FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
NIA20-AA
NIA20-AB

FIELD MAINTENANCE PRINT SET

DIGITAL EQUIPMENT CORPORATION

PRINT SET PART NUMBER MP01984-01

REVISION HISTORY	REV.	ECO NUMBER	DATE

DRN. M. JOSEPH	DATE 4 DEC 84	TITLE: NIA20-A TABLE OF CONTENTS
CHK'D JOE DONAHER	DATE 10 DEC 84	
DES. ENG. PAT CAPPABIANCA	DATE 10 DEC 84	
RESP. ENG. JOHN TIUNAN	DATE 10 DEC 84	
FIELD SERVICE BOB BRANDIMARTE	DATE 10 DEC 84	
TOP DOC. B-DD-NIA20-A-DBU		

digital

SIZE	CODE	NUMBER	REV.
B	TC	NIA20-A-DBU	A

SHEET 1 OF 2

MRO

A-PS-9107673-0-0	POWER CORD EXT. 60HZ	
D-AD-7011432-0-0	POWER CORD EXT. 50HZ	
D-IA-7021448-0-DBU	HARNESS DC VOLTAGE MON.	SECT. #1
K-PL-7021448-0-DBP	HARNESS DC VOLTAGE MON.	SECT. #1
D-IA-7020352-0-0	HARNESS DC VOLTAGE MON.	SECT. #2
K-PL-7020352-0-DBP	HARNESS DC VOLTAGE MON.	SECT. #2
D-IA-7019862-0-0	HARNESS VANE SWITCH	
K-PL-7019862-0-DBP	HARNESS VANE SWITCH	
B-DD-5414506-0 (COMPLETE)	VOLTAGE MONITOR BOARD	
D-IA-7019270-0-0	CABLE M-BUS	
K-PL-7019270-0-DBP	CABLE M-BUS	
D-IA-7020488-0-0	HARNESS, SHORT VANE SWITCH	
K-PL-7020488-0-DBP	HARNESS, SHORT VANE SWITCH	
B-DD-5414793-0 (COMPLETE)	BACKPANEL CI20	
D-DD-5415695-0 (COMPLETE)	CURRENT LIMITER	
K-PL-NIA20-A-SH	NIA20-A SHIPLIST	

TITLE: NIA20-A TABLE OF CONTENTS	SHEET 2 OF 2	SIZE B	CODE TC	NUMBER NIA20-A-DBU	REV. A

MRO

A-PS-9107673-0-0	POWER CORD EXT. 60HZ	
D-AD-7011432-0-0	POWER CORD EXT. 50HZ	
D-IA-7021448-0-DBU	HARNESS DC VOLTAGE MON.	SECT. #1
K-PL-7021448-0-DBP	HARNESS DC VOLTAGE MON.	SECT. #1
D-IA-7020352-0-0	HARNESS DC VOLTAGE MON.	SECT. #2
K-PL-7020352-0-DBP	HARNESS DC VOLTAGE MON.	SECT. #2
D-IA-7019862-0-0	HARNESS VANE SWITCH	
K-PL-7019862-0-DBP	HARNESS VANE SWITCH	
B-DD-5414506-0 (COMPLETE)	VOLTAGE MONITOR BOARD	
D-IA-7019270-0-0	CABLE M-BUS	
K-PL-7019270-0-DBP	CABLE M-BUS	
D-IA-7020488-0-0	HARNESS, SHORT VANE SWITCH	
K-PL-7020488-0-DBP	HARNESS, SHORT VANE SWITCH	
B-DD-5414793-0 (COMPLETE)	BACKPANEL CI20	
D-DD-5415695-0 (COMPLETE)	CURRENT LIMITER	
K-PL-NIA20-A-SH	NIA20-A SHIPLIST	

TITLE: NIA20-A TABLE OF CONTENTS	SHEET 2 OF 2	SIZE B	CODE TC	NUMBER NIA20-A-DBU	REV. A

MRO

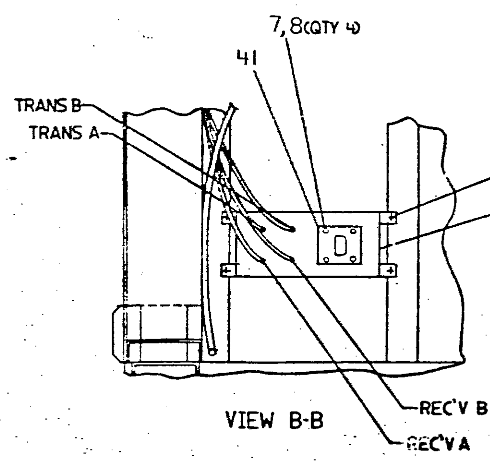
LEGEND

PART NO.	VARIATION	REV
NIA20-AA	115V 50/60HZ	A2
NIA20-AB	230V 50/60HZ	A2

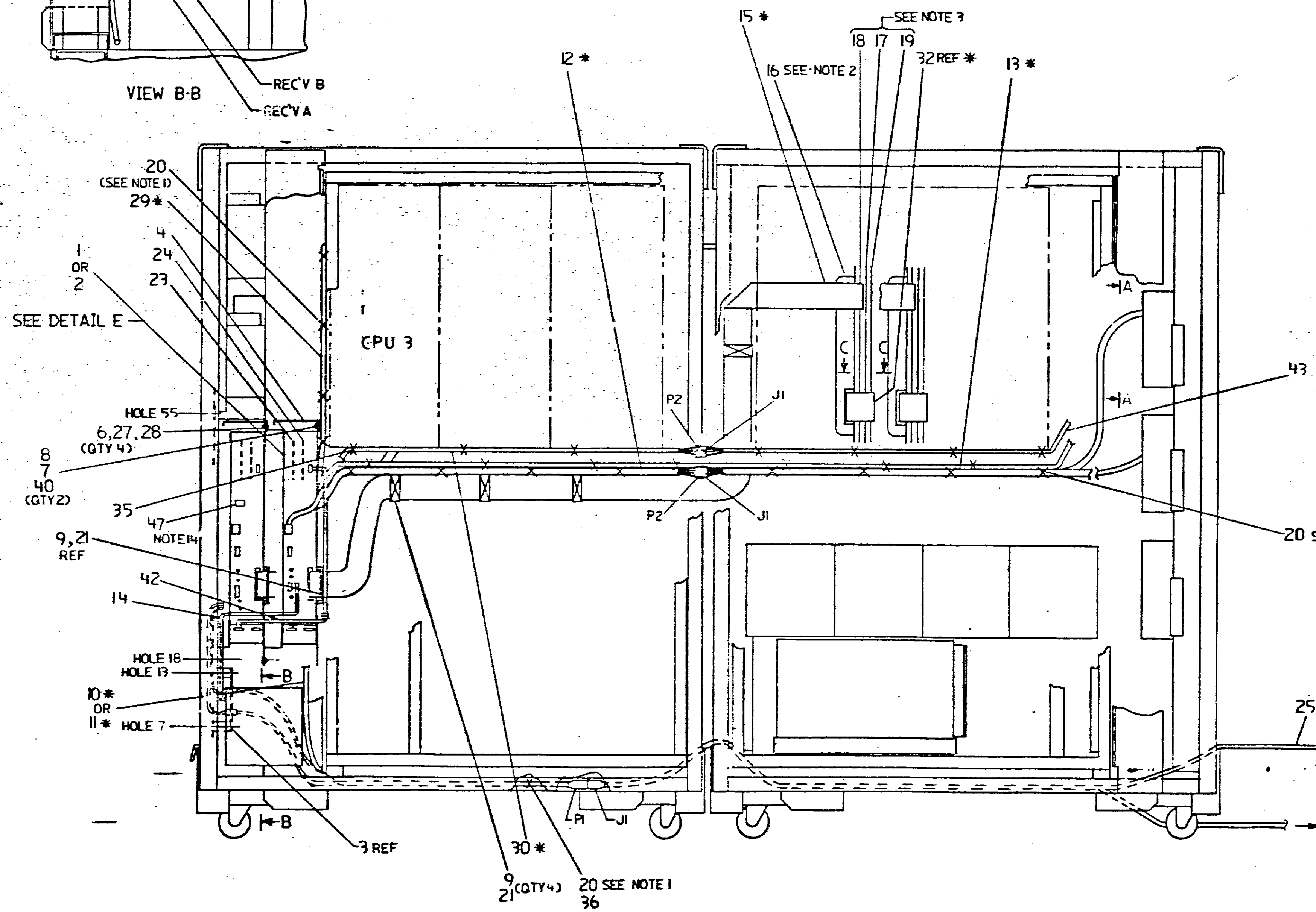
NOTES: * FOR ALL HARNESS AND CABLE CONNECTIONS SEE HARNESS OR CABLE CHARTS ON SHEET 3.

1. ATTACH CABLE TIES(ITEM 20) APPOX. 8" APART EXCEPT WHERE SHOWN.
2. ITEM *16 OCCUPIES SLOTS 22, 23 & 24.
3. MODULE M 3001 ITEM *19 IS LOCATED IN RH20 LOGIC ASSY SLOT *19
   MODULE M 3002 ITEM *17 IS LOCATED IN SLOT * 20
   MODULE M 3003 ITEM *18 IS LOCATED IN SLOT * 21
4. PLACE ITEM *37 (DECAL, AIR FLOW) ON POWER CONTROLLER * 863 NEXT TO AIR FLOW CPU L.E.D.
5. CONNECT TO ANY AVAILABLE SWITCHED OUTLET.
6. CONNECT POINTS 11 & 12 FROM ITEM *3, 9 PIN MATE-N-LOCK, TO AVAILABLE POSITION 1&2, OR 3&4, OR 5&6, OR 7&8 (19-30 VAC).
7. P2 ON ITEM *30 (HARNESS, VANE SWITCH) CONNECTS WITH EXISTING VANE SWITCH CONNECTOR. SEE VIEW D-D ON SHEET 2 OF 3. NOT USED WHEN CI20 IS INSTALLED.
8. J1 ON ITEM *30 (HARNESS, VANE SWITCH) CONNECTS WITH EXISTING CONNECTOR P4. SEE VIEW D-D ON SHEET 2 OF 3.
9. ITEM *39 (SUPPORT, CABLE) NOT USED IF SYSTEM IS EQUIPPED WITH A MA20 CORE MEMORY.
10. SWITCH POSITIONS ON VOLTAGE MONITOR BOARD: SWITCH *1 - ON
    SWITCH *2 - OFF
    SWITCH *3 - OFF
    SWITCH *4 - OFF

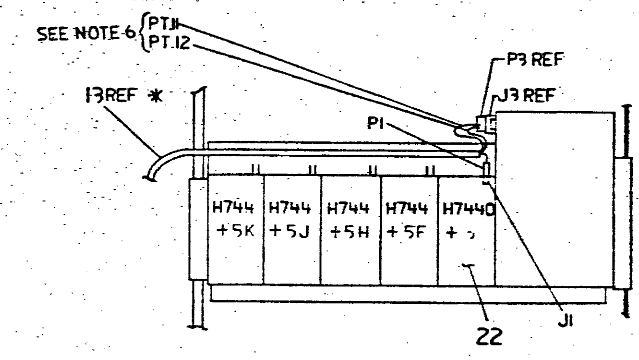
NOTES CONTINUED ON SHEET 2



VIEW B-B



CPU CAB — KL10-E REAR VIEW — I/O CAB



VIEW A-A
SHOWING P.S. H7420
WITH DC+5V CONNECTION

CAUTION: OFF SHEET PARTS LIST SEE K-PL-NIA20-A-DBP. (Z7838A)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

THIRD ANGLE PROJECTION — DO NOT SCALE DRAWING — REMOVE BURRS AND BREAK SHARP CORNERS — MATERIAL: SEE PARTS LIST

TITLE: NIA20 ASSY

digital

DOCUMENT NUMBER: E UA NIA20-A-0

B-DD-NIA20-A

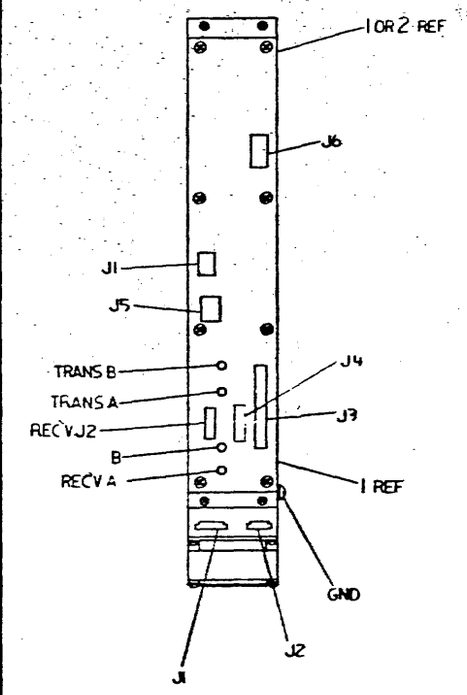
REVISION HISTORY: A RELEASED; B NIA20-MR(01) — J. TIVNAN

NOTES: CONTINUED FROM SHEET 1

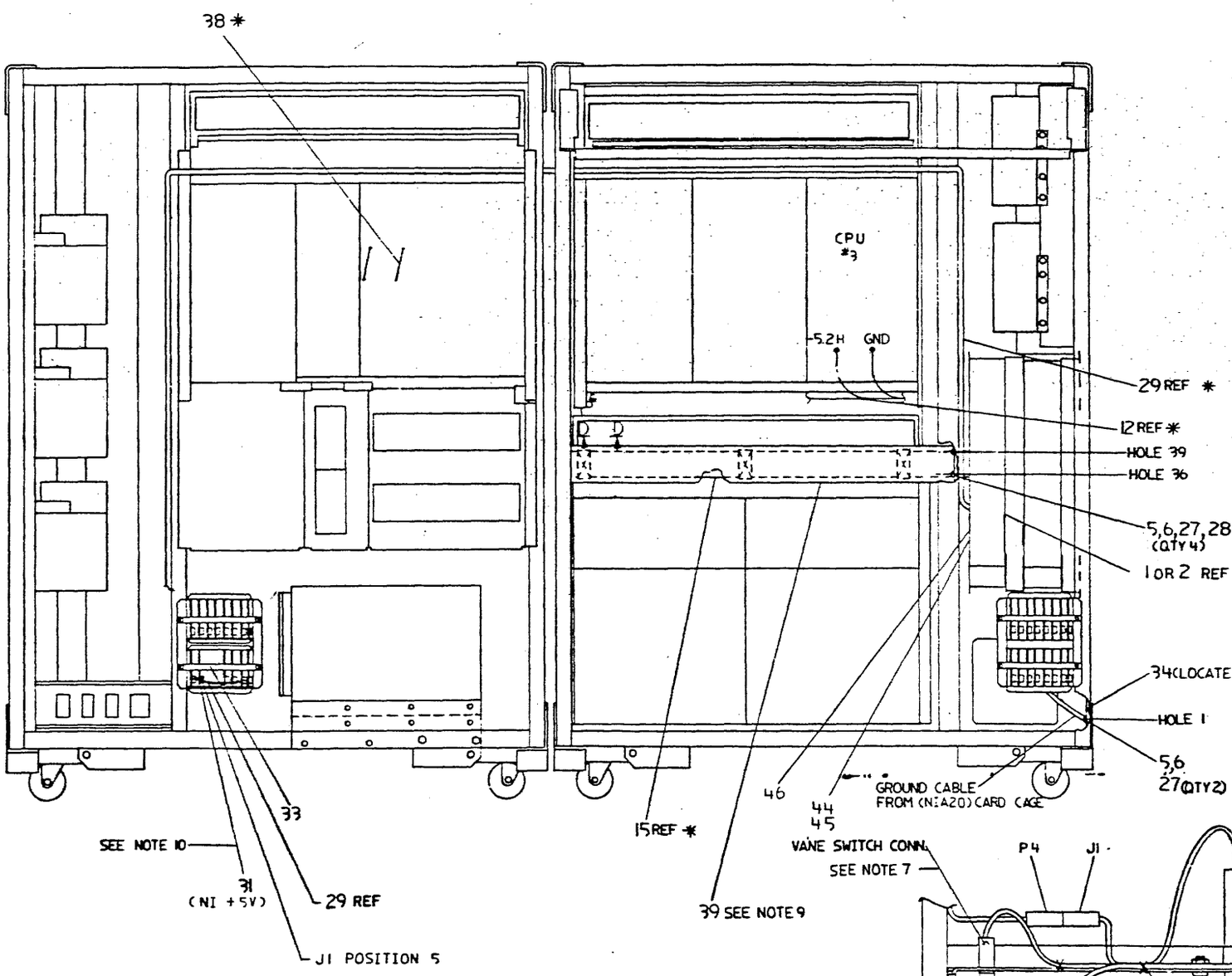
11. ITEMS NOT NEEDED WHEN 'CI' KIT IS INSTALLED

ITEMS	QTY	PART NO.
5	8	9007786-00
6	8	9006073-01
27	8	9007651-00
28	8	9006668-00
3	1	7428312-01
30	1	7019862-00

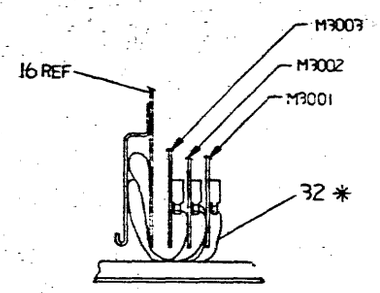
12. REMOVE CABLE FROM 'CI20' CARDCAGE IN J6 POSITION AND PLUG INTO J6 ON 'NIA20' CARDCAGE.
13. ITEM #42 ONLY USED WHEN CI20 AND NIA20 ARE INSTALLED TOGETHER.
14. PLACE ITEM #47 OVER LABEL INSIDE OF CARD CAGE DOOR.



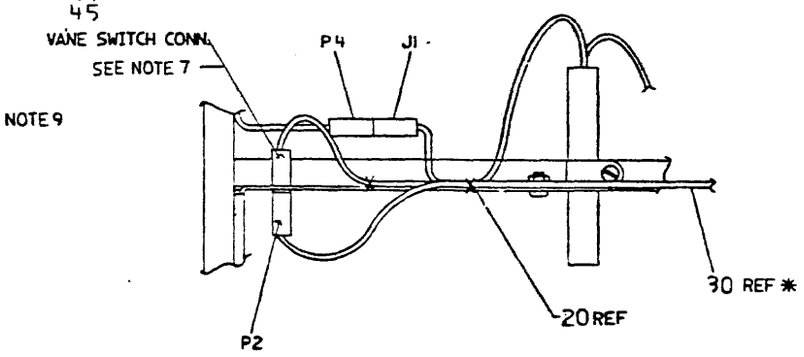
DETAIL E



FRONT VIEW



VIEW C-C
SHOWING CABLE BUS M
INTERBOARD CONNECTION



VIEW D-D

REVISION HISTORY		
DATE	ECO NUMBER	REV

TITLE: NIA20 ASSY

DOCUMENT NUMBER: E UA NIA20-A-0 B

SCALE

SHEET 2 OF 3

NIA20-A-0 B

ITEM NO.	FROM UNIT	FROM LOCATION	FROM REF DESIG	TO UNIT	TO LOCATION	TO REF DESIG	REMARKS
10 OR 11	CARD CAGE	GND	GND	25 OR 26	J1	P1	
	FAN BRKT	J2	P2				
14	CARD CAGE	J4	P1	41		P2	
25/26	ITEM 10 OR 11	P1	J1	R61 PC	SEE NOTE 5	P1	
1/2	CARD CAGE	GND	——	CAB RAIL	HOLE #1	——	
15	C120 BP	J3	P1 STRIPE DOWN	RH20 DTE COM3003-J2		P2 STRIPE UP	
32	M3003	J1	P3	M3002	J1	P2	
	M3002	J1	P1				
38	RH20 BP	B1ON1	——	RH20 BP	B13B1	——	
		B13B1	——		B1DE	——	
		C1 L2	——		B13B2	——	
		B13E2	——		B19B2	——	
		C10K2	——		B13U1	——	
		B13U1	——		B19U1	——	
		C10T2	——		C13B1	——	
		C13B1	——		C19B1	——	
		C12H2	——		C13N1	——	
		C8N1	——		C19N1	——	
		C12L1	——		C13E2	——	
		C13B2	——		C19E2	——	
		C14H2	——		A15R2	——	
		C14F1	——		F15A1	——	
		A14J2	——		A15E1	——	
		C14P1	——		A15D2	——	
		C14K2	——		A15S2	——	
		B14C1	——		B15A1	——	
		C20H2	——		A21R2	——	
		C2CF1	——		F21A1	——	
		A20J2	——		A21E1	——	
		C20P1	——		A21D2	——	
		C20K2	——		A21S2	——	
	RH20 BP	B20J1	——	RH20 BP	B21A1	——	

ITEM NO.	HARNESS POINT	ITEM CONNECTION	CONNECTION	WITH	REMARKS
12	——	P1	NIA20 BP J2	——	——
	——	P3	NIA20 BP J1	——	
	5	——	CPU 3 BP GND	——	——
	6	——	CPU 3 BP -5.2H	——	——
	——	P2	SECTION-2 J1	——	ITEM #13
13	——	P1	H7440 J1	——	SEE VIEW A-A
	11	——	SEE NOTE 6	——	——
	12	——			
30	——	P1	FAN BRT J1	——	——
	——	P2	SEE NOTE 7	——	——
	——	J1	SEE NOTE 8	——	——
	——	P3	NIA20 BP J6	——	SEE NOTE 2
29	——	P2	NIA20 BP J5	——	——
	——	P1	J1 (ITEM 44)	——	
	6	——	+5V MON BD J1-5	——	SEE FRONT VIEW
42	P3	P1	C120 CABLE VANE SWITCH		
	P2		NIA20 FAN BRKT J1		
	P1		C120 FAN BRKT J1		
43	——	J1	PK (ITEM 29)		
	——	P1	MON BD J1	ITEM #31	

SEE NOTE 11

SEE NOTE 1

REVISION HISTORY

DATE	ECO NUMBER	REV.

TITLE

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
E	UA	NIA20-A-0	B

AUTOMATED BY PRTLST.40(50) P A R T S L I S T SHEET A1 OF A2

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION AA	AB
					VARIATION REVISION LEVEL:	A2	A2
1	1	E-AD-7019268-0-0	7019268-00		CARD CAGE ASSY IPA-20-L	1	-
2	2	E-AD-7019268-0-0	7019268-01		CARD CAGE ASSY CI20	-	1
3	3	D-IA-7428312-0-0	7428312-01	A	BRACKET,INTERFACE	1	1
4	4	C-IA-7428222-0-0	7428222-01		BAFFLE,AIR	1	1
5	5		9007786-00		RETAINER,U-NUT 10-32X	9	9
6	6		9006073-01		SCREW,MACH PAN PHIL 10-	13	13
7	7		9006022-01		SCREW,MACH PAN PHIL 6-	6	6
8	8		9006633-00		WASHER,LOCK INTERNAL STEEL	6	6
9	9		1213716-00		SPACER,FOAM POLYU 1/2	4	4
10	10	D-IA-7020539-0-0	7020539-06		CABLE,FAN AC	-	1
11	11	D-IA-7019274-0-0	7019274-06		CABLE,FAN AC	1	-
12	12	D-IA-7019272-0-0	7019272-00		HARNESS DC-5.2 SECT N1-1 DC+5	1	1
13	13	D-IA-7019273-0-0	7019273-00		HARNESS DC-5.2 SECT N1-2 DC+5	1	1
14	14	D-IA-7019893-0-0	7019893-3L		CABLE ASSY, ETHERNET	1	1
15	15		BC06R-08		BC06R I/O CABLE	1	1
16	16	D-AD-7019266-0-0	7019266-00		MODULE BLANK ASSY	1	1
17	17		M3002-00		CI20 MICROPROCESSOR,MULTIWIRE HE	1	1
18	18		M3003-00		CI20 C-BUS/PLI INTERFACE,MULTIWI	1	1
19	19		M3001-00		CI20 E-BUS INTERFACE,MULTIWIRE H	1	1
20	20		9007032-00		TIE,CABLE BUNDL.DIA 0-1-3/4"=101	A/R	A/R
21	21		1213715-00		CLIP,FLAT CABLE W/ADHESIVE BK	4	4
22	22		H7440-00		POA1 H7440	1	1
23	23		L0072-00		NI20 (KL10 TO NI ADAPTOR)	1	1
24	24	D-IA-7014103-0-0	7014103-00		BLANK MODULE ASSY	1	1
25	25		9107673-06		PWR CORD,TERM 3-14 SJT 115	1	-
26	26	D-AD-7011432-0-0	7011432-02		POW CORD EXTENSION 50HZ	-	1
27	27		9007651-00		WASHER,LOCK EXTERNAL STEEL	14	14
28	28		9006664-00		WASHER,FLAT SST	12	12
29	29	D-IA-7020352-0-0	7020352-00		HARNESS, D.C. VOLTAGE MONITOR	1	1
30	30	D-IA-7019862-0-0	7019862-00		HARNESS,VANE SWITCH	1	1

REVISION HISTORY

ENG	ECO NUMBER	REV
---	INITIAL	A
JT	NIA20-MR001	B

BASIC PART NO: NIA20

SECTION A OF A

SECTION.VARIATION INDEX
[A]AA,AB
[B]
[C]
[D]
[E]
[F]

DRN: P. DENNISON DATE: 8 SEP 83

CHK'D: JIM SICARD DATE: 14-APR-83

DES.ENG: P. CAPPABIANCA DATE: 25-APR-83

RESP.ENG.: P. CAPPABIANCA DATE: 25-APR-83

MFG.ENG.: S. ALMEIDA DATE: 15-APR-83

ASSEMBLY NUMBER: E-UA-NIA20-A-0

TOP DOCUMENT NUMBER: #B-DD-NIA20-A

D I G I T A L

TITLE PARTS LIST
NIA20 ASSY
(KL10-E)

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
K	PL	NIA20-A-DBP	B

RELEASE DATE: 16-AUG-85

FILE NAME: Z7838B.PLS

EDIT # 34

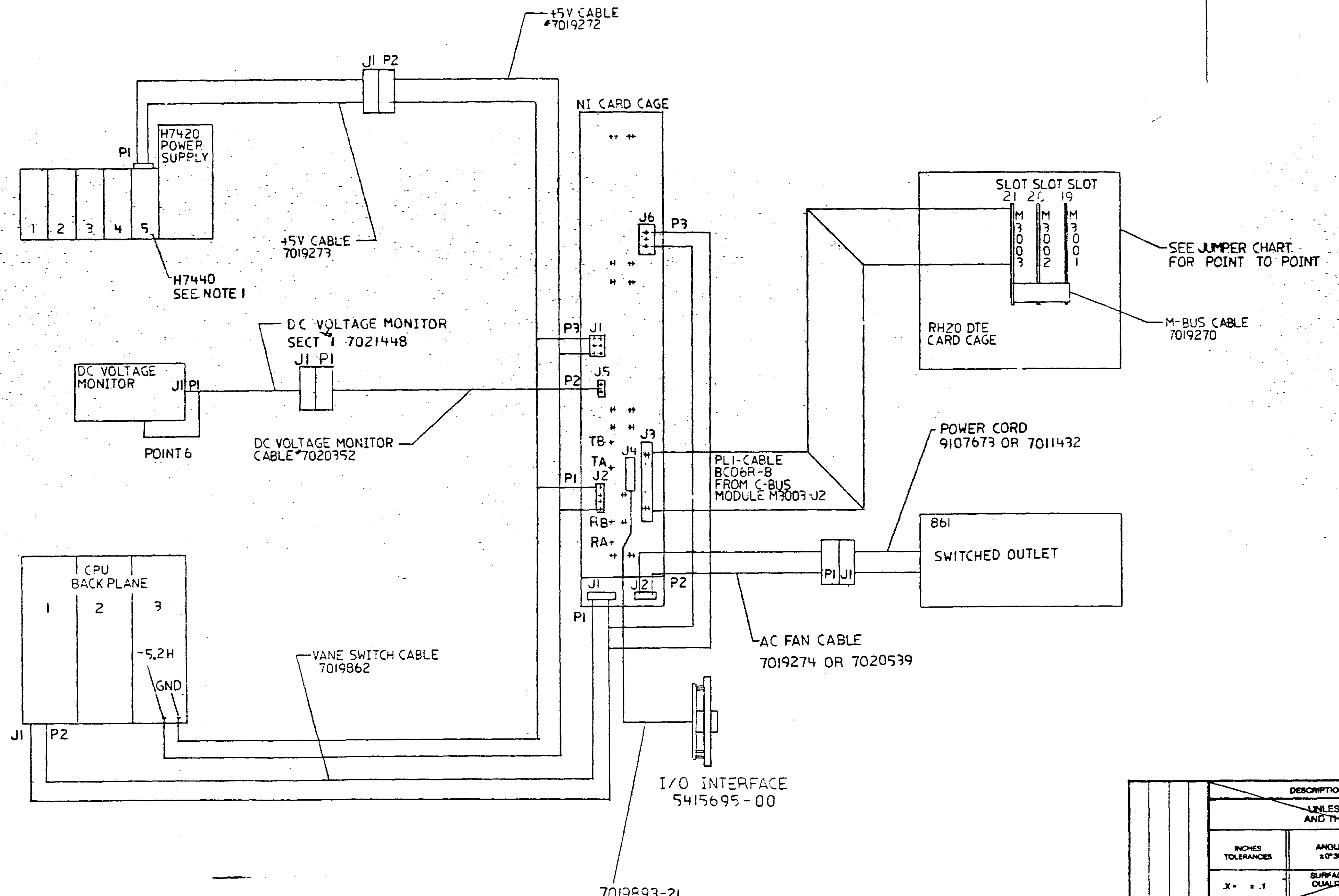
LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION AA	AB
					VARIATION REVISION LEVEL:	A2	A2
31	31	D-UA-5414506-0-0	5414506-01		VOLTAGE, MONITOR BOARD	1	1
32	32	D-IA-7019270-0-0	7019270-1J		BUS, CABLE, M ASSY.	1	1
33	33		3621499-01	A	LABEL,DCV MONITOR CI20	1	1
34	34		3613272-00		LABEL,ADH BACK,MYLAR CAP	1	1
35	35		9007031-00		TIE,CABLE BUNDL.DIA 0- 3/4"=101	36	36
36	36		9008264-00		MOUNT, CABLE TIE, ADHESIVE BACKE	A/R	A/R
37	37	SEE NOTE 4 ON UA	3621498-02	A	LABEL,AIRFLOW CPU/NI CT 20	1	1
38	38	SEE NOTE 1	9105740-55		WIRE(WRAP) 30AWG KYNAR UL14	A/R	A/R
39	39	D-IA-7428311-0-0	7428311-01		SUPPORT,CABLE	1	1
40	40		9006659-00	A	WASHER,FLAT S/PAS	2	2
41	41		5415695-01		CURRENT LIMITER	1	1
42	42	D-IA-7020488-0-0	7020488-00		CABLE, SHORT SWITCH VANE	1	1
43	43	D-IA-7021448-0-0	7021448-5C		CABLE DC VOLTAGE MONITOR SECT. 1	1	1
44	44		3617674-00		LABEL,SERIAL/POWER W/O UL + CSA	-	1
45	45		3617674-01		LABEL,SERIAL/POWER W UL & CSA	1	-
46	46		3617880-09		LABEL,CLASS "A" SUBASSEMBLY	1	-
47	47		3621501-02		LABEL,MODULE LOCATION,NI20	1	1

48 NOTE: 12 FEET REQUIRED

DIGITAL	TITLE: NIA20 ASSY (KL10-E)	SECTION A OF A	SIZE: K / CODE: PL / DOCUMENT NUMBER: NIA20-A-DBP	REV: B

NOTES:

1. CONNECT 2 POSITION CONNECTOR P1 TO H7440-J1 CONNECT POINTS 11&12 TO H7420, 9PIN MAT-IN LOK, TO AVAILABLE POSITION 1&2 3&4 5&6 OR 7&8. (19-30 VAC)



JUMPER CHART			
FROM		TO	
UNIT	LOCATION	UNIT	LOCATION
RH20BP	B10N1	RH20BP	B13B1
↑	B13B1	↑	B19B1
	C10L2		B13B2
	B13B2		B19B2
	C10K2		B13U1
	B13U1		B19U1
	C10T2		C13B1
	C13B1		C19B1
	C12H2		C13N1
	C13N1		C19N1
	C12L1		C13B2
	C13B2		C19B2
	C14H2		A15R2
	C14F1		F15A1
	A14J2		A15E1
	C14P1		A15D2
	C14K2		A15S2
	B14J1		B15A1
	C20H2		A21R2
	C20F1		F21A1
	A20J2		A21E1
	C20P1		A21D2
↓	C20K2	↓	A21S2
RH20BP	B20J1	RH20BP	B21A1

DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

QUANTITY & VARIATION

DRN	G. R. Dennison	DATE 8-SEPT-83
CHK'D	[signature]	DATE 3-Mar-84
DES ENG	[signature]	DATE 29-Jun-84
RESP ENG	[signature]	DATE 29-Jun-84
MFG ENG	[signature]	DATE 29-Jun-84

NEXT HIGHER DOC. E-UA-NIA20-A-0

digital

TITLE: INTERCONNECT DIAGRAM NIA20-A

DOCUMENT NUMBER: SIZE D | CODE IC | NUMBER NIA20-A-1 | REV A

SCALE — | SHEET 1 OF 1

REVISION HISTORY: REV A | RELEASED

MRO

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 5-DEC-84

TITLE NIA20-A INSTALLATION PROCEDURE FOR KL10E

REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	Released					
B	NIA20	MR001	B.EICHMANN	7 MAY85	[signature]	9/11/85

ENG [signature] APPD [signature] SIZE A CODE SP NUMBER NIA20-A-1 REV B

1.0 OVERVIEW

This describes the installation of the NIA20 Network Interconnect Adapter in a KL10-E system. Figures 3-1 and 3-2 show the NIA20 installed in a KL10-E, rear and front views, respectively. Table 3-1 itemizes the NIA20 parts and Table 3-2 lists the harness and cable connections used in the NIA20/KL10-E installation.

The NIA20 installation uses assigned slots in RH20 Logic Assembly positions 4 and 5, with RH20 positions 6 and 7 reserved for installation of a CI20 Computer Interconnect. A system containing an NIA20 is limited to a maximum of four RH20s. In the installation of an NIA20, a module blank assembly, DEC part number 7019266-00, is used to prevent plugging any other module into RH20 position 4 as described in subsection 3.4.3, instruction 7 (see Figure 3-3).

NOTE

The prior or subsequent installation of a CI20 Computer Interconnect with an NIA20 requires minor deviations in the following procedures and will be described herein when applicable.

Installation of the NIA20 in an existing system requires implementing the following procedures:

1. Unpacking and checkout of installation kit
2. Pre-installation checkout
3. Backplane wire adds
4. Installation of port modules
5. Installation of power supply regulator
6. Installation of NIA card cage
7. Installation of NIA current limiter
8. Installation of DC power harness
9. Installation of vane switch harness
10. Installation of DC voltage monitor harness and module
11. Installation of PLI bus
12. Installation of fan ac cable and power cord
13. Installation of internal NIA cable
14. Installation of KL10 Adapter Board and Blank Module Assembly
15. Checkout

The following subsections provide detailed instructions for performing each of the above installation procedures.

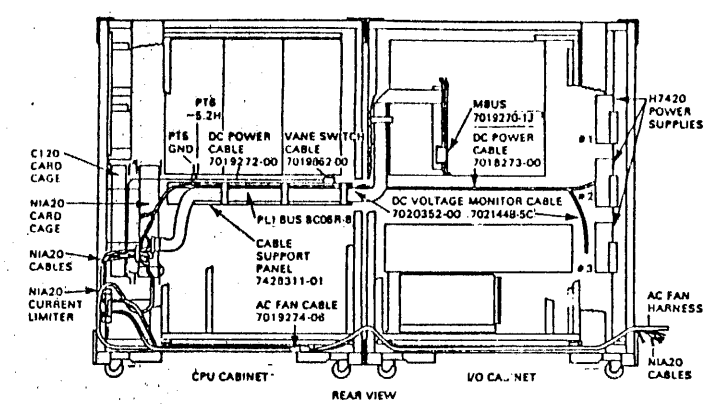


Figure 3-1. NIA20 in KL10-E, Rear View

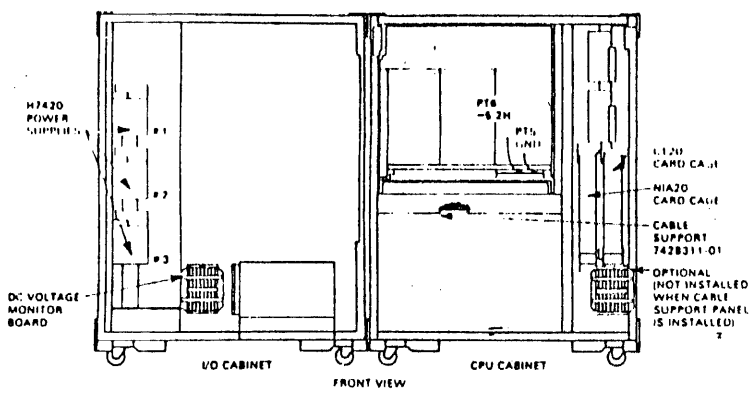


Figure 3-2. NIA20 in KL10-E, Front View

Table 3-1. NIA20 in KL10-E Parts List

Line Item	Part Number	Description	Qty
1	7019268-00	Card Cage Assy IPA-20-L	1
2	7019268-01	Card Cage Assy C120	1
3	7428312-01	Bracket, Interface	1
4	7428222-01	Baffle, Air	1
5	9007786-00	Retainer, U-Nut 10-32X	9
6	9006073-01	Screw, Mach Pan Phil 10-	13
7	9006022-01	Screw, Mach Pan Phil 6-	6
8	9006633-00	Washer, Lock Internal Steel	6
9	1213716-00	Spacer, Foam Polyu 1/2	4
10	7020539-06	Cable, Fan AC	1
11	7019274-06	Cable, Fan AC	1
12	7019272-00	Harness, DC-5.2 Sect N1-1 DC+5	1
13	7019273-00	Harness, DC-5.2 Sect N1-2 DC+5	1
14	7019893-XX	Cable Assy Ethernet	1
15	BC06R	BC06R I/O Cable	1
16	7019266-00	Module Blank Assy	1
17	M3002-00	C120 Microprocessor, Multiwire HE	1
18	M3003-00	C120 C-Bus/PLI Interface, Multiwire	1
19	M3001-00	C120 E-Bus Interface, Multiwire HE	1
20	9007032-00	Tie, Cable Bundl. Dia 0-1-3/4"=101	A/R
21	1213715-00	Clip, Flat Cable W/Adhesive Bk	4
22	H7440-00	POA1 H7440	1
23	L0072-00	NI20 (KL10 to NI Adaptor)	1
24	7014103-00	Blank Module Assy	1
25	9107673-06	Pwr Cord, Term 3-14 SJT 115	1
26	7011432-02	Pow Cord Extension 50Hz	1
27	9007651-00	Washer, Lock External Steel	14
28	9006664-00	Washer, Flat SST	12
29	7020352-00	Harness, DC Voltage Monitor	1
30	7019862-00	Harness, Vane Switch	1
31	5414506-01	Voltage, Monitor Board	1
32	7019270-1J	Bus, Cable, M Assy	1
33	3621499-01	Label, DCV Monitor C120	1
34	3613272-00	Label, Adh Back, Mylar Cap	1
35	9007031-00	Tie, Cable Bundl. Dia 0-3/4"=101	36
36	9008264-00	Mount, Cable Tie, Adhesive Back	A/R
37	3621498-02	Label, Airflow CPU/NI CT 20	1
38	9105740-55	Wire (Wrap) 30AWG KYNAR UL14 (12 ft. required)	A/R
39	7428311-01	Support, Cable	1
40	9006659-00	Washer, Flat S/PAS	2
41	5415695-01	Current Limiter	1
42	7020488-00	Cable, Short Switch Vane	1
43	7021448-5C	Cable, DC Voltage Monitor Sect.1	1
44	3617674-00	Label, Serial/Power W/O UL + CSA	1
45	3617674-01	Label, Serial/Power W UL & CSA	1
46	3617880-09	Label, Class "A" Subassembly	1
47	3621501-02	Label, Module Location, NI20	1

Table 3-2. NIA20 in KL10-E Harness and Cable Connections

HARNESS CONNECTIONS

Parts List Item No.	Harness Terminals: Point	Harness Terminals: Connection	Connection	Remarks
12	-	P1	NIA20 BP J2	-
	-	P3	NIA20 BP J1	-
	5	-	CPU #3 BP GND	-
	6	-	CPU #3 BP -5.2H	-
	-	P2	SECT. N-2 J1	Parts List Item 13
13	-	P1	H7440 J1	See Figure 3-5
	7	-	See Figure 3-5	
	8	-	See Figure 3-5	
30	-	P1	Fan Brkt. J1	See Note 1
	-	P2	See Figure 3-11	See Note 1
	-	J1	See Note 2	See Note 1
	-	P3	NIA20 BP J6	See Notes 1 and 3
29	-	P2	NIA20 BP J5	
	-	P1	J1	Parts List Item 31
	6	-	+5V Mon.Bd. J1-5	See Figure A-2
41	P3	P1	C120 Cable Vane Switch	See Note 4
	P2	-	NIA20 Fan Brkt. J1	See Note 4
	P1	-	C120 Fan Brkt. J1	See Note 4
43	-	J1	P1 Parts List Item 29	-
	-	P1	Mon.Bd. J1	Parts List Item 31

NOTES:

1 Items not needed when CI kit is installed:

Item	Qty	Part No.	Description
5	8	9007786-00	Retainer, U-Nut 10-32X
6	8	9006073-01	Screw, Mach Pan Phil 10-
27	8	9007651-00	Washer, Lock Ext ST
28	8	9006664-00	Washer, Flat SST
3	1	7428312-01	Bracket, Interface
30	1	7019862-00	Harness, Vane Switch

2 J1 on Parts List Item 30 (Harness, Vane Switch) connects with existing connector P4 (see Figure 3-11).

3 Relocate cable from C120 Card Cage at J6 connector and insert into NIA20 Card Cage J6 connector.

4 Parts List Item 4 used when C120 and NIA20 are installed together.

CABLE CONNECTIONS

Parts List Item No.	From: Unit	From: Location	From: Ref.Desig.	To: Unit	To: Location	To: Ref.Desig.	Remarks
10	C.Cage Fan Brk	Gnd J2	Gnd P2	25 or 26	J1	P1	NIA20-CB
14	C.Cage	J4	P1	41		P2	
25/26	Item 10 or 11	P1	J1	B61 PC		P1	Connect to any avail. switched outlet
1/2	C.Cage	Gnd	-	Cabrail	Hole P	-	
15	NI20 BP	J3	P1 Stripe Down	RH20 DTE CC	M3003 J2	P2 Stripe Up	
32	M3003 M3001	J1 J1	P3 P1	M3002 M3002	J1 J1	P2 P2	
38	RH20 BP	B10N1	-	RH20 BP	B13B1	-	
		B13B1	-		B19B1	-	
		C10L2	-		B13B2	-	
		B13B2	-		B19B2	-	
		C10K2	-		B13U1	-	
		B13U1	-		B19U1	-	
		C10T2	-		C13B1	-	
		C13B1	-		C19B1	-	
		C12H2	-		C13N1	-	
		C13N1	-		C19N1	-	
		C12L1	-		C13B2	-	
		C13B2	-		C19B2	-	
		C14H2	-		A15R2	-	
		C14F1	-		F15A1	-	
		A14J2	-		A15E1	-	
		C14P1	-		A15D2	-	
		C14K2	-		A15S2	-	
		B14J1	-		B15A1	-	
		C20H2	-		A21R2	-	
		C20F1	-		F21A1	-	
		A20J2	-		A21E1	-	
		C20P1	-		A21D2	-	
		C20K2	-		A21S2	-	
		B20J1	-		B21A1	-	

2.0 UNPACKING AND CHECKOUT

Before unpacking any equipment, move all boxes into the computer area. Check the shipment against the packing list to be sure that all boxes were sent. If any boxes are missing, contact the customer and the branch field service manager. Check that all boxes are sealed, and there is no sign of external damage, such as dents, holes, or damaged corners.

If any boxes are open or damaged, document it on the installation or field service report and inform the customer. Open the boxes one at a time, starting with the box marked "READ ME FIRST" and find the packing slip. Check the contents of the box against the packing slip and examine each item for damage. Note missing or damaged items on the installation report or field service report.

This completes the unpacking and checkout phase. Advise the branch field service manager of any problems during this phase. If any items are damaged, the branch field service manager may want the customer to file an insurance claim. For missing items, the branch field service manager should get a short-ship request.

3.0 EQUIPMENT NEEDED FOR INSTALLATION AND CHECKOUT

The following equipment is required for installation and checkout of the NIA20:

1. wire wrap tool (or wire wrap gun), No. 30 AWG, DEC part No. 29-18301
2. wire unwrapping tool, No. 30 AWG, DEC part No. 29-13513
3. Regular Phillips screwdriver
4. Tektronix 475 oscilloscope or equivalent (100 MHz)
5. KLAD pack
6. scope, digital voltmeter
7. H4080 Ethernet Loopback Connector

4.0 INSTALLATION PROCEDURE

4.1 Pre-Installation Checkout

Before performing the installation, verify that the presently configured system is operating properly to preclude the possibility of current system problems being ascribed to the NIA20 after its installation.

1. Remove all customer media, to minimize the possibility of corrupting customer data.
2. Mount the supplied KLAD pack, bring up the diagnostic monitor, and run the "B" string to verify that the system is working properly.
3. Power-down the system.
4. Verify that the system has a M8532-YA board installed. If not, replace the currently installed M8532 with a M8532-YA.
5. RH20 positions 4, and 5 will be used for the NIA20. If there is an RH20 in position 4, remove it. If there an RH20 in position 5, leave it temporarily installed and perform diagnostic DFRHB to verify the reliability of the backplane wiring. If there is no RH20 in position 5, relocate a module from one of the other RH20 positions to position 5.
6. Power-up the system and run diagnostic DFRHB. This verifies that the backplane wiring of RH20 position 5 is functional. Power-down the system and reinstall the RH20 in its original position.
7. Perform diagnostic DFRHB also in RH20 position 7 to verify the reliability of existing backplane wiring in RH20 positions 6 and 7, before implementing any NIA20 modifications.
8. Power-down the system and reinstall the RH20 in its original position.

4.2 Backplane Wire Adds

For the installation of the NIA20, twenty-four new wires must be added to RH20 backplane positions 4 and 5. An examination of the RH20 backplane must be performed to confirm the physical addition of the wire wraps listed in Table 3-3. A CHECK column is included in the table for the wire installer to record installation progress.

To prepare the wire adds, strip approximately 1 inch of insulation from the wire to allow sufficient turns to be made on the wire wrap post. After each wire is added, enter a check in the blank space adjacent to the wire listing in Table 3-3.

To assure the reliability of the new wiring, an ohmmeter check of each new wire add should be performed by a person other than the wire installer.

Table 3-3. NIA20 in KL10-E Wire Adds

Signal Name	From	To/From To		Check
EBUS D11 L	B10N1	B13B1	B19B1	____
EBUS D12 L	C10L2	B13B2	B19B2	____
EBUS D13 L	C10K2	B13U1	B19U1	____
EBUS PARITY L	C10T2	C13B1	C19B1	____
EBUS P100 L	C12H2	C13N1	C19N1	____
EBUS PARITY ACTIVE L	C12L1	C13B2	C19B2	____
MPR7 MWBUSCTLFLD01 H	C14L2	A15R2		____
MPR7 MWMGCFLD08 H	C14F1	F15A1		____
MPR7 MWTIMEFLD H	A14J2	A15E1		____
CBI1 CLK2 L	C14P1	A15D2		____
CBI2 CLK4 L	C14K2	A15S2		____
CBI2 CCCHANERR L	B14J1	B15A1		____
MPR7 MWBUSCTLFLD01 H	C20H2	A21R2		____
MPR7 MWMGCFLD08 H	C20F1	F21A1		____
MPR7 MWTIMEFLD H	A20J2	A21E1		____
CBI1 CLK2 L	C20P1	A21D2		____
CBI2 CLK4 L	C20K2	A21S2		____
CBI2 CCCHANERR L	B20J1	B21A1		____

4.3 Installation Of Port Modules

Protective backing is placed on the lower third non-component side of each port module and the upper third of the non-component side of the M3002. As the modules are inserted and/or removed, the protective backing protects the Mbus and PLI bus cables. Note that the protective backing should not interfere with the card guide or cover the gold finger contacts on the module. Insert the port modules as follows:

1. Connect MBus cable, DEC part number 7019270-1J. Be sure to orient the cable so that the flat wire comes out of the cable header away from the board, as shown in Figure 3-3.
2. Insert the M3001 EBus Interface/Port ALU Module in the rightmost slot of RH20 position number 5 (slot 19, looking at the backplane from the module side). The arrow on cable should be aligned with the arrow on the board connector.
3. Connect the MBus cable to the M3002 Port Microprocessor Module as shown in Figure 3-3.
4. Insert the Module M3002 in slot 20 to the left of the installed M3001 as shown in Figure 3-3.
5. Connect the MBus cable to the M3003 module as shown in Figure 3-3.
6. Install the M3003 CBUS/PLI Interface Module in slot 21 which is located to the left of the installed M3002.

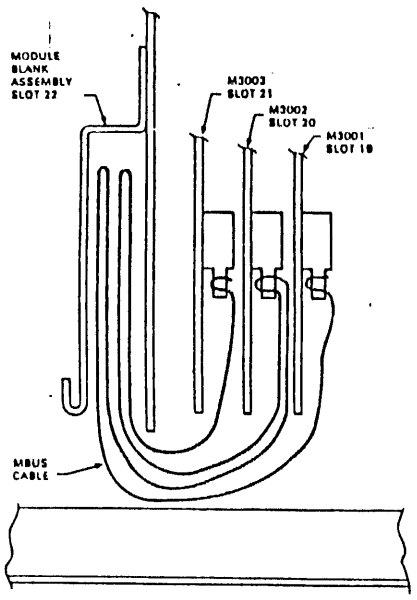


Figure 3-3. MBus Cable Interboard Connection, Top View

7. Install the Module Blank Assembly, DEC part Number 7019266-00. In RH20 position 4, slot 22. This assembly blocks slots 22, 23, and 24. It prevents modules from being inserted into RH20 position 4 and provides a baffle for system cabinet airflow.

8. Perform an ohmmeter check between PT17U and ground to verify that there are no shorts to ground.

9. Fold the MBus cable into the Module Blank Assembly as shown in Figure 3-3.

10. Close the module door.

11. Attach the self-sticking Module Utilization Decal, DEC part number 3622344-02, on the upper rear Baffle Panel.

12. Power Up the KL10.

13. Readjust the existing +5 volt power supply to 5.0 +/- 0.25 V. This adjustment is located on H7420 number 1 in H744 number 4. The location of this regulator is the second slot over from the circuit breaker. The voltage is monitored at +5F, between PT17U and ground.

14. Typer MR (CR) with KLDCP loaded and running, then type FX1 (CR) in response to the command prompt, as shown below:

```
> MR  (CR)
> FX1 (CR)
```

15. Deskew the port modules using a Tektronix 475 (or equivalent 100 MHz minimum) oscilloscope by performing the following steps (see Figure 3-4):

16. Connect channel 1 of the oscilloscope to MRT MBOX CLK H, 4033P1, on the CPU backplane. Use a ground Clip.

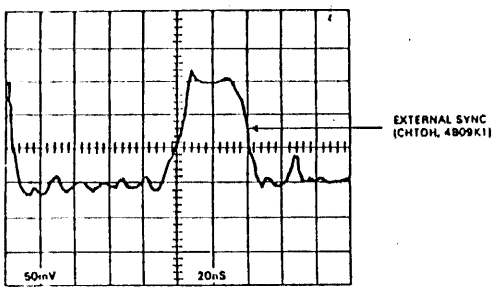


Figure 3-4A. External Sync (CHTO-H)

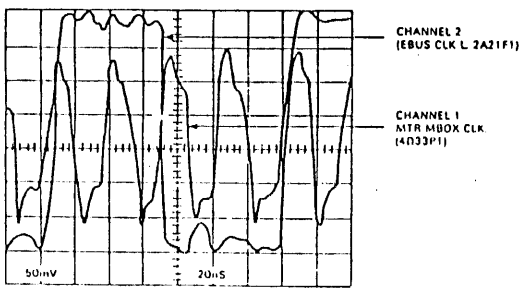


Figure 3-4B. EBUS CLK L and MTR MBOX CLK

Figure 3-4 NIA20 Deskew Timing

4.4 Power Supply Regulator Installation.

Three H7420 power supplies are located on the I/O Cabinet side wall as shown in Figure 3-1. The H7440 regulator to be added is installed in the upper H7420 power supply location. This additional +5 volt regulator is required to support the NIA20 card cage and is installed as follows (see Figure 3-5):

1. Remove the spare slot filler panel from slot 5 of the H7420 number 1 power supply. Save all existing hardware.

2. Take the new H7440 regulator from the kit and install the H7440 in slot 5 of H7420 number 1, using two screws on top and one thumb screw at the bottom. Note that some systems may use H744 or H7440 regulators.

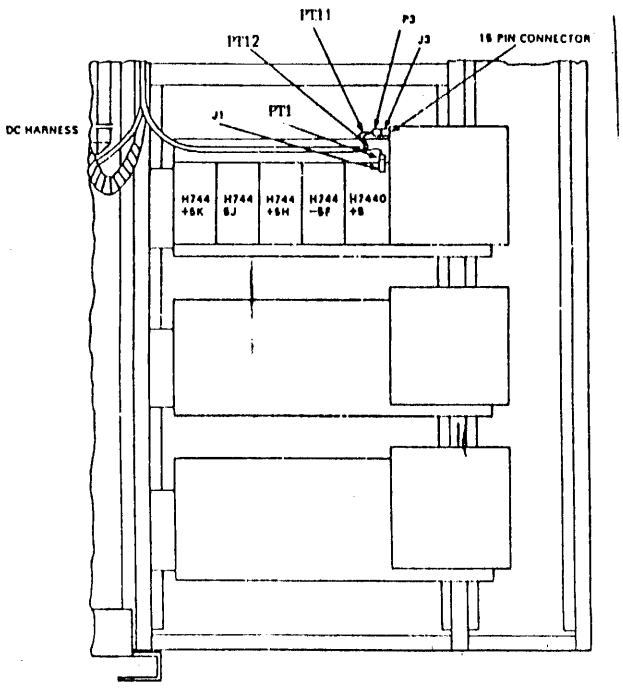


Figure 3-5. H7420 Power Supply

17. Set the time base to 20 ns.

18. Set channel 1 vertical gain to 0.5 V/division. Set the ground reference to 1.3 volts above the horizontal center level of the oscilloscope. (MTR MBOX CLK H is an ECL signal.)

19. Set the oscilloscope sync to positive external.

20. Connect external sync input to CHTO H, 4B09K1 on the CPU backplane. Use a ground clip.

21. Connect channel 2 to CDS1, EBUS CLK L, 2A21F1 on the I/O backplane. Set the channel 2 vertical gain to 0.5 V/division. Use a ground clip. To measure TTL voltages, set the ground reference to 1.5 volts below the horizontal center line of the oscilloscope.

22. Press the Trigger View Switch of the oscilloscope and display the external sync. Adjust the display, so that the rising edge of the external sync aligns with the vertical center line of the oscilloscope.

23. Display MBOX CLK H, channel 1. Identify the rising edge of MBOX CLK H that occurs prior to the vertical center line of the oscilloscope. Display channel 1 and channel 2.

24. Put the KL10-E in the override fault state. Remove the I/O rear door to access the I/O backplane.

25. Locate the 3rd from bottom potentiometer on the clock module (M8559) in slot 12 of the I/O backplane. Using this potentiometer, adjust the FALLING edge of channel 2, EBUS CLK L so that it crosses the RISING edge of MBOX CLK H. This crossing occurs on the horizontal center line of the oscilloscope.

26. Disconnect all probes.

27. Mount the KLAD pack on the front end RP06.

28. Load and run diagnostic DFPTA to verify proper functioning of the port modules. If the modules fail, troubleshoot as directed by the diagnostic. If the modules are functioning properly, continue with the installation.

4.5 Installation Of NIA20 Card Cage/Internal Cable

NOTES

1. When a CI20 is installed, the NIA20 is mounted as shown in Figure 3-1.

2. In the event the CPU Cabinet side panel cannot be removed, the installation of the Current Limiter (refer to subsection 3.4.5.1) should be performed before installing the card cage to avoid making the location inaccessible.

To install the NIA20 card cage shown in Figure 3-6 and the internal NIA20 cable, perform the following instructions:

1. Install the two NIA20 mounting brackets shown in Figure 3-7 as follows:

   a) Remove and reposition any tie-wrapped cables from the right-side frame member of the CPU Cabinet (as viewed from the front) to accommodate the NIA20 mounting brackets and card cage.

   b) Install a total of 8 U-Nuts (Tinnerman nuts), DEC part number 9007786-00, on the right-side frame members of the CPU cabinet (viewed from the front) in preparation for NIA20 card cage and Current Limiter installation. Insert the Tinnerman nuts into frame holes 5, 11, 15 and 52 on each vertical side frame member counting up from the bottom of the cabinet (see Figure 3-7). Four Tinnerman nuts are inserted into each vertical side frame member.

   c) Use four 10/32 one-half inch Phillips panhead machine screws, DEC part number 9006073-01 and four No. 10 star lock washers, DEC part number 9007651-00 on each vertical side of the frame.

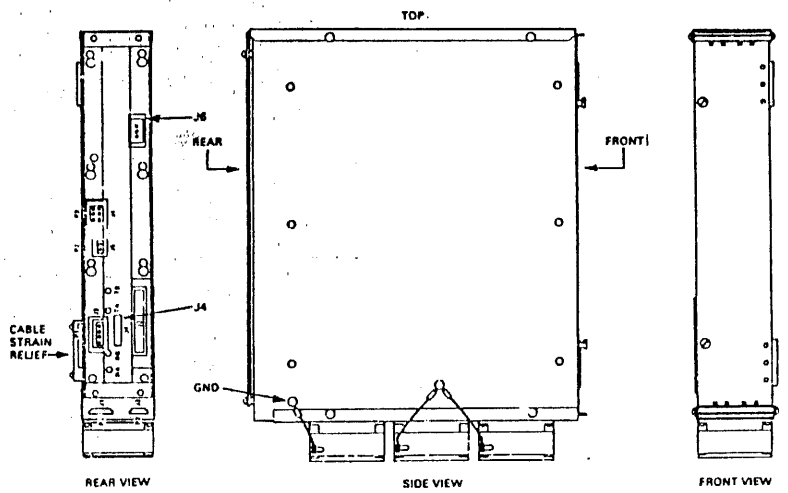


Figure 3-6. NIA20 Card Cage Views

2. Locate the NIA20 internal cable strain relief (white) on the rear left-side of NIA20 card cage (see Figure 3-6). Because of the inaccessible location of this strain relief once the card cage is mounted, the internal cable is routed through it before installing the card cage.

3. Locate the three-foot internal NIA20 cable, DEC part number 7019893-2L.

4. Prepare the internal NIA20 cable for installation by positioning a stick mount on the right-side frame member of the CPU Cabinet (viewed from the front), above the reserved C120 connectors on the Bracket Interface (see Figure 3-9).

5. Route the three-foot internal NIA20 cable through the white plastic strain relief on the NIA20 card cage. Allow enough slack to connect the internal cable to the NIA20 card cage backplane and tighten the strain relief.

6. Connect the internal NIA20 cable to the J4 connector (see Figure 3-6) on the rear of the NIA20 card cage and route the cable as shown in Figure 3-1. The cable connector engages a detent when properly seated.

7. Mount the NIA20 card cage on the two NIA20 mounting brackets (see Figure 3-7), using a total of four 10/32 screws, external lockwashers, and flat washers in frame holes 15 and 52. Hang the NIA20 card cage on the top two screws, then install the bottom two screws.

8. Install the NIA20 card cage ground cable (see Figure 3-6) as follows:

   a) Install a Tinnerman nut in hole 11 of the left side frame member in the CPU cabinet (viewed from the rear).

   b) Connect the ground cable on the left-side frame member (viewed from the rear) by inserting a screw and using a starwasher on each side of the ground cable.

   c) Attach a ground label, DEC part number 3613272-00, closest to hole 1.

9. Run the internal NIA20 cable to the previously positioned stick mount and insert its other end into the rear J1 connector of the NIA20 Current Limiter.

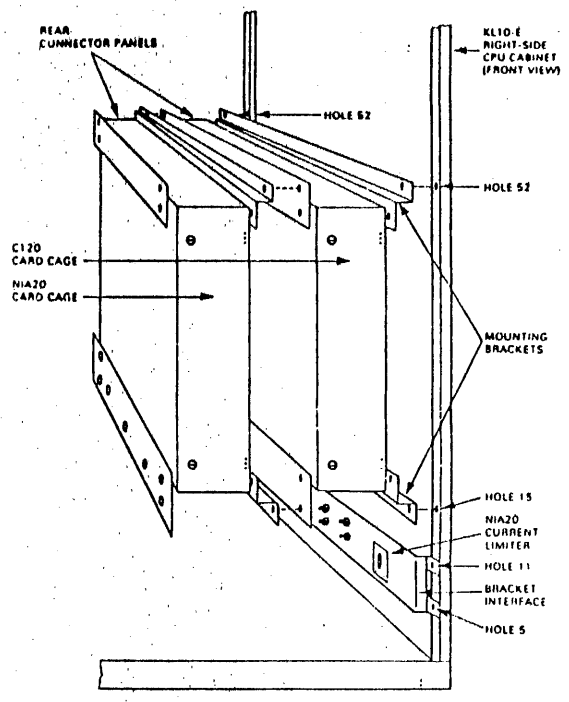


Figure 3-7. NIA-20 Card Cage In KL10-E

4.5.1 Installation Of NIA20 Current Limiter - The NIA20 Current Limiter, DEC part number 5415695-01 is pre-installed on the Bracket Interface, DEC part number 7428312-01, as shown in Figure 3-8. The Bracket Interface, NIA20 internal cable, and BNE3 external cable are installed at the site as follows:

1. Locate the Bracket Interface which is to be located on the lower right-side frame holes 5 and 11 of the CPU Cabinet (viewed from the front). Four 10-32 screws, external lockwashers, and flat washers are used to install the Bracket Interface.

2. Connect the internal cable to the rear J1 connector and also connect the BNE3 external (Ethernet Transceiver) cable to the front P1 connector located on the NIA20 Current Limiter (see Figure 3-8).

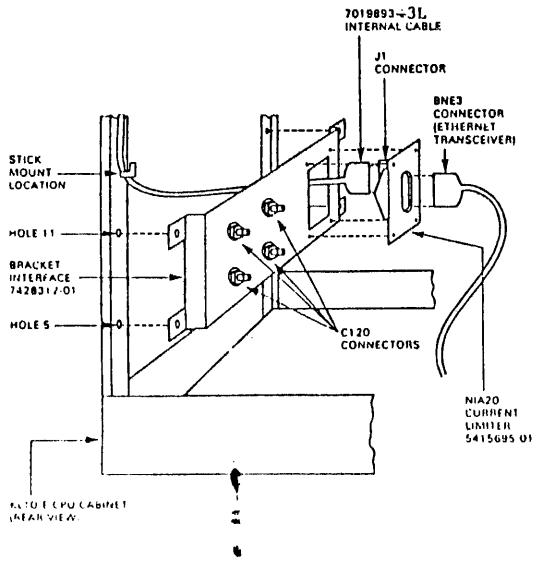


Figure 3-8. NIA20 Current Limiter

4.5.2 Harness Installation - The following list of harnesses to be installed are:

1. DC power harness (2 sections)
2. vane switch cable
3. DC voltage monitor cables
4. fan ac cable and power cord
5. PLI bus
6. External BNE3 NIA20 cable

Figure 3-9 shows a diagram of the harness and cable interconnections. The above harnesses are installed as follows:

1. Install tie wraps approximately eight inches apart on all harnesses. When routing cables close to internal assemblies, use spiral wire wrap to protect the cables from edges.

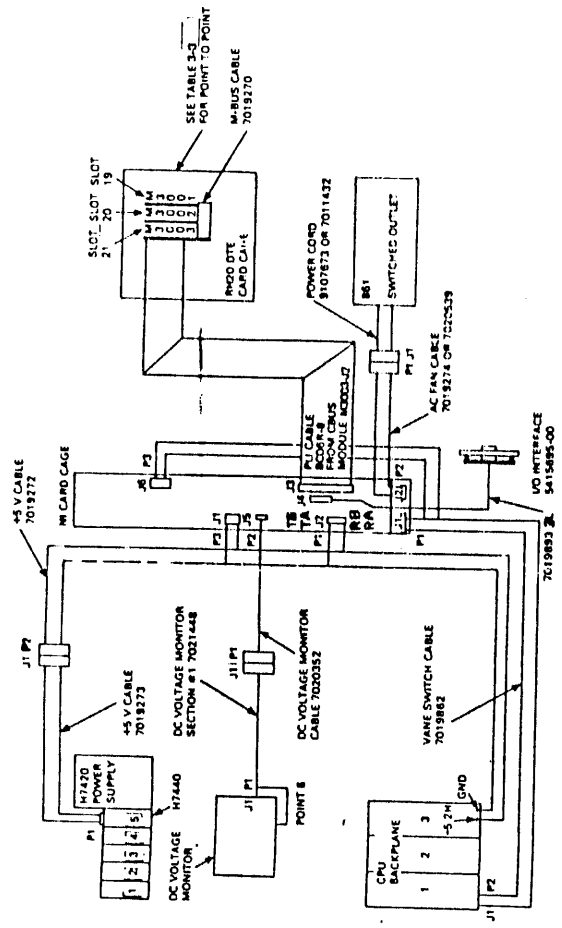


Figure 3-9. NIA20 Harness And Cable Interconnection Diagram

2. Locate the DC power harness, DEC part numbers 7019272-00 and 7019273-00 (see Figure 3-10), and its black and blue wires labeled PT5 and PT6. Connect the black wire to -5.2 ground and the blue wire to -5.2V in the CPU Cabinet (see Figure 3-2).

3. Locate and connect P1 of the DC power cable, DEC part number 7019272-00, into connector J1 of the NIA20 card cage backplane (see Figure 3-6). Next, connect P3 of of DC power cable into J2 of the NIA20 card cage.

4. Connect P2 of the 7019272-00 DC power cable to J1 of the 7019273-00 DC power cable.

5. Tie wrap the new harness to existing KL I/O power harnesses and route this cable as shown in Figure 3-1. Use spiral wrap along the harness where it contacts the side of the CPU frame member nearest the H7420 power supplies.

6. Locate the red and white wires labeled PT11 and PT12 of DC power cable (see Figure 3-10). Disconnect P3 atop power supply H7420 number 1, then connect PT7 and PT8 to pins 3 and 4, respectively, on P3 of the H7420. Then reconnect P3 to the H7420.

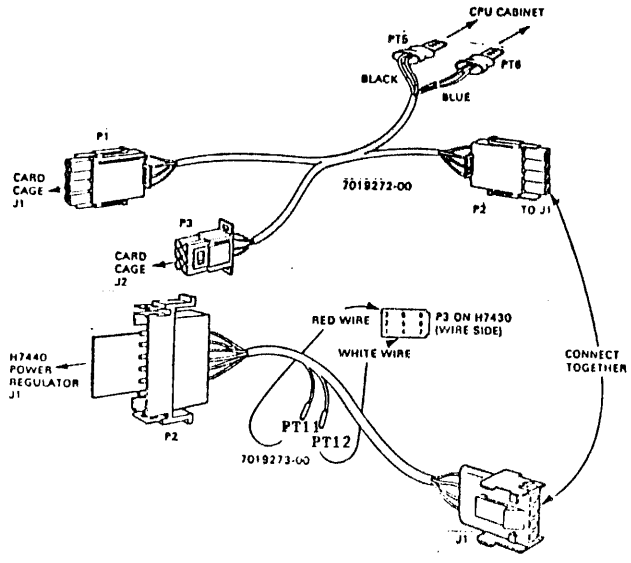


Figure 3-10. DC Power Cable

7. Connect P1 of the 7019273-00 DC power cable to connector J1 of the previously installed H7440 regulator (see Figure 3-5).

8. Locate the vane switch cable, DEC part number 7019862-00, (see Figure 3-11). Connect P1 of the vane switch cable to connector J1 located on the NIA20 card cage (see Figure 3-6). Also, connect P3 of the vane switch cable to connector J6 of the NIA20 card cage. Use stick mounts and spiral wire wrap as needed to route and protect the vane switch cable.

NOTE

When a CI20 is installed (in a combined CI20/NIA20 installation) the short vane switch cable, DEC part number 7020488-00, is used to jumper CI20 vane switch harness to NIA20 card cage. Connector P3 should be removed from the CI20 backplane connector J6 and connected to the NIA20 backplane connector J6 (CI20 backplane connector J6 will be left blank). Consult the CI20 Reference Manual (DEC order number EK-CI20-RM-001) for other applicable CI20 installation procedures.

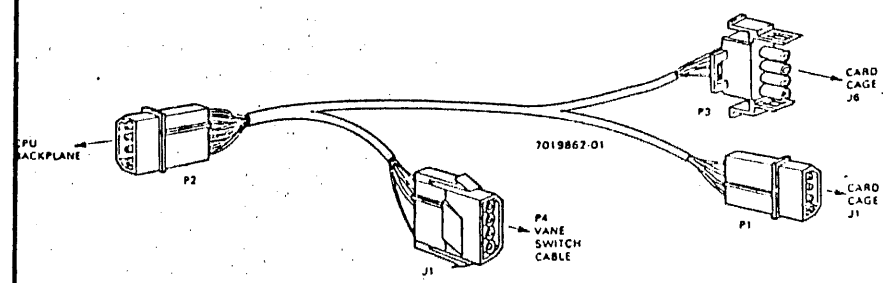


Figure 3-11. Vane Switch Cable

9. Remove the original KL CPU vane switch cable (P4) and connect this to the NIA20 vane switch cable connector J1.

10. Connect P2 of the vane switch cable to the original KL CPU vane switch assembly (see Figures 3-1 and 3-12).

11. Overlay the CPU/NIA20 air flow fault decal over the existing CPU air fault message decal on the 863 Fault Switch.

12. Locate the DC voltage monitor cable, DEC part number 7020352-00 (see Figure 3-13). Connect P2 of the DC voltage monitor cable to J5 on the NIA20 card cage and connect the other cable end (P1) into connector J1 on the new DC voltage monitor board.

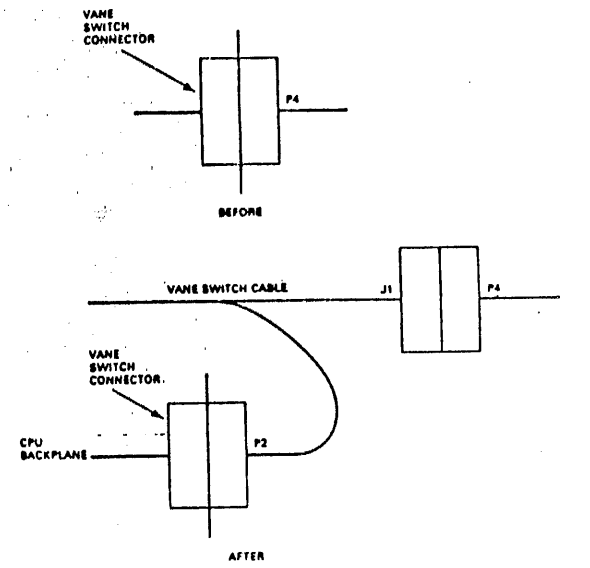
13. Locate the switches on the DC voltage monitor board, DEC part number 5414506-01. Only Switch S1 should be ON, while all other DC voltage monitor board switches should be OFF.

14. Insert the DC voltage monitor board into the +5 volt slot of the DC voltage monitor card cage.

15. Attach the monitor panel decal, DEC part number 3621501-02, to indicate the slot used for the NIA20 DC voltage monitor board.

16. Connect the remaining single orange wire of the DC voltage monitor cable to a location adjacent to the existing orange wire on the DC voltage monitor board zone +5L.

17. Tie wrap the DC voltage monitor and vane switch harnesses to the DC power cable. Use adhesive-backed square cable mounts to support the harness.



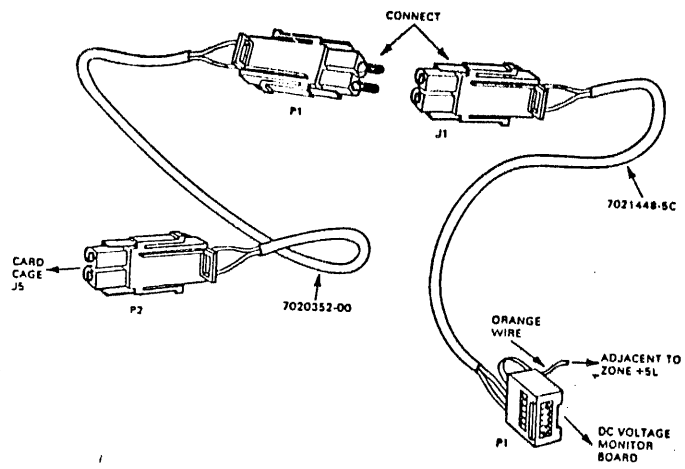


Figure 3-13. DC Voltage Monitor Cable

18. Locate the fan ac cable, DEC part number 7019274-06 (120 Vac 60 Hz) or 7020539-06 (240 Vac 50 Hz), and the power cord, DEC part number 9107673-06 (120 Vac 60 Hz) or 7011432-02 (240 Vac 50 Hz), (see Figure 3-14). Connect the fan ac cable connector P2 to connector J2 on the NIA20 card cage and then join the fan ac cable to the power cord. Insert the other end of the power cord into any available switched outlet of the 861 power controller. Connect the ground wire to the adjacent side ground screw on the NIA20 card cage. Use a star washer to ensure a good electrical connection.

19. Install a Tinnerman nut in hole 11 on the frame and attach the ground cable from the NIA20 card cage to the frame. Use two star washers to ensure a good electrical connection.

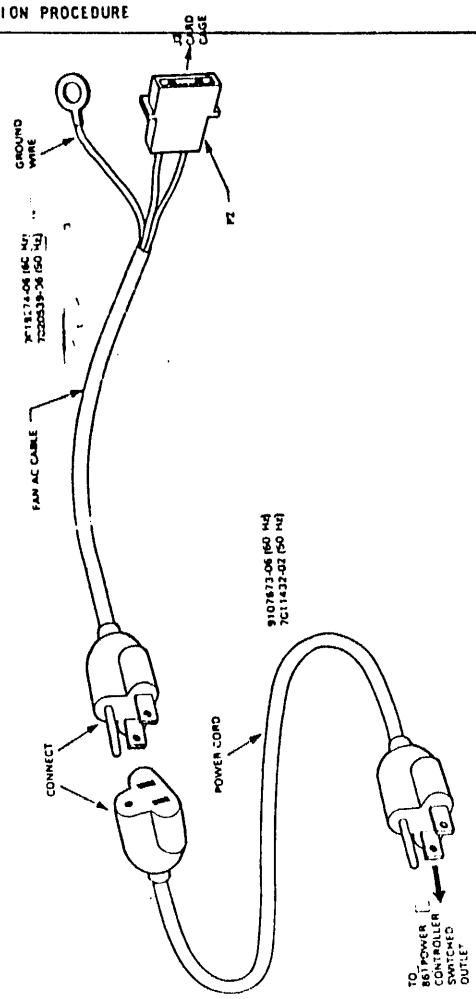


Figure 3-14. Fan AC Cable And Power Cord

20. Locate Cable Support panel, DEC part number 7428311-00 (see Figure 3-1). Install the smooth side of panel (used to support the cable harnesses) toward the rear when facing the CPU cabinet. Use four of each: Tinnerman nuts, screws, flat washers, and lock washers in holes 36 and 39.

21. Locate the PLI cable, DEC part number BC06R-08 (see Figure 3-1 for cable route and Figure 3-9 for cable connection). Connect one end of the PLI cable (identified by a red line imprinted on top of the cable) to module M3003 and route through the cable strain relief on the NIA20 card cage. The other end of the PLI cable (identified by a red line imprinted on bottom of the cable) to connector J3 on the NIA20 card cage (see Figure 3-6). To secure the PLI cable, install adhesive foam, DEC part number 1213716-00, within each of the 4 flat cable clamps. Install one cable clamp on the side of the CPU card cage and three cable clamps across rear of cable support panel.

22. Route the cables as shown in Figure 3-1.

23. Replace the CPU Cabinet door.

4.6 Installation Of KL10 Adapter Board And Blank Module Assembly

The KL10 to NI Adapter Board, DEC part number L0072-00, and the Blank Module Assembly, DEC part number 7014103-00, are installed in the NIA20 card cage as follows:

1. The KL10 to NI Adapter Board and the Blank Module Assembly are installed into the NIA20 card cage by opening its front hinged-end panel door.

2. Install the KL10 to NI Adapter Board (L0072-00) in the left hand slot.

3. Install the Blank Module Assembly (7014103-00) in the adjacent slot to the right.

4.7 Checkout

The physical part of the installation is complete at this point. All that remains is to verify that the system runs properly in the new configuration. Perform the following steps to verify the installation.

1. Verify that the KL10-E is no longer in the override fault state.

2. Power up the KL10-E.

3. Readjust the 5 volt power supply to 5.0 +/- 0.25 V. This adjustment is located on power supply H7420 number 1, regulator H7440 slot 5 (see Figure 3-5). This regulator is located nearest the H7420 power supply breaker. The voltage is monitored at the black and red wires on connector J1 of the NIA20 card cage (see Figure 3-7).

4. Load and run diagnostic DFPTA for a least 5 passes in Exec mode.

   NOTE: Certain configurations may require the use of an H4080 Ethernet Loopback Connector in place of existing Ethernet Transceiver.

5. Load and run diagnostic DFNIE for at least 5 passes in Exec mode.

6. Load and run diagnostic DFNIA for at least 5 passes in Exec mode.

7. Enable the operating system

8. Run diagnostics DFPTA in user mode for at least 5 passes.

9. Run diagnostics UETP NIA20 Test in user mode for at least 4 hours.

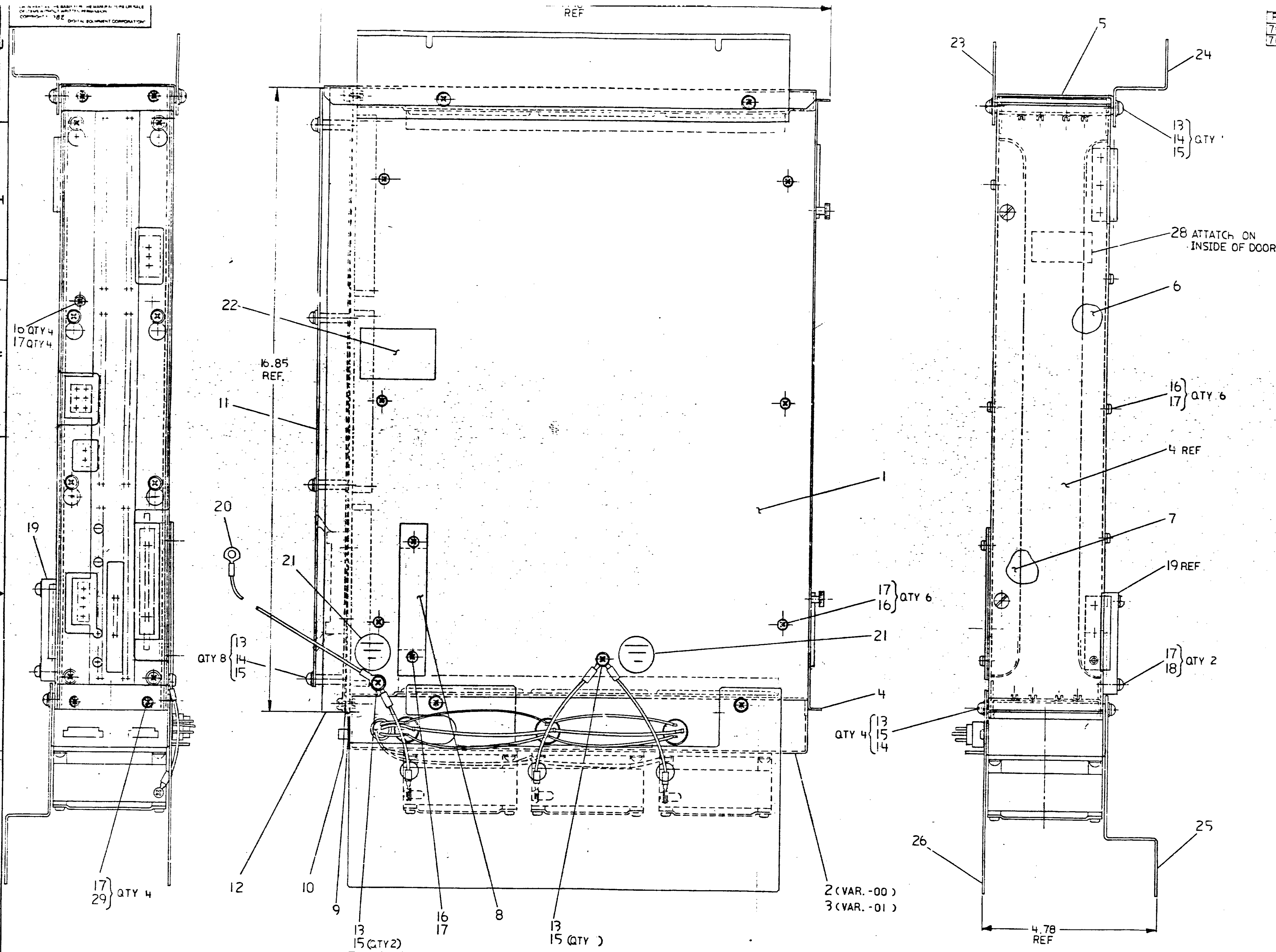
10. Disable the operating system.

