FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
DL11-W
DL11-WA
DL11-WB
DL11-WC

DL11-W
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØ1Ø6

REVISIONS		
REV.	CHG. NO.	DATE
A	DL11W-1	NOV-76
B	DL11-W-2	8-77

USED ON OPTION/MODEL

SHEET I OF 1

DRN. D. Head	DATE 26 MAR 76	digital
CHK'D D. Head	DATE 26 MAR 76	TITLE: FIELD MAINTENANCE PRINT SET DL11-W
PROJ. ENG. R.E. Bratt	DATE 29-MAR 1976	SIZE B / CODE TC / NUMBER DL11-W-1 / REV. B
FIELD SERV. [illegible]	DATE 14-April 1976	DIST.

DRB 124

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	D. HEALY	CHECKED D. HEALY	SECTION 1
DATE	25 MAR 76	DATE 25 MAR 76	
ENG	R.E. BRATT	PROD K. MACDONALD	ISSUED SECT. 1
DATE	1 APR 76	DATE 7-APR-76	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-W	DL11-WA	DL11-WB	DL11-WC
1	D-CS-M7856-Ø=1	SLU/RTC OPTION	1	1	1	1
2	D-1A-7008360-1-0	CABLE ASSY (KL8-E)	-	1	-	-
3	D-UA-BCØ5C-25-0	CABLE MODEM BCØ5C	-	-	1	-
4	D-UA-BC03L-10-0	CABLE ASSY	-	-	-	1
5	2376ØA9 *	BOOTSTRAP ROM	1	1	-	1
6	9906228 *	BOX ROM	1	1	-	1
7	D-CS-H315-0-1	MODEM TEST CONNECTOR (SEE NOTE 3.)	-	-	1	1

* 1. THE ROM AND ROM BOX WILL BE ADDED AT FA+T.

2. THE ROM AND ROM BOX ARE TO BE SHIPPED ONLY IF AN LT33 OPTION IS SHIPPED WITH A UNIBUS 11 SYSTEM.

3. ONE H315 PER PDP-11 SYS. OR ONE PER DL-11/WB OR WC LOOSE PIECE/ADD ON.

TITLE SERIAL LINE/LINE CLOCK DL11-W	ASSY NO. NONE	SIZE A	CODE PL	NUMBER DL11-W-Ø	REV. D	ECO NO. DT11W MK005
	SHEET 1 OF 1	DIST				

DEC FORM DEC 16-(325)-1031 N870
DR4 110

MK

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

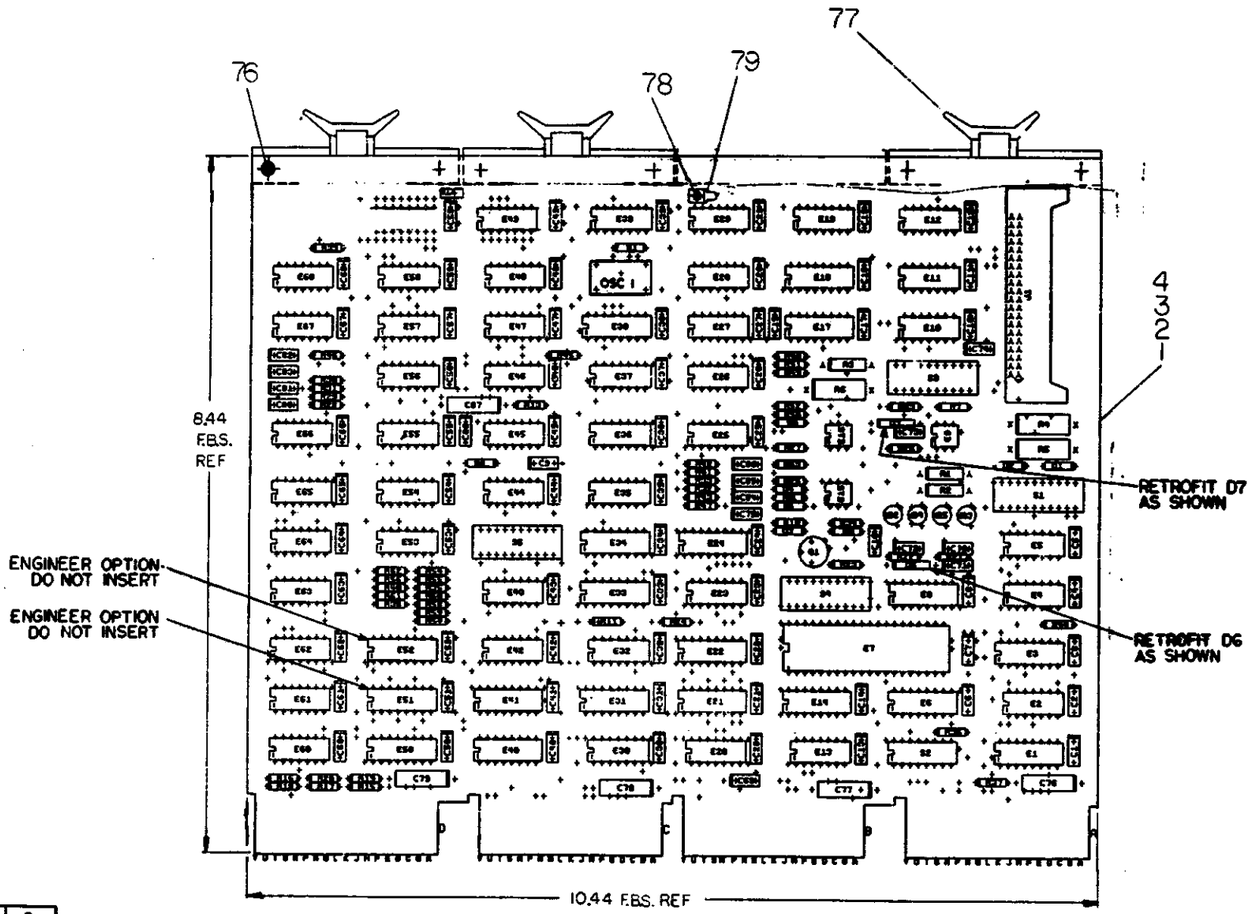
MADE BY D. HEALY	CHECKED D. HEALY	SECTION 1
DATE 25 MAR 76	DATE 25 MAR 76	
ENG RB Pratt	PROD K N. MacDonald	ISSUED SECT. 1
DATE 1-APR-76	DATE 7 APR 76	

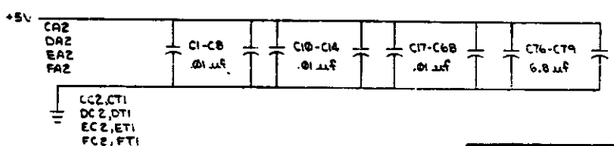
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION DL11-W	DL11-WA	DL11-WB	DL11-WC
1	D-CS-M7856-Ø-1	SLU/RTC OPTION	1	1	1	1
2	D-IA-7008360-1-0	CABLE ASSY (KL8-E)	-	1	-	-
3	D-UA-BCØ5C-25-0	CABLE MODEM BCØ5C	-	-	1	-
4	D-UA-BC03L-10-0	CABLE ASSY	-	-	-	1

TITLE SERIAL LINE/LINE CLOCK DL11-W	ASSY NO. NONE	SIZE A	CODE PL	NUMBER DL11-W-Ø	REV. A	ECO NO. DL11W 00001
	SHEET 1 OF 1	DIST.				

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

NOTES:





REF				
REF		X-Y COORDINATE HOLE LOCATION	X-CO-M7856-B-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7856-B-5	2
REF		MODULE ECO HISTORY	D-MH-M7856-B-6	3
1		ETCHED CIRCUIT BOARD	5011484	4
67	C1 THRU C8,C16 THRU C15, C17 THRU C60,C66	CAPACITOR, .01uf, 100V, 20%	1001610-01	5
7	C9,C69 THRU C74	CAPACITOR, 470pf, 100V, 5%	1000024	6
1	C75	CAPACITOR, 330pf, 100V, 5%	1000023	7
6	C80 THRU C85	CAPACITOR, 82pf, 100V, 5%	1000015	8
1	C86	CAPACITOR, 150pf, 100V, 5%	1000019	9
1	C87	CAPACITOR, 2.2uf, 20V, 10%	1002827	10
4	C76,C77,C78,C79	CAPACITOR, 6.8uf, 35V, 10%	1005306	11
1	C16	CAPACITOR, 5000pf, 100V, 20%	1001765	12
3	D1,D2,D3	DIODE, IN4003	1105796	13
1	D4	DIODE, ZENER IN4742	1109502	14
2	D6,D7	DIODE, CURRENT LIMITER MCL1301	1105610	15
1	D8	DIODE, D664	1100114	16
4	S1,S3,S4,S5	SWITCH, 10 POSITION	1211164-06	17
1	S2	SWITCH, 8 POSITION	1211164-04	18
				19
				20
1	J1	CONNECTOR, 40 PIN	1209941	21
1	R83	RESISTOR, 330, 1/4W, 5%	1300295	22
3	R1,R2,R3	RESISTOR, 100 OHM, 1/2W, 5%	1300260	23
3	R4,R5,R6	RESISTOR, 560 OHM, 1W, 5%	1303848	24
2	R7,R8	RESISTOR, 68K, 1/4W, 5%	1301327	25
1	R9	RESISTOR, 33 OHM, 1/4W, 5%	1300197	26
1	R10	RESISTOR, 120K, 1/4W, 5%	1300539	27
1	R12	RESISTOR,680, 1/4W, 5%	1301424	28
1	R25	RESISTOR, 68 OHM, 1/4W, 5%	1300219	29
2	R13,R14	RESISTOR, 100 OHM, 1/4W, 5%	1300229	30
4	R15,R16,R17,R18	RESISTOR, 180 OHM, 1/4W, 5%	1301322	31
4	R19,R20,R21,R22	RESISTOR, 390 OHM, 1/4W, 5%	1300309	32
1	R23	RESISTOR, 7.5K, 1/4W, 5%	1301422	33
2	R27, R26	RESISTOR, 150 OHM, 1/4W, 5%	1300250	34
6	R28 THRU R33	RESISTOR, 270 OHM, 1/4W, 5%	1301972	35
27	R35,R36,R37,R39 THRU R62	RESISTOR, 10K, 1/4W, 5%	1300479	36
3	R41,R64,R38,	RESISTOR, 1K, 1/4W, 5%	1300365	37
1	R34	RESISTOR, 220 OHM, 1/4W, 5%	1300271	38
1	Q1	TRANSISTOR, DEC 6531B	1509330	39
2	Q3,Q4	TRANSISTOR, A05	1510705	40
2	Q2,Q5	TRANSISTOR, A55	1510706	41
2	E9,E16	OPTICALLY COUPLED ISOLATOR	1510727-1	42
1	OSC 1	OSCILLATOR 50688 MHZ	1811660-02	43
1	E15	I.C. DEC 4N26	1911998	44
3	E1,E6,E14	I.C. DEC 8641	1911579	45
6	E2,E13,E20,E60,E61,E49	I.C. DEC 8881	1909705	46
1	E3	I.C. DEC 8097	1911527	47
3	E4,E44,E64	I.C. DEC 7400	1910155	48
7	E5,E35,E37,E55,E57,E63,E68	I.C. DEC 7474	1905547	49
1	E7	I.C. DEC UART(1808)	1918458-01	50
1	E8	I.C. DEC 74175	1910651	51
1	E10	I.C. [illegible] 1489L	1910323	52
1	E11	I.C. DEC 1488L	1910322	53
2	E17,E18	I.C. DEC 7415I	1909936	54
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV. D

