digital

DQII

Engineering Drawings

Digital Equipment Corporation

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE	
NPR-SYNC LINE CONTROL	B-DD-DQ11-Ø
NPR-SYNC LINE CONTROL	D-UA-DQ11-Ø-Ø
NPR-SYNC LINE CONTROL	A-PL-DQ11-Ø-Ø
MODULE UTILIZATION (AA)	D-MU-DQ11-Ø-1
MODULE UTILIZATION (AB)	D-MU-DQ11-Ø-2
DF11 CONV CABLE (D1)	D-BD-DQ11-Ø-4
DATA SET CNTL (D2)	D-CS-M7815-Ø-1
ADDRESS INTERRUPT CLOCK (D3)	D-BS-DQ11-Ø-5
BUS SEL CSR'S,SH. REG (D4)	D-CS-M7812-Ø-1
CC/BA & SHIFT CNTL (D5)	D-CS-M7813-Ø-1
WIRED CHAR DET & NPR CNTL.(D6)	D-CS-M7818-Ø-1
DQ11-AA/DQ11-AB CONNECTIONS(D7)	D-IC-DQ11-Ø-7
PMG CHAR DET & SEQ CNTL (D8)	D-CS-M7817-Ø-1
AB BUS SEL & BCC CNTL (D9)	D-CS-M7816-Ø-1
UNIBUS CONNECTORS	D-IC-DQ11-Ø-6
ADDRESS SELECTOR	D-CS-M1Ø5-Ø-1
INTERRUPT CONTROL MODULE	D-CS-M7821-Ø-1
CRYSTAL CLOCK	D-CS-M4050-Ø-1
CABLE CONNECTOR	D-CS-M971-Ø-1
I/O CABLE ASSY	C-IA-BCØ8S-Ø-Ø
INTERNAL BUS CONN	D-CS-M92Ø-Ø-1
WIRED ASSY (DQ11-AA)	C-IA-7009467-Ø-Ø
WIRE LIST (DQ11-AA)	K-WL-DQ11-Ø-12
BACK PLANE ASSY	D-IA-7009152-Ø-Ø
WIRED ASSY (DQ11-AB)	C-IA-7009468-Ø-Ø
WIRE LIST (DQ11-AB)	K-WL-DQ11-Ø-14
MODEM TEST CONNECTOR	D-CS-H315-Ø-1
LEVEL CONVERTERS & CABLES	B-DD-DF11-Ø
ACCESSORY LIST	A-AL-DQ11-Ø-3
POWER HARNESS	D-IA-7009563-Ø-Ø
AWT REVISION STATUS	A-WT-7009468-Ø

UNIT VARIATIONS

VAR	TITLE	PRINT SET DQ11-C	DQ11-KA		
DQ11-AA	BASIC SYNC CONTROL	X			
DQ11-BA	DATA SET CONTROL	X			
DQ11-AB	BCC CONTROL	X			
DQ11-BB	PROTOCOL CONTROL	X			
DQ11-KA	CRYSTAL CLOCK (M4050)		X		
DQ11-DA	DQ11-AA+BA+DF11-A	X			
DQ11-EA	DQ11-AA+BA+DF11 -G	X			
DQ11-DE	DQ11-AA+AB+BA+BB+DF11-A	X			
DQ11-EE	DQ11-AA+AB+BA+BB+DF11-G	X			
DQ11-DD	DQ11-AA+AB+BA+DF11-A	X			
DQ11-ED	DQ11-AA+AB+BA+DF11-G	X			

REVISIONS		
REV	CHG. NO.	DATE
A	DQ11AA-2	2/74
B	DQ11AB-1	3/74
C	DQ11AB-2	4/74
D	DQ11-1	4/74
E	DQ11AB-3	8/74
F	DQ11AB-4	3/75
H	DQ11AA-3	4/75
J	DQ11-2	6/75
K	DQ11AA-5	7/75
L	DQ11-3	8/75

USED ON OPTION/MODEL	
11/40	
11/45	

SHEET 1 OF 4

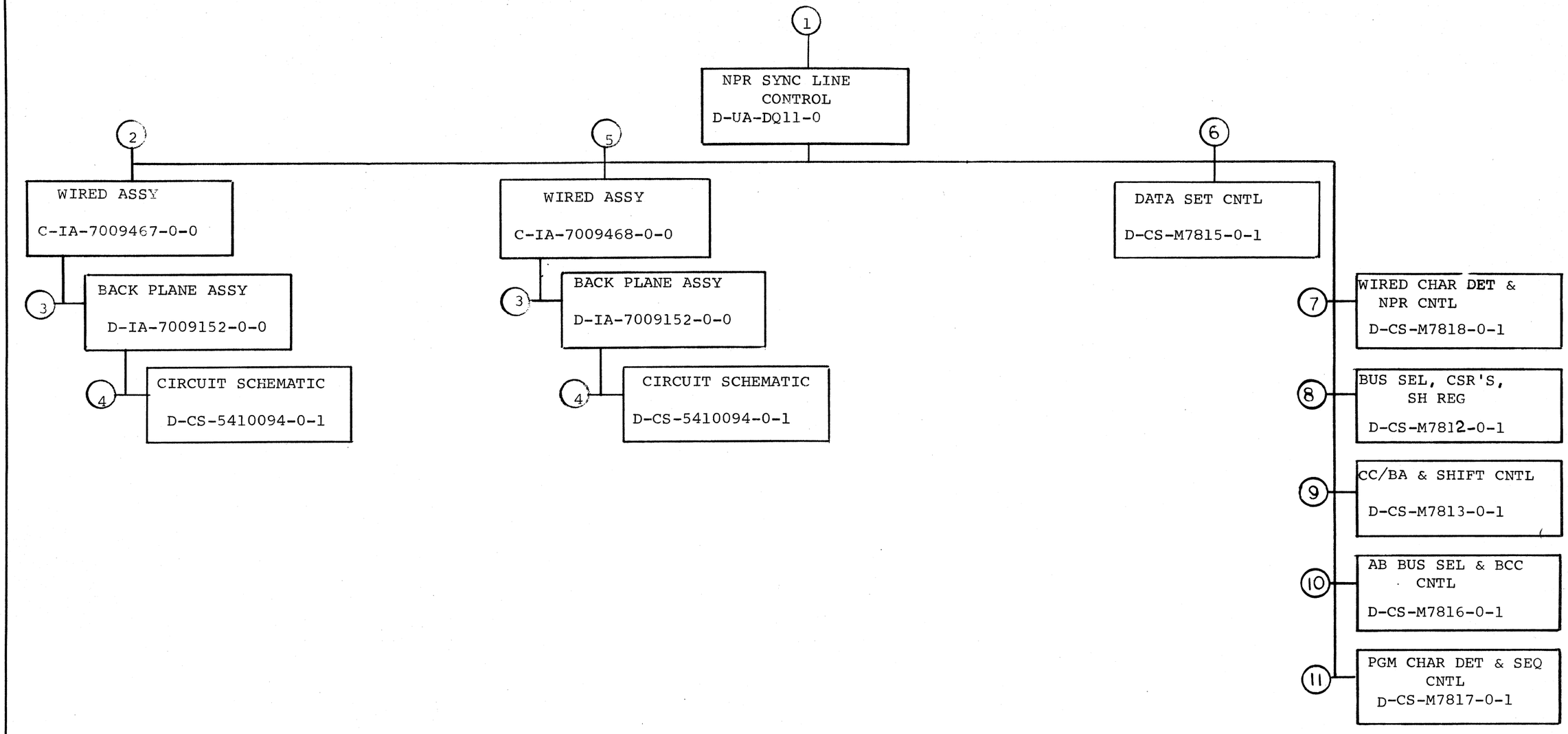
DRN. E.WILSON	DATE 9/4/73	TITLE NPR SYNC LINE CONTROL
CHK'D.	DATE 12/10/73	
PROJ ENG.	DATE 12-10-73	
PROD.	DATE 12-11-73	
FIELD SERV.	DATE 12/11/73	

SIZE	CODE	NUMBER	REV
B	DD	DQ11-0	L

DIST

DEC 16-13231-1062-1A-8912

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
NPR SYNC LINE CONTROL	SHEET 2 OF 4	B	DD	DQ11-Ø	L

CUSTOMER PRINT SET DQ11-Ø	CUSTOMER PRINT SET DQ11-KA			MFG. SET	ELECTRICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					1	D-UA-DQ11-Ø-Ø	A	1	NPR SYNC LINE CONTROL	
X						A-PL-DQ11-Ø-Ø	A	1	NPR SYNC LINE CONTROL	
X						D-MU-DQ11-Ø-1	*	1	MODULE UTILIZATION (AA)	
X						D-MU-DQ11-Ø-2	*	1	MODULE UTILIZATION (AB)	
X						A-AL-DQ11-Ø-3	A	1	DQ11 ACCESSORY LIST	
C						B-DD-DF11-Ø	#	1	LEVEL CONVERTERS + CABLES	
X						D-BD-DQ11-Ø-4	*	1	DF11 CONV/CABLE	
X						D-BS-DQ11-Ø-5	*	1	ADDRESS INTERRUPT CLOCK	
X						D-IC-DQ11-Ø-6	*	1	UNIBUS CONNECTORS	
X						D-IC-DQ11-Ø-7	A	1	DQ11-AA/DQ11-AB CONNECTORS	
						A-SP-DQ11-Ø-8	*		ENGINEERING SPEC	
						A-SP-DQ11-Ø-9	*		TEST PROCEDURE	
						A-SP-DQ11-Ø-10	*		ACCEPTANCE PROCEDURE	
X						D-CS-M92Ø-Ø-1	#	1	INTERNAL BUS CONN	
X						D-CS-M105-Ø-1	#	1	ADDRESS SELECTOR	
X						D-CS-M7821-Ø-1	#	2	INTERRUPT CONTROL MODULE	
X	X					D-CS-M4050-Ø-1	#	1	CRYSTAL CLOCK	
X						D-CS-H315-Ø-1	#	1	MODEM TEST CONN	
X						C-IA-BC08S-Ø-Ø	#		I/O CABLE ASSY	
X						D-IA-7009563-Ø-Ø	#	1	DAII-F/DDII-B OPTION HARNESS	
X						D-CS-M971-Ø-1	#		CABLE CONNECTOR	
						A-SL-DQ11-Ø-11	*		SOFTWARE LIST	
						A-SP-DQ11-Ø-13	*		MODULE TEST PROCEDURE	
X					2	C-IA-7009467-0-0	B	1	WIRED ASSY(DQ11-AA)	
C						K-WL-DQ11-Ø-12	D	1	WIRE LIST (DQ11-AA)	
						A-WT-7009467-0	#	1	AWT STATUS REV	
X					3	D-IA-7009152-0-0	#	1	BACK PLANE ASSY	
						C-SC-1209583-0-1		1	CASTING,THREE BLOCK	
					4	D-CS-5410094-0-1		1	CIRCUIT SCHEMATIC	
						K-CO-5410094-0-4		1	X-Y COORDINATE HOLE LOCATION	
						E-AH-5410094-0-5		1	ASSY/DRILLING HOLE LAYOUT	
						B-MH-5410094-0-6		1	MODULE ECO HISTORY	

CUSTOMER PRINT SET DQ11-Ø	CUSTOMER PRINT SET DQ11-KA			MFG SET	ELECTRICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					5	C-IA-7009468-0-0	*	1	WIRED ASSY (DQ11-AB)	
C						K-WL-DQ11-Ø-14	E	1	WIRE LIST (DQ11-AB)	
X						A-WT-7009468-0	#	1	AWT STATUS REV	
X					6	D-CS-M7815-Ø-1	#	2	DATA SET CNTL	
						K-CO-M7815-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
						D-AH-M7815-Ø-5		1	ASSY/HOLE LOCATION	
						B-MH-M7815-Ø-6		1	MODULE ECO HISTORY	
X					7	D-CS-M7818-Ø-1	#	4	WIRED CHAR DET & NPR CNTL	
						K-CO-M7818-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
						D-AH-M7818-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
						B-MH-M7818-Ø-6		1	MODULE ECO HISTORY	
X					8	D-CS-M7812-Ø-1	#	1Ø	BUS,SEL CSR'S,SH REG	
						K-CO-M7812-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
						D-AH-M7812-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
						B-MH-M7812-Ø-6		1	MODULE ECO HISTORY	
X					9	D-CS-M7813-0-1	#	1Ø	CC/BA & SHIFT CNTL	
						K-CO-M7813-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
						D-AH-M7813-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
						B-MH-M7813-Ø-6		1	MODULE ECO HISTRY	
X					10	D-CS-M7816-Ø-1	#	7	AB BUS SEL & BCC CNTL	
						K-CO-M7816-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
						D-AH-M7816-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
						B-MH-M7816-Ø-6		1	MODULE ECO HISTORY	
X					11	D-CS-M7817-Ø-1	#	7	PGM CHAR DET & SEQ CNTL	
						K-CO-M7817-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
						D-AH-M7817-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
						B-MH-M7817-Ø-6		1	MODULE ECO HISTORY	

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
NPR-SYNC LINE CONTROL	SHEET 3 OF 4	B	DD	DQ11-Ø	L

MECHANICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	D-UA-DQ11-Ø-Ø	A	1	NPR SYNC LINE CONTROL	
			A-PL-DQ11-Ø-Ø	A	1	NPR SYNC LINE CONTROL (PL)	
			D-UA-BC01R-0-Ø			MODEM CABLE	
			D-UA-BC01W-25-Ø			MODEM CABLE (301/303)	
		2	C-IA-7009467-0-0	B	1	WIRED ASSY (DQ11-AA)	
		3	D-IA-7009152-0-0	#	1	BACK PLAIN ASSY	
			C-SC-1209583-0-1		1	CASTING ,THREE BLOCK	
		4	C-IA-7009468-0-0	#	1	WIRED ASSY (DQ11-AB)	

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
NPR - SYNC LINE CONTROL	4 OF 4	B	DD	DQ11-Ø	L

DRB 108

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

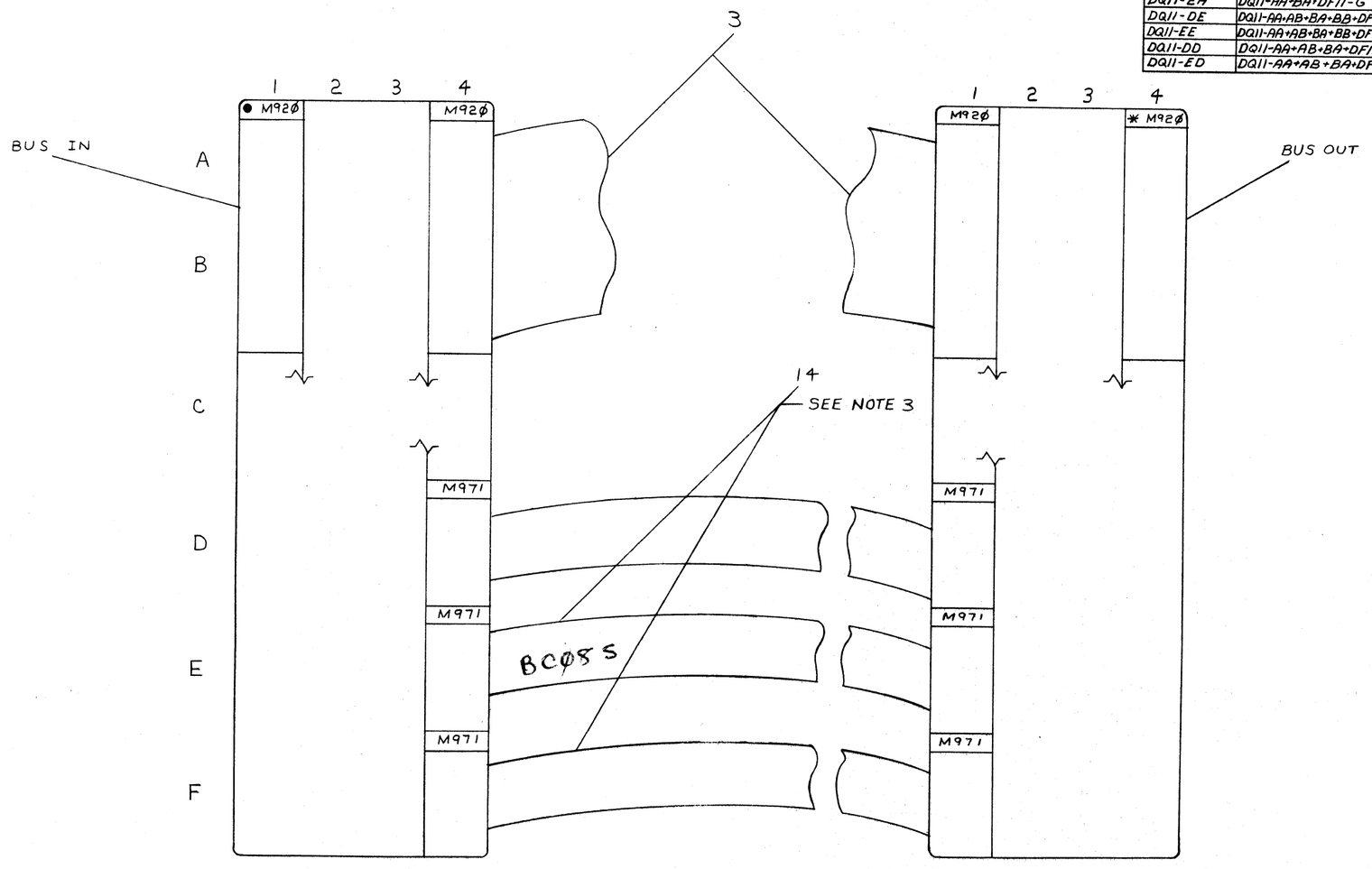
REV	NUMBER	SIZE	CODE
A	Ø-Ø-11ØDQ11	D	UA

LEGEND

VAR	TITLE
DQ11-AA	BASIC SYNC CONTROL
DQ11-BA	DATA SET CONTROL
DQ11-AB	BCC CONTROL
DQ11-BB	PROTOCOL CONTROL
DQ11-KA	CRYSTAL CLOCK(M4050)
DQ11-DA	DQ11-AA+BA+DF11-A
DQ11-EA	DQ11-AA+BA+DF11-G
DQ11-DE	DQ11-AA+AB+BA+BB+DF11-A
DQ11-EE	DQ11-AA+AB+BA+BB+DF11-G
DQ11-DD	DQ11-AA+AB+BA+DF11-A
DQ11-ED	DQ11-AA+AB+BA+DF11-G

NOTES:

1. ● IF FIRST UNIT IN EXPANDER BOX. REPLACE M92Ø WITH BC11A-XX
2. ✱ IF END OF BUS REPLACE M92Ø WITH M93Ø
3. CABLES ARE BCØ8S. IF BCØ8R IS SUBSTITUTED THEN ONE END OF THE CABLE SHOULD BE REVERSED
4. FOR ALL 11/45 CPU'S WITH S/N #'S LESS THAN 2000 USE HARNESS 7009162. FOR 11/35-11/40 CPU'S WITH S/N LESS THAN 6000 OR H960-D/E WITH S/N LESS THAN 7000 USE HARNESS 7009099.



DQ 11-AA

DQ 11-AB

BASIC SYNC CNTRL

REVISIONS	REV.	CHK	CHANGE NO
	A	JRG	DQ11-00001

J. Chester 5-2-78
LISEE
R. Kane 5-6-78

BRUNING 40-107 15968
DEC FORM NO
DRD 100-A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DQ11		PARTS LIST		

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

DRN. E. Wilson	DATE 8/29/78	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. [illegible]	DATE 11-1-78	
ENG. R. [illegible]	DATE 12-12-78	TITLE: NPR SYNC LINE CONTROL
PROJ. ENG. [illegible]	DATE 12-12-78	
PROD. R. Wall	DATE 12-11-78	

NEXT HIGHER ASSY.: A-PL-DQ11-Ø-Ø
SCALE: NONE
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	UA	DQ11-Ø-Ø	A

DIST.

SIZE D CODE UA NUMBER DQ11-Ø-Ø REV. A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY E.Wilson DATE 8/29/73	CHECKED DATE 12/22/73	SECTION
ENG R. Fusco DATE 12-10-73	PROD R. Wall DATE 12-11-73	ISSUED SECT.

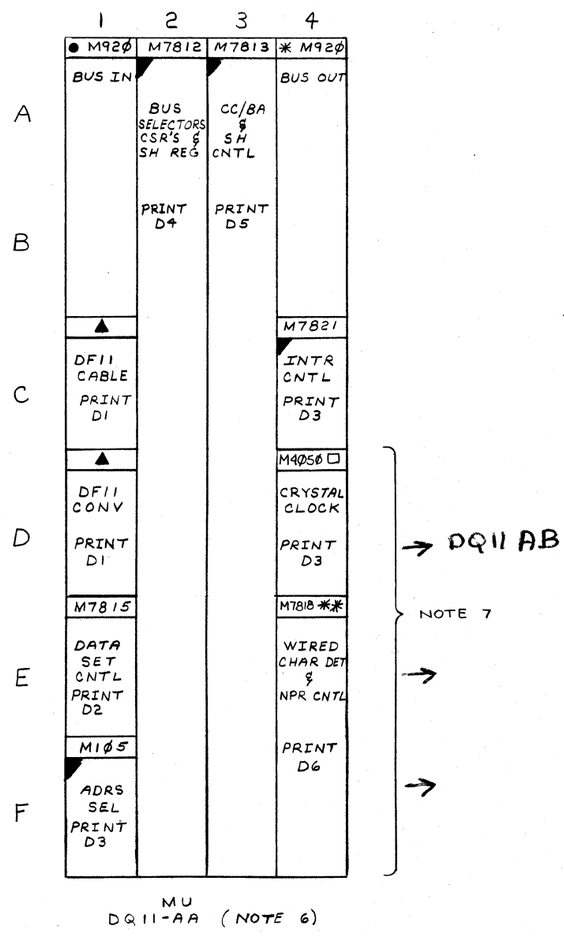
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
			DQ11-AA	DQ11-BA	DQ11-AB	DQ11-BB	DQ11-KA		DQ11-DA	DQ11-EA	DQ11-DE	DQ11-EE	DQ11-DD	DQ11-ED
1	C-IA-7009467-0-0	WIRED ASSY (DQ11-AA)	1						1	1	1	1	1	1
2	C-IA-7009468-0-0	WIRED ASSY (DQ11-AB)			1						1	1	1	1
3	D-CS-M920-0-1	INTERNAL BUS CONN	1		1				1	1	2	2	2	2
4	D-CS-M105-0-1	ADDRESS SELECTOR	1						1	1	1	1	1	1
5	D-CS-M7821-0-1	INTERRUPT CONTROL MODULE	1						1	1	1	1	1	1
6	D-CS-M4050-0-1	CRYSTAL CLOCK					1							
7	D-CS-M7815-0-1	DATA SET CNTL		1					1	1	1	1	1	1
8	D-CS-M7818-0-1	WIRED CHAR DET & NPR CNTL	1						1	1	1	1	1	1
9	D-CS-M7812-0-1	BUS SEL, CSR'S, SH REG	1						1	1	1	1	1	1
10	D-CS-M7813-0-1	CC/BA & SHIFT CNTL	1						1	1	1	1	1	1
11	D-CS-M7816-0-1	AB BUS SEL & BCL CNTL			1						1	1	1	1
12	D-CS-M7817-0-1	PGM CHAR DET & SEQ CNTL				1					1	1		
13	D-CS-M971-0-1	CABLE CONNECTOR			6						6	6	6	6
14	C-IA-BC08S-1	I/O CABLE ASSY			3						3	3	3	3
15	B-DD-DF11-A	EIA/CCITT CONV-CABLE							1		1		1	
16	B-DD-DF11-G	301/303 CONV-CABLE								1		1		1
17	D-CS-H315-0-1	MODEM TEST CONNECTOR							1		1		1	
18	D-PS-12-11284-04	SW DUST COVERS (8 POS)	9						9	9	9	9	9	9
19	C-IA-5408778-0-0	PRIORITY JUMPER LEVEL #5	1						1	1	1	1	1	1
~~20~~	~~D-IA-7009099~~	~~POWER HARNESS~~	~~1~~		~~1~~				~~1~~	~~1~~	~~2~~	~~2~~	~~2~~	~~2~~
21	D-IA-7009563-0-0	DA11-F/DD11-B OPTION HARNESS	1		1				1	1	2	2	2	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
NPR SYNC LINE CONTROL	SHEET 1 OF 1	A	PL	DQ11-0-0	A	DQ11-00001
		DIST.				

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

NOTES:

1. ● IF FIRST UNIT IN EXPANDER BOX REPLACE M920 WITH BC11A.
2. ✱ IF END OF BUS REPLACE M920 WITH M930.
3. ▲ DF11 OPTION REF MODULE VARIATION CHART.
4. □ USE DQ11-KA OPTION (M4050 CRYSTAL CLOCK) IN DQ11-AA. IF USING DQ11-AB, M971 CABLE MODULE SHOULD BE IN THIS SLOT. FOR REFERENCE OF RELOCATION OF M4050 SEE D-MU-DQ11-0-2.
5. ✱✱ IF USING DQ11-AB THESE SLOTS ARE M971 CABLE MODULES. FOR REFERENCE OF LOCATION OF M7818, SEE D-MU-DQ11-0-2.
6. DQ11-AA STD. MODULES ARE M920, M105, M7821, M7812, M7813 ALL OTHERS MAYBE SELECTED VIA OPTIONS AS SHOWN IN THE MODULE VARIATION TABLE.
7. IF M971 REF PRINT D-IC-DQ11-0-7 FOR DQ11-AA / DQ11-AB (D7-1) CONNECTIONS.



→ DQ11 AB

NOTE 7

MODULE VARIATIONS (DQ11-AA)

SYSTEM CONFIGURATION	SLOT C1	SLOT D1	SLOT E1	SLOT D4	SLOT E4, F4
E1A DQ11-DA	BC01R-XX	M594	M7815	"	M7818 (NOTE 5)
20m DQ11-EA	BC01W/M970	M595	M7815	"	M7818 (NOTE 5)
DQ11-DE	BC01R-XX	M594	M7815	"	M971 (NOTE 5)
DQ11-EE	BC01W/M970	M595	M7815	"	M971 (NOTE 5)
DQ11-DD	BC01R-XX	M594	M7815	"	M971 (NOTE 5)
DQ11-ED	BC01W-/M970	M595	M7815	"	M971 (NOTE 5)
DF11-A	BC01R-XX	M594	"	"	"
DF11-G	BC01W/M970	M595	"	"	"
DQ11-KA (NO DQ11-AB SYSTEM UNIT)	"	"	"	M4050 (NOTE 4)	"
DQ11-BA	"	"	M7815	"	"

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DQ11		PARTS LIST		

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

MATERIAL

FINISH

DRN. E. Wilson	DATE 8/28/73	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD. [illegible]	DATE 11/19/73	
ENG. K. Lewis	DATE 12-10-73	TITLE: MODULE UTILIZATION (DQ11-AA)
PROJ. ENG. [illegible]	DATE 12-10-73	
PROD. R. Well	DATE 12-11-73	
NEXT HIGHER ASSY. B-DD-DQ11-0		SIZE D, CODE MU, NUMBER DQ11-0-1, REV.
SCALE · NONE		
SHEET 1 OF 1		DIST.

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO. DRD 102-C

D M U DQ11-0-1 (REV.)

NOTES:
1. ● IF FIRST UNIT IN EXPANDER BOX REPLACE M920 WITH BC11-A.
2. ✱ IF END OF BUS REPLACE M920 WITH M7818.
3. ☐ DQ11-KA (M9050) CRYSTAL CLOCK OPTION.
4. DQ11-AB STD. MODULES ARE M920, M7816. THE DQ11-KA AND M7818 ARE RELOCATED FROM THE DQ11-AA SYSTEM UNIT. ALSO MODULE M7817 IS THE DQ11-BB OPTION.

	1	2	3	4
	● M920	M7816	M7817	✱ M920
A	BUS IN	AB SELECTORS & ADR CNTL PRINT D9	DQ11-BB PGM CHAR DET & SEQ CNTL PRINT D8	BUS OUT
B	☐ M9050			
C	DQ11-KA CRYSTAL CLOCK PRINT D3			
	M971			
D	CONTROL SIGNALS PRINT D7			
	M971			M7818
E	CONTROL SIGNALS PRINT D7			WIRED CHAR DET & NPR CNTL PRINT D6
	M971			
F	CONTROL SIGNALS PRINT D7			

M U
DQ11-AB (NOTE 4)

MODULE VARIATIONS (DQ11-AB)

SYSTEM CONFIGURATIONS	SLOT C1	SLOT A3-F3
DQ11-BB	#	M7817
DQ11-KA	M9050	#

REVISIONS			
REV.	CHANGE NO.	CHK.	DATE

DEC FORM NO. ORD 102-C

FIRST USED ON OPTION/MODEL: DQ11	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

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

MATERIAL
FINISH

DRN. J. Wilson 8/29/73
CHK'D. [illegible] 11/15/73
ENG. R. Trull 12-19-73
PROJ. ENG. R. Trull 12-19-73
PROD. R. Wall 12-21-73

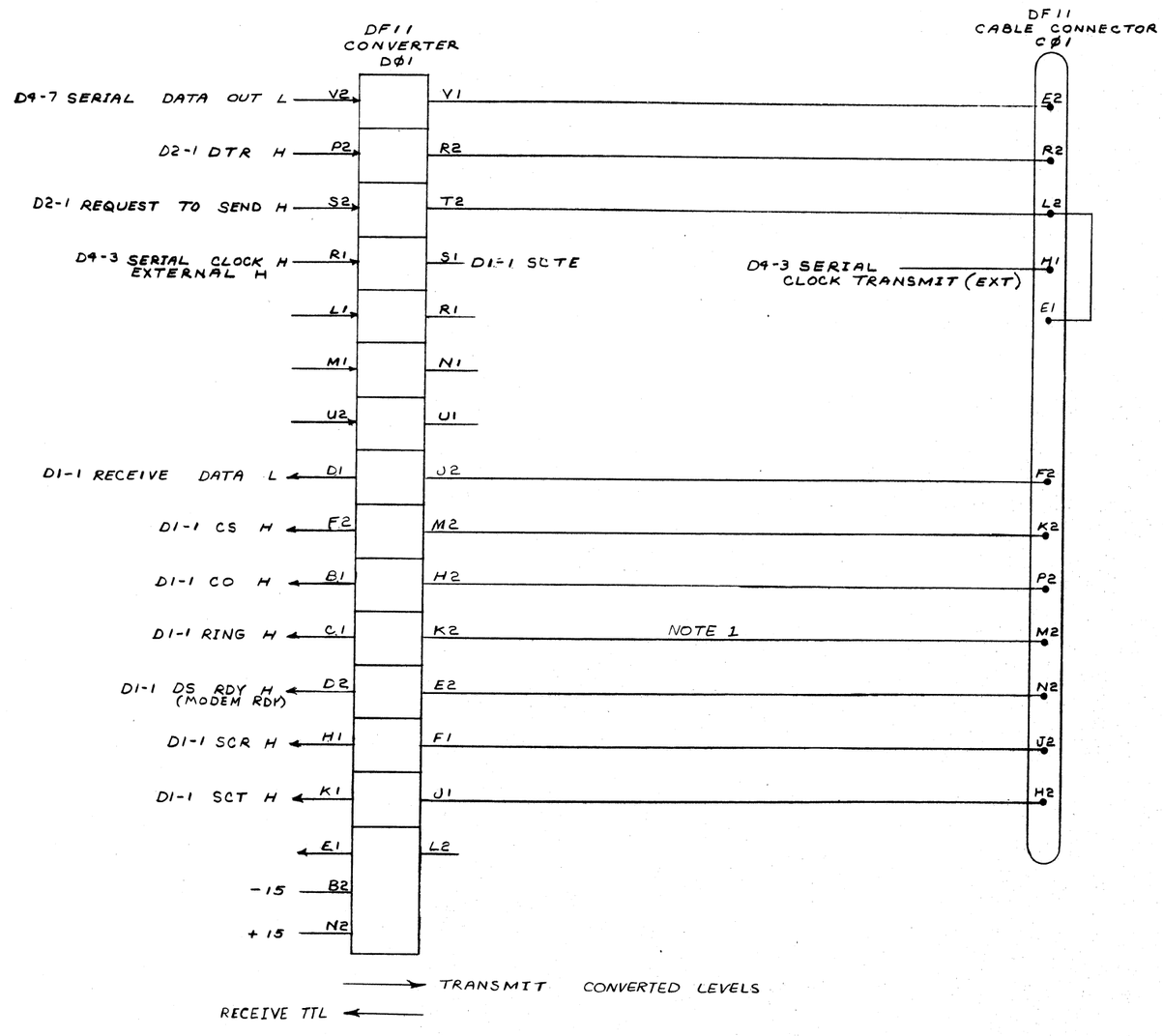
NEXT HIGHER ASSY. B-CD-DQ11-Ø
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION DQ11-AB

SIZE D | CODE MU | NUMBER DQ11-Ø-2 | REV.
DIST.

SIZE D | CODE MU | NUMBER DQ11-Ø-2 | REV.



NOTE: 1. DF11A: IF RING LEAD IS OPEN AT MODEM END, CABLE CROS TALK MAY CAUSE INTERRUPTS. EITHER GROUND CØ1M2 OR ADD A 33K 1/4W RESISTOR FROM E3(12) (M594) TO -15V. MODULE IS ETCHED ACCOMADATE THIS RESISTOR.

2 THE BCØ1W-25 MUST HAVE ALL JUMPERS REMOVED EXCEPT THOSE LABELED 202 (TWO) AND 301 (TWO)

DF11	DF11 CONV	DF11 CABLE	NOTES
DF11-A	M594	BCØ1R-XX	EIA/CCITT
DF11-G	M595	BCØ1W-25/M97Ø	BELL 3Ø1/3Ø3

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DQ11		PARTS LIST		

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

MATERIAL —

FINISH —

DRN. E Wilson	DATE 2/20/73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. [illegible]	DATE 11/13/73	
ENG. R. Isaac	DATE 12-10-73	
PROJ. ENG. R. Isaac	DATE 12-10-73	
PROD. K. Wall	DATE 12-11-73	

NEXT HIGHER ASS'Y B-DD-DQ11-Ø

SCALE —

SHEET 1 OF 1

TITLE: DF11 CONV/CABLE (D1-1)

SIZE D | CODE BD | NUMBER DQ11-Ø-4 | REV.

DIST.

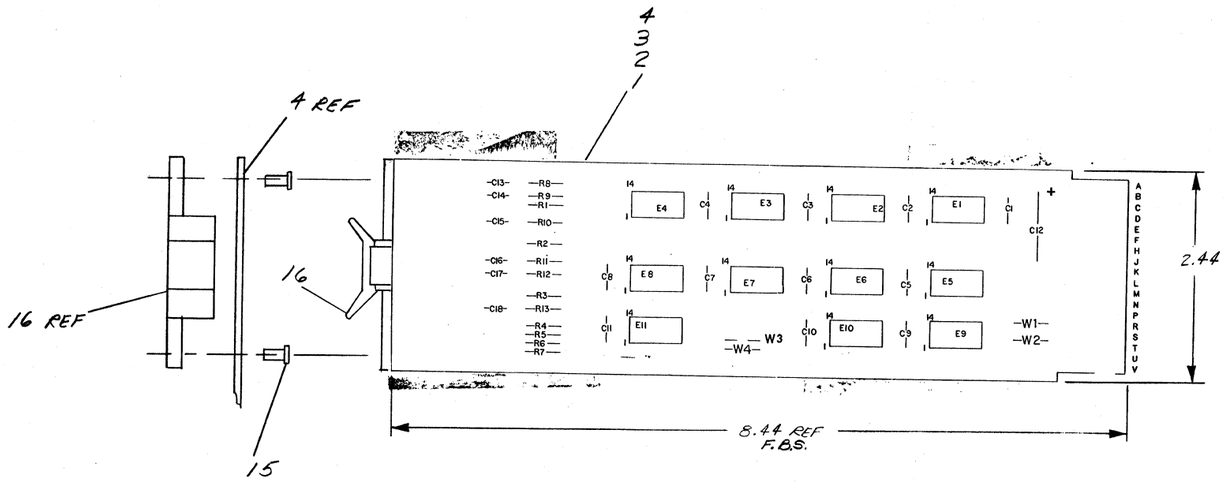
REVISIONS	REV.
CHANGE NO.	
CHK.	

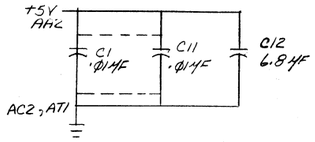
DEC FORM NO. DRD 102A

NOTES:

1. W1, W2, W3, W4 ARE MACHINE INSERTED JUMPERS.
2. REMOVE W4 TO INHIBIT RING INTERRUPTS.
3. REMOVE W3 TO INHIBIT INITALIZE FROM CLEARING RS & DTR.
4. UNLESS OTHERWISE SPECIFIED RESISTANCE IS IN OHMS.
5. UNLESS OTHERWISE SPECIFIED CAPACITORS ARE 100V, 5%.

JUMPERS	FUNCTION
W1	INTERRUPT IF UC 13
W2	INTERRUPT IF UC 14
W3	INHIBIT INIT RS & DTR
W4	INHIBIT RING INTERRUPTS





REF		X-Y COORDINATE HOLE LOCATION	K-DD-M7815-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	C-AH-M7815-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7815-0-6	3
1		ETCHED CIRCUIT BOARD	5010500	4
11	C1-C11	CAPACITOR .01MF 50V 20% AXIAL CER	1001610	5
6	C13-C18	CAPACITOR 1200PF 100V 5% D.M.	1002424	6
1	C12	CAPACITOR 6.8MF 35V 10% S.TANT	1005306	7
6	R8-R13	RESISTOR 220 1/4W 5%	1300271	8
7	R1-R7	RESISTOR 3K 1/4W 5%	1300432	9
4	E1, E5, E9, E10	IC DEC 7974	1905547	10
2	E2, E6	IC DEC 7400	1905575	11
1	E8	IC DEC 7420	1905577	12
2	E3, E7	IC DEC 7404	1909686	13
2	E4, E11	IC DEC 7486	1910011	14
2		EYELET #GS4-7	9006732	15
1		HANDLE, FLIP-CHIP MAGENTA	9008337-6	16
AR	W1-W4	BUS WIRE #22 AWG	9107560-01	17

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: DQ11

ETCH BOARD REV: A

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

BRUNING 40-522 16699
DEC FORM NO. DRD-135A

REV	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.
*	ORIGINATED				
CHK		SEMICONDUCTOR CONVERSION CHART			

REVISIONS

DRN. M. Pierce	DATE 4/2/73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. [illegible]	DATE 9/16/73	TITLE: DATA SET CONTROL
ENG. Remi Pierce	DATE 7/12/73	
PROJ. ENG. Kenn Lewis	DATE 7/13/73	
PROD. R. Wall	DATE 7/13/73	
NEXT HIGHER ASSY: B-DD-DQ11-0		SIZE D CODE CS M7815 - -1 REV. *
SCALE NONE		
SHEET 1 OF 2		DIST.

SIZE D CODE CS M7815-0-1 REV *

D4-3 TEST LOOP H AE2 — 7404 E3

D1-1 CO H AA1 — 7404 E3 (13→12) R8 220Ω — 7486 E4 (10,9→8) — C13 1200Ø PF

D1-1 CS H AB1 — 7404 E3 (11→10) R9 220Ω — 7486 E4 (2,1→3) — C14 1200Ø PF

D1-1 RING H AU2 W4 — 7404 E7 (1→2) R12 220Ω — +5V R7 3K — 7486 E11 (12,13→11) — C17 1200Ø PF

* AH2 — 7404 E3 (1→2) R10 220Ω — +5V R1 3K — 7486 E4 (5,4→6) — C15 1200Ø PF

* AK2 — 7404 E7 (11→10) R13 220Ω — +5V R3 3K — 7486 E11 (5,4→6) — C18 1200Ø PF

* AJ2 — 7404 E7 (13→12) R11 220Ω — +5V R2 3K — 7486 E11 (9,10→8) — C16 1200Ø PF

7420 E8 (10,13,9,12→8)

7400 E6 (5,4→6)

D4-2 D15 H AT2 — 7474 E10 (2→5,6) — AS2 D2-1 DATA SET INTR (1) H

R5 3K +5V; * AR1; * AU1; +3V; R4 3K +5V — 7420 E8 (4,2,1,5→6) — 7400 E6 (1,2→3) — AN2 D2-1 DS INTR L

W1; W2

D4-2 D14 H AR2 — 7474 E9 UØ 14 (2→5,6) — AV1 D2-1 UØ 14 (1) H

D4-2 D13 H AP2 — 7474 E9 UØ 13 (12→9,10) — AN1 D2-1 UØ 13 (1) H

D4-4 LD RX 15-8 H AM1

+3V; D4-1 D4 H AL1; D4-4 LDTX 7-Ø H AK1 — 7474 E5 DATA SET IE (2→5,6; 3→5,6) — AV1 D2-1 DATA SET IE(1) H

+3V; D4-2 D8 H AE1 — 7474 E1 RS (12→9,8; 11→9,8) — +3V; 7400 E2 (5,4→6) — 7404 E3 (3→4) — AF2 D2-1 REQUEST TO SEND H

D4-3 TX CLOCK H AD2

+3V; D4-2 D9 H AM2 — 7474 E3 DTR (12→9,8; 11→9,8)

D3-1 OUT H AD1; D3-1 SEL 2 H AC1 — 7400 E2 (9,10→8) — 7404 E3 (9→8)

+3V; 7400 E6 (10,9→8) — 7404 E7 (9→8) — AL2 D2-1 DATA TERM RDY H

AH1 D2-1 DTR (1) H

AF1 D2-1 RS (1) H

W3; R6 3K +5V

D5-4 INI H AV2 — 7404 E7 (3→4) — 7404 E7 (5→6) — +3V

7474 E10 (12→9,8; 11→9,8)

7400 E2 (1,2→3)

7400 E2 (12,13→11)

7400 E6 (12,13→11)

7486 E4 (12,13→11)

7486 E11 (1,2→3)

* NOT ASSIGNED

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SET CONTROL (D2-1)	D	CS M781	Ø-1	*
SCALE NONE	SHEET 2 OF 2	DIST.		

DEC FORM NO. DRD 138

NOTES:
1. CRYSTAL FREQ. FOR SPECIFIED BAUD RATE
   a) BAUD RATE <250,000 CRYSTAL IS 16X BAUD RATE
   b) BAUD RATE >250,000 CRYSTAL IS 2X BAUD RATE
2. MODULE LOCATION IS DØ4 IF DQ11-AA OPTION ONLY! IF DQ11-AB OPTION IS USED SLOT CØ1 IN DQ11-AB SYSTEM UNIT IS USED.

(BØ1V1) BUS MSYN L — E1
(BØ1S1) BUS A 17 L — D1
(BØ1S2) BUS A 16 L — E2
(BØ1R1) BUS A 15 L — D2
(BØ1R2) BUS A 14 L — K1
(BØ1P1) BUS A 13 L — K2
(BØ1P2) BUS A 12 L — C1
(BØ1N1) BUS A 11 L — L1
(BØ1N2) BUS A 1Ø L — P1
(BØ1M1) BUS A Ø9 L — R1
(BØ1M2) BUS A Ø8 L — N2
(BØ1L1) BUS A Ø7 L — P2
(BØ1L2) BUS A Ø6 L — U1
(BØ1K1) BUS A Ø5 L — V1
(BØ1K2) BUS A Ø4 L — U2
(BØ1J1) BUS A Ø3 L — V2
(BØ1J2) BUS A Ø2 L — F1
(BØ1H1) BUS A Ø1 L — H1
(BØ1H2) BUS A ØØ L — H2
(BØ1T2) BUS C1 L — F2
(BØ1U2) BUS C0 L — J2

M1Ø5 FØ1
Ø 12
Ø 11
Ø 1Ø
Ø 9
Ø 8
Ø 7
Ø 6
Ø 5
Ø 4
Ø 3
JUMPER FOR ZERO
A1

S2 — D3-1 SEL Ø H
T2 — D3-1 SEL 2 H
R2 — D3-1 SEL 4 H
S1 — D3-1 SEL 6 H
M2 — D3-1 OUT HIGH H
N1 — D3-1 OUT LOW H
M1 — D3-1 IN H
L2

(BØ1U1) BUS SSYN L
U1
B1
D5-3 INH SEL L

(INTB B DONE H)
(MASTER B L)

M7821 INTERRUPT CONTROL CØ4

D5-3 NPR RQST H — R1
D5-3 NPR EN (1) H — U1
(AØ1U1) BUS NPG IN H — V1
(AØ4U1) BUS NPG OUT H — B1

CONTROL A

C1 — V2
A1 — D1
E1 — T2
K2 — U1
H2 — P1
S1 — S2
R2 — M2
P2 — L2

CONTROL B

D5-5 BG OUT H
D5-5 BG IN H
D5-5 INTERRUPT "B" H
D5-5 INH INTR "B" L

D5-5 VECTOR BIT 2 (1) H — D2

U2 — N1

BUS NPR L (AØ1S2)
D3-1 MASTER AL
BUS BBSY L (AØ1P2)
BUS SACK L (AØ1R2)
D3-1 BRL
D3-1 INTR "B" DONE H

Ø 2 — E2 — BUS DØ2 L (AØ1D1)
Ø 3 — L1 — BUS DØ3 L (AØ1E2)
Ø 4 — N2 — BUS DØ4 L (AØ1E1)
Ø 5 — F1 — BUS DØ5 L (AØ1F2)
Ø 6 — F2 — BUS DØ6 L (AØ1F1)
Ø 7 — H1 — BUS DØ7 L (AØ1H2)
Ø 8 — K1 — BUS DØ8 L (AØ1H1)
Ø 9 — M1 — BUS INTR L (AØ1B1)

J2
Ø 9 Ø
JUMPER FOR ONE

M4Ø5Ø*
CRYSTAL CLOCK
NOTE 1,2
* REMOVE W1Ø

D2 — D3-1 KA CRYSTAL CLOCK H

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DQ11		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY 7
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL
FINISH

DRN.	L Wilson	DATE 5/18/73
CHK'D	Richard Gleason	DATE 11/12/73
ENG.	R. Lunn	DATE 12-10-73
PROJ. ENG.	R Lunn	DATE 12-10-73
PROD.	R Well	DATE 12-11-73

NEXT HIGHER ASS'Y: B-DD-DQ11-Ø
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

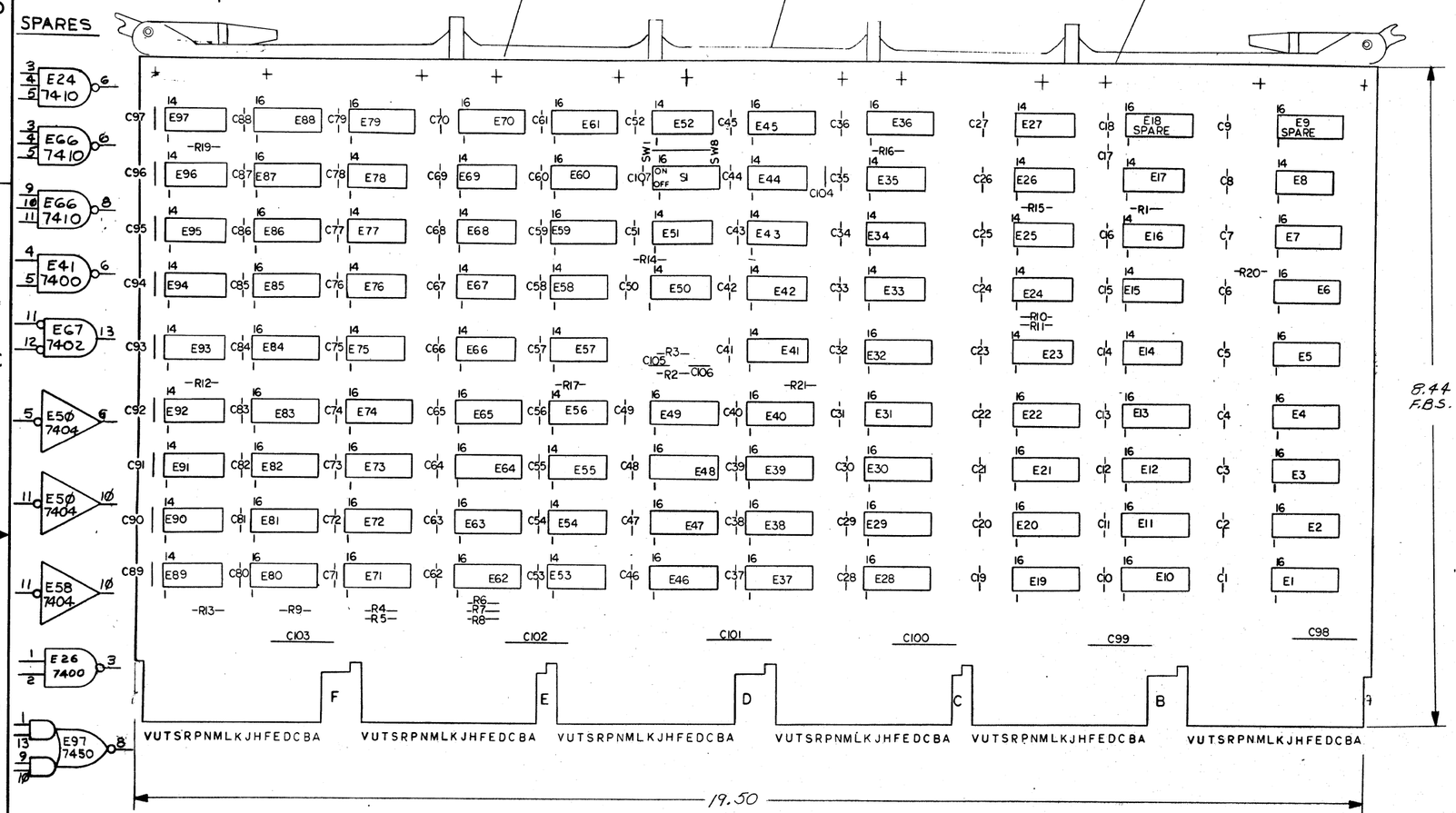
TITLE: ADDR., INTER. CONTROL & CLOCK (D3-1)

SIZE CODE: D | BS | DQ11-Ø-5 | REV.
DIST.

DEC FORM NO. DRD 102A

NOTES:

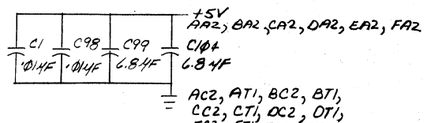
SPARES



IC	GND	+5V
IC 74151	8	16
IC 74153	8	16
IC 7442	8	16
IC 9015	8	16
IC 74175	8	16
IC 7474	8	16
IC 7457	8	16
IC 8838	8	16
IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS



SWITCH 1	SW ON FUNCTION
SW1	EXTERNAL CLOCK
SW2	TI MODEM
SW3	KA ÷ 16
SW4	KA ÷ 2
* SW5	EXT CLOCK (RC)
SW6	NU
SW7	NU
SW8	NU

* IF SW5 IS ON THEN SW3 & SW4 MUST BE OFF.

REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7812-B-4	1
REF		ASSY/DRILLING HOLE LOCATION	D-AH-M7812-B-5	2
REF		MODULE ECO HISTORY	B-MH-M7812-B-6	3
1		ETCHED CIRCUIT BOARD	5010510	4
12		EYELET	9006732	5
97	C1-97,	CAP .01 UF 50V 20% AXIAL	1001810-00	6
3	C104, C105, C106	CAP 1200 PF 100V 5%	1002424	7
6	C98-103	CAP 6.8 UF 35V 10%	1005306	8
1		HANDLE	1210711-02	9
1	S1	SWITCH 8 POS. (DUAL IN LINE)	1211164-04	10
4	E1-4	I.C. DEC 8838	1911117	11
4	R2,3,14,16	RES 220 1/4W 5%	1300271	12
4	R6-9	RES 330 1/4W 5%	1300295	13
7	R1,4,5,10,11,20,21	RES 3K 1/4W 5%	1300432	14
1	R17	RES 10K 1/4W 5%	1300479	15
4	R12,13,15, 19	RES 750 1/4W 5%	1301401	16
5	E35,42,43,51,57	I.C. DEC 7474	1905547	17
5	E8, 26,41,68,69	I.C. DEC 7400	1905575	18
2	E66,24	I.C. DEC 7410	1905576	19
1	E23	I.C. DEC 7430	1905578	20
1	E97	I.C. DEC 7450	1905580	21
1	E17	I.C. DEC 74H20	1905835	22
2	E15,67	I.C. DEC 7402	1909004	23
1	E16	I.C. DEC 74H00	1909056	24
2	E27,44	I.C. DEC 74H55	1909063	25
1	E34	I.C. DEC 74H11	1909267	26
3	E25,50,58	I.C. DEC 7404	1909686	27
4	E89-92	I.C. DEC 8242	1909712	28
1	E14	I.C. DEC 8815	1909713	29
4	E20,21,29,32	I.C. DEC 74151	1909936	30
16	E37-40,46-49,62-65,71-74	I.C. DEC 74153	1909937	31
8	E53-56,75-78	I.C. DEC 7486	1910011	32
5	E93-96,52	I.C. DEC 74197	1910035	33
2	E79,88	I.C. DEC 7442	1910048	34
2	E5,6	I.C. DEC 4015	1910087	35
1	E33	I.C. DEC 7408	1910155	36
8	E80-87	I.C. DEC 74175	1910851	37
14	E7,10-13,19,22,28,30,31,36 E45,61,70	I.C. DEC 74174	1910852	38
2	E59,60	I.C. DEC 74157	1910855	39
1	C107	CAP .047uf 16V -20 +50% CER DISC	1009678-00	40

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: DQ11

ETCH BOARD REV: E

SEMICONDUCTOR CONVERSION CHART

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

REV	CHANGE NO.	CHK	
C	M7812-00001	R.LISEE	3/20/74
D	M7812-00002	R.LISEE	6/6/74
E	M7812-00003	R.LISEE	9/9/74

REVISIONS

DRN. M.Pierce 7/1/73
CHK'D R.Lisee 7/Feb/73
ENG. R.Lisee 10-18-73
PROJ. ENG. R.Lisee 10-18-73
PROD. R.Wall 10-24-73

NEXT HIGHER ASSY: B-LD-DQ11-0

SCALE: NONE

SHEET 1 OF 9

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BUS SELECTORS CSR & SH REG

SIZE D | CODE CS | NUMBER M7812-0-1 | REV. E

DIST.

BRUNING 40-522 16699

DEC FORM NO. DRD-135A

PIN	SIGNAL NAME	PAGE	D4-1	D4-2	D4-3	D4-4	D4-5	D4-6	D4-7
AF1	BUS DATA 00 L		X						
AF2	BUS DATA 01 L		X						
AP2	BUS DATA 02 L		X						
AR1	BUS DATA 03 L		X						
AH2	BUS DATA 04 L		X						
AH1	BUS DATA 05 L		X						
AM2	BUS DATA 06 L		X						
AN2	BUS DATA 07 L		X						
AK1	BUS DATA 08 L			X					
AP1	BUS DATA 09 L			X					
AL2	BUS DATA 10 L			X					
AJ2	BUS DATA 11 L			X					
AM1	BUS DATA 12 L			X					
AL1	BUS DATA 13 L			X					
AK2	BUS DATA 14 L			X					
AN1	BUS DATA 15 L			X					
EL2	D1-1 RING H			X					
EV2	D1-1 CO H			X					
EL1	D1-1 CS H			X					
EU1	D1-1 DS INTR (1) H			X					
DV1	D1-1 SCTE				X				
EE2	D1-1 RECEIVE DATA L				X				
EF1	D1-1 SCT H				X				
ED2	D1-1 SCR H				X				
EK1	D1-1 DS RDY H			X					
FD2	D2-1 DATA SET IE (1) H		X						
ES1	D2-1 RS (1) H			X					
EV1	D2-1 DTR (1) H			X					
EJ2	D2-1 U.D. 13 (1) H			X					
EK2	D2-1 U.D. 14 (1) H			X					
BL1	D2-1 BA IT L				X				
CH1	D3-1 SEL 6 H				X				
BJ2	D3-1 SEL 0 H				X	X			
CE2	D3-1 SEL 2 H				X	X			
BK2	D3-1 SEL 4 H				X				
CD1	D3-1 IN H				X				
CJ1	D3-1 OUT HIGH H					X			
CS1	D3-1 OUT LOW H					X			
EC1	D3-1 KA CRYSTAL CLOCK H				X				
AA1	D4-1 D0 H		X		X	X	X	X	X
AC1	D4-1 D1 H		X		X	X	X	X	X
BJ1	D4-1 D2 H		X		X	X	X	X	X
BF2	D4-1 D3 H		X		X	X	X	X	X
CT2	D4-1 D4 H		X			X	X	X	X
BD2	D4-1 D5 H		X			X	X	X	X
AJ1	D4-1 D6 H		X		X	X	X	X	X
AB1	D4-1 D7 H		X		X	X	X	X	X
AE1	D4-2 D8 H			X	X	X	X	X	X
AD1	D4-2 D9 H			X	X	X	X	X	X
CR1	D4-2 D10 H			X	X		X	X	X
CP1	D4-2 D11 H			X	X		X	X	X
CP2	D4-2 D12 H			X			X	X	X
CN1	D4-2 D13 H			X			X	X	X
CN2	D4-2 D14 H			X			X	X	X
CM1	D4-2 D15 H			X	X	X	X		X
	D4-3 SEL (0/4) MUX AL		X	X	X				
	D4-3 SEL(0/2) MUX B L		X	X	X				
	D4-3 CSR/BRD → BUS 7-0 L		X		X				
	D4-3 CSR/BRD → BUS 15-8-L			X	X				
	D4-3 06 REG → BUS L		X	X	X				
	D4-3 REG MUX A L		X	X	X				
	D4-3 REG MUX B L		X	X	X				
CH2	D4-3 AB MUX SEL H				X				
EA1	D4-3 SERIAL CLOCK TRANSMIT EXT				X				
	D4-3 CLR SYNC L				X			X	
DS1	D4-3 SERIAL CLOCK EXTERNAL				X				
DS2	D4-3 BCC 16-23 (1) H		X		X				
DK1	D4-3 BITS 8 (1) H			X	X		X		
DL2	D4-3 BITS 9 (1) H			X	X		X		
DT2	D4-3 BITS 10 (1) H			X	X		X		FB1
DB1	D4-3 BITS 11 (1) H			X	X		X	X	FC1
DL1	D4-3 VRC (1) H			X	X				EN1
CV1	D4-3 UNDEFINED 2 H		X		X				EP1
	D4-3 STEP CK (1) H		X		X				AU1
	D4-3 STEP MODE (1) H		X		X				AE2
DU2	D4-3 TEST LOOP (1) H		X		X			X	
	D4-3 SD H		X		X				
ED1	D4-3 TX CLOCK H				X				
FE2	D4-3 RX CLOCK H				X	X			
FM2	D4-3 SERIAL DATA IN L				X	X			
	D4-4 +3V					X		X	
	D4-4 HD (1) H		X		X	X			
DK2	D4-4 STRIP SYNC (1) H		X			X			
	D4-4 ERR IE (1) H		X			X			
	D4-4 RX DONE IE (1) H		X			X			
	D4-4 CHAR IE (1) H		X			X			
	D4-4 CHAR INTR (1) H			X		X			
CU1	D4-4 RX/CHAR INTR L					X			
	D4-4 RX P DONE (1) H		X			X			
	D4-4 RX S DONE (1) H		X			X			
ER2	D4-4 RX GO (1) H		X			X			
CJ2	D4-4 LD RX 15-8 H					X			
CE1	D4-4 LD TX 7-0 H					X			ER1
									BL2
EP2	D4-4 IDLE MODE (1) H		X			X			FE1
	D4-4 TX DONE IE (1) H		X			X			

PIN	SIGNAL NAME	PAGE	D4-1	D4-2	D4-3	D4-4	D4-5	D4-6	D4-7
AV1	D4-4 TX ERR INTR L					X			
	D4-4 TX P DONE (1) H		X			X			
	D4-4 TX S DONE (1) H		X			X			
EN2	D4-4 TX GO (1) H		X			X			
FU1	D4-5 RD 15 H						X		⊗
FP1	D4-5 RD 14 H						X		⊗
FR2	D4-5 RD 13 H						X		⊗
FV1	D4-5 RD 12 H						X		⊗
FN1	D4-5 RD 11 H						X		⊗
FS2	D4-5 RD 10 H						X		⊗
FV2	D4-5 RD 9 H						X		⊗
FU2	D4-5 RD 8 H						X		⊗
FJ1	D4-5 RD 7 H						X		⊗
FS1	D4-5 RD 6 H						X		⊗
FR1	D4-5 RD 5 H						X		⊗
FT2	D4-5 RD 4 H						X		⊗
	D4-5 +3V					X	X		⊗
FH2	D4-5 RD 3 H						X		⊗
FF2	D4-5 RD 2 H						X		⊗
FJ2	D4-5 RD 1 H						X		⊗
FK1	D4-5 RD 0 H						X		⊗
FN2	D4-5 RX BCC DATA IN L						X		⊗
	D4-5 BITS 11 L						⊗		X
	D4-5 TB 15 H			X			X		
	D4-5 TB 14 H			X			X		
	D4-5 TB 13 H			X			X		
	D4-5 TB 12 H			X			X		
	D4-5 TB 11 H			X			X		
	D4-5 TB 10 H			X			X		
	D4-5 TB 9 H			X			X		
	D4-5 TB 8 H			X			X		
	D4-5 TB 7 H		X				X		
	D4-5 TB 6 H		X				X		
	D4-5 TB 5 H		X				X		
	D4-5 TB 4 H		X				X		
	D4-5 TB 3 H		X				X		
	D4-5 TB 2 H		X				X		
	D4-5 TB 1 H		X				X		
	D4-5 TB 0 H		X				X		
BN2	D4-5 TD 15 H						X		
CV2	D4-5 TD 14 H						X		
BP1	D4-5 TD 13 H						X		
BR1	D4-5 TD 12 H						X		
BT2	D4-5 TD 11 H						X		
BS2	D4-5 TD 10 H						X		
BH1	D4-5 TD 9 H						X		
BR2	D4-5 TD 8 H						X		
BH2	D4-5 TD 7 H						X		
BK1	D4-5 TD 6 H						X		
BV2	D4-5 TD 5 H						X		
BU1	D4-5 TD 4 H						X		
BV1	D4-5 TD 3 H						X		
BS1	D4-5 TD 2 H						X		
BU2	D4-5 TD 1 H						X		
BP2	D4-5 TD 0 H						X		
	D4-5 TX DATA 15-8 L						X		
	D4-5 TX DATA 7-0 L						X		
	D4-6 TX CK LOSS (1) H		X					X	
	D4-6 TX LATE (1) H		X					X	
	D4-6 TX NON MEM (1) H		X					X	
	D4-6 RX CK LOSS (1) H		X					X	
	D4-6 TX ERR L							X	
	D4-6 RX ERR L							X	
	D4-6 RX LATE (1) H		X					X	
	D4-6 RX NON MEM (1) H		X					X	
	D4-6 RX BCC ERR (1) H		X					X	
	D4-6 RX VRC ERR (1) H		X					X	
	D4-6 REG PT 8 (1) H			X				X	
	D4-6 REG PT 9 (1) H			X				X	
	D4-6 REG PT 10 (1) H			X				X	
	D4-6 REG PT 11 (1) H			X				X	
	D4-6 EE 13 (1) H								
	D4-6 EE 14 (1) H								
	D4-6 ERR INTR H							X	
	D4-7 S15 (1) H			X					X
	D4-7 S14 (1) H			X					X
	D4-7 S13 (1) H			X					X
	D4-7 S12 (1) H			X					X
	D4-7 S11 (1) H			X					X
	D4-7 S10 (1) H			X					X
	D4-7 S9 (1) H			X					X
	D4-7 S8 (1) H			X					X
	D4-7 S7 (1) H		X						X
	D4-7 S6 (1) H		X						X
	D4-7 S5 (1) H		X						X
	D4-7 S4 (1) H		X						X
	D4-7 S3 (1) H		X						X
	D4-7 S2 (1) H		X						X
	D4-7 S1 (1) H		X						X
	D4-7 S0 (1) H		X						X
	D4-7 SERIAL DATA OUT L								X
	D4-7 TX DATA H							X	
	D4-7 RX SYNC DET H								X
	D4-7 BRD 15 H		X						X

PIN	SIGNAL NAME	PAGE	D4-1	D4-2	D4-3	D4-4	D4-5	D4-6	D4-7
	D4-7 BRD 14 H								X
	D4-7 BRD 13 H								X
	D4-7 BRD 12 H								X
	D4-7 BRD 11 H								X
	D4-7 BRD 10 H								X
	D4-7 BRD 9 H								X
	D4-7 BRD 8 H								X
	D4-7 BRD 7 H		X						X
	D4-7 BRD 6 H		X						X
	D4-7 BRD 5 H		X						X
	D4-7 BRD 4 H		X						X
	D4-7 BRD 3 H		X						X
	D4-7 BRD 2 H		X						X
	D4-7 BRD 1 H		X						X
	D4-7 BRD 0 H		X						X
DR2	D5-1 CC/BA 0 H		X						
EB1	D5-1 CC/BA 1 H		X						
DH2	D5-1 CC/BA 2 H		X						
DD2	D5-1 CC/BA 3 H		X						
DJ1	D5-1 CC/BA 4 H		X						
DN2	D5-1 CC/BA 5 H		X						
DH1	D5-1 CC/BA 6 H		X						
DA1	D5-1 CC/BA 7 H		X						
DM2	D5-2 CC/BA 8 H			X					
DP1	D5-2 CC/BA 9 H			X					
DD1	D5-2 CC/BA 10 H			X					
DF2	D5-2 CC/BA 11 H			X					
DF1	D5-2 CC/BA 12 H			X					
DE2	D5-2 CC/BA 13 H			X					
DP2	D5-2 CC/BA 14 H			X					
EM1	D5-2 SP PORT 13 H			X					
EM2	D5-2 SP PORT 14 H			X					
DN1	D5-2 CC/BA 15 H			X					
BF1	D6-2 LD TX BUF (0) L								
BD1	D5-3 TX CYCLE H				X				
BB1	D5-3 RX CYCLE H				X				
CC1	D5-3 RX NPR L					X			
EE1	D5-4 LD MISC L					X			
FA1	D5-4 14,13 WEN H					X			
FF1	D5-4 TX S (1) H		X						
FH1	D5-4 RX S (1) H		X						
AD2	D5-4 LD PTEE H								
AT2	D5-4 LD ERR H								
BE1	D5-4 1 → RX CK LOSS L								
AS1	D5-4 1 → TX CK LOSS L								
FD1	D5-4 CK LOSS SH CNTL H					X			
BA1	D5-4 INI H					X			
EH1	D5-4 1 → RX P DONE L								
EJ1	D5-4 1 → RX S DONE L								
CR2	D5-4 0 → RX GO L								
CF2	D5-4 1 → TX P DONE L								
CS2	D5-4 1 → TX S DONE L								
CF1	D5-4 0 → TX GO L								
DR1	D5-4 LD SYNC L								
DM1	D5-6 TX ACTIVE (1) H								
DU1	D5-6 TX ACTIVE (1) H								
CA1	D5-6 TX ACTIVE (1) H								
CM2	D5-6 TX BIT CNTR 1 (1) H								
CL2	D5-6 TX BIT CNTR 2 (1) H								
CK1	D5-6 TX BIT CNTR 4 (1) H								
BM1	D5-6 VRC/TX ACTIVE L								
CL1	D5-6 TX SYNC EN 15-8 L								
CK2	D5-6 TX SYNC EN 7-0 L								
BN1	D5-6 TX DATA EN 7-0 L								
BM2	D5-6 TX DATA EN 15-8 L								
BE2	D5-6 LD TX SH REG H								
AR2	D5-6 TX LATE L								
EU2	D5-7 RX ACTIVE (1) H								
FL1	D5-7 CLR RX L								
FL2	D5-7 LD RX BUF 15-8 L								
AU2	D5-7 VRC ERR DET L								
DE1	D5-7 SYNC 2 (1) H								
DC1	D5-7 SYNC 1 (1) H								
AS2	D5-8 RX LATE L								
FK2	D5-8 LD RX BUF 7-0 L								
ES2	D6-1 CD 8 H								
ET2	D6-1 CD 9 H								
EF2	D6-1 CD 10 H								
EH2	D6-1 CD 11 H								
CU2	D6-1 1 → CHAR INTR L								
BC1	D6-2 TIME OUT H								
BF1	D6-2 LD TX BUF (1) L								
CB1	D9-4 BCC/DLE L								
AV2	D9-6 BCC ERR L								
DJ2	D9-6 RX BCC CYCLE L								

NOTES:
1. IF A NAME APPEARS TWO TIMES IT IS SHOWN WITH ⊗.
2. SIGNAL NAMES WITH TWO OR MORE PINS ARE SHOWN IN BRACKETS.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
BUS SELECTORS CSR & BRD REG	D	CS	M7812-0-1	E
SCALE NONE	SHEET 2 OF 9	DIST.		

