,R_MOVED,R_TO,
                                  R_SP,R_REGISTER,R_17,
                                  R_CONTENTS,R_OF,R_SP,R_REGISTER,R_17,
                                  R_MOVED,R_TO,R_REGISTER,R_B,
                                  R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY THE
                                                ;SP REGISTER 12
V 0215,  4040,6165,2710,4000    R_OUTPUT,R_RESULT,R_OF,R_OPERATION,R_TO,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY THE
                                                ;SP REGISTER 12

                                                ;DESTINATION OPERAND MOVED TO
V 0220,  4420,2615,7517,6000    R_B,R_REGISTER,R_17,
                                  R_B,R_SOURCE,R_OPERAND,R_AND,
                                  R_DESTINATION,R_OPERAND,R_SIGN,R_EXTENDED,
                                  R_SET,R_CONDITION,R_CODES,R_ACCORDING,
                                  R_TO,R_RESULTS
                                                ;REGISTER B
V 0221,  4440,2614,7516,4000    R_DESTINATION,R_OPERAND,R_MOVED,R_TO,
                                  R_B,R_REGISTER,R_11,R_OP,R_B,R_SOURCE,R_CODES,
                                  R_BYTES,R_SWAPPED,R_MOVED,R_TO,
                                  R_SP,R_REGISTER,R_17,
                                  R_CONTENTS,R_OF,R_SP,R_REGISTER,R_17,
                                  R_MOVED,R_TO,R_REGISTER,R_B,
                                  R_OUTPUT,R_RESULT,R_OF,R_OPERATION,
                                  R_DATA,J/SERV
                                                ;OUTPUT RESULT OF OPERATION
                                                ;TO ADDRESS SPECIFIED BY THE
                                                ;SP REGISTER 12
V 0222,  4474,6015,2717,6000    R_DESTINATION,R_OPERAND,R_MOVED,R_TO,
                                  R_REGISTER,R_B,
                                  R_B,R_SOURCE,R_OPERAND,R_AND,
                                  R_DESTINATION,R_OPERAND,R_SIGN,R_EXTENDED,
                                  R_SET,R_CONDITION,R_CODES,R_ACCORDING,
                                  R_TO,R_RESULTS
V 0223,  4120,2615,7517,6000    R_BYTES,R_SWAPPED,R_MOVED,R_TO,
                                  R_SP,R_REGISTER,R_17,
                                  R_CONTENTS,R_OF,R_SP,R_REGISTER,R_17,
                                  R_MOVED,R_TO,R_REGISTER,R_B,
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                        ; 1088
                        ; 1089
                        ; 1090
                        ; 1091
V 0225, 4610,6014,3013,0000 ; 1092  ADD3=21RD_PD PLUS 2,J/ADD3=3     ;ADD TWO TO CONTENTS OF DESTINATION
                        ; 1093                                      ;REGISTER
V 0230, 4634,6015,2716,4000 ; 1094  RDD3=31P12_R,J/RDD3=4           ;TRANSFER ADDRESS OF DESTINATION
                        ; 1095                                      ;OPERAND TO SP REGISTER 12
                        ; 1096  RDD3=41BA_R12,DATI,ALBYT,          ;INPUT DESTINATION OPERAND
                        ; 1097          B_UNIBUS DATA,             ;FROM MEMORY
V 0231, 3502,0101,7516,4000 ; 1098          BUT BYTE,J/RDD#=2       ;BRANCH IF BYTE INSTRUCTION
                        ; 1099          ;IF ODD BYTE GO TO RDDB=1
                        ; 1100          ;IF EVEN BYTE GO TO RDEB=1
                        ; 1101          ;IF NOT BYTE FALL THROUGH TO RDD#=2
                        ; 1102
                        ; 1103
                        ; 1104  RDD5=21 BA_RD,DATI,                 ;INPUT ADDRESS OF DESTINATION
V 0232, 4600,0111,7512,0000 ; 1105          B_UNIBUS DATA,J/RDD3=3  ;OPERAND
                        ; 1106
                        ; 1107
V 0233, 4730,6014,3015,0000 ; 1108  RDD6=21 PC_PC PLUS 2,J/RDD6=3    ;ADD TWO TO PC
V 0235, 4600,0015,3113,0000 ; 1109  RDD6=31B_R PLUS RD,J/RDD3=3      ;ADD INDEX WORD TO CONTENTS
                        ; 1110                                      ;OF DESTINATION REGISTER TO
                        ; 1111                                      ;OBTAIN ADDRESS OF DESTINATION
                        ; 1112                                      ;OPERAND
                        ; 1113
                        ; 1114
V 0242, 5033,6014,3015,0000 ; 1115  RDD7=21PC_PC PLUS 2,J/RDD7=3    ;ADD TWO TO PC
V 0241, 5040,0015,3113,0000 ; 1116  RDD7=31B_F PLUS RD,J/RDD7=4     ;ADD INDEX WORD TO CONTENTS
                        ; 1117                                      ;OF DESTINATION REGISTER TO OBTAIN
                        ; 1118                                      ;ADDRESS OF DESTINATION ADDRESS
V 0242, 5074,6015,2716,4000 ; 1119  RDD7=41 R12_F,J/RDD7=5          ;MOVE ADDRESS OF DESTINATION
                        ; 1120                                      ;ADDRESS TO SP REGISTER 12
                        ; 1121  RDD7=51BA_R12,DATI,                 ;INPUT DESTINATION ADDRESS
V 0243, 4600,0111,7516,4000 ; 1122          B_UNIBUS DATA,J/RDD3=3  ;FROM MEMORY
                        ; 1123
                        ; 1124
                        ; 1125
V 0244, 3540,0015,7517,6000 ; 1126  RDDB=21B_R17,J/RDEB=1            ;DESTINATION OPERAND MOVED
                        ; 1127                                      ;TO B REGISTER
                        ; 1128
                        ; 1129
                        ; 1130
                        ; 1131
                        ; 1132
                        ; 1133
                        ; 1134
V 0245, 3120,6615,7514,1000 ; 1135  RDIV=31 B_RD OP B,COND CODES,J/RDIV=3   ;NEW DESTINATION OPERAND
                        ; 1136                                      ;TRANSFERRED THROUGH ALU
                        ; 1137                                      ;ALLOWING CONDITION CODES TO
                        ; 1138                                      ;BE SET ACCORDINGLY
                        ; 1139
                        ; 1140
V 0246, 5170,6014,3012,0000 ; 1141  RDI3=21 PC_PD PLUS 2,J/RDT3=3    ;ADD TWO TO CONTENTS OF DESTINATION
                        ; 1142                                      ;REGISTER
V 0247, 5214,6015,2716,4000 ; 1143  RDI3=31 R12_F,J/RDI3=4          ;TRANSFER ADDRESS OF DESTINATION
                        ; 1144                                      ;OPERAND TO SP REGISTER 12
                        ; 1145  RDI3=41 BA_R12,DATIP,ALBYT,        ;INPUT DESTINATION OPERAND FROM
                        ; 1146                  B_UNIBUS DATA,     ;MEMORY
V 0250, 4702,0121,7515,4000 ; 1147                  BUT BYTE,J/RDI3=5  ;BRANCH ON BYTE INSTRUCTION
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                        ; 1148          ;IF ODD BYTE GO TO RDB3=1
                        ; 1149          ;IF EVEN BYTE GO TO RDB3=1
                        ; 1150          ;IF NOT BYTE FALL THROUGH TO RDI3=5
                        ; 1151  RDI5=21 BA_RD,DATI,                 ;INPUT ADDRESS OF DESTINATION
V 0251, 5160,0111,7514,0000 ; 1152          B_UNIBUS DATA,J/RDI3=3  ;OPERAND FROM MEMORY
                        ; 1153
                        ; 1154
V 0252, 5270,6014,3015,0000 ; 1155  RDI6=21 PC_PC PLUS 2,J/RDI6=3    ;ADD TWO TO PC
V 0253, 5160,0015,3113,0000 ; 1156  RDI6=31B_R PLUS RD,J/RDT3=3      ;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  RDI7=21 PC_PC PLUS 2,J/RDT7=3    ;ADD TWO TO PC
V 0255, 5340,0015,3113,0000 ; 1163  RDI7=31 B_F PLUS RI,J/RDT7=4     ;ADD INDEX WORD TO CONTENTS OF
                        ; 1164                                      ;DESTINATION REGISTER TO OBTAIN
                        ; 1165                                      ;ADDRESS OF DESTINATION ADDRESS
V 0256, 5374,6015,2716,4000 ; 1166  RDT7=41 R12_F,J/RDI7=5          ;MOVE ADDRESS OF DESTINATION
                        ; 1167                                      ;ADDRESS TO SP REGISTER 12
                        ; 1168  RDT7=51 BA_R12,DATI,                ;INPUT DESTINATION ADDRESS
V 0257, 5160,0111,7516,4000 ; 1169          B_UNIBUS DATA,J/RDI3=3  ;FROM MEMORY
                        ; 1170
                        ; 1171
V 0260, 3720,6615,7513,1000 ; 1172  RDTB=21B_RD OP B,COND CODES,J/RDB=2  ;NEW DESTINATION OPERAND
                        ; 1173                                      ;TRANSFERRED THROUGH ALU TO
                        ; 1174                                      ;HIGH BYTE OF B REGISTER
                        ; 1175                                      ;ALLOWING CONDITION CODES TO
                        ; 1176                                      ;BE SET ACCORDINGLY
                        ; 1177
V 0261, 5440,0015,7517,6000 ; 1178  RDB1=21 B_R17,J/RDB1=3           ;DESTINATION OPERAND MOVED TO
                        ; 1179                                      ;REGISTER B
V 0262, 4040,0015,2711,0000 ; 1180  RDB1=31 B_B,J/R10R=3             ;AUXILIARY CONTROL SET-UP,
                        ; 1181                                      ;DESTINATION OPERAND ROTATED
                        ; 1182                                      ;WITHOUT TRANSFER THROUGH ALU
                        ; 1183
V 0263, 5500,0015,7517,6000 ; 1184  RDB2=21 B_R17,J/RDB2=3           ;DESTINATION OPERAND MOVED TO
                        ; 1185                                      ;REGISTER B
V 0264, 4220,0015,2711,0000 ; 1186  RDB2=31 B_B,J/R20R=3             ;AUXILIARY CONTROL SET-UP,
                        ; 1187                                      ;DESTINATION OPERAND ROTATED
                        ; 1188                                      ;WITHOUT TRANSFER THROUGH ALU
                        ; 1189
V 0265, 5540,0015,7517,6000 ; 1190  RDB3=21 B_R17,J/RDB3=3           ;DESTINATION OPERAND MOVED TO
                        ; 1191                                      ;B REGISTER
V 0266, 4420,0015,2711,0000 ; 1192  RDB3=31 B_B,J/R30R=3             ;AUXILIARY CONTROL SET-UP,
                        ; 1193                                      ;DESTINATION OPERAND ROTATED
                        ; 1194
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V 0331, 6640,6155,2715,4040  ; 1312                    J/JSR1=6
V 0332, 6660,0015,7515,6000  ; 1313  JSR1=6: B_PC,J/JSR1=7                ;PC MOVED TO B REGISTER
V 0333, 6711,6015,2704,0000  ; 1314  JSR1=7: RS_B,J/JSR1=8                ;B REGISTER LOADED INTO SOURCE
                             ; 1315                                      ;REGISTER
V 0334, 6720,6015,7516,4040  ; 1316  JSR1=8: B_R12,J/JSR1=9               ;MOVE CONTENTS OF TEMPORARY STORAGE
                             ; 1317                                      ;TO B REGISTER
V 0335, 0014,6015,2715,6020  ; 1318  JSR1=9: PC_B,J/SERV                  ;LOAD CONTENTS OF B REGISTER
                             ; 1319                                      ;INTO PC
                             ; 1320
                             ; 1321
V 0336, 6550,6014,3012,0020  ; 1322  JSR2=2: RD_RD PLUS 2,J/JSR1=2;ADD TWO TO CONTENTS OF DESTINATION
                             ; 1323                                      ;REGISTER
                             ; 1324
                             ; 1325
                             ; 1326  JSR5=2: BA_RD,DATI,                 ;INPUT DATA FROM MEMORY ADDRESS
V 0337, 6540,0111,7510,0000  ; 1327                B_DATIBUS DATA,J/JSR1=2  ;SPECIFIED BY DESTINATION REGISTER
                             ; 1328
                             ; 1329
V 0340, 7430,6014,3015,5040  ; 1330  JSR6=2: PC_PC PLUS 2,J/JSR6=3        ;ADD TWO TO PC
V 0341, 6540,6015,3114,0000  ; 1331  JSR6=3: B_B PLUS RD,J/JSR1=2         ;ADD INDEX WORD TO CONTENTS OF
                             ; 1332                                      ;DESTINATION REGISTER
                             ; 1333
                             ; 1334
V 0342, 7474,6014,3015,6020  ; 1335  JSR7=2: PC_PC PLUS 2,J/JSR7=3        ;ADD TWO TO PC
V 0343, 7100,6015,3114,0000  ; 1336  JSR7=3: B_B PLUS RD,J/JSR7=4         ;ADD INDEX WORD TO CONTENTS OF
                             ; 1337                                      ;DESTINATION REGISTER
V 0344, 7134,6015,2716,4020  ; 1338  JSR7=4: R12_B,J/JSR7=5               ;MOVE CONTENTS OF B REGISTER
                             ; 1339                                      ;TO TEMPORARY STORAGE
                             ; 1340                                      ;REGISTER
                             ; 1341  JSR7=5: BA_R12,DATI,                ;INPUT DATA FROM MEMORY
V 0345, 6540,0111,7516,4000  ; 1342                B_DATIBUS DATA,J/JSR1=2  ;ADDRESS SPECIFIED BY
                             ; 1343                                      ;TEMPORARY STORAGE REGISTER
                             ; 1344
                             ; 1345
                             ; 1346
                             ; 1347
V 0346, 7174,6015,2715,6020  ; 1348  RTS=2:  PC_B,J/RTS=3                 ;MOVE CONTENTS OF B REGISTER TO PC
                             ; 1349  RTS=3:  BA_R6,DATI,                 ;INPUT DATA FROM MEMORY ADDRESS
                             ; 1350                B_DATIBUS DATA,       ;SPECIFIED BY STACK POINTER
V 0347, 7200,0111,7515,4000  ; 1351                     J/RTS=4
V 0350, 3130,6014,3015,4020  ; 1352  RTS=4:  R6_R6 PLUS 2,J/RTS=3;ADD TWO TO CONTENTS OF
                             ; 1353                                      ;STACK POINTER
                             ; 1354
                             ; 1355
                             ; 1356
                             ; 1357
V 0351, 7250,6014,3015,4020  ; 1358  RTI=2:  BA_R6 PLUS 2,J/RTI=3        ;ADD TWO TO STACK POINTER
V 0352, 7274,6015,2715,6020  ; 1359  RTI=3:  PC_B,J/RTI=4                 ;RESTORE STORED PC
                             ; 1360  RTI=4:  BA_R6,DATI,                 ;RESTORE PROCESSOR STATUS
                             ; 1361                B_DATIBUS DATA,       ;FROM STACK
V 0353, 7303,0111,7515,4000  ; 1362                     J/RTI=5
V 0354, 7320,7215,2714,0000  ; 1363  RTI=5:  PS_B,J/RTI=6
V 0355, 0010,6014,3015,4020  ; 1364  RTI=6:  R6_R6 PLUS 2,J/SERV          ;ADD TWO TO STACK POINTER
                             ; 1365
                             ; 1366
                             ; 1367
                             ; 1368
V 0356, 0160,6015,2714,0000  ; 1369  A=2:    B_B,J/A=1                   ;MOCK MICRO-STEP
V 0357, 0414,6015,2716,0020  ; 1370  A=3:    R13_B,J/TRAP=2  ;LOAD CONTENTS OF B REGISTER
                             ; 1371                                      ;INTO SP REGISTER 13
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                             ; 1372
                             ; 1373
                             ; 1374
                             ; 1375
V 0360, 0000,6615,4017,0000  ; 1376  CCC=2:  CC_R14 AND ~B,J/SERV         ;LOAD CONTENTS OF SP REGISTER 14
                             ; 1377                                      ;ADDED WITH COMPLEMENT OF
                             ; 1378                                      ;CONTENT OF B REGISTER INTO
                             ; 1379                                      ;CONDITION CODES
                             ; 1380
                             ; 1381
                             ; 1382
                             ; 1383
V 0361, 0000,6615,7117,0000  ; 1384  SCC=2:  CC_R14 OR B,J/SERV          ;LOAD CONDITION CODES WITH RESULT
                             ; 1385                                      ;OF ORING CONTENTS OF SP
                             ; 1386                                      ;REGISTER 14 WITH CONTENTS
                             ; 1387                                      ;OF B REGISTER.
                             ; 1388
                             ; 1389
                             ; 1390
                             ; 1391
V 0362, 7474,6015,2715,2020  ; 1392  REST=2: R5_B,J/REST=3                ;MOVE B REGISTER TO REGISTER 5
V 0363, 7514,6015,6316,6020  ; 1393  REST=3: R13_0,J/REST=4  ;ZERO SP REGISTER
V 0364, 7530,6014,3416,6000  ; 1394  REST=4: R13_R13 PLUS 2,J/REST=5 ;PERFORM NEXT 5 STEPS TO
V 0365, 7554,6015,1516,6000  ; 1395  REST=5: R13_R13 PLUS R13,J/REST=6       ;OBTAIN 24 AS THE CONTENTS
V 0366, 7574,6014,7416,6000  ; 1396  REST=6: R13_R13 PLUS 1,J/REST=7 ;OF SP REGISTER 13
V 0367, 7614,6015,1516,6000  ; 1397  REST=7: R13_R13 PLUS R13,J/REST=8
V 0370, 2274,6015,1516,6000  ; 1398  REST=8: R13_R13 PLUS R13,J/TRAP=0
                             ; 1399
                             ; 1400
                             ; 1401
                             ; 1402 ;UNUSED ROM LOCATIONS
                             ; 1403
                             ; 1404
V 0371, 0000,6011,7514,0000  ; 1405  NG=1:  J/SERV
V 0372, 0000,6011,7514,0000  ; 1406  NG=2:  J/SERV
V 0373, 0000,6011,7514,0000  ; 1407  NG=3:  J/SERV
V 0374, 0000,6011,7514,0000  ; 1408  NG=4:  J/SERV
V 0375, 0000,6011,7514,0000  ; 1409  NG=5:  J/SERV
V 0376, 0000,6011,7514,0000  ; 1410  NG=6:  J/SERV
V 0377, 0000,6011,7514,0000  ; 1411  NG=7:  J/SERV
                             ; 1412
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LOCATION / LINE NUMBER INDEX

LOC	0	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]	8[illegible]6
0020	898	811	816	823	829	835	842	848
0030	722	728	734	74[illegible]	745	751	75[illegible]	764
0040	343	356	37[illegible]	383	395	403	411	417
0050	479	491	501	513	51[illegible]	526	533	539
0060	215	243	253	265	271	279	285	291
0070	585	598	612	625	638	645	652	658
0100	715	9[illegible]	209	2[illegible]2	219	9[illegible]	297	32[illegible]
0110	9[illegible]4	9[illegible]6	9[illegible]7	9[illegible]9	259	91[illegible]	326	334
0120	911	913	915	921	348	944	422	945
0130	949	956	959	9[illegible]0	362	965	43[illegible]	43[illegible]
0140	966	97[illegible]	973	976	376	981	44[illegible]	454
0150	986	992	993	1[illegible]0[illegible]	3[illegible]8	1001	462	47[illegible]
0160	1[illegible]05	101[illegible]	1[illegible]15	1[illegible]18	483	1019	544	552
0170	1025	1026	1029	1032	5[illegible]6	1037	56[illegible]	56[illegible]
0200	1041	1045	1[illegible]48	1051	5[illegible]9	1054	[illegible]63	1[illegible]57
0210	1062	1065	1[illegible]68	1[illegible]7[illegible]	[illegible]93	1073	[illegible]78	67[illegible]
0220	1077	1[illegible]83	1083	1[illegible]86	[illegible]17	1092	[illegible]93	[illegible]85
0230	1094	1[illegible]98	1105	11[illegible]8	[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	1166	1169
0260	1172	1178	11[illegible]0	11[illegible]4	11[illegible]6	11[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	127[illegible]	1281	1286
0320	1288	12[illegible]9	1293	1294	1297	13[illegible]0	13[illegible]4	13[illegible]7
0330	1308	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	1363	1364	136[illegible]	137[illegible]
0360	137[illegible]	138[illegible]	1392	1393	1394	1395	139[illegible]	1397
0370	1398	14[illegible]5	14[illegible]6	1407	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) AMUX
ALU
K
PSW
UB
(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
NONE
(U) BYTE
BUT
(U) BYTE SERVICE
SERV
(U) DAT TRAN
TRAN
(U) ENAB SEX
SEX
(U) J
F-1
F-2
F1
F2
JMP1-1
JMP1-2
JMP2-1
JMP2-2
JMP3-1
JMP4-1
JMP5-1
JMP5-2
JMP6-1
JMP6-2
JMP6-3

```
JMP7=1          805
JMP7=2          806     1293
JMP7=3          1293    1294
JMP7=4          1294    1297
JMP7=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          438     678
M1EB=2          438     1040    1054
M10B=1          430
M10B=2          430     1045
M1GB=3          1045    1047    1180
M10B=4          1048    1051
M10B=5          1051    1054
M2E8=1          446     693
M2E8=2          446     1056    1070
M20B=1          454
M20B=2          454     1062
M20B=3          1062    1064    1180
M20B=4          1065    1068
M20B=5          1066    1070
M3EB=1          462     708
M3EB=2          462     1072    1086
M30B=1          470
M30B=2          470     1077
M30B=3          1077    1079    1192
M30B=4          1080    1083
M30B=5          1083    1086
MDB=1           422
MDB=2           422     1037    1172
MDM0=1          342
MDM0=2          343     347
MDM0=3          348     577     981     1135    1210    1352
MDM1=1          354     395
MDM1=2          356     361     643
MDM1=3          362     965     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    1026
MDM7=4          1026    1029
MDM7=5          1029    1031
MOV=1           576
NDEB=1          544     568     1126
NDM0=1          478
NDM0=2          479     483     491     548     1098
NDM1=1          489     518
NDM2=1          499
NDM2=2          501     506
NDM3=1          512
NDM3=2          513     1092
NDM3=3          1092    1094    1105    1169    1122
NDM3=4          1094    1096
NDM4=1          516
NDM5=1          526
NDM5=2          526     1104
NDM6=1          532
NDM6=2          533     1108
NDM6=3          1108    1109
NDM7=1          536
NDM7=2          539     1115
NDM7=3          1115    1116
NDM7=4          1116    1119
NDM7=5          1119    1121
NDORA=1         552     560
NDUR=2          552     1126
NG=1            1405
NG=2            1406
NG=3            1407
NG=4            1408
NG=5            1409
NG=6            1410
NG=7            1411
NMEB=1          568
NMOB=1          560
REB1=1          678
REB2=1          693
REB3=1          708
REST=1          691
REST=2          691     1302
REST=3          1392    1393
REST=4          1393    1394
REST=5          1394    1395
REST=6          1395    1396
```

RESET=7 1396 1397
RESI=8 1397 1398
ROB1=1 670
ROB1=2 676 1178
ROB1=3 1176 1180
ROB2=1 685
ROB2=2 685 1184
ROB2=3 1184 1186
ROB3=1 700
ROB3=2 700 1190
ROB3=3 1190 1192
ROT0=1 584
ROT0=2 585 589
ROT0=3 589 1135
ROT1=1 596 638
ROT1=2 596 603
ROT2=1 610
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=1 663
ROT8=2 663 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
SPE=1 296 326 976
SR0=1 326 334
SR0=2 326 976
SCC=1 885
SCC=2 885 1384
SERV 193 219 297 483 544 874 915 921 981 986 993 1010
1037 1041 1071 1200 1236 1278 1318 1364 1376 1384 1405 1406
1407 1409 1409 1410 1411
SM0=1 214
SM0=2 215 218 243 259 949
SM1=1 241 271
SM2=1 251
SM2=2 253 259

SM3=1 264
SM3=2 265 944
SM3=3 944 945 956 960 973
SM3=4 945 947
SM4=1 270
SM5=1 278
SM5=2 279 955
SM6=1 284
SM6=2 285 959
SM6=3 959 960
SM7=1 290
SM7=2 291 965
SM7=3 965 966
SM7=4 966 970
SM7=5 970 972
SMBE=1 326
SMB0=1 334
SMB4=1 722
SMB4=2 722 1205
SMB4=3 1205 1210
SMB1=1 727 745
SMB1=2 728 1215
SMB1=3 1215 1220
SMB2=1 733
SMB2=2 734 1225
SMB2=3 1225 1230
SMB2=4 1230 1233
SMB2=5 1235 1236
SMB3=1 739
SMB3=2 740 1240
SMB3=3 1240 1242 1257 1261 1273
SMB3=4 1242 1244
SMB3=5 1246 1247
SMB3=6 1247 1251
SMB4=1 745
SMB5=1 751
SMB5=2 751 1256
SMB6=1 757
SMB6=2 758 1260
SMB6=3 1260 1261
SMB7=1 763
SMB7=2 764 1266
SMB7=3 1266 1267
SMB7=4 1267 1270
SMB7=5 1270 1272
TRAE=1 902
TRAP=10 910 911
TRAP=11 911 912
TRAP=12 913 915
TRAP=2 902 897 1370
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=1 966 1369
W=2 967 1369
W=3 1370

32

33

```
(U) LOAD IR                 113
        LOAD                114   921
(U) MACRO%                  122
        ALBYT               102   241   251   270   320   334   354   366   394   489   499   510
                            560   568   596   614   637   947   993  1003  1040  1056  1072  1096
                           1145
        ASLB                109  1198
        BA_PC               122   208   284   290   410   416   532   538   651   657   757   763
                            799   805   841   847
        BA_R10              126   947   972
        BA_R12              127  1003  1009  1031  1072  1096  1121  1145  1168  1244  1272  1299
                           1341
        BA_R13              128   908   912
        BA_R16              129
        BA_R6               125   859   899   905  1310  1349  1360
        BA_RD               124   354   368   382   469   499   512   596   618   624   727   733
                            739   781   822   985   990  1014  1040  1056  1104  1151  1233  1256
                           1285  1326
        BA_RS               123   241   251   264   958
        BUT BYTE            106   215   243   253   343   355   370   479   491   501   585   598
                            612   949  1005  1098  1147
        BUT DEST            107   218   247
        BUT IR DECODE       108   221
        BUT SERVICE         109   193   866
        B_B                 144   559   623   617   629   663   678   693   708   874  1180  1186
                           1192  1369
        B_B PLUS RD         140  1019  1026  1109  1116  1156  1163  1261  1267  1289  1294  1331
                           1336
        B_B PLUS RS         139   960   966
        B_B SEX             146   715
        B_IR_UNIBUS DATA    177   209
        B_PC                148   891   904  1313
        B_R11 OP B          150   347   361   375   387   483   576
        B_R11 OP B SEX      151   422   438   446   462   544  1047  1064  1079
        B_R12               149  1316
        B_R17               143   976  1045  1054  1062  1070  1077  1086  1126  1178  1184  1190
        B_R17 OP B          152  1210  1220  1230  1251
        B_RD                147   342   478   584   722   769   775   811   816   853
        B_RD OP B           154  1135  1172
        B_RS                145   214  1308
        B_UNIBUS DATA       178   193   242   252   265   285   291   356   369   383   411   417
                            490   500   513   533   539   597   611   625   652   658   728   733
                            740   758   764   782   820   806   823   842   848   860   867   909
                            913   948   956   973  1004  1015  1032  1097  1105  1122  1146  1152
                           1169  1245  1257  1273  1286  1300  1327  1342  1350  1361
        CC_R14 AND CB       170  1376
        CC_R14 OR B         171  1384
        COND CODES          185   347   361   375   387   422   438   446   462   483   544   576
                           1047  1064  1079  1135  1172  1210  1220  1230  1251
        DATI                173   208   241   251   264   284   290   382   410   416   489   499
                            512   532   538   624   651   657   739   757   763   781   799   805
                            822   841   847   859   908   912   947   955   972  1014  1031  1096
                           1104  1121  1151  1166  1256  1272  1285  1299  1326  1341  1349  1360
        DATIP               174   354   368   596   614   727   733  1003  1145  1244
        DATO                175   899   905   985   990  1009  1233  1310
        DATOB               176  1040  1056  1072
        ENAB DBE            183   899
        ENABOVER            184   271   278   394   403   518   526   638   645   745   751   787
                            793   829   835   897   902  1306
        NOP                 172   907

        PC_B                163   911  1278  1318  1348  1359
        PC_PC PLUS 2        132   920   959   965  1018  1025  1168  1115  1155  1162  1200  1206
                           1288  1293  1330  1335
        PC_PC PLUS B        141  1200
        PSW_B               179   915  1363
        R10_B               159   945   970
        R11_B               156   218
        R11_B SEX           157   296
        R12_B               162  1001  1029  1094  1119  1143  1166  1242  1270  1297  1304  1338
        R13_B               168  1393
        R13_B               166   202  1370
        R13_R13 PLUS 1      138  1396
        R13_R13 PLUS 2      137   916  1394
        R13_R13 PLUS R13    142  1395  1397  1398
        R14_PSW             165   879   885
        R16_B               167
        R17_B (SWAB)        158   320   430   454   470   552   670   685   700  1051  1068  1083
                           1205  1215  1225  1247
        R5_B                155  1392
        R6_R6 MINUS 2       136   897   902  1306
        R6_R6 PLUS 2        135  1352  1358  1364
        RDB_B               161  1037
        RDB_RD OP B         153
        RD_B                160   981
        RD_RD MINUS 2       134   394   403   518   526   637   645   745   751   787   793   829
                            835
        RD_RD PLUS 2        133   508   560   568   993   999  1092  1141  1236  1240  1281  1322
        RS_B                164  1314
        RS_RS MINUS 2       131   270   278
        RS_RS PLUS 2        130   259   326   334   944
        UNIBUS DATA_B       181   906   986   991  1010  1041  1057  1073  1234  1311
        UNIBUS DATA_PSW     180   900
(U) NIL                     118
(U) ROM SPA                  31
        PC                   35   208   284   290   410   416   532   538   651   657   757   763
                            799   805   841   847   891   904   911   920   959   965  1018  1025
                           1108  1115  1155  1162  1200  1206  1266  1278  1288  1293  1313  1318
                           1330  1335  1348  1359
        PS                   34
        R10                  36   945   947   970   972
        R11                  37   218   296   347   361   375   387   422   438   446   462   483
                            544   576  1047  1064  1079
        R12                  38  1001  1003  1009  1029  1031  1072  1094  1096  1119  1121  1143
                           1145  1166  1168  1242  1244  1270  1272  1297  1299  1304  1310  1338
                           1341
        R13                  39   202   908   910   912  1370  1393  1394  1395  1398  1397  1398
        R14                  40   879   885  1376  1384
        R17                  41   976  1045  1054  1062  1070  1077  1086  1126  1178  1184  1190
                           1210  1220  1230  1251
        R5                   32  1392
        R6                   33   859   897   899   902   905  1306  1310  1349  1352  1358  1360
                           1364
        SWAB                 42   320   430   454   470   552   670   685   700  1051  1068  1083
                           1205  1215  1225  1247
(U) SP CONTROL               75
        ENABLE               60   259   270   278   326   334   394   403   506   518   526   560
                            568   637   645   745   751   787   793   829   835   897   902   910
                            920   944   959   965   993   999  1018  1025  1092  1108  1115  1141
                           1157  1162  1230  1240  1260  1266  1281  1288  1293  1300  1322  1330
                           1335  1352  1358  1364  1394
```

34

35

186

READ
WRITE LOW
WRITE WORD

78
79 879 885 1037
82 202 216 296 320 430 454 470 552 670 685 700
911 945 970 981 1041 1029 1051 1068 1083 1094 1119 1143
1166 1200 1205 1215 1225 1242 1247 1270 1278 1297 1304 1314
1318 1330 1348 1359 1370 1392 1393 1395 1396 1397 1398

(U) SPA MUX
BA
RD

24
27 193 866
29 342 354 368 382 394 403 478 489 499 576 512
518 526 540 568 584 596 610 624 637 645 722 727
733 739 745 751 769 775 781 787 793 811 816 822
829 835 853 981 985 990 993 999 1014 1019 1026 1037
1040 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

ROM SPA

30 202 208 215 284 290 296 320 347 361 375 387
410 416 422 430 438 446 454 462 470 483 532 538
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 1178 1184 1190 1200
1205 1210 1215 1220 1225 1230 1242 1244 1247 1251 1260 1200
1270 1272 1278 1288 1293 1297 1299 1304 1306 1310 1313 1316
1318 1330 1335 1335 1341 1348 1349 1352 1358 1359 1360 1364
1370 1376 1384 1392 1393 1394 1395 1396 1397 1398

RS

28 214 241 251 259 264 270 276 320 334 944 950
960 966 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. Peterson	ISSUED SECT. 1
DATE 10-27-75	DATE 10/22/75	

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

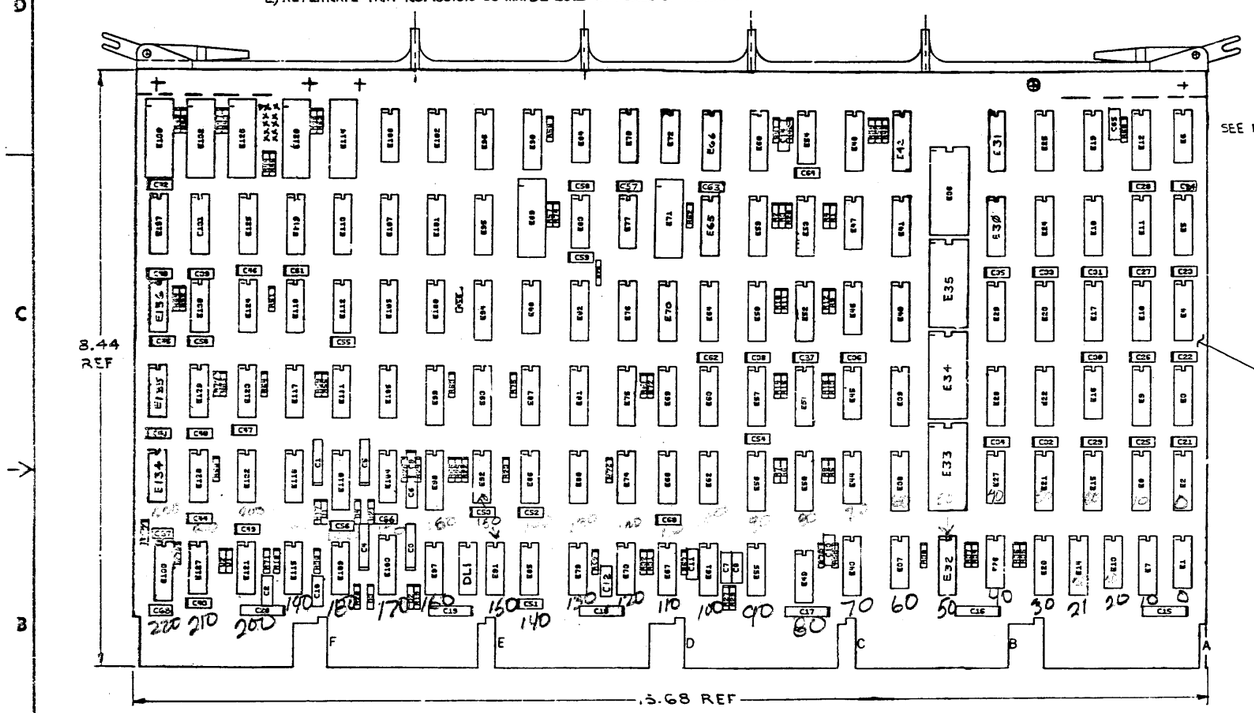
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NOTES:

1.) MAINTENANCE CONNECTOR LOCATED BETWEEN E120 & E126
PIN ASSIGNMENTS AS FOLLOWS

K9 MPC 04L	X	X	K9 MPC 00L
K9 MPC 01L	X	X	K9 MPC 03L
K9 MPC 02L	X	X	K9 MPC 06L
K9 MPC 05L	X	X	K9 MPC 07L
MAN CHK ENABL	X	X	MAN CLK L

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



REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7263-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7263-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7263-0-5	3
1		ETCHED CIRCUIT BOARD	5011244	4
1	C1	CAPACITOR, 22uf, 8V, 10%	1005836	5
6	C2,C8,C11,C12,C13,C85	CAPACITOR, 470pf, 100V, 5%	1000024	6
1	C3	CAPACITOR, .47uf, 35V, 10%	1005985	7
1	C4	CAPACITOR, 1uf, 35V, 10%	1001778	8
1	C5	CAPACITOR, 15uf, 20V, 10%	1004812	9
1	C6	CAPACITOR, 82pf, 100V, 5%	1000015	10
1	C7	CAPACITOR, 100pf, 100V, 5%	1000016	11
1	C9	CAPACITOR, 2200pf, 250V, 20%	1000055	12
1	C14	CAPACITOR, 330pf, 100V, 5%	1000023	13
6	C15,C18,C17,C18,C19,C20	CAPACITOR, 6.8uf, 35V, 10%	1005306	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,R43 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, 68 OHM, 1/4W, 5%	1300219	20
1	R19	RESISTOR, 12K, 1/4W, 5%	1300488	21
8	R22,R23,R26,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, 22Ø, 1/4W, 5%	1300271	24
1	R26	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, 680 OHM, 1/4W, 5%	1301424	29
16	R51,R52,R54 THRU R63,R72 THRU R76,R79	RESISTOR, 470 OHM, 1/4W, 5%	1300316	30
1	R64	RESISTOR, 1.5K, 1/4W, 5%	1300391	31
1	R68	RESISTOR, 180 OHM, 1/4W, 5%	1301322	32
1	R71	RESISTOR, 820 OHM, 1/4W, 5%	1301775	33
1	DL1	DELAY LINE, 150 NSEC.	1612463	34
2	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
4	E6,E16,E74	I.C. DEC 8815	1909713	37
4	E8,E11,E15,E18	I.C. DEC 74153	1909937	38
4	E9,E10,E12,E28,E29,E30,E66	I.C. DEC 74157	1910655	39
2	E13,E54,E92	I.C. DEC 7420	1905577	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 ~~9601~~ N8T37N	1911115	42
2	E19,E25	I.C. DEC 74175	1910651	43
4	E21,E22,E23,E24	I.C. DEC 74194	1910623	44
2	E26,E37	I.C. DEC 8881	1909705	45
2	E27,E61	I.C DEC 7408	1910155	46
1	E31	I.C. DEC 74182	1910619	47
4	E33,E34,E35,E36	I.C. DEC 74181	1909962	48
1	E42	I.C. DEC 74S133	1911583	49
4	E44,E45,E46,E47	I.C. DEC 7486	1910011	50
1	E49	I.C. DEC 8640	1911465	51
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

IC 9602	8	16
IC 7442	8	16
IC 74S153	8	16
IC 74298	8	16
IC 3101A	8	16
IC 8640	1	8
IC 74S133	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 3841	8	16
IC TYPE	GND	+5V

GND AND 5V ARE LOGICALLY 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	
		ETCH BOARD REV.	F

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

SEMICONDUCTOR CONVERSION CHART

CHG	CHANGE NO.	REV.
	17263-00001	D

REVISIONS

B. CRAMA 11/1/77 — ENG 10-12-5-00009 M — PC 12/30/77 — PROD — QA — CUST — 17263-00002 L

B. BERNSTEIN 11-SEP-76 — 17263-00003 K — 5-SEP-76 — 17263-00004 J — 6-AUG-76 — 17263-00005 H — 6-AUG-76 — 17263-00006 G — 15-JUL-76 — 17263-00007 F — 11-JUN-76 — 17263-00008 E — 21 APR 76

V. BERNSTEIN — 17263-00001 — 6.28.76 — D

DRN	DATE
CHK	DATE
ENG	DATE 6/30/77
PROJ. ENG.	DATE 6/30/77
PROD.	DATE 6/30/77
NEXT HIGHER ASSY	
SCALE	
SHEET 1 OF 14	

digital

TITLE: KDII-D

SIZE	CODE	NUMBER	REV.
D	CS	M7263-0-1	M

DIST.

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SPARE LOGIC

GRANT CONTINUITY

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

4	E50,E51,E52,E53	I.C. DEC 3101A	1910653	52
4	E55,E73,E97,E105,E115,E121, E123,E129	I.C. DEC 7474	1905547	53
2	E58,E57,E58,E59	I.C. DEC 74298	1911271	54
6	E62,~~E66~~,E79,E85,E105,E118, E117,E124 E66	I.C. DEC 7402	1909004	55
2	~~E67~~,E122 E67	I.C. DEC 7414	1911324	56
2	~~E95,E96~~ E95,E96	I.C. DEC 74S153	1910547	57
3	E77,E83,E102	I.C. DEC 74H81	1909849	58
4	E78,E106,E127 106	I.C. DEC 7404	1909686	59
6	E80,E100,E104,E118,~~E108~~,E126	I.C. DEC 7400	1905575	60
1	E84	I.C. DEC 74S82	1912388	61
2	~~E88~~,E112 E86	I.C. DEC 7437	1910091	62
1	E72	I.C. DEC 74S08	1912389	63
1	~~E89~~ 88	I.C. DEC 7427	1910078	64
1	E90	I.C. DEC 7442	1910046	65
1	E91	I.C. DEC 74S08	1910532	66
2	~~E98~~E33 E98	I.C. DEC 9602	1910951	67
2	E103,E110	I.C. DEC 74123	1910436	68
3	E111,E130,~~E136~~ E136	I.C. DEC 7405	1909930	69
1	~~E134~~ E134	I.C. DEC 74H103	1910409	70
12	E7	I.C. DEC 256 x 4 TS	23A31A2-B5	71
14	E48	I.C. DEC 256 x 4	23A21A2	72
2	E60,E82	I.C. DEC 256 x 4	23A22A2	73
1	E89	I.C. DEC 256 x 4	23A27A2	74
1	E70	I.C. DEC 256 x 4	23A23A2	75
1	E75	I.C. DEC 256 x 4	23A26A2	76
2	E78,E99	I.C. DEC 256 x 4 TS	23A29A2-B5	77
1	E81	I.C. DEC 256 x 4	23A25A2	78
1	E87	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	23A15A1-B5	81
1	E71	I.C. DEC 256 x 8 TS	2380581	82
1	E89	I.C. DEC 256 x 8 TS	2380781	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	12107II-02	89
12		EYELETS	9JG0026-01	90
1	W1	JUMPER, WACH INS	9009185	91
18		PIN, WIRE-WRAP, .025 SQ.	9009149	92
1	C10	CAPACITOR 150pf 100V 5%	1003026	93
1	R77	RES, 30K, 1/4W, 5%	1302394	94
1	C68	CAP, 1000 pf, 100V, 5%	1003026	95
1	C67	CAP, 220 pf, 100V, 5%	1003021	96
AR		WIRE, 30 AWG	9007077	97
AR		TUBING	9007071	98

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
KDII-D	D	CS	M7263-0-1	M
SCALE —	SHEET 2 OF 14	DIST.		

DCS M7263-0-1 M

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3101A			
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
7486 E47
K1 AMUX Ø3 H
K3 AMUX 11 H
K1 AMUX Ø2 H
K3 AMUX 10 H
K1 AMUX Ø1 H
K3 AMUX Ø9 H
K1 AMUX ØØ H
K3 AMUX 08 H
74298 E59 SP REG
WS CLK
3101A E53 SPM
WR ENB D2 D1 C2 C1 A2 A1 B2 B1 D0 D3 M2(1) M1(1) M0(1) M3(1) A3 A2 A1 A0
K1 SP ØØ L
K10 INVERT (1) H
K1 SWAB L
K1 SPW LOW L
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 ØØ L
K9 BMODE Ø1 L
K1 AMUX Ø3 H
K1 AMUX Ø2 H
K1 AMUX Ø1 H
K1 AMUX ØØ H
74194 E24 BREG
S1 S0 DSR 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 +1 L
74157 E30 BLEG MUX
B0 A0 B3 A3 B1 A1 B2 A2 STB S0 f0 f3 f1 f2
K9 ENAB +1 L

K6 ASSERT ADRESS L
8641 E41
BJ1 BUS AØ3 L
K1 BAØ3 H
BJ2 BUS AØ2 L
K1 BAØ2 H
BH1 BUS AØ1 L
K1 BAØ1 H
BH2 BUS AØØ L
K1 BAØØ H

K1 ALU CIN Ø1 L
74182 E31 CIN COUTX G0 P0
K10 ALU CIN ØØ L
8815 E6
K1 Ø-3 = ØH
K8 C3H
74181 E36 ALU
A-B COUT G P B3 A3 B2 A2 B1 A1 B0 A0 S3 S2 S1 S0 M CIN f3 f2 f1 f0
K8 C2H
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
AE2 BUS DØ3 L
AC1 BUS DØ2 L
AD2 BUS DØ1 L
AC1 BUS DØ3 L
STB1 STB0 DI EI AI CI D0 B0 A0 C0 S1 S0 f1 f0
74153 E18 AMUX
K1 AMUX Ø3 H
K1 AMUX Ø2 H
STB1 STB0 DI BI AI CI D0 B0 A0 C0 S1 S0 f1 f0
74153 E11 AMUX
K1 AMUX Ø1 H
K1 AMUX ØØ 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
A0 B0 A1 B1 A3 B3 A2 B2 STB S0 f0 f1 f3 f2
74175 E19 PSW
D0 R0(1) R0(0) D1 R1(1) R1(0) D2 R2(1) R2(0) D3 R3(1) R3(0) CLR CLK
K1NBIT(1) H
K1ZBIT(1) H
K1 VBIT(1) H
K1 CBIT(1) H
K10 AMUX S1 L
K10 AMUX S0 L

K5 REG CLK H
K9 LOAD CC L
K2 PSW LOAD L
7400 E128
7400 E108
K10 AUX CONTROL (1) H
R63 130
C65 47 PF
K5 PROC INIT L

74194

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

74157

STB	S0	DATA
H	–	F=Ø
L	L	F=A
L	H	F=B

74153

S1	S0	DATA
L	L	F=A
L	H	F=B
H	L	F=C
H	H	F=D

REVISIONS
CLK | CHANGE NO. | REV.

DATA PATH 3-3(11/24)CPU
TITLE KD11-D (K1)
SIZE D CODE CS NUMBER M7263-0-1 REV. H
SCALE
SHEET 3 OF 14
DIST.

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3101A			
BN3	WR	MEMOP	OUTPUT
H	—	DO NOTHING	H
L	L	WRITE	H
L	H	READ	COMPL OF SEL WORD

K10 ENAB REG (1) L
K1 SPW LOW L
+5V
R5 R6 R7 R8 330Ω
K2 AMUX Ø7 H
K4 AMUX 15 H
K2 AMUX Ø6 H
K4 AMUX 14 H
K2 AMUX Ø5 H
K4 AMUX 13 H
K2 AMUX Ø4 H
K4 AMUX 12 H
K1 SWAB L
K1 SPW LOW L
7498 E56 SP REG
WS CLK
3101A E50 SPM
A3 A2 A1 A0
K8 SPA Ø3 H
K8 SPA Ø2 H
K8 SPA Ø1 H
K8 SPA ØØ H
7486 E44
K4 BUF INV H
K6 ASSERT ADDRESS L
8641 E38
BUS AØ7 L
K2 BAØ7 H
BUS AØ6 L
K2 BAØ6 H
BUS AØ5 L
K2 BAØ5 H
BUS AØ4 L
K2 BAØ4 H
K6 ENAB DATA L
8641 E2
BUS DØ7 L
BUS DØ6 L
BUS DØ5 L
BUS DØ4 L
K2 ALU CIN Ø2 L
74182 E31
K2 4-7= ØH
8815 E16
K11 SHIFT IN Ø7 H
K9 BMODE ØØ L
K9 BMODE Ø1 L
74194 E21 BREG
K2 AMUX Ø7 H
K2 AMUX Ø6 H
K2 AMUX Ø5 H
K2 AMUX Ø4 H
K2 BREG Ø7(1) H
K2 BREG Ø4(1) H
7408 E27
K2 BLEG Ø7 H
K9 ENAB+1 L
74181 E33 ALU
K1Ø ALU S3 H
K1Ø ALU S2 H
K1Ø ALU S1 H
K1Ø ALU SØ H
K1Ø ALU MODE (1) H
K1 ALU CIN Ø1 L
K1Ø PE FLAG (1) H
74153 E15 AMUX
74153 E8 AMUX
K2 AMUX Ø7 H
K2 AMUX Ø6 H
K2 AMUX Ø5 H
K2 AMUX Ø4 H
+3VA
K5 BREG CLK L
K1 BREG Ø3 (1) H
74175 E25 PSW
K2 PSW Ø7(1)H
K2 PSW Ø6(1)H
K8 C4 H
K1Ø AMUX S1 L
K1Ø AMUX SØ L
K2 AMUX Ø7 H
K2 AMUX Ø6 H
K2 AMUX Ø5 H
K2 AMUX Ø4 H
K2 PSW Ø5 (1) H
K2 TBIT(1) H
K2 TBIT(1)L
K5 REG CLK H
K9 LOAD PSW L
K8 EXT LOAD PSW L
7474 E103
7404 E118
74194 E127
K2 PSW LOAD L
K5 PROC INIT L

74194

CLK	SI	SØ	OPERATION
—	L	L	HOLD
↑	L	H	SHIFT RIGHT
↑	H	L	SHIFT LEFT
↑	H	H	LOAD

74153

S1	SØ	DATA
L	L	F=A0
L	H	F=B0
H	L	F=C0
H	H	F=D0

REVISIONS		
ZONE	CHANGE NO.	INT.

DATA PATH 4-7(11/2-4) CPU

TITLE		SIZE	CODE	NUMBER	REV.
KD11-D	(K2)	D	CS	M7263-Ø-1	M
SCALE —	SHEET 4 OF 14	DIST.			

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ENB	WR	MEM OP	OUTPUT
H	—	DO NOTHING	H
L	L	WRITE	H
L	H	READ	COMPL OF SEL WORD

K9 SPW HIGH H
K5 REG CLK H
7400 E10B
K10 ENAB REG (1) L
K3 SPW HIGH L
+5V
R9 330 R10 330 R11 330 R12 330
7486 E46
K6 ASSERT ADDRESS L
8641 E40
BM1 BUS A11 L
K3 BA11 H
BM2 BUS A10 L
K3 BA10 H
BM1 BUS A09 L
K3 BA09 H
BM2 BUS A08 L
K3 BA08 H
K6 ENAB DATA L
8641 E4
AK2 BUS D11 L
AJ1 BUS D10 L
AJ2 BUS D09 L
AH1 BUS D08 L

74298 E58 SP REG
K3 AMUX 11 H
K1 AMUX Ø5 H
K3 AMUX 10 H
K1 AMUX Ø2 H
K3 AMUX Ø9 H
K1 AMUX Ø1 H
K3 AMUX Ø8 H
K1 AMUX ØØ H
K1 SWAB L
K3 SPW HIGH L
3101A E52 SPM
K8 SPA Ø3 H
K8 SPA Ø2 H
K8 SPA Ø1 H
K8 SPA ØØ H
K10 INVERT (1) H

K3 ALU CIN Ø3L
74182 E31 COUT2
8815 E6
K3 8-11 = Ø H

K4 BREG 12 (1) H
K9 BMODE ØØ L
K9 BMODE Ø1 L
74194 E23 BREG
K3 AMUX 11 H
K3 AMUX 10 H
K3 AMUX Ø9 H
K3 AMUX Ø8 H
+3VA
K5 BREG CLK L
K2 BREG Ø7 (1) H
K3 BREG 11 (1) H
K3 BREG Ø8 (1) H
74157 E29 BLEG MUX
K2 BLEG Ø7 H
K10 ENAB SEx (1) L

74181 E35 ALU
K10 ALU S3 H
K10 ALU S2 H
K10 ALU S1 H
K10 ALU S0 H
K10 ALU MODE (1) H
K2 ALU CIN Ø2 L

74157 E10 AMUX
K3 AMUX 11 H
K3 AMUX 10 H
K3 AMUX Ø9 H
K3 AMUX Ø8 H
K10 AMUX S0L
8641 E17
K3 S0L
K10 AMUX S1L
8641 E17

74194

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

74157

STB	S0	DATA
H	-	Fn = Ø
L	L	Fn = An
L	H	Fn = Bn

REVISIONS

CHK	CHANGE NO.	REV.

DATA PATH 8-11 (1/3) SPU

TITLE KD11-D (K3)
SIZE D CODE DCS NUMBER M7263-Ø-1 REV. M
SCALE — SHEET 5 OF 14 DIST.

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3101A

ENB	WR	MEM CP	OUTPUT
H	—	DO NOTHING	H
L	L	WRITE	H
L	H	READ	COMPL OF SEL WORD

K10 ENAB REG (1) L
K3 SPW HIGH L
+5V
R13 330 R14 330 R15 330 R16 330
74298 E57 SP REG
WS CLK
K4 AMUX 15 H
K2 AMUX Ø7 H
K4 AMUX 14 H
K2 AMUX Ø6 H
K4 AMUX 13 H
K2 AMUX Ø5 H
K4 AMUX 12 H
K2 AMUX Ø4 H
K1 SWAB L
K3 SPW HIGH L
3101A E51 SPM
WR ENB
K8 SPA Ø3 H
K8 SPA Ø2 H
K8 SPA Ø1 H
K8 SPA Ø0 H
K10 INVERT (1) H
74S08 E72
K4 BUF INV H
7486 E45
K6 ASSERT ADDRESS L
8641 E39
BR1 BUS A15 L
K4 BA15 H
BR2 BUS A14 L
K4 BA14 H
BP1 BUS A13 L
K4 BA13 H
BP2 BUS A12 L
K4 BA12 H
7420 E54
K4 ALEG 15 H
8815 E16
K4 12-15 = Ø H
K6 ENAB DATA L
8641 E3
AM2 BUS D15 L
AL1 BUS D14 L
AL2 BUS D13 L
AM1 BUS D12 L
K11 SERIAL SHIFT H
K9 3MODE Ø0 L
K9 3MODE Ø1 L
74194 E22 BREG
CLR CLK DS0
+3VA
K3 3REG CLK L
K3 3REG 11 (1) H
K4 AMUX 15 H
K4 AMUX 14 H
K4 AMUX 13 H
K4 AMUX 12 H
K4 BREG 12 (1) H
K2 BLEG Ø7 H
74157 E28 BLEG MUX
STB
K10 ENAB SEx (1) L
K4 BLEG 15 H
74181 E34 ALU
K10 ALU S3 H
K10 ALU S2 H
K10 ALU S1 H
K10 ALU S0 H
K10 ALU MODE (1) H
K3 ALU CIN Ø3 L
74157 E9 AMUX
K35Ø L
K10 AMUX S1 L
K4 AMUX 15 H
K4 AMUX 14 H
K4 AMUX 13 H
K4 AMUX 12 H
K6 ASSERT ADDRESS L
8691 E17
BS1 BUS A17 L
K4 BA17 H
BS2 BUS A16 L
K4 BA16 H
+3V A
+5V
R65 1K R66 1K R69 1K
+3V D
+3V C
+3V B

74157

ST3	SØ	DATA
H	—	FN=Ø
L	L	FN=AB
L	H	FN=BA

74194

CLK	S1	SØ	OPERATION
—	L	L	HOLD
↗	L	H	SHIFT RIGHT
↗	H	L	SHIFT LEFT
↗	H	H	LOAD

DATA PATH 12-15(11/24) CPU

TITLE	SIZE	CODE	NUMBER	REV.
KD11-D (K4)	D	CS	M7263-Ø-1	M

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+5V
R71 820Ω
R18 68
BUS AC LO L
BF1 13
8837 E32
12
C2 470pf
C1 22 µf
R17 24K
D1 D664
BUS DC LO L
BF2 15
8837 E32
14
C66 1000 pf
74123 E110 INIT 150ms
+3V B
C3 .47µf
R19 12K
D2 D664
74123 E103 PUP 2.2 MS
C4 1 µf
R20 24K
D3 D664
74123 E103 PDWN 6.6MS
+3VC
7474 E97
K5 PFAIL (1) H
K5 PFAIL (1) L
K5 PROC INIT H
7402 E85
K8 PFAIL SER L
K5 PROC CLK L
7402 E85
7414 E122
7402 E117
7420 E92
7400 E80
K12 HLT RQST L
7400 E104
K5 POWER CLR L
7474 E109 PWR INIT
K5 PROC CLK L
7405 E111
K9 MPC ØØ L
+3V B
BUS INIT L
AA1
8837 E20
K5 RCD INIT H
7400 E104
+5V
C5 15 µf
R21 24K
D4 D664
+3V B
7474 E109 START RESET
K12 START RESET L
K5 PROC CLK L
K5 POWER CLR L
74123 E110 RESET 100 MS
K5 RESET (1) H
K5 PFAIL (1) L
7437 E86
K5 PROC INIT H
7437 E86
K5 PROC INIT L
7400 E80
8881 E37
AA1
BUS INIT L
7420 E92
K7 BG INH L
K6 TRAN INH L
7450 E91
+5V
R22 1K
MAN CLK ENAB L
DS1
+5V
R23 1K
DS1
MAN CLK L
7450 E91
7450 E91
7458 E91
K8 EXT TRAN
DL1
R25 220
K6 TRAN CLK H
K10 DAT TRAN (1) H
7402 E79
7402 E79
K5 BREG CLK L
K8 INST TRAP SER L
7402 E79
7437 E86
K5 PROC CLK H
7437 E86
K5 PROC CLK L

POWER UP TIMING (TIMES IN MSEC)
BUS DC LO L
BUS AC LO L
E110 PIN 5 (INIT)
E103 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
E103 PIN 5 (PDWN)
PFAIL (1) H
MPC ØØ L
PROC INIT L
6.6

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
70-20 175-155
(WITH MAN CLK ENAB L & MAN CLK L BOTH H)

FOR MANUAL CLOCK OPERATION
MAN CLK ENABL
MAN CLK L
E91 PIN 6

(PFAIL/AUTO REST/INIT/PROC CLK)

TITLE		SIZE	CODE	NUMBER	REV.
KD11-D (K5)		D	CS	M7263-0-1	M
SCALE	SHEET 7 OF 14	DIST.			

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K6 CI L
K6 START TRAN H
7402 E85
K6 ASSERT ADDRESS L
K8 INIT DATI H
7402 E116
K6 ENAB DATA L
K10 CI (1) H
7414 E122
K10 CØ (1) H
7430 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
K6 BBSY H
K7 NPR H
K7 NPSUH
K7 NO SACK TD L
8815 E74
9602 E98
+3VC
+3V
8641 E43
BT2
BUS CI L
K6 CI H
K10 CI(1) H
BU2
BUS CØ L
K6 CØ H
K10 CØ(1) H
AP2
BUS BBSY L
K6 BBSY H
+3VD
BV1
BUS MSYN L
K6 MSYN H
R27 150
C7 100pf
7474 E121
7414 E67
K10 DAT TRAN (1) H
K6 EOT (Ø) H
7400 E80
K6 TRAN INH L
K6 START TRANH
7402 E85
K5 RCD INIT H
R26 3.8K 1%
C9 220pf
9602 E98
22
15
K1 SPØØ L
K10 ALLOW BYTE H
7402 E68
K6 TRAN CLK H
R29 150
C8 470pf
K6 SSYN H
7414 E122
7414 E67
+3V B
BUS PA L
AN1
BUS PB L
AN2
8837 E20
8640 E49
K6 CI L
7400 E104
K6 PE (1) H
7474 E121 PE
PARITY ENABLE W1
W2
K6 SSYN H
7474 E115 BE
K6 BE (1) H
K6 BE (1) L
K10 DAT TRAN (1) H
K6 TRAN INH L
7400 E125
K6 FORCE SERV H
+3V B
7474 E115 EOT
K6 EOT (1) H
+5V
R25 1.5K
R30 68
C10 150pf
7405 E111

(DATA TRAN)

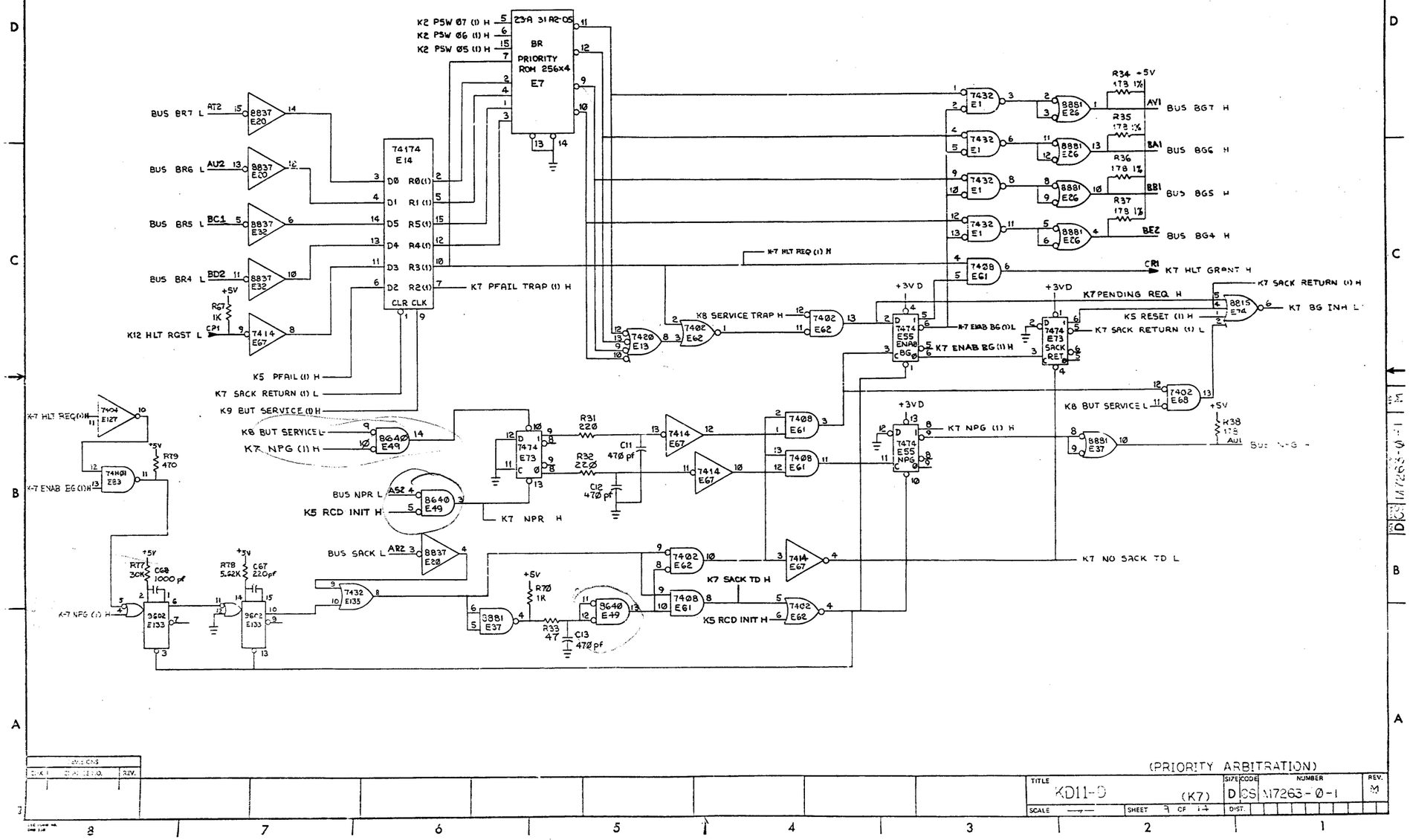
TITLE		SIZE	CODE	NUMBER	REV.
KDII-D	(K6)	D	CS	M7263-Ø-1	N1
SCALE ——	SHEET 8 OF 14	DIST.			

DRAWING		
DWG	CHANGE NO.	REV.

M7263-Ø-1

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(PRIORITY ARBITRATION)

TITLE	KD11-D (K7)	SIZE	CODE	NUMBER	REV.
		D	DS	M7263-Ø-1	M
SCALE	SHEET 9 OF 14	DIST.			

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K2 TBIT (1) L
K12 ENABTBIT L
K5 PROC CLK H
K8 TBIT SER H
K5 PROC INIT L
7402 E124
74H109 E134
K8 TBIT FLAG(1) H

INSTRUCTION	K	IR CODE Ø2	Ø1	ØØ
ILLEGAL INST	4	H	L	H
RESERVED INST	1Ø	H	H	L
BPT	14	H	L	L
IOT	2Ø	L	H	H
EMT	3Ø	L	H	L
TRAP	34	L	L	H
HLT	—	L	L	L
NONE	—	H	H	H

SERVICE ORDER
HLT INST (FROM C
BE (SERV TBIT)
INST TRAPS (SERV TBIT)
TBIT
STOV
PFAIL
HALT SW
INTR (BR7, BR6, BR5, BR4)
NEXT INSTR FETCH

+5V
R74 470, R76 470, R75 470, R73 470, R72 470
K10 BE FLAG (1) H
K12 IR CODE Ø2 L
K12 IR CODE Ø1 L
K12 IR CODE Ø0 L
K8 TBIT FLAG (1) H
K8 STOV (1) H
K7 P FAIL TRAP (1) H
K10 PE FLAG (1) H
BUT SERVICE 23-ØØ6-B1 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
74H01 E102
K10 AMUX SØ L
7432 E135
K8 INTR H
K9 BUT SERVICE (1) H
74H01 E102
K9 MPC ØØ L

K10 ROM SPAØ3 (1) H
K1 BAØ3 H
K10 ROM SPAØ2 (1) H
K11 IR Ø2 (1) H
K11 IR ØØ (1) H
K1 BA Ø2 H
STBI STBØ
DI C1 B1 A1 74S153 DØ E96 CØ BØ AØ
SI SØ
F1
F0
K8 SPA Ø3 H
K8 SPA Ø2 H

K10 ROM SPAØ1 (1) H
K11 IR Ø1 (1) H
K11 IR Ø7 (1) H
K1 BAØ1 H
K10 ROM SPAØØ (1) H
K11 IR ØØ (1) H
K11 IR Ø6 (1) H
K1 BA ØØ H
STBI STBØ
D1 C1 B1 A1 74S153 DØ E95 CØ BØ AØ
SI SØ
F1
FØ
K8 SPA Ø1 H
K8 SPA ØØ H
K10 SPA MUX Ø1 (1) H
K10 SPA MUX ØØ (1) H
SPA MUX

K10 ALLOW BYTE H
7400 E118
K8 INH +1 L
7400 E100
K8 R6+7 L
7432 E135
K8 R6 L
K11 8-15 = Ø L
K9 ENAB STOV L
7432 E135
7402 E117
K5 PROC CLK L
74H103 E134
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

74S153

S1	SØ	DATA
L	L	FØ=AØ
L	H	FØ=BØ
H	L	FØ=CØ
H	H	FØ=DØ

K9 BA 17 H
K4 BA 16 H
K4 BA 15 H
K4 BA 14 H
K4 BA 13 H
K4 BA 12 H
K3 BA 11 H
K3 BA 10 H
K3 BA 09 H
K3 BA 08 H
K2 BA 07 H
K2 BA 06 H
K6 MSYN H
74S133 E42

INTERNAL ADDRESS DECODE
K7 SACK RETURN (1) H
K6 START TRAN H
7402 E79

K7 SACK RETURN (1) H
K6 C1 H
K2 BA Ø5 H
K2 BA Ø4 H
K1 BA Ø3 H
K1 BA Ø2 H
K1 BA Ø1 H
K1 BA ØØ H
23-A21 A2 E98
K8 EXT LOAD PSW L
K9 SP WRITE L
7404 E78
K8 INIT DATI H

R39 330, R40 330, R41 680
+5V
7404 E78
R28 1K
R42 47
C14 3ØØ pf
74H01 E77
7414 E122
K2 BAØ5 H
74H01 E102
K10 AMUX SØ L
7405 E111
K10 AMUX S1 L

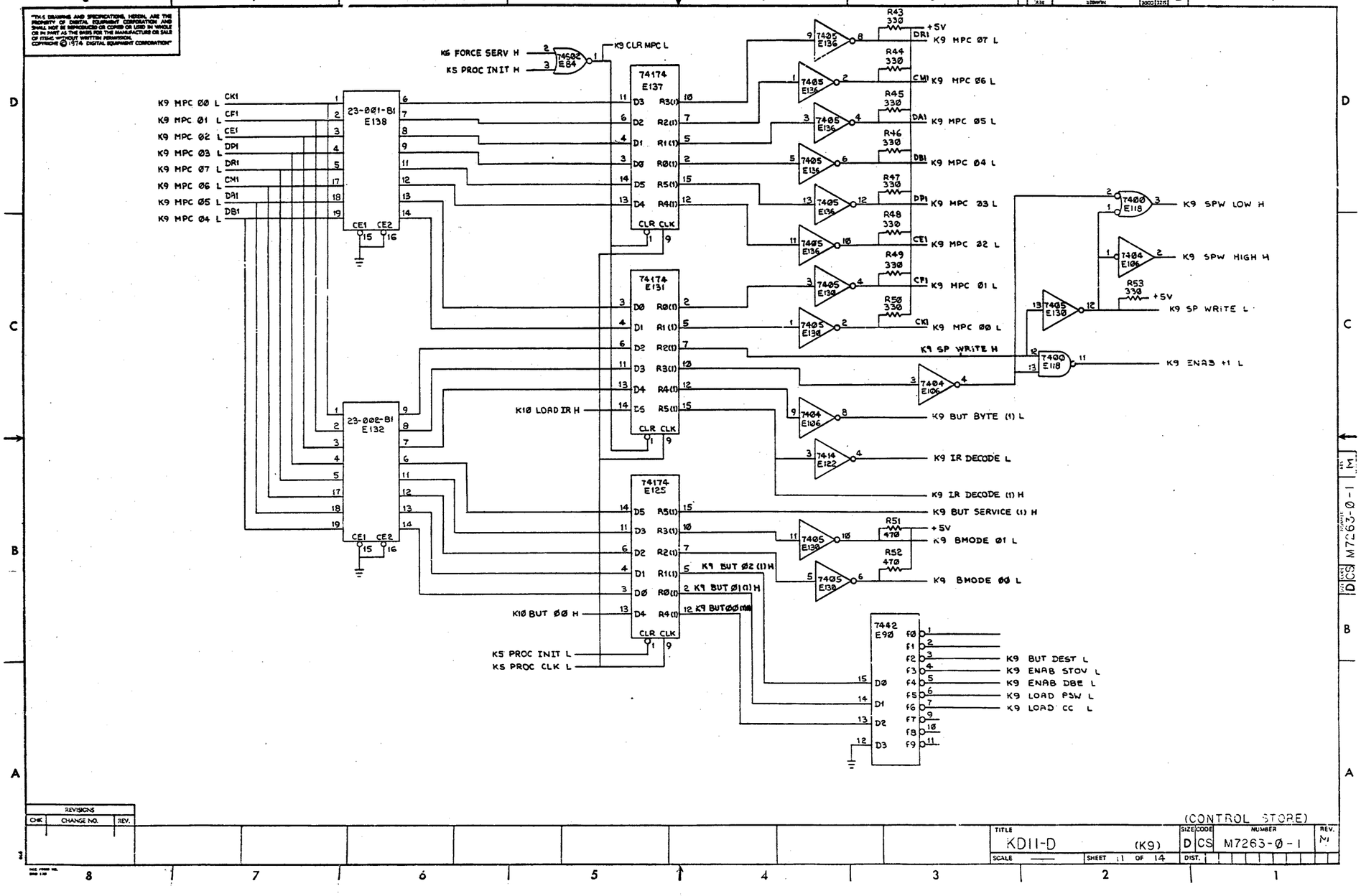
+3V B
7474 E123 SSYN
K5 PROC CLK L
BUS INTR L
8837 E20
K8 INTR H
7403 E128
8881 E37
BUS SSYN L
7403 E128
K8 EXT TRAN L

(SPA MUX, BUT SERVICE, INTERNAL ADDRESS DECODE)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	RE...
KDII-D (KS)	D	CS	M7263-D-1	A1
SCALE — SHEET 15 OF 14	DIST.			

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REVISIONS		
OK	CHANGE NO.	REV.

(CONTROL STORE)

TITLE	SIZE	CODE	NUMBER	REV.
KDII-D (K9)	D	CS	M7263-Ø-1	N
SCALE — SHEET 1 OF 14	DIST.			

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K9 MPC Ø0 L — CX1
K9 MPC Ø1 L — CF1
K9 MPC Ø2 L — CE1
K9 MPC Ø3 L — DP1
K9 MPC Ø7 L — DR1
K9 MPC Ø6 L — CM1
K9 MPC Ø5 L — DA1
K9 MPC Ø4 L — DB1

23-003-B1 E126 → K1Ø BUT Ø0 H

23-004-B1 E120 → K1Ø ROM S3 H, K1Ø ROM S2 H, K1Ø ROM S1 H, K1Ø ROM S0 H, K1Ø ROM MODE H, K1Ø ROM CIN L

K1Ø AUX SETUP H

23-005-B1 E114 → K1Ø AUX SETUP H

74174 E119
D0 R0(1) → K1Ø DAT TRAN (1) H
D1 R1(1) → K1Ø C1 (1) H
D2 R2(1) → K1Ø C0 (1) H
D3 R3(1) → 7402 E117 → K1Ø ALLOW BYTE H
D4 R4(1) → 7405 E130 → K1Ø AMUX S1 L
D5 R5(1) → 7405 E111 → K1Ø AMUX S0 L
CLR CLK

RS4 470 Ω +5V
K11 BYTE L
RS5 470 Ω

74174 E113
D0 R0(1) → K1Ø ENAB SEX (1) L
D1 R1(1)
D2 R2(1)
D3 R3(1)
D4 R4(1)
D5 R5(1) → K1Ø ALU MODE (1) H
CLR CLK

7437 E112 → K1Ø ALU S3 H
7437 E112 → K1Ø ALU S2 H
7437 E112 → K1Ø ALU S1 H
7437 E112 → K1Ø ALU S0 H

74174 E107
D0 R0(1) → K1Ø ALU CIN Ø0 L
D4 R4(1) → K1Ø INVERT (1) H
D5 R5(1) → K1Ø ENAB REG (1) L
D3 P3(1) → K1Ø SPA MUX Ø1 (1) H
D1 R1(1) → K1Ø SPA MUX Ø0 (1) H
D2 R2(1) → K1Ø ROM SPA Ø3 (1) H
CLR CLK

K11 INVERT H
K11 ENAB REG L

74174 E101
D1 R1(1) → K1Ø ROM SPA Ø2 (1) H
D3 R3(1) → K1Ø ROM SPA Ø1 (1) H
D2 R2(1) → K1Ø ROM SPA Ø0 (1) H
D0 R0(1) → K1Ø AUX CONTROL (1) H
D4 R4(1) → K1Ø PE FLAG (1) H
D5 R5(1) → K1Ø BE FLAG (1) H
CLR CLK

K6 PE (1) H
K6 BE (1) H

7404 E78 → K1Ø LOAD IRL

K5 PROC INIT L
K5 PROC CLK L
K1Ø LOAD IR H

REVISIONS		
C-K	CHANGE NO.	REV.

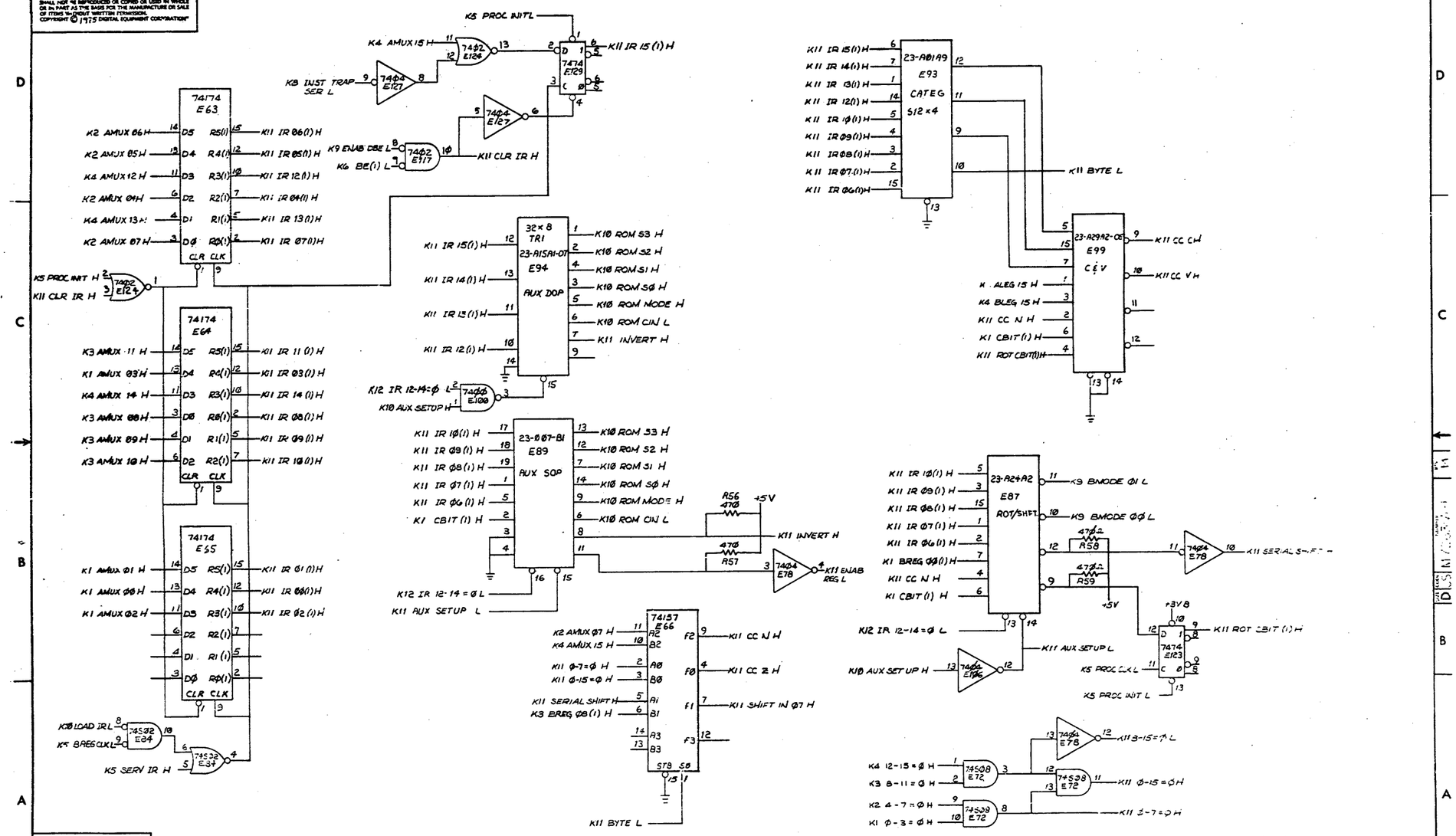
TITLE	SIZE	CODE	NUMBER	REV.
KDII-D (K1Ø) CONTROL STORE	D	CS	M7263-Ø-1	N

SCALE — SHEET 12 OF 14 DIST

M7263-Ø-1 D CS

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REVISIONS		
CHK	CHANGE NO.	REV.

(IR DECODE, AUX CONTROL COND CODES)

TITLE	SIZE	CODE	NUMBER	REV.
KD11-D (K11)	D	CS	M7263-0-1	M
SCALE	SHEET 13 OF 14		DIST.	

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K11 IR Ø3 (1)H
K11 IR Ø4 (1)H
K11 IR Ø5 (1)H
7427 E88
K12 DMØH

K11 IR 14(1)H
K11 IR 13(1)H
K11 IR 12(1)H
7427 E88
7404 E106
K12 IR 12-14=ØL
K12 IR 12-14=ØH

K11 N BIT (1)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-A22 A2
E60
BRANCH
K9 MPC ØG L
K9 IR DECODE L
K11 IR 11 (1)H
K12 IR 12-14=ØL
7402 E105
7404 E106
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 DMØ H
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 ENABT 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 E100
K12 IR 8-15=ØL
K11 IR15(1)H
K12 IR 11-14=ØL
7402 E105

K12 DMØ H
K11 IR14(1)H
K11 IR13(1)H
K11 IR12(1)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 (1)H
K11 IR Ø4 (1)H
K11 IR Ø3 (1)H
74H01 E83
K9 MPC Ø2L
K9 MPC ØIL
K9 MPC ØØL

K1 SP ØØL
K6 ASSERT ADDRESS L
7405Ø2 E84
74H01 E102
K9 MPC ØØL
K9 BUT BYTE (1) L
K11 BYTE L
7402 E124
7405 E111
K9 MPC ØIL

K11 IR11(1)H
K11 IR 10(1)H
K11 IR Ø9(1)H
74H01 E77
K9 MPC Ø2 L
K9 MPC Ø1 L
K9 MPC ØØ L
+5V
R64
470
K12 IR CODE ØØ L
K9 IR DECODE (1)H
K12 IR 12-14=ØH
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 DMØ H
23-A25 A2
E81
SOP
MICRO
BRANCH
K9 MPC Ø5 L
K9 MPC Ø4 L
K9 MPC Ø3 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 Ø7(1)H
K11 IR Ø6(1)H
K12 DMØ H
23-A26 A2
E75
SOP
DECODE
+5V
R62
470
K12 IR CODE Ø2 L
K12 IR CODE Ø1 L
K12 IR CODE ØØ L
R61
470
+5V
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- A22A2
E82
SOP
MICRO
BRANCH
K9 MPC Ø2 L
K9 MPC Ø1 L
K9 MPC ØØ L
K12 IR 8-15=ØL
K9 IR DECODE L

REVISIONS		
CHK	CHANGE NO.	REV.

IR,DECODE,AUX CONTROL, SEND CODES

TITLE	SIZE	CODE	NUMBER	REV.
KDII-D (K12)	D	DS	M7263-0-1	M
SCALE — SHEET 14 OF 14	DIST			

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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 10/22/75	
ENG. R. Barry	DATE 10-22-75	
PROJ. ENG. B BERNSTEIN	DATE 10-22-75	
PROD. R.K Peterson	DATE 10/22/75	
NEXT HIGHER ASSEMBLY B-DD-KDII-D		TITLE ROM LISTING KDII-D PDP 11/64
SCALE		SIZE K CODE CS NUMBER KDII-D-3 REV.
SHEET 1 OF 145		DIST.

