

**digital**

**BD -50**

**Engineering Drawings**

**Digital Equipment Corporation**

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# DRAWING DIRECTORY

## CUSTOMER PRINT SET INDEX

THIS IS PRINT SET     

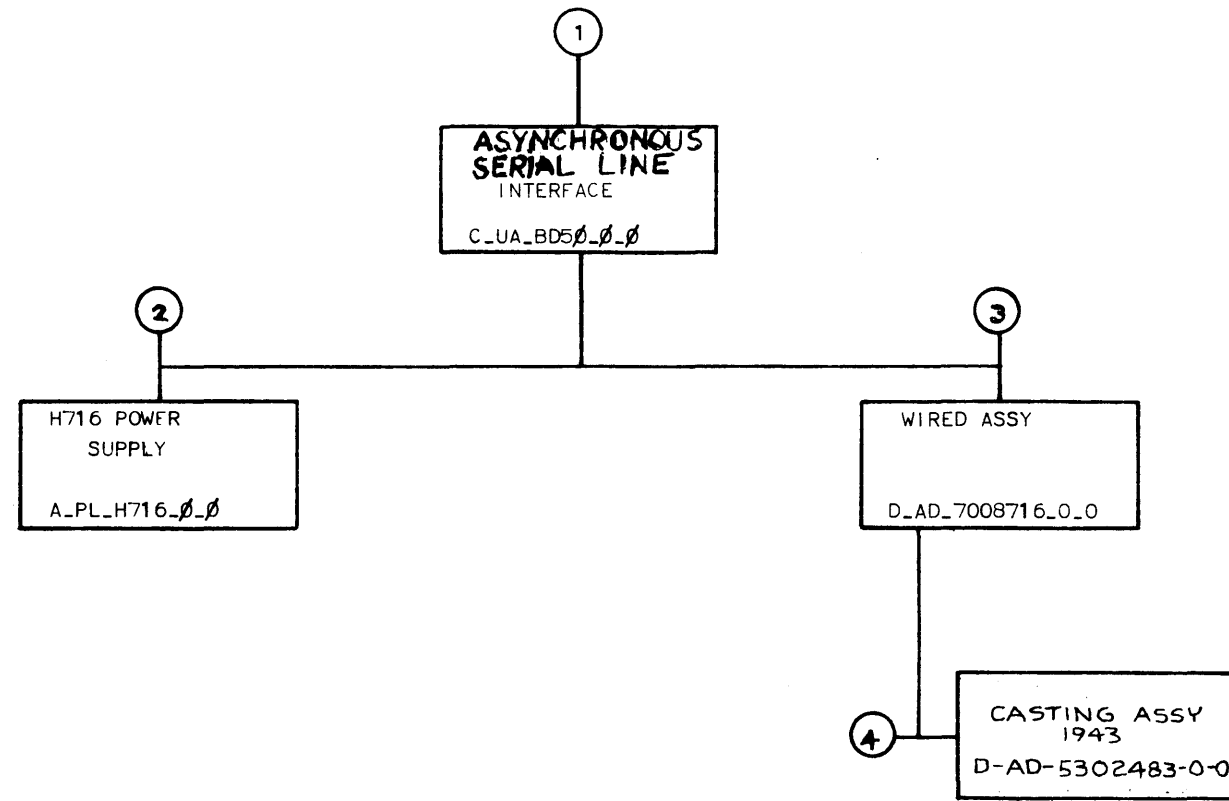
	SEQUENCE
DRAWING DIRECTORY	B-DD-BD50-0
MODULE UTILIZATION (BD50)	D-MU-BD50-0-1
MODULE UTILIZATION (PL)	A-PL-BD50-0-1
CH0 XMTR & RECEIVER	D-BS-BD50-0-2
CH1 XMTR & RECEIVER	D-BS-BD50-0-3
INTERFACE TO I/O BUS	D-BS-BD50-0-4
BD50-API	D-BS-BD50-0-5
IOT SELECTION	D-BS-BD50-0-6
I/O BUS CONNECTORS	D-IC-BD50-0-7
I/O BUS CABLE	D-IC-BD50-0-8
I/O BUS CONNECTOR TO POS BUS	D-IC-BD50-0-9
WIRE LIST	K-WL-BD50-0-10
ENGR SPECS	A-SP-BD50-0-11
ACCEPTANCE CRITERIA	A-SP-BD50-0-12
LEVEL CONVERTER	D-IA-BC01J-0-0
LEVEL CONVERTER	D-IA-BC01A-0-0
WIRE ASSY	D-AD-7008716-0-0
WIRE ASSY (PL)	A-PL-7008716-0-0

MFG. SET ASYNCHRONOUS SERIAL LINE INT	C-UM-BD50-0-0
ASYNCHRONOUS SERIAL LINE INT	A-PL-BD50-0-0
LEVEL CONVERTER	D-IA-BC01J-0-0
H716 POWER SUPPLY	A-PL-H716-0-0
WIRED ASSY	D-AD-7008716-0-0
WIRED ASSY (PL)	A-PL-7008716-0-0
LEVEL CONVERTER	D-IA-BC01A-0-0
CASTING ASSY 1943	D-AD-5302483-0-0

UNIT VARIATIONS		PRINT SET TYPE			
ARIATION	TITLE	BD50-0			
BD50-0	ASYNCHRONOUS SERIAL LINE INTERFACE	X			

REVISIONS	CHG. NO.	REV							USED ON OPTION/MODEL	DRN.	DATE	TITLE	SIZE CODE	NUMBER	REV
			DATE	DESCRIPTION	DATE	C. B. MC COY	11872	ASYNCHRONOUS SERIAL INTERFACE							
			DATE	DESCRIPTION	DATE	CHK'D	DATE								
	0001	A	1/1/72	LEARSON				W. Reed	1-26-72		B	DD	BD50-0	E	
	0002	B	3/1/72	LEARSON				W. Reed	1-26-72		B	DD	BD50-0	E	
	0003	C	2/1/72	LEARSON				W. Reed	1-26-72		B	DD	BD50-0	E	
	0004	D	9/15/72	LEARSON				W. Reed	1-26-72		B	DD	BD50-0	E	
	0005	E	12-15-72	LEARSON				W. Reed	1-26-72		B	DD	BD50-0	E	

DRB 106



TITLE	SHEET 2 OF 3	SIZE CODE	NUMBER	REV
ASYNCHRONOUS SERIAL LINE INTERFACE		B DD	BD5φ-φ	E



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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
USAGE	M912 1/0 CABLE 2	M912 1/0 CABLE 2	M912 1/0 CABLE 2	M912 1/0 CABLE 2	M983 1/0 CABLE 2	M983 1/0 CABLE 2	M983 1/0 CABLE 2	M983 1/0 CABLE 2	M983 1/0 CABLE 2	M983 1/0 CABLE 2	M500 CONVERTER 2	M500 CONVERTER 2	M500 FOR POP9 2	M921 CHO SEL 2	M401 REC CLR 2	M706 REC CH0 2	M707 TRANS CH0 2	CABLE	M401 TR CLK 2	M401 REC CLK 2	M706 REC CH1 2	M707 TRANS CH1 2	
A	1/0 BUS THRU 08	1/0 BUS THRU 17	DS 8 THRU 05 SKP RQ INT ROST RD RQ RD STATUS 10 PWR CLR	1/0 BUS THRU 08	1/0 BUS THRU 17	DS 8 THRU 05 SKP RQ INT ROST RD RQ RD STATUS 10 PWR CLR	BAC 08 THRU 06 DS 3 BMB 06 DS 4 BMB 07 DS 5 BMB 08 DS 1 BMB 04 DS 2 BMB 05	BAC 08 THRU 06 DS 3 BMB 06 DS 4 BMB 07 DS 5 BMB 08 DS 1 BMB 04 DS 2 BMB 05	BAC 08 THRU 06 DS 3 BMB 06 DS 4 BMB 07 DS 5 BMB 08 DS 1 BMB 04 DS 2 BMB 05	BAC 08 THRU 06 DS 3 BMB 06 DS 4 BMB 07 DS 5 BMB 08 DS 1 BMB 04 DS 2 BMB 05	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN	AC 08 BUS DATA BUS 05 DATA BUS 07 INT ROST AC CLEAR B RUN
B	10 RUN DATA OFLO 10 OFLO 10 ADDR 03 08	10 ADDR 08 INCMB 1 CA INH API 8 RQ GR API 1 RQ GR 17	10 RUN DATA OFLO 10 OFLO 10 ADDR 03 08	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17
C	10 RUN DATA OFLO 10 OFLO 10 ADDR 03 08	10 ADDR 08 INCMB 1 CA INH API 8 RQ GR API 1 RQ GR 17	10 RUN DATA OFLO 10 OFLO 10 ADDR 03 08	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17

	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
USAGE	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2	M115 CABLE 2		
C	10 RUN DATA OFLO 10 OFLO 10 ADDR 03 08	10 ADDR 08 INCMB 1 CA INH API 8 RQ GR API 1 RQ GR 17	10 RUN DATA OFLO 10 OFLO 10 ADDR 03 08	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	10 ADDR 08 INCMB 1 CA INH API 3 RQ GR DCH RQ GR EN 17	
D	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H	SEL REQ (1)H SEL 08 CLR AC CH0 CH1 XREQ (1)H X REQ (1)H	RREQ (1)H R REQ (1)H

H716 POWER SUPPLY

REVISIONS	CHANGE NO.	REV.
1	BD50-00001	A
2	BD50-00002	B
3	BD50-00002	B
4	BD50-00002	B
5	BD50-00002	B
6	BD50-00002	B
7	BD50-00002	B
8	BD50-00002	B

- ▲ 8 FAMILY NEG BUS CABLES BC80C-6
- \* 8 FAMILY POS BUS CABLES BC80A-6
- WHEN USED ON POP-9 REMOVE M500 FROM A13 AND PUT IN A12
- ONLY USED WITH POP-9
- BC80C-5, POP-9

FIRST USED ON OPTION/MODEL  
BD50

DO NOT SCALE DRAWING	DRN. <i>CEM/Cy</i>	DATE 1-21-72
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	CHK'D. <i>CEM/Cy</i>	DATE 8-72
TOLERANCES	ENG. <i>CEM/Cy</i>	DATE 1-22-72
DECIMALS FRACTIONS ANGLES	PROJ. ENG. <i>CEM/Cy</i>	DATE 1-22-72
= .005 = 1/64 = 0°30'	PROD. <i>CEM/Cy</i>	DATE 1-21-72
FINAL SURFACE QUALITY	NEXT HIGHER ASSY	
REMOVE BURRS AND BREAK SHARP CORNERS	B-DD-BD50-0	
	SCALE 11	
	SHEET 1 OF 1	