(PRINT FIND)

DEC FORM NO. DRD 138

D4-5 TB Ø H
D4-3 STEP CK (1) H
D4-7 SØ (1) H
D5-1 CC/BA ØH
DR2
74153 E49 f1
D4-4 RX GO (1) H
D4-4 TX GO (1) H
D4-6 TX CK LOSS (1) H
D4-7 BRD Ø H
ER2
EN2
74153 E65 f1
D4-5 TB1 H
D4-3 STEP MODE (1) H
D4-7 S1 (1) H
D5-1 CC/BA 1H
EB1
74153 E49 fØ
D4-4 STRIP SYNC (1) H
D4-4 IDLE MODE (1) H
D4-6 RX CK LOSS (1) H
D4-7 BRD 1 H
DK2
EP2
74153 E65 fØ
D4-5 TB2 H
D4-3 UNDIFINED 2 H
D4-7 S2 (1) H
D5-1 CC/BA 2 H
CV1
DH2
74153 E40 f1
D5-4 RX S (1) H
D5-4 TX S (1) H
D4-6 TX LATE (1) H
D4-7 BRD 2 H
FH1
FF1
74153 E74 f1
D4-5 TB3 H
D4-3 TEST LOOP (Ø) H
D4-7 S3 (1) H
D5-1 CC/BA 3 H
DD2
DU2
74153 E40 fØ
D4-4 HD (1) H
D4-4 ERR IE (1) H
D4-6 RX LATE (1) H
D4-7 BRD 3 H
D4-3 SEL (Ø/2) MUX B L
D4-3 SEL (Ø/4) MUX A L
D4-3 CSR/BRD→BUS 7-Ø L
D4-3 REG MUX B L
D4-3 REG MUX A L
D4-3 Ø6 REG→BUS L
74153 E74 fØ
7486 E56
8838 E4
8838 E3
AF1 BUS DATA ØØ L
AA1 D4-1 DØ H
AF2 BUS DATA Ø1 L
AC1 D4-1 D1 H
AP2 BUS DATA Ø2 L
BU1 D4-1 D2 H
ARI BUS DATA Ø3 L
BF2 D4-1 D3 H
D4-4 RX S DONE (1) H
D4-4 TX S DONE (1) H
D4-6 RX BCC ERR (1) H
D4-7 BRD 6 H
D4-4 RX P DONE (1) H
D4-4 TX P DONE (1) H
D4-6 RX VRC ERR (1) H
D4-7 BRD 7 H
D4-5 TB4 H
D4-7 S4 (1) H
D5-1 CC/BA 4 H
DU1
74153 E48 f1
D4-4 CHAR IE (1) H
D2-1 DATA SET IE (1) H
D4-6 TX NON MEM (1) H
D4-7 BRD 4 H
FD2
R9 330Ω
D4-5 TB5 H
D4-7 S5 (1) H
D5-1 CC/BA 5H
DN2
74153 E48 fØ
D4-4 RX DONE IE (1) H
D4-4 TX DONE IE (1) H
D4-6 RX NON MEM (1) H
D4-7 BRD 5 H
D4-5 TB6 H
D4-3 BCC 16-23 (1) H
D4-7 S6 (1) H
D5-1 CC/BA 6 H
DS2
DH1
74153 E39 fØ
D4-5 TB7 H
D4-3 SD H
D4-7 S7 (1) H
D5-1 CC/BA 7 H
DA1
74153 E39 f1
7486 E55
8838 E2
AH2 BUS DATA Ø4 L
CT2 D4-1 D4 H
AH1 BUS DATA Ø5 L
BD2 D4-1 D5 H
AM2 BUS DATA Ø6 L
AU1 D4-1 D6 H
D4-1 E2 ENABLE H
AN2 BUS DATA Ø7 L
AB1 D4-1 D7 H
D4-1 E3 ENABLE H
74153 E64 f1
74153 E64 fØ
74153 E73 f1
74153 E73 fØ
74153 E74 f1

* CONNECTIONS ARE INTERNAL TO CHIP-NAMED FOR INTERCONNECTION USE ONLY.

REVISIONS		
CHK	CHANGE NO.	REV.

(BUS SELECTORS 7-Ø)

TITLE	BUS SELECTORS CSR & SH REG (D4-1)	SIZE	CODE	NUMBER	REV.
SCALE NONE	SHEET 3 OF 9	D	CS	M7812-Ø-1	E
		DIST.			

DEC FORM NO. DRD 138

D4-5 TB8 H
D4-3 BITS 8 (1) H
D4-7 SB (1) H
D5-2 CC/BA 8 H
74153 E47 f1
D6-1 CD 8 H
D2-1 RS (1) H
D4-6 REG PT 8 (1) H
D4-7 BRD 8 H
+5V R4 3K
74153 E72 f1
D4-5 TB9 H
D4-3 BITS 9 (1) H
D4-7 S9 (1) H
D5-2 CC/BA 9 H
74153 E47 fØ
+5V R5 3K
74153 E72 fØ
D4-1 E3 ENABLE *
D6-1 CD 9 H
D2-1 DTR (1) H
D4-6 REG PT 9 (1) H
D4-7 BRD 9 H
D4-5 TB1Ø H
D4-3 BITS 1Ø (1) H
D4-7 S1Ø (1) H
D5-2 CC/BA 1Ø H
74153 E38 f1
74153 EG3 f1
D6-1 CD 1Ø H
D1-1 DS RDY H
D4-6 REG PT 1Ø (1) H
D4-7 BRD 1Ø H
D4-5 TB11 H
D4-3 BITS 11 (1) H
D4-7 S11 (1) H
D5-2 CC/BA 11 H
74153 E38 fØ
74153 E63 fØ
D6-1 CD 11 H
D1-1 RING H
D4-6 REG PT 11 (1) H
D4-7 BRD 11 H
D4-3 SEL (C/2) MUX B L
D4-3 SEL (Ø/4) MUX A L
D4-3 CSR/BRD→BUS 15-8 L
D4-3 REG MUX B L
D4-3 REG MUX A L
D4-3 D6 REG→BUS L
* D4-1 E2 ENABLE
7486 E54
8838 E2
8838 E3
8838 E1
AK1 BUS DATA Ø8 L
AP1 BUS DATA Ø9 L
AL2 BUS DATA 1Ø L
AN2 BUS DATA 11 L
D4-5 TB12 H
D5-7 SYNC 2 (1) H
D4-7 S12 (1) H
D5-2 CC/BA 12 H
74153 E37 fØ
74153 AØ E71 fØ
D4-5 TB13 H
D5-7 SYNC 1 (1) H
D4-7 S13 (1) H
D5-2 CC/BA 13 H
74153 E37 f1
74153 E62 f1
RB 33Ø
D4-5 TB14 H
D5-6 TX ACTIVE (1) H
D4-7 S14 (1) H
D5-2 CC/BA 14 H
74153 E46 fØ
74153 EG2 fØ
RC 33Ø
R7 33Ø
D4-5 TB15 H
D4-3 VRC (1) H
D4-7 S15 (1) H
D5-2 CC/BA 15 H
74153 E46 f1
74153 E71 f1
D4-4 CHAR INTR H
D1-2 DATA SET INTR (1) H
D4-6 ERR INTR H
D4-7 BRD 15 H
7486 E53
8838 E1
AM1 BUS DATA 12 L
CM2 D4-2 D12 H
AL1 BUS DATA 13 L
CN1 D4-2 D13 H
AK2 BUS DATA 14 L
CN2 D4-2 D14 H
AN1 BUS DATA 15 L
CM1 D4-2 D15 H

* CONNECTIONS ARE INTERNAL TO CHIP-NAMED FOR PRINT INTERCONNECTION USE ONLY.

REVISIONS		
CHK	CHANGE NO.	REV.

(BUS SELECTORS 15-8)

TITLE	SIZE	CODE	NUMBER	REV.
BUS SELECTORS CSR & SH REG (D4-2)	D	DCS	M7812-Ø-1	E
SCALE NONE	SHEET 4 OF 9	DIST.		

DEC FORM NO. DRD 138

RX CSR (SEL Ø)
TX CSR (SEL 2)
PT/ERR CSR (SEL 4)
RX DATA (RD → BUS)

D3-1 SEL 4 H BK2 — 74Ø2 E15 — D4-3 SEL (Ø/4) MUX A L
D3-1 SEL Ø H BV2 — L H L H
L L H H
D3-1 SEL 2 H CE2 — 74Ø2 E15 — D4-3 SEL (Ø/2) MUX B L

D3-1 KA CRYSTAL CLOCK H EC1 — 74Ø4 E5Ø — D5-4 +3V

74197 E52: D3 D2 1Ø C1 D4 — R3(1) R2(1) R1(1) R0(1); CLR LO CLK1 CLK2
÷16 SI (SW3) 3
÷2 SI (SW4) 4

~ 28 KHZ: 74Ø4 E5Ø — R14 22Ø — 74Ø4 E5Ø — C1Ø7 .Ø47 µF

D5-4 +3V — 7474 E51 (D C RC÷2 Ø) — D4-5 +3V

DS1 LA-3 SERIAL CLOCK EITERNAL
S1 (SW5) 5; S1 (SW2) 2

D5-3 RX NPR L CC1 — 74Ø Ø E24 — 74HØØ E16 — D4-3 CSR/BRD → BUS 7-Ø L
D2-1 BA IT L BC1 — 74HØØ E16 — 74H2Ø E17 — D4-3 CSR/BRD → BUS 15-8 L
+5V R1 3K
D3-1 IN H CD1 — 74Ø4 E25 — 74HØ4 E16 — 74H2Ø E17 — D4-3 Ø6 REG → BUS L
D3-1 SEL 6 H CH1

74174 E7Ø:
D4-2 DØ H AE1 — D5 R5(1) 15 — DK1 D4-3 BITS 8 (1) H
D4-2 D7 H AD1 — D4 R4(1) 12 — DL2 D4-3 BITS 9 (1) H
D4-2 D1Ø H CR1 — D3 R3(1) 1Ø — DT2 D4-3 BITS 1Ø (1) H
D4-1 D6 H AJ1 — D2 R2(1) 7 — DS2 D4-3 BCC 16-23 (1) H
D1 R1(1) 5
D4-2 D11 H CP1 — DØ RØ(1) 2 — DB1 D4-3 BITS 11 (1) H
CLR CLK
D4-3 CLR SYNC L

74174 E61:
D4-1 D1 H AC1 — D5 R5(1) 15 — D4-3 STEP MODE (1) H
D4-1 D2 H BV1 — D4 R4(1) 12 — D4-3 SD H
D4-2 D15 H CM1 — D3 R3(1) 1Ø — CV1 D4-3 UNDEFINED 2 H
D4-1 D3 H BF2 — D2 R2(1) 7 — DL1 D4-3 VRC (1) H
D4-1 DØ H AA1 — D1 R1(1) 5 — DU2 D4-3 TEST LOOP (1) H
DØ RØ(1) 2 — D4-3 STEP CK (1) H
CLR CLK

D4-6 REG PT1Ø H EN1 — 74ØØ E26 — 74HØØ E16
D4-6 REG PT 9 H FC1 — 74Ø2 E15 — 74HØØ E16
TX BUF (PT 13)
MISC (PT 12)
SYNC (PT 11)
CC/BA (PT Ø-7)
D4-6 REG PT 8 H FB1 — 74ØØ E8 — D4-3 REG MUX A L (L H L H)
D4-6 REG PT 9 H FC1 — 74ØØ E8 — D4-3 REG MUX B L (L L H H)
D4-6 REG PT 11 H EP1 — 74H11 E34 — CH2 D4-3 AB MUX SEL H

D5-4 LD MISC L EE1 — 74Ø4 E58 — 74Ø4 E5Ø — 74ØØ E68 — D4-7 TXDATA H
D5-4 INI H BA1 — 74Ø4 E25 — BL2 EE2 D1-1 RECEIVE DATA L
D4-1 D7 H AB1 — 74Ø8 E33 — EF1 D1-1 SCT H
D5-6 TX ACTIVE (1) H DU1 — 74Ø4 E58 — ED2 D1-1 SCR H
D1-1 SCTE DV1 — R17 1ØK — EA1 D4-3 SERIAL CLOCK TRANSMIT (EXT)
SI (SW1)
D5-4 CLK LOSS SH CNTL H FD1 — 74Ø2 E67 — 74Ø4 E58 (HIGH SEL B)
D4-4 HD (1) H — 74ØØ E68

74157 E59: 1Ø 11 13 14 6 5 3 2 — B3 A3 B2 A2 B1 A1 BØ AØ STB — f3 f2 f1 fØ SØ — 9 12 7 4 15 1
74157 E6Ø: 1Ø 11 13 14 6 5 3 2 — B3 A3 B2 A2 B1 A1 BØ AØ STB — f3 f2 f1 fØ SØ — 9 12 7 4 15 1

ED1 D4-3 TX CLOCK H
74ØØ E69 — FE2 D4-3 RX CLOCK H
FM2 D4-3 SERIAL DATA IN L

(AA SEL DCDR & MISC CSR)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE BUS SELECTORS CSR & SH REG (D4-3)		SIZE D	CODE CS	NUMBER M7812 - Ø-1	REV. E
SCALE NONE	SHEET 5 OF 9	DIST.			

SIZE CODE DCSM7812-Ø-1 NUMBER REV E

DEC FORM NO. DRD 138

D4-1 D3 H BF2
D4-1 D1 H AQ1
D4-1 D5 H BQ2
D4-1 D7 H AB1
D4-1 D6 H AU1
D4-1 DØ H AA1

74174 E45
D5 P5(1) 15 — D4-4 RX DONE IE (1) H
D4 R4(1) 12 — DR2 D4-4 STRIP SYNC (1) H
D3 R3(1) 1Ø — D4-4 HD (1) H
D2 R2(1) 7
D1 R1(1) 5
DØ RØ(1) 2 — D4-4 CHAR IE (1) H
CLR CLK — D4-4 CHAR INTR (1) H

D4-1 D4 H CT2
D6-1 1→CHAR INTR L CU2
D4-2 D15 H CM1

74174 E36
D5 R5(1) 15 — D4-4 ERR IE (1) H
D4 R4(1) 12 — EP2 D4-4 IDLE MODE (1) H
D3 R3(1) 1Ø — D4-4 TX DONE IE (1) H
D2 R2(1)
D1 R1(1) 5
DØ RØ(1) 2
CLR CLK

7474 E43 CHAR INTR
R16 22Ø
C1Ø4 1200PF
74H55 E44 — 8 CU1 — D4-4 RX/CHAR INTR L

D4-6 ERR INTR H
D5-4 1→TX F DONE L CF2
74H55 E27 — 8 AV1 — D4-4 TX/ERR INTR L

D5-4 1→RX F DONE L EH1
R3 22Ø
C1Ø6 1200PF
7474 E57 F HOLD
74ØØ E41 — D4-4 RXP DONE (1) H
7474 E42 RXP DONE

7474 E35 TX P DONE
74ØØ E26 — D4-4 TX P DONE (1) H

D5-4 1→RX S DONE L EJ1
R2 22Ø
C1Ø5 1200PF
7474 E57 S HOLD
74ØØ E41 — D4-4 RXS DONE (1) H
7474 E42 RXS DONE

D5-4 1→TX S DONE L CS2
+5V R21 3K
7474 E35 TX S DONE — D4-4 TX S DONE (1) H

D4-5 +3V
7474 E43 RX GO
ER2 D4-4 RX GO (1) H

7474 E51 TX GO — EN2 D4-4 TX GO (1) H

D4-6 RX ERR L
D5-4 Ø→RX GO L CR2
D5-4 IN1 H BA1
74Ø4 E25
74H11 E34

D4-6 TX ERR L CF1
D5-4 Ø→TX GO L
74H11 E34
74Ø4 E25
+5V R15 75Ø
D4-4 +3V

D9-6 RX BCC CYCLE L CV2
D3-1 OUT HIGH H CU1
D3-1 SEL Ø H BU2
D3-1 OUT LOW H CS1
D3-1 SEL 2 H CE2
74Ø8 E33
CV2 D4-4 LD RX 15-8 H

CE1 D4-4 LD TX 7-Ø H

REVISIONS		
CHK	CHANGE NO.	REV.

(TX, RX CSR)

TITLE	SIZE	CODE	NUMBER	REV.
BUS SELECTORS CSR & SH RLG (T+R)	D	CS	M7812-Ø-1	E
SCALE NONE	SHEET 6 OF 9	DIST.		

DEC FORM NO. ORD 138

D4-3 BITS 8 (1) H — DK1
D4-3 BITS 9 (1) H — DL2
D4-3 BITS 10 (1) H — DT2
D4-3 SERIAL DATA IN L (LOW = ONE = MARK) — FM2
D4-3 BITS 11 (1) H — DB1
D4-5 BITS 11 L

7442 E79 — RX DATA DCDR 15-8
7442 E88 — RX DATA DCDR 7-0

7486 E78 — 7486 E77 — 7486 E76 — 7486 E75

74175 E81 — RX SHIFT 15-12
74175 E85 — RX SHIFT 11-8
74175 E84 — RX SHIFT 7-4
74175 E87 — RX SHIFT 3-0

74197 E76 — RX BUF 15-12
74197 E75 — RX BUF 11-8
74197 E94 — RX BUF 7-4
74197 E93 — RX BUF 3-0

D5-7 LD RX BUF 15-8 L — FL2
D5-7 CLR RX L — FL1
D4-3 RX CLOCK H — FE2
D5-8 LD RX BUF 7-0 L — FK2

FU1 D4-5 RD15 H
FF1 D4-5 RD14 H
FR2 D4-5 RD13 H
FV1 D4-5 RD12 H
FN1 D4-5 RD11 H
FS2 D4-5 RD10 H
FV2 D4-5 RD9 H
FB2 D4-5 RD8 H
FV1 D4-5 RD7 H
FS1 D4-5 RD6 H
FR1 D4-5 RD5 H
FT2 D4-5 RD4 H
FH2 D4-5 RD3 H
FF2 D4-5 RD2 H
FJ2 D4-5 RD1 H
FK1 D4-5 RD0 H
D4-5 +3V

R19 750Ω +5V

D4-2 INI H — BA1 — 7400 E26 — BF1
D6-2 LD TX BUF (1) H — FNE
D4-5 RX BCC DATA IN L
7450 E97
7400 E69
7400 E66
7400 E79

74174 E10 — TX BUF 15-12
74174 E9 — TX SH HOLD 15-10
74174 E12 — TX BUF 9-6
74174 E11 — TX SH HOLD 9-6
74174 E13 — TX BUF 5-0
74174 E22 — TX SH HOLD 5-0

D4-2 D15 H — CN1
D4-2 D14 H — CN2
D4-2 D13 H — CN1
D4-2 D12 H — CP2
D4-2 D11 H — CP1
D4-2 D10 H — CR1
D4-2 D9 H — AD1
D4-2 D8 H — AE1
D4-1 D7 H — AB1
D4-1 D6 H — AN1
D4-1 D5 H — BD2
D4-1 D4 H — CT2
D4-1 D3 H — BF2
D4-1 D2 H — BN1
D4-1 D1 H — AC1
D4-1 D0 H — AA1

D4-5 TB 15 H
D4-5 TB 14 H
D4-5 TB 13 H
D4-5 TB 12 H
D4-5 TB 11 H
D4-5 TB 10 H
D4-5 TB 9 H
D4-5 TB 8 H
D4-5 TB 7 H
D4-5 TB 6 H
D4-5 TB 5 H
D4-5 TB 4 H
D4-5 TB 3 H
D4-5 TB 2 H
D4-5 TB 1 H
D4-5 TB 0 H

D5-6 LD TX SH REG H — BE2

D5-6 TX DATA EN 15-8 L — BM2 — 7 — STB — 74151 E20 — SEND DATA SEL 15-8 — D4-5 TX DATA 15-8 L
D5-6 TX DATA EN 7-0 L — BN1 — 7 — STB — 74151 E21 — SEND DATA SEL 7-0 — D4-5 TX DATA 7-0 L

D4-5 TD 15 H — BN2
D4-5 TD 14 H — CV2
D4-5 TD 13 H — BP1
D4-5 TD 12 H — BR1
D4-5 TD 11 H — BT2
D4-5 TD 10 H — BS2
D4-5 TD 9 H — BM1
D4-5 TD 8 H — BE2
D4-5 TD 7 H — BK2
D4-5 TD 6 H — BK1
D4-5 TD 5 H — BJ2
D4-5 TD 4 H — BJ1
D4-5 TD 3 H — BV1
D4-5 TD 2 H — BS1
D4-5 TD 1 H — BU2
D4-5 TD 0 H — BP2

D5-6 TX BIT CNTR 4 (1) H — CK1
D5-6 TX BIT CNTR 2 (1) H — CL2
D5-6 TX BIT CNTR 1 (1) H — CM2

REVISIONS

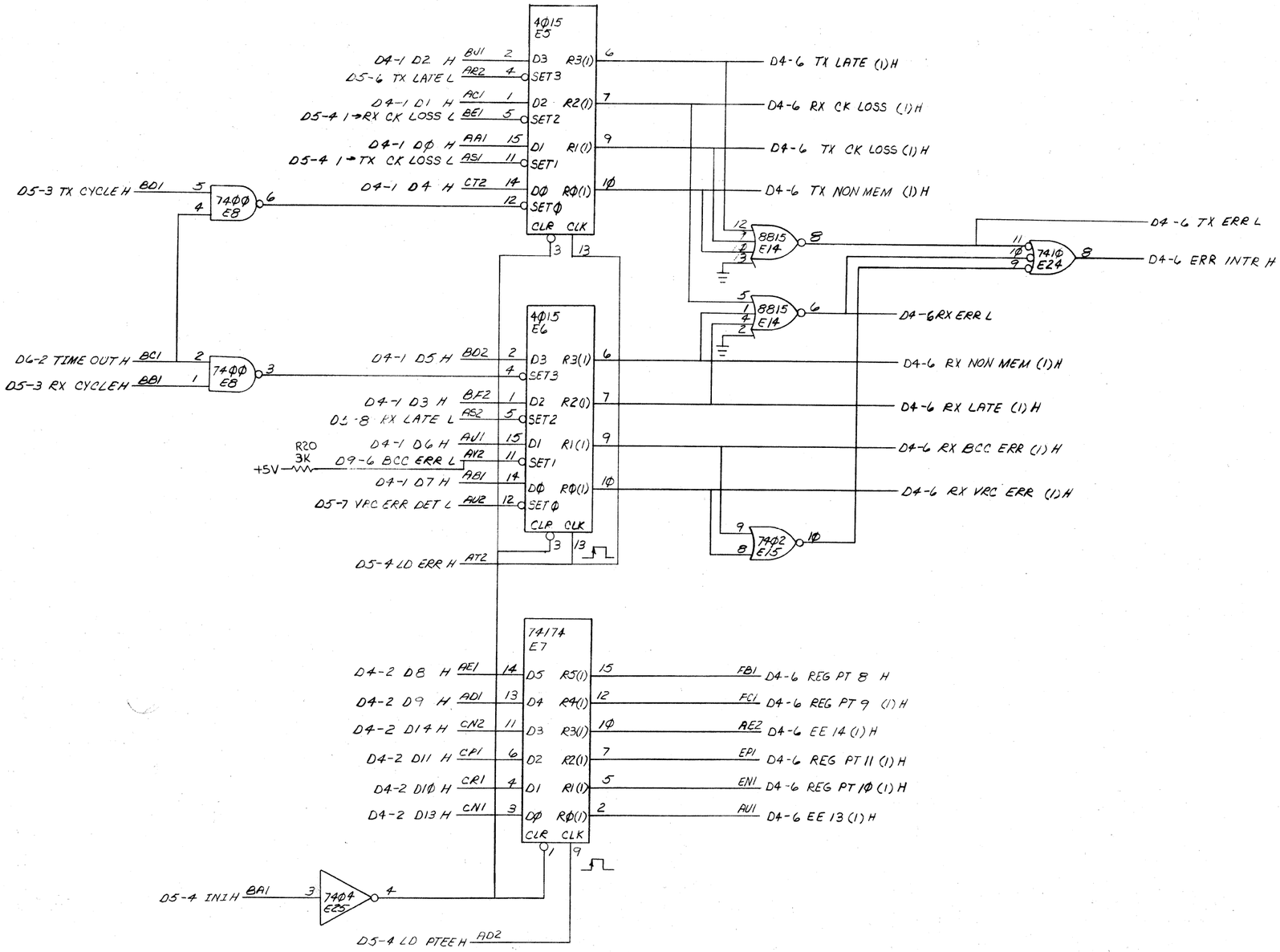
CHK	CHANGE NO.	REV.

DEC FORM NO. DRD 138

(TX/RX SHIFT REGISTERS)

TITLE: BUS SELECTORS CSR & SH REG (D4-5)
SIZE D | CODE CS | NUMBER M7812-0-1 | REV. E
SCALE NONE | SHEET 7 OF 9 | DIST.

DCS M7812-0-1 REV E



REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. DRD 138

TITLE: BUS SELECTORS CSR & SH REG (D4-6) (REG ERR, CSR)
SIZE: D | CODE: CS | NUMBER: M7812-Ø-1 | REV: E
SCALE: NONE | SHEET 8 OF 9 | DIST:

D5-4 TX SYNC EN 15-8 L CLI

D4-2 D15 H CNI 11 — D3 R3(1) 74174 E28 — 10 — D4-7 S15 (1) H
D4-2 D14 H CN2 6 — D2 R2(1) SYNC 15-10 — 7 — D4-7 S14 (1) H
D4-2 D13 H CNI 13 — D4 R4(1) — 12 — D4-7 S13 (1) H
D4-2 D12 H CP2 4 — D1 R1(1) — 5 — D4-7 S12 (1) H
D4-2 D11 H CPI 3 — DØ RØ(1) — 2 — D4-7 S11 (1) H
D4-2 D10 H CRI 14 — D5 R5(1) — 15 — D4-7 S10 (1) H
CLR CLK — 1 — 9

D4-5 RD15 H FUI 12 — 13 — 8242 E89 — 11
D4-5 RD14 H FPI 6 — 5 — 8242 E89 — 4
D4-5 RD13 H FR2 9 — 8 — 8242 E89 — 10
D4-5 RD12 H FVI 1 — 2 — 8242 E89 — 3
D4-5 RD11 H FNI 6 — 5 — 8242 E90 — 4
D4-5 RD10 H FS2 9 — 8 — 8242 E90 — 10
D4-5 RD9 H FV2 1 — 2 — 8242 E90 — 3
D4-5 RD8 H FU2 12 — 13 — 8242 E90 — 11

D4-7 S9 (1) H — 3 — D1
D4-7 S8 (1) H — 4 — DØ

7 — 74151 E29 — 5 — f
D7 — 12
D6 — 13
D5 — 14
D4 — 15 — SEND SYNC 15-8
D3 — 1
D2 — 2
D1 — 3
DØ — 4
9 10 11

D4-2 D9 H ADI 3 — DØ RØ(1) 74174 E30 — 2
D4-2 D8 H AEI 4 — D1 R1(1) SYNC 9-6 — 5
D5 R5(1) — 14 — 15
D4 R4(1) — 13 — 12
D4-1 D7 H ABI 11 — D3 R3(1) — 10
D4-1 D6 H ANI 6 — D2 R2(1) — 7
CLR CLK — 1 — 9

D4-1 D5 H BD2 13 — D4 R4(1) 74174 E31 — 12
D4-1 D4 H CT2 4 — D1 R1(1) SYNC 5-Ø — 5
D4-1 D3 H BF2 3 — DØ RØ(1) — 2
D4-1 D2 H BNI 14 — D5 R5(1) — 15
D4-1 D1 H AC1 6 — D2 R2(1) — 7
D4-1 D0 H AAI 11 — D3 R3(1) — 10
CLR CLK — 1 — 9

D4-3 CLR SYNC L
D5-4 LD SYNC L DRI 3 — 74Ø4 E5Ø — 4

R13 750 — +5V — R12 750

D5-4 TX SYNC EN 7-Ø L CK2

D4-5 RD 7 H FUI 9 — 8 — 8242 E91 — 10
D4-5 RD 6 H FS1 1 — 2 — 8242 E91 — 3
D4-5 RD 5 H FR1 6 — 5 — 8242 E91 — 4
D4-5 RD 4 H FT2 12 — 13 — 8242 E91 — 11
D4-5 RD 3 H FH2 2 — 1 — 8242 E92 — 3
D4-5 RD 2 H FF2 12 — 13 — 8242 E92 — 11
D4-5 RD 1 H FJ2 6 — 5 — 8242 E92 — 4
D4-5 RDØ H FK1 9 — 8 — 8242 E92 — 10

D4-7 S7 (1) H — 12 — D7
D4-7 S6 (1) H — 13 — D6
D4-7 S5 (1) H — 14 — D5
D4-7 S4 (1) H — 15 — D4
D4-7 S3 (1) H — 1 — D3
D4-7 S2 (1) H — 2 — D2
D4-7 S1 (1) H — 3 — D1
D4-7 SØ (1) H — 4 — DØ

7 — 74151 E32 — 5 — f
SEND SYNC 7-Ø
S2 S1 SØ — 9 10 11 — 6 — f

D5-6 TX BIT CNTR 4 (1) H CK1
D5-6 TX BIT CNTR 2 (1) H CL2
D5-6 TX BIT CNTR 1 (1) H CM2

+5V — R11 3k — RIØ 3K
D9-4 TX BCC/DLE L CBI — 12 — CBI
D5-6 VRC/DATA EN L BMI — 11 — BMI
D4-4 +3V — 3
D4-3 TX DATA 15-8 L — 6
D4-3 TX DATA 7-ØL — 4
2
1
7430 E23 — 8

D4-3 TEST LOOP (1) H DU2 9 — 8 — 7402 EG7 — 10 ERI
D4-7 SERIAL DATA OUT L
BL2 D4-7 TX DATA H

D4-3 BITS 11 (1) H DBI 1 — 2 — 74ØØ EG8 — 3
D4-5 BITS 11 L — 1 — 13 — 2 — 7410 EG6 — 12
5 — 4 — 74ØØ EG8 — 6 FEI — D4-7 RX SYNC DET H

D5-3 RX NPR L CC1 2 — 3 — 7402 EL7 — 1

74175 E81
D4-5 RD 15 H FUI 12 — D2 BRD 15-12 R2(1) R2(Ø) — 14 11 — D4-7 BRD 15 H
D4-5 RD 14 H FPI 4 — DØ — RØ(1) RØ(Ø) — 2 3 — D4-7 BRD 14 H
D4-5 RD 13 H FR2 13 — D3 — R3(1) R3(Ø) — 15 14 — D4-7 BRD 13 H
D4-5 RD 12 H FV1 5 — D1 — R1(1) R1(Ø) — 7 6 — D4-7 BRD 12 H
CLR CLK — 1 — 9

74175 E81
D4-5 RD 11 H FN1 4 — DØ BRD 11-8 RØ(1) RØ(Ø) — 2 3 — D4-7 BRD 11 H
D4-5 RD 10 H FS2 13 — D3 — R3(1) R3(Ø) — 15 14 — D4-7 BRD 10 H
D4-5 RD 9 H FV2 5 — D1 — R1(1) R1(Ø) — 7 6 — D4-7 BRD 9 H
D4-5 RD 8 H FU2 12 — D2 — R2(1) R2(Ø) — 10 11 — D4-7 BRD 8 H
CLR CLK — 1 — 9

74175 E82
D4-5 RD 7 H FU1 13 — D3 BRD 7-4 R3(1) R3(Ø) — 15 14 — D4-7 BRD 7 H
D4-5 RD 6 H FS1 5 — D1 — R1(1) R1(Ø) — 7 6 — D4-7 BRD 6 H
D4-5 RD 5 H FR1 4 — DØ — RØ(1) RØ(Ø) — 2 3 — D4-7 BRD 5 H
D4-5 RD 4 H FT2 12 — D2 — R2(1) R2(Ø) — 10 11 — D4-7 BRD 4 H
CLR CLK — 1 — 9

74175 E83
D4-5 RD 3 H FH2 5 — D3 BRD 3-Ø R1(1) R1(Ø) — 7 6 — D4-7 BRD 3 H
D4-5 RD 2 H FF2 12 — D2 — R2(1) R2(Ø) — 10 11 — D4-7 BRD 2 H
D4-5 RD 1 H FU2 4 — D1 — RØ(1) RØ(Ø) — 2 3 — D4-7 BRD 1 H
D4-5 RD Ø H FR1 13 — DØ — R3(1) R3(Ø) — 15 14 — D4-7 BRD Ø H
CLR CLK — 1 — 9

(SYNC/TX DATA)

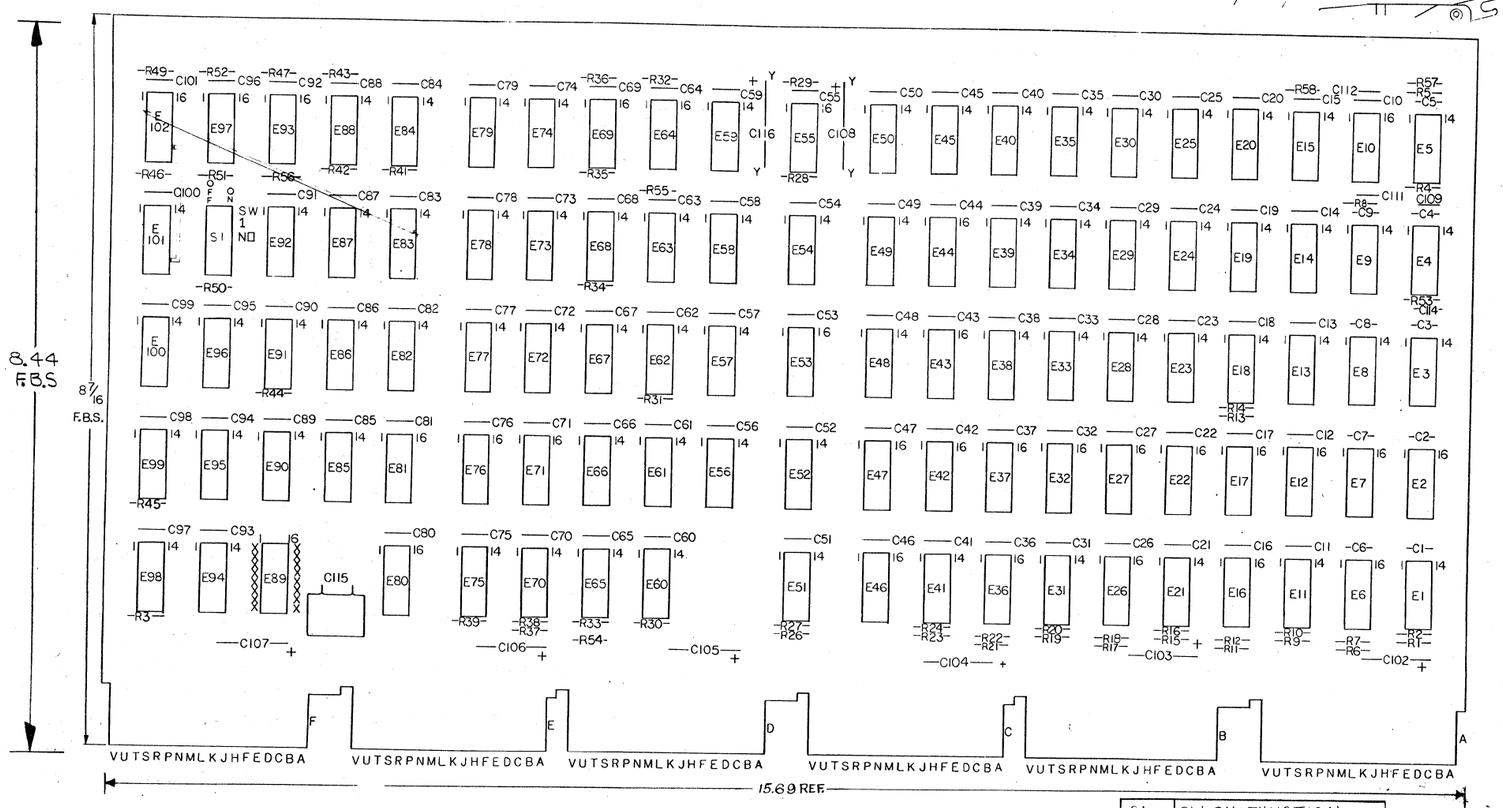
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
BUS SELECTORS CSR & SH... (D4-7)	D	CS	M7912-Ø-1	E
SCALE	SHEET 2 OF 9		DIST.	

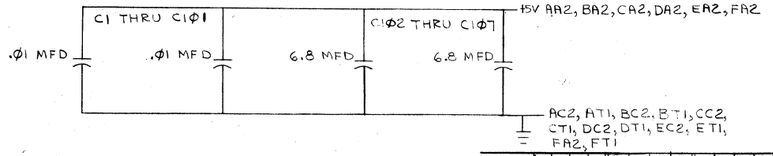
DEC FORM NO. DRD 138

NOTES:

1. UNLESS OTHERWISE NOTED ALL RESISTANCE IS IN OHMS.
2. ALL SPARES ARE ON SHEET #7.



S1	SW ON FUNCTION
SW1	TWO SYNCH TO FRAME
SW2	ACTIVE ON NON SYNCH
SW3	
SW4	EVEN VRC
SW5	
SW6	
SW7	
SW8	



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

IC PIN LOCATIONS

BRUNING 40-522 16699

DEC FORM NO. DRD 135A

REV	DESCRIPTION	DATE	APPROVED
K	ORIGINATED	7-11-73	R. LISEE
J	M7813-00006	10-5-74	R. LISEE
H	M7813-00005	9-30-74	R. LISEE
F	M7813-00004	9-17-74	R. LISEE
E	M7813-00003	8-28-74	R. LISEE
D	M7813-00002	1-29-74	R. LISEE
C	M7813-0000	12-12-73	R. LISEE
B	ORIGINATED	11-26-73	R. LISEE

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: DQ11

REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7813-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AH-M7813-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7813-0-6	3
1		ETCHED CIRCUIT BOARD	5010532	4
1	C112	CAP 10 MMF 100V 5% DM	1000006	5
1	C114	CAP 330 MMF 100V 5% DM	1000023	6
101	C1-C101	CAP .01 MFD 50V 20% AX CER	1001610	7
1	C115	CAP 1500 MMF 100V 5% DM	1002428	8
2	C108, C116	CAP 3.3 UF 20V 10% TANT	1005334	9
6	C102-C107	CAP 6.8 MFD 35V 10% TANT	1005306	10
1	E89	SOCKET I.C.	1209838	11
1	S1	DUAL IN-LINE SWITCH(8 POSITION)	1211164-4	12
3	R4 R44, R53	RES 220 OHMS 1/4W 5%	1300271	13
20	R1, R2, R6, R7, R9, R10-R24	RES 470 OHMS 1/4W 5%	1300316	14
18	R26, R27, R30, R31, R33, R34, R54, R37 R38, R39, R41, R42, R43, R67, R50, R3, R45, R58	RES 3K 1/4W 5%	1300432	15
2	R52, R56	RES 15K 1/4W 5%	1300496	16
10	R5, R8, R32, R35, R46, R47, R51, R49 R55, R36	RES 5.6K 1/4W 5%	1301874	17
2	R28, R29	RES 18K 1/4W 5%	1302465	18
18	E14, 24, 29, 49, 58, 59, 63, 67, 68, 72, 73, 77, 78, 87, 91, 92, 100, 101	I.C. DEC 7474	1905547	19
7	E20, 39, 62, 65, 75, 95, 98	I.C. DEC 7400	1905575	20
3	E45, 61, 88	I.C. DEC 7410	1905576	21
2	E80, 83	I.C. DEC 7420	1905577	22
5	E48, 57, 51, 52, 90	I.C. DEC 7450	1905580	23
4	E30, 35, 56, 82	I.C. DEC 7402	1909004	24
1	E9	I.C. DEC 74H00	1909056	25
2	E8, 38	I.C. DEC 74H30	1909060	26
3	E3, 19, 34	I.C. DEC 74H74	1909667	27
6	E4, 40, 70, 74, 94, 95	I.C. DEC 7404	1909686	28
5	E1, 11, 21, 31, 41	I.C. DEC 8881	1909705	29
3	E18, 23, 28	I.C. DEC 7416	1909928	30
2	E13, 15	I.C. DEC 74H04	1909931	31
1	E84	I.C. DEC 7486	1910011	32
1	E44	I.C. DEC 7442	1910046	33
8	E5, 33, 50, 54, 66, 79, 96, 99	I.C. DEC 7408	1910155	34
7	E10, 55, 64, 69, 93, 97, 102	I.C. DEC 74123	1910436	35
7	E7, 17, 27, 37, 43, 47, 76	I.C. DEC 74S158	1910549	36
8	E2, 12, 22, 32, 42, 80, 81, 86	I.C. DEC 74161	1910650	37
1	E71	I.C. DEC 74175	1910851	38
5	E6, 16, 26, 36, 46	I.C. DEC 3101	1910863	39
1	E25	I.C. DEC 7427	1910878	40
1	E53	I.C. DEC 8837	1911116	41
12		EYELET #GS4-7 STIMPSON	9006732	42
1		HANDLE, MODULE	1210711-2	43
1	C111	CAP 27MMf 100V 5 DM	1001739	44
1	C109	CAP 1200PF 100V 5% DM	1002424	45

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV F

DRN. K.Q. Bo	DATE 7-11-73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 11-15-73	
ENG.	DATE 11/15/73	TITLE CC/BA AND SHIFT CONTROL
PROJ. ENG.	DATE 11/15/73	
PROD. R. Well	DATE 11/8/73	
NEXT HIGHER ASSY B-DD-DQ11-Ø		
SCALE 1/1		SIZE D CODE DCS NUMBER M7813-Ø-1 REV. K
SHEET 1 OF 10		DIST.

PIN	SIGNAL NAME	PAGE →	D5-1 3	D5-2 4	D5-3 5	D5-4 6	D5-5 7	D5-6 8	D5-7 9	D5-8 10
AJ1	BUS A00 L		X							
AL1	BUS A01 L		X							
AM1	BUS A02 L		X							
AK1	BUS A03 L		X							
AN1	BUS A04 L		X							
AU1	BUS A05 L		X							
AV1	BUS A06 L		X							
AP1	BUS A07 L		X							
BF1	BUS A08 L			X						
BJ1	BUS A09 L			X						
BK1	BUS A10 L			X						
BH1	BUS A11 L			X						
BN1	BUS A12 L			X						
BS1	BUS A13 L			X						
BR1	BUS A14 L			X						
BP1	BUS A15 L			X						
CH2	BUS A16 L			X						
CC1	BUS A17 L			X						
CK2	BUS C1 L				X					
DL1	BUS SSYN L					X				
DE1	BUS INIT L					X				
FH2	BUS BG IN H						X			
FH1	BUS BG OUT H						X			
FF2	BUS BG 4 OUT H						X			
FF1	BUS BG 4 IN H						X			
FE2	BUS BG 5 OUT H						X			
FE1	BUS BG 5 IN H						X			
FD2	BUS BG 6 OUT H						X			
FD1	BUS BG 6 IN H						X			
FC1	BUS BG 7 OUT H						X			
FB1	BUS BG 7 IN H						X			
FA1	BUS BR L						X			
EV1	BUS BR 4 L						X			
EU1	BUS BR 5 L						X			
EV2	BUS BR 6 L						X			
EU2	BUS BR 7 L						X			
DR2	D2-1 DS INTR L						X			
AK2	D3-1 MASTER A L		X	X	X		X			
CM1	D3-1 OUT HIGH H						X			
CV2	D3-1 SEL 4 H						X			
CU1	D3-1 OUT LOW H						X			
BS2	D3-1 SEL 6 H						X			
DN2	D3-1 INTR B DONE H							X		
AL2	D4-1 D0 H		X							
AN2	D4-1 D1 H		X						X	
AP2	D4-1 D2 H		X							
AM2	D4-1 D3 H		X							
BA1	D4-1 D4 H		X							X
BC1	D4-1 D5 H		X			X				
BD1	D4-1 D6 H		X							
BB1	D4-1 D7 H		X							
BM1	D4-2 D8 H			X						
BP2	D4-2 D9 H			X						
BR2	D4-2 D10 H			X						
BN2	D4-2 D11 H			X						
CB1	D4-2 D12 H			X		X			X	
CE2	D4-2 D13 H			X						
CF2	D4-2 D14 H			X						
CD2	D4-2 D15 H			X						
EP2	D4-3 BITS 8 (1) H						X	X		
EN2	D4-3 BITS 9 (1) H						X	X		
EM2	D4-3 BITS 10 (1) H						X	X		
EL2/FM2	D4-3 BITS 11 (1) H		X				X	X	X	
EM1	D4-3 TX CLOCK H					X	X			
ES1	D4-3 RX CLOCK H					X		X		
DA1	D4-3 TEST LOOP (1) H					X				
DF1	D4-3 VRC (1) H						X	X		
EH2	D4-3 SERIAL DATA IN L							X		
FM2	D4-4 LD RX 15-8 H						X	X		
AD1	D4-4 TX GD (1) H					X				
FM1	D4-4 RX GD (1) H					X		X		
DN1	D4-4 TX/ERR INTP L						X			
AE1	D4-4 RX/CHAR INTP L						X			
DS2	D4-4 IDLE MODE (1) H							X		
FN1	D4-4 STRIP SYNC (1) H								X	X
EP1	D4-6 RX SYNC DET H							X	X	
CR2	D4-6 REG PT 8 (1) H		X			X				
CP2	D4-6 REG PT 9 (1) H		X			X				
CR1	D4-6 REG PT 10 (1) H		X			X				
BL2	D4-6 REG PT 11 (1) H			X		X				
CN2	D4-6 EE 13 (1) H			X						
CN1	D4-6 EE 14 (1) H			X						
FR2	D4-7 TX DATA H						X			
	D5-1 CC ODD (1) H		X				X		X	
	D5-1 INT L		X	X						
	D5-1 CC/BA CARRY 7-0 H		X	X						
	D5-1 CC O'FLOW H		X	X	X	X				
CH1	D5-1 CC/BA ADRS 8 L		X	X						
CJ2	D5-1 CC/BA ADRS 9 L		X	X						
CF1	D5-1 CC/BA ADRS 10 L		X	X						
AE2	D5-1 CC/BA 0 H		X							
AD2	D5-1 CC/BA 1 H		X							
AH2	D5-1 CC/BA 2 H		X							
AF2	D5-1 CC/BA 3 H		X							

PIN	SIGNAL NAME	PAGE →	D5-1 3	D5-2 4	D5-3 5	D5-4 6	D5-5 7	D5-6 8	D5-7 9	D5-8 10
AR2	D5-1 CC/BA 4 H		X							
AS1	D5-1 CC/BA 5 H		X							
AT2	D5-1 CC/BA 6 H		X							
AS2	D5-1 CC/BA 7 H		X							
BF2	D5-2 CC/BA 8 H			X						
BE2	D5-2 CC/BA 9 H			X						
DJ2	D5-2 CC/BA 10 H			X						
BH2	D5-2 CC/BA 11 H			X						
BU2	D5-2 CC/BA 12 H			X						
BT2	D5-2 CC/BA 13 H			X						
BU1	D5-2 CC/BA 14 H			X						
BV2	D5-2 CC/BA 15 H			X						
CE1	D5-2 DI PORT 14 L			X						
CK1	D5 2 SP PORT 13 H			X						
CJ1	D5-2 SP PORT 14 H			X						
	D5-2 CC/BA CARRY 15-0 H		X	X						
	D5-3 LD CC/BA CNTR (1) L		X	X	X					
AR1	D5-3 TEST NEXT CC (1) H				X	X				
AV2	D5-3 NPR RQ H					X				
AU2	D5-3 NPR EN (1) H					X				
	D5-3 RX NPR DONE H					X	X			X
DP1	D5-3 TX CYCLE H		X			X	X		X	
	D5-3 TX NPR DONE H					X			X	
CL2	D5-3 RX CYCLE H		X			X	X			X
	D5-3 BA H		X			X				
AF1	D5-3 RX NPR L					X				
	D5-3 CK CC/BA CNTR H		X	X		X				
CD1	D5-3 INH SEL L					X				
	D5-3 CC/BA CYCLE H		X	X		X	X		X	
	D5-3 BA L		X	X		X				
AJ2	D5-3 CNTR LD PULSE H		X			X				
	D5-3 TEST ODD CNT H		X			X				
	D5-3 LD CC/BA SP 15-0 L		X	X		X				
CM2	D5-3 LD SP PORT L			X		X				
	D5-3 NEXT CC PULSE H					X				
CU2	D5-4 LD PTEE H						X			
CV1	D5-4 LD ERP H						X			
CP1	D5-4 LD SYNC L						X			
DJ1	D5-4 LD MISC L						X			
CA1	D5-4 SEL 6 LD L						X			
	D5-4 LD CC/BA L						X			
CT2	D5-4 WEN (1) H						X			
	D5-4 LD EXT/TRANS H						X			
AC1	D5-4 1→TX CK LOSS L						X			
DM1	D5-4 CLOCK LOSS SH CNTL (1) H						X			
BV1	D5-4 1→RX CK LOSS L						X			
CS2	D5-4 0→TX GO L						X			
DM2	D5-4 1→TXS DONE L						X			
DH2	D5-4 TXS (1) H		X				X			
DF2	D5-4 1→TX P DONE L						X			
DJ2	D5-4 RX S(1) H		X				X			
DD1	D5-4 1→RX P DONE L						X			
DC1	D5-4 1→RX S DONE L						X			
CS1	D5-4 0→RX GO L						X			
AH1	D5-4 INI H		X				X	X		
	D5-4 INI L				X		X			
DL2	D5-4 BSSYN H						X			
BD2	D5-5 INH INTR "B" L						X			
BE1	D5-5 VECTOR BIT 2 (1) H						X			
EA1	D5-5 INTR B H						X			
	D5-5 +3A						X	X	X	
	D5-5 +3B						X	X		
	D5-5 +3C				X		X		X	
	D5-5 +3D		X	X			X			
	D5-5 +3E			X			X			
DV2	D5-6 B TXC L							X		
EB1	D5-6 TX FAKE END (1) H							X		
EH1	D5-6 TX ACTIVE (1) H							X		
	D5-6 INI L							X		X
ED2	D5-6 DLE EN (1) L							X		
EC1	D5-6 BCC EN (1) L							X		
ED1	D5-6 TX SYNC EN 15-8 L							X		
EE2	D5-6 TX SYNC EN 7-0 L							X		
EF1	D5-6 DATA EN 15-8 L							X		
EF2	D5-6 DATA EN 7-0 L							X		
DV1	D5-6 SYNC EN L							X		
DK1	D5-6 VRC/DATA SEL L							X		
EK1	D5-6 TX BIT CNTR 8 (1) H							X		
EJ2	D5-6 TX BIT CNTR 4 (1) H							X		
EJ1	D5-6 TX BIT CNTR 2 (1) H							X		
ER2	D5-6 TX BIT CNTR 1 (1) H							X		
FJ1	D5-6 1→TX SEARCH RQ H							X		
ER1	D5-6 TX LATE L							X		
	D5-6 TX NPR RQ (1) L				X			X		
DS1	D5-6 LD TX SH REG H							X		
DK2	D5-7 LD RX BUF 15-8 L								X	X
	D5-7 RX TRANSFER PULSE H								X	X
FJ2	D5-7 TEST JUMPER MATCH L								X	
EK2	D5-7 SYNC 1 (1) H								X	X
ET2	D5-7 SYNC 2 (1) H								X	
DH1	D5-7 RX ACTIVE (1) H								X	X
EL1	D5-7 LD RX BIT CNTR L								X	
	D5-7 LD MISC H				X				X	X
FU1	D5-7 CLR RX CNTL L								X	
	D5-7 CLR RX L								X	X
CL1	D5-7 LD BUF L								X	X
	D5-6 SYNC/DATA EN L						X			
	D5-7 RX ACTIVE(1)L				X				X	

PIN	SIGNAL NAME	PAGE →	D5-1 3	D5-2 4	D5-3 5	D5-4 6	D5-5 7	D5-6 8	D5-7 9	D5-8 10
FS1	D5-7 VRC ERR DET L								X	
FK1	D5-7 B RX C L								X	
	D5-7 EVEN VRC L							X	X	X
AA1	D5-8 LD RX BUF 7-0 L									X
FR1	D5-8 RX CC ODD L									X
	D5-8 CRA DLY L								X	X
FU2	D5-8 RX LATE L									X
	D5-8 RX NPR RQ (1) L					X				X
BK2	D6-2 END NPR CYCLE (1) L					X				
FP2	D8-3 RX SEARCH DONE L									
FS2	D8-4 CRA L									X
FT2	D8-4 STRIP DBL CHAR L									X
DE2	D8-4 0→TX GO/DONE L						X			
DD2	D8-4 0→RX GO/DONE L						X			
DT2	D8-5 TX TRANS (1) L									
DP2	D8-5 PAD RQ L								X	
DU2	D8-5 DLE RQ L								X	
DR1	D8-5 TX TOTAL TRANS (1) L								X	
DJ1	D8-5 BCC RQ L								X	
FP1	D8-6 RX TRANS (1) L								X	
										X
EE1	D8-6 DIS RX TRANSFER PULSE L									X
EN1	D8-6 RX BCC CYCLE L									
ABI	TP					X				
BM2	TP					X				

NOTE
1 IF A NAME APPEARS TWO TIMES IT IS SHOWN WITH ⊗
2 SIGNAL NAMES WITH TWO PINS ARE SHOWN AS PIN/PIN

REVISIONS		
CHK	CHANGE NO.	REV.

(PRINT FIND)

TITLE	SIZE	CODE	NUMBER	REV.
CC/BA AND SHIFT CONTROL	D	CS	M7813-0-1	K
SCALE —/—/— SHEET 2 OF 10	DIST.			

DEC FORM NO. DRD 138

D5-5 +3V D

D5-3 CNTR LD PULSE H AJ2

D5-2 CC/BA CARRY 15-Ø H

D5-1 CC ODD(1)H

D5-3 TEST ODD CNT H

D5-3 CC/BA CYCLE H

D4-3 BITS 11 (1) H FK2

D5-3 BA H

D5-1 INI L

D5-4 INI H AH1

D5-3 LD CC/BA CNTR (1) L

D5-3 CK CC/BA CNTR H

D5-1 CC/BA CARRY 7-Ø H

D5-1 CC O'FLOW H

D3-1 MASTER A L AK2

D5-3 LD CC/BA SP 15-Ø L

D4-1 D1 H AN2

D4-1 DØ H AL2

D4-1 D2 H AP2

D4-1 D3 H AM2

D4-1 D5 H BC1

D4-1 D4 H BA1

D4-1 D6 H BD1

D4-1 D7 H BB1

D4-6 REG PT-9 (1) H CP2

D4-6 REG PT8 (1) H CR2

D4-6 REG PT1Ø (1) H CR1

D5-3 TX CYCLE H DP1

D5-4 TX S (1) H DH2

D5-4 RX S (1) H DJ2

D5-3 RX CYCLE H CL2

D5-3 BA L

CJ2 D5-1 CC/BA ADRS 9 L

CH1 D5-1 CC/BA ADRS 8 L

CF1 D5-1 CC/BA ADRS 1Ø L

AD2 D5-1 CC/BA 1 H

AL1 BUS A Ø1 L

AE2 D5-1 CC/BA Ø H

AJ1 BUS A ØØL

AF2 D5-1 CC/BA 3 H

AK1 BUS A Ø3 L

AH2 D5-1 CC/BA 2 H

AM1 BUS A Ø2 L

AS1 D5-1 CC/BA 5 H

AU1 BUS A Ø5 L

AR2 D5-1 CC/BA 4 H

AN1 BUS A Ø4 L

AS2 D5-1 CC/BA 7 H

AP1 BUS A Ø7 L

AT2 D5-1 CC/BA 6 H

AV1 BUS A Ø6 L

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	CC/BA AND SHIFT CONTROL (D5-1) (CC/BA 7-Ø)		SIZE	CODE	NUMBER	REV.
			D	CS	M7813-Ø-1	K
SCALE		SHEET 3 OF 10	DIST.			

DEC FORM NO. ORD 138

D5-1 CC O'FLOW H

D5-3 LD CC/BA SP 15-Ø L

D3-1 MASTER A L AK2 1 — 74H04 E13 2

+5V

D5-1 INI L
D5-3 LD CC/BA CNTR (1) L
D5-3 CLK CC/BA CNTR H
D5-1 CC/BA CARRY 7-Ø H

74161 E22 — CC/BA CNTR 11-8 — LSB MSB CLR LD CLK CNT EN CRY EN CO

7416 E23 ×4

745158 E27 — CC/BA DATA MUX B3 11-8 — STB SØ

D4-2 D8 H BM1 14
D4-2 D9 H BP2 11
D4-2 DIØ H BR2 5
D4-2 D11 H BN2 2

3101 E26 — CC/BA 11-8 — WR ENB D2 D3 DØ D1 M2(1) M3(1) MØ(1) M1(1) A3 A2 A1 AØ

P.5 47Ø BF2 D5-2 CC/BA 8 H
8881 E21 — BF1 BUS A ØB L
P.6 47Ø BE2 D5-2 CC/BA 9 H
8881 E21 — BJ1 BUS A Ø9 L
P.7 47Ø BJ2 D5-2 CC/BA 1Ø H
8881 E21 — BK1 BUS A 1Ø L
P.8 47Ø BH2 D5-2 CC/BA 11 H
8881 E21 — BH1 BUS A 11 L

D5-3 CC/BA CYCLE H

(LOW = A OUT)

74161 E32 — CC/BA CNTR 15-12 — LSB MSB CLR LD CLK CNT EN CRY EN CO

7416 E28 ×4

745158 E37 — CC/BA DATA MUX A3 15-12 — STB SØ

D4-2 D12 H CB1 14
D4-2 D13 H CE2 11
D4-2 D14 H CF2 5
D4-2 D15 H CD2 2

3101 E36 — CC/BA 15-12 — WR ENB D2 D3 DØ D1 M2(1) M3(1) MØ(1) M1(1) A3 A2 A1 AØ

+5V
P.9 47Ø BU2 D5-2 CC/BA 12 H
8881 E31 — BN1 BUS A 12 L
P.10 47Ø BT2 D5-2 CC/BA 13 H
8881 E31 — BS1 BUS A 13 L
P.11 47Ø BU1 D5-2 CC/BA 14 H
8881 E31 — BR1 BUS A 14 L
P.12 47Ø BV2 D5-2 CC/BA 15 H
8881 E31 — BP1 BUS A 15 L

D5-3 LD SP PORT L CM2

74161 E42 — CC/BA CNTR 17,16 — LSB MSB CLR LD CLK CNT EN CRY EN CO

745158 E47 — CC/BA DATA MUX A3 17,16 — STB SØ

D4-6 EE13 (1) H CN2 14
D4-6 EE14 (1) H CN1 11
D4-6 REG PT 11 (1) H BL2 5

7402 E56

3101 E46 — CC/BA 17-16 — WR ENB D2 D3 DØ D1 M2(1) M3(1) MØ(1) M1(1) A3 A2 A1 AØ

CE1 D5-2 DI PORT 14 L
+5V
R23 47Ø CK1 D5-2 SP PORT 13 H
8881 E41 — CH2 BUS A 16 L
R24 47Ø CJ1 D5-2 SP PORT 14 H
8881 E41 — CC1 BUS A 17 L

7416 E28 ×2

D5-2 CC/BA CARRY 15-Ø H

D5-3 BA L

D5-1 CC/BA ADRS 1Ø L CF1
D5-1 CC/BA ADRS 9 L CJ2
D5-1 CC/BA ADRS 8 L CH1

(CC/BA 15-8)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
CC/BA AND SHIFT CONTROL (D5-2)	D	CS	M7813-Ø-1	K
SCALE —	SHEET 4 OF 10	DIST.		

DEC FORM NO. DRD 138

D6-2 END NPR CYCLE (1) L — AK2

D5-3 NPR RQ H — AV2

D5-7 RX NPR RQ (1) L
D5-6 TX NPR RQ (1) L
7400 E20 — 7408 E5 — R4 220Ω — C109 1200 PF

7474 E29 NPR EN — AV2 — D5-3 NPR EN (1) H
7402 E36 — D5-3 RX NPR DONE H
7474 E29 TX/RX CYCLE — DP1 — D5-3 TX CYCLE H
7402 E36 — D5-3 TX NPR DONE H
CL2 — D5-3 RX CYCLE H

D5-3 LD CC/BA CNTR (1) L

D3-1 MASTER A L — AK2

74H00 E9 — D5-3 BA H
74H00 E15 — 7AF1 — 74H00 E9 — D5-3 RX NPR L
8881 E41 — 1Φ CK2 — BUS C1 L

+5V — R5 5.6K — C112 10pf — 50NS — 74123 E10 CLK — D5-3 CK CC/BA CNTR H
+5 — R58 3K — TP BM2

7474 E14 EN START — 7400 E20 — 7474 E14 LD CC/BA CNTR Φ — 7408 E33 — 74H74 E19 INCR CC/BA CNTR — 74H74 E19 CC/BA SEL — 7427 E25 — 7402 E36 — 7474 E36 CC/BA CYCLE

D5-4 INI L

D5-4 +3VE — 7408 E33 — 7474 E24 O'FLOW HOLD — 7474 E24 TEST NEXT CC — D5-3 TEST NEXT CC (1) H — ARI

D5-1 CC O'FLOW H

+5V — R8 5.6K — C111 27pf — 75NS — 74123 E10 MODE SEL — +5 — R57 3K — TP AB1

D5-5 +3V D — 8881 E41 — CDI — D5-3 INH SEL L
74H00 E15 — D5-3 CC/BA CYCLE H

253 220Ω — C114 330pf — 7408 E33 — 100NS — 7409 E4

74H00 E15 — D5-3 BA L

74H00 E9 — E4 7404 — 7408 E5 — AJ2 — D5-3 CNTR LD PULSE H (CC)

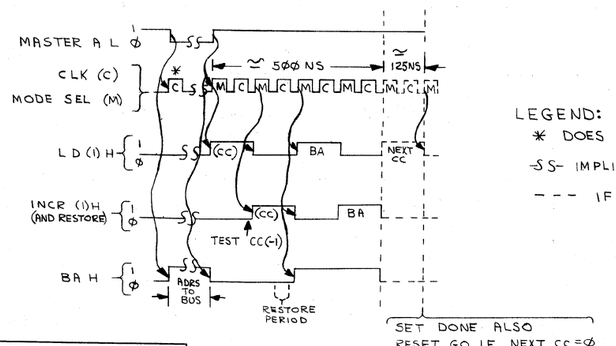
7408 E5 — D5-3 TEST ODD CNT H

7400 E20

7409 E4 — 7402 E35 — 7408 E5 — D5-3 LD CC/BA SP 15-Φ L
CM2 — D5-3 LD SP PORT L

D5-4 LD EXT/TRANS H
D5-4 LD CC/BA L

D5-2 NEXT CC PULSE H



LEGEND:
* DOES NOTHING
-SS- IMPLIES BUS RESPONSE
--- IF O' FLOW

REVISIONS		
CHK	CHANGE NO.	REV.

(CC/BA CONTROL)

TITLE	SIZE	CODE	NUMBER	REV.
CC/BA AND SHIFT CONTROL (D5-3)	D	CS	M7813-Ø-1	K
SCALE	SHEET 5 OF 10		DIST.	

DEC FORM NO. DRD 138

D3-1 OUT HIGH H CMI
D3-1 SEL 4 H CV2
7408 E50
CU2 D5-4 LD PTEE H
CV1 D5-4 LD ERR H
D4-6 REG PT11 (1) H BL2
D4-6 REG PT10 (1) H CR1
D4-6 REG PT9 (1) H CP2
D4-6 REG PT8 (1) H CR2
7400 E39
7404 E40
7442 E44
REG PT WRITE /0-17 DC DR
DJ1 D5-4 LD MISC L
CPI D5-4 LD SYNC L
CA1 D5-4 SEL 6 LD L
D5-4 LD CC/BA L
+5
R56 15K
D5-3 CC/BA CYCLE H
74123 E93
+3V
D3-1 OUT LOW H CU1
D3-1 SEL 6 H BS2
(≃100NS)
7410 E45
D5-5 +3VC
D4-2 D12 H CB1
7474 E49 WR EN
7474 E49 WR SYNC
CT2 D5-4 WEN (1) H
7402 E35
D5-4 LD EXT/TRANS H
D4-7 TX GO (1) H AD1
C108 3.3µf
R29 18K
+5V
D4-3 TX CLOCK H EM1
18MS 74123 E55 TX CLOCK LOSS DLY
AC1 D5-4 1→ TX CK LOSS L
C116 3.3µf
R28 18K
D4-3 RX CLOCK H ES1
18MS 74123 E53 RX CLOCK LOSS DLY
D4-3 TEST LOOP (1) H DA1
D4-7 RX GO (1) H FM1
D5-3 RX NPR DONE H
D5-7 RX ACTIVE(1) L
DM1 D5-4 CLOCK LOSS SH CNTL (1) H
7474 E59 CK LOS SH CNTR
R32 5.6K
74123 E64 RX CLOCK LOSS PULSE
BV1 D5-4 1→ RX CK LOSS L

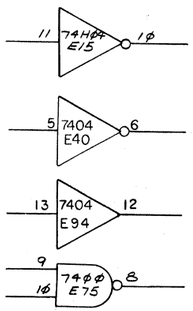
+5V
R27 3K
D8-4 Ø→ RX GO/DONE L DD2
8837 E56
BUS INIT L DE1
8837 E53
D8-4 Ø→ TX GO/DONE L DE2
R26 3K
BUS SSYN L DL1
DL2 D5-4 BSSYN H
D5-1 CC O'FLOW H
7450 E48
CS2 D5-4 Ø→ TX GO L
D5-3 NEXT CC PULSE H
7408 E54
DH2 D5-4 TXS (1) H
7450 E57
DM2 D5-4 1→ TXS DONE L
D5-3 TX CYCLE H DP1
D5-3 TEST NEXT CC (1) H
7474 E58 TXS
DF2 D5-4 1→ TX P DONE L
DJ2 D5-4 RX S (1) H
D5-3 RX CYCLE H CL2
7474 E58 RXS
7450 E51
DD1 D5-4 1→ RX P DONE L
DC1 D5-4 1→ RX S DONE L
CS1 D5-4 Ø→ RX GO L
7400 E40
AH1 D5-4 INI H
D5-4 INI L
D9-1 D5 H BC1
D5-7 LD MISC H
7450 E52

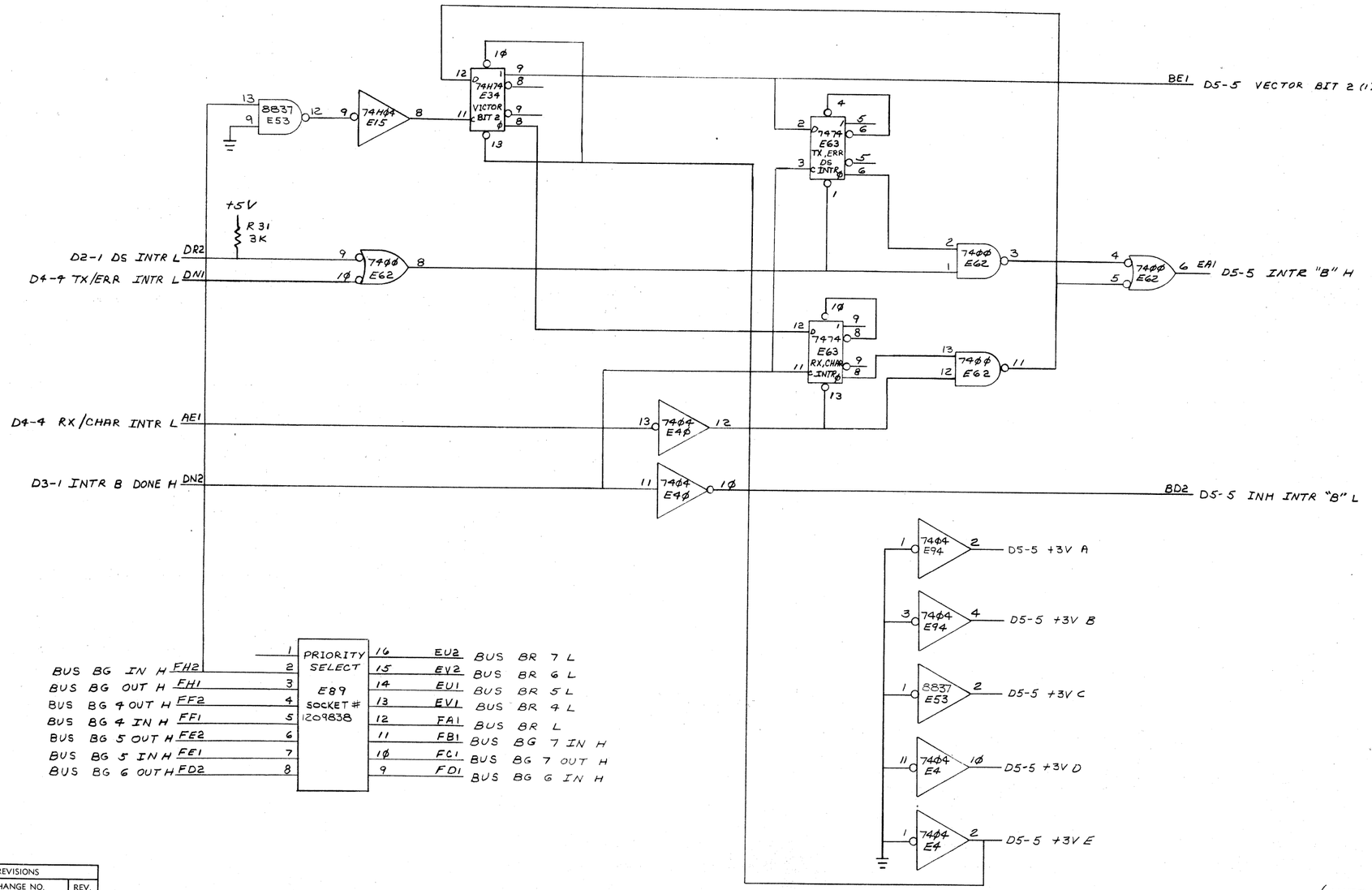
REVISIONS
CHK | CHANGE NO. | REV.

