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FIELD MAINTENANCE  
PRINT SET

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UNIT VARIATIONS  
COVERED BY THIS  
PRINT SET

DMF32-AA  
DMF32-AB  
DMF32-AC

DMF32-0  
FIELD MAINTENANCE PRINT SET  
  
DIGITAL EQUIPMENT CORPORATION  
PRINT SET ORDER NO. MP00965

REVISION HISTORY			USED ON OPTION/MODEL	RESPONSIBLE ENG. : M. REICH	d   i   g   i   t   a   l						
ENG	ECO NUMBER	REV		DATE : 21 APR 82							
---	INITIAL	A		MADE BY : R. J. RILEY							
RG	DMF32-MK001	B		DATE : 21 APR 82	TITLE FIELD MAINTENANCE PRINT SET						
				CHECKED BY  : S. DUNCANSON	(DMF32-0 OPTION)						
				DATE : 21 APR 82							
				PROJECT ENGINEER : M. REICH							
				DATE : 21 APR 82							
				FIELD SERVICE : G. SWITZER							
				DATE : 21 APR 82							
					SIZE	CODE	DOCUMENT NUMBER	REV.			
					K	TC	DMF32-0-1	B			
					SHEET 1 OF 2						

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FIELD MAINTENANCE  
PRINT SET

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 D-EC-5014458-0-0 ETCH CUT DRAWING  
 D-UA-BC06R-0-0 CABLE I/O - UNIT ASSEMBLY  
 B-DD-H3248-0 DMF32 SL LOOP BACK MODULE - DRWG. DIRECTORY  
 D-UA-H3248-0-0 DMF32 SL LOOP BACK MODULE - UNIT ASSEMBLY  
 K-PL-H3248-0-DBP DMF32 SL LOOP BACK MODULE - PARTS LIST  
 K-CS-H3248-0-0 DMF32 SL LOOP BACK MODULE - CIRC. SCHEMATIC  
 D-EC-5015167-0-0 ETCH CUT DRAWING  
 B-DD-H3249-0 DMF32 STAGGERED LOOP BACK MOD. - DRWG. DIRECT  
 D-UA-H3249-0-0 DMF32 STAGGERED LOOP BACK MOD. - UNIT ASSY.  
 K-PL-H3249-0-DBP DMF32 STAGGERED LOOP BACK MOD. - PARTS LIST  
 K-CS-H3249-0-1 DMF32 STAGGERED LOOP BACK MOD. - CIR. SCHEM.  
 D-EC-5014985-0-0 ETCH CUT DRAWING  
 D-TD-M8396-0-0 TIMING DIAGRAM  
 D-BD-M8396-0-0 BLOCK DIAGRAM  
 D-GL-M8396-0-1 PAL LISTINGS  
 D-GL-M8396-0-2 FORWARD REFERENCING

UNIT VARIATIONS  
COVERED BY THIS  
PRINT SET

DMF32-AA  
DMF32-AB  
DMF32-AC

DMF32-0

FIELD MAINTENANCE PRINT SET

DIGITAL EQUIPMENT CORPORATION

PRINT SET ORDER NO. MP00965

REVISION HISTORY			USED ON OPTION/MODEL	RESPONSIBLE ENG. : M. REICH	d   i   g   i   t   a   l			
ENG	ECO NUMBER	REV		DATE : 21 APR 82				
				MADE BY : R. J. RILEY	TITLE FIELD MAINTENANCE PRINT SET			
				DATE : 21 APR 82				
				CHECKED BY : S. DUNCANSON	(DMF32-0 OPTION)			
				DATE : 21 APR 82				
				PROJECT ENGINEER : M. REICH				
				DATE : 21 APR 82				
				FIELD SERVICE : G. SWITZER	SIZE	CODE	DOCUMENT NUMBER	REV.
				DATE : 21 APR 82	K	TC	DMF32-0-1	B
					SHEET 2 OF 2			

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DRAWING DIRECTORY

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FOR FIELD MAINTENANCE PRINT SET REFER TO K-TC-DMF32-0-1

UNIT VARIATIONS	
VARIATION	TITLE
DMF32-AA	DMF32 OPTION ( 7' CABLES)
DMF32-AB	DMF32 OPTION (10' CABLES)
DMF32-AC	DMF32 OPTION (12' CABLES)

REVISION HISTORY		USED ON OPTION/MODEL	RESPONSIBLE ENG. : M. REICH	d   i   g   i   t   a   l			
ENG	ECO NUMBER	REV	DATE : 2 FEB 82	TITLE	DRAWING DIRECTORY		
---	INITIAL	A	MADE BY : R. J. RILEY	DMF32 OPTION			
RG	DMF32-MK001	B	DATE : 2 FEB 82				
			CHECKED BY <i>RB</i> : R. J. RILEY				
			DATE : 2 FEB 82				
			DESIGN ENGINEER : <i>B. Bateman</i> M. REICH				
			DATE : 2 FEB 82				
			PRODUCTION ENG. : D. BATEMAN	SIZE	CODE	DOCUMENT NUMBER	REV.
			DATE : 2 FEB 82	K	DD	DMF32-0	B
				SHEET 1 OF 2			

F  
I  
N  
D

T  
Y  
P  
E

F  
I  
N  
D

T  
Y  
P  
E

# DRAWING NUMBER

DESCRIPTION

# DRAWING NUMBER

DESCRIPTION

1 D-UA-DMF32-0-0  
K-PL-DMF32-0-0

DMF32 OPTION  
DMF32 OPTION PARTS LIST

E/M  
E/M

9 A-SP-3700701-0-0

PKG. I/O FRAME H9544-SJ

M

2 B-DD-M8396-0

COMBO BOARD

E/M

10 K-SP-DMF32-0-2

DMF32 ENG. SPECIFICATION

E/M

3 D-AD-BC06R-0-0

CABLE, I/O (MJ11-A)

E/M

4 E-AD-7018754-0-0  
D-IA-7426406-0-0  
B-MD-7425880-0-0  
K-PL-7018754-0-DBP

DMF32 I/O PANEL ASSY  
PLATE, OCTAL, I/O COMBO  
SPACER, IO BOARD/PANEL  
DMF32 I/O PANEL ASSY

E/M  
M  
M  
E/M

5 B-DD-5414459-0

COMBO DISTRIBUTION PANEL

E/M

6 B-DD-H3248-0

DMF32 SL LOOP BACK MODULE

E/M

7 B-DD-H3249-0

DMF32 STAGGERED LOOP BACK  
MODULE

E/M

8 E-AR-H9544-SJ-DBU  
K-PL-H9544-SJ-DBP  
E-IA-7427040-0-DBU  
A-PS-3700701-0-0

FRAME, I/O NON-SHIEDEL  
FRAME, I/O NON-SHIEDED  
FRAME, I/O NON-SHIEDED  
PKG. I/O FRAME H9544-SJ

M  
M  
M  
M

TYPE: E ELECTRICAL  
M MECHANICAL  
E/M ELECTRO/MECHANICAL

d | i | g | i | t | a | l

TITLE

DRAWING DIRECTORY

DMF32 OPTION

SIZE | CODE | DOCUMENT NUMBER | REV.

K | DD | DMF32-0 | B

SHEET 2 OF 2



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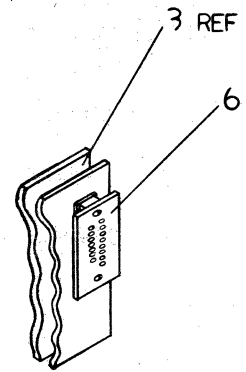
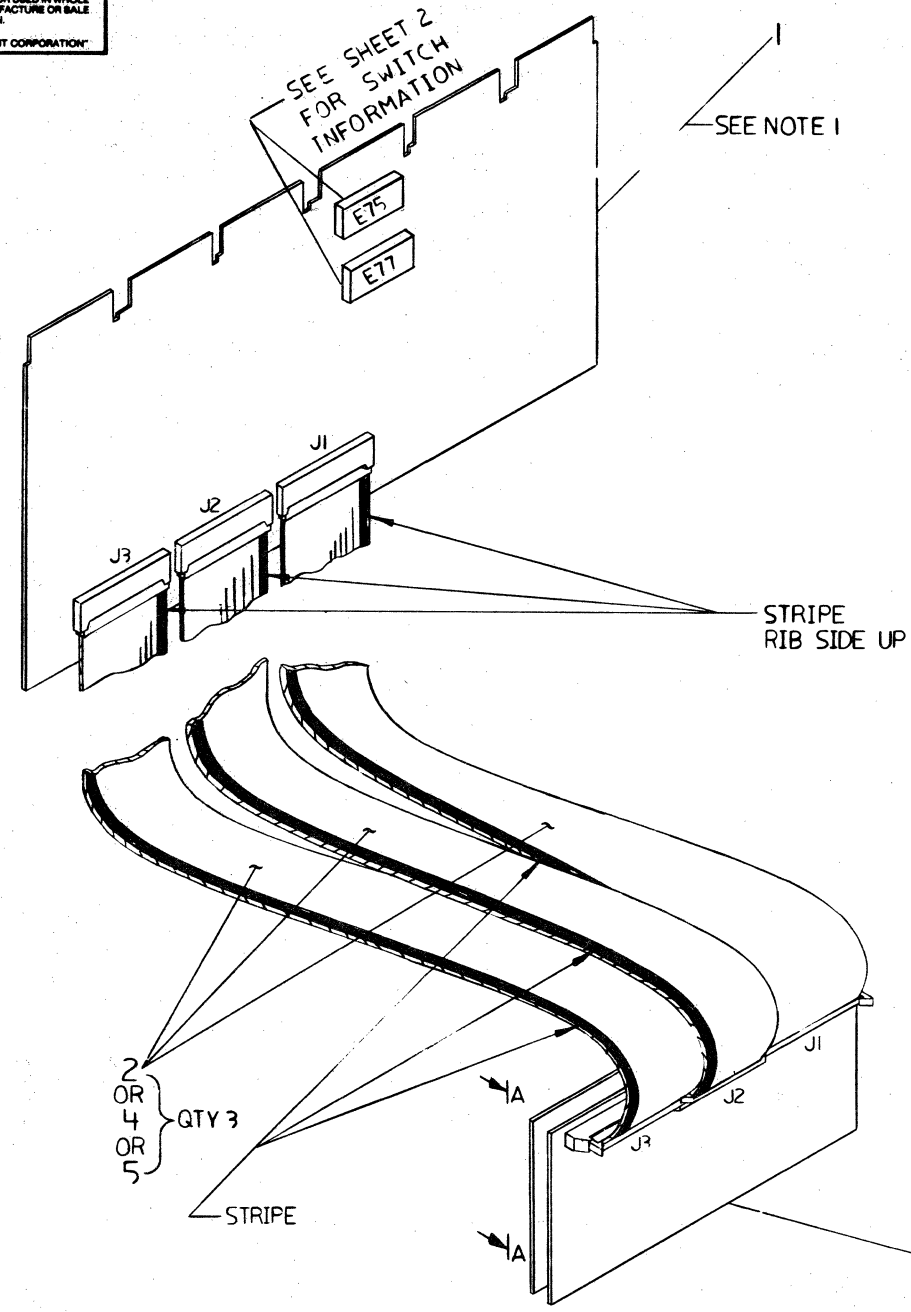
8 8 0-0-24M32-0-0

D

C

B

A



VIEW A A  
TEST CONNECTOR, ITEM 6,  
MAY BE PLUGGED INTO J4-J12  
OR AT THE END OF THE BC22  
CABLE.

NOTES:

1. FOR PROPER OPERATION REMOVE THE NPG JUMPER FROM THIS SLOT. THIS CHANGE ONLY APPLIES TO BACKPLANES USING G727 GRANT CARDS. (JUMPER IS FROM CAI TO CBI)
2. FOR PROPER MOUNTING USE H9544-SA, SB, MK OR EQUIVALENT PER EK-IOBE5-DG-001.

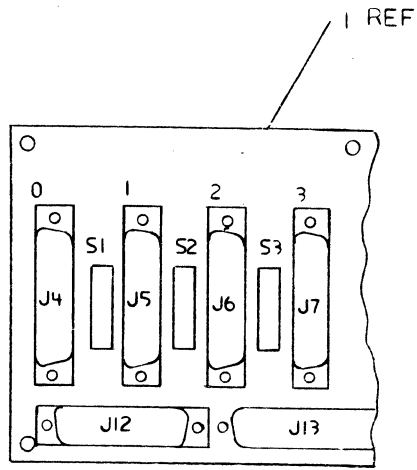
CAUTION: SEE OFF SHEET PARTS LIST EXISTS.  
REFER TO K-PL-DMF32-0-0.

REVISION HISTORY	
DATE	INITIAL
1-83	DMF32-MK001
	R. Gates
	B. Rogers

DESCRIPTION		DRAWING NO.		PART NO.		ITEM NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)							
INCHES TOLERANCES		ANGLES ±0°30'		APPLICABLE DIMENSION RANGE			
X = ± .1		SURFACE QUALITY		(CHECK ONE)			
XX = ± .02		MICROINCHES		OVER TO OVER TO OVER TO OVER TO OVER TO			
XXX = ± .005				0 TO 0.2 TO 1.2 TO 4.0 TO 12.0 TO 40.0			
OK ANTIITY & VARIATION				± .02 ± .05 ± .10 ± .04 ± .08 ± .12 ± .16 ± .24 ± .04			
THIRD ANGLE PROJECTION		DWN		DATE		TITLE	
DO NOT SCALE DRAWING		F. L. Jousignant		21 Jan 82		digital	
REMOVE BURRS AND BREAK SHARP CORNERS		CHK'D		DATE		DMF32 OPTION	
MATERIAL		DES. ENG.		DATE		DOCUMENT NUMBER	
FINISH		Mark Reich		2-2-82		DUA DMF32-0-0	
		RESP. ENG.		DATE		SIZE CODE NUMBER REV.	
		Mark Reich		2-25-82		DUA DMF32-0-0 B	
		MFG. ENG.		DATE		SCALE SHEET OF 3	
		B. Rogers		2-2-82		MK 1	
		NEXT HIGHER DOC		K-DD-DMF32-0			

REV. B  
DMF32-0-0  
DUA

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COMPONENT SIDE I/O MODULE

COMMON SET-UP FOR ASYNC PORTS <1:3>				
SWITCH PACK 1/2	TERM	MODEM / TEST CONN	SWITCH ON DESCRIPTION USING DMF32 AND INTERFACE STANDARD NAMES	PIN NO.
1	OFF	OFF	RX D H CONNECTED TO SECONDARY RECEIVE DATA (SBB/119)	(PIN 1)
2	ON	ON	USER TX H CONNECTED TO ANALOG LOOPBACK (BELL AL/449 LL)	(PIN 18)
3	OFF	OFF	CAR H CONNECTED TO SEC. REC'D LINE SIG. DET. (SCF/122)	(PIN 12)
4	ON	ON	USER RX H CONNECTED TO TEST MODE IND. (BELL TM/449 TM)	(PIN 25)
5	ON	ON	RX D H CONNECTED TO RECEIVED DATA (BB/104)	(PIN 3)
6	ON	ON	RTS H CONNECTED TO REQUEST TO SEND (CA/105)	(PIN 4)
7	ON	ON	S. RTS H CONNECTED TO SEC. REQUEST TO SEND (SCA/120)	(PIN 19)
8	ON	OFF	CAR H CONNECTED TO DATA SET READY (CC/107)	(PIN 6)
9	ON	ON	CAR H CONNECTED TO REC'D LINE SIG. DET. (CF/109)	(PIN 8)
10	ON	ON	S. CAR H CONNECTED TO SEC. REC'D LINE SIG. DET. (SCF/122)	(PIN 12)

COMMON SET-UPS FOR SYNC PORT			
SWITCH PACK 3	MODEM H3248 SL. LOOP	SWITCH ON DESCRIPTION USING DMF32 AND INTERFACE STANDARD NAMES	PIN NO.
1	ON	USER TX H CONNECTED TO ANALOG LOOPBACK (BELL AL/449 LL)	(PIN 18)
2	ON	DTE CLK H CONNECTED TO TRANS. SIG. EL. TMNG (DA/113)	(PIN 24)
3	ON	USER RX H CONNECTED TO TEST MODE IND. (BELL TM/449 TM)	(PIN 25)

DMF DEVICE CONFIGURATION  
 54-14453 DIP SWITCH PACK NO. 3

SW5	SW4	ACTIVE DEVICE
OFF	OFF	ASYNC + SYNC + LP
OFF	ON	ASYNC + SYNC + DR
ON	OFF	ASYNC + LP
ON	ON	ASYNC

DEVICE ADDRESS SWITCH SETTINGS  
 SWITCH PACK E75

ADDRESS RANGE	BIT SW #	12	11	10	9	8	7	6	5	4	3	2	1
		1	2	3	4	5	6	7	8	* 9	* 10		
760340		ON	ON	ON	ON	ON	OFF	OFF	OFF	ON	ON		
760400		ON	ON	ON	ON	OFF	ON	ON	ON				
760440		ON	ON	ON	ON	OFF	ON	ON	OFF				
760500		ON	ON	ON	ON	OFF	ON	OFF	ON				
760540		ON	ON	ON	ON	OFF	ON	OFF	OFF				
760600		ON	ON	ON	ON	OFF	OFF	ON	ON				
760640		ON	ON	ON	ON	OFF	OFF	ON	OFF				
760700		ON	ON	ON	ON	OFF	OFF	OFF	ON				
760740		ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON		
761000		ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON		

REF COMBO BOARD (M8396)

DEVICE PRIORITY SWITCH SETTINGS  
 SWITCH PACK E77

DEVICE PRIORITY	SW NO.	* 1	2	3	4	5	6	7	8	9	* 10
5		ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
6		ON	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF

\* FOR MAINT ONLY

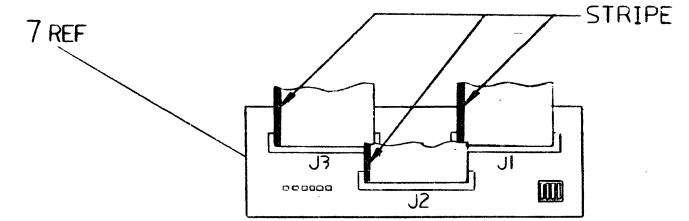


FIGURE B  
 FIELD SERVICE MAINTENANCE PROCEDURE.  
 DISCONNECT ITEM 3 (SHEET 1)  
 AND CONNECT ITEM 7 (SHOWN ABOVE)

DESCRIPTION	DRAWING NO.	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)			
INCHES TOLERANCES X = ± .1 .XX = ± .02 .XXX = ± .005	ANGLES ± 0°30' SURFACE QUALITY	APPLICABLE DIMENSION RANGE (CHECK ONE)	
		<input type="checkbox"/> 0 TO 1.2	<input type="checkbox"/> 1.2 TO 4.0
QUANTITY & VARIATION	MICROINCHES	DIMENSION RANGE IN INCHES	
		<input type="checkbox"/> ± .02	<input type="checkbox"/> ± .03
THIRD ANGLE PROJECTION		DATE	TITLE
DO NOT SCALE DRAWING		DATE	digital DMF 32 OPTION
REMOVE BURRS AND BREAK SHARP CORNERS		DATE	
MATERIAL		DATE	
FINISH		DATE	
DOCUMENT NUMBER		SCALE	SHEET 2 OF 3
D U A DMF 32-0-0		MK 1	

REVISION HISTORY  
 ECO NUMBER  
 DATE

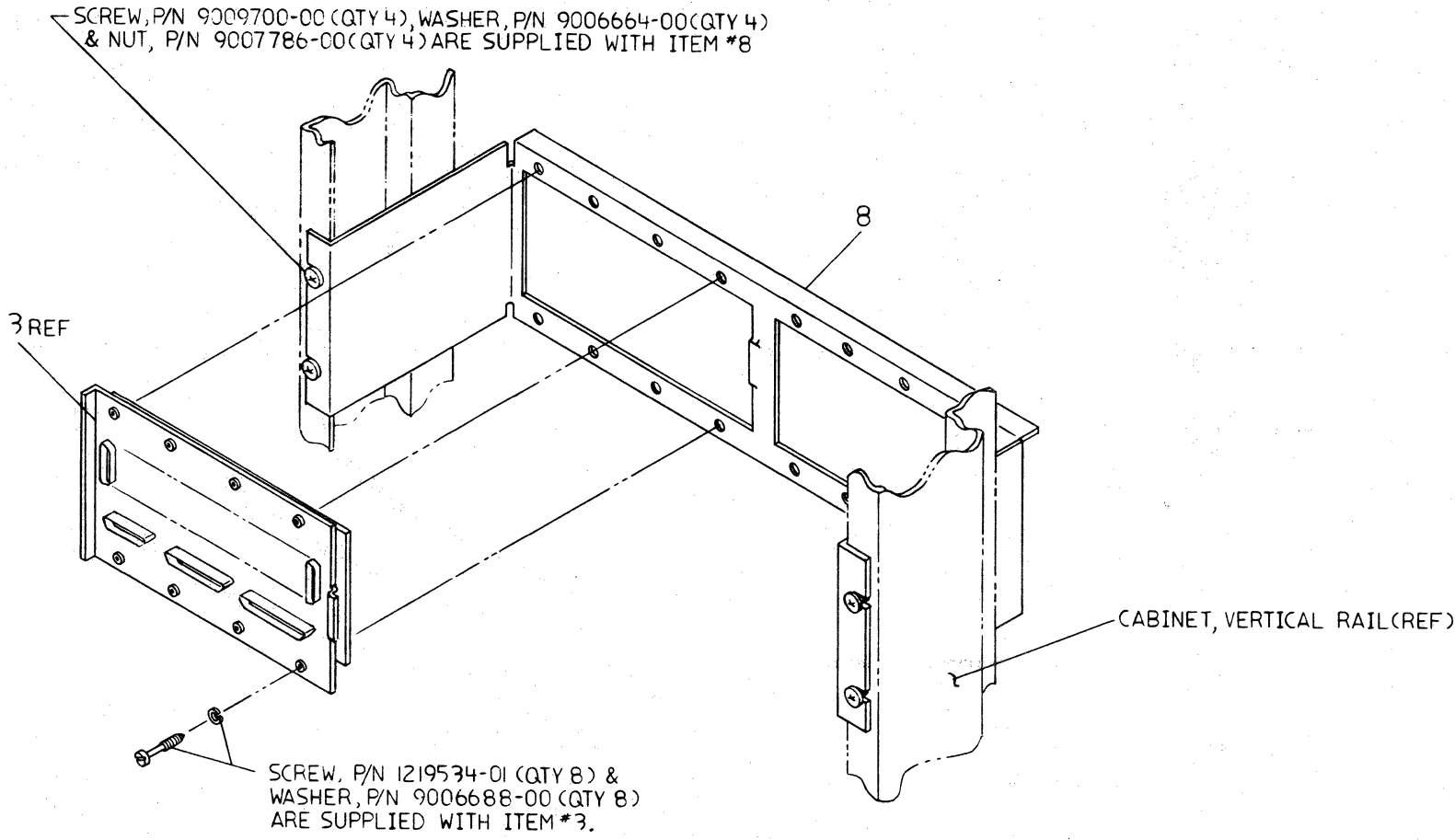
DUA DMF 32-0-0

digital

DMF 32 OPTION

MK 1

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VIEW SHOWING MOUNTING OF I/O PANEL ASSY (ITEM #3) TO FRAME, I/C NON-SHIELDED (ITEM #8)

REV.	
CHG	
CHK	
REVISIONS	NO.
CHANGE	

DESCRIPTION		DWG. PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
ANGLES ±0° 30'	CLASS OF ACCURACY	NOMINAL DIMENSION RANGE INCHES	
SURFACE QUALITY	(CHECK ONE)	0 TO 0.25	0.25 TO 4.0
QUANTITY & VARIATION	MEDIUM	4.0 TO 12.0	12.0 TO 40.0
MICROINCHES	PREFERRED	40.0 TO 80.0	80.0 TO 10.1
THIRD ANGLE PROJECTION	DRN.	FIRST USED ON	
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	TITLE	
DO NOT SCALE DWG	ENG.	DMF32 OPTION	
MATERIAL	PROJ. ENG.	SIZE CODE	NUMBER
FINISH	PROD.	D UA	DMF32-0-0
	NEXT HIGHER ASSY.	SCALE	REV.
		SHEET 3 OF 3	B
		DIST.	1 MK

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION		
				AA	AB	AC
1	B-DD-M8396-0-0	M8396-00	DMF32 I/O MUX,HEX	1	1	1
2	D-AD-BC06R-0-0	BC06R-07	CABLE I/O (MJ11-A)	3	0	0
3	F-AD-7018754-0-0	7018754-00	I/O PANEL COMBO	1	1	1
4	D-AD-BC06R-0-0	BC06R-10	CABLE I/O 10FT TM02	0	3	0
5	D-AD-BC06R-0-0	BC06R-12	CABLE I/O 12FT (MJ11)	0	0	3
6	D-AD-H3248-0-0	H3248-00	SINGLE RS232 LOOP BACK SYNC/ASYN	1	1	1
7	B-DD-H3249-0-0	H3249-00	TRIPLE STAGGERED LOOP BACK CONNE	REF	REF	REF
8	F-AR-H9544-SJ-DBU	H9544-SJ	BULKHEAD PANEL, NON SHIELDING	0	1	0
9	A-PS-3700701-0-0	3700701-02	PKG I/O FRAME H9544-SJ	0	1	0

REVISION HISTORY		BASIC PART NO: DMF32		DRN:	P. TOUSIGNANT	DATE: 23-APR-82	DIGITAL				
ENG:	ECO NUMBER	REV	SECTION A OF A	CHK'D:	A. ROCHA	DATE: 23-APR-82	TITLE	PARTS LIST			
---	INITIAL	A	SECTION VARIATION INDEX				DMF32 OPTION				
RG	DMF32-MK001	B	(A) AA,AB,AC								
			(B)	DES.ENG.:	M. REICH	DATE: 23-APR-82					
			(C)	RESP.ENG.:	M. REICH	DATE: 23-APR-82	DOCUMENT NUMBER				
			(D)				SIZE	CODE	NUMBER	REV	
			(E)	MFG.ENG.:	D. BATEMAN	DATE: 23-APR-82	K	PL	DMF32-0-0	B	
			(F)	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:	FILE NAME:	EDIT			
				D-UA-DMF32-0-0		#K-DD-DMF32-0	MK0831.PLS	13			

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DRAWING NO.	NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS																		
				1	2	3	4	5	6	7	8	9	10	11	12							
		M8396	MODULE REVISION	A	B																	
D-UA-M8396-0-0	1		COMBO BOARD	A	B																	
D-MD-5014453-0-0	5		DRILL & ETCH DRAWING	A	B																	
DEC-5014453-0-0	2		ETCH CUT DRAWING	A	B																	
		5014453	ETCHED BOARD	C	D																	
K-PC-M8396-0-DB0			PC DATA BASE	C	D																	
K-PL-M8396-0-DBP	3		PL DATA BASE	A	B																	
K-CS-M8396-0-DBS			CS DATA BASE	A	B																	
D-CS-M8396-0-COM A	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM B	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM C	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM D	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM E	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM F	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM H	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM J	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM K	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM L	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM M	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM N	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM P	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM R	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM S	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM T	1 *		COMBO BOARD	A	B																	
DCS-M8396-0-COM U	1 *		COMBO BOARD	A	B																	

**NOTES:** \* CONTROL SOURCE IS DATA BASE  
 NO CONTROLLED PAPER ORIGINALS EXIST  
 2. DD SHEETS 1 & 2 PERTAIN TO ETCH REV D,  
 SHEETS 3 & 4 PERTAIN TO ETCH REV C.