**digital** EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

MODULE UTILIZATION  
BD50

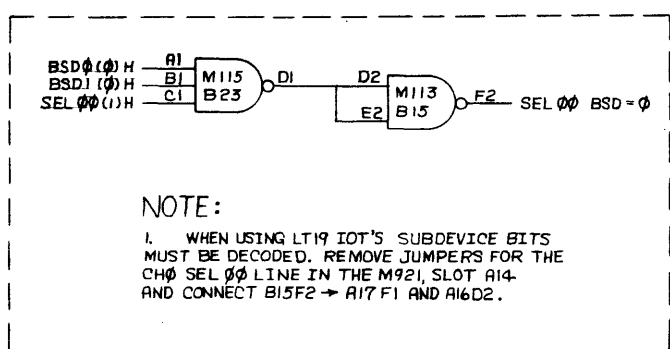
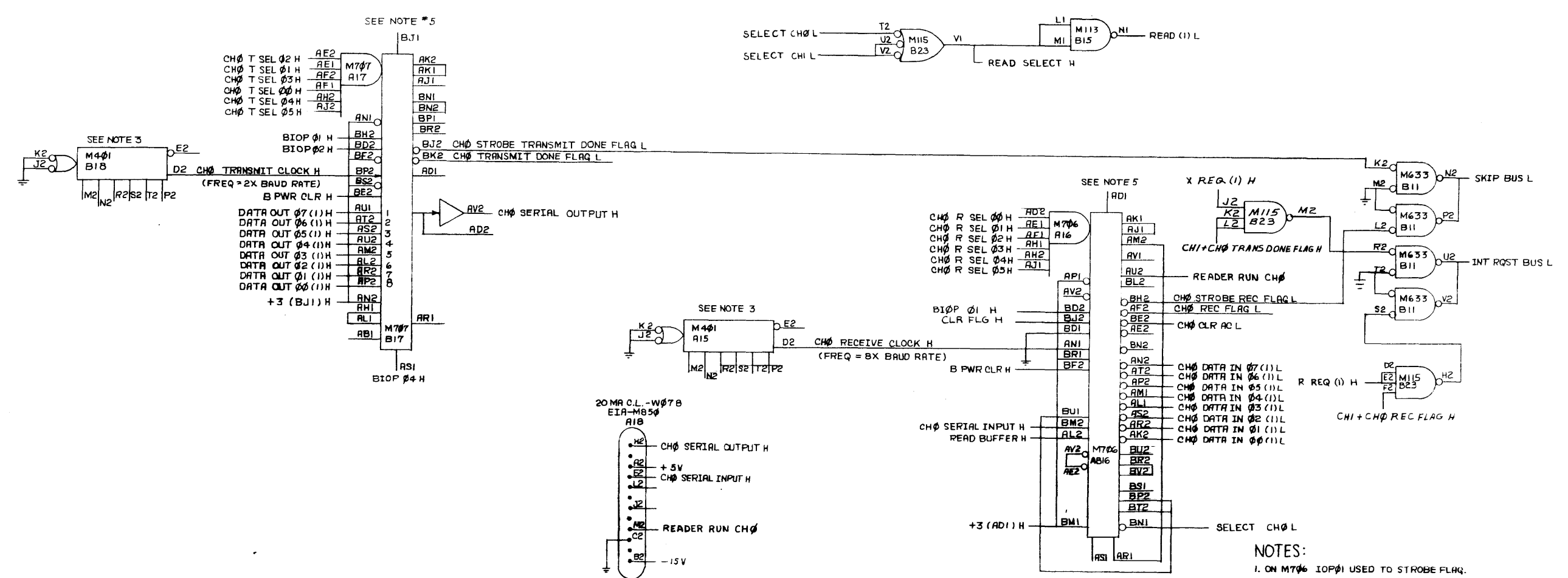
SIZE CODE NUMBER  
DIMU BD50-0-1

REV. B

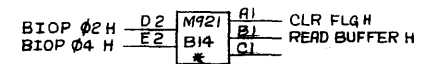
REV. B  
DIMU BD50-0-1

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				QUANTITY / VARIATION															
PARTS LIST				BD50-A	BD50-B	BD50-C	BD50-HA	BD50-HB											
MADE BY C.B. MC COY		CHECKED <i>J. J. Leonard</i>		SECTION															
DATE 1/21/72		DATE 1-26-72		ISSUED SECT.															
ENG <i>J. J. Leonard</i>		PROD <i>N. Reed</i>																	
DATE 1-26-72		DATE 1-26-72																	
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																	
	M104	IO BUS MULTIPLEXER				2													
	M113	10-2 INPUT NAND GATES		1	1	1													
	M115	8-3 INPUT NAND GATES		1	1	1													
	M401	VARIABLE CLOCK		4	4	4	2	2											
	M500	NEGATIVE INPUT CONVERTER			3	3													
	M633	NEGATIVE BUS DRIVER			3	3		1											
	M706	TELETYPE RECEIVER		2	2	2	1	1											
	M707	TELETYPE TRANSMITTER		2	2	2	1	1											
	BC08A-6	CABLE		3															
	BC08C-6	CABLE			3														
	BC09C-5	CABLE				1													
	M921	DEVICE CODE SELECT JUMPER BOARD		3	3	3	1	1											
	M623	POS BUS DRIVER		3			1												
TITLE				ASSY NO.		SIZE CODE		NUMBER				REV.		ECO NO.					
MODULE UTILIZATION				S-DD-BD50-0-		A PL		BD50-0-1				B		BD50-00002					
SHEET 1 OF 1				DIST.															

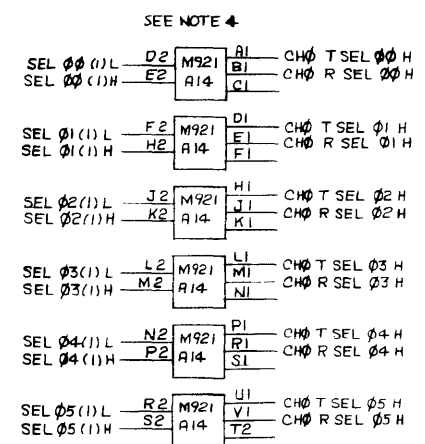
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1572



**NOTE:**  
1. WHEN USING LT19 IOT'S SUBDEVICE BITS MUST BE DECODED. REMOVE JUMPERS FOR THE CH0 SEL 00 LINE IN THE M921, SLOT A14. AND CONNECT B15F2 → A17 F1 AND A16D2.



\* WHEN USED ON PDP8, 01, 0L, 0S CONNECT JUMPERS B14D2 → B14A1 AND B14E2 → B14B1.  
WHEN USED ON PDP-9 CONNECT JUMPERS B14D2 → B14A1 AND B14B1.



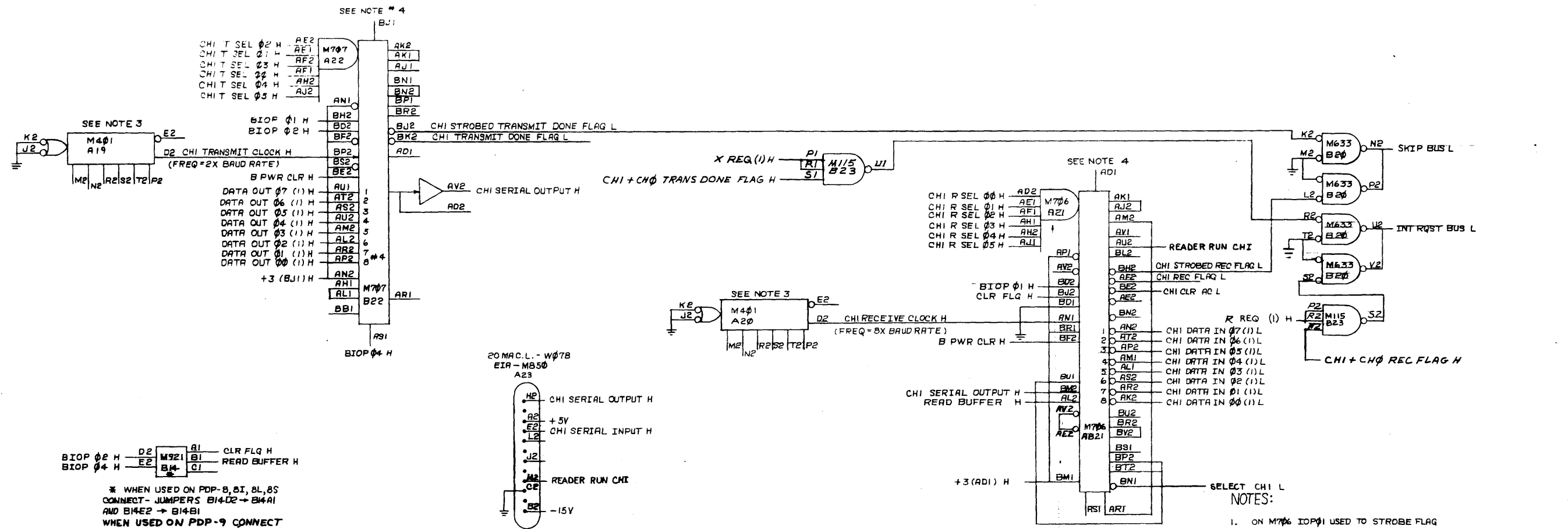
- NOTES:**
- ON M706 IOP01 USED TO STROBE FLAG.
  - ON M707 IOP01 USED TO STROBE FLAG. IOP02 USED TO CLEAR FLAG. IOP04 USED TO LOAD DATA BUFFER (WRITE).
  - ON M401 SEE BELOW FOR DESIRED FREQUENCY.
  - FOR JUMPER CONNECTION SEE PRINT(BD50-0-06)
  - WHEN USED WITH LA30 REMOVE M706, M707 AND M401'S AND REPLACE WITH M7718 AND M7719 RESPECTIVELY.
  - WHEN USED AS A SINGLE CHANNEL UNIT JUMPER CH1 FLAGS TO B15 U1.

FREQUENCY RANGE	INTERCONNECTION REQUIRED
1.5MHZ TO 10MHZ	(100 pf) NONE
175KHZ TO 1.75MHZ	(1000 pf) N2 TO R2
17.5KHZ TO 175KHZ	(.01 ufd) N2 TO S2
1.75KHZ TO 17.5KHZ	(0.1 ufd) N2 TO T2
175HZ TO 1.75KHZ	(1.0 ufd) N2 TO P2

REVISIONS	CHANGE NO.	REV.
CHK	ED50-00001	A
LEARNSON	12-14-72	B
LEARNSON	12-15-72	C

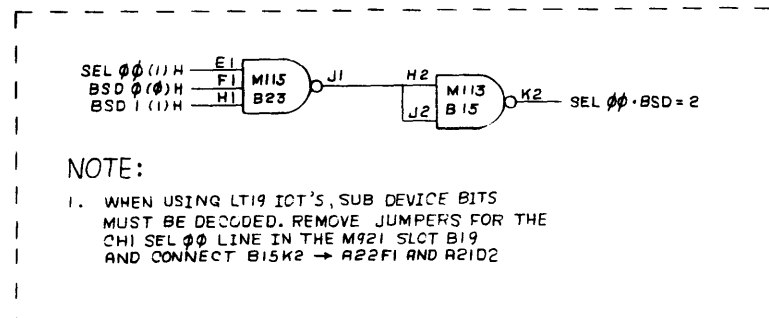
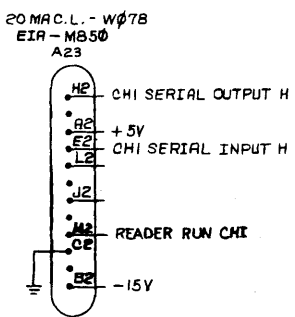
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. Margaret	DATE 11-10-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D. Johnson	DATE 1-26-72	TITLE	
ANGLES	ENG. Johnson	DATE 1-26-72	CH0 XMTR & RECEIVER	
XXX = .005 .XX = .02 .X = .1	PROJ. ENG. Johnson	DATE 1-26-72	REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY	
MATERIAL	NEXT HIGHER ASSY.	PRD. Johnson	DATE 1-26-72	
FINISH	B-DD-BD50-0	SCALE	SIZE CODE	NUMBER
		SHEET	OF	DIST.