11. Remove all Field Service packs and tapes from the customers system and store in a secure area.

12. Transfer/Sign-off system to customer's authorized representative.

LEGEND

PART NO	VARIATION	REF
7019268-00	115V 50/60HZ	[illegible]
7019268-01	230V 50/60HZ	[illegible]



CAUTION: OFF SHEET PARTS LIST EXIST
SEE K-PL-7019268-0-DBP

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 = ± .006
ANGLES ± 0°30'
SURFACE QUALITY — MICROINCHES
QUANTITY & VARIATION

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: SEE PARTS LIST

DRN — DATE 9 OCT 81
CHK'D — DATE 14 DEC 82
DES. ENG. — DATE 14 APR 83
RESP. ENG. — DATE 14 APR 83
MFG. ENG. — DATE

TITLE: CARD CAGE ASSY CI20

digital

DOCUMENT NUMBER

SIZE E CODE AD NUMBER 7019268-00 REV F

LINE	ITEM	TIP DOCUMENT	PART NUMBER	REV	DESCRIPTION	QTY PER VARIATION 00	01
					VARIATION REVISION LEVEL:	A4	A4
1	1	D-IA-7018178-0-0	7018178-00		WELDMENT,CARD CAGE	1	1
2	2	D-IA-7018941-0-0	7018941-00		PLATE FAN ASSY	1	-
3	3	D-IA-7018941-0-0	7018941-01		PLATE, FAN ASSY	-	1
4	4	D-AD-7020492-0-0	7020492-00		DOOR, REAR ASSY	1	1
5	5	D-IA-7018179-0-0	7018179-00		WELDMENT,COVER	1	1
6	6	E-IA-7424873-0-0	7424873-00		PANEL,FILLER	1	1
7	7	E-IA-7424873-0-0	7424873-01		PANEL,FILLER	1	1
8	8	B-AD-7018181-0-0	7018181-00		STRAIN RELIEF ASSY	1	1
9	9		5414793-00		BACKPLANE,IPAZO	1	1
10	10	C-MD-7424875-0-0	7424875-01		GASKET	1	1
11	11	E-MD-7424870-0-0	7424870-01		COVER,BACKPLANE	1	1
12	12	E-IA-7424871-0-0	7424871-01		STIFFENER,BACKPLANE	1	1
13	13		9006038-01		SCREW,MACH PAN PHIL 8-	18	18
14	14		9006660-00		WASHER,FLAT SST	16	16
15	15		9008151-00		WASHER,LOCK EXTERNAL STEEL	20	20
16	16		9006022-01		SCREW,MACH PAN PHIL 6-	18	18
17	17		9007649-00		WASHER,LOCK EXTERNAL STEEL	24	24
18	18		9006025-01		SCREW,MACH PAN PHIL 6-	2	2
19	19	C-MD-7427436-0-0	7427436-01		STRAINRELIEF,BLOCK	1	1
20	20		1213756-16		GROUND STRAP	1	1
21	21		3613272-00	B	LABEL,ADH BACK,MYLAR CAP	1	1
22	22		3616606-00	A	LABEL, TOP LEVEL STATUS	2	2
23	23	C-IA-7428223-0-0	7428223-01		PLATE,TOP	1	1
24	24	C-MD-7428225-0-0	7428225-01		BRACKET,TOP	1	1
25	25	C-MD-7428224-0-0	7428224-01		BRACKET,BOTTOM	1	1
26	26	D-IA-7428221-0-0	7428221-01		PLATE,BOTTOM	1	1
27	27		3621500-01		*** THIS ITEM IS NOT USED ***	-	-
28	28		3621501-01		LABEL,MODULE LOCATION C120	1	1
29	29		9006024-01		SCREW,MACH PAN PHIL 6-	4	4

REVISION HISTORY		
ENG	ECO NUMBER	REV
---	INITIAL	D
PC	7019268-MR001	E
PC	C120-MR01A	F

BASIC PART NO: 7019268

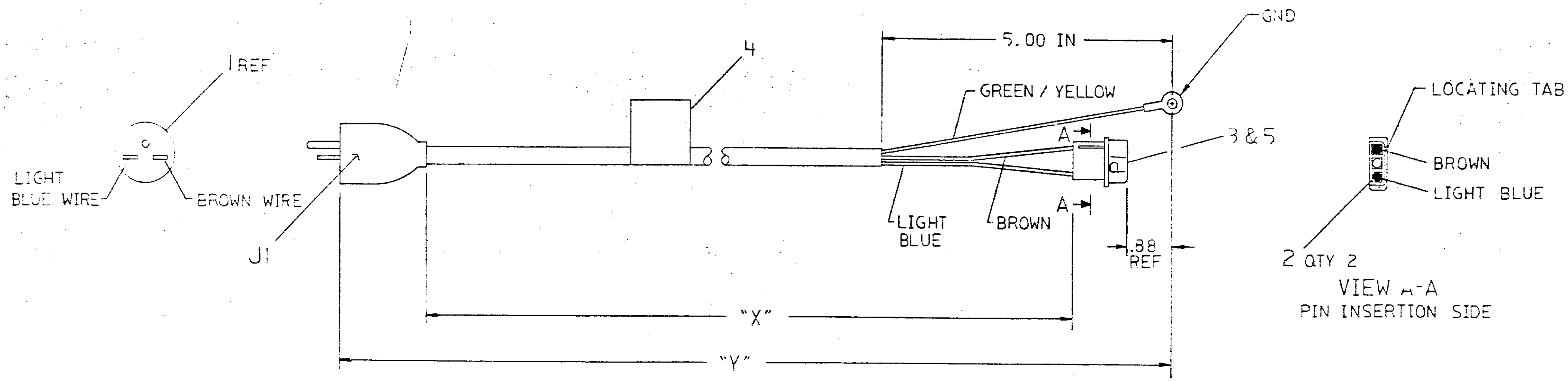
SECTION A OF A

SECTION,VARIATION INDEX
[A]00,01
[B]
[C]
[D]
[E]
[F]

DRN: W. ALLEN	DATE: 9 OCT 81	DIGITAL
CHK'D: G. F.	DATE: 14-DEC-82	TITLE PARTS LIST CARD CAGE ASSY C120
DES.ENG: P. CAPPABIANCA	DATE: 14-APR-83	DOCUMENT NUMBER
RESP.ENG.: P. CAPPABIANCA	DATE: 14-APR-83	SIZE: K CODE: PL NUMBER: 7019268-0-DBP REV: F
MFG.ENG.: S. ALMEIDA	DATE: 13-APR-83	RELEASE DATE: 28-FEB-85
ASSEMBLY NUMBER: E-AD-7019268-0-0	TOP DOCUMENT NUMBER:	FILE NAME: 25878F.PLS EDIT # 22

LEGEND

PART NO.	DIM. "X" VAR.	DIM. "Y" (RECUT) REF.	REV
7020539-06	5FT,9IN±1.0IN	6FT. ±.5 IN.	B1



CAUTION: OFF SHEET PARTS LIST EXIST
SEE K-PL-7020539-0-DBP

QUANTITY & VARIATION	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 — MICROINCHES

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: SEE PARTS LIST
FINISH: —

		DATE
DRN	R. Daviusso	3-DEC-82
CHK'D	[signature]	14-DEC-82
DES ENG	P. Cappabianca	14 APR 83
RESP ENG	P. Cappabianca	14 APR 83
MFG ENG	[signature]	14-11-83

NEXT HIGHER DOC: E-UA-C120-A-0

TITLE: CABLE, FAN AC 50 HZ

digital

DOCUMENT NUMBER: SIZE D CODE IA NUMBER 7020539-0-0 REV C
SCALE — SHEET 1 OF 1

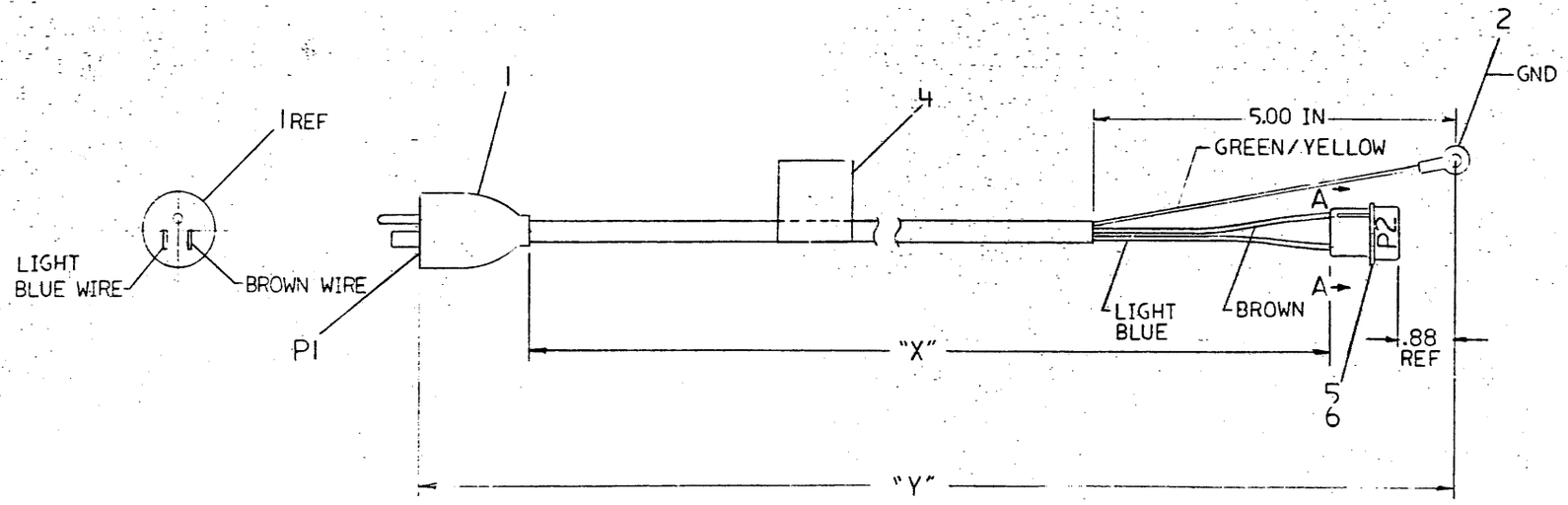
REVISION HISTORY: REV C, ECO NUMBER RELEASED

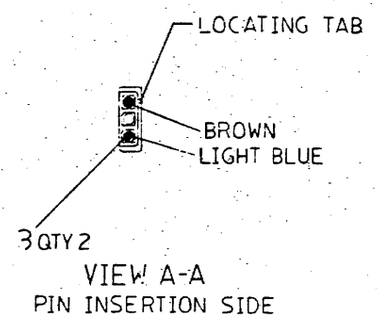
LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 06
					VARIATION REVISION LEVEL:	
1	1		1700016-06		PWR CORD,TERM 3-18 SJT 230	1
2	2		1209378-00		MATE-N-LOK 01PIN 20-14AWG .085DD	2
3	3		1209351-03		MATE-N-LOK 03PIN(1X03).200CC HSG	1
4	4		3616073-00		LABEL,ID W/COPY VERTICAL	1
5	5	A-DC-7409872-0-0	7409872-02		PWR HARNESS DECAL, BLACK ON CLEA	1

REVISION HISTORY			BASIC PART NO: 7020539			
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: P. E. DENNISON	DATE: 15-APR-83	D I G I T A L
---	INITIAL	C	SECTION.VARIATION INDEX [A]06	CHK'D: 14 DEC 83	DATE: 14 DEC 82	TITLE PARTS LIST CABLE FAN AC 50HZ
			[B]	DES.ENG: P. CAPPABIANCA	DATE: 14 APR 83	DOCUMENT NUMBER: SIZE K / CODE PL / NUMBER 7020539-0-08P / REV C
			[C]	RESP.ENG.: P. CAPPABIANCA	DATE: 14 APR 83	
			[D]	MFG.ENG.: J. MCCAFFERY	DATE: 11 APR 83	RELEASE DATE: 02-FEB-84
			[E]	ASSEMBLY NUMBER: D-IA-7020539-0-0	TOP DOCUMENT NUMBER: E-UA-CI20-A-0	FILE NAME: Z6009C.PLS / EDIT # 6
			[F]			

LEGEND			
PART NO.	DIM. "X" VAR	DIM. "Y" (PRECUT) REF	REV
7019274-06	5FT.9IN±1.0IN	6FT. ± .5 IN.	B1

NOTES:





VIEW A-A
PIN INSERTION SIDE

CAUTION: OFF SHEET SHEET PARTS LIST EXISTS.
SEE K-PL-7019274-0-DBP.

REVISION HISTORY		
DATE	ECO NUMBER	REV
RELEASED		C

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 (CHECK ONE)	DIMENSION RANGE IN 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
X = ± .1	SURFACE QUALITY	☐		± .02	± .03	± .05	± .10	
XX = ± .02		☐	± .004	± .008	± .012	± .016	± .020	± .04
XXX = ± .005	MICROINCHES	☐						

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: —

DRN: W Allen	DATE: 19 APR 82	TITLE: digital CABLE, FAN AC 60 HZ
CHK'D: [illegible]	DATE: 19 APR 82	
DES ENG: R Cappariano	DATE: 14 APR 83	
RESP ENG: R Cappariano	DATE: 14 APR 83	
MFG ENG: [illegible]	DATE: 1-11-83	
NEXT HIGHER DOC: E-UA-CI20-A-J		DOCUMENT NUMBER: SIZE D, CODE IA, NUMBER 7019274-0-0, REV C
		SCALE: —, SHEET 1 OF 1

DRD 1000

MIRO

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 06
					VARIATION REVISION LEVEL:	
1	1		1700006-06		PWR CORD,TERM 3-15 SJT 115	1
2	2		9007928-00		TERM,RING #10STUD CRIMP 14-1	1
3	3		1209378-00		MATE-N-LOK 01PIN 20-14AWG .093DD	2
4	4		3616073-00		LABEL,ID W/COPY-VERTICAL	1
5	5	A-DC-7409872-0-0	7409872-02		PWR HARNESS DECAL, BLACK ON CLEA	1
6	6		1209351-03		MATE-N-LOK 03PIN(1X03).200CC HSG	1

REVISION HISTORY			BASIC PART NO: 7019274				
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: W ALLEN	DATE: 19 APR 82	D I G I T A L	
	INITIAL	C	SECTION.VARIATION INDEX	CHK'D: G. F.	DATE: 14 DEC 82	TITLE PARTS LIST	
			[A]06			CABLE FAN,AC 60 HZ	
			[B]	DES.ENG: P. CAPPABIANCA	DATE: 14 APR 83	DOCUMENT NUMBER	
						SIZE CODE NUMBER	REV
			[C]	RESP.ENG.: P. CAPPABIANCA	DATE: 14 APR 83	K PL 7019274-0-DSP	C
			[D]				
			[E]	MFG.ENG.: J. MCCAFFERY	DATE: 11 APR 83	RELEASE DATE: 02-FEB-84	
			[F]	ASSEMBLY NUMBER: D-IA-7019274-0-0	TOP DOCUMENT NUMBER:	FILE NAME: Z5903C.PLS	EDIT # 8

D IA 7019272-0-0 C

SYMBOLS

ITEM NO	SYMBOL	PART NO (REF)
4	□	1212170-00
5	○	9007920-00

WIRE TABLE

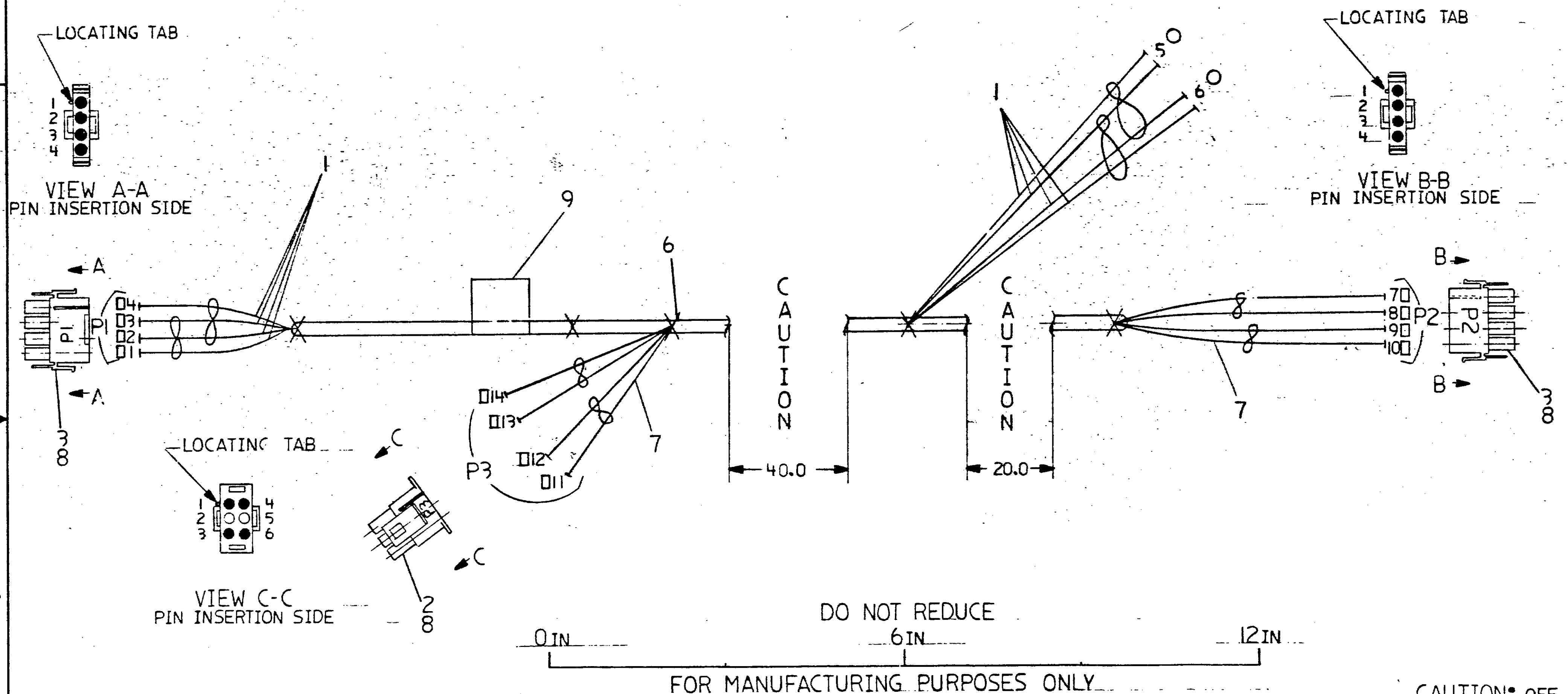
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH	REMARKS
1	TWP #14	BLU	1	P1-4	4	6		5	TWP
		BLU	2	P1-3					
		BLK	3	P1-2		5		5	TWP
		BLK	4	P1-					
7	TWP #14	RED	7	P2-1		11	P3-4	4	
		BLK	8	P2-2		12	P3-1		
7	TWP #14	BLK	9	P2-3		13	P3-3		
		RED	10	P2-4	4	14	P3-6	4	

LEGEND

PART NO	VARIATION	REV
7019272-00	AS SHOWN	A2

NOTES:

1. USE TIE WRAPS (X) ITEM 6 APPROXIMATELY EVERY 3 INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. CONNECTOR TO BE LABLED WITH COMPONENT IDENTIFIERS.
3. UNLESS OTHERWISE NOTED ALL LENGTHS ARE IN INCHES.



CAUTION: OFF SHEET PARTS LIST EXISTS SEE K-PL-7Ø19272-Ø-DBP.

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 — MICROINCHES
QUANTITY & VARIATION

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: SEE PARTS LIST
FINISH

		DATE
DRN	W. Allen	13 APR 82
CHK'D		10 DEC 82
DES. ENG.	P. Cappabianca	14 APR 83
RESP. ENG.	P. Cappabianca	14 APR 83
MFG. ENG.		4-11-83

NEXT HIGHER DOC. E-UA-CI2Ø-A-Ø

TITLE: HARNESS DC-5.2 SECT'N-1 DC+5

digital

DOCUMENT NUMBER: SIZE D CODE IA NUMBER 7019272-0-0 REV. C

REVISION HISTORY

REV.	ECO NUMBER	DATE	
B	RELEASED		Gene Alston
C	7019272-MR001	10-31-84	P. CAPPABIANCA

1 MRO

AUTOMATED BY PRTLST.40(50)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION
						00
					VARIATION REVISION LEVEL:	A2
1	1		9107440-06		WIRE,TWP 14AWG19/.0147IPVC 300V1	A/R
2	2		1212167-06		MATE-N-LOK 06SKT(2X03).250CC HSG	1
3	3		1212167-01		MATE-N-LOK 04SKT(1X04).250CC HSG	2
4	4		1212170-00		MATE-N-LOK 01SKT 20-14AWG .0850D	12
5	5		9007920-00		TERM QUICK .300TAB CRIMP 12-1	2
6	6		9007880-00		TIE,CABLE BUNDL DIA 0-1.14"=101	8
7	7		9107440-02		WIRE,TWP 14AWG19/.0147IPVC 300V1	A/R
8	8	A-DC-7409872-0-0	7409872-02		PWR HARNESS DECAL, BLACK ON CLEA	1
9	9		3616073-00		LABEL,ID W/COPY VERTICAL	1

REVISION HISTORY			BASIC PART NO: 7019272				
ENG	ECO NUMBER	REV	SECTION A OF A				
---	INITIAL	B	SECTION.VARIATION INDEX	DRN: W. ALLEN	DATE: 13-APR-82	D I G I T A L	
PC	7019272-MR001	C	[A]00	CHK'D: G. F.	DATE: 10 DEC 82	TITLE PARTS LIST HARNESS DC-5.2 SECT N-1 DC+5	
			[B]	DES.ENG: P. CAPPABIANCA	DATE: 14 APR 83	DOCUMENT NUMBER	
			[C]			SIZE / CODE / NUMBER / REV	
			[D]	RESP.ENG.: P. CAPPABIANCA	DATE: 14 APR 83	K / PL / 7019272-0-DBP / C	
			[E]	MFG.ENG.: J. MCCAFFERY	DATE: 11 APR 83	RELEASE DATE: 30-OCT-84	
			[F]	ASSEMBLY NUMBER: D-IA-7019272-0-0	TOP DOCUMENT NUMBER:	FILE NAME: Z5884C.PLS	EDIT # 9

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SYMBOLS

ITEM NO.	SYMBOL	PART NO. (REF)
5	■	1209378-00
6	I■	1212169-00

WIRE TABLE

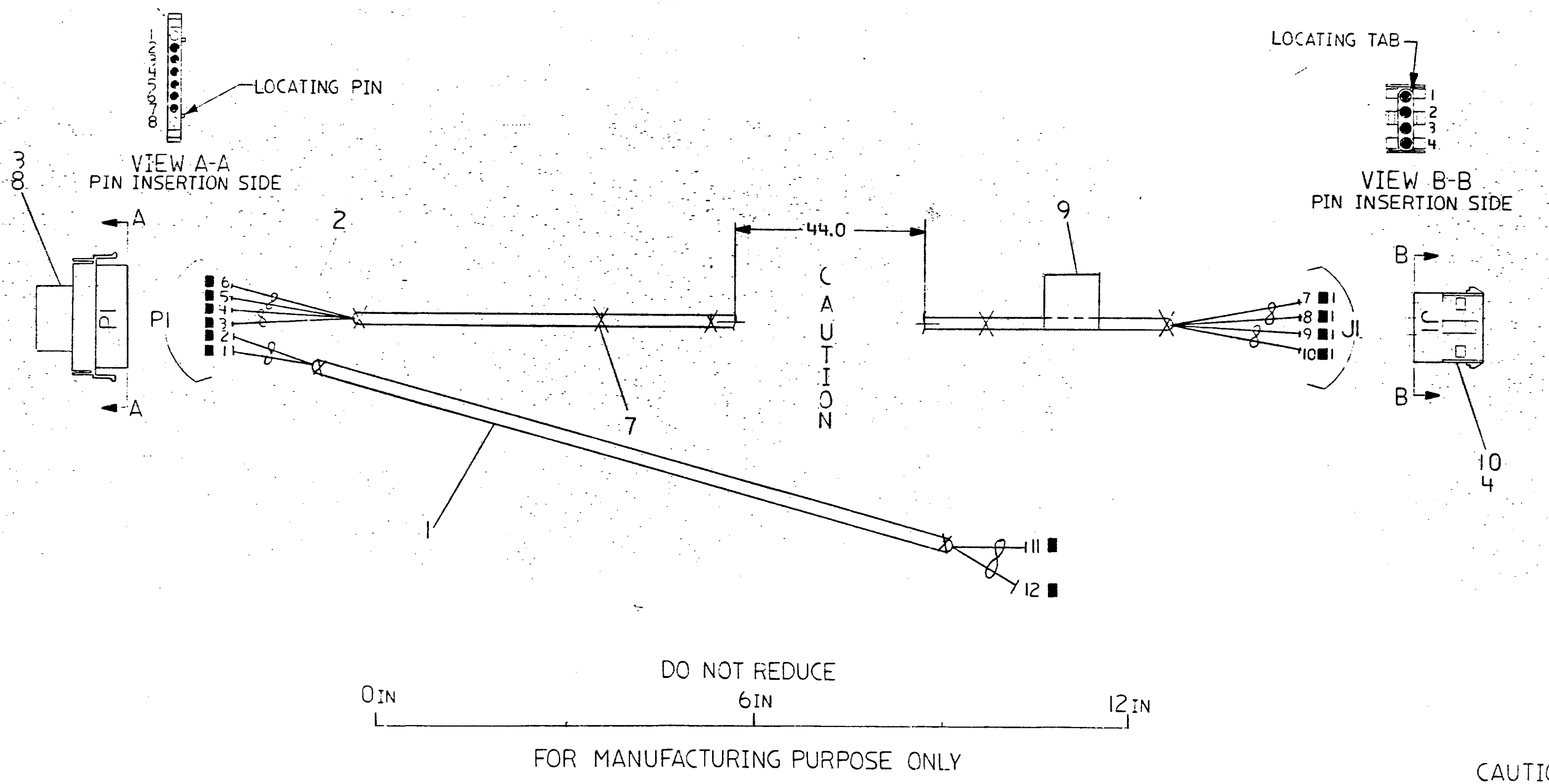
ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH	REMARKS
1	TWP #18	WHT	1	P1-7	5	12		5	
		RED	2	P1-6	▲	11		5	
2	TWP #14	RED	3	P1-5		10	J1-4	6	
		BLK	4	P1-4		9	J1-3	▲	
2	TWP #14	BLK	5	P1-3	▼	8	J1-2	▼	
		RED	6	P1-2	5	7	J1-1	6	

LEGEND

PART NO	VARIATION	REV
7019273 00	AS SHOWN	01

NOTES:

1. USE TIE WRAPS(X) ITEM 7 APPROXIMATELY EVERY 3 INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. CONNECTOR TO BE LABLED WITH COMPONENT IDENTIFIERS.
3. UNLESS OTHERWISE NOTED ALL LENGTHS ARE IN INCHES.



CAUTION: OFF SHEET PARTS LIST EXIST
SEE K-PL-7019273-0-DBP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

NEXT HIGHER DOC: E-UA-C120-A-0

TITLE: HARNESS DC-5.2 SECT'N-2 DC +5

digital

DOCUMENT NUMBER: SIZE D, CODE IA, NUMBER 7019273-0-0, REV C

SCALE 1/1

REVISION HISTORY: REV C, RELEASED

DRD 1000

AUTOMATED BY PRTLST.4Q(50) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00
					VARIATION REVISION LEVEL:	
1	1		9107430-92		WIRE,TWP 18AWG(19/30)IPVC 150V	A/R
2	2		9107440-02		WIRE,TWP 14AWG19/.0147IPVC 600V1	A/R
3	3	A-PS-1209340-0-0	1209340-01		MATE-N-LOK 08PIN(1X08) HSG	1
4	4	A-PS-1212168-0-0	1212168-02		MATE-N-LOK 04POS(1X04).250CC HSG	1
5	5	A-PS-1209378-0-0	1209378-00		MATE-N-LOK 01PIN 20-14AWG .085DD	8
6	6	A-PS-1212169-0-0	1212169-00		MATE-N-LOK 01PIN 20-14AWG .085DD	4
7	7		9007980-00		TIE,CABLE BUNDL DIA 0-1.14"=101	A/R
8	8	A-DC-7409872-0-0	7409872-02		PWR HARNESS DECAL, BLACK ON CLEA	1
9	9		3616073-00		LABEL,ID W/COPY VERTICAL	1
10	10	A-DC-7409873-0-0	7409873-02		PWR CONN DECAL BLACK ON CLEAR	1

REVISION HISTORY			BASIC PART NO: 7019273					
ENG	ECO NUMBER	REV	SECTION A OF A					
	INITIAL	C	SECTION.VARIATION INDEX	DRN: W. ALLEN	DATE: 14-APR-82	D I G I T A L		
			[A]00	CHK'D: G. F.	DATE: 14 DEC 82	TITLE PARTS LIST		
			[B]	DES.ENG: P. CAPPABIANCA	DATE: 14 APR 83	HARNESS DC-5.2 SECTION-2 DC+5		
			[C]			DOCUMENT NUMBER		
				RESP.ENG.: P. CAPPABIANCA	DATE: 14 APR 83	SIZE	CODE	NUMBER	REV
			[D]			K	PL	7019273-0-06P	C
			[E]	MFG.ENG.: J. MCCAFFERY	DATE: 11 APR 83	RELEASE DATE: 02-FEB-84		
			[F]	ASSEMBLY NUMBER: D-IA-7019273-0-0	TOP DOCUMENT NUMBER: E-UA-2I20-0-0	FILE NAME: Z5883C.PLS		EDIT #: 4

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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

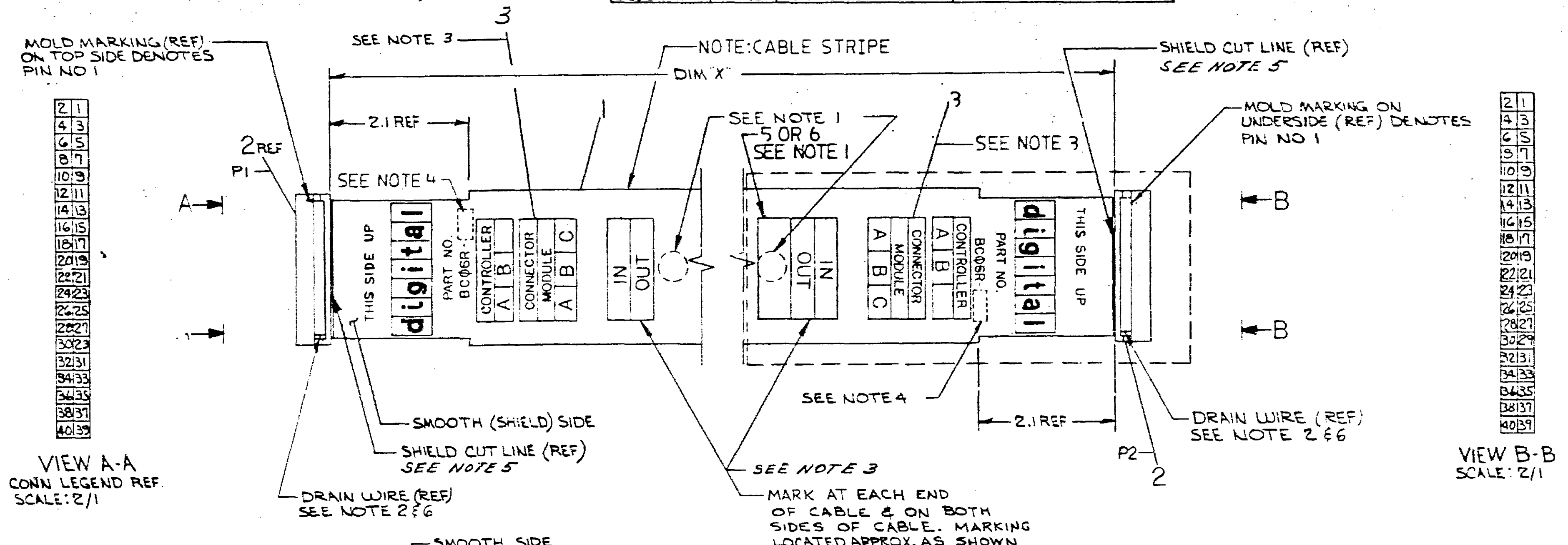
NUMBER	DIM "X"	PRECUT LENGTH	REMARKS
BCØ6R-Ø1	1FT	1FT 1.5IN ± 1IN	SEE PRE-CUT VIEW C-C
BCØ6R-Ø2	2FT	2FT 1.5IN ± 1IN	
BCØ6R-Ø3	3FT	3FT 1.5IN ± 1IN	
BCØ6R-Ø4	4FT	4FT 1.5IN ± 1IN	
* BCØ6R-Ø5	4FT 6IN	4FT 7.5IN ± 1.5IN	SEE NOTE 7 *
BCØ6R-Ø6	6FT	6FT 1.5IN ± 2IN	
BCØ6R-Ø8	8FT	8FT 1.5IN ± 2IN	
BCØ6R-1Ø	10FT	10FT 1.5IN ± 2IN	
BCØ6R-12	12FT	12FT 1.5IN ± 3IN	
BCØ6R-2Ø	20FT	20FT 1.5IN ± 3IN	
BCØ6R-25	25FT	25FT 1.5IN ± 3IN	
BCØ6R-3Ø	30FT	30FT 1.5IN ± 6IN	
BCØ6R-5Ø	50FT	50FT 1.5IN ± 1.C FT	
BCØ6R-6Ø	60FT	60FT 1.5IN ± 1.2FT	
BCØ6R-75	75FT	75FT 1.5IN ± 1.5FT	
BCØ6R-AØ	100FT	100FT 1.5IN ± 2FT	
BCØ6R-Ø7	7FT	7FT 1.5IN ± 2IN	
BCØ6R-8F	8FT 6IN	8FT 7.5IN ± 1IN	SEE PRE-CUT VIEW C-C
BCØ6R-15	15FT	15FT 1.5IN ± 3IN	
BCØ6R-1C	15IN	16.5IN ± 1IN	SEE PRE-CUT VIEW C-C
BCØ6R-1K	1FT 9IN	1FT 10.5IN ± 1IN	SEE PRE-CUT VIEW C-C

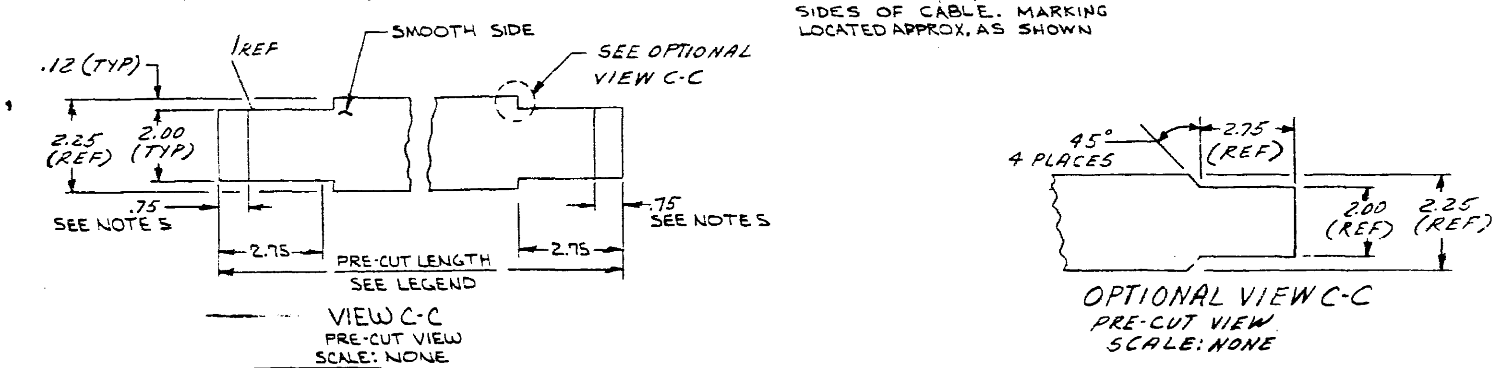
NOTES:

1. 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.
2. DRAIN WIRE CONNECTS TO PIN NO 40.
3. RUBBER STAMP INFORMATION SHOWN USING INK (ITEM 3) & ARTWORK DEC NO A-DC-7411699-0-0.
4. STAMP APPLICABLE OPTION DASH NO. ACCORDING TO LENGTH.
5. REMOVE SHIELD .75 FROM END OF PRECUT CABLE (SEE VIEW C-C).
6. COVER EXPOSED DRAIN WIRE WITH ITEM 4 PRIOR TO ASSY (BOTH ENDS).

*7. FOR RP04, RP05, RP06 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.





CAUTION: OFF SHEET PARTS LIST EXISTS. SEE: K-PL-BCØ6R-Ø-DBP (Z6996)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO.
RPØ4		PARTS LIST		

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

NEXT HIGHER ASSY.: E-IA-7009807-0-0, E-IA-7009808-0-0

DIGITAL EQUIPMENT CORPORATION, MAYNARD MASSACHUSETTS

TITLE: BCØ6R I/O CABLE

SIZE: D CODE: UA NUMBER: BCØ6R-Ø-Ø REV.: J
SCALE: NONE SHEET 1 OF 1

D-UA-BCØ6R-Ø-Ø

1 of 1

REVISIONS: A BC06R-00001; B BC06R-00002 L. CONDON; C BC06R-00003 D. LIGNOS; D BC06R-00004 R. BOUYEAU; E L. CAPRARIELLO; F BC06R-CX006 C DUNIGAN; H BC06R-CX007 W. HARDER; J BCØ6R-CXØØ8 F.U. 16 DEC 83 R. HOLLADAY

AUTOMATED BY PRTLST.5R(52) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 01 H
1	1		1700034-00	H	CABLE,RIBBON BOND 40COND 30AWG	A/R
2	2		1211206-00	S	CONN,IDC 40SKT(2X20).100CC GOL	2
3	3		4901150-00	A	INK,ACID BASE,WATERPROOF	A/R
4	4		3612511-00	CR	TAPE,VINYL ADH .50 WDX 7M	A/R
5	5		3616073-00	B	LABEL,ID W/COLY VERTICAL	1
6	6		3616989-00	A	LABEL,CABLE LARGE	1

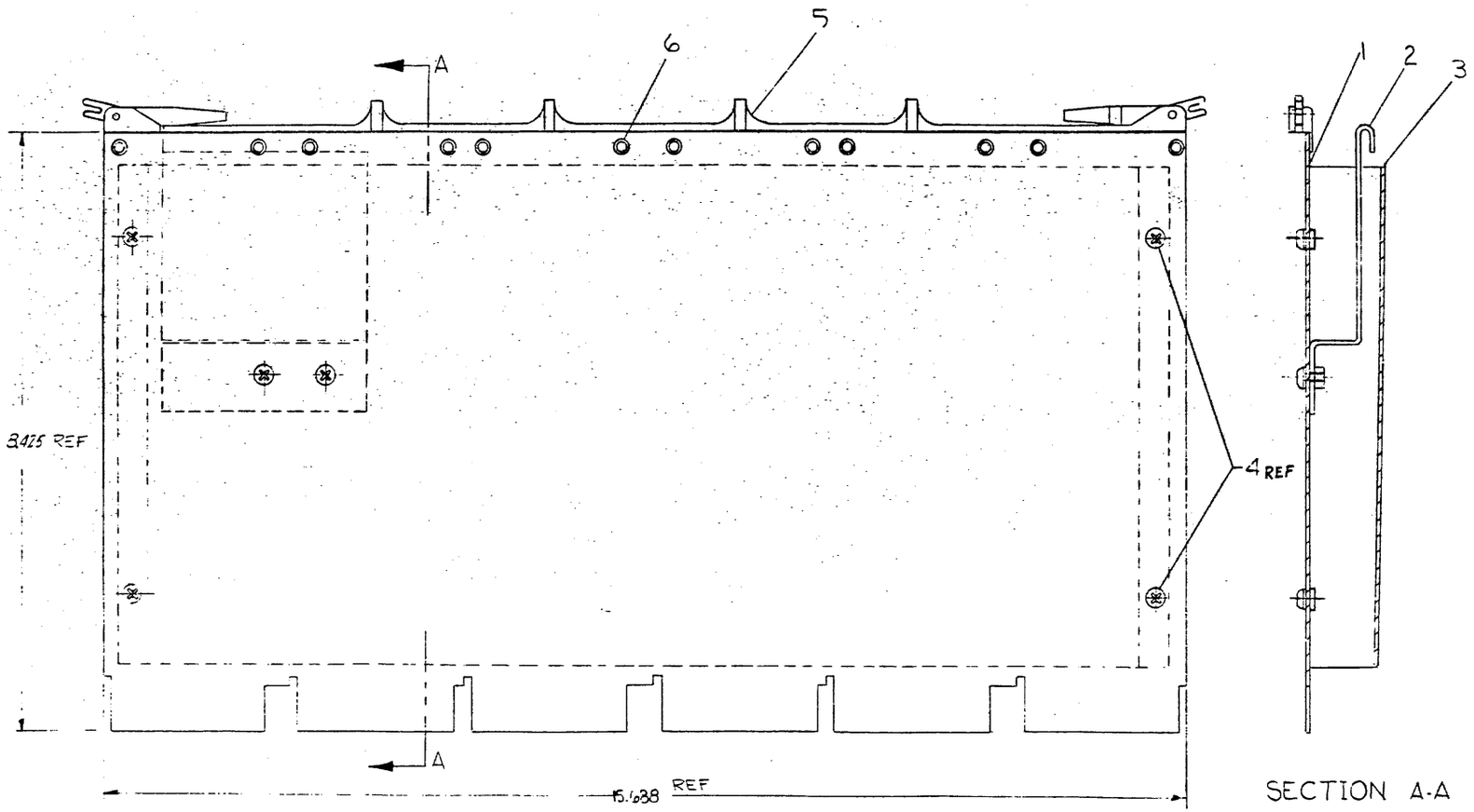
REVISION HISTORY			BASIC PART NO: BC06R					
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: D. DI PERRI	DATE: 12-22-73	D I G I T A L		
WH	BC06R-CX007	H	SECTION.VARIATION INDEX	CHK'D: B. MONETTE	DATE: 3-25-74	TITLE PARTS LIST BC06R I/O CABLE		
RH	BC06R-CX008 R# 12/7/73	J	[A]01					
RM 20 DEC 83			[B]	DES.ENG: D. POTTER	DATE: 3-29-73	DOCUMENT NUMBER		
			[C]			SIZE	CODE	NUMBER / REV
			[D]	RESP.ENG.: D. LIGNOS	DATE: 4-17-74	K	PL	BC06R 0-DBP / J
			[E]	MFG.ENG.: A. PARLSING	DATE: 4-21-74	RELEASE DATE:		
			[F]	ASSEMBLY NUMBER: D-UA-BC06R-0-0-0	TOP DOCUMENT NUMBER: E-IA-7009807-0-0	FILE NAME: Z6996J.PLS	EDIT #: 4	

SIZE	CODE	NUMBER	REV
D	--	70-09266-0-0	B

LEGEND

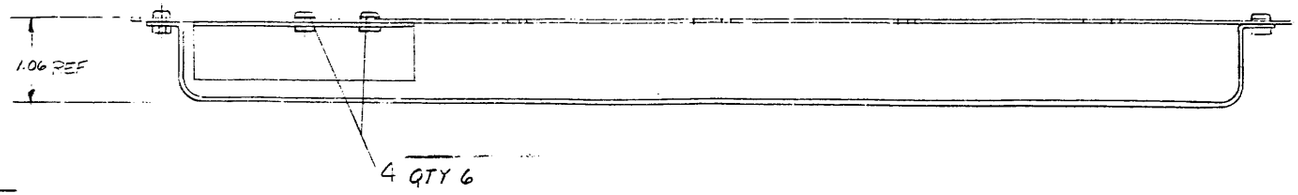
NUMBER	VARIATION	REV
70-09266-0-0	AS SHOWN	A

NOTES:



SECTION A-A

CAUTION: OFF SHEET PARTS LIST EXIST
SEE K-PL-70-09266-0-DBP



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 (CHECK ONE)	DIMENSION RANGE IN 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 60.0
X = ± .1 XX = ± .02 XXX = ± .005	SURFACE QUALITY ✓ MICROINCHES	☐	± .02		± .03	± .05	± .10	
QUANTITY & VARIATION		☐	± .004	± .008	± .012	± .016	± .024	± .04
		☐						

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL SEE PARTS LIST

FINISH TIN/LEAD

DRN		DATE 20 FEB 93
CHK'D		DATE 15 DEC 92
DES ENG	R. Cappabianca	DATE 13 APR 93
RESP ENG	R. Cappabianca	DATE 13 APR 93
MFG ENG		DATE 13/11/93
NEXT HIGHER DOC	E-UA-CI20-A-0	

TITLE: MODULE BLANK ASSY

DOCUMENT NUMBER: SIZE D | CODE -- | NUMBER 70-09266-0-0 | REV B

SCALE 1/1 | SHEET 1 OF 1

REVISION HISTORY		
DATE	ECO NUMBER	REV
	RELEASED	B

DRD 1000

MRO

AUTOMATED BY PRTLST.4Q(50) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION		QTY PER VARIATION 00
					VARIATION REVISION LEVEL:		
1	1	D-MD-7428313-0-0	49057-00		AIR FLOW CONTROLLER,HEX (FOR CI2		1
2	2	C-IA-7424869-0-0	7424869-01		CLIP		1
3	3	D-IA-7426796-0-0	7426796-01		BAFFLE		1
4	4		90000022-01		SCREW,MACH PAN	PHIL 5-	6

REVISION HISTORY			BASIC PART NO: 7019266				
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: W. ALLEN	DATE: 20-FEB-82	D I G I T A L	
	INITIAL	B	SECTION.VARIATION INDEX	CHK'D: G. F.	DATE: 14-DEC-82	TITLE PARTS LIST MODULE BLANK ASSY	
			CA]00				
			CB]	DES.ENG: P. CAPPABIANCA	DATE: 13-APR-83	DOCUMENT NUMBER	
			CC]			SIZE CODE NUMBER REV	
				RESP.ENG.: P. CAPPABIANCA	DATE: 13-APR-83	K PL 7019266-0-DBP B	
			CD]				
			CE]	MFG.ENG.: S. ALMEIDA	DATE: 13-APR-83	RELEASE DATE: 02-FEB-84	
			CF]	ASSEMBLY NUMBER: D-AD-7019266-0-0	TOP DOCUMENT NUMBER:	FILE NAME: Z5881B.PLS	EDIT # 6

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			ECO NUMBER	-	M3001 MR001
		M3001-00	MODULE REVISION	A1	A1
D-UA-M3001-0-0	2		EBUS	A	A1
K-PL-M3001-0-DBP	2		PARTS LIST, M3001	A	A1
D-CS-M3001-0-EBI1	1		CI20 EBUS INTFC CONTROL 1	A	A
D-CS-M3001-0-EBI2	1		CI20 EBUS INTFC CONTROL 2	A	A
D-CS-M3001-0-EBI3	1		CI20 EBUS INTFC EBUS-MBUS MUXS	A	A
D-CS-M3001-0-EBI4	1		CI20 EBUS INTFC CSR REG	A	A
D-CS-M3001-0-EBI5	1		CI20 EBUS INTFC EBUS PAR AND EBUF	A	A
D-CS-M3001-0-EBI6	1		CI20 EBUS INTFC EBUS XCEIVERS	A	A
D-CS-M3001-0-EBI7	1		CI20 EBUS INTFC MICROPROC ALU 1	A	A
D-CS-M3001-0-EBI8	1		CI20 EBUS INTFC MICROPROC ALU 2	A	A
D-CS-M3001-0-EBI9	1		CI20 EBUS INTFC UPROC CNST MUX	A	A
D-CS-M3001-0-EBIA	1		CI20 EBUS INTFC PWR & GND	A	A
D-CS-M3001-0-EBIB	1		CI20 EBUS INTFC UNUSED FINGER	A	A
D-CS-M3001-0-BLK	1		BLOCK DIAGRAM EBUS MODULE	A	A
K-PC-M3001-0-DBI	-		P.C. DESIGN DATA BASE	A	A
D-DD-5015384-0	2		DRAWING DIRECTORY, 5015384	REF	REF

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. D.DELLORCO DATE 19-FEB-85
CHK D. D.CAUNTER DATE 19-FEB-85
ENG. E. BLOOM DATE 19-FEB-85
BOARD LOCATION: N/A
SHEET 1 OF 2
DSK:M3001I.T2P[4,57] 19-FEB-85 13:06
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: CI20

TITLE: DRAWING DIRECTORY
M3001 (EBUS)

SIZE	CODE	NUMBER	REV.
D	DD	M3001-0	C

MRD

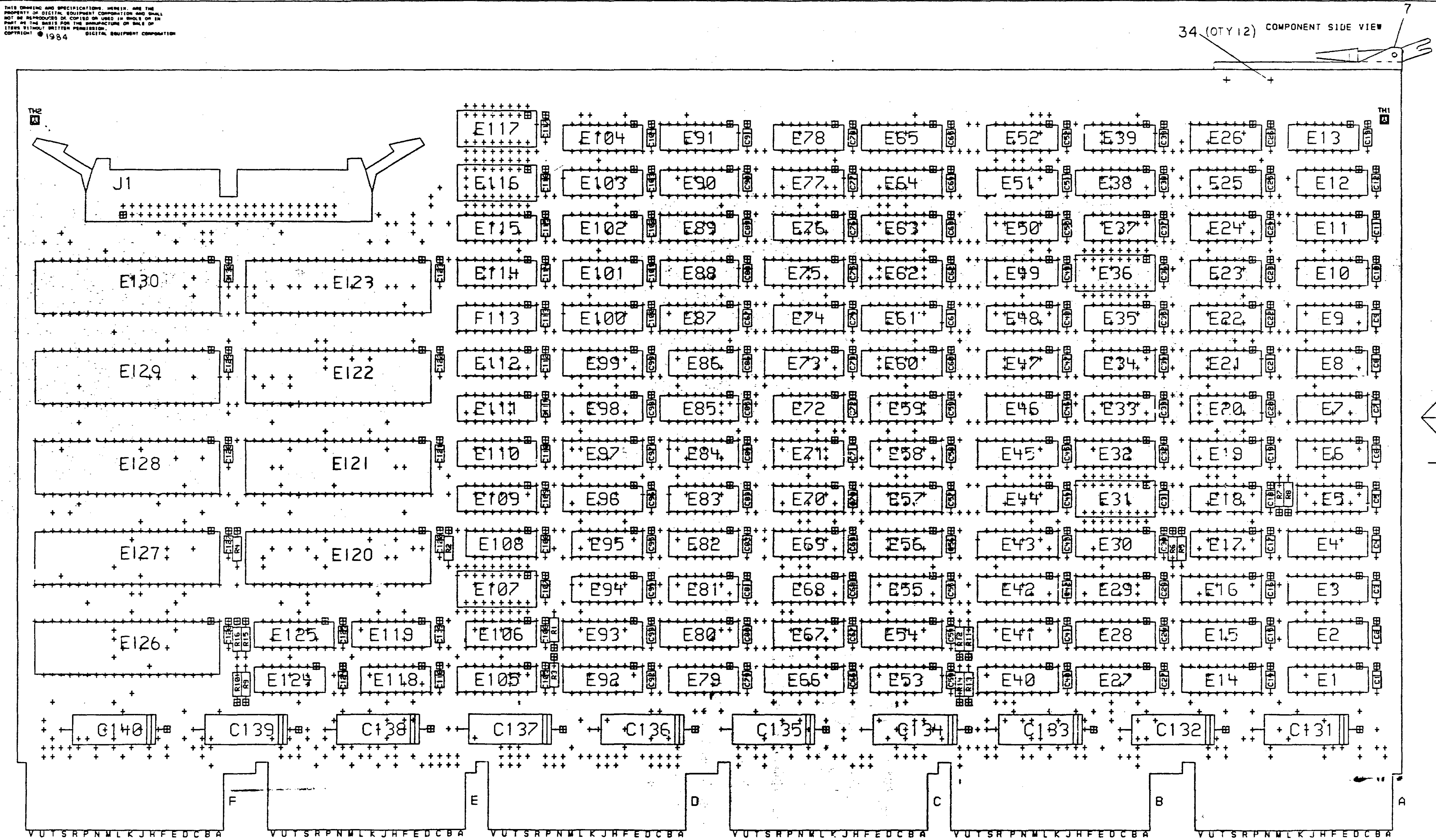
DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			ECO NUMBER	M3001 MR001	M3001 MR002
		M3001-00	MODULE REVISION	A2	A3
D-UA-M3001-0-0	1		EBUS	B	C
K-PL-M3001-0-DBP	2		PARTS LIST, M3001	B	C
D-CS-M3001-0-EBI1	1		CI20 EBUS INTFC CONTROL 1	A	A
D-CS-M3001-0-EBI2	1		CI20 EBUS INTFC CONTROL 2	A	A
D-CS-M3001-0-EBI3	1		CI20 EBUS INTFC EBUS-MBUS MUXS	A	A
D-CS-M3001-0-EBI4	1		CI20 EBUS INTFC CSR REG	A	A
D-CS-M3001-0-EBI5	1		CI20 EBUS INTFC EBUS PAR AND EBUF	A	A
D-CS-M3001-0-EBI6	1		CI20 EBUS INTFC EBUS XCEIVERS	A	A
D-CS-M3001-0-EBI7	1		CI20 EBUS INTFC MICROPROC ALU 1	A	A
D-CS-M3001-0-EBI8	1		CI20 EBUS INTFC MICROPROC ALU 2	A	A
D-CS-M3001-0-EBI9	1		CI20 EBUS INTFC UPROC CNST MUX	A	A
D-CS-M3001-0-EBIA	1		CI20 EBUS INTFC PWR & GND	A	A
D-CS-M3001-0-EBIB	1		CI20 EBUS INTFC UNUSED FINGER	A	A
D-CS-M3001-0-BLK	1		BLOCK DIAGRAM EBUS MODULE	A	A
K-PC-M3001-0-DBI	-		P.C. DESIGN DATA BASE	B	B
D-DD-5015384-0	2		DRAWING DIRECTORY, 5015384	REF	REF

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. D.DELLORCO	DATE 19-FEB-85	ENG. E BLOOM	DATE 19-FEB-85	TITLE: DRAWING DIRECTORY M3001 (EBUS)
CHK'D. D.CAUNTER	DATE 19-FEB-85	BOARD LOCATION: N/A		
DSK:M30012.T2P[4,57] [19-FEB-85 13:06]		NEXT HIGHER ASSEMBLY:	SHEET 2 OF 2	SIZE D | CODE DD | NUMBER M3001-0 | REV. C
FIRST USED ON OPTION/MODEL: CI20				

MRO


34 (QTY 12)
COMPONENT SIDE VIEW
7
TH2
TH1
J1
E117 E104 E91 E78 E65 E52 E39 E26 E13
E116 E103 E90 E77 E64 E51 E38 E25 E12
E115 E102 E89 E76 E63 E50 E37 E24 E11
E130 E123 E114 E101 E88 E75 E62 E49 E36 E23 E10
E113 E100 E87 E74 E61 E48 E35 E22 E9
E129 E122 E112 E99 E86 E73 E60 E47 E34 E21 E8
E111 E98 E85 E72 E59 E46 E33 E20 E7
E128 E121 E110 E97 E84 E71 E58 E45 E32 E19 E6
E109 E96 E83 E70 E57 E44 E31 E18 E5
E127 E120 E108 E95 E82 E69 E56 E43 E30 E17 E4
E107 E94 E81 E68 E55 E42 E29 E16 E3
E126 E125 E119 E106 E93 E80 E67 E54 E41 E28 E15 E2
E124 E118 E105 E92 E79 E66 E53 E40 E27 E14 E1
C140 C139 C138 C137 C136 C135 C134 C133 C132 C131
F E D C B A
VUTSRPNMLKJHFEDCBA

NOTES:
SPARE COMPONENTS: E31, E36, E107, E116, E117

STEP &	↑ Y AXIS Ø	STEP Ø TIMES
REPEAT	→ X AXIS Ø	STEP Ø TIMES

ETCH REV. C1

SIGNATURES	DATE
DRN.	14 MAY 84
CHK	23 AUG 84
MECH. ENG.	27 AUG 84
PROJ. ENG.	27 AUG 84
PROD.	5 JUL 84

digital

TITLE: EBUS

SCALE 2/1
SHT. 1 OF 1

SIZE	CODE	NUMBER	REV
D	UA	M3001-Ø-Ø	C

TOP DOC. NO: D-DD-M3001-Ø

MRO 1 MS#L90861C

LINE	ITEM	TCP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A3	
1	1	D-MD-5015384-0-0	5015384-01	C	DRILL & ETCH DWG FOR M3001	1	
2	2		1001610-00		.01 MFD 50V +80-20% Z5U CER	113	C1-C17,C19-C29,C31-C52,C55-C104,
						CONT	C107-C119
3	3		1012084-03		150 MFD 15V +75-10% AL EL	10	C131-C140
4	4		1012784-00		.047 MFD 50V +80-20% CER	17	C18,C30,C53,C54,C105,C106,
						CONT	C120-C130
5	5		1216832-03		PCB,HEADER 50POS(2X25),.100CC 90D	1	J1
6	6		1215278-00		CABLE,FLEX NOMEX SHEET MODULE PR	1	
7	7		1216988-02		HANDLE,MODULE,HEX TWO EJECTORS	1	
8	8		1300295-00		330.0 .25 W 5.0 % CF	2	R1,R3
9	9		1300309-00		390.0 .25 W 5.0 % CF	6	R6,R8,R10,R12,R14,R16
10	11		1301322-00		180.0 .25 W 5.0 % CF	8	R2,R4,R5,R7,R9,R11,R13,R15
11	12		1910532-B0		74S00 BURNED-IN NAND GATE-	6	E12,E34,E82,E95,E106,E108
12	13		1910534-B0		74S04 BURNED-IN INVERTER G	6	E9,E10,E44,E53,E78,E79
13	14		1910536-B0		74S10 BURNED-IN NAND GATE-	3	E7,E71,E81
14	15		1910537-B0		74S11 BURNED-IN AND GATE-T	1	E124
15	15		1910544-B0		74S74 BURNED-IN FF-D DUAL,	9	E6,E8,E17,E18,E55,E67-E69,E83
16	17		1911117-00	DEC	8838 TRANSCEIVER,BUS,QUA	16	E1-E3,E14-E16,E27-E30,E40-E43,
						CONT	E54,E66
17	18		1911573-B0		74S280 BURNED-IN PARITY GEN	10	E46-E50,E52,E74,E76,E77,E86
18	19		1911641-B0		74S257 BURNED-IN MUX,QUAD 2	9	E87-E90,E99-E103
19	20		1911675-B0		74S138 BURNED-IN DECODER/DE	1	E45
20	21		1912097-00	SN	74S182 LOOK AHD CARRY GEN	3	E113,E119,E125
21	22		1912388-B0		74S02 BURNED-IN NOR GATE-Q	8	E19,E20,E33,E37,E56,E58,E84,E94
22	23		1912389-B0		74S08 BURNED-IN AND GATE,Q	7	E21,E35,E39,E57,E59,E72,E118
23	24		1912697-00		LS174 FF-D HEX W/CLEAR	6	E91,E98,E104,E112,E114,E115
24	25		1912799-B0		LS00 BURNED-IN NAND GATE-	2	E22,E26
25	26		1912805-B0		LS08 BURNED-IN AND GATE-Q	2	E13,E23
26	27		1912819-00		LS42 DECODER,BCD-DECIMAL	1	E32
27	28		1912824-B0		LS74 BURNED-IN FF-D DUAL-	3	E11,E24,E25

REVISION HISTORY		
ENG	ECO NUMBER	REV
	INITIAL	A
JT	M3001-MR001	B
EB	M3001-MR002	C

BASIC PART NO: M3001
SECTION A OF A

SECTION,VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]
[H]
[J]
[K]
[L]
[M]
[N]

DRN: D,DELLORCO — DATE: 14-OCT-82
CHK'D: D,DELLORCO — DATE: 3-JAN-84
DES,ENG: R,CARN — DATE: 19-APR-84
RESP,ENG,: R,CARN — DATE: 19-APR-84
MFG,ENG,: R,CARN — DATE: 19-APR-84

ASSEMBLY NUMBER: D-UA-M3001-0-0
TOP DOCUMENT NUMBER: D-DD-M3001-0

D I G I T A L

TITLE PARTS LIST
M3001
EBUS

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
K	PL	M3001-0-DBP	C

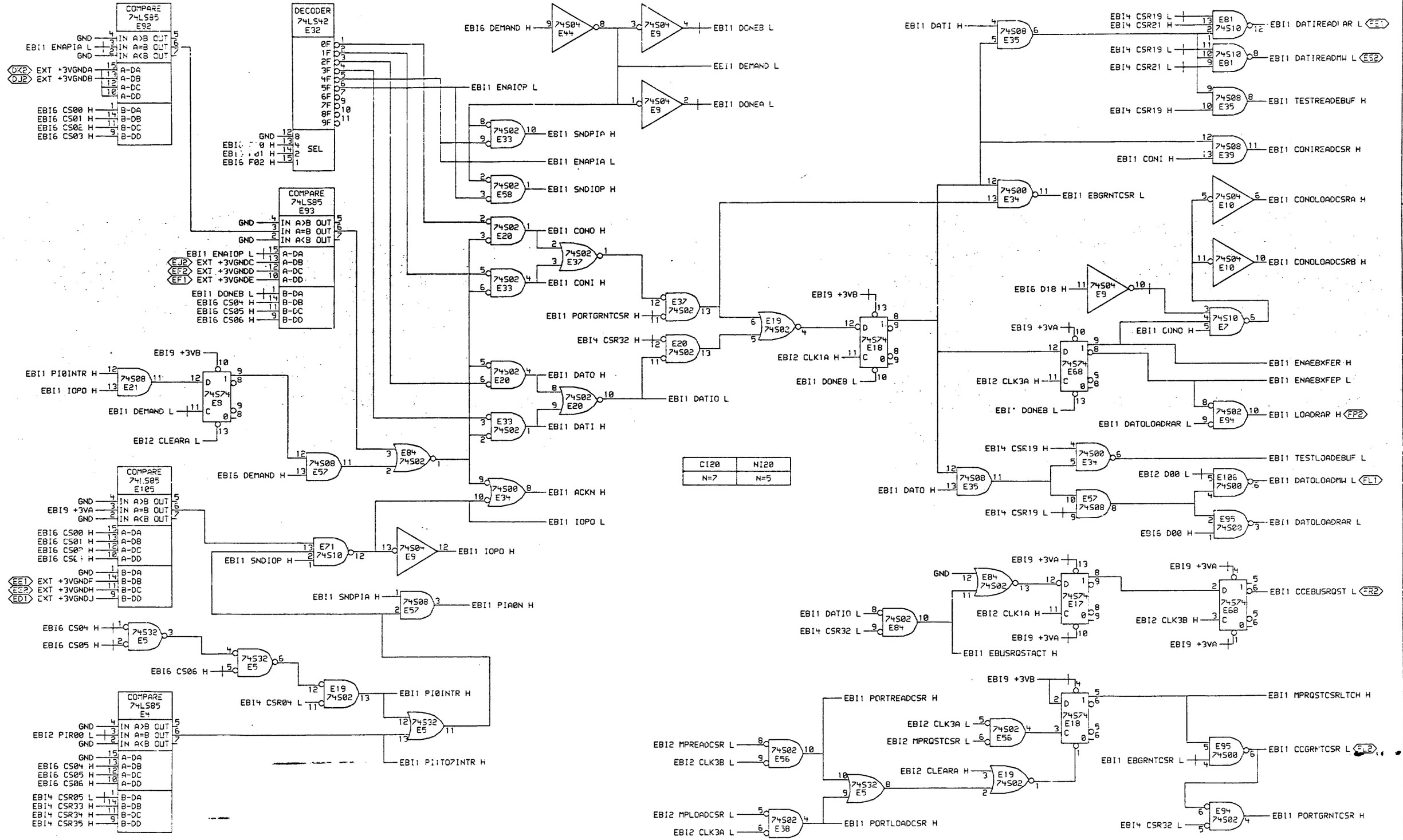
RELEASE DATE: 18-FEB-85

FILE NAME: Z8533C,PLS
EDIT #: 18

LINE	ITEM	TCP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A3	
28	29		1912828-00		LS85 COMPARATOR,4BIT MAGN	4	E4,E92,E93,E105
29	30		1912847-00		LS157 MUX 1 OF 2(QUAD)	14	E38,E51,E60,E61,E63-E65,E73,E85,
						CONT	E96,E97,E109-E111
30	31		1912853-B0		LS175 BURNED-IN FF-D,QUAD	3	E62,E75,E80
31	32		1913245-00		2901 BIPOLAR MICROPROCESSO	9	E120-E123,E126-E130
32	33		1913340-B0		74S32 BURNED-IN OR GATE,QU	2	E5,E70
33	34		9000024-01		EYELET,ROLLED 0.1210DX0.192	12	

SIZE	CODE	NUMBER	REV.
D	CS	M3001-0-EBI1	A

CI20	NI20
N=7	N=5



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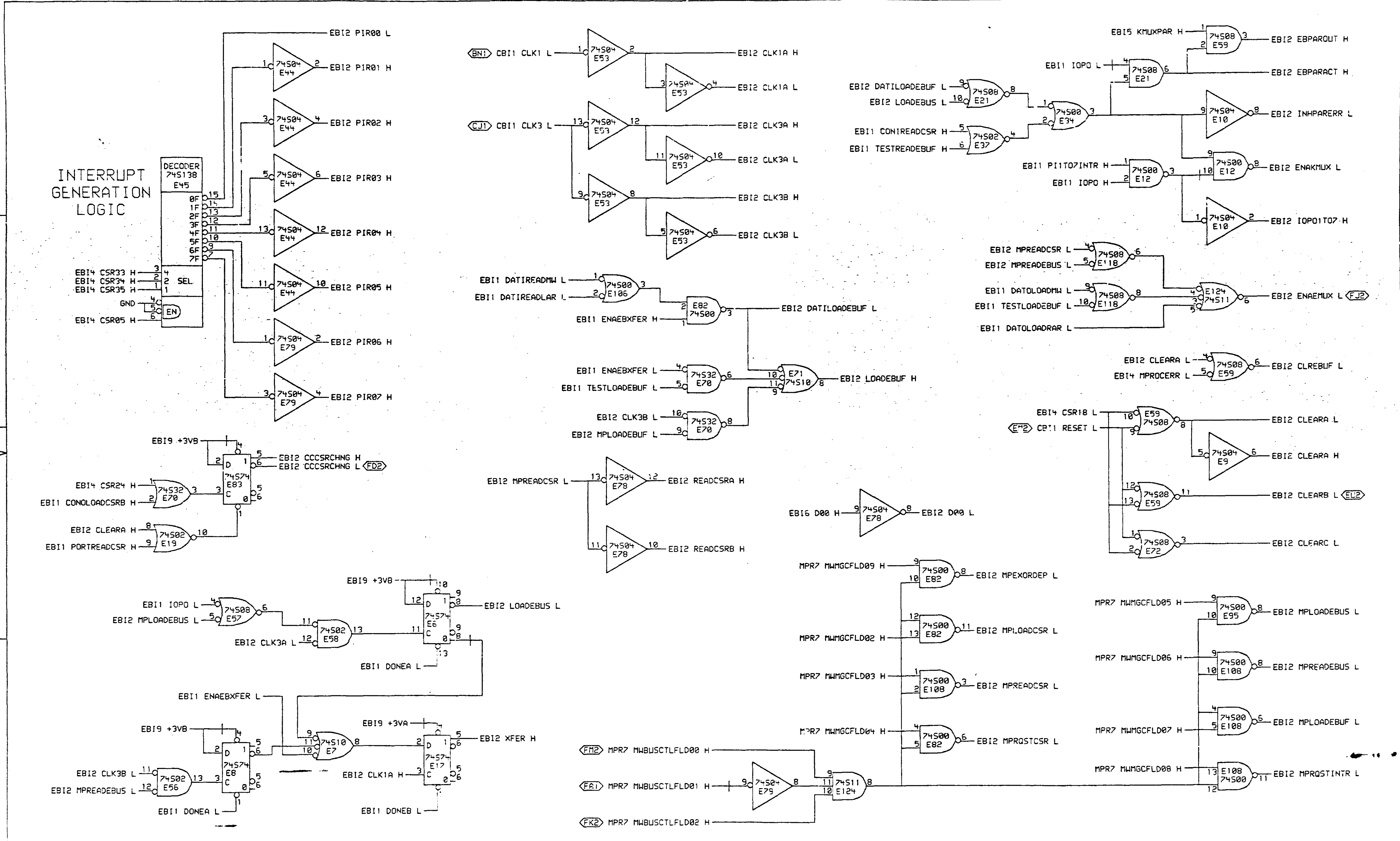
	SMK	CHANGE NO.	REV

digital	DRN. Loomby	DATE 05-APR-84	ENG. R Lam	DATE 05-APR-84	TITLE: CI20 EBUS INTFC CONTROL 1
	CHK D. Meyers	DATE 19-APR-84	BOARD LOCATION:	SHEET 1 OF 1	
SUDCOM:<BOWEN.ECO>EBI103.DRW 29-MAR-84 08:43			NEXT H.S-ER ASSEMBLY:		SIZE D / CODE CS / NUMBER M3001-0-EBI1 / REV. A
FIRST USED ON OPTION/MODEL: CI20			D-DD-M3001-0		


INTERRUPT GENERATION LOGIC
DECODER 74S138 E45
EBI4 CSR33 H
EBI4 CSR34 H
EBI4 CSR35 H
GND
EBI4 CSR05 H
SEL
EN
EBI2 PIR00 L
EBI2 PIR01 H
EBI2 PIR02 H
EBI2 PIR03 H
EBI2 PIR04 H
EBI2 PIR05 H
EBI2 PIR06 H
EBI2 PIR07 H
EBI9 +3VB
EBI2 CCCSRCHNG H
EBI2 CCCSRCHNG L
FD2
EBI4 CSR24 H
EBI1 CONOLOADCSRB H
EBI2 CLEARA H
EBI1 PORTREADCSR H
EBI1 IOPO L
EBI2 MPLOADEBUS L
EBI2 CLK3A L
EBI1 DONEA L
EBI2 LOADEBUS L
EBI1 ENAEBXFER L
EBI2 CLK3B L
EBI2 MPREADEBUS L
EBI9 +3VA
EBI2 XFER H
EBI2 CLK1A H
EBI1 DONEB L
BN1
CBI1 CLK1 L
EBI2 CLK1A H
EBI2 CLK1A L
CJ1
CBI1 CLK3 L
EBI2 CLK3A H
EBI2 CLK3A L
EBI2 CLK3B H
EBI2 CLK3B L
EBI1 DATIREADMW L
EBI1 DATIREADLAR L
EBI1 ENAEBXFER H
EBI2 DATILOADEBUF L
EBI1 ENAEBXFER L
EBI1 TESTLOADEBUF L
EBI2 LOADEBUF H
EBI2 CLK3B L
EBI2 MPLOADEBUF L
EBI2 MPREADCSR L
EBI2 READCSRA H
EBI2 READCSRB H
EBI6 D00 H
EBI2 D00 L
MPR7 MWMGCFLD09 H
EBI2 MPEXORDEP L
MPR7 MWMGCFLD02 H
EBI2 MPLOADCSR L
MPR7 MWMGCFLD03 H
EBI2 MPREADCSR L
MPR7 MWMGCFLD04 H
EBI2 MPRQSTCSR L
FM2
MPR7 MWBUSCTLFLD00 H
FA1
MPR7 MWBUSCTLFLD01 H
FK2
MPR7 MWBUSCTLFLD02 H
EBI5 KMUXPAR H
EBI2 EBPAROUT H
EBI1 IOPO L
EBI2 EBPARACT H
EBI2 DATILOADEBUF L
EBI2 LOADEBUS L
EBI1 CONIREADCSR H
EBI1 TESTREADEBUF H
EBI2 INHPARERR L
EBI1 PI1TO7INTR H
EBI1 IOPO H
EBI2 ENAKMUX L
EBI2 IOPO1TO7 H
EBI2 MPREADCSR L
EBI2 MPREADEBUS L
EBI1 DATOLOADMW L
EBI1 TESTLOADEBUF L
EBI1 DATOLOADRAR L
EBI2 ENAEMUX L
FJ2
EBI2 CLEARA L
EBI4 MPROCERR L
EBI2 CLREBUF L
EBI4 CSR18 L
FM2
CBI1 RESET L
EBI2 CLEARA L
EBI2 CLEARA H
EBI2 CLEARB L
EL2
EBI2 CLEARC L
MPR7 MWMGCFLD05 H
EBI2 MPLOADEBUS L
MPR7 MWMGCFLD06 H
EBI2 MPREADEBUS L
MPR7 MWMGCFLD07 H
EBI2 MPLOADEBUF L
MPR7 MWMGCFLD08 H
EBI2 MPRQSTINTR L

REVISIONS: CHK | CHANGE NO. | REV

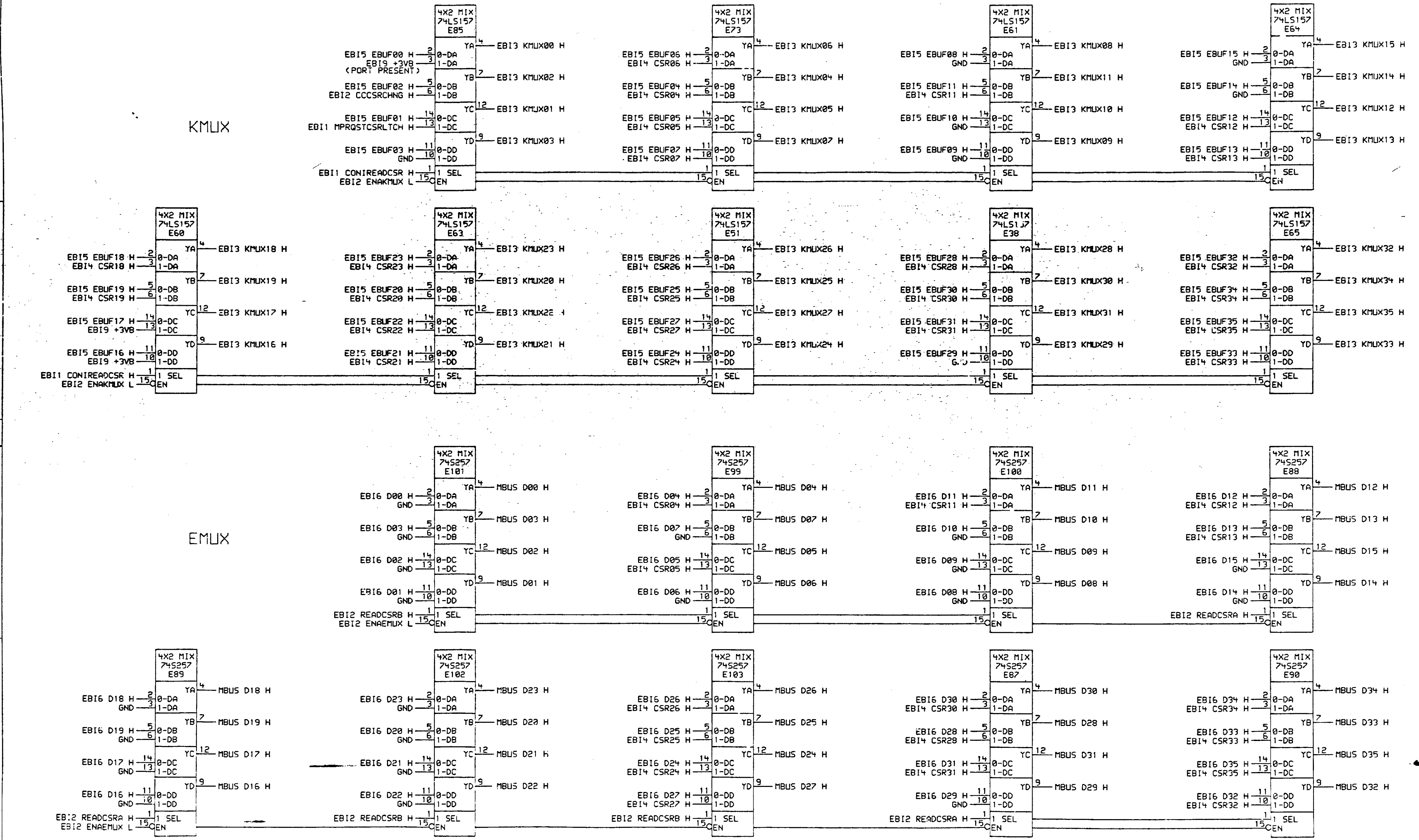
digital

DRN. | DATE 05-APR-84 | ENG. | DATE 05-APR-84
CHK'D. | DATE | BOARD LOCATION:
SHEET 1 OF 1

SUDCOM:(BOWEN.ECO)EBI203.DRW 29-MAR-84 08:44 | NEXT HIGHER ASSEMBLY: D-DD-M3001-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 EBUS INTFC CONTROL 2

SIZE D | CODE CS | NUMBER M3001-0-EBI2 | REV. A



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EBI5 EBUF00 H 2 0-DA
EBI9 +3V8 3 1-DA
(PORT PRESENT)
YA 4 EBI3 KMUX00 H
EBI5 EBUF02 H 5 0-DB
EBI2 CCCSRCHNG H 6 1-DB
YB 7 EBI3 KMUX02 H
EBI5 EBUF01 H 14 0-DC
EBI1 MPRQSTCSRLTCH H 13 1-DC
YC 12 EBI3 KMUX01 H
EBI5 EBUF03 H 11 0-DD
GND 10 1-DD
YD 9 EBI3 KMUX03 H
EBI1 CONIREADCSR H 1 SEL
EBI2 ENAKMUX L 15 EN
4X2 MIX 74LS157 E73
EBI5 EBUF06 H 0-DA
EBI4 CSR06 H 1-DA
YA EBI3 KMUX06 H
EBI5 EBUF04 H 0-DB
EBI4 CSR04 H 1-DB
YB EBI3 KMUX04 H
EBI5 EBUF05 H 0-DC
EBI4 CSR05 H 1-DC
YC EBI3 KMUX05 H
EBI5 EBUF07 H 0-DD
EBI4 CSR07 H 1-DD
YD EBI3 KMUX07 H
4X2 MIX 74LS157 E61
EBI5 EBUF08 H 0-DA
GND 1-DA
YA EBI3 KMUX08 H
EBI5 EBUF11 H 0-DB
EBI4 CSR11 H 1-DB
YB EBI3 KMUX11 H
EBI5 EBUF10 H 0-DC
GND 1-DC
YC EBI3 KMUX10 H
EBI5 EBUF09 H 0-DD
EBI4 CSR09 H 1-DD
YD EBI3 KMUX09 H
4X2 MIX 74LS157 E64
EBI5 EBUF15 H 0-DA
GND 1-DA
YA EBI3 KMUX15 H
EBI5 EBUF14 H 0-DB
GND 1-DB
YB EBI3 KMUX14 H
EBI5 EBUF12 H 0-DC
EBI4 CSR12 H 1-DC
YC EBI3 KMUX12 H
EBI5 EBUF13 H 0-DD
EBI4 CSR13 H 1-DD
YD EBI3 KMUX13 H
4X2 MIX 74LS157 E60
EBI5 EBUF18 H 0-DA
EBI4 CSR18 H 1-DA
YA EBI3 KMUX18 H
EBI5 EBUF19 H 0-DB
EBI4 CSR19 H 1-DB
YB EBI3 KMUX19 H
EBI5 EBUF17 H 0-DC
EBI9 +3V8 1-DC
YC EBI3 KMUX17 H
EBI5 EBUF16 H 0-DD
EBI9 +3V8 1-DD
YD EBI3 KMUX16 H
EBI1 CONIREADCSR H 1 SEL
EBI2 ENAKMUX L 15 EN
4X2 MIX 74LS157 E63
EBI5 EBUF23 H 0-DA
EBI4 CSR23 H 1-DA
YA EBI3 KMUX23 H
EBI5 EBUF20 H 0-DB
EBI4 CSR20 H 1-DB
YB EBI3 KMUX20 H
EBI5 EBUF22 H 0-DC
EBI4 CSR22 H 1-DC
YC EBI3 KMUX22 H
EBI5 EBUF21 H 0-DD
EBI4 CSR21 H 1-DD
YD EBI3 KMUX21 H
4X2 MIX 74LS157 E51
EBI5 EBUF26 H 0-DA
EBI4 CSR26 H 1-DA
YA EBI3 KMUX26 H
EBI5 EBUF25 H 0-DB
EBI4 CSR25 H 1-DB
YB EBI3 KMUX25 H
EBI5 EBUF27 H 0-DC
EBI4 CSR27 H 1-DC
YC EBI3 KMUX27 H
EBI5 EBUF24 H 0-DD
EBI4 CSR24 H 1-DD
YD EBI3 KMUX24 H
4X2 MIX 74LS157 E38
EBI5 EBUF28 H 0-DA
EBI4 CSR28 H 1-DA
YA EBI3 KMUX28 H
EBI5 EBUF30 H 0-DB
EBI4 CSR30 H 1-DB
YB EBI3 KMUX30 H
EBI5 EBUF31 H 0-DC
EBI4 CSR31 H 1-DC
YC EBI3 KMUX31 H
EBI5 EBUF29 H 0-DD
GND 1-DD
YD EBI3 KMUX29 H
4X2 MIX 74LS157 E65
EBI5 EBUF32 H 0-DA
EBI4 CSR32 H 1-DA
YA EBI3 KMUX32 H
EBI5 EBUF34 H 0-DB
EBI4 CSR34 H 1-DB
YB EBI3 KMUX34 H
EBI5 EBUF35 H 0-DC
EBI4 CSR35 H 1-DC
YC EBI3 KMUX35 H
EBI5 EBUF33 H 0-DD
EBI4 CSR33 H 1-DD
YD EBI3 KMUX33 H
EMUX
4X2 MIX 74S257 E101
EBI6 D00 H 0-DA
GND 1-DA
YA MBUS D00 H
EBI6 D03 H 0-DB
GND 1-DB
YB MBUS D03 H
EBI6 D02 H 0-DC
GND 1-DC
YC MBUS D02 H
EBI6 D01 H 0-DD
GND 1-DD
YD MBUS D01 H
EBI2 READCSRB H 1 SEL
EBI2 ENAEMUX L 15 EN
4X2 MIX 74S257 E99
EBI6 D04 H 0-DA
EBI4 CSR04 H 1-DA
YA MBUS D04 H
EBI6 D07 H 0-DB
GND 1-DB
YB MBUS D07 H
EBI6 D05 H 0-DC
EBI4 CSR05 H 1-DC
YC MBUS D05 H
EBI6 D06 H 0-DD
GND 1-DD
YD MBUS D06 H
4X2 MIX 74S257 E100
EBI6 D11 H 0-DA
EBI4 CSR11 H 1-DA
YA MBUS D11 H
EBI6 D10 H 0-DB
GND 1-DB
YB MBUS D10 H
EBI6 D09 H 0-DC
GND 1-DC
YC MBUS D09 H
EBI6 D08 H 0-DD
GND 1-DD
YD MBUS D08 H
4X2 MIX 74S257 E88
EBI6 D12 H 0-DA
EBI4 CSR12 H 1-DA
YA MBUS D12 H
EBI6 D13 H 0-DB
EBI4 CSR13 H 1-DB
YB MBUS D13 H
EBI6 D15 H 0-DC
GND 1-DC
YC MBUS D15 H
EBI6 D14 H 0-DD
GND 1-DD
YD MBUS D14 H
EBI2 READCSRA H 1 SEL
4X2 MIX 74S257 E89
EBI6 D18 H 0-DA
GND 1-DA
YA MBUS D18 H
EBI6 D19 H 0-DB
GND 1-DB
YB MBUS D19 H
EBI6 D17 H 0-DC
GND 1-DC
YC MBUS D17 H
EBI6 D16 H 0-DD
GND 1-DD
YD MBUS D16 H
EBI2 READCSRA H 1 SEL
EBI2 ENAEMUX L 15 EN
4X2 MIX 74S257 E102
EBI6 D23 H 0-DA
GND 1-DA
YA MBUS D23 H
EBI6 D20 H 0-DB
GND 1-DB
YB MBUS D20 H
EBI6 D21 H 0-DC
GND 1-DC
YC MBUS D21 H
EBI6 D22 H 0-DD
GND 1-DD
YD MBUS D22 H
EBI2 READCSRB H 1 SEL
4X2 MIX 74S257 E103
EBI6 D26 H 0-DA
EBI4 CSR26 H 1-DA
YA MBUS D26 H
EBI6 D25 H 0-DB
EBI4 CSR25 H 1-DB
YB MBUS D25 H
EBI6 D24 H 0-DC
EBI4 CSR24 H 1-DC
YC MBUS D24 H
EBI6 D27 H 0-DD
EBI4 CSR27 H 1-DD
YD MBUS D27 H
EBI2 READCSRB H 1 SEL
4X2 MIX 74S257 E87
EBI6 D30 H 0-DA
EBI4 CSR30 H 1-DA
YA MBUS D30 H
EBI6 D28 H 0-DB
EBI4 CSR28 H 1-DB
YB MBUS D28 H
EBI6 D31 H 0-DC
EBI4 CSR31 H 1-DC
YC MBUS D31 H
EBI6 D29 H 0-DD
GND 1-DD
YD MBUS D29 H
EBI2 READCSRA H 1 SEL
4X2 MIX 74S257 E90
EBI6 D34 H 0-DA
EBI4 CSR34 H 1-DA
YA MBUS D34 H
EBI6 D33 H 0-DB
EBI4 CSR33 H 1-DB
YB MBUS D33 H
EBI6 D35 H 0-DC
EBI4 CSR35 H 1-DC
YC MBUS D35 H
EBI6 D32 H 0-DD
EBI4 CSR32 H 1-DD
YD MBUS D32 H

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. DATE 05-APR-84 ENG. DATE 05-APR-84
CHK'D. DATE
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>EBI300.DRW 29-MAR-84 08:45
NEXT HIGHER ASSEMBLY: D-DD-M3001-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 EBUS INTFC EBUS-MBUS MUXS

SIZE	CODE	NUMBER	REV.
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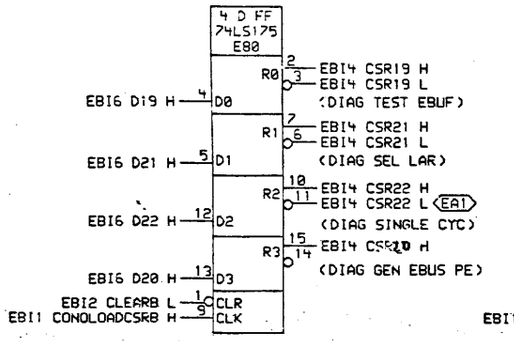

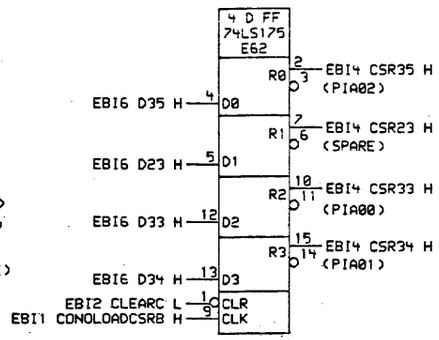

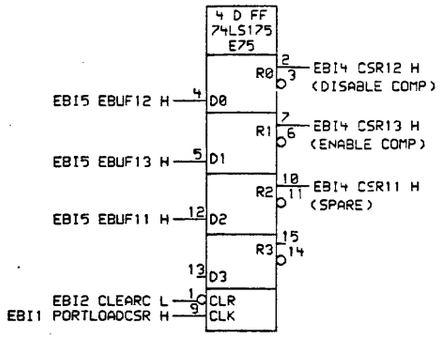

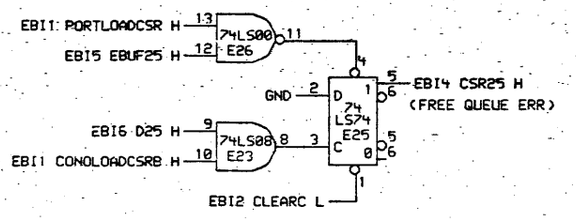

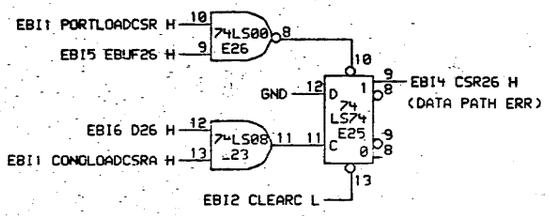

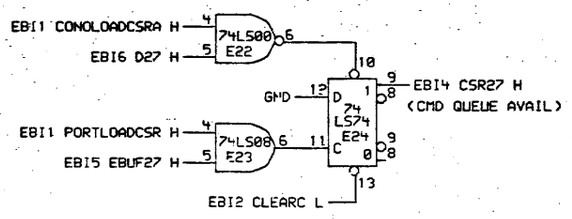

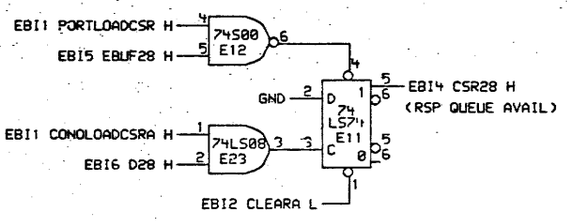

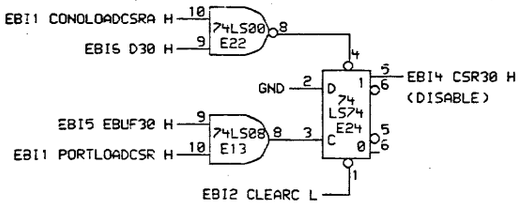

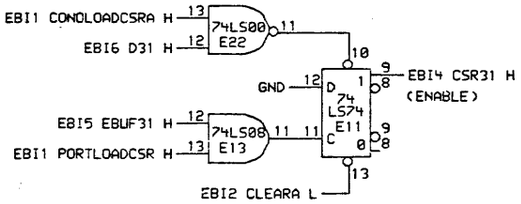

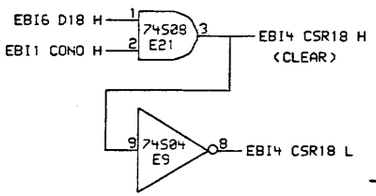

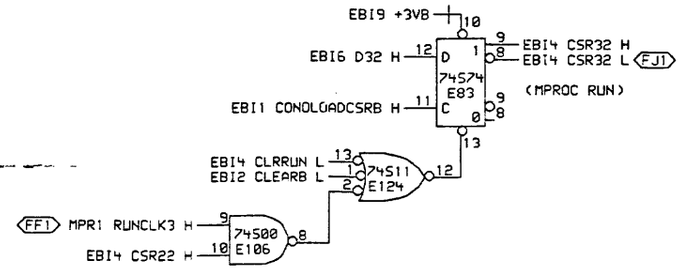

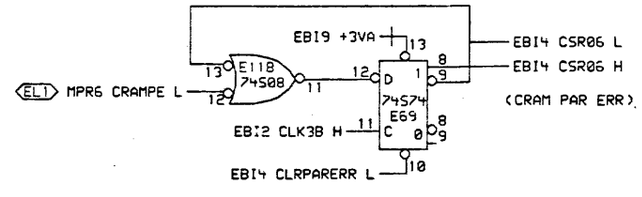

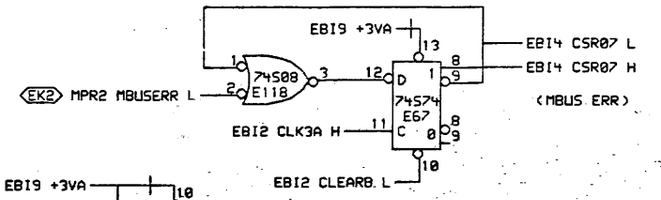

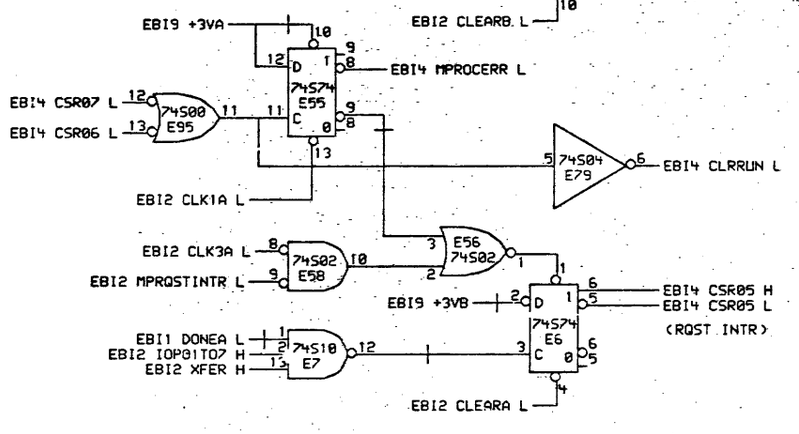

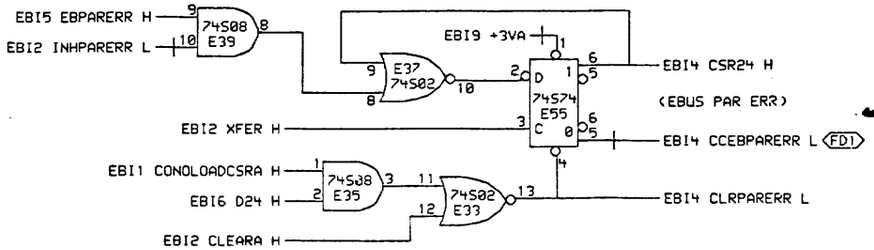

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN S. Toomey — DATE 05-APR-84 — ENG R. Carr — DATE 05-APR-84