(CLOCK LOSS, REG, SEL, DONE, CNTL)
TITLE CC/BA AND SHIFT CONTROL (D5-4)
SIZE D CODE CS NUMBER M7813-Ø-1 REV. K
SCALE SHEET 6 OF 10 DIST.
NUMBER M7813-Ø-1 REV. K
SIZE D CODE CS

DEC FORM NO. DRD 138

SPARES





REVISIONS		
CHK	CHANGE NO.	REV.

(INTERRUPT & VECTOR CNTL)

TITLE	SIZE	CODE	NUMBER	REV.
CC BA AND SHIFT CONTROL (D5-5)	D	CS	M7813-Ø-1	K
SCALE —	SHEET 7 OF 10	DIST.		

DEC FORM NO. DRD 138

D4-3 VRC (1)H DF1 — 7410 E61 — 7404 E95

D4-6 TX DATA H FR2 — 7404 E74 — 7486 E84 — 7474 E87 ONES CNT

7404 E74 — 7408 E79 — 7404 E74

D5-6 VRC/DATA SEL L DK1

D5-7 EVEN VRC L — 7486 E84 — 7474 E87 VRC HOLD — 7450 E52

D5-5 +3V A

CL1 D5-6 SYNC/DATA ENL

D5-3 CC/BA CYCLE H — 7410 E48 — 7408 E79

D4-3 BITS 11(1)H EL2

D4-3 BITS 10(1)H EN2 5
D4-3 BITS 9(1)H EN2 4
D4-3 BITS 8(1)H EP2 3

74161 E81 TX BIT CNTR (MSB, LSB, CLR, LD, CLK, CNT EN, CRY EN, C.O.)

D5-5 +3V C

D5-1 CC ODD (1) H — DV2 — 7400 E65 — R33 3K +5V

D5-6 BTXC L DV2

D8-5 DLE RQ L DV2

D8-5 PAD RQ L DP2 — R32 3K +5V

D4-3 TX CLOCK H EM1 — 7474 E73 TX ACTIVE — EH1 D5-6 TX ACTIVE (1) H

D5-4 INI H AH1 — 7404 E74 — D5-6 INI L

D5-5 BCC RQ L DU1 — R31 3K +5V — 7404 E70

D4-4 IDLE MODE (1)H DS2
D5-5 TX TOTAL TRANS L DR1 — R54 3K +5 — 7400 E65

7402 E56 — 7402 E56 — 7427 E25 — 7410 E61 — 7404 E70

7402 E30 — DV1 D5-6 SYNC EN (1) L
7402 E82 — EC1 D5-6 BCC EN (1) L
ED2 D5-6 DLE EN (1) L

74175 E71 SEND ENABLE (D3, D2, D1, D0, CLR, CLK; R3(1), R3(0), R2(1), R2(0), R1(1), R1(0), R0(1), R0(0))

D8-5 TX TRANS (1) L DT2 — R38 3K +5V — 7404 E70 — 7410 E61

7474 E68 SAVE SYNC — D5-5 +3VC

7474 E67 CHNR PENDING

7474 E67 CHAR CNT

7408 E66 — 7408 E66 — 74H04 E15 — 7404 E70 — 7410 E88

D5-3 TX CYCLE H DP1
D5-1 CC ODD (1) H — 7400 E65

D5-5 +3V B

7474 E72 SAVE SYNC ODD CC — 7474 E72 FAKE END — EB1 D5-6 TX FAKE END (1) H

74161 E86 BINARY COUNTER (MSB, LSB, CLR, LD, CLK, CNT EN, CRY EN, C.O.)

EK1 D5-6 TX BIT CNTR 8(1) H
EJ2 D5-6 TX BIT CNTR 4(1) H
EJ1 D5-6 TX BIT CNTR 2(1) H
ER2 D5-6 TX BIT CNTR 1(1) H
+3V

74S158 E76 (SYNC/DATA ENABLE; B3, A3, B2, A2, B1, A1, B0, A0; F3, F2, F1, F0; STB, S0; LOW="A" OUT)

EE2 D5-6 TX SYNC EN 7-0 L
ED1 D5-6 TX SYNC EN 15-8 L
EF1 D5-6 DATA EN 15-8 L
EF2 D5-6 DATA EN 7-0 L

7404 E74 — D5-3 TX NPR DONE H

7420 E60 — DS1 D5-6 LD TX SH REG H — E64 7423 — R55 5.6K +5 — 7408 E79 — D5-6 INI L

7474 E77 DATA SYNC — 7474 E77 DATA RDY

7474 E76 NPR RQ — 7474 E76 TX LATE

74123 E69 START SYNS — 7400 E75 — R36 5.6K +5V

FJ1 D5-6 TX SEARCH RQ H — 7404 E94

ER1 D5-6 TX LATE L
AD1 D4-4 TX GO (1) H
D5-6 TX NPR RQ (1) L

REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. DRD 138

TITLE: CC/BA AND SHIFT CONTROL (D5-6) (TX CONTROL)
SIZE: D | CODE: CS | NUMBER: M7813-Ø-1 | REV: K
SCALE: — | SHEET 8 OF 10 | DIST.

DCS M7813-Ø-1 K

D4-6 RX SYNC DET H EP1
D4-4 RX GO (1) H FM1
D4-3 RX CLOCK H ES1
7408 E96
7400 E85
7402 E82
7404 E95
7474 E91 SYNC
SW1
SW2
R50 3K +5V
7408 E96
7404 E95
+5V R42 3K
7410 E88
≃500 NS
R44 220Ω
C115 1500 PF
D4-2 D12 H CB1
7474 E92 RX ACTIVE
74123 E93 FORCE FRAME
+5V R47 5.6K
DH1 D5-7 RX ACTIVE (1) H
D5-7 RX ACTIVE (1) L
D4-4 LD RX 15-8 H FM2
DK2 D5-7 LD RX BUF 15-8 L
+5V R52 15K
100NS 74123 E97 LD Ø BUF
+5V R51 5.6K
50NS 74123 E97 CNTL PULSE Ø
7408 E79
D5-7 RX TRANSFER PULSE H
7404 E94
FJ2 D5-7 TEST JUMPER MATCH L
+5V R49 5.6K
74123 E102 GO RESET Ø
D5-7 LD BUF L
D5-4 LD MISC L DJ1
7404 E95
D4-1 DI H AH2
7400 E85
D5-7 LD MISC H
+5V R46 5.6K
50NS 74123 E102 ACTIVE RESET Ø
D5-8 CRA DLY L
D5-4 INI H AH1
7420 E83
7402 E82
7408 E96
EU1 D5-7 CLR RX CNTL L
7408 E96
D5-7 CLR RX L
E101 (10) D5-5 +3VA
EK2 D5-7 SYNC 1 (1) H
ET2 D5-7 SYNC 2 (1) H
D4-3 VRC (1) H DF1
7408 E66
D9-6 RX BCC CYCLE L EN1
7420 E83
FS1 D5-7 VRC ERR DET L
D5-5 +3VB
R41 3K +5V
SW4 S1
D5-7 EVEN VRC L
7406 E84
7402 E82
EL1 D5-7 LD RX BIT CNTR L
D4-3 BITS 11 (1) H EL2
D4-3 BITS 10(1) H EM2
D4-3 BITS 9(1) H EN2
D4-3 BITS 8(1) H EP2
74161 E80 RX BIT CNTR.
MSB LSB CLR LD CLK CNT EN CRY EN CARRY OUT
D4-3 SERIAL DATA IN L EH2
7486 E84
7474 E92 VRC ONE IS CNTR
7404 E95
FK1 D5-7 BRXC L

REVISIONS		
CHK	CHANGE NO.	REV.

(RX START UP/VRC/BIT CNTR)

TITLE	SIZE	CODE	NUMBER	REV.
CC/BA AND SHIFT CONTROL (D5-7)	D	CS	M7813-Ø-1	K
SCALE — / — SHEET 9 OF 10	DIST.			

DEC FORM NO. DRD 138

DCSM7813-Ø-1 K

D5-5 +3V C

D5-7 RX ACTIVE (1) H DHI

D5-7 LD BUF L

D5-7 LD RX BUF 15-8 L DK2

7404 E74

7400 E20 AAI D5-8 LDRX BUF 7-Ø L

7427 E25

D5-5

+3A

7474 E100 RCV FRAME START E59

7474 E100 RCV FRAME DONE E69

+5V R35 5.6K

74123 E69 SX PRESET

7400 E39 D5-8 CRA DLY L

+5V R34 3K

D8-4 CRA L FS2

7474 E68 CRA DLY E59

+5V R39 3K

D9-6 DIS RX TRANSFER PULSE L EEI

D5-7 RX TRANSFER PULSE H E75

7400 E75

7400 E78

D8-3 RX SEARCH DONE L FP2

R3 3K +5V

7408 E99

+5V R45 3K

D8-6 RX TRANS (1) L EPI

D4-4 STRIP SYNC (1) H FNI

D4-6 RX SYNC DET H EPI

7408 E99

7450 E96

7400 E99

D5-7 CLR RX L

D5-7 SYNC 1 (1) H EK2

D8-4 STRIP DB CHAR L FT2

7410 E88

7400 E98

R43 3K +5V

D4-3 BITS 11 (1) H FK2

7404 E94

7400 E98

7408 E99

D5-3 RX CYCLE H CL2

D5-1 CC ODD (1) H

7400 E98 FR1 D5-8 RX CC ODD L

D4-1 D4H BA1

D5-7 LD MISC H

74H50 E38

7474 E101 RX NPR RQ E49

D5-3 RX NPR DONE H

7474 E101 RX LATE E59 FU2 D5-8 RX LATE L

D5-8 RX NPR RQ (1) L

D5-6 INI L

REVISIONS		
CHK	CHANGE NO.	REV.

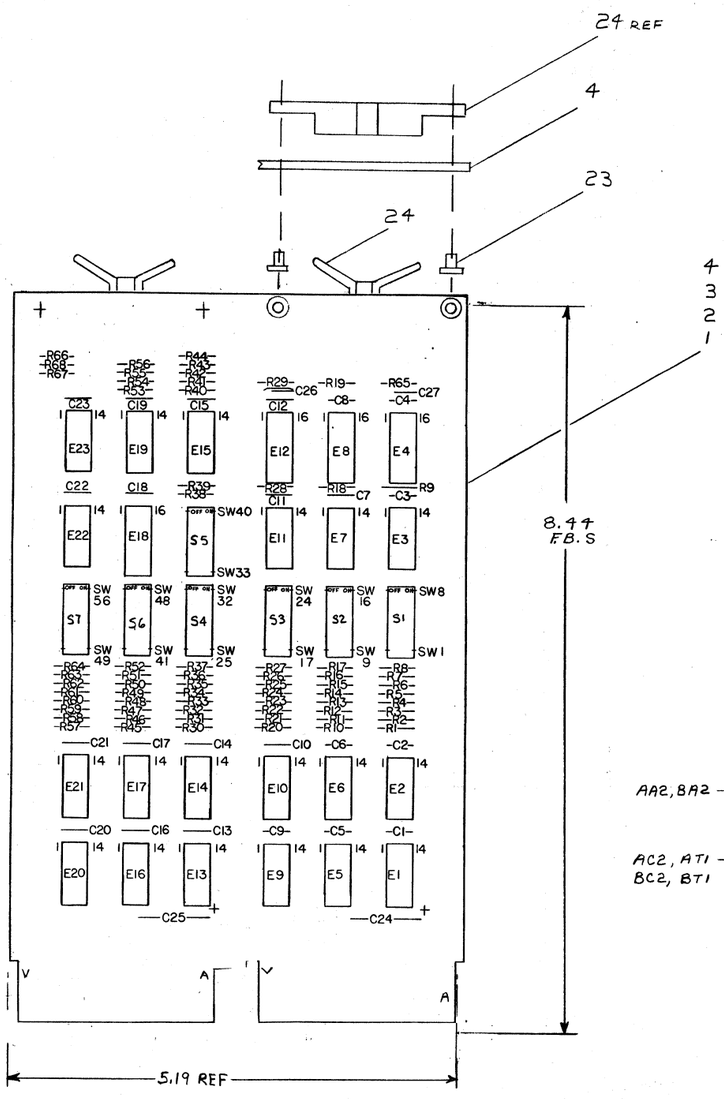
(RX CHARACTER CNTL.)

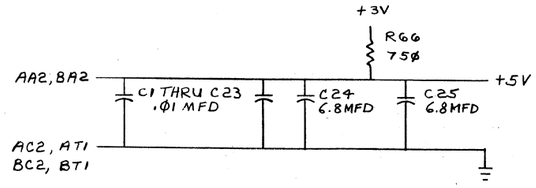
TITLE	SIZE	CODE	NUMBER	REV.
CC/BA AND SHIFT CONTROL (D5-8)	D	CS	M7813-Ø-1	K
SCALE NONE	SHEET 10 OF 10	DIST.		

DEC FORM NO. DRD 138

NOTES:

1. SWITCHES ARE MOUNTED FOR "OFF" TO THE LEFT AND "ON" TO THE RIGHT.
2. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS.





REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7818-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7818-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7818-0-6	3
1		ETCHED CIRCUIT BOARD	5010501	4
1	C27	CAP. 330 MMF 100V 5% DM	1000023	5
23	C1 THRU C23	CAP. .01 MFD 50V 20% AXCER	1001610	6
1	C26	CAP. 1500 MMF 100V 5% DM	1002428	7
2	C24, C25	CAP. 6.8 MFD 35V 10% TANT	1005306	8
7	S1, S2, S3, S4, S5, S6, S7	DUAL IN LINE SWITCH (8P05)	1811164-4	9
58	R1 THRU R8, R10 THRU R17, R20 THRU R27, R30 THRU R41, R45 THRU R64, R67, R68	RES. 3K 1/4W 5%	1300432	10
4	R9, R18, R19, R28	RES. 10K 1/4W 5%	1300479	11
4	R42, R43, R44, R66	RES. 750 OHMS 1/4 5%	1301401	12
1	R65	RES. 5.6K 1/4 5%	1301874	13
1	R29	RES. 47K 1/4 5%	1302177	14
1	E11	I.C. DEC 7474	1905547	15
2	E3, E22	I.C. DEC 7402	1909004	16
2	E15, E19	I.C. DEC 8881	1909705	17
12	E1, E2, E5, E6, E9, E10, E13, E14, E16, E17, E20, E21	I.C. DEC 8242	1909712	18
1	E23	I.C. DEC 8815	1909713	19
1	E7	I.C. DEC 74H103	1910409	20
3	E9, E8, E12	I.C. DEC 74123	1910436	21
1	E18	I.C. DEC 74175	1910651	22
4		EYELET #GS4-7 STIMPSON	9006732	23
2		HANDLE, FLIP CHIP, MAGENTA	9008337-6	24

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DEC 74175	8	16
DEC 74123	8	16
DEC 74H103	11	4
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: DQ11

ETCH BOARD REV: D

REV	CHANGE NO.	CHK
C	ORIGINATED M7818-00001	R. LISEE 11-12-73
B		R. Lisee 12-10-73

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

DRN.	G. Wilson 5/14/73
CHK'D	9/24/73
ENG.	9/25/73
PROJ. ENG.	9/25/73
PROD.	K. Weil 10/5/73

NEXT HIGHER ASSY: B-DD-DQ11-0

SCALE:

SHEET 1 OF 4

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: HARD WIRED CHAR DET/NPR CONTROL

SIZE D | CODE CS | NUMBER M7818-0-1 | REV. C

DIST.

BRUNING 40-522 16699

DEC FORM NO. DRD-135A

NOTES:
1. SW → SWITCH
2. BOXES (EXCLUDING SW 40-33, CONTAIN BIT POSITIONS FOR COMPARE. COMPARE FOR ONE IS OFF AND A ZERO IS ON
3. CHARACTER Ø, 1, 2 RELATES TO RX CSR BITS 10, 9, 8 RESPECTIVELY.
4. COMPARE FOR SINGLE CHARACTER ≤ 8 BITS USE ENABLES FOR HIGH BYTE AND BIT SELECTIONS FOR 15-8.
5. IF LESS THAN THREE CHARACTERS ARE REQUIRED — REPEAT A USED CHARACTER UNTIL ALL THREE SELECTIONS ARE USED.
6. "INTR EN" (SW4Ø) ON ENABLES CHARACTER. DETECTED TO SET "CHAR DET FLAG" TO A ONE (M7812 MODULE)
7. "SYNC EN" (SW39) ALLOWS A SYNC. COMPARE TO SET CD11 AND SET "CHAR DET FLAG" TO A ONE (M7812 MODULE) IF SW4Ø IS SET.

TYP S5

SW 4Ø — SW 33

INTR EN	
SYNC EN	
Ø LOW EN	BYTE ENABLES LOW IS 7-Ø HIGH IS 15-8
1 LOW EN	
2 LOW EN	
2 HIGH EN	
1 HIGH EN	
Ø HIGH EN	

OFF ON

E22 REF — E18 REF — E11 REF — E7 REF — E3 REF

	S7 CHAR 2H	S6 CHAR 1H	S4 CHAR ØH	S3 CHAR 2L	S2 CHAR 1L	S1 CHAR ØL
	SW 56 — SW 49	SW 48 — SW 41	SW 32 — SW 25	SW 24 — SW 17	SW 16 — SW 9	SW 8 — SW 1
	15	15	15	7	7	7
	14	14	14	6	6	6
	13	13	13	5	5	5
	12	12	12	4	4	4
	11	11	11	3	3	3
	1Ø	1Ø	1Ø	2	2	2
	9	9	9	1	1	1
	8	8	8	Ø	Ø	Ø
	OFF ON	OFF ON	OFF ON	OFF ON	OFF ON	OFF ON
	R64	R52	R37	R27	R17	R8

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
HARD WIRED CHAR DET/NPR CONTROL	D	CS	M7818-Ø-1	C
SCALE	SHEET 2 OF 4	DIST.		

+5V CHAR Ø LOW

+5V CHAR 1 LOW

+5V CHAR 2 LOW

D4-5 RD 6 H AD2
D4-5 RD 7 H AE2
D4-5 RD 4 H AF2
D4-5 RD 5 H AH2
D4-5 RD Ø H AJ2
D4-5 RD 3 H AK2
D4-5 RD 2 H AL2
D4-5 RD 1 H AM2

SW 7 S1 · SW 8 S1 · SW 5 S1 · SW 6 S1 · SW 1 S1 · SW 4 S1 · SW 3 S1 · SW 2 S1
SW 15 S2 · SW 16 S2 · SW 13 S2 · SW 14 S2 · SW 9 S2 · SW 12 S2 · SW 11 S2 · SW 10 S2
SW 23 S3 · SW 24 S3 · SW 21 S3 · SW 22 S3 · SW 17 S3 · SW 20 S3 · SW 19 S3 · SW 18 S3

R7 3K · R8 3K · R5 3K · R6 3K · R1 3K · R4 3K · R3 3K · R2 3K
R16 3K · R17 3K · R14 3K · R15 3K · R10 3K · R13 3K · R12 3K · R11 3K
R26 3K · R27 3K · R24 3K · R25 3K · R20 3K · R23 3K · R22 3K · R21 3K

8242 E1 · 8242 E2 · 8242 E5 · 8242 E6 · 8242 E9 · 8242 E10

SW 38 S5 · SW 37 S5 · SW 36 S5 · SW 33 S5 · SW 34 S5 · SW 35 S5

R44 750 · R43 750 · R42 750

CHAR Ø HIGH

+5V CHAR 1 HIGH

+5V CHAR 2 HIGH

D4-5 RD 14 H BD2
D4-5 RD 15 H BE2
D4-5 RD 12 H BF2
D4-5 RD 13 H BH2
D4-5 RD 8 H BJ2
D4-5 RD 11 H BK2
D4-5 RD 10 H BL2
D4-5 RD 9 H BM2

SW 31 S4 · SW 32 S4 · SW 29 S4 · SW 30 S4 · SW 25 S4 · SW 28 S4 · SW 27 S4 · SW 26 S4
SW 47 S6 · SW 48 S6 · SW 45 S6 · SW 46 S6 · SW 41 S6 · SW 44 S6 · SW 43 S6 · SW 42 S6
SW 55 S7 · SW 56 S7 · SW 53 S7 · SW 54 S7 · SW 49 S7 · SW 52 S7 · SW 51 S7 · SW 50 S7

R36 3K · R37 3K · R34 3K · R35 3K · R30 3K · R33 3K · R32 3K · R31 3K
R51 3K · R52 3K · R49 3K · R50 3K · R45 3K · R48 3K · R47 3K · R46 3K
R63 3K · R64 3K · R61 3K · R62 3K · R57 3K · R60 3K · R59 3K · R58 3K

8242 E13 · 8242 E14 · 8242 E16 · 8242 E17 · 8242 E20 · 8242 E21

74175 E18
D3 D2 D1 D0 CLR CLK
BR2
D5-7 RX ACTIVE(1) H

+5V R41 3K

8881 E19 · R56 3K · BV2 D6-1 CD 8 H
8881 E19 · R54 3K · BT2 D6-1 CD 9 H
8881 E19 · R53 3K · BS2 D6-1 CD 10 H
8881 E19 · R55 3K · BU2 D6-1 CD 11 H

+5V R40 3K
8881 E15 · AV2 D6-1 1 → CHAR INTR L
BV1
D8-6 BB IT L

+5V R67 3K
8815 E23 · SW 40 S5

+5V C27 330 pf · R65 5.6K
7423 E4 · ~ 500NS
+3V

SW 39 SP5 · +5V R38 3K
7402 E22 · 7402 E22
BN2
D4-7 RX SYNC DET H

+5V R68 3K
7402 E22 · 8815 E23
BB2
D9-6 EN RX TRANSFER PULSE H
BP2
D5-7 TEST JUMPER MATCH L

REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. DRD 126

TITLE	SIZE	CODE	NUMBER	REV.
HARD WIRED CHAR DET/NPR CONTROL (D6-1)	D	CS	M7818-Ø-1	C
SCALE	SHEET 3 OF 4	DIST.		

SIZE CODE NUMBER REV. D CS M7818-Ø-1 C

D3-1 MASTER A L AN2

D5-3 RX CYCLE H AB1

D5-4 BSSYN H AV2

+5V R18 10K
74123 E8 CK2 ≃ 75 NS
+3V

+5V R9 10K
74123 E4 START ≃ 75 NS
+3V

+5V R19 10K
74123 E8 CK1 ≃ 75 NS
+3V

74H101 E7 MSYN K

7474 E11 END CYCLE

+5V R28 10K
74123 E12 END NPR CYCLE ≃ 75 NS
+3V
AR2 D6-2 END NPR CYCLE (1) L

8881 E15
AT2 BUS MSYN L

8881 E15
AP2 D6-2 LD TX BUF (1) L

8881 E15 R39 3K +15V
AS2 D6-2 TIME OUT (1) H

74H101 E7 LDTX BUF

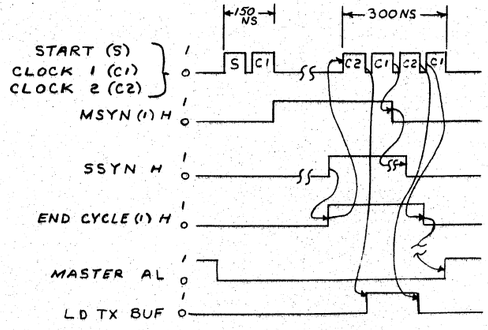
7402 E22

+5V C26 1500PF R29 47K
74123 E12 MSYN TIMER 2.0 μs

7474 E11 TIME OUT

74Ø2 E3

NOTES:
1. —ss— IMPLIES BUS RESPONSE.
2. PULSE TIME (75NS) INCLUDES INTERNAL DELAY FROM TRIGGER.



REVISIONS

CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
HARD WIRED CHAR DET/NPR CONTROL (D6-2)	D	CS	M7818-Ø-1	C
SCALE	SHEET 4 OF 4	DIST.		

SIZE D | CODE IC | NUMBER DQ11-Ø-7 | REV A

DQ11-AA D4 / DQ11-AB D1

M971

D4-3 BCC 29-16 (1) H	A1	
D4-3 AB MUX SEL H	B1	
D4-3 TX CLOCK H	C1	
D4-3 RX CLOCK H	D1	
D4-5 RX BCC DATA IN L	E1	
D4-7 TX DATA H	F1	
D5-1 CC/BA ADRS 8 L	H1	
D5-1 CC/BA ADRS 9 L	J1	
D5-1 CC/BA ADRS 1Ø L	K1	
D5-2 DI PORT 14 L	L1	
D5-2 SP PORT 13 H	M1	
D5-2 SP PORT 14 H	N1	
D5-7 SYNC DATA EN L	P1	
D5-3 CNTR LD PULSE H	R1	
D5-3 LD SP PORT L	S1	
	T1	
D5-4 SEL 6 LD L	U1	
D5-4 INI H	V1	

M971

+5V	A2	
D5-6 B TX C L	B2	
	C2	
D3-1 KA CRYSTAL CLOCK H	D2	
D5-6 TX FAKE END (1) H	E2	
D5-6 TX ACTIVE (1) H	F2	
D5-6 SYNC EN L	H2	
D5-6 BCC EN (1) L	J2	
D5-6 LD TX SH REG H	K2	
D5-3 TEST NEXT CC (1) H	L2	
D5-7 B RX C L	M2	
D5-8 RX CC ODD L	N2	
D9-4 BCC/DLE L	P2	
D9-5 TX TOTAL TRANS (1) L	R2	
D9-5 BCC RQ L	S2	
D9-6 RX BCC CYCLE L	T2	
D9-6 BCC ERR L	U2	
D5-4 RX S (1) H	V2	

DQ11-AA E4 / DQ11-AB E1

M971

D4-5 TD Ø H	A1	
D5-3 RX CYCLE H	B1	
D4-5 TD 1 H	C1	
D4-5 TD 2 H	D1	
D4-5 TD 3 H	E1	
D4-5 TD 4 H	F1	
D4-5 TD 5 H	H1	
D4-5 TD 6 H	J1	
D4-5 TD 7 H	K1	
D5-6 DLE EN (1) L	L1	
D5-6 TX BIT CNTR 4 (1) H	M1	
D5-6 TX BIT CNTR 2 (1) H	N1	
D5-6 TX BIT CNTR 1 (1) H	P1	
D5-6 1 → TX SEARCH RQ H	R1	
D8-3 RX SEARCH DONE L	S1	
	T1	
D8-4 STRIP DBL CHAR L	U1	
D8-4 Ø → RX GO/DONE L	V1	

M971

+5V	A2	
D8-4 CRA L	B2	
	C2	
D4-5 RD 6 H	D2	
D4-5 RD 7 H	E2	
D4-5 RD 4 H	F2	
D4-5 RD 5 H	H2	
D4-5 RD Ø H	J2	
D4-5 RD 3 H	K2	
D4-5 RD 2 H	L2	
D4-5 RD 1 H	M2	
D3-1 MASTER A L	N2	
D6-2 LD TX BUF (1) H	P2	
D6-2 END NPR CYCLE (1) L	R2	
D6-2 TIME OUT (1) H	S2	
BUS MSYN L	T2	
D5-4 BSSYN H	U2	
D6-1 1 → CHAR INTR L	V2	

DQ11-AA F4 / DQ11-AB F1

M971

D4-4 STRIP SYNC (1) H	A1	
D4-4 LD RX 15-8 H	B1	
D4-5 TD 8 H	C1	
D4-5 TD 9 H	D1	
D4-5 TD 1Ø H	E1	
D4-5 TD 11 H	F1	
D4-5 TD 12 H	H1	
D4-5 TD 13 H	J1	
D4-5 TD 14 H	K1	
D4-5 TD 15 H	L1	
D8-4 Ø → TX GO/DONE L	M1	
D8-5 PAD RQ L	N1	
D8-5 DLE RQ L	P1	
D8-5 TX TRANS (1) L	R1	
D8-6 RX TRANS (1) L	S1	
	T1	
D8-6 DLE SAVE (1) L	U1	
	V1	

M971

+5V	A2	
D9-6 DIS RX TRANSFER PULSE L	B2	
	C2	
D4-5 RD 14 H	D2	
D4-5 RD 15 H	E2	
D4-5 RD 12 H	F2	
D4-5 RD 13 H	H2	
D4-5 RD 8 H	J2	
D4-5 RD 11 H	K2	
D4-5 RD 1Ø H	L2	
D4-5 RD 9 H	M2	
D4-7 RX SYNC DET	N2	
D5-7 TEST JUMPER MATCH L	P2	
D5-7 RX ACTIVE (1) H	R2	
D6-1 CD 1Ø H	S2	
D6-1 CD 9 H	T2	
D6-1 CD 11 H	U2	
D6-1 CD 8 H	V2	

REVISIONS			
CHK	CHANGE NO.	REV.	
RB	DQ11AA-00002	A	2-22-74
	R. LISEE		2-25-74

DEC FORM NO. DRD 107-C

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DQ11		PARTS LIST		

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

DRN.	R. Wilson	DATE 5/17/73
CHK'D.	Kirt Glaic	DATE 11/16/73
ENG.	R. Lisee	DATE 12-10-73
PROJ. ENG.	R. Lisee	DATE 12-10-73
PROD.	R. Wall	DATE 12-11-73

NEXT HIGHER ASSY. B-DD-DQ11-Ø
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
DQ11-AA / DQ11-AB CONNECTIONS (D7-1)

SIZE	CODE	NUMBER	REV.
D	IC	DQ11-Ø-7	A

DIST.

SIZE D | CODE CS | NUMBER M7817-0-1 | REV D

NOTES:

JUMPER	JUMPER IN FUNCTION
W1	BCC IN "X" TWO PARTS *
W2	BCC INCLUDES START CHAR.*

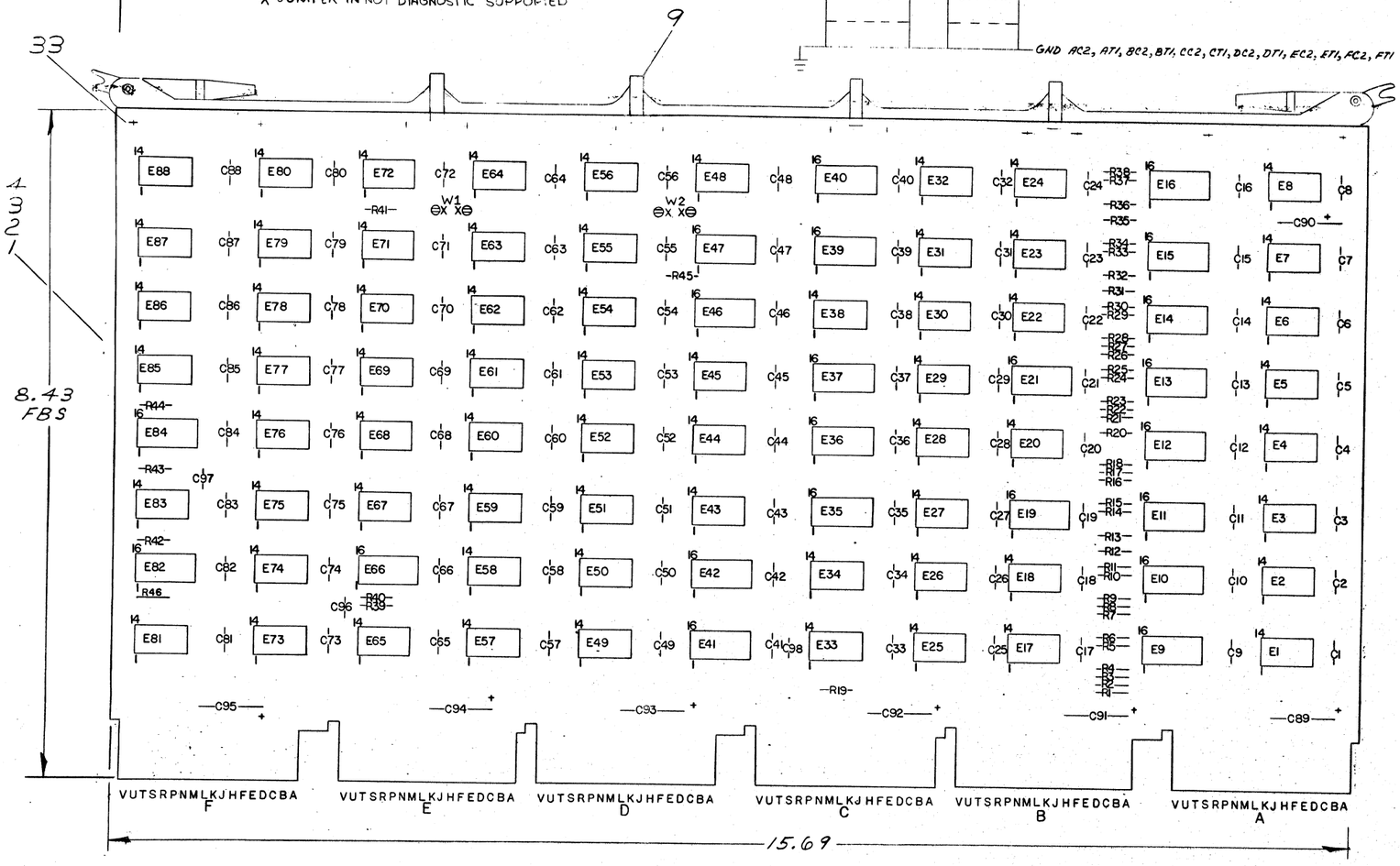
* JUMPER IN NOT DIAGNOSTIC SUPPORTED

C1 - C88 → .01 UF 50V 20%

C89 - C95 → 6.8 UF 35V 10%

+5V AA2, BA2, CA2, DA2, EA2, FA2

GND AC2, AT1, BC2, BT1, CC2, CT1, DC2, DT1, EC2, ET1, FC2, FT1



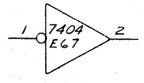
REF				
REF		COORDINATE HOLE LOCATION	K-CO-M7817-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7817-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7817-0-6	3
1		ETCHED CIRCUIT BOARD	5010553	4
1	C97	CAPACITOR 10PF 100V 5% D.M.	1000006	5
2	C96, C98	CAPACITOR 330PF 100 5% D.M.	1000023	6
88	C1-C88	CAPACITOR .01UF 50V 20% AX	1001610-01	7
7	C89-C95	CAPACITOR 6.8UF 35V 10% TANT	1005306	8
1		HANDLE ASSY	1210711-2	9
37	R1-R18, R20-R38	RESISTOR 470 ¼W 5%	1300316	10
6	R39-R43, R45, R46	RESISTOR 5.6K ¼W 5%	1301874	11
14	E56, E62, E63, E64, E68, E69, E70 E71, E72, E81, E83, E26, E30, E61	IC DEC 7474	1905547	12
8	E33, E52, E54, E55, E60, E73, E78, E75	IC DEC 7400	1905575	13
5	E24, E53, E86, E87, E85	IC DEC 7410	1905576	14
1	E76	IC DEC7420	1905577	15
2	E45, E58	IC DEC 7450	1905580	16
2	E59, E74	IC DEC 7402	1909004	17
1	E57	IC DEC 74H21	1909058	18
3	E49, E50, E51	IC DEC 74H55	1909063	19
2	E20, E28	IC DEC 74H11	1909267	20
7	E2, E4, E6, E8, E43, E67, E80	IC DEC 7404	1909686	21
5	E1, E3, E5, E7, E44	IC DEC 8881	1909705	22
10	E17, E18, E22, E23, E25, E27, E29 E38, E31, E34	IC DEC 8242	1909712	23
1	E36	IC DEC 74151	1909936	24
1	E32	IC DEC 7486	1910011	25
1	E48	IC DEC 7437	1910091	26
4	E65, E77, E79, E88	IC DEC 7408	1910155	27
3	E66, E82, E84	IC DEC 74123	1910436	28
1	E40	IC DEC 74161	1910650	29
5	E35, E37, E39, E41, E47	IC DEC 74175	1910651	30
8	E9, E10, E11, E12, E13, E14, E15 E16,	IC DEC 3101	1910653	31
4	E19, E21, E42, E46	IC DEC 74157	1910655	32
12		EYELET	9006732	33
4		SPLIT LUG	9006735	34
1	R19	RESISTOR 220 1/4 W 5%	130027/	35
1	R44	RESISTOR 10K ¼W 5%	1300479	36

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION MODEL: DQ11

PARTS LIST

ETCH BOARD REV D



DEC 3101	8	16
DEC 74175	8	16
DEC 74151	8	16
IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

BRUNING 40-522-16699

DEC FORM NO. DRD-135A

REV	CHANGE NO.	CHK	DATE
B.	ORIGINATED	R.LISSE	5-24-74
C	M7817-00001	R.LISSE	6-9-74
D	M7817-00002	R.LISSE	6-20-75
			7-15-75

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN.	N. Davis	9-6-73
CHK'D.	Robert Glass	2/11/74
ENG.	R. Lissee	2/11/74
PROJ. ENG.	R. Lissee	2/11/74
PROD.	R. Wall	2/11/74

NEXT HIGHER ASSY: B-DD-DQ11-0

SCALE: 1/1

SHEET 1 OF 8

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CHAR DET & SEQ CNTL

SIZE	CODE	NUMBER	REV.
D	CS	M7817-0-1	D

DIST.

PIN	NAME	PAGE	D8-1	D8-2	D8-3	D8-4	D8-5	D8-6
AS2	BUS DATA Ø0 L		X					
AR1	BUS DATA 01 L		X					
AS1	BUS DATA Ø2 L		X					
AR2	BUS DATA Ø3 L		X					
AM2	BUS DATA Ø4 L		X					
AL1	BUS DATA Ø5 L		X					
AM1	BUS DATA Ø6 L		X					
AF1	BUS DATA Ø7 L		X					
AV1	BUS DATA Ø8 L		X					
AE2	BUS DATA Ø9 L		X					
BA1	BUS DATA 10 L		X					
AE1	BUS DATA 11 L		X					
AK2	BUS DATA 12 L		X					
AH1	BUS DATA 13 L		X					
AJ2	BUS DATA 14 L		X					
AF2	BUS DATA 15 L		X					
FJ1	D4-3 RX CLOCK H							X
CH1	D4-4 LD RX 15-8 H				X			
FF1	D4-4 STRIP SYNC (1) H							X
BE1	D4-5 RD Ø H			X				
BK1	D4-5 RD 1 H			X				
BH1	D4-5 RD 2 H			X				
BC1	D4-5 RD 3 H			X				
BF2	D4-5 RD 4 H			X				
BL2	D4-5 RD 5 H			X				
BD2	D4-5 RD 6 H			X				
BE2	D4-5 RD 7 H			X				
CM1	D4-5 RD 8 H			X			X	
DJ1	D4-5 RD 9 H			X			X	
CL1	D4-5 RD 10 H			X			X	
CF1	D4-5 RD 11 H			X			X	
CS1	D4-5 RD 12 H			X			X	
CJ1	D4-5 RD 13 H			X			X	
CK1	D4-5 RD 14 H			X			X	
CT2	D4-5 RD 15 H			X			X	
BF1	D4-5 TD Ø H			X				
BR1	D4-5 TD 1 H			X				
BJ1	D4-5 TD 2 H			X				
BD1	D4-5 TD 3 H			X				
BJ2	D4-5 TD 4 H			X				
BM2	D4-5 TD 5 H			X				
BK2	D4-5 TD 6 H			X				
BH2	D4-5 TD 7 H			X				
CR2	D4-5 TD 8 H			X				
DK1	D4-5 TD 9 H			X				
DH1	D4-5 TD 10 H			X				
CR1	D4-5 TD 11 H			X				
CU2	D4-5 TD 12 H			X				
CV2	D4-5 TD 13 H			X				
CV1	D4-5 TD 14 H			X				
CU1	D4-5 TD 15 H			X				
FE1	D4-6 RX SYNC DET H							X
FR2	D5-3 RX CYCLE H							X
BV2	D5-6 LD TX SH REG H						X	
CP1	D5-6 LD TX SH REG H			X				
FN1	D5-6 1→TX SEARCH RQ H				X			
CE1	D5-6 TX BIT CNTR 1 (1) H						X	
CD1	D5-6 TX BIT CNTR 2 (1) H						X	
CC1	D5-6 TX BIT CNTR 4 (1) H						X	
FV1	D5-6 DLE EN (1) L						X	
EU1	D5-6 SYNC/DATA EN L						X	
FB1	D5-6 TX ACTIVE (1) H						X	
FV2	D5-6 BCC EN (1) L						X	
FP1	D5-7 TEST JUMPER MATCH L				X			
FC1	D5-7 RX ACTIVE (1) H							X
CA1	D6-1 CD 8 H				X			
CB1	D6-1 CD 9 H				X			
CN2	D6-1 CD 10 H				X			
CN1	D6-1 CD 11 H				X			
EP1	D6-1 1→ CHAR INTR L					X		
EU2	D6-2 END NPR CYCLE (1) H							X
	D8-1 CM Ø H		X	X			X	
	D8-1 CM 1 H		X	X			X	
	D8-1 CM 2 H		X	X			X	
	D8-1 CM 3 H		X	X			X	
	D8-1 CM 4 H		X	X			X	
	D8-1 CM 5 H		X	X			X	
	D8-1 CM 6 H		X	X			X	
	D8-1 CM 7 H		X	X			X	
	D8-1 CM 8 H		X	X				
	D8-1 CM 9 H		X	X				
	D8-1 CM 10 H		X	X				
	D8-1 CM 11 H		X	X				
	D8-1 CM 12 H		X	X				
	D8-1 CM 13 H		X	X				
	D8-1 CM 14 H		X	X				
	D8-1 CM 15 H		X	X				
BB1	D8-1 SEQ Ø H		X					
EB1	D8-1 SEQ 1 H		X			X		
EC1	D8-1 SEQ 2 H		X			X		
DM1	D8-1 SEQ 3 H		X			X		
DA1	D8-1 SEQ 4 H		X			X		
CP2	D8-1 SEQ 5 H		X			X		

PIN	NAME	PAGE	D8-1	D8-2	D8-3	D8-4	D8-5	D8-6
DU1	D8-1 SEQ 6 H		X					
DR1	D8-1 SEQ 7 H		X					
BP2	D8-1 SEQ 8 H		X					
EE1	D8-1 SEQ 9 H		X			X		
BV1	D8-1 SEQ 10 H		X					
BS1	D8-1 SEQ 11 H		X					
BM1	D8-1 SEQ 12 H		X					
BN1	D8-1 SEQ 13 H		X					
BL1	D8-1 SEQ 14 H		X	X				
BP1	D8-1 SEQ 15 H		X	X				
	D8-2 LB MATCH H			X	X			
	D8-2 HB MATCH H			X	X			
	D8-2 WORD MATCH			X	X			
	D8-2 DBL MATCH L			X				
	D8-2 SAVED WORD MATCH H			X	X			
	D8-3 CM WE L		X		X			
	D8-3 SEQ WE L		X		X		X	
	D8-3 RX DONE (SEARCH)H				X			X
EV1	D8-3 RX SEARCH DONE L				X			
	D8-3 DLE ADD (7-0) 1				X		X	
	D8-3 DLE ADD (15-8) L				X		X	
	D8-3 TX SEQ STROBE A H				X	X		
	D8-3 TX SEQ STROBE B H				X	X		
	D8-3 RX SEQ STROBE H				X	X		
	D8-3 DLE STRIP H				X			X
	D8-3 RX SEARCH H			X	X			
	D8-3 CHAR CNTR 1 (1) H		X		X			
	D8-3 CHAR CNTR 2 (1) H		X		X			
	D8-3 CHAR CNTR 4 (1) H		X		X			
	D8-3 CHAR CNTR 8 (1) H		X		X			
	D8-4 RX BCC EXCLUDE L					X		X
BU1	D8-4 CHAR STRIP L					X		X
BN2	D8-4 STRIP DBL CHAR					X		
	D8-4 RX GO/DONE L					X		X
DS1	D8-4 CRA L					X		
DE1	D8-4 RX BCC 5 L					X		
DD1	D8-4 RX BCC 4 L					X		
	D8-4 RX BCC CONT L					X		X
	D8-4 RX BCC ON L					X		X
	D8-4 Ø→RX TRANS L					X		X
	D8-4 1→RX TRANS L					X		X
	D8-4 1→CHAR INTR L				X	X		
	D8-4 TX BCC EXCLUDE (7-0) L					X	X	
	D8-4 SEND PAD L					X	X	
DN1	D8-4 Ø→TX GO/DONE L					X		
	D8-4 TX BCC ON L					X	X	
	D8-4 1→TX TRANS L					X	X	
	D8-4 TX BCC EXCLUDE (15-8) L					X	X	
DF1	D8-4 TX BCC NEXT CHAR L					X		
DV1	D8-4 TX BCC 5 L					X		
EA1	D8-4 TX BCC 4 L					X		
	D8-4 TX BCC ON NEXT FRAME L					X	X	
	D8-4 TX BCC CONT L					X	X	
	D8-4 1→TX TRANS NEXT FRAME L					X	X	
	D8-5 RX DLE DET L						X	X
FL1	D8-5 INH SH TX BCC L						X	
EK1	D8-5 PAD RQ L						X	
	D8-5 B TX ACTIVE H				X		X	
	D8-5 +3V		X	X	X		X	X
EP1	D8-5 DLE RQ L						X	
DP1	D8-5 TX TRANS (1) L				X		X	
EN1	D8-5 TX BCC SH EN L						X	
FM1	D8-6 NOT RESTART L							X
ED1	D8-6 BCC ON SYNC (1) L							X
	D8-6 SKP FRAME L				X			X
EV2	D8-6 DLE SAVE (1) L				X			X
	D8-6 B RX ACTIVE H				X			X
FU1	D8-6 IT BB L							X
EM1	D8-6 DES RX BCC SH L							X
	D8-6 RX TRANS (1) H						X	X
FA1	D8-6 RX TRANS (1) L				X			X
DL1	D8-6 Ø→RX GO/DONE L							X
AU2	D9-1 D0 H		X					
AT2	D9-1 D1 H		X					
AU1	D9-1 D2 H		X					
AV2	D9-1 D3 H		X					
AN1	D9-1 D4 H		X					
AN2	D9-1 D5 H		X					
AP2	D9-1 D6 H		X					
AP1	D9-1 D7 H		X					
AD2	D9-1 D8 H		X		X			
AD1	D9-1 D9 H		X		X		X	
AB1	D9-1 D10 H		X		X			
AC1	D9-1 D11 H		X		X			
AK1	D9-1 D12 H		X					
AJ1	D9-1 D13 H		X					
AH2	D9-1 D14 H		X					
AL2	D9-1 D15 H		X					
AA1	D9-2 CM→BUS H		X					
FK1	D9-2 INI H				X		X	
CS2	D9-4 AB TX DATA L						X	
FR1	D9-5 TX TOTAL TRANS L				X			
EH1	D9-5 TX C H						X	
ES1	D9-5 TX EXIT PULSE H						X	
EL1	D9-5 TX C L						X	
FS1	D9-6 EN RX TRANSFER PULSE H				X			

PIN	NAME	PAGE	D8-1	D8-2	D8-3	D8-4	D8-5	D8-6
DC1	D9-6 LD SEQ L				X			
DB1	D9-6 LD CHAR DET L				X			
FS2	D9-6 RX BCC CYCLE L				X			
EF1	D9-6 RX BCC CYCLE L							X
FD1	D9-6 RX TOTAL TRANS (1) L							X
FH1	D9-6 B RX C H							X

NOTES;

1. IF A NAME APPEARS TWO TIMES IT IS SHOWN WITH X.
2. SIGNAL NAMES WITH TWO PINS ARE SHOWN IN BRACKETS.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
CHAR DET SEQ CNTL	D	CS	M7817-Ø-1	D
SCALE —	SHEET 2 OF 8	DIST.		

DEC FORM NO. DRD 138

D9-1 D0 H AV2 1 7404 E6 2
D9-1 D1 H AT2 3 7404 E6 4
D9-1 D2 H AU1 11 7404 E6 10
D9-1 D3 H AV2 13 7404 E6 12

3101 E13 CHAR MEM 3-0 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ
3101 E14 SEQ MEM 3-0 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ

R23 470 — DB-1 CM ØH
R22 470 — DB-1 CM 1H
R25 470 — DB-1 CM 2H
R24 470 — DB-1 CM 3H
R26 470 — BBI DB-1 SEQ ØH
R27 470 — EBI DB-1 SEQ 1H
R28 470 — EC1 DB-1 SEQ 2H
R29 470 — DM1 DB-1 SEQ 3H

8881 E5 — 1 AS2 BUS DATA ØØL
8881 E5 — 4 AR1 BUS DATA Ø1L
8881 E5 — 13 AS1 BUS DATA Ø2L
8881 E5 — 10 AR2 BUS DATA Ø3L

D9-1 D4 H AN1 1 7404 E4 2
D9-1 D5 H AN2 3 7404 E4 4
D9-1 D6 H AP2 11 7404 E4 10
D9-1 D7 H AP1 13 7404 E4 12

3101 E11 CHAR MEM 7-4 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ
3101 E12 SEQ MEM 7-4 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ

DB-3 CM WE L
DB-3 SEQ WE L
DB-3 CHAR CNTR 8(1) H
DB-3 CHAR CNTR 4(1) H
DB-3 CHAR CNTR 2(1) H
DB-3 CHAR CNTR 1(1) H

R13 470 — DB-1 CM 4H
R12 470 — DB-1 CM 5H
R15 470 — DB-1 CM 6H
R14 470 — DB-1 CM 7H
R16 470 — DA1 DB-1 SEQ 4H
R18 470 — CP2 DB-1 SEQ 5H
R21 470 — DU1 DB-1 SEQ 6H
R20 470 — +5V
R19 470 — DR1 DB-1 SEQ 7H

8881 E3 — 1 AM2 BUS DATA Ø4L
8881 E3 — 4 AL1 BUS DATA Ø5L
8881 E3 — 13 AM1 BUS DATA Ø6L
8881 E3 — 10 AF1 BUS DATA Ø7L

D9-1 D8 H AD2 1 7404 E9 2
D9-1 D9 H AD1 3 7404 E9 4
D9-1 D10 H AB1 11 7404 E8 10
D9-1 D11 H AC1 13 7404 E8 12

3101 E15 CHAR MEM 11-8 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ
3101 E16 SEQ MEM 11-8 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ

R32 470 — DB-1 CM 8H
R31 470 — DB-1 CM 9H
R33 470 — DB-1 CM 10H
R34 470 — DB-1 CM 11H
R36 470 — BP2 DB-1 SEQ 8H
R35 470 — EE1 DB-1 SEQ 9H
R39 470 — BV1 DB-1 SEQ 10H
R37 470 — BS1 DB-1 SEQ 11H

8881 E7 — 1 AV1 BUS DATA Ø8L
8881 E7 — 4 AE2 BUS DATA Ø9L
8881 E7 — 13 BA1 BUS DATA 10L
8881 E7 — 10 AE1 BUS DATA 11L

D9-1 D12 H AK1 1 7404 E2 2
D9-1 D13 H AJ1 3 7404 E2 4
D9-1 D14 H AH2 11 7404 E2 10
D9-1 D15 H AL2 13 7404 E2 12

3101 E9 CHAR MEM 15-12 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ
3101 E10 SEQ MEM 15-12 — WR, ENB, DI, DØ, D2, D3, MI(1), MØ(1), M2(1), M3(1), A3 A2 A1 AØ

R4 470 — DB-1 CM 12H
R2 470 — DB-1 CM 13H
R6 470 — DB-1 CM 14H
R5 470 — DB-1 CM 15H
R7 470 — BM1 DB-1 SEQ 12H
R8 470 — BN1 DB-1 SEQ 13H
R11 470 — BL1 DB-1 SEQ 14H
R10 470 — +5V
R9 470 — BP1 DB-1 SEQ 15H

8881 E1 — 1 AK2 BUS DATA 12L
8881 E1 — 4 AH1 BUS DATA 13L
8881 E1 — 13 AL2 BUS DATA 14L
8881 E1 — 10 AF2 BUS DATA 15L

D9-2 CM → BUS H AA1 9 7404 E8 8
7437 E48 10 8

REVISIONS

CHK	CHANGE NO.	REV.

(CHAR & SEQ MEM)

TITLE CHAR DET & SEQ CNTL (D8-1)
SIZE D | CODE CS | NUMBER M7817-Ø-1 | REV. D
SCALE — | SHEET 3 OF 8 | DIST.

D4-5 RD 15 H CT2 — 74157 E42 RX/TX SEL 15-12 — f1, f0, f2, f3
D4-5 RD 14 H CK1
D4-5 RD 13 H CJ1
D4-5 RD 12 H CS1
8242 E18 — R28 470 +5V
DB-3 RX SEARCH H
(LOW = A OUT)

D4-5 TD 15 H CU1 — 74175 E41 TX HOLD 15-12 — R1(1), R1(0), R0(1), R0(0), R3(1), R3(0), R2(1), R2(0)
D4-5 TD 14 H CV1
D4-5 TD 13 H CV2
D4-5 TD 12 H CU2
D5-6 LD TX SH REG H CP1
D8-5 + 3V
D4-5 TD 7 H BH2 — DB-1 CM 15 H
D4-5 TD 6 H BK2 — DB-1 CM 14 H
D4-5 TD 5 H BM2 — DB-1 CM 13 H
D4-5 TD 4 H BJ2 — DB-1 CM 12 H
8242 E17 — R3 470 +5V
8242 E25 — R1 470 +5V

D4-5 RD 7 H BE2 — 74157 E19 RX/TX SEL 7-14 — f3, f2, f1, f0
D4-5 RD 6 H BD2
D4-5 RD 5 H BL2
D4-5 RD 4 H BF2
DB-1 CM 7 H
DB-1 CM 6 H
DB-1 CM 5 H
DB-1 CM 4 H
8242 E27 — R17 470 +5V
(LOW = A OUT)

D4-5 RD 11 H CF1 — 74157 E46 RX/TX SEL 11-8 — f1, f0, f2, f3
D4-5 RD 10 H CL1
D4-5 RD 9 H DJ1
D4-5 RD 8 H CM1
8242 E22

D4-5 TD11 H CR1 — 74175 E47 TX HOLD 11-8 — R1(1), R1(0), R0(1), R0(0), R3(1), R3(0), R2(1), R2(0)
D4-5 TD10 H DH1
D4-5 TD9 H DK1
D4-5 TD8 H CR2
8242 E31

D4-5 TD 3 H BD1 — DB-1 CM 11 H
D4-5 TD 2 H BJ1 — DB-1 CM 10 H
D4-5 TD 1 H BB1 — DB-1 CM 9 H
D4-5 TD 0 H BF1 — DB-1 CM 8 H
8242 E23

D4-5 RD 3 H BC1 — 74157 E21 RX/TX SEL 3-0 — f3, f2, f0, f1
D4-5 RD 2 H BH1
D4-5 RD 1 H BK1
D4-5 RD 0 H BE1
DB-1 CM 3 H
DB-1 CM 2 H
DB-1 CM 1 H
DB-1 CM 0 H
8242 E29
(TX/RX CM COMPARE)

DB-1 SEQ 15 H BP1
74H11 E20 — DB-2 LB MATCH H (COMPARE CM 15-8 TO RX/TX 7-0)
DB-2 HB MATCH H (COMPARE 15-8 TO RX/TX 15-8)
(COMPARE CM 15-0 TO RX/TX 15-0)
DB-2 WORD MATCH H
74H02 E59 — DB-2 DBL MATCH L
DB-1 SEQ 14 H BL1
74H11 E28 — DB-2 SAVED WORD MATCH H
TX LB (COMPARE CM15-8 TO TX 7-0)

REVISIONS		
CHK	CHANGE NO.	REV.
E.W. Stern		A

TITLE	SIZE	CODE	NUMBER	REV.
CHAR DFF'S-Q CNTL (D8-2)	D	DCS	M7817-0-1	D
SCALE	SHEET 4 OF 8	DIST.		

DEC FORM NO. DIRD 1/74

D9-2 INI H FA1

D9-6 LD CHAR DET L DB1 — 7404 E43 — 7400 E60 — DB-3 CM WE L

D9-6 LD SEQ L DC1 — 7404 E43 — 7400 E60 — DB-3 SEQ WE L

DB-6 BRX ACTIVE H
DB-5 BTX ACTIVE H
— 7402 E74 — R19 220Ω — C98 330PF — 7400 E33 — CH1 — D9-4 LD RX 15-8 H

DB-4 I→ CHAR INTR L — 7400 E33

7404 E43 — 7486 E32

D9-1 D 11 H AC1
D9-1 D 10 H AB1
D9-1 D 9 H AD1
D9-1 D 8 H AD2
— 74161 E40 CHAR CNTR (MSB / LSB) — CLR, LD, CLK, CNT EN, CRY EN, CO

74175 E39 CHAR DET HOLD — DB-3 CHAR CNTR 1(1) H, 2(1) H, 4(1) H, 8(1) H
D3 R3(1) — CN1 — DG-1 CD 11 H
R3(Ø)
DØ RØ(1) — CN2 — DG-1 CD 10 H
RØ(Ø)
D1 R1(1) — CB1 — DG-1 CD 9 H
R1(Ø)
D2 R2(1) — CA1 — DG-1 CD 8 H
R2(Ø)
CLR CLK

7474 E56 CARRY HOLD — 7408 E65 — 7474 E83 CHAR SEARCH ACTIVE — 7400 E73 — 7408 E65 — 7474 E83 TX/RX SEARCH — (TX) (RX)

+5V — C97 10PF — R43 5.6K — 74123 E84 INCR — DB-5 +3V

+5V — R44 10K — 74123 E84 TEST — 7404 E43

+5V — R42 5.6K — 74123 E82 EN2 SEARCH

D9-6 RX BCC FS2 CYCLE L
DB-5 TEST JUMPER MATCH L FP1 — 7404 E6 — 7474 E81 RX SEARCH RQ

D9-6 EN RX TRANSFER PULSE H — FS1 — 7400 E73 — 7404 E80

D9-5 TX TOTAL TRANS L FR1 — 7400 E33 — 7400 E73 — 7410 E85 — 7408 E65

DB-3 RX DONE (SEARCH) H — 7404 E67 — 7400 E75 EV1 — DB-3 RX SEARCH DONE L
DB-6 SKP FRAME L

D8-5 TX TRANS (1) L DP1 — 7402 E67 — 74H21 E57 — 7400 E75 — DB-3 DLE ADD(7-Ø) L, DB-3 DLE ADD(15-8) L

DB-1 SEQ 9 H EE1

DB-2 SAVED WORD MATCH H
DB-2 LB MATCH H — 74H55 E51 — 7404 E93 — DB-3 TX SEQ STROBE A H
DB-2 WORD MATCH H
DB-2 HB MATCH H — 74H55 E49 — 7404 E93 — DB-3 TX SEQ STROBE B H

7428 E76 — 7437 E48 — DB-3 RX SEQ STROBE H

74H55 E58 — 74H21 E57 — DB-3 DLE STRIP H

D8-5 RX TRANS (1) L FA1 — 7402 E74 — 7402 E74 — DB-3 RX SEARCH H
DB-6 DLE SAVE (1) L EV2 — 7408 E75

REVISIONS

CHK	CHANGE NO.	REV.

(CHAR DET CONTROL)

TITLE	SIZE	CODE	NUMBER	REV.
CHAR DET & SEQ CNTL (D8-3)	D	CS	M7817-Ø-1	D

SCALE — SHEET 5 OF 8 — DIST.

DEC FORM NO. DRD 138

DB-1 SEQ 11 H BSI
DB-2 DBL MATCH L
DB-1 SEQ 10 H BVI
DB-1 SEQ 8 H BP2
DB-1 SEQ 7 H DRI
DB-1 SEQ 6 H DUI
DB-1 SEQ 5 H CP2
DB-1 SEQ 4 H DAI
DB-1 SEQ 3 H DMI
DB-1 SEQ 2 H ECI
DB-1 SEQ 1 H EBI
DB-1 SEQ 12 H BMI
DB-1 SEQ 13 H BNI
DB-3 RX SEQ STROBE H
DB-3 TX SEQ STROBE A H
DB-3 TX SEQ STROBE B H
DB-2 LB MATCH H
DB-2 SAVED WORD MATCH H
+5V
D8-5 +3V

7410 E24 — DB-4 RX BCC EXCLUDE L
7410 E24 — 8 BVI — DB-4 CHAR STRIP L
7410 E24 — 6 BN2 — DB-4 STRIP DBL CHAR L
7400 E8 — 6
7400 E52 — 8 — DB-4 RX GO/DONE L
7400 E52 — 11 DSI — DB-4 CRA L
8881 E44 — 10 DEI — DB-4 RX BCC 5 L
8881 E44 — 1 DDI — DB-4 RX BCC 4 L
7402 E59 — 1 — 7404 E4 — 6
7410 E86 — 6 — D8-4 RX BCC CONT L
7400 E54 — 8 — DB-4 RX BCC ON L
7400 E54 — 11 — DB-4 Ø → RX TRANS L
7410 E53 — 8 — DB-4 1 → RX TRANS L
7450 E58 — 6
C94 330 PF
R40 5.6K
74123 E66 — ERI — DG-1 1 → CHAR INTR L
DB-4 1 → CHAR INTR L

7400 E55 — 8 — DB-4 TX BCC EXCLUDE(7-Ø) L
7400 E55 — 11 — DB-4 SEND PAD L
7400 E52 — 6 DNI — DB-4 Ø → TX GO/DONE L
7400 E54 — 6 — DB-4 TX BCC ON L
7410 E53 — 6 — DB-4 1 → TX TRANS L

7400 E55 — 3 — DB-4 TX BCC EXCLUDE(15-8) L
7450 E45 — 6 DVI — DB-4 TX BCC 5 L
7450 E45 — 8 EAI — DB-4 TX BCC 4 L
7400 E52 — 3
8881 E44 — 13 DFI — DB-4 TX BCC NEXT CHAR L
7400 E54 — 3 — DB-4 TX BCC ON NEXT FRAME L
7402 E74 — 7404 E6 — 8
7410 E87 — 6 — D8-4 TX BCC CONT L
7410 E53 — 12 — DB-4 1 → TX TRANS NEXT FRAME L
7402 E59 — 10 — 7404 E2 — 6

REVISIONS		
CHK	CHANGE NO.	REV.
	[illegible]	

(SEQ DCDR)

TITLE	SIZE	CODE	NUMBER	REV.
CHAR DET & SEQ CNTL (D8-4)	D	DCS	M7817-Ø-1	D
SCALE —	SHEET 6 OF 8	DIST.		

NUMBER M7817-Ø-1 REV D
SIZE CODE DCS

+5V
R9 470Ø
D4-5RD15H CT2 5 8242 E34
D4-5RD14H CK1 1 8242 E34
D4-5RD13H CJ1 12 8242 E34
D4-5RD12H CS1 8 8242 E34
D4-5RD11H CE1 5 8242 E38
D4-5RD1ØH CL1 1 8242 E38
D4-5 RD 9 H DJ1 9 8242 E38
D4-5 RD 8 H CM1 13 8242 E38
D8-6 RX TRANS (1) H 7410 E86
D8-5 RX DLE DET L

74175 E35 DLE 7-4
D8-1 CM 7 H D2 R2(1) R2(Ø)
D8-1 CM 6 H D3 R3(1) R3(Ø)
D8-1 CM 5 H DØ RØ(1) RØ(Ø)
D8-1 CM 4 H D1 R1(1) R1(Ø)
CLR CLK

74175 E37 DLE 3-Ø
D8-1 CM 3 H D2 R2(1) R2(Ø)
D8-1 CM 2 H D3 R3(1) R3(Ø)
D8-1 CM 1 H DØ RØ(1) RØ(Ø)
D8-1 CM Ø H D1 R1(1) R1(Ø)
CLR CLK

D8-3 SEQ WE L 7404 E80 7408 E88
D9-1D9H ADI 7474 E72 SEQ & HOLD
D9-2 INI H FKI 7404 E80
D5-6 SYNC/DATA EN L EU1 7408 E79 7408 E88 7400 E78

STB 74151 E36
TX DLE 7-Ø
D7 D6 D5 D4 D3 D2 D1 DØ
S2 S1 SØ
CE1 D5-6 TX BIT CNTR 1(1) H
CD1 D5-6 TX BIT CNTR 2(1) H
CC1 D5-6 TX BIT CNTR 4(1) H

D5-6 DLE EN (1) L FV1 7408 E88 FL1
D8-5 INH SHTX BCC L
D8-4 TX BCC EXCLUDE (7-Ø) L
D8-4 TX BCC EXCLUDE (15-8) L
7474 E71 TXBCC EX 7474 E70 TXBCC EX NEXT

+5V R41 5.6K W1
D8-4 SEND PAD L
7474 E72 PAD 2 7474 E71 PAD 1
D8-5B TX ACTIVE H
D5-6 TX ACTIVE (1) H FB1 7486 E32
EKI D8-5 PAD RQ L

D9-5 TX C H EH1
7404 E67 D8-5 T3V
D9-5 TX EXIT PULSE H ES1
D5-6 LD TX SH REG H BV2 7474 E26 EXIT DLY
7486 E32
D8-4 TX BCC CONT L
D5-6 BCC EN (1) L FV2 7474 E26 TXBCC CONT

+5V R39 5.6
74123 E66
D9-3 DLE ADD (7-Ø) L 7408 E77
8881 E44 4 CS2 D9-4 AB TX DATA L
D8-3 DLE ADD (15-8) L
7474 E68 TX DLE
7474 E68 DLE NEXT FRAME EPI D8-5 DLE RQ L
D9-5 TXCL EL1

D8-4 to TX TRANS NEXT FRAME L 7474 EG1 TX TRANS NEXT
7408 EG0 D8-4 TX TRANS L 7408 E77
7474 EG9 TX TRANS DPI D8-5 TX TRANS (1) L
7404 E67
D8-4 TX BCC ON NEXT FRAME L 7474 E29 TX BCC NEXT
D8-4 TX BCC ON L 74H11 E28 7404 E2
7474 E38 BCC SH ON
7400 E55 7400 E66
+5V R45 5.6V W2
7410 E85 EN1 D8-5 TX BCC SH EN L

(TX PROTOCAL CNTL)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	CHAR DET & SEQ CNTL (D8-5)	SIZE	CODE	NUMBER / REV.
		D	CS	M7817-Ø-1 D
SCALE	SHEET 7 OF 8	DIST.		

DEC FORM NO DRD 138

D8-5 RX DLE DET L
D8-3 RX DONE (SEARCH) H
7400 E99
FD1
D9-6 RX TOTAL TRANS (1) L
D8-4 RX BCC ON L
D8-4 RX BCC CONT L
7400 E77
7474 E56 BCC CONT
D9-6 RX BCC CYCLE L EF1
7474 E61 BCC RESTART
7410 E86
FM1
D8-6 NOT RESTART L
7474 E62 BCC ON SYNC
D4-3 RX CLOCK H FJ1
ED1 D8-6 BCC ON SYNC (1) L
7404 E80
D9-6B RX C H FH1
7400 E78
7400 E79
D4-4 STRIP SYNC (1) H FF1
D4-6 RX SYNC DET H FE1
D8-5 +3V
7474 E63 BCC DLE SAVE
7410 E87
7420 E76
7404 E67
D8-6 DES RX BCC SH L
D8-4 CHAR STRIP L BUI 1Ø
7474 E62 SKP FRAME
7450 E58
D8-6 SKP FRAME L
D8-4 1→ RX TRANS L
7474 E63 RX TRANS
D8-6 RX TRANS (1) H
D8-4 Ø→ RX TRANS L
FA1 D8-6 RX TRANS (1) L
D8-3 DLE STRIP H
7402 E39
7474 E64 DLE SAVE
EV2 D8-6 DLE SAVE (1) L
D8-4 RX BCC EXCLUDE L
7474 E64 RX BCC EX
D5-7 RX ACTIVE (1) H FC1
7486 E32
D8-6 BRX ACTIVE H
7437 E48
FU1 D8-6 IT BB L
D8-4 RX /GO DONE L
D5-3 RX CYCLE H FR2
7410 E85
DL1 D8-6 0→ RX GO/DONE L
D6-2 END NPR CYCLE (1) L EU2
7400 E73

REVISIONS		
CHK	CHANGE NO.	REV.
		A

(RX PROTOCAL CNTL)

TITLE: CHAR DET & SEQ CNTL (D8-6)	SIZE: D	CODE: CS	NUMBER: M7817-Ø-1	REV: D
SCALE:	SHEET 8 OF 8	DIST.		