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BIOP 02 H - D2 M921 A1 CLR FLG H  
 BIOP 04 H - E2 M921 B1 READ BUFFER H

\* WHEN USED ON PDP-8, 8I, 8L, 8S  
 CONNECT - JUMPERS B14D2 -> B14A1  
 AND B14E2 -> B14B1  
 WHEN USED ON PDP-9 CONNECT  
 JUMPERS B14D2 -> B14A1 AND B14B1



NOTE:  
 1. WHEN USING LT19 IOT'S, SUB DEVICE BITS MUST BE DECODED. REMOVE JUMPERS FOR THE CHI SEL 00 LINE IN THE M921 SLCT B19 AND CONNECT B15K2 -> R22F1 AND R21D2

SEE NOTE 5

SEL 00 (1) L - D2 M921 A1 CHI T SEL 00 H	SEL 00 (1) H - E2 M921 B1 CHI R SEL 00 H
SEL 01 (1) L - F2 M921 D1 CHI T SEL 01 H	SEL 01 (1) H - H2 M921 E1 CHI R SEL 01 H
SEL 02 (1) L - J2 M921 H1 CHI T SEL 02 H	SEL 02 (1) H - K2 M921 K1 CHI R SEL 02 H
SEL 03 (1) L - L2 M921 L1 CHI T SEL 03 H	SEL 03 (1) H - M2 M921 N1 CHI R SEL 03 H
SEL 04 (1) L - N2 M921 P1 CHI T SEL 04 H	SEL 04 (1) H - P2 M921 S1 CHI R SEL 04 H
SEL 05 (1) L - R2 M921 U1 CHI T SEL 05 H	SEL 05 (1) H - S2 M921 T2 CHI R SEL 05 H

- NOTES:
- ON M706 IOP01 USED TO STROBE FLAG
  - ON M707 IOP01 USED TO STROBE FLAG IOP02 USED TO CLEAR FLAG IOP04 USED TO LOAD DATA BUFFER (WRITE).
  - ON M401 SEE BELOW FOR CONNECTING DESIRED FREQUENCY
  - WHEN USED WITH LA30 REMOVE M706, M707 AND M401'S AND REPLACE WITH M771B AND M7709 RESPECTIVELY
  - FOR JUMPER CONNECTION SEE PRINT (BD50-0-06)

FREQUENCY RANGE	INTERCONNECTION REQUIRED
1.5MHZ TO 10MHZ	(100pf) NONE
17.5KHZ TO 175KHZ	(1000pf) N2 TO R2
17.5KHZ TO 175KHZ	(.01ufd) N2 TO S2
1.75KHZ TO 17.5KHZ	(.1ufd) N2 TO T2
175HZ TO 1.75KHZ	(1.0ufd) N2 TO P2

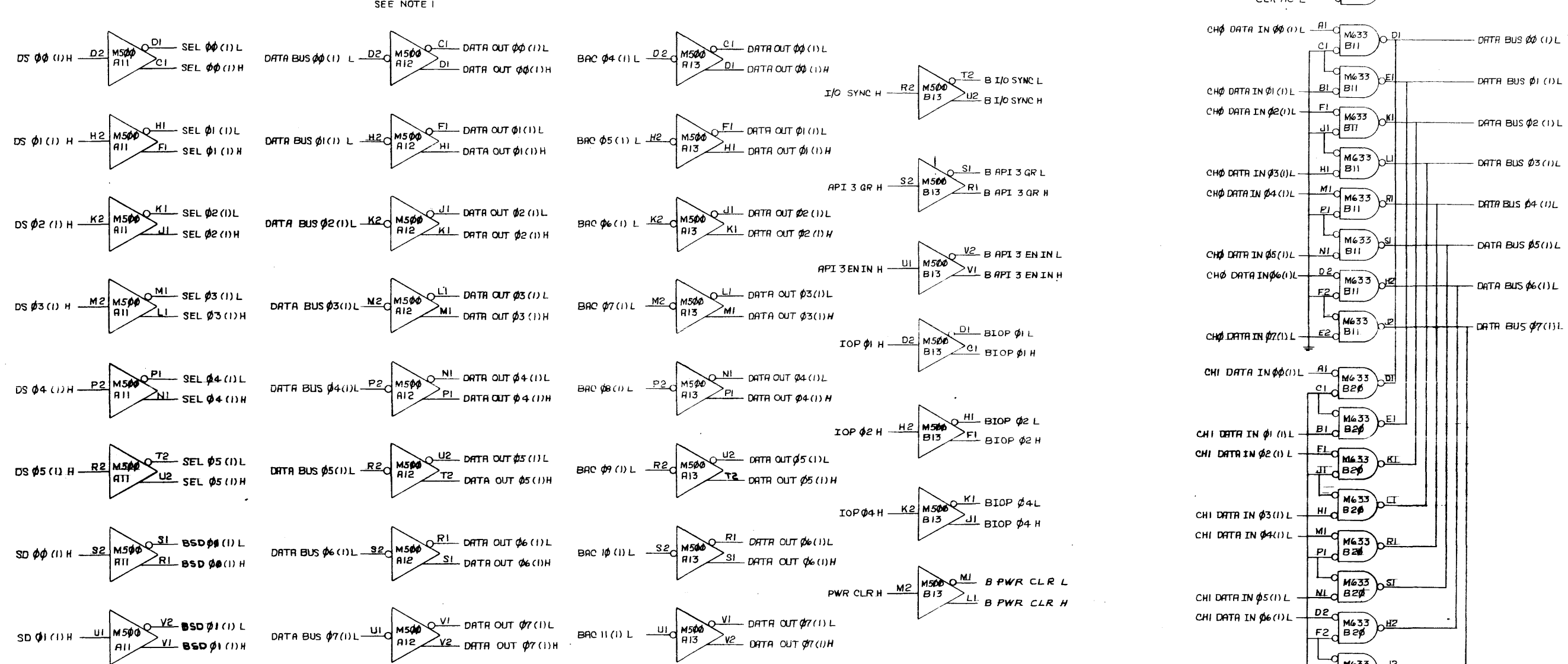
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP/8				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRAWN: Margaret Kauppinen	DATE: 11-9-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS: .xxx = .005, .xx = .02, .x = .1	CHKD: J. J. ...	DATE: 1-26-72	TITLE: CHI XMTR & RECEIVER	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	ENG: J. J. ...	DATE: 1-26-72	SIZE CODE: B-DD-BD50-2-03	
MATERIAL	PROD: W. J. ...	DATE: 1-26-72	NUMBER: D	
FINISH	SCALE	SHEET OF	DIST.	

REVISIONS

REV.	CHANGE NO.	DATE	BY
A	BD50-00001	12-10-71	J. LEARSON
B	BD50-00003	12-10-71	J. LEARSON
C	BD50-00004	12-10-71	J. LEARSON
D	BD50-00005	12-10-71	J. LEARSON



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SEE NOTE 1

NOTE:  
 1. WHEN USED ON A PDP-9 REMOVE M500 FROM SLOT A13 AND INSERT IT IN SLOT A12.  
 2. WHEN USED ON POS BUS COMPUTER REMOVE ALL M500'S AND REPLACE M633'S WITH M6233.

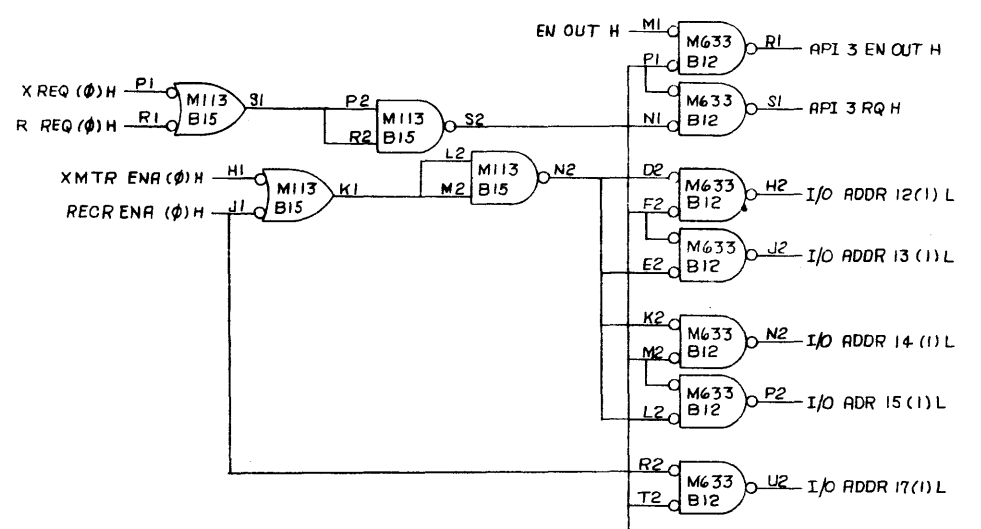
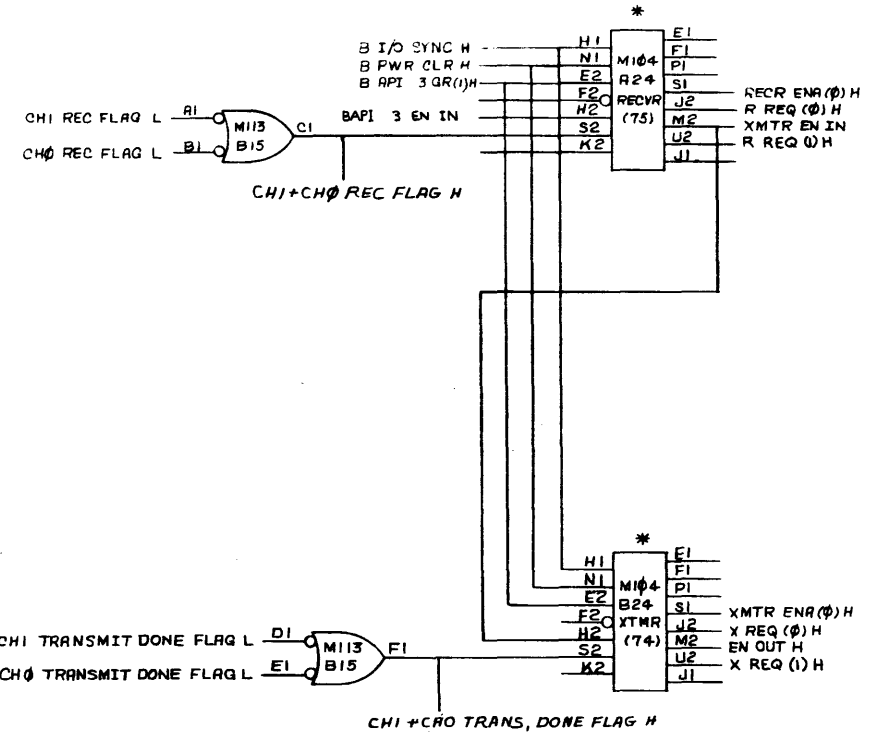
REV	CHG	NO.	DATE
A	1	1	1-26-72

LEARSON

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP/8		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN Margaret Sampson CHKD W. Brown ENG J. Wilson PROJ. ENG. J. Wilson PROD. W. Reed	DATE 11-8-71 1-26-72 1-26-72 1-26-72 1-26-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS XXX = .005 XX = .02 X = .1	ANGLES ±0° 30'	TITLE INTERFACE TO I/O BUS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
MATERIAL FINISH	B-DD-BD50-0	D BS	BD50-0-04	A
SCALE	SHEET	OF	DIST.	