CHK D. Williams — DATE — BOARD LOCATION:

SHEET 1 OF 1

SWDCOM:<BOWEN.ECO>EBI403.DRW 29-MAR-84 08:45 — NEXT HIGHER ASSEMBLY: D-DD-M3001-0

FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 EBUS INTFC CSR REG

SIZE	CODE	NUMBER	REV.
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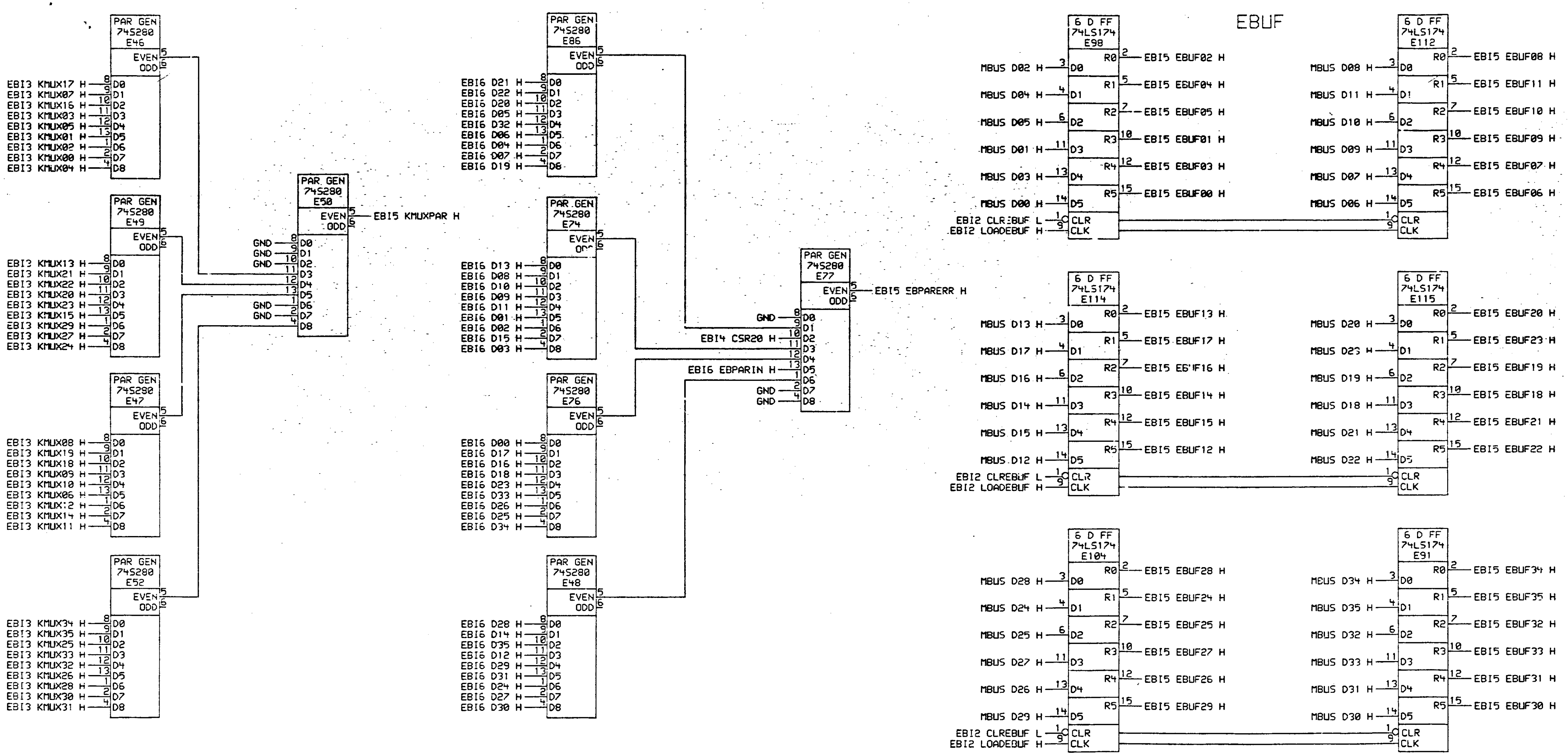
MR



REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. [signature] DATE 05-APR-84
CHK'D. [signature] DATE 9 APR 84
ENG. R. Caw DATE 05-APR-84
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M3001-0
SUDCOM:<BOWEN.ECO>EBI500.DRW 29-MAR-84 08:46
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 EBUS INTFC EBUS PAR & EBUF

SIZE	CODE	NUMBER	REV.
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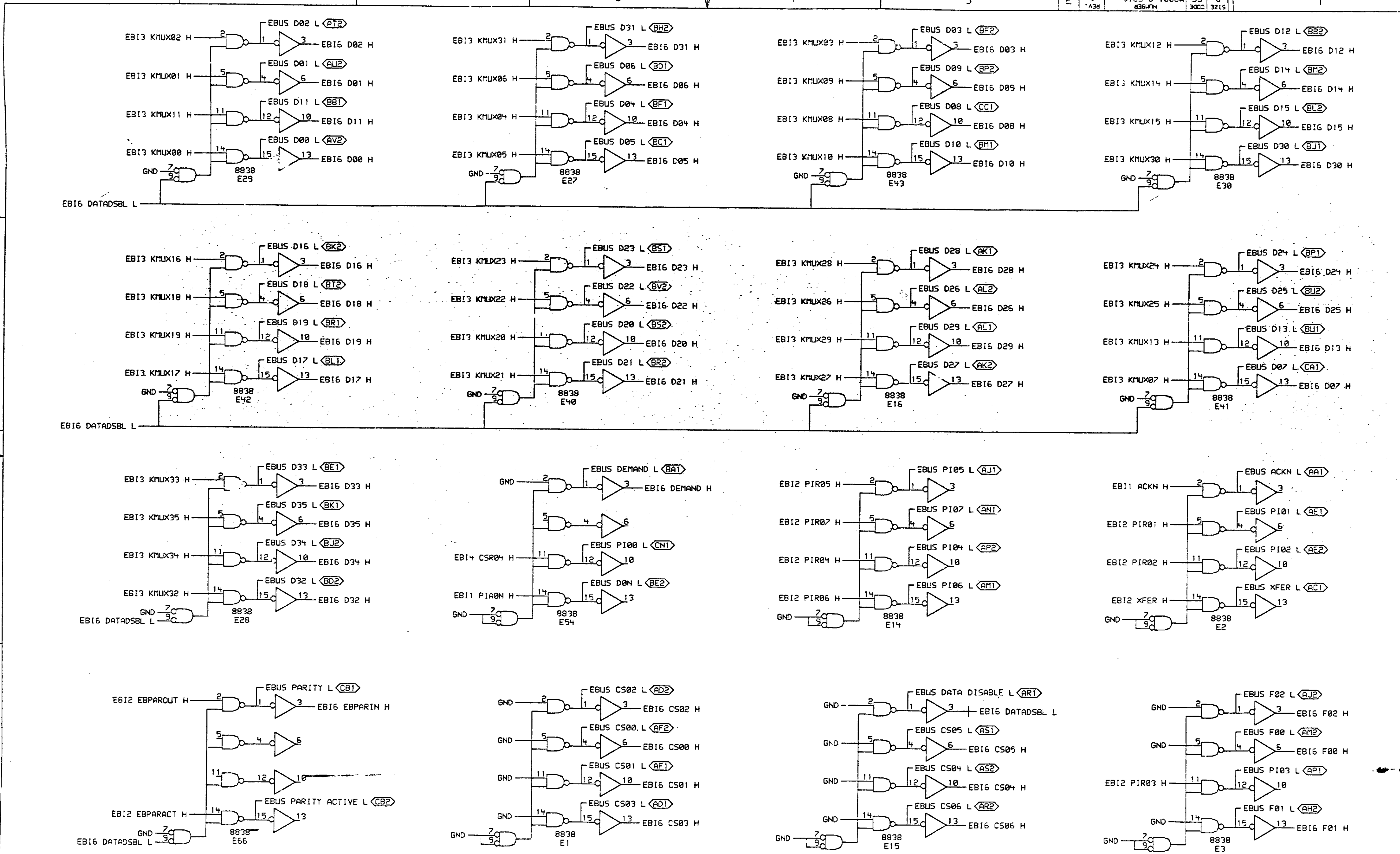
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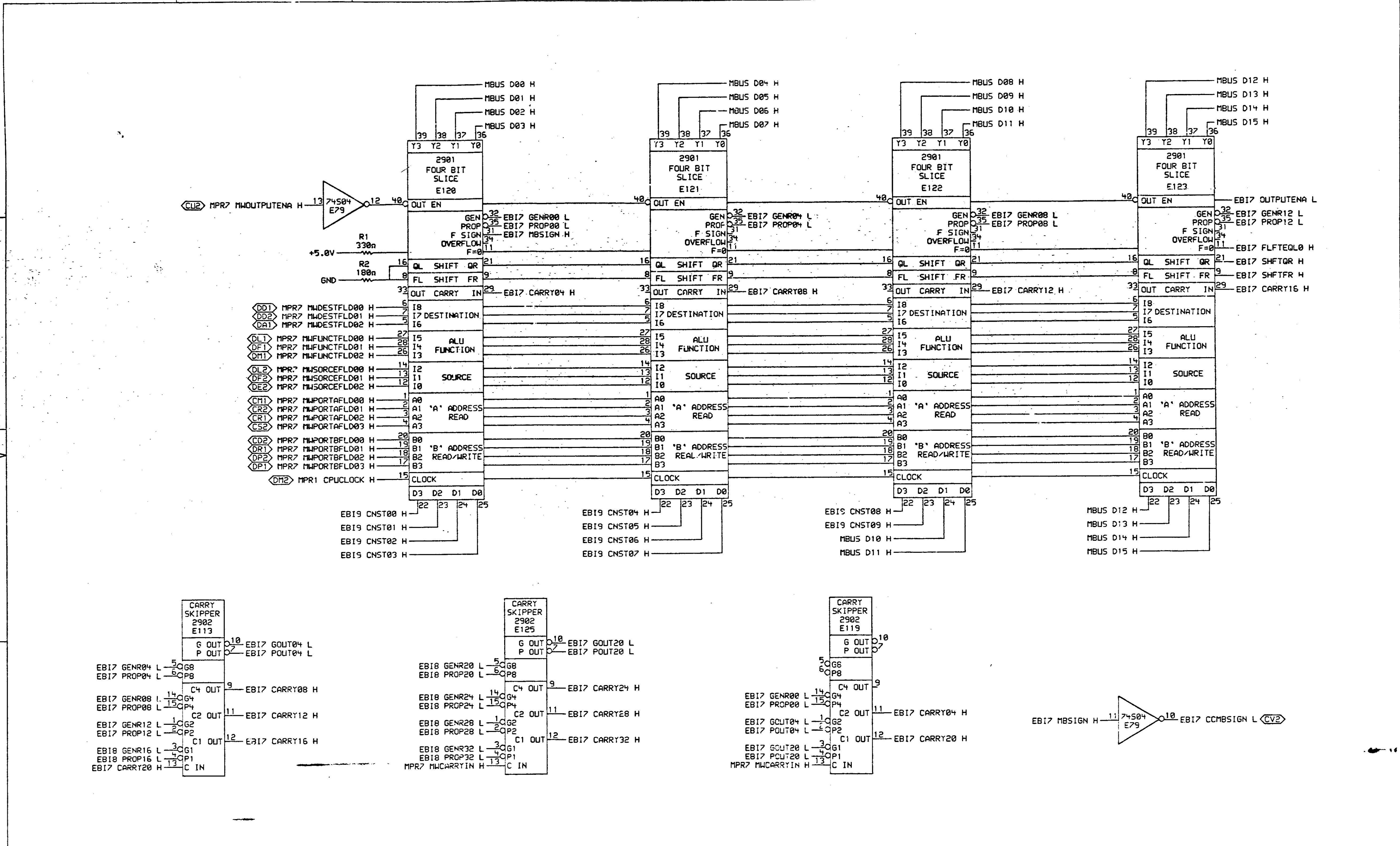
EBUS D02 L (AT2)
EBI6 D02 H
EBI3 KMUX01 H
EBUS D01 L (AU2)
EBI6 D01 H
EBI3 KMUX11 H
EBUS D11 L (BB1)
EBI6 D11 H
EBI3 KMUX00 H
EBUS D00 L (AV2)
EBI6 D00 H
GND
8838
E29
EBI6 DATADSBL L
EBI3 KMUX31 H
EBUS D31 L (BH2)
EBI6 D31 H
EBI3 KMUX06 H
EBUS D06 L (BD1)
EBI6 D06 H
EBI3 KMUX04 H
EBUS D04 L (BF1)
EBI6 D04 H
EBI3 KMUX05 H
EBUS D05 L (BC1)
EBI6 D05 H
8838
E27
EBI3 KMUX03 H
EBUS D03 L (BF2)
EBI6 D03 H
EBI3 KMUX09 H
EBUS D09 L (BP2)
EBI6 D09 H
EBI3 KMUX08 H
EBUS D08 L (CC1)
EBI6 D08 H
EBI3 KMUX10 H
EBUS D10 L (BM1)
EBI6 D10 H
8838
E43
EBI3 KMUX12 H
EBUS D12 L (BB2)
EBI6 D12 H
EBI3 KMUX14 H
EBUS D14 L (BM2)
EBI6 D14 H
EBI3 KMUX15 H
EBUS D15 L (BL2)
EBI6 D15 H
EBI3 KMUX30 H
EBUS D30 L (BJ1)
EBI6 D30 H
8838
E30
EBI3 KMUX16 H
EBUS D16 L (BK2)
EBI6 D16 H
EBI3 KMUX18 H
EBUS D18 L (BT2)
EBI6 D18 H
EBI3 KMUX19 H
EBUS D19 L (BR1)
EBI6 D19 H
EBI3 KMUX17 H
EBUS D17 L (BL1)
EBI6 D17 H
8838
E42
EBI3 KMUX23 H
EBUS D23 L (BS1)
EBI6 D23 H
EBI3 KMUX22 H
EBUS D22 L (BV2)
EBI6 D22 H
EBI3 KMUX20 H
EBUS D20 L (BS2)
EBI6 D20 H
EBI3 KMUX21 H
EBUS D21 L (BR2)
EBI6 D21 H
8838
E40
EBI3 KMUX28 H
EBUS D28 L (AK1)
EBI6 D28 H
EBI3 KMUX26 H
EBUS D26 L (AL2)
EBI6 D26 H
EBI3 KMUX29 H
EBUS D29 L (AL1)
EBI6 D29 H
EBI3 KMUX27 H
EBUS D27 L (AK2)
EBI6 D27 H
8838
E16
EBI3 KMUX24 H
EBUS D24 L (BP1)
EBI6 D24 H
EBI3 KMUX25 H
EBUS D25 L (BU2)
EBI6 D25 H
EBI3 KMUX13 H
EBUS D13 L (BU1)
EBI6 D13 H
EBI3 KMUX07 H
EBUS D07 L (CA1)
EBI6 D07 H
8838
E41
EBI3 KMUX33 H
EBUS D33 L (BE1)
EBI6 D33 H
EBI3 KMUX35 H
EBUS D35 L (BK1)
EBI6 D35 H
EBI3 KMUX34 H
EBUS D34 L (BJ2)
EBI6 D34 H
EBI3 KMUX32 H
EBUS D32 L (BD2)
EBI6 D32 H
8838
E28
EBUS DEMAND L (BA1)
EBI6 DEMAND H
EBI4 CSR04 H
EBUS PI00 L (CN1)
EBI1 PIA0N H
EBUS D0N L (BE2)
8838
E54
EBI2 PIR05 H
EBUS PI05 L (AJ1)
EBI2 PIR07 H
EBUS PI07 L (AN1)
EBI2 PIR04 H
EBUS PI04 L (AP2)
EBI2 PIR06 H
EBUS PI06 L (AM1)
8838
E14
EBI1 ACKN H
EBUS ACKN L (AA1)
EBI2 PIR01 H
EBUS PI01 L (AE1)
EBI2 PIR02 H
EBUS PI02 L (AE2)
EBI2 XFER H
EBUS XFER L (AC1)
8838
E2
EBI2 EBPAROUT H
EBUS PARITY L (CB1)
EBI6 EBPARIN H
EBI2 EBPARACT H
EBUS PARITY ACTIVE L (CB2)
8838
E66
EBUS CS02 L (AD2)
EBI6 CS02 H
EBUS CS00 L (AF2)
EBI6 CS00 H
EBUS CS01 L (AF1)
EBI6 CS01 H
EBUS CS03 L (AD1)
EBI6 CS03 H
8838
E1
EBUS DATA DISABLE L (AR1)
EBI6 DATADSBL L
EBUS CS05 L (AS1)
EBI6 CS05 H
EBUS CS04 L (AS2)
EBI6 CS04 H
EBUS CS06 L (AR2)
EBI6 CS06 H
8838
E15
EBUS F02 L (AJ2)
EBI6 F02 H
EBUS F00 L (AM2)
EBI6 F00 H
EBI2 PIR03 H
EBUS PI03 L (AP1)
EBUS F01 L (AH2)
EBI6 F01 H
8838
E3

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN	DATE 05-APR-84	ENG.	DATE 05-APR-84	TITLE: CI20 EBUS INTFC EBUS XCEIVERS
CHK'D.	DATE 19-APR-84	BOARD LOCATION:		
SUDCOM:<BOWEN.ECO>EBI602.DRW	29-MAR-84 08:47	SHEET 1 OF 1		
		NEXT HIGHER ASSEMBLY: D-DD-M3001-0		
FIRST USED ON OPTION/MODEL: CI20				

SIZE	CODE	NUMBER	REV.
D	CS	M3001-0-EBI6	A



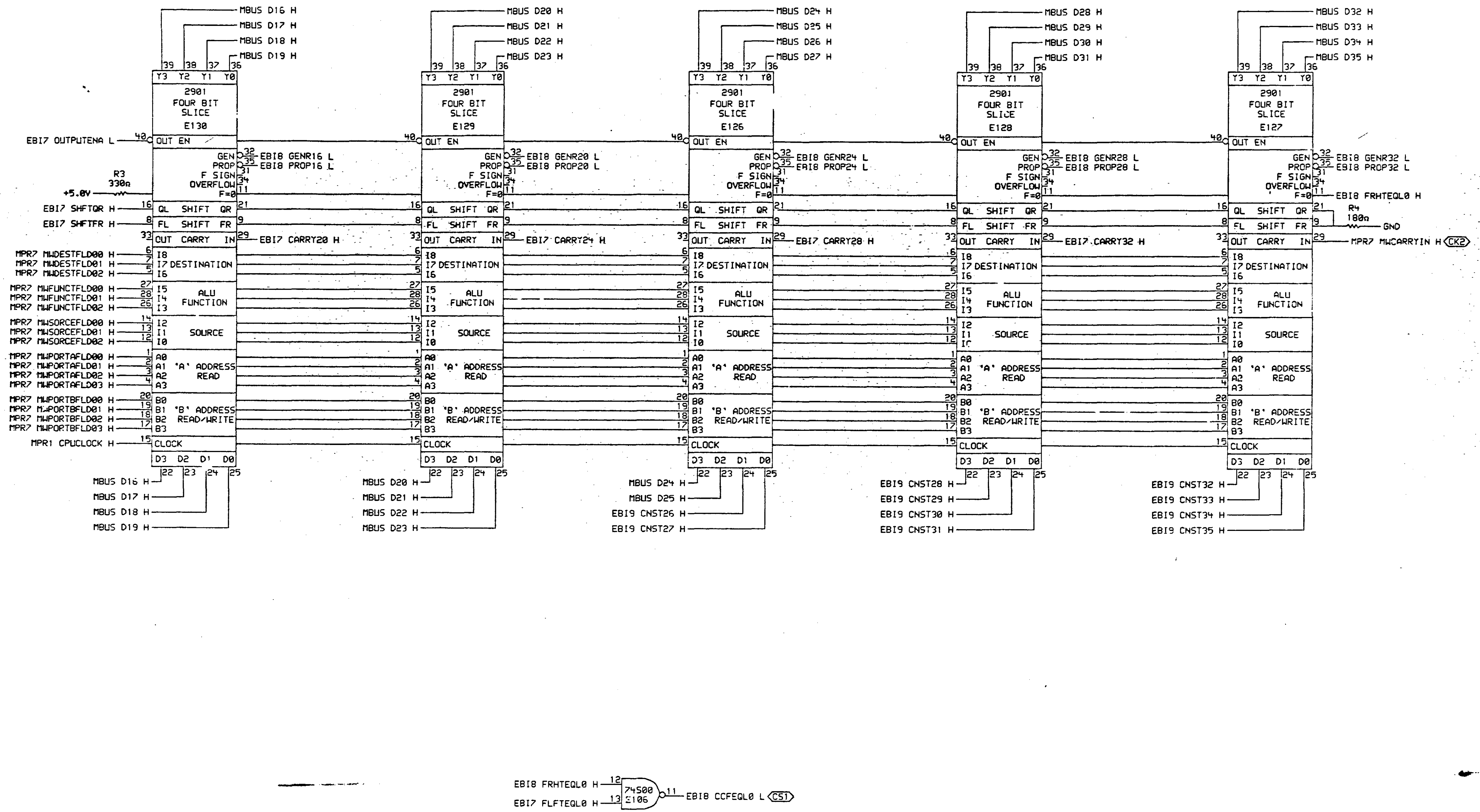
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. DATE 05-APR-84 ENG. DATE 05-APR-84
CHK'D. DATE
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>EBI701.DRW 29-MAR-84 08:47
NEXT HIGHER ASSEMBLY: D-DD-M3001-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 EBUS INTFC MICROPROC ALU 1

SIZE D CODE CS NUMBER M3001-0-EBI7 REV. A



REVISIONS

CHK	CHANGE NO.	REV

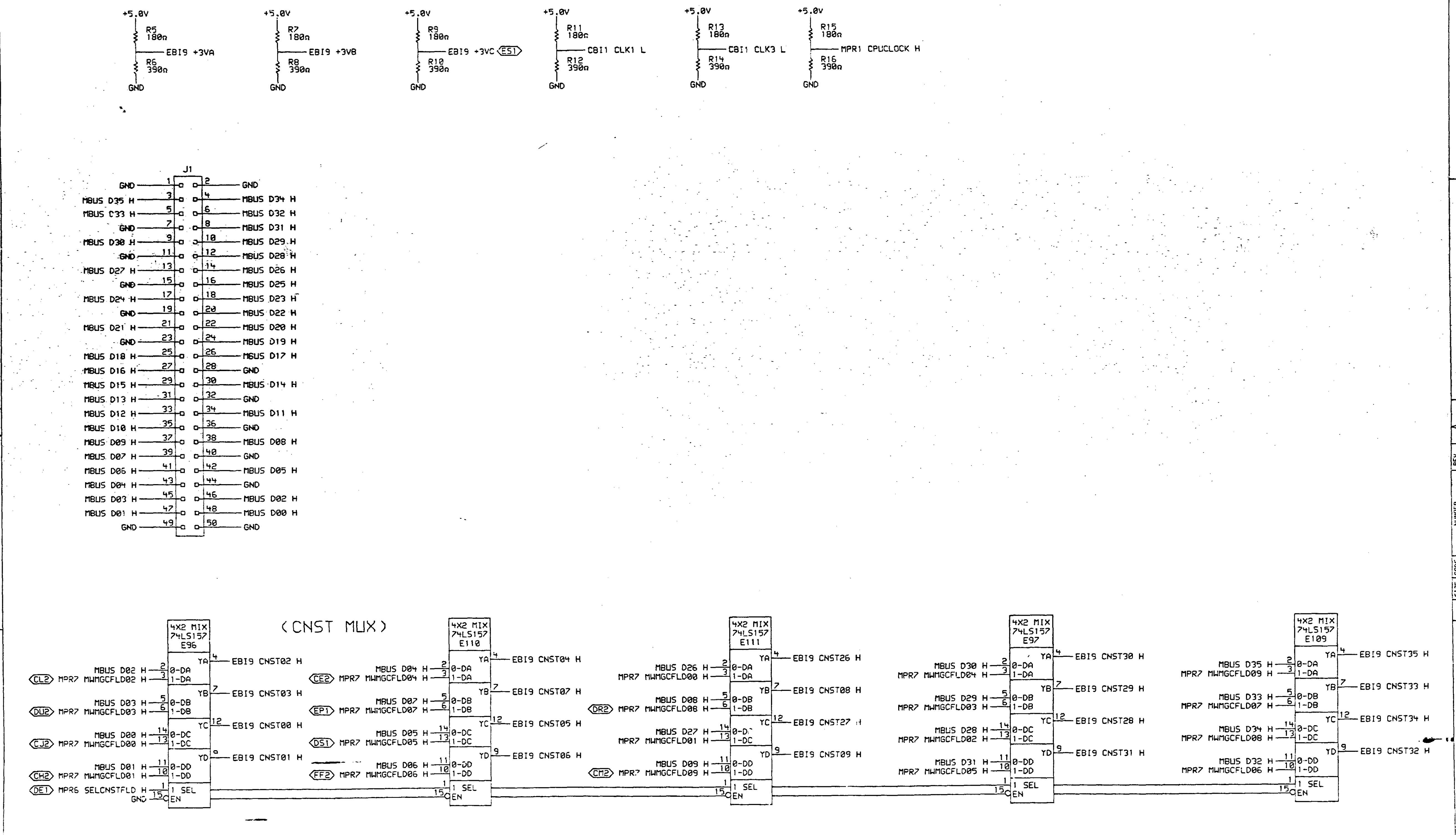
digital

DRN. (signature) DATE 05-APR-84
CHK'D. (signature) DATE 19-APR-84
ENG. R. (signature) DATE 05-APR-84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>EBI801.DRW 29-MAR-84 08:48
NEXT HIGHER ASSEMBLY: D-DD-M3001-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 EBUS INTFC MICROPROC ALU 2

SIZE	CODE	NUMBER	REV.
D	CS	M3001-0-EBI8	A

MR


+5.0V
R5 180Ω
EBI9 +3VA
R6 390Ω
GND
+5.0V
R7 180Ω
EBI9 +3VB
R8 390Ω
GND
+5.0V
R9 180Ω
EBI9 +3VC
ES1
R10 390Ω
GND
+5.0V
R11 180Ω
CBI1 CLK1 L
R12 390Ω
GND
+5.0V
R13 180Ω
CBI1 CLK3 L
R14 390Ω
GND
+5.0V
R15 180Ω
MPR1 CPUCLOCK H
R16 390Ω
GND
J1
GND 1 2 GND
MBUS D35 H 3 4 MBUS D34 H
MBUS D33 H 5 6 MBUS D32 H
GND 7 8 MBUS D31 H
MBUS D30 H 9 10 MBUS D29 H
GND 11 12 MBUS D28 H
MBUS D27 H 13 14 MBUS D26 H
GND 15 16 MBUS D25 H
MBUS D24 H 17 18 MBUS D23 H
GND 19 20 MBUS D22 H
MBUS D21 H 21 22 MBUS D20 H
GND 23 24 MBUS D19 H
MBUS D18 H 25 26 MBUS D17 H
MBUS D16 H 27 28 GND
MBUS D15 H 29 30 MBUS D14 H
MBUS D13 H 31 32 GND
MBUS D12 H 33 34 MBUS D11 H
MBUS D10 H 35 36 GND
MBUS D09 H 37 38 MBUS D08 H
MBUS D07 H 39 40 GND
MBUS D06 H 41 42 MBUS D05 H
MBUS D04 H 43 44 GND
MBUS D03 H 45 46 MBUS D02 H
MBUS D01 H 47 48 MBUS D00 H
GND 49 50 GND
(CNST MUX)
4X2 MIX 74LS157 E96
MBUS D02 H 2 0-DA
CL2 MPR7 MWMGCFLD02 H 3 1-DA
YA 4 EBI9 CNST02 H
MBUS D03 H 5 0-DB
DU2 MPR7 MWMGCFLD03 H 6 1-DB
YB 7 EBI9 CNST03 H
MBUS D00 H 14 0-DC
CJ2 MPR7 MWMGCFLD00 H 13 1-DC
YC 12 EBI9 CNST00 H
MBUS D01 H 11 0-DD
CH2 MPR7 MWMGCFLD01 H 10 1-DD
YD 9 EBI9 CNST01 H
DE1 MPR6 SELCNSTFLD H 1 1 SEL
GND 15 EN
4X2 MIX 74LS157 E110
MBUS D04 H 2 0-DA
CE2 MPR7 MWMGCFLD04 H 3 1-DA
YA 4 EBI9 CNST04 H
MBUS D07 H 5 0-DB
EP1 MPR7 MWMGCFLD07 H 6 1-DB
YB 7 EBI9 CNST07 H
MBUS D05 H 14 0-DC
DS1 MPR7 MWMGCFLD05 H 13 1-DC
YC 12 EBI9 CNST05 H
MBUS D06 H 11 0-DD
FF2 MPR7 MWMGCFLD06 H 10 1-DD
YD 9 EBI9 CNST06 H
1 1 SEL
15 EN
4X2 MIX 74LS157 E111
MBUS D26 H 2 0-DA
MPR7 MWMGCFLD00 H 3 1-DA
YA 4 EBI9 CNST26 H
MBUS D08 H 5 0-DB
DR2 MPR7 MWMGCFLD08 H 6 1-DB
YB 7 EBI9 CNST08 H
MBUS D27 H 14 0-DC
MPR7 MWMGCFLD01 H 13 1-DC
YC 12 EBI9 CNST27 H
MBUS D09 H 11 0-DD
CM2 MPR7 MWMGCFLD09 H 10 1-DD
YD 9 EBI9 CNST09 H
1 1 SEL
15 EN
4X2 MIX 74LS157 E97
MBUS D30 H 2 0-DA
MPR7 MWMGCFLD04 H 3 1-DA
YA 4 EBI9 CNST30 H
MBUS D29 H 5 0-DB
MPR7 MWMGCFLD03 H 6 1-DB
YB 7 EBI9 CNST29 H
MBUS D28 H 14 0-DC
MPR7 MWMGCFLD02 H 13 1-DC
YC 12 EBI9 CNST28 H
MBUS D31 H 11 0-DD
MPR7 MWMGCFLD05 H 10 1-DD
YD 9 EBI9 CNST31 H
1 1 SEL
15 EN
4X2 MIX 74LS157 E109
MBUS D35 H 2 0-DA
MPR7 MWMGCFLD09 H 3 1-DA
YA 4 EBI9 CNST35 H
MBUS D33 H 5 0-DB
MPR7 MWMGCFLD07 H 6 1-DB
YB 7 EBI9 CNST33 H
MBUS D34 H 14 0-DC
MPR7 MWMGCFLD08 H 13 1-DC
YC 12 EBI9 CNST34 H
MBUS D32 H 11 0-DD
MPR7 MWMGCFLD06 H 10 1-DD
YD 9 EBI9 CNST32 H
1 1 SEL
15 EN

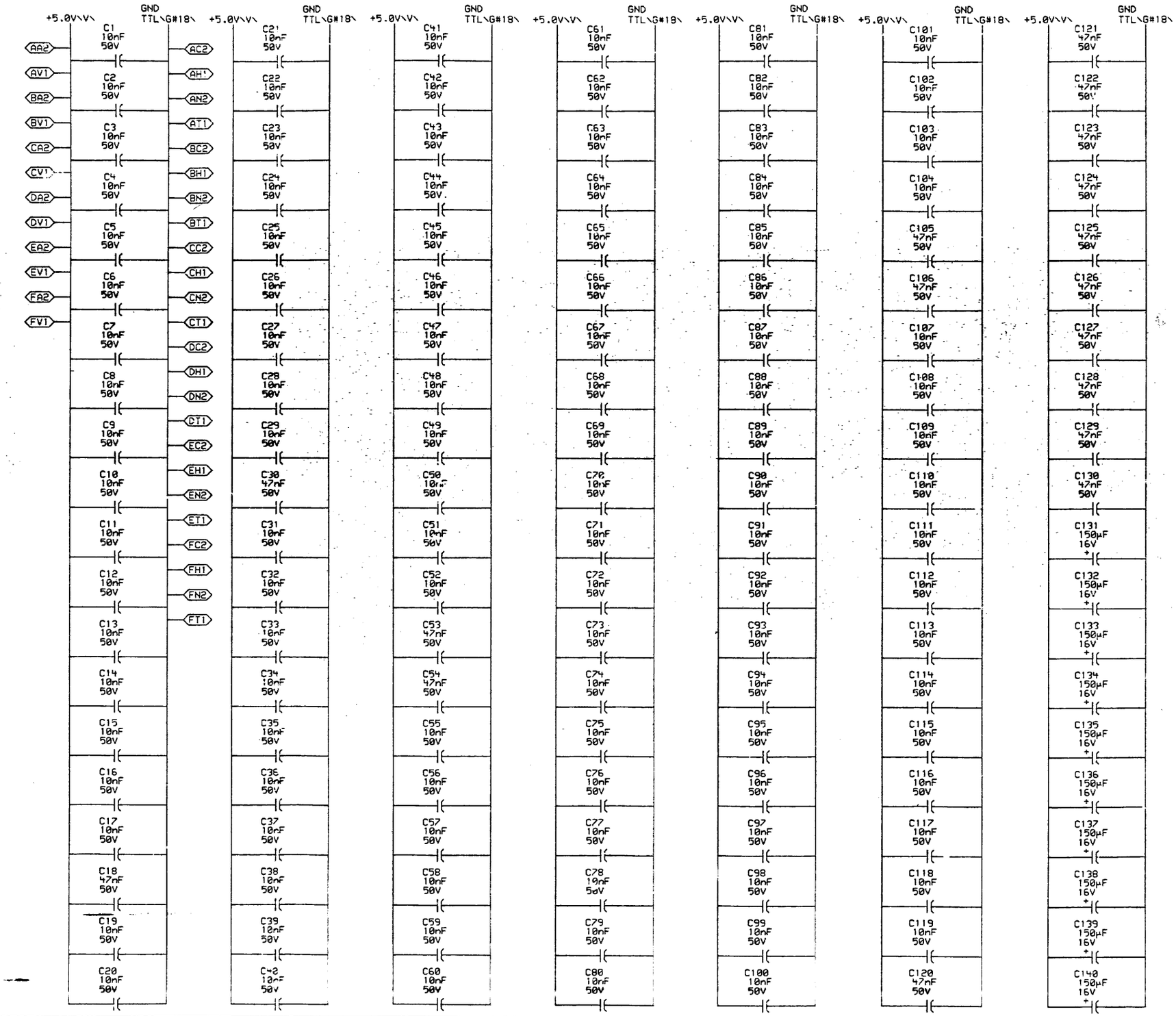
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN.	DATE 05-APR-84	ENG.	DATE 05-APR-84
CHK'D.	DATE 9 APR 84	BOARD LOCATION:	
SUDCOM: <30WEN.ECO>EBI900.DRW	29-MAR-84 08:48	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: CI20		NEXT HIGHER ASSEMBLY: D-DD-M3001-0	

TITLE: CI20 EBUS INTFC μPROC CNST MUX

SIZE	CODE	NUMBER	REV.
D	CS	M3001-0-EBI9	A



REVISIONS		
CHK	CHANGE NO.	REV

SLDCOM:<BOWEN.ECO>EBIA00.DRW 29-MAR-84 08:48
FIRST USED ON OPTION/MODEL: CI20

DRN. L. Toomey	DATE 05-APR-84	ENG. R. Parr	DATE 05-APR-84	TITLE: CI20 EBUS INTFC PWR & GND
CHK D. Bowser	DATE 19-APR-84	BOARD LOCATION:	SHEET 1 OF 1	
NEXT HIGHER ASSEMBLY: D-DD-M3001-0				SIZE D / CODE CS / NUMBER M3001-0-EBIA / REV. A

MR

AB1 — N/C SEE NOTE 3
AB2 — N/C SEE NOTE 3
AU1 — N/C SEE NOTE 3
CD1 — N/C SEE NOTE 1
CE1 — N/C SEE NOTE 1
CF1 — N/C SEE NOTE 1
CF2 — CBI1 CLK2 L
CK1 — N/C SEE NOTE 1
CL1 — CBI1 CLK4 L
CP1 — N/C SEE NOTE 2
CP2 — N/C SEE NOTE 2
CU1 — N/C SEE NOTE 3
DB1 — N/C SEE NOTE 3
DB2 — N/C SEE NOTE 3
DC1 — N/C NOTE:EXTRA GND
DH2 — N/C NOTE:EXTRA GND
DJ1 — N/C SEE NOTE 2
DK1 — N/C SEE NOTE 2
DN1 — N/C NOTE:EXTRA GND
DS2 — N/C SEE NOTE 1
DT2 — N/C NOTE:EXTRA GND
DU1 — N/C SEE NOTE 3
DV2 — N/C SEE NOTE 2
EB1 — N/C SEE NOTE 3
EB2 — N/C SEE NOTE 3
EC1 — N/C NOTE:EXTRA GND
ED2 — N/C SEE NOTE 1
EH2 — N/C NOTE:EXTRA GND
EJ1 — N/C NOTE:EXTRA GND
EK1 — N/C NOTE:EXTRA GND
EL2 — N/C SEE NOTE 1
EM1 — N/C SEE NOTE 2
EN1 — N/C NOTE:EXTRA GND
EP2 — N/C NOTE:EXTRA GND
ER1 — N/C SEE NOTE 2
ER2 — N/C SEE NOTE 2
ET2 — N/C NOTE:EXTRA GND
EU1 — N/C SEE NOTE 3
EV2 — N/C SEE NOTE 1
FB1 — N/C SEE NOTE 3
FB2 — N/C SEE NOTE 3
FC1 — N/C NOTE:EXTRA GND
FE2 — N/C SEE NOTE 2
FH2 — N/C NOTE:EXTRA GND
FK1 — N/C SEE NOTE 1
FM1 — N/C SEE NOTE 1
FN1 — N/C NOTE:EXTRA GND
FP1 — MPR7 MWMARKBIT H
FR1 — N/C SEE NOTE 1
FS1 — N/C SEE NOTE 2
FS2 — N/C SEE NOTE 1
FT2 — N/C SEE NOTE 2
FU1 — N/C SEE NOTE 3
FU2 — N/C NOTE:EXTRA GND
FV2 — N/C SEE NOTE 2

NOTE 1: THESE PINS ARE CONNECTED AS SHOWN BELOW

FROM	TO
C13D1	A14A1
C13E1	A14U2
F13R1	B14H2
F13M1	B14K1
D13S2	B14K2
E13L2	B14R1
E13D2	C14J1
C13F1	C14R2
C13K1	D14H2
F13K1	D14J1
E13V2	A15U2
F13S2	A15J1

NOTE 2: THESE PINS DO NOT CONNECT TO EITHER THE MPROC OR CBUS
NOTE 3: RSVD FOR -5.2V

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. L. Toomey | DATE 05-APR-84 | ENG. R Law | DATE 05-APR-84
CHK'D. W Williams | DATE 19 APR 84 | BOARD LOCATION:
SUDCOM:<BOWEN.ECO>EB1B00.DRW 29-MAR-84 00:49 | SHEET 1 OF 1 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: CI20 | D-DD-M3001-0

TITLE: CI20 EBUS INTFC UNUSED FINGER

SIZE	CODE	NUMBER	REV.
D	CS	M3001-0-EB1B	A

EBUS

EBUS PARITY
EBUS D00-35
37
(OPEN COLLECTOR)

PAR OUT
1

EBUS PAR GENR

KMUX00-35
36

KMUX03-35
37 37 36

KMUX

DATIREADMW
MPLOADEBUS
CONIREADCSR
DATIREADLAR
TESTREADEBUF

EBUF00-35
36

CSR00-35
36

D00-35
36

EBUF
CLK

MPLOADEBUF
TESTLOADEBUF
DATIREADMW

MBUS D00-35
36
(TRI-STATE)

EMUX

D00-35
36

MBUS D00-35
36
(TRI-STATE)

MPREADCSR
MPREADEBUS
TESTLOADEBUF
DATOLOADRAR
DATOLOADMW

MBUS 36 BITS

MWMGCFLD00
MWMGCFLD01
MWMGCFLD02
MWMGCFLD03
MWMGCFLD04
MWMGCFLD05
MWMGCFLD06
MWMGCFLD07
MWMGCFLD08
MWMGCFLD09

10 FROM CRAM CTRL REG

MBUS D00-09
MBUS D26-35
20

10 10

SELCNSTFLD

CNST MUX

MBUS D10-25
16

CNST D00-09
CNST D26-35
20

EBUS PARITY
EBUS D00-35
37
(OPEN COLLECTOR)

PAR IN
D00-35
37

EBUS PAR CHKR

EBUS PARITY ERR

TO μPROC CTRL LOGIC

CSR32 (MPROC RUN)

CSR00-35 36

EBUF 11-13,25-28,30,31
9

CSR STATUS REG

D:8-24,25-28,30,31,32-35
17

CONTROLS

MPLOADCSR
MPRQSTCSR
MPRQSTINTR
CONOLOADCSR

MBUS D10-25
CNST D00-09
CNST D26-35
36

MWDESTFLD00
MWDESTFLD01
MWDESTFLD02
MWSORCEFLD00
MWSORCEFLD01
MWSORCEFLD02
MWFUNCTFLD00
MWFUNCTFLD01
MWFUNCTFLD02

MWPORTAFLF00
MWPORTAFLF01
MWPORTAFLF02
MWPORTBFLF00
MWPORTBFLF01
MWPORTBFLF02
MWPORTBFLF03
MWOUTENA
MWCARRY

20 FROM CRAM CTRL REG

EBUS CONTROL LOGIC

CSR CONTROL BITS TO/FROM EBUS CONTROL LOGIC

DEMAND
F00-02
CS00-36
P100-07

TRANSFER ACKNOWLEDGE
DATA DISABLE

TO EBUS CONTROLS

MPEXORDEP MPLOADCSR
MPREADCSR MPRQSTCSR
MPLOADEBUS MPREADEBUS
MPLOADEBUF MPRQSTINTR

TO ALL PORT CONTROLS

CCINTRACTIVE TESTREADEBUF
CCGRNTCSR CCEBUSRQST
CCCSRCHNG CCEBPARERR
DATOLOADRAR DATIREADLAR
CONOLOADCSR CONIREADCSR
DATOLOADMW DATIREADMW
TESTLOADEBUF

D/Y A/I

MICRO-PROC ARITHMETIC LOGIC UNIT (2901'S -2902'S)

CPUCLOCK → CLK

TO CC MUX
2

CCMBSIGN
CCFEQL0

MWBUSCTLFLD00
MWBUSCTLFLD01
MWBUSCTLFLD02
MWMGCFLD02
MWMGCFLD03
MWMGCFLD04
MWMGCFLD05
MWMGCFLD06
MWMGCFLD07
MWMGCFLD08
MWMGCFLD09
MBUSERR
CRAMPE

FROM CRAM CTRL REG

FROM CBUS CTRL LOGIC

CLK1
CLK3
RESET

EBUS INTERFACE/PORT ALU MODULE

REVISIONS			
	CHK	CHANGE NO.	REV

digital

DRN T. Toomey — DATE 05-APR-84
CHK D. — DATE 17-APR-84
ENG. R. Law — DATE 05-APR-84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM::<BOWEN.ECO>EBUS.DRW 29-MAR-84 08:49
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION MODEL: KLIPA
D-DD-M3001-0

TITLE: BLOCK DIAGRAM EBUS MODULE

SIZE	CODE	NUMBER	REV.
D	BD	M3001-0-BLK	A

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			ECO NUMBER	-	M3002 MR001
		M3002-00	MODULE REVISION	A1	A1
D-UA-M3002-0-0	1		MICRO PROCESSOR	A	A1
K-PL-M3002-0-DBP	2		PARTS LIST, M3002	A	A1
D-CS-M3002-0-MPR1	1		CI20 MPROC CONT CTRL LOGIC 1	A	A
D-CS-M3002-0-MPR2	1		CI20 MPROC CONT CTRL LOGIC 2	A	A
D-CS-M3002-0-MPR3	1		CI20 MPROC CONT SEQR AND RAM ADDR	A	A
D-CS-M3002-0-MPR4	1		CI20 MPROC CONT CRAM RAM 1	A	A
D-CS-M3002-0-MPR5	1		CI20 MPROC CONT CRAM RAM 2	A	A
D-CS-M3002-0-MPR6	1		CI20 MPROC CONT CRAM PARITY	A	A
D-CS-M3002-0-MPR7	1		CI20 MPROC CONT CRAM REG	A	A
D-CS-M3002-0-MPR8	1		CI20 MPROC CONT LOCAL STORAGE	A	A
D-CS-M3002-0-MPR9	1		CI20 MPROC CONT CRAM LOAD 1	A	A
D-CS-M3002-0-MPRA	1		CI20 MPROC CONT CRAM LOAD 2	A	A
D-CS-M3002-0-MPRB	1		CI20 MPROC CONT PWR AND GND	A	A
D-CS-M3002-0-MPRC	1		CI20 MPROC CONT UNUSED FINGERS	A	A
D-BD-M3002-0-BLK	1		BLOCK DIAGRAM MICROPROCESSOR MOD	A	A
K-PC-M3002-0-DBI	-		P.C. DESIGN DATA BASE	A	A
D-DD-5015385-0	2		DRAWING DIRECTORY, 5015385	REF	REF

REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN. D.DELLORCO	DATE 19-FEB-85	ENG. E BLOOM	DATE 19-FEB-85	TITLE: DRAWING DIRECTORY M3002	
	CHK'D. D.CAUNTER	DATE 19-FEB-85	BOARD LOCATION: N/A			
DSK:M3002I.T2P[4,57] 19-FEB-85 13:07			NEXT HIGHER ASSEMBLY:		SIZE D / CODE DD / NUMBER M3002-0 / REV. C	
FIRST USED ON OPTION/MODEL: CI20			SHEET 1 OF 2			

MRD

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			ECO NUMBER	M3002 MR001	M3002 MR002
		M3002-00	MODULE REVISION	A2	A3
D-UA-M3002-0-0	1		MICRO PROCESSOR	B	C
K-PL-M3002-0-DBP	2		PARTS LIST, M3002	B	C
D-CS-M3002-0-MPR1	1		CI20 MPROC CONT CTRL LOGIC 1	A	A
D-CS-M3002-0-MPR2	1		CI20 MPROC CONT CTRL LOGIC 2	A	A
D-CS-M3002-0-MPR3	1		CI20 MPROC CONT SEQR AND RAM ADDR	A	A
D-CS-M3002-0-MPR4	1		CI20 MPROC CONT CRAM RAM 1	A	A
D-CS-M3002-0-MPR5	1		CI20 MPROC CONT CRAM RAM 2	A	A
D-CS-M3002-0-MPR6	1		CI20 MPROC CONT CRAM PARITY	A	A
D-CS-M3002-0-MPR7	1		CI20 MPROC CONT CRAM REG	A	A
D-CS-M3002-0-MPR8	1		CI20 MPROC CONT LOCAL STORAGE	A	A
D-CS-M3002-0-MPR9	1		CI20 MPROC CONT CRAM LOAD 1	A	A
D-CS-M3002-0-MPRA	1		CI20 MPROC CONT CRAM LOAD 2	A	A
D-CS-M3002-0-MPRB	1		CI20 MPROC CONT PWR AND GND	A	A
D-CS-M3002-0-MPRC	1		CI20 MPROC CONT UNUSED FINGERS	A	A
D-BD-M3002-0-BLK	1		BLOCK DIAGRAM MICROPROCESSOR MOD	A	A
K-PC-M3002-0-DBI	-		P.C. DESIGN DATA BASE	B	B
D-DD-5015385-0	2		DRAWING DIRECTORY, 5015385	REF	REF

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. D.DELLORCO DATE 19-FEB-85
CHK'D. D.CAUNTER DATE 19-FEB-85
ENG. E BLOOM DATE 19-FEB-85
BOARD LOCATION: N/A
SHEET 2 OF 2
DSK:M30022.T2P[4,57] 19-FEB-85 13:07 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: CI20

TITLE: DRAWING DIRECTORY M3002

SIZE	CODE	NUMBER	REV.
D	DD	M3002-0	C

MLO


36(QTY.12)
COMPONENT SIDE VIEW
35
TH2
TH1
J1
E87 E79 E70 E60 E50 E40 E30 E20 E10
E86 E78 E69 E59 E49 E39 E29 E19 E9
E111 E103 E95 E85 E77 E68 E58 E48 E38 E28 E18 E8
E110 E102 E94 E76 E67 E57 E47 E37 E27 E17 E7
E109 E101 E93 E66 E56 E46 E36 E26 E16 E6
E108 E100 E92 E84 E75 E65 E55 E45 E35 E25 E15 E5
E107 E99 E91 E83 E74 E64 E54 E44 E34 E24 E14 E4
E106 E98 E90 E82 E73 E63 E53 E43 E33 E23 E13 E3
E105 E97 E89 E81 E72 E62 E52 E42 E32 E22 E12 E2
E104 E96 E88 E80 E71 E61 E51 E41 E31 E21 E11 E1
C121 C120 C119 C118 C117 C116 C115 C114 C113 C112
F E D C B A
V U T S R P N M L K J H F E D C B A

NOTES: 1. SPARE COMPONENT LOCATIONS:
E47, E50, E87, E88

2. THIS BOARD MUST MEET SAFETY REQ. FOR "HPWR"

STEP & REPEAT	+ Y AXIS	Ø	STEP	Ø	TIMES
	→ X AXIS	Ø	STEP	Ø	TIMES

CHK | CHANGE NO | REV

ETCH REV. C1

SIGNATURES	DATE
DRN. D. Williams	
CHK. D. D. Williams	
MECH. ENG.	
PROJ. ENG.	
PROD.	

digital

TITLE MICRO PROCESSOR

SCALE 2/1	SIZE	CODE	NUMBER	REV
SHT. 1 OF 1	D	UA	M3002-0-0	C

TOP DOC NO: D-DD-M3002-Ø

MRO 1 MS# 190860 C

AUTOMATED BY PRTSUD.2B(4)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A3	
1	1	D-MD-5015385-0-0	5015385-01	C	DRILL & ETCH DWG FOR M3002	1	
2	2		1001610-00		.01 MFD 50V +80-20% Z5U CER	76	C1-C10,C12-C50,C52,C61,C62,C71,
						CONT	C73-C75,C77-C84,C87,C90-C99,C104
3	3		1012784-00		.047 MFD 50V +80-20% CER	35	C11,C51,C53-C60,C63-C70,C72,C76,
						CONT	C85,C86,C88,C89,C100-C103,
						CONT	C105-C111
4	4		1012084-03		150 MFD 15V +75-10% AL EL	10	C112-C121
5	5		1910536-B0		74S10 BURNED-IN NAND GATE-	1	E1
6	6		1910544-B0		74S74 BURNED-IN FF-D DUAL,	3	E2,E6,E13
7	7		1910532-B0		74S00 BURNED-IN NAND GATE-	1	E3
8	8		1910534-B0		74S04 BURNED-IN INVERTER G	8	E4,E7,E12,E20,E26,E40,E41,E77
9	9		1912389-B0		74S08 BURNED-IN AND GATE,Q	4	E5,E14,E21,E99
10	10		1910542-B0		74S64 BURNED-IN A-O-I GATE	4	E8,E9,E18,E19
11	11		1910539-B0		74S20 BURNED-IN NAND GATE-	1	E10
12	12		1912746-B0		74S37 BURNED-IN NAND GATE-	3	E11,E51,E84
13	13		1912388-B0		74S02 BURNED-IN NOR GATE-Q	3	E15,E52,E83
14	14		1910537-B0		74S11 BURNED-IN AND GATE-T	1	E16
15	15		1911675-B0		74S138 BURNED-IN DECODER/DE	1	E17
16	16		1910956-00		74S151 MUX 1 OF 8	2	E22,E31
17	17		1912697-00		LS174 FF-D HEX W/CLEAR	3	E23,E98,E106
18	18		1911573-B0		74S280 BURNED-IN PARITY GEN	8	E24,E29,E32,E34,E37,E42,E61,E74
19	19		1913340-B0		74S32 BURNED-IN OR GATE,QU	1	E25
20	20		1910550-B0		74S174 BURNED-IN FF-D HEX	11	E27,E28,E33,E35,E38,E43,E62,E72,
						CONT	E73,E75,E96
21	21		1911641-B0		74S257 BURNED-IN MUX,QUAD 2	8	E30,E36,E39,E44,E81,E82,E85,E86
22	22		1913493-B0		74S241 BURNED-IN OCTAL BUFF	8	E45,E46,E48,E49,E90,E91,E94,E95
23	23		2119250-00		4KX4 STATIC RAM 55NS	16	E53-E60,E63-E70
24	24		1910548-B0		74S157 BURNED-IN MUX 1 OF 2	5	E71,E80,E97,E104,E105
25	25		1916358-00		CONTROLLER,MICROPROG	1	E76
26	26		1911712-B0		74S51 BURNED-IN AND/OR GAT	1	E78

REVISION HISTORY			BASIC PART NO: M3002			
ENG	ECO NUMBER	REV	SECTION A OF A			
	INITIAL	A	SECTION.VARIATION INDEX	DRN: D,DELLORCO	DATE: 5-APR-83	DIGITAL
JT	M3002-MR001	B	[A] 00	CHK'D: R.W.CAUNTER	DATE: 7-APR-83	TITLE: PARTS LIST M3002 MICRO PROCESSOR
EB	M3002-MR002	C	[B]			
			[C]	DES.ENG: R,CARN	DATE: 19-APR-84	DOCUMENT NUMBER
			[D]			SIZE: K; CODE: PL; NUMBER: M3002-0-DBP; REV: C
			[E]			
			[F]	RESP.ENG.: R,CARN	DATE: 19-APR-84	
			[H]			
			[J]			
			[K]	MFG.ENG.: R,CARN	DATE: 19-APR-84	RELEASE DATE: 18-FEB-85
			[L]			
			[M]	ASSEMBLY NUMBER: D-UA-M3002-0-0	TOP DOCUMENT NUMBER: #D-DD-M3002-0	FILE NAME: Z8532C.PLS; EDIT #: 9
			[N]			

LINE	ITEM	TCP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A3	
27	27		1912847-00		LS157 MUX 1 OF 2(QUAD)	2	E79,E92
28	28		1914214-00		LS374 FF-D OCTAL EDGE TRIG	2	E89,E93
29	29		2116957-03		1K MOS RAM 55NS 1	9	E100-E103,E107-E111
30	30		1216832-03		PCB,HEADER 50POS(2X25).100CC 90D	1	J1
31	31		1301322-00		180.0 .25 W 5.0 % CF	10	R1,R4,R6,R8,R9,R12,R13,R15,R29,
						CONT	R31
32	32		1300309-00		390.0 .25 W 5.0 % CF	10	R2,R3,R5,R7,R10,R11,R14,R16,R30,
						CONT	R32
33	33		1300202-00		47.0 .25 W 5.0 % CF	12	R17-R28
34	34		1215278-00		CABLE,FLEX NOMEX SHEET MODULE PR	1	
35	35		1216988-02		HANDLE,MODULE,HEX TWO EJECTORS	1	
36	36		9000024-01	A	EYELET,ROLLED 0.1210DX0.192	12	

37 NOTE: 1. SPARE COMPONENT LOCATIONS ARE: E47,E50,E87,E88

DD2 EBI1 DATIREADLAR L → 74S04 E40 → MPR1 DATIREADLAR H

CP1 CBI1 CLK2 L → 74S04 E41 → MPR1 CLK2A H

CK2 CBI1 CLK4 L, MPRA +3VA → 74S37 E51 → MPR1 CLK4A H

BN1 CBI1 CLK1 L → 74S04 E41 → MPR1 CLK1A H

CU2 CBI1 CLK3 L → 74S04 E41 → MPR1 CLK3A H; → 74S04 E41 → MPR1 CLK3A L

AS2 EBI2 CLEARB L → 74S04 E12 → MPR1 CLEARA H; → 74S04 E12 → MPR1 CLEARA L AD1

BJ2 EBI4 CSR22 L → 74S04 E77; MPR1 RUNCLK4 H, MPR1 RUNCLK1A H, EBI4 CSR22 L → E78 74S51 → 74S04 E26 → MPR2 STRBCRAM H → 74S32 E25 → MPR1 LOADLAR H

MPR6 LOADSADREG L, MPR1 RUNCLK4 L → E83 74S02 → MPR1 CLKSADREG H

DF1 EBI4 CSR32 L → 74S04 E12 → MPR1 CSR32 H

MPR2 MBUSERR L, MPR6 CRAMPE L → 74S08 E21 → MPR1 ERROR L

MPR1 RAR12 H → 74S04 E26 → MPR1 SELRHTCRAMA H; → 74S04 E77 → MPR1 SELRHTCRAMB H

MPR9 RAR12 H → 74S08 E5 → MPR1 RAR12 H

CE1 EBI2 ENAEMUX L → 74S04 E26 → MPR1 ENAEMUX H

AE1 CBI3 MPENACMUX L → 74S04 E12 → MPR1 ENACMUX H

MPR1 CLK4A H → 74S37 E11 → MPR1 CPUCLOCK H AV2; → 74S37 E84 → MPR1 RUNCLK4 L; → 74S04 E77 → MPR1 RUNCLK4 H

MPR1 CLK3A H → 74S08 E21 → MPR1 RUNCLK3 H AP1

MPR1 ERROR L → 74S08 E21; MPR1 CLK2A H → 74S08 E14 → MPR1 RUNCLK2 H

MPR1 CLK1A H, MPR1 CSR32 H → 74S10 E1 → 74S37 E51 → MPR1 RUNCLK1A H; MPRA +3VA → 74S37 E11 → MPR1 RUNCLK1B H

MPR1 MPROCRUN H

MPRA +3VA → 74S74 E2 D: MPR1 CSR32 H; C: MPR1 CLK1A H, MPR1 CLEARA L

MPRA +3VA → 74S74 E13 D: MPR1 CLK3A H; C: MPR1 CLEARA L

EBI4 CSR22 L, EBI4 CSR32 L → 74S08 E21 → MPR1 LORCRAM H

E14 74S08 → 74S32 E25 → MPR1 SELRARADR H

MPRA +3VA → 74S74 E2 D: MPR1 CLK3A L; C: MPR1 CLEARA H → 74S02 E15 → MPR1 CLRCRAMREG L

µPROC RUN CLOCKS

MPR6 RDLOCALMEM H → 74S02 E83; → E99 74S08 → MPR1 ENLOCALMEM L

74S04 E77 → MPR1 WRLOCALMEM L

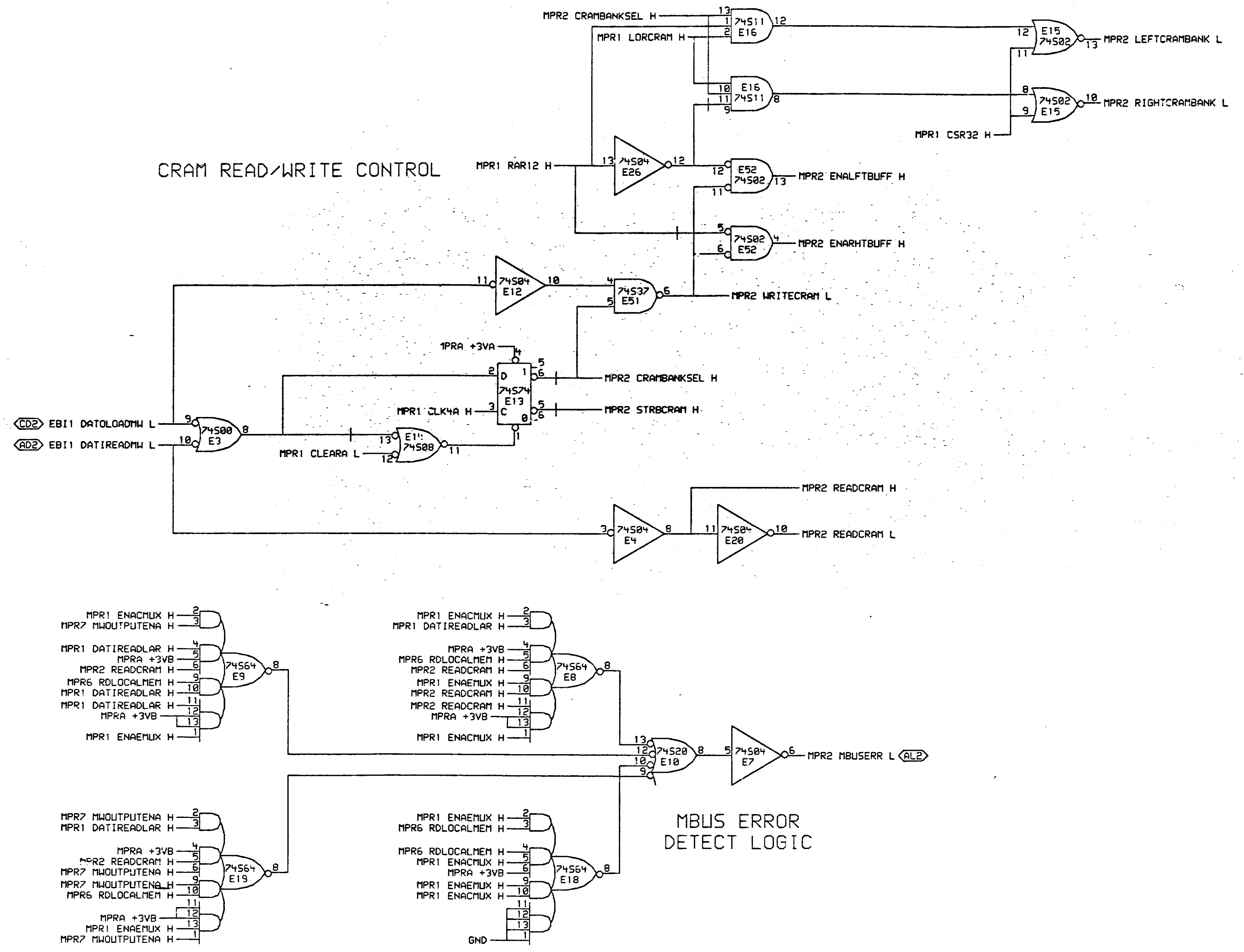
MPRA +3VB → 74S74 E6 D: MPR6 LDLOCALMEM H; C: MPR1 RUNCLK2 H

MPR1 CLEARA H, MPR1 CLK4A H → 74S02 E15

LOCAL MEMORY CONTROL

REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN. D. Toomby	DATE 04-APR-84	ENG. R. Carr	DATE 04-APR-84	TITLE: CI20 MPROC CONT CTRL LOGIC 1
	CHK D. Wiener	DATE 19 APR 84	BOARD LOCATION:		
SUDCOM:<BOWEN.ECO>MPR100.DRW 29-MAR-84 08:51			SHEET 1 OF 1		SIZE D | CODE CS | NUMBER M3002-0-MPR1 | REV. A
FIRST USED ON OPTION/MODEL: CI20			NEXT HIGHER ASSEMBLY: D-DD-M3002-0		



REVISIONS		
CHK	CHANGE NO.	REV

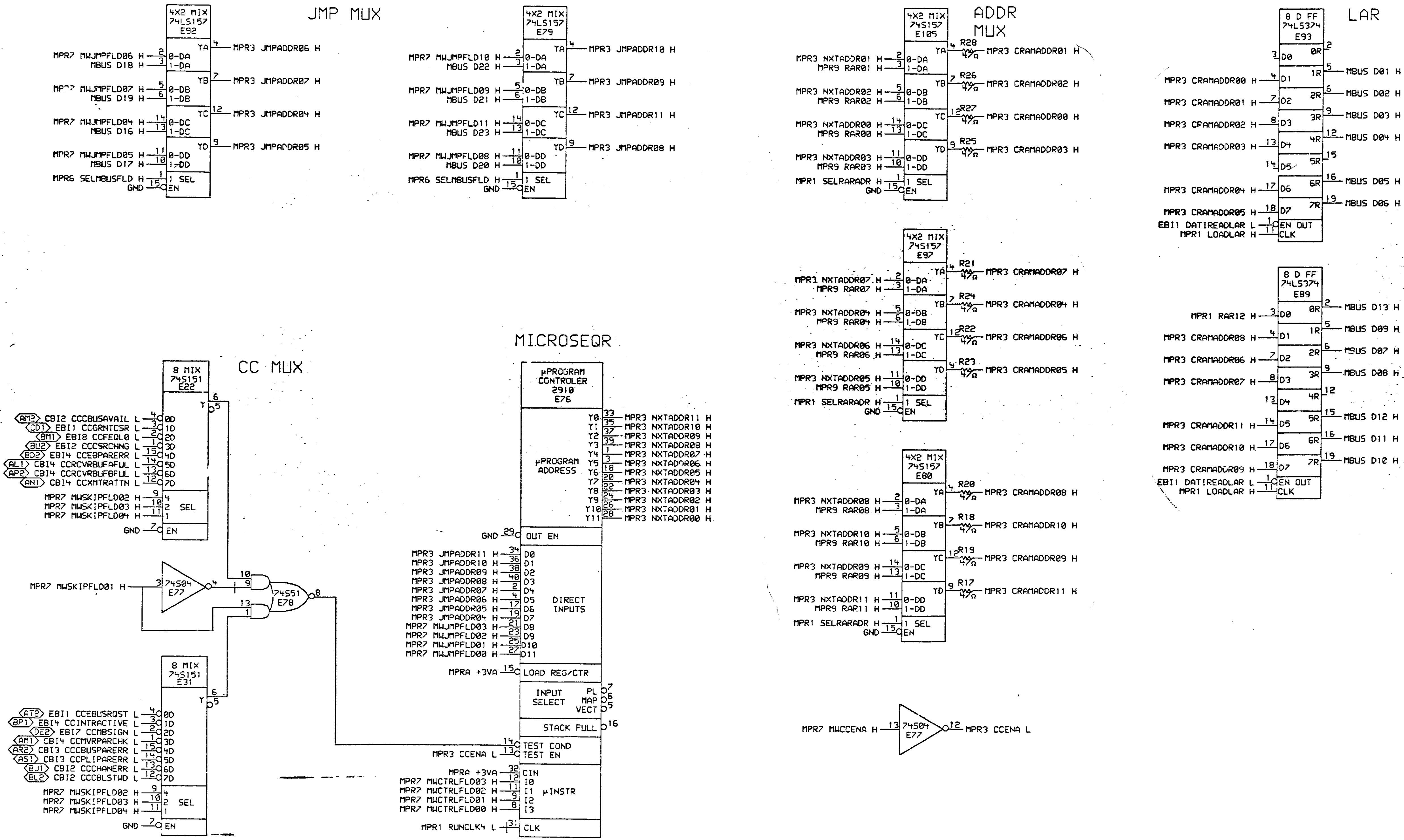
digital

DRN. (signature) DATE 04-APR-84 ENG. R. (signature) DATE 04-APR-84
CHK'D. DATE 4-APR-84 BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>MPR200.DRW 29-MAR-84 08:51 NEXT HIGHER ASSEMBLY: D-DD-M3002-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 MPROC CONT CTRL LOGIC 2

SIZE	CODE	NUMBER	REV.
D	CS	M3002-0-MPR2	A

1 MA



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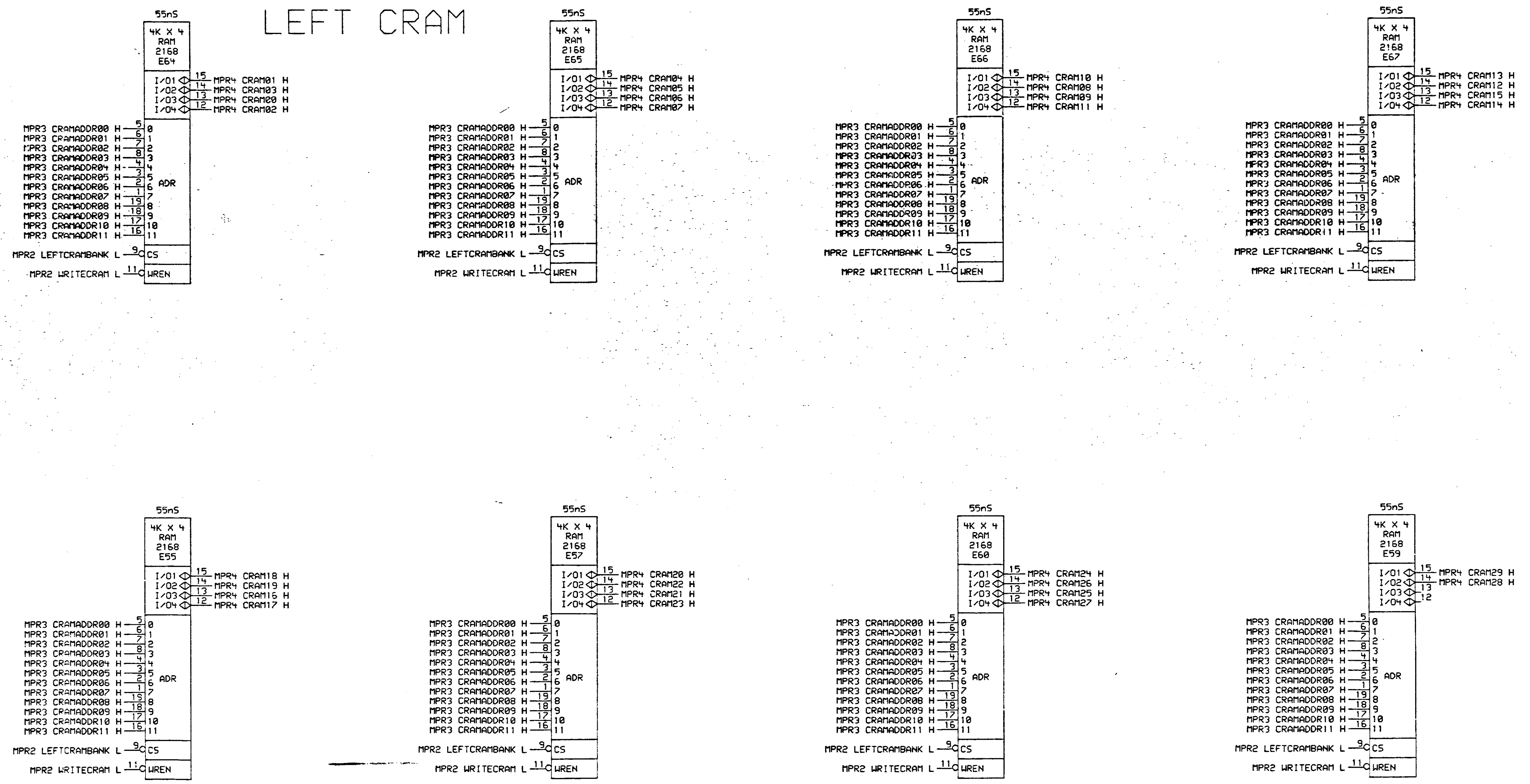
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: DATE 04-APR-84 | ENG: DATE 04-APR-84
CHK'D. DATE 19-APR-84 | BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>MPR300.DRW 29-MAR-84 08:52 | NEXT HIGHER ASSEMBLY: D-DD-M3002-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 MPROC CONT SEQR & RAM ADDR

SIZE	CODE	NUMBER	REV.
D	CS	M3002-0-MPR3	A



REVISIONS
CHK | CHANGE NO. | REV

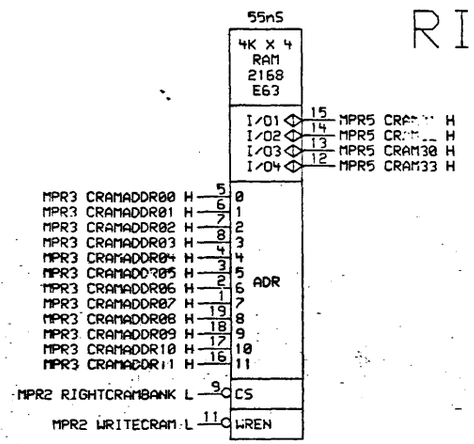
digital
DRN. DATE 04-APR-84
CHK'D. DATE 19-APR-84
ENG. DATE 04-APR-84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>MPR400.DRW 29-MAR-84 08:52
NEXT HIGHER ASSEMBLY: D-DD-M3002-0
FIRST USED ON OPTION/MODEL: CI20

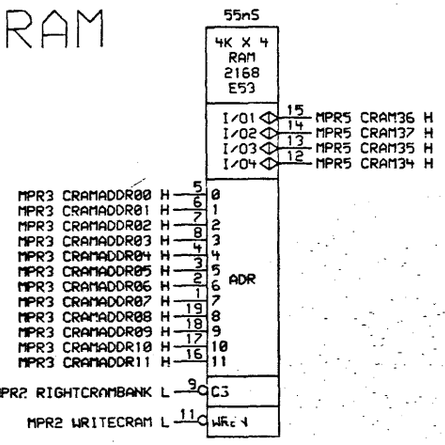
TITLE: CI20 MPROC CONT CRAM RAM 1

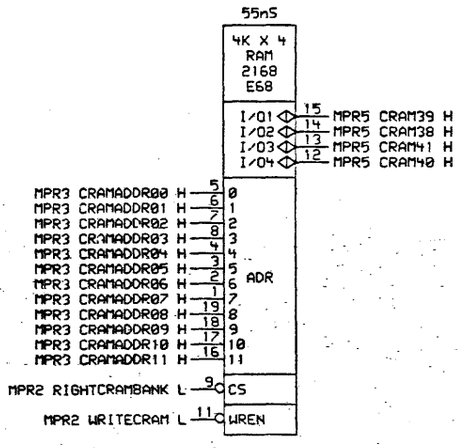
SIZE D | CODE CS | NUMBER M3002-0-MPR4 | REV. A

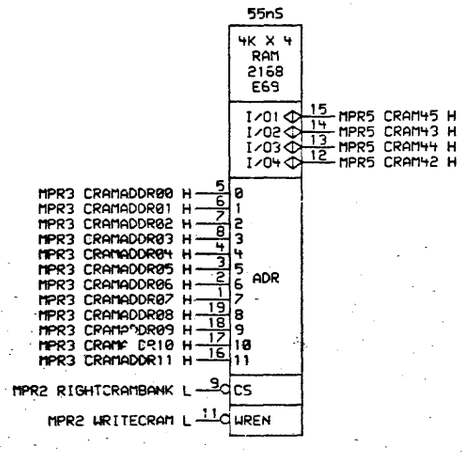
1 MA

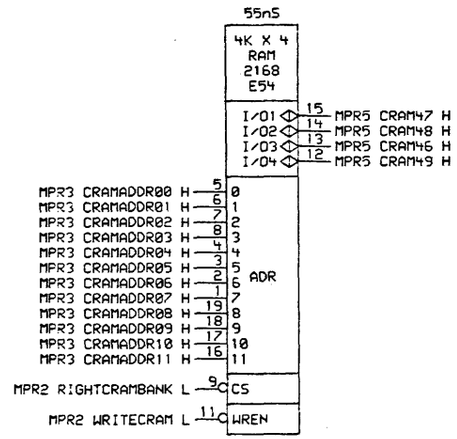
RIGHT CRAM

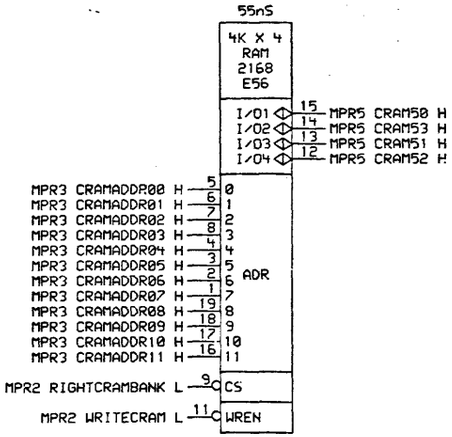


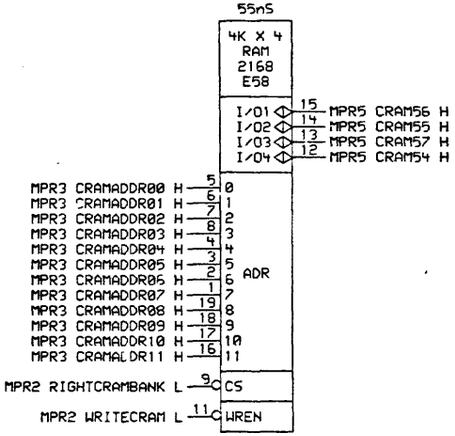


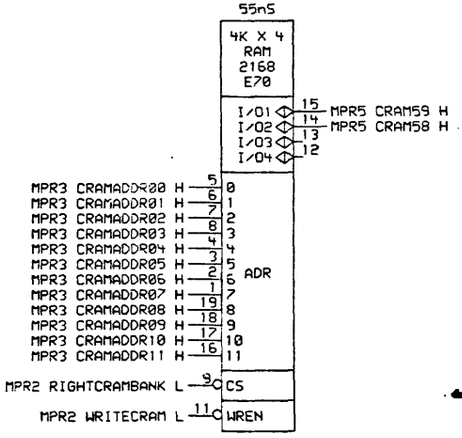












REVISIONS		
CHK	CHANGE NO.	REV

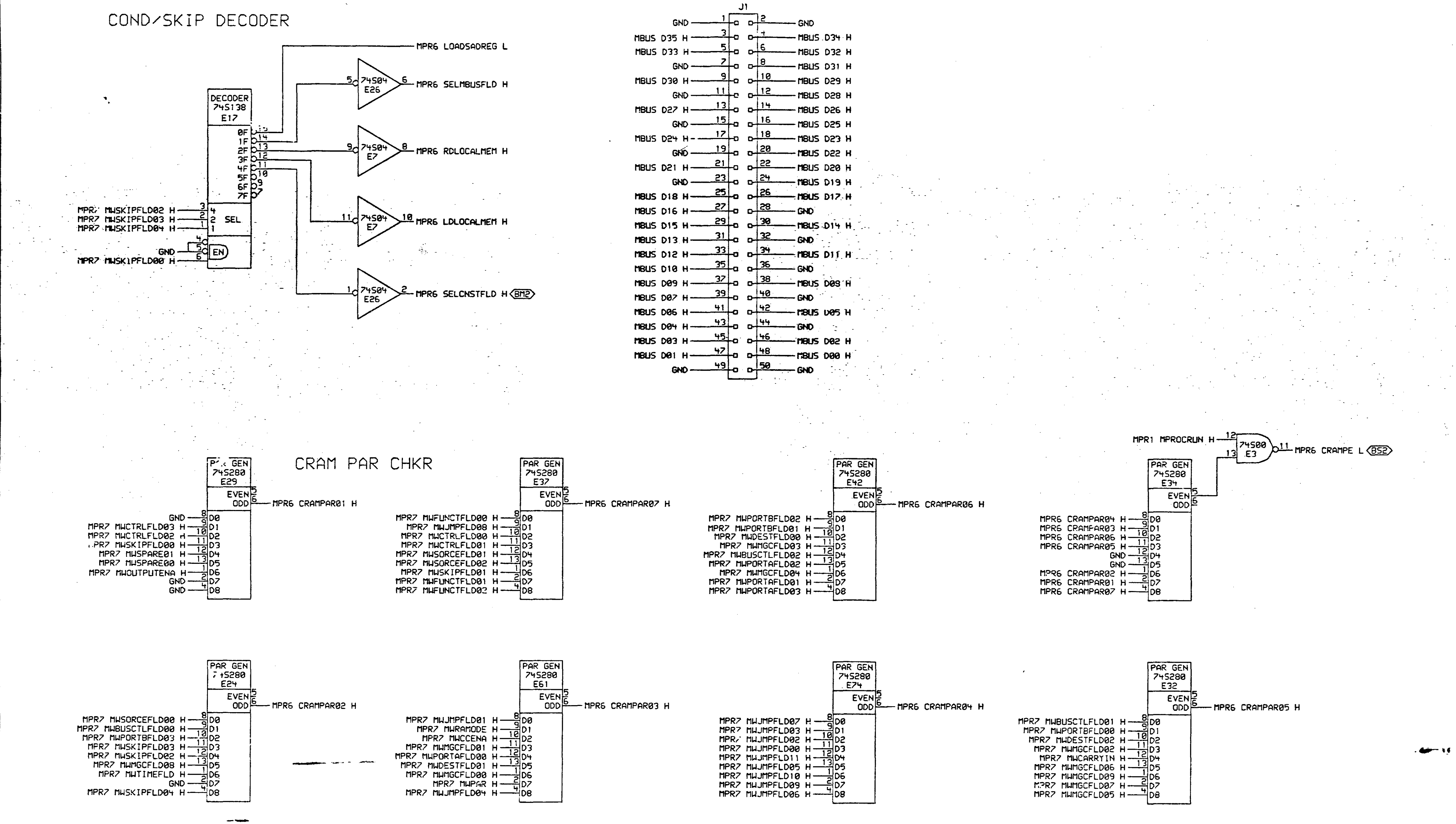
digital

DRN. L. Twomey DATE 04-APR-84 ENG. R. Barr DATE 04-APR-84
CHK D. Williams DATE 19-APR-84 BOARD LOCATION:
SHEET 1 OF 1
SUDCM:<BOWEN.ECO>MPR500.DRW 29-MAR-84 08:52 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: CI20 D-DD-M3002-0

