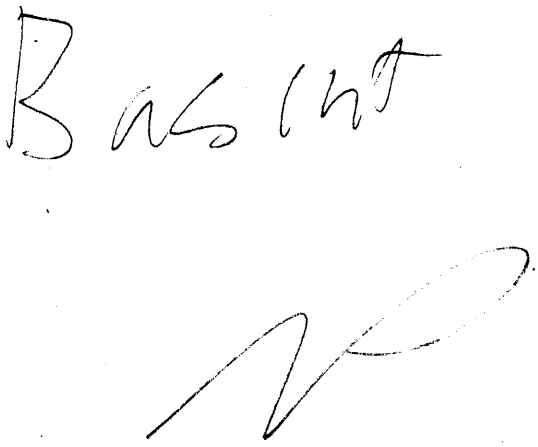
LISPM B s Interface CADR1:BUSINT UML 25-MAR-81 0822
FILNAM EXT[P,PN] DATE TIME MODULE(DWG NUM) REV AUTHOR
TITLE 1 PROJECT NOMENCLATURE
TITLE 2 SHEET n OF m BOARD TYPE
CARD LOC(VARIABLE SETTINGS) NEXT HIGHER ASSEMBLY

BUSPAR.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
BUS PARITY				LG684	
BUSSEL.DRW[CAD,R1]	10-DEC-80	1005			TK
CBUS				LG684	
BUS FROM UNIBUS				LG684	
CAPS.DRW[CAD,R1]	10-DEC-80	1006			TK
CBUS				LG684	
BYPASS CAPACITORS				LG684	
CLM.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
CABLES TO PROCESSOR				LG684	
CTP.DRW[CAD,R1]	08-SEP-78	1311			
CBUS				LG684	
TEST POINTS				LG684	
CUBUS.DRW[CAD,R1]	03-OCT-78	0716			
CBUS				LG684	
UNIBUS SPC CONNS				LG684	
CXBUS.DRW[CAD,R1]	10-DEC-80	1009			
CBUS				LG684	
XBUS BACKPLANE CONNS				LG684	
DATCTL.DRW[CAD,R1]	10-DEC-80	1733			TK
CBUS				LG684	
DATA PATH CONTROL				LG684	
DBGIN.DRW[CAD,R1]	10-DEC-80	1025			TK
CBUS				LG684	
DEBUGEE DATA PATH				LG684	
DBGOUT.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DEBUGER DATA PATH				LG684	
DIAG.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DIAGNOSTIC BUS				LG684	
LMADR.DRW[CAD,R1]	10-DEC-80	1027			TK
CBUS				LG684	
ADDRESS FROM LISP MACHINE				LG684	
LMDATA.DRW[CAD,R1]	10-DEC-80	1027			H
CBUS				LG684	
PROCESSOR DATA XCVR				LG684	
RBUF.DRW[CAD,R1]	10-DEC-80	1028			TK
CBUS				LG684	
READ BUFFER				LG684	
REQERR.DRW[CAD,R1]	10-DEC-80	1040			TK
CBUS				LG684	
ERROR LOGIC				LG684	



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LISPM Bus Interface              CADR1:BUSINT UML        -MAR-81  0822
FILNAM.EXT[P,PN]        DATE        TIME MODULE(DWG NUM) REV     AUTHOR
        TITLE 1                          PROJECT         NOMENCLATURE
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        CARD LOC(VARIABLE SETTINGS)      NEXT HIGHER ASSEMBLY

REQLM.DRW[CAD,R1]       10-DEC-80  1718                          TK
        CBUS                                          LG684
        XBUS REQ & ACK                                LG684

REQTIM.DRW[CAD,R1]      10-DEC-80  1526
        CBUS                                          LG684
        XBUS & UNIBUS TIMEOUT                         LG684

REQU.DRW[CAD,R1]        10-DEC-80  1536                          TK
        CBUS                                          LG684
        XBUS REQUEST FROM UNIBUS                      LG684

REQUB.DRW[CAD,R1]       10-DEC-80  1523                          TK
        CBUS                                          LG684
        IM & DEBUG TO UNIBUS                          LG684

RQSYNC.DRW[CAD,R1]      10-DEC-80  1132                          TK
        CBUS                                          LG684
        REQUEST SYNCHRONIZER                          LG684

UBA.DRW[CAD,R1]         10-DEC-80  1132                          TK
        CBUS                                          LG684
        UNIBUS ADDRESS TRANSCEIVERS                   LG684

UBCYC.DRW[CAD,R1]       10-DEC-80  1720                          TK
        CBUS                                          LG684
        UNIBUS SLAVE RESPONSE                         LG684

UBD.DRW[CAD,R1]         10-DEC-80  1133                          TK
        CBUS                                          LG684
        UNIBUS DATA TRANSCEIVERS                      LG684

UBINTC.DRW[CAD,R1]      10-DEC-80  1134                          TK
        CBUS                                          LG684
        UNIBUS INTERPUPT CONTROL                      LG684

UBMAP.DRW[CAD,R1]       10-DEC-80  1135                          TK
        CBUS                                          LG684
        UNIBUS MAP                                    LG684

UBMAST.DRW[CAD,R1]      10-DEC-80  1321                          TK
        CBUS                                          LG684
        UNIBUS MASTERSHIP                             LG684

UBXA.DRW[CAD,R1]        10-DEC-80  1136                          TK
        CBUS                                          LG684
        UNIBUS ADDRESS TO XBUS                        LG684

UPRIOR.DRW[CAD,R1]      10-DEC-80  1315                          TK
        CBUS                                          LG684
        UNIBUS BUS GRANT                              LG684

WBUF.DRW[CAD,R1]        10-DEC-80  1137                          TK
        CBUS                                          LG684
        WRITE BUFFER                                  LG684

XA.DRW[CAD,R1]          10-DEC-80  1152                          TK
        CBUS                                          LG684
        XBUS ADDRESS TRANSCEIVERS                     LG684
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FILNAM.EXT[P,PN]        DATE        TIME MODULE(DWG NUM) REV      AUTHOR
        TITLE 1                          PROJECT         NOMENCLATURE
        TITLE 2                          SHEET n Of m    BOARD TYPE
        CARD LOC(VARIABLE SETTINGS)      NEXT HIGHER ASSEMBLY

XAPAR.DRW[CAD,R1]       10-DEC-80  1149                          TK
        CBUS                                                LG684
        XBUS ADDRESS PARITY                                 LG684

XBD.DRW[CAD,R1]         10-DEC-80  1150                          TK
        CBUS                                                LG684
        XBUS TO BUS                                         LG684

XD.DRW[CAD,R1]          10-DEC-80  1150                          TK
        CBUS                                                LG684
        XBUS DATA TRANSCEIVERS                              LG684
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LISPM F s Interface CADR1:BUSINT UML 25-MAR-81 0822
******* DIP MAP *******

26S10 XD x F30	26S10 XD x E30	74LS244 XBD x D30	93S48 BUSPAR x C30	8304 LMDATA x B30	SIP180/3 LMDATA x A30
26S10 XD x F29	26S10 XD x E29	74LS244 XBD x D29	93S48 BUSPAR x C29	8304 LMDATA x B29	SIP180/3 LMDATA x A29
26S10 XD x F28	26S10 XD x E28	74LS244 XBD x D28	93S48 BUSPAR x C28	8304 LMDATA x B28	SIP180/3 LMDATA x A28
26S10 XD x F27	26S10 XD x E27	74LS244 XBD x D27	29701 WBUF x C27	8304 LMDATA x B27	74LS240 LMADR x A27
26S10 XA x F26	26S10 XA x E26	29701 RBUF x D26	29701 WBUF x C26	74LS244 BUSSEL x B26	74LS240 LMADR x A26
26S10 XA x F25	26S10 XA x E25	29701 RBUF x D25	29701 WBUF x C25	74LS244 BUSSEL x B25	74LS240 LMADR x A25
26S10 XA x F24	93S48 XAPAR x E24	29701 RBUF x D24	29701 WBUF x C24	74LS244 BUSSEL x B24	74LS240 LMADR x A24
26S10 XA x F23	93S48 XAPAR x E23	29701 RBUF x D23	74LS244 RBUF x C23	74LS244 BUSSEL x B23	74LS240 LMADR x A23
26S10 XA x F22	74LS244 UBXA x E22	74LS244 RBUF x D22	74LS244 RBUF x C22	8304 DBGOUT x B22	SIP180/3 DBGIN x A22
26S10 XA x F21	74LS244 UBXA x E21	74LS244 RBUF x D21	74LS244 BUSSEL x C21	8304 DBGOUT x B21	8304 DIAG x A21
26S10 XD x F20	74LS244 UBXA x E20	74S86 REQERR xxxx D20	74LS244 BUSSEL x C20	74S00 DATCTL xxxx B20	8304 DIAG x A20

LISPM Bus Interface CADR1;BUSINT UML 5-MAR-81 0823
******* DIP MAP *******

DM8838 UBD x F19	74LS244 UBD x E19	74LS244 BUSSEL x D19	74LS244 BUSSEL x C19	74S04 DATCTL xxxxxx B19	74LS374 DBGIN x A19
DM8838 UBD x F18	74LS244 UBD x E18	74LS240 UBINTC x D18	74S51 DATCTL xx C18	74S32 DATCTL xxxx B18	74LS374 DBGIN x A18
DM8838 UBD x F17	74LS244 UBMAP x E17	74LS374 UBINTC x D17	74S51 DATCTL xx C17	74S02 DATCTL xxxx B17	74S241 DBGOUT x A17
DM8838 UBD x F16	74LS244 UBMAP x E16	25LS2519 UBINTC x D16	74LS244 REQERR x C16	74S08 REQTIM xxxx B16	25LS2519 DBGIN x A16
DM8838 UPRIOR x F15	29701 UBMAP x E15	74LS74 UBINTC xx D15	74S64 DATCTL x C15	8304 REQERR x B15	74S139 DBGIN xo A15
74S38 UPRIOR xxoo F14	29701 UBMAP x E14	74LS74 UBINTC xx D14	74S51 DATCTL xx C14	74S74 RQSYNC xx B14	74S10 DBGIN xxx A14
74S38 UPRIOR xxxx F13	29701 UBMAP x E13	74LS74 UBINTC xx D13	74S10 RQSYNC xxx C13	74S04 XA xxxxxx B13	74S04 DBGIN xxxxxx A13
DM8838 UBA x F12	29701 UBMAP x E12	74S133 REQU x D12	74S260 RQSYNC xx C12	74S02 DBGOUT xxxx B12	74S08 DBGOUT xxxx A12
DM8838 UBA x F11	74S258 UBMAP x E11	74S04 UBA xxxxxx D11	74S64 REQLM x C11	74S51 REQLM xx B11	74S00 DIAG xxxx A11
DM8838 UBA x F10	74S258 UBMAP x E10	74S174 UPRIOR x D10	74S64 REQLM x C10	74S74 REQUB xx B10	MID100 DBGOUT xoo A10
DM8838 UBA x F09	74S08 REQLM xxoo E09	74S472 UPRIOR x D09	ID100 REQLM x C09	ID250 REQUB x B09	74S32 DBGIN xxxx A09

LISPM Bus Interface CADR1:BUSINT UML 25-MAR-81 0823
******* DIP MAP *******

DM8838 UBA x	74S133 UBCYC x	25LS2519 UPRIOR x	74S04 REQLM xxxxxx	74S74 UBCYC xx	74S175 RQSYNC x
F08	E08	D08	C08	B08	A08
DM8838 UBMAST x	74S139 UBCYC xx	25LS2519 UPRIOR x	MTD100 REQU xxx	74S04 CLM xxxxxx	74S260 RQSYNC xx
F07	E07	D07	C07	B07	A07
DM8838 UPRIOR x	74S260 UBCYC xx	74S10 UBMAST xxx	74S51 REQUB xx	TD100 RQSYNC x	74S175 RQSYNC x
F06	E06	D06	C06	B06	A06
74S133 UBCYC x	74S04 UBINTC xxxxxx	74S00 UBINTC xxxx	74S20 REQU xo	74S11 RQSYNC xxx	74S02 RQSYNC xxxx
F05	E05	D05	C05	B05	A05
TD250 UBCYC x	74S32 UBINTC xxxx	74S74 UBMAST xx	74S11 DBGIN xxx	74S241 DBGOUT x	74S00 REQU xxxx
F04	E04	D04	C04	B04	A04
74S00 REQU xxxx	74S138 UBCYC x	74LS74 REQU xx	74LS27 UPRIOR xxx	74S04 REQTIM xxxxxx	74LS112 REQERR ox
F03	E03	D03	C03	B03	A03
74S02 REQU xxxx	74S08 UBINTC xxxx	74LS74 UBMAST xx	74LS74 UBMAST xx	74 276 REQERR x	74S288 REQTIM x
F02	E02	D02	C02	B02	A02
TD100 REQU x	74S00 UBMAST xxxx	MTD100 UBMAST xxx	74LS163 UPRIOR x	74LS273 REQTIM x	74LS124 REQTIM xo
F01	E01	D01	C01	B01	A01

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*** *** EDGE CONNECTIONS Flags: (# Output, @ Terminator, ---- Dedicated ground, ++++ Dedicated power) *******

-A-	-B-	-C-	-D-
A1 -XBUS35 A2 +5.0V++++++++++++++++++	A1 -XBUS5 # A2 +5.0V++++++++++++++++++	A1 UB NPG IN # A2 +5.0V++++++++++++++++++	A1 # A2 +5.0V++++++++++++++++++
B1 -XBUS34 B2 -5.0V	B1 -XBUS4 # B2 -5.0V	B1 UB NPG OUT # B2 -5.0V	B1 # B2 -5.0V
C1 -XBUS33 C2 GND----------	C1 -XBUS3 # C2 GND----------	C1 -XBUS RQ # C2 GND----------	C1 # C2 GND----------
D1 -XBUS32 D2 -XBUS31 #	D1 -XBUS2 # D2 -XBUS1 #	D1 -XBUS ACK # D2 -UBD15 H #	D1 # D2 -UB BR7 H #
E1 -XBUS30 # E2 -XBUS29 #	E1 -XBUS0 # E2 -XBUS PAR #	E1 -XBUS WR # E2 -UBD14 H #	E1 # E2 -UB BR6 H #
F1 GND F2 -XBUS28 #	F1 GND F2 -XADDR PAR #	F1 GND F2 -UBD13 H #	F1 GND F2 -UB BR5 H #
H1 -XBUS27 # H2 -XBUS26 #	H1 -XADDR21 # H2 -XADDR20 #	H1 -UBD11 H # H2 -UBD12 H #	H1 # H2 -UB BR4 H #
J1 -XBUS25 # J2 -XBUS24 #	J1 -XADDR19 # J2 -XADDR18 #	J1 -XBUS IGNPAR # J2 -UBD10 H #	J1 # J2
K1 -XBUS23 # K2 -XBUS22 #	K1 -XADDR17 # K2 -XADDR16 #	K1 -XBUS INIT # K2 -UBD9 H #	K1 # K2 UB BG7 IN #
L1 -XBUS21 # L2 -XBUS20 #	L1 -XADDR15 # L2 -XADDR14 #	L1 -XBUS EXTRQ # L2 -UBD8 H #	L1 -UB INIT H # L2 UB BG7 IN #
M1 -XBUS19 # M2 -XBUS18 #	M1 -XADDR13 # M2 -XADDR12 #	M1 -XBUS BUSY # M2 -UBD7 H #	M1 # M2 UB BG6 IN #
N1 GND N2 -XBUS17 #	N1 GND N2 -XADDR11 #	N1 GND N2 -UBD4 H #	N1 GND N2 UB BG6 IN #
P1 -XBUS16 # P2 -XBUS15 #	P1 -XADDR10 # P2 -XADDR9 #	P1 -XBUS SYNC # P2 -UBD5 H #	P1 +12.0V P2 UB BG5 IN #
R1 -XBUS14 # R2 -XBUS13 #	R1 -XADDR8 # R2 -XADDR7 #	R1 -LM BOOT H # R2 -UBD1 H #	R1 +12.0V R2 UB BG6 IN #
S1 -XBUS12 # S2 -XBUS11 #	S1 -XADDR6 # S2 -XADDR5 #	S1 -XBUS INTR # S2 -UDD0 H #	S1 +12.0V S2 UB BG4 IN #
T1 GND---------- T2 -XBUS10 #	T1 GND---------- T2 -XADDR4 #	T1 GND---------- T2 -UBD3 H #	T1 GND---------- T2 UB BG4 IN #
U1 -XBUS9 # U2 -XBUS8 #	U1 -XADDR3 # U2 -XADDR2 #	U1 -XBUS POWER RESET H # U2 -UBD2 H #	U1 # U2
V1 -XBUS7 # V2 -XBUS6 #	V1 -XADDR1 # V2 -XADDR0 #	V1 -XBUS EXTGRANT OUT # V2 -UBD6 H #	V1 # V2

LISPM Bus Interface CADR1;BUSINT UML 5-MAR-81 0823
******* EDGE CONNECTIONS Flags: (# Output, @ Terminator, ---- Dedicated ground, ++++ Dedicated power) *******

-E-	-F-	-J01-	-J02-
A1	A1	01 CLK0 #	01
A2 +5.0V++++++++++++++++++	A2 +5.0V++++++++++++++++++	02 -MEMRQ H @	02
B1	B1	03 -LM ACK H #	03
B2 -5.0V	B2 -5.0V	04 LMX GRANT #	04
C1 -UB ADR12 H #	C1	05 LMUB GRANT #	05
C2 GND----------	C2 GND----------	06 XBUS REQUEST #	06
D1 -UB ADR17 H #	D1 -UB BBSY H #	07 LMUB MASTER #	07
D2 -UB ADR15 H #	D2	08 C1 OUT #	08
E1 -UB MSYN H #	E1	09 XWR #	09
E2 -UB ADR16 H #	E2	10 -FREE H #	10
F1 -UB ADR2 H #	F1 GND	11 NXM TIMEOUT #	11
F2 -UB C1 H #	F2	12 -ANY PAR ERROR H #	12
H1 -UB ADR1 H #	H1	13 ANY GRANT DLYD #	13
H2 -UB ADR0 H #	H2	14 MSYN IN #	14
J1 -UB SSYN H #	J1 -UB NPR H #	15 MSYN OUT #	15
J2 -UB C0 H	J2	16 SSYN IN #	16
K1 -UB ADR14 H #	K1	17 SSYN OUT #	17
K2 -UB ADR13 H #	K2	18 UB REG CYC TO #	18
L1 -UB ADR11 H #	L1	19 UBXRQ #	19
L2	L2	20 UBX GRANT #	20
M1	M1 -UB INTR H #	21 -DEBUG IN REQ H @	21
M2	M2	22 DEBUG ACK #	22
N1 GND	N1 GND	23 DBUB MASTER #	23
N2 -UB ADR8 H #	N2	24 NC #	24
P1 -UB ADR10 H #	P1	25 NC #	25
P2 -UB ADR7 H #	P2	26 ----------	26 ----------
R1 -UB ADR9 H #	R1	27 ----------	27 ----------
R2	R2	28 ----------	28 ----------
S1	S1	29 ----------	29 ----------
S2	S2	30 ----------	30 ----------
T1 GND----------	T1 GND----------	31 ----------	31 ----------
T2	T2 -UB SACK H #	32 ----------	32 ----------
U1 -UB ADR6 H #	U1	33 ----------	33 ----------
U2 -UB ADR4 H #	U2	34 ----------	34 ----------
V1 -UB ADR5 H #	V1	35 ----------	35 ----------
V2 -UB ADR3 H #	V2 LOCAL ENABLE @	36 ----------	36 ----------
		37 ----------	37 ----------
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LISPM Bus Interface CADR1;BUSINT UML 25-MAR-81 0823
******* EDGE CONNECTIONS Flags: (# Output, @ Terminator, ---- Dedicated ground, ++++ Dedicated powe.) *******

-J03-	-J04-	-J05-	-J06
01	01	01 DBD0 #	01 DBD0 #
02	02	02 DBD1 #	02 DBD1 #
03	03	03 DBD2 #	03 DBD2 #
04	04	04 DBD3 #	04 DBD3 #
05	05	05 DBD4 #	05 DBD4 #
06	06	06 DBD5 #	06 DBD5 #
07	07	07 DBD6 #	07 DBD6 #
08	08	08 DBD7 #	08 DBD7 #
09	09	09 DBD8 #	09 DBD8 #
10	10	10 DBD9 #	10 DBD9 #
11	11	11 DBD10 #	11 DBD10 #
12	12	12 DBD11 #	12 DBD11 #
13	13	13 DBD12 #	13 DBD12 #
14	14	14 DBD13 #	14 DBD13 #
15	15	15 DBD14 #	15 DBD14 #
16	16	16 DBD15 #	16 DBD15 #
17	17	17 DEBUG IN A0 @	17 DEBUG OUT A0 #
18	18	18 DEBUG IN A1 @	18 DEBUG OUT A1 #
19	19	19 DEBUG IN WR @	19 DEBUG OUT WR #
20	20	20 -DEBUG IN REQ H @	20 -DEBUG OUT REQ H #
21 ----------	21 ----------	21 DEBUG IN ACK #	21 DEBUG OUT ACK @
22 ----------	22 ----------	22 NC #	22 NC #
23 ----------	23 ----------	23 NC #	23 NC #
24 ----------	24 ----------	24 NC #	24 NC #
25 ----------	25 ----------	25 NC #	25 NC #
26 ----------	26 ----------	26 ----------	26 ----------
27 ----------	27 ----------	27 ----------	27 ----------
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*** *** EDGE CONNECTIONS Flags: (# Output, @ Terminator, ---- Dedicated ground, ++++ Dedicated power). *******

-J07-	-J08-	-J09-	-J10-
01 SPY0	# 01 GND	01 -ADR15 H	01
02 SPY1	# 02 -MCLK7 H	@ 02 -ADR14 H	02
03 SPY2	# 03 GND	03 -ADR13 H	03
04 SPY3	# 04 GND	04 -ADR12 H	04
05 SPY4	# 05 SPY ADR 1	# 05 -ADR11 H	05
06 SPY5	# 06 SPY ADR 2	# 06 -ADR10 H	06
07 SPY6	# 07 SPY ADR 3	# 07 -ADR9 H	07
08 SPY7	# 08 SPY ADR 4	# 08 -ADR8 H	08
09 SPY8	# 09 -SPY READ H	# 09 -ADR7 H	09
10 SPY9	# 10 -SPY WRITE H	# 10 -ADR6 H	10
11 SPY10	# 11 -BUSINT LM RESET H	# 11 -ADR5 H	11
12 SPY11	# 12 -LM BOOT H	12 -ADR4 H	12
13 SPY12	# 13 -LM UNIBUS RESET H	13 -ADR3 H	13
14 SPY13	# 14 LM MEMDRIVE ENB	# 14 -ADR2 H	14
15 SPY14	# 15 -LM POWER RESET H	15 -ADR1 H	15
16 SPY15	# 16 NC	# 16 -ADR0 H	16
17 -LM GRANT H	# 17 NC	# 17 -MEMRQ H	@ 17
18 WRCYC	@ 18 NC	# 18 -LM ACK H	# 18
19 LM INT	# 19 NC	# 19 -LOADMD H	# 19
20 MEMPAR FROM LM	@ 20 NC	# 20 -LM IGNPAR H	# 20
21 ----------	21 ----------	21	21
22 ----------	22 ----------	22	22
23 ----------	23 ----------	23	23
24 ----------	24 ----------	24	24
25 ----------	25 ----------	25	25
26 ----------	26 ----------	26 ----------	26 ----------
27 ----------	27 ----------	27 ----------	27 ----------
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LISPM Bus Interface CADR1;BUSINT UML 25-MAR-81 0823
******* EDGE CONNECTIONS Flags: (# Output, @ Terminator, ---- Dedicated ground, ++++ Dedicated power) *******

-J11-		-J12-	
01 MEM31	#	01 MEM11	#
02 MEM30	#	02 MEM10	#
03 MEM29	#	03 MEM9	#
04 MEM28	#	04 MEM8	#
05 MEM27	#	05 MEM7	#
06 MEM26	#	06 MEM6	#
07 MEM25	#	07 MEM5	#
08 MEM24	#	08 MEM4	#
09 MEM23	#	09 MEM3	#
10 MEM22	#	10 MEM2	#
11 MEM21	#	11 MEM1	#
12 MEM20	#	12 MEM0	#
13 MEM19	#	13 MEMPAR TO LM	#
14 MEM18	#	14 -ADRPAR H	
15 MEM17	#	15 -ADR21 H	
16 MEM16	#	16 -ADR20 H	
17 MEM15	#	17 -ADR19 H	
18 MEM14	#	18 -ADR18 H	
19 MEM13	#	19 -ADR17 H	
20 MEM12	#	20 -ADR16 H	
21 ----------		21 ----------	
22 ----------		22 ----------	
23 ----------		23 ----------	
24 ----------		24 ----------	
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39 ----------		39 ----------	
40 ----------		40 ----------	

LISPM Bus Interface CADR1;BUSINT STF 25-MAR-81 0823

FILNAM.EXT[P,PN]	DATE	TIME	MODULE(DWG NUM)	REV	AUTHOR
TITLE 1			PROJECT	NOMENCLATURE	
TITLE 2			SHEET n OF m	BOARD TYPE	
CARD LOC(VARIABLE SETTINGS)			NEXT HIGHER ASSEMBLY		
BUSPAR.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
BUS PARITY				LG684	
BUSSEL.DRW[CAD,R1]	10-DEC-80	1005			TK
CBUS				LG684	
BUS FROM UNIBUS				LG684	
CAPS.DRW[CAD,R1]	10-DEC-80	1006			TK
CBUS				LG684	
BYPASS CAPACITORS				LG684	
CLM.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
CABLES TO PROCESSOR				LG684	
CTP.DRW[CAD,R1]	08-SEP-78	1311			
CBUS				LG684	
TEST POINTS				LG684	
CUBUS.DRW[CAD,R1]	03-OCT-78	0716			
CBUS				LG684	
UNIBUS SPC CONNS				LG684	
CXBUS.DRW[CAD,R1]	10-DEC-80	1009			
CBUS				LG684	
XBUS BACKPLANE CONNS				LG684	
DATCTL.DRW[CAD,R1]	10-DEC-80	1733			TK
CBUS				LG684	
DATA PATH CONTROL				LG684	
DBGIN.DRW[CAD,R1]	10-DEC-80	1025			TK
CBUS				LG684	
DEBUGEE DATA PATH				LG684	
DBGOUT.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DEBUGER DATA PATH				LG684	
DIAG.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DIAGNOSTIC BUS				LG684	
LMADR.DRW[CAD,R1]	10-DEC-80	1027			TK
CBUS				LG684	
ADDRESS FROM LISP MACHINE				LG684	
LMDATA.DRW[CAD,R1]	10-DEC-80	1027			H
CBUS				LG684	
PROCESSOR DATA XCVR				LG684	
RBUF.DRW[CAD,R1]	10-DEC-80	1028			TK
CBUS				LG684	
READ BUFFER				LG684	
REQERR.DRW[CAD,R1]	10-DEC-80	1040			TK
CBUS				LG684	
ERROR LOGIC				LG684	

LISPM E s Interface CADR1:BUSINT STF 25-MAR-81 0823
FILNAM.EXT[P,PN] DATE TIME MODULE(DWG NUM) REV AUTHOR
TITLE 1 PROJECT NOMENCLATURE
TITLE 2 SHEET n OF m BOARD TYPE
CARD LOC(VARIABLE SETTINGS) NEXT HIGHER ASSEMBLY

REQLM.DRW[CAD,R1] 10-DEC-80 1718 TK
CBUS LG684
XBUS REQ & ACK LG684

REQTIM.DRW[CAD,R1] 10-DEC-80 1526
CBUS LG684
XBUS & UNIBUS TIMEOUT LG684

REQU.DRW[CAD,R1] 10-DEC-80 1536 TK
CBUS LG684
XBUS REQUEST FROM UNIBUS LG684

REQUB.DRW[CAD,R1] 10-DEC-80 1523 TK
CBUS LG684
LM & DEBUG TO UNIBUS LG684

RQSYNC.DRW[CAD,R1] 10-DEC-80 1132 TK
CBUS LG684
REQUEST SYNCHRONIZER LG684

UBA.DRW[CAD,R1] 10-DEC-80 1132 TK
CBUS LG684
UNIBUS ADDRESS TRANSCEIVERS LG684

UBCYC.DRW[CAD,R1] 10-DEC-80 1720 TK
CBUS LG684
UNIBUS SLAVE RESPONSE LG684

UBD.DRW[CAD,R1] 10-DEC-80 1133 TK
CBUS LG684
UNIBUS DATA TRANSCEIVERS LG684

UBINTC.DRW[CAD,R1] 10-DEC-80 1134 TK
CBUS LG684
UNIBUS INTERRUPT CONTROL LG684

UBMAP.DRW[CAD,R1] 10-DEC-80 1135 TK
CBUS LG684
UNIBUS MAP LG684

UBMAST.DRW[CAD,R1] 10-DEC-80 1321 TK
CBUS LG684
UNIBUS MASTERSHIP LG684

UBXA.DRW[CAD,R1] 10-DEC-80 1136 TK
CBUS LG684
UNIBUS ADDRESS TO XBUS LG684

UPRIOR.DRW[CAD,R1] 10-DEC-80 1315 TK
CBUS LG684
UNIBUS BUS GRANT LG684

WBUF.DRW[CAD,R1] 10-DEC-80 1137 TK
CBUS LG684
WRITE BUFFER LG684

XA.DRW[CAD,R1] 10-DEC-80 1152 TK
CBUS LG684
XBUS ADDRESS TRANSCEIVERS LG684

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LISPM Bus Interface              CADR1:BUSINT STF        25-MAR-81  0823
FILNAM.EXT[P,PN]        DATE        TIME MODULE(DWG NUM) REV      AUTHOR
        TITLE 1                          PROJECT         NOMENCLATURE
        TITLE 2                          SHEET n OF m    BOARD TYPE
        CARD LOC(VARIABLE SETTINGS)      NEXT HIGHER ASSEMBLY

XAPAR.DRW[CAD,R1]       10-DEC-80  1149                          TK
        CBUS                                          LG684
        XBUS ADDRESS PARITY                           LG684

XBD.DRW[CAD,R1]         10-DEC-80  1150                          TK
        CBUS                                          LG684
        XBUS TO BUS                                   LG684

XD.DRW[CAD,R1]          10-DEC-80  1150                          TK
        CBUS                                          LG684
        XBUS DATA TRANSCEIVERS                        LG684
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LISPM Bus Interface CADR1;BUSINT STF 25-MAR-81 0823

PART NUMBER	DIPTYPE	LOC	BODY	FILE	POS
N/A	74LS124	A01( )	74LS124	REQTIM	D2
	74S288	A02( )	74S288	REQTIM	C7
	74LS112	A03( )	74LS112-1		REQERR C4
	74S00	A04( )	74S00	REQU	D3
			74S00	RQSYNC	C4
			74S00	RQSYNC	B7
			OS00L	REQLM	B3
		A11( )	74S00	DIAG	D7
			74S00	DBGIN	D6
			74S00	DBGOUT	D1
			74S00	REQLM	D2
		B20( )	74S00	DATCTL	A1
			74S00	DATCTL	D7
			74S00	DATCTL	A7
			OS00L	DATCTL	B7
		D05( )	74S000	UBINIC	D2
			74S000	UBMAST	A2
			74S00	UBMAST	B2
			74S00	RQSYNC	C4
		E01( )	74S00	UBMAST	A6
			74S00	UBMAST	A6
			74S000	UBMAST	B6
			74S000	UBMAST	B6
		F03( )	74S00	REQU	C1
			74S00	REQU	C5
			74S00	UBCYC	D3
			74S000	REQU	B1
	74S02	A05( )	74S020	RQSYNC	A5
			74S020	RQSYNC	C2
			OS02L	DATCTL	A1
			OS02L	REQLM	A6
		B12( )	74S02	DBGOUT	B2
			74S02	REQLM	A7
			74S02	REQLM	A7
			74S02	REQUB	C1
		B17( )	74S02	DATCTL	B1
			74S020	REQLM	D1
			74S02	DATCTL	C1
			74S020	REQLM	A3
		F02( )	74S020	REQU	C4
			74S020	REQU	D4
			74S020	REQU	D4
			74S02	UBCYC	B6
	74S175	A06( )	74S175	RQSYNC	B8
		A08( )	74S175	RQSYNC	B2
	74S260	A07( )	74S2600	RQSYNC	B5
			74S2600	RQSYNC	B5
		C12( )	74S2600	RQSYNC	A5
			74S2600	REQLM	A2
		E06( )	74S2600	UBCYC	D2
			74S260	REQU	D5
	74S32	A09( )	74S32	DBGIN	C7
			74S32	DBGOUT	A2
			74S32	REQUB	D2
			74S32	UBMAST	B1
		B18( )	74S320	DATCTL	B7
			OS32L	UBCYC	A6
			74S32	DATCTL	A1
			74S320	REQLM	A3
		E04( )	74S32	UBINTC	D6
			OS32L	UBCYC	A5
			74S32	REQU	D8
			74S320	REQU	A1

LISPM F s Interface CADR1:BUSINT STF 25-MAR-81 0823

PART N'MB'R	DIPTYPE	LOC	BODY	FILE	POS
	MTD100	A19( )	MTD100	DBGOUT	A2
		C07( )	MTD100	RFQU	B2
			MTD100	REQUB	B6
			MTD100	RQSYNC	C6
		D01( )	MTD100	UBMAST	B1
			MTD100	UBMAST	D1
			MTD100	UBMAST	D3
	74S08	A12( )	74S08	DBGOUT	C2
			74S08	DBGIN	C6
			74S080	DBGIN	D7
			74S08	RFQUB	A3
		B16( )	74S080	REQTIM	C4
			74S08	REQERR	A3
			74S080	UBMAST	B6
			74S080	UBMAST	B6
		E02( )	74SC8	UBINTC	D6
			74S08	UBCYC	D7
			74S080	REQU	A2
			74S080	REQERR	C3
		E09( )	S08L	REQLM	C1
			S08L	REQLM	C1
	74S04	A13( )	74S04	DBGIN	D7
			74S04	DBGIN	D2
			74S040	DBGIN	D4
			74S040	DBGOUT	A2
			74S040	DIAG	D2
			74S040	REQLM	D3
		B03( )	74S04	REQTIM	C1
			74S04	REQTIM	D6
			74S04	REQTIM	D6
			74S040	REQU	D4
			74S04	UBMAST	C2
			74S040	UBMAST	D2
		B07( )	74S040	CLM	D7
			74S04	CLM	D7
			74S04	RQSYNC	D2
			74S040	RQSYNC	D7
			74S040	RQSYNC	D7
			74S040	RQSYNC	C4
		B13( )	OS04L	XA	D2
			74S04	REQERR	C1
			74S040	REQLM	B3
			74S040	REQLM	B7
			OS04L	DATCTL	C7
			OS04L	REQERR	D2
		B19( )	74S04	DATCTL	C1
			74S04	DATCTL	B1
			74S04	DATCTL	B1
			74S040	DATCTL	C5
			74S04	DATCTL	B1
			74S01	REQLM	A2
		C08( )	74S040	RFQLM	C6
			74S04	DATCTL	C1
			74S04	DATCTL	C1
			74S04	DATCTL	D1
			74S04	DATCTL	D1
			74S04	DATCTL	D1
		D11( )	74S04A	UBA	D3
		E05( )	74S04	UBINTC	D6
			74S040	UBCYC	A3
			74S04	UBCYC	D7
			74S040	REQU	A4
			74S040	REQU	D6
			74S040	UBMAST	A4

LISPM Bus Interface CADR1;BUSINT STF 25-MAR-81 0823

PART NUMBER	DIPTYPE	LOC	BODY	FILE	POS		
	74S10	A14( )	74S100	DBGIN	C6		
			74S10	DIAG	D6		
			74S100	DBGIN	D7		
		C13( )	74S100	RQSYNC	C1		
			74S10	DATCTL	B7		
			74S100	DATCTL	D6		
		D06( )	74S10	UBMAST	A1		
			74S10	UBMAST	A1		
			74S10	UBMAST	D1		
	74S139	A15( )	74S139	DBGIN	D4		
		E07( )	74S139	UBCYC	D4		
			74S139	UBCYC	B3		
	25LS2519	A16( )	25LS2519		DBGIN	B7	
		D07( )	25LS2519		UPRIOR	C6	
		D08( )	25LS2519		UPRIOR	C4	
		D16( )	25LS2519		UBINTC	D2	
	74S241	A17( )	74S241	DBGOUT	D2		
		B04( )	74S241	DBGOUT	D5		
	74LS374	A18( )	74LS374	DBGIN	B5		
		A19( )	74LS374	DBGIN	B3		
		D17( )	74LS374	UBINTC	D4		
	8304	A20( )	8304	DIAG	C7		
		A21( )	8304	DIAG	C2		
		B15( )	8304	REQERR	D7		
		B21( )	8304	DBGOUT	B6		
		B22( )	8304	DBGOUT	B4		
		B27( )	8304	LMDATA	B8		
		B28( )	8304	LMDATA	B6		
		B29( )	8304	LMDATA	B4		
		B30( )	8304	LMDATA	B2		
	SIP180/390-8	A22@03( )		SIP180/390-8		DBGIN	D1
		A28@03( )		SIP180/390-8		LMDATA	D8
		A28@20( )		SIP180/390-8		LMDATA	D6
		A29@03( )		SIP180/390-8		LMDATA	D5
		A29@20( )		SIP180/390-8		LMDATA	D4
		A30@03( )		SIP180/390-8		LMDATA	D2
		A30@20( )		SIP180/390-8		LMDATA	D1
	SIP330/470-8	A22@20( )		SIP330/470-8		CLM	D3
	74LS240	A23( )	74LS240	LMADR	D7		
		A24( )	74LS240	LMADR	D5		
		A25( )	74LS240	LMADR	B7		
		A26( )	74LS240	LMADR	B5		
		A27( )	74LS240	LMADR	B2		
		D18( )	74LS240	UBINTC	B6		
	74LS273	B01( )	74LS273	REQTIM	C5		
	74 276	B02( )	74276	REQERR	B4		
	DUMMY4	B03@01( )		DUMMY4	REQTIM	D2	
		F13@01( )		DUMMY4	UPRIOR	D3	
		F14@01( )		DUMMY4	UPRIOR	D3	
	74S11	B05( )	74S110	RQSYNC	C5		
			74S11	REQERR	A3		
			74S11	REQERR	C3		
		C04( )	74S110	DBGIN	D7		
			OS11L	UBCYC	B4		
			74S11	UBMAST	C1		

LISPM Bus Interface CADR1:BUSINT STF 25-MAR-81 0823

PART NUMBER	DIPTYPE	LOC	BODY	FILE	POS
	TD100	B06( )	TD100	RQSYNC	D2
		C09( )	TD100	REQLM	D4
		F01( )	TD100	REQU	D2
	74S74	B08( )	74S74	UBCYC	B5
			74S74	RQSYNC	C3
		B10( )	74S74	REQUB	C2
			74S74	REQUB	B2
		B14( )	74S74	RQSYNC	C7
			74S74	REQLM	C4
		D04( )	74S74	UBMAST	C4
			74S74	UBMAST	D4
	TD250	B09( )	TD250	REQUB	D2
		F04( )	TD250	UBCYC	D7
	74S51	B11( )	74S51	REQLM	B7
			74S51	DBGOUT	B2
		C06( )	74S51A	REQUB	B7
			74S51A	REQERR	D1
		C14( )	74S51A	DATCTL	C6
			74S51A	REQLM	C2
		C17( )	74S51A	DATCTL	C4
			74S51A	DATCTL	A7
		C18( )	74S51A	DATCTL	A4
			74S51A	DATCTL	B4
	74LS244	B23( )	74LS244	BUSSEL	B8
		B24( )	74LS244	BUSSEL	B6
		B25( )	74LS244	BUSSEL	B3
		B26( )	74LS244	BUSSEL	B1
		C16( )	74LS244	REQERR	C7
		C19( )	74LS244	BUSSEL	D6
		C20( )	74LS244	BUSSEL	D3
		C21( )	74LS244	BUSSEL	D1
		C22( )	74LS244	RBUF	D4
		C23( )	74LS244	RBUF	D2
		D19( )	74LS244	BUSSEL	D8
		D21( )	74LS244	RBUF	D8
		D22( )	74LS244	RBUF	D6
		D27( )	74LS244	XBD	D8
		D28( )	74LS244	XBD	D6
		D29( )	74LS244	XBD	D3
		D30( )	74LS244	XBD	D1
		E16( )	74LS244	UBMAP	D8
		F17( )	74LS244	UBMAP	D6
		E18( )	74LS244	UBD	D4
		E19( )	74LS244	UBD	D1
		E20( )	74LS244	UBXA	D7
		E21( )	74LS244	UBXA	D5
		E22( )	74LS244	UBXA	D2
	74LS163	C01( )	74LS163	UPRIOR	D1
	74LS74	C02( )	74LS74I	UBMAST	B1
			74LS74	UBMAST	B4
		D02( )	74LS74I	UBMAST	C1
			74LS74	UBMAST	C4
		D03( )	LS74	REQU	D7
			74LS74I	REQERR	D4
		D13( )	74LS74	UBINTC	C6
			74LS74	UBINTC	C7
		D14( )	74LS74	UBINTC	A4
			74LS74	UBINTC	B4
		D15( )	74LS74	UBINTC	A2
			74LS74	UBINTC	B2

LISPM B s Interface CADR1:BUSINT STF 25-MAR-81 0823

PART NUMBER	DIPTYPE	LOC	BODY	FILE	POS
	74LS27	C03( )	74LS27	UPRIOR	C4
			74LS270	UBMAST	A5
			74LS27	REQERR	A7
	74S20	C05( )	74S20	REQU	B3
	CAP	C08@01( )		BYPASS	CAPS C2
		C30@01( )		BYPASS	CAPS C1
		F07@01( )		BYPASS	CAPS C8
		F15@01( )		BYPASS	CAPS C6
		F23@01( )		BYPASS	CAPS C5
		F30@01( )		BYPASS	CAPS C4
	74S64	C10( )	74S64	REQLM	D8
		C11( )	74S64	REQLM	D6
		C15( )	74S64	DATCTL	D4
	29701	C24( )	29701	WBUF	D8
		C25( )	29701	WBUF	D6
		C26( )	29701	WBUF	D4
		C27( )	29701	WBUF	D2
		D23( )	29701	RBUF	B8
		D24( )	29701	RBUF	B6
		D25( )	29701	RBUF	B4
		D26( )	29701	RBUF	B2
		E12( )	29701	UBMAP	B8
		E13( )	29701	UBMAP	B6
		E14( )	29701	UBMAP	B4
		E15( )	29701	UBMAP	B2
	93S48	C28( )	93S48	BUSPAR	D7
		C29( )	93S48	BUSPAR	D4
		C30( )	93S48	BUSPAR	D1
		E23( )	93S48	XAPAR	C6
		E24( )	93S48	XAPAR	C2
	74S472	D09( )	74S472	UPRIOR	C3
	74S174	D10( )	74S174	UPRIOR	C1
	74S133	D12( )	74S133	REQU	B7
		E08( )	74S133	UBCYC	B1
		F05( )	74S133O	UBCYC	C6
	74S86	D20( )	74S86	REQERR	A2
			74S86O	REQERR	A2
			74S86	REQERR	C2
		.	S86L	REQUB	A8
	74S138	E03( )	74S138	UBCYC	B7
	74S258	E10( )	74S258	UBMAP	D3
		E11( )	74S258	UBMAP	D1
	26S10	E25( )	26S10	XA	B8
		E26( )	26S10	XA	B4
		E27( )	26S10	XD	D6
		E28( )	26S10	XD	D3
		E29( )	26S10	XD	B6
		F30( )	26S10	XD	B3
		F20( )	26S10	XD	B1
		F21( )	26S10	XA	D2
		F22( )	26S10	XA	B2
		F23( )	26S10	XA	D8
		F24( )	26S10	XA	D6
		F25( )	26S10	XA	D4
		F26( )	26S10	XA	B6
		F27( )	26S10	XD	D8
		F28( )	26S10	XD	D5
		F29( )	26S10	XD	B8
		F30( )	26S10	XD	B5

LISPM Bus Interface CADR1:BUSINT STF 25-MAR-81 0823

PART NUMBER	DIPTYPE	LOC	BODY	FILE	POS
	DM8838	F06( )	8838	UPRIOR	D7
		F07( )	8838	UBMAST	C8
		F08( )	8838	UBA	C8
		F09( )	8838	UBA	C6
		F10( )	8838	UBA	C5
		F11( )	8838	UBA	C3
		F12( )	8838	UBA	C1
		F15( )	8838	UPRIOR	D5
		F16( )	8838	UBD	B8
		F17( )	8838	UBD	B6
		F18( )	8838	UBD	B4
		F19( )	8838	UBD	B1
	74S38	F13( )	74S380	UPRIOR	A7
			74S380	UPRIOR	A7
			74S380	UPRIOR	B7
			74S380	UPRIOR	B7
		F14( )	74S380	UPRIOR	B7
			74S380	UPRIOR	B7

LISPM Bus Interface CADR1;BUSINT PRT 25-MAR-81 0821

FILNAM.EXT[P,PN]	DATE	TIME	MODULE(DWG NUM)	REV	AUTHOR
TITLE 1			PROJECT	NOMENCLATURE	
TITLE 2			SHEET n OF m	BOARD TYPE	
CARD LOC(VARIABLE SETTINGS)			NEXT HIGHER ASSEMBLY		
BUSPAR.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
BUS PARITY				LG684	
BUSSEL.DRW[CAD,R1]	10-DEC-80	1005			TK
CBUS				LG684	
BUS FROM UNIBUS				LG684	
CAPS.DRW[CAD,R1]	10-DEC-80	1006			TK
CBUS				LG684	
BYPASS CAPACITORS				LG684	
CLM.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
CABLES TO PROCESSOR				LG684	
CTP.DRW[CAD,R1]	08-SEP-78	1311			
CBUS				LG684	
TEST POINTS				LG684	
CUBUS.DRW[CAD,R1]	03-OCT-78	0716			
CBUS				LG684	
UNIBUS SPC CONNS				LG684	
CXBUS.DRW[CAD,R1]	10-DEC-80	1009			
CBUS				LG684	
XBUS BACKPLANE CONNS				LG684	
DATCTL.DRW[CAD,R1]	10-DEC-80	1733			TK
CBUS				LG684	
DATA PATH CONTROL				LG684	
DBGIN.DRW[CAD,R1]	10-DEC-80	1025			TK
CBUS				LG684	
DEBUGEE DATA PATH				LG684	
DBGOUT.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DEBUGER DATA PATH				LG684	
DIAG.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DIAGNOSTIC BUS				LG684	
LMADR.DRW[CAD,R1]	10-DEC-80	1027			TK
CBUS				LG684	
ADDRESS FROM LISP MACHINE				LG684	
LMDATA.DRW[CAD,R1]	10-DEC-80	1027			H
CBUS				LG684	
PROCESSOR DATA XCVR				LG684	
RBUF.DRW[CAD,R1]	10-DEC-80	1028			TK
CBUS				LG684	
READ BUFFER				LG684	
REQERR.DRW[CAD,R1]	10-DEC-80	1040			TK
CBUS				LG684	
ERROR LOGIC				LG684	

```
LISPM Bus Interface              CADR1;BUSINT PRT        5-MAR-81  0821
FILNAM.EXT[P,PN]        DATE        TIME MODULE(DWG NUM) REV      AUTHOR
        TITLE 1                          PROJECT          NOMENCLATURE
        TITLE 2                          SHEET n OF m     BOARD TYPE
        CARD LOC(VARIABLE SETTINGS)      NEXT HIGHER ASSEMBLY

REQLM.DRW[CAD,R1]       10-DEC-80  1718                          TK
        CBUS                                            LG684
        XBUS REQ & ACK                                  LG684

REQTIM.DRW[CAD,R1]      10-DEC-80  1526
        CBUS                                            LG684
        XBUS & UNIBUS TIMEOUT                           LG684

REQU.DRW[CAD,R1]        10-DEC-80  1536                          TK
        CBUS                                            LG684
        XBUS REQUEST FROM UNIBUS                        LG684

REQUE.DRW[CAD,R1]       10-DEC-80  1523                          TK
        CBUS                                            LG684
        LM & DEBUG TO UNIBUS                            LG684

RQSYNC.DRW[CAD,R1]      10-DEC-80  1132                          TK
        CBUS                                            LG684
        REQUEST SYNCHRONIZER                            LG684

UBA.DRW[CAD,R1]         10-DEC-80  1132                          TK
        CBUS                                            LG684
        UNIBUS ADDRESS TRANSCEIVERS                     LG684

UBCYC.DRW[CAD,R1]       10-DEC-80  1720                          TK
        CBUS                                            LG684
        UNIBUS SLAVE RESPONSE                           LG684

UBD.DRW[CAD,R1]         10-DEC-80  1133                          TK
        CBUS                                            LG684
        UNIBUS DATA TRANSCEIVERS                        LG684

UBINTC.DRW[CAD,R1]      10-DEC-80  1134                          TK
        CBUS                                            LG684
        UNIBUS INTERRUPT CONTROL                        LG684

UBMAP.DRW[CAD,R1]       10-DEC-80  1135                          TK
        CBUS                                            LG684
        UNIBUS MAP                                      LG684

UBMAST.DRW[CAD,R1]      10-DEC-80  1321                          TK
        CBUS                                            LG684
        UNIBUS MASTERSHIP                               LG684

UBXA.DRW[CAD,R1]        10-DEC-80  1136                          TK
        CBUS                                            LG684
        UNIBUS ADDRESS TO XBUS                          LG684

UPRIOR.DRW[CAD,R1]      10-DEC-80  1315                          TK
        CBUS                                            LG684
        UNIBUS BUS GRANT                                LG684

WBUF.DRW[CAD,R1]        10-DEC-80  1137                          TK
        CBUS                                            LG684
        WRITE BUFFER                                    LG684

XA.DRW[CAD,R1]          10-DEC-80  1152                          TK
        CBUS                                            LG684
        XBUS ADDRESS TRANSCEIVERS                       LG684
```

```
LISPM Bus Interface              CADR1:BUSINT PRT        25-MAR-81  0821
FILNAM.EXT[P,PN]        DATE        TIME MODULE(DWG NUM) REV      AUTHOR
        TITLE 1                          PROJECT         NOMENCLATURE
        TITLE 2                          SHEET n OF m    BOARD TYPE
        CARD LOC(VARIABLE SETTINGS)      NEXT HIGHER ASSEMBLY

XAPAR.DRW[CAD,R1]       10-DEC-80  1149                          TK
        CBUS                                                LG684
        XBUS ADDRESS PARITY                                 LG684

XBD.DRW[CAD,R1]         10-DEC-80  1150                          TK
        CBUS                                                LG684
        XBUS TO BUS                                         LG684

XD.DRW[CAD,R1]          10-DEC-80  1150                          TK
        CBUS                                                LG684
        XBUS DATA TRANSCEIVERS                              LG684
```

LISPM F s Interface CADR1;BUSINT PRT 25-MAR-81 0821

PART NUMBER	DIPTYPE	COUNT	DESCRIPTION	LOCATIONS
N/A	74LS124	1		A01
	74S288	1	PART NAME:TBP 18S030N	A02
	74LS112	1		A03
	74S00	6		A04, A11, B20, D05 E01, F03
	74S02	4		A05, B12, B17, F02
	74S175	2		A06, A08
	74S260	3		A07, C12, E06
	74S32	3		A09, B18, E04
	MTD100	3		A10, C07, D01
	74S08	4		A12, B16, E02, E09
	74S04	8		A13, B03, B07, B13 B19, C08, D11, E05
	74S10	3		A14, C13, D06
	74S139	2		A15, E07
	25LS2519	4		A16, D07, D08, D16
	74S241	2		A17, B04
	74LS374	3		A18, A19, D17
	8304	9		A20, A21, B15, B21 B22, B27, B28, B29 B30
	SIP180/390-8	7		A22@03, A28@03 A28@20, A29@03 A29@20, A30@03 A30@20
	SIP330/470-8	1		A22@20
	74LS240	6		A23, A24, A25, A26 A27, D18
	74LS273	1		B01
	74 276	1		B02
	DUMMY4	3		B03@01, F13@01 F14@01
	74S11	2		B05, C04
	TD100	3		B06, C09, F01
	74S74	4		B08, B10, B14, D04
	TD250	2		B09, F04
	74S51	5		B11, C06, C14, C17 C18
	74LS244	24		B23, B24, B25, B26 C16, C19, C20, C21 C22, C23, D19, D21 D22, D27, D28, D29 D30, E16, E17, E18 E19, E20, E21, E22
	74LS163	1		C01
	74LS74	6		C02, D02, D03, D13 D14, D15
	74LS27	1		C03
	74S20	1		C05
	CAP	6		C08@01, C30@01 F07@01, F15@01 F23@01, F30@01
	74S64	2		C10, C11
	74S64	1	COMMENT::=UB.MAP.SELECT ∧ UBRD	C15
	29701	12		C24, C25, C26, C27 D23, D24, D25, D26 E12, E13, E14, E15
	93S48	5		C28, C29, C30, E23 E24
	74S472	1	PART NAME:TBP 18S42N	D09
	74S174	1		D10
	74S133	3		D12, E08, F05
	74S86	1		D20
	74S138	1		E03

LISPM Bus Interface CADR1;BUSINT PRT 5-MAR-81 0822

PART NUMBER	DIPTYPE	COUNT	DESCRIPTION	LOCATIONS
	74S258	2		E10, E11
	26S10	17		E25, E26, E27, E28 E29, E30, F20, F21 F22, F23, F24, F25 F26, F27, F28, F29 F30
	DM8838	12		F06, F07, F08, F09 F10, F11, F12, F15 F16, F17, F18, F19
	74S38	2		F13, F14

LISPM Bus Interface CADR1:BUSINT WLS 11-DEC-80 1555
FILNAM.EXT[P,PN] DATE TIME MODULE(DWG NUM) REV AUTHOR
TITLE 1 PROJECT NOMENCLATURE
TITLE 2 SHEET n OF m BOARD TYPE
CARD LOC(VARIABLE SETTINGS) NEXT HIGHER ASSEMBLY

BUSPAR.DRW[CAD,R1] 10-DEC-80 1004 TK
CBUS LG684
BUS PARITY LG684

BUSSEL.DRW[CAD,R1] 10-DEC-80 1005 TK
CBUS LG684
BUS FROM UNIBUS LG684

CAPS.DRW[CAD,R1] 10-DEC-80 1006 TK
CBUS LG684
BYPASS CAPACITORS LG684

CLM.DRW[CAD,R1] 10-DEC-80 1004 TK
CBUS LG684
CABLES TO PROCESSOR LG684

CTP.DRW[CAD,R1] 08-SEP-78 1311
CBUS LG684
TEST POINTS LG684

CUBUS.DRW[CAD,R1] 03-OCT-78 0716
CBUS LG684
UNIBUS SPC CONNS LG684

CXBUS.DRW[CAD,R1] 10-DEC-80 1009
CBUS LG684
XBUS BACKPLANE CONNS LG684

DATCTL.DRW[CAD,R1] 10-DEC-80 1733 TK
CBUS LG684
DATA PATH CONTROL LG684

DBGIN.DRW[CAD,R1] 10-DEC-80 1025 TK
CBUS LG684
DEBUGEE DATA PATH LG684

DBGOUT.DRW[CAD,R1] 10-DEC-80 1026 TK
CBUS LG684
DEBUGER DATA PATH LG684

DIAG.DRW[CAD,R1] 10-DEC-80 1026 TK
CBUS LG684
DIAGNOSTIC BUS LG684

LMADR.DRW[CAD,R1] 10-DEC-80 1027 TK
CBUS LG684
ADDRESS FROM LISP MACHINE LG684

LMDATA.DRW[CAD,R1] 10-DEC-80 1027 H
CBUS LG684
PROCESSOR DATA XCVR LG684

RBUF.DRW[CAD,R1] 10-DEC-80 1028 TK
CBUS LG684
READ BUFFER LG684

REQERR.DRW[CAD,R1] 10-DEC-80 1040 TK
CBUS LG684
ERROR LOGIC LG684

LISPM B s Interface CADR1:BUSINT WLS 11-DEC-80 1555
FILNAM EX:[P,PN] DATE TIME MODULE(DWG NUM REV AUTHOR
TITLE 1 PROJECT NOMENCLATURE
TITLE 2 SHEET n OF m BOARD TYPE
CARD LOC(VARIABLE SETTINGS) NEXT HIGHER ASSEMBLY

REQLP.DRW[CAD,R1] 10-DEC-80 1718 TK
CBUS LG684
XBUS REQ & ACK LG684

REQTIM.DRW[CAD,R1] 10-DEC-80 1526
CBUS LG684
XBUS & UNIBUS TIMEOUT LG684

REQU.DRW[CAD,R1] 10-DEC-80 1536 TK
CBUS LG684
XBUS REQUEST FROM UNIBUS LG684

REQUB.DRW[CAD,R1] 10-DEC-80 1523 TK
CBUS LG684
LM & DEBUG TO UNIBUS LG684

RQSYNC.DRW[CAD,R1] 10-DEC-80 1132 TK
CBUS LG684
REQUEST SYNCHRONIZER LG684

UBA.DRW[CAD,R1] 10-DEC-80 1132 TK
CBUS LG684
UNIBUS ADDRESS TRANSCEIVERS LG684

UBCYC.DRW[CAD,R1] 11-DEC-80 1457 TK
CBUS LG684
UNIBUS SLAVE RESPONSE LG684

UBD.DRW[CAD,R1] 10-DEC-80 1133 TK
CBUS LG684
UNIBUS DATA TRANSCEIVERS LG684

UBINTC.DRW[CAD,R1] 10-DEC-80 1134 TK
CBUS LG684
UNIBUS INTERRUPT CONTROL LG684

UBMAP.DRW[CAD,R1] 10-DEC-80 1135 TK
CBUS LG684
UNIBUS MAP LG684

UBMAST.DRW[CAD,R1] 10-DEC-80 1321 TK
CBUS LG684
UNIBUS MASTERSHIP LG684

UBXA.DRW[CAD,R1] 10-DEC-80 1136 TK
CBUS LG684
UNIBUS ADDRESS TO XBUS LG684

UPRIOR.DRW[CAD,R1] 10-DEC-80 1315 TK
CBUS LG684
UNIBUS BUS GRANT LG684

WBUF.DRW[CAD,R1] 10-DEC-80 1137 TK
CBUS LG684
WRITE BUFFER LG684

XA.DRW[CAD,R1] 10-DEC-80 1152 TK
CBUS LG684
XBUS ADDRESS TRANSCEIVERS LG684

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LISPM Bus Interface              CADR1;BUSINT WLS        -DEC-80  1555
FILNAM.EXT[P,PN]        DATE        TIME MODULE(DWG NUM) REV      AUTHOR
        TITLE 1                          PROJECT         NOMENCLATURE
        TITLE 2                          SHEET n OF m    BOARD TYPE
        CARD LOC(VARIABLE SETTINGS)      NEXT HIGHER ASSEMBLY

XAPAR.DRW[CAD,R1]       10-DEC-80  1149                          TK
        CBUS                                          LG684
        XBUS ADDRESS PARITY                           LG684