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ASSEMBLY DRAWING  
 99-0-0508  
 2



\*NOTE:  
 WHEN NOT USED WITH PDP-9 API REMOVE  
 THE M104'S IN SLOTS A24 AND B24  
 ADD:  
 B23E2-B23PI-B15U1  
 B15H1-B15J1-B15PI-B15RI-B15V1

REV.	CHANGE NO.	DATE	BY
1			
2			
3			

CHKD BY: *[Signature]*  
 B. D. 50-00001 A  
 LEARSON  
 1/11/72

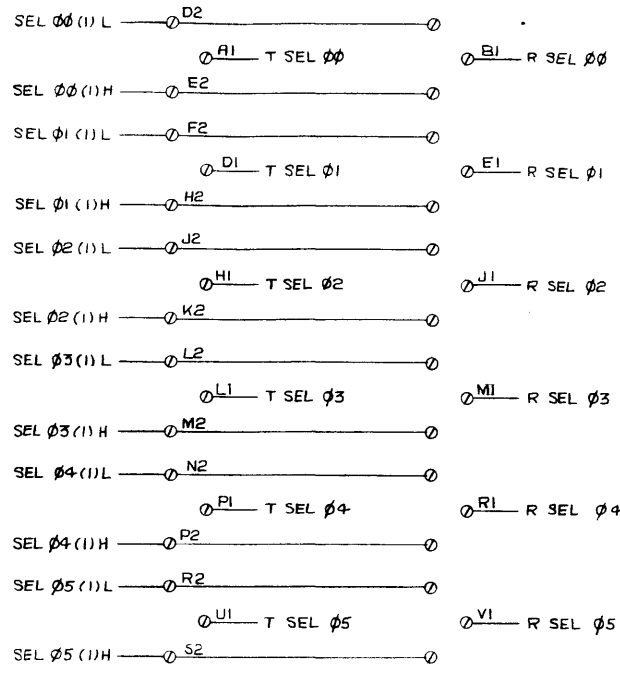
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP/6				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN: <i>Cem/G</i>	DATE: 1-17-72	digital EQUIPMENT CORPORATION MAYFORD MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHK'D: <i>[Signature]</i>	DATE: 1-26-72	TITLE	
ANGLES ±0°30'	ENG: <i>[Signature]</i>	DATE: 1-26-72	BD50-API (USED ONLY ON PDP9)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD: <i>[Signature]</i>	DATE: 1-26-72	MATERIAL	
	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
	B-DD-EC50-1		D BS	BD50-0-05
FINISH	SCALE			REV. A
	SHEET OF			

REV. A  
 NUMBER  
 D BS BD50-0-05

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DEVICE CODE SELECT JUMPER BOARD  
M921 (SEE CHART BELOW)

PRINT SIG NAME	PDP9 SIG NAME	PDP8,8S, SIG NAME	PDP8I,8L, SIG NAME
DS 0 (1) H	DS 0 (1) H	BMB 03 (0) H	
DS 1 (1) H	DS 1 (1) H	BMB 04 (0) H	
DS 2 (1) H	DS 2 (1) H	BMB 05 (0) H	
DS 3 (1) H	DS 3 (1) H	BMB 06 (0) H	
DS 4 (1) H	DS 4 (1) H	BMB 07 (0) H	
DS 5 (1) H	DS 5 (1) H	BMB 08 (0) H	
SEL 00 (1) L		BMB 03 (0) H	
SEL 00 (1) H		BMB 03 (1) H	
SEL 01 (1) L		BMB 04 (0) H	
SEL 01 (1) H		BMB 04 (1) H	
SEL 02 (1) L		BMB 05 (0) H	
SEL 02 (1) H		BMB 05 (1) H	
SEL 03 (1) L		BMB 06 (0) H	
SEL 03 (1) H		BMB 06 (1) H	
SEL 04 (1) L		BMB 07 (0) H	
SEL 04 (1) H		BMB 07 (1) H	
SEL 05 (1) L		BMB 08 (0) H	
SEL 05 (1) H		BMB 08 (1) H	
DATA BUS 00 (1) L	I/O BUS 10 (1) L	BAC 04 BUS L	AC 04 BUS L
DATA BUS 01 (1) L	I/O BUS 11 (1) L	BAC 05 BUS L	AC 05 BUS L
DATA BUS 02 (1) L	I/O BUS 12 (1) L	BAC 06 BUS L	AC 06 BUS L
DATA BUS 03 (1) L	I/O BUS 13 (1) L	BAC 07 BUS L	AC 07 BUS L
DATA BUS 04 (1) L	I/O BUS 14 (1) L	BAC 08 BUS L	AC 08 BUS L
DATA BUS 05 (1) L	I/O BUS 15 (1) L	BAC 09 BUS L	AC 09 BUS L
DATA BUS 06 (1) L	I/O BUS 16 (1) L	BAC 10 BUS L	AC 10 BUS L
DATA BUS 07 (1) L	I/O BUS 17 (1) L	BAC 11 BUS L	AC 11 BUS L
DATA OUT 00 (1) H		BAC 04 (1) H	
DATA OUT 01 (1) H		BAC 05 (1) H	
DATA OUT 02 (1) H		BAC 06 (1) H	
DATA OUT 03 (1) H		BAC 07 (1) H	
DATA OUT 04 (1) H		BAC 08 (1) H	
DATA OUT 05 (1) H		BAC 09 (1) H	
DATA OUT 06 (1) H		BAC 10 (1) H	
DATA OUT 07 (1) H		BAC 11 (1) H	
BAC 04 (1) L		BAC 04 (1) L	
BAC 05 (1) L		BAC 05 (1) L	
BAC 06 (1) L		BAC 06 (1) L	
BAC 07 (1) L		BAC 07 (1) L	
BAC 08 (1) L		BAC 08 (1) L	
BAC 09 (1) L		BAC 09 (1) L	
BAC 10 (1) L		BAC 10 (1) L	
BAC 11 (1) L		BAC 11 (1) L	
IOP 1 H	IOP 1 H	IOP 1 H	
IOP 2 H	IOP 2 H	IOP 2 H	
IOP 4 H	IOP 4 H	IOP 4 H	
BIOP 1 H			BIOP 1 H
BIOP 2 H			BIOP 2 H
BIOP 4 H			BIOP 4 H
PWR CLR H	I/O PWR CLR H	B INT H	
B PWR CLR H			B INT H
SKIP BUS L	SKIP BUS L	SKIP BUS L	SKIP BUS L
INT RQST BUS L	INT REQ BUS	INT RQST BUS L	INT RQST BUS L
RD RQ L	RD RQ L		
AC CLEAR CONT BUS L		AC CLEAR CONT BUS L	AC CLEAR CONT BUS L



NOTE: WHEN USED TO REPLACE PDP-8 CONSOLE TTY GND ME17K AND ME17N AND REMOVE TTY CLK IN PDP-8

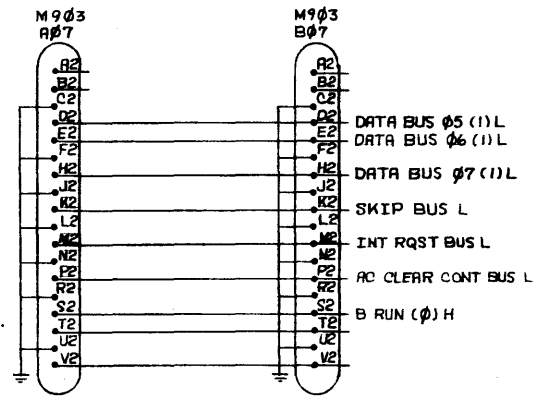
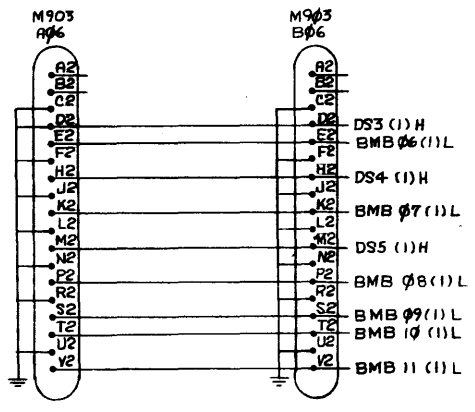
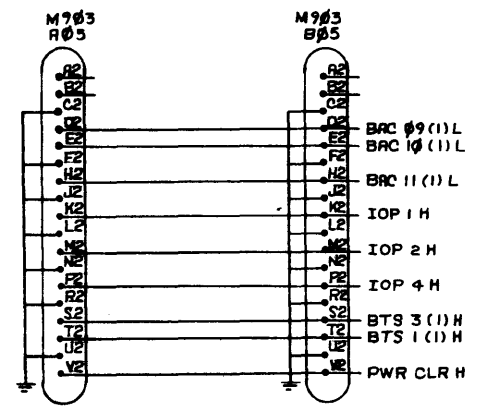
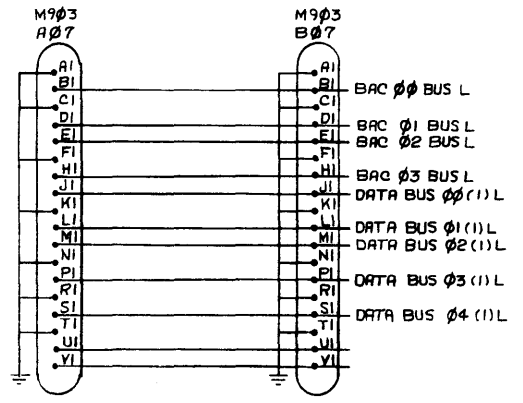
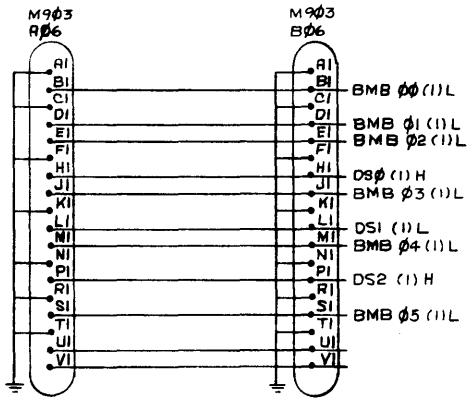
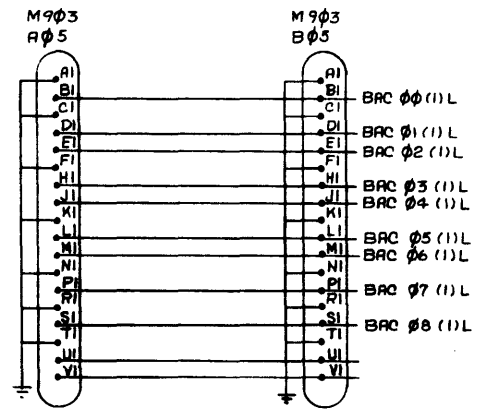
M921 JUMPER SELECTION CHART

