



pdp11

AA11-D  
D/A subsystem  
engineering drawings

PDP-11 LAB  
ELEC. ENG. DEPT.

DO NOT  
REMOVE

digital



**AA11-D  
D/A subsystem  
engineering drawings**

1st Printing August 1971

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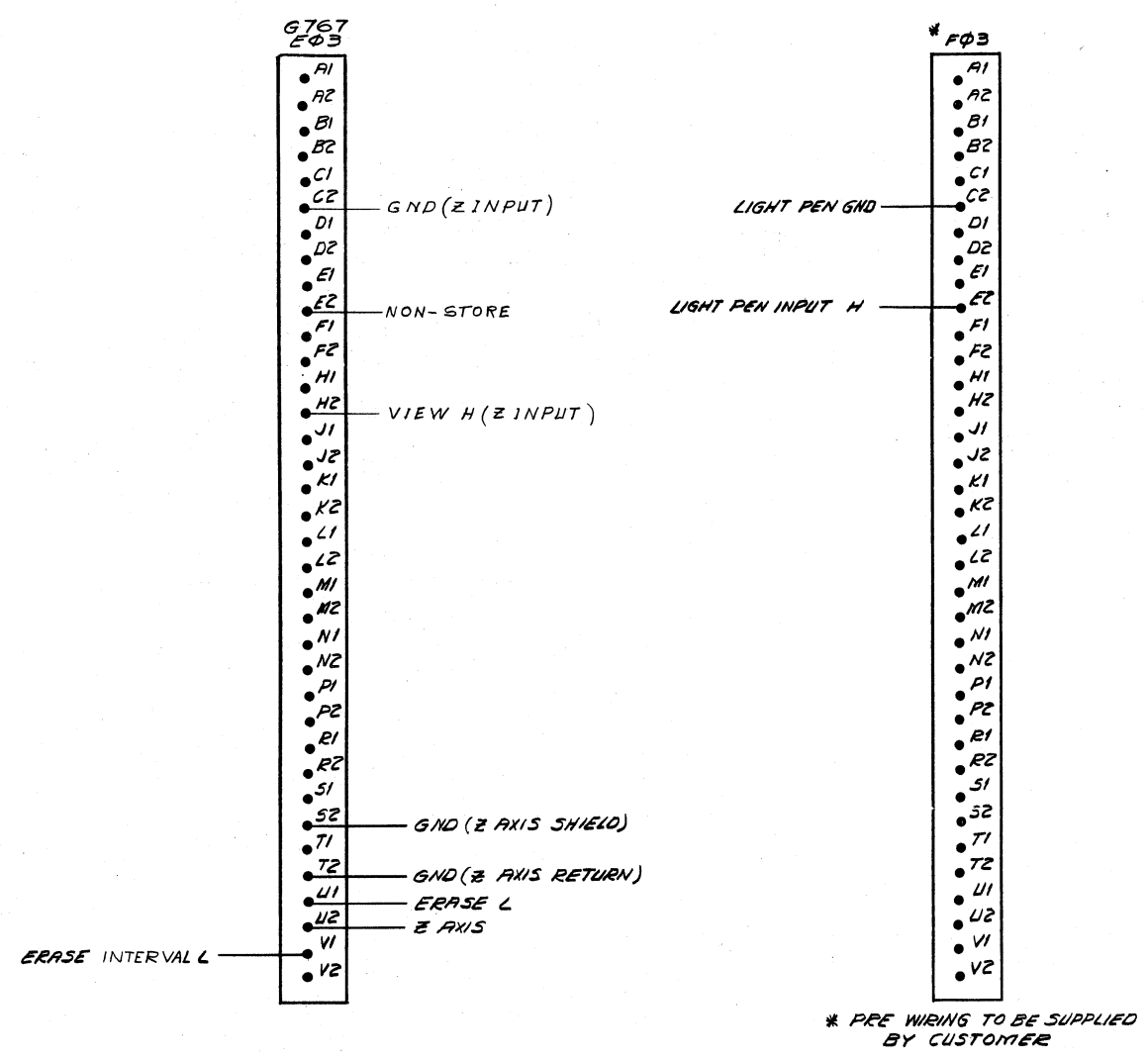
## ENGINEERING DRAWINGS

Drawing Number	Title
D-IC-AA11-D-02	Option Cables
D-BS-AA11-D-03	D-A Converters
D-BS-AA11-D-04	Interface
D-IC-AA11-D-05	AA11-D Bus & Power Connections
D-CS-M799-0-01	Scope Control (2 sheets)
D-MU-AA11-0-MU	Module Utilization
D-UA-AA11-D-0	Digital to Analog Control Assy.
D-CS-A614-0-1	12 Bit DAC with Buffer Register
D-UA-H704-C-0	H704-C Power Supply
K-WL-AA11-D-WL	Wire List

Handwritten scribble or mark.



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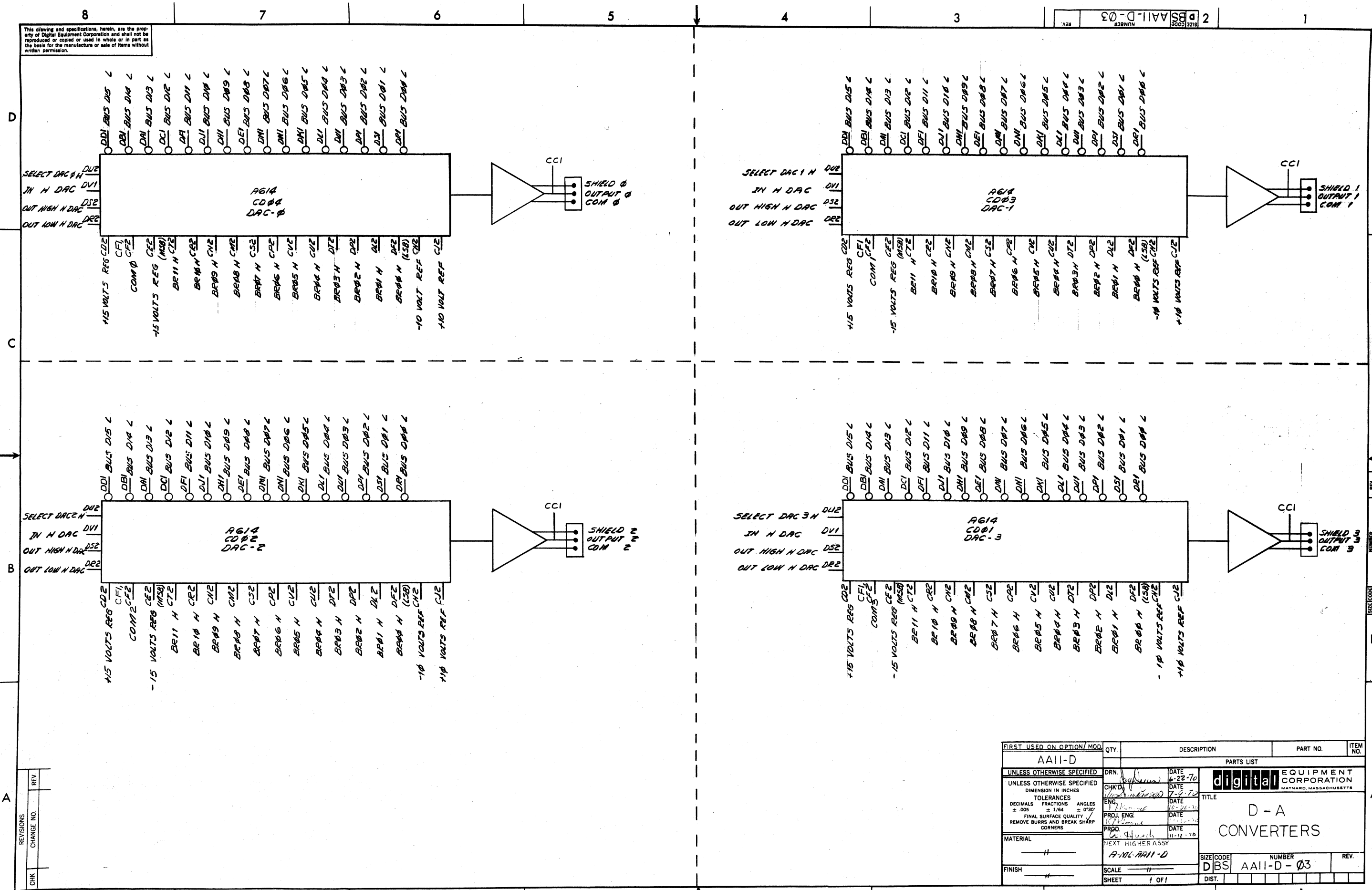


CHK	CHANGE NO	REV.
	AAIID-00004	A
	GAGNE	4-14-71
	AAIID-00005	B
	GAGNE	6-25-71

FIRST USED ON OPTION MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
AAII-D				
PARTS LIST				
<b>digital</b> CORPORATION WAYNARD, MASSACHUSETTS				
TITLE <b>OPTION CABLES</b>				
UNLESS OTHERWISE SPECIFIED				
DIMENSION IN INCHES		DRN	DATE	
TOLERANCES		CHKD	DATE	
DECIMALS = .005	FRACTIONS = 1/64	ENG.	DATE	
ANGLES = 0°30'		PROJ. ENG.	DATE	
FINAL SURFACE QUALITY		PROD.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL				
NEXT HIGHER ASSY				
FINISH				
SCALE				
SHEET 1 OF 1				
SIZE CODE	NUMBER	REV.		
DIC	AAII-D-02	B		
DIST.				