DEC FORM NO
DEC 11

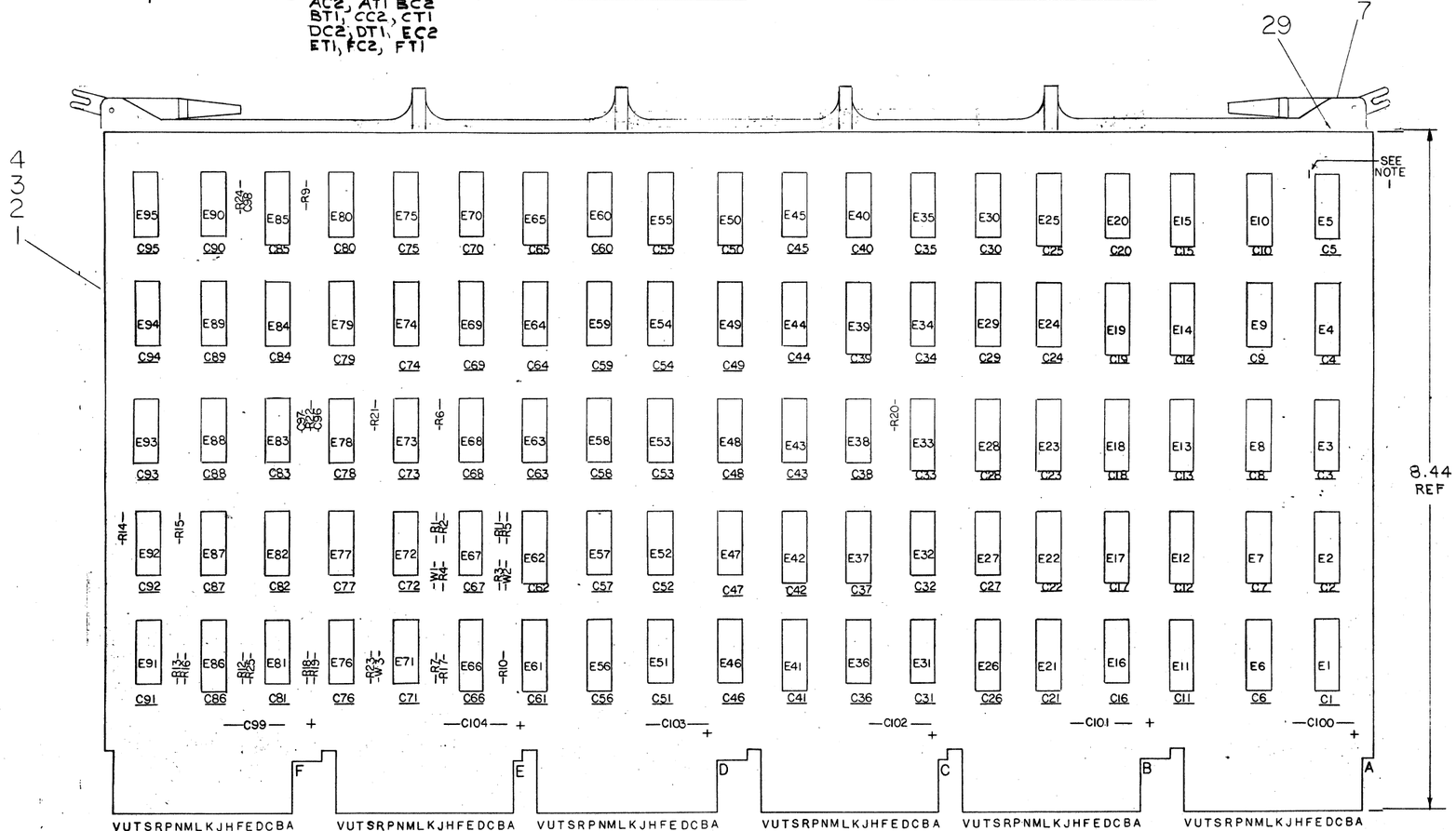
NOTES:

1.) PIN ORIENTATION AS SHOWN ON E5

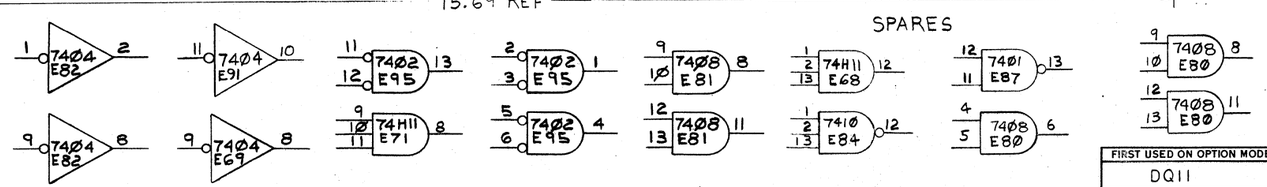
+5V: AA2, BA2, CA2, DA2, EA2, FA2 — +C1 - C95 .01MF — +C99 - C104 6.8 MF

GND: AC2, AT1 BC2, BT1, CC2, CT1, DC2, DT1, EC2, ET1, FC2, FT1

JUMPER	FUNCTION
W1	BCC COUNT: W2 OUT = 3, W1 OUT = 2, W1, W2 OUT = 1
W2	
W3	OUT = RX BCC START NOT INCLUDED IN BCC (FIRST STX)



SPARES



DEC 74123	8	16
DEC 74153	8	16
DEC 74157	8	16
DEC 74174	8	16
DEC 74175	8	16
DEC 7442	8	16
DEC 8838	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 COORDINATE HOLE LOCATION	K-CO-M7816-Ø-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7816-Ø-5	2
REF		ECO MODULE HISTORY	B-MH-M7816-Ø-6	3
1		ETCH CIRCUIT BOARD	5010536	4
95	C1-C95	CAP. .01 MF 50V 20% AXIAL CER	1001610-01	5
6	C99-C104	CAP 6.8 MF 35V 10% TANT	1005306	6
1		HANDLE MODULE	1210711-2	7
1	R20	RES 470 OHMS 1/4W 5%	1300316	8
16	R1-R7, R13-R15, R23, R25, R11, R18, R19, R21,	RES 3K OHMS 1/4W 5%	1300432	9
6	R10, R12, R16, R17, R24, R9	RES 5.6K OHMS 1/4W 5%	1301874	10
8	E77, E78, E74, E92, E93, E84, E12, E90	I.C. DEC 7474	1905547	11
3	E64, E73, E83	I.C. DEC 7400	1905575	12
3	E63, E84, E89	I.C. DEC 7410	1905576	13
2	E87, E87	I.C. DEC 7401	1905590	14
3	E32, E88, E95	I.C. DEC 7402	1909004	15
2	E98, E71	I.C. DEC 74H11	1909267	16
4	E16, E69, E82, E91	I.C. DEC 7404	1909688	17
4	E31, E34, E43, E57	I.C. DEC 7416	1909920	18
8	E3, E8, E13, E21, E22, E23, E26, E4	I.C. DEC 74153	1909937	19
13	E5, E20, E30, E36, E38, E44, E46, E48, E51, E54, E60, E76, E75	I.C. DEC 7486	1910011	20
2	E61, E62	I.C. DEC 7442	1910046	21
1	E58	I.C. DEC 7437	1910091	22
16	E9, E27, E28, E24, E40, E45, E47, E49, E52, E53, E59, E70, E79, E81, E80, E35,	I.C. DEC 7408	1910156	23
3	E85, E86, E66	I.C. DEC 74123	1910436	24
3	E12, E18, E19	I.C. DEC 74175	1910651	25
10	E6, E10, E17, E25, E41, E42, E96, E56, E65, E39	I.C. DEC 74174	1910652	26
6	E14, E15, E20, E33, E37, E50	I.C. DEC 74157	1910655	27
4	E1, E2, E7, E11	I.C. DEC 8838	1911117	28
12		EYELET GS-4-7	9006732	29
1	W2,	INSULATED JUMPER	9009185	30
3	C96, C97, C98	CAP 330PF 100V 5%	1800923	31
1	R22	RES 220 OHMS 1/4W 5%	1300271	32

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: DQ11

ETCH BOARD REV: E

REV	CHANGE NO.	ORIGINATED
B	M7816000001/B	3-28-74
C	M7816-00002	5-21-74
D	M7816-00003	7-18-74
E	M7816-00003	2-23-75
F	M7816-00003	3-5-75
G	M7816-00005	6-23-75
H	M7816-00005	7-15-75

SEMICONDUCTOR CONVERSION CHART

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

DRN. R. Wall 8-20-73
CHK'D. Kent Bressen 11/25/74
ENG. R. Lisee 1-23-74
PROJ. ENG. R. Lisee 1-23-74
PROD. R. Wall 1-25-74

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: AB SELECTORS AND BCC CNTL

NEXT HIGHER ASSY: B-DD-DQ11-Ø

SCALE: NONE

SHEET 1 OF 8

SIZE D | CODE CS | NUMBER M7816-Ø-1 | REV. H

DIST.

DRAWING 40-522 16699

DEC FORM NO. DRD-135A

PIN	SIGNAL NAME	PAGE →	D9-1 3	D9-2 4	D9-3 5	D9-4 6	D9-5 7	D9-6 8
AK2	BUS DATA 00 L		X					
AJ2	BUS DATA 01 L		X					
AB1	BUS DATA 02 L		X					
AU1	BUS DATA 03 L		X					
AU2	BUS DATA 04 L		X					
AT2	BUS DATA 05 L		X					
AS1	BUS DATA 06 L		X					
AS2	BUS DATA 07 L		X					
AJ1	BUS DATA 08 L		X					
AH2	BUS DATA 09 L		X					
AD2	BUS DATA 10 L		X					
AD1	BUS DATA 11 L		X					
AF2	BUS DATA 12 L		X					
AF1	BUS DATA 13 L		X					
AE2	BUS DATA 14 L		X					
AE1	BUS DATA 15 L		X					
CV1	D4-3 AB MUX SEL H			X				
BH2	D4-3 BCC 23-16 (1) H			X				
EE2	D4-3 TX CLOCK H						X	
EF1	D4-3 RX CLOCK H							X
DN1	D4-4 STRIP SYNC (1) H							X
CP2	D4-5 RX BCC DATA IN L					X		
EE1	D4-6 TX DATA H						X	
DM1	D4-6 SYNC DET H							X
BH1	D5-1 CC/BA ADRS 8 L			X				
BJ1	D5-1 CC/BA ADRS 9 L			X				
EL1	D5-1 CC/BA ADRS 10 L			X				
FE2	D5-2 DI PORT 14 L							X
FN1	D5-2 SP PORT 14 H						X	
FJ2	D5-2 SP PORT 13 H						X	X
FJ1	D5-2 TEST JUMPER L							X
CU2	D5-3 TEST NEXT CC (1) H						X	
EV2	D5-3 CNTR LD PULSE H						X	
FB1	D5-3 RX CYCLE H						X	X
DR1	D5-3 LD SP PORT L							X
DL2	D5-4 INI H			X				
DP1	D5-4 SEL 6 LD L							X
ED2	D5-4 RX S (1) H							X
ED1	D5-6 BCC EN (1) L					X		
EM1	D5-6 LD TX SH REG H						X	
FD2	D5-6 TX ACTIVE (1) H						X	
ED1	D5-6 BCC EN (1) H						X	
FS2	D5-6 B TX C L						X	
FH1	D5-6 TX FAKE END (1) H						X	
EU1	D5-6 SYNC EN L						X	
DD2	EH1 D5-7 B RX C L — D5-7 RX ACTIVE (1) H							X
	EK1 D5-8 RX CC DDD L							X
	AN1 D8-1 SEQ Ø H		X					
	AL1 D8-1 SEQ 1 H		X					
	BD2 D8-1 SEQ 2 H		X					
	AR1 D8-1 SEQ 3 H		X					
	BL2 D8-1 SEQ 4 H		X					
	BK1 D8-1 SEQ 5 H		X					
	BK2 D8-1 SEQ 6 H		X					
	BJ2 D8-1 SEQ 7 H		X					
	AK1 D8-1 SEQ 8 H		X					
	AC1 D8-1 SEQ 9 H		X					
	AH1 D8-1 SEQ 10 H		X					
	AA1 D8-1 SEQ 11 H		X					
	BN1 D8-1 SEQ 12 H		X					
	BL1 D8-1 SEQ 13 H		X					
	BM1 D8-1 SEQ 14 H		X					
	BM2 D8-1 SEQ 15 H		X					
	FN2 D8-4 TX BCC NEXT CHAR L					X		
	FV1 D8-4 TX BCC 4 L					X		
	FP2 D8-4 TX BCC 5 L					X		
	EK2 D8-4 RX BCC 4 L						X	
	EH2 D8-4 RX BCC 5 L						X	
	EV1 D8-5 TX BCC SH EN L					X		
	FA1 D8-5 INH SH TX BCC L					X		
	EJ2 D8-6 DES RX BCC SH L						X	
	ER2 D8-6 BCC ON SYNC (1) L						X	
	EJ1 D8-6 NOT RESTART L						X	
	FH2 D8-6 IT BB L						X	
	EL2 D8-6 IT RS L			X				
	FF1 D8-6 RA TRANS L						X	
	AR2 D9-1 D0 H		X	X				
	AV2 D9-1 D1 H		X	X				
	BC1 D9-1 D2 H		X	X				
	BF1 D9-1 D3 H		X	X				
	BB1 D9-1 D4 H		X	X				
	BA1 D9-1 D5 H		X	X				
	AV1 D9-1 D6 H		X	X				
	BE1 D9-1 D7 H		X	X				
	BE2 D9-1 D8 H		X	X				
	BD1 D9-1 D9 H		X	X				
	AM1 D9-1 D10 H		X	X				
	AM2 D9-1 D11 H		X	X				
	AN2 D9-1 D12 H		X	X				
	AP1 D9-1 D13 H		X	X				
	AP2 D9-1 D14 H		X	X				
	AL2 D9-1 D15 H		X	X				
	D9-1 +3		X	X	X	X	X	

PIN	SIGNAL NAME	PAGE →	D9-1 3	D9-2 4	D9-3 5	D9-4 6	D9-5 7	D9-6 8
	D9-2 CC/BA ADRS 8 H		X	X				X
	D9-2 CC/BA ADRS 9 H		X	X				X
	D9-2 CC/BA ADRS 10 H			X				X
	D9-2 MUX → BUS L		X	X				
CL2	D9-2 CM → BUS H			X				
	D9-2 BCC 23-16 H		X	X			X	X
BF2	D9-2 INI H			X				
	D9-2 INI L			X			X	X
	D9-2 POLY Ø (1) H			⊗	X	X		
	D9-2 POLY 1 (1) H			⊗	X	X		
	D9-2 POLY 2 (1) H			⊗	X	X		
	D9-2 POLY 3 (1) H			⊗	X	X		
	D9-2 POLY 4 (1) H			⊗	X	X		
	D9-2 POLY 5 (1) H			⊗	X	X		
	D9-2 POLY 6 (1) H			⊗	X	X		
	D9-2 POLY 7 (1) H			⊗	X	X		
	D9-2 POLY 8 (1) H		X	X	X	X		
	D9-2 POLY 9 (1) H		X	X	X	X		
	D9-2 POLY 10 (1) H		X	X	X	X		
	D9-2 POLY 11 (1) H		X	X	X	X		
	D9-2 POLY 12 (1) H		X	X	X	X		
	D9-2 POLY 13 (1) H		X	X	X	X		
	D9-2 POLY 14 (1) H		X	X	X	X		
	D9-2 POLY 15 (1) H		X	X	X	X		
	D9-2 POLY 16 (1) H			⊗	X	X		
	D9-2 POLY 17 (1) H			⊗	X	X		
	D9-2 POLY 18 (1) H			⊗	X	X		
	D9-2 POLY 19 (1) H			⊗	X	X		
	D9-2 POLY 20 (1) H			⊗	X	X		
	D9-2 POLY 21 (1) H			⊗	X	X		
	D9-2 POLY 22 (1) H			⊗	X	X		
	D9-2 POLY 23 (1) H			⊗	X	X		
	D9-2 POLY MUX Ø H		X	X				
	D9-2 POLY MUX 1 H		X	X				
	D9-2 POLY MUX 2 H		X	X				
	D9-2 POLY MUX 3 H		X	X				
	D9-2 POLY MUX 4 H		X	X				
	D9-2 POLY MUX 5 H		X	X				
	D9-2 POLY MUX 6 H		X	X				
	D9-2 POLY MUX 7 H		X	X				
	D9-3 RX BCC Ø (1) H				X		X	
	D9-3 RX BCC 1 (1) H				X		X	
	D9-3 RX BCC 2 (1) H				X		X	
	D9-3 RX BCC 3 (1) H				X		X	
	D9-3 RX BCC 4 (1) H				X		X	
	D9-3 RX BCC 5 (1) H				X		X	
	D9-3 RX BCC 6 (1) H				X		X	
	D9-3 RX BCC 7 (1) H				X		X	
	D9-3 RX BCC 8 (1) H		X		X		X	
	D9-3 RX BCC 9 (1) H		X		X		X	
	D9-3 RX BCC 10 (1) H		X		X		X	
	D9-3 RX BCC 11 (1) H		X		X		X	
	D9-3 RX BCC 12 (1) H		X		X		X	
	D9-3 RX BCC 13 (1) H		X		X		X	
	D9-3 RX BCC 14 (1) H		X		X		X	
	D9-3 RX BCC 15 (1) H		X		X		X	
	D9-3 RX BCC 16 (1) H				X			X
	D9-3 RX BCC 17 (1) H				X			X
	D9-3 RX BCC 18 (1) H				X			X
	D9-3 RX BCC 19 (1) H				X			X
	D9-3 RX BCC 20 (1) H				X			X
	D9-3 RX BCC 21 (1) H				X			X
	D9-3 RX BCC 22 (1) H				X			X
	D9-3 RX BCC 23 (1) H				X			X
	D9-3 RX ZERO BCC H				X			
	D9-4 TX BCC Ø (1) H					X		
	D9-4 TX BCC 1 (1) H					X		
	D9-4 TX BCC 2 (1) H					X		
	D9-4 TX BCC 3 (1) H					X		
	D9-4 TX BCC 4 (1) H					X		
	D9-4 TX BCC 5 (1) H					X		
	D9-4 TX BCC 6 (1) H					X		
	D9-4 TX BCC 7 (1) H					X		
	D9-4 TX BCC 8 (1) H		X			X		
	D9-4 TX BCC 9 (1) H		X			X		
	D9-4 TX BCC 10 (1) H		X			X		
	D9-4 TX BCC 11 (1) H		X			X		
	D9-4 TX BCC 12 (1) H		X			X		
	D9-4 TX BCC 13 (1) H		X			X		
	D9-4 TX BCC 14 (1) H		X			X		
	D9-4 TX BCC 15 (1) H		X			X		
	D9-4 TX BCC 16 (1) H					X		
	D9-4 TX BCC 17 (1) H					X		
	D9-4 TX BCC 18 (1) H					X		
	D9-4 TX BCC 19 (1) H					X		
	D9-4 TX BCC 20 (1) H					X		
	D9-4 TX BCC 21 (1) H					X		
	D9-4 TX BCC 22 (1) H					X		
	D9-4 TX BCC 23 (1) H					X		
DP2	D9-4 BCC/DLE L							
	D9-5 TX BCC MUX Ø H		X					
	D9-5 TX BCC MUX 1 H		X					
	D9-5 TX BCC MUX 2 H		X					
	D9-5 TX BCC MUX 3 H		X					
	D9-5 TX BCC MUX 4 H		X					
	D9-5 TX BCC MUX 5 H		X					

PIN	SIGNAL NAME	PAGE →	D9-1 3	D9-2 4	D9-3 5	D9-4 6	D9-5 7	D9-6 8
	D9-5 TX BCC MUX 6 H		X				X	
	D9-5 TX BCC MUX 7 H		X				X	
	D9-5 B CNTR LP H						X	
FU2	D9-5 TX EXIT PULSE H						X	
FK1	D9-5 TX TOTAL TRANS (1) L						X	
FE1	D9-5 BCC RQ L						X	
FR2	D9-5 TX C L						X	
FT2	D9-5 TX C H						X	
	D9-5 SHIFT TX BCC H					X	X	
	D9-5 CLR TX BCC L					X	X	
	D9-6 RX BCC MUX Ø H		X					X
	D9-6 RX BCC MUX 1 H		X					X
	D9-6 RX BCC MUX 2 H		X					X
	D9-6 RX BCC MUX 3 H		X					X
	D9-6 RX BCC MUX 4 H		X					X
	D9-6 RX BCC MUX 5 H		X					X
	D9-6 RX BCC MUX 6 H		X					X
	D9-6 RX BCC MUX 7 H		X					X
FC1	D9-6 RX TOTAL TRANS (1) L							X
	D9-6 W2 H						X	X
	D9-6 W1 H						X	X
	D9-6 SHIFT RX BCC H							X
EB1	D9-6 PROBCC CYCLE L				X			X
EF2	D9-6 BCC ERR L							X
	D9-6 CLR RX BCC L				X			X
FD1	D9-6 DIS RX TRANS PU L							X
ET2	D9-6 B RX C H							X
EC1	D9-6 EN RX TRANSFER PULSE H							X
EA1	D9-6 LD CHAR DET L							X
DR2	D9-6 LD SEQ L							X
	D9-6 LD POLY L			X				X
DH2	D9-6 RX BCC CYCLE L							X

NOTES;
1. IF A NAME APPEARS TWO TIMES IT IS SHOWN WITH (X)
2. SIGNAL NAMES WITH TWO PINS ARE SHOWN IN BRACKETS.

REVISIONS		
CHK	CHANGE NO.	REV.

(PRINT FIND)

TITLE	SIZE	CODE	NUMBER	REV.
AB SELECTORS & BCC CNTL	D	CS	M7816-Ø-1	H
SCALE NONE	SHEET 2 OF 8	DIST.		

M7816-Ø-1 H
D CS

D9-2 POLY MUX Ø H
D9-5 TX BCC MUX Ø H
D9-6 RX BCC MUX Ø H
D8-1 SEQ Ø H — AN1
D9-2 POLY MUX 1 H
D9-5 TX BCC MUX 1 H
D9-6 RX BCC MUX 1 H
D8-1 SEQ 1 H — AL1
74153 E8

D9-2 POLY MUX 2 H
D9-5 TX BCC MUX 2 H
D9-6 RX BCC MUX 2 H
D8-1 SEQ 2 H — BD2
D9-2 POLY MUX 3 H
D9-5 TX BCC MUX 3 H
D9-6 RX BCC MUX 3 H
D8-1 SEQ 3 H — AR1
74153 E13

D9-2 POLY MUX 4 H
D9-5 TX BCC MUX 4 H
D9-6 RX BCC MUX 4 H
D8-1 SEQ 4 H — BL2
D9-2 POLY MUX 5 H
D9-5 TX BCC MUX 5 H
D9-6 RX BCC MUX 5 H
D8-1 SEQ 5 H — BK1
74153 E23

D9-2 POLY MUX 6 H
D9-5 TX BCC MUX 6 H
D9-6 RX BCC MUX 6 H
D8-1 SEQ 6 H — BK2
D9-2 POLY MUX 7 H
D9-5 TX BCC MUX 7 H
D9-6 RX BCC MUX 7 H
D8-1 SEQ 7 H — BJ2
74153 E22

D9-2 CC/BA ADRS 8 H L H L H
D9-2 CC/BA ADRS 9 H L L H H
POLY
TX BCC
RX BCC
SEQ

8838 E7
AK2 BUS DATA ØØ L
AR2 D9-1 DØ H
AV2 D9-1 D1 H
AJ2 BUS DATA Ø1 L
AB1 BUS DATA Ø2 L
BC1 D9-1 D2 H
BF1 D9-1 D3 H
AU1 BUS DATA Ø3 L

8838 E11
AU2 BUS DATA Ø4 L
BB1 D9-1 D4 H
BA1 D9-1 D5 H
AT2 BUS DATA Ø5 L
AS1 BUS DATA Ø6 L
AV1 D9-1 D6 H
BE1 D9-1 D7 H
AS2 BUS DATA Ø7 L

7404 E16
D9-1 +3V

D9-2 BCC 23-16 H
D9-2 MUX → BUS L
D9-2 POLY 8 (1) H
D9-4 TX BCC 8 (1) H
D9-3 RX BCC 8 (1) H
D8-1 SEQ 8 H — AK1
D9-2 POLY 9 (1) H
D9-4 TX BCC 9 (1) H
D9-3 RX BCC 9 (1) H
D8-1 SEQ 9 H — AC1
74153 E4

D9-2 POLY 10 (1) H
D9-4 TX BCC 10 (1) H
D9-3 RX BCC 10 (1) H
D8-1 SEQ 10 H — AH1
D9-2 POLY 11 (1) H
D9-4 TX BCC 11 (1) H
D9-3 RX BCC 11 (1) H
D8-1 SEQ 11 H — AA1
74153 E3

D9-2 POLY 12 (1) H
D9-4 TX BCC 12 (1) H
D9-3 RX BCC 12 (1) H
D8-1 SEQ 12 H — BN1
D9-2 POLY 13 (1) H
D9-4 TX BCC 13 (1) H
D9-3 RX BCC 13 (1) H
D8-1 SEQ 13 H — BL1
74153 E21

D9-2 POLY 14 (1) H
D9-4 TX BCC 14 (1) H
D9-3 RX BCC 14 (1) H
D8-1 SEQ 14 H — BM1
D9-2 POLY 15 (1) H
D9-4 TX BCC 15 (1) H
D9-3 RX BCC 15 (1) H
D8-1 SEQ 15 H — BM2
74153 E26

8838 E2
AJ1 BUS DATA Ø8 L
BE2 D9-1 D8 H
BD1 D9-1 D9 H
AH2 BUS DATA Ø9 L
AD2 BUS DATA 1Ø L
AM1 D9-1 DIØ H
AM2 D9-1 DI1 H
AD1 BUS DATA 11 L

8838 E1
AF2 BUS DATA 12 L
AN2 D9-1 DI2 H
AP1 D9-1 DI3 H
AF1 BUS DATA 13 L
AE2 BUS DATA 14 L
AP2 D9-1 DI4 H
AL2 D9-1 DI5 H
AE1 BUS DATA 15 L

REVISIONS		
CHK	CHANGE NO.	REV.

BUS SELECTORS

TITLE	SIZE	CODE	NUMBER	REV.
AB SELECTORS & BCC CNTL (D9-1)	D	CS	M7816-Ø-1	H
SCALE —	SHEET 3 OF 8	DIST.		

DEC FORM NO. DRD 138

M7816-Ø-1 REV H
SIZE D CODE CS NUMBER

D9-1 +3V
D5-1 CC/BA ADRS 10 L EL1
7486 E75
D9-2 CC/BA ADRS 10 H

D9-3 AB MUX SEL H CV1
7410 E63
D9-2 MUX → BUS L

+5V R21 3K
D8-6 IT BB L EL2
7400 E73
7410 E63
7402 E32
CL2
D9-2 CM → BUS H

D5-1 CC/BA ADRS 8L BH1
7404 E16
7402 E32
D9-2 CC/BA ADRS 8 H

D5-1 CC/BA ADRS 9L BJ1
7404 E16
D9-2 CC/BA ADRS 9 H

74157 E14
D9-2 POLY Ø (1) H
D9-2 POLY 16 (1) H
D9-2 POLY MUX Ø H
D9-2 POLY 1 (1) H
D9-2 POLY 17 (1) H
D9-2 POLY MUX 1 H
D9-2 POLY 2 (1) H
D9-2 POLY 18 (1) H
D9-2 POLY MUX 2 H
D9-2 POLY 3 (1) H
D9-2 POLY 19 (1) H
D9-2 POLY MUX 3 H
STB SØ

74157 E28
D9-2 POLY 4 (1) H
D9-2 POLY 20 (1) H
D9-2 POLY MUX 4 H
D9-2 POLY 5 (1) H
D9-2 POLY 21 (1) H
D9-2 POLY MUX 5 H
D9-2 POLY 6 (1) H
D9-2 POLY 22 (1) H
D9-2 POLY MUX 6 H
D9-2 POLY 7 (1) H
D9-2 POLY 23 (1) H
D9-2 POLY MUX 7 H
STB SØ
(LOW = A OUT)

D9-6 LD POLY L
7404 E16
7402 E32
7402 E32
D4-3 BCC 23-16 (1) H BH2
7404 E16
D5-4 INI H DL2
7437 E58
7404 E16

74154 E6 POLY 15-10
D9-1 D10 H AM1
D9-1 D11 H AM2
D9-1 D12 H AN2
D9-1 D13 H API
D9-1 D14 H AP2
D9-1 D15 H AL2
D9-2 POLY 10 (1) H
D9-2 POLY 11 (1) H
D9-2 POLY 12 (1) H
D9-2 POLY 13 (1) H
D9-2 POLY 14 (1) H
D9-2 POLY 15 (1) H
CLR CLK
D9-2 BCC 23-16 H
BF2
D9-2 INI H

74175 E18 POLY 23-20
D9-2 POLY 23 (1) H
D9-2 POLY 22 (1) H
D9-2 POLY 21 (1) H
D9-2 POLY 20 (1) H

74175 E19 POLY 19-16
D9-2 POLY 19 (1) H
D9-2 POLY 18 (1) H
D9-2 POLY 17 (1) H
D9-2 POLY 16 (1) H

74175 E12 POLY 3-Ø
D9-1 DØ H AR2
D9-1 D1 H AV2
D9-1 D2 H BC1
D9-1 D3 H BF1
D9-2 POLY Ø (1) H
D9-2 POLY 1 (1) H
D9-2 POLY 2 (1) H
D9-2 POLY 3 (1) H

74174 E17 POLY 9-4
D9-1 D4 H BB1
D9-1 D5 H BA1
D9-1 D6 H AV1
D9-1 D7 H BE1
D9-1 D8 H BE2
D9-1 D9 H BD1
D9-2 POLY 4 (1) H
D9-2 POLY 5 (1) H
D9-2 POLY 6 (1) H
D9-2 POLY 7 (1) H
D9-2 POLY 8 (1) H
D9-2 POLY 9 (1) H
D9-2 INI L

POLY & BUS SEL DCDR

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
AB SELECTORS & BCC CNTL (D9-2)	D	CS	M7816-Ø-1	H
SCALE —	SHEET 4 OF 5		DIST.	

DEC FORM NO. DRD 138

D9-3 RX ZERO BCC H

R2Ø 470R +5V

D9-2 POLY 23 (1) H — 7408 E52 — 7486 E51 — 74174 RX BCC 23-18 E56 — D9-3 RX BCC 23 (1) H
D9-2 POLY 22 (1) H — 7408 E52 — 7486 E51 — D9-3 RX BCC 22 (1) H
D9-2 POLY 21 (1) H — 7408 E52 — 7486 E51 — D9-3 RX BCC 21 (1) H
D9-2 POLY 20 (1) H — 7408 E52 — 7486 E51 — D9-3 RX BCC 20 (1) H
D9-2 POLY 19 (1) H — 7408 E47 — 7486 E51 — D9-3 RX BCC 19 (1) H
D9-2 POLY 18 (1) H — 7408 E47 — 7486 E46 — D9-3 RX BCC 18 (1) H

D9-2 POLY 17 (1) H — 7408 E47 — 7486 E46 — 74174 RX BCC 17-12 E91 — D9-3 RX BCC 17 (1) H
D9-2 POLY 16 (1) H — 7408 E47 — 7486 E46 — D9-3 RX BCC 16 (1) H
D9-2 POLY 15 (1) H — 7408 E27 — 7486 E46 — D9-3 RX BCC 15 (1) H
D9-2 POLY 14 (1) H — 7408 E27 — 7486 E36 — D9-3 RX BCC 14 (1) H
D9-2 POLY 13 (1) H — 7408 E27 — 7486 E36 — D9-3 RX BCC 13 (1) H
D9-2 POLY 12 (1) H — 7408 E27 — 7486 E36 — D9-3 RX BCC 12 (1) H

D9-2 POLY 11 (1) H — 7408 E29 — 7486 E36 — 74174 RX BCC 11-6 E39 — D9-3 RX BCC 11 (1) H
D9-2 POLY 10 (1) H — 7408 E29 — 7486 E44 — D9-3 RX BCC 10 (1) H
D9-2 POLY 9 (1) H — 7408 E29 — 7486 E44 — D9-3 RX BCC 9 (1) H
D9-2 POLY 8 (1) H — 7408 E29 — 7486 E44 — D9-3 RX BCC 8 (1) H
D9-2 POLY 7 (1) H — 7408 E45 — 7486 E44 — D9-3 RX BCC 7 (1) H
D9-2 POLY 6 (1) H — 7408 E45 — 7486 E38 — D9-3 RX BCC 6 (1) H

D9-2 POLY 5 (1) H — 7408 E45 — 7486 E38 — 74174 RX BCC 5-Ø E42 — D9-3 RX BCC 5 (1) H
D9-2 POLY 4 (1) H — 7408 E45 — 7486 E38 — D9-3 RX BCC 4 (1) H
D9-2 POLY 3 (1) H — 7408 E49 — 7486 E38 — D9-3 RX BCC 3 (1) H
D9-2 POLY 2 (1) H — 7408 E49 — 7486 E48 — D9-3 RX BCC 2 (1) H
D9-2 POLY 1 (1) H — 7408 E49 — 7486 E48 — D9-3 RX BCC 1 (1) H
D9-2 POLY Ø (1) H — 7408 E49 — 7486 E48 — D9-3 RX BCC Ø (1) H

D9-5 RX BCC DATA IN L CP2 — 7486 E48 — 7437 E58

D9-6 CLR RX BCC L
D9-6 SHIFT RX BCC H

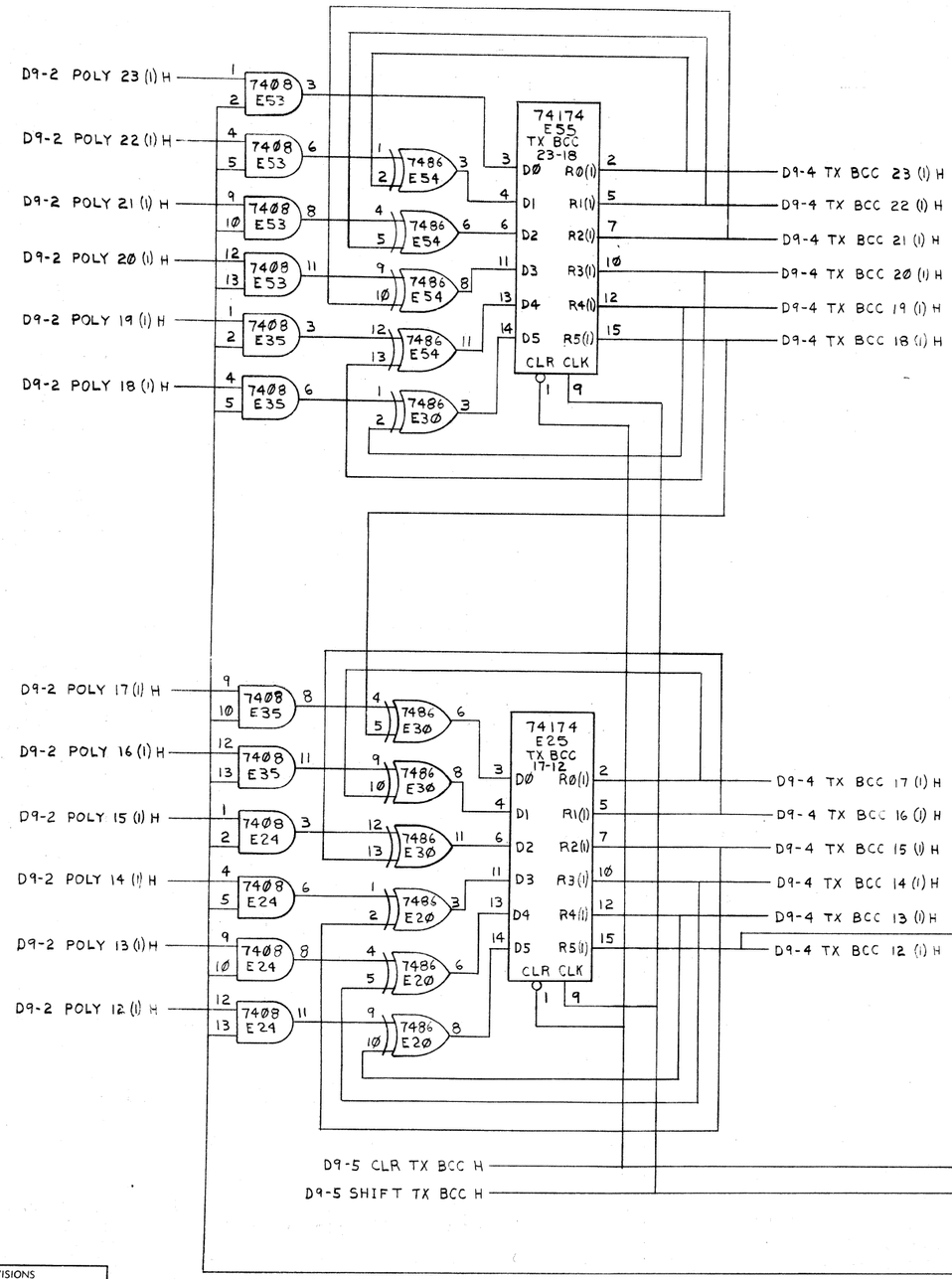
REVISIONS		
CHK	CHANGE NO.	REV.

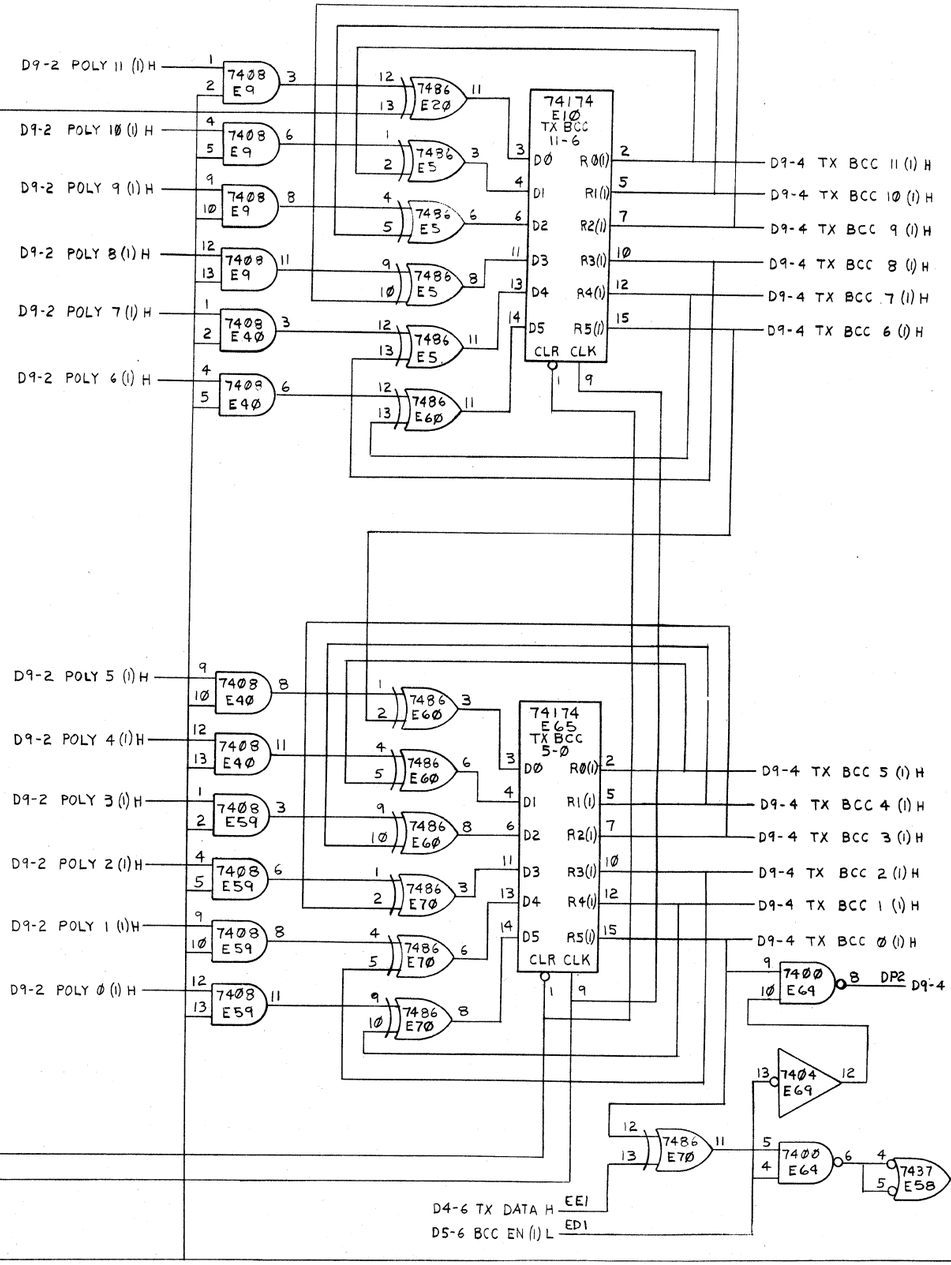
RX BCC GENERATOR

TITLE	SIZE	CODE	NUMBER	REV.
AB SELECTORS & BCC CNTL (D9-3)	D	CS	M7816-Ø-1	H

SCALE — SHEET 5 OF 8 — DIST.

DEC FORM NO DRD 138





REVISIONS		
CHK	CHANGE NO.	REV.

TX BCC GENERATOR

TITLE	SIZE	CODE	NUMBER	REV.
AB SELECTORS & BCC CNTL (D9-4)	D	CS	M7816-∅-1	H

SCALE — SHEET 6 OF 8 DIST.

DEC FORM NO DRD 138

D8-4 TX BCC NEX CHAR L FN2
D5-6 TX FAKE END (1) H FH1
D9-4 TX BCC 4 L FV1
D9-6 W1 H
D9-4 TX BCC 5 L FP2
D9-6 W2 H

7401 E87 7401 E87 7401 E87

+5V R12 5.6K

D9-5 TX TOTAL TRANS (1) L FK1

74123 BCC STROBE E86

R13 3K +5V R14 3K +5V +5V

7400 E83 FEL D9-5 BCC RQ L

7404 E69 7408 E80 7408 E79 7410 E89 7410 E89 7402 E88 7404 E91 7402 E88 7404 E91

D5-3 TEST NEXT CC(1) H CU2
D5-3 CNTR LD PULSE H EV2
D9-5 B CNTR LP H
D5-2 SP PORT 14 H FN1
D5-2 SP PORT 13 H FJ2
D5-3 RX CYCLE H FB1 5
D5-6 LD TX SH REG H EM1 10
D9-1 +3V

7409 E82 7408 E79

D 7474 EXIT TX TRANS E94 D 7474 EXIT/ ENTER E94 D 7474 TX TOTAL TRANS DLY E89 D 7474 E93 TX TOTAL TRANS

7486 E75 7402 E88 7404 E91

D 7474 TX BCC CNTR A E90 D 7474 TX BCC CNTR B E92 D 7474 TX BCC NEXT FR E92

7400 E83 7408 E81

FR2 D9-5 TX C L

FU2 D9-5 TX EXIT PULSE H

74157 E15

D9-4 TX BCC Ø (1) H
D9-4 TX BCC 16 (1) H
D9-4 TX BCC 1 (1) H
D9-4 TX BCC 17 (1) H
D9-4 TX BCC 2 (1) H
D9-4 TX BCC 18 (1) H
D9-4 TX BCC 3 (1) H
D9-4 TX BCC 19 (1) H
STB SØ
D9-5 TX BCC MUX Ø H
D9-5 TX BCC MUX 1 H
D9-5 TX BCC MUX 2 H
D9-5 TX BCC MUX 3 H

74157 E50

D9-4 TX BCC 4 (1) H
D9-4 TX BCC 20 (1) H
D9-4 TX BCC 5 (1) H
D9-4 TX BCC 21 (1) H
D9-4 TX BCC 6 (1) H
D9-4 TX BCC 22 (1) H
D9-4 TX BCC 7 (1) H
D9-4 TX BCC 23 (1) H
STB SØ
D9-5 TX BCC MUX 4 H
D9-5 TX BCC MUX 5 H
D9-5 TX BCC MUX 6 H
D9-5 TX BCC MUX 7 H

D9-2 BCC 24-16 H (LOW=A OUT)

D5-6 BTXC L FS2
D5-6 BCC EN(1) H ED1
D5-6 TX ACTIVE(1) H FD2
D8-5 TX BCC SH EN L EM1
D9-2 INI L

7404 E91 7400 E83 7408 E76

R22 220 C96 330 PF C97 330 PF
R18 3K +5V

+5V R24 5.6K C98 330 PF

74123 BCC PRESET E85

D4-3 TX CLOCK H EE2

+5V R17 5.6K +5V R16 5.6K

74123 BCC SH PULSE E66 74123 CLEAR START E86

7410 E89 74H11 E71 7408 E79

D9-5 SHIFT TX BCC H
D9-5 CLR TX BCC L

D8-5 INH SH TX BCC L FA1
D5-6 SYNC EN L EU1

+5V R19 3K

7408 E76

FT2 D9-5 TX C H

7404 E91

TX BCC CNTL

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE AB SELECTORS & BCC CNTL (D9-5)		SIZE D	CODE CS	NUMBER M7816-Ø-1 REV. H
SCALE	SHEET 7 OF 8	DIST.		

DEC FORM 5/3
DRD 128

D8-6 RX TRANS L FF1 4 — 7408 E81 — 6 FC1 D9-6 RX TOTAL TRANS(1) L

+5V R7 3K

D8-6 DES RX BCC SH L EJ2

D9-6 W2 H
EH2 D8-4 RX BCC 5 L
D9-6 W1 H

EK2 D8-4 RX BCC 4 L

D4-3 RX CLOCK H EF1

D5-2 TEST JUMPER L FJ1 — 7402 E88
D4-4 STRIP SYNC (1) H DN1 — 7400 E64
D4-6 SYNC DET H DM1
D9-5 B CNTR LP H
D5-3 RX CYCLE H FB1
D5-2 SP PORT 13 H FJ2 — 7410 E84
D5-7 RX ACTIVE (1) H DD2 — 7486 E75

7410 E84 — 7474 RX TOTAL TRANS E78 (ENDTT BCCCNTL)

R2 3K +5V
R4 3K +5V
R1 3K +5V
W1 W2

7401 E67 — D8-6 BCC ON SYNC (1) L ER2

R23 3K W3 — 7408 E76 — 74123 SH RX BCC EG6 — R10 5.6K — 74H11 E71 — D9-6 SHIFT RX BCC H

R5 3K — 7410 E63 — 7474 RX BCC ON E77 — 7400 E83 — DH2 D9-6 RX BCC CYCLE L

7404 E82 — 7404 E69 — D5-7 B RXC L EH1

7402 E95 — 7404 E91 — EB1 D9-6 PRO BCC CYCLE L

7400 E73 — 7408 E76 — 7474 E74 RX BCC CNTR B — 7474 E93 DE GLITCH

7402 E73 — 7486 E75 — 7474 RX BCC CNTR A E74

7408 E79 — D5-8 RX CC ODD L EK1

7437 E58 — 7474 E77 END DLY

R9 5.6K — 74123 TEST RX BCC E85 — 7400 E64 — 74H11 E68 — EF2 D9-6 BCC ERR L — D9-6 CLR RX BCC L

D9-1 +3V
D8-6 NOT RESTART L EJ1

D9-3 RX ZERO BCC H — 7404 E69 — R6 3K +5V

7408 E81 — FD1 D9-6 DIS RX TRANSF PU L — R25 3K +5V

FH2 D8-6 ITBB L

ET2 D9-6 B RX C H

74157 E37

D9-3 RX BCC Ø (1) H
D9-3 RX BCC 16 (1) H — A Ø, B Ø — f3 — D9-6 RX BCC MUX Ø H
D9-3 RX BCC 1 (1) H
D9-3 RX BCC 17 (1) H — A1, B1 — f2 — D9-6 RX BCC MUX 1 H
D9-3 RX BCC 2 (1) H
D9-3 RX BCC 18 (1) H — A3, B3 — f1 — D9-6 RX BCC MUX 2 H
D9-3 RX BCC 3 (1) H
D9-3 RX BCC 19 (1) H — A2, B2 — f0 — D9-6 RX BCC MUX 3 H
STB S0

74157 E33

D9-3 RX BCC 4 (1) H
D9-3 RX BCC 20 (1) H — A Ø, B Ø — f3 — D9-6 RX BCC MUX 4 H
D9-3 RX BCC 5 (1) H
D9-3 RX BCC 21 (1) H — A1, B1 — f2 — D9-6 RX BCC MUX 5 H
D9-3 RX BCC 6 (1) H
D9-3 RX BCC 22 (1) H — A3, B3 — f1 — D9-6 RX BCC MUX 6 H
D9-3 RX BCC 7 (1) H
D9-3 RX BCC 23 (1) H — A2, B2 — f0 — D9-6 RX BCC MUX 7 H
STB S0

D9-2 POLY 23-16 (LOW=A OUT)

D5-2 DI PORT 14 L FE2 — 7409 E82

7442 E62 PT DCDR — D3 D2 D1 D0 — f9 f8 f7 f6 f5 f4 f3 f2 f1 f0
D5-3 LD SP PORT L DR1
D9-2 CC/BA ADRS 10 H
D9-2 CC/BA ADRS 9 H
D9-2 CC/BA ADRS 8 H

7442 E61 RG PT WRITE 10,14,17 — D3 D2 D1 D0 — f7 f6 f5 f4 f3 f2 f1 f0
D5-4 SEL6 LD L DP1

7474 RX (S) SAVE E72 — 7401 E67 — D9-2 INI L (E58-3)

7474 RX (P) SAVE E72 — 7404 E69 — 7401 E67 — R11 3K +5V
D5-4 RX S (1) H ED2

74H11 E68 — EC1 D9-6 EN RX TRANSFER PULSE H

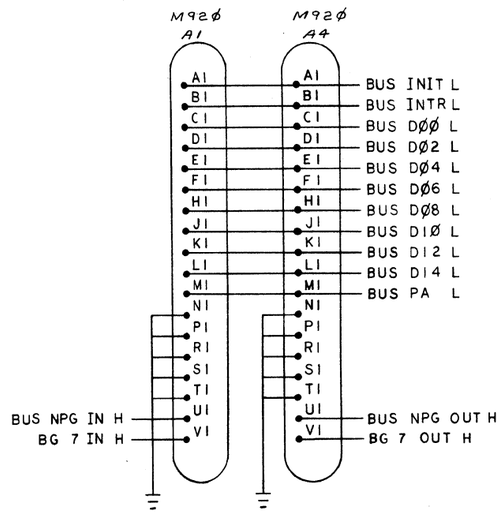
D9-6 LD POLY L
DR2 D9-6 LD SEQ L
EA1 D9-6 LD CHAR DET L

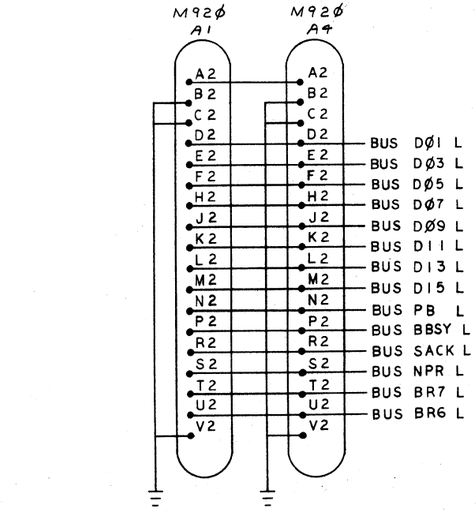
REVISIONS

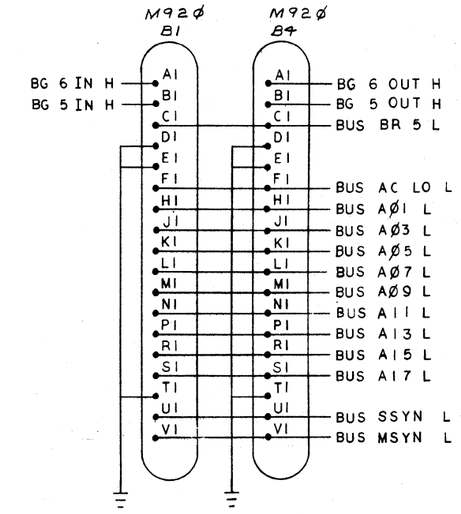
CHK	CHANGE NO.	REV.

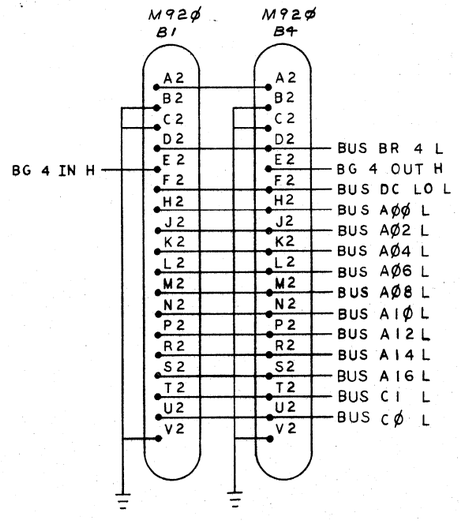
RX BCC CNTL

TITLE	SIZE	CODE	NUMBER	REV.
AB SELECTORS & BCC CNTL (D9-6)	D	CS	M7816-Ø-1	H
SCALE —/— SHEET 8 OF 8	DIST.			









NOTES:
1. THE UNIBUS CONNECTOR IS A DOUBLE HEIGHT MODULE.
2. IF DQ11 IS LAST DEVICE ON THE BUS, REPLACE M920 WITH A M93Ø BUS TERMINATOR.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DQ11		PARTS LIST		

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

DRN.	L Wilson	DATE 5/16/73
CHKD.		DATE 11/12/73
ENG.		DATE 12-10-77
PROJ. ENG.		DATE 12-10-23
PROD.	R. Wall	DATE 12-11-77

NEXT HIGHER ASSY.: B-DD-DQ11-Ø
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

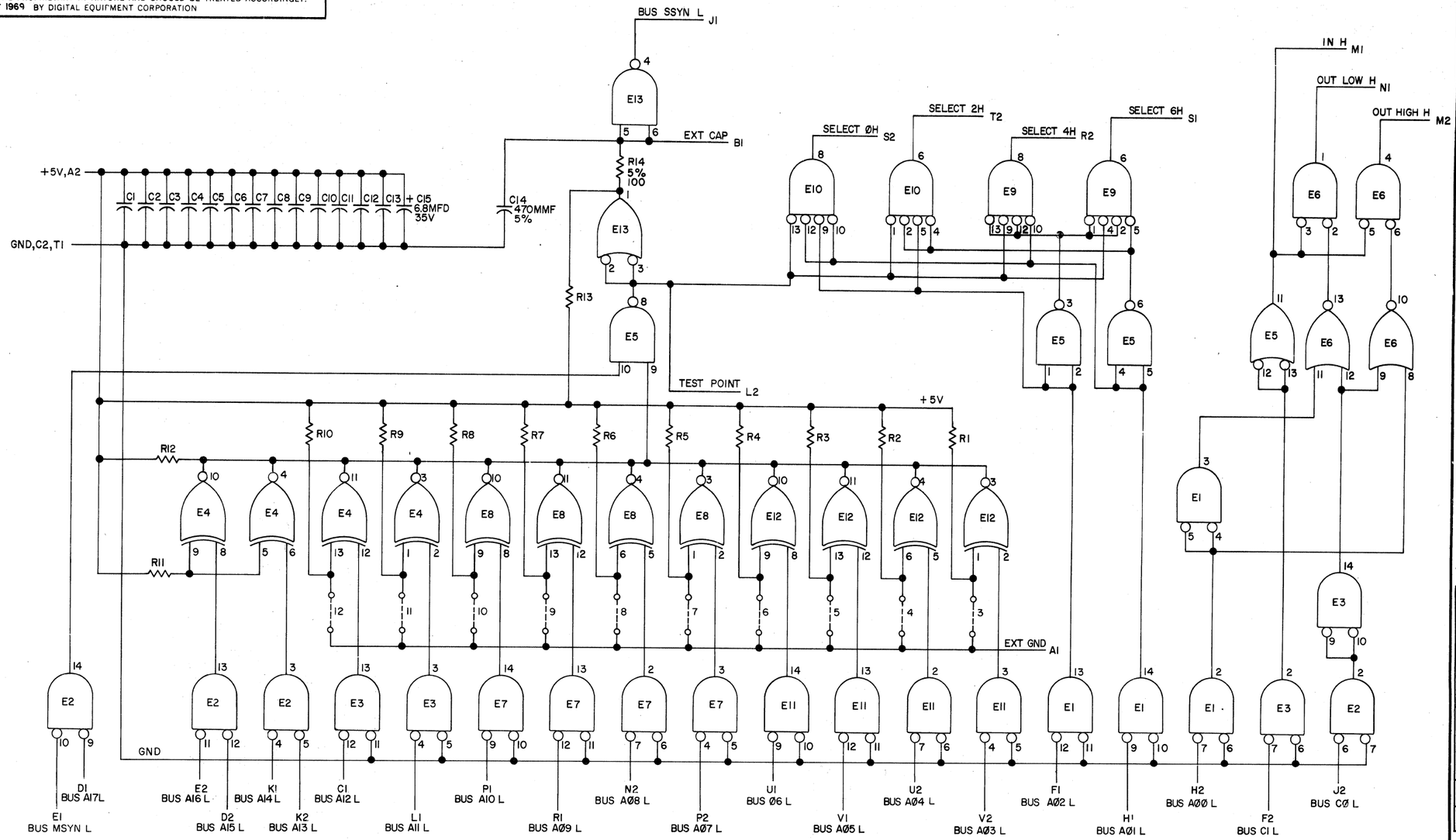
TITLE: UNIBUS® CONNECTORS

SIZE	CODE	NUMBER	REV.
D	IC	DQ11-Ø-6	

DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 133-A



UNLESS OTHERWISE INDICATED:
O---O INDICATES JUMPERS
RESISTORS ARE 1K, 1/4W, 5%
CAPACITORS ARE .01MFD, 100V, 20%
E1, E2, E3, E7, E11 ARE DEC8640
E4, E8, E12 ARE DEC8242
E9, E10 ARE DEC8815
E5 IS DEC74H00
E6 IS DEC7402
E13 IS DEC8881

PIN 1 ON E1, E2, E3, E7, E11 = GND
PIN 8 ON E1, E2, E3, E7, E11 = +5V
PIN 7 ON E4, E5, E6, E8, E9, E10, E12, E13 = GND
PIN 14 ON E4, E5, E6, E8, E9, E10, E12, E13 = +5V

REVISIONS	REV	A	B	C
	CHG NO	LRI	00002	00003
	CHK	TS		

		DATE
DRN	A. Petrey	11-26-69
CHK'D		1-9-70
ENG		
PROD		

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ADDRESS SELECTOR M105

SIZE	CODE	NUMBER	REV
C	CS	M105-0-1	C

PRINTED CIRCUIT REV. C

DEC FORM NO. DRC 102

AS 449-P6

Dist. 2 [illegible] 1343

5 Pink

* SEE ALLOWABLE SUBSTITUTION LIST AND NOTE 6

PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	E12, E18	I.C. DEC 7474	1905547	2
2	E4,E7,E17	I.C. DEC 7400	1905575	3
3	E6,E13,E14	I.C. DEC 7402	1909004	3
4	E1,E11	I.C. DEC 8640	1911469	2
5	E5	I.C. DEC 74H74	1909667	1
6	E2,E8,E9,E15,E16	I.C. DEC 8881	1909705	5
7	E3	I.C. DEC 74H04	1909931	1
8	E10	I.C. DEC 7408	1910155	1
9	C19,C20	CAP,330PF,100V,5% DM	1000023	2
10	C18	CAP,6.8MFD,35V,20% TANT	1000067	1
11	C1 THRU C17	CAP,.01MFD,100V,20% DISC	1001610	17
12	R7, R8	RES,47Ω,1/4W,5%	1300202	2
13	R1,R2	RES,390Ω,1/4W,5%	1300309	2
14	R4,R10	RES,180Ω,1/4W,5%	1301322	2
15	R3, R5, R6, R9	RES,1KΩ,1/4W,5%	1300365	4

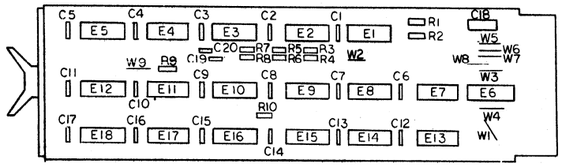
NOTES:

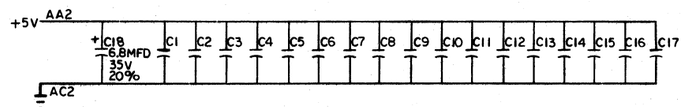
1. VECTOR BIT JUMPERS MUST BE CUT FOR A "ZERO" AND MUST BE INSERTED FOR A "ONE".
2. NPR JUMPER (W9) MUST BE CUT FOR SOME PDP-11 PROCESSORS; IF THE RIGHT HALF REQUEST CIRCUIT IS USED FOR NPA'S; OR IF PIN J1 IS NOT WIRED ON THE M7821 SLOT.
3. DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE, PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM.
4. GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY EXCEPTIONS ARE:

I C TYPE	GND	+5V
DEC 8640	PIN 1	PIN 8

5. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS, CAPACITANCE IS IN PICOFARADS. CAPACITORS WITHOUT ANY NOTED VALUES ARE .01 MFD.
6. DEC 8640'S WERE PHASED IN AS 380 REPLACEMENTS. ANY 380 FAILURES SHOULD BE REPLACED BY 8640'S.

COMPONENT PLACEMENT





REVISIONS		
CHK	CHANGE NO	REV
PK	M7821-00001 4-13-72 P.K. Kuhl S.ROTHMAN	B
PK	M7821-00002 R.O. Hale S.ROTHMAN R. Bisson 7-24-73	C
PK	M7821-00003 J. Powell 1-31-74 L. CONDON L. Condon 11/25/74	D

DRG FORM NO DRD 102A

FIRST USED ON OPT/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/20		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY 7
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

DRN.		DATE 9-29-71
CHK'D.		DATE 9-29-71
ENG.		DATE 9-29-71
PROJ.		DATE 9-29-71
PROD.		DATE

NEXT HIGHER ASSY —

SCALE —

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
INTERRUPT CONTROL M7821

SIZE	CODE	NUMBER	REV.
D	CS	M7821-Ø-1	D

DIST.

REV D
NUMBER M7821-Ø-1
SIZE D CS

A REQUEST 1 H U1
A REQUEST 2 H V1
A MASTER CLEAR H R1
BUS A BG IN H B1
A SACK ENBL L J2
BUS BBSY L D1
BUS SSYN L C1
A START INTR L R2
B START INTR L P2
VECTOR BIT Φ2 H D2
BUS NPR L J1
B REQUEST 1 H K2
B REQUEST 2 H H2
B MASTER CLEAR H S1
BUS B BG IN H E1

U2 BUS A BR L
V2 BUS A BG OUT H
N1 A MASTER L
M2 B INTR DONE H
L2 A INTR DONE H
P1 BUS B BR L
A1 BUS B BG OUT H
T2 BUS SACK L
S2 B MASTER L
E2 BUS DΦ2 L
L1 BUS DΦ3 L
N2 BUS DΦ4 L
F1 BUS DΦ5 L
M1 BUS INTR L
F2 BUS DΦ6 L
H1 BUS DΦ7 L
K1 BUS DΦ8 L

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV B

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

SEMICONDUCTOR CONVERSION CHART

ORIGINATED B
CHK
REV
CHANGE NO.
REVISIONS

DRN. Vern Cyman DATE 7-27-71
CHK'D. [illegible] DATE 7-27-71
ENG. [illegible] DATE 7-29-71
PROJ. ENG. [illegible] DATE 7-29-71
PROD. [illegible] DATE
NEXT HIGHER ASSY
SCALE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
INTERRUPT CONTROL M7821

SIZE	CODE	NUMBER	REV.
D	CS	M7821-Ø-1	D

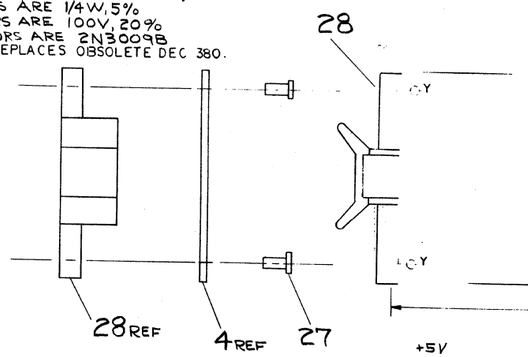
DIST.

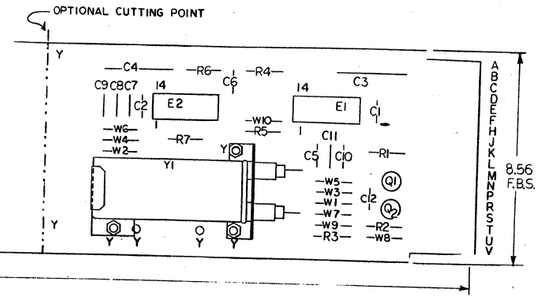
SIZE D CODE CS NUMBERS M7821-Ø-1 REV D

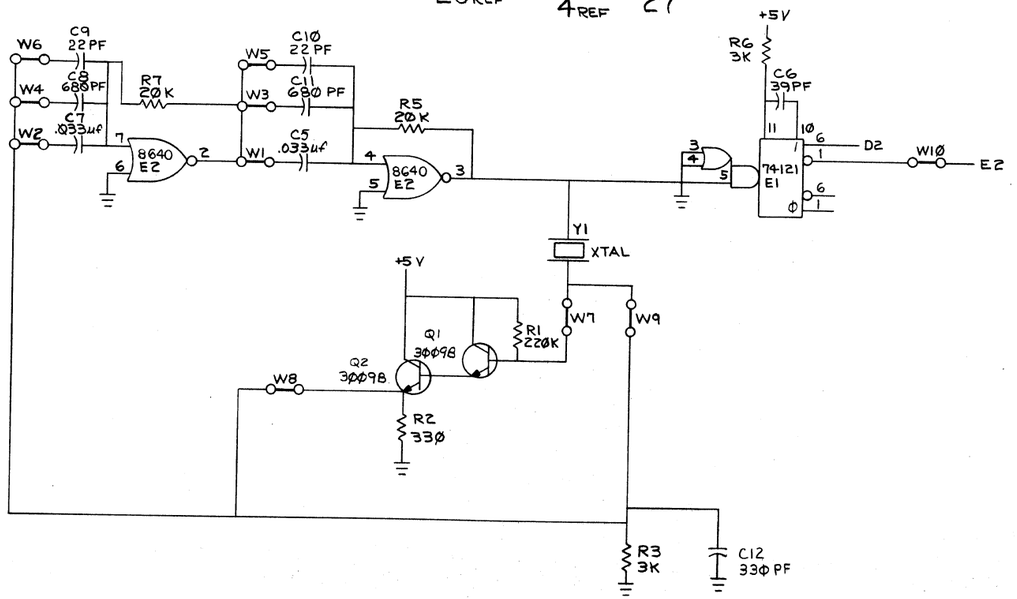
FC FORM NO.

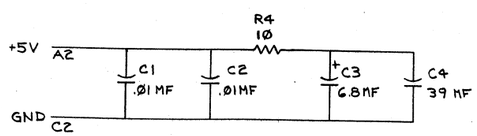
NOTES:

1. UNLESS OTHERWISE SPECIFIED, RESISTORS ARE 1/4W, 5% CAPACITORS ARE 100V, 20% TRANSISTORS ARE 2N3009B
2. DEC 8640 REPLACES OBSOLETE DEC 380.