DEC FORM NO.
DRB 109

DEC PART NUMB: 23-A01A9
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 10-28-74

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-AM1A9
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	1111	17
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-AM1A9
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

105

5

ROM PATTERN SPEC

DEC PART NUMBR 23-AB139
ORIGINATOR JOHN ALBOM
DATE OF ORIGIN 10-29-74

OCTAL DATA
05
05
04
04
16
16
12
12
05
05
04
04
16
16
12
12
05
05
04
04
17
17
13
13
17
17
13
13
16
17
13
17
17
17
13
13

OCTAL LOC	BINARY DATA
108	0101
109	0101
110	0100
111	0100
112	1110
113	1110
114	1010
115	1010
116	0101
117	0101
118	0100
119	0100
120	1110
121	1110
122	1010
123	1010
124	0101
125	0101
126	0100
127	0100
128	1111
129	1111
130	1011
131	1000
132	1111
133	1111
134	1011
135	1011
136	1110
137	1111
138	1010
139	1111
140	1111
141	1111
142	1011
143	1011

6

ROM PATTERN SPEC

DEC PART NUMBR 23-AB139
ORIGINATOR JOHN ALBOM
DATE OF ORIGIN 10-29-74

OCTAL DATA
17
17
17
17
17
17
13
13
05
17
01
17
17
17
13
13
11
14
17
10
17
17
13
13
07
17
03
17
17
17
13
13
17
17
17
17

OCTAL LOC	BINARY DATA
220	1111
221	1111
222	1111
223	1111
224	1111
225	1111
226	1011
227	1011
230	0101
231	1111
232	0001
233	1111
234	1111
235	1111
236	1011
237	1011
240	1001
241	1100
242	1111
243	1000
244	1111
245	1111
246	1011
247	1011
250	0111
251	1111
252	0011
253	1111
254	1111
255	1111
256	1011
257	1011
260	1111
261	1111
262	1111
263	1111

DEC PART NUMBER 23-AB14A9
ORIGINATOR: JOHN ALLEN
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	1011	13
183	267	1011	13
184	270	1101	15
185	271	1111	17
186	272	1001	11
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	0130	04
199	307	0130	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-AB14A9
ORIGINATOR: JOHN ALLEN
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 NUMBR 23-A0189
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 10-28-74

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	1011	13
259	403	1011	13
260	404	1111	17
261	405	1111	17
262	406	1011	13
263	407	1011	13
264	410	1111	17
265	411	1111	17
266	412	1011	13
267	413	1011	13
268	414	1111	17
269	415	1111	17
270	416	1011	13
271	417	1011	13
272	420	1111	17
273	421	1111	17
274	422	1011	13
275	423	1011	13
276	424	1111	17
277	425	1111	17
278	426	1011	13
279	427	1011	13
280	430	1111	17
281	431	1111	17
282	432	1011	13
283	433	1011	13
284	434	1111	17
285	435	1111	17
286	436	1011	13
287	437	1011	13

ROM PATTERN SPEC

DEC PART NUMBR 23-A0189
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
288	440	1111	17
289	441	1111	17
290	442	1011	13
291	443	1011	13
292	444	1111	17
293	445	1111	17
294	446	1011	13
295	447	1011	13
296	450	1111	17
297	451	1111	17
298	452	1011	13
299	453	1011	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	1011	13
311	467	1011	13
312	470	1111	17
313	471	1111	17
314	472	1011	13
315	473	1011	13
316	474	1111	17
317	475	1111	17
318	476	1011	13
319	477	1011	13
320	500	1111	17
321	501	1111	17
322	502	1011	13
323	503	1011	13

ROM PATTERN SPEC

DEC PART NUMBER 23-A0149
ORIGINATOR: JOHN BLEDSOE
DATE OF ORIGIN: 10-28-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
324	504	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

ROM PATTERN SPEC

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 NUMBR 23-A01A9
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 12-28-74

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 NUMBR 23-A01A9
ORIGINATOR: JOHN BLEDM
DATE OF ORIGIN: 12-28-74

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

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DEC PART NUMBR: 23-A31A9
ORIGINATOR: JOHN BLEOM
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 NUMBR: 23-A31A9
ORIGINATOR: JOHN BLEOM
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-A19A1
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-25-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	00000000	000
1	01	01110000	160
2	02	01000101	105
3	03	01110010	162
4	04	00000000	000
5	05	01110000	160
6	06	01000101	105
7	07	01110010	162
8	10	01110111	167
9	11	01110100	164
10	12	01101010	152
11	13	00000000	000
12	14	01110111	167
13	15	01110100	164
14	16	00001010	012
15	17	00000000	000
16	20	00000000	000
17	21	00001000	010
18	22	00000000	000
19	23	00000000	000
20	24	00000000	000
21	25	00000000	000
22	26	00010000	020
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-A21A2
ORIGINATOR: JOHN BLOEM
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

POM PATTERN SPEC

DFC PART NUMBR 23-42182
ORIGINATOR JOHN ALDEN
DATE OF ORIGIN 10-08-74

OCTAL DATA	DECIMAL LOC	OCTAL LOC	BINARY DATA
17	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	1111
17	67	103	1111
17	68	104	1111
17	69	105	1111
17	70	106	1111
17	71	107	1111

POM PATTERN SPEC

DFC PART NUMBR 23-42182
ORIGINATOR JOHN ALDEN
DATE OF ORIGIN 10-08-74

OCTAL DATA	DECIMAL LOC	OCTAL LOC	BINARY DATA
17	72	110	1111
17	73	111	1111
17	74	112	1111
17	75	113	1111
17	76	114	1111
17	77	115	1111
17	78	116	1111
17	79	117	1111
17	80	120	1111
17	81	121	1111
17	82	122	1111
17	83	123	1111
17	84	124	1111
17	85	125	1111
17	86	126	1111
17	87	127	1111
17	88	130	1111
17	89	131	1111
17	90	132	1111
17	91	133	1111
17	92	134	1111
17	93	135	1111
17	94	136	1111
17	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
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ROM PATTERN SPEC

DEC PART NUMBER 23-A2142
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 12-28-74

OCTAL LOC	BINARY DATA	OCTAL DATA
108	1111	17
109	1111	17
110	1111	17
111	0011	03
112	1111	17
113	1111	17
114	1111	17
115	1111	17
116	1111	17
117	1111	17
118	1111	17
119	1111	17
120	1111	17
121	1111	17
122	1111	17
123	0110	06
124	1111	17
125	1111	17
126	1111	17
127	0111	07
128	0110	06
129	0110	06
130	0110	06
131	0110	06
132	0101	05
133	0101	05
134	0101	05
135	0101	05
136	0110	06
137	0110	06
138	0110	06
139	0110	06
140	0101	05
141	0101	05
142	0101	05
143	0101	05

ROM PATTERN SPEC

DEC PART NUMBER 23-A2142
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 12-28-74

OCTAL LOC	BINARY DATA	OCTAL DATA
144	0110	06
145	0110	06
146	0110	06
147	0110	06
148	0101	05
149	0101	05
150	0101	05
151	0101	05
152	0110	06
153	0110	06
154	0110	06
155	0110	06
156	0101	05
157	0101	05
158	0101	05
159	0101	05
160	1111	17
161	1111	17
162	1111	17
163	1111	17
164	1111	17
165	1111	17
166	1111	17
167	1111	17
168	1111	17
169	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

ROM PATTERN SPEC PAGE 23

DEC PART NUMBER 23-A21A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-18-74

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 BLOEM
DATE OF ORIGIN: 12-18-74

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	0110	06
236	354	1111	17
237	355	1111	17
238	356	1111	17
239	357	0011	03
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	0110	06

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ROM PATTERN SPEC PAGE 1 OF 1 25

DEC PART NUMBR 23-A21A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-30-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1111	17
253	375	1111	17
254	376	1111	17
255	377	0111	07

ROM PATTERN SPEC PAGE 1 OF 1 26

DEC PART NUMBR 23-A2242
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
[illegible]	043	1110	16

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ROM PATTERN SPEC PAGE 8

DEC PART NUMBER 23-A22A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 5-MAR-75

OCTAL LOC	BINARY DATA	OCTAL DATA
36	1110	16
37	1111	17
38	1111	17
39	1110	16
40	1000	10
41	1111	17
42	1111	17
43	1110	16
44	1110	16
45	1111	17
46	1110	16
47	1111	17
48	1111	17
49	1110	16
50	1111	17
51	1110	16
52	1111	17
53	1110	16
54	1111	17
55	1110	16
56	1110	16
57	1111	17
58	1111	17
59	1110	16
60	1111	17
61	1110	16
62	1110	16
63	1111	17
64	0011	03
65	1100	14
66	1100	14
67	0101	05
68	1111	17
69	1110	16
70	1111	17
71	0110	06

ROM PATTERN SPEC PAGE 9

DEC PART NUMBER: 23-A22A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 5-MAR-75

OCTAL LOC	BINARY DATA	OCTAL DATA
72	0011	03
73	0100	04
74	1100	14
75	0101	05
76	1110	16
77	0111	07
78	1110	16
79	0111	07
80	1111	17
81	1110	16
82	1110	16
83	1111	17
84	1110	16
85	1111	17
86	1110	16
87	1111	17
88	1111	17
89	1110	16
90	1110	16
91	1111	17
92	1111	17
93	1110	16
94	1110	16
95	1111	17
96	0011	03
97	0100	04
98	1111	17
99	0100	04
100	1111	17
101	2110	06
102	1111	17
103	0110	06
104	0011	03
105	0100	04
106	1111	17
107	0100	04

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DEC PART NUMBR 23-A22A2
ORIGINATOR: JOHN BLOEM
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	1111	17
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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DEC PART NUMBR 23-A22A2
ORIGINATOR: JOHN BLOEM
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

ROM PATTERN SPEC PAGE 2 OF 3 32

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

ROM PATTERN SPEC

DEC PART NUMBR 23-A22A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGTN: 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-A22A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGTN: 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

ROM PATTERN SPEC

DEC PART NUMBER 23-A23A2
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	1111	17
68	104	0111	07
69	105	1111	17
70	106	0111	07
71	107	1111	17

ROM PATTERN SPEC

DEC PART NUMBER 23-A23A2
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

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DEC PART NUMBER 23-A2342
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 19-MAY-75

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	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	1111	17
123	173	1111	17
124	174	1111	17
125	175	1111	17
126	176	1111	17
127	177	1111	17
128	200	1111	17
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	0011	03
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

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DEC PART NUMBER 23-A2342
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

DFC PART NUMBR 23-A23A2
ORIGINATOR: JOHN E BLOFM
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

DFC PART NUMBR 23-A23A2
ORIGINATOR: JOHN E BLOFM
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-A23A2
ORIGINATOR: JOHN E BLOOM
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-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-4-74

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	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	0111	07
33	041	0011	03
34	042	0111	07
35	043	0010	02

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DEC PART NUMBR 23-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-4-74

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

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DEC PART NUMBR 23-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-4-74

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 NUMBR 23-A24A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-4-74

ROM PATTERN SPEC

DECIMAL 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 NUMBR 23-A24A3
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-4-74

ROM PATTERN SPEC

DECIMAL 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

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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

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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-A2A42
ORIGINATOR JOHN E BLOOM
DATE OF ORIGIN 10-4-74

OCTAL LOC	OCTAL DATA	BINARY DATA
252	87	0111
253	87	0111
254	87	0111
255	87	0111
374	87	0111
375	87	0111
376	87	0111
377	87	0111

50

ROM PATTERN SPEC

DEC PART NUMBER 23-A2A42
ORIGINATOR JOHN E BLOOM
DATE OF ORIGIN 10-04-74

DECIMAL LOC	OCTAL LOC	OCTAL DATA	BINARY DATA
0	000	17	1111
1	001	17	1111
2	002	05	0101
3	003	00	0000
4	004	17	1111
5	005	17	1111
6	006	17	1111
7	007	00	0000
8	010	17	1111
9	011	17	1111
10	012	03	0011
11	013	17	1111
12	014	17	1111
13	015	17	1111
14	016	03	0011
15	017	17	1111
16	020	17	1111
17	021	17	1111
18	022	05	0101
19	023	17	1111
20	024	17	1111
21	025	17	1111
22	026	17	1111
23	027	17	1111
24	030	17	1111
25	031	17	1111
26	032	03	0011
27	033	17	1111
28	034	17	1111
29	035	17	1111
30	036	03	0011
31	037	17	1111
32	040	17	1111
33	041	17	1111
34	042	05	0101
35	043	00	0000

ROM PATTERN SPEC

DEC PART NUMBER 23-A25A2
ORIGINATOR: JOHN E ALDEN
DATE OF ORIGIN: 10-09-74

OCTAL DATA
17
17
17
00
17
17
03
17
17
17
03
17
17
17
05
17
17
17
17
17
17
03
17
17
17
17
00
17
17
17
00

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	1111
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-A25A2
ORIGINATOR: JOHN E ALDEN
DATE OF ORIGIN: 10-09-74

OCTAL DATA
17
17
03
17
17
17
03
17
17
17
17
17
17
17
17
17
17
17
03
17
17
17
17
00
17
17
17
00
17
17
03
17

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 NUMB: 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 8 56

DEC PART NUMB: 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 NUMBR 23-A25A2
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

ROM PATTERN SPEC

DEC PART NUMBR 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

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 PAGE 4 OF 8 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 PAGE 5 OF 8 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	1000	10
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 BLOEM
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-A26A2
ORIGINATOR: JOHN E BLOEM
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

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DEC PART NUMBR 23-A26A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	1110	16
253	375	1110	16
254	376	1110	16
255	377	0110	06

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DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
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	021	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	1110	16
34	042	0111	07
35	043	0111	07

ROM PATTERN SPEC

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 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

ROM PATTERN SPEC

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 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 PAGE 8 OF 8 69

DEC PART NUMBER 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
148	154	0000	00
149	155	0000	00
150	156	0000	00
151	157	0000	00
152	160	0000	00
153	161	0000	00
154	162	0000	00
155	163	0000	00
156	164	0000	00
157	165	0000	00
158	166	0000	00
159	167	0000	00
160	170	0000	00
161	171	0000	00
162	172	0000	00
163	173	0000	00
164	174	0000	00
165	175	0000	00
166	176	0000	00
167	177	0000	00
168	200	0110	06
169	201	0110	06
170	202	0111	07
171	203	1011	13
172	204	1111	17
173	205	1111	17
174	206	1111	17
175	207	1011	13
176	210	0000	00
177	211	0000	00
178	212	0000	00
179	213	0000	00
180	214	0000	00
181	215	0000	00
182	216	0000	00
183	217	0000	00

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DEC PART NUMBER 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-3-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
184	220	0000	00
185	221	0000	00
186	222	0000	00
187	223	0000	00
188	224	0000	00
189	225	0000	00
190	226	0000	00
191	227	0000	00
192	230	0000	00
193	231	0000	00
194	232	0000	00
195	233	0000	00
196	234	0000	00
197	235	0000	00
198	236	0000	00
199	237	0000	00
200	240	0110	06
201	241	0110	06
202	242	0111	07
203	243	1011	13
204	244	1111	17
205	245	1111	17
206	246	1111	17
207	247	1011	13
208	250	0000	00
209	251	0000	00
210	252	0000	00
211	253	0000	00
212	254	0000	00
213	255	0000	00
214	256	0000	00
215	257	0000	00
216	260	0000	00
217	261	0000	00
218	262	0000	00
219	263	0000	00

ROM PATTERN SPEC

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-3-74

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

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-3-74

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

DEC PART NUMBR 23-A27A2
ORIGINATOR: JOHN E BLOOM
DATE OF ORIGIN: 10-3-74

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

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 NUMBR 23-A29A2
ORIGINATOR: JOHN ALOFM
DATE OF ORIGIN: 20-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	0110	06
37	045	0011	03
38	046	0110	06
39	047	0011	03
40	050	1110	16
41	051	0111	07
42	052	1110	16
43	053	0111	07
44	054	1010	12
45	055	0011	03
46	056	1010	12
47	057	0011	03
48	060	1010	12
49	061	0011	03
50	062	1000	10
51	063	0011	03
52	064	0110	06
53	065	0011	03
54	066	0110	06
55	067	0011	03
56	070	1010	12
57	071	0011	03
58	072	1010	12
59	073	0011	03
60	074	1010	12
61	075	0011	03
62	076	1010	12
63	077	0011	03
64	100	0010	02
65	101	1011	13
66	102	0010	02
67	103	1011	13
68	104	0010	02
69	105	0011	03
70	106	0010	02
71	107	0011	03

ROM PATTERN SPEC

DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN ALOFM
DATE OF ORIGIN: 20-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
72	110	0010	02
73	111	1011	13
74	112	0010	02
75	113	1011	13
76	114	1110	16
77	115	0011	03
78	116	1110	16
79	117	0011	03
80	120	0110	06
81	121	1111	17
82	122	0110	06
83	123	1111	17
84	124	0010	02
85	125	0011	03
86	126	0010	02
87	127	0011	03
88	130	0110	06
89	131	1111	17
90	132	0110	06
91	133	1111	17
92	134	1110	16
93	135	0011	03
94	136	1110	16
95	137	0011	03
96	140	1010	12
97	141	0011	03
98	142	1010	12
99	143	0011	03
100	144	0110	06
101	145	0011	03
102	146	0110	06
103	147	0011	03
104	150	1010	12
105	151	0011	03
106	152	1010	12
107	153	0011	03

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DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN BLOEM
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

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DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN BLOEM
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

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DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 20-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
190	264	1110	16
191	265	0011	03
192	266	1110	16
193	267	1011	13
194	270	1110	16
195	271	0011	03
196	272	1110	16
197	273	1011	13
198	274	1110	16
199	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
196	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

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DEC PART NUMBR 23-A29A2
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 20-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-A29A2
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-A31A2
ORIGINATOR: JOHN E BLOEM
DATE OF ORIGIN: 10-28-74

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

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DEC PART NUMBR 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

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DEC PART NUMBR 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 NUMB: 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 NUMB: 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

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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

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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

POW PATTERN SPEC

DEC PART NUMBR 23-A31A2
ORIGINATOR JOHN E BLOEM
DATE OF ORIGIN 10-28-74

OCTAL DATA
17
17
17
17

DECIMAL LOC	OCTAL LOC	BINARY DATA
252	374	1111
253	375	1111
254	376	1111
255	377	1111

OCTAL DATA
000
000
000
000
000
000
000
327
037
357
157
257
057
317
000
000
350
170
000
030
260
330
130
230
040
000
200
000
220
200
000
000
003
375
175
020

POW PATTERN SPEC

DEC PART NUMBR 23-A31A2
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 27-SEP-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
0	000	00000000
1	001	00000000
2	002	00000000
3	003	00000000
4	004	00000000
5	005	00000000
6	006	00000000
7	007	11013010
8	010	00011111
9	011	11101111
10	012	01101111
11	013	10101111
12	014	00101111
13	015	11001111
14	016	00000000
15	017	00000000
16	020	11101110
17	021	01101110
18	022	00001110
19	023	00101110
20	024	10101110
21	025	11011110
22	026	01011110
23	027	10011110
24	030	00100101
25	031	00000000
26	032	10110110
27	033	00000000
28	034	10101110
29	035	10110110
30	036	00000000
31	037	00110110
32	040	00000011
33	041	11111101
34	042	01111101
35	043	00001111

DEC PART 40001 23-00101
ORIGINATOR JOHN MAUCH
DATE OF ORIGIN 27-FEB-75

DEC PATTERN SPEC

OCTAL DATA	OCTAL LOC	BINARY DATA
075	044	00111101
246	045	10100110
135	046	01011101
000	047	00000000
035	050	00011101
211	051	10001001
155	052	01101101
221	053	10010001
059	054	00101101
101	055	01000001
115	056	01001101
000	057	00000000
005	060	00101101
125	061	01010101
225	062	10010101
254	063	10011100
145	064	01100101
051	065	00101001
061	066	00110001
041	067	00100001
272	070	10111010
132	071	01011010
232	072	10011010
214	073	10001100
252	074	10101010
002	075	00110010
042	076	00100010
042	077	00100010
153	100	01101011
153	101	01101011
000	102	00000000
273	103	10111011
073	104	00111011
333	105	11011011
133	106	01011011
233	107	10011011

DEC PART 40001 23-00101
ORIGINATOR JOHN MAUCH
DATE OF ORIGIN 27-FEB-75

DEC PATTERN SPEC

OCTAL DATA	OCTAL LOC	BINARY DATA
033	110	00011011
353	111	11101011
263	112	10110011
253	113	10101011
053	114	00101011
313	115	11001011
263	116	10110011
213	117	10001011
201	120	10000001
001	121	00000001
006	122	00000110
026	123	00010110
352	124	11101010
332	125	11011010
352	126	11101010
042	127	00100010
032	130	00011010
226	131	10011110
252	132	10101010
240	133	10100000
000	134	00000000
000	135	00000000
112	136	01001010
214	137	10001100
265	140	10101101
130	141	01110110
031	142	00011001
006	143	00110110
211	144	10111001
011	145	00001001
056	146	00101110
231	147	10011001
315	150	11001101
140	151	01100110
031	152	00011001
040	153	00100000

ROM PATTERN SPEC [redacted] 93

DEC PART NUMBR 23-90101
ORIGINATORS JOHN BAUER
DATE OF ORIGIN 27-FEB-75

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	11111011	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	11100000	340
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	11100111	347
138	212	01101011	153
139	213	10100111	247
140	214	00100111	047
141	215	11000111	307
142	216	01101011	153
143	217	10000111	207

ROM PATTERN SPEC [redacted] 94

DEC PART NUMBR 23-90101
ORIGINATOR: JOHN BAUER
DATE OF ORIGIN: 27-FEB-75

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	11100101	345
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	10300110	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	10010100	224

250

EDA PATTERN SPEC 95

DEC PART NUMBER 23-00101
ORIGINATOR JOHN DOHER
DATE OF ORIGIN 27-FEB-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	10101001	251
181	265	00111110	076
182	266	00101110	056
183	267	00101110	056
184	270	00011110	036
185	271	11061110	316
186	272	01001110	116
187	273	10000100	204
188	274	11010110	326
189	275	00100110	046
190	276	00111010	072
191	277	00101010	052
192	300	10110011	263
193	301	10110011	263
194	302	00000000	000
195	303	01000011	103
196	304	00110011	063
197	305	11010011	323
198	306	01010011	123
199	307	01000011	103
200	310	00010011	023
201	311	01000011	103
202	312	10001110	216
203	313	10100011	243
204	314	00100011	043
205	315	11000011	303
206	316	01000011	103
207	317	00000000	000
208	320	11100010	342
209	321	01100010	142
210	322	00001010	012
211	323	00100010	042
212	324	10110010	262
213	325	11010010	322
214	326	01010010	122
215	327	10010010	222

EDA PATTERN SPEC 96

DEC PART NUMBER 23-00101
ORIGINATOR JOHN DOHER
DATE OF ORIGIN 27-FEB-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	11000110	306
217	331	00000000	000
218	332	00010010	022
219	333	00000000	000
220	334	00001000	010
221	335	11001010	312
222	336	10100010	242
223	337	11101101	355
224	340	10001101	215
225	341	01111010	172
226	342	00000000	000
227	343	00111010	072
228	344	11100001	341
229	345	11010001	321
230	346	01010001	121
231	347	10010001	221
232	350	01010110	126
233	351	00101101	055
234	352	00000001	001
235	353	10100101	245
236	354	10100001	241
237	355	11000001	301
238	356	01000001	101
239	357	00000000	000
240	360	01001011	113
241	361	00001011	013
242	362	11110011	363
243	363	10010000	220
244	364	01110011	163
245	365	01110011	163
246	366	10110011	263
247	367	10100110	246
248	370	01110111	167
249	371	01100111	147
250	372	00001111	017
251	373	10001111	217

ROM PATTERN SPEC

DEC PART NUMBR 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

ROM PATTERN SPEC

DEC PART NUMBR 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	200
28	034	00111000	070
29	035	00000000	000
30	036	00110000	060
31	037	00000010	002
32	040	00110000	060
33	041	10000000	200
34	042	00111100	074
35	043	10000000	200

ROM PATTERN SPEC

DEC PART NUMBI 23-002B1
ORIGINATOR: JOHN BLOEM
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	00000000	000
47	057	10110000	260
48	060	00000000	000
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	00000000	000
57	071	00000000	000
58	072	11111000	370
59	073	11111000	370
60	074	00000000	000
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

ROM PATTERN SPEC

DEC PART NUMBI 23-002B1
ORIGINATOR: JOHN BLOEM
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 23-002H1
ORIGINATOR: JOHN RLOEH
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
100	144	00000000
101	145	00111100
102	146	10000001
103	147	00000000
104	150	00000000
105	151	00111100
106	152	11111111
107	153	11111111
108	154	00000000
109	155	00000000
110	156	11111111
111	157	11111111
112	160	00000000
113	161	00000000
114	162	00000000
115	163	00000000
116	164	00000000
117	165	00000000
118	166	00000000
119	167	00000000
120	170	00000000
121	171	00000000
122	172	11111111
123	173	11111111
124	174	00000000
125	175	00000000
126	176	00000000
127	177	11111111
128	200	00111100
129	201	00000000
130	202	00111000
131	203	01110000
132	204	00000000
133	205	00111100
134	206	00111000
135	207	00111000
136	210	00000000
137	211	00111100
138	212	00000000
139	213	00111100
140	214	00000000
141	215	00111000
142	216	00000000
143	217	00111000

ROM PATTERN SPEC

DEC PART NUMBR 23-002H1
ORIGINATOR: JOHN RLOEH
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
144	220	00111100
145	221	10000001
146	222	00111100
147	223	10000001
148	224	00111000
149	225	00111000
150	226	00111000
151	227	00111000
152	230	00111100
153	231	10000001
154	232	00111100
155	233	10000001
156	234	00000000
157	235	00000000
158	236	00111100
159	237	00000000
160	240	00000000
161	241	00111100
162	242	00000000
163	243	00111000
164	244	00000000
165	245	00111000
166	246	00000000
167	247	00000010
168	250	00111100
169	251	00111000
170	252	10110000
171	253	00000000
172	254	00000000
173	255	00111100
174	256	00000000
175	257	00111000
176	260	00000000
177	261	00000000
178	262	11111100
179	263	11111000

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	00002000	000
189	275	00002010	002
190	276	00002010	002
191	277	00000010	002
192	300	00002000	000
193	301	00111000	070
194	302	00111100	074
195	303	00002000	000
196	304	00111100	074
197	305	00000000	000
198	306	00111000	070
199	307	00020000	000
200	310	00111000	070
201	311	00000000	000
202	312	10002000	200
203	313	00111100	074
204	314	00020000	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	00002000	000
213	325	00002000	000
214	326	00112000	060
215	327	00002000	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	10002000	200
231	347	00000000	000
232	350	00110000	060
233	351	00002000	000
234	352	00002000	000
235	353	00002000	000
236	354	00111100	074
237	355	10002000	200
238	356	00002000	000
239	357	00110000	060
240	360	00002000	000
241	361	00002000	000
242	362	11111000	370
243	363	11111000	370
244	364	00002000	000
245	365	00002000	000
246	366	00002000	000
247	367	10002000	200
248	370	00002001	001
249	371	00002000	000
250	372	00110100	064
251	373	00110100	064

155

OCTAL DATA

000
000
000
001

ROM PATTERN SPEC

DEC PART NUMBER 23-00381
ORIGINATOR JOHN BLOEM
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

120
120
120
120

120
120
120
100

160
160
160
160

160
160
170
170

040
040
160
360

121
163
160
060

160
070
160
170

060
121
163
105

163
170
163
170

ROM PATTERN SPEC

DEC PART NUMBER 23-00381
ORIGINATOR JOHN BLOEM
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	01012020
5	005	01012000
6	006	01012020
7	007	01112020
8	010	01112000
9	011	00112000
10	012	01112000
11	013	00112000
12	014	01112020
13	015	01112020
14	016	01112020
15	017	01112020
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	00112020
26	032	01112020
27	033	01112000
28	034	00112020
29	035	01012001
30	036	01112011
31	037	01012121
32	040	01112011
33	041	01112020
34	042	01112000
35	043	01112020

ROM PATTERN SPEC PAGE 107

DEC PART NUMBR 23-003B1
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 PAGE 108

DEC PART NUMBR 23-003B1
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

ROM PATTERN SPEC

DEC PART NUMBR 23-00381
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	01110000	160
109	155	01110000	160
110	156	00111000	070
111	157	01110000	160
112	160	01010001	121
113	161	01010001	121
114	162	00110000	060
115	163	00110000	060
116	164	01010001	121
117	165	01010101	125
118	166	01010101	125
119	167	01110000	160
120	170	01010001	121
121	171	01010001	121
122	172	00110000	060
123	173	00110000	060
124	174	01010001	121
125	175	01110000	160
126	176	01110000	160
127	177	00110000	060
128	200	01110000	160
129	201	01110000	160
130	202	00110000	060
131	203	01111000	170
132	204	01010001	121
133	205	01110000	160
134	206	00110000	060
135	207	00110000	060
136	210	01010001	121
137	211	01110000	160
138	212	01010001	121
139	213	01110000	160
140	214	01110000	160
141	215	00110000	060
142	216	01110000	160
143	217	00110000	060

ROM PATTERN SPEC

DEC PART NUMBR 23-00381
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
144	220	01110000	160
145	221	00111000	070
146	222	01110000	160
147	223	01111000	170
148	224	00110000	060
149	225	00100000	040
150	226	01110011	163
151	227	01110011	163
152	230	01110000	160
153	231	00111000	070
154	232	01110000	160
155	233	01111000	170
156	234	01110000	160
157	235	01010001	121
158	236	01110000	160
159	237	01110000	160
160	240	01010001	121
161	241	01110000	160
162	242	01110000	160
163	243	00110000	060
164	244	01110000	160
165	245	00110000	060
166	246	01010001	121
167	247	01000101	105
168	250	01110000	160
169	251	00110000	060
170	252	01111000	170
171	253	01110000	160
172	254	01010001	121
173	255	01110000	160
174	256	01110000	160
175	257	00110000	060
176	260	01010001	121
177	261	01010001	121
178	262	00110000	060
179	263	00100000	040

ROM PATTERN SPEC ~~PAGE 1 OF 4~~ 111

DEC PART NUMBI 23-003B1
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	01111000	170
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	01110011	163
215	327	01110000	160

ROM PATTERN SPEC ~~PAGE 2 OF 4~~ 112

DEC PART NUMBI 23-003B1
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	00111000	070
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	01110000	160
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	01110000	160
247	367	01111000	170
248	370	01010000	120
249	371	01110000	160
250	372	11110000	360
251	373	11110000	360

ROM PATTERN SPEC [redacted] 113

DEC PART NUMBR 23-00381
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	01010000	120

ROM PATTERN SPEC [redacted] 114

DEC PART NUMBR 23-00481
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	00001111	017
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 115

DEC PART NUMBR 23-0044A1
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 116

DEC PART NUMBR 23-0044B1
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

DEC PART NUMBI 23-00481
ORIGINATORI JOHN BLOEM
DATE OF ORIGINI 12-MAY-75

ROM PATTERN SPEC [redacted] 117

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

DEC PART NUMBI 23-00481
ORIGINATORI JOHN BLOEM
DATE OF ORIGINI 12-MAY-75

ROM PATTERN SPEC [redacted] 118

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	00001010	012
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 NUMBER 23-00481
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 12-MAY-75

DECIMAL LOC	OCTAL LOC	OCTAL DATA	BINARY DATA
100	144	057	00101111
101	145	057	00101111
102	146	057	00101111
103	147	057	00101111
104	150	057	00101111
105	151	057	00101111
106	152	045	00100101
107	153	045	00100101
108	154	057	00101111
109	155	057	00101111
110	156	057	00101111
111	157	057	00101111
112	160	057	00101111
113	161	012	00001010
114	162	012	00001010
115	163	012	00001010
116	164	012	00001010
117	165	012	00001010
118	166	012	00001010
119	167	012	00001010
120	170	012	00001010
121	171	012	00001010
122	172	012	00001010
123	173	012	00001010
124	174	057	00101111
125	175	057	00101111
126	176	057	00101111
127	177	057	00101111
128	200	057	00101111
129	201	057	00101111
130	202	057	00101111
131	203	057	00101111
132	204	057	00101111
133	205	057	00101111
134	206	057	00101111
135	207	057	00101111
136	210	057	00101111
137	211	057	00101111
138	212	057	00101111
139	213	057	00101111
140	214	057	00101111
141	215	057	00101111

ROM PATTERN SPEC

DEC PART NUMBER 23-00481
ORIGINATOR JOHN BLOEM
DATE OF ORIGIN 12-MAY-75

DECIMAL LOC	OCTAL LOC	OCTAL DATA	BINARY DATA
142	216	071	00111001
143	217	071	00111001
144	220	045	00100101
145	221	071	00111001
146	222	071	00111001
147	223	057	00101111
148	224	057	00101111
149	225	071	00111001
150	226	071	00111001
151	227	071	00111001
152	230	057	00101111
153	231	057	00101111
154	232	057	00101111
155	233	071	00111001
156	234	057	00101111
157	235	071	00111001
158	236	071	00111001
159	237	057	00101111
160	240	071	00111001
161	241	057	00101111
162	242	045	00100101
163	243	057	00101111
164	244	057	00101111
165	245	057	00101111
166	246	057	00101111
167	247	057	00101111
168	250	071	00111001
169	251	057	00101111
170	252	057	00101111
171	253	057	00101111

ROM PATTERN SPEC

DEC PART NUMBR 23-#4#4#1
ORIGINATOR JOHN BLOFM
DATE OF ORIGIN 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
252	374	#2131111
253	375	#0111201
254	376	#2131111
255	377	#0131111

ROM PATTERN SPEC

DEC PART NUMBR 23-#2#5#1
ORIGINATOR JOHN BLOFM
DATE OF ORIGIN 12-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA
0	#00	#2021#10
1	#01	#0021#10
2	#02	#0021#10
3	#03	#0021#10
4	#04	#0021#14
5	#05	#0011#10
6	#06	#0011#10
7	#07	#1131112
8	#10	#1131110
9	#11	#1131110
10	#12	#1131110
11	#13	#1131110
12	#14	#1131110
13	#15	#1121011
14	#16	#0021111
15	#17	#0021111
16	#20	#1021#20
17	#21	#0021#20
18	#22	#0021#20
19	#23	#0021#20
20	#24	#0131110
21	#25	#0131110
22	#26	#0021200
23	#27	#1131011
24	#30	#1131111
25	#31	#1031110
26	#32	#0021#20
27	#33	#1021112
28	#34	#1131011
29	#35	#1021200
30	#36	#0131112
31	#37	#0131112
32	#40	#0021#20
33	#41	#1131111
34	#42	#1131111
35	#43	#1131111

ROM PATTERN SPEC

DEC PART NUMBER 23-20501
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
012	050	00001010
012	051	00001010
157	052	01101111
212	053	00001010
157	054	01101111
212	055	00001010
157	056	01101111
210	057	10001000
153	060	01101011
153	061	01101011
010	062	00001000
010	063	00001000
010	064	00001000
010	065	00001000
012	066	00001010
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
012	100	00001010
010	101	00001000
153	102	01101011
056	103	00101110
022	104	00010010
153	105	01101011
053	106	00101011
002	107	00000010

ROM PATTERN SPEC

DEC PART NUMBER 23-20501
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
202	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	10001010
210	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 23-00581
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 23-00581
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	00001000	010
170	252	10001000	210
171	253	01101111	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 23-00581
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 23-00581
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	00001000	010
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	00001000	010
247	367	11001110	316
248	370	00000000	000
249	371	00001000	010
250	372	00001111	017
251	373	00001111	017

ROM PATTERN SPEC

DEC PART NUMBR 23-03591
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 13-MAY-75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	10101011	253
253	375	10101010	252
254	376	11101011	353
255	377	00000000	000

ROM PATTERN SPEC

DEC PART NUMBR 23-03681
ORIGINATOR: JOHN BLOEM
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 PAGE 1 OF 6 131

DEC PART NUMBR 23-006B1
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 PAGE 2 OF 6 132

DEC PART NUMBR 23-006B1
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

ROM PATTERN SPEC

DEC PART NUMBR 23-00681
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
108	154	10111001	271
109	155	10111101	275
110	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

ROM PATTERN SPEC

DEC PART NUMBR 23-00681
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 16-DEC-74

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	10111120	274
169	251	10111101	275
170	252	10110120	264
171	253	10110101	265
172	254	10111120	274
173	255	10111101	275
174	256	10110120	264
175	257	10110101	265
176	260	10111120	274
177	261	10111100	274
178	262	10110120	264
179	263	10110100	264

ROM PATTERN SPEC

DEC PART NUMBR 23-00581
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
180	264	10111120	274
181	265	10111130	274
182	266	10112130	264
183	267	10112130	264
184	270	10111120	274
185	271	10111131	275
186	272	10112130	264
187	273	10112131	265
188	274	10111100	274
189	275	10111101	275
190	276	10112100	264
191	277	10112101	265
192	300	10111010	272
193	301	10111010	272
194	302	10112010	262
195	303	10112100	264
196	304	10111010	272
197	305	10111120	274
198	306	10112010	262
199	307	10112100	264
200	310	10111010	272
201	311	10111101	275
202	312	10112010	262
203	313	10112101	265
204	314	10111010	272
205	315	10111101	275
206	316	10112010	262
207	317	10112101	265
208	320	10111010	272
209	321	10111120	274
210	322	10112010	262
211	323	10112100	264
212	324	10111010	272
213	325	10111120	274
214	326	10112010	262
215	327	10112100	264

ROM PATTERN SPEC

DEC PART NUMBR 23-00581
ORIGINATOR: JOHN BLOEM
DATE OF ORIGIN: 16-DEC-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
216	330	10111010	272
217	331	10111101	275
218	332	10112010	262
219	333	10112101	265
220	334	10111010	272
221	335	10111101	275
222	336	10112010	262
223	337	10112101	265
224	340	01111111	177
225	341	11111100	374
226	342	11112101	365
227	343	11112100	364
228	344	11101120	354
229	345	11111100	374
230	346	11112101	365
231	347	11112100	364
232	350	01111111	177
233	351	11111101	375
234	352	11112101	365
235	353	11112101	365
236	354	11101120	354
237	355	11111101	375
238	356	11112101	365
239	357	11112101	365
240	360	11011110	336
241	361	11111100	374
242	362	11112101	365
243	363	11112100	364
244	364	11101120	354
245	365	11111100	374
246	366	11112101	365
247	367	11112100	364
248	370	11011110	336
249	371	11111101	375
250	372	11112101	365
251	373	11112101	365

ROM PATTERN SPEC PAGE 0 OF 0 137

DEC PART NUMBR 23-00681
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	11110101	365

ROM PATTERN SPEC PAGE 0 OF 0 138

DEC PART NUMBR 23-00781
ORIGINATOR: JOHN BLOOM
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	10111101	275
33	041	10111101	275
34	042	10111101	275
35	043	10111101	275

ROM PATTERN SPEC PAGE 1 OF 2 139

DEC PART NUMBR 23-00781
ORIGINATOR: JOHN BLEOM
DATE OF ORIGIN: 10-09-74

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
36	044	00000000	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 PAGE 2 OF 2 140

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	00032000	000
110	156	00032000	000
111	157	00032000	000
112	160	00100111	047
113	161	00100111	047
114	162	00100111	047
115	163	00100111	047
116	164	00002000	000
117	165	00002000	000
118	166	00002000	000
119	167	00002000	000
120	170	00002000	000
121	171	00002000	000
122	172	00002000	000
123	173	00002000	000
124	174	00002000	000
125	175	00002000	000
126	176	00002040	000
127	177	00002000	000
128	200	00100111	047
129	201	00100111	047
130	202	00100111	047
131	203	00100111	047
132	204	00002000	000
133	205	00002000	000
134	206	00002000	000
135	207	00002000	000
136	210	00002000	000
137	211	00002000	000
138	212	00002000	000
139	213	00002000	000
140	214	00002000	000
141	215	00002000	000
142	216	00002000	000
143	217	00002020	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	00002000	000
149	225	00002000	000
150	226	00002000	000
151	227	00002020	000
152	230	00032020	000
153	231	00002000	000
154	232	00002000	000
155	233	00002000	000
156	234	00002000	000
157	235	00002000	000
158	236	00002000	000
159	237	00032000	000
160	240	00100111	047
161	241	00100111	047
162	242	00100111	047
163	243	00100111	047
164	244	00002000	000
165	245	00002000	000
166	246	00002000	000
167	247	00002020	000
168	250	00002000	000
169	251	00002000	000
170	252	00002000	000
171	253	00002020	000
172	254	00032000	000
173	255	00002020	000
174	256	00002020	000
175	257	00032020	000
176	260	00100111	047
177	261	00100111	047
178	262	00100111	047
179	263	00100111	047

225

ROM PATTERN SPEC [illegible] 143

DEC PART NUMBR 23-20781
ORIGINATOR: JOHN BLEDM
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	00100000	040
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] 144

DEC PART NUMBR 23-20781
ORIGINATOR: JOHN BLEDM
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

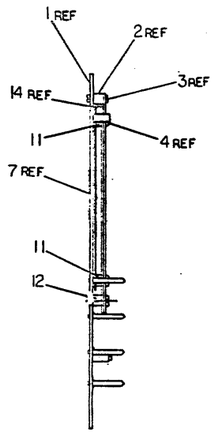
DEC PART NUMB: 23-00781
ORIGINATOR: JOHN BLEOM
DATE OF ORIGIN: 10-09-74

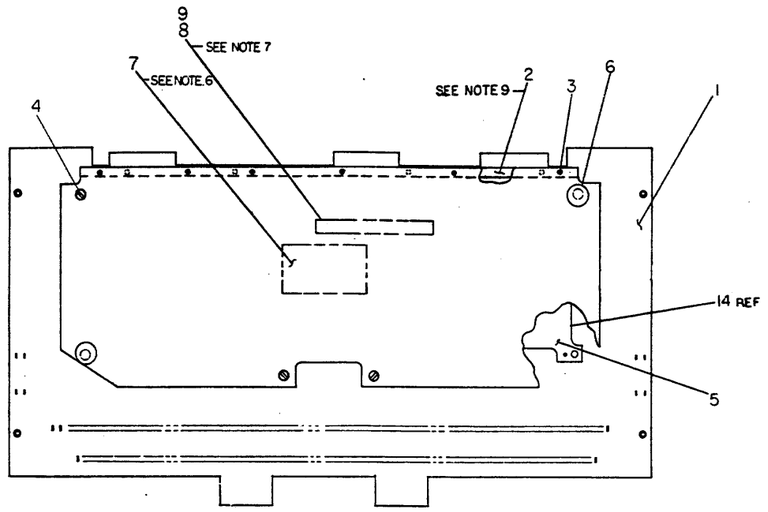
DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
252	374	00000000	000
253	375	00000000	000
254	376	00000000	000
255	377	00000000	000

377

Pages 278-303 Missing From Original Document

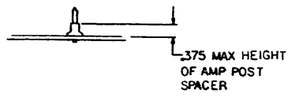
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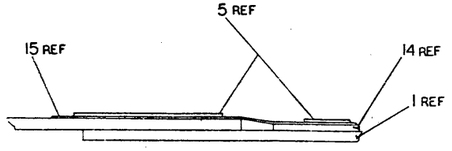


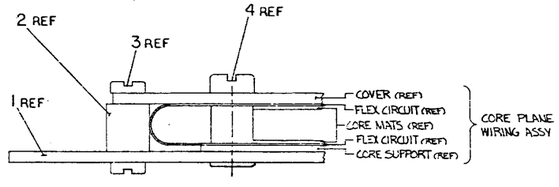


NOTES:

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-IA-7013707-0-0
4. CLOSE COVER (PARTS OF ITEM NO. 5) 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.







1	FLEX CIRCUIT ASSY(32K-SPC)	D-ES-H228CC91-0-0	15
1	STACK BOARD (32K-SPC)	D-10-7022.3-0-0	14
A/R	PROTECTIVE COATING, RED (FI45)	4901093	13
2	STANDOFF, COAXIAL, .250 LONG	3003877-01	12
4	STANDOFF, COAXIAL, .38 LONG	3003927-00	11
A/R	ADHESIVE (ATV 3145)	4901036-00	10
A/R	INK, BLACK	4901084-00	9
A/R	EPOXY	4901082-00	8
1	NAME PLATE	3614053-00	7
2	WARRANTY SEAL	3813970-00	6
1	CORE PLANE WIRING ASSY	D-IA-7013707-0-0	5
8	SCR, SLT TRUSS HD, NYLON #4-40	9003233-4	4
10	SCR, SLT TRUSS HD, NYLON #6-56	9003203-01	3
1	STIFFENER SPACER (32K-SPC)	D-ES-7013707-0-0-01	2
1	STACK BOARD (32K-SPC)	D-IA-7013693-0-0	1

ITEM NO.	DESCRIPTION	PART OR IDENTIFYING NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

FINISH, BREAK AND MACHINE EDGES

MATERIAL

NEXT ASSY

APPLICATION

DRAWN MMM-YY

CHECKED

ENGR APPR

MFG APPR

NEXT HIGHER ASSY

PARTS LIST

TITLE H228-8
CORE MEMORY
STACK ASSEMBLY

SIZE E | CODE | DWG NO. UA H228-8-0 | REV.

SCALE 1/1

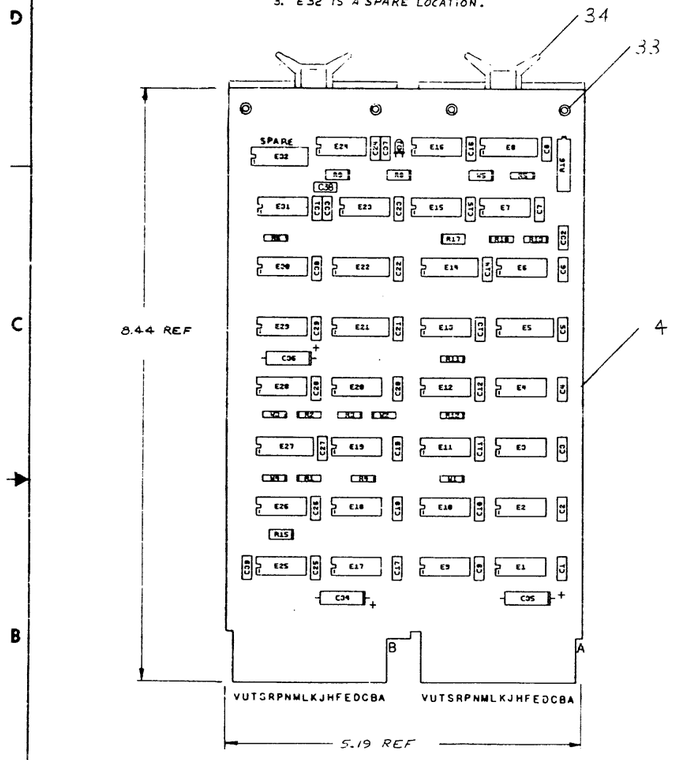
SHEET

304

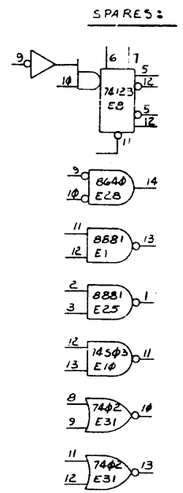
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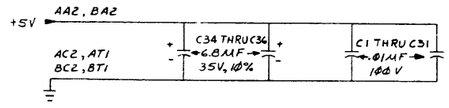
NOTES:

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 S 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 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REF		CIRCUIT SCHEMATIC	D CS-M7850-0-1	REF
REF		X-Y COORDINATE HOLE LOCATION	X-CO-M7850-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7850-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7850-06	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%	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% (76 PRR)	1309143-10	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	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

FIRST USED ON OPTION MODEL

ETCH BOARD REV. B

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

SEMICONDUCTOR CONVERSION CHART

REV.	REVISIONS	CHANGE NO.	CHK
B	ADDED W5 PER M7850-0001	M7850-00001	J MANTON 5/21/75

DRN W. LUFKIN 2/5/75
CHK'D 2/17/75
ENG. 2/17/75
PROJ. ENG. 2/17/75
PROD. 2/17/75
NEXT HIGHER ASSY

digital

TITLE: PARITY MODULE

SIZE D | CODE DCS | NUMBER M7850-0-1 | REV. B

SCALE | SHEET 1 OF 3 | DIST.

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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 (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
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
BUS A05 L BK1 — 8640 E18 — A05 H
BUS A06 L BK2 — 8640 E26 — A06 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
314A E19

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
74157 E5: A11 H, PM3 D05 H, A13 H, PM3 D07 H, A12 H, PM3 D06 H → F3, F0, F1, F2
STB S0; SEL DATA L; **

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
74174 E21, 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 CSR 2 (0) H
PM3 INIT L
7474 E6

PM3 D00 H → PM2 CSR 0 (1) H (ERR IND ENAB)
PM3 CLK CSR H
7474 E6

ADRS 3 SEL 2 H
T485 E27: A>B, A=B, A<B; IN> IN= IN<
ADRS SEL 1 H
T400 E24
T402 E31
PM12 CSR ADRS SEL H
PM3 VH

+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
T402 E31
8881 E25
BA1 — ETCH CUT, SIGNAL NOT USED
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 (WORDS) 8	W4 A4	W3 A3	W2 A2	W1 A1
772140	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	CS	M7850-0-1	B
SCALE	SHEET 2 OF 3	DIST.		

DEC STANDARD M7850-0-1 REV B

306

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NOTES:
- # B INPUTS SELECTED WHEN SEL IS LOW (*)
- ## 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 DI4 L
BUS DI3 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
8881 E9, E17, E1
AM2 BUS DI5 L
AL1 BUS DI4 L
AL2 BUS DI3 L
AK1 BUS DI2 L
AK2 BUS DI1 L
AJ1 BUS DIØ L
AJ2 BUS DØ9 L
AH1 BUS DØ8 L
AH2 BUS DØ7 L
AF1 BUS DØ6 L
AF2 BUS DØ5 L
AE1 BUS DØ4 L
AE2 BUS DØ3 L
AD1 BUS DØ2 L
AD2 BUS DØ1 L
AC1 BUS DØØ L
8640 E12, E11, E2, E3
PM3 DI5H
DI4H
DI3H
DI2H
PM3 DI1H
PM3 DIØH
PM3 DØ9H
PM3 DØ8H
PM3 8 BIT GEN H
74S280 E13
PM3 DØ7H
DØ6H
DØ5H
DØ4H
DØ3H
DØ2H
DØ1H
PM3 DØØH
PM3 A BIT GEN H
PM3 C1 H
74S03 E10
74S08 E10
74S03 E10
AN1 INT BUS P1 L
AP1 INT BUS P0 L
PM3 PAR ERR H
8266 E14
PM2 CSR 2 (Ø) H
PM3 VH
PM2 CØH
PM3 8 BIT GEN H
PM3 A BIT GEN H
PM3 DATIP L
PM3 C1L
R12 470
R11 470
R10 470
+5V
R6 470
74H04 E16
PM3 INT SSYN H
R5 4.7K
R16 10K (T.P.)
ON50
BB2 S SYN DLY (Ø) H
INT BUS SSYN L BE1
PM3 C1 L
74123 E8
PM3 INIT L
R13 1K
C32 .01UF
PM3 PAR ERR (1) H
PM3 PAR ERR (1) L
PM2 CSR Ø (1) H
7474 E15
8881 E1 AN2 BUS PB L
PM3 INT SSYN H
PM3 M SYN PULSE L
PM3 PAR ERR H
8881 E25 10 BU1 BUS SSYN L
BUS INIT L AA1
INIT H
PM3 INIT L
BUS C1 L BT2
PM3 C1 H
PM3 C1 L
R8 100
C37 330 PF 5%
7408 E24
ERR CLR INH L
7408 E23
S SYNC INH Ø H
BE2 INT BUS PAR MOD DET L
R9 100
C33 330PF 5%
7400 E24
PM3 M SYN PULSE L
BUS M SYN L BV1
PM2 CSR ADRS SEL H
R15 100
C39 470 PF 5%
PM3 READ SEL H
PM3 CLK CSR H
CLK CSR L
PM3 CLK ADRS H
PM3 PAR ERR (1) L

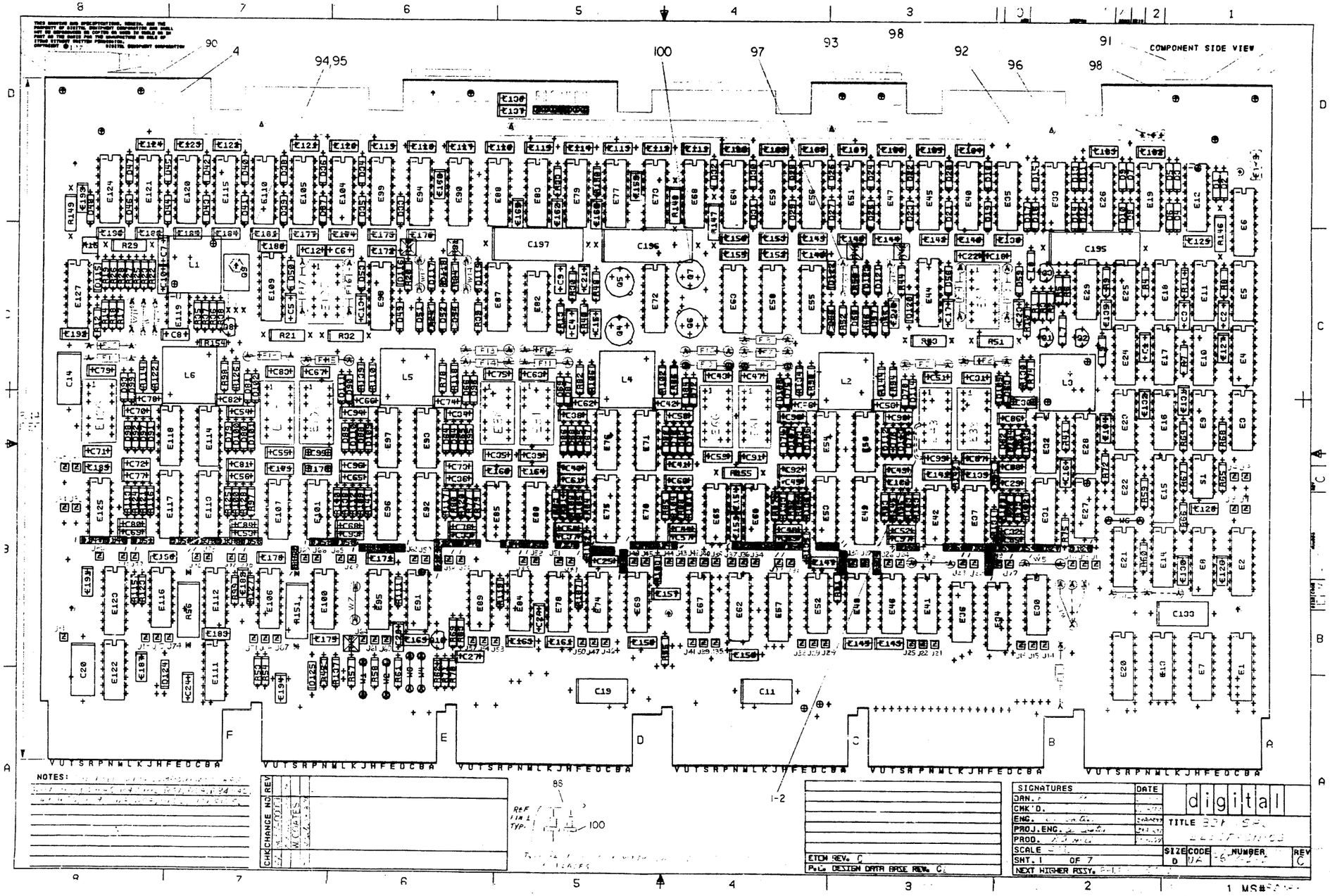
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM3)	D	DCS	M7850-0-1	B
SCALE	SHEET 3 OF 3	DIST		

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-DBP	REV: C


COMPONENT SIDE VIEW
NOTES:
SIGNATURES
DATE
DRN.
CHK'D.
ENG.
PROJ.ENG.
PROD.
SCALE
SHT. 1 OF 7
NEXT HIGHER ASSY.
digital
TITLE
SIZE D
CODE
NUMBER
REV C
ETCH REV. C
P.C. DESIGN DATA BASE REV. C
REF FIN 1 TYP.
C19
C11
C197
C196
C195
C133
L1
L2
L3
L4
L5
L6

315

LAYER 1

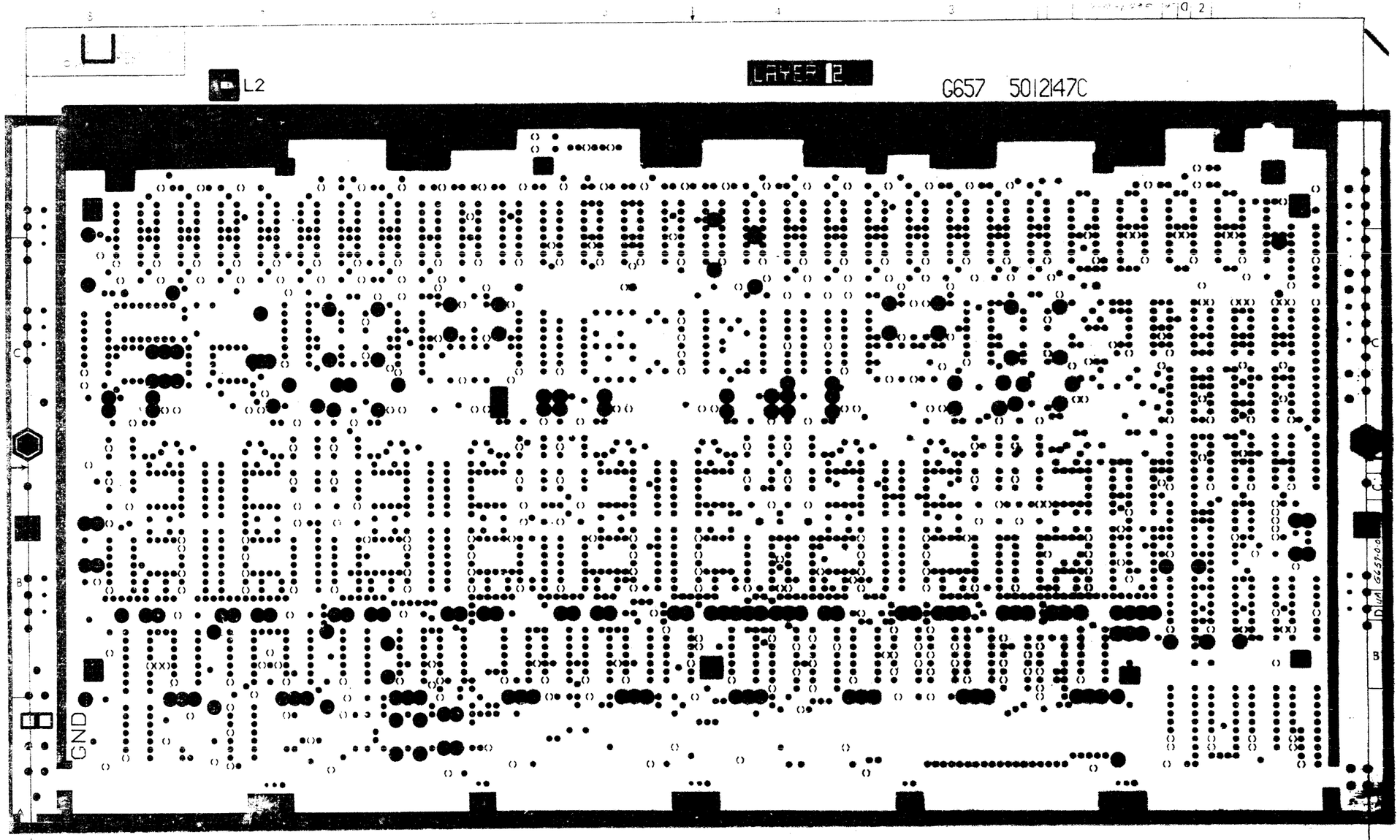
32K SPC ELECTRONICS 5012147C G657

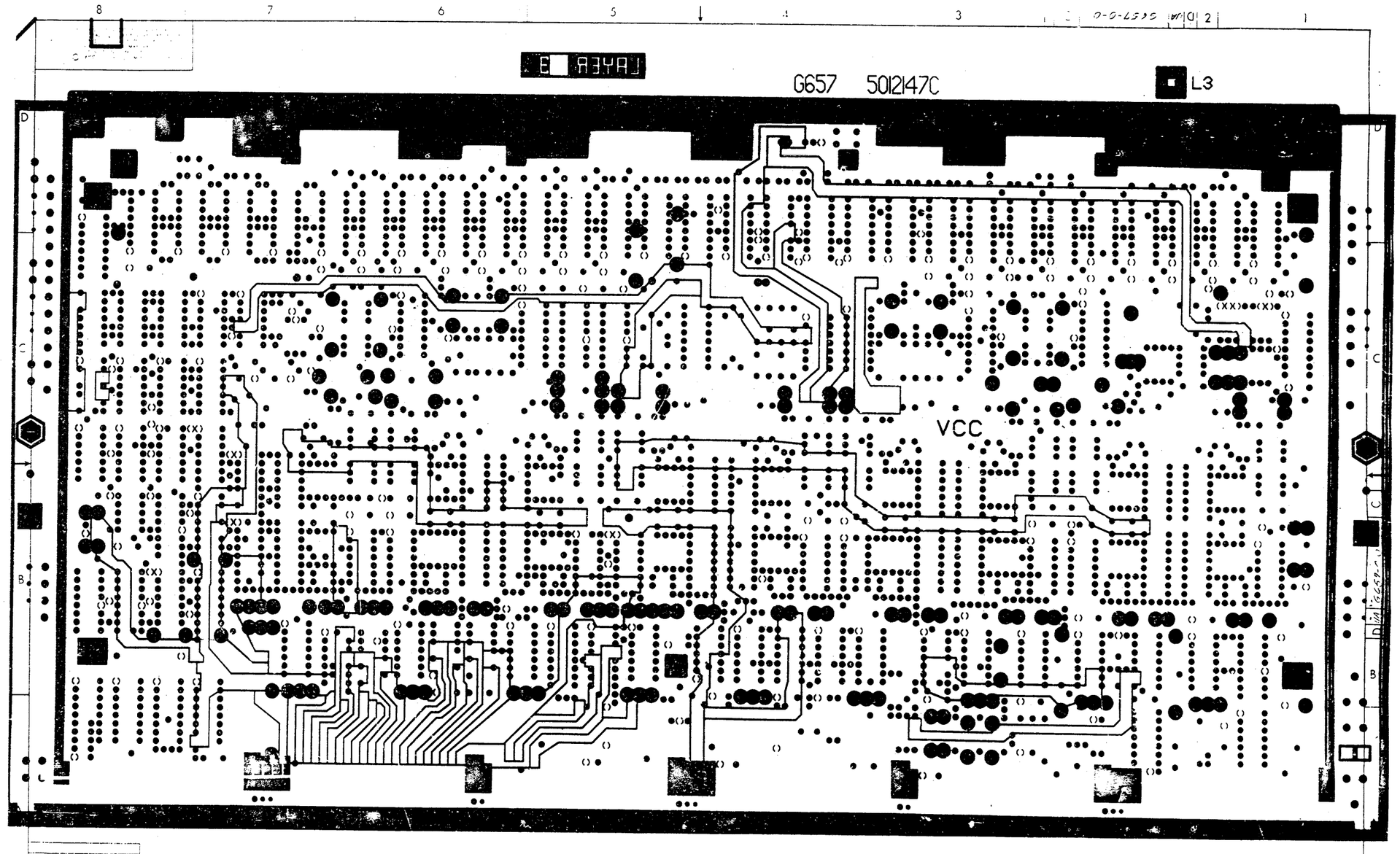
L1

CS*ABCDEFHJ SIDE 1

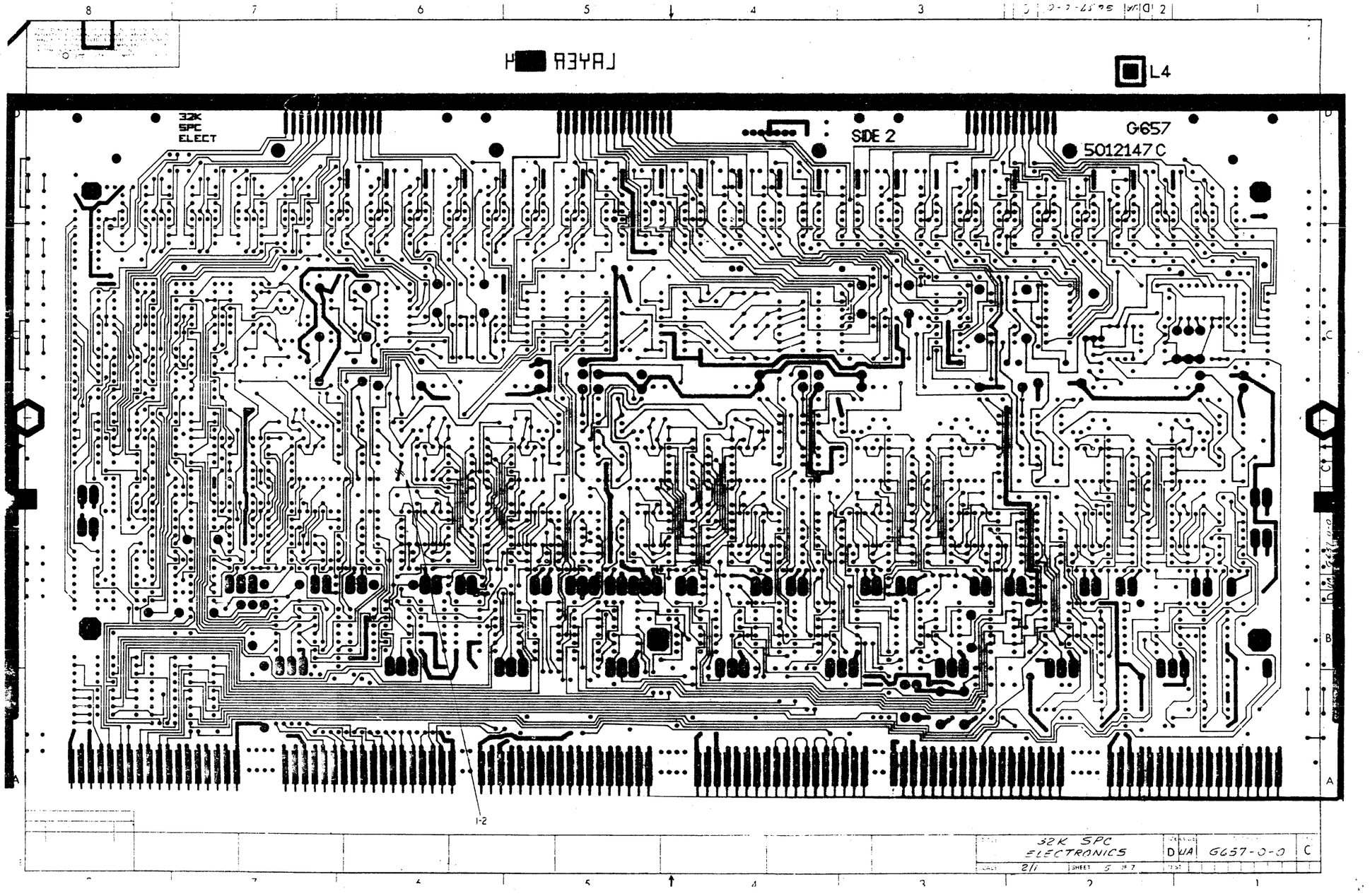
J88 J89 J87 J86

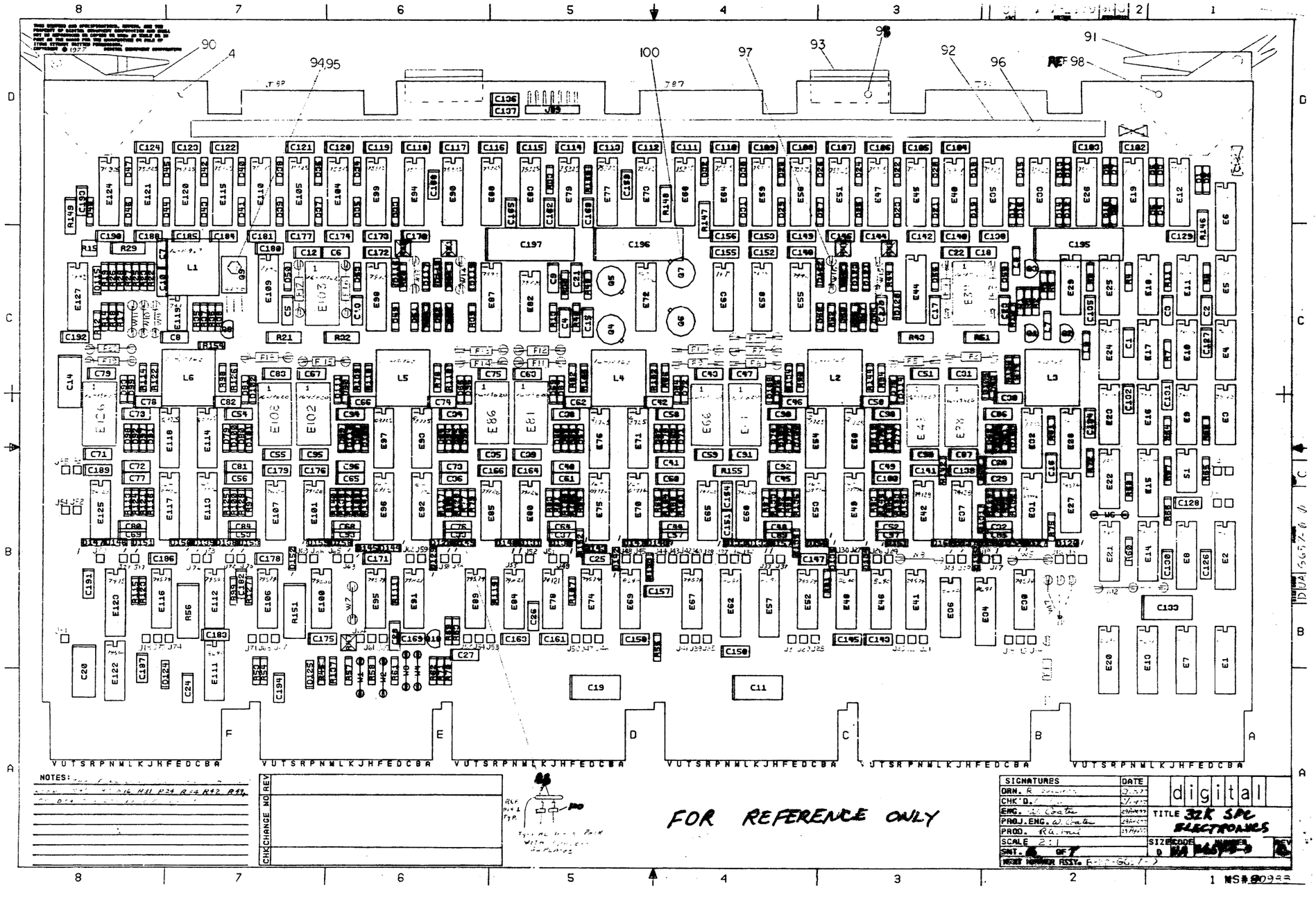
digital


L2
LAYER 2
G657 5012147C
GND
32K SPC
ELECTRONICS
D WA G657-C-0
C



32K SPC
ELECTRONICS
D JA G657 0-J C


LAYER 4
L4
32K
SPC
ELECT
SIDE 2
G657
5012147 C
1-2
32K SPC
ELECTRONICS
D
A
G657-0-0
C
SHEET 5 OF 7


FOR REFERENCE ONLY
NOTES:
SIGNATURES
DATE
DRN. R
CHK'D.
ENG.
PROJ. ENG. W. Coates
PROD. R. Rand
SCALE 2:1
SHT. 1 OF 1
digital
TITLE 32K SPC ELECTRONICS
SIZE D
CODE
NUMBER
REV
CHK
CHANGE NO
REV

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REWORK INSTRUCTIONS

ECO#1

ETCH CUTS SIDE 2:

1-1 CUT ETCH FROM E93-7 TO C99

WIRE ADD SIDE 2

1-2 FROM E93-5 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

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COMPONENT SIDE VIEW

J88 J87 J86

NOTES:
1. PINS THAT HAVE AMP POST SPACERS ARE (16 PLACES) J2,14,21,28,35,42,37,49,7,75,56. AMP POST SPACERS MUST BE PUT ON BEFORE ELECTRICAL COMPONENTS ARE INSTALLED.

CHK CHANGE NO	REV

TYPICAL DIODE PACK WITH SPACERS 18 PLACES

REF PIN 1 TYP

ETCH REV. D
P.C. DESIGN DATA BASE REV. DL

SIGNATURES	DATE
DRN. K Shampine	12-8-76
CHK'D K Shampine	12-8-76
ENG. [illegible]	[illegible]
PROJ. ENG. [illegible]	[illegible]
PROD.	
SCALE 2/1	
SHT. 1 OF 4	
NEXT HIGHER ASSY. 3-DD-5412149-0	

digital

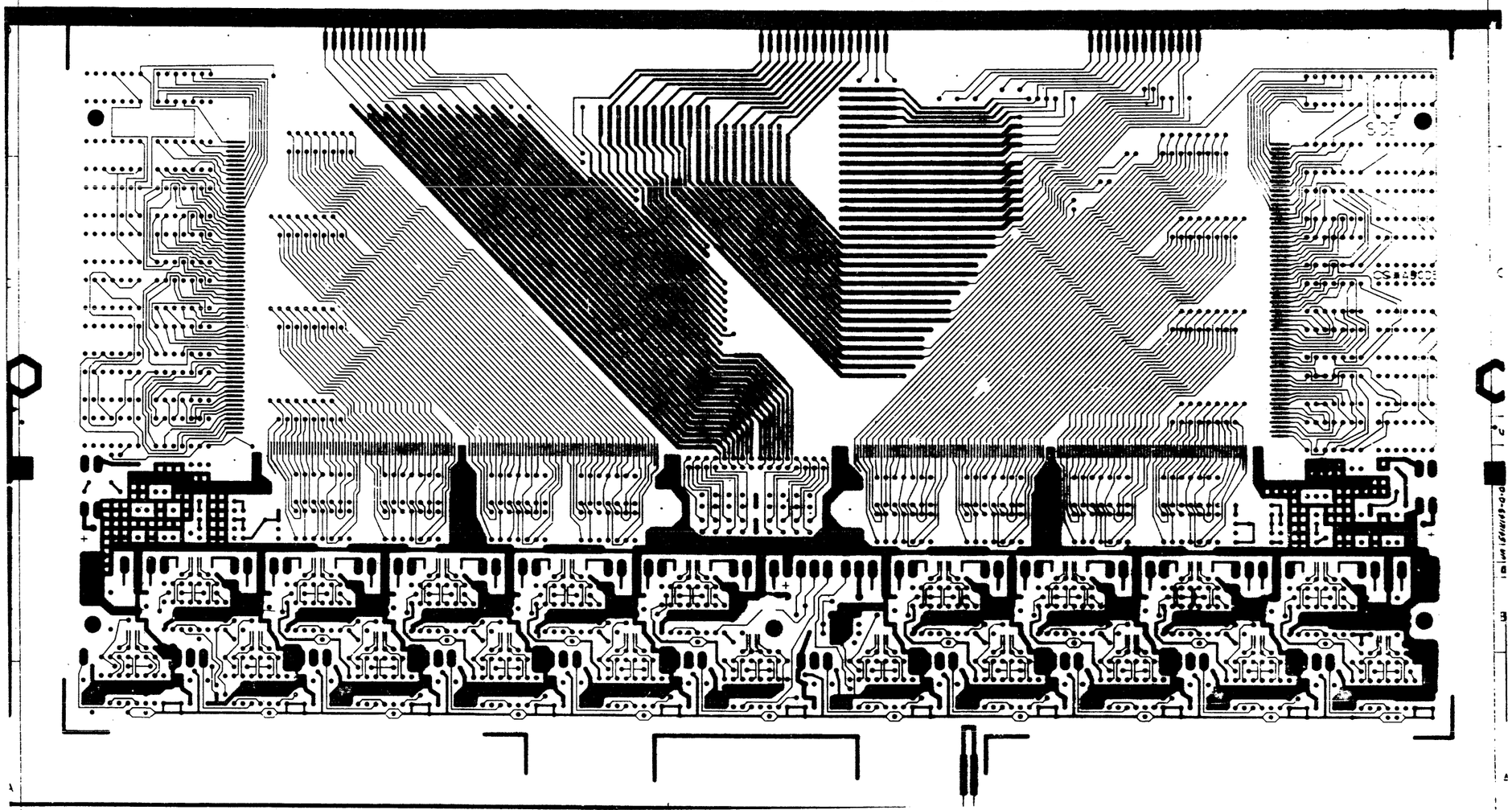
TITLE 32 K SPC MEMORY

SIZE	CODE	NUMBER	REV
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MS# 30989

322

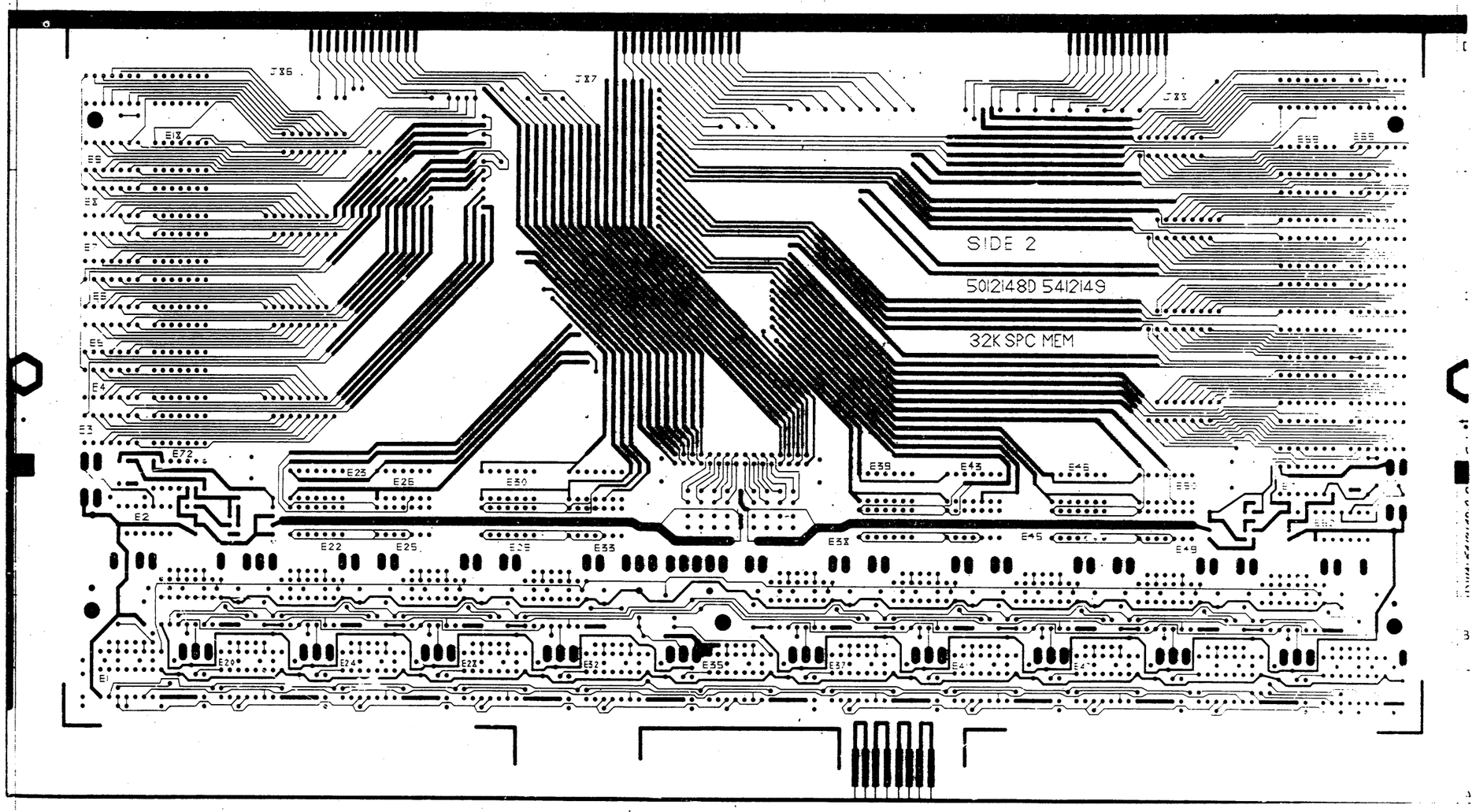
5412149 50:2148D



32K SPC
MEMORY D UA 5412149-0-0 C

211 2 4

323



32K SPC MEMORY D UA 5412149-0-0 C

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D 60-0-6912149-0 DUA C

J88 J87 J86

E70 E60 E69 E59 E68 E58 E67 E57 E66 E56 E65 E55 E64 E54 E63 E53 E62 7412B

E19 E10 E18 E9 E17 E8 E16 E7 E15 E6 E14 E5 E13 E4 E12 E3 E72 Q3725 E2 74128

J85 J83 J84 J82 C113 C104 C105 R45 E71 Q3725 C103 D26 D27 R49 R44 C102 D24 D25 E50 E46 E43 E39 E49 E45 E42 E38

R50 RES NETWORK 110Ω ¼W 1
R51 RES NETWORK 110Ω ¼W 1
R52 RES NETWORK 110Ω ¼W 1
R53 RES NETWORK 110Ω ¼W 1

E34 E30 E26 E23 E33 E29 E25 E22

J4 J2 J3 J1 R5 R6 R4 C6 C7 C11 C10 41 SEE NOTE 1

C107 + 6.8µF J80 J79 J77 J76 J73 J72 J70 J69 J66 J65 J63 J62 J59 J58 J56 J55 J52 J51 J49 J48 J45 J44 J41 J40 J38 J37 J34 J33 J31 J30 J27 J26 J24 J23 J20 J19 J17 J16 J13

D23 D21 D19 D17 D15 D12 D10 D8 D14 D11 D9 D7 D13 D6 D4 D2 D5 D3 D1

R42 R38 R34 R30 R26 R16 R12 R8 R14 R10 R4 R2 R6 R3 R1 R5

C101 C100 C99 C91 C90 C89 C81 C80 C79 C71 C70 C69 C61 C60 C59 C44 C43 C42 C34 C33 C32 C24 C23 C22 C14 C13 C12 C106 C98 C92 C88 C82 C78 C72 C68 C62 C58 C45 C41 C35 C25 C21 C114 C46 C9 C8

E52 7520 E48 7520 E44 7520 E40 7520 E36 7520 E31 7520 E27 7420 E21 7520 E11 E8 E7 E6 E5 E4 E3 E2 E1

C51 6.8µF C52

J81 J78 J75 J74 J71 J68 J67 J64 J61 J60 J57 J54 J53 J50 J47 J46 J43 J42 J39 J36 J35 J32 J29 J28 J25 J22 J21 J18 J15 J14 J11

D28 D24 D22 D20 D18 D16 D13 D11 D9 D7 D1 D3 D5

R46 R40 R36 R32 R28 R24 R22 R18 R14 R10 R4 R2 R6 R3 R1 R5

C111 C110 C96 C95 C86 C85 C76 C75 C66 C65 C56 C55 C49 C48 C39 C38 C29 C28 C20 C19 C112 C108 C107 C97 C94 C93 C87 C84 C83 C77 C74 C73 C67 C64 C63 C57 C54 C53 C50 C47 C46 C10 C37 C36 C30 C27 C26 C21 C18 C17 C0 C15 C16 C4

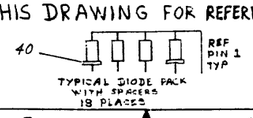
E61 7520 E51 7520 E47 7520 E41 7520 E37 7520 E35 7520 E32 7520 E28 7520 E24 7520 E20 7520 E1

R47

NOTES:
1. PINS THAT HAVE AMP POST SPACERS ARE LOCATED AT: 13, 14, 21, 23, 33, 35, 51, 53, 54, 71, 73, 75.
AMP POST SPACERS MUST BE PUT ON BEFORE ELECTRONIC COMPONENTS ARE INSTALLED.