XBD.DRW[CAD,R1]         10-DEC-80  1606                          TK
        CBUS                                          LG684
        XBUS TO BUS                                   LG684

XD.DRW[CAD,R1]          10-DEC-80  1150                          TK
        CBUS                                          LG684
        XBUS DATA TRANSCEIVERS                        LG684
```

LISP Bus Interface CADR1:BUSINT WLS 11-DEC-80 1555

DIP TYPE	BODY NAME	# SECTION	TOTAL DIPS	#SPARE SECTIONS	MA	@V		
25LS251	25LS2519	4	4	0				
	WITH LOCATIONS	4	4	0	156.00MA	@5.00V		
26S10	26S10	17	17	0				
	WITH LOCATIONS	17	17	0	1190.00MA	@5.00V		
74 276	74276	1	1	0				
	WITH LOCATIONS	1	1	0	81.00MA	@5.00V		
74LS27	74LS27	2						
	74LS270	1	1	0				
	WITH LOCATIONS	3	1	0	6.80MA	@5.00V		
74LS74	74LS741	3						
	74LS74	8						
	LS74	1	6	0				
	WITH LOCATIONS	12	6	0	48.00MA	@5.00V		
74LS112	74LS112-1	1	1	1				
	WITH LOCATIONS	1	1	1	8.00MA	@5.00V		
74LS124	74LS124	1	1	1				
	WITH LOCATIONS	1	1	1	27.50MA	@5.00V	110.00MA	@5.00V
74LS163	74LS163	1	1	0				
	WITH LOCATIONS	1	1	0	32.00MA	@5.00V		
74LS240	74LS240	6	6	0				
	WITH LOCATIONS	6	6	0	324.00MA	@5.00V		
74LS244	74LS244	24	24	0				
	WITH LOCATIONS	24	24	0	1296.00MA	@5.00V		
74LS273	74LS273	1	1	0				
	WITH LOCATIONS	1	1	0	27.00MA	@5.00V		
74LS374	74LS374	3	3	0				
	WITH LOCATIONS	3	3	0	135.00MA	@5.00V		
74S00	74S00	17						
	OS00L	2						
	74S000	5	6	0				
	WITH LOCATIONS	24	6	0	216.00MA	@5.00V		
74S02	74S020	7						
	OS02L	2						
	74S02	7	4	0				
	WITH LOCATIONS	16	4	0	180.00MA	@5.00V		
74S04	74S04	21						
	74S040	18						
	OS04L	3						
	74S04A	6	8	0				
	WITH LOCATIONS	48	8	0	432.00MA	@5.00V		

LISPM B s Interface CADR1;BUSINT WLS 11-DEC-80 1555

DIPTYP	BODY NAME	# SECTION	TOTAL DIPS	#SPARE SECTIONS	MA	@V
74S08	74S08	6				
	74S080	6				
	S08L	2	4	2		
	WITH LOCATIONS	14	4	2	272.00MA	@5.00V
74S10	74S100	4				
	74S10	5	3	0		
	WITH LOCATIONS	9	3	0	81.00MA	@5.00V
74S11	74S110	2				
	74S11	3				
	OS11L	1	2	0		
	WITH LOCATIONS	6	2	0	84.00MA	@5.00V
74S20	74S20	1	1	1		
	WITH LOCATIONS	1	1	1	18.00MA	@5.00V
74S32	74S32	7				
	74S320	3				
	OS32L	2	3	0		
	WITH LOCATIONS	12	3	0	204.00MA	@5.00V
74S38	74S380	6	2	2		
	WITH LOCATIONS	6	2	2	160.00MA	@5.00V
74S51	74S51	2				
	74S51A	8	5	0		
	WITH LOCATIONS	10	5	0	110.00MA	@5.00V
74S64	74S64	3	3	0		
	WITH LOCATIONS	3	3	0	48.00MA	@5.00V
74S74	74S74	8	4	0		
	WITH LOCATIONS	8	4	0	120.00MA	@5.00V
74S86	74S86	2				
	74S860	1				
	S86L	1	1	0		
	WITH LOCATIONS	4	1	0	75.00MA	@5.00V
74S133	74S133	2				
	74S1330	1	3	0		
	WITH LOCATIONS	3	3	0	30.00MA	@5.00V
74S138	74S138	1	1	0		
	WITH LOCATIONS	1	1	0	74.00MA	@5.00V
74S139	74S139	3	2	1		
	WITH LOCATIONS	3	2	1	180.00MA	@5.00V
74S174	74S174	1	1	0		
	WITH LOCATIONS	1	1	0	144.00MA	@5.00V

LISPM Bus Interface CADR1;BUSINT WLS 1 -DEC-80 1555

DIPTYPE	BODY NAME	# SECTION	TOTAL DIPS	/SPARE SECTIONS	MA	@V
74S175	74S175	2	2	0		
	WITH LOCATIONS	2	2	0	192.00MA	@5.00V
74S241	74S241	2	2	0		
	WITH LOCATIONS	2	2	0	360.00MA	@5.00V
74S258	74S258	2	2	0		
	WITH LOCATIONS	2	2	0	174.00MA	@5.00V
74S260	74S2600	5				
	74S260	1	3	0		
	WITH LOCATIONS	6	3	0	135.00MA	@5.00V
74S288	74S288	1	1	0		
	WITH LOCATIONS	1	1	0	110.00MA	@5.00V
74S472	74S472	1	1	0		
	WITH LOCATIONS	1	1	0	155.00MA	@5.00V
93S48	93S48	5	5	0		
	WITH LOCATIONS	5	5	0	400.00MA	@5.00V
8304	8304	9	9	0		
	WITH LOCATIONS	9	9	0	900.00MA	@5.00V
29701	29701	12	12	0		
	WITH LOCATIONS	12	12	0	1200.00MA	@5.00V
CAP	BYPASS	6	6 TOTAL BODIES (NOT DIPS)			
DM8838	8838	12	12	0		
	WITH LOCATIONS	12	12	0	840.00MA	@5.00V
DUMMY4	DUMMY4	3	3	0		
	WITH LOCATIONS	3	3	0		
MTD100	MTD100	7	3	2		
	WITH LOCATIONS	7	3	2	120.00MA	@5.00V
SIP180/	SIP180/390-8	7	7	0		
	WITH LOCATIONS	7	7	0	1050.00MA	@5.00V
SIP330/	SIP330/470-8	1	1	0		
	WITH LOCATIONS	1	1	0	90.00MA	@5.00V
TD100	TD100	3	3	0		
	WITH LOCATIONS	3	3	0	147.00MA	@5.00V
TD250	TD250	2	2	0		
	WITH LOCATIONS	2	2	0	98.00MA	@5.00V

GRAND TOTAL = 187(176)
WITH LOCATION= 187(176)
NUMBER IN PARENS IS REAL (.GE.14 PINS) DIPS.

TOTAL CURRENTS:
11840.30MA @5.00V

CONS	PADDLE	# PINS	TOTAL PINS
	"A"	36	
	"B"	36	
	"C"	36	
	"D"	22	
	"E"	27	
	"F"	11	
	"J01"	25	
	"J05"	25	
	"J06"	25	
	"J07"	20	
	"J08"	20	
	"J09"	20	
	"J11"	20	
	"J12"	20	343

LISP Bus Interface CADR1:BUSINT WLS 11-DEC-80 1557
RUNS WITH NO OUTPUTS

SIGNAL NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM #I,#O Z# C#			
HI 1-14	-66.32	2.32	0.00	0.00	UPRIOR 7,0	UBMAST 4,0	UBCYC 13,0	RQSYNC 1,0
					REQUB 4,0	REQU 2,0	REQLM 1,0	REQERR 8,0
					DBGOUT 1,0	DBGIN 1,0	DATCTL 3,0	
HI 15-30	-40.46	0.58	0.00	0.00	XD 1,0	UBINTC 5,0	RQSYNC 1,0	REQU 5,0
					DBGOUT 1,0	DBGIN 1,0	CLM 0,0Z2	
VCO CAP1	0.00	0.00	0.00	0.00	REQTIM 2,0			
VCO CAP2	0.00	0.00	0.00	0.00	REQTIM 2,0			

LISPM B s Interface CADR1;BUSINT WLS 11-DEC-80 1557
RUNS W.IC" ARE OVERLOADED

SIGNA· NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM #I,#O Z# C#							
MSYN IN	-13.20	0.36	16.00	-0.40	UBMAST 0,1 DATCTL 1,0	UBCYC CTP	2,0 0,0_	REQU	3,0	REQLM	1,0	

LISPM Bus Interface CADR1;BUSINT WLS 11-DEC-80 1557
BACKPANEL RUNS WHICH ARE HEAVILY LOADED

SIGNAL NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM	#I,#O	Z#	C#						
DBUB MASTER	-12.00	0.30	20.00	-1.00	UBMAST	0,1		REQUB	1,0	DBGOUT	2,0	DBGIN	1,0	
					DATCTL	2,0		CTP	0,0_					
DEBUG IN A0	-27.00	0.05	0.00	0.00	DBGIN	1,0Z_								
DEBUG IN A1	-27.00	0.05	0.00	0.00	DBGIN	1,0Z_								
-DEBUG IN REQ H	-27.00	0.05	0.00	0.00	DBGIN	1,0Z_		CTP	0,0_					
DEBUG IN WR	-29.00	0.10	0.00	0.00	DBGOUT	1,0		DBGIN	0,0Z_	DATCTL	1,0			
DEBUG OUT ACK	-27.00	0.05	0.00	0.00	DBGOUT	1,0_		DBGIN	0,0Z					
-FREE H	-10.20	0.27	20.00	-1.00	RQSYNC	5,1		REQERR	1,1	CTP	0,0_			
LMUB GRANT	-16.00	0.40	20.00	-1.00	RQSYNC	1,1		REQUB	1,0	REQLM	3,0	DATCTL	3,0	
					CTP	0,0_								
LOCAL ENABLE	-49.00	0.60	0.00	0.00	UPRIOR	5,0		UBINTC	1,0	DBGIN	1,0Z_	CUBUS	0,0_	
-MCLK7 H	-17.00	0.05	0.00	0.00	CLM	1,0Z_								
MEM0	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM1	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM10	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM11	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM12	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM13	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM14	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM15	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM16	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM17	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM18	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM19	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM2	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM20	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM21	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM22	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM23	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM24	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM25	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM26	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM27	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM28	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM29	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM3	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM30	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM31	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM4	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM5	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM6	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM7	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM8	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEM9	-25.00	0.00	48.00	-5.00	LMDATA	0,1Z		CLM	0,0_					
MEMPAR FROM LM	-29.00	0.10	0.00	0.00	REQERR	2,0		LMDATA	0,0Z	CLM	0,0_			
-MEMRQ H	-19.00	0.10	0.00	0.00	REQLM	2,0		CTP	0,0_	CLM	0,0Z_			
MSYN IN	-13.20	0.36	16.00	-0.40	UBMAST	0,1		UBCYC	2,0	REQU	3,0	REQLM	1,0	
					DATCTL	1,0		CTP	0,0_					
UBX GRANT	-10.00	0.25	20.00	-1.00	RQSYNC	0,1		REQLM	1,0	DATCTL	4,0	CTP	0,0_	
WRCYC	-17.00	0.05	0.00	0.00	DATCTL	1,0		CLM	0,0Z_					
-XBUS POWER RESET H	-15.00	0.00	100.00	0.00	XA	0,1		CXBUS	0,0_	CLM	0,0Z			

LISPM Bus Interface CADR1;BUSINT WLS 11-DEC-80 1557
RUNS WITH NO INPUTS

SIGNAL NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM	#I,#O	Z#	C#
-ANY GRANT DLYD	0.00	0.00	12.00	-2.60	UPRIOR	0,1		
ANY INT GRANT;(NOT USED)	0.00	0.00	12.00	-3.20	UPRIOR	0,1		
BG4O	0.00	0.00	12.00	-2.60	UPRIOR	0,1		
BG5O	0.00	0.00	12.00	-2.60	UPRIOR	0,1		
BG6O	0.00	0.00	12.00	-2.60	UPRIOR	0,1		
BG7O	0.00	0.00	12.00	-2.60	UPRIOR	0,1		
NPGO	0.00	0.00	12.00	-2.60	UPRIOR	0,1		
UBAO	0.00	0.00	16.00	-0.40	UBA	0,1		
UNUSED TIMEOUT	0.00	0.00	8.00	-0.40	REQTIM	0,1		

LISPM B , Interface CADR1;BUSINT WLS 11-DEC-80 1557
RUNS WITH MORE THAN 1 CONNECTOR PIN

SIGNAL NAME		LOW IN	HI IN	LOW OUT	HI OUT	FILNAM #I,#O Z# C#			
DBD0		-0.76	0.04	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	2,0_
DBD1		-0.76	0.04	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	2,0_
DBD10		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
DBD11		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
DBD12		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
DBD13		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
DBD14		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
DBD15		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
DBD2		-0.76	0.04	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	2,0_
DBD3		-0.76	0.04	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	2,0_
DBD4		-0.40	0.02	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	1,0_
DBD5		-0.40	0.02	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	1,0_
DBD6		-0.40	0.02	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	1,0_
DBD7		-0.40	0.02	48.00	-5.00	REQERR 0,1	DBGOUT 0,1_	DBGIN	1,0_
DBD8		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
DBD9		-0.40	0.02	48.00	-5.00	DBGOUT 0,1_	DBGIN 1,0_		
-DEBUG IN REQ	H	-27.00	0.05	0.00	0.00	DBGIN 1,0Z_	CTP 0,0_		
-LM ACK	H	0.00	0.00	20.00	-1.00	REQLM 0,1	CTP 0,0_	CLM	0,0_
-LM BOOT	H	0.00	0.00	0.00	0.00	CUBUS 0,0_	CLM 0,0_		
-MEMRQ	H	-19.00	0.10	0.00	0.00	REQLM 2,0	CTP 0,0_	CLM	0,0Z_
UB BG4 IN		0.00	0.00	60.00	0.00	UPRIOR 0,1	CUBUS 0,0_2		
UB BG5 IN		0.00	0.00	60.00	0.00	UPRIOR 0,1	CUBUS 0,0_2		
UB BG6 IN		0.00	0.00	60.00	0.00	UPRIOR 0,1	CUBUS 0,0_2		
UB BG7 IN		0.00	0.00	60.00	0.00	UPRIOR 0,1	CUBUS 0,0_2		

LISPM Bus Interface CADR1;BUSINT WLS 1 -DEC-80 1557
UNUSED EXTRA OUTPUTS

SIGNAL NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM #I,#O Z# C#
BUS PAR ODD	0.00	0.00	20.00	-1.00	BUSPAR 0,1
DISABLE INT GRANT	0.00	0.00	8.00	-0.40	UBINTC 0,1
GRANT RESET	0.00	0.00	20.00	-1.00	RQSYNC 0,1
INT BUSY T20	0.00	0.00	20.00	-1.00	RQSYNC 0,1
INT BUSY T60	0.00	0.00	20.00	-1.00	RQSYNC 0,1
SSYN T200	0.00	0.00	20.00	-1.00	REQUB 0,1
SSYN T250	0.00	0.00	20.00	-1.00	REQUB 0,1
SSYN T50	0.00	0.00	20.00	-1.00	REQUB 0,1
UB REG CYC T100	0.00	0.00	20.00	-1.00	UBCYC 0,1
UB REG CYC T200	0.00	0.00	20.00	-1.00	UBCYC 0,1
-UNIBUS REQUEST	0.00	0.00	20.00	-1.00	REQUB 0,1

LISP Bus Interface CADR1:BUSINT WLS 11-DEC-80 1558
RUNS WITH WIRE OR WARNINGS. OUTPUTS ON DIFFERENT DIPS

SIGNAL NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM #I,#O Z# C#			
-FREE H	-10.20	0.27	20.00	-1.00	RQSYNC 5,1	REQERR 1,1	CTP	0,0_
LM ADR PAR ERROR	-0.60	0.04	16.00	-0.80	REQERR 2,2			
LM PAR ERROR	-0.60	0.04	16.00	-0.80	REQERR 2,2			
UB MAP ERROR	-0.20	0.02	8.00	-0.40	REQERR 1,2			
UB NXM ERROR	-0.20	0.02	16.00	-0.80	REQERR 1,2			
WRITE THROUGH ENB	-0.20	0.02	20.00	-1.00	UBCYC 0,1	REQERR 1,1		
XB NXM ERROR	-0.20	0.02	16.00	-0.80	REQERR 1,2			
XB PAR ERROR	-0.60	0.04	8.00	-0.40	REQERR 2,2			

LISPM P s Interface CADR1:BUSINT WLS 11-DEC-80 1558
RUNS W TH WIRE OR WARNINGS. RUN GOES TO BACKPANEL

SIGNA	NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM #I,#O Z# C#			
-FREE	H	-10.20	0.27	20.00	-1.00	RQSYNC 5,1	REQERR 1,1	CTP	0,0_

LISPM Bus Interface CADR1;BUSINT WLS ?-DEC-80 1559
RUNS WITH NO INPUTS OR OUTPUTS

SIGNAL NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM #I,#O Z# C#		
+12.0V	0.00	0.00	0.00	0.00	CXBUS 0,0_3		
-5.0V	0.00	0.00	0.00	0.00	CXBUS 0,0_6		
-LM BOOT H	0.00	0.00	0.00	0.00	CUBUS 0,0_	CLM	0,0_
-UB CO H	0.00	0.00	0.00	0.00	CUBUS 0,0_		
-XBUS32	0.00	0.00	0.00	0.00	CXBUS 0,0_		
-XBUS33	0.00	0.00	0.00	0.00	CXBUS 0,0_		
-XBUS34	0.00	0.00	0.00	0.00	CXBUS 0,0_		
-XBUS35	0.00	0.00	0.00	0.00	CXBUS 0,0_		
XBUS POWER OK	0.00	0.00	0.00	0.00	NO PINS		

LISPM Bus Interface CADR1;BUSINT WLS 11-DEC-80 1559
RUNS WITH INPUTS AND/OR OUTPUTS CONNECTED TO POWER

SIGNAL NAME	LOW IN	HI IN	LOW OUT	HI OUT	FILNAM	#I,#O	Z#	C#
+5.0V	0.00	0.00	0.00	0.00	XD	9,0	XBD	4,0
					WBUF	4,0	UPRIOR	11,0
					UBMAP	8,0	UBINTC	6,0
					UBA	6,0	RQSYNC	6,0
					REQTIM	8,0,	RFQLM	7,0
					LMDATA	10,0	LMADR	5,0
					DBGIN	11,0	DATCTL	12,0
					CAPS	12,0	BUSSEL	8,0

XAPAR	2,0	XA	8,0
UBXA	3,0	UBMAST	7,0
UBD	6,0	UBCYC	5,0
REQUB	2,0	REQU	9,0
REQERR	11,0	RBUF	8,0
DIAG	2,0	DBGOUT	7,0
CXBUS	0,0_6	CLM	2,0
BUSPAR	3,0		

CBUS-UP[illegible]OR BUS GRANT PROM

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;NOTE. THE VERY FIRST LINE OF THIS FILE IS THE TAPE LABEL
;
;ADDRESS ENCODING:
; 400   -DISABLE INT GRANT
; 200   -CLEAR GRANT
; 100   LEVEL1
;  40   LEVEL0  - INTERRUPT LEVEL <4,4,5,6 (USE DISABLE FOR 7)
;  20   BR4
;  10   BR5
;   4   BR6
;   2   BR7
;   1   NPR
;
;DATA ENCODING:
; 200   NC
; 100   ANY INT GRANT (NOT USED, BUT I'LL GENERATE ANYWAY)
;  40   ANY GRANT
;  20   BG4
;  10   BG5
;   4   BG6
;   2   BG7
;   1   NPG

0       0       ;CLEAR GRANT
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506     0       ;CLEAR GR A NT
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510     0       ;CLEAR GR/ \I NT
511     0       ;CLEAR GR/ \I NT
512     0       ;CLEAR GR/ \I NT
513     0       ;CLEAR GR/ \I NT
514     0       ;CLEAR GR/ \I NT
515     0       ;CLEAR GR/ \I NT
516     0       ;CLEAR GR/ \I NT
517     0       ;CLEAR GR/ \I NT
520     0       ;CLEAR GR/ \I NT
521     0       ;CLEAR GR/ \I NT
522     0       ;CLEAR GR/ \I NT
523     0       ;CLEAR GR/ \I NT
524     0       ;CLEAR GR/ \I NT
525     0       ;CLEAR GR/ \I NT
526     0       ;CLEAR GR/ \I NT
527     0       ;CLEAR GR/ \I NT
530     0       ;CLEAR GR/ \I NT
531     0       ;CLEAR GR/ \I NT
532     0       ;CLEAR GR/ \I NT
533     0       ;CLEAR GR/ \I NT
534     0       ;CLEAR GR/ \I NT
535     0       ;CLEAR GR/ \I NT
536     0       ;CLEAR GR/ \I NT
537     0       ;CLEAR GR/ \I NT
540     0       ;CLEAR GR/ \I NT
541     0       ;CLEAR GR/ \I NT
542     0       ;CLEAR GR/ \I NT
543     0       ;CLEAR GR/ \I NT
544     0       ;CLEAR GR/ \I NT
545     0       ;CLEAR GR/ \I NT
546     0       ;CLEAR GR/ \I NT
547     0       ;CLEAR GR/ \I NT
550     0       ;CLEAR GR/ \I NT
551     0       ;CLEAR GR/ \I NT
552     0       ;CLEAR GR/ \I NT
553     0       ;CLEAR GR/ \I NT
554     0       ;CLEAR GR/ \I NT
555     0       ;CLEAR GR/ \I NT
556     0       ;CLEAR GR/ \I NT
557     0       ;CLEAR GR/ \I NT
560     0       ;CLEAR GR/ \I NT
561     0       ;CLEAR GR/ \I NT
562     0       ;CLEAR GR/ \I NT
563     0       ;CLEAR GR/ \I NT
564     0       ;CLEAR GR/ \I NT
565     0       ;CLEAR GR/ \I NT
566     0       ;CLEAR GR/ \I NT
567     0       ;CLEAR GR/ \I NT
570     0       ;CLEAR GR/ \I NT
571     0       ;CLEAR GR/ \I NT
572     0       ;CLEAR GR/ \I NT
573     0       ;CLEAR GR/ \I NT
574     0       ;CLEAR GR/ \I NT
575     0       ;CLEAR GR/ \I NT
576     0       ;CLEAR GR/ \I NT
577     0       ;CLEAR GR/ \I NT
600     0       ;NO REQ
601     41      ;NPR -> NI ?G, ANY GRANT
602     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
603     41      ;NPR -> NI ?G, ANY GRANT
604     144     ;BR6 -> BG 6, ANY GRANT, INT GRANT
605     41      ;NPR -> NI ?G, ANY GRANT
606     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
607     41      ;NPR -> NI ?G, ANY GRANT
610     150     ;BR5 -> BG 5, ANY GRANT, INT GRANT
611     41      ;NPR -> NI ?G, ANY GRANT
612     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
613     41      ;NPR -> NI ?G, ANY GRANT
614     144     ;BR6 -> BG 6, ANY GRANT, INT GRANT
615     41      ;NPR -> NI ?G, ANY GRANT
616     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
617     41      ;NPR -> NI ?G, ANY GRANT
620     160     ;BR4 -> BG 4, ANY GRANT, INT GRANT
621     41      ;NPR -> NI ?G, ANY GRANT
622     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
623     41      ;NPR -> NI ?G, ANY GRANT
624     144     ;BR6 -> BG 6, ANY GRANT, INT GRANT
625     41      ;NPR -> NI ?G, ANY GRANT
626     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
627     41      ;NPR -> NI ?G, ANY GRANT
630     150     ;BR5 -> BG 5, ANY GRANT, INT GRANT
631     41      ;NPR -> NI ?G, ANY GRANT
632     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
633     41      ;NPR -> NI ?G, ANY GRANT
634     144     ;BR6 -> BG 6, ANY GRANT, INT GRANT
635     41      ;NPR -> NI ?G, ANY GRANT
636     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
637     41      ;NPR -> NI ?G, ANY GRANT
640     0       ;NO REQ
641     41      ;NPR -> NI ?G, ANY GRANT
642     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
643     41      ;NPR -> NI ?G, ANY GRANT
644     144     ;BR6 -> BG 6, ANY GRANT, INT GRANT
645     41      ;NPR -> NI ?G, ANY GRANT
646     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
647     41      ;NPR -> NI ?G, ANY GRANT
650     150     ;BR5 -> BG 5, ANY GRANT, INT GRANT
651     41      ;NPR -> NI ?G, ANY GRANT
652     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
653     41      ;NPR -> NI ?G, ANY GRANT
654     144     ;BR6 -> BG 6, ANY GRANT, INT GRANT
655     41      ;NPR -> NI ?G, ANY GRANT
656     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
657     41      ;NPR -> NI ?G, ANY GRANT
660     0       ;BR4 BUT L EVEL >= 1
661     41      ;NPR -> NI ?G, ANY GRANT
662     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
663     41      ;NPR -> NI ?G, ANY GRANT
664     144     ;BR6 -> BG 6, ANY GRANT, INT GRANT
665     41      ;NPR -> NI ?G, ANY GRANT
666     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
667     41      ;NPR -> NI ?G, ANY GRANT
670     150     ;BR5 -> BG 5, ANY GRANT, INT GRANT
671     41      ;NPR -> NI ?G, ANY GRANT
672     142     ;BR7 -> BG 7, ANY GRANT, INT GRANT
```

```
673     41      ;NPR -> NPG, ANY GRANT
674     144     ;BR6 -> BG6, ANY GRANT, INT GRANT
675     41      ;NPR -> NPG, ANY GRANT
676     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
677     41      ;NPR -> NPG, ANY GRANT
700     0       ;NO REQ
701     41      ;NPR -> NPG, ANY GRANT
702     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
703     41      ;NPR -> NPG, ANY GRANT
704     144     ;BR6 -> BG6, ANY GRANT, INT GRANT
705     41      ;NPR -> NPG, ANY GRANT
706     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
707     41      ;NPR -> NPG, ANY GRANT
710     0       ;BR5 BUT LEVEL >=2
711     41      ;NPR -> NPG, ANY GRANT
712     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
713     41      ;NPR -> NPG, ANY GRANT
714     144     ;BR6 -> BG6, ANY GRANT, INT GRANT
715     41      ;NPR -> NPG, ANY GRANT
716     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
717     41      ;NPR -> NPG, ANY GRANT
720     0       ;BR4 BUT LEVEL >= 1
721     41      ;NPR -> NPG, ANY GRANT
722     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
723     41      ;NPR -> NPG, ANY GRANT
724     144     ;BR6 -> BG6, ANY GRANT, INT GRANT
725     41      ;NPR -> NPG, ANY GRANT
726     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
727     41      ;NPR -> NPG, ANY GRANT
730     0       ;BR5 BUT LEVEL >=2
731     41      ;NPR -> NPG, ANY GRANT
732     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
733     41      ;NPR -> NPG, ANY GRANT
734     144     ;BR6 -> BG6, ANY GRANT, INT GRANT
735     41      ;NPR -> NPG, ANY GRANT
736     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
737     41      ;NPR -> NPG, ANY GRANT
740     0       ;NO REQ
741     41      ;NPR -> NPG, ANY GRANT
742     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
743     41      ;NPR -> NPG, ANY GRANT
744     0       ;BR6 BUT LEVEL=3
745     41      ;NPR -> NPG, ANY GRANT
746     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
747     41      ;NPR -> NPG, ANY GRANT
750     0       ;BR5 BUT LEVEL >=2
751     41      ;NPR -> NPG, ANY GRANT
752     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
753     41      ;NPR -> NPG, ANY GRANT
754     0       ;BR6 BUT LEVEL=3
755     41      ;NPR -> NPG, ANY GRANT
756     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
757     41      ;NPR -> NPG, ANY GRANT
760     0       ;BR4 BUT LEVEL >= 1
761     41      ;NPR -> NPG, ANY GRANT
762     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
763     41      ;NPR -> NPG, ANY GRANT
764     0       ;BR6 BUT LEVEL=3
765     41      ;NPR -> NPG, ANY GRANT
766     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
767     41      ;NPR -> NPG, ANY GRANT
770     0       ;BR5 BUT LEVEL >=2
771     41      ;NPR -> NPG, ANY GRANT
772     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
773     41      ;NPR -> NPG, ANY GRANT
774     0       ;BR6 BUT LEVEL=3
775     41      ;NPR -> NPG, ANY GRANT
776     142     ;BR7 -> BG7, ANY GRANT, INT GRANT
777     41      ;NPR -> NPG, ANY GRANT

END
```

```
REQTIM    NXM TIMEOUT PROM (74S288)

;NOTE  THE VERY FIRST LINE OF THIS FILE IS THE TAPE LABEL
;
;74S288, 32x8 PROM

;ADDRESS ENCODING:
; 20    DEBUG REQUEST ACTIVE
; 10    TIMEOUT 3
;  4    TIMEOUT 2
;  2    TIMEOUT 1
;  1    TIMEOUT 0
;
;DATA ENCODING:
; 200   NC
; 100   WARNING TIMEOUT
;  40   HUNG TIMEOUT
;  20   NXM TIMEOUT
;  10   TIMEOUT 3
;   4   TIMEOUT 2
;   2   TIMEOUT 1
;   1   TIMEOUT 0
;
;This Assumes Roughly 2 uSec clock intervals
;                Normal          When referencing other processor
;NXM timeout     10 uSec         30 uSec
;HUNG timeout    20 uSec         32 uSec
;

0       1       ; idle
1       2       ;2 usec
2       3       ;4 usec
3       104     ;6 usec         (warning timeout)
4       5       ;8 usec
5       26      ;10 usec        NXM TIMEOUT
6       7       ;12 usec
7       10      ;14 usec
10      11      ;16 usec
11      12      ;18 usec
12      53      ;20 usec        HUNG TIMEOUT
13      14      ;22 usec
14      55      ;24 usec        extra HUNG TIMEOUT
15      16      ;26 usec
16      57      ;28 usec        extra HUNG TIMEOUT
17      0       ;30 usec
;Debug mode:
20      1       ; idle
21      2       ;2 usec
22      3       ;4 usec
23      4       ;6 usec
24      105     ;8 usec         (warning timeout)
25      6       ;10 usec
26      7       ;12 usec
27      10      ;14 usec
30      11      ;16 usec
31      12      ;18 usec
32      13      ;20 usec
33      14      ;22 usec
34      15      ;24 usec
35      36      ;26 usec        NXM timeout
36      17      ;28 usec
37      56      ;30 usec        HUNG timeout

END             ;The end
```

MOON@M[illegible]T-AI 06/28/79 05:27:30 Re: Xbus terminators
To: (FUG LISPM) at MIT-AI
CC: H at MIT-AI
The assignments of the 12 SIPs on the Xbus terminator are as follows:
first 6 - data lines except bit 0
next 4 - address lines and data bit 0
bottom 2 - control lines

The existing terminators are as follows:
CADR1,CADR3,CADR5 - all 180/390
CADR2,CADR4 - 5 180/390, 5 162/260, 1 81/130, 1 162/260
CADR6 - 5 180/390, 4 162/260, 1 180/390, 2 81/130
CADR7 - 10 180/390, 1 81/130, 1 180/390

After thinking about it and scoping some signals, I think these are all brain-damaged. I propose that the right thing is:
6 180/390
4 162/260
2 81/130
Anyone who disagrees please complain, otherwise we will adopt this. Penny please add this to the parts lists. Tom please make sure enough of each kind get ordered.

I'm not sure if it makes any difference for the address lines to be 162/260 instead of 180/390 but I guess it can't hurt and it's probably a good idea.
Y

order is 180/390s at top, 81/130s at bottom. bottom has flat area usually marked "XBUS TERMINATOR". the sockets are slanted, and the sip dot goes to the upper end. The xbus term goes in slot 31 of the backplane, sections A-C.

The clock can be stopped at the end of either phase, for several reasons. Usually the clock stops at the end of the read phase, referred to as "wait". This leaves the clock in the inactive high state, and leaves the latches on the memories open. The clock can wait because the machine was commanded to halt by the diagnostic interface, because a single-step commanded by the diagnostic interface has completed, because of an error such as a parity error, because of the statistics counter overflowing, or because of a memory-wait condition. This latter condition happens if a main memory cycle is initiated while a previous cycle is still in progress, or if the program calls for the result of a main memory read before the bus controller has granted the bus access needed to perform that read cycle. During a clock wait, the processor clock stops, but the clock to the rest of the system (the bus interface and XBUS devices). continues to run, allowing them to operate. When the processor finishes waiting the processor clock starts up in synchrony with the external clock.

The clock can also stop at the end of the write phase, referred to as "hang". This is used only during memory reads. If the processor calls for the result of a read which is in progress but has not yet completed, it hangs until the data has arrived from memory and sufficient time has passed for the data to flow through the data paths and appear on the output bus. This is also sufficient time for the parity of the data to be checked. In the case of a hang, both clocks stop, which allows them to restart synchronously without any extra delay. In this way, the speed of the processor is adjusted to exactly match the speed of the memory.

ε4The Bus Interfaceε0

The Bus Interface connects the CADR machine to two busses, the Unibus and the Xbus. The Unibus is a regular pdp11 bus, used to attach peripheral devices, especially commercial devices designed for the PDP11 line. The Xbus is a 32-bit bus used to attach memory and high-performance peripheral devices, such as disk. The bus interface also includes the diagnostic interface, which allows a unibus operator, such as a pdp10, a pdp11, or another lisp machine, to control the operation of the machine, hardware to pass interrupts from the Unibus and the Xbus to the processor, the logic which arbitrates the Xbus, and the logic which arbitrates the Unibus in the absence of a pdp11 on that bus.

The Bus Interface allows the CADR machine to access memory on the Xbus and devices on the Unibus, allows independent devices on the Xbus to access the Xbus (only), and allows Unibus devices to access Xbus memory (through a map since the Unibus address space is not big enough.) Buffering is provided when the Unibus accesses the Xbus, to convert a 32-bit word into a pair of 16-bit words.

<<More to come>>

Cover how to program the various frobs from the Unibus, initialization, map structure.

.page
.sect
ε4The Xbusε0

The Xbus is the standard 32 bit wide data bus for the CADR processor. Main memory and high speed peripherals such as the disk control and TV display are interfaced to the Xbus. Control of the Xbus is similar to the Unibus, in that transfers are positively timed and (as far as the devices are concerned) asynchronous. The bus is terminated at both ends with resistive pullups of 390 ohms to ground and 180 ohms to +5 volts, for an effective 123 ohm termination to +3.42 volts. At ground, each termination draws 28 ma. for a total load of 56 ma. The bus is open collector, and may be driven with any device capable of handling the 56 ma. load. The recommended driver is the AMD 26S10, which also provides bus receivers.

A typical read cycle begins with placing the address for the transfer on the -XADDR lines and the parity of the address on the -XBUS.ADDRPAR line. The -XBUS.RQ line is then lowered, initiating the request. The responding device places the requested data on the 32 -XBUS lines and the parity of the data on the -XBUS.PAR line. Should it not be convenient for the device to produce parity (as in the case of I/O registers), the device may assert -XBUS.IGNPAR to notify the bus master that the transfer should not be checked for correct parity. The responding device then asserts -XBUS.ACK, which remains asserted until the -XBUS.RQ signal is removed by the master.

Write requests proceed identically, except that the master asserts -XBUS.WR and the data to be written on the -XBUS lines along with the address lines. All bus masters are required to produce good parity data on writes.

Deskewing delays are the responsibility of the bus master. In particular, it is the responsibility of the bus master to assert good address, write, and data lines 80 ns. prior to asserting -XBUS.RQ, and these lines must be held until the -XBUS.ACK signal drops in response to the master dropping -XBUS.RQ. Responding devices are allowed to assert -XBUS.ACK at the same time they drive read data onto the -XBUS lines. Thus, masters should delay 50 ns. after receiving -XBUS.ACK before dropping -XBUS.RQ and strobing the data. Responding devices are required to drop -XBUS.ACK immediately after -XBUS.RQ is no longer asserted.

Normal bus master arbitration between the CADR processor and the Unibus requests is handled by the bus interface. Devices on the Xbus which must become bus master, such as the disk control, do so by asserting the -XBUS.EXTRQ signal. When the bus becomes free, the bus interface responds by asserting -XBUS.EXTGRANT. This signal is daisy chained between bus master devices on the Xbus, coming in on the -XBUS.EXTGRANT.IN pin and leaving on the -XBUS.EXTGRANT.OUT pin. Within each device, the decision is made whether or not to pass the grant onto the next device. Unlike the Unibus structure, the decision on whether to pass grant and the act of becoming bus master happen synchronously with a master clock signal distributed on the -XBUS.SYNC line.

When a device initiates a request, it immediately asserts -XBUS.EXTRQ. At the falling edge of -XBUS.SYNC it clocks the request signal into a D flip flop which we will call REQ.SYNC. When -XBUS.EXTGRANT.IN goes low; the device asserts -XBUS.EXTGRANT.OUT unless it has either the REQ.SYNC flip flop set, or is already the bus master. At the next falling edge of -XBUS.SYNC the device which has both -XBUS.EXTGRANT.IN and REQ.SYNC set becomes bus master. The device should immediately assert -XBUS.BUSY and may immediately begin asserting address lines for a transfer. -XBUS.BUSY may be dropped asynchronously, after the slave device drops -XBUS.ACK in response to the master's request.

The -XBUS.EXTGRANT.IN signal must be terminated with a resistive pullup of 180 ohms to +5 volts within each device which does not simply connect it to -XBUS.EXTGRANT.OUT.

Signal review:

data lines:

-XBUS0 through -XBUS31	32 data lines, low when data is a one
-XBUS.PAR	parity of the 32 data lines. Required for writes
-XBUS.IGNPAR	ignore parity signal, may be asserted by any device for a read

address lines:

-XADDR0 through -XADDR21	22 address lines, low for address bit a one
-XADDR.PAR	<<this needs to be decided... is this required?>>

cycle control lines:

-XBUS.RQ	Asserted by the master to request a read or write Minimum of 80 ns following stable -XADDR, -XBUS.WRITE and -XBUS data
-XBUS.ACK	Asserted by the slave in response to -XBUS.RQ No delay necessary following assertion of good read data
-XBUS.WR	Asserted by the master during a write cycle.

mastership control lines:

-XBUS.BUSY	Asserted when a device other than the bus interface is bus master. Only the bus interface examines this line. Asserted on a -XBUS.SYNC clock edge, dropped asynchronously after -XBUS.ACK drops
-XBUS.EXTRQ	Asserted when a device other than the bus interface wishes to become bus master. Asserted asynchronously, may be removed asynchronously after the device becomes master, but before dropping -XBUS.BUSY
-XBUS.EXTGRANT.IN	The daisy-chained mastership grant signal. Must be pulled up with 180 ohms to VCC in the device.
-XBUS.EXTGRANT.OUT	Asserted initially by the bus interface, synchronously with the -XBUS.SYNC edge. The signal may be subject to synchronizer lossage, since it is a clocked version of -XBUS.EXTRQ which is not synchronous with -XBUS.SYNC

Miscellaneous:

-XBUS.INIT	When low, resets all devices. This is low during power on and off, and when the machine is reset.
-XBUS.SYNC	Synchronization clock for mastership passing and other desired purposes. Devices become bus master synchronous with the edge of this signal. The request will normally follow the edge by 80 ns
XBUS.INTR	Driving this low requests an interrupt. All devices are required to initialize to a non-interrupt enable condition, and are required to have interrupt

enable and disable bits which can selectively enable interrupts from that device. The "requesting interrupt" state must be readable in one of the device control register bits.

XBUS.POWER.OK

This line is HIGH when power is stable. It remains low for <<xx>> seconds after power comes on, and goes low <<xx>> seconds before power is turned off.

	******** UNIBUS ********		******** MODIFIED UNIBUS (11/34) ********	
AA	INIT L	+5	--	--
AB	INTR L	(gnd)	--	TEST POINT
AC	D00	GND	--	--
AD	D02	D01	--	--
AE	D04	D03	--	--
AF	D06	D05	--	--
AH	D08	D07	--	--
AJ	D10	D09	--	--
AK	D12	D11	--	--
AL	D14	D13	--	--
AM	PA	D15	--	--
AN	(gnd)	PB	PAR P1	--
AP	(gnd)	BBSY	PAR P0	--
AR	(gnd)	SACK	+15 BATT	--
AS	(gnd)	NPR	-15 BATT	--
AT	(gnd)	BR7	--	--
AU	NPG	BR6	+20 (CORE)	--
AV	BG7	(gnd)	+20 (CORE)	+20 (CORE)
BA	BG6	+5	RESV BUS	--
BB	BG5	(gnd)	RESV PIN	--
BC	BR5	(gnd)	--	--
BD	(gnd)	BR4	+5 BATT	--
BE	(gnd)	BG4	INT SSYN	PAR DET
BF	ACLO	DCLO	--	--
BH	A01	A00	--	--
BJ	A03	A02	--	--
BK	A05	A04	--	--
BL	A07	A06	--	--
BM	A09	A08	--	--
BN	A11	A10	--	--
BP	A13	A12	--	--
BR	A15	A14	--	--
BS	A17	A16	--	--
BT	(gnd)	C1	--	--
BU	SSYN	C0	--	--
BV	MSYN	(gnd)	--	-5 (CORE)

	OUR MODIFIED "SPC" SLOT		11/34 SPC SLOT	
CA	NPG IN	+5	--	--
CB	NPG OUT	-5	--	--
CC		(gnd)	PA	--
CD		D15	LINE CLOCK	--
CE		D14	TP	--
CF	(gnd)	D13	TP	--
CH	D11	D12	--	--
CJ		D10	AINT B	--
CK		D9	TP	--
CL		D8	AINT ENB B	--
CM		D7	TP	--
CN	(gnd)	D4	DCLO	--
CP		D5	HALT REQ	--
CR		D1	HALT GRT	--
CS		D0	PB	--
CT	(gnd)	D3	--	--
CU		D2	+15/+8	--
CV		D6	ACLO	--
DA		+5	TP	--
DB		-5	TP	--
DC		(gnd)	A SEL6	--
DD		BR7	A OUT LOW	--
DE		BR6	A SEL4	--
DF	(gnd)	BR5	A SEL0	--
DH		BR4	A IN	--
DJ			A SEL2	A BR OUT
DK		BG7 IN	A OUT	--
DL	BUS INIT	" OUT	--	--
DM		BG6 IN	A INT ENB A	--
DN	(gnd)	" OUT	A INT A	--
DP		BG5 IN	TP	--
DR		" OUT	TP	--
DS		BG4 IN	TP	--
DT	(gnd)	" OUT	--	--
DU			TP	A BG IN
DV			A SSYN IN H	A BG OUT
EA		+5	--	--
EB		-5	A SSYN IN H	--
EC	A12	(gnd)	--	--
ED	A17	A15	--	--
EE	MSYN	A16	--	--
EF	A02	C1	--	--
EH	A01	A00	--	--
EJ	SSYN	C0	--	--
EK	A14	A13	--	--
EL	A11		--	TP
EM		(gnd)	A IN	A OUT HIGH
EN	(gnd)	A08	A OUT LOW	--
EP	A10	A07	--	--
ER	A09		--	A SEL4
ES		(gnd)	A SEL6	A SEL0
ET	(gnd)		--	A SEL2
EU	A06	A04	--	--
EV	A05	A03	--	--
FA		+5	A BG OUT	--
FB		-5	A BG IN	--
FC	[SSYN]	(gnd)	SSYN	--
FD	BBSY	[D02]	--	(F01 N1)
FE		[D06]	(F01 V2)	D02
FF	[D05]		D05	D06
FH	[D07]		D07	A INT ENB B
FJ	NPR		--	--
FK	[D08]		D08	A INT B
FL	[D03]		D03	(F01 L2)
FM	INTR		--	(F01 M2)
FN	(gnd)	[D04]	(F01 N1)	D04
FP			A BR OUT	(F01 P2)
FR			(F01 L2)	(F01 N1)
FS			(F01 M2)	(F01 P2)
FT	(gnd)	SACK	--	--
FU			A INT A	A BR OUT
FV			A INT ENB A	(F01 V2)

[BRACKETED SIGNALS] INDICATE ONES THAT MAY NEED TO BE ADDED FOR COMPLETE SPC COMPATABLILITY

SLOT 11
BUS INTERFACE SLOT

XBUS

AA	-XBUS35 +5	
AB	-XBUS34 -5	
AC	-XBUS33 GND	
AD	-XBUS32	-XBUS31
AE	-XBUS30	-XBUS29
AF	GND	-XBUS28
AH	-XBUS27	-XBUS26
AJ	-XBUS25	-XBUS24
AK	-XBUS23	-XBUS22
AL	-XBUS21	-XBUS20
AM	-XBUS19	-XBUS18
AN	GND	-XBUS17
AP	-XBUS16	-XBUS15
AR	-XBUS14	-XBUS13
AS	-XBUS12	-XBUS11
AT	GND	-XBUS10
AU	-XBUS9	-XBUS8
AV	-XBUS7	-XBUS6
BA	-XBUS5	+5
BB	-XBUS4	-5
BC	-XBUS3	GND
BD	-XBUS2	-XBUS1
BE	-XBUS0	-XBUS.PAR
BF	GND	-XADDR.PAR
BH	-XADDR21	-XADDR20
BJ	-XADDR19	-XADDR18
BK	-XADDR17	-XADDR16
BL	-XADDR15	-XADDR14
BM	-XADDR13	-XADDR12
BN	GND	-XADDR11
BP	-XADDR10	-XADDR9
BR	-XADDR8	-XADDR7
BS	-XADDR6	-XADDR5
BT	GND	-XADDR4
BU	-XADDR3	-XADDR2
BV	-XADDR1	-XADDR0

The XBUS on paddles A,B is identical
to the pin layout of the interface card

	SLOT 11 BUS INTERFACE SLOT		SLOT 15-18 TV CARD CONNECTIONS	XBUS	
CA	NPG IN	+5	[NPG JMP] --		+5
CB	NPG OUT	-5	[NPG JMP]		-5
CC	-XBUS.RQ	GND			GND
CD	-XBUS.ACK	D15			-XBUS.RQ
CE	-XBUS.WR	D14	SELECT		-XBUS.ACK
CF	GND	D13	VIDEO OUT (GND!)		-XBUS.WR
CH	D11	D12		-XBUS.EXTGRANT.IN	-XBUS.IGNPAR
CJ	-XBUS.IGNPAR	D10	SR IN 0	-XBUS.EXTGRANT.OUT	-XBUS.INIT
CK	-XBUS.INIT	D9	SR IN 1		-XBUS.EXTRQ
CL	-XBUS.EXTRQ	D8	SR IN 2		-XBUS.BUSY
CM	-XBUS.BUSY	D7	SR IN 3		-XBUS.SYNC
CN	GND	D4			--
CP	-XBUS.SYNC	D5			-XBUS.INTR
CR	--	D1			
CS	-XBUS.INTR	D0			
CT	GND	D3			
CU	--	D2			
CV	-XBUS.EXTGRANT.OUT	D6			
DA		+5			
DB		-5			
DC		GND			
DD		BR7	SR OUT 0		
DE		BR6	SR OUT 1		
DF	GND	BR5	SR OUT 2 (GND!)		
DH		BR4	SR OUT 3		
DJ					
DK		BG7 IN		[BG7 JMP]	
DL	BUS INIT	BG7 OUT		[BG7 JMP]	
DM		BG6 IN		[BG6 JMP]	
DN	GND	BG6 OUT		[BG6 JMP]	
DP		BG5 IN	+12V	[BG5 JMP]	
DR		BG5 OUT	+12V	[BG5 JMP]	
DS		BG4 IN	+12V	[BG4 JMP]	
DT	GND	BG4 OUT		[BG4 JMP]	
DU					
DV					
EA		+5			
EB		-5			
EC	A12	GND			
ED	A17	A15			
EE	MSYN	A16			
EF	A2	C1			
EH	A1	A0			
EJ	SSYN	C0			
EK	A14	A13			
EL	A11				
EM					
EN	GND	A8			
EP	A10	A7			
ER	A9				
ES					
ET	GND				
EU	A6	A4			
EV	A5	A3			
FA		+5			
FB		-5			
FC		GND			
FD	BBSY				
FE					
FF	GND				
FH					
FJ	NPR				
FK					
FL					
FM	INTR				
FN	GND				
FP					
FR					
FS					
FT	GND	SACK			
FU					
FV					

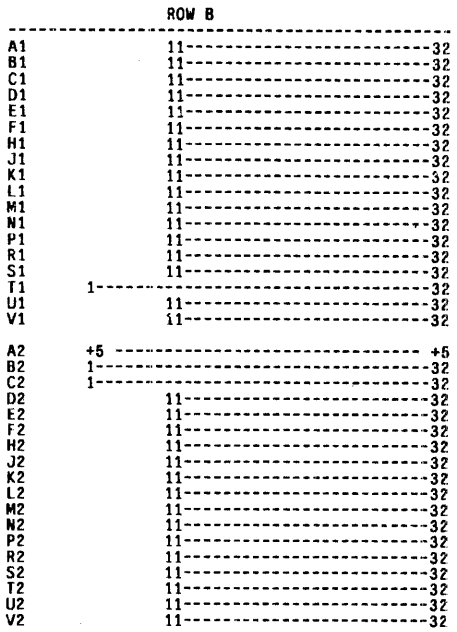
(-- means bussed through, otherwise pin uncommitted)

MEM CONTROL CARD

CA	--	+5	
CB	--	-5	
CC	--	GND	
CD	--	-XBUS.RQ	
CE		-XBUS.ACK	
CF	GND	-XBUS.WR	
CH		-XBUS.IGNPAR	
CJ		-XBUS.INIT	
CK		-XBUS.EXTRQ	
CL		-XBUS.BUSY	
CM		-XBUS.SYNC	
CN	GND	--	
CP		-XBUS.INTR	
CR		--	
CS		--	
CT	GND	--	
CU		--	
CV		--	
DA	--	+5	
DB	--	-5	
DC	--	GND	
DD	--	MADR 21	
DE		MADR 20	
DF	GND	MADR 19	
DH		MADR 18	
DJ		MADR 17	
DK		MADR 16	
DL		MADR 15	
DM		MADR 14	
DN	GND	MADR 13	
DP	+12	MADR 12	
DR	+12	MADR 11	
DS	+12	MADR 10	
DT	GND	MADR 9	
DU		MADR 8	
DV		MADR 7	
EA	MADR 6	+5	
EB	MADR 5	-5	
EC	MADR 4	GND	
ED	MADR 3	MADR 2	(-- Means bus thru, otherwise pin is uncommitted)
EE	←MEML 21	MADR 1	(← These signals are wire wrapped to the left busses)
EF	GND	MADR 0	
EH	←MEML 20	MEM RQ	
EJ	←MEML 19	MEM ACK(?)	
EK	←MEML 18	MEM WR	
EL	←MEML 17	MEM REFRESH	
EM	←MEML 16	MEM PAGE MODE(?)	
EN	GND	MEMR 21→	
EP	←MEML 15	MEMR 20→	
ER	←MEML 14	MEMR 19→	
ES	←MEML 13	MEMR 18→	
ET	GND	MEMR 17→	
EU	←MEML 12	MEMR 16→	
EV	←MEML 11	MEMR 15→	
FA	--	+5	
FB	--	-5	
FC	--	GND	
FD	--	MEMR 14→	
FE	←MEML 10	MEMR 13→	
FF	GND	MEMR 12→	
FH	←MEML 9	MEMR 11→	
FJ	←MEML 8	MEMR 10→	
FK	←MEML 7	MEMR 9→	
FL	←MEML 6	MEMR 8→	
FM	←MEML 5	MEMR 7→	
FN	GND	MEMR 6→	
FP	←MEML 4	MEMR 5→	
FR	←MEML 3	MEMR 4→	
FS	←MEML 2	MEMR 3→	
FT	GND	MEMR 2→	
FU	←MEML 1	MEMR 1→	
FV	←MEML 0	MEMR 0→	

```
                ROW A
------ ---------------------------------------
A1              11-------------------------32
B1              11-------------------------32
C1              11-------------------------32
D1              11-------------------------32
E1              11-------------------------32
F1              11-------------------------32
H1              11-------------------------32
J1              11-------------------------32
K1              11-------------------------32
L1              11-------------------------32
M1              11-------------------------32
N1              11-------------------------32
P1              11-------------------------32
R1              11-------------------------32
S1              11-------------------------32
T1      1---------------------------------32
U1              11-------------------------32
V1              11-------------------------32

A2      +5 ------------------------------- +5
B2      1---------------------------------32
C2      1---------------------------------32
D2              11-------------------------32
E2              11-------------------------32
F2              11-------------------------32
H2              11-------------------------32
J2              11-------------------------32
K2              11-------------------------32
L2              11-------------------------32
M2              11-------------------------32
N2              11-------------------------32
P2              11-------------------------32
R2              11-------------------------32
S2              11-------------------------32
T2              11-------------------------32
U2              11-------------------------32
V2              11-------------------------32
```


ROW B
A1 11 32
B1 11 32
C1 11 32
D1 11 32
E1 11 32
F1 11 32
H1 11 32
J1 11 32
K1 11 32
L1 11 32
M1 11 32
N1 11 32
P1 11 32
R1 11 32
S1 11 32
T1 1 32
U1 11 32
V1 11 32
A2 +5 +5
B2 1 32
C2 1 32
D2 11 32
E2 11 32
F2 11 32
H2 11 32
J2 11 32
K2 11 32
L2 11 32
M2 11 32
N2 11 32
P2 11 32
R2 11 32
S2 11 32
T2 11 32
U2 11 32
V2 11 32

ROW C

A1		12-18	19-22	23-26	27-32
B1		12-18	19-22	23-26	27-32
C1		12-18	19-22	23-26	27-32
D1		12-18	19-22	23-26	27-32
E1					
F1	1----------32				
H1	1-11				
J1					
K1					
L1					
M1					
N1	1----------32				
P1					
R1					
S1					
T1	1----------32				
U1					
V1					
A2	+5 ---------- +5				
B2	1----------32				
C2	1----------32				
D2	1-11	12----------32			
E2	1-11	12----------32			
F2	1-11	12----------32			
H2	1-11	12----------32			
J2	1-11	12----------32			
K2	1-11	12----------32			
L2	1-11	12----------32			
M2	1-11	12----------32			
N2	1-11	12----------32			
P2	1-11	12----------32			
R2	1-11	12-18	19-22	23-26	27-32
S2	1-11	12-18	19-22	23-26	27-32
T2	1-11	12-18	19-22	23-26	27-32
U2	1-11	12-18	19-22	23-26	27-32
V2	1-11	12-18	19-22	23-26	27-32

	ROW D			
A1	12-18	19-22	23-26	27-32
B1	12-18	19-22	23-26	27-32
C1	12-18	19-22	23-26	27-32
D1	12-18	19-22	23-26	27-32
E1				
F1	1----------			32
H1				
J1				
K1				
L1				
M1				
N1	1----------			32
P1				
R1				
S1				
T1	1----------			32
U1				
V1				
A2	+5 ----------			+5
B2	1----------			32
C2	1----------			32
D2	1-11	12-18	19-22	23-26	27-32
E2	1-11	12-18	19-22	23-26	27-32
F2	1-11	12-18	19-22	23-26	27-32
H2	1-11	12-18	19-22	23-26	27-32
J2		12-18	19-22	23-26	27-32
K2		12-18	19-22	23-26	27-32
L2		12-18	19-22	23-26	27-32
M2		12-18	19-22	23-26	27-32
N2		12-18	19-22	23-26	27-32
P2		12-18	19-22	23-26	27-32
R2		12-18	19-22	23-26	27-32
S2		12-18	19-22	23-26	27-32
T2		12-18	19-22	23-26	27-32
U2		12-18	19-22	23-26	27-32
V2		12-18	19-22	23-26	27-32

		ROW E			
A1		12-18	19-22	23-26	27-32
B1		12-18	19-22	23-26	27-32
C1	1-11	12-18	19-22	23-26	27-32
D1	1-11	12-18	19-22	23-26	27-32
E1	1-11				
F1	1-11	12----------			32
H1	1-11				
J1	1-11				
K1	1-11				
L1	1-11				
M1					
N1	1----------				32
P1	1-11				
R1	1-11				
S1					
T1	1----------				32
U1	1-11				
V1	1-11				
A2	+5 ----------				+5
B2	1----------				32
C2	1----------				32
D2	1-11	12-18	19-22	23-26	27-32
E2	1-11	12-18	19-22	23-26	27-32
F2	1-11	12-18	19-22	23-26	27-32
H2	1-11	12-18	19-22	23-26	27-32
J2	1-11	12-18	19-22	23-26	27-32
K2	1-11	12-18	19-22	23-26	27-32
L2		12-18	19-22	23-26	27-32
M2		12-18	19-22	23-26	27-32
N2	1-11	12-18	19-22	23-26	27-32
P2	1-11	12-18	19-22	23-26	27-32
R2		12-18	19-22	23-26	27-32
S2		12-18	19-22	23-26	27-32
T2		12-18	19-22	23-26	27-32
U2	1-11	12-18	19-22	23-26	27-32
V2	1-11	12-18	19-22	23-26	27-32

ROW F

A1		12-18	19-22	23-26	27-32
B1		12-18	19-22	23-26	27-32
C1		12-18	19-22	23-26	27-32
D1	1-11	12-18	19-22	23-26	27-32
E1					
F1		12----------			-32
H1					
J1	1-11				
K1					
L1					
M1	1-11				
N1	1----------				-32
P1					
R1					
S1					
T1	1----------				-32
U1					
V1					
A2	+5 ----------				+5
B2	1----------				-32
C2	1----------				-32
D2		12-18	19-22	23-26	27-32
E2		12-18	19-22	23-26	27-32
F2		12-18	19-22	23-26	27-32
H2		12-18	19-22	23-26	27-32
J2		12-18	19-22	23-26	27-32
K2		12-18	19-22	23-26	27-32
L2		12-18	19-22	23-26	27-32
M2		12-18	19-22	23-26	27-32
N2		12-18	19-22	23-26	27-32
P2		12-18	19-22	23-26	27-32
R2		12-18	19-22	23-26	27-32
S2		12-18	19-22	23-26	27-32
T2	1-11	12-18	19-22	23-26	27-32
U2		12-18	19-22	23-26	27-32
V2		12-18	19-22	23-26	27-32

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1559
FILNAM.EXT[P,PN] DATE TIME MODULE(DWG NUM) REV AUTHOR
TITLE 1 PROJECT NOMENCLATURE
TITLE 2 SHEET n OF m BOARD TYPE
CARD LOC(VARIABLE SETTINGS) NEXT HIGHER ASSEMBLY