REVISIONS	REV.	B
	DATE	2-82

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USED ON OPTION/MODEL  
 NEBULA

DRN.	J. Casey	8-10-81	TITLE	COMBO BOARD	
CHK'D	J. Casey	8-10-81	SIZE	B	
ENG.	M. Reich	1-8-82	CODE	DD	
PROD.	P. Bateman	1-14-82	NUMBER	M8396-0	REV. B
			SHEET	1 OF 4	

DRAWING NO.	NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS															
				A	B														
D-CS-M8396-0-COMV	1	*	COMBO BOARD	A	B														
D-CS-M8396-0-COMW	1	*	COMBO BOARD	A	B														
D-CS-M8396-0-COMX	1	*	COMBO BOARD	A	B														

**NOTES:**

REVISION HISTORY	DATE	ECO NO.	REV.													

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USED ON OPTION/MODEL	DRN. J. CASEY	DATE 2-26-82
NEBULA	CHK'D J. CASEY	DATE 2-26-82
	DES. ENG. W. REICH	DATE 2-26-82
	RESP. ENG. W. REICH	DATE 2-26-82
	MFG. ENG. D. BATERMAN	DATE 2-26-82

TITLE: COMBO BOARD

DOCUMENT NUMBER: M8396-0

SIZE	CODE	NUMBER	REV.
B	DD	M8396-0	B

SHEET 2 OF 4

DRAWING NO.	NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS													
D-UA-M8396-0-0	2		COMBO BOARD	AI													
B-PL-M8396-0-0				AI													
D-CS-M8396-0-COMA	1		COMBO BOARD	AI													
D-CS-M8396-0-COMB	1		COMBO BOARD	AI													
D-CS-M8396-0-COMC	1		COMBO BOARD	AI													
D-CS-M8396-0-COMD	1		COMBO BOARD	AI													
D-CS-M8396-0-COME	1		COMBO BOARD	AI													
D-CS-M8396-0-COMF	1		COMBO BOARD	AI													
D-CS-M8396-0-COMH	1		COMBO BOARD	AI													
D-CS-M8396-0-COMJ	1		COMBO BOARD	AI													
D-CS-M8396-0-COMK	1		COMBO BOARD	AI													
D-CS-M8396-0-COML	1		COMBO BOARD	AI													
D-CS-M8396-0-COMM	1		COMBO BOARD	AI													
D-CS-M8396-0-COMN	1		COMBO BOARD	AI													
D-CS-M8396-0-COMP	1		COMBO BOARD	AI													
D-CS-M8396-0-COMR	1		COMBO BOARD	AI													
D-CS-M8396-0-COMS	1		COMBO BOARD	AI													
D-CS-M8396-0-COMT	1		COMBO BOARD	AI													
D-CS-M8396-0-COMU	1		COMBO BOARD	AI													

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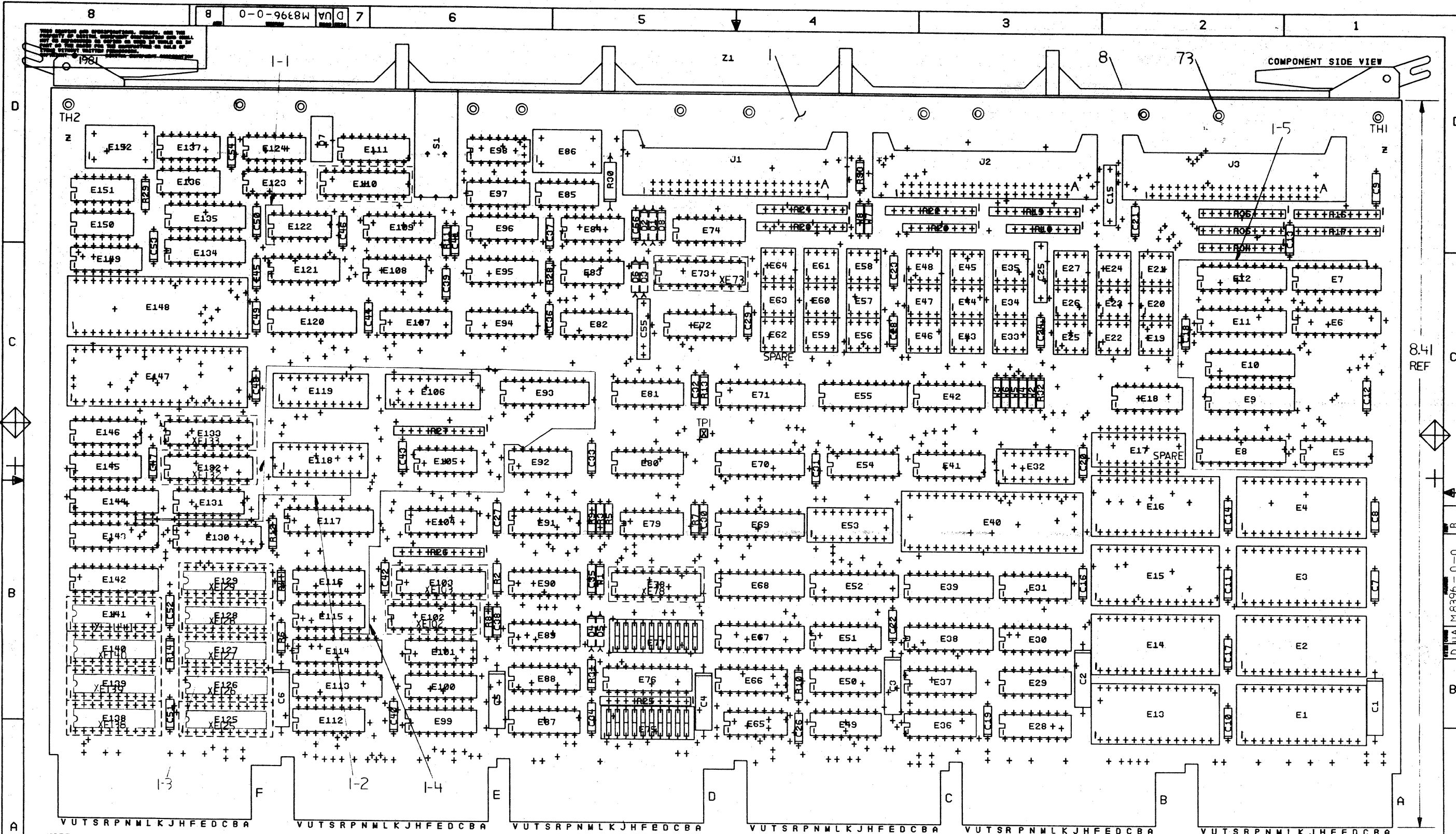
REVISION HISTORY	DATE	ECO NO.	REV.														

USED ON OPTION/MODEL		DRN. J. CASEY	DATE 2-26-82	TITLE <b>COMBO BOARD</b>			
NEBULA		CHK'D J. CASEY	DATE 2-26-82				
		DES. ENG. W. REICH	DATE 2-26-82	DOCUMENT NUMBER			
		RESP. ENG. W. REICH	DATE 2-26-82				
		MFG. ENG. D. BATERMAN	DATE 2-26-82	SIZE <b>B</b>	CODE <b>DD</b>	NUMBER M8396-0-0	REV. <b>B</b>
						SHEET	3 OF 4









NOTES:  
 1. SPARE IC'S ARE E17, E62  
 2. INSERT ITEM 76 IN 1 HOLE MARKED 'X'

STEP 6 + Y AXIS 0 STEP 1 TIMES  
 REPEAT + X AXIS 0 STEP 1 TIMES

CHK	CHANGE NO	REV	DATE	BY
	2	2	10-24-81	DAVID DROZD

ETCH REV. D-PI
----------------

SIGNATURES	DATE	TITLE
DRN. DAV. D. DROZD	9-24-81	COMBO BOARD
CHK'D. <i>[Signature]</i>	10-8-81	
MECH. ENG. <i>[Signature]</i>	2-24-82	
PROJ. ENG. <i>[Signature]</i>	2-24-82	
PROD. <i>[Signature]</i>	2-24-82	
SCALE 2/1	SHT. 1 OF 2	SIZE CODE D
NEXT HIGHER ASSY. B-DD-M8396-0	NUMBER M8396-0-0	REV B

digital

8

8 AM 0-0-968W UNO 2000 2218

6

5

4

3

2

1

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REWORK INSTRUCTIONS:

WIRE ADDS:

- 1 ADD WIRE FROM E122-01 TO E122-13
- 2 ADD WIRE FROM E118-09 TO E144-09
- 3 ADD WIRE FROM E144-08 TO E92-13
- 4 ADD WIRE FROM E114-15 TO E92-13
- 5 ADD WIRE FROM E5-02 TO E7-12

D

D

C

C

B

B

A

A

REVISION HISTORY		
DATE	ECO NUMBER	REV.

TITLE  
COMBO BOARD

DOCUMENT NUMBER		REV.
SIZE CODE	NUMBER	
DUA	M8396-0-0	B
SCALE 2/1	SHEET 2	OF 2

REV. B  
NUMBER M8396-0-0  
SIZE CODE DUA

DWG 133A

8

7

6

5

4

3

2

1

TW

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
1	2	1012084-01	8 MFD 25V +75-10% AL EL	6		C1-C6
3	4	1012784-00	.047 MFD 50V +80-20% CER	47		C7-C14, C16-C24, C26-C54, C56
5	6	1013466-11	.22 MFD 50V +80-20% Z5U CER	3		C15, C25, C55
7	8	1105796-00	IN 4004 PIV=400 I= 1A D041 SP	6		D1-D6
9	10	1105873-00	4M5-1A21 VZ= 5.1 1% .400W	1		D8
11	12	1117373-00	LED ASSY GREEN	1		D7
13	14	1209941-02	HEADER 100 40POS RT ANGLE	3		J1-J3
15	16	1211164-06	SW, DIP 10POS/1PST 5VDC100MA F	2		E75, E77
17	18	1214109-00	SW, TOG 1P ON/OFF/ON RT AN	1		S1
19	20	1215006-04	SKT, IC 20PIN DIP TIN PLATE	16		XE73, XE78, XE102, XE103, XE110, XE132, XE133, XE125, XE129, XE138, XE141, XE126, XE127, XE128, XE139, XE140
					CONT	
					CONT	
					CONT	
11	13	1216988-02	HANDLE, MODULE, HEX TWO EJECTORS	1		R4, R6-R14, R28, R29
12	14	1300229-00	100.0 .25 W 5.0 % CC	12		R30
13	15	1300315-00	470.0 .50 W 5.0 % CC	1		R5, R31-R33
14	16	1300365-00	1.0 K .25 W 5.0 % CC	4		E104
15	17	1311003-01	R NETWORK 14-180 14-390 16PIN	1		R2, R3
16	18	1311422-00	178.0 .25 W 1.0 % RN55D-F10	2		
17	19			0		
18	20			3		R25-R27
19	21	1312114-01	R NETWORK 8-470 5.0 % 10PIN	1		R18
20	22	1318824-00	R NETWORK 7-1M 5.0 % 8PIN	1		R20
21	23	1318825-00	R NETWORK 7-10K 2.0 % 8PIN	1		R19, R22-R24
22	24	1319038-00	R NETWORK 8-21.5K 1.0 % 10PIN	4		E86
23	25	1811660-02	OSCILLATOR, XTAL 5.0688 MHZ	1		E152
24	26	1814057-00	OSCILLATOR, XTAL 40.000 MHZ	1		E124
25	27	1909004-00	DEC 7402 NOR GATE-QUAD 2IN	1		E85, E122
26	28	1910091-00	DEC 7437 AND GATE-QUAD 2IN, 6U	2		E108, E151
27	29	1910532-00	74500 NAND GATE-QUAD 2IN	2		E84
28	30	1910534-00	74504 INVERTER GATE-HEX 1I	1		

BLANK

REVISION HISTORY		BASIC PART NO: M8396		DRN: J.FERGUSON		DATE: 05-MAR-81		D I G I T A L	
ENG:	ECO NUMBER	REV	SECTION A OF A	CHK'D: F.GAROFALO		DATE: 05-MAR-81		TITLE PARTS LIST	
	INITIAL	B	SECTION VARIATION INDEX	DES.ENG: M.REICH		DATE: 05-MAR-81		COMBO BOARD	
			[A] 00	RESP.ENG.: M.REICH		DATE: 05-MAR-81		DOCUMENT NUMBER	
			[B]	MFG.ENG.: D BATEMAN		DATE: 26-FEB-82		SIZE: CODE: NUMBER REV	
			[C]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME: EDIT #	
			[D]	D-UA-M8396-0-0		B-DD-M8396-0-0		Z3915B.PLS 15	
			[E]						
			[F]						
			[H]						
			[J]						
			[K]						
			[L]						
			[M]						
			[N]						

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LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	PER VARIATION	REFERENCE DESIGNATOR
					00		
27	27		1910544-00	74574 FF-D DUAL, EDGE TRIGG	2		E123, E136
28	28		1910547-00	74S153 MUX 1 OF 4 (DUAL)	2		E96, E109
29	29		1910549-00	74S158 MUX 1 OF 2 (QUAD)	1		E107
30	30		1910552-00	74S194 SHIFT REG., 4BIT RIGH	1		E131
31	31	BLANK			0		
32	32		1911469-00	DEC 8640 RECEIVER, BUS, QUAD, U	1		E65
33	33		1911579-00	8641 TRANSCEIVER, BUS, QUA	10		E28, E36, E49, E51, E87-E89, E99,
34	33					CONT	E100, E112
35	34		1911641-00	SN 74S257 MUX, QUAD 2 TO 1	2		E115, E116
36	35		1911675-00	74S133 DECODER/DEMUX 3-8 LIN	2		E80, E81, E111
37	36		1912388-00	74S02 NOR GATE-QUAD 2IN, PO	2		E83, E137
38	37		1912647-00	LS257 MUX 1 OF 2 (QUAD)	2		E5, E18
39	38		1912656-00	LS670 REGISTER FILE 4X4, LO	4		E29, E30, E37, E50
40	39		1912697-00	LS174 FF-D HEX W/CLEAR	2		E54, E101
41	40		1912799-00	LS00 NAND-GATE-QUAD 2IN, P	1		E97
42	41		1912801-00	LS02 NOR-GATE-QUAD 2IN	1		E79
43	42		1912803-00	LS04 INVERTER GATE, HEX	2		E92, E93
44	43		1912824-00	LS74 FF-D DUAL, EDGE TRIGG	2		E105, E150
45	44		1912842-00	LS138 DECODER-THREE INPUT,	1		E31
46	45		1912844-00	LS151 MUX 1 OF 8 & DATA	1		E66
47	46		1912845-00	LS153 MUX 1 OF 4 (DUAL)	4		E41, E42, E72, E74
48	47		1912860-00	LS259 LATCH 8BIT	3		E82, E94, E95
49	48		1913245-02	2901A-1 MICROPROCESSOR 4-	2		E147, E148
50	49		1913671-50	74S374 FF-D, OCTAL, TRI STATE	2		E113, E114
51	50		1913671-00	74S374 FF-D OCTAL TRISTATE	6		E71, E117, E130, E142-E144
52	51		1913888-00	DC 102A EQUALS CHECKER 8BIT	1		E76
53	52		1914214-00	LS374 FF-D OCTAL EDGE TRIG	11		E9, E10, E38, E39, E52, E55, E67-E70,
54	53					CONT	E93
55	54		1914438-00	DC 013 UNIBUS INTERRUPT-BIP	2		E90, E91
56	55		1914866-00	AM 93S48PCGEN/CHECK PARITY, 43	4		E121, E145, E146, E149
57	56		1915193-00	LS244 DRIVER, LINE, OCTAL, T	1		E120
58	57		1915415-00	9636 DRIVER, DUAL, EIA RS-	12		E21, E24, E26, E27, E35, E45, E47, E48,
59	58		1915416-00	9637 RECEIVER, DUAL, RS-42	14		E27, E58, E60, E61
60	58					CONT	E19, E20, E22, E23, E25, E33, E34, E43,
61	59		1916680-01	2911A MICROPROGRAM SEQUENC	3		E44, E46, E56, E59, E63, E64
62	60		2112517-01	RECIEVER/TRANSMITTER	1		E106, E118, E119
63	61		2112623-05	DUAL BAUD RATE GEN, +5V ONLY	1		E40
64	62		2116957-03	1K MOS RAM 55NS 1	2		E53
65	63		2118400-00	8046T BAUD RATE GEN., PROGR	1		E134, E135
66	64		2118623-00	2561-3COMMUNICATIONS, INTER	8		E32
67	65		23001F5-00	F5-01	1		E1-E4, E13-E16
68	66		23002F5-00	F5-01	1		E141
69	67		23003F5-00	F5-01	1		E129
70	68		23004F5-00	F5-01	1		E125
71	69		23005F5-00	F5-01	1		E126
72	70		23006F5-00	F5-01	1		E128
73	71		23007F5-00	F5-01	1		E127
							E138

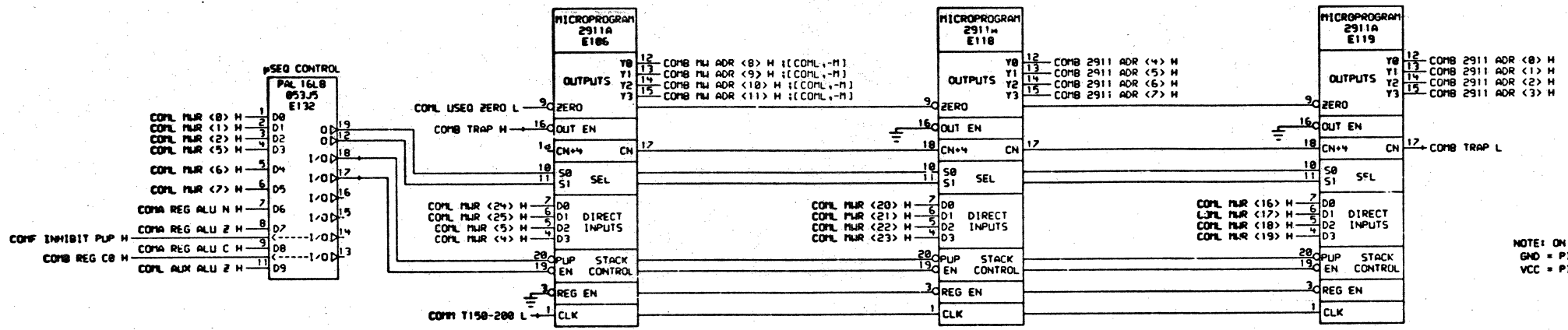
D	I	G	I	T	A	L	TITLE	COMBO BOARD	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
										K	PL	M8396-0-DBP	B

PARTS LIST

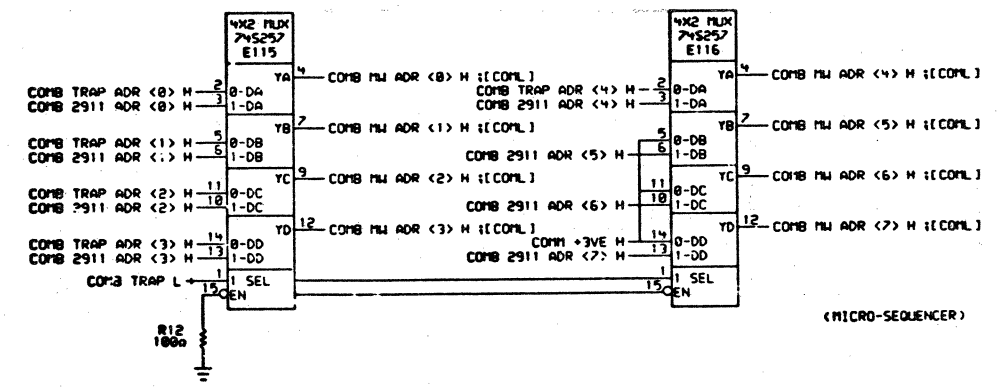
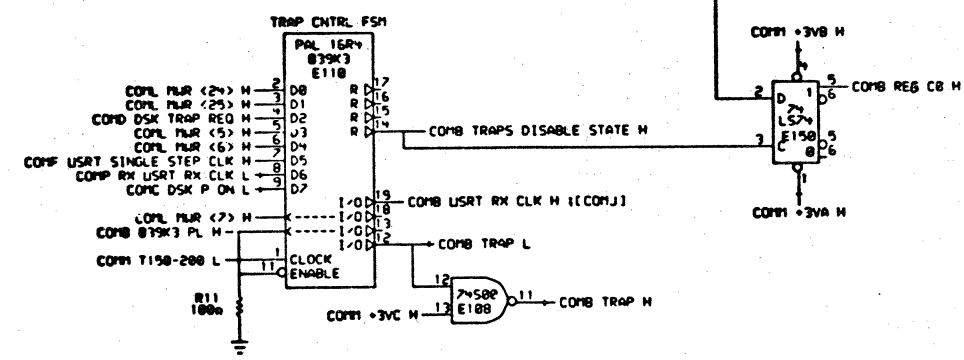
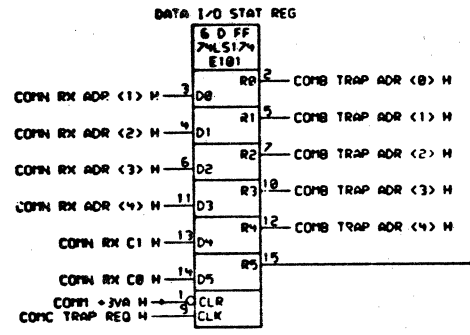
LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
72	66		23007K5-00	K5-01	1	E78
73	82		23008F5-00	F5-01	1	E140
74	83		23009F5-00	F5-01	1	E139
75	67		23018K4-00	K4-01	1	E102
76	68		23028K4-00	K4-01	1	E73
77	69		23039K3-00	K3-01	1	E110
78	70		23053J5-00	J5-01	1	E132
79	71		23054J5-00	J5-01	1	E133
80	72		23059K3-00	K3-01	1	E103
81	1	D-MD-5014453-D-P1	5014453-00	DRILL & ETCH M8396	1	
82	73		9000024-01	EYELET, ROLL FLANGE .12100X .192	12	
83	76		9009149-00	PIN, STAKING, P.C. BOARD, .025 X	1	TP1
84	74		9009185-00	JUMPER, WIRE, INSULATED, BLACK B	8	W1-W8
85	85		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	
86	86		1316395-02	R NETWORK 9-1.0K 2.0% 10PIN	5	R16, R17, R34-R36
87	87		1913777-00	LS240 DRIVER, LINE, OCTAL T	3	E6-E8
88	88		1913462-00	74S240 OCTAL BUFFER, INVERTI	2	E11, E12

D	I	G	I	T	A	L	TITLE	COMBO BOARD	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
										K	PL	M8396-0 DBP	B



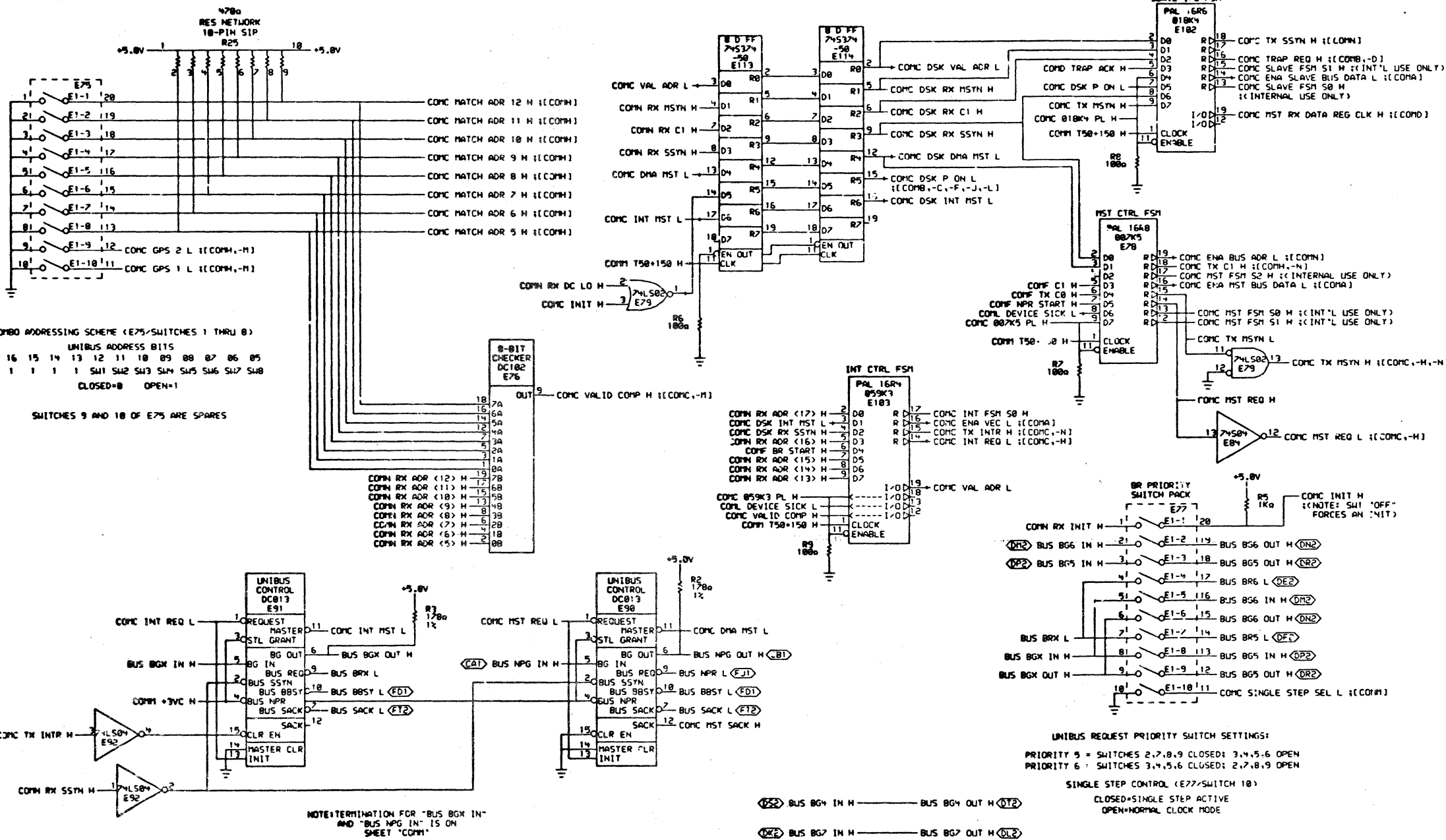


NOTE: ON 2911  
 GND = PIN 8  
 VCC = PIN 2



(MICRO-SEQUENCER)