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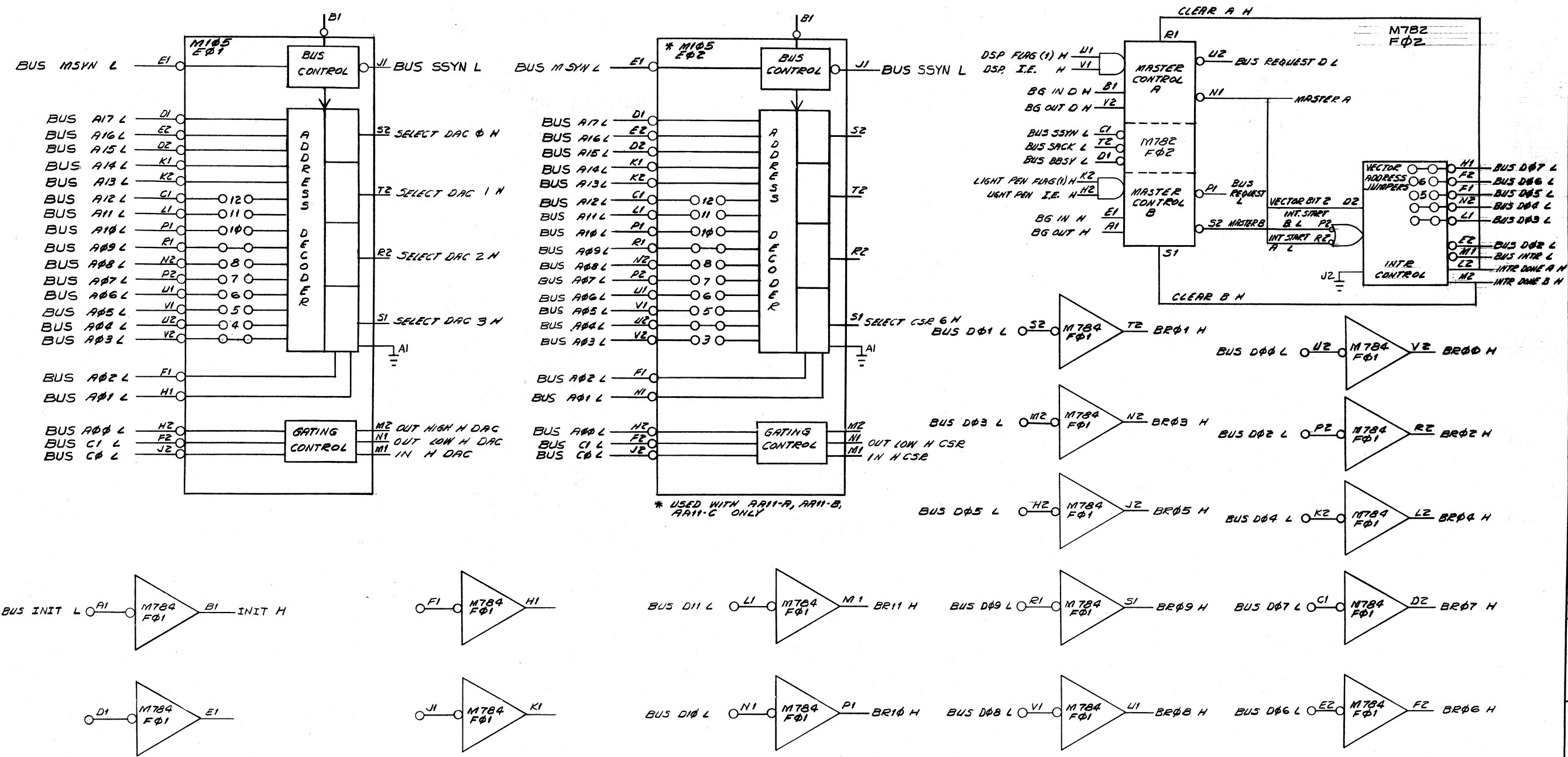
REV. 2  
DBS A111-D-03  
NUMBER



REV.	CHG.	NO.

FIRST USED ON OPTION/ MOD.	QTY.	DESCRIPTION	PART NO.	ITEM NO.
A111-D				
UNLESS OTHERWISE SPECIFIED				
DRN.	DATE	PARTS LIST		
	6-22-70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
CHK'D	DATE	TITLE		
	7-9-72	D-A CONVERTERS		
ENG.	DATE	MATERIAL		
	10-26-70			
PROJ. ENG.	DATE	FINISH		
PROD.	DATE	NEXT HIGHER ASSY		
	11-12-70	A-111-A111-D		
SCALE		SIZE CODE		NUMBER
1 OF 1		DBS		A111-D-03
SHEET		DIST.		REV.

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\* USED WITH AA11-A, AA11-B, AA11-C ONLY