FREQ	JUMPERS
5KC - 38 KC	W9 OUT
38KC - 500KC	W7,8 OUT
500KC - 1MC	W1,2,7,8 OUT
1MC - 5MC	W1,2,3,4,7,8 OUT

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		X-Y COORDINATE HOLE LOCATION	K-CO-M4050-0-4	1
		ASSY/DRILLING HOLE LAYOUT	D-AH-M4050-0-5	2
		MODULE ECO HISTORY	B-MH-M4050-0-6	3
1		ETCHED CIRCUIT BOARD	5010579	4
1	C6	CAP 39 PF 15V DM	1000010	5
1	C4	CAP 39 MF 10V 10% TANT	1000076	6
2	C8,C11	CAP 680 PF 100V D.M.	1000026	7
2	C1,C2	CAP .01 MF 100V 20% DISC	1001610	8
1	C3	CAP 6.8 MF 35V 10% TANT	1005306	9
2	C7,C5	CAP .033 MF 25V X% DISC	1010873	10
2	C9,C10	CAP 22 PF 100V 5% D.M.	1005820	11
1	R2	RES 330 1/4W 5%	1300295	12
2	R6,R3	RES 3K 1/4W 5%	1300432	13
2	R5,R7	RES 20K 1/4W 5%	1302391	14
1	R4	RES 10 1/4W 5%	1301317	15
1	R1	RES 220K 1/4W 5%	1302092	16
2	Q1,Q2	TRANS DEC 3009B	1503100	17
1	E2	I.C. DEC 8640	1911469	18
1	E1	I.C. DEC 74121	1910230	19
1		BRACKET, CRYSTAL HOLDER	5303154	20
1		BRACKET, REAR SUPPORT	5302825	21
3		NUT HEX #2-56	9006555	22
3		SCREW, PH #2-56X 1/4	9006001-1	23
1	Y1	CRYSTAL (CUSTOMER WILL SPECIFY)		24
2		CRYSTAL SOCKET	1202812	25
10	W1 THRU W10	BUSS WIRE	9107560-01	26
2		EYELET (GS4-7 STIMPSON)	9006732	27
1		HANDLE-MAGENTA	9008337-06	28
1	C12	330 PF 100V 5 %	1000023	29

PARTS LIST

ETCH BOARD REV D

FIRST USED ON OPTION MODEL

DEC. IC 8640	1	8
IC TYPE	GND	+ 5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

BRUNING 40-522 16699
DEC FORM NO. DRD-135A

REV	CHANGE NO.	CHK	ORIGINATED
C			M4050-00001 D. Bernanos 11-28-73
D			S.SHAMMAS 12-4-73
E			M4050-00002 H. Simmons 12-3-74 S.SHAMMAS

REVISIONS

DEC NO.	EIA NO.	DEC NO.	EIA NO.
DEC 3009-B	2N3646		

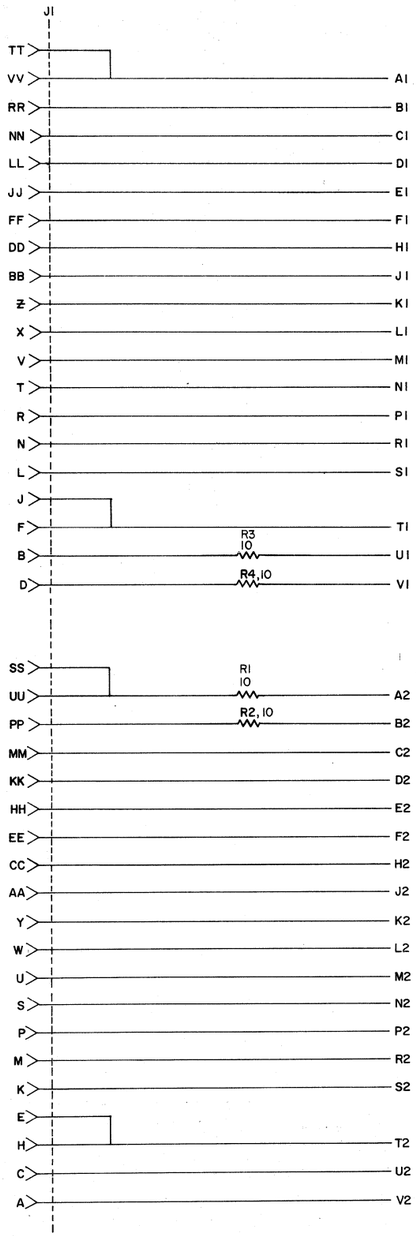
SEMICONDUCTOR CONVERSION CHART

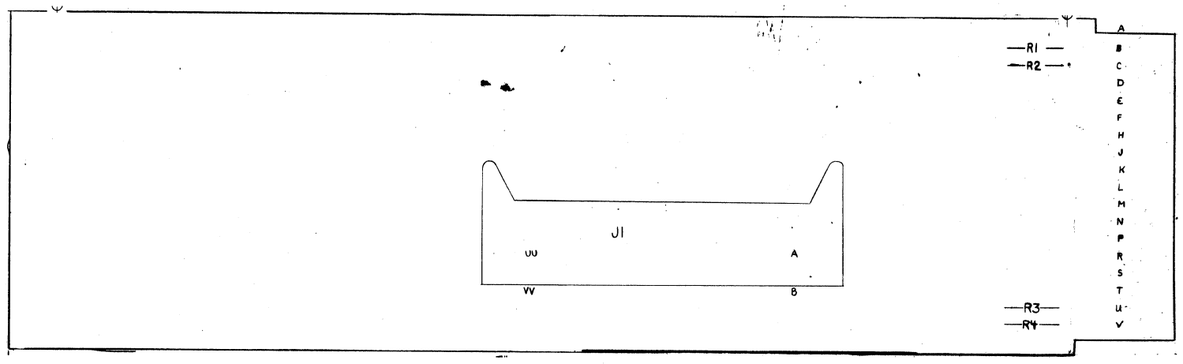
DRN. D. Sullivan 9/20/73
CHK'D. M. Paine DATE 10/4/73
ENG. S. Shammas DATE 10-16-73
PROJ. ENG. S. Shammas DATE 10-16-73
PROD. R. Wil DATE 10-23-73
NEXT HIGHER ASSY
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CRYSTAL CLOCK

SIZE D | CODE CS | NUMBER M4050-0-1 | REV. E
DIST.





QTY.	REF. DESIGNATION	DESCRIPTION	DEC PART NO.	ITEM NO.
		PARTS LIST		
1		HANDLE, FLIP CHIP - MAGENTA	9008337-06	8
2		EYELET	9006732	7
4	R1, 2, 3, 4,	RES. 10 ¼W 10%	1300170	6
1	J1	BERG HEADER	1209941	5
1	.	ETCHED CIRCUIT BOARD	5009754	4
		MODULE ECO HISTORY	B-MH-M971-0-6	3
		ASSY/DRILLING HOLE LAYOUT	D-AH-M971-0-5	2
		X-Y COORDINATE HOLE LOCATION	K-CO-M971-0-4	1

REVISIONS					
CHR	CHG NO.	REV.			
			DRN	B.F. Haile	DATE 9/20/71
			CHK'D	NANCY MOORE	DATE 10-1-71
			ENG		DATE
			PROD		DATE

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE CABLE INTERFACE BOARD #2

SIZE	CODE	NUMBER	REV.
D	CS	M971-0-1	A

PRINTED CIRCUIT REV. B

DEC FORM NO. DRD 116

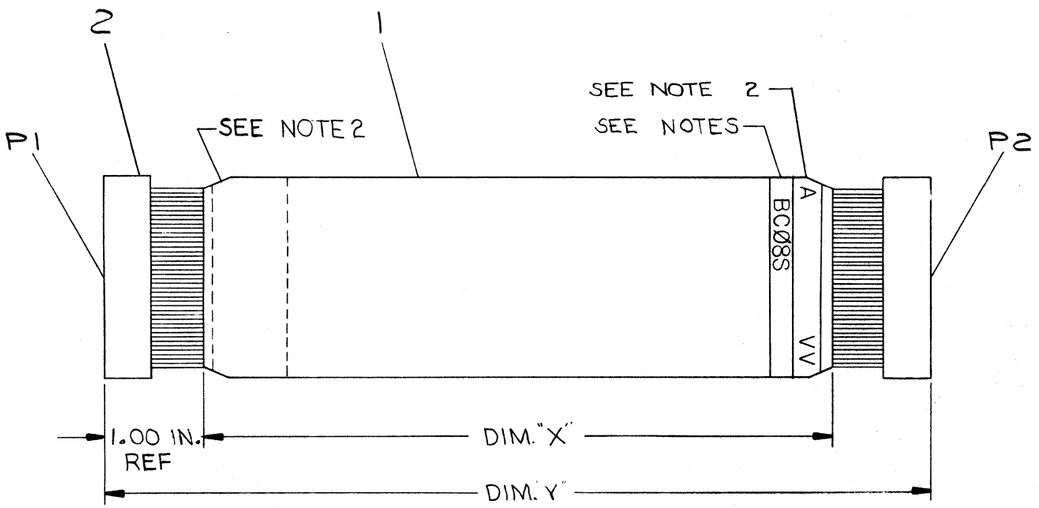
SIZE D | CODE CS | NUMBER M971-0-1 | REV A

LEGEND

NUMBER	DIM. X VAR.	DIM. Y REF
BC08S-1	10.00 IN. ±1.00 IN.	1.00FT ±1.00IN.
BC08S-15	15.0FT. $^{+5.00 IN.}_{-0.00 IN.}$	15 FT. 2 IN. $^{+5.00IN.}_{-0.00IN.}$
BC08S-25	25.0FT. ± 3IN.	25FT. 2IN. ±3IN.
BC08S-2K	2.0 FT 9IN ±1.0IN	2.0FT. 11IN ±1.0IN
BC08S-10	10.0 FT. ± 2 IN.	10FT. 2IN. ±2IN.
BC08S-7	7.0 FT. ± 2IN.	7FT. 2IN. ±2IN.
BC08S-1B	14IN. ± 1 IN.	16 IN. ± 1 IN.
BC08S-5L	70IN. ± 1.5IN.	72IN. ± 1.5IN.

NOTES:

1. CONNECTORS P1 AND P2 ARE TO BE WIRED POINT TO POINT.
2. CONNECTOR LEGEND IDENTIFICATION TO BE PLACED ON SHIELD SIDE OF CABLE AT ONE END. AND WIRE SIDE OF CABLE ON THE OTHER END.
3. MUST BE ASSEMBLED TO PROCESS SPECIFICATION 76-06485-0-0.
4. INSPECTION AND TEST STAMPS TO BE PLACED AT EACH END OF THE CABLE ASSEMBLY.
5. THE NUMBER BC08S MUST BE ON THE CABLE IN CONJUNCTION WITH CONNECTOR LEGEND IDENTIFICATION.



ITEM NO.	PART NO.	DESCRIPTION	QTY.
2	1211206	CONNECTOR 40 SOCKET	2
1	1700004	CABLE, FLAT 40 COND	A/R

PARTS LIST

FIRST USED ON OPTION/MODEL: L AB8-E

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

MATERIAL: —
FINISH: —

		DATE
DRN.	J. Ferguson	5-12-71
CHK'D.	D. X. Grabe	5-13-71
ENG.	D. X. Grabe	5-13-71
PROJ. ENG.		
PROD.		5/1/71

NEXT HIGHER ASSY.: A-PL-DR8-EA-0

SCALE: NONE
SHEET 1 OF 1

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
I/O CABLE ASSY (DIAG. JUMPER)

SIZE	CODE	NUMBER	REV.
C	IA	BC08S-0-0	K

DIST. G

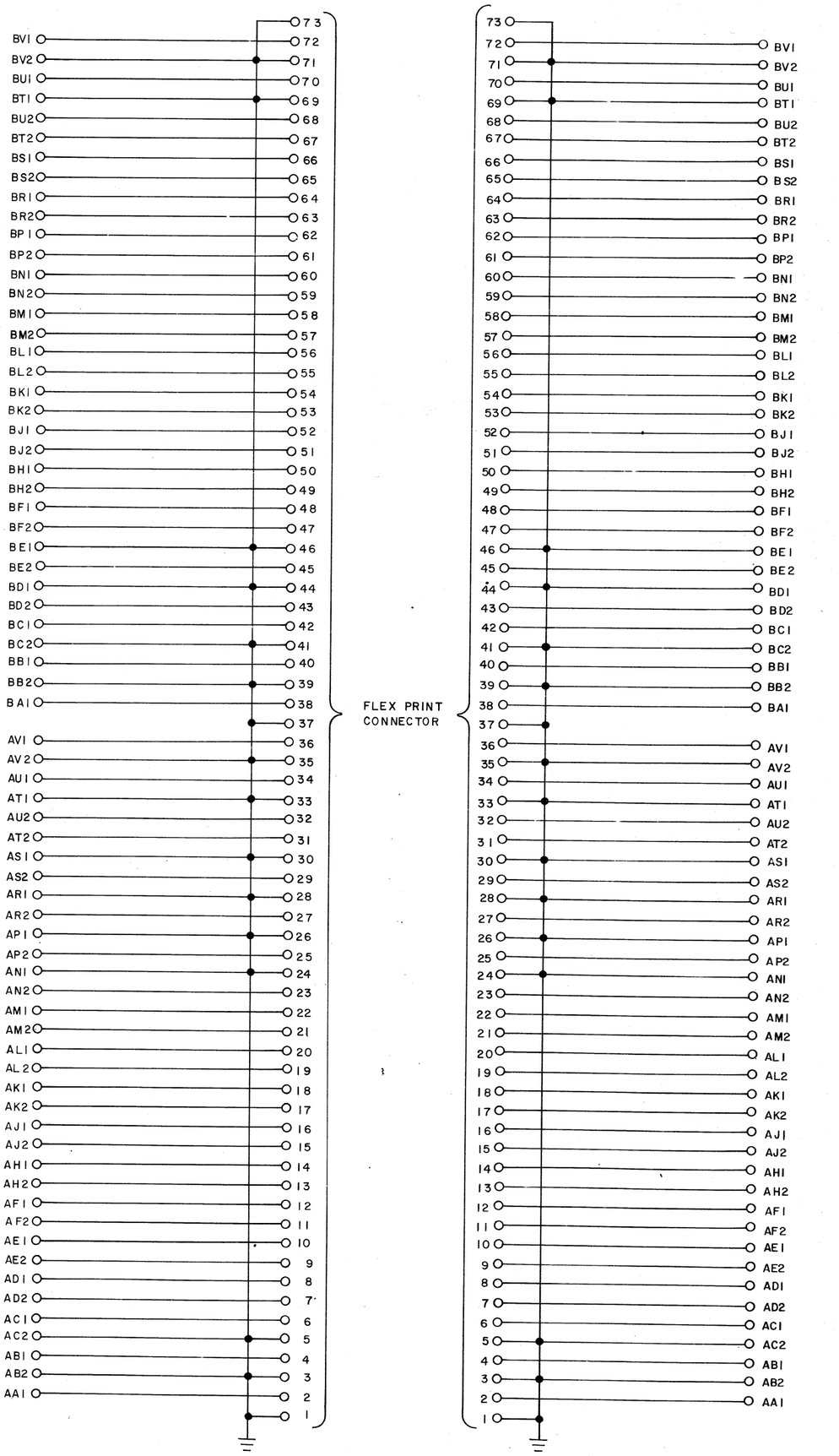
REVISIONS

REV.	CHANGE NO.			
A	BC08S-00001 THIS DWG WAS 7008418-0-0	12-2-71	A. WALLACK	12/2/71
B	BC08S-00002	V. BASTIANI 1-3-72		1-3-72
C	BC08S-00003	6-23-72	ANDERSON	
D	BC08S-00004	B. B. Coolidge 8-9-73	A. WALLACK	A. Wallack
E	BC08S-00005	E. ALLain 2-26-74	WALLACK	8 Mar '74
F	BC08S-00006	S. MANKIEWICZ 5-10-74	R. ALLEN	
H	BC08S-00007	8-30-74	A. WALLACK	9-4-74
J	BC08S-00008	6-9-75	A. WALLACK	6-11-75
K	LA36-00112	6-26-75	A. GERSHNOW	Roy Zmicka 6-26-75

DEC FORM NO. DRC 100-A

DEC FORM NO. DRO-102

REVISIONS		
CHK	CHG NO.	REV.
	00001	A
	00002	B



DRN	DATE
CHK'D	DATE
ENG	DATE
CHK	DATE
PROD	DATE

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: INTERNAL BUS CONNECTOR M920

SIZE	CODE	NUMBER	REV.
C	CS	M920-0-1	B

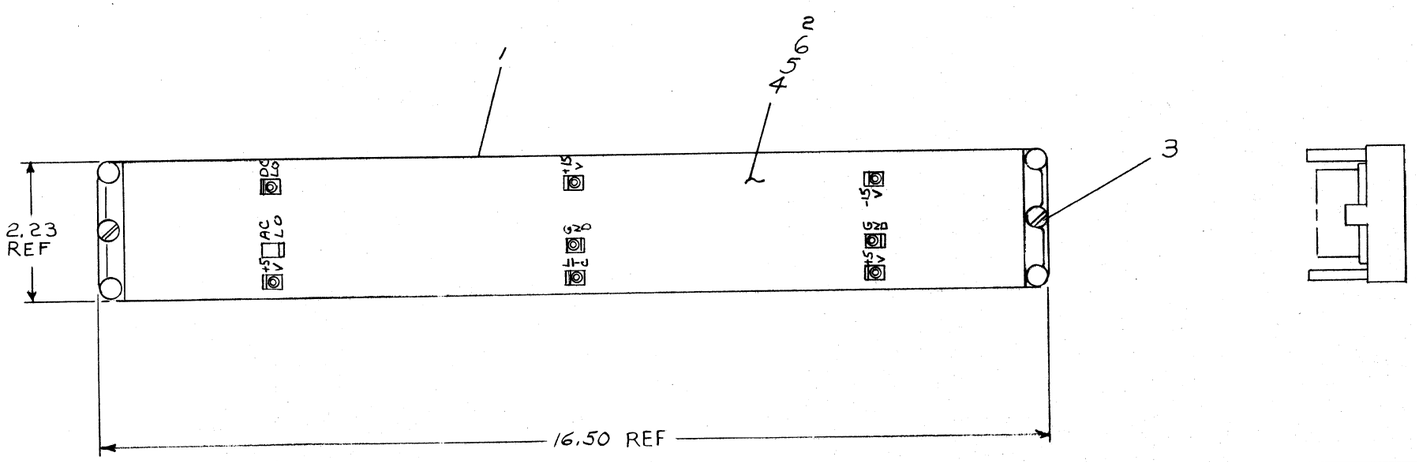
PRINTED CIRCUIT REV.

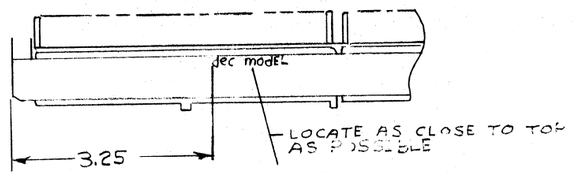
B	

SIZE C | CODE CS | NUMBER M920-0-1 | REV. B

WIRE TABLE FOR DQ11-AA

ITEM NO	SIGNAL NAME	FROM PIN	TO PIN	COLOR	AWG
5	-15	DQ1 B2	WIRE WRAP PIN A -15 V LUG	BLU	# 24
4	+15	DQ1 N2	WIRE WRAP AT +15 V LUG	ORG	#24
6	BUS AC LO	BØ1F1	WIRE WRAP PIN AT AC LO LUG	YEL	#3Ø
6	BUS DC LO	BØ1 F2	WIRE WRAP PIN AT DC CLO LUG	YEL	#3Ø
7	TIME OUT(1) H	BØ2 C1	EØ4 S2	WHITE	#30 TWP
	GND	BØ2 C2	EØ4 T1	BLK	





REVISIONS	REV.	CHK	
CHANGE NO. DQ11AA-00003	A	EW	4-14-75
R. LISEE			4-16-75
DQ11-00003	B	EW	8-21-75
R. LISEE			8-22-75

A/R	#30 SOLID CONDUCTOR KYNAR	9107675-09	8
REF	AWT REVISION STATUS	A-WT-7009467-0	7
A/R	#3Ø SOLID CONDUCTOR KYNAR	9105740-Ø4	6
A/R	#24 SOLID CONDUCTOR KYNAR	9107688-Ø6	5
A/R	#24 SOLID CONDUCTOR KYNAR	9107688-Ø3	4
2	SCR CAPTIVE	9008167	3
1	WIRE LIST (DQ11-AA)	K-WL-DQ11-Ø-12	2
1	BACK PANEL	D-IA-7009152-00	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: DQ11

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

		DATE
DRN. E. Wilson		5/21/73
CHK'D. Kent Olga		12/6/73
ENG. R. Lisee		12-10-73
PROJ. ENG. R. Lisee		12-10-73
PROD. R. Wall		12-11-73

NEXT HIGHER ASSY. A-PL-DQ11-Ø-Ø
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: WIRED ASS'Y (DQ11-AA)

SIZE	CODE	NUMBER	REV.
C	IA	7009467-0-0	B

DIST.

DEC FORM NO. DRC 100-B

SIZE C CODE IA NUMBER 7009467-0-0 REV. B

REV.	NUMBER	SIZE	CODE
D	DQ11-0-12	K	WL

REVISIONS	CHANGE NO.	CHK
A	DQ11AA-00001	BM
	E. ALLain 12-19-73	
	LISEE	
	R. Lisee 1-14-74	
B	DQ11AA-00002	
	L Makesavage 1-30-74	
	R. LISEE	
	R Lisee 2-25-74	
C	DQ11AA-00003	
D	DQ11-00003	

FIRST USED ON OPTION MODEL
DQ11

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN. E. Wilson	DATE 8/31/73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 10/22/73	
ENG.	DATE 11/16/73	
PROJ. ENG.	DATE 11/16/73	
PROD. R Davis	DATE 11/21/73	
NEXT HIGHER ASSEMBLY D-AD-7009467-0-0		
SCALE NONE		
SHEET 1 OF 1		

TITLE

WIRE LIST
(DQ11-AA)

SIZE	CODE	NUMBER	REV.
K	WL	DQ11-0-12	D

DIST.

DEC FORM NO.
DRB 109

DQ11AA.D HND288.V23(23) 05/24/74 PAGE 1

30-AUG-75 914

RUN NAME	A/P	PIN NAME	PIN ORDER	BAY - ORDER	LENGTH	EXCEPTIONS	Q	DRAW	RV	PG	Y	X	REMARKS	RUN NUMBER
						1=PIN RUN								1
+15V		D01N2												2
														2
-15V		D01A1		1=01			*							2
-15V		D01B2		1=02			*							2-6/8
-15V				1										
A01A2		A01A2		1=01			*	D01						3
A01A2		A04A2		1=02			*	D01						3
A01A2				1										3-6/8
B01A2		B01A2		1=01			*	D01						4
B01A2		B04A2		1=02			*	D01						4
B01A2				1										3=6/8
BUS A00	L	A03J1		1=01			*	D14.1						5
BUS A00	L	B04H2		1=02			*	D01						5
BUS A00	L	B01H2		1=03			*	D01						5
BUS A00	L	F01H2		1=04			*	D03						5
				1										21=6/8
BUS A01	L	A03L1		1=01			*	D14.1						6
BUS A01	L	B04H1		1=02			*	D01						6
BUS A01	L	B01H1		1=03			*	D01						6
BUS A01	L	F01H1		1=04			*	D03						6
				1										2=3
BUS A02	L	A03M1		1=01			*	D14.1						7
BUS A02	L	B04J2		1=02			*	D01						7
BUS A02	L	B01J2		1=03			*	D01						7
BUS A02	L	F01F1		1=04			*	D03						7
				1										6=2
BUS A03	L	A03K1		1=01			*	D14.1						8
BUS A03	L	B04J1		1=02			*	D01						8
BUS A03	L	B01J1		1=03			*	D01						8
BUS A03	L	F01V2		1=04			*	D03						8
				1										22=2/8
BUS A04	L	A03N1		1=01			*	D14.1						9
BUS A04	L	B04K2		1=02			*	D01						9
BUS A04	L	B01K2		1=03			*	D01						9
BUS A04	L	F01U2		1=04			*	D03						9
				1										22=4/8

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RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - ORDER	Q	DRAW	RV	PG	Y	X	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A05	L	A03U1		1-01	*	D14	1							10
BUS A05	L	B04K1		1-02	*	D01								10
BUS A05	L	B01K1		1-03	*	D01								10
BUS A05	L	F01V1		1-04	*	D03						22-0/8		10
BUS A05				1										
BUS A06	L	A03V1		1-01	*	D14	1							11
BUS A06	L	B04L2		1-02	*	D01								11
BUS A06	L	B01L2		1-03	*	D01								11
BUS A06	L	F01U1		1-04	*	D03						22-2/8		11
BUS A06				1										
BUS A07	L	A03P1		1-01	*	D14	1							12
BUS A07	L	B04L1		1-02	*	D01								12
BUS A07	L	B01L1		1-03	*	D01								12
BUS A07	L	F01P2		1-04	*	D03						22-0/8		12
BUS A07				1										
BUS A08	L	R04M2		1-01	*	D01	1							13
BUS A08	L	B03F1		1-02	*	D14	2							13
BUS A08	L	B01M2		1-03	*	D01								13
BUS A08	L	F01N2		1-04	*	D03						19-6/8		13
BUS A08				1										
BUS A09	L	B03J1		1-01	*	D14	2							14
BUS A09	L	B04M1		1-02	*	D01								14
BUS A09	L	B01M1		1-03	*	D01								14
BUS A09	L	F01R1		1-04	*	D03						6-4		14
BUS A09				1										
BUS A10	L	B04N2		1-01	*	D01								15
BUS A10	L	B03K1		1-02	*	D14	2							15
BUS A10	L	B01N2		1-03	*	D01								15
BUS A10	L	F01P1		1-04	*	D03						20-3/8		15
BUS A10				1										
BUS A11	L	B04N1		1-01	*	D01								16
BUS A11	L	B03H1		1-02	*	D14	2							16
BUS A11	L	B01N1		1-03	*	D01								16
BUS A11	L	F01L1		1-04	*	D03						20-0/8		16
BUS A11				1										
BUS A12	L	R04P2		1-01	*	D01								16
BUS A12	L	B03N1		1-02	*	D14	2							16
BUS A12	L	A01P2		1-03	*	D01								16
BUS A12	L	F01C1		1-04	*	D03						6-1		16
BUS A12				1										
														17
														17
														17
												19-5/8		17
														17
														17
												19-0/8		17

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RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - ORDER	Q	DRAW	RV	PG	Y	X	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A13	L	B04P1		1-01	*	D01								18
BUS A13	L	R03S1		1-02	*	D14	2							18
BUS A13	L	A01P1		1-03	*	D01								18
BUS A13	L	F01K2		1-04	*	D03						19-0/8		18
BUS A13				1										
BUS A14	L	R04R2		1-01	*	D01								19
BUS A14	L	B03R1		1-02	*	D14	2							19
BUS A14	L	B01R2		1-03	*	D01								19
BUS A14	L	F01K1		1-04	*	D03						18-4/8		19
BUS A14				1										
BUS A15	L	R04R1		1-01	*	D01								20
BUS A15	L	B03P1		1-02	*	D14	2							20
BUS A15	L	B01R1		1-03	*	D01								20
BUS A15	L	F01D2		1-04	*	D03						18-0/8		20
BUS A15				1										
BUS A16	L	R01S2		1-01	*	D01								21
BUS A16	L	B04S2		1-02	*	D01								21
BUS A16	L	C03H2		1-03	*	D14	2							21
BUS A16	L	F01E2		1-04	*	D03						18-2/8		21
BUS A16				1										
BUS A17	L	B04S1		1-01	*	D01								22
BUS A17	L	B01S1		1-02	*	D01								22
BUS A17	L	C03C1		1-03	*	D14	2							22
BUS A17	L	F01D1		1-04	*	D03						18-2/8		22
BUS A17				1										
BUS AC LO	L	B01F1		1-01	*	D01								23
BUS AC LO	L	B04F1		1-02	*	D01								23
BUS AC LO				1								3-6/8		23
BUS BBSY	L	A01P2		1-01	*	D01								24
BUS BBSY	L	A04P2		1-02	*	D01								24
BUS BBSY	L	C04D1		1-03	*	D03								24
BUS BBSY				1								10-5/8		24
BUS BG 04 IN	H	B01E2		1-01	*	D14	5							25
BUS BG 04 IN	H	F03F1		1-02	*	D14	5							25
BUS BG 04 IN				1								13-2/8		25
BUS BG 04 OUT	H	R04E2		1-01	*	D14	5							26
BUS BG 04 OUT	H	F03F2		1-02	*	D14	5							26
BUS BG 04 OUT				1								13-2/8		26

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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
BUS BG 05 IN	H	B01B1		1-01	*	D14		5							27
BUS BG 05 IN	H	F03E1		1-02	*	D14		5							27
BUS BG 05 IN				1											
BUS BG 05 OUT	H	B04B1		1-01	*	D14		5							28
BUS BG 05 OUT	H	F03E2		1-02	*	D14		5							28
BUS BG 05 OUT				1											
BUS BG 06 IN	H	B01A1		1-01	*	D14		5							29
BUS BG 06 IN	H	F03D1		1-02	*	D14		5							29
BUS BG 06 IN				1											
BUS BG 06 OUT	H	B04A1		1-01	*	D14		5							30
BUS BG 06 OUT	H	F03D2		1-02	*	D14		5							30
BUS BG 06 OUT				1											
BUS BG 07 IN	H	A01V1		1-01	*	D14		5							31
BUS BG 07 IN	H	F03B1		1-02	*	D14		5							31
BUS BG 07 IN				1											
BUS BG 07 OUT	H	A04V1		1-01	*	D14		5							32
BUS BG 07 OUT	H	F03C1		1-02	*	D14		5							32
BUS BG 07 OUT				1											
BUS BR 4	L	B01D2		1-01	*	D01									33
BUS BR 4	L	B04D2		1-02	*	D01									33
BUS BR 4	L	E03V1		1-03	*	D14		5							33
BUS BR 4				1											
BUS BR 5	L	B01C1		1-01	*	D01									34
BUS BR 5	L	B04C1		1-02	*	D01									34
BUS BR 5	L	E03U1		1-03	*	D14		5							34
BUS BR 5				1											
BUS BR 6	L	A01U2		1-01	*	D01									35
BUS BR 6	L	A04U2		1-02	*	D01									35
BUS BR 6	L	E03V2		1-03	*	D14		5							35
BUS BR 6				1											
BUS BR 7	L	A01T2		1-01	*	D01									36
BUS BR 7	L	A04T2		1-02	*	D01									36
BUS BR 7	L	E03U2		1-03	*	D14		5							36

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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
BUS C0	L	B04U2		1-01	*	D.									37
BUS C0	L	B01U2		1-02	*	D01									37
BUS C0	L	F01J2		1-03	*	D03									37
BUS C0				1											
BUS C1	L	B01T2		1-01	*	D01									38
BUS C1	L	B04T2		1-02	*	D01									38
BUS C1	L	C03K2		1-03	*	D14		3							38
BUS C1	L	F01F2		1-04	*	D03									38
BUS C1				1											
BUS D00	L	A01C1		1-01	*	D01									39
BUS D00	L	A02F1		1-02	*	D05									39
BUS D00	L	A04C1		1-03	*	D01									39
BUS D00				1											
BUS D01	L	A01D2		1-01	*	D01									40
BUS D01	L	A02F2		1-02	*	D05									40
BUS D01	L	A04D2		1-03	*	D01									40
BUS D01				1											
BUS D02	L	A01D1		1-01	*	D01									41
BUS D02	L	A04D1		1-02	*	D01									41
BUS D02	L	A02P2		1-03	*	D05									41
BUS D02	L	C04E2		1-04	*	D03									41
BUS D02				1											
BUS D03	L	A04E2		1-01	*	D01									42
BUS D03	L	A01E2		1-02	*	D01									42
BUS D03	L	A02R1		1-03	*	D05									42
BUS D03	L	C04L1		1-04	*	D03									42
BUS D03				1											
BUS D04	L	A01E1		1-01	*	D01									43
BUS D04	L	A02H2		1-02	*	D05									43
BUS D04	L	A04E1		1-03	*	D01									43
BUS D04	L	C04N2		1-04	*	D03									43
BUS D04				1											
BUS D05	L	A01F2		1-01	*	D01									44
BUS D05	L	A02H1		1-02	*	D05									44
BUS D05	L	A04F2		1-03	*	D01									44
BUS D05	L	C04F1		1-04	*	D03									44
BUS D05				1											

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
L	A01F1		1-01	*	D01					1				45
L	A02M2		1-02	*	D05					2				45
L	A04F1		1-03	*	D01					1				45
L	C04F2		1-04	*	D03							14-4/8		45
			1											
L	A01H2		1-01	*	D01					1				46
L	A02N2		1-02	*	D05					2				46
L	A04H2		1-03	*	D01					1		3-6		46
L	C04H1		1-04	*	D03							14-7/8		46
			1											
L	A01H1		1-01	*	D01					1				47
L	A02K1		1-02	*	D06					2				47
L	A04H1		1-03	*	D01					1		3-6		47
L	C04K1		1-04	*	D03							14-5/8		47
			1											
L	A02P1		1-01	*	D06					2				48
L	A01J2		1-02	*	D01					1				48
L	A04J2		1-03	*	D01							6-6/8		48
			1											
L	A01J1		1-01	*	D01					2				49
L	A02L2		1-02	*	D06					1				49
L	A04J1		1-03	*	D01							6-4/8		49
			1											
L	A01K2		1-01	*	D01					2				50
L	A02J2		1-02	*	D06					1				50
L	A04K2		1-03	*	D01							6-2/8		50
			1											
L	A01K1		1-01	*	D01					2				51
L	A02M1		1-02	*	D06					1				51
L	A04K1		1-03	*	D01							6-4/8		51
			1											5
L	A01L2		1-01	*	D01					1				52
L	A02L1		1-02	*	D06					2				52
L	A04L2		1-03	*	D01							6-0/8		52
			1											
L	A01L1		1-01	*	D01					2				53
L	A02K2		1-02	*	D06					1				53
L	A04L1		1-03	*	D01							6-2/8		53
			1											

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
L	A01M2		1-01	*	D01					1				54
L	A02N1		1-02	*	D06					2				54
L	A04M2		1-03	*	D01							6-2/8		54
			1											
L	B01F2		1-01	*	D01					1				55
L	B04F2		1-02	*	D01							3-6/8		55
			1											
L	A01A1		1-01	*	D01					2				56
L	A04A1		1-02	*	D01					1				56
L	D03E1		1-03	*	D14,4							14-6/8		56
			1											
L	A01B1		1-01	*	D01					2				57
L	A04B1		1-02	*	D01					1				57
L	C04M1		1-03	*	D03							12-4/8		57
			1											
L	B01V1		1-01	*	D01					2				58
L	B04V1		1-02	*	D01					1				58
L	E04T2		1-03	*	D04					2		2-2		58
L	F01E1		1-04	*	D03							18-7/8		58
			1											
H	A01U1		1-01	*	D01					1				59
H	C04B1		1-02	*	D03							6-4/8		59
			1											
H	A04U1		1-01	*	D01					1				60
H	C04V2		1-02	*	D03							8-0/8		60
			1											
L	A01S2		1-01	*	D01					2				61
L	A04S2		1-02	*	D01					1		3-2		61
L	C04J1		1-03	*	D03									61
L	C04U2		1-04	*	D03							14-3/8		61
			1											
L	A01M1		1-01	*	D01					1				62
L	A04M1		1-02	*	D01							3-6/8		62
			1											
L	A01N2		1-01	*	D01					1				63
L	A04N2		1-02	*	D01							3-6/8		63
			1											

DQ11AA.D RUN NAME
BUS D06
BUS D06
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BUS DC LO
BUS INIT
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BUS INIT
BUS INIT
BUS INTR
BUS INTR
BUS INTR
BUS INTR
BUS MSYN
BUS MSYN
BUS MSYN
BUS MSYN
BUS NPG IN
BUS NPG IN
BUS NPG IN
BUS NPG OUT
BUS NPG OUT
BUS NPG OUT
BUS NPR
BUS NPR
BUS NPR
BUS NPR
BUS NPR
BUS PA
BUS PA
BUS PA
BUS PB
BUS PB
BUS PB

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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
BUS SACK	L	A01R2		1-01	*	D01					2				64
BUS SACK	L	A04R2		1-02	*	D01					1				64
BUS SACK	L	C04T2		1-03	*	D03							11-4/8		64
BUS SACK				1											
BUS SSYN	L	B01U1		1-01	*	D01					2				65
BUS SSYN	L	B04U1		1-02	*	D01					1				65
BUS SSYN	L	C04C1		1-03	*	D03					2				65
BUS SSYN	L	D03L1		1-04	*	D14,4					1				65
BUS SSYN	L	F01J1		1-05	*	D03							20-6/8		65
BUS SSYN				1											
CO	H	C01P2		1-01	*	D02					1				66
CO	H	D01H2		1-02	*	D02							4-2/8		66
CO				1											
CS	H	C01K2		1-01	*	D02					1				67
CS	H	D01M2		1-02	*	D02							5-2/8		67
CS				1											
D01R2		C01R2		1-01	*	D02					1				68
D01R2		D01R2		1-02	*	D02							5-0/8		68
D01R2				1											
D01T2		C01E1		1-01	*	2					2				69
D01T2		C01L2		1-02	*	D02					1				69
D01T2		D01T2		1-03	*	D02							9-0/8		69
D01T2				1											
D01V1		C01E2		1-01	*	D02					1				70
D01V1		D01V1		1-02	*	D02							6-6/8		70
D01V1				1											
D1-1 CO	H	D01B1		1-01	*	D01					2				71
D1-1 CO	H	E01A1		1-02	*	D13					1				71
D1-1 CO	H	E02V2		1-03	*	D06							9-4/8		71
D1-1 CO				1											
D1-1 CS	H	D01F2		1-01	*	D01					1				72
D1-1 CS	H	E01B1		1-02	*	D13					2				72
D1-1 CS	H	E02L1		1-03	*	D06							8-0/8		72
D1-1 CS				1											
D1-1 DS RDY	H	D01D2		1-01	*	D06					1				73
D1-1 DS RDY	H	F02K1		1-02	*	D06							5-4/8		73
D1-1 DS RDY				1											

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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
D1-1 RECEIVE DATA	L	D01D1		1-01	*	D01					1				74
D1-1 RECEIVE DATA	L	F02E2		1-02	*	D01							5-2/8		74
D1-1 RECEIVE DATA				1											
D1-1 RING	H	D01C1		1-01	*	D06					1				75
D1-1 RING	H	E02L2		1-02	*	D06					2				75
D1-1 RING	H	E01U2		1-03	*	D13							9-4/8		75
D1-1 RING				1											
D1-1 SCR	H	D01H1		1-01	*	D01					1				76
D1-1 SCR	H	E02D2		1-02	*	D01							4-6/8		76
D1-1 SCR				1											
D1-1 SCT	H	D01K1		1-01	*	D01					1				77
D1-1 SCT	H	E02F1		1-02	*	D01							4-6/8		77
D1-1 SCT				1											
D1-1 SCTE	H	D01S1		1-01	*	D08					1				78
D1-1 SCTE	H	D02V1		1-02	*	D08							3-2/8		78
D1-1 SCTE				1											
D2-1 BAIT	L	B02L1		1-01	*	D08					1				79
D2-1 BAIT	L	E01S1		1-02	*	D13							11-0/8		79
D2-1 BAIT				1											
D2-1 DATA SET IE (1)	H	E01J1		1-01	*	D13					1				80
D2-1 DATA SET IE (1)	H	F02D2		1-02	*	D05							5-0/8		80
D2-1 DATA SET IE (1)				1											
D2-1 DATA SET INTR (1)	H	E01S2		1-01	*	D13					1				81
D2-1 DATA SET INTR (1)	H	E02U1		1-02	*	D06							2-6/8		81
D2-1 DATA SET INTR (1)				1											
D2-1 DATA TERM RDY	H	D01P2		1-01	*	D13					1				82
D2-1 DATA TERM RDY	H	E01L2		1-02	*	D13							4-4/8		82
D2-1 DATA TERM RDY				1											
D2-1 DS INTR	L	D03R2		1-01	*	D14,5					1				83
D2-1 DS INTR	L	E01N2		1-02	*	D13							5-0/8		83
D2-1 DS INTR				1											
D2-1 DTR (1)	H	E01H1		1-01	*	D13					1				84
D2-1 DTR (1)	H	E02V1		1-02	*	D06							4-0/8		84
D2-1 DTR (1)				1											

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW	RV	PG	Y	X	Z	REMARKS	30-AUG-75 LENGTH	914 EXCEPTIONS	PAGE 10 RUN NUMBER
D2=1 REQUEST TO SEND	H	D01S2		1=01	*	D02									85
D2=1 REQUEST TO SEND	H	E01F2		1=02	*	D13									85
D2=1 REQUEST TO SEND				1									3=6/8		85
D2=1 RS (1)	H	E01F1		1=01	*	D13									86
D2=1 RS (1)	H	E02S1		1=02	*	D06									86
D2=1 RS (1)				1									3=6/8		86
D2=1 UO 13 (1)	H	E01N1		1=01	*	D13									87
D2=1 UO 13 (1)	H	E02J2		1=02	*	D06									87
D2=1 UO 13 (1)				1									3=2/8		87
D2=1 UO 14 (1)	H	E01V1		1=01	*	D13									88
D2=1 UO 14 (1)	H	E02K2		1=02	*	D06									88
D2=1 UO 14 (1)				1									3=6/8		88
D3=1 BR	L	C04P1		1=01	*	D03									89
D3=1 BR	L	F03A1		1=02	*	D14,5									89
D3=1 BR				1									9=0/8		89
D3=1 IN	H	C02D1		1=01	*	D08									90
D3=1 IN	H	F01M1		1=02	*	D03									90
D3=1 IN				1									11=4/8		90
D3=1 INTR B DONE	H	C04M2		1=01	*	D03									91
D3=1 INTR B DONE	H	C04S1		1=02	*	D03									91
D3=1 INTR B DONE	H	D03N2		1=03	*	D14,5									91
D3=1 INTR B DONE				1									7=6/8		91
D3=1 KA CRYSTAL CLOCK	H	D04D2		1=01	*	D04									92
D3=1 KA CRYSTAL CLOCK	H	E02C1		1=02	*	D08									92
D3=1 KA CRYSTAL CLOCK				1									5=2/8		92
D3=1 MASTER A	L	A03K2		1=01	*	D14,1									93
D3=1 MASTER A	L	C04N1		1=02	*	D03									93
D3=1 MASTER A	L	E04N2		1=03	*	D04									93
D3=1 MASTER A				1									16=0/8		93
D3=1 OUT HIGH	H	C02J1		1=01	*	D09									94
D3=1 OUT HIGH	H	C03M1		1=02	*	D14,4									94
D3=1 OUT HIGH	H	E01D1		1=03	*	D13									94
D3=1 OUT HIGH	H	F01M2		1=04	*	D03									94
D3=1 OUT HIGH				1									16=0/8		94

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW	RV	PG	Y	X	Z	REMARKS	30-AUG-75 LENGTH	914 EXCEPTIONS	PAGE 11 RUN NUMBER
D3=1 OUT LOW	H	C03U1		1=01	*	D14.4									95
D3=1 OUT LOW	H	C02S1		1=02	*	D09									95
D3=1 OUT LOW	H	F01N1		1=03	*	D03									95
D3=1 OUT LOW				1									13=2/8		95
D3=1 SEL 00	H	B02J2		1=01	*	D08									96
D3=1 SEL 00	H	F01S2		1=02	*	D03									96
D3=1 SEL 00				1									14=0/8		96
D3=1 SEL 02	H	C02E2		1=01	*	D08									97
D3=1 SEL 02	H	E01C1		1=02	*	D13									97
D3=1 SEL 02	H	F01T2		1=03	*	D03									97
D3=1 SEL 02				1									14=6/8		97
D3=1 SEL 04	H	B02K2		1=01	*	D08									98
D3=1 SEL 04	H	C03V2		1=02	*	D14.4									98
D3=1 SEL 04	H	F01R2		1=03	*	D03									98
D3=1 SEL 04				1									16=4/8		98
D3=1 SEL 06	H	B03S2		1=01	*	D14.4									99
D3=1 SEL 06	H	C02H1		1=02	*	D08									99
D3=1 SEL 06	H	F01S1		1=03	*	D03									99
D3=1 SEL 06				1									15=6/8		99
D4=1 D00	H	A02A1		1=01	*	D05									100
D4=1 D00	H	A03L2		1=02	*	D14,1									100
D4=1 D00				1									3=6/8		100
D4=1 D01	H	A02C1		1=01	*	D05									101
D4=1 D01	H	A03N2		1=02	*	D14,1									101
D4=1 D01				1									3=6/8		101
D4=1 D02	H	A03P2		1=01	*	D14,1									102
D4=1 D02	H	B02J1		1=02	*	D05									102
D4=1 D02				1									2=2		102
D4=1 D03	H	A03M2		1=01	*	D14,1									103
D4=1 D03	H	B02F2		1=02	*	D05									103
D4=1 D03				1									4=6/8		103
D4=1 D04	H	B03A1		1=01	*	D14,1									104
D4=1 D04	H	C02T2		1=02	*	D05									104
D4=1 D04	H	E01L1		1=03	*	D13									104
D4=1 D04				1									14=0/8		104

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RUN NAME

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A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X
H	B02D2		1-01	*	D05				
H	B03C1		1-02	*	D14	4			
			1						
H	A02J1		1-01	*	D05				
H	B03D1		1-02	*	D14	1			
			1						
H	A02B1		1-01	*	D05				
H	B03B1		1-02	*	D14	1			
			1						
H	A02E1		1-01	*	D06				
H	B03M1		1-02	*	D14	2			
H	E01E1		1-03	*	D13				
			1						
H	A02D1		1-01	*	D06				
H	B03P2		1-02	*	D14	2			
H	E01M2		1-03	*	D13				
			1						
H	B03R2		1-01	*	D14	2			
H	C02R1		1-02	*	D06				
			1						
H	B03N2		1-01	*	D14	2			
H	C02P1		1-02	*	D06				
			1						
H	C02P2		1-01	*	D06				
H	C03B1		1-02	*	D14	2			
			1						
H	C03E2		1-01	*	D14	2			
H	C02N1		1-02	*	D06				
H	E01P2		1-03	*	D13				
			1						
H	C03F2		1-01	*	D14	2			
H	C02N2		1-02	*	D06				
H	F01R2		1-03	*	D13				
			1						

Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
1				105
				105
		2-4/8		105
1				106
				106
		4-6/8		106
1				107
				107
		5-2/8		107
2				108
1				108
				108
		15-6/8		108
2				109
1				109
				109
		16-6/8		109
1				110
				110
		5-2/8		110
1				111
				111
		5-2/8		111
1				112
				112
		4-0/8		112
2				113
1				113
				113
		11-4/8		113
2				114
1				114
				114
		11-2/8		114

DQ11AA.D
RUN NAME

HND288.V23(23) 05/24/74

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X
H	C03D2		1-01	*	D14	2			
H	C02M1		1-02	*	D06				
H	E01T2		1-03	*	D13				
			1						
H	C02H2		1-01	*	D08				
H	D04B1		1-02	*	D04				
			1						
H	D02S2		1-01	*	D08				
H	D04A1		1-02	*	D04				
			1						
H	D02K1		1-01	*	D08				
H	E03P2		1-02	*	D14	7			
			1						
H	D02L2		1-01	*	D08				
H	E03N2		1-02	*	D14	6			
			1						
H	D02T2		1-01	*	D08				
H	E03M2		1-02	*	D14	7			
			1						
H	D02B1		1-01	*	D08				
H	E03L2		1-02	*	D14	6			
H	F03K2		1-03	*	D14	1			
			1						
H	D04D1		1-01	*	D04				
H	E03S1		1-02	*	D14	7			
H	F02E2		1-03	*	D10				
			1						
H	D01R1		1-01	*	D08				
H	D02S1		1-02	*	D08				
			1						
L	E03H2		1-01	*	D14	7			
L	F02M2		1-02	*	D08				
			1						
H	C01H1		1-01	*	D08				
H	E02A1		1-02	*	D08				
			1						

Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
2				115
1				115
		11-6/8		115
1		2-2		116
				116
		5-1/8		116
1				117
				117
		4-4/8		117
1				118
				118
		5-6/8		118
1				119
				119
		5-2/8		119
1				120
				120
		4-4/8		120
1				121
2				121
				121
		11-2/8		121
1				122
2				122
				122
		10-4/8		122
1				123
				123
		2-6/8		123
1				124
				124
		5-6/8		124
1				125
		3-3		125
		7-3/8		125

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D4-3 TEST LOOP (1)	H	D03A1		1-01 *		D14,4		1				126
D4-3 TEST LOOP (1)	H	D02U2		1-02 *		D08		2				126
D4-3 TEST LOOP (1)	H	E01E2		1-03 *		D13						126
D4-3 TEST LOOP (1)				1						8-0/8		126
D4-3 TX CLOCK	H	D04C1		1-01 *		D04		2				127
D4-3 TX CLOCK	H	E02D1		1-02 *		D08		1				127
D4-3 TX CLOCK	H	E01D2		1-03 *		D13		2				127
D4-3 TX CLOCK	H	E03M1		1-04 *		D14,6						127
D4-3 TX CLOCK				1						11-2/8		127
D4-3 UNDEFINED 02	H	C02V1				D08					1-PIN RUN	128
D4-3 VRC (1)	H	D02L1		1-01 *		D08		1				129
D4-3 VRC (1)	H	D03F1		1-02 *		D08						129
D4-3 VRC (1)				1						3-0/8		129
D4-4 IDLE MODE (1)	H	D03S2		1-01 *		D14,6		1				130
D4-4 IDLE MODE (1)	H	E02P2		1-02 *		D09						130
D4-4 IDLE MODE (1)				1						4-6/8		130
D4-4 LD RX 15-8	H	C02J2		1-01 *		D09		1				131
D4-4 LD RX 15-8	H	E01M1		1-02 *		D13		2				131
D4-4 LD RX 15-8	H	F04B1		1-03 *		D04		1				131
D4-4 LD RX 15-8	H	F03M2		1-04 *		D14,7						131
D4-4 LD RX 15-8				1						16-6/8		131
D4-4 LD TX 7/0	H	C02E1		1-01 *		D09		1				132
D4-4 LD TX 7/0	H	E01K1		1-02 *		D13						132
D4-4 LD TX 7/0				1						8-2/8		132
D4-4 RX GO (1)	H	E02R2		1-01 *		D09		1				133
D4-4 RX GO (1)	H	F03M1		1-02 *		D14,4						133
D4-4 RX GO (1)				1						4-6/8		133
D4-4 RX/CHAR INTR	L	A03E1		1-01 *		D14,5		1		4-4		134
D4-4 RX/CHAR INTR	L	C02U1		1-02 *		D09						134
D4-4 RX/CHAR INTR				1						9-5/8		134
D4-4 STRIP SYNC (1)	H	D02K2		1-01 *		D09		1				135
D4-4 STRIP SYNC (1)	H	F04A1		1-02 *		D04		2				135
D4-4 STRIP SYNC (1)	H	F03N1		1-03 *		D14,8						135
D4-4 STRIP SYNC (1)				1						11-0/8		135
D4-4 TX GO (1)	H	A03D1		1-01 *		D14,6		1				136
D4-4 TX GO (1)	H	E02N2		1-02 *		D09						136
D4-4 TX GO (1)				1						14-0/8		136

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D4-4 TX/ERR INTR	L	A02V1		1-01 *		D09		1				137
D4-4 TX/ERR INTR	L	D03N1		1-02 *		D14,5						137
D4-4 TX/ERR INTR				1						9-6/8		137
D4-5 RD00	H	E04J2		1-01 *		D04		1		2-6		138
D4-5 RD00	H	F02K1		1-02 *		D10						138
D4-5 RD00				1						6-1/8		138
D4-5 RD01	H	E04M2		1-01 *		D04		1				139
D4-5 RD01	H	F02J2		1-02 *		D10						139
D4-5 RD01				1						5-0/8		139
D4-5 RD02	H	E04L2		1-01 *		D04		1				140
D4-5 RD02	H	F02F2		1-02 *		D10						140
D4-5 RD02				1						5-0/8		140
D4-5 RD03	H	E04K2		1-01 *		D04		1				141
D4-5 RD03	H	F02H2		1-02 *		D10						141
D4-5 RD03				1						5-2/8		141
D4-5 RD04	H	E04F2		1-01 *		D04		1				142
D4-5 RD04	H	F02T2		1-02 *		D10						142
D4-5 RD04				1						6-6/8		142
D4-5 RD05	H	E04H2		1-01 *		D04		1		3-1		143
D4-5 RD05	H	F02R1		1-02 *		D10						143
D4-5 RD05				1						6-7/8		143
D4-5 RD06	H	E04D2		1-01 *		D04		1				144
D4-5 RD06	H	F02S1		1-02 *		D10						144
D4-5 RD06				1						7-0/8		144
D4-5 RD07	H	E04E2		1-01 *		D04		1		2-7		145
D4-5 RD07	H	F02J1		1-02 *		D10						145
D4-5 RD07				1						6-3/8		145
D4-5 RD08	H	F02U2		1-01 *		D10		1				146
D4-5 RD08	H	F04J2		1-02 *		D04						146
D4-5 RD08				1						4-0/8		146
D4-5 RD09	H	F02V2		1-01 *		D10		1				147
D4-5 RD09	H	F04M2		1-02 *		D04						147
D4-5 RD09				1						3-4/8		147
D4-5 RD10	H	F02S2		1-01 *		D10		1				148
D4-5 RD10	H	F04L2		1-02 *		D04						148
D4-5 RD10				1						3-6/8		148

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D4-5 RD11	H	F02N1		1-01 *		D10		1				149
D4-5 RD11	H	F04K2		1-02 *		D04						149
D4-5 RD11				1						3-6/8		149
D4-5 RD12	H	F02V1		1-01 *		D10		1				150
D4-5 RD12	H	F04F2		1-02 *		D04						150
D4-5 RD12				1						4-4/8		150
D4-5 RD13	H	F02R2		1-01 *		D10		1				151
D4-5 RD13	H	F04H2		1-02 *		D04						151
D4-5 RD13				1						3-4/8		151
D4-5 RD14	H	F02P1		1-01 *		D10		1				152
D4-5 RD14	H	F04D2		1-02 *		D04						152
D4-5 RD14				1						4-2/8		152
D4-5 RD15	H	F02U1		1-01 *		D10		1				153
D4-5 RD15	H	F04E2		1-02 *		D04						153
D4-5 RD15				1						4-4/8		153
D4-5 RX BCC DATA IN	L	D04E1		1-01 *		D04		1				154
D4-5 RX BCC DATA IN	L	F02N2		1-02 *		D10						154
D4-5 RX BCC DATA IN				1						8-6/8		154
D4-5 TD 00	H	B02P2		1-01 *		D10		1				155
D4-5 TD 00	H	E04A1		1-02 *		D04						155
D4-5 TD 00				1						9-0/8		155
D4-5 TD 01	H	B02U2		1-01 *		D10		1				156
D4-5 TD 01	H	E04C1		1-02 *		D04						156
D4-5 TD 01				1						8-6/8		156
D4-5 TD 02	H	B02S1		1-01 *		D10		1				157
D4-5 TD 02	H	E04D1		1-02 *		D04						157
D4-5 TD 02				1						9-2/8		157
D4-5 TD 03	H	B02V1		1-01 *		D10		1		4-2		158
D4-5 TD 03	H	E04E1		1-02 *		D04						158
D4-5 TD 03				1						9-1/8		158
D4-5 TD 04	H	B02U1		1-01 *		D10		1				159
D4-5 TD 04	H	E04F1		1-02 *		D04						159
D4-5 TD 04				1						9-2/8		159
D4-5 TD 05	H	B02V2		1-01 *		D10		1				160
D4-5 TD 05	H	E04H1		1-02 *		D04						160
D4-5 TD 05				1						9-0/8		160

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D4-5 TD 06	H	B02K1		1-01 *		D10		1				161
D4-5 TD 06	H	E04J1		1-02 *		D04						161
D4-5 TD 06				1						10-4/8		161
D4-5 TD 07	H	B02H2		1-01 *		D10		1				162
D4-5 TD 07	H	E04K1		1-02 *		D04						162
D4-5 TD 07				1						10-6/8		162
D4-5 TD 08	H	B02R2		1-01 *		D10		1				163
D4-5 TD 08	H	F04C1		1-02 *		D04						163
D4-5 TD 08				1						11-6/8		163
D4-5 TD 09	H	B02H1		1-01 *		D10		1				164
D4-5 TD 09	H	F04D1		1-02 *		D04						164
D4-5 TD 09				1						13-0/8		164
D4-5 TD 10	H	B02S2		1-01 *		D10		1				165
D4-5 TD 10	H	F04E1		1-02 *		D04						165
D4-5 TD 10				1						12-0/8		165
D4-5 TD 11	H	B02T2		1-01 *		D10		1				166
D4-5 TD 11	H	F04F1		1-02 *		D04						166
D4-5 TD 11				1						12-0/8		166
D4-5 TD 12	H	B02R1		1-01 *		D10		1				167
D4-5 TD 12	H	F04H1		1-02 *		D04						167
D4-5 TD 12				1						12-2/8		167
D4-5 TD 13	H	B02P1		1-01 *		D04		1				168
D4-5 TD 13	H	F04J1		1-02 *		D04						168
D4-5 TD 13				1						12-6/8		168
D4-5 TD 14	H	C02V2		1-01 *		D10		1				169
D4-5 TD 14	H	F04K1		1-02 *		D04						169
D4-5 TD 14				1						9-4/8		169
D4-5 TD 15	H	B02N2		1-01 *		D10		1				170
D4-5 TD 15	H	F04L1		1-02 *		D04						170
D4-5 TD 15				1						13-0/8		170
D4-6 EE 13 (1)	H	A02U1		1-01 *		D11		1				171
D4-6 EE 13 (1)	H	C03N2		1-02 *		D14,2						171
D4-6 EE 13 (1)				1						7-2/8		171
D4-6 EE 14 (1)	H	A02E2		1-01 *		D11		1				172
D4-6 EE 14 (1)	H	C03N1		1-02 *		D14,2						172
D4-6 EE 14 (1)				1						8-6/8		172

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D4-6 REG PT08 (1)	H	C03R2		1-01 *		D14,4		1				173
D4-6 REG PT08 (1)	H	F02B1		1-02 *		D11						173
D4-6 REG PT08 (1)				1						9-2/8		173
D4-6 REG PT09 (1)	H	C03P2		1-01 *		D14,4		1		4-5		174
D4-6 REG PT09 (1)	H	F02C1		1-02 *		D11						174
D4-6 REG PT09 (1)				1						9-7/8		174
D4-6 REG PT10 (1)	H	C03R1		1-01 *		D14,4		1		3-5		175
D4-6 REG PT10 (1)	H	E02N1		1-02 *		D11						175
D4-6 REG PT10 (1)				1						7-7/8		175
D4-6 REG PT11 (1)	H	B03L2		1-01 *		D14,4		1		5-1		176
D4-6 REG PT11 (1)	H	E02P1		1-02 *		D11						176
D4-6 REG PT11 (1)				1						10-7/8		176
D4-7 RX SYNC DET	H	E03P1		1-01 *		D14,8		1		2-0		177
D4-7 RX SYNC DET	H	F02E1		1-02 *		D12		2				177
D4-7 RX SYNC DET	H	F04N2		1-03 *		D04						177
D4-7 RX SYNC DET				1						8-5/8		177
D4-7 SERIAL DATA OUT	L	D01V2		1-01 *		D02		1				178
D4-7 SERIAL DATA OUT	L	E02R1		1-02 *		D02						178
D4-7 SERIAL DATA OUT				1						4-4/8		178
D4-7 TX DATA	H	B02L2		1-01 *		D12		2				179
D4-7 TX DATA	H	D04F1		1-02 *		D04		1				179
D4-7 TX DATA	H	F03R2		1-03 *		D14,6						179
D4-7 TX DATA				1						16-2/8		179
D5-1 CC/BA 00	H	A03E2		1-01 *		D14,1		1				180
D5-1 CC/BA 00	H	D02R2		1-02 *		D05						180
D5-1 CC/BA 00				1						11-6/8		180
D5-1 CC/BA 01	H	A03D2		1-01 *		D14,1		1				181
D5-1 CC/BA 01	H	E02B1		1-02 *		D05						181
D5-1 CC/BA 01				1						13-0/8		181
D5-1 CC/BA 02	H	A03H2		1-01 *		D14,1		1				182
D5-1 CC/BA 02	H	D02H2		1-02 *		D05						182
D5-1 CC/BA 02				1						10-4/8		182
D5-1 CC/BA 03	H	A03F2		1-01 *		D14,1		1				183
D5-1 CC/BA 03	H	D02D2		1-02 *		D05						183
D5-1 CC/BA 03				1						10-2/8		183

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D5-1 CC/BA 04	H	A03R2		1-01 *		D14,1		1				184
D5-1 CC/BA 04	H	D02J1		1-02 *		D05						184
D5-1 CC/BA 04				1						10-0/8		184
D5-1 CC/BA 05	H	A03S1		1-01 *		D14,1		1				185
D5-1 CC/BA 05	H	D02N2		1-02 *		D14,1						185
D5-1 CC/BA 05				1						10-0/8		185
D5-1 CC/BA 06	H	A03T2		1-01 *		D14,1		1				186
D5-1 CC/BA 06	H	D02H1		1-02 *		D05						186
D5-1 CC/BA 06				1						9-4/8		186
D5-1 CC/BA 07	H	A03S2		1-01 *		D14,1		1		4-3		187
D5-1 CC/BA 07	H	D02A1		1-02 *		D05						187
D5-1 CC/BA 07				1						9-3/8		187
D5-1 CC/BA ADRS 08	L	C03H1		1-01 *		D14,2		1		2-5		188
D5-1 CC/BA ADRS 08	L	D04H1		1-02 *		D04						188
D5-1 CC/BA ADRS 08				1						5-7/8		188
D5-1 CC/BA ADRS 09	L	C03J2		1-01 *		D14,2		1		2-4		189
D5-1 CC/BA ADRS 09	L	D04J1		1-02 *		D04						189
D5-1 CC/BA ADRS 09				1						5-5/8		189
D5-1 CC/BA ADRS 10	L	C03F1		1-01 *		D14,2		1		2-6		190
D5-1 CC/BA ADRS 10	L	D04K1		1-02 *		D04						190
D5-1 CC/BA ADRS 10				1						6-1/8		190
D5-2 CC/BA 08	H	B03F2		1-01 *		D14,2		1				191
D5-2 CC/BA 08	H	D02M2		1-02 *		D06						191
D5-2 CC/BA 08				1						8-4/8		191
D5-2 CC/BA 09	H	B03E2		1-01 *		D14,2		1				192
D5-2 CC/BA 09	H	D02P1		1-02 *		D06						192
D5-2 CC/BA 09				1						9-0/8		192
D5-2 CC/BA 10	H	B03J2		1-01 *		D14,2		1		3-5		193
D5-2 CC/BA 10	H	D02D1		1-02 *		D06						193
D5-2 CC/BA 10				1						7-7/8		193
D5-2 CC/BA 11	H	B03H2		1-01 *		D14,2		1				194
D5-2 CC/BA 11	H	D02F2		1-02 *		D06						194
D5-2 CC/BA 11				1						7-6/8		194
D5-2 CC/BA 12	H	B03U2		1-01 *		D14,2		1				195
D5-2 CC/BA 12	H	D02F1		1-02 *		D06						195
D5-2 CC/BA 12				1						6-4/8		195

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D5-2 CC/BA 13	H	B03T2		1-01 *		D14,2		1				196
D5-2 CC/BA 13	H	D02E2		1-02 *		D06						196
D5-2 CC/BA 13				1						6-4/8		196
D5-2 CC/BA 14	H	B03U1		1-01 *		D14,2		1				197
D5-2 CC/BA 14	H	D02P2		1-02 *		D06						197
D5-2 CC/BA 14				1						7-2/8		197
D5-2 CC/BA 15	H	B03V2		1-01 *		D14,2		1				198
D5-2 CC/BA 15	H	D02N1		1-02 *		D06						198
D5-2 CC/BA 15				1						7-2/8		198
D5-2 DI PORT 14	L	C03E1		1-01 *		D14,2		1		2-7		199
D5-2 DI PORT 14	L	D04L1		1-02 *		D04						199
D5-2 DI PORT 14				1						6-3/8		199
D5-2 SP PORT 13	H	C03K1		1-01 *		D14,2		2				200
D5-2 SP PORT 13	H	D04M1		1-02 *		D04		1				200
D5-2 SP PORT 13	H	E02M1		1-03 *		D06						200
D5-2 SP PORT 13				1						10-6/8		200
D5-2 SP PORT 14	H	C03J1		1-01 *		D14,2		1		2-6		201
D5-2 SP PORT 14	H	D04N1		1-02 *		D04		2				201
D5-2 SP PORT 14	H	E02M2		1-03 *		D06						201
D5-2 SP PORT 14				1						11-1/8		201
D5-3 CNTR LD PULSE	H	A03J2		1-01 *		D14,3		1				202
D5-3 CNTR LD PULSE	H	D04R1		1-02 *		D04						202
D5-3 CNTR LD PULSE				1						11-2/8		202
D5-3 INH SEL	L	C03D1		1-01 *		D14,3		1				203
D5-3 INH SEL	L	F01B1		1-02 *		D03						203
D5-3 INH SEL				1						10-4/8		203
D5-3 LD SP PORT	L	C03M2		1-01 *		D14,3		1		2-6		204
D5-3 LD SP PORT	L	D04S1		1-02 *		D04						204
D5-3 LD SP PORT				1						6-1/8		204
D5-3 NPR EN (1)	H	A03U2		1-01 *		D14,3		1				205
D5-3 NPR EN (1)	H	C04V1		1-02 *		D03						205
D5-3 NPR EN (1)				1						8-0/8		205
D5-3 NPR RQST	H	A03V2		1-01 *		D14,3		1		3-6		206
D5-3 NPR RQST	H	C04U1		1-02 *		D03						206
D5-3 NPR RQST				1						8-1/8		206

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D5-3 RX CYCLE	H	B02B1		1-01 *		D11		2				207
D5-3 RX CYCLE	H	C03L2		1-02 *		D14,8		1				207
D5-3 RX CYCLE	H	E04B1		1-03 *		D04						207
D5-3 RX CYCLE				1						13-0/8		207
D5-3 RX NPR	L	A03F1		1-01 *		D14,3		1		3-5		208
D5-3 RX NPR	L	C02C1		1-02 *		D08						208
D5-3 RX NPR				1						7-7/8		208
D5-3 TEST NEXT CC (1)	H	A03R1		1-01 *		D14,4		1				209
D5-3 TEST NEXT CC (1)	H	D04L2		1-02 *		D04						209
D5-3 TEST NEXT CC (1)				1						10-2/8		209
D5-3 TX CYCLE	H	B02D1		1-01 *		D11		1				210
D5-3 TX CYCLE	H	D03P1		1-02 *		D14,4						210
D5-3 TX CYCLE				1						9-0/8		210
D5-4 00 TO RX GO	L	C02R2		1-01 *		D09		1				211
D5-4 00 TO RX GO	L	C03S1		1-02 *		D14,4						211
D5-4 00 TO RX GO				1						2-4/8		211
D5-4 00 TO TX GO	L	C02F1		1-01 *		D09		1				212
D5-4 00 TO TX GO	L	C03S2		1-02 *		D14,4						212
D5-4 00 TO TX GO				1						3-6/8		212
D5-4 01 TO RX CK LOSS	L	B02E1		1-01 *		D11		1				213
D5-4 01 TO RX CK LOSS	L	B03V1		1-02 *		D14,4						213
D5-4 01 TO RX CK LOSS				1						4-2/8		213
D5-4 01 TO RX P DONE	L	D03D1		1-01 *		D14,4		1				214
D5-4 01 TO RX P DONE	L	E02H1		1-02 *		D09						214
D5-4 01 TO RX P DONE				1						5-4/8		214
D5-4 01 TO RX S DONE	L	D03C1		1-01 *		D14,4		1				215
D5-4 01 TO RX S DONE	L	E02J1		1-02 *		D09						215
D5-4 01 TO RX S DONE				1						5-6/8		215
D5-4 01 TO TX CK LOSS	L	A02S1		1-01 *		D11		1				216
D5-4 01 TO TX CK LOSS	L	A03C1		1-02 *		D14,4						216
D5-4 01 TO TX CK LOSS				1						4-0/8		216
D5-4 01 TO TX P DONE	L	C02F2		1-01 *		D09		1				217
D5-4 01 TO TX P DONE	L	D03F2		1-02 *		D14,4						217
D5-4 01 TO TX P DONE				1						5-2/8		217

D5-4 Ø1 TO TX S DONE	L	C02S2		1-01 *		D09		1			218
D5-4 Ø1 TO TX S DONE	L	D03M2		1-02 *		D14,4					218
D5-4 Ø1 TO TX S DONE				1					4-6/8		218
D5-4 BSSYN	H	DØ3L2		1-01 *		D14,4		1			219
D5-4 BSSYN	H	E04U2		1-02 *		DØ4					219
D5-4 BSSYN				1					6-0/8		219
D5-4 CLOCK LOSS SH CNT	H	DØ3M1		1-01 *		D14,4		1			220
D5-4 CLOCK LOSS SH CNT	H	F02D1		1-02 *		D14,4					220
D5-4 CLOCK LOSS SH CNT				1					7-0/8		220
D5-4 INI	H	A03H1		1-01 *		D14,7		2	2-1		221
D5-4 INI	H	B02A1		1-02 *		DØ9		1			221
D5-4 INI	H	DØ4V1		1-03 *		DØ4		2			221
D5-4 INI	H	E01V2		1-04 *		D13					221
D5-4 INI				1					20-5/8		221
D5-4 LD ERR	H	A02T2		1-01 *		D11		1			222
D5-4 LD ERR	H	C03V1		1-02 *		D14,4					222
D5-4 LD ERR				1					8-0/8		222
D5-4 LD MISC	L	DØ3J1		1-01 *		D14,7		1			223
D5-4 LD MISC	L	E02E1		1-02 *		DØ8					223
D5-4 LD MISC				1					4-6/8		223
D5-4 LD PTEE	H	A02D2		1-01 *		D11		1			224
D5-4 LD PTEE	H	C03U2		1-02 *		D14,4					224
D5-4 LD PTEE				1					9-4/8		224
D5-4 LD SYNC	L	C03P1		1-01 *		D14,4		1	2-5		225
D5-4 LD SYNC	L	D02R1		1-02 *		DØ4					225
D5-4 LD SYNC				1					5-7/8		225
D5-4 RX S (1)	H	DØ3J2		1-01 *		D14,1		2			226
D5-4 RX S (1)	H	D04V2		1-02 *		D9,6		1	3-2		226
D5-4 RX S (1)	H	F02H1		1-03 *		DØ5					226
D5-4 RX S (1)				1					10-7/8		226
D5-4 SEL Ø6 LD	L	C03A1		1-01 *		D14,4		1			227
D5-4 SEL Ø6 LD	L	D04U1		1-02 *		DØ4					227
D5-4 SEL Ø6 LD				1					7-2/8		227
D5-4 TX S (1)	H	DØ3H2		1-01 *		D14,4		1	3-6		228
D5-4 TX S (1)	H	F02F1		1-02 *		DØ5					228
D5-4 TX S (1)				1					8-1/8		228