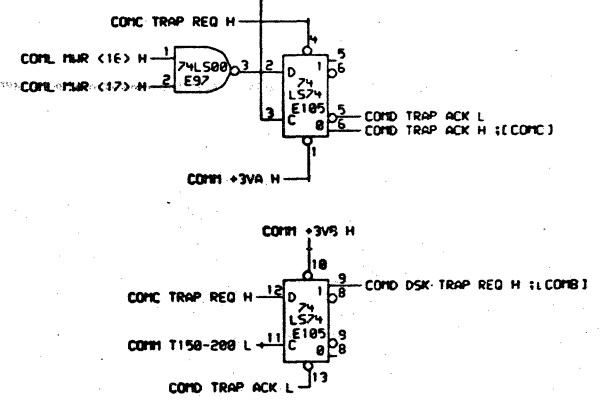
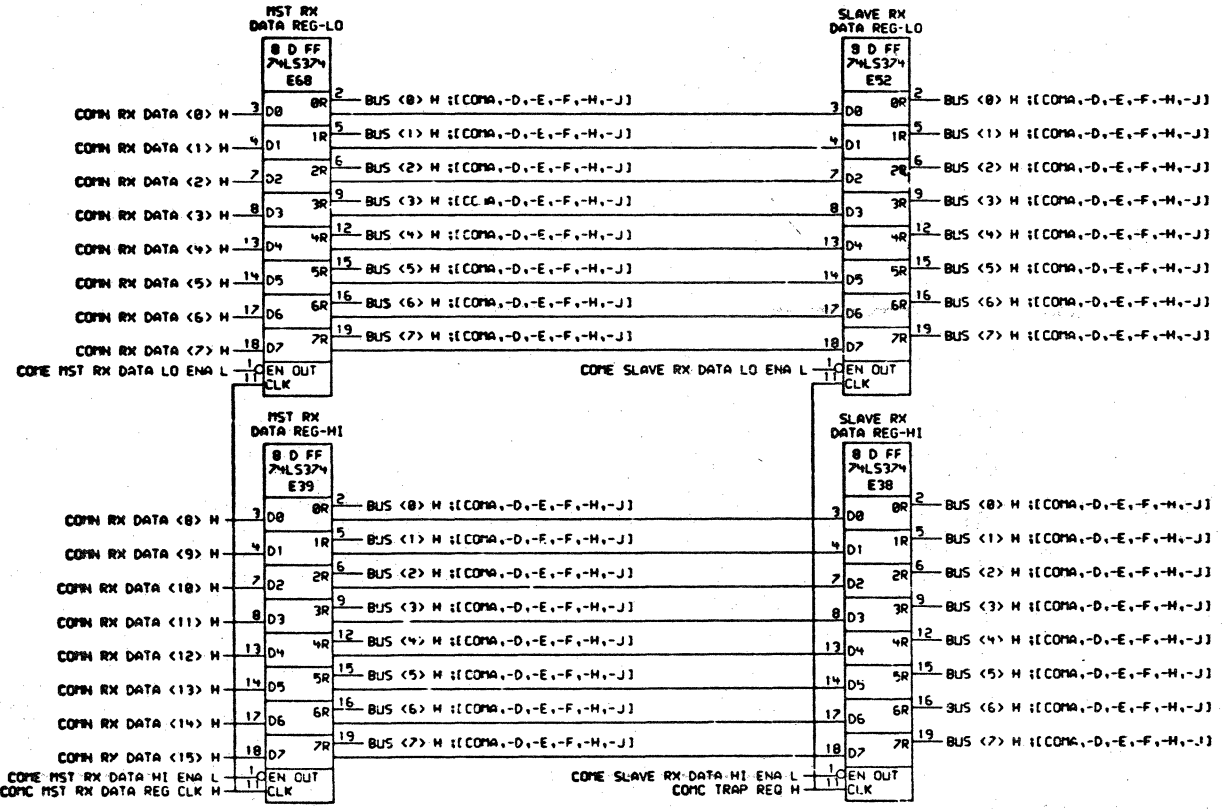
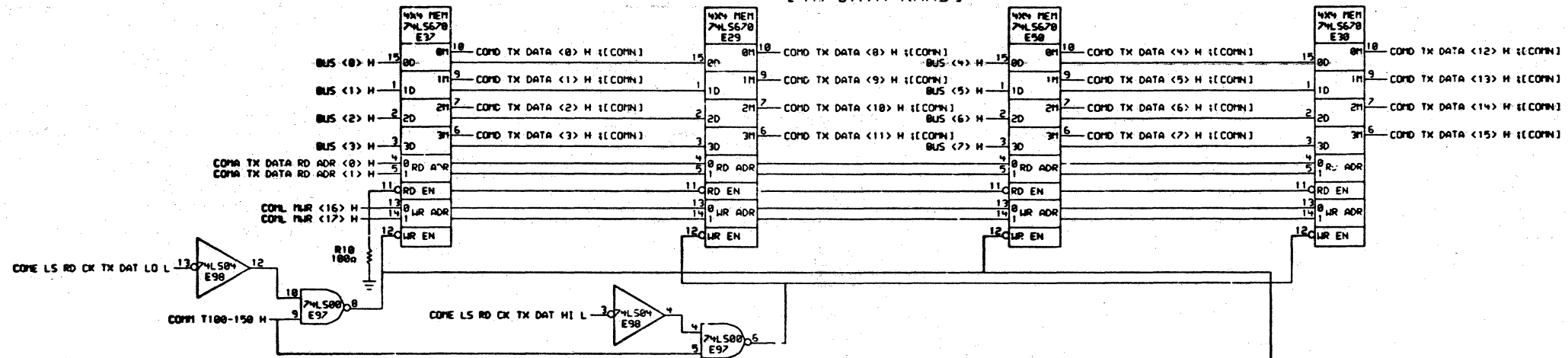
NUMBER: SC01 (CHANGE) COMC.DWG. 1. SCALE: 2" = 1" REVISED: 17-SEP-82 12:16  
 NUMBER: COMC.PLOT (E75) 17-SEP-82 12:16

REV.	CHG.	CHANGE NO.	REV.

digital	DRN: S.M. HAFNER	DATE: 17-SEP-82	ENG.	DATE	ENG.	TITLE: DMF32 COMM
	CHK'D:	DATE: 17-SEP-82	DATE	DATE	DATE	OPTION BOARD (COMC)
SC01 (CHANGE) COMC.DWG. 12-MAY-82 09:43 NEXT HIGHER ASSEMBLY:		FIRST USED ON OPTION MODEL: 117730		SIZE: K	CODE: CS	NUMBER: M8396-0-COMC
						REV. B



[ TX DATA RAMS ]



(UNITBUS INTERFACE-DATA REGISTERS)

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REVISIONS	
NO.	CHANGE NO. REV.
1	

	DRN. G.M. HAFNER	DATE 17-SEP-92	ENG.	DATE	TITLE: DMF32 COMM
	CHK'D.	DATE	BOARD LOCATION:	SHEET	OPTION BOARD (COMD)
SCOPE: (HAFNER) COMD.DRW 17-MAY-82 09:43		NEXT HIGHER ASSEMBLY:		SIZE: K	CODE: CS
FIRST USED ON: OP:10N/MODEL: 112730		B-DD-DMF32-0		NUMBER: M8396-0-COMD	REV. B

HAFNER, SCOP (HAFNER) COMD.DRW.1, SCALE 2:1, RELEASE BOX  
 HAFNER COMD.DRW.1 (25) 17-SEP-92 12117

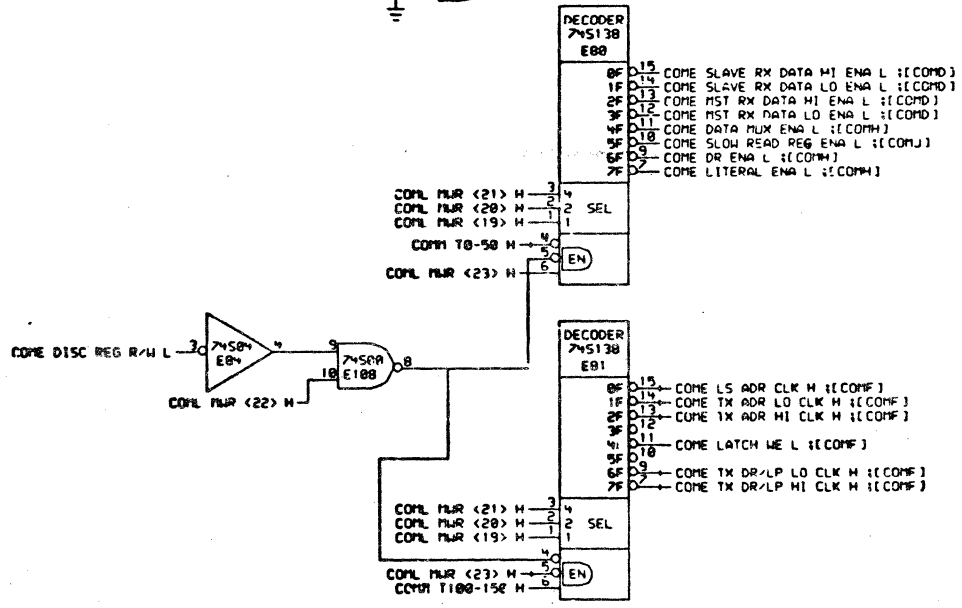
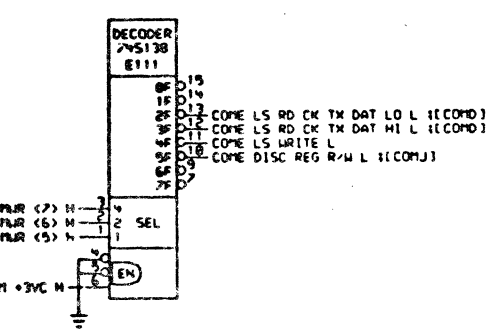
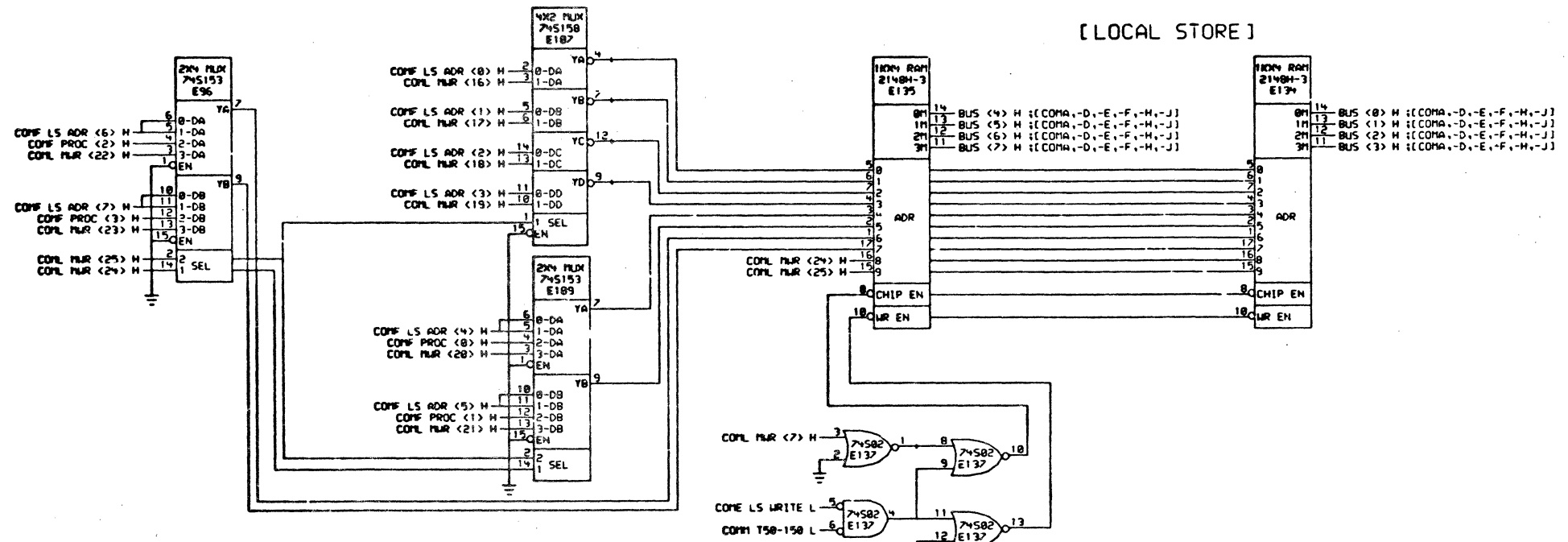
REV. B  
 NUMBER M8396-0-COMD  
 SIZE CS  
 B  
 A

D

C

B

D



(LOCAL STORE AND READ/WRITE CONTROL)

WARNER SCOP (WARNER) CODE: DMF 32 COMM OPTION BOARD (COME) SCALE 2: 0" RELEASE BOX  
 WARNER CODE: DMF 32-0 17-SEP-82 12117

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--	------------------------------	---	---	---

D

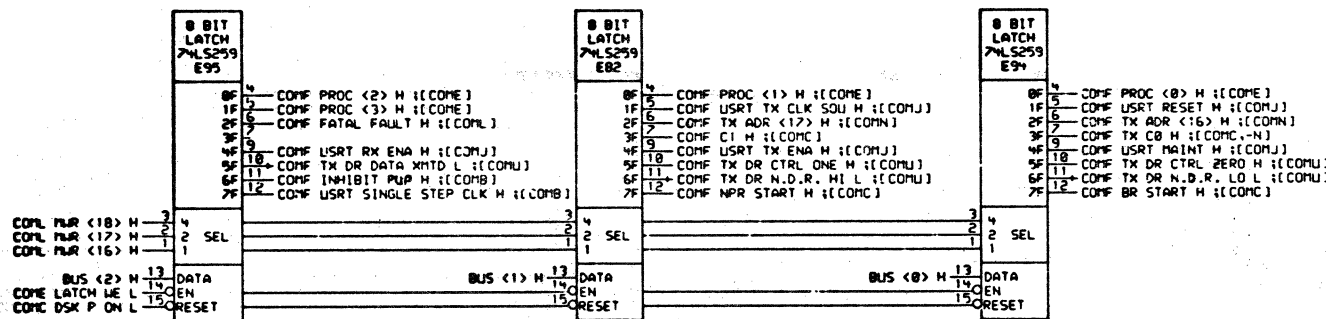
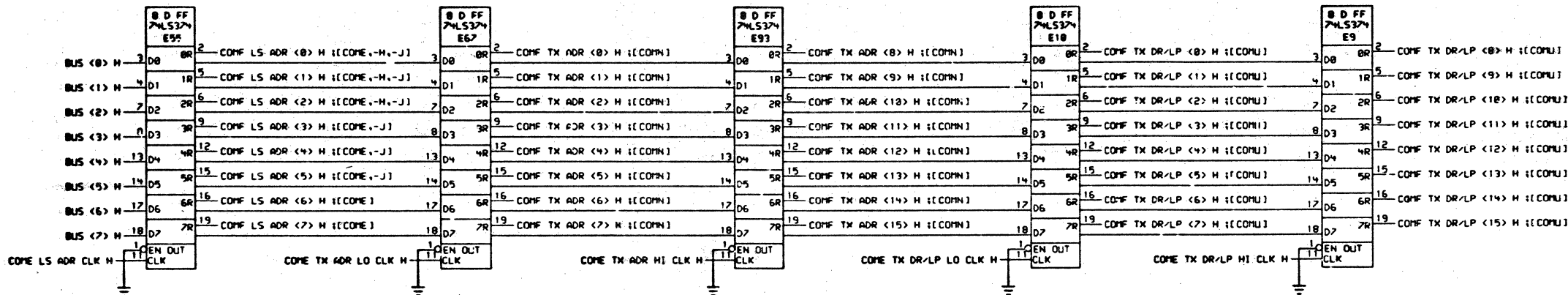
C

B

D

WARNER SCOP (WARNER) CODE: DMF 32 COMM OPTION BOARD (COME) SCALE 2: 0" RELEASE BOX  
 WARNER CODE: DMF 32-0 17-SEP-82 12117

INDIRECT ADDRESS REGISTER (IAR)



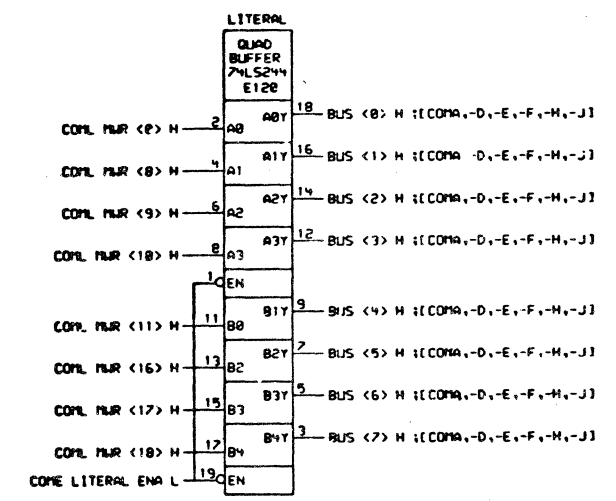
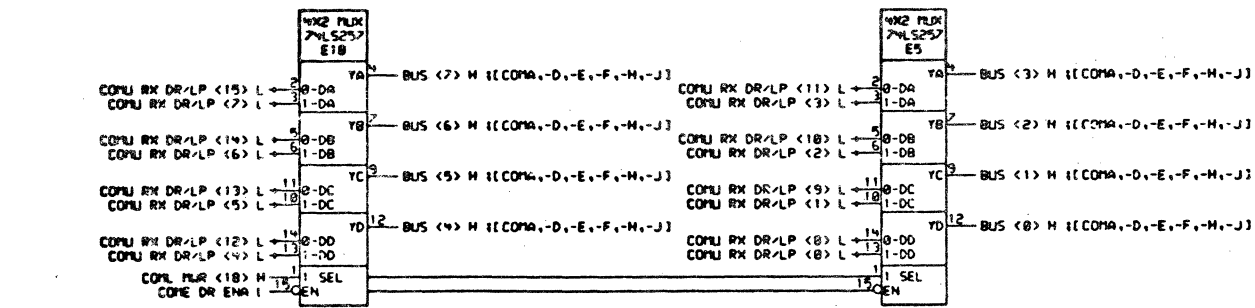
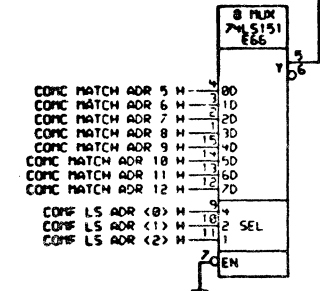
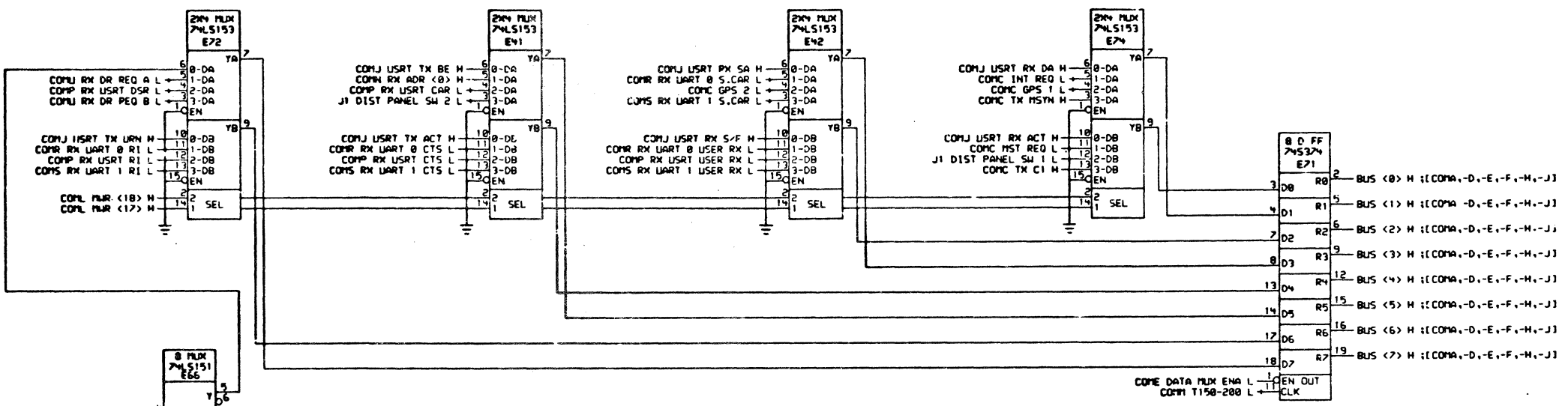
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REVISIONS	
CHK	CHANGE NO. REV

<b>digital</b>	DRN. G.H. HAFNER	DATE 17-SEP-82	ENG.	DATE	TITLE: DMF32 COMM OPTION BOARD (COMF)
	CHK'D.	DATE	BOARD LOCAL: CN:	SHEET 1 OF 1	SIZE CODE K CS NUMBER M8396-0-COMF REV. B
FIRST USED ON OPTION MODEL: 11/230		NEXT HIGHER ASSEMBLY: 8-DD-DMF32-0			

NUMBER: SCOP1 (M8396-COMF) DRAWING SCALE: 2" = 0" RELEASE BOX NUMBER: COMF (A, C, D, E, F) 17-SEP-82 12:17



(DATA FLUX)

WORKER: SCOPICHAFNER/COM-DMF32-1-SCALE 2.0-0-RELEASE WORK  
 NUMBER: COM-DMF32-1-17-SEP-82 12117

REV	CHG	CHANGE NO.	REV

REV	CHG	CHANGE NO.	REV

	DRN. G.M. HAFNER	DATE 17-SEP-82	ENG.	DATE	TITLE: DMF32 CCOMM
	CHK'D.	DATE	BOARD LOCATION: SHEET 1 OF 1		OPTION BOARD (COMM)
SCOPICHAFNER/COM-DMF32-1-SCALE 2.0-0-17-SEP-82 12117 NEXT HIGHER ASSEMBLY: B-DD-DMF32-0					SIZE CODE K CS NUMBER M8396-0-COMH REV. B

REV. B  
 SIZE CODE K CS M8396-0-COMH

NOTE: E86  
VCC= PIN 4  
GND= PIN 2

5.0688 MHZ  
CRYSTAL  
OSC  
E86

ASYN. BRG  
BAUD RATE  
GENERATOR  
8116  
E53

MPCC  
2E52  
E48

NOTE:  
VCC= PIN 32  
GND= PIN 9

SLOW DATA BUS <0> H ((COMJ))  
SLOW DATA BUS <1> H ((COMJ))  
SLOW DATA BUS <2> H ((COMJ))  
SLOW DATA BUS <3> H ((COMJ))  
SLOW DATA BUS <4> H ((COMJ))  
SLOW DATA BUS <5> H ((COMJ))  
SLOW DATA BUS <6> H ((COMJ))  
SLOW DATA BUS <7> H ((COMJ))

COMJ USRT CS L  
COMJ LRT A0 H  
COMJ LRT A1 H  
COMJ LRT A2 H

COMJ PULLUP A H  
COMJ LRT R/W L

COMJ USRT RESET H  
COMJ USRT MAINT H  
COMJ USRT RX ENA H  
COMJ USRT RX CLK H  
COMJ RX USRT RX C L  
COMJ USRT TX ENA H  
COMJ USRT TX CLK H

COMJ DSK P ON L  
COMJ DSK P ON H ((COMJ))

SLOW R/W CTRL  
FSM PAL  
PAL 16R5  
82K4  
E73

COMJ USRT TX CLK SOU H  
COMJ LS ADDR <4> H  
COMJ BRG USRT TX CLK L  
COMJ PLUR <22> H  
COMJ LS ADDR <5> H  
COMJ RX USRT TX CLK L  
COMJ DISC REG R/W L  
COMJ DSK P ON L

COMJ W19K4 PL H  
CLOCK  
ENABLE

COMJ T180-150 H  
COMJ T90-135 L

EM  
RD/LR  
BY  
DBUSEN  
RES  
TXACT  
TXBUFEPTT  
RX-EN  
RXCLK  
TXEN  
TXCLK

COMJ USRT RX ACT H ((COMJ))  
COMJ USRT RX DA H ((COMJ))  
COMJ USRT RX S-F H ((COMJ))  
COMJ USRT RX SA H ((COMJ))  
COMJ USRT TX ACT H ((COMJ))  
COMJ USRT TX BE H ((COMJ))  
COMJ USRT TX URN H ((COMJ))  
COMJ USRT TX D L ((COMJ))

SLOW WRITE REG  
8 D FF  
74LS374  
E69

BUS <0> H  
BUS <1> H  
BUS <2> H  
BUS <3> H  
BUS <4> H  
BUS <5> H  
BUS <6> H  
BUS <7> H

SLOW READ REG  
8 D FF  
74LS374  
E78

BUS <0> H  
BUS <1> H  
BUS <2> H  
BUS <3> H  
BUS <4> H  
BUS <5> H  
BUS <6> H  
BUS <7> H

SLOW ADRS REG  
6 D FF  
74LS174  
E54

COMJ LS ADDR <0> H  
COMJ LS ADDR <1> H  
COMJ LS ADDR <2> H  
COMJ LS ADDR <3> H  
COMJ LS ADDR <4> H  
COMJ PLUR <23> H  
COMJ +3VA H