BUSPAR.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
BUS PARITY				LG684	
BUSSEL.DRW[CAD,R1]	10-DEC-80	1005			TK
CBUS				LG684	
BUS FROM UNIBUS				LG684	
CAPS.DRW[CAD,R1]	10-DEC-80	1006			TK
CBUS				LG684	
BYPASS CAPACITORS				LG684	
CLM.DRW[CAD,R1]	10-DEC-80	1004			TK
CBUS				LG684	
CABLES TO PROCESSOR				LG684	
CTP.DRW[CAD,R1]	08-SEP-78	1311			
CBUS				LG684	
TEST POINTS				LG684	
CUBUS.DRW[CAD,R1]	03-OCT-78	0716			
CBUS				LG684	
UNIBUS SPC CONNS				LG684	
CXBUS.DRW[CAD,R1]	10-DEC-80	1009			
CBUS				LG684	
XBUS BACKPLANE CONNS				LG684	
DATCTL.DRW[CAD,R1]	10-DEC-80	1733			TK
CBUS				LG684	
DATA PATH CONTROL				LG684	
DBGIN.DRW[CAD,R1]	10-DEC-80	1025			TK
CBUS				LG684	
DEBUGEE DATA PATH				LG684	
DBGOUT.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DEBUGER DATA PATH				LG684	
DIAG.DRW[CAD,R1]	10-DEC-80	1026			TK
CBUS				LG684	
DIAGNOSTIC BUS				LG684	
LMADR.DRW[CAD,R1]	10-DEC-80	1027			TK
CBUS				LG684	
ADDRESS FROM LISP MACHINE				LG684	
LMDATA.DRW[CAD,R1]	10-DEC-80	1027			H
CBUS				LG684	
PROCESSOR DATA XCVR				LG684	
RBUF.DRW[CAD,R1]	10-DEC-80	1028			TK
CBUS				LG684	
READ BUFFER				LG684	
REQERR.DRW[CAD,R1]	10-DEC-80	1040			TK
CBUS				LG684	
ERROR LOGIC				LG684	

LISP Bus Interface CADR1;XAUG WLR 11-DEC-80 1559

FILNAM.EXT[P,PN]	DATE	TIME	MODULE(DWG NUM)	REV	AUTHOR
TITLE 1			PROJECT	NOMENCLATURE	
TITLE 2			SHEET n OF m	BOARD TYPE	
CARD LOC(VARIABLE SETTINGS)			NEXT HIGHER ASSEMBLY		
REQLM.DRW[CAD,R1]	10-DEC-80	1718			1K
CBUS				LG684	
XBUS REQ & ACK				LG684	
REQTIM.DRW[CAD,R1]	10-DEC-80	1526			
CBUS				LG684	
XBUS & UNIBUS TIMEOUT				LG684	
REQU.DRW[CAD,R1]	10-DEC-80	1536			TK
CBUS				LG684	
XBUS REQUEST FROM UNIBUS				LG684	
REQUB.DRW[CAD,R1]	10-DEC-80	1523			TK
CBUS				LG684	
LM & DEBUG TO UNIBUS				LG684	
RQSYNC.DRW[CAD,R1]	10-DEC-80	1132			TK
CBUS				LG684	
REQUEST SYNCHRONIZER				LG684	
UBA.DRW[CAD,R1]	10-DEC-80	1132			TK
CBUS				LG684	
UNIBUS ADDRESS TRANSCEIVERS				LG684	
UBCYC.DRW[CAD,R1]	11-DEC-80	1457			TK
CBUS				LG684	
UNIBUS SLAVE RESPONSE				LG684	
UBD.DRW[CAD,R1]	10-DEC-80	1133			TK
CBUS				LG684	
UNIBUS DATA TRANSCEIVERS				LG684	
UBINTC.DRW[CAD,R1]	10-DEC-80	1134			TK
CBUS				LG684	
UNIBUS INTERRUPT CONTROL				LG684	
UBMAP.DRW[CAD,R1]	10-DEC-80	1135			TK
CBUS				LG684	
UNIBUS MAP				LG684	
UBMAST.DRW[CAD,R1]	10-DEC-80	1321			TK
CBUS				LG684	
UNIBUS MASTERSHIP				LG684	
UBXA.DRW[CAD,R1]	10-DEC-80	1136			TK
CBUS				LG684	
UNIBUS ADDRESS TO XBUS				LG684	
UPRIOR.DRW[CAD,R1]	10-DEC-80	1315			TK
CBUS				LG684	
UNIBUS BUS GRANT				LG684	
WBUF.DRW[CAD,R1]	10-DEC-80	1137			TK
CBUS				LG684	
WRITE BUFFER				LG684	
XA.DRW[CAD,R1]	10-DEC-80	1152			TK
CBUS				LG684	
XBUS ADDRESS TRANSCEIVERS				LG684	

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LISPM B s Interface              CADR1:XAUG WLR          11-DEC-80  1559
FILNAM EXT[P,PN]        DATE        TIME MODULE(DWG NUM: REV      AUTHOR
        TITLE 1                          PROJECT         NOMENCLATURE
        TITLE 2                          SHEET n OF m    BOARD TYPE
        CARD LOC(VARIABLE SETTINGS)      NEXT HIGHER ASSEMBLY

XAPAR.DRW[CAD,R1]       10-DEC-80  1149                          TK
        CBUS                                            LG684
        XBUS ADDRESS PARITY                             LG684

XBD.DRW[CAD,R1]         10-DEC-80  1606                          TK
        CBUS                                            LG684
        XBUS TO BUS                                     LG684