REV. 2  
 NUMBER DBS-AA11-D-04  
 SIZE CODE 2

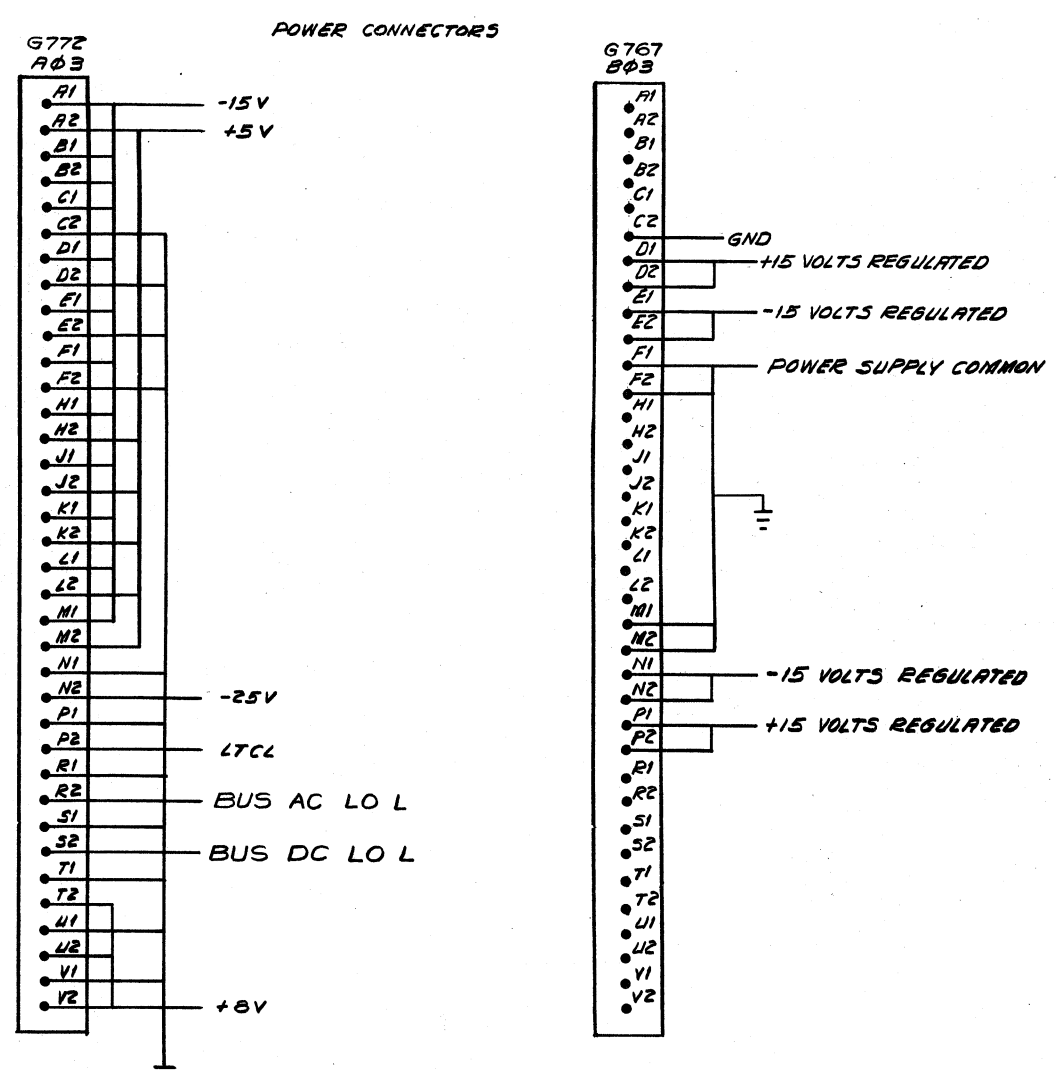
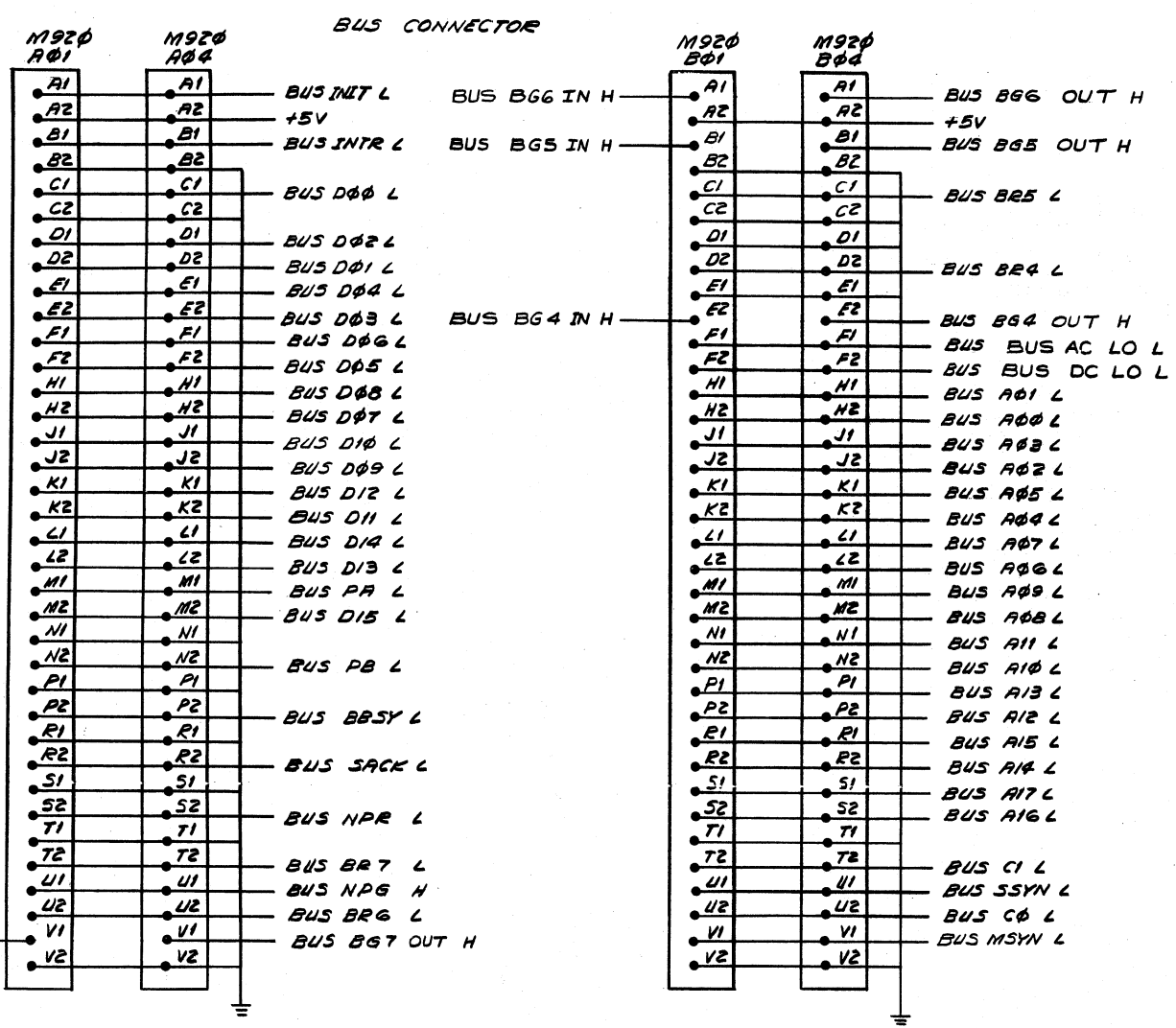
FIRST USED ON OPTION MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
AA11-D		PARTS LIST		
UNLESS OTHERWISE SPECIFIED	DRM	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK	DATE	TITLE	
DIMENSION IN INCHES		7-9-70	INTERFACE	
TOLERANCES	ENG.	10-26-70	SIZE CODE NUMBER REV.	
DECIMALS FRACTIONS ANGLES	PROJ. ENG.	11-12-70	DBS	AA11-D-04
± .005 ± 1/64 ± 0°30'	PRD.		SCALE	1 OF 1
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			SHEET	
MATERIAL	NEXT HIGHER ASSY			
	AA-ML-AA11-D			
FINISH				

REV.	CHANGE NO.



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SIZE CODE D I C A A I I - D - 0 5



REV.	CHANGE NO.	DATE
A	AAI1D-0002	1-26-71

REVISIONS

CHK: [Signature]

ENG: [Signature]

PROD: [Signature]

DATE: 1-26-71

FIRST USED ON OPTION MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
AAI1-D				

UNLESS OTHERWISE SPECIFIED	DATE	DATE	DATE	DATE
DRAWN	6-23-70			
CHECKED		7-6-70		
ENG.				
PROJ. ENG.				
PROD.				

**digital EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

TITLE: **AAI1-D BUS & POWER CONNECTIONS**

SCALE: 1 OF 1

SIZE CODE: D I C A A I I - D - 0 5

NUMBER: A

REV. NO.:

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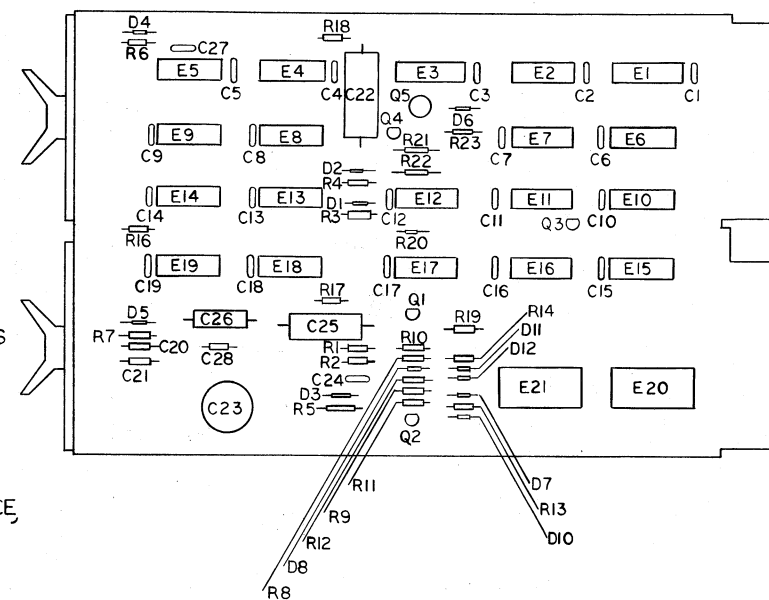
PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	CI THRU C19, C24, C27	.01 MF 100V 20% DISC	1001610	21
2	C20, C21	1 MF 35V 10% S.TANT	1001776	2
3	C22	.22 MF 100V 10% MYLAR	1000037	1
4	C23	1 MF 100V 20% DISC	1000030	1
5	C25	.15 MF 100V 10% MYLAR	1002629	1
6	C26	.047 MF 100V 10% MYLAR	1000051	1
7	DI THRU D8	D604 DIODE	1100114	8
8	D10, D11, D12	D670 DIODE	1102162	3
9	E1, E10, E13, E15	DEC 7474 IC	1905547	4
10	E2, E14	DEC 8881 IC	1909705	2
11	E3, E4, E5, E8, E9, E12, E16, E17, E18, E19	DEC 7400 IC	1905575	10
12	E6	DEC 7420 IC	1905577	1
13	E7, E11	DEC 7410 IC	1905576	2
14	E20, E21	IC SOCKET	1209838	2
15	R1, R6	330 1/4 W 5% RES	1300295	2
16	R2, R12	750 1/4 W 5% RES	1301401	2
17	R3, R5, R7	470 1/4 W 5% RES	1300316	3
18	R4	220 1/4 W 5% RES	1300271	1
19	R8, R9, R10, R11, R14, R17, R18, R19, R23	3K 1/4 W 5% RES	1300432	10
20	R13	680 1/4 W 5% RES	1301424	1
21	R16	820 1/4 W 5% RES	1301775	1
22	R20, R22	1K 1/4 W 5% RES	1300365	2
23	Q1, Q2	DEC 6534 C TRANSISTOR	1503409-02	2
24	Q3, Q4	DEC 2 TRANSISTOR	1505650	2
25	Q5	DEC 3638 B TRANSISTOR	1502979	1
26	TP1-TP3, C28 OPTION	SPLIT LUGS	9006735	5

NOTES:

- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KAI1 PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED; MULTIPLE NOTATIONS OF THE SAME SIGNALS WITHIN A MODULE HAVE THE PIN NOTED ON EACH. AN INPUT SIGNAL IS NOTED ONLY ONCE PER SHEET UNLESS SEPERATE PINS ARE USED; MULTIPLE INPUTS ARE CONNECTED. MODULE OUTPUT SIGNALS ARE BROUGHT TO THE EXTREME RIGHT OF EACH SHEET.
- PROCESSOR SIGNAL SOURCE NOTATION (K10-2, FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. IF ON A PRINT, THE FIRST NUMBER OF THE K PREFIXES COINCIDE FOR A SIGNAL NAME AND THE PRINT (SEE TITLE BLOCK), THE SIGNAL IS GENERATED ON THE MODULE. A DIFFERENCE IN THE FIRST NUMBER OF THE K PREFIXES INDICATES A SIGNAL GENERATED OFF THE MODULE. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
- DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE, PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM. CAPACITORS WITHOUT NOTED VALUES ARE .01 MFD.
- GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY.
- ⊙ INDICATES SPLT LUGS.
- C28 IS AN ENGINEERING OPTION.