DECODER  
74LS138  
E31

COMJ UART 0 CS L ((COMJ))  
COMJ UART 1 CS L ((COMJ))  
COMJ UART 2 CS L ((COMJ))  
COMJ UART 3 CS L ((COMJ))  
COMJ UART 4 CS L ((COMJ))  
COMJ UART 5 CS L ((COMJ))  
COMJ UART 6 CS L ((COMJ))  
COMJ UART 7 CS L ((COMJ))

COMJ 5.0688 H  
COMJ 5.0688 L

COMJ BRG SEL H  
COMJ SLOW BRG CS L

SYNC. BRG  
BAUD RATE  
GENERATOR  
88461  
E32

NOTE:  
VCC= 3  
GND= 5

COMJ 5.0688 H  
COMJ 5.0688 L  
COMJ +3V0 H  
COMJ BRG SEL H  
COMJ SLOW BRG CS L

COMJ BRG USRT TX CLK L ((COMJ))

COMJ LRT R/W L ((COMJ))

(USRT, BRG'S AND SLOW R/W CONTROL)

REV.	DATE	BY	CHK'D	DESCRIPTION
1	17-SEP-82	G.M.HAFNER		RELEASED FOR PRODUCTION

REV.	DATE	BY	CHK'D	DESCRIPTION
1	17-SEP-82	G.M.HAFNER		RELEASED FOR PRODUCTION

REV.	DATE	BY	CHK'D	DESCRIPTION
1	17-SEP-82	G.M.HAFNER		RELEASED FOR PRODUCTION

REV.	DATE	BY	CHK'D	DESCRIPTION
1	17-SEP-82	G.M.HAFNER		RELEASED FOR PRODUCTION

REV.	DATE	BY	CHK'D	DESCRIPTION
1	17-SEP-82	G.M.HAFNER		RELEASED FOR PRODUCTION

DRN.	G.M.HAFNER	DATE	17-SEP-82	ENG.		DATE		TITLE:	DMF32 COMM
CHK'D.		DATE		BOARD LOCATION:		SHEET	1	OF	1
SCOPE: (HAFNER, COMJ) DRW 21		JUL 82 2011		NEXT HIGHER ASSEMBLY:		SIZE		CODE	NUMBER
FIRST USED ON OPTION MODEL:		117730		B-DD-DMF32-0		K		CS	M8396-0-COMJ
									REV.
									B

DMF32 COMM BOARD OPTION BOARD (COMJ) SCALE 8:1 RELEASED FOR PRODUCTION 17-SEP-82 1217

D

C

B

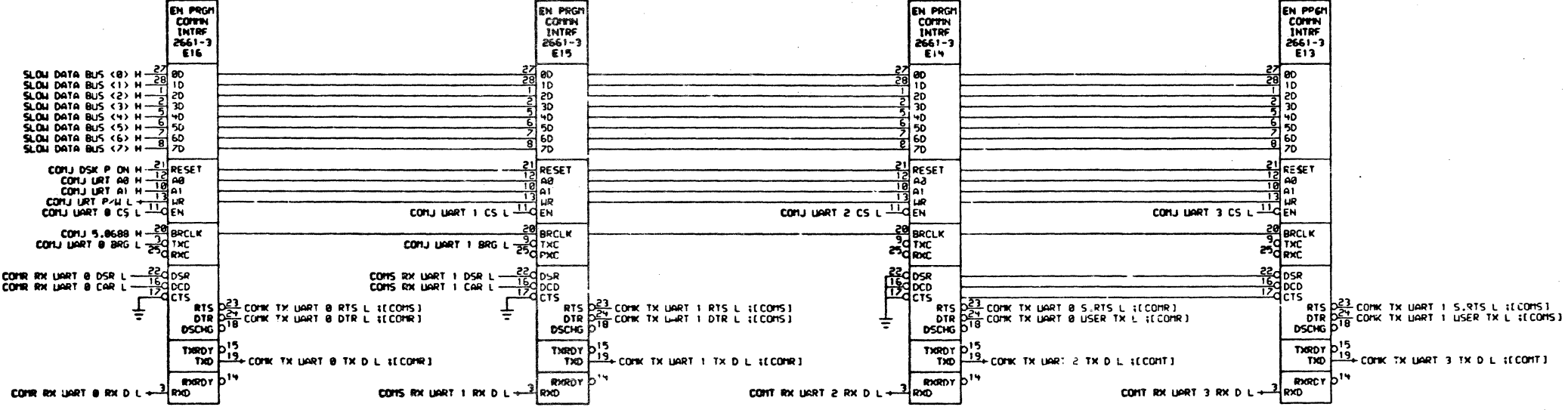
A

ASYNC LINE 0

ASYNC LINE 1

ASYNC LINE 2

ASYNC LINE 3

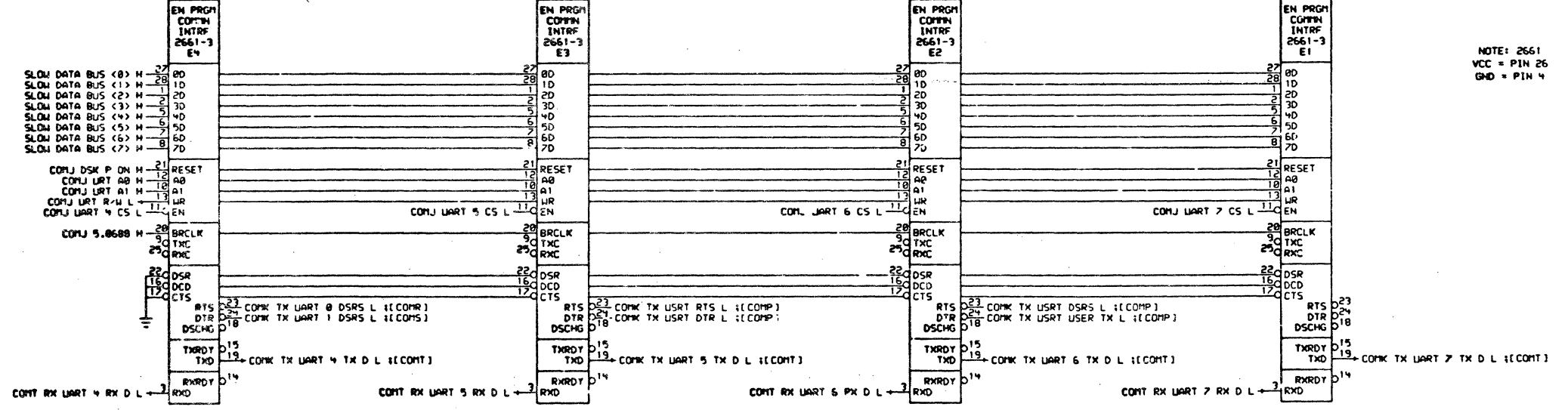


ASYNC LINE 4

ASYNC LINE 5

ASYNC LINE 6

ASYNC LINE 7



NOTE: 2661  
 VCC = PIN 26  
 GND = PIN 4

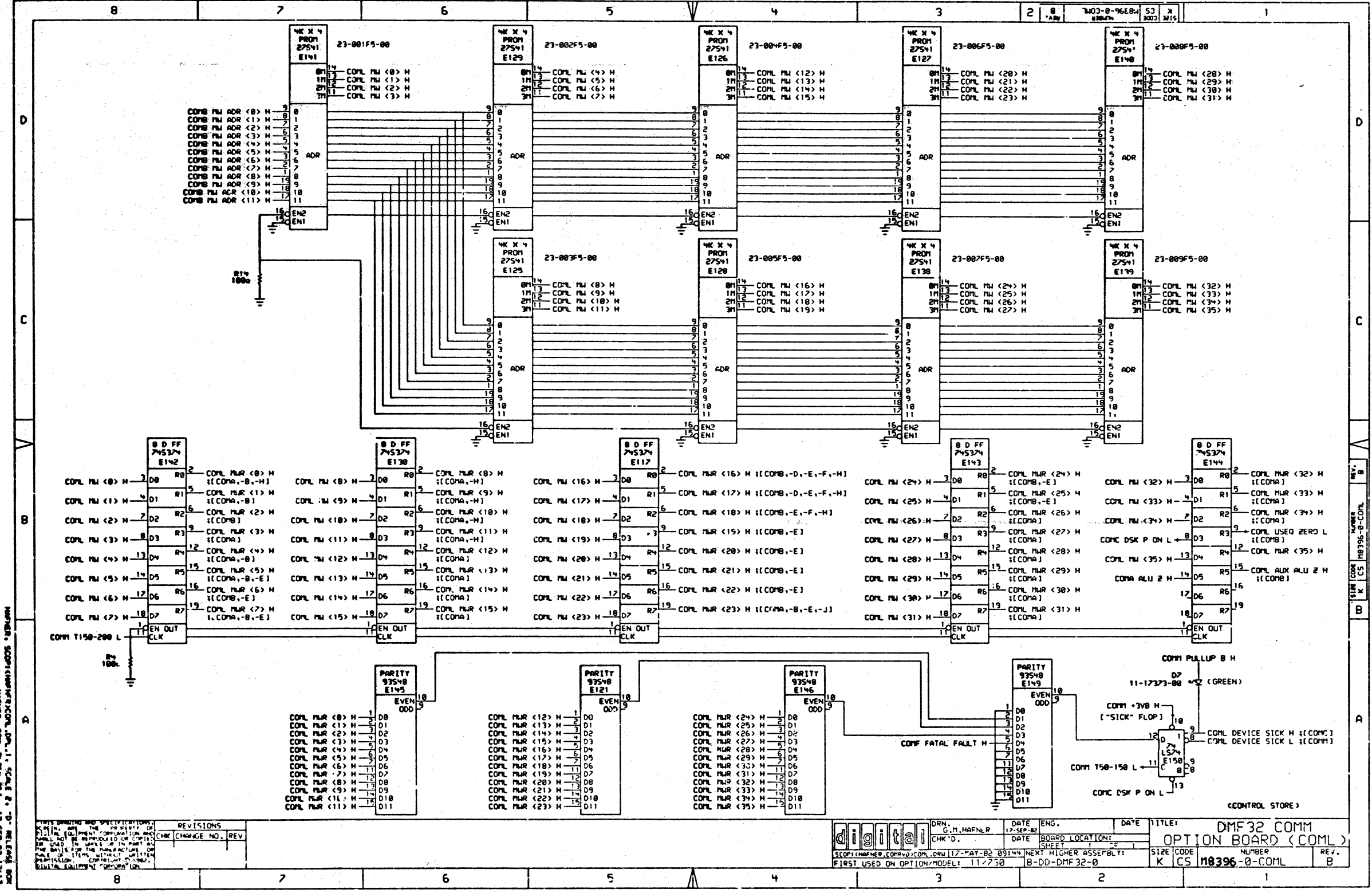
(UARTS)

NUMBER: SC001 (NAME: M8396-COMK) REV. 1.1 SCALE: 2:1  
 NUMBER: COMK (REV: 1.1) 17-SEP-82 12:11

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REV	CHANGE NO.	REV

	DRN. G.M. HAFNER	DATE 17-SEP-82	ENG.	DATE	TITLE: DMF32 COMM
	CHK'D.	DATE	BOARD LOCATION:		OPTION BOARD (COMK)
SC001 (NAME: M8396-COMK) REV. 1.1 MAY-82 09:44 FIRST USED ON OPTION/MODEL: 117730	NEXT HIGHER ASSEMBLY: 8-DD-DMF32-0	SIZE CODE K CS	NUMBER M8396-0-COMK	REV. B	



NUMBER: SCOM1 (MAY 82) COML 1, SCALE: 8" x 10" REF: 6562 COML  
 NUMBER: COML 1, DATE: 17-SEP-82 12117

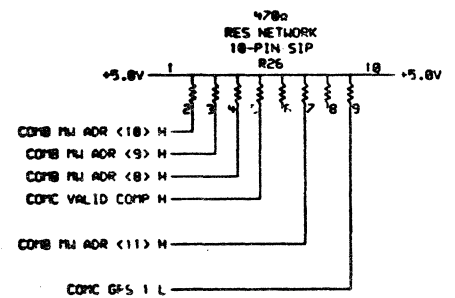
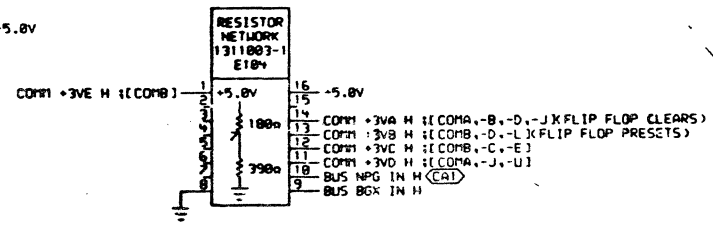
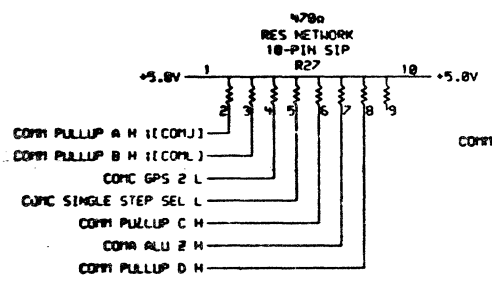
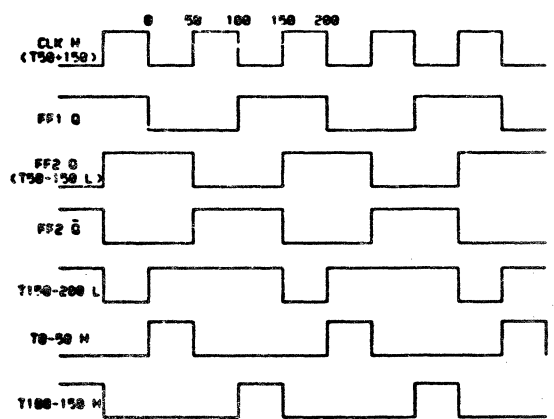
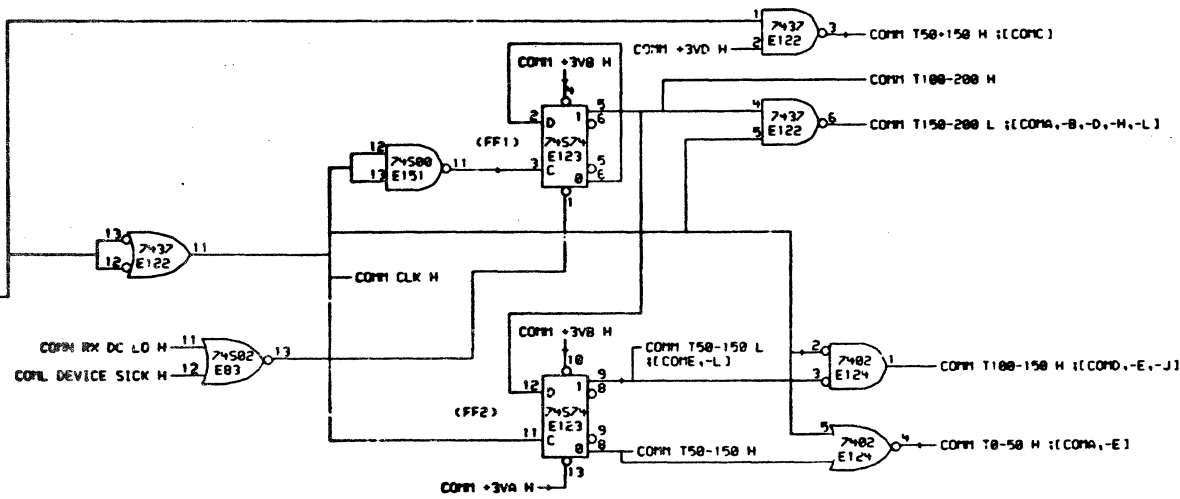
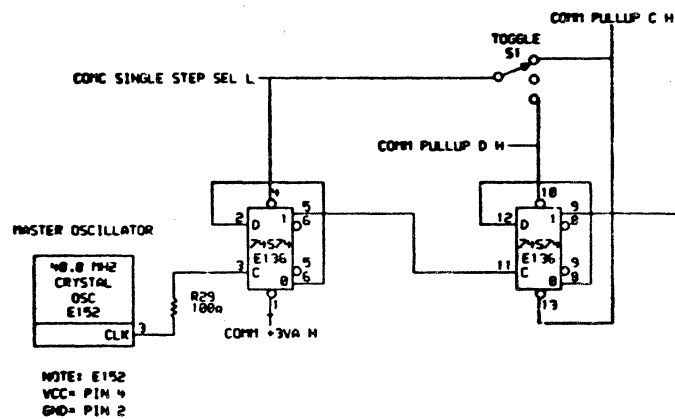
REVISIONS		
CHK	CHANGE NO.	REV

	DRN. G. M. HAFNER	DATE 17-SEP-82	ENG.	DATE	TITLE: DMF32 COMM
	CHK'D.	DATE 17-MAY-82 09:44	BOARD LOCATION:	SHEET 1	OPTION BOARD (COML)
SCOM1 (MAY 82) COML 1, SCALE: 8" x 10" REF: 6562 COML			NEXT HIGHER ASSEMBLY:		SIZE CODE NUMBER
FIRST USED ON OPTION/MODEL: 1172730			B-DD-DMF32-0		REV. B

REV. B  
 NUMBER 118396-0-COML  
 CS K

CLOCK PHASE GENERATOR

DIVIDE-BY-FOUR  
& SINGLE STEP



(MASTER CLOCK AND PULLUPS-PULLDOWNS)

NUMBER SCOP1 (MAY 1982) COMM, 1, SCALE 2, 17-SEP-82 12119  
NUMBER COMM, 1, SCALE 4, 17-SEP-82 12119

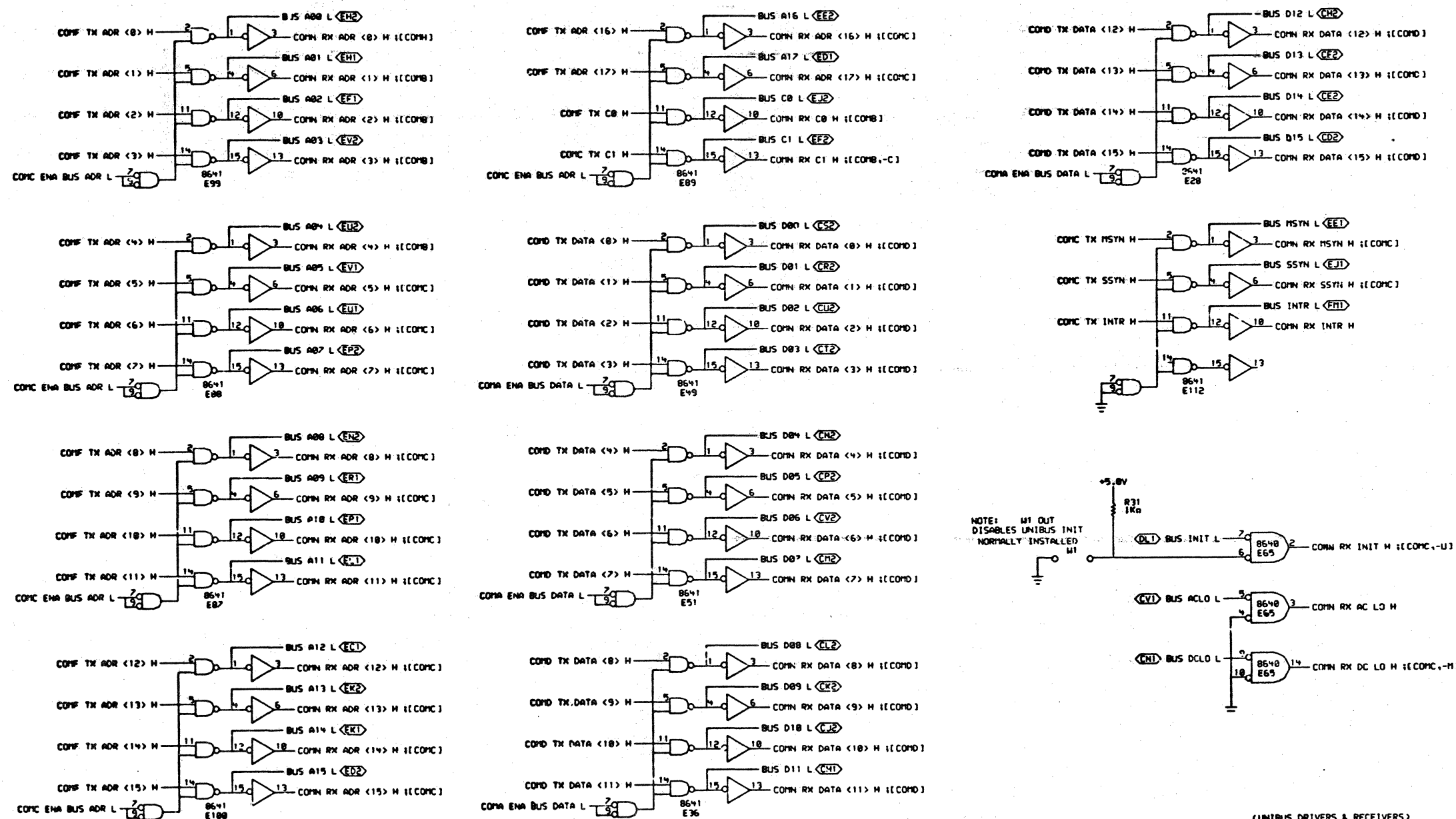
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REVISIONS		
CHG	CHANGE NO.	REV

digital	DRN: G.M. HAFNER	DATE ENG: 17-SEP-82	DATE	TITLE: DMF32 COMM
	CHK'D:	DATE		OPTION BOARD (COMM)
SCOP1 (MAY 1982) COMM, 1, SCALE 2, 17-SEP-82 12119				SIZE: K
FIRST USED ON OPTION MODEL: 117:30				COLE: CS
NEXT HIGHER ASSEMBLY: 18-00-M8396-0				NUMBER: M8396-0-COMM
				REV: B

REV. B  
MAY 1982  
M8396-0-COMM





NOTE: R31  
1KΩ  
UNIBUS INIT  
DISABLES UNIBUS INIT  
NORMALLY INSTALLED  
M1

(UNIBUS DRIVERS & RECEIVERS)

NUMBER: SCOP1 (MAYNEX) COMM, OPT. 1, SCALE 2, 0" REFERENCE BOX  
 PARTS DRAWING AND SPECIFICATIONS  
 DRAWN BY: J. H. WAGNER  
 CHECKED BY: J. H. WAGNER  
 DATE: 12-SEP-82  
 DATE: 12-MAY-82  
 DATE: 11-7-80  
 BOARD LOCATION: B-DD-DMF32-0  
 NEXT HIGHER ASSEMBLY: B-DD-DMF32-0  
 FIRST USED ON OPTION MODEL: 117730

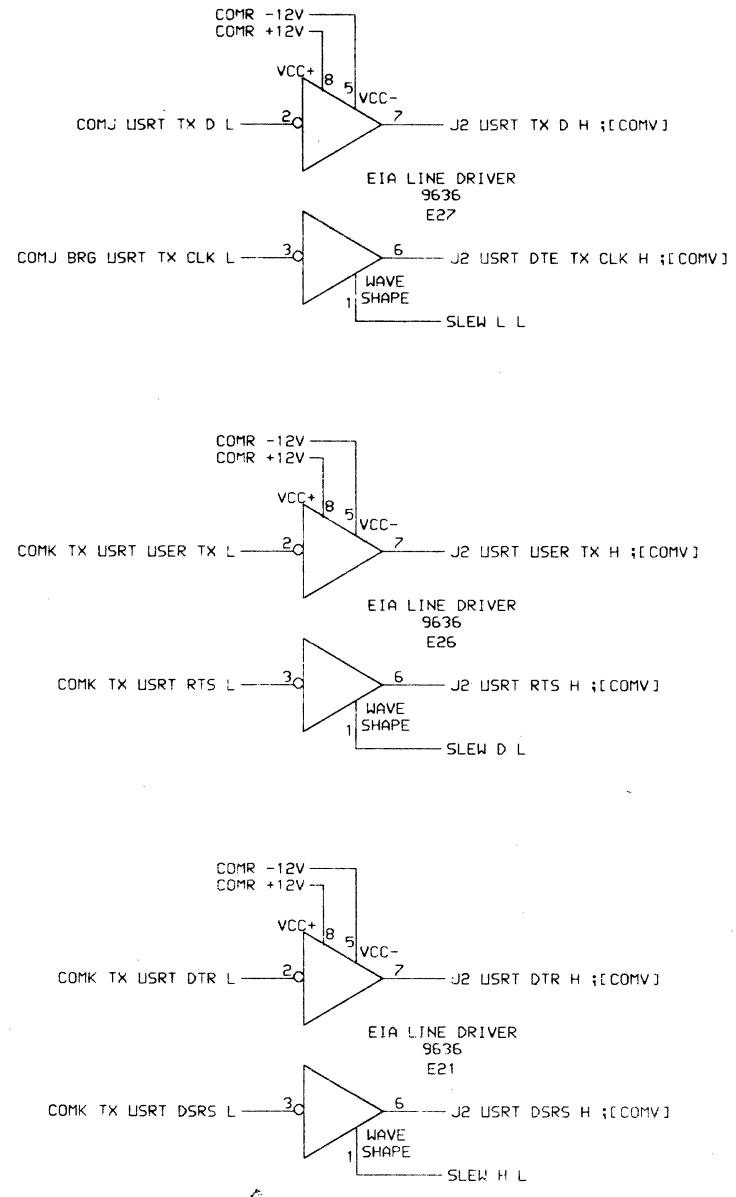
REVISIONS	
CHK	CHANGE NO. REV

	DRN. J. H. WAGNER	DATE 12-SEP-82	ENG.	DATE	TITLE: DMF32 COMM
	CHK'D.	DATE 12-MAY-82	BOARD LOCATION: B-DD-DMF32-0		OPTION BOARD (COMM)
SCOP1 (MAYNEX) COMM, OPT. 1, SCALE 2, 0" REFERENCE BOX PARTS DRAWING AND SPECIFICATIONS DRAWN BY: J. H. WAGNER CHECKED BY: J. H. WAGNER DATE: 12-SEP-82 DATE: 12-MAY-82 DATE: 11-7-80 BOARD LOCATION: B-DD-DMF32-0 NEXT HIGHER ASSEMBLY: B-DD-DMF32-0 FIRST USED ON OPTION MODEL: 117730					SIZE CODE K CS NUMBER M8396-0-COMM REV. 5