XD.DRW[CAD,R1]          10-DEC-80  1150                          TK
        CBUS                                            LG684
        XBUS DATA TRANSCEIVERS                          LG684
```

LISPM Bus Interface CADR1:XAUG WLR -DEC-80 1559

LOC	DIPTYPE	BODY	FILE	POS	
A01	74LS124	74LS124	REQTIM	D2	
A02	74S288	74S288	REQTIM	C7	
A03	74LS112	74LS112-1		REQERR	C4
A04	74S00	74S00	REQU	D3	
			RQSYNC	C4	
			RQSYNC	B7	
		OS00L	REQLM	B3	
A05	74S02	74S020	RQSYNC	A5	
			RQSYNC	C2	
		OS02L	DATCTL	A1	
			REQLM	A6	
A06	74S175	74S175	RQSYNC	B8	
A07	74S260	74S2600	RQSYNC	B5	
			RQSYNC	B6	
A08	74S175	74S175	RQSYNC	B2	
A09	74S32	74S32	DBGIN	C7	
			DBGOUT	A2	
			REQUB	D2	
			UBMAST	B1	
A10	MTD100	MTD100	DBGOUT	A2	
A11	74S00	74S00	DIAG	D7	
			DBGIN	D6	
			DBGOUT	D1	
			REQLM	D2	
A12	74S08	74S08	DBGOUT	C2	
			DBGIN	C6	
		74S080	DBGIN	D7	
		74S08	REQUB	A3	
A13	74S04	74S04	DBGIN	D7	
			DBGIN	D2	
		74S040	DBGIN	D4	
			DBGOUT	A2	
			DIAG	D2	
			REQLM	D3	
A14	74S10	74S100	DBGIN	C6	
		74S10	DIAG	D6	
		74S100	DBGIN	D7	
A15	74S139	74S139	DBGIN	D4	
A16	25LS251	25LS2519		DBGIN	B7
A17	74S241	74S241	DBGOUT	D2	
A18	74LS374	74LS374	DBGIN	B5	
A19	74LS374	74LS374	DBGIN	B3	
A20	8304	8304	DIAG	C7	
A21	8304	8304	DIAG	C2	
A22@03	SIP180/	SIP180/390-8		DBGIN	D1
A22@20	SIP330/	SIP330/470-8		CLM	D3
A23	74LS240	74LS240	LMADR	D7	
A24	74LS240	74LS240	LMADR	D6	
A25	74LS240	74LS240	LMADR	B7	
A26	74LS240	74LS240	LMADR	B5	
A27	74LS240	74LS240	LMADR	B2	
A28@03	SIP180/	SIP180/390-8		LMDATA	D8
A28@20	SIP180/	SIP180/390-8		LMDATA	D6
A29@03	SIP180/	SIP180/390-8		LMDATA	D5
A29@20	SIP180/	SIP180/390-8		LMDATA	D4
A30@03	SIP180/	SIP180/390-8		LMDATA	D2
A30@20	SIP180/	SIP180/390-8		LMDATA	D1
B01	74LS273	74LS273	REQTIM	C5	
B02	74 276	74276	REQERR	B4	
B03	74S04	74S04	REQTIM	C1	
			REQTIM	D6	
			REQTIM	D6	
		74S040	REQU	D4	
		74S04	UBMAST	C2	
		74S040	UBMAST	D2	

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1559

LOC	DIPTYPE	BODY	FILE	POS
B03B01	DUMMY4	DUMMY4	REQTIM	D2
B04	74S241	74S241	DBGOUT	D5
B05	74S11	74S110	RQSYNC	C5
		74S11	REQERR	A3
			REQERR	C3
B06	TD100	TD100	RQSYNC	D2
B07	74S04	74S040	CLM	D7
		74S04	CLM	D7
			RQSYNC	D2
		74S040	RQSYNC	D7
			RQSYNC	D7
			RQSYNC	C4
B08	74S74	74S74	UBCYC	B5
			RQSYNC	C3
B09	TD250	TD250	REQUB	D2
B10	74S74	74S74	REQUB	C2
			REQUB	B2
B11	74S51	74S51	REQLM	B7
			DBGOUT	B2
B12	74S02	74S02	DBGOUT	B2
			REQLM	A7
			REQLM	A7
			REQUB	C1
B13	74S04	OS04L	XA	D2
		74S04	REQERR	C1
		74S040	REQLM	B3
			REQLM	B7
		OS04L	DATCTL	C7
			REQERR	D2
B14	74S74	74S74	RQSYNC	C7
			REQLM	C4
B15	8304	8304	REQERR	D7
B16	74S08	74S080	REQTIM	C4
		74S08	REQERR	A3
		74S080	UBMAST	B6
			UBMAST	B6
B17	74S02	74S02	DATCTL	B1
		74S020	REQLM	D1
		74S02	DATCTL	C1
		74S020	REQLM	A3
B18	74S32	74S320	DATCTL	B7
		OS32L	UBCYC	A6
		74S32	DATCTL	A1
		74S320	REQLM	A3
B19	74S04	74S04	DATCTL	C1
			DATCTL	B1
			DATCTL	B1
		74S040	DATCTL	C5
		74S04	DATCTL	B1
			REQLM	A2
B20	74S00	74S00	DATCTL	A1
			DATCTL	D7
			DATCTL	A7
		OS001	DATCTL	B7
B21	8304	8304	DBGOUT	B6
B22	8304	8304	DBGOUT	B4
B23	74LS244	74LS244	BUSSEL	B8
B24	74LS244	74LS244	BUSSEL	B6
B25	74LS244	74LS244	BUSSEL	B3
B26	74LS244	74LS244	BUSSEL	B1

LISPM B ; Interface CADR1;XAUG WLR 11-DEC-80 1559

LOC	D'PTYPE	BODY	FILE	POS
B27	8304	8304	LMDATA	B8
B28	8304	8304	LMDATA	B6
B29	8304	8304	LMDATA	B4
B30	8304	8304	LMDATA	B2
C01	74LS163	74LS163	UPRIOR	D1
C02	74LS74	74LS74I	UBMAST	B1
		74LS74	UBMAST	B4
C03	74LS27	74LS27	UPRIOR	C4
		74LS27O	UBMAST	A6
		74LS27	REQERR	A7
C04	74S11	74S11O	DBGIN	D7
		0S11L	UBCYC	B4
		74S11	UBMAST	C1
C05	74S20	74S20	REQU	B3
C06	74S51	74S51A	REQUB	B7
			REQERR	D1
C07	MTD100	MTD100	REQU	B2
			REQUB	B6
			RQSYNC	C6
C08	74S04	74S04O	REQLM	C6
		74S04	DATCTL	C1
			DATCTL	C1
			DATCTL	D1
			DATCTL	D1
			DATCTL	D1
C08@01	CAP	BYPASS	CAPS	C2
C09	TD100	TD100	REQLM	D4
C10	74S64	74S64	REQLM	D8
C11	74S64	74S64	REQLM	D6
C12	74S260	74S260O	RQSYNC	A5
			REQLM	A2
C13	74S10	74S10O	RQSYNC	C1
		74S10	DATCTL	B7
		74S10O	DATCTL	D6
C14	74S51	74S51A	DATCTL	C6
			REQLM	C2
C15	74S64	74S64	DATCTL	D4
C16	74LS244	74LS244	REQERR	C7
C17	74S51	74S51A	DATCTL	C4
			DATCTL	A7
C18	74S51	74S51A	DATCTL	A4
			DATCTL	B4
C19	74LS244	74LS244	BUSSEL	D6
C20	74LS244	74LS244	BUSSEL	D3
C21	74LS244	74LS244	BUSSEL	D1
C22	74LS244	74LS244	RBUF	D4
C23	74LS244	74LS244	RBUF	D2
C24	29701	29701	WBUF	Q8
C25	29701	29701	WBUF	D6
C26	29701	29701	WBUF	D4
C27	29701	29701	WBUF	D2
C28	93S48	93S48	BUSPAR	D7
C29	93S48	93S48	BUSPAR	D4
C30	93S48	93S48	BUSPAR	D1
C30@01	CAP	BYPASS	CAPS	C1
D01	MTD100	MTD100	UBMAST	B1
			UBMAST	D1
			UBMAST	D3
D02	74LS74	74LS74I	UBMAST	C1
		74LS74	UBMAST	C4

LISPM Bus Interface CADR1:XAUG WLR 1 -DEC-80 1559

LOC	DIPTYPE	BODY	FILE	POS
D03	74LS74	LS74	REQU	D7
		74LS74I	REQERR	D4
D04	74S74	74S74	UBMAST	C4
			UBMAST	D4
D05	74S00	74S000	UBINTC	D2
			UBMAST	A2
		74S00	UBMAST	B2
			RQSYNC	C4
D06	74S10	74S10	UBMAST	A1
			UBMAST	A1
			UBMAST	D1
D07	25LS251	25LS2519		UPRIOR C6
D08	25LS251	25LS2519		UPRIOR C4
D09	74S472	74S472	UPRIOR	C3
D10	74S174	74S174	UPRIOR	C1
D11	74S04	74S04A	UBA	D3
D12	74S133	74S133	REQU	B7
D13	74LS74	74LS74	UBINTC	C6
			UBINTC	C7
D14	74LS74	74LS74	UBINTC	A4
			UBINTC	B4
D15	74LS74	74LS74	UBINTC	A2
			UBINTC	B2
D16	25LS251	25LS2519		UBINTC D2
D17	74LS374	74LS374	UBINTC	D4
D18	74LS240	74LS240	UBINTC	B6
D19	74LS244	74LS244	BUSSEL	D8
D20	74S86	74S86	REQERR	A2
		74S860	REQERR	A2
		74S86	REQERR	C2
		S86L	REQUB	A8
D21	74LS244	74LS244	RBUF	D8
D22	74LS244	74LS244	RBUF	D6
D23	29701	29701	RBUF	B8
D24	29701	29701	RBUF	B6
D25	29701	29701	RBUF	B4
D26	29701	29701	RBUF	B2
D27	74LS244	74LS244	XBD	D8
D28	74LS244	74LS244	XBD	D6
D29	74LS244	74LS244	XBD	D3
D30	74LS244	74LS244	XBD	D1
E01	74S00	74S00	UBMAST	A6
			UBMAST	A6
		74S000	UBMAST	B6
			UBMAST	B6
E02	74S08	74S08	UBINTC	D6
			UBCYC	D7
		74S080	REQU	A2
			REQERR	C3
E03	74S138	74S138	UBCYC	B7
E04	74S32	74S32	UBINTC	D6
		OS32L	UBCYC	A5
		74S32	REQU	D8
		74S320	REQU	A1
E05	74S04	74S04	UBINTC	D6
		74S040	UBCYC	A3
		74S04	UBCYC	D7
		74S040	REQU	A4
			REQU	D6
			UBMAST	A4

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1559

LOC	DIPTYPE	BODY	FILE	POS
E06	74S260	74S2600	UBCYC	D2
		74S260	REQU	D5
E07	74S139	74S139	UBCYC	D4
			UBCYC	B3
E08	74S133	74S133	UBCYC	B1
E09	74S08	S08L	REQLM	C1
			REQLM	C1
E10	74S258	74S258	UBMAP	D3
E11	74S258	74S258	UBMAP	D1
E12	29701	29701	UBMAP	B8
E13	29701	29701	UBMAP	B6
E14	29701	29701	UBMAP	B4
E15	29701	29701	UBMAP	B2
E16	74LS244	74LS244	UBMAP	D8
E17	74LS244	74LS244	UBMAP	D6
E18	74LS244	74LS244	UBD	D4
E19	74LS244	74LS244	UBD	D1
E20	74LS244	74LS244	UBXA	D7
E21	74LS244	74LS244	UBXA	D5
E22	74LS244	74LS244	UBXA	D2
E23	93S48	93S48	XAPAR	C6
E24	93S48	93S48	XAPAR	C2
E25	26S10	26S10	XA	B8
E26	26S10	26S10	XA	B4
E27	26S10	26S10	XD	D6
E28	26S10	26S10	XD	D3
E29	26S10	26S10	XD	B6
E30	26S10	26S10	XD	B3
F01	TD100	TD100	REQU	D2
F02	74S02	74S020	REQU	C4
			REQU	D4
			REQU	D4
		74S02	UBCYC	B6
F03	74S00	74S00	REQU	C1
			REQU	C5
			UBCYC	D3
		74S000	REQU	B1
F04	TD250	TD250	UBCYC	D7
F05	74S133	74S1330	UBCYC	C6
F06	DM8838	8838	UPRIOR	D7
F07	DM8838	8838	UBMAST	C8
F07@01	CAP	BYPASS	CAPS	C8
F08	DM8838	8838	UBA	C8
F09	DM8838	8838	UBA	C6
F10	DM8838	8838	UBA	C5
F11	DM8838	8838	UBA	C3
F12	DM8838	8838	UBA	C1
F13	74S38	74S380	UPRIOR	A7
			UPRIOR	A7
			UPRIOR	B7
			UPRIOR	B7
F13@01	DUMMY4	DUMMY4	UPRIOR	D3
F14	74S38	74S380	UPRIOR	B7
			UPRIOR	B7
F14@01	DUMMY4	DUMMY4	UPRIOR	D3
F15	DM8838	8838	UPRIOR	D5
F15@01	CAP	BYPASS	CAPS	C6
F16	DM8838	8838	UBD	B8
F17	DM8838	8838	UBD	B6
F18	DM8838	8838	UBD	B4

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1559

LOC	DPTYPE	BODY	FILE	POS
F19	DM8838	8838	UBD	B1
F20	26S10	26S10	XD	B1
F21	26S10	26S10	XA	D2
F22	26S10	26S10	XA	B2
F23	26S10	26S10	XA	D8
F23@01	CAP	BYPASS	CAPS	C5
F24	26S10	26S10	XA	D6
F25	26S10	26S10	XA	D4
F26	26S10	26S10	XA	B6
F27	26S10	26S10	XD	D8
F28	26S10	26S10	XD	D5
F29	26S10	26S10	XD	B8
F30	26S10	26S10	XD	B5
F30@01	CAP	BYPASS	CAPS	C4
A	CON			
B	CON			
C	CON			
D	CON			
E	CON			
F	CON			
J01	CON			
J05	CON			
J06	CON			
J07	CON			
J08	CON			
J09	CON			
J11	CON			
J12	CON			

LISPM Bus Interface CADR1;XAUG WLR -DEC-80 1559

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
GND	A01-09(11)	.	%G					74LS124	74LS124	REQTIM	D2	
	A01-10	!			.7							
				-75.16/0.00								
	A02-15(17)	.	TI	-0.25	0.03		-SEL	74S288	74S288	REQTIM	C7	
	A02-10	!			1.1							
				-75.16/0.00								
	A03-12(14)	.	TI	-0.40	0.02		K2	74LS112	74LS112-1		REQERR	C4
	A03-10	!			.9							
				-75.16/0.00								
	A07-13(16)	.	TI	-2.00	0.05			74S260	74S2600	RQSYNC	B5	
	A07-10	!			1.0							
				-75.16/0.00								
	A16-17	\	TI	-0.36	0.02		-CLK E	25LS2519		25LS2519		DBGIN B7
	A16-07	.!	TI	-0.36	0.02	.9	-OE.W	25LS2519		25LS2519		DBGIN B7
	A16-10	!			.7							
				-75.16/0.00		3.1						
	A17-10	\										
	A17-01	.!	TI	-2.00	0.05	1.3	-ENB	74S241	74S241	DBGOUT	D2	
	J08-03	!.					CON		CLM	A8		
	J08-04	.!					CON		CLM	A8		
	J08-01	!					CON		CLM	A8		
				-75.16/0.00		7.4						
	A22@20-08(13)	.	%G					SIP330/470-8		SIP330/470-8		CLM D3
	A22-10	!			.8							
				-75.16/0.00								
	A24-02	.	TI	-0.20	0.02		IN1	74LS240	74LS240	LMADR	D5	
	A24-04	!.	TI	-0.20	0.02	.6	IN2	74LS240	74LS240	LMADR	D5	
	A24-06	.!	TI	-0.20	0.02	.6	IN3	74LS240	74LS240	LMADR	D5	
	A24-10	!			.8							
				-75.16/0.00		5.0						
	A28@20-08(13)	.	%G					SIP180/390-8		SIP180/390-8		LMDATA D6
	A28-10	!			.8							
				-75.16/0.00								
	A29@20-08(13)	.	%G					SIP180/390-8		SIP180/390-8		LMDATA D4
	A29-10	!			.8							
				-75.16/0.00								
	A30@20-08(13)	.	%G					SIP180/390-8		SIP180/390-8		LMDATA D1
	A30-10	!			.8							
				-75.16/0.00								
	C03-04(07)	.	TIP	-0.40	0.02			74LS27	74LS27	UPRIOR	C4	
	C03-10	!			.7							
				-75.16/0.00								
	C08@01-01	\	%G					CAP	BYPASS	CAPS	C2	
	C08@01-02	.!	%G			BARE		CAP	BYPASS	CAPS	C2	
	C08-10	!			1.2							
				-75.16/0.00		2.8						
	C10-10(13)	.	TIS	-2.00	0.05			74S64	74S64	REQLM	D8	
	C10-10	!			.8							
				-75.16/0.00								
	C11-13(16)	.	TIS	-2.00	0.05			74S64	74S64	REQLM	D6	
	C11-10	!			1.0							
				-75.16/0.00								
	C12-09(12)	\	TI	-2.00	0.05			74S260	74S2600	RQSYNC	A5	
	C12-08(11)	.!	TI	-2.00	0.05	BARE		74S260	74S2600	RQSYNC	A5	
	C12-10	!			.7							
				-75.16/0.00		2.3						
	C19-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	BUSSEL	D6	
	C19-15	.!	TI	-0.20	0.02	.6	IN6	74LS244	74LS244	BUSSEL	D6	
	C19-13	!.	TI	-0.20	0.02	.6	IN7	74LS244	74LS244	BUSSEL	D6	
	C19-11	.!	TI	-0.20	0.02	.6	IN8	74LS244	74LS244	BUSSEL	D6	
	C19-10	!			.7							
				-75.16/0.00		7.0						
	C20-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	BUSSEL	D3	
	C20-15	.!	TI	-0.20	0.02	.6	IN6	74LS244	74LS244	BUSSEL	D3	
	C20-13	!.	TI	-0.20	0.02	.6	IN7	74LS244	74LS244	BUSSEL	D3	
	C20-11	.!	TI	-0.20	0.02	.6	IN8	74LS244	74LS244	BUSSEL	D3	
	C20-10	!			.7							
				-75.16/0.00		7.0						
	C21-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	BUSSEL	D1	
	C21-15	.!	TI	-0.20	0.02	.6	IN6	74LS244	74LS244	BUSSEL	D1	
	C21-13	!.	TI	-0.20	0.02	.6	IN7	74LS244	74LS244	BUSSEL	D1	
	C21-11	.!	TI	-0.20	0.02	.6	IN8	74LS244	74LS244	BUSSEL	D1	
	C21-10	!			.7							
				-75.16/0.00		7.0						
	C24-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	WBUF	D8	
	C24-10	!			1.0							
				-75.16/0.00								
	C25-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	WBUF	D6	
	C25-10	!			1.0							
				-75.16/0.00								
	C26-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	WBUF	D4	
	C26-10	!			1.0							
				-75.16/0.00								
	C27-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	WBUF	D2	
	C27-10	!			1.0							
				-75.16/0.00								
	C28-12(14)	\	TI	-0.80	0.02		I	93S48	93S48	BUSPAR	D7	
	C28-11(13)	.!	TI	-0.80	0.02	BARE	I	93S48	93S48	BUSPAR	D7	
	C28-10	!			.8							
				-75.16/0.00		2.4						
	C30@01-01	\	%G					CAP	BYPASS	CAPS	C1	
	C30@01-02	.!	%G			BARE		CAP	BYPASS	CAPS	C1	
	C30-10	!			1.2							
				-75.16/0.00		2.8						
	D04-12(15)	\	TI	-2.00	0.05		D2	74S74	74S74	UBMAST	D4	
	D04-03(06)	.!	TI	-4.00	0.10	.7	-CLK1	74S74	74S74	UBMAST	C4	
	D04-10	!			.8							
				-75.16/0.00		3.0						
	D07-07	\	TI	-0.36	0.02		-OE.W	25LS2519		25LS2519		UPRIOR C6
	D07-08	.!	TI	-0.36	0.02	BARE	-OE.Y	25LS2519		25LS2519		UPRIOR C6
	D07-10	!			.6							
				-75.16/0.00		2.2						
	D08-07	\	TI	-0.36	0.02		-OE.W	25LS2519		25LS2519		UPRIOR C4
	D08-08	.!	TI	-0.36	0.02	BARE	-OE.Y	25LS2519		25LS2519		UPRIOR C4
	D08-10	!			.6							
				-75.16/0.00		2.2						
	D09-15	.	TI	-0.25	0.04		-CE	74S472	74S472	UPRIOR	C3	
	D09-10	!			.9							
				-75.16/0.00								
	D16-17	.	TI	-0.36	0.02		-CLK E	25LS2519		25LS2519		UBINIC D2
	D16-18	!.	TI	-0.36	0.02	BARE	POL	25LS2519		25LS2519		UBINIC D2
	D16-07	.!	TI	-0.36	0.02	.9	-OE.W	25LS2519		25LS2519		UBINIC D2
	D16-10	!			.7							

			-75.16/0.00		4.7					
D19-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	BUSSEL	D8
D19-15	.!	TI	-0.20	0.02	.6	IN6	74LS244	74LS244	BUSSEL	D8
D19-13	!	TI	-0.20	0.02	.6	IN7	74LS244	74LS244	BUSSEL	D8
D19-11	.!	TI	-0.20	0.02	.6	IN8	74LS244	74LS244	BUSSEL	D8
D19-10	!			.7						
			-75.16/0.00		7.0					
D23-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	RBUF	B8
D23-10	!			1.0						
			-75.16/0.00							
D24-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	RBUF	B6
D24-10	!			1.0						
			-75.16/0.00							
D25-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	RBUF	B4
D25-10	!			1.0						
			-75.16/0.00							
D26-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	RBUF	B2
D26-10	!			1.0						
			-75.16/0.00							
E06-09(12)	.	TI	-2.00	0.05			74S260	74S2600	UBCYC	D2
E06-10	!			.8						
			-75.16/0.00							
E10-15(17)	.	TI	-2.00	0.05		-ENB	74S258	74S258	UBMAP	D3
E10-10	!			1.1						
			-75.16/0.00							
E11-15(17)	.	TI	-2.00	0.05		-ENB	74S258	74S258	UBMAP	D1
E11-10	!			1.1						
			-75.16/0.00							
E12-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	UBMAP	B8
E12-10	!			1.0						
			-75.16/0.00							
E13-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	UBMAP	B6
E13-10	!			1.0						
			-75.16/0.00							
E14-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	UBMAP	B4
E14-10	!			1.0						
			-75.16/0.00							
E15-02(04)	.	TI	-0.25	0.01		-CS	29701	29701	UBMAP	B2
E15-10	!			1.0						
			-75.16/0.00							
E22-02	\	TI	-0.20	0.02		IN1	74LS244	74LS244	UBXA	D2
E22-04	.!	TI	-0.20	0.02	.6	IN2	74LS244	74LS244	UBXA	D2
E22-10	!			1.0						
			-75.16/0.00		3.1					
E23-12(14)	.	TI	-0.80	0.02		I	93S48	93S48	XAPAR	C6
E23-10	!			.9						
			-75.16/0.00							
E25-01(03)	.	%G					26S10	26S10	XA	B8
E25-10	!			1.1						
			-75.16/0.00							
E26-01(03)	.	%G					26S10	26S10	XA	B4
E26-10	!			1.1						
			-75.16/0.00							
E27-01(03)	.	%G					26S10	26S10	XD	D6
E27-10	!			1.1						
			-75.16/0.00							
E28-01(03)	.	%G					26S10	26S10	XD	D3
E28-10	!			1.1						
			-75.16/0.00							
E29-01(03)	.	%G					26S10	26S10	XD	B6
E29-10	!			1.1						
			-75.16/0.00							
E30-01(03)	.	%G					26S10	26S10	XD	B3
E30-10	!			1.1						
			-75.16/0.00							
FT1	.	G				CON		CXBUS	B2	
F01-10	!			1.0						
			-75.16/0.00							
FN1	.					CON		CXBUS	B2	
F02-10	!			1.0						
			-75.16/0.00							
FF1	.					CON		CXBUS	B2	
F03-10	!			1.1						
			-75.16/0.00							
FC2	.	G				CON		CXBUS	B2	
F04-10	!			.8						
			-75.16/0.00							
ET1	.	G				CON		CXBUS	B2	
F06-10	!.			1.1						
F06-07(09)	.!	TI	-1.60	0.04	BARE	DIS B	DM8838	8838	UPRIOR	D7
F06-05(07)	!.	TI	-1.60	0.04	.6	IN4	DM8838	8838	UPRIOR	D7
F06-02(04)	.!	TI	-1.60	0.04	.7	IN3	DM8838	8838	UPRIOR	D7
F06-14(16)	!	TI	-1.60	0.04	.8	IN1	DM8838	8838	UPRIOR	D7
			-75.16/0.00		9.3					
FN1	.					CON		CXBUS	B2	
F07-09(11)	!.	TI	-1.60	0.04	1.1	DIS A	DM8838	8838	UBMAST	C8
F07-10	.!			.7						
F07-07(09)	!.	TI	-1.60	0.04	BARE	DIS B	DM8838	8838	UBMAST	C8
F07001-02	.!	%G			1.1		CAP	BYPASS	CAPS	C8
F07001-01	!	%G			BARE		CAP	BYPASS	CAPS	C8
			-75.16/0.00		9.1					
F08-14(16)	\	TI	-1.60	0.04		IN1	DM8838	8838	UBA	C8
F08-07(09)	.!	TI	-1.60	0.04	.9	DIS B	DM8838	8838	UBA	C8
F08-10	!			BARE						
			-75.16/0.00		2.5					
FC2	\	G				CON		CXBUS	B2	
F09-10	.!			.9						
F09-07(09)	!	TI	-1.60	0.04	BARE	DIS B	DM8838	8838	UBA	C6
			-75.16/0.00		2.6					
F10-07(09)	.	TI	-1.60	0.04		DIS B	DM8838	8838	UBA	C5
F10-10	!			BARE						
			-75.16/0.00							
F11-07(09)	.	TI	-1.60	0.04		DIS B	DM8838	8838	UBA	C3
F11-10	!			BARE						
			-75.16/0.00							
DT1	\	G				CON		CXBUS	B2	
F12-10	.!			1.1						
F12-07(09)	!	TI	-1.60	0.04	BARE	DIS B	DM8838	8838	UBA	C1
			-75.16/0.00		2.7					
F13001-02	\	I	0.00	0.00			DUMMY4	DUMMY4	UPRIOR	D3
F13-10	.!			1.2						
DN1	!					CON		CXBUS	A2	
			-75.16/0.00		3.8					
DF1	.					CON		CXBUS	A2	
F14-10	!			1.0						
			-75.16/0.00							
DC2	\	G				CON		CXBUS	A2	

F15-07(09)	.!	TI	-1.60	0.04	1.0	DIS B	DM8838	8838	UPRIOR	D5
F15-10	!.			BARE						
F15-09(11)	.!	TI	-1.60	0.04	.7	DIS A	DM8838	8838	UPRIOR	D5
F15-11(13)	!.	TI	-1.60	0.04	.6	IN2	DM8838	8838	UPRIOR	D5
F15-14(16)	.!	TI	-1.60	0.04	.7	IN1	DM8838	8838	UPRIOR	D5
F15-02(04)	!.	TI	-1.60	0.04	.8	IN3	DM8838	8838	UPRIOR	D5
F15@01-02	.!	%G			.6		CAP	BYPASS	CAPS	C6
F15@01-01	!	%G			BARE		CAP	BYPASS	CAPS	C6
			-75.16/0.00		15.1					
F16-07(09)	.	TI	-1.60	0.04		DIS B	DM8838	8838	UBD	B8
F16-10	!			BARE						
			-75.16/0.00							
CT1	\	G				CON		CXBUS	B1	
F17-10	.!			1.0						
F17-07(09)	!	TI	-1.60	0.04	BARE	DIS B	DM8838	8838	UBD	B6
			-75.16/0.00		2.6					
CN1	\					CON		CXBUS	B1	
F18-10	.!			1.0						
F18-07(09)	!	TI	-1.60	0.04	BARE	DIS B	DM8838	8838	UBD	B4
			-75.16/0.00		2.6					
CF1	\					CON		CXBUS	B1	
F19-10	.!			1.1						
F19-07(09)	!	TI	-1.60	0.04	BARE	DIS B	DM8838	8838	UBD	B1
			-75.16/0.00		2.7					
CC2	.	G				CON		CXBUS	B1	
F20-10	!.			.8						
F20-05(07)	.!	TI	-0.54	0.03	.7	IN1	26S10	26S10	XD	B1
F20-01(03)	!	%G			.8		26S10	26S10	XD	B1
			-75.16/0.00		5.3					
F21-01(03)	.	%G					26S10	26S10	XA	D2
F21-12(14)	!.	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XA	D2
F21-11(13)	.!	TI	-0.54	0.03	BARE	IN2	26S10	26S10	XA	D2
F21-10	!			.8						
			-75.16/0.00		4.8					
BT1	\	G				CON		CXBUS	B1	
F22-10	.!			1.1						
F22-05(07)	!.	TI	-0.54	0.03	.7	IN1	26S10	26S10	XA	B2
F22-04(06)	.!	TI	-0.54	0.03	BARE	IN0	26S10	26S10	XA	B2
F22-13(15)	!.	TI	-0.54	0.03	.7	IN3	26S10	26S10	XA	B2
F22-12(14)	.!	TI	-0.36	0.02	BARE	-ENB	26S10	26S10	XA	B2
F22-01(03)	!	%G			.9		26S10	26S10	XA	B2
			-75.16/0.00		11.1					
BN1	\					CON		CXBUS	B1	
F23-10	.!			1.1						
F23-01(03)	!.	%G			1.1		26S10	26S10	XA	D8
F23@01-02	.!	%G			BARE		CAP	BYPASS	CAPS	C5
F23@01-01	!	%G			BARE		CAP	BYPASS	CAPS	C5
			-75.16/0.00		6.9					
F24-01(03)	.	%G					26S10	26S10	XA	D6
F24-10	!			1.1						
			-75.16/0.00							
BF1	.					CON		CXBUS	B1	
BC2	!.	G				CON		CXBUS	B1	
F25-10	.!			.9						
F25-01(03)	!	%G			1.1		26S10	26S10	XA	D4
			-75.16/0.00		5.8					
F26-01(03)	.	%G					26S10	26S10	XA	B6
F26-10	!			1.1						
			-75.16/0.00							
F27-01(03)	.	%G					26S10	26S10	XD	D8
F27-10	!			1.1						
			-75.16/0.00							
F28-01(03)	\	%G					26S10	26S10	XD	D5
F28-10	.!			1.1						
AT1	!	G				CON		CXBUS	B1	
			-75.16/0.00		3.7					
F29-01(03)	\	%G					26S10	26S10	XD	B8
F29-10	.!			1.1						
AN1	!					CON		CXBUS	A1	
			-75.16/0.00		3.7					
AF1	.					CON		CXBUS	A1	
AC2	!.	G				CON		CXBUS	A1	
F30-10	.!			.9						
F30-01(03)	!.	%G			1.1		26S10	26S10	XD	B5
F30@01-02	.!	%G			BARE		CAP	BYPASS	CAPS	C4
F30@01-01	!	%G			BARE		CAP	BYPASS	CAPS	C4
			-75.16/0.00		9.0					

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1603

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS			
+12.0V	DS1	\					CON		CXBUS	C1				
	DR1	.I					CON		CXBUS	C1				
	DP1	;					CON		CXBUS	C1				
				0.00/0.00		1.7			NO INPUTS OR OUTPUTS			____	3	
+5.0V	A01-03(05)	\	I	0.00	0.00		RNG	74LS124	74LS124	REQTIM	D2			
	A01-02(04)	.I	I	0.00	0.00	BARE	CONT	74LS124	74LS124	REQTIM	D2			
	A01-15(17)	!	V	+5.00V	27.50MA	.7	SIGVCC	74LS124	74LS124	REQTIM	D2			
	A01-16(18)	.I	%V	+5.00V	110.00MA		BARE		74LS124	74LS124	REQTIM	D2		
	A01-20	!			.6									
				PWR/0.00		6.0	INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A02-16(18)	;	%TV	+5.00V	110.00MA				74S288	74S288	REQTIM	C7		
	A02-20	!			.6									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A03-16(18)	;	%TV	+5.00V	8.00MA				74LS112	74LS112-1	REQERR	C4		
	A03-20	!			.6									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A04-14(17)	;	%TV	+5.00V	36.00MA				74S00	OS00L	REQLM	B3		
	A04-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A05-14(17)	;	%TV	+5.00V	45.00MA				74S02	OS02L	DATCTL	A1		
	A05-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A06-16(18)	;	%TV	+5.00V	96.00MA				74S175	74S175	RQSYNC	B8		
	A06-20	!			.6									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A07-14(17)	;	%TV	+5.00V	45.00MA				74S260	74S2600	RQSYNC	B5		
	A07-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A08-16(18)	;	%TV	+5.00V	96.00MA				74S175	74S175	RQSYNC	B2		
	A08-20	!			.6									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A09-14(17)	;	%TV	+5.00V	68.00MA				74S32	74S32	DBGIN	C7		
	A09-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A10-14(17)	;	%TV	+5.00V	40.00MA				MID100	MID100	DBGOUT	A2		
	A10-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A11-14(17)	;	%TV	+5.00V	36.00MA				74S00	74S00	DBGIN	D6		
	A11-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A12-14(17)	;	%TV	+5.00V	68.00MA				74S08	74S08	DBGIN	C6		
	A12-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A13-14(17)	;	%TV	+5.00V	54.00MA				74S04	74S040	DBGIN	D4		
	A13-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A14-14(17)	;	%TV	+5.00V	27.00MA				74S10	74S100	DBGIN	C6		
	A14-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A15-16(18)	;	%TV	+5.00V	90.00MA				74S139	74S139	DBGIN	D4		
	A15-20	!			.6									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A22@03-01(03)	;	%V	+5.00V	150.00MA				SIP180/390-8	SIP180/390-8		OBGIN	D1	
	A22-20	!			.8									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A28@03-01(03)	;	%V	+5.00V	150.00MA				SIP180/390-8	SIP180/390-8		LMDATA	D8	
	A28-20	!			.8									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A29@03-01(03)	;	%V	+5.00V	150.00MA				SIP180/390-8	SIP180/390-8		LMDATA	D5	
	A29-20	!			.8									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	A30@03-01(03)	;	%V	+5.00V	150.00MA				SIP180/390-8	SIP180/390-8		LMDATA	D2	
	A30-20	!			.8									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B03-14(17)	;	%TV	+5.00V	54.00MA				74S04	74S04	REQTIM	C1		
	B03-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B05-14(17)	;	%TV	+5.00V	42.00MA				74S11	74S11	REQERR	A3		
	B05-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B06-14(17)	;	%TV	+5.00V	49.00MA				TD100	TD100	RQSYNC	D2		
	B06-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B07-14(17)	;	%TV	+5.00V	54.00MA				74S04	74S04	CLM	D7		
	B07-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B08-14(17)	;	%TV	+5.00V	30.00MA				74S74	74S74	RQSYNC	C3		
	B08-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B09-14(17)	;	%TV	+5.00V	49.00MA				TD250	TD250	REQUB	D2		
	B09-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B10-14(17)	;	%TV	+5.00V	30.00MA				74S74	74S74	REQUB	B2		
	B10-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B11-14(17)	;	%TV	+5.00V	22.00MA				74S51	74S51	DBGOUT	B2		
	B11-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B12-14(17)	;	%TV	+5.00V	45.00MA				74S02	74S02	DBGOUT	B2		
	B12-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B13-14(17)	;	%TV	+5.00V	54.00MA				74S04	OS04L	DATCTL	C7		
	B13-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B14-14(17)	;	%TV	+5.00V	30.00MA				74S74	74S74	REQLM	C4		
	B14-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B16-14(17)	;	%TV	+5.00V	68.00MA				74S08	74S08	REQERR	A3		
	B16-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B17-14(17)	;	%TV	+5.00V	45.00MA				74S02	74S02	DATCTL	B1		
	B17-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B18-14(17)	;	%TV	+5.00V	68.00MA				74S32	74S320	DATCTL	B7		
	B18-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B19-14(17)	;	%TV	+5.00V	54.00MA				74S04	74S040	DATCTL	C5		
	B19-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	B20-14(17)	;	%TV	+5.00V	36.00MA				74S00	74S00	DATCTL	A7		
	B20-20	!			.7									
				PWR/0.00			INPUT AND/OR OUTPUT CONNECTED TO POWER					____	3	
	C01-16(18)	;	%TV	+5.00V	32.00MA				74LS163	74LS163	UPRIOR	D1		

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C01-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C02-14(17)      .    %TV  +5.00V  8.00MA                   74LS74  74LS74  UBMAST  B4
C02-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C03-14(17)      .    %TV  +5.00V  6.80MA                   74LS27  74LS27  REQERR  A7
C03-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C04-14(17)      .    %TV  +5.00V  42.00MA                  74S11   74S110  DBGIN   D7
C04-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C05-14(17)      .    %TV  +5.00V  18.00MA                  74S20   74S20   REQU    B3
C05-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C06-14(17)      .    %TV  +5.00V  22.00MA                  74S51   74S51A  REQERR  D1
C06-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C07-14(17)      .    %TV  +5.00V  40.00MA                  MTD100  MTD100  REQU    B2
C07-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C08-14(17)      \    %TV  +5.00V  54.00MA                  74S04   74S04   DATCTL  D1
C08001-03(19)   .!   %TV  +5.00V  0.00MA  .6               CAP     BYPASS  CAPS    C2
C08-20          !                   BARE
                          PWR/0.00          2.2   INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C09-14(17)      .    %TV  +5.00V  49.00MA                  TD100   TD100   REQLM   D4
C09-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C10-14(17)      .    %TV  +5.00V  16.00MA                  74S64   74S64   REQLM   D8
C10-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C11-14(17)      .    %TV  +5.00V  16.00MA                  74S64   74S64   REQLM   D6
C11-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C12-14(17)      .    %TV  +5.00V  45.00MA                  74S260  74S2600 REQLM   A2
C12-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C13-14(17)      .    %TV  +5.00V  27.00MA                  74S10   74S10   DATCTL  B7
C13-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C14-14(17)      .    %TV  +5.00V  22.00MA                  74S51   74S51A  DATCTL  C6
C14-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C15-14(17)      .    %TV  +5.00V  16.00MA                  74S64   74S64   DATCTL  D4
C15-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C17-14(17)      .    %TV  +5.00V  22.00MA                  74S51   74S51A  DATCTL  A7
C17-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C18-14(17)      .    %TV  +5.00V  22.00MA                  74S51   74S51A  DATCTL  B4
C18-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C24-16(18)      .    %TV  +5.00V  100.00MA                         29701   29701   WBUF   D8
C24-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C25-16(18)      .    %TV  +5.00V  100.00MA                         29701   29701   WBUF   D6
C25-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C26-16(18)      .    %TV  +5.00V  100.00MA                         29701   29701   WBUF   D4
C26-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C27-16(18)      .    %TV  +5.00V  100.00MA                         29701   29701   WBUF   D2
C27-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C28-16(18)      .    %TV  +5.00V  80.00MA                  93S48   93S48   BUSPAR  D7
C28-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C29-16(18)      .    %TV  +5.00V  80.00MA                  93S48   93S48   BUSPAR  D4
C29-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
C30-16(18)      \    %TV  +5.00V  80.00MA                  93S48   93S48   BUSPAR  D1
C30001-03(19)   .!   %TV  +5.00V  0.00MA  BARE             CAP     BYPASS  CAPS    C1
C30-20          !                   BARE
                          PWR/0.00          1.7   INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D01-14(17)      .    %TV  +5.00V  40.00MA                  MTD100  MTD100  UBMAST  D1
D01-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D02-14(17)      .    %TV  +5.00V  8.00MA                   74LS74  74LS74  UBMAST  C4
D02-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D03-14(17)      .    %TV  +5.00V  8.00MA                   74LS74  74LS74I REQERR  D4
D03-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D04-14(17)      .    %TV  +5.00V  30.00MA                  74S74   74S74   UBMAST  D4
D04-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D05-14(17)      .    %TV  +5.00V  36.00MA                  74S00   74S00   RQSYNC  C4
D05-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D06-14(17)      .    %TV  +5.00V  27.00MA                  74S10   74S10   UBMAST  D1
D06-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D10-16(18)      .    %TV  +5.00V  144.00MA                         74S174  74S174  UPRIOR  C1
D10-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D11-14(17)      .    %TV  +5.00V  54.00MA                  74S04   74S04A  UBA     D3
D11-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D12-16(18)      .    %TV  +5.00V  10.00MA                  74S133  74S133  REQU    B7
D12-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D13-14(17)      .    %TV  +5.00V  8.00MA                   74LS74  74LS74  UBINIC  C7
D13-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D14-14(17)      .    %TV  +5.00V  8.00MA                   74LS74  74LS74  UBINIC  A4
D14-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D15-14(17)      .    %TV  +5.00V  8.00MA                   74LS74  74LS74  UBINIC  B2
D15-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D20-14(17)      .    %TV  +5.00V  75.00MA                  74S86   74S86   REQERR  A2
D20-20          !                   .7
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D23-16(18)      .    %TV  +5.00V  100.00MA                         29701   29701   RBUF   B8
D23-20          !                   .6
                          PWR/0.00                INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D24-16(18)      .    %TV  +5.00V  100.00MA                         29701   29701   RBUF   B6
D24-20          !                   .6
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                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D25-16(18)      .      %TV     +5.00V  100.00MA                   29701   29701   RBUF    B4
D25-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
D26-16(18)      .      %TV     +5.00V  100.00MA                   29701   29701   RBUF    B2
D26-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E01-14(17)      .      %TV     +5.00V  36.00MA             74S00   74S00   UBMAST  A6
E01-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E02-14(17)      .      %TV     +5.00V  68.00MA             74S08   74S080  REQERR  C3
E02-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E03-16(18)      .      %TV     +5.00V  74.00MA             74S138  74S138  UBCYC   B7
E03-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E04-14(17)      .      %TV     +5.00V  68.00MA             74S32   74S32   REQU    D8
E04-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E05-14(17)      .      %TV     +5.00V  54.00MA             74S04   74S040  REQU    A4
E05-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E06-14(17)      .      %TV     +5.00V  45.00MA             74S260  74S260  REQU    D5
E06-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E07-16(18)      .      %TV     +5.00V  90.00MA             74S139  74S139  UBCYC   D4
E07-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E08-16(18)      .      %TV     +5.00V  10.00MA             74S133  74S133  UBCYC   B1
E08-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E09-14(17)      .      %TV     +5.00V  68.00MA             74S08   S08L    REQLM   C1
E09-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E10-16(18)      .      %TV     +5.00V  87.00MA             74S258  74S258  UBMAP   D3
E10-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E11-16(18)      .      %TV     +5.00V  87.00MA             74S258  74S258  UBMAP   D1
E11-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E12-16(18)      .      %TV     +5.00V  100.00MA                   29701   29701   UBMAP   B8
E12-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E13-16(18)      .      %TV     +5.00V  100.00MA                   29701   29701   UBMAP   B6
E13-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E14-16(18)      .      %TV     +5.00V  100.00MA                   29701   29701   UBMAP   B4
E14-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E15-16(18)      .      %TV     +5.00V  100.00MA                   29701   29701   UBMAP   B2
E15-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E23-16(18)      .      %TV     +5.00V  80.00MA             93S48   93S48   XAPAR   C6
E23-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E24-16(18)      .      %TV     +5.00V  80.00MA             93S48   93S48   XAPAR   C2
E24-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E25-16(18)      .      %TV     +5.00V  70.00MA             26S10   26S10   XA      B8
E25-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E26-16(18)      .      %TV     +5.00V  70.00MA             26S10   26S10   XA      B4
E26-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E27-16(18)      .      %TV     +5.00V  70.00MA             26S10   26S10   XD      D6
E27-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E28-16(18)      .      %TV     +5.00V  70.00MA             26S10   26S10   XD      D3
E28-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E29-16(18)      .      %TV     +5.00V  70.00MA             26S10   26S10   XD      B6
E29-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
E30-16(18)      .      %TV     +5.00V  70.00MA             26S10   26S10   XD      B3
E30-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F01-14(17)      .      %TV     +5.00V  49.00MA             TD100   TD100   REQU    D2
F01-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F02-14(17)      .      %TV     +5.00V  45.00MA             74S02   74S020  REQU    D4
F02-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F03-14(17)      .      %TV     +5.00V  36.00MA             74S00   74S00   REQU    C5
F03-20          !                       .7
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
FA2             \      V                              CON                 CXBUS   D1
F04-14(17)      .!     %TV     +5.00V  49.00MA 1.6         TD250   TD250   UBCYC   D7
F04-20          !                       .7
                               PWR/0.00        3.7    INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F05-16(18)      .      %TV     +5.00V  10.00MA             74S133  74S1330 UBCYC   C6
F05-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F06-16(18)      .      %TV     +5.00V  70.00MA             DM8838  8838    UPRIOR  D7
F06-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F07-16(18)      \      %TV     +5.00V  70.00MA             DM8838  8838    UBMAST  C8
F07@01-03(19)   .!     %TV     +5.00V  0.00MA  BARE        CAP     BYPASS  CAPS    C8
F07-20          !                       BARE
                               PWR/0.00        1.7    INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F08-16(18)      .      %TV     +5.00V  70.00MA             DM8838  8838    UBA     C8
F08-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
EA2             \      V                              CON                 CXBUS   D1
F09-16(18)      .!     %TV     +5.00V  70.00MA 1.6         DM8838  8838    UBA     C6
F09-20          !                       .6
                               PWR/0.00        3.7    INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F10-16(18)      .      %TV     +5.00V  70.00MA             DM8838  8838    UBA     C5
F10-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F11-16(18)      .      %TV     +5.00V  70.00MA             DM8838  8838    UBA     C3
F11-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F12-16(18)      .      %TV     +5.00V  70.00MA             DM8838  8838    UBA     C1
F12-20          !                       .6
                               PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER ____ 3
F13-14(17)      .      %TV     +5.00V  80.00MA             74S38   74S380  UPRIOR  B7
F13-20          !                       .7
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                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
DA2                    \       V                                 CON          CXBUS   D1
F14-14(17)             .!      %TV        +5.00V  80.00MA 1.3             74S38    74S380  UPRIOR  B7
F14-20                 !                          .7
                                          PWR/0.00         3.7   INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F15-16(18)             \       %TV        +5.00V  70.00MA                 DM8838   8838    UPRIOR  D5
F15@01-03(19)          .!      %TV        +5.00V  0.00MA  BARE            CAP      BYPASS  CAPS    C6
F15-20                 !                          BARE
                                          PWR/0.00         1.7   INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F16-16(18)             .       %TV        +5.00V  70.00MA                 DM8838   8838    UBD     B8
F16-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F17-16(18)             .       %TV        +5.00V  70.00MA                 DM8838   8838    UBD     B6
F17-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F18-16(18)             .       %TV        +5.00V  70.00MA                 DM8838   8838    UBD     B4
F18-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F19-16(18)             .       %TV        +5.00V  70.00MA                 DM8838   8838    UBD     B1
F19-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
CA2                    \       V                                 CON          CXBUS   D1
F20-16(18)             .!      %TV        +5.00V  70.00MA 1.6             26S10    26S10   XD      B1
F20-20                 !                          .6
                                          PWR/0.00         3.7   INPUT AND/OR OUTPUT CONNECTED TO POWER  ____.3
F21-16(18)             .       %TV        +5.00V  70.00MA                 26S10    26S10   XA      D2
F21-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F22-16(18)             .       %TV        +5.00V  70.00MA                 26S10    26S10   XA      B2
F22-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F23-16(18)             \       %TV        +5.00V  70.00MA                 26S10    26S10   XA      D8
F23@01-03(19)          .!      %TV        +5.00V  0.00MA  BARE            CAP      BYPASS  CAPS    C5
F23-20                 !                          BARE
                                          PWR/0.00         1.7   INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F24-16(18)             .       %TV        +5.00V  70.00MA                 26S10    26S10   XA      D6
F24-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
BA2                    \       V                                 CON          CXBUS   D1
F25-16(18)             .!      %TV        +5.00V  70.00MA 1.5             26S10    26S10   XA      D4
F25-20                 !                          .6
                                          PWR/0.00         3.6   INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F26-16(18)             .       %TV        +5.00V  70.00MA                 26S10    26S10   XA      B6
F26-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F27-16(18)             .       %TV        +5.00V  70.00MA                 26S10    26S10   XD      D8
F27-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F28-16(18)             .       %TV        +5.00V  70.00MA                 26S10    26S10   XD      D5
F28-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
F29-16(18)             .       %TV        +5.00V  70.00MA                 26S10    26S10   XD      B8
F29-20                 !                          .6
                                          PWR/0.00               INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
AA2                    .       V                                 CON          CXBUS   D1
F30-16(18)             !.      %TV        +5.00V  70.00MA 1.6             26S10    26S10   XD      B5
F30@01-03(19)          .!      %TV        +5.00V  0.00MA  BARE            CAP      BYPASS  CAPS    C4
F30-20                 !                          BARE
                                          PWR/0.00         4.8   INPUT AND/OR OUTPUT CONNECTED TO POWER  ____ 3
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LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-5.0V	FB2						CON		CXBUS	D1	
	EB2						CON		CXBUS	D1	
	DB2						CON		CXBUS	C1	
	CB2						CON		CXBUS	C1	
	BB2						CON		CXBUS	C1	
	AB2						CON		CXBUS	C1	
				0.00/0.00		21.3			NO INPUTS OR OUTPUTS		____ 3
%A01-07	B01-11		TI	-0.40	0.02		CLK^	74LS273	74LS273	REQTIM	C5
	A01-07(09)		TO	24.00	-1.20	1.7	Y	74LS124	74LS124	REQTIM	D2
				-0.40(0.02)/24.00(-1.20)							
%A04-06	A06-09(11)		TI	-2.00	0.05		CLK	74S175	74S175	RQSYNC	B8
	A04-06(09)		TO	20.00	-1.00	1.8		74S00	74S00	RQSYNC	B7
				-2.00(0.05)/20.00(-1.00)							
%A04-08	B03-13(16)		TI	-2.00	0.05			74S04	74S040	REQU	D4
	A04-08(11)		TO	20.00	-1.00	1.2		74S00	74S00	REQU	D3
				-2 00(0.05)/20.00(-1.00)							
%A04-11	B14-01(04)		TI	-6.00	0.15		-CLR1	74S74	74S74	REQLM	C4
	B14-02(05)		TI	-2.00	0.05	BARE	D1	74S74	74S74	REQLM	C4
	A04-11(14)		TO	20.00	-1.00	5.2		74S00	OS00L	REQLM	B3
				-8.00(0.20)/20.00(-1.00)				6.8			
%A05-04	B08-12(15)		TI	-2.00	0.05		D2	74S74	74S74	RQSYNC	C3
	B08-13(16)		TI	-6.00	0.15	BARE	-CLR2	74S74	74S74	RQSYNC	C3
	A05-04(07)		TO	20.00	-1.00	2.5		74S02	74S020	RQSYNC	C2
	A04-01(04)		TIS	-2.00	0.05	1.0		74S00	74S00	RQSYNC	C4
				-10.00(0.25)/20.00(-1.00)				6.6			
%A05-10	B12-05(08)		TI	-2.00	0.05			74S02	74S02	REQLM	A7
	A05-10(13)		TO	20.00	-1.00	3.8		74S02	OS02L	REQLM	A6
				-2.00(0.05)/20.00(-1.00)							
%A05-13	B20-02(05)		TIS	-2.00	0.05			74S00	74S00	DATCTL	A1
	A05-13(16)		TO	20.00	-1.00	7.7		74S02	OS02L	DATCTL	A1
				-2.00(0.05)/20.00(-1.00)							
%A09-11	D05-10(13)		TIS	-2.00	0.05			74S00	74S00	UBMAST	B2
	A09-11(14)		TO	20.00	-1.00	4.4	OUT	74S32	74S32	UBMAST	B1
				-2.00(0.05)/20.00(-1.00)							
%A11-03	C04-11(14)		TIS	-2.00	0.05			74S11	74S110	DBGIN	D7
	A11-03(06)		TO	20.00	-1.00	4.4		74S00	74S00	DBGIN	D6
	A12-05(08)		TIS	-2.00	0.05	1.0		74S08	74S080	DBGIN	D7
	A14-09(12)		TIS	-2.00	0.05	1.8		74S10	74S100	DBGIN	D7
				-6.00(0.15)/20.00(-1.00)				10.2			
%A11-06	A17-17		TI	-0.40	0.05		IN5	74S241	74S241	DBGOUT	D2
	A11-06(09)		TO	20.00	-1.00	3.8		74S00	74S00	DBGOUT	D1
				-0.40(0.05)/20.00(-1.00)							
%A12-03	A12-03(06)		TO	20.00	-1.00			74S08	74S08	DBGIN	C6
	A09-01(04)		TI	-2.00	0.05	2.0	IN	74S32	74S32	DBGIN	C7
				-2.00(0.05)/20.00(-1.00)							

LISPM B: , Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
%A14-12	A14-12(15)	.	TO	20.00	-1.00			74S10	74S100	DBGIN	C6
	A09-02(05)	!	TI	-2.00	0.05	3.3	IN	74S32	74S32	DBGIN	C7
				-2.00(0.05)/20.00(-1.00)							