JUMPERS TO BE PUT IN WHEN USED ON PDP-8, 8S, 8L, 8I							WHEN USED ON PDP9	
WHEN USED AS A CONSOLE TELEPRINTER REPLACEMENT			WHEN USED AS AN EXTRA DEVICE				WHEN USED AS AN EXTRA DEVICE	
CODE	TRANS 04	REC 03	TRANS 4-1	REC 4-1	TRANS 4-3	REC 4-2	TRANS 4-0	REC 4-1
PIN	TO	TO	TO	TO	TO	TO	TO	TO
D2	A1	B1						
E2			A1	B1	A1	B1		
F2	D1	E1	D1	E1	D1	E1	D1	E1
H2								
J2	H1	J1	H1	J1	H1	J1	H1	J1
K2								
L2		M1	L1	M1	L1	M1	L1	M1
M2	L1							
N2	P1		P1	R1	P1	R1	P1	R1
P2		R1			P1	R1		
R2	U1			V1		V1	U1	
S2		V1	U1		U1			V1

REV	
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL PDP8	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. Margaret Daugherty	DATE 11-11-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .xxx = .005 .xx = .02 .x = .1	CHK'D J. Larson	DATE 1-26-72	TITLE	
ANGLES ± 0° 30'	ENG. J. Larson	DATE 2-16-72	I/O T SELECTION	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG. J. Larson	DATE 1-26-72		
MATERIAL	PROD. W. Reed	DATE 1-24-72		
FINISH	NEXT HIGHER ASSY.			
	R-DD-BD50-0	SIZE CODE	NUMBER	REV.
		D BS	BD50-0-06	
	SCALE	SHEET	OF	DIST.

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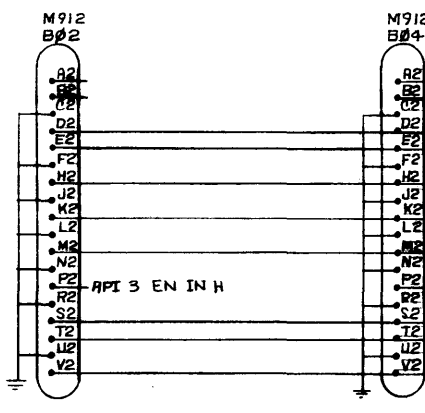
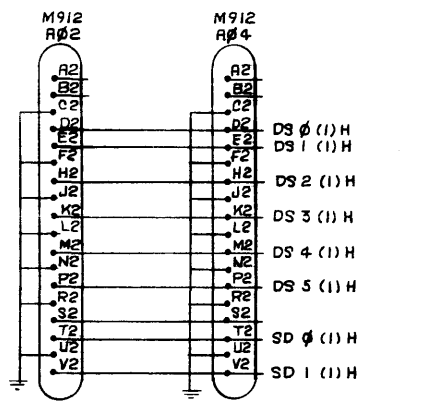
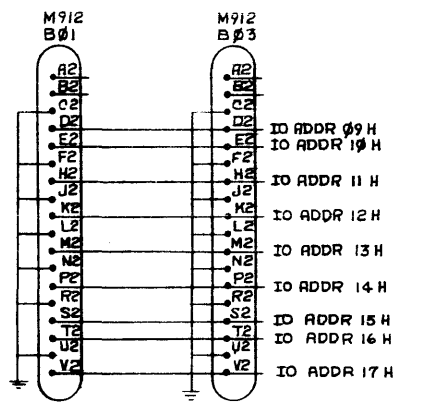
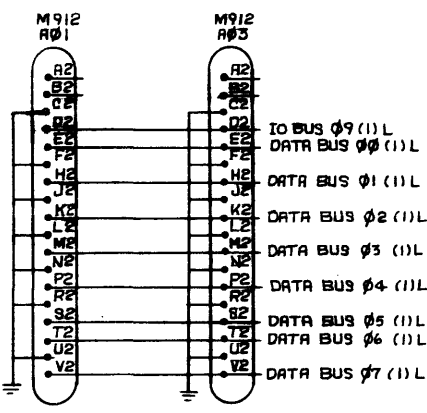
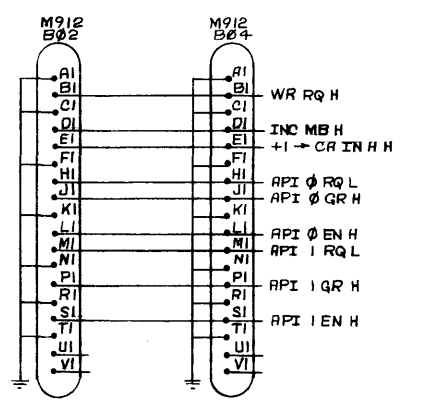
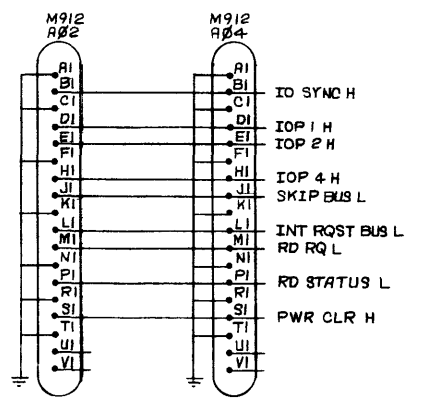
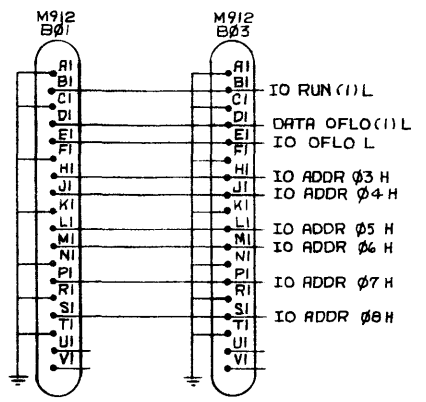
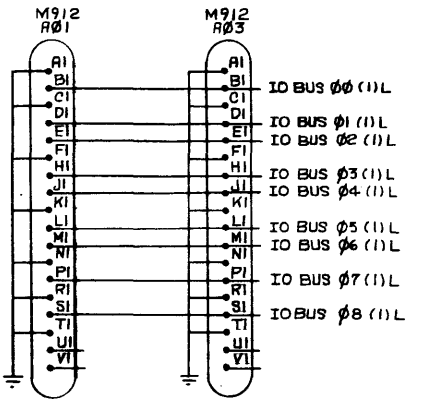


REVISIONS	REV.
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP/8				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.				
TOLERANCES		PARTS LIST		
DECIMALS	ANGLES	DRN. Margaret	DATE 11-11-71	<b>digital</b> EQUIPMENT CORPORATION MATTAPOISETT, MASSACHUSETTS TITLE TO NEG BUS I/O BUS CONNECTORS
.XXX = .008	±0° 30'	CHK'D. J. J. ...	DATE 1-24-72	
.XX = .02		ENG. J. J. ...	DATE 1-24-72	
.X = .1		PROJ. ENG. J. J. ...	DATE 1-24-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		PROD. J. J. ...	DATE 1-24-72	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	B-DD-BD50-0		D I C	BD50-0-07
SCALE		SHEET	OF	DIST.

REV. 0-07

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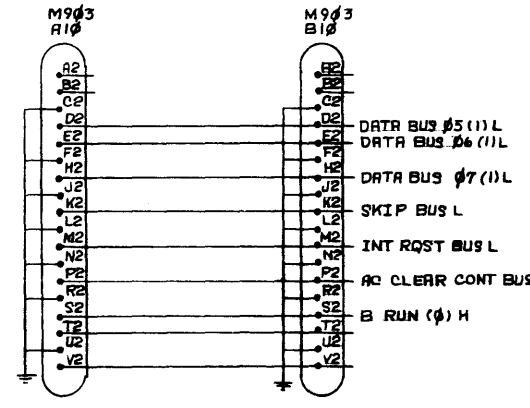
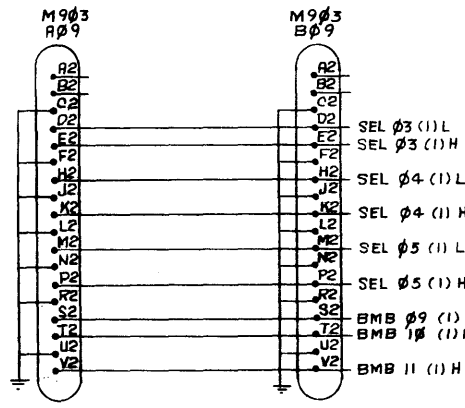
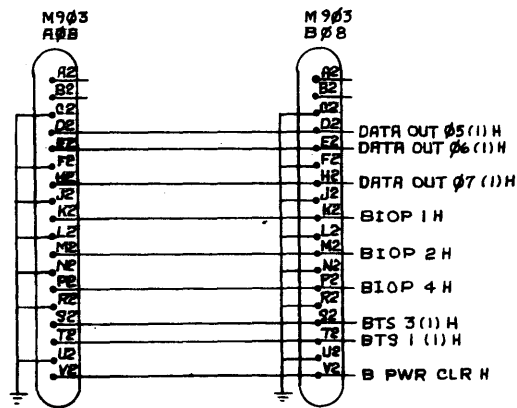
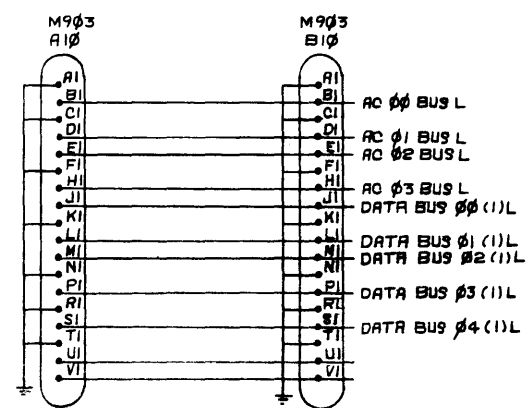
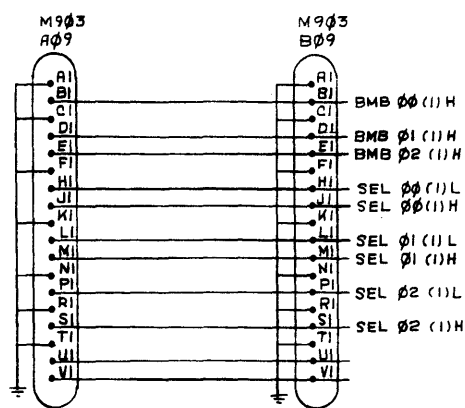
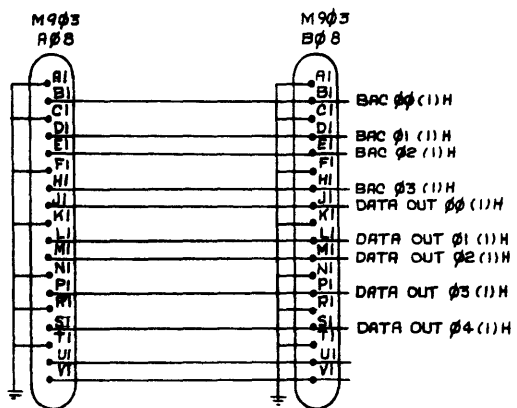
REV.
CHANGE NO.
CHK

FIRST USED ON OPTION/MODEL PDP/8	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DATE 11-15-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
TOLERANCES	DATE 1-26-72	TITLE (PDP-9) I/O BUS CABLE		
DECIMALS .XXX = .005	DATE 1-26-72			
ANGLES ± 0° 30'	DATE 1-26-72			
.XX = .02	DATE 1-26-72			
.X = .1	DATE 1-26-72			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 1-26-72			
MATERIAL	DATE 1-26-72			
FINISH	DATE 1-26-72			
NEXT HIGHER ASSY.		SIZE CODE	NUMBER	REV.
B-DD-0050-0		DIC	BD50-0-08	
SCALE		SHEET	OF	DIST.