REV. B  
 NUMBER M8396-0-COMM  
 SIZE CODE K CS  
 REV. A

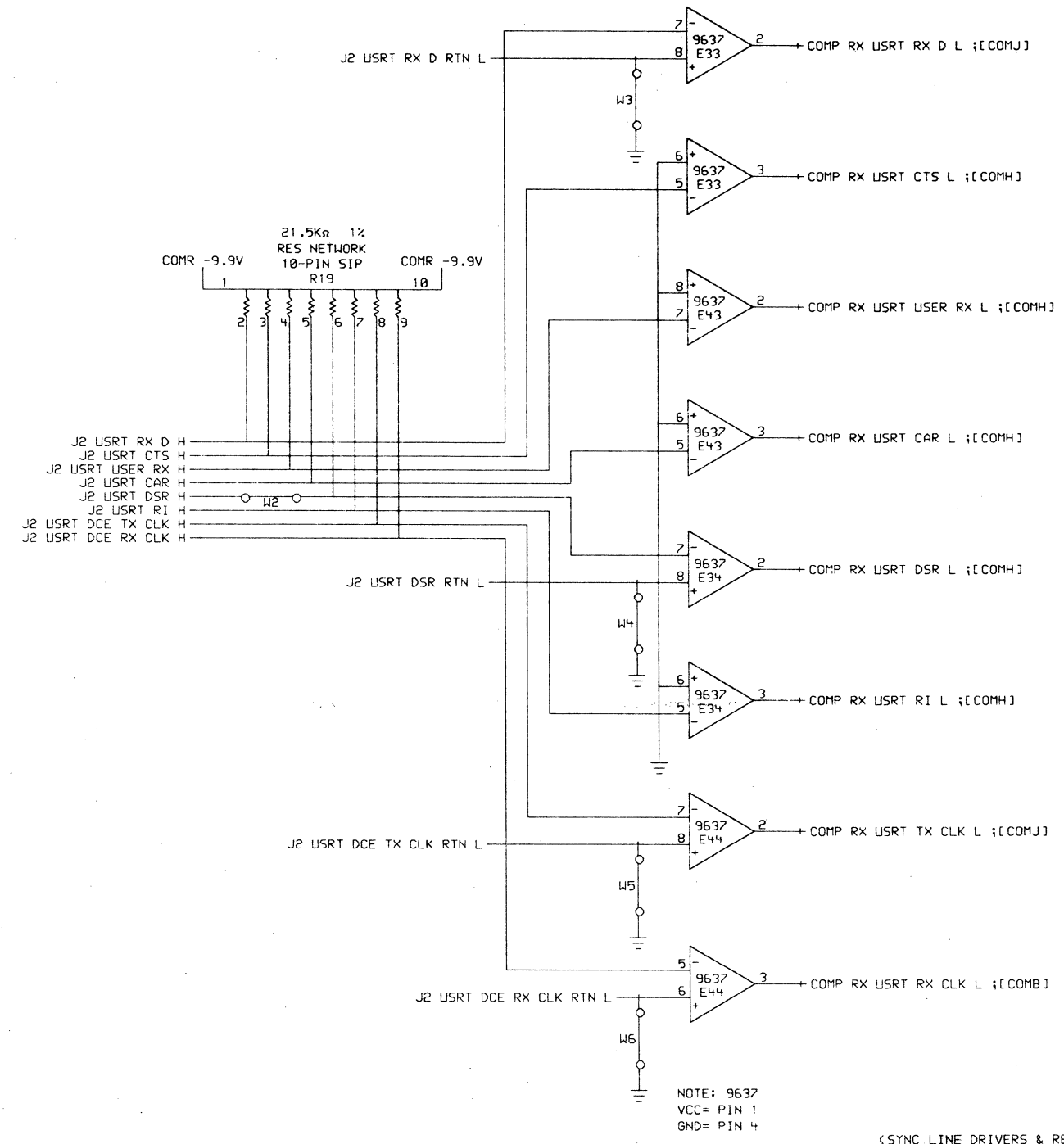
D  
C  
B  
A

D  
C  
B  
A



NOTE: 9636  
 GND= PIN 4

NOTE: W2 NORMALLY INSTALLED  
 OPTIONAL RESISTOR IN PLACE OF  
 W2 ALLOWS E34-02 HIGH WHEN  
 INPUT(E34-08) IS GROUNDED  
 W3 THRU W6 NORMALLY INSTALLED  
 REMOVED FOR DIFFERENTIAL  
 RECEIVER ONLY



NOTE: 9637  
 VCC= PIN 1  
 GND= PIN 4

< SYNC LINE DRIVERS & RECEIVERS >

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REVISIONS		
CHK	CHANGE NO.	REV

DRN G.M.HAFNER	DATE 03-APR-83	ENG.	DATE	TITLE:
CHK'D.	DATE	BOARD LOCATION:	SHEET 1 OF 1	DMF32 COMM
XTRA: <FRASER>COMP.DRW 111-FEB-83 05:12				NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 117730				B-DD-DMF32-0

SIZE	CODE	NUMBER	REV.
K	CS	M8396-0-COMP	C

D

C

B

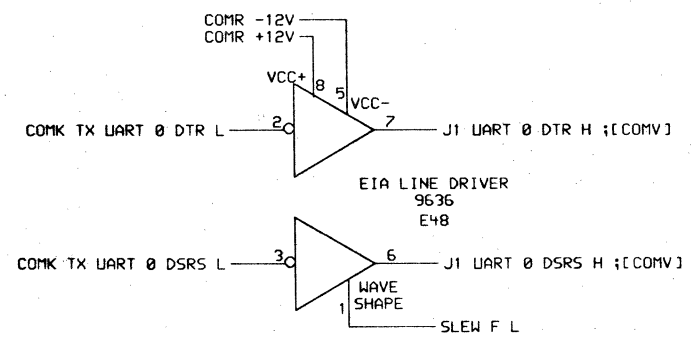
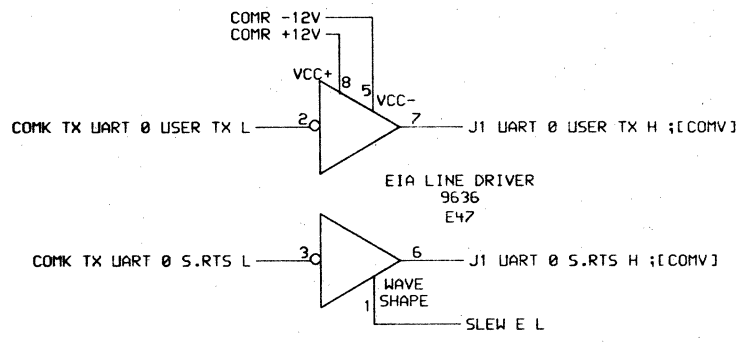
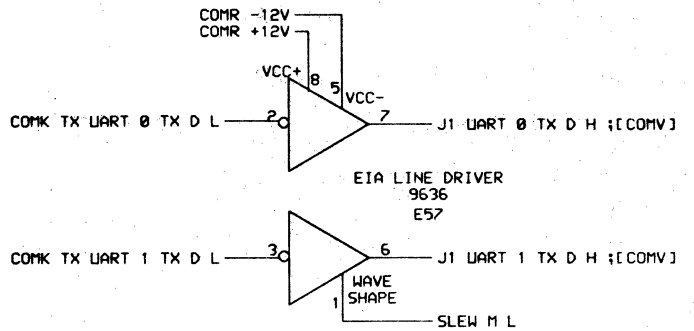
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D

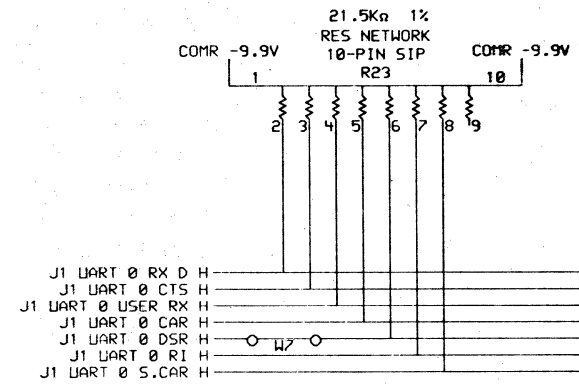
C

B

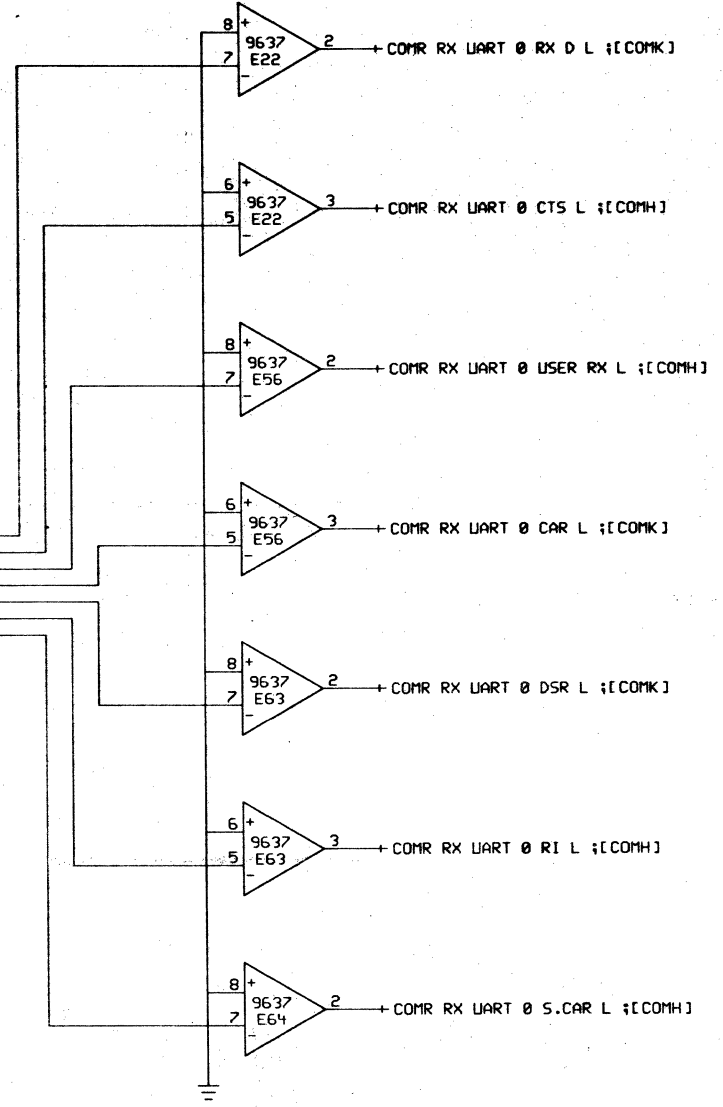
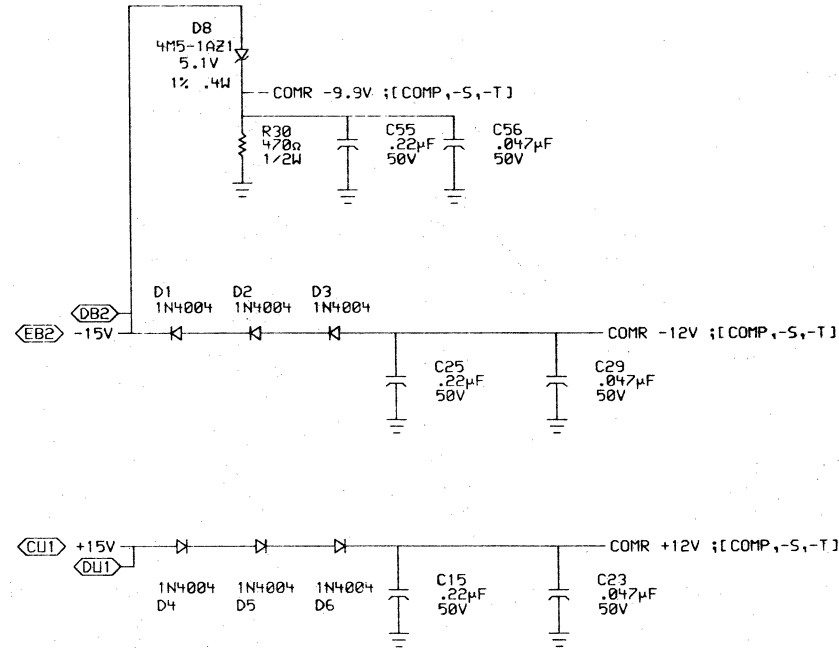
A



NOTE: 9636  
GND= PIN 4



NOTE: W7 NORMALLY INSTALLED  
OPTIONAL RESISTOR IN PLACE  
OF W7 ALLOWS E63-02 HIGH  
WHEN INPUT IS GROUNDED



NOTE: 9637  
VCC= PIN 1  
GND= PIN 4

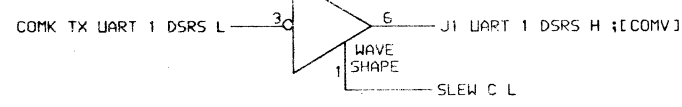
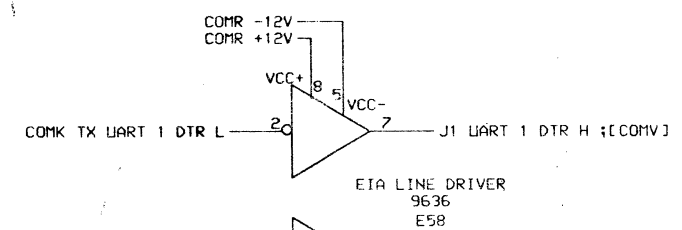
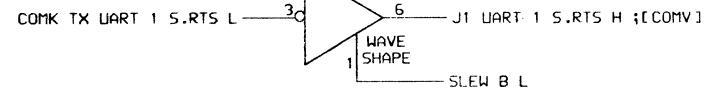
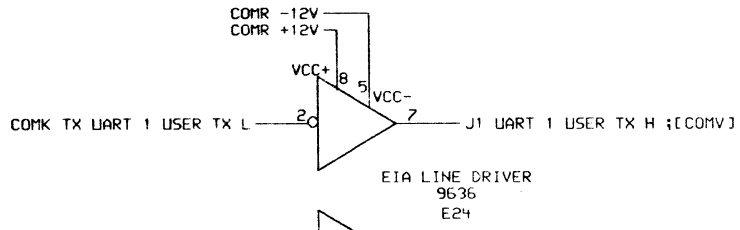
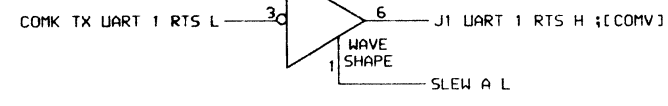
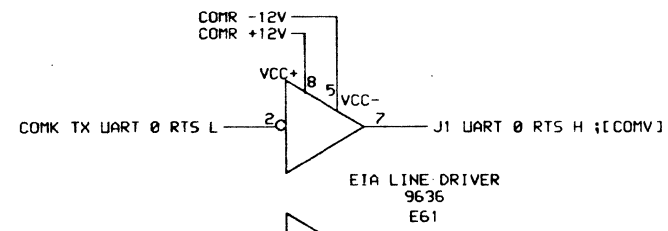
(ASYNC LINE 0 DRIVERS & RECEIVERS)

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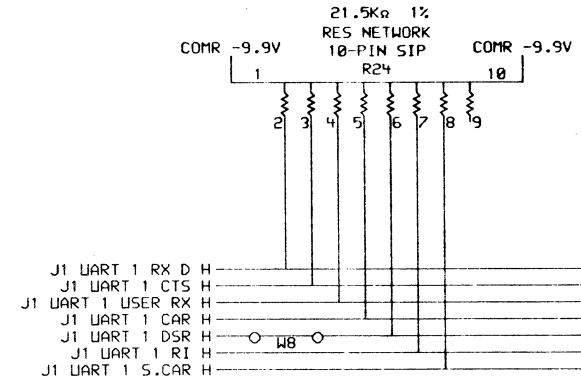
REVISIONS		
CHK	CHANGE NO.	REV

DRN. G.M.HAFNER	DATE 11-FEB-83 05:12	ENG. BOARD LOCATION: B-DD-DMF32-0	DATE	TITLE: DMF32 COMM OPTION BOARD (COMR)
CHK'D.	DATE	SHEET 1 OF 1		
XTRA: <FRASER>COMR.DRW		NEXT HIGHER ASSEMBLY: B-DD-DMF32-0	SIZE K	CODE CS
FIRST USED ON OPTION MODEL: 117730			NUMBER M8396-0-COMR	REV. C

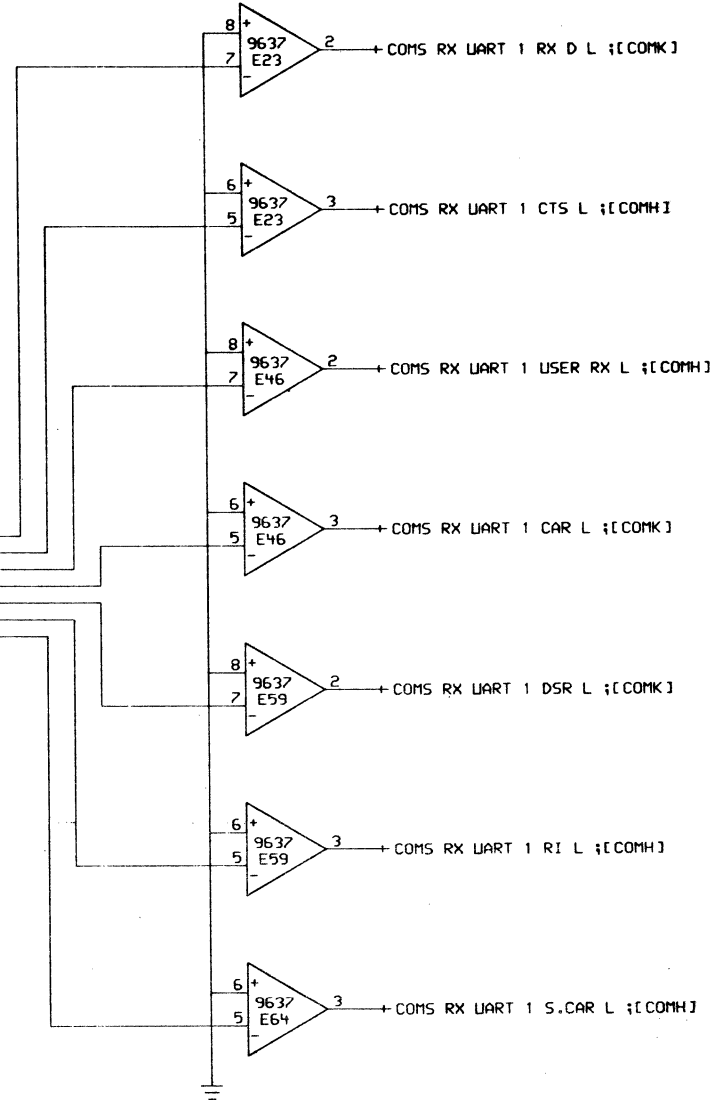
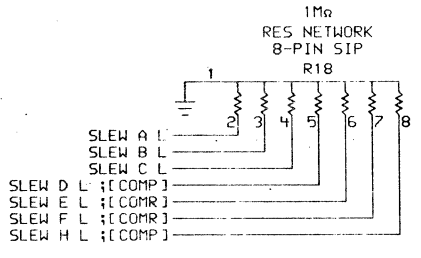
SIZE K	CODE CS	NUMBER M8396-0-COMR	REV. C
--------	---------	---------------------	--------



NOTE: 9636  
 GND= PIN 4



NOTE: W8 NORMALLY INSTALLED  
 OPTIONAL RESISTOR IN PLACE  
 OF W8 ALLOWS E59-02 HIGH  
 WHEN INPUT IS GROUNDED



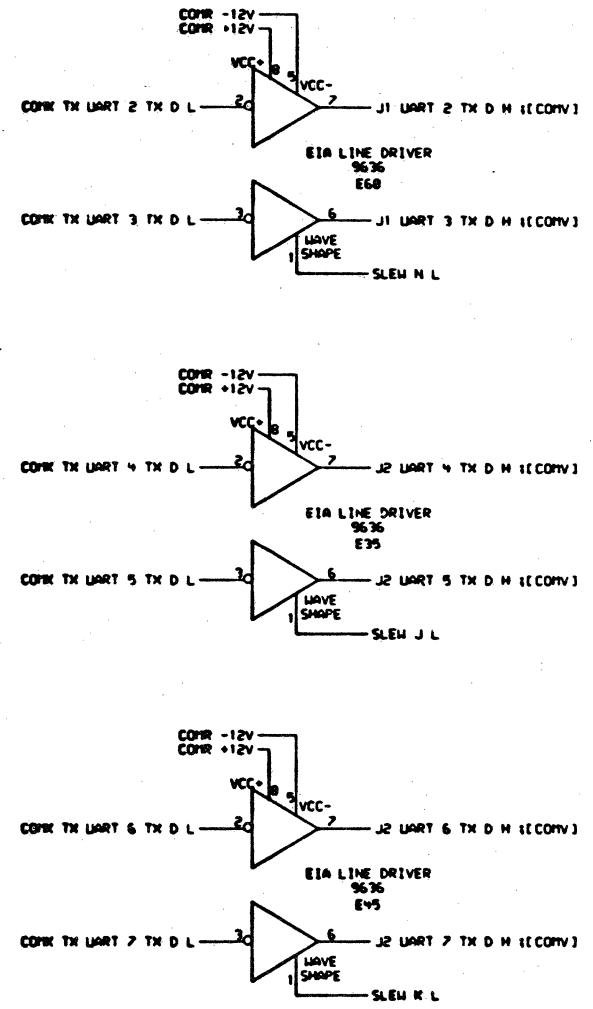
NOTE: 9637  
 VCC= PIN 1  
 GND= PIN 4

(ASYNC LINE 1 DRIVERS & RECEIVERS)

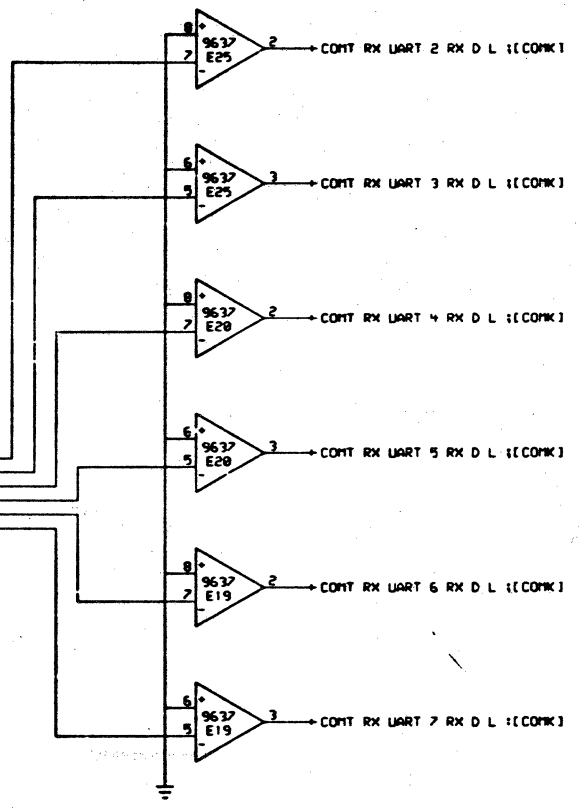
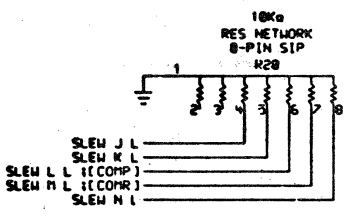
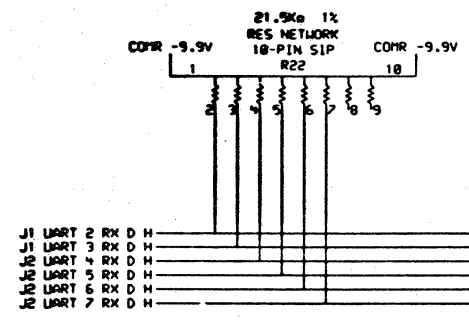
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REVISIONS	
CHK	CHANGE NO. REV

DRN. G.M.HAFNER	DATE 05-APR-83	ENG.	DATE	TITLE: DMF32 COMM OPTION BOARD (COMS)
CHK'D.	DATE	BOARD LOCATION:	SHEET 1 OF 1	
XTRA: <FRASER>COMS.DRW 11-FEB-83 05:13		NEXT HIGHER ASSEMBLY:	SIZE CODE	NUMBER
FIRST USED ON OPTION/MODEL: 11/730		B-DD-DHF32-0	K CS	M8396-0-COMS
			REV.	C