FIRST USED ON OPTION MODEL

IC 384	1	8
IC 8637	8	16
IC 314A	1	8
IC 74123	8	16
IC 74157	8	16
IC 74153	8	16
IC 7493	10	5
IC 7492	10	5
IC 74151	8	16
IC 74175	8	16
IC UART	1	3
IC 8097	8	16
IC 8641	8	16
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.	REVISIONS	CHANGE NO.	CHK
D	[illegible]	M7856-00001	[illegible]
E	[illegible]	M7856-00002	[illegible]

DRN.		DATE 8/4/75
CHKD.		DATE 9-9-75
ENG.		DATE 11-20-75
PROJ. ENG.		DATE 11-24-75
PROD. ENG.		DATE 11-25-75
NEXT HIGHER ASSY		
SCALE		
SHEET 1 OF 9		

digital

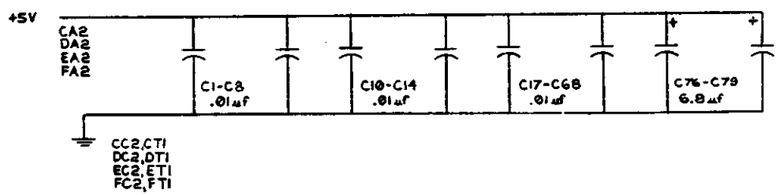
TITLE SLU/RTD OPTION

SIZE	CODE	NUMBER	REV.
D	CS	M7856-D-1	E

DIST.

CSM7856-D-1

NOTES:



IC	GND	+5V
IC 8641	8	16
IC 334	1	8
IC 25[illegible]7	8	16
IC 314A	1	8
IC 74123	8	16
IC 74157	8	16
IC 74153	8	16
IC 7493	10	5
IC 7492	10	5
IC 74151	8	16
IC 74175	8	16
IC UART	1	3
IC 8097	8	16
IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REV.	CHK	CHANGE NO.	REVISIONS
J	M7856-MK0085		R. HARRINGTON 14-APR-80
H	M7856-0-1304		B. CRAMM 2/27/79

FIRST USED ON OPTION MODEL

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV. E

SEMICONDUCTOR CONVERSION CHART

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

DRN. D Dimmick	DATE 2/23/79	
CHK'D. [illegible]	DATE 3-5-79	
ENG. [illegible]	DATE 3-7-79	
PROJ. ENG. [illegible]	DATE 3-7-79	
PROJ. [illegible]	DATE 3-15-79	
NEXT HIGHER ASSY		
SCALE		
SHEET 1 OF 8		

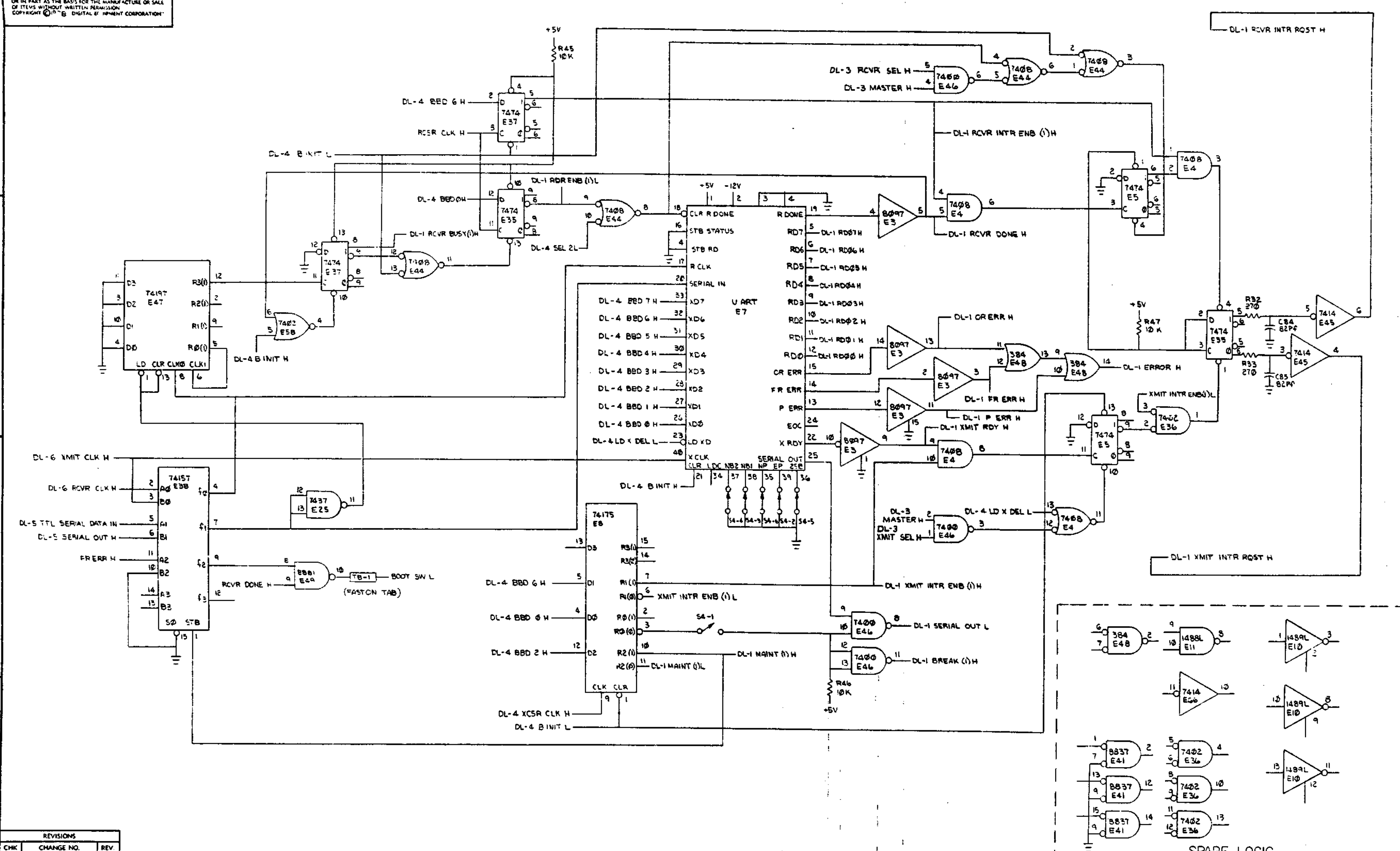
TITLE: SLU/RTC OPTION

SIZE D | CODE CS | NUMBER M7856-0-1 | REV. J

DIST.