CHK	CHANGE NO	REV

THIS DRAWING FOR REFERENCE ONLY



TYPICAL DIODE PACK WITH SPACERS 18 PLACES

ETCH REV. D
P.C. DESIGN DATA BASE REV. DL

SIGNATURES	DATE
DRN. K. Hampton	12-8-76
CHK'D. K. Hampton	12-9-76
ENG. W. Coates	12 APR 77
PROJ. ENG. W. Coates	26 APR 77
PROD.	

digital

TITLE 32K SPC MEMORY

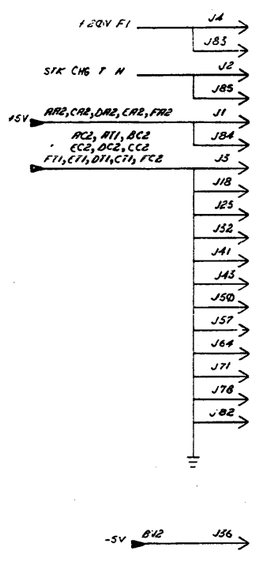
SCALE 2/1 | SIZE D | CODE UA | NUMBER 5412149-0-0 | REV C
SHT. 4 OF 4
NEXT HIGHER ASSY: B-DD-5412149-0

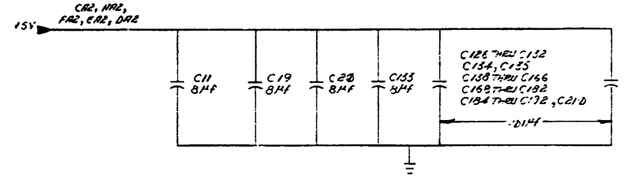
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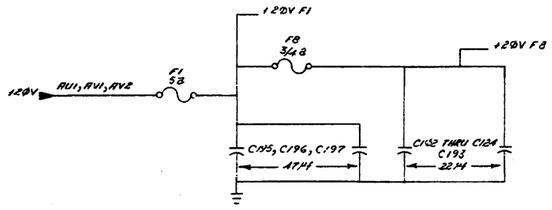
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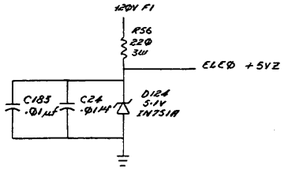
BANK SELECTION

	NON INTERLEAVED	INTERLEAVED	A17	A16	A15	A14	A13
SW	CCA1	EA+1	SW1	SW2	SW3	SW4	SW5
0	32K	64K	ON	ON	ON	ON	ON
4K	36K	68K	ON	ON	ON	ON	OFF
8K	40K	72K	ON	ON	ON	OFF	ON
12K	44K	76K	ON	ON	ON	OFF	OFF
16K	48K	80K	ON	ON	OFF	ON	ON
20K	52K	84K	ON	ON	OFF	ON	OFF
24K	56K	88K	ON	ON	OFF	OFF	ON
28K	60K	92K	ON	ON	OFF	OFF	OFF
32K	64K	96K	ON	OFF	ON	ON	ON
36K	68K	100K	ON	OFF	ON	ON	OFF
40K	72K	104K	ON	OFF	ON	OFF	ON
44K	76K	108K	ON	OFF	ON	OFF	OFF
48K	80K	112K	ON	OFF	OFF	ON	ON
52K	84K	116K	ON	OFF	OFF	ON	OFF
56K	88K	120K	ON	OFF	OFF	OFF	ON
60K	92K	124K	ON	OFF	OFF	OFF	OFF
64K	96K	124K	OFF	ON	ON	ON	ON
68K	100K	124K	OFF	ON	ON	ON	OFF
72K	104K	124K	OFF	ON	ON	OFF	ON
76K	108K	124K	OFF	ON	ON	OFF	OFF
80K	112K	124K	OFF	ON	OFF	ON	ON
84K	116K	124K	OFF	ON	OFF	ON	OFF
88K	120K	124K	OFF	ON	OFF	OFF	ON
92K	124K	124K	OFF	ON	OFF	OFF	OFF
96K	124K	124K	OFF	OFF	ON	ON	ON
100K	124K	124K	OFF	OFF	ON	ON	OFF
104K	124K	124K	OFF	OFF	ON	OFF	ON
108K	124K	124K	OFF	OFF	ON	OFF	OFF
112K	124K	124K	OFF	OFF	OFF	ON	ON
116K	124K	124K	OFF	OFF	OFF	ON	OFF
120K	124K	124K	OFF	OFF	OFF	OFF	ON







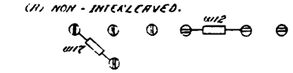


TS325	8	9	16
8640	1	8	
8641	8	16	
7483A	12	5	
7475	12	5	
74H12	8	16	
IC TYPE	GND	+5V	+20

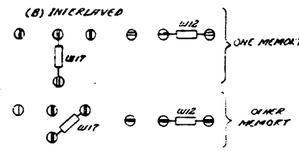
REVISIONS	REV.
CHANGE NO.	
5 ASSEMBLY NOTES	C

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 STACK IS SHOWN ON CS-5412149-0-1.

4.

MODE		WR BYTE Ø L / WR BYTE 1 L	CLOCK Ø H / CLOCK 1 H	CLEAR Ø L / CLEAR 1 L	STROBE LNLBAR, UNLBAR / STROBE LNUBAR, UNUBAR	OUT EN L
DATI	BUS CØ=H, BUS C1=H	H / H	L / L	⊔ / ⊔	⊓ / ⊓	⊔
DATO	BUS CØ=H, BUS C1=L	L / L	⊓ / ⊓	H / H	L / L	H
DATOB	BUS CØ=L, BUS C1=L, BUS AØ=H (LO BYTE)	L / H	⊓ / L	H / ⊔	L / ⊓	H
DATOB	BUS CØ=L, BUS C1=L, BUS AØ=L (UP BYTE)	H / L	L / ⊓	⊔ / H	⊓ / L	H

5. W1, W2, W3, W4, W9, W10, W11, MUST BE INSTALLED BEFORE MEMORY TEST.

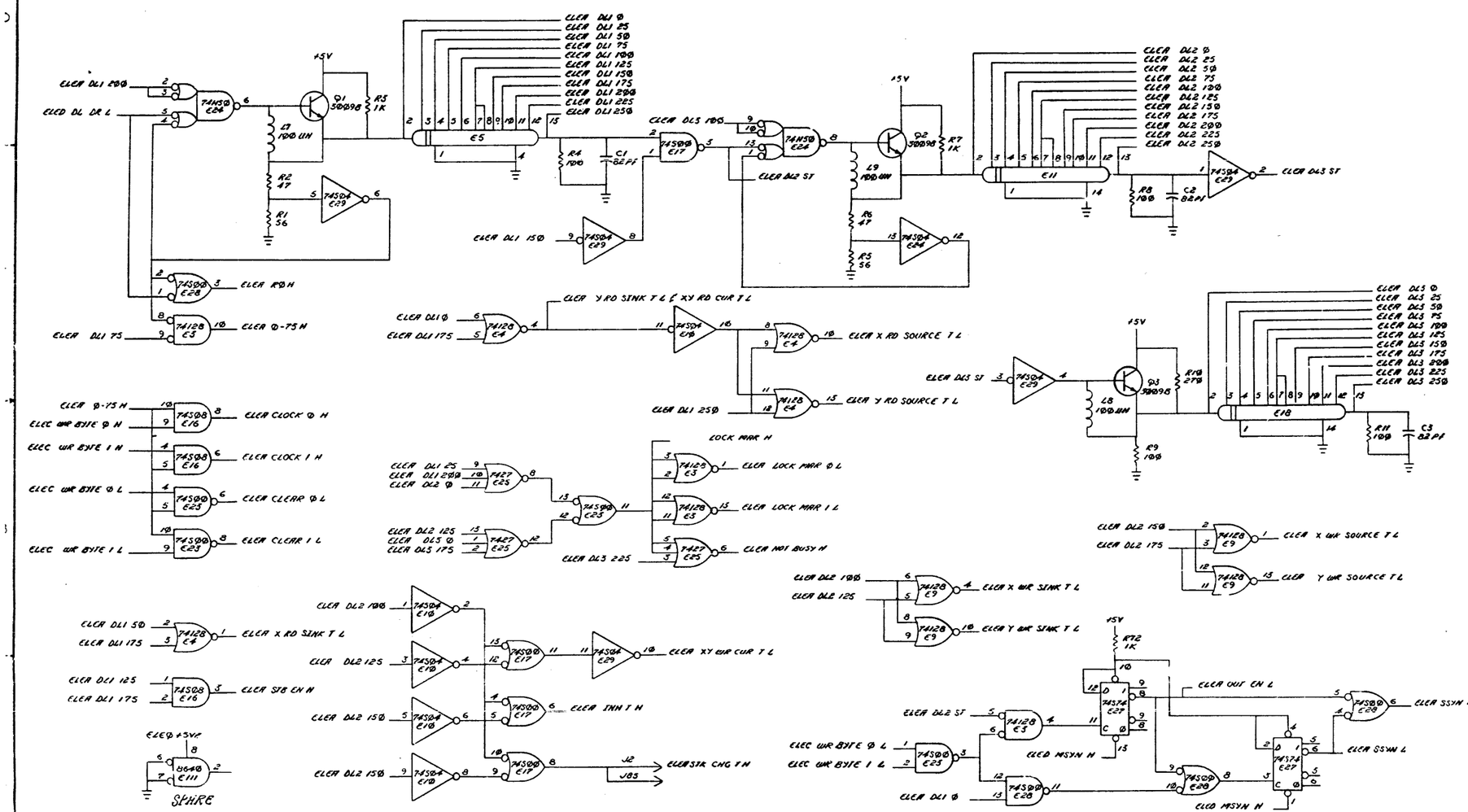
6. W5 AND W6 CONTROL BITS 16 AND 17. (A) FOR 16 BIT SYSTEM W5 AND W6 OUT. (B) FOR 18 BIT SYSTEM W5 AND W6 IN.

DRN. Angel Rubio	1/23/77	FIRST USED ON: MM11-YP
CHK'D Ron Hamilton	2/9/77	digital
ENG. W. Coates	2/9/77	TITLE: (ELEØ) 32K SPEC ELECTRONICS
PROJ. ENG. W. Coates	2/9/77	
PROD. [illegible]	2/10/77	
NEXT HIGHER ASSY.		
B-DD-G657-0		SIZE D / CODE CS / NUMBER G657-0-1 / REV. C
SCALE NONE		
SHEET 1 OF 18		DIST.

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NOTE ALL DIODES D672
UNLESS OTHERWISE SPECIFIED

BUS GRANT LINES
DK2 - DL2
DM2 - DN2
DP2 - DR2
DS2 - DT2
CA1 - CB1

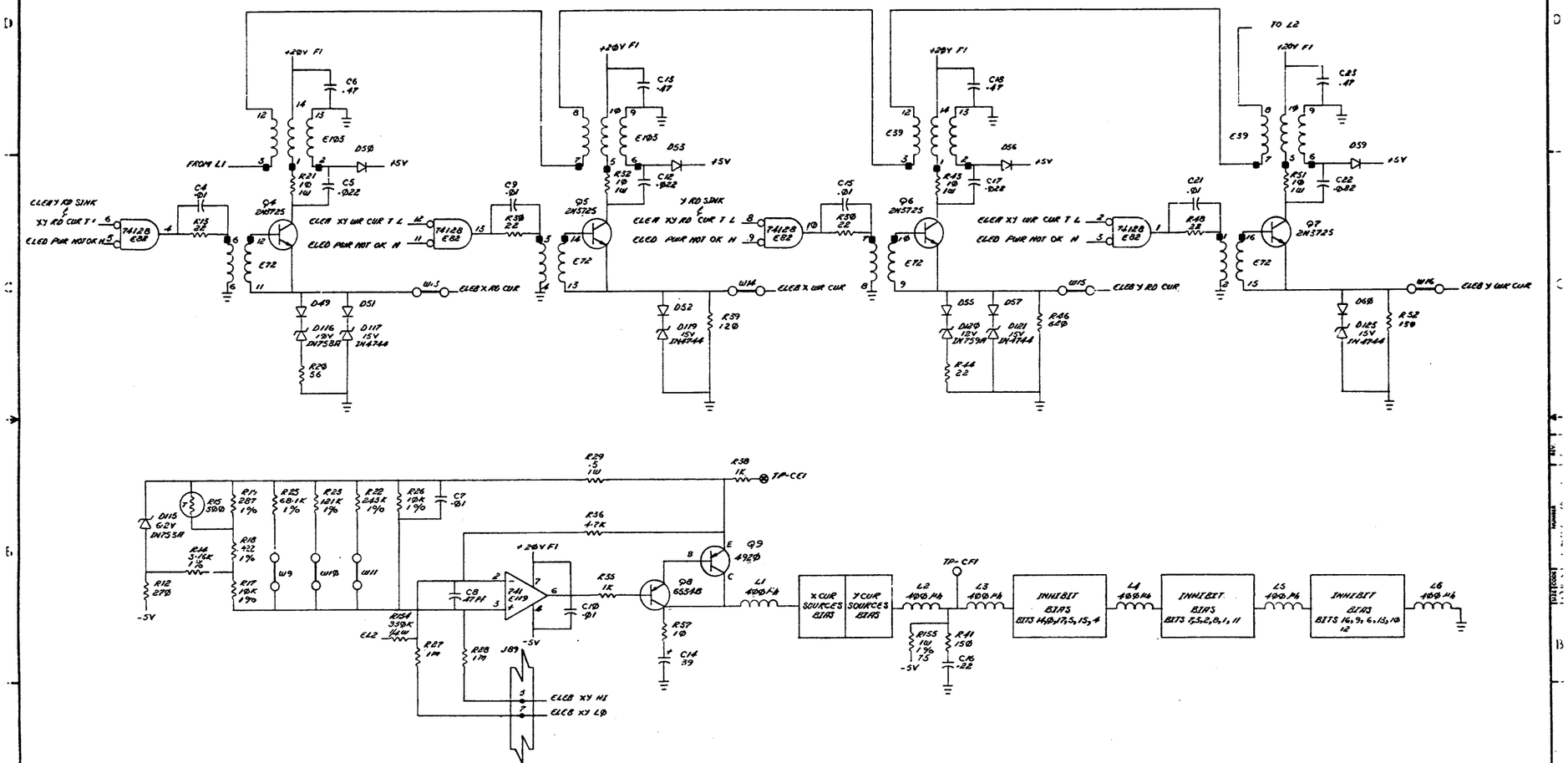


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
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SCALE NONE SHEET 2 OF 18	DIST.			

DEC FORM NO. 10 138

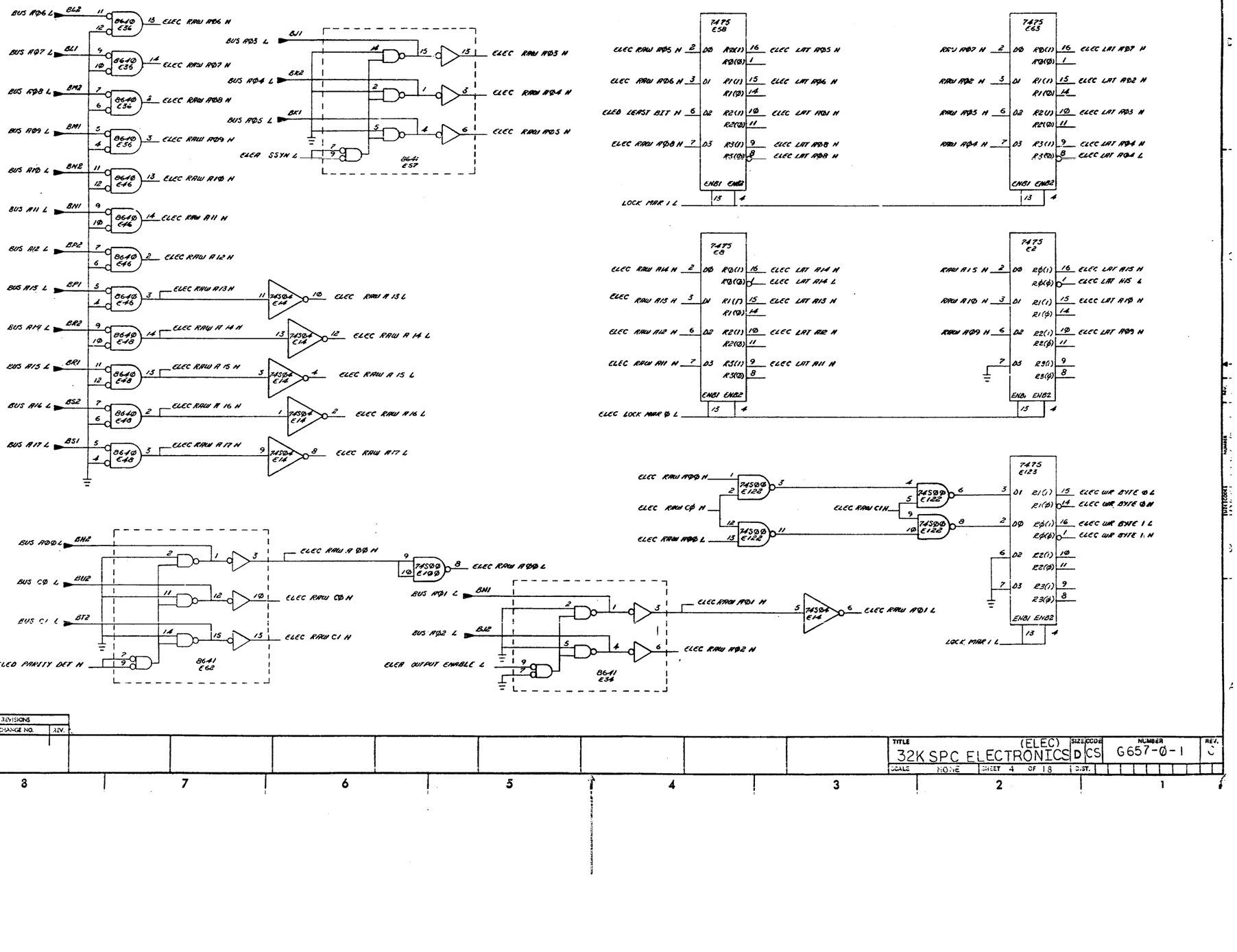
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32KSPC ELECTRONICS (ELES)	D	CS	G657-0-1	C
SCALE NONE SHEET 3 OF 18	DIST.			

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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	DIST.		

ELC FORM NO. DMD 328

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ELEC RAW A13 H
ELEC RAW A14 H
ELEC RAW A15 H
ELEC RAW A16 H
ELEC RAW A17 H
74S30 E21
+5V R60 10K
ELEC RAW A12 H
+5V R59 10K
ELEC RAW A11 H

ELEA MEM BUSY H
ELEA SSYN L
ELED MSYN H
74S30 E22
ELED DL DR L

ELEC RAW A12 L
ELEC RAW A13 L
ELEC RAW A16 L
ELEC RAW A17 L
74S85 E15
+5V R68 10K
+5V R67 10K
+5V R66 10K
+5V R65 10K
15V R64 10K
74S08 E16
RAW A13 L
S1

RAW A16 H
RAW A14 H
RAW A04 L
LEAST BIT H

ELEA SSYN H
PARITY DET. L
BE2
8641 E69
BUI
ELED BUS SSYN L
8641 E62
ELED PARITY DET. H
BE1
ELED INT SSYN L
ELEA SSYN L
8641 E57

ELEA RD H
ELEA LOCK MAR H
BUS DC LO L
BF2
BUS MSYN L
BY1
ELED MSYN H
74S00 E100
74S00 E108
ELEB +5V2
74S00 E110
ELED +5V2
8641 E111
ELED PWR NOT OK H
+5V R54 4.99K 1%
R55 31.6K 1%
8641 E111

ELEC LAT A 15 L
ELEB INH T H
74S40 E112
ELED LO INH L
ELED UP INH L
ELEC LAT A 15 H

+20V F1
R51 220
DIE5 5.1V IN751A
C104 .01
R57 9.09K 1%
R58 19.6K 1%
R61 34.8K 1%
R62 68.1K 1%
W1
W2
W3
W4
R53 3.48K 1%
R69 44.7K 1%
C27 .01
+5V2(REG)
C28 .01
J89
R71 82K
R70 44.7K 1%
D16 1N758
C26 22pf
+5V(REG)
C25 .01
ELEA X RD SINK T L
R52 1K
+5V
74H21 E18

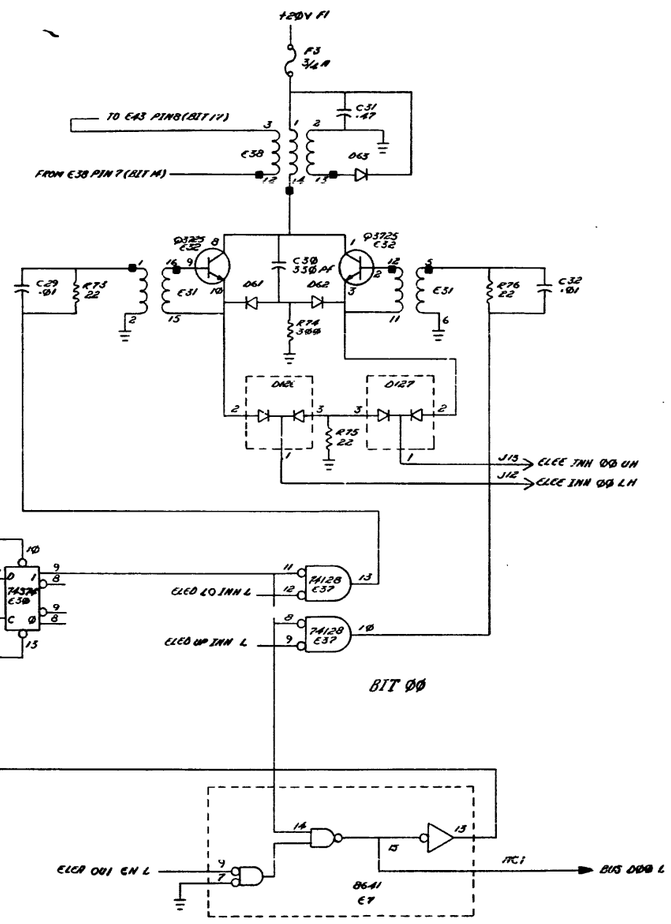
LAT A 15 L
WR BYTE 0 L
WR BYTE 1 L
LAT A 15 H
SIB EN H
74H21 E91
74H21 E84
J37 ELED STB LMLB H
J40 ELED STB LMUB H
J38 ELED STB UMLB H
J42 ELED STB UMUB H

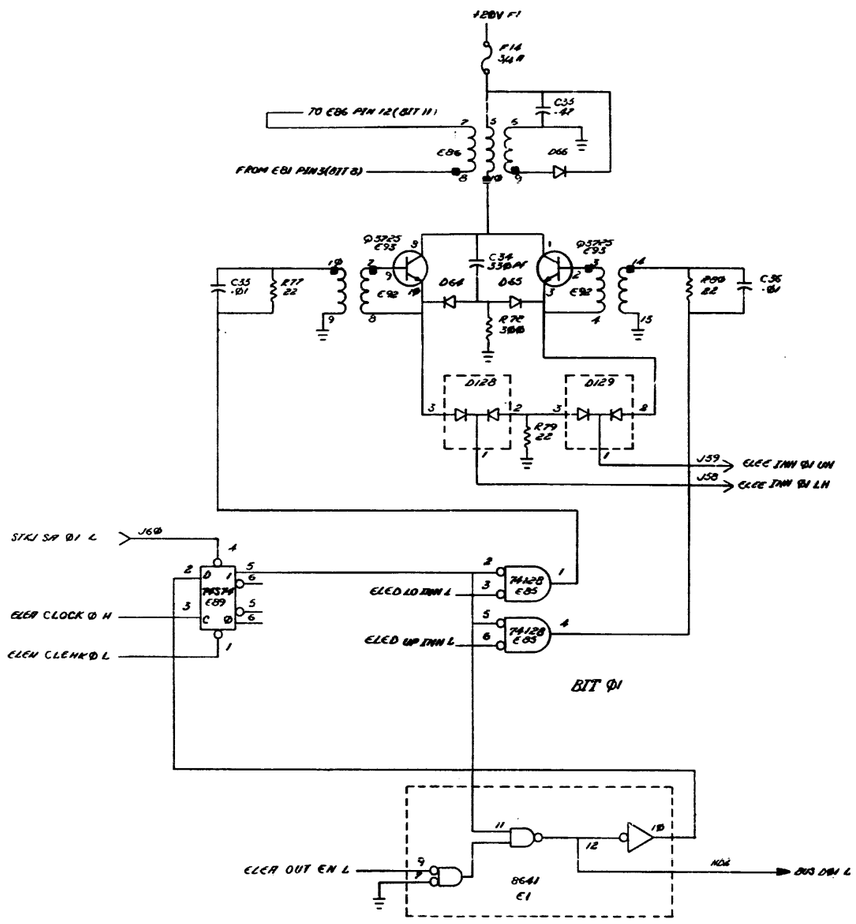
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELED)	D	CS	G657-0-1	C
SCALE NONE SHEET 5 OF 18	DIST.			

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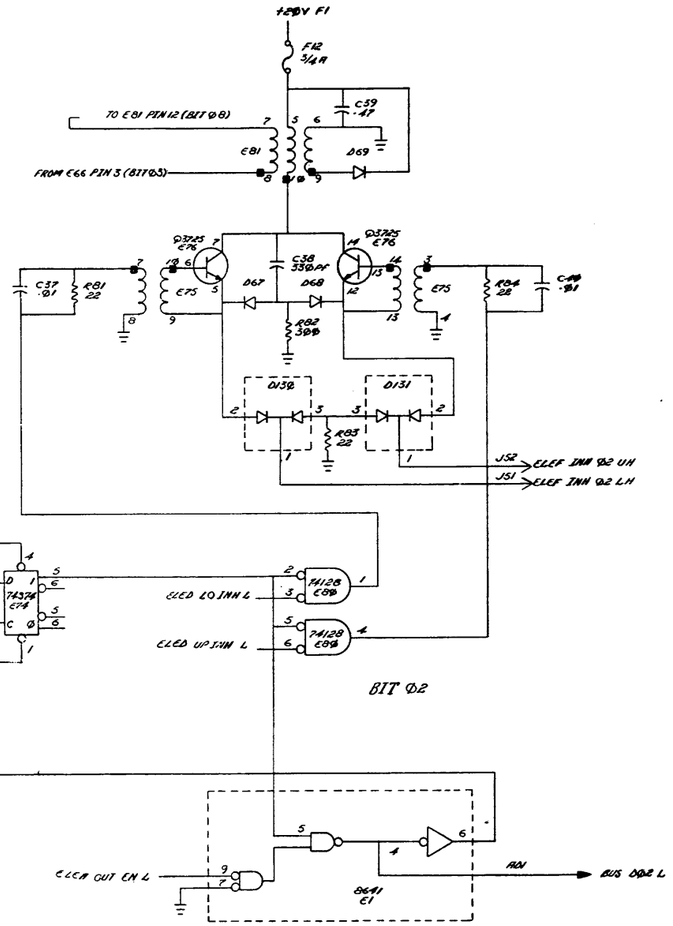


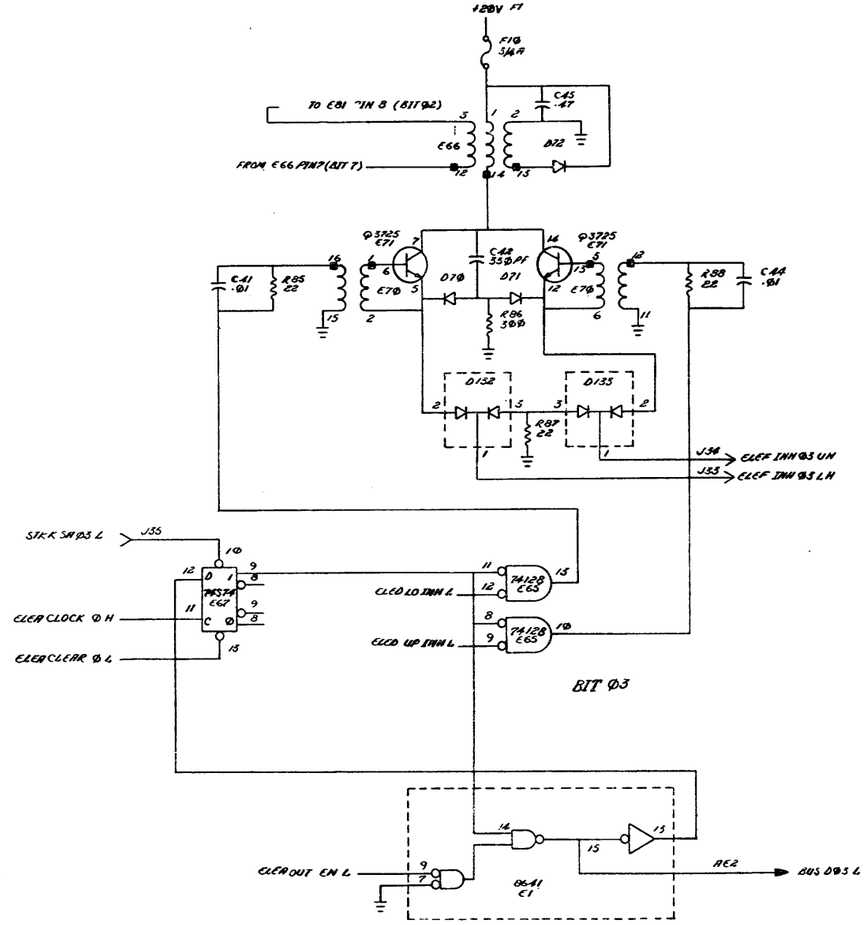


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: 32K SPC ELECTRONICS (ELEE)		SIZE	CODE	NUMBER	REV.
SCALE: NONE	SHEET 6 OF 18	D	DCS	G657-0-1	C

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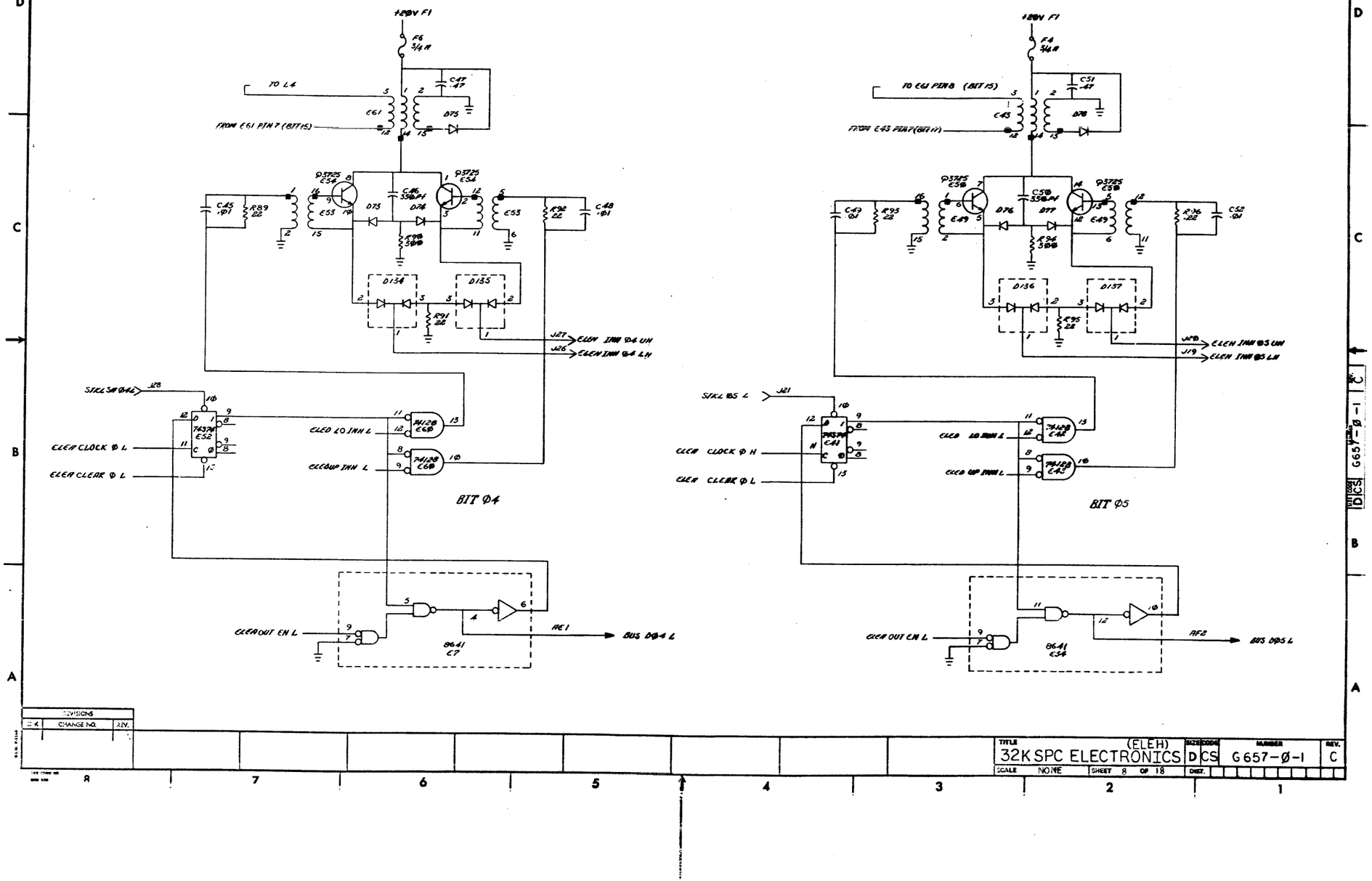


CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
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SCALE NONE SHEET 7 OF 18	DIST.			

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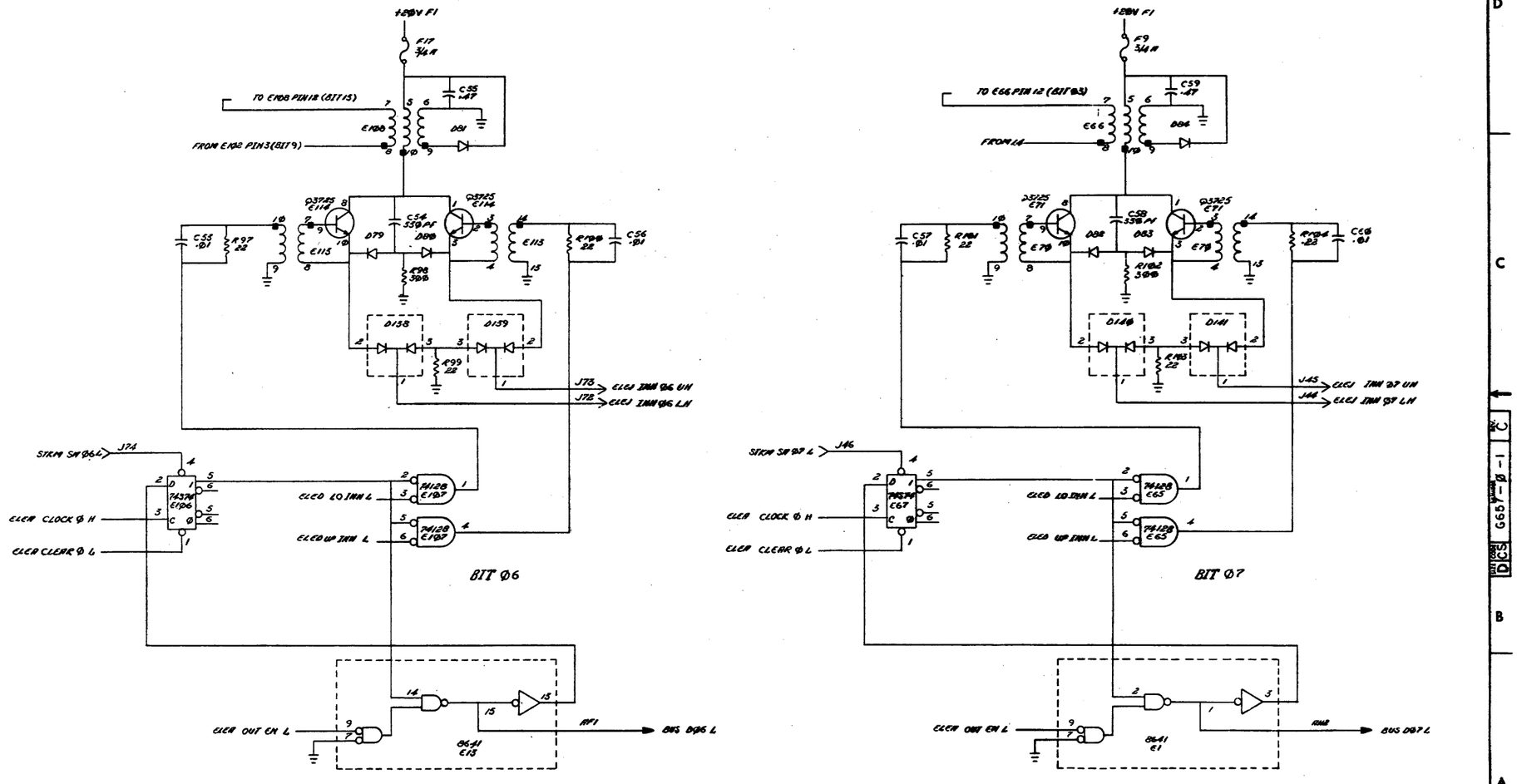
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REVISIONS		
LTR	CHANGE NO.	REV.

TITLE	32K SPC ELECTRONICS (ELEH)		SIZE	CODE	NUMBER / REV.
			D	CS	G657-Ø-1 / C
SCALE	NONE	SHEET 8 OF 18	DIST.		

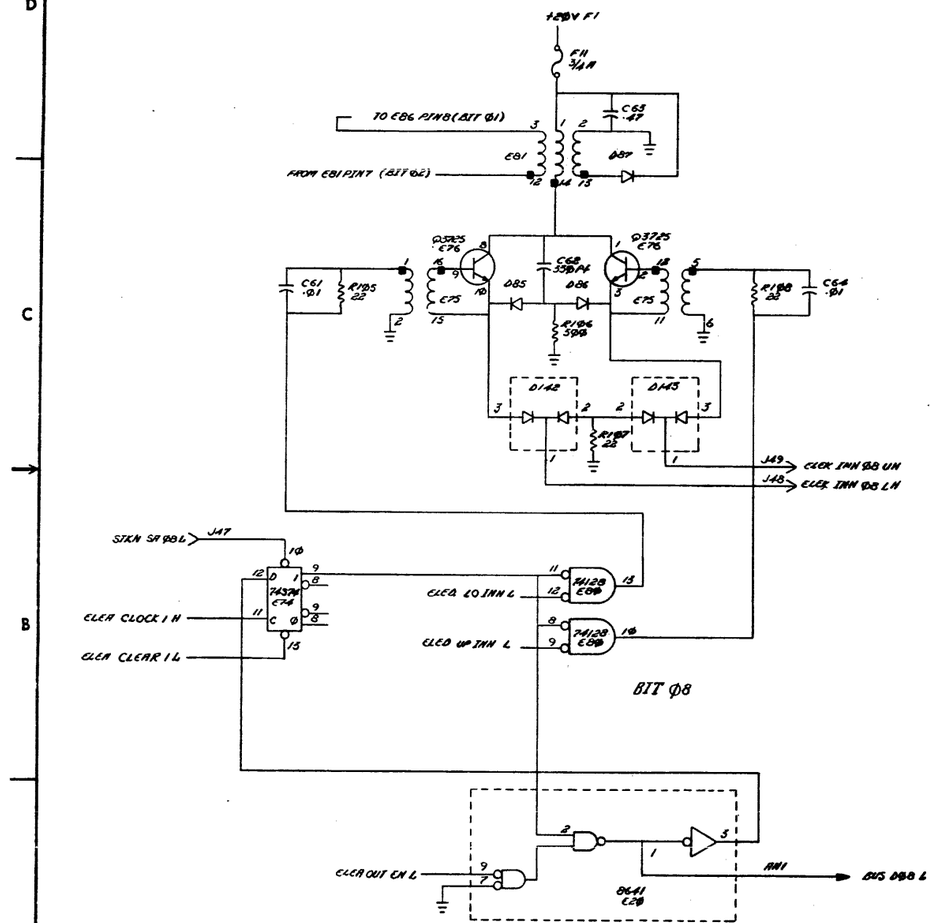
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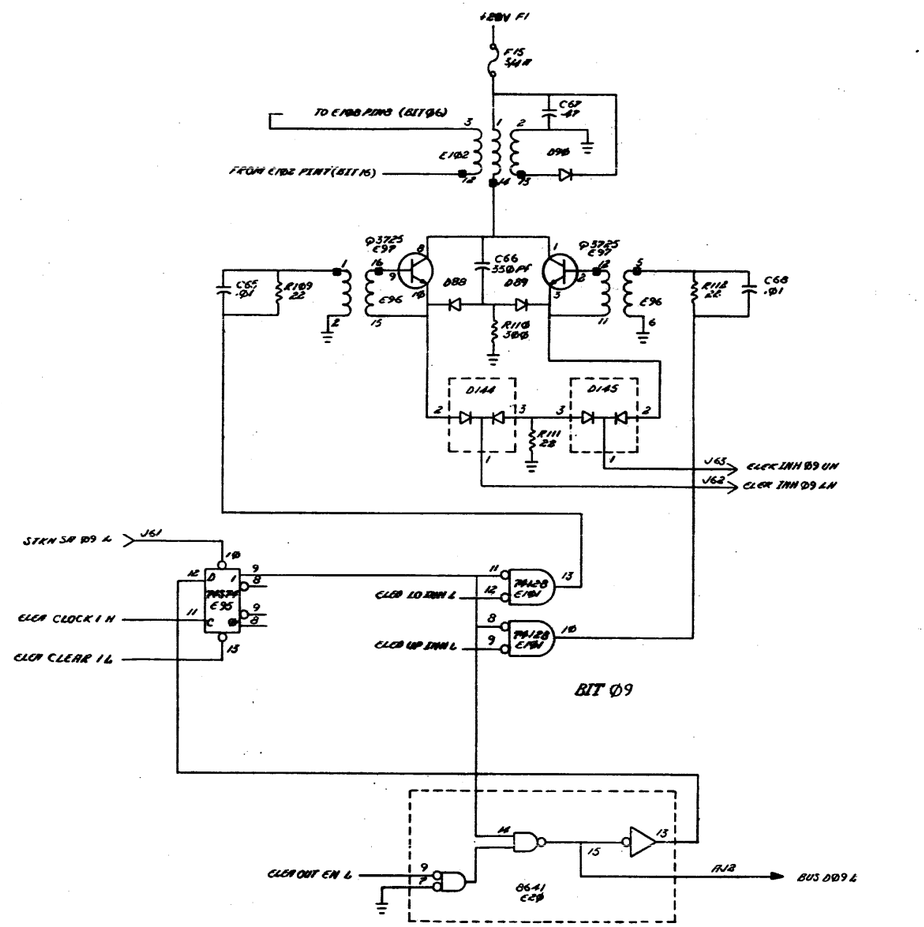


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEJ)	D	DCS	G657-Ø-1	C
SCALE NONE SHEET 9 OF 18	DIST.			

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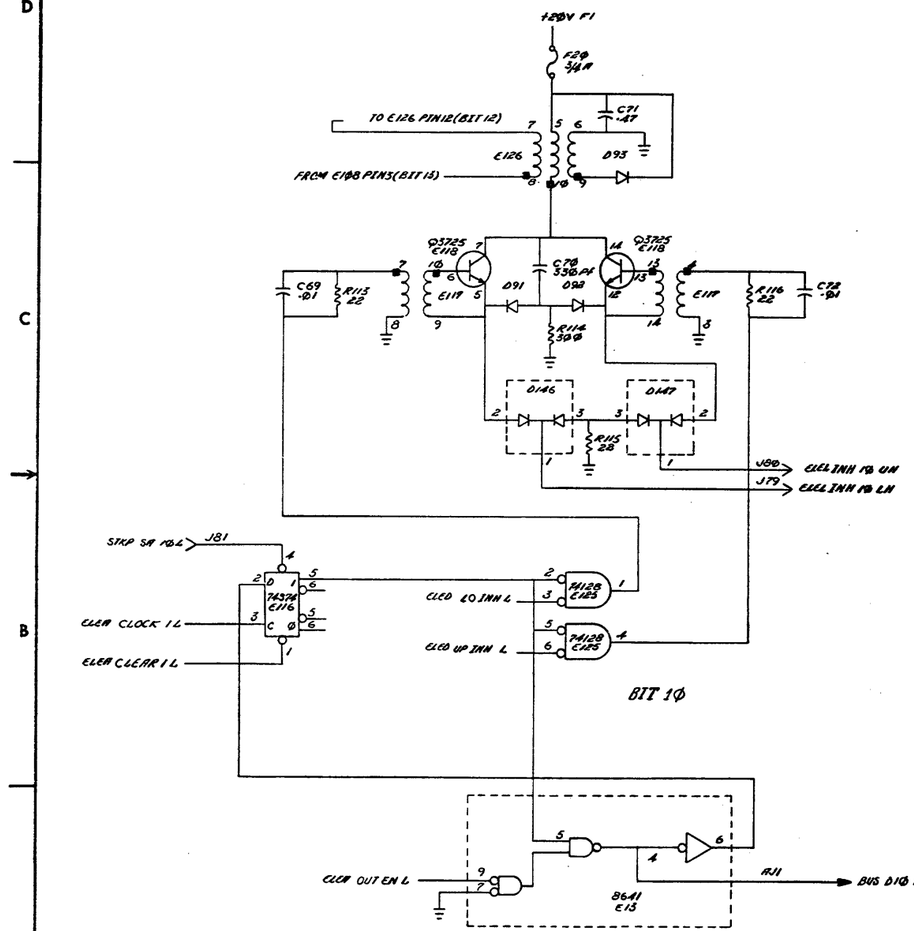


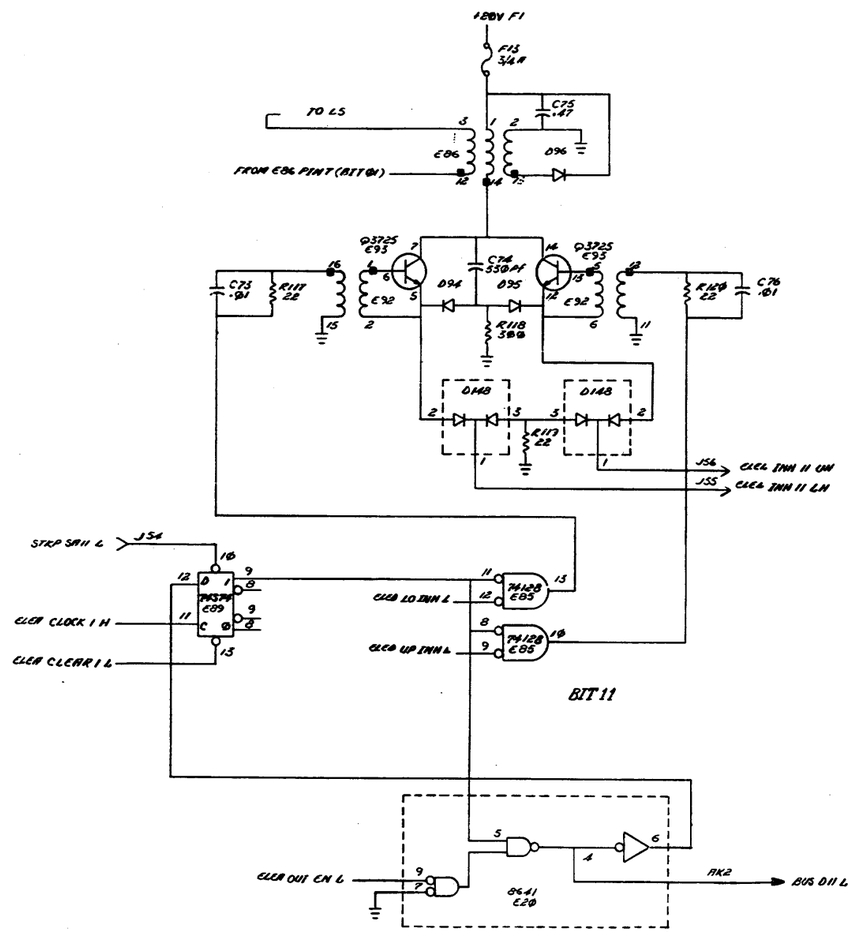


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ECO #	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEK)	D	CS	G657-Ø-1	C
SCALE NONE SHEET 10 OF 16	DIST.			

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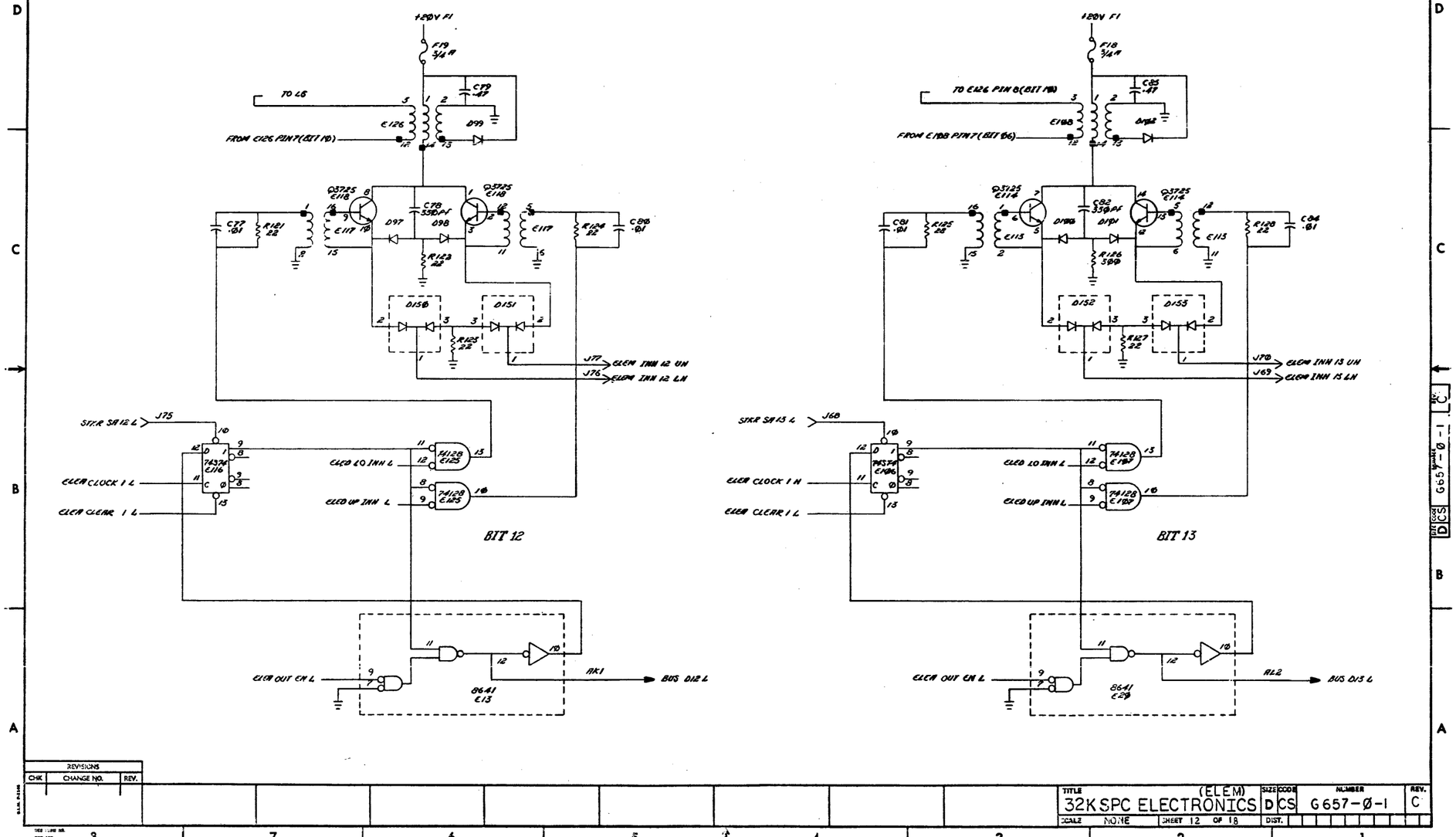


REV. SIGNS		
SYM	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEL)	D	CS	G657-0-1	C
SCALE NONE SHEET 11 OF 18	DIST.			

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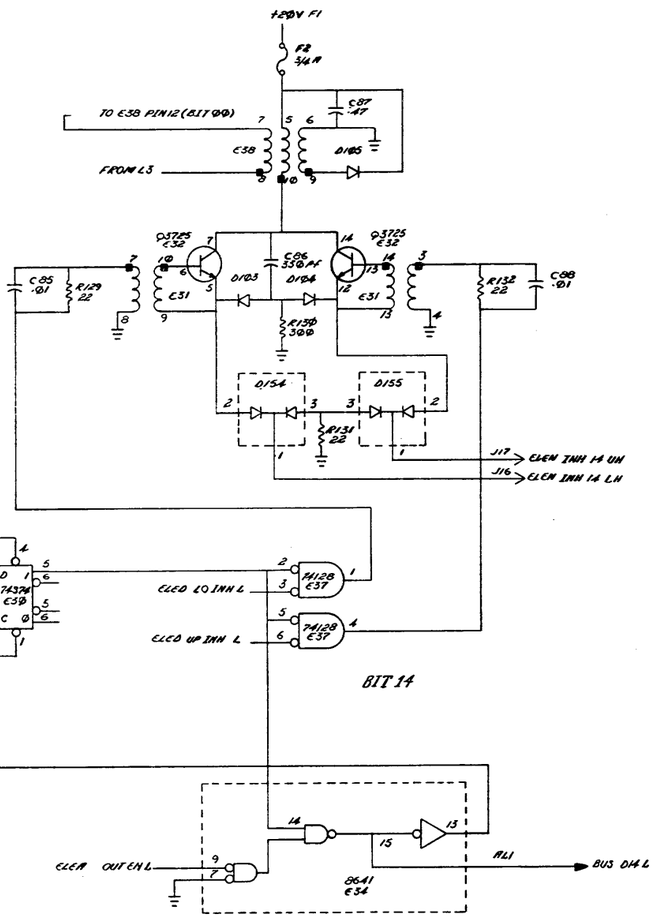


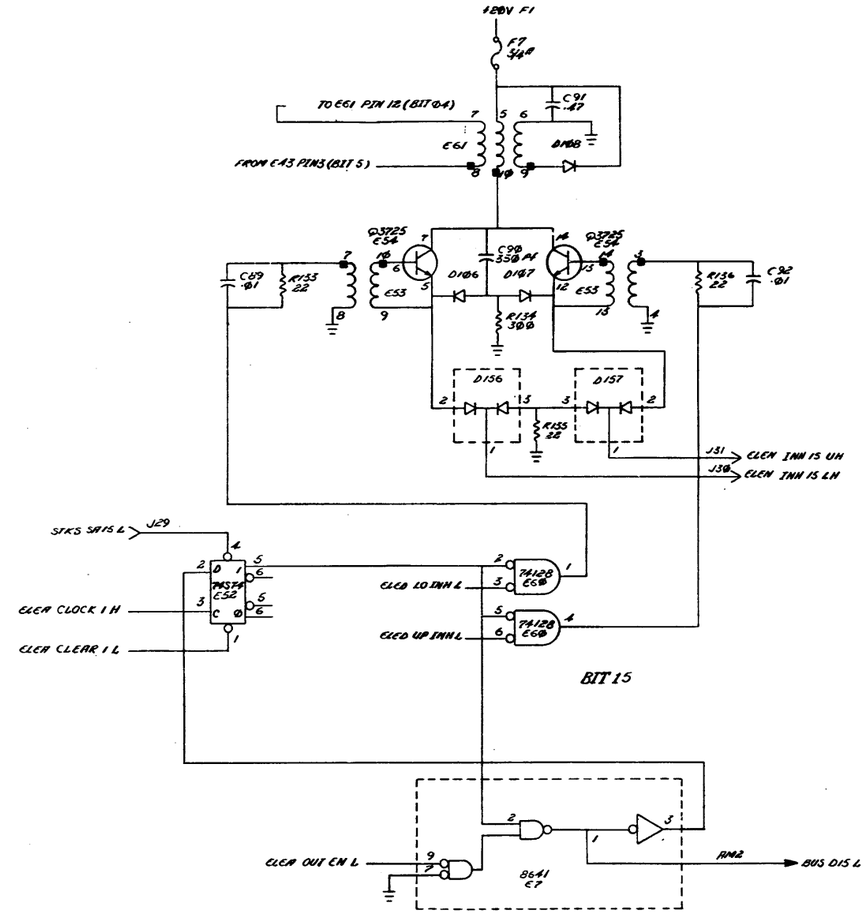
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CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEM)	D	CS	G657-Ø-1	C
SCALE NONE · SHEET 12 OF 18 · DIST.				

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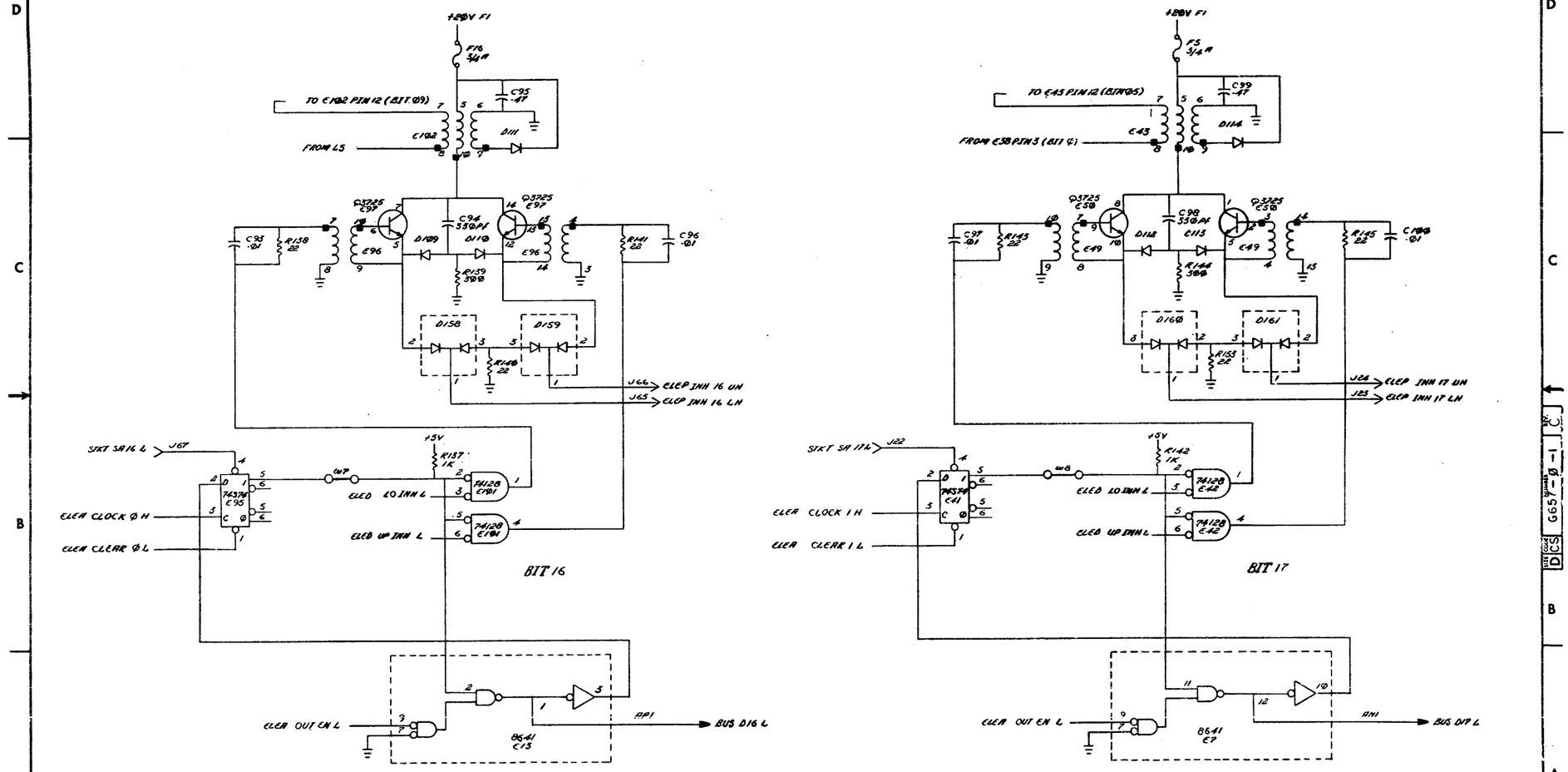


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CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
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SCALE NONE SHEET 13 OF 18	CIST.			

G657-Ø-1 REV C

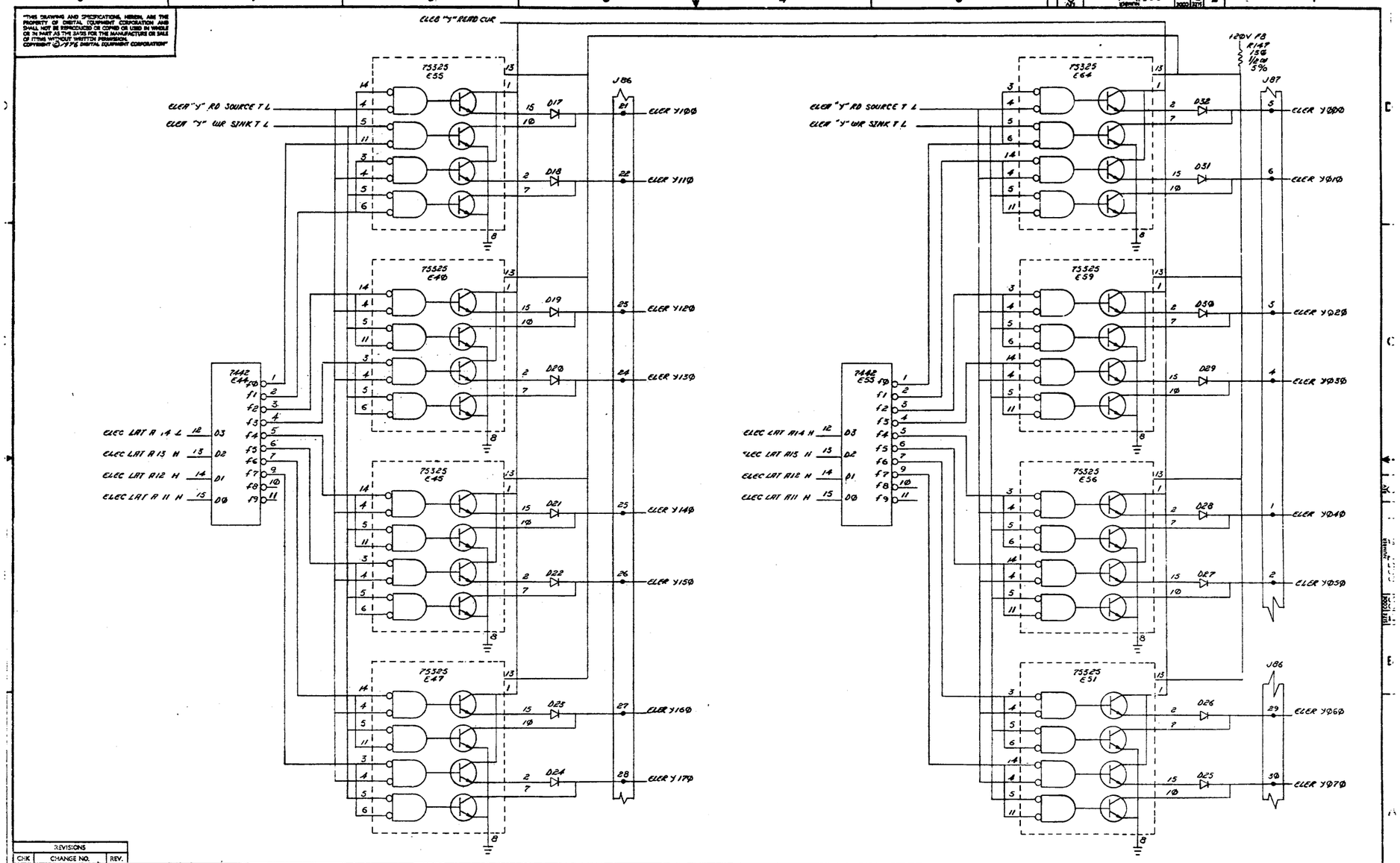
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELEP)	D	DCS	G657-Ø-1	C
SCALE NONE SHEET 14 OF 18	DIST.			

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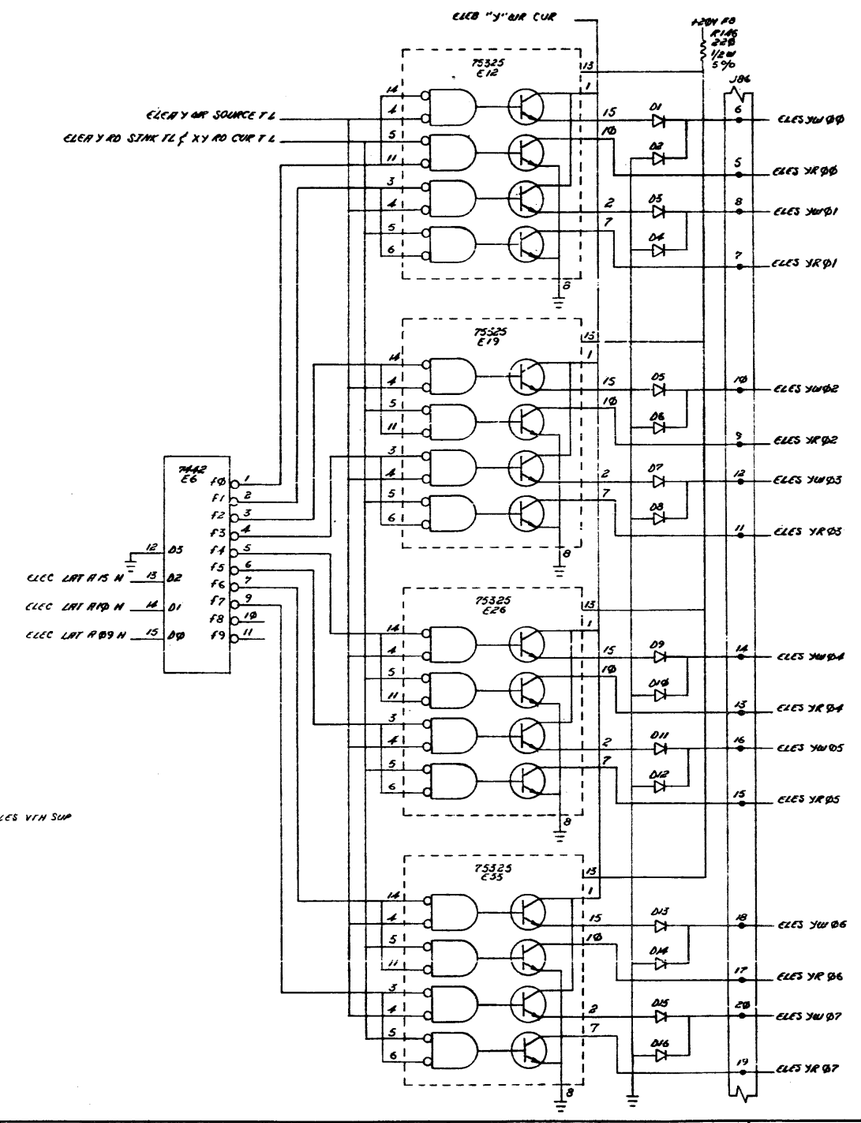
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CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELER)	D	CS	G657-Ø-1	C
SCALE NON SHEET 15 OF 18	DIST.			

DEC FORM NO. DRD 328

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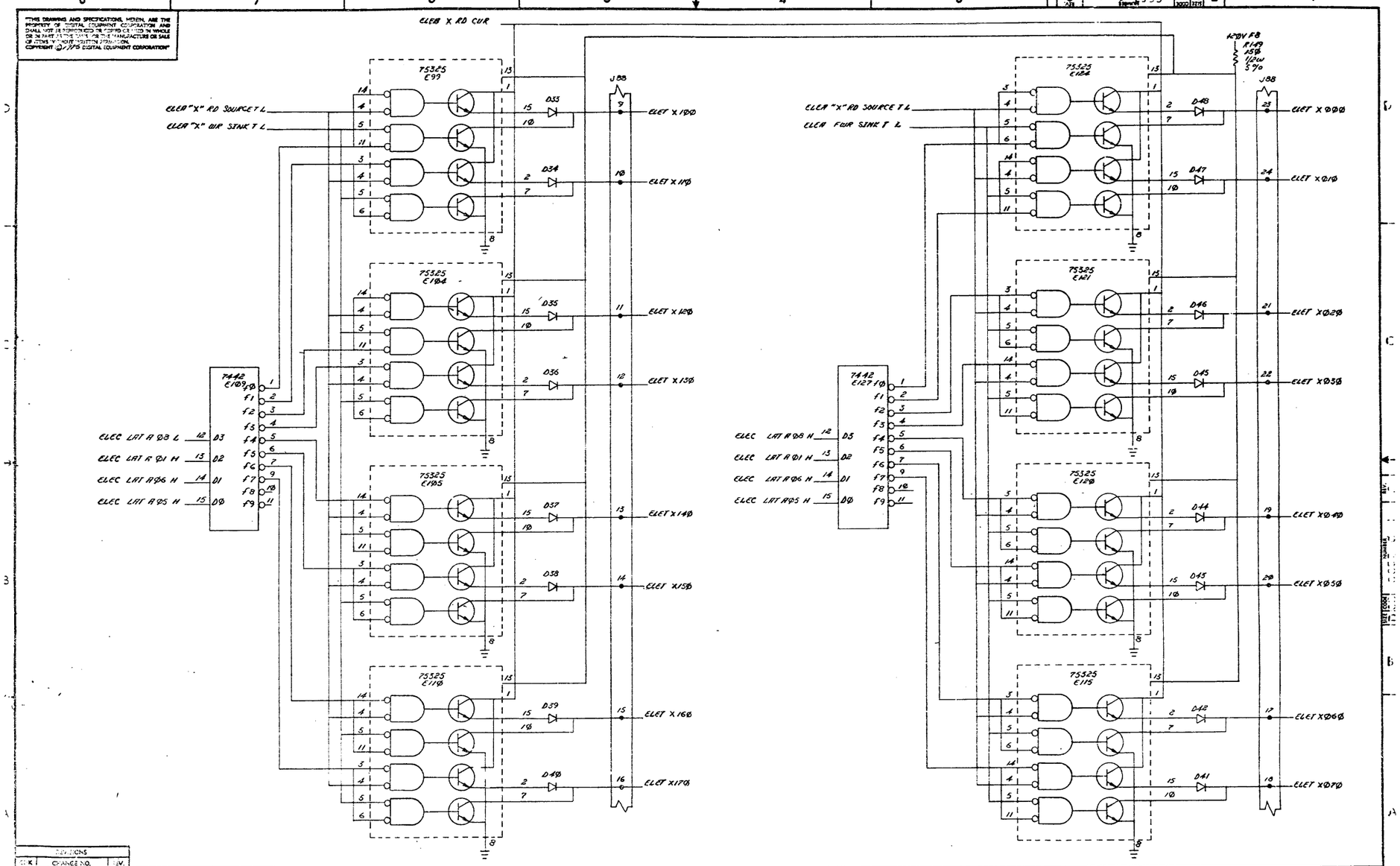
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CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELES)	D	CS	G657-Ø-1	C
SCALE NONE	SHEET 16 OF 18	DIST.		

SEE FORM NO. CRD 138

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REVISIONS		
BLK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
32K SPC ELECTRONICS (ELET)	D	CS	G657-Ø-1	C
SCALE NONE SHEET 17 OF 19	DIST.			

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ELEB X WR CUR

+20V FB
R148
150
1/2 W
5%

75325 E85
75325 E88
75325 E90
75325 E94
75325 E68
75325 E73
75325 E77
75325 E79

ELEA "X" WR SOURCE T L
ELEA "X" RD SINK T L

7442 E98
7442 E87

ELEC LAT A B4 L
ELEC LAT A B3 H
ELEC LAT A B2 H
ELEC LAT A B1 H
ELEC LAT A B0 H

ELEU XW10
ELEU XR10
ELEU XW11
ELEU XR11
ELEU XW12
ELEU XR12
ELEU XW13
ELEU XR13
ELEU XW14
ELEU XR14
ELEU XW15
ELEU XR15
ELEU XW16
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ELEU XR17
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ELEU XW02
XR02
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ELEU XW04
ELEU XR04
ELEU XW05
ELEU XR05
ELEU XW06
ELEU XR06
ELEU XW07
ELEU XR07

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.			

DEC FORM NO. DRD 128

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B-TC-MM11-DP-3

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MM11-DP PRINT SET
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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. D. Crowley	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-01124-16-N675-(327)

DRB 124

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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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

USED ON OPTION/MODEL

	DRN.	DATE
	CHK'D W. Lufkin	DATE 4/27/75
	PROJ. ENG.	DATE 10/29/75
	ENGR. R.A. Hill	DATE 10/29/75
	FIELD SERV.	DATE 11/4/75

SHEET 1 OF 2

TITLE: MM11-DP MEMORY MODULE

SIZE	CODE	NUMBER	REV
B	DD	MM11-DP	B

DIST

DEC-11-1325101-2-2692-A-RB97Z

DRB 106

345

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	SHEET	SIZE	CODE	NUMBER	REV
MM11-DP MEMORY MODULE	2 OF 2	B	DD	MM11-DP	B

DRB 108

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NOTES:

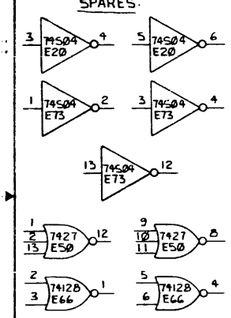
1. INTERLEAVE CONTROL IS ACHIEVED AS FOLLOWS:
   (A) NON-INTERLEAVED
   W5.W6 OUT
   (B) INTERLEAVED
   W5 IN, W6 OUT } ONE MEMORY
   W5 OUT, W6 IN } THE OTHER MEMORY
   (C) ADDRESS JUMPERS FOR THE COMBINED INTERLEAVED MEMORY ARE NOT THE SAME AS FOR THE NON-INTERLEAVED CASE (W1 THRU W4 MUST BE CUT THE 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 H222 MEMORY STACK IS SHOWN ON CS 5411554-0-1.
   NOTES CONTINUED ON SHEET 2

8.44 REF

BANK SELECTION

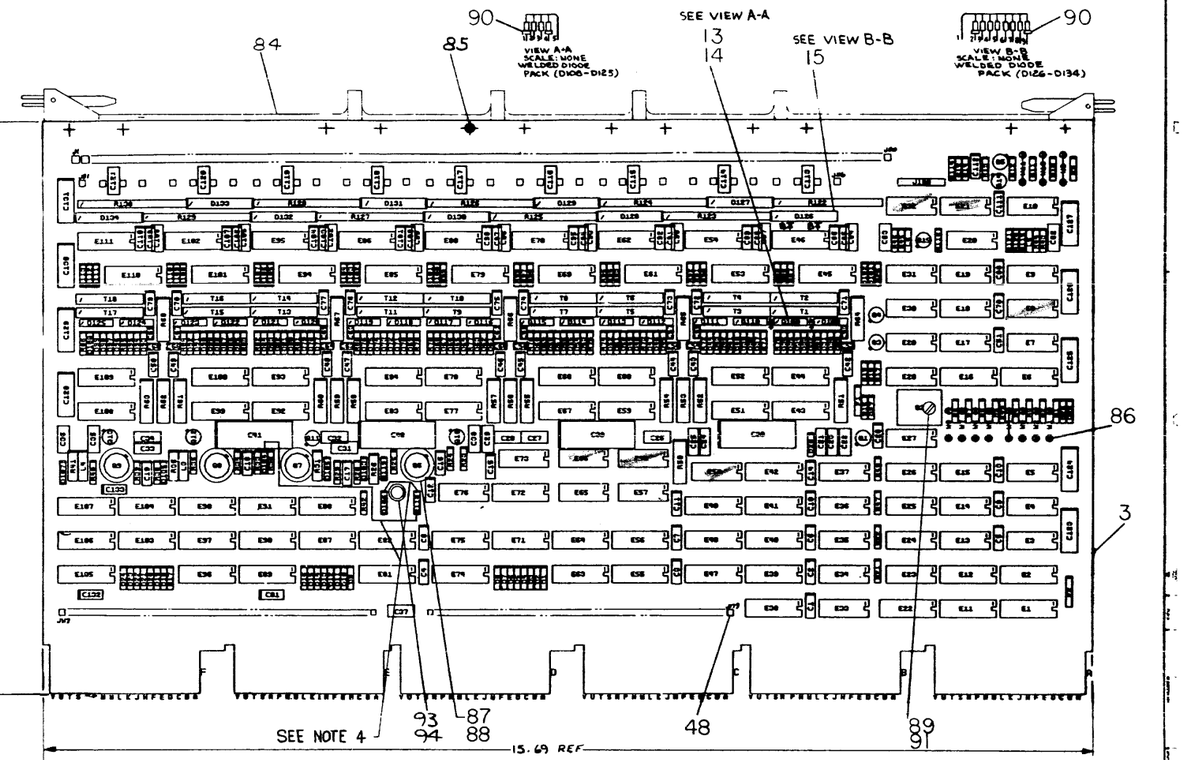
S.A. 16-17	S.A. 18-21	EA11	W1	W2	W3	W4
—	Ø	16K	OUT	OUT	OUT	IN
—	8K	24K	OUT	OUT	IN	OUT
Ø	16K	32K	OUT	OUT	IN	IN
8K	24K	40K	OUT	IN	OUT	OUT
16K	32K	48K	OUT	IN	OUT	IN
24K	40K	56K	OUT	IN	IN	OUT
32K	48K	64K	OUT	IN	IN	IN
40K	56K	72K	IN	OUT	OUT	OUT
48K	64K	80K	IN	OUT	OUT	IN
56K	72K	88K	IN	OUT	IN	OUT
64K	80K	96K	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

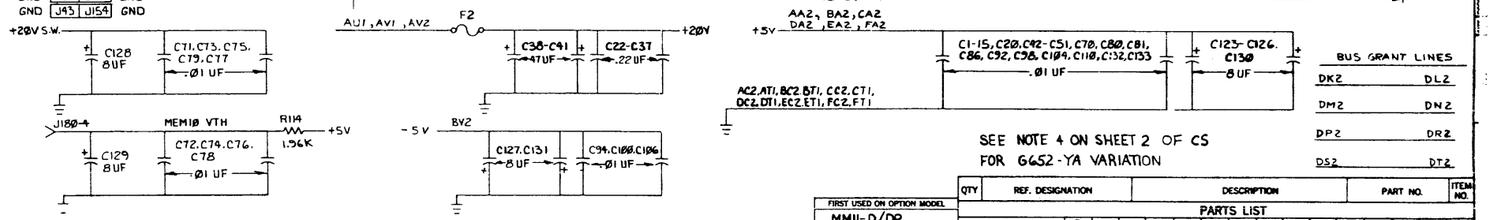
SPARES:



MEM9 BIT 16 EIT LOCK OUT	J18
BB2	J152 STACK XY
J18Ø-7	J179 STACK XY LO
J18Ø-5	J18Ø STACK XY HI
+2ØV	J153
+5V	J155
MEM1 X STACK CHG H	J149
MEM2 Y STACK CHG H	J15Ø
cE1	J151 STACK V REF
GND	J9 J6Ø GND
GND	J26 J77 GND
GND	J43 J154 GND

J18Ø-1	+5V
J18Ø-2	STROBE
J18Ø-3	GND
J18Ø-4	VTH
J18Ø-5	STACK XY HI
J18Ø-6	GND
J18Ø-7	STACK XY LO





BUS GRANT LINES	
DK2	DL2
DM2	DN2
DP2	DR2
DS2	DT2

SEE NOTE 4 ON SHEET 2 OF CS FOR G652-YA VARIATION

8690	1	8	
8691	8	16	
75325	8	9	16
7520	9	16	
74157	8	16	
74153	8	16	
7483	12	5	
7475	12	5	
7442	8	16	
IC TYPE	GND	+5V	+20V SW

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

IC PIN LOCATIONS

REV.	CHANGE NO.	CHK.	REVISIONS
C	G652-00001		D. SMELSER 3/9/76
D	G652-00002		D. SMELSER 5/3/76
E	G652-00003		D. SMELSER 11/22/76
F	G652-00004		D. SMELSER 4/1/77
			R. Lyons 4 OCT 77
			D. SMELSER 10-10-77

FIRST USED ON OPTION MODEL: MMII-D/DP

ETCH BOARD REV: D

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DES.	DATE
Robert Raymond	6-9-75
CHK'D	DATE 7/1/75
MFG	DATE 7/31/75
PROD. ENG.	DATE 7/31/75
PROD. R A Hite.	DATE 9/4/75
NEXT HIGHER ASSY	
SCALE	
SHEET OF 11	

digital

TITLE: 16K X 18 MEMORY ELECTRONICS

SIZE D | CODE CS | NUMBER G652-Ø-1 | REV. F | DIST.

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

SEMICONDUCTOR CONVERSION CHART

G652-Ø-1

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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	8-MH-G652-0-6	2
1	1		ETCHED CIRCUIT BOARD	5011492	3
2	2	C82,C83	CAPACITOR, 82 pf, 100V, 5%, DM	1000015-00	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,C65, C109,C110,C112,C132,C133	CAPACITOR, .01 uf, 50V, 20%, CER	1001610-00	9
16	16	C22 THRU C37	CAPACITOR, .22 uf, 50V +80%, -20%, CER	1010274-00	10
9	9	C123 THRU C131	CAPACITOR, 8 uf, 25V, AL EL	1012084-01	11
1	1	D28	DIODE ZENER IN751A 5.1V, 5%	1110994-00	12
9	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 D672	1105275-00	16
1	1	D106	DIODE ZENER IN756A, 8.2V, 1%	1103441-01	17
1	1	D105	DIODE ZENER IN4742, 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, 1.96K, 1/4W, 1%	1304833-00	24
1	1	R47	RESISTOR, 3.16K, 1/8W, 1%	1303045-00	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,R119	RESISTOR, 47, 1/4W, 5%	1300202-00	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, 4.64K, 1/8W, 1%	1304856-00	42
1	1	R26	RESISTOR, 11, 1W WW	1312466-01	43
1	1	R36	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	1212104-00	49
2	2	Q14,Q15	TRANSISTOR, 3009B	1503100-00	50
2	2	Q3,Q4	TRANSISTOR, 6534B	1503409-01	51
5	5	Q5, Q10 THRU Q13	TRANSISTOR, 4258	1505321-00	52
1	1	Q1	TRANSISTOR, 6531B	1509336-00	53
4	4	Q6 THRU Q9	TRANSISTOR, 3782	1509849-01	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	1905575-00	60
1	1	E76	I.C. DEC 7408	1910741-00	61
1	1	E50	I.C. DEC 7427	1910878-00	62
1	1	E7	I.C. DEC 7430	1905578-00	63
2	2	E32,E85	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,E66	I.C. DEC 74128	1912068-00	69
1	1	E16	I.C. DEC 74153	1909937-00	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	1910536-00	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,E61,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,E83,E87,E88,E71 E74,E75,E77,E78,E81,E83,E84 E87,E89 THRU E93,E96,E98 THRU E100,E103 THRU E109	I.C. DEC 75325	1910960-00	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 8885	1910649-00	83
1	1		HANDLE	1210711-02	84
12	12		EYELET (HANDLE)	9006732-00	85
22	22		EYELET (SPLIT LUGS)	9006735-00	86
4	4	(USE WITH Q6 THRU Q9)	HEAT SINK, RED	1210001-00	87
4	4	(USE WITH Q6 THRU Q9)	TRANSIPAD	9007201-00	88
1	1		SCREW PPH #4-40 x 3/8	9006011-01	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)	9007560-01	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	R41	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 D104 AND CATHODE OF D135.
COMPONENT CHANGE, RESISTOR, R118 CHANGED FROM 750Ω TO 22Ω 1/4 W 5%.
RESISTOR, R41 CHANGED FROM 11Ω TO 12Ω 1W, 1%.
JUMPER #1 FROM CATHODE OF D104 TO BOTTOM OF R118
JUMPER #2 FROM CATHODE OF D106 TO TOP OF R118
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.
SCALE —	SHEET 2 OF 11	D	CS	G652-0-1	T
		DIST.			