SIZE CODE NUMBER 0-08

A

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REVISIONS	REV.
CHANGE NO.	
CHK.	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP/8		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN Margaret	DATE 11-16-71	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CHK'D: Wilson	DATE 1-24-72		
DECIMALS	ENG.	DATE 2-6-72		
ANGLES	PROJ. ENG.	DATE 1-26-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE 1-28-72	TITLE	
MATERIAL	NEXT HIGHER ASSY.		I/O BUS CONNECTION TO POS BUS	
FINISH	SCALE NONE		SIZE CODE	NUMBER
	SHEET NONE		D I C	B D 5 0 - 0 - 0 9
	SHEET OF		DIST.	

DRWG NO	REV LTR
K - WL - BD50-0-10	C

REVISIONS			
REV LTR	ECO NO	DATE	ENG
A	00001	2-14-72	<i>[Signature]</i>
B	00003	6-26-72	<i>[Signature]</i>
C	00005	12-15-72	<i>[Signature]</i>

DRAWN <i>Margaret</i> <i>Kauphons</i>	DATE 11-18-71	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE ASYNCHRONOUS SERIAL LINE INTERFACE				
CHECKED <i>[Signature]</i>	DATE 1/24/72		FOR TAPE #      FILE #				
ENG <i>[Signature]</i>	DATE 1/26/72		ASSY NO D - AD - 7008716-0-0	SIZE K	CODE WL	DWG. NO. BD50-0-10	REV LTR C
PROJ. ENG <i>[Signature]</i>	DATE 1-26-72	SCALE 1/1	SHEET	OF	DIST.		
PROD <i>[Signature]</i>	DATE 1-26-72						

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**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION**

DATE 12/14/71

TITLE BD50 Asynchronous Serial Line Interface

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGE PER ECO	BD50-00003	LEARSON	6/72	<i>J. Learson</i>	6-29-72

ENG <i>J. Learson</i>	APPD <i>J. Learson</i>	SIZE A	CODE SP	NUMBER BD50-0-11	REV A
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DEC FORM NO. DRA 107

SHEET 1 OF 7

**ENGINEERING SPECIFICATION**



CONTINUATION SHEET

TITLE BD50 Asynchronous Serial Line Interface

Description:

The BD50 is a self-contained asynchronous serial line interface which can accomodate up to two channels. It is directly plug compatible to the I/O Bus system of either the PDP-8 family (either positive or negative bus), the PDP-9, or the PDP-9/L. This device expands the machines communications faculty to accomodate two devices interfacing with 20 ma current loop or two parallel LA30's (DEC WRITER) or any combination of each. The BD50 can also interface EIA-LEVEL operated device such as a high speed asynchronous modem which meet the requirements of EIA SPEC RS232-C.

The BD50 is full duplex.

Each channel of the BD50 uses two variable clocks; One for transmitting and the other for receiving. This gives the user the added capability of transmitting and receiving data using a wide range of baud rates.

The BD50 uses the program interrupt and skip facilities of a computer and when used on a PDP-9, has the option of using API if the PDP-9 is so equipped. Because of the echo function of the PDP-9, the BD50 can not be used to replace the console teleprinter.

IOT's on either the PDP-9, PDP-9L or family of 8 are completely jumper selectable. The IOT codes given are recommended codes. Any convenient code can be used.

Note: The PDP-9 and PDP-9/L requires hardware echo back for the console teleprinter; the parallel LA30 cannot be used with the BD50 as a console teleprinter..

SIZE A	CODE SP	NUMBER BD50-0-11	REV A
--------	---------	------------------	-------

DEC FORM NO DEC 16-(381)-1022-N370  
DRA 108

SHEET 2 OF 7



**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE BD50 Asynchronous Serial Line Interface

1.0 SPECIFICATIONS

a. Mechanical

Logic Panel one 1943  
 Connector Blocks 6-H 803  
 Dimensions 19"w., 5<sup>3</sup>/<sub>16</sub>"h., 14"d.

b. ELECTRICAL

AC input power 115 V AC, 60 Hz  
 230 V AC, 50Hz

Power Supply H 716  
 +5V @ 4 amps.  
 -15V @ 1.5 amps.

Module type M series

c. OPERATIONAL

Capacity two channels

Line Driving 20 Ma current loop 25 feet\*\*  
 EIA Levels 25 feet

Transfer Rates 110 to 2400 BAUD

2.0 INSTALLATION

TYPE OF MACHINE	TYPE OF CABLES
PDP-8; or PDP-8/S	BC08C* 6
PDP-8/L; or PDP-8I	BC08A* 6
PDP-9	BC09C* 5

\*6 foot length will be shipped unless specified differently by customer.

\*\*Will drive up to 2000 feet depending on Baud rate and cable characteristic

SIZE A	CODE SP	NUMBER BD50-0-11	REV A
-----------	------------	---------------------	----------

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE BD50 Asynchronous Serial Line Interface

2.1 INTERFACING CABLES FOR:

20 MA CL	7008519
EIA RS232C	BC01J-25 (VT05)
EIA RS232C	BC01A-25

2.2 INTERFACING

Interfacing, to either 5 or 8 Bit code.

a. M706

Pin Connections for 5 or 8 bit code:

5 bit code AM2 to AJ2  
 AR1 to Ground

8 bit: AM2 to AR1  
 AJ2 to AK1

Pin Connections for stop time:

1.0 units - BP2 to BT2  
 BR2 to BU2

1.5 Units BP2 to BS1  
 BR2 to BU2

2.0 Units BP2 to BT2  
 BR2 to BV2

b. M707

Pin Connections for 5 or 8 bit code:

5 Bit - AK1 to AJ1

8 Bit - AK1 to AK2

Pin connections for stop time:

1.0 units - BN2 to BR2

1.5 units - BN2 to BP1

2.0 units - BN2 to BN1

SIZE A	CODE SP	NUMBER BD50-0-11	REV A
-----------	------------	---------------------	----------

TITLE BD50 Asynchronous Serial Line Interface

3.0 BD50 VARIATIONS

BD50-AA	115 V AC; 8 Pos Bus
BD50-AB	230 V AC; 8 Pos Bus
BD50-BA	115 V AC; 8 Neg. Bus
BD50-BB	230 V AC; 8 Neg. Bus
BD50-CA	115 V AC; 9 Bus
BD50-CB	230 V AC; 9 Bus

4.0 PROGRAMMING

4.1 PDP-9

The PDP-9 IOT instruction format is shown in Fig. 4.1

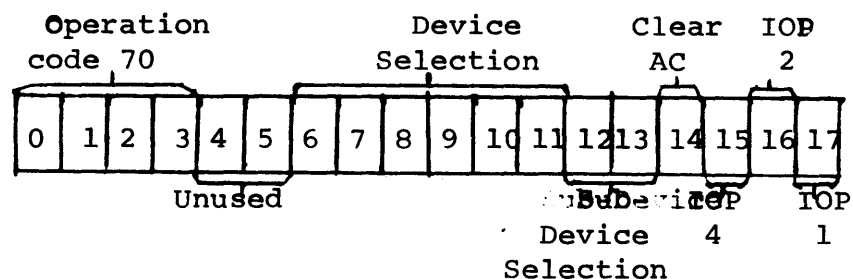


Fig. 4.1

When LT19 device codes are used, 40 and 41, the sub-device selection bits are decoded as follows:

Bits 13	Bits 12	Channel
0	0	0
1	0	1

When any other device code is used the sub device selection bits are not decoded.

SIZE	CODE	NUMBER	REV
A	SP	BD50-0-11	A

TITLE BD50 Asynchronous Serial Line Interface

RECOMMENDED CODES

FUNCTION

Channel 0

<u>704001</u>	CH0 skip if transmitter flag is set.
<u>704002</u>	Clear CH0 transmitter flag.
<u>704004</u>	Loads CH0 transmitter and sends character.
<u>704101</u>	Skip if CH0 receiver flag is set.
<u>704102</u>	Reads contents of CH0 receiver module and clears flag.

Channel 1

<u>704021</u>	CH1 skip if transmitter flag is set.
<u>704022</u>	Clears CH1 transmitter flag.
<u>704024</u>	Loads CH1 transmitter and sends character.

SIZE	CODE	NUMBER	REV
A	SP	BD50-0-11	A

# ENGINEERING SPECIFICATION

digital

CONTINUATION SHEET

TITLE BD50 Asynchronous Serial Line Interface

RECOMMENDED CODES	FUNCTION
Channel 1	
<u>704121</u>	Skip if CH1 receiver flag is set.
<u>704122</u>	Reads contents of CH1 receiver module and clears flag.
4.2 PDP-8 Family	
When CH0 is used as a console teleprinter replacement use standard TTY IOT's.	

**I/O DEVICE**

RECOMMENDED CODES	FUNCTION
Channel 0	
<del>6411</del>	CH0 skip if transmitter flag is set.
6412	CH0 Clear transmitter flag.
6414	Loads CH0 transmitter and sends character.
6401	CH0 skip if receiver flag is set.
6402	Clear CH0 receiver module.
6404	Reads CH0 receiver module.
Channel 1	
6421	CH1 skip if receiver flag is set.
6422	Clear CH1 receiver flag.
6424	Reads CH1 receiver module.
6431	CH1 skip if transmitter flag is set.
6432	CH1 clear transmitter flag.
6434	Loads CH1 transmitter module.

SIZE <b>A</b>	CODE SP	NUMBER BD50-0-11	REV <b>A</b>
------------------	------------	---------------------	-----------------

**DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS**

**ENGINEERING SPECIFICATION**

DATE 1/26/72

TITLE BD50 ACCEPTANCE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

**SCOPE:**

To Define the criteria necessary for acceptance of the BD50.

**PDP-9:**

**Acceptance Test:**

LT19 Diagnostic, Maindec-09-D8cc, must run successfully.  
In addition, the following documentation list must be complete.

- a. 1 set of BD50 prints
- b. Program tape (LT19 Diagnostic)
- c. Write up of LT19 diagnostic

**PDP-8;8I,8L**

**Acceptance Test:**

LT08 Diagnostic, Maindec 828, must run successfully.  
In addition, the following documentation list must be complete.

- a. 1 set of BD50 prints
- b. Program Tape (LT08 Diagnostic)
- c. Write up of LT08 diagnostic.