NOTE: 9636  
GND = PIN 4



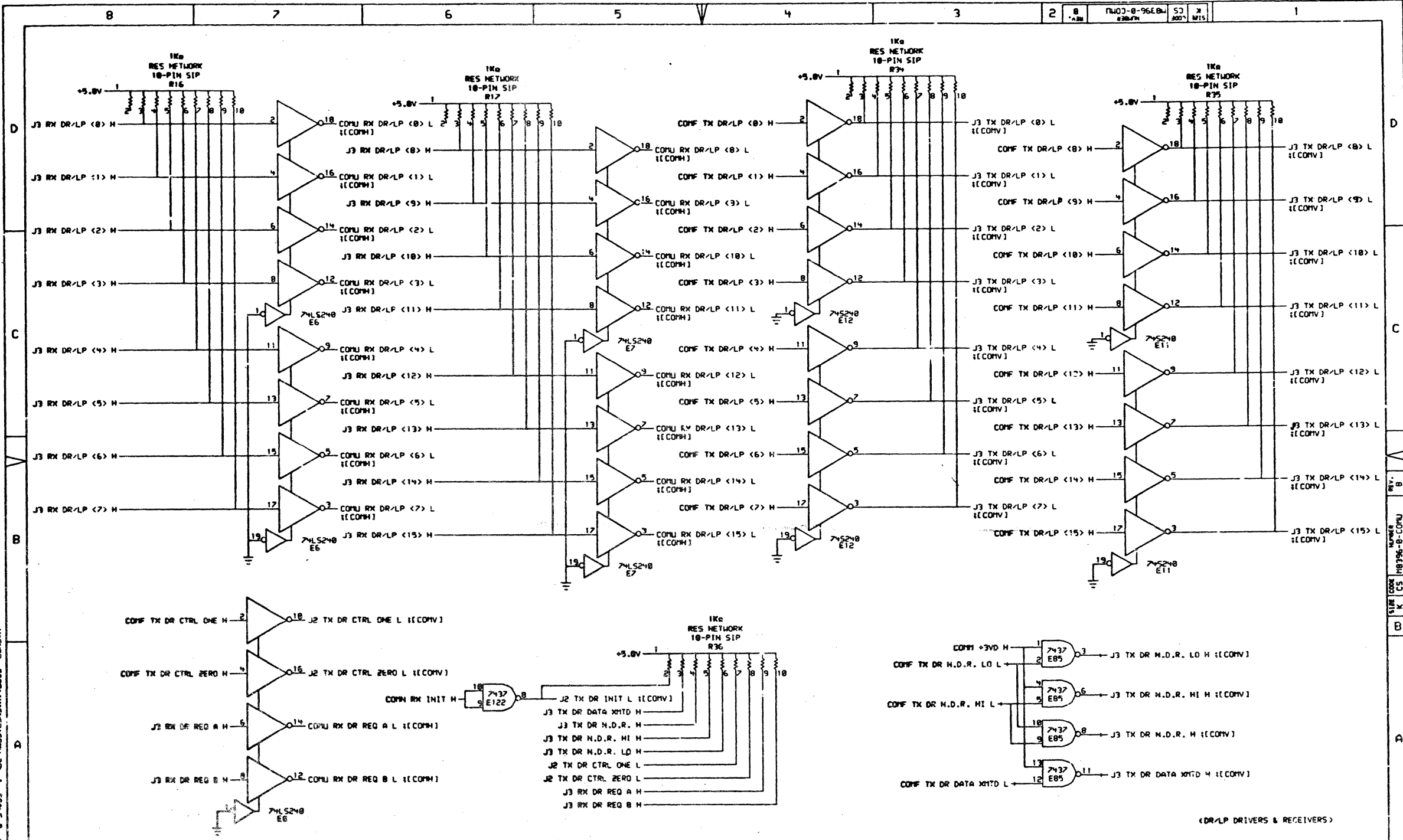
NOTE: 9637  
VCC = PIN 1  
GND = PIN 4

((ASYNC LINES <2>7) DRIVERS & RECEIVERS)

NUMBER: SCOP (CHARTER) COMT, DR. 1, SCALE 8, 10, RELEASE COM  
 NUMBER: COMT, DR. 1, SCALE 8, 17-SEP-82 12110

REVISIONS	
CHK	CHANGE NO. REV

digital	DRN. G.M. HANMER	DATE 17-SEP-82	ENG.	DATE	TITLE
	CHK'D.	DATE	BOARD LOCATION:	SHEET	DMF32 COMM
SCOP (CHARTER) COMT, DR. 1, SCALE 8, 17-MAY-82 09144 NEXT HIGHER ASSEMBLY:					SIZE CODE
FIRST USED ON OPTION/MODEL: 11/730					K CS
					NUMBER
					M8396-U-COMT
					REV.
					B



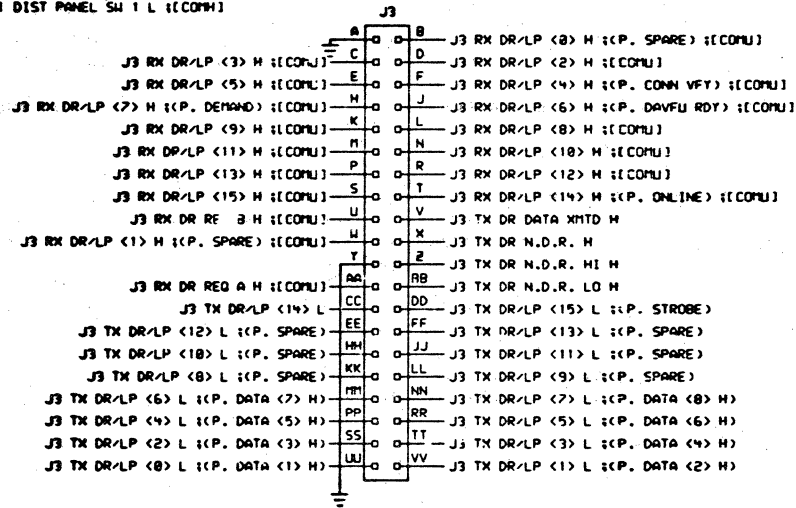
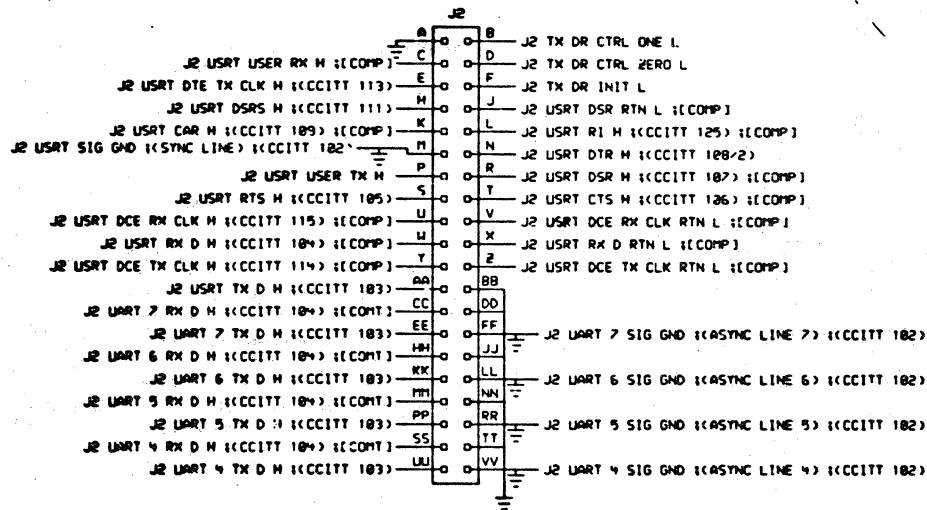
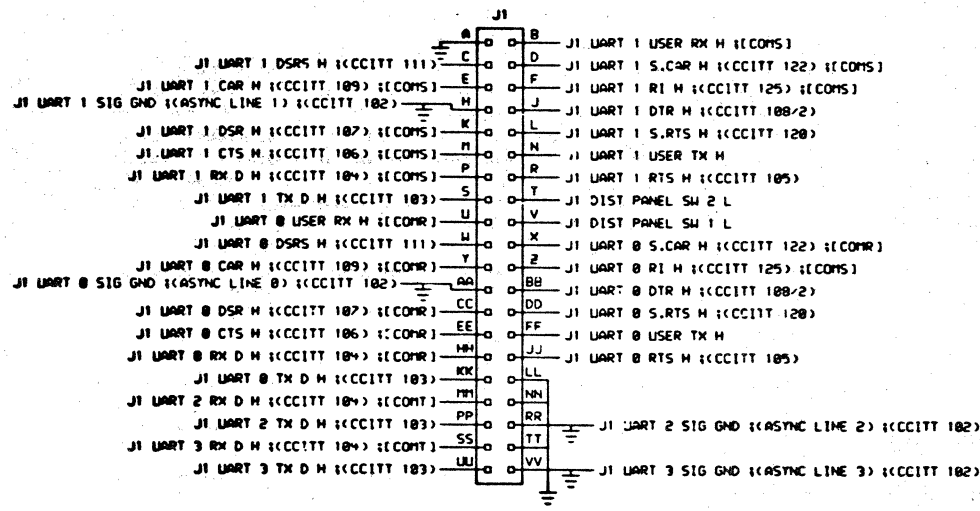
(DR/LP DRIVERS & RECEIVERS)

NUMBER, SCOP (NUMBER) COM1, 1, SCALE 2, 0, RELEASE FOR  
 NUMBER COM1, 1, 17-SEP-82 12:18

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 CORPORATION.

REVISIONS
CHANGE NO. 001

digital	DRN. G.M. HAFNER	DATE 17-SEP-82	ENG.	DATE	TITLE: DMF32 COM1
	CHK'D.	DATE	BOARD LOCATION:	SHEET 1	OPTION BOARD (COMU)
SCOP (NUMBER) COM1, 1, SCALE 2, 0, RELEASE FOR		DATE 17-MAY-82 09:44	NEXT HIGHER ASSEMBLY:		SIZE CODE NUMBER REV.
FIRST USED ON OPTION MODEL: 117730		18-DD-DMF32-0		K CS	M3396-A-COMU B



NOTES:

01. PIN CORRESPONDENCES ARE AS FOLLOWS:

PIN 'A' = PIN 40;  
PIN 'B' = PIN 39;  
PIN 'VV' = PIN 11;  
ETC.

(PER PURCHASE SPEC. #1209941-0-0 REV. R1 DATED 4-21-77)

02. SIGNAL NAMES IN PARENTHESES FOLLOWING THE DR/LP SIGNALS ARE NAMES OF CONTROL SIGNALS WHEN USED FOR LP INTERFACE.

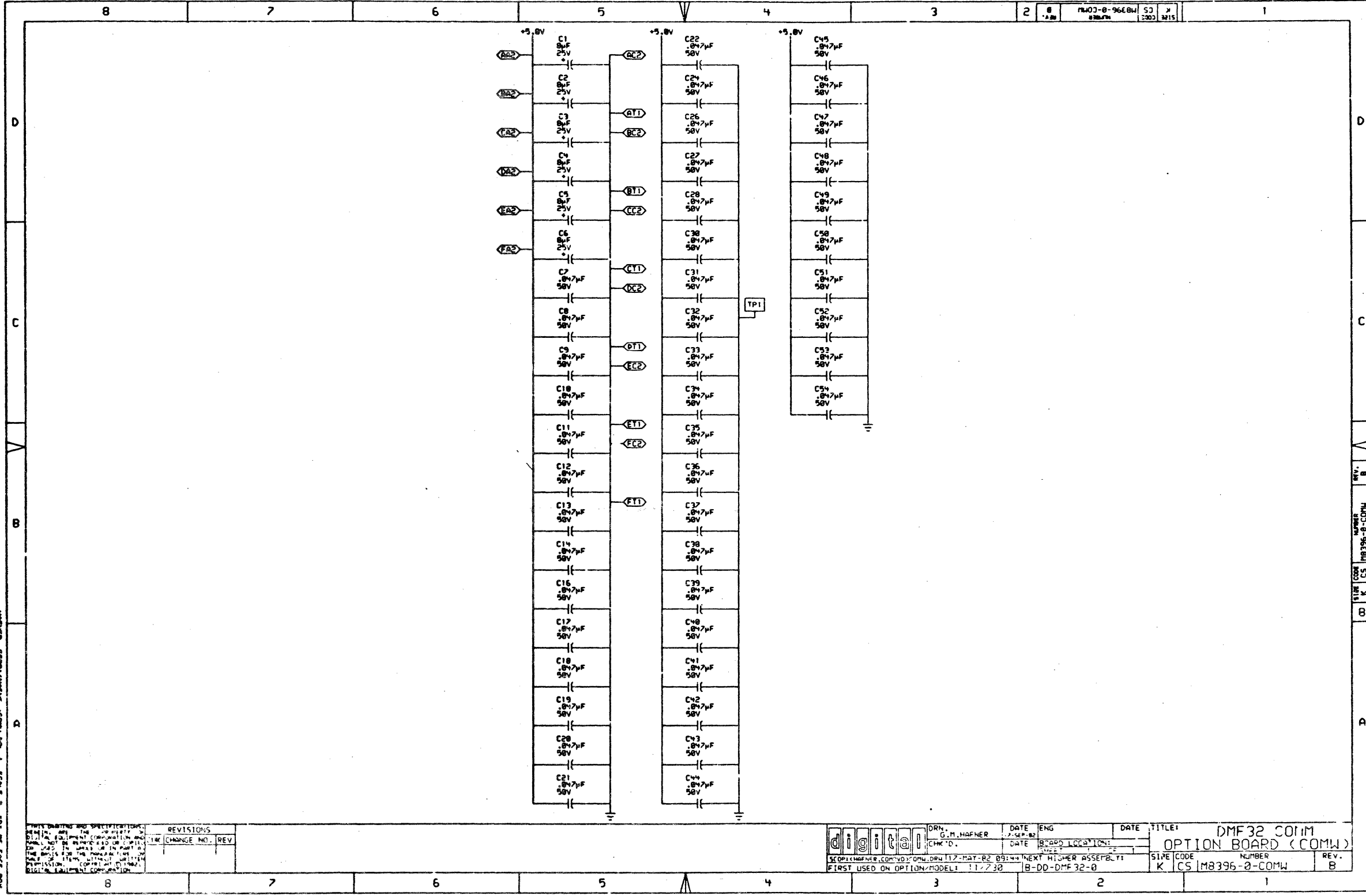
03. PIN 'A' GOES TO FLAT CABLE SHIELD.

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REVISIONS	
CHK	CHANGE NO. REV

DIGITAL		DRAWN: G.M. HAFNER	DATE: 17-SEP-82	ENG.	DATE	TITLE: DMF32 COMM OPTION BOARD (COMV)
SCOP (HAFNER.COMV.DIGITAL) 117-MAY-82 09144		CHK'D:	DATE	BOARD LOCATION:	SHEET 1 OF 2	REV. B
FIRST USED ON OPTION MODEL: 11/730		NEXT HIGHER ASSEMBLY: B-DD-DMF32-0		SIZE CODE: K CS	NUMBER: M8396-0-COMV	REV. B

REV. B  
CS  
M8396-0-COMV



1512  
CORP  
M400-0-96384  
S3  
3215

NUMBER: SCOP (MAYBE - 10) (MAYBE - 1) - SCALE 8 - 0 - 05, 04, 05, 06  
NUMBER: COMW, PL 01, 02, 03, 17-SEP-82 12118

REV. B  
NUMBER  
M8396-0-COMW

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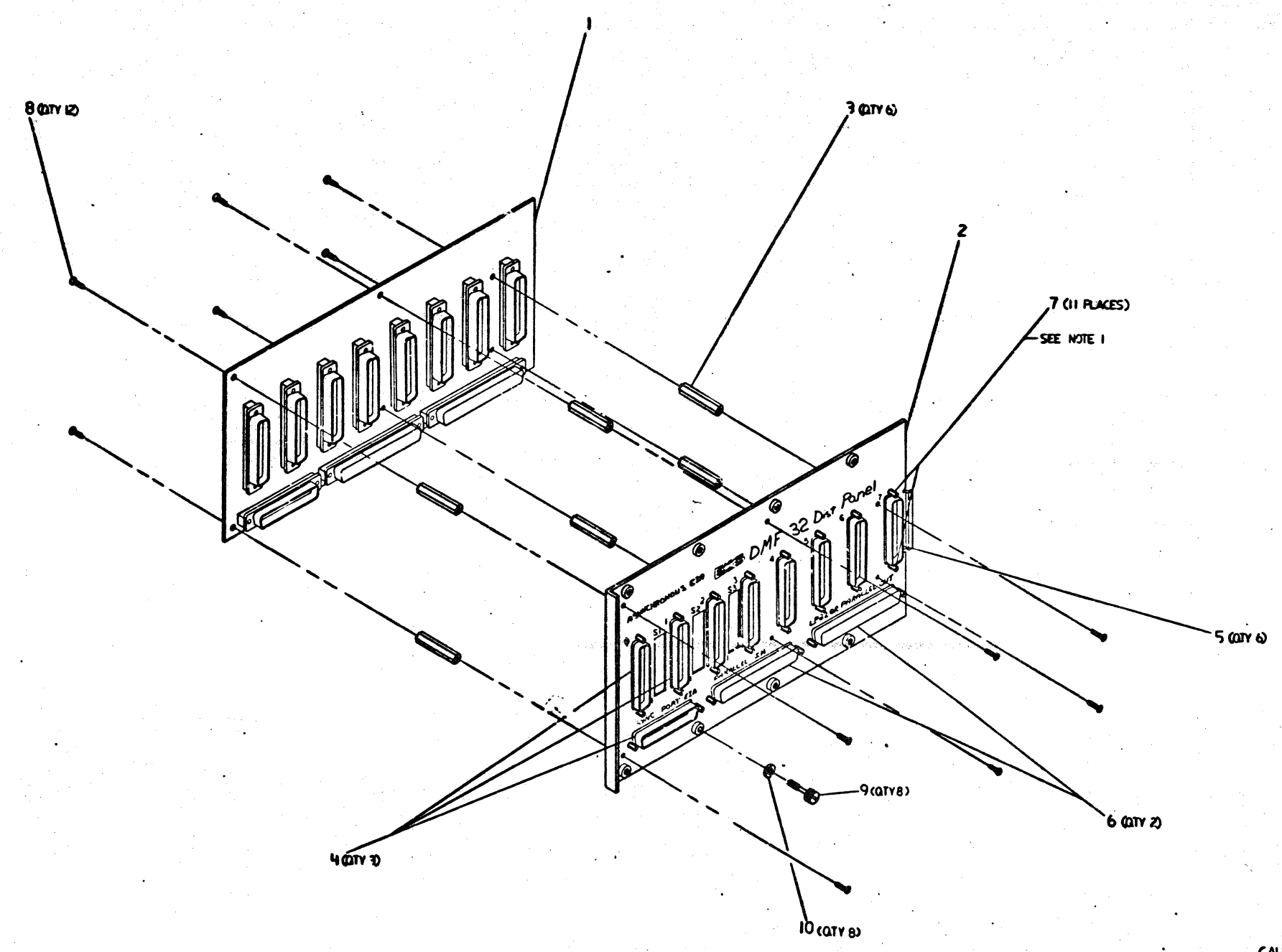
REVISIONS	
CHANGE NO.	REV

<b>digital</b>	DRN. G.M. HAFNER	DATE 17-SEP-82	ENG	DATE	TITLE
	CHK'D.	DATE	BOARD LOCATION	SHEET	
SCOP (MAYBE - 10) (MAYBE - 1) - SCALE 8 - 0 - 05, 04, 05, 06					DMF32 COMW
FIRST USED ON OPTION/MODEL: 11/7/80					OPTION BOARD (COMW)
NEXT HIGHER ASSEMBLY: B-DD-DMF32-0				SIZE CODE	NUMBER
				K CS	M8396-0-COMW
				REV.	B



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 DEPARTMENT 1 (90) DIGITAL EQUIPMENT CORPORATION

- NOTES:**
1. USE ONLY THE M/F STANDOFF AND SPLIT LOCK WASHERS IN EACH KIT.
  2. INSERT ITEMS 4, 5 & 6 INTO ITEM 1 PRIOR TO SECURING TO ITEM 2.



CAUTION: SEE OFF SHEET PARTS LIST  
 K-PL-7018754-0-DBP (Z3006A)

REV	DESCRIPTION
1	ISSUED FOR FABRICATION
2	REVISED PART
3	REVISED PART
4	REVISED PART
5	REVISED PART
6	REVISED PART
7	REVISED PART
8	REVISED PART

DESCRIPTION	DRAWING NO.	PART NO.	REV.					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)								
INCH TOLERANCES	ANGLES 1/4°	APPLICABLE DIMENSION RANGE	DIMENSION RANGE IN INCHES					
			OVER 0 TO 0.25	OVER 0.25 TO 0.50	OVER 0.50 TO 1.00	OVER 1.00 TO 1.50	OVER 1.50 TO 2.00	OVER 2.00 TO 3.00
± 0.1		EXCEPT SHOWN	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	
QUANTITY & VARIATION	SURFACE QUALITY	FINISH	TITLES					
SEE PARTS LIST	✓	✓	TITLE: <b>DMF 32 I/O PANEL ASSY</b> DATE: 7-27-82 DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature] PART NO.: 7018754-0-0 DOCUMENT NUMBER: E AD 7018754-0-0 A DRAWING NO.: D-LA-DMF 32-0-0					

E AD 7018754-0-0 A

A

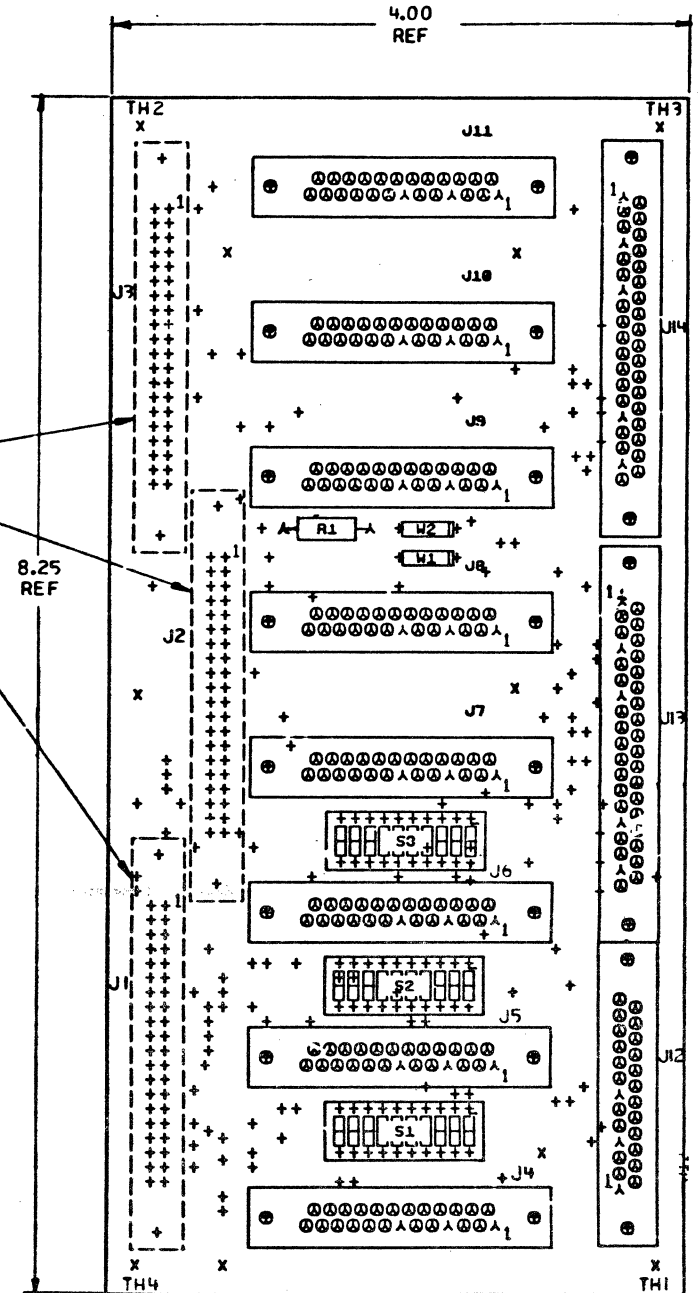
LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION	
1	1	D-UA-5414459-0-0	5414459-00	COMPO DISTRIBUTION BOARD	1
2	2	D-IA-7426406-04-DBU	7426406-04	PANEL,OCTAL	1
3	3	B-MD-7425880-0-0	7425880-00	SPACER,I/O BRD/PANEL	6
4	4	A-PS-1219572-0-0	1219572-01	CONN,D SUB 25PIN ADAPTER/FILTER	3
5	5	A-PS-1219572-0-0	1219572-03	CONN,D SUB 10PIN ADAPTOR/FILTER	6
6	6	A-PS-1217431-0-0	1217431-03	CONN,D SUB 37PIN ASSY STRAIGHT W	2
7	7		9008451-00	SCREW LOCK,ASSY	11
8	8		9009546-00	SCREW,SEMS PAN PHIL	4- 12
9	9		1219534-01	SCREW, CAPTV SLOT	4- 8
10	10		9006688-00	WASHER,HELICAL SPLIT SST	8

REVISION HISTORY		BASIC PART NO: 7018754		DRN:	P. TOUSIGNANT	DATE: 02-APR-82	DIGITAL		
ENG	ECO NUMBER	REV	SECTION A OF A	CHK'D:	A. ROCHA	DATE: 02-APR-82	TITLE	PARTS LIST	
---	INITIAL	A	SECTION. VARIATION INDEX				DMF 32 I/O PANEL ASSY		
			[A] 00						
			[B]	DES.ENG.:	D. CARLSON	DATE: 02-APR-82			
			[C]	RESP.ENG.:	D. CARLSON	DATE: 02-APR-82		DOCUMENT NUMBER	
			[D]				SIZE	CODE	NUMBER
			[E]	MFG.ENG.:	S. CASTIGLIONE	DATE: 02-APR-82	K	PL	7018754-0-DBP
			[F]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:	FILE NAME:	EDIT #	
				E-AD-7018754-0-0		B-DD-DFM32-0-0	Z3006A.PLS	11	

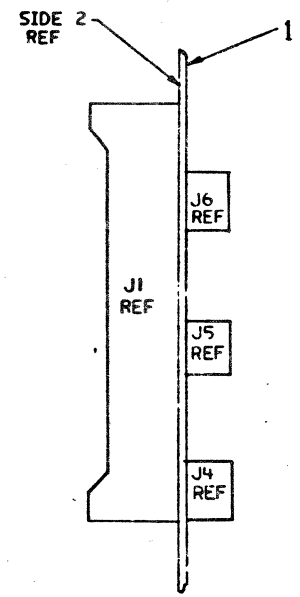
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SEE NOTE 1



VIEW A-A  
SCALE-NONE  
SEE NOTE 1

- NOTES:
- J1, J2 & J3 TO BE MOUNTED ON SIDE 2 AS SHOWN IN VIEW A-A
  - MUST MEET UL RATING 94V0
  - ALLOW .120" PROTRUSION OF CONNECTOR PINS ON SIDE 2.