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MEM2 RAW A12 H
MEM2 RAW A11 H
MEM1 A17 H
MEM1 A15 H
MEM2 RAW A13 H
MEM2 RAW A14 H
MEM1 A16 H
MEM1 A16 H
MEM1 A17 H
MEM1 A15 H
MEM2 RAW A14 H
MEM1 SSYN L
MEM1 MSYN H
MEM1 NOT BUSY H
MEM1 RAW A0I H
MEM1 RAW A0I L
MEM1 A15 H
BUS A17 L
BUS A16 L
BUS A15 L
BUS A0I L
BUS DCLØ L
BUS MSYN L
MEM1 RAW A0I H
MEM1 RAW A0I L
MEM1 A17 H
MEM1 A16 H
MEM1 A15 H
MEM1 RAW A0I H
MEM1 LOCK MAR H
MEM1 RØ H
MEM1 MSYN H
MEM1 RØ H
BANK SEL H
INTERLEAVE
MEM1 LEAST BIT H
READ
WRITE
MEM1 X READ SOURCE T L
MEM1 READ SINK T L
MEM1 X READ I SOURCE T H
MEM1 STROBE EN L
MEM2 WR BYTEØ L
MEM2 WR BYTE1 L
MEM1 INPUT MDR H
MEM1 INPUT MDR H
MEM1 CLR MDR L
MEM1 SSYN H
MEM1 SSYN L
MEM1 OUTPUT EN L
MEM1 MSYN H
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 STBØ H
MEM1 STBI H
MEM1 INH TØ L
MEM1 INH TI L
+20V
+20V SW
F1 1 AMP
(TIMING & CONTROL)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
16K X18 MEMORY ELECTRONICS (MEM1)	D	CS	G652-0-1	E
SCALE	SHEET 3 OF 11	DIST.		

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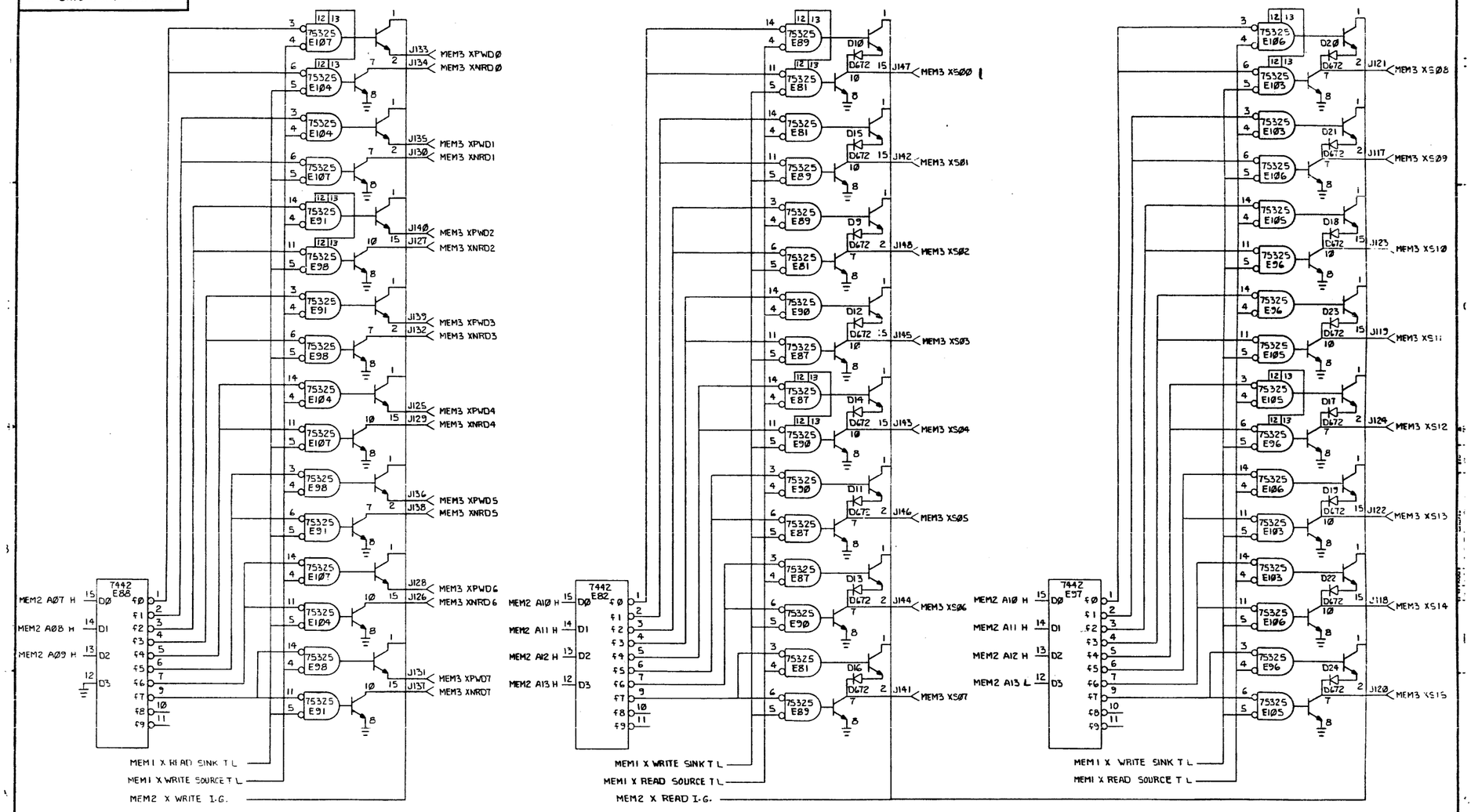
MEM1 LEAST BIT H
BUS A04 L
BUS A03 L
BUS A02 L
MEM1 OUTPUT EN L
MEM2 A01 H
MEM2 A04 H
MEM2 A03 H
MEM2 A02 H
BUS A08 L
BUS A06 L
BUS A05 L
BUS A07 L
MEM2 A08 H
MEM2 A06 H
MEM2 A05 H
MEM2 A07 H
MEM1 LOCK MAR 1 L
MEM2 RAW 12 H
BUS A12 L
BUS A09 L
BUS A10 L
BUS A11 L
MEM2 A12 H
MEM2 A09 H
MEM2 A10 H
MEM2 A11 H
MEM2 RAW 11 H
MEM2 RAW A0 H
MEM2 RAW C0 H
MEM2 RAW C1 H
BUS A14 L
BUS A13 L
MEM2 RAW 14 H
MEM2 RAW 13 H
MEM1 LOCK MAR 2 L
MEM2 WR BYTE 0 L
MEM2 WR BYTE 1 L
MEM2 A13 H
MEM2 A13 L
MEM2 A14 B0 L
MEM2 A14 B1 L
MEM2 A14 B0 H
MEM2 A14 B1 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
MEM2 A14 B0 H
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
BUS SSYN L
MEM1 SSYN H
BUS C0 L
BUS C1 L
BUS A0 L
MEM2 PAW C0 H
MEM2 RAW C1 H
MEM2 RAW A0 H
INT SSYN L
PARITY DETECT L
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
X-READ I.G.
Y-COMMON END I.G.
X-WRITE I.G.
Y-DIODE END I.G.
STACK V REF
CUT ETCH
ADD JUMPER
FOR YA VARIATION SEE NOTE 4
SEE NOTE 4
(MAR & CURRENT SOURCES)

REVISIONS		
CLK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM2)	D	CS	G652-0-1	F
SCALE —	SHEET 4 OF 11	DIST.		

350

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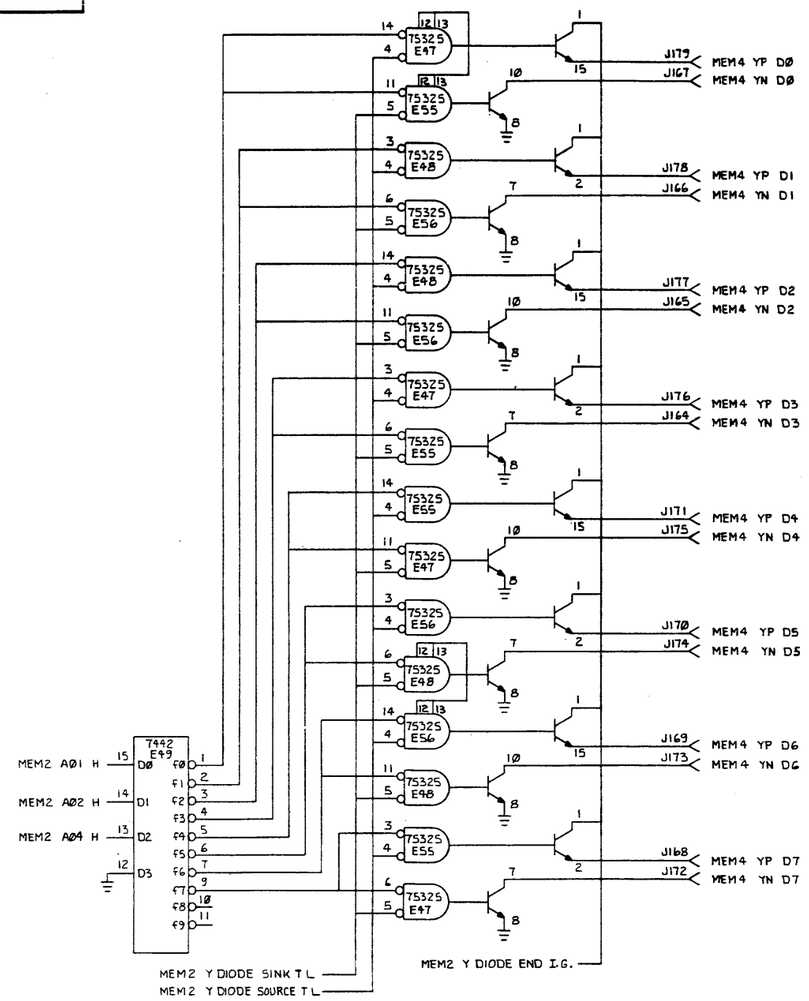


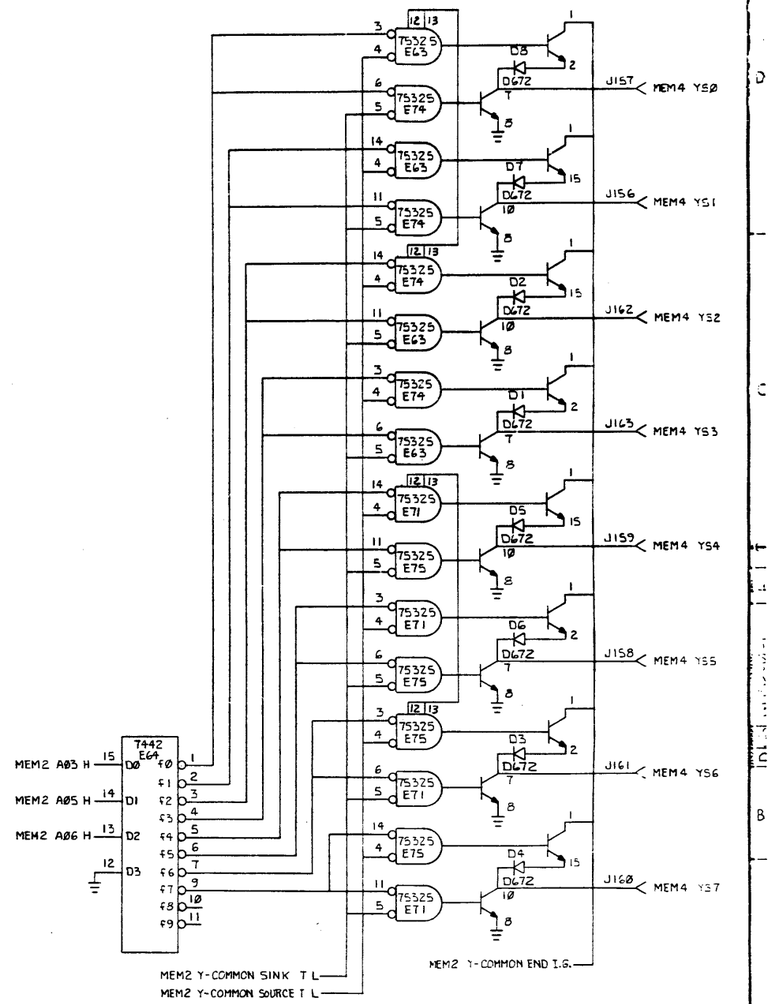
REVISIONS		
CHK	CHANGE NO.	REV.

(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.		

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REVISIONS		
CHK	CHANGE NO.	REV.

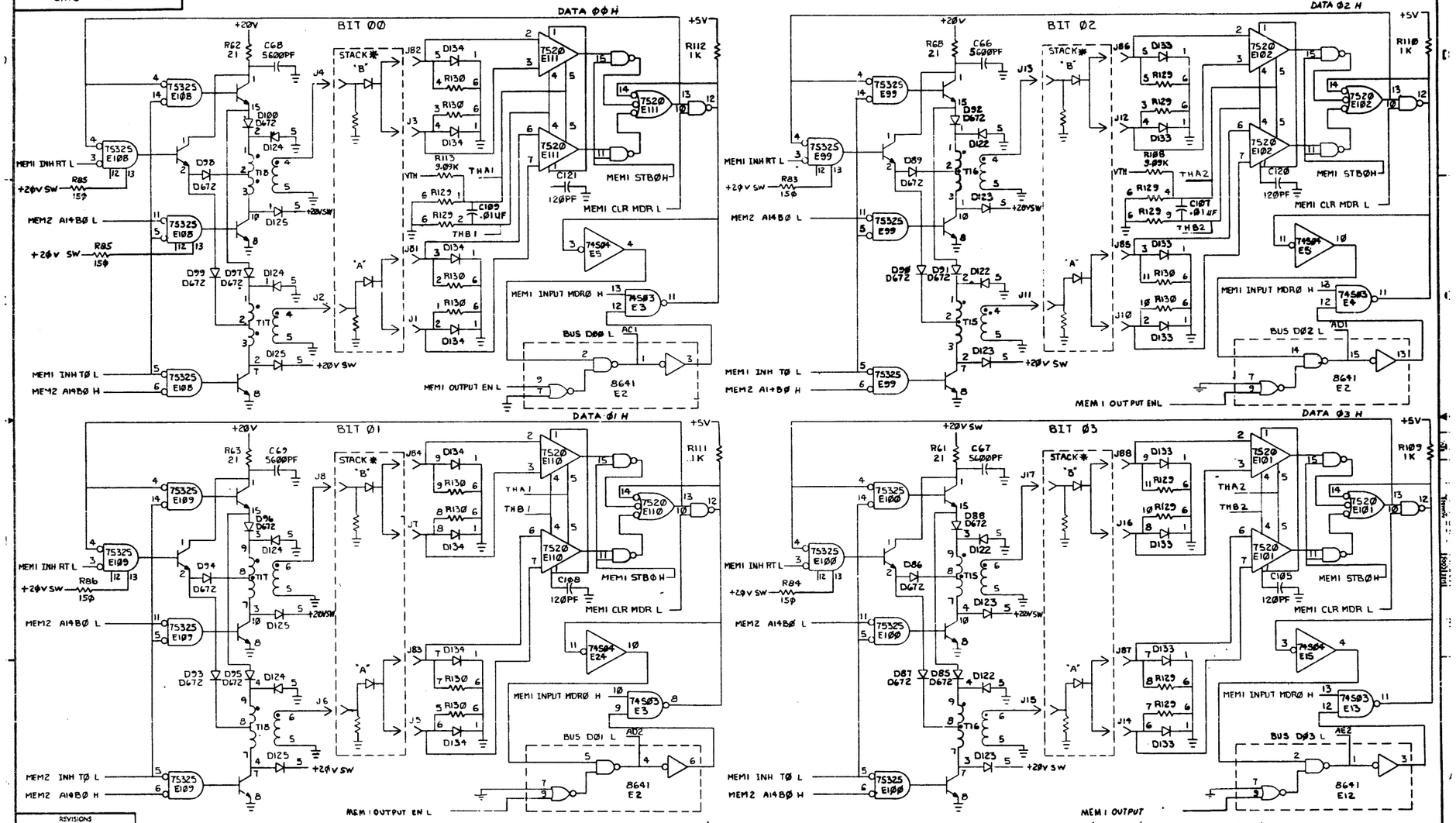
(Y DRIVE)

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM4)	D	CS	G652-0-1	D
SCALE — #	SHEET 6 OF 11	DIST.		

358

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* MOUNTED ON H222 BD:



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM5)	D	CS	G652-Ø-1	F
SCALE —	SHEET 7 OF 11		DIST.	

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* MOUNTED ON H222 BD

BIT Ø4 — DATA Ø4 H

BIT Ø6 — DATA Ø6 H

BIT Ø5 — DATA Ø5 H

BIT Ø7 — DATA Ø7 H

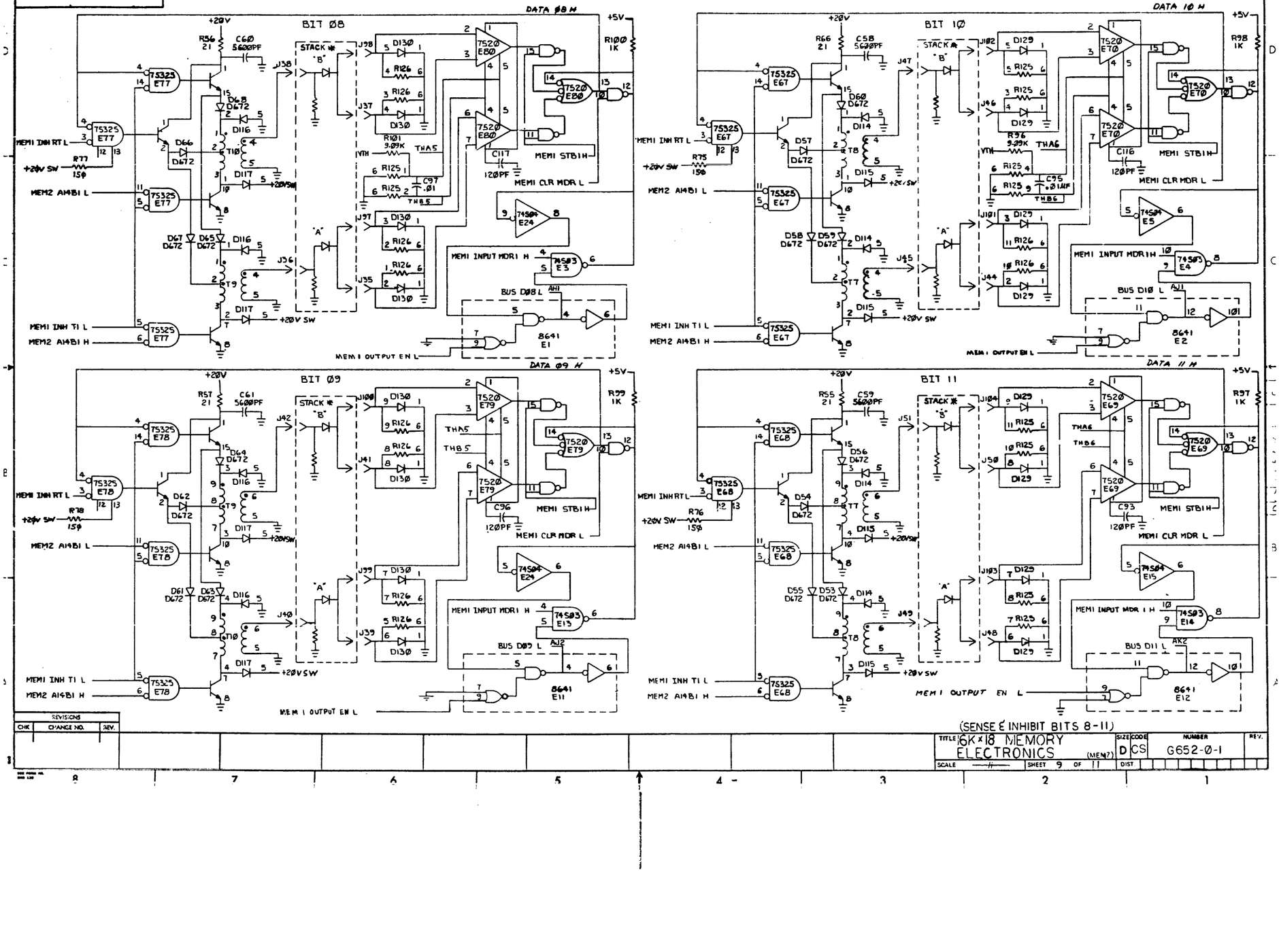
(SENSE & INHIBIT BITS 4-7)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
16K×18 MEMORY ELECTRONICS (MEM6)	D	CS	G652-0-1	F
SCALE — H — SHEET 8 OF 11	DIST.			

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* MOUNTED ON H222 BD:

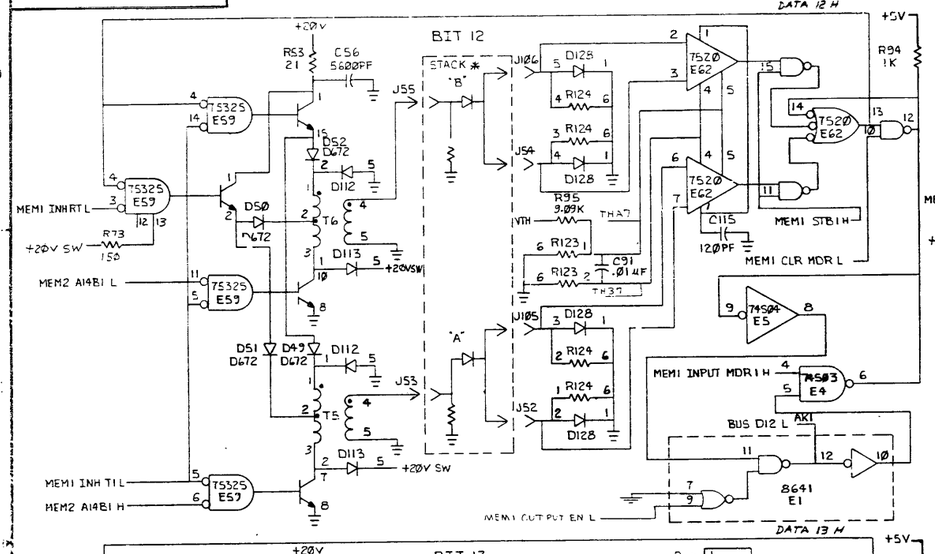


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE 16K x 18 MEMORY ELECTRONICS (MEM7)		SIZE D	CODE CS	NUMBER G652-0-1	REV.
SCALE —H—	SHEET 9 OF 11	DIST			

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* MOUNTED ON M222 BD



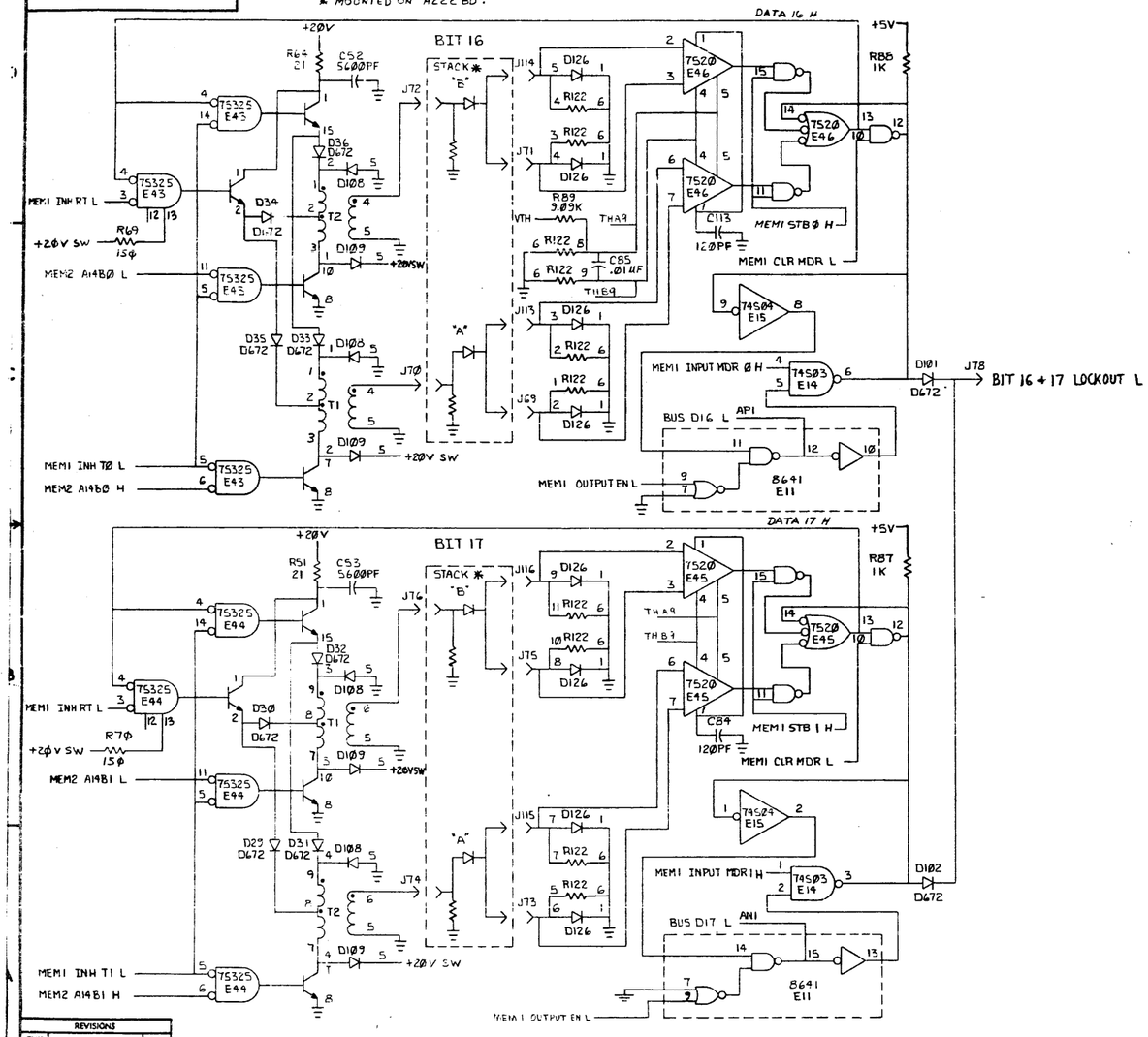
REVISIONS		
CHK	CHANGE NO.	REV.

(SENSE & INHIBIT BITS 12-15)

TITLE		SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM)		D	CS	G652-0-1	F
SCALE —	SHEET 10 OF 11	DIST.			

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* MOUNTED ON M722 BD.



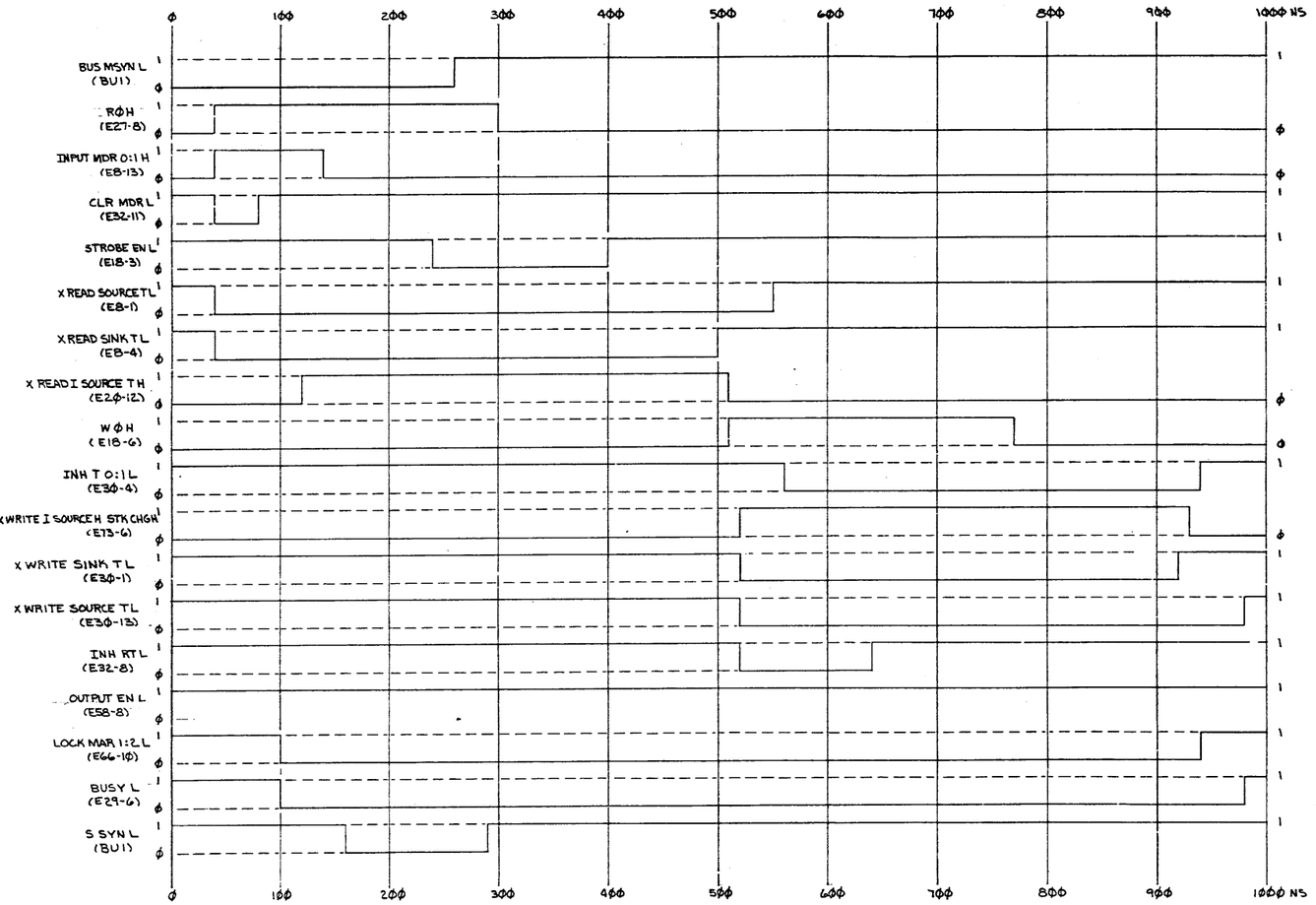
REVISIONS		
CHK	CHANGE NO.	REV.

(SENSE & INHIBIT BITS 16 & 17)

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM9)	D	CS	G652-0-1	F
SCALE —	SHEET 1 OF 1	DIST.		

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DAT O



DRN. W. LUFKIN	9/SEPT/75	FIRST USED ON	digital
CHK'D		MMII-DP	
ENG. D. [illegible]	10/29/75	TITLE	
PROJ. ENG() T.O.	11/4/75	MMII-DP	
PROD. ENG. NCLE	22 OCT 75	TIMING DIAGRAM	
NEXT HIGHER ASSY.		SIZE D	CODE TD
3-DD-MMII-DP		NUMBER MMII-DP-2	REV.
SCALE		DIST.	
SHEET 1 OF 2			

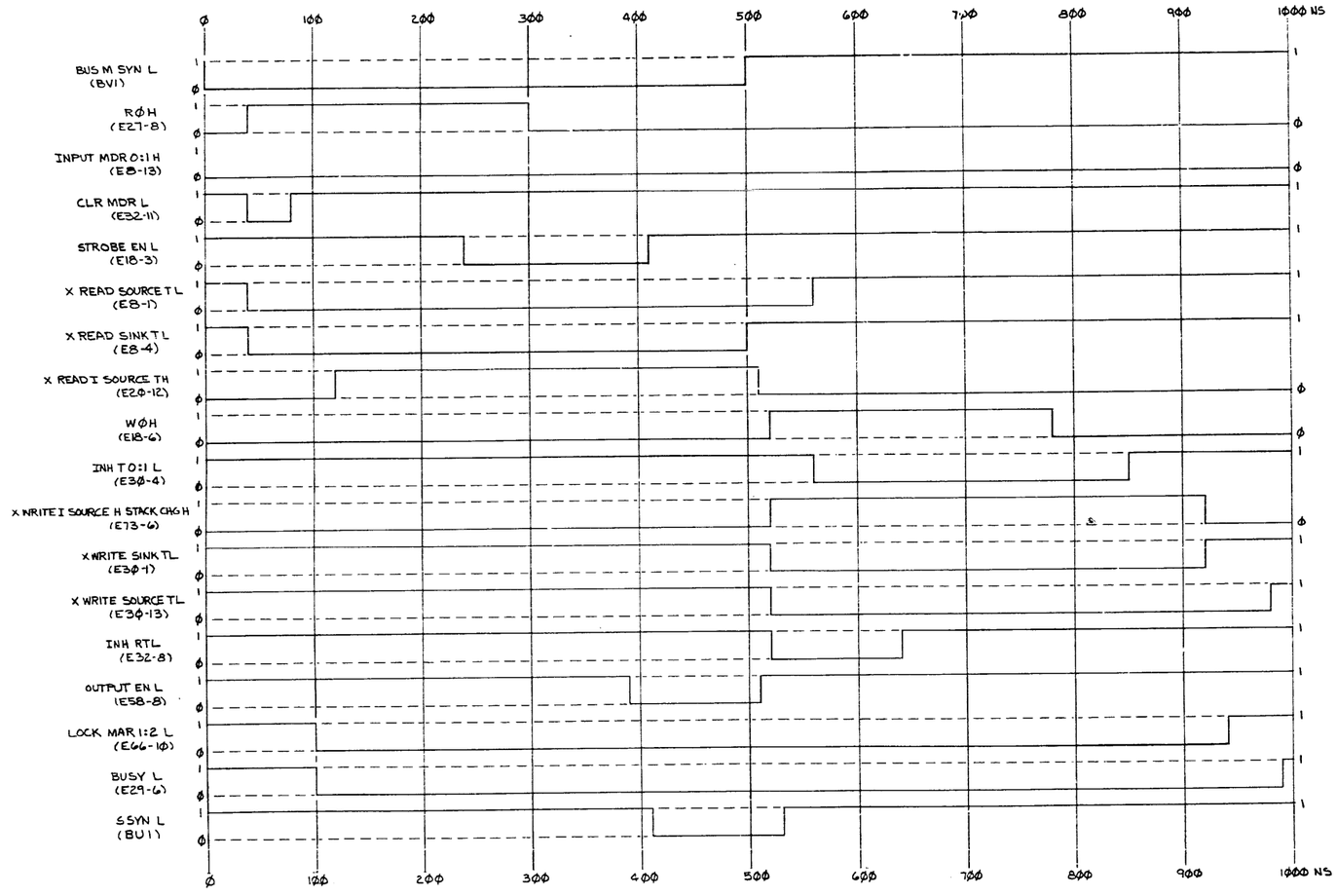
REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. CRD 102-0

SIZE	CODE	NUMBER	REV.
D	TD	MMII-DP-2	B

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DAT I



REVISIONS		
CHK	CHANGE NO.	REV.

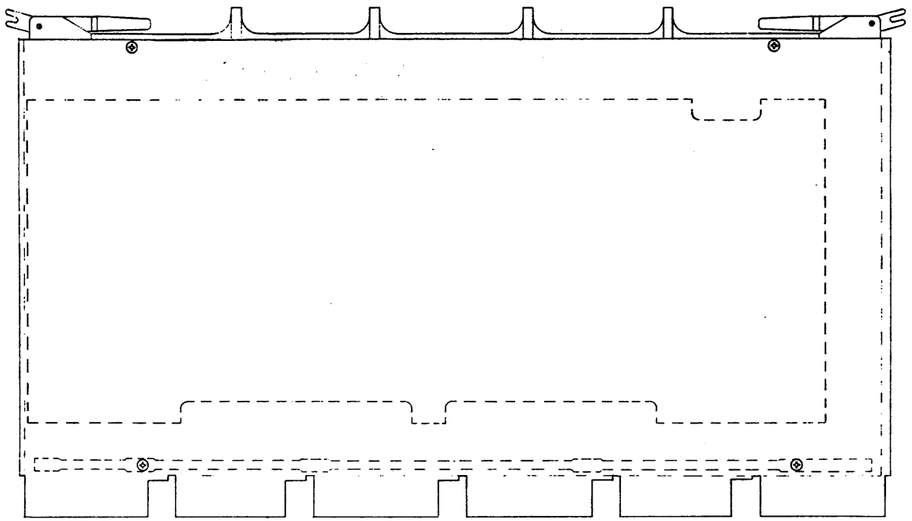
TITLE	SIZE	CODE	NUMBER	REV.
MMII-DP TIMING DIAGRAM	D	TD	MMII-DP-2	
SCALE	SHEET 2 OF 2	DIST.		

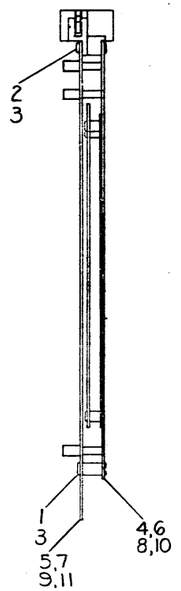
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LEGEND

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 (18BIT)	D-UA-H222-A-0
	A	G652 16K x 18 CORE MEM.	D-CS-G652-0-1
		H222-A STACK BOARD (18 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 #2-56X .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			CAGE PART NO.	ITEM NO.

MMII-D / MMII-DP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)		OVER 0 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 315
SURFACE QUALITY IN MICROINCHES ✓			.2	1.3	2.3	17.8	63.0
	MEDIUM ☐		±.006	±.008	±.012	±.016	±.024	±.04
	PREFERRED ☐		±.002	±.016	±.025	±.38	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DRN. K. LUFKIN 7/24/75
CHK'D 8/21/75
ENG. A 8/21/75
PROJ. ENG. 8/21/75
PROD. 8/21/75

FIRST USED ON MMII-DP

digital

TITLE MMII-DP MEMORY MODULE ASSEMBLY

NEXT HIGHER ASSY. MMII-DP

MATERIAL SEE PARTS LIST

SIZE D | CODE UA | NUMBER MMII-DP-0 | REV. A

SCALE 1/1

SHEET 1 OF 1

REVISIONS			
LTR	DESCRIPTION	ECO	DATE
A	FIRST RELEASE	22 728 77	

D SHELSER 3/18/77

DEC FORM NO. DMD 1006

36

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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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

DEC 14-11231-10621-A-R972

DRB 106

USED ON OPTION/MODEL				
		DRN. W LUFKIN	DATE 24/OCT/75	TITLE H222 MEMORY STACK
		CHK'D.	DATE 24/OCT/75	
		PROJ ENG.	DATE 10/28/75	
		PROD. R.A. 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				

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-5411554-0-0			PARTS LIST	
			D-AH-5411554-0-5			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		SIZE	CODE	NUMBER	REV
H222 MEMORY STACK	SHEET 2 OF 2	B	DD	H222-Ø	B

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

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NOTE:
PREFIX FOR J156-J179 IS MEM4.

"Y" DIODE MATRIX

J160 YS7 · J161 YS6 · J158 YS5 · J159 YS4 · J163 YS3 · J162 YS2 · J156 YS1 · J157 YS0

D18 · D52 · D60 · D54 · D62 · D56 · D64 · D58 · D66 · D16

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

R57 · R58

CB .22 UF 50V · D17 D672 · R56 82 1/2 W · +5V

+20V J153 · C4 .22 UF · Q2 3736 · L1 100 UH · D2 D672 · R54 47 · J155 +5V · W4 · C9 .01 UF · D6 D672 · D4 D672 · D79 D672

PULL UP H · J150 · MEM2Y STACK CHG H · 74S140 E2 · R15 100 · C5 680 PF · Q3 3736

REV.	DESCRIPTION	DATE	APPROVED
C	5411554-00001	9-26	
D	5411554-00002	7-14-76	

DRN. M. Thomas 6-26-75 · CHK'D. 7/9/75 · ENG. 7/14/75 · PROJ. ENG. 7/14/75 · P.RCD. 7/14/75 · NEXT HIGHER ASSY. D-UA-H222-0

FIRST USED ON MMIID/DA

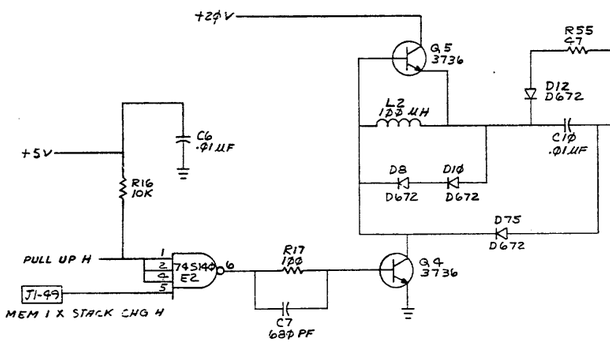
TITLE 16K X 16, 18 MEMORY STACK

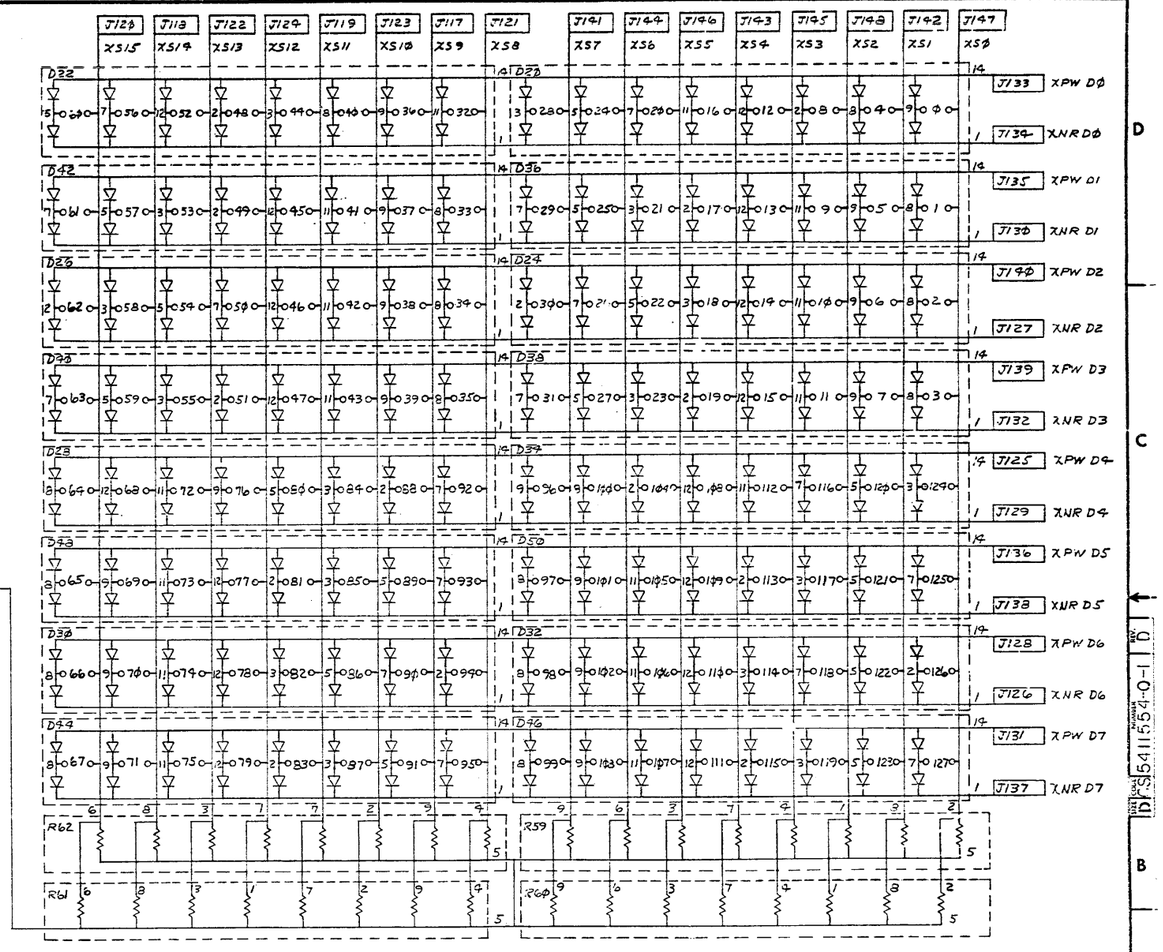
SIZE D · CODE CS · NUMBER 5411554-C-1 · REV. D · SCALE — · SHEET 1 OF 3 · DIST.

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"X" DIODE MATRIX

NOTE:
PREFIX FOR J117-J148 IS MEM3.





REVISIONS		
DNK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
16K X 16, 18 MEMORY STACK	D	CS	5411554-0-1	D
SCALE —	SHEET 2 OF 3	DIST.		

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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 Ø0A: J1 SBØØA, J81 SAØØA, J2 IØØA — R53 — D73
BIT ØØB: J3 SBØØB, J82 SAØØB, J4 IØØB — R52 — D71
BIT Ø1A: J5 SBØ1A, J83 SAØ1A, J6 IØ1A — R51 — D69
BIT Ø1B: J7 SBØ1B, J84 SAØ1B, J8 IØ1B — R50 — D67
BIT Ø2A: J10 SBØ2A, J85 SAØ2A, J11 IØ2A — R49 — D65
BIT Ø2B: J12 SBØ2B, J86 SAØ2B, J13 IØ2B — R48 — D63
BIT Ø3A: J14 SBØ3A, J87 SAØ3A, J15 IØ3A — R97 — D61
BIT Ø3B: J16 SBØ3B, J88 SBØ3B, J17 IØ3B — R46 — D59
BIT Ø4A: J18 SBØ4A, J89 SAØ4A, J19 IØ4A — R45 — D57
BIT Ø4B: J20 SBØ4B, J90 SAØ4B, J21 IØ4B — R44 — D55
BIT Ø5A: J22 SBØ5A, J91 SAØ5A, J23 IØ5A — R43 — D53
BIT Ø5B: J24 SBØ5B, J92 SAØ5B, J25 IØ5B — R42 — D57
BIT Ø6A: J27 SBØ6A, J93 SAØ6A, J26 IØ6A — R41 — D49
BIT Ø6B: J29 SBØ6B, J94 SAØ6B, J30 IØ6B — R96 — D47
BIT Ø7A: J31 SBØ7A, J95 SAØ7A, J32 IØ7A — R39 — D45
BIT Ø7B: J33 SBØ7B, J96 SAØ7B, J34 IØ7B — R38 — D43
BIT Ø8A: J35 SBØ8A, J97 SAØ8A, J36 IØ8A — R37 — D41
BIT Ø8B: J37 SBØ8B, J98 SAØ8B, J38 IØ8B — R36 — D39
BIT Ø9A: J39 SBØ9A, J99 SAØ9A, J96 IØ9A — R35 — D37
BIT Ø9B: J41 SBØ9B, J100 SAØ9B, J42 IØ9B — R34 — D35
BIT 10A: J44 SB10A, J101 SAØA, J45 I10A — R33 — D33
BIT 10B: J46 SB10B, J102 SAØB, J47 I10B — R32 — D31
BIT 11A: J48 SB11A, J103 SA11A, J49 I11A — R31 — D29
BIT 11B: J50 SB11B, J104 SA11B, J51 I11B — R30 — D27
BIT 12A: J52 SB12A, J105 SA12A, J53 I12A — R29 — D25
BIT 12B: J54 SB12B, J106 SA12B, J55 I12B — R28 — D23
BIT 13A: J56 SB13A, J107 SA13A, J57 I13A — R27 — D21
BIT 13B: J58 SB13B, J108 SA13B, J59 I13B — R26 — D19
BIT 14A: J61 SB14A, J109 SA14A, J62 I14A — R25 — D17
BIT 14B: J63 SB14B, J110 SA14B, J64 I14B — R24 — D15
BIT 15A: J65 SB15A, J111 SA15A, J66 I15A — R23 — D13
BIT 15B: J67 SB15B, J112 SA15B, J68 I15B — R22 — D11
BIT 16A: J69 SB16A, J113 SA16A, J70 I16A — R21 — D9
BIT16B: J71 SB16B, J114 SA16B, J72 I16B — R20 — D7
BIT17A: J73 SB17A, J115 SA17A, J74 I17A — R19 — D5
BIT17B: J75 SB17B, J116 SA17B, J76 I17B — R18 — D3

W3 (SEE NOTE 3) — J78 BIT 16&17 LOCK OUT

+20
D1 1N757A 9.1V
R1 82Ø
R2 3.16K
R3 1.21K
R4 1.62K
R5 10K
R6 21.5K
W1
W2 (SEE NOTE 4)
R7 1K
R14 1K
C1 .01 µF
R10 3.48K
R8 150K
R9 150K
XY J152
XY LO J79
XY HI J80
J9, J26, J43, J60, J77, J154
C2 .22µF
U2 72741 E1
C3 .01µF
R11 470
R12 1.96K
R13 100
Q1 6534B
J151 V REF

REVISIONS		
CHK	CHANGE NO.	REV.

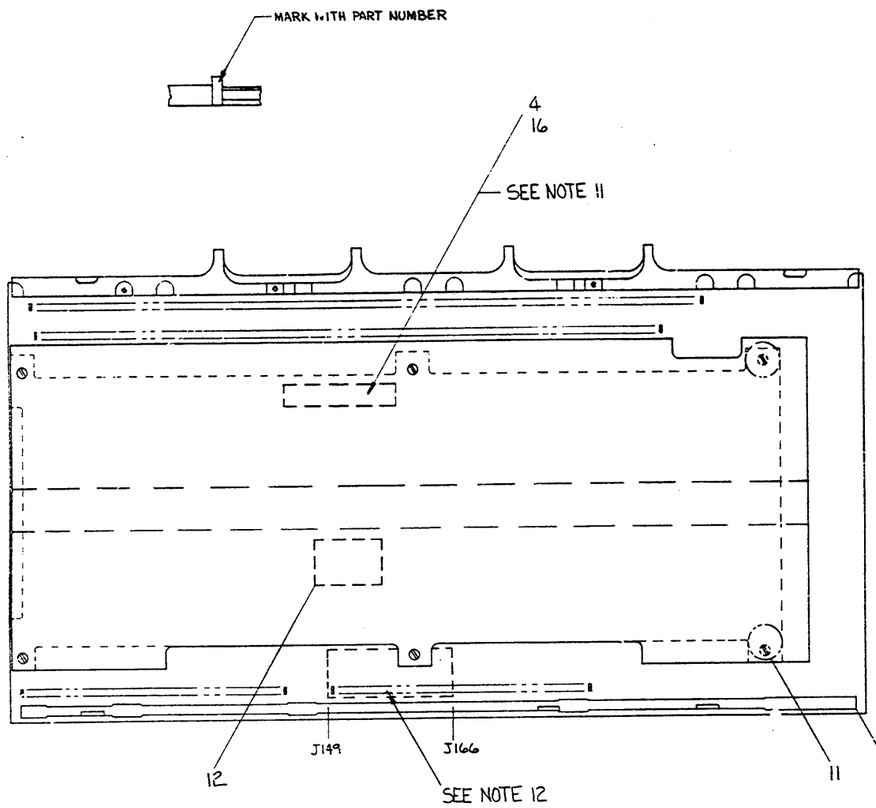
TITLE	SIZE	CODE	NUMBER	REV.
16K X 16, 18 MEMORY STACK	D	CS	5411554-0-1	D
SCALE	SHEET 3 OF 3	DIST.		

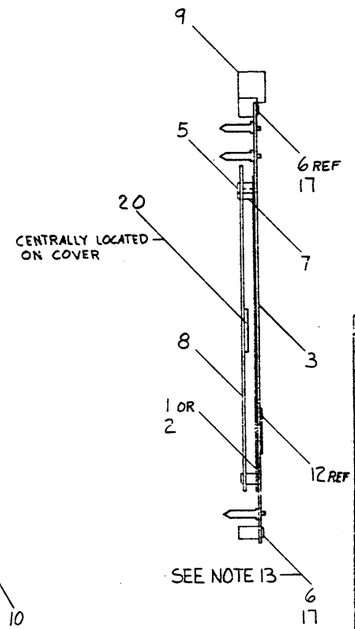
DEC STORE NO. 5411554-0-1 REV. D

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H222-0-0

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 6 & 17.
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 .05 IN THIS AREA OF SIDE 2.
13. INSTALL ITEM 17 (LOCKWASHER) "TORQUE HAND TIGHT".

1	1	1	1	TAPE FOAM ADHESIVE 1.9 X .35	9008956-01	20
1	–	–	–	CORE PLANE WIRING ASSY	E-IA-7011661-3-B	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
A/R	A/R	A/R	A/R	EPOXY	4901082-00	16
A/R	A/R	A/R	A/R	PROTECTIVE COATING (F145)	4901083-00	15
A/R	A/R	A/R	A/R	ADHESIVE (RTV 3145)	4901086-00	14
A/R	A/R	A/R	A/R	ADHESIVE (RTV 3140)	4901085-00	13
1	1	1	1	NAME PLATE	~~10-57233-00~~	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
A/R	A/R	A/R	A/R	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	–	1	CORE PLANE WIRING ASSY	E-IA-7011661-0-0	1
H222-YB	H222-YA	H222-B	H222-A	DESCRIPTION	DWG. PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	OVER 0 TO 0.3	OVER 0.3 TO 1.2	OVER 1.2 TO 4.3	OVER 4.3 TO 12.3	OVER 12.3 TO 40.0	OVER 40.0 TO 80.0
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
QUANTITY & VARIATION	PREFERRED ☐	±.012	±.016	±.029	±.04	±.063	±0.1

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DRN. W. LUFKIN 7/17/75
CHK'D 7/17/75
ENG. 7/17/75
PROJ. ORG. 7/17/75
PROG. 7/17/75
NEXT HIGHER ASSY. D-IA-MM11-DP-L
SCALE 1/1
SHEET 1 OF 1

FIRST USED ON MM11-DP

digital

TITLE
H222 CORE MEMORY STACK ASSEMBLY

SIZE D | CODE UA | NUMBER H222-0-0 | REV. 5 | DIST.

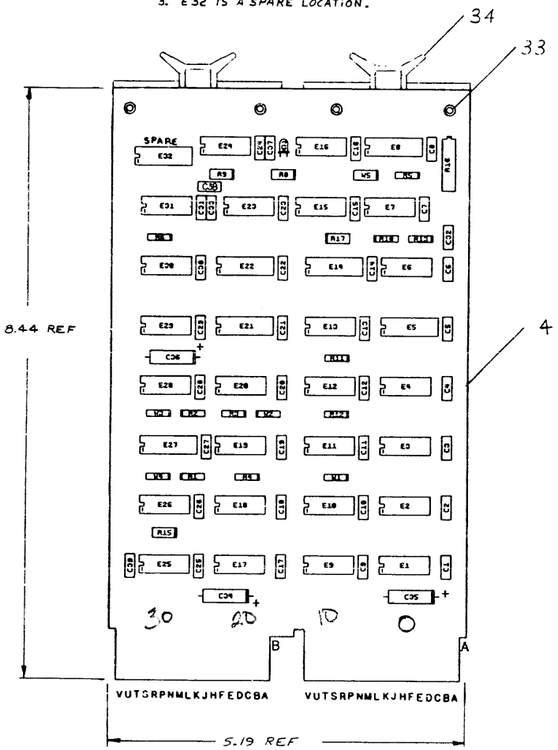
Revisions			
ZONE	Comment Rec.	DATE	APPROVED
	ECO# 1		A

H222-0-0003 B
D-MM11-DP-L
USED ON NEXT ASSY
APPLICATION

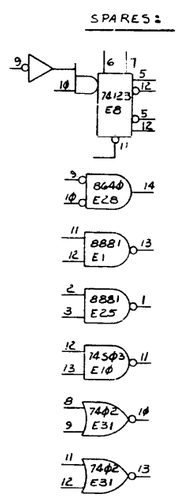
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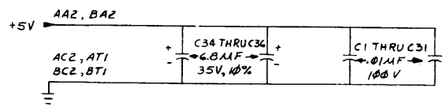
NOTES:

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-M7850-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7850-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7850-06	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, 35V, 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 3/4 W 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	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	1910436-00	23
1	E10	I.C. 74503	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.

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. B

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 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

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

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	CHK.
B	M7850-00001	

REVISIONS

DRN. W. LUFKIN DATE 2-5-75
CHK'D DATE 2/17/75
ENG. DATE 2/18/75
PROJ. ENG. DATE 2/11/75
PROD. DATE 2/13/75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 3

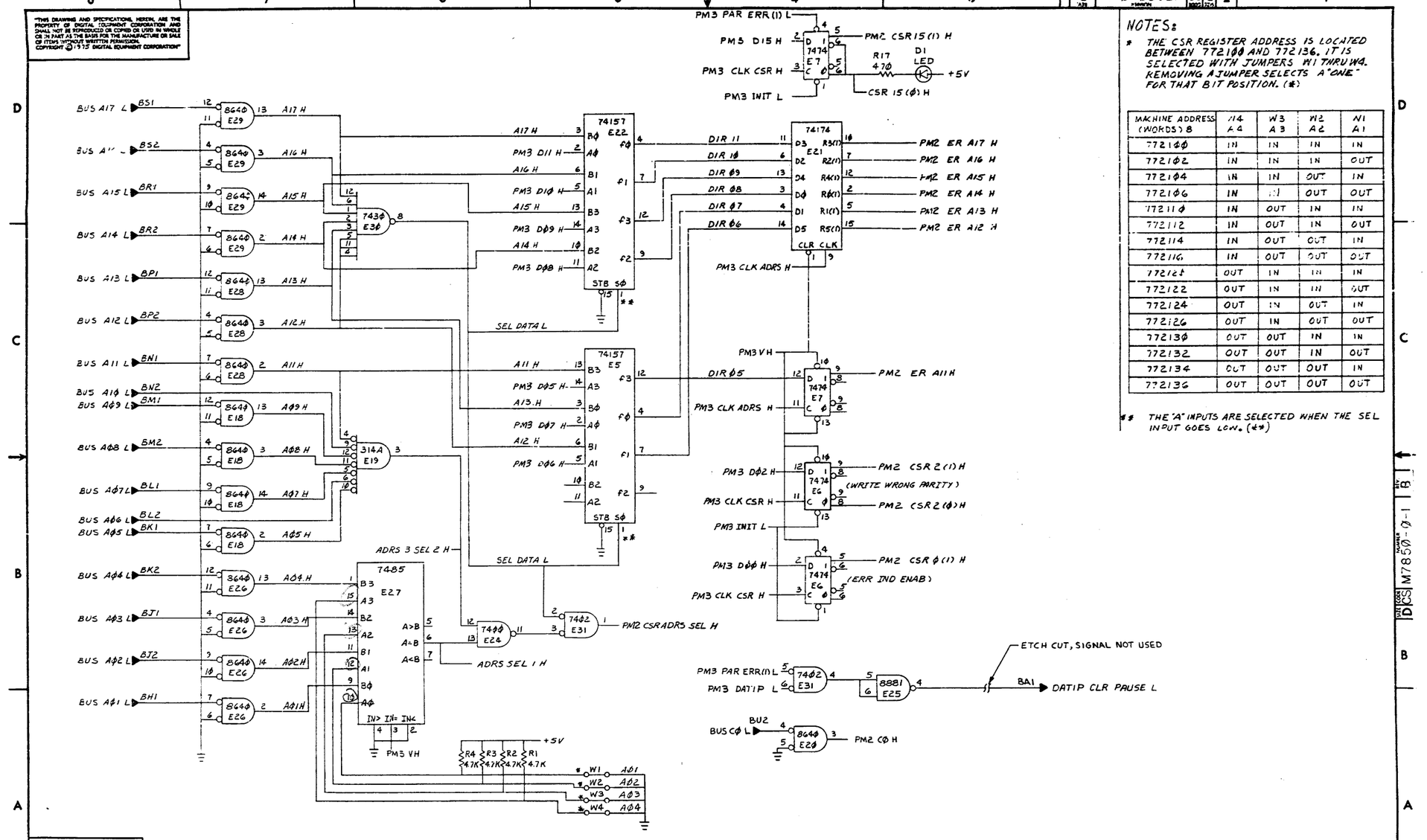
digital

TITLE: PARITY MODULE

SIZE	CODE	NUMBER	REV.
D	CS	M7850-0-1	B

DIST.

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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
772140	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	CS	M7850-Ø-1	B
SCALE	SHEET 2 OF 3	DIST.		

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NOTES:
1. B INPUTS SELECTED WHEN SEL IS LOW (*)
2. ** SET R16 TO 110Ω 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 DI4 L
BUS DI3 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

8881 E9, E17, E1 — 8640 E12, E11, E2, E3 — 74S280 E13, E4

BUS DI5 L, BUS DI4 L, BUS DI3 L, BUS DI2 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, DØ4 H, DØ3 H, DØ1 H, PM3 DØ6 H, PM3 DØ5 H, PM3 A BIT GEN H, PM3 DØ2 H, PM3 DØØ H

PM3 C1 H
74S03 E10 — ANI INT BUS PI L; API INT BUS PØ L
74S03 E10 — PM3 PAR ERR H
8266 E14 — PM2 CSR 2(Ø) H, PM3 VH, PM2 CØ H; PM3 8 BIT GEN H, PM3 A BIT GEN H, PM3 DATIP L, PM3 C1 L
RG 470Ω +5V — PM3 C1 H — PM3 INT SYN H
R5 4.7K +5V; R13 1K +5V PM3 VH; R16 10K (T.P.)
INT BUS SSYN L — BE1 — PM3 C1 L — 7812 E8 — S SYN DLY (Ø) H
C32 .01UF — PM3 PAR ERR(1) H, PM3 PAR ERR(1) L
PM3 INIT L
74S74 E15 — PM2 CSR Ø(1) H — 8881 E1 — AN2 BUS PB L
PM3 INT SSYN H, PM3 M SYN PULSE L, PM3 PAR ERR H
8881 E25 — BU1 BUS SSYN L
74S74 E15 — 7400 E23 — S SYNC INH Ø H
BE2 INT BUS PAR MOD DET L

BUS INIT L — AA1 — 8640 E20 — INIT H — 74H04 E16 — PM3 INIT L
BUS C1 L — BT2 — 8640 E20 — PM3 C1 H — 74H04 E16 — PM3 C1 L
BUS M SYN L — BV1 — 8640 E20
R9 100; C33 330 PF 5%; 74H04 E16; 7400 E24 — PM3 M SYN PULSE L
R15 100; C39 470 PF 5%; PM3 C1 L — 7408 E23 — PM3 READ SEL H
PM2 CSR ADRS SEL H
PM3 C1 H
PM3 CLK CSR H — 74H02 E16 — 7400 E24 — PM3 CLK ADRS H
PM3 PAR ERR(1) L

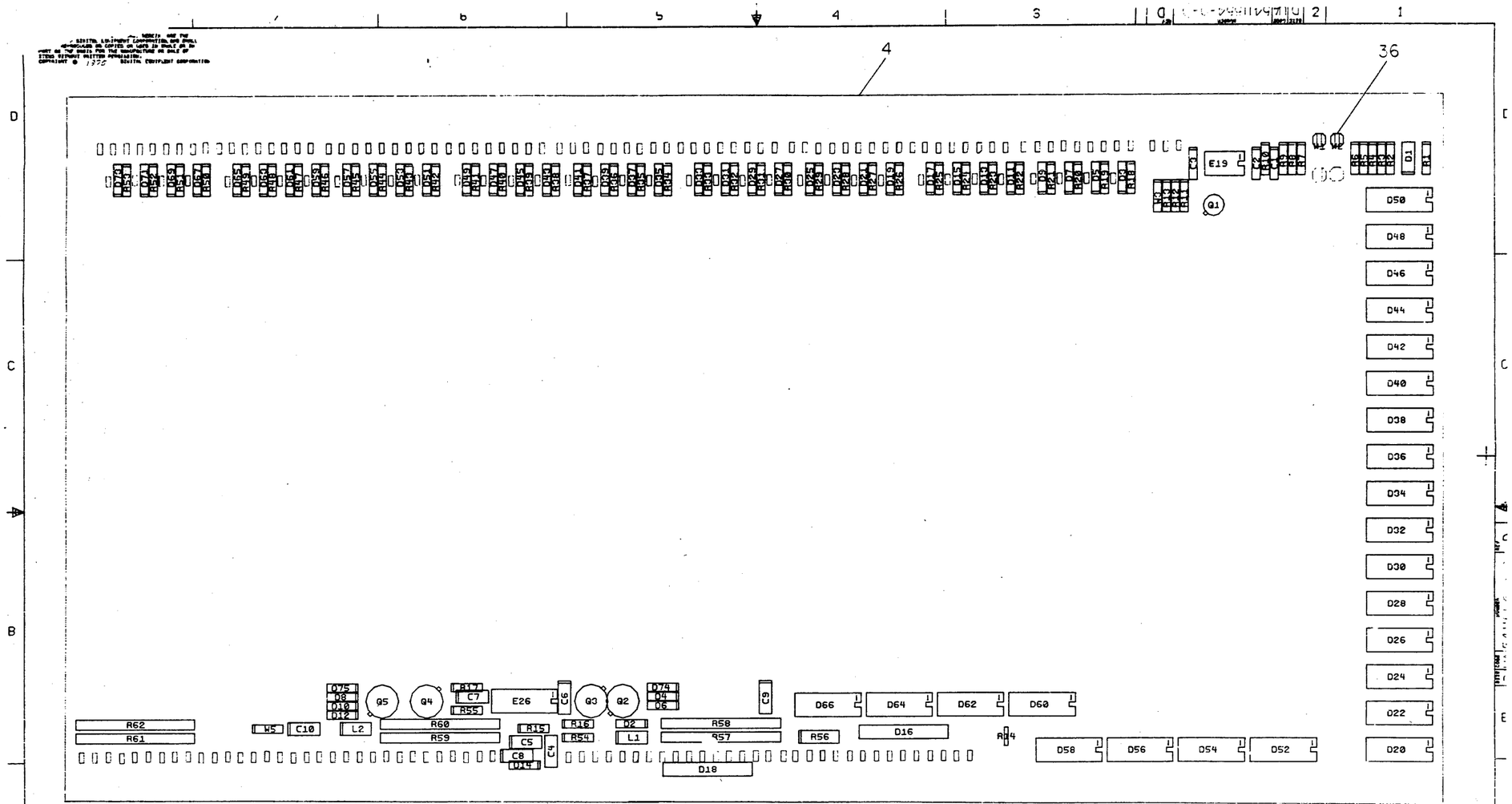
PM3 C1 H — 74S03 E10 — PM3 PAR ERR(1) H — 74H04 E16 — R8 100; C37 330 PF 5% — 7400 E24 — ERR CLR INH L

REVISIONS

CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM3)	D	DCS	M7850-0-1	B
SCALE	SHEET 3 OF 3	DIST.		

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NOTES:

CHK	CHANGE NO	REV
SIZ	5411554-0003	D
	D. SMELSER	

SIGNATURES	DATE
DRN. C. Eddy	7/9/75
CHK'D.	7/10/75
ENG.	
PROJ.ENG.	
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

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M. Poirier
DATE 7/7/75
ENG D Fraher
DATE 7/14/75
CHECKED [illegible]
DATE 7/7/75
PROD R G Hill 7/14/75
DATE
SECTION
ISSUED SECT.

QUANTITY/VARIATION

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	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
16K x 16, 18 MEMORY STACK	D-UA-5411554-0-0	A	PL	5411554-0-0	D	00002
	SHEET 1 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 NS70
DRA

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M. Poirier
DATE 7/7/75
ENG D Fraher
DATE 7/14/75
CHECKED [illegible]
DATE 7/7/75
PROD R G Hill 7/14/75
DATE
SECTION
ISSUED SECT.

QUANTITY/VARIATION

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	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
16K x 16, 18 MEMORY STACK	D-UA-5411554-0-0	A	PL	5411554-0-0	D	
	SHEET 2 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 NS70
DRA

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-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		

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

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

DEC 91 (225)-1062-V1-1972

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,BP,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

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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		PRINT SET
VAR	TITLE	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	
9 75	H221-2	A	

USED ON OPTION/MODEL		DRN.	DATE	TITLE
MM11-C		W. MAJOR	1/22/75	H221 CORE MEMORY STACK
		CHK'D.	DATE	
		PROJ ENG.	DATE	
		PROD.	DATE 2/13/75	SIZE B / CODE DD / NUMBER H221-Ø / REV A
		FIELD SERV.	DATE 3-18-76	DIST
SHEET 1 OF 2				

DEC 16-03251-1052-1A-8952

DRB 106

374

ELECTRICAL

CUSTOMER PRINT SET 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-CS-5411246-0-1	#	3	H221 STACK BOARD	
			E-IA-7010839-0-0		2	CORE PLANE WIRING ASSY	

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	B	1	H221 CORE MEMORY STACK ASSY	
			D-MD-7413449-0-0		1	STIFFENER	
			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

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

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NOTES:

1. * INDICATES HAND INSERTED POWER RESISTORS TO BE RAISED FROM BOARD.
(R18, R55, R76, R134, R60, R61, R64, R65, R84, R85, R90, R91, R107, R108, R113, R114, R130, R131, R135, R136, R148, R149 R39)

SPARES :

74H04 E4 — 1, 2, 8, 9
74H04 E19 — 1, 2, 8, 9
74H04 E16 — 1, 2
74H04 E16 — 10, 11
74H04 E29 — 3, 4
74H06 E68 — 3, 4
74H06 E68 — 10, 11
8641 E25 — 7, 9, 11, 12, 10
74H74 E21 — 1, 8, 9, 10, 12, 13
74H00 E10 — 1, 2, 3
RP1 100 — 8, 9, 10, 11, 6
74H08 E59 — 1, 2, 3
74H08 E59 — 12, 13, 11

DETAIL A

SEE NOTE 1

SEE DETAIL A

8.99 REF

15.69 REF

+5V: AA2 BA2 CA2 DA2 FA2 — J8-1, J3-18
C1-C12, C14, C15, C18-C21, C24, C26-C30, C32, C33, C34, C43, C44, C50-C54, C62, C61, C67-C71, C77, C78, C84-C88, C91-C96, C105, C108, C111-C115 — .01 µF 50V
C49, C66, C117, C119, C236 — 8 µF 25V
C47, C64, C81, C98, C110 — .22 µF 50V
-5V: BV2
C118 — 8 µF 25V
C62, C79, C90, C107 — .01 µF
C98, C65, C88, C103 — 47 µF
C42, C57, C73, C100 — 8 µF 25V
C36, C55, C72, C99 — .01 µF
C46, C53, C63, C76, C87, C89, C97, C106, C109 — .22 µF 50V
+20V: AV1 AV1 AV2 — J3-19
AC2 AT1 BC2 CC2 CT1 DC2 DT1 EC2 ET1 FC2 FT1 — J8-3 J8-6 J3-17 J4-40 J4-14 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

REV.	DESCRIPTION	DATE	APPROVED
J	ECO G651-00004	11-14-75	J MANTON
H	ECO G651-00003	9-25-75	J MANTON
F	ECO G651-00002	7-24-75	J MANTON
D	ECO G651-00001	7-16-75	J MANTON

REVISIONS

FIRST USED ON OPTION MODEL

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

DRN. W. LUFKIN 4-20-75
CHK'D 4/6/75
ENG. 4/15/75
PROJ. ENG. 4/13/75
PROD. 4/21/75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 13

digital

TITLE: UNIBUS 8K MEMORY

SIZE D | CODE DCS | NUMBER G651-0-1 | REV. J
DIST.

SIZE DCS | CODE | NUMBER G651-0-1 | REV. J

DEC FORM NO. DRD 123.0

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PARTS LIST

REF DES		DESCRIPTION	PART NUMBER	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-CO-G851-0-4	1
REF		ASSY/DRILL HOLE LAYOUT	D-AH-G851-0-5	2
REF		MODULE ECO HISTORY	B-MH-G851-0-6	3
1		ETCHED CIRCUIT BOARD	5011155	4
2	C56,C74	CAP 100 PF 100V 5% CM	1000016-00	5
9	C218,C220,C224,C226 C228,C230,C232,C234,C222	CAP 120 PF 100V 5% CM	1000018-00	6
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,C99, C104,C105,C107,C108,C111-C115,C219,C221,C225,C229, C233	CAP .01 UF 50V 20%	1001610-01	8
10	C42,C49,C57,C66,C100,C117, C118,C119,C236,C73	CAP 8 UF 25V±0% ALUM	1012084-01	9
1	C39	CAP 27 PF 100V 5% CM	1001739-00	10
4	C13,C25,C37,C101	CAP 82 PF 100V 5% CM	1000015-00	11
13	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 3300PF 50V 10% CER	1011740-01	13
4	C48,C65,C82,C103	CAP 47 UF AL EL	1012219-00	14
18	F1-F18	1/4 A PICO FUSE	1210929-04	15
1	D2	DIODE IN757A 9.1V 1% ZENER	1110890-01	16
1	D1	DIODE IN751A 5.1V 5% ZENER	1110894-00	17
1	R29	RES 100 ¼W 5%	1301775-00	18
1	R158	RES 200 ¼W 5%	1300274-00	19
3	R157,R159,R150	RES 270 ¼W 5%	1300356-00	20
9	R70,R68,R73,R97,R127,R97,R74,R68 R129	RES 470 ¼W 5%	1300318-00	21
1	R48	RES 1.5K ¼W 5%	1300291-00	22
19	R91,R82,R83,R86,R87,R88,R87,R92 R93,R109,R110,R115,R116,R132,R133 R137,R151,R158,R160,	RES 1.0K ¼W 5%	1300265-00	23
2	R27,R28	RES 2.7K ¼W 5%	1300426-00	24
3	R22,R45,R46	RES 1.05K ¼W 1%	1004833-00	25
1	R20	RES 2.61K ¼W 1%	1300303-00	26
1	R153	RES 2K ¼W 5%	1302268-00	27
1	R21	RES 10K ¼W 5%	1300479-00	28
1	R24	RES 32K ¼W 5%	1003219-00	29
1	R51	RES 2.7K ¼W 1%	1004868	30
1	R34	RES 330 ¼W 5%	1301990-00	31
1	R43	RES 21.5K ¼W 1%	1303155-00	32
18	R69,R68,R69,R83,R88,R104,R105,R111 R112,R121,R123,R129,R130,R145,R147 R152,R98,R81	RES 10 ¼W 5%	1002124-00	33
4	R54,R71,R95,R125	RES 75 ¼W 5%	1002379-00	34
2	R49,R32	RES 100K ¼W 5%	1002468-00	35
1	R41	RES 825 ¼W 1%	1005143-00	36
1	R42	RES 1.47K ¼W 1%	1005163-00	37
2	R25,R26	RES 14.7K ¼W 1%	1002241-00	38
5	R31,R32,R105,R122,R156	RES 9.09K ¼W 1%	1004155-00	39
1	R30	RES 4.02K ¼W 1%	1004163-00	40
4	R113,R35,R75,R124	RES 10 ¼W 1%	1310002-01	41
18	R90,R91,R94,R95,R04,R95,R90,R91, R107,R108,R113,R114,R120,R131,R105 R155,R148,R149	RES 21.5K ¼W 1%	1311703-01	42

PARTS LIST

REF DES		DESCRIPTION	PART NUMBER	ITEM NO
5	R161-R165	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 ¼W 5%	1300229-00	45
9	R8,R12,R13,R14,R15,R40,R18, R158,R155	RES 4.7K ¼W 5%	1300447-00	46
18	R56,R57,R77-R80,R100-R103, R117-R120,R141-R144	RES 5.6K ¼W 5%	1301874-00	47
2	R44,R2	RES 10K ¼W 1%	1303312-00	48
1	R19	RES 10 ¼W 5%	1301317-00	49
1	R1	RES 3.83K ¼W 1%	1309413-00	50
1	R54	RES 24.3K ¼W 1%	1309418-00	51
1	R52	RES 12.1K ¼W 1%	1303313-00	52
1	R53	RES 47K ¼W 5%	1302177-00	53
1	R124	RES 330 ¼W 5%	1300295-00	54
1	Q5	TRANSISTOR 2904-A	1501913-00	55
8	Q1-Q4,Q15,Q17,Q19,Q21	TRANSISTOR 3009-B	1503100-00	56
4	Q11,Q12,Q13,Q14	TRANSISTOR 6534B	1503409-01	57
4	Q16,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	1510662-00	62
4	E11,E12,E54,E55	DEL4Y LINE 250 NS TAPPED	1611243-00	63
9	T1-T9	TRANSFORMER INHIBIT (IN-LINE)	1612119-00	64
1	E40	IC 7450	1905530-00	65
4	E37,E38,E48,E49	IC 7475	1909050-00	66
2	E10,E43	IC 74H00	1909056-00	67
2	E42,E52	IC 74H50	1909060-00	68
1	E33	IC 74H53	1909062-00	69
5	E59,E69,E79,E93,E104	IC 74H08	1912400-00	70
1	E21	IC 74H74	1909667-00	71
1	E27	IC 8881	1909705-00	72
14	E9,E5,E6,E8,E15,E23,E20,E61 E70,E80,E94,E105,E17,E18	IC 74H01-1	1909849-00	73
6	E4,E7,E16,E19,E29,E78	IC 74H04	1909931-00	74
5	E66,E76,E36,E92,E103	IC 7442	1910048-00	75
1	E31	IC 7435	1910224-00	76
1	E57	IC 74121	1910230-00	77
1	E60	IC 741	1910238-00	78
5	E24,E34,E45,E53,E96	IC 8335	1910649-00	79
9	E67,E71,E77,E81,E87,E95,E97 E98,E106	IC 7528	1910687-00	80
1	E68	IC 7406	1910741-00	81
2	E44,E56	IC 7427	1910378-00	82
20	E52-E55,E72-E75,E82-E85,E88-E91,E99-E102	IC 75325	1910960-00	83
6	E26,E35,E36,E48,E47,E50	IC 8640	1911469-00	84
4	USE WITH Q7-Q10	HEAT SINK 2201 RED	1210001-00	85
1		HANDLE ASSY (HEX)	7413182-00	86
113	D3,D6-D11,D18-D30,D35-D42, D47-D50,D55-D73,D34-D104, D129-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	88
1	J0	CONN,MALE 7 PIN	1212104-00	89
1	E39	SWITCH DIP PACKAGE	1211184-04	90
12		EYELET	9006732-00	91
6	W15,W16,W17,W18,W8,W2	JUMPER,INSULATED	9009185-00	92
23	(USE WITH Q5,Q7-Q10 Q41-Q58)	TRANSIPAD	9007201-00	93
1		STANDOFF ¼ O.D. X 3/8 LG X #8-32 TAP	9008213-00	94
1		SCREW, NYLON #8-32 X ¼	9009041-01	95
1	R37	RES 270 1/4W 5%	1301972-00	96
4	R38,R75,R99,R129	RES 680 ¼W 5%	1301424	97
1	R50	RES 3.16K 1/4W 1%	1303045	98

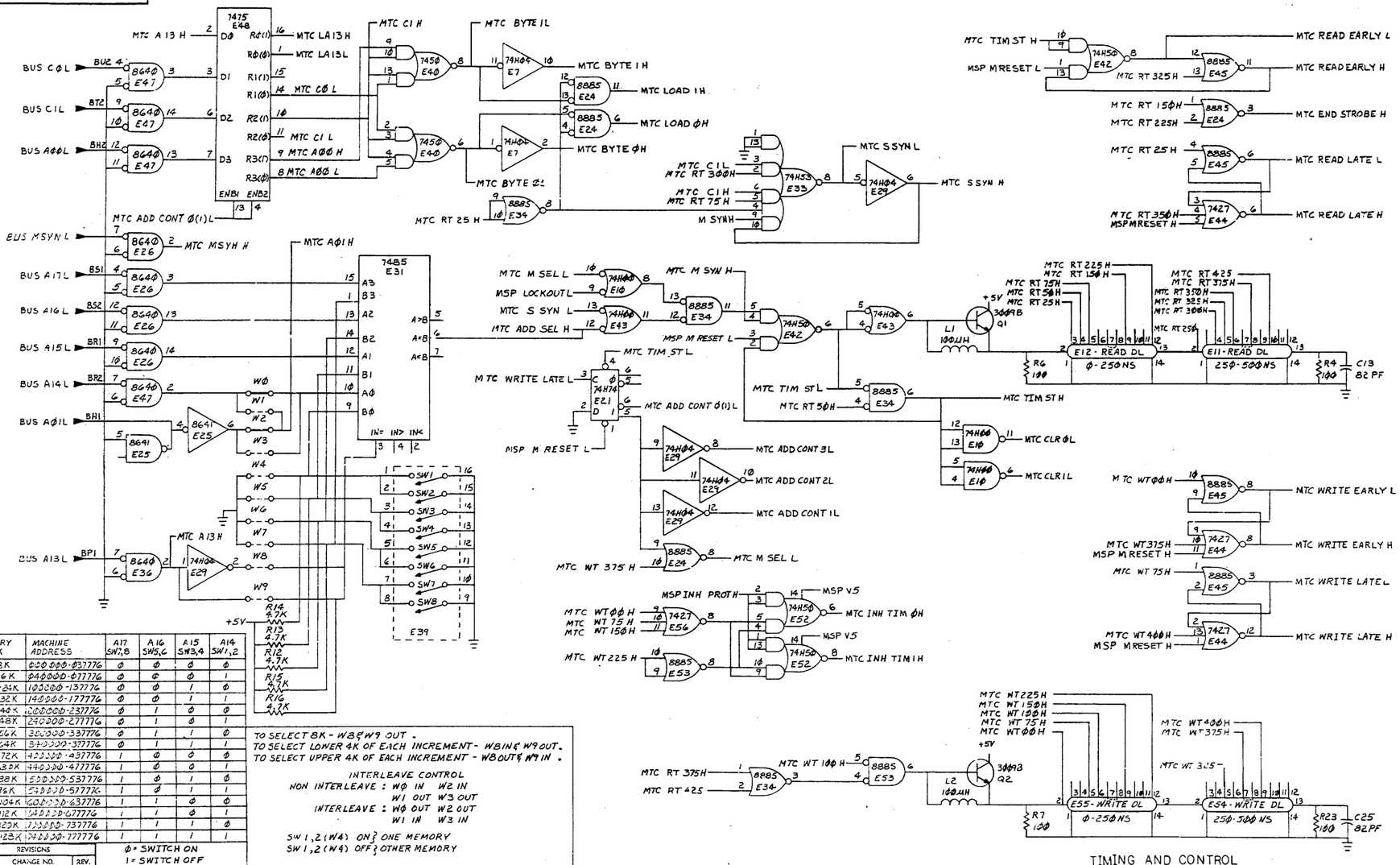
REF DES NOT USED	
CAP	C18,C17,C116,C120 - C199 C223, C231,C235, C227
DIODES	D4,D5,D12-D15,D31-D34,D43-D48, D61-D64,D80-D85,D105-D108,D116-D120, D134-D137,D145,D146
RES	R3,R5,R9,R10,R11,R17,R154
TRANS	Q6,Q23-Q40
I.C.	E22,E23,E30,E32,E41,E51,E58

REVISIONS		
DRK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY	D	CS	C851-0-1	J
SCALE — / — SHEET 2 OF 15	DIST.			