TITLE: CI20 MPROC CONT CRAM RAM 2

SIZE D | CODE CS | NUMBER M3002-0-MPR5 | REV. A

MR



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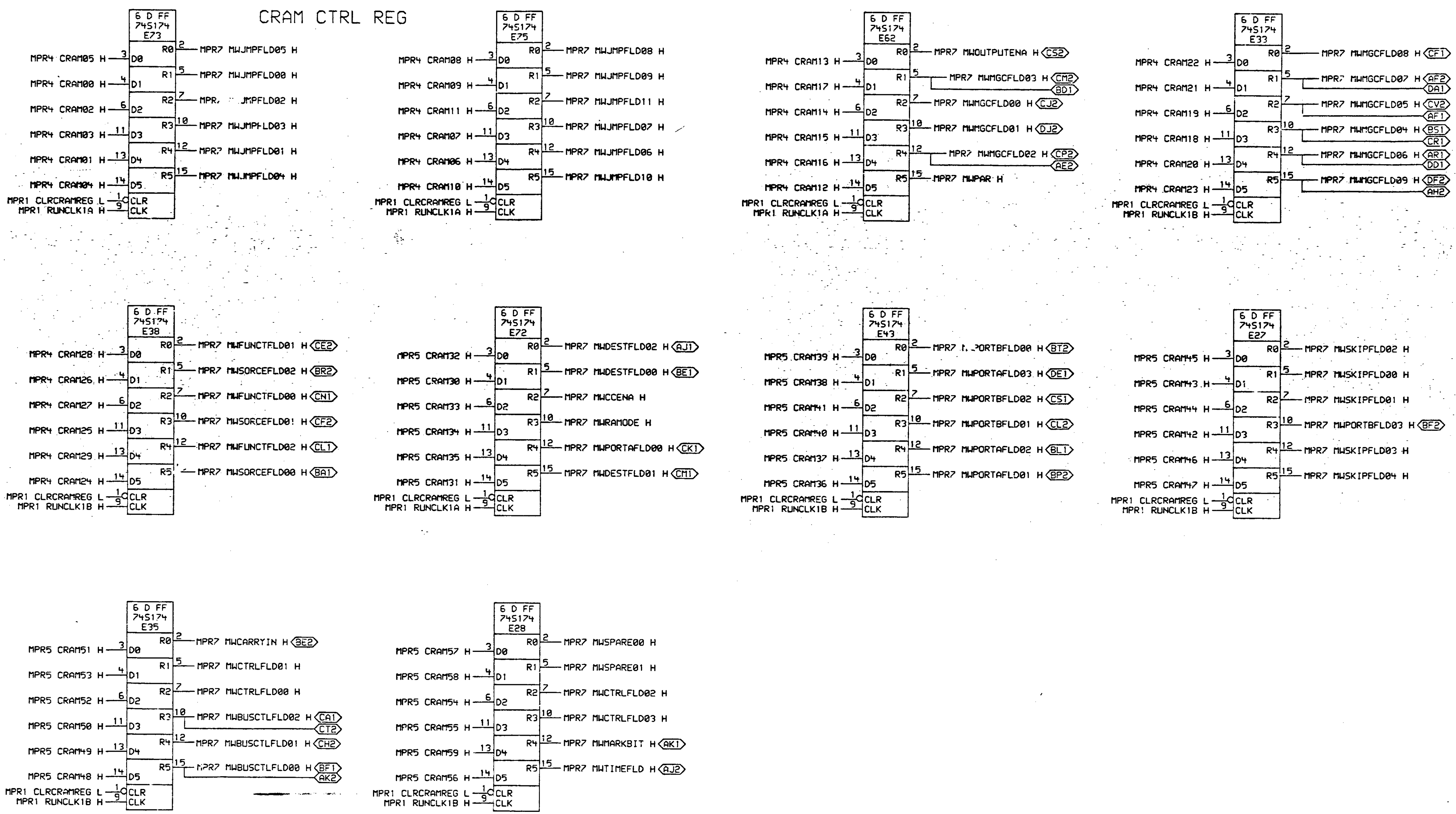
	CHK	CHANGE NO.	REV

digital

DRN.	DATE 04-APR-84	ENG.	DATE 04-APR-84	TITLE: CI20 MPROC CONT CRAM PARITY
CHK'D.	DATE 19 APR 84	BOARD LOCATION:	SHEET 1 OF 1	
SUDCOM:<BOWEN.ECO>MPR600.DRW	29-MAR-84 08:53	NEXT HIGHER ASSEMBLY:	SIZE D / CODE CS / NUMBER M3002-0-MPR6	REV. A
FIRST USED ON OPTION/MODEL: CI20		D-DD-M3022-0		



REVISIONS		
CHK	CHANGE NO.	REV

digital — DRN. (signed) DATE 04-APR-84 — ENG. R. (signed) DATE 04-APR-84 — CHK'D. (signed) DATE 10-APR-84

SUDCOM:<BOWEN.ECO>MPR700.DRW 29-MAR-84 08:53

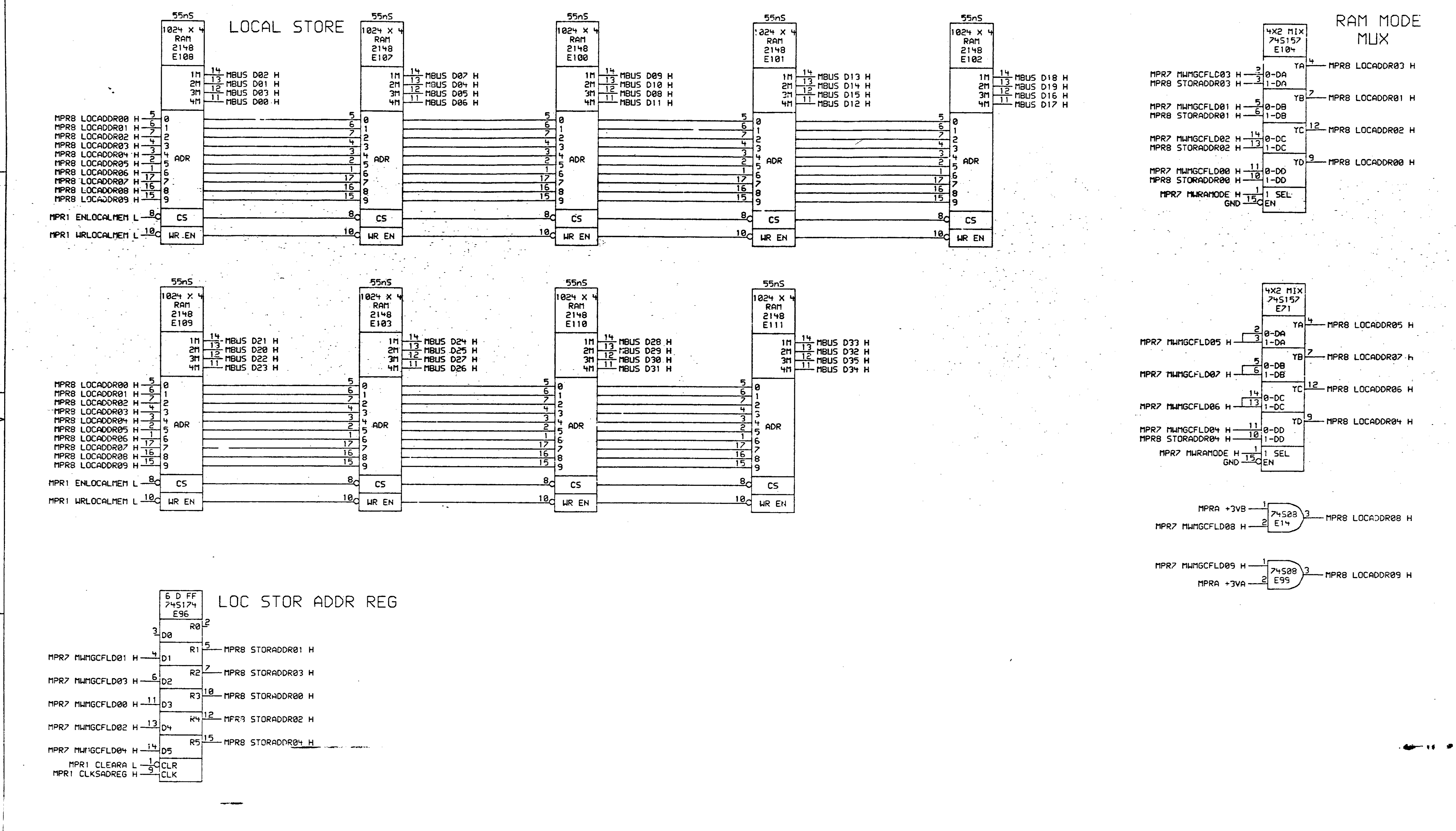
FIRST USED ON OPTION/MODEL: CI20

BOARD LOCATION: — SHEET 1 OF 1

NEXT HIGHER ASSEMBLY: D-DD-M3002-0

TITLE: CI20 MPROC CONT CRAM REG

SIZE D — CODE CS — NUMBER M3002-0-MPR7 — REV. A


LOCAL STORE
55nS
1024 X 4 RAM 2148 E108
1024 X 4 RAM 2148 E107
1024 X 4 RAM 2148 E100
1024 X 4 RAM 2148 E101
1024 X 4 RAM 2148 E102
1024 X 4 RAM 2148 E109
1024 X 4 RAM 2148 E103
1024 X 4 RAM 2148 E110
1024 X 4 RAM 2148 E111
ADR
CS
WR EN
MBUS D02 H
MBUS D01 H
MBUS D03 H
MBUS D00 H
MBUS D07 H
MBUS D04 H
MBUS D05 H
MBUS D06 H
MBUS D09 H
MBUS D10 H
MBUS D08 H
MBUS D11 H
MBUS D13 H
MBUS D14 H
MBUS D15 H
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MBUS D34 H
MPR8 LOCADDR00 H
MPR8 LOCADDR01 H
MPR8 LOCADDR02 H
MPR8 LOCADDR03 H
MPR8 LOCADDR04 H
MPR8 LOCADDR05 H
MPR8 LOCADDR06 H
MPR8 LOCADDR07 H
MPR8 LOCADDR08 H
MPR8 LOCADDR09 H
MPR1 ENLOCALMEM L
MPR1 WRLOCALMEM L
RAM MODE MUX
4X2 MIX 74S157 E104
MPR7 MWMGCFLD03 H
MPR8 STORADDR03 H
MPR7 MWMGCFLD01 H
MPR8 STORADDR01 H
MPR7 MWMGCFLD02 H
MPR8 STORADDR02 H
MPR7 MWMGCFLD00 H
MPR8 STORADDR00 H
MPR7 MWRAMODE H
GND
4X2 MIX 74S157 E71
MPR7 MWMGCFLD05 H
MPR7 MWMGCFLD07 H
MPR7 MWMGCFLD06 H
MPR7 MWMGCFLD04 H
MPR8 STORADDR04 H
MPRA +3VB
MPR7 MWMGCFLD08 H
74S08 E14
MPR7 MWMGCFLD09 H
MPRA +3VA
74S08 E99
LOC STOR ADDR REG
6 D FF 74S174 E96
MPR7 MWMGCFLD01 H
MPR7 MWMGCFLD03 H
MPR7 MWMGCFLD00 H
MPR7 MWMGCFLD02 H
MPR7 MWMGCFLD04 H
MPR1 CLEARA L
MPR1 CLKSADREG H
MPR8 STORADDR01 H
MPR8 STORADDR03 H
MPR8 STORADDR00 H
MPR8 STORADDR02 H
MPR8 STORADDR04 H

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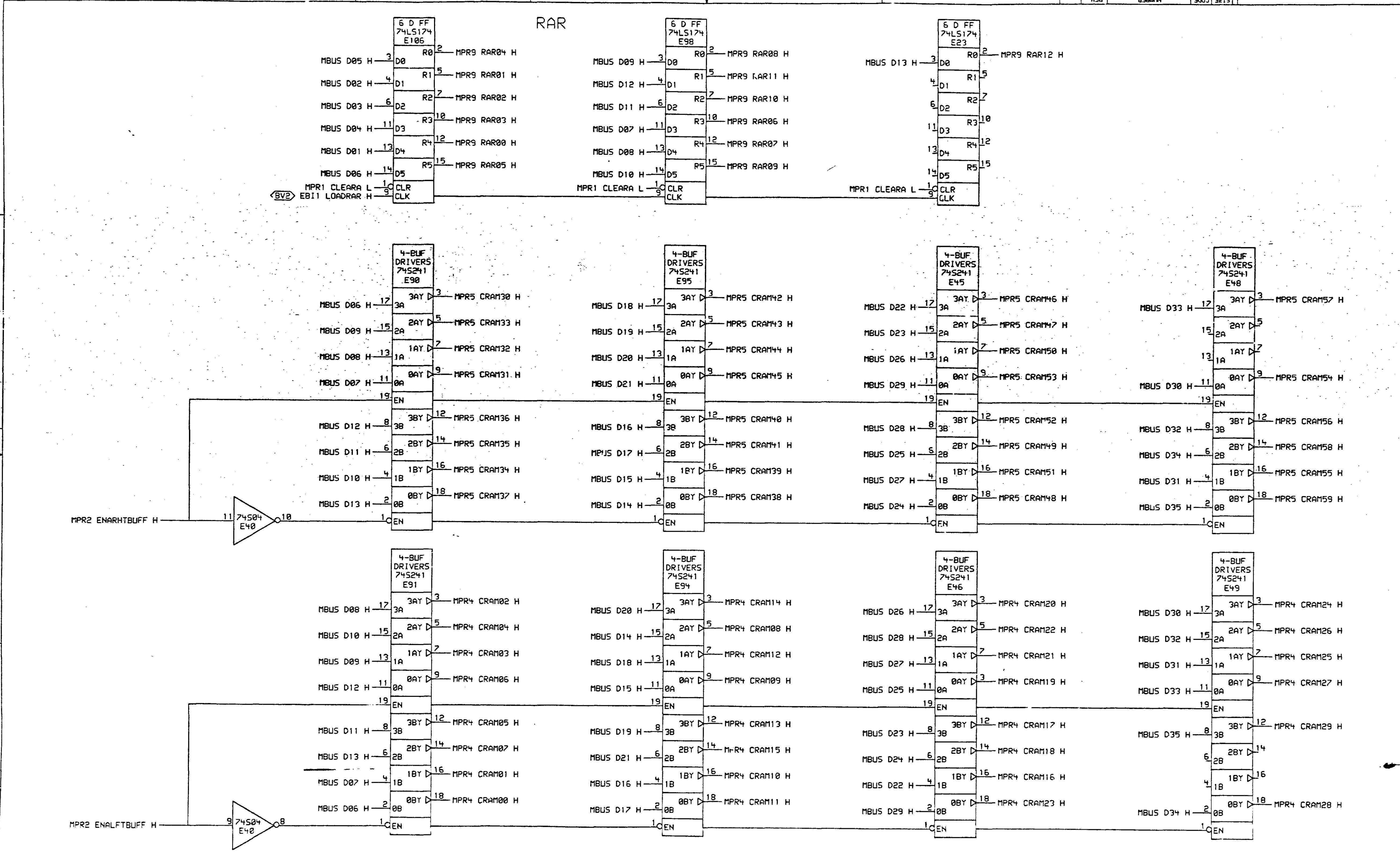
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. [signature] DATE 04-APR-84 ENG. R. [signature] DATE 04-APR-84
CHK'D. [signature] DATE 17 APR 84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:(BOWEN.ECO)MPR900.DRW 29-MAR-84 09:53
NEXT HIGHER ASSEMBLY: D-DD-M3002-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 MPROC CONT LOCAL STORAGE

SIZE	CODE	NUMBER	REV.
D	CS	M3002-0-MPR8	A


RAR
6 D FF 74LS174 E106
MBUS D05 H
MBUS D02 H
MBUS D03 H
MBUS D04 H
MBUS D01 H
MBUS D06 H
MPR1 CLEARA L
BV2 EBI1 LOADRAR H
MPR9 RAR04 H
MPR9 RAR01 H
MPR9 RAR02 H
MPR9 RAR03 H
MPR9 RAR00 H
MPR9 RAR05 H
6 D FF 74LS174 E98
MBUS D09 H
MBUS D12 H
MBUS D11 H
MBUS D07 H
MBUS D08 H
MBUS D10 H
MPR9 RAR08 H
MPR9 RAR11 H
MPR9 RAR10 H
MPR9 RAR06 H
MPR9 RAR07 H
MPR9 RAR09 H
6 D FF 74LS174 E23
MBUS D13 H
MPR9 RAR12 H
4-BUF DRIVERS 74S241 E90
MBUS D06 H
MBUS D09 H
MBUS D08 H
MBUS D07 H
MBUS D12 H
MBUS D11 H
MBUS D10 H
MBUS D13 H
MPR5 CRAM30 H
MPR5 CRAM33 H
MPR5 CRAM32 H
MPR5 CRAM31 H
MPR5 CRAM36 H
MPR5 CRAM35 H
MPR5 CRAM34 H
MPR5 CRAM37 H
4-BUF DRIVERS 74S241 E95
MBUS D18 H
MBUS D19 H
MBUS D20 H
MBUS D21 H
MBUS D16 H
MBUS D17 H
MBUS D15 H
MBUS D14 H
MPR5 CRAM42 H
MPR5 CRAM43 H
MPR5 CRAM44 H
MPR5 CRAM45 H
MPR5 CRAM40 H
MPR5 CRAM41 H
MPR5 CRAM39 H
MPR5 CRAM38 H
4-BUF DRIVERS 74S241 E45
MBUS D22 H
MBUS D23 H
MBUS D26 H
MBUS D29 H
MBUS D28 H
MBUS D25 H
MBUS D27 H
MBUS D24 H
MPR5 CRAM46 H
MPR5 CRAM47 H
MPR5 CRAM50 H
MPR5 CRAM53 H
MPR5 CRAM52 H
MPR5 CRAM49 H
MPR5 CRAM51 H
MPR5 CRAM48 H
4-BUF DRIVERS 74S241 E48
MBUS D33 H
MBUS D30 H
MBUS D32 H
MBUS D34 H
MBUS D31 H
MBUS D35 H
MPR5 CRAM57 H
MPR5 CRAM54 H
MPR5 CRAM56 H
MPR5 CRAM58 H
MPR5 CRAM55 H
MPR5 CRAM59 H
MPR2 ENARHTBUFF H
74S04 E40
4-BUF DRIVERS 74S241 E91
MBUS D08 H
MBUS D10 H
MBUS D09 H
MBUS D12 H
MBUS D11 H
MBUS D13 H
MBUS D07 H
MBUS D06 H
MPR4 CRAM02 H
MPR4 CRAM04 H
MPR4 CRAM03 H
MPR4 CRAM06 H
MPR4 CRAM05 H
MPR4 CRAM07 H
MPR4 CRAM01 H
MPR4 CRAM00 H
4-BUF DRIVERS 74S241 E94
MBUS D20 H
MBUS D14 H
MBUS D18 H
MBUS D15 H
MBUS D19 H
MBUS D21 H
MBUS D16 H
MBUS D17 H
MPR4 CRAM14 H
MPR4 CRAM08 H
MPR4 CRAM12 H
MPR4 CRAM09 H
MPR4 CRAM13 H
MPR4 CRAM15 H
MPR4 CRAM10 H
MPR4 CRAM11 H
4-BUF DRIVERS 74S241 E46
MBUS D26 H
MBUS D28 H
MBUS D27 H
MBUS D25 H
MBUS D23 H
MBUS D24 H
MBUS D22 H
MBUS D29 H
MPR4 CRAM20 H
MPR4 CRAM22 H
MPR4 CRAM21 H
MPR4 CRAM19 H
MPR4 CRAM17 H
MPR4 CRAM18 H
MPR4 CRAM16 H
MPR4 CRAM23 H
4-BUF DRIVERS 74S241 E49
MBUS D30 H
MBUS D32 H
MBUS D31 H
MBUS D33 H
MBUS D35 H
MBUS D34 H
MPR4 CRAM24 H
MPR4 CRAM26 H
MPR4 CRAM25 H
MPR4 CRAM27 H
MPR4 CRAM29 H
MPR4 CRAM28 H
MPR2 ENALFTBUFF H
74S04 E40

REVISIONS		
CHK	CHANGE NO.	REV

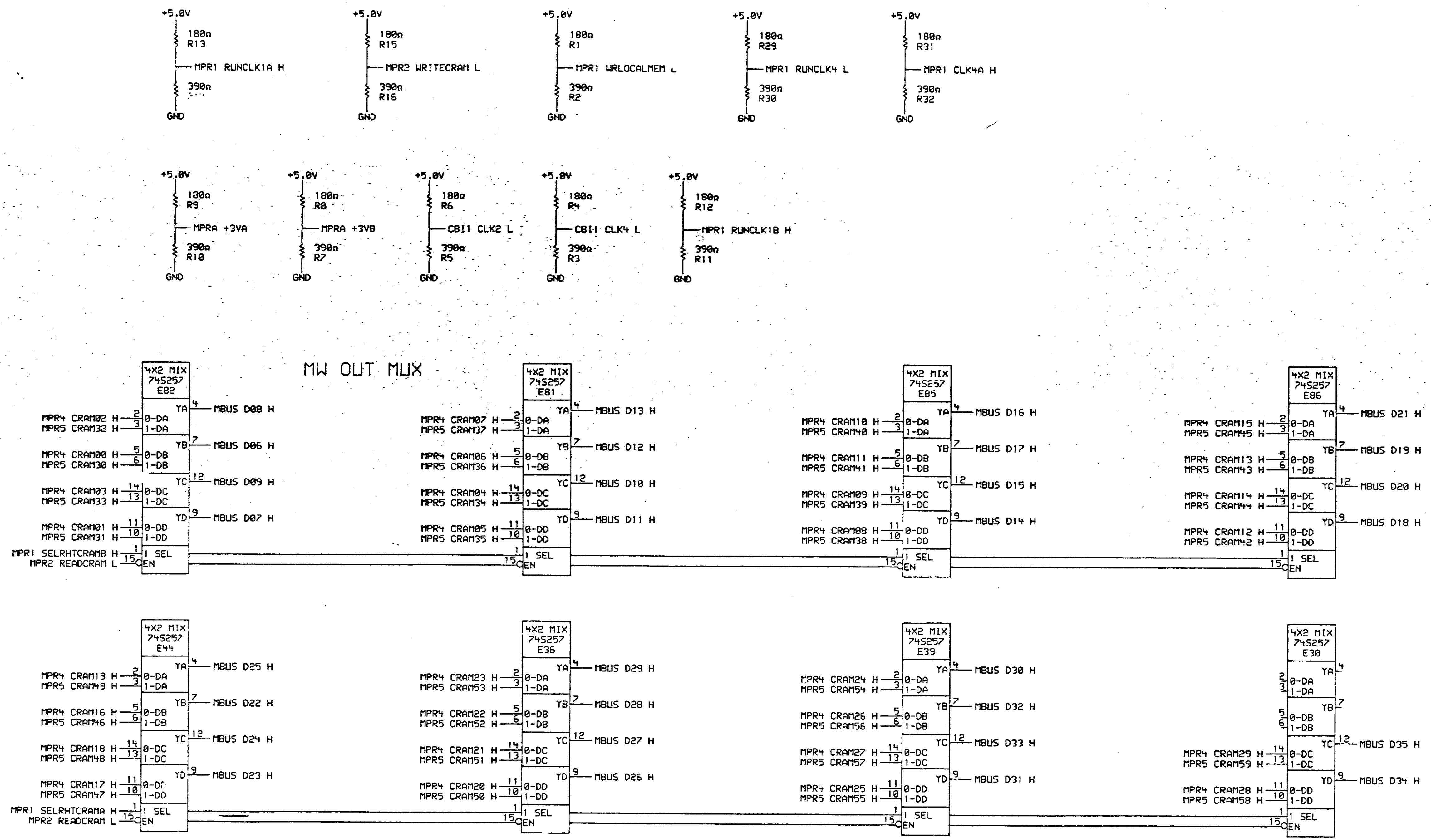
digital

DRN: DATE 04-APR-84 ENG. DATE 04-APR-84
CHK'D. DATE 7APR-84 BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>MPR900.DRW 29-MAR-84 08:53 NEXT HIGHER ASSEMBLY: D-DD-M3002-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 MPROC CONT CRAM LOAD 1

SIZE D CODE CS NUMBER M3002-0-MPR9 REV. A

1 MR



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REVISIONS		
CHK	CHANGE NO.	REV

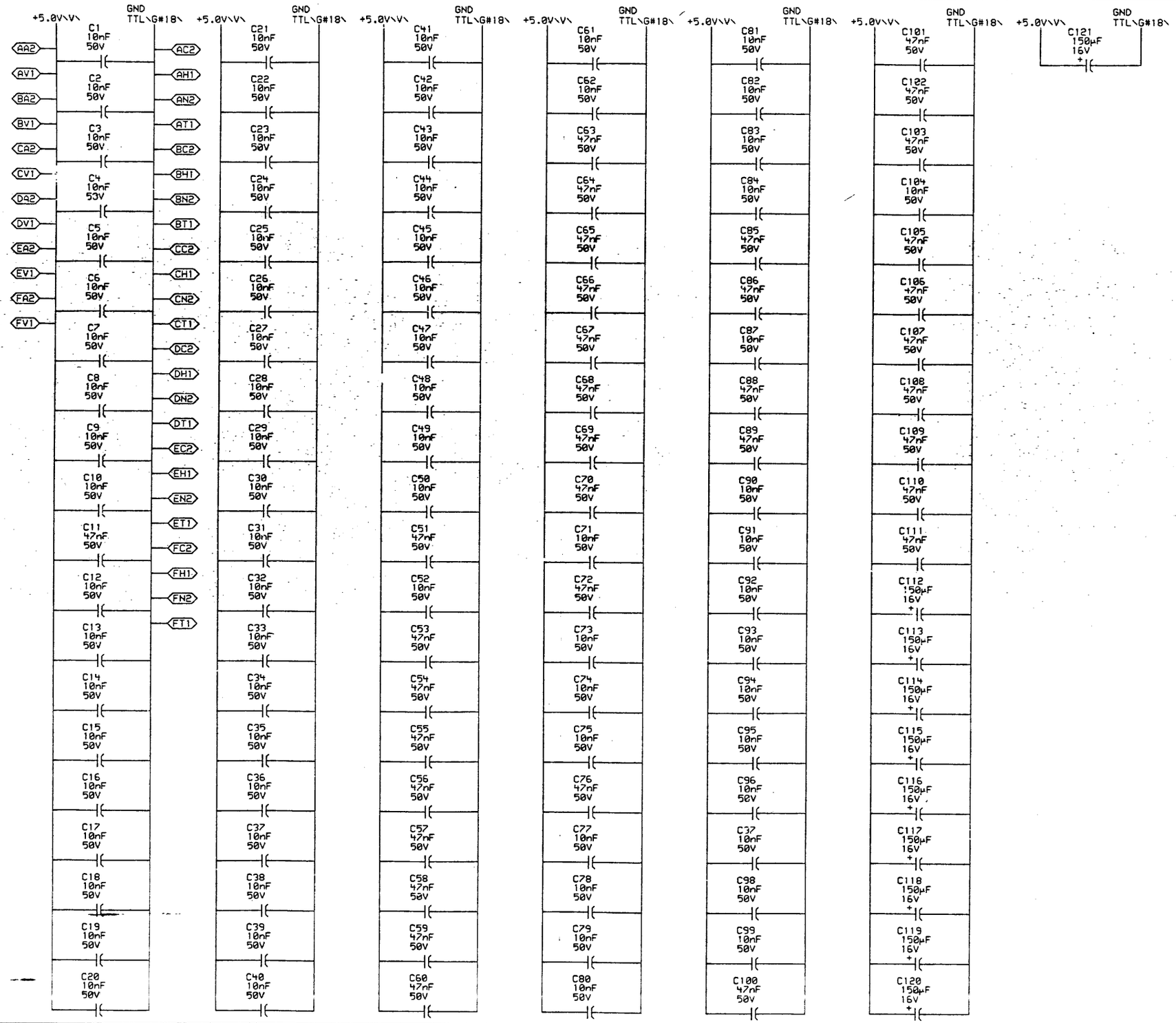
digital

DRN.	DATE 04-APR-84	ENG. R.	DATE 04-APR-84
CHK'D.	DATE 19-APR-84	BOARD LOCATION:	
SUDCOM:<BOWEN.ECO>MPRA00.DRW 29-MAR-84 08:53		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: CI20		NEXT HIGHER ASSEMBLY: D-DD-M3002-0	

TITLE: CI20 MPROC CONT CRAM LOAD 2

SIZE	CODE	NUMBER	REV.
D	CS	M3002-0-MPRA	A

1 MR



SIZE	CODE	NUMBER	REV.
D	CS	M3002-0-MPRB	A

REVISIONS		
CHK	CHANGE NO.	REV

DRN. L. Toomby	DATE 04-APR-84	ENG. R Law	DATE 04-APR-84
CHK D. Bisiaux	DATE 19-APR-84	BOARD LOCATION:	
SUDCOM:<BOWEN.ECO>MPRA00.DRW 29-MAR-84 08:53		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: CI20		NEXT HIGHER ASSEMBLY: D-DD-M3002-0	

TITLE: CI20 MPROC CONT PWR & GND

SIZE	CODE	NUMBER	REV.
D	CS	M3002-0-MPRB	A

N/R

CI20 MPROC CONT UNUSED FINGERS

AA1 — N/C SEE NOTE 1
AB1 — N/C SEE NOTE 3
AB2 — N/C -5.2V
AC1 — N/C EXTRA GND
AU1 — N/C -5.2V
AU2 — N/C SEE NOTE 1
BB1 — N/C SEE NOTE 3
BB2 — N/C SEE NOTE 3
BC1 — N/C EXTRA GND
BH2 — N/C SEE NOTE 1
BK1 — N/C SEE NOTE 1
BK2 — N/C SEE NOTE 1
BR1 — N/C SEE NOTE 1
BU1 — N/C SEE NOTE 3
CB1 — N/C SEE NOTE 3
CB2 — N/C SEE NOTE 3
CC1 — N/C EXTRA GND
CJ1 — N/C SEE NOTE 1
CR2 — N/C SEE NOTE 1
CU1 — N/C SEE NOTE 3
DB1 — N/C SEE NOTE 3
DB2 — N/C SEE NOTE 3
DC1 — N/C EXTRA GND
DH2 — N/C SEE NOTE 1
DJ1 — N/C SEE NOTE 1
DK1 — N/C SEE NOTE 2

DK2 — N/C SEE NOTE 2
DL1 — N/C SEE NOTE 2
DL2 — N/C SEE NOTE 2
DM1 — N/C SEE NOTE 2
DM2 — N/C SEE NOTE 2
DN1 — N/C SEE NOTE 2
DP1 — N/C SEE NOTE 2
DP2 — N/C SEE NOTE 2
DR1 — N/C SEE NOTE 2
DR2 — N/C SEE NOTE 2
DS1 — N/C SEE NOTE 2
DS2 — N/C SEE NOTE 2
DT2 — N/C SEE NOTE 2
DU1 — N/C SEE NOTE 3
DU2 — N/C SEE NOTE 2
DV2 — N/C SEE NOTE 2
EA1 — N/C SEE NOTE 2
EB1 — N/C SEE NOTE 3
EB2 — N/C SEE NOTE 3
EC1 — N/C SEE NOTE 2
ED1 — N/C SEE NOTE 2
ED2 — N/C SEE NOTE 2
EE1 — N/C SEE NOTE 2
EE2 — N/C SEE NOTE 2
EF1 — N/C SEE NOTE 2
EF2 — N/C SEE NOTE 2
EH2 — N/C SEE NOTE 2

EJ1 — N/C SEE NOTE 2
EJ2 — N/C SEE NOTE 2
EK1 — N/C SEE NOTE 2
EK2 — N/C SEE NOTE 2
EL1 — N/C SEE NOTE 2
EL2 — N/C SEE NOTE 2
EM1 — N/C SEE NOTE 2
EM2 — N/C SEE NOTE 2
EN1 — N/C SEE NOTE 2
EP1 — N/C SEE NOTE 2
EP2 — N/C SEE NOTE 2
ER1 — N/C SEE NOTE 2
ER2 — N/C SEE NOTE 2
ES1 — N/C SEE NOTE 2
ES2 — N/C SEE NOTE 2
ET2 — N/C SEE NOTE 2
EU1 — N/C SEE NOTE 3
EU2 — N/C SEE NOTE 2
EV2 — N/C SEE NOTE 2
FA1 — N/C SEE NOTE 2
FB1 — N/C SEE NOTE 3
FB2 — N/C -5.2V
FC1 — N/C SEE NOTE 2
FD1 — N/C SEE NOTE 2
FD2 — N/C SEE NOTE 2
FE1 — N/C SEE NOTE 2
FE2 — N/C SEE NOTE 2

FF1 — N/C SEE NOTE 2
FF2 — N/C SEE NOTE 2
FH2 — N/C SEE NOTE 2
FJ1 — N/C SEE NOTE 2
FJ2 — N/C SEE NOTE 2
FK1 — N/C SEE NOTE 2
FK2 — N/C SEE NOTE 2
FL1 — N/C SEE NOTE 2
FL2 — N/C SEE NOTE 2
FM1 — N/C SEE NOTE 2
FM2 — N/C SEE NOTE 2
FN1 — N/C SEE NOTE 2
FP1 — N/C SEE NOTE 2
FP2 — N/C SEE NOTE 2
FR1 — N/C SEE NOTE 2
FR2 — N/C SEE NOTE 2
FS1 — N/C SEE NOTE 2
FS2 — N/C SEE NOTE 2
FT2 — N/C SEE NOTE 2
FU1 — N/C -5.2V
FU2 — N/C SEE NOTE 2
FV2 — N/C SEE NOTE 2

NOTE 1: THESE PINS ARE CONNECTED AS SHOWN BELOW

FROM	TO
C13D1	A14A1
C13E1	A14U2
F13R1	B14H2
F13M1	B14K1
D13S2	B14K2
E13L2	B14R1
E13D2	C14J1
C13F1	C14R2
C13K1	D14H2
F13K1	D14J1

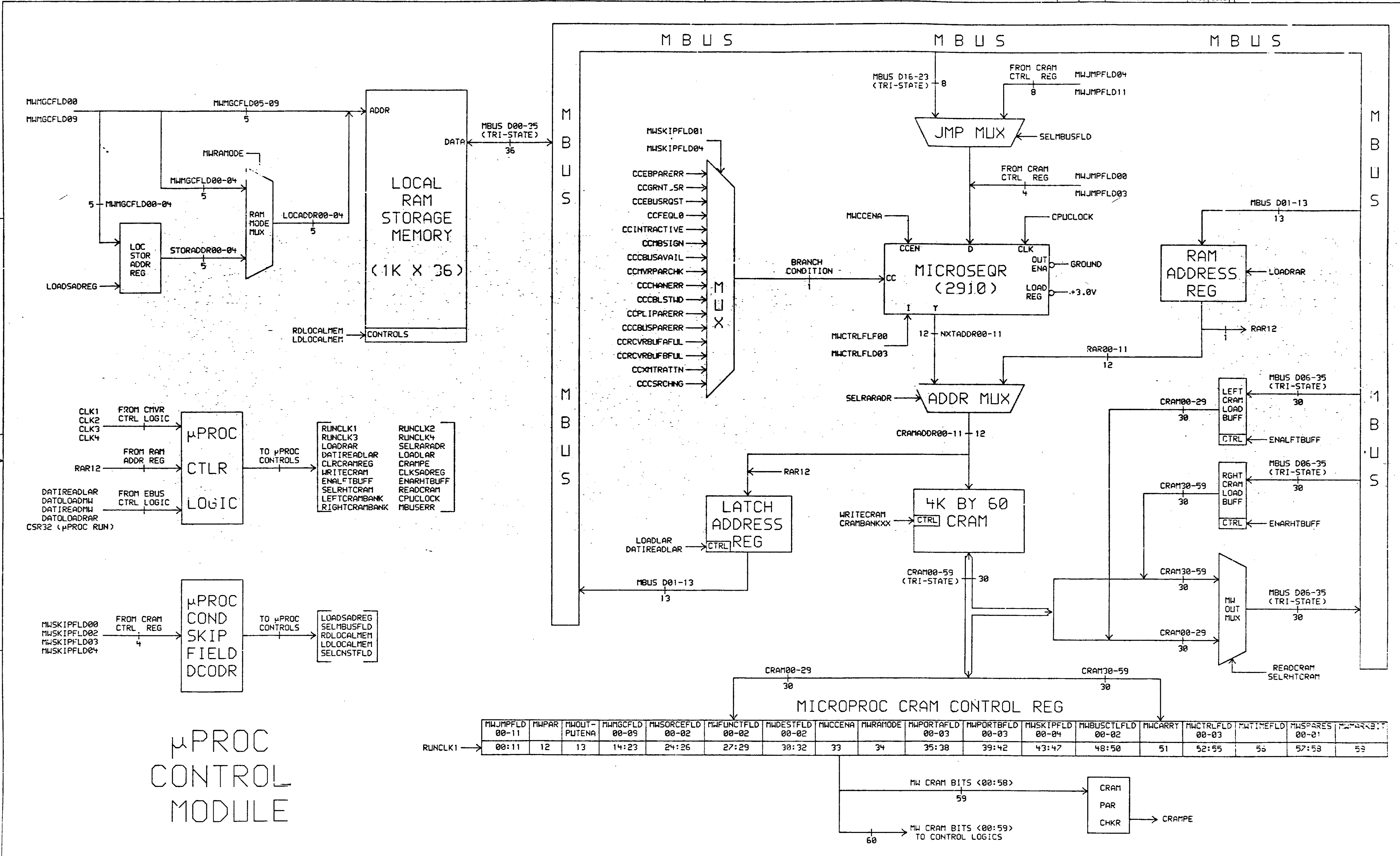
NOTE 2: RSVD FOR MASS BUS
NOTE 3: RSVD FOR -5.2V

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. (signature) DATE 04-APR-84
ENG. R. (signature) DATE 04-APR-84
CHK'D. (signature) DATE 19-APR-84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>MPRC00.DRW 29-MAR-84 08:54
NEXT HIGHER ASSEMBLY: D-DD-M3002-0
FIRST USED ON OPTION/MODEL: CI20
TITLE: CI20 MPROC CONT UNUSED FINGERS
SIZE D CODE CS NUMBER M3002-0-MPRC REV. A

MR


MBUS
MBUS
MBUS
MWMGCFLD00
MWMGCFLD09
MWMGCFLD05-09
5
ADDR
DATA
MBUS D00-35
(TRI-STATE)
36
MWRAMODE
MWMGCFLD00-04
5
5 MWMGCFLD00-04
RAM MODE MUX
LOCADDR00-04
5
LOC STOR ADDR REG
STORADDR00-04
5
LOADSADREG
LOCAL RAM STORAGE MEMORY
(1K X 36)
RDLOCALMEM
LDLOCALMEM
CONTROLS
MWSKIPFLD01
MWSKIPFLD04
CCEBPARERR
CCGRNTLSR
CCEBUSRQST
CCFEQL0
CCINTRACTIVE
CCMBSIGN
CCCBUSAVAIL
CCMVRPARCHK
CCCHANERR
CCCBLSTWD
CCPLIPARERR
CCCBUSPARERR
CCRCVRBUFAFUL
CCRCVRBUFBFUL
CCXMTRATTN
CCCSRCHNG
MUX
BRANCH CONDITION
1
MBUS D16-23
(TRI-STATE)
8
FROM CRAM CTRL REG
8
MWJMPFLD04
MWJMPFLD11
JMP MUX
SELMBUSFLD
FROM CRAM CTRL REG
4
MWJMPFLD00
MWJMPFLD03
MWCCENA
CPUCLOCK
CCEN
D
CLK
OUT ENA
GROUND
CC
MICROSEQR
(2910)
LOAD REG
+3.0V
I
Y
MWCTRLFLF00
MWCTRLFLD03
12
NXTADDR00-11
MBUS D01-13
13
RAM ADDRESS REG
LOADRAR
1
RAR12
RAR00-11
12
SELRARADR
ADDR MUX
CRAMADDR00-11
12
RAR12
LATCH ADDRESS REG
CTRL
LOADLAR
DATIREADLAR
MBUS D01-13
13
WRITECRAM
CRAMBANKXX
4K BY 60 CRAM
CTRL
CRAM00-59
(TRI-STATE)
30
MBUS D06-35
(TRI-STATE)
30
CRAM00-29
30
LEFT CRAM LOAD BUFF
CTRL
ENALFTBUFF
MBUS D06-35
(TRI-STATE)
30
CRAM30-59
30
RGHT CRAM LOAD BUFF
CTRL
ENARHTBUFF
CRAM30-59
30
MW OUT MUX
MBUS D06-35
(TRI-STATE)
30
CRAM00-29
30
READCRAM
SELRHTCRAM
CLK1
CLK2
CLK3
CLK4
FROM CMVR CTRL LOGIC
µPROC CTLR LOGIC
FROM RAM ADDR REG
RAR12
DATIREADLAR
DATOLOADMW
DATIREADMW
DATOLOADRAR
CSR32 (µPROC RUN)
FROM EBUS CTRL LOGIC
TO µPROC CONTROLS
RUNCLK1
RUNCLK3
LOADRAR
DATIREADLAR
CLRCRAMREG
WRITECRAM
ENALFTBUFF
SELRHTCRAM
LEFTCRAMBANK
RIGHTCRAMBANK
RUNCLK2
RUNCLK4
SELRARADR
LOADLAR
CRAMPE
CLKSADREG
ENARHTBUFF
READCRAM
CPUCLOCK
MBUSERR
MWSKIPFLD00
MWSKIPFLD02
MWSKIPFLD03
MWSKIPFLD04
FROM CRAM CTRL REG
4
µPROC COND SKIP FIELD DCODR
TO µPROC CONTROLS
LOADSADREG
SELMBUSFLD
RDLOCALMEM
LDLOCALMEM
SELCNSTFLD
CRAM00-29
30
CRAM30-59
30
MICROPROC CRAM CONTROL REG
RUNCLK1
MW CRAM BITS <00:58>
59
CRAM PAR CHKR
CRAMPE
60
MW CRAM BITS <00:59>
TO CONTROL LOGICS
µPROC CONTROL MODULE

MICROPROC CRAM CONTROL REG

MWJMPFLD 00-11	MWPAR	MWOUT-PUTENA	MWMGCFLD 00-09	MWSORCEFLD 00-02	MWFUNCTFLD 00-02	MWDESTFLD 00-02	MWCCENA	MWRAMODE	MWPORTAFLD 00-03	MWPORTBFLD 00-03	MWSKIPFLD 00-04	MWBUSCTLFLD 00-02	MWCARRY	MWCTRLFLD 00-03	MWTIMEFLD	MWSPARES 00-01	MWMARKBIT
00:11	12	13	14:23	24:26	27:29	30:32	33	34	35:38	39:42	43:47	48:50	51	52:55	56	57:58	59

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. [signature] DATE 18-APR-84 | ENG. E. BLCOM DATE 18-APR-84

CHK'D. [signature] DATE 19 APR 84 | BOARD LOCATION: | SHEET 1 OF 1

SUDCOM:<BCLEN.ECO>MPU.DRW 18-APR-84 15:12

FIRST USED ON OPTION/MODEL: KLIPA

NEXT HIGHER ASSEMBLY: D-DD-M3002-0

TITLE: BLOCK DIAGRAM MICROPROCESSOR MOD

SIZE D | CODE BD | NUMBER M3002-0-BLK | REV. A

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			ECO NUMBER	-	M3003 MR001
		M3003-00	MODULE REVISION	A1	A1
D-UA-M3003-0-0	2		CBUS	A	A1
K-PL-M3003-0-DBP	2		PARTS LIST, M3003	A	A1
D-CS-M3003-0-CBI1	1		CI20 CBUS INTFC CBUS CONTROL 1	A	A
D-CS-M3003-0-CBI2	1		CI20 CBUS INTFC CBUS CONTROL 2	A	A
D-CS-M3003-0-CBI3	1		CI20 CBUS INTFC MVR CONTROL 1	A	A
D-CS-M3003-0-CBI4	1		CI20 CBUS INTFC MVR CONTROL 2	A	A
D-CS-M3003-0-CBI5	1		CI20 CBUS INTFC CBUS INTERFACE	A	A
D-CS-M3003-0-CBI6	1		CI20 CBUS INTFC CBUS PARITY	A	A
D-CS-M3003-0-CBI7	1		CI20 CBUS INTFC FMTR INPUT MUXS	A	A
D-CS-M3003-0-CBI8	1		CI20 CBUS INTFC MVR/FMTR	A	A
D-CS-M3003-0-CBI9	1		CI20 CBUS INTFC PLI INTERFACE	A	A
D-CS-M3003-0-CBIA	1		CI20 CBUS INTFC MBUS INTERFACE	A	A
D-CS-M3003-0-CBIB	1		CI20 CBUS INTFC PWR & GND	A	A
D-CS-M3003-0-CBIC	1		CI20 CBUS INTFC UNUSED FINGERS	A	A
D-CS-M3003-0-BLK	1		BLOCK DIAGRAM CBUS MODULE	A	A
K-PC-M3003-0-DBI	-		P.C. DESIGN DATA BASE	A	A
D-DD-5015386-0	2		DRAWING DIRECTORY, 5015386	REF	REF

REVISIONS		
CHK	CHANGE NO.	REV

DRN. D.DELLORCO 19-FEB-85 | ENG. E. BLOOM 19-FEB-85
CHK D.CAUNTER 19-FEB-85 | BOARD LOCATION: N/A
DSK:M3003I.T2P[4,57] 19-FEB-85 13:07 | SHEET 1 OF 2
FIRST USED ON OPTION/MODEL: CI20 | NEXT HIGHER ASSEMBLY:

TITLE: DRAWING DIRECTORY M3003 (CBUS)

SIZE	CODE	NUMBER	REV.
D	DD	M3003-0	C

MRO

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			ECO NUMBER	M3003 MR001	M3003 MR002
		M3003-00	MODULE REVISION	A2	A3
D-UA-M3003-0-0	1		CBUS	B	C
K-PL-M3003-0-DBP	2		PARTS LIST, M3003	B	C
D-CS-M3003-0-CBI1	1		CI20 CBUS INTFC CBUS CONTROL 1	A	A
D-CS-M3003-0-CBI2	1		CI20 CBUS INTFC CBUS CONTROL 2	A	A
D-CS-M3003-0-CBI3	1		CI20 CBUS INTFC MVR CONTROL 1	A	A
D-CS-M3003-0-CBI4	1		CI20 CBUS INTFC MVR CONTROL 2	A	A
D-CS-M3003-0-CBI5	1		CI20 CBUS INTFC CBUS INTERFACE	A	A
D-CS-M3003-0-CBI6	1		CI20 CBUS INTFC CBUS PARITY	A	A
D-CS-M3003-0-CBI7	1		CI20 CBUS INTFC FMTR INPUT MUXS	A	A
D-CS-M3003-0-CBI8	1		CI20 CBUS INTFC MVR/FMTR	A	A
D-CS-M3003-0-CBI9	1		CI20 CBUS INTFC PLI INTERFACE	A	A
D-CS-M3003-0-CBIA	1		CI20 CBUS INTFC MBUS INTERFACE	A	A
D-CS-M3003-0-CBIB	1		CI20 CBUS INTFC PWR & GND	A	A
D-CS-M3003-0-CBIC	1		CI20 CBUS INTFC UNUSED FINGERS	A	A
D-CS-M3003-0-BLK	1		BLOCK DIAGRAM CBUS MODULE	A	A
K-PC-M3003-0-DBI	-		P.C. DESIGN DATA BASE	B	B
D-DD-5015386-0	2		DRAWING DIRECTORY, 5015386	REF	REF

REVISIONS		
CHK	CHANGE NO.	REV

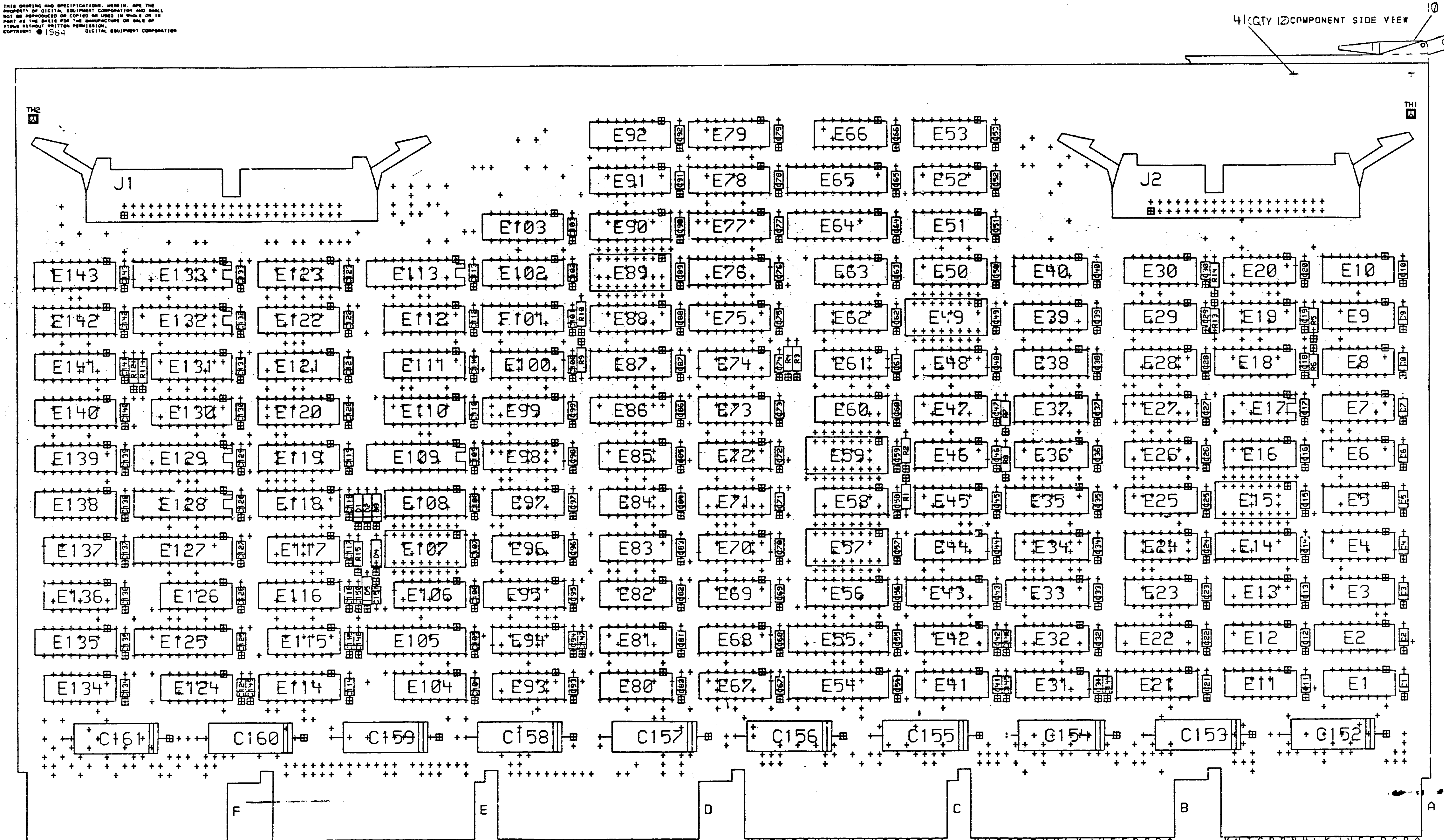
digital

DRN. D.DELLORCO DATE 19-FEB-85
CHK D. D.CAUNTER DATE 19-FEB-85
ENG. E BLOOM DATE 19-FEB-85
BOARD LOCATION: N/A
SHEET 2 OF 2
DSK:M30072.T2P[4,57] 19-FEB-85 13:07
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: CI20

TITLE: DRAWING DIRECTORY M3003 (CBUS)

SIZE	CODE	NUMBER	REV.
D	DD	M3003-0	C

MRD



NOTES: 1. SPARE COMPONENT LOCATIONS ARE: E15, E49, E57, E59, E89, E107.
2. THIS BOARD MUST MEET SAFETY REQ. FOR HPWR.

STEP & REPEAT → Y AXIS 0 STEP 0 TIMES
→ X AXIS 0 STEP 0 TIMES

CHK	CHANGE NO	REV
D.D.	M3003 MR2	C
	E. BLOOM	

ETCH REV. C1

SIGNATURES	DATE
DRN.	
CHK'D. D. Ducoreo	
MECH. ENG.	
PROJ. ENG.	
PROD.	
SCALE 2/1	
SHT. 1 OF 1	

digital

TITLE CBUS

SIZE	CODE	NUMBER	REV
D	UA	M3003-0-0	C

TOP DOC NO: D-DD-M3003-0

MRO 1 MS# 190e50 C

AUTOMATED BY PRTLST.40(50) P A R T S L I S T

LINE	ITEM	TCP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A3	
1	1	D-MD-5015386-0-0	5015386-01	C	DRILL & ETCH DWG FOR M3003	1	
2	2		1001610-00		.01 MFD 50V +80-20% Z5U CER	132	C1-C17,C19-C28,C30,C32-C40,
						CONT	C43-C45,C47-C58,C60-C73,C75-C93,
						CONT	C95-C99,C101-C114,C116-C123,
						CONT	C125-C140,C142,C143,C150,C151
3	3		1012784-00		.047 MFD 50V +80-20% CER	7	C18,C29,C45,C59,C74,C100,C141
4	4		1010274-00		.22 MFD 50V +80-20% Z5U CER	12	C31,C41,C42,C94,C115,C124,
						CONT	C144-C149
5	5		1012084-03		150 MFD 15V +75-10% AL EL	10	C152-C161
6	6		1100113-00		D 662 OS 600PCB(STABISTOR)	5	D1-D5
7	7		1216832-03		PCB,HEADER 50POS(2X25),100CC 90D	1	J1
8	8		1216832-02		PCB,HEADER 40POS(2X20),100CC 90D	1	J2
9	9		1215278-00		CABLE,FLEX NOMEX SHEET MODULE PR	1	
10	10		1216988-02		HANDLE,MODULE,HEX TWO EJECTORS	1	
11	11		1301322-00		180.0 .25 W 5.0 % CF	7	R1,R3,R5,R7,R9,R11,R13
12	12		1300309-00		390.0 .25 W 5.0 % CF	7	R2,R4,R6,R8,R10,R12,R14
13	13		1301477-00		82.0 .25 W 5.0 % CF	1	R15
14	14		1912746-B0		74S37 BURNED-IN NAND GATE-	5	E1,E8,E11,E30,E104
15	15		1911117-00		DEC 8838 TRANSCEIVER,BUS,QUA	1	E2
16	16		1910539-E0		74S20 BURNED-IN NAND GATE-	2	E3,E29
17	17		1910544-B0		74S74 BURNED-IN FF-D DUAL,	11	E4,E13,E16,E20,E23,E34,E38,E45,
						CONT	E52,E61,E62
18	18		1912388-B0		74S02 BURNED-IN NOR GATE-Q	10	E5,E10,E19,E24,E25,E47,E48,E71,
						CONT	E72,E81
19	19		1910534-B0		74S04 BURNED-IN INVERTER G	8	E6,E12,E39,E46,E53,E85,E93,E100
20	20		1910536-B0		74S10 BURNED-IN NAND GATE-	1	E7
21	21		1910532-B0		74S00 BURNED-IN NAND GATE-	4	E9,E28,E63,E80
22	22		1910957-B0		74S175 BURNED-IN FF-D QUAD	3	E14,E18,E35
23	23		1616653-00		DELAY= 50NS,10TAPS WITH TTLBU	1	E17
24	24		1911675-B0		74S138 BURNED-IN DECODER/DE	1	E21

REVISION HISTORY		
ENG	ECC NUMBER	REV
	INITIAL	A
JT	M3003-MR001	B
EB	M3003-MR002	C

BASIC PART NO: M3003
SECTION A OF A
SECTION,VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]
[H]
[J]
[K]
[L]
[M]
[N]

DRN: D.DELLORCO DATE: 18-NOV-82
CHK'D: D,CAUNTER DATE: 18-NOV-82
DES.ENG: R,CARN DATE: 19-APR-84
RESP.ENG.: R,CARN DATE: 19-APR-84
MFG.ENG.: R,CARN DATE: 19-APR-84
ASSEMBLY NUMBER: D-UA-M3003-0-0
TOP DOCUMENT NUMBER: #D-DD-M3003-0

D I G I T A L

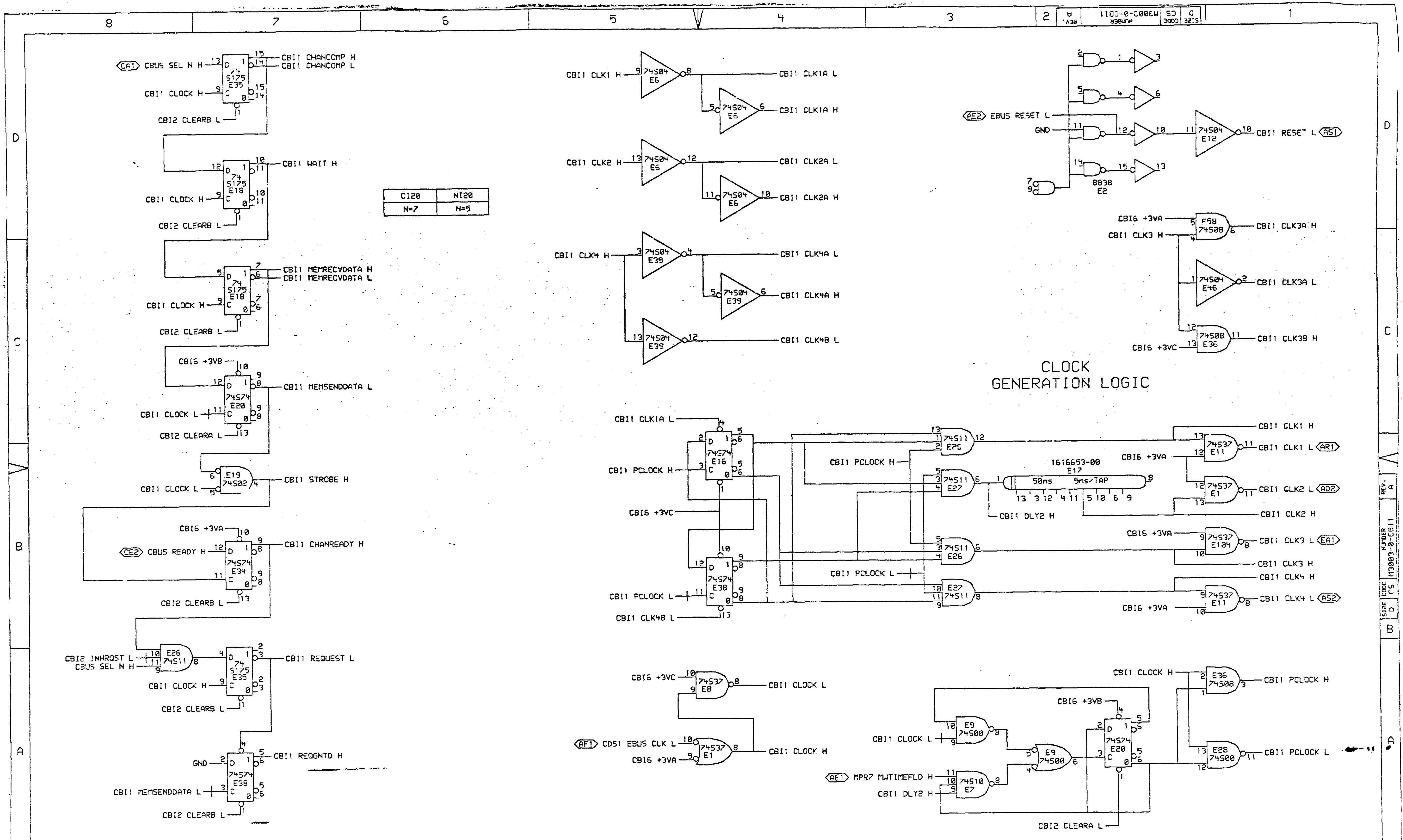
TITLE PARTS LIST
M3003
C BUS

DOCUMENT NUMBER SIZE	CODE	NUMBER	REV
K	PL	M3003-0-DBP	C

RELEASE DATE: 18-FEB-85
FILE NAME: ZR534C.PLS
EDIT # 18

LINE	ITEM	TCP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00 A3	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:		
25	25		1910545-B0		74S112 BURNED-IN FF-JK DUAL	1	E22
26	26		1910537-B0		74S11 BURNED-IN AND GATE-T	2	E26,E27
27	27		1910010-00		RECT. ASSY PIV= 100 IO=15.00A	6	E31,E41,E42,E94,E115,E124
28	28		1913340-B0		74S32 BURNED-IN OR GATE,QU	5	E32,E37,E50,E60,E68
29	29		1912697-00		LS174 FF-D HEX W/CLEAR	7	E33,E43,E56,E95,E114,E116,E135
30	30		1912389-B0		74S08 BURNED-IN AND GATE,Q	3	E36,E58,E84
31	31		1911712-B0		74S51 BURNED-IN AND/OR GAT	2	E40,E70
32	32		1911573-B0		74S280 BURNED-IN PARITY GEN	12	E44,E51,E66,E69,E73,E74,E82,E97,
							CONT E117,E126,E136,E137
33	33		1913671-B0		74S374 BURNED-IN FF-D OCTAL	7	E54,E55,E64,E65,E105,E125,E127
34	34		1910837-00		8093 BUFFER GATE-QUAD 2IN	2	E67,E134
35	35		1912847-00		LS157 MUX 1 OF 2(QUAD)	11	E75,E76,E79,E87,E88,E108,E118,
							CONT E119,E138,E142,E143
36	36		1910548-B0		74S157 BURNED-IN MUX 1 OF 2	2	E77,E92
37	37		1910552-00		74S194 SHIFT REG.,4BIT RIGH	12	E78,E90,E91,E99,E101-E103,E110,
							CONT E120,E130,E140,E141
38	38		1912096-B0		74S86 BURNED-IN XOR GATE,Q	3	E83,E96,E106
39	39		1911641-B0		74S257 BURNED-IN MUX,QUAD 2	9	E86,E98,E111,E112,E121-E123,
							CONT E131,E139
40	40		1913493-B0		74S241 BURNED-IN OCTAL BUFF	6	E109,E113,E128,E129,E132,E133
41	41		9000024-01		EYELET,ROLLED 0.121ODX0.192	12	

42 NOTE: 1. SPARE LOCATIONS ARE: E15,E49,E57,E59,E89,E107



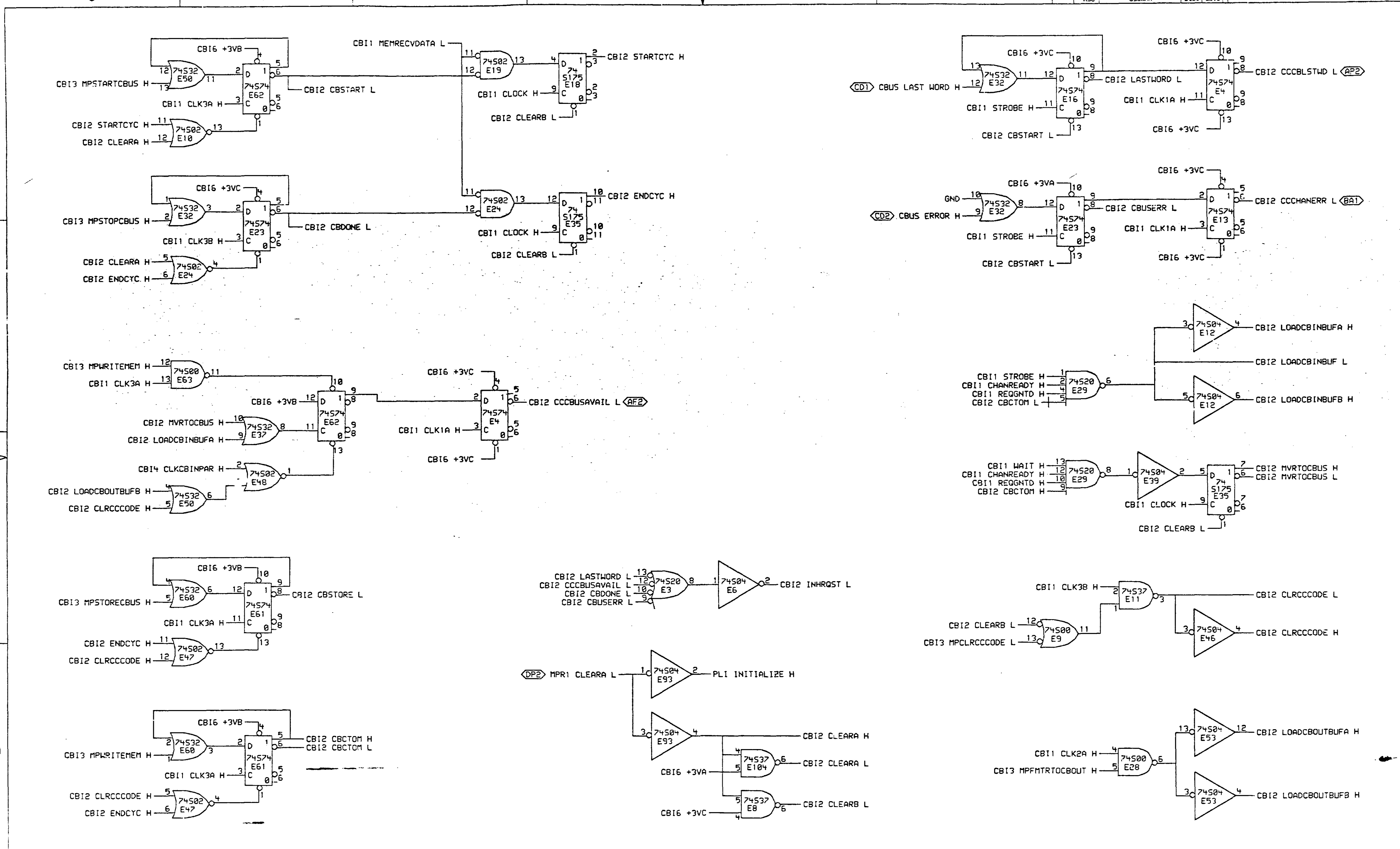
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. DATE 03-APR-84 | ENG. R CARN DATE 03-APR-84
CHK'D. DATE 19 APR 84 | BOARD LOCATION: SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>CBI101.DRW 29-MAR-84 09:00 | NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 CBUS INTFC CBUS CONTROL 1

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI1	A



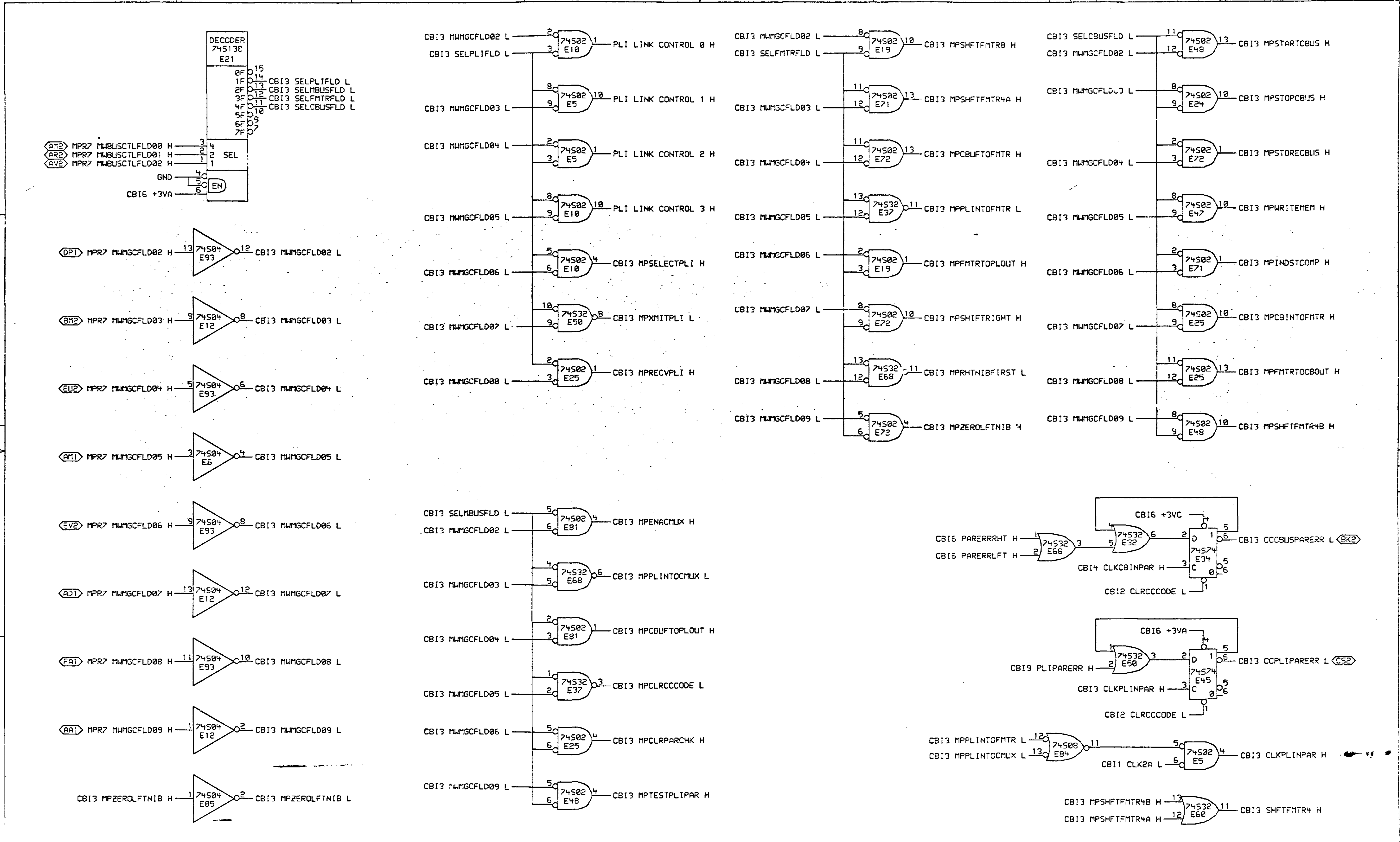
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. [signature] DATE 03-APR-84
CHK'D. [signature] DATE 4-APR-84
ENG R. CARN DATE 03-APR-84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>CBI203.DRW 29-MAR-84 09:01
NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 CBUS INTFC CBUS CONTROL 2

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI2	A



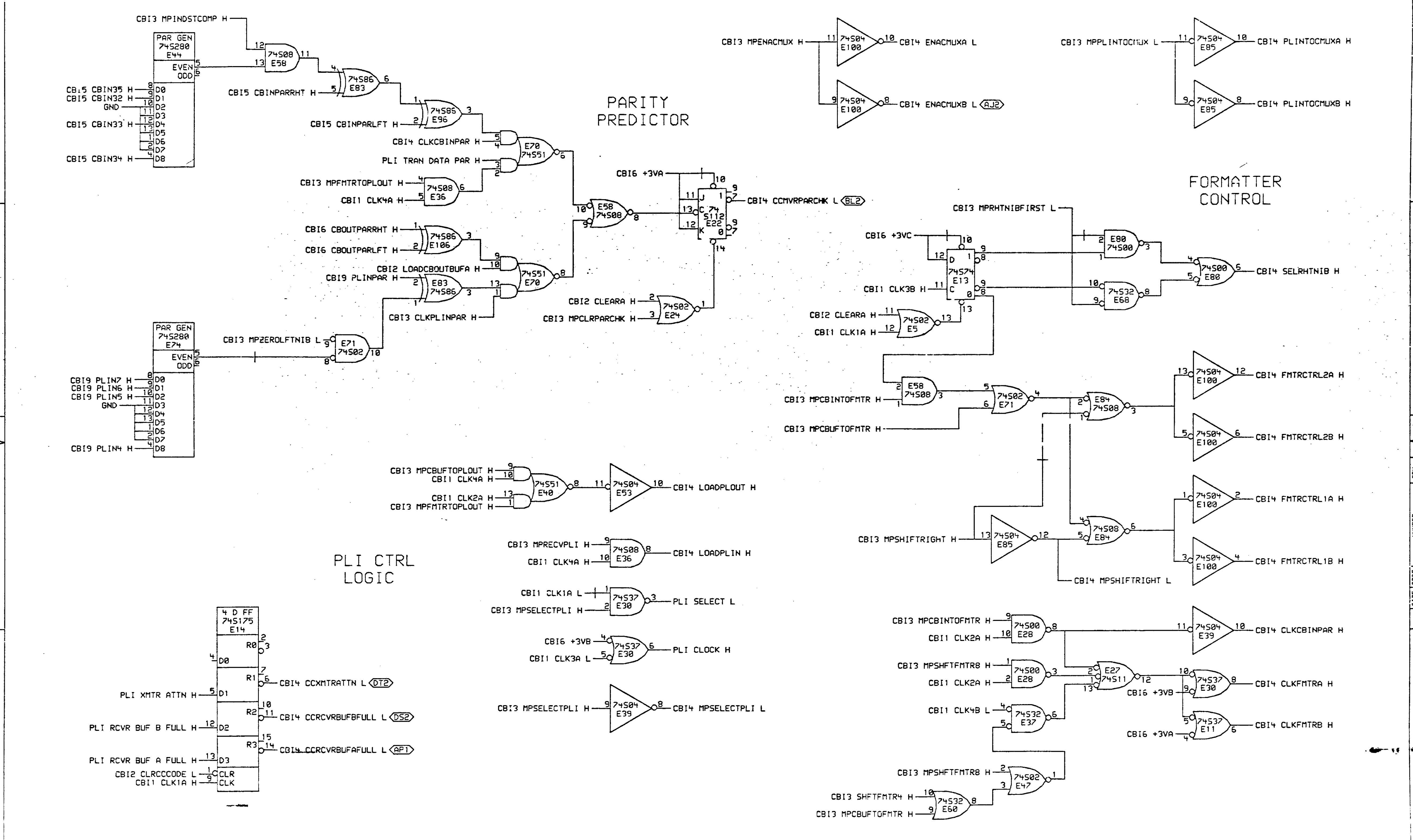
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN.	DATE 03-APR-84	ENG.	DATE 03-APR-84
CHK'D.	DATE 9 APR 84	BOARD LOCATION:	
SUDCOM:<BOWEN.ECO>CBI302.DRW 29-MAR-84 09:01		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: CI20		NEXT HIGHER ASSEMBLY: D-DD-M3003-0	

TITLE: CI20 CBUS INTFC MVR CONTROL 1

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI3	A


PARITY PREDICTOR
FORMATTER CONTROL
PLI CTRL LOGIC
CBI3 MPINDSTCOMP H
PAR GEN 74S280 E44
EVEN
ODD
CBI5 CBIN35 H
CBI5 CBIN32 H
GND
CBI5 CBIN33 H
CBI5 CBIN34 H
74S08 E58
74S86 E83
CBI5 CBINPARRHT H
74S86 E96
CBI5 CBINPARLFT H
CBI4 CLKCBINPAR H
PLI TRAN DATA PAR H
E70 74S51
CBI3 MPFMTRTOPLOUT H
74S08 E36
CBI1 CLK4A H
E58 74S08
CBI6 +3VA
74S112 E22
CBI4 CCMVRPARCHK L
BL2
CBI6 CBOUTPARRHT H
CBI6 CBOUTPARLFT H
74S86 E106
CBI2 LOADCBOUTBUFA H
CBI9 PLINPAR H
E83 74S86
74S51 E70
CBI3 CLKPLINPAR H
CBI2 CLEARA H
CBI3 MPCLRPARCHK H
74S02 E24
PAR GEN 74S280 E74
CBI3 MPZEROLFTNIB L
E71 74S02
CBI9 PLIN7 H
CBI9 PLIN6 H
CBI9 PLIN5 H
CBI9 PLIN4 H
CBI3 MPENACMUX H
74S04 E100
CBI4 ENACMUXA L
CBI4 ENACMUXB L
AJ2
CBI3 MPPLINTOCMUX L
74S04 E85
CBI4 PLINTOCMUXA H
CBI4 PLINTOCMUXB H
CBI3 MPRHTNIBFIRST L
CBI6 +3VC
74S74 E13
CBI1 CLK3B H
E80 74S00
74S00 E80
CBI4 SELRHTNIB H
74S32 E68
CBI2 CLEARA H
CBI1 CLK1A H
74S02 E5
E58 74S08
CBI3 MPCBINTOFMTR H
74S02 E71
E84 74S08
CBI3 MPCBUFTOFMTR H
CBI4 FMTRCTRL2A H
CBI4 FMTRCTRL2B H
CBI4 FMTRCTRL1A H
CBI4 FMTRCTRL1B H
CBI3 MPSHIFTRIGHT H
74S04 E85
74S08 E84
CBI4 MPSHIFTRIGHT L
CBI3 MPCBUFTOPLOUT H
CBI1 CLK4A H
CBI1 CLK2A H
CBI3 MPFMTRTOPLOUT H
74S51 E40
74S04 E53
CBI4 LOADPLOUT H
CBI3 MPRECVPLI H
CBI1 CLK4A H
74S08 E36
CBI4 LOADPLIN H
CBI1 CLK1A L
CBI3 MPSELECTPLI H
74S37 E30
PLI SELECT L
CBI6 +3VB
CBI1 CLK3A L
PLI CLOCK H
CBI3 MPSELECTPLI H
74S04 E39
CBI4 MPSELECTPLI L
4 D FF 74S175 E14
PLI XMTR ATTN H
CBI4 CCXMTRATTN L
DT2
PLI RCVR BUF B FULL H
CBI4 CCRCVRBUFBFULL L
DS2
PLI RCVR BUF A FULL H
CBI4 CCRCVRBUFAFULL L
AP1
CBI2 CLRCCCODE L
CBI1 CLK1A H
CBI3 MPCBINTOFMTR H
CBI1 CLK2A H
74S00 E28
CBI4 CLKCBINPAR H
CBI3 MPSHFTFMTR8 H
CBI1 CLK2A H
E27 74S11
CBI6 +3VB
74S37 E30
CBI4 CLKFMTRA H
CBI1 CLK4B L
74S32 E37
CBI6 +3VA
74S37 E11
CBI4 CLKFMTRB H
CBI3 MPSHFTFMTR8 H
74S02 E47
CBI3 SHFTFMTR4 H
CBI3 MPCBUFTOFMTR H
74S32 E60

REVISIONS		
CHK	CHANGE NO.	REV

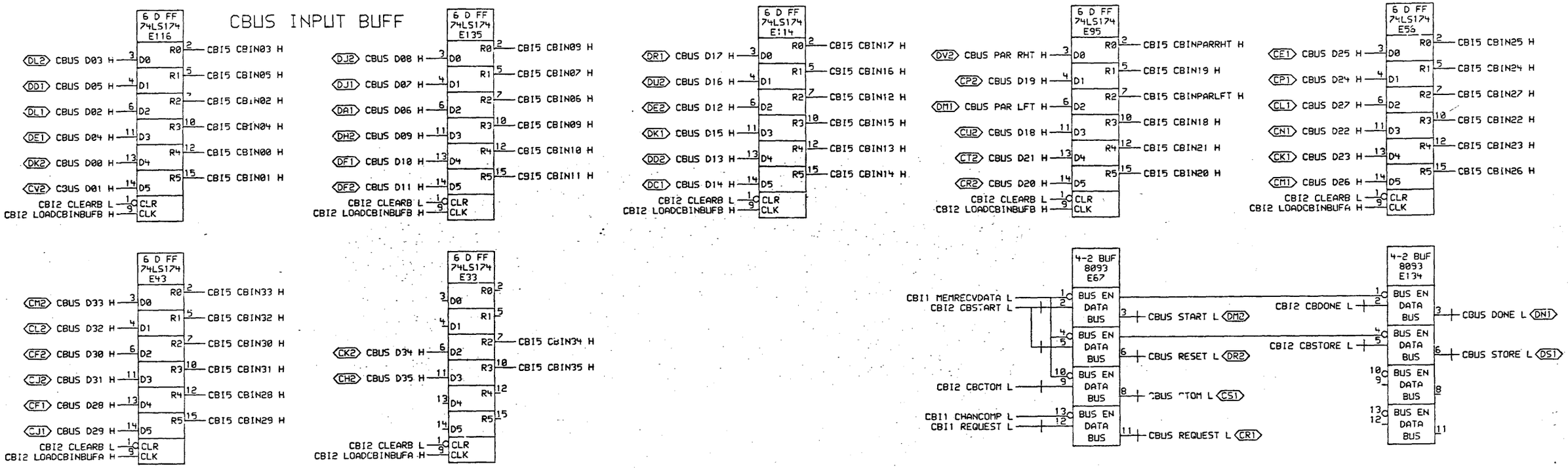
digital

DRN. D. Toomby — DATE 03-APR-84
ENG. R. Carr — DATE 03-APR-84
CHK'D. — DATE 19 APR 84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<SCHEN.ECO>CBI401.DRW 29-MAR-84 05:01
NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

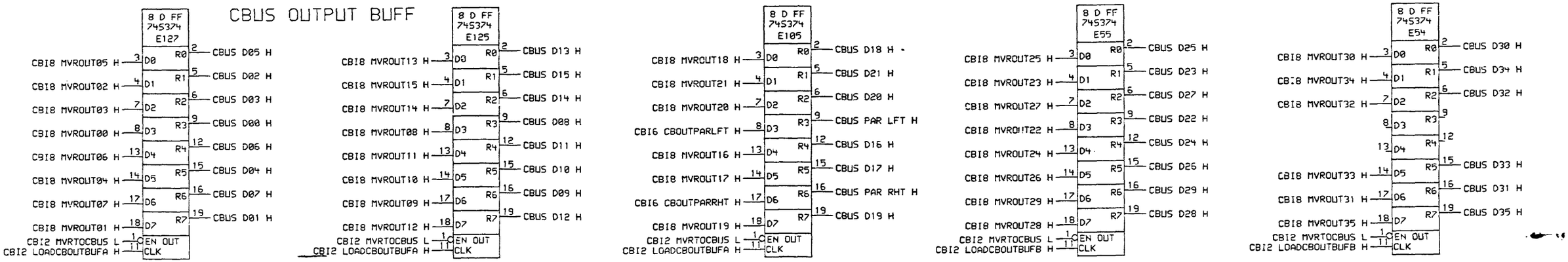
TITLE: CI20 CBUS INTFC MVR CONTROL 2

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI4	A

CBUS INPUT BUFF



CBUS OUTPUT BUFF



REVISIONS		
CHK	CHANGE NO.	REV

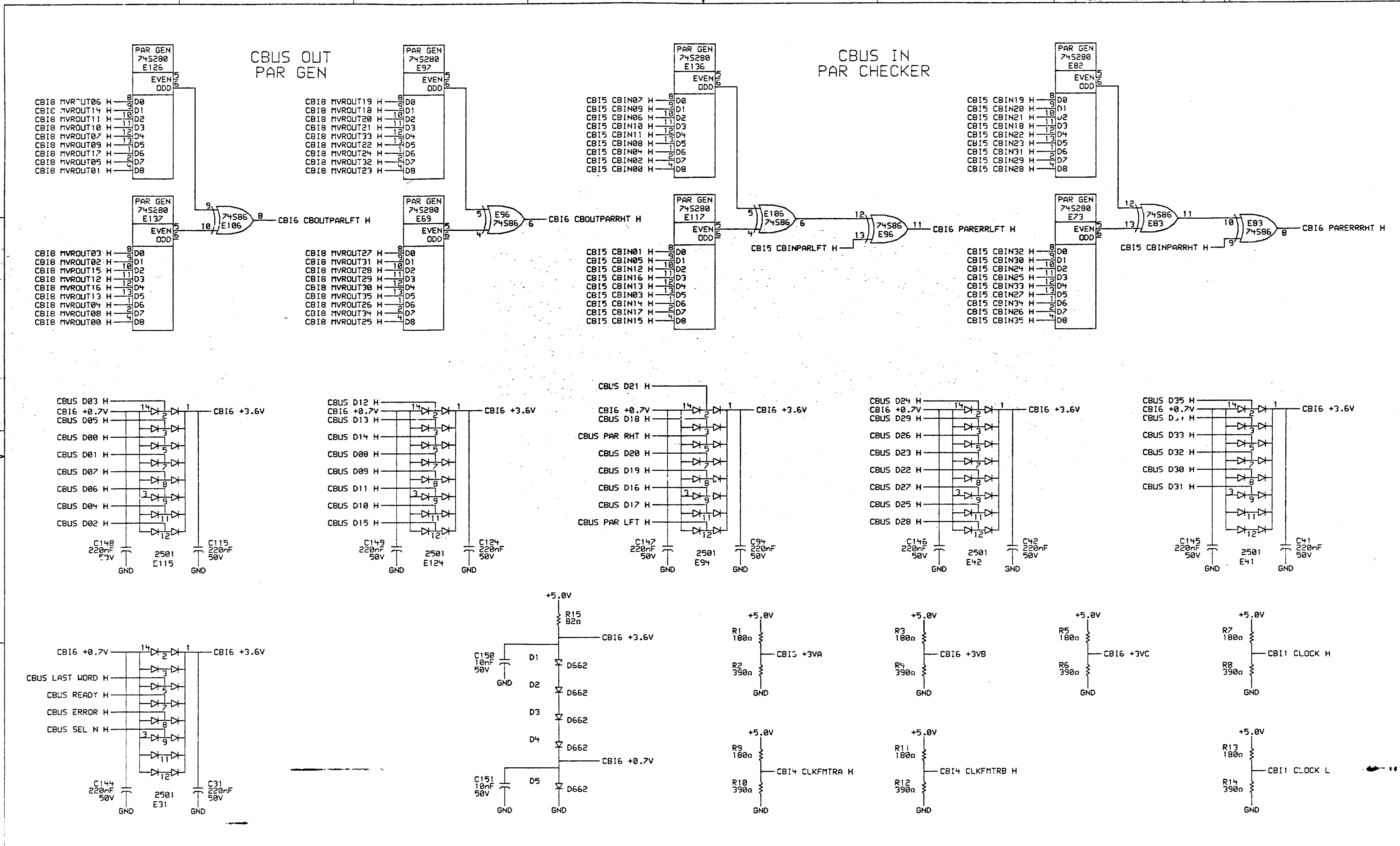
SUDCOM:<BOWEN.ECO>CBI500.DRW 29-MAR-84 09:02 | NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

DRN. T. Toomey 03-APR-84 | ENG. R. Carr 03-APR-84 | CHK'D. K.D. Williams 19 APR 84 | DATE | BOARD LOCATION: | SHEET 1 OF 1