COMPONENT PLACEMENT



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

FIRST USED ON OPT/MOD AA11-D	QTY.	DESCRIPTION	PART NO.	ITEM NO.																																													
PARTS LIST																																																	
<table border="1"> <tr> <td>UNLESS OTHERWISE SPECIFIED</td> <td>DRN</td> <td>DATE</td> <td colspan="2">digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS</td> </tr> <tr> <td>UNLESS OTHERWISE SPECIFIED</td> <td>CHK'D</td> <td>DATE</td> <td colspan="2">TITLE</td> </tr> <tr> <td>DIMENSION IN INCHES</td> <td>ENG</td> <td>DATE</td> <td colspan="2">DISPLAY CONTROL M799</td> </tr> <tr> <td>TOLERANCES</td> <td>PROJ. ENG.</td> <td>DATE</td> <td>SIZE CODE</td> <td>NUMBER</td> </tr> <tr> <td>DECIMALS ± .005</td> <td>PROD.</td> <td>DATE</td> <td>DCSM799-0-1</td> <td>REV. D</td> </tr> <tr> <td>FRACTIONS ± 1/64</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ANGLES ± 0°30'</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>FINAL SURFACE QUALITY</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>REMOVE BURRS AND BREAK SHARP CORNERS</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE		DIMENSION IN INCHES	ENG	DATE	DISPLAY CONTROL M799		TOLERANCES	PROJ. ENG.	DATE	SIZE CODE	NUMBER	DECIMALS ± .005	PROD.	DATE	DCSM799-0-1	REV. D	FRACTIONS ± 1/64					ANGLES ± 0°30'					FINAL SURFACE QUALITY					REMOVE BURRS AND BREAK SHARP CORNERS				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS																																														
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REMOVE BURRS AND BREAK SHARP CORNERS																																																	
MATERIAL	NEXT HIGHER ASSY																																																
FINISH	A-ML-AAH-D	SCALE	NONE	SHEET 1 OF 2																																													

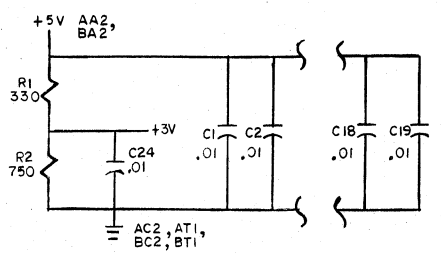
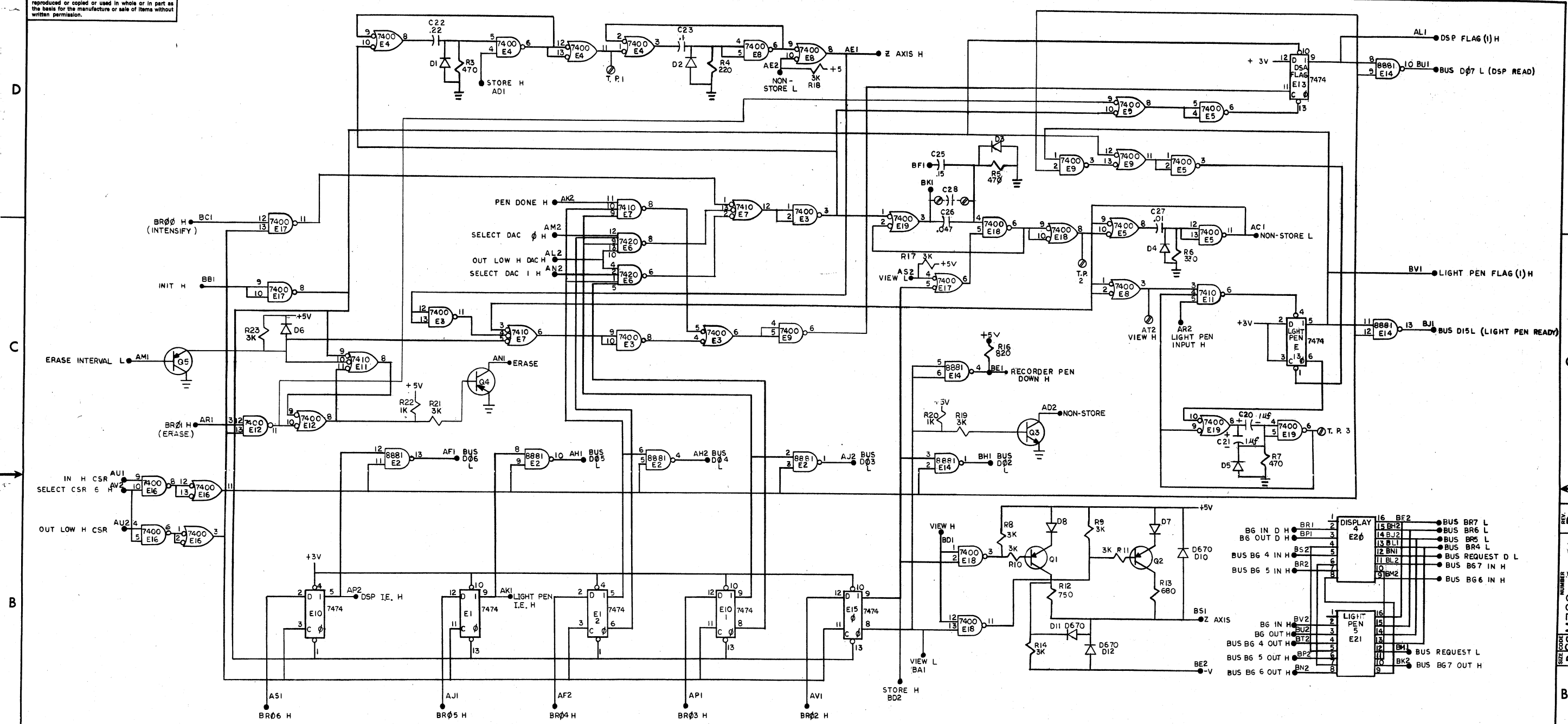
REV. D	CHG. NO. M799-00001	DATE 10/12/70
REV. C	CHG. NO. M799-00002	DATE 1-3-71
ROGER GAGNE 3-3-71		

REV. D  
NUMBER  
DCSM799-0-1

1 Pink

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1-0-662W3212

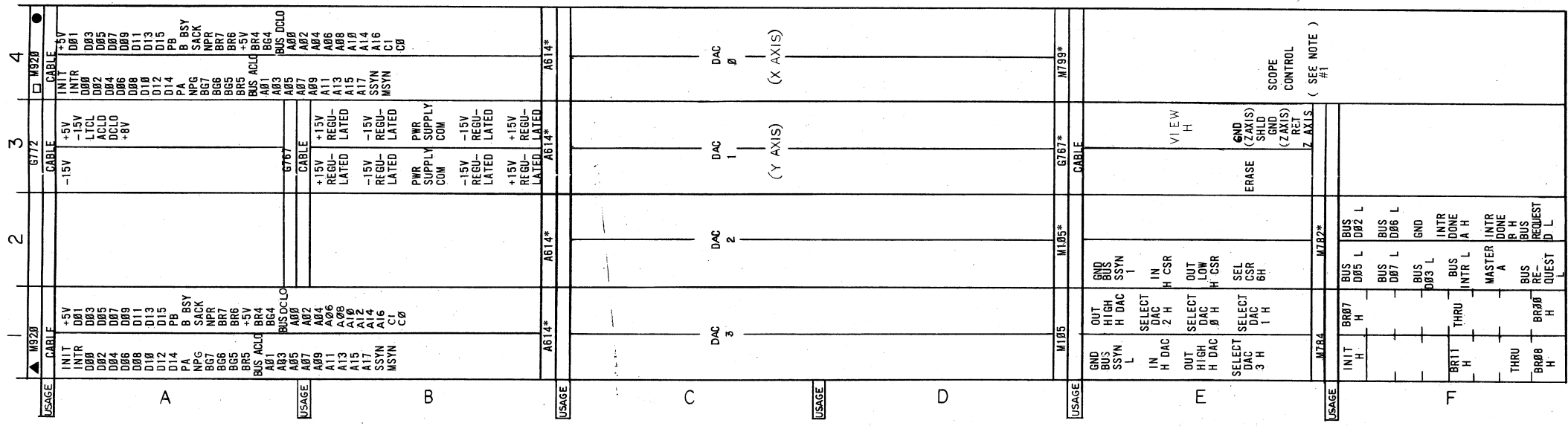


FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
A11-D				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED				
DRM	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE <b>DISPLAY CONTROL M799</b>		
CHK'D	DATE			
ENG.	DATE			
PROJ. ENG.	DATE			
PROD.	DATE	SIZE CODE NUMBER DCSM799-0-1		
MATERIAL		NEXT HIGHER ASSY		
FINISH		SCALE		
SHEET		2 OF 2		