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MEMORY BANK	MACHINE ADDRESS	A17 SW7,8	A16 SW5,6	A15 SW3,4	A14 SW1,2
0-8K	000 000-037776	0	0	0	0
8K-16K	040000-077776	0	0	0	1
16K-24K	100000-137776	0	0	1	0
24K-32K	140000-177776	0	0	1	1
32K-40K	200000-237776	0	1	0	0
40K-48K	240000-277776	0	1	0	1
48K-56K	300000-337776	0	1	1	0
56K-64K	340000-377776	0	1	1	1
64K-72K	400000-437776	1	0	0	0
72K-80K	440000-477776	1	0	0	1
80K-88K	500000-537776	1	0	1	0
88K-96K	540000-577776	1	0	1	1
96K-104K	600000-637776	1	1	0	0
104K-112K	640000-677776	1	1	0	1
112K-120K	700000-737776	1	1	1	0
120K-128K	740000-777776	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

SW1,2 (W4) ON } ONE MEMORY
SW1,2 (W4) OFF } OTHER MEMORY

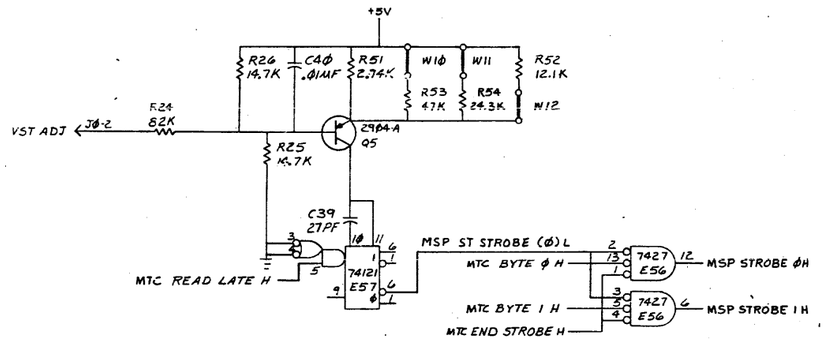
REVISIONS		
CHK	CHANGE NO.	REV.

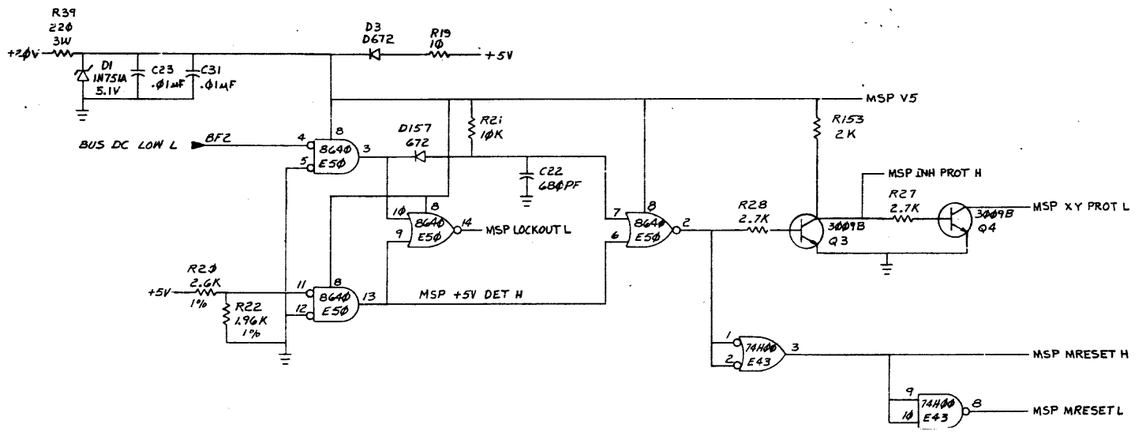
TIMING AND CONTROL

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MTC)	D	CS	G651-0-1	J
SCALE	SHEET 3 OF 13	DIST.		

DEC FORM NO. SMD 138

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REVISIONS

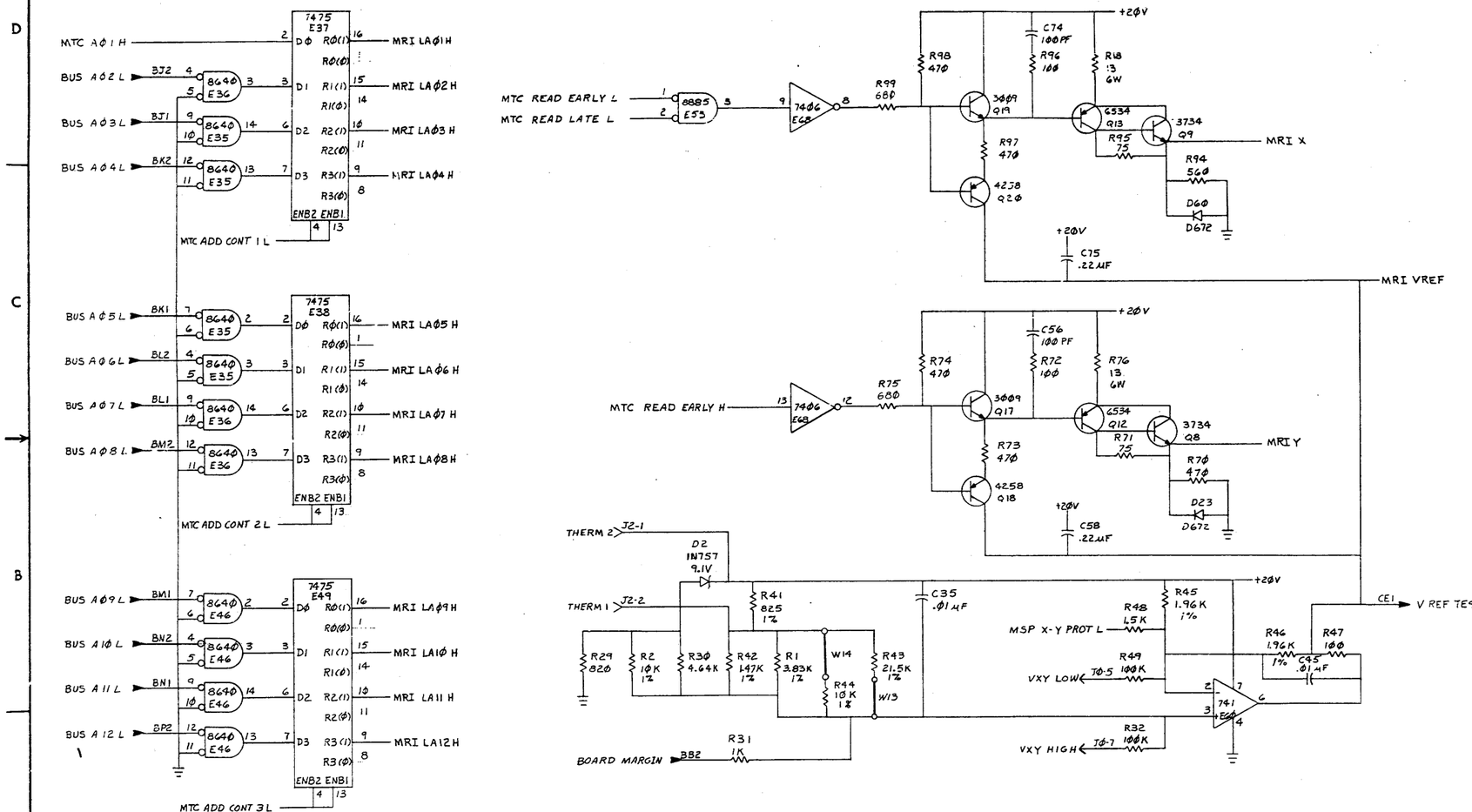
CHK	CHANGE NO.	REV.

STROBE AND PROTECT (MSP)

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY	D	CS	G651-Ø-1	J
SCALE	SHEET 4 OF 13	DIST.		

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REVISIONS

CHK	CHANGE NO.	REV.

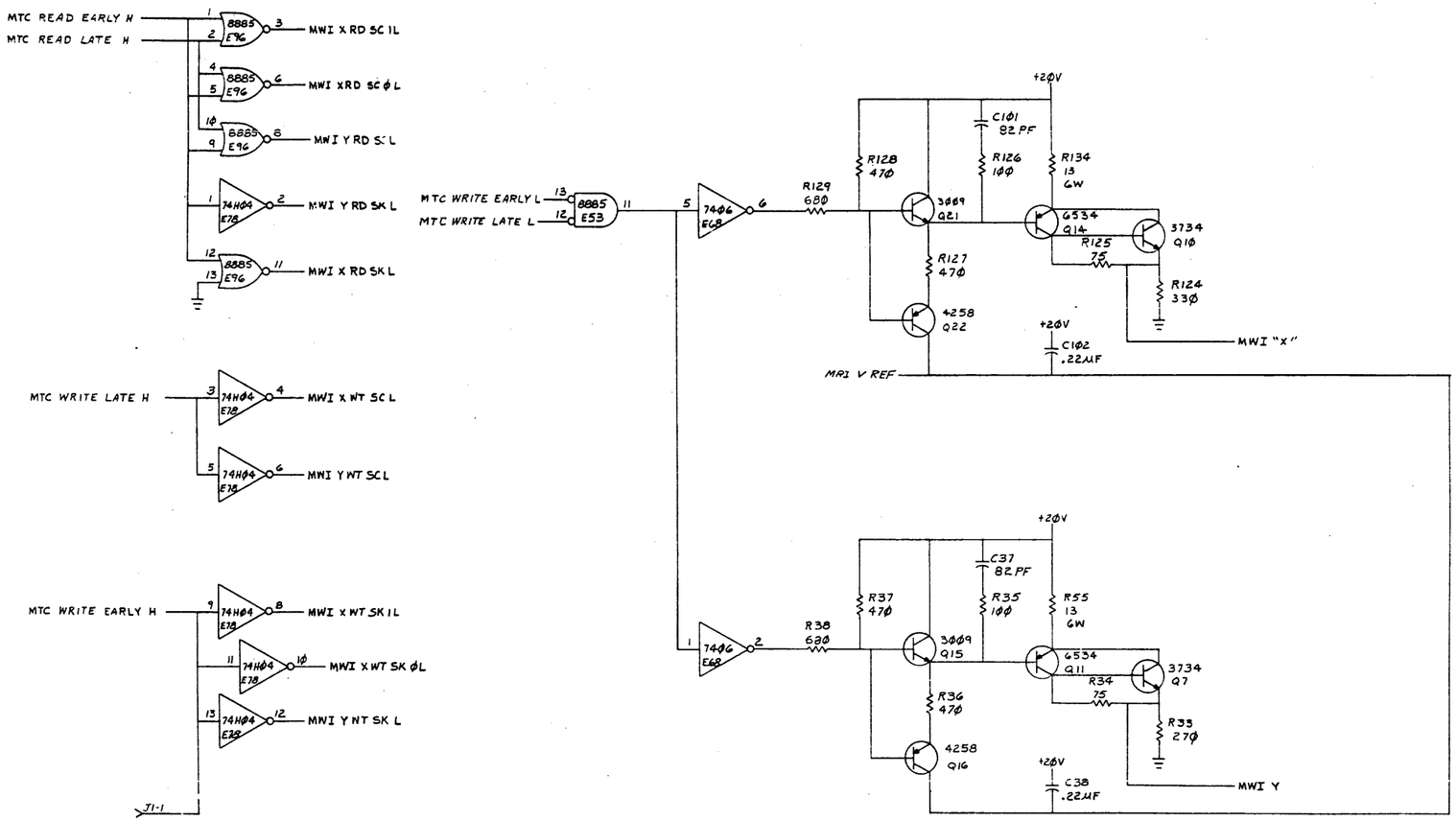
X,Y READ CURRENT SOURCES (ADD LATCH)

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MRI)	D	DCS	G651-Ø-1	J
SCALE	SHEET 5 OF 13	DIST.		

DEC FORM NO. DNB 139

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REVISIONS		
CHK	CHANGE NO.	REV.

X,Y WRITE CURRENT SOURCES

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MWI)	D	CS	G651-Ø-1	J
SCALE	SHEET 4 OF 13	DIST.		

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ALL DIODES ARE D672
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MRI "X" W17

75325 E82

R159 270 +20V 1/2W

MWI XRD SCØL
MWI XWT SKØL

D72 J3-1 XSØØ
D73 J3-2 XSØ1

75325 E83

D74 J3-3 XSØ2
D75 J3-4 XSØ3

75325 E84

D76 J3-5 XSØ4
D77 J3-6 XSØ5

75325 E85

D78 J3-7 XSØ6
D79 J3-8 XSØ7

7442 E86

MRI LAIØH
MRI LA11H
MRI LA12H
MTC LA13H

75325 E88

MWI XRD SC1L
MWI XWT SKØL

D97 J3-9 XSØ8
D98 J3-10 XSØ9

75325 E89

D99 J3-11 XS10
D100 J3-12 XS11

75325 E90

D101 J3-13 XS12
D102 J3-14 XS13

75325 E91

D103 J3-15 XS14
D104 J3-16 XS15

7442 E92

MRI LA1ØH
MRI LA11H
MRI LA12H
MRI LA13L

MWI "X" W18

R160 270 +20V 1/2W

MWI XWT SCL
MWI XRD SKL

75325 E99

J5-2 XPW DØ
J5-1 XNR DØ

75325 E100

J5-3 XPW D1
J5-4 XNR D1

75325 E101

J5-6 XPW D2
J5-5 XNR D2

75325 E102

J5-7 XPW D3
J5-8 XNR D3

75325 E103

J5-10 XPW D4
J5-9 XNR D4

75325 E104

J5-11 XPW D5
J5-12 XNR D5

75325 E105

J5-14 XPW D6
J5-13 XNR D6

75325 E106

J5-15 XPW D7
J5-16 XNR D7

7442 E103

MRI LAØ7H
MRI LAØ8H
MRI LAØ9H

X DRIVERS AND X SWITCHES

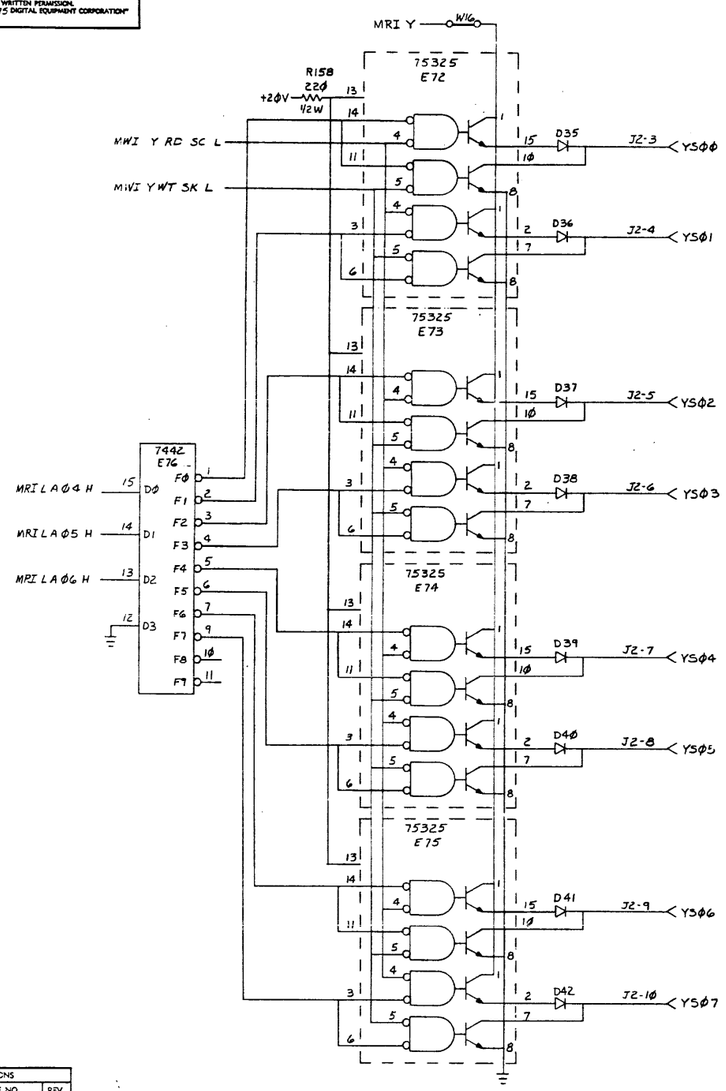
REVISIONS		
CHK	CHANGE NO.	REV.

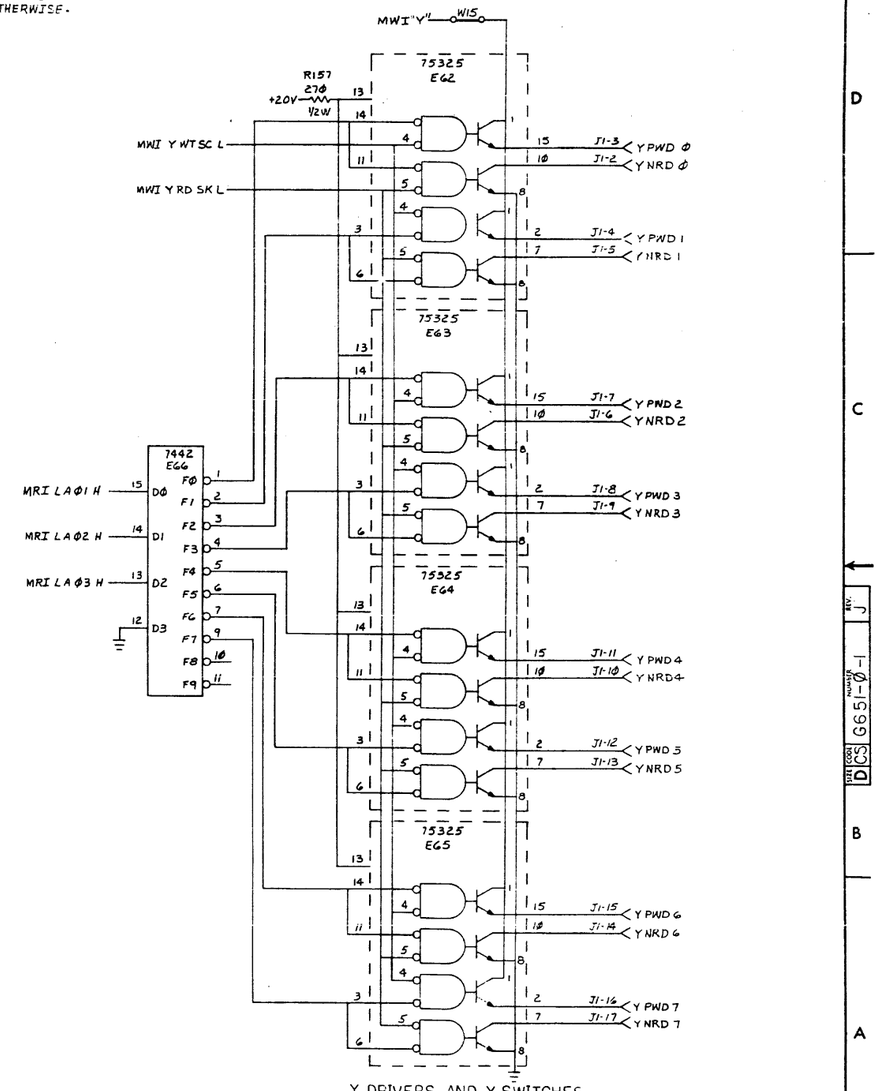
TITLE	UNIBUS 8K MEMORY (MXD)	SIZE	CODE	NUMBER	REV.
		D	DCS	G651-Ø-1	J
SCALE	SHEET 7 OF 13	DIST.			

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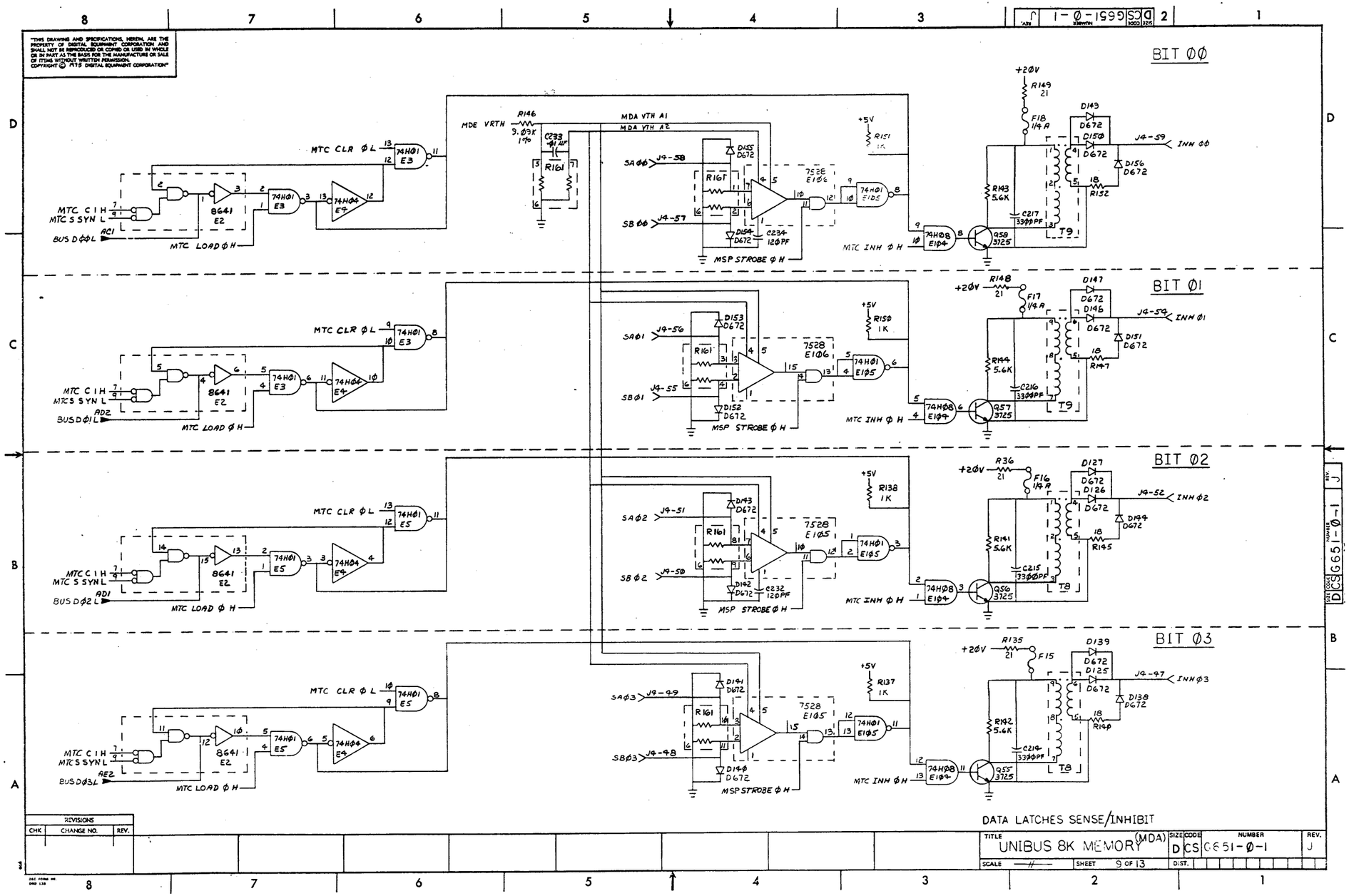


Y DRIVERS AND Y SWITCHES

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MYD)	D	CS	G651-Ø-1	J
SCALE	SHEET 3 OF 13	DIST.		

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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.			

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BIT Ø4

MDE VRTH 9.09K R122 1%
C229 .01μF
R162
MDB VTH B1
MDB VTH B2
SAØ4 J9-45
SBØ4 J9-44
D132 D672
D131 D672
7528 E97
C238 120PF
MSP STROBE Ø H
+5V R133 1K
74H01 E99
MTC INH Ø H
74H08 E93
Q54 3725
+20V R131 21
F14 1/4A
D124 D672
D123 D672
D133 672
J9-46 INH Ø4
R119 5.6K
C213 3300 PF
R139 18
T7
MTC CLR ØL
74H01 E6
MTC C1H
MTC S SYN L
8641 E1
BUS DØ4L AE1
MTC LOAD Ø H
74H04 E7

BIT Ø5

SAØ5 J9-42
SBØ5 J9-43
D130 D672
D129 D672
7528 E97
MSP STROBE Ø H
+5V R132 1K
74H01 E99
MTC INH Ø H
74H08 E93
Q53 3725
+20V R130 21
F13 1/4A
D122 D672
D121 D672
D128 672
J9-41 INH Ø5
R120 5.6K
C212 3300PF
R123 18
T7
MTC CLR ØL
MTC C1H
MTC S SYN L
8641 E1
BUS DØ5L AF2
MTC LOAD Ø H

BIT Ø6

SAØ6 J9-38
SBØ6 J9-37
D114 D672
D113 D672
7528 E95
C228 120PF
MSP STROBE Ø H
+5V R116 1K
74H01 E99
MTC INH Ø H
74H08 E93
Q52 3725
+20V R114 21
F12 1/4A
D90 D672
D89 D672
D115 672
J9-39 INH Ø6
R117 5.6K
C211 3300PF
R121 18
T6
MTC CLR ØL
MTC C1H
MTC S SYN L
8641 E1
BUS DØ6L AF1
MTC LOAD Ø H

BIT Ø7

SAØ7 J4-35
SBØ7 J4-36
D112 D672
D111 D672
7528 E95
MSP STROBE Ø H
+5V R115 1K
74H01 E99
MTC INH Ø H
74H08 E93
Q51 3725
+20V R113 21
F11 1/4A
D110 D672
D88 D672
D109 672
J9-34 INH Ø7
R118 5.6K
C210 3300PF
R112 18
T6
MTC CLR ØL
MTC C1H
MTC SSYNL
8641 E1
BUS DØ7L AH2
MTC LOAD Ø H

REVISIONS		
CHK	CHANGE NO.	REV

DATA LATCHES SENSE/INHIBIT

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MDB)	D	CS	G651-Ø-1	J
SCALE —	SHEET 10 OF 13	DIST.		

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BIT Ø8

MTC CLR I L → 74HØ1 E15 (13→12→11)
MTC C I H, MTC S SYN L → B641 E14 (7, 9)
BUS DØ8 L (AH) → B641 E14 (2)
MTC LOAD I H → B641 E14 (1)
B641 E14 (3) → 74HØ1 E15 (2→3) → 74HØ4 E16 (13→12)
MDE VRTH → R105 9.09K → MDC VTH C1 / MDC VTH C2
C225 .Ø1µF; R163 (5, 7, 6)
SA ØB J4-32 → R163 (11); SB ØB J4-31 → R163 (2)
D95 D672; D94 D672; C226 12ØPF
7528 E87 (4, 5, 10, 12)
MSP STROBE I H
+5V → R110 1K
74HØ1 E8Ø (9→10→8)
MTC INH I H → 74HØ8 E79 (9→10→8)
Q5Ø 3725
+20V → R108 21Ω → F1Ø 1/4A
D87 D672; D86 D672; D96 672
J4-33 INH ØB
R102 5.6K; CZØ9 3300PF; R111 1Ø; T5

BIT Ø9

MTC CLR I L → 74HØ1 E15 (10→9→8)
MTC C I H, MTC S SYN L → B641 E19 (7, 5)
BUS DØ9 L (AJ2) → B641 E19 (4)
MTC LOAD I H → B641 E19 (6)
B641 E19 (6) → 74HØ1 E15 (4→6) → 74HØ4 E16 (9→8)
SA Ø9 J4-30 → R163 (3); SB Ø9 J4-29 → R163 (4)
D93 D6; D92 D672
7528 E87 (4, 5, 15, 13)
MSP STROBE I H
+5V → R109 1K
74HØ1 E8Ø (5→4→6)
MTC INH I H → 74HØ8 E79 (5→4→6)
Q49 3725
+20V → R107 21Ω → F9 1/4A
D85 D672; D84 D672; D91 672
J4-28 INH Ø9
R103 5.6K; CZØ8 3300PF; R106 1Ø; T5

BIT 1Ø

MTC CLR I L → 74HØ1 E17 (13→12→11)
MTC C I H, MTC S SYN L → B641 E14 (7, 9)
BUS DØ1Ø L (AJ1) → B641 E14 (14)
MTC LOAD I H → B641 E14 (15)
B641 E14 (13) → 74HØ1 E17 (2→1) → 74HØ4 E16 (3→4)
SA 1Ø J4-25 → R163 (11); SB 1Ø J4-24 → R163 (2)
D7Ø D672; D69 D672; C224 12ØPF
7528 E81 (4, 5, 10, 12)
MSP STROBE I H
+5V → R93 1K
74HØ1 E8Ø (1→2→3)
MTC INH I H → 74HØ8 E79 (1→2→3)
Q48 3725
+20V → R91 21Ω → F8 1/4A
D53 D672; D52 D672; D71 672
J4-26 INH 1Ø
R100 5.6K; CZØ7 3300PF; R104 1Ø; T4

BIT 11

MTC CLR I L → 74HØ1 E17 (10→9→8)
MTC C I H, MTC S SYN L → B641 E14 (7, 9)
BUS D11 L (AK2) → B641 E14 (11)
MTC LOAD I H → B641 E14 (12)
B641 E14 (10) → 74HØ1 E17 (5→6) → 74HØ4 E16 (6)
SA 11 J4-23 → R163 (3); SB 11 J4-22 → R163 (11)
DG8 D672; DG7 D672
7528 E81 (4, 5, 15, 13)
MSP STROBE I H
+5V → R92 1K
74HØ1 E8Ø (12→13→11)
MTC INH I H → 74HØ8 E79 (12→13→11)
Q47 3725
+20V → R9Ø 21Ω → F7 1/4A
D51 D672; DG6 672; DG5 672
J4-21 INH 11
R101 5.6K; C226 3300PF; R39 3Ω; T4

REVISIONS		
CHK	CHANGE NO.	REV.

DATA LATCHES SENSE/INHIBIT

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MDC)	D	DCS	G651-Ø-1	J

SCALE — | SHEET 11 OF 13 | DIST.

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BIT 12

MTC CLR I L — 74H01 E18 pin 13 / pin 12 → pin 11
MTC C I H, MTC S SYN L — 8641 E13 pins 7, 9
BUS D 12 L — AK1
MTC LOAD I H
MDE VRTH — RB2 9.09K 1% — C221 .014F — R164
MDD VTH D1, MDD VTH D2
SA 12 — J4-19 — D58 DG72 — R16A
SB 12 — J4-18 — D57 DG72 — C222 120PF
7528 E77
MSP STROBE I H
+5V — RB7 1K
74H01 E70 pin 8
INH I H — 74H08 E69 pin 9 / pin 8
+20V — RB5 21 — F6 1/4 A
D50 DG72 — D49 DG72 — J4-20 — INH 12
D59 DG72
R79 5.6K — C205 330 PF — T3 — R88 18
Q46 3725

BIT 13

MTC CLR I L — 74H01 E18 pin 10 / pin 9 → pin 8
MTC C I H, MTC S SYN L — 8641 E13 pins 5, 9
BUS D 13 L — AL2
MTC LOAD I H
SA 13 — J4-17 — D56 DG72 — R16A
SB 13 — J4-16 — D55 DG72
7528 E77
MSP STROBE I H
+5V — RB6 1K
74H01 E70 pin 6
MTC INH I H — 74H08 E69 pin 5 / pin 6
+20V — RB4 21 — F5 1/4 A
D48 DG72 — D47 DG72 — J4-15 — INH 13
D59 DG72
RB0 5.6K — C204 3300 PF — T3 — R83 18
Q45 3725

BIT 14

MTC CLR I L — 74H01 E20 pin 13 / pin 12 → pin 11
MTC C I H, MTC S SYN L — 8641 E13 pins 14, 15
BUS D 14 L — AL1
MTC LOAD I H
SA 14 — J4-12 — D29 DG72 — R16A
SB 14 — J4-11 — D28 DG72 — C220 120PF
7528 E71
MSP STROBE I H
+5V — RB7 1K
74H01 E70 pin 3
MTC INH I H — 74H08 E69 pin 2 / pin 3
+20V — RB5 21 — F4 1/4 A
D21 DG72 — D22 DG72 — J4-13 — INH 14
D30 DG72
R77 5.6K — C203 3300 PF — T2 — R81 18
Q44 3725

BIT 15

MTC CLR I L — 74H01 E20 pin 10 / pin 9 → pin 8
MTC C I H, MTC S SYN L — 8641 E13 pins 11, 12
BUS D 15 L — AM2
MTC LOAD I H
SA 15 — J4-10 — D27 DG72 — R16A
SB 15 — J4-9 — D26 DG72
7528 E71
MSP STROBE I H
+5V — RB6 1K
74H01 E70 pin 11
MTC INH I H — 74H08 E69 pin 12 / pin 11
+20V — RB4 21 — F3 1/4 A
D27 DG72 — D25 DG72 — J4-8 — INH 15
D24 DG72
R78 5.6K — C202 3300 PF — T2 — R69 18
Q43 3725

DATA LATCHES SENSE/INHIBIT

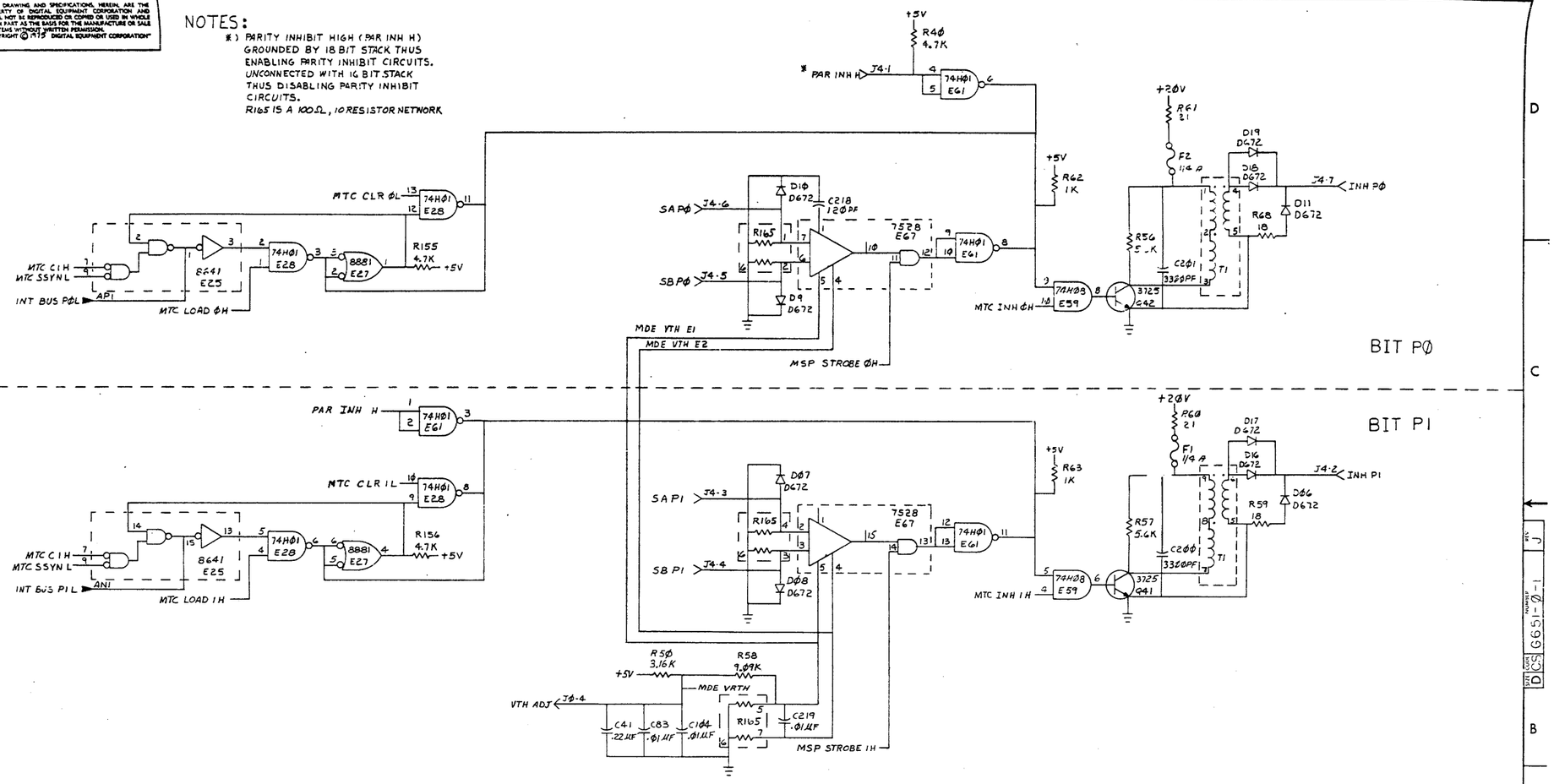
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MDD)	D	CS	G651-0-1	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



REVISIONS		
CHK	CHANGE NO.	REV.

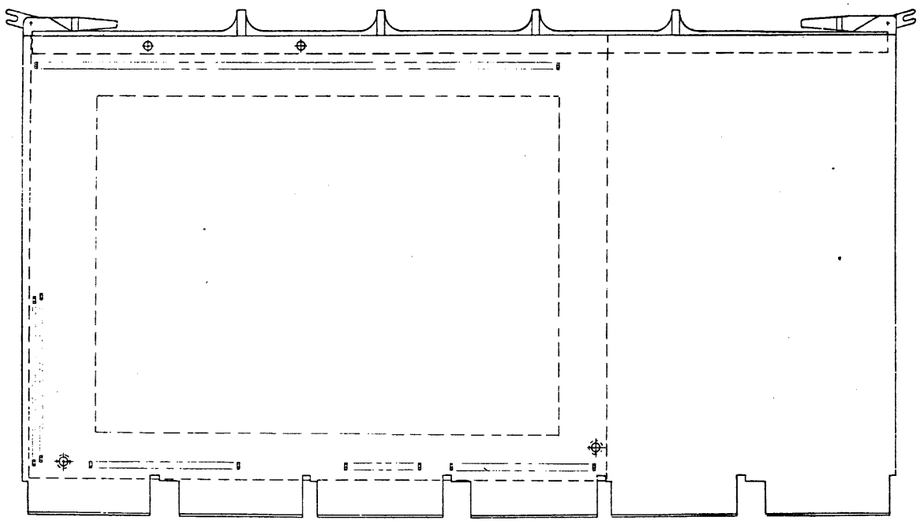
SENSE/INHIBIT (PØ, P1) DATA LATCHES

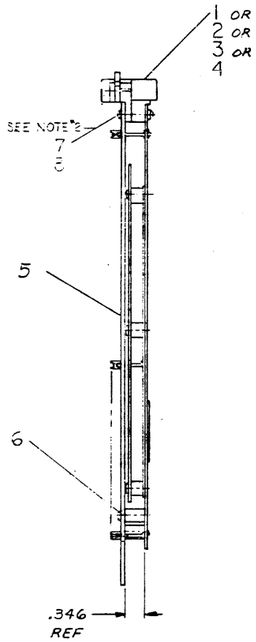
TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS 8K MEMORY (MDE)	D	CS	G651-Ø-1	J
SCALE	SHEET 13 OF 13	DIST.		

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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	9006002-01	5
2	2	2	2	WASHER INT. #2	9006631	7
2	2	2	2	SCR, SLOTTED, NYLON 4-40 X.2516	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
MM11BP	MM11B	MM11CP	MM11C	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 4.5	OVER 4.5 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 30.0
SURFACE QUALITY IN ✓ MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.018	±.024	±.04
	PREFERRED ☐	±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DRN. P. Sanderson 1-16-75
CHK'D
ENG.
PROJ. ENG.
PROD.

NEXT HIGHER ASSY. B-DD-MM11-C

FIRST USED ON MM11-C

digital

TITLE
MEMORY SYSTEM
MODULE ASSEMBLY

SIZE D | CODE UA | NUMBER MM11-C-0 | REV. C

SCALE 1/1

SHEET 1 OF 1

DIST.

REVISIONS			
LTR	CHANGE NO.		REV
A	2311	D. Mahon 4-SEP-75	A
B	2402	J. MANTON 9/24/75	B
C	2406	J. MANTON 12/15/75	C

DEC FORM NO. D40 1006

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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~~CUSTOMER PRINT SET INDEX~~

~~THIS IS PRINT SET~~

SEQUENCE

SEQUENCE

NOTE:
1. FOR FIELD MAINTENANCE PRINT SET REFER TO B-TC-11/Ø4-Ø-1
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-LL 230V	

REVISIONS			
REV	CHG. NO.	DATE	
A	11/04-1	8/8	
B	11/04-3	7-15	
C	11/04-4	7-17	
D	11/04-5	7-17	
E	11/04-6	8-9	
F	11/04-7	8-15	
H	11/04-8	6-77	
J	11/04-9	12-77	
K	11/04-10	3 78	

EN-01062-1A-1-6-R97-(3225)

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.K. Peterson	DATE 10/27/75	SIZE B / CODE DD / NUMBER 11/Ø4-0 / REV K
~~FIELD SERV~~	~~DATE~~	DIST

DRB 106

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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	
11/04-HC	KD11-D, KY11-LA, M9312 M9302.	
	MM11-DP DD11-P BA11-LK, 115V	
11/04 HD	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP, DD11-P, BA11-LL, 230V	
11/04 MC	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP(2), DD11-P, BA11-LK, 115V	
11/04-MD	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP(2), DP11-P, BA11-LL, 230V	
11/04-HA	KD11-D, KY11-LA, M9312 , M9302	
	MM11-C, DD11-P, BA11-LK, 115V	
11/04-HB	KD11-D, KY11-LA, M9312 , M9302	
	MM11-C, DD11-P, BA11-LL, 230V	
11/04-DH	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP, DD11-P, 7013323-0, 115V	
11/04-DJ	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP, DD11-P, 7013323-3, 230V	
11/04-LH	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP(2), DD11-P, 7013323-0, 115V	
11/04-LJ	KD11-D, KY11-LA, M9312 , M9302	
	MS11-JP(2), DD11-P, 7013323-3, 230V	
11/04-HH	KD11-D, KY11-LA M9312 , M9302	
	MM11-DP, DD11-P 7013323-2, 115V	
11/04-HJ	KD11-D, KY11-LA M9312 , M9302	
	MM11-DP-DD11-P 7013323-5, 230V	
11/04-MH	KD11-D, KY11-LA M9312 , M9302	
	MM11-DP(2) DD11-P 7013323-2, 115V	
11/04-MJ	KD11-D, KY11-LA, M9312 , M9302	
	MM11-DP(2), DD11-P 7013323-5, 230V	
11/04-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

SHEET 2 OF 7

DRN. G.MARINI	DATE 9-25-75	TITLE DRAWING DIRECTORY JJ/04
CHK'D. D.HEALY	DATE 9-30-75	
PROJ ENG. R BARRY	DATE 10-22-75	
PROD. R.K.PETERSON	DATE 10-22-75	SIZE B / CODE CD / NUMBER JJ/04 Ø / REV K
FIELD SERV. -//	DATE -//	DIST

EN-01062-1A-16-R92-(325)

DRB 106

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digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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

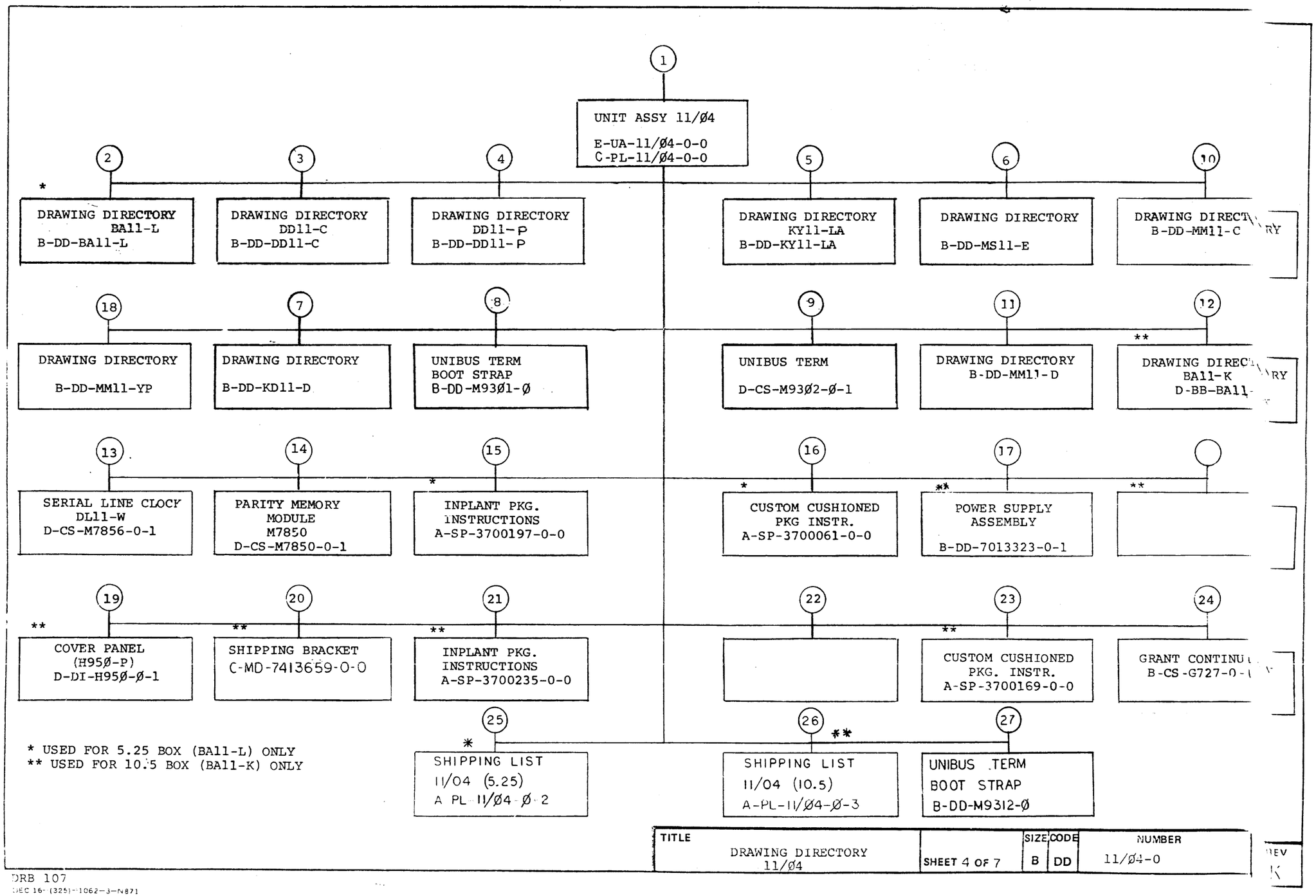
SHEET 3 OF 7

DRN. G MARINI	DATE 9-25-75	TITLE DRAWING DIRECTORY 11/04
CHK'D. D HEALY	DATE 9-30-75	
PROJ ENG. R BARRY	DATE 10-22-75	
PRCD. R K PETERSON	DATE 10-22-75	SIZE B / CODE DD / NUMBER 11/04 Ø / REV K
FIELD SERV. —//—	DATE —//—	DIST

EN-01062-1A-16-R972(325)

DRB 106

392



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

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-M9312-0		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
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S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY 11/Ø4	SHEET 5 OF 7	B	DD	11/Ø4-0	K

DRB 108

digital EN-01062-2B-15-R972-(325)

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	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-M93Ø1-0		1	UNIBUS TERM BOOT STRAP	
		9	D-CS-M93Ø2-Ø-1		2	UNIBUS TERM	
			K-CO-M93Ø2-Ø-4			X-Y COORDINATE HOLE LOCATION	
			D-AH-M93Ø2-Ø-5			ASSY/DRILLING HOLE LAYOUT	
			B-MH-M93Ø2-Ø-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/Ø4-Ø-2		1	SHIPPING LIST 11/Ø4 (5.25)	
		26	A-PL-11/Ø4-Ø-3		1	SHIPPING LIST 11/Ø4 (10.5)	

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

TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY 11/Ø4	SHEET 7 OF 7	3	DD	11/Ø4-0	K

DRB 108

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

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FIELD MAINTENANCE PRINT SET

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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

SHEET 1 OF 1

DRN.	DATE	26 MAR 76
CHK'D	DATE	26 MAR 76
PROJ. ENG.	DATE	22 MAR 1976
FIELD SERV.	DATE	14 APR 1976

digital

TITLE: FIELD MAINTENANCE PRINT SET DL11-W

SIZE	CODE	NUMBER	REV.
B	TC	DL11-W-1	

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		

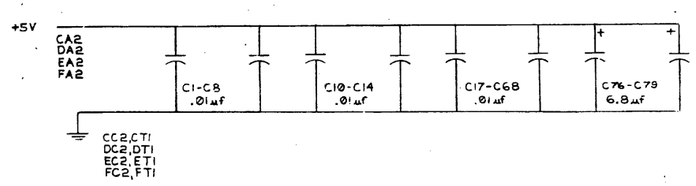
ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-W	DL11-WA	DL11-WB	DL11-WC
1	D-CS-M7856-Ø=1	SLU/RTC OPTION	1	1	1	1
2	D-1A-7008360-1-0	CABLE ASSY (KL8-E)	-	1	-	-
3	D-UA-BCØ5C-25-0	CABLE MODEM BCØ5C	-	-	1	-
4	D-UA-BC03L-10-0	CABLE ASSY	-	-	-	1
5	23760A9 *	BOOTSTRAP ROM	1	1	-	1
6	9906228 *	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 16 (825) 1051 NS70
CBA 110

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NOTES:



IC TYPE.	GND	+5V
IC 8641	8	16
IC 8334	1	2
IC 8437	8	16
IC 3404A	1	8
IC 74123	8	16
IC 74157	8	16
IC 74153	8	16
IC 7493	10	5
IC 7432	10	5
IC 74151	8	16
IC 74175	8	16
IC UART	1	3
IC 8087	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.

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV. E

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

SEMICONDUCTOR CONVERSION CHART

CHK	REVISIONS	CHANGE NO.	REV.
	ECO FROM M7856-0-1 REV. G	M7856-00004	H

DRN. B. CRAMM 3/27/78
CHK'D. D Douglas DATE 3/23/78
ENG. [illegible] DATE 3-7-78
PROJ. ENG. [illegible] DATE 3-7-78
PROD. [illegible] DATE 3-12-78
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 8

digital

TITLE: SLU/RTC OPTION

SIZE	CODE	NUMBER	REV.
D	CS	M7856-0-1	H

DIST.

ASE DOCS DCS M7356-0-1 REV. H

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DL-1 RCVR INTR RQST H

DL-3 RCVR SEL H
DL-3 MASTER H
7408 E44
7408 E44
7408 E4

DL-1 RCVR INTR ENB (1) H

DL-4 BBD 6 H
RCSR CLK H
DL-4 B INIT L
7474 E57
DL-1 RDR ENB (1) L
DL-4 BBD Ø H
7474 E35
7408 E44
DL-1 RCVR BUSY (1) H
DL-4 SEL 2 L
7408 E44
7474 E57
74197 E47
7452 E58
DL-4 B INIT H

+5V
R45 10K

+5V -12V
CLR R DONE
STB STATUS
STB RD
R CLK
SERIAL IN
XD7
XD6
XD5
XD4
XD3
XD2
XDI
XDØ
LD XD
X CLK
U ART E7
DL-4 BBD 7 H
DL-4 BBD 6 H
DL-4 BBD 5 H
DL-4 BBD 4 H
DL-4 BBD 3 H
DL-4 BBD 2 H
DL-4 BBD I H
DL-4 BBD Ø H
DL-4 LD X DEL L
DL-4 B INIT H
CLR LDC NB2 NB1 NP EP 2SB
SERIAL OUT
S4-4 S4-3 S4-1 S4-2 S4-5

R DONE
RD7
RD6
RD5
RD4
RD3
RD2
RD1
RDØ
OR ERR
FR ERR
P ERR
EOC
X RDY

8097 E3
DL-1 RDØ7 H
DL-1 RDØ6 H
DL-1 RDØ5 H
DL-1 RDØ4 H
DL-1 RDØ3 H
DL-1 RDØ2 H
DL-1 RDØ1 H
DL-1 RDØØ H
DL-1 OR ERR H
DL-1 FR ERR H
DL-1 P ERR H
DL-1 XMIT RDY H
DL-1 RCVR DONE H
7408 E4

7474 E5
7408 E4
+5V
R47 10 K
7474 E35
R32 270
R33 270
C84 82PF
C85 82PF
7414 E45
7414 E45
384 E48
384 E48
DL-1 ERROR H

XMIT INTR ENB (1) L
7402 E36
7474 E5

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
74157 E38
7437 E25
8881 E49
TB-1
BOOT SW L
(FASTON TAB)

74175 E8
DL-4 BBD 6 H
DL-4 BBD Ø H
DL-4 BBD 2 H
DL-4 XCSR CLK H
DL-4 B INIT L
XMIT INTR ENB (1) L
S4-1
DL-1 XMIT INTR ENB (1) H
DL-1 MAINT (1) H
DL-1 MAINT (1) L
7408 E46
7400 E46
DL-1 SERIAL OUT L
DL-1 BREAK (1) H
R46 10K
+5V

DL-3 MASTER H
DL-3 XMIT SEL H
7400 E46
DL-4 LD X DEL L
7408 E4
DL-1 XMIT INTR RQST H

SPARE LOGIC
384 E48
1488L E11
1489L E10
7414 E66
1489L E10
3837 E41
7402 E36
8837 E41
7402 E36
8837 E41
7402 E36

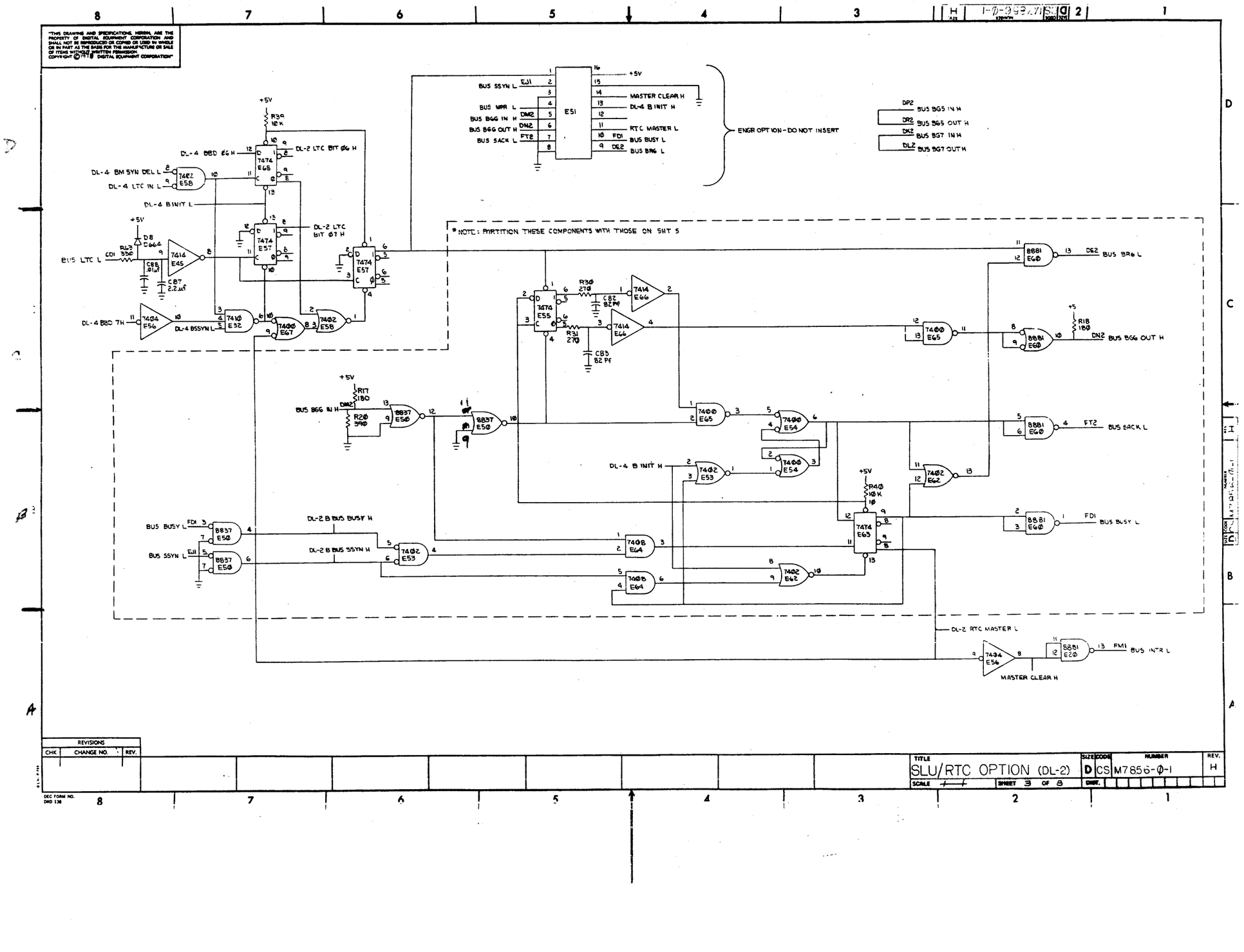
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-1)	D	CS	M7856-0-1	H
SCALE	SHEET 2 OF 8	DIST.		

DEC FORM NO. DRD 138

400

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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-2)	D	CS	M7856-Ø-1	H
SCALE 1:1	SHEET 3 OF 8		DWG.	

DEC FORM NO. DRD 138

401

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BUS SACK L FT2
BUS BG4 OUT H DT2
BUS BG4 IN H DS2
BUS NPR L FJ1
BUS SSYN L EJ1
E52 — 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 BBUS BUSY H
BBUS SSYN H
DL-2 RTC MASTER L
MASTER L
SACK H
DL-3 RCVR SEL H
DL-3 XMIT SEL H
DL-3 MASTER H

DH2 BUS BR4 L
DT2 BUS BG4 OUT H
FT2 BUS SACK L
FDI BUS BUSY L
CT2 BUS DØ3 L
CM2 BUS DØ7 L
CL2 BUS DØ8 L
CV2 BUS DØ6 L
FMI BUS INTR L
CP2 BUS DØ5 L
CN2 BUS DØ4 L
CU2 BUS DØ2 L

S2-4 *, S2-7 *, S2-8 *, S2-5 *, S2-3 *, S2-6 *

* VECTOR ADDRESS SWITCHES - ON=1 OFF=Ø

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-3)	D	CS	M7856-Ø-1	H
SCALE — SHEET 4 OF 8	DIST.			

DEC FORM NO. DRD 138

M7856-0-1 H

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BUS MSYN L — EE1 11 — 8837 E31 — 10 — R13 100 — C9 470 pF — 12 — 8881 E49 — 13

DL-4 BMSYN DEL L — R64 1K +5V — DL-7 SSYN EN L — 3 — 74Ø2 E23 — 1 — R11 1K +5V — R14 100 — C69 470 pF

1 — 7414 E45 — 2 — DL-4 BSSYN L

5 — 8881 E20 — 4 — EJ1 BUS SSYN L

BUS INIT L — DL1 3 — 8837 E41 — 4 — 3 — 74Ø4 E36 — 4 — DL-4 B INIT L — DL-4 B INIT H

DL-7 LD XBUF H — C84 150 pF — 74123 E24 SDS VSEC Ø — R41 10K +5V — DL-4 LDXDEL L

DL-7 RBUF → BUS H — 74123 E24 USEC Ø — DL-4 SEL 2 L — R43 18K +5V

DL-7 RCSR CLK ENB L — 74Ø2 E23 — DL-4 RCSR CLK H

DL-7 XCSR CLK ENBL — 74Ø2 E23 — DL-4 XCSR CLK H

74157 E22 2:1 MUX

DL-1 BREAK (1) H — A2
DL-1 RDØØ H — B2
DL-1 MAINT (1) H — A3
DL-1 RDØ2 H — B3
DL-7 E22 S0 H — S0
DL-7 E22 STB L — STB
→ f2, f1, f3

DL-1 RDØ1 H — BUS DØ1 L CR2 — DL-4 BBD 1 H
DL-1 RDØ3 H — BUS DØ3 L CT2 — DL-4 BBD 3 H
DL-1 RDØ4 H — BUS DØ4 L CM2 — DL-4 BBD 4 H
DL-1 RDØ5 H — BUS DØ5 L CP2 — DL-4 BBD 5 H
DL-7 E14 EN L — B641 E14

BUS DØØ L CS2 — DL-4 BBD ØH
BUS DØ2 L CU2 — DL-4 BBD 2H
BUS DØ6 L CV2 — DL-4 BBD 6H
BUS DØ7 L CM2 — DL-4 BBD 7H
DL-7 E6 EN L — B641 E6

74153 E21 4:1 MUX

DL-1 RDØG H — A0
DL-1 XMIT INTR ENB (1) H — B0
DL-1 RCVR INTR ENB (1) H — C0
DL-2 LTC BIT ØG H — D0
DL-1 RDØ7 H — A1
DL-1 XMIT READY H — B1
DL-1 RCVR DONE H — C1
DL-2 LTC BIT Ø7 H — D1
DL-7 E21 S1 H — S1
DL-7 E21 S0 H — S0
STB0 STB1
→ f0, f1

DL-7 E23 EN L — 74Ø2 E23 — DL-1 RCVR BUSY (1) H — 8881 E23 — CW1 — BUS DI1 L

DL-1 P ERR H — BUS DI2 L CN2
DL-1 FR ERR H — BUS DI3 L CF2
DL-1 OR ERR H — BUS DI4 L CE2
DL-1 ERROR H — BUS DI5 L CD2
DL-7 EN ERR L — S4-7 — +5V R44 15K — B641 E1

REVISIONS		
CHK	CHANGE NO.	REV.

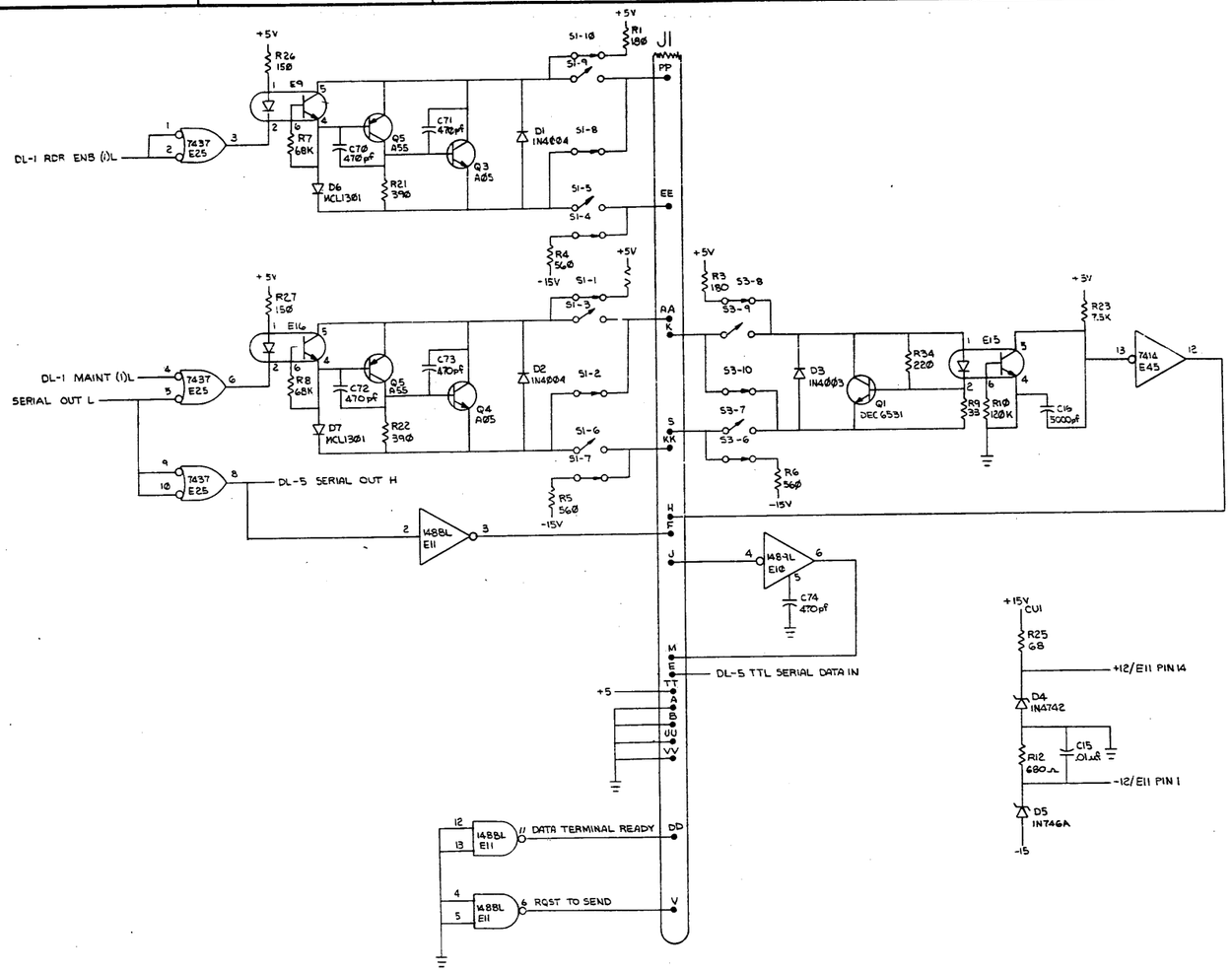
TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-4)	D	CS	M7856-Ø-1	H
SCALE — SHEET 5 OF 8	DIST.			

DEC FORM NO. DRD 128

403

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NOTE:
1. SWITCHES ARE SHOWN IN ACTIVE MODE.
2. D7, D6 ARE MCL1301 1 MA CONSTANT CURRENT DIODES.

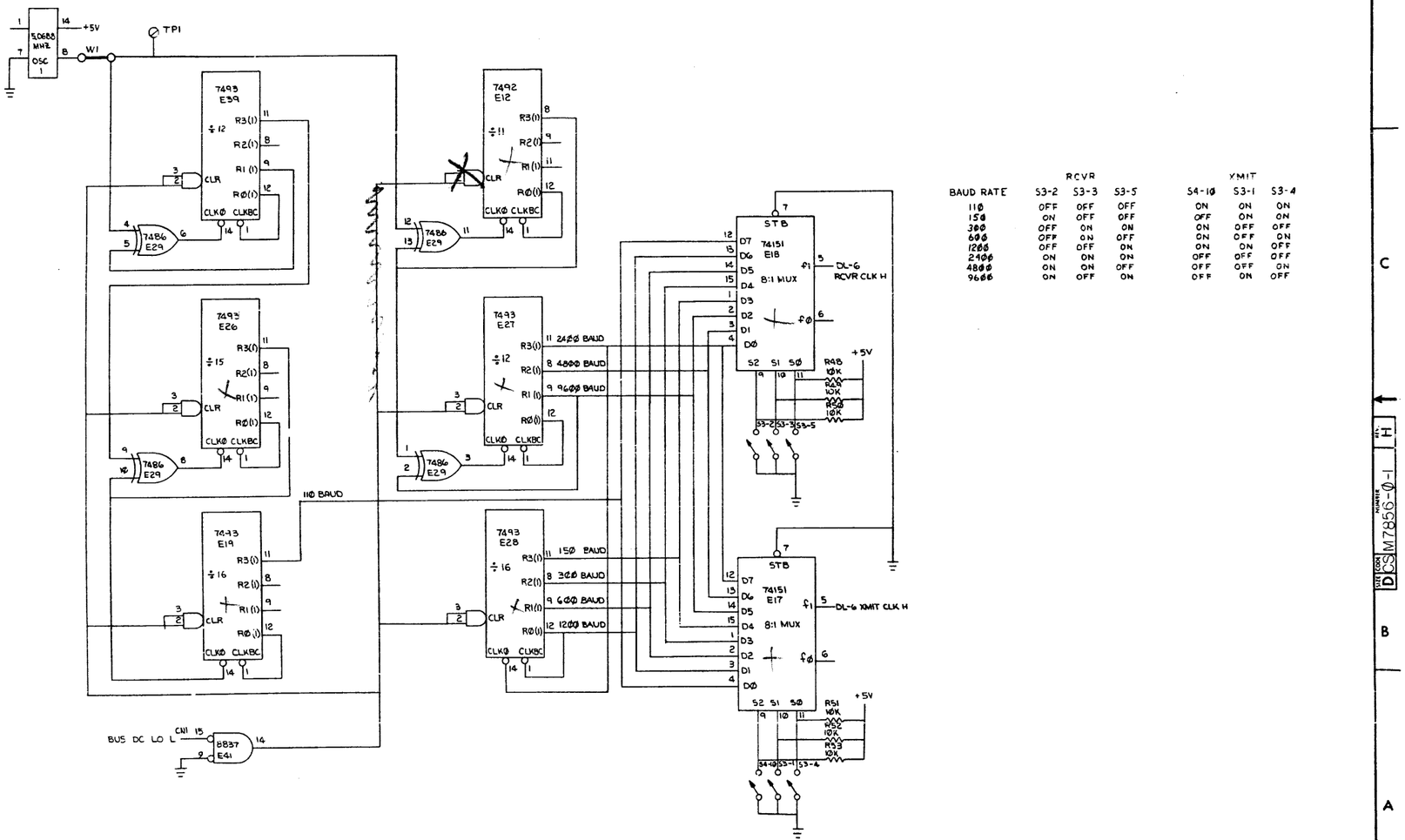


REVISIONS		
CHK	CHANGE NO.	REV

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. DRD 138

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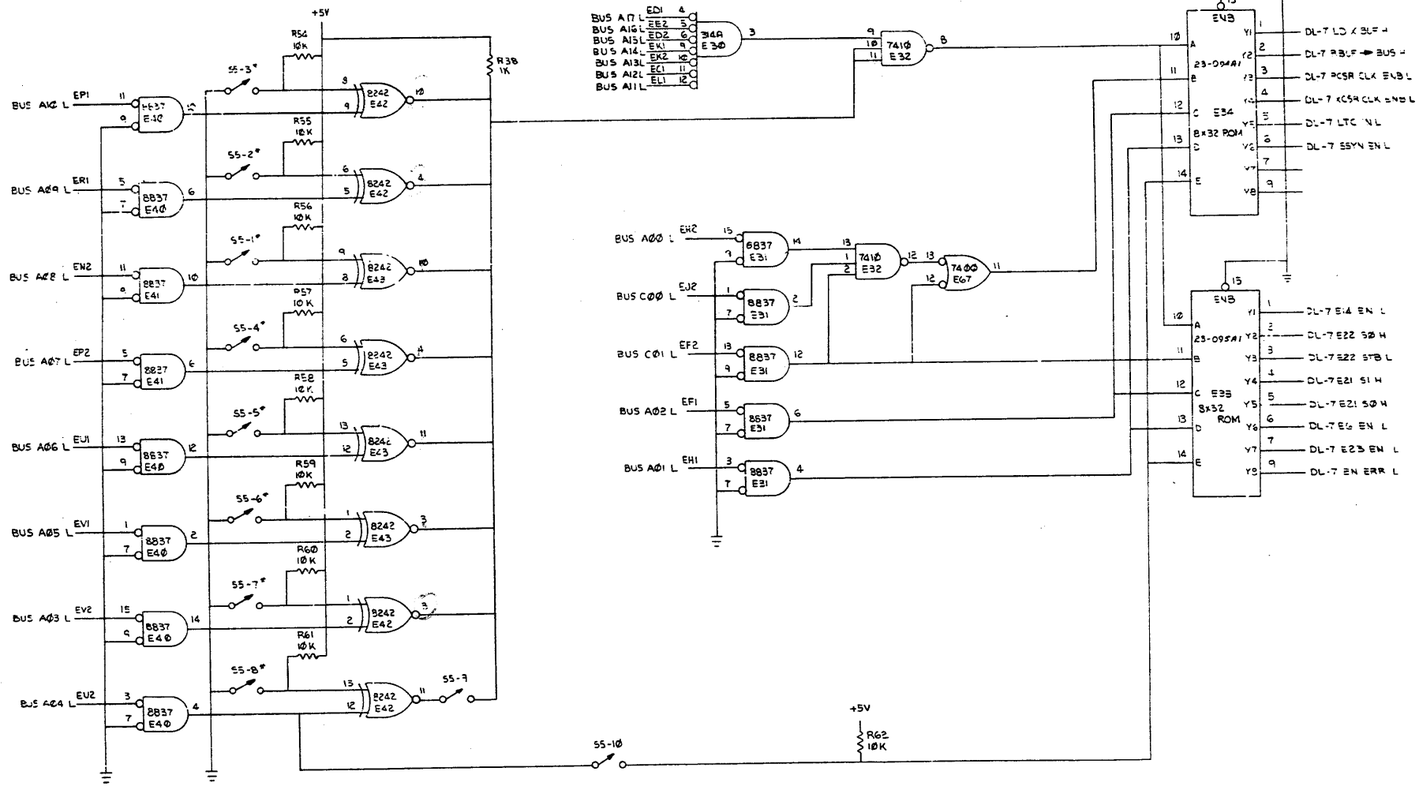
BAUD RATE	RCVR S3-2	RCVR S3-3	RCVR S3-5	XMIT S4-10	XMIT S3-1	XMIT S3-4
110	OFF	OFF	OFF	ON	ON	ON
150	ON	OFF	OFF	OFF	ON	ON
300	OFF	ON	ON	ON	OFF	OFF
600	OFF	ON	OFF	ON	OFF	ON
1200	OFF	OFF	ON	ON	ON	OFF
2400	ON	ON	ON	OFF	OFF	OFF
4800	ON	ON	OFF	OFF	OFF	ON
9600	ON	OFF	ON	OFF	ON	OFF

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.		

DEC FORM NO. DRD 138

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"ADDRESS SELECTION SWITCHES" OFF=1 ON=0

REVISIONS		
CHK	CHANGE NO	REV

DEC FORM NO. DMD 2.38

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-7)	D	CS	M7856-0-1	H
SCALE -/- SHEET 8 OF 8	DIST.			

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SIZE K | CODE CS | NUMBER M7856-0-9 | REV.

(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. J. Nelson 7-JAN-76

CHK'D T. Hastings 9-Aug-76

ENG. W. Scott 9-Sep-76

PROJ. ENG. R. Best 9-Sep-76

PROD. A. Abbott 9-Sep-76

FIRST USED ON DL11-W

digital

TITLE ROM LISTING

NEXT HIGHER ASSY. D-CS-M7856-0-1

SCALE

SHEET 1 OF 3

SIZE	CODE	NUMBER	REV.
K	CS	M7856-0-9	

DIST.

REVISIONS

REV.	CHANGE NO.	DATE

DEC 15-(329)-1030-18-R275
DRB 100A

407

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

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WIRE TABLE

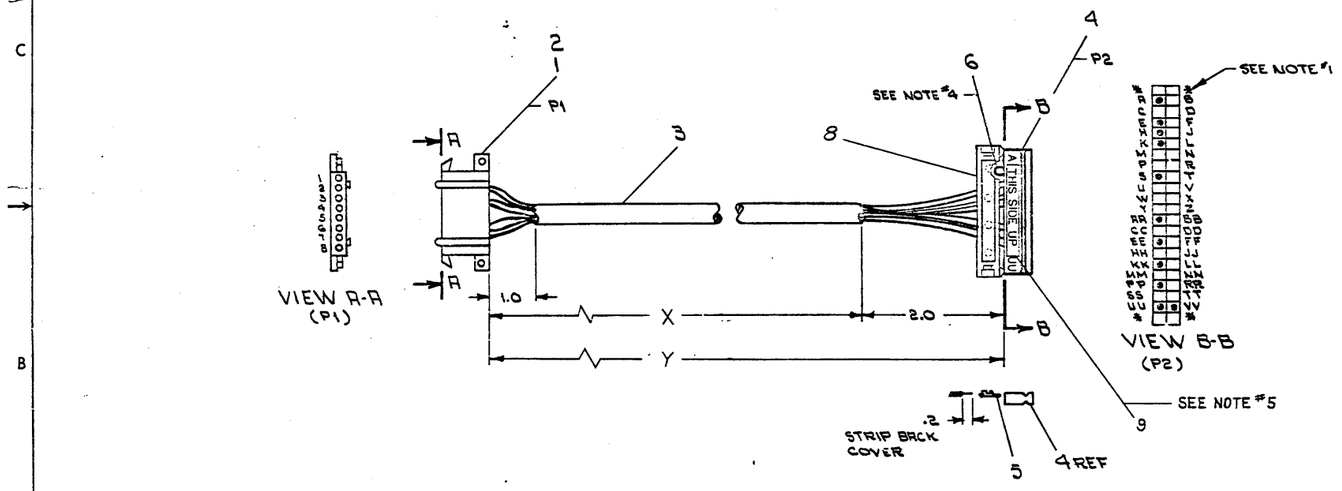
ITEM NO.	DESCRIPTION AWG	COLOR	PAIR NO.	FROM CONNECTION	WITH	TO CONNECTION	WITH
3	22	BLK	1	P1-3	2	P2-KK	S
3		RED		P1-5	2	P2-S	
3,7		SHIELD		SEE NOTE #2	—	P2-R(NOTE #3)	
3		BLK	2	P1-4	2	P2-EE	
3		WHT		P1-5	2	P2-RR	
3,7		SHIELD		SEE NOTE #2	—	P2-UU(NOTE #3)	
3		BLK	3	P1-6	2	P2-PP	
3		GRN		P1-7	2	P2-K	
3,7		SHIELD		SEE NOTE #2	—	P2-VV(NOTE #3)	
6	22	BLK	—	P2-E	S	P2-H	S

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	9FT 2IN ± 2IN

NOTES:

1. * ASTERISKS INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
2. DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLES.
3. DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM #7 (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
4. ITEM #6 (WIRE) TO BE APPROXIMATELY ONE(1) INCH LONG.
5. PLACE ITEM #9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM #4 (BERG HOUSING) AS SHOWN.



1	LABEL, THIS SIDE UP	3611567	9
1	STRAIN RELIEF	12.11166	8
AR	TUB. #18 TEF. THINWALL WHT	9107279-11	7
AR	WIRE, #22 AWG STRD TEF BLK	9107350-00	6
11	SOCKET, CRIMP# 47216	1210089-07	5
1	HOUSING, BERG #65033-015	1210913-15	4
AR	CABLE, BELDEN #8777 TEF SHLD	9107723-0	3
3	CONTACT MATE-N-LOCK(FEMALE)	1203379-03	2
1	CONN. MATE-N-LOCK(FEMALE)	1209740-00	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS		
DASH	CHANGE NO.	REV
1	E.C.O. 00002	A
2	E.C.O. 00001	B
3	E.C.O. 00001	C
4	E.C.O. 00001	D
5	E.C.O. 00001	E
6	E.C.O. 00001	F
7	E.C.O. 00001	G
8	E.C.O. 00001	H

DRAWN	K. REGAN
TRACED	K. REGAN
DESIGNED	K. REGAN
ENGR. SUP.	M.E. LEWANDOWSKI
PROJ. SUP.	J. MCNAMARA

FIRST USED ON OPTION/MODEL: PDP-8E

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY 125
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST
FINISH:

DRAWN	K. REGAN	DATE 10-29-71
CHKD.	J. MCNAMARA	DATE 11-1-71
ENGR. APPD.	M.E. LEWANDOWSKI	DATE 11-1-71
PROJ. SUP.	J. MCNAMARA	DATE 11-1-71
QUAL. CONTROL		DATE

NEXT HIGHER ASSY: A-ML-KL8-E-0
SCALE: NONE
SHEET: OF

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: CABLE ASSEMBLY (KL8E)

SIZE/CODE: D | NUMBER: D|A|7008360-0-0 | REV: H
DIST:

H | 0-0-7008360 | D | IA | 2

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WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION		FROM WITH	TO CONNECTION	TO 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		FROM WITH	TO CONNECTION	TO 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	
		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

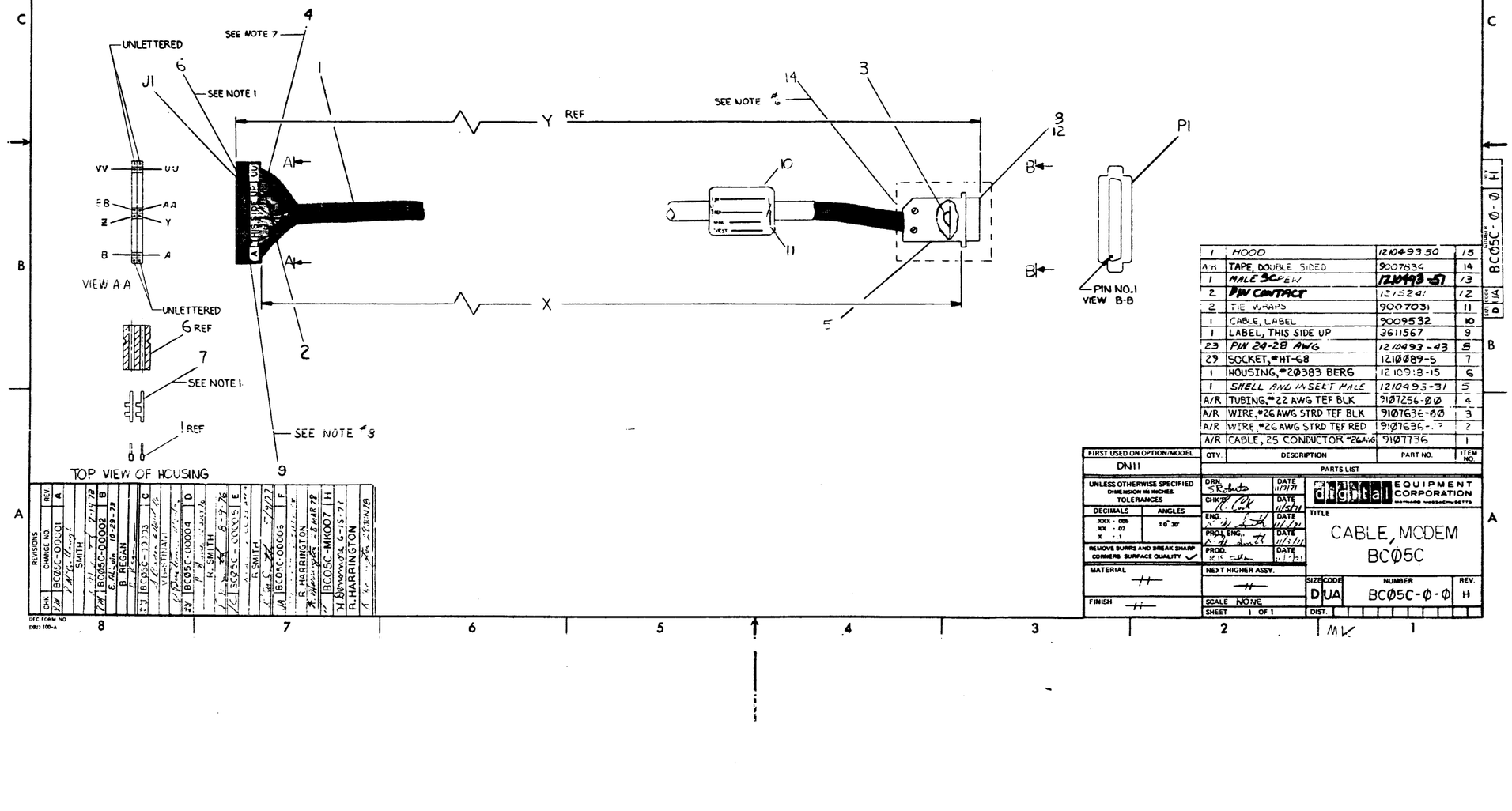
NB
* DENOTES THREE WIRES ARE SOLDERED INTO THE P1-1 SOLDER CUP
** DENOTES THREE WIRES ARE SOLDERED INTO THE P1-7 SOLDER CUP

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 ITEM #13 (9107302-01) IN TWO PLACES (PIN P1-7) TO PREVENT SHORTING~~
5. ~~USE ITEM #12 (9107295-01) ON ALL REMAINING SOLDER CUPS TO PREVENT SHORTING.~~
6. DUE TO TOLERANCES WITH DIFFERENT ~~CONNECTORS~~ THE HOOD (ITEM #3) MAY VARY IN OUTSIDE DIAMETER CAUSING POTENTIAL STRAIN RELIEF GRIPPING PROBLEM. SHOULD THIS CONDITION BE PRESENT USE ITEM #4 (9107834) AT JUNCTION OF CABLE AND HOOD
7. PLACE ITEM #4 (9107256) OVER SHIELD WIRE J1-A, J1-B, P1-1, P1-7



ITEM NO.	QTY.	DESCRIPTION	PART NO.
1	1	HOOD	12104935Ø
14	A/R	TAPE, DOUBLE SIDED	9007836
13	1	MALE SCREW	1210993-51
12	2	PIN CONTACT	1211524
11	2	TIE WRAPS	9007031
10	1	CABLE, LABEL	9009532
9	1	LABEL, THIS SIDE UP	3611567
8	23	PIN 24-28 AWG	1210993-03
7	29	SOCKET, #HT-68	1210089-5
6	1	HOUSING, #2Ø383 BERG	12109138-15
5	1	SHELL AND INSERT MALE	1210993-31
4	A/R	TUBING, #22 AWG TEF BLK	9107256-ØØ
3	A/R	WIRE, #26 AWG STRD TEF BLK	9107636-ØØ
2	A/R	WIRE, #26 AWG STRD TEF RED	9107636-02
1	A/R	CABLE, 25 CONDUCTOR #26 AWG	9107736

PARTS LIST

REVISIONS CHG.	CHANGE NO	REV.
12M	BCØ5C-ØØCØ1	A
12M	BCØ5C-ØØØØ2	B
12M	BCØ5C-ØØØØ3	C
12M	BCØ5C-ØØØØ4	D
12M	BCØ5C-ØØØØ5	E
12M	BCØ5C-ØØØØ6	F
12M	BCØ5C-MKØØ7	H

FIRST USED ON OPTION/MODEL: DN11

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX - .ØØ5, XX - .Ø2, X - .1
ANGLES: ±Ø° 3Ø'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN S Roberts DATE 11/27/71
CHK [illegible] DATE 11/30/71
ENG. [illegible] DATE 11/1/71
PROJ. ENG. [illegible] DATE 11/1/71
PROD. [illegible] DATE 11/1/71
NEXT HIGHER ASSY.
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CABLE, MODEM BCØ5C

SIZE D | CODE DUA | NUMBER BCØ5C-Ø-Ø | REV. H

DIST MK

DEC FORM NO 12823 100-A

4!