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ENG <i>John D. Farnsworth</i>	APPD <i>W. L. Larson</i>	SIZE A	CODE SP	NUMBER BD50-0-12	REV
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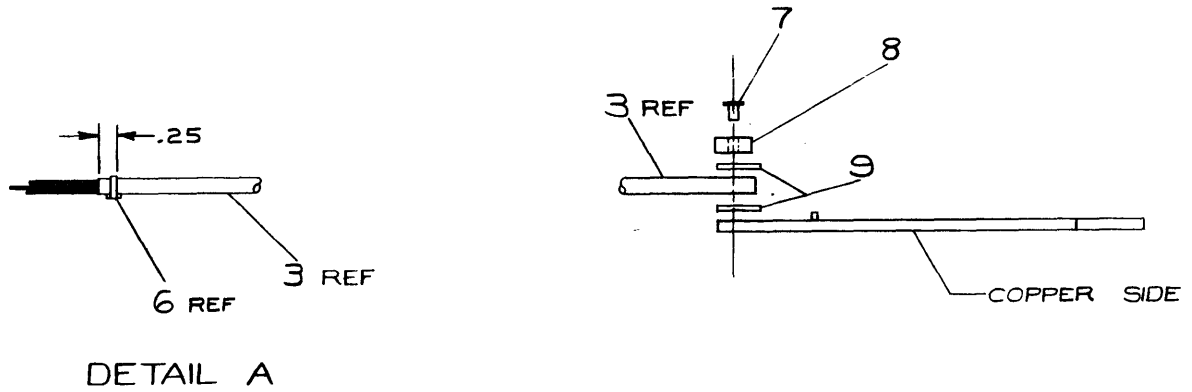
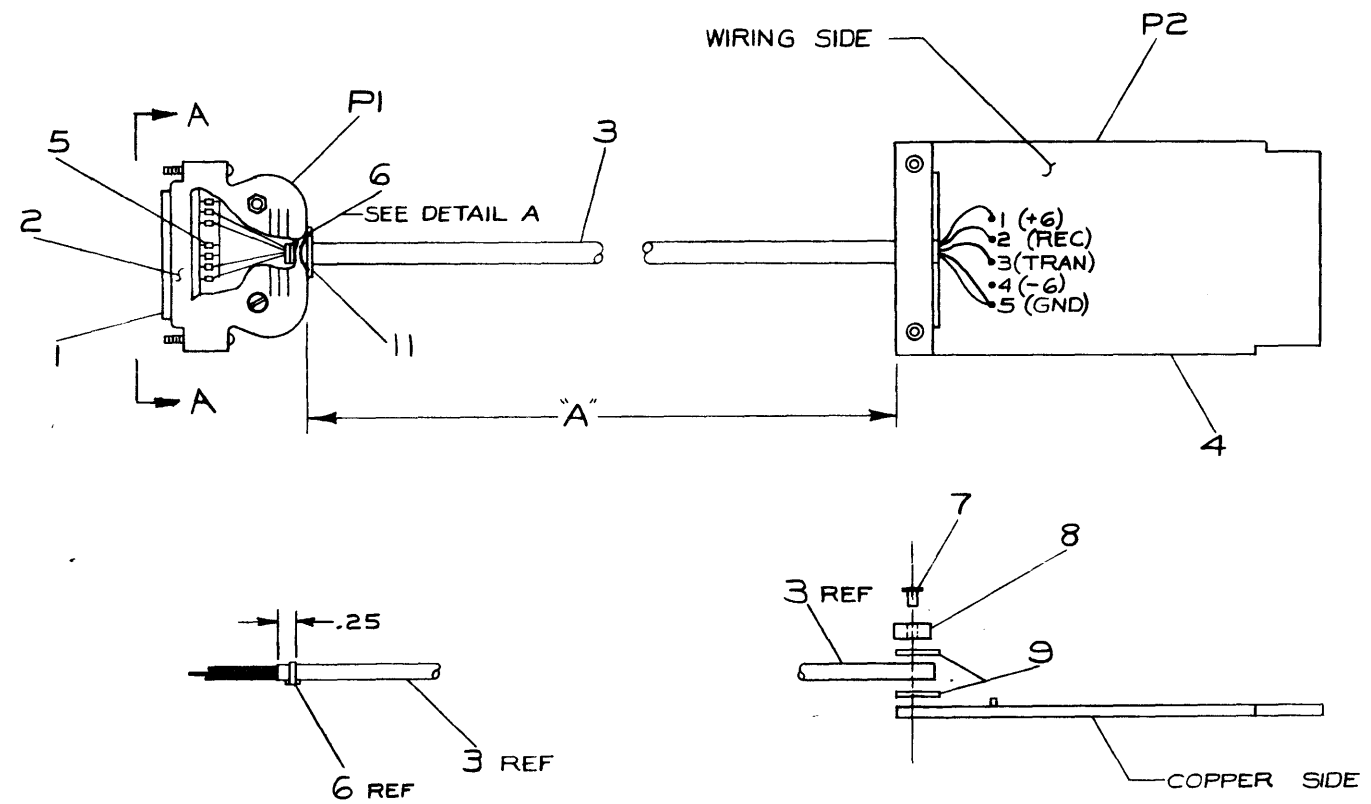
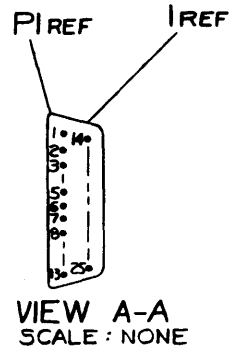
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LEGEND	
NUMBER	"A" DIM
BCØIJ-10	10 ± 2"
BCØIJ-25	25 ± 5"

WIRE TABLE						
ITEM NO.	DESCRIPTION	FROM CONNECTION	TO CONNECTION	REMARKS		
3	BLK	P1-7	P2-5			
3	GRN	P1-2	P2-2			
3	RED	P1-3	P2-3			
3	BRN	P1-1	P2-5			
10	22	P1-5	P1-6	JUMPER		
10	22	P1-6	P1-8	JUMPER		
3	WHT	P1-5	P2-1			

**NOTES:**

- ALL WIRES AND JUMPERS IN P1 ARE TO BE INSULATED WITH A .25 INCH PIECE OF TUBING (ITEM #5).
- APPLY TAPE (ITEM #9) BETWEEN CABLE (ITEM #3) AND BOARD (ITEM #4), ALSO BETWEEN CLAMP (ITEM #8) AND CABLE.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GROMMET	9007668	11
A/R	22 AWG BUS WIRE	9107560-01	10
A/R	TAPE, #4032, .03 THK x .50W	9007834	9
1	CABLE CLAMP	1202704	8
2	EYELET, #GS-4-7, STIMPSON	9006732	7
1	TIE WRAP, PANDUIT #SST-1B	9007031	6
A/R	HIGH SHRINK TUBING, WHT, .12 IN	9107255	5
1	EIA LEVEL CONVERTER	M850	4
A/R	CABLE, BELDON, 5 COND	9107630	3
1	CANNON PLUG HOOD #DB51226-1	1205885	2
1	CANNON CONNECTOR DB-19604-433 (DBM255)	1204975	1

FIRST USED ON OPTION/ MODEL LT37	DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DESIGNED: W.F. Mc... DATE: 5/6/70 CHECKED: ... DATE: 5/20/70 ENG: ... DATE: 5/15/70 PROJ. ENG: ... DATE: 11/10/70 PROD: ... DATE: 5/23/70 NEXT HIGHER ASSY DUA-LT37-Ø-Ø	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE <b>LEVEL CONVERTER (BI POLAR)</b> SIZE CODE: DIABCØIJ-Ø-Ø NUMBER: Ø-Ø REV.
REVISIONS CHANGE NO. CHK	MATERIAL FINISH	SCALE: NONE SHEET 1 OF 1	DIST. E

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LEGEND		
NUMBER	DIM 'A'	TOLERANCE
BCOIA-5	5 FT	± 2 IN
BCOIA-10	10 FT	± 3 IN
BCOIA-15	15 FT	± 4 IN
BCOIA-20	20 FT	± 5 IN
BCOIA-25	25 FT	± 6 IN
BCOIA-30	30 FT	± 7 IN
BCOIA-35	35 FT	± 8 IN
BCOIA-40	40 FT	± 10 IN
BCOIA-45	45 FT	± 11 IN
BCOIA-50	50 FT	± 12 IN

WIRE TABLE							
ITEM NO	DESCRIPTION	FROM		TO			
		AWG	COLOR	CONNECTION	WITH		CONNECTION
3	#22 BLK			P1-1	S-SOLDER	P2-5	SOLDER
3	#22 RED			P1-2	S-SOLDER	P2-3	SOLDER
3	#22 GRN			P1-3	S-SOLDER	P2-2	SOLDER
3	#22 GRN			P1-7	S-SOLDER	P2-3	SOLDER
3	#22 WHT			P1-20	S-SOLDER	P2-1	SOLDER