%B01-09	B01-09	.	TO	8.00	-0.40		Q3	74LS273	74LS273	REQTIM	C5
	A02-14(16)	!	TI	-0.25	0.03	2.1	ADE	74S288	74S288	REQTIM	C7
				-0.25(0.03)/8.00(-0.40)							
%B01-12	B01-12	.	TO	8.00	-0.40		Q4	74LS273	74LS273	REQTIM	C5
	A02-13(15)	!	TI	-0.25	0.03	1.9	ADD	74S288	74S288	REQTIM	C7
				-0.25(0.03)/8.00(-0.40)							
%B01-15	B01-15	.	TO	8.00	-0.40		Q5	74LS273	74LS273	REQTIM	C5
	A02-12(14)	!	TI	-0.25	0.03	1.6	ADC	74S288	74S288	REQTIM	C7
				-0.25(0.03)/8.00(-0.40)							
%B01-16	B01-16	.	TO	8.00	-0.40		Q6	74LS273	74LS273	REQTIM	C5
	A02-11(13)	!	TI	-0.25	0.03	1.4	ADB	74S288	74S288	REQTIM	C7
				-0.25(0.03)/8.00(-0.40)							
%B01-19	B01-19	.	TO	8.00	-0.40		Q7	74LS273	74LS273	REQTIM	C5
	A02-10(12)	!	TI	-0.25	0.03	1.1	ADA	74S288	74S288	REQTIM	C7
				-0.25(0.03)/8.00(-0.40)							
%B03-08	B03-08(11)	.	TO	20.00	-1.00			74S04	74S04	REQTIM	C1
	A01-06(08)	!	TI	-0.40	0.02	2.3	EN	74LS124	74LS124	REQTIM	D2
				-0.40(0.02)/20.00(-1.00)							
%B03-12	E06-13(16)	.	TI	-2.00	0.05			74S260	74S260	REQU	D5
	B03-12(15)	!	TO	20.00	-1.00	4.0		74S04	74S040	REQU	D4
				-2.00(0.05)/20.00(-1.00)							
%B05-06	B05-06(09)	.	TO	20.00	-1.00			74S11	74S11	REQERR	A3
	B02-02	!	TI	-1.60	0.04	2.1	J1	74 276	74276	REQERR	B4
				-1.60(0.04)/20.00(-1.00)							
%B05-08	B05-08(11)	.	TO	20.00	-1.00			74S11	74S11	REQERR	C3
	A03-11(13)	!	TI	-0.40	0.02	2.1	J2	74LS112	74LS112-1		REQERR C4
				-0.40(0.02)/20.00(-1.00)							
%B05-12	C07-03(06)	.	TI	-2.00	0.05		IN2	MTD100	MTD100	RQSYNC	C8
	B05-12(15)	!	TO	20.00	-1.00	1.8		74S11	74S110	RQSYNC	C5
				-2.00(0.05)/20.00(-1.00)							
%B08-09	B08-09(12)	.	TO	20.00	-1.00		Q2	74S74	74S74	RQSYNC	C3
	A04-02(05)	!	TIS	-2.00	0.05	3.2		74S00	74S00	RQSYNC	C4
				-2.00(0.05)/20.00(-1.00)							
%B12-13	B12-13(16)	.	TO	20.00	-1.00			74S02	74S02	REQUB	C1
	B10-13(16)	!	TI	-6.00	0.15	1.4	-CLR2	74S74	74S74	REQUB	C2
				-6.00(0.15)/20.00(-1.00)							
%B16-03	B16-03(06)	.	TO	20.00	-1.00			74S08	74S080	REQTIM	C4
	B01-01	!	TI	-0.40	0.02	8.0	-CLR	74LS273	74LS273	REQTIM	C5
				-0.40(0.02)/20.00(-1.00)							

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1606

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
%B16-06 B16-06(09)	.	TO	20.00	-1.00			74S08	74S08	REQERR	A3
B02-09	!	TI	-1.60	0.04	7.4	J2	74 276	74276	REQERR	B4
			-1.60(0.04)/20.00(-1.00)							
%B19-12 B19-12(15)	.	TO	20.00	-1.00			74S04	74S04	REQLM	A2
R17-09(12)	!	TI	-2.00	0.05	1.5		74S02	74S02O	REQLM	A3
			-2.00(0.05)/20.00(-1.00)							
%C06-06 C06-06(09)	.	TO	20.00	-1.00			74S51	74S51A	REQERR	D1
B13-11(14)	!	TI	-2.00	0.05	4.5		74S04	OS04L	REQERR	D2
			-2.00(0.05)/20.00(-1.00)							
%C06-08 D20-12(15)	.	TI	-2.00	0.05			74S86	S86L	REQUB	A8
C06-08(11)	!	TO	20.00	-1.00	7.5		74S51	74S51A	REQUB	B7
			-2.00(0.05)/20.00(-1.00)							
%C07-10 C07-10(13)	.	TO	16.00	-1.00		OUT2	MTD100	MTD100	RQSYNC	C6
B14-11(14)	!	TI	-4.00	0.10	4.1	-CLK2	74S74	74S74	RQSYNC	C7
			-4.00(0.10)/16.00(-1.00)							
%C07-12 C07-12(15)	.	TO	16.00	-1.00		OUT1	MTD100	MTD100	REQUB	B6
C06-01(04)	!	TIS	-2.00	0.05	1.3		74S51	74S51A	REQUB	B7
			-2.00(0.05)/16.00(-1.00)							
%C09-10 C11-04(07)	.	TIS	-2.00	0.05			74S64	74S64	REQLM	D6
C09-10(13)	!	TO	20.00	-1.00	1.2	60NS	TD100	TD100	REQLM	D4
			-2.00(0.05)/20.00(-1.00)							
%C13-06 C13-06(09)	.	TO	20.00	-1.00			74S10	74S100	DATCTL	D6
B20-12(15)	!	TIS	-2.00	0.05	4.5		74S00	74S00	DATCTL	D7
			-2.00(0.05)/20.00(-1.00)							
%C14-06 C14-06(09)	.	TO	20.00	-1.00			74S51	74S51A	DATCTL	C6
B13-05(08)	!	TI	-2.00	0.05	1.7		74S04	OS04L	DATCTL	C7
			-2.00(0.05)/20.00(-1.00)							
%C14-08 C14-08(11)	\	TO	20.00	-1.00			74S51	74S51A	REQLM	C2
A04-13(16)	,!	TIS	(-2.00)	0.05	6.1		74S00	OS00L	REQLM	B3
A04-12(15)	!	TIS	-2.00	0.05	BARE		74S00	OS00L	REQLM	B3
			-2.00(0.10)/20.00(-1.00)				7.7			
%D01-08 D04-11(14)	.	TI	-4.00	0.10		-CLK2	74S74	74S74	UBMAST	D4
D01-08(11)	!	TO	16.00	-1.00	2.0	OUT3	MTD100	MTD100	UBMAST	D3
			-4.00(0.10)/16.00(-1.00)							
%D03-05 E02-04(07)	.	TIS	-2.00	0.05			74S08	74S08O	REQERR	C3
D03-05(08)	!	TO	8.00	-0.40	1.6	Q1	74LS74	74LS74I	REQERR	D4
			-2.00(0.05)/8.00(-0.40)							
%D03-09 E04-01(07)	.	TI	-2.00	0.05		IN	74S32	74S32	REQU	D8
D03-09(12)	!	TO	8.00	-0.40	1.4	Q2	74LS74	LS74	REQU	D7
			-2.00(0.05)/8.00(-0.40)							
%D05-06 D05-06(09)	.	TO	20.00	-1.00			74S00	74S00	RQSYNC	C4
B05-01(04)	!	TIS	-2.00	0.05	3.1		74S11	74S110	RQSYNC	C5
			-2.00(0.05)/20.00(-1.00)							

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
%D05-08	D05-08(11)	.	TO	20.00	-1.00			74S00	74S00	UBMAST	B2
	D04-01(04)	i	TI	-6.00	0.15	1.4	-CLR1	74S74	74S74	UBMAST	C4
				-6.00(0.15)/20.00(-1.00)							
%D05-11	D17-11	.	TI	-0.40	0.02		CLK	74LS374	74LS374	UBINTC	D4
	D05-11(14)	i	TO	20.00	-1.00	6.5		74S00	74S000	UBINTC	D2
				-0.40(0.02)/20.00(-1.00)							
%D13-05	D13-12(15)	.	TIP	-0.40	0.02		D2	74LS74	74LS74	UBINTC	C7
	D13-05(08)	i	TO	8.00	-0.40	.8	Q1	74LS74	74LS74	UBINTC	C6
				-0.40(0.02)/8.00(-0.40)							
%D14-08	D14-08(11)	.	TO	8.00	-0.40		-Q2	74LS74	74LS74	UBINTC	B4
	D14-04(07)	i	TIP	-0.80	0.04	.9	-SET	74LS74	74LS74	UBINTC	A4
				-0.80(0.04)/8.00(-0.40)							
%D15-08	D15-08(11)	.	TO	8.00	-0.40		-Q2	74LS74	74LS74	UBINTC	B2
	D15-04(07)	i	TIP	-0.80	0.04	.9	-SET	74LS74	74LS74	UBINTC	A2
				-0.80(0.04)/8.00(-0.40)							
%D20-03	D20-03(06)	.	TO	20.00	-1.00			74S86	74S86	REQERR	A2
	B05-03(06)	i	TIS	-2.00	0.05	8.3		74S11	74S11	REQERR	A3
				-2.00(0.05)/20.00(-1.00)							
%D20-06	D20-06(09)	.	TO	20.00	-1.00			74S86	74S86	REQERR	C2
	B05-11(14)	i	TIS	-2.00	0.05	8.0		74S11	74S11	REQERR	C3
				-2.00(0.05)/20.00(-1.00)							
%D20-08	D20-08(11)	.	TO	20.00	-1.00			74S86	74S860	REQERR	A2
	B16-04(07)	i	TIS	-2.00	0.05	3.8		74S08	74S08	REQERR	A3
				-2.00(0.05)/20.00(-1.00)							
%E01-08	F07-05(07)	.	TI	-1.60	0.04		IN4	DM8838	8838	UBMAST	C8
	E01-08(11)	i	TO	20.00	-1.00	3.3		74S00	74S000	UBMAST	B6
				-1.60(0.04)/20.00(-1.00)							
%E01-11	F07-02(04)	.	TI	-1.60	0.04		IN3	DM8838	8838	UBMAST	C8
	E01-11(14)	i	TO	20.00	-1.00	3.3		74S00	74S000	UBMAST	B6
				-1.60(0.04)/20.00(-1.00)							
%E02-06	E02-06(09)	.	TO	20.00	-1.00			74S08	74S080	REQERR	C3
	D03-02(05)	i	TIP	-0.40	0.02	2.0	D1	74LS74	74LS74I	REQERR	D4
				-0.40(0.02)/20.00(-1.00)							
%E04-03	E04-03(06)	.	TO	20.00	-1.00		OUT	74S32	74S320	REQU	A1
	E02-13(16)	i	TIS	-2.00	0.05	1.2		74S08	74S080	REQU	A2
				-2.00(0.05)/20.00(-1.00)							
%E04-11	E04-11(14)	.	TO	20.00	-1.00		OUT	74S32	OS32L	UBCYC	A5
	B18-13(16)	i	TI	-2.00	0.05	8.3	IN	74S32	OS32L	UBCYC	A6
				-2.00(0.05)/20.00(-1.00)							
%E05-08	E05-08(11)	.	TO	20.00	-1.00			74S04	74S040	REQU	D6
	D03-11(14)	i	TIP	-0.80	0.04	2.2	-CLK2	74LS74	LS74	REQU	D7
				-0.80(0.04)/20.00(-1.00)							

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
%E06-05	E06-05(08)	.	TO	20.00	-1.00			74S260	74S260	REQU	D5
	E05-09(12)	i	TI	-2.00	0.05	.7		74S04	74S040	REQU	D6
				-2.00(0.05)/20.00(-1.00)							
%E08-09	E08-09(11)	.	TO	20.00	-1.00			74S133	74S133	UBCYC	B1
	E07-01(03)	i	TI	-2.00	0.05	1.5	1G	74S139	74S139	UBCYC	B3
				-2.00(0.05)/20.00(-1.00)							
%E09-03	E09-03(06)	.	TO	20.00	-1.00			74S08	S08L	REQLM	C1
	C14-13(16)	i	TIS	-2.00	0.05	4.1		74S51	74S51A	REQLM	C2
				-2.00(0.05)/20.00(-1.00)							
%E09-06	E09-06(09)	.	TO	20.00	-1.00			74S08	S08L	REQLM	C1
	C14-01(04)	i	TIS	-2.00	0.05	4.1		74S51	74S51A	REQLM	C2
				-2.00(0.05)/20.00(-1.00)							
%E24-09	E24-09(11)	.	TO	20.00	-1.00		E	93S48	93S48	XAPAR	C2
	E23-11(13)	i	TI	-0.80	0.02	1.0	I	93S48	93S48	XAPAR	C6
				-0.80(0.02)/20.00(-1.00)							
%F01-08	F02-09(12)	.	TI	-2.00	0.05			74S02	74S020	REQU	D4
	F01-08(11)	i	TO	20.00	-1.00	1.0	100NS	TD100	TD100	REQU	D2
				-2.00(0.05)/20.00(-1.00)							
%F01-10	F03-09(12)	.	TIS	-2.00	0.05			74S00	74S00	REQU	C5
	F01-10(13)	i	TO	20.00	-1.00	1.5	60NS	TD100	TD100	REQU	D2
				-2.00(0.05)/20.00(-1.00)							
%F02-01	F02-01(04)	.	TO	20.00	-1.00			74S02	74S02	UBCYC	B6
	E03-04(06)	i	TI	-2.00	0.05	1.5	G2A	74S138	74S138	UBCYC	B7
				-2.00(0.05)/20.00(-1.00)							
%F02-04	F03-10(13)	.	TIS	-2.00	0.05			74S00	74S00	REQU	C5
	F02-04(07)	i	TO	20.00	-1.00	1.3		74S02	74S020	REQU	C4
				-2.00(0.05)/20.00(-1.00)							
%F02-10	F02-10(13)	.	TO	20.00	-1.00			74S02	74S020	REQU	D4
	E06-01(04)	i	TI	-2.00	0.05	2.7		74S260	74S260	REQU	D5
				-2.00(0.05)/20.00(-1.00)							
%F02-13	F02-13(16)	.	TO	20.00	-1.00			74S02	74S020	REQU	D4
	E06-02(05)	i	TI	-2.00	0.05	2.5		74S260	74S260	REQU	D5
				-2.00(0.05)/20.00(-1.00)							
%F03-03	F03-03(06)	.	TO	20.00	-1.00			74S00	74S00	UBCYC	D3
	E07-15(17)	i	TI	-2.00	0.05	3.1	2G	74S139	74S139	UBCYC	D4
				-2.00(0.05)/20.00(-1.00)							
-ADR0	H										
	J09-16	\					CON		CLM	B4	
	A25-17	.I	TI	-0.20	0.02	1.7	IN5	74LS240	74LS240	LMADR	B7
	A25-08	I	TI	-0.20	0.02	.9	IN4	74LS240	74LS240	LMADR	B7
				-0.40/0.00		4.1					
-ADR1	H										
	J09-15	\					CON		CLM	B4	
	A25-06	.I	TI	-0.20	0.02	1.7	IN3	74LS240	74LS240	LMADR	B7
	A25-15	I	TI	-0.20	0.02	.7	IN6	74LS240	74LS240	LMADR	B7
				-0.40/0.00		3.9					

LISPM Bus Interface CADR1;XAUG WLR ' -DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-ADR10	H										
	J09-06	\					CON		CLM	A4	
	A27-04	.!	TI	-0.20	0.02	3.0	IN2	74LS240	74LS240	LMADR	B2
	A27-13	!	TI	-0.20	0.02	.9	IN7	74LS240	74LS240	LMADR	B2
				-0.40/0.00		5.4					
-ADR11	H										
	J09-05	\					CON		CLM	A4	
	A27-02	.!	TI	-0.20	0.02	3.1	IN1	74LS240	74LS240	LMADR	B2
	A27-11	!	TI	-0.20	0.02	1.3	IN8	74LS240	74LS240	LMADR	B2
				-0.40/0.00		5.9					
-ADR12	H										
	J09-04	\					CON		CLM	A4	
	A23-17	.!	TI	-0.20	0.02	1.8	IN5	74LS240	74LS240	LMADR	D7
	A23-08	!	TI	-0.20	0.02	.9	IN4	74LS240	74LS240	LMADR	D7
				-0.40/0.00		4.2					
-ADR13	H										
	J09-03	\					CON		CLM	A4	
	A23-06	.!	TI	-0.20	0.02	1.8	IN3	74LS240	74LS240	LMADR	D7
	A23-15	!	TI	-0.20	0.02	.7	IN6	74LS240	74LS240	LMADR	D7
				-0.40/0.00		4.0					
-ADR14	H										
	J09-02	\					CON		CLM	A4	
	A23-04	.!	TI	-0.20	0.02	1.7	IN2	74LS240	74LS240	LMADR	D7
	A23-13	!	TI	-0.20	0.02	.9	IN7	74LS240	74LS240	LMADR	D7
				-0.40/0.00		4.1					
-ADR15	H										
	J09-01	\					CON		CLM	A4	
	A23-02	.!	TI	-0.20	0.02	1.7	IN1	74LS240	74LS240	LMADR	D7
	A23-11	!	TI	-0.20	0.02	1.3	IN8	74LS240	74LS240	LMADR	D7
				-0.40/0.00		4.5					
-ADR16	H										
	J12-20	\					CON		CLM	C3	
	A24-17	.!	TI	-0.20	0.02	3.5	IN5	74LS240	74LS240	LMADR	D5
	A24-08	!	TI	-0.20	0.02	.9	IN4	74LS240	74LS240	LMADR	D5
				-0.40/0.00		5.9					
-ADR17	H										
	C12-13(15)	\	TI	-2.00	0.05			74S260	74S2600	REQLM	A2
	A24-15	.!	TI	-0.20	0.02	6.8	IN6	74LS240	74LS240	LMADR	D5
	J12-19	!					CON		CLM	C3	
				-2.20/0.00		11.8					
-ADR18	H										
	C12-12(15)	\	TI	-2.00	0.05			74S260	74S2600	REQLM	A2
	A24-13	.!	TI	-0.20	0.02	6.8	IN7	74LS240	74LS240	LMADR	D5
	J12-18	!					CON		CLM	B3	
				-2.20/0.00		11.8					
-ADR19	H										
	C12-03(06)	\	TI	-2.00	0.05			74S260	74S2600	REQLM	A2
	A24-11	.!	TI	-0.20	0.02	7.0	IN8	74LS240	74LS240	LMADR	D5
	J12-17	!					CON		CLM	B3	
				-2.20/0.00		11.9					

LISP Bus Interface CADR1:XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-ADR2	H										
	J09-14	\					CON		CLM	B4	
	A25-04	.!	TI	-0.20	0.02	1.6	IN2	74LS240	74LS240	LMADR	B7
	A25-13	!	TI	-0.20	0.02	.9	IN7	74LS240	74LS240	LMADR	B7
				-0.40/0.00		4.0					
-ADR20	H										
	J12-16	\					CON		CLM	B3	
	D18-08	.!	TI	-0.20	0.02	7.8	IN4	74LS240	74LS240	UBINTC	B6
	C12-02(05)	!	TI	-2.00	0.05	3.8		74S260	74S2600	REQLM	A2
				-2.20/0.00		13.1					
-ADR21	H										
	J12-15	\					CON		CLM	B3	
	D18-06	.!	TI	-0.20	0.02	7.6	IN3	74LS240	74LS240	UBINTC	B6
	C12-01(04)	!	TI	-2.00	0.05	3.7		74S260	74S2600	REQLM	A2
				-2.20/0.00		12.8					
-ADR3	H										
	J09-13	\					CON		CLM	B4	
	A25-02	.!	TI	-0.20	0.02	1.5	IN1	74LS240	74LS240	LMADR	B7
	A25-11	!	TI	-0.20	0.02	1.3	IN8	74LS240	74LS240	LMADR	B7
				-0.40/0.00		4.3					
-ADR4	H										
	J09-12	\					CON		CLM	B4	
	A26-17	.!	TI	-0.20	0.02	2.3	IN5	74LS240	74LS240	LMADR	B5
	A26-08	!	TI	-0.20	0.02	.9	IN4	74LS240	74LS240	LMADR	B5
				-0.40/0.00		4.7					
-ADR5	H										
	J09-11	\					CON		CLM	B4	
	A26-06	.!	TI	-0.20	0.02	2.3	IN3	74LS240	74LS240	LMADR	B5
	A26-15	!	TI	-0.20	0.02	.7	IN6	74LS240	74LS240	LMADR	B5
				-0.40/0.00		4.5					
-ADR6	H										
	J09-10	\					CON		CLM	B4	
	A26-04	.!	TI	-0.20	0.02	2.3	IN2	74LS240	74LS240	LMADR	B5
	A26-13	!	TI	-0.20	0.02	.9	IN7	74LS240	74LS240	LMADR	B5
				-0.40/0.00		4.7					
-ADR7	H										
	J09-09	\					CON		CLM	A4	
	A26-02	.!	TI	-0.20	0.02	2.2	IN1	74LS240	74LS240	LMADR	B5
	A26-11	!	TI	-0.20	0.02	1.3	IN8	74LS240	74LS240	LMADR	B5
				-0.40/0.00		5.0					
-ADR8	H										
	J09-08	\					CON		CLM	A4	
	A27-17	.!	TI	-0.20	0.02	3.1	IN5	74LS240	74LS240	LMADR	B2
	A27-08	!	TI	-0.20	0.02	.9	IN4	74LS240	74LS240	LMADR	B2
				-0.40/0.00		5.5					
-ADR9	H										
	J09-07	\					CON		CLM	A4	
	A27-06	.!	TI	-0.20	0.02	3.0	IN3	74LS240	74LS240	LMADR	B2
	A27-15	!	TI	-0.20	0.02	.7	IN6	74LS240	74LS240	LMADR	B2
				-0.40/0.00		5.2					

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
ADR=UNIBUS												
C12-05(08)	\	TO	20.00	-1.00			74S260	74S2600	REQLM	A2		
B18-10(13)	.!	TI	-2.00	0.05	3.9	IN	74S32	74S320	REQLM	A3		
B19-13(16)	!	TI	-2.00	0.05	1.0		74S04	74S04	REQLM	A2		
			-4.00(0.10)/20.00(-1.00)				6.4					
-ADRPAR H												
J12-14	.					CON		CLM	B3			
D20-10(13)	!	TI	-2.00	0.05	6.7		74S86	74S860	REQERR	A2		
			-2.00/0.00									
ANY GRANT												
D09-12	\	TOT	12.00	-3.20		D6	74S472	74S472	UPRIOR	C3		
D07-13	.!	TI	-0.36	0.02	1.5	I2	25LS2519		25LS2519		UPRIOR	C6
C01-01(03)	!	TI	-0.80	0.02	4.1	-CLR	74LS163	74LS163	UPRIOR	D1		
			-1.16(0.04)/12.00(-3.20)				7.1					
ANY GRANT DLYD												
J01-13	.					CON		CTP	C3			
D08-17	!.	TI	-0.36	0.02	5.5	-CLK E	25LS2519		25LS2519		UPRIOR	C4
D07-17	.!	TI	-0.36	0.02	.9	-CLK E	25LS2519		25LS2519		UPRIOR	C6
D07-11	!	TOT	12.00	-2.60	1.0	Y2	25LS2519		25LS2519		UPRIOR	C6
			-0.72(0.04)/12.00(-2.60)				10.4					
-ANY GRANT DLYD									ONE PIN RUN	____ 0		
D07-12		TOT	12.00	-2.60		W2	25LS2519		25LS2519		UPRIOR	C6
									UNUSED SIGNAL	____ 1		
ANY INT GRANT;(NOT USED)									ONE PIN RUN	____ 0		
D09-13		TOT	12.00	-3.20		D7	74S472	74S472	UPRIOR	C3		
									UNUSED SIGNAL	____ 1		
-ANY PAR ERROR H												
J01-12	.					CON		CTP	B3			
C03-08(11)	!	TO	8.00	-0.40	4.3		74LS27	74LS27	REQERR	A7		
			0.00/8.00									
BBSY IN H												
F07-03(05)	.	TO	16.00	-0.40		OUT3	DM8838	8838	UBMAST	C8		
C03-01(04)	!	TIP	-0.40	0.02	4.4		74LS27	74LS270	UBMAST	A5		
			-0.40(0.02)/16.00(-0.40)									
BG4O									ONE PIN RUN	____ 0		
D08-03		TOT	12.00	-2.60		Y0	25LS2519		25LS2519		UPRIOR	C4
									UNUSED SIGNAL	____ 1		
-BG4O F13-02(05)	.	TIS	-4.00	0.10			74S38	74S380	UPRIOR	A7		
D08-02	!	TOT	12.00	-2.60	4.0	W0	25LS2519		25LS2519		UPRIOR	C4
			-4.00(0.10)/12.00(-2.60)									
BG4P D09-11	.	TOT	12.00	-3.20		D5	74S472	74S472	UPRIOR	C3		
D08-01	!	TI	-0.36	0.02	1.7	I0	25LS2519		25LS2519		UPRIOR	C4
			-0.36(0.02)/12.00(-3.20)									
-BG5O									ONE PIN RUN	____ 0		
D08-06		TOT	12.00	-2.60		Y1	25LS2519		25LS2519		UPRIOR	C4
									UNUSED SIGNAL	____ 1		

LISPM Bus Interface CADR1;XAUG WLR 4-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
-BG5O	F13-05(08)	.	TIS	-4.00	0.10			74S38	74S380	UPRIOR	A7	
	D08-05	i	TOT	12.00	-2.60	4.0	W1	25LS2519		25LS2519		UPRIOR C4
				-4.00(0.10)/12.00(-2.60)								
BG5P	D09-09	.	TOT	12.00	-3.20		D4	74S472	74S472	UPRIOR	C3	
	D08-04	i	TI	-0.36	0.02	1.2	I1	25LS2519		25LS2519		UPRIOR C4
				-0.36(0.02)/12.00(-3.20)								
BG6O										ONE PIN RUN		____ 0
	D08-11		TOT	12.00	-2.60		Y2	25LS2519		25LS2519		UPRIOR C4
										UNUSED SIGNAL		____ 1
-BG6O	F13-09(12)	.	TIS	-4.00	0.10			74S38	74S380	UPRIOR	B7	
	D08-12	i	TOT	12.00	-2.60	3.8	W2	25LS2519		25LS2519		UPRIOR C4
				-4.00(0.10)/12.00(-2.60)								
BG6P	D09-08	.	TOT	12.00	-3.20		D3	74S472	74S472	UPRIOR	C3	
	D08-13	i	TI	-0.36	0.02	.6	I2	25LS2519		25LS2519		UPRIOR C4
				-0.36(0.02)/12.00(-3.20)								
BG7O										ONE PIN RUN		____ 0
	D08-14		TOT	12.00	-2.60		Y3	25LS2519		25LS2519		UPRIOR C4
										UNUSED SIGNAL		____ 1
-BG7O	F13-12(15)	.	TIS	-4.00	0.10			74S38	74S380	UPRIOR	B7	
	D08-15	i	TOT	12.00	-2.60	3.8	W3	25LS2519		25LS2519		UPRIOR C4
				-4.00(0.10)/12.00(-2.60)								
BG7P	D09-07	.	TOT	12.00	-3.20		D2	74S472	74S472	UPRIOR	C3	
	D08-16	i	TI	-0.36	0.02	.7	I3	25LS2519		25LS2519		UPRIOR C4
				-0.36(0.02)/12.00(-3.20)								
BR4	F06-06(08)	.	TO	16.00	-0.40		OUT4	DM8838	8838	UPRIOR	D7	
	D10-14(16)	i	TI	-2.00	0.05	3.8	6D	74S174	74S174	UPRIOR	C1	
				-2.00(0.05)/16.00(-0.40)								
BR4D	D10-15(17)	.	TO	20.00	-1.00		6Q	74S174	74S174	UPRIOR	C1	
	D09-05	i	TI	-0.25	0.04	1.3	A4	74S472	74S472	UPRIOR	C3	
				-0.25(0.04)/20.00(-1.00)								
BR5	F15-13(15)	.	TO	16.00	-0.40		OUT1	DM8838	8838	UPRIOR	D5	
	D10-13(15)	i	TI	-2.00	0.05	3.8	5D	74S174	74S174	UPRIOR	C1	
				-2.00(0.05)/16.00(-0.40)								
BR5D	D10-12(14)	.	TO	20.00	-1.00		5Q	74S174	74S174	UPRIOR	C1	
	D09-04	i	TI	-0.25	0.04	1.3	A3	74S472	74S472	UPRIOR	C3	
				-0.25(0.04)/20.00(-1.00)								
BR6	F15-10(12)	.	TO	16.00	-0.40		OUT2	DM8838	8838	UPRIOR	D5	
	D10-11(13)	i	TI	-2.00	0.05	3.8	4D	74S174	74S174	UPRIOR	C1	
				-2.00(0.05)/16.00(-0.40)								
BR6D	D10-10(12)	.	TO	20.00	-1.00		4Q	74S174	74S174	UPRIOR	C1	
	D09-03	i	TI	-0.25	0.04	1.4	A2	74S472	74S472	UPRIOR	C3	
				-0.25(0.04)/20.00(-1.00)								

!ISPA Bus Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
BR7	F15-03(05)	.	TO	16.00	-0.40		OUT3	DM8838	8838	UPRIOR	D5
	D10-06(08)	I	TI	-2.00	0.05	3.6	3D	74S174	74S174	UPRIOR	C1
				-2.00(0.05)/16.00(-0.40)							
BR7D	D10-07(09)	.	TO	20.00	-1.00		3Q	74S174	74S174	UPRIOR	C1
	D09-02	I	TI	-0.25	0.04	1.3	A1	74S472	74S472	UPRIOR	C3
				-0.25(0.04)/20.00(-1.00)							
BUS → LM											
	B18-03(06)	\	TO	20.00	-1.00		OUT	74S32	74S32	DATCTL	A1
	B27-11	.I	TI	-0.40	0.02	5.3	A - B	8304	8304	LMDATA	B8
	B28-11	I.	TI	-0.40	0.02	.9	A - B	8304	8304	LMDATA	B6
	B29-11	.I	TI	-0.40	0.02	.9	A - B	8304	8304	LMDATA	B4
	B30-11	I	TI	-0.40	0.02	.9	A - B	8304	8304	LMDATA	B2
				-1.60(0.08)/20.00(-1.00)				12.5			
-BUS→UB H											
	C18-06(09)	\	TO	20.00	-1.00			74S51	74S51A	DATCTL	A4
	D21-19	.I	TI	-0.20	0.02	2.3	-ENB	74LS244	74LS244	RBUF	D8
	D22-19	I.	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	RBUF	D6
	C22-19	.I	TI	-0.20	0.02	1.5	-ENB	74LS244	74LS244	RBUF	D4
	C23-19	I	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	RBUF	D2
				-0.80(0.08)/20.00(-1.00)				10.1			
BUS 0	F27-13(15)	\	TI	-0.54	0.03		IN3	26S10	26S10	XD	D8
	D27-03	.I	TOT	24.00	-15.00	3.0	OUT5	74LS244	74LS244	XBD	D8
	C30-07(09)	I.	TI	-0.80	0.02	2.0	I	93S48	93S48	BUSPAR	D1
	B27-08	.I	TOT	5.00	-0.40	2.4	A7	8304	8304	LMDATA	B8
	B23-03	I.	TOT	24.00	-15.00	2.5	OUT5	74LS244	74LS244	BUSSEL	B8
	B23-12	.I	TOT	24.00	-15.00	1.1	OUT4	74LS244	74LS244	BUSSEL	B8
	D21-17	I	TI	-0.20	0.02	2.4	IN5	74LS244	74LS244	RBUF	D8
				-1.54(0.07)/5.00(-0.40)			20.9				
BUS 0-11 PAR ODD											
	C30-09(11)	.	TO	20.00	-1.00		E	93S48	93S48	BUSPAR	D1
	C28-14(16)	I	TI	-0.80	0.02	1.6	I	93S48	93S48	BUSPAR	D7
				-0.80(0.02)/20.00(-1.00)							
BUS 1	D21-15	\	TI	-0.20	0.02		IN6	74LS244	74LS244	RBUF	D8
	B23-05	.I	TOT	24.00	-15.00	2.9	OUT6	74LS244	74LS244	BUSSEL	B8
	B23-14	I.	TOT	24.00	-15.00	.8	OUT3	74LS244	74LS244	BUSSEL	B8
	B27-07	.I	TOT	5.00	-0.40	2.1	A6	8304	8304	LMDATA	B8
	C30-06(08)	I.	TI	-0.80	0.02	2.4	I	93S48	93S48	BUSPAR	D1
	D27-05	.I	TOT	24.00	-15.00	2.1	OUT6	74LS244	74LS244	XBD	D8
	F27-11(13)	I	TI	-0.54	0.03	3.0	IN2	26S10	26S10	XD	D8
				-1.54(0.07)/5.00(-0.40)			20.8				
BUS 10	F28-05(07)	\	TI	-0.54	0.03		IN1	26S10	26S10	XD	D5
	D28-07	.I	TOT	24.00	-15.00	2.6	OUT7	74LS244	74LS244	XBD	D6
	C30-12(14)	I.	TI	-0.80	0.02	2.2	I	93S48	93S48	BUSPAR	D1
	B28-06	.I	TOT	5.00	-0.40	2.2	A5	8304	8304	LMDATA	B6
	B25-16	I.	TOT	24.00	-15.00	1.7	OUT2	74LS244	74LS244	BUSSEL	B3
	B25-07	.I	TOT	24.00	-15.00	.8	OUT7	74LS244	74LS244	BUSSEL	B3
	C22-13	I	TI	-0.20	0.02	2.1	IN7	74LS244	74LS244	RBUF	D4
				-1.54(0.07)/5.00(-0.40)			19.1				

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
BUS 11	F28-04(06)	\	TI	-0.54	0.03		IN0	26S10	26S10	XD	D5
	D28-09	.!	TOT	24.00	-15.00	2.3	OUT8	74LS244	74LS244	XBD	D6
	C30-11(13)	!.	TI	-0.80	0.02	2.2	I	93S48	93S48	BUSPAR	D1
	B28-05	.!	TOT	5.00	-0.40	2.4	A4	8304	8304	LMDATA	B6
	B25-18	!.	TOT	24.00	-15.00	1.7	OUT1	74LS244	74LS244	BUSSEL	B3
	B25-09	.!	TOT	24.00	-15.00	1.1	OUT8	74LS244	74LS244	BUSSEL	B3
	C22-11	!	TI	-0.20	0.02	2.1	IN8	74LS244	74LS244	RBUF	D4
				-1.54(0.07)/5.00(-0.40)			19.3				
BUS 12	E28-13(15)	\	TI	-0.54	0.03		IN3	26S10	26S10	XD	D3
	D28-12	.!	TOT	24.00	-15.00	1.2	OUT4	74LS244	74LS244	XBD	D6
	C29-07(09)	!.	TI	-0.80	0.02	1.6	I	93S48	93S48	BUSPAR	D4
	B28-04	.!	TOT	5.00	-0.40	2.1	A3	8304	8304	LMDATA	B6
	B26-12	!.	TOT	24.00	-15.00	1.3	OUT4	74LS244	74LS244	BUSSEL	B1
	B26-03	.!	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	BUSSEL	B1
	C23-17	!	TI	-0.20	0.02	2.1	IN5	74LS244	74LS244	RBUF	D2
				-1.54(0.07)/5.00(-0.40)			16.9				
BUS 12-23 PAR ODD											
	C29-09(11)	.	TO	20.00	-1.00		E	93S48	93S48	BUSPAR	D4
	C28-13(15)	!	TI	-0.80	0.02	1.1	I	93S48	93S48	BUSPAR	D7
				-0.80(0.02)/20.00(-1.00)							
BUS 13	E28-11(13)	\	TI	-0.54	0.03		IN2	26S10	26S10	XD	D3
	D28-14	.!	TOT	24.00	-15.00	1.6	OUT3	74LS244	74LS244	XBD	D6
	C29-06(08)	!.	TI	-0.80	0.02	1.5	I	93S48	93S48	BUSPAR	D4
	B28-03	.!	TOT	5.00	-0.40	2.1	A2	8304	8304	LMDATA	B6
	B26-14	!.	TOT	24.00	-15.00	1.3	OUT3	74LS244	74LS244	BUSSEL	B1
	B26-05	.!	TOT	24.00	-15.00	.8	OUT6	74LS244	74LS244	BUSSEL	B1
	C23-15	!	TI	-0.20	0.02	2.1	IN6	74LS244	74LS244	RBUF	D2
				-1.54(0.07)/5.00(-0.40)			16.9				
BUS 14	C23-13	\	TI	-0.20	0.02		IN7	74LS244	74LS244	RBUF	D2
	B26-07	.!	TOT	24.00	-15.00	2.1	OUT7	74LS244	74LS244	BUSSEL	B1
	B26-16	!.	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	BUSSEL	B1
	B28-02	.!	TOT	5.00	-0.40	1.2	A1	8304	8304	LMDATA	B6
	C29-05(07)	!.	TI	-0.80	0.02	2.1	I	93S48	93S48	BUSPAR	D4
	D28-16	.!	TOT	24.00	-15.00	1.4	OUT2	74LS244	74LS244	XBD	D6
	E28-05(07)	!	TI	-0.54	0.03	1.8	IN1	26S10	26S10	XD	D3
				-1.54(0.07)/5.00(-0.40)			16.9				
BUS 15	C23-11	\	TI	-0.20	0.02		IN8	74LS244	74LS244	RBUF	D2
	B26-09	.!	TOT	24.00	-15.00	2.1	OUT8	74LS244	74LS244	BUSSEL	B1
	B26-18	!.	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	BUSSEL	B1
	B28-01	.!	TOT	5.00	-0.40	1.2	A0	8304	8304	LMDATA	B6
	C29-04(06)	!.	TI	-0.80	0.02	2.1	I	93S48	93S48	BUSPAR	D4
	D28-18	.!	TOT	24.00	-15.00	1.3	OUT1	74LS244	74LS244	XBD	D6
	E28-04(06)	!	TI	-0.54	0.03	1.9	IN0	26S10	26S10	XD	D3
				-1.54(0.07)/5.00(-0.40)			17.2				
BUS 16	F29-13(15)	\	TI	-0.54	0.03		IN3	26S10	26S10	XD	B8
	D29-03	.!	TOT	24.00	-15.00	3.0	OUT6	74LS244	74LS244	XBD	D3
	C29-03(05)	!.	TI	-0.80	0.02	1.3	I	93S48	93S48	BUSPAR	D4
	B29-08	.!	TOT	5.00	-0.40	1.2	A7	8304	8304	LMDATA	B4
	D23-12(14)	!.	TI	-0.25	0.01	3.9	D3	29701	29701	RBUF	B8
	D19-12	.!	TOT	24.00	-15.00	2.5	OUT4	74LS244	74LS244	BUSSEL	D8
	D19-03	!	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	BUSSEL	D8
				-1.59(0.06)/5.00(-0.40)			20.5				

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
BUS 17	D19-05	\	TOT	24.00	-15.00		OUT6	74LS244	74LS244	BUSSEL	D8
	D19-14	.!	TOT	24.00	-15.00	.8	OUT3	74LS244	74LS244	BUSSEL	D8
	D23-10(12)	!.	TI	-0.25	0.01	2.5	D2	29701	29701	RBUF	B8
	F29-11(13)	.!	TI	-0.54	0.03	4.1	IN2	26S10	26S10	XD	B8
	D29-05	!.	TOT	24.00	-15.00	3.0	OUT6	74LS244	74LS244	XBD	D3
	C29-02(04)	.!	TI	-0.80	0.02	1.6	I	93S48	93S48	BUSPAR	D4
	B29-07	!	TOT	5.00	-0.40	1.2	A6	8304	8304	LMDATA	B4
				-1.59(0.06)/5.00(-0.40)			20.7				
BUS 18	D19-07	\	TOT	24.00	-15.00		OUT7	74LS244	74LS244	BUSSEL	D8
	D19-16	.!	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	BUSSEL	D8
	D23-06(08)	!.	TI	-0.25	0.01	2.2	D1	29701	29701	RBUF	B8
	F29-05(07)	.!	TI	-0.54	0.03	4.1	IN1	26S10	26S10	XD	B8
	D29-07	!.	TOT	24.00	-15.00	2.6	OUT7	74LS244	74LS244	XBD	D3
	C29-01(03)	.!	TI	-0.80	0.02	1.9	I	93S48	93S48	BUSPAR	D4
	B29-06	!	TOT	5.00	-0.40	1.2	A5	8304	8304	LMDATA	B4
				-1.59(0.06)/5.00(-0.40)			20.3				
BUS 19	D19-09	\	TOT	24.00	-15.00		OUT8	74LS244	74LS244	BUSSEL	D8
	D19-18	.!	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	BUSSEL	D8
	D23-04(06)	!.	TI	-0.25	0.01	2.2	D0	29701	29701	RBUF	B8
	F29-04(06)	.!	TI	-0.54	0.03	4.2	IN0	26S10	26S10	XD	B8
	D29-09	!.	TOT	24.00	-15.00	2.3	OUT8	74LS244	74LS244	XBD	D3
	C29-15(17)	.!	TI	-0.80	0.02	2.1	I	93S48	93S48	BUSPAR	D4
	B29-05	!	TOT	5.00	-0.40	1.5	A4	8304	8304	LMDATA	B4
				-1.59(0.06)/5.00(-0.40)			20.9				
BUS 2	D21-13	\	TI	-0.20	0.02		IN7	74LS244	74LS244	RBUF	D8
	B23-07	.!	TOT	24.00	-15.00	2.9	OUT7	74LS244	74LS244	BUSSEL	B8
	B23-16	!.	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	BUSSEL	B8
	B27-06	.!	TOT	5.00	-0.40	2.2	A5	8304	8304	LMDATA	B8
	C30-05(07)	!.	TI	-0.80	0.02	2.4	I	93S48	93S48	BUSPAR	D1
	D27-07	.!	TOT	24.00	-15.00	2.3	OUT7	74LS244	74LS244	XBD	D8
	F27-05(07)	!	TI	-0.54	0.03	2.6	IN1	26S10	26S10	XD	D8
				-1.54(0.07)/5.00(-0.40)			20.7				
BUS 20	C19-03	\	TOT	24.00	-15.00		OUT5	74LS244	74LS244	BUSSEL	D6
	C19-12	.!	TOT	24.00	-15.00	1.1	OUT4	74LS244	74LS244	BUSSEL	D6
	D24-12(14)	!.	TI	-0.25	0.01	3.1	D3	29701	29701	RBUF	B6
	E29-13(15)	.!	TI	-0.54	0.03	3.1	IN3	26S10	26S10	XD	B6
	D29-12	!.	TOT	24.00	-15.00	1.2	OUT4	74LS244	74LS244	XBD	D3
	C29-14(16)	.!	TI	-0.80	0.02	1.9	I	93S48	93S48	BUSPAR	D4
	B29-04	!	TOT	5.00	-0.40	1.7	A3	8304	8304	LMDATA	B4
				-1.59(0.06)/5.00(-0.40)			19.6				
BUS 21	C19-05	\	TOT	24.00	-15.00		OUT6	74LS244	74LS244	BUSSEL	D6
	C19-14	.!	TOT	24.00	-15.00	.8	OUT3	74LS244	74LS244	BUSSEL	D6
	D24-10(12)	!.	TI	-0.25	0.01	3.3	D2	29701	29701	RBUF	B6
	E29-11(13)	.!	TI	-0.54	0.03	3.1	IN2	26S10	26S10	XD	B6
	D29-14	!.	TOT	24.00	-15.00	1.6	OUT3	74LS244	74LS244	XBD	D3
	C29-13(15)	.!	TI	-0.80	0.02	1.6	I	93S48	93S48	BUSPAR	D4
	B29-03	!	TOT	5.00	-0.40	1.9	A2	8304	8304	LMDATA	B4
				-1.59(0.06)/5.00(-0.40)			19.8				
BUS 22	C19-07	\	TOT	24.00	-15.00		OUT7	74LS244	74LS244	BUSSEL	D6
	C19-16	.!	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	BUSSEL	D6
	D24-08(08)	!.	TI	-0.25	0.01	3.1	D1	29701	29701	RBUF	B6
	E29-05(07)	.!	TI	-0.54	0.03	3.1	IN1	26S10	26S10	XD	B6
	D29-16	!.	TOT	24.00	-15.00	1.8	OUT2	74LS244	74LS244	XBD	D3
	C29-12(14)	.!	TI	-0.80	0.02	1.3	I	93S48	93S48	BUSPAR	D4
	B29-02	!	TOT	5.00	-0.40	2.1	A1	8304	8304	LMDATA	B4
				-1.59(0.06)/5.00(-0.40)			19.7				

LISPM Bus Interface CADR1:XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
BUS 23	C19-09	\	TOT	24.00	-15.00		OUT8	74LS244	74LS244	BUSSEL	D6
	C19-18	.!	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	BUSSEL	D6
	D24-04(06)	!.	TI	-0.25	0.01	3.1	D0	29701	29701	RBUF	B6
	E29-04(06)	.!	TI	-0.54	0.03	3.2	IN0	26S10	26S10	XD	B6
	D29-18	!.	TOT	24.00	-15.00	1.9	OUT1	74LS244	74LS244	XBD	D3
	C29-11(13)	.!	TI	-0.80	0.02	1.0	I	93S48	93S48	BUSPAR	D4
	B29-01	!	TOT	5.00	-0.40	2.3	A0	8304	8304	LMDATA	B4
				-1.59(0.06)/5.00(-0.40)			20.1				
BUS 24	F30-13(15)	\	TI	-0.54	0.03		IN3	26S10	26S10	XD	B5
	D30-03	.!	TOT	24.00	-15.00	3.0	OUT5	74LS244	74LS244	XBD	D1
	B30-08	!.	TOT	5.00	-0.40	2.1	A7	8304	8304	LMDATA	B2
	C28-07(09)	.!	TI	-0.80	0.02	2.0	I	93S48	93S48	BUSPAR	D7
	D25-12(14)	!.	TI	-0.25	0.01	1.9	D3	29701	29701	RBUF	B4
	C20-12	.!	TOT	24.00	-15.00	3.1	OUT4	74LS244	74LS244	BUSSEL	D3
	C20-03	!	TOT	24.00	-15.00	1.1	OUT6	74LS244	74LS244	BUSSEL	D3
				-1.59(0.06)/5.00(-0.40)			20.7				
BUS 25	F30-11(13)	\	TI	-0.54	0.03		IN2	26S10	26S10	XD	B5
	D30-05	.!	TOT	24.00	-15.00	3.0	OUT6	74LS244	74LS244	XBD	D1
	B30-07	!.	TOT	5.00	-0.40	2.4	A6	8304	8304	LMDATA	B2
	C28-06(08)	.!	TI	-0.80	0.02	2.0	I	93S48	93S48	BUSPAR	D7
	D25-10(12)	!.	TI	-0.25	0.01	2.1	D2	29701	29701	RBUF	B4
	C20-14	.!	TOT	24.00	-15.00	3.3	OUT3	74LS244	74LS244	BUSSEL	D3
	C20-05	!	TOT	24.00	-15.00	.8	OUT6	74LS244	74LS244	BUSSEL	D3
				-1.59(0.06)/5.00(-0.40)			21.1				
BUS 26	F30-05(07)	\	TI	-0.54	0.03		IN1	26S10	26S10	XD	B5
	D30-07	.!	TOT	24.00	-15.00	2.6	OUT7	74LS244	74LS244	XBD	D1
	B30-06	!.	TOT	5.00	-0.40	2.7	A5	8304	8304	LMDATA	B2
	C28-05(07)	.!	TI	-0.80	0.02	2.0	I	93S48	93S48	BUSPAR	D7
	D25-06(08)	!.	TI	-0.25	0.01	2.4	D1	29701	29701	RBUF	B4
	C20-16	.!	TOT	24.00	-15.00	3.1	OUT2	74LS244	74LS244	BUSSEL	D3
	C20-07	!	TOT	24.00	-15.00	.8	OUT7	74LS244	74LS244	BUSSEL	D3
				-1.59(0.06)/5.00(-0.40)			21.1				
BUS 27	F30-04(06)	\	TI	-0.54	0.03		IN0	26S10	26S10	XD	B5
	D30-09	.!	TOT	24.00	-15.00	2.3	OUT8	74LS244	74LS244	XBD	D1
	B30-05	!.	TOT	5.00	-0.40	3.0	A4	8304	8304	LMDATA	B2
	C28-04(06)	.!	TI	-0.80	0.02	2.0	I	93S48	93S48	BUSPAR	D7
	D25-04(06)	!.	TI	-0.25	0.01	2.3	D0	29701	29701	RBUF	B4
	C20-18	.!	TOT	24.00	-15.00	3.1	OUT1	74LS244	74LS244	BUSSEL	D3
	C20-09	!	TOT	24.00	-15.00	1.1	OUT8	74LS244	74LS244	BUSSEL	D3
				-1.59(0.06)/5.00(-0.40)			21.3				
BUS 28	E30-13(15)	\	TI	-0.54	0.03		IN3	26S10	26S10	XD	B3
	D30-12	.!	TOT	24.00	-15.00	1.2	OUT4	74LS244	74LS244	XBD	D1
	B30-04	!.	TOT	5.00	-0.40	3.2	A3	8304	8304	LMDATA	B2
	C28-03(05)	.!	TI	-0.80	0.02	2.0	I	93S48	93S48	BUSPAR	D7
	D26-12(14)	!.	TI	-0.25	0.01	1.9	D3	29701	29701	RBUF	B2
	C21-12	.!	TOT	24.00	-15.00	3.1	OUT4	74LS244	74LS244	BUSSEL	D1
	C21-03	!	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	BUSSEL	D1
				-1.59(0.06)/5.00(-0.40)			20.0				
BUS 29	C21-05	\	TOT	24.00	-15.00		OUT6	74LS244	74LS244	BUSSEL	D1
	C21-14	.!	TOT	24.00	-15.00	.8	OUT3	74LS244	74LS244	BUSSEL	D1
	D26-10(12)	!.	TI	-0.25	0.01	3.3	D2	29701	29701	RBUF	B2
	E30-11(13)	.!	TI	-0.54	0.03	2.7	IN2	26S10	26S10	XD	B3
	D30-14	!.	TOT	24.00	-15.00	1.6	OUT3	74LS244	74LS244	XBD	D1
	C28-02(04)	.!	TI	-0.80	0.02	2.4	I	93S48	93S48	BUSPAR	D7
	B30-03	!	TOT	5.00	-0.40	2.0	A2	8304	8304	LMDATA	B2
				-1.59(0.06)/5.00(-0.40)			20.3				

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
BUS 3	D21-11	\	TI	-0.20	0.02		IN8	74LS244	74LS244	RBUF	D8
	B23-09	.!	TOT	24.00	-15.00	2.9	OUT8	74LS244	74LS244	BUSSEL	B8
	B23-18	!.	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	BUSSEL	B8
	B27-05	.!	TOT	5.00	-0.40	2.2	A4	8304	8304	LMDATA	B8
	C30-04(06)	!.	TI	-0.80	0.02	2.4	I	93S48	93S48	BUSPAR	D1
	D27-09	.!	TOT	24.00	-15.00	2.5	OUT8	74LS244	74LS244	XBD	D8
	F27-04(06)	!	TI	-0.54	0.03	2.3	IN0	26S10	26S10	XD	D8
				-1.54(0.07)/5.00(-0.40)			20.9				
BUS 30	C21-07	\	TOT	24.00	-15.00		OUT7	74LS244	74LS244	BUSSEL	D1
	C21-16	.!	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	BUSSEL	D1
	D26-06(08)	!.	TI	-0.25	0.01	3.1	D1	29701	29701	RBUF	B2
	E30-05(07)	.!	TI	-0.54	0.03	2.7	IN1	26S10	26S10	XD	B3
	D30-16	!.	TOT	24.00	-15.00	1.8	OUT2	74LS244	74LS244	XBD	D1
	C28-01(03)	.!	TI	-0.80	0.02	2.3	I	93S48	93S48	BUSPAR	D7
	B30-02	!	TOT	5.00	-0.40	2.0	A1	8304	8304	LMDATA	B2
				-1.59(0.06)/5.00(-0.40)			20.2				
BUS 31	C21-09	\	TOT	24.00	-15.00		OUT8	74LS244	74LS244	BUSSEL	D1
	C21-18	.!	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	BUSSEL	D1
	D26-04(06)	!.	TI	-0.25	0.01	3.1	D0	29701	29701	RBUF	B2
	E30-04(06)	.!	TI	-0.54	0.03	2.7	IN0	26S10	26S10	XD	B3
	D30-18	!.	TOT	24.00	-15.00	1.9	OUT1	74LS244	74LS244	XBD	D1
	C28-15(17)	.!	TI	-0.80	0.02	1.9	I	93S48	93S48	BUSPAR	D7
	B30-01	!	TOT	5.00	-0.40	2.0	A0	8304	8304	LMDATA	B2
				-1.59(0.06)/5.00(-0.40)			20.2				
BUS 4	D22-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	RBUF	D6
	B24-12	.!	TOT	24.00	-15.00	2.4	OUT4	74LS244	74LS244	BUSSEL	B6
	B24-03	!.	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	BUSSEL	B6
	B27-04	.!	TOT	5.00	-0.40	2.0	A3	8304	8304	LMDATA	B8
	C30-03(05)	!.	TI	-0.80	0.02	2.4	I	93S48	93S48	BUSPAR	D1
	D27-12	.!	TOT	24.00	-15.00	2.4	OUT4	74LS244	74LS244	XBD	D8
	E27-13(15)	!	TI	-0.54	0.03	1.2	IN3	26S10	26S10	XD	D6
				-1.54(0.07)/5.00(-0.40)			19.0				
BUS 5	D22-15	\	TI	-0.20	0.02		IN6	74LS244	74LS244	RBUF	D6
	B24-05	.!	TOT	24.00	-15.00	2.9	OUT6	74LS244	74LS244	BUSSEL	B6
	B24-14	!.	TOT	24.00	-15.00	.8	OUT3	74LS244	74LS244	BUSSEL	B6
	B27-03	.!	TOT	5.00	-0.40	1.7	A2	8304	8304	LMDATA	B8
	C30-02(04)	!.	TI	-0.80	0.02	2.4	I	93S48	93S48	BUSPAR	D1
	D27-14	.!	TOT	24.00	-15.00	2.3	OUT3	74LS244	74LS244	XBD	D8
	E27-11(13)	!	TI	-0.54	0.03	1.6	IN2	26S10	26S10	XD	D6
				-1.54(0.07)/5.00(-0.40)			19.2				
BUS 6	D22-13	\	TI	-0.20	0.02		IN7	74LS244	74LS244	RBUF	D6
	E27-05(07)	.!	TI	-0.54	0.03	2.9	IN1	26S10	26S10	XD	D6
	D27-16	!.	TOT	24.00	-15.00	1.8	OUT2	74LS244	74LS244	XBD	D8
	C30-01(03)	.!	TI	-0.80	0.02	2.2	I	93S48	93S48	BUSPAR	D1
	B27-02	!.	TOT	5.00	-0.40	2.4	A1	8304	8304	LMDATA	B8
	B24-16	.!	TOT	24.00	-15.00	1.7	OUT2	74LS244	74LS244	BUSSEL	B6
	B24-07	!	TOT	24.00	-15.00	.8	OUT7	74LS244	74LS244	BUSSEL	B6
				-1.54(0.07)/5.00(-0.40)			19.3				
BUS 7	D22-11	\	TI	-0.20	0.02		IN8	74LS244	74LS244	RBUF	D6
	E27-04(06)	.!	TI	-0.54	0.03	2.8	IN0	26S10	26S10	XD	D6
	D27-18	!.	TOT	24.00	-15.00	1.9	OUT1	74LS244	74LS244	XBD	D8
	C30-15(17)	.!	TI	-0.80	0.02	2.3	I	93S48	93S48	BUSPAR	D1
	B27-01	!.	TOT	5.00	-0.40	2.7	A0	8304	8304	LMDATA	B8
	B24-18	.!	TOT	24.00	-15.00	1.7	OUT1	74LS244	74LS244	BUSSEL	B6
	B24-09	!	TOT	24.00	-15.00	1.1	OUT8	74LS244	74LS244	BUSSEL	B6
				-1.54(0.07)/5.00(-0.40)			20.0				

LISPM Bus Interface CADR1;XAUG WLR 1'-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
BUS 8	F28-13(15)	\	TI	-0.54	0.03		IN3	26S10	26S10	XD	D6
	D28-03	.!	TOT	24.00	-15.00	3.0	OUT5	74LS244	74LS244	XBD	D6
	C30-14(16)	!.	TI	-0.80	0.02	2.0	I	93S48	93S48	BUSPAR	D1
	B28-08	.!	TOT	5.00	-0.40	2.0	A7	8304	8304	LMDATA	B6
	B25-12	!.	TOT	24.00	-15.00	1.7	OUT4	74LS244	74LS244	BUSSEL	B3
	B25-03	.!	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	BUSSEL	B3
	C22-17	!	TI	-0.20	0.02	2.1	IN5	74LS244	74LS244	RBUF	D4
				-1.54(0.07)/5.00(-0.40)			19.4				
BUS 9	F28-11(13)	\	TI	-0.54	0.03		IN2	26S10	26S10	XD	D5
	D28-05	.!	TOT	24.00	-15.00	3.0	OUT6	74LS244	74LS244	XBD	D6
	C30-13(15)	!.	TI	-0.80	0.02	2.1	I	93S48	93S48	BUSPAR	D1
	B28-07	.!	TOT	5.00	-0.40	2.1	A6	8304	8304	LMDATA	B6
	B25-14	!.	TOT	24.00	-15.00	1.6	OUT3	74LS244	74LS244	BUSSEL	B3
	B25-05	.!	TOT	24.00	-15.00	.8	OUT6	74LS244	74LS244	BUSSEL	B3
	C22-15	!	TI	-0.20	0.02	2.1	IN6	74LS244	74LS244	RBUF	D4
				-1.54(0.07)/5.00(-0.40)			19.2				
-BUSINT LM RESET		H									
-BUSINT LM RESET		H;RESET PROCESSOR									
	J08-11	.					CON		CLM	B8	
	C04-08(11)	!	TO	20.00	-1.00	8.3		74S11	74S110	DBGIN	D7
				0.00/20.00							
BUS PAR EVEN											
	C06-05(08)	.	TIS	-2.00	0.05			74S51	74S51A	REQERR	D1
	D20-04(07)	!.	TI	-2.00	0.05	7.5		74S86	74S86	REQERR	C2
	D20-01(04)	.!	TI	-2.00	0.05	.7		74S86	74S86	REQERR	A2
	C28-10(12)	!	TO	20.00	-1.00	4.8	0	93S48	93S48	BUSPAR	D7
				-6.00(0.15)/20.00(-1.00)				16.0			
BUS PAR ODD										ONE PIN RUN	____ 0
	C28-09(11)		TO	20.00	-1.00		E	93S48	93S48	BUSPAR D7	
									UNUSED EXTRA OUTPUT		____ 0
BUS READY											
	E01-04(07)	\	TIS	-2.00	0.05			74S00	74S00	UBMAST	A6
	E01-01(04)	.!	TIS	-2.00	0.05	.7		74S00	74S00	UBMAST	A6
	C03-12(15)	!	TO	8.00	-0.40	2.8		74LS27	74LS270	UBMAST	A5
				-4.00(0.10)/8.00(-0.40)			5.0				
BUS REQ	F15-05(07)	.	TI	-1.60	0.04		IN4	DM8838	8838	UPRIOR	D5
	D05-03(06)	!	TO	20.00	-1.00	6.0		74S00	74S000	UBMAST	A2
				-1.60(0.04)/20.00(-1.00)							
C1 IN	F12-03(05)	.	TO	16.00	-0.40		OUT3	DM8838	8838	UBA	C1
	E07-13(15)	!.	TI	-2.00	0.05	2.9	2B	74S139	74S139	UBCYC	D4
	C08-09(12)	.!	TI	-2.00	0.05	2.4		74S04	74S04	DATCTL	D1
	C08-05(08)	!	TI	-2.00	0.05	.8		74S04	74S04	DATCTL	D1
				-6.00(0.15)/16.00(-0.40)				9.1			
C1 OUT											
WRITE DATA → UB											
	J01-08	.					CON		CTP	B3	
	B13-06(09)	!.	TO	20.00	-1.00	6.4		74S04	0S04L	DATCTL	C7
	C15-06(09)	.!	TIS	-2.00	0.05	1.9		74S64	74S64	DATCTL	D4
	F12-02(04)	!	TI	-1.60	0.04	3.6	IN3	DM8838	8838	UBA	C1
				-3.60(0.09)/20.00(-1.00)				14.9			

LISPM Bus Interface CADR1:XAUG WLR 11-DEC-80 1606

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
-CLEAR GRANT H												
C03-06(09)	.	TO	8.00	-0.40			74LS27	74LS27	UPRIOR	C4		
D07-19	!.	TI	-0.36	0.02	2.8	-CLR	25LS2519		25LS2519		UPRIOR	C6
D08-19	.!	TI	-0.36	0.02	.9	-CLR	25LS2519		25LS2519		UPRIOR	C4
D09-18	!	TI	-0.25	0.04	1.0	A7.	74S472	74S472	UPRIOR	C3		
			-0.97(0.08)/8.00(-0.40)			7.7						
-CLK H												
C01-02(04)	.	TI	-0.80	0.04		CLK	74LS163	74LS163	UPRIOR	D1		
D07-09	!.	TI	-0.36	0.02	3.8	CLK	25LS2519		25LS2519		UPRIOR	C6
D08-09	.!	TI	-0.36	0.02	.9	CLK	25LS2519		25LS2519		UPRIOR	C4
D10-09(11)	!.	TI	-2.00	0.05	1.8	CLK	74S174	74S174	UPRIOR	C1		
D13-03(06)	.!	TIP	-0.80	0.04	1.7	-CLK1	74LS74	74LS74	UBINTC	C6		
D13-11(14)	!.	TIP	-0.80	0.04	.8	-CLK2	74LS74	74LS74	UBINTC	C7		
B10-03(06)	.!	TI	-4.00	0.10	3.4	-CLK1	74S74	74S74	REQUB	B2		
B08-11(14)	!.	TI	-4.00	0.10	1.2	-CLK2	74S74	74S74	RQSYNC	C3		
B07-12(15)	.!	TO	20.00	-1.00	1.0		74S04	74S04	CLM	D7		
A08-09(11)	!	TI	-2.00	0.05	1.3	CLK	74S175	74S175	RQSYNC	B2		
			-15.12(0.46)/20.00(-1.00)				27.9					
CLK0 F21-05(07)	\	TI	-0.54	0.03		IN1	26S10	26S10	XA	D2		
B07-10(13)	.!	TO	20.00	-1.00	8.4		74S04	74S040	CLM	D7		
B07-13(16)	!.	TI	-2.00	0.05	.7		74S04	74S04	CLM	D7		
A04-04(07)	.!	TIS	-2.00	0.05	2.5		74S00	74S00	RQSYNC	B7		
J01-01	!					CON		CTP	A3			
			-4.54(0.13)/20.00(-1.00)				18.6					
-DB ADR0 CLK H												
A19-11	.	TI	-0.40	0.02		CLK^	74LS374	74LS374	DBGIN	B3		
A18-11	!.	TI	-0.40	0.02	.9	CLK^	74LS374	74LS374	DBGIN	B5		
A15-07(09)	.!	TO	20.00	-1.00	2.3	1Y3	74S139	74S139	DBGIN	D4		
A14-02(05)	!	TIS	-2.00	0.05	1.1		74S10	74S100	DBGIN	C6		
			-2.80(0.09)/20.00(-1.00)				7.3					
-DB ADR1 CLK H												
A16-09	\	TI	-0.36	0.02		CLK	25LS2519		25LS2519		DBGIN	B7
A15-06(08)	.!	TO	20.00	-1.00	1.0	1Y2	74S139	74S139	DBGIN	D4		
A14-01(04)	!	TIS	-2.00	0.05	1.1		74S10	74S100	DBGIN	C6		
			-2.36(0.07)/20.00(-1.00)				3.6					
-DB BUS REQ H												
D06-06(09)	\	TO	20.00	-1.00			74S10	74S10	UBMAST	A1		
D05-02(05)	.!	TIS	-2.00	0.05	1.1		74S00	74S000	UBMAST	A2		
D02-02(05)	!	TIP	-0.40	0.02	1.9	D1	74LS74	74LS74I	UBMAST	C1		
			-2.40(0.07)/20.00(-1.00)				4.5					
DBD0 J05-01	;					CON		DBGIN	A1			
J06-01	!.					CON		DBGOUT	A8			
B15-19	.!	TOT	48.00	-5.00	3.3	B0	8304	8304	REQERR	D7		
A16-18	!.	TI	-0.36	0.02	1.4	I3	25LS2519		25LS2519		DBGIN	B7
A18-18	.!	TI	-0.40	0.02	1.5	D7	74LS374	74LS374	DBGIN	B5		
B21-17	!	TOT	48.00	-5.00	2.7	B7	8304	8304	DBGOUT	B6		
			-0.76(0.04)/48.00(-5.00)				15.6 MORE THAN 1 CONNECTOR PIN				____	0
DBD1 J05-02	;					CON		DBGIN	A1			
J06-02	!.					CON		DBGOUT	A8			
B15-18	.!	TOT	48.00	-5.00	3.2	B1	8304	8304	REQERR	D7		
A16-13	!.	TI	-0.36	0.02	1.2	I2	25LS2519		25LS2519		DBGIN	B7
A18-17	.!	TI	-0.40	0.02	1.5	D6	74LS374	74LS374	DBGIN	B5		
B21-13	!	TOT	48.00	-5.00	2.6	B6	8304	8304	DBGOUT	B6		
			-0.76(0.04)/48.00(-5.00)				15.2 MORE THAN 1 CONNECTOR PIN				____	0

LISPM B: , Interface CADR1:XAUG WLR 11-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
DBD10	J05-11	.					CON		DBGIN	A1			
	J06-11	! .					CON		DBGOUT	B8			
	A19-14	.!	TI	-0.40	0.02	3.9	D5	74LS374	74LS374	DBGIN	B3		
	B22-14	!	TOT	48.00	-5.00	2.3	B5	8304	8304	DBGOUT	B4		
				-0.40(0.02)/48.00(-5.00)				9.9 MORE THAN 1 CONNECTOR PIN				____	0
DBD11	J05-12	.					CON		DBGIN	B1			
	J06-12	! .					CON		DBGOUT	B8			
	A19-13	.!	TI	-0.40	0.02	3.8	D4	74LS374	74LS374	DBGIN	B3		
	B22-15	!	TOT	48.00	-5.00	2.2	B4	8304	8304	DBGOUT	B4		
				-0.40(0.02)/48.00(-5.00)				9.7 MORE THAN 1 CONNECTOR PIN				____	0
DBD12	J05-13	.					CON		DBGIN	B1			
	J06-13	! .					CON		DBGOUT	B8			
	A19-08	.!	TI	-0.40	0.02	3.5	D3	74LS374	74LS374	DBGIN	B3		
	B22-16	!	TOT	48.00	-5.00	2.4	B3	8304	8304	DBGOUT	B4		
				-0.40(0.02)/48.00(-5.00)				9.6 MORE THAN 1 CONNECTOR PIN				____	0
DBD13	J05-14	.					CON		DBGIN	B1			
	J06-14	! .					CON		DBGOUT	B8			
	A19-07	.!	TI	-0.40	0.02	3.3	D2	74LS374	74LS374	DBGIN	B3		
	B22-17	!	TOT	48.00	-5.00	2.4	B2	8304	8304	DBGOUT	B4		
				-0.40(0.02)/48.00(-5.00)				9.4 MORE THAN 1 CONNECTOR PIN				____	0
DBD14	J05-15	.					CON		DBGIN	B1			
	J06-15	! .					CON		DBGOUT	B8			
	A19-04	.!	TI	-0.40	0.02	3.1	D1	74LS374	74LS374	DBGIN	B3		
	B22-18	!	TOT	48.00	-5.00	2.5	B1	8304	8304	DBGOUT	B4		
				-0.40(0.02)/48.00(-5.00)				9.3 MORE THAN 1 CONNECTOR PIN				____	0
DBD15	J05-16	.					CON		DBGIN	B1			
	J06-16	! .					CON		DBGOUT	B8			
	A19-03	.!	TI	-0.40	0.02	3.0	D0	74LS374	74LS374	DBGIN	B3		
	B22-19	!	TOT	48.00	-5.00	2.5	B0	8304	8304	DBGOUT	B4		
				-0.40(0.02)/48.00(-5.00)				9.2 MORE THAN 1 CONNECTOR PIN				____	0
DBD2	J06-03	.					CON		DBGIN	A1			
	J06-03	! .					CON		DBGOUT	A8			
	B15-17	.!	TOT	48.00	-5.00	3.2	B2	8304	8304	REQERR	D7		
	A16-04	! .	TI	-0.36	0.02	1.6	I1	25LS2519		25LS2519		DBGIN	B7
	A18-14	.!	TI	-0.40	0.02	1.8	D5	74LS374	74LS374	DBGIN	B5		
	B21-14	!	TOT	48.00	-5.00	2.3	B5	8304	8304	DBGOUT	B6		
				-0.76(0.04)/48.00(-5.00)				15.6 MORE THAN 1 CONNECTOR PIN				____	0
DBD3	J05-04	.					CON		DBGIN	A1			
	J06-04	! .					CON		DBGOUT	A8			
	A16-01	.!	TI	-0.36	0.02	2.7	I0	25LS2519		25LS2519		DBGIN	B7
	B15-16	! .	TOT	48.00	-5.00	2.0	B3	8304	8304	REQERR	D7		
	A18-13	.!	TI	-0.40	0.02	2.1	D4	74LS374	74LS374	DBGIN	B5		
	B21-15	!	TOT	48.00	-5.00	2.2	B4	8304	8304	DBGOUT	B6		
				-0.76(0.04)/48.00(-5.00)				15.7 MORE THAN 1 CONNECTOR PIN				____	0
DBD4	J05-05	\					CON		DBGIN	A1			
	J06-05	.!					CON		DBGOUT	A8			
	B15-15	! .	TOT	48.00	-5.00	3.2	B4	8304	8304	REQERR	D7		
	A18-08	.!	TI	-0.40	0.02	1.9	D3	74LS374	74LS374	DBGIN	B5		
	B21-16	!	TOT	48.00	-5.00	2.4	B3	8304	8304	DBGOUT	B6		
				-0.40(0.02)/48.00(-5.00)				12.7 MORE THAN 1 CONNECTOR PIN				____	0

LISPM Bus Interface CADR1;XAUG WLR 7-DEC-80 1606

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
DBD5	J05-06	\					CON		DBGIN	A1		
	J06-06	.!					CON		DBGOUT	A8		
	B15-14	!.	TOT	48.00	-5.00	3.2	B5	8304	8304	REQERR	D7	
	A18-07	.!	TI	-0.40	0.02	2.1	D2	74LS374	74LS374	DBGIN	B5	
	B21-17	!	TOT	48.00	-5.00	2.4	B2	8304	8304	DBGOUT	B6	
				-0.40(0.02)/48.00(-5.00)				12.9 MORE THAN 1 CONNECTOR PIN				____ 0
DBD6	J05-07	\					CON		DBGIN	A1		
	J06-07	.!					CON		DBGOUT	A8		
	B15-13	!.	TOT	48.00	-5.00	3.2	B6	8304	8304	REQERR	D7	
	A18-04	.!	TI	-0.40	0.02	2.4	D1	74LS374	74LS374	DBGIN	B5	
	B21-18	!	TOT	48.00	-5.00	2.5	B1	8304	8304	DBGOUT	B6	
				-0.40(0.02)/48.00(-5.00)				13.3 MORE THAN 1 CONNECTOR PIN				____ 0
DBD7	J05-08	\					CON		DBGIN	A1		
	J06-08	.!					CON		DBGOUT	B8		
	B15-12	!.	TOT	48.00	-5.00	3.3	B7	8304	8304	REQERR	D7	
	A18-03	.!	TI	-0.40	0.02	2.5	D0	74LS374	74LS374	DBGIN	B5	
	B21-19	!	TOT	48.00	-5.00	2.5	B0	8304	8304	DBGOUT	B6	
				-0.40(0.02)/48.00(-5.00)				13.5 MORE THAN 1 CONNECTOR PIN				____.0
DBD8	J05-09	.					CON		DBGIN	A1		
	J06-09	!.					CON		DBGOUT	B8		
	A19-18	.!	TI	-0.40	0.02	4.0	D7	74LS374	74LS374	DBGIN	B3	
	B22-12	!	TOT	48.00	-5.00	2.7	B7	8304	8304	DBGOUT	B4	
				-0.40(0.02)/48.00(-5.00)				10.4 MORE THAN 1 CONNECTOR PIN				____ 0
DBD9	J05-10	.					CON		DBGIN	A1		
	J06-10	!.					CON		DBGOUT	B8		
	A19-17	.!	TI	-0.40	0.02	3.9	D6	74LS374	74LS374	DBGIN	B3	
	B22-13	!	TOT	48.00	-5.00	2.6	B6	8304	8304	DBGOUT	B4	
				-0.40(0.02)/48.00(-5.00)				10.2 MORE THAN 1 CONNECTOR PIN				____ 0
-DBD ENB H												
	B22-09	\	TI	-0.80	0.02		-ENB	8304	8304	DBGOUT	B4	
	B21-09	.!	TI	-0.80	0.02	.9	-ENB	8304	8304	DBGOUT	B6	
	B12-10(13)	!	TO	20.00	-1.00	4.7		74S02	74S02	DBGOUT	B2	
				-1.60(0.04)/20.00(-1.00)				7.1				
DB NEED UB												
	D06-03(06)	.	TIS	-2.00	0.05			74S10	74S10	UBMAST	A1	
	C06-13(16)	!.	TIS	-2.00	0.05	1.7		74S51	74S51A	REQUB	B7	
	A13-04(07)	.!	TO	20.00	-1.00	4.2		74S04	74S040	DBGIN	D4	
	B16-12(15)	!	TIS	-2.00	0.05	2.5		74S08	74S080	UBMAST	B6	
				-6.00(0.15)/20.00(-1.00)				11.4				
-DB NEED UB H												
	D01-05(08)	\	TI	-2.00	0.05		IN3	MTD100	MTD100	UBMAST	D3	
	A13-03(06)	.!	TI	-2.00	0.05	7.4		74S04	74S040	DBGIN	D4	
	A15-04(06)	!	TO	20.00	-1.00	1.4	1Y0	74S139	74S139	DBGIN	D4	
				-4.00(0.10)/20.00(-1.00)				10.3				
-DB READ STATUS H												
	B15-09	\	TI	-0.80	0.02		-ENB	8304	8304	REQERR	D7	
	A15-05(07)	.!	TO	20.00	-1.00	1.7	1Y1	74S139	74S139	DBGIN	D4	
	A14-13(16)	!	TIS	-2.00	0.05	.7		74S10	74S100	DBGIN	C6	
				-2.80(0.07)/20.00(-1.00)				3.9				

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
-DB RESET H												
D02-04(07)	\	TIP	-0.80	0.04		-SET	74LS74	74LS74I	UBMAST	C1		