D5-4 WEN (1)	H	C03T2		1-01 *		D14,4		1	4-3		229
D5-4 WEN (1)	H	F02A1		1-02 *		DØ6					229
D5-4 WEN (1)				1					9-3/8		229
D5-5 BG IN	H	C04E1		1-01 *		DØ3		1			230
D5-5 BG IN	H	F03H2		1-02 *		D14,5					230
D5-5 BG IN				1					10-6/8		230
D5-5 BG OUT	H	C04A1		1-01 *		DØ3		1			231
D5-5 BG OUT	H	F03H1		1-02 *		D14,5					231
D5-5 BG OUT				1					11-2/8		231
D5-5 INH INTR B	L	B03D2		1-01 *		D14,3		1			232
D5-5 INH INTR B	L	C04H2		1-02 *		DØ3					232
D5-5 INH INTR B				1					5-4/8		232
D5-5 INTR B	H	C04K2		1-01 *		DØ3		1			233
D5-5 INTR B	H	E03A1		1-02 *		D14,5					233
D5-5 INTR B				1					7-0/8		233
D5-5 VECTOR BIT 2 (1)	H	B03E1		1-01 *		D14,5		1			234
D5-5 VECTOR BIT 2 (1)	H	C04D2		1-02 *		DØ3					234
D5-5 VECTOR BIT 2 (1)				1					5-0/8		234
D5-6 Ø1 TO TX SEARCH R	H	E04R1		1-01 *		DØ4		1			235
D5-6 Ø1 TO TX SEARCH R	H	F03J1		1-02 *		D14,6					235
D5-6 Ø1 TO TX SEARCH R				1					4-4/8		235
D5-6 BCC EN (Ø)	H	C02D2		1-01 *		DØ9		1			236
D5-6 BCC EN (Ø)	H	DØ4J2		1-02 *		DØ4		2			236
D5-6 BCC EN (Ø)	H	E03C1		1-03 *		D14,6					236
D5-6 BCC EN (Ø)				1					10-4/8		236
D5-6 BTXC	L	DØ3V2		1-01 *		D14,6		1			237
D5-6 BTXC	L	DØ4B2		1-02 *		DØ4					237
D5-6 BTXC				1					4-4/8		237
D5-6 DATA EN 15-8	L	B02M2		1-01 *		D14,6		1			238
D5-6 DATA EN 15-8	L	E03F1		1-02 *		D14,6					238
D5-6 DATA EN 15-8				1					9-6/8		238
D5-6 DATA EN 7-0	L	B02N1		1-01 *		D14,6		1			239
D5-6 DATA EN 7-0	L	E03F2		1-02 *		D14,6					239
D5-6 DATA EN 7-0				1					9-6/8		239

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RUN NAME A/P PIN NAME ORDER PIN REMARKS 30-AUG-75 LENGTH EXCEPTIONS RUN NUMBER

D5-6 DLE EN (0)	H	E03D2				1=01 *		D14,6
D5-6 DLE EN (0)	H	E04L1				1=02 *		D04
D5-6 DLE EN (0)					3-2/8	1		
D5-6 LD TX SH REG	H	B02E2				1=01 *		D10
D5-6 LD TX SH REG	H	D04K2				1=02 *		D04
D5-6 LD TX SH REG	H	D03S1			12-0/8	1=03 *		D14,6
D5-6 LD TX SH REG						1		
D5-6 SYNC EN	L	D03V1				1=01 *		D14,6
D5-6 SYNC EN	L	D04H2				1=02 *		D04
D5-6 SYNC EN					4-0/8	1		
D5-6 TX ACTIVE (1)	H	D04F2				1=01 *		D04
D5-6 TX ACTIVE (1)	H	D02M1				1=02 *		D08
D5-6 TX ACTIVE (1)	H	D02U1				1=03 *		D09
D5-6 TX ACTIVE (1)	H	E03H1		C02A1		1=04 *		D14,6
D5-6 TX ACTIVE (1)	H	C02A1			19-2/8	1=05 *		D14,6
D5-6 TX ACTIVE (1)						1		
D5-6 TX BIT CNTR 01 (1	H	C02M2				1=01 *		D04
D5-6 TX BIT CNTR 01 (1	H	E04P1				1=02 *		D04
D5-6 TX BIT CNTR 01 (1	H	E03R2				1=03 *		D14,6
D5-6 TX BIT CNTR 01 (1					10-6/8	1		
D5-6 TX BIT CNTR 02 (1	H	C02L2				1=01 *		D04
D5-6 TX BIT CNTR 02 (1	H	E03J1				1=02 *		D14,6
D5-6 TX BIT CNTR 02 (1	H	E04N1				1=03 *		D04
D5-6 TX BIT CNTR 02 (1					10-4/8	1		
D5-6 TX BIT CNTR 04 (1	H	C02K1				1=01 *		D04
D5-6 TX BIT CNTR 04 (1	H	E03J2				1=02 *		D14,6
D5-6 TX BIT CNTR 04 (1	H	E04M1				1=03 *		D04
D5-6 TX BIT CNTR 04 (1					10-4/8	1		
D5-6 TX BIT CNTR 08 (1	H	E03K1						D14,6
D5-6 TX FAKE END (1)	H	D04E2				1=01 *		D04
D5-6 TX FAKE END (1)	H	E03B1				1=02 *		D14,6
D5-6 TX FAKE END (1)					4-6/8	1		
D5-6 TX LATE	L	A02R2				1=01 *		D11
D5-6 TX LATE	L	E03R1				1=02 *		D14,6
D5-6 TX LATE					13-0/8	1		

DQ11AA.D HND288.V23(23) 05/24/74 914 PAGE 25
RUN NAME A/P PIN NAME ORDER PIN REMARKS 30-AUG-75 LENGTH EXCEPTIONS RUN NUMBER

D5-6 TX SYNC EN 15-8	L	C02L1				1=01 *		D[illegible]
D5-6 TX SYNC EN 15-8	L	E03D1				1=02 *		D14,6
D5-6 TX SYNC EN 15-8					7-0/8	1		
D5-6 TX SYNC EN 7-0	L	C02K2				1=01 *		D12
D5-6 TX SYNC EN 7-0	L	E03E2				1=02 *		D14,6
D5-6 TX SYNC EN 7-0					7-2/8	1		
D5-6 VRC/DATA EN	L	B02M1				1=01 *	1	D12
D5-6 VRC/DATA EN	L	D03K1				1=02 *		D14,6
D5-6 VRC/DATA EN					7-4/8	1		
D5-7 B RX C	L	D04M2				1=01 *		D04
D5-7 B RX C	L	F03K1				1=02 *		D14,7
D5-7 B RX C					7-6/8	1		
D5-7 CLR RX CNTL	L	F02L1				1=01 *		D10
D5-7 CLR RX CNTL	L	F03U1				1=02 *		D14,7
D5-7 CLR RX CNTL					3-4/8	1		
D5-7 LD RX BIT CNTR	L	E03L1						D14,7
D5-7 LD RX BUF 15-8	L	D03K2				1=01 *		D14,8
D5-7 LD RX BUF 15-8	L	F02L2				1=02 *		D10
D5-7 LD RX BUF 15-8					8-0/8	1		
D5-7 RX ACTIVE (1)	H	D03H1				1=01 *		D14,8
D5-7 RX ACTIVE (1)	H	E02U2				1=02 *		D06
D5-7 RX ACTIVE (1)	H	F04R2				1=03 *		D04
D5-7 RX ACTIVE (1)					11-4/8	1		
D5-7 SYNC 01 (1)	H	D02C1				1=01 *		D06
D5-7 SYNC 01 (1)	H	E03K2				1=02 *		D06
D5-7 SYNC 01 (1)					6-0/8	1		
D5-7 SYNC 02 (1)	H	D02E1				1=01 *		D06
D5-7 SYNC 02 (1)	H	E03T2				1=02 *		D14,7
D5-7 SYNC 02 (1)					6-4/8	1		
D5-7 SYNC DATA EN	L	C03L1				1=01 *	1	
D5-7 SYNC DATA EN	L	D04P1				1=02 *		D14,7
D5-7 SYNC DATA EN					2=6	1		
D5-7 SYNC DATA EN					6=1/8	1		
D5-7 TEST JUMPER MATCH	L	F03J2				1=01 *		D14,7
D5-7 TEST JUMPER MATCH	L	F04P2				1=02 *		D04
D5-7 TEST JUMPER MATCH					3-2/8	1		

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D5-7 VRC ERR DET	L	A02U2		1-01 *		D11		1				262
D5-7 VRC ERR DET	L	F03S1		1-02 *		D14,7						262
D5-7 VRC ERR DET				1						15-4/8		262
D5-8 LD RX BUF 7-0	L	A03A1		1-01 *		D14,8		1				263
D5-8 LD RX BUF 7-0	L	F02K2		1-02 *		D10						263
D5-8 LD RX BUF 7-0				1						16-6/8		263
D5-8 RX CC ODD	L	D04N2		1-01 *		D04		1				264
D5-8 RX CC ODD	L	F03R1		1-02 *		D14,8						264
D5-8 RX CC ODD				1						8-2/8		264
D5-8 RX LATE	L	A02S2		1-01 *		D11		1				265
D5-8 RX LATE	L	F03U2		1-02 *		D14,8						265
D5-8 RX LATE				1						16-0/8		265
D6-1 01 TO CHAR INTR	L	C02U2		1-01 *		D09		1				266
D6-1 01 TO CHAR INTR	L	E04V2		1-02 *		D04						266
D6-1 01 TO CHAR INTR				1						8-2/8		266
D6-1 CD 08	H	E02S2		1-01 *		D06		1				267
D6-1 CD 08	H	F04V2		1-02 *		D04						267
D6-1 CD 08				1						6-0/8		267
D6-1 CD 09	H	E02T2		1-01 *		D06		1				268
D6-1 CD 09	H	F04T2		1-02 *		D04						268
D6-1 CD 09				1						5-4/8		268
D6-1 CD 10	H	E02F2		1-01 *		D06		1				269
D6-1 CD 10	H	F04S2		1-02 *		D04						269
D6-1 CD 10				1						6-4/8		269
D6-1 CD 11	H	E02H2		1-01 *		D06		1				270
D6-1 CD 11	H	F04U2		1-02 *		D04						270
D6-1 CD 11				1						6-6/8		270
D6-2 END NPR CYCLE (1)	L	B03K2		1-01 *		D14,3		1				271
D6-2 END NPR CYCLE (1)	L	E04R2		1-02 *		D04						271
D6-2 END NPR CYCLE (1)				1						11-0/8		271
D6-2 LD TX BUF (1)	H	B02F1		1-01 *		D10		1				272
D6-2 LD TX BUF (1)	H	E04P2		1-02 *		D04						272
D6-2 LD TX BUF (1)				1						11-4/8		272
D6-2 TIME OUT (1)	H	B02C1		1-01 *	H			1	TWP		HAND WIRE	273
D6-2 TIME OUT (1)	H	E04S2		1-02 *		D04					TO HERE	273
D6-2 TIME OUT (1)				1						12-2/8		273

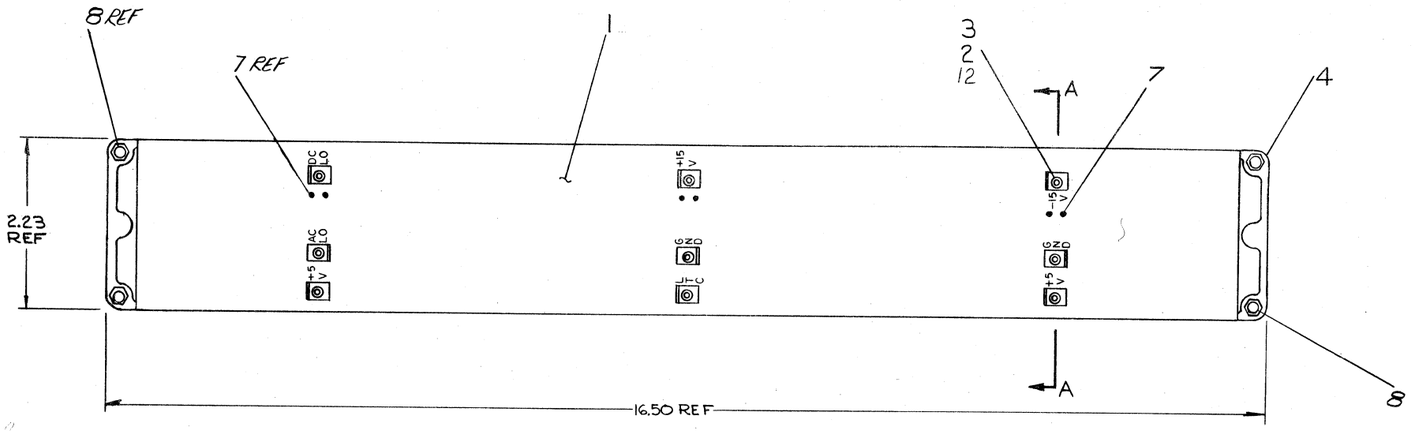
RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D8-3 RX SEARCH DONE	L	E04S1		1-01 *		D04		1				274
D8-3 RX SEARCH DONE	L	F03P2		1-02 *		D14,8						274
D8-3 RX SEARCH DONE				1						5-0/8		274
D8-4 00 TO RX GO/DONE	L	D03D2		1-01 *		D14,4		1				275
D8-4 00 TO RX GO/DONE	L	E04V1		1-02 *		D04						275
D8-4 00 TO RX GO/DONE				1						6-6/8		275
D8-4 00 TO TX GO/DONE	L	D03E2		1-01 *		D14,4		1				276
D8-4 00 TO TX GO/DONE	L	F04M1		1-02 *		D04						276
D8-4 00 TO TX GO/DONE				1						8-4/8		276
D8-4 CRA	L	E04B2		1-01 *		D04		1				277
D8-4 CRA	L	F03S2		1-02 *		D14,8						277
D8-4 CRA				1						7-0/8		277
D8-4 STRIP DBL CHAR	L	E04U1		1-01 *		D04		1				278
D8-4 STRIP DBL CHAR	L	F03T2		1-02 *		D14,8						278
D8-4 STRIP DBL CHAR				1						5-0/8		278
D8-5 DLE RQ	L	D03U2		1-01 *		D14,6		1				279
D8-5 DLE RQ	L	F04P1		1-02 *		D04						279
D8-5 DLE RQ				1						7-2/8		279
D8-5 PAD RQ	L	D03P2		1-01 *		D14,6		1				280
D8-5 PAD RQ	L	F04N1		1-02 *		D04						280
D8-5 PAD RQ				1						7-6/8		280
D8-5 TX TRANS	L	D03T2		1-01 *		D04		1				281
D8-5 TX TRANS	L	F04R1		1-02 *		D04						281
D8-5 TX TRANS				1						7-4/8		281
D8-6 DLE SAVE (0)	H	F03L1		1-01 *		D14,8		1				282
D8-6 DLE SAVE (0)	H	F04U1		1-02 *		D04						282
D8-6 DLE SAVE (0)				1						3-4/8		282
D8-6 IT BB	L	F04V1				D04					1-PIN RUN	283
D9-4 BCC/DLE	L	C02B1		1-01 *		D12		1				284
D9-4 BCC/DLE	L	D04P2		1-02 *		D04						284
D9-4 BCC/DLE				1						7-0/8		284
D9-5 BCC RQ	L	D03U1		1-01 *		D14,6		1				285
D9-5 BCC RQ	L	D04S2		1-02 *		D04						285
D9-5 BCC RQ				1						3-2/8		285

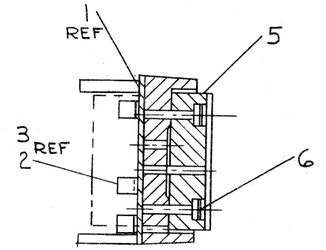
RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D9-5 TX TOTAL TRANS	L	D03R1		1-01 *		D14,6		1				286
D9-5 TX TOTAL TRANS	L	D04R2		1-02 *		D04						286
D9-5 TX TOTAL TRANS				1						3-0/8		286
D9-6 BCC ERR	L	A02V2		1-01 *		D11		1				287
D9-6 BCC ERR	L	D04U2		1-02 *		D04						287
D9-6 BCC ERR				1						10-4/8		287
D9-6 DIS RX TRANSF PUL	H	E03E1		1-01 *		D04		1				288
D9-6 DIS RX TRANSF PUL	H	F04B2		1-02 *		D04						288
D9-6 DIS RX TRANSF PUL				1						5-0/8		288
D9-6 RX BCC CYCLE	L	D02J2		1-01 *		D09		2				289
D9-6 RX BCC CYCLE	L	D04T2		1-02 *		D04		1				289
D9-6 RX BCC CYCLE	L	E03N1		1-03 *		D5,8						289
D9-6 RX BCC CYCLE				1						8-4/8		289
D9-6 RX TOTAL TRANS	L	F03P1		1-01 *		D14,8		1				290
D9-6 RX TOTAL TRANS	L	F04S1		1-02 *		D04						290
D9-6 RX TOTAL TRANS				1						3-0/8		290
DS RDY	H	C01N2		1-01 *		D02		1				291
DS RDY	H	D01E2		1-02 *		D02						291
DS RDY				1						4-2/8		291
GND 01		A01C2		1-01 *		D01		1				292
GND 01		A01N1		1-02 *		D01		2				292
GND 01		A01P1		1-03 *		D01		1				292
GND 01		A01R1		1-04 *		D01		2				292
GND 01		A01S1		1-05 *		D01		1				292
GND 01		A01T1		1-06 *		D01		2				292
GND 01		A01V2		1-07 *		D01		1				292
GND 01		B01C2		1-08 *		D01		2				292
GND 01		B01D1		1-09 *		D01		1				292
GND 01		B01E1		1-10 *		D01		2				292
GND 01		B01T1		1-11 *		D01		1				292
GND 01		B01V2		1-12 *		D01		2				292
GND 01		C01C2		1-13 *		D01		1				292
GND 01		C01T1		1-14 *		D01		2				292
GND 01		D01C2		1-15 *		D01		1				292
GND 01		D01T1		1-16 *		D01		2				292
GND 01		E01C2		1-17 *		D13		1				292
GND 01		E01T1		1-18 *		D13		2		1-4		292
GND 01		F01A1		1-19 *		D03		1				292
GND 01		F01C2		1-20 *		D01		2				292
GND 01		F01T1		1-21 *		D01						292
GND 01				1						63-1/8		292

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND 02		A02C2		1-01 *		D01		1				293
GND 02		A02T1		1-02 *		D01		2				293
GND 02		B02C2		1-03 *		D01		1				293
GND 02		B02T1		1-04 *		D01		2				293
GND 02		C02C2		1-05 *		D01		1				293
GND 02		C02T1		1-06 *		D01		2				293
GND 02		D02C2		1-07 *		D01		1				293
GND 02		D02T1		1-08 *		D01		2				293
GND 02		E02C2		1-09 *		D01		1				293
GND 02		E02T1		1-10 *		D01		2				293
GND 02		F02C2		1-11 *		D01		1				293
GND 02		F02T1		1-12 *		D01						293
GND 02				1						41-0/8		293
GND 03		A03C2		1-01 *		D01		1				294
GND 03		A03T1		1-02 *		D01		2				294
GND 03		B03C2		1-03 *		D01		1				294
GND 03		B03T1		1-04 *		D01		2				294
GND 03		C03C2		1-05 *		D01		1				294
GND 03		C03T1		1-06 *		D01		2				294
GND 03		D03C2		1-07 *		D01		1				294
GND 03		D03T1		1-08 *		D01		2				294
GND 03		E03C2		1-09 *		D01		1				294
GND 03		E03T1		1-10 *		D01		2				294
GND 03		F03C2		1-11 *		D01		1				294
GND 03		F03T1		1-12 *		D01						294
GND 03				1						41-0/8		294

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND Ø4		A04C2		1-01 *		DØ1					1				295
GND Ø4		A04N1		1-02 *		DØ1					2				295
GND Ø4		A04P1		1-03 *		DØ1					1				295
GND Ø4		A04R1		1-04 *		DØ1					2				295
GND Ø4		A04S1		1-05 *		DØ1					1				295
GND Ø4		A04T1		1-06 *		DØ1					2				295
GND Ø4		A04V2		1-07 *		DØ1					1				295
GND Ø4		B04C2		1-08 *		DØ1					2				295
GND Ø4		B04D1		1-09 *		DØ1					1				295
GND Ø4		B04E1		1-10 *		DØ1					2				295
GND Ø4		B04T1		1-11 *		DØ1					1				295
GND Ø4		B04V2		1-12 *		DØ1					2				295
GND Ø4		C04C2		1-13 *		DØ1					1				295
GND Ø4		C04J2		1-14 *		DØ3					2				295
GND Ø4		C04R1		1-15 *		DØ3					1				295
GND Ø4		C04T1		1-16 *		DØ1					2				295
GND Ø4		D04C2		1-17 *		DØ4					1				295
GND Ø4		D04T1		1-18 *		DØ4					2				295
GND Ø4		E04C2		1-19 *		DØ4					1				295
GND Ø4		E04T1		1-20 *		DØ4					2				295
GND Ø4		F04C2		1-21 *		DØ4					1				295
GND Ø4		F04T1		1-22 *		DØ4									295
GND Ø4				1									65-0/8		
MASTER B	L	C04P2		1-01 *		DØ3					2				296
MASTER B	L	C04R2		1-02 *		DØ3					1				296
MASTER B	L	C04S2		1-03 *		DØ3									296
MASTER B				1									5-0/8		
RECEIVE DATA	L	C01F2		1-01 *		DØ2					1				297
RECEIVE DATA	L	D01J2		1-02 *		DØ2									297
RECEIVE DATA				1									5-2/8		297
RING	H	C01M2		1-01 *		DØ2					1				298
RING	H	D01K2		1-02 *		DØ2									298
RING				1									4-6/8		298
SCR	H	C01J2		1-01 *		DØ2					1				299
SCR	H	D01F1		1-02 *		DØ2									299
SCR				1									5-0/8		299
SCT	H	C01H2		1-01 *		DØ2					1		2-4		300
SCT	H	D01J1		1-02 *		DØ2									300
SCT				1									5-5/8		300

NOTES:
1) FOR CIRCUIT SCHEMATIC REFER TO DRAWING NUMBER D-CS-5410094-0-1
2. WIRE WRAP ONE END OF 24 GAUGE BLK WIRE TO PIN F02T1 AND SOLDER THE OTHER END TO THE LOCKING TERMINAL WHICH IS MOUNTED UNDER THE SYSTEM UNIT MOUNTING SCREW.
3. INSURE THAT WIRE SHIELDS ARE IN PLACE PRIOR TO LOGIC BEING WIREWRAPPED.





SECTION A-A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
9	WIRE SHIELDS	9009526	12
1	LOCKING TERMINAL, SHAKEPROOF	90-06766	11
A/R	#29 AWG SOLID KYNAR INS. WIRE, BLK	9107688-00	10
9	LOGIC WASHER EXT TOOTH #6	9007699	9
4	STAND-OFF JAN 4146B	9009120-1	8
6	WIRE WRAP PINS	12.10385	7
6	SCR PH PAN HD #B-32X5/8 SELF TAP	9006120	6
3	288 PIN CONN BLOCK TYPE #HB03	12.10258	5
1	CASTING, THREE BLOCK	C-SC-1209583-0-1	4
9	EYELETS	9009000	3
9	FASTON TABS	9008219	2
1	ETCHED CIRCUIT BOARD	50/10093	1

PARTS LIST

FIRST USED ON OPTION/MODEL
PDP11

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

DRN. M Rivera	DATE 11/7/72	
CHK'D J. Ferguson	DATE 11-16-72	
ENG. V Bastiani	DATE 11/9/72	
PROJ. ENG. V Bastiani	DATE 11/9/72	
PROD. Paul Hugo	DATE 11/14/72	
NEXT HIGHER ASSY.		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BACK PLANE ASS'Y

SIZE	CODE	NUMBER	REV.
D	IA	7009152-0-0	B

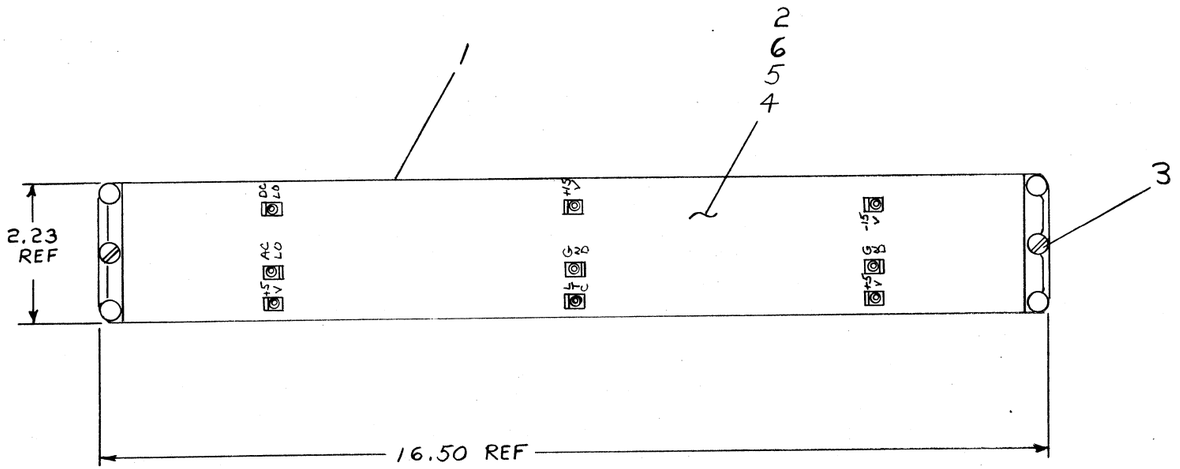
DIST. C

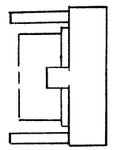
REVISIONS	CHK	CHANGE NO.	REV.
		7009152-00001	A
Drawn M. Rivera 11/3			
V. BASTIANI 11/Bastiani 2-12-73			
#2		7009152-00002	B
J. Austin 9-21-73			
BASTIANI			
V Bastiani 10-2-73			

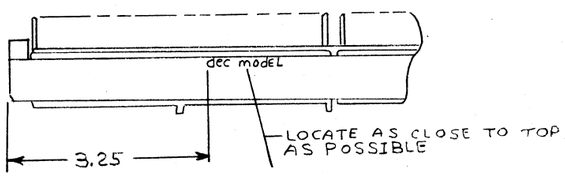
DEC FORM NO. DRD 100-A

WIRE TABLE FOR DQ11-AB

ITEM NO	SIGNAL NAME	FROM PIN	TO PIN	COLOR	AWG
6	BUS AC LO	BØ1F1	WIRE WRAP PIN AT AC LO LUG	YEL	#3Ø
6	BUS DC LO	BØ1F2	WIRE WRAP PIN AT DC LO LUG	YEL	#3Ø







QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
A/R	#30 SOLID CONDUCTOR KYNAR	9105740-Ø4	6
A/R	#24 SOLID CONDUCTOR KYNAR	9107688-Ø6	5
A/R	#24 SOLID CONDUCTOR KYNAR	9107688-Ø3	4
2	SCR CAPTIVE	9008167	3
1	WIRE LIST (DQ11-AB)	K-WL-DQ11-Ø-14	2
1	BACK PANEL	D-IA-7009152ØØ	1

FIRST USED ON OPTION/MODEL: DQ11

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

MATERIAL

FINISH

		DATE
DRN.	E. Wilson	5/22/73
CHK'D.		DATE
ENG.	R. Frase	DATE 12-10-73
PROJ. ENG.	R. Frase	DATE 12-19-73
PROD.	R. Wall	DATE 12-11-73

NEXT HIGHER ASSY.: A-PL-DQ11-Ø-Ø

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: WIRED ASS'Y (DQ11-AB)

SIZE	CODE	NUMBER	REV.
C	IA	7009468-0-0	

DIST.

REV.	REVISIONS	CHK
	CHANGE NO.	

DEC FORM NO. DRC 100-B

REV	NUMBER	SIZE	CODE
E	DQ11-Ø-14	K	WL

REVISIONS	CHK	CHANGE NO.	REV.
		DQ11AB-00001	A
		G. Wurbs 4-10-74	
		R. LISEE 4-25-74	
		DQ11AB-00002	B
		J. Chanton 4-29-74	
		LISEE 5-6-74	
		DQ11AB-00003	C
		G. Wurbs 8-30-74	
		R.LISEE 9-7-74	
		DQ11AB-00004	D
		G. Wurbs 3-25-75	
		R. LISEE 3-27-75	
		DQ11AB-00005	E
		G. Wurbs 7-24-75	
		R. LISEE 8-5-75	

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DQ11		PARTS LIST		

DRN. E. Wilson	DATE 8/31/73	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 10/22/73	
ENG. R. Lisee	DATE 12-10-73	TITLE
PROJ. ENG. R. Lisee	DATE 12-10-73	WIRE LIST (DQ11-AB)
PROD. R. Wall	DATE 12-11-73	
NEXT HIGHER ASSEMBLY C-1A-7009468-Ø-Ø		SIZE K / CODE WL / NUMBER DQ11-Ø-14 / REV. E
SCALE NONE		DIST.
SHEET 1 OF 1		

DEC FORM NO.
DRB 109

DG11AR.E HND288.V23(23) 05/24/74 11126 PAGE 1
23-AUG-75 EXCEPTIONS

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	RUN NUMBER
A01A2		A01A2		1-01 *		D01					1			1
A01A2		A04A2		1-02 *		D01								1
A01A2				1									3-6/8	
B01A2		B01A2		1-01 *		D01					1			2
B01A2		B04A2		1-02 *		D01								2
B01A2				1									3-6/8	
BG 4	H	B01E2		1-01 *		D01					1			3
BG 4	H	B04E2		1-02 *		D01								3
BG 4				1									3-6/8	
BG 5	H	B01F1		1-01 *		D01					1			4
BG 5	H	B04B1		1-02 *		D01								4
BG 5				1									3-6/8	
BG 6	H	B01A1		1-01 *		D01					1			5
BG 6	H	B04A1		1-02 *		D01								5
BG 6				1									3-6/8	
BG 7	H	A01V1		1-01 *		D01					1			6
BG 7	H	A04V1		1-02 *		D01								6
BG 7				1									3-6/8	
BUS A00	L	B01H2		1-01 *		D01					1			7
BUS A00	L	B04H2		1-02 *		D01								7
BUS A00				1									3-6/8	
BUS A01	L	B01H1		1-01 *		D01					1			8
BUS A01	L	B04H1		1-02 *		D01								8
BUS A01				1									3-6/8	
BUS A02	L	B01J2		1-01 *		D01					1			9
BUS A02	L	B04J2		1-02 *		D01								9
BUS A02				1									3-6/8	
BUS A03	L	B01J1		1-01 *		D01					1			10
BUS A03	L	B04J1		1-02 *		D01								10
BUS A03				1									3-6/8	
BUS A04	L	B01K2		1-01 *		D01					1			11
BUS A04	L	B04K2		1-02 *		D01								11
BUS A04				1									3-6/8	
BUS A05	L	B01K1		1-01 *		D01					1			12
BUS A05	L	B04K1		1-02 *		D01								12
BUS A05				1									3-6/8	

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23-AUG-75 EXCEPTIONS

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	RUN NUMBER
BUS A06	L	B01L2		1-01 *		D01					1			13
BUS A06	L	B04L2		1-02 *		D01								13
BUS A06				1									3-6/8	
BUS A07	L	B01L1		1-01 *		D01					1			14
BUS A07	L	B04L1		1-02 *		D01								14
BUS A07				1									3-6/8	
BUS A08	L	B01M2		1-01 *		D01					1			15
BUS A08	L	B04M2		1-02 *		D01								15
BUS A08				1									3-6/8	
BUS A09	L	B01M1		1-01 *		D01					1			16
BUS A09	L	B04M1		1-02 *		D01								16
BUS A09				1									3-6/8	
BUS A10	L	B01N2		1-01 *		D01					1			17
BUS A10	L	B04N2		1-02 *		D01								17
BUS A10				1									3-6/8	
BUS A11	L	B01N1		1-01 *		D01					1			18
BUS A11	L	B04N1		1-02 *		D01								18
BUS A11				1									3-6/8	
BUS A12	L	B01P2		1-01 *		D01					1			19
BUS A12	L	B04P2		1-02 *		D01								19
BUS A12				1									3-6/8	
BUS A13	L	B01P1		1-01 *		D01					1			20
BUS A13	L	B04P1		1-02 *		D01								20
BUS A13				1									3-6/8	
BUS A14	L	B01R2		1-01 *		D01					1			21
BUS A14	L	B04R2		1-02 *		D01								21
BUS A14				1									3-6/8	
BUS A15	L	B01R1		1-01 *		D01					1			22
BUS A15	L	B04R1		1-02 *		D01								22
BUS A15				1									3-6/8	
BUS A16	L	B01S2		1-01 *		D01					1			23
BUS A16	L	B04S2		1-02 *		D01								23
BUS A16				1									3-6/8	
BUS A17	L	B01S1		1-01 *		D01					1			24
BUS A17	L	B04S1		1-02 *		D04								24
BUS A17				1									3-6/8	

BUS AC LO	L	A01P1	1-01 *								25	1
BUS AC LO	L	A04F1	1-02 *			D01					25	
BUS AC LO			1			D04				3-6/8	25	
BUS BASY	L	A01P2	1-01 *			D01					26	1
BUS BASY	L	A04P2	1-02 *			D01					26	
BUS BASY			1							3-6/8	26	
BUS BR4	L	A01D2	1-01 *			D01					27	1
BUS BR4	L	A04D2	1-02 *			D01					27	
BUS BR4			1							3-6/8	27	
BUS BR5	L	A01C1	1-01 *			D01					28	1
BUS BR5	L	A04C1	1-02 *			D01					28	
BUS BR5			1							3-6/8	28	
BUS BR6	L	A01U2	1-01 *			D01					29	1
BUS BR6	L	A04U2	1-02 *			D01					29	
BUS BR6			1							3-6/8	29	
BUS BR7	L	A01T2	1-01 *			D01					30	1
BUS BR7	L	A04T2	1-02 *			D01					30	
BUS BR7			1							3-6/8	30	
BUS C0	L	A01U2	1-01 *			D01					31	1
BUS C0	L	A04U2	1-02 *			D01					31	
BUS C0			1							3-6/8	31	
BUS C1	L	A01T2	1-01 *			D01					32	1
BUS C1	L	A04T2	1-02 *			D01					32	
BUS C1			1							3-6/8	32	
BUS D00	L	A03S2	1-01 *			D8-1					33	1
BUS D00	L	A02K2	1-02 *			D9-1					33	2
BUS D00	L	A01C1	1-03 *			D01					33	1
BUS D00	L	A04C1	1-04 *			D01					33	
			1							10-4/8	33	
BUS D01	L	A03P1	1-01 *			D8-1					34	1
BUS D01	L	A02U2	1-02 *			D9-1					34	2
BUS D01	L	A01D2	1-03 *			D01					34	1
BUS D01	L	A04D2	1-04 *			D01					34	
			1							10-0/8	34	

BUS D02	L	A01D1	1-01 *			D01					35	2
BUS D02	L	A02B1	1-02 *			D9-1					35	1
BUS D02	L	A04D1	1-03 *			D01					35	2
BUS D02	L	A03S1	1-04 *			D8-1					35	
			1							10-4/8	35	
BUS D03	L	A01E2	1-01 *			D01					36	2
BUS D03	L	A04E2	1-02 *			D01					36	1
BUS D03	L	A03R2	1-03 *			D8-1					36	2
BUS D03	L	A02U1	1-04 *			D9-1					36	
			1							11-0/8	36	
BUS D04	L	A01E1	1-01 *			D01					37	1
BUS D04	L	A04E1	1-02 *			D01					37	2
BUS D04	L	A03M2	1-03 *			D8-1					37	1
BUS D04	L	A02U2	1-04 *			D9-1					37	
			1							10-2/8	37	
BUS D05	L	A01F2	1-01 *			D01					38	1
BUS D05	L	A03L1	1-02 *			D8-1					38	2
BUS D05	L	A04F2	1-03 *			D01					38	1
BUS D05	L	A02T2	1-04 *			D9-1					38	
			1							10-4/8	38	
BUS D06	L	A01F1	1-01 *			D01					39	1
BUS D06	L	A04F1	1-02 *			D01					39	2
BUS D06	L	A03M1	1-03 *			D8-1					39	1
BUS D06	L	A02S1	1-04 *			D9-1					39	
			1							10-0/8	39	
BUS D07	L	A01H2	1-01 *			D01					40	1
BUS D07	L	A03F1	1-02 *			D8-1					40	2
BUS D07	L	A04H2	1-03 *			D01					40	1
BUS D07	L	A02S2	1-04 *			D9-1					40	
			1							10-0/8	40	
BUS D08	L	A01H1	1-01 *			D01					41	1
BUS D08	L	A02J1	1-02 *			D9-1					41	2
BUS D08	L	A04H1	1-03 *			D01					41	1
BUS D08	L	A03V1	1-04 *			D8-1					41	
			1							10-2/8	41	
BUS D09	L	A01J2	1-01 *			D01					42	1
BUS D09	L	A02H2	1-02 *			D9-1					42	2
BUS D09	L	A03E2	1-03 *			D01					42	1
BUS D09	L	A04J2	1-04 *			D8-1					42	
			1							9-0/8	42	

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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
BUS D10	L	A01J1		1-01	*	D01					1				43
BUS D10	L	A02D2		1-02	*	D9-1					2				43
BUS D10	L	A04J1		1-03	*	D01					1				43
BUS D10	L	B03A1		1-04	*	D8-1							11-0/8		43
				1											
BUS D11	L	A01K2		1-01	*	D01					2				44
BUS D11	L	A02D1		1-02	*	D9-1					1				44
BUS D11	L	A03E1		1-03	*	D8-1					2				44
BUS D11	L	A04K2		1-04	*	D01							9-2/8		44
				1											
BUS D12	L	A01K1		1-01	*	D01					2				45
BUS D12	L	A02F2		1-02	*	D9-1					1				45
BUS D12	L	A03K2		1-03	*	D8-1					2				45
BUS D12	L	A04K1		1-04	*	D01							9-0/8		45
				1											
BUS D13	L	A01L2		1-01	*	D01					2				46
BUS D13	L	A02F1		1-02	*	D9-1					1				46
BUS D13	L	A03H1		1-03	*	D8-1					2				46
BUS D13	L	A04L2		1-04	*	D01							9-2/8		46
				1											
BUS D14	L	A01L1		1-01	*	D01					1				47
BUS D14	L	A02E2		1-02	*	D9-1					2				47
BUS D14	L	A03J2		1-03	*	D8-1					1				47
BUS D14	L	A04L1		1-04	*	D01							9-2/8		47
				1											
BUS D15	L	A01M2		1-01	*	D01					2				48
BUS D15	L	A02E1		1-02	*	D9-1					1				48
BUS D15	L	A03F2		1-03	*	D8-1					2				48
BUS D15	L	A04M2		1-04	*	D01							9-6/8		48
				1											
BUS DC LO	L	B01F2		1-01	*	D01					1				49
BUS DC LO	L	B04F2		1-02	*	D01							3-6/8		49
				1											
BUS INIT	L	A01A1		1-01	*	D01					1				50
BUS INIT	L	A04A1		1-02	*	D01							3-6/8		50
				1											
BUS INTR	L	A01B1		1-01	*	D01					1				51
BUS INTR	L	A04B1		1-02	*	D01							3-6/8		51
				1											

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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
BUS MSYN	L	B01V1		1-01	*	D01					2				52
BUS MSYN	L	B04V1		1-02	*	D01					1				52
BUS MSYN	L	E04T2		1-03	*	D3-2							13-6/8		52
				1											
BUS NPG	H	A01U1		1-01	*	D01					1				53
BUS NPG	H	A04U1		1-02	*	D01							3-6/8		53
BUS NPG				1											
BUS NPR	L	A01S2		1-01	*	D01					1				54
BUS NPR	L	A04S2		1-02	*	D01							3-6/8		54
BUS NPR				1											
BUS PA	L	A01M1		1-01	*	D01					1				55
BUS PA	L	A04M1		1-02	*	D01							3-6/8		55
BUS PA				1											
BUS PH	L	A01N2		1-01	*	D01					1				56
BUS PH	L	A04N2		1-02	*	D01							3-6/8		56
BUS PH				1											
BUS SACK	L	A01R2		1-01	*	D01					1				57
BUS SACK	L	A04R2		1-02	*	D01							3-6/8		57
BUS SACK				1											
BUS SSYN	L	B01U1		1-01	*	D01					1				58
BUS SSYN	L	B04U1		1-02	*	D01							3-6/8		58
BUS SSYN				1											
D3-1 KA CRYSTAL CLOCK	H	C01D2		1-01	*	D02					1				59
D3-1 KA CRYSTAL CLOCK	H	D01D2		1-02	*	D02							5-0/8		59
D3-1 KA CRYSTAL CLOCK				1											
D3-1 MASTER A	L	E01N2		1-01	*	D02					1				60
D3-1 MASTER A	L	E04N2		1-02	*	D02							3-6/8		60
D3-1 MASTER A				1											
D4-3 AB MUX SEL	H	C02V2		1-01	*	D9-2					1				61
D4-3 AB MUX SEL	H	D01B1		1-02	*	D02							3-4/8		61
D4-3 AB MUX SEL				1											
D4-3 BCC 23-16 (1)	H	B02H2		1-01	*	D9-2					1				62
D4-3 BCC 23-16 (1)	H	D01A1		1-02	*	D02							7-2/8		62
D4-3 BCC 23-16 (1)				1											

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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
D4-3 RX CLOCK	H	D01D1		1-01 *		D02					2				63
D4-3 RX CLOCK	H	E02F1		1-02 *		D9-6					1				63
D4-3 RX CLOCK	H	F03J1		1-03 *		D8-6							10=6/8		63
D4-3 RX CLOCK				1											
D4-3 TX CLOCK	H	D01C1		1-01 *		D02									64
D4-3 TX CLOCK	H	E02E2		1-02 *		D9-5							5=4/8		64
D4-3 TX CLOCK				1											
D4-4 LD RX 15-8	H	C03H1		1-01 *		D8-3					1				65
D4-4 LD RX 15-8	H	F01B1		1-02 *		D02									65
D4-4 LD RX 15-8				1									10=0/8		65
D4-4 STRIP SYNC (1)	H	D02N1		1-01 *		D9-6					1				66
D4-4 STRIP SYNC (1)	H	F01A1		1-02 *		D02					2				66
D4-4 STRIP SYNC (1)	H	F03F1		1-03 *		D8-6							10=2/8		66
D4-4 STRIP SYNC (1)				1											
D4-5 RD 00	H	E03E1		1-01 *		D8-2					1				67
D4-5 RD 00	H	F01J2		1-02 *		D02					2				67
D4-5 RD 00	H	E04J2		1-03 *		D3-1							14=4/8		67
D4-5 RD 00				1											
D4-5 RD 01	H	B03K1		1-01 *		D8-2					1				68
D4-5 RD 01	H	E04M2		1-02 *		D3-1					2				68
D4-5 RD 01	H	E01M2		1-03 *		D02							14=4/8		68
D4-5 RD 01				1											
D4-5 RD 02	H	B03H1		1-01 *		D8-2					1				69
D4-5 RD 02	H	E01J2		1-02 *		D02					2				69
D4-5 RD 02	H	E04L2		1-03 *									14=4/8		69
D4-5 RD 02				1											
D4-5 RD 03	H	B03C1		1-01 *		D8-2					1				70
D4-5 RD 03	H	E04K2		1-02 *		D3-1					2				70
D4-5 RD 03	H	E01K2		1-03 *		D02							15=0/8		70
D4-5 RD 03				1											
D4-5 RD 04	H	B03F2		1-01 *		D8-2					1				71
D4-5 RD 04	H	E04F2		1-02 *		D3-1					2				71
D4-5 RD 04	H	E01F2		1-03 *		D02							14=0/8		71
D4-5 RD 04				1											
D4-5 RD 05	H	B03L2		1-01 *		D8-2					1				72
D4-5 RD 05	H	E04H2		1-02 *		D3-1					2				72
D4-5 RD 05	H	E01H2		1-03 *		D02							13=6/8		72
D4-5 RD 05				1											

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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
D4-5 RD 06	H	B03D2		1-01 *		D8-2									73
D4-5 RD 06	H	E04D2		1-02 *		D3-1									73
D4-5 RD 06	H	E01D2		1-03 *		D02							14=0/8		73
D4-5 RD 06				1											
D4-5 RD 07	H	B03E2		1-01 *		D8-2									74
D4-5 RD 07	H	E04F2		1-02 *		D3-1									74
D4-5 RD 07	H	E01E2		1-03 *		D02							14=0/8		74
D4-5 RD 07				1											
D4-5 RD 08	H	C03M1		1-01 *		D8-2									75
D4-5 RD 08	H	F01J2		1-02 *		D02									75
D4-5 RD 08	H	F04J2		1-03 *		D3-1							14=0/8		75
D4-5 RD 08				1											
D4-5 RD 09	H	D03J1		1-01 *		D8-2									76
D4-5 RD 09	H	F04M2		1-02 *		D3-1									76
D4-5 RD 09	H	F01M2		1-03 *		D02							12-0/8		76
D4-5 RD 09				1											
D4-5 RD 10	H	C03L1		1-01 *		D8-2									77
D4-5 RD 10	H	F04L2		1-02 *		D3-1									77
D4-5 RD 10	H	F01L2		1-03 *		D02							14=4/8		77
D4-5 RD 10				1											
D4-5 RD 11	H	C03F1		1-01 *		D8-2									78
D4-5 RD 11	H	F04K2		1-02 *		D3-1									78
D4-5 RD 11	H	F01K2		1-03 *		D02							14=6/8		78
D4-5 RD 11				1											
D4-5 RD 12	H	C03S1		1-01 *		D8-2									79
D4-5 RD 12	H	F01F2		1-02 *		D02									79
D4-5 RD 12	H	F04F2		1-03 *		D3-1							13-2/8		79
D4-5 RD 12				1											
D4-5 RD 13	H	C03J1		1-01 *		D8-2									80
D4-5 RD 13	H	F04H2		1-02 *		D3-1									80
D4-5 RD 13	H	F01H2		1-03 *		D02							14-2/8		80
D4-5 RD 13				1											
D4-5 RD 14	H	C03K1		1-01 *		D8-2									81
D4-5 RD 14	H	F01D2		1-02 *		D02									81
D4-5 RD 14	H	F04D2		1-03 *		D3-1							13-6/8		81
D4-5 RD 14				1											

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	RUN NUMBER
D4-5 RD 15	H	C03T2		1-01 *		D8-2		1			82
D4-5 RD 15	H	F04K2		1-02 *		D3-1		2			82
D4-5 RD 15	H	F01E2		1-03 *		D02				13-0/8	82
D4-5 RD 15				1							
D4-5 RX BCC DATA IN	H	C02P2		1-01 *		D9-3		1			83
D4-5 RX BCC DATA IN	H	D01E1		1-02 *		D02				4-4/8	83
D4-5 RX BCC DATA IN				1							
D4-5 TD 00	H	B03F1		1-01 *		D8-2		1			84
D4-5 TD 00	H	E01A1		1-02 *		D02				10-0/8	84
D4-5 TD 00				1							
D4-5 TD 01	H	B03R1		1-01 *		D8-2		1			85
D4-5 TD 01	H	F01C1		1-02 *		D02				9-2/8	85
D4-5 TD 01				1							
D4-5 TD 02	H	B03J1		1-01 *		D8-2		1			86
D4-5 TD 02	H	E01D1		1-02 *		D02				10-0/8	86
D4-5 TD 02				1							
D4-5 TD 03	H	B03D1		1-01 *		D8-2		1			87
D4-5 TD 03	H	E01E1		1-02 *		D02				10-6/8	87
D4-5 TD 03				1							
D4-5 TD 04	H	B03J2		1-01 *		D8-2		1			88
D4-5 TD 04	H	E01F1		1-02 *		D02				10-4/8	88
D4-5 TD 04				1							
D4-5 TD 05	H	B03M2		1-01 *		D8-2		1			89
D4-5 TD 05	H	E01H1		1-02 *		D02				10-2/8	89
D4-5 TD 05				1							
D4-5 TD 06	H	B03K2		1-01 *		D8-2		1			90
D4-5 TD 06	H	E01J1		1-02 *		D02				10-4/8	90
D4-5 TD 06				1							
D4-5 TD 07	H	B03H2		1-01 *		D8-2		1			91
D4-5 TD 07	H	E01K1		1-02 *		D02				11-0/8	91
D4-5 TD 07				1							
D4-5 TD 08	H	C03R2		1-01 *		D8-2		1			92
D4-5 TD 08	H	F01C1		1-02 *		D02				9-4/8	92
D4-5 TD 08				1							

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	RUN NUMBER
D4-5 TD 09	H	D03K1		1-01 *		D8-2		1			93
D4-5 TD 09	H	F01D1		1-02 *		D02				7-2/8	93
D4-5 TD 09				1							
D4-5 TD 10	H	D03H1		1-01 *		D8-2		1			94
D4-5 TD 10	H	F01E1		1-02 *		D02				7-6/8	94
D4-5 TD 10				1							
D4-5 TD 11	H	C03P1		1-01 *		D8-2		1			95
D4-5 TD 11	H	F01F1		1-02 *		D02				9-6/8	95
D4-5 TD 11				1							
D4-5 TD 12	H	C03U2		1-01 *		D8-2		1			96
D4-5 TD 12	H	F01H1		1-02 *		D02				9-6/8	96
D4-5 TD 12				1							
D4-5 TD 13	H	C03V2		1-01 *		D8-2		1			97
D4-5 TD 13	H	F01J1		1-02 *		D02				9-6/8	97
D4-5 TD 13				1							
D4-5 TD 14	H	C03V1		1-01 *		D8-2		1			98
D4-5 TD 14	H	F01K1		1-02 *		D02				9-6/8	98
D4-5 TD 14				1							
D4-5 TD 15	H	C03U1		1-01 *		D8-2		1			99
D4-5 TD 15	H	F01L1		1-02 *		D02				9-6/8	99
D4-5 TD 15				1							
D4-7 RX SYNC DET	H	D02M1		1-01 *		D9-6		1			100
D4-7 RX SYNC DET	H	F03E1		1-02 *		D8-6		2			100
D4-7 RX SYNC DET	H	F01N2		1-03 *		D02		1			100
D4-7 RX SYNC DET	H	F04N2		1-04 *		D3-1					100
D4-7 RX SYNC DET				1							
D4-7 TX DATA	H	D01F1		1-01 *		D02		1			101
D4-7 TX DATA	H	E02E1		1-02 *		D09-4				5-0/8	101
D4-7 TX DATA				1							
D5-1 CC-BA ADRS 09	L	B02H1		1-01 *		D9-2		1			102
D5-1 CC-BA ADRS 08	L	D01H1		1-02 *		D02				7-6/8	102
D5-1 CC-BA ADRS 08				1							
D5-1 CC-BA ADRS 09	L	B02J1		1-01 *		D9-2		1			103
D5-1 CC-BA ADRS 09	L	D01J1		1-02 *		D02				7-6/8	103
D5-1 CC-BA ADRS 09				1							

DQ11AB.E
RUN NAME

HND288.V23(23) 05/24/74
A/P PIN NAME — ORDER PIN — BAY - ORDER — Q — DRAW RV PG Y

D5-1	CC-BA ADRS 10	L	D01K1		1-01	*		D02
D5-1	CC-BA ADRS 10	L	E02L1		1-02	*		D9-2
D5-1	CC-BA ADRS 10				1			
D5-2	DI PORT 14	L	D01L1		1-01	*		D02
D5-2	DI PORT 14	L	F02E2		1-02	*		D9-6
D5-2	DI PORT 14				1			
D5-2	SP PORT 13	H	D01M1		1-01	*		D02
D5-2	SP PORT 13	H	F02J2		1-02	*		D9-5
D5-2	SP PORT 13				1			
D5-2	SP PORT 14	H	D01N1		1-01	*		D02
D5-2	SP PORT 14	H	F02N1		1-02	*		D9-5
D5-2	SP PORT 14				1			
D5-3	CNTR LD PULSE	H	D01R1		1-01	*		D02
D5-3	CNTR LD PULSE	H	E02V2		1-02	*		D9-2
D5-3	CNTR LD PULSE				1			
D5-3	LD SP PORT	L	D01S1		1-01	*		D02
D5-3	LD SP PORT	L	D02R1		1-02	*		D9-6
D5-3	LD SP PORT				1			
D5-3	RX CYCLE	H	E04B1		1-01	*		D3-2
D5-3	RX CYCLE	H	E01B1		1-02	*		D02
D5-3	RX CYCLE	H	F02B1		1-03	*		D9-5
D5-3	RX CYCLE	H	F03R2		1-04	*		D8-6
D5-3	RX CYCLE				1			
D5-3	TST NEXT CC (1)	H	C02U2		1-01	*		D9-5
D5-3	TST NEXT CC (1)	H	D01L2		1-02	*		D03
D5-3	TST NEXT CC (1)				1			
D5-4	B SSYN	H	E01U2		1-01	*		D02
D5-4	B SSYN	H	E04U2		1-02	*		D02
D5-4	B SSYN				1			
D5-4	INI	H	D01V1		1-01	*		D02
D5-4	INI	H	D02L2		1-02	*		D9-2
D5-4	INI				1			
D5-4	RX S (1)	H	D01V2		1-01	*		D5-4
D5-4	RX S (1)	H	E02D2		1-02	*		D9-6
D5-4	RX S (1)				1			

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X	Z	REMARKS	LENGTH	RUN NUMBER
	1			104
				104
			5-2/8	104
	1			105
				105
			7-2/8	105
	1			106
				106
			7-4/8	106
	1			107
				107
			7-6/8	107
	1			108
				108
			5-6/8	108
	1			109
				109
			3-0/8	109
	2			110
	1			110
	2			110
				110
			13-2/8	110
	1			111
				111
			4-4/8	111
	1			112
				112
			3-6/8	112
	1			113
				113
			3-6/8	113
	1			114
				114
			3-2/8	114

23-AUG-75 11:26 EXCEPTIONS

X	Z	REMARKS	LENGTH	RUN NUMBER
	1			115
				115
			3-0/8	115
	1			116
				116
			5-2/8	116
	1			117
				117
			9-4/8	117
	1			118
	2			118
				118
			11-6/8	118
	1			119
				119
			6-4/8	119
	2			120
	1			120
	2			120
				120
			14-6/8	120
	1			121
				121
			6-2/8	121
	1			122
				122
			5-6/8	122
	2			123
	1			123
				123
			10-2/8	123
	1			124
				124
			9-0/8	124
	1			125
				125
			9-0/8	125

DQ11AB.F
RUN NAME

HND288.V23(23) 05/24/74
A/P PIN NAME — ORDER PIN — BAY - ORDER — Q — DRAW RV PG Y

D5-4	SEL 6 LD	L	D01U1		1-01	*		D02
D5-4	SEL 6 LD	L	D02P1		1-02	*		D9-6
D5-4	SEL 6 LD				1			
D5-6	1 TO TX SEARCH RQ	H	E01R1		1-01	*		D8-3
D5-6	1 TO TX SEARCH RQ	H	F03N1		1-02	*		D8-3
D5-6	1 TO TX SEARCH RQ				1			
D5-6	B TX C	L	D01B2		1-01	*		D02
D5-6	B TX C	L	F02S2		1-02	*		D9-5
D5-6	B TX C				1			
D5-6	RCC EN (0)	H	D01J2		1-01	*		D02
D5-6	RCC EN (0)	H	E02D1	F03V2	1-02	*		D9-5
D5-6	RCC EN (0)	H	F03V2		1-03	*		
D5-6	RCC EN (0)				1			
D5-6	DLE EN (0)	H	E01L1		1-01	*		D02
D5-6	DLE EN (0)	H	F03V1		1-02	*		D02
D5-6	DLE EN (0)				1			
D5-6	LD TX SH REG	H	B03V2		1-01	*		D8-5
D5-6	LD TX SH REG	H	C03P1		1-02	*		D8-2
D5-6	LD TX SH REG	H	D01K2		1-03	*		D02
D5-6	LD TX SH REG	H	E02M1		1-04	*		D9-5
D5-6	LD TX SH REG				1			
D5-6	SYNC EN	L	D01H2		1-01	*		D02
D5-6	SYNC EN	L	E02U1		1-02	*		D9-5
D5-6	SYNC EN				1			
D5-6	SYNC/DATA EN	L	D01P1		1-01	*		D02
D5-6	SYNC/DATA EN	L	E03U1		1-02	*		D8-5
D5-6	SYNC/DATA EN				1			
D5-6	TX ACTIVE (1)	H	D01F2		1-01	*		D02
D5-6	TX ACTIVE (1)	H	F03B1		1-02	*		D8-3
D5-6	TX ACTIVE (1)	H	F02D2		1-03	*		D9-5
D5-6	TX ACTIVE (1)				1			
D5-6	TX BIT CNTR 1 (1)	H	C03E1		1-01	*		D8-5
D5-6	TX BIT CNTR 1 (1)	H	E01P1		1-02	*		D02
D5-6	TX BIT CNTR 1 (1)				1			
D5-6	TX BIT CNTR 2 (1)	H	C03D1		1-01	*		D8-5
D5-6	TX BIT CNTR 2 (1)	H	E01N1		1-02	*		D02
D5-6	TX BIT CNTR 2 (1)				1			

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RUN NAME A/P PIN ORDER BAY - Q DRAW RV PG Y X 23-AUG-75 11:26 EXCEPTIONS RUN NUMBER

Z	REMARKS	LENGTH	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	RUN NUMBER
1													126
													126
		9=0/8											126
1													127
													127
		8=0/8											127
1													128
													128
		4=4/8											128
1													129
2													129
1													129
2													129
		17=6/8											129
2													130
1													130
2													130
		9=2/8											130
1													131
													131
		4=4/8											131
2													132
1													132
													132
		6=4/8											132
1													133
2													133
		16=4/8											133
1													134
2													134
		16=2/8											134

Z	REMARKS	LENGTH	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	RUN NUMBER
1													135
2													135
		14=6/8											135
1													136
2													136
		15=0/8											136
1													137
2													137
		6=6/8											137
1													138
		3=6/8											138
1													139
		3=6/8											139
1													140
		4=0/8											140
1													141
		12=0/8											141
1													142
		10=0/8											142
1													143
		10=2/8											143
1													144
		6=4/8											144
1													145
		5=6/8											145

DQ11AB.E HND288.V23(23) 05/24/74
RUN NAME A/P PIN ORDER BAY - Q DRAW RV PG Y X

		A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X
D5-6	TX BIT CNTR 4 (1)	H	C03C1		1-01 *						D8-5
D5-6	TX BIT CNTR 4 (1)	H	E01M1		1-02 *						D02
D5-6	TX BIT CNTR 4 (1)				1						
D5-6	TX FAKE END (1)	H	D01E2		1-01 *						D02
D5-6	TX FAKE END (1)	H	F02H1		1-02 *						D9-5
D5-6	TX FAKE END (1)				1						
D5-7	A RX C	L	D01M2		1-01 *						D02
D5-7	A RX C	L	E02H1		1-02 *						D9-6
D5-7	A RX C				1						
D5-7	RX ACTIVE (1)	H	D02D2		1-01 *	1					
D5-7	RX ACTIVE (1)	H	E03J1		1-02 *						D8-6
D5-7	RX ACTIVE (1)	H	F03C1		1-03 *						D8-3
D5-7	RX ACTIVE (1)	H	F04R2		1-04 *						D3-1
D5-7	RX ACTIVE (1)	H	F01R2		1-05 *						D02
D5-7	RX ACTIVE (1)				1						
D5-7	TEST JUMPER MATCH	L	F02J1		1-01 *						D9-6
D5-7	TEST JUMPER MATCH	L	F01P2		1-02 *						D02
D5-7	TEST JUMPER MATCH	L	F03P1		1-03 *						D8-3
D5-7	TEST JUMPER MATCH	L	F04P2		1-04 *						D3-1
D5-7	TEST JUMPER MATCH				1						
D5-8	RX CC ODD	L	D01N2		1-01 *						D02
D5-8	RX CC ODD	L	E02K1		1-02 *						D9-6
D5-8	RX CC ODD				1						
D6-1	Ø1 TO CHAR INTR	L	E01V2		1-01 *						D02
D6-1	Ø1 TO CHAR INTR	L	E03R1		1-02 *						D8-4
D6-1	Ø1 TO CHAR INTR	L	F04V2		1-03 *						D3-1
D6-1	Ø1 TO CHAR INTR				1						
D6-1	CD Ø8	H	C03A1		1-01 *						D8-3
D6-1	CD Ø8	H	F01V2		1-02 *						D02
D6-1	CD Ø8	H	F04V2		1-03 *						D3-1
D6-1	CD Ø8				1						
D6-1	CD Ø9	H	C03B1		1-01 *						D8-3
D6-1	CD Ø9	H	F04T2		1-02 *						D3-1
D6-1	CD Ø9	H	F01T2		1-03 *						D02
D6-1	CD Ø9				1						
D6-1	CD 10	H	C03N2		1-01 *						D8-3
D6-1	CD 10	H	F04S2		1-02 *						D3-1
D6-1	CD 10	H	F01S2		1-03 *						D02
D6-1	CD 10				1						
D6-1	CD 11	H	C03N1		1-01 *						D8-3
D6-1	CD 11	H	F04U2		1-02 *						D3-1
D6-1	CD 11	H	F01U2		1-03 *						D02
D6-1	CD 11				1						
D6-2	END NPR CYCLE (Ø)	H	E01R2		1-01 *						D02
D6-2	END NPR CYCLE (Ø)	H	F03U2		1-02 *						D8-6
D6-2	END NPR CYCLE (Ø)	H	E04R2		1-03 *						D3-2
D6-2	END NPR CYCLE (Ø)				1						
D6-2	LD TX BUF (Ø)	H	E01P2		1-01 *						D02
D6-2	LD TX BUF (Ø)	H	E04P2		1-02 *						D02
D6-2	LD TX BUF (Ø)				1						
D6-2	TIME OUT (1)	H	E01S2		1-01 *						D02
D6-2	TIME OUT (1)	H	E04S2		1-02 *						D02
D6-2	TIME OUT (1)				1						
D8-1	SEQ ØØ	H	A02N1		1-01 *						D9-1
D8-1	SEQ ØØ	H	B03B1		1-02 *						D8-1
D8-1	SEQ ØØ				1						
D8-1	SEQ Ø1	H	A02L1		1-01 *						D9-1
D8-1	SEQ Ø1	H	E03B1		1-02 *						D9-1
D8-1	SEQ Ø1				1						
D8-1	SEQ Ø2	H	B02D2		1-01 *						D9-1
D8-1	SEQ Ø2	H	E03C1		1-02 *						D8-4
D8-1	SEQ Ø2				1						
D8-1	SEQ Ø3	H	A02R1		1-01 *						D9-1
D8-1	SEQ Ø3	H	D03M1		1-02 *						D8-4
D8-1	SEQ Ø3				1						
D8-1	SEQ Ø4	H	B02L2		1-01 *						D9-1
D8-1	SEQ Ø4	H	D03A1		1-02 *						D8-4
D8-1	SEQ Ø4				1						
D8-1	SEQ Ø5	H	B02K1		1-01 *						D9-1
D8-1	SEQ Ø5	H	C03P2		1-02 *						D8-4
D8-1	SEQ Ø5				1						

Z	REMARKS	23-AUG-75 LENGTH	11126 EXCEPTIONS	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	RUN NUMBER
1	D8-1 SEQ 06			H	A02K2		1-01	*				D9-1		146
	D8-1 SEQ 06			H	D03U1		1-02	*				D8-4		146
	D8-1 SEQ 06	8-6/8					1							146
1	D8-1 SEQ 07			H	B02J2		1-01	*				D9-1		147
	D8-1 SEQ 07			H	D03P1		1-02	*				D8-4		147
	D8-1 SEQ 07	8-4/8					1							147
1	D8-1 SEQ 08			H	A02K1		1-01	*				D9-1		148
	D8-1 SEQ 08			H	B03P2		1-02	*				D8-4		148
	D8-1 SEQ 08	6-0/8					1							148
1	D8-1 SEQ 09			H	A02C1		1-01	*				D9-1		149
	D8-1 SEQ 09			H	E03E1		1-02	*				D8-3		149
	D8-1 SEQ 09	13-2/8					1							149
1	D8-1 SEQ 10			H	A02H1		1-01	*				D9-1		150
	D8-1 SEQ 10			H	B03V1		1-02	*				D8-4		150
	D8-1 SEQ 10	6-6/8					1							150
1	D8-1 SEQ 11			H	A02A1		1-01	*				D9-1		151
	D8-1 SEQ 11			H	B03S1		1-02	*				D8-4		151
	D8-1 SEQ 11	7-0/8					1							151
1	D8-1 SEQ 12			H	A02N1		1-01	*				D9-1		152
	D8-1 SEQ 12			H	A03M1		1-02	*				D8-4		152
	D8-1 SEQ 12	2-6/8					1							152
1	D8-1 SEQ 13			H	A02L1		1-01	*				D9-1		153
	D8-1 SEQ 13			H	B03N1		1-02	*				D8-4		153
	D8-1 SEQ 13	3-0/8					1							153
1	D8-1 SEQ 14			H	B02M1		1-01	*				D9-1		154
	D8-1 SEQ 14			H	B03L1		1-02	*				D8-2		154
	D8-1 SEQ 14	3-0/8					1							154
1	D8-1 SEQ 15			H	B02M2		1-01	*				D9-1		155
	D8-1 SEQ 15			H	A03P1		1-02	*				D8-2		155
	D8-1 SEQ 15	2-6/8					1							155
1	D8-3 RX SEARCH DONE			L	E01S1		1-01	*				D02		156
	D8-3 RX SEARCH DONE			L	E03V1		1-02	*				D8-3		156
	D8-3 RX SEARCH DONE	3-6/8					1							156
1	D8-4 00 TO RX GO/DONE			L	D03L1		1-01	*				D8-4		157
	D8-4 00 TO RX GO/DONE			L	E01V1		1-02	*				D02		157
	D8-4 00 TO RX GO/DONE	6-2/8					1							157

Z	REMARKS	23-AUG-75 LENGTH	11126 EXCEPTIONS	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	RUN NUMBER
1	D8-4 00 TO TX GO/DONE			L	D03N1		1-01	*				D8-4		158
	D8-4 00 TO TX GO/DONE			L	E01M1		1-02	*				D02		158
	D8-4 00 TO TX GO/DONE	8-0/8					1							158
1	D8-4 CRA			L	D03S1		1-01	*				D8-4		159
	D8-4 CRA			L	E01B2		1-02	*				D02		159
	D8-4 CRA	3-4/8					1							159
1	D8-4 RX ACC 04			L	D03D1		1-01	*				D8-4		160
	D8-4 RX ACC 04			L	E02K2		1-02	*				D9-6		160
	D8-4 RX ACC 04	5-6/8					1							160
1	D8-4 RX ACC 05			L	D03E1		1-01	*				D8-4		161
	D8-4 RX ACC 05			L	E02H2		1-02	*				D9-6		161
	D8-4 RX ACC 05	5-2/8					1							161
1	D8-4 STRIP DBL CHAR			L	B03N2		1-01	*				D8-4		162
	D8-4 STRIP DBL CHAR			L	F01U1		1-02	*				D02		162
	D8-4 STRIP DBL CHAR	11-2/8					1							162
1	D8-4 TX ACC 04			L	E03A1		1-01	*				D8-4		163
	D8-4 TX ACC 04			L	F02V1		1-02	*				D9-5		163
	D8-4 TX ACC 04	7-4/8					1							163
1	D8-4 TX ACC 05			L	D03V1		1-01	*				D8-4		164
	D8-4 TX ACC 05			L	F02P2		1-02	*				D9-5		164
	D8-4 TX ACC 05	7-2/8					1							164
1	D8-4 TX ACC NEXT CHAR			L	D03F1		1-01	*				D8-4		165
	D8-4 TX ACC NEXT CHAR			L	F02N2		1-02	*				D9-5		165
	D8-4 TX ACC NEXT CHAR	8-4/8					1							165
1	D8-5 DLE RQ			L	E03P1		1-01	*				D8-5		166
	D8-5 DLE RQ			L	F01P1		1-02	*				D02		166
	D8-5 DLE RQ	5-4/8					1							166
1	D8-5 INH SH TX ACC			L	F02A1		1-01	*				D9-5		167
	D8-5 INH SH TX ACC			L	F03L1		1-02	*				D8-5		167
	D8-5 INH SH TX ACC	3-6/8					1							167
1	D8-5 PAD RQ			L	E03K1		1-01	*				D02		168
	D8-5 PAD RQ			L	F01N1		1-02	*				D02		168
	D8-5 PAD RQ	5-6/8					1							168
1	D8-5 TX ACC SH EN (1)			H	E02V1		1-01	*				D9-5		169
	D8-5 TX ACC SH EN (1)			H	E03N1		1-02	*				D8-5		169
	D8-5 TX ACC SH EN (1)	3-2/8					1							169