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WIRE TABLE

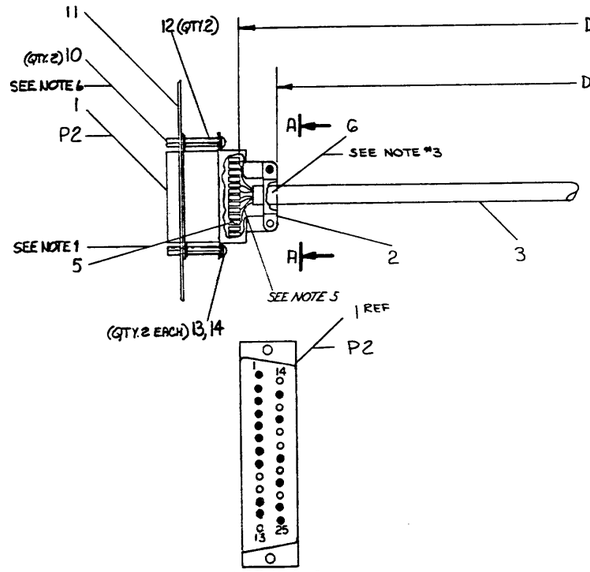
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
3	22	BLK	P1-VV	7	P2-7	SOLDER
↓	↓	GRN/WHT	P1-C	↓	P2-25	↓
		GRN/BLK	P1-JJ		P2-12	
		ORN/BLK	P1-FF		P2-11	
		RED	P1-DD		P2-20	
		GRN	P1-BB		P2-8	
		BLU/WHT	P1-Z		P2-6	
		ORN	P1-X		P2-22	
		BLU	P1-V		P2-4	
		WHT	P1-T		P2-5	
		BLU/BLK	P1-R		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

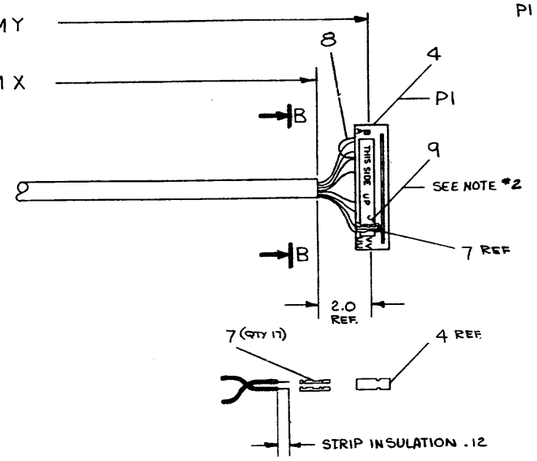
LEGEND

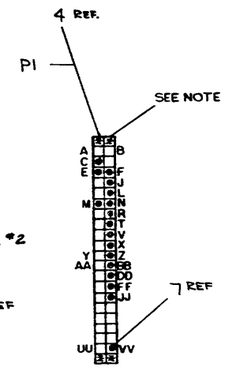
NUMBER	VARIATION DIM "X"	DIM "Y" PRECUT
BCØ3L-10	10FT ± 2IN	10FT, 5IN
BCØ3L-5	5FT ± 2IN	5FT, 5IN
BCØ3L-1K	1FT 9IN ± 1IN	2FT
BCØ3L-Ø1	1FT ±1IN	1FT, 3IN

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 3/8" 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.







2	WASHER, LOCK #4	9006188	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-7414072-00	11
2	SCREW LOCK ASSY	9008451-00	10
1	LABEL (THIS SIDE UP)	3611567	9
3IN	WIRE, STRANDED #22 AWG IPVC (BLK)	9107350-00	8
17	SOCKET, CRIMP	1210089-07	7
A/R	TAPE, DOUBLE SIDED .50 W.D.	9007834	6
16	TUBING, HEAT SHRINK .12	9107255-09	5
1	CONN, 44 POS, HSG.	1210918-15	4
A/R	CABLE, 15 COND, 22 AWG.	9107672-00	3
1	HOOD, CONN.	1212516-00	2
1	CONNECTOR, PLUG, FILTERED	1214031-00	1

REVISIONS					
SYM	ECO NO.	REV.			
E	0101-00002	A	B. SAMPSON	10-13-75	
F	0101-00003	B	R. SAMPSON	11-25-75	
G	0101-00004	C	R. SAMPSON	5-13-76	
H	0101-00005	D	T. ORR	11-22-77	
J	0101-00006	E	T. ORR	2 MAY 78	
K	BC03L-MK0007	F	T. ORR	3 SEP 78	

DIGITAL

DRAWN	FIRST USED ON
CHK	
ENG	
PROJ	
MGR	
NEXT HIGHER ASSY.	
SCALE 1/1	
SHEET 1 OF 1	

TITLE: FILTERED CABLE ASSY BCØ3L

SIZE D | CODE UA | NUMBER BCØ3L-Ø Ø | REV. F

DIST.

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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	OVER 0 TO 0.3	OVER 0.3 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 120.0
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED ☐	±.002	±.004	±.006	±.01	±.016	±.025

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

USED ON

NEXT ASSY

PARTS LIST

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

BC03L-Ø-Ø

4V

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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 16-(392)-1079-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.

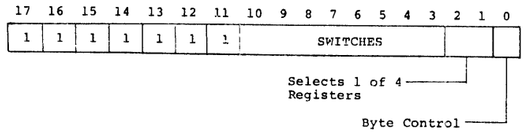
6) Additional switch selections for compatability.

7) Installation of G9000 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-(361)-1022-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.

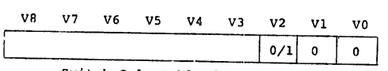
For a DL11-W used as the console device, the vector is 060/064. Additional DL11-W's vector addresses are floating.

SIZE	CODE	NUMBER	REV
A	SP	DL11-W-2	A

DEC FORM NO DEC 16-(361)-1022-N370
DRA 108

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE DL11-W Installation Procedure



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-(361)-1022-N370
DRA 108

A3

S4-5	# 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 S3-2	Receiver S3-3	Receiver S3-5	Transmitter S4-10	Transmitter S3-1	Transmitter 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-B, 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	[illegible]
11/40	KD11-A	[illegible]
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

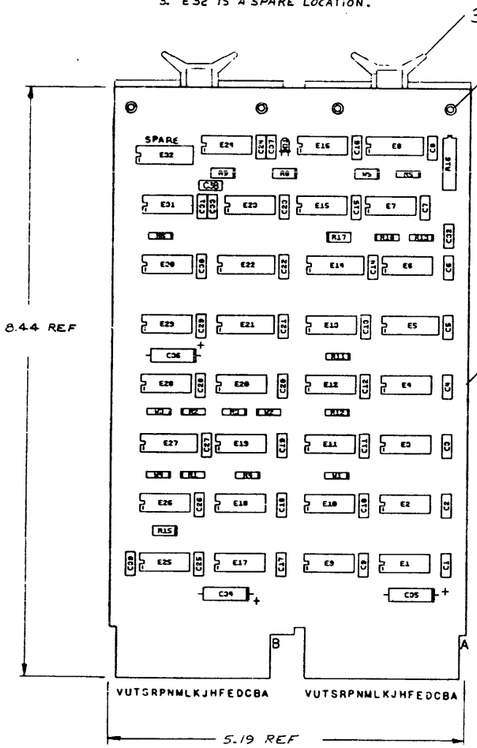
*NOTE: A wire connection is not necessary for backplane pin numbers ending in N1 DCLOL. Is already connected to the input of the DL11-W.

A14

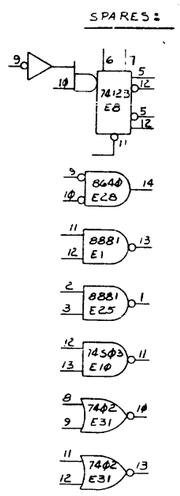
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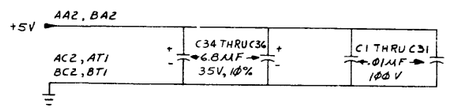
NOTES:

1. ALL RESISTORS 1/4 W, 5% UNLESS OTHERWISE NOTED.
   ALL CAPACITORS ARE 100V, 20% UNLESS OTHERWISE NOTED.
2. JUMPER CONTROL OPERATIONS ARE AS FOLLOWS:
   W1 THRU W4 SELECT CSR ADDRESS, W5 CAPACITOR FOR 5 SYN DLY, NOT USED.
3. E32 IS A SPARE LOCATION.



SPARES:





REF			
REF		CIRCUIT SCHEMATIC	D-CS-M7850-0-1
REF		X-Y COORDINATE HOLE LOCATION	X-CO-M7850-0-4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7850-0-5
REF		MODULE ECO HISTORY	B-MH-M7850-0-6
1		ETCHED CIRCUIT BOARD	5010651-00
1	C39	CAP 470 PF, 100V, 5% (DM)	1000024-00
2	C33, C37	CAP 330 PF, 100V, 5% (DM)	1000023-00
32	C1 THRU C32	CAP .01 MF, 100 V, 20% DISC	1001610-01
3	C34, C35, C36	CAP 6.8 MF, 35 V, 10% STANT	1005306-00
1	D1	DIODE, L.E.D.	1110324-00
5	R1 THRU R5	RES 4.7K 1/4W 5%	1306447-00
3	R8, R9, R15	RES 100 1/4W 5%	1300229-00
5	R6, R10, R11, R12, R17	RES 470 1/4W 5%	1300316-00
1	R13	RES 1K 1/4W 5%	1300365-00
1	R16	RES 10K 3/4W 2% (1% PER R)	1303143-10
1	E24	I.C. 7400	1905575-00
1	E30	I.C. 7430	1905578-00
1	E31	I.C. 7402	1903004-00
1	E19	IC. 314A	1909704-00
1	E23	IC. 7408	1910155-00
4	E1, E9, E17, E25	IC. 8881	1909705-00
1	E16	I.C. 74H04	1909931-00
1	E27	I.C. 7485	1910224-00
1	E8	I.C. 74123	1910436-00
1	E10	I.C. 74S03	1910533-00
1	E15	I.C. 74S74	1910544-00
1	E21	I.C. 74174	1910652-00
2	E5, E22	I.C. 74157	1910655-00
9	E2, E3, E11, E12, E18 E20, E24, E28, E29	I.C. 8640	1911469-00
2	E6, E13	I.C. 74S280	1911573-00
1	E14	I.C. 8266	1909934-00
2	E6, E7	I.C. 7474	1905547-00
4	W1 THRU W4	INSULATED JUMPER	9009185-00
4		EYELET	9006732-00
2		HANDLE, FLIPCHIP (MAGENTA)	9008337-6

QTY	REF. DESIGNATION	DESCRIPTION	PART NO	ITEM NO

FIRST USED ON OPTION MODEL

PARTS LIST

ETCH BOARD REV. B

8640	1	8
8266	8	16
74157	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 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	CHANGE NO.	REVISIONS	DATE	APPROVED
B	7850-00001	ECO RELEASE	4/14/75	J MANTON

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

SEMICONDUCTOR CONVERSION CHART

DRN. W. LUFKIN DATE 2-5-75
CHK'D DATE 2/7/75
ENG. DATE 2/13/75
PROJ. ENG. DATE 2/19/75
PROD. ENG. DATE 2-19-75
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 3
DIST.

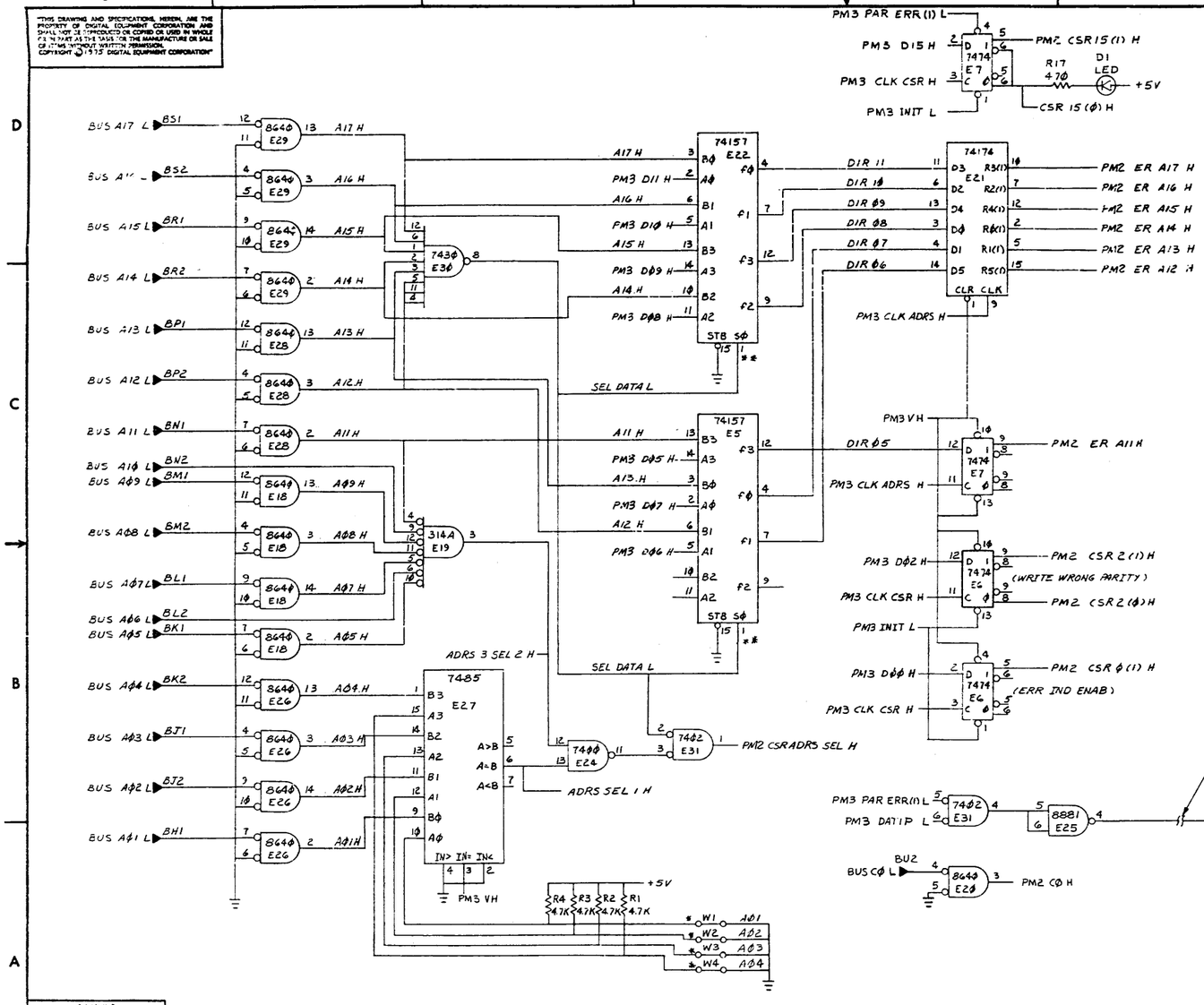
digital

TITLE: PARITY MODULE

SIZE D | CODE DCS | NUMBER M7850-0-1 | REV B

416

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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: PARITY MODULE (PM2)		SIZE: D	CODE: CS	NUMBER: M7850-0-1
SCALE	SHEET 2 OF 3	DIST.		REV. B

4-16

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NOTES:
- # B INPUTS SELECTED WHEN SEL IS LOW (#)
- ## 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 DI4 L
BUS DI3 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
8881 E9, E9, E9, E9, E17, E17, E17, E17, E1, E1
AH2 BUS DI5 L
AL1
AL2
AK1
AK2 BUS DI1 L
AJ1 BUS DI0 L
AJ2 BUS DØ9 L
AH1 BUS DØ8 L
AH2 BUS DØ7 L
AF1 BUS DØ6 L
AF2 BUS DØ5 L
AE1
AE2
AD1 BUS DØ2 L
AD2
AC1 BUS DØØ L
8640 E12, E11, E11, E11, E12, E12, E2, E2, E2, E2, E11, E3, E3, E3, E3, E3
PM3 DI5H
DI4H
DI3H
DI2H
PM3 DI1H
PM3 DIØH
PM3 DØ9H
PM3 DØ8H
PM3 DØ7H
DØ4H
DØ3H
DØ1H
PM3 DØ6H
PM3 DØ5H
PM3 DØ2H
PM3 DØØH
74S288 E13, E4
ODD, EVEN
PM3 A BIT GEN H
PM3 C1 H
74S03 E1Ø, E1Ø, E1Ø
ANI INT BUS PI L
API INT BUS PØ L
PM3 PAR ERR H
R12 470, R11 470, R1Ø 470, +5V
8266 E14
PM3 VH
PM2 CØH
PM3 INT SYN H
PM3 B BIT GEN H
PM3 A BIT GEN H
PM3 DATIP L
PM3 C1 L
R6 47Ø +5V
74H64 E16
R5 4.7K +5V
R16 1ØK (T.P.)
R13 1K +5V PM3 VH
C32 .ØIUF
INT BUS SSYN L
BE1
PM3 C1 L
74123 E8
BB2 S SYN DLY (B) H
PM3 PAR ERR(1) H
PM3 PAR ERR(1) L
74S74 E15
PM2 CSR Ø(1) H
8881 E1
AN2 BUS PB L
PM3 INIT L
PM3 INT SSYN H
PM3 M SYN PULSE L
PM3 PAR ERR H
BUI BUS SSYN L
8881 E25
C37 33Ø PF 5%
R8 1ØØ
74H64 E16
PM3 PAR ERR(1) H
7400 E24
ERRCLR IN# L
74S08 E23
S SYNC INH Ø H
BE2 INT BUS PAR MOD DET L
BUS INIT L
AA1
8640 E20
INIT H
PM3 INIT L
BUS C1 L
BT2
PA 3 C1 H
PM3 C1 L
R9 1ØØ
C33 33ØPF 5%
C39 47Ø PF 5%
R15 1ØØ
BUS M SYN L
BV1
PM2 CSR ADRS SEL H
74S08 E23
PM3 READ SEL H
PM3 C1 H
PM3 CLK CSR H
CLK CSR L
PM3 CLK ADRS H
PM3 PAR ERR (1) L

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM3)	D	DCS	M7850-0-1	B
SCALE	SHEET 3 OF 3	DIST.		

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-C0011
		DIST.				

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

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

A-8

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

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FIELD MAINTENANCE PRINT SET

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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)

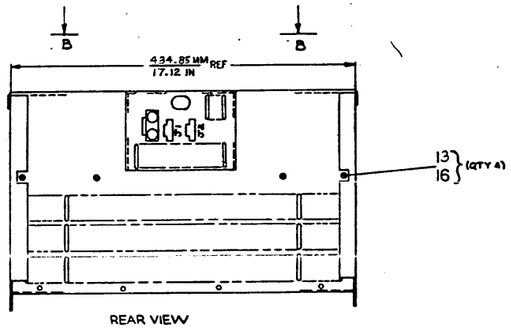
DRB 124

420

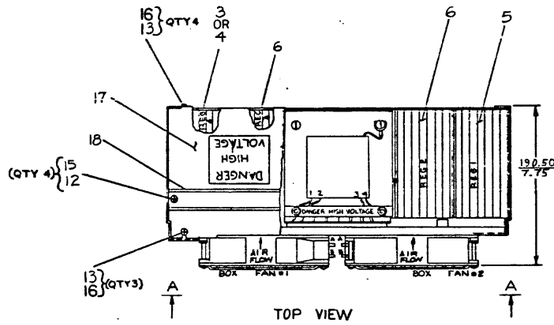
LEGEND	
NUMBER	VARIATION
7013323-0	120V H765-P, 5411086, 5410864-YA, TWO H7441, H745
7013323-1	120V H765-P, 5411086, 5410864-YA, TWO H7441, H745, H785
7013323-2	120V H765-P, 5411086, 5410864-YA, TWO H7441, H745, H754
7013323-3	240V H765-R, 5411086, 5410864-YA, TWO H7441, H745
7013323-4	240V H765-R, 5411086, 5410864-YA, TWO H7441, H745, H785
7013323-5	240V H765-R, 5411086, 5410864-YA, TWO H7441, H745, H754

NOTES

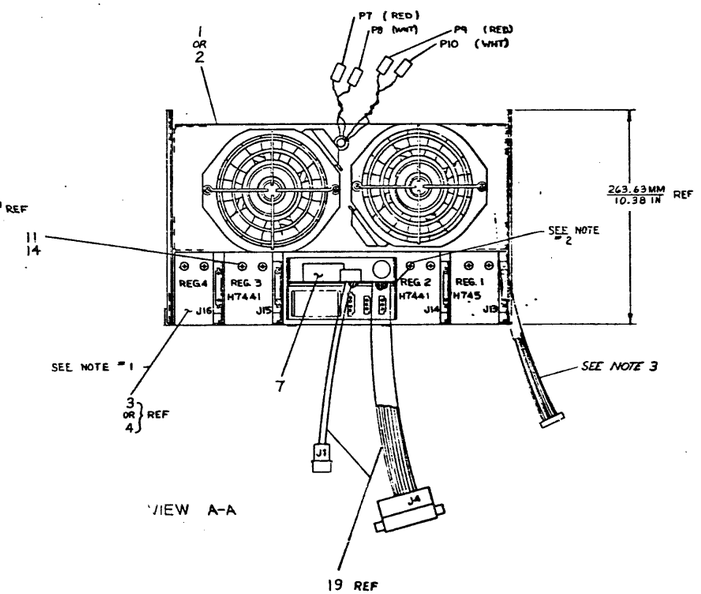
1. REGULATOR #4 IS DETERMINED BY THE VARIATION REQUIRED - SEE LEGEND AND PARTS LIST.
2. GREEN/YELLOW GROUND WIRE FROM TRANSFORMERS TO BE FASTENED UNDER REGULATOR #2 MOUNTING SCREW.
3. CONSOLE CABLE 7011411-2J FROM KY11-LR. THIS CABLE IS USED ONLY TO CONNECT THE H785/H7856 BATTERY BACK-UP REGULATOR IN REGULATOR SLOT #4.



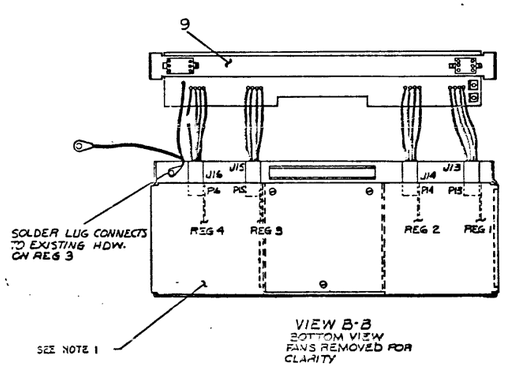
REAR VIEW



TOP VIEW



VIEW A-A



VIEW B-B
BOTTOM VIEW
FANS REMOVED FOR CLARITY

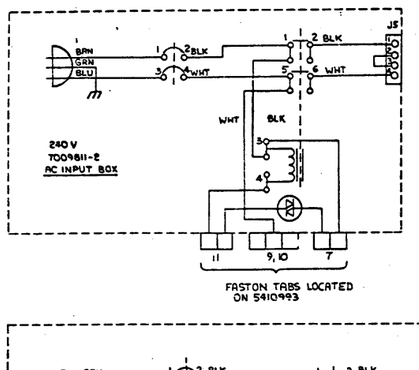
CAUTION: OFF SHEET PARTS LIST EXSISTS
SEE A-PL-7013323-0-0

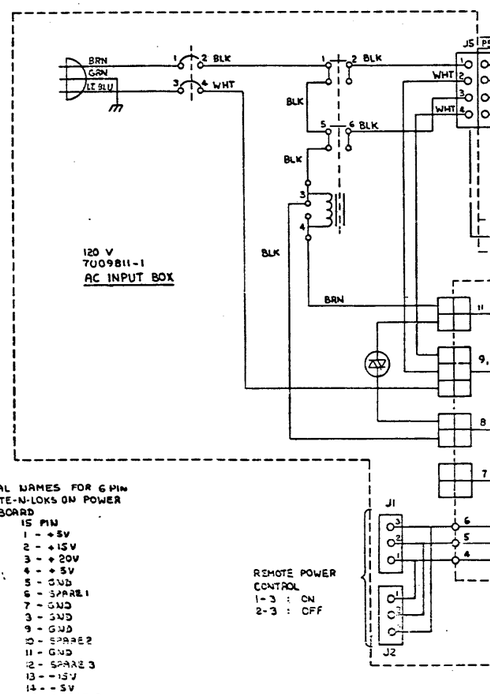
FIRST USED ON	QTY.	DESCRIPTION	PART NO.
1134A		PARTS LIST	
DRAWN A. Malatesta	DATE 3-...-71	digital	
CHK'D [illegible]	DATE 3-...-71	TITLE 1134A POWER SUPPLY ASSY	
ENG [illegible]	DATE 3-...-71		
DRAWING [illegible]	DATE 1-...-72		
PROD [illegible]	DATE 1-...-72		
NEXT HIGHER ASSY.			
MATERIAL SEE PARTS LIST	B-DD-7013323-0	SCALE NONE	SHEET 1 OF 2
	F UA	7013323-0-0	REV. 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*5V&-15V ONLY
J15 FROM PWR. DIST. BD	P15 LOCATED ON REG.#3 (H7441)	GND, +5V, 28VAC
J14 FROM PWR DIST. BD	P14 LOCATED ON REG.#2 (H7441)	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

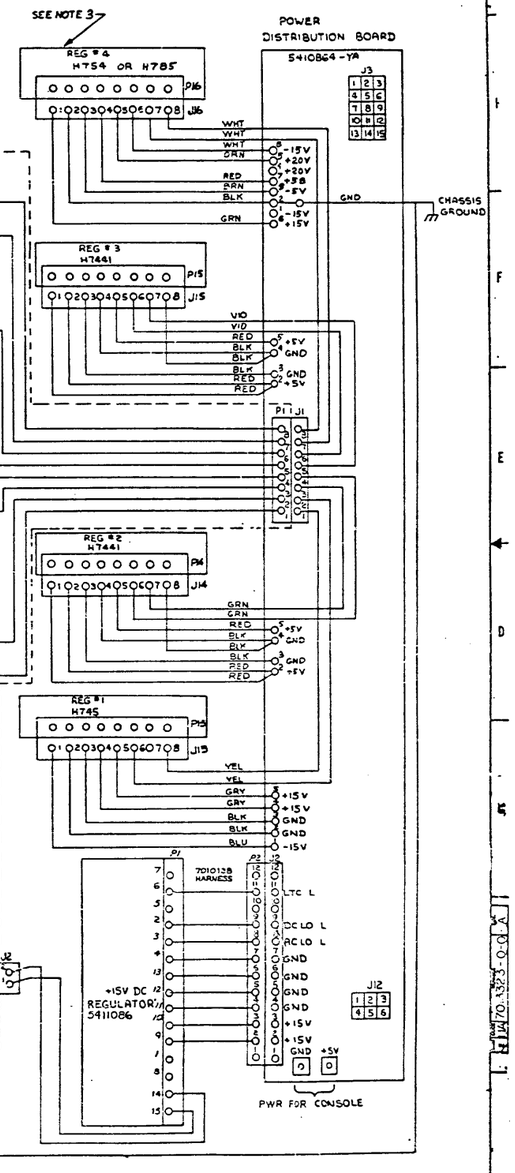
CONNECTION TABLE		
FROM CONNECTION	TO CONNECTION	SIGNALS
P4 FROM +15 V REG.	J2 LOCATED ON PWR DIST BD	-15 V, LTC L, AC LO L, DC LO L, GND
P5 FROM TRANS. ASSY	J5 LOCATED ON AC INPUT BOX	120/240 VAC
P7 (RED)	FAN #1-A	120 VAC - HOT
P8 (WHT)	FAN #1-B	120 VAC - NEUTRAL
P9 (RED)	FAN #2-A	120 VAC - HOT
P10 (WHT)	FAN #2-B	120 VAC - NEUTRAL
+1 P14 GRN/YEL WIRE	SEE NOTE 5	CHASSIS GROUND





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



UNLESS OTHERWISE NOTED	CHANGE NO.	REV	TITLE 1134A POWER SUPPLY ASSY	SIZE E	DWG NO. 7013323-0-0
			SCALE	SHEET 2 OF 3	REV A

COPY

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

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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-C-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
CN	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
RM	H765-12	K
[illegible]	H765-13	L
[illegible]	H765-14	M
KT	H765-15	N
8-77	H765-16	P
9-77	H765-17	R

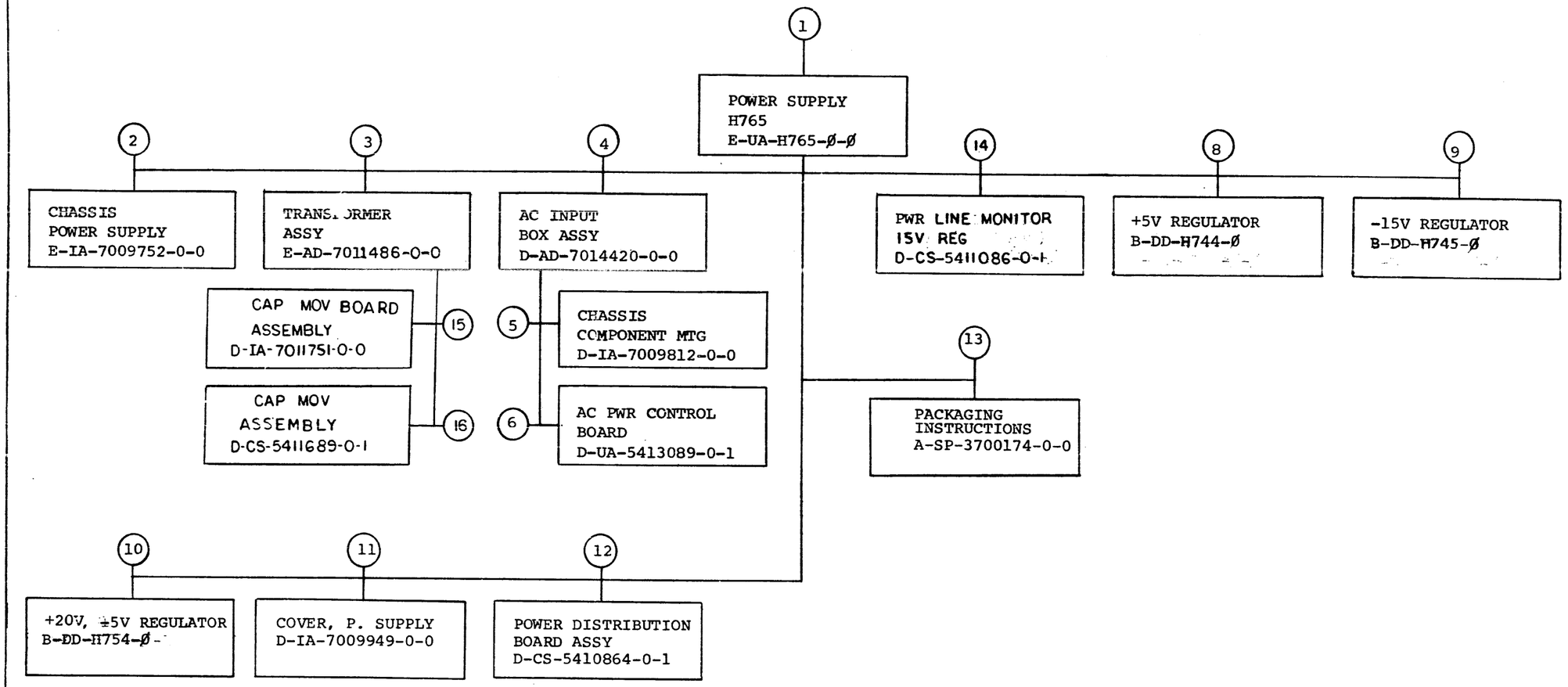
USED ON OPTION/MODEL
BA11-K
11/35-S

SHEET 1 OF 5

DRN. J. FERGUSON	DATE 6/25/74	TITLE: DRAWING DIRECTORY POWER SUPPLY H765
CHK'D. D. HEALY	DATE 7/3/74	
PROJ ENG. S. Dalton	DATE 9/4/74	
PROD. RK Peterson	DATE 9/11/74	SIZE B / CODE DD / NUMBER H765-Ø / REV R
FIELD SERV R. L. Gates	DATE 9/13/74	DIST

DEC 16-12651-1 1962-1A-R92

DRB 106



TITLE			SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY POWER SUPPLY H765	SHEET 2 OF 5		B	DD	H765-Ø	R

DRB 107
DEC 16-(325) 1062-3-N671

A25

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						OPTION NO./FILE DATE
1					FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION		
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		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)-1062-2B-R972

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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
					1	E-UA-H765-Ø-Ø	R	2	POWER SUPPLY H765							6	D-UA-5413089-0-0			PILOT CONTROL BOARD	
						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												
																8	B-DD-H744-Ø		2	DRAWING DIRECTORY H744	
					3	E-AD-7011486-0-0		2	TRANSFORMER ASSY												
						C-MD-7414301-0-0		1	COVER												
																9	B-DD-H745-Ø		2	DRAWING DIRECTORY H745	
					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							10	B-DD-H754-Ø		3	DRAWING DIRECTORY H754	
						A-DC-7412380-0-1		1	DECAL 230V												
																11	D-IA-7009949-0-0		1	COVER, POWER SUPPLY	
																	C-MD-7412473-0-0		1	STRIP, CLAMP	
					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 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)-1062-2B-R972

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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 ECO 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	SHEET	SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY POWER SUPPLY H765	SHEET 5 OF 5	B	DD	H765-Ø	R

DPB 108

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

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LEGEND	
NUMBER	VARIATION
H765-A	120 V 50/60 HZ
H765-B	240 V 50/60 HZ
H765-C	120V ~~50/60~~ HZ NO H754
H765-D	240V ~~50/60~~ HZ 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 (~~5/8~~ (SCREW) ~~1/4~~ WASHER) TO BE USED TO MOUNT 54-11086 (ITEM 4) IN AC INPUT BOX (ITEM 2 OR 3) IN A,B,C,D 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-AD-7010H-1 SHEET 2 FOR ISOMETRIC ORIENTATION OF CLAMP & PLUG WIRES.~~
2. TIGHTEN FAN SCREWS TO 10 IN-LBS WITH A TORQUE SCREW DRIVER.
3. ~~USE ITEM 54-1 IN PLACE OF ITEM 22 WHEN USING ROUND PINS.~~
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 EXTRNL TOOTH WASHER UNDER MOUNT SCREW HEAD OF SOLD TRANSFORMERS ONLY.~~
6. ~~GREEN YELLOW WIRE FROM TRANSFORMER TO BE FASTENED UNDER REGULATOR MOUNTING SCREW.~~
7. ~~IN EARLIER VERSIONS OF THE TRANSFORMER ASSEMBLY A CABLE CLAMP WAS USED IN PLACE OF THE 3 TIE WRAPS 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

VIEW B-B
BOTTOM VIEW
FANS REMOVED
FOR CLARITY

FRONT VIEW

4	4	4	4	4	4	SCR PH HD 6-32X 1/4	9006020-1	56
1	1	1	1	1	1	CABLE GND	70-13825-02	55
1	1	–	–	–	–	DECAL	A-DC-74182611-0-0	54
A/R	A/R	A/R	A/R	A/R	A/R	GREASE CONDUCTOR	9001173-01	53
2	2	2	2	2	2	WASHER LOCK EXT TOOTH #8-32	9008012	52
2	2	2	2	2	2	NUT, REP #6-32	9006543	51
~~6~~	~~6~~	~~6~~	~~6~~	~~6~~	~~6~~	~~WASHER, FLAT #10~~	~~9006635~~	~~50~~
~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~A/R~~	~~WIRE, HOOK UP #18~~	~~9003373-01~~	~~49~~
1	1	1	1	1	1	TRANSFORMER ASSEMBLY	E-AD-7014H06-0-0	48
2	2	2	2	2	2	FAN GUARD	1212561	47
–	–	–	–	~~6~~	~~6~~	~~SCREW, MACH #10-32~~	~~9006705~~	~~46~~
1	1	1	1	1	1	HARNESS INTERCONN.	D-IA-7014138-0-0	45
–	–	–	–	REF	REF	WASH EXT TOOTH #10	9009681	44
1	1	1	1	1	1	A.B.S. VINYL 4.75 X 3.5	12109184-03	43
1	1	1	1	1	1	A.B.S. VINYL 4.75 X 6	12109184-04	42
–	–	–	–	REF	REF	SCR PH HD 6-32 X 0.25	9007810-1	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-3700744-00	35
–	–	1	1	1	1	PWR DISTR BUTTON BOX	C-S-5410844-0-1	34
A/R	A/R	A/R	A/R	A/R	A/R	PERMA BOND	9009157	33
A/R	A/R	A/R	A/R	A/R	A/R	GROMMET STRIP	9008291	32
4	4	4	4	4	4	TIE WRAP 7/8 W	9007880	31
3	3	3	3	3	3	WASH, CSK #6	9008270	30
1	1	–	–	1	1	STICKER DANGER HIGH VOLTAGE	3610267	29
4	4	4	4	4	4	WASH, INT TOOTH LOCK #8	9006634	28
1	1	–	–	1	1	TROUGH, WIRE	D-IA-7009450-0-0	27
1	1	–	–	1	1	COVER, POWER SUPPLY	D-IA-7009949-0-0	26
4	4	4	4	4	4	SCR. PH HD TRUSS #8-32X.62	9006040-3	25
–	–	–	–	~~4~~	~~4~~	~~HEX NUT 5-40-32~~	~~9006545~~	~~24~~
4	4	4	4	4	4	SCR PH HD TRUSS 10-32X.500	9006079-3	23
4	4	4	4	4	4	SCR PH HD TRUSS 6-32X1.75	9006031-3	22
1	1	1	1	1	1	GROMMET .501 D	9007016	21
1	1	1	1	1	1	CHASSIS, POWER SUPPLY	E-IA-7009720-0-0	20
–	–	–	–	REF	REF	CLAMP, CABLE	~~D-IA-7012830-0-0~~	~~19~~
–	–	–	–	~~2~~	~~2~~	~~SCR PH HD FIL #8-32X.500~~	~~9006013-2~~	~~18~~
–	–	10	10	12	12	WASH INT TOOTH #10	9006635	17
11	11	11	11	17	17	WASH INT TOOTH #6	9006633	16
–	–	6	6	8	8	SCR PH HD TRUSS 10-32X.25	9008007-3	15
7	7	11	11	11	11	SCR PH HD TRUSS 6-32X.25	9006020-3	14
–	–	–	–	~~2~~	~~2~~	~~SCR PH HD TRUSS 6-32X.375~~	~~9006022-3~~	~~13~~
–	–	–	–	~~2~~	~~2~~	~~SCR PH HD FIL #6-32X.500~~	~~9006018-2~~	~~12~~
–	–	–	–	~~2~~	~~2~~	~~SCR PH HD FIL #8-32X.500~~	~~9006018-2~~	~~11~~
3	3	3	3	3	3	SCR. PHL FLT HD 6-32X.375	9002604-2	10
–	–	–	–	~~2~~	~~2~~	~~NUT, CLIP~~	~~9009108-1~~	~~9~~
2	2	2	2	2	2	FAN, 115 V AC 50/60HZ	1211714	8
–	–	–	–	1	1	+20V REGULATOR (H754)	B-DD-H754-0	7
–	–	1	1	1	1	-15 V REGULATOR (H745)	B-DD-H745-0	6
–	–	2	2	2	2	+5 V REGULATOR (H744)	B-DD-H744-0	5
–	–	1	1	1	1	PWR BD. (+15V REG.)	E-IA-8411086	4
1	–	1	–	1	–	AC INPUT BOX ASSY 230V	D-AD-7014420-2-0	3
–	1	–	1	–	1	AC INPUT BOX ASSY 115V	D-AD-7014420-1-0	2
~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~BRACKET, MOUNTING~~	~~D-MS-7014434-0-0~~	~~1~~
H765-R	H765-P	H765-D	H765-C	H765-B	H765-A			ITEM NO.

FIRST USED ON (ITEM/MODEL)	QTY.	DESCRIPTION	PART NO.	ITEM NO.
8A11-K		PARTS LIST		

DIMENSIONAL TOLERANCE

UNLESS OTHERWISE SPECIFIED

DRAWN	DATE
R.J. [illegible]	6-26-78
CHECKED	DATE
R. KENNEDY	6-27-78
ENGR	DATE
[illegible]	6-27-78
PROJ. ENGR	DATE
PROD. ENGR	DATE

digital

TITLE: POWER SUPPLY, H765

MATERIAL	NUMBER	REV.
SEE PARTS LIST	B-DD H765-0	U
FINISH	SIZE/CODE: E UA	H765-0-0
SCALE: NONE	SHT 1 OF 2	DIST

NEXT HIGHER ASSY.

| REVISIONS | | |

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, 28 VAC
J14 FROM PWR DIST. BD	P14 LOCATED ON REG.#2 (H744)	GND, +5V, 28 VAC
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	-15V, LTC L, AC LO L, DC LO L, GND
P5 FROM TRANS. 535V	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

TRANS ASSY
7011486

5411689
CAP MOV ASSEMBLY

AC POWER CONTROL
54-13089

12.14330
K1

SEE NOTE 6

POWER DISTRIBUTION BOARD
54-12934-01

REG #4 H754/H735

REG #3 H744

REG #2 H744

REG #1 H745

7C10138 HARNESS

+5V DC REGULATOR 411086

11/05-23 CONSOLE PWR.

CHASSIS GROUND G2

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

REMOTE POWER CONTROL
1-3 : ON
2-3 : OFF

CPU CONSOLE POWER SWITCH
1-3 : ON

TITLE	SIZE	CODE	NUMBER	REV
POWER SUPPLY 11765	E	UA	4765-0-0	
SCALE	SHEET	OF	DIST.	

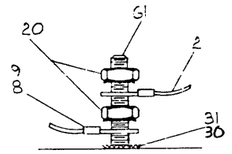
A36

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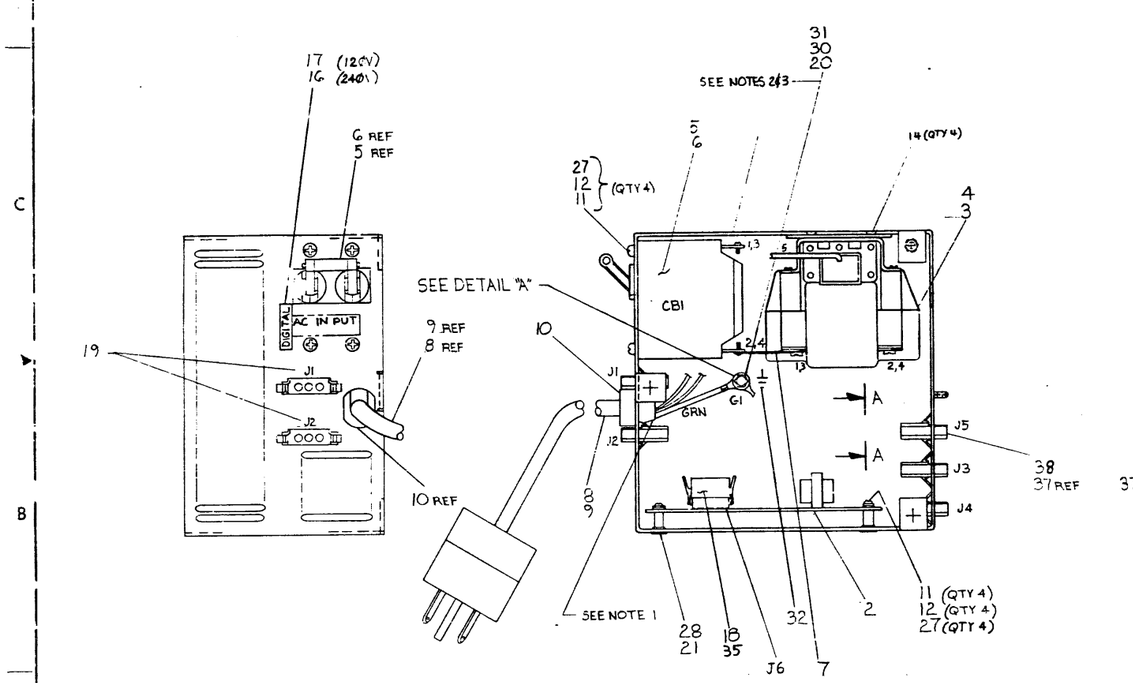
NOTES:

1. LEAVE .51N ±.21N 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



1	1	CONN 4 PIN	1209350-04	38
4	4	SOCKET, MATE-N-LOCK	1209379	37
7	3	TERM BLUE RING	9007328	36
4	4	CONNECTOR, SOCKET	1212170-00	35
A/R	A/R	WIRE #18 BRN	9107800-11	34
A/R	A/R	WIRE #18 BLU	9107800-06	33
1	1	DECAL, SAFETY GROUND	A-DC-3612680-01	32
1	1	WASHER, EXT TOOTH #8	9009078	31
A/R	A/R	GREASE, CONDUCTIVE	4901173-01	30
3	1	TERMINAL, RED RING	9007930	29
4	4	SCR, PH FL HD 6-32 X 1/4	9003020-02	28
8	8	WASHER, FLAT #6	9006656	27
REF	REF	A.C. INPUT BOX ASSEMBLY PROCEDURE	A-SP-7014420-0-0	26
REF	REF	TESTER PARTS LIST	A-PL-7009811-0-0	25
REF	REF	TESTER TEST PROCEDURE	A-SP-7009811-0-0	24
REF	REF	TESTER U.A.	A-UA-7009811-0-0	23
REF	REF	TESTER C.S.	A-CS-7009811-0-0	22
4	4	SPACER 6-32 X 3/8"	9003244	21
2	2	NUT, KEPS #8-32	9002533	20
1	1	DECAL	A-DC-7403273-13	19
1	1	CONNECTOR, 4 PIN	1212167-01	18
—	1	DECAL 120V 47-63 HZ 12A	A-DC-7412303-1	17
1	—	DECAL 240V 47-63 HZ 6A	A-DC-7412380-1	16
4	4	SCR, PH FL HD 6-32 X 3/8	9003039-03	15
4	4	SCR PH FL HD. 4-40 X .19	90030039-06	14
4	4	NUT, KEPS #4-40	9002535	13
8	8	WASHER, INT TOOTH #6	9006633	12
8	8	SCR PHL PAN HD #6-32 X .25	9003020-1	11
1	1	STRAIN RELIEF	9002509	10
1	—	POWER CORD 240V	D-AD-7012500-1	9
—	1	POWER CORD 120V	D-AD-7012500-0	8
2	2	JUMPER STRAP	1214074-02	7
1	—	CIRCUIT BREAKER 10A	1212124-03	6
—	1	CIRCUIT BREAKER 12A	1212124-05	5
1	—	CONTACTOR 240V	1214233-01	4
—	1	CONTACTOR 120V	1214233-00	3
1	1	AC PWR CONTR BOARD	D-CS-5413089-0-11	2
1	1	CHASSIS, COMP MTG	D-IA-7003800	1
QTY	QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.

7014420-2
7014420-1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
±0° 30'		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	±.06
✓	PREFERRED ☐	±.012	±.016	±.026	±.06	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

DRAWN	Thomas J	6-30-77
CHK'D	[illegible]	7-26-77
ENG.	[illegible]	7-27-77
PROJ. ENG.	[illegible]	8/24/77
PROD.	[illegible]	8/25/77

FIRST USED ON: H765

TITLE: AC INPUT BOX ASSY

NEXT HIGHER ASSY.: E-LA-H765-0-0

MATERIAL: SEE PARTS LIST

FINISH

SIZE: D | CODE: AD | NUMBER: 7014420-0-0 | REV.: A

SCALE

SHEET 1 OF 2 | DIST.

REVISIONS				
DOC	CHANGE NO.	REV.		
EC	7014-280-00001	A	7-27-77	R. KENNEDY

A31

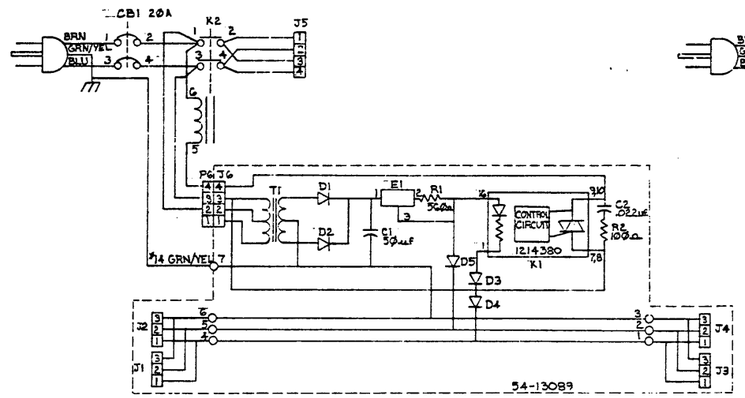
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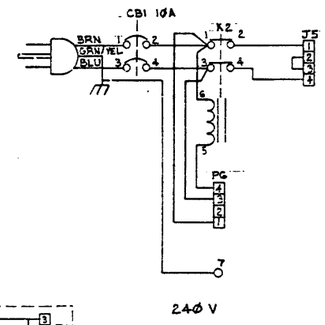
WIRE TABLE-1 VAR 120V

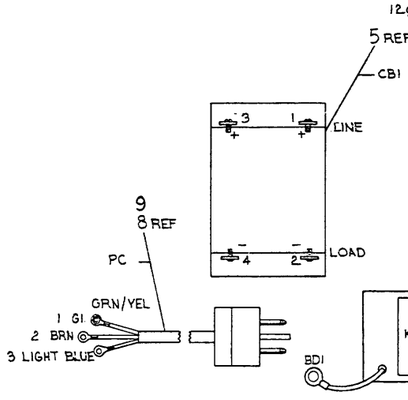
ITEM NO	DESCRIPTION AWG.	COLOR	FROM STRIP LENGTH	FROM CONN.	FROM WITH	TO STRIP LENGTH	TO CONN.	TO WITH	PRECUT WIRE LENGTH
8	14	GRN/YEL	SEE NOTE 3	PC-1			G1		
8	14	BRN		PC-2			CB1-1		
8	14	BLU		PC-3			CB1-3		
33	18	BLU	SEE NOTE4	K2-4	36	SEE NOTE 5	J5-2	37	3.0 ± 0.25
							J5-4	37	3.0± 0.25
							J5-1	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		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		

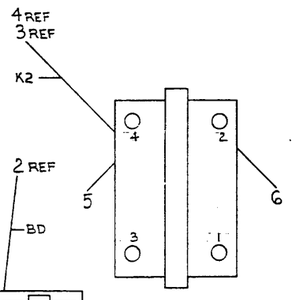
WIRE TABLE-2VAR 240V

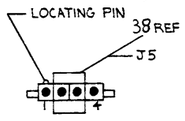
ITEM NO	DESCRIPTION AWG	COLOR	FROM STRIP LENGTH	FROM CONN	FROM WITH	TO STRIP LENGTH	TO CONN	TO WITH	PRECUT WIRE LENGTH
9	14	GRN/YEL	SEE NOTE 3	PC-1			G1		
9	14	BRN		PC-2			CB1-1		
9	14	BLU		PC-3			CB1-3		
33	18	BLU	SEE NOTE4	K2-4	29	SEE NOTE 5	J5-4	37	3.0± 0.25
34	18	BRN	SEE NOTE 4	K2-2	29	SEE NOTE 5	J5-1	37	3.0±0.25
34	18	BRN	SEE NOTE 5	J5-2	37	SEE NOTE 5	J5-3	37	2.0±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		











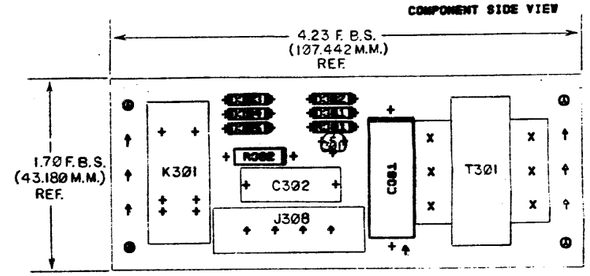
REVISIONS CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
AC INPUT BOX ASSY.	D	AD	7014420-0-0	A

SCALE — SHEET 2 OF 2

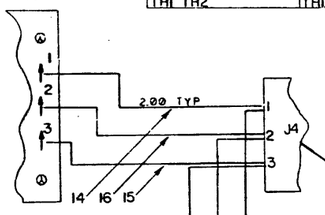
© 1972

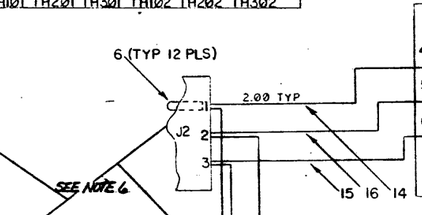
COMPONENT SIDE VIEW

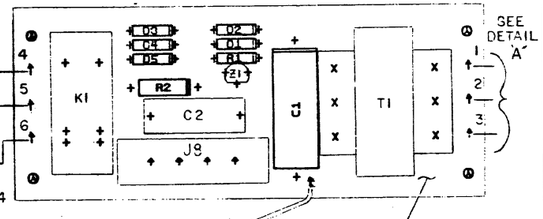


REFERENCE DESIGNATION CHART	
ACTUAL REF DES	SUPERFICIAL REF DES
C1 C2	C101 C201 C301 C102 C202 C302
D1 D2	D101 D201 D301 D102 D202 D302
D3 D4	D103 D203 D303 D104 D204 D304
D5	D105 D205 D305
J8	J108 J208 J308
K1	K101 K201 K301
R1 R2	R101 R201 R301 R102 R202 R302
T1	T101 T201 T301
Z1	Z101 Z201 Z301
TH1 TH2	TH101 TH201 TH301 TH102 TH202 TH302

DETAIL 'A'







NOTES:
1. 8 HOLES .3145 (+.003 -.005) MAYMARD ONLY
2. THIS BOARD REQUIRES U/L APPROVAL.
3. DO NOT SLIT BOARD, MUST BE SHEARED.
4. REFER TO PARTS LIST FOR IDENTIFICATION OF NUMBERED ITEMS.
5. MULTI-REF DESIGNATIONS ARE USED TO ACCOMODATE PNL THIS TECHNIQUES — SEE CHART FOR REF
6. J1, J2, J3 AND J4 ARE NOT USED ON 'A' VARIATION.

CHG NO	REV
541289-1	B
541289-2	C
541289-3	D

SIGNATURES	DATE
DRN.	6-30-72
CHK'D.	7-1-72
ENG.	7/27/72
PROJ. ENG.	7/31/72
PROD.	8/1/72

SCALE 2/1
SHT. 1 OF 2
NEXT NUMBER ASSY. 8-00-541289-0-0

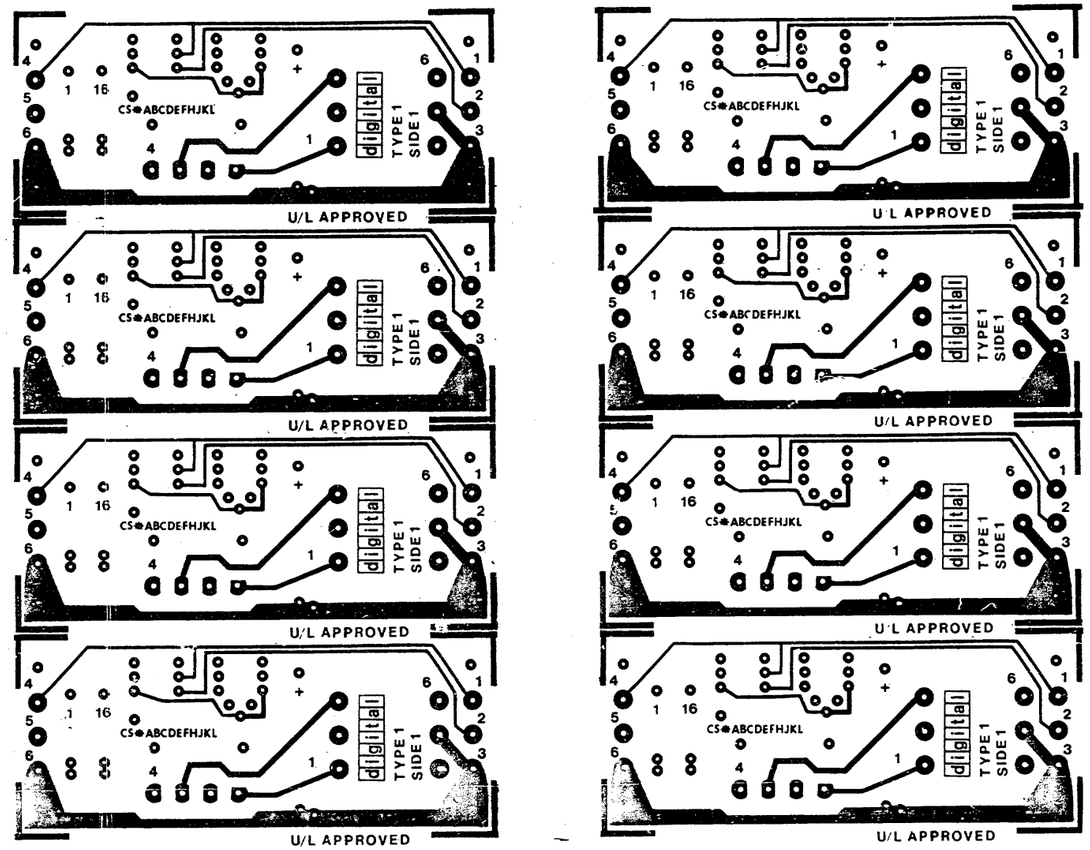
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TITLE A.C. CONTROL BOARD

SIZE	CODE	NUMBER	REV
D	UA	541289-0-2	D

MS#104153

433

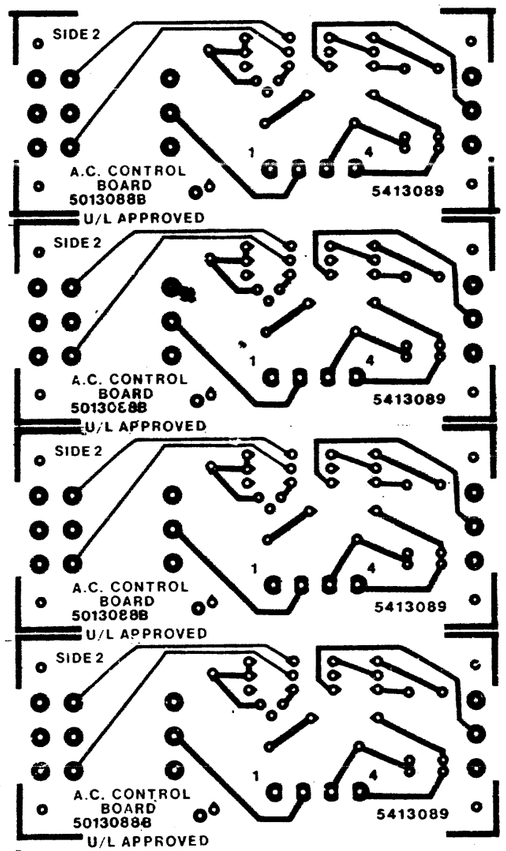


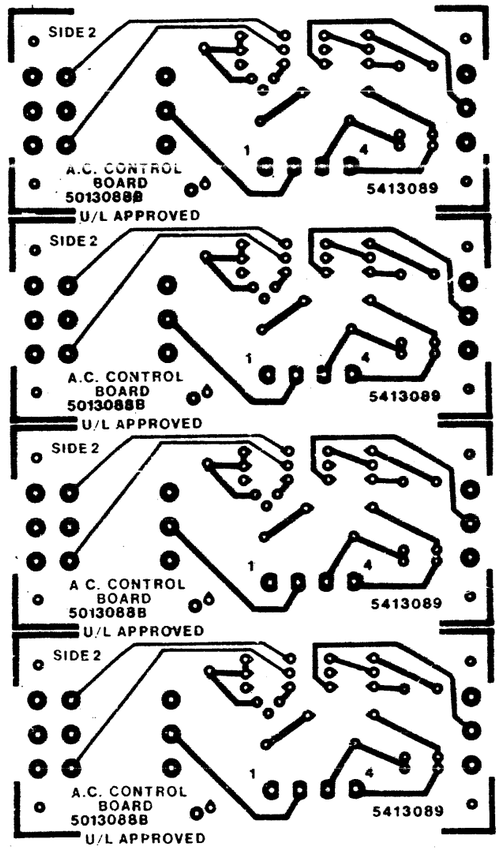
VIEWED FROM SIDE 1

A.C. CONTROL BOARD DUA 5413089-0-0 D

SCALE 2:1 SHEET 2 OF 3

43





VIEWED FROM SIDE 2

| | | |

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DRAWING DIRECTORY

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CUSTOMER PRINT SET

DRAWING DIRECTORY	B-DD-H744-0
CIRCUIT SCHEMATIC	D-CS-H744-0-1
UNIT ASSY	E-UA-H744-0-0

MFG SET

TEST PROCEDURE	A-SP-H744-0-3
MFG SPEC	A-SP-H744-0-8
PACKAGING INST	A-PI-3700074-0-0

UNIT VARIATIONS

VAR	TITLE
H744	+5V REGULATOR
H744-YA	2.0 - 8.0V VARIABLE REGULATOR

REVISIONS			
CHK	CHANGE NO.	REV.	
GP	00019	R	
JA	00020	S	

USED ON OPTION/MODEL	
11/45	

SHEET 1 OF 4

DRN. D. FONTAINE	DATE 2-4-72	TITLE +5V REGULATOR
CHK'D. D. FONTAINE	DATE 2-4-72	
PROJ. ENG. G. POTTER	DATE 2-24-72	SIZE B · CODE DD · NUMBER H744-0 · REV S
PROD. A. HIRSCH	DATE 2-24-72	DIST.

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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			
REV.	R	S	
CHG NO.	00018	00019	00020
DATE		2-77	3-78

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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

DRB-126 EN-01148-16-N126(325)

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	R
	CHG NO	00017 00019
	DATE	2-77

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USED ON OPTION/MODEL		DRN.		TITLE
11/45		D. FONTAINE	2-4-72	+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		

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USED ON OPTION/MODEL	
11/45	

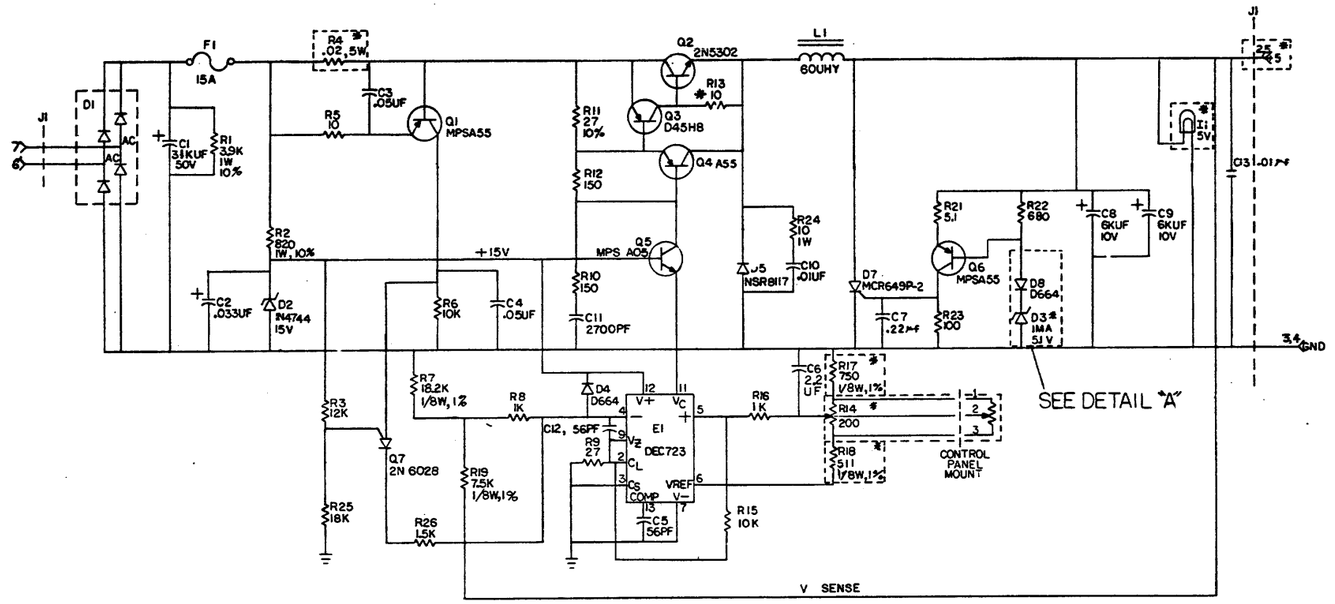
DRN.	D. FONTAINE	2-4-72
CHK'D	D. FONTAINE	2-4-72
ENG.	G. POTTER	2-24-72
PROD.	A. HIRSCH	2-24-72

TITLE: +5V REGULATOR

SIZE	CODE	NUMBER	REV.
B	DD	H744-Ø	S

SHEET 4 OF 4

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*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	

IN964A	SAME	MPSA55	
D664	IN6606	2N3302	
MCR649P2		D45H8	
IN754A	SAME	MPSA05	
IN744	SAME		
NSR8117			
2N6028			
REC NO.	EIA NO.	REC NO.	EIA NO.

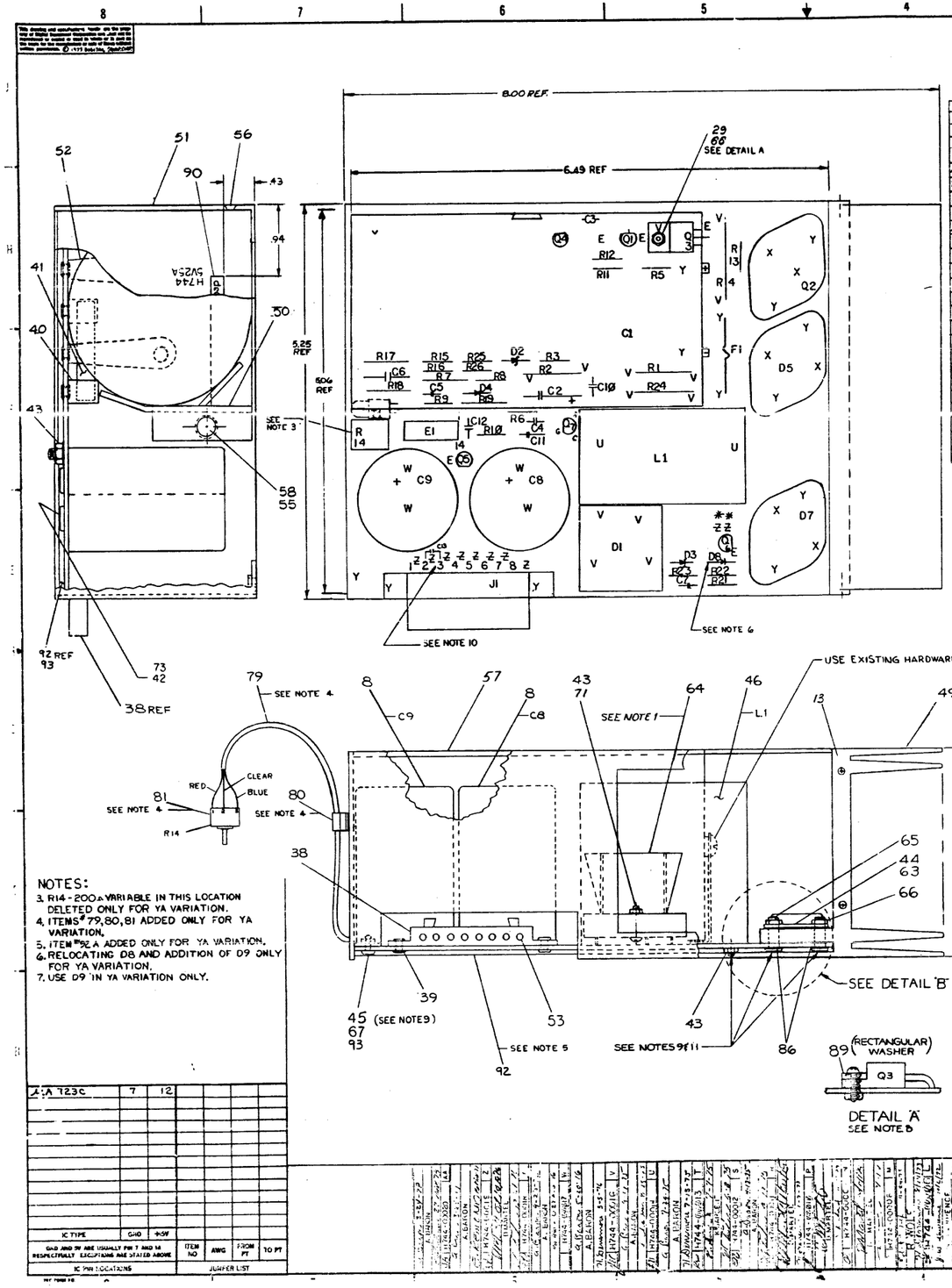
SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION

TITLE: 5V REGULATOR

SIZE: D | DWG NO: H744-F-1 | REV: Y

H744-F-1-Y



NOTES:

1. APPLY ITEM #63 (COMPOUND) BETWEEN TRANSISTOR (Q2), DIODES (D5, D7) AND ITEM #44 (WASHER) ALSO BETWEEN ITEM #44 (WASHER) AND HEAT SINK (ITEM #49). ALSO APPLY ITEM #63 (COMPOUND) BETWEEN ITEM #9 (DIODE BRIDGE) AND ITEM #64 (HEAT SINK BRIDGE).

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 SCREW HEAD OF #4 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

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 #92A ADDED ONLY FOR YA VARIATION.
6. RELOCATING D8 AND ADDITION OF D9 ONLY FOR YA VARIATION.
7. USE D9 IN YA VARIATION ONLY.

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H745-Ø		
CIRCUIT SCHEMATIC	D-CS-H745-Ø-1	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 16-12251-1 06-21-0-RV12

DPB 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

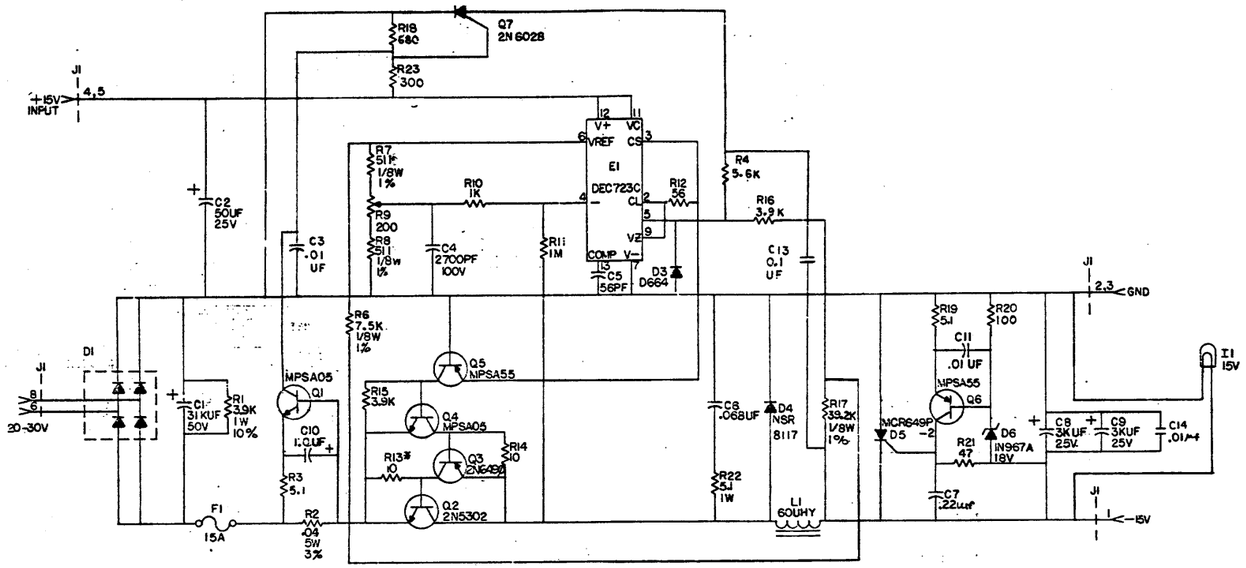
digital

TITLE -15V REGULATOR

SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER H745-Ø | REV R

DRB 108A

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* FUSIBLE
UNLESS OTHERWISE INDICATED:
RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV E

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

REVISIONS: CHANGE NO. H745 – 00021 REV E

A. DAHON 9/3/72 Made from 4-24-72

DRN. Roger J Duquette 11-5-71
CHK'D. Nancy Moore 11-5-71
ENG. [illegible] 11/72
PROJ. [illegible] 11/72
PROG. [illegible] 11/3/72
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 1

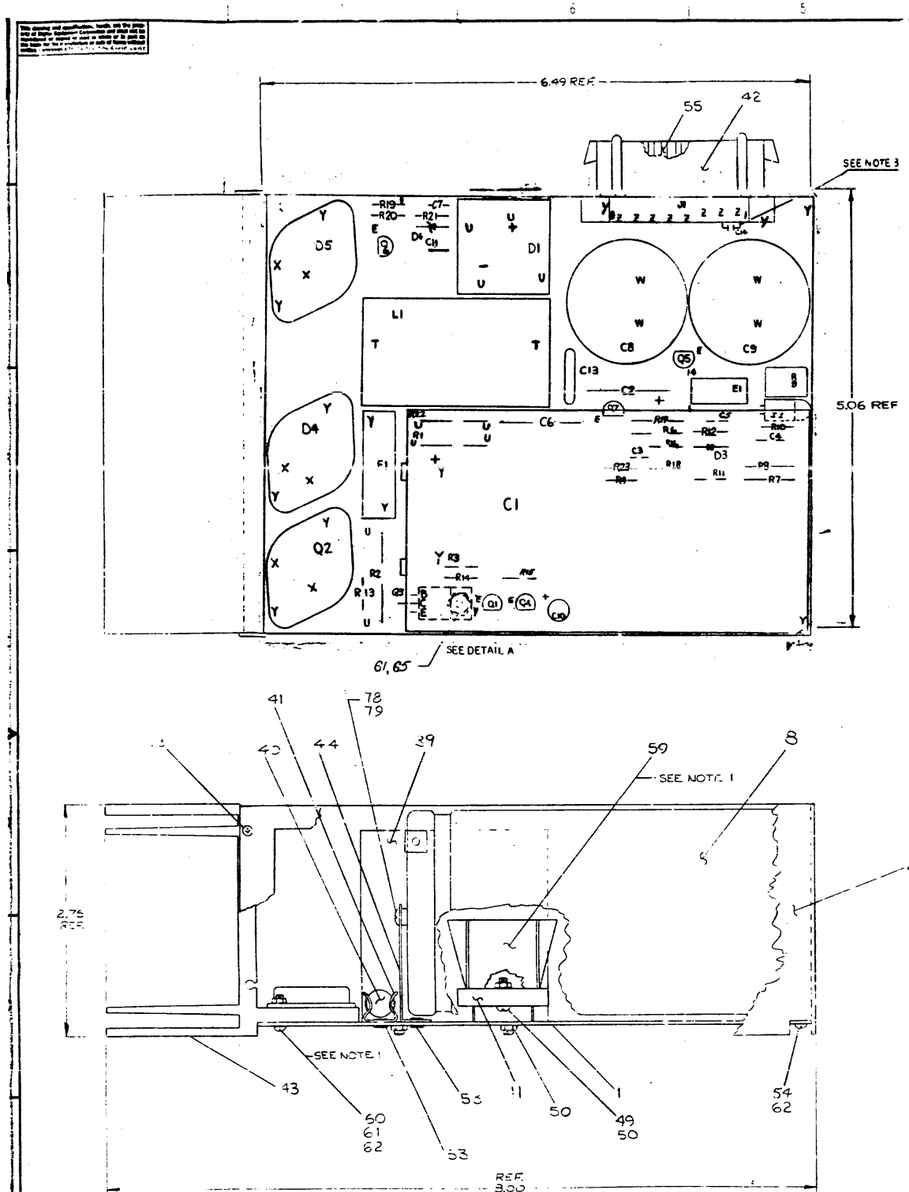
Digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

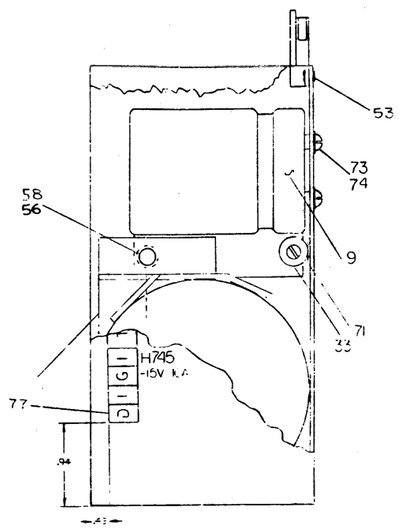
TITLE: –15V REG.

SIZE D CODE CS NUMBER H745-0-1 REV E

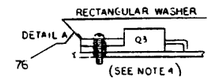
DIST.

H745-0-1 REV E





NOTE:
3. INSERT C14 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS 1-2.



NOTE 4:
Q3 SCREW HEAD SHOULD BE ON TOP OF FLAT RECTANGULAR WASHER AS SHOWN. APPLY 6 INCH LBS. OF TORQUE WHEN SECURING Q3 TO CKT. BOARD BEFORE SOLDERING.

NOTE 5: TORQUE APPLICATION
(1) APPLY 12 INCH LBS. OF TORQUE TO ALL #4 HARDWARE EXCEPT Q3.
(2) APPLY 16 INCH LBS. OF TORQUE TO ALL #2 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 & D5 ALSO APPLY ITEM = 51 (COMPOUND) BETWEEN ITEM #11 (D1 - BRIDGE) AND ITEM = 59 (HEAT SINK).
2. 1010022 MAY BE SUBSTITUTED FOR C13 (1000030).