D02-13(16)	.!	TIP	-1.20	0.06	.6	-CLR2	74LS74	74LS74	UBMAST	C4		
B16-11(14)	!	TO	20.00	-1.00	7.7		74S08	74S080	UBMAST	B6		
			-2.00(0.10)/20.00(-1.00)				10.0					
DB UB GRANTED												
D02-12(15)	.	TIP	-0.40	0.02		D2	74LS74	74LS74	UBMAST	C4		
D02-06(09)	!	TO	8.00	-0.40	.9	-Q1	74LS74	74LS74I	UBMAST	C1		
			-0.40(0.02)/8.00(-0.40)									
-DBUB GRANTED												
D06-09(12)	.	TIS	-2.00	0.05			74S10	74S10	UBMAST	D1		
D02-05(08)	!	TO	8.00	-0.40	2.8	Q1	74LS74	74LS74I	UBMAST	C1		
			-2.00(0.05)/8.00(-0.40)									
DBUB MASTER												
D04-09(12)	.	TO	20.00	-1.00		Q2	74S74	74S74	UBMAST	D4		
C07-01(04)	!.	TI	-2.00	0.05	2.4	IN1	MTD100	MTD100	REQUB	B6		
J01-23	.!					CON		CIP	D3			
A12-01(04)	!.	TIS	-2.00	0.05	4.0		74S08	74S08	DBGIN	C6		
B11-13(16)	.!	TIS	-2.00	0.05	1.7		74S51	74S51	DBGOUT	B2		
B12-08(11)	!.	TI	-2.00	0.05	1.2		74S02	74S02	DBGOUT	B2		
C14-02(05)	.!	TIS	-2.00	0.05	1.4		74S51	74S51A	DATCTL	C6		
B17-06(09)	!	TI	-2.00	0.05	2.1		74S02	74S02	DATCTL	C1		
			-12.00(0.30)/20.00(-1.00)				25.6		HEAVILY	LOADED	____	0
-DBUB MASTER H												
E01-12(15)	.	TIS	-2.00	0.05			74S00	74S000	UBMAST	B6		
D04-08(11)	!.	TO	20.00	-1.00	2.1	-Q2	74S74	74S74	UBMAST	D4		
D06-05(08)	.!	TIS	-2.00	0.05	1.2		74S10	74S10	UBMAST	A1		
C13-03(06)	!.	TIS	-2.00	0.05	4.2		74S10	74S100	DATCTL	D6		
B16-13(16)	.!	TIS	-2.00	0.05	2.6		74S08	74S080	UBMAST	B6		
A16-08	!.	TI	-0.36	0.02	1.3	-OE.Y	25LS2519		25LS2519		DBGIN	B7
A18-01	.!	TI	-0.40	0.02	1.7	-OE	74LS374	74LS374	DBGIN	B5		
A19-01	!	TI	-0.40	0.02	.9	-OE	74LS374	74LS374	DBGIN	B3		
			-9.16(0.26)/20.00(-1.00)				23.0					
DB UB SELECTED												
E01-02(05)	.	TIS	-2.00	0.05			74S00	74S00	UBMAST	A6		
D02-09(12)	!	TO	8.00	-0.40	1.5	Q2	74LS74	74LS74	UBMAST	C4		
			-2.00(0.05)/8.00(-0.40)									
-DB UB SELECTED H												
D06-04(07)	\	TIS	-2.00	0.05			74S10	74S10	UBMAST	A1		
D02-08(11)	.!	TO	8.00	-0.40	2.2	-Q2	74LS74	74LS74	UBMAST	C4		
E01-09(12)	!	TIS	-2.00	0.05	1.6		74S00	74S000	UBMAST	B6		
			-4.00(0.10)/8.00(-0.40) 5.3									
-DB UB SET MASTER H												
E01-03(06)	.	TO	20.00	-1.00			74S00	74S00	UBMAST	A6		
D04-10(13)	!	TI	-4.00	0.10	2.5	-SET2	74S74	74S74	UBMAST	D4		
			-4.00(0.10)/20.00(-1.00)									
-DEBUG → UD H												
UD → DEBUG												
B22-11	\	TI	-0.40	0.02		A - B	8304	8304	DBGOUT	B4		
B21-11	.!	TI	-0.40	0.02	.9	A - B	8304	8304	DBGOUT	B6		
B11-08(11)	!	TO	20.00	-1.00	5.4		74S61	74S51	DBGOUT	B2		
			-0.80(0.04)/20.00(-1.00)				7.8					

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
DEBUG ACK												
B04-17	\	TI	-0.40	0.05		IN5	74S241	74S241	DBGOUT	D5		
J01-22	.!					CON		CTP	D3			
A09-03(06)	!	TO	20.00	-1.00	2.8	OUT	74S32	74S32	DBGIN	C7		
			-0.40(0.05)/20.00(-1.00)				6.9					
DEBUG ACTIVE												
B12-09(12)	\	TI	-2.00	0.05			74S02	74S02	DBGOUT	B2		
B11-09(12)	.!	TIS	-2.00	0.05	.9		74S51	74S51	DBGOUT	B2		
A09-06(09)	!	TO	20.00	-1.00	2.2	OUT	74S32	74S32	DBGOUT	A2		
			-4.00(0.10)/20.00(-1.00)				4.6					
-DEBUGEE RESET H												
C04-10(13)	\	TIS	-2.00	0.05			74S11	74S110	DBGIN	D7		
A14-11(14)	.!	TIS	-2.00	0.05	6.0		74S10	74S100	DBGIN	D7		
A16-12	!	TOT	12.00	-2.60	1.5	W2	25LS2519		25LS2519		DBGIN	B7
			-4.00(0.10)/12.00(-2.60)				9.0					
DEBUG IN A0												
A22@03-03(05)	\	TZ	-25.00	0.00			SIP180/390-8		SIP180/390-8		DBGIN	D1
A15-02(04)	.!	TI	-2.00	0.05	4.0	1A	74S139	74S139	DBGIN	D4		
J05-17	!					CON		DBGIN	B1			
			-27.00/0.00		7.0				HEAVILY LOADED		____	0
DEBUG IN A1												
A22@03-02(04)	\	TZ	-25.00	0.00			SIP180/390-8		SIP180/390-8		DBGIN	D1
A15-03(05)	.!	TI	-2.00	0.05	4.0	1B	74S139	74S139	DBGIN	D4		
J05-18	!					CON		DBGIN	B1			
			-27.00/0.00		7.1				HEAVILY LOADED		____	0
DEBUG IN ACK												
J05-21	.					CON		DBGIN	B1			
B04-03	!	TOT	64.00	-15.00	6.3	OUT5	74S241	74S241	DBGOUT	D5		
			0.00/64.00									
-DEBUG IN REQ H												
J01-21	.					CON		CTP	D3			
J05-20	!.					CON		DBGIN	B1			
A15-01(03)	.!	TI	-2.00	0.05	1.4	1G	74S139	74S139	DBGIN	D4		
A22@03-05(07)	!	TZ	-25.00	0.00	4.0		SIP180/390-8		SIP180/390-8		DBGIN	D1
			-27.00/0.00		13.8				HEAVILY LOADED		____	0
							MORE THAN 1 CONNECTOR PIN				____	0
DEBUG IN WR												
A22@03-04(06)	.	TZ	-25.00	0.00			SIP180/390-8		SIP180/390-8		DBGIN	D1
J05-19	!.					CON		DBGIN	B1			
B11-01(04)	.!	TIS	-2.00	0.05	3.2		74S51	74S51	DBGOUT	B2		
C14-03(06)	!	TIS	-2.00	0.05	2.4		74S51	74S51A	DATCTL	C6		
			-29.00/0.00		12.9				HEAVILY LOADED		____	0
DEBUG OUT A0												
J06-17	.					CON		DBGOUT	B8			
A17-09	!	TOT	64.00	-15.00	2.3	OUT8	74S241	74S241	DBGOUT	D2		
			0.00/64.00									
DEBUG OUT A1												
J06-18	.					CON		DBGOUT	C8			
A17-07	!	TOT	64.00	-15.00	2.1	OUT7	74S241	74S241	DBGOUT	D2		
			0.00/64.00									

LISPM Bus Interface CADR1;XAUG WLR -)DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
DEBUG OUT ACK												
A22@03-06(08)	\	TZ	-25.00	0.00			SIP180/390-8		SIP180/390-8		DBGIN	D1
J06-21	.!					CON		DBGOUT	C8			
A12-09(12)	!	TIS	-2.00	0.05	2.1		74S08	74S08	DBGOUT	C2		
			-27.00/0.00		7.7				HEAVILY LOADED		____	0
-DEBUG OUT REQ H												
J06-20						CON		DBGOUT	C8			
A17-03	!	TOT	64.00	-15.00	1.7	OUT5	74S241	74S241	DBGOUT	D2		
			0.00/64.00									
DEBUG OUT WR												
J06-19						CON		DBGOUT	C8			
A17-05	!	TOT	64.00	-15.00	1.9	OUT6	74S241	74S241	DBGOUT	D2		
			0.00/64.00									
-DEBUG RESET H												
-DEBUG RESET H;RESET DEBUG INTERFACE												
D04-13(16)	\	TI	-6.00	0.15		-CLR2	74S74	74S74	UBMAST	D4		
A12-06(09)	.!	TO	20.00	-1.00	5.2		74S08	74S080	DBGIN	D7		
A16-19	!	TI	-0.36	0.02	2.9	-CLR	25LS2519		25LS2519		DBGIN	B7
			-6.36(0.17)/20.00(-1.00)				9.6					
DEBUG SSYN												
E06-12(15)	.	TI	-2.00	0.05			74S260	74S260	REQU	D5		
A12-08(11)	!	TO	20.00	-1.00	5.4		74S08	74S08	DBGOUT	C2		
			-2.00(0.05)/20.00(-1.00)									
-DEBUG TIMEOUT INH H												
B16-02(05)	.	TIS	-2.00	0.05			74S08	74S080	REQTIM	C4		
A16-05	!	TOT	12.00	-2.60	1.5	W1	25LS2519		25LS2519		DBGIN	B7
			-2.00(0.05)/12.00(-2.60)									
DISABLE INT GRANT										ONE PIN RUN	____	0
D14-05(08)		TO	8.00	-0.40		Q1	74LS74	74LS74	UBINTC	A4		
									UNUSED EXTRA OUTPUT		____	0
-DISABLE INT GRANT H												
D18-15	.	TI	-0.20	0.02		IN6	74LS240	74LS240	UBINTC	B6		
D14-13(16)	!.	TIP	-1.20	0.06	2.5	-CLR2	74LS74	74LS74	UBINTC	B4		
D14-06(09)	.!	TO	8.00	-0.40	.9	-Q1	74LS74	74LS74	UBINTC	A4		
D09-19	!	TI	-0.25	0.04	2.8	A8	74S472	74S472	UPRIOR	C3		
			-1.65(0.12)/8.00(-0.40)			9.2						
ENABLE UB INTS												
D16-15	.	TOT	12.00	-2.60		W3	25LS2519		25LS2519		UBINTC	D2
D15-12(15)	!	TIP	-0.40	0.02	.9	D2	74LS74	74LS74	UBINTC	B2		
			-0.40(0.02)/12.00(-2.60)									
FREE B07-02(05)	.	TO	20.00	-1.00			74S04	74S040	RQSYNC	C4		
A04-05(08)	!	TIS	-2.00	0.05	2.1		74S00	74S00	RQSYNC	B7		
			-2.00(0.05)/20.00(-1.00)									
-FREE H												
J01-10	\					CON		CTP	B3			
A04-03(06)	.!	TO	20.00	-1.00	1.8		74S00	74S00	RQSYNC	C4		
A05-03(06)	!.	TI	-2.00	0.05	.9		74S02	74S020	RQSYNC	A5		
A07-12(15)	.!	TI	-2.00	0.05	1.7		74S260	74S2600	RQSYNC	B5		
A07-09(12)	!.	TI	-2.00	0.05	.7		74S260	74S2600	RQSYNC	B5		
B07-01(04)	.!	TI	-2.00	0.05	1.1		74S04	74S040	RQSYNC	C4		
C12-10(13)	!.	TI	-2.00	0.05	3.6		74S260	74S2600	RQSYNC	A5		
B15-07	.!	TOT	5.00	-0.40	2.1	A6	8304	8304	REQERR	D7		
C16-15	!	TI	-0.20	0.02	1.7	IN6	74LS244	74LS244	REQERR	C7		
			-10.20(0.27)/20.00(-1.00)				24.1		HEAVILY LOADED		____	0
									"WIRE-OR", OUTPUTS ON DIFFERENT DIPS		____	2
									"WIRE-OR", SIGNAL GOES TO BACKPANEL		____	3

LISP Bus Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
GRANT RESET									ONE PIN RUN	____ 0		
B14-09(12)		TO	20.00	-1.00		Q2	74S74	74S74	RQSYNC	C7		
									UNUSED EXTRA OUTPUT	____ 0		
-GRANT RESET H												
B14-08(11)	\	TO	20.00	-1.00		-Q2	74S74	74S74	RQSYNC	C7		
A08-01(03)	.I	TI	-2.00	0.05	4.2	-CLR	74S175	74S175	RQSYNC	B2		
A06-01(03)	I	TI	-2.00	0.05	1.4	-CLR	74S175	74S175	RQSYNC	B8		
			-4.00(0.10)/20.00(-1.00)				7.1					
GRANT TIMEOUT												
C03-05(08)	.	TISP	-0.40	0.02			74LS27	74LS27	UPRIOR	C4		
C01-15(17)	I	TO	8.00	-0.40	1.3	CRY	74LS163	74LS163	UPRIOR	D1		
			-0.40(0.02)/8.00(-0.40)									
HI 1-14 D20-13(16)	\	TI	-2.00	0.05			74S86	S86L	REQUB	A8		
C15-05(08)	.I	TIS	(-2.00)	0.05	3.4		74S64	74S64	DATCTL	D4		
C15-04(07)	I.	TIS	-2.00	0.05	BARE		74S64	74S64	DATCTL	D4		
C15-01(04)	.I	TIS	-2.00	0.05	.7		74S64	74S64	DATCTL	D4		
B15-11	I.	TI	-0.40	0.02	1.0	A - B	8304	8304	REQERR	D7		
B14-04(07)	.I	TI	-4.00	0.10	1.3	-SET	74S74	74S74	REQLM	C4		
B10-10(13)	I.	TI	-4.00	0.10	2.2	-SET2	74S74	74S74	REQUB	C2		
B10-04(07)	.I	TI	-4.00	0.10	.8	-SET	74S74	74S74	REQUB	B2		
B08-01(04)	I.	TI	-6.00	0.15	1.5	-CLR1	74S74	74S74	UBCYC	B5		
B08-04(07)	.I	TI	-4.00	0.10	.7	-SET	74S74	74S74	UBCYC	B5		
B08-10(13)	I.	TI	-4.00	0.10	.8	-SET2	74S74	74S74	RQSYNC	C3		
D10-01(03)	.I	TI	-2.00	0.05	2.3	-CLR	74S174	74S174	UPRIOR	C1		
D08-18	I.	TI	-0.36	0.02	1.1	POL	25LS2519		25LS2519		UPRIOR	C4
D07-18	.I	TI	-0.36	0.02	.9	POL	25LS2519		25LS2519		UPRIOR	C6
C06-10(13)	I.	TIS	-2.00	0.05	1.2		74S51	74S51A	REQUB	B7		
C04-09(12)	.I	TIS	-2.00	0.05	1.5		74S11	74S110	DBGIN	D7		
C04-05(08)	I.	TIS	-2.00	0.05	.8		74S11	OS11L	UBCYC	B4		
B04-19	.I	TI	-2.00	0.05	2.2	ENB	74S241	74S241	DBGOUT	D5		
A03-10(12)	I.	TI	-0.80	0.06	1.1	-SET2	74LS112	74LS112-1		REQERR	C4	
B02-17	.I	TI	-1.60	0.04	1.2	-K4	74 276	74276	REQERR	B4		
B02-04	I.	TI	-1.60	0.04	.7	-K1	74 276	74276	REQERR	B4		
B02-07	.I	TI	-1.60	0.04	.7	-K2	74 276	74276	REQERR	B4		
B02-14	I.	TI	-1.60	0.04	.7	-K3	74 276	74276	REQERR	B4		
B02-11	.I	TI	-1.60	0.04	.7	-SET	74 276	74276	REQERR	B4		
C02-01(04)	I.	TIP	-1.20	0.06	1.0	-CLR1	74LS74	74LS74I	UBMAST	B1		
C02-10(13)	.I	TIP	-0.80	0.04	.9	-SET2	74LS74	74LS74	UBMAST	B4		
C01-09(11)	I.	TI	-0.80	0.02	1.0	-LOAD	74LS163	74LS163	UPRIOR	D1		
C01-10(12)	.I	TI	-0.80	0.04	BARE	ENB T	74LS163	74LS163	UPRIOR	D1		
C01-07(09)	I.	TI	-0.40	0.02	.7	ENB P	74LS163	74LS163	UPRIOR	D1		
D02-01(04)	.I	TIP	-1.20	0.06	1.2	-CLR1	74LS74	74LS74I	UBMAST	C1		
D03-01(04)	I.	TIP	-1.20	0.06	.9	-CLR1	74LS74	74LS74I	REQERR	D4		
D03-12(15)	.I	TIP	-0.40	0.02	.8	D2	74LS74	LS74	REQU	D7		
D03-10(13)	I.	TIP	-0.80	0.04	.6	-SET2	74LS74	LS74	REQU	D7		
D02-10(13)	.I	TIP	-0.80	0.04	.9	-SET2	74LS74	74LS74	UBMAST	C4		
E03-06(08)	I.	TI	-2.00	0.05	1.6	G1	74S138	74S138	UBCYC	B7		
F05-06(08)	.I	TIS	-2.00	0.05	1.9		74S133	74S133O	UBCYC	C6		
F05-07(09)	I.	TIS	(-2.00)	0.05	BARE		74S133	74S133O	UBCYC	C6		
F05-10(12)	.I	TIS	(-2.00)	0.05	.7		74S133	74S133O	UBCYC	C6		
F05-11(13)	I.	TIS	(-2.00)	0.05	BARE		74S133	74S133O	UBCYC	C6		
F05-12(14)	.I	TIS	(-2.00)	0.05	BARE		74S133	74S133O	UBCYC	C6		
F05-13(15)	I.	TIS	(-2.00)	0.05	BARE		74S133	74S133O	UBCYC	C6		
F05-14(16)	.I	TIS	(-2.00)	0.05	BARE		74S133	74S133O	UBCYC	C6		
F05-15(17)	I.	TIS	(-2.00)	0.05	BARE		74S133	74S133O	UBCYC	C6		
E08-15(17)	.I	TIS	-2.00	0.05	2.3		74S133	74S133	UBCYC	B1		
F14@01-01	I	I	0.00	0.00	3.3		DUMMY4	DUMMY4	UPRIOR	D3		
			-66.32/0.00		110.6				NO DRIVE	____ 1		

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
HI 15-30												
F20-11(13)	.	TI	-0.54	0.03		IN2	26S10	26S10	XD	B1		
D16-19	!.	TI	-0.36	0.02	3.9	-CLR	25LS2519		25LS2519		UBINTC	D2
D15-10(13)	.!	TIP	-0.80	0.04	1.2	-SET2	74LS74	74LS74	UBINTC	B2		
D14-10(13)	!.	TIP	-0.80	0.04	.9	-SET2	74LS74	74LS74	UBINTC	B4		
D13-10(13)	.!	TIP	-0.80	0.04	.9	-SET2	74LS74	74LS74	UBINTC	C7		
D13-04(07)	!.	TIP	-0.80	0.04	.8	-SET	74LS74	74LS74	UBINTC	C6		
D12-11(13)	.!	TIS	-2.00	0.05	.7		74S133	74S133	REQU	B7		
D12-12(14)	!.	TIS	(-2.00)	0.05	BARE		74S133	74S133	REQU	B7		
D12-13(15)	.!	TIS	(-2.00)	0.05	BARE		74S133	74S133	REQU	B7		
D12-14(16)	!.	TIS	(-2.00)	0.05	BARE		74S133	74S133	REQU	B7		
D12-15(17)	.!	TIS	(-2.00)	0.05	BARE		74S133	74S133	REQU	B7		
B14-12(15)	!.	TI	-2.00	0.05	2.7	D2	74S74	74S74	RQSYNC	C7		
A16-18	.!	TI	-0.36	0.02	2.2	POL	25LS2519		25LS2519		DBGIN	B7
A17-19	!.	TI	-2.00	0.05	1.0	ENB	74S241	74S241	DBGOUT	D2		
A22020-07(14)	.!	TZ	-15.00	0.00	3.0		SIP330/470-8		SIP330/470-8		CLM	D3
A22020-06(15)	!	TZ	-15.00	0.00	BARE		SIP330/470-8		SIP330/470-8		CLM	D3
			-40.46/0.00		38.8					NO DRIVE	____ 1	
HUNG TIMEOUT												
B03-11(14)	.	TI	-2.00	0.05			74S04	74S04	REQTIM	D6		
B01-05	!	TO	8.00	-0.40	1.8	Q1	74LS273	74LS273	REQTIM	C5		
			-2.00(0.05)/8.00(-0.40)									
-HUNG TIMEOUT H												
B14-10(13)	.	TI	-4.00	0.10		-SET2	74S74	74S74	RQSYNC	C7		
B03-10(13)	!	TO	20.00	-1.00	5.9		74S04	74S04	REQTIM	D6		
			-4.00(0.10)/20.00(-1.00)									
INT BUSY												
B19-01(04)	.	TI	-2.00	0.05			74S04	74S04	DATCTL	B1		
B16-01(04)	!.	TIS	-2.00	0.05	1.9		74S08	74S080	REQTIM	C4		
C13-08(11)	.!	TO	20.00	-1.00	2.5		74S10	74S100	RQSYNC	C1		
B06-01(04)	!.	TI	-2.00	0.05	4.6	IN	TD100	TD100	RQSYNC	D2		
A05-05(08)	.!	TI	-2.00	0.05	1.3		74S02	74S020	RQSYNC	C2		
B03-09(12)	!	TI	-2.00	0.05	1.8		74S04	74S04	REQTIM	C1		
			-10.00(0.25)/20.00(-1.00)				18.1					
INT BUSY T100												
B06-08(11)	\	TO	20.00	-1.00		100NS	TD100	TD100	RQSYNC	D2		
B10-11(14)	.!	TI	-4.00	0.10	2.6	-CLK2	74S74	74S74	REQUB	C2		
A11-12(15)	!	TIS	-2.00	0.05	1.7		74S00	74S00	REQLM	D2		
			-6.00(0.15)/20.00(-1.00)				5.7					
INT BUSY T20										ONE PIN RUN	____ 0	
B06-12(15)		TO	20.00	-1.00		20NS	TD100	TD100	RQSYNC	D2		
									UNUSED EXTRA OUTPUT		____ 0	
INT BUSY T40 H												
B14-13(16)	.	TI	-6.00	0.15		-CLR2	74S74	74S74	RQSYNC	C7		
B06-04(07)	!	TO	20.00	-1.00	4.8	40NS	TD100.	TD100	RQSYNC	D2		
			-6.00(0.15)/20.00(-1.00)									
INT BUSY T60										ONE PIN RUN	____ 0	
B06-10(13)		TO	20.00	-1.00		60NS	TD100	TD100	RQSYNC	D2		
									UNUSED EXTRA OUTPUT		____ 0	

LISPM Bus Interface CADR1;XAUG WLR 4-DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
INT BUSY T80												
B14-03(06)	\	TI	-4.00	0.10		-CLK1	74S74	74S74	REQLM	C4		
B07-03(06)	.!	TI	-2.00	0.05	3.9		74S04	74S04	RQSYNC	D2		
B06-06(09)	!	TO	20.00	-1.00	1.0	80NS	TD100	TD100	RQSYNC	D2		
			-6.00(0.15)/20.00(-1.00)				6.4					
-INT BUSY T80 H												
B07-04(07)	\	TO	20.00	-1.00			74S04	74S04	RQSYNC	D2		
B02-08	.!	TI	-1.60	0.04	3.0	-CLK2	74 276	74276	REQERR	B4		
B02-03	!	TI	-1.60	0.04	.9	-CLK1	74 276	74276	REQERR	B4		
			-3.20(0.08)/20.00(-1.00)				5.4					
-INTC DRIVE H												
E03-15(17)	.	TO	20.00	-1.00		0	74S138	74S138	UBCYC	B7		
D16-08	!.	TI	-0.36	0.02	6.7	-OE.Y	25LS2519		25LS2519		UBINTC	D2
D17-01	.!	TI	-0.40	0.02	1.3	-OE	74LS374	74LS374	UBINTC	D4		
D18-19	!	TI	-0.20	0.02	1.3	-ENB	74LS240	74LS240	UBINTC	B6		
			-0.96(0.06)/20.00(-1.00)				12.3					
INTR IN E02-03(06)	.	TO	20.00	-1.00			74S08	74S08	UBINTC	D6		
D13-01(04)	!.	TIP	-1.20	0.06	6.1	-CLR1	74LS74	74LS74	UBINTC	C6		
D13-02(05)	.!	TIP	-0.40	0.02	BARE	D1	74LS74	74LS74	UBINTC	C6		
D13-13(16)	!	TIP	-1.20	0.06	.7	-CLR2	74LS74	74LS74	UBINTC	C7		
			-2.80(0.14)/20.00(-1.00)				9.9					
INTR SSYN												
E04-05(08)	.	TI	-2.00	0.05		IN	74S32	74S32	REQU	D8		
D13-09(12)	!.	TO	8.00	-0.40	5.4	Q2	74LS74	74LS74	UBINTC	C7		
D14-11(14)	.!	TIP	-0.80	0.04	1.0	-CLK2	74LS74	74LS74	UBINTC	B4		
D15-11(14)	!	TIP	-0.80	0.04	.9	-CLK2	74LS74	74LS74	UBINTC	B2		
			-3.60(0.13)/8.00(-0.40)				10.3					
-INTR SSYN H												
D13-08(11)	.	TO	8.00	-0.40		-Q2	74LS74	74LS74	UBINTC	C7		
D05-13(16)	!	TIS	-2.00	0.05	4.5		74S00	74S000	UBINTC	D2		
			-2.00(0.05)/8.00(-0.40)									
INT STOPS GRANTS												
D16-12	.	TOT	12.00	-2.60		W2	25LS2519		25LS2519		UBINTC	D2
D14-12(15)	!	TIP	-0.40	0.02	1.5	D2	74LS74	74LS74	UBINTC	B4		
			-0.40(0.02)/12.00(-2.60)									
LEVEL0 D16-05	.	TOT	12.00	-2.60		W1	25LS2519		25LS2519		UBINTC	D2
D09-16	!	TI	-0.25	0.04	3.6	A5	74S472	74S472	UPRIOR	C3		
			-0.25(0.04)/12.00(-2.60)									
LEVEL1 D16-02	.	TOT	12.00	-2.60		W0	25LS2519		25LS2519		UBINTC	D2
D09-17	!	TI	-0.25	0.04	3.7	A6	74S472	74S472	UPRIOR	C3		
			-0.25(0.04)/12.00(-2.60)									
-LM ACK H												
J09-18	\					CON		CLM	B4			
B11-06(09)	.!	TO	20.00	-1.00	7.7		74S51	74S51	REQLM	B7		
J01-03	!					CON		CTP	A3			
			0.00/20.00		15.2		MORE THAN 1 CONNECTOR PIN				____	0

LISPM Bus Interface CADR1:XAUG WLR 11-DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-LMADR→UB H										
B19-08(11)	.	TO	20.00	-1.00			74S04	74S04	DATCTL	C1
A23-01	!.	TI	-0.20	0.02	3.1	-ENB	74LS240	74LS240	LMADR	D7
A24-01	.!	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	D5
A25-01	!.	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	B7
A26-01	.!	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	B5
A27-01	!	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	B2
			-1.00(0.10)/20.00(-1.00)				12.7			
-LMADR→XBUS H										
D18-01	\	TI	-0.20	0.02		-ENB	74LS240	74LS240	UBINTC	B6
B19-04(07)	.!	TO	20.00	-1.00	2.1		74S04	74S04	DATCTL	B1
A23-19	!.	TI	-0.20	0.02	3.3	-ENB	74LS240	74LS240	LMADR	D7
A24-19	.!	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	D5
A25-19	!.	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	B7
A26-19	.!	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	B5
A27-19	!	TI	-0.20	0.02	.9	-ENB	74LS240	74LS240	LMADR	B2
			-1.20(0.12)/20.00(-1.00)				16.5			
LM ADR PAR ERROR										
C16-06	.	TI	-0.20	0.02		IN3	74LS244	74LS244	REQERR	C7
B15-03	!.	TOT	5.00	-0.40	1.9	A2	8304	8304	REQERR	D7
C03-10(13)	.!	TIP	-0.40	0.02	6.4		74LS27	74LS27	REQERR	A7
B02-06	!	TO	16.00	-0.80	2.0	Q2	74 276	74276	REQERR	B4
			-0.60(0.04)/16.00(-0.80)				13.3			
							"WIRE-OR", OUTPUTS ON DIFFERENT DIPS ____ 2			
-LM BOOT H										
J08-12	.					CON		CLM	B8	
CR1	!					CON		CUBUS	D1	
			0.00/0.00					MORE THAN 1 CONNECTOR PIN ____ 0		
								NO INPUTS OR OUTPUTS ____ 3		
-LMBUS ENB H										
B19-02(05)	\	TO	20.00	-1.00			74S04	74S04	DATCTL	B1
B27-09	.!	TI	-0.80	0.02	4.5	-ENB	8304	8304	LMDATA	B8
B28-09	!.	TI	-0.80	0.02	.9	-ENB	8304	8304	LMDATA	B6
B29-09	.!	TI	-0.80	0.02	.9	-ENB	8304	8304	LMDATA	B4
B30-09	!	TI	-0.80	0.02	.9	-ENB	8304	8304	LMDATA	B2
			-3.20(0.08)/20.00(-1.00)				11.7			
-LM BUS REQ H										
D06-12(15)	\	TO	20.00	-1.00			74S10	74S10	UBMAST	A1
D05-01(04)	.!	TIS	-2.00	0.05	1.3		74S00	74S000	UBMAST	A2
C02-02(05)	!	TIP	-0.40	0.02	2.3	D1	74LS74	74LS74I	UBMAST	B1
			-2.40(0.07)/20.00(-1.00)				5.1			
-LM GRANT H										
J07-17	.					CON		CLM	B6	
B12-04(07)	!	TO	20.00	-1.00	5.0		74S02	74S02	REQLM	A7
			0.00/20.00							
-LM IGNPAR H										
J09-20	.					CON		CLM	C4	
B12-01(04)	!	TO	20.00	-1.00	7.3		74S02	74S02	REQLM	A7
			0.00/20.00							

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
LM INT J07-19						CON		CLM	C6	
E04-08(11)		TO	20.00	-1.00	10.6	OUT	74S32	74S32	UBINTC	D6
			0.00/20.00							
LM MEMDRIVE ENB										
J08-14						CON		CLM	B8	
B13-12(15)		TO	20.00	-1.00	3.9		74S04	74S040	REQLM	B7
			0.00/20.00							
LM NEED UB										
D06-02(05)		TIS	-2.00	0.05			74S10	74S10	UBMAST	A1
B10-05(08)		TO	20.00	-1.00	3.2	Q1	74S74	74S74	REQUB	B2
A12-12(15)		TIS	-2.00	0.05	2.3		74S08	74S08	REQUB	A3
B16-09(12)		TIS	-2.00	0.05	2.9		74S08	74S080	UBMAST	B6
			-6.00(0.15)/20.00(-1.00)				11.4			
-LM NEED UB										
D05-09(12)		TIS	-2.00	0.05			74S00	74S00	UBMAST	B2
B10-06(09)		TO	20.00	-1.00	3.6	-Q1	74S74	74S74	REQUB	B2
			-2.00(0.05)/20.00(-1.00)							
LMNEEDUB (EARLY)										
B17-10(13)		TO	20.00	-1.00			74S02	74S020	REQLM	A3
B10-02(05)		TI	-2.00	0.05	4.3	D1	74S74	74S74	REQUB	B2
B10-01(04)		TI	-6.00	0.15	BARE	-CLR1	74S74	74S74	REQUB	B2
			-8.00(0.20)/20.00(-1.00)				5.9			
LM PAR ERROR										
C16-11		TI	-0.20	0.02		IN8	74LS244	74LS244	REQERR	C7
B15-05		TOI	5.00	-0.40	2.2	A4	8304	8304	REQERR	D7
C03-11(14)		TIP	-0.40	0.02	6.3		74LS27	74LS27	REQERR	A7
B02-05		TO	16.00	-0.80	2.0	Q1	74 276	74276	REQERR	B4
			-0.60(0.04)/16.00(-0.80)				13.5			
							"WIRE-OR", OUTPUTS ON DIFFERENT DIPS ____ 2			
LM POWER RESET										
F21-13(15)		TI	-0.54	0.03		IN3	26S10	26S10	XA	D2
B13-02(05)		TO	20.00	-1.00	6.7		74S04	0S04L	XA	D2
			-0.54(0.03)/20.00(-1.00)							
-LM POWER RESET H										
J08-15						CON		CLM	B8	
B13-01(04)		TI	-2.00	0.05	4.1		74S04	0S04L	XA	D2
A12-04(07)		TIS	-2.00	0.05	1.4		74S08	74S080	DBGIN	D7
			-4.00/0.00		7.0					
LMRD										
-LMWR H										
C08-02(05)		TO	20.00	-1.00			74S04	74S04	DATCTL	C1
C08-03(06)		TI	-2.00	0.05	BARE		74S04	74S04	DATCTL	C1
C10-05(08)		TIS	-2.00	0.05	1.5		74S64	74S64	REQLM	D8
C10-12(15)		TIS	-2.00	0.05	.8		74S64	74S64	REQLM	D8
C17-01(04)		TIS	-2.00	0.05	3.7		74S51	74S51A	DATCTL	A7
C18-01(04)		TIS	-2.00	0.05	.9		74S51	74S51A	DATCTL	B4
B18-02(05)		TI	-2.00	0.05	1.4	IN	74S32	74S32	DATCTL	A1
			-12.00(0.30)/20.00(-1.00)				15.9			

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-LMRD H										
LMWR C18-05(08)	\	TIS	-2.00	0.05			74S51	74S51A	DATCTL	A4
C17-05(08)	.!	TIS	-2.00	0.05	.9		74S51	74S51A	DATCTL	C4
C14-05(08)	!.	TIS	-2.00	0.05	1.9		74S51	74S51A	DATCTL	C6
C08-04(07)	.!	TO	20.00	-1.00	3.5		74S04	74S04	DATCTL	C1
B05-05(08)	!	TIS	-2.00	0.05	2.3		74S11	74S11	REQERR	A3
			-8.00(0.20)/20.00(-1.00)				13.1			
-LM RESET H										
C02-04(07)	\	TIP	-0.80	0.04		-SET	74LS74	74LS74I	UBMAST	B1
C02-13(16)	.!	TIP	-1.20	0.06	.8	-CLR2	74LS74	74LS74	UBMAST	B4
B16-08(11)	!	TO	20.00	-1.00	7.5		74S08	74S08O	UBMAST	B6
			-2.00(0.10)/20.00(-1.00)				9.8			
LMUB GRANT										
J01-05	.					CON		CTP	A3	
A06-07(09)	!.	TO	20.00	-1.00	3.1	2Q	74S175	74S175	RQSYNC	B8
B10-12(15)	.!	TI	-2.00	0.05	2.9	D2	74S74	74S74	REQUB	C2
B11-04(07)	!.	TIS	-2.00	0.05	.7		74S51	74S51	REQLM	B7
B12-03(06)	.!	TI	-2.00	0.05	1.0		74S02	74S02	REQLM	A7
C17-13(16)	!.	TIS	-2.00	0.05	3.4		74S51	74S51A	DATCTL	A7
C18-04(07)	.!	TIS	-2.00	0.05	.7		74S51	74S51A	DATCTL	A4
C14-04(07)	!.	TIS	-2.00	0.05	2.4		74S51	74S51A	DATCTL	C6
C10-06(09)	.!	TIS	-2.00	0.05	2.5		74S64	74S64	REQLM	D8
D05-05(08)	!	TIS	-2.00	0.05	3.1		74S00	74S00	RQSYNC	C4
			-16.00(0.40)/20.00(-1.00)				31.8		HEAVILY LOADED ____ 0	
-LMUB GRANT H										
C13-11(14)	\	TIS	-2.00	0.05			74S10	74S10O	RQSYNC	C1
A06-06(08)	.!	TO	20.00	-1.00	4.8	-2Q	74S175	74S175	RQSYNC	B8
A05-09(12)	!	TI	-2.00	0.05	.7		74S02	OS02L	REQLM	A6
			-4.00(0.10)/20.00(-1.00)				7.0			
LM UB GRANTED										
C02-12(15)	.	TIP	-0.40	0.02		D2	74LS74	74LS74	UBMAST	B4
C02-06(09)	!	TO	8.00	-0.40	.9	-Q1	74LS74	74LS74I	UBMAST	B1
			-0.40(0.02)/8.00(-0.40)							
-LMUB GRANTED										
C04-13(16)	.	TIS	-2.00	0.05			74S11	74S11	UBMAST	C1
C02-05(08)	!	TO	8.00	-0.40	1.8	Q1	74LS74	74LS74I	UBMAST	B1
			-2.00(0.05)/8.00(-0.40)							
LMUB GRANT SET										
A07-05(08)	.	TO	20.00	-1.00			74S260	74S260O	RQSYNC	B5
A06-05(07)	!	TI	-2.00	0.05	1.0	2D	74S175	74S175	RQSYNC	B8
			-2.00(0.05)/20.00(-1.00)							
LMUB MASTER										
D04-05(08)	\	TO	20.00	-1.00		Q1	74S74	74S74	UBMAST	C4
J01-07	.!					CON		CTP	B3	
A12-13(16)	!.	TIS	-2.00	0.05	5.9		74S08	74S08	REQUR	A3
B17-05(08)	.!	TI	-2.00	0.05	3.1		74S02	74S02	DATCTL	C1
B19-09(12)	!	TI	-2.00	0.05	1.8		74S04	74S04	DATCTL	C1
			-6.00(0.15)/20.00(-1.00)				20.6			

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-LM UB MASTER H										
E01-13(16)	\	TIS	-2.00	0.05			74S00	74S000	UBMAST	B6
D04-06(09)	.!	TO	20.00	-1.00	1.8	-Q1	74S74	74S74	UBMAST	C4
D06-13(16)	!.	TIS	-2.00	0.05	1.8		74S10	74S10	UBMAST	A1
A05-08(11)	.!	TI	-2.00	0.05	3.3		74S02	OS02L	REQLM	A6
B16-10(13)	!	TIS	-2.00	0.05	6.0		74S08	74S080	UBMAST	B6
			-8.00(0.20)/20.00(-1.00)				17.4			
LMUB RQ D05-04(07)	\	TIS	-2.00	0.05			74S00	74S00	RQSYNC	C4
A08-05(07)	.!	TI	-2.00	0.05	4.1	2D	74S175	74S175	RQSYNC	B2
A12-11(14)	!	TO	20.00	-1.00	2.7		74S08	74S08	REQUB	A3
			-4.00(0.10)/20.00(-1.00)				8.3			
LMUBRQS H										
A08-07(09)	.	TO	20.00	-1.00		2Q	74S175	74S175	RQSYNC	B2
A07-08(11)	!	TI	-2.00	0.05	.7		74S260	74S2600	RQSYNC	B5
			-2.00(0.05)/20.00(-1.00)							
-LMUBRQS H										
A08-06(08)	.	TO	20.00	-1.00		-2Q	74S175	74S175	RQSYNC	B2
A07-01(04)	!	TI	-2.00	0.05	1.1		74S260	74S2600	RQSYNC	B5
			-2.00(0.05)/20.00(-1.00)							
LM UB SELECTED										
E01-05(08)	.	TIS	-2.00	0.05			74S00	74S00	UBMAST	A6
C02-09(12)	!	TO	8.00	-0.40	2.7	Q2	74LS74	74LS74	UBMAST	B4
			-2.00(0.05)/8.00(-0.40)							
-LM UB SELECTED H										
E01-10(13)	\	TIS	-2.00	0.05			74S00	74S000	UBMAST	B6
C02-08(11)	.!	TO	8.00	-0.40	2.5	-Q2	74LS74	74LS74	UBMAST	B4
D06-01(04)	!	TIS	-2.00	0.05	2.2		74S10	74S10	UBMAST	A1
			-4.00(0.10)/8.00(-0.40) 6.2							
-LM UB SET MASTER H										
E01-06(09)	.	TO	20.00	-1.00			74S00	74S00	UBMAST	A6
D04-04(07)	!	TI	-4.00	0.10	2.4	-SET	74S74	74S74	UBMAST	C4
			-4.00(0.10)/20.00(-1.00)							
-LM UNIBUS RESET H										
J08-13	.					CON		CLM	B8	
A14-10(13)	!	TIS	-2.00	0.05	2.9		74S10	74S100	DBGIN	D7
			-2.00/0.00							
LMX GRANT										
J01-04	.					CON		CTP	A3	
A06-10(12)	!.	TO	20.00	-1.00	3.5	3Q	74S175	74S175	RQSYNC	B8
B12-06(09)	.!	TI	-2.00	0.05	3.4		74S02	74S02	REQLM	A7
C17-04(07)	!.	TIS	-2.00	0.05	3.1		74S51	74S51A	DATCTL	C4
B17-02(05)	.!	TI	-2.00	0.05	1.7		74S02	74S02	DATCTL	B1
B19-03(06)	!	TI	-2.00	0.05	1.5		74S04	74S04	DATCTL	B1
			-8.00(0.20)/20.00(-1.00)				19.2			
-LMX GRANT										
C13-10(13)	.	TIS	-2.00	0.05			74S10	74S100	RQSYNC	C1
C06-04(07)	!.	TIS	-2.00	0.05	4.3		74S51	74S51A	REQERR	D1
B07-05(08)	.!	TI	-2.00	0.05	1.6		74S04	74S040	RQSYNC	D7
A06-11(13)	!	TO	20.00	-1.00	1.6	-3Q	74S175	74S175	RQSYNC	B8
			-6.00(0.15)/20.00(-1.00)				10.5			

LISPM B ; Interface CADR1;XAUG WLR 11-DEC-80 1606

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
LMX GRANT A											
E09-02(05)	\	TIS	-2.00	0.05			74S08	S08L	REQLM	C1	
C06-02(05)	.!	TIS	-2.00	0.05	3.1		74S51	74S51A	REQERR	D1	
B05-04(07)	!	TIS	-2.00	0.05	1.5		74S11	74S11	REQERR	A3	
B07-06(09)	.!	TO	20.00	-1.00	1.5		74S04	74S04O	RQSYNC	D7	
B11-02(05)	!	TIS	-2.00	0.05	2.6		74S61	74S51	REQLM	B7	
C10-13(16)	.!	TIS	-2.00	0.05	1.6		74S64	74S64	REQLM	D8	
C14-10(13)	!	TIS	-2.00	0.05	2.5		74S61	74S51A	REQLM	C2	
B16-05(08)	.!	TIS	-2.00	0.05	1.8		74S08	74S08	REQERR	A3	
C18-13(16)	!	TIS	-2.00	0.05	2.0		74S51	74S51A	DATCTL	B4	
			-16.00(0.40)/20.00(-1.00)				27.0				
LMX GRANT SET											
A07-06(09)	.	TO	20.00	-1.00			74S260	74S2600	RQSYNC	B5	
A06-12(14)	!	TI	-2.00	0.05	.7	3D	74S175	74S175	RQSYNC	B8	
			-2.00(0.05)/20.00(-1.00)								
LMXRQ C14-09(12)	.	TIS	-2.00	0.05			74S51	74S51A	REQLM	C2	
B13-08(11)	!	TO	20.00	-1.00	1.6		74S04	74S04O	REQLM	B3	
			-2.00(0.05)/20.00(-1.00)								
-LMXRQ H											
B18-08(11)	\	TO	20.00	-1.00		OUT	74S32	74S32O	REQLM	A3	
B13-09(12)	.!	TI	-2.00	0.05	3.0		74S04	74S04O	REQLM	B3	
A07-04(07)	!	TI	-2.00	0.05	4.0		74S260	74S2600	RQSYNC	B5	
			-4.00(0.10)/20.00(-1.00)				8.5				
-LOAD INT CTL2 REG H											
D15-03(06)	\	TIP	-0.80	0.04		-CLK1	74LS74	74LS74	UBINTC	A2	
D05-12(15)	.!	TIS	-2.00	0.05	5.1		74S00	74S000	UBINTC	D2	
E03-10(12)	!	TO	20.00	-1.00	2.2	5	74S138	74S138	UBCYC	B7	
			-2.80(0.09)/20.00(-1.00)				8.8				
-LOAD INT CTL REG H											
E03-11(13)	\	TO	20.00	-1.00		4	74S138	74S138	UBCYC	B7	
D14-03(06)	.!	TIP	-0.80	0.04	5.8	-CLK1	74LS74	74LS74	UBINTC	A4	
D16-09	!	TI	-0.36	0.02	1.5	CLK	25LS2519		25LS2519		UBINTC D2
			-1.16(0.06)/20.00(-1.00)				8.8				
-LOADMD H											
J09-19	.					CON		CLM	C4		
C10-08(11)	!	TO	20.00	-1.00	8.8		74S64	74S64	REQLM	D8	
			0.00/20.00								
LOADMD ACK											
E06-03(06)	.	TI	-2.00	0.05			74S260	74S260	REQU	D5	
A13-12(15)	!	TO	20.00	-1.00	6.3		74S04	74S04O	REQLM	D3	
			-2.00(0.05)/20.00(-1.00)								
-LOADMD ACK H											
B05-13(16)	.	TIS	-2.00	0.05			74S11	74S11O	RQSYNC	C5	
C10-02(05)	!	TIS	-2.00	0.05	2.9		74S64	74S64	REQLM	D8	
A11-11(14)	.!	TO	20.00	-1.00	2.6		74S00	74S00	REQLM	D2	
A13-13(16)	!	TI	-2.00	0.05	1.5		74S04	74S04O	REQLM	D3	
			-6.00(0.15)/20.00(-1.00)				10.0				

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
LOCAL ENABLE												
FV2	\					CON		CUBUS	D1			
E02-01(04)	.!	TIS	-2.00	0.05	2.7		74S08	74S08	UBINTC	D6		
F13-01(04)	!.	TIS	-4.00	0.10	6.1		74S38	74S380	UPRIOR	A7		
F13-04(07)	.!	TIS	-4.00	0.10	.7		74S38	74S380	UPRIOR	A7		
F13-10(13)	!.	TIS	-4.00	0.10	.8		74S38	74S380	UPRIOR	B7		
F13-13(16)	.!	TIS	-4.00	0.10	.7		74S38	74S380	UPRIOR	B7		
F14-01(04)	!.	TIS	-4.00	0.10	.7		74S38	74S380	UPRIOR	B7		
A13-01(04)	.!	TI	-2.00	0.05	6.0		74S04	74S04	DBGIN	D2		
A22@03-07(09)	!	TZ	-25.00	0.00	5.0		SIP180/390-8		SIP180/390-8		DBGIN	D1
			-49.00/0.00		33.2				HEAVILY LOADED		____ 0	
-LOCAL ENABLE H												
F06-09(11)	\	TI	-1.60	0.04		DIS A	DM8838	8838	UPRIOR	D7		
A09-13(16)	.!	TI	-2.00	0.05	6.6	IN	74S32	74S32	UBMAST	B1		
A11-01(04)	!.	TIS	-2.00	0.05	1.2		74S00	74S00	DBGIN	D6		
A13-02(05)	.!	TO	20.00	-1.00	1.5		74S04	74S04	DBGIN	D2		
D18-17	!	TI	-0.20	0.02	4.7	IN5	74LS240	74LS240	UBINTC	B6		
			-5.80(0.16)/20.00(-1.00)				18.5					
MAPVALID H												
E17-02	\	TI	-0.20	0.02		IN1	74LS244	74LS244	UBMAP	D6		
F15-05(07)	.!	TOT	16.00	-2.00	1.6	Q0	29701	29701	UBMAP	B2		
E02-12(15)	!	TIS	-2.00	0.05	6.6		74S08	74S080	REQU	A2		
			-2.20(0.07)/16.00(-2.00)				9.7					
-MCLK7 H												
B07-11(14)	\	TI	-2.00	0.05			74S04	74S040	CLM	D7		
J08-02	.!					CON		CLM	A8			
A22@20-03(18)	!	TZ	-15.00	0.00	3.4		SIP330/470-8		SIP330/470-8		CLM	D3
			-17.00/0.00		10.4				HEAVILY LOADED		____ 0	
MEM0 B27-12	\	TOT	48.00	-5.00		B7	8304	8304	LMDATA	B8		
A30@20-02(19)	.!	TZ	-25.00	0.00	2.8		SIP180/390-8		SIP180/390-8		LMDATA	D1
J12-12	!					CON		CLM	B3			
			-25.00/48.00		5.7				HEAVILY LOADED		____ 0	
MEM1 B27-13	\	TOT	48.00	-5.00		B6	8304	8304	LMDATA	B8		
A30@20-03(18)	.!	TZ	-25.00	0.00	2.6		SIP180/390-8		SIP180/390-8		LMDATA	D1
J12-11	!					CON		CLM	B3			
			-25.00/48.00		5.6				HEAVILY LOADED		____ 0	
MEM10 J12-02	\					CON		CLM	A3			
A30@03-06(08)	.!	TZ	-25.00	0.00	2.3		SIP180/390-8		SIP180/390-8		LMDATA	D2
B28-14	!	TOT	48.00	-5.00	1.7	B5	8304	8304	LMDATA	B6		
			-25.00/48.00		5.5				HEAVILY LOADED		____ 0	
MEM11 J12-01	\					CON		CLM	A3			
A30@03-07(09)	.!	TZ	-25.00	0.00	2.4		SIP180/390-8		SIP180/390-8		LMDATA	D2
B28-15	!	TOT	48.00	-5.00	1.5	B4	8304	8304	LMDATA	B6		
			-25.00/48.00		5.4				HEAVILY LOADED		____ 0	
MEM12 B28-16	\	TOT	48.00	-5.00		B3	8304	8304	LMDATA	B6		
A29@20-02(19)	.!	TZ	-25.00	0.00	1.9		SIP180/390-8		SIP180/390-8		LMDATA	D4
J11-20	!					CON		CLM	C1			
			-25.00/48.00		4.8				HEAVILY LOADED		____ 0	

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
MEM13	B28-17	\	TOT	48.00	-5.00		B2	8304	8304	LMDATA B6		
	A29@20-03(18)	.!	TZ	-25.00	0.00	1.7		SIP180/390-8		SIP180/390-8	LMDATA	D4
	J11-19	!					CON		CLM	C1		
				-25.00/48.00		4.6				HEAVILY LOADED	____ 0	
MEM14	B28-18	\	TOT	48.00	-5.00		B1	8304	8304	LMDATA B6		
	A29@20-04(17)	.!	TZ	-25.00	0.00	1.6		SIP180/390-8		SIP180/390-8	LMDATA	D4
	J11-18	!					CON		CLM	B1		
				-25.00/48.00		4.6				HEAVILY LOADED	____ 0	
MEM15	J11-17	\					CON		CLM	B1		
	A29@20-05(16)	.!	TZ	-25.00	0.00	1.6		SIP180/390-8		SIP180/390-8	LMDATA	D4
	B28-19	!	TOT	48.00	-5.00	1.4	B0	8304	8304	LMDATA B6		
				-25.00/48.00		4.5				HEAVILY LOADED	____ 0	
MEM16	B29-12	\	TOT	48.00	-5.00		B7	8304	8304	LMDATA B4		
	A29@20-06(15)	.!	TZ	-25.00	0.00	1.8		SIP180/390-8		SIP180/390-8	LMDATA	D4
	J11-16	!					CON		CLM	B1		
				-25.00/48.00		5.0				HEAVILY LOADED	____ 0	
MEM17	J11-15	\					CON		CLM	B1		
	A29@20-07(14)	.!	TZ	-25.00	0.00	1.7		SIP180/390-8		SIP180/390-8	LMDATA	D4
	B29-13	!	TOT	48.00	-5.00	1.6	B6	8304	8304	LMDATA B4		
				-25.00/48.00		4.8				HEAVILY LOADED	____ 0	
MEM18	B29-14	\	TOT	48.00	-5.00		B5	8304	8304	LMDATA B4		
	A29@03-02(04)	.!	TZ	-25.00	0.00	1.9		SIP180/390-8		SIP180/390-8	LMDATA	D5
	J11-14	!					CON		CLM	B1		
				-25.00/48.00		4.9				HEAVILY LOADED	____ 0	
MEM19	B29-15	\	TOT	48.00	-5.00		B4	8304	8304	LMDATA B4		
	A29@03-03(05)	.!	TZ	-25.00	0.00	1.7		SIP180/390-8		SIP180/390-8	LMDATA	D5
	J11-13	!					CON		CLM	B1		
				-25.00/48.00		4.8				HEAVILY LOADED	____ 0	
MEM2	B27-14	\	TOT	48.00	-5.00		B5	8304	8304	LMDATA B8		
	A30@20-04(17)	.!	TZ	-25.00	0.00	2.5		SIP180/390-8		SIP180/390-8	LMDATA	D1
	J12-10	!					CON		CLM	B3		
				-25.00/48.00		5.7				HEAVILY LOADED	____ 0	
MEM20	J11-12	\					CON		CLM	B1		
	A29@03-04(06)	.!	TZ	-25.00	0.00	1.6		SIP180/390-8		SIP180/390-8	LMDATA	D5
	B29-16	!	TOT	48.00	-5.00	1.5	B3	8304	8304	LMDATA B4		
				-25.00/48.00		4.6				HEAVILY LOADED	____ 0	
MEM21	J11-11	\					CON		CLM	B1		
	A29@03-05(07)	.!	TZ	-25.00	0.00	1.8		SIP180/390-8		SIP180/390-8	LMDATA	D5
	B29-17	!	TOT	48.00	-5.00	1.3	B2	8304	8304	LMDATA B4		
				-25.00/48.00		4.6				HEAVILY LOADED	____ 0	
MEM22	J11-10	\					CON		CLM	B1		
	A29@03-06(08)	.!	TZ	-25.00	0.00	1.9		SIP180/390-8		SIP180/390-8	LMDATA	D5
	B29-18	!	TOT	48.00	-5.00	1.1	B1	8304	8304	LMDATA B4		
				-25.00/48.00		4.5				HEAVILY LOADED	____ 0	
MEM23	J11-09	\					CON		CLM	A1		
	A29@03-07(09)	.!	TZ	-25.00	0.00	2.0		SIP180/390-8		SIP180/390-8	LMDATA	D5
	B29-19	!	TOT	48.00	-5.00	.9	B0	8304	8304	LMDATA B4		
				-25.00/48.00		4.4				HEAVILY LOADED	____ 0	

LISPM B s Interface CADR1:XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
MEM24	B30-12	\	TOT	48.00	-5.00		B7	8304	8304	LMDATA B2		
	A28@20-02(19)	.!	TZ	-25.00	0.00	2.5		SIP180/390-8		SIP180/390-8	LMDATA	D6
	J11-08	!					CON		CLM	A1		
				-25.00/48.00		5.3				HEAVILY LOADED	____ 0	
MEM25	B30-13	\	TOT	48.00	-5.00		B6	8304	8304	LMDATA B2		
	A28@20-03(18)	.!	TZ	-25.00	0.00	2.3		SIP180/390-8		SIP180/390-8	LMDATA	D6
	J11-07	!					CON		CLM	A1		
				-25.00/48.00		5.2				HEAVILY LOADED	____ 0	
MEM26	B30-14	\	TOT	48.00	-5.00		B5	8304	8304	LMDATA B2		
	A28@20-04(17)	.!	TZ	-25.00	0.00	2.2		SIP180/390-8		SIP180/390-8	LMDATA	D6
	J11-06	!					CON		CLM	A1		
				-25.00/48.00		5.2				HEAVILY LOADED	____ 0	
MEM27	B30-15	\	TOT	48.00	-5.00		B4	8304	8304	LMDATA B2		
	A28@20-05(16)	.!	TZ	-25.00	0.00	2.0		SIP180/390-8		SIP180/390-8	LMDATA	D6
	J11-05	!					CON		CLM	A1		
				-25.00/48.00		5.2				HEAVILY LOADED	____ 0	
MEM28	B30-16	\	TOT	48.00	-5.00		B3	8304	8304	LMDATA B2		
	A28@20-06(15)	.!	TZ	-25.00	0.00	1.9		SIP180/390-8		SIP180/390-8	LMDATA	D6
	J11-04	!					CON		CLM	A1		
				-25.00/48.00		5.2				HEAVILY LOADED	____ 0	
MEM29	J11-03	\					CON		CLM	A1		
	A28@20-07(14)	.!	TZ	-25.00	0.00	1.9		SIP180/390-8		SIP180/390-8	LMDATA	D6
	B30-17	!	TOT	48.00	-5.00	1.7	B2	8304	8304	LMDATA B2		
				-25.00/48.00		5.1				HEAVILY LOADED	____ 0	
MEM3	B27-15	\	TOT	48.00	-5.00		B4	8304	8304	LMDATA B8		
	A30@20-05(16)	.!	TZ	-25.00	0.00	2.4		SIP180/390-8		SIP180/390-8	LMDATA	D1
	J12-09	!					CON		CLM	A3		
				-25.00/48.00		5.7				HEAVILY LOADED	____ 0	
MEM30	B30-18	\	TOT	48.00	-5.00		B1	8304	8304	LMDATA B2		
	A28@03-02(04)	.!	TZ	-25.00	0.00	2.1		SIP180/390-8		SIP180/390-8	LMDATA	D8
	J11-02	!					CON		CLM	A1		
				-25.00/48.00		5.2				HEAVILY LOADED	____ 0	
MEM31	B30-19	\	TOT	48.00	-5.00		B0	8304	8304	LMDATA B2		
	A28@03-03(05)	.!	TZ	-25.00	0.00	2.0		SIP180/390-8		SIP180/390-8	LMDATA	D8
	J11-01	!					CON		CLM	A1		
				-25.00/48.00		5.2				HEAVILY LOADED	____ 0	
MEM4	B27-16	\	TOT	48.00	-5.00		B3	8304	8304	LMDATA B8		
	A30@20-06(15)	.!	TZ	-25.00	0.00	2.3		SIP180/390-8		SIP180/390-8	LMDATA	D1
	J12-08	!					CON		CLM	A3		
				-25.00/48.00		5.7				HEAVILY LOADED	____ 0	
MEM5	B27-17	\	TOT	48.00	-5.00		B2	8304	8304	LMDATA B8		
	A30@20-07(14)	.!	TZ	-25.00	0.00	2.1		SIP180/390-8		SIP180/390-8	LMDATA	D1
	J12-07	!					CON		CLM	A3		
				-25.00/48.00		5.7				HEAVILY LOADED	____ 0	
MEM6	B27-18	\	TOT	48.00	-5.00		B1	8304	8304	LMDATA B8		
	A30@03-02(04)	.!	TZ	-25.00	0.00	2.0		SIP180/390-8		SIP180/390-8	LMDATA	D2
	J12-06	!					CON		CLM	A3		
				-25.00/48.00		5.3				HEAVILY LOADED	____ 0	

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
MEM7	B27-19	\	TOT	48.00	-5.00		B0	8304	8304	LMDATA	B8		
	A30@03-03(05)	.!	TZ	-25.00	0.00	1.9		SIP180/390-8		SIP180/390-8		LMDATA	D2
	J12-05	!					CON		CLM	A3			
				-25.00/48.00		5.3				HEAVILY LOADED		____	0
MEM8	B28-12	\	TOT	48.00	-5.00		B7	8304	8304	LMDATA	B6		
	A30@03-04(06)	.!	TZ	-25.00	0.00	2.0		SIP180/390-8		SIP180/390-8		LMDATA	D2
	J12-04	!					CON		CLM	A3			
				-25.00/48.00		5.5				HEAVILY LOADED		____	0
MEM9	J12-03	\					CON		CLM	A3			
	A30@03-05(07)	.!	TZ	-25.00	0.00	2.2		SIP180/390-8		SIP180/390-8		LMDATA	D2
	B28-13	!	TOT	48.00	-5.00	1.8	B6	8304	8304	LMDATA	B6		
				-25.00/48.00		5.5				HEAVILY LOADED		____	0
MEMPAR FROM LM													
	C06-03(06)	;	TIS	-2.00	0.05			74S51	74S51A	REQERR	D1		
	D20-02(05)	!.	TI	-2.00	0.05	7.5		74S86	74S86	REQERR	A2		
	J07-20	.!					CON		CLM	C6			
	A28@03-04(06)	!	TZ	-25.00	0.00	4.4		SIP180/390-8		SIP180/390-8		LMDATA	D8
				-29.00/0.00		19.8				HEAVILY LOADED		____	0
MEMPAR TO LM													
	J12-13	;					CON		CLM	B3			
	B04-05	!	TOT	64.00	-15.00	13.4	OUT6	74S241	74S241	DBGOUT	D5		
				0.00/64.00									
-MEMRQ H													
	J01-02	\					CON		CTP	A3			
	B17-08(11)	.!	TI	-2.00	0.05	9.4		74S02	74S02O	REQLM	A3		
	B18-09(12)	!.	TI	-2.00	0.05	1.0	IN	74S32	74S32O	REQLM	A3		
	A22@20-04(17)	.!	TZ	-15.00	0.00	3.0		SIP330/470-8		SIP330/470-8		CLM	D3
	J09-17	!					CON		CLM	B4			
				-19.00/0.00		19.7				HEAVILY LOADED		____	0
										MORE THAN 1 CONNECTOR PIN		____	0
MSYN IN	J01-14	\					CON		CTP	C3			
	C05-02(05)	.!	TIS	-2.00	0.05	3.8		74S20	74S20	REQU	B3		
	D03-13(16)	!.	TIP	-1.20	0.06	1.8	-CLR2	74LS74	LS74	REQU	D7		
	F03-01(04)	.!	TIS	-2.00	0.05	2.6		74S00	74S00	UBCYC	D3		
	F07-10(12)	!.	TO	16.00	-0.40	2.8	OUT2	DM8838	8838	UBMAST	C8		
	E09-05(08)	.!	TIS	-2.00	0.05	1.8		74S08	S08L	REQLM	C1		
	E08-14(16)	!.	TIS	-2.00	0.05	.8		74S133	74S133	UBCYC	B1		
	D12-10(12)	.!	TIS	-2.00	0.05	2.6		74S133	74S133	REQU	B7		
	C15-13(16)	!	TIS	-2.00	0.05	2.6		74S64	74S64	DATCTL	D4		
				-13.20(0.36)/16.00(-0.40)				29.3		OVERLOADED		____	2
										HEAVILY LOADED		____	0
MSYN OUT													
	J01-15	\					CON		CTP	C3			
	F07-11(13)	.!	TI	-1.60	0.04	7.6	IN2	DM8838	8838	UBMAST	C8		
	D20-11(14)	!	TO	20.00	-1.00	7.3		74S86	S86L	REQUB	A8		
				-1.60(0.04)/20.00(-1.00)				16.4					
NC										NO CONNECTION RUN		____	0
	A02-09(11)		TOT	20.00	-6.50		OUT8	74S288	74S288	REQTIM	C7		
	A03-07(09)		TO	8.00	-0.40		-Q2	74LS112	74LS112-1	REQERR	C4		
	A06-13(15)		TI	-2.00	0.05		4D	74S175	74S175	RQSYNC	B8		
	A06-14(16)		TO	20.00	-1.00		-4Q	74S175	74S175	RQSYNC	B8		
	A06-15(17)		TO	20.00	-1.00		4Q	74S175	74S175	RQSYNC	B8		
	A08-13(15)		TI	-2.00	0.05		4D	74S175	74S175	RQSYNC	B2		
	A08-14(16)		TO	20.00	-1.00		-4Q	74S175	74S175	RQSYNC	B2		
	A08-15(17)		TO	20.00	-1.00		4Q	74S175	74S175	RQSYNC	B2		
	A16-02		TOT	12.00	-2.60		W0	25LS2519		25LS2519		DBGIN	B7
	A16-03		TOT	12.00	-2.60		Y0	25LS2519		25LS2519		DBGIN	B7
	A16-06		TOT	12.00	-2.60		Y1	25LS2519		25LS2519		DBGIN	B7
	A16-11		TOT	12.00	-2.60		Y2	25LS2519		25LS2519		DBGIN	B7
	A16-15		TOT	12.00	-2.60		W3	25LS2519		25LS2519		DBGIN	B7
	A24-14		TOT	24.00	-15.00		-OUT3	74LS240	74LS240	LMADR	D5		
	A24-16		TOT	24.00	-15.00		-OUT2	74LS240	74LS240	LMADR	D5		
	A24-18		TOT	24.00	-15.00		-OUT1	74LS240	74LS240	LMADR	D5		
	A28@03-05(07)		TZ	-25.00	0.00			SIP180/390-8		SIP180/390-8		LMDATA	D8
	A28@03-06(08)		TZ	-25.00	0.00			SIP180/390-8		SIP180/390-8		LMDATA	D8
	A28@03-07(09)		TZ	-25.00	0.00			SIP180/390-8		SIP180/390-8		LMDATA	D8
	B03@01-01		I	0.00	0.00			DUMMY4	DUMMY4	REQTIM	D2		
	B04-01		TI	-2.00	0.05		-ENB	74S241	74S241	DBGOUT	D5		
	B04-02		TI	-0.40	0.05		IN1	74S241	74S241	DBGOUT	D5		
	B04-04		TI	-0.40	0.05		IN2	74S241	74S241	DBGOUT	D5		
	B04-06		TI	-0.40	0.05		IN3	74S241	74S241	DBGOUT	D5		
	B04-07		TOT	64.00	-15.00		OUT7	74S241	74S241	DBGOUT	D5		
	B04-08		TI	-0.40	0.05		IN4	74S241	74S241	DBGOUT	D5		
	B04-09		TOT	64.00	-15.00		OUT8	74S241	74S241	DBGOUT	D5		
	B04-11		TI	-0.40	0.05		IN8	74S241	74S241	DBGOUT	D5		
	B04-12		TOT	64.00	-15.00		OUT4	74S241	74S241	DBGOUT	D5		
	B04-13		TI	-0.40	0.05		IN7	74S241	74S241	DBGOUT	D5		
	B04-14		TOT	64.00	-15.00		OUT3	74S241	74S241	DBGOUT	D5		
	B04-16		TOT	64.00	-15.00		OUT2	74S241	74S241	DBGOUT	D5		
	B04-18		TOT	64.00	-15.00		OUT1	74S241	74S241	DBGOUT	D5		
	B08-08(11)		TO	20.00	-1.00		-Q2	74S74	74S74	RQSYNC	C3		
	C01-03(05)		TI	-0.40	0.02		A	74LS163	74LS163	UPRIOR	D1		
	C01-04(06)		TI	-0.40	0.02		B	74LS163	74LS163	UPRIOR	D1		
	C01-05(07)		TI	-0.40	0.02		C	74LS163	74LS163	UPRIOR	D1		
	C01-06(08)		TI	-0.40	0.02		D	74LS163	74LS163	UPRIOR	D1		
	C01-11(13)		TO	8.00	-0.40		OD	74LS163	74LS163	UPRIOR	D1		
	C01-12(14)		TO	8.00	-0.40		OC	74LS163	74LS163	UPRIOR	D1		
	C01-13(15)		TO	8.00	-0.40		OB	74LS163	74LS163	UPRIOR	D1		
	C01-14(16)		TO	8.00	-0.40		OA	74LS163	74LS163	UPRIOR	D1		
	C09-04(07)		TO	20.00	-1.00		40NS	ID100	ID100	REQLM	D4		
	C09-06(09)		TO	20.00	-1.00		80NS	ID100	ID100	REQLM	D4		
	C09-08(11)		TO	20.00	-1.00		100NS	ID100	ID100	REQLM	D4		
	C09-12(15)		TO	20.00	-1.00		20NS	ID100	ID100	REQLM	D4		
	C19-09(12)		TIS	-2.00	0.05			74S64	74S64	REQLM	D8		
	C11-01(04)		TIS	-2.00	0.05			74S64	74S64	REQLM	D6		
	C11-11(14)		TIS	(-2.00)	0.05			74S64	74S64	REQLM	D6		
	C11-12(15)		TIS	(-2.00)	0.05			74S64	74S64	REQLM	D6		
	C29-10(12)		TO	20.00	-1.00		0	93S48	93S48	BUSPAR	D4		
	C30-10(12)		TO	20.00	-1.00		0	93S48	93S48	BUSPAR	D1		
	D03-08(11)		TO	8.00	-0.40		-Q2	74LS74	LS74	REQU	D7		
	D04-02(05)		TI	-2.00	0.05		D1	74S74	74S74	UBMAST	C4		
	D07-01		TI	-0.36	0.02		I0	25LS2519		25LS2519		UPRICR	C6
	D07-02		TOT	12.00	-2.60		W0	25LS2519		25LS2519		UPRICR	C6
	D07-03		TOT	12.00	-2.60		Y0	25LS2519		25LS2519		UPRICR	C6

D07-04	TI	-0.36	0.02	I1	25LS2519	25LS2519	I RIOR	C6
D07-05	TOT	12.00	-2.60	W1	25LS2519	25LS2519	UPRIOR	C6
D07-06	TOT	12.00	-2.60	Y1	25LS2519	25LS2519	UPRIOR	C6
D09-14	TOT	12.00	-3.20	D8	74S472 74S472	UPRIOR C3		
D13-06(09)	TO	8.00	-0.40	-Q1	74LS74 74LS74	UBINTC C6		
D14-09(12)	TO	8.00	-0.40	Q2	74LS74 74LS74	UBINTC B4		
D15-09(12)	TO	8.00	-0.40	Q2	74LS74 74LS74	UBINTC B2		
D18-02	TI	-0.20	0.02	IN1	74LS240 74LS240	UBINTC B6		
D18-04	TI	-0.20	0.02	IN2	74LS240 74LS240	UBINTC B6		
D18-16	TOT	24.00	-15.00	-OUT2	74LS240 74LS240	UBINTC B6		
D18-18	TOT	24.00	-15.00	-OUT1	74LS240 74LS240	UBINTC B6		
E03-07(09)	TO	20.00	-1.00	7	74S138 74S138	UBCYC B7		
E03-12(14)	TO	20.00	-1.00	3	74S138 74S138	UBCYC B7		
E03-14(16)	TO	20.00	-1.00	1	74S138 74S138	UBCYC B7		
E22-16	TOT	24.00	-15.00	OUT2	74LS244 74LS244	UBXA D2		
E22-18	TOT	24.00	-15.00	OUT1	74LS244 74LS244	UBXA D2		
E24-10(12)	TO	20.00	-1.00	0	93S48 93S48	XAPAR C2		
E25-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XA B8		
E25-06(08)	TO	20.00	-1.00	OUT1	26S10 26S10	XA B8		
E25-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XA B8		
E25-14(16)	TO	20.00	-1.00	OUT3	26S10 26S10	XA B8		
E26-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XA B4		
E26-06(08)	TO	20.00	-1.00	OUT1	26S10 26S10	XA B4		
E26-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XA B4		
E26-14(16)	TO	20.00	-1.00	OUT3	26S10 26S10	XA B4		
F01-04(07)	TO	20.00	-1.00	40NS	TD100 TD100	REQU D2		
F01-06(09)	TO	20.00	-1.00	80NS	TD100 TD100	REQU D2		
F01-12(15)	TO	20.00	-1.00	20NS	TD100 TD100	REQU D2		
F12-04(06)	TOC	50.00		BUS4	DM8838 8838	UBA C1		
F12-05(07)	TI	-1.60	0.04	IN4	DM8838 8838	UBA C1		
F12-06(08)	TO	16.00	-0.40	OUT4	DM8838 8838	UBA C1		
F14@01-02	I	0.00	0.00		DUMMY4 DUMMY4	UPRIOR D3		
F14@01-03(19)	I	0.00	0.00		DUMMY4 DUMMY4	UPRIOR D3		
F20-02(04)	TOC	100.00		-BUS0	26S10 26S10	XD B1		
F20-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XD B1		
F20-04(06)	TI	-0.54	0.03	IN0	26S10 26S10	XD B1		
F20-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XD B1		
F21-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XA D2		
F21-06(08)	TO	20.00	-1.00	OUT1	26S10 26S10	XA D2		
F21-14(16)	TO	20.00	-1.00	OUT3	26S10 26S10	XA D2		
F22-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XA B2		
F23-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XA D8		
F23-06(08)	TO	20.00	-1.00	OUT1	26S10 26S10	XA D8		
F23-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XA D8		
F23-14(16)	TO	20.00	-1.00	OUT3	26S10 26S10	XA D8		
F24-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XA D6		
F24-06(08)	TO	20.00	-1.00	OUT1	26S10 26S10	XA D6		
F24-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XA D6		
F24-14(16)	TO	20.00	-1.00	OUT3	26S10 26S10	XA D6		
F25-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XA D4		
F25-06(08)	TO	20.00	-1.00	OUT1	26S10 26S10	XA D4		