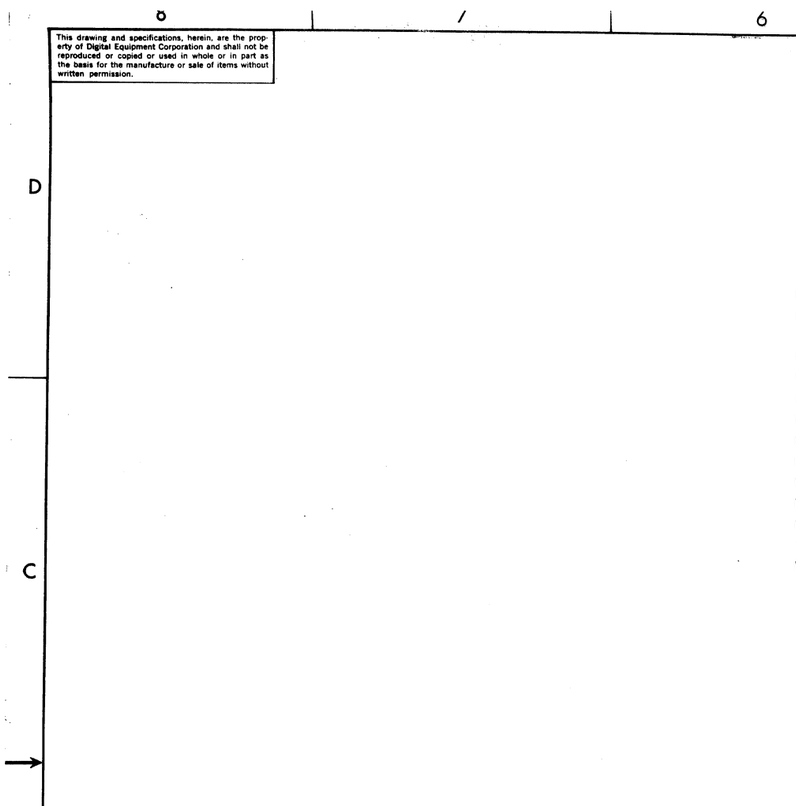
RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D8-5 TX TRANS (0)	H	D03P1		1-01 *		D02		1				170
D8-5 TX TRANS (0)	H	F01R1		1-02 *		D02						170
D8-5 TX TRANS (0)				1						8-0/8		170
D8-6 BCC ON SYNC (0)	H	E02R2		1-01 *		D9-6		1				171
D8-6 BCC ON SYNC (0)	H	E03D1		1-02 *		D8-6						171
D8-6 BCC ON SYNC (0)				1						3-6/8		171
D8-6 DES RX BCC SH	L	E02J2		1-01 *		D9-6		1				172
D8-6 DES RX BCC SH	L	E03M1		1-02 *		D8-6						172
D8-6 DES RX BCC SH				1						2-6/8		172
D8-6 DLE SAVE (0)	H	E03V2		1-01 *		D8-6		1				173
D8-6 DLE SAVE (0)	H	F01U1		1-02 *		D3-1						173
D8-6 DLE SAVE (0)				1						5-4/8		173
D8-6 IT BB	L	E02L2		1-01 *	1	D9-6		1		2-3		174
D8-6 IT BB	L	F02H2		1-02 *		D9-6		2				174
D8-6 IT BB	L	F03U1		1-03 *		D8-6		1				174
D8-6 IT BB	L	F04V1		1-04 *		D9-2		2				174
D8-6 IT BB	L	F01V1		1-05 *		D8-6						174
D8-6 IT BB				1						15-7/8		174
D8-6 NOT RESTART	L	E02J1		1-01 *		D9-6		1				175
D8-6 NOT RESTART	L	F03M1		1-02 *		D8-6						175
D8-6 NOT RESTART				1						5-6/8		175
D8-6 RX TRANS	L	F02F1		1-01 *		D9-6		1				176
D8-6 RX TRANS	L	F03A1		1-02 *		D8-3						176
D8-6 RX TRANS				1						3-2/8		176
D9-1 D00	H	A02R2		1-01 *		D9-1		1				177
D9-1 D00	H	A03U2		1-02 *		D8-1						177
D9-1 D00				1						3-0/8		177
D9-1 D01	H	A02V2		1-01 *		D9-1		1				178
D9-1 D01	H	A03T2		1-02 *		D8-1						178
D9-1 D01				1						3-0/8		178
D9-1 D02	H	A03U1		1-01 *		D8-1		1				179
D9-1 D02	H	B02C1		1-02 *		D9-1						179
D9-1 D02				1						3-4/8		179
D9-1 D03	H	A03V2		1-01 *		D8-1		1				180
D9-1 D03	H	B02F1		1-02 *		D9-1						180
D9-1 D03				1						4-0/8		180

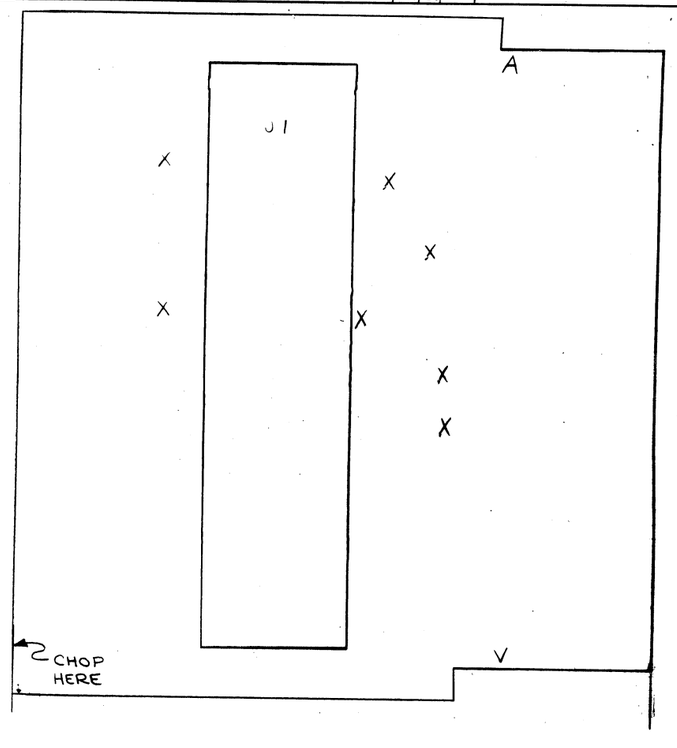
RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D9-1 D04	H	A03N1		1-01 *		D8-1		1				181
D9-1 D04	H	B02B1		1-02 *		D9-1						181
D9-1 D04				1						4-0/8		181
D9-1 D05	H	A03N2		1-01 *	1	D8-1		1		1-7		182
D9-1 D05	H	B02A1		1-02 *		D9-1						182
D9-1 D05				1						4-3/8		182
D9-1 D06	H	A02V1		1-01 *		D9-1		1				183
D9-1 D06	H	A03P2		1-02 *		D8-1						183
D9-1 D06				1						3-2/8		183
D9-1 D07	H	A03P1		1-01 *		D8-1		1				184
D9-1 D07	H	B02E1		1-02 *		D9-1						184
D9-1 D07				1						4-2/8		184
D9-1 D08	H	A03D2		1-01 *		D8-1		1				185
D9-1 D08	H	B02E2		1-02 *		D9-1						185
D9-1 D08				1						5-4/8		185
D9-1 D09	H	A03D1		1-01 *	1	D8-1		1		2-4		186
D9-1 D09	H	B02D1		1-02 *		D9-1						186
D9-1 D09				1						5-5/8		186
D9-1 D10	H	A02M1		1-01 *		D8-1		1				187
D9-1 D10	H	A03B1		1-02 *		D8-1						187
D9-1 D10				1						3-6/8		187
D9-1 D11	H	A02M2		1-01 *		D9-1		1				188
D9-1 D11	H	A03C1		1-02 *		D8-1						188
D9-1 D11				1						3-4/8		188
D9-1 D12	H	A02N2		1-01 *		D9-1		1				189
D9-1 D12	H	A03K1		1-02 *		D8-1						189
D9-1 D12				1						2-6/8		189
D9-1 D13	H	A02P1		1-01 *		D9-1		1				190
D9-1 D13	H	A03J1		1-02 *		D8-1						190
D9-1 D13				1						3-2/8		190
D9-1 D14	H	A02P2		1-01 *		D9-1		1				191
D9-1 D14	H	A03H2		1-02 *		D8-1						191
D9-1 D14				1						3-2/8		191
D9-1 D15	H	A02L2		1-01 *		D9-1		1				192
D9-1 D15	H	A03L2		1-02 *		D8-1						192
D9-1 D15				1						2-6/8		192

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D9-2 CM TO BUS	H	A03A1		1-01 *		D8-1		1				193
D9-2 CM TO BUS	H	C02L2		1-02 *		D9-2						193
D9-2 CM TO BUS				1						8-6/8		193
D9-2 INI	H	B02F2		1-01 *		D9-2		1				194
D9-2 INI	H	F03K1		1-02 *		D8-5						194
D9-2 INI				1						13-2/8		194
D9-4 BCC-DLE	L	C03S2		1-01 *		D8-5		1				195
D9-4 BCC-DLE	L	D02P2		1-02 *		D9-4		2				195
D9-4 BCC-DLE	L	D01P2		1-03 *		D02						195
D9-4 BCC-DLE				1						7-6/8		195
D9-5 BCC RQ	L	D01S2		1-01 *		D02		1				196
D9-5 BCC RQ	L	F02E1		1-02 *		D9-5						196
D9-5 BCC RQ				1						6-4/8		196
D9-5 TX C	H	E03H1		1-01 *		D8-5		1				197
D9-5 TX C	H	F02T2		1-02 *		D9-5						197
D9-5 TX C				1						6-2/8		197
D9-5 TX C	L	E03L1		1-01 *		D8-5		1				198
D9-5 TX C	L	F02R2		1-02 *		D9-5						198
D9-5 TX C				1						5-6/8		198
D9-5 TX EXIT PULSE	H	E03S1		1-01 *		D8-5		1				199
D9-5 TX EXIT PULSE	H	F02U2		1-02 *		D9-5						199
D9-5 TX EXIT PULSE				1						5-4/8		199
D9-5 TX TOTAL TRAN (Ø)	H	D01R2		1-01 *		D02		1				200
D9-5 TX TOTAL TRAN (Ø)	H	F02K1		1-02 *		D9-5		2				200
D9-5 TX TOTAL TRAN (Ø)	H	F03R1		1-03 *		D8-3						200
D9-5 TX TOTAL TRAN (Ø)				1						10-2/8		200
D9-6 B RX C	H	E02T2		1-01 *		D9-6		1				201
D9-6 B RX C	H	F03H1		1-02 *		D8-6						201
D9-6 B RX C				1						4-0/8		201
D9-6 BCC ERR	L	D01U2		1-01 *		D02		1				202
D9-6 BCC ERR	L	E02F2		1-02 *		D9-6						202
D9-6 BCC ERR				1						3-6/8		202
D9-6 DIS RX TRANSF PU	L	F01B2		1-01 *		D02		1				203
D9-6 DIS RX TRANSF PU	L	F02D1		1-02 *		D9-2						203
D9-6 DIS RX TRANSF PU				1						2-6/8		203

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D9-6 EN RX TRANSFER PU	H	E02C1		1-01 *		D9-6		1				204
D9-6 EN RX TRANSFER PU	H	F04B2		1-02 *		D3-1		2				204
D9-6 EN RX TRANSFER PU	H	F03S1		1-03 *		D8-3						204
D9-6 EN RX TRANSFER PU				1						9-6/8		204
D9-6 LO CHAR DET	L	D03R1		1-01 *		D8-3		1				205
D9-6 LO CHAR DET	L	F02A1		1-02 *		D9-6						205
D9-6 LO CHAR DET				1						5-0/8		205
D9-6 LO SEQ	L	D02R2		1-01 *		D9-6		1				206
D9-6 LO SEQ	L	D03C1		1-02 *		D8-3						206
D9-6 LO SEQ				1						3-6/8		206
D9-6 PRO BCC CYCLE	L	E02B1		1-01 *	2	D02		2				207
D9-6 PRO BCC CYCLE	L	F03S2		1-02 *		D8-6		*				207
D9-6 PRO BCC CYCLE				1						7-0/8		207
D9-6 RX BCC CYCLE	L	D01T2		1-01 *				1				208
D9-6 RX BCC CYCLE	L	D02H2	E03F1	1-02 *				2				208
D9-6 RX BCC CYCLE	L	E03F1		1-03 *								208
D9-6 RX BCC CYCLE				1						8-6/8		208
D9-6 RX TOTAL TRAN	L	F01S1		1-01 *		D02		1				209
D9-6 RX TOTAL TRAN	L	F03D1		1-02 *		D8-6		2				209
D9-6 RX TOTAL TRAN	L	F02C1		1-03 *		D9-6						209
D9-6 RX TOTAL TRAN				1						7-2/8		209
GND #1		A01B2		1-01 *		D01		1				210
GND #1		A01C2		1-02 *		D01		2				210
GND #1		A01N1		1-03 *		D01		1				210
GND #1		A01P1		1-04 *		D01		2				210
GND #1		A01P1		1-05 *		D01		1				210
GND #1		A01S1		1-06 *		D01		2				210
GND #1		A01T1		1-07 *		D01		1				210
GND #1		A01V2		1-08 *		D01		2				210
GND #1		B01B2		1-09 *		D01		1				210
GND #1		B01C2		1-10 *		D01		2				210
GND #1		B01D1		1-11 *		D01		1				210
GND #1		B01E1		1-12 *		D01		2				210
GND #1		B01T1		1-13 *		D01		1				210
GND #1		B01V2		1-14 *		D01						210
GND #1				1						35-6/8		210

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND Ø4		A04R2		1-01 *				D01			1				211
GND Ø4		A04C2		1-02 *				D01			2				211
GND Ø4		A04N1		1-03 *				D01			1				211
GND Ø4		A04P1		1-04 *				D01			2				211
GND Ø4		A04R1		1-05 *				D01			1				211
GND Ø4		A04S1		1-06 *				D01			2				211
GND Ø4		A04T1		1-07 *				D01			1				211
GND Ø4		A04V2		1-08 *				D01			2				211
GND Ø4		B04R2		1-09 *				D01			1				211
GND Ø4		B04C2		1-10 *				D01			2				211
GND Ø4		B04D1		1-11 *				D01			1				211
GND Ø4		B04E1		1-12 *				D01			2				211
GND Ø4		B04T1		1-13 *				D01			1				211
GND Ø4		B04V2		1-14 *				D01							211
GND Ø4				1									35-6/8		211





QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
7		EYELET FEED THRU	9006731	6
1	J1	CONN. CINCH DB-255-3	1210247	5
1		ETCHED CIRCUIT BOARD	501002C	4
		MODULE ECO HISTORY	B-MH-H315-0-6	3
		ASSY/DRILLING HOLE LAYOUT	C-AH-H315-0-5	2
		X-Y COORDINATE HOLE LOCATION	K-CO-H315-0-4	1
QTY.	REF. DESIGNATION	DESCRIPTION	DEC PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV A

REV	CHANGE NO. REVISIONS	DEC NO.	EIA NO.	DEC NO.	EIA NO.	CHK

SEMICONDUCTOR CONVERSION CHART

DRN. Roger J. Duquette DATE 3-5-72
CHK'D. DATE 3-16-72
ENG DATE 3-17-72
PROJ ENG DATE 3-17-72
PROD DATE 3/20/72
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE MODEM TEST CONNECTOR

SIZE D | CODE CS | NUMBER H315-0-1 | REV.

DIST.

DEC FORM NO. DRD-135

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

PRINT SET #1	SEQUENCE
DRAWING DIRECTORY	B-DD-DF11-Ø
ENGINEERING SPEC	A-SP-DF11-Ø-1
EIA/LEVEL CONVERTER	A-PL-M594-Ø-Ø
EIA/LEVEL CONVERTER	C-CS-M594-Ø-1
3Ø1/3Ø3 CONVERTER	D-CS-M595-Ø-1
20 MA TO TTL CONVERTER	D-CS-M596Ø-Ø-1
OPTIC COUPLED CURRENT ISOLATOR	D-CS-M598-Ø-1
CABLE CARD ASSY (BCØ1R)	D-UA-BCØ1R-Ø-Ø
CABLE INTERFACE (BCØ5F)	C-UA-BCØ5F-Ø-Ø
HIGH SPEED MODEM CABLE	D-UA-BCØ1W-Ø-Ø
TTY CABLE CONNECTOR	C-CS-M973-Ø-1
CABLE INTERFACE BD #1	D-CS-M97Ø-Ø-1
LEVEL CONVERTERS & CABLES	C-PL-DF11-Ø-Ø
MODEM TO DAA CABLE	D-UA-BC11E-Ø-Ø
ASYNC ORIGINATE MODEM	D-CS-M586-Ø-1
ASYNC ANSWER MODEM	D-CS-M587-Ø-1

UNIT VARIATIONS

VAR	TITLE	PRINT SET DF11-1
DF11-A	TTL TO EIA RS-232-C/CCITT V24	x
DF11-BA	TTL TO AUDIO-ORIGINATE FREQ	
	MODEM	X
DF11-BB	TTL TO AUDIO-ANSWER FREQ MODEM	X
DF11-F	TTL TO ACTIVE 20MA LOCAL	
	TELEPRINTER	x
DF11-G	TTL TO BELL SYSTEM 301 & 303	x
DF11-K	TTL TO OPTICAL COUPLED 20 MA	x

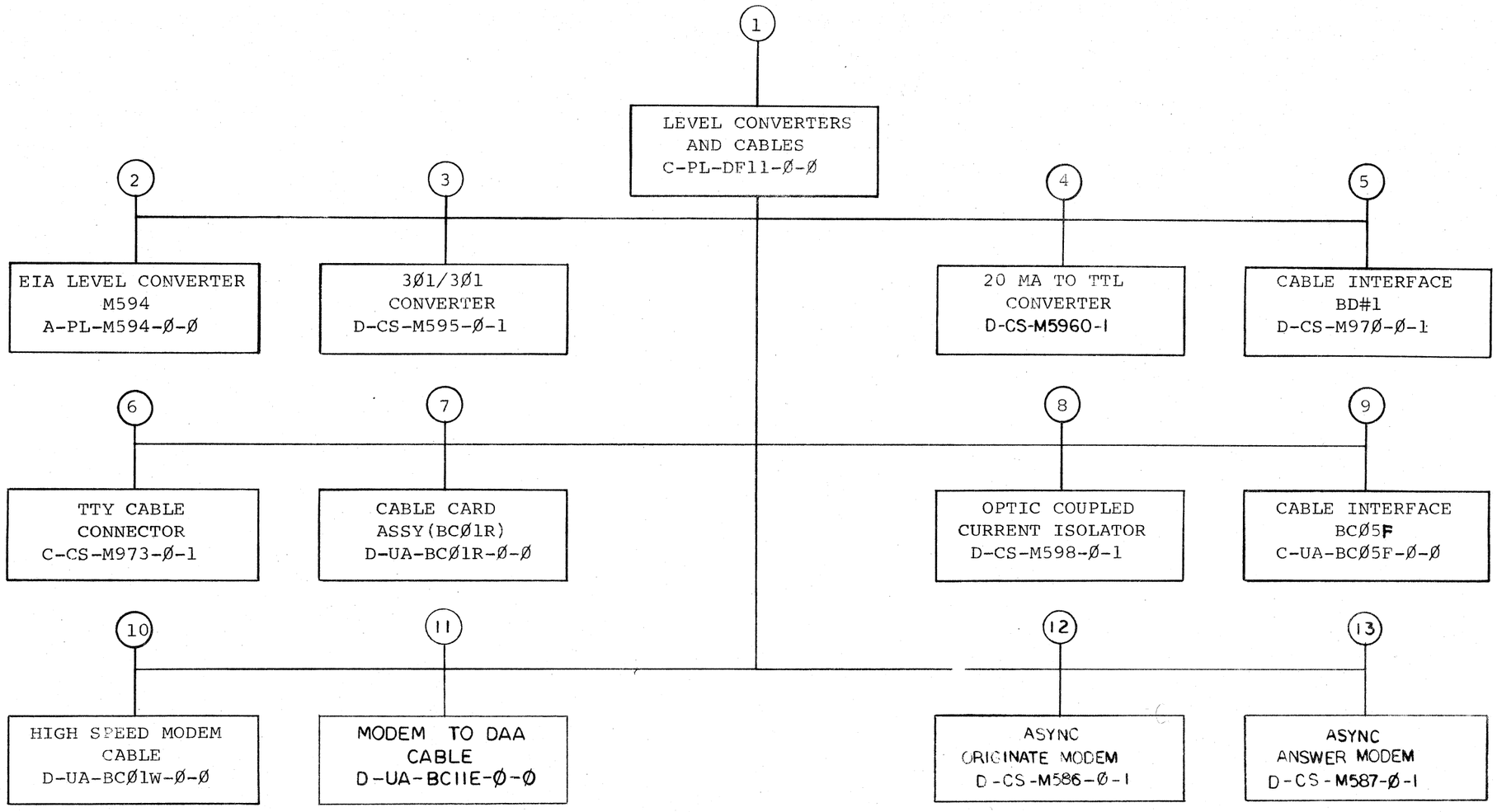
REVISIONS	DATE	CHG. NO.	REV
	3/73	DF11-6	A
	5-73	DF11-7	B
	9-73	DF11-8	C
	5-74	DF11-9	D
	9-75	DF11-10	E

USED ON OPTION/MODEL

SHEET 1 OF 4

DRN. G.FLANDERS	DATE 9/11/2	TITLE: LEVEL CONVERTERS AND CABLES
CHK'D. J.CAHILL	DATE 10/13/2	
PROJ ENG.	DATE 1-2-73	
PROD.	DATE 1-3-73	SIZE B · CODE DD · NUMBER DF11-Ø · REV E
FIELD SERV.	DATE 1-3-73	DIST

DRB 106
DEC 16-(325)-1062-1A-R972



TITLE	SHEET	SIZE	CODE	NUMBER	REV
LEVEL CONVERTERS AND CABLES	2 OF 4	B	DD	DF11-Ø	E

ELECTRICAL

CUSTOMER PRINT SET DF11-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	C-PL-DF11-Ø-Ø	F	1	LEVEL CONVERTERS AND CABLES	
X			A-SP-DF11-Ø-1	B	10	ENGINEERING SPEC	
			A-SP-DF11-Ø-2	C	16	ACCEPTANCE PROCEDURE	
			A-SP-DF11-Ø-3	*	2	OPTION TEST PROCEDURE	
X		2	A-PL-M594-Ø-Ø	#	1	EIA LEVEL CONVERTER M594	
X			C-CS-M594-Ø-1	#	1	EIA LEVEL CONVERTER M594	
			K-CO-M594-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
			D-AH-M594-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-M594-Ø-6		1	MODULE ECO HISTORY	
			A-ML-M594-T		1	M594 TESTER	
X		3	D-CS-M595-Ø-1	#	2	3Ø1/3Ø3 CONVERTER	
			K-CO-M595-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
			D-AH-M595-Ø-5		1	ASSY/DRILLING HOLE LOCATION	
			B-MH-M595-Ø-6		1	MODULE ECO HISTORY	
			B-SP-M595-Ø-7		3	TEST PROCEDURE	
X		4	D-CS-M596Ø-Ø-1	#	2	20 MA TO TTL CONVERTER	
			K-CO-M596Ø-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
			D-AH-M596Ø-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-M596Ø-Ø-6		1	MODULE ECO HISTORY	
X		5	D-CS-M97Ø-Ø-1	#	1	CABLE INTERFACE BD #1	
			K-CO-M97Ø-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
			D-AH-M97Ø-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-M97Ø-Ø-6		1	MODULE ECO HISTORY	
X		6	C-CS-M973-Ø-1	#	1	TTY CABLE CONNECTOR	
			K-CO-M973-Ø-4		1	X-Y COORDINATE HOLE LOCATION	

ELECTRICAL

CUSTOMER PRINT SET DF11-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			D-AH-M973-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-M973-Ø-6		1	MODULE ECO HISTORY	
X		7	D-UA-BCØ1R-Ø-Ø	#	1	CABLE CARD ASSY (BCØ1R)	
			C-CS-BCØ1R-Ø-2		1	BCØ1R-25	
			B-SP-BCØ1R-Ø-3		1	TEST PROCEDURE	
X		8	D-CS-M598-Ø-1	#	1	OPTIC COUPLED CURRENT ISOLATOR	
			K-CO-M598-Ø-4		1	X-Y COORDINATE HOLE LOCATION	
			D-AH-M598-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-M598-Ø-6		1	MODULE ECO HISTORY	
			5009823		1	ETCHED CIRCUIT BOARD	
			A-ML-M598-T		1	M598 TESTER	
			A-SP-M598-Ø-8		9	M598 SPECIFICATIONS	
			B-CS-M598-Ø-2		1	M598 TESTER	
X		9	C-UA-BCØ5F-Ø-Ø	#	1	CABLE INTERFACE BCØ5F	
			B-CS-BCØ5F-Ø-2		1	CIRCUIT SCHEMATIC	
			B-SP-BCØ5F-Ø-3		1	TEST PROCEDURE	
X		10	D-UA-BCØ1W-Ø-Ø	#	1	HIGH SPEED MODEM CABLE	
X		11	D-UA-BC11E-Ø-Ø	#	1	MODEM TO DAA CABLE	

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
LEVEL CONVERTERS AND CABLES	SHEET 3 OF 4	B	DD	DF11-Ø	E

DRB 108
DEC 16-(325)-1062-2B-R972

ELECTRICAL

CUSTOMER PRINT SET DF11-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		12	A-PS-2ØM586-Ø-Ø		11	ORIGINATE FREQ MODEM	
			A-II-2ØM586-Ø-Ø		8	INCOMING INSPECTION PROCEDURE	
X			D-CS-M586-Ø-1	#	2	ASYNC ORIGINATE MODEM	
			B-MH-M586-Ø		1	MODULE HISTORY	
		13	A-PS-2ØM587-Ø-Ø		11	ANSWER FREQ MODEM	
			A-II-2ØM587-Ø-Ø		8	INCOMING INSPECTION PROCEDURE	
X			D-CS-M587-Ø-1	#	2	ASYNC ANSWER MODEM	
			B-MH=M587-Ø		1	MODULE 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
LEVEL CONVERTERS AND CABLES	SHEET 4 OF 4	B	DD	DF11-Ø	E

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE June 30, 1972

TITLE DF11 Serial Line Signal Conditioning Options

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	DF11-00005	McNAMARA	8/72		9/5/72
B	ECO CHANGE	DF11-00009	DIETER	4/74		6/5/74

ENG	APPD	SIZE	CODE	NUMBER	REV
		A	SP	DF11-0-1	B

DEC FORM NO. DRA 107

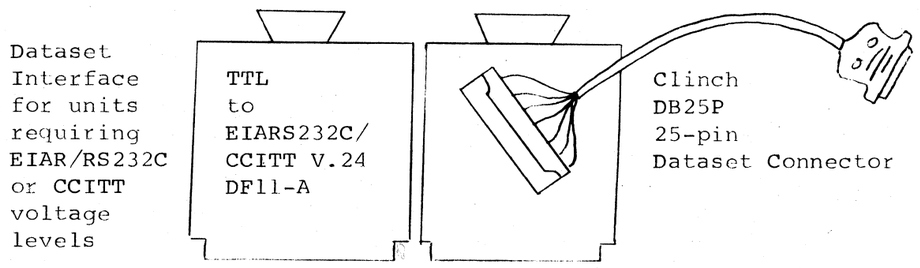
ENGINEERING SPECIFICATION — CONTINUATION SHEET

TITLE DF11 Serial Line Signal Conditioning Options

I. General

Modern digital computers handle almost all data signals as Transistor-Transistor Logic (TTL) levels. These levels must then be converted to other voltage levels or current values to prepare them for application to communications media so that they can be transmitted to a distant processor or terminal. In addition to the need for level conversion, there is a requirement to have cables of various lengths equipped with a variety of specialized fittings for each communications medium serviced.

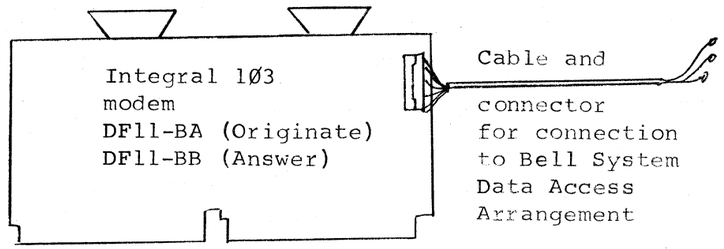
A DF11 unit will normally consist of two single height (8-1/2" by 3") modules. One module performs the electrical signal conditioning function of converting from TTL signal levels to the external signal levels required (e.g. EIA RS-232-C, 20 milliampere current loop, Bell System CBS or CDT Data Access Arrangements, etc.). The second module performs the physical interface function; i.e. furnishes a cable to connect the level-converted signals produced by the first module to the desired device or channel. In the case of the DF11-A RS-232-C/CCITT Recommendation V24 Interface, the second module provides a 25-conductor cable and plug to connect the level-converted signals on the back panel wires to the dataset.



SIZE	CODE	NUMBER	REV
A	SP	DF11-0-1	B

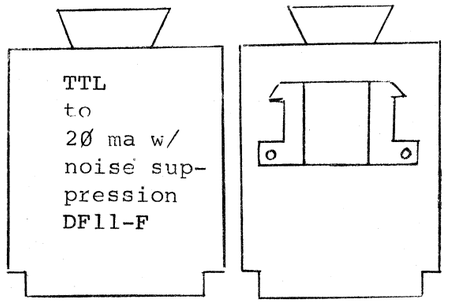
DEC FORM NO DEC 16-(381)-1022-N370 DRA 108

Integral Modem converts TTL to tone signals for transmission on voice-grade lines.



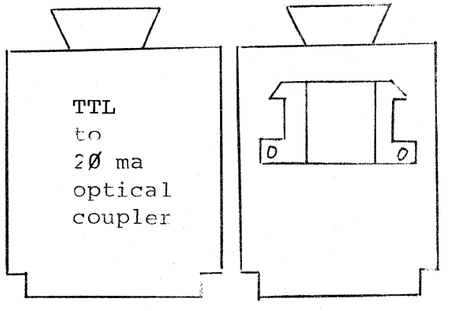
Cable and connector for connection to Bell System Data Access Arrangement

20 ma, local teleprinter (mechanical distributor, such as Teletype® Model 33, 35



Female Mate-N-Lok to 2 twisted pair

20 ma optical coupler active or passive mode



Female Mate-N-Lok to 2 twisted pair

® "Teletype" is a registered trademark of Teletype Corporation, Skokie, Illinois

II. Variations

DF11-A TTL to EIA RS-232-C/CCITT V24

This option consists of an M594 module and a BC01R cable assembly. (A BC05C cable and M971 module may be supplied as equivalent to a BC01R).

DF11-BA TTL to audio frequency shift keyed tone signals.

This option consists of an M586 module (integral 103-type modem in the Originate-Only mode). Twenty-five foot cable and connector provided for connection with Bell System Data Access arrangement CDT or private wireline channels.

DF11-BB TTL to audio frequency shift keyed tone signals.

This option consists of an M587 module (integral 103-type modem in the Answer-Only mode). Twenty-five foot cable and connector provided for connection with Bell System Data Access arrangements CBS or CDT.

DF11-F TTL to 20 milliampere active local Teletype® loop.

This option consists of an M596 module and an M973. The M973 has an Amp Mate-N-Lok connector mounted on it for connection with customer supplied 22 AWG, 2 twisted pair cable to a local or remote Model 33 or 35 Teletype®. Reader Run control leads are not provided.

DF11-G TTL to Bell System 301/303 Dataset Interface. Signal levels, cable connector, and signal pinning compatible with the Bell 301/303 Datasets.

This option consists of an M595 module and a twenty-five foot coaxial cable.

DF11-K TTL to active or passive 4-wire current mode (20 ma) loop.

This option consists of an M598 optical coupler module and an M973 Mate-N-Lok module.

III. Specifications

Temperature: All DF11 modules will operate from 10°C to 50°C with relative humidity from 20% to 95% (without condensation).

Speed & Distance:

DF11-A 9600 baud at 50 feet with DEC supplied cable.

DF11-BA 300 baud with 0 dbm to -50 dbm received signal level when used with CDT data access arrangement, 300 baud with 0 dbm to -50 dbm received signal level when used on private wires. Transmit level is 0 to -12 dbm pot adjustable.

DF11-BB 300 baud with 0 dbm to -50 dbm received signal level when used either with CBS, CDT,

or private wires. Transmit level is 0 to -12 dbm pot adjustable.

DF11-F 110 baud at 5000 feet 22 AWG twisted pair telephone cable when inserted jumpers are in place (TTY noise filter). 2400 baud at 3000 feet with 22 AWG "QUAD" wire (DEC PN 9105856-4) and using the DF11-K (Passive transmit and receive) at the other end.

DF11-G 250K baud with DEC-supplied 25 foot cable.

DF11-K 2400 baud at 1500 feet of 22 AWG twisted pair telephone cable.

NOTE: The data rates and distances cited above are those warranteed by Digital. They are applicable in electrically quiet environments and do not necessarily represent limiting values. Jumpers on M5960 (DF11-F) must be cut for speeds above 110 baud.

IV. Applications:

	DC11	DL11*	DM11	DP11	LA30S
DF11-A	YES	2	YES	YES	YES
DF11-BA	1	1	3	NO	YES
DF11-BB	1	1	YES	NO	3
DF11-F	YES	2	YES	4	5
DF11-G	NO	NO	NO	YES	NO
DF11-K	YES	YES	YES	4	YES

* DL11 refers to DL11 in DD11B system unit or 11/05.

NOTES: 1. The DF11-BA and DF11-BB require +15 volts and -15 volts. They may be used with the DC11 and DL11 only if these voltages are available.

2. The DL11 contains its own active 20 ma and EIA interface circuits. While the DF11-A or DF11-F could be used, it would be a duplication of equipment.

3. It is anticipated that the DF11-BA will be used in terminals such as the LA30S and the DF11-BB will be used in processor options such as the DM11. Technically, they could be used in the reverse order, but this would not be recommended, since the DF11-BA does not have auto-answer capability.

4. No applications have been found for the DF11-F and DF11-K with synchronous controls due to clocking problems.

5. The DF11-F is "active" only and hence would not typically be used in a terminal.

V. Connectivity:

	DF11-A	DF11-BA	DF11-BB	DF11-F	DF11-G	DF11-K
DF11-A	1	NO	NO	NO	NO	NO
DF11-BA	NO	NO	YES	NO	NO	NO
DF11-BB	NO	YES	NO	NO	NO	NO
DF11-F	NO	NO	NO	NO	NO	YES
DF11-G	NO	NO	NO	NO	NO	NO
DF11-K	NO	NO	NO	2	NO	2

NOTES: 1. Null modem required (H312A)
2. See "Active" vs. "Passive"

VI. "Active" vs. "Passive"

In 20 ma transmission, information is transmitted by means of switching on and off a current flow. To do this, a current source is used; a switch is used; and a current flow detector is required.

In the classical 20 ma device, the Model 33 or 35 Teletype®, the keyboard encoding mechanism contains the "switch" and the printer driver mechanism includes a "current detector". The typical computer console Teletype® control contains a source plus current detector in its receiver circuitry and a source plus switch in its transmitter circuitry. Since the receiver

contains the source, it is referred to as an "active" receiver. Since the transmitter contains a source, it too is referred to as "active". All DEC console teletype controls, and the DF11-F are "active" 20 ma interfaces.

The DF11-K, however, has its greatest volume of use in the LA30S, where it is necessary to simulate a Teletype® interface; i.e., a switch on the transmit leg and a detector on the receive leg. Since there are no sources, the DF11-K is referred to as a "passive" 20 ma interface. Jumpers are provided to connect sources into the receiver circuitry, the transmit circuitry, or both.

When used with a console teletype control or a DF11-F, the DF11-K should be left in passive transmit/passive receive mode. When two DF11-K's talk to each other, the active transmit/passive receive mode is recommended. Be sure to arrange the leads so that the receiver of one is connected to the transmitter of the other, etc.

VII. Pinning Assignments

The following pinning assignments apply to the DF11 series, although individual DF11 options may not use them all:

Cable Slot ("A" slot in DC11, 11/05)("B" slot in(LA30,DH11,DM11)

A1	Do Not Use
B1	Do Not Use
C1	Transmitted Data +
D1	Transmitted Data -
E1	Secondary Transmitted Data EIA
F1	Secondary Received Data EIA
H1	Transmit Signal Element Timing DTE EIA
J1	Received Data +
K1	Secondary Clear To Send*
L1	Secondary Request To Send*
M1	Signal Quality Detector*
N1	Received Data -
P1	Secondary Receive Line Signal Detector*
R1	
S1	Force Busy EIA
T1	Ground
U1	
V1	UK Special Systems

A2	Do Not Use
B2	Do Not Use
C2	Ground
D2	DO NOT USE
E2	Transmitted Data EIA
F2	Received Data EIA
H2	Transmit Signal Element Timing DCE EIA
J2	Receive Signal Element Timing EIA
K2	Clear To Send EIA
L2	Request To Send EIA
M2	Ring Indicator EIA
N2	Data Set Ready EIA
P2	Received Line Signal Detect EIA
R2	Data Terminal Ready EIA
S2	Data Signalling Rate Selector*
T2	Ground
U2	Select Standby*
V2	UK Special Systems

* Signals shown with an asterisk have no level conversion module pin assignments. If implemented, these signals would have to be level converted elsewhere.

Converter Slot ("B" slot in DC11, 11/05)("A" slot in LA30,DH11,DM11)

A1	Response Control for EIA Receivers
B1	Carrier Detect TTL
C1	Ring Indicator TTL
D1	Received Data TTL
E1	Secondary Received Data TTL
F1	Received Signal Element Timing EIA
H1	Receive Signal Element Timing TTL
J1	Transmit Signal Element Timing DCE EIA
K1	Transmit Signal Element Timing DCE TTL
L1	Transmitted Data +
M1	Transmitted Data -
N1	Received Data +
P1	Received Data -
R1	Transmit Signal Element Timing DTE TTL
S1	Transmit Signal Element Timing DTE EIA
T1	Ground
U1	Secondary Transmitted Data EIA
V1	Transmitted Data EIA

A2	+5 (250MA MAX)

B2	-15 (155MA MAX)
C2	Ground
D2	Data Set Ready TTL
E2	Data Set Ready EIA
F2	Clear To Send TTL
H2	Carrier Detect EIA
J2	Receive Data EIA
K2	Ring Indicator EIA
L2	Secondary Receive Data EIA
M2	Clear To Send EIA
N2	+15 (140MA MAX)
P2	Data Terminal Ready TTL
R2	Data Terminal Ready EIA
S2	Request To Send TTL
T2	Request To Send EIA
U2	Secondary Transmitted Data TTL
V2	Transmitted Data TTL

VIII. Notes:

1. Caution should be exercised in ordering DF11 options as add-on's to systems using the DM11 distribution panel. In systems where the customer uses 20 ma or EIA without modem control, a single level conversion module serves four lines. If the customer desires some other type of level conversion, and orders a DF11 series device to do it, that DF11 device must be added in a four-line group for which level conversion is presently not implemented, or the four-line group into which it is introduced must be converted to per-line level conversion. This is necessary to prevent the new level converter and the old "one-per-four-lines"converter from trying to level convert the same line.

2. The DF11 modules are located in the following locations in the following options:

Option	Converter Slot	Cable Slot
DC11 Line Unit 1	DØ1	CØ1
Line Unit 2	DØ4	CØ4
DP11	DØ4	CØ4
DM11 Distribution		
Line ØØ - 15	AØ6 - A21	BØ6 - B21
LA30	A18	B18
11/05	BØ1	AØ1
DD11B	BØ2	AØ2
	BØ3	AØ3

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	M.A. Gilbert	CHECKED R. Wald	SECTION
DATE	3/12/71	DATE 3/12/71	
ENG	R. Lisie	PROD R. Silverman	ISSUED SECT.
DATE	3/16/71	DATE 6/14/71	

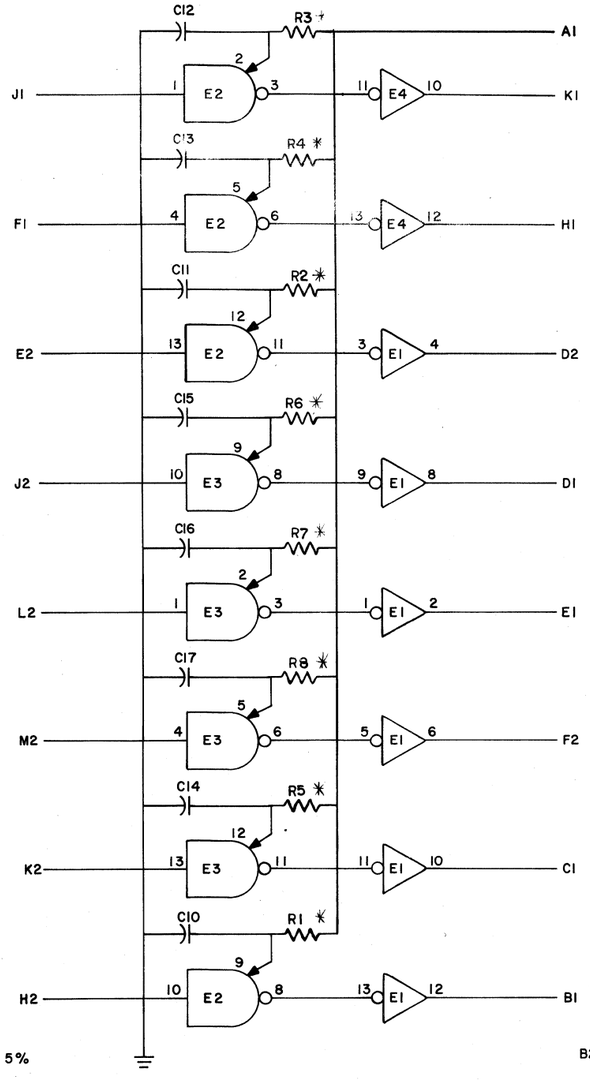
ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			M594	M594-YB										
1	C-CS-M594-0-1	CIRCUIT SCHEMATIC												
2	K-CO-M594-0-4	X-Y COORDINATE HOLE LOCATION												
3	D-AH-M594-0-5	ASSY/DRILLING HOLE LAYOUT												
4	B-MH-M594-0-6	MODULE ECO HISTORY												
5	5009443	ETCHED CIRCUIT BOARD	1	1										
6	1000024	CAP. 470PF 100v 5% D.M.	8	8	C10	C11	C12	C13	C14	C15	C16	C17		
7	1001610	CAP. .01UF 100v 20% DISC	11	11	C1	C2	C3	C4	C5	C6	C7	C8	C9	C18
														C19
9	1210244-0	GRIPLET												
10	1300510	RES. 33K 1/4W 10%	0	8	R1	R2	R3	R4	R5	R6	R7	R8		
11	1909686	I.C. DEC 7404	3	3	E1	E4	E6							
12	1910322	I.C. DEC 1488L	2	2	E5	E7								
13	1910323	I.C. DEC 1489L	2	2	E2	E3								
14	9006732	EYELET #GS4-7	2	2										
15	9008337-06	HANDLE FLIP CHIP - MAGENTA	1	1										
16	1100125	1N758A ZENER DIODE	2	2	D1	D2								
17	1300295	RES 330 ¼w 5%	2	2			R9	R10						
18	1002433	CAP. 22UF 35v 20% S.TANT	2	2	C20	C21								
19	15-1913	TRANSISTOR 2N2904A	1	1	Q1									
20	15-1881	TRANSISTOR DEC 2219	1	1	Q2									
21	9008351-0	TRANSISTOR CAP	2	2										

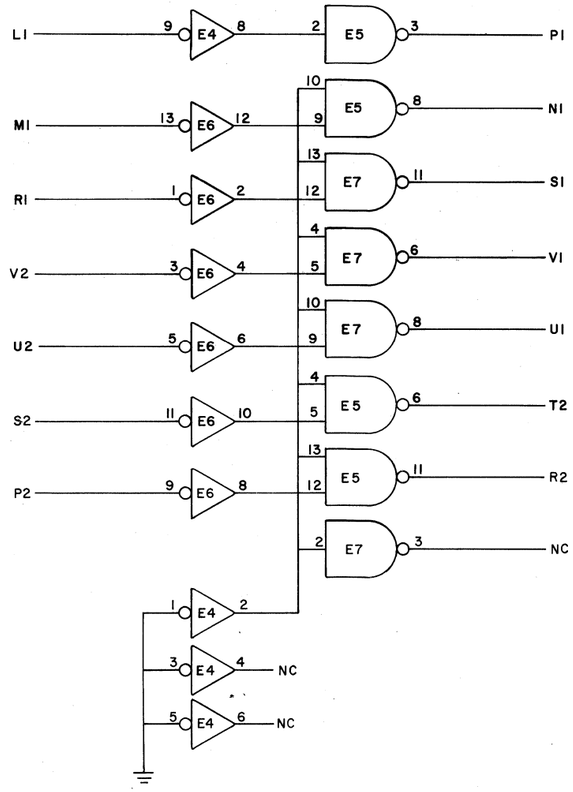
TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
EIA LEVEL CONVERTER M594	SHEET 1 OF 1	A	PL	M594-0-0	D	00004

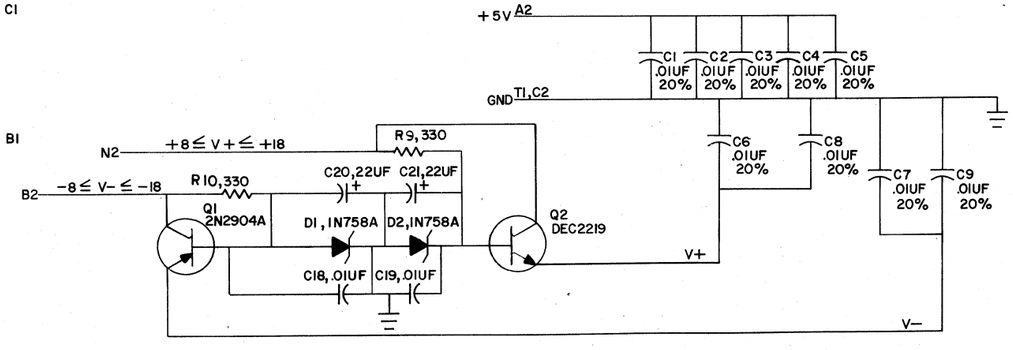
DIST. 4 — 324 434 435 2

DEC FORM NO. 16-1031
DRA 110

final







UNLESS OTHERWISE INDICATED:
CAPACITORS ARE 470 PF, 100V, 5%

E1,E4,E6 = DEC7404
E5,E7 = DEC1488L
E2,E3 = DEC1489L
PIN 7 = GND
PIN 14 = +5V ON E1–E4,E6
PIN 1 = –V
PIN 7 = GND ON E5,E7
PIN 14 = +V

✳ NOTE
R1 → R8 INSERTED FOR YB VAR.
A1 MUST BE TIED TO –15V FOR 3V HYSTERESIS.

REVISIONS	CHK	CHG NO.	REV.
		A	
		00001	
		00002 2nd	
		00003	C
M594-04			D

		DATE
DRN.	S. COOPER	3/11/71
CHK'D	R. Lisee	3/11/71
ENG.	R. Lisee	3-16-71
PROD.		DATE

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
1N758A	SAME		
DEC2219	2N2219		
2N2904A	SAME		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EIA LEVEL CONVERTER M594

SIZE	CODE	NUMBER	REV.
C	CS	M594-0-1	D

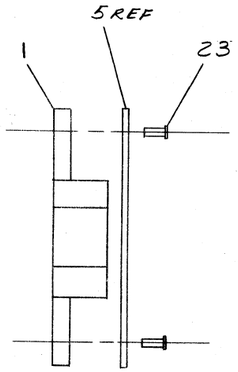
PRINTED CIRCUIT REV. B

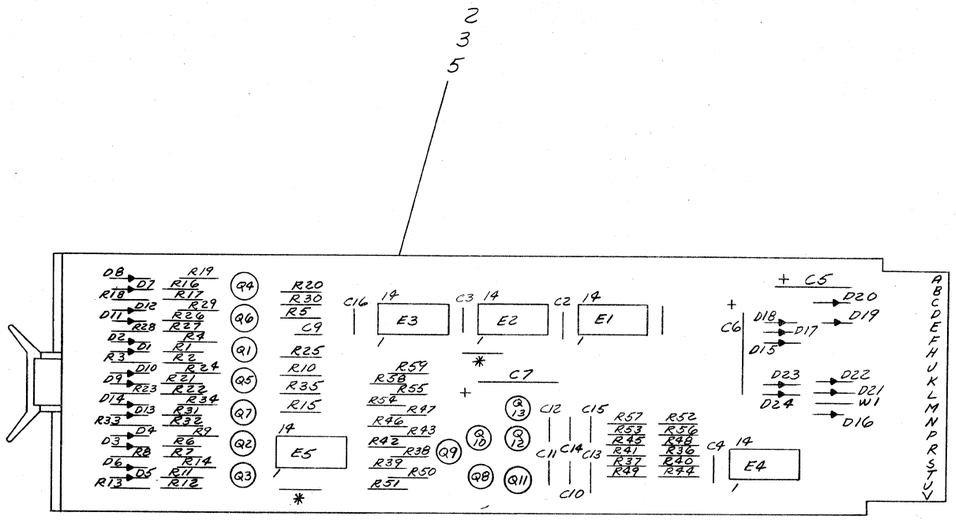
REV. D
SIZE C | CODE CS | NUMBER M594-0-1

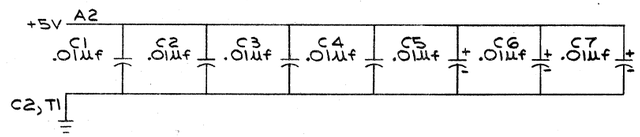
DEC FORM NO. DRC 102

Print

NOTES:







QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2		EYELET G54-7	9006732	23
1	E5	I.C DEC 1488	1910322	22
1	E4	I.C DEC 7417	1909929	21
1	E3	I.C. DEC1489	1910323	20
2	E1, E2	I.C. DEC 7404	1909686	19
13	Q1-Q13	TRANS. DEC 3009B	1503100	18
6	R38, R42, R46, R50, R54, R58	RES. 47 1/4W 5%	1300202	17
12	R36, R37, R40, R41, R44, R45, R48, R49, R52, R53, R56, R57	RES. 330 1/4W 10%	1300293	16
7	R4, R9, R14, R19, R24 R29, R34	RES. 7.5K 1/4W 5%	1304841	15
7	R3, R8, R13, R18 R23, R28, R33	RES. 7.5K 1/4W 5%	1301422	14
7	R2, R7, R12, R17, R22 R27, R32	RES. 100 1/4W 10%	1300231	13
20	R1, R5, R6, R10, R11 R15, R16, R20, R21, R25 R26, R30, R31, R35, R39 R43, R47, R51, R55, R59	RES. 2.2K 1/4W 5%	1300417	12
8	D2, D4, D6, D8, D10, D12, D14, D16	DIODE D662	1100113	11
16	D1, D3, D5, D7, D9, D11, D13, D15, D17-D24	DIODE D664	1100114	10
6	C10-C15	CAP. 120 PF 100V 5% DM	1000018	9
2	C9, C16	CAP. 470 PF 100V 5% DM	1000024	8
3	C5-C7	CAP. 6.8 MFD 35V 20% TANT	1000067	7
4	C1-C4	CAP. .01 MFD 100V 20% DISC.	1001610	6
1		ETCHED CIRCUIT BOARD	5009872	5
REF		MODULE ECO HISTORY	B-MH-M595-0-6	4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M595-0-5	3
REF		X-Y COORDINATE HOLE LOC.	K-CO-M595-0-4	2
1		HANDLE, FLIP CHIP MAGENTA	9008337-06	1

PARTS LIST

ETCH BOARD REV B

FIRST USED ON OPTION MODEL: DF11-G

DEC NO.	EIA NO.
DEC 3009B	2N3646
D664	IN3606
D662	IN645

SEMICONDUCTOR CONVERSION CHART

DEC 1488	7	N/A
IC TYPE	GND	+ 5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		
IC PIN LOCATIONS		

DRN. S. Marcotte DATE 5-17-72
CHK'D R. Cook DATE 5/31/72
ENG. R. Louie DATE 5-30-72
PROJ. ENG. R. Louie DATE 5-30-72
PROD. P. F. Nash DATE 5-30-72
NEXT HIGHER ASSY —/—
SCALE NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: 3Ø1/3Ø3 CONVERTER

SIZE D | CODE CS | NUMBER M595-Ø-1 | REV. A

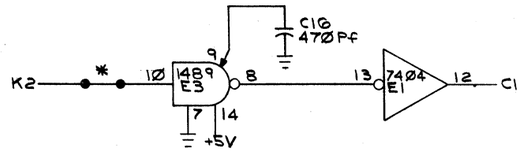
DIST.

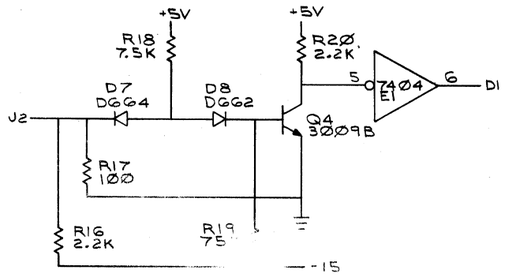
REVISIONS

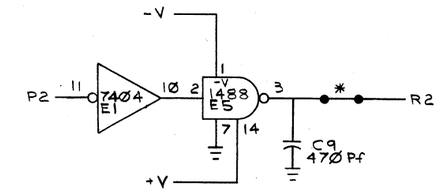
REV	CHANGE NO.	CHK

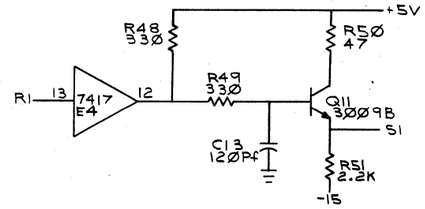
BRUNING 40-522 16699

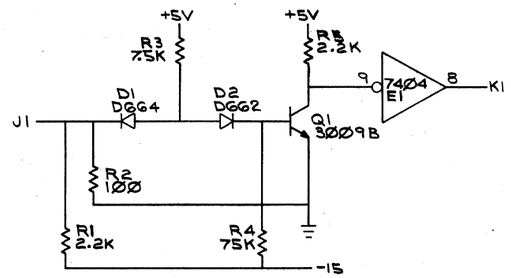
DEC FORM NO. DRD-135A

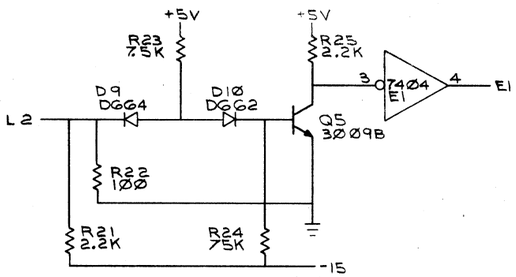


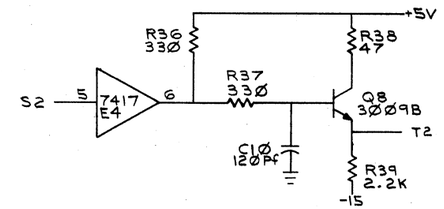


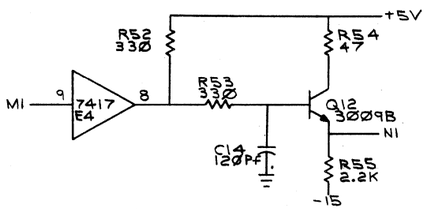


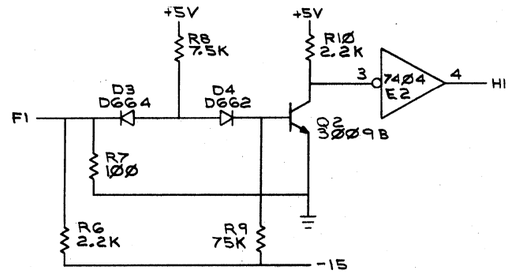


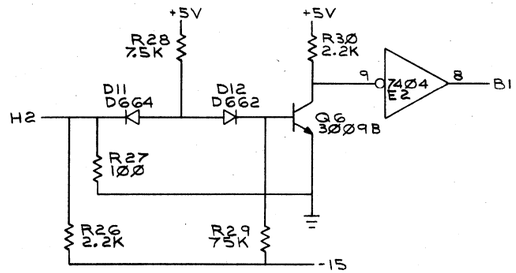


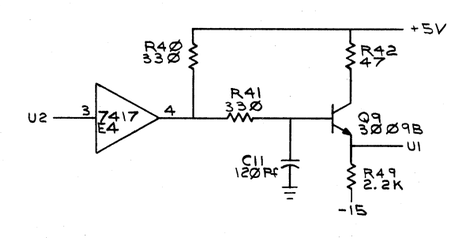


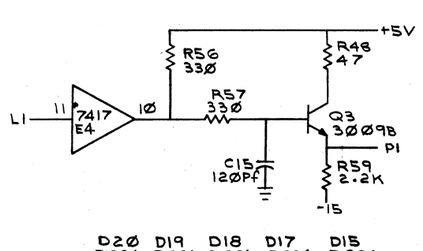


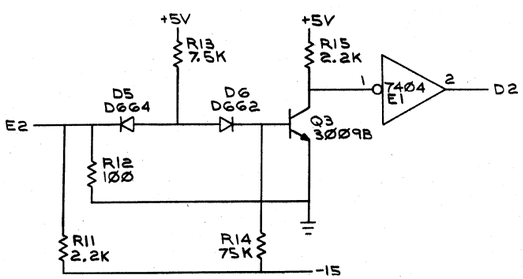


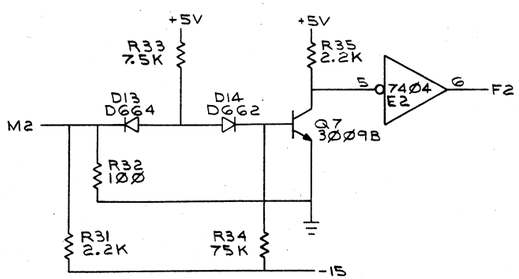


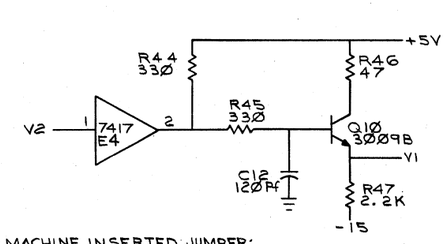


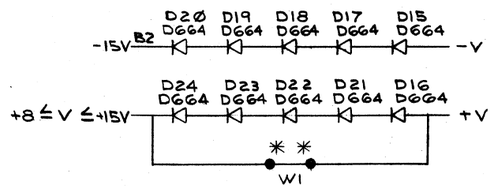












* MACHINE INSERTED JUMPER:
ETCH BOARD #3Ø3
REMOVE JUMPER IF USED WITH 301

** MAY BE REMOVED IF INPUT VOLTAGE > +12 VOLTS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DF11-G	PARTS LIST			

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

		DATE
DRN.	J. Ferguson	5-17-72
CHKD	R. Cook	5-30-72
ENG.	R. Lavie	5-30-72
PROJ. ENG.	R. Lavie	5-30-72
PROD.	P. F. Martin	5-30-72

NEXT HIGHER ASSY. —

SCALE —

SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: 3Ø1/3Ø3 CONVERTER

SIZE	CODE	NUMBER	REV.
D	CS	M595-Ø-1	A

DIST.

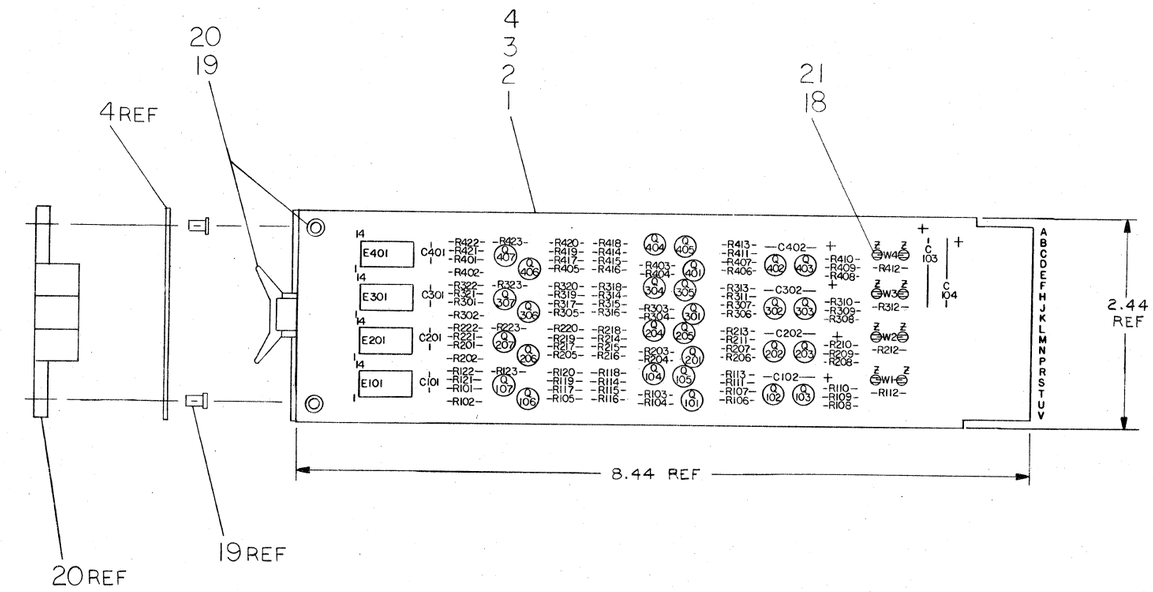
REV.	REVISIONS	CHANGE NO.	CHK
A			

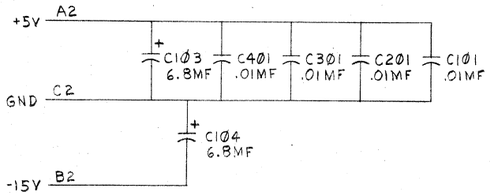
BRUNING 40-522 15940

DEC FORM NO DRD 102-B

NOTES:

1. UNLESS OTHERWISE STATED RESISTANCE IS IN OHMS.





REF DESIGNATION	QTY	DESCRIPTION	PART NO.	ITEM NO.
	REF	X-Y COORDINATE HOLE LOCATION	K-CO-M5960-0-4	1
	REF	ASSY/DRILLING HOLE LAYOUT	D-AH-M5960-0-5	2
	REF	MODULE ECO HISTORY	B-MH-M5960-0-6	3
	1	ETCHED CIRCUIT BOARD	5016827	4
C101,C201,C301,C401	4	CAP .01 MF 100V 20% DISC	1001610-01	5
C102,C202,C302,C402	4	CAP 2.2 MF 35V 10% TANT	1002431	6
C103,C104	2	CAP 6.8 MF 35V 10% TANT	1005306	7
R108-R113,R208-R213,R308-R313,R408-R413	24	RES 47 OHMS 1/4W 5%	1300202	8
R117,R118,R217,R218,R317,R318,R417,R418	8	RES 68 OHMS 1/4W 5%	1300219	9
R106,R107,R206,R207 R306,R307,R406,R407	8	RES 150 OHMS 1/4W 5%	1300250	10
R102,R103,R105,R114,R116,R119,R120,R202,R203,R205,R214,R216,R219,R220,R302,R303,R305,R314,R316,R319,R320,R402,R403,R405,R414,R416,R419,R420	28	RES 1K OHMS 1/4W 5%	1300365	11
R101,R104,R201,R204,R301,R304,R401,R404	8	RES 3K OHMS 1/4W 5%	1300432	12
R123,R223,R323,R423	4	RES 15K OHMS 1/4W 5%	1300496	13
R115,R121,R122,R215,R221,R222,R315,R321,R322,R415,R421,R422	12	RES 5.6K OHMS 1/4W 5%	1301874	14
Q103,Q105,Q107,Q203,Q205,Q207,Q303,Q305,Q307,Q403,Q405,Q407	12	TRANS MPSA05	1510705	15
Q101,Q102,Q104,Q106,Q201,Q202,Q204,Q206,Q301,Q302,Q304,Q306,Q401,Q402,Q404,Q406	16	TRANS MPSA55	1510706	16
E101,E201,E301,E401,	4	I.C. DEC 11380	1911113	17
	8	SPLIT LUG	9006735	18
	2	EYELET	9006732	19
	1	HANDLE FLIP CHIP (MAGENTA)	9008337-6	20
W1,W2,W3,W4	4	BUSS WIRE #22 AWG	9107560-01	21

PARTS LIST

DEC 11380	1	8
IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

ORIGINATED	A
CHANGE NO.	
REVISIONS	

DEC NO.	EIA NO.	DEC NO.	EIA NO.
		MPS A05	NA
		MPS A55	NA

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: DF11

ETCH BOARD REV: B

NEXT HIGHER ASSY

DRN. R. Smith 10-2-73
CHK'D. Kurt Hagen 10/10/73
ENG. K. Dieter 10-19-73
PROJ. ENG. K. Dieter 10-17-73
PROD. R. Wall 10-24-73
SCALE NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

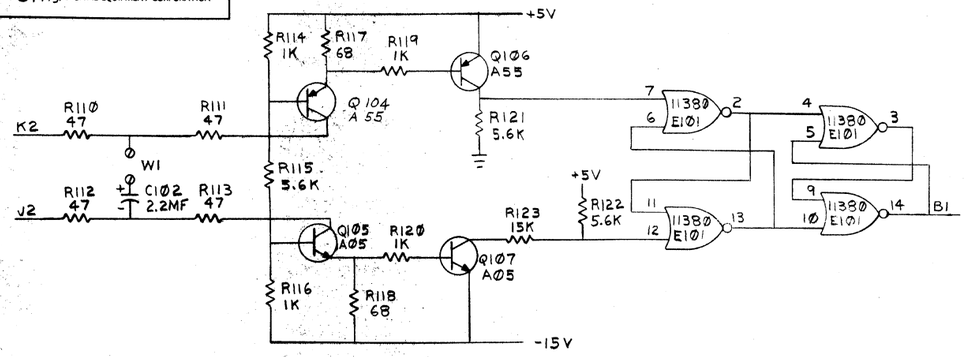
TITLE: 2Ø MA TO TTL CONVERTER

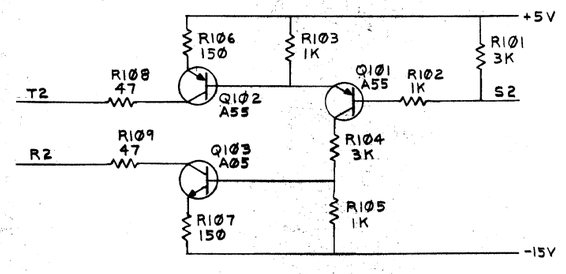
SIZE D | CODE CS | NUMBER M5960-Ø-1 | REV. A

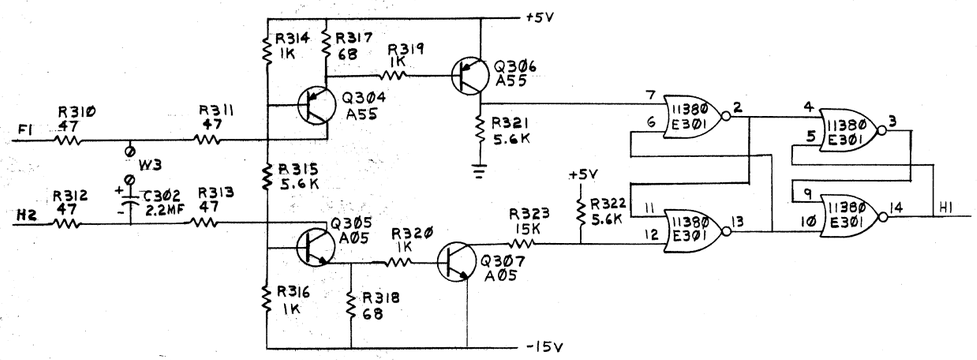
DIST.