TITLE: CI20 CBUS INTFC
CBUS INTERFACE

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI5	A

REV. A | NUMBER M3003-0-CBI5 | CODE CS | SIZE D



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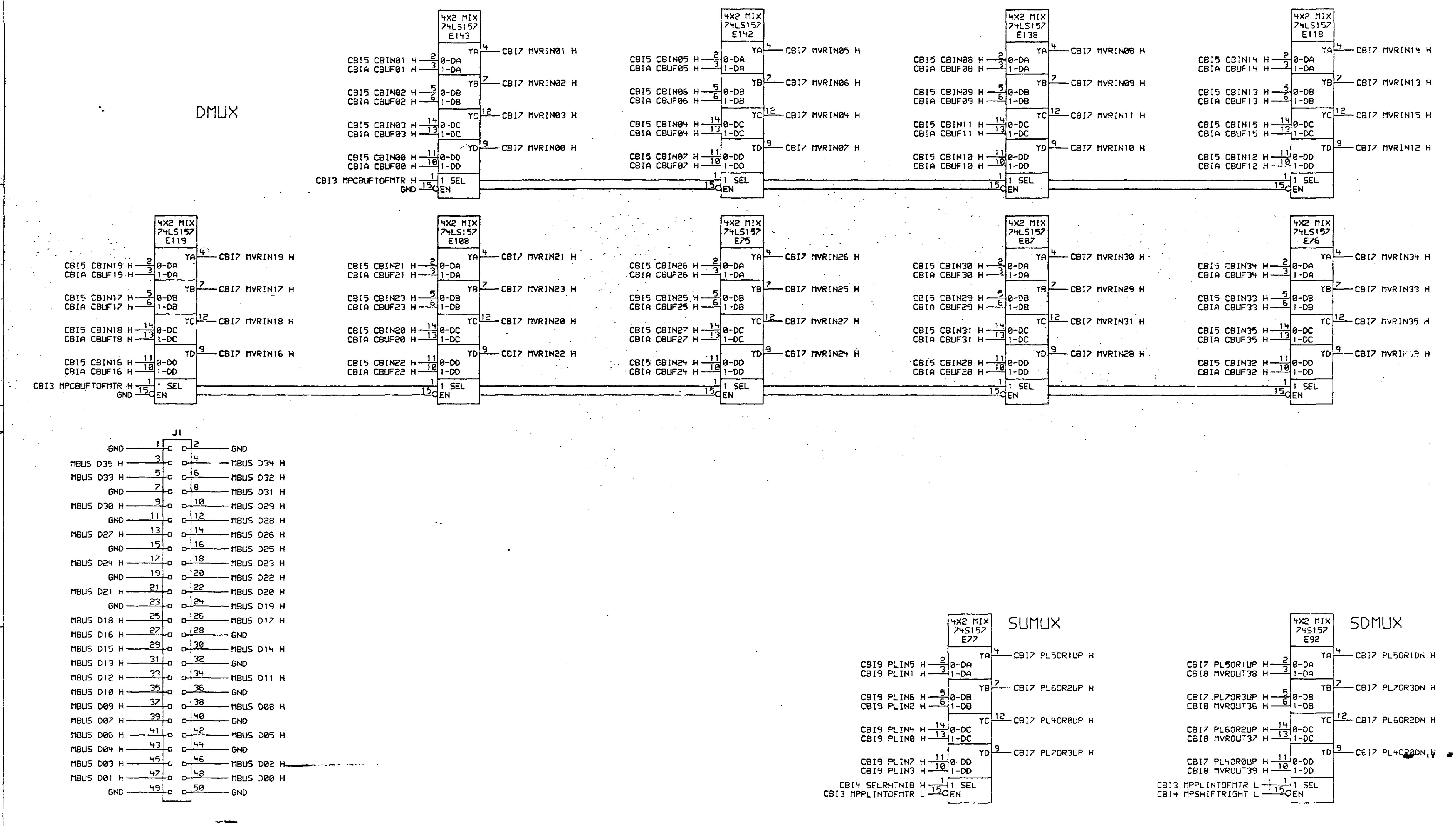
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. | DATE 03-APR-84 | ENG | DATE 03-APR-84
CHK'D. | DATE 19-APR-84 | BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>CBI600.DRW 29-MAR-84 09:03
NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 CBUS INTFC CBUS PARITY

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI6	A



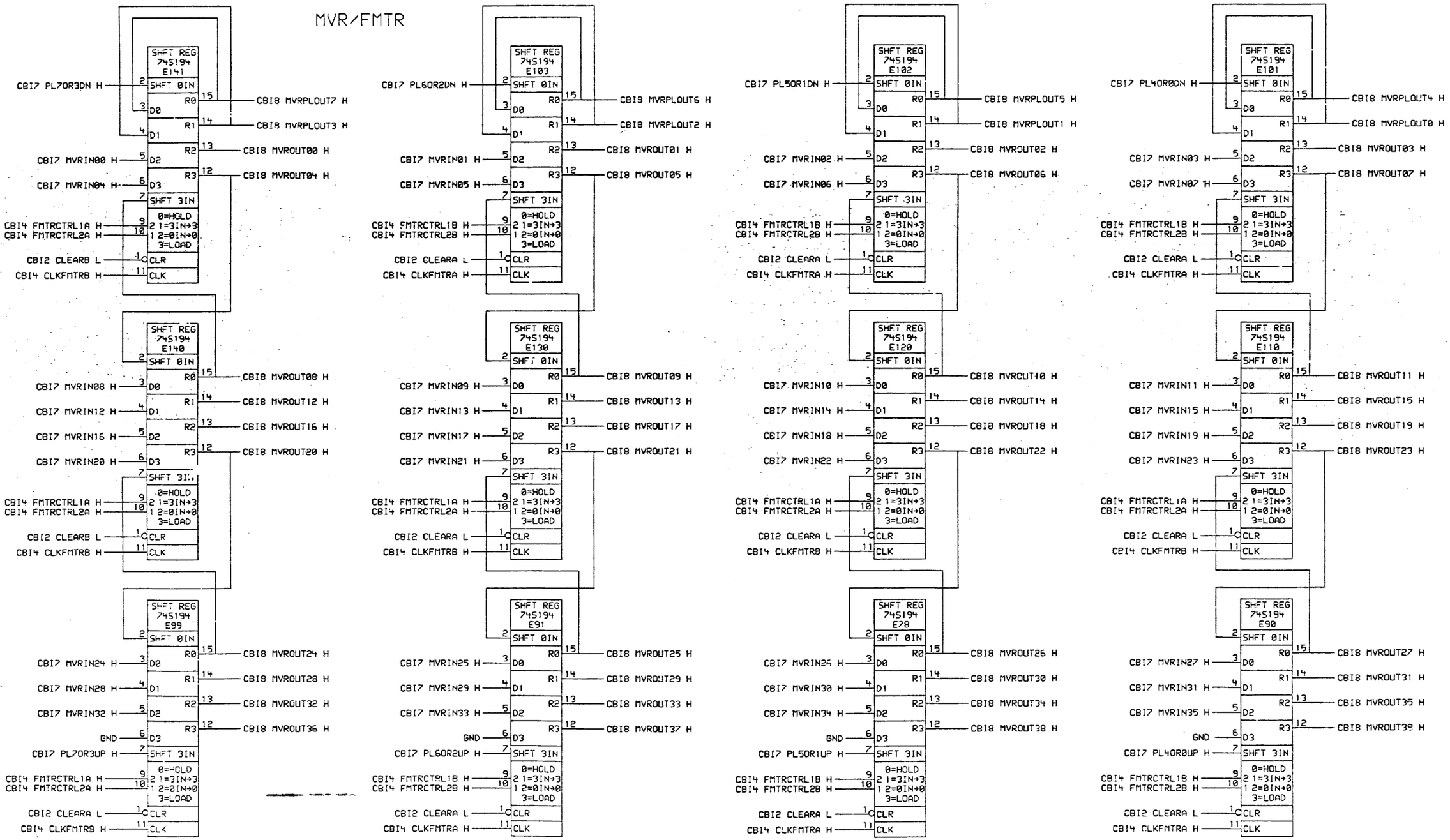
REVISIONS
CHK | CHANGE NO. | REV

digital
DRN. DATE 03-APR-84 — ENG. R. Cam — DATE 03-APR-84
CHK'D. DATE 4-APR-84
BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>CBI700.DRW 29-MAR-84 09:2
NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 CBUS INTFC FMTR INPUT MUXS

SIZE D | CODE CS | NUMBER M3003-0-CBI7 | REV. A

MVR/FMTR



REVISIONS

CHK	CHANGE NO.	REV

digital

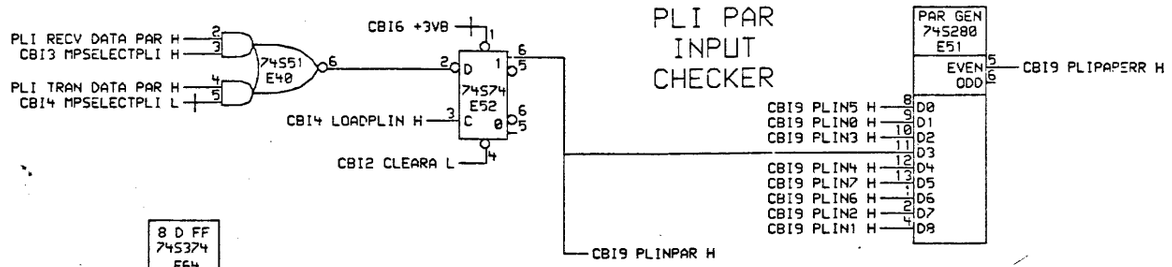
DRN. J. Toomey | DATE 03-APR-84 | ENG. R.C. | DATE 03-APR-84
CHK. D. D'Amico | DATE 19-APR-84 | BOARD LOCATION:
SHEET 1 OF 1
SUBCOM:<BOWEN.ECO>CBI800.DRW 29-MAR-84 09:05 | NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 CBUS INTFC MVR/FMTR

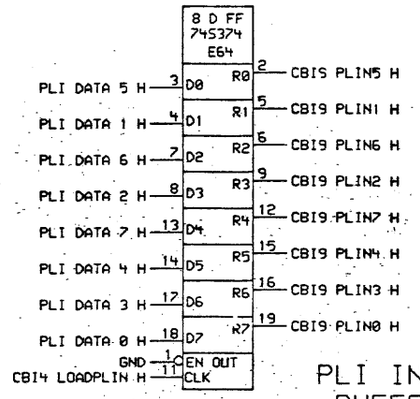
SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI8	A

MR

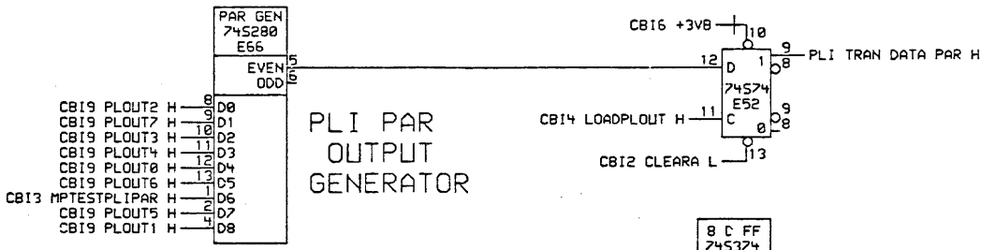
PLI PAR INPUT CHECKER



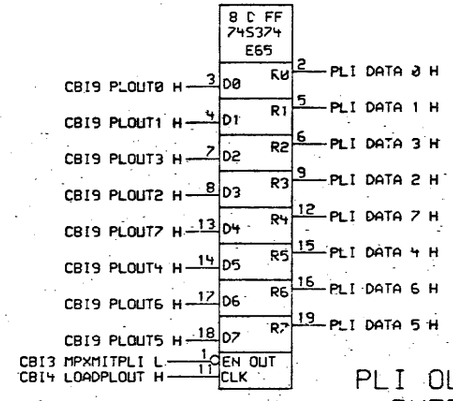
PLI INPUT BUFFER



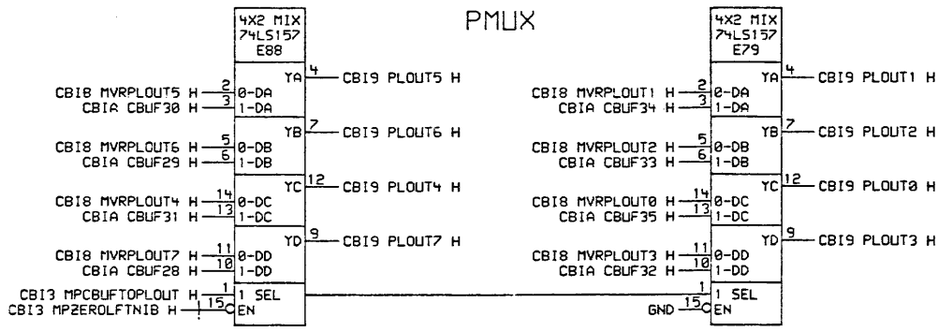
PLI PAR OUTPUT GENERATOR

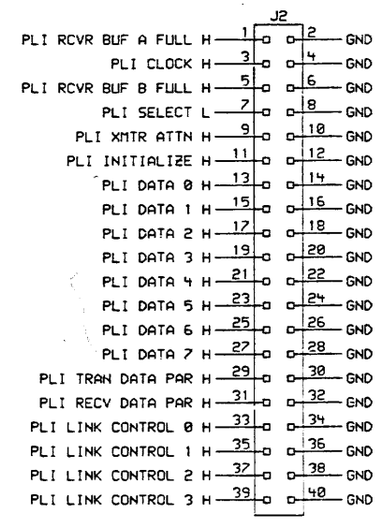


PLI OUTPUT BUFFER



PMUX





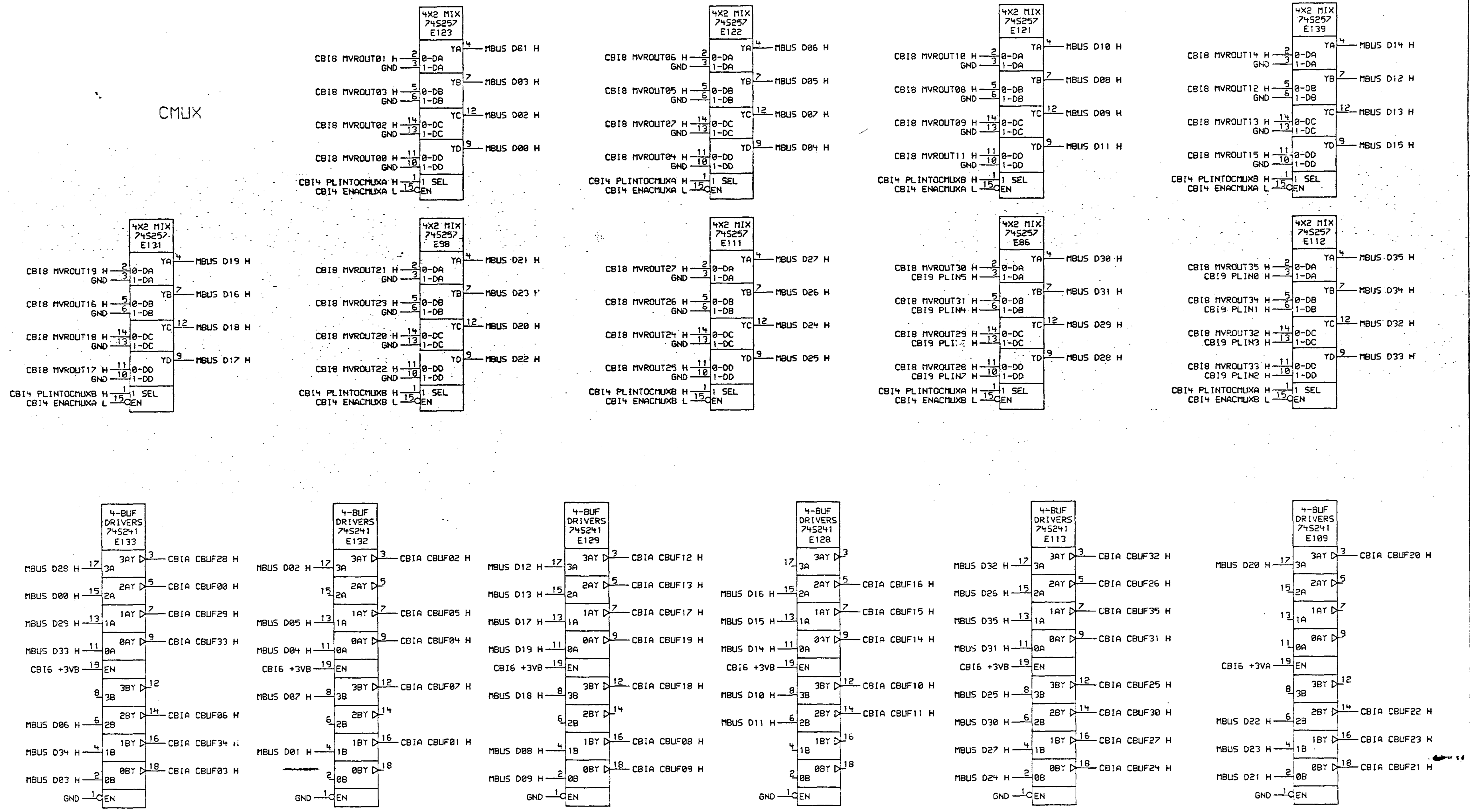
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. S. Toomey | DATE 03-APR-84 | ENG. R. Lam | DATE 03-APR-84
CHK D. [illegible] | DATE A-APR-84 | BOARD LOCATION:
SHEET 1 OF 1
SUBCOM:<BOWEN.ECO>CBI900.DRW 29-MAR-84 09:05 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: CI20 | D-DD-M3003-0

TITLE: CI20 CBUS INTFC PLI INTERFACE

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBI9	A



REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. DATE 03-APR-84 | ENG. DATE 03-APR-84
CHK'D. DATE 19-APR-84
SUDCOM:<BOWEN.ECO>CBIA00.DRW 29-MAR-84 09:06
FIRST USED ON OPTION/MODEL: CI20
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M3003-0

TITLE: CI20 CBUS INTFC MBUS INTERFACE

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBIA	A

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN.	DATE 03-APR-84	ENG. R. Law	DATE 03-APR-84
CHK'D.	DATE 19-APR-84	BOARD LOCATION:	
		SHEET 1 OF 1	
SUDCOM:<BOWEN.ECO>CBI800.DRW	29-MAR-84 09:06	NEXT HIGHER ASSEMBLY: D-DD-M3003-0	
FIRST USED ON OPTION/MODEL: CI20			

TITLE: CI20 CBUS INTFC PWR & GND

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBIB	A

MR

AB2 — N/C SEE NOTE 3
AB1 — N/C SEE NOTE 3
AC1 — N/C EXTRA GND
AH2 — N/C EXTRA GND
AJ1 — N/C SEE NOTE 1
AK2 — EBUS D27 L
AK1 — EBUS D28 L
AL2 — EBUS D26 L
AL1 — EBUS D29 L
AN1 — N/C EXTRA GND
AT2 — N/C EXTRA GND
AU2 — N/C SEE NOTE 1
AU1 — N/C SEE NOTE 3
BB2 — N/C SEE NOTE 3
BB1 — N/C SEE NOTE 3
BC1 — N/C EXTRA GND
BD2 — EBUS D32 L
BD1 — N/C EXTRA GND
BE2 — N/C EXTRA GND
BE1 — EBUS D33 L
BF2 — N/C EXTRA GND

BF1 — N/C EXTRA GND
BH2 — EBUS D31 L
BJ2 — EBUS D34 L
BJ1 — EBUS D30 L
BK1 — EBUS D35 L
BL1 — EBUS D17 L
BM1 — N/C EXTRA GND
BN1 — N/C EXTRA GND
BP2 — N/C EXTRA GND
BP1 — EBUS D24 L
BR2 — EBUS D21 L
BR1 — EBUS D19 L
BS2 — EBUS D20 L
BS1 — EBUS D23 L
BT2 — EBUS D18 L
BU2 — EBUS D25 L
BU1 — N/C SEE NOTE 3
BV2 — EBUS D22 L
CB2 — N/C SEE NOTE 3
CB1 — N/C SEE NOTE 3
CC1 — N/C EXTRA GND
CU1 — N/C SEE NOTE 3

DB2 — N/C SEE NOTE 3
DB1 — N/C SEE NOTE 3
DU1 — N/C SEE NOTE 3
EB2 — N/C SEE NOTE 3
EB1 — N/C SEE NOTE 3
EC1 — N/C EXTRA GND
ED2 — N/C SEE NOTE 2
ED1 — N/C SEE NOTE 2
EE2 — N/C SEE NOTE 2
EE1 — N/C SEE NOTE 2
EF2 — N/C SEE NOTE 2
EF1 — N/C SEE NOTE 2
EH2 — N/C EXTRA GND
EJ2 — N/C SEE NOTE 2
EJ1 — N/C SEE NOTE 2
EK2 — N/C SEE NOTE 2
EK1 — N/C SEE NOTE 2
EL2 — N/C SEE NOTE 2
EL1 — N/C SEE NOTE 2
EM2 — N/C SEE NOTE 2
EM1 — N/C SEE NOTE 2
EN1 — N/C EXTRA GND

EP2 — N/C SEE NOTE 2
EP1 — N/C SEE NOTE 2
ER2 — N/C SEE NOTE 2
ER1 — N/C SEE NOTE 2
ES2 — N/C SEE NOTE 2
ES1 — N/C SEE NOTE 2
ET2 — N/C EXTRA GND
EU1 — N/C SEE NOTE 3
FB2 — N/C SEE NOTE 3
FB1 — N/C SEE NOTE 3
FC1 — N/C EXTRA GND
FD2 — N/C SEE NOTE 2
FD1 — N/C SEE NOTE 2
FE2 — N/C SEE NOTE 2
FE1 — N/C SEE NOTE 2
FF2 — N/C SEE NOTE 2
FF1 — N/C SEE NOTE 2
FH2 — N/C EXTRA GND
FJ2 — N/C SEE NOTE 2
FJ1 — N/C SEE NOTE 2
FK2 — N/C SEE NOTE 2
FK1 — N/C SEE NOTE 2

FL2 — N/C SEE NOTE 2
FL1 — N/C SEE NOTE 2
FM2 — N/C SEE NOTE 2
FM1 — N/C SEE NOTE 2
FN1 — N/C EXTRA GND
FP2 — N/C SEE NOTE 2
FP1 — N/C SEE NOTE 2
FR2 — N/C SEE NOTE 2
FR1 — N/C SEE NOTE 2
FS2 — N/C SEE NOTE 2
FS1 — N/C SEE NOTE 2
FT2 — N/C EXTRA GND
FU2 — N/C EXTRA GND
FU1 — N/C SEE NOTE 3
FV2 — N/C SEE NOTE 4

NOTE 1: THESE PINS ARE CONNECTED AS SHOWN BELOW

FROM	TO
F13S2	A15J1
E13V2	A15U2

NOTE 2: RSVD FOR MASS BUS
NOTE 3: RSVD FOR -5.2V
NOTE 4: THESE PINS DO NOT CONNECT TO EITHER THE EBUS OR MPROC

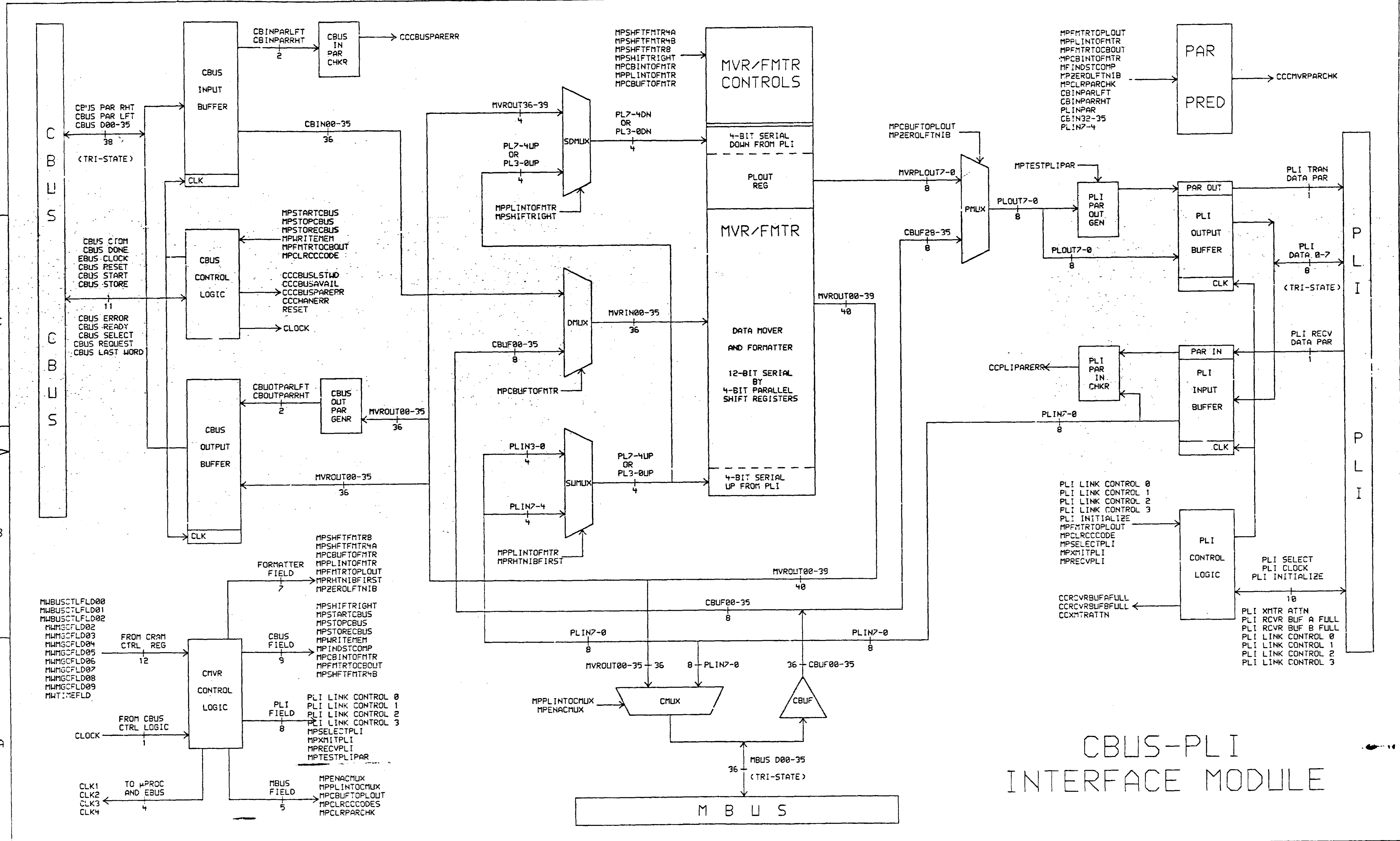
REVISIONS		
CHK	CHANGE NO.	REV

digital | DRN. [signature] DATE 03-APR-84 | ENG. [signature] DATE 03-APR-84
CHK'D. [signature] DATE 19-APR-84 | BOARD LOCATION: | SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>CBIC00.DRW 29-MAR-84 09:05 | NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: CI20

TITLE: CI20 CBUS INTFC UNUSED FINGERS

SIZE	CODE	NUMBER	REV.
D	CS	M3003-0-CBIC	A

MR



CBUS-PLI INTERFACE MODULE

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: [signature] DATE 03-APR-84 ENG: [signature] DATE 03-APR-84
CHK'D: [signature] DATE 19 APR 84 BOARD LOCATION:
SHEET 1 OF 1
SUDCOM:<BOWEN.ECO>CBUS.DRW 29-MAR-84 09:06 NEXT HIGHER ASSEMBLY: D-DD-M3003-0
FIRST USED ON OPTION/MODEL: KLIPA

TITLE: BLOCK DIAGRAM CBUS MODULE

SIZE	CODE	NUMBER	REV.
D	BD	M3003-0-BLK	A

MR

DRAWING NUMBER	NO.OF SHT	PART NUMBER	DESCRIPTION	REVISION	ECO L0072 MR001
		L0072-00	MODULE REVISION	A1	A2
E-UA-L0072-0-0	2		NIA	A	-
K-PL-L0072-0-DBP	4		PART LIST, L0072	A	-
E-UA-L0072-0-1	1		NIA	-	A
K-PL-L0072-1-DBP	4		PARTS LIST, L0072	-	A
D-CS-L0072-0-NIAA	1		LINK CONTROL & PHYS ADDRESS	A	B
D-CS-L0072-0-NIAB	1		XMIT STATUS & PLI MUX	A	B
D-CS-L0072-0-NIAC	1		TDR REG. & PHYS ADDR ROM	A	B
D-CS-L0072-0-NIAD	1		TRANSMIT BUF TIMING & ADDR COUNTER	A	B
D-CS-L0072-0-NIAE	1		TRANSMIT CONTROL LOGIC	A	B
D-CS-L0072-0-NIAF	1		TRANSMIT BUFFER	A	B
D-CS-L0072-0-NIAG	1		RETRY LOGIC	A	B
D-CS-L0072-0-NIAH	1		CRC LOGIC	A	B
D-CS-L0072-0-NIAI	1		RX SHIFT,FRAMING & ADDRESS COMPARE	A	B
D-CS-L0072-0-NIAJ	1		REC & RX MEM CONTROL LOGIC	A	B
D-CS-L0072-0-NIAK	1		RCV STAT & FREE USED BUF LISTS	A	B
D-CS-L0072-0-NIAL	1		RECEIVE MEMORY ADDRESS COUNTERS	A	B
D-CS-L0072-0-NIAM	1		RECEIVE MEMORY ADDRESS MUX	A	B
D-CS-L0072-0-NIAN	1		RECEIVE MEMORY	A	B
D-CS-L0072-0-NIAO	1		MANCHESTER DECODER AND CSLN DET	A	B
D-CS-L0072-0-NIAP	1		MANCHESTER ENCODER AND CLK	A	B
D-CS-L0072-0-NIAQ	1		CAPDRW 1 PWR & GND	A	B
D-CS-L0072-0-NIAR	1		CAPDRW 2 N/C PINS	A	B
D-CS-L0072-0-NIAS	1		-5.2V CAP	A	B
D-BD-L0072-0-BD	1		L0072 BLOCK DIAG	-	A
K-PC-L0072-0-DBI	-		P.C. DESIGN DATA BASE TAPE	B	C
D-DD-5015697-0	1		5015697 DRAWING DIRECTORY	REF	REF

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. D. DELLORCO	DATE 31-JUL-85	ENG. R. NEMET	DATE 31-JUL-85	TITLE: L0072 DRAWING DIRECTORY	
CHK'D D. DELLORCO	DATE 31-JUL-85	BOARD LOCATION: N/A	SHEET 1 OF 1		
DSK:L72A1.T2P[4,125] 31-JUL-85 15:00		NEXT HIGHER ASSEMBLY:		SIZE D / CODE DD / NUMBER L0072-0 / REV. B	
FIRST USED ON OPTION/MODEL: NIA20		NONE			

COMPONENT SIDE VIEW

SEE NOTE 2

0-18

0-19

REWORK INSTRUCTIONS

NEW RELEASE

0-1 THRU 0-17 FOR ETCH CUTS REFER TO
E-EC-5015697-0-0

COMPONENT ADDS, SIDE 1, AS SHOWN
0-18 R154 (P/N 1300229-00)
0-19 R155 (P/N 1300219-00)

LIFT PINS, SIDE 1
0-20 LIFT BOTTOM PIN OF R61 (CLOSEST TO FINGERS)
0-21 LIFT BOTTOM PIN OF R57 (SIDE CLOSEST TO FINGERS)

WIRE ADD, SIDE 1, (P/N 9107460-55)
0-22 R88 TOP (SIDE AWAY FROM FINGERS) TO R50 BOTTOM (SIDE CLOSEST TO FINGERS)

WIRE ADDS, SIDE 1, (P/N 9105740-55)
0-23 E43-2 TO E25-1
0-24 E44-2 TO E63-4
0-25 E179-4 TO C242-2 (NEGITIVE SIDE OF CAP)
0-26 E204-3 TO E235-11
0-27 E204-3 TO R97-1 (SIDE AWAY FROM FINGERS)
0-28 E159-3 TO E202-4
0-29 E190-8 TO E202-5
0-30 E190-8 TO E91-4
0-31 E202-6 TO E85-3
0-32 E91-13 TO E85-2
0-33 E91-6 TO E91-1
0-34 E74-9 TO E91-3
0-35 E91-12 TO E35-10
0-36 E91-2 TO E91-5
0-37 E91-5 TO E109-1
0-38 E91-12 TO E198-5
0-39 FINGER PIN C2 TO FINGER PIN C46
0-40 E111-15 TO E111-8
0-41 R61 BOTTOM (CLOSEST TO FINGERS) TO E181-14
0-42 E15-9 TO E157-3
0-43 E157-4 TO E159-3
0-44 E61-8 TO E143-19
0-45 E228-1 TO E225-15
0-46 E228-2 TO E230-8
0-47 E228-16 TO R36-2 (SIDE CLOSEST TO FINGERS)
0-48 E228-15 TO E228-16
0-49 R57-2 (SIDE CLOSEST TO FINGERS) TO LIFTED END OF R61 (SIDE CLOSEST TO FINGERS)
0-50 E196-2 TO E198-3
0-51 E197-11 TO E195-6
0-52 E197-3 TO E195-8
0-53 E138-10 TO E193-3
0-54 E81-8 TO E139-12

REVISIONS

NIA

AUTOMATED BY PRTLST,5R(55) P A R T S L I S T SHEET A1 OF A4

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A1	
1	1	D-MD-5015697-0-0	5015697-01		DRILL AND ETCH FOR L0072	1	
2	2		1000019-00		150.0 MMF 100V 5%200PPM MICA	2	C251,C253
3	3		1001610-00		.01 MFD 50V +80-20% Z5U CER	245	C1-C63,C70-C74,C80-C94,
							CONT C100-C238,C245,C248,C249,
							CONT C254-C265,C270-C277
4	4		1002424-00		1200.0 MMF 100V 5%200PPM MICA	2	C250,C252
5	5		1012084-01		8 MFD 25V +75-10% AL EL	1	C242
6	6		1012784-00		.047 MFD 50V +80-20% CER	20	C64-C69,C75-C79,C95-C99,
							CONT C266-C269
7	7		1016681-00		.47 MFD 50V +80-20% CER	1	C247
8	8		1018220-03		1500 MFD 16V+100-10% AL EL	5	C239-C241,C243,C244
9	9		1018220-04		220 MFD 6V+100-10% AL EL	1	C246
10	10		1100113-00		D 662 OS 600PCB(STABISTOR)	2	D5,D6
11	11		1100114-00		PIV= 25 IO=135 MA	4	D1-D4
12	12		1105871-00		VZ= 5.15 1% 250 MW	1	D7
13	13		1216988-02		HANDLE,MODULE,HEX TWO EJECTORS	1	
14	14		1300171-00		10.0 1.0 W 5.0 % CC	1	R51
15	15		1300219-00		68.0 .25 W 5.0 % CF	54	R7,R13-R21,R24,R36,R42,R47,R48,
							CONT R55,R56,R62-R71,R73-R75,R80,R90,
							CONT R99,R101,R103-R109,R111-R116,
							CONT R122,R125,R139-R141,R145,R155
16	16		1300229-00		100.0 .25 W 5.0 % CF	17	R27,R29-R34,R38,R39,R43,R46,R49,
							CONT R52,R96,R133,R134,R154
17	17		1300309-00		390.0 .25 W 5.0 % CF	23	R53,R59,R72,R76,R78,R83,R85,R87,
							CONT R94,R97,R126,R128,R130,R132,
							CONT R136,R138,R143,R146,R149-R153
18	18		1300316-00		470.0 .25 W 5.0 % CF	3	R3,R60,R110
19	19		1300365-00		1.0 K .25 W 5.0 % CF	4	R4,R28,R37,R119
20	20		1300439-00		3.30 K .25 W 5.0 % CF	1	R57
21	21		1300496-00		15.0 K .25 W 5.0 % CF	1	R117

REVISION HISTORY			BASIC PART NO: L0072			
ENG	ECO NUMBER	REV	SECTION A OF A			
	INITIAL	A	SECTION,VARIATION INDEX	DRN: D,DELLORCO	DATE: 06-JUL-84	DIGITAL
			[A] 00	CHK'D: D,DELLORCO	DATE: 06-JUL-84	TITLE PARTS LIST
			[B]			L0072
			[C]	DES,ENG: R,NEMET	DATE: 06-JUL-84	NIA
			[D]			DOCUMENT NUMBER
			[E]			SIZE CODE NUMBER REV
			[F]	RESP,ENG,: R,NEMET	DATE: 06-JUL-84	K PL L0072-0-DBP A
			[H]			
			[J]			
			[K]	MFG,ENG,: D,FORMAN	DATE: 18-DEC-84	RELEASE DATE: 14-JAN-85
			[L]			
			[M]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	FILE NAME: EDIT #:
	—		[N]	E-UA-L0072-0-0	#D-DD-L0072-0	MR378A.PLS 14

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION VARIATION REVISION LEVEL:	QTY PER 09 A1	REFERENCE DESIGNATOR
22	22		1301322-00		180.0 .25 W 5.0 % CF	23	R23,R35,R41,R44,R45,R61,R77,R79,
							CONT R81,R84,R86,R89,R92,R95,R98,
							CONT R127,R129,R131,R135,R137,R142,
							CONT R144,R147
23	23		1301424-00		680.0 .25 W 5.0 % CF	1	R58
24	24		1302388-00	K	2.0 .25 W 5.0 % CF	4	R9,R10,R26,R120
25	25		1302391-00	K	20.0 .25 W 5.0 % CF	1	R8
26	26		1302466-00	K	100.0 .25 W 5.0 % CF	1	R40
27	27		1303064-00		75.0 .25 W 1.0 % RN55D-F10	1	R93
28	28		1303179-00	K	8.20 .25 W 5.0 % CF	3	R11,R82,R91
29	29		1303312-00	K	10.0 .25 W 1.0 % RN55D-F10	2	R12,R148
30	30		1305121-00		38.30 .25 W 1.0 % RN55D-F10	4	R5,R6,R123,R124
31	31		1309294-00		105.0 .25 W .10% RN55E-B 2	1	R54
32	32		1309729-00		15.0 1.0 W 5.0 % CC	1	R50
33	33		1313150-00		430.0 .25 W 5.0 % CF	8	R1,R2,R22,R25,R100,R102,R118,
							CONT R121
34	34		1319471-01		10.0 2.0 W 5.0 % M.OXIDE	1	R88
35	35		1510706-02		C 55 PNP 500MW SI	2	Q1,Q2
36	36		1611601-00		DELAY= 50NS,TAPPED LINE	1	E211
37	37		1616653-01		DELAY= 100NS,10TAPS WITH TTLBU	2	E177,R195
38	38		1619248-00		DELAY= 25/74NS ECL MULTI-LOGIC	1	E230
39	39		1811660-00		OSCILLATOR, XTAL 20.000 MHZ	1	E161
40	40		1910532-B0		74S00 BURNED-IN NAND GATE-	5	E43,E112,E133,E167,E202
41	41		1910534-B0		74S04 BURNED-IN INVERTER G	9	E9,E45,E60,E105,E130,E154,E157,
							CONT E186,E201
42	42		1910536-B0		74S10 BURNED-IN NAND GATE-	5	E44,E91,E118,E190,E198
43	43		1910537-B0		74S11 BURNED-IN AND GATE-T	3	E7,E119,E218
44	44		1910539-B0		74S20 BURNED-IN NAND GATE-	6	E46,E47,E53,E131,E167,E169
45	45		1910542-B0		74S64 BURNED-IN A-O-I GATE	2	E84,E156
46	46		1910544-B0		74S74 BURNED-IN FF-D DUAL,	10	E4,E5,E41,E116,E142,E146,E159,
							CONT E170,E200,E233
47	47		1910544-01		74S74-60GG-D DUAL,EDGE TRIG	2	E141,E197
48	48		1910545-B0		74S112 BURNED-IN FF-JK DUAL	1	E123
49	49		1910547-B0		74S153 BURNED-IN MUX 1 OF 4	1	E111
50	50		1910548-B0		74S157 BURNED-IN MUX 1 OF 2	5	E72,E128,E135,E137,E216
51	51		1910549-B0		74S158 BURNED-IN MUX 1 OF 2	4	E16,E17,E55,E58
52	52		1910550-B0		74S174 BURNED-IN FF-D HEX	2	E38,E59
53	53		1910957-B0		74S175 BURNED-IN FF-D QUAD	2	E148,E194
54	54		1911402-00		10105 OR/NOR GATE,2-3-2	3	E207,E213,E225
55	55		1911404-00		10107 XOR/NOR GATE,3-2IN	2	E226,E229
56	56		1911414-00		10124 TTL TO ECL TRNSLTR	2	E182,E184
57	57		1911415-00		10125 ECL TO TTL TRNSLTR	2	E183,E185
58	58		1911506-00		10173 MUX-QUAD 2IN W/OUTPU	1	E224
59	59		1911573-B0		74S280 BURNED-IN PARITY GEN	3	E90,E113,E219
60	60		1911641-B0		74S257 BURNED-IN MUX,QUAD 2	1	E28
61	61		1911675-B0		74S138 BURNED-IN DECODER/DE	2	E191,E192
62	62		1911676-B0		74S139 BURNED-IN DECODER-DU	1	E175
63	63		1911712-B0		74S51 BURNED-IN AND/OR GAT	3	E106,E176,E232

DIGITAL	TITLE	SECTION A OF A
	L0072 NIA	

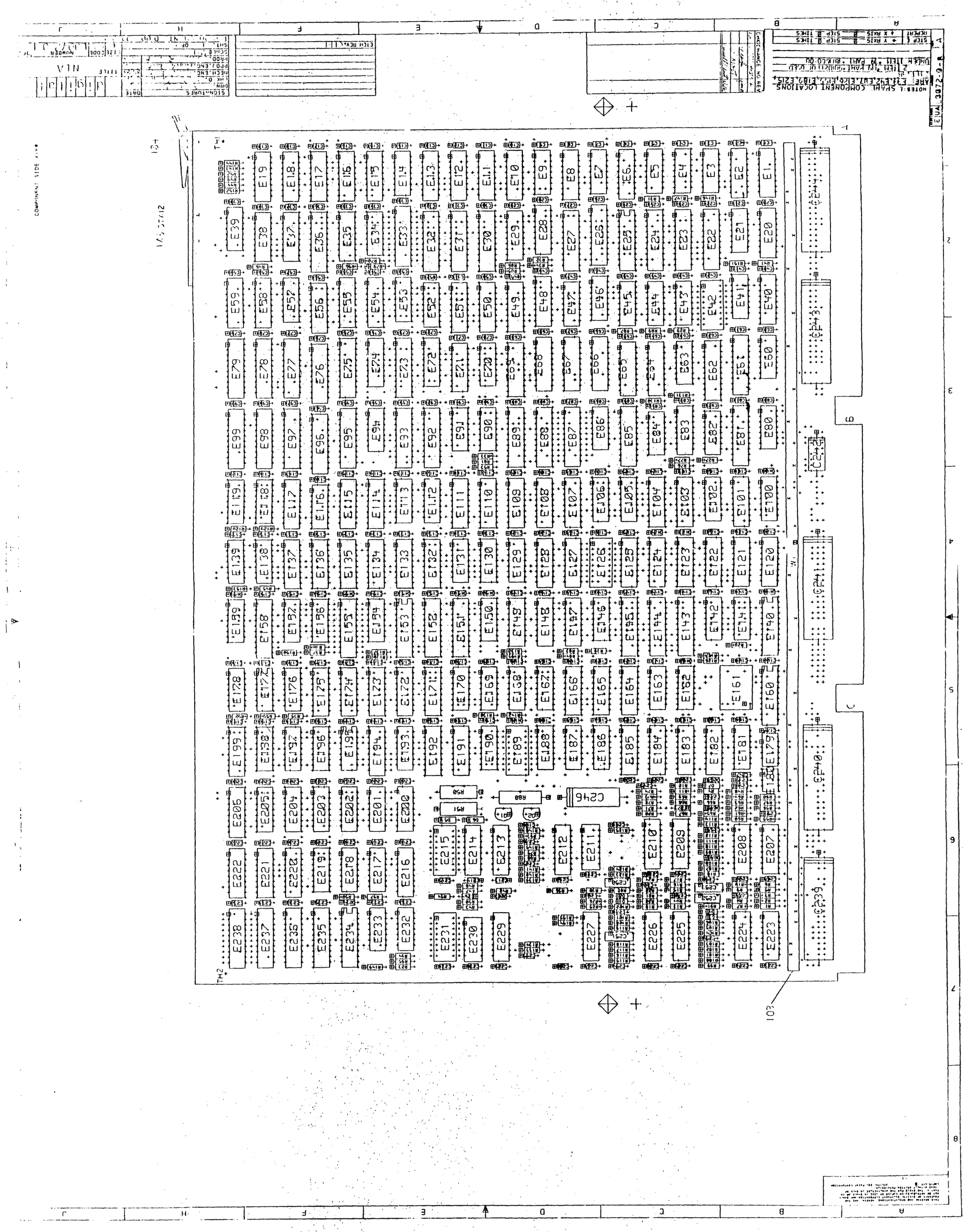
SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	L0072-0-DBP	A

LINE	ITEM	TCP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00 / A1	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:		
64	64		1911983-B0		74S133 BURNED-IN NAND GATE-	2	E8,E51
65	65		1912096-B0		74S86 BURNED-IN XOR GATE,Q	1	E94
66	66		1912388-B0		74S02 BURNED-IN NOR GATE-Q	7	E21,E80,E82,E102,E168,E188,E217
67	67		1912389-B0		74S08 BURNED-IN AND GATE,Q	4	E34,E57,E63,E178
68	68		1912656-B0		LS67 BURNED-IN REGISTER F	4	E199,E206,E221,E222
69	69		1912660-B0		74S253 BURNED-IN MUX 1 OF 4	4	E104,E125,E164,E165
70	70		1912746-B0		74S37 BURNED-IN NAND GATE-	4	E3,E100,E150,E203
71	71		1912799-B0		LS00 BURNED-IN NAND GATE-	1	E138
72	72		1912801-B0		LS02 BURNED-IN NOR GATE-Q	3	E39,E162,E163
73	73		1912805-B0		LS08 BURNED-IN AND GATE-Q	3	E86,E181,E196
74	74		1912813-B0		LS27 BURNED-IN NOR GATE-T	1	E205
75	75		1912824-B0		LS74 BURNED-IN FF-D DUAL-	1	E204
76	76		1912833-00		LS109 FF-JK DUAL,POS EDGE	1	E136
77	77		1912834-B0		LS112 BURNED-IN FF-JK DUAL	5	E103,E120-E122,E124
78	78		1912849-B0		LS161 BURNED-IN COUNTER,SY	9	E1,E10-E13,E29,E40,E147,E220
79	79		1912851-B0		LS169 BURNED-IN COUNTER,SY	4	E107-E109,E117
80	80		1912853-B0		LS175 BURNED-IN FF-D,QUAD	2	E83,E101
81	81		1912863-B0		LS273 BURNED-IN FF-D,OCTAL	1	E237
82	82		1913009-00		4N36 OPTO COUPLED ISLTR	1	E180
83	83		1913220-00		10216 RECEIVER,TRIPLE LINE	2	E223,E227
84	84		1913294-B0		93S16 BURNED-IN COUNTER,SY	10	E2,E15,E18-E20,E35,E37,E54,E56,
						CONT	E74
85	85		1913340-B0		74S32 BURNED-IN OR GATE,QU	1	E193
86	86		1913493-B0		74S241 BURNED-IN OCTAL BUFF	2	E140,E160
87	87		1913671-B0		74S374 BURNED-IN FF-D OCTAL	3	E36,E93,E235
88	88		1913671-50		74S374 FF-D,OCTAL,TRI STATE	4	E61,E62,E85,E88
89	89		1913888-00	DC	102A EQUALS CHECKER 8BIT	1	E236
90	90		1914084-00		74S299 SHIFT REG.,8BIT RIGH	3	E25,E153,E234
91	91		1914085-B0		74S260 BURNED-IN NOR GATE,D	4	E14,E52,E70,E129
92	92		1914156-00	LM	393 VOLT.COMPARATOR DUAL	1	E179
93	93		1914768-00	C	67401J MEMORY FIFO,SERIAL	6	E110,E114,E115,E127,E149,E166
94	94		1914845-00		2918 FF-D QUAD TRI-STATE	6	E132-E134,E172-E174
95	95		1914866-00	AM	93S48PCGEN/CHECK PARITY, 4B	1	E6
96	96		1917244-B0		74S169 BURNED-IN COUNTER,SY	3	E48-E50
97	97		1918353-00		10231 FF-D MASTER-SLAVE	5	E208-E210,E212,E214
98	98		2116957-13		1KX4 MOS RAM 55NS	6	E64-E69
99	99		2118054-04		16K MOS RAM STATIC	10	E75-E79,E95-E99
100	100		23058K4-00	K4-01		1	E81
101	101		23059K4-00	K4-01		1	E22
102	102		23060K4-00	K4-01		1	E23
103	103		23071K5-00	K5-01		2	E32,E73
104	104		23072K5-00	K5-01		2	E31,E89
105	105		23082K5-00	K5-01		1	E26
106	106		23083K5-00	K5-01		1	E27
107	107		23084K5-00	K5-01		1	E30
108	108		23085K5-00	K5-01		1	E158
109	109		23086K5-00	K5-01		1	E145
110	110		23106K3-00	K3-01	PAL,REG	2	E151,E152

DIGITAL	TITLE	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
	L0072 NIA		K	PL	L0072-0-DBP	A

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A1	
111	111		23107K3-00		K3-01 PAL,REG	1	E143
112	112		23112K3-00		K3-01 PAL,REG	1	E24
113	113		23113K3-00		K3-01 PAL,REG	1	E144
114	114		23167J5-00		J5-01 PAL,LOGIC	1	E92
115	115	D-IA-7019209-0-0	7019209-00		BUSBAR ASSY (1.4 CTRS)	1	W1
116	116		9000024-01		EYELET,ROLLED 0.1210DX0.192	12	
117	117		23384A1-00		A1-07	1	E71
118	118		23365A1-00		A1-09	1	E171
119	119		9010213-01		SPACER,DUAL IN-LINE NYLN .450	1	

120 NOTE: 1. SPARE COMPONENT LOCATIONS ARE: E33,E42,E87,E126,E155,E189,E215,
121 NOTE: E228,E231,E238
122 NOTE: 2. ITEM #119 PART #9010213-01 USED UNDER ITEM #39 PART #1811660-00



AUTOMATED BY PRTLST.5R(55)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A2	
1	1	D-MD-5015697-0-0	5015697-01		DRILL AND ETCH FOR L0072	1	
2	2		1000019-00		150.0 MMF 100V 5%200PPM MICA	2	C251,C253
3	3		1001610-00		.01 MFD 50V +80-20% Z5U CER	245	C1-C63,C70-C74,C80-C94,
							CONT C100-C238,C245,C248,C249,
							CONT C254-C265,C270-C277
4	4		1002424-00		1200.0 MMF 100V 5%200PPM MICA	2	C250,C252
5	5		1012084-01		8 MFD 25V +75-10% AL EL	1	C242
6	6		1012784-00		.047 MFD 50V +80-20% CER	20	C64-C69,C75-C79,C95-C99,
							CONT C266-C269
7	7		1016681-00		.47 MFD 50V +80-20% CER	1	C247
8	8		1018220-03		1500 MFD 15V+100-10% AL EL	5	C239-C241,C243,C244
9	9		1018220-04		220 MFD 6V+100-10% AL EL	1	C246
10	10		1100113-00		D 662 OS 600PC8(STABISTOR)	2	D5,D6
11	11		1100114-00		PIV= 25 IO=135 MA	4	D1-D4
12	12		1105871-00		VZ= 5.15 1% 250 MW	1	D7
13	13		1216989-02		HANDLE,MODULE,HEX TWO EJECTORS	1	
14	14		1300171-00		10.0 1.0 W 5.0 % CC	1	R51
15	15		1300219-00		68.0 .25 W 5.0 % CF	54	R7,R13-R21,R24,R36,R42,R47,R48,
							CONT R55,R56,R62-R71,R73-R75,R80,R90,
							CONT R99,R101,R103-R109,R111-R116,
							CONT R122,R125,R139-R141,R145,R155
16	16		1300229-00		100.0 .25 W 5.0 % CF	17	R27,R29-R34,R38,R39,R43,R46,R49,
							CONT R52,R96,R133,R134,R154
17	17		1300309-00		390.0 .25 W 5.0 % CF	23	R53,R59,R72,R76,R78,R83,R85,R87,
							CONT R94,R97,R126,R128,R130,R132,
							CONT R136,R138,R143,R146,R149-R153
18	18		1300316-00		470.0 .25 W 5.0 % CF	3	R3,R60,R110
19	19		1300365-00		1.0 K .25 W 5.0 % CF	4	R4,R28,R37,R119
20	20		1300439-00		3.30 K .25 W 5.0 % CF	1	R57
21	21		1300496-00		15.0 K .25 W 5.0 % CF	1	R117

REVISION HISTORY			BASIC PART NO: L0072			
ENG	ECO NUMBER	REV	SECTION A OF A			
	L0072-MR001	A	SECTION.VARIATION INDEX	DRN: D.DELLORCO	DATE: 06-JUL-84	D I G I T A L
			[A] 00	CHK'D: D.DELLORCO	DATE: 06-JUL-84	TITLE PARTS LIST
			[B]			L0072
			[C]	DES.ENG: R.NEMET	DATE: 06-AUG-84	NIA
			[D]			DOCUMENT NUMBER
			[E]			SIZE CODE NUMBER REV
			[F]	RESP.ENG.: R.NEMET	DATE: 06-AUG-84	K PL L0072-1-D8P A
			[H]			
			[J]			
			[K]	MFG.ENG.: D.FORMAN	DATE: 06-AUG-84	RELEASE DATE: 18-SEP-85
			[L]			
			[M]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	FILE NAME: EDIT #
			[N]	E-UA-L0072-0-0	*D-DD-L0072-0	MR477A.PLS 17

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A2	
22	22		1301322-00		180.0 .25 W 5.0 % CF	23	R23,R35,R41,R44,R45,R61,R77,R79,
							CONT R81,R84,R86,R89,R92,R95,R98,
							CONT R127,R129,R131,R135,R137,R142,
							CONT R144,R147
23	23		1301424-00		680.0 .25 W 5.0 % CF	1	R58
24	24		1302388-00		2.0 K .25 W 5.0 % CF	4	R9,R10,R26,R120
25	25		1302391-00		20.0 K .25 W 5.0 % CF	1	R8
26	26		1302466-00		100.0 K .25 W 5.0 % CF	1	R40
27	27		1303064-00		75.0 .25 W 1.0 % RN55D-F10	1	R93
28	28		1303179-00		8.20 K .25 W 5.0 % CF	3	R11,R82,R91
29	29		1303312-00		10.0 K .25 W 1.0 % RN55D-F10	2	R12,R148
30	30		1305121-00		38.30 .25 W 1.0 % RN55D-F10	4	R5,R6,R123,R124
31	31		1309234-00		105.0 .25 W .10% RN55E-B 2	1	R54
32	32		1309729-00		15.0 1.0 W 5.0 % CC	1	R50
33	33		1313150-00		430.0 .25 W 5.0 % CF	8	R1,R2,R22,R25,R100,R102,R118,
							CONT R121
34	34		1319471-01		10.0 2.0 W 5.0 % M.OXIDE	1	R88
35	35		1510706-02		C 55 PNP 500MW SI	2	Q1,Q2
36	36		1611601-00		DELAY= 50NS,TAPPED LINE	1	E211
37	37		1616653-01		DELAY= 100NS,10TAPS WITH TTL8U	2	E177,R195
38	38		1619248-00		DELAY= 25/74NS ECL MULTI-LOGIC	1	E230
39	39		1811660-00		OSCILLATOR, XTAL 20.000 MHZ	1	E161
40	40		1910532-80		74S00 BURNED-IN NAND GATE-	5	E43,E112,E139,E187,E202
41	41		1910534-80		74S04 BURNED-IN INVERTER G	9	E9,E45,E60,E105,E130,E154,E157,
							CONT E186,E201
42	42		1910536-80		74S10 BURNED-IN NAND GATE-	5	E44,E91,E118,E190,E198
43	43		1910537-80		74S11 BURNED-IN AND GATE-T	3	E7,E119,E218
44	44		1910539-80		74S20 BURNED-IN NAND GATE-	6	E46,E47,E53,E131,E167,E169
45	45		1910542-80		74S64 BURNED-IN A-O-I GATE	2	E84,E156
46	46		1910544-80		74S74 BURNED-IN FF-D DUAL,	10	E4,E5,E41,E116,E142,E146,E159,
							CONT E170,E200,E233
47	47		1910544-01		74S74-60GG-D DUAL,EDGE TRIG	2	E141,E197
48	48		1910545-80		74S112 BURNED-IN FF-JK DUAL	1	E123
49	49		1910547-80		74S153 BURNED-IN MUX 1 OF 4	1	E111
50	50		1910548-80		74S157 BURNED-IN MUX 1 OF 2	5	E72,E128,E135,E137,E216
51	51		1910549-80		74S158 BURNED-IN MUX 1 OF 2	4	E16,E17,E55,E58
52	52		1910550-80		74S174 BURNED-IN FF-D HEX	2	E38,E59
53	53		1910957-80		74S175 BURNED-IN FF-D QUAD	2	E148,E194
54	54		1911402-00		10105 OR/NOR GATE,2-3-2	3	E207,E213,E225
55	55		1911404-00		10107 XOR/NOR GATE,3-2IN	2	E226,E229
56	56		1911414-00		10124 TTL TO ECL TRNSLTR	2	E182,E184
57	57		1911415-00		10125 ECL TO TTL TRNSLTR	2	E183,E185
58	58		1911506-00		10173 MUX, QUAD 2-IN W/LAT	1	E224
59	59		1911573-80		74S280 BURNED-IN PARITY GEN	3	E90,E113,E219
60	60		1911641-80		74S257 BURNED-IN MUX,QUAD 2	1	E28
61	61		1911675-80		74S138 BURNED-IN DECODER/DE	2	E191,E192
62	62		1911676-80		74S139 BURNED-IN DECODER-DU	1	E175
63	63		1911712-80		74S51 BURNED-IN AND/OR GAT	3	E106,E176,E232

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A2	
64	64		1911983-80		74S133 BURNED-IN NAND GATE-	2	E8,E51
65	65		1912096-80		74S86 BURNED-IN XOR GATE,Q	1	E94
66	66		1912388-80		74S02 BURNED-IN NOR GATE-Q	7	E21,E80,E82,E102,E168,E188,E217
67	67		1912389-80		74S08 BURNED-IN AND GATE,Q	4	E34,E57,E63,E178
68	68		1912656-80		LS670 BURNED-IN REGISTER F	4	E199,E206,E221,E222
69	69		1912660-80		74S253 BURNED-IN MUX 1 OF 4	4	E104,E125,E164,E165
70	70		1912746-80		74S37 BURNED-IN NAND GATE-	4	E3,E100,E150,E203
71	71		1912799-80		LS00 BURNED-IN NAND GATE-	1	E138
72	72		1912801-80		LS02 BURNED-IN NOR GATE-Q	3	E39,E162,E163
73	73		1912805-80		LS08 BURNED-IN AND GATE-Q	3	E86,E181,E196
74	74		1912813-80		LS27 BURNED-IN NOR GATE-T	1	E205
75	75		1912824-80		LS74 BURNED-IN FF-D DUAL-	1	E204
76	76		1912833-00		LS109 FF-JK DUAL,POS EDGE	1	E136
77	77		1912834-80		LS112 BURNED-IN FF-JK DUAL	5	E103,E120-E122,E124
78	78		1912849-80		LS161 BURNED-IN COUNTER,SY	9	E1,E10-E13,E29,E40,E147,E220
79	79		1912851-80		LS169 BURNED-IN COUNTER,SY	4	E107-E109,E117
80	80		1912853-80		LS175 BURNED-IN FF-D,QUAD	2	E83,E101
81	81		1912863-80		LS273 BURNED-IN FF-D,OCTAL	1	E237
82	82		1913009-00		4N36 OPTO COUPLED ISLTR	1	E180
83	83		1913220-00		10216 RECEIVER, TRIPLE LIN	2	E223,E227
84	84		1913294-80		93S16 BURNED-IN COUNTER,SY	10	E2,E15,E18-E20,E35,E37,E54,E56,
						CONT	E74
85	85		1913340-80		74S32 BURNED-IN OR GATE,QU	1	E193
86	86		1913493-80		74S241 BURNED-IN OCTAL BUFF	2	E140,E160
87	87		1913671-80		74S374 BURNED-IN FF-D OCTAL	3	E36,E93,E235
88	88		1913671-50		74S374 FF-D,OCTAL,TRI STATE	4	E61,E62,E85,E88
89	89		1913988-00	DC	102A EQUALS CHECKER 8BIT	1	E236
90	90		1914084-00		74S299 SHIFT REG.,8BIT RIGH	3	E25,E153,E234
91	91		1914085-80		74S260 BURNED-IN NOR GATE,D	4	E14,E52,E70,E129
92	92		1914156-00	LM	393 VOLT.COMPARATOR DUAL	1	E179
93	93		1914768-00	C	67401J MEMORY FIFO,SERIAL	6	E110,E114,E115,E127,E149,E166
94	94		1914845-00		2918 FF-D QUAD TRI-STATE	6	E132-E134,E172-E174
95	95		1914866-00	AM	93S48PCGEN/CHECK PARITY, 48	1	E6
96	96		1917244-80		74S169 BURNED-IN COUNTER,SY	3	E48-E50
97	97		1918353-00		10231 FF-D, MASTER-SLAVE,	5	E208-E210,E212,E214
98	98		2116957-13		1KX4 MOS RAM 55NS	6	E64-E69
99	99		2118054-04		16K MOS RAM STATIC	10	E75-E79,E95-E99
100	100		23058K4-00		K4-01	1	E81
101	101		23059K4-00		K4-01	1	E22
102	102		23060K4-00		K4-01	1	E23
103	103		23071K5-00		K5-01	2	E32,E73
104	104		23072K5-00		K5-01	2	E31,E89
105	105		23082K5-00		K5-01	1	E26
106	106		23083K5-00		K5-01	1	E27
107	107		23084K5-00		K5-01	1	E30
108	108		23085K5-00		K5-01	1	E158
109	109		23086K5-00		K5-01	1	E145
110	110		23106K3-00		K3-01 PAL,REG	2	E151,E152

AUTOMATED BY PRTLST.5R(55)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION		QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:		A2	
111	111		23107K3-00		K3-01	PAL,REG	1	E143
112	112		23112K3-00		K3-01	PAL,REG	1	E24
113	113		23113K3-00		K3-01	PAL,REG	1	E144
114	114		23167J5-00		J5-01	PAL,LOGIC	1	E92
115	115	D-IA-7019209-0-0	7019209-00		BUSBAR ASSY (1.4 CTRS)		1	W1
116	116		9000024-01		EYELET,ROLLED	0.1210DX0.192	12	
117	117		23384A1-00		A1-07		1	E71
118	118		23365A1-00		A1-09		1	E171
119	119		9010213-01		SPACER,DUAL IN-LINE	NYLN .450	1	

120 NOTE: 1. SPARE COMPONENT LOCATIONS ARE: E33,E42,E87,E126,E155,E189,E215,
121 NOTE: E231,E239
122 NOTE: 2. ITEM #119 PART #9010213-01 USED UNDER ITEM #39 PART #1811660-00

DIGITAL	TITLE: L0072 NIA	SECTION A OF A	SIZE: K	CODE: PL	DOCUMENT NUMBER: L0072-1-DBP	REV: A

LINK CONTROL REGISTER

NIAA INTERN LP BK L → 74S04 E186 → NIAA LOOPBACK H

74S04 E201 → NIAA GEN WRONG PAR H

PAL 16R4 106K3 E152

[B,PORT,PLI] [S,,CN] JDATA 0 H (C11) → D0 → R17 → -NIAA PRMSC MODE H
[B,PORT,PLI] [S,,CN] JDATA 1 H (C12) → D1 → R16 → -NIAA DIS XMIT CRC H
[B,PORT,PLI] [S,,CN] JDATA 2 H (C22) → D2 → R15 → -NIAA INTERN LP BK H
[B,PORT,PLI] [S,,CN] JDATA 3 H (C14) → D3 → R14
[B,,PLI JLINK [S,,CN] JCONTROL 0 H (C7) → D4
[B,,PLI JLINK [S,,CN] JCONTROL 1 H (C8) → D5
[B,,PLI JLINK [S,,CN] JCONTROL 2 H (C9) → D6
[B,,PLI JLINK [S,,CN] JCONTROL 3 H (C10) → D7

I/O → -PLI [S,,CN] JSELECT H (C6)
I/O → -NIAE PLI INIT A H
I/O
I/O
NIAM D PORT CLK H → CLOCK
ENABLE

NIAA ENA LNK L → 74S04 E186 → NIAA ENABLE LINK H

PAL 16R4 106K3 E151

[B,PORT,PLI] [S,,CN] JDATA 4 H (C15) → D0 → R17 → -NIAA ENA LNK H
[B,PORT,PLI] [S,,CN] JDATA 5 H (C21) → D1 → R16 → -NIAA MEM ORG BIT 0 H
[B,PORT,PLI] [S,,CN] JDATA 6 H (C17) → D2 → R15 → -NIAA MEM ORG BIT 1 H
[B,PORT,PLI] [S,,CN] JDATA 7 H (C18) → D3 → R14 → -NIAA ENA HTB H
[B,,PLI JLINK [S,,CN] JCONTROL 0 H (C7) → D4
[B,,PLI JLINK [S,,CN] JCONTROL 1 H (C8) → D5
[B,,PLI JLINK [S,,CN] JCONTROL 2 H (C9) → D6
[B,,PLI JLINK [S,,CN] JCONTROL 3 H (C10) → D7

I/O → -PLI [S,,CN] JSELECT H (C6)
I/O → -NIAE PLI INIT A H
I/O
I/O
NIAM D PORT CLK H → CLOCK
ENABLE

NIAA SOFT GND L

R27 100Ω

DECODER 74S138 E192

0F → NIAA RD REG L
1F → NIAA CLR RCV BUF L
2F
3F → NIAA REC TO XMIT BUF L
4F → NIAA WT FREE BUF LST L
5F → NIAA WT REC BUF ADRS L
6F → NIAA XMIT ACTION L
7F → NIAA RESET REC ATT L

[B,,PLI JLINK [S,,CN] JCONTROL 2 H (C9)
[B,,PLI JLINK [S,,CN] JCONTROL 1 H (C8)
[B,,PLI JLINK [S,,CN] JCONTROL 0 H (C7)
→ SEL

[B,,PLI JLINK [S,,CN] JCONTROL 3 H (C10)
+3V C H
→ EN

PLI [S,,CN] JSELECT L (C6)

DECODER 74S138 E191

0F
1F
2F → NIAA WT ADRS REG L
3F → NIAA RD UBUF LST L
4F → NIAA WT XMIT BUF L
5F → NIAA RD XMIT STAT L
6F → NIAA RD REC STAT L
7F → NIAA WT REG L

LINK [S,,CN] JCONTROL 2 H (B34)
[B,,PLI JLINK [S,,CN] JCONTROL 2 H (C9)
LINK [S,,CN] JCONTROL 1 H (B32)
[B,,PLI JLINK [S,,CN] JCONTROL 1 H (C8)
LINK [S,,CN] JCONTROL 0 H (B31)
[B,,PLI JLINK [S,,CN] JCONTROL 0 H (C7)
→ SEL

GND → EN

LINK [S,,CN] JCONTROL 3 H (B36)
[B,,PLI JLINK [S,,CN] JCONTROL 3 H (C10)

NIAA WT REG L → 74S04 E201 → NIAA WT REG H

PHYSICAL ADDRESS RAM

4X4 MEM 74LS670 E221

NIAA B PORT DATA 1 H → 0D
NIAA B PORT DATA 0 H → 1D
NIAA B PORT DATA 3 H → 2D
NIAA B PORT DATA 2 H → 3D
NIAI PHYS RAM ADRS 0 H → RD ADR
NIAI PHYS RAM ADRS 1 H
RD EN
NIAA MAINT ADRS 0 H → WR ADR
NIAA MAINT ADRS 1 H
WR EN

0M → NIAA PHY ADRS 1 H
1M → NIAA PHY ADRS 0 H
2M → NIAA PHY ADRS 3 H
3M → NIAA PHY ADRS 2 H

4X4 MEM 74LS670 E222

0M → NIAA PHY ADRS 3 H
1M → NIAA PHY ADRS 0 H
2M → NIAA PHY ADRS 1 H
3M → NIAA PHY ADRS 2 H

NIAI PHYS RAM ADRS 2 H → 74S04 E157 → -NIAI PHYS RAM ADRS 2 L

4X4 MEM 74LS670 E199

NIAA B PORT DATA 6 H → 0D
NIAA B PORT DATA 7 H → 1D
NIAA B PORT DATA 5 H → 2D
NIAA B PORT DATA 4 H → 3D
NIAI PHYS RAM ADRS 0 H → RD ADR
NIAI PHYS RAM ADRS 1 H
RD EN
NIAA MAINT ADRS 0 H → WR ADR
NIAA MAINT ADRS 1 H
WR EN

0M → NIAA PHY ADRS 6 H
1M → NIAA PHY ADRS 7 H
2M → NIAA PHY ADRS 5 H
3M → NIAA PHY ADRS 4 H

4X4 MEM 74LS670 E206

0M → NIAA PHY ADRS 6 H
1M → NIAA PHY ADRS 7 H
2M → NIAA PHY ADRS 5 H
3M → NIAA PHY ADRS 4 H

NIAM A PORT CLK L
NIAA WT REG H → 74S20 E169 → 8

NIAA MAINT ADRS 2 H

NIAA WT REG H → E169 74S20
NIAM A PORT CLK L → 6

-NIAA MAINT ADRS 3 L → 74S02 E217
-NIAA MAINT ADRS 4 L

NIAA MAINT ADRS 2 H → 74S04 E154 → 10

74S04 E154 → NIAA XMIT FRAME H

DECODER 74S139 E175

0F → NIAA XMIT FRAME L
1F → NIAA RESET TX BUF L
2F → NIAA TX BUF DEC L
3F → NIAA WT TX EOF L

NIAA B PORT DATA 1 H
NIAA B PORT DATA 0 H → 2 SEL 1
NIAA XMIT ACTION L → EN

NOTE: THIS MODULE WILL NOT FUNCTION PROPERLY WHEN RUNNING THE KL AT SLOW CLOCKS

MAINTANCE ADDRESS REGISTER

8 D FLOP 74LS273 E237

NIAA B PORT DATA 2 H → D0 → 0R → NIAA MAINT ADRS 2 H
NIAA B PORT DATA 0 H → D1 → 1R → NIAA MAINT ADRS 0 H
NIAA B PORT DATA 1 H → D2 → 2R → NIAA MAINT ADRS 1 H
D3 → 3R
D4 → 4R
D5 → 5R
NIAA B PORT DATA 3 H → D6 → 6R → NIAA MAINT ADRS 3 H
NIAA B PORT DATA 4 H → D7 → 7R → NIAA MAINT ADRS 4 H
NIAE PLI INIT L → CLR
CLK

+5.0V
R23 180Ω → +3V A H
R149 390Ω

NIAM A PORT CLK L
NIAA WT ADRS REG L → 74S02 E168

NIAA MAINT ADRS 4 H
NIAA MAINT ADRS 2 H → 74S10 E198 → NIAA SELECT CTR L

-NIAA MAINT ADRS 3 L
-NIAA MAINT ADRS 0 L
-NIAA MAINT ADRS 1 L → E205 74LS27

[B,PORT,PLI] [S,,CN] JDATA 0 H (C11)
PORT [S,,CN] JDATA 0 H (B20)
+3V D H
→ 74S08 E57 → NIAA B PORT DATA 0 H

PORT [S,,CN] JDATA 1 H (B21)
[B,PORT,PLI] [S,,CN] JDATA 1 H (C12)
+3V D H
→ 74S08 E57 → NIAA B PORT DATA 1 H

PORT [S,,CN] JDATA 2 H (B22)
[B,PORT,PLI] [S,,CN] JDATA 2 H (C22)
+3V H
→ 74S08 E34 → NIAA B PORT DATA 2 H

PORT [S,,CN] JDATA 3 H (B24)
[B,PORT,PLI] [S,,CN] JDATA 3 H (C14)
+3V D H
→ 74S08 E57 → NIAA B PORT DATA 3 H

PORT [S,,CN] JDATA 4 H (B26)
[B,PORT,PLI] [S,,CN] JDATA 4 H (C15)
+3V D H
→ 74S08 E34 → NIAA B PORT DATA 4 H

PORT [S,,CN] JDATA 5 H (B25)
[B,PORT,PLI] [S,,CN] JDATA 5 H (C21)
+3V D H
→ 74S08 E34 → NIAA B PORT DATA 5 H

PORT [S,,CN] JDATA 6 H (B28)
[B,PORT,PLI] [S,,CN] JDATA 6 H (C17)
+3V H
→ 74S08 E178 → NIAA B PORT DATA 6 H

PORT [S,,CN] JDATA 7 H (B27)
[B,PORT,PLI] [S,,CN] JDATA 7 H (C18)
+3V H
→ 74S08 E178 → NIAA B PORT DATA 7 H

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: R. NEMET	DATE 31-JUL-85	ENG:	DATE 31-JUL-85	TITLE: LINK CONTROL &PHYS ADDRESS	
CHK'D: M. Nemet	DATE 31-JUL-85	BOARD LOCATION:			
ELF:<COM1>NIAA.DRW	23-MAY-85 10:03	SHEET 1 OF 1	NEXT HIGHER ASSEMBLY:		
FIRST USED ON OPTION/MODEL: NIA20		D-DD-L0072-0		SIZE D / CODE CS / NUMBER L0072-0-NIAA / REV. B	

MRD

TRANSMIT STATUS REGISTER

4 D FF 74LS175 E101
NIAE TX DONE L
NIAB DEFER DET L
NIAB LOSS OF CARR DET L
NIAE TX DONE L
NIAE HTB 5 L
NIAG RB 1 L
NIAE HTB 5 L
NIAG RB 0 L
NIAE LNK INIT L
-NIAP 10 MHZ C H
74S02 E82
74S02 E82
74S02 E82
74S02 E80
R0 R1 R2 R3 D0 D1 D2 D3 CLR CLK

4 D FF 74LS175 E83
NIAE TX TOO LONG DET H
NIAD 8TH BIT H
NIAE SYNCD CLSN H
NIAB SET HTB H
NIAE LD SLOT CNTR 4 L
-NIAE RETRY OVFLO L
NIAE 64TH BYTE L
NIAB LCLSN L
NIAE LNK INIT L
-NIAP 10 MHZ C H
E63 74S08
E63 74S08
74S02 E82
74S02 E82
74S02 E21
R0 R1 R2 R3 D0 D1 D2 D3 CLR CLK
NIAB SET TOTL L

74S02 E102
-NIAA ENA HTB H
NIAE PLI INIT H
NIAB SET LCLSN L

74S00 E43
NIAE TRANSMIT 1 L
NIAE HTB 5 L
NIAB SET HTB H

74S00 E43
NIAE SYNCD CLSN H
NIAE TRANSMIT 1 H
NIAB LCLSN L

74S04 E105
NIAE PLI INIT L
-NIAE TBUF PAR ERR DET H
NIAB TBUF PAR ERR H
NIAB TBUF PAR ERR L

C 74LS112 E120 J K
NIAM E PORT CLK H
NIAB LOSS OF CARR H
NIAB LOSS OF CARR L

C 74LS112 E121 J K
NIAM F PORT CLK H
NIAB RETRY BIT 1 H

C 74LS112 E120 J K
NIAM F PORT CLK H
NIAB RETRY BIT 0 H

C 74LS112 E124 J K
NIAM E PORT CLK H
NIAB DEFER H
NIAB DEFER L

C 74LS112 E122 J K
NIAM F PORT CLK H
NIAB LATE CLSN H
NIAB LATE CLSN L

C 74LS112 E103 J K
NIAM F PORT CLK H
NIAB HTB H
NIAB HTB L

C 74LS112 E121 J K
NIAB TX ON TOO LONG H
NIAB TX ON TOO LONG L

C 74LS112 E103 J K
GND
NIAM F PORT CLK H
NIAA XMIT FRAME H
NIAB TBUF PAR ERR H
NIAB TBUF PAR ERR L
NIAE PLI INIT A L

74LS02 E162
NIAB LOSS OF CARR L
ACK [S,,CN] JH C38

74LS02 E163
NIAB DEFER L
XMIT [S,,CN] JABORT H C41

E162 74LS02
NIAB LATE CLSN L
PLI CRC ERR H C35

74LS02 E163
-NIAB HTB L
CDB [S,,CN] JH C51

E162 74LS02
NIAB TX ON TOO LONG L
CDA [S,,CN] JH C42

74LS02 E162
NIAB TBUF PAR ERR L
XBUF [S,,CN] JPE H C44

NIAE XMIT ATTENTION 0H

74S10 E190
NIAA RD XMIT STAT L
NIAA RD UBUF LST L
NIAA RD REC STAT L

74S02 E188
NIAA RD REG L

74S02 E217
NIAC TDR LO L

74S08 E178
NIAC TDR HI L

PAL 16R6 058K4 E81
R R R R R R
I/O I/O
NIAE SYNCD CARR H
-NIAE TRANSMIT 1 H
-NIAG RB 1 H
-NIAG RTRY CNT 0 H
-NIAE INC RETRY CNTR 3 H
-NIAE DFR H
NIAD 8TH BIT ACTIVE L
-NIAE LNK INIT H
-NIAP 10 MHZ C H
NIAA SOFT GND L
D0 D1 D2 D3 D4 D5 D6 D7 CLK EN
-NIAB CARR DETD H
-NIAB CARR UP AND DOWN H
-NIAB DEFER DET H

-NIAB CARR DETD H
NIAB CARR UP AND DOWN L
74S04 E60
E80 74S02
NIAB LOSS OF CARR DET L

2X4 MIX 74S253 E164
NIAC TDR MUX 1 H
NIAB RETRY BIT 1 H
NIAK F LENGH ERR H
NIAK UBUF LST 1 H
LINK CONTROL 1 H
LINK CONTROL 0 H
0-DA 1-DA 2-DA 3-DA EN SEL
YA
[B,PORT,PLI] [S,,CN] JDATA 1 H C12
-!(PORT DATA 1 H)

NIAC TDR MUX 0 H
NIAB RETRY BIT 0 H
NIAK P FRAME ERR H
NIAK UBUF LST 0 H
0-DB 1-DB 2-DB 3-DB EN
YB
[B,PORT,PLI] [S,,CN] JDATA 0 H C11
-!(PORT DATA 0 H)

2X4 MIX 74S253 E165
NIAC TDR MUX 2 H
NIAB LATE CLSN H
NIAK CRC ERR H
NIAK UBUF LST 2 H
[B,PORT,PLI] [S,,CN] JDATA 2 H C22
-!(PORT DATA 2 H)

NIAC TDR MUX 3 H
NIAB LOSS OF CARR H
NIAK FBUF EMPTY H
NIAK UBUF LST 3 H
[B,PORT,PLI] [S,,CN] JDATA 3 H C14
-!(PORT DATA 3 H)

2X4 MIX 74S253 E125
NIAC TDR 05 H
NIAB TX ON TOO LONG H
NIAK BUF USED BIT 1 H
NIAK UBUF LST 5 H
[B,PORT,PLI] [S,,CN] JDATA 5 H C21
-!(PORT DATA 5 H)

NIAC TDR 04 H
NIAB DEFER H
NIAK BUF USED BIT 0 H
NIAK UBUF LST 4 H
[B,PORT,PLI] [S,,CN] JDATA 4 H C15
-!(PORT DATA 4 H)

2X4 MIX 74S253 E104
NIAC TDR 06 H
NIAB HTB L
NIAK BUF USED BIT 2 H
NIAK UBUF LST 6 H
[B,PORT,PLI] [S,,CN] JDATA 6 H C17
-!(PORT DATA 6 H)

NIAC TDR 07 H
NIAB TBUF PAR ERR H
NIAK FBUF PAR ERR H
GND
[B,PORT,PLI] [S,,CN] JDATA 7 H C18
-!(PORT DATA 7 H)

REVISIONS

CHK	CHANGE NO.	REV

digital

DRN	DATE	ENG.	DATE
R. NEMET	31-JUL-85	R. Nemet	31-JUL-85
CHK'D	DATE	BOARD LOCATION:	
M. Neal	31-JUL-85	SHEET 1 OF 1	

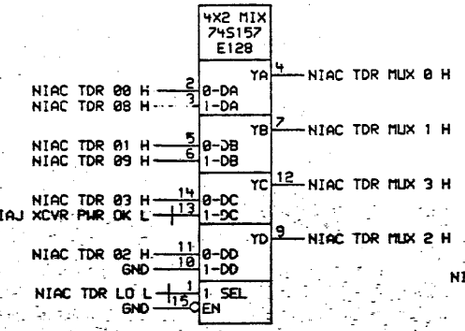
ELF:<COM1>NIAB.DRW 23-MAY-85 10:03 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: NIA20 D-DD-L0072-0

TITLE: XMIT STATUS & PLI MUX

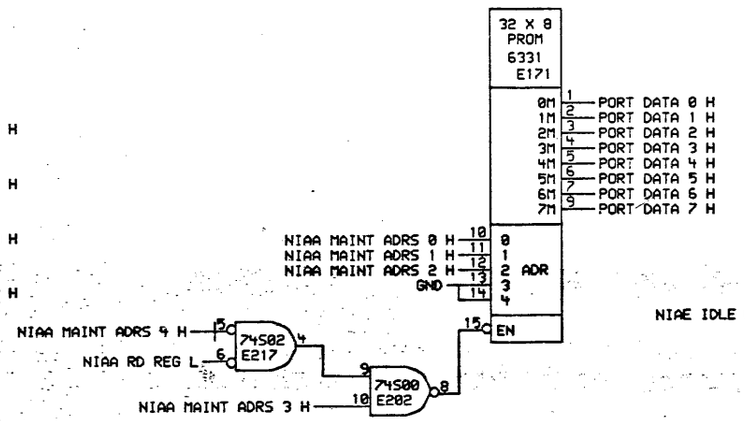
SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAB	B

MRO

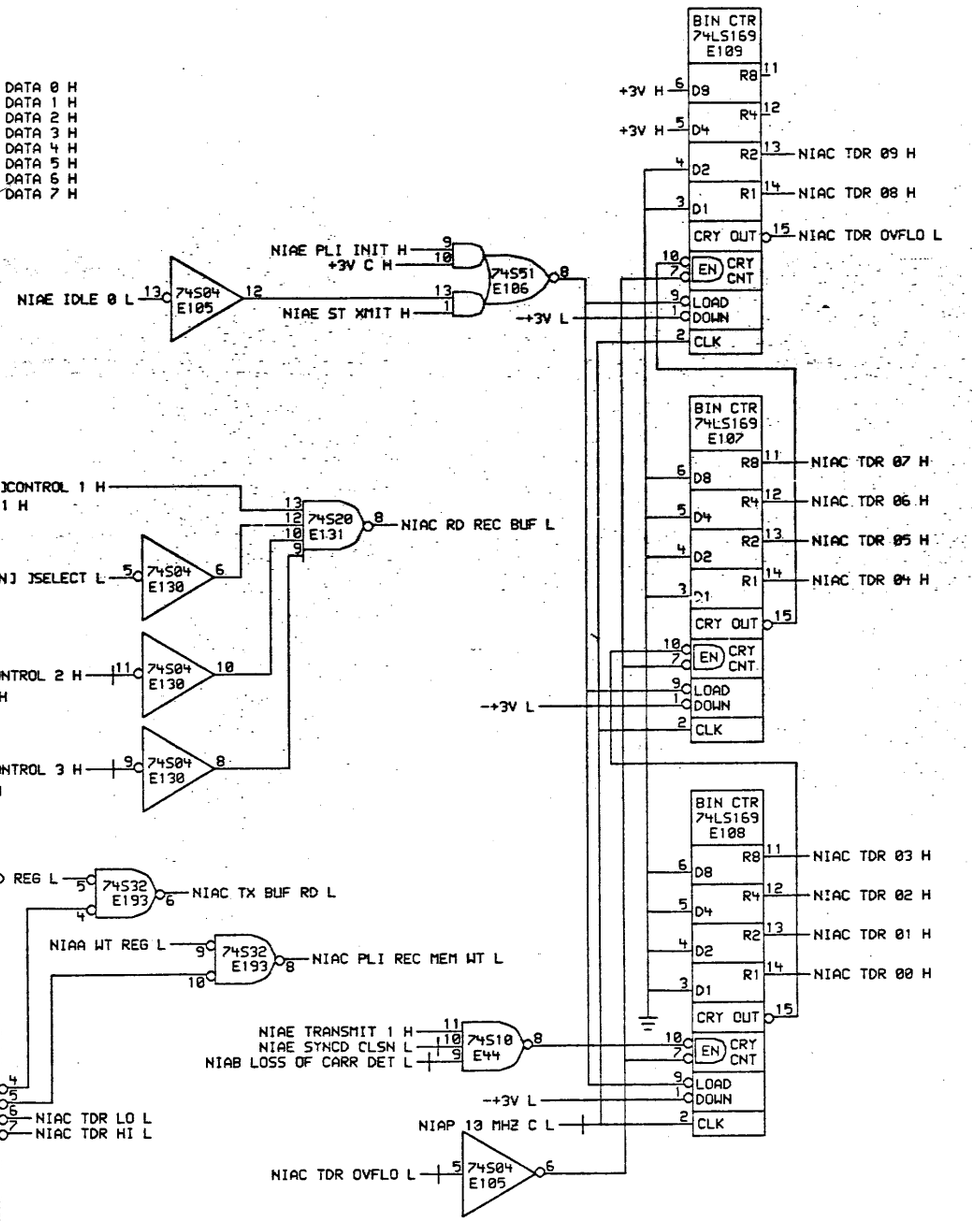
TDR MUX

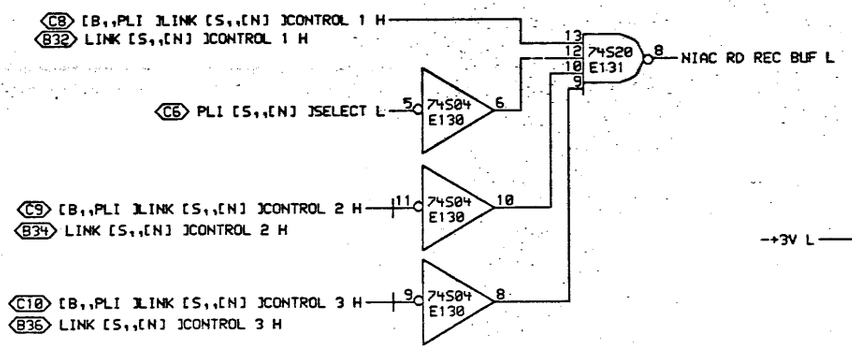


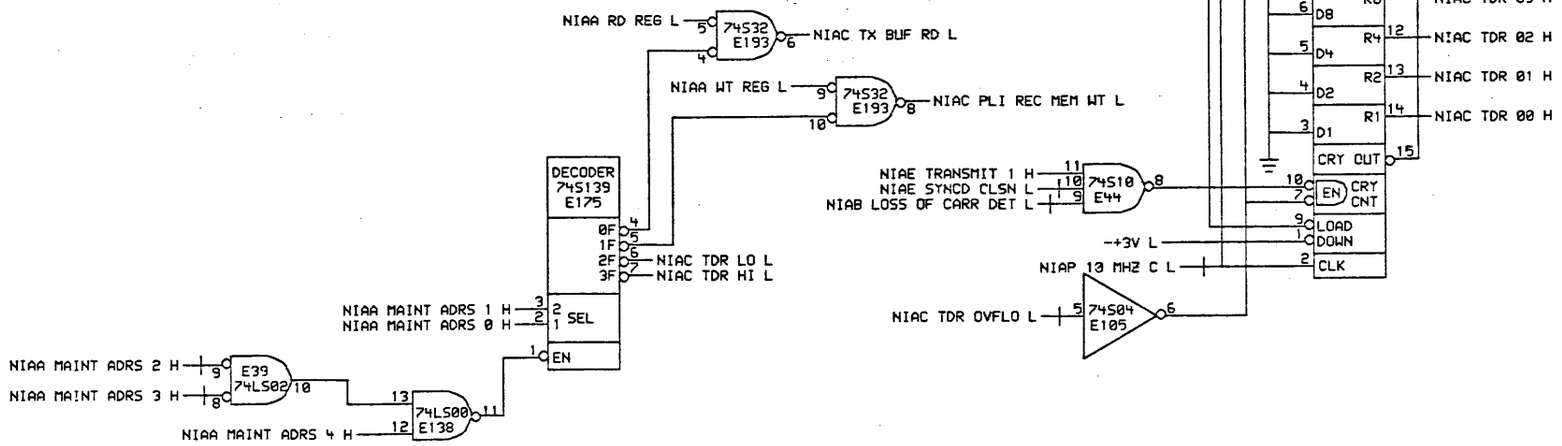
PHYSICAL ADDRESS ROM



TDR REGISTER







REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. R. NEMET — DATE 31-JUL-85 — ENG. — DATE 31-JUL-85
CHK. — DATE 31-JUL-85 — BOARD LOCATION:
ELF:<COM>NIAC.DRW 23-MAY-85 10:04 — SHEET 1 OF 1 — NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: NIA20 — D-DD-L0072-0