CHG	NO	REV	DATE	BY	CHK'D

STEP	E	Y	AXIS	STEP	TIMES
REPER*			X <td></td> <td></td>		

ETCH REV. 0-0
---------------

SIGNATURES	DATE	TITLE
DRN: <i>[Signature]</i>	2/2/81	digital
CHK'D: <i>[Signature]</i>	2/2/81	
RECH. ENG. <i>[Signature]</i>	2/2/81	COMBO
PROJ. ENG. <i>[Signature]</i>	2/2/81	DISTRIBUTION PANEL
PROD.		
SCALE 2/1		SIZE CODE NUMBER
SHT. 1 OF 1		0 U A 5414459-0-0 B
NEXT HIGHER ASSY. 8-00-5414459-0		

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
1	1		5014458-00	DRILL & ETCH	1	
			1211164-06	SW,DIP 10POS/1PST 5VDC100MA F	3	S1-S3
			1215341-00	PCB,HEADER 40PIN(2X20).100CC STR	3	J1-J3
			1216296-00	CONN,D SUB 37PIN ASSY STRAIGHT P	2	J13,J14
			1217536-01	CONN,D SUB 25PIN ASSY STRAIGHT P	9	J4-J12
			1300228-00	100.0 50 W 5.0 % CC	1	R1
			9009185-00	JUMPER, WIRE, INSULATED. BLACK B	2	W1,W2

REVISION HISTORY		BASIC PART NO: 5014458		DRN: T WALSH		DATE: 31-AUG-81		D I G I T A L	
ENG:	ECO NUMBER	REV	SECTION A OF A	CHK'D: E.T.GERRY		DATE: 31-AUG-81		TITLE PARTS LIST	
	INITIAL	A	SECTION VARIATION INDEX	DES.ENG: MATT BENSON		DATE: 25-FEB-82		COMBO DISTRIBUTION PANEL	
			[A] 00	RESP.ENG.: MATT BENSON		DATE:		DOCUMENT NUMBER	
			[B]	MFG.ENG.: P ANDERSON		DATE: 25-FEB-82		K PL 5414459-0-DBP A	
			[C]	ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME: 23914A.PLS	
			[D]	D-UA-5414459-0-0				EDIT # 4	
			[E]	"THIS DRAWING AND SPECIFICATIONS HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT (C) 1982. DIGITAL EQUIPMENT CORPORATION"					
			[F]						
			[H]						
			[J]						
			[N]						

D

D

C

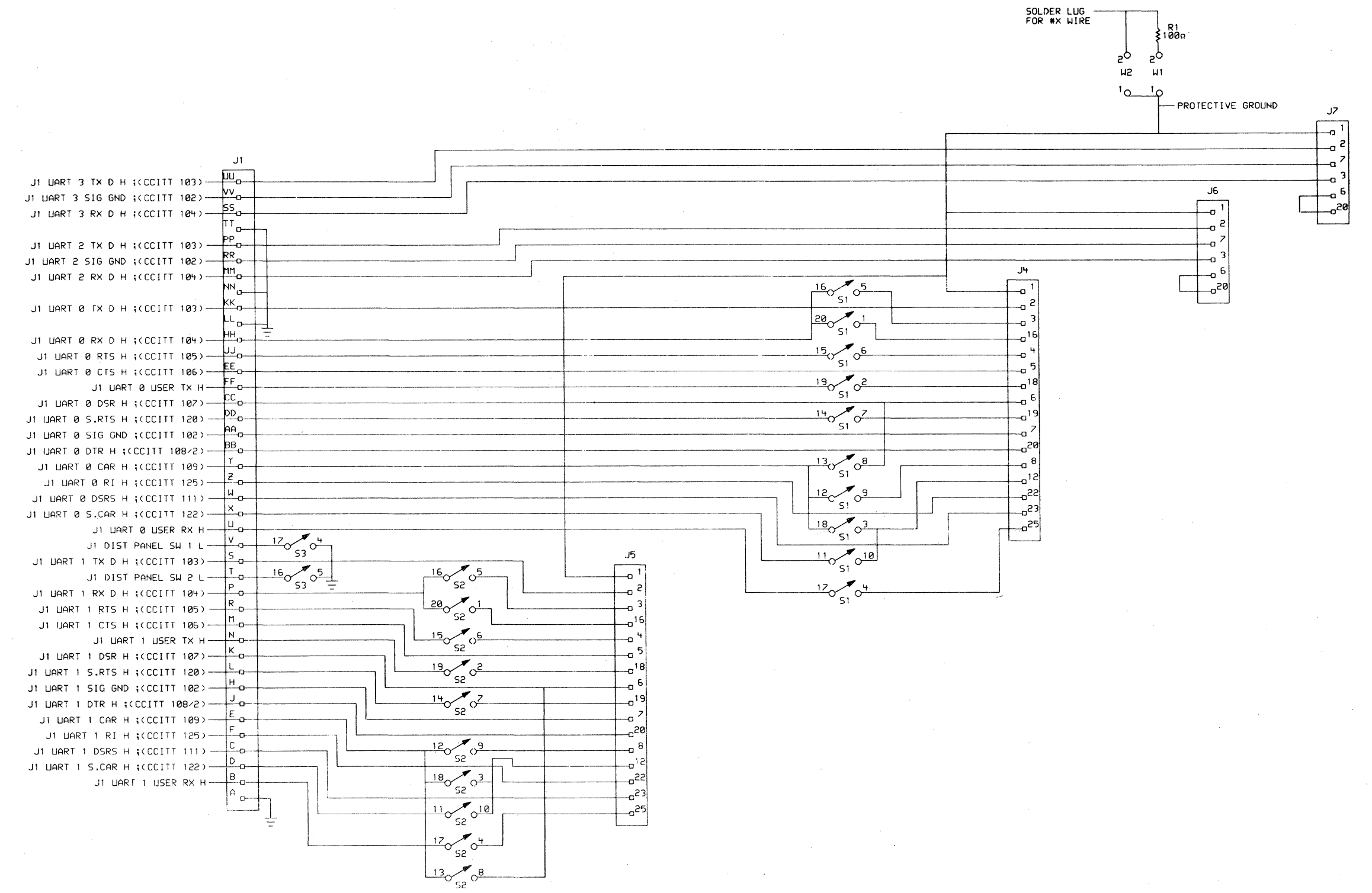
C

B

B

A

A



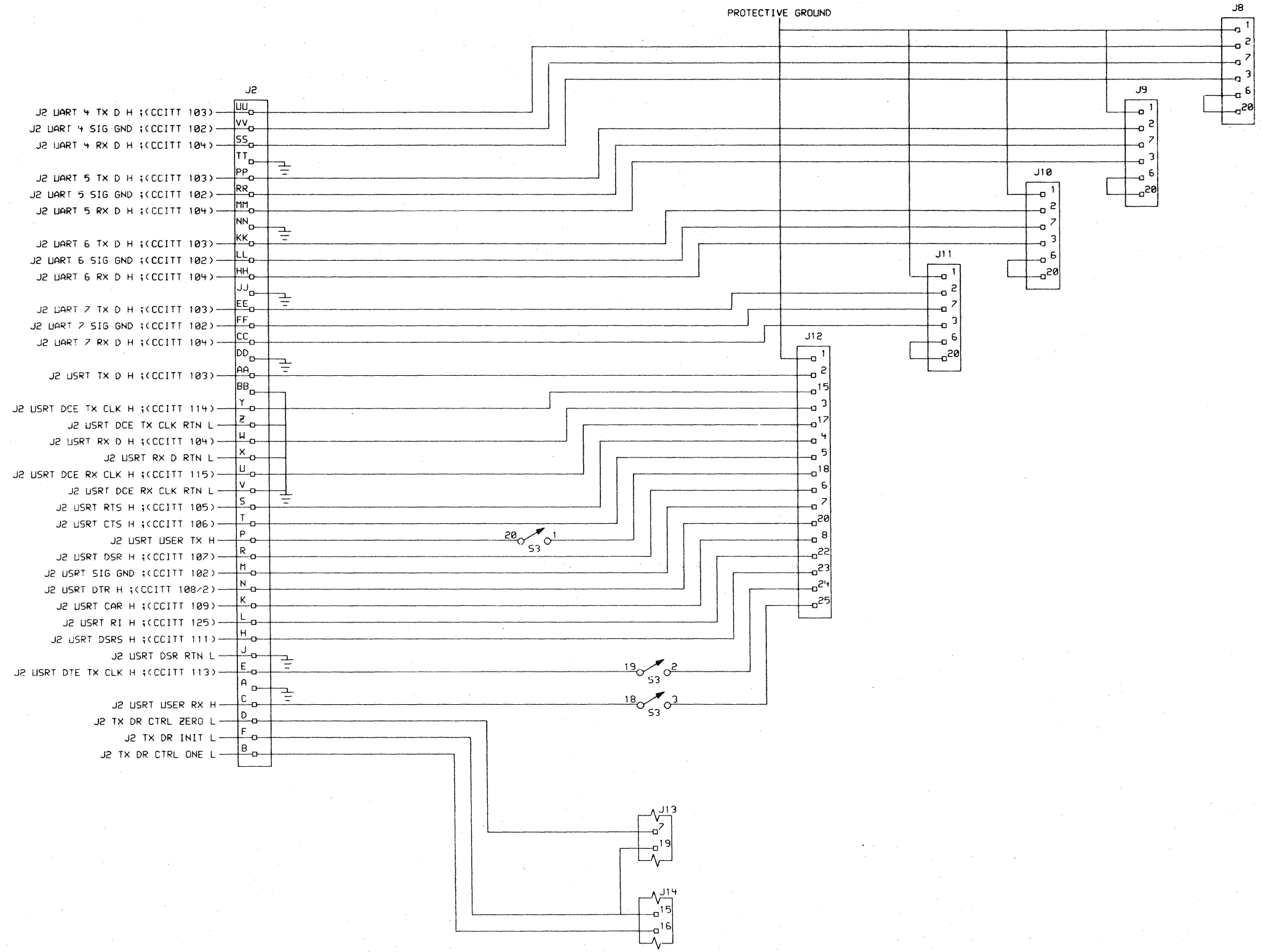
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REVISIONS		
CHK	CHANGE NO.	REV.

digital	DRN <i>D. M. Hoffer</i>	DATE 13-MAR-82	ENG. D. CARLSON	DATE 13-MAR-82	TITLE: COMBO DISTRIBUTION MODULE (CDMA)
	CHK'D.	DATE	BOARD LOCATION: SHEET 1 OF 3		
FIRST USED ON OPTION/MODEL: 11/730					SIZE CODE D CS
					NUMBER 54-14459-0-1
					REV. A

D  
 C  
 B  
 A

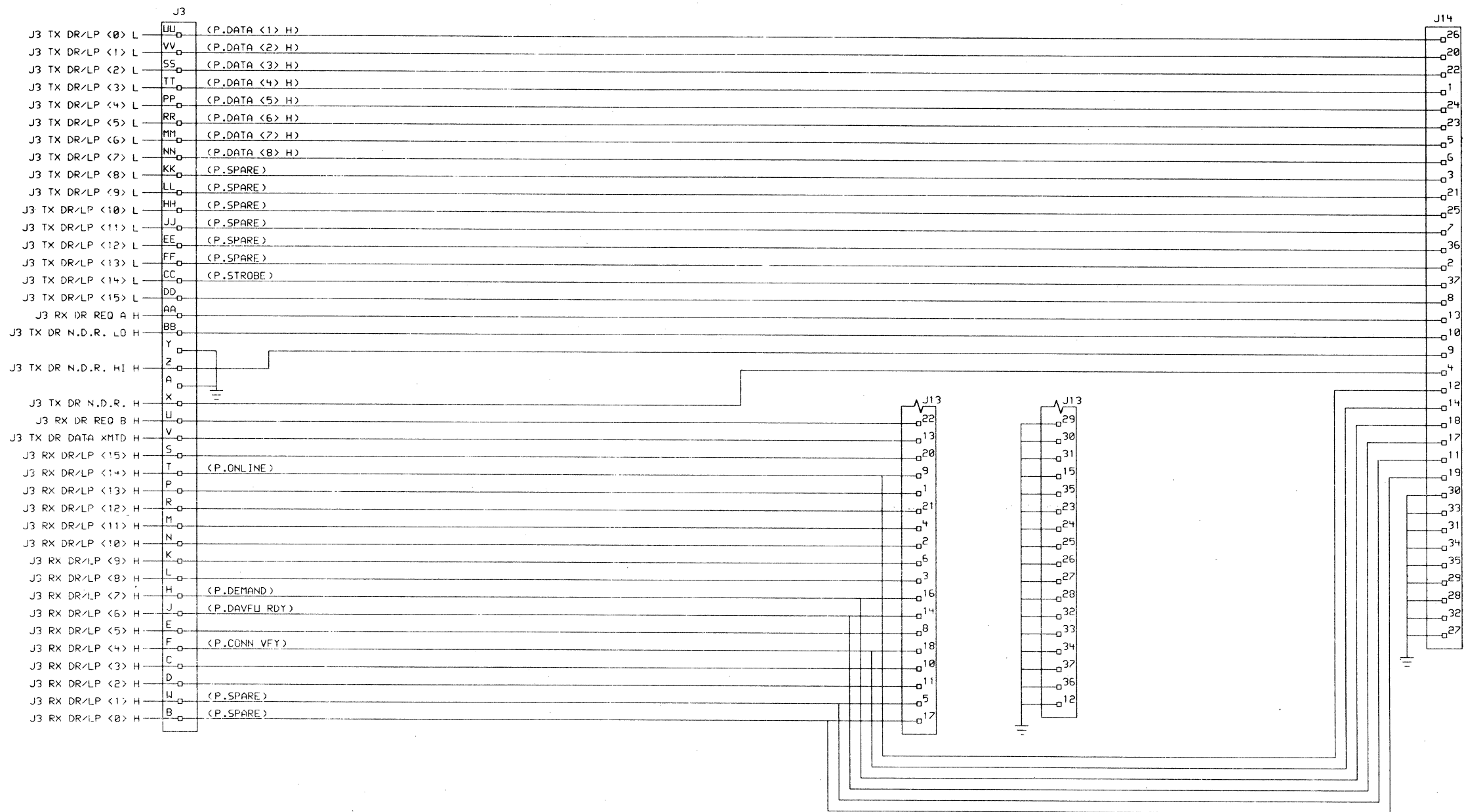
D  
 C  
 B  
 A



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REVISIONS	
CHK	CHANGE NO. REV

digital	DRN	DATE	ENG.	DATE	TITLE
	CHK'D.	13-MAR-82	D. CARLSON	13-MAR-82	COMBO DISTRIBUTION MODULE (CDBM)
[ 367,1500 ] CDBM.DRW		13-MAR-82 18:10	NEXT HIGHER ASSEMBLY:		SIZE CODE
FIRST USED ON OPTION/MODEL: 11/730		SHEET 2 OF 3		D CS	NUMBER 54-14459-0-1
					REV. A



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REVISIONS		
CHK	CHANGE NO.	REV

**digital**  
 [367,1500]CDMC.DRW 113-MAR-82 18:11  
 FIRST USED ON OPTION MODEL: 117730

DRN: *D.M. Hoffer*  
 CHK'D.  
 DATE: 13-MAR-82

ENG: D. CARLSON  
 DATE: 13-MAR-82  
 BOARD LOCATION: SHEET 3 OF 3  
 NEXT HIGHER ASSEMBLY:

TITLE: COMBO DISTRIBUTION MODULE (CDMC)  
 SIZE CODE: D CS  
 NUMBER: 54-14459-0-1  
 REV: A



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**WIRE TABLE**

FROM	TO	FROM	TO
P1-1	P2-1	P1-21	P2-21
P1-2	P2-2	P1-22	P2-22
P1-3	P2-3	P1-23	P2-23
P1-4	P2-4	P1-24	P2-24
P1-5	P2-5	P1-25	P2-25
P1-6	P2-6	P1-26	P2-26
P1-7	P2-7	P1-27	P2-27
P1-8	P2-8	P1-28	P2-28
P1-9	P2-9	P1-29	P2-29
P1-10	P2-10	P1-30	P2-30
P1-11	P2-11	P1-31	P2-31
P1-12	P2-12	P1-32	P2-32
P1-13	P2-13	P1-33	P2-33
P1-14	P2-14	P1-34	P2-34
P1-15	P2-15	P1-35	P2-35
P1-16	P2-16	P1-36	P2-36
P1-17	P2-17	P1-37	P2-37
P1-18	P2-18	P1-38	P2-38
P1-19	P2-19	P1-39	P2-39
P1-20	P2-20	P1-40	P2-40

**LEGEND**

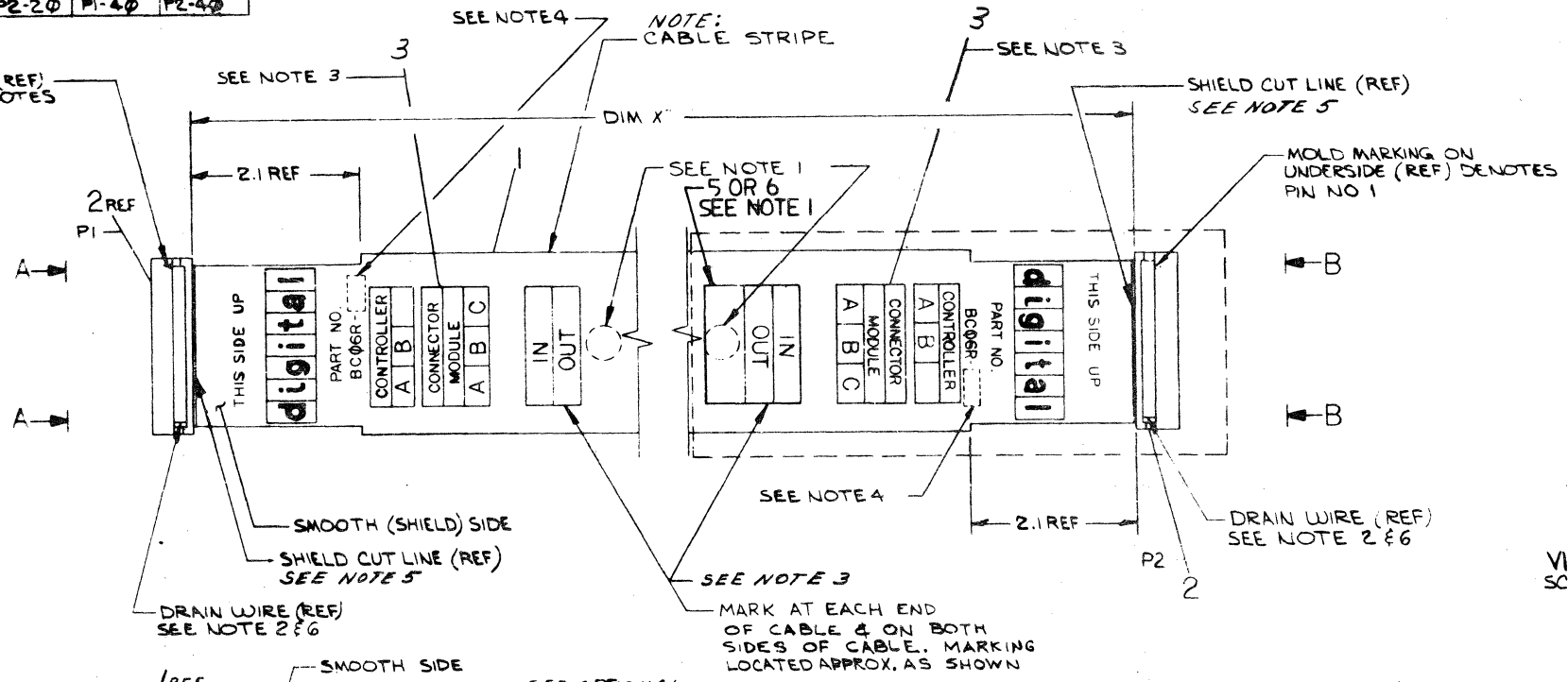
NUMBER	DIM X"	PRECUT LENGTH	REMARKS
BCØGR-Ø1	1 FT	1 FT 1.5 IN ± 1 IN	SEE PRE-CUT VIEW C-C
BCØGR-Ø2	2 FT	2 FT 1.5 IN ± 1 IN	
BCØGR-Ø3	3 FT	3 FT 1.5 IN ± 1 IN	
BCØGR-Ø4	4 FT	4 FT 1.5 IN ± 1 IN	
BCØGR-Ø5	4 FT 6 IN	4 FT 7.5 IN ± 1.5 IN	SEE NOTE 7
BCØGR-Ø6	6 FT	6 FT 1.5 IN ± 2 IN	
BCØGR-Ø8	8 FT	8 FT 1.5 IN ± 2 IN	
BCØGR-10	10 FT	10 FT 1.5 IN ± 2 IN	
BCØGR-12	12 FT	12 FT 1.5 IN ± 3 IN	
BCØGR-20	20 FT	20 FT 1.5 IN ± 3 IN	
BCØGR-25	25 FT	25 FT 1.5 IN ± 3 IN	
BCØGR-30	30 FT	30 FT 1.5 IN ± 6 IN	
BCØGR-50	50 FT	50 FT 1.5 IN ± 10 FT	
BCØGR-60	60 FT	60 FT 1.5 IN ± 12 FT	
BCØGR-75	75 FT	75 FT 1.5 IN ± 15 FT	
BCØGR-AØ	100 FT	100 FT 1.5 IN ± 2 FT	
BCØGR-Ø7	7 FT	7 FT 1.5 IN ± 2 IN	
BCØGR-ØF	8 FT 6 IN	8 FT 7.5 IN ± 1 IN	SEE PRE-CUT VIEW C-C
BCØGR-15	15 FT	15 FT 1.5 IN ± 3 IN	

**NOTES:**

- LABEL (ITEMS 5 OR 6 CAN BE USED) TO CONTAIN:  
PART NO.  
REV.  
DATE (OF BUILD)  
MFG (STAMP) TEST (STAMP)  
INSP (STAMP)  
AFFIX LABEL AROUND CABLE IN APPROX CENTER.
- DRAIN WIRE CONNECTS TO PIN NO 40.
- RUBBER STAMP INFORMATION SHOWN USING INK (ITEM 3) & ARTWORK DEC NO A-DC-7411699-0-0.
- STAMP APPLICABLE OPTION DASH NO. ACCORDING TO LENGTH.
- REMOVE SHIELD .75 FROM END OF PRECUT CABLE (SEE VIEW C-C).
- COVER EXPOSED DRAIN WIRE WITH ITEM 4 PRIOR TO ASSY (BOTH ENDS).
- FOR RPØ4, RPØ5, RPØ6 USE WRAP AROUND VINYL LABEL. SEE VARIATIONS ON DRAWING NUMBER A-PS-3615389-0-0 ALSO SEE NEXT HIGHER ASSEMBLY E-IA-7009807-0-0 AND E-IA-7009808-0-0.

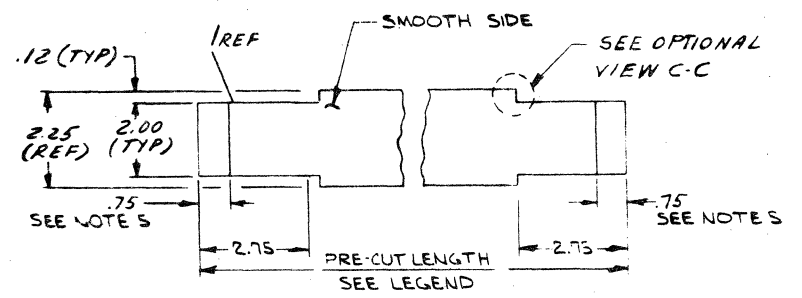
MOLD MARKING REF ON TOP SIDE DENOTES PIN NO 1

2	1
4	3
6	5
8	7
10	9
12	11
14	13
16	15
18	17
20	19
22	21
24	23
26	25
28	27
30	29
32	31
34	33
36	35
38	37
40	39

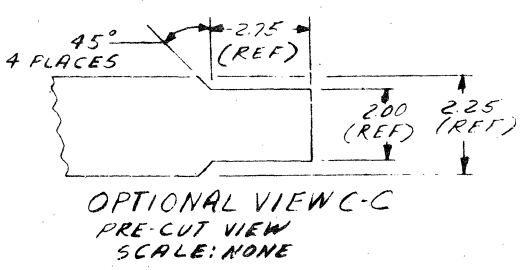


VIEW A-A  
CONN LEGEND REF  
SCALE: 2/1

VIEW B-B  
SCALE: 2/1



VIEW C-C  
PRE-CUT VIEW  
SCALE: NONE



OPTIONAL VIEW C-C  
PRE-CUT VIEW  
SCALE: NONE

(CX ONLY) SEE NOTE 1  
SEE NOTE 1

QTY	DESCRIPTION	PART NO	ITEM NO
1	LABEL I.D.	3616989-0-0	6
1	LABEL I.D.	3616073-0-0	5
A/R	PLASTIC TAPE	3612511-0	4
A/R	INK	4901150	3
2	CONNECTOR, 40 SOCKET	1211206	2
A/R	CABLE, 40 COND FLAT W/SHIELD	17-00034	1

REV	CHANGE NO	DATE	BY	CHK	DESCRIPTION
1	A	4/1/75	W. DUNHAM	W. DUNHAM	REVISED FOR RPØ4
2	B	4-7-75	W. DUNHAM	W. DUNHAM	REVISED FOR RPØ5
3	C	6-17-75	W. DUNHAM	W. DUNHAM	REVISED FOR RPØ6
4	D	8-27-75	W. DUNHAM	W. DUNHAM	REVISED FOR RPØ7
5	E	10-27-75	W. DUNHAM	W. DUNHAM	REVISED FOR RPØ8
6	F	12-27-75	W. DUNHAM	W. DUNHAM	REVISED FOR RPØ9

FIRST USED ON OPTION/MODEL <b>RPØ4</b>	QTY	DESCRIPTION	PART NO	ITEM NO
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN <i>W. Dunham</i>	DATE 12-22-75	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ANGLES	DATE 12-22-75	TITLE <b>BCØGR I/O CABLE</b>	
XXX - 006 XX - 02 X - 1	± 0° 30'	DATE 12-22-75	REV. <b>F</b>	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 12-22-75	NEXT HIGHER ASSY. E-IA-7009807-0-0 E-IA-7009808-0-0		
MATERIAL <b>SEE PARTS LIST</b>	SCALE NONE	SIZE CODE <b>DUA</b>	NUMBER <b>BCØGR-Ø-Ø</b>	REV. <b>F</b>
FINISH	SHEET 1 OF 1	SHEET 1 OF 1		

DRAWING NO.	NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS																	
		H3248-00	DMF-32SL LOOP BACK	A	B																
D-UA-H3248-0-0	1		DMF-32SL LOOP BACK	A	B																
D-CS-H3248-0-0	1		DMF-32SL LOOP BACK	A	A																
K-PL-H3248-0-DBP1			DMF-32SL LOOP BACK	A	B																
K-PC-H3248-0-DBG			P.C. DESIGN DATABASE	A	A																
		5015167-00	P.C. BOARD	A	B																
D-MD-5015167-0-0	3		DRILL & ETCH DRAWINGS	A	B																
D-EC-5015167-0-0	2		ETCH CUT DRAWING	A	B																