		ASSY/DRILLING HOLE LAYOUT	D-AM-H745-0-5		70
1		PACKING INSTRUCTIONS	API-3700074-0-0		69
1	R18	RES. 680 "WW 5"	1301424		68
1	R23	RES 200 "WW 5%	1301425		67
1	C14 (SEE NOTE 2)	CAP. 0.1 uF 100V 20 %	1000030		66
1		BCR PH #4-40 X 5/16 LG	9009010-1		65
1	I1	LAMP 15V	1214356		64
4		SCR, PPH M4X5/16LG., SELF TAPPING	9009948		63
8		#4 WASHER #4	9009932		62
7		NUT HEX #4-40	9009557		61
6		SCR PH, PAN HD #4-40 X 3/16 LG	9009573-1		60
1		HEAT SINK BRIDGE RECT.	1210807		59
1		SCR PH, PAN HD #6-32 X 1/4 LG	9009539-1		58
1		SCR PH, FLT HD #6-32 X 1/4 LG	9004020-02		57
1		WASHER LOCK #6	9006633		56
8		CONTACT FERRULE	1209458		55
2		SCR PH, PAN HD 4-40 X 1/4 LG	9009539-1		54
6		EYELET 625-4-1	9009500		53
3		INSULATOR WASHER	9008721		52
AR		THERMAL COMPOUND	9010288		51
1		NUT HEX #6-32	9009935		50
1		SCREW PH, PAN HD 6-32 X 5/8 LG	9004525-01		49
4		WASHER FHC FOR #6-32 X .438	A-900-0084-5		48
1		HEAT SINK	D-AM-5308758-0-0		47
1		REGULATOR UNIT	D-AM-5308758-0		46
1		2.5 HOLDER CAPACITOR	C-HD-5308758-0-0		45
2		STRAP CAPACITOR	C-HD-5308758-0-0		44
1		HEAT SINK	D-PS-1210737-0-0		43
1	J1	TERM. STRIP-3-LOCK 3 PIN	1208385		42
2		FUSE CLIP	5012201		41
1	F1	FUSE	1213237-01		40
1	L1	REACTOR 60 UHY	1810058		39
1	E1	INTERFACED CIRCUIT UA723C	1111015		38
1	Q3	TRANSISTOR 2N6498	1512652-01		37
2	Q5, Q6	TRANSISTOR MJE	1510705		36
2	Q1, Q4	TRANSISTOR MJE	1510705		35
1	Q2	TRANSISTOR 2N3055	1510598		34
1	R9	RES VARIABLE 200 Ω, 20%	1310852		33
1	R20	RES 100Ω 1/2 W 5%	1302229		32
1	R11	RES 1 MEG 1/2 W 5%	1305105		31
1	R4	RES. 5.6 K 1/4W 5%	1302174		30
2	R15, R16	RES 3.3K 1/2 W 5%	1302444		29
2	R19, R3	RES 5.1 1/2 W 5%	1308422		28
1	R12	RES 56 1/2 W 5%	1302802		27
1	R21	RES 47 1/2 W 5%	1302292		26
1	R17	RES 39.2K 1/2W 1%	1305262		25
1	R18	RES 18 1/2 W 5%	1302385		24
1	R14	RES 10 1/2 W 5%	1301317		23
1	R6	RES 7.5K 1 W 1%	1305322		22
2	R7, R8	RES 511 1 W 1%	1309411		21
1	R22	RES 5.1 1/4 W 5%	1302138		20
	R24	NOT USED	1300419		19
1	R2	RES 4.64K 1%	1311362-00		18
1	R1	RES 3.3K 1/2 10.	1302927		17
1	CR	BRIDGE 1N5	1110708		16
1	D5	SCR MCR64M-2	1109465		15
1	D4	DIODE MSR3117	1116215		14
2	D3	DIODE D664	1109114		13
1	Q7	TRANSISTOR UNI JUNCTION 2N6028	1510727		12
1	D1	DIODE BRIDGE	1110714		11
3	C12	CAP .15UF 220V 10%	1004312		10
2	C8, C9	CAP 3.0K UF 25V	1010703		9
1	C1	CAP 31K UF 50V	1010958		8
1	C10	CAP 1.0 UF 25V	1010866-01		7
1	C2	CAP 50 UF 25V -10+75%	1001758		6
1	C5	CAP 1000 UF 10V 10%	1009852		5
1	C4	CAP 2700PF 100V 5%	1001631		4
3	C11, C3, C14	CAP .01UF 30V 20%	1001610		3
1	C6	CAP 1UF 100V	1010843		2
		ETCHED CIRCUIT BOARD	5014752		REF
		SCHEMATIC DIAGRAM	D-AM-H745-0-1		REF
		CIRCUIT DESCRIPTION	D-AM-H745-0-2		REF
QTY.	REF DESIGNATION	PARTS LIST DESCRIPTION	PART NO.		ITEM NO.

1		DECAL (H745)	7416945-02	90	
2		WASHER INT. TOOTH #10	9006635	79	
2		SCREW PAN 10-32 x 3/4 LG	9009449-01	78	
1	C7	CAP .22 uF 50V	1010274	77	
1		WASHER, RECTANGULAR	9009769	76	
1	R13	RES 10Ω 2 W, FUSIBLE	1312496-00	75	
4		LOCKWASHER #10 INT	9006635	74	
4		SCR #10-32 X 3/4 SLOTTED FIN HD.	9009465-01	73	
				72	
1		TRANSPAD	9008206	71	

ETCH BOARD REV E

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

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

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

SEMICONDUCTOR CONVERSION CHART

DRAWN			
ENGR			
PROJ ENGR			
PROD ENGR			
PRINT MADE ON			
SCALE		SHEET	1 OF 1

EQUIPMENT CORPORATION

TITLE: -15 REGULATOR

CAGE CODE	SIZE	NUMBER	REV
04713	E	H745-0-0	

DIST.

745

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

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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 Hammon	DATE 3-14-74	SIZE B / CODE DD / NUMBER H754-Ø / REV D
FIELD SERV. Walt Aubee	DATE 7/25/74	DIST

DEC 16-12251-10S2-1A-R92

DRB 106

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	

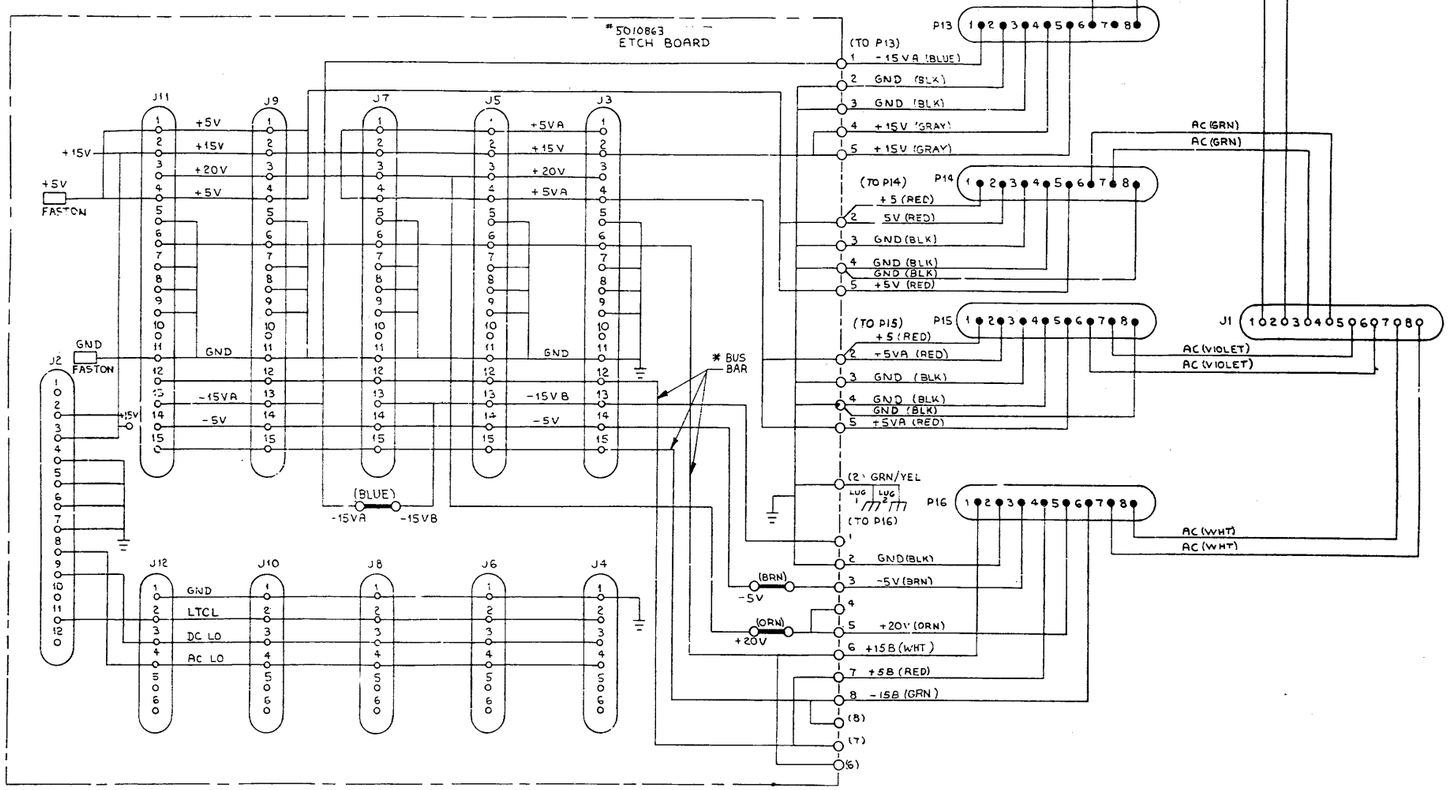
CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
+20 VOLT REGULATOR	SHEET 2 OF 3	B	DD	H754-Ø	B

DRB 108

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

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* 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.			

452

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WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION 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]		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	PDB P16-6 J11,J9,J7,J5,J3 ALL PIN #6	+15V.B
LEVEL B	PDB P16-7 J11,J9,J7,J5,J3 ALL PIN #12	+5V
LEVEL C	PDB P16-8 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

453

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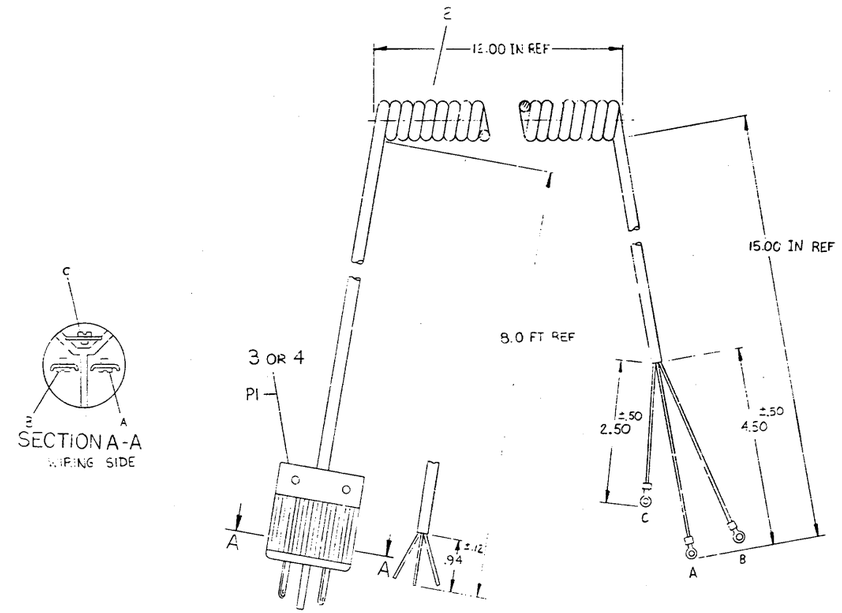
LEGEND	
NUMBER	VARIATION
7012500-0	120V
7012500-1	240V

WIRE TABLE (7012500-0)

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	REMARKS
3	14	GRN	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	COLOR	FROM CONNECTION	WITH	TO CONNECTION	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	B	TERMINAL RING TONGUE	9007935	5
~~2~~	~~2~~	~~TERMINAL, QUICK CONNECT~~	~~9007919-0~~	~~5~~
1	-	PLUG, 240 V	9008853	4
-	1	PLUG, 120 V	9003938	3
1	1	POWER CORD	7700965-0	2
~~-~~	~~1~~	~~POWER CORD~~	~~7700963-0~~	~~2~~

7012500-1
7012500-0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

SURFACE QUALITY IN MIC./INCHES	CLASS OF ACCURACY (CHECK ONE)	ANGLES ±0° 30'	OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
	MEDIUM ☐		±.004	±.008	±.012	±.018	±.024	±.04
	PREFERRED ☐		±.002	±.005	±.008	±.012	±.020	±.03

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

DRN.	R Brinley	2-27-76
CHK'D		
ENG.		
PROJ. ENG.		
PROD.		

FIRST USED ON: 3A11-K

digital

TITLE: POWER CORD 120V 240V

NEXT HIGHER ASSY.: 7009811-0-0

MATERIAL: SEE PARTS LIST

FINISH

SCALE: NONE

SHEET 1 OF 1

SIZE D | CODE IA | NUMBER 70125000-0-0 | REV. B

DIST.

REVISIONS		
CHANGE NO.	DATE	DWN
1	3-19-76	RB

REV.	DESCRIPTION	DATE	APPROVED
B	ADDED 240V	3-19-76	
A	RELEASED	2-27-76	

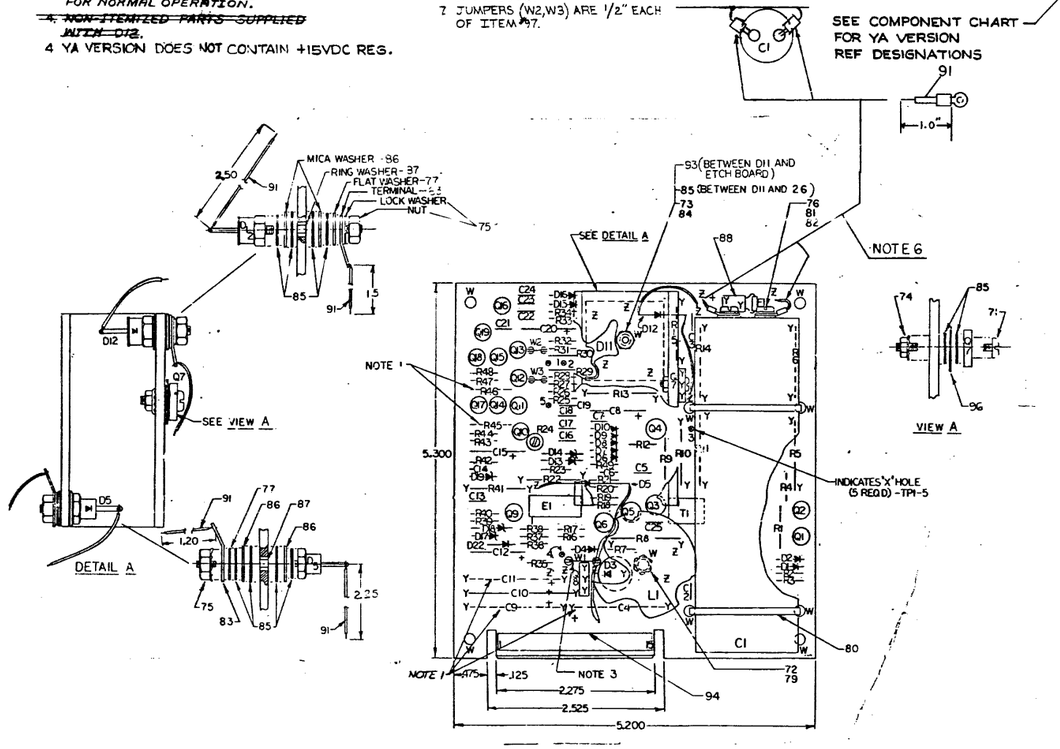
SIZE D | CODE IA | NUMBER 7012500-0-0 | REV. B

8	7	6	5	4	3	2	1		

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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 RES.
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				
REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411086-0-4	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 56PF 100V 5%	1000012	5
4	4	C18,C17,C18,C21	CAPACITOR 330PF 100V 5%	1000023	6
3	5	C3,C13,C19,C22,C23	CAPACITOR .01uf 100V 20%	1001610-01	7
1	3	C9,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 8400uf 50V -10% +75%	1010851	13
1	2	D2,D19	DIODE IN748A	1100122	14
0	1	D5	DIODE IN2970B	1100134	15
0	1	D3	DIODE MR1833B	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 IN4884	1105798	19
0	1	D12	DIODE IN3828	1105 7	20
0	1	D10	DIODE IN5817A	1110068	21
~~2~~	~~2~~	~~D20,D21~~	~~DIODE IN5854-1 (LIGHT EMITTING)~~	~~1110324~~	~~22~~
1	1	D11	DIODE BRIDGE 200V 2AA	1110714	23
2	2	D13,D14	DIODE 1TT2429	1110925	24
0	1	F1	FUSE PICO 5A	1205747	25
0	1		HEAT SINK	1211986	26
0	1	R23	RESISTOR 47 1/4W 5%	1300202	27
0	2	R7,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	R19	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	39
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 680 1/4W 5%	1301424	41
0	1	R16	RESISTOR 22K 1/4W 5%	1301908	42
1	1	R13	RESISTOR 1K 2W 5%	1301952	43
0	1	R9	RESISTOR 27 1/2W 5%	1302253	44
2	2	R19,R21	RESISTOR 30K 1/4W 5%	1302394	45
0	1	R36	RESISTOR 511 1/4W 1%	1302411	46
0	1	R39	RESISTOR 909 1/4W 1%	1302685	47
1	1	R25	RESISTOR 3.16K 1/4W 1%	1303045	48
1	1	R8	RESISTOR 470 2W 5%	1303062	49
1	2	R17,R28	RESISTOR 1K 1/4W 1%	1303114	50
1	1	R31	RESISTOR 2.61K 1/4W 1%	1303303	51
0	1	R42	RESISTOR 10K 1/4W 1%	1303312	52
2	2	R33,R34	RESISTOR 5.11K 1/4W 1%	1304854	53
1	1	R30	RESISTOR 9.09K 1/4W 1%	1304355	54
YA	QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

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

PARTS LIST

ETCH BOARD REV. D

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

SEMICONDUCTOR CONVERSION CHART

REV.	DESCRIPTION	DATE	APPROVED
C	CHANGE NO. 5411086-0001	6-6-75	E. LOVA
D	CHANGE NO. 5411086-0002	6-26-75	E. LOVA
E	CHANGE NO. 5411086-0003	7-25-75	E. LOVA
F	CHANGE NO. 5411086-0004	8-15-75	E. LOVA
G	CHANGE NO. 5411086-0005	9-5-75	E. LOVA
H	CHANGE NO. 5411086-0006	10-17-75	E. LOVA
J	CHANGE NO. 5411086-0007	11-14-75	E. LOVA
K	CHANGE NO. 5411086-0008	12-19-75	E. LOVA
L	CHANGE NO. 5411086-0009	1-29-76	E. LOVA

DRN.	G. Vincent	DATE 10-7-74
CHK'D		DATE
APP'D		DATE
APP'D		DATE
APP'D		DATE
NEXT HIGHER ASSY		
SCALE		
SHEET	1 OF 4	

digital

TITLE: PWR. LINE MONITOR/15V REG.

SIZE D | CODE CS | NUMBER 5411086-0-1 | REV. L

DIST.

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NOTES:

YA	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	1	R29	RESISTOR 3.48K 1/4W 1%	1305114	55
1	1	R28	RESISTOR 5.62K 1/4W 1%	1305128	56
1	1	R27	RESISTOR 4.32K 1/4W 1%	1305324	57
0	1	R35	RESISTOR 24.9K 1/4W 1%	1305405	58
0	1	R24	RESISTOR 200 20% 62PR	1309150-10	59
1	1	R32	RESISTOR 18.2K 1/4W 1%	1305412	60
0	2	R5,R6	RESISTOR .2 5W 5% WW	1309884	61
0	1	Q7	TRANSISTOR MJE3055	1510155	62
4	9	Q2,Q3,Q5,Q8,Q16,Q19	TRANSISTOR MPSA05	1510705	63
0	2	Q4,Q9	TRANSISTOR MPS A55	1510706	64
0	1	Q9	TRANSISTOR 2N 4441	1505867	65
4	5	Q1,Q11,Q12,Q13,Q18	TRANSISTOR 2N 4258	1509142	66
4	4	Q14,Q15,Q17,Q18	TRANSISTOR 2N 5433	1511686	67
0	1	L1	INDUCTOR, 500 uh	1611868	68
1	1	T1	TRANSFORMER	1612026	69
0	1	E1	I.C. DEC 723	1910415	70
0	1		SCREW, PHM #4-40 X 7/16 LG.	9006012-1	71
0	1		SCREW, PHM #6-32 X 1/4 LG.	9006020-1	72
0	1		SCREW, PHM #8-32 X 7/8 LG.	9006027-1	73
0	1		KEP NUT #4-40	9006557	74
0	2		KEP NUT #10-32	9006566	75
2	2		WASHER, ITTLKTR #10	9006635	76
0	2		WASHER, FLAT	9006696	77
0	2	(W1)	SPLIT LUG	9006735	78
0	1		SPACER, 1/4AF X 1/2	9006861	79
4	4		CABLE TIE	9007880	80
2	2		TERMINAL	9007930	81
2	2		SCREW, PHM #10-32 X 1/4 LG.	9008007-1	82
0	2		TERMINAL	9008150	83
0	1		KEP NUT #6-32	9008185	84
0	A/R		COMPOUND, THERMAL JOINT	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	12		WIRE #18 STRANDED BLK	9107350-0-0	91
REF	REF		MODULE TEST PROCEDURE	A-SP-1145-TA-2	92
1	1		WASHER, RING	9006713	93
1	1		.010 INCH SHIM	7413721-0-0	94
REF	REF		ENG. SPEC AND TEST PROC.	A-SP-5411086-0-2	95
0	1		INSULATOR, THERMA FILM	9009597	96
A/R	A/R	W2,W3	WIRE #22 BUS	9107330-0-0	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

REV	CHANGE NO.	DESCRIPTION

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

SEMICONDUCTOR CONVERSION CHART

DRN	J.Vincent	DATE 10-7-74
CH'D		DATE
ENG		DATE 11/7/74
APPD		DATE 11/7/74
QA		DATE 11/14/74
NEXT HIGHER ASSY		
TITLE		

digital EQUIPMENT CORPORATION

TITLE PWR. LINE MONITOR/15V REG.

SIZE CODE D | NUMBER CS 5411086-0-1 | REV. L

SHEET 2 OF 4 | DIST.

454

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+25 TO +45 VDC

R8 470 2W

R13 1K 2W

TP3

C25 18 pf

R21 30K

R20 1K

R18 1K

R19 30K

C6 13 pf

Q3 MPS A05

Q5 MPS A05

T1

C5 .22 µf 50V

D22 D672

D8 D672 D9 D672 D6 D672 D7 D672

C7 .22 µf 50V

D10 1N4744 15V

R48 750

Q19 MPS A05

5 -10V TO -15V (TEST POINT)

(ENG OPTION) (SEE NOTE 1) R46 1/2W

Q15 2N5433

Q18 2N5433

3 AC LO 1

8 AC LO 2

R49 220

R47 10K

4 LO GND

R43 10K

P34 5.11K 1%

R33 5.11K 1%

D15 D672

AC-1

D16 D672

AC-1

20V TO 33V RMS AC INPUT

C24 .22 µf 50V

C28 1.5 µf 35V

TP1

R32 18.2K 1%

R31 2.61K 1%

TP2

R30 5.09K 1%

R29 3.48K 1%

R26 5.62K 1%

TP5

R27 4.99K 1%

C8 2.2 µf 35V

Q16 2N4250

Q13 2N4250

Q12 2N4250

Q11 2N4250

C21 330 pf

C18 330 pf

C17 330 pf

C16 330 pf

R25 3.16K 1%

W3

W2

R44 750

Q10 MPS A05

Q17 2N5433

Q14 2N5433

1 DC LO 2

2 DC LO 1

R45 1/2W (SEE NOTE 1 ENG. OPTION)

D14 ITT4429 5.1V

D13 ITT4429 5.1V

C22 .01 µf 100V

C23 .01 µf 100V

R28 1K 1%

C19 .01 µf 100V

RETURN

+25 TO +45VDC

TO 20V TO 33V RMS AC INPUT

AC-1 15

AC-2 14

D11

L1 BRIDGE 2DV

R15 3.3K 1W

6 LINE CLK L

R22 390 ~ 2W

D19 3.9V 1N748A

C19 .22 µF 50V

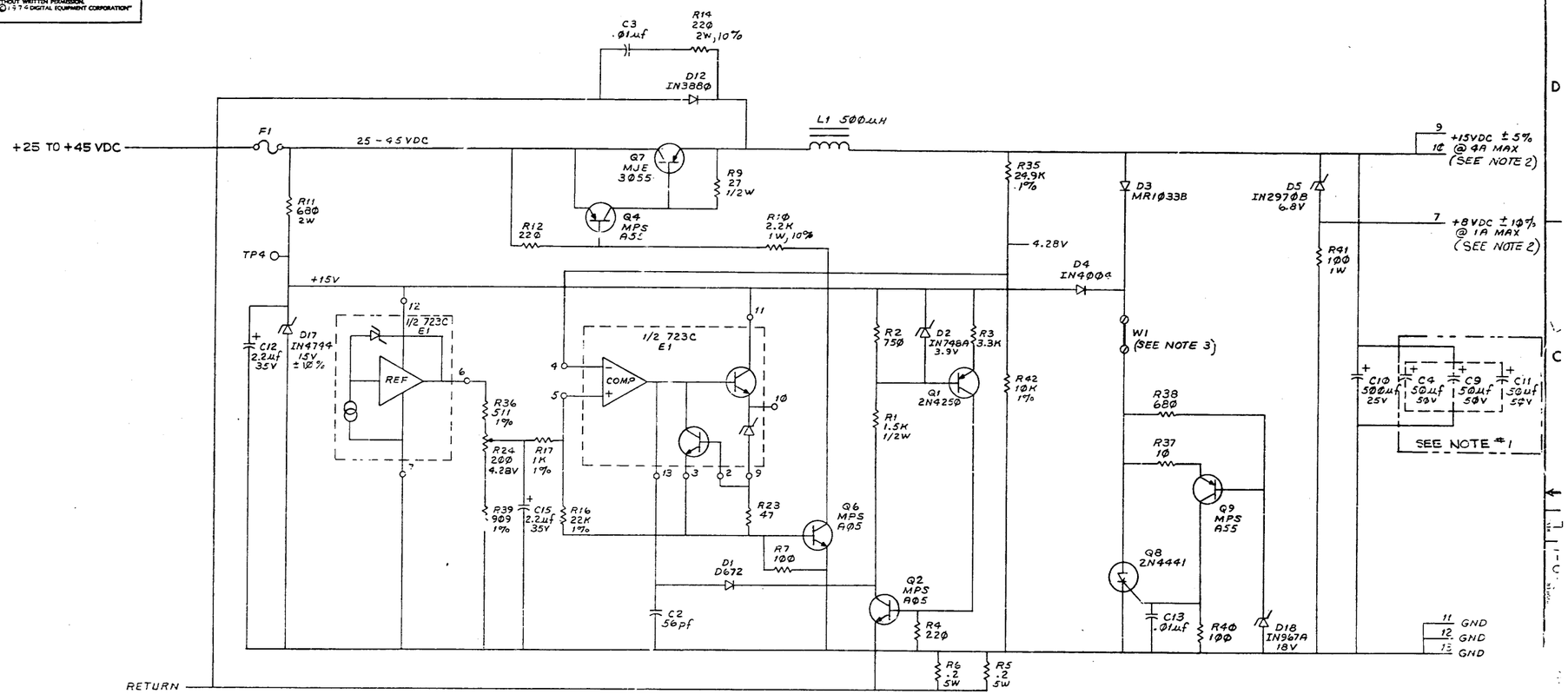
POWER FAIL CIRCUIT

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PWR. LINE MONITOR/15V REG.	D	CS	5411086-0-1	L
SCALE	SHEET 3 OF 4	DIST.		

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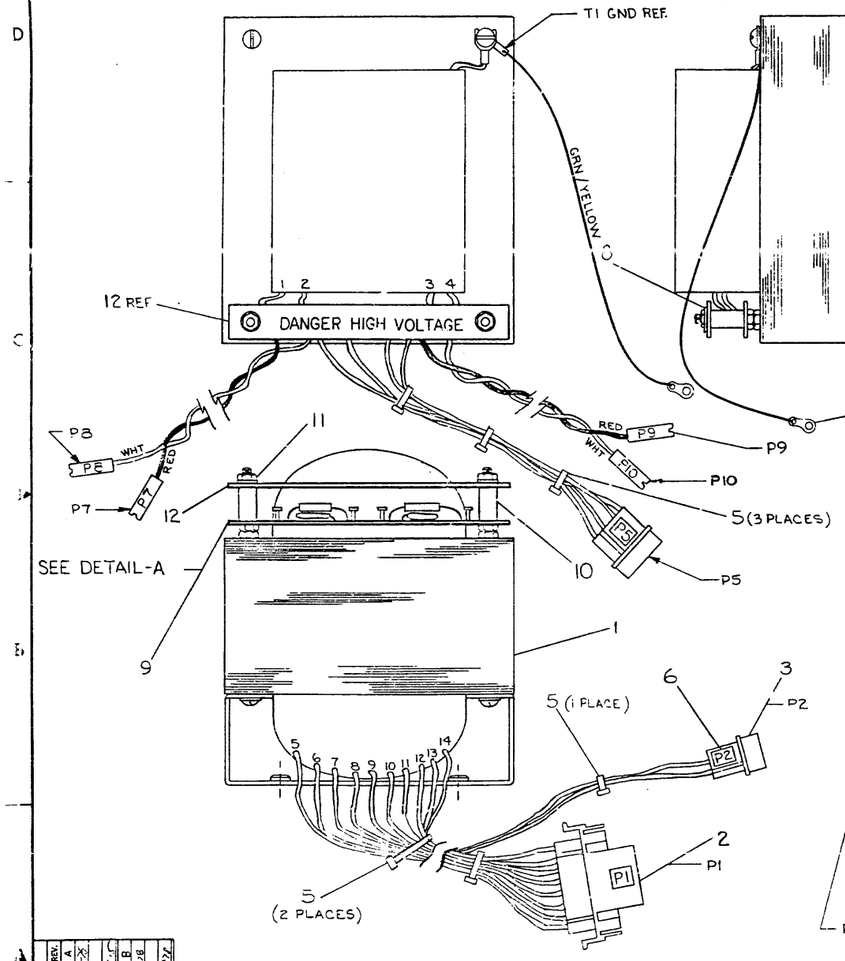
15V REGULATOR
(SEE NOTE #4)

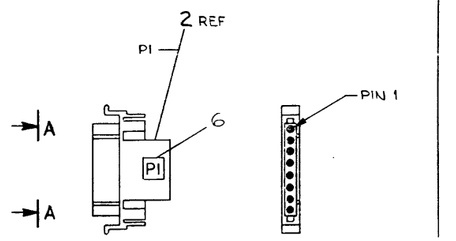
REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
PWR. LINE MONITOR/15V REG.	D	CS	5411086-0-1	L
SCALE —	SHEET 4 OF 4	DIST.		

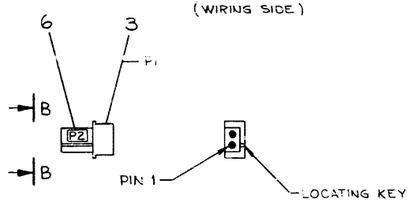
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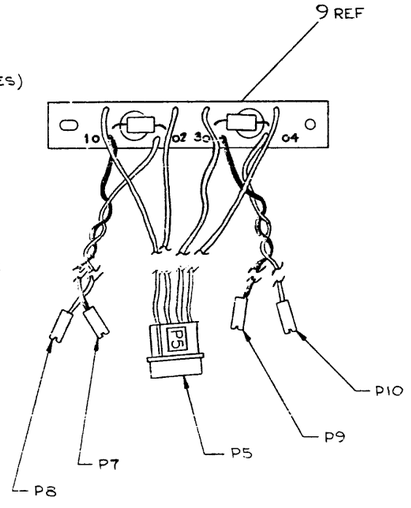




VIEW A-A
(WIRING SIDE)



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-IA-7414301-0-0	12
2	NUT, KEP #10-32	9003535	11
2	SPACER, 3/8 OD X 1/2 LG	9001831	10
1	CAP MOV BOARD ASSY	70-IA-7011751-0-0	9
2	WASHER, FLAT .937 X .218 ID	9003664	8
1	GROUND LUG	9008150	7
1	DECAL	A-DC-7409872-0-0	6
A/R	CABLE TIES 5 1/4 L X 1/8 W	9007880	5
10	PIN, MALE	1209378-1	4
1	CONN., 2 PIN	1210822-2	3
1	CONN., 3 PIN	1209340-01	2
1	TRANSFORMER	1612524	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0°30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: OVER 0 TO 0.3	OVER 0.3 TO 1.2	OVER 1.2 TO 4.0	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: SEE PARTS LIST

FINISH

DRN. [illegible]
CHK'D. [illegible]
ENG. [illegible]
PROJ. ENG. R. [illegible]
PROD. [illegible]
NEXT HIGHER ASSY. D-IA-7011482-0-0

FIRST USED ON: H752

digital

TITLE: TRANSFORMER ASS'Y

SIZE: D | CODE: 80 | NUMBER: 7011486-0-0 | REV: B

SCALE 1/1

SHEET 1 OF 2

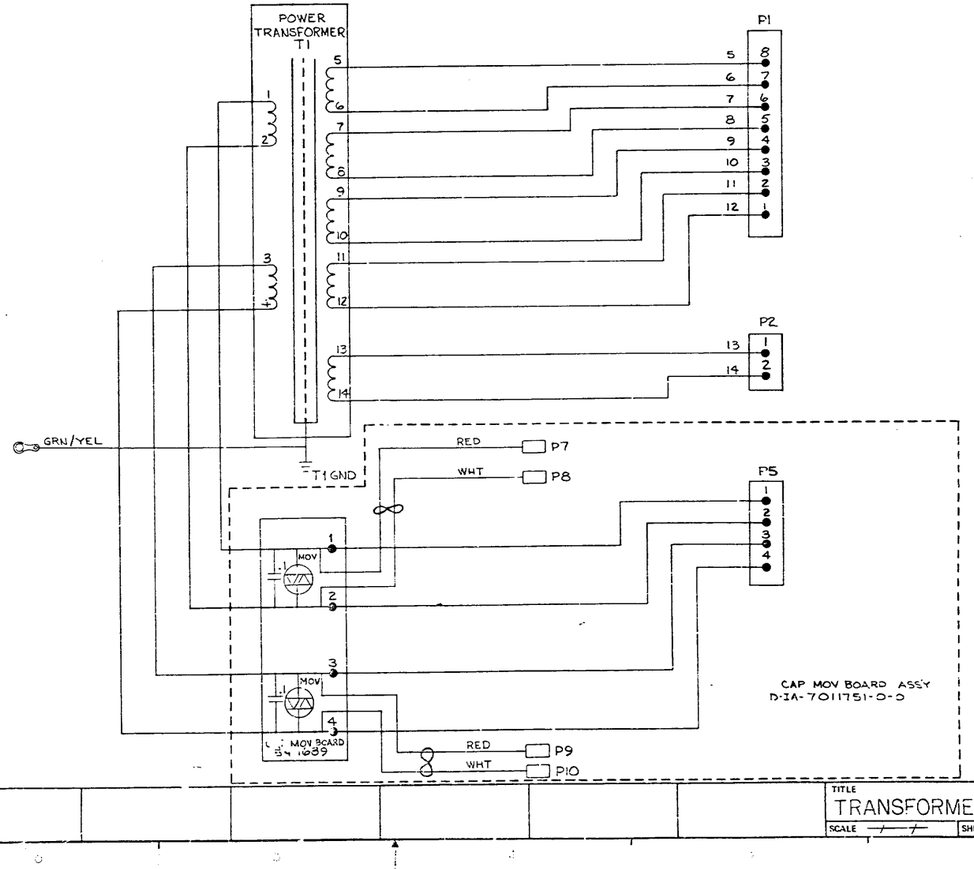
DIST.

REVISIONS	CHANGE NO.	REV.
ORIG.		
PER	7011486-00001	A

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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 4	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.	

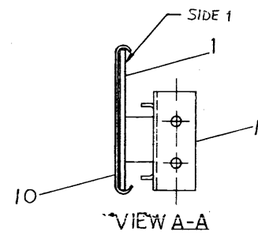
D-IA-7011486-0-0

40

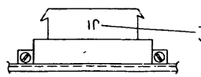
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NOTES:

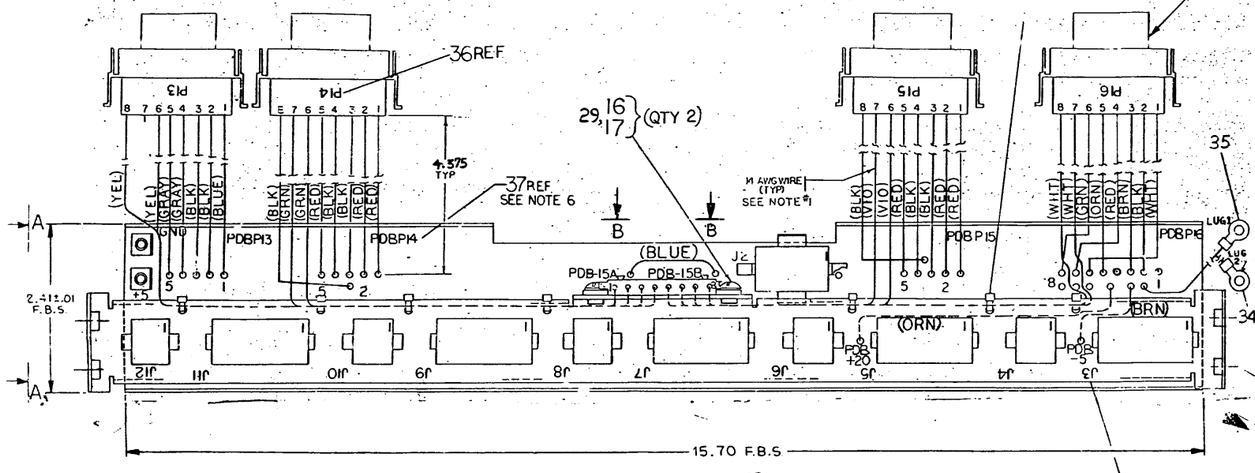
1. FOR HAND WIRING INFORMATION SEE WIRE TABLE ON SHEET 3.
2. MATE-N-LOK FIXTURES (ITEM 28) MUST BE USED DURING WAVE SOLDERING OF J2, J3-J12
3. WIRE JUMPERS ON CIRCUIT BOARD ARE PART OF SIGNAL PATHS. THEY ARE NOT FOR OPTIONS
4. PLACE DECALS (ITEM 30, 31 & 36) APPROX. AS SHOWN.
5. POWER DIST. BOARD WITH 7 #14 AWG WIRES AND BUS BAR IS THE YA VARIATION.
6. PLACE DECAL (ITEM 34) COVERING BOARD ETCH APPROX. AS SHOWN.

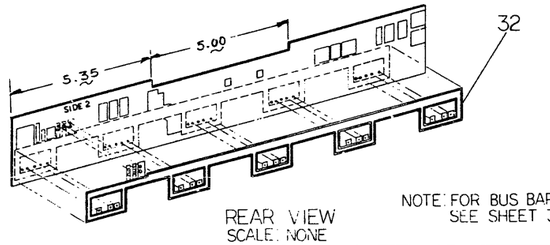


VIEW A-A



VIEW B-B
SCALE: NONE





REAR VIEW
SCALE: NONE

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.
1	1		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 LUG~~	~~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 x .3125	9006021-03	16
2	2		WASHER, INT TOOTH #6	9006633	17
A/R	A/R		WIRE #14 AWG STRD (ORN)	9107370-00	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-9305937-0-0	28
2	2		FLAT WASHER #6	9006656	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-7409873-02	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

FIRST USED ON OPTION MODEL: BA11-K

ETCH BOARD REV. D

REV.	CHANGE NO.	CHK	DATE
D	ORIGINATED	M. CARRAFIELLO	30 JAN 74
C	5410864-00001	R. WOLF	3-JAN-75
B	5410864-00004	B. MINOR	2 FEB 76
A	5410864-00006	B. MINOR	2 FEB 76
L	5410864-00008	J. MERCURI	28 SEP 77

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

SEMICONDUCTOR CONVERSION CHART

DRN. P. Bensley 6/14/74
CHK'D DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY D-UA-BA11-K-Ø
SCALE NONE
SHEET 1 OF 3

digital

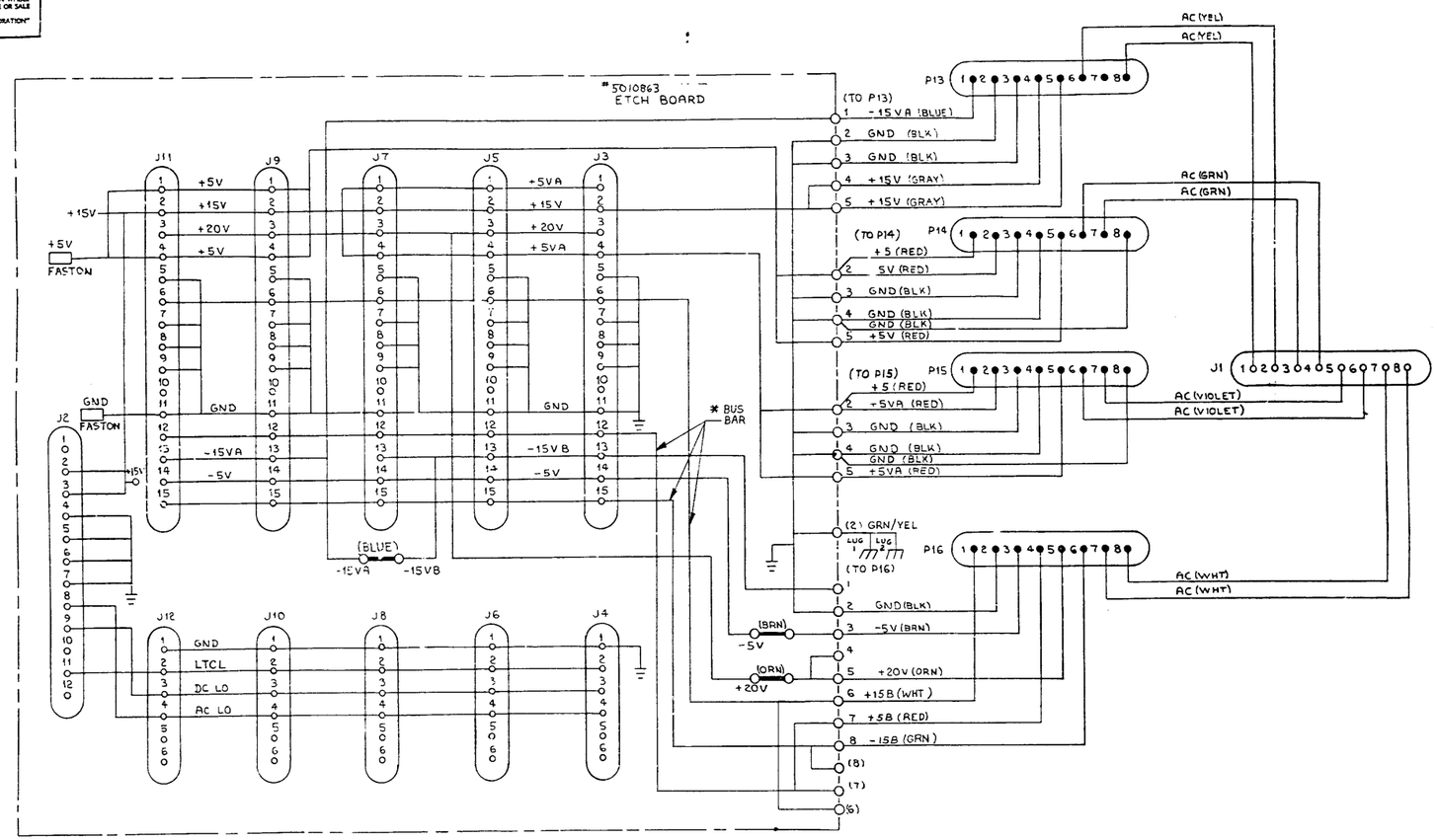
TITLE: POWER DISTRIBUTION BOARD

SIZE D | CODE CS | NUMBER 5410864-0-1 | REV. L

DIST.

461

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* 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.		

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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	PDB P16-6 J11,J9,J7,J5,J3 ALL PIN #6	+15V. B
LEVEL B	PDB P16-7 J11,J9,J7,J5,J3 ALL PIN #12	+5V
LEVEL C	PDB P16-8 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.			

DEC FORM NO

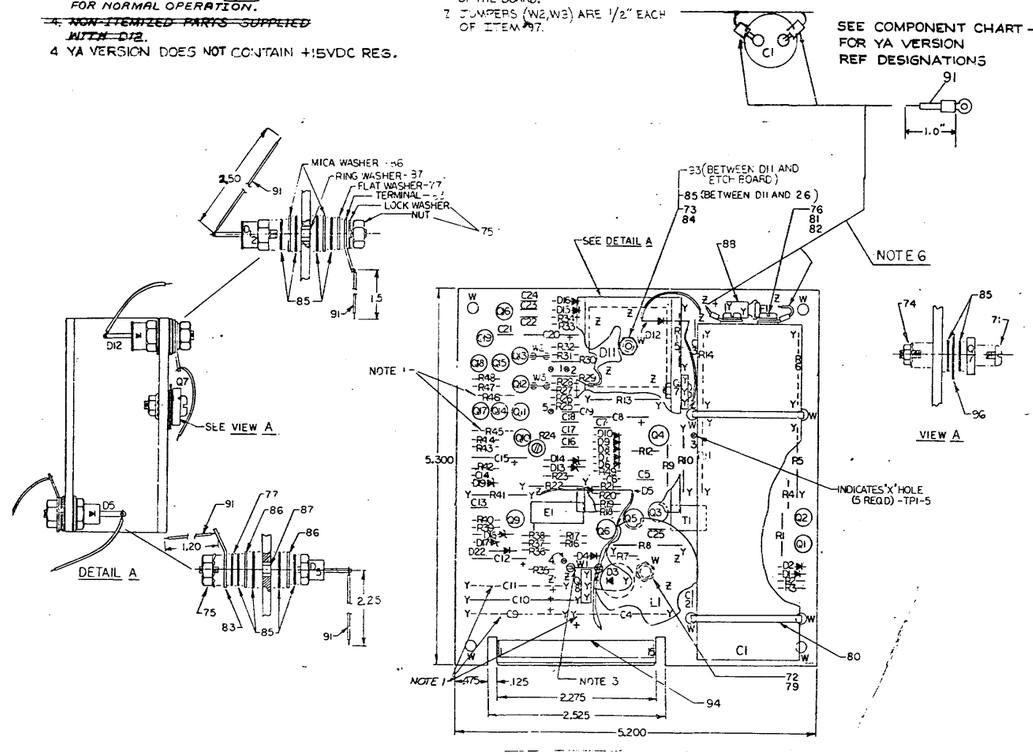
DCS 5410864-0-1 L

463

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NOTES:

1. R45, R46, 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 15V 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				
REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411986-B-5	1
REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411986-B-5	2
REF	REF		MODULE ECO HISTORY	B-MH-5411986-B-B	3
1	1		ETCHED CIRCUIT BOARD	5011085	4
0	1	C2	CAPACITOR 58PF 100V 5%	1000012	5
4	4	C16,C17,C18,C21	CAPACITOR 330PF 100V 5%	1000023	6
3	5	C3,C13,C19,C22,C23	CAPACITOR .01uf 100V 20%	1001610-01	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	C2#	CAPACITOR 1.5uf 35V 10%	1009725	10
4	4	C5,C7,C14,C24	CAPACITOR .22uf 50V -20%+80%	1010274-01	11
0	1	C1#	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 IN2978	1100134	15
0	1	D3	DIODE MR1#33B	1103341	16
7	8	D1,D6,D7,D8,D9,D15,D16,D22	DIODE D672	1105275	17
1	2	D1#,D17	DIODE IN4744	1105648	18
0	1	D4	DIODE IN4#84	1105796	19
0	1	D12	DIODE IN398#	1109440	20
0	1	D19	DIODE IN987A	1110088	21
~~2~~	~~2~~	~~D23,D21~~	~~DIODE MV5054-1 (LIGHT EMITTING)~~	~~1110324~~	~~22~~
1	1	D11	DIODE BRIDGE 200V 2#A	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%	1300202	27
0	2	R7,R49	RESISTOR 100 1/4W 5%	1300229	28
0	1	R41	RESISTOR 100 1# 5%	1300232	29
1	3	R4,R12,R49	RESISTOR 220 1/4W 5%	1300271	30
0	1	R14	RESISTOR 220 2W 10%	1300278	31
0	1	R11	RESISTOR 680 2W 5%	1300348	32
2	2	R18,R2#	RESISTOR 1K 1/4W 5%	1300365	33
0	1	R1	RESISTOR 1.5K 1/2W 5%	1300394	34
0	1	R1#	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	39
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 680 1/4W 5%	1301424	41
0	1	R16	RESISTOR 22K 1/4W 5%	1301808	42
1	1	R13	RESISTOR 1K 2W 5%	1301952	43
0	1	R9	RESISTOR 27 1/2W 5%	1302253	44
2	2	R19,R21	RESISTOR 30K 1/4W 5%	1302394	45
0	1	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%	1303062	49
1	2	R17,R28	RESISTOR 1K 1/4W 1%	1303114	50
1	1	R31	RESISTOR 2.61K 1/4W 1%	1303303	51
0	1	R42	RESISTOR 10K 1/4W 1%	1303312	52
2	2	R33,R34	RESISTOR 5.11K 1/4W 1%	1304854	53
1	1	R38	RESISTOR 9.09K 1/4W 1%	1304855	54
YA	QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED IN OPTION MODEL

PARTS LIST

ETCH BOARD REV. D

COMPONENT CHART - YA VERSION		
3	C19, C22, C23	7
1	C8	8
1	D19	14
7	D6, D7, D8, D9, D15, D16, D22	17
1	D10	18
1	R49	30
2	R44, R48	40
1	R28	50
4	Q3, Q5, Q10, Q19	63
4	Q11, Q12, Q13, Q16	66
QTY	REF. DESIGNATION	ITEM

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

REV.	CHANGE NO.	CHK	DATE	REVISION
D	5411086-0001		5-6-74	ORIGINAL
E	5411086-0002		5-17-74	
F	5411086-0003		6/8/74	
H	5411086-0000C		10/15/74	
J	5411086-0000S		6/8/75	
K	5411086-0000G		12-20-77	
L	5411086-0000T		1-19-78	

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

SEMICONDUCTOR CONVERSION CHART

DRN. G. Vincent DATE 10-7-74
CHK'D DATE
SPEC. DATE
PROJ. ENG. DATE
PROD. ENG. DATE
NEXT HIGHER ASSY

digital

TITLE PWR. LINE MONITOR/15V REG.

SIZE D | CODE CS | NUMBER 5411086-0-1 | REV. E

SCALE

SHEET 1 OF 4

DIST.

DIGITAL 5411086-0-1

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NOTES:

YA	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO.
1	1	R29	RESISTOR 3.48K 1/4W 1%	1305114	55
1	1	R28	RESISTOR 5.62K 1/4W 1%	1305128	56
1	1	R27	RESISTOR 4.99K 1/4W 1%	1305324	57
0	1	R35	RESISTOR 24.9K 1/4W 1%	1305405	58
0	1	R24	RESISTOR 200 20% 62PR	1309159-10	59
1	1	R32	RESISTOR 18.2K 1/4W 1%	1309412	60
0	2	R5,R6	RESISTOR .2 5W 5% WW	1309884	61
0	1	Q7	TRANSISTOR MJE2955	1510555	62
4	5	Q2,Q3,Q5,Q8,Q18,Q19	TRANSISTOR MPSA05	1510705	63
0	2	Q4,Q9	TRANSISTOR MPS A55	1510706	64
0	1	Q8	TRANSISTOR 2N 4441	1505867	65
4	5	Q1,Q11,Q12,Q13,Q16	TRANSISTOR 2N 4258	1509142	66
4	4	Q14,Q15,Q17,Q18	TRANSISTOR 2N 5433	1511686	67
0	1	L1	INDUCTOR, 500 uh	1611868	68
0	1	T1	TRANSFORMER	1612026	69
0	1	E1	I.C. DEC 723	1910415	70
0	1		SCREW, PHM #4-40 X 7/16 LG.	9008012-1	71
0	1		SCREW, PHM #8-32 X 1/4 LG.	9008020-1	72
0	1		SCREW, PHM #6-32 X 7/8 LG.	9006027-1	73
0	1		KEP NUT #4-40	9008557	74
0	2		KEP NUT #10-32	9006586	75
2	2		WASHER, INTLKWR #10	9006635	76
0	2		WASHER, FLAT	9006666	77
0	2	(W1)	SPLIT LUG	9006735	78
0	1		SPACER, 1/4AF X 1/2	9006861	79
4	4		CABLE TIE	9007880	80
2	2		TERMINAL	9007330	81
2	2		SCREW, PHM #10-32 X 1/4 LG.	9008007-1	82
0	2		TERMINAL	9008150	83
0	1		KEP NUT #6-32	9008185	84
0	A/R		COMPOUND, THERMAL JOINT	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, 390, 2W 10%	130/880	89
0	1	W1	JUMPER	9009185	90
2	A/R		WIRE #18 STRANDED BLK	9107350-0-0	91
REF	REF		MODULE TEST PROCEDURE	A-SP-1145-TA-2	92
1	1		WASHER, RING	9006713	93
1	1		.010 INCH SHIM	7413721-0-0	94
REF	REF		ENG. SPEC-AND TEST PROC.	A-SP-5411086-0-0	95
0	1		INSULATOR, THERMA FILM	9009597	96
A/R	A/R	W2,W3	WIRE #22 BLK	9107350-0-0	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

REV	CHANGE NO	DEC NO.	EIA NO.	DEC NO.	EIA NO.

CHK REVISIONS

SEMICONDUCTOR CONVERSION CHART

DRN. G. Vincent DATE 10-9-74
CHK D. [illegible] DATE 10-17-74
ENG. [illegible] DATE 11/21/74
PROJ. ENGR. [illegible] DATE 11/21/74
PROD. [illegible] DATE 11/4/74
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION

TITLE PWR. LINE MONITOR/15V REG.

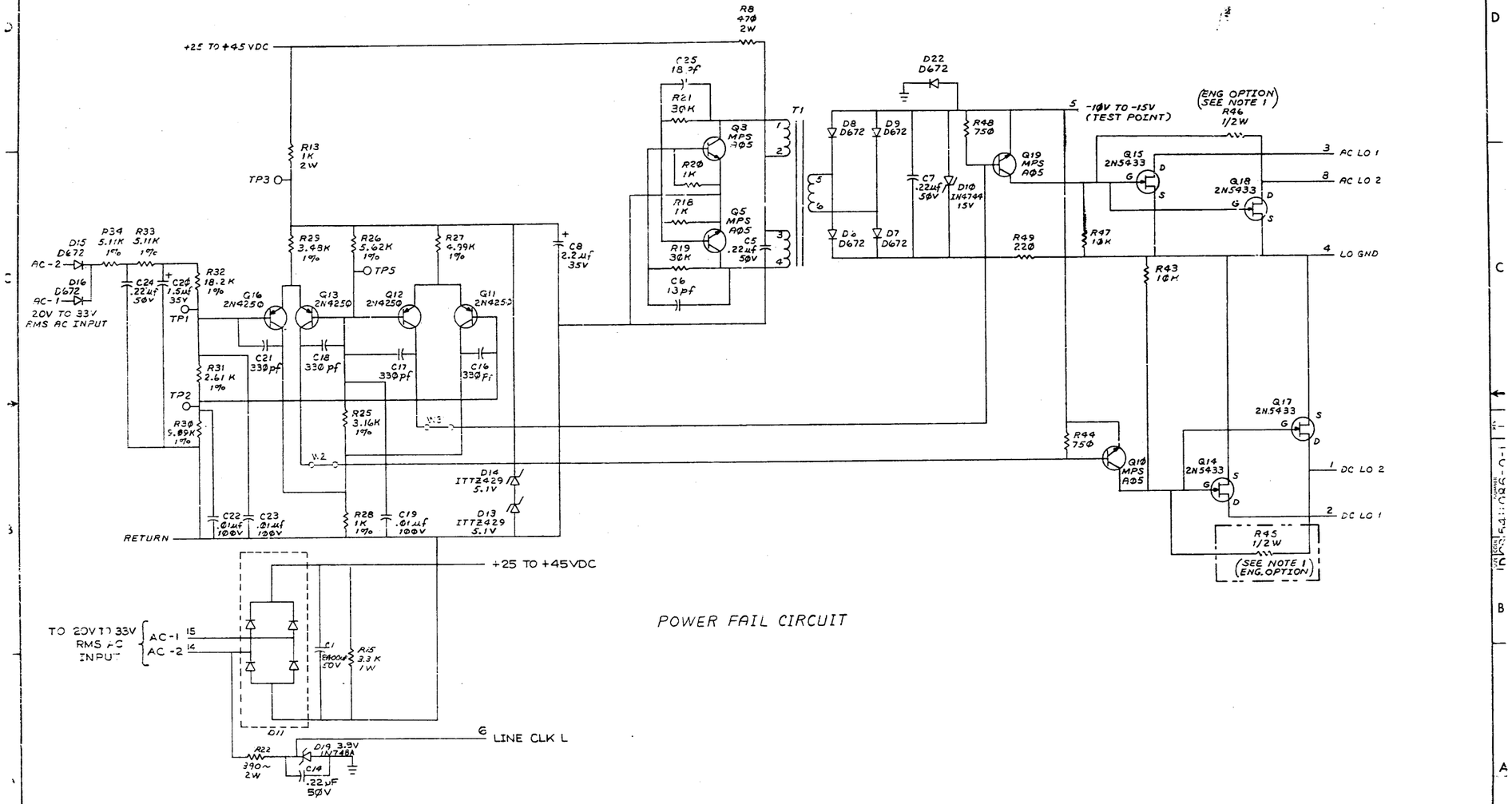
SIZE D | CODE CS | NUMBER 5411086-0-1 | REV. L

SCALE

SHEET 2 OF 4

DIST.

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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.	

MICROFILMED

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+25 TO +45 VDC

F1

25 - 45 VDC

C3 .01uf

R14 22Ω 2W, 10%

D12 IN3880

L1 500uH

Q7 MJE 3055

Q4 MPS A5C

R9 27 1/2W

R11 6.8Ω 2W

R12 22Ω

R10 2.2K 1W, 10%

TP9

+15V

4.28V

R35 24.9K 1%

D3 MR1033B

D5 IN2970B 6.8V

R41 100 1W

D4 TN4004

9 10 +15VDC ± 5% @ 4A MAX (SEE NOTE 2)

7 +8VDC ± 10% @ 1A MAX (SEE NOTE 2)

W1 (SEE NOTE 3)

D17 IN4794 15V ± 10%

C12 2.2uf 35V

1/2 723C E1

REF

COMP

R36 511 1%

R24 200 4.28V

R17 1K 1%

R39 909 1%

C15 2.2uf 35V

R16 22K 1%

R23 47

Q6 MPS A05

R7 100

D1 D672

C2 56pf

R2 75Ω

D2 IN748A 3.9V

R3 3.3K

Q3 2N4250

R1 1.5K 1/2W

R42 10K 1%

Q2 MPS A05

R4 22Ω

R6 .2 5W

R5 .2 5W

R38 68Ω

R37 10

Q5 MPS A55

Q8 2N4441

C13 .01uf

R40 100

D18 IN967A 8V

11 GND

12 GND

13 GND

C10 500uf 25V

C4 50uf 50V

C9 50uf 50V

C11 50uf 50V

SEE NOTE #1

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 —H— SHEET 1 OF 4	DIST.			

467

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FIELD MAINTENANCE PRINT SET

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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

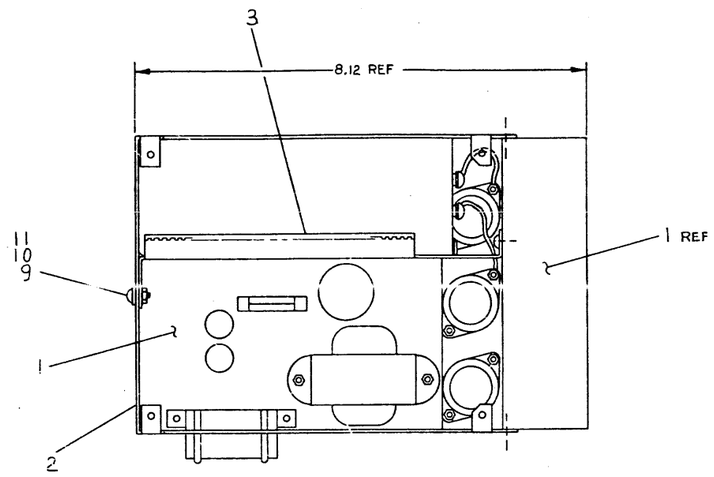
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1134A	

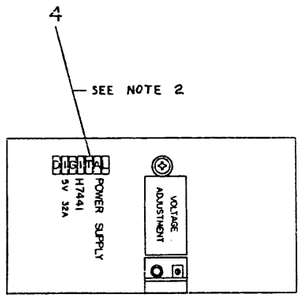
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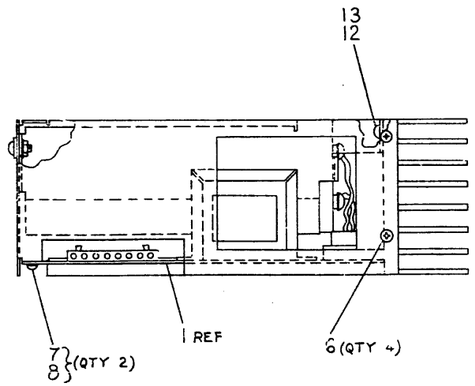
NOTES:

~~1. ATTACH (RED) WIRE FROM ITEM (#1) REG. 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.







ITEM NO.	DESCRIPTION	DWG./PART NO.
1	WASHER, LOCK INT. TOOTH #6	9006633
1	SCR, PHL PAN HD. #6-32X.38	9006022-01
1	NUT, KEPS #6-32X.31	9006560
1	WASHER, FLAT #6	9006659
1	SCR, PHL PAN HD. #6-32X.31	9006021-01
2	WASHER FLAT #4	9008172
2	SCR, PHL. PAN HD #4-40X.25	9008301-01
4	SCR, SELF TAPPING #4-40X.31	9009142-2
~~1~~	~~CAPACITOR, 24X, C, 50 VDC~~	~~1010703-00~~
1	DECAL	B-1A-7416945-10
1	BRACKET, CAPACITOR	D-1A-7417543-0-0
1	BRACKET, REGULATOR	D-1A-5309756-09
1	REGULATOR, +5V, 32 A	D-UA-541244i-0-0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: OVER 0 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 480	OVER 480 TO 1200	OVER 1200 TO 4800
SURFACE QUALITY IN MICROINCHES	MEDIUM	±.005	±.008	±.012	±.016	±.024	±.04
	PREFERRED	±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRN. [illegible] MAR 76
CHK'D [illegible] MAR 76
ENG. [illegible] MAR 76
PROJ. ENG. [illegible] MAR 76
PROD. [illegible]
NEXT HIGHER ASSY.
8-DD-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. C

DIST.

REVISIONS			
DATE	CHANGE NO.		REV.
10-MAY-77	H7441-00001		A
6 FEB 77	H7441-00003		B
21-MAR-77	H7441-00004		C

DEC FORM NO.

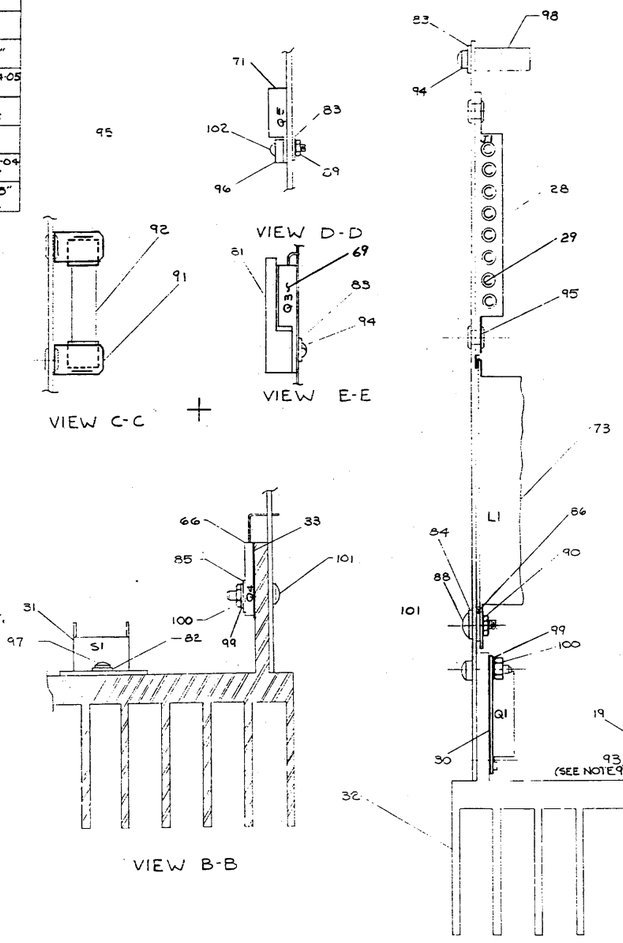
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WIRE & BUS STRAP RUNS

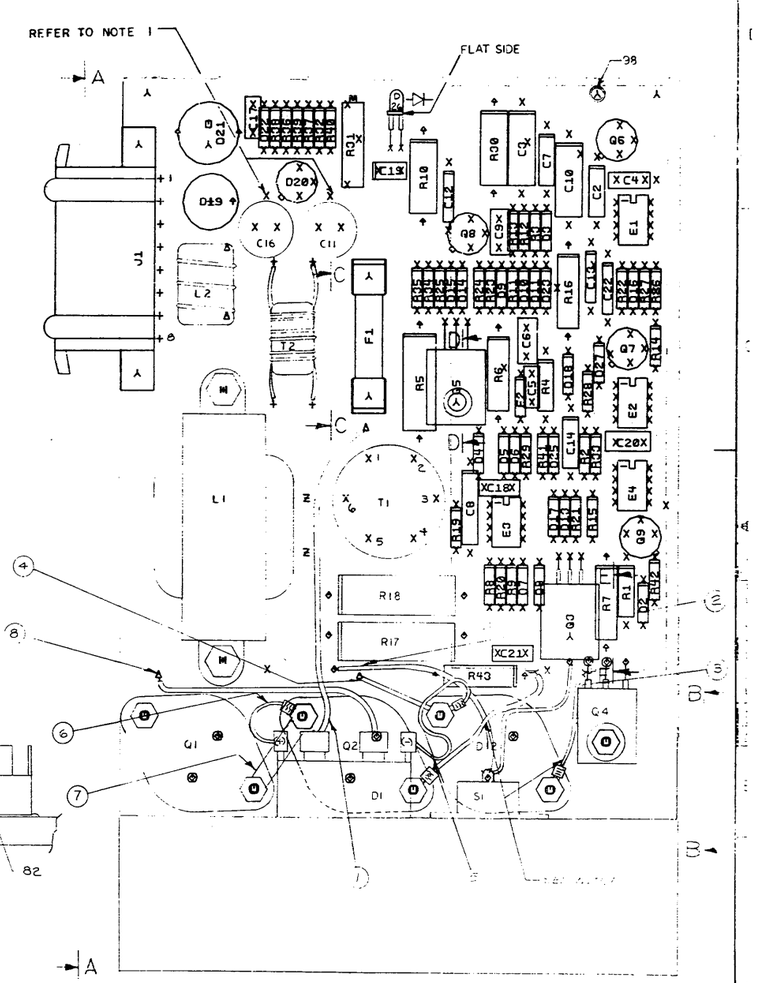
NO.	FROM	TO	WIRE OR BUS LENGTH
①	FEEDTHRU AT F1	TERMINAL D1	#14 AWG 4" SEE NOTE 3
②	S1	FEEDTHRU SHOWN	#18 AWG 3"
③	S1	FEEDTHRU SHOWN	#18 AWG 2.5"
④	D12	FEEDTHRU SHOWN	DEC PT #12140T4-05 SEE NOTE 4
⑤	TERMINAL D1	D12	#14 AWG 3" SEE NOTE 5
⑥	TERMINAL D1	Q2	#14 AWG 2" SEE NOTE 6
⑦	Q2	Q1	DEC PT #12140T4-04 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 #26) 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 #25) IS MOUNTED UNDER RING LUG OF Q2 AND ON CASE OF Q1.
8. TORQUE HARDWARE ON Q1, Q2, Q4 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.

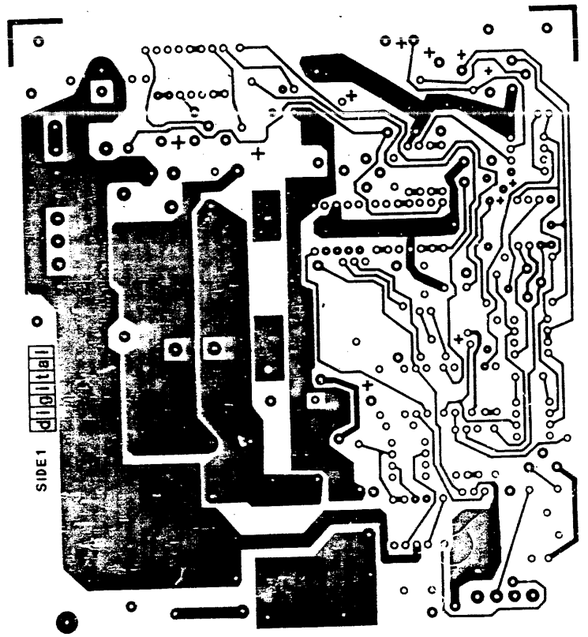
NOTES:
1. INDICATED DRILL POINTS AT C11 AND C16 SHOULD NOT BE USED FOR DRILL ALIGNMENT DURING MANUFACTURE. THESE OVERSIZED PADS WILL NOT CENTER WITH DRILL BORING.



COMPONENT SIDE VIEW



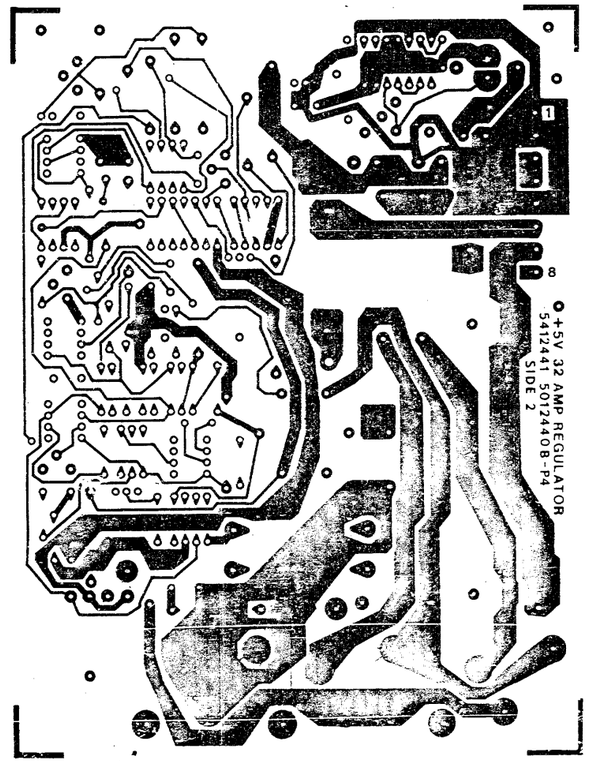
CHG/HANGE NO	REV
5412141-00007	J



REVISIONS		
CHK	CHANGE NO	REV

-5V, 32 AMP. REGULATOR D UA 5412441-2-Ø

471



REVISIONS		
LTR	CHANGE NO	REV

-5V, 32 AMP REGULATOR D-A-54-244-Ø-Ø J

2/1 5 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

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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 OP 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	

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE PARTS LIST +5V 32 AMP REGULATOR	SIZE K	CODE PL	DOCUMENT NUMBER 5412441-0-0	REV J

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J1 F1 D1 MDA990-3 C1 2400 MF T1 S1 NC Q1 2N5302 Q2 2N5302 T2 D7 A114B D8 A114B R5 .25 R7 3.3W Q3 D45H8 D4 D672 D5 D672 D6 D672 R6 130 C21 .01UF D12 R43 10 1W L1 L2 R13 7.5K R20 56.2K C18 .01MF R8 226 P1 .26 R17 .215W R18 .215W 301 E3 R21 1K R42 10K D13 D672 C11 560MF C16 1200MF U13 MR1333B R36 3Ø D22 1N752A D26 HV 5454 C19 .47MF D20 2N5962 D21 C22RXFS R33 12Ω R37 12Ω C17 .01MF R39 3Ω R40 39Ø J1

R4 47 C5 .01MF F2 5A Q5 D44C11 D9 D672 D10 D672 D23 D672 R16 220 1W R1 1.5K Q4 MJE3055 D2 1N759A R10 .39 2W R11 270 R30 150 1W Q9 2N5433

C2 2.2MF C22 1UF D11 D672 R14 10K R22 10K D3 D672 R3 3.65K R2 1.21K R12 4.7K Q6 AD5 R13 1K C6 470PF D27 672 R15 10K 555 E2 Q7 AD5 D16 D672 R26 8.2K R27 1K C10 .015MF C9 220PF Q8 A55 R23 330 R24 150 D14 D672 D15 D672 R25 8.2K R28 680 C13 1 MF R29 68K R34 150 C12 .68UF R35 3.3K 555 E1 C3 .015MF C4 .01MF CTL GND

C7 2.2MF D17 D672 D25 D672 C8 100UF 301 E4 C20 33PF R41 4.7K C14 1MF R31 1K R32 2.49K R33 536 D19 1N823

REVISION HISTORY			
CHK	ENGINEERING ORDER NO.	REV.	
	5412441-00001	A	R. DAY 4-23-76
	5412441-00002	B	NOT RELEASED R. DAY 6-21-77
	5412441-00003	C	R. DAY 13 MAR 77
	5412441-00004	D	R. DAY 13 MAY 77
	5412441-00006	E	E. CROCKER 13 OCT 77
	5412441-00007	F	B. GIST 13 DEC 77
	5412441-00008	H	B. GIST 13.12.77

DRN.			FIRST USED ON H7441 digital
CHK'D			
ENG.			TITLE +5V 32 AMF REGULATOR
PROJ. ENGR.			
PROD.			
NEXT HIGHER ASSY.			SIZE D CODE CS NUMBER 5412441-0-1 REV. H
SCALE			DIST.
SHEET	1 OF 1		

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MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

	SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H745-Ø		
CIRCUIT SCHEMATIC	D-CS-H745-Ø-1	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 / NUMBER H745-Ø	REV R
FIELD SERV. A. ZINS	DATE 2-25-72	DIST	

DEC-16-1325-1062-1A-MY2

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

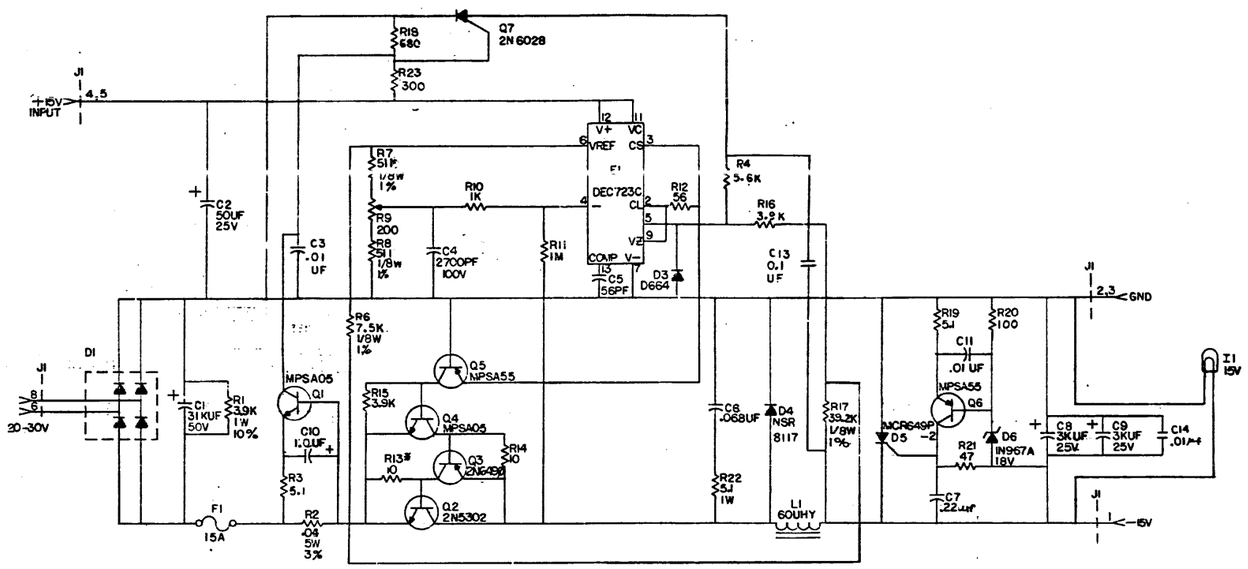
digital

TITLE -15V REGULATOR

SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER H745-Ø | REV R

DRB 108A

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* FUSIBLE
UNLESS OTHERWISE INDICATED:
RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV E

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	IN 3606	D45H8	
NSR 8117		2N 6028	
MCR 849P – 2			
IN 967A	SAME		
2N 5302			
MPS A05			
MPS A55			

A. LAHON 11-3-71 — ECO-0021 — Changed to — Initial ECO — REV

DRW. Roger J Poulette 11-4-71
CHK'D. Randy Moore 11-4-71
ENG. [illegible] 11/72
PROJ. MGR. [illegible] 1/5/72
PROG. [illegible] 1/31/72
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 1

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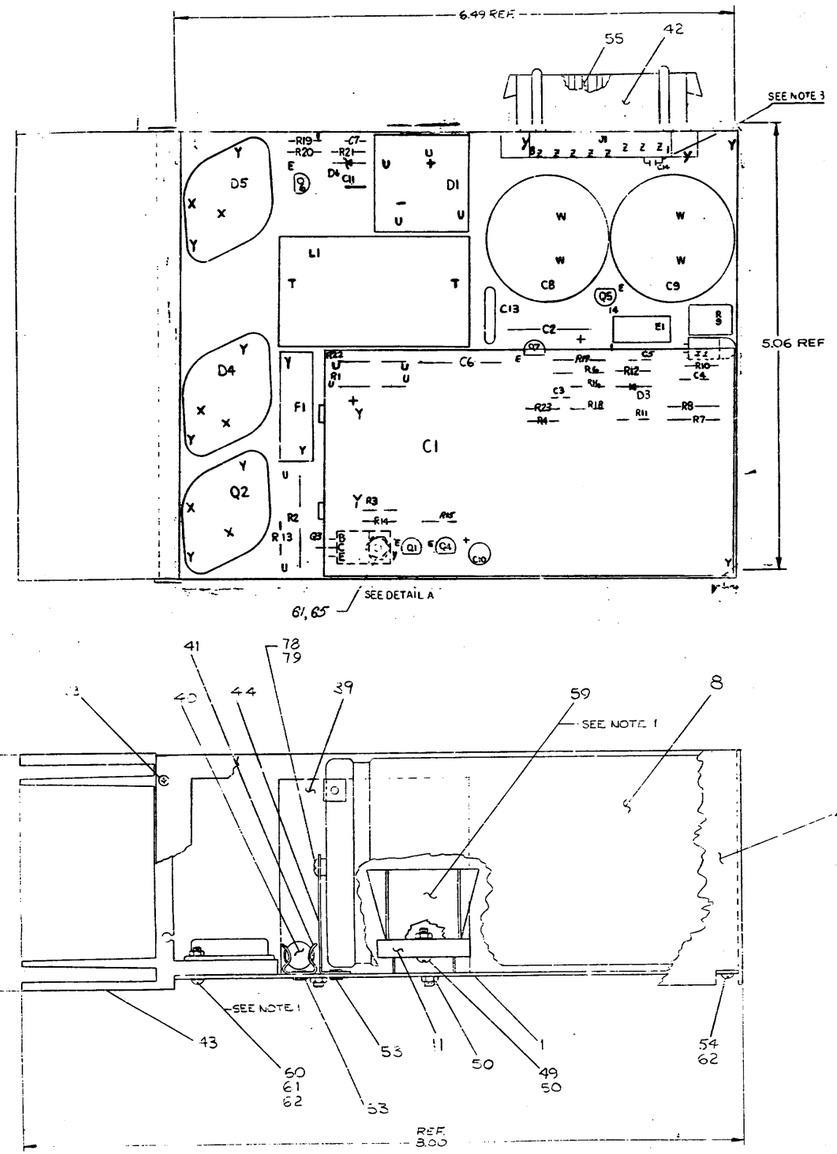
TITLE: –15V REG.

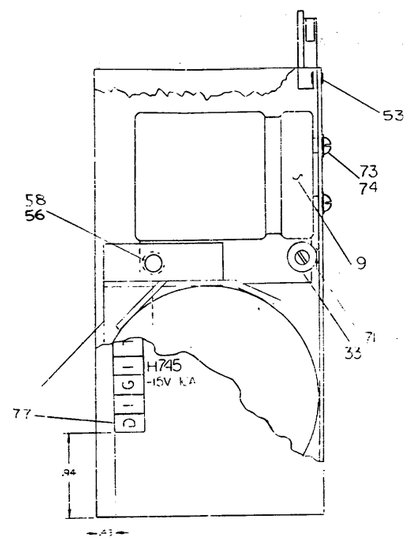
SIZE D | CODE CS | NUMBER H745-0-1 | REV E

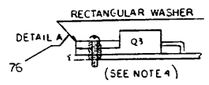
DIST.

H745-0-1

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NOTE:
3. INSERT C14 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS 1-2.

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 (D5) BRIDGE AND ITEM #59 (HEAT SINK).
2. 1010030 MAY BE SUBSTITUTED FOR C13 (1000030).

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.