MIC 1

SIZE D | CODE CS | NUMBER M7856-0-1 | REV. J

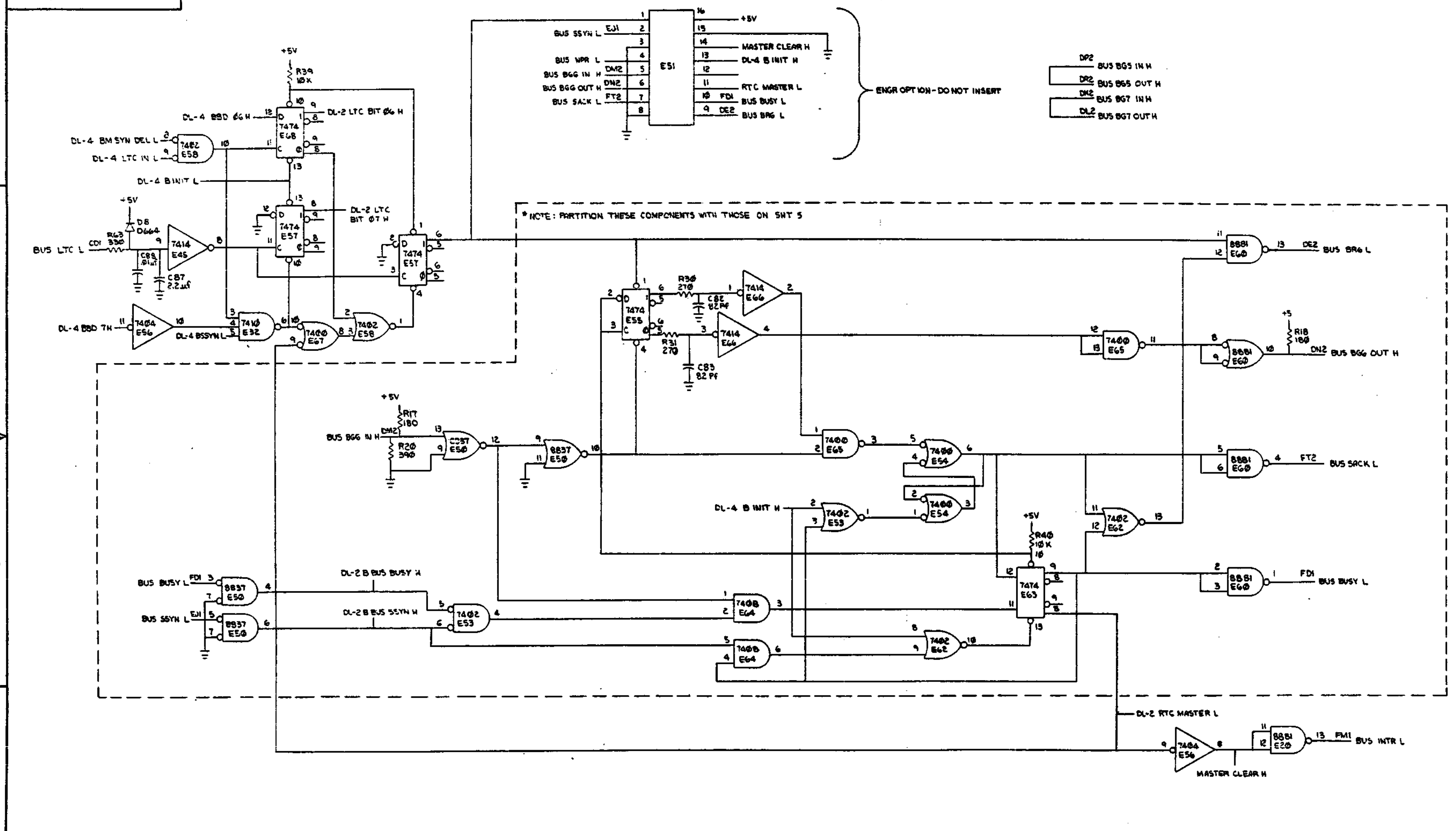


REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SLU/RTC OPTION (DL-1)	
SIZE D	CODE CS	NUMBER M7856-0-1
REV.	J	
SCALE	SHEET 2 OF 8	DIST.

DEC FORM NO. DRD 339

MK



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: SLU/RTC OPTION (DL-2)

SIZE: D | CODE: CS | NUMBER: M7856-Ø-1 | REV.: J

SCALE: — | SHEET 3 OF 8

BUS SACK L — FT2
BUS BG4 OUT H — DT2
BUS BG4 IN H — DS2
BUS NPR L — FJ1
BUS SSYN L — EJ1
E52 — 9 DAL, 10 FDI, 11 MASTER L, 12 SACK H, 13 DL-4 B INIT H, 14 MASTER H, 15, 16 +5V
ENGR OPTION DO NOT INSERT

*NOTE: PARTITION THESE COMPONENTS WITH THOSE NOTED ON SHT. 4

DL-1 XMIT INTR H
RQST H
DL-1 RCVR INTR RQST H
3B4 E48
7404 E56
7400 E65
7474 E55
R28 270Ω
R29 270Ω
C80 82pF
C81 82pF
7414 E66
7414 E66
7414 E66
+5V
R15 180Ω
R19 390Ω
BUS BG4 IN H — DS2
8837 E58
8837 E50
7400 E65
7400 E54
DL-4 B INIT H
7402 E53
7402 E62
+5V
R35 10K
7474 E63
DL-2 BBUS BUSY H
BBUS SSYN H
7402 E53
7408 E64
7408 E64
7402 E62
8881 E61 — DH2 — BUS BR4 L
8881 E61 — +5V R16 180Ω — DT2 — BUS BG4 OUT H
8881 E61 — FT2 — BUS SACK L
8881 E61 — FDI — BUS BUSY L
8881 E2 — S2-4* — CT2 — BUS D03 L
8881 E2 — S2-7* — CM2 — BUS D07 L
8881 E2 — S2-8* — CL2 — BUS D08 L
+5V RST 10K
DL-2 RTC MASTER L
8881 E2 — CV2 — BUS D06 L
R36 10K +5V
MASTER L
7404 E56
DL-3 MASTER H
8881 E13 — FMI — BUS INTR L
8881 E13 — S2-3* — CP2 — BUS D05 L
8881 E13 — S2-6* — CM2 — BUS D04 L
8881 E13 — CU2 — BUS D02 L
SACK H
7400 E67
7474 E68
DL-3 RCVR SEL H
DL-3 XMIT SEL H
7400 E67

* VECTOR ADDRESS SWITCHES - ON=1 OFF=0

REVISIONS

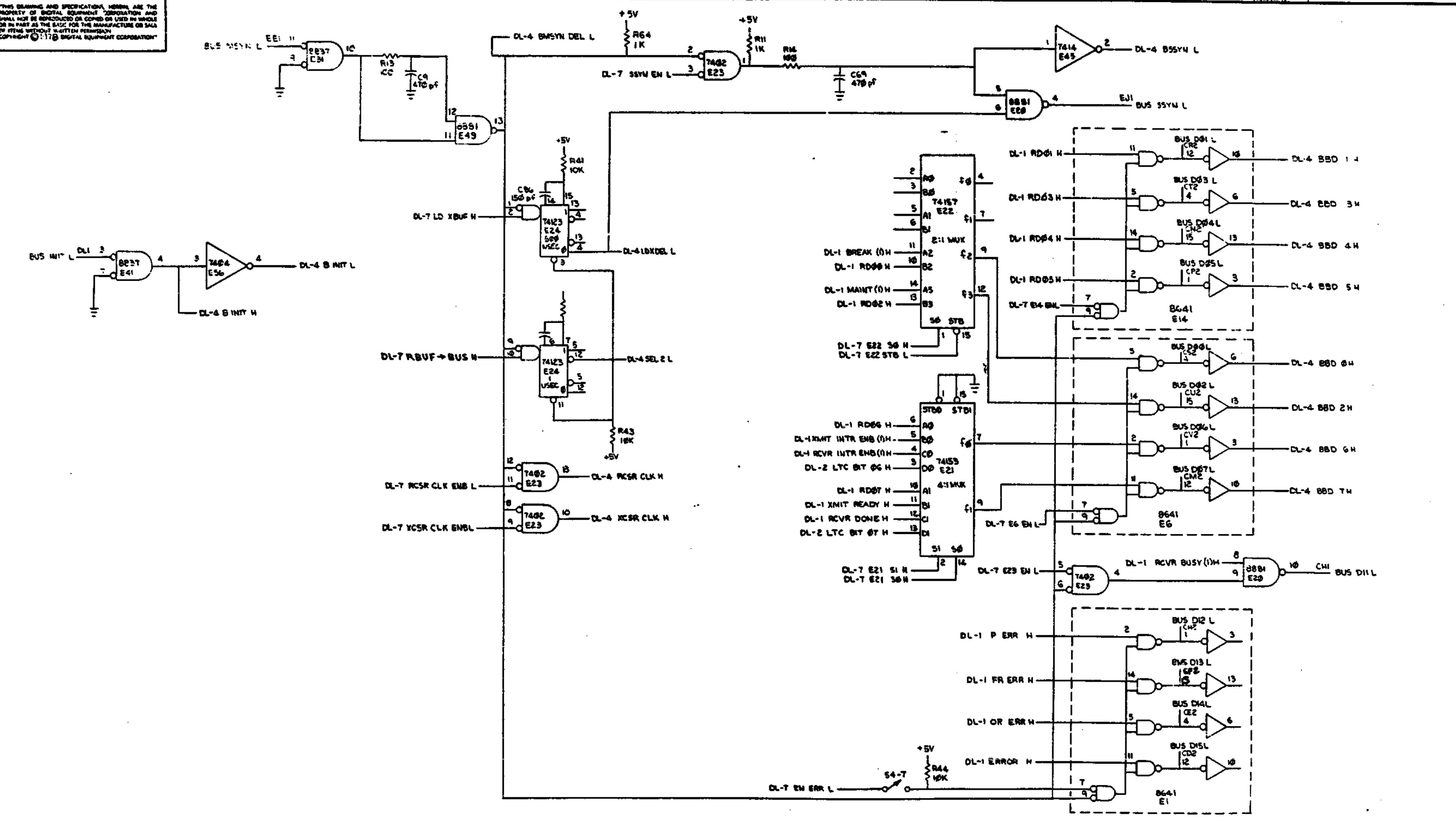
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-3)	D	DCS	M7856-0-1	J

SCALE — SHEET 4 OF 9 — DIST.