**NOTES:**

REV. B
CHG NO. TW001
DATE 7/82

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USED ON OPTION/MODEL	DMF-32	DRN	Thomas F. Wald	11-11-81	TITLE	DMF-32SL LOOP BACK MODULE		
		CHK'D	Thomas F. Wald	11-11-81	SIZE	CODE	NUMBER	REV.
		ENC		11-11-81	B	DD	H3248 - 0-0	B
		PROB	J.D. Anderson	1/29/82	SHEET	1	OF 1	

TW

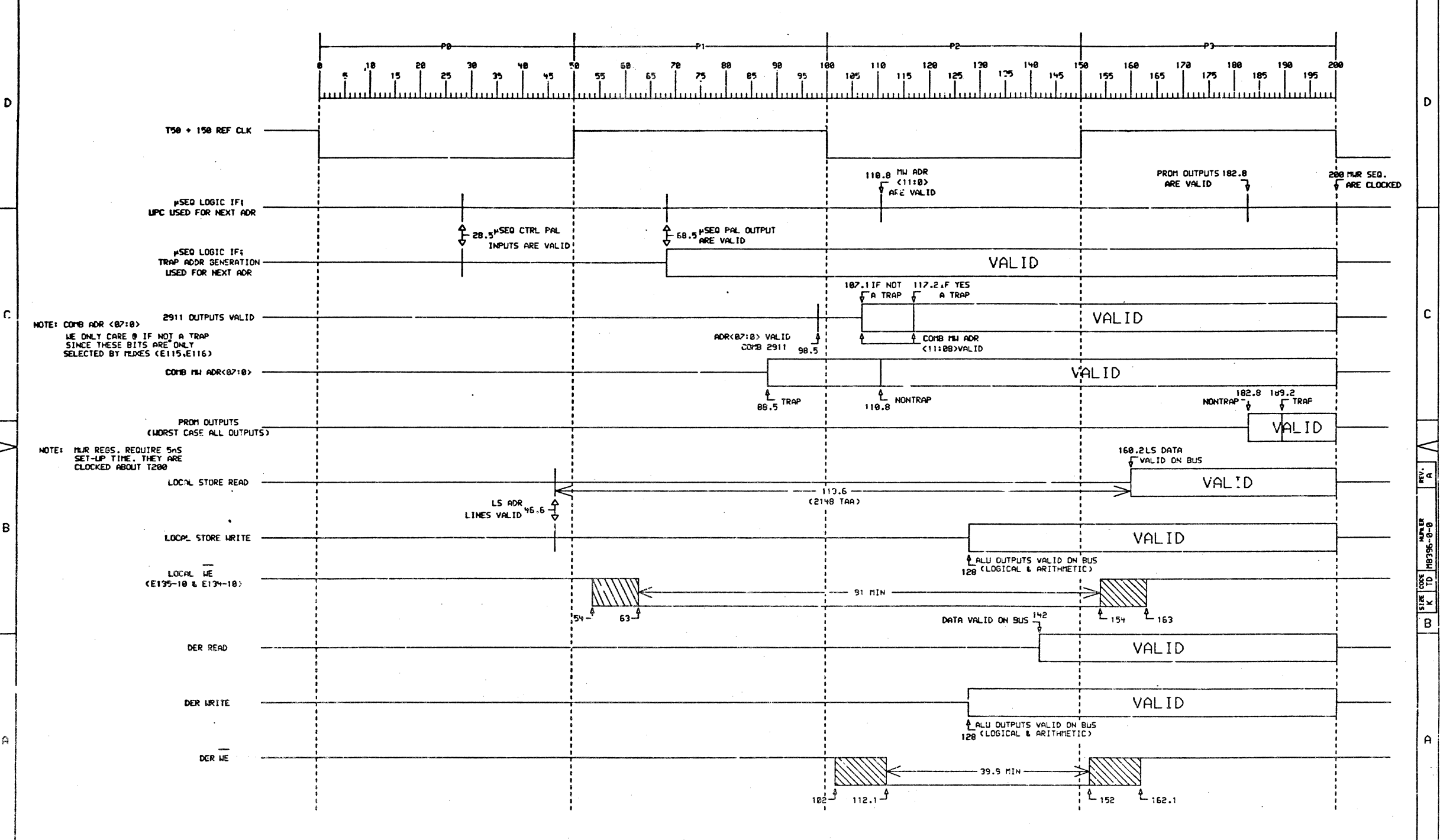


LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION
1	1	5015167-00	CIRCUIT DRILL & ETCH	1
2	2	1216296-02	CONN,D SUB 25SKT ASSY STRAIGHT P	1
3	3	BLANK	*** THIS ITEM IS NOT USED ***	-

REVISION HISTORY		BASIC PART NO: 5415168		DRN: B. WALDIE	DATE: 9-OCT-81	D I G I T A L			
ENG	ECO NUMBER	REV	SECTION A OF A	CHK'D: F. GAROFALO	DATE: 13-OCT-81	TITLE		PARTS LIST	
MB	H3248-TW001	B	[A] 00	DES.ENG.: M. BENSON	DATE: 13-OCT-81	DMF-32SL LOOP BACK			
			[B]	RESP.ENG.: M. BENSON	DATE: 13-OCT-81	DOCUMENT NUMBER			
			[C]	MFG.ENG.: P. ANDERSON	DATE: 13-OCT-81	SIZE	CODE	NUMBER	REV
			[D]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	K	PL	H3248-0-DBP	B
			[E]	D-UA-H3248-0-0				FILE NAME:	EDIT #
			[F]					Z3026B.PLS	1

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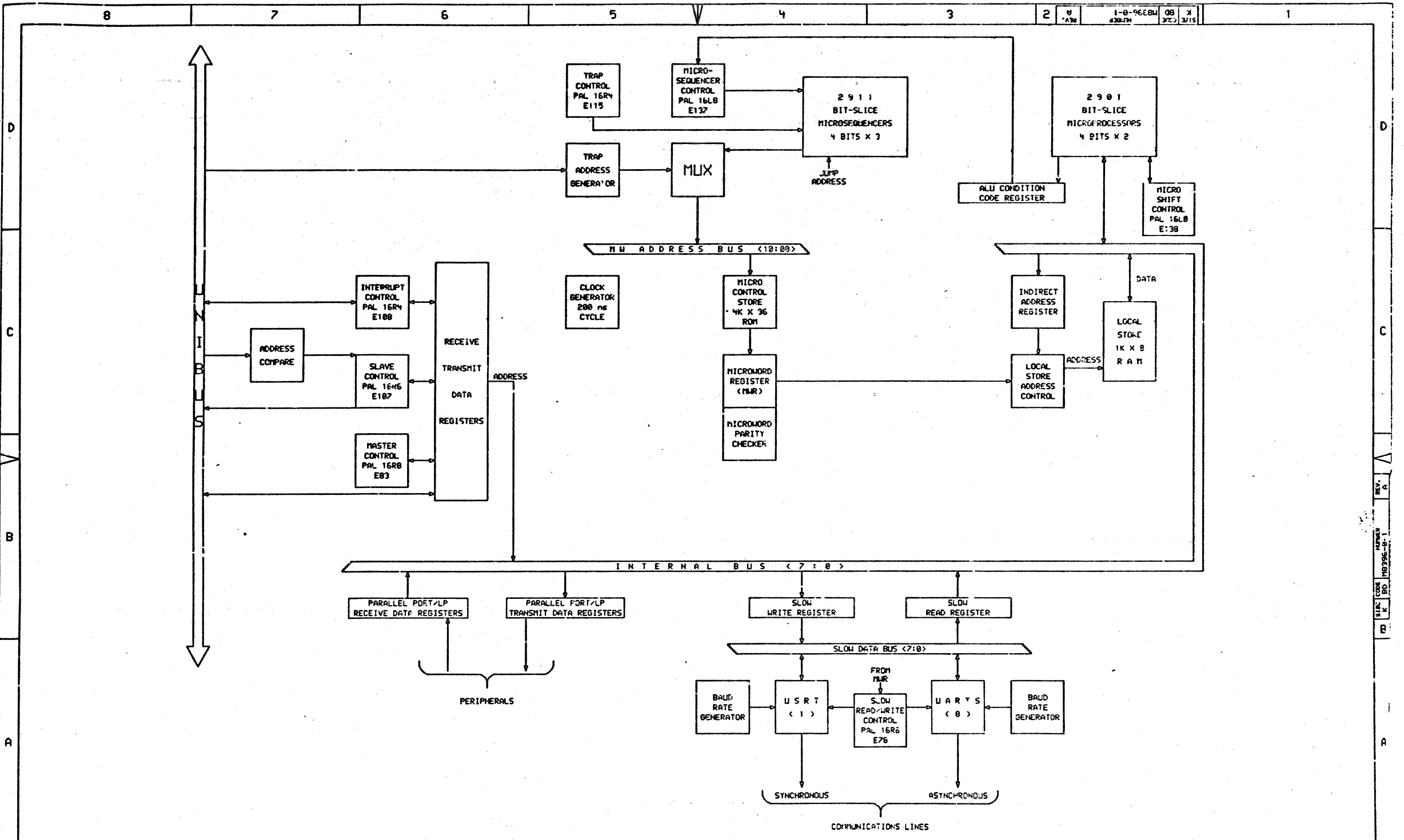




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REVISIONS	
CHK	CHANGE NO. REV.

<b>digital</b>	DRN. G.M. HAFNER	DATE 15-FEB-83	ENG.	DATE	TITLE: DMF32
	CHK'D.	DATE	BOARD LOCATION:	SHEET 1 OF 1	TIMING DIAGRAM
SCOP: HAFNER, NEBLA, SCOTTD, DRW 15-JUL-82 10:20		NEXT HIGHER ASSEMBLY:		SIZE CODE K TD	NUMBER M8396-0-0
FIRST USED ON OPTION-MODEL: 117730				REV. A	



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REVISIONS		
CHK	CHANGE NO.	REV

DRN. G.M. HAFNER	DATE 24-FEB-83	ENG.	DATE 24-FEB-83	TITLE: DMF32 COM1 OPTION BLOCK DIAGRAM
CHK'D.	DATE	BOARD LOCATION:	SHEET	
OSKDI (201,788) COMBLK.DRW (23-FEB-83 10:21)	NEXT HIGHER ASSEMBLY:	SIZE: CODE	NUMBER	REV. A
FIRST USED ON OPTION/MODEL: DMF32	B-DD-18395-0-0	K	BD M8395-0-1	

8	7	6	5	4	3	2	1
---	---	---	---	---	---	---	---

REV. A  
 NAME  
 M8395-0-1  
 BD  
 K  
 BD

PART NUMBER: 23-039K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #1D-C5-M8396-0-COMB

LOCATION/DESCRIPTION: E115/TRAP CONTROL FSM  
 ASSIGNED PIN NUMBER:

- 1= T135-130
- 2= MUR<24>
- 3= MUR<25>
- 4= TRAP.REQ
- 5= MUR<5>
- 6= MUR<6>
- 7= S.STEP.CLK
- 8= RX.CLK
- 9= /PON
- 10= GND
- 11= GND
- 12= /TRAP
- 13= PL
- 14= S0
- 15= NC
- 16= NC
- 17= NC
- 18= MUR<7>
- 19= USRT.RX.CLK
- 20= VCC

EQUATIONS:

```

/S0:=
MUR<25>#MUR<7>#MUR<6>#MUR<5>#S0# /PON
MUR<25>#MUR<7>#MUR<6>#MUR<5>#TRAP.REQ#S0# /PON
MUR<24>#MUR<7>#MUR<6>#MUR<5>#TRAP.REQ#S0# /PON
MUR<7>#TRAP.REQ#S0# /PON
MUR<6>#TRAP.REQ#S0# /PON
MUR<5>#TRAP.REQ#S0# /PON

IF[VCC] TRAP:=
MUR<25>#MUR<7>#MUR<6>#MUR<5>#TRAP.REQ#S0# /PON
MUR<24>#MUR<7>#MUR<6>#MUR<5>#TRAP.REQ#S0# /PON
MUR<7>#TRAP.REQ#S0# /PON
MUR<6>#TRAP.REQ#S0# /PON
MUR<5>#TRAP.REQ#S0# /PON

IF[VCC] /USRT.RX.CLK:=
/RX.CLK#S.STEP.CLK
/RX.CLK#S.STEP.CLK
    
```

PART NUMBER: 23-059K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #1D-C5-M8396-0-COMB

LOCATION/DESCRIPTION: E108/INTERRUPT CONTROL FSM  
 ASSIGNED PIN NUMBER:

- 1= T45.0R.135
- 2= RX.ADR<17>
- 3= INT.MST
- 4= RX.SSTN
- 5= RX.ADR<16>
- 6= BR.STRT
- 7= RX.ADR<15>
- 8= RX.ADR<14>
- 9= RX.ADR<13>
- 10= GND
- 11= GND
- 12= VAL.ID.COMP
- 13= SICK
- 14= INT.REQ
- 15= TX.INTR
- 16= EN.VEC
- 17= S0
- 18= PL
- 19= VAL.ADR
- 20= VCC

EQUATIONS:

```

/TX.INTR:=
/TX.INTR#INT.REQ#S0# /PL
/EN.VEC#INT.REQ#S0# /PL
/TX.INTR#EN.VEC#INT.REQ# /PL
/BR.STRT# /PL
/SICK# /PL
/PX.SSTN# /PL

/EN.VEC:=
/TX.INTR#EN.VEC#INT.REQ#BR.STRT#SICK# /PL
/EN.VEC#INT.REQ#S0#RX.SSTN#BR.STRT#SICK# /PL
/TX.INTR#INT.REQ#S0#INT.MST#BR.STRT#SICK# /PL
/INT.MST# /PL

/INT.REQ:=
/TX.INTR#EN.VEC#INT.REQ#BR.STRT#SICK# /PL
/TX.INTR#INT.REQ#S0#BR.STRT#SICK# /PL
/TX.INTR#EN.VEC#S0#BR.STRT#SICK# /PL
/EN.VEC#INT.REQ#S0#BR.STRT#SICK# /PL
/RX.ADR<16># /PL

/S0:=
/TX.INTR#EN.VEC#INT.REQ#S0#BR.STRT#SICK# /PL
/TX.INTR#EN.VEC#INT.REQ#S0#BR.STRT#SICK# /PL
/TX.INTR#EN.VEC#INT.REQ#S0#BR.STRT#SICK# /PL
/RX.ADR<17># /PL

IF[VCC] /VAL.ID.COMP:=
RX.ADR<17>#RX.ADR<16>#RX.ADR<15>#RX.ADR<14>
/RX.ADR<13>#VAL.ID.COMP
    
```

23-039K3-00  
 23-059K3-00

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REVISIONS	
CHK	CHANGE NO. REV.

	DRN. <i>M.Hofner</i>	DATE 30-DEC-82	ENG.	DATE	TITLE: COMM OPTION ROM AND PAL LISTINGS
	CHK'D.	DATE	BOARD LOCATION: SHEET 1 OF 3		
DSK:SLCMB1.TRP[4,32] 30-DEC-82 11:12 NEXT HIGHER ASSEMBLY:		SIZE CODE K GL	NUMBER MC396-0-0	REV. A	
FIRST USED ON OPTION/MODEL: DMF 32		B-DD-M8396-0-0			

REV. A  
 NUMBER 23-039K3-00  
 CODE GL  
 SIZE K  
 B  
 A



PART NUMBER: 23-018K4-00  
 DEVICE TYPE: PAL16R6  
 SCHEMATIC SHEET #1D-CS-18396-0-COMC  
 LOCATION/DESCRIPTION: E107/SLAVE I/O FSM  
 ASSIGNED PIN NUMBER:

- 1= TYS.OR.135
- 2= VAL.ADR
- 3= RX.HSYN
- 4= RX.C1
- 5= TRAP.ACK
- 6= PL
- 7= PON
- 8= RX.SSYN
- 9= TX.HSYN
- 10= GND
- 11= GND
- 12= NC
- 13= S0
- 14= EN.DAT

EQUATIONS:

TX.SSYN= /TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#RX.HSYN#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#TRAP.ACK#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#RX.C1#PL  
 PON#PL  
 VAL.ADR#PL

TRAP.REQ= /TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#VAL.ADR#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#RX.HSYN#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#RX.HSYN#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#PL  
 RX.C1#PL

EN.DAT= /TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#TRAP.ACK#RX.C1#PON#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S0#PON#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#RX.HSYN#PL  
 VAL.ADR#PL

S0= /TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#TRAP.ACK#RX.C1#PON#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#RX.HSYN#PL  
 RX.SSYN#PL

S1= /TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#PON#PL  
 TX.SSYN#TRAP.REQ#EN.DAT#S1#S0#PON#PL  
 TRAP.ACK#PL

IF[VCC] /STC.REG.CLK= /TX.HSYN  
 RX.SSYN  
 RX.C1

PART NUMBER: 23-028K4-00  
 DEVICE TYPE: PAL16R6  
 SCHEMATIC SHEET #1D-CS-18396-0-COMJ  
 LOCATION/DESCRIPTION: E78/SLOW R/H CONTROL FSM  
 ASSIGNED PIN NUMBER:

- 1= T90-135
- 2= STC.SOU
- 3= LS.ADR<4>
- 4= BRG.L.K
- 5= NR<22>
- 6= LS.ADR<5>
- 7= RX.STC
- 8= DER
- 9= PON
- 10= GND
- 11= GND
- 12= PL
- 13= ADR.DAT.REG.CLK
- 14= S0
- 15= B.CS
- 16= A.CS
- 17= S.CS
- 18= SLO.RD.REG.CLK
- 19= STC
- 20= VCC

EQUATIONS:

SLO.RD.REG.CLK= /SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PON#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PON#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PON#PL  
 STC.SOU#PL

ADR.DAT.REG.CLK= /SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#NR<22>#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#DER#PL  
 PON#PL  
 RX.STC#PL

S.CS= /SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0  
 LS.ADR<5>#LS.ADR<4>#PON#PL  
 ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PON#PL  
 LS.ADR<4>#PL

A.CS= /ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PON#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0  
 LS.ADR<5>#PC#PL  
 DER#PL

B.CS= /ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0#PON#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#S0  
 LS.ADR<5>#LS.ADR<4>#PON#PL  
 NR<22>#PL

S0= /SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#PON#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#PON#PL  
 SLO.RD.REG.CLK#ADR.DAT.REG.CLK#S.CS#A.CS#B.CS#PON#PL  
 LS.ADR<5>#PL

IF[VCC] /STC= /STC.SOU#RX.STC

PART NUMBER: 23-007K5-00  
 DEVICE TYPE: PAL16R8  
 SCHEMATIC SHEET #1D-CS-18396-0-COMC  
 LOCATION/DESCRIPTION: E83/MASTER CONTROL FSM  
 ASSIGNED PIN NUMBER:

- 1= TYS.OR.135
- 2= RX.SSYN
- 3= DMA.HST
- 4= N.C.
- 5= C1
- 6= TX.C0
- 7= NPR.STRT
- 8= SICK
- 9= PL
- 10= GND
- 11= GND
- 12= S1
- 13= S0
- 14= MST.RLJ
- 15= TX.HSYN
- 16= EN.DAT
- 17= S2
- 18= TX.C1
- 19= EN.AD
- 20= VCC

EQUATIONS:

EN.ADI= /TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#NPR.STRT#SICK  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#TX.C0#NPR.STRT#SICK  
 EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#DMA.HST#NPR.STRT#SICK  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#NPR.STRT#SICK  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#NPR.STRT#SICK  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S0#NPR.STRT#SICK  
 TX.C1#EN.AD#EN.DAT#MST.REQ#S2#S1#S0#NPR.STRT#SICK

EN.DAT= /TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#TX.C0  
 RX.SSYN#NPR.STRT#SICK#PL  
 EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#DMA.HST#C1#NPR.STRT#SICK#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#NPR.STRT#SICK#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S0#DMA.HST#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#RX.SSYN#NPR.STRT#SICK#PL  
 C1#PL

MST.REQ= /TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#TX.C0#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#PL  
 EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#DMA.HST#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#PL  
 NPR.STRT#PL  
 SICK#PL  
 NPR.STRT#PL

TX.HSYN= /TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#NPR.STRT#SICK#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#NPR.STRT#SICK#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#RX.SSYN#NPR.STRT#SICK#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#RX.SSYN#NPR.STRT#SICK#PL  
 TX.C0#PL

S2= /TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#TX.C0#RX.SSYN#PL  
 EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#DMA.HST#PL  
 NPR.STRT#PL  
 SICK#PL  
 TX.C1#PL

S1= /TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#NPR.STRT#SICK#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#NPR.STRT#SICK#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#RX.SSYN#NPR.STRT#SICK#PL  
 RX.SSYN#PL

S0= /EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#DMA.HST#PL  
 TX.C1#EN.AD#MST.REQ#TX.HSYN#S2#S1#S0#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#RX.SSYN#PL  
 NPR.STRT#PL  
 SICK

TX.C1= /TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#S2#S1#S0#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#TX.C0#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#TX.C0#RX.SSYN#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#PL  
 TX.C1#EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#PL  
 EN.AD#EN.DAT#MST.REQ#TX.HSYN#S2#S1#S0#DMA.HST#C1#PL  
 DMA.HST#PL

23-018K4-00  
 23-028K4-00  
 23-007K5-00

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REVISIONS	
CHK	CHANGE NO. REV.

digital	DRN	DATE	ENG.	DATE	TITLE:
	CHK'D	30-DEC-82			COMM OPTION ROM AND PAL LISTINGS
DSK:GLCH02.12P(4,32)		DATE	BOARD LOCATION:	SIZE	CODE
FIRST USED ON OPTION MODEL: DMF 32		30-DEC-82 11:09	SHEET 2 OF 3	K	GL
B-DD-18396-0-0		NEXT HIGHER ASSEMBLY:	NUMBER	REV.	
			M8396-0-0	A	

PART NUMBER: 23-053J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #10-CS-18396-0-L0MB

LOCATION/DESCRIPTION: E137/MICRO-SEQUENCE CONTROL  
ASSIGNED PIN NUMBER:

- 1= TMR<0>
- 2= TMR<1>
- 3= TMR<2>
- 4= TMR<5>
- 5= TMR<6>
- 6= TMR<7>
- 7= REG.ALU.N
- 8= REG.ALU.Z
- 9= REG.ALU.C
- 10= GND
- 11= ALX.ALU.Z
- 12= S1
- 13= DAT.CB
- 14= I.PUP
- 15= NC
- 16= NC
- 17= FE
- 18= PUP
- 19= S0
- 20= VCC

EQUATIONS:

```

IF[VCC] /S0:=
  TMR<7>
  +TMR<6>
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#REG.ALU.N
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#REG.ALU.Z
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#ALX.ALU.Z
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#REG.ALU.C
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#DAT.CB

IF[VCC] /S1:=
  TMR<2>#TMR<7>
  +TMR<2>#TMR<6>
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#REG.ALU.N
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#REG.ALU.Z
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#ALX.ALU.Z
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#REG.ALU.C
  +TMR<2>#TMR<1>#TMR<0>#TMR<7>#TMR<6>#DAT.CB

IF[VCC] FE:=
  TMR<2>#TMR<7>#I.PUP
  +TMR<2>#TMR<6>#I.PUP
  +TMR<7>#TMR<6>#TMR<2>#TMR<1>#TMR<0>#I.PUP
  +TMR<7>#TMR<6>#TMR<2>#TMR<1>#TMR<0>#I.PUP

IF[VCC] /PUP:=
  TMR<2>#TMR<7>
  +TMR<2>#TMR<6>
  +TMR<7>#TMR<6>#TMR<2>#TMR<1>#TMR<0>

```

PART NUMBER: 23-054J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #10-CS-18396-0-C0MA

LOCATION/DESCRIPTION: E138/SHIFT CONTROL  
ASSIGNED PIN NUMBER:

- 1= TMR<0>
- 2= TMR<1>
- 3= TMR<33>
- 4= EN.SLAVE.DAT
- 5= EN.MST.DAT
- 6= EN.VEC
- 7= NC
- 8= NC
- 9= NC
- 10= GND
- 11= NC
- 12= TX.DAT.RD.ADR<1>
- 13= EN.BUS.DAT
- 14= NC
- 15= 0.LSB
- 16= 0.MSB
- 17= RAM.LSB
- 18= RAM.MSB
- 19= TX.DAT.RD.ADR<0>
- 20= VCC

EQUATIONS:

```

IF[ TMR<33> ] /RAM.MSB:=
  TMR<33>#TMR<1>
  +TMR<1>#TMR<0>#RAM.LSB
  +TMR<1>#TMR<0>#0.LSB

IF[ TMR<33> ] /RAM.LSB:=
  TMR<1>#TMR<0>
  +TMR<0>#0.MSB
  +TMR<1>#TMR<0>#RAM.MSB

IF[ TMR<33> ] /0.MSB:=
  TMR<1>#TMR<0>
  +TMR<0>#RAM.LSB
  +TMR<1>#TMR<0>#0.LSB

IF[ TMR<33> ] /0.LSB:=
  TMR<1>
  +TMR<1>#TMR<0>#0.MSB
  +TMR<1>#TMR<0>#RAM.MSB

IF[VCC] /TX.DAT.RD.ADR<0>:=
  EN.SLAVE.DAT#EN.MST.DAT#EN.VEC
  +EN.SLAVE.DAT#EN.MST.DAT#EN.VEC

IF[VCC] /TX.DAT.RD.ADR<1>:=
  EN.SLAVE.DAT#EN.MST.DAT#EN.VEC
  +EN.SLAVE.DAT#EN.MST.DAT#EN.VEC

IF[VCC] EN.BUS.DAT:=
  EN.SLAVE.DAT#EN.MST.DAT#EN.VEC
  +EN.SLAVE.DAT#EN.MST.DAT#EN.VEC
  +EN.SLAVE.DAT#EN.MST.DAT#EN.VEC

```

23-053J5-00  
23-054J5-00

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REVISIONS		
CHK	CHANGE NO.	REV

digital CHK'D.	DRN D.H.Hofman	DATE 30-DEC-82	ENG.	DATE	TITLE: COMM OPTION ROM AND PAL LISTINGS
	DATE	BOARD LOCATION: SHEET 3 OF 3	SIZE CODE K GL	NUMBER M8396-0-0	REV. A
FIRST USED ON OPTION/MODEL: DMF 32		NEXT HIGHER ASSEMBLY: B-DD-M8396-0-0			

REV. A  
NUMBER  
M8396-0-0  
SIZE CODE  
K GL