		ASSY/DRILLING HOLE LAYOUT	D-AM-H745-0-5	70
1		PACKING INSTRUCTIONS	API-3700074-0-0	69
1	R18	RES. 680 ¼W 5%	1301424	68
1	R23	RES. 300 ¼W 5%	1301425	67
1	C13 (SEE NOTE 2)	CAP. 0.1 UF 100V 20%	1000030	66
1		SCR PH 8#-40 X 5/16 LG	9009010-1	65
1	J1	LAMP 15V	1214356	64
4		SCR, PPH 8#-32 X 5/16 LG. SELF TAPPING	9008942	63
6		L. WASHER #4	9006532	62
7		HEX NUTS #4-40	9008557	61
6		SCR PHL PAN HD #4-40 X 3/16 LG	9008014	60
1		HEAT SINK BRIDGE RECT	1210307	59
1		SCR PHL PAN HD #8-32 X 1 LG	9009009-1	58
1		SCR PHL FLT HD #6-32 X 1/4 LG	9004020-02	57
1		WASHER LOCK #6	9004633	56
8		CONTACT FEMALE	1209408	55
2		SCR PHL PAN HD #4-40 X 3/16 LG	9008301-1	54
6		EYELET 093-4-4	9005050	53
3		INSULATOR WASHER	9008721	52
1.42		THERMAL COMPOUND	9010208	51
3		HEX NUTS 8-32	9008935	50
1		SCREW PHL PAN HD 8-32 X 3/8 LG	9004625-01	49
4		SCREW PHL PAN HD 8-32 X 1/2 LG	9004008-5	48
1		GROMMET RUBBER	0-05-0208050-0-0	47
1		INSULATOR SHEET	0-14-0208038-0-	46
1		2.5 HOLDER CAPACITOR	C-05-0208033-0-0	45
2		STRAP CAPACITOR	C-05-0208033-0-0	44
1		HEAT SINK	0-05-1210032-0-0	43
1	J1	CONN. MALE-W-LOCK 8 PIN	1208048	42
2		FUSE CLIP	9007281	41
1	F1	FUSE	1213237-01	40
1	L1	REACTOR 85 MH	1210209	39
1	E1	ENCAPSULATED CIRCUIT H1225C	1208045	38
1	Q5	TRANSISTOR 2N6498	1512652-01	37
2	Q3, Q4	TRANSISTOR MJE	1510208	36
2	Q1, Q6	TRANSISTOR MJE	1510208	35
1	Q2	TRANSISTOR 2N3302	1508038	34
1	R8	RES. VARIABLE 200 Ω, 20%	1210252	33
1	R20	RES. 100 Ω ¼W 5%	1300229	32
1	R21	RES. 1 MEG ¼W 5%	1305-05	31
1	R4	RES. 5.6 K ½ W 5%	1301274	30
2	R15, R16	RES 3.9K ¼W 5%	1300444	29
2	R19, R3	RES 5.1 ¼W 5%	1300422	28
1	R12	RES 56 ¼W 5%	1302602	27
1	R29	RES 47 ¼W 5%	1302202	26
1	R17	RES 39.2K Y8W 1%	1305276-1	25
1	R10, R14	RES 10 ¼W 5%	1303167	24
1	R6	RES 7.5K 1.8W 1%	1305322	23
2	R7, R9	RES 5K 1.8W 1%	1305411	22
1	R22	RES 5.1 1% 5%	1302138	21
1	R24	RES 100 ¼W 5%	1300479	20
1	R2	RES 0.4 ohm 3%	1341362-00	19
1	R1	RES 3.9K 1% 10%	1302927	18
1	CR	BRIDGE IN36	1410088	17
1	D5	SCR MCR6406-2	1109405	16
1	D4	DIODE MSR1117	1116215	15
1	D1	DIODE D64	1100114	14
1	Q1	TRANSISTOR UNI JUNCTION 2N6028	1510277	13
1	G1	DIODE BR100	1110214	12
1	C12	CAP .05Ø .20/100	1004-02	11
2	C8, C9	CAP 3.0 M UF 25V	1010288	10
1	C1	CAP 31K UF 50V	1010258	9
1	C10	CAP 1.0 UF 25V	1010266-01	8
1	C2	CAP 50 UF 25V -10+75%	1001256	7
1	C6	CAP .068 UF 100V 10%	1002052	6
1	C4	CAP 2700PF 100V 5%	1001637	5
3	C11, C3, C14	CAP .01UF 100V 20%	1001610	4
1	C5	CAP .1UF 100V 20%	1001652	3
		ETCHED CIRCUIT BOARD	SC-3765	2
		RELAY SEE SCHEMATIC	K745-0-1	1
		CIRCUIT SCHEMATIC	SCHEMATIC-1	0
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
ETCH BOARD REV	E			

1		DECAL (H745)	7416945-02	80
2		WASHER INT. TOOTH #10	9006635	79
2		SCREW PAN 10-32 x 5/16 LG	9009469-01	78
1	C7	CAP .22 UF 50V	1010274	77
1		WASHER, RECTANGULAR	9009769	76
1	R13	RES 10Ω 2W, FUSIBLE	1312496-00	75
4		LOCKWASHER #10 INT	9006635	74
4		SCR #10-32X.31 SLOTTED FIN HD.	9009465-01	73
				72
1		TRANSPAD	9006206	71

IC TYPE	GND	+15V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

ITEM NO	AWG	FROM PT	TO PT
JUMPER LIST			

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D66	IN3606		
SEMICONDUCTOR CONVERSION CHART			

DRAWN		EQUIPMENT CORPORATION	
CHECKED		TITLE	-15 REGULATOR
ENGR APPR.			
MFG APPR.			
PROJECT LDR			
QUALITY			
SCALE		SIZE	E
SHEET	1 OF 1	DWG NO.	H745-0-0
		REV	JA

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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 Hamm	DATE 3-14-74	SIZE B / CODE DD / NUMBER H754-Ø / REV B
FIELD SERV. Walt Aubrey	DATE 7/25/74	DIST

DEC 10-12251-10X2-1A-R972

DRB 106

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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

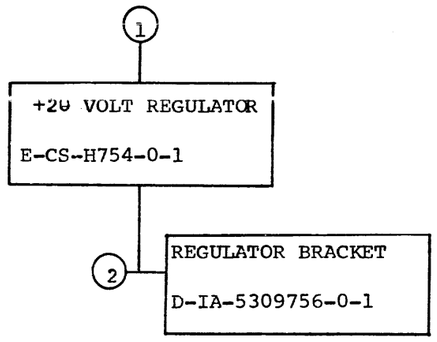
CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-CS-H754-0-1	#	2	+20 VOLT REGULATOR	
			D-PS-1210737-0-0		1	HEAT SINK REGULATOR	
			C-IA-5309758-0-0		1	CAPACITOR BRACKET	
		2	D-IA-5409756-0-0		1	BRACKET REGULATOR	
			A-SS-5309756-0-1		1	SILK SCREEN	
			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

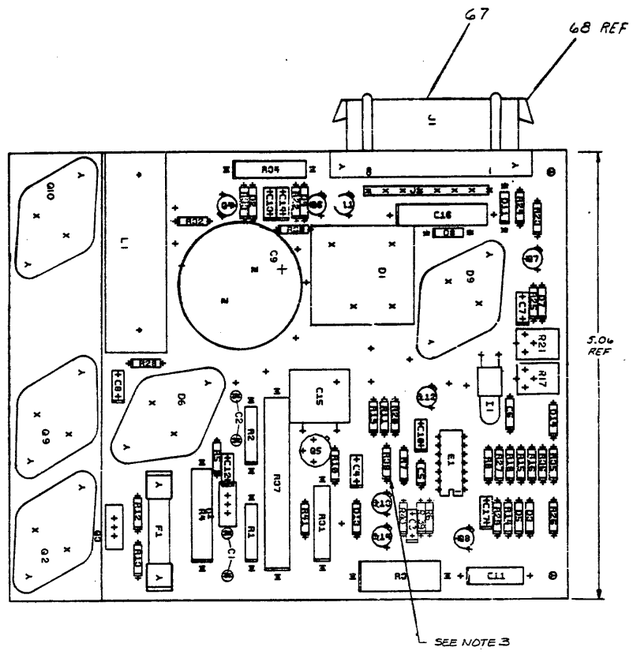
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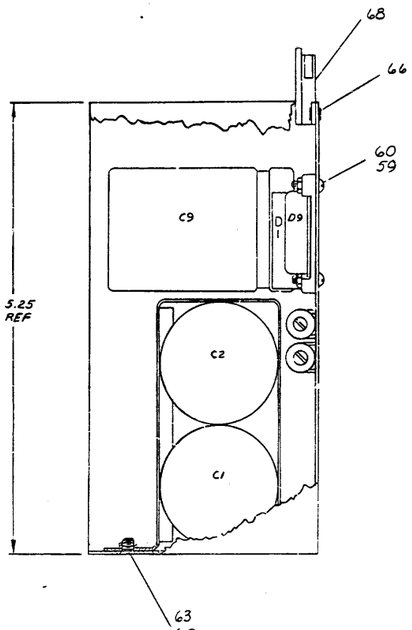


TITLE					
+20 VOLT REGULATOR	SHEET 3 OF 3	SIZE B	CODE DD	NUMBER H754-Ø	REV 5

DRB 107

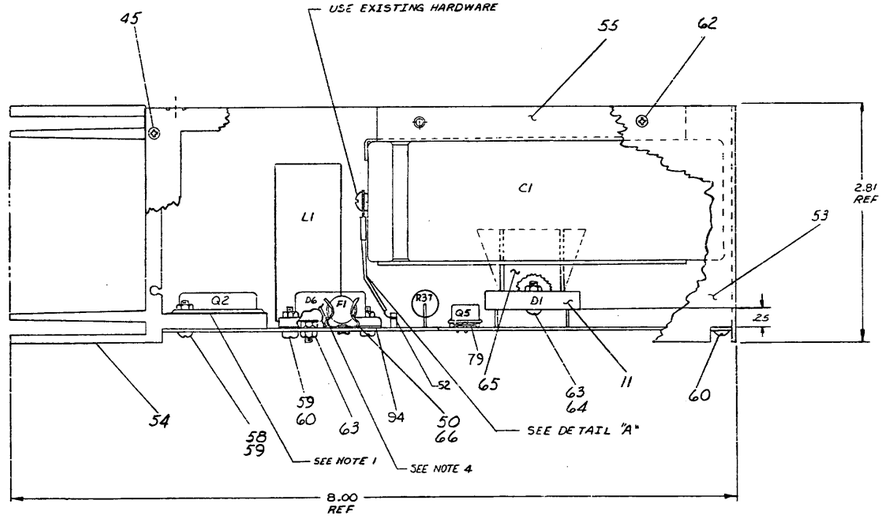
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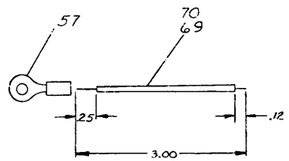




NOTES:

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, ±3%.
3. ADD INSULATION (9107256-11) TO BOTH LEADS OF R39 TO AVOID SHORT TO ETCH.
4. APPLY ITEM #71 (COMPOUND) ON BOTH SIDES OF ITEM #94 (MICA WASHER) FOR D6.





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	9009663	94
1	C7	CAP .22 uF 50V	1010274	93
1	Q1	TRANSISTOR 2N4920-1	1509405-1	92
1	R13	RES.27Ω 1/4W 5% FUSIBLE	1312496-01	91
AR		INSULATION	9107256-11	90
1	R39	RES 220 1/4W 5%	1302271	89
1	R37	RES. .1 10W 1%	1309108	88
1	R38	RES.1K 1% THERMISTOR	1310071	87
1	C16	CAP. 1000uF 25V	1002781	86
1	Q10	TRANSISTOR MJ900	1310712	85
1	Q9	TRANSISTOR MJ3000	1511449	84
1	C13	CAP. 180 PF 100V ±2% DM	1000218	83
				82
2	Q4, Q14	TRANSISTOR MPS A05	1310785	81
1	D2	DIODE 2003	1100100	80
2	(UNDER Q5 & R6)	TRANSPAD	9002206	79
1	R31	RES .15Ω 2W 10%	1310147	78
2	C14, C17	CAP. 1000 PF, 100V, 5%, DM	1899842	77
1	R22	RES 309Ω 1/8W 1%	1305125	76
2	R33, R8	RES .78K 1/8W 1%	1302212	75
1	R11	RES 15K 1/8W 5%	1300596	74
1	R20	RES 470Ω 1/4W 5%	1300516	73
				72
2		WASHER INSULATOR	9009781	72
A/R		COMPOUND, THERMAL	9009248	71
A/R		WIRE, #18AWG, STRD, PVC INS (BLK)	9107388-00	70
A/R		WIRE #18AWG, STRD, PVC INS (RED)	9107388-02	69
1	J1	WIRE-W-LOCK CONN 8 PIN	1200848	68
8		PIN, SOCKET, MATE-N-LOCK	1200498	67
4		STEEL ST. OFF	9009230	66
1		HEAT SINK, BRIDGE RECTIFIER	1210207	65
1		SCR. PHL PAN HD 8-32 X ⅜	9006024-1	64
5		KEPS NUT 8-32 SS	9006185	63
2		SCR PHL FLAT HD 8-32 X 5/16	9006021-2	62
3		SCR PHL PAN HD 4-40 X ¼	9006011-2	61
6		SCR PHL PAN HD 4-40 X 3/8	9006011-1	60
10		KEPS NUT 4-40	9006547	59
5		SCR PHL PAN HD 4-40 X ¼	9006013-1	58
4		TERMINAL SOLDERLESS, #10	9007300	57
1		CHASSIS	C-CS-H754-0-0	56
1		1.5 CAP BRKT	C-18-5308756-0-0	55
1		HEAT SINK REGULATOR	D-PS-1210737-0-0	54
1		BRACKET REG	D-18-5308758-A-0	53
4		SPLIT LUG	9006736	52
1	Q8	TRANSISTOR 2N6026	19-19677	51
2		FUSE CLIP	9007200	50
1	F1	FUSE 1¼ AMP	1213237-000	49
1	L1	REACTOR 170 uHY	19-12968	48
1	E1	INTEGRATED CIRCUIT 723	19-10415	47
6	Q7,Q6,Q11,Q12, Q13	TRANSISTOR MPS A93	19-10708	46
4		SCR PHL FLAT HD 6-32 SELF TAPPING	9008142-02	45
1	Q5	TRANSISTOR 2N2906	19 03708	44
1	Q2	TRANSISTOR 2N5038	19-17863	43
1	Q3	TRANSISTOR 2N6491	1513704	42
2	R17, R21	RES VARIABLE 200 ±20% POT	13-10862	41
2	R23, R36	RES 5.1 1/2 5%	13-03427	40
1	R18	RES.237 1/8W 1%	1304857	39
				38
2	R14, R5	RES 1/2 5% 27	13-01527	37
1	R10	RES 150 1/2 5%	13-00258	36
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-H754-0-5	35
2	R7, R40	RES 2K 1/4W 5%	1302268	34
2	R6, R19	RES 12K 1/2 5%	13-00468	33
6	R15, R25, R30, R24, R35, R41	RES 100 1/2 5%	13-00228	32
1	R12	RES 6.8Ω 1/4W 5% FUSIBLE	1312496-02	31
				30
1	R27	RES 10K 1/2W 1%	1303312	29
1	R32	RES.3K1 1/8W 1%	13-00444	28
1	R16	RES.287Ω 1/8W 1%	13-05124	27
1	R29	RES. 10K 1/2 5%	13-02485	26
1	C11	CAP. 2.2 uF 35V 10% S. TANT	10-02431	25
1	R4	RES 5W 3% .03 Ω	1310976-1	24
1	R3	RES 1.5K 5W 5%	13-01897	23
1	R34	RES.47 2W 5%	13-05258	22
1	R26	RES 1.5K 1/2 5%	13-00591	21
2	R1, R2	RES 3.3K 1/2 10%	13-02671	20
1	R28	RES 10Ω 1/4W, 5%	1303137	19
2	D11, D8	DIODE 1N5624	1110420	18
				17
1	D14	DIODE 752A ZENER	1102308	16
1	D9	DIODE 1N 548 P-2	11-17465	15
1	D7	DIODE 1N978, 24 V	11-17858	14
1	D6	DIODE, 20 AMP FAST REC	11-10715	13
1	D3	DIODE 1N4744, ZENER, 15V	11-05648	12
1	D1	DIODE KBS 2514	11-10714	11
3	D5, D13, D4	DIODE D554	11-05114	10
1	C15	CAP .1 UF 100 V 20% DISC	1000030	9
1	C8	CAP 2.2K UF 30V 6% AL. EL.	10-10859	8
4	C5, C9, C4, C10,	CAP .01UF 50V 20% DISC.	10-01810-01	7
1	C6	CAP 2.7 50PF 100V 5% DM	10-01837	6
1	C4	CAP 150PF 100V 5% DM	10-00012	5
1	E1	LAMP, 28V, 40 MA	17-11239	4
1	C12	CAP .1 uF 20V DISC	10-01724	3
2	C1, C2	CAP 4.7 UF 50V 10% AL. EL.	10-11763	2
1		ETCHED CIRCUIT BOARD	5103131	1
		WIRE LIST HISTORY	B-WH-H754-0-6	SHT
		X-Y COORDINATE HOLE LOCATION	X-CO-H754-0-4	SHT

PARTS LIST

ETCH BOARD REV J

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

IC PIN LOCATIONS

ITEM NO.	AWG	FROM PT	TO PT

JUMPER LIST

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D554	1N3606		

SEMICONDUCTOR CONVERSION CHART

DRAWN 4-23-72 A. BAGGIO
TRACED 4-27-72 A. BAGGIO
CHECKED 4-28-72 A. BAGGIO
ENGR APPD 4-28-72 A. BAGGIO
MFG APPD 4-28-72 A. BAGGIO
QA APPD 4-28-72 A. BAGGIO
NEXT HIGHER ASSY

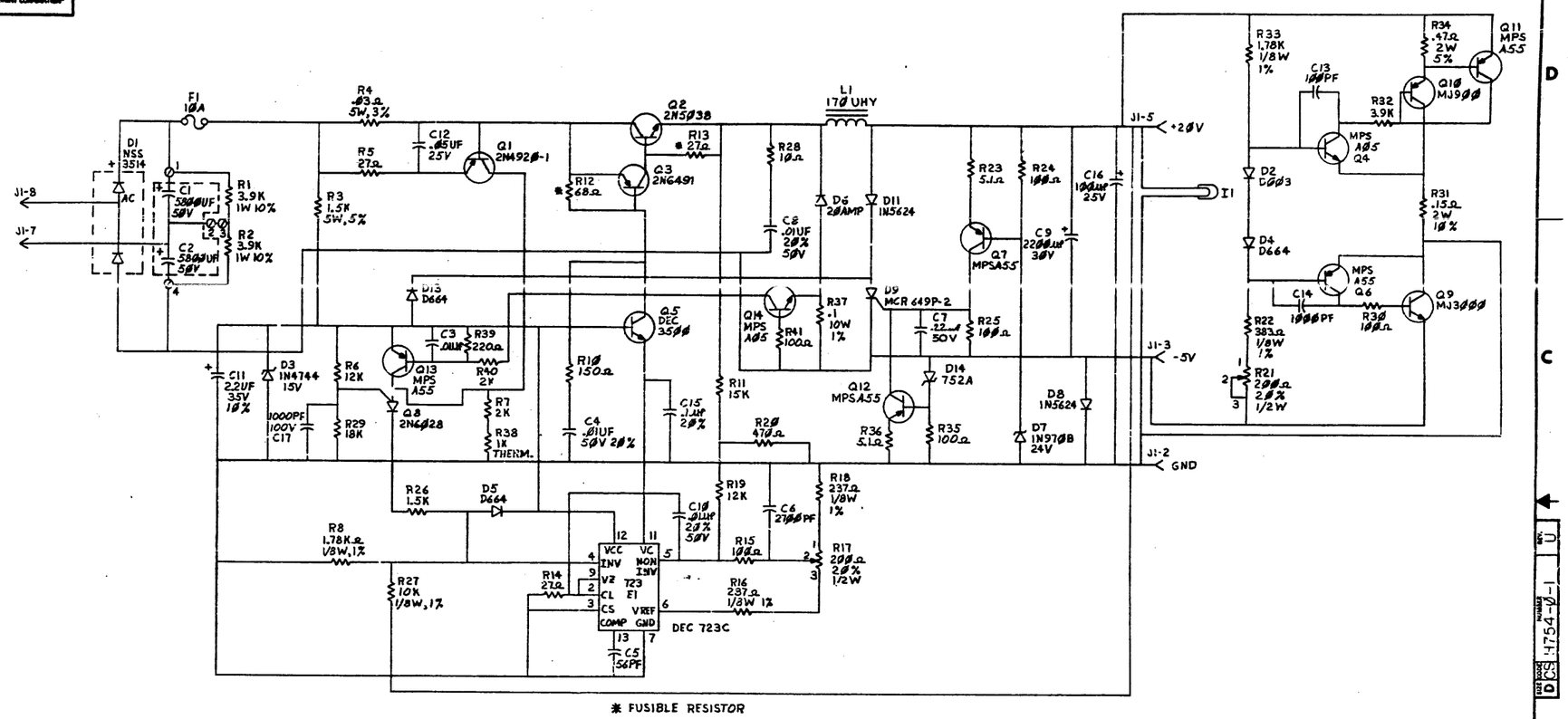
DIGITAL EQUIPMENT CORPORATION

TITLE
+ 20 VOLT REGULATOR

DOCUMENT NO. 2 CS H754-0-1
SIZE C
REV U
SCALE
SHEET 1 OF 2

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* FUSIBLE RESISTOR

DRN. P. BISSONNETTE	8-29-72	FIRST USED ON H754	digital
CHK'D R.VICKLES	12-17-72	TITLE +20 VOLT REGULATOR	
ENG. R. BURTON	5-7-73		
PROJ. ENG. R.BURTON	5-7-73		
PROD. L. BAPTISTE	5-9-73		
NEXT HIGHER ASSY.		SIZE D CODE CS NUMBER H754-0-1 REV. U	
SCALE			
SHEET 2 OF 2		DIST.	

DOC NUMBER DCS H754-0-1 REV. U

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FIELD MAINTENANCE PRINT SET

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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 I OF 1

DRN. D. HEALY	DATE NOV 76	digital
CHK'D D. HEALY	DATE NOV 76	TITLE: H785 REGULATOR BATTERY BACKUP
PROJ. ENG. Joe Mercuri	DATE 12-19-76	
FIELD SERV.	DATE 12-20-76	

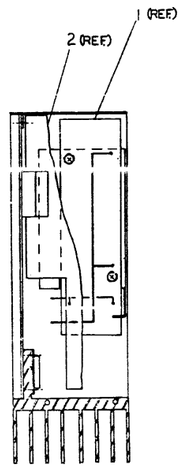
SIZE	CODE	NUMBER	REV.
B	TC	H785-Ø-1	A
DIST.			

EN 01124-16-NL75-1247

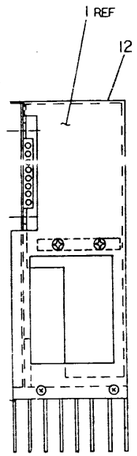
DRB 124

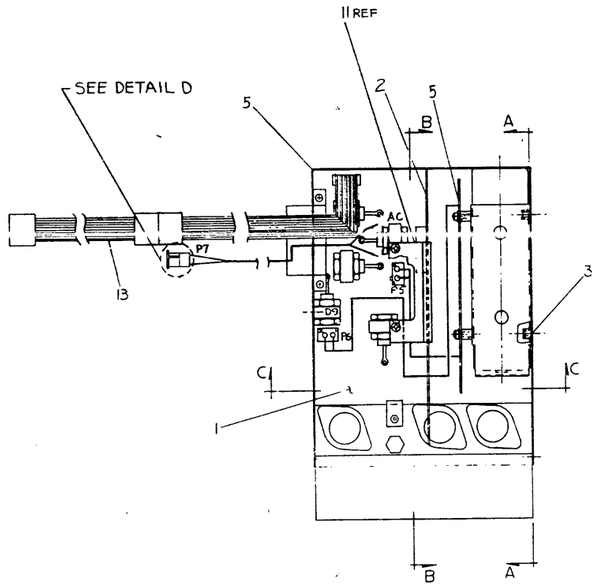
486

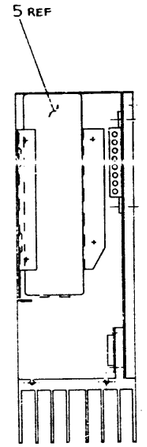
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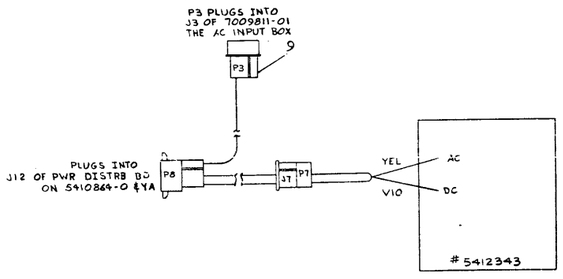
SECTION B-B



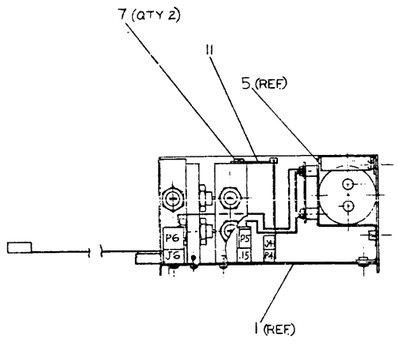




SECTION A-A



DETAIL D



SECTION C-C

1	CABLE, CONSOLE	7011411-2J	13
1	DECAL, H785-H785B	7416945-06	12
1	RETAINER, CARD	B-MD-7413124-0-0	11
2	SCR. PN PL HD 6-32 x .31	9003801-2	10
1	CABLE, AC, DC/LO	C-IA-7013676-0-0	9
1	WASH. LOCK INT. 700 DIA.	9000633	8
2	SCR. PN. HD. PAN #4-40 x .25	9003301-01	7
1	SCR. PN MD FLAT	9003142-2	6
1	SLEEP TAP #4-40 x .31	C-AD-7013322-0-0	5
1	CAPACITOR BRKT. ASSY	9000326	4
4	SCR. PN. FL HD. 6-32 x .19	9008020-2	3
1	H735 CONTROL BOARD	D-UA-5412385-0-0	2
1	H735 BATTERY BACKUP REGULATOR	D-UA-5412343-0-0	1
	DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION	DECIMALS	CLASS OF ACCURACY	.XX ±.03	.XXX ±.010	.XXXX ±.0050	FRACTIONS ±1/32	ANGLES ±1°	MICRO-INCHES	
	MACHINED	± .005	± .003	± .002	± .0015	± .015	± .25		
	PREFERRED	± .010	± .005	± .003	± .002	± .031	± .5	63	

THIRD ANGLE PROJECTION

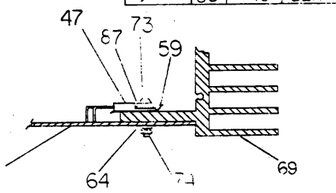
DRAWN	7/5/79	FIRST USED ON: 1134A
CHECKED	7/20/79	
ENGR. MANAGER	7/24/79	TITLE: REGULATOR BATTERY BACKUP
PROJ. ENGR.	7/27/79	
PROD.		
NEXT HIGHER ASSY.		
MATERIAL: SEE PARTS LIST	SPEC: 300-H735-0	SIZE: E; CODE: UA; NUMBER: H785-0-0; REV: C
FINISH	SCALE: FULL	
	SHEET: OF 1	DIST.

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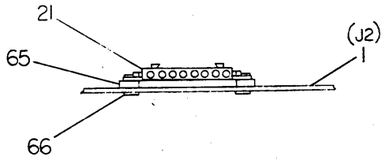
WIRE TABLE

ITEM NO	RUN NO	DESCRIPT. AWG	DESCRIPT. COLOR	FROM	TO H785	TO H7850	LENGTH
77	75	18 TWP	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

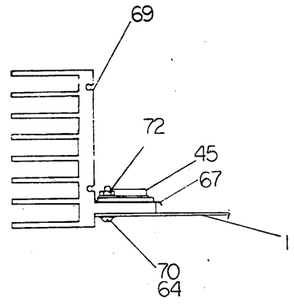
UNTWIST ITEM NO 77 AND USE PROPER COLOR.



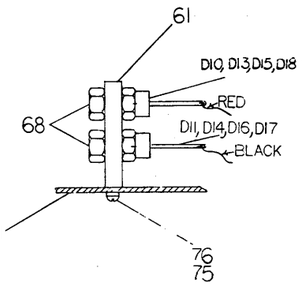
VIEW D-D
SCALE: NONE



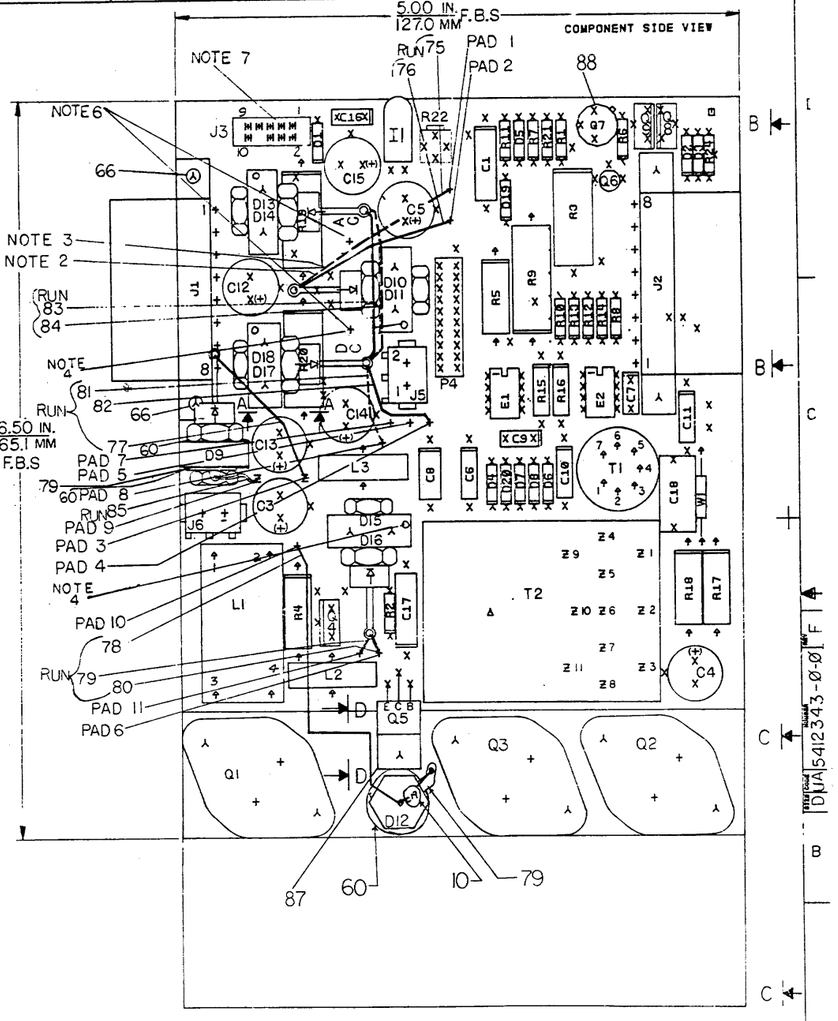
VIEW B-B
SCALE: NONE



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. TIPPED HOLE AT TOP OF HEATSINKS MUST FACE PROPER WAY TO ALLOW INSERTION OF CARD GUIDE.
5. TORQUE SPECIFICATIONS:
   SI-03 10 IN-LBS INSPECT TO MIN OFS TORQUE FROM SCREW HEAD
   I3S 8 IN-LBS INSPECT TO MIN OFS TORQUE FROM SCREW HEAD
   25-08 7 IN-LBS INSPECT TO MIN OFS TORQUE FROM NUT SIDE

NOTES:
6. SOLDER ITEM NO 55 AC, 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	CHK
C	5412343-00001	K.T.
D	5412343-000002	R.M.
E	5412343-00003	R.M.
F	5412343-MEM4	K.T.

ETCH REV. C
P.C. DESIGN DATA BASE REV. C

SIGNATURES	DATE
DRN [illegible]	11-8-77
CHK'D. [illegible]	11-3-77
ENG. [illegible]	11-3-77
PROJ. ENG. [illegible]	11-3-77
PROD. [illegible]	11-8-77

digital

TITLE: H785 BATTERY BACKUP REGULATOR

SCALE 2-1 | SHT. 1 OF 5

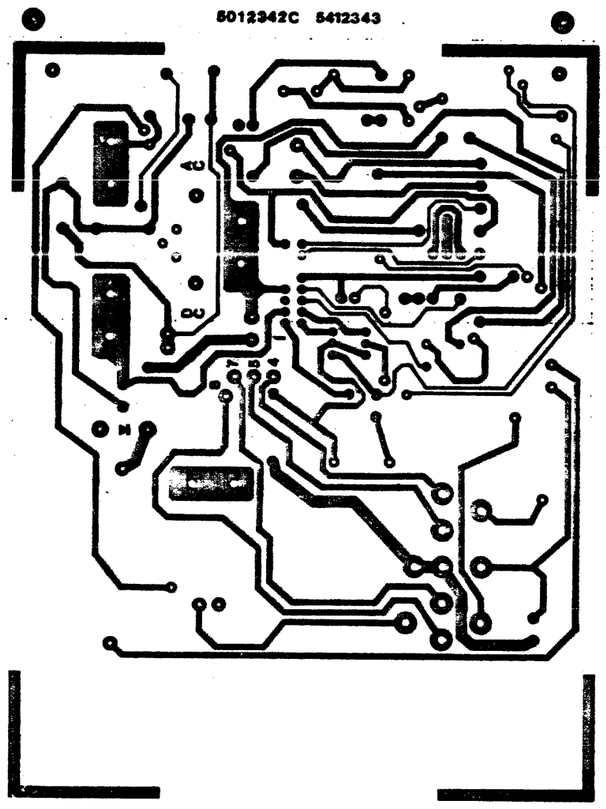
SIZE	CODE	NUMBER	REV
D	UA	5412343-0-0	F

NEXT ASSEMBLY REV. B-DD-5412343-0

MS#60929

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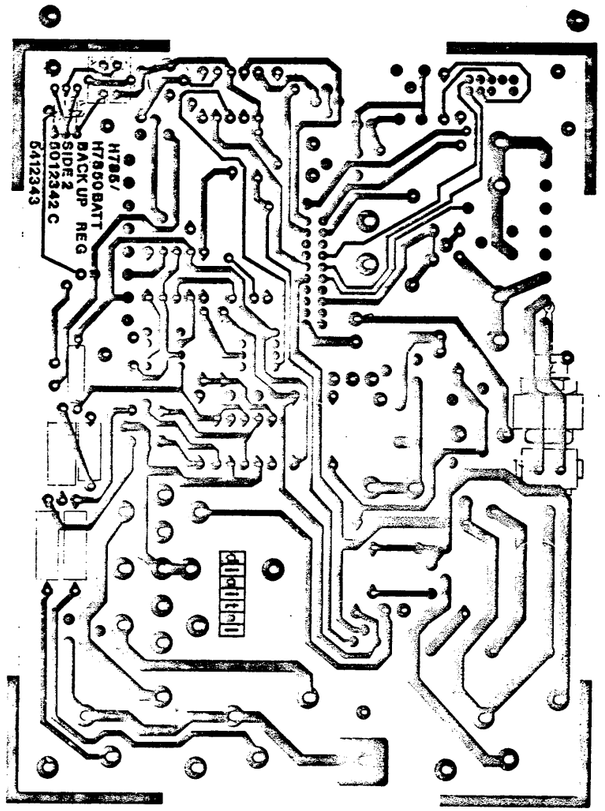
TITLE	SIZE	CODE	NUMBER	REV.
H785 BATTERY BACKUP REGULATOR	D	07611A	5412343-0-0	F
SCALE 2/1 SHEET 2 OF 5	DIST			

DUA 5412343-0-0 F

D 07611A 5412343-0-0 F

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REVISIONS		
CHK	CHANGE NO	REV

TITLE	H785 BATTERY BACKUP REGULATOR		
SIZE	CODE	NUMBER	REV.
D	UA	5412343-Ø-Ø	F
SCALE 2/1	SHEET 3 OF 5	DIST	

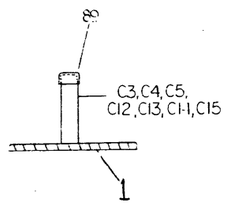
D UA 5412343-Ø-Ø F

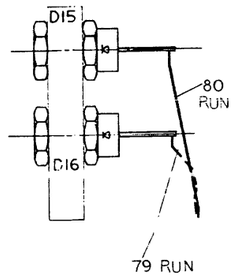
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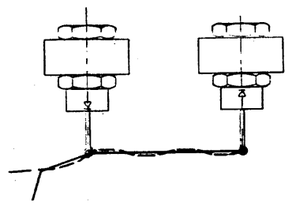
NOTES:

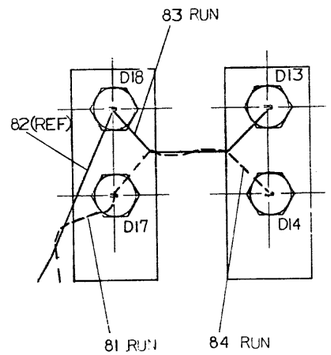
1. WIRING INFORMATION IS ON SHEET 1 OF 4.

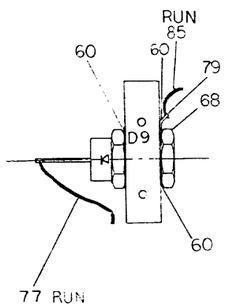
2. DIODES TO BE ASSEMBLED TO HEAT-SINKS AND WIRED AS SHOWN BEFORE INSTALLING TO BOARD.

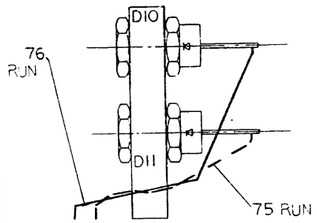










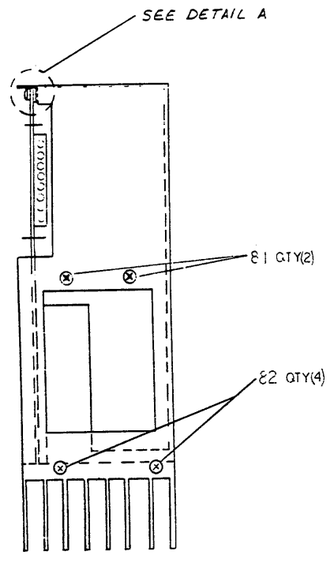


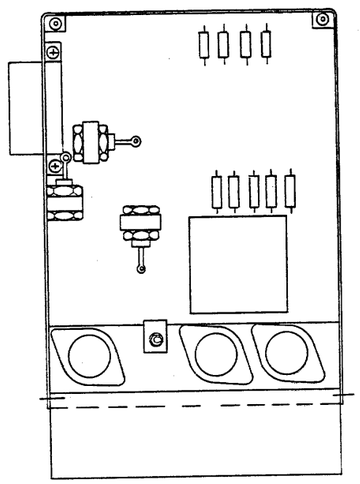
REVISIONS		
DATE	CHANGE NO.	REV.

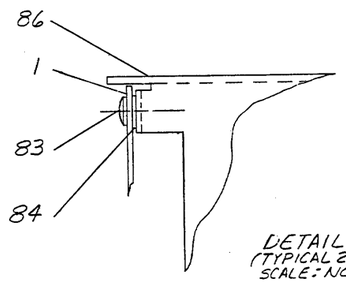
TITLE	H735 BATTERY BACKUP REGULATOR	SIZE/CODE	NUMBER / REV.
		D UA	5412343-0-0 F
SCALE 2/1	SHEET 4 OF 5	DIST.	

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DETAIL A
(TYPICAL 2 PLACES)
SCALE: NONE

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	H785 BATTERY BACKUP REGULATOR		SIZE CODE	NUMBER / REV.
SCALE 1-1	SHEET 5 OF 5		D UA	5412343-0-0 F
			DIST.	

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LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION		QTY	REFERENCE DESIGNATORS
1	1	D-CD-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		1000813-00	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% .40W PPEP S.A.V.E(		2	D2,D3
15	15		1105275-00	D 672 TR= 15NS PIV= 60V SP		7	D1,D4-D8,D20
16	16		1103940-00	1N 3880 PIV=100 I= 6A D04 SM		6	D10,D11,D13-D16
17	17		1113366-00	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 20POS EDGE MOUNT		1	P4
21	21		1209340-00	MATE-N-LOK 8PIN,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.	FIRST USED ON:		DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
CHK	ECO NO	REV						
B.N	00004	F	0%	MADE BY: D BILODEAU	DATE: 31-JUL-78	TITLE: PARTS LIST		
				CHECKED: R PUZZO	DATE: 31-JUL-78	H795 BATTERY BACKUP REGULATOR		
				DSN.ENG.: J MERCURI	DATE: 31-JUL-78			
				PROD.: R KING	DATE: 31-JUL-78	SIZE: K	CODE: PL	DOCUMENT NUMBER: 5412343-0-0BP
				RESP.ENG.: J MERCURI	DATE: 31-JUL-78	ASSY. C.: C-CA-5412343-0-0		EDIT#: 3

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LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
31	31		1300680-00	2.7 M 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 45H8 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		1612593-00	500 UH 6A S	1	L1
52	52		1613874-00	CHOKE,15UH 4A	2	L2,L3
53	53		1613876-00	XFMR,POWER,RATIO 1:2 7PIN S	1	T1
54	54		1613875-00	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		7013384-1D	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		9006655-00	WASHER, FLAT, .312 O.D. X .125 ID X .025 T	1	
64	64		9006656-00	WASHER, FLAT, .312 O.D. X .156 I.D. X .027	6	
65	65		9006706-00	WASHER, NYLON, FLAT #4 .375 OD X .031 THK	2	
66	66		9006745-00	EYELET, ROLLED FLANGE, .120 OD X .260 LG	4	
67	67		1213071-02	INSULATOR,RUBBER SILICONE SM	3	
68	68		9006505-00	NUT,KEP , 10-32X 3/8 AF CS/	1	
69	69		1210737-04	HEAT SINK,REGULATOR	1	
70	70		9007793-04	SCREW,RIND,SLOT, 6-32X 9/16 SS/PAS	6	
71	71		9007649-00	******** THIS ITEM IS NOT USED *********	-	
72	72		9108185-00	NUT,KEP , 6-32X1/4 AF CS/	6	
73	73		9008033-01	SCREW,PAN ,PHIL, 4-40X 9/16 SS/PAS	1	
74	74		9006557-00	NUT,KEP , 4-40X 1/4 AF CS	1	
75	75		9006632-00	WASHER,LOCK,INT,.260OD X .120ID X .015 THK	6	
76	76		9006410-04	SCREW,RIND,SLOT, 4-40X 5/16 SS/PAS	8	
77	77		9107430-02	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 M785 BATTERY BACKUP REGULATOR	SIZE: B	CODE: PD	DOCUMENT NUMBER: 5412343-0-0BP	REV: F

AUTOMATED BY PRTLST 2E(2)

PARTS LIST

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
79	79		9028506-00	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-7417410-0-0	7417410-00	REGULATOR BRACKET	1	
87	87		9009769-00	WASHER, RECTANGULAR .405X.225X.060	1	
88	88		9007201-00	TRANSIPADS #10253	1	
89	89		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

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LVAC
LVAC
GND
DC LO
AC LO
RDC
GND
BAT IN
LVAC
LVAC
+5V B
CHG MODE
MON EN
BAT MON
BOOT EN
STAND BY
DC ON
+15V
+14V
GND
-3V
+15V (OUT)
-15V (OUT)
+5B (OUT)

REVISIONS			
DIR	CHANGE NO.	REV.	
MF	5412343-0001	C	
	G.POTTER		
JHC	7-6-77		
MF	5412343-0001	D	
N. Thurston	22 July 77		
	G. POTTER		
JHC	24AUG77		
MF	5412343-0003	E	
N. Thurston	20 DEC 77		
JHC	6 Mar 78		
N. THURSTON			
MF	5412343-0004	F	
N. Thurston	6 Apr 78		
W.F. BAUMAN			

DESIGNED	V. Vincent	7-20-76
CHK'D	J. [illegible]	7-24-76
ENGR.	E. Fuller	7-9-77
PROJ. ENGR.	[illegible]	7-9-77
PROD.	K. King	7-8-77
NEXT HIGHER ASSY.		
SCALE	—	
SHEET	1 OF 1	

FIRST USED ON

digital

TITLE
H785 BATTERY BACKUP REGULATOR

SIZE	CODE	NUMBER	REV.
D	CS	5412343-0-1	F

DIST.

496

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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:

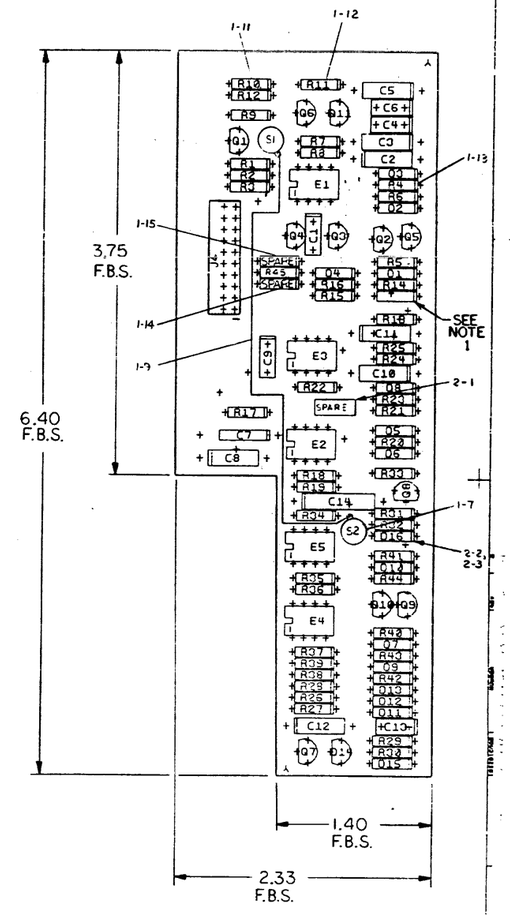
2-3. D16 (ZENER BI-DIRECTIONAL P/N 1119913-00)

NOTES:

1. COMPONENT NOT INSERTED

CHG	CHANGE NO	REV
01	5412365-1	C
	G. POTTER	
	5412365-2	D
	INTERCURI	
	5412365-3	E
	G. POTTER	

COMPONENT SIDE VIEW



ETCH REV. C

P.C. DESIGN DATA BASE REV. C

SIGNATURES	DATE
DRN. F. CAROFALO	12-9-76
CHK'D. F. SEIDMAN	12-9-76
ENG.	17 DEC 76
PROJ. ENG.	17 DEC 76
PROD.	17 DEC 76
SCALE 2/1	
SHT. 1 OF 3	
NEXT HIGHER ASSY. B-DD-5412365-0	

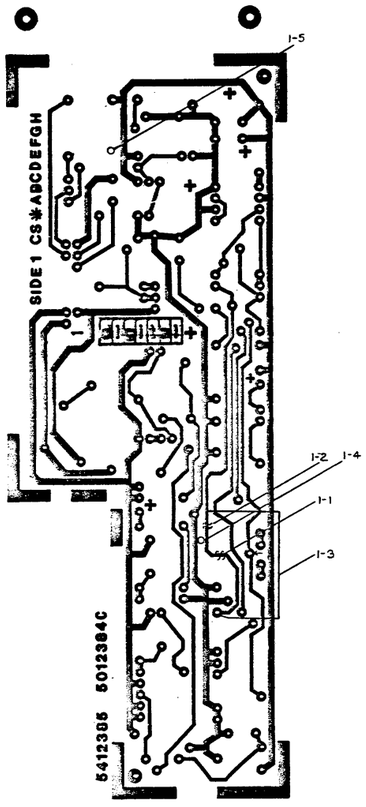
digital

TITLE H785 CONTROL BD

SIZE	CODE	NUMBER	REV
D	UA	5412385-0-0	F

497

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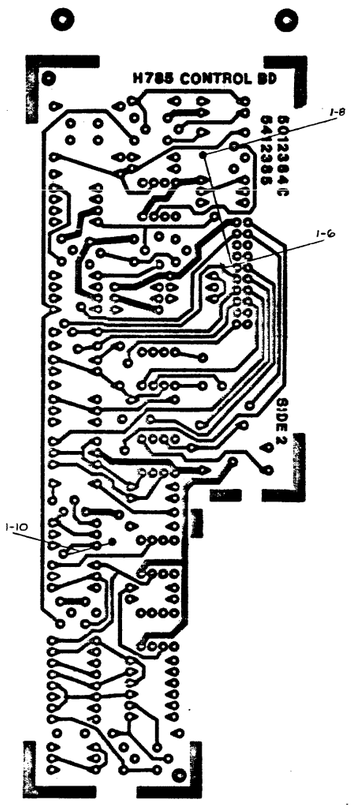


REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
H785 CONTROL BD	D	UA	5412385-0-0	E
SCALE 2/1 SHEET 2 OF 3	DIST			

5412385-0-0 E
D UA

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REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
H785 CONTROL BD	D	LIA	5412385-0-0	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,R41

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

ASSY.NO.: D-UA-5412385-0-0 EDIT 4

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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

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BAT IN
+14 V
CHG MODE
+5V B
MON EN
BAT MON
AC/LO
BOOT EN
+15V
-15V
RDC
DC/LO
AC/LO
GND

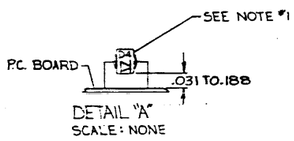
NOTES:
1. H785, 18V OPERATION REMOVE JUMPER W2.
2. H785, 12V OPERATION REMOVE JUMPER W1.
3. J13 IS AN ENGINEERING OPTION TO BE DETERMINED AT A LATER DATE.

Numerals	Ground No.	REV
Dec	5412385-0000	D
Oct	5412385-0000	D
Hex	5412385-0000	D

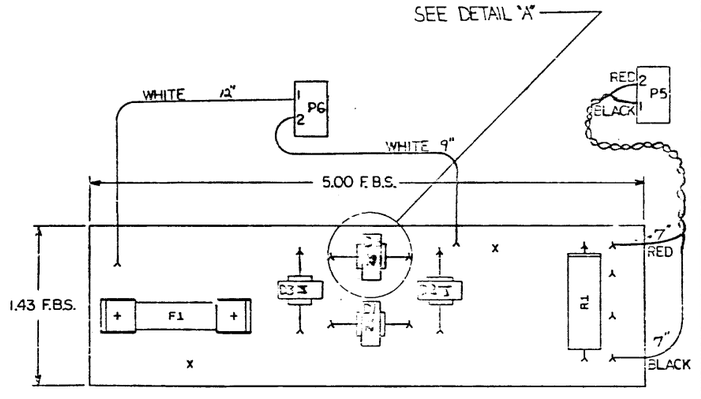
REVISIONS			
DIC	Ground No.	REV	
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[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]

COMPONENT SIDE VIEW

NOTES:
1. DIODES D1 THRU D4 MUST BE RAISED FROM THE P.C. BOARD .031 TO .188



DETAIL "A"
SCALE: NONE



NOTES:

SIGNATURES	DATE
DRN.	
CHK'D.	
ENGR.	
MFG.	
QUAL.	
APPROVED	

digital

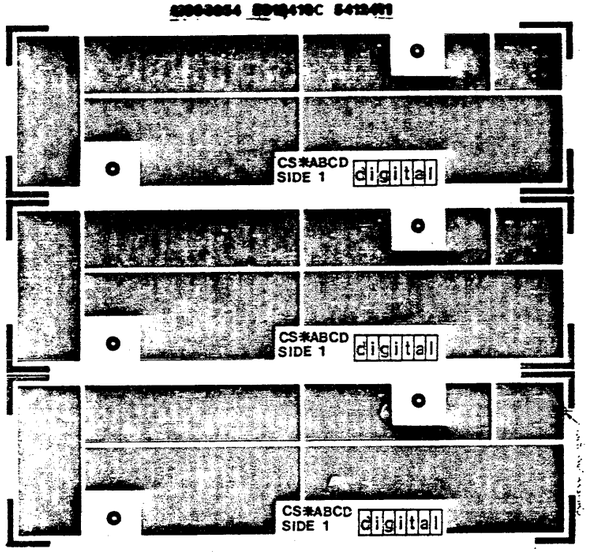
TITLE INPUT RECTIFIER BOARD

SIZE A | CAGE CODE | DWG. NO. 54124II-Ø-Ø1 | REV. E

DUA 54124II-Ø-Ø E

503

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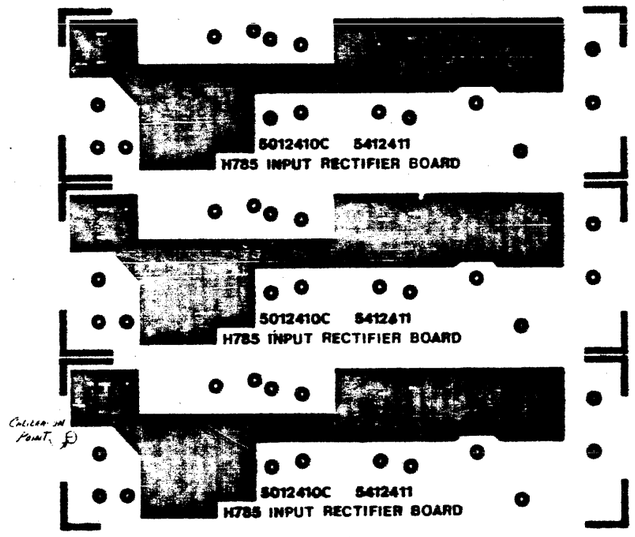


REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
INPUT RECTIFIER BOARD	D	13	5412411-0-0	E
SCALE	SHEET 2 OF 3	DIST		

504

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Callout point

REVISIONS											
CHK	CHANGE NO	ITR									

TITLE	SIZE	CODE	NUMBER	REV.
INPUT RETIFIER BOARD	D	UA	5412411-0 0	E
SCALE 2/1 SHEET 2 OF 2	DIST			

505

AUTOMATED BY PRTLST 1D(11) — PARTS LIST — 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.
CHK	ECO NO	REV	
---	00003	E	00

FIRST USED ON:

MADE BY:	D.BILODEAU	DATE: 08-MAR-78
CHECKED:	F.GAROFALO	DATE: 08-MAR-78
DSN.ENG.:	J.MERCURI	DATE: 08-MAR-78
PROD.:	R.B.KING	DATE: 08-MAR-78
RESP.ENG.:	J.MERCURI	DATE: 08-MAR-78

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PARTS LIST
INPUT RECTIFIER BOARD

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	5412411-0-0	E

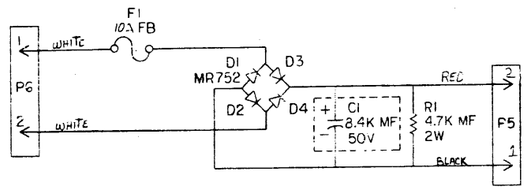
ASSY.NO.: D-UA-5412411-0-0 — EDIT 3

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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		

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

FIRST USED ON OPTION MODEL

ETCH BOARD REV. C

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

SEMICONDUCTOR CONVERSION CHART

REVISIONS	CHANGE NO.	REV.
J.MERCURI	5412411-00003	C

DRN Jack Hurley 7-19-74
CHK Jack Hurley 7-19-74
ENG Joe Mercuri 11-5-74
PROJ ENG [illegible] 11-7-74
PROD [illegible] DATE

NEXT HIGHER ASSY

SCALE —/+—
SHEET 1 OF 1

digital

TITLE
INPUT
RECTIFIER BOARD

SIZE D | CODE CS | NUMBER 5412411-0-1 | REV. C
DIST.

DEC FORM NO. DHD 1 3/8 B

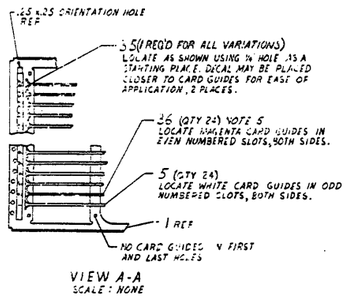
509

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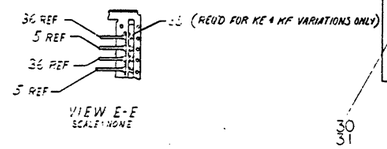
FOR MFG USE ONLY

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	230/50/60HZ
BA11-KA	NO POWER SUPPLY

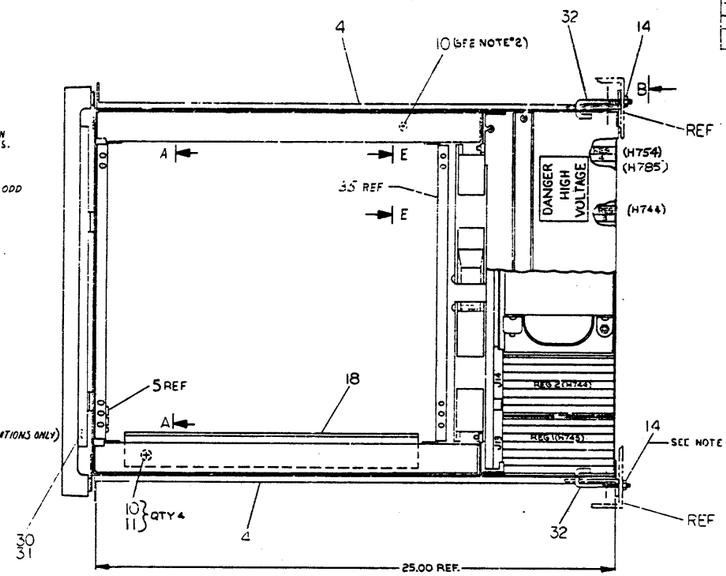
NOTES:
1. CAUTION: OFF SHEEET PARTS LISTS EXISTS SEE A-PL-BA11-K-0
2. GROUND LUG OF PWR. DISTRIBUTION BD. ATTACHES TO GND STANDOFF ON CHASSIS.
3. TIGHTEN ALL SYSTEM UNIT MOUNTING SCREWS TO 13 IN-LBS WITH A TORQUE SCREW DRIVER.
4. ATTACH SHIPPING BRACKETS TO POWER SUPPLY AND BOLT THROUGH HOLE IN CABINET RAILS.
5. INSTALL CARD GUIDES, ITEM NOS. 5 & 36 USING TOOL NO. 9412610-2.
6. ASSEMBLE ITEM NO. 37 USING EXISTING HARDWARE.



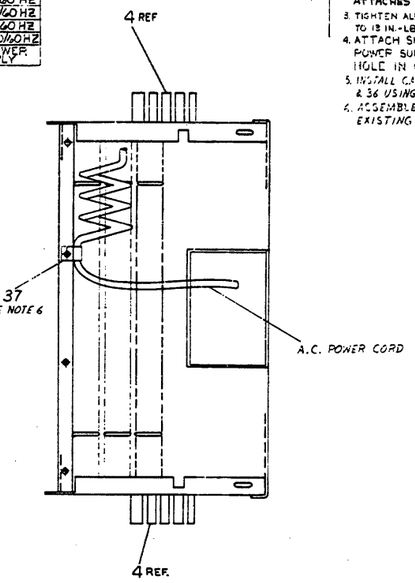
VIEW A-A
SCALE: NONE



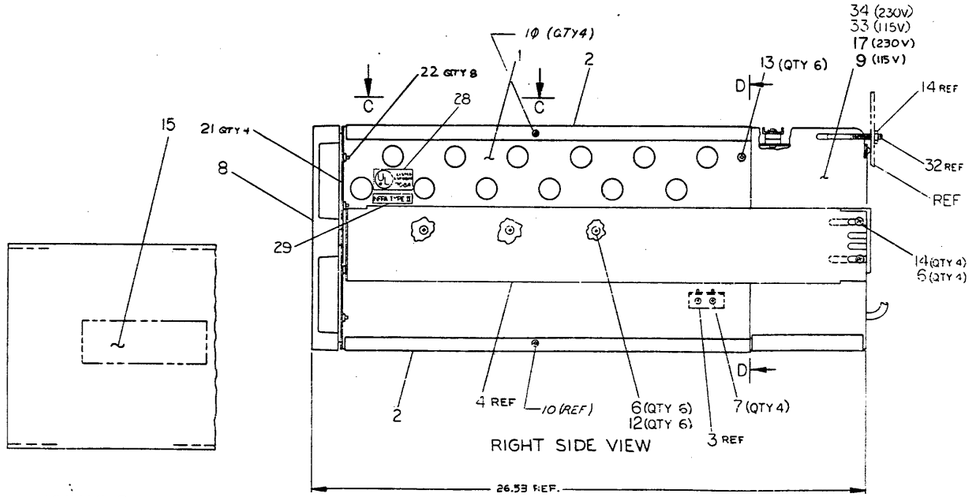
VIEW E-E
SCALE: NONE



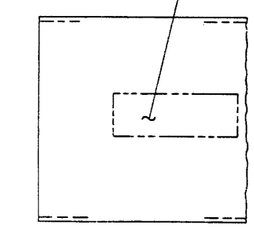
TOP VIEW
(CHASSIS COVER REMOVED)



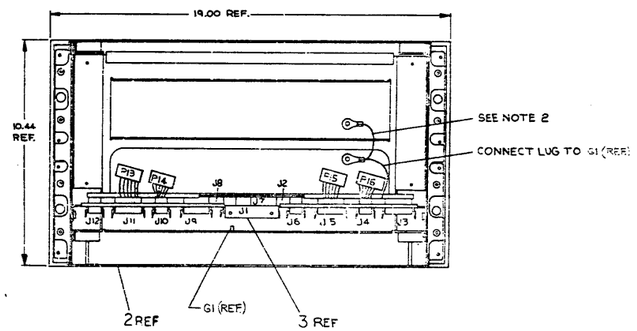
VIEW B-B



RIGHT SIDE VIEW



VIEW C-C
SCALE: NONE
ONLY TOP COVER ITEM #2 SHOWN



VIEW D-D
REAR VIEW
(POWER SUPPLY AND CHASSIS SLIDES REMOVED)

SYSTEM OR OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
BA11-K		PARTS LIST		

DIMENSIONAL TOLERANCE
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

FRACTIONS	INCHES	ANGLES
±.125	XXX ±.38	45° 30'
±.06	XX ±.38	
±.03	X ±.1	

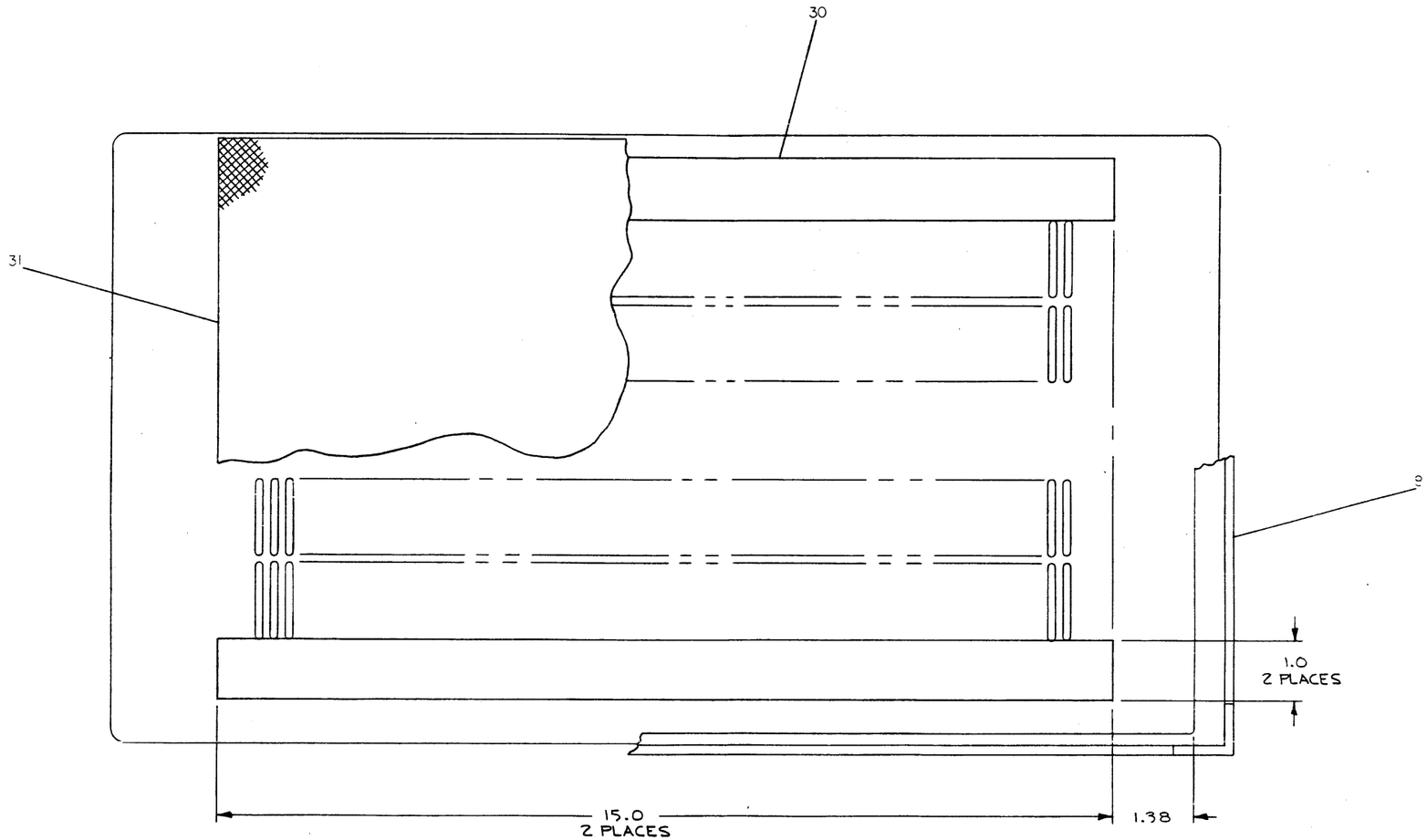
THIRD ANGLE PROJECTION
REMOVE SLIVERS AND SHARP EDGES
MATERIAL
FINISH

DRAWN Cathy DATE
CHECKED DATE
ENGR DATE
MFG DATE

TITLE
UNIT ASS'Y
BA11-K

3-DD-BA11-K
SIZE E | LA | BA11-K-0 | REV. N

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REAR VIEW

REVISIONS		
SYM	CHANGE NO	REV

TITLE	UNIT ASSY BA11-K-0	SIZE/CODE	NUMBER / REV.
		E UA	BA11-K-0 N
SCALE	SHEET 2 OF 2	DIST.	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET 7

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
WKK	BA11K-7	C
B.M.	BA11K-8	D
[illegible]	BA11K-9	E
RJS	BA11K-10	F
[illegible]	BA11K-11	H
RJP	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

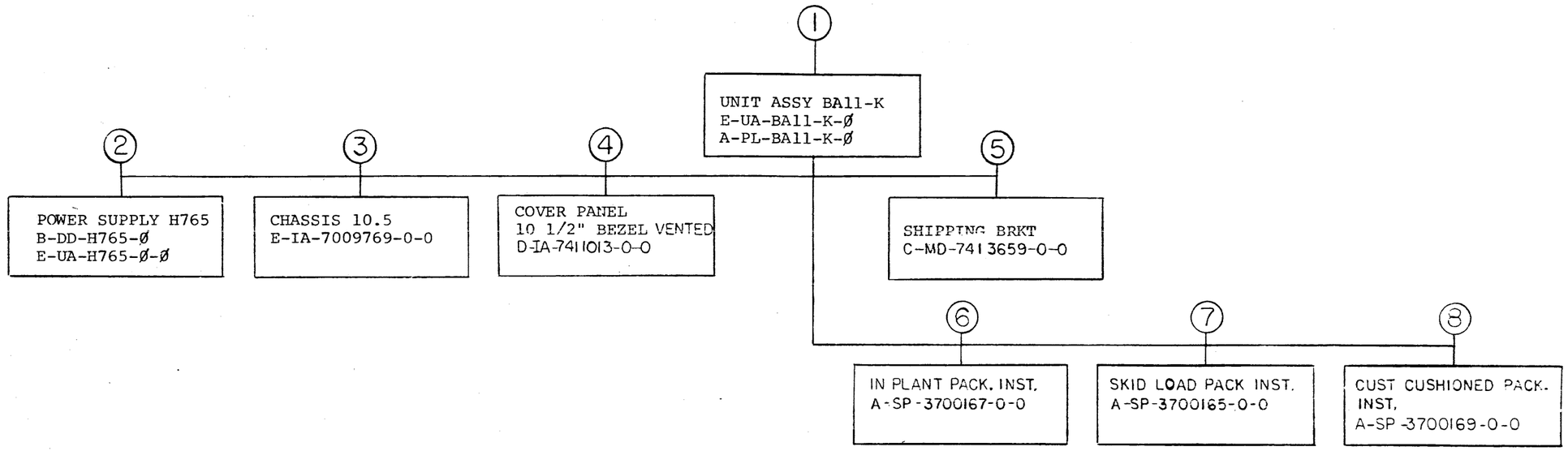
SHEET 1 OF 4

DRN. J.FERGUSEN	DATE 6/22/74	TITLE: DRAWING DIRECTORY BA11-K
CHK'D. D. HEALY	DATE 7/3/74	
PROJ ENG. E. Dutton	DATE 9/4/74	
PROD. R. Peterson	DATE 10/1/74	SIZE B / CODE DD / NUMBER BA11-K / REV M
FIELD SERV. R.L. Gates	DATE 9/13/74	DIST

DRB 106

DEC 16-12251-1/1972

510



TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY BA11-K	SHEET 2 OF 4	B	DD	BA11-K	M

DRB 107
DEC 16-(325)-1002-3-NSTI

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	X	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

MECHANICAL

CUSTOMER PRINT SET 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	
			A-PL-BA11-K-Ø	M	2	UNIT ASSY BA11-K PL	
			D-IA-7009768-0-0		1	COVER, CHASSIS	
			D-PS-1211825-0-0		3	SLIDE, 3 POS TILT	
			D-MD-7412184-0-0		1	CABLE, TROUGH CHASSIS	
X			D-UA-BC11A-10-Ø		1	UNIBUS, CABLE, 10 FT	
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	
			A-DC-5309414-0		1	DECAL UL	
			A-DC-5309413-0		1	DECAL NFPA	
			A-PS-3613281-0-0		1	DECAL	
		2	B-DD-H765-Ø		5	DWG DIRECTORY H765	
			E-UA-H765-Ø-Ø		2	POWER SUPPLY H765	
		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-7411013-0-0		1	COVER PANEL 10 1/2 BEZEL	
		5	C-MD-7413659-0-0		1	SHIPPING BRKT	

MECHANICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
	X	6	A-SP-3700167-0-0	-	3	IN PLANT PACK. INST.	
			A-PS-9905650-0-0	-	2	REGULAR SLOTTED CARTON	
			A-PS-9905335-0-0	-	2	BEZEL PROTECTOR	
			A-PS-9905644-0-0	-	2	REAR PROTECTOR	
			A-PS-9905323-0-0	A	2	SIDE PROTECTOR	
			A-PS-9905129-0-0	A	4	POLY BAG 20 x 13 x 40in 1-1/2 mil.	
	X	7	A-SP-3700165-0-0	-	4	SKID LOAD PACK. INST.	
			A-PS-1210568-0-0	-	2	CUSHIONED SKID	
			A-PS-9905445-0-0	-	2	HALF OVERLAP SLOTTED CARTON (TOP)	
			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	
			A-PS-9905642-0-0	-	2	FOAM PAD	
			A-PS-9905643-0-0	-	2	FOAM WITH CORRUGATED SIDE WALL ASSEMBLY	

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

TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY BA11-K	SHEET 4 OF 4	B	DD	BA11-K	M

DRB 108

DEC 16-(325)-1062-28-R972

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	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-7009768-0-0	COVER, CHASSIS	2	2	–	–	–	–	–
3	D-CS-541086-0-1	POWER DISTRIBUTION BOARD	REF	REF	REF	REF	REF	REF	–
4	D-PS-1211825-0-0	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	9008020-2	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	9006633	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	9006565	NUT, KEPS, #10-32	6	6	–	–	–	–	–
15	DEC-3-(374)-1825 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-0	A	PL	BA11-K-0	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	

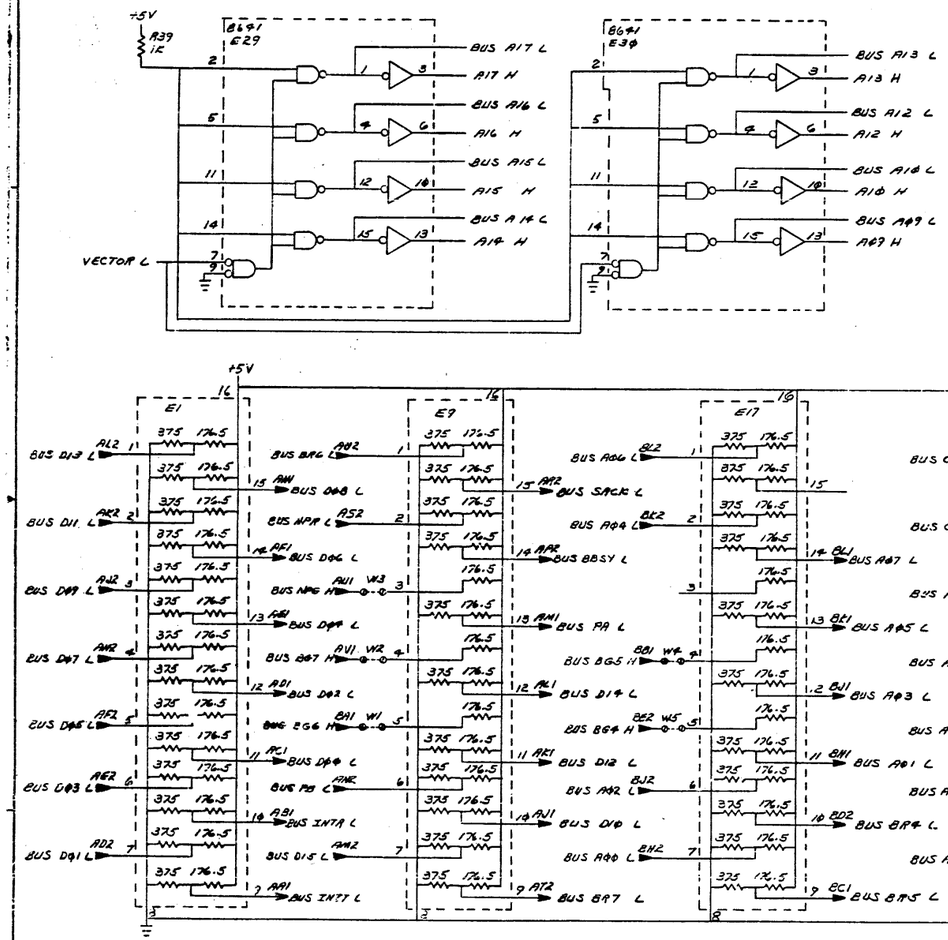
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	BA11-KE	BA11-KF	BA11-KH	BA11-KJ	BA11-KK	BA11-KL	BA11-KA
23	A-SP-3700167-0-0	IN PLANT PACK. INST.	REF	REF	REF	REF	REF	REF	REF
24	A-SP-3700165-0-0	SKID LOAD PACK INST.	REF	REF	REF	REF	REF	REF	REF
25	A-SP-3700169-0-0	CUST. CUSHIONED PACK. INST.	REF	REF	REF	REF	REF	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	1211336-02	TAPE	A/R	A/R	–	–	–	–	–
31	1211255-0-0	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	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	–

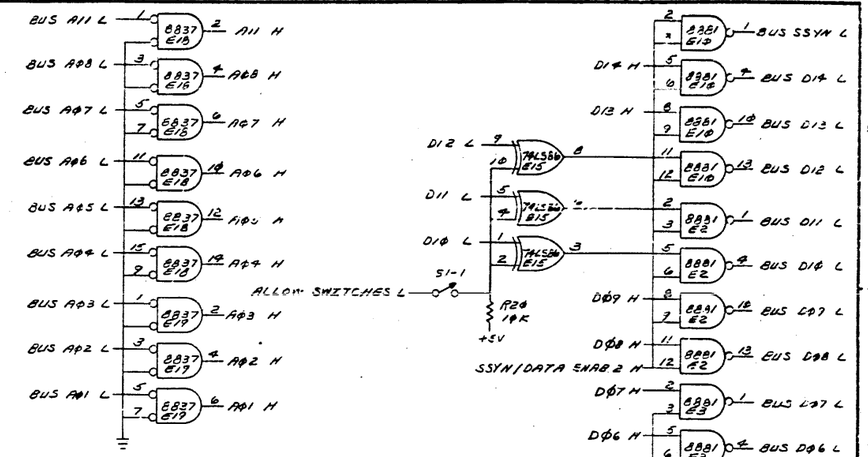
TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
UNIT ASSY BA11-K	E-UA-BA11-K-0	A	PL	BA11-K-0	N	
	SHEET 2 OF 2	DIST.				

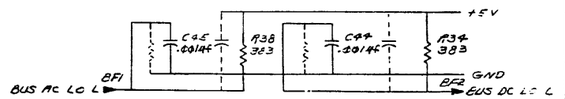
DEC FORM DEC 16-(325)-1031-N870
DRA 110

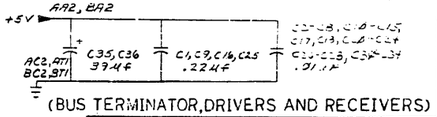
514

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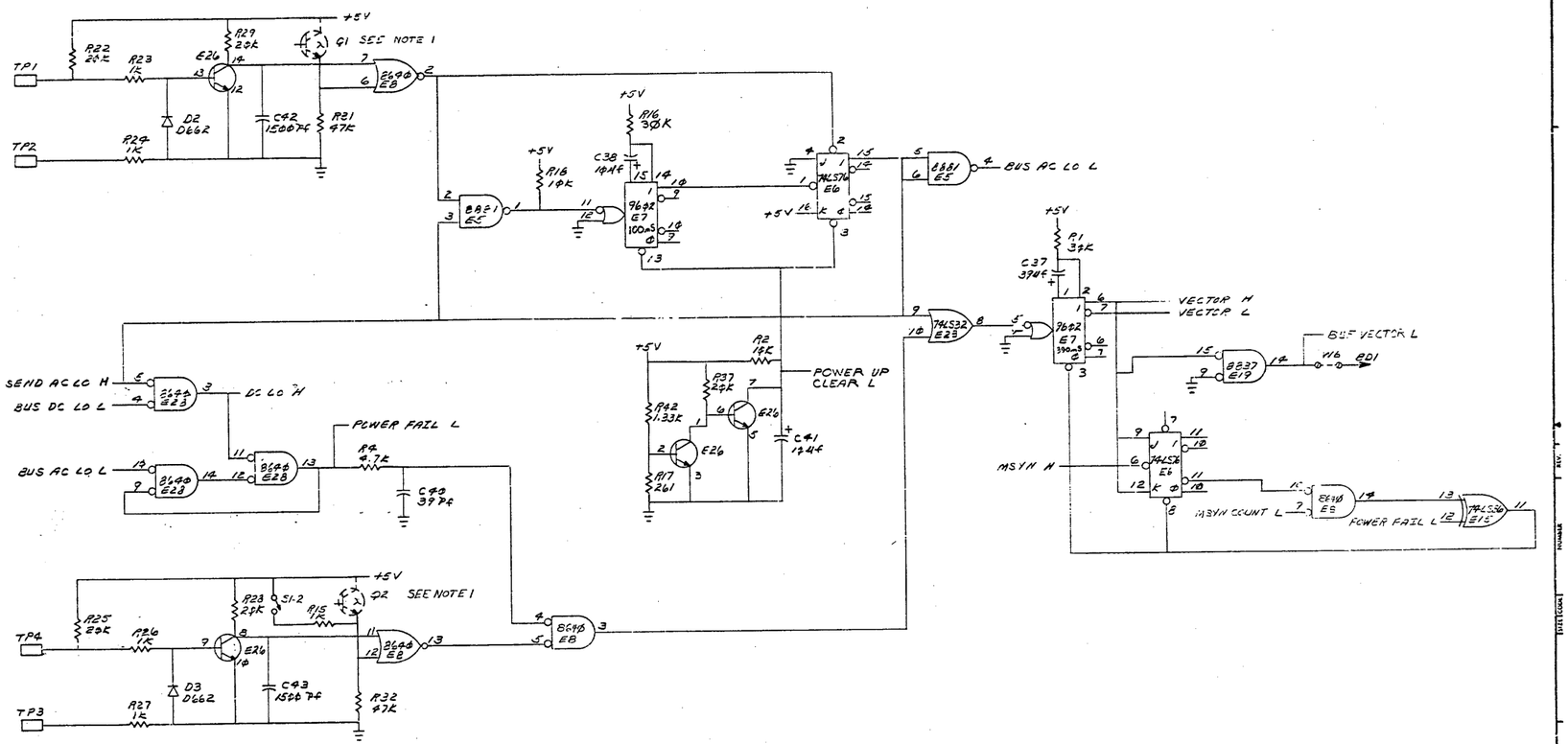


(BUS TERMINATOR, DRIVERS AND RECEIVERS)

DRN.	12-3-77	FIRST USED ON
CHK'D	12-30-77	
ENG.	12-20-77	TITLE
PROJ. ENG.	1-26-78	BOOTSTRAP TERMINATOR
PROD.	1-30-78	
NEXT HIGHER ASSY.		
SCALE		SIZE D, CODE CS, NUMBER M9312-0-1, REV. B
SHEET 1 OF 4		DIST.

REV.	REVISION HIST.	DATE	APPROVED
B	M9312-00001	1-26-78	B.GIST

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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.		

516.

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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 H	LOW ROM L	HIGH ROM H
765 XXX	H	H	L	L
765 XXX	L	L	H	L
773 XXX	X	H	H	H
DEFAULT	X	L	H	L

ALLOW SWITCHES ROM

ADR-01 (OCTAL)	HIGH ROM H	ENABLE ROM L	A19, 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

ROM DATA LATCH H

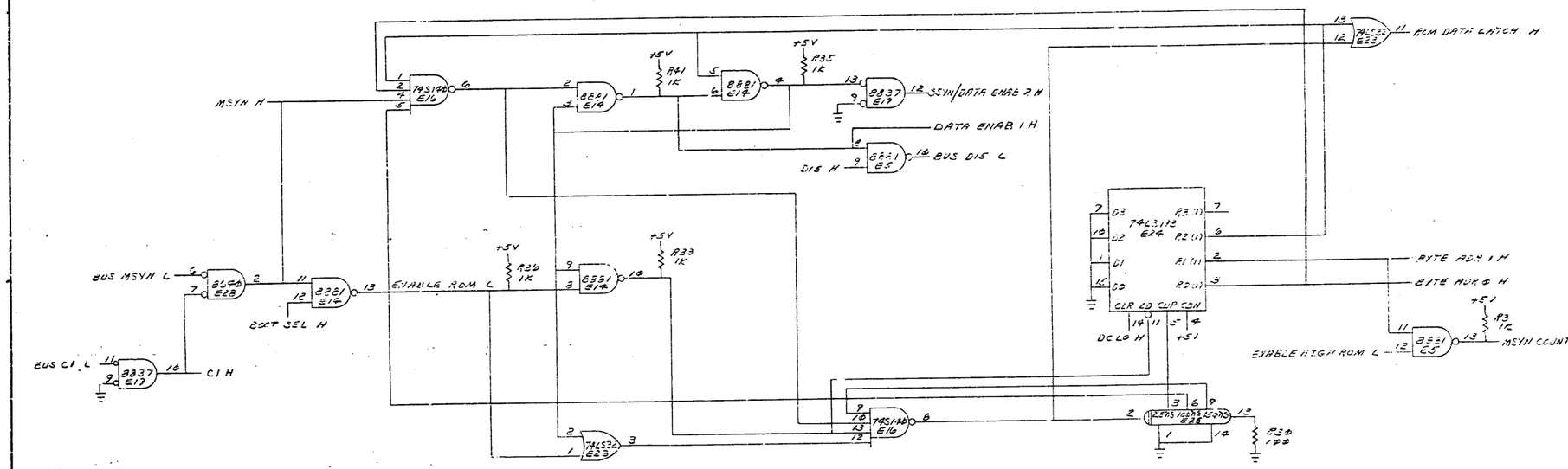
BOOT SEL H
LOW ROM L
HIGH ROM H
BOOT 1L
BOOT 2L
BOOT 3L
BOOT 4L
ALLOW SWITCHES H
ALLOW SWITCHES L
DATA ENAB I H
ENABLE ROM L
ENABLE HIGH ROM L

W3	W9	W10	W11	W12	BOOT 1 L	BOOT 2 L	BOOT 3 L	BOOT 4 L
L	L	L	H	L	L	H	H	H
L	H	L	H	L	H	L	H	H
H	L	L	H	L	H	H	L	H
H	H	L	H	L	H	H	H	L
X	X	H	L	X	H	H	H	H

(ADDRESS DECODE AND BOOT ROMS)

TITLE	SIZE/CODE	NUMBER	REV.
BOOTSTRAP TERMINATOR	D CS	M9312-0-1	E
SCALE	SHEET 3 OF 4	DIST.	

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(TIMING AND CONTROL)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
BOOTSTRAP TERMINATOR	D	CS	M9312-D-1	B
SCALE	SHEET 4 OF 4	DIST.		

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