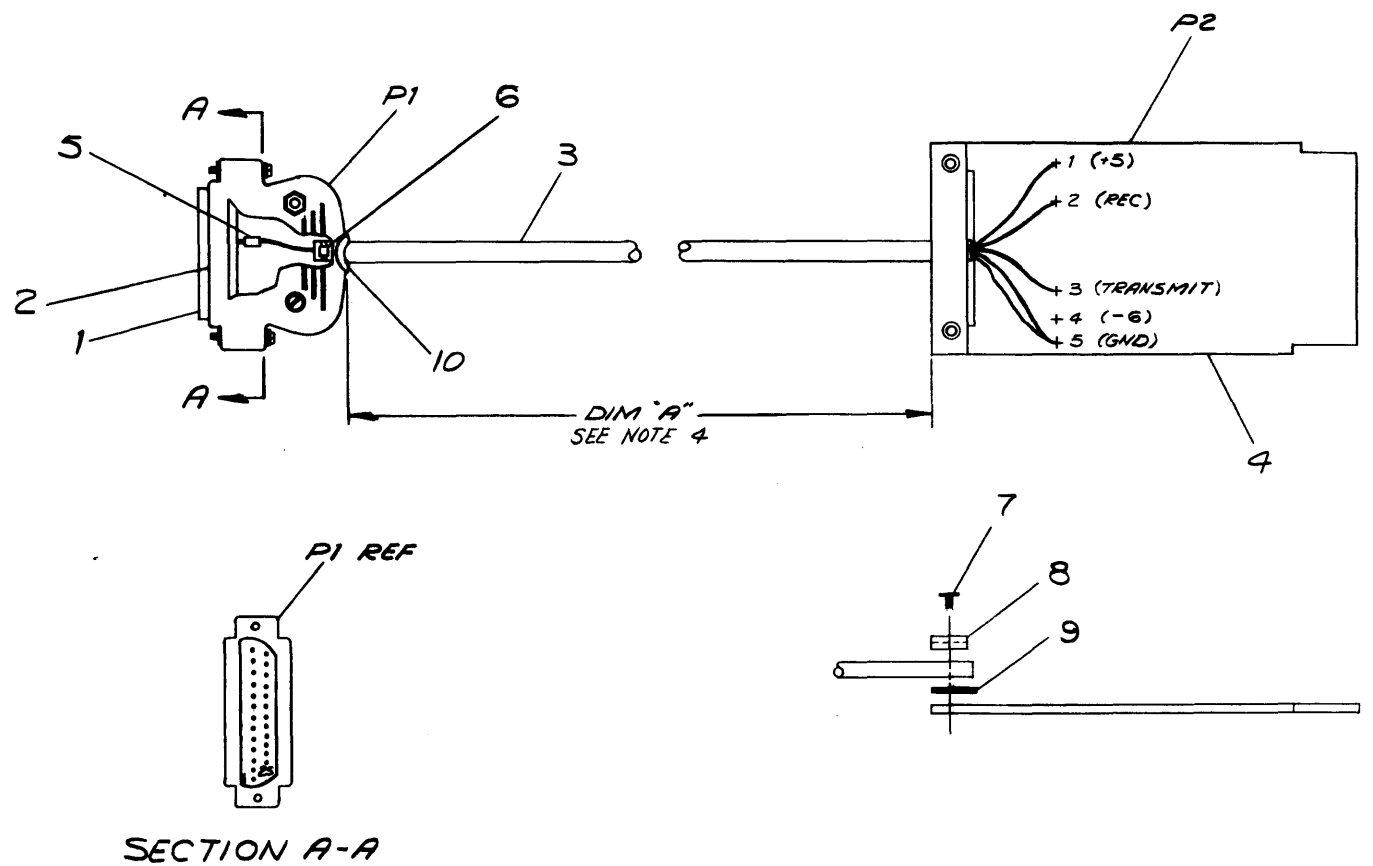
**NOTES:**

- EACH SOLDERED CONNECTION ON P1 SHALL BE INSULATED WITH A 1/4 INCH PIECE OF HY-SHRINK TUBING (#5)
- APPLY TAPE (#9) BETWEEN CABLE (#3) AND BOARD (#4) THEN SOLDER. ASSEMBLE CLAMP (#8) & EYELETS (#7) TO BOARD AFTER SOLDERING.
- ~~VARIATIONS AND LENGTHS SHOWN IN LEGEND ARE STANDARD OTHER THAN STANDARD VARIATIONS WILL BE SPECIFIED BY ALPHANUMERIC DESIGNATION FOR LENGTHS OTHER THAN FOOT INCREMENTS FROM ONE (1) FOOT THROUGH NINE (9) FEET, ELEVEN (11) INCHES.~~
  - ~~A-1" = 9-7"~~
  - ~~B-2" = 11-8"~~
  - ~~C-3" = 1-3"~~
  - ~~D-4" = 1-10"~~
  - ~~E-5" = 1-11"~~
  - ~~F-6" = 1-12"~~

~~EXAMPLE: BCOIA-30-3-5" LENGTHS WILL BE IN FOOT INCREMENTS FROM TEN (10) FEET ON AND WILL BE SPECIFIED BY THE CORRESPONDING NUMERICAL DESIGNATION~~

~~EXAMPLE: BCOIA-11-11 FEET THE TOLERANCE ON DIMENSION 'A' WILL BE ± 2% OF THE FOOT INCREMENT~~

- CABLE TO BE CUT TO DIM 'A' + 3 INCHES



SECTION A-A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GROMMET # 809 A.I.R.	9007668	10
N/R	TAPE #4032 1/2 X 1 3/4 LG (3M CO)	9007839-0-0	9
1	CABLE CLAMP	1202704	8
2	EYELET #GS-9-7 STIMPSON	9006732	7
1	TIE WRAP PARADUIT #SST-1B	9007031	6
4	HEAT SHRINK TUBING 1/8 DIA	9107235	5
1	M850 CABLE CONN	M850	4
N/R	CABLE, BELDEN 5 COND	9107680	3
1	PLUG CINCH HOOD #DBS1226-1	1205885	2
1	PLUG CINCH DB-25P	1205886	1

REV	CHANGE NO.	DATE	BY
A	BCOIA-00001		
B	BCOIA-00003		

FIRST USED ON OPTION / MODEL  
**BCOIA**

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

MATERIAL  
NEXT HIGHER ASSY

FINISH

SCALE  
SHEET 1 OF 1

DRN: [Signature] DATE: 9-5-67  
CHK: [Signature] DATE: 11-1-67  
DES: [Signature] DATE: 1-1-68  
PROJ. ENG: [Signature] DATE: 1-1-68  
PROD: [Signature] DATE: 1-1-68

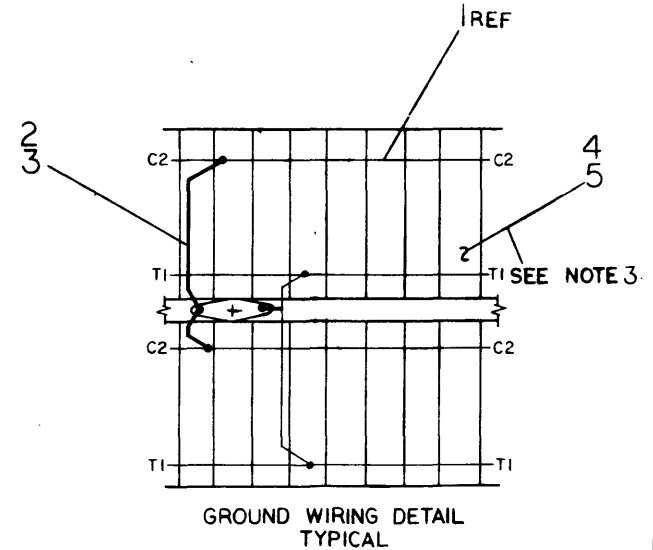
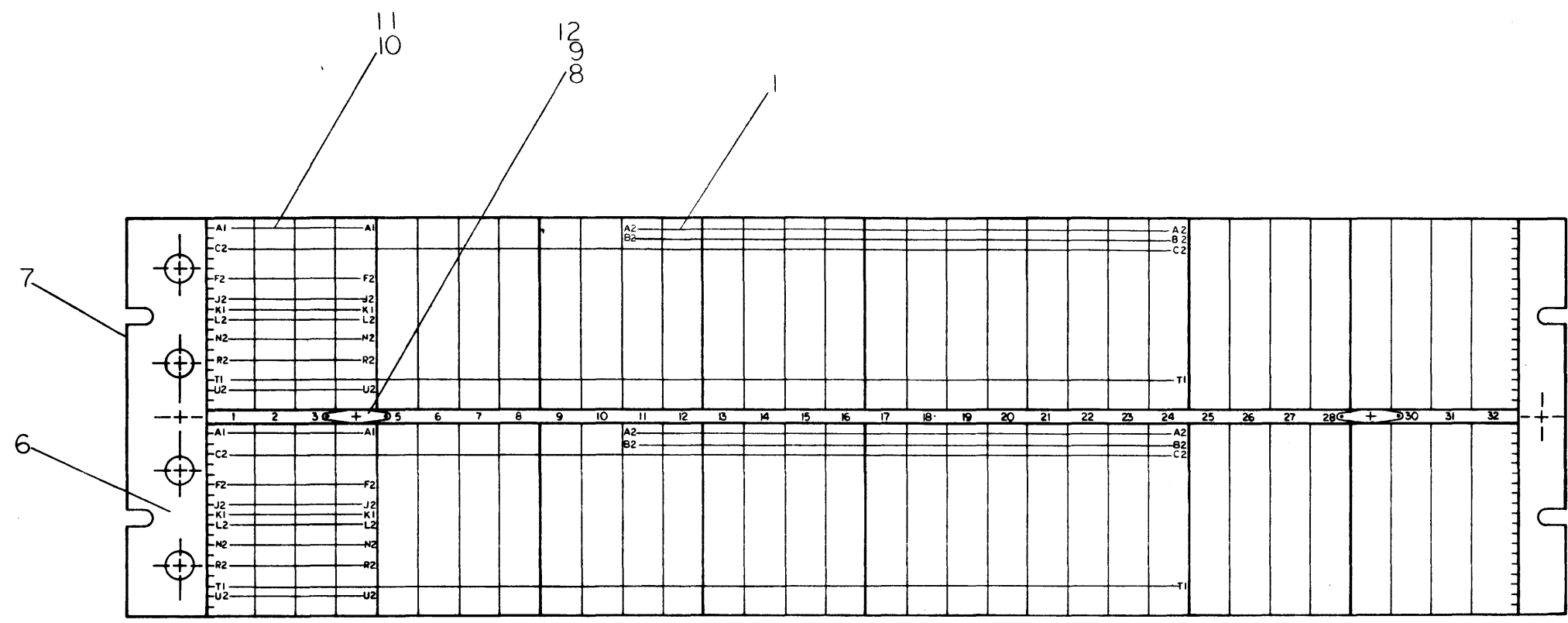
digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
**LEVEL CONVERTER (BI POLAR)**

SIZE CODE: D I A  
NUMBER: BCOIA-0-0  
REV: B

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- NOTES:**
1. CONNECTIONS ON ITEM NUMBER 1 & 2 TO BE LOCATED AND SOLDERED AT MINIMUM PRACTICAL HEIGHT ABOVE BLOCKS.
  2. ALL CONNECTOR BLOCKS TO BE GROUNDED TO GROUND LUGS AS SHOWN, 2 PLACES.
  3. USE YELLOW WIRE (ITEM #4) FOR MACHINE WRAPPED AND BLUE WIRE (ITEM #5) FOR HAND WRAPPED WIRING.



REV.	
CHANGE NO.	
CHK	
116	

FIRST USED ON OPTION/MODEL PDP/8	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES ANGLES = 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN. <i>CRMS/ly</i> DATE 1-15-72 CHK'D. <i>RG</i> DATE 1-26-72 ENG. <i>RG</i> DATE 1-26-72 PROJ. ENL. <i>RG</i> DATE 1-26-72 PROD. <i>RG</i> DATE 1-26-72	digital EQUIPMENT CORPORATION MATHARD, MASSACHUSETTS		
MATERIAL MEXD HIGHER ASSY		TITLE WIRED ASS'Y		
FINISH		B-DD-BD50-0	SCALE NONE	SHEET 2 OF 1
		SIZE CODE D AD 7008716-0-0	NUMBER 7008716-0-0	REV.

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>				QUANTITY / VARIATION														
MADE BY M. DAUPHINAIS		CHECKED <i>J.D. Levison</i>		SECTION														
DATE 11/16/71		DATE 1-26-72																
ENG <i>J.D. Levison</i>		PROD <i>W. Reed</i>		ISSUED SECT.														
DATE 1-26-72		DATE 1-26-72																
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION				A/R												
1	1205541	BUS STRIP				A/R												
2	9107560-1	22 AWG BUS WIRE				A/R												
3	9107265	#22 TUBING, TEFLON, WHITE				A/R												
4	9105740-5	30 AWG SOLID TEF INS. WIRE, YEL				A/R												
5	9105740-7	30 AWG SOLID TEF INS. WIRE, BLU				A/R												
6	A-DC-7406371-0-0	LOGIC FRAME DECALS				A/R												
7	D-AD-5302483-0-0	1943 CASTING W/PINS				1												
8	9006634	WASH INT TOOTH LOCK #8				6												
9	9007597	TERM #2116-08-00 SHAKEPROOF				3												
10	1205348	288 PIN CONN. BLOCK H803				6												
11	9006120	SCR, FIL HD POZIDRIVE 8-32 X 5/8				12												
12	9006035-1	SCR, PHL HD PAN 8-32 X 1/4 SST				3												
REF	K-WL-BD50-0-11	WIRE LIST																
TITLE <b>WIRED ASSY</b>				ASSY NO. <b>D-UA-BD50-0-0</b>		SIZE <b>A</b>	CODE <b>PL</b>	NUMBER 7008716-0-0					REV.	ECO NO.				
				SHEET 1 OF 1		DIST.												