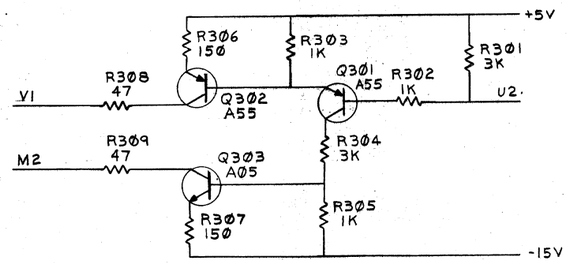
SIZE D | CODE CS | NUMBER M5960-Ø-1 | REV. A

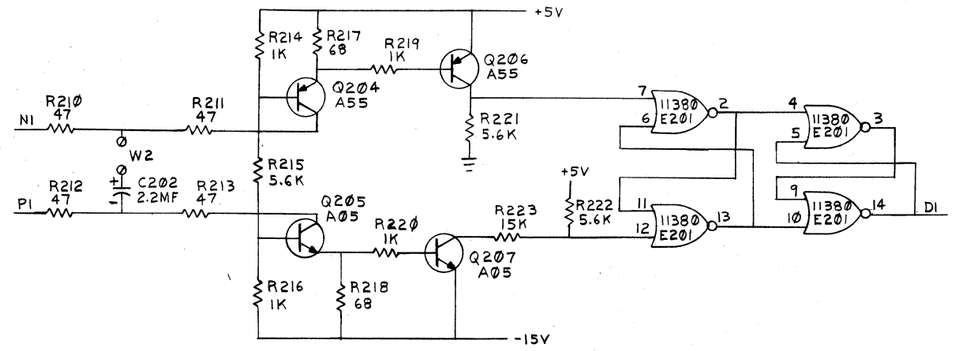
BRUNING 40-522 16699
DEC FORM NO. DRD-135A

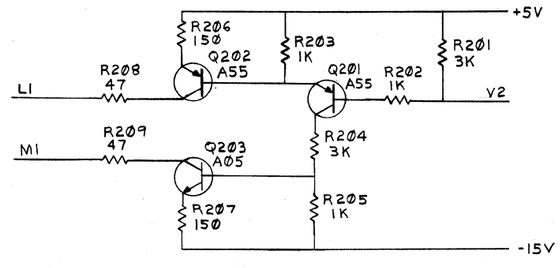


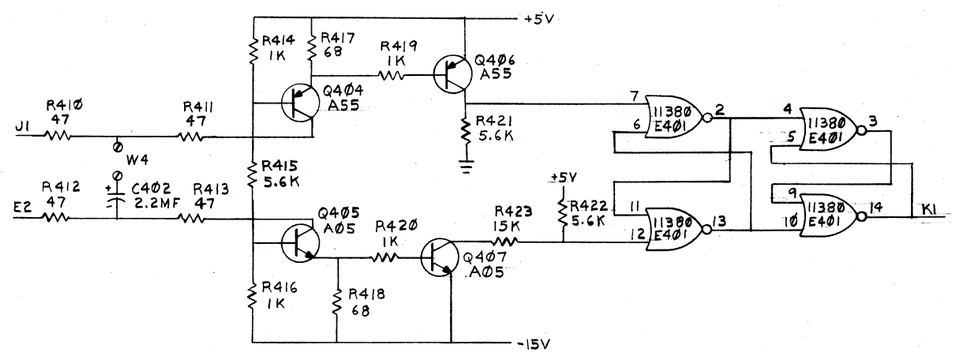


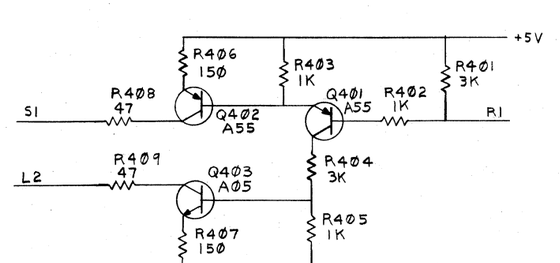










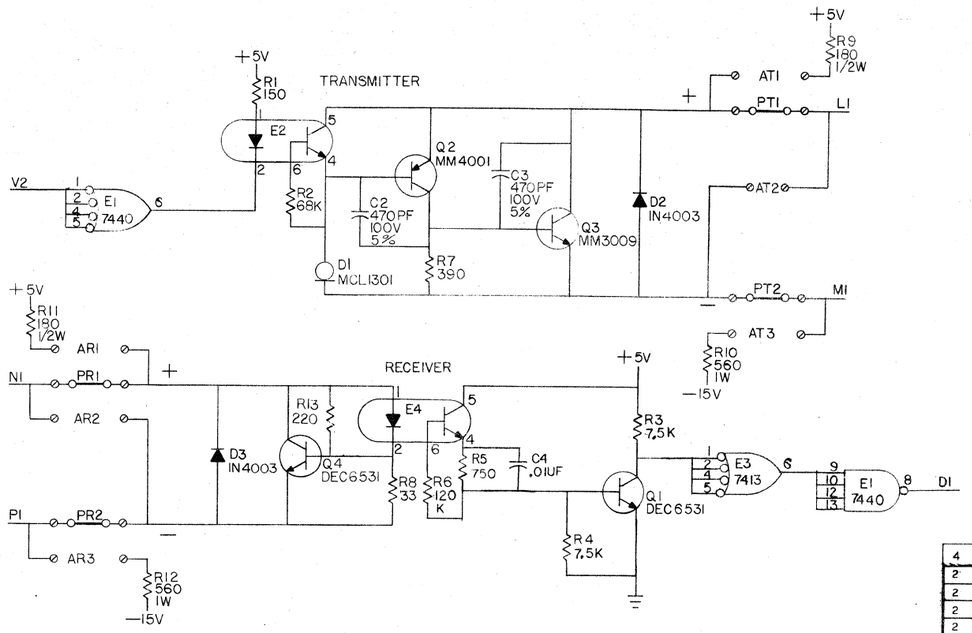


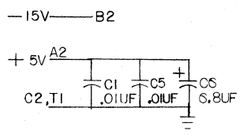
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
20 MA TO TTL CONVERTER	D	CS	M5960-0-1	A
SCALE —	SHEET 2 OF 2	DIST.		

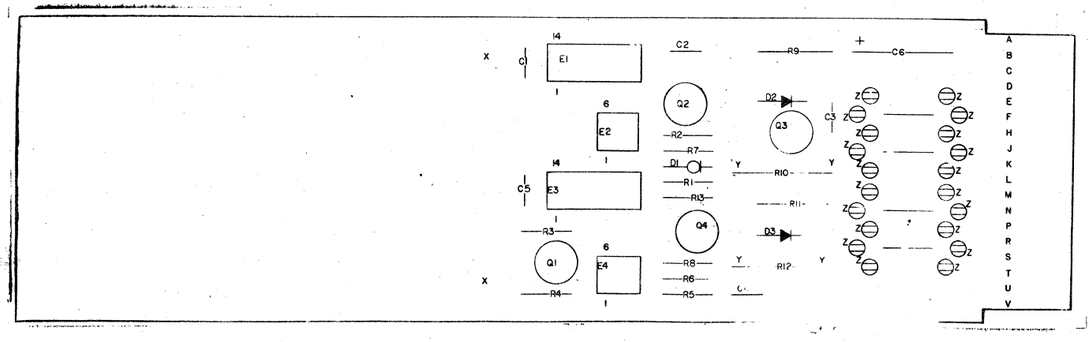
DEC FORM NO. ORD 136

M5960-0-1 REV A





UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W 5%
PIN 14 = GND ON E1, E3
PIN 7 = +5V
NOTE:
DI IS A 1.0mA CONSTANT CURRENT DIODE



ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
34	4	PT1, PT2, PR1, PR2	WIRE, BUSS, #22 AWG	9107560-01
33	2		SCREW, NYLON 4-40 x 3/8	9006401
32	2		PHENOLIC SPACER 4-40 x 3/8	9006968
31	2		TRANSI PAD	9007200
30	2		PLASTIC TRANS CAP.	9006351-0
29	1	R6	RES. 120K ¼W 5%	1300539
28	1	R5	RES. 750 ¼W 5%	1301401
27	1	E3	I.C. DEC 7413	1909989
26	1	E1	I.C. DEC 7440	1905679
25	1		HANDLE, FLIPCHIP, MAGENTA	9008337-06
24	20		SPLITLUG	9006735
23	2		EYELET	9006732
22	2	E2, E4	ISOLATOR, OPTIC	1510727
21	1	Q3	TRANS. MM 3009	1510592
20	1	Q2	TRANS. MM 4001	1510591
19	2	Q1, Q4	TRANS. DEC 6531	1509338
18	2	R10, R12	RES. 560 1W 5%	1303048
17	1	R13	RES. 220 ¼W 5%	1300271
16	1	R2	RES. 68K ¼W 5%	1301327
15	2	R3, R4	RES. 7.5K ¼W 5%	1301422
14	1	R7	RES. 390 ¼W 5%	1300309
13	2	R9, R11	RES. 180 ¼W 5%	1300260
12	1	R1	RES. 150 ¼W 5%	1300250
11	1	R8	RES. 33 ¼W 5%	1300197
10	A/R		GRIPLET	1210244-0
9	1	D1	DIODE MCL 1301	1105610
8	2	D2, D3	DIODE 1N4003	1103448
7	1	C6	CAP. 6.8UF 35V 10%	1005306
6	3	C1, C4, C5	CAP. .01UF 100V 20% DISC	1001610
5	2	C2, C3	CAP. 470PF 100V 5% DM	1000024
4	1		ETCHED CIRCUIT BOARD	5009823
3			MODULE ECO HISTORY	B-MH-M598-0-6
2			ASSY/DRILLING HOLE LAYOUT	D-AH-M598-0-5
1			X-Y COORDINATE HOLE LOCATION	K-CO-M598-0-4

PARTS LIST

ETCH BOARD REV C

DEC NO.	EIA NO.	DEC NO.	EIA NO.
DEC6531	MPS6531		
IN 4003	SAME		
MCL1301			
MM4001			
MM3009			
D664	IN3606		

SEMICONDUCTOR CONVERSION CHART

REVISIONS	REV	CHANGE NO.	CHK
Robert M. Fitch 10-5-71 R. FITCH	D	M598-00003	R. FITCH 5-14-75
Robert Fitch 12-3-71	C	M598-00002	R. FITCH 3-6-72
Robert Fitch 12-2-23 R. FITCH	B	M598-00001	Nancy Moore 1-14-72

DRN. Roger J. Doucette DATE 11-9-71
CHK'D. NANCY MOORE DATE 11-12-71
ENG. R Fitch DATE 11-29-71
PROJ. ENG. R Fitch DATE 11-29-71
PROD. DATE
NEXT HIGHER ASSY DF11K
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE OPTIC COUPLED CURRENT ISOLATOR

SIZE D | CODE CS | NUMBER M598-0-1 | REV. D
DIST.

DEC FORM NO. DRD-135

M97ØØ JUMPER FUNCTIONS

FUNCTIONS OF MODEM JUMPERS WHEN (INSTALLED)

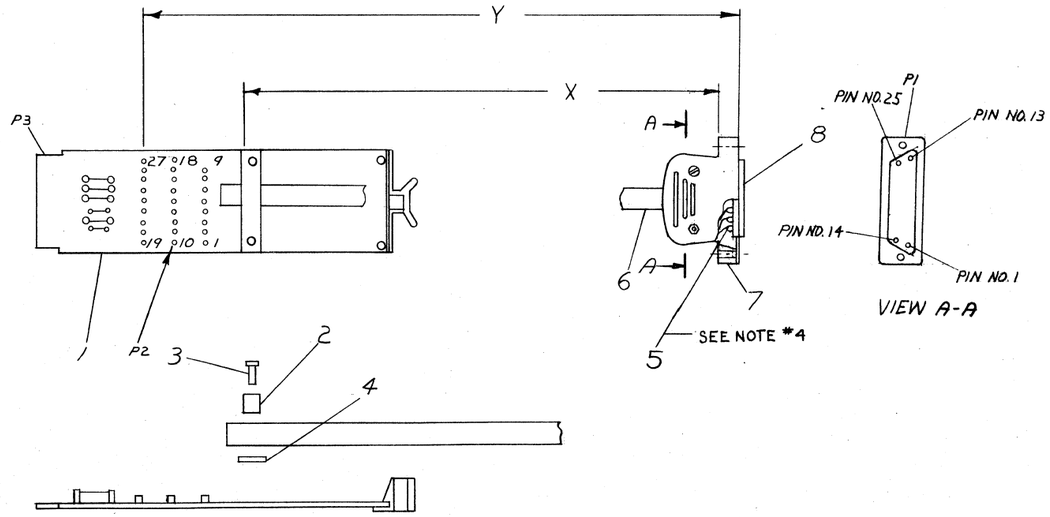
A. EIA-SECONDARY TRANSMIT AND RECEIVE DATA LINES TO EIA PINS 14 AND 16
B. 202-SECONDARY TRANSMIT AND RECEIVE DATA LINES TO EIA PINS 11+12
C. 811-BELL 811B RESTRAINT FUNCTION IS MONITORED BY SECONDARY RECEIVE.
D. BUSY-BELL 103E FORCE BUSY FUNCTION DRIVEN BY REQUEST TO SEND.

LEGEND		
NUMBER	VARIATION	
	DIM-X	DIM-Y (CABLE CUT)
BCØIR-25	25" ± 3"	25" 3"
BCØIR-50	50' ± 2%	50' 3"

BCØIR WIRE TABLE

COLOR	P1-PIN	P2-LUG	SIGNAL NAME	P3-PIN	
BLU-WHT	1	6	GROUND	C2	
WHT-BLU	2	1	TRANSMITTED DATA	E2	
ORN-WHT	3	2	RECEIVED DATA	F2	
WHT-ORN	4	24	REQUEST TO SEND	L2	
GRN-WHT	5	14	CLEAR TO SEND	K2	
WHT-GRN	6	26	DATA SET READY	N2	
BRN-WHT	7	7	GROUND	C2	
WHT-BRN	8	18	CARRIER	P2	
SLA-WHT	9	15	+POWER (NOT USED)		
WHT-SLA	10	16	-POWER (NOT USED)		
BLU-RED	11	19	BELL 202 SEC. TRANS. DATA	E1	B
RED-BLU	12	21	BELL 202 SEC. RECV. DATA	F1	B
ORN-RED	13	11	SEC CLEAR TO SEND	K1	
SLA-RED	14	20	EIA SECONDARY TRANS. DATA	E1	A
SLA-GRN	15	3	SERIAL CLOCK TRANS.	H2	
RED-BRN	16	23	EIA SECONDARY RECV DATA	F1	A
SLA-	17	22	SERIAL CLOCK RECV.	J2	C*
RED-SLA	18	17	UNASSIGNED NOT USED		
BLU-BLK	19	12	SECONDARY REQUEST TO SEND	L1	
BLK-BLU	20	9	DATA TERMINAL READY	R2	
ORN-BLK	21	13	SIGNAL QUALITY DETECT	M1	
BLK-ORN	22	25	RING	M2	
GRN-BLK	23	8	SIGNAL RATE SELECT	S2	
BRN-RED	24	10	EXTERNAL CLOCK	H1	
RED-ORN	25	27	FORCE BUSY	S1	
SPECIAL					
SHIELD A	CUT	4	SHIELD A (GROUND)	C2	
SHIELD B	CUT	5	SHIELD B (GROUND)	C2	

NOTES:
1. IF USED FOR FOLLOWING OPTIONS CUT ALL JUMPER EXCEPT. (DC11, DP11, DM11-DB, DS10, DQ11 AND DS11)
   (2) 202 JUMPERS
   REF. NOTE #6
   DN11-(2) EIA JUMPERS
   DM11-DC/DM11-BB (2) 202 AND (1) 811 JUMPERS. FOR OTHER APPLICATIONS REFER TO CHART ON LEFT FOR M9700 JUMPER FUNCTIONS.
2. CIRCLED LETTERS ON RIGHT OF WIRE TABLE INDICATE THOSE PINS WHICH ARE DEPENDENT ON M97ØØ JUMPER FUNCTIONS AT LEFT.
3. C* 811 JUMPER CONNECTS J2 TO F1
   SOLDER #6 (CABLE) TO #1 (CONN. CARD), APPLY #4 (TAPE) AROUND #6 (CABLE), ASSEMBLE #2 (CABLE CLAMP) AND #3 (EYELETS) TO #1 (CONN. CARD) AFTER SOLDERING
4. EACH SOLDERED CONNECTION ON P1 SHALL BE INSULATED WITH A ¾ INCH PIECE OF ITEM #5 (TUBING)
5. P1-15 AND P1-17 ARE SHIELDED LEADS
6. OLDER REV. BCØIR CABLES HAD "3Ø1" JUMPERS. (M97Ø + BCØ5C-25). NEW REV. CABLES (M9700) HAVE THESE CONNECTIONS IN THE ETCH. DO NOT REMOVE 3Ø1 JUMPERS ON OLD REV CABLES.



ITEM NO.	QTY.	DESCRIPTION	PART NO.
8	1	CONN PLUG #DB25-P	1205886
7	1	HOOD, CINCH #DB51226-1	1205885
6	A/R	CABLE, 25 CONDUCTOR	9107736
5	A/R	SHRINKABLE TUBING	9107255
4	A/R	TAPE, DOUBLE SIDED ½"	9007834
3	2	EYELET A-94	9006741
2	1	CLAMP, CABLE	12027901-01
1	1	M9700 CABLE CONNECTOR	M9700

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP 11

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

MATERIAL —//—
FINISH —//—

DRN. G FLANDERS	DATE 10-12-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J FLEMING	DATE 10-16-70	
ENG. V BASTEANI	DATE 10-16-73	
PROJ. ENG. V BASTEANI	DATE 10-1970	
PROD. D CULL	DATE 10 16 70	

TITLE: CABLE CARD ASSY (BCØIR)

NEXT HIGHER ASSY. A-PL-DC11-DA-0
SCALE —//—
SHEET OF 1

SIZE	CODE	NUMBER	REV.
D	UA	BCØIR-Ø-Ø	F

DIST.

REVISIONS			
CHK	CHANGE NO.	REV.	
JM	BCØIR-00003	D	
	REVISED & REDRAWN — J Clarke 8-8-73		
SHAMMAS	Shammas 8-13-73	E	
JM	BCØIR-00004	F	
J Clarke 1-18-74			
SHAMMAS	Willie P Smith 1-25-74		
JM	BCØIR-00005	G	
E Ellis 4/May 20			
J McINTYRE	C. McIntyre 9-11-75		

DEC FORM NO. DRD 100-B

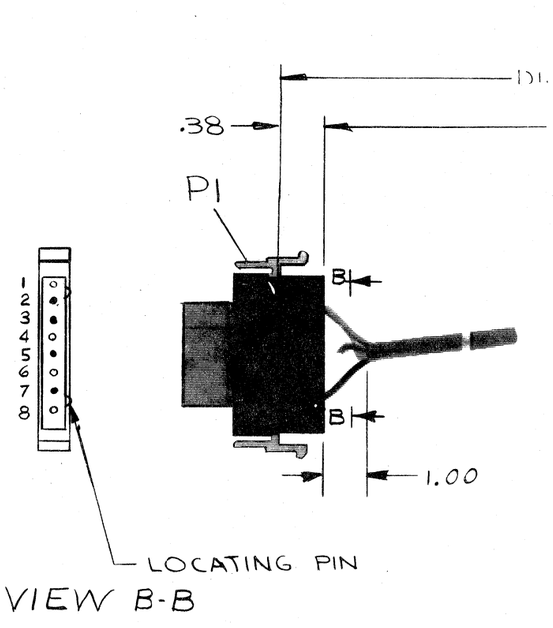
SIZE D | CODE UA | NUMBER BCØIR-Ø-Ø | REV F

LEGEND

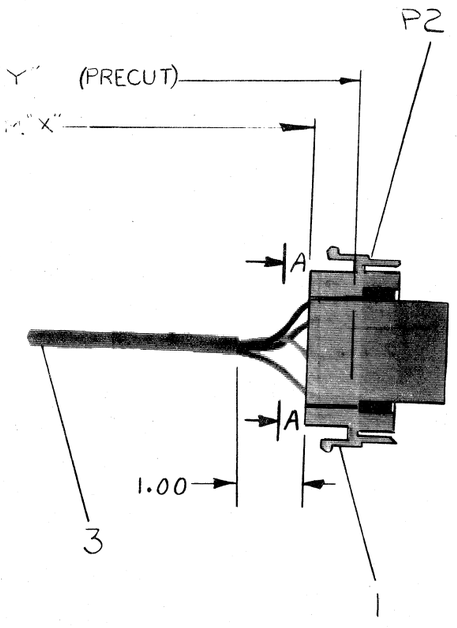
NUMBER	DIM 'X' VARIATION	DIM 'Y' (PRECUT) REF
BCØ5F-15	15 FT. ± 3 IN.	15 FT. .75 IN. ±3 IN.

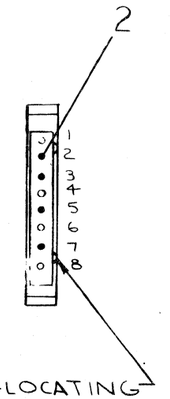
WIRE TABLE

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



VIEW B-B





VIEW A-A

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

PARTS LIST

FIRST USED ON OPTION MODEL: DF11

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

MATERIAL

FINISH

		DATE
DRN	E. F. Landrum	11/6/71
CHK'D	P. McCann	11/9/71
ENG	Robert Fitch	11/9/71
PROJ. ENG.	Ralph Gabbard	11/9/71
PROD.	Frank Gibson	11/9/71

NEXT HIGHER ASS'Y

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CABLE INTERFACE
BCØ5F

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

DIST.

REVISIONS			
CHK	CHANGE NO.		REV.
FMD	BCØ5F-00001		A
[illegible]	[illegible]	11-5-71	
	R. FITCH	11-9-71	
Robert Fitch			
EK	LA36-00119		B
EKEENEW		7/17/75	
J. BITTO		7/18/75	

DEC FORM NO. DRC

FUNCTION	WIRE	CONNECTION FROM	CONNECTION TO
CLEAR TO SEND (CS)	C COND	P1 — C	J1 — T
SEND REQUEST (SR)	D COND	P1 — D	J1 — V
SEND DATA (SD)	E COND	P1 — E	J1 — F
DATA SET READY (DSR)	F COND	P1 — F	J1 — Z
RING INDICATOR (RI)	F SHIELD	P1 — F	J1 — X
LOCAL TEST (LT)	G COND	P1 — G	J1 — FF
SERIAL CLOCK TRANSMIT (SCTE)	H COND	P1 — H	J1 — L
SERIAL CLOCK TRANSMIT (SCT)	J COND	P1 — J	J1 — N
RECEIVE DATA (RD)	K COND	P1 — K	J1 — U
SERIAL CLOCK RECEIVE (SCR)	L COND	P1 — L	J1 — R
AGC LOCK AGC	M COND	P1 — M	J1 — BB
DATA TERMINAL READY (DTR)	M SHEILD	P1 — M	J1 — DD
	C SHEILD	P1 — C	J1 — A
	D SHEILD	P1 — D	J1 — A
	E SHEILD	P1 — E	J1 — B
	G SHEILD	P1 — G	J1 — B
	H SHEILD	P1 — H	J1 — VV
	J SHEILD	P1 — J	J1 — VV
	K SHEILD	P1 — K	J1 — UU
	L SHEILD	P1 — L	J1 — UU
	A	P1 — A	NC
	B	P1 — B	NC

WIRE REFERENCE TABLE	
A	LOCATION
TRACER	OF
G	WIRES
B	IN
H	WOVEN
C	CABLE
J	
D	
K	
E	
L	
F	
M	

NOTES:

A. A TWISTED PAIR WIRE 6IN. LONG WILL BE ATTACHED TO EACH CONDUCTOR OF EACH WIRE (1 WIRE TO INNER CONDUCTOR, 1 WIRE TO THE SHIELD, THE WIRES WILL THEN BE CRIMPED TO THE BERG PINS AS INDICATED.

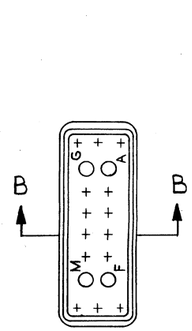
B. WHEN SUPPLIED BY A VENDOR THIS CABLE WILL BE FULLY TESTED BY VENDOR. TESTED AND INSPECTED BY INCOMING INSPECTION PRIOR TO ACCEPTANCE.

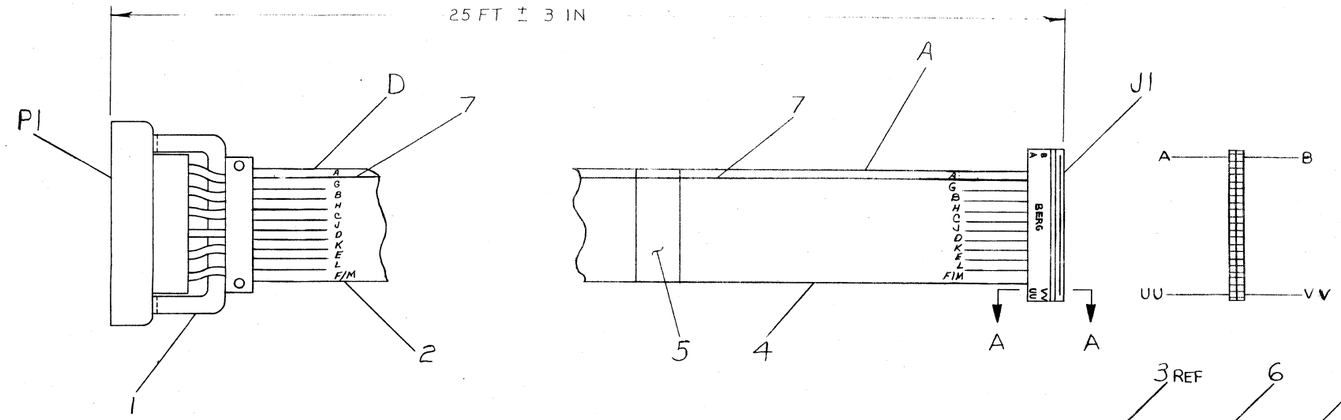
C. THIS IS THE CABLE DESCRIBED BY PURCHASE SPECIFICATION 17-00019.

D. A COLORED TRACER WILL BE WOVEN INTO THE CABLE BETWEEN WIRES "A" AND "G".

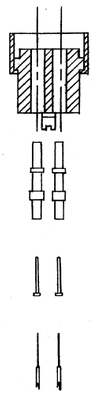
E. RG195 A/U CAN BE USED TO DIRECTLY REPLACE RG 180U.

F. NO SUBSTITUTIONS, OTHER THAN THOSE SPECIFIED IN THIS PRINT, MAY BE MADE WITHOUT PRIOR APPROVAL.





SECTION A-A



SECTION B-B

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
A/R	COLORED TRACER		7
A/R	BERG PINS	12-10087-	6
A/R	INSULATION		5
A/R	WIRE 26/28 AWG TWP		4
1	CONN BERG	12-10090-00	3
A/R	CABLE COAX RG180 B/U		2
1	BURNDY M012 MXP-17TC		1

FIRST USED ON OPTION/MODEL

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

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

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

		DATE
DRN.	[illegible]	2-1-72
CHK.	[illegible]	3-22-72
ENG.	[illegible]	3-23-72
PROJ. ENG.	[illegible]	3-23-72
PROD.	[illegible]	3-27-72

NEXT HIGHER ASSY.

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: HIGH SPEED MODEM CABLE

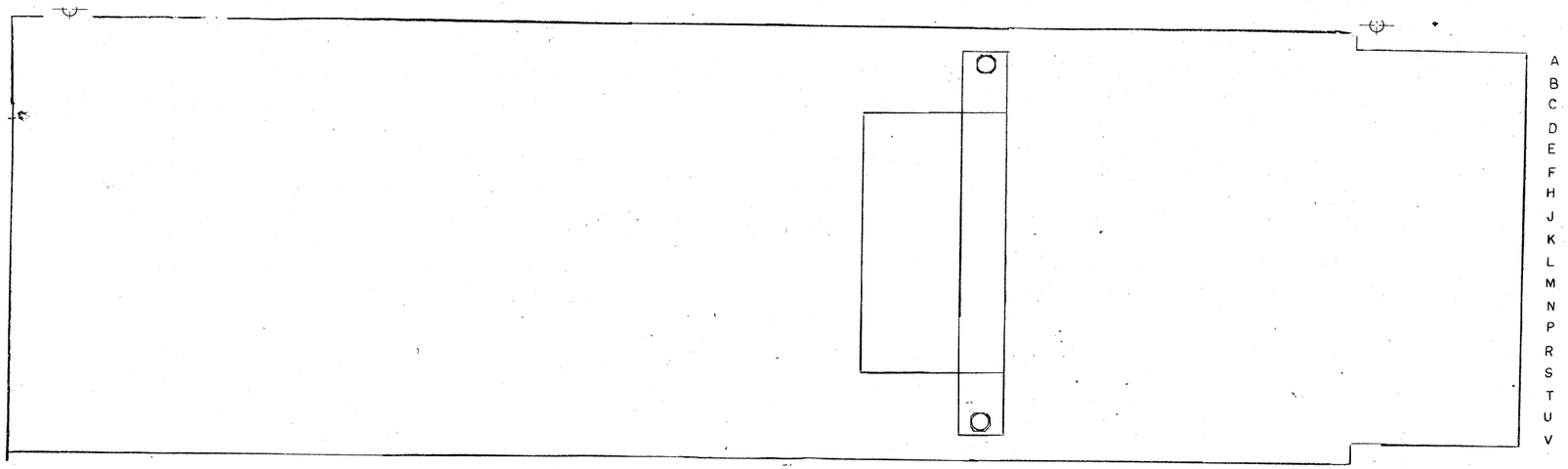
SIZE	CODE	NUMBER	REV.
D	UA	BC01W-0-0	A

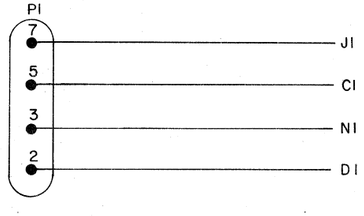
DIST.

REVISIONS	REV.	CHANGE NO.	CHK	
	A	BC01W-00001	DM	SMITH 7-14-72

DEC FORM NO. DRD 100-A

A BC01W-0-0 UA D 2





QTY.	REF DESIGNATION	DESCRIPTION	DEC PART NO.	ITEM NO.
		PARTS LIST		
		X-Y COORDINATE HOLE LOCATION	K-CO-M973-0-4	1
		ASSY/DRILLING HOLE LAYOUT	B-AH-M973-0-5	2
		MODULE ECO HISTORY	B-MH-M973-0-6	3
1		ETCHED CIRCUIT BOARD	5009587	4
1		PIN HOUSING	1209340-0-0	5
4		PINS	1209456	6
2		eyelet	9006732	7
1		handle, FLIP CHIP - MAGENTA	9008337-06	8
2		screw 4-40 X 3/8LG	9006011	9
1		WSHR, FLT	9006880	10
2		WASHER	9006693	11
4		FEED THRU EYELET	9006731	12
2		RIVETS	9007266	13

REVISIONS

CHK	CHG NO	REV
RJ	00001	A

DRN. B. J. Hale	DATE 5/11/71	
CHK'D NANCY MOORE	DATE 5-13-71	
ENG. S. Shammas	DATE 5/21/71	
PROD.	DATE	

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE TTY CABLE CONNECTOR

SIZE	CODE	NUMBER	REV.
C	CS	M973-0-1	A

PRINTED CIRCUIT REV. A

NUMBER M973-0-1 REV. A
SIZE C CODE CS

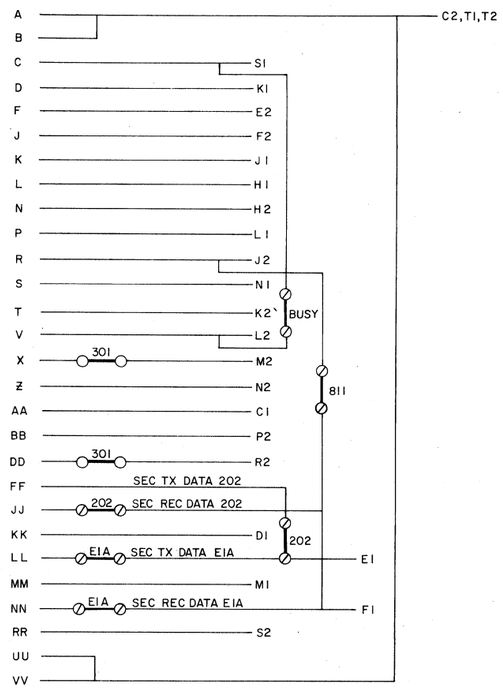
12

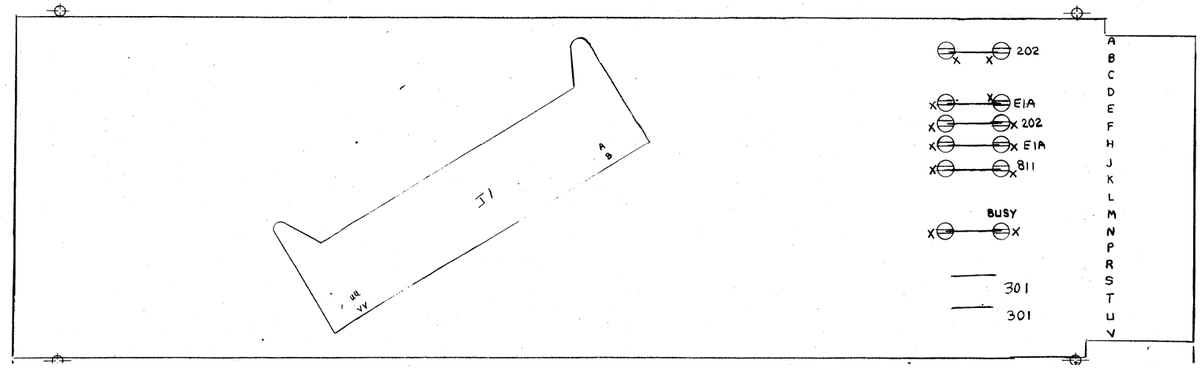
DEC FORM NO. DRC 102

MS

(4) DIST. 324, 434, 435 2

1. FUNCTIONS OF MODEM JUMPERS (WHEN INSTALLED)
   - A. EIA — SECONDARY TRANSMIT & RECEIVE DATA LINES TO EIA PINS 14 & 16
   - B. 202 — SECONDARY TRANSMIT & RECEIVE DATA LINES TO EIA PIN 11 & 12
   - C. 301 — ALLOW OPERATION OF RING AND DATA TERMINAL READY FUNCTIONS WITH BELL 303 SERIES
   - D. 811 — BELL 811B RESTRAINT FUNCTION IS MONITORED BY SECONDARY RECEIVE
   - E. BUSY — BELL 811B FORCE BUSY FUNCTION ANDED WITH REQUEST TO SEND
2. 301 — REMOVE FOR BELL 301 USE ONLY





QTY.	REF. DESIGNATION	DESCRIPTION	DEC PART NO.	ITEM NO.
		PARTS LIST		
1		HANDLE, FLIP CHIP - MAGENTA	9008337-06	8
12		SPLIT LUGS	9006735	7
2		EYELETS	9006732	6
1	J1	CONN 40P RT ANG HEADER	12099[illegible]1	5
1		ETCHED CIRCUIT BOARD	5009752	4
		MODULE ECO HISTORY	B-EH-M970-0-6	3
		ASSY/DRILLING HOLE LAYOUT	D-AH-M970-0-5	2
		X-Y COORDINATE HOLE LOCATION	K-CO-M970-0-4	1

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA

REVISIONS			
REV.			
CHK CHG NO			

DRN S. Cooper DATE 14 SEP 71
CHK'D T. Keller DATE 18 SEP 71
ENG [illegible] DATE 11/19/71
PROD DATE

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CABLE INTERFACE BD. # 1

SIZE D | CODE CS | NUMBER M970-0-1 | REV C

PRINTED CIRCUIT REV. D

DEC FORM NO. DRD 116

SIZE D | CODE CS | NUMBER M970-0-1 | REV C

ITEM NO	PART NO.	DESCRIPTION	DF11-A	DF11-B	DF11-BB		DF11-F	DF11-G				DF11-K
1	A-PL-M594-Ø-Ø	EIA/CCITT CONVERTER	1	–	–	–	–	–	–	–	–	–
2	D-CS-M595-Ø-1	CURRENT MODE CONVERTER BELL 301, 303	–	–	–	–	–	1	–	–	–	–
3	D-CS-M596Ø-Ø-1	20 MA TO TTL CONVERTER	–	–	–	–	1	–	–	–	–	–
4	A-PL-M97Ø-Ø-Ø	8.5 FLIP CHIP/40 PIN HEADER	–	–	–	–	–	1	–	–	–	–
5	A-PL-M973-Ø-Ø	8.5 FLIP CHIP/MATE-N-LOCK	–	–	–	–	1	–	–	–	–	1
6	D-UA-BCØ1R-25-Ø	BCØ1R CABLE ASSEMBLY	1	–	–	–	–	–	–	–	–	–
7	A-PL-M598-Ø-Ø	PASSIVE 20MA TO TTL	–	–	–	–	–	–	–	–	–	1
8	C-UA-BCØ5F-15-Ø	CABLE INTERFACE, BCØ5F-15	–	–	–	–	–	–	–	–	–	1
9	D-UA-BCØ1W-25-Ø	HIGH SPEED MODEM CABLE	–	–	–	–	–	1	–	–	–	–
10	A-PS-2ØM586-Ø-Ø	ASYNCH MODEM 300 BAUD ORIG	–	1	–	–	–	–	–	–	–	–
11	A-PS-2ØM587-Ø-Ø	ASYNCH MODEM 300 BAUD ANS	–	–	1	–	–	–	–	–	–	–
12	D-UA-BC11E-Ø-Ø	MODEM TO DAA CABLE	–	1	1	–	–	–	–	–	–	–

FIRST USED ON

	DP11-DA	LA3Ø	PDP11/05		DM11	DP11-DB			LA3Ø			

REVISIONS			
CHK	CHANGE NO.		REV.
[illegible]	DF11-0000	8-5-71	A
McNAMARA			
[illegible]	DF11-00002	10-12-71	B
[illegible]	DF11-00003	11-11-71	C
J. MCNAMARA		11-16-71	
[illegible]	DF11-00004	6-15-72	D
MCNAMARA			
[illegible]	DF11-00006	3-30-73	E
J. MCNAMARA		4-6-73	
[illegible]	DF11-00009	5-23-74	F
J. MCNAMARA		6-5-74	

FIRST USED ON OPTION/MODEL

UNLESS OTHERWISE SPECIFIED

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

MATERIAL

FINISH

DRN.	K. RUSS	DATE 3/18/71
CHK'D.	A. RAIMONDI	DATE 3-22-71
ENG.	[illegible]	DATE 3-25-71
PROJ. ENG.	[illegible]	DATE 3-25-71
PROD.	[illegible]	DATE 3-26-71

NEXT HIGHER ASSY.

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LEVEL CONVERTERS AND CABLES

SIZE	CODE	NUMBER	REV.
C	PL	DF11-Ø-Ø	F

DIST.

SIZE C CODE PL NUMBER DF11-Ø-Ø REV. F

DEC FORM NO. DRC 110

WIRE TABLE

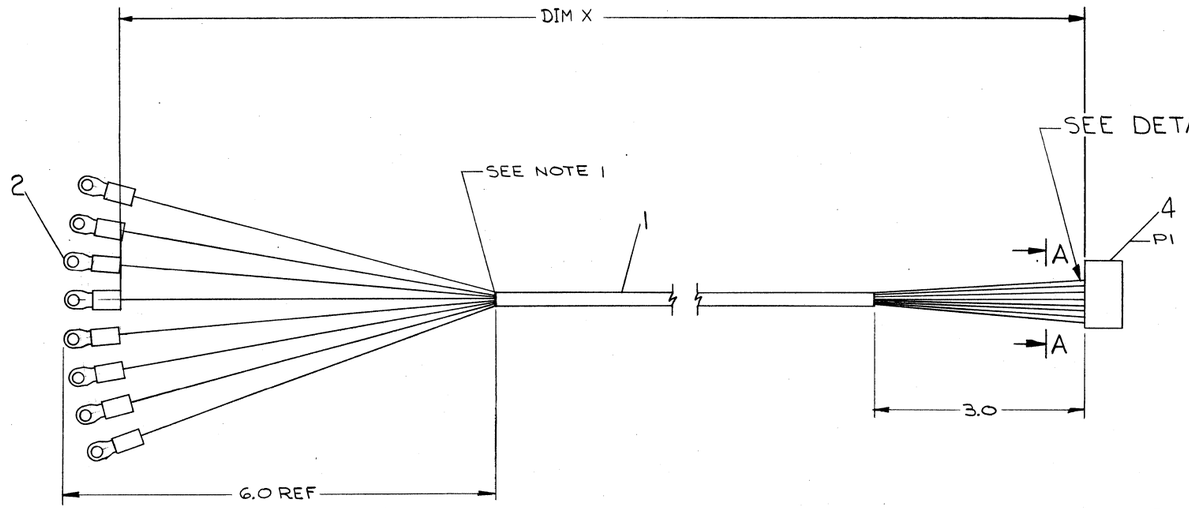
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	CUT POINT
1	22	RED	——	2	P1-1 (DA)	3	8
↑	↑	GRN	——	↑	P1-2 (OH)	↑	7
		BLU	——		P1-3 (SH)		6
		WHT	——		P1-4 (CCT)		5
		ORN	——		P1-5 (DR)		4
		VIO	——		P1-6 (DT)		3
↓	↓	YEL	——	↓	P1-7 (RI)	↓	2
1	22	BLK	——	2	P1-8 (GND)	3	1

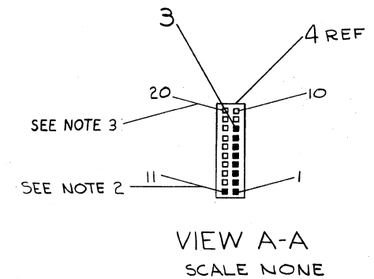
LEGEND

NUMBER	VARIATION	
	DIM X	DIM Y (PRECUT)
BC11E-25	25' ± 3"	25' + 3"-0"

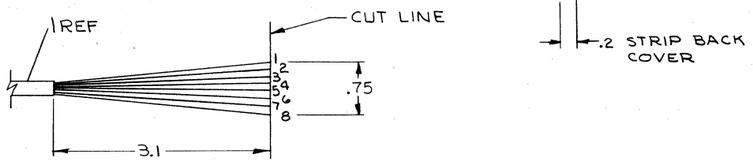
NOTES:

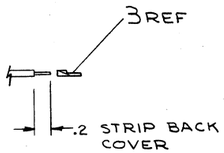
1. TWO WIRES (GRY, BRN) ARE TO BE CUT BACK AT INSULATION BOTH ENDS.
2. P1-11 IS A DUMMY PIN, USED FOR REFERENCE ONLY.
3. P1-20 IS TO BE NEXT TO ARROW ON CONNECTOR HOUSING ON MODEM WHEN P1 IS PLUGGED IN.





VIEW A-A
SCALE NONE





DETAIL B
DO NOT REDUCE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	RECEPTACLE 20 PIN 65043-027 BERG	1210918-27	4
9	MINI-TERMINAL #47783 BERG	1210089-6	3
8	CONN ARKLESS #50360-1	9007930	2
A/R	CABLE 10 CONDUCTOR	9107623	1

PARTS LIST

REVISIONS	CHANGE NO.	CHK	REV.
	BC11E-00001 Drawn 11-27-72 W. SMITH		A
	BC11E-00002 Drawn 3-7-73 W. SMITH		B

FIRST USED ON OPTION/MODEL: DF11-BA&-BB

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

		DATE
DRN.		7/26/72
CHKD.		7/27/72
ENG.		7/27/72
PROJ. ENG.		7/27/72
PROD.		10-5-72

NEXT HIGHER ASSY
SCALE 1/1
SHEET 1 OF 1

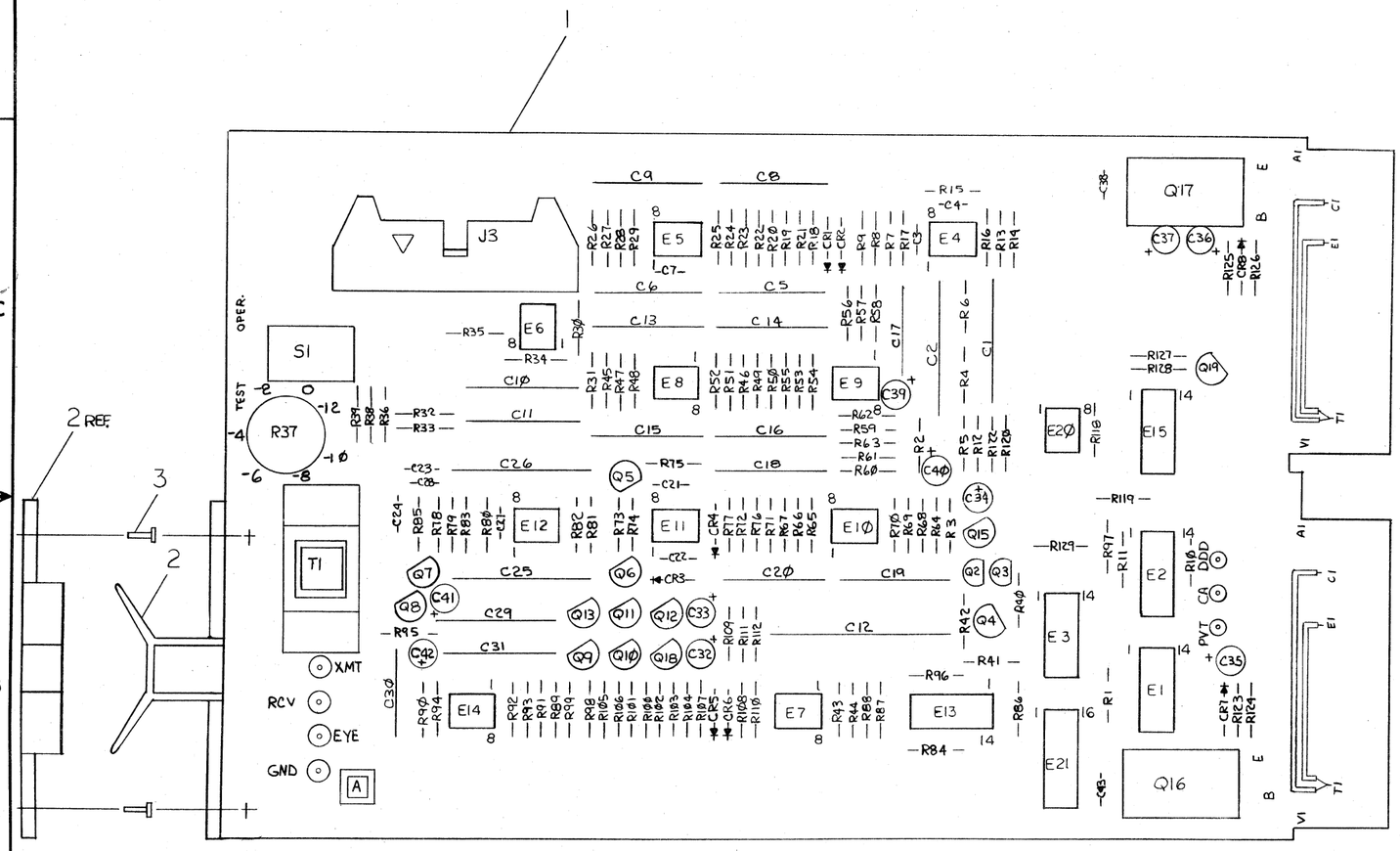
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: MODEM TO DAA CABLE (BC11E)

SIZE D | CODE UA | NUMBER BC11E-Ø-Ø | REV. B
DIST.

DEC FORM NO. DRD 100

NOTES:



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		ASYNC ORIGINATE MODEM(INTERTEL)	20M586	1
1		HANDLE FLIP-CHIP MAGENTA	9008337-06	2
2		EYELET	9006742	3

PARTS LIST

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

IC PIN LOCATIONS

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK
B	M586-00001 ORIGINATED	J. McNAMARA 3-21-74
A		

REVISIONS

FIRST USED ON OPTION MODEL: DF11 - BA

ETCH BOARD REV: A

DRN Ed Olson 7/16/73
CHK'D S. McManus 8/14/73
ENG. S. McManus 8/14/73
PROJ. ENG. S. McManus 8/14/73
PROD. Russ Davis 8/14/73
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ASYNC ORIGINATE MODEM

SIZE D | CODE CS | NUMBER M586-0-1 | REV. B

SCALE — | SHEET 1 OF 2 | DIST.

BRUNING 40-522 16699
DEC FORM NO. DRD-135A

OPERATE
TEST
+5V
R1 12K
R97 12K
7416 E2
7404 E1
74LS51 E3
MOD-IN
FSK OSCILLATOR
BANDPASS FILTER
R34 4.4VPP
XMT (TEST POINT)
R39 1.0K
R38 1.0K
R35 10.0K
R37 10K
R36 4.99K
T1
J3-6 DATA TIP
N.C.
N.C.
J3-5 DATA RING
SP-007
TRANSMIT DATA AV2
TRANSMIT DATA BV2
REQUEST TO SEND AS2
REQUEST TO SEND BS2
DATA TERMINAL READY AP2
DATA TERMINAL READY BP2
7400 E15
PVT
CA
DDD
R10 12K
R11 12K
INITIATE LONG SPACE DISCONNECT 3 ± 0.5 SEC
+9.4V
R118 36.5K
R119 63.4K
R120 330 R
R129 12K
R122 220Ω
C34 10UF
2N3565 Q15
72558P E20
75154 E21
R41 276K
R42 220Ω
R40 22K
2N3565 Q4
C12 1.0UF
72558P E7
R43 63.4K
R44 36.5 K
CLEAR TO SEND DELAY (265 ± 65 MS)
AF2 CLEAR TO SEND
BF2 CLEAR TO SEND
DEMOD IN
R45 267K
BANDPASS FILTER
LIMITER
DELAY DETECTOR
EYE (TEST POINT)
R95 1.0K
R94 17.4K
C31 0.027 UF
72558P E14
7426 E13
R96 18K
+9.4V
AB1 CARRIER DETECT
BB1 CARRIER DETECT
CARRIER DETECT
R75 1.0K
RCV (TEST POINT)
C22 0.1 UF
R76 2.10K
R77 196K
R99 2.0K
72558P E11
GND
AG1 AG2 AE1 AT1 BC1 BC2 BE1 BT1
J3-8
GND
SG
GND
+15V AN2
+15V BN2
2N5190 Q16
+9.4V ± 10% @ .1A MAX
R123 510Ω
R124 510Ω
IN4740A CR7
C35 10UF
-15V AB2
-15V BB2
2N5193 Q17
-9.4V ± 10% @ .1A MAX
R125 510Ω
R126 510Ω
IN4740A CR8
C36 10UF
+5V AA2
+5V BA2
C37 10UF
C38 .01UF
+5V

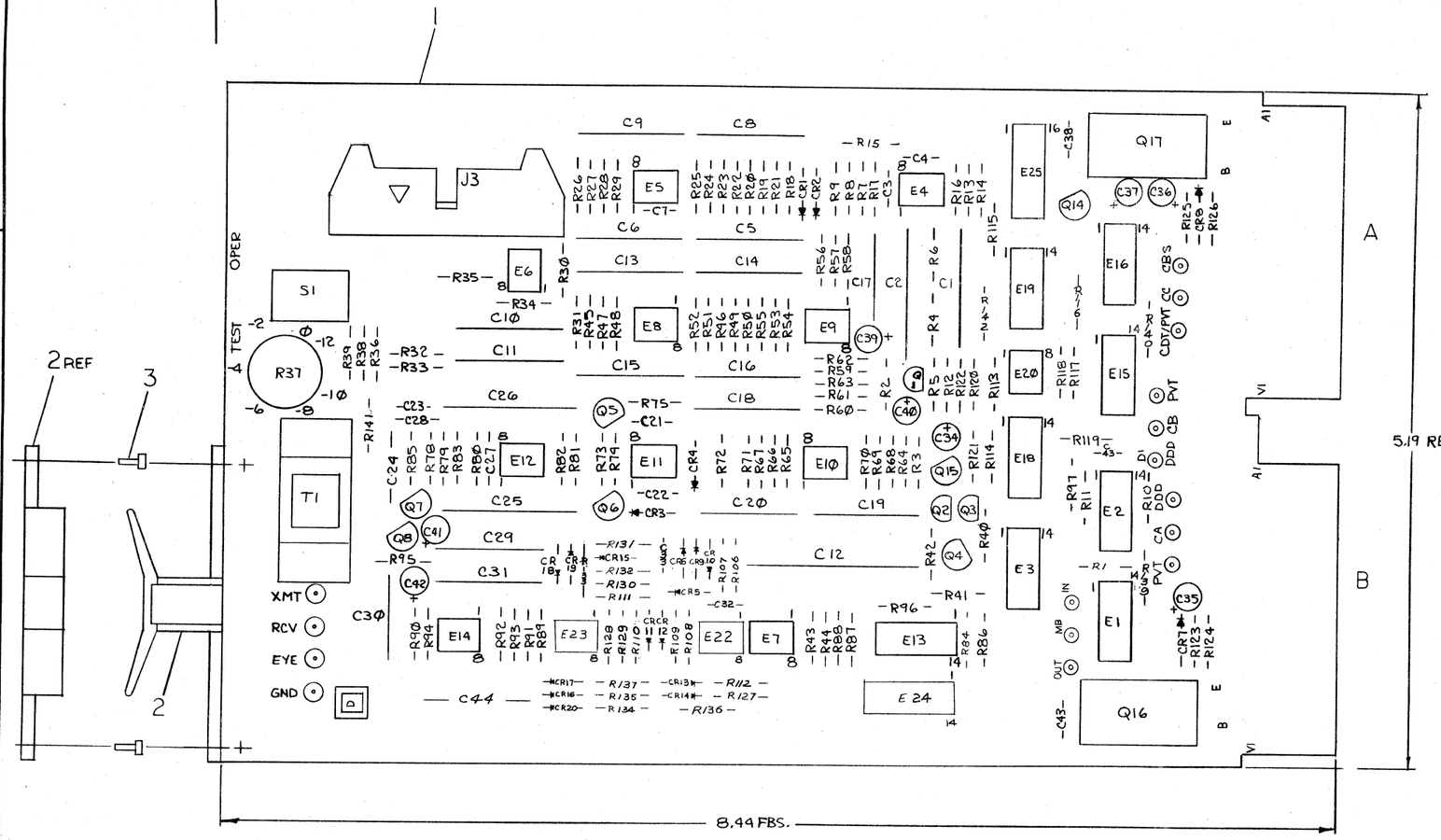
TRANSMIT DATA
MOD-IN
XMT — APPROX 4A VP-P
DEMOD-IN — LINE SIGNAL
RCV — 60MV P-P(MIN) 18V P-P(MAX)
EYE — APPROX. 3V P-P
CARRIER DETECT
RECEIVE DATA

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: ASYNC ORIGINATE MODEM
SCALE: 1/1 | SHEET 2 OF 2
SIZE D | CODE CS | NUMBER M586-0-1 | REV B
DIST.

DEC FORM NO DRD 138

NOTES:



1		ASYNC ANSWER MODEM (INTERTEL)	20M587
1		HANDLE FLIP-CHIP MAGENTA	9008337-06
2		EYELET	9006742

QTY | REF DESIGNATION | DESCRIPTION | PART NO. | ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: DF11-BB

ETCH BOARD REV: A

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

REVISIONS	CHANGE NO.	CHK	DATE
B	M587-00001	R. VARGAS 3-14-74	3-14-74
A	ORIGINATED	J. McNAMARA	3-21-74
C	M587-00002	J. MC NAMARA	5/9/74
D			9-3-74

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

SEMICONDUCTOR CONVERSION CHART

DRN		DATE 7/23/73
CHK'D		DATE 8/14/73
ENG		DATE 8/14/73
PROJ. ENG.		DATE 8/14/73
PROD	Russ Davis	DATE 8/14/73

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ASYNC ANSWER MODEM

SIZE D | CODE CS | NUMBER M587-0-1 | REV. C

DIST.

BRUNING 40-522 16699

DEC FORM NO. DRD-135A

+5V R97 12K

7416 E2 — 74L51 E3 — 7404 E1 → AD1 RECEIVE DATA, BD1 RECEIVE DATA

OPERATE — +5V R1 12K — S1 — TEST

7404 E1 — 74L51 E3 — MOD-IN → FSK OSCILLATOR → BAND PASS FILTER → R34 4.4VPP → 72558P E6 → R35 10.0K, R39 1.0K, R38 1.0K → XMT (TEST POINT)

TRANSMIT DATA AV2
TRANSMIT DATA BV2 — 7404 E1 — 7400 E15

REQUEST TO SEND AS2
REQUEST TO SEND BS2

+5V R10 12K

7416 E2 — 7416 E2 — R11 12K — +5V

PVT — CB — DDD

R40 22K — Q4 2N3565 — +9.4V

CLEAR TO SEND DELAY (265 ± 65 MS)

R42 220Ω — R41 267K — C12 1.0UF — R44 36.5K — R34 63.4K — 72558P E7 — 75154 E24 — +5V

T1 — SP-0007 — NC. — NC.

R37 10K — R36 4.99K

J3-6 DATA TIP
J3-5 DATA RING

7404 E1 — 7400 E15 → AF2 CLEAR TO SEND, BF2 CLEAR TO SEND

7400 E19 — R116 2.2K — Q14 2N3565 — R117 37.4K — R118 36.5K — R119 63.4K — +9.4V

PVT — CA — DDD — IN — MB — OUT

7404 E16 — 7404 E16 — 7402 E18 — INITIATE LONG SPACE (3±0.5 SEC.)

+9.4V — R120 330K — R122 220Ω — Q15 2N3565 — R121 22K — C34 10UF — 72558P E20

DEMOD-IN — R45 182K — BAND PASS FILTER — C21 0.1UF — R72 4.7K — LIMITER

+5V — 75154 E25 — 7416 E2

R75 1.0K — RCV (TEST POINT)

C22 0.1UF — R106 6.19K

CARRIER DETECT — E1 7404 — AB1 CARRIER DETECT, BB1 CARRIER DETECT

GND
SG — J3-8
GND

AE1, AC2, AT1, BC2, BT1, BE1 — GND

+15V AN2 — 2N5190 Q16 — +9.4V ±10% @ .1A (MAX) — C35 10µf

R123 510Ω — R124 510Ω

CR7 IN4740A

-15 AB2 — 2N5193 Q17 — -9.4V ±10% @ .1A (MAX) — C35 10µf

R125 510Ω — R126 510Ω

CR8 IN4740A

+5V AA2
+5V BA2 — +5V

C37 10µf — C38 .01µf

DA J3-1
OH J3-2 — 7404 E16

RING INDICATOR AC1
RING INDICATOR BC1
RI J3-7 — 75154 E25 — +5V

DATA TERM READY AP2
DATA TERM READY BP2 — 7400 E15
+5 R140 4.7K

SH J3-3 — 75154 E25 — +5V

CCT J3-4 — 75154 E25 — NC.

DATA SET READY AD2
DATA SET READY BD2

7402 E18 — 7400 E19 — 7404 E16 — CDT/PVT — CC — CBS

R114 1.8K — R113 3.9K — 72558P E20 — R115 2.7K

DELAY DETECTOR

R142 12K — 72558P E11 — R141 2.7K

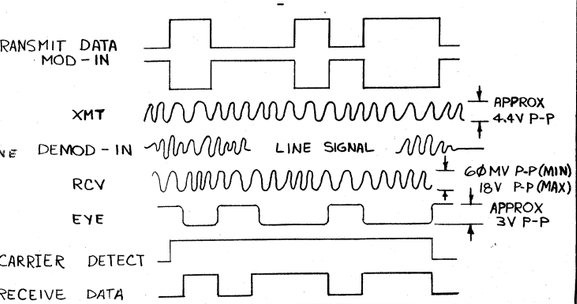
R94 17.4K — R95 1.0K — EYE (TEST POINT) — +5V

PS — C31 .0027µf — 72558P E14 — 7426 E13 — R96 18K — +9.4V

NOTE:
1) WHEN M587 IS USED ON DDD W/CBS DAA, MB STRAP IN PERMITS REQ. TO SEND TO CONTROL "MAKE BUSY" FEATURE. (REV. D) INSTALLATION MUST BE COORDINATED WITH TELEPHONE COMPANY.

M587 STRAPPING TABLE

STRAP	DDD CDT DAA	DDD CBS DAA	PRIVATE LINE
CA	DDD	DDD	PVT
CB	DDD	DDD	PVT
CC	CDT/PVT	CBS	CDT/PVT
MB	—	NOTE 1	—



REVISIONS

CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
ASYNC ANSWER MODEM	D	CS	M587-Ø-1	C
SCALE —	SHEET 2 OF 2	DIST.		

DEC FORM NO. DRD 138

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY E. WILSON DATE 8/29/73	CHECKED [illegible] DATE 10/22/73	SECTION
ENG R. Lusis DATE 12-10-73	PROD R. Wall DATE 12-11-73	ISSUED SECT.

LEGEND

D	DOCUMENT
DN	DOCUMENT CHANGE NOTICE
PA	PAPER TAPE ASCII
PB	PAPER TAPE BINARY
PM	PAPER TAPE READ-IN-MODE

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION								
			DQ11-AA	DQ11-AB	DQ11-BB	DQ11-DA	DQ11-EA	DQ11-DE/DD	DQ11-ED/EE	KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
	LIB KIT 11-DQ11A-A-K	SOFTWARE KIT	1			1	1	1	1		
	B-DD-DQ11-Ø	CUSTOMER PRINT SET	1			1	1	1	1		
	M920	BUS CONNECTOR	1	1		1	1	2	2		
	BC08S-1	CABLE		3				3	3		
	M971	CONNECTOR MODULE		6				6	6		
	H315	TEST CONNECTOR				1		1			
	DEC-11-HDQAA-A-D	MAINTENANCE MANUAL	1			1	1	1	1		
	EK-11-DQ11-OOP	DQ11 PROGRAMMING MANUAL	1			1	1	1	1		

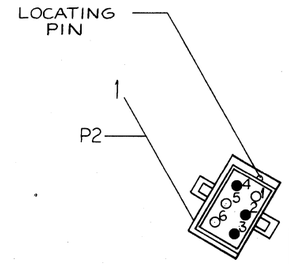
TITLE: DQ11 ACCESSORY LIST	ASSY. NO.	SIZE: A	CODE: AL	NUMBER: DQ11-0-3	REV.: A	ECO NO: DQ11—00002
	SHEET 1 OF 1	DIST.				

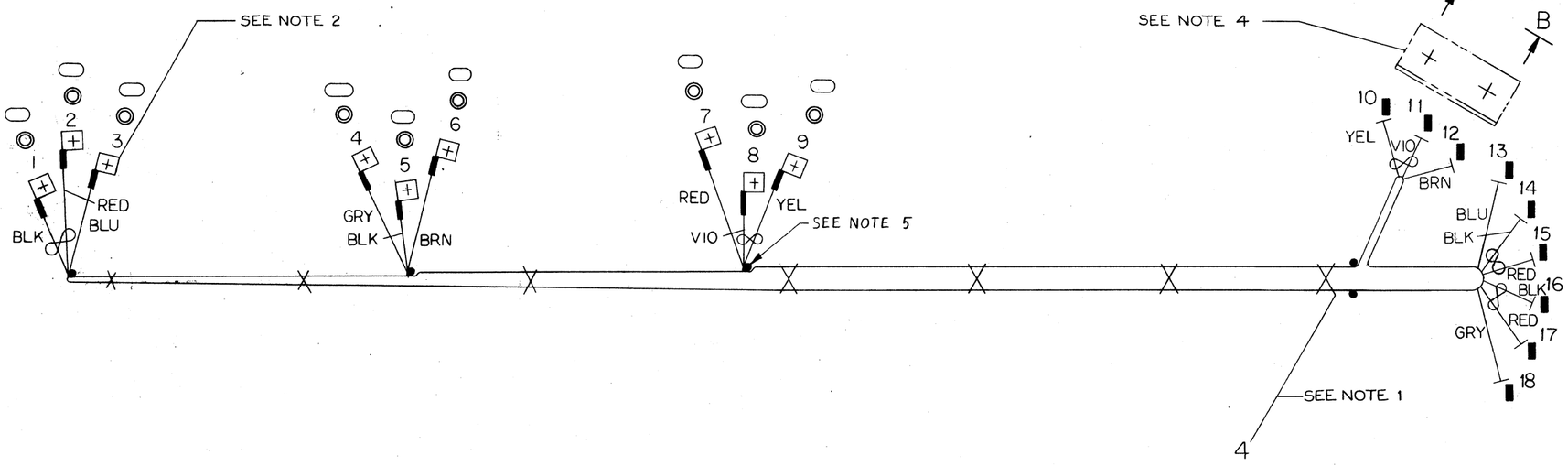
DEC 16-(325)-1075-N172 DRA 121

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM TERM	TO POINT	TO CONNECTION	TO TERM	REMARKS
7	14 TWP	RED	7		5,6	17	P1-1	3	+5V
		BLK	5			16	P1-7		GND
9	18 AWG	GRY	4			18	P1-2		+15
7	14 TWP	RED	2			15	P1-4		+5
		BLK	1			14	P1-9		GND
11	14 AWG	BLU	3			13	P1-13		-15
10	18 AWG	BRN	6			12	P2-2		LINE CLOCK
8	18 TWP	V10	8			11	P2-3		DC LO
		YEL	9		5,6	10	P2-4	3	AC LO

NOTES:
1. USE TIE WRAPS (X) ITEM 4 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY, AND AT EVERY BREAK-OUT POINT.
2. ATTACH MALE FASTON DEC 9008219-0 WITH #4 WOOD SCREWS (9 PLACES).
3. USE CONN. BRKT C-MD-9305761-H15-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-15.
4. USE CONN. BRKT C-MD-9305761-H6-0 MOUNT WITH #6 WOOD SCREWS. USE MATING CONN. 1209350-06.
5. DOT ◉ INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY. COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.





DO NOT REDUCE
SCALE
6 IN.
0 IN. 12 IN.
DO NOT BUILD FROM REDUCED PRINT

	SYM	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		A/R	WIRE, #14 AWG BLU	9107370-66	11
		A/R	WIRE, #18 AWG BRN	9107360-11	10
		A/R	WIRE, #18 AWG GRY	9107360-88	9
		A/R	WIRE, #18 TWP YEL/V10	9107430-47	8
		A/R	WIRE, #14 TWP BLK/RED	9107440-02	7
⬭		A/R	TUBING, SHRINK	9107305-02	6
◎		9	CONN., SOLDERLESS	9009262-0	5
X		A/R	WRAP, TIE	9007031	4
▮		9	PIN, MALE	1209378-01	3
		1	HOUSING, CONN. 15 PIN	1209351-15	2
		1	HOUSING, CONN. 6 PIN	1209351-06	1

FIRST USED ON OPT/MOD

PARTS LIST

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

		DATE
DRN.	Carl McCoy	9-26-73
CHK'D	[illegible]	10/11/73
ENG.	Darell Boaen	10/3/73
PROJ. ENG.	Darell Boaen	10/3/73
PROD.	Jack Norman	10/11/73

NEXT HIGHER ASSY.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: POWER HARNESS DA11-F/DD11-B

SIZE D | CODE IA | NUMBER 7009563-0-0 | REV.
SCALE 1/1
SHEET 1 OF 1
DIST.

REVISIONS: REV. | CHANGE NO. | CHK.
BRUNING 40-107 15968
DEC FORM NO DRD 100-A

REV. | NUMBER 7009563-0-0 | SIZE CODE D IA

DRAWING NUMBER	INIT REL	AUTOMATIC WIRE TESTER (AWT) REVISION STATUS																				
	T4	C	D	E																		
K-WL-DQ11-0-14	B	C	D	E																		
C-IA-7009468-0-0	*	*	*	*																		
D-CS-5410094-0-1	C	C	C	C																		

SIZE A | CODE WT | NUMBER 7009468-0 | REV E

REVISIONS	REV.	CHK
CHANGE NO.		
DQ11AB-00003 ORIGINATED	C	—
DQ11AB-00004	D	
DQ11AB-00005	E	EK

DRN. B. Vine	DATE 8-30-74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D L. Gilbert	DATE 9-9-74	TITLE DQ11
ENG. R. Tuttle	DATE 9-9-74	AWT REVISION STATUS
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON DQ11		SIZE A | CODE WT | NUMBER 7009468-0 | REV. E
SCALE —		DIST.
SHEET 1 OF 1		

DRA 123

DEC 16-(325)-1097-N174