REV.	CHANGE NO.	REVISIONS

DEC FORM NO DRD 102A

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□ -IF END OF BUS REPLACE M920 WITH M930  
 ● -IF LAST UNIT IN BASIC BOX, REPLACE M920 WITH BC11-A CABLE END WHEN EXPANDING TO PERIPHERAL BOX  
 ▲ -IF FIRST UNIT IN EXPANDER BOX, REPLACE M920 WITH BC11-A CABLE END.  
 \*BLOCKS WITH \* INDICATE LOCATIONS RESERVED FOR AA11-A OR AA11-B OR AA11-C AND A614 OPTIONS.  
 NOTE:  
 1. IF M799 NOT USED PLACE A G727 IN SLOT F04

REVISIONS	
CHK	CHANGE NO.
FR	AA11D-00004 A
	M. Jones 4-14-71
	GAGNE
	4-20-71
	AA11C-00002 B
	8-16-71
	GAGNE
	7-5-71

FIRST USED ON OPTION/MOD AA11-D	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION WAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
DIMENSION IN INCHES	ENG	DATE	MODULE UTILIZATION	
TOLERANCES	PROJ. ENG.	DATE	SCALE	
FINAL SURFACE QUALITY	PROD.	DATE	SHEET	
REMOVE BURRS AND BREAK SHARP CORNERS	NEXT HIGHER ASSY	DATE	DIST.	
MATERIAL	AA11-DA		REV. B	
FINISH	SCALE		NUMBER	
	SHEET		AA11-0-MU	

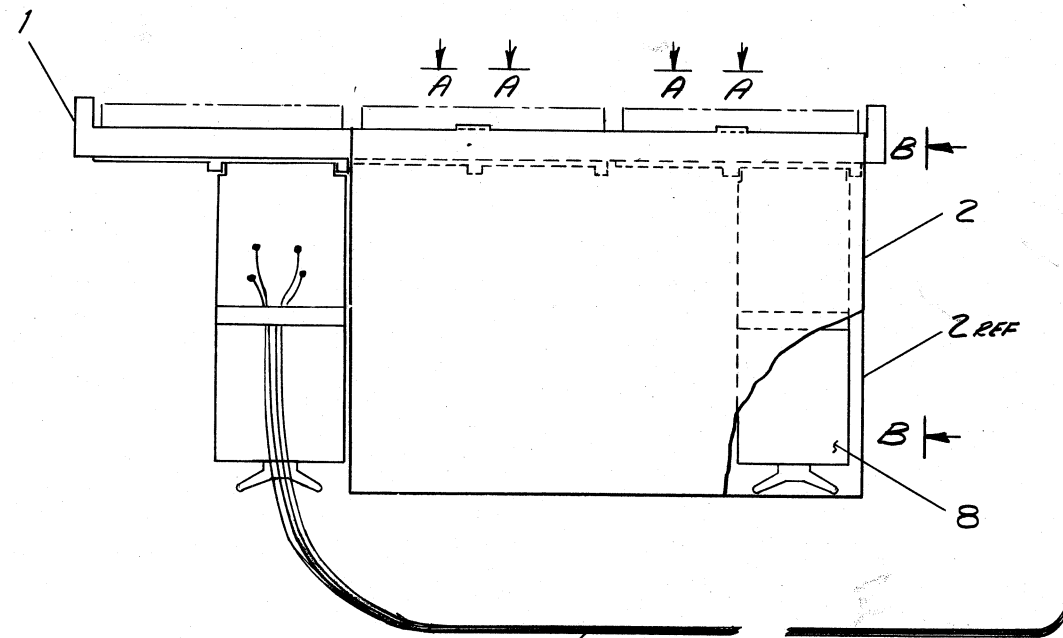
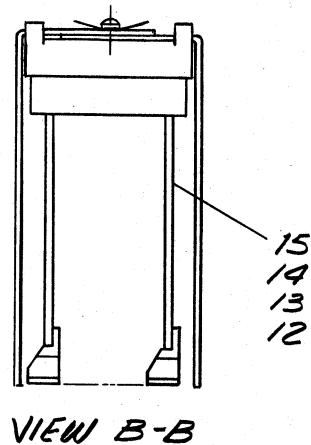
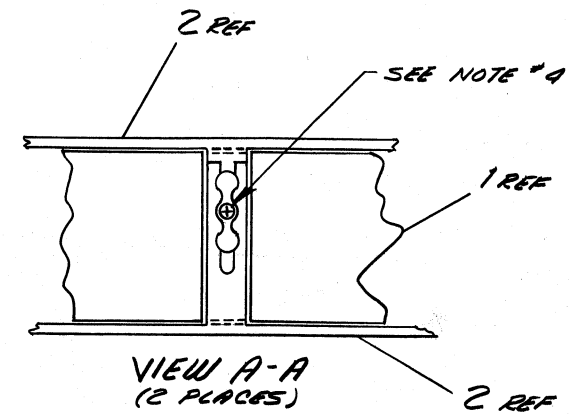


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LEGEND	
NUMBER	VARIATION
AA11-DA	115V CONTROL ASSY
AA11-DB	230V CONTROL ASSY

WIRE TABLE						
ITEM NO	DESCRIPTION	FROM		TO		WITH CONNECTION WITH
		AWG	COLOR	CONNECTION	CONNECTION	
4	#14 TWP	RED	P5 REF	---	TB2-1	---
	#14 TWP	BLU	P4 REF	---	TB2-4	---
9	#14 TWP	BLU	P3 REF	---	TB2-8	---
	#14 TWP	BRN	P2 REF	---	TB2-5	---
9	#14 TWP	RED	TB1-3	ITEM 11	115V/230V PNL	ITEM 10
	#14 TWP	WHT	TB1-2	ITEM 11	115V/230V PNL	ITEM 10

- NOTES:**
1. POWER SUPPLY & LOGIC LOCATION IN CAB TO BE DETERMINED BY SYSTEM REQUIRED.
  2. ITEMS #12 THRU #15 ARE OPTIONS TO AA11-D UNITS.
  3. FOR LOCATION OF MODULES IN OPTIONS ITEM 12, 13, 14 AND 15 REFER TO D-MU-AA11-D-MU
  4. TO INSTALL PROTECTION PLATE ITEM #2 BACK OFF GND SCREW ON BLOCK, SLIDE IN PLATES AND RETIGHTEN SCREW.
  5. FOR DRAWING INDEX LIST REFER TO D-DI-AA11-D-1