F25-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XA D4		
F25-14(16)	TO	20.00	-1.00	OUT3	26S10 26S10	XA D4		
F26-03(05)	TO	20.00	-1.00	OUT0	26S10 26S10	XA B6		
F26-06(08)	TO	20.00	-1.00	OUT1	26S10 26S10	XA B6		
F26-10(12)	TO	20.00	-1.00	OUT2	26S10 26S10	XA B6		
F26-14(16)	TO	20.00	-1.00	OUT3	26S10 26S10	XA B6		
J01-24				CON	CTP	D3		
J01-25				CON	CTP	D3		
J05-22				CON	DBGIN	B1		
J05-23				CON	DBGIN	B1		
J05-24				CON	DBGIN	C1		
J05-25				CON	DBGIN	C1		
J06-22				CON	DBGOUT	C8		
J06-23				CON	DBGOUT	C8		
J06-24				CON	DBGOUT	C8		
J06-25				CON	DBGOUT	C8		
J08-16				CON	CLM	B8		
J08-17				CON	CLM	B8		
J08-18				CON	CLM	B8		
J08-19				CON	CLM	C8		
J08-20				CON	CLM	C8		

THIS RUN IS NOT TO BE WIRED

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
NPG1 IN												
NPG IN E05-12(15)	\	TO	20.00	-1.00			74S04	74S040	UBMAST	A4		
D06-11(14)	.!	TIS	-2.00	0.05	1.6		74S10	74S10	UBMAST	D1		
C03-13(16)	!.	TIP	-0.40	0.02	2.4		74LS27	74LS270	UBMAST	A5		
D02-03(06)	.!	TIP	-0.80	0.04	1.9	-CLK1	74LS74	74LS74I	UBMAST	C1		
D01-03(06)	!	TI	-2.00	0.05	.9	IN2	MTD100	MTD100	UBMAST	D1		
			-5.20(0.16)/20.00(-1.00)				11.3					
NPG1 IN T100												
D06-10(13)	\	TIS	-2.00	0.05			74S10	74S10	UBMAST	D1		
D02-11(14)	.!	TIP	-0.80	0.04	2.5	-CLK2	74LS74	74LS74	UBMAST	C4		
D01-10(13)	!	TO	16.00	-1.00	1.0	OUT2	MTD100	MTD100	UBMAST	D1		
			-2.80(0.09)/16.00(-1.00)				5.0					
NPG1 OUT												
NPG2 IN D01-01(04)	.	TI	-2.00	0.05		IN1	MTD100	MTD100	UBMAST	B1		
C02-03(06)	!.	TIP	-0.80	0.04	1.5	-CLK1	74LS74	74LS74I	UBMAST	B1		
C04-02(05)	.!	TIS	-2.00	0.05	1.5		74S11	74S11	UBMAST	C1		
B03-02(05)	!	TO	20.00	-1.00	1.7		74S04	74S040	UBMAST	D2		
			-4.80(0.14)/20.00(-1.00)				7.7					
-NPG1 OUT H												
D06-08(11)	.	TO	20.00	-1.00			74S10	74S10	UBMAST	D1		
B03-01(04)	!	TI	-2.00	0.05	3.8		74S04	74S040	UBMAST	D2		
			-2.00(0.05)/20.00(-1.00)									
NPG2 IN T100												
D01-12(15)	\	TO	16.00	-1.00		OUT1	MTD100	MTD100	UBMAST	B1		
C02-11(14)	.!	TIP	-0.80	0.04	1.6	-CLK2	74LS74	74LS74	UBMAST	B4		
C04-01(04)	!	TIS	-2.00	0.05	1.2		74S11	74S11	UBMAST	C1		
			-2.80(0.09)/16.00(-1.00)				4.3					
NPG2 OUT												
C04-12(15)	.	TO	20.00	-1.00			74S11	74S11	UBMAST	C1		
B03-03(06)	!	TI	-2.00	0.05	1.8		74S04	74S04	UBMAST	C2		
			-2.00(0.05)/20.00(-1.00)									
-NPG IN H												
F06-03(05)	.	TO	16.00	-0.40		OUT3	DM8838	8838	UPRIOR	D7		
E05-13(16)	!	TI	-2.00	0.05	1.6		74S04	74S040	UBMAST	A4		
			-2.00(0.05)/16.00(-0.40)									
NPGO									ONE PIN RUN		____	0
D07-14		TOT	12.00	-2.60		Y3	25LS2519		25LS2519		UPRIOR	C6
									UNUSED SIGNAL		____	1
-NPGO F14-02(05)	.	TIS	-4.00	0.10			74S38	74S380	UPRIOR	B7		
D07-15	!	TOT	12.00	-2.60	4.3	W3	25LS2519		25LS2519		UPRIOR	C6
			-4.00(0.10)/12.00(-2.60)									
-NPG OUT H												
F14-05(08)	\	TIS	(-4.00)	0.10			74S38	74S380	UPRIOR	B7		
F14-04(07)	.!	TIS	-4.00	0.10	BARE		74S38	74S380	UPRIOR	B7		
B03-04(07)	!	TO	20.00	-1.00	7.5		74S04	74S04	UBMAST	C2		
			-4.00(0.20)/20.00(-1.00)				9.1					

LISPM Bus Interface CADR1;XAUG WLR 1-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
NPGP	D09-06	.	TOT	12.00	-3.20		D1	74S472	74S472	UPRIOR	C3
	D07-16	!	TI	-0.36	0.02	1.2	I3	25LS2519		25LS2519	UPRIOR C6
				-0.36(0.02)/12.00(-3.20)							
NPR	F15-06(08)	.	TO	16.00	-0.40		OUT4	DM8838	8838	UPRIOR	D5
	D10-04(06)	!	TI	-2.00	0.05	3.9	2D	74S174	74S174	UPRIOR	C1
				-2.00(0.05)/16.00(-0.40)							
NPRD	D10-05(07)	.	TO	20.00	-1.00		2Q	74S174	74S174	UPRIOR	C1
	D09-01	!	TI	-0.25	0.04	1.2	A0	74S472	74S472	UPRIOR	C3
				-0.25(0.04)/20.00(-1.00)							
NXM TIMEOUT											
	J01-11	\					CON		CTP	B3	
	B01-06	.!	TO	8.00	-0.40	2.9	Q2	74LS273	74LS273	REQTIM	C5
	B03-05(08)	!.	TI	-2.00	0.05	1.5		74S04	74S04	REQTIM	D6
	A09-09(12)	.!	TI	-2.00	0.05	3.9	IN	74S32	74S32	REQUB	D2
	C11-09(12)	!	TIS	-2.00	0.05	2.9		74S64	74S64	REQLM	D6
				-6.00(0.15)/8.00(-0.40) 15.7							
-NXM TIMEOUT H											
	B02-18	\	TI	-1.60	0.04		-CLK4	74 276	74276	REQERR	B4
	B02-13	.!	TI	-1.60	0.04	.9	-CLK3	74 276	74276	REQERR	B4
	B03-06(09)	!	TO	20.00	-1.00	.7		74S04	74S04	REQTIM	D6
				-3.20(0.08)/20.00(-1.00)				3.1			
PROM HUNG TIMEOUT											
	B01-04	.	TI	-0.40	0.02		D1	74LS273	74LS273	REQTIM	C5
	A02-06(08)	!	TOT	20.00	-6.50	1.3	OUT6	74S288	74S288	REQTIM	C7
				-0.40(0.02)/20.00(-6.50)							
PROM NXM TIMEOUT											
	B01-07	.	TI	-0.40	0.02		D2	74LS273	74LS273	REQTIM	C5
	A02-05(07)	!	TOT	20.00	-6.50	1.7	OUT5	74S288	74S288	REQTIM	C7
				-0.40(0.02)/20.00(-6.50)							
PROM UNUSED											
	B01-03	.	TI	-0.40	0.02		D0	74LS273	74LS273	REQTIM	C5
	A02-07(09)	!	TOT	20.00	-6.50	1.2	OUT7	74S288	74S288	REQTIM	C7
				-0.40(0.02)/20.00(-6.50)							
RBUF16	D23-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	RBUF	B8
	D21-08	!	TI	-0.20	0.02	1.7	IN4	74LS244	74LS244	RBUF	D8
				-0.20(0.02)/16.00(-2.00)							
RBUF17	D23-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	RBUF	B8
	D21-06	!	TI	-0.20	0.02	1.8	IN3	74LS244	74LS244	RBUF	D8
				-0.20(0.02)/16.00(-2.00)							
RBUF18	D23-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	RBUF	B8
	D21-04	!	TI	-0.20	0.02	1.6	IN2	74LS244	74LS244	RBUF	D8
				-0.20(0.02)/16.00(-2.00)							
RBUF19	D23-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	RBUF	B8
	D21-02	!	TI	-0.20	0.02	1.6	IN1	74LS244	74LS244	RBUF	D8
				-0.20(0.02)/16.00(-2.00)							

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
RBUF20	D24-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	RBUF	B6
	D22-08	!	TI	-0.20	0.02	1.7	IN4	74LS244	74LS244	RBUF	D6
				-0.20(0.02)/16.00(-2.00)							
RBUF21	D24-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	RBUF	B6
	D22-06	!	TI	-0.20	0.02	1.8	IN3	74LS244	74LS244	RBUF	D6
				-0.20(0.02)/16.00(-2.00)							
RBUF22	D24-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	RBUF	B6
	D22-04	!	TI	-0.20	0.02	1.6	IN2	74LS244	74LS244	RBUF	D6
				-0.20(0.02)/16.00(-2.00)							
RBUF23	D24-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	RBUF	B6
	D22-02	!	TI	-0.20	0.02	1.6	IN1	74LS244	74LS244	RBUF	D6
				-0.20(0.02)/16.00(-2.00)							
RBUF24	D25-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	RBUF	B4
	C22-08	!	TI	-0.20	0.02	2.6	IN4	74LS244	74LS244	RBUF	D4
				-0.20(0.02)/16.00(-2.00)							
RBUF25	D25-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	RBUF	B4
	C22-06	!	TI	-0.20	0.02	2.8	IN3	74LS244	74LS244	RBUF	D4
				-0.20(0.02)/16.00(-2.00)							
RBUF26	D25-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	RBUF	B4
	C22-04	!	TI	-0.20	0.02	2.6	IN2	74LS244	74LS244	RBUF	D4
				-0.20(0.02)/16.00(-2.00)							
RBUF27	D25-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	RBUF	B4
	C22-02	!	TI	-0.20	0.02	2.6	IN1	74LS244	74LS244	RBUF	D4
				-0.20(0.02)/16.00(-2.00)							
RBUF28	D26-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	RBUF	B2
	C23-08	!	TI	-0.20	0.02	2.6	IN4	74LS244	74LS244	RBUF	D2
				-0.20(0.02)/16.00(-2.00)							
RBUF29	D26-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	RBUF	B2
	C23-06	!	TI	-0.20	0.02	2.8	IN3	74LS244	74LS244	RBUF	D2
				-0.20(0.02)/16.00(-2.00)							
RBUF30	D26-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	RBUF	B2
	C23-04	!	TI	-0.20	0.02	2.6	IN2	74LS244	74LS244	RBUF	D2
				-0.20(0.02)/16.00(-2.00)							
RBUF31	D26-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	RBUF	B2
	C23-02	!	TI	-0.20	0.02	2.6	IN1	74LS244	74LS244	RBUF	D2
				-0.20(0.02)/16.00(-2.00)							
-RBUFWE	H										
	F03-08(11)	\	TO	20.00	-1.00			74S00	74S00	REQU	C5
	D23-03(05)	.!	TI	-0.25	0.01	10.8	-WE	29701	29701	RBUF	B8
	D24-03(05)	!	TI	-0.25	0.01	.9	-WE	29701	29701	RBUF	B6
	D25-03(05)	.!	TI	-0.25	0.01	.9	-WE	29701	29701	RBUF	B4
	D26-03(05)	!	TI	-0.25	0.01	.9	-WE	29701	29701	RBUF	B2
				-1.00(0.04)/20.00(-1.00)				18.0			

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
RESET										
RESET;RESET TO BUSSES ;RESET ARBITER										
F06-11(13)	\	TI	-1.60	0.04		IN2	DM8838	8838	UPRIOR	D7
B12-11(14)	.!	TI	-2.00	0.05	5.9		74S02	74S02	REQUB	C1
A13-05(08)	!.	TI	-2.00	0.05	1.5		74S04	74S04	DBGIN	D7
A14-08(11)	.!	TO	20.00	-1.00	1.3		74S10	74S100	DBGIN	D7
F21-04(06)	!	TI	-0.54	0.03	6.5	IN0	26S10	26S10	XA	D2
			-6.14(0.17)/20.00(-1.00)				19.7			
-RESET H										
D15-01(04)	\	TIP	-1.20	0.06		-CLR1	74LS74	74LS74	UBINTC	A2
D14-01(04)	.!	TIP	-1.20	0.06	.9	-CLR1	74LS74	74LS74	UBINTC	A4
A13-06(09)	!	TO	20.00	-1.00	3.3		74S04	74S04	DBGIN	D7
			-2.40(0.12)/20.00(-1.00)				5.7			
-RESET ERR H										
E03-09(11)	\	TO	20.00	-1.00		6	74S138	74S138	UBCYC	B7
D03-04(07)	.!	TIP	-0.80	0.04	1.9	-SET	74LS74	74LS74I	REQERR	D4
B02-01	!.	TI	-1.60	0.04	3.3	-CLR	74 276	74276	REQERR	B4
A03-14(16)	.!	TI	-0.80	0.06	1.5	-CLR2	74LS112	74LS112-1	REQERR	C4
B08-03(06)	!	TI	-4.00	0.10	3.0	-CLK1	74S74	74S74	UBCYC	B5
			-7.20(0.24)/20.00(-1.00)				14.2			
SACKD D10-02(04)	.	TO	20.00	-1.00		1Q	74S174	74S174	UPRIOR	C1
C03-03(06)	!	TIP	-0.40	0.02	4.1		74LS27	74LS27	UPRIOR	C4
			-0.40(0.02)/20.00(-1.00)							
SACK IN F07-06(08)	\	TO	16.00	-0.40		OUT4	DM8838	8838	UBMAST	C8
D10-03(05)	.!	TI	-2.00	0.05	3.4	1D	74S174	74S174	UPRIOR	C1
A09-12(15)	!	TI	-2.00	0.05	3.7	IN	74S32	74S32	UBMAST	B1
			-4.00(0.10)/16.00(-0.40)				8.6			
SELECT DEBUG										
B01-08	\	TI	-0.40	0.02		D3	74LS273	74LS273	REQTIM	C5
A09-05(08)	.!	TI	-2.00	0.05	4.6	IN	74S32	74S32	DBGOUT	A2
A10-01(04)	!.	TI	-2.00	0.05	1.1	IN1	MTD100	MTD100	DBGOUT	A2
A11-04(07)	.!	TIS	-2.00	0.05	1.0		74S00	74S00	DBGOUT	D1
A12-10(13)	!.	TIS	-2.00	0.05	1.3		74S08	74S08	DBGOUT	C2
A13-08(11)	.!	TO	20.00	-1.00	1.0		74S04	74S040	DBGOUT	A2
C15-10(13)	!	TIS	-2.00	0.05	2.7		74S64	74S64	DATCTL	D4
			-10.40(0.27)/20.00(-1.00)				19.2			
-SELECT DEBUG H										
E07-06(08)	\	TO	20.00	-1.00		1Y2	74S139	74S139	UBCYC	B3
C13-05(08)	.!	TIS	-2.00	0.05	4.2		74S10	74S100	DATCTL	D6
A13-09(12)	!	TI	-2.00	0.05	2.6		74S04	74S040	DBGOUT	A2
			-4.00(0.10)/20.00(-1.00)				8.3			
SELECT DEBUG DLYD										
A11-05(08)	\	TIS	-2.00	0.05			74S00	74S00	DBGOUT	D1
A10-12(15)	.!	IO	16.00	-1.00	.7	OUT1	MTD100	MTD100	DBGOUT	A2
A09-04(07)	!	TI	-2.00	0.05	1.3	IN	74S32	74S32	DBGOUT	A2
			-4.00(0.10)/16.00(-1.00)				3.5			
-SELECT INTERRUPT H										
E07-05(07)	\	TO	20.00	-1.00		1Y1	74S139	74S139	UBCYC	B3
F05-02(04)	.!	TIS	-2.00	0.05	1.7		74S133	74S133O	UBCYC	C8
E03-05(07)	!	TI	-2.00	0.05	1.7	G2B	74S138	74S138	UBCYC	B7
			-4.00(0.10)/20.00(-1.00)				4.9			

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
SELECT PAGE										
E05-02(05)	\	TO	20.00	-1.00			74S04	74S040	UBCYC	A3
E10-01(03)	.!	TI	-4.00	0.10	3.0	SEL	74S258	74S258	UBMAP	D3
E11-01(03)	!.	TI	-4.00	0.10	.9	SEL	74S258	74S258	UBMAP	D1
C13-02(05)	.!	TIS	-2.00	0.05	2.7		74S10	74S10	DATCTL	B7
B20-10(13)	!	TIS	-2.00	0.05	4.3		74S00	74S00	DATCTL	A7
			-12.00(0.30)/20.00(-1.00)				15.4			
-SELECT PAGE H										
E07-07(09)	\	TO	20.00	-1.00		1Y3	74S139	74S139	UBCYC	B3
E05-01(04)	.!	TI	-2.00	0.05	1.6		74S04	74S040	UBCYC	A3
F05-03(05)	!	TIS	-2.00	0.05	1.6		74S133	74S1330	UBCYC	C6
			-4.00(0.10)/20.00(-1.00)				4.7			
SELECT SPY										
A14-03(06)	\	TIS	-2.00	0.05			74S10	74S10	DIAG	D6
A13-10(13)	.!	TO	20.00	-1.00	.7		74S04	74S040	DIAG	D2
A11-10(13)	!	TIS	-2.00	0.05	1.4		74S00	74S00	DIAG	D7
			-4.00(0.10)/20.00(-1.00)				3.6			
-SELECT SPY H										
F05-01(03)	.	TIS	-2.00	0.05			74S133	74S1330	UBCYC	C6
E07-04(06)	!.	TO	20.00	-1.00	1.7	1Y0	74S139	74S139	UBCYC	B3
C13-04(07)	.!	TIS	-2.00	0.05	4.1		74S10	74S100	DATCTL	D6
A13-11(14)	!.	TI	-2.00	0.05	2.7		74S04	74S040	DIAG	D2
A20-09	.!	TI	-0.80	0.02	3.7	-ENB	8304	8304	DIAG	C7
A21-09	!	TI	-0.80	0.02	.9	-ENB	8304	8304	DIAG	C2
			-7.60(0.19)/20.00(-1.00)				19.1			
SPY0 J07-01	;					CON		CLM	A6	
A20-12	!	TOT	48.00	-5.00	2.9	B7	8304	8304	DIAG	C7
			0.00/48.00							
SPY1 J07-02	;					CON		CLM	A6	
A20-13	!	TOT	48.00	-5.00	2.8	B6	8304	8304	DIAG	C7
			0.00/48.00							
SPY10 J07-11	;					CON		CLM	B6	
A21-14	!	TOT	48.00	-5.00	2.4	B5	8304	8304	DIAG	C2
			0.00/48.00							
SPY11 J07-12	;					CON		CLM	B6	
A21-15	!	TOT	48.00	-5.00	2.3	B4	8304	8304	DIAG	C2
			0.00/48.00							
SPY12 J07-13	;					CON		CLM	B6	
A21-16	!	TOT	48.00	-5.00	2.2	B3	8304	8304	DIAG	C2
			0.00/48.00							
SPY13 J07-14	;					CON		CLM	B6	
A21-17	!	TOT	48.00	-5.00	2.0	B2	8304	8304	DIAG	C2
			0.00/48.00							
SPY14 J07-15	;					CON		CLM	B6	
A21-18	!	TOT	48.00	-5.00	1.9	B1	8304	8304	DIAG	C2
			0.00/48.00							

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
SPY15	J07-16						CON		CLM	B6	
	A21-19		TOT	48.00	-5.00	1.7	B0	8304	8304	DIAG	C2
				0.00/48.00							
SPY2	J07-03						CON		CLM	A6	
	A20-14		TOT	48.00	-5.00	2.7	B5	8304	8304	DIAG	C7
				0.00/48.00							
SPY3	J07-04						CON		CLM	A6	
	A20-15		TOT	48.00	-5.00	2.5	B4	8304	8304	DIAG	C7
				0.00/48.00							
SPY4	J07-05						CON		CLM	A6	
	A20-16		TOT	48.00	-5.00	2.4	B3	8304	8304	DIAG	C7
				0.00/48.00							
SPY5	J07-06						CON		CLM	A6	
	A20-17		TOT	48.00	-5.00	2.3	B2	8304	8304	DIAG	C7
				0.00/48.00							
SPY6	J07-07						CON		CLM	A6	
	A20-18		TOT	48.00	-5.00	2.1	B1	8304	8304	DIAG	C7
				0.00/48.00							
SPY7	J07-08						CON		CLM	A6	
	A20-19		TOT	48.00	-5.00	2.0	B0	8304	8304	DIAG	C7
				0.00/48.00							
SPY8	J07-09						CON		CLM	A6	
	A21-12		TOT	48.00	-5.00	2.7	B7	8304	8304	DIAG	C2
				0.00/48.00							
SPY9	J07-10						CON		CLM	B6	
	A21-13		TOT	48.00	-5.00	2.6	B6	8304	8304	DIAG	C2
				0.00/48.00							
SPY ADR 1											
	J08-05						CON		CLM	A8	
	A17-12		TOT	64.00	-15.00	1.7	OUT4	74S241	74S241	DBGOUT	D2
				0.00/64.00							
SPY ADR 2											
	J08-06						CON		CLM	A8	
	A17-14		TOT	64.00	-15.00	1.4	OUT3	74S241	74S241	DBGOUT	D2
				0.00/64.00							
SPY ADR 3											
	J08-07						CON		CLM	A8	
	A17-16		TOT	64.00	-15.00	1.3	OUT2	74S241	74S241	DBGOUT	D2
				0.00/64.00							
SPY ADR 4											
	J08-08						CON		CLM	A8	
	A17-18		TOT	64.00	-15.00	1.1	OUT1	74S241	74S241	DBGOUT	D2
				0.00/64.00							

LISPM B[illegible] Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-SPY READ H										
J08-09	.					CON		CLM	A8	
A11-08(11)	i	TO	20.00	-1.00	4.0		74S00	74S00	DIAG	D7
			0.00/20.00							
-SPY WRITE H										
J08-10	.					CON		CLM	B8	
A14-06(09)	i	TO	20.00	-1.00	3.0		74S10	74S10	DIAG	D6
			0.00/20.00							
SSYN IN F07-13(15)	.	TO	16.00	-0.40		OUT1	DM8838	8838	UBMAST	C8
C03-02(05)	i.	TIP	-0.40	0.02	4.6		74LS27	74LS270	UBMAST	A5
J01-16	.!					CON		CTP	C3	
A09-10(13)	i	TI	-2.00	0.05	3.7	IN	74S32	74S32	REQUB	D2
			-2.40(0.07)/16.00(-0.40)				15.1			
SSYN OUT										
J01-17	\					CON		CTP	C3	
E04-06(09)	.!	TO	20.00	-1.00	6.3	OUT	74S32	74S32	REQU	D8
F07-14(16)	i	TI	-1.60	0.04	2.4	IN1	DM8838	8838	UBMAST	C8
			-1.60(0.04)/20.00(-1.00)				10.2			
SSYN TO A12-02(05)	\	TIS	-2.00	0.05			74S08	74S08	DBGIN	C6
A09-08(11)	.!	TO	20.00	-1.00	1.7	OUT	74S32	74S32	REQUB	D2
B09-01(04)	i	TI	-2.00	0.05	1.0	IN	TD250	TD250	REQUB	D2
			-4.00(0.10)/20.00(-1.00)				4.2			
SSYN T100										
B12-12(15)	.	TI	-2.00	0.05			74S02	74S02	REQUB	C1
B09-04(07)	i	TO	20.00	-1.00	2.3	100NS	TD250	TD250	REQUB	D2
			-2.00(0.05)/20.00(-1.00)							
SSYN T150										
B11-05(08)	.	TIS	-2.00	0.05			74S51	74S51	REQLM	B7
B09-10(13)	i	TO	20.00	-1.00	1.1	150NS	TD250	TD250	REQUB	D2
			-2.00(0.05)/20.00(-1.00)							
SSYN T200									ONE PIN RUN	____ 0
B09-06(09)		TO	20.00	-1.00		200NS	TD250	TD250	REQUB D2	
								UNUSED EXTRA OUTPUT		____ 0
SSYN T250									ONE PIN RUN	____ 0
B09-08(11)		TO	20.00	-1.00		250NS	TD250	TD250	REQUB D2	
								UNUSED EXTRA OUTPUT		____ 0
SSYN T50									ONE PIN RUN	____ 0
B09-12(15)		TO	20.00	-1.00		50NS	TD250	TD250	REQUB D2	
								UNUSED EXTRA OUTPUT		____ 0
TIMEOUT 0										
B01-18	.	TI	-0.40	0.02		D7	74LS273	74LS273	REQTIM	C5
A02-01(03)	i	TOT	20.00	-6.50	1.6	OUT1	74S288	74S288	REQTIM	C7
			-0.40(0.02)/20.00(-6.50)							
TIMEOUT 1										
B01-17	.	TI	-0.40	0.02		D6	74LS273	74LS273	REQTIM	C5
A02-02(04)	i	TOT	20.00	-6.50	1.6	OUT2	74S288	74S288	REQTIM	C7
			-0.40(0.02)/20.00(-6.50)							

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
TIMEOUT 2													
	B01-14	.	TI	-0.40	0.02		D5	74LS273	74LS273	REQTIM	C5		
	A02-03(05)	!	TOT	20.00	-6.50	1.8	OUT3	74S288	74S288	REQTIM	C7		
				-0.40(0.02)/20.00(-6.50)									
TIMEOUT 3													
	B01-13	.	TI	-0.40	0.02		D4	74LS273	74LS273	REQTIM	C5		
	A02-04(06)	!	TOT	20.00	-6.50	1.8	OUT4	74S288	74S288	REQTIM	C7		
				-0.40(0.02)/20.00(-6.50)									
UA01	F08-11(13)	\	TI	-1.60	0.04		IN2	DM8838	8838	UBA	C8		
	A18-19	.!	TOT	8.00	-2.60	8.3	Q7	74LS374	74LS374	DBGIN	B5		
	A25-12	!	TOT	24.00	-15.00	4.0	-OUT4	74LS240	74LS240	LMADR	B7		
				-1.60(0.04)/8.00(-2.60)			13.8						
UA010	F10-02(04)	\	TI	-1.60	0.04		IN3	DM8838	8838	UBA	C5		
	A19-16	.!	TOT	8.00	-2.60	7.7	Q6	74LS374	74LS374	DBGIN	B3		
	A27-14	!	TOT	24.00	-15.00	4.5	-OUT3	74LS240	74LS240	LMADR	B2		
				-1.60(0.04)/8.00(-2.60)			13.7						
UA011	F10-05(07)	\	TI	-1.60	0.04		IN4	DM8838	8838	UBA	C5		
	A19-15	.!	TOT	8.00	-2.60	7.8	Q5	74LS374	74LS374	DBGIN	B3		
	A27-16	!	TOT	24.00	-15.00	4.5	-OUT?	74LS240	74LS240	LMADR	B2		
				-1.60(0.04)/8.00(-2.60)			13.8						
UA012	F11-14(16)	\	TI	-1.60	0.04		IN1	DM8838	8838	UBA	C3		
	A19-12	.!	TOT	8.00	-2.60	6.9	Q4	74LS374	74LS374	DBGIN	B3		
	A27-18	!	TOT	24.00	-15.00	4.5	-OUT1	74LS240	74LS240	LMADR	B2		
				-1.60(0.04)/8.00(-2.60)			12.9						
UA013	F11-11(13)	\	TI	-1.60	0.04		IN2	DM8838	8838	UBA	C3		
	A19-09	.!	TOT	8.00	-2.60	7.0	Q3	74LS374	74LS374	DBGIN	B3		
	A23-12	!	TOT	24.00	-15.00	2.7	-OUT4	74LS240	74LS240	LMADR	D7		
				-1.60(0.04)/8.00(-2.60)			11.2						
UA014	F11-02(04)	\	TI	-1.60	0.04		IN3	DM8838	8838	UBA	C3		
	A19-06	.!	TOT	8.00	-2.60	7.1	Q2	74LS374	74LS374	DBGIN	B3		
	A23-14	!	TOT	24.00	-15.00	2.8	-OUT3	74LS240	74LS240	LMADR	D7		
				-1.60(0.04)/8.00(-2.60)			11.4						
UA015	F11-05(07)	\	TI	-1.60	0.04		IN4	DM8838	8838	UBA	C3		
	A19-05	.!	TOT	8.00	-2.60	7.4	Q1	74LS374	74LS374	DBGIN	B3		
	A23-16	!	TOT	24.00	-15.00	2.7	-OUT2	74LS240	74LS240	LMADR	D7		
				-1.60(0.04)/8.00(-2.60)			11.6						
UA016	F12-14(16)	\	TI	-1.60	0.04		IN1	DM8838	8838	UBA	C1		
	A19-02	.!	TOT	8.00	-2.60	7.1	Q0	74LS374	74LS374	DBGIN	B3		
	A23-18	!	TOT	24.00	-15.00	2.8	-OUT1	74LS240	74LS240	LMADR	D7		
				-1.60(0.04)/8.00(-2.60)			11.4						
UA017	F12-11(13)	\	TI	-1.60	0.04		IN2	DM8838	8838	UBA	C1		
	A16-14	.!	TOT	12.00	-2.60	6.4	Y3	25LS2519		25LS2519		DBGIN	B7
	A24-12	!	TOT	24.00	-15.00	4.5	-OUT4	74LS240	74LS240	LMADR	D5		
				-1.60(0.04)/12.00(-2.60)				12.4					
UA02	F08-02(04)	\	TI	-1.60	0.04		IN3	DM8838	8838	UBA	C8		
	A18-16	.!	TOT	8.00	-2.60	8.0	Q6	74LS374	74LS374	DBGIN	B5		
	A25-14	!	TOT	24.00	-15.00	4.0	-OUT3	74LS240	74LS240	LMADR	B7		
				-1.60(0.04)/8.00(-2.60)			13.5						

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UA03	F08-05(07)	\	TI	-1.60	0.04		IN4	DM8838	8838	UBA	C8
	A18-15	.!	TOT	8.00	-2.60	8.2	Q5	74LS374	74LS374	DBGIN	B6
	A25-16	!	TOT	24.00	-15.00	4.0	-OUT2	74LS240	74LS240	LMADR	B7
				-1.60(0.04)/8.00(-2.60)			13.7				
UA04	F09-14(16)	\	TI	-1.60	0.04		IN1	DM8838	8838	UBA	C6
	A18-12	.!	TOT	8.00	-2.60	7.3	Q4	74LS374	74LS374	DBGIN	B6
	A25-18	!	TOT	24.00	-15.00	4.0	-OUT1	74LS240	74LS240	LMADR	B7
				-1.60(0.04)/8.00(-2.60)			12.8				
UA05	F09-11(13)	\	TI	-1.60	0.04		IN2	DM8838	8838	UBA	C6
	A18-09	.!	TOT	8.00	-2.60	7.3	Q3	74LS374	74LS374	DBGIN	B5
	A26-12	!	TOT	24.00	-15.00	4.7	-OUT4	74LS240	74LS240	LMADR	B5
				-1.60(0.04)/8.00(-2.60)			13.5				
UA06	F09-02(04)	\	TI	-1.60	0.04		IN3	DM8838	8838	UBA	C6
	A18-06	.!	TOT	8.00	-2.60	7.4	Q2	74LS374	74LS374	DBGIN	B5
	A26-14	!	TOT	24.00	-15.00	4.8	-OUT3	74LS240	74LS240	LMADR	B5
				-1.60(0.04)/8.00(-2.60)			13.7				
UA07	F09-05(07)	\	TI	-1.60	0.04		IN4	DM8838	8838	UBA	C6
	A18-05	.!	TOT	8.00	-2.60	7.7	Q1	74LS374	74LS374	DBGIN	B5
	A26-16	!	TOT	24.00	-15.00	4.7	-OUT2	74LS240	74LS240	LMADR	B5
				-1.60(0.04)/8.00(-2.60)			13.9				
UA08	F10-14(16)	\	TI	-1.60	0.04		IN1	DM8838	8838	UBA	C5
	A18-02	.!	TOT	8.00	-2.60	7.3	Q0	74LS374	74LS374	DBGIN	B5
	A26-18	!	TOT	24.00	-15.00	4.8	-OUT1	74LS240	74LS240	LMADR	B5
				-1.60(0.04)/8.00(-2.60)			13.6				
UA09	F10-11(13)	\	TI	-1.60	0.04		IN2	DM8838	8838	UBA	C5
	A19-19	.!	TOT	8.00	-2.60	8.0	Q7	74LS374	74LS374	DBGIN	B3
	A27-12	!	TOT	24.00	-15.00	4.5	-OUT4	74LS240	74LS240	LMADR	B2
				-1.60(0.04)/8.00(-2.60)			14.0				
-UB16→BUS	H										
	C17-08(11)	\	TO	20.00	-1.00			74S51	74S51A	DATCTL	A7
	D19-19	.!	TI	-0.20	0.02	1.5	-ENB	74LS244	74LS244	BUSSEL	D8
	C19-19	!.	TI	-0.20	0.02	1.5	-ENB	74LS244	74LS244	BUSSEL	D6
	C20-19	.!	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	D3
	C21-19	!.	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	D1
	B23-01	.!	TI	-0.20	0.02	1.8	-ENB	74LS244	74LS244	BUSSEL	B8
	B24-01	!.	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	B6
	B25-01	.!	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	B3
	B26-01	!	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	B1
				-1.60(0.16)/20.00(-1.00)				19.8			
UB17-14=MAP											
	F03-02(05)	\	TIS	-2.00	0.05			74S00	74S00	UBCYC	D3
	E06-06(09)	.!	TO	20.00	-1.00	2.1		74S260	74S2600	UBCYC	D2
	C15-12(15)	!	TIS	-2.00	0.05	5.9		74S64	74S64	DATCTL	D4
				-4.00(0.10)/20.00(-1.00)				9.5			
-UB32→BUS	H										
	D19-01	\	TI	-0.20	0.02		-ENB	74LS244	74LS244	BUSSEL	D8
	C19-01	.!	TI	-0.20	0.02	1.5	-ENB	74LS244	74LS244	BUSSEL	D6
	B20-03(06)	!.	TO	20.00	-1.00	1.2		74S00	74S00	DATCTL	A1
	C20-01	.!	TI	-0.20	0.02	1.0	-ENB	74LS244	74LS244	BUSSEL	D3
	C21-01	!.	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	D1
	B23-19	.!	TI	-0.20	0.02	2.1	-ENB	74LS244	74LS244	BUSSEL	B8
	B24-19	!.	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	B6
	B25-19	.!	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	B3
	B26-19	!	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	BUSSEL	B1
				-1.60(0.16)/20.00(-1.00)				19.9			

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UBA0										ONE PIN RUN ___ 0	
	F08-13(15)		TO	16.00	-0.40		OUT1	DM8838	8838	UBA UNUSED SIGNAL ___ 1	C8
UBA 1	A17-08	.	TI	-0.40	0.05		IN4	74S241	74S241	DBGOUT	D2
	E11-03(05)	!.	TI	-2.00	0.05	5.5	IN1	74S258	74S258	UBMAP	D1
	E10-03(05)	.!	TI	-2.00	0.05	.9	IN1	74S258	74S258	UBMAP	D3
	F08-10(12)	!.	TO	16.00	-0.40	2.1	OUT2	DM8838	8838	UBA	C8
	E07-14(16)	.!	TI	-2.00	0.05	2.0	2A	74S139	74S139	UBCYC	D4
	E03-01(03)	!	TI	-2.00	0.05	2.8	A	74S138	74S138	UBCYC	B7
				-8.40(0.25)/16.00(-0.40)				19.3			
UBA10	F10-03(05)	.	TO	16.00	-0.40		OUT3	DM8838	8838	UBA	C5
	E08-10(12)	!.	TIS	-2.00	0.05	1.4		74S133	74S133	UBCYC	B1
	E10-02(04)	.!	TI	-2.00	0.05	1.3	IN0	74S258	74S258	UBMAP	D3
	E11-02(04)	!	TI	-2.00	0.05	.9	IN0	74S258	74S258	UBMAP	D1
				-6.00(0.15)/16.00(-0.40)				6.6			
UBA11	E08-07(09)	.	TIS	-2.00	0.05			74S133	74S133	UBCYC	B1
	E10-05(07)	!.	TI	-2.00	0.05	1.5	IN0	74S258	74S258	UBMAP	D3
	E11-05(07)	.!	TI	-2.00	0.05	.9	IN0	74S258	74S258	UBMAP	D1
	F10-06(08)	!	TO	16.00	-0.40	1.7	OUT4	DM8838	8838	UBA	C5
				-6.00(0.15)/16.00(-0.40)				7.1			
UBA 12	F11-13(15)	.	TO	16.00	-0.40		OUT1	DM8838	8838	UBA	C3
	E10-11(13)	!.	TI	-2.00	0.05	1.5	IN0	74S258	74S258	UBMAP	D3
	E11-11(13)	.!	TI	-2.00	0.05	.9	IN0	74S258	74S258	UBMAP	D1
	D11-09(12)	!	TI	-2.00	0.05	1.4		74S04	74S04A	UBA	D3
				-6.00(0.15)/16.00(-0.40)				6.8			
-UBA 12	E08-06(08)	.	TIS	-2.00	0.05			74S133	74S133	UBCYC	B1
	D11-08(11)	!	TO	20.00	-1.00	2.5		74S04	74S04A	UBA	D3
				-2.00(0.05)/20.00(-1.00)							
UBA13	E08-05(07)	.	TIS	-2.00	0.05			74S133	74S133	UBCYC	B1
	E10-14(16)	!.	TI	-2.00	0.05	1.8	IN0	74S258	74S258	UBMAP	D3
	E11-14(16)	.!	TI	-2.00	0.05	.9	IN0	74S258	74S258	UBMAP	D1
	F11-10(12)	!	TO	16.00	-0.40	1.9	OUT2	DM8838	8838	UBA	C3
				-6.00(0.15)/16.00(-0.40)				7.6			
UBA 14	E08-04(06)	\	TIS	-2.00	0.05			74S133	74S133	UBCYC	B1
	F11-03(05)	.!	TO	16.00	-0.40	2.3	OUT3	DM8838	8838	UBA	C3
	D11-11(14)	!	TI	-2.00	0.05	2.5		74S04	74S04A	UBA	D3
				-4.00(0.10)/16.00(-0.40)				6.3			
-UBA 14	E06-08(11)	.	TI	-2.00	0.05			74S260	74S2600	UBCYC	D2
	D11-10(13)	!	TO	20.00	-1.00	3.3		74S04	74S04A	UBA	D3
				-2.00(0.05)/20.00(-1.00)							
UBA 15	F11-06(08)	\	TO	16.00	-0.40		OUT4	DM8838	8838	UBA	C3
	E08-03(05)	.!	TIS	-2.00	0.05	2.5		74S133	74S133	UBCYC	B1
	D11-13(16)	!	TI	-2.00	0.05	2.6		74S04	74S04A	UBA	D3
				-4.00(0.10)/16.00(-0.40)				6.6			
-UBA 15	E06-10(13)	.	TI	-2.00	0.05			74S260	74S2600	UBCYC	D2
	D11-12(15)	!	TO	20.00	-1.00	3.3		74S04	74S04A	UBA	D3
				-2.00(0.05)/20.00(-1.00)							

LISPM Bus Interface CADR1;XAUG WLR -DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UBA16	F12-13(15)	\	TO	16.00	-0.40		OUT1	DM8838	8838	UBA	C1
	E08-02(04)	.!	TIS	-2.00	0.05	3.1		74S133	74S133	UBCYC	B1
	E06-11(14)	!	TI	-2.00	0.05	1.2		74S260	74S2600	UBCYC	D2
				-4.00(0.10)/16.00(-0.40)				5.8			
UBA17	F12-10(12)	\	TO	16.00	-0.40		OUT2	DM8838	8838	UBA	C1
	E08-01(03)	.!	TIS	-2.00	0.05	3.3		74S133	74S133	UBCYC	B1
	E06-04(07)	!	TI	-2.00	0.05	1.5		74S260	74S2600	UBCYC	D2
				-4.00(0.10)/16.00(-0.40)				6.3			
UBA 2	E03-02(04)	\	TI	-2.00	0.05		B	74S138	74S138	UBCYC	B7
	F08-03(05)	.!	TO	16.00	-0.40	3.2	OUT3	DM8838	8838	UBA	C8
	E10-06(08)	!.	TI	-2.00	0.05	1.7	IN1	74S258	74S258	UBMAP	D3
	E11-06(08)	.!	TI	-2.00	0.05	.9	IN1	74S258	74S258	UBMAP	D1
	E20-17	!.	TI	-0.20	0.02	5.3	IN5	74LS244	74LS244	UBXA	D7
	A17-11	.!	TI	-0.40	0.05	4.5	IN8	74S241	74S241	DBGOUT	D2
	A17-06	!	TI	-0.40	0.05	.9	IN3	74S241	74S241	DBGOUT	D2
				-7.00(0.27)/16.00(-0.40)				24.0			
UBA 3	F08-06(08)	.	TO	16.00	-0.40		OUT4	DM8838	8838	UBA	C8
	E10-10(12)	!.	TI	-2.00	0.05	2.1	IN1	74S258	74S258	UBMAP	D3
	E11-10(12)	.!	TI	-2.00	0.05	.9	IN1	74S258	74S258	UBMAP	D1
	E20-15	!.	TI	-0.20	0.02	5.0	IN6	74LS244	74LS244	UBXA	D7
	A17-13	.!	TI	-0.40	0.05	4.9	IN7	74S241	74S241	DBGOUT	D2
	A17-04	!	TI	-0.40	0.05	.9	IN2	74S241	74S241	DBGOUT	D2
				-5.00(0.22)/16.00(-0.40)				19.8			
UBA 4	F09-13(15)	\	TO	16.00	-0.40		OUT1	DM8838	8838	UBA	C6
	E10-13(15)	.!	TI	-2.00	0.05	1.7	IN1	74S258	74S258	UBMAP	D3
	E11-13(15)	!.	TI	-2.00	0.05	.9	IN1	74S258	74S258	UBMAP	D1
	E20-13	.!	TI	-0.20	0.02	5.0	IN7	74LS244	74LS244	UBXA	D7
	A17-02	!	TI	-0.40	0.05	5.8	IN1	74S241	74S241	DBGOUT	D2
				-4.60(0.17)/16.00(-0.40)				17.9			
UBA5	E20-11	\	TI	-0.20	0.02		IN8	74LS244	74LS244	UBXA	D7
	F09-10(12)	.!	TO	16.00	-0.40	6.0	OUT2	DM8838	8838	UBA	C6
	E07-02(04)	!	TI	-2.00	0.05	2.5	1A	74S139	74S139	UBCYC	B3
				-2.20(0.07)/16.00(-0.40)				10.0			
UBA6	E20-08	\	TI	-0.20	0.02		IN4	74LS244	74LS244	UBXA	D7
	F09-03(05)	.!	TO	16.00	-0.40	6.0	OUT3	DM8838	8838	UBA	C6
	E07-03(05)	!	TI	-2.00	0.05	1.9	1B	74S139	74S139	UBCYC	B3
				-2.20(0.07)/16.00(-0.40)				9.4			
UBA 7	E20-06	\	TI	-0.20	0.02		IN3	74LS244	74LS244	UBXA	D7
	D11-01(04)	.!	TI	-2.00	0.05	5.1		74S04	74S04A	UBA	D3
	F09-06(08)	!	TO	16.00	-0.40	3.2	OUT4	DM8838	8838	UBA	C6
				-2.20(0.07)/16.00(-0.40)				9.8			
UBA 7	E08-13(15)	.	TIS	-2.00	0.05			74S133	74S133	UBCYC	B1
	D11-02(06)	!	TO	20.00	-1.00	2.1		74S04	74S04A	UBA	D3
				-2.00(0.05)/20.00(-1.00)							
UBA 8	E20-04	\	TI	-0.20	0.02		IN2	74LS244	74LS244	UBXA	D7
	D11-03(06)	.!	TI	-2.00	0.05	5.0		74S04	74S04A	UBA	D3
	F10-13(15)	!	TO	16.00	-0.40	2.7	OUT1	DM8838	8838	UBA	C5
				-2.20(0.07)/16.00(-0.40)				9.2			

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UBA 8	E08-12(14)	.	TIS	-2.00	0.05			74S133	74S133	UBCYC	B1
	D11-04(07)	!	TO	20.00	-1.00	2.1		74S04	74S04A	UBA	D3
				-2.00(0.05)/20.00(-1.00)							
UBA 9	E20-02	\	TI	-0.20	0.02		IN1	74LS244	74LS244	UBXA	D7
	D11-05(08)	.!	TI	-2.00	0.05	5.0		74S04	74S04A	UBA	D3
	F10-10(12)	!	TO	16.00	-0.40	2.8	OUT2	DM8838	8838	UBA	C5
				-2.20(0.07)/16.00(-0.40)				9.3			
-UBA 9	E08-11(13)	.	TIS	-2.00	0.05			74S133	74S133	UBCYC	B1
	D11-06(09)	!	TO	20.00	-1.00	2.0		74S04	74S04A	UBA	D3
				-2.00(0.05)/20.00(-1.00)							
-UBACK H											
	F03-06(09)	.	TO	20.00	-1.00			74S00	74S00	REQU	C1
	F02-11(14)	!.	TI	-2.00	0.05	.7		74S02	74S020	REQU	D4
	F02-05(08)	.!	TI	-2.00	0.05	.8		74S02	74S020	REQU	C4
	F01-01(04)	!	TI	-2.00	0.05	1.1	IN	TD100	TD100	REQU	D2
				-6.00(0.15)/20.00(-1.00)				5.6			
-UBADDR→XBUS H											
	R19-06(09)	\	TO	20.00	-1.00			74S04	74S04	DATCTL	B1
	E20-01	.!	TI	-0.20	0.02	3.0	-ENB	74LS244	74LS244	UBXA	D7
	E20-19	!.	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	UBXA	D7
	E21-01	.!	TI	-0.20	0.02	.7	-ENB	74LS244	74LS244	UBXA	D5
	E21-19	!.	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	UBXA	D5
	E22-01	.!	TI	-0.20	0.02	.7	-ENB	74LS244	74LS244	UBXA	D2
	E22-19	!	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	UBXA	D2
				-1.20(0.12)/20.00(-1.00)				14.3			
-UB ADR0 H											
	EH2	.					CON		CUBUS	A5	
	F08-15(17)	!	TOC	50.00		1.5	BUS1	DM8838	8838	UBA	C8
				0.00/50.00							
-UB ADR1 H											
	EH1	.					CON		CUBUS	A5	
	F08-12(14)	!	TOC	50.00		1.4	BUS2	DM8838	8838	UBA	C8
				0.00/50.00							
-UB ADR10 H											
	EP1	.					CON		CUBUS	C5	
	F10-01(03)	!	TOC	50.00		2.4	BUS3	DM8838	8838	UBA	C5
				0.00/50.00							
-UB ADR11 H											
	EL1	.					CON		CUBUS	C5	
	F10-04(06)	!	TOC	50.00		1.9	BUS4	DM8838	8838	UBA	C5
				0.00/50.00							
-UB ADR12 H											
	EC1	.					CON		CUBUS	C5	
	F11-15(17)	!	TOC	50.00		2.1	BUS1	DM8838	8838	UBA	C3
				0.00/50.00							
-UB ADR13 H											
	EK2	.					CON		CUBUS	C5	
	F11-12(14)	!	TOC	50.00		2.4	BUS2	DM8838	8838	UBA	C3
				0.00/50.00							

LISPM F s Interface CADR1:XAUG WLR 11-DEC-80 1607

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UB ADR14 H EK1 F11-01(03)	i	TOC	50.00 0.00/50.00	2.4	CON BUS3	DM8838	CUBUS 8838	C5 UBA	C3
-UB ADR15 H ED2 F11-04(06)	i	TOC	50.00 0.00/50.00	1.7	CON BUS4	DM8838	CUBUS 8838	C5 UBA	C3
-UB ADR16 H EE2 F12-15(17)	i	TOC	50.00 0.00/50.00	2.5	CON BUS1	DM8838	CUBUS 8838	D5 UBA	C1
-UB ADR17 H ED1 F12-12(14)	i	TOC	50.00 0.00/50.00	2.4	CON BUS2	DM8838	CUBUS 8838	D5 UBA	C1
-UB ADR2 H EF1 F08-01(03)	i	TOC	50.00 0.00/50.00	1.8	CON BUS3	DM8838	CUBUS 8838	A5 UBA	C8
-UB ADR3 H EV2 F08-04(06)	i	TOC	50.00 0.00/50.00	1.7	CON BUS4	DM8838	CUBUS 8838	A5 UBA	C8
-UB ADR4 H EU2 F09-15(17)	i	TOC	50.00 0.00/50.00	2.4	CON BUS1	DM8838	CUBUS 8838	A5 UBA	C6
-UB ADR5 H EV1 F09-12(14)	i	TOC	50.00 0.00/50.00	2.5	CON BUS2	DM8838	CUBUS 8838	B5 UBA	C6
-UB ADR6 H EU1 F09-01(03)	i	TOC	50.00 0.00/50.00	2.4	CON BUS3	DM8838	CUBUS 8838	B5 UBA	C6
-UB ADR7 H EP2 F09-04(06)	i	TOC	50.00 0.00/50.00	1.7	CON BUS4	DM8838	CUBUS 8838	B5 UBA	C6
-UB ADR8 H EN2 F10-15(17)	i	TOC	50.00 0.00/50.00	2.3	CON BUS1	DM8838	CUBUS 8838	B5 UBA	C5
-UB ADR9 H ER1 F10-12(14)	i	TOC	50.00 0.00/50.00	2.6	CON BUS2	DM8838	CUBUS 8838	B5 UBA	C5

LISPM Bus Interface CADR1;XAUG WLR 1-DEC-80 1607

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
-UBADRIVE H											
B17-04(07)	.	TO	20.00	-1.00			74S02	74S02	DATCTL	C1	
F12-09(11)	!	TI	-1.60	0.04	5.6	DIS A	DM8838	8838	UBA	C1	
F11-09(11)	.!	TI	-1.60	0.04	.9	DIS A	DM8838	8838	UBA	C3	
F10-09(11)	!	TI	-1.60	0.04	.9	DIS A	DM8838	8838	UBA	C5	
F09-09(11)	.!	TI	-1.60	0.04	.9	DIS A	DM8838	8838	UBA	C6	
F08-09(11)	!	TI	-1.60	0.04	.9	DIS A	DM8838	8838	UBA	C8	
			-8.00(0.20)/20.00(-1.00)				15.2				
-UB BBSY H											
FD1	;					CON		CUBUS	C7		
F07-01(03)	!	TOC	50.00		2.5	BUS3	DM8838	8838	UBMAST	C8	
			0.00/50.00								
UB BG4 IN											
UB BG4 IN;(OUT)											
DT2	\					CON		CUBUS	C7		
DS2	.!					CON		CUBUS	C7		
F13-03(06)	!	TOC	60.00		1.4		74S38	74S380	UPRIOR	A7	
			0.00/60.00		3.0		MORE THAN 1 CONNECTOR PIN				____.0
UB BG5 IN											
UB BG5 IN;(OUT)											
DR2	\					CON		CUBUS	C7		
DP2	.!					CON		CUBUS	C7		
F13-06(09)	!	TOC	60.00		1.1		74S38	74S380	UPRIOR	A7	
			0.00/60.00		2.7		MORE THAN 1 CONNECTOR PIN				____ 0
UB BG6 IN											
UB BG6 IN;(OUT)											
DN2	\					CON		CUBUS	C7		
DM2	.!					CON		CUBUS	B7		
F13-08(11)	!	TOC	60.00		1.0		74S38	74S380	UPRIOR	B7	
			0.00/60.00		2.6		MORE THAN 1 CONNECTOR PIN				____ 0
UB BG7 IN											
UB BG7 IN;(OUT)											
DK2	\					CON		CUBUS	B7		
DL2	.!					CON		CUBUS	B7		
F13-11(14)	!	TOC	60.00		1.2		74S38	74S380	UPRIOR	B7	
			0.00/60.00		2.8		MORE THAN 1 CONNECTOR PIN				____ 0
-UB BR4 H											
DH2	;					CON		CUBUS	B7		
F06-04(06)	!	TOC	50.00		4.3	BUS4	DM8838	8838	UPRIOR	D7	
			0.00/50.00								
-UB BR5 H											
DF2	;					CON		CUBUS	A7		
F15-15(17)	!	TOC	50.00		1.7	BUS1	DM8838	8838	UPRIOR	D5	
			0.00/50.00								
-UB BR6 H											
DE2	;					CON		CUBUS	A7		
F15-12(14)	!	TOC	50.00		1.4	BUS2	DM8838	8838	UPRIOR	D5	
			0.00/50.00								

LISPM Bus Interface CADR1:XAUG WLR 11-DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW / HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UB BR7 H DD2 F15-01(03)	I	TOC	50.00 0.00/50.00	1.6	CON BUS3	DM8838	CUBUS 8838	A7 UPRIOR	D5
-UB C0 H EJ2					CON		CUBUS	D3	ONE PIN RUN ____ 0 NO INPUTS OR OUTPUTS ____ 3
-UB C1 H EF2 F12-01(03)	I	TOC	50.00 0.00/50.00	2.4	CON BUS3	DM8838	CUBUS 8838	D3 UBA	C1
-UBD0 H CS2 F16-15(17)	I	TOC	50.00 0.00/50.00	1.5	CON BUS1	DM8838	CUBUS 8838	A3 UBD	B8
-UBD1 H CR2 F16-12(14)	I	TOC	50.00 0.00/50.00	1.3	CON BUS2	DM8838	CUBUS 8838	A3 UBD	B8
-UBD10 H CJ2 F18-01(03)	I	TOC	50.00 0.00/50.00	1.6	CON BUS3	DM8838	CUBUS 8838	C3 UBD	B4
-UBD11 H CH1 F18-04(06)	I	TOC	50.00 0.00/50.00	1.6	CON BUS4	DM8838	CUBUS 8838	C3 UBD	B4
-UBD12 H CH2 F19-15(17)	I	TOC	50.00 0.00/50.00	1.5	CON BUS1	DM8838	CUBUS 8838	C3 UBD	B1
-UBD13 H CF2 F19-12(14)	I	TOC	50.00 0.00/50.00	1.2	CON BUS2	DM8838	CUBUS 8838	C3 UBD	B1
-UBD14 H CE2 F19-01(03)	I	TOC	50.00 0.00/50.00	1.6	CON BUS3	DM8838	CUBUS 8838	C3 UBD	B1
-UBD15 H CD2 F19-04(06)	I	TOC	50.00 0.00/50.00	1.3	CON BUS4	DM8838	CUBUS 8838	C3 UBD	B1
-UBD2 H CU2 F16-01(03)	I	TOC	50.00 0.00/50.00	1.6	CON BUS3	DM8838	CUBUS 8838	A3 UBD	B8

LISPM B ; Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UBD3 H										
CT2						CON		CUBUS	A3	
F16-04(06)	I	TOC	50.00		1.4	BUS4	DM8838	8838	UBD	B8
			0.00/50.00							
-UBD4 H										
CN2						CON		CUBUS	A3	
F17-15(17)	I	TOC	50.00		1.5	BUS1	DM8838	8838	UBD	B6
			0.00/50.00							
-UBD5 H										
CP2						CON		CUBUS	B3	
F17-12(14)	I	TOC	50.00		1.1	BUS2	DM8838	8838	UBD	B6
			0.00/50.00							
-UBD6 H										
CV2						CON		CUBUS	B3	
F17-01(03)	I	TOC	50.00		1.6	BUS3	DM8838	8838	UBD	B6
			0.00/50.00							
-UBD7 H										
CM2						CON		CUBUS	B3	
F17-04(06)	I	TOC	50.00		1.4	BUS4	DM8838	8838	UBD	B6
			0.00/50.00							
-UBD8 H										
CL2						CON		CUBUS	B3	
F18-15(17)	I	TOC	50.00		1.5	BUS1	DM8838	8838	UBD	B4
			0.00/50.00							
-UBD9 H										
CK2						CON		CUBUS	B3	
F18-12(14)	I	TOC	50.00		1.1	BUS2	DM8838	8838	UBD	B4
			0.00/50.00							
-UBDRIVE										
F19-09(11)	.	TI	-1.60	0.04		DIS A	DM8838	8838	UBD	B1
F18-09(11)	I	TI	-1.60	0.04	.9	DIS A	DM8838	8838	UBD	B4
F17-09(11)	.I	TI	-1.60	0.04	.9	DIS A	DM8838	8838	UBD	B6
F16-09(11)	I	TI	-1.60	0.04	.9	DIS A	DM8838	8838	UBD	B8
C15-08(11)	.I	TO	20.00	-1.00	3.8		74S64	74S64	DATCTL	D4
B20-13(16)	I	TIS	-2.00	0.05	3.4		74S00	74S00	DATCTL	D7
			-8.40(0.21)/20.00(-1.00)				15.9			
-UB ERR DRIVE H										
E03-13(15)	\	TO	20.00	-1.00		2	74S138	74S138	UBCYC	B7
C16-01	.I	TI	-0.20	0.02	7.2	-ENB	74LS244	74LS244	REQERR	C7
C16-19	I	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	REQERR	C7
			-0.40(0.04)/20.00(-1.00)				9.5			
-UB INIT H										
DL1						CON		CUBUS	B7	
F06-12(14)	I	TOC	50.00		3.8	BUS2	DM8838	8838	UPRIOR	D7
			0.00/50.00							
UB INT E04-09(12)	.	TI	-2.00	0.05		IN	74S32	74S32	UBINTC	D6
D15-05(08)	I	TO	8.00	-0.40	5.8	Q1	74LS74	74LS74	UBINTC	A2
			-2.00(0.05)/8.00(-0.40)							

11SPM Bus Interface CADR1;XAUG WLR 1-DEC-80 1607

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UB INT D18-13	\	TI	-0.20	0.02		IN7	74LS240	74LS240	UBINTC	B6
D15-13(16)	.!	TIP	-1.20	0.06	2.0	-CLR2	74LS74	74LS74	UBINTC	B2
D15-06(09)	!	TO	8.00	-0.40	.9	-Q1	74LS74	74LS74	UBINTC	A2
			-1.40(0.08)/8.00(-0.40)				4.4			
-UB INTR H										
FM1	.					CON		CUBUS	D7	
F06-15(17)	!	TOC	50.00		3.0	BUS1	DM8838	8838	UPRIOR	D7
			0.00/50.00							
-UB INVALID H										
E02-05(08)	\	TIS	-2.00	0.05			74S08	74S08O	REQERR	C3
E02-11(14)	.!	TO	20.00	-1.00	.8		74S08	74S08O	REQU	A2
C05-01(04)	!	TIS	-2.00	0.05	3.2		74S20	74S20	REQU	B3
			-4.00(0.10)/20.00(-1.00)				5.5			
UBMA 10 E21-13	\	TI	-0.20	0.02		IN7	74LS244	74LS244	UBXA	D5
E16-13	.!	TI	-0.20	0.02	2.9	IN7	74LS244	74LS244	UBMAP	D8
E12-07(09)	!	TOT	16.00	-2.00	2.8	Q1	29701	29701	UBMAP	B8
			-0.40(0.04)/16.00(-2.00)				7.2			
UBMA 11 E21-11	\	TI	-0.20	0.02		IN8	74LS244	74LS244	UBXA	D5
E16-11	.!	TI	-0.20	0.02	2.9	IN8	74LS244	74LS244	UBMAP	D8
E12-05(07)	!	TOT	16.00	-2.00	2.8	Q0	29701	29701	UBMAP	B8
			-0.40(0.04)/16.00(-2.00)				7.2			
UBMA 12 E21-08	\	TI	-0.20	0.02		IN4	74LS244	74LS244	UBXA	D5
E16-08	.!	TI	-0.20	0.02	2.9	IN4	74LS244	74LS244	UBMAP	D8
E13-11(13)	!	TOT	16.00	-2.00	1.6	Q3	29701	29701	UBMAP	B6
			-0.40(0.04)/16.00(-2.00)				6.0			
UBMA 13 E21-06	\	TI	-0.20	0.02		IN3	74LS244	74LS244	UBXA	D5
E16-06	.!	TI	-0.20	0.02	2.9	IN3	74LS244	74LS244	UBMAP	D8
E13-09(11)	!	TOT	16.00	-2.00	1.7	Q2	29701	29701	UBMAP	B6
			-0.40(0.04)/16.00(-2.00)				6.1			
UBMA 14 E21-04	\	TI	-0.20	0.02		IN2	74LS244	74LS244	UBXA	D5
E16-04	.!	TI	-0.20	0.02	2.9	IN2	74LS244	74LS244	UBMAP	D8
E13-07(09)	!	TOT	16.00	-2.00	2.0	Q1	29701	29701	UBMAP	B6
			-0.40(0.04)/16.00(-2.00)				6.4			
UBMA 15 E21-02	\	TI	-0.20	0.02		IN1	74LS244	74LS244	UBXA	D5
E16-02	.!	TI	-0.20	0.02	2.9	IN1	74LS244	74LS244	UBMAP	D8
E13-05(07)	!	TOT	16.00	-2.00	2.0	Q0	29701	29701	UBMAP	B6
			-0.40(0.04)/16.00(-2.00)				6.4			
UBMA 16 E22-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	UBXA	D2
E17-17	.!	TI	-0.20	0.02	2.9	IN5	74LS244	74LS244	UBMAP	D6
E14-11(13)	!	TOT	16.00	-2.00	2.0	Q3	29701	29701	UBMAP	B4
			-0.40(0.04)/16.00(-2.00)				6.4			
UBMA17 E22-15	.	TI	-0.20	0.02		IN6	74LS244	74LS244	UBXA	D2
E17-15	!.	TI	-0.20	0.02	2.9	IN6	74LS244	74LS244	UBMAP	D6
E14-09(11)	.!	TOT	16.00	-2.00	2.0	Q2	29701	29701	UBMAP	B4
D12-05(07)	!	TIS	-2.00	0.05	2.4		74S133	74S133	REQU	B7
			-2.40(0.09)/16.00(-2.00)				10.3			

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UBMA18	E22-13	.	TI	-0.20	0.02		IN7	74LS244	74LS244	UBXA	D2
	E17-13	!.	TI	-0.20	0.02	2.9	IN7	74LS244	74LS244	UBMAP	D6
	E14-07(09)	.!	TOT	16.00	-2.00	2.3	Q1	29701	29701	UBMAP	B4
	D12-04(06)	!	TIS	-2.00	0.05	2.2		74S133	74S133	REQU	B7
				-2.40(0.09)/16.00(-2.00)				10.4			
UBMA19	E22-11	.	TI	-0.20	0.02		IN8	74LS244	74LS244	UBXA	D2
	E17-11	!.	TI	-0.20	0.02	2.9	IN8	74LS244	74LS244	UBMAP	D6
	E14-05(07)	.!	TOT	16.00	-2.00	2.3	Q0	29701	29701	UBMAP	B4
	D12-03(05)	!	TIS	-2.00	0.05	2.1		74S133	74S133	REQU	B7
				-2.40(0.09)/16.00(-2.00)				10.3			
UBMA20	E22-08	.	TI	-0.20	0.02		IN4	74LS244	74LS244	UBXA	D2
	E17-08	!.	TI	-0.20	0.02	2.9	IN4	74LS244	74LS244	UBMAP	D6
	E15-11(13)	.!	TOT	16.00	-2.00	1.1	Q3	29701	29701	UBMAP	B2
	D12-02(04)	!	TIS	-2.00	0.05	2.8		74S133	74S133	REQU	B7
				-2.40(0.09)/16.00(-2.00)				9.8			
UBMA21	E22-06	.	TI	-0.20	0.02		IN3	74LS244	74LS244	UBXA	D2
	E17-06	!.	TI	-0.20	0.02	2.9	IN3	74LS244	74LS244	UBMAP	D6
	E15-09(11)	.!	TOT	16.00	-2.00	1.3	Q2	29701	29701	UBMAP	B2
	D12-01(03)	!	TIS	-2.00	0.05	3.0		74S133	74S133	REQU	B7
				-2.40(0.09)/16.00(-2.00)				10.2			
UBMA 8	E21-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	UBXA	D5
	E16-17	.!	TI	-0.20	0.02	2.9	IN5	74LS244	74LS244	UBMAP	D8
	E12-11(13)	!	TOT	16.00	-2.00	2.5	Q3	29701	29701	UBMAP	B8
				-0.40(0.04)/16.00(-2.00)				6.9			
UBMA 9	E21-15	\	TI	-0.20	0.02		IN6	74LS244	74LS244	UBXA	D5
	E16-15	.!	TI	-0.20	0.02	2.9	IN6	74LS244	74LS244	UBMAP	D8
	E12-09(11)	!	TOT	16.00	-2.00	2.5	Q2	29701	29701	UBMAP	B8
				-0.40(0.04)/16.00(-2.00)				6.9			
-UBMAP → UDO H											
	B20-08(11)	\	TO	20.00	-1.00			74S00	74S00	DATCTL	A7
	E17-19	.!	TI	-0.20	0.02	3.4	-ENB	74LS244	74LS244	UBMAP	D6
	E17-01	!.	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	UBMAP	D6
	E16-19	.!	TI	-0.20	0.02	.7	-ENB	74LS244	74LS244	UBMAP	D8
	E16-01	!	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	UBMAP	D8
				-0.80(0.08)/20.00(-1.00)				10.2			
UB MAP ERROR											
	D03-06(09)	\	TO	8.00	-0.40		-Q1	74LS74	74LS74I	REQERR	D4
	B15-06	.!	TOT	5.00	-0.40	6.9	A5	8304	8304	REQERR	D7
	C16-13	!	TI	-0.20	0.02	2.0	IN7	74LS244	74LS244	REQERR	C7
				-0.20(0.02)/8.00(-0.40)			10.4				
							"WIRE-OR", OUTPUTS ON DIFFERENT DIPS ____ 2				
-UBMAPWE H											
	C13-12(15)	\	TO	20.00	-1.00			74S10	74S10	DATCTL	B7
	E15-03(05)	.!	TI	-0.25	0.01	2.7	-WE	29701	29701	UBMAP	B2
	E14-03(05)	!.	TI	-0.25	0.01	.9	-WE	29701	29701	UBMAP	B4
	E13-03(05)	.!	TI	-0.25	0.01	.9	-WE	29701	29701	UBMAP	B6
	E12-03(05)	!	TI	-0.25	0.01	.9	-WE	29701	29701	UBMAP	B8
				-1.00(0.04)/20.00(-1.00)				9.9			

LISPM B: , Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UB MD LOAD										
B17-13(16)	\	TO	20.00	-1.00			74S02	74S020	REQLM	D1
A11-13(16)	.!	TIS	-2.00	0.05	3.6		74S00	74S00	REQLM	D2
C10-03(06)	!	TIS	-2.00	0.05	2.9		74S64	74S64	REQLM	D8
			-4.00(0.10)/20.00(-1.00)				8.0			
-UB MSYN H										
EE1	;					CON		CUBUS	D3	
F07-12(14)	!	TOC	50.00		1.6	BUS2	DM8838	8838	UBMAST	C8
			0.00/50.00							
UB NPG IN										
F06-01(03)	.	TOC	50.00			BUS3	DM8838	8838	UPRIOR	D7
F13@01-03(19)	!.	I	0.00	0.00	4.3		DUMMY4	DUMMY4	UPRIOR	D3
F14-03(06)	.!	TOC	60.00		.9		74S38	74S380	UPRIOR	B7
CA1	!					CON		CUBUS	A7	
			0.00/50.00		12.0					
UB NPG OUT										
CB1	\					CON		CUBUS	A7	
F14-06(09)	.!	TOC	60.00		3.6		74S38	74S380	UPRIOR	B7
F13@01-01	!	I	0.00	0.00	1.4		DUMMY4	DUMMY4	UPRIOR	D3
			0.00/60.00		6.5					
-UB NPR H										
FJ1	;					CON		CUBUS	D7	
F15-04(06)	!	TOC	50.00		6.6	BUS4	DM8838	8838	UPRIOR	D5
			0.00/50.00							
UB NXM ERROR										
C16-08	\	TI	-0.20	0.02		IN4	74LS244	74LS244	REQERR	C7
B15-04	.!	TOT	5.00	-0.40	2.0	A3	8304	8304	REQERR	D7
B02-16	!	TO	16.00	-0.80	6.6	Q4	74 276	74276	REQERR	B4
			-0.20(0.02)/16.00(-0.80)				10.1			
							"WIRE-OR", OUTPUTS ON DIFFERENT DIPS ____ 2			
-UBPN0A E11-04(06)	\	TOT	20.00	-1.00		-OUT	74S258	74S258	UBMAP	D1
E12-13(15)	.!	TI	-0.25	0.01	1.2	A3	29701	29701	UBMAP	B8
E13-13(15)	!.	TI	-0.25	0.01	.9	A3	29701	29701	UBMAP	B6
E14-13(15)	.!	TI	-0.25	0.01	.9	A3	29701	29701	UBMAP	B4
E15-13(15)	!.	TI	-0.25	0.01	.9	A3	29701	29701	UBMAP	B2
C26-13(15)	.!	TI	-0.25	0.01	6.4	A3	29701	29701	WBUF	D4
C27-13(15)	!	TI	-0.25	0.01	.9	A3	29701	29701	WBUF	D2
			-1.50(0.06)/20.00(-1.00)				18.7			
-UBPN0B E10-04(06)	\	TOT	20.00	-1.00		-OUT	74S258	74S258	UBMAP	D3
D23-13(15)	.!	TI	-0.25	0.01	7.3	A3	29701	29701	RBUF	B8
D24-13(15)	!.	TI	-0.25	0.01	.9	A3	29701	29701	RBUF	B6
D25-13(15)	.!	TI	-0.25	0.01	.9	A3	29701	29701	RBUF	B4
D26-13(15)	!.	TI	-0.25	0.01	.9	A3	29701	29701	RBUF	B2
C25-13(15)	.!	TI	-0.25	0.01	1.7	A3	29701	29701	WBUF	D6
C24-13(15)	!	TI	-0.25	0.01	.9	A3	29701	29701	WBUF	D8
			-1.50(0.06)/20.00(-1.00)				20.1			
-UBPN1A E11-07(09)	\	TOT	20.00	-1.00		-OUT	74S258	74S258	UBMAP	D1
E12-14(16)	.!	TI	-0.25	0.01	1.3	A2	29701	29701	UBMAP	B8
E13-14(16)	!.	TI	-0.25	0.01	.9	A2	29701	29701	UBMAP	B6
E14-14(16)	.!	TI	-0.25	0.01	.9	A2	29701	29701	UBMAP	B4
E15-14(16)	!.	TI	-0.25	0.01	.9	A2	29701	29701	UBMAP	B2
C26-14(16)	.!	TI	-0.25	0.01	6.4	A2	29701	29701	WBUF	D4
C27-14(16)	!	TI	-0.25	0.01	.9	A2	29701	29701	WBUF	D2
			-1.50(0.06)/20.00(-1.00)				18.8			

LISPM Bus Interface CADR1;XAUG WLR 1'-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UBPN1B	E10-07(09)	\	TOT	20.00	-1.00		-OUT	74S258	74S258	UBMAP	D3
	D23-14(16)	.!	TI	-0.25	0.01	7.4	A2	29701	29701	RBUF	B8
	D24-14(16)	!.	TI	-0.25	0.01	.9	A2	29701	29701	RBUF	B6
	D25-14(16)	.!	TI	-0.25	0.01	.9	A2	29701	29701	RBUF	B4
	D26-14(16)	!.	TI	-0.25	0.01	.9	A2	29701	29701	RBUF	B2
	C25-14(16)	.!	TI	-0.25	0.01	1.7	A2	29701	29701	WBUF	D6
	C24-14(16)	!	TI	-0.25	0.01	.9	A2	29701	29701	WBUF	D8
				-1.50(0.06)/20.00(-1.00)				20.2			
-UBPN2A	E11-09(11)	\	TOT	20.00	-1.00		-OUT	74S258	74S258	UBMAP	D1
	E12-15(17)	.!	TI	-0.25	0.01	1.2	A1	29701	29701	UBMAP	B8
	E13-15(17)	!.	TI	-0.25	0.01	.9	A1	29701	29701	UBMAP	B6
	E14-15(17)	.!	TI	-0.25	0.01	.9	A1	29701	29701	UBMAP	B4
	E15-15(17)	!.	TI	-0.25	0.01	.9	A1	29701	29701	UBMAP	B2