TITLE: TDR REG. & PHYS ADDR ROM

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAC	B

MRO

PREAMBLE ROM

32 X 8 PROM 6331 E71

NIAD TBUF 1K SEL L — 74S20 E46
NIAD TBUF 2K SEL L — 74S20 E47
74S04 E45 — 74S04 E45
NIAD TBUF ADRS 10 H
NIAD TBUF ADRS 11 H
74S20 E46

NIAD TBUF ADRS 04 H
NIAD TBUF ADRS 03 H
NIAD TBUF ADRS 02 H
NIAD TBUF ADRS 01 H
NIAD TBUF ADRS 00 H
EN

TBUF DATA 0 H
TBUF DATA 1 H
TBUF DATA 2 H
TBUF DATA 3 H
TBUF DATA 4 H
TBUF DATA 5 H
TBUF DATA 6 H
TBUF DATA 7 H

TRANSMIT SERIALIZER

BIN CTR 74LS169 E117
+3V A H
+3V A H
+3V A H
+3V A H
GND
-NIAE TX ACTIVE L
+3V D H
NIAP 10 MHZ B L
CRY OUT
CRY CNT
LOAD
DOWN
CLK

74S11 E119 — NIAD 8TH BIT H

74S299 E155
R7 R6 R5 R4 R3 R2 R1 R0
NIAD TX SERIAL OUT H

NIAD 8TH BIT H
+3V H
NIAP 10 MHZ B L
+3V H
+3V H
-+3V L
-+3V L
1S 2S CLR CLK ENSF0 7 ENSF7 0 ENO

NIAC TX BUF RD L — 74S04 E154 — NIAD TX BUF RD H

-NIAE TX ACTIVE H — 74S10 E118 — NIAD RESET TBUF ADRS L

NIAE INC RETRY CNTR 3 L
NIAE TX ACTIVE H — 74LS00 E138
NIAD 8TH BIT H
E139 74S00
NIAD 8TH BIT ACTIVE L
NIAP 10 MHZ B L — 74LS109 E136
-+3V A L
-+3V A L
+3V A H
+3V A H
74S74 E116
74S74 E116
NIAE LNK INIT L — E57 74S08
NIAE PLI INIT A L
NIAP 10 MHZ B L
NIAE TX ACTIVE H
E91 74S10 — NIAD EN TBUF ADRS CNTR L
E138 74LS00

NIAA WT XMIT BUF L
NIAA WT TX EOF L — 74S10 E190
NIAA REC TO XMIT BUF L
NIAM A PORT CLK H
NIAE PLI INIT L
74S175 E194

NIAM A PORT CLK H
NIAM PCLK 20 H — 74S51 E176 — NIAD TBUF WE L
NIAM PCLK 20 H
NIAM PCLK 30 H — 74S51 E176 — NIAD TX IN TSE L

NIAD TX BUF RD H
NIAM A PORT CLK H
NIAE PLI INIT L
74S175 E194
NIAD EN TBUF ADRS CNTR L — E131 74S20 — 74S04 E9

NIAA TX BUF DEC L — 74S04 E201
NIAD TX SERIAL OUT H
NIAM A PORT CLK H
NIAE PLI INIT L
74S175 E194

-NIAE ST XMIT H
NIAM PCLK 30 H
NIAE ST XMIT H
-NIAP 10 MHZ B H
GND — 74S64 E156

+3V C H
NIAD TX BUF RD H
NIAM E PORT CLK H
74S74 E146

NIAM PCLK 30 H — 74S04 E157

NIAA RESET TX BUF L — 74S04 E154
NIAM A PORT CLK H
NIAE PLI INIT A L
74S175 E148

NIAD RESET TBUF ADRS L — E139 74S00
NIAA XMIT FRAME H
NIAM A PORT CLK H
NIAD TX FRAME L
NIAE PLI INIT A L
74S175 E148

GND — 74S260 E129 — NIAE PLI INIT H

NIAA CLR RCV BUF L — 74S04 E186 — NIAD RESET BUFFERS H
NIAM A PORT CLK H
NIAE PLI INIT A L
74S175 E148

+3V C H
NIAC PLI REC MEM WT L — 74S74 E146 — NIAD PLI REC MEM WT H, NIAD PLI REC MEM WT L
NIAM E PORT CLK H
NIAE PLI INIT

TRANSMIT BUFFER CONTROL

BIN CTR 74S169 E48
BIN CTR 74S169 E49
BIN CTR 74S169 E50
D8 D4 D2 D1
R8 R4 R2 R1
CRY OUT
CRY CNT
LOAD DOWN
CLK

NIAD TBUF ADRS 11 H
NIAD TBUF ADRS 10 H
NIAD TBUF ADRS 09 H
NIAD TBUF ADRS 08 H
NIAD TBUF ADRS 07 H
NIAD TBUF ADRS 06 H
NIAD TBUF ADRS 05 H
NIAD TBUF ADRS 04 H
NIAD TBUF ADRS 03 H
NIAD TBUF ADRS 02 H
NIAD TBUF ADRS 01 H
NIAD TBUF ADRS 00 H
GND

REVISIONS		
CHK	CHANGE NO.	REV

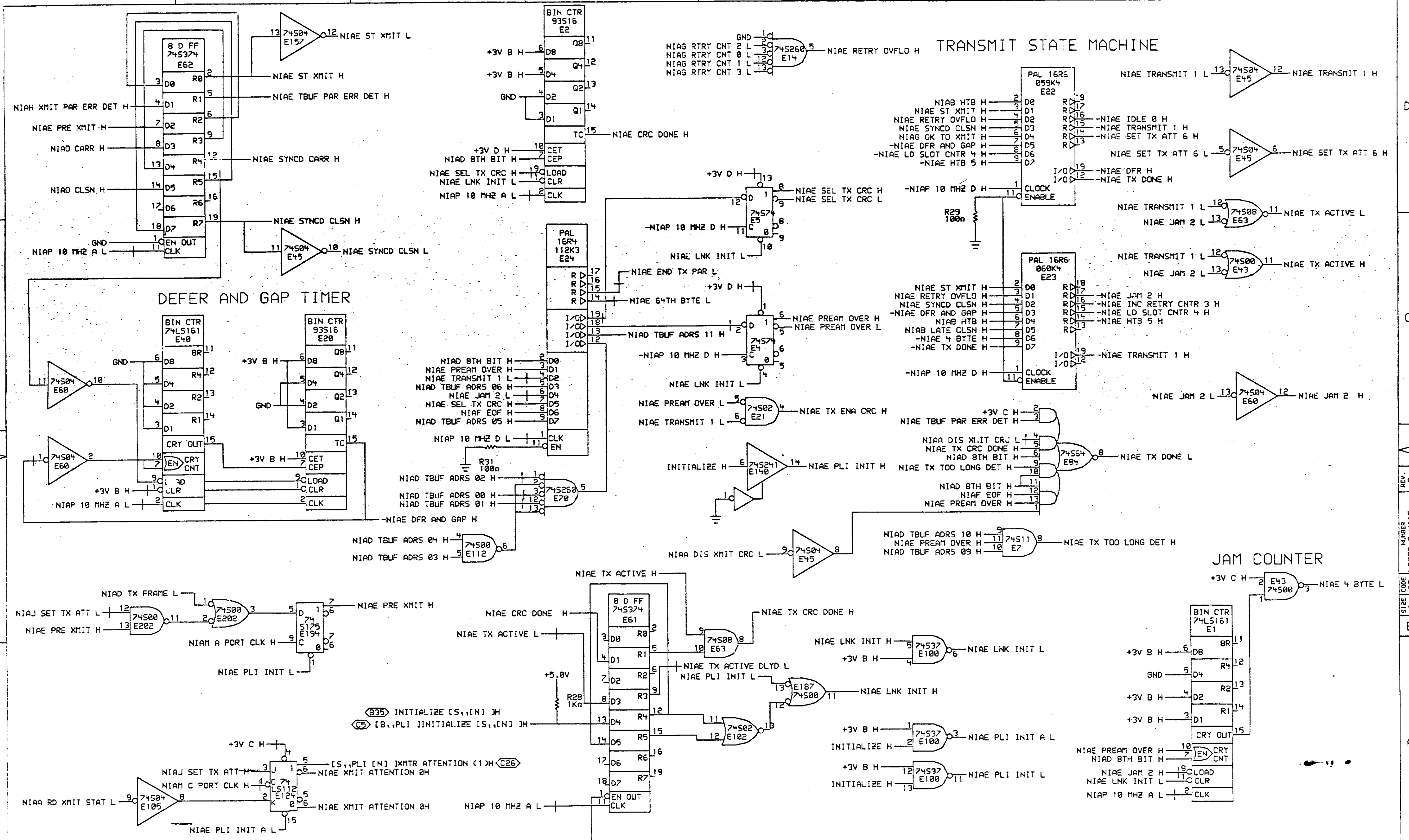
digital

DRN R. NEMET — DATE 31-JUL-85 — ENG. — DATE 31-JUL-85
CHK — DATE 31-JUL-85 — BOARD LOCATION:
ELF:<COM1>NIAD.DRW 23-MAY-85 10:05 — SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: NIA20 — NEXT HIGHER ASSEMBLY: D-DD-L0072-0

TITLE: TRANSMIT BUF TIMING & ADDR COUNTER

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAD	B

MED



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REVISIONS		
CHK	CHANGE NO.	REV

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DRN. R. NEMET — DATE 31-JUL-85 — ENG. R. Nemet — DATE 31-JUL-85
CHK'D — DATE 31-JUL-85 — BOARD LOCATION: S-FEET 1 OF 1
ELF:<COM1>NIAE.DRW 23-MAY-85 10:06 — NEXT HIGHER ASSEMBLY: D-DD-L0072-0
FIRST USED ON OPTION/MODEL: NIA20

TITLE: TRANSMIT CONTROL LOGIC

SIZE D — CODE CS — NUMBER L0072-0-NIAE — REV. B

TRANSMIT MEMORY

NIAF TBUF PAR H
NIAF ECF H

45nS 1024 X 4 RAM 2148 E66 / E69 / E65 / E67 / E68 / E64

NIAD TBUF ADRS 00 H
NIAD TBUF ADRS 01 H
NIAD TBUF ADRS 02 H
NIAD TBUF ADRS 03 H
NIAD TBUF ADRS 04 H
NIAD TBUF ADRS 05 H
NIAD TBUF ADRS 06 H
NIAD TBUF ADRS 07 H
NIAD TBUF ADRS 08 H
NIAD TBUF ADRS 09 H
NIAD TBUF 1K SEL L
NIAD TBUF WE L
NIAD TBUF 2K SEL L

4 D FF 2918 E133

<B20> PORT [S,,CN] JDATA 0 H
<C11> [B,PORT,PLI] [S,,CN] JDATA 0 H
<B22> PORT [S,,CN] JDATA 2 H
<C22> [B,PORT,PLI] [S,,CN] JDATA 2 H
<B24> PORT [S,,CN] JDATA 3 H
<C14> [B,PORT,PLI] [S,,CN] JDATA 3 H
<B21> PORT [S,,CN] JDATA 1 H
<C12> [B,PORT,PLI] [S,,CN] JDATA 1 H
NIAM C PORT CLK H
NIAD TX IN TSE L

NIAF D PORT DATA 0 H
NIAF D PORT DATA 2 H
NIAF D PORT DATA 3 H
NIAF D PORT DATA 1 H

TBUF DATA 0 H
TBUF DATA 2 H
TBUF DATA 3 H
TBUF DATA 1 H
TBUF DATA 4 H
TBUF DATA 5 H
TBUF DATA 6 H
TBUF DATA 7 H

4 D FF 2918 E134

<B27> PORT [S,,CN] JDATA 7 H
<C18> [B,PORT,PLI] [S,,CN] JDATA 7 H
<B29> PORT [S,,CN] JDATA 6 H
<C17> [B,PORT,PLI] [S,,CN] JDATA 6 H
<B26> PORT [S,,CN] JDATA 4 H
<C15> [B,PORT,PLI] [S,,CN] JDATA 4 H
<B25> PORT [S,,CN] JDATA 5 H
<C21> [B,PORT,PLI] [S,,CN] JDATA 5 H

NIAF D PORT DATA 7 H
NIAF D PORT DATA 6 H
NIAF D PORT DATA 4 H
NIAF D PORT DATA 5 H

NIAA WT TX EOF L
7450A E154
7458G E94
NIAL XMIT PAR H

4 D FF 2918 E132

NIAF D PB PARITY H
NIAM C PORT CLK H

4 D FF 2918 E174

NIAF END TX FRAME H
NIAF TBUF PARITY H
NIAM PCLK 140 H
NIAC TX BUF RD L

4 D FF 2918 E172

PORT [S,,CN] JDATA 2 H <B22>
[B,PORT,PLI] [S,,CN] JDATA 2 H <C22>
PORT [S,,CN] JDATA 0 H <B20>
[B,PORT,PLI] [S,,CN] JDATA 0 H <C11>
PORT [S,,CN] JDATA 1 H <B21>
[B,PORT,PLI] [S,,CN] JDATA 1 H <C12>
PORT [S,,CN] JDATA 3 H <B24>
[B,PORT,PLI] [S,,CN] JDATA 3 H <C14>

4 D FF 2918 E173

PORT [S,,CN] JDATA 4 H <B26>
[B,PORT,PLI] [S,,CN] JDATA 4 H <C15>
PORT [S,,CN] JDATA 6 H <B29>
[B,PORT,PLI] [S,,CN] JDATA 6 H <C17>
PORT [S,,CN] JDATA 7 H <B27>
[B,PORT,PLI] [S,,CN] JDATA 7 H <C18>
PORT [S,,CN] JDATA 5 H <B25>
[B,PORT,PLI] [S,,CN] JDATA 5 H <C21>

REVISIONS		
CHK	CHANGE NO.	REV

DRN R. NEMET	DATE 31-JUL-85	ENG.	DATE 31-JUL-85	TITLE: TRANSMIT BUFFER
	DATE 31-JUL-85	BOARD LOCATION: SHEET 1 OF 1		
ELF:<COM1>NIAF.DRW 23-MAY-85 12:48		NEXT HIGHER ASSEMBLY: D-DD-L0072-0		SIZE D / CODE CS / NUMBER L0072-0-NIAF / REV. B
FIRST USED ON OPTION/MODEL: NIA22				

MRO

RANDOM NUMBER GENERATOR/RETRY COUNTER

FORCE COLLISION REGISTER

NIAJ SYNC TRANSMIT 1 H
TBUF DATA 0 H
TBUF DATA 1 H
TBUF DATA 2 H
→ 74S20 E47

PAL 16R4 107K3 E143

C7 [B,,PLI JLINK [S,,[N] JCONTROL 0 H
B31 LINK [S,,[N] JCONTROL 0 H
C8 [B,,PLI JLINK [S,,[N] JCONTROL 1 H
B32 LINK [S,,[N] JCONTROL 1 H
C9 [B,,PLI JLINK [S,,[N] JCONTRDL 2 H
B34 LINK [S,,[N] JCONTROL 2 H
C10 [B,,PLI JLINK [S,,[N] JCONTROL 3 H
B36 LINK [S,,[N] JCONTROL 3 H
C6 PLI [S,,[N] JSELECT L
NIAA SELECT CTR L
PORT DATA 0 H
PORT DATA 1 H
NIAM B PORT CLK H

R R R R → -NIAG PRESET PRNG H
I/O I/O I/O I/O → -NIAE TX ACTIVE H, -NIAD EN TBUF ADRS CNTR H, -NIAE PLI INIT H
D0 D1 D2 D3 D4 D5 D6 D7
CLK EN

→ 74S04 E186 → NIAG FORCE CLSN H

SLOT TIMER

BIN CTR 74LS161 E12
+3V D H
+3V C H
8R R4 R2 R1 CRY OUT
D8 D4 D2 D1
EN CRY CNT
LOAD CLR CLK

→ NIAG OK TO XMIT L
→ NIAE LNK INIT L
→ NIAP 10 MHZ E L

BIN CTR 74LS161 E13
+3V C H
→ NIAG OK TO XMIT L
→ +3V D H
→ NIAG OK TO XMIT L

RETRY LOGIC

74S10 E44

PAL 16R8 084K5 E30
NIAG RTRY CNT 3 L
NIAG RTRY CNT 2 L
NIAG RTRY CNT 1 L
NIAG RTRY CNT 0 L
NIAG RV 5 L
D0 D1 D2 D3 D4 D5 D6 D7 CLOCK ENABLE
R R R R R R R R → NIAG RV 9 L, NIAG RV 8 L, NIAG RV 7 L, NIAG RV 6 L

BIN CTR 74LS161 E11
+3V D H
8R R4 R2 R1 CRY OUT → NIAG OK TO XMIT H
D8 D4 D2 D1
EN CRY CNT
LOAD CLR CLK

74S04 E60 → NIAG RB 1 L

74S02 E80
NIAG RTRY CNT 0 L
NIAE RETRY OVFLO H
E80 74S22 → NIAG RB 0 L

PAL 16R8 083K5 E27
NIAG RV 1 L
D0 D1 D2 D3 D4 D5 D6 D7 CLOCK ENABLE
R R R R R R R R → NIAG RV 5 L, NIAG RV 4 L, NIAG RV 3 L, NIAG RV 2 L

PAL 16R8 082K5 E26
NIAG RV 4 L
NIAG RV 5 L
NIAG RV 3 L
NIAG RV 2 L
NIAG RV 6 L
NIAG RV 0 L
+3V D H
NIAG RV 8 L
NIAG RV 7 L
NIAG RV 1 L
NIAG RV 9 L
→ 74S133 E8 →
D0 D1 D2 D3 D4 D5 D6 D7 CLOCK ENABLE
NIAG RV 9 L
NIAG RV 6 L
NIAE LNK INIT L
NIAE ST XMIT H
NIAE INC RETRY CNTR 3 L
NIAG PRESET PRNG L
NIAP 10 MHZ F L
R32 100Ω
R R R R R R R R → NIAG RV 1 L, NIAG RV 0 L, NIAG RTRY CNT 3 L, NIAG RTRY CNT 2 L, NIAG RTRY CNT 1 L, NIAG RTRY CNT 0 L

NIAE ST XMIT H
NIAE LD SLOT CNTR 4 L
→ 74S08 E34 →

NIAG OK TO XMIT H → 74S04 E9 → NIAG OK TO XMIT L

REVISIONS		
CHK	CHANGE NO.	REV

DRN. R. NEMET	DATE 31-JUL-85	ENG. K. Nemet	DATE 31-JUL-85
CHK'D	DATE 31-JUL-85	BOARD LOCATION: SHEET 1 OF 1	
ELF:<COM1>NIAG.DRW 23-MAY-85 10:48		NEXT HIGHER ASSEMBLY:	
FIRST USED ON OPTION/MODEL: NIA20		D-DD-L0072-0	

TITLE: RETRY LOGIC

SIZE	CODE	NUMBER	REV.
D	CS	L0072-2-NIAG	B

MRO

TRANSMIT PARITY CHECKER

+3V B H
NIAF TBUF PAR H
NIAH EN TBUF ADRS CNTR H
+3V B H
74S74 E41
8-BIT SFT REG 74S299A E25
PARITY 93S48 E6
EVEN / ODD
7R 6R 5R 4R 3R 2R 1R 0R
D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11
GND GND
+3V C H
GND
1S 2S
CLR
NIAP 10 MHZ F L
CLK
NIAD TX SERIAL OUT H
ENSF0 7
ENSF7 0
ENO

NIAH EN TBUF PAR L
74S02 E21
NIAH XMIT PAR ERR DET H

+3V B H
NIAF EOF H
NIAH EN TBUF ADRS CNTR H
+3V B H
74S74 E41

CRC TX/RX MUX

4X2 MIX 74S257 E28
NIAO RCV CLK H
NIAP 10 MHZ F L
NIAO RX SERIAL OUT H
NIAD TX SERIAL OUT H
GND
NIAH SEL TX CRC H
NIAI START FR H
NIAE TX ENA CRC H
0-DA 1-DA 0-DB 1-DB 0-DC 1-DC 0-DD 1-DD 1 SEL
YA YB YC YD
EN
R34 100Ω

NIAE TRANSMIT 1 H
NIAA DIS XMIT CRC L
74LS08 E86

NIAD EN TBUF ADRS CNTR L
74S04 E60
NIAH EN TBUF ADRS CNTR H

+3V D H
NIAE TX ENA CRC H
NIAD 8TH BIT H
NIAE END TX PAR L
74S10 E44
74S74 E4
NIAP 10 MHZ F L
NIAH EN TBUF PAR L
NIAE LNK INIT L

NIAE SEL TX CRC L
74S04 E105
NIAH SEL TX CRC H

CRC GENERATOR/CHECKER

+5.0V
R35 180Ω
R150 390Ω
+3V H
GND

PAL 16R8 071K5 E73
PAL 16R8 071K5 E32
PAL 16R8 072K5 E31
PAL 16R8 072K5 E89
D0 D1 D2 D3 D4 D5 D6 D7
R R R R R R R R
CLOCK ENABLE
R33 100Ω

74S04 E9
74S260 E52
74S260 E52
74S260 E14
74S260 E70
74S133 E51
74S51 E105

+3V H
-NIAI RCV BYTE STB H
NIAE LNK INIT L
74S74 E200
NIAH CRC OK H
NIAH CRC OK L
74S20 E53

NIAH SEL TX CRC H
NIAE SEL TX CRC L
NIAD TX SERIAL OUT H
NIAH TX STR L

REVISIONS		
CHK	CHANGE NO.	REV

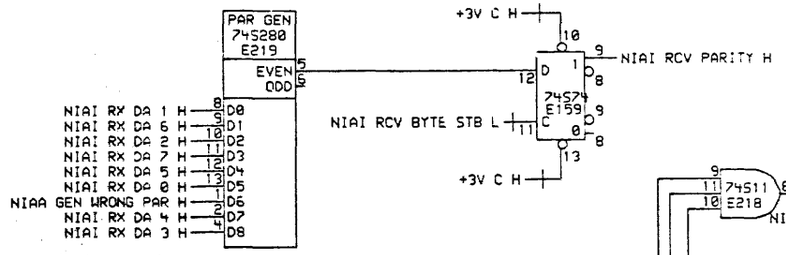
DRN R. NEMET | DATE 31-JUL-85 | ENG. | DATE 31-JUL-85
DATE | BOARD LOCATION: | SHEET 1 OF 1
ELF:<COM1>NIAH.DRW 23-MAY-85 10:50 | NEXT HIGHER ASSEMBLY: D-DD-L0072-0
FIRST USED ON OPTION/MODEL: NIA20

TITLE: CRC LOGIC

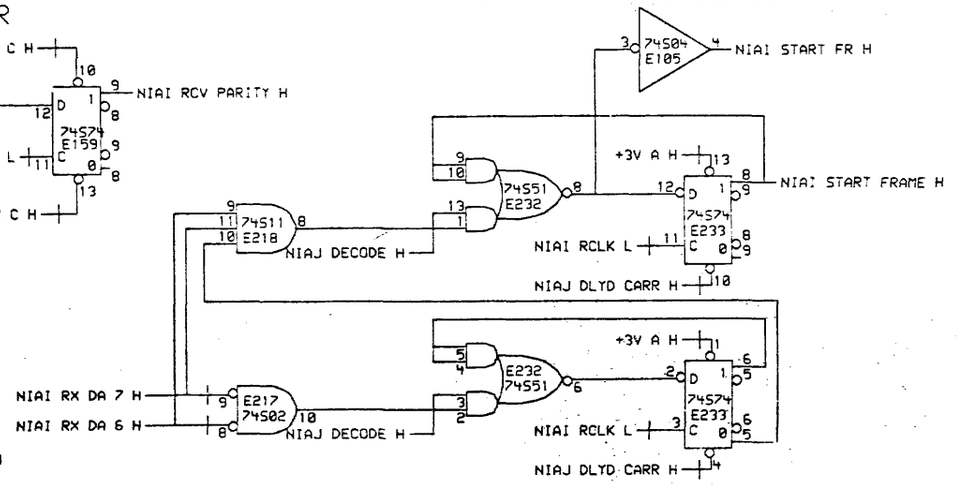
SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAH	B

mRO

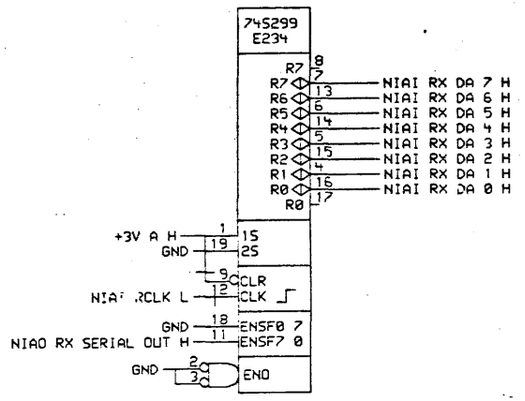
RECEIVER PARITY GENERATOR

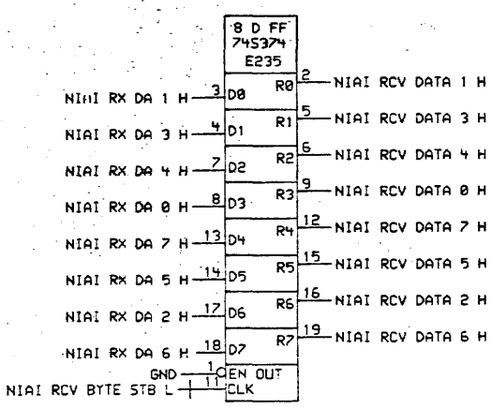


START FRAME DETECTOR

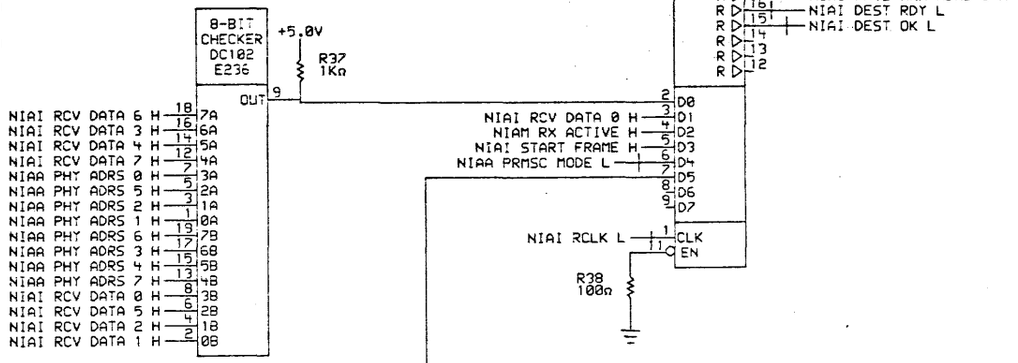


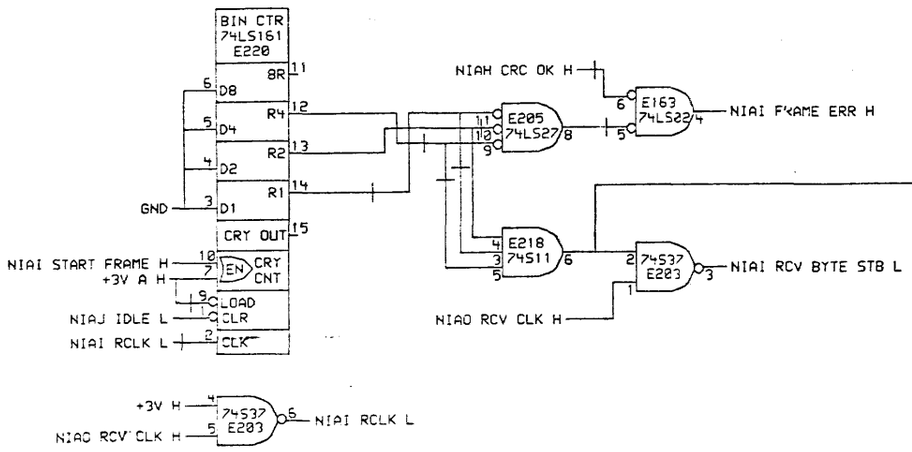
RECEIVE DESERIALIZER





RECEIVE ADDRESS COMPARE





REVISIONS		
CHK	CHANGE NO.	REV

DRN R. NEMET | DATE 31-JUL-85 | ENG. | DATE 31-JUL-85 | DATE 31-JUL-85 | BOARD LOCATION: | SHEET 1 OF 1

ELF:<COM>NIAI.DRW 23-MAY-85 10:56 | NEXT HIGHER ASSEMBLY: D-DD-L0272-0 | FIRST USED ON OPTION/MODEL: NIA20

TITLE: RX SHIFT, FRAMING & ADDRESS COMPARE

SIZE D | CODE CS | NUMBER L0072-0-NIAI | REV. B

MRO

8 D FF 74S374 E88
NIAJ SYNC TRANSMIT 1 H
NIAJ DLYD CARR H
NIAJ XCVR PWR OK L
NIAP NO XCVR PWR H
NIAO CARR H
NIAE TRANSMIT 1 H
GND
NIAM A PORT CLK H
EN OUT
CLK

74S04 E201
NIAJ SET TX ATT H
NIAJ SET TX ATT L

8 D FF 74S374 E85
NIAM DLYD RCV MEM EN L
NIAI DEST RDY L
NIAK FBUF OR L
NIAE SET TX ATT 6 H
NIAJ DLYD RX MEM EN L
NIAJ SYNC DEST RDY L
NIAJ SYNC FBUF OR L
NIAJ SET TX ATT H

+3V C H
NIAM RUNT DET L
NIAJ RX WT MEM H
74S74 E170
NIAJ RUNT L
NIAJ IDLE L

+3V C H
NIAM FRAME TOO LONG DET L
NIAJ RX WT MEM H
74S74 E170
NIAJ FRAME TOO LONG H
NIAJ FRAME TOO LONG L
NIAJ IDLE L

NIAK FB PAR ERR H
74S02 E188
NIAJ RX WT MEM H

RECEIVE MEMORY STATE MACHINE

74S04 E186
NIAJ NO FBUF H

PAL 16R4 112K3 E144
NIAJ LD NEW BUF L
NIAJ NO FBUF L
NIAJ DECODE L
NIAJ GET NEW BUF L
NIAJ RX EOF L
NIAJ IDLE L

NIAJ SYNC FBUF OR L
NIAJ BUF OVFLO H
NIAJ RUNT L
NIAJ FRAME TOO LONG H
NIAE PLI INIT L
NIAJ MATCH L
NIAJ NO MATCH L
NIAM E PORT CLK H

NIAA ENABLE LINK H
NIAJ DLYD CARR H
74S00 E187

RECEIVE STATE MACHINE

PAL 16R8 086K5 E145
74S04 E201
NIAJ DECODE H
NIAJ IDLE L
NIAJ DECODE L
NIAJ NO MATCH L
NIAJ MATCH L
NIAJ RX EOF L

NIAJ RUNT L
NIAE PLI INIT L
NIAI DEST OK L
NIAJ BUF OVFLO H
NIAJ SYNC DEST RDY L
NIAA ENA LNK L
NIAM E PORT CLK H

74S04 E154
NIAJ RX EOF H

R39 100Ω

+3V A H
NIAI RCV BYTE STB L
NIAM PCLK 180 H
74LS74 E204
74S74 E192
NIAM PCLK 200 H
+3V A H
74S74 E197
NIAM B PORT CLK H
+3V A H
+3V B H
74S74 E142
+3V B H

E138 74LS00

USED BUFFER COUNTER

BIN CTR 74LS161 E147
8R
D8
R4 NIAJ BUF USED 2 H
D4
R2 NIAJ BUF USED 1 H
D2
R1 NIAJ BUF USED 0 H
GND
D1
CRY OUT
+3V C H
+3V C H
EN CRY CNT
+3V C H
LOAD
NIAJ IDLE L
CLR
NIAJ BUF OVFLO H
CLK

+3V H
NIAM BUF OVFLO DET L
74S74 E200
NIAJ BUF OVFLO H
NIAD PLI REC MEM WT H
74S32 E193
NIAE PLI INIT L
NIAJ LD NEW BUF L
74LS08 E196

NIAJ DLYD RX MEM EN L
+3V H
74S10 E91
NIAJ WT RX MEM EN H
NIAJ LD NEW BUF L
NIAM WT RCV MEM EN H
+3V H
74S12 E91

REVISIONS		
CHK	CHANGE NO.	REV

DRN R. NEMET | DATE 31-JUL-85 | ENG | DATE 31-JUL-85 | DATE 31-JUL-85 | BOARD LOCATION: | SHEET 1 OF

TITLE: REC & RX MEM CONTROL LOGIC

ELF:<COM>NIAJ.DRW 23-MAY-85 10:56 | NEXT HIGHER ASSEMBLY: D-DD-L0072-0

FIRST USED ON OPTION/MODEL: NIA20

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAJ	B

mro

FREE BUFFER LIST

USED BUFFER LIST

RECEIVE STATUS FIFO

64 X 4 FIFO 67401 E114
NIAA B PORT DATA 5 H
NIAA B PORT DATA 4 H
<C19> PLI [S,,CN] JTRANSMIT DATA PAR H
NIAA B PORT DATA 6 H
D0 D1 D2 D3
DOUT 0 DOUT 1 DOUT 2 DOUT 3
NIAK FBUF LST 5 H
NIAK FBUF LST 4 H
NIAK FBUF PAR H
NIAK FBUF LST 6 H
SIN SO
RDY IN RDY OUT
CLR
NIAD RESET BUFFERS H
NIAE PLI INIT H
74S02 E168

64 X 4 FIFO 67401 E115
NIAA B PORT DATA 3 H
NIAA B PORT DATA 0 H
NIAA B PORT DATA 1 H
NIAA B PORT DATA 2 H
NIAK FBUF LST 3 H
NIAK FBUF LST 0 H
NIAK FBUF LST 1 H
NIAK FBUF LST 2 H
NIAM A PORT CLK L
NIAA WT FREE BUF LST L
74S02 E16?
NIAA RD UBUF LST L
74S02 E168

+3V B H
NIAJ GET NEW BUF L
NIAM B PORT CLK H
74S74 E142

PAR GEN 74S280 E113
EVEN ODD
NIAK FBUF LST 2 H
NIAK FBUF LST 1 H
NIAK FBUF LST 0 H
NIAK FBUF PAR H
NIAK FBUF LST 4 H
NIAK FBUF LST 5 H
GND
NIAK FBUF LST 6 H
NIAK FBUF LST 3 H
D0 D1 D2 D3 D4 D5 D6 D7 D8

NIAM PCLK 40 H
74S04 E186
74S00 E112
NIAK FBUF OR L
74S10 E118
NIAK LD NEW BUF H
NIAJ LD NEW BUF L
74S04 E157
NIAK LD NEW BUF H

64 X 4 FIFO 67401 E110
D0 D1 D2 D3
DOUT 0 DOUT 1 DOUT 2 DOUT 3
NIAK UBUF LST 6 H
NIAK UBUF PAR H
NIAK UBUF LST 5 H
NIAK UBUF LST 4 H
SIN SO
RDY IN RDY OUT
CLR
NIAM PCLK 20 H
NIAJ RX EOF H
74S08 E178

64 X 4 FIFO 67401 E149
D0 D1 D2 D3
DOUT 0 DOUT 1 DOUT 2 DOUT 3
NIAK UBUF LST 0 H
NIAK UBUF LST 1 H
NIAK UBUF LST 3 H
NIAK UBUF LST 2 H
SIN SO
RDY IN RDY OUT
CLR

NIAA CLR RCV BUF L
NIAA RESET REC ATT L
74S00 E187
74S74 E148
NIAM A PORT CLK H
NIAE PLI INIT A L

+3V A H
E139 74S00
74S74 E159
NIAK FB PAR ERR H
NIAK LD NEW BUF H

64 X 4 FIFO 67401 E165
D0 D1 D2 D3
NIAJ FRAME TOO LONG H
NIAJ FRAME ERR H
NIAH CRC OK L
NIAJ NO FBUF H
DOUT 0 DOUT 1 DOUT 2 DOUT 3
NIAK F LENGTH ERR H
NIAK P FRAME ERR H
NIAK CRC ERR H
NIAK FBUF EMPTY H
SIN SO
RDY IN RDY OUT
CLR
74LS08 E181
<C25> BUFFER [S,,CN] JB BUS H
-!(PFE H)
74LS08 E181
<C32> BUFFER [S,,CN] JA BUS H
-!(FBUFE H)

64 X 4 FIFO 67401 E127
D0 D1 D2 D3
NIAJ BUF USED 2 H
NIAJ BUF USED 1 H
NIAJ BUF USED 0 H
NIAK FB PAR ERR H
DOUT 0 DOUT 1 DOUT 2 DOUT 3
NIAK BUF USED BIT 2 H
NIAK BUF USED BIT 1 H
NIAK BUF USED BIT 0 H
NIAK FBUF PAR ERR H
SIN SO
RDY IN RDY OUT
CLR
74LS08 E181
<C37> XMTR [S,,CN] JBUS
-!(CSB? OR FPE H)
E167 74S20

+3V B H
74S74 E141
74S112 E123
<C27> PLI [S,,CN] JRCVR BUF A FULL H
-!(REC ATT H)
NIAE PLI INIT L
NIAM B PORT CLK H
NIAE PLI INIT H
74S02 E102

REVISIONS
CHK CHANGE NO. REV

DRN R. NEMET 31-JUL-85
ENG K. Nemet 31-JUL-85
DATE 3-JUL-85
BOARD LOCATION:
SHEET 1 OF 1
ELF:(COM)NIAK.DRW 23-MAY-85 10:56
NEXT HIGHER ASSEMBLY: D-DD-L0072-0
FIRST USED ON OPTION/MODEL: NIA20

TITLE: RCV STAT & FREE USED BUF LISTS
SIZE D | CODE CS | NUMBER L0072-0-NIAK | REV. B

mro

RECEIVE MEMORY READ ADDRESS COUNTER

BIN CTR 93S16 E19
GND → D8
GND → D4
GND → D2
GND → D1
NIAL RM RD ADRS 03 H ← Q8
NIAL RM RD ADRS 02 H ← Q4
NIAL RM RD ADRS 01 H ← Q2
NIAL RM RD ADRS 00 H ← Q1
TC
NIAL RD REC BUF H → CET, CEP
NIAA WT REC BUF ADRS L → LOAD
NIAE PLI INIT A L → CLR
NIAM D PORT CLK H → CLK

BIN CTR 93S16 E37
GND → D8
GND → D4
GND → D2
GND → D1
NIAL RM RD ADRS 07 H ← Q8
NIAA B PORT DATA 3 H
NIAL RM RD ADRS 06 H ← Q4
NIAA B PORT DATA 2 H
NIAL RM RD ADRS 05 H ← Q2
NIAA B PORT DATA 1 H
NIAL RM RD ADRS 04 H ← Q1
NIAA B PORT DATA 0 H
TC
CET, CEP
LOAD ← NIAE PLI INIT A L
CLR
CLK

BIN CTR 93S16 E56
D8, D4, D2, D1
NIAL RM RD ADRS 11 H ← Q8
NIAL RM RD ADRS 10 H ← Q4
NIAL RM RD ADRS 09 H ← Q2
NIAA B PORT DATA 5 H
NIAL RM RD ADRS 08 H ← Q1
NIAA B PORT DATA 4 H
TC
CET, CEP
LOAD ← NIAE PLI INIT A L
CLR
CLK

BIN CTR 93S16 E18
GND → D8
GND → D4
NIAL RM RD ADRS 13 H ← Q2
NIAL RM RD ADRS 12 H ← Q1
TC
CET, CEP
LOAD ← NIAE PLI INIT A L
CLR
CLK

RECEIVE MEMORY WRITE ADDRESS COUNTER

BIN CTR 93S16 E35
GND → D8
GND → D4
GND → D2
GND → D1
NIAL RM WT ADRS 03 H ← Q8
NIAL RM WT ADRS 02 H ← Q4
NIAL RM WT ADRS 01 H ← Q2
NIAL RM WT ADRS 00 H ← Q1
TC
NIAJ WT RX MEM EN H → CET, CEP
NIAJ LD NEW BUF L → LOAD
NIAE PLI INIT A L → CLR
NIAM INC WT ADRS L → CLK

BIN CTR 93S16 E54
D8, D4, D2, D1
NIAL RM WT ADRS 07 H ← Q8
NIAK FBUF LST 3 H
NIAL RM WT ADRS 06 H ← Q4
NIAK FBUF LST 2 H
NIAL RM WT ADRS 05 H ← Q2
NIAK FBUF LST 1 H
NIAL RM WT ADRS 04 H ← Q1
NIAK FBUF LST 0 H
TC
CET, CEP
LOAD ← NIAE PLI INIT A L
CLR
CLK

BIN CTR 93S16 E74
D8, D4, D2, D1
NIAL RM WT ADRS 11 H ← Q8
NIAL RM WT ADRS 10 H ← Q4
NIAL RM WT ADRS 09 H ← Q2
NIAK FBUF LST 5 H
NIAL RM WT ADRS 08 H ← Q1
NIAK FBUF LST 4 H
TC
CET, CEP
LOAD ← NIAE PLI INIT A L
CLR
CLK

BIN CTR 93S16 E15
GND → D8
GND → D4
NIAL RM WT ADRS 13 H ← Q2
NIAL RM WT ADRS 12 H ← Q1
TC
CET, CEP
LOAD ← NIAE PLI INIT A L
CLR
CLK

RECEIVE MEMORY OUTPUT BUFFERS

6 D FF 74S174 E38
NIAN B RCV DATA 1 H → D0
NIAN B RCV DATA 0 H → D1
NIAN B RCV DATA 2 H → D2
NIAN B RCV DATA 3 H → D3
NIAN B RCV DATA 4 H → D4
NIAN B RCV DATA 5 H → D5
+3V D H → CLR
CLK
R0, R1, R2, R3, R4, R5

8 D FF 74S374 E75
D0, D1, D2, D3, D4, D5, D6, D7
R0 → PORT [S,,[N] JDATA 1 H (B21) [B,PORT,PLI] [S,,[N] JDATA 1 H (C12)
R1 → PORT [S,,[N] JDATA 0 H (B20) [B,PORT,PLI] [S,,[N] JDATA 0 H (C11)
R2 → PORT [S,,[N] JDATA 3 H (B24) [B,PORT,PLI] [S,,[N] JDATA 3 H (C14)
R3 → PORT [S,,[N] JDATA 6 H (B28) [B,PORT,PLI] [S,,[N] JDATA 6 H (C17)
R4 → PORT [S,,[N] JDATA 7 H (B27) [B,PORT,PLI] [S,,[N] JDATA 7 H (C18)
R5 → PORT [S,,[N] JDATA 2 H (B22) [B,PORT,PLI] [S,,[N] JDATA 2 H (C22)
R6 → PORT [S,,[N] JDATA 4 H (B26) [B,PORT,PLI] [S,,[N] JDATA 4 H (C15)
R7 → PORT [S,,[N] JDATA 5 H (B25) [B,PORT,PLI] [S,,[N] JDATA 5 H (C21)
NIAC RD REC BUF L → EN OUT
CLK

6 D FF 74S174 E59
NIAN B RCV DATA 6 H → D0
NIAN B RCV PARITY H → D1
NIAN B END OF FRAME H → D2
NIAN B RCV DATA 7 H → D3
+3V D H → D4
NIAM RM ADRS SEL H → D5
CLR
CLK
R0, R1, R2, R3, R4, R5

74S86 E94

8 D FF 74S374 E93
D0, D1, D2, D3, D4, D5, D6, D7
R0, R1, R2, R3, R4, R5, R6, R7
R3 → NIAL L END OF FRAME H
R4 → NIAL L RCV PARITY H
EN OUT
CLK

NIAM PCLK 100 H → E196 74LS08
NIAM PCLK 10 H → 74S04 E157

+5.0V
R45 180Ω → +3V D H
R44 180Ω → +3V C H
R41 180Ω → +3V B H
R153 390Ω
R152 390Ω
R151 390Ω

2X4 MIX 74S153 E111

(C19) PLI [S,,[N] JTRANSMIT DATA PAR H → 0-DA
NIAL L RCV PARITY H → 1-DA
GND → 2-DA
GND → 3-DA
EN
YA → NIAL XMIT PAR H
YB → PLI [S,,[N] JRECEIVE DATA PAR H (C20)
NIAL L RCV PARITY H → 0-DB
NIAK UBUF PAR H → 1-DB
NIAF TBUF PARITY H → 2-DB
GND → 3-DB
EN
SEL

PAR GEN 74S280 E90

EVEN, ODD
(B28) PORT [S,,[N] JDATA 6 H
(C17) [B,PORT,PLI] [S,,[N] JDATA 6 H → D0
(B27) PORT [S,,[N] JDATA 7 H
(C18) [B,PORT,PLI] [S,,[N] JDATA 7 H → D1
(B26) PORT [S,,[N] JDATA 4 H
(C15) [B,PORT,PLI] [S,,[N] JDATA 4 H → D2
(B25) PORT [S,,[N] JDATA 5 H
(C21) [B,PORT,PLI] [S,,[N] JDATA 5 H → D3
(B22) PORT [S,,[N] JDATA 2 H → D4
(C22) [B,PORT,PLI] [S,,[N] JDATA 2 H → D5
(B21) PORT [S,,[N] JDATA 1 H → D6
(C12) [B,PORT,PLI] [S,,[N] JDATA 1 H → D7
(B20) PORT [S,,[N] JDATA 0 H → D8
(C11) [B,PORT,PLI] [S,,[N] JDATA 0 H
(B24) PORT [S,,[N] JDATA 3 H
(C14) [B,PORT,PLI] [S,,[N] JDATA 3 H

NIAC RD REC BUF L → 74S04 E9 → NIAL RD REC BUF H

NIAA RD UBUF LST L → 74S00 E112
NIAC TX BUF RD L → 74S00 E112
NIAC RD REC BUF L → SEL

+3V A H → D
NIAL L END OF FRAME H → C
74LS74 E204

NIAE LNK INIT L → 74LS08 E196
NIAA WT REC BUF ADRS L

4X2 MIX 74S157 E216

NIAF END TX FRAME H → 0-DA
1-DA
YA → PLI [S,,[N] JRCVR BUF B FULL H (C28)
0-DB
1-DB
YB
0-DC
1-DC
YC
0-DD
1-DD
YD
NIAD TX BUF RD H → SEL
GND → EN

REVISIONS

CHK	CHANGE NO.	REV

DRN R. NEMET DATE 31-JUL-85 ENG. DATE 31-JUL-85
CHK DATE 31-JUL-85 BOARD LOCATION: SHEET 1 OF 1
ELF:<CCM1>NIAL.DRW 23-MAY-85 10:57 NEXT HIGHER ASSEMBLY: D-DD-L0072-0
FIRST USED ON OPTION/MODEL: NIA20

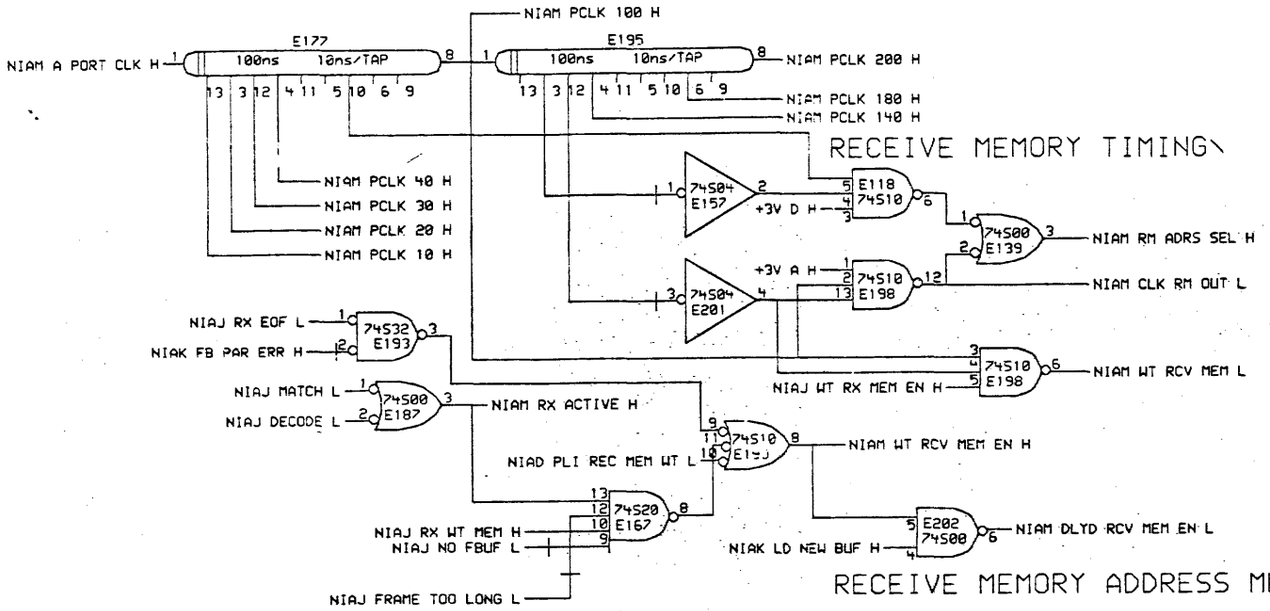
TITLE: RECEIVE MEMORY ADDRESS COUNTERS

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAL	B

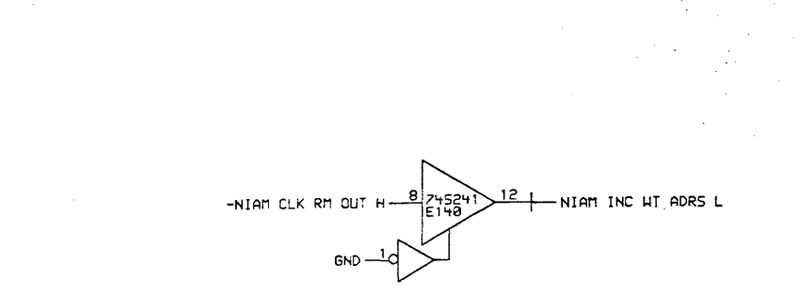
MRO

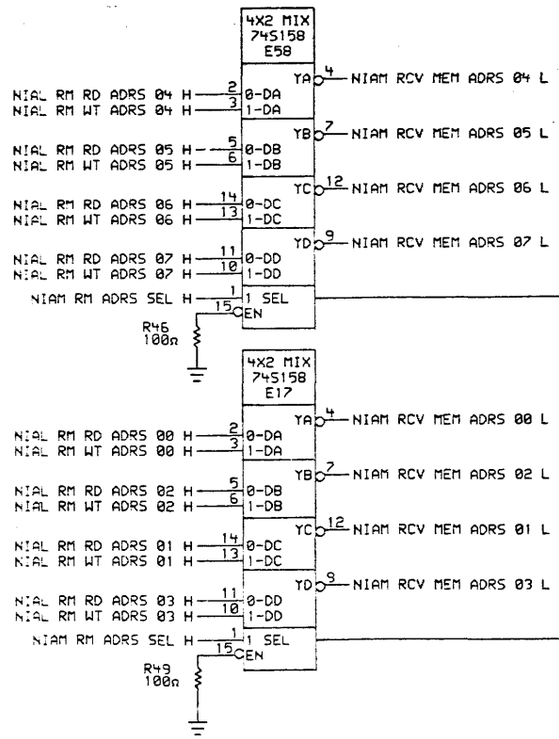
REV. B | NUMBER L0072-0-NIAL | CODE CS | SIZE D

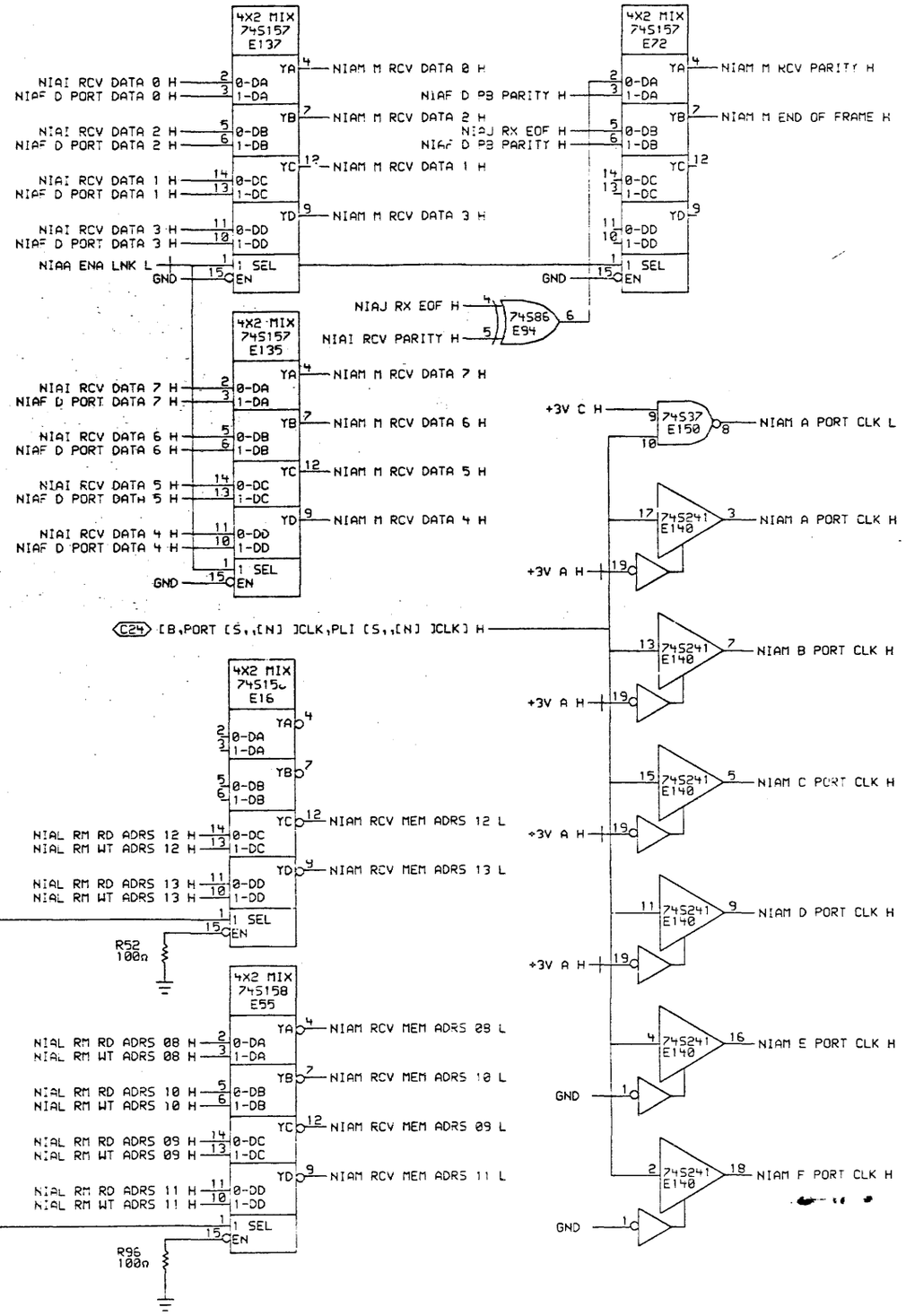
RECEIVE MEMORY TIMING



RECEIVE MEMORY ADDRESS MUX







REVISIONS		
CHK	CHANGE NO.	REV

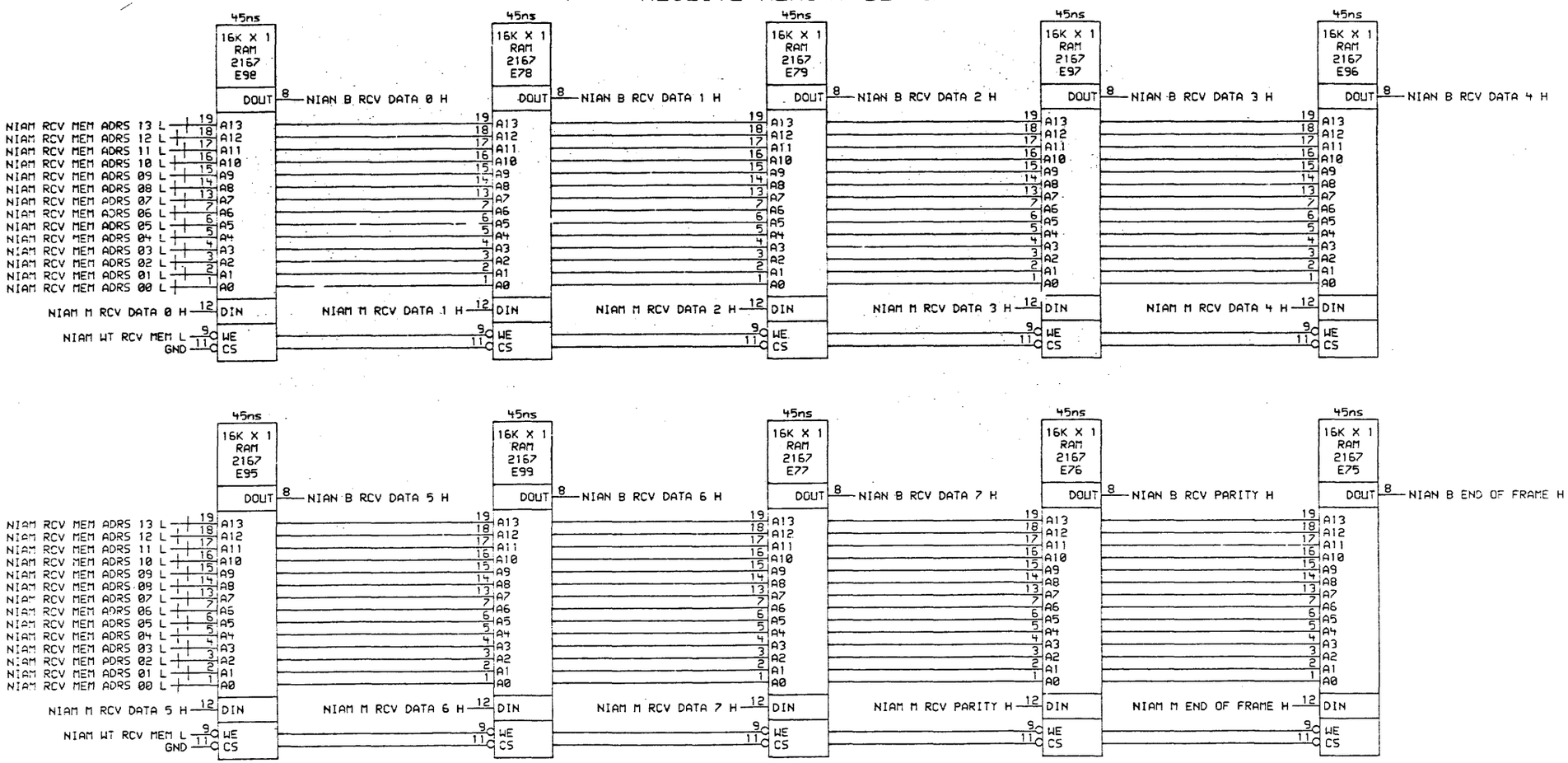
DRN R. NEMET | DATE 31-JUL-85 | ENG. | DATE 31-JUL-85
CHK | DATE 31-JUL-85 | BOARD LOCATION: | SHEET 1 OF 1
ELF:<COM>NIAM.DRW 23-MAY-85 10:58 | NEXT HIGHER ASSEMBLY: D-DD-L0272-0
FIRST USED ON OPTION/MODEL: NIA20

TITLE: RECEIVE MEMORY ADDRESS MUX

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAM	B

MRO

RECEIVE MEMORY BUFFER



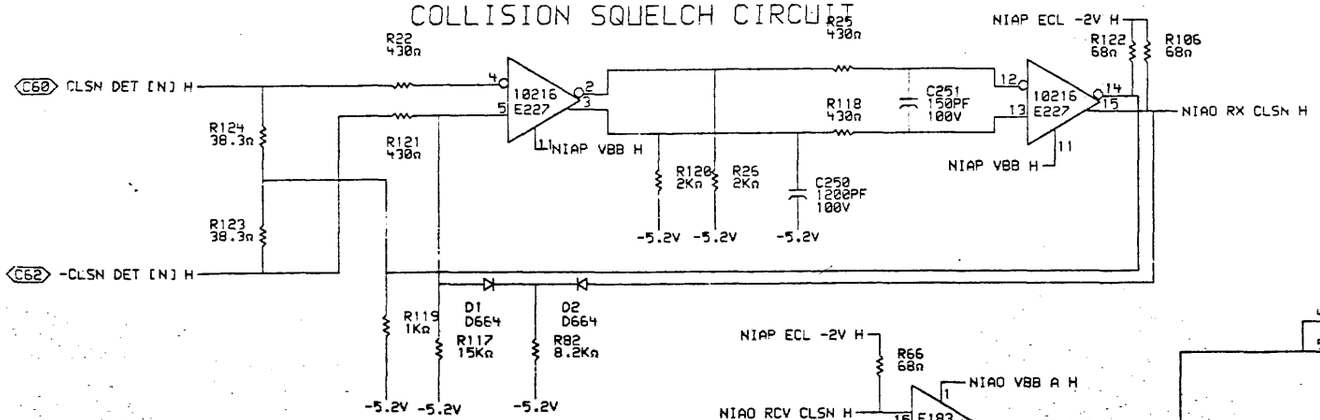
REVISIONS		
CHK	CHANGE NO.	REV

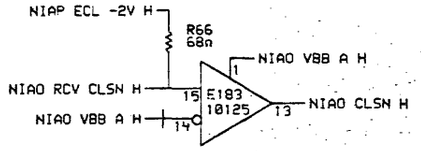
DRN. R. NEMES DATE 31-JUL-85 ENG. DATE
CHK. DATE 31-JUL-85 BOARD LOCATION:
ELF:<COM1>NIAN.DRW 23-MAY-85 10:58 SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: NIA20 NEXT HIGHER ASSEMBLY: D-DD-L0072-0

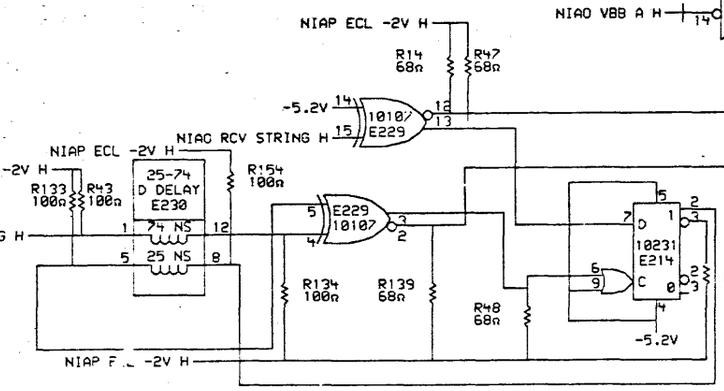
TITLE: RECEIVE MEMORY

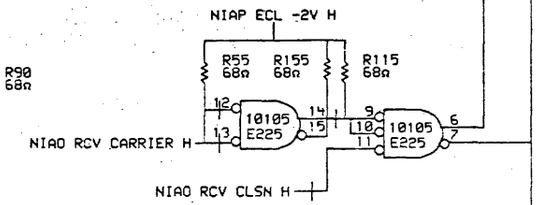
SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAN	B

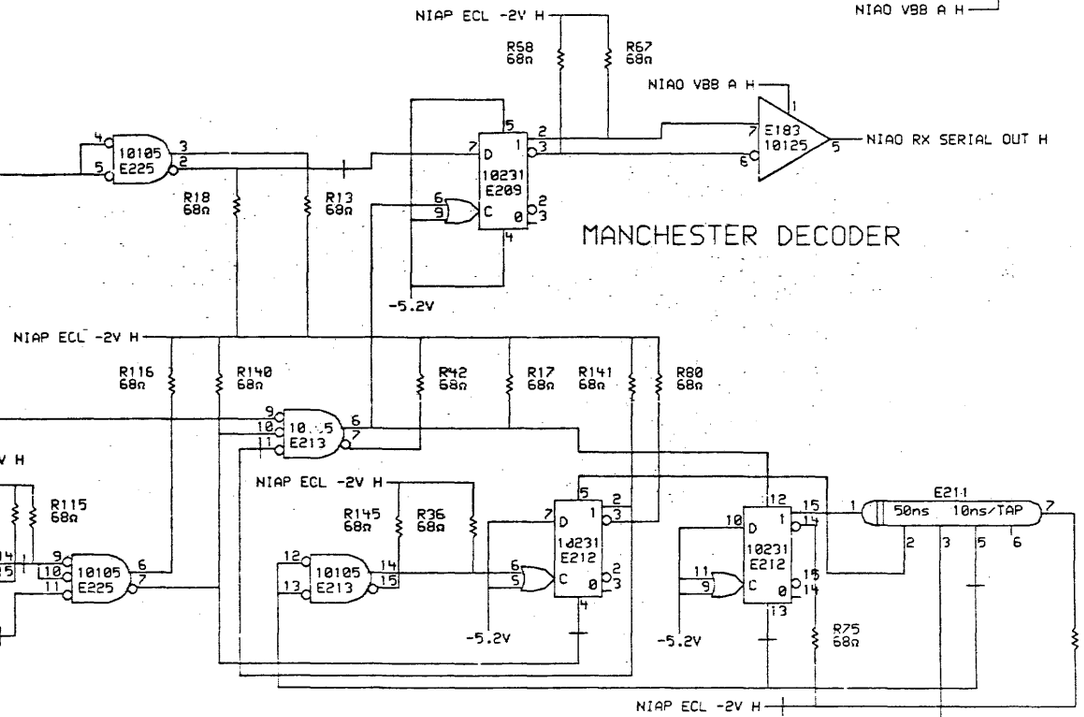
COLLISION SQUELCH CIRCUIT



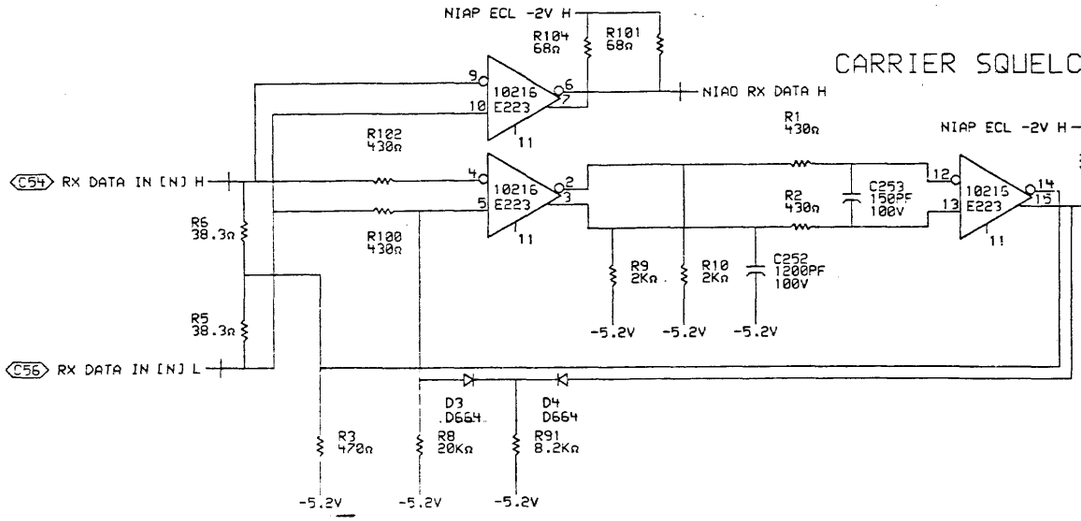


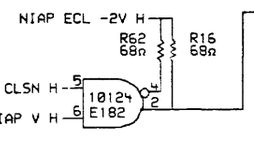




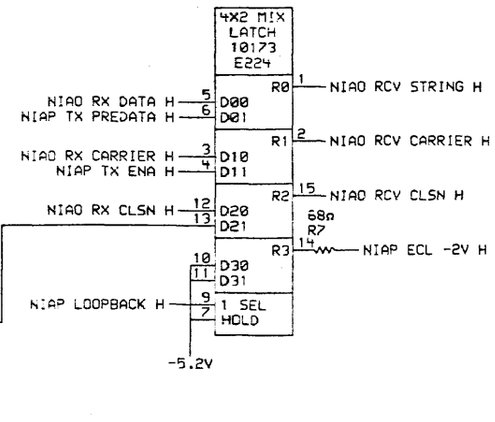


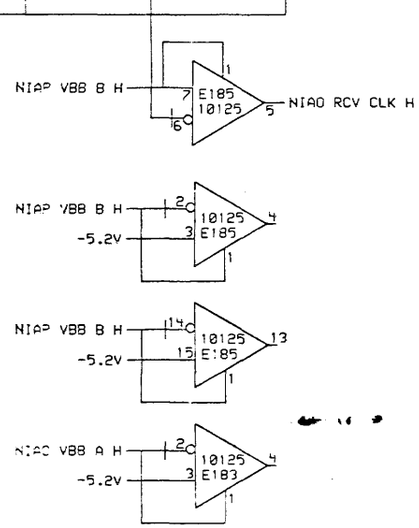
CARRIER SQUELCH CIRCUIT





LOOPBACK MUX





REVISIONS		
CHK	CHANGE NO.	REV

DRN R. NEMET DATE 31-JUL-85 ENG. DATE 31-JUL-85
CHKD DATE 31-JUL-85 BOARD LOCATION:
SHEET 1 OF 1
E.F:(COM)>NIAO.DRW 23-MAY-85 10:58 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: NIA20 D-DD-L0072-0

TITLE: MANCHESTER DECODER AND CLSN DET

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAO	B

MRO

MANCHESTER ENCODER

NIAP ECL -2V H
R73 68Ω
R24 68Ω
NIAH TX STR L
NIAP V H
10124 E184
10231 E210
NIAP ECL 10 MHZ H
10107 E226
NIAP ECL 10 MHZ H
NIAP ECL 10 MHZ H
-5.2V
-5.2V
NIAP ECL -2V H
R70 68Ω
R21 68Ω
R19 68Ω
R109 68Ω
NIAP 20 MHZ L
'10231 E208
-5.2V
R113 68Ω
R103 68Ω
NIAP TX PREDATA H
10105 E207
TX DATA OUT [N] L C68
TX DATA OUT [N] H C66
R110 470Ω
R50 470Ω
-5.2V
-5.2V
NIAP LOOPBACK H
NIAP ECL -2V H
R69 68Ω
R99 68Ω
NIAA LOOPBACK H
NIAP V H
10124 E184
NIAP LOOPBACK H
NIAP ECL -2V H
R53 68Ω
R111 68Ω
NIAE LNK INIT H
NIAP V H
10124 E182
NIAP TX ENA H
NIAP ECL -2V H
R71 68Ω
R108 68Ω
NIAE TX ACTIVE DLYD L
NIAP V H
10124 E184
-5.2V
10231 E209
NIAP ECL 10 MHZ L
-5.2V
R112 68Ω
R107 68Ω
NIAP ECL -2V H
10231 E208
NIAP 20 MHZ L
-5.2V
R105 68Ω
R56 68Ω
NIAP ECL -2V H
NIAP ECL 10 MHZ L
NIAP ECL 10 MHZ H
10231 E210
NIAP 20 MHZ L
-5.2V
R74 69Ω
R20 68Ω
NIAP ECL -2V H
20 MHZ CRYSTAL OSC E161
OUT
10124 E182
NIAP V
NIAP 20 MHZ L
R64 68Ω
R125 68Ω
NIAP ECL -2V H

XCVR POWER DETECT

A90 [B,XCVR POS,+15.0V]
-!(POWER)
POWER XCVR [N] POS C65
C242 8μF
A86 [B,XCVR NEG,GND]
POWER RETURN XCVR [N] NEG C67
-!(POWER RETURN)
!M393 E179
-!(DET H)
C59 DET [N] H
R12 10KΩ
R58 680Ω
R4 1KΩ
+5.0V
R57 3.3KΩ
C247 47μF 50V
LM393 E179
74S241 E162
NIAP NO XCVR PWR H
C248 10nF 50V
R11 8.2KΩ
C249 10nF 50V
D7 1NXXX 5.1V1% .25W
CC1A E180
-!(DET L)
C64 [B,-DET H,POWER RETURN XCVR [N] NEG]
R40 100KΩ
LM393 E179
+3V A H
R148 10KΩ
NIAP ECL 10 MHZ L
NIAP ECL 10 MHZ H
10125 E185
74S37 E150
NIAP 10 MHZ H
NIAP VBB B H
+3V H
+3V D H
74S37 E3
NIAP 10 MHZ A L
NIAP 10 MHZ H
+3V D H
74S37 E3
NIAP 10 MHZ D L
+3V H
74S37 E150
NIAP 10 MHZ B L
+3V H
74S37 E150
NIAP 10 MHZ E L
+3V B H
74S37 E100
NIAP 10 MHZ C L
+3V D H
74S37 E3
NIAP 10 MHZ F L
+5.0V
R61 180Ω
NIAP V H
R72 390Ω
NIAP ECL -2V H
Q1 C55
Q2 C55
D5 D662
D6 D662
R54 105Ω
R93 75.0Ω
C180 10nF 50V
R51 10Ω
R52 15Ω
R98 10Ω
C246 220μF 6V
-5.2V

REVISIONS			
CHK	CHANGE NO.	REV

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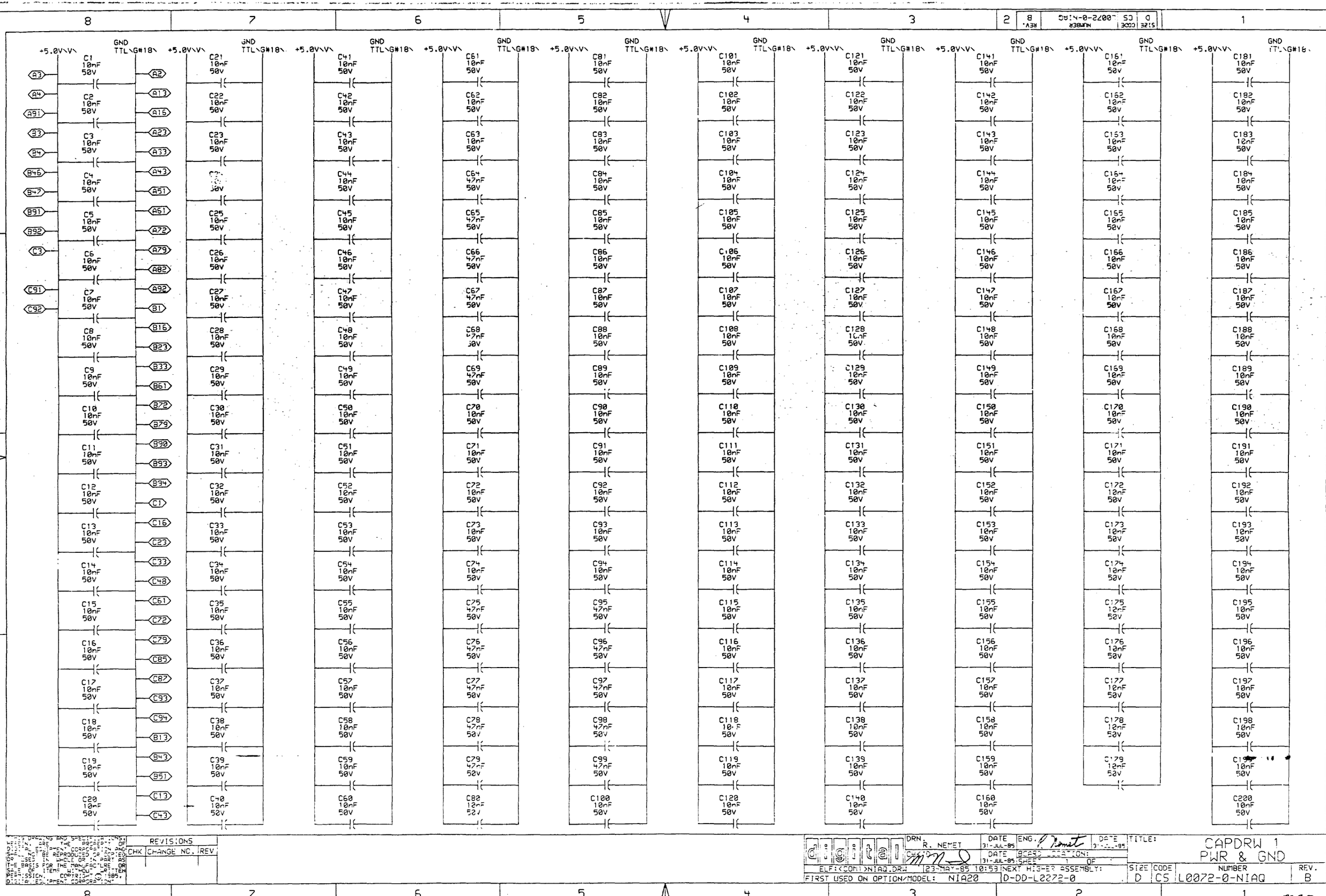
DRN R. NEMET	DATE 31-JUL-85	ENG.	DATE 31-JUL-85	TITLE: MANCHESTER ENCODER AND CLK	
CHK	DATE 31-JUL-85	BOARD LOCATION: SHEET 1 OF			
ELF:(COM)NIAP.DRW 23-MAY-85 10:59	NEXT HIGHER ASSEMBLY: D-DD-L0272-0			SIZE D	CODE CS
FIRST USED ON OPTION/MODEL: NIA20				NUMBER L0072-0-NIAP	REV. B

MR2



REVISIONS		
CHK	CHANGE NO.	REV

DRN. R. NEMET	DATE 31-JUL-85	ENG.	DATE
CHK	DATE 31-JUL-85	BOARD CREATION:	
		SHEET 1 OF	

TITLE: CAPDRW 1 PWR & GND

ELF:<CONI>NIAQ.DRW 23-MAY-85 10:53 NEXT HIGHER ASSEMBLY:

FIRST USED ON OPTION/MODEL: NIA20 D-DD-L0272-0

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAQ	B

mro

+5.0V
R81 180Ω
R53 390Ω
NIAP 10 MHZ C L

+5.0V
R144 180Ω
R143 390Ω
NIAM D PORT CLK H

+5.0V
R142 180Ω
R138 390Ω
NIAM A PORT CLK L

+5.0V
R137 180Ω
R136 390Ω
NIAM C PORT CLK H

+5.0V
R135 180Ω
R132 390Ω
PORT CLK H

+5.0V
R131 180Ω
R130 390Ω
NIAP 10 MHZ A L

+5.0V
R129 180Ω
R128 390Ω
NIAP 10 MHZ B L

+5.0V
R79 180Ω
R78 390Ω
NIAP 10 MHZ E L

+5.0V
R89 180Ω
R87 390Ω
NIAP 10 MHZ D L

+5.0V
R86 180Ω
R85 390Ω
NIAP 10 MHZ F L

+5.0V
R94 180Ω
R83 390Ω
NIAM E PORT CLK H

+5.0V
R77 180Ω
R76 390Ω
NIAM F PORT CLK H

+5.0V
R98 180Ω
R97 390Ω
NIAI RCV BYTE STB L

+5.0V
R95 180Ω
R94 390Ω
NIAI RCLK L

NIAP ECL -2V H
GND
C254 10nF 50V
C255 10nF 50V
C256 10nF 50V
C257 10nF 50V
C258 10nF 50V
C259 10nF 50V
C260 10nF 50V
C261 10nF 50V
C262 10nF 50V
C263 10nF 50V
C264 10nF 50V
C265 10nF 50V
C245 10nF 50V
C270 10nF 50V
C271 10nF 50V
C272 10nF 50V
C273 10nF 50V

+5.0V
GND
C201 10nF 50V
C202 10nF 50V
C203 10nF 50V
C204 10nF 50V
C205 10nF 50V
C206 10nF 50V
C216 10nF 50V
C217 10nF 50V
C218 10nF 50V
C219 10nF 50V
C220 10nF 50V
C238 10nF 50V

NIAP ECL -2V H
GND
C274 10nF 50V
C275 10nF 50V
C276 10nF 50V
C277 10nF 50V

GND
TTL GND
C221 10nF 50V
C222 10nF 50V
C232 10nF 50V
C233 10nF 50V
C234 10nF 50V
C235 10nF 50V
C236 10nF 50V
C240 1500µF 16V
C241 1500µF 16V
C243 1500µF 16V

GND
TTL GND
C244 1500µF 16V
C237 10nF 50V

GND
-5.2V
C223 10nF 50V
C224 10nF 50V
C225 10nF 50V
C226 10nF 50V
C227 10nF 50V
C228 10nF 50V
C229 10nF 50V
C230 10nF 50V
C231 10nF 50V

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C80 NC
C81 NC
C82 NC
C83 NC
C84 NC
C86 NC
C88 NC

C4 NC

+5.0V
R127 180Ω
R126 390Ω
NIAM B PORT CLK H

+5.0V
R92 180Ω
R59 390Ω
NIAM A PORT CLK H

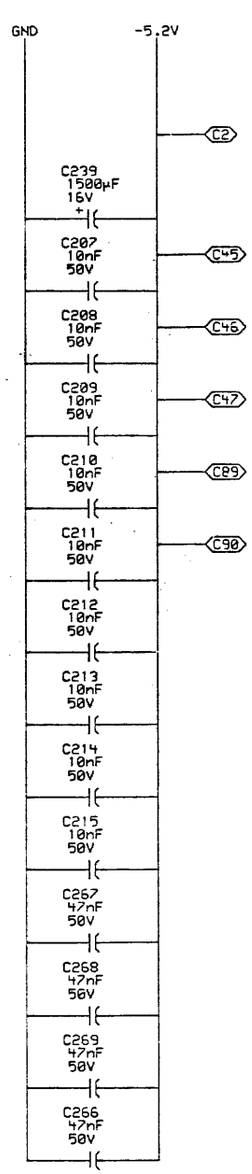
+5.0V
R147 180Ω
R146 390Ω
NIAP 10 MHZ H

REVISIONS		
CHK	CHANGE NO.	REV

DRN R. NEMET
CHKD
DATE 31-JUL-85
ENG. R. Nemet DATE 31-JUL-85
DATE 31-JUL-85
BOARD LOCATION:
SHEET 1 OF 1
ELF:<COM1>NIAR.DRW 23-MAY-85 11:00
NEXT HIGHER ASSEMBLY: D-DD-L0072-0
FIRST USED ON OPTION/MODEL: NIA20

TITLE: CAPDRW 2 N/C PINS
SIZE D | CODE CS | NUMBER L0072-0-NIAR | REV. B

MLO



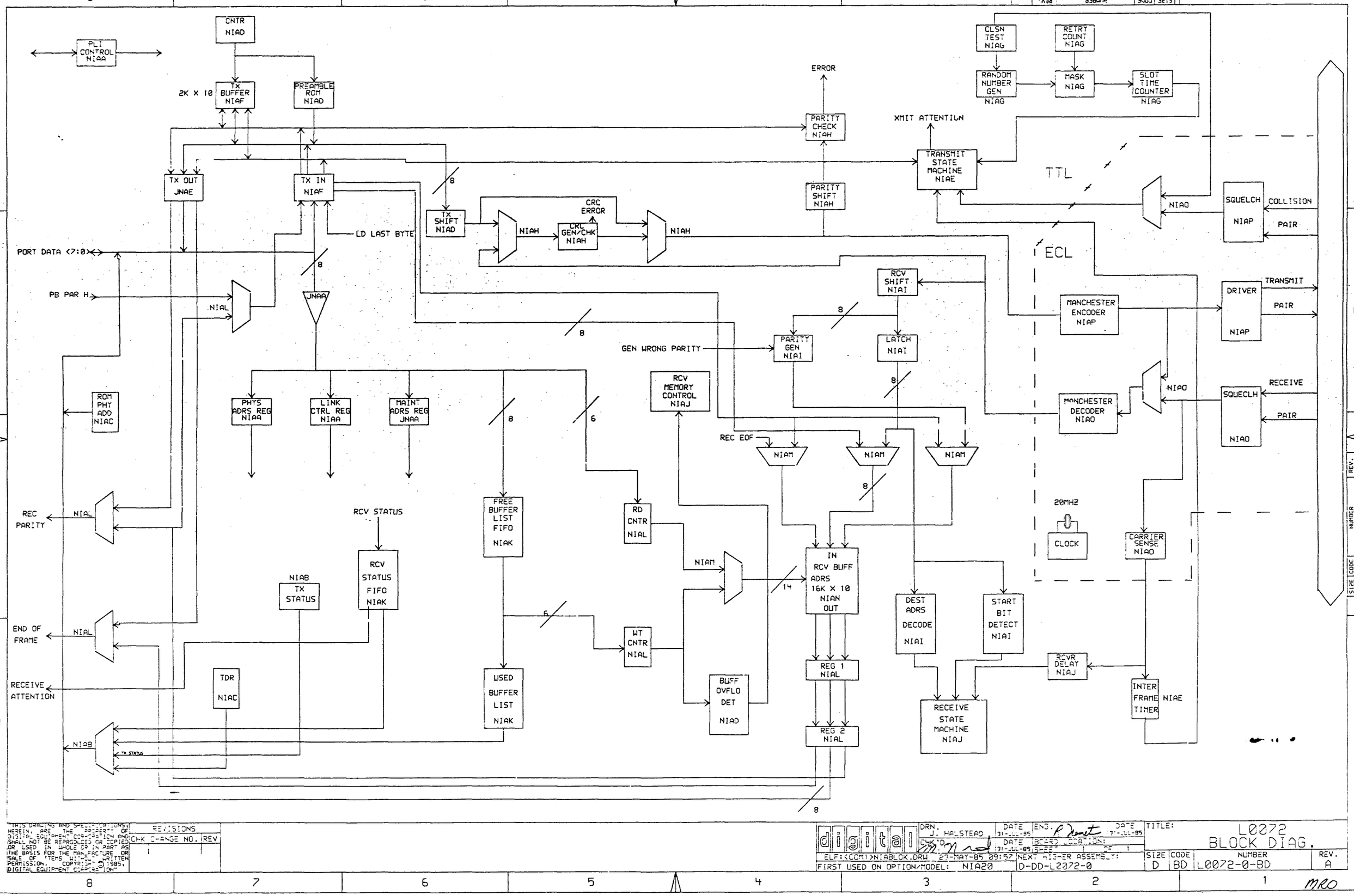
REVISIONS		
CHK	CHANGE NO.	REV

DRN R. NEMET DATE 31-JUL-85 ENG. DATE 31-JUL-85
CHK DATE 31-JUL-85 BOARD LOCATION:
SHEET 1 OF 1
ELF:<COM1>NIAS.DRW 23-MAY-85 11:00 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: NIA20 D-DD-L0072-0

TITLE: -5.2V CAP

SIZE	CODE	NUMBER	REV.
D	CS	L0072-0-NIAS	B

MRO



REVISIONS		
CHK	CHANGE NO.	REV
	1	

DRN. J. HALSTEAD	DATE 31-JUL-85	ENG.	DATE 31-JUL-85	TITLE: L0072 BLOCK DIAG.
CHK'D	DATE 31-JUL-85	BOARD LOCATION:	SHEET 1 OF 1	
ELF:<COM1>NIABLOK.DRW 23-MAY-85 09:52		NEXT HIGHER ASSEMBLY:		SIZE D / CODE BD / NUMBER L0072-0-BD / REV. A
FIRST USED ON OPTION/MODEL: NIA20		D-DD-L2372-0		

MRO

D IA 7019893-0-0 A

WIRE TABLE

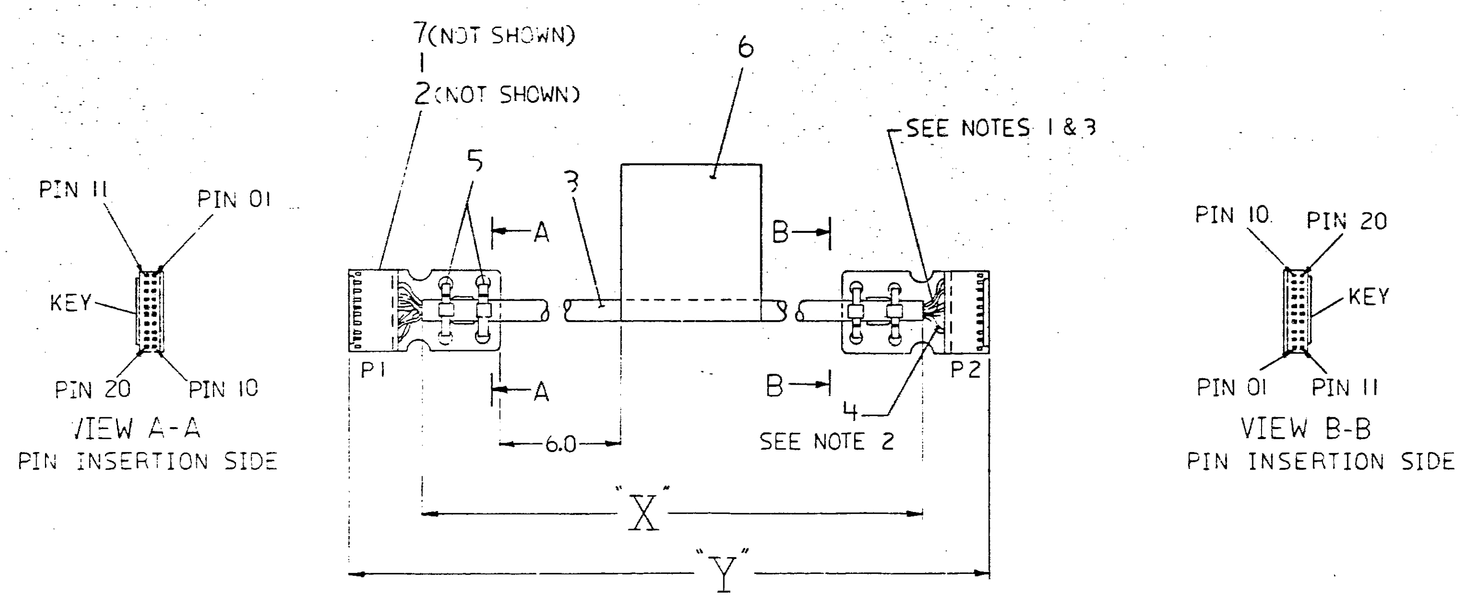
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH
3	24	SHLD	—	P1-11	4 & 2	—	P2-11	4 & 2
	28 TWP	WHT	—	P1-2	7	—	P2-2	7
		BLK	—	P1-3	7	—	P2-3	7
	24 TWT	VIO	—	P1-15	2	—	P2-15	2
		RED	—	P1-18	2	—	P2-18	2
		BLK	—	P1-19	2	—	P2-19	2
	28 TWP	BLU	—	P1-5	7	—	P2-5	7
		GRN	—	P1-6	7	—	P2-6	7
	28 TWP	ORN	—	P1-8	7	—	P2-8	7
		YEL	—	P1-9	7	—	P2-9	7

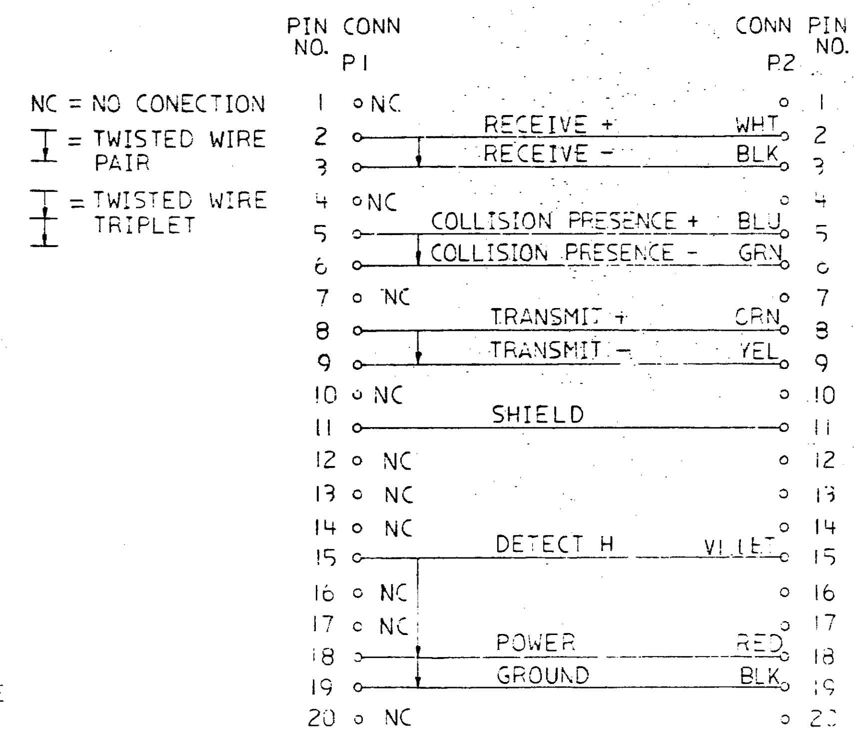
LEGEND

PART NUMBER	DIM "X" VAR	DIM "Y" (PRECUT) REF	REV
7019893-2L	2FT., 10IN. ±1.0IN.	3FT., 0IN. ± IN.	A1
7019893-3L	3FT., 10IN. ±1.0IN.	4FT., 0IN ± IN.	A1
7019893-7L	6FT., 10IN. ±1.0IN.	8FT., 0IN ± IN.	A1

NOTES

1. REMOVE OUTER JACKET AND SHIELD OF ITEM #3 .75 INCHES, BOTH ENDS.
2. INSTALL ITEM #4 TO SHEILD DRAIN WIRE, BOTH ENDS, BEFORE ATTACHING ITEM #2.
3. MAINTAINING THE INTEGRITY OF THE TWISTED WIRE PAIRS AS MUCH AS POSSIBLE, INSTALL ITEM #2 OR 7 TO ALL LEADS, AND INSERT INTO CONNECTOR HOUSING (ITEM #1).
4. ATTACH ITEM #5 BOTH ENDS.