CONNECT TO 115V OR 230V TABS ON POWER DISTRIBUTION PANEL IN CAB

SEE WIRE TABLE

SEE WIRE TABLE

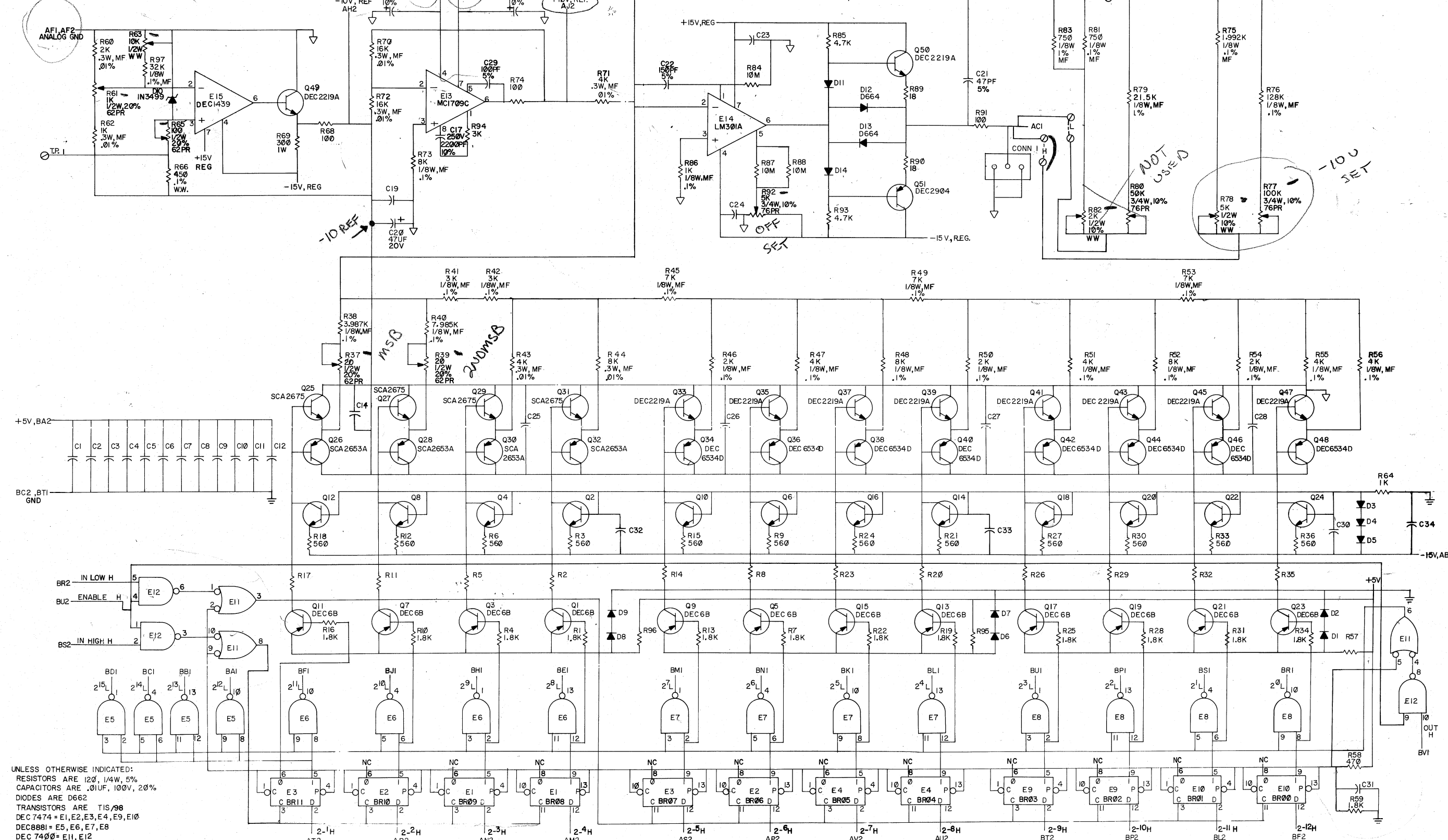
REVISIONS	NO.	REV.
CHK		

FIRST USED ON OPTION/ MOD AA11-D	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRY	DATE	digital EQUIPMENT CORPORATION WATYARD MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
DIMENSION IN INCHES	ENG.	DATE	DIGITAL TO ANALOG CONTROL ASSY (AA11-D)	
TOLERANCES	PROJ. ENG.	DATE	SIZE/CODE	
ANGLES	PRQD.	DATE	NUMBER	
FINAL SURFACE QUALITY	NEXT HIGHER ASSY		DUA AA11-D-0	
REMOVE BURRS AND BREAK SHARP CORNERS	FINISH		- REV.	
	SCALE		DIST.	
	SHEET	1 OF 1		

SIZE CODE  
DUA AA11-D-0

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1-0-19V SC D  
3003 3/15



UNLESS OTHERWISE INDICATED:  
RESISTORS ARE 1/2W, 1/4W, 5%  
CAPACITORS ARE .01UF, 100V, 20%  
DIODES ARE D662  
TRANSISTORS ARE TIS/98  
DEC 7474 = E1, E2, E3, E4, E9, E10  
DEC 8881 = E5, E6, E7, E8  
DEC 7400 = E11, E12  
PIN 7 = GND, ON E1 THRU E12  
PIN 14 = +5V  
--- = CUSTOMER OPTION, DO NOT INSERT  
▽ = ANALOG GND  
SHIELD IS TIED TO ANALOG GND

○ = SPLIT LUG  
CONNECTOR ONE (1) IS A 1209456

REV	DATE	BY	CHKD
1	9-30-70	W. Wyatt	
2	11-11-70		

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA
D662	IN645	DEC 6534D	MPS 6534
D664	IN3499	SCA 2653A	SAME
2N2904	SAME	SCA 2675	SAME
DEC 2219A	2N2219	TIS 98	SAME
		DEC 6B	NONE

DRN	DATE	9-30-70
CHKD	DATE	11-11-70
APP'D	DATE	11/11/70
PROD	DATE	

digital		EQUIPMENT CORPORATION		MAYNARD, MASSACHUSETTS	
SIZE	CODE	NUMBER	REV		
D	CS	A614-0-1	C		
PRINTED CIRCUIT REV. [ ]					

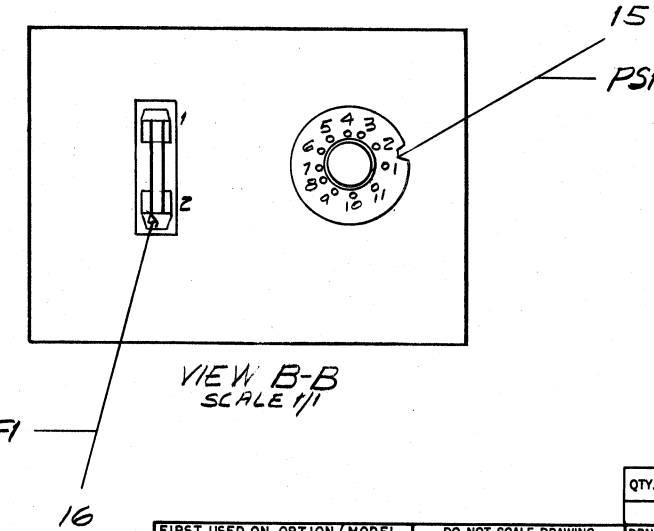
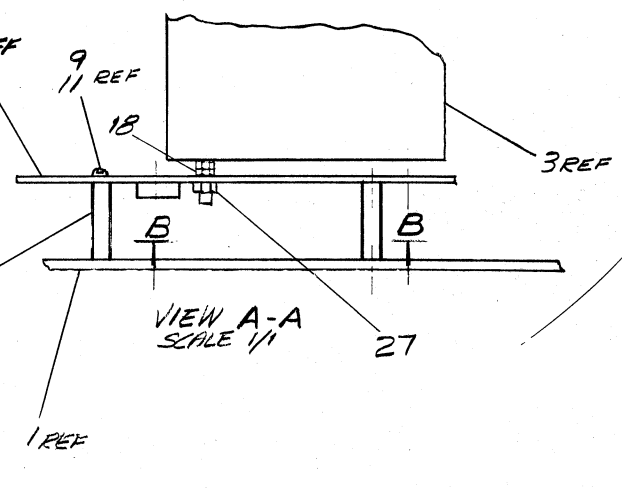
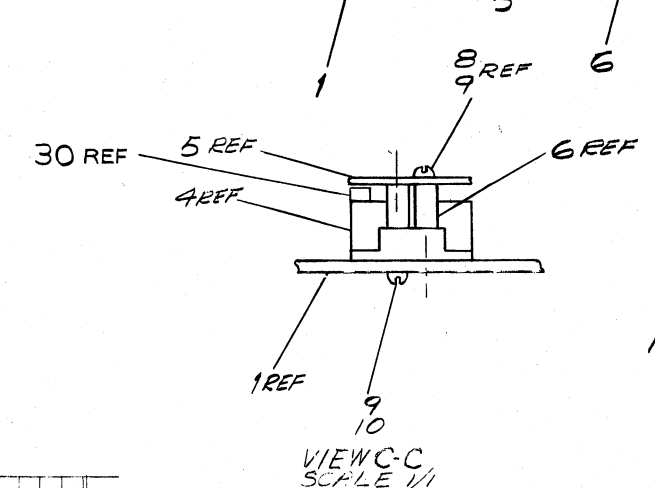
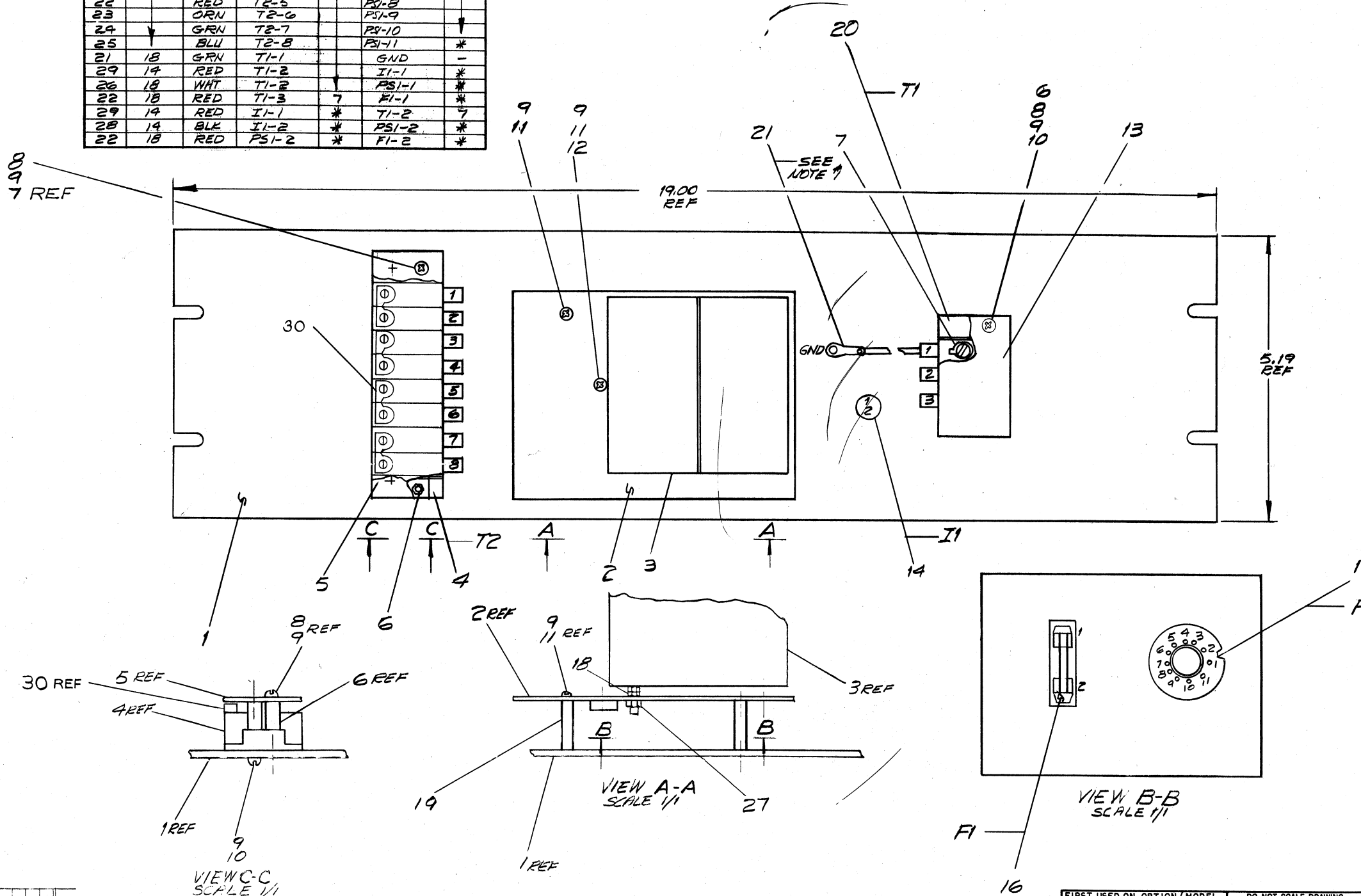
TITLE 12 BIT BI POLAR DAC CONVERTER A614