DEC FORM NO. DRD 130

SHEET CODE DCS M7856-0-1 J

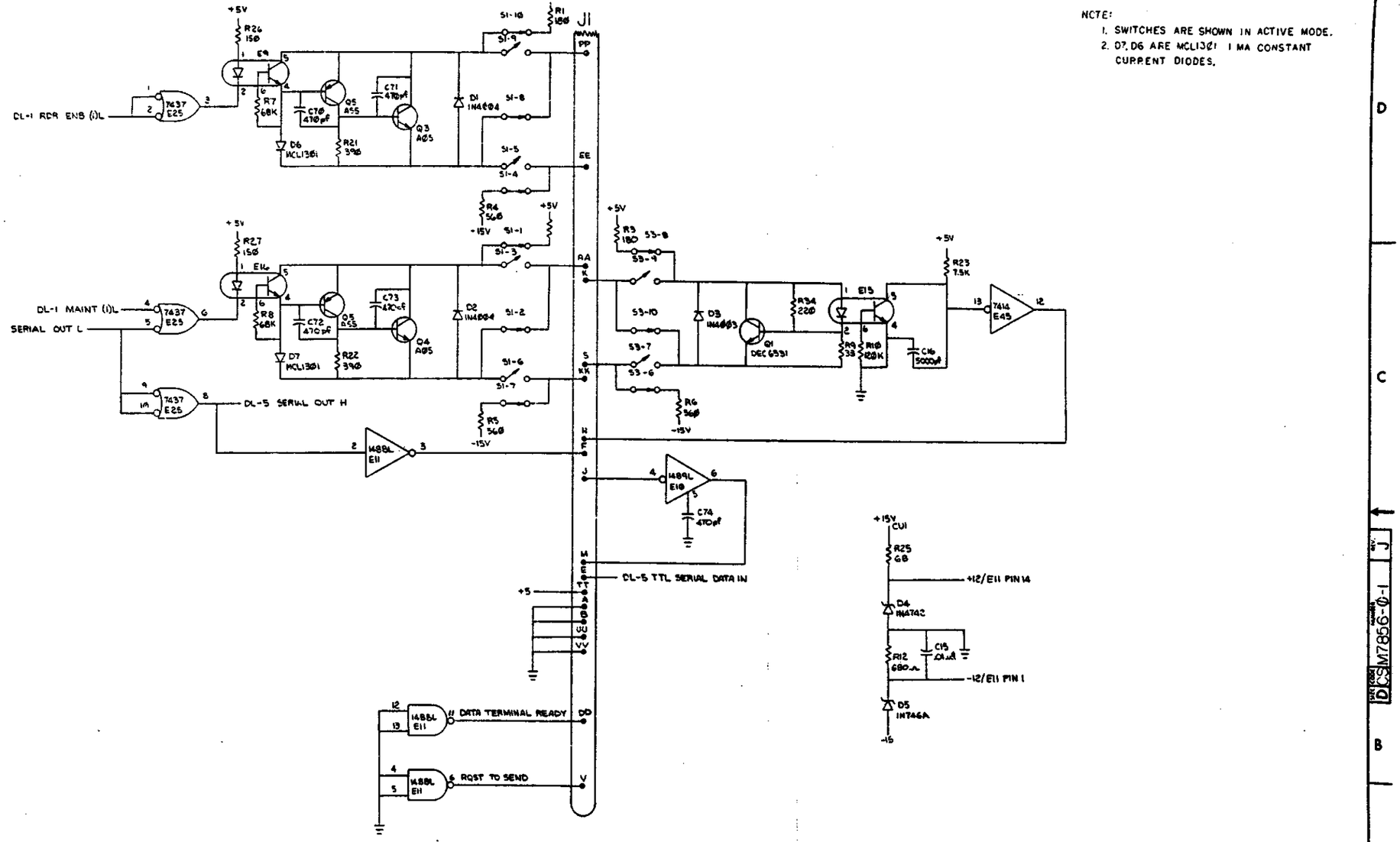


TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-4)	D	CS	M7856-0-1	J

SCALE ——— SHEET 5 OF 8

REVISIONS		
CHK	CHANGE NO.	REV.

NOTE:
1. SWITCHES ARE SHOWN IN ACTIVE MODE.
2. D7, D6 ARE MCL130! 1 MA CONSTANT CURRENT DIODES.

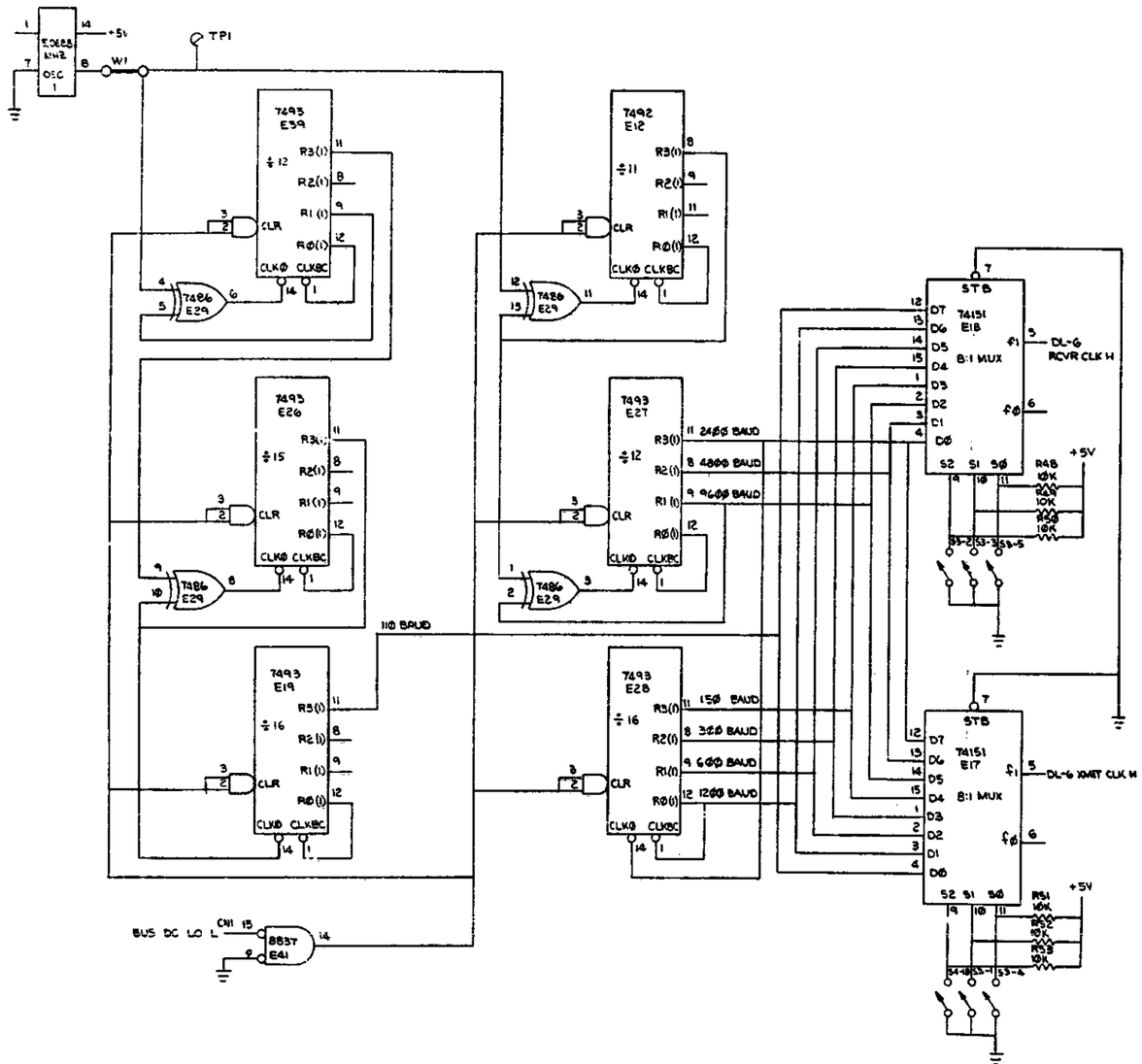


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-5)	D	CS	M7856-Ø-1	J
SCALE —	SHEET 6 OF 8		DIST.	