CAUTION: OFF SHEET PARTS LIST EXISTS.
SEE K-PL-7019893-0-DBP

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 MICROINCHES
APPLICABLE DIMENSION RANGE (CHECK ONE)
DIMENSION RANGE IN INCHES

QUANTITY & VARIATION

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: SEE PARTS LIST
FINISH

DRN — DATE
CHKD — DATE 8 MAY 84
DES ENG — DATE 8 MAY 84
RESP ENG — DATE 8 MAY 84
MFG ENG — DATE
NEXT HIGHER DOC

TITLE: CABLE ASSY, ETHERNET

digital

DOCUMENT NUMBER
SIZE D | CODE IA | NUMBER 7019893-0-0 | REV A
SCALE | SHEET 1 OF 1

REVISION HISTORY
REV A | ECO NUMBER: RELEASED | DATE

DRC 1000

AUTOMATED BY PPTLST.4Q(47)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 2L	3L	7L
					VARIATION REVISION LEVEL:	A1	A1	A1
1	1		1214112-07	A	CONN,P+S 20POS(2X10).100CC HSG	2	2	2
2	2		1214113-00		CONN,P+S 01SKT 24-20AWG .	8	8	8
3	3		1700347-01		CABLE,RND 09COND 28AWG TWP	A/R	A/R	A/R
4	4		9107278-11		TUBING,TEFLON .042ID	A/R	A/R	A/R
5	5		9007031-00		TIE,CABLE BUNDL.DIA 0- 3/4"=101	4	4	4
6	6		3616073-00		LABEL,ID W/COPY VERTICAL	1	1	1
7	7		1214293-00		CONN,P&S 01SKT 30-26AWG	12	12	12

REVISION HISTORY			BASIC PART NO: 7019893			
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: JOE DONAHER	DATE: 18 AUG 82	D I G I T A L
	INITIAL	A	SECTION.VARIATION INDEX [A],2L,3L,7L	CHK'D: JOE DONAHER	DATE: 12 APR 84	TITLE PARTS LIST CABLE ASSY, ETHERNET
			[B]	DES.ENG: P CAPPABIANCA	DATE: 25-APR-84	DOCUMENT NUMBER
			[C]			SIZE: K CODE: PL NUMBER: 7019893-0-DBP REV: A
			[D]	RESP.ENG.: P CAPPABIANCA	DATE: 25-APR-84	
			[E]	MFG.ENG.: J. MCCAFFREY	DATE: 17 MAY 84	RELEASE DATE: 12-JUN-84
			[F]	ASSEMBLY NUMBER: D-IA-7019893-0-0	TOP DOCUMENT NUMBER: D-IA-7019893-0-0	FILE NAME: Z5372A.PLS EDIT #: 6

WIRE TABLE

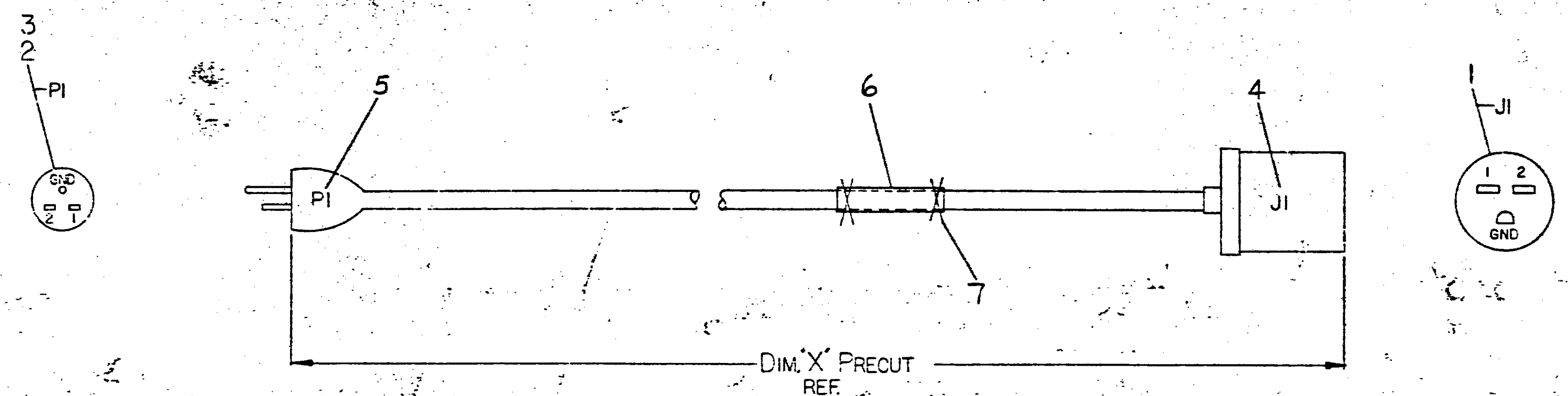
ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
2	—	BLK	P1-1	—	J1-1	—	
OR	—	WHT	P1-2	—	J1-2	—	
3	—	GRN	P1-GND	—	J1-GND	—	

LEGEND

NUMBER	DIM 'X' VARIATION
7011432-1	3 FT ± 1.5 IN.
7011432-2	6 FT ± 3.0 IN.
7011432-3	9 FT ± 3.0 IN.

NOTES:

1. POWER CORD INSULATED JACKET SHALL BE CAPTIVE WITHIN THE RECEPTACLE (ITEM #1) STRAIN RELIEF WITH NO WIRE INSULATION VISIBLE.



7011432-3	7011432-2	7011432-1	DESCRIPTION	DWG./PART NO.	ITEM NO.
2	2	2	TIES, CABLE	9007031	7
1	1	1	LABEL, CABLE I.D.	9009532	6
1	1	1	POWER HARN. DECAL (WHT/CLR	A-DC-7409872-1-0	5
1	1	1	POWER CONN DECAL (WHT/CLR	A-DC-7409873-1-0	4
1	-	-	POWER CORD 230V	1700016-09	3
-	1	1	POWER CORD 230V	1700016-06	2
1	1	1	RECEPTACLE, AC 3WIRE	5008855	1

QUANTITY & VARIATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'

SURFACE QUALITY IN MICROINCHES

CLASS OF ACCURACY (CHECK ONE)	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
MEDIUM	±.004	±.008	±.012	±.018	±.024	±.04
PREFERRED	±.012	±.018	±.025	±.04	±.063	±0.1

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH: —

DRN: [illegible] 15-2-75
CHK'D: [illegible] 5-2-75
ENG.: [illegible] 6-12-75
PROJ. ENG.: [illegible]
PROD.: [illegible]

NEXT HIGHER ASSY: D-UA-KL10-0-0

SCALE: —

SHEET 1 OF 1

FIRST USED ON: KL10

digital

TITLE: POWER CORD

SIZE: D | CODE: AD | NUMBER: 7011432-0-0 | REV.: A

DIST.

REVISIONS

REV.	CHANGE NO.	CHK
A	7011432-00001	J. PROVIDENT

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WIRE TABLE

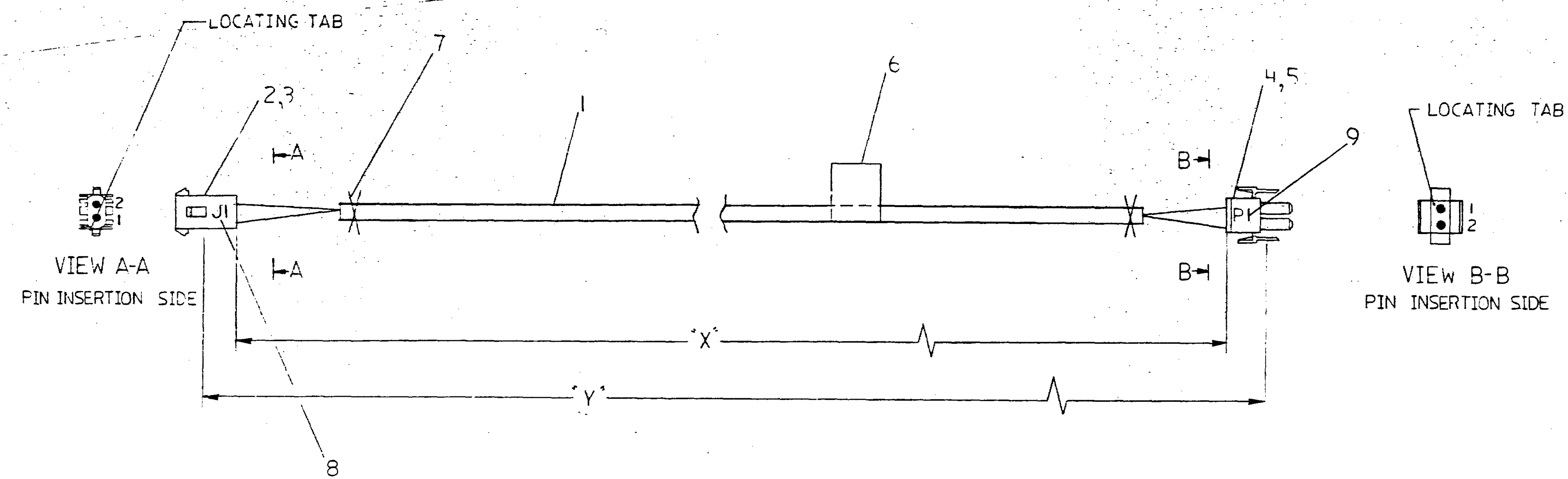
ITEM NO.	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	WITH	TO POINT	TO CONNECTION	WITH
2	20 TWP	RED	—	J1-1	3	—	P1-1	5
		BLK	—	J1-2	3	—	P1-2	5

LEGEND

PART NO.	DIM. "X" VARIATION	DIM. "Y" (PRECUT) REF	REV
7021448-5C	5FT. 3IN ± 2.0 IN	5FT. 4IN ± 2.0	A2

NOTES:

1. CONNECTOR TO BE LABELED WITH COMPONENT IDENTIFIERS USING ITEMS 8 & 9.
2. UNLESS OTHERWISE NOTED ALL LENGTHS ARE IN INCHES.



CAUTION: OFF SHEET PARTS LIST EXISTS
SEE K-PL-7021448-0-DBP.

REV.	ECO NUMBER	DATE
A	RELEASED	85
B	7021448(U)	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LISTS

DRN: 5-30-84
CHK'D: 7-16-84
DES ENG: 6-20-84
RESP ENG: 6-20-84
MFG ENG: 7-16-84

TITLE: CABLE, D.C. VOLTAGE MONITOR SECTION #1

digital

DOCUMENT NUMBER: D IA 7021448-0-0

TOP DOC. NO: D-IA-7021448-0-0

SCALE 1/1

DRO 100F
EN-01382-18-REV A(388)

AUTOMATED BY: PRTLST.SR(55)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION
					VARIATION REVISION LEVEL:	5C A2
1	1		9107789-02		WIRE,TWP 20AWG(07/28)PVC 300V	A/R
2	2		1212168-01		MATE-N-LOK 02POS(1X02).250CC HSG	1
3	3		1212169-00		MATE-N-LOK 01PIN 20-14AWG .0850D	2
4	4		1212167-02		MATE-N-LOK 02SKT(1X02).250CC HSG	1
5	5		1212170-00		MATE-N-LOK 01SKT 20-14AWG .0850D	2
6	6		3616073-00		LABEL,ID W/COPY VERTICAL	1
7	7		9007031-00		TIE,CABLE BUNDL.DIA 0- 3/4"=101	A/R
8	8		7409873-02		PWR CONN DECAL BLACK ON CLEAR	1
9	9		7409872-02		PWR HARNESS DECAL, BLACK ON CLEA	1

REVISION HISTORY		
ENG	ECO NUMBER	REV
---	INITIAL	A
PC	7021448-MR001	B

BASIC PART NO: 7021448

SECTION A OF A

SECTION.VARIATION INDEX
[A]5C
[B]
[C]
[D]
[E]
[F]

DRN:	G. ALSTON	DATE: 30-MAY-84
CHK'D:	J. BROWN	DATE: 16-JUL-84
DES.ENG:	P. CAPPABIANCA	DATE: 20-JUN-84
RESP.ENG.:	P. CAPPABIANCA	DATE: 20-JUN-84
MFG.ENG.:	JOHN MCCAFFREY	DATE: 16 JUL 84

ASSEMBLY NUMBER: D-IA-7021448-0-0

TOP DOCUMENT NUMBER: D-IA-7021448-0-0

D I G I T A L

TITLE PARTS LIST
CABLE,D.C. VOLTAGE
MONITOR SECTION #1

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
K	PL	7021448-0-DBP	B

RELEASE DATE: 31-JAN-85

FILE NAME: E9863E.PLS

EDIT #: 10

D IA 7020352-0-0 C

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SYMBOL

ITEM NO.	SYMBOL	PART NO. (REF)
5	▯	1215121-04
6	▯	1212170-00

WIRE TABLE

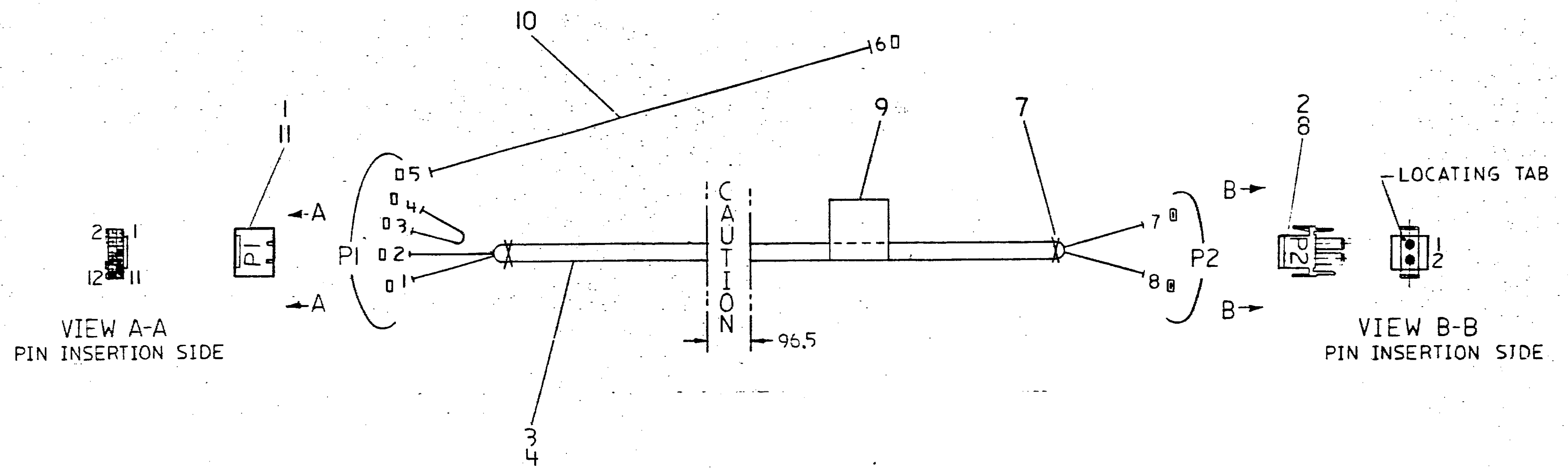
ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH	REMARKS
3	TWP 20	RED	1	P1-9	5	7	P2-1	6	
		BLK	2	P1-7	5	8	P2-2	6	
4	20	BLK	3	P1-12	5	4	P1-8	5	2.75 LG
10	20	ORG	5	P1-5	5	6	—	5	

LEGEND

PART NO	VARIATION	REV
7020352-00	AS SHOWN	A2

NOTES:

1. UNLESS OTHERWISE NOTED ALL LENGTHS ARE IN INCHES.
2. CONNECTOR TO BE LABLED WITH COMPONENT IDENTIFIERS.



DO NOT REDUCE

0 IN 6 IN 12 IN

FOR MANUFACTURING PURPOSES ONLY

CAUTION: OFF SHEET PARTS LIST EXISTS. SEE K-PL-7020352-0-DBP.

DATE	ECO NUMBER	REV
	RELEASED	B
10-23-84	7020352-MFC01	C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

QUANTITY & VARIATION — DESCRIPTION — DRAWING NO. — PART NO. — ITEM NO.

INCHES TOLERANCES: .X = ± .1, .XX = ± .02, .XXX = ± .005
ANGLES ± 0° 30'
SURFACE QUALITY — MICROINCHES

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL: SEE PARTS LIST
FINISH: —

		DATE
DRN	W.	1 OCT. 82
CHK'D		10 DEC 82
DES ENG.	P. Cappabianca	13 APR 83
RESP ENG.	P. Cappabianca	13 APR 83
MFG. ENG.		4-11-83
NEXT HIGHER DOC	E-UA-CI20-A-Ø	

TITLE: HARNESS DC VOLTAGE MONITOR

digital

DOCUMENT NUMBER: SIZE D CODE IA NUMBER 7020352-0-0 REV C

SCALE 1/1 SHEET OF

MRO 1

AUTOMATED BY PRT_ST.40(50)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00
					VARIATION REVISION LEVEL:	A2
1	1		1214112-03		CONN,P+S 12POS(2X06).100CC HSG	1
2	2		1212167-02		MATE-N-LOK 02SKT(1X02).250CC HSG	1
3	3		9107789-02		WIRE,TWP 20AWG(07/28)PVC 300V	A/R
4	4		9107460-00		WIRE, 20AWG(07/28)IPVC 150V	A/R
5	5		1215121-04		CONN,P&S 01SKT 24-20AWG	6
6	6		1212170-00		MATE-N-LOK 01SKT 20-14AWG .0850D	2
7	7		9007031-00	B	TIE,CABLE BUNDL,DIA 0- 3/4"=101	2
8	8	A-DC-7409872-0-0	7409872-02		PWR HARNESS DECAL, BLACK ON CLEA	1
9	9		3616073-00		LABEL,ID W/COPY VERTICAL	1
10	10		9107460-33		WIRE, 20AWG(07/28)IPVC 150V	A/R
11	11	A-DC-7409872-0-0	7409872-01		PWR HARNESS DECAL WHITE ON CLEAR	1

REVISION HISTORY

ENG.	ECO NUMBER	REV
---	INITIAL	B
PC	7020352-MR001	C

BASIC PART NO: 7020352

SECTION A OF A

SECTION.VARIATION INDEX
[A]00
[B]
[C]
[D]
[E]
[F]

DRN:	W. ALLEN	DATE: 1 OCT 82
CHK'D:	G. F.	DATE: 10 DEC 82
DES.ENG:	P. CAPPABIANCA	DATE: 13 APR 83
RESP.ENG.:	P. CAPPABIANCA	DATE: 13 APR 83
MFG.ENG.:	J. MCCAFFERY	DATE: 11 APR 83

ASSEMBLY NUMBER:
D-IA-7020352-0-0

TOP DOCUMENT NUMBER:

D I G I T A L

TITLE PARTS LIST
HARNESS D C
VOLTAGE MONITOR

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
K	PL	7020352-0-DBP	C

RELEASE DATE: 30-OCT-84

FILE NAME: Z5906C.PLS

EDIT # 13

SIZE D | CODE IA | NUMBER 7019862-0-0 | REV C

SYMBOLS

ITEM NO.	SYMBOL	PART NO. (REF)
4	■	1209378-00
5	□	1209379-03
10	▮	1209378-03
12	▯	1209379-00
16	☑	1212170-00

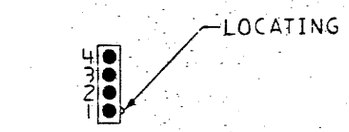
WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH	REMARKS
9	22	BLK	1	P1-1	10	8	P2-1	4	
9	22	BLK	9	J1-1	12				
14	18	BLK				13	P3-1	16	
9	22	BLK	2	P1-2	10	7	P2-2	4	
9	22	BLK	10	J1-2	5				
8	22	ORN	3	P1-3	10	6	P2-3	4	
8	22	ORN	11	J1-3	12				
13	18	ORN				14	P3-3	16	
1	22	YEL	4	P1-4	10	5	P2-4	4	
1	22	YEL	12	J1-4	5				

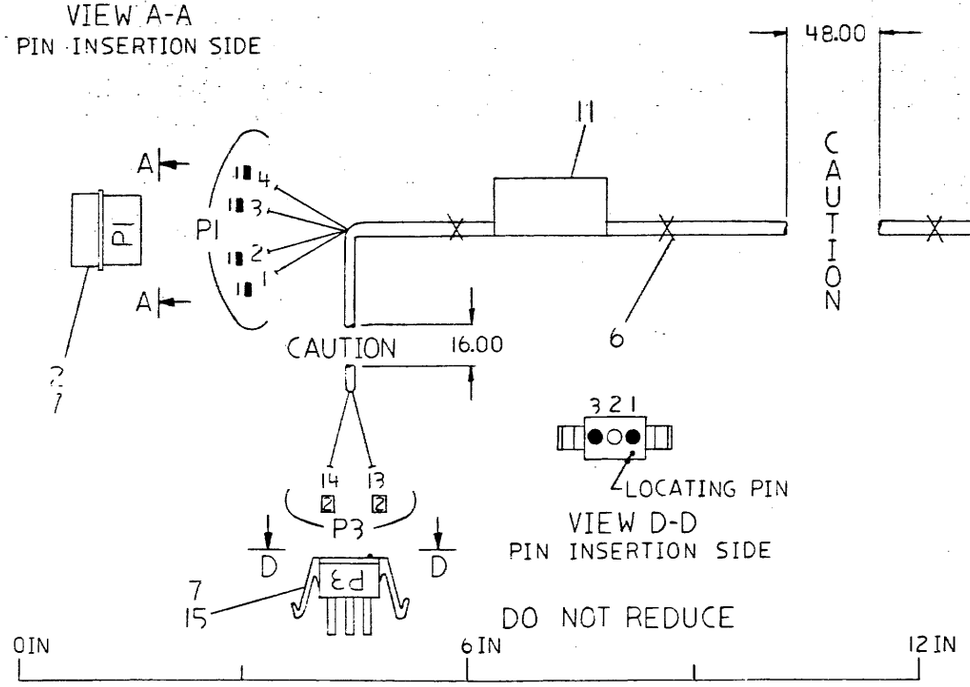
LEGEND

PART NO	VARIATION	REV
7019862-00	AS SHOWN	B1

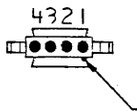
NOTES:
1. USE TIE WRAPS (X) ITEM #6 APPROXIMATELY EVERY 3 INCHES WHEN NECESSAR AND AT EVERY BREAKOUT POINT.
2. CONNECTORS TO BE LABLED WITH COMPONENT IDENTIFIERS.
3. UNLESS OTHERWISE NOTED ALL LENGTHS ARE IN INCHES.



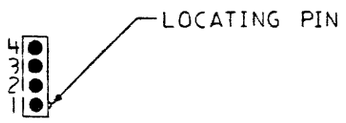
VIEW A-A
PIN INSERTION SIDE



VIEW D-D
PIN INSERTION SIDE



VIEW C-C
PIN INSERTION SIDE



VIEW B-B
PIN INSERTION SIDE

DO NOT REDUCE

0 IN — 6 IN — 12 IN

FOR MANUFACTURING PURPOSES ONLY

CAUTION: OFF SHEET PARTS LIST EXISTS.
SEE K-PL-7019862-0-DBP.

REVISION HISTORY		
DATE	ECO NUMBER	REV
	RELEASED	C

DRD 1000

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 (CHECK ONE)	DIMENSION RANGE IN 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 60.0
X = ± .1	SURFACE QUALITY			± .02	± .03	± .05	± .10	
XX = ± .02			± .004	± .008	± .012	± .016	± .024	± .04
XXX = ± .005	MICROINCHES							

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

DRN: Joe Erhart	DATE: 16 NOV 92	
CHK'D: [illegible]	DATE: 14 DEC 92	
DES ENG: R. Coppolino	DATE: 14 APR 93	
RESP ENG: R. Coppolino	DATE: 14 APR 93	
MFG ENG: [illegible]	DATE: 14-11-93	
NEXT HIGHER DOC: E-UA-CI20-A-0		

TITLE: HARNESS, SWITCH VANE

DOCUMENT NUMBER: SIZE D | CODE IA | NUMBER 7019862-0-0 | REV C

SCALE 1/1 | SHEET 1 OF 1

M20

AUTOMATED BY PRTLST.1Q(50)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00
					VARIATION REVISION LEVEL:	
1	1		9107350-44		WIRE, 22AWG(07/30)IPVC 150V	A/R
2	2		1209351-01		MATE-N-LOK 04PIN(1X04).200CC HSG	2
3	3		1209350-04		MATE-N-LOK 04SKT(1X04).200CC HSG	1
4	4		1209378-00		MATE-N-LOK 01PIN 20-14AWG .085DD	4
5	5		1209379-03		MATE-N-LOK 01SKT 30-22AWG .085DD	2
6	6		9007031-00		TIE,CABLE BUNDL.DIA 0- 3/4"=101	A/R
7	7	A-DC-7409873-0-0	7409873-02		PWR CONN DECAL BLACK ON CLEAR	1
8	8		9107350-33		WIRE, 22AWG(07/30)IPVC 150V	A/R
9	9		9107350-00		WIRE, 22AWG(07/30)IPVC 150V	A/R
10	10		1209378-03		MATE-N-LOK 01PIN 30-22AWG .085DD	4
11	11		3016273-00		LABEL,TD W/COPY VERTICAL	1
12	12		1209379-00		MATE-N-LOK 01SKT 20-14AWG .032DD	2
13	13		9107360-33		WIRE, 18AWG(19/30)IPVC 150V	A/R
14	14		9107360-00		WIRE, 18AWG(19/30)IPVC 150V	A/R
15	15		1212167-00		MATE-N-LOK 03SKT(1X03).250CC HSG	1
16	16		1212170-00		MATE-N-LOK 01SKT 20-14AWG .085DD	2

REVISION HISTORY			BASIC PART NO: 7019862				
ENG	ECO NUMBER	REV	SECTION A OF A				
	INITIAL	C	SECTION.VARIATION INDEX [A]00	DRN: JOE DONAHER	DATE: 15 NOV 82	D I G I T A L	
			[B]	CHK'D: G. F.	DATE: 14 APR 83	TITLE PARTS LIST HARNESS, SWITCH VANE	
			[C]	DES.ENG: P. CAPPARIANCA	DATE: 14 APR 83	DOCUMENT NUMBER	
			[D]	RESP.ENG.: P. CAPPARIANCA	DATE: 14 APR 83	SIZE: K CODE: PL NUMBER: 7019862-0-08P REV: C	
			[E]	MFG.ENG.: J. MCCAFFERY	DATE: 11 APR 83	RELEASE DATE: 02-FEB-84	
			[F]	ASSEMBLY NUMBER: 0-IA-7019862-0-0	TOP DOCUMENT NUMBER:	FILE NAME: Z5888C.PLS	EDIT #: 9

SIZE	CODE	NUMBER	REV.
B	DD	5414506-1	A

DRAWING NO.	NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS
		5414506-01	MODULE REVISION	A
D-UA-5414506-1-0	1		VOLTAGE MONITOR BOARD	A
K-PL-5414506-1-DBP	1		VOLTAGE MONITOR BOARD(PL)	A
D-CS-5414506-1-1	1		VOLTAGE MONITOR BOARD (CS)	A
A-SP-5414506-1-2	4		VOLTAGE MONITOR BOARD (SP)	B
D-MD-5014505-0-0	2		DRILL & ETCH DRAWING (MD)	A
D-EC-5014505-0-0	1		ETCH CUT DRAWING (EC)	A
		5014505	ETCHED CIRCUIT BOARD	C
K-PC-5414506-0-DBC	-		P.C. DESIGN DATA BASE	A

NOTES:

REVISIONS	
REV.	A
CHG NO.	ORIG
DATE	☒

digital

USED ON OPTION/MODEL			
KL10	DRN. M. Normand	25 Sept 81	TITLE VOLTAGE MONITOR BOARD
	CHK'D RW Counter	1 Oct 81	SIZE B CODE DD NUMBER 5414506-1 REV. A
	ENG. R E [illegible]	1 OC T 81	
	PROD	1 OCT 81	SHEET 1 OF 1

MR

DRB 126

COMPONENT SIDE VIEW

REWORK INSTRUCTIONS

INITIAL RELEASE

COMPONENT ADDS SIDE1 AS SHOWN

O-1 SW1 (P/N 12111164-00, SW DIP 1A 4POS)

A. CLIP OFF BOTH LEADS OF SW1-4 FLUSH WITH SWITCH BODY

B. INSERT SWITCH INTO 6 PIN'S AT AT THE TOP R1.

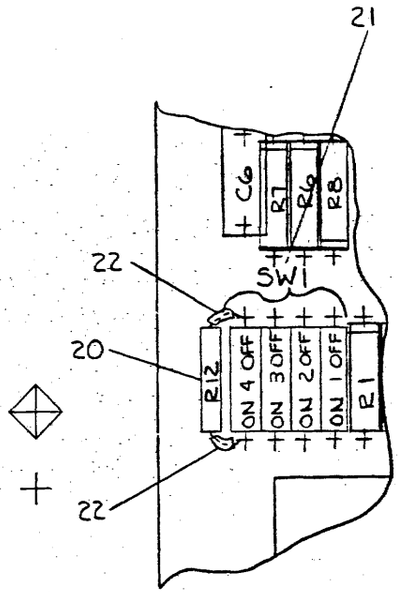
O-2 R12 (P/N 1300447, 470K .25W 5.0%)

A. ADD TEFLON THIN WALL TUBING (P/N 9107807-11 TO BOTH LEADS.

B. INSERT R12 INTO 2 PTH'S BENEATH SW1-4

NOTE: DIRECTIONS ARE GIVEN WITH RESPECT TO MODULE BEING POSITIONED WITH CONNECTOR J1 TOWARD USER.

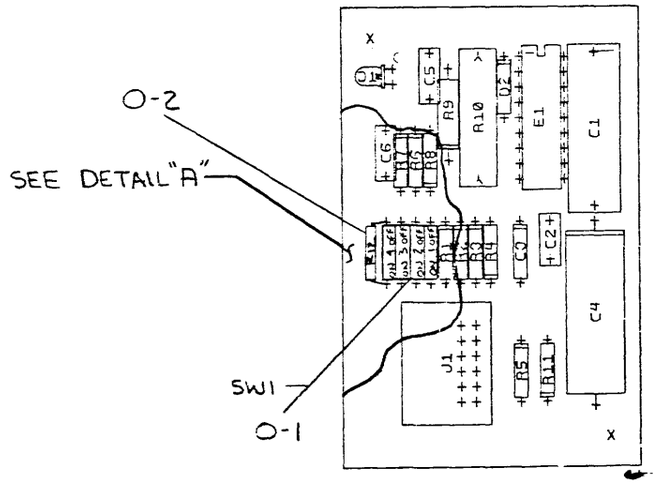
INDICATE MODULE REVISION AS "A"



DETAIL "A"
INSTALLED SWITCH (SW1)

SWITCH SW1

SWITCH POSITION	VOLTAGE ±20	±15	±5
1	OFF	OFF	ON
2	OFF	ON	OFF
3	ON	OFF	OFF
4	NOT USED		



NOTES: 2 MLZ1

STEP E	↑ Y AXIS .2"	STEP 1	TIMES
REPEAT	→ X AXIS .15"	STEP 4	TIMES

CHK	CHANGE NO	REV

ETCH REV.

SIGNATURES	DATE
DRN.	22 SEP 81
CHK'D.	10-SEP-81
MECH. ENG.	10-SEP-81
PROJ. ENG.	10-SEP-81
PROD.	10-SEP-81
SCALE 2	
SHT. OF	
NEXT HIGHER ASSY. B	

digital

TITLE VOLTAGE MONITOR BD-RL

SIZE	CODE	NUMBER	REV
D	UA	54115051-1-0	A

MR 1 MS# 190515-

AUTOMATED BY PRILST,3P(44) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 01	REFERENCE DESIGNATOR
1	1	D-MD-5014505-0-0	5014505-00	DRILL AND ETCH BRD.	1	
2	2		1000075-00	25 MFD 25V +75-10% AL EL	1	C1
3	3		1000004-00	.02 MFD 100V 20% Z5U DISC	1	C2
4	4		1001610-00	.01 MFD 50V +80-20% Z5U CER	1	C3
5	5		1000080-00	50 MFD 50V +75-10% AL EL	1	C4
6	6		1010274-01	.22 MFD 50V +80-20% Z5U CER	2	C5,C6
7	7		1117373-00	LED ASSY GREEN	1	D1
8	8		1105796-00	1N 4004 PIV=400 I= 1A D041 SP	1	D2
9	9		1217652-00	HEADER 12PIN RT ANGLE,DBL RO	1	J1
10	10		1317925-00	6.98 K .25 W .10% RN55E-B 2	1	R1
11	11		1317924-00	36.50 K .25 W .10% RN55E-B 2	1	R2
12	12		1317923-00	51.10 K .25 W .10% RN55E-B 2	1	R3
13	13		1317922-00	732.0 .25 W .10% RN55E-B 2	1	R4
14	14		1305355-00	7.0 K .25 W .10% RN55C-B 5	1	R5
15	15		1300365-00	1.0 K .25 W 5.0 % CC	2	R6,R7
16	16		1300250-00	150.0 .25 W 5.0 % CC	1	R8
17	17		1300347-00	680.0 .50 W 5.0 % CC	1	R9
18	18		1300368-00	1.0 K 1.0 W 5.0 % CC	1	R10
19	19	SEE NOTE #1	1917657-00	3544J LOW-VOLT SUPERVISORY	1	E1
20	20		1300447-00	4.70 K .25 W 5.0 % CC	2	R11,R12
21	21		1211164-00	SW,DIP 1P 1A 4POS	1	SW1
22	22		9107807-11	TUBING,THIN WALL,.022ID UL	A/R	

23 NOTE: 1.THIS PART CAN BE MARKED SG2544J/DEC3544J.

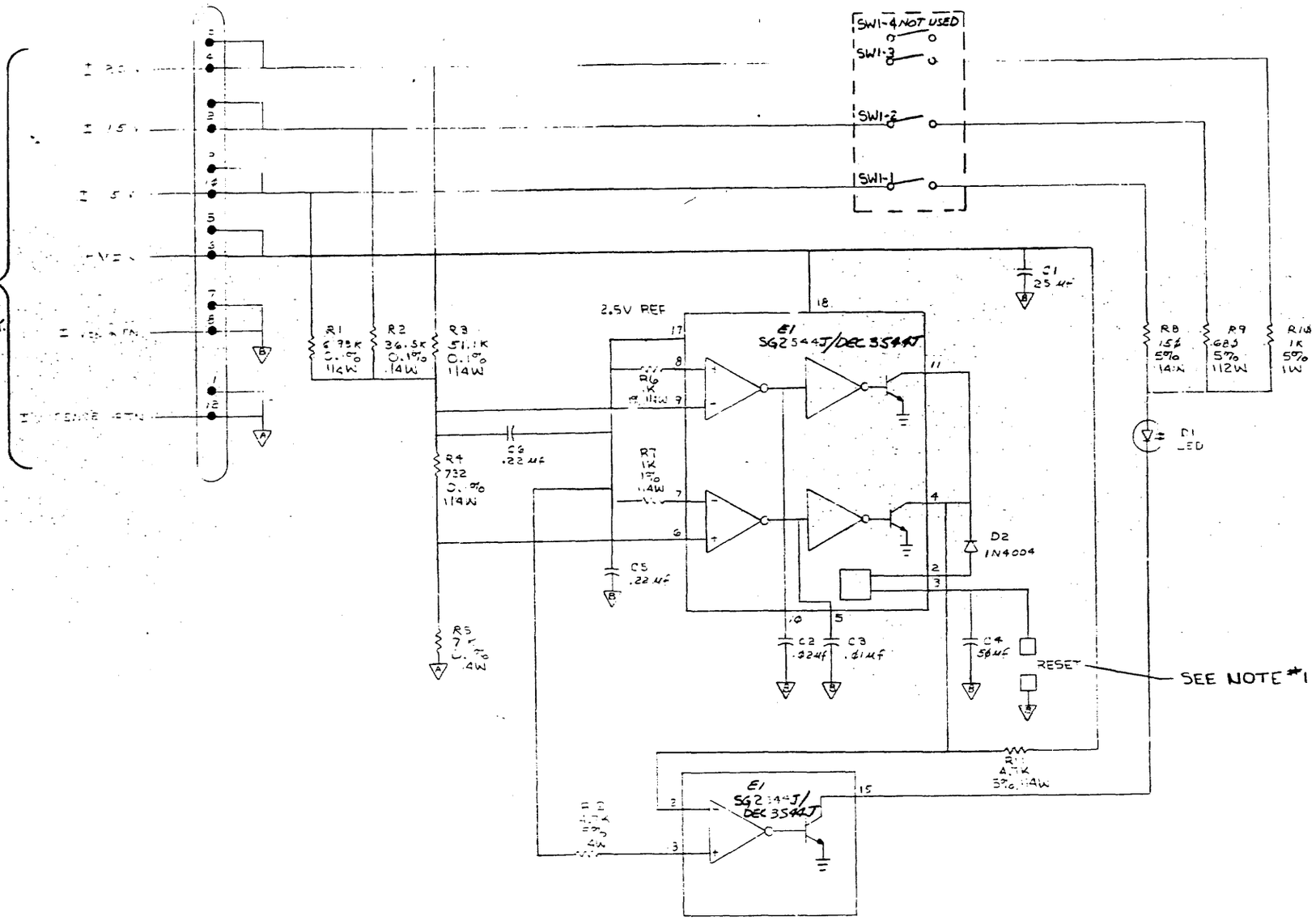
REVISION HISTORY			BASIC PART NO: 5414506		
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: M.NORMAND	DATE: 22-SEP-81
---	INITIAL	A	SECTION,VARIATION INDEX	CHK'D: R.W.CAUNTER	DATE: 1-OCT-81
			[A] 01		
			[B]	DES,ENG: R.JOSEPHSON	DATE: 1-OCT-81
			[C]		
			[D]		
			[E]	RESP,ENG,: R.JOSEPHSON	DATE: 1-OCT-81
			[F]		
			[H]		
			[J]	MFG,ENG,: T.CAVANAUGH	DATE: 1-OCT-81
			[K]		
			[L]		
			[M]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:
			[N]	D-UA-5414506-1-0	B-DD-54145-5-1

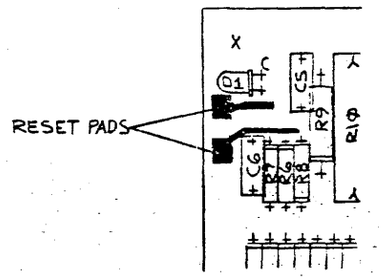
DIGITAL
TITLE PARTS LIST
5414506-01 VOLTAGE MONITOR BOARD
DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
F	PL	5414506-1-DBP	A

FILE NAME:	EDIT #
Z3208A.PL8	4

NOTES:
1. JUMPER PADS TOGETHER TO RESET INDICATOR. RESET IS ALSO PROVIDED BY REMOVAL OF ALL POWER TO THE MODULE. RESET JUMPER MUST BE LESS THAN 100 OHMS MAXIMUM.





SWITCH POSITION	VOLTAGE ±20	±15	±5
1	OFF	OFF	ON
2	OFF	ON	OFF
3	ON	OFF	OFF
4	NOT USED		

SWITCH SW1
CAUTION: ONLY ONE SWITCH MUST BE ON FOR PROPER OPERATION OF THIS BOARD.

DRN	FIRST USED ON KL10
CHK	digital
ENG	TITLE VOLTAGE MONITOR BOARD
PROJ ENG	
PROD	
NEXT HIGHER ASSY	
SCALE NONE	SIZE D CODE CS NUMBER 54145[illegible]-1-1 REV A
SHEET 1 OF	DIST

REVISIONS: REV. | CHANGE NO. | CHK

MR 1

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE Sept. 22,1981

TITLE VOLTAGE MONITOR

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
John Tivnan		A	SP	5414506-1-2	A

DEC 16-(392)-1079-N971
DRA 107

SHEET 1 of 5

ENGINEERING SPECIFICATION — CONTINUATION SHEET

TITLE VOLTAGE MONITOR

1.0 General

1.1 This is a specification for a voltage monitor printed circuit board.

When the input voltage to the module is within its range and the correct switch is placed in the "on" position, a green LED is illuminated.

When the voltage goes out of range either on an overvoltage or undervoltage condition, the green LED is extinguished and this fault is latched.

1.2 Reference Documents

DEC STD 102 - Environmental Standard.
D-UA-5414506-1-0 Voltage Monitor Board

2.0 Electrical Specifications

2.1 Input Voltages

The following voltage input ranges are acceptable for monitoring:

+5V	0- +7V DC
+15V	0- +20V DC
+20V	0- +25V DC
-5V	0- -7V DC
-15V	0- -20V DC
-20V	0- -25V DC

2.2 Power Source

This module will operate from a power source of-4.5Vto -40V DC, or +4.5V to +40V DC.

2.3 Detection Band

This module will detect and extinguish the green LED display when the input voltage is out of the following bands:

	SIZE	CODE	NUMBER	REV
	A	SP	5414506-1-2	A

DEC FORM NO EN-01022-16-N370-(381)
DRA 108

SHEET 2 OF 5

ENGINEERING SPECIFICATION — CONTINUATION SHEET

TITLE VOLTAGE MONITOR

Switch	Voltage	Error Band (Fault when outside this range)
SW1 1	+/-5V	$\pm 5\%$ $\pm 1.5\%$ (3.5% to 6.5%)
SW1 2	+/-15V	$\pm 5\%$ $\pm 1.5\%$ (3.5% to 6.5%)
SW1 3	+/-20V	$\pm 5\%$ $\pm 1.5\%$ (3.5% to 6.5%)

2.4 Reset

Reset pads are provided on the printed circuit board for local reset. Jumper reset pads together to reset the indicator. Reset is also provided by removal of all power to the module. Reset jumper must be less than 100 ohms resistance.

2.5 Turn-on Time Delay

An undervoltage fault will be disabled for $100^{\pm 30}_{ms}$ ms after the power source voltage is truned on.

2.6 Fault Duration

The over and/or under voltage condition must exist for a duration of time before detection.

Overvoltage Condition - 0.1_{ms}
Undervoltage Condition - 0.2_{ms}

2.7 Operating Power

Current drain is 16 ma during normal operation. Current drain during a fault condition is 22 ma.

2.8 Operating Voltage

Module will operate as long as power source voltage is greater than 4.5V. Duration of true indication may be lengthened by connecting power source voltage to a voltage higher than being monitored.

If the module is operated from the voltage it is monitoring, it will not indicate (at all) upon loss of the voltage.

3.0 Output

3.1 Indicator

Normal operation of the voltage is indicated by an illuminated green LED. Abnormal voltage is indicated by the lack of illumination by the green LED.

	SIZE	CODE	NUMBER	REV
	A	SP	5414506-1-2	A

DEC FORM NO EN-01022-16-N370-(381)
DRA 108

SHEET 3 OF 5

ENGINEERING SPECIFICATION — CONTINUATION SHEET

TITLE VOLTAGE MONITOR

4.0 Mechanical and Physical

4.1 Size - Printed circuit board 2.0 x 3.0 in. Maximum height is 0.5 in.

4.2 Weight

4.3 Mounting - Any position

4.4 Cooling - Natural convection.
Power may range from 100 mw to 650 mw depending upon power source voltage.

4.5 Temperature Range

- Per DEC Std 102 for Class B environment

4.6 Altitude - 8000 ft - operate

4.7 Vibration - Per DEC Std 102 Class B

4.8 Mechanical Shock - Per DEC Std 102

5.0 Reliability

MTBF goal is greater than 200,000 hours for ground benign environment per MIL - HDBK 217B based on parts count.

6.0 Safety

Not applicable

7.0 Input-Output Connector

J1 Part Number 12-17652-00 Mates with 12-14112-03 connector. Contacts in mating connector are 12-151121-00

Signals

J1-1	15V INPUT
J1-2	15V INPUT
J1-3	20V INPUT
J1-2	20V INPUT
J1-5	INPUT VOLTAGE
J1-6	INPUT VOLTAGE
J1-7	INPUT VOLTAGE RETURN
J1-8	INPUT VOLTAGE RETURN
J1-9	5V INPUT
J1-10	5V INPUT

	SIZE	CODE	NUMBER	REV
	A	SP	5414506-1-2	A

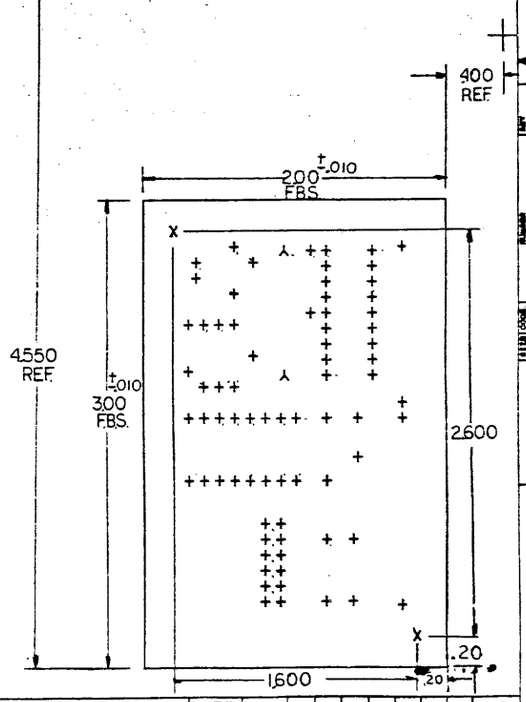
DEC FORM NO EN-01022-16-N370-(381)
DRA 108

SHEET 4 OF 5

J1-11 SENSE VOLTAGE RETURN
J1-12 SENSE VOLTAGE RETURN

In addition, two printed circuit pads are provided for reset.

COMPONENT SIDE VIEW



NOTES: 2ML74

STEP & REPEAT	↑ Y AXIS 35 STEP 2 TIMES
	→ X AXIS 26 STEP 3 TIMES

CHK	CHANGE NO	REV

DIMENSIONAL TOLERANCE
INCHES
XXX = ±.005
XX = ±.020
X = ±.040
ANGLE = ±0° 30'

HOLE DATA											
SYMBOL	+	A	X	↑	Z	W	Δ	◫	◇	*
FIN HOLE SIZE	.042	.055	.141								
PLATED	X	X	OPT								
NON PLATED											
QTY.	74	2	2								
◯=OFF GRD HLE											
DRILL SIZE											

.025 GRID UNLESS INDICATED

BOARD FABRICATION INFORMATION
BOARD SIZE 10.6 QUAD
BOARD DATA DWG. # EMD 7605819-17-0
BOARD MAT'L FL-GF-.055-E 2/2
DEC PS -- 1400000
QTY. OF LAYERS 2
PTH - X PRINT AND ETCH
SOLDER MASK NO SIDE 2 BOTH SIDES
GOLD CONTACTS NO BOTTOM TOP

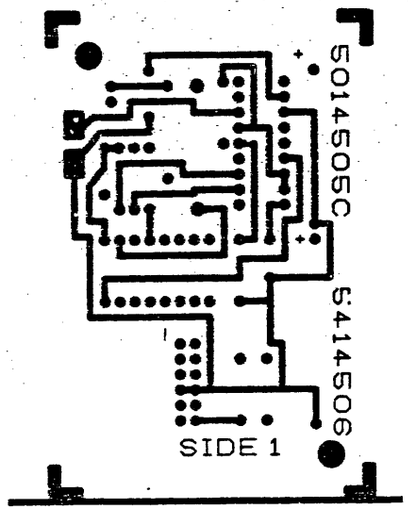
SIGNATURES	DATE
DRN.	5-18-80
CHK.	
MECH. ENG.	
PROJ. ENG.	
PROD.	7/14/80

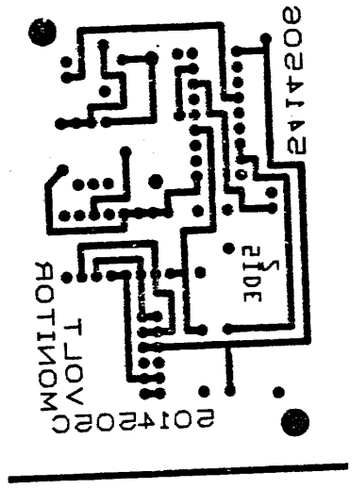
digital

TITLE DRILL AND ETCH DRAWING

SCALE 2/1	SIZE D	CODE MD	NUMBER 5014505-0-0	REV A
SHT. 1 OF 2	NEXT HIGHER ASSY. D-UA-5414506-0-0		ETCH REV. C	

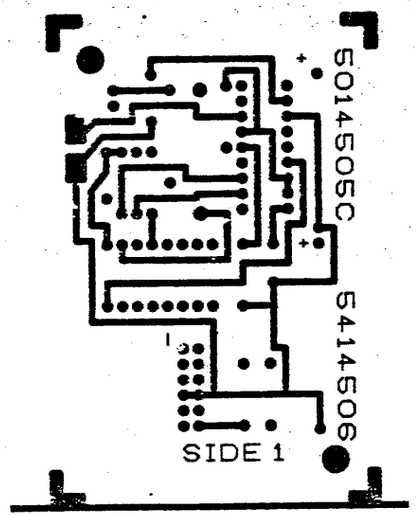
MR † MS# 190515A

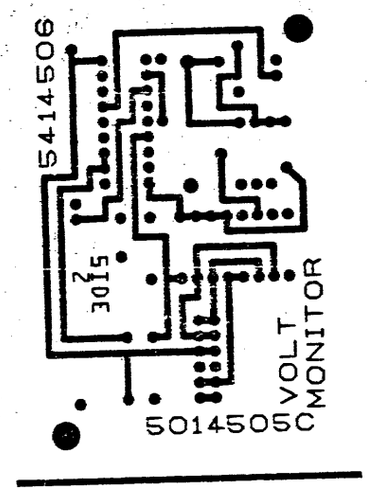




REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
DRILL & ETCH DRAWING	D	MD	5014505-0-0	A
SCALE 2/1	SHEET 2 OF 2	DIST.		





NOTES:

CHK	CHANGE NO	REV

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	

digital

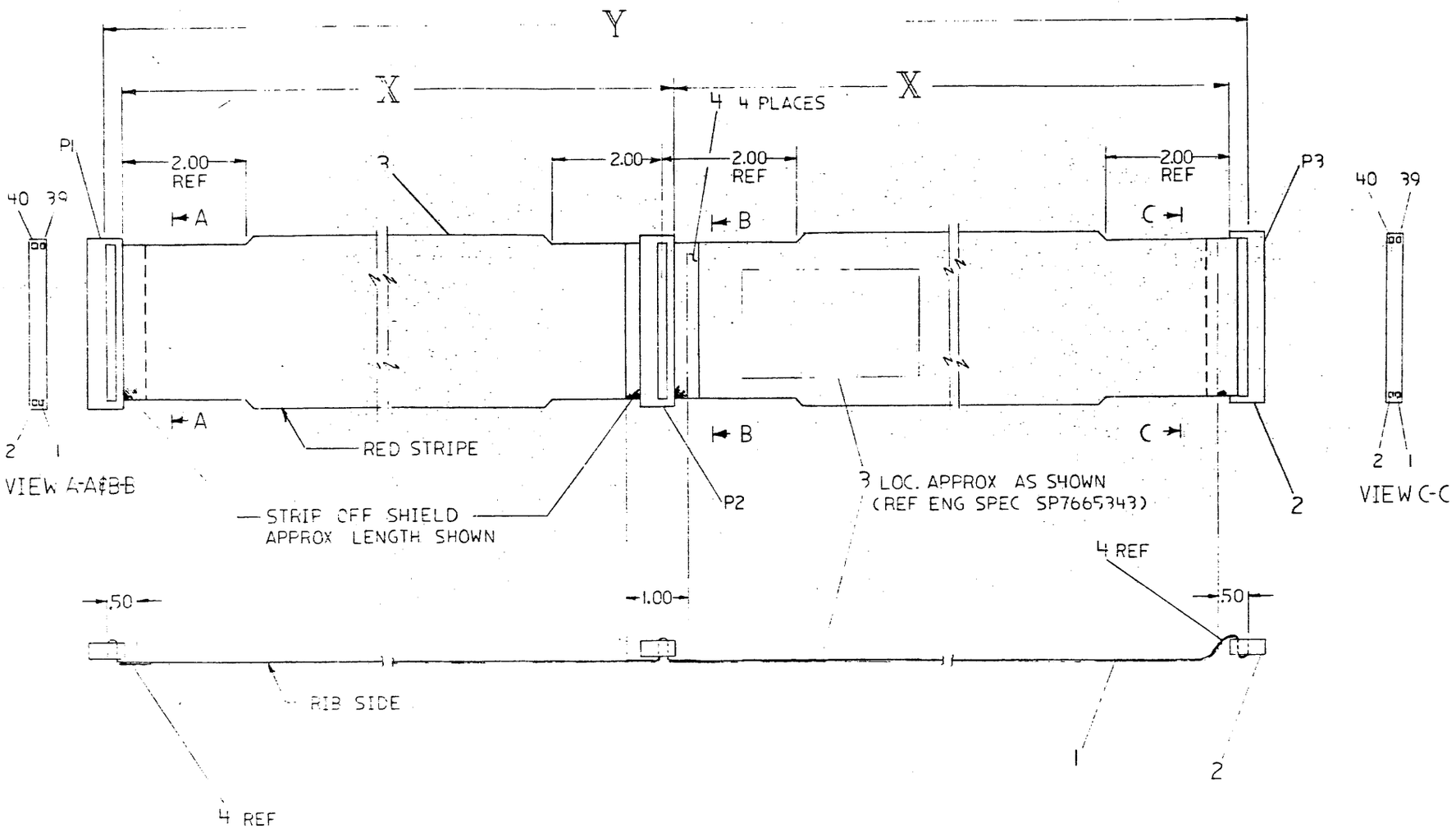
TITLE
ETCH CUT DRAWING

SCALE	SIZE	CODE	NUMBER	REV
2/1	D	EC	5014505-0-0	A
SHT. 1 OF 1				
ETCH REV C	FIRST USED ON KLIØ			

MS#

LEGEND			
PART NO.	DIM "X"	DIM "Y" (PRECUT)	REV
7019270-1J	0 FT., 10 IN. ± 1 IN.	1 FT., 10 IN. (REF)	A1
7019270-03	1 FT., 6 IN. ± 1 IN.	3 FT., 2 IN. (REF)	A1

NOTES:



VIEW A-A & B-B

VIEW C-C

CAUTION: OFF SHEET PARTS LIST EXISTS.
SEE K-PL-7019270-0-D3P.

REVISION HISTORY		
DATE	ECO NUMBER	REV
RELEASED		B

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 (CHECK ONE)	DIMENSION RANGE IN 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 60.0
X ± .1	SURFACE QUALITY				± .02	± .03	± .05	± .10
XX ± .02			± .004	± .004	± .012	± .016	± .024	± .04
XXX ± .005	MICROINCHES							

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

DRN		DATE 8 MAR 83
CHK'D		DATE 11 MAR 83
DES ENG	Pappalardo	DATE 13 MAR 83
RESP ENG	Pappalardo	DATE 13 MAR 83
MFG ENG		DATE
NEXT HIGHER DOC	E-UA-CI20-A-0	

TITLE: digital
BUS, CABLE M. ASSY

DOCUMENT NUMBER: SIZE D | CODE EA | NUMBER 7019270-0-0 | REV B

SCALE | SHEET 1 OF 1

DRD 1000

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 1J	03
					VARIATION REVISION LEVEL:		
1	1		1700004-01		CABLE,RIBBON BOND 50COND 28AWG	A/R	A/R
2	2		1211664-00		CONN,IDC 50POS(1X25).100CC GOL	3	3
3	3		3616073-00		LABEL,ID W/COPY VERTICAL	1	1
4	4		3612511-00	-	TAPE,VINYL ADH .50 WDX 7M	A/R	0

REVISION HISTORY			BASIC PART NO: 7019270				
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: W. ALLEN	DATE: 10-MAR-82	D I G I T A L	
	INITIAL	B	SECTION.VARIATION INDEX	CHK'D: G. F.	DATE: 10 DEC 82	TITLE: PARTS LIST	
			[A]1J,03			BUS CABLE, M ASSY	
			[B]	DES.ENG: P. CAPPABIANCA	DATE: 13 APR 83	DOCUMENT NUMBER	
			[C]			SIZE / CODE / NUMBER / REV	
			[D]	RESP.ENG.: P. CAPPABIANCA	DATE: 13 APR 83	K / PL / 7019270-0-0BP / B	
			[E]	MFG.ENG.: J. MCCAFFERY	DATE: 11 APR 83	RELEASE DATE: 02-MAR-84	
			[F]	ASSEMBLY NUMBER: D-IA-7019270-0-0	TOP DOCUMENT NUMBER:	FILE NAME: Z5885B.PLS	EDIT #: 8

D IA 7020488-0-0 A

SYMBOLS

ITEM NO	SYMBOL	PART NO (REF)
4	▮	1209378-00
5	▯	1209379-03
10	ı▮	1209378-03

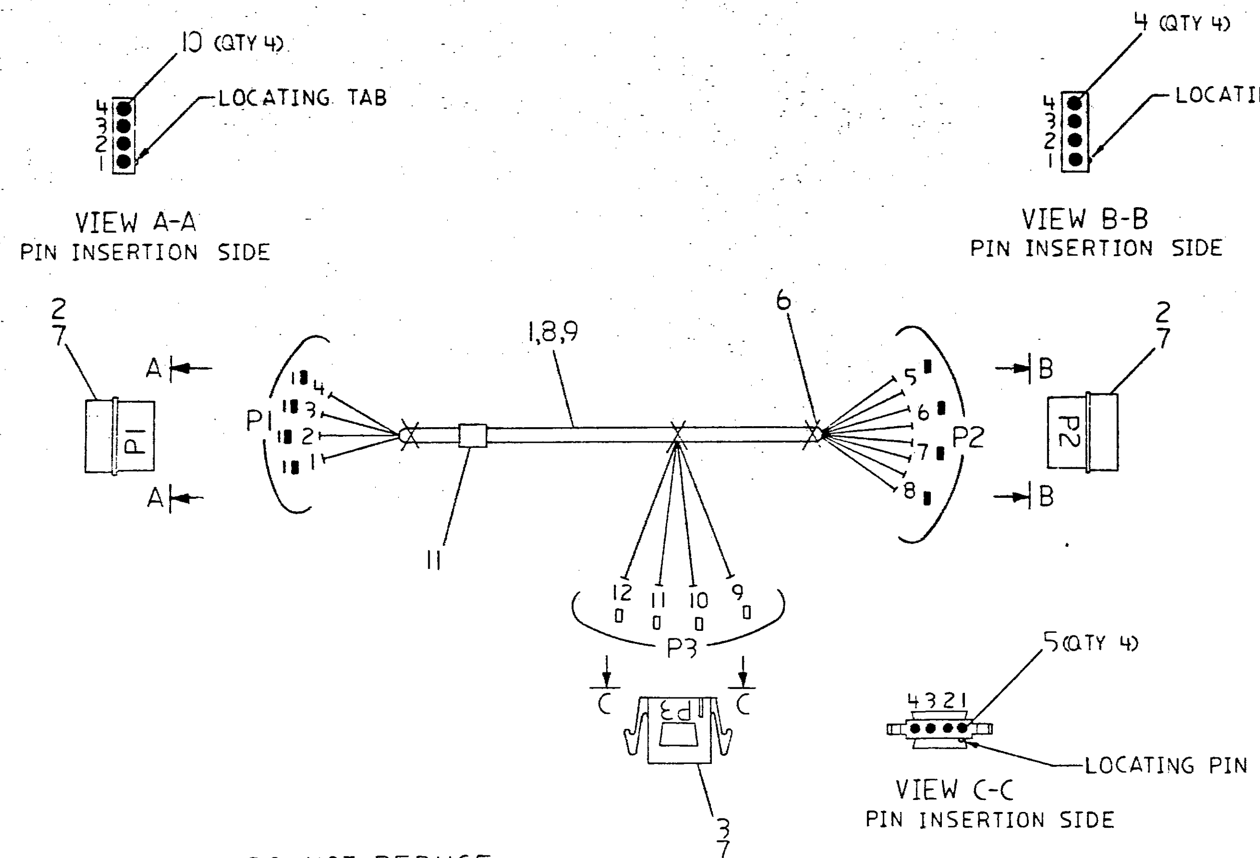
WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	TO WITH	REMARKS
9	22	BLK	1	P1-1	10	8	P2-1	4	
			9	P3-1	5				
			2	P1-2	10	7	P2-2	4	
9		BLK	10	P3-2	5				
8		ORN	3	P1 3	10	6	P2-3	4	
8		ORN	11	P3 3	5				
1		YEL	4	P1 4	10	5	P2-4	4	
1	22	YEL	12	P3 4	5				

LEGEND

PART NO	VARIATION	REV
7020488-00	AS SHOWN	A1

NOTES:
1. USE TIE WRAPS (X) ITEM #6 APPROXIMATELY EVERY 3 INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. CONNECTOR TO BE LABLED WITH COMPONENT IDENTIFIERS.
3. UNLESS OTHERWISE NOTED ALL LENGTHS ARE IN INCHES.



CAUTION: OFF SHEET PARTS LIST EXISTS. SEE K-PL-7020488-0-DBP. (Z5887A)

DO NOT REDUCE

0 IN 6 IN 12 IN

FOR MANUFACTURING PURPOSES ONLY

REVISION HISTORY | ECO NUMBER | DATE | REV.

QUANTITY & VARIATION	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 — MICROINCHES
APPLICABLE DIMENSION RANGE (CHECK ONE)
DIMENSION RANGE IN INCHES: OVER 0 TO 3.2; OVER 3.2 TO 12; OVER 12 TO 40; OVER 40 TO 120; OVER 120 TO 400; OVER 400 TO 800

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: —//—

DRN: Joe Dipalo Jr. DATE 15 Nov 82
CHK'D: DATE 3-Feb-84
DES ENG: DATE 2-Jun-84
RESP ENG: DATE 2-Jun-84
MFG ENG: DATE

NEXT HIGHER ASSY: D-IA-7020488-0-0

TITLE: HARNESS, SMALL SWITCH VANE

digital

DOCUMENT NUMBER: SIZE D CODE IA NUMBER 7020488-0-0 REV A

SCALE 1/1 SHEET OF

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00 (VARIATION REVISION LEVEL: A1)
1	1		9107350-44		WIRE, 22AWG(07/30)IPVC 150V	A/R
2	2		1209351-04		MATE-N-LOK 04PIN(1X04).200CC HSG	2
3	3		1209350-04		MATE-N-LOK 04SKT(1X04).200CC HSG	1
4	4		1209378-00		MATE-N-LOK 01PIN 20-14AWG .0850D	4
5	5		1209379-03		MATE-N-LOK 01SKT 30-22AWG .0850D	4
6	6		9007031-00		TIE,CABLE BUNDL,DIA 0- 3/4"=101	A/R
7	7	A-DC-7409872-0-0	7409872-02		PWR HARNESS DECAL, BLACK ON CLEA	1
8	8		9107350-33		WIRE, 22AWG(07/30)IPVC 150V	A/R
9	9		9107350-00		WIRE, 22AWG(07/30)IPVC 150V	A/R
10	10		1209378-03		MATE-N-LOK 01PIN 30-22AWG .0850D	4
11	11		3616073-00		LABEL,ID W/COPY VERTICAL	1

REVISION HISTORY			BASIC PART NO: 7020488	DRN: JOE DONAHER	DATE: 15 NOV 82	D I G I T A L
ENG	ECO NUMBER	REV	SECTION A OF A	CHK'D: JIM SICARD	DATE: 13 FEB 84	TITLE PARTS LIST SHORT SWITCH VANE
---	INITIAL	A	SECTION.VARIATION INDEX (A)00	DES.ENG: P CAPPABIANCA	DATE: 29 JUN 84	DOCUMENT NUMBER: SIZE K; CODE PL; NUMBER 7020488-0-DBP; REV A
			(B)	RESP.ENG.: P CAPPABIANCA	DATE: 29 JUN 84	
			(C)	MFG.ENG.: J MCCAFFREY	DATE: 29 JUN 84	RELEASE DATE: 05-JUL-84
			(D)	ASSEMBLY NUMBER: D-IA-7020488-0-0	TOP DOCUMENT NUMBER: D-IA-7020488-0-0	FILE NAME: 25387A.PLB
			(E)			
			(F)			

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS
			ECO NUMBER	-
		5414793-00	MODULE REVISION	A1
E-UA-5414793-0-0	1		IPA 20-L BACKPANEL	A
K-PL-5414793-0-DBP	1		PARTS LIST, 5414793	A
D-CS-5414793-0-1	5		IPA20-L BACKPLANE INT CONN	A
K-PC-5414793-0-DBC	-		CALDEC DATA BASE	A
D-DD-5014792-0	1		DRAWING DIRECTORY, 5014792	A

REVISIONS		
CHK	CHANGE NO.	REV

DRN E.WILSON 05-JUN-84 | ENG. 05-JUN-84 | CHK'D. 05-JUN-84

DSK:14793.T2P[4,36] 05-JUN-84 09:41 | NEXT HIGHER ASSEMBLY: " | BOARD LOCATION: N/A | SHEET 1 OF 1

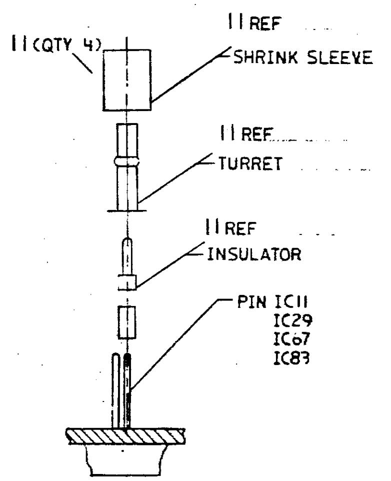
FIRST USED ON OPTION/MODEL:

TITLE: DRAWING DIRECTORY 5414793

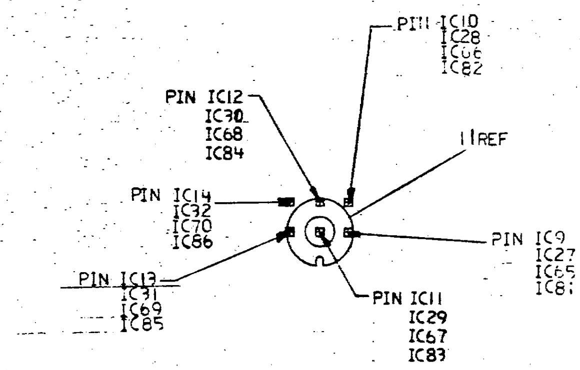
SIZE	CODE	NUMBER	REV.
D	DD	5414793-0	A

MRO

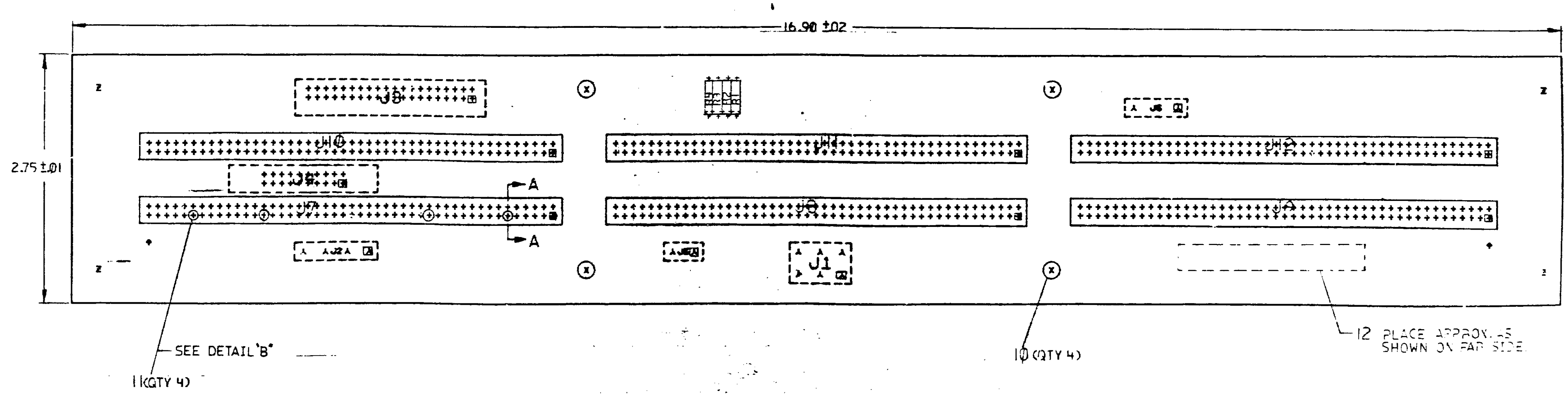
COMPONENT SIDE VIEW



SECTION "A-A"
SCALE: NONE



DETAIL "B"
4 PLACES
SCALE: NONE



digital

TITLE IPA 2/1 BACKPLANE

SIZE E | CODE UA | NUMBER 5414793-0-0 | REV

SIGNATURES | DATE
DRN.
CHK.
MECH. ENG.
PROJ. ENG.
PROD.
SCALE 2/1
SHT. 1 OF 1
TOP DWG. NO. D-DD-5414793-0

ETCH REV. C

CHG | CHANGE NO | REV

STEP & REPEAT | + Y AXIS STEP TIMES | + X AXIS STEP TIMES

NOTES:

AUTOMATED BY PRTLST.4Q(47) — P A R T S L I S T — SHEET A1 OF A1

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A1	
1	1	D-MD-5014792-0-0	5014792-00		DRILL&ETCH DRAWING	1	
2	2		1300309-00		390.0 .25 W 5.0 % CF	2	R2,R4
3	3		1301322-00		180.0 .25 W 5.0 % CF	2	R1,R3
4	4		1212297-12		MATE-N-LOK 06PIN(2X03).250CC HDR	1	J1
5	5		1212297-15		MATE-N-LOK 04PIN(1X04).250CC HDR	1	J2
6	6		1220547-01		PCB HEADER 40PIN(2X20).100CC STR	1	J3
7	7		1217869-01	A	PCB,HEADER 20PIN(2X10).100CC STR	1	J4
8	8		1212297-10		MATE-N-LOK 02PIN(1X02).250CC HDR	1	J5
9	9		1212297-14		MATE-N-LOK 03PIN(1X03).250CC HDR	1	J6
10	10		9009150-02		INSERT,THREAD SLF-CLNCH	4	
11	11		1218506-00		CONN,COAX BKP 50 OHM PLUG CLAM	4	
12	12	A-DC-7411881-0-0	7411881-01		DECAL	1	
13	13		1218421-02		CARD EDGE 94PIN(2X47).100CC STR	6	J7-J12
14	14		9905016-04		CARTON,DIE CUT,SELF LOCK W/FOAM	1	

REVISION HISTORY

ENG	ECO NUMBER	REV
	INITIAL	A

BASIC PART NO: 5414793

SECTION A OF A

SECTION.VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]
[H]
[J]
[K]
[L]
[M]
[N]

DRN: J.PLANTE — DATE: 14-SEP-82

CHK'D: R.W.CAUNTER — DATE: 1-DEC-82

DES.ENG: P.CAPPABIANCA — DATE: 8-JUN-84

RESP.ENG.: P.CAPPABIANCA — DATE: 8-JUN-84

MFG.ENG.: S.BAYNE — DATE: 5-NOV-84

ASSEMBLY NUMBER: E-UA-5414793-0-0

TOP DOCUMENT NUMBER: #D-DD-5414793-0

D I G I T A L

TITLE: PARTS LIST
5414793
IPA 20-L BACKPLANE

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
K	PL	5414793-0-DBP	A

RELEASE DATE: 05-NOV-84

FILE NAME: Z9869A.PLS

EDIT #: 14

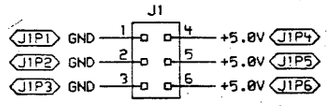
IPA20-L POWER AND SIGNAL INTERCONNECTIONS

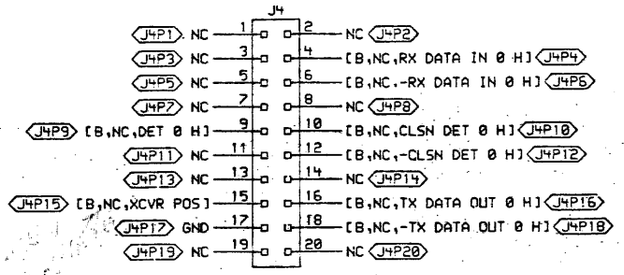
NOTES: 1. THE VARIABLE FIELDS ARE DEFINED AS FOLLOWS:
[B, FIELD 1, FIELD 2]
FIELD 1 = CI20; FIELD 2 = NIA20

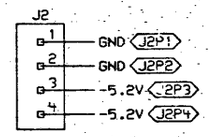
2. NO VARIABLE SIGNAL FIELD DENOTES A COMMON SIGNAL FOR BOTH CI/NIA 20.

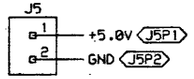
3. FOR BACKPANEL WIRELISTER GENFRATION/CONTROL, RUN THE FOLLOWING WD FILES WITH SW B=2: IPAPWR.WD, BKPSL1.WD, AND BKPSL2.WD

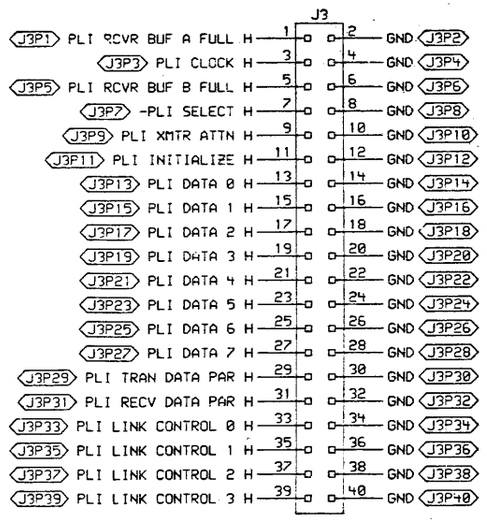
4. FOR CI20 OR NIA20 BACKPANEL SIGNAL WIRELIST, RUN THE FOLLOWING WD FILES: IPAPWR.WD, IPASLT1.WD, AND IPASLT2.WD AND SET SW B=1 FOR CI20 AND B=2 FOR NIA20.