157, 324, 434, 435, 3 5 PINK

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WIRE TABLE						
ITEM NO	AWG	COLOR	FROM CONNECTION	WITH CONNECTION	TO CONNECTION	WITH CONNECTION
22	18	RED	T2-1	7	PSI-4	*
23		ORN	T2-2		PSI-5	
24		GRN	T2-3		PSI-6	
25		BLU	T2-4		PSI-7	
22		RED	T2-5		PSI-8	
23		ORN	T2-6		PSI-9	
24		GRN	T2-7		PSI-10	
25		BLU	T2-8		PSI-11	*
21	18	GRN	T1-1		GND	-
29	14	RED	T1-2		I1-1	*
26	18	WHT	T1-2		PSI-1	*
22	18	RED	T1-3	7	FI-1	*
29	14	RED	I1-1	*	T1-2	*
28	14	BLK	I1-2	*	PSI-2	*
22	18	RED	PSI-2	*	FI-2	*

NOTES:  
 1. ITEM (24) GRN WIRE, TO BE SOLDERED TO ITEM (21) GND LUG, THEN FASTEN ITEM (21) GND LUG BETWEEN ITEM (21) MTS. PANEL AND ITEM (20) SPACER.  
 2. \* INDICATES SOLDERED END OF WIRE.



REV.	CHANGE NO.	DATE	BY	CHK
A	H704C-00002	1-17-70	GAGNE	
B	H704C-00003	1-17-70	GAGNE	

FIRST USED ON OPTION/MODEL  
AA11-D

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN.	DATE	digital EQUIPMENT CORPORATION	
CHKD.	DATE	MAYNARD, MASSACHUSETTS	
ENG.	DATE	TITLE	
PROJ. ENG.	DATE	POWER SUPPLY ASSY (115 VAC)	
PROD.	DATE	NEXT HIGHER ASSY	
SCALE		SIZE CODE	NUMBER
SHEET OF		DUA H704-C-0	REV. B

REV. B  
 NUMBER DUA H704-C-0  
 SIZE CODE

DRWG NO	REV LTR
K-WL-AA11-D-WL	A

REVISIONS			
REV LTR	ECO NO	DATE	ENG
A	AA11D-00005	6-24-71	RA

DRAWN <i>Kohlschund</i>	DATE 11-4-70	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE WIRE LIST		
CHECKED <i>K. Duss</i>	DATE 11-12-70		FOR TAPE #      FILE #		
ENG <i>R. Alogue</i>	DATE 11-12-70		ASSY NO —	SIZE K	CODE WL
PROJ ENG <i>R. Alogue</i>	DATE 11-12-70		SCALE —	DWG. NO. AA11-D-WL	REV LTR A
PROD <i>A. Heisch</i>	DATE 11-12-70		SHEET / OF /	DIST.	













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LENGTH EXCEPTIONS

RUN NAME A/P PIN ORDER PIN RAY - ORDER 0 DRAW RV PG Y X Z REMARKS

BUS 007 L A01H2 1-01 C AA11D-05 2 CABLE 59
BUS 007 L A04H2 1-02 C AA11D-05 1 CABLE 59
BUS 007 L D04M1 1-03 AA11D-03 2 59
BUS 007 L D03M1 1-04 AA11D-03 1 59
BUS 007 L D02M1 1-05 AA11D-03 2 59
BUS 007 L D01M1 1-06 AA11D-03 1 59
BUS 007 L F01C1 1-07 AA11D-04 2 59
BUS 007 L F02H1 1-08 AA11D-04 2 59
BUS 007 L F04U1 1-09 AA11D-06 1 59
BUS 008 L A01H1 1-01 C AA11D-05 2 CABLE 60
BUS 008 L A04H1 1-02 C AA11D-05 1 CABLE 60
BUS 008 L D04E1 1-03 AA11D-03 2 60
BUS 008 L D03E1 1-04 AA11D-03 1 60
BUS 008 L D02E1 1-05 AA11D-03 2 60
BUS 008 L D01E1 1-06 AA11D-03 1 60
BUS 008 L F01V1 1-07 AA11D-04 1 60

BUS 009 L A01J2 1-01 C AA11D-05 2 CABLE 61
BUS 009 L A04J2 1-02 C AA11D-05 1 CABLE 61
BUS 009 L D04H1 1-03 AA11D-03 2 61
BUS 009 L D03H1 1-04 AA11D-03 1 61
BUS 009 L D02H1 1-05 AA11D-03 2 61
BUS 009 L D01H1 1-06 AA11D-03 1 61
BUS 009 L F01R1 1-07 AA11D-04 1 61

BUS 010 L A01J1 1-01 C AA11D-05 2 CABLE 62
BUS 010 L A04J1 1-02 C AA11D-05 1 CABLE 62
BUS 010 L D04J1 1-03 AA11D-03 2 62
BUS 010 L D03J1 1-04 AA11D-03 1 62
BUS 010 L D02J1 1-05 AA11D-03 2 62
BUS 010 L D01J1 1-06 AA11D-03 1 62
BUS 010 L F01N1 1-07 AA11D-04 1 62

BUS 011 L A01K2 1-01 C AA11D-05 2 CABLE 63
BUS 011 L A04K2 1-02 C AA11D-05 1 CABLE 63
BUS 011 L D04F1 1-03 AA11D-03 2 63
BUS 011 L D03F1 1-04 AA11D-03 1 63
BUS 011 L D02F1 1-05 AA11D-03 2 63
BUS 011 L D01F1 1-06 AA11D-03 1 63
BUS 011 L F01L1 1-07 AA11D-04 1 63