DEC FORM NO. DRD 128

DCS M7856-Ø-1 J



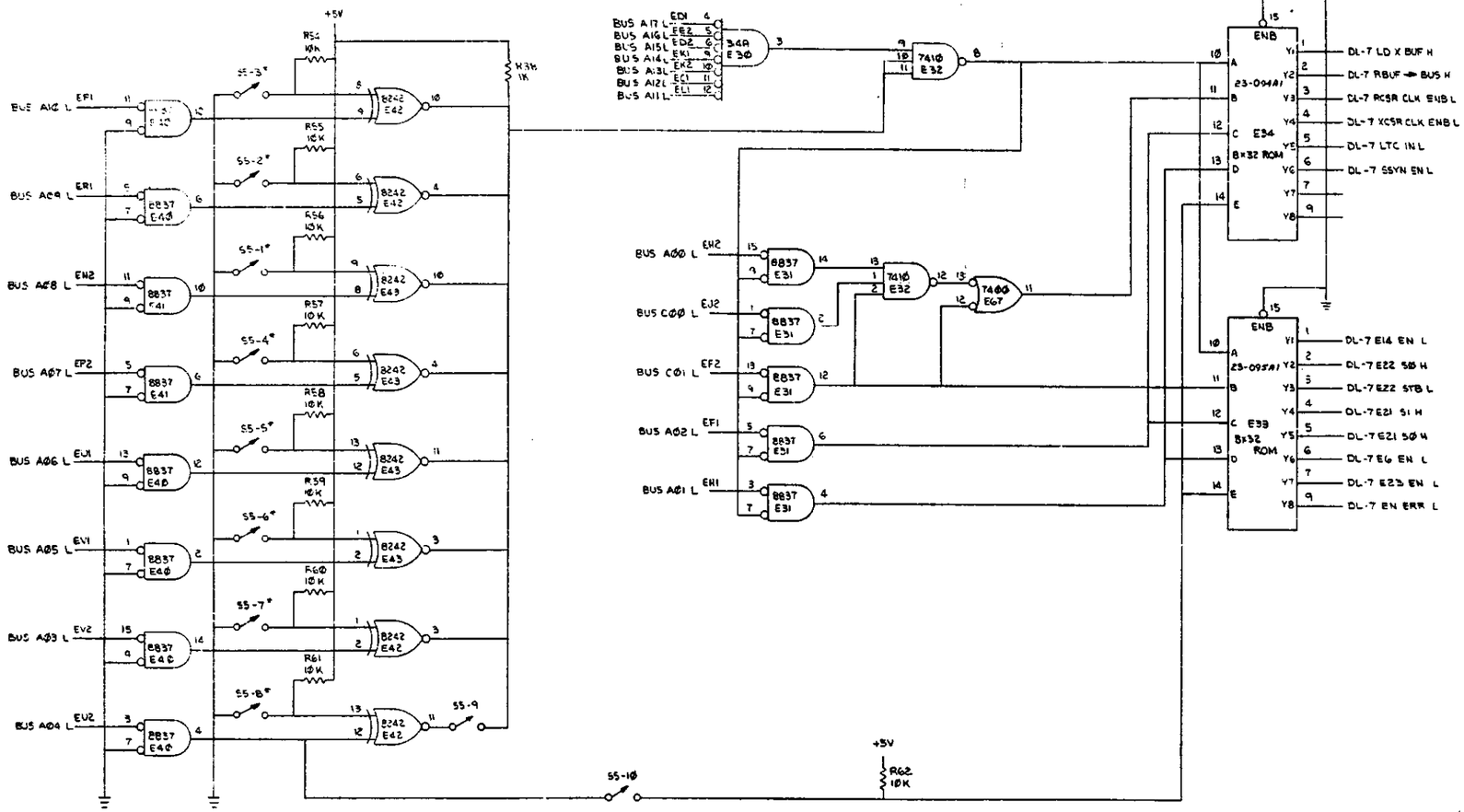
BAUD RATE	RCVR S3-2	RCVR S3-3	RCVR S3-5	XMIT S4-10	XMIT S3-1	XMIT S3-4
110	OFF	OFF	OFF	ON	ON	ON
150	ON	OFF	OFF	OFF	ON	ON
300	OFF	ON	ON	ON	OFF	OFF
600	OFF	ON	OFF	ON	OFF	ON
1200	OFF	OFF	ON	ON	ON	OFF
2400	ON	ON	ON	OFF	OFF	OFF
4800	ON	ON	OFF	OFF	OFF	ON
9600	ON	OFF	ON	OFF	ON	OFF

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-6)	D	CS	M7856-0-1	J
SCALE	SHEET 7 OF 8	DIST.		

DEC FORM NO. 2123 138

MK 1



*ADDRESS SELECTION SWITCHES - OFF=1 ON=Ø

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-7)	D	CS	M7856-Ø-1	J
SCALE —	SHEET 8 OF 8	DIST		

DEC FORM NO. DRO 338

REV.	NUMBER	CODE	SIZE	
	M7856-0-9	CS	K	2

(FOR 23094A1-A07 & 23095A1-A07)

DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
SURFACE QUALITY IN ✓ MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED ☐	±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —

FINISH —

DRN. —

CHK'D —

ENG. —

PROJ. ENG. —

PROD. —

NEXT HIGHER ASSY. D-CS-M7856-0-1

SCALE —

SHEET 1 OF 3

FIRST USED ON DL11-W

digital

TITLE
ROM LISTING

SIZE	CODE	NUMBER	REV.
K	CS	M7856-0-9	

DIST.

REVISIONS		
LTR	CHANGE NO.	REV.

DEC PART NUMB: 23094A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	00111100	074
1	01	00111100	074
2	02	00111100	074
3	03	00111100	074
4	04	00111100	074
5	05	00111100	074
6	06	00111100	074
7	07	00111100	074
8	10	00111100	074
9	11	00111100	074
10	12	00111100	074
11	13	00111100	074
12	14	00001100	014
13	15	00111100	074
14	16	00011100	034
15	17	00111100	074
16	20	00011000	030
17	21	00111100	074
18	22	00011100	034
19	23	00111100	074
20	24	00010100	024
21	25	00111100	074
22	26	00011100	034
23	27	00111100	074
24	30	00011100	034
25	31	00111100	074
26	32	00011110	036
27	33	00111100	074
28	34	00011101	035
29	35	00111100	074
30	36	00011100	034
31	37	00111100	074

DEC PART NUMB: 23-095A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	11111111	377
1	01	11111111	377
2	02	11111111	377
3	03	11111111	377
4	04	11111111	377
5	05	11111111	377
6	06	11111111	377
7	07	11111111	377
8	10	11111111	377
9	11	11111111	377
10	12	11111111	377
11	13	11111111	377
12	14	11011111	337
13	15	11111111	377
14	16	11111111	377
15	17	11111111	377
16	20	10001111	217
17	21	11111111	377
18	22	11111111	377
19	23	11111111	377
20	24	11010001	321
21	25	11111111	377
22	26	11111111	377
23	27	11111111	377
24	30	01000010	102
25	31	11111111	377
26	32	11111111	377
27	33	11111111	377
28	34	11111111	377
29	35	11111111	377
30	36	11111111	377
31	37	11111111	377

WIRE TABLE

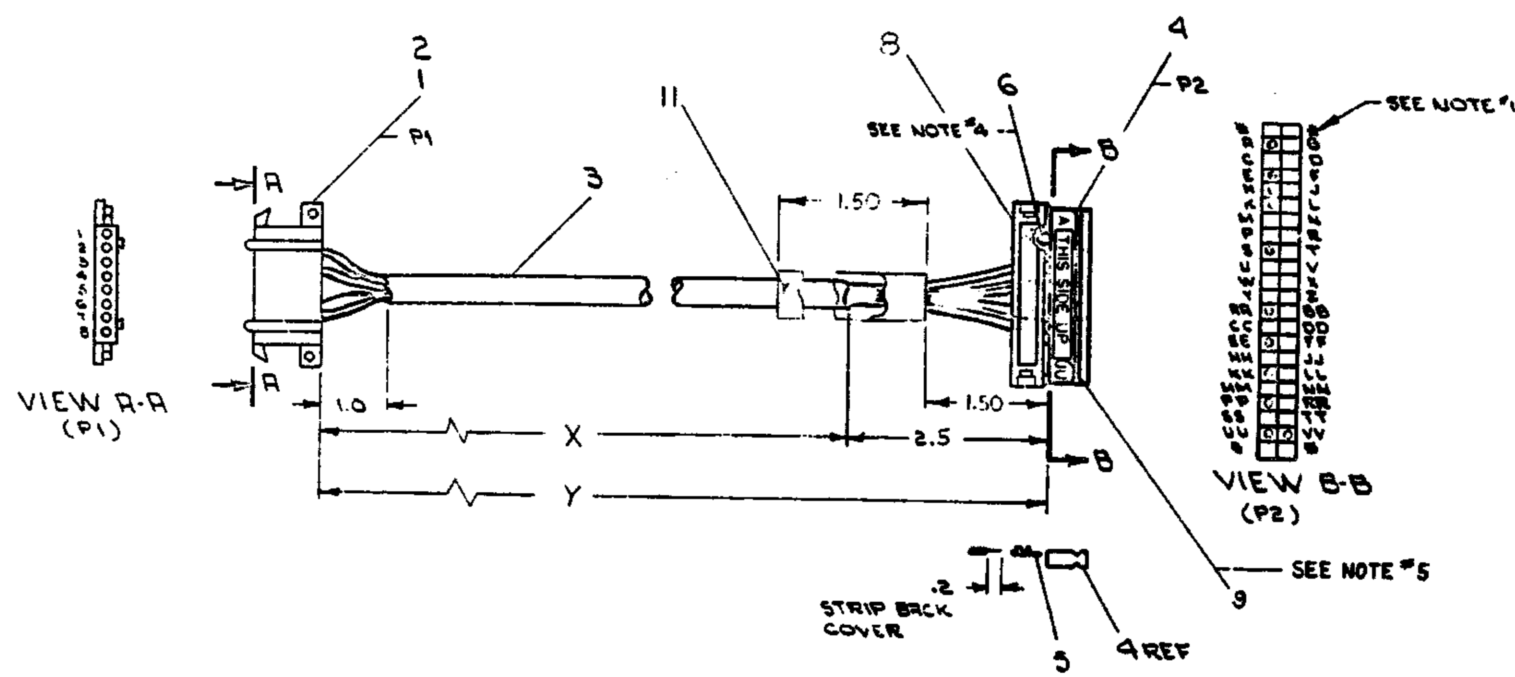
ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	PAIR NO.	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	[illegible]	1	P1-2	2	P2-KK	5
3		RED	1	P1-3	2	P2-S	
3,7		SHIELD	1	SEE NOTE #2	—	P2-A(NOTE #3)	
3		BLK	2	P1-4	2	P2-EE	
3		WHT	2	P1-5	2	P2-AA	
3,7		SHIELD	2	SEE NOTE #2	—	P2-UU(NOTE #3)	
3		BLK	3	P1-6	2	P2-PP	
3		GRN	3	P1-7	2	P2-K	
3,7		SHIELD	3	SEE NOTE #2	—	P2-VV(NOTE #3)	
6	22	BLK	—	P2-E	5	P2-H	5

LEGEND

VARIATION	LENGTH X	LENGTH Y
7008360-0	45 IN ±1.0	27 IN ±1.0
7008360-1	45 IN ±1.0	48 IN ±1.0
7008360-9	8 FT 11.5 IN ± 2 IN	9 FT 2 IN ± 2 IN

NOTES:

1. * ASTERISKS INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
2. DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLES.
3. DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM #7 (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
4. ITEM #6 (WIRE) TO BE APPROXIMATELY ONE (1) INCH LONG.
5. PLACE ITEM #9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM #4 (BERG HOUSING) AS SHOWN.



PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	LABEL, CABLE IDENT	3616073	11
A/R	TUBING, SHRINK	9107252-00	10
1	LABEL, THIS SIDE UP	3611567	9
1	STRAIN RELIEF	1211166	8
A/R	TUB. THINWALL, NAT	9107267-11	7
A/R	WIRE #22 AWG STRD TEF BLK	9107350-00	6
11	SOCKET, CRIMP #47216	1210089-07	5
1	HOUSING BERG #65043-015	1210918-15	4
A/R	CABLE, BELDEN #8777 3PR SHLD	9107723-0	3
6	CONTACT MATE-N-LOCK (FEMALE)	1209379-03	2
1	CONN. MATE-N-LOCK (FEMALE)	1209340-00	1

FIRST USED ON OPTION/MODEL: PDP-8E

DO NOT SCALE DRAWING

SEE PARTS LIST

EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: CABLE ASSEMBLY (KL8E)

NEXT HIGHER ASSY: A ML-KL8-E-0

SCALE: NONE

SHEET 1 OF

SIZE: D CODE: IA NUMBER: 7008360-0-0 REV: J

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
1	26	BLU/WHT	P1-1 *	12	J1-VV	7
		WHT/BLU	P1-2	8	J1-F	
		ORN/WHT	P1-3		J1-J	
		WHT/ORN	P1-4		J1-V	
		GRN/WHT	P1-5		J1-T	
		WHT/GRN	P1-6	8	J1-Z	
		BRN/WHT	P1-7 **	12	J1-UU	
		WHT/BRN	P1-8	8	J1-BB	
		SLA/WHT	P1-9		J1-Y	
		WHT/SLA	P1-10		J1-W	
		BLU/RED	P1-11		J1-FF	
		RED/BLU	P1-12		J1-JJ	
		ORN/RED	P1-13		J1-D	
		SLA/RED	P1-14		J1-LL	
1	26	SLA/GRN	P1-15		J1-N	7

ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH
1	26	RED/BRN	P1-16	8	J1-NN	7
		SLA	P1-17		J1-R	
		RED/SLA	P1-18		J1-U	
		BLU/BLK	P1-19		J1-P	
		BLK/BLU	P1-20		J1-DD	
		ORN/BLK	P1-21		J1-MM	
		BLK/ORN	P1-22		J1-X	
		GRN/BLK	P1-23		J1-RR	
		BRN/RED	P1-24		J1-L	
		RED/ORN	P1-25	8	J1-C	
		SHIELD	P1-1 *	12	J1-A	
1		SHIELD	P1-7 **	12	J1-B	7
3		BLK	P1-1 *	12	P1-7 **	12
2	26	RED	J1-E	7	J1-M	7

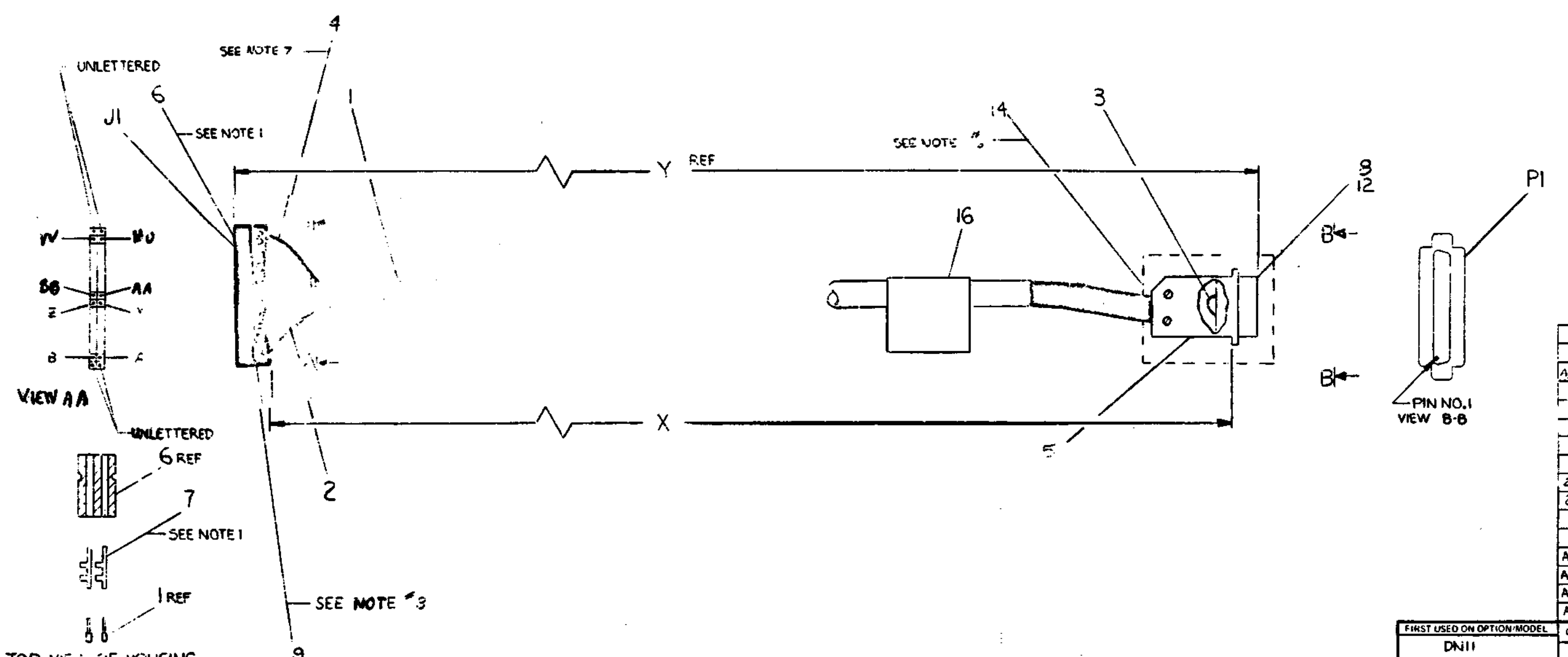
NB
* DENOTES THREE WIRES ARE SOLDERED INTO THE P1-1 SOLDER CUP
** DENOTES THREE WIRES ARE SOLDERED INTO THE P1-7 SOLDER CUP

LEGEND

NUMBER	VARIATION DIM X	DIM Y (PRECUT)
BC05C-25	25'±3"	25'1.8"
BC05C-50	50'±2%	50'1.8"
BC05C-09	9'±3"	9'1.8"
BC05C-1F	18"±1	19.8"
BC05C-2F	30"±1"	31.8"

NOTES:

1. MANUFACTURING SHOULD USE MACHINE CRIMPER TOOL FOR CRIMPING PINS (ITEM #7) MUST BE HT68 FROM BERG ELECT
2. ONLY DEC PART # 1210918-15 MAY BE USED AS J1.
3. PLACE ITEM # 9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM # 6 (BERG HOUSING) AS SHOWN.
4. ~~[illegible]~~
5. ~~USE ITEM #12 (9107295-11) ON ALL REMAINING SOLDER CUPS TO PREVENT SHORTING.~~
6. DUE TO: TOLERANCES WITH DIFFERENT VENDORS THE HOOD (ITEM #5) MAY VARY IN OUTSIDE DIAMETER CAUSING POTENTIAL STRAIN RELIEF GRIPPING PROBLEM SHOULD THIS CONDITION BE PRESENT USE ITEM #4 (9107834) AT JUNCTION OF CABLE AND HOOD
7. PLACE ITEM #4 (9107256) OVER SHIELD WIRE J1-A, J1-B, P1-1, P1-7



PARTS LIST

QTY	DESCRIPTION	PART NO	ITEM NO
1	LABEL, CABLE IDENTIFICATION	3616073-00	16
1	HOOD	1210493-50	15
A/R	TAPE, DOUBLE SIDED	9007834	14
1	MALE SCREW	1210493-51	13
2	PIN CONTACT	1215241	12
~~2~~	~~TIE WRAPS~~	~~9007031~~	~~11~~
~~1~~	~~CABLE LABEL~~	~~9009532~~	~~10~~
1	LABEL, THIS SIDE UP	3611567	9
23	PIN 24-20 AWG	1210493-43	8
29	SOCKET, #HT-68	1210089-5	7
1	HOUSING, #20383 BERG	1210918-15	6
1	SHELL AND INSERT MALE	1210493-31	5
A/R	TUBING, #22 AWG TEF BLK	9107256-00	4
A/R	WIRE, #26 AWG STRD TEF BLK	9107636-00	3
A/R	WIRE, #26 AWG STRD TEF RED	9107636-22	2
A/R	CABLE, 25 CONDUCTOR #26 AWG	9107736	1