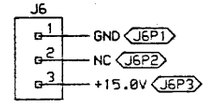


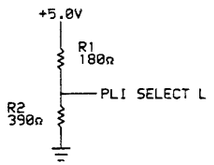


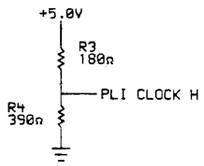












REVISIONS		
CHK	CHANGE NO.	REV

DRN. Toomey	DATE 10-JUL-84	ENG. R.J.EICHMANN	DATE 10-JUL-84
CHK'D D. DELLORCO	DATE 10-JUL-84	BOARD LOCATION: SHEET 1 OF 5	
XTRA:<EICHMANN>IPAPWR.DRW 10-JUL-84 09:08		NEXT HIGHER ASSEMBLY:	
FIRST USED ON OPTION/MODEL: IPA20-L		IPA20-L	

TITLE: IPA20-L BACKPLANE INT CONN

SIZE	CODE	NUMBER	REV.
D	CS	5414793-0-1	A

MRO 1

L0100 (LINK) SIGNALS FOR SLOT 1

(CI20 ONLY)

A1

A1A1	NC	1	2	GND	A1A2
A1A3	+5.0V	3	4	+5.0V	A1A4
A1A5	NC	5	6	NC	A1A6
A1A7	NC	7	8	NC	A1A8
A1A9	NC	9	10	NC	A1A10
A1A11	NC	11	12	NC	A1A12
A1A13	NC	13	14	NC	A1A14
A1A15	NC	15	16	GND	A1A16
A1A17	NC	17	18	NC	A1A18
A1A19	NC	19	20	NC	A1A20
A1A21	NC	21	22	NC	A1A22
A1A23	GND	23	24	NC	A1A24
A1A25	NC	25	26	NC	A1A26
A1A27	NC	27	28	NC	A1A28
A1A29	NC	29	30	NC	A1A30
A1A31	NC	31	32	NC	A1A32
A1A33	GND	33	34	NC	A1A34
A1A35	NC	35	36	NC	A1A36
A1A37	NC	37	38	NC	A1A38
A1A39	NC	39	40	NC	A1A40
A1A41	NC	41	42	NC	A1A42
A1A43	NC	43	44	NC	A1A44
A1A45	NC	45	46	NC	A1A46
A1A47	NC	47	48	NC	A1A48
A1A49	NC	49	50	NC	A1A50
A1A51	NC	51	52	NC	A1A52
A1A53	NC	53	54	NC	A1A54
A1A55	NC	55	56	NC	A1A56
A1A57	NC	57	58	NC	A1A58
A1A59	NC	59	60	NC	A1A60
A1A61	GND	61	62	NC	A1A62
A1A63	NC	63	64	NC	A1A64
A1A65	NC	65	66	NC	A1A66
A1A67	NC	67	68	NC	A1A68
A1A69	NC	69	70	NC	A1A70
A1A71	NC	71	72	GND	A1A72
A1A73	NC	73	74	NC	A1A74
A1A75	NC	75	76	NC	A1A76
A1A77	NC	77	78	NC	A1A78
A1A79	GND	79	80	NC	A1A80
A1A81	NC	81	82	NC	A1A82
A1A83	NC	83	84	NC	A1A84
A1A85	NC	85	86	NC	A1A86
A1A87	NC	87	88	NC	A1A88
A1A89	NC	89	90	NC	A1A90
A1A91	+5.0V	91	92	GND	A1A92
A1A93	NC	93	94	NC	A1A94

B1

B1B1	GND	1	2	NC	B1B2
B1B3	+5.0V	3	4	+5.0V	B1B4
B1B5	NC	5	6	NC	B1B6
B1B7	XTEND HDR L	7	8	ALTER DELTA TIME L	B1B8
B1B9	DISABLE ARB L	9	10	EXTEND ACK TO L	B1B10
B1B11	ILIK NODE ADDRESS 1 H	11	12	ILIK NODE ADDRESS 0 H	B1B12
B1B13	ILIK NODE ADDRESS 3 H	13	14	ILIK NODE ADDRESS 2 H	B1B14
B1B15	ILIK NODE ADDRESS 4 H	15	16	GND	B1B16
B1B17	ILIK NODE ADDRESS 6 H	17	18	ILIK NODE ADDRESS 5 H	B1B18
B1B19	ILIK NODE ADDRESS 7 H	19	20	PORT DATA 0 H	B1B20
B1B21	PORT DATA 1 H	21	22	PORT DATA 2 H	B1B22
B1B23	GND	23	24	PORT DATA 3 H	B1B24
B1B25	PORT DATA 5 H	25	26	PORT DATA 4 H	B1B26
B1B27	PORT DATA 7 H	27	28	PORT DATA 6 H	B1B28
B1B29	SELECT H	29	30	RCVR PACKET END H	B1B30
B1B31	LINK CONTROL 0 H	31	32	LINK CONTROL 1 H	B1B32
B1B33	GND	33	34	LINK CONTROL 2 H	B1B34
B1B35	INITIALIZE H	35	36	LINK CONTROL 3 H	B1B36
B1B37	ILIM RCVR A ENABLE H	37	38	ILIM RCVR B ENABLE H	B1B38
B1B39	ILIJ ICCS PATH B H	39	40	ILIV CRC STATUS H	B1B40
B1B41	ILIA PACKET LENGTH H	41	42	ILIN RCVR CLK H	B1B42
B1B43	RCVR BUFFERS FULL H	43	44	ILIC VALID RCVR STATUS H	B1B44
B1B45	NC	45	46	+5.0V	B1B46
B1B47	+5.0V	47	48	NC	B1B48
B1B49	ILIA VALID RCVR DATA (1) H	49	50	ILIF RCVR DATA PARITY (1) H	B1B50
B1B51	ILIF RCVR DATA 0 H	51	52	ILIF RCVR DATA 1 H	B1B52
B1B53	ILIF RCVR DATA 2 H	53	54	ILIF RCVR DATA 3 H	B1B54
B1B55	ILIF RCVR DATA 4 H	55	56	ILIF RCVR DATA 5 H	B1B56
B1B57	ILIF RCVR DATA 6 H	57	58	ILIF RCVR DATA 7 H	B1B58
B1B59	ILIL XMIT STATUS 7 (1) H	59	60	XMIT BUFFER EMPTY H	B1B60
B1B61	GND	61	62	ILIC XMIT DATA ENABLE (1) H	B1B62
B1B63	ILIL XMIT STATUS 0 H	63	64	ILIL XMIT ATTENTION (1) H	B1B64
B1B65	ILIL XMIT STATUS 2 H	65	66	ILIL XMIT STATUS 1 H	B1B66
B1B67	ILIB XMIT STATUS 4 (1) H	67	68	ILIL XMIT STATUS 3 (1) H	B1B68
B1B69	ILIL XMIT STATUS 6 (1) H	69	70	ILIL XMIT STATUS 5 (1) H	B1B70
B1B71	PORT CLK H	71	72	GND	B1B72
B1B73	XMIT DATA PARITY H	73	74	XMIT DATA 0 H	B1B74
B1B75	XMIT DATA 1 H	75	76	XMIT DATA 2 H	B1B76
B1B77	XMIT DATA 3 H	77	78	XMIT DATA 4 H	B1378
B1B79	GND	79	80	XMIT DATA 5 H	B1B80
B1B81	XMIT DATA 7 H	81	82	XMIT DATA 6 H	B1B82
B1B83	DISABLE RCVR CLK L	83	84	RCVR TEST CLK L	B1B84
B1B85	ILIR XMIT CLK H	85	86	XMIT CLK DISABLE L	B1B86
B1B87	XMIT TEST CLK H	87	88	XMIT TEST CLK L	B1B88
B1B89	NC	89	90	GND	B1B90
B1B91	+5.0V	91	92	+5.0V	B1B92
B1B93	GND	93	94	GND	B1B94

C1

C1C1	GND	1	2	-5.2V	C1C2
C1C3	+5.0V	3	4	NC	C1C4
C1C5	NC	5	6	NC	C1C6
C1C7	CIB XMIT SHIELD	7	8	CIB XMIT SHIELD	C1C8
C1C9	CIB XMIT SHIELD	9	10	CIB XMIT SHIELD	C1C10
C1C11	CIB XMIT	11	12	CIB XMIT SHIELD	C1C12
C1C13	CIB XMIT SHIELD	13	14	CIB XMIT SHIELD	C1C14
C1C15	NC	15	16	NC	C1C16
C1C17	NC	17	18	NC	C1C18
C1C19	GND	19	20	GND	C1C20
C1C21	NC	21	22	NC	C1C22
C1C23	NC	23	24	NC	C1C24
C1C25	CIA XMIT SHIELD	25	26	CIA XMIT SHIELD	C1C26
C1C27	CIA XMIT SHIELD	27	28	CIA XMIT SHIELD	C1C28
C1C29	CIA XMIT	29	30	CIA XMIT SHIELD	C1C30
C1C31	CIA XMIT SHIELD	31	32	CIA XMIT SHIELD	C1C32
C1C33	NC	33	34	NC	C1C34
C1C35	NC	35	36	NC	C1C36
C1C37	NC	37	38	NC	C1C38
C1C39	GND	39	40	GND	C1C40
C1C41	NC	41	42	NC	C1C42
C1C43	NC	43	44	NC	C1C44
C1C45	-5.2V	45	46	-5.2V	C1C46
C1C47	-5.2V	47	48	GND	C1C48
C1C49	NC	49	50	NC	C1C50
C1C51	NC	51	52	NC	C1C52
C1C53	GND	53	54	GND	C1C54
C1C55	NC	55	56	NC	C1C56
C1C57	NC	57	58	NC	C1C58
C1C59	NC	59	60	NC	C1C60
C1C61	NC	61	62	NC	C1C62
C1C63	CIB RCVR SHIELD	63	64	CIB RCVR SHIELD	C1C64
C1C65	CIB RCVR SHIELD	65	66	CIB RCVR SHIELD	C1C66
C1C67	CIB RCVR	67	68	CIB RCVR SHIELD	C1C68
C1C69	CIB RCVR SHIELD	69	70	CIB RCVR SHIELD	C1C70
C1C71	NC	71	72	NC	C1C72
C1C73	NC	73	74	NC	C1C74
C1C75	GND	75	76	GND	C1C76
C1C77	NC	77	78	NC	C1C78
C1C79	CIA RCVR SHIELD	79	80	CIA RCVR SHIELD	C1C80
C1C81	CIA RCVR SHIELD	81	82	CIA RCVR SHIELD	C1C82
C1C83	CIA RCVR	83	84	CIA RCVR SHIELD	C1C84
C1C85	CIA RCVR SHIELD	85	86	CIA RCVR SHIELD	C1C86
C1C87	NC	87	88	NC	C1C88
C1C89	-5.2V	89	90	-5.2V	C1C90
C1C91	+5.0V	91	92	+5.0V	C1C92
C1C93	GND	93	94	GND	C1C94

REVISIONS		
CHK	CHANGE NO.	REV

DRN.	DATE 10-JUL-84	ENG. R.J.EICHMANN	DATE 10-JUL-84
CHK'D. D.DELLORCO	DATE 10-JUL-84	BOARD LOCATION:	
XTRA:(EICHMANN)PASLT1.DRW 10-JUL-84 09:10		SHEET 2 OF 5	
FIRST USED ON OPTION/MODEL: IPA20-L		NEXT HIGHER ASSEMBLY: IPA20-L	

TITLE: IPA20-L BACKPLANE INT CONN

SIZE	CODE	NUMBER	REV.
D	CS	5414793-0-1	A

MRO 1

L0109 (PILA) SIGNALS FOR SLOT 2 (B FIELD #1)
L0072 (NIA) SIGNALS FOR SLOT 2 (B FIELD #2)

A2

Label	Signal	Pin	Pin	Signal	Label
A2A1	NC	1	2	GND	A2A2
A2A3	+5.0V	3	4	+5.0V	A2A4
A2A5	NC	5	6	NC	A2A6
A2A7	NC	7	8	NC	A2A8
A2A9	NC	9	10	NC	A2A10
A2A11	NC	11	12	NC	A2A12
A2A13	GND	13	14	NC	A2A14
A2A15	NC	15	16	GND	A2A16
A2A17	NC	17	18	NC	A2A18
A2A19	NC	19	20	NC	A2A20
A2A21	NC	21	22	NC	A2A22
A2A23	GND	23	24	NC	A2A24
A2A25	NC	25	26	NC	A2A26
A2A27	NC	27	28	NC	A2A28
A2A29	NC	29	30	NC	A2A30
A2A31	NC	31	32	NC	A2A32
A2A33	GND	33	34	NC	A2A34
A2A35	NC	35	36	NC	A2A36
A2A37	NC	37	38	NC	A2A38
A2A39	NC	39	40	NC	A2A40
A2A41	NC	41	42	NC	A2A42
A2A43	GND	43	44	NC	A2A44
A2A45	NC	45	46	NC	A2A46
A2A47	NC	47	48	NC	A2A48
A2A49	NC	49	50	NC	A2A50
A2A51	GND	51	52	NC	A2A52
A2A53	NC	53	54	NC	A2A54
A2A55	NC	55	56	NC	A2A56
A2A57	NC	57	58	NC	A2A58
A2A59	NC	59	60	NC	A2A60
A2A61	GND	61	62	NC	A2A62
A2A63	NC	63	64	NC	A2A64
A2A65	NC	65	66	NC	A2A66
A2A67	NC	67	68	NC	A2A68
A2A69	NC	69	70	NC	A2A70
A2A71	NC	71	72	GND	A2A72
A2A73	NC	73	74	NC	A2A74
A2A75	NC	75	76	NC	A2A76
A2A77	NC	77	78	NC	A2A78
A2A79	GND	79	80	NC	A2A80
A2A81	NC	81	82	GND	A2A82
A2A83	NC	83	84	NC	A2A84
A2A85	NC	85	86	[B,NC,XCVR NEG]	A2A86
A2A87	NC	87	88	NC	A2A88
A2A89	NC	89	90	[B,NC,XCVR POS]	A2A90
A2A91	+5.0V	91	92	GND	A2A92
A2A93	NC	93	94	NC	A2A94

B2

Label	Signal	Pin	Pin	Signal	Label
B2B1	GND	1	2	NC	B2B2
B2B3	+5.0V	3	4	+5.0V	B2B4
B2B5	NC	5	6	NC	B2B6
B2B7	[B,RCVR BUFFERS FULL H,NC]	7	8	NC	B2B8
B2B9	[B,DISABLE ARB L,NC]	9	10	[B,ILIK NODE ADDRESS 3 H,NC]	B2B10
B2B11	[B,ILIK NODE ADDRESS 1 H,NC]	11	12	[B,ILIK NODE ADDRESS 0 H,NC]	B2B12
B2B13	[B,NC,GND]	13	14	[B,ILIK NODE ADDRESS 2 H,NC]	B2B14
B2B15	[B,ILIK NODE ADDRESS 4 H,NC]	15	16	GND	B2B16
B2B17	[B,ILIK NODE ADDRESS 6 H,NC]	17	18	[B,ILIK NODE ADDRESS 5 H,NC]	B2B18
B2B19	[B,ILIK NODE ADDRESS 7 H,NC]	19	20	PORT DATA 0 H	B2B20
B2B21	PORT DATA 1 H	21	22	PORT DATA 2 H	B2B22
B2B23	GND	23	24	PORT DATA 3 H	B2B24
B2B25	PORT DATA 5 H	25	26	PORT DATA 4 H	B2B26
B2B27	PORT DATA 7 H	27	28	PORT DATA 6 H	B2B28
B2B29	[B,SELECT H,NC]	29	30	[B,RCVR PACKET END H,NC]	B2B30
B2B31	LINK CONTROL 0 H	31	32	LINK CONTROL 1 H	B2B32
B2B33	GND	33	34	LINK CONTROL 2 H	B2B34
B2B35	INITIALIZE H	35	36	LINK CONTROL 3 H	B2B36
B2B37	[B,ILIM RCVR A ENABLE H,NC]	37	38	[B,ILIM RCVR B ENABLE H,NC]	B2B38
B2B39	[B,ILIJ ICCS PATH B H,NC]	39	40	[B,ILIV CRC STATUS H,NC]	B2B40
B2B41	NC	41	42	[B,ILIN RCVR CLK H,NC]	B2B42
B2B43	[B,NC,GND]	43	44	[B,ILIC VALID RCVR STATUS H,NC]	B2B44
B2B45	NC	45	46	+5.0V	B2B46
B2B47	+5.0V	47	48	[B,ILIF RCVR DATA 0 H,NC]	B2B48
B2B49	[B,ILIA VALID RCVR DATA (1) H,NC]	49	50	[B,ILIF RCVR DATA PARITY (1) H,NC]	B2B50
B2B51	[B,NC,GND]	51	52	[B,ILIF RCVR DATA 1 H,NC]	B2B52
B2B53	[B,ILIF RCVR DATA 2 H,NC]	53	54	[B,ILIF RCVR DATA 3 H,NC]	B2B54
B2B55	[B,ILIF RCVR DATA 4 H,NC]	55	56	[B,ILIF RCVR DATA 5 H,NC]	B2B56
B2B57	[B,ILIF RCVR DATA 6 H,NC]	57	58	[B,ILIF RCVR DATA 7 H,NC]	B2B58
B2B59	[B,ILIL XMIT STATUS 7 (1) H,NC]	59	60	[B,XMIT BUFFER EMPTY H,NC]	B2B60
B2B61	GND	61	62	[B,ILIC XMIT DATA ENABLE (1) H,NC]	B2B62
B2B63	[B,ILIL XMIT STATUS 0 H,NC]	63	64	[B,ILIL XMIT ATTENTION (1) H,NC]	B2B64
B2B65	[B,ILIL XMIT STATUS 2 H,NC]	65	66	[B,ILIL XMIT STATUS 1 H,NC]	B2B66
B2B67	[B,ILIB XMIT STATUS 4 (1) H,NC]	67	68	[B,ILIL XMIT STATUS 3 (1) H,NC]	B2B68
B2B69	[B,ILIL XMIT STATUS 6 (1) H,NC]	69	70	[B,ILIL XMIT STATUS 5 (1) H,NC]	B2B70
B2B71	[B,PORT CLK H,NC]	71	72	GND	B2B72
B2B73	[B,XMIT DATA PARITY H,NC]	73	74	[B,XMIT DATA 0 H,NC]	B2B74
B2B75	[B,XMIT DATA 1 H,NC]	75	76	[B,XMIT DATA 2 H,NC]	B2B76
B2B77	[B,XMIT DATA 3 H,NC]	77	78	[B,XMIT DATA 4 H,NC]	B2B78
B2B79	GND	79	80	[B,XMIT DATA 5 H,NC]	B2B80
B2B81	[B,XMIT DATA 7 H,NC]	81	82	[B,XMIT DATA 6 H,NC]	B2B82
B2B83	NC	83	84	NC	B2B84
B2B85	[B,ILIR XMIT CLK H,NC]	85	86	NC	B2B86
B2B87	NC	87	88	NC	B2B88
B2B89	NC	89	90	GND	B2B90
B2B91	+5.0V	91	92	+5.0V	B2B92
B2B93	GND	93	94	GND	B2B94

C2

Label	Signal	Pin	Pin	Signal	Label
C2C1	GND	1	2	[B,NC,-5.2V]	C2C2
C2C3	+5.0V	3	4	[B,+5.0V,NC]	C2C4
C2C5	PLI INITIALIZE H	5	6	PLI SELECT L	C2C6
C2C7	PLI LINK CONTROL 0 H	7	8	PLI LINK CONTROL 1 H	C2C8
C2C9	PLI LINK CONTROL 2 H	9	10	PLI LINK CONTROL 3 H	C2C10
C2C11	PLI DATA 0 H	11	12	PLI DATA 1 H	C2C12
C2C13	[B,NC,GND]	13	14	PLI DATA 3 H	C2C14
C2C15	PLI DATA 4 H	15	16	GND	C2C16
C2C17	PLI DATA 6 H	17	18	PLI DATA 7 H	C2C18
C2C19	PLI TRAN DATA PAR H	19	20	PLI RECV DATA PAR H	C2C20
C2C21	PLI DATA 5 H	21	22	PLI DATA 2 H	C2C22
C2C23	GND	23	24	PLI CLOCK H	C2C24
C2C25	BUFFER B BUS H	25	26	PLI XMTR ATTN H	C2C26
C2C27	PLI RCVR BUF A FULL H	27	28	PLI RCVR BUF B FULL H	C2C28
C2C29	[B,DISABLE ARB L,NC]	29	30	NC	C2C30
C2C31	[B,FIRST BUFFER H,NC]	31	32	BUFFER A BUS H	C2C32
C2C33	GND	33	34	[B,RCVR B ENABLE H,NC]	C2C34
C2C35	[B,CRC ERROR H,PLI CRC ERR H]	35	36	[B,RCVR A ENABLE H,NC]	C2C36
C2C37	XMTR BUSY H	37	38	ACK H	C2C38
C2C39	[B,DEST BUSY H,NC]	39	40	[B,ARBITRATE H,NC]	C2C40
C2C41	XMIT ABORT H	41	42	CDA H	C2C42
C2C43	[B,NC,GND]	43	44	XBUF PE H	C2C44
C2C45	[B,NC,-5.2V]	45	46	[B,NC,-5.2V]	C2C46
C2C47	[B,NC,-5.2V]	47	48	GND	C2C48
C2C49	NC	49	50	NC	C2C50
C2C51	CDB H	51	52	NC	C2C52
C2C53	NC	53	54	[B,NC,RX DATA IN 0 H]	C2C54
C2C55	NC	55	56	[B,NC,-RX DATA IN 0 H]	C2C56
C2C57	NC	57	58	NC	C2C58
C2C59	[B,NC,DET 0 H]	59	60	[B,NC,CLSN DET 0 H]	C2C60
C2C61	GND	61	62	[B,NC,-CLSN DET 0 H]	C2C62
C2C63	NC	63	64	[B,NC,XCVR NEG]	C2C64
C2C65	[B,NC,XCVR POS]	65	66	[B,NC,TX DATA OUT 0 H]	C2C66
C2C67	[B,NC,XCVR NEG]	67	68	[B,NC,-TX DATA OUT 0 H]	C2C68
C2C69	NC	69	70	NC	C2C70
C2C71	NC	71	72	GND	C2C72
C2C73	NC	73	74	NC	C2C74
C2C75	NC	75	76	NC	C2C76
C2C77	NC	77	78	NC	C2C78
C2C79	GND	79	80	NC	C2C80
C2C81	NC	81	82	NC	C2C82
C2C83	NC	83	84	NC	C2C84
C2C85	[B,NC,GND]	85	86	NC	C2C86
C2C87	[B,NC,GND]	87	88	NC	C2C88
C2C89	[B,NC,-5.2V]	89	90	[B,NC,-5.2V]	C2C90
C2C91	+5.0V	91	92	+5.0V	C2C92
C2C93	GND	93	94	GND	C2C94

REVISIONS		
CHK	CHANGE NO.	REV

DRN.	DATE 10-JUL-84	ENG. R.J.EICHMANN	DATE 10-JUL-84
CHK'D. D. DELLORCO	DATE 10-JUL-84	BOARD LOCATION:	
		SHEET 3 OF 5	
XTRA:(EICHMANN)IPASLT2.DRW;10-JUL-84 09:11		NEXT HIGHER ASSEMBLY: IPA20-L	
FIRST USED ON OPTION/MODEL: IPA20-L			

TITLE: IPA20-L BACKPLANE INT CONN

SIZE	CODE	NUMBER	REV.
D	CS	5414793-0-1	A

IPA20-L SLOT 1 BACKPANEL CONNECTIONS

A1

A1A1	NC	1	2	GND	A1A2
A1A3	+5.0V	3	4	+5.0V	A1A4
A1A5	NC	5	6	NC	A1A6
A1A7	NC	7	8	NC	A1A8
A1A9	NC	9	10	NC	A1A10
A1A11	NC	11	12	NC	A1A12
A1A13	NC	13	14	NC	A1A14
A1A15	NC	15	16	GND	A1A16
A1A17	NC	17	18	NC	A1A18
A1A19	NC	19	20	NC	A1A20
A1A21	NC	21	22	NC	A1A22
A1A23	GND	23	24	NC	A1A24
A1A25	NC	25	26	NC	A1A26
A1A27	NC	27	28	NC	A1A28
A1A29	NC	29	30	NC	A1A30
A1A31	NC	31	32	NC	A1A32
A1A33	GND	33	34	NC	A1A34
A1A35	NC	35	36	NC	A1A36
A1A37	NC	37	38	NC	A1A38
A1A39	NC	39	40	NC	A1A40
A1A41	NC	41	42	NC	A1A42
A1A43	NC	43	44	NC	A1A44
A1A45	NC	45	46	NC	A1A46
A1A47	NC	47	48	NC	A1A48
A1A49	NC	49	50	NC	A1A50
A1A51	NC	51	52	NC	A1A52
A1A53	NC	53	54	NC	A1A54
A1A55	NC	55	56	NC	A1A56
A1A57	NC	57	58	NC	A1A58
A1A59	NC	59	60	NC	A1A60
A1A61	GND	61	62	NC	A1A62
A1A63	NC	63	64	NC	A1A64
A1A65	NC	65	66	NC	A1A66
A1A67	NC	67	68	NC	A1A68
A1A69	NC	69	70	NC	A1A70
A1A71	NC	71	72	GND	A1A72
A1A73	NC	73	74	NC	A1A74
A1A75	NC	75	76	NC	A1A76
A1A77	NC	77	78	NC	A1A78
A1A79	GND	79	80	NC	A1A80
A1A81	NC	81	82	NC	A1A82
A1A83	NC	83	84	NC	A1A84
A1A85	NC	85	86	NC	A1A86
A1A87	NC	87	88	NC	A1A88
A1A89	NC	89	90	NC	A1A90
A1A91	+5.0V	91	92	GND	A1A92
A1A93	NC	93	94	NC	A1A94

B1

B1B1	GND	1	2	NC	B1B2
B1B3	+5.0V	3	4	+5.0V	B1B4
B1B5	NC	5	6	NC	B1B6
B1B7	NC	7	8	NC	B1B8
B1B9	NC	9	10	NC	B1B10
B1B11	ILIK NODE ADDRESS 1 H	11	12	ILIK NODE ADDRESS 0 H	B1B12
B1B13	ILIK NODE ADDRESS 3 H	13	14	ILIK NODE ADDRESS 2 H	B1B14
B1B15	ILIK NODE ADDRESS 4 H	15	16	GND	B1B16
B1B17	ILIK NODE ADDRESS 6 H	17	18	ILIK NODE ADDRESS 5 H	B1B18
B1B19	ILIK NODE ADDRESS 7 H	19	20	PORT DATA 0 H	B1B20
B1B21	PORT DATA 1 H	21	22	PORT DATA 2 H	B1B22
B1B23	GND	23	24	PORT DATA 3 H	B1B24
B1B25	PORT DATA 5 H	25	26	PORT DATA 4 H	B1B26
B1B27	PORT DATA 7 H	27	28	PORT DATA 6 H	B1B28
B1B29	SELECT H	29	30	RCVR PACKET END H	B1B30
B1B31	LINK CONTROL 0 H	31	32	LINK CONTROL 1 H	B1B32
B1B33	GND	33	34	LINK CONTROL 2 H	B1B34
B1B35	INITIALIZE H	35	36	LINK CONTROL 3 H	B1B36
B1B37	ILIM RCVR A ENABLE H	37	38	ILIM RCVR B ENABLE H	B1B38
B1B39	ILIJ ICCS PATH B H	39	40	ILIV CRC STATUS H	B1B40
B1B41	NC	41	42	ILIN RCVR CLK H	B1B42
B1B43	RCVR BUFFERS FULL H	43	44	ILIC VALID RCVR STATUS H	B1B44
B1B45	NC	45	46	+5.0V	B1B46
B1B47	+5.0V	47	48	NC	B1B48
B1B49	ILIA VALID RCVR DATA (1) H	49	50	ILIF RCVR DATA PARITY (1) H	B1B50
B1B51	ILIF RCVR DATA 0 H	51	52	ILIF RCVR DATA 1 H	B1B52
B1B53	ILIF RCVR DATA 2 H	53	54	ILIF RCVR DATA 3 H	B1B54
B1B55	ILIF RCVR DATA 4 H	55	56	ILIF RCVR DATA 5 H	B1B56
B1B57	ILIF RCVR DATA 6 H	57	58	ILIF RCVR DATA 7 H	B1B58
B1B59	ILIL XMIT STATUS 7 (1) H	59	60	XMIT BUFFER EMPTY H	B1B60
B1B61	GND	61	62	ILIC XMIT DATA ENABLE (1) H	B1B62
B1B63	NC	63	64	ILIL XMIT ATTENTION (1) H	B1B64
B1B65	ILIL XMIT STATUS 2 H	65	66	ILIL XMIT STATUS 1 H	B1B66
B1B67	ILIB XMIT STATUS 4 (1) H	67	68	NC	B1B68
B1B69	ILIL XMIT STATUS 6 (1) H	69	70	ILIL XMIT STATUS 5 (1) H	B1B70
B1B71	PORT CLK H	71	72	GND	B1B72
B1B73	XMIT DATA PARITY H	73	74	XMIT DATA 0 H	B1B74
B1B75	XMIT DATA 1 H	75	76	XMIT DATA 2 H	B1B76
B1B77	XMIT DATA 3 H	77	78	XMIT DATA 4 H	B1B78
B1B79	GND	79	80	XMIT DATA 5 H	B1B80
B1B81	XMIT DATA 7 H	81	82	XMIT DATA 6 H	B1B82
B1B83	NC	83	84	NC	B1B84
B1B85	ILIR XMIT CLK H	85	86	NC	B1B86
B1B87	NC	87	88	NC	B1B88
B1B89	NC	89	90	GND	B1B90
B1B91	+5.0V	91	92	+5.0V	B1B92
B1B93	GND	93	94	GND	B1B94

C1

C1C1	GND	1	2	-5.2V	C1C2
C1C3	+5.0V	3	4	+5.0V	C1C4
C1C5	NC	5	6	NC	C1C6
C1C7	NC	7	8	NC	C1C8
C1C9	NC	9	10	NC	C1C10
C1C11	NC	11	12	NC	C1C12
C1C13	NC	13	14	NC	C1C14
C1C15	NC	15	16	NC	C1C16
C1C17	NC	17	18	NC	C1C18
C1C19	GND	19	20	GND	C1C20
C1C21	NC	21	22	NC	C1C22
C1C23	NC	23	24	NC	C1C24
C1C25	NC	25	26	NC	C1C26
C1C27	NC	27	28	NC	C1C28
C1C29	NC	29	30	NC	C1C30
C1C31	NC	31	32	NC	C1C32
C1C33	NC	33	34	NC	C1C34
C1C35	NC	35	36	NC	C1C36
C1C37	NC	37	38	NC	C1C38
C1C39	GND	39	40	GND	C1C40
C1C41	NC	41	42	NC	C1C42
C1C43	NC	43	44	NC	C1C44
C1C45	-5.2V	45	46	-5.2V	C1C46
C1C47	-5.2V	47	48	GND	C1C48
C1C49	NC	49	50	NC	C1C50
C1C51	NC	51	52	NC	C1C52
C1C53	GND	53	54	GND	C1C54
C1C55	NC	55	56	NC	C1C56
C1C57	NC	57	58	NC	C1C58
C1C59	NC	59	60	NC	C1C60
C1C61	NC	61	62	NC	C1C62
C1C63	NC	63	64	NC	C1C64
C1C65	NC	55	66	NC	C1C66
C1C67	NC	67	68	NC	C1C68
C1C69	NC	69	70	NC	C1C70
C1C71	NC	71	72	NC	C1C72
C1C73	NC	73	74	NC	C1C74
C1C75	GND	75	76	GND	C1C75
C1C77	NC	77	78	NC	C1C78
C1C79	NC	79	80	NC	C1C80
C1C81	NC	81	82	NC	C1C82
C1C83	NC	83	84	NC	C1C84
C1C85	NC	85	86	NC	C1C86
C1C87	NC	87	88	NC	C1C88
C1C89	-5.2V	89	90	-5.2V	C1C90
C1C91	+5.0V	91	92	+5.0V	C1C92
C1C93	GND	93	94	GND	C1C94

REVISIONS		
CHK	CHANGE NO.	REV

DRN.	DATE 10-JUL-84	ENG. R.J.EICHMANN	DATE 10-JUL-84
CHK'D. D. DELLORCO	DATE 10-JUL-84	BOARD LOCATION: SHEET 4 OF 5	
XTRA:<EICHMANN>BKPSL:.DRJ 10-JUL-84 09:12		NEXT HIGHER ASSEMBLY: IPA20-L	
FIRST USED ON OPTION/MODEL: IPA20-L			

TITLE: IPA20-L BACKPLANE INT CONN

SIZE	CODE	NUMBER	REV.
D	CS	5414793-0-1	A

MRO 1

IPA20-L SLOT 2 BACKPANEL CONNECTIONS

A2

A2A1	NC	1	2	GND	A2A2
A2A3	+5.0V	3	4	+5.0V	A2A4
A2A5	NC	5	6	NC	A2A6
A2A7	NC	7	8	NC	A2A8
A2A9	NC	9	10	NC	A2A10
A2A11	NC	11	12	NC	A2A12
A2A13	NC	13	14	NC	A2A14
A2A15	NC	15	16	GND	A2A16
A2A17	NC	17	18	NC	A2A18
A2A19	NC	19	20	NC	A2A20
A2A21	NC	21	22	NC	A2A22
A2A23	GND	23	24	NC	A2A24
A2A25	NC	25	26	NC	A2A26
A2A27	NC	27	28	NC	A2A28
A2A29	NC	29	30	NC	A2A30
A2A31	NC	31	32	NC	A2A32
A2A33	GND	33	34	NC	A2A34
A2A35	NC	35	36	NC	A2A36
A2A37	NC	37	38	NC	A2A38
A2A39	NC	39	40	NC	A2A40
A2A41	NC	41	42	NC	A2A42
A2A43	NC	43	44	NC	A2A44
A2A45	NC	45	46	NC	A2A46
A2A47	NC	47	48	NC	A2A48
A2A49	NC	49	50	NC	A2A50
A2A51	NC	51	52	NC	A2A52
A2A53	NC	53	54	NC	A2A54
A2A55	NC	55	56	NC	A2A56
A2A57	NC	57	58	NC	A2A58
A2A59	NC	59	60	NC	A2A60
A2A61	GND	61	62	NC	A2A62
A2A63	NC	62	64	NC	A2A64
A2A65	NC	65	66	NC	A2A66
A2A67	NC	67	68	NC	A2A68
A2A69	NC	69	70	NC	A2A70
A2A71	NC	71	72	GND	A2A72
A2A73	NC	73	74	NC	A2A74
A2A75	NC	75	76	NC	A2A76
A2A77	NC	77	78	NC	A2A78
A2A79	GND	79	80	NC	A2A80
A2A81	NC	81	82	NC	A2A82
A2A83	NC	83	84	NC	A2A84
A2A85	NC	85	86	NC	A2A86
A2A87	NC	87	88	NC	A2A88
A2A89	NC	89	90	+15.0V	A2A90
A2A91	+5.0V	91	92	GND	A2A92
A2A93	NC	93	94	NC	A2A94

B2

B281	GND	1	2	NC	B282
B283	+5.0V	3	4	+5.0V	B284
B285	NC	5	6	NC	B286
B287	RCVR BUFFERS FULL H	7	8	NC	B288
B289	NC	9	10	ILIK NODE ADDRESS 3 H	P2810
B2811	ILIK NODE ADDRESS 1 H	11	12	ILIK NODE ADDRESS 0 H	B2812
B2813	NC	13	14	ILIK NODE ADDRESS 2 H	B2814
B2815	ILIK NODE ADDRESS 4 H	15	16	GND	B2816
B2817	ILIK NODE ADDRESS 6 H	17	18	ILIK NODE ADDRESS 5 H	B2818
B2819	ILIK NODE ADDRESS 7 H	19	20	PORT DATA 0 H	B2820
B2821	PORT DATA 1 H	21	22	PORT DATA 2 H	B2822
B2823	GND	23	24	PORT DATA 3 H	B2824
B2825	PORT DATA 5 H	25	26	PORT DATA 4 H	B2826
B2827	PORT DATA 7 H	27	28	PORT DATA 6 H	B2828
B2829	SELECT H	29	30	RCVR PACKET END H	B2830
B2831	LINK CONTROL 0 H	31	32	LINK CONTROL 1 H	B2832
B2833	GND	33	34	LINK CONTROL 2 H	B2834
B2835	INITIALIZE H	35	36	LINK CONTROL 3 H	B2836
B2837	ILIM RCVR A ENABLE H	37	38	ILIM RCVR B ENABLE H	B2838
B2839	ILIJ ICCS PATH B H	39	40	ILIV CRC STATUS H	B2840
B2841	NC	41	42	ILIN RCVR CLK H	B2842
B2843	NC	43	44	ILIC VALID RCVR STATUS H	B2844
B2845	NC	45	46	+5.0V	B2846
B2847	+5.0V	47	48	ILIF RCVR DATA 0 H	B2848
B2849	ILIA VALID RCVR DATA (1) H	49	50	ILIF RCVR DATA PARITY (1) H	B2850
B2851	NC	51	52	ILIF RCVR DATA 1 H	B2852
B2853	ILIF RCVR DATA 2 H	53	54	ILIF RCVR DATA 3 H	B2854
B2855	ILIF RCVR DATA 4 H	55	56	ILIF RCVR DATA 5 H	B2856
B2857	ILIF RCVR DATA 6 H	57	58	ILIF RCVR DATA 7 H	B2858
B2859	ILIL XMIT STATUS 7 (1) H	59	60	XMIT BUFFER EMPTY H	B2860
B2861	GND	61	62	ILIC XMIT DATA ENABLE (1) H	B2862
B2863	NC	63	64	ILIL XMIT ATTENTION (1) H	B2864
B2865	ILIL XMIT STATUS 2 H	65	66	ILIL XMIT STATUS 1 H	B2866
B2867	ILIB XMIT STATUS 4 (1) H	67	68	NC	B2868
B2869	ILIL XMIT STATUS 6 (1) H	69	70	ILIL XMIT STATUS 5 (1) H	B2870
B2871	PORT CLK H	71	72	GND	B2872
B2873	XMIT DATA PARITY H	73	74	XMIT DATA 0 H	B2874
B2875	XMIT DATA 1 H	75	76	XMIT DATA 2 H	B2876
B2877	XMIT DATA 3 H	77	78	XMIT DATA 4 H	B2878
B2879	GND	79	80	XMIT DATA 5 H	B2880
B2881	XMIT DATA 7 H	81	82	XMIT DATA 6 H	B2882
B2883	NC	83	84	NC	B2884
B2885	ILIR XMIT CLK H	85	86	NC	B2886
B2887	NC	87	88	NC	B2888
B2889	NC	89	90	GND	B2890
B2891	+5.0V	91	92	+5.0V	B2892
B2893	GND	93	94	GND	B2894

C2

C2C1	GND	1	2	-5.2V	C2C2
C2C3	+5.0V	3	4	+5.0V	C2C4
C2C5	PLI INITIALIZE H	5	6	PLI SELECT L	C2C6
C2C7	PLI LINK CONTROL 0 H	7	8	PLI LINK CONTROL 1 H	C2C8
C2C9	PLI LINK CONTROL 2 H	9	10	PLI LINK CONTROL 3 H	C2C10
C2C11	PLI DATA 0 H	11	12	PLI DATA 1 H	C2C12
C2C13	NC	13	14	PLI DATA 3 H	C2C14
C2C15	PLI DATA 4 H	15	16	GND	C2C16
C2C17	PLI DATA 6 H	17	18	PLI DATA 7 H	C2C18
C2C19	PLI TRAN DATA PAR H	19	20	PLI RECV DATA PAR H	C2C20
C2C21	PLI DATA 5 H	21	22	PLI DATA 2 H	C2C22
C2C23	GND	23	24	PLI CLOCK H	C2C24
C2C25	NC	25	26	PLI XMTR ATTN H	C2C26
C2C27	PLI RCVR BUF A FULL H	27	28	PLI RCVR BUF B FULL H	C2C28
C2C29	NC	29	30	NC	C2C30
C2C31	NC	31	32	NC	C2C32
C2C33	GND	33	34	NC	C2C34
C2C35	NC	35	36	NC	C2C36
C2C37	NC	37	38	NC	C2C38
C2C39	NC	39	40	NC	C2C40
C2C41	NC	41	42	NC	C2C42
C2C43	NC	43	44	NC	C2C44
C2C45	-5.2V	45	46	-5.2V	C2C46
C2C47	-5.2V	47	48	GND	C2C48
C2C49	NC	49	50	NC	C2C50
C2C51	NC	51	52	NC	C2C52
C2C53	NC	53	54	[B,NC,RX DATA IN 0 H]	C2C54
C2C55	NC	55	56	[B,NC,-RX DATA IN 0 H]	C2C56
C2C57	NC	57	58	NC	C2C58
C2C59	[B,NC,DET 0 H]	59	60	[B,NC,CLSN DET 0 H]	C2C60
C2C61	GND	61	62	[B,NC,-CLSN DET 0 H]	C2C62
C2C63	NC	63	64	GND	C2C64
C2C65	[B,NC,XCVR POS]	65	66	[B,NC,TX DATA OUT 0 H]	C2C66
C2C67	GND	67	68	[B,NC,-TX DATA OUT 0 H]	C2C68
C2C69	NC	69	70	NC	C2C70
C2C71	NC	71	72	GND	C2C72
C2C73	NC	73	74	NC	C2C74
C2C75	NC	75	76	NC	C2C76
C2C77	NC	77	78	NC	C2C78
C2C79	GND	79	80	NC	C2C80
C2C81	NC	81	82	NC	C2C82
C2C83	NC	83	84	NC	C2C84
C2C85	NC	85	86	NC	C2C85
C2C87	NC	87	88	NC	C2C88
C2C89	-5.2V	89	90	-5.2V	C2C90
C2C91	+5.0V	91	92	+5.0V	C2C92
C2C93	GND	93	94	GND	C2C94

REVISIONS		
CHK	CHANGE NO.	REV

DRN. | DATE 10-JUL-84 | ENG. R.J. EICHMANN | DATE 10-JUL-84
CHK'D D. DELLORCO | DATE 10-JUL-84 | BOARD LOCATION:
SHEET 5 OF 5
XTRA:<EICHMANN>BKPSL2.DRW 10-JUL-84 09:13 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: IPA20-L | IPA20-L

TITLE: IPA20-L BACKPLANE INT CONN
SIZE D | CODE CS | NUMBER 5414793-0-1 | REV. A

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS
			ECO NUMBER	-
		5014792-00	ETCHED CIRCUIT BOARD	C
E-MD-5014792-0-0	5		DRILL AND ETCH DRAWING	A
E-EC-5014792-0-0	2		ETCH CUT DRAWING	A

REVISIONS		
CHK	CHANGE NO.	REV

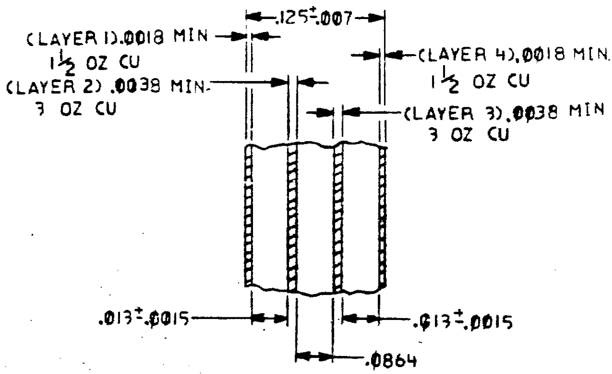
DRN E.WILSON DATE 06-JUN-84 ENG. DATE 06-JUN-84
CHK D. Wilcox DATE 06-JUN-84 BOARD LOCATION: N/A
SHEET 1 OF 1
DSK:14792.T2P[4,36] 06-JUN-84 11:51 NEXT HIGHER ASSEMBLY: D-DD-5414793-0
FIRST USED ON OPTION/MODEL:

TITLE: DRAWING DIRECTORY 5014792

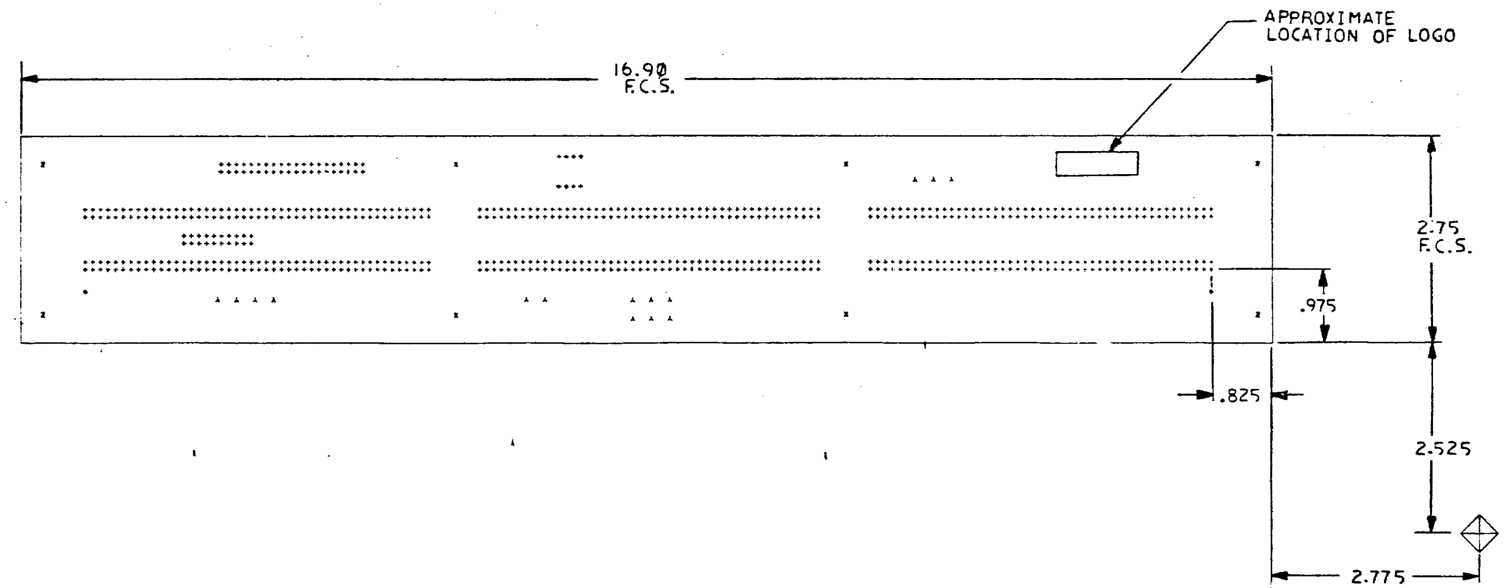
SIZE	CODE	NUMBER	REV.
D	DD	5014792-0	A

MRD

VIEWED FROM SIDE 1
COMPONENT SIDE



BOARD LAY-UP



FOR HOLE TOLERANCES USE DEC STD 176										
SYMBOL	+	⅄	X	♆	Z	⋈	Δ	◫	◊	✱
FIN HOLE SIZE	.040	.067	.187	.125	.171					
PLATED	X	X								
NON PLATED			X	X	X					
QTY.	632	15	4	2	4					
◯=OFF GRD HOLE	0	0	0	0	0					
DRILL SIZE										

NOTE: ALL HOLE LOCATIONS ARE DESIGNED ON .025 GRID INCREMENTS FROM DATUM UNLESS SYMBOL IS CIRCLED.

DESIGN INFORMATION
CIRCUIT SIZE: X 16.90 Y 2.75 INCHES
CIRCUIT TYPE: PPE [] PTH [] ML [X]
CIRCUIT TECHNOLOGY: SD [] HD15X15 [] HD12X13 [] HZD [] OTHER [X] MSL
UL REQUIREMENTS LPWR [] HPWR [X]
CIRCUIT OUTLINE & FINGER DETAIL ____ [] AS SHOWN [X]
LAYER CONSTRUCTION PER ____ [] AS SHOWN [X]
ARTWORK LAYOUT: MANUAL [] CAD [X]
ENG SPECIAL FEATURES:
SPECIAL NOTES:

FABRICATION INFORMATION
FABRICATE BOARD PER ____ [] AS SHOWN [X]
SOLDER MASK, SIDE 1 [] SIDE 2 [] NONE [X]
SPECIFICATIONS AND STANDARDS:
MATERIALS AND WORKMANSHIP FOR ALL FABRICATED PRINTED WIRING BOARDS MUST MEET OR EXCEED THE REQUIREMENTS OF DEC STD 176.
SPECIAL NOTES:

TOLERANCES	
INCHES UNLESS SPECIFIED	
.XXX ± .010	ANGLES
.XX ± .020	±0 DEG 30 MIN
.X ± .100	

SIGNATURES	DATE
DRN: [signature]	9/1/83
CHK'D: RW Counter	30May84
MECH ENG: Pat Cappabianca	5/29/84
PROJ ENG: Pat Cappabianca	5/30/84
MFG ENG: [signature]	6/4/84
SCALE: 1/1	
SHEET 1 OF 5	
TOP DOCUMENT NO: D-DD-5014792-0	

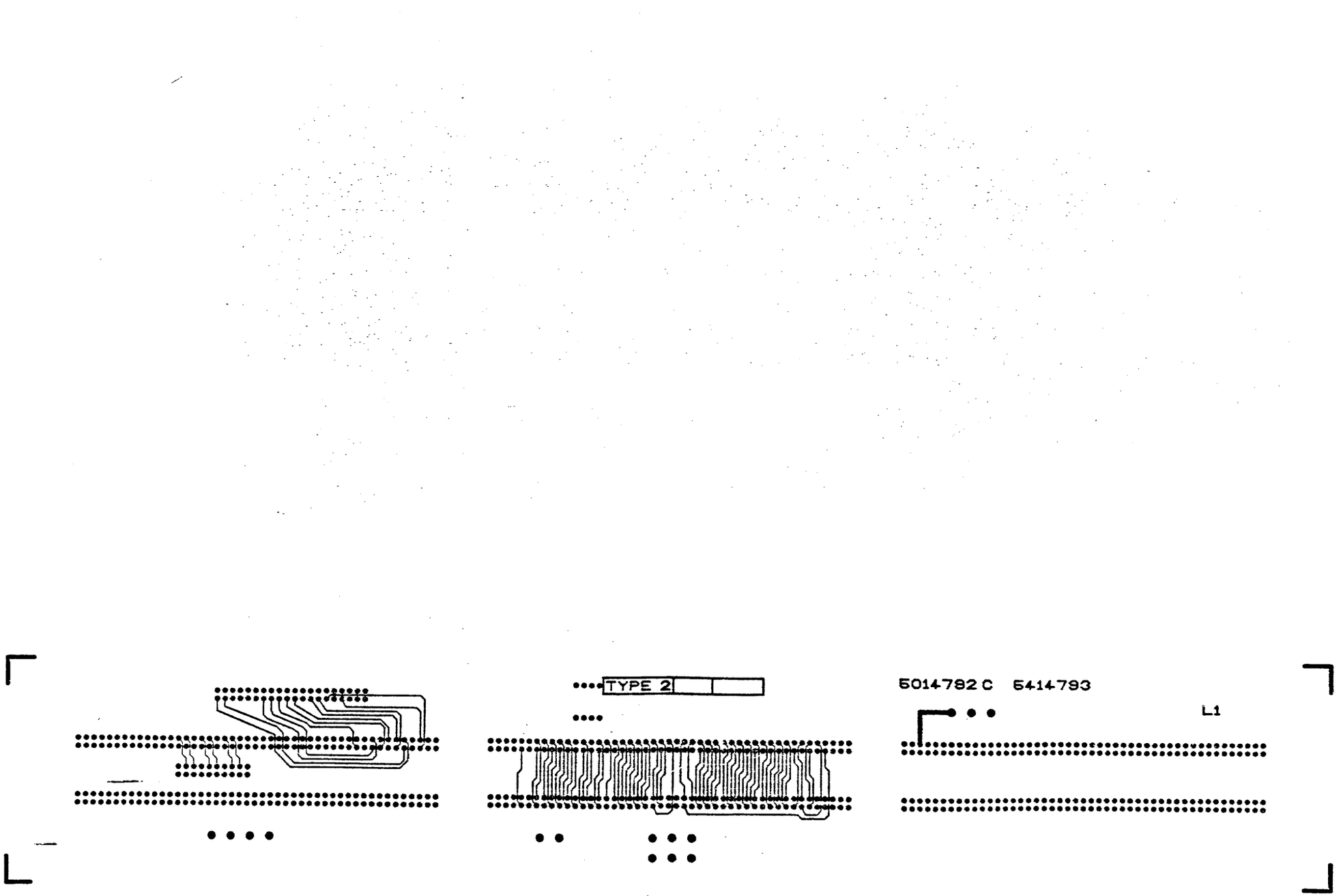
digital

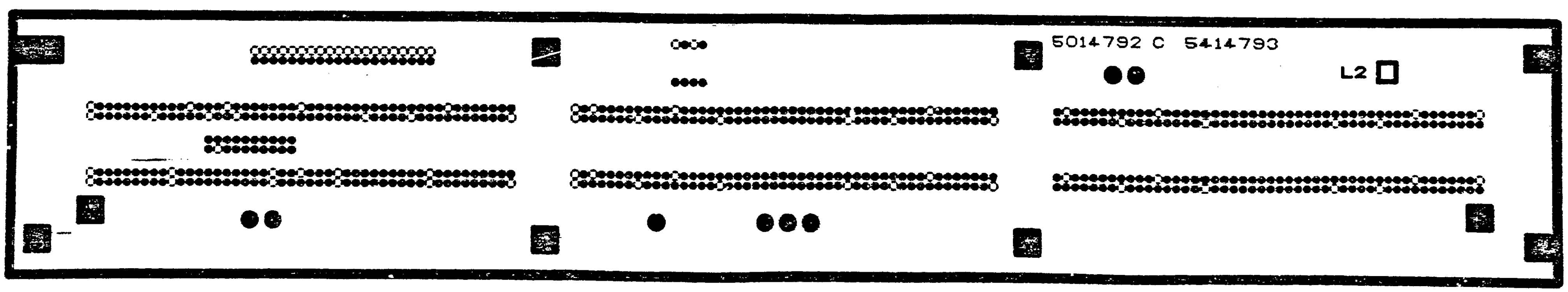
TITLE: DRILL & ETCH DRAWING

SIZE	CODE	NUMBER	REV
D	MD	5014792-0-0	A

ETCH REV: C

MRO 1 WO# 190627B


TYPE 2
5014782 C
5414793
L1



SIGNATURES	DATE
DRN.	
CHK'D.	
MECH. ENG.	
PROJ. ENG.	
PROD.	

digital

TITLE
DRILL & ETCH DRAWING

SIZE	CODE	NUMBER	REV
E	[illegible]	[illegible]	[illegible]

SCALE 2/1
SHT. 3 OF 5
TOP DOCUMENT [illegible]

SIGNATURES	DATE
DRN.	
CHK D.	
MECH. ENG.	
PROJ. ENG.	
PROD.	
SCALE 2/1	
SHT. 4 OF 5	

digital

TITLE
DRILL & ETCH DRAWING

SIZE	CODE	NUMBER	REV
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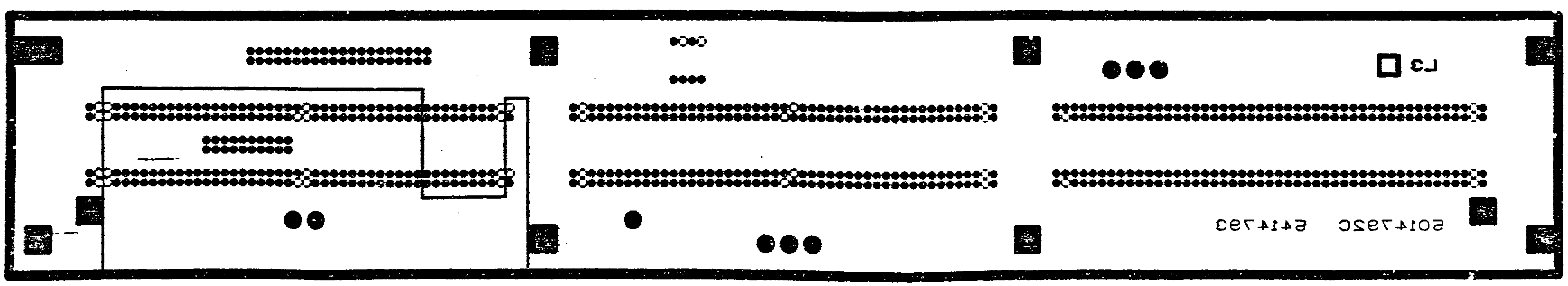
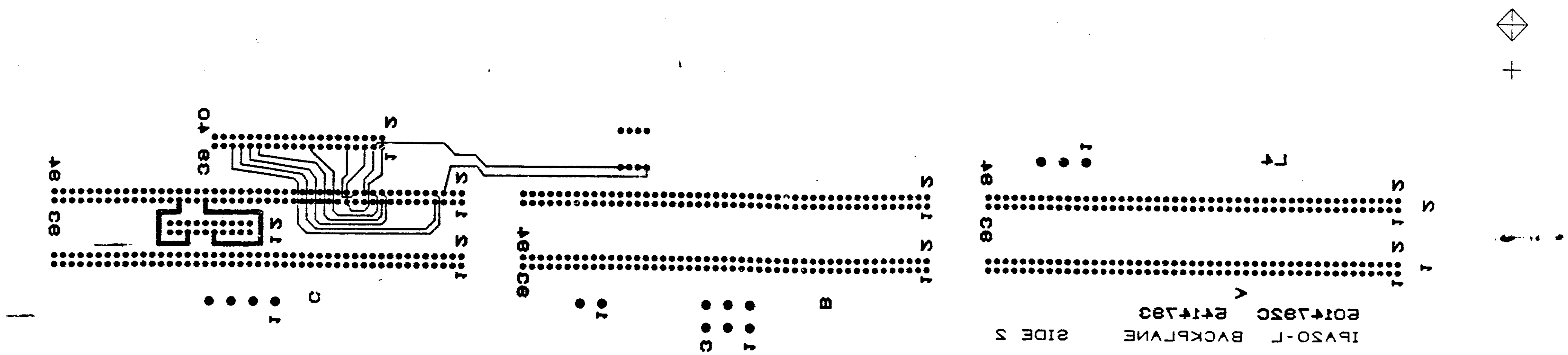
TOP DOCUMENT: D-DD-5014792-





SIGNATURES	DATE
DRN.	
CHK'D.	
MECH.ENG.	
PROJ.ENG.	
PROD.	
SCALE 2:1	
SHT. 5 OF 5	

digital

TITLE DRILL & ETCH DRAWING

SIZE	CODE	NUMBER	REV
E	MD	[illegible]	A

TOP DOCUMENT [illegible]

CHG	CHANGE NO.	REV

NOTES:

STEP E	→ Y AXIS	STEP	TIMES
NCPEAT	↓ X AXIS	STEP	TIMES

5014792-0-0 A

SIGNATURES	DATE
DRN.	
CHK.	
MECH. ENG.	
PROJ. ENG.	
PROD.	

TOP DOCUMENT NODE: [illegible]

SHT. 1 OF 2

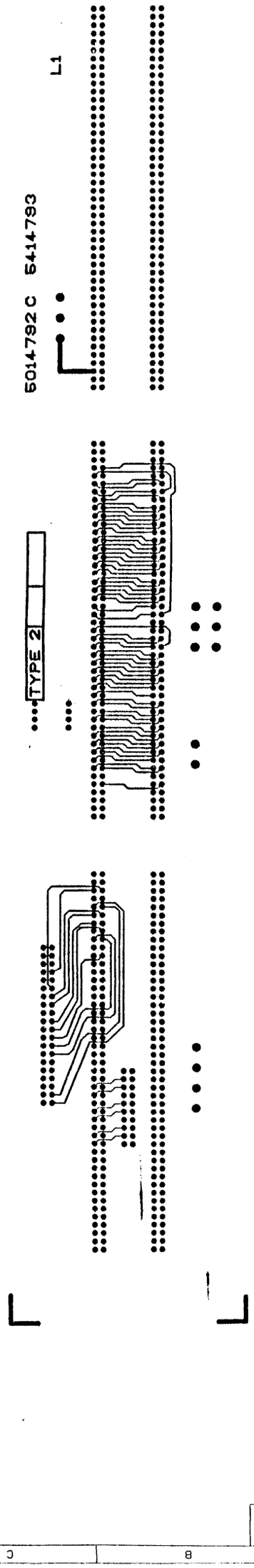
SCALE

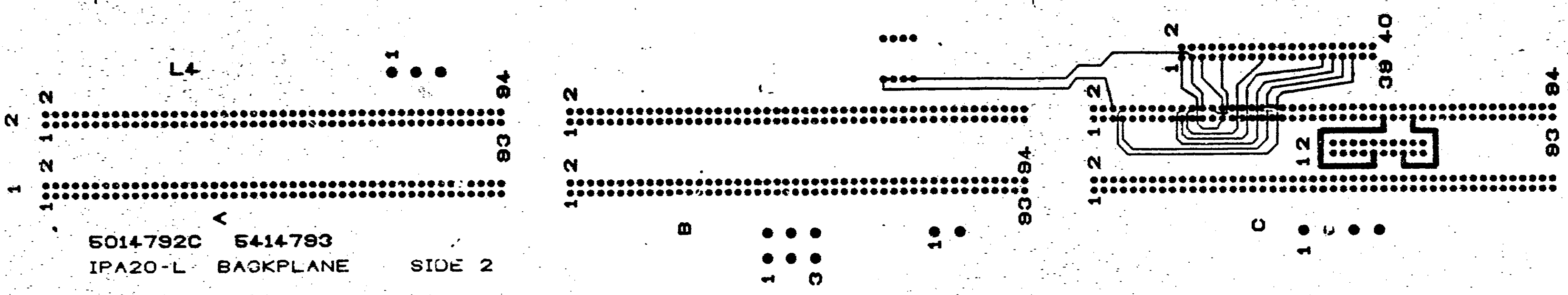
SIZE	CODE	NUMBER	REV
E	ECL	5014792-0-0	A

TITLE

ETCH CUT DRAWING

digital





REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
ETCH CUT DRAWING	E	EC	50-4792-0-0	A

EC 5014792-0-0 A

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS
			ECO NUMBER	- 1
		5415695-00	MODULE REVISION	A1 A2
D-UA-5415695-0-0	1		CURRENT LIMITER	A B
K-PL-5415695-0-DBP	1		PARTS LIST, 5415695	A B
D-CS-5415695-0-1	1		CURRENT LIMITER	A A
A-SP-5415695-0-DBF	6		NI CURRENT LIMITER ENG. SPEC.	A A
K-PC-5415695-0-DBG	-		GEMS DESIGN DATA BASE	A A
B-DD-5015694-0	1		DRAWING DIRECTORY, 5015694	REF REF

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. D.DELLORCO DATE 15-JAN-85 ENG. DATE 16JAN85
CHK D. DATE 15-JAN-85 BOARD LOCATION: N/A
DSK:156959.T2P[4,36] 15-JAN-85 14:21 SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: " NEXT HIGHER ASSEMBLY: N/A

TITLE: DRAWING DIRECTORY 5415695

SIZE	CODE	NUMBER	REV.
D	DD	5415695-0	B

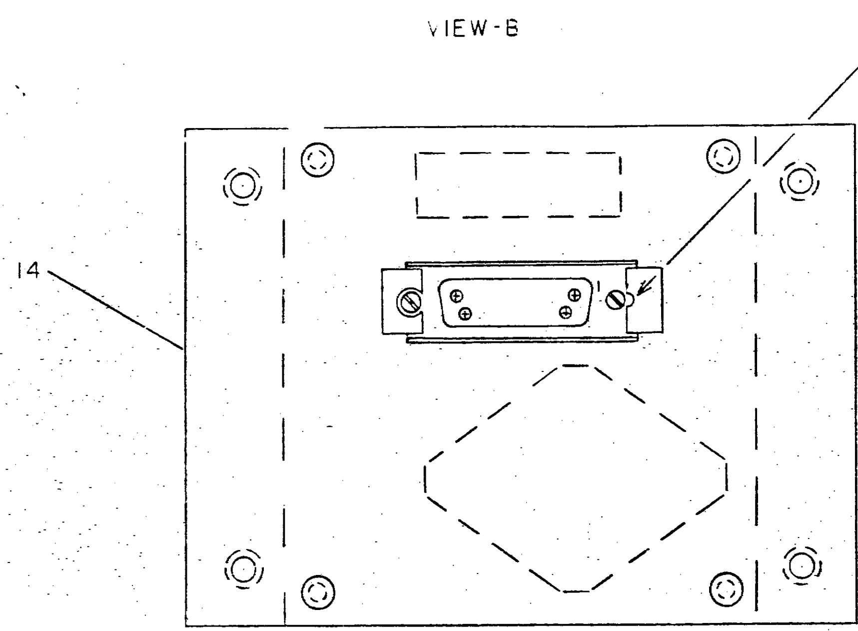
MRO 1

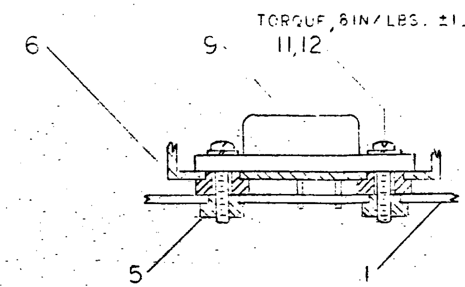
D UA5415695-0-0 B

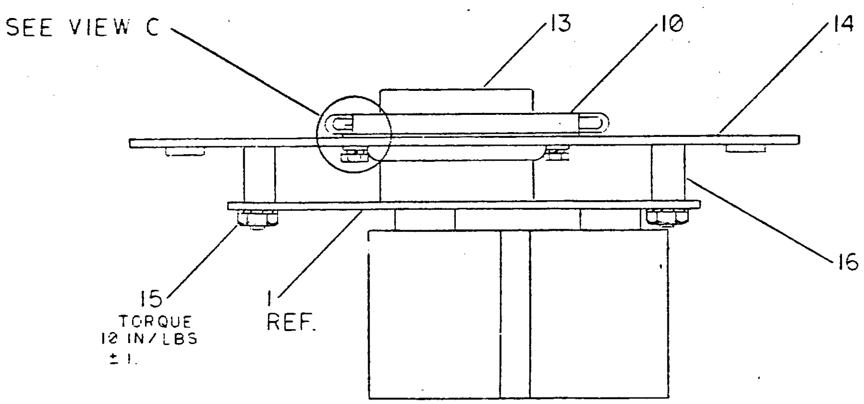
LEGEND

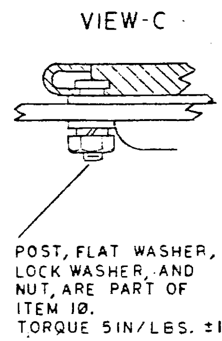
PART NO.	VARIATION	REV
5415695-00	AS SHOWN	A2

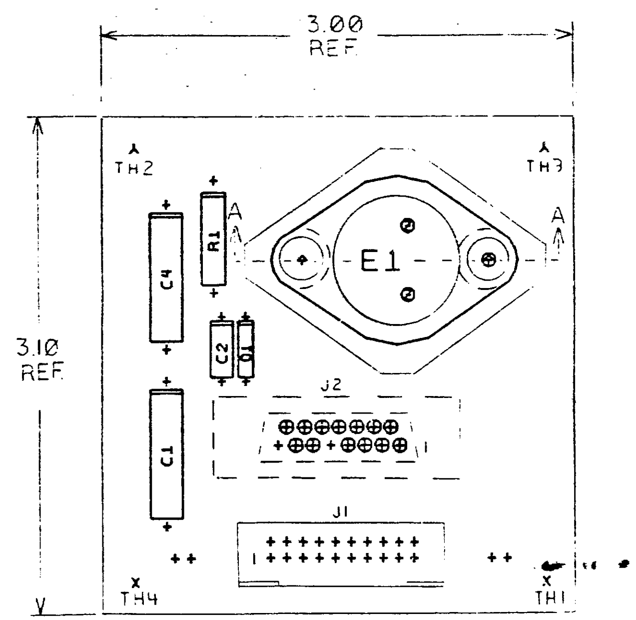
COMPONENT SIDE VIEW











NOTES: 1. STEP AND REPEAT CODE 2AC00. J2, ITEM 13, AND ITEM 14, ASSEMBLED AFTER FLOW SOLDER SEE VIEWS B AND C.

STEP & REPEAT	↑ Y AXIS 3.10 STEP 3 TIMES
	→ X AXIS 3.00 STEP 5 TIMES

CHK	CHANGE NO	REV
	RELEASED DATA	A
	5415695 MRI	B
	P. CAPPABIANCA	

ETCH REV. B

SIGNATURES	DATE
DRN.	7/22/83
CHK D.	
MECH.ENG.	
PROJ.ENG.	
PROD.	

digital

TITLE CURRENT LIMITER

SCALE 2 / 1
SHT. 1 OF 1

SIZE	CODE	NUMBER	REV
D			B

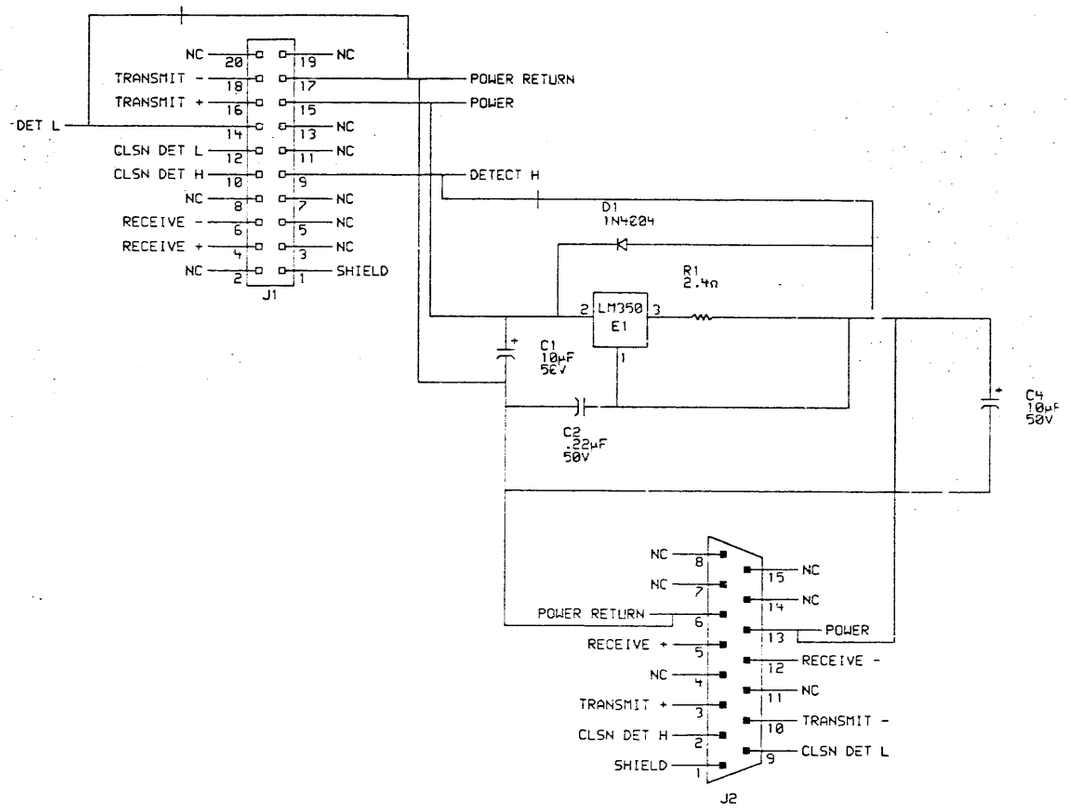
TOP DOCUMENT: D-00-5415695-0

AUTOMATED BY PRTLST.40(50)

P A R T S L I S T

LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
					VARIATION REVISION LEVEL:	A2	
1	1	D-MD-5015694-0-0	5015694-01		DRILL AND ETCH FOR 54-15695-00	1	
2	2		1000070-00		10 MFD 50V+100-10% AL EL	2	C1,C4
3	3		1017897-01		.22 MFD 50V +80-20% CER	1	C2
4	4		1105796-00		PIV= 400 IO= 1.00A 1N4004 DO-41	1	D1
5	5		1214789-00		INSERT,THREAD	2	
6	6		1213426-03		HEAT SINK,TO-3 1.880X01.4	1	
7	7		1213477-06		PCB HEADER 20PIN(2X10).100CC STR	1	J1
8	8		1320740-01		2.40 3.0 W 1.0 % WW	1	R1
9	9		1916580-01	A	350 VOLT REG,VAR 2V	1	E1
10	10		1218489-00	A	CONN,D SUB 15PIN LATCH KIT	1	
11	11		9006024-01		SCREW,MACH PAN PHIL 6-	2	
12	12		9007801-00		WASHER,HELICAL SPLIT SST	2	
13	13		1220350-01	A	CONN,D SUB 15SKT ASSY STR TIN PL	1	J2
14	14		7429724-01		PANEL,I/O INTERFACE	1	
15	15		9006560-00	A	NUT,HEX EXT TOOTH LCKWSHR 6-32	4	
16	16		9006801-00	A	SPACER,CLEAR HOLE HEX ALUM 6	4	

REVISION HISTORY			BASIC PART NO: 5415695				
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: J,LENT	DATE: 20-OCT-82	DIGITAL	
PC	INITIAL	A	SECTION,VARIATION INDEX	CHK'D: PASCO	DATE: 26-SEP-83	TITLE: PARTS LIST 5415695 CURRENT LIMITER	
PC	5415695-MR001	B	[A] 00				
			[B]	DES.ENG: J,CROSS	DATE: 9-DEC-83	DOCUMENT NUMBER	
			[C]			SIZE: K; CODE: PL; NUMBER: 5415695-0-DBP; REV: B	
			[D]				
			[E]	RESP.ENG.: J,CROSS	DATE: 9-DEC-83		
			[F]				
			[H]	MFG.ENG.: M,WARRIEN	DATE: 28-MAR-84	RELEASE DATE: 15-JAN-85	
			[J]				
			[K]	ASSEMBLY NUMBER: D-UA-5415695-0-0	TOP DOCUMENT NUMBER: #D-DD-5415695-0	FILE NAME: Z8529B.PLS	EDIT #: 15
			[L]				
			[M]				
			[N]				



REVISIONS		
CHK	CHANGE NO.	REV
	1	1

DRN K Fleming 09-FEB-84
CHK'D D Williams 13 FEB 84
ENG [illegible] 6 Apr 84
BOARD LOCATION:
SHEET 1 OF 1

TITLE: CURRENT LIMITER

SUDCOM: (BOLEN,ECO)ETH.DRW 09-FEB-84 09:13
NEXT HIGHER ASSEMBLY: D-DD-5415695-00
FIRST USED ON OPTION/MODEL:

SIZE	CODE	NUMBER	REV.
D	CS	5415695-0-1	A

DATE	ECO #	ORIGINATOR	APPROVED	REV
01-Jun-1984	Init.	John Cross	John Tivnan	A

23-May-84
Engineer Date

John V. Tivnan 23 MAY 84
Approved Date

File ID: 74

TABLE OF CONTENTS/REVISION STATUS

1 GENERAL

The NI Current Limiter provides a limit to the output current available from the protected port. The circuit will limit the output current to 600 milliamperes, maximum.

No fuse protection is required because the circuit is designed to be current-limiting.

1.1 REFERENCED DOCUMENTS

EL-00030-00	DEC STD 030 Module Manufacturing Standard
EL-00102-00	DEC STD 102 Environmental Standard For Computers and Peripherals
EL-00119-00	DEC STD 119 Digital Product Safety
EL-00186-00	DEC STD 186 Signal Integrity

2 ELECTRICAL SPECIFICATIONS

2.1 POWER SOURCE

The circuit will operate from a 15 V, 2 ampere dc power source.

2.2 INPUT VOLTAGE

+15 (± 2%) Vdc, ripple and noise 5% maximum

2.3 OUTPUT VOLTAGE

+15.3 to +11.4 Vdc, ripple and noise 5% maximum

2.4 OUTPUT CURRENT

500 milliamperes, maximum

2.5 EXTERNAL PROTECTION

Because the short circuit current will be limited to 600 milliamperes, maximum, and the components will not exceed safe temperatures under operating or overload conditions, the current limiter requires no external protection.

2.6 CONNECTIONS

2.6.1 Input J1 20-Pin Connector Berg Type

Pin	Function	Pin	Function
1	NC	11	NC
2	NC	12	CLSN DET L
3	NC	13	NC
4	RECEIVE +	14	DETECT L
5	NC	15	POWER +15V
6	RECEIVE -	16	TRANSMIT +
7	NC	17	POWER RTN
8	NC	18	TRANSMIT -
9	DETECT H	19	NC
10	CLSN DET H	20	NC

2.6.2 Output J2 15-Pin Connector D Shell (Type RS-232)

Pin	Function	Pin	Function
1	SHIELD	8	NC
2	CLSN DET H	9	CLSN DET L
3	TRANSMIT +	10	TRANSMIT -
4	NC	11	NC
5	RECEIVE +	12	RECEIVE -
6	POWER RTN	13	POWER +12
7	NC	14	NC
		15	NC

2.6.3 Internally Commoned

All signals with same name
Pin 14 J1 to Pin 17 J1 to Pin 6 J2 (Power RTN Layer)
Pin 9 J1 to Pin 13 J2
Pin 1 J1 to Pin 1 J2 to Mounting Panel (GND Layer)

3 MECHANICAL SPECIFICATIONS

3.1 SIZE

Printed circuit board mounted on panel 4.2 x 3.1 inches.

3.2 MOUNTING

The panel will be mounted by four 6-32 inserts, one in each corner. Mounting dimensions are approximately 2.35 x 3.55 in. for mounting on 74-28312 interface bracket.

3.3 CONNECTIONS

The circuit will be connected to the power source and I/O bulkhead via J1, 20-pin, Berg type header connector. The output will be connected to J2, 15-pin D Shell connector (Type RS-232).

3.4 WEIGHT

6.6 ounce typical.

3.5 COOLING

a. Natural convection.
b. Total dissipation during normal operation - 2 watts typical.
c. Total dissipation during short circuit condition - 9.5 watts maximum.

3.6 TEMPERATURE RANGE

+10°C to +50°C (+50°F to +122°F) per DEC STD 102 for Class B environment as cooled by internal cabinet air.

3.7 ALTITUDE

8000 feet operate with maximum allowable temperature reduced by 1°F for each 1000 feet elevation.

3.8 VIBRATION

Sinusoidal vibration:

5-22 HZ	0.010 inch DA
22-500 HZ	0.25 GPK
500-22 HZ	0.25 GPK
22-5 HZ	0.010 inch DA

Sweep rate 1 octave/min. Per DEC STD 102 Class B.

3.9 MECHANICAL SHOCK

40 GPK Per DEC STD 102 Class B.

4 RELIABILITY

4.1 MBTF

Greater than 1,000,000 hour for ground fixed environment per MIL-HDBK-217D.

5 SAFETY

The PC board will be Type 1 material.

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS
			ECO NUMBER	-
		5015694-01	ETCHED CIRCUIT BOARD	B1
D-MD-5015694-0-0	4		DRILL AND ETCH DRAWING	A
D-EC-5015694-0-0	1		ETCH CU" DRAWING	A

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. D.DELLORCO | DATE 02-APR-84 | ENG. | DATE

CHK D. | DATE 02-APR-84 | BOARD LOCATION: N/A

DSK:15694.T2P[4,36] | 02-APR-84 11:36 | SHEET 1 OF 1

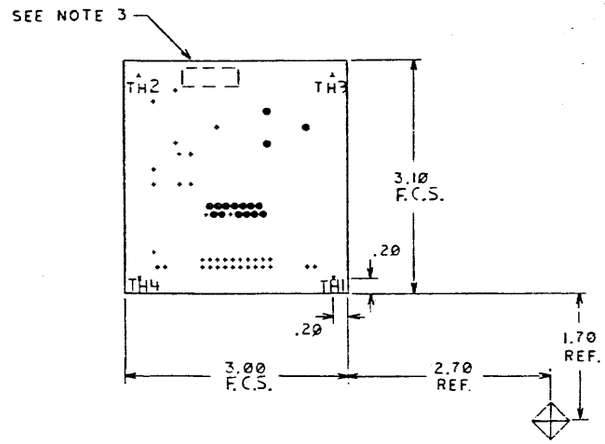
FIRST USED ON OPTION/MODEL: " | NEXT HIGHER ASSEMBLY: D-DD-5415695-0

TITLE: DRAWING DIRECTORY 5015694

SIZE	CODE	NUMBER	REV.
D	DD	5015694-0	A

MR 1

VIEWED FROM SIDE 1
COMPONENT SIDE



FOR HOLE TOLERANCES USE DEC STD 176										
SYMBOL	+	A	X	◇	Z	H	Δ	□	◇	*
FIN HOLE SIZE	.042	.157	.156	.213	.067					
PLATED	X		X	X	X					
NON PLATED		X								
QTY.	49	2	2	2	2					
()=OFF GRD HOLE	13	0	0	1	2					
DRILL SIZE										

NOTE: ALL HOLE LOCATIONS ARE DESIGNED ON .025 GRID INCREMENTS FROM DATUM UNLESS SYMBOL IS CIRCLED.

DESIGN INFORMATION
CIRCUIT SIZE: X 3.00 Y 3.10 INCHES
CIRCUIT TYPE: PPE() PTH() ML(X)
CIRCUIT HD15X15()
TECHNOLOGY: SD() HD12X13() H20() OTHER(X) MSL
UL REQUIREMENTS LPWR(X) HPWR()
CIRCUIT OUTLINE & FINGER DETAIL _____ () AS SHOWN(X)
LAYER CONSTRUCTION PER A-SP-7607723 (X) AS SHOWN()
ARTWORK LAYOUT: MANUAL() CAD(X)
ENG SPECIAL FEATURES:
SPECIAL NOTES: 1. STEP AND REPEAT CODE 2AC60.
2. .213 DIA. HOLE TOLERANCE ±.003.
3. APPROX. LOCATION OF LO-GO, SIDE 2.

FABRICATION INFORMATION
FABRICATE BOARD PER D-MC-ELMF659-0-0 (X) AS SHOWN()
SOLDER MASK, SIDE 1 (X) SIDE 2 (X) NONE()
SPECIFICATIONS AND STANDARDS:
MATERIALS AND WORKMANSHIP FOR ALL FABRICATED PRINTED WIRING BOARDS MUST MEET OR EXCEED THE REQUIREMENTS OF DEC STD 176.
SPECIAL NOTES: 1. IMPEDANCE TEST COUPON NEEDED TO BE: 8 MILS, L1 AND L4, AND 0 MILS ON L2 AND L3.

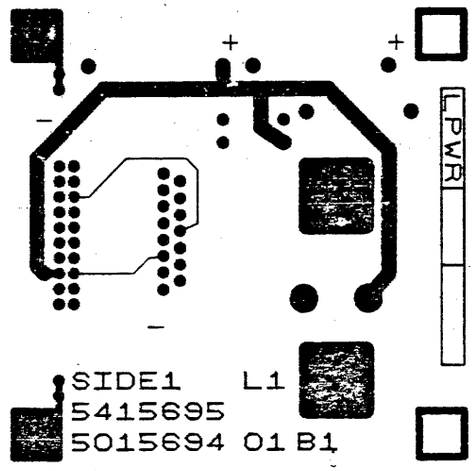
TOLERANCES	
INCHES UNLESS SPECIFIED	
.XXX ± .010	ANGLES
.XX ± .020	±0 DEG 30 MIN
.X ± .120	

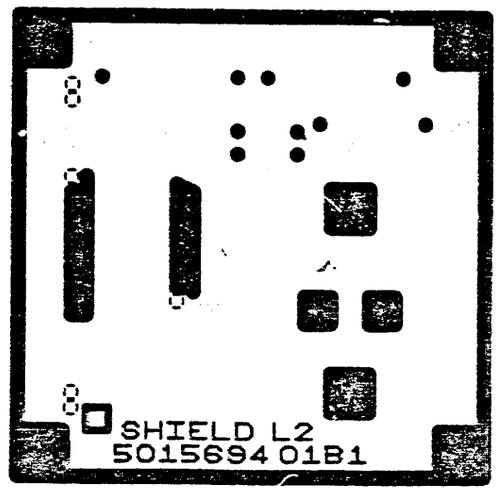
SIGNATURES	DATE
DRN:	2/21/83
CHK'D:	10 NOV 83
MECH ENG:	12.05
PROJ ENG:	12.05
MFG ENG:	1/26/84

SCALE: 1 / 1
SHEET 1 OF 4
SIZE: D | CODE | NUMBER: MD5015694-0-0 | REV: A
TOP DOCUMENT: D-DD-5015694-0-0 | ETCH REV: B1

TITLE: DRILL AND ETCH DRAWING

CHK	CHANGE NOTICE	DATE
A	RELEASED	





REVISIONS		
C-K	CHANGE NO	REV

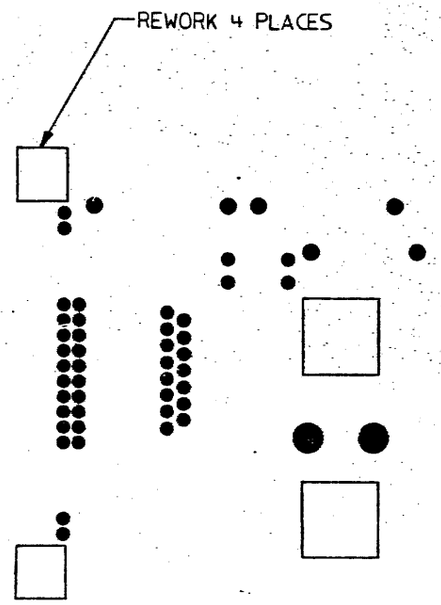
TITLE	SIZE	CODE	NUMBER	REV.
DRILL & ETCH DRAWING	D	MD	5015694-0-0	A
SCALE 2/1	SHEET 2 OF 4	DIST.		

MR

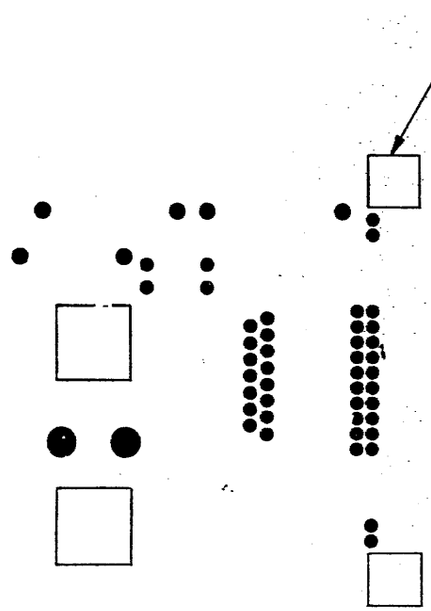
REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
DRILL & ETCH DRAWING	D	MD	5015694-0-0	A
SCALE 2/1 SHEET 3 OF 4	DIST.			

MR



SOLDER MASK REWORK
SIDE 1

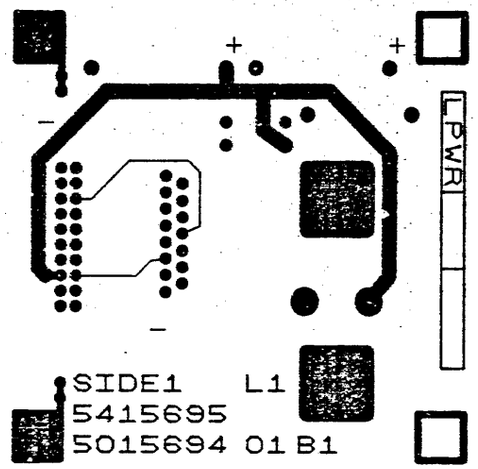


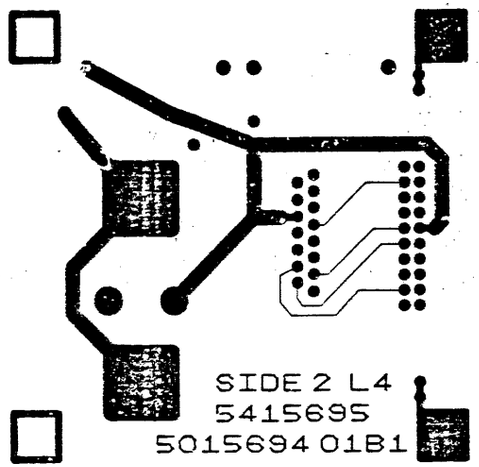
SOLDER MASK REWORK
SIDE 2

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
DRILL & ETCH DRAWING	D	MD	5015594-0-0	A
SCALE 2/1 SHEET 4 OF 4	DIST.			

5015594-0-0 D MD A





NOTES:

REV	CHANGE NO	RELEASED AT
A		

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ.ENG.	
PROD.	

digital

TITLE
ETCH CUT DRAWING

SCALE 2/1	SIZE	CODE	NUMBER	REV
SHT. 1 OF 1	D	EC	5015694-0-0	A

ETCH REV B1 FIRST USED ON VENUS

MR 1 MS#