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LENGTH EXCEPTIONS

RUN NAME A/P PIN ORDER PIN RAY - ORDER 0 DRAW RV PG Y X Z REMARKS

BUS 012 L A01K1 1-01 C AA11D-05 2 CABLE 64
BUS 012 L A04K1 1-02 C AA11D-05 1 CABLE 64
BUS 012 L D04C1 1-03 AA11D-03 2 64
BUS 012 L D03C1 1-04 AA11D-03 1 64
BUS 012 L D02C1 1-05 AA11D-03 2 64
BUS 012 L D01C1 1-06 AA11D-03 1 64

BUS 013 L A04L2 1-01 C AA11D-05 2 CABLE 65
BUS 013 L A01L2 1-02 C AA11D-05 1 CABLE 65
BUS 013 L D01A1 1-03 AA11D-03 2 65
BUS 013 L D02A1 1-04 AA11D-03 1 65
BUS 013 L D03A1 1-05 AA11D-03 2 65
BUS 013 L D04A1 1-06 AA11D-03 1 65

BUS 014 L A01L1 1-01 C AA11D-05 2 CABLE 66
BUS 014 L A04L1 1-02 C AA11D-05 1 CABLE 66
BUS 014 L D04B1 1-03 AA11D-03 2 66
BUS 014 L D03B1 1-04 AA11D-03 1 66
BUS 014 L D02B1 1-05 AA11D-03 2 66
BUS 014 L D01B1 1-06 AA11D-03 1 66

BUS 015 L A04M2 1-01 C AA11D-05 2 CABLE 67
BUS 015 L A01M2 1-02 C AA11D-05 1 CABLE 67
BUS 015 L D01D1 1-03 AA11D-03 2 67
BUS 015 L D02D1 1-04 AA11D-03 1 67
BUS 015 L D03D1 1-05 AA11D-03 2 67
BUS 015 L D04D1 1-06 AA11D-03 1 67
BUS 015 L F04J1 1-07 AA11D-04 1 67

BUS INTR L A04A1 1-01 C AA11D-05 2 CABLE 68
BUS INTR L A01A1 1-02 C AA11D-05 1 CABLE 68
BUS INTR L F01A1 1-03 1 68
BUS INTR L A04B1 1-01 C AA11D-05 2 CABLE 69
BUS INTR L A01B1 1-02 C AA11D-05 1 CABLE 69
BUS INTR L F02M1 1-03 1 69

AA11D.A  
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A/P PIN ORDER PIN BAY - ORDER

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 LENGTH EXCEPTIONS RUN NUMBER

Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
C	AA11D-05					2			CABLE	70
C	AA11D-05					1			CABLE	70
						2				70
								15-0/8		70
C	AA11D-05					1			CABLE	71
C	AA11D-05					1			CABLE	71
								3-6/8		71
C	AA11D-05					1			CABLE	72
C	AA11D-05					1			CABLE	72
								3-6/8		72
C	AA11D-05					1			CABLE	73
C	AA11D-05					1			CABLE	73
								3-6/8		73
C	AA11D-05					1			CABLE	74
C	AA11D-05					1			CABLE	74
								3-6/8		74
AA11D-04						1				75
AA11D-06						1				75
								3-4/8		75
AA11D-04						1				76
AA11D-06						1				76
								3-4/8		76
C	AA11D-05					2			CABLE	77
C	AA11D-05					1			CABLE	77
								19-6/8		77
C	AA11D-05					2			CABLE	78
C	AA11D-05					1			CABLE	78
										78
						2				78
						2				78
						1				78
AA11D-04						1				78
								20-0/8		78
AA11D-04						1				79
AA11D-04						1				79
								3-0/8		79

AA11D.A  
 RUN NAME HND288,V10 12/3/70

A/P PIN ORDER PIN BAY - ORDER

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 LENGTH EXCEPTIONS RUN NUMBER

Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
H	F02M2					1				80
H	F02S1					1				80
								3-0/8		80
H	E04L1					1				81
H	F02U1					1				81
								6-4/8		81
H	E04P2					1				82
H	F02V1					1				82
								6-2/8		82
L	E03U1					1			CABLE	83
L	E04N1					1				83
								3-2/8		83
L	E03V1					1			CABLE	84
L	E04M1					1				84
								3-4/8		84
A01B2						1				85
A01C2						2				85
A01N1						1				85
A01R1						2				85
A01P1						1				85
A01S1						2				85
A01T1						1				85
A01V2						2				85
B01B2						1				85
B01D1						2				85
B01C2						1				85
B01E1						2				85
B01T1						1				85
B01V2						2				85
C01C2						1				85
C01T1						2				85
D01C2						1				85
D01T1						2				85
D01A1						1				85
E01C2						2				85
E01T1						1				85
F01C2						2				85
F01T1						1				85
								68-0/8		85

RUN NAME	A/P	PIN	ORDER	PIN	BAY -	ORDER	RAY -	ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN	NUMBER
GND 02		A02C2		1-01		1-01									2					86
GND 02		A02T1		1-02		1-02									1					86
GND 02		B02C2		1-03		1-03									2					86
GND 02		B02T1		1-04		1-04									1					86
GND 02		C02C2		1-05		1-05									2					86
GND 02		C02T1		1-06		1-06									1					86
GND 02		D02C2		1-07		1-07									2					86
GND 02		D02T1		1-08		1-08									1					86
GND 02		E02A1		1-09		1-09									2					86
GND 02		E02C2		1-10		1-10									1					86
GND 02		E02T1		1-11		1-11									2					86
GND 02		F02C2		1-12		1-12									1					86
GND 02		F02J2		1-13		1-13									2					86
GND 02		F02T1		1-14		1-14									1					86
GND 02				1												46-0/8				86
GND 03		A03C2		1-01		1-01									2					87
GND 03		A03T1		1-02		1-02									1					87
GND 03		B03C2		1-03		1-03									2					87
GND 03		B03T1		1-04		1-04									1					87
GND 03		C03C2		1-05		1-05									2					87
GND 03		C03T1		1-06		1-06									1					87
GND 03		D03C2		1-07		1-07									2					87
GND 03		D03T1		1-08		1-08									1					87
GND 03		E03C2		1-09		1-09									2					87
GND 03		E03S2		1-10		1-10									1					87
GND 03		E03T2		1-11		1-11				AA110-02					2					87
GND 03		E03T1		1-12		1-12				AA110-02					1					87
GND 03		F03C2		1-13		1-13									2					87
GND 03		F03T1		1-14		1-14									1					87
GND 03				1												45-6/8				87

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RUN NAME	A/P	PIN	ORDER	PIN	BAY -	ORDER	RAY -	ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN	NUMBER
GND 04		A04B2		1-01		1-01									1					88
GND 04		A04C2		1-02		1-02									2					88
GND 04		A04N1		1-03		1-03									1					88
GND 04		A04R1		1-04		1-04									2					88
GND 04		A04P1		1-05		1-05									1					88
GND 04		A04S1		1-06		1-06									2					88
GND 04		A04T1		1-07		1-07									1					88
GND 04		A04V2		1-08		1-08									2					88
GND 04		B04B2		1-09		1-09									1					88
GND 04		B04D1		1-10		1-10									2					88
GND 04		B04C2		1-11		1-11									1					88
GND 04		B04E1		1-12		1-12									2					88
GND 04		B04T1		1-13		1-13									1					88
GND 04		B04V2		1-14		1-14									2					88
GND 04		C04C2		1-15		1-15									1					88
GND 04		C04T1		1-16		1-16									2					88
GND 04		D04C2		1-17		1-17									1					88
GND 04		D04T1		1-18		1-18									2					88
GND 04		E04C2		1-19		1-19									1					88
GND 04		E04T1		1-20		1-20									2					88
GND 04		F04C2		1-21		1-21									1					88
GND 04		F04T1		1-22		1-22									2					88
GND 04				1												65-4/8				88
IN H CSR	H	E02M1		1-01		1-01									1					89
IN H CSR	H	F04U1		1-02		1-02														89
IN H CSR				1												3-6/8				89
IN H DAC	H	D04V1		1-01		1-01									2					90
IN H DAC	H	D03V1		1-02		1-02									1					90
IN H DAC	H	D02V1		1-03		1-03									2					90
IN H DAC	H	D01V1		1-04		1-04									1					90
IN H DAC	H	E01M1		1-05		1-05														90
IN H DAC				1												12-2/8				90
INIT	H	F01B1		1-01		1-01									1					91
INIT	H	F04B1		1-02		1-02														91
INIT				1												3-6/8				91
LIGHT PEN FLAG (1)	H	F02K2		1-01		1-01									1					92
LIGHT PEN FLAG (1)	H	F04V1		1-02		1-02														92
LIGHT PEN FLAG (1)				1												3-6/8				92
LIGHT PEN I.E.	H	E04K1		1-01		1-01									1					93
LIGHT PEN I.E.	H	F02H2		1-02		1-02														93
LIGHT PEN I.E.				1												5-2/8				93