FIRST USED ON OPTION/MODEL: DN11

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. S Roberts DATE 11/1/71
CHK. R. Cook DATE 11/2/71
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

NEXT HIGHER ASSY: —//—

DIGITAL EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CABLE, MODEM BC05C

SIZE: D CODE: UA NUMBER: BC05C-0-0 REV: J

SCALE: NONE SHEET 1 OF 1

REV	CHANGE NO.	ORIG.	DATE
A	BC05C-0-01	SMITH	7-11-72
B	BC05C-00002	E. REGAN	10-28-72
C	[illegible]	STEWART	[illegible]
D	BC05C-00004	SMITH	6-7-76
F	BC05C-00005	SMITH	[illegible]
G	BC05C-MK007	HARRINGTON	MAR 78
H	BC05C-MK007	H. HARRINGTON	6-15-78
J	BC05C-MK009	J. FIELD	Jan 80

WIRE TABLE

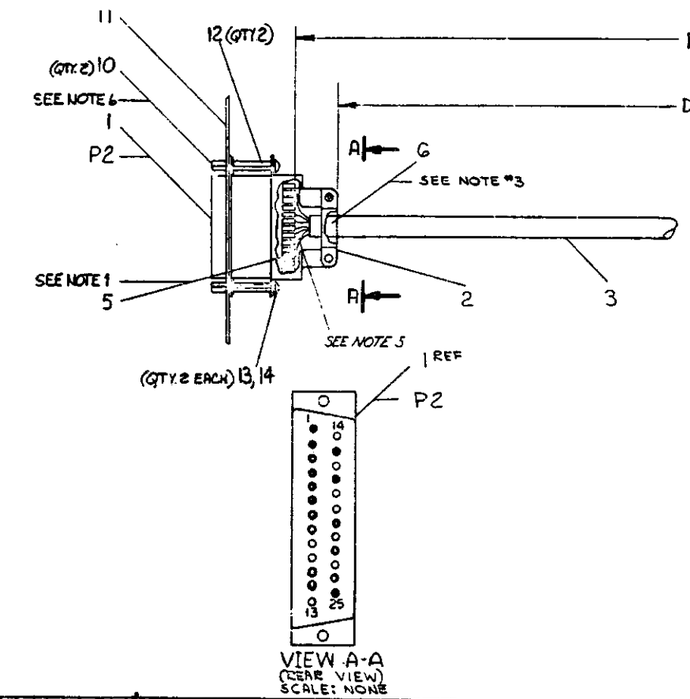
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	P1-VV	7	P2-7	SOLDER
		GRN/WHT	P1-C		P2-25	
		GRN/BLK	P1-JJ		P2-12	
		ORN/BLK	P1-FF		P2-11	
		RED	P1-DD		P2-20	
		GRN	P1-BB		P2-8	
		YELLOW/WHT	P1-Z		P2-6	
		ORN	P1-X		P2-22	
		BLU	P1-V		P2-4	
		WHT	P1-T		P2-5	
		BLU/BLK	P1-R		P2-17	
		BLK/WHT	P1-N		P2-15	
		RED/WHT	P1-L		P2-24	
		WHT/BLK	P1-J		P2-3	
3		RED/BLK	P1-F		P2-2	SOLDER
8		BLK	P1-E	7	P1-M	7
8	22	BLK	P2-1	SOLDER	P2-7	SOLDER

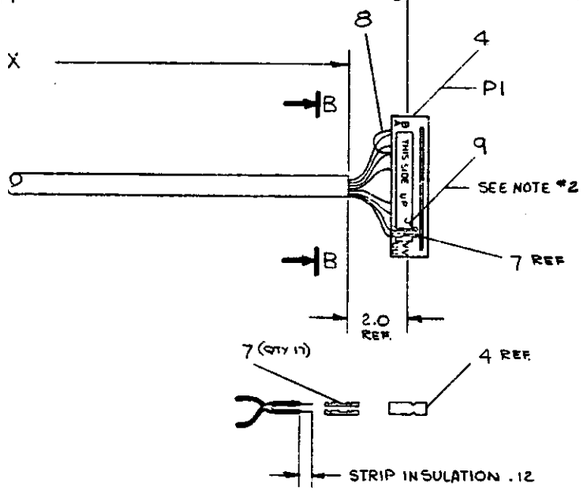
LEGEND

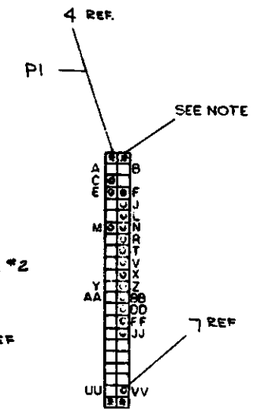
NUMBER	VARIATION DIM "X"	DIM "Y" PRECUT
BCØ3L-1Ø	1ØFT ± 2IN	1ØFT, 5IN
BCØ3L-5	5FT ± 2IN	5FT, 5IN
BCØ3L-1K	1FT 9IN ± 1IN	2FT
BCØ3L-Ø1	1FT ±1IN	1FT, 3IN

NOTES

1. EACH SOLDERED CONN ON P2 SHALL BE INSULATED WITH A .25 PIECE OF SHRINK TUBING (ITEM #5)
2. PLACE ITEM #9 (THIS SIDE UP STICKER) ON LETTERED SIDE OF ITEM #4 (CONN HOUSING) AS SHOWN.
3. FOR STRAIN RELIEF WRAP 2 TURNS OF TAPE (ITEM #6) AROUND CABLE (ITEM #3) AS SHOWN.
4. PINS MARKED * IN VIEW B-B ARE NOT USEABLE
5. WIRES COMING FROM CENTER OF PLUG CONN SHOULD BE 5/8 LG., ALL OTHERS SHOULD BE CONFINED INTO HOOD OF CONN SO THAT THEY'RE NOT BUNCHED.
6. PLACE LOCKWASHER (SUPPLIED WITH ITEM #10) BETWEEN SPACER AND CONNECTOR FLANGE. DISCARD NUT (QTY 2) SUPPLIED WITH ITEM #10.







2	WASHER, LOCK #4	9006688	14
2	SCR, PHL PAN HD #4-40 X .25	9008301-1	13
2	SPACER, THREADED, HEX	9008833	12
1	PLATE, CONN. MTG.	8-MD-7111/Z-0-0	11
2	SCREW LOCK ASSY	9008451-00	10
1	LABEL (THIS SIDE UP)	3611567	9
3IN	WIRE, STRANDED #22 AWG IPVC (BLK)	9107350-00	8
17	SOCKET, CRIMP	1210089-07	7
A/R	TAPE, DOUBLE SIDED .50 W D.	9007834	6
16	TUBING, HEAT SHRINK .12	9107255-09	5
1	CONN, 44 POS, HSG.	1210918-15	4
A/R	CABLE, 15 COND, 22 AWG.	9107672-00	3
1	HOOD, CONN.	1212516-00	2
1	CONNECTOR, PLUG, FILTERED	1214031-00	1

REVISIONS	CHANGE NO.	REV.
CHK	031-00002	A
B. SAMPSON	031-00003	B
M. CLEVIANDOWSKI	BCØ3L-00004	C
R. SAMPSON	BCØ3L-00005	D
T. ORR	BCØ3L-0306	E
T. ORR	BCØ3L-MK0087	F
T. ORR		

DESCRIPTION — DWG/PART NO — ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

SURFACE QUALITY IN MICROINCHES	CLASS OF ACCURACY (CHECK ONE)	NOMINAL RANGE INCHES OVER 0 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 800
	MEDIUM	±.004	±.008	±.012	±.016	±.024
	PREFERRED	±.012	±.016	±.020	±.04	±.063

ANGLES ±0° 30'

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DES
CHK
ENG
PROJ
PROD
NEXT HIGHER ASSY.
SCALE 1/1
SHEET 1 OF 1

FIRST USED ON

TITLE: FILTERED CABLE ASSY BCØ3L

SIZE D | CODE 07JA | NUMBER BCØ3L-Ø Ø | REV. F

DIST.

REV. F 14 | 16 JAN 1978 | BCØ3L-Ø-Ø

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 2-28-77

TITLE DL11-W Installation Procedure

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	00002	B. CRAMM	8-77	B. Pratt	8-77

ENG	APPD	SIZE	CODE	NUMBER	REV
Bob Pratt		A	SP	DL11-W-2	A

DEC 36(392)-1079-N971
DRA 107

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE DL11-W Installation Procedure

DL11-W Installation Procedure

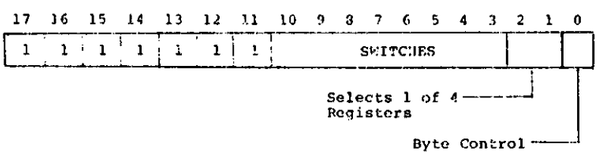
Installation of the M7856 module consists of the following preparations:

1) Switch selection of the address mode and register addresses.
2) Switch selection of vector address.
3) Switch selection of data format.
4) Switch selection of receiver and transmitter baud rates.
5) Switch selection of operation mode for the current loops.
6) Additional switch selections for compatability.
7) Installation of G9000 in systems where +15V is not available.

NOTE: The notation used to indicate a particular switch is as follows: SX-Y where X denotes the particular switch pack and Y denotes the individual switch in the pack. The switch pack is labeled on the P. C. board with an SX(ie S2) and the individual switches are labeled on the switch pack as are the on-off positions.

A. Register Address Assignments:

The DL11-W can respond to addresses with the following format:



The DL11-W can be operated in one of three different address selection modes. Normally, a DL11-W used as console terminal control would operate in the first mode, whereas additional DL11-W's would be operated in the second mode. The third mode is not normally used, but is included here for completeness.

SIZE	CODE	NUMBER	REV
A	SP	DL11-W-2	A

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

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE DL11-W Installation Procedure

Mode 1: Both the serial line unit and the real-time clock sections can be addressed. Due to common address selection logic, operation in this mode requires that the serial line unit addresses be restricted to 77756X. The line clock address is 777546.

Mode 2: Only the serial line unit section can be addressed. Address selection ranges from 74000 to 777777. Line clock is disabled and does not respond to address 777546.

Mode 3: Only the line clock section can be addressed at 777546. The serial line unit section does not respond to any address.

ADDRESS AND MODE SELECTION

Address Bit	A10	A09	A08	A07	A06	A05	A04	A03	N/A	N/A
Switch	S5-3	S5-2	S5-1	S5-4	S5-5	S5-6	S5-8	S5-7	S5-9	S5-10
Mode 1	Off	Off	Off	On	Off	Off	Off	On	Off	On
Mode 2*	Off	Off	Off	On	Off	Off	Off	On	On	Off
Mode 3	Off	Off	Off	On	Off	Off	On	On	On	On

*Address 77756X selected for serial line interface. Other addresses may be selected using SWITCH-OFF = 1 and SWITCH-ON = 0.

Note: Remove R63 from DL11-W's operated in Mode 2 to allow proper operation of a line frequency clock or DL11-W operated in Mode 1 or Mode 3.

Address assignments for serial lines are normally made in the ranges from 77650X to 77667X and from 77561X to 77617X.

B. Vector Address Assignments:

The line clock, if enabled, has a fixed vector address of 100 and cannot be changed. The serial line assignments are to floating vectors produced in the form XX0 (Receiver) and XX4 (Transmitter) where XX ranges from 00 to 77.

For a DL11-W used as the console device, the vector is 060/064. Additional DL11-W's vector addresses are floating.

SIZE	CODE	NUMBER	REV
A	SP	DL11-W-2	A

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

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE DL11-W Installation Procedure

V8	V7	V6	V5	V4	V3	V2	V1	V0
						0/1	0	0

Switch Selectable for Serial Line

Vector Bit	V8	V7	V6	V5	V4	V3
Switch	S2-8	S2-7	S2-5	S2-3	S2-6	S2-4
060/064	Off	Off	Off	On	On	Off

On = 1, Off = 0

C. Selection of Data Format:

1. Data Bits

Switches S4-3 and S4-4 control the number of data bits in the serial character as follows:

S4-4	S4-3	# of Data Bits
On	On	5
On	Off	6
Off	On	7
Off	Off	8

2. Parity

Parity is controlled by switches S4-2 and S4-6 as follows:

S4-2	S4-6	Parity
Off	Off	Off
On	Off	Off
Off	On	Even
On	On	Odd

3. Stop Bits

Switch S4-5 controls the number of stop bits selected in the serial character as follows:

SIZE	CODE	NUMBER	REV
A	SP	DL11-W-2	A

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

S4-5	# of Stop Bits
On	1
Off	2 (or 1.5 if 5 data bits are selected)

D. Baud Rate Selection:

Receiver and Transmitter baud rates are independent, so any combination may be selected.

Baud Rate Switch Selections

Baud Rate	Receiver S3-2	S3-3	S3-5	Transmitter S4-10	S3-1	S3-4
110	Off	Off	Off	On	On	On
150	On	Off	Off	Off	On	On
300	Off	On	On	On	Off	Off
600	Off	On	Off	On	Off	On
1200	Off	Off	On	On	On	Off
2400	On	On	On	Off	Off	Off
4800	On	On	Off	Off	Off	On
9600	On	Off	On	Off	On	Off

E. Current Loop Operation Mode:

Normally, current loops should be in active mode, unless interfaced to another active loop, such as to another DL11.

Active - Passive Mode Selection

Transmitter	S1-1	S1-2	S1-3	S1-6	S1-7
Active	On	On	Off	Off	On
Passive	Off	Off	On	On	Off
Receiver	S3-6	S3-7	S3-8	S3-9	S3-10
Active	On	Off	On	Off	On
Passive	Off	On	Off	On	Off
Reader Enable	S1-4	S1-5	S1-8	S1-9	S1-10
Active	On	Off	On	Off	On
Passive	Off	On	Off	On	Off

F. Compatability Selection:

Switches S4-1 and S4-7 allow the DL11-W to be configured to replace DL11-A, B, C, and D options in most applications.

DL11-W Compatability Switches

Selectable	Switch	Description
Break Bit	S4-1	Enabled in the ON position. Should be disabled (switch OFF) if replacing a DL11-A, or DL11-B. Should be enabled (switch ON) if replacing a DL11-C or DL11-D.
Error Bits	S4-7	Error bit reporting is enabled in the ON position. Should be disabled if replacing DL11-A or DL11-B, and should be enabled if replacing DL11-C or DL11-D.

Note: Both EIA level and current loop signals are available at the berg connector on the module. No selection is necessary. The proper cable will pick up the correct signals.

G. G8000 Installation:

For DL11-W EIA operation, a positive voltage is required between 9 and 15 volts to operate the EIA drivers. For PDP-11/20 and PDP-11/15 systems with the H720 power supply, a G8000 module must be installed to provide this voltage. Using a filter network, this module converts the full-wave rectified "+8V" signal to a positive DC voltage.

1. Install G8000 into slot A02 or DD11-A.
2. Wire A03V2 to A02V2.
3. Wire A02N2 to CXXU1 where XX is the slot location of the M7856.

H. DL11-W Systems with +15V Available Using DD11-A

There is a special situation of using a DD11-A to mount a DL11-W in systems with +15V available. These systems have +15V available, and it appears at pin A03V2 of the DD11-A when using power harness such as 7009177, 7008855, or 7008909. In this situation, no G8000 is necessary, and +15V can be wired directly from A03V2 to CXXU1, where XX is the slot number of the DL11.

I. When using the DL11-W in an 11/05 processor pin CXXU1 has +15V available on it so no G8000 or no jumpers are required.

J. INSTALLATION

The DL11-W module plugs into an SPC slot. A wire must be installed to pick up the LTC L signal from the power supply and apply it to the line frequency input of the DL11-W.

When installed, the LTC L input to the DL11-W is located on pin CD1. Connect a length of 30 AWG wire from pin CD1 on the backplane to the pin on the backplane, as designated in Table 1-1, for each application.

Table 1-1 LTC L Connection

PDP Computer	Processor	Pin Number
11/04	KD11-D (4 slot)	C02D1,C03D1,C04D1
11/04	KD11-D (9 slot)	C02D1,C03D1,C04D1,C05D1, C06D1,C07D1,C08D1, or C09D1
11/05	KA11-A w/8K memory	C01D1,C02D1,C03D1,C04D1, or F08V2
11/05	KD11-A w/16K memory	C01D1 or F08V2
11/20	KA11	A13P2 or B12R1
11/34	KD11-E	C03D1,C04D1,C05D1,C06D1, C07D1,C08D1, or C09D1
11/35	KD11-A	F03R1 or C09D1
11/40	KD11-A	F03R1 or C09D1
11/45	KB11-A	C26D1,C27D1, or C28D1
11/55	KB11-D	C26D1,C27D1, or C28D1
11/70	KB11-B	C40D1,C41D1,C42D1,C43D1, or C44D1
11/70	KB11-C	C40D1, C41D1,C42D1,C43D1, or C44D1
DD11-B Peripheral Mounting Panel		C01D1,C02D1,C03D1, or C04D1
DD11-D Peripheral Mounting Panel		C01D1,C02D1,C03D1,C04D1, C05D1,C06D1,C07D1,C08D1,C09D1
DD11-A Peripheral Mounting Panel		A03P2

NOTE: A wire connection is not necessary for backplane pin numbers ending in D1. LTC L is already connected to the line frequency input of the DL11-W.

K. Installation

The DL11-W module plugs into an SPC slot. A wire must be installed to pick up the DCLOL signal from the power supply and apply it to the DCLO input of the DL11-W.

When installed, the DCLOL input to the DL11-W is located on pin CN1. Connect a length of 30 AWG wire from pin CN1 on the backplane to the pin on the backplane, as designated in Table 1-2 for each application.

Table 1-2 DCLOL Connection

PDP Computer	Processor	Pin Number
11/04*	KD11-D (4 slot)	C03N1, C04N1
11/04*	KD11-D (9 slot)	C03N1 thru C09N1
11/05*	KA11-A w/8K Memory	C01N1, C02N1, C03N1, C04N1
11/05*	KD11-A w/16K Memory	C01N1
11/20	KA11	B11F2, B14F2, A13S2, A08S2, A03S2, B04D2, F06B2
11/34*	KD11-E	C03N1 thru C09N1
11/35	KD11-A	C09N1
11/40	KD11-A	C09N1
11/45*	KB11-A	C26N1, C26N1, C28N1
11/55*	KB11-D	C26N1, C26N1, C28N1
11/70*	KB11-B	C40N1, C41N1, C42N1, C43N1, C44N1
11/70*	KB11-C	C40N1, C41N1, C42N1, C43N1, C44N1
DD11-B Peripheral Mounting Panel		C01N1 thru C04N1
DD11-D Peripheral Mounting Panel		C01N1 thru C09N1
DD11-A Peripheral Mounting Panel		B01F2, B04F2, A03S2

*NOTE: A wire connection is not necessary for backplane pin numbers ending in N1 DCLOL. Is already connected to the input of the DL11-W.