	C26-15(17)	.!	TI	-0.25	0.01	6.4	A1	29701	29701	WBUF	D4
	C27-15(17)	!	TI	-0.25	0.01	.9	A1	29701	29701	WBUF	D2
				-1.50(0.06)/20.00(-1.00)				18.7			
-UBPN2B	E10-09(11)	\	TOT	20.00	-1.00		-OUT	74S258	74S258	UBMAP	D3
	D23-15(17)	.!	TI	-0.25	0.01	7.2	A1	29701	29701	RBUF	B8
	D24-15(17)	!.	TI	-0.25	0.01	.9	A1	29701	29701	RBUF	B6
	D25-15(17)	.!	TI	-0.25	0.01	.9	A1	29701	29701	RBUF	B4
	D26-15(17)	!.	TI	-0.25	0.01	.9	A1	29701	29701	RBUF	B2
	C25-15(17)	.!	TI	-0.25	0.01	1.7	A1	29701	29701	WBUF	D6
	C24-15(17)	!	TI	-0.25	0.01	.9	A1	29701	29701	WBUF	D8
				-1.50(0.06)/20.00(-1.00)				20.0			
-UBPN3A	H										
	E04-12(15)	.	TI	-2.00	0.05		IN	74S32	OS32L	UBCYC	A5
	E11-12(14)	!.	TOT	20.00	-1.00	4.0	-OUT	74S258	74S258	UBMAP	D1
	E12-01(03)	.!	TI	-0.25	0.01	.9	A0	29701	29701	UBMAP	B8
	E13-01(03)	!.	TI	-0.25	0.01	.9	A0	29701	29701	UBMAP	B6
	E14-01(03)	.!	TI	-0.25	0.01	.9	A0	29701	29701	UBMAP	B4
	E15-01(03)	!.	TI	-0.25	0.01	.9	A0	29701	29701	UBMAP	B2
	C26-01(03)	.!	TI	-0.25	0.01	6.4	A0	29701	29701	WBUF	D4
	C27-01(03)	!	TI	-0.25	0.01	.9	A0	29701	29701	WBUF	D2
				-3.50(0.11)/20.00(-1.00)				23.9			
-UBPN3B	E10-12(14)	\	TOT	20.00	-1.00		-OUT	74S258	74S258	UBMAP	D3
	D23-01(03)	.!	TI	-0.25	0.01	6.8	A0	29701	29701	RBUF	B8
	D24-01(03)	!.	TI	-0.25	0.01	.9	A0	29701	29701	RBUF	B6
	D25-01(03)	.!	TI	-0.25	0.01	.9	A0	29701	29701	RBUF	B4
	D26-01(03)	!.	TI	-0.25	0.01	.9	A0	29701	29701	RBUF	B2
	C25-01(03)	.!	TI	-0.25	0.01	1.7	A0	29701	29701	WBUF	D6
	C24-01(03)	!	TI	-0.25	0.01	.9	A0	29701	29701	WBUF	D8
				-1.50(0.06)/20.00(-1.00)				19.6			
UBRD											
-UBWR	H										
	F02-02(05)	\	TI	-2.00	0.05			74S02	74S02	UBCYC	B6
	E04-01(04)	.!	TI	-2.00	0.05	2.0	IN	74S32	74S32O	REQU	A1
	C08-06(09)	!.	TO	20.00	-1.00	3.1		74S04	74S04	DATCTL	D1
	A05-12(15)	.!	TI	-2.00	0.05	3.2		74S02	OS02L	DATCTL	A1
	A11-09(12)	!.	TIS	-2.00	0.05	3.5		74S00	74S00	DIAG	D7
	B11-10(13)	.!	TIS	-2.00	0.05	1.4		74S51	74S51	DBGOUT	B2
	B20-09(12)	!	TIS	-2.00	0.05	5.0		74S00	74S00	DATCTL	A7
				-12.00(0.30)/20.00(-1.00)				25.7			

LISP Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UBRD H										
UBWR E03-03(05)	.	TI	-2.00	0.05		C	74S138	74S138	UBCYC	B7
C08-10(13)	!.	TO	20.00	-1.00	3.8		74S04	74S04	DATCTL	D1
D12-07(09)	.!	TIS	-2.00	0.05	2.5		74S133	74S133	REQU	B7
C13-01(04)	!.	TIS	-2.00	0.05	2.1		74S10	74S10	DATCTL	B7
A14-04(07)	.!	TIS	-2.00	0.05	2.4		74S10	74S10	DIAG	D6
A17-15	!.	TI	-0.40	0.05	2.3	IN6	74S241	74S241	DBGOUT	D2
A20-11	.!	TI	-0.40	0.02	2.0	A - B	8304	8304	DIAG	C7
A21-11	!.	TI	-0.40	0.02	.9	A - B	8304	8304	DIAG	C2
C17-09(12)	.!	TIS	-2.00	0.05	3.3		74S51	74S51A	DATCTL	A7
C17-03(06)	!	TIS	-2.00	0.05	.9		74S51	74S51A	DATCTL	C4
			-13.20(0.39)/20.00(-1.00)				32.2			
UBRD A										
-UBWR A H										
C18-10(13)	\	TIS	-2.00	0.05			74S51	74S51A	DATCTL	B4
C18-03(06)	.!	TIS	-2.00	0.05	.8		74S51	74S51A	DATCTL	A4
C15-09(12)	!.	TIS	-2.00	0.05	1.7		74S64	74S64	DATCTL	D4
C15-11(14)	.!	TIS	-2.00	0.05	.6		74S64	74S64	DATCTL	D4
C15-02(05)	!.	TIS	-2.00	0.05	.8		74S64	74S64	DATCTL	D4
C08-11(14)	.!	TI	-2.00	0.05	3.7		74S04	74S04	DATCTL	D1
C08-08(11)	!	TO	20.00	-1.00	.7		74S04	74S04	DATCTL	D1
			-12.00(0.30)/20.00(-1.00)				15.8			
-UB READ BUFFER H										
F05-04(06)	.	TIS	-2.00	0.05			74S133	74S1330	UBCYC	C6
E07-11(13)	!.	TO	20.00	-1.00	2.0	2Y1	74S139	74S139	UBCYC	D4
D21-01	.!	TI	-0.20	0.02	7.4	-ENB	74LS244	74LS244	RBUF	D8
D22-01	!.	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	RBUF	D6
C22-01	.!	TI	-0.20	0.02	1.5	-ENB	74LS244	74LS244	RBUF	D4
C23-01	!	TI	-0.20	0.02	.9	-ENB	74LS244	74LS244	RBUF	D2
			-2.80(0.13)/20.00(-1.00)				18.7			
-UB READ XBUS H										
E07-12(14)	.	TO	20.00	-1.00		2Y0	74S139	74S139	UBCYC	D4
F03-13(16)	!.	TIS	-2.00	0.05	2.6		74S00	74S000	REQU	B1
F02-08(11)	.!	TI	-2.00	0.05	1.2		74S02	74S020	REQU	D4
F02-06(09)	!	TI	-2.00	0.05	.8		74S02	74S020	REQU	C4
			-6.00(0.15)/20.00(-1.00)				7.6			
UB REG CYC T0										
J01-18	.					CON		CTP	C3	
C15-03(06)	!.	TIS	-2.00	0.05	6.8		74S64	74S64	DATCTL	D4
F05-09(11)	.!	TO	20.00	-1.00	6.4		74S133	74S1330	UBCYC	C6
F04-01(04)	!	TI	-2.00	0.05	1.4	IN	TD250	TD250	UBCYC	D7
			-4.00(0.10)/20.00(-1.00)				17.6			
UB REG CYC T100									ONE PIN RUN	____ 0
F04-04(07)		TO	20.00	-1.00		100NS	TD250	TD250	UBCYC D7	
									UNUSED EXTRA OUTPUT	____ 0
UB REG CYC T150 H										
F04-10(13)	\	TO	20.00	-1.00		150NS	TD250	TD250	UBCYC	D7
E05-03(06)	.!	TI	-2.00	0.05	1.8		74S04	74S04	UBCYC	D7
B18-04(07)	!	TI	-2.00	0.05	7.7	IN	74S32	74S320	DATCTL	B7
			-4.00(0.10)/20.00(-1.00)				11.0			

LISPM B ; Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-UB REG CYC T150										
E05-04(07)	.	TO	20.00	-1.00			74S04	74S04	UBCYC	D7
E02-09(12)	I	TIS	-2.00	0.05	1.7		74S08	74S08	UBCYC	D7
			-2.00(0.05)/20.00(-1.00)							
UB REG CYC T200									ONE PIN RUN	____ 0
F04-06(09)		TO	20.00	-1.00		200NS	TD250	TD250	UBCYC D7	
									UNUSED EXTRA OUTPUT	____ 0
UB REG CYC T250										
F04-08(11)	.	TO	20.00	-1.00		250NS	TD250	TD250	UBCYC	D7
A04-09(12)	I	TIS	-2.00	0.05	6.0		74S00	74S00	REQU	D3
			-2.00(0.05)/20.00(-1.00)							
UB REG CYC T50										
F04-12(15)	.	TO	20.00	-1.00		50NS	TD250	TD250	UBCYC	D7
E02-10(13)	I	TIS	-2.00	0.05	1.8		74S08	74S08	UBCYC	D7
			-2.00(0.05)/20.00(-1.00)							
UB REG WRITE PULSE										
F02-03(06)	.	TI	-2.00	0.05			74S02	74S02	UBCYC	B6
E02-08(11)	I.	TO	20.00	-1.00	1.2		74S08	74S08	UBCYC	D7
C13-13(16)	.I	TIS	-2.00	0.05	6.6		74S10	74S10	DATCTL	B7
A14-05(08)	I	TIS	-2.00	0.05	2.4		74S10	74S10	DIAG	D6
			-6.00(0.15)/20.00(-1.00)				13.2			
-UB SACK H										
FT2	.					CON		CUBUS	D7	
F07-04(06)	I	TOC	50.00		3.6	BUS4	DM8838	8838	UBMAST	C8
			0.00/50.00							
-UB SSYN H										
EJ1	.					CON		CUBUS	D3	
F07-15(17)	I	TOC	50.00		1.7	BUS1	DM8838	8838	UBMAST	C8
			0.00/50.00							
-UB TO MD										
E09-04(07)	\	TIS	-2.00	0.05			74S08	S08L	REQLM	C1
D12-09(11)	.I	TO	20.00	-1.00	2.4		74S133	74S133	REQU	B7
B17-11(14)	I	TI	-2.00	0.05	4.0		74S02	74S020	REQLM	D1
			-4.00(0.10)/20.00(-1.00)				7.9			
-UB WRITE BUFFER H										
F05-05(07)	.	TIS	-2.00	0.05			74S133	74S1330	UBCYC	C6
E07-10(12)	I.	TO	20.00	-1.00	2.0	2Y2	74S139	74S139	UBCYC	D4
B18-05(08)	.I	TI	-2.00	0.05	6.7	IN	74S32	74S320	DATCTL	B7
B18-12(15)	I	TI	-2.00	0.05	.8	IN	74S32	OS32L	UBCYC	A6
			-6.00(0.15)/20.00(-1.00)				12.5			
-UB WRITE XBUS H										
F02-12(15)	\	TI	-2.00	0.05			74S02	74S020	REQU	D4
F03-12(15)	.I	TIS	-2.00	0.05	.9		74S00	74S000	REQU	B1
C04-06(09)	I	TO	20.00	-1.00	3.5		74S11	OS11L	UBCYC	B4
			-4.00(0.10)/20.00(-1.00)				5.9			
-UB WR XBUS H										
E07-09(11)	.	TO	20.00	-1.00		2Y3	74S139	74S139	UBCYC	D4
C04-04(07)	I	TIS	-2.00	0.05	3.5		74S11	OS11L	UBCYC	B4
			-2.00(0.05)/20.00(-1.00)							

LISPM Bus Interface CADR1;XAUG WLR 1-DEC-80 1607

SIGNAL NAME LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UB XBUS T0										
F03-11(14)	\	TO	20.00	-1.00			74S00	74S000	REQU	B1
C05-04(07)	.!	TIS	-2.00	0.05	3.8		74S20	74S20	REQU	B3
C07-05(08)	!	TI	-2.00	0.05	1.5	IN3	MTD100	MTD100	REQU	B2
			-4.00(0.10)/20.00(-1.00)				6.8			
UB XBUS T100										
C07-08(11)	\	TO	16.00	-1.00		OUT3	MTD100	MTD100	REQU	B2
C05-05(08)	.!	TIS	-2.00	0.05	1.8		74S20	74S20	REQU	B3
D03-03(06)	!	TIP	-0.80	0.04	1.8	-CLK1	74LS74	74LS74I	REQERR	D4
			-2.80(0.09)/16.00(-1.00)				5.1			
UBX GRANT										
J01-20	\					CON		CTP	D3	
A06-02(04)	.!	TO	20.00	-1.00	1.7	1Q	74S175	74S175	RQSYNC	B8
B13-13(16)	!.	TI	-2.00	0.05	4.4		74S04	74S040	REQLM	B7
B17-03(06)	.!	TI	-2.00	0.05	2.2		74S02	74S02	DATCTL	B1
B18-01(04)	!.	TI	-2.00	0.05	1.0	IN	74S32	74S32	DATCTL	A1
B19-05(08)	.!	TI	-2.00	0.05	1.1		74S04	74S04	DATCTL	B1
B20-01(04)	!	TIS	-2.00	0.05	1.1		74S00	74S00	DATCTL	A1
			-10.00(0.25)/20.00(-1.00)				19.0		HEAVILY LOADED	____ 0
-UBX GRANT H										
B17-12(15)	.	TI	-2.00	0.05			74S02	74S020	REQLM	D1
C13-09(12)	!.	TIS	-2.00	0.05	2.9		74S10	74S100	RQSYNC	C1
B07-09(12)	.!	TI	-2.00	0.05	3.6		74S04	74S040	RQSYNC	D7
A06-03(05)	!	TO	20.00	-1.00	2.1	-1Q	74S175	74S175	RQSYNC	B8
			-6.00(0.15)/20.00(-1.00)				11.6			
UBX GRANT A										
F03-04(07)	\	TIS	-2.00	0.05			74S00	74S00	REQU	C1
B07-08(11)	.!	TO	20.00	-1.00	5.2		74S04	74S040	RQSYNC	D7
C17-02(05)	!.	TIS	-2.00	0.05	5.2		74S51	74S51A	DATCTL	C4
C18-02(05)	.!	TIS	-2.00	0.05	.9		74S51	74S51A	DATCTL	A4
C18-09(12)	!	TIS	-2.00	0.05	.9		74S51	74S51A	DATCTL	B4
			-8.00(0.20)/20.00(-1.00)				16.7			
UBX GRANT SET										
C12-06(09)	.	TO	20.00	-1.00			74S260	74S2600	RQSYNC	A5
A06-04(06)	!	TI	-2.00	0.05	4.4	1D	74S175	74S175	RQSYNC	B8
			-2.00(0.05)/20.00(-1.00)							
UBXRQ J01-19	\					CON		CTP	C3	
A08-12(14)	.!	TI	-2.00	0.05	2.9	3D	74S175	74S175	RQSYNC	B2
D12-06(08)	!.	TIS	-2.00	0.05	4.3		74S133	74S133	REQU	B7
E09-01(04)	.!	TIS	-2.00	0.05	2.1		74S08	S08L	REQLM	C1
E05-06(09)	!	TO	20.00	-1.00	2.5		74S04	74S040	REQU	A4
			-6.00(0.15)/20.00(-1.00)				16.3			
-UBXRQ H										
E05-05(08)	.	TI	-2.00	0.05			74S04	74S040	REQU	A4
C05-06(09)	!	TO	20.00	-1.00	2.5		74S20	74S20	REQU	B3
			-2.00(0.05)/20.00(-1.00)							
-UBXRQS H										
A08-10(12)	\	TO	20.00	-1.00		3Q	74S175	74S175	RQSYNC	B2
A07-10(13)	.!	TI	-2.00	0.05	1.0		74S260	74S2600	RQSYNC	B5
A07-03(06)	!	TI	-2.00	0.05	.8		74S260	74S2600	RQSYNC	B5
			-4.00(0.10)/20.00(-1.00)				3.3			

LISP Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
-UBXRQS H													
	C12-04(07)	.	TI	-2.00	0.05			74S260	74S260	RQSYNC	A5		
	A08-11(13)	!	TO	20.00	-1.00	3.2	-3Q	74S175	74S175	RQSYNC	B2		
				-2.00(0.05)/20.00(-1.00)									
-UDI → UDO H													
	B20-11(14)	\	TO	20.00	-1.00			74S00	74S00	DAICTL	D7		
	E19-19	.!	TI	-0.20	0.02	3.3	-ENB	74LS244	74LS244	UBD	D1		
	E19-01	!.	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	UBD	D1		
	E18-19	.!	TI	-0.20	0.02	.7	-ENB	74LS244	74LS244	UBD	D4		
	E18-01	!	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	UBD	D4		
				-0.80(0.08)/20.00(-1.00)				10.1					
UDI0	D14-02(05)	\	TIP	-0.40	0.02		D1	74LS74	74LS74	UBINTC	A4		
	E12-12(14)	.!	TI	-0.25	0.01	1.9	D3	29701	29701	UBMAP	B8		
	F16-13(15)	!.	TO	16.00	-0.40	2.7	OUT1	DM8838	8838	UBD	B8		
	E18-17	.!	TI	-0.20	0.02	2.1	IN5	74LS244	74LS244	UBD	D4		
	D19-08	!.	TI	-0.20	0.02	1.2	IN4	74LS244	74LS244	BUSSEL	D8		
	B23-08	.!	TI	-0.20	0.02	3.4	IN4	74LS244	74LS244	BUSSEL	B8		
	C24-12(14)	!	TI	-0.25	0.01	1.7	D3	29701	29701	WBUF	D8		
				-1.50(0.10)/16.00(-0.40)				20.5					
UDI1	E12-10(12)	.	TI	-0.25	0.01		D2	29701	29701	UBMAP	B8		
	F16-10(12)	!.	TO	16.00	-0.40	2.7	OUT2	DM8838	8838	UBD	B8		
	E18-15	.!	TI	-0.20	0.02	2.2	IN6	74LS244	74LS244	UBD	D4		
	D19-06	!.	TI	-0.20	0.02	1.6	IN3	74LS244	74LS244	BUSSEL	D8		
	C24-10(12)	.!	TI	-0.25	0.01	3.4	D2	29701	29701	WBUF	D8		
	B23-06	!	TI	-0.20	0.02	2.1	IN3	74LS244	74LS244	BUSSEL	B8		
				-1.10(0.08)/16.00(-0.40)				18.0					
UDI10	E19-13	\	TI	-0.20	0.02		IN7	74LS244	74LS244	UBD	D1		
	F18-03(05)	.!	TO	16.00	-0.40	1.6	OUT3	DM8838	8838	UBD	B4		
	E14-06(08)	!.	TI	-0.25	0.01	2.6	D1	29701	29701	UBMAP	B4		
	D16-16	.!	TI	-0.36	0.02	2.4	I3	25LS2519		25LS2519		UBINTC	D2
	C20-04	!.	TI	-0.20	0.02	2.5	IN2	74LS244	74LS244	BUSSEL	D3		
	B25-04	.!	TI	-0.20	0.02	3.2	IN2	74LS244	74LS244	BUSSEL	B3		
	C26-06(08)	!	TI	-0.25	0.01	2.0	D1	29701	29701	WBUF	D4		
				-1.46(0.10)/16.00(-0.40)				21.8					
UDI11	E19-11	\	TI	-0.20	0.02		IN8	74LS244	74LS244	UBD	D1		
	F18-06(08)	.!	TO	16.00	-0.40	1.7	OUT4	DM8838	8838	UBD	B4		
	E14-04(06)	!.	TI	-0.25	0.01	2.8	D0	29701	29701	UBMAP	B4		
	D15-13	.!	TI	-0.36	0.02	2.0	I2	25LS2519		25LS2519		UBINTC	D2
	C20-02	!.	TI	-0.20	0.02	2.9	IN1	74LS244	74LS244	BUSSEL	D3		
	B25-02	.!	TI	-0.20	0.02	3.2	IN1	74LS244	74LS244	BUSSEL	B3		
	C26-04(06)	!	TI	-0.25	0.01	2.0	D0	29701	29701	WBUF	D4		
				-1.46(0.10)/16.00(-0.40)				22.1					
UDI12	F19-13(15)	\	TO	16.00	-0.40		OUT1	DM8838	8838	UBD	B1		
	E19-08	.!	TI	-0.20	0.02	1.4	IN4	74LS244	74LS244	UBD	D1		
	E15-12(14)	!.	TI	-0.25	0.01	2.2	D3	29701	29701	UBMAP	B2		
	D16-04	.!	TI	-0.36	0.02	1.9	I1	25LS2519		25LS2519		UBINTC	D2
	C21-08	!.	TI	-0.20	0.02	3.0	IN4	74LS244	74LS244	BUSSEL	D1		
	B26-08	.!	TI	-0.20	0.02	3.2	IN4	74LS244	74LS244	BUSSEL	B1		
	C27-12(14)	!	TI	-0.25	0.01	1.7	D3	29701	29701	WBUF	D2		
				-1.46(0.10)/16.00(-0.40)				20.9					

LISPM B s Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS	
UDI13	F19-10(12)	\	TO	16.00	-0.40		OUT2	DM8838	8838	UBD	B1	
	E19-06	.!	TI	-0.20	0.02	1.9	IN3	74LS244	74LS244	UBD	D1	
	E15-10(12)	!.	TI	-0.25	0.01	2.2	D2	29701	29701	UBMAP	B2	
	D16-01	.!	TI	-0.36	0.02	2.4	I0	25LS2519		25LS2519		UBINTC D2
	C21-06	!.	TI	-0.20	0.02	3.0	IN3	74LS244	74LS244	BUSSEL	D1	
	B26-06	.!	TI	-0.20	0.02	3.2	IN3	74LS244	74LS244	BUSSEL	B1	
	C27-10(12)	!	TI	-0.25	0.01	2.1	D2	29701	29701	WBUF	D2	
				-1.46(0.10)/16.00(-0.40)				22.3				
UDI14	E15-06(08)	.	TI	-0.25	0.01		D1	29701	29701	UBMAP	B2	
	F19-03(05)	!.	TO	16.00	-0.40	2.6	OUT3	DM8838	8838	UBD	B1	
	E19-04	.!	TI	-0.20	0.02	1.6	IN2	74LS244	74LS244	UBD	D1	
	C21-04	!.	TI	-0.20	0.02	2.9	IN2	74LS244	74LS244	BUSSEL	D1	
	B26-04	.!	TI	-0.20	0.02	3.2	IN2	74LS244	74LS244	BUSSEL	B1	
	C27-06(08)	!	TI	-0.25	0.01	2.0	D1	29701	29701	WBUF	D2	
				-1.10(0.08)/16.00(-0.40)				18.3				
UDI15	D15-02(05)	\	TIP	-0.40	0.02		D1	74LS74	74LS74	UBINTC	A2	
	E15-04(06)	.!	TI	-0.25	0.01	1.6	D0	29701	29701	UBMAP	B2	
	F19-06(08)	!.	TO	16.00	-0.40	2.8	OUT4	DM8838	8838	UBD	B1	
	E19-02	.!	TI	-0.20	0.02	2.1	IN1	74LS244	74LS244	UBD	D1	
	C21-02	!.	TI	-0.20	0.02	2.9	IN1	74LS244	74LS244	BUSSEL	D1	
	B26-02	.!	TI	-0.20	0.02	3.2	IN1	74LS244	74LS244	BUSSEL	B1	
	C27-04(06)	!	TI	-0.25	0.01	2.0	D0	29701	29701	WBUF	D2	
				-1.50(0.10)/16.00(-0.40)				22.1				
UDI2	E12-06(08)	\	TI	-0.25	0.01		D1	29701	29701	UBMAP	B8	
	F16-03(05)	.!	TO	16.00	-0.40	2.6	OUT3	DM8838	8838	UBD	B8	
	E18-13	!.	TI	-0.20	0.02	2.0	IN7	74LS244	74LS244	UBD	D4	
	D17-18	.!	TI	-0.40	0.02	2.1	D7	74LS374	74LS374	UBINTC	D4	
	D19-04	!.	TI	-0.20	0.02	1.2	IN2	74LS244	74LS244	BUSSEL	D8	
	C24-06(08)	.!	TI	-0.25	0.01	3.0	D1	29701	29701	WBUF	D8	
	B23-04	!	TI	-0.20	0.02	2.0	IN2	74LS244	74LS244	BUSSEL	B8	
				-1.50(0.10)/16.00(-0.40)				20.4				
UDI3	E12-04(06)	\	TI	-0.25	0.01		D0	29701	29701	UBMAP	B8	
	F16-06(08)	.!	TO	16.00	-0.40	2.8	OUT4	DM8838	8838	UBD	B8	
	E18-11	!.	TI	-0.20	0.02	2.0	IN8	74LS244	74LS244	UBD	D4	
	D17-17	.!	TI	-0.40	0.02	2.2	D6	74LS374	74LS374	UBINTC	D4	
	D19-02	!.	TI	-0.20	0.02	1.2	IN1	74LS244	74LS244	BUSSEL	D8	
	C24-04(06)	.!	TI	-0.25	0.01	3.0	D0	29701	29701	WBUF	D8	
	B23-02	!	TI	-0.20	0.02	2.0	IN1	74LS244	74LS244	BUSSEL	B8	
				-1.50(0.10)/16.00(-0.40)				20.7				
UDI4	E13-12(14)	\	TI	-0.25	0.01		D3	29701	29701	UBMAP	B6	
	F17-13(15)	.!	TO	16.00	-0.40	2.7	OUT1	DM8838	8838	UBD	B6	
	E18-08	!.	TI	-0.20	0.02	1.4	IN4	74LS244	74LS244	UBD	D4	
	D17-14	.!	TI	-0.40	0.02	1.7	D5	74LS374	74LS374	UBINTC	D4	
	C19-08	!.	TI	-0.20	0.02	1.7	IN4	74LS244	74LS244	BUSSEL	D6	
	B24-08	.!	TI	-0.20	0.02	3.2	IN4	74LS244	74LS244	BUSSEL	B6	
	C25-12(14)	!	TI	-0.25	0.01	1.7	D3	29701	29701	WBUF	D6	
				-1.50(0.10)/16.00(-0.40)				19.9				
UDI5	E13-10(12)	\	TI	-0.25	0.01		D2	29701	29701	UBMAP	B6	
	F17-10(12)	.!	TO	16.00	-0.40	2.7	OUT2	DM8838	8838	UBD	B6	
	E18-06	!.	TI	-0.20	0.02	1.9	IN3	74LS244	74LS244	UBD	D4	
	D17-13	.!	TI	-0.40	0.02	1.4	D4	74LS374	74LS374	UBINTC	D4	
	C19-06	!.	TI	-0.20	0.02	1.9	IN3	74LS244	74LS244	BUSSEL	D6	
	B24-06	.!	TI	-0.20	0.02	3.2	IN3	74LS244	74LS244	BUSSEL	B6	
	C25-10(12)	!	TI	-0.25	0.01	2.1	D2	29701	29701	WBUF	D6	
				-1.50(0.10)/16.00(-0.40)				20.7				

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UDI6	E13-06(08)	\	TI	-0.25	0.01		D1	29701	29701	UBMAP	B6
	F17-03(05)	.!	TO	16.00	-0.40	2.6	OUT3	DM8838	8838	UBD	B6
	E18-04	!.	TI	-0.20	0.02	1.7	IN2	74LS244	74LS244	UBD	D4
	D17-08	.!	TI	-0.40	0.02	1.3	D3	74LS374	74LS374	UBINTC	D4
	C19-04	!.	TI	-0.20	0.02	2.3	IN2	74LS244	74LS244	BUSSEL	D6
	B24-04	.!	TI	-0.20	0.02	3.2	IN2	74LS244	74LS244	BUSSEL	B6
	C25-06(08)	!	TI	-0.25	0.01	2.0	D1	29701	29701	WBUF	D6
				-1.50(0.10)/16.00(-0.40)				20.6			
UDI7	C25-04(06)	.	TI	-0.25	0.01		D0	29701	29701	WBUF	D6
	B24-02	!.	TI	-0.20	0.02	2.0	IN1	74LS244	74LS244	BUSSEL	B6
	C19-02	.!	TI	-0.20	0.02	3.2	IN1	74LS244	74LS244	BUSSEL	D6
	D17-07	!.	TI	-0.40	0.02	2.3	D2	74LS374	74LS374	UBINTC	D4
	E18-02	.!	TI	-0.20	0.02	1.2	IN1	74LS244	74LS244	UBD	D4
	F17-06(08)	!.	TO	16.00	-0.40	2.2	OUT4	DM8838	8838	UBD	B6
	E13-04(06)	.!	TI	-0.25	0.01	2.8	D0	29701	29701	UBMAP	B6
	B08-02(05)	!	TI	-2.00	0.05	4.7	D1	74S74	74S74	UBCYC	B5
				-3.50(0.15)/16.00(-0.40)				27.4			
UDI8	E14-12(14)	\	TI	-0.25	0.01		D3	29701	29701	UBMAP	B4
	F18-13(15)	.!	TO	16.00	-0.40	2.7	OUT1	DM8838	8838	UBD	B4
	E19-17	!.	TI	-0.20	0.02	1.8	IN5	74LS244	74LS244	UBD	D1
	D17-04	.!	TI	-0.40	0.02	2.2	D1	74LS374	74LS374	UBINTC	D4
	C20-08	!.	TI	-0.20	0.02	2.1	IN4	74LS244	74LS244	BUSSEL	D3
	B25-08	.!	TI	-0.20	0.02	3.2	IN4	74LS244	74LS244	BUSSEL	B3
	C26-12(14)	!	TI	-0.25	0.01	1.7	D3	29701	29701	WBUF	D4
				-1.50(0.10)/16.00(-0.40)				21.2			
UDI9	E14-10(12)	\	TI	-0.25	0.01		D2	29701	29701	UBMAP	B4
	F18-10(12)	.!	TO	16.00	-0.40	2.7	OUT2	DM8838	8838	UBD	B4
	E19-15	!.	TI	-0.20	0.02	1.9	IN6	74LS244	74LS244	UBD	D1
	D17-03	.!	TI	-0.40	0.02	2.4	D0	74LS374	74LS374	UBINTC	D4
	C20-06	!.	TI	-0.20	0.02	2.1	IN3	74LS244	74LS244	BUSSEL	D3
	B25-06	.!	TI	-0.20	0.02	3.2	IN3	74LS244	74LS244	BUSSEL	B3
	C26-10(12)	!	TI	-0.25	0.01	2.1	D2	29701	29701	WBUF	D4
				-1.50(0.10)/16.00(-0.40)				21.9			
UDO 0	F16-14(16)	\	TI	-1.60	0.04		IN1	DM8838	8838	UBD	B8
	E16-03	.!	TOT	24.00	-15.00	1.8	OUT5	74LS244	74LS244	UBMAP	D8
	E18-03	!.	TOT	24.00	-15.00	1.4	OUT5	74LS244	74LS244	UBD	D4
	D18-05	.!	TOT	24.00	-15.00	1.3	-OUT6	74LS240	74LS240	UBINTC	B6
	C16-18	!.	TOT	24.00	-15.00	1.9	OUT1	74LS244	74LS244	REQERR	C7
	A20-08	.!	TOT	5.00	-0.40	2.9	A7	8304	8304	DIAG	C7
	B21-08	!.	TOT	5.00	-0.40	1.7	A7	8304	8304	DBGOUT	B6
	D21-03	.!	TOT	24.00	-15.00	2.1	OUT5	74LS244	74LS244	RBUF	D8
	D21-12	!	TOT	24.00	-15.00	1.1	OUT4	74LS244	74LS244	RBUF	D8
				-1.60(0.04)/5.00(-0.40)				24.7			
UDO 1	F16-11(13)	\	TI	-1.60	0.04		IN2	DM8838	8838	UBD	B8
	E18-05	.!	TOT	24.00	-15.00	2.0	OUT6	74LS244	74LS244	UBD	D4
	E16-05	!.	TOT	24.00	-15.00	1.4	OUT6	74LS244	74LS244	UBMAP	D8
	C16-16	.!	TOT	24.00	-15.00	2.7	OUT2	74LS244	74LS244	REQERR	C7
	D18-03	!.	TOT	24.00	-15.00	1.6	-OUT5	74LS240	74LS240	UBINTC	B6
	D21-14	.!	TOT	24.00	-15.00	2.3	OUT3	74LS244	74LS244	RBUF	D8
	D21-05	!.	TOT	24.00	-15.00	.8	OUT6	74LS244	74LS244	RBUF	D8
	B21-07	.!	TOT	5.00	-0.40	2.4	A6	8304	8304	DBGOUT	B6
	A20-07	!	TOT	5.00	-0.40	1.7	A6	8304	8304	DIAG	C7
				-1.60(0.04)/5.00(-0.40)				25.4			

LISPM Bus Interface CADR1:XAUG WLR 11-DEC-80 1607

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
UDO 10	D16-14	.	TOT	12.00	-2.60		Y3	25LS2519		25LS2519		UBINTC	D2
	E17-07	!.	TOT	24.00	-15.00	1.6	OUT7	74LS244	74LS244	UBMAP	D6		
	F18-02(04)	.!	TI	-1.60	0.04	1.4	IN3	DM8838	8838	UBD	B4		
	E19-07	!.	TOT	24.00	-15.00	1.4	OUT7	74LS244	74LS244	UBD	D1		
	C22-07	.!	TOT	24.00	-15.00	3.1	OUT7	74LS244	74LS244	RBUF	D4		
	C22-16	!.	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	RBUF	D4		
	B22-06	.!	TOT	5.00	-0.40	1.6	A5	8304	8304	DBGOUT	B4		
	A21-06	!	TOT	5.00	-0.40	1.7	A5	8304	8304	DIAG	C2		
				-1.60(0.04)/5.00(-0.40)			20.5						
UDO 11	D16-11	.	TOT	12.00	-2.60		Y2	25LS2519		25LS2519		UBINTC	D2
	E17-09	!.	TOT	24.00	-15.00	1.5	OUT8	74LS244	74LS244	UBMAP	D6		
	F18-05(07)	.!	TI	-1.60	0.04	1.5	IN4	DM8838	8838	UBD	B4		
	E19-09	!.	TOT	24.00	-15.00	1.5	OUT8	74LS244	74LS244	UBD	D1		
	C22-09	.!	TOT	24.00	-15.00	3.1	OUT8	74LS244	74LS244	RBUF	D4		
	C22-18	!.	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	RBUF	D4		
	B22-05	.!	TOT	5.00	-0.40	1.4	A4	8304	8304	DBGOUT	B4		
	A21-05	!	TOT	5.00	-0.40	1.7	A4	8304	8304	DIAG	C2		
				-1.60(0.04)/5.00(-0.40)			20.8						
UDO 12	D16-06	.	TOT	12.00	-2.60		Y1	25LS2519		25LS2519		UBINTC	D2
	E17-12	!.	TOT	24.00	-15.00	2.1	OUT4	74LS244	74LS244	UBMAP	D6		
	F19-14(16)	.!	TI	-1.60	0.04	1.7	IN1	DM8838	8838	UBD	B1		
	E19-12	!.	TOT	24.00	-15.00	1.1	OUT4	74LS244	74LS244	UBD	D1		
	C23-12	.!	TOT	24.00	-15.00	3.4	OUT4	74LS244	74LS244	RBUF	D2		
	C23-03	!.	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	RBUF	D2		
	B22-04	.!	TOT	5.00	-0.40	1.6	A3	8304	8304	DBGOUT	B4		
	A21-04	!	TOT	5.00	-0.40	1.7	A3	8304	8304	DIAG	C2		
				-1.60(0.04)/5.00(-0.40)			21.7						
UDO 13	D16-03	.	TOT	12.00	-2.60		Y0	25LS2519		25LS2519		UBINTC	D2
	E17-14	!.	TOT	24.00	-15.00	2.1	OUT3	74LS244	74LS244	UBMAP	D6		
	F19-11(13)	.!	TI	-1.60	0.04	2.0	IN2	DM8838	8838	UBD	B1		
	E19-14	!.	TOT	24.00	-15.00	1.6	OUT3	74LS244	74LS244	UBD	D1		
	C23-14	.!	TOT	24.00	-15.00	3.4	OUT3	74LS244	74LS244	RBUF	D2		
	C23-05	!.	TOT	24.00	-15.00	.8	OUT6	74LS244	74LS244	RBUF	D2		
	B22-03	.!	TOT	5.00	-0.40	1.8	A2	8304	8304	DBGOUT	B4		
	A21-03	!	TOT	5.00	-0.40	1.7	A2	8304	8304	DIAG	C2		
				-1.60(0.04)/5.00(-0.40)			22.4						
UDO 14	F19-02(04)	.	TI	-1.60	0.04		IN3	DM8838	8838	UBD	B1		
	E19-16	!.	TOT	24.00	-15.00	1.5	OUT2	74LS244	74LS244	UBD	D1		
	E17-16	.!	TOT	24.00	-15.00	1.4	OUT2	74LS244	74LS244	UBMAP	D6		
	D18-09	!.	TOT	24.00	-15.00	1.2	-OUT8	74LS240	74LS240	UBINTC	B6		
	C23-07	.!	TOT	24.00	-15.00	3.3	OUT7	74LS244	74LS244	RBUF	D2		
	C23-16	!.	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	RBUF	D2		
	B22-02	.!	TOT	5.00	-0.40	2.1	A1	8304	8304	DBGOUT	B4		
	A21-02	!	TOT	5.00	-0.40	1.7	A1	8304	8304	DIAG	C2		
				-1.60(0.04)/5.00(-0.40)			21.0						
UDO 15	F19-05(07)	.	TI	-1.60	0.04		IN4	DM8838	8838	UBD	B1		
	E17-18	!.	TOT	24.00	-15.00	2.1	OUT1	74LS244	74LS244	UBMAP	D6		
	D18-07	.!	TOT	24.00	-15.00	1.2	-OUT7	74LS240	74LS240	UBINTC	B6		
	E19-18	!.	TOT	24.00	-15.00	1.5	OUT1	74LS244	74LS244	UBD	D1		
	C23-09	.!	TOT	24.00	-15.00	2.8	OUT8	74LS244	74LS244	RBUF	D2		
	C23-18	!.	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	RBUF	D2		
	B22-01	.!	TOT	5.00	-0.40	2.0	A0	8304	8304	DBGOUT	B4		
	A21-01	!	TOT	5.00	-0.40	1.7	A0	8304	8304	DIAG	C2		
				-1.60(0.04)/5.00(-0.40)			21.4						

LISPM B s Interface CADR1:XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
UDO 2	F16-02(04)	\	TI	-1.60	0.04		IN3	DM8838	8838	UBD	B8
	E16-07	.!	TOT	24.00	-15.00	1.2	OUT7	74LS244	74LS244	UBMAP	D8
	E18-07	!.	TOT	24.00	-15.00	1.4	OUT7	74LS244	74LS244	UBD	D4
	C16-14	.!	TOT	24.00	-15.00	2.8	OUT3	74LS244	74LS244	REQERR	C7
	D17-19	!.	TOT	8.00	-2.60	1.2	Q7	74LS374	74LS374	UBINTC	D4
	D21-07	.!	TOT	24.00	-15.00	2.2	OUT7	74LS244	74LS244	RBUF	D8
	D21-16	!.	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	RBUF	D8
	B21-06	.!	TOT	5.00	-0.40	2.6	A5	8304	8304	DBGOUT	B6
	A20-06	!	TOT	5.00	-0.40	1.7	A5	8304	8304	DIAG	C7
				-1.60(0.04)/5.00(-0.40)			24.4				
UDO 3	F16-05(07)	\	TI	-1.60	0.04		IN4	DM8838	8838	UBD	B8
	E16-09	.!	TOT	24.00	-15.00	1.3	OUT8	74LS244	74LS244	UBMAP	D8
	E18-09	!.	TOT	24.00	-15.00	1.4	OUT8	74LS244	74LS244	UBD	D4
	D17-16	.!	TOT	8.00	-2.60	2.0	Q6	74LS374	74LS374	UBINTC	D4
	C16-12	!.	TOT	24.00	-15.00	1.3	OUT4	74LS244	74LS244	REQERR	C7
	D21-09	.!	TOT	24.00	-15.00	2.9	OUT8	74LS244	74LS244	RBUF	D8
	D21-18	!.	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	RBUF	D8
	B21-05	.!	TOT	5.00	-0.40	2.5	A4	8304	8304	DBGOUT	B6
	A20-05	!	TOT	5.00	-0.40	1.7	A4	8304	8304	DIAG	C7
				-1.60(0.04)/5.00(-0.40)			24.7				
UDO 4	C16-09	\	TOT	24.00	-15.00		OUT8	74LS244	74LS244	REQERR	C7
	D17-15	.!	TOT	8.00	-2.60	1.6	Q5	74LS374	74LS374	UBINTC	D4
	E16-12	!.	TOT	24.00	-15.00	1.9	OUT4	74LS244	74LS244	UBMAP	D8
	F17-14(16)	.!	TI	-1.60	0.04	1.3	IN1	DM8838	8838	UBD	B6
	E18-12	!.	TOT	24.00	-15.00	1.3	OUT4	74LS244	74LS244	UBD	D4
	D22-12	.!	TOT	24.00	-15.00	2.7	OUT4	74LS244	74LS244	RBUF	D6
	D22-03	!.	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	RBUF	D6
	B21-04	.!	TOT	5.00	-0.40	2.6	A3	8304	8304	DBGOUT	B6
	A20-04	!	TOT	5.00	-0.40	1.7	A3	8304	8304	DIAG	C7
				-1.60(0.04)/5.00(-0.40)			24.7				
UDO 5	C16-07	\	TOT	24.00	-15.00		OUT7	74LS244	74LS244	REQERR	C7
	D17-12	.!	TOT	8.00	-2.60	2.0	Q4	74LS374	74LS374	UBINTC	D4
	E16-14	!.	TOT	24.00	-15.00	1.5	OUT3	74LS244	74LS244	UBMAP	D8
	F17-11(13)	.!	TI	-1.60	0.04	1.7	IN2	DM8838	8838	UBD	B6
	E18-14	!.	TOT	24.00	-15.00	1.7	OUT3	74LS244	74LS244	UBD	D4
	D22-14	.!	TOT	24.00	-15.00	2.7	OUT3	74LS244	74LS244	RBUF	D6
	D22-05	!.	TOT	24.00	-15.00	.8	OUT6	74LS244	74LS244	RBUF	D6
	B21-03	.!	TOT	5.00	-0.40	2.9	A2	8304	8304	DBGOUT	B6
	A20-03	!	TOT	5.00	-0.40	1.7	A2	8304	8304	DIAG	C7
				-1.60(0.04)/5.00(-0.40)			25.5				
UDO 6	C16-05	\	TOT	24.00	-15.00		OUT6	74LS244	74LS244	REQERR	C7
	D17-09	.!	TOT	8.00	-2.60	2.0	Q3	74LS374	74LS374	UBINTC	D4
	E16-16	!.	TOT	24.00	-15.00	1.2	OUT2	74LS244	74LS244	UBMAP	D8
	F17-02(04)	.!	TI	-1.60	0.04	1.5	IN3	DM8838	8838	UBD	B6
	E18-16	!.	TOT	24.00	-15.00	1.7	OUT2	74LS244	74LS244	UBD	D4
	D22-07	.!	TOT	24.00	-15.00	2.4	OUT7	74LS244	74LS244	RBUF	D6
	D22-16	!.	TOT	24.00	-15.00	.8	OUT2	74LS244	74LS244	RBUF	D6
	B21-02	.!	TOT	5.00	-0.40	3.1	A1	8304	8304	DBGOUT	B6
	A20-02	!	TOT	5.00	-0.40	1.7	A1	8304	8304	DIAG	C7
				-1.60(0.04)/5.00(-0.40)			24.9				
UDO 7	C16-03	\	TOT	24.00	-15.00		OUT5	74LS244	74LS244	REQERR	C7
	D17-06	.!	TOT	8.00	-2.60	1.9	Q2	74LS374	74LS374	UBINTC	D4
	E16-18	!.	TOT	24.00	-15.00	1.3	OUT1	74LS244	74LS244	UBMAP	D8
	F17-05(07)	.!	TI	-1.60	0.04	2.0	IN4	DM8838	8838	UBD	B6
	E18-18	!.	TOT	24.00	-15.00	2.1	OUT1	74LS244	74LS244	UBD	D4
	D22-09	.!	TOT	24.00	-15.00	2.2	OUT8	74LS244	74LS244	RBUF	D6
	D22-18	!.	TOT	24.00	-15.00	1.1	OUT1	74LS244	74LS244	RBUF	D6
	B21-01	.!	TOT	5.00	-0.40	3.0	A0	8304	8304	DBGOUT	B6
	A20-01	!	TOT	5.00	-0.40	1.7	A0	8304	8304	DIAG	C7
				-1.60(0.04)/5.00(-0.40)			25.8				

LISPM Bus Interface CADR1;XAUG WLR 1-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	TRACES	USE	DIPTYPE	BODY	FILE	POS
UDO 8	F18-14(16)	.	TI	-1.60	0.04		IN1	DM8838	8838	UBD	B4
	E19-03	!	TOT	24.00	-15.00	1.8	OUT5	74LS244	74LS244	UBD	D1
	E17-03	.!	TOT	24.00	-15.00	1.4	OUT5	74LS244	74LS244	UBMAP	D6
	D17-05	!	TOT	8.00	-2.60	1.3	Q1	74LS374	74LS374	UBINTC	D4
	C22-12	.!	TOT	24.00	-15.00	3.3	OUT4	74LS244	74LS244	RBUF	D4
	C22-03	!	TOT	24.00	-15.00	1.1	OUT5	74LS244	74LS244	RBUF	D4
	B22-08	.!	TOT	5.00	-0.40	1.0	A7	8304	8304	DBGOUT	B4
	A21-08	!	TOT	5.00	-0.40	1.7	A7	8304	8304	DIAG	C2
				-1.60(0.04)/5.00(-0.40)			20.6				
UDO 9	F18-11(13)	.	TI	-1.60	0.04		IN2	DM8838	8838	UBD	B4
	E19-05	!	TOT	24.00	-15.00	1.9	OUT6	74LS244	74LS244	UBD	D1
	E17-05	.!	TOT	24.00	-15.00	1.4	OUT6	74LS244	74LS244	UBMAP	D6
	D17-02	!	TOT	8.00	-2.60	1.8	Q0	74LS374	74LS374	UBINTC	D4
	C22-14	.!	TOT	24.00	-15.00	3.3	OUT3	74LS244	74LS244	RBUF	D4
	C22-05	!	TOT	24.00	-15.00	.8	OUT6	74LS244	74LS244	RBUF	D4
	B22-07	.!	TOT	5.00	-0.40	1.3	A6	8304	8304	DBGOUT	B4
	A21-07	!	TOT	5.00	-0.40	1.7	A6	8304	8304	DIAG	C2
				-1.60(0.04)/5.00(-0.40)			21.2				
UNIBUS INIT IN											
	F06-10(12)	.	TO	16.00	-0.40		OUT2	DM8838	8838	UPRIOR	D7
	A11-02(05)	!	TIS	-2.00	0.05	6.7		74S00	74S00	DBGIN	D6
				-2.00(0.05)/16.00(-0.40)							
UNIBUS INTR IN											
	F06-13(15)	.	TO	16.00	-0.40		OUT1	DM8838	8838	UPRIOR	D7
	E02-02(05)	!	TIS	-2.00	0.05	3.0		74S08	74S08	UBINTC	D6
				-2.00(0.05)/16.00(-0.40)							
UNIBUS REQUEST											
	B02-19	.	TI	-1.60	0.04		J4	74 276	74276	REQERR	B4
	C06-09(12)	!	TIS	-2.00	0.05	3.1		74S51	74S51A	REQUB	B7
	C10-04(07)	.!	TIS	-2.00	0.05	2.2		74S64	74S64	REQLM	D8
	B10-09(12)	!	TO	20.00	-1.00	1.4	Q2	74S74	74S74	REQUB	C2
				-5.60(0.14)/20.00(-1.00)				9.7			
-UNIBUS REQUEST											
	B10-08(11)		TO	20.00	-1.00		-Q2	74S74	74S74	REQUB	C2
										ONE PIN RUN	____ 0
										UNUSED EXTRA OUTPUT	____ 0
UNUSED TIMEOUT											
	B01-02		TO	8.00	-0.40		Q0	74LS273	74LS273	REQTIM C5	
										ONE PIN RUN	____ 0
										UNUSED SIGNAL	____ 1
VCO CAP1											
	B03@01-03(19)	.	I	0.00	0.00			DUMMY4	DUMMY4	REQTIM D2	
	A01-04(06)	!	I	0.00	0.00	1.9	CEXT	74LS124	74LS124	REQTIM D2	
				0.00/0.00						NO DRIVE	____ 1
VCO CAP2											
	B03@01-02	.	I	0.00	0.00			DUMMY4	DUMMY4	REQTIM D2	
	A01-05(07)	!	I	0.00	0.00	1.6	CEXT	74LS124	74LS124	REQTIM D2	
				0.00/0.00						NO DRIVE	____ 1
WBUF0	C24-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	WBUF D8	
	B23-17	!	TI	-0.20	0.02	2.0	IN5	74LS244	74LS244	BUSSEL B8	
				-0.20(0.02)/16.00(-2.00)							

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
WBUF1	C24-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	WBUF	D8
	B23-15	!	TI	-0.20	0.02	2.0	IN6	74LS244	74LS244	BUSSEL	B8
				-0.20(0.02)/16.00(-2.00)							
WBUF10	C26-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	WBUF	D4
	B25-13	!	TI	-0.20	0.02	1.7	IN7	74LS244	74LS244	BUSSEL	B3
				-0.20(0.02)/16.00(-2.00)							
WBUF11	C26-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	WBUF	D4
	B25-11	!	TI	-0.20	0.02	1.3	IN8	74LS244	74LS244	BUSSEL	B3
				-0.20(0.02)/16.00(-2.00)							
WBUF12	C27-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	WBUF	D2
	B26-17	!	TI	-0.20	0.02	2.0	IN5	74LS244	74LS244	BUSSEL	B1
				-0.20(0.02)/16.00(-2.00)							
WBUF13	C27-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	WBUF	D2
	B26-15	!	TI	-0.20	0.02	2.0	IN6	74LS244	74LS244	BUSSEL	B1
				-0.20(0.02)/16.00(-2.00)							
WBUF14	C27-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	WBUF	D2
	B26-13	!	TI	-0.20	0.02	1.7	IN7	74LS244	74LS244	BUSSEL	B1
				-0.20(0.02)/16.00(-2.00)							
WBUF15	C27-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	WBUF	D2
	B26-11	!	TI	-0.20	0.02	1.3	IN8	74LS244	74LS244	BUSSEL	B1
				-0.20(0.02)/16.00(-2.00)							
WBUF2	C24-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	WBUF	D8
	B23-13	!	TI	-0.20	0.02	1.7	IN7	74LS244	74LS244	BUSSEL	B8
				-0.20(0.02)/16.00(-2.00)							
WBUF3	C24-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	WBUF	D8
	B23-11	!	TI	-0.20	0.02	1.3	IN8	74LS244	74LS244	BUSSEL	B8
				-0.20(0.02)/16.00(-2.00)							
WBUF4	C25-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	WBUF	D6
	B24-17	!	TI	-0.20	0.02	2.0	IN5	74LS244	74LS244	BUSSEL	B6
				-0.20(0.02)/16.00(-2.00)							
WBUF5	C25-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	WBUF	D6
	B24-15	!	TI	-0.20	0.02	2.0	IN6	74LS244	74LS244	BUSSEL	B6
				-0.20(0.02)/16.00(-2.00)							
WBUF6	C25-07(09)	.	TOT	16.00	-2.00		Q1	29701	29701	WBUF	D6
	B24-13	!	TI	-0.20	0.02	1.7	IN7	74LS244	74LS244	BUSSEL	B6
				-0.20(0.02)/16.00(-2.00)							
WBUF7	C25-05(07)	.	TOT	16.00	-2.00		Q0	29701	29701	WBUF	D6
	B24-11	!	TI	-0.20	0.02	1.3	IN8	74LS244	74LS244	BUSSEL	B6
				-0.20(0.02)/16.00(-2.00)							
WBUF8	C26-11(13)	.	TOT	16.00	-2.00		Q3	29701	29701	WBUF	D4
	B25-17	!	TI	-0.20	0.02	2.0	IN5	74LS244	74LS244	BUSSEL	B3
				-0.20(0.02)/16.00(-2.00)							

LISPM B , interface CADR1:XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
WBUF9	C26-09(11)	.	TOT	16.00	-2.00		Q2	29701	29701	WBUF	D4		
	B25-15	!	TI	-0.20	0.02	2.0	IN6	74LS244	74LS244	BUSSEL	B3		
				-0.20(0.02)/16.00(-2.00)									
-WBUFWE H													
	B18-06(09)	\	TO	20.00	-1.00		OUT	74S32	74S320	DATCTL	B7		
	C24-03(05)	.!	TI	-0.25	0.01	3.5	-WE	29701	29701	WBUF	D8		
	C25-03(05)	!.	TI	-0.25	0.01	.9	-WE	29701	29701	WBUF	D6		
	C26-03(05)	.!	TI	-0.25	0.01	.9	-WE	29701	29701	WBUF	D4		
	C27-03(05)	!	TI	-0.25	0.01	.9	-WE	29701	29701	WBUF	D2		
				-1.00(0.04)/20.00(-1.00)				10.7					
WRCYC	C08-01(04)	\	TI	-2.00	0.05			74S04	74S04	DATCTL	C1		
	J07-18	.!					CON		CLM	B6			
	A22020-02(19)	!	TZ	-15.00	0.00	2.0		SIP330/470-8		SIP330/470-8		CLM	D3
				-17.00/0.00		10.7				HEAVILY LOADED		____ 0	
WRITEOK H													
	E17-04	\	TI	-0.20	0.02		IN2	74LS244	74LS244	UBMAP	D6		
	E15-07(09)	.!	TOT	16.00	-2.00	1.6	Q1	29701	29701	UBMAP	B2		
	E04-02(05)	!	TI	-2.00	0.05	6.0	IN	74S32	74S320	REQU	A1		
				-2.20(0.07)/16.00(-2.00)				9.1					
WRITE THROUGH													
	B20-06(09)	\	TO	20.00	-1.00			74S00	OS00L	DATCTL	B7		
	C17-10(13)	.!	TIS	-2.00	0.05	2.0		74S51	74S51A	DATCTL	A7		
	A05-11(14)	!	TI	-2.00	0.05	6.9		74S02	OS02L	DATCTL	A1		
				-4.00(0.10)/20.00(-1.00)				10.4					
-WRITE THROUGH H													
	C04-03(06)	\	TIS	-2.00	0.05			74S11	OS11L	UBCYC	B4		
	A04-10(13)	.!	TIS	-2.00	0.05	2.5		74S00	74S00	REQU	D3		
	B18-11(14)	!.	TO	20.00	-1.00	7.5	OUT	74S32	OS32L	UBCYC	A6		
	B20-04(07)	.!	TIS	-2.00	0.05	1.1		74S00	OS00L	DATCTL	B7		
	B20-05(08)	!	TIS	(-2.00)	0.05	BARE		74S00	OS00L	DATCTL	B7		
				-6.00(0.20)/20.00(-1.00)				15.7					
WRITE THROUGH ENB													
	C16-17	\	TI	-0.20	0.02		IN5	74LS244	74LS244	REQERR	C7		
	B15-08	.!	TOT	5.00	-0.40	1.5	A7	8304	8304	REQERR	D7		
	B08-05(08)	!	IO	20.00	-1.00	3.9	Q1	74S74	74S74	UBCYC	B5		
				-0.20(0.02)/20.00(-1.00)				6.9					
								"WIRE-OR", OUTPUTS ON DIFFERENT DIPS				____ 2	
-WRITE THROUGH ENB		H											
	E04-13(16)	.	TI	-2.00	0.05		IN	74S32	OS32L	UBCYC	A5		
	B08-06(09)	!	TO	20.00	-1.00	3.8	-Q1	74S74	74S74	UBCYC	B5		
				-2.00(0.05)/20.00(-1.00)									
XACK	F03-05(08)	\	TIS	-2.00	0.05			74S00	74S00	REQU	C1		
	C08-12(15)	.!	TO	20.00	-1.00	4.9		74S04	74S040	REQLM	C6		
	B11-03(06)	!	TIS	-2.00	0.05	2.1		74S51	74S51	REQLM	B7		
				-4.00(0.10)/20.00(-1.00)				8.5					
-XACK	C11-08(11)	\	TO	20.00	-1.00			74S64	74S64	REQLM	D6		
	C10-11(14)	.!	TIS	-2.00	0.05	1.0		74S64	74S64	REQLM	D8		
	C08-13(16)	!	TI	-2.00	0.05	1.5		74S04	74S040	REQLM	C6		
				-4.00(0.10)/20.00(-1.00)				4.0					

LISPM Bus Interface CADR1;XAUG WLR -DEC-80 1608

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-XADDR0 BV2					CON		CXBUS	A5	
F23-15(17)	I	TOC	100.00 0.00/100.00	1.8	-BUS3	26S10	26S10	XA	D8
-XADDR1 BV1					CON		CXBUS	A5	
F23-09(11)	I	TOC	100.00 0.00/100.00	1.5	-BUS2	26S10	26S10	XA	D8
-XADDR10 BP1					CON		CXBUS	B5	
F25-07(09)	I	TOC	100.00 0.00/100.00	1.8	-BUS1	26S10	26S10	XA	D4
-XADDR11 BN2					CON		CXBUS	B5	
F25-02(04)	I	TOC	100.00 0.00/100.00	1.8	-BUS0	26S10	26S10	XA	D4
-XADDR12 BM2					CON		CXBUS	B5	
E25-15(17)	I	TOC	100.00 0.00/100.00	2.8	-BUS3	26S10	26S10	XA	B8
-XADDR13 BM1					CON		CXBUS	B5	
E25-09(11)	I	TOC	100.00 0.00/100.00	2.5	-BUS2	26S10	26S10	XA	B8
-XADDR14 BL2					CON		CXBUS	B5	
E25-07(09)	I	TOC	100.00 0.00/100.00	2.2	-BUS1	26S10	26S10	XA	B8
-XADDR15 BL1					CON		CXBUS	B5	
E25-02(04)	I	TOC	100.00 0.00/100.00	2.9	-BUS0	26S10	26S10	XA	B8
-XADDR16 BK2					CON		CXBUS	C5	
F26-15(17)	I	TOC	100.00 0.00/100.00	2.2	-BUS3	26S10	26S10	XA	B6
-XADDR17 BK1					CON		CXBUS	C5	
F26-09(11)	I	TOC	100.00 0.00/100.00	2.0	-BUS2	26S10	26S10	XA	B6
-XADDR18 BJ2					CON		CXBUS	C5	
F26-07(09)	I	TOC	100.00 0.00/100.00	1.6	-BUS1	26S10	26S10	XA	B6
-XADDR19 BJ1					CON		CXBUS	C5	
F26-02(04)	I	TOC	100.00 0.00/100.00	2.0	-BUS0	26S10	26S10	XA	B6

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-XADDR2 BU2						CON		CXBUS	A5	
F23-07(09)	I	TOC	100.00		1.2	-BUS1	26S10	26S10	XA	D8
			0.00/100.00							
-XADDR20										
BH2						CON		CXBUS	C5	
E26-15(17)	I	TOC	100.00		2.9	-BUS3	26S10	26S10	XA	B4
			0.00/100.00							
-XADDR21										
BH1						CON		CXBUS	C5	
E26-09(11)	I	TOC	100.00		2.5	-BUS2	26S10	26S10	XA	B4
			0.00/100.00							
-XADDR3 BU1						CON		CXBUS	A5	
F23-02(04)	I	TOC	100.00		1.7	-BUS0	26S10	26S10	XA	D8
			0.00/100.00							
-XADDR4 BT2						CON		CXBUS	A5	
F24-15(17)	I	TOC	100.00		2.0	-BUS3	26S10	26S10	XA	D6
			0.00/100.00							
-XADDR5 BS2						CON		CXBUS	A5	
F24-09(11)	I	TOC	100.00		1.6	-BUS2	26S10	26S10	XA	D6
			0.00/100.00							
-XADDR6 BS1						CON		CXBUS	B5	
F24-07(09)	I	TOC	100.00		1.5	-BUS1	26S10	26S10	XA	D6
			0.00/100.00							
-XADDR7 BR2						CON		CXBUS	B5	
F24-02(04)	I	TOC	100.00		1.7	-BUS0	26S10	26S10	XA	D6
			0.00/100.00							
-XADDR8 BR1						CON		CXBUS	B5	
F25-15(17)	I	TOC	100.00		2.4	-BUS3	26S10	26S10	XA	D4
			0.00/100.00							
-XADDR9 BP2						CON		CXBUS	B5	
F25-09(11)	I	TOC	100.00		1.9	-BUS2	26S10	26S10	XA	D4
			0.00/100.00							
-XADDRDRIVE H										
B17-01(04)	\	TO	20.00	-1.00			74S02	74S02	DATCTL	B1
F25-12(14)	.I	TI	-0.36	0.02	6.1	-ENB	26S10	26S10	XA	B8
F26-12(14)	I.	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XA	B4
F26-12(14)	.I	TI	-0.36	0.02	1.5	-ENB	26S10	26S10	XA	B6
F25-12(14)	I.	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XA	D4
F24-12(14)	.I	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XA	D6
F23-12(14)	I	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XA	D8
			-2.16(0.12)/20.00(-1.00)				18.7			
-XADDR PAR										
BF2						CON		CXBUS	A5	
E26-07(09)	I	TOC	100.00		2.2	-BUS1	26S10	26S10	XA	B4
			0.00/100.00							

LISPM 6 s Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
XADDR PAR OUT										
XAO PAR EVEN										
-XAO PAR ODD H										
E26-05(07)	.	TI	-0.54	0.03		IN1	26S10	26S10	XA	B4
E23-10(12)	!	TO	20.00	-1.00	1.7	0	93S48	93S48	XAPAR	C6
			-0.54(0.03)/20.00(-1.00)							
XA00 A25-03	.	TOT	24.00	-15.00		-OUT5	74LS240	74LS240	LMADR	B7
E20-03	!.	TOT	24.00	-15.00	5.5	OUT5	74LS244	74LS244	UBXA	D7
E24-07(09)	.!	TI	-0.80	0.02	2.5	I	93S48	93S48	XAPAR	C2
F23-13(15)	!	TI	-0.54	0.03	1.3	IN3	26S10	26S10	XA	D8
			-1.34(0.05)/24.00(-15.00)				12.3			
XA01 A25-05	.	TOT	24.00	-15.00		-OUT6	74LS240	74LS240	LMADR	B7
E24-06(08)	!.	TI	-0.80	0.02	5.2	I	93S48	93S48	XAPAR	C2
F23-11(13)	.!	TI	-0.54	0.03	1.6	IN2	26S10	26S10	XA	D8
E20-05	!	TOT	24.00	-15.00	2.7	OUT6	74LS244	74LS244	UBXA	D7
			-1.34(0.05)/24.00(-15.00)				12.5			
XA010 A27-07	.	TOT	24.00	-15.00		-OUT7	74LS240	74LS240	LMADR	B2
E24-12(14)	!.	TI	-0.80	0.02	5.0	I	93S48	93S48	XAPAR	C2
F25-05(07)	.!	TI	-0.54	0.03	1.6	IN1	26S10	26S10	XA	D4
E21-07	!	TOT	24.00	-15.00	2.7	OUT7	74LS244	74LS244	UBXA	D5
			-1.34(0.05)/24.00(-15.00)				12.3			
XA011 A27-09	.	TOT	24.00	-15.00		-OUT8	74LS240	74LS240	LMADR	B2
E24-11(13)	!.	TI	-0.80	0.02	4.9	I	93S48	93S48	XAPAR	C2
F25-04(06)	.!	TI	-0.54	0.03	1.4	IN0	26S10	26S10	XA	D4
E21-09	!	TOT	24.00	-15.00	2.6	OUT8	74LS244	74LS244	UBXA	D5
			-1.34(0.05)/24.00(-15.00)				11.9			
XA012 A23-03	.	TOT	24.00	-15.00		-OUT5	74LS240	74LS240	LMADR	D7
E25-13(15)	!.	TI	-0.54	0.03	5.3	IN3	26S10	26S10	XA	B8
E23-07(09)	.!	TI	-0.80	0.02	1.8	I	93S48	93S48	XAPAR	C6
E21-12	!	TOT	24.00	-15.00	1.1	OUT4	74LS244	74LS244	UBXA	D5
			-1.34(0.05)/24.00(-15.00)				11.2			
XA013 A23-05	.	TOT	24.00	-15.00		-OUT6	74LS240	74LS240	LMADR	D7
E21-14	!.	TOT	24.00	-15.00	5.1	OUT3	74LS244	74LS244	UBXA	D5
E23-06(08)	.!	TI	-0.80	0.02	1.2	I	93S48	93S48	XAPAR	C6
E25-11(13)	!	TI	-0.54	0.03	1.7	IN2	26S10	26S10	XA	B8
			-1.34(0.05)/24.00(-15.00)				11.0			
XA014 A23-07	.	TOT	24.00	-15.00		-OUT7	74LS240	74LS240	LMADR	D7
E21-16	!.	TOT	24.00	-15.00	4.7	OUT2	74LS244	74LS244	UBXA	D5
E23-05(07)	.!	TI	-0.80	0.02	1.2	I	93S48	93S48	XAPAR	C6
E25-05(07)	!	TI	-0.54	0.03	1.4	IN1	26S10	26S10	XA	B8
			-1.34(0.05)/24.00(-15.00)				10.3			
XA015 A23-09	.	TOT	24.00	-15.00		-OUT8	74LS240	74LS240	LMADR	D7
E21-18	!.	TOT	24.00	-15.00	4.3	OUT1	74LS244	74LS244	UBXA	D5
E23-04(06)	.!	TI	-0.80	0.02	1.2	I	93S48	93S48	XAPAR	C6
E25-04(06)	!	TI	-0.54	0.03	1.4	IN0	26S10	26S10	XA	B8
			-1.34(0.05)/24.00(-15.00)				9.9			
XA016 A24-03	.	TOT	24.00	-15.00		-OUT5	74LS240	74LS240	LMADR	D5
E22-03	!.	TOT	24.00	-15.00	5.0	OUT5	74LS244	74LS244	UBXA	D2
E23-03(05)	.!	TI	-0.80	0.02	1.0	I	93S48	93S48	XAPAR	C6
F26-13(15)	!	TI	-0.54	0.03	2.6	IN3	26S10	26S10	XA	B6
			-1.34(0.05)/24.00(-15.00)				11.6			

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
XA017	A24-05		TOT	24.00	-15.00		-OUT6	74LS240	74LS240	LMADR	D5
	E22-05		TOT	24.00	-15.00	5.0	OUT6	74LS244	74LS244	UBXA	D2
	E23-02(04)		TI	-0.80	0.02	1.0	I	93S48	93S48	XAPAR	C6
	F26-11(13)		TI	-0.54	0.03	2.8	IN2	26S10	26S10	XA	B6
				-1.34(0.05)/24.00(-15.00)				11.8			
XA018	A24-07		TOT	24.00	-15.00		-OUT7	74LS240	74LS240	LMADR	D5
	E23-01(03)		TI	-0.80	0.02	4.6	I	93S48	93S48	XAPAR	C6
	F22-07		TOT	24.00	-15.00	1.1	OUT7	74LS244	74LS244	UBXA	D2
	F26-05(07)		TI	-0.54	0.03	2.7	IN1	26S10	26S10	XA	B6
				-1.34(0.05)/24.00(-15.00)				11.3			
XA019	A24-09		TOT	24.00	-15.00		-OUT8	74LS240	74LS240	LMADR	D5
	E23-15(17)		TI	-0.80	0.02	4.4	I	93S48	93S48	XAPAR	C6
	E22-09		TOT	24.00	-15.00	1.4	OUT8	74LS244	74LS244	UBXA	D2
	F26-04(06)		TI	-0.54	0.03	2.6	IN0	26S10	26S10	XA	B6
				-1.34(0.05)/24.00(-15.00)				11.4			
XA02	A25-07		TOT	24.00	-15.00		-OUT7	74LS240	74LS240	LMADR	B7
	E24-05(07)		TI	-0.80	0.02	4.9	I	93S48	93S48	XAPAR	C2
	F23-05(07)		TI	-0.54	0.03	1.7	IN1	26S10	26S10	XA	D8
	E20-07		TOT	24.00	-15.00	2.3	OUT7	74LS244	74LS244	UBXA	D7
				-1.34(0.05)/24.00(-15.00)				11.9			
XA020	D18-12		TOT	24.00	-15.00		-OUT4	74LS240	74LS240	UBINTC	B6
	E22-12		TOT	24.00	-15.00	2.7	OUT4	74LS244	74LS244	UBXA	D2
	E23-14(16)		TI	-0.80	0.02	1.1	I	93S48	93S48	XAPAR	C6
	E26-13(15)		TI	-0.54	0.03	2.0	IN3	26S10	26S10	XA	B4
				-1.34(0.05)/24.00(-15.00)				8.8			
XA021	D18-14		TOT	24.00	-15.00		-OUT3	74LS240	74LS240	UBINTC	B6
	E22-14		TOT	24.00	-15.00	2.7	OUT3	74LS244	74LS244	UBXA	D2
	E23-13(15)		TI	-0.80	0.02	1.0	I	93S48	93S48	XAPAR	C6
	E26-11(13)		TI	-0.54	0.03	2.0	IN2	26S10	26S10	XA	B4
				-1.34(0.05)/24.00(-15.00)				8.7			
XA03	A25-09		TOT	24.00	-15.00		-OUT8	74LS240	74LS240	LMADR	B7
	E24-04(06)		TI	-0.80	0.02	4.6	I	93S48	93S48	XAPAR	C2
	F23-04(06)		TI	-0.54	0.03	1.7	IN0	26S10	26S10	XA	D8
	E20-09		TOT	24.00	-15.00	2.1	OUT8	74LS244	74LS244	UBXA	D7
				-1.34(0.05)/24.00(-15.00)				11.4			
XA04	A26-03		TOT	24.00	-15.00		-OUT5	74LS240	74LS240	LMADR	B5
	E24-03(05)		TI	-0.80	0.02	5.2	I	93S48	93S48	XAPAR	C2
	F24-13(15)		TI	-0.54	0.03	1.7	IN3	26S10	26S10	XA	D6
	E20-12		TOT	24.00	-15.00	2.6	OUT4	74LS244	74LS244	UBXA	D7
				-1.34(0.05)/24.00(-15.00)				12.5			
XA05	A26-05		TOT	24.00	-15.00		-OUT6	74LS240	74LS240	LMADR	B5
	E24-02(04)		TI	-0.80	0.02	4.9	I	93S48	93S48	XAPAR	C2
	F24-11(13)		TI	-0.54	0.03	2.0	IN2	26S10	26S10	XA	D6
	E20-14		TOT	24.00	-15.00	2.8	OUT3	74LS244	74LS244	UBXA	D7
				-1.34(0.05)/24.00(-15.00)				12.7			
XA06	A26-07		TOT	24.00	-15.00		-OUT7	74LS240	74LS240	LMADR	B5
	E24-01(03)		TI	-0.80	0.02	4.6	I	93S48	93S48	XAPAR	C2
	F24-05(07)		TI	-0.54	0.03	1.9	IN1	26S10	26S10	XA	D6
	E20-16		TOT	24.00	-15.00	2.6	OUT2	74LS244	74LS244	UBXA	D7
				-1.34(0.05)/24.00(-15.00)				12.1			

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
XAO7	A26-09	.	TOT	24.00	-15.00		-OUT8	74LS240	74LS240	LMADR	B5
	E24-15(17)	!.	TI	-0.80	0.02	4.4	I	93S48	93S48	XAPAR	C2
	F24-04(06)	.!	TI	-0.54	0.03	1.8	IN0	26S10	26S10	XA	D6
	E20-18	!	TOT	24.00	-15.00	2.7	OUT1	74LS244	74LS244	UBXA	D7
				-1.34(0.05)/24.00(-15.00)				11.9			
XAO8	A27-03	.	TOT	24.00	-15.00		-OUT5	74LS240	74LS240	LMADR	B2
	E21-03	!.	TOT	24.00	-15.00	5.8	OUT5	74LS244	74LS244	UBXA	D5
	E24-14(16)	.!	TI	-0.80	0.02	2.3	I	93S48	93S48	XAPAR	C2
	F25-13(15)	!	TI	-0.54	0.03	1.7	IN3	26S10	26S10	XA	D4
				-1.34(0.05)/24.00(-15.00)				12.8			
XAO9	A27-05	.	TOT	24.00	-15.00		-OUT6	74LS240	74LS240	LMADR	B2
	E21-05	!.	TOT	24.00	-15.00	5.8	OUT6	74LS244	74LS244	UBXA	D5
	E24-13(15)	.!	TI	-0.80	0.02	2.3	I	93S48	93S48	XAPAR	C2
	F25-11(13)	!	TI	-0.54	0.03	1.8	IN2	26S10	26S10	XA	D4
				-1.34(0.05)/24.00(-15.00)				12.9			
-XAO PAR EVEN H											
XAO PAR ODD											
	E23-09(11)	.	TO	20.00	-1.00		E	93S48	93S48	XAPAR	C6
	D20-09(12)	!	TI	-2.00	0.05	2.4		74S86	74S860	REQERR	A2
				-2.00(0.05)/20.00(-1.00)							
-XB→BUS H											
	C18-08(11)	\	TO	20.00	-1.00			74S51	74S51A	DATCTL	B4
	D27-01	.!	TI	-0.20	0.02	4.7	-ENB	74LS244	74LS244	XBD	D8
	D27-19	!.	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	XBD	D8
	D28-01	.!	TI	-0.20	0.02	.7	-ENB	74LS244	74LS244	XBD	D6
	D28-19	!.	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	XBD	D6
	D29-01	.!	TI	-0.20	0.02	.7	-ENB	74LS244	74LS244	XBD	D3
	D29-19	!.	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	XBD	D3
	D30-01	.!	TI	-0.20	0.02	.7	-ENB	74LS244	74LS244	XBD	D1
	D30-19	!	TI	-0.20	0.02	.8	-ENB	74LS244	74LS244	XBD	D1
				-1.60(0.16)/20.00(-1.00)				20.5			
XB NXM ERROR											
	C16-02	\	TI	-0.20	0.02		IN1	74LS244	74LS244	REQERR	C7
	B15-01	.!	TOT	5.00	-0.40	1.7	A0	8304	8304	REQERR	D7
	B02-15	!	TO	16.00	-0.80	6.7	Q3	74 276	74276	REQERR	B4
				-0.20(0.02)/16.00(-0.80)				9.9			
								"WIRE-OR", OUTPUTS ON DIFFERENT DIPS			____ 2
XB PAR ERROR											
	C16-04	.	TI	-0.20	0.02		IN2	74LS244	74LS244	REQERR	C7
	B15-02	!.	TOT	5.00	-0.40	1.8	A1	8304	8304	REQERR	D7
	A03-09(11)	.!	TO	8.00	-0.40	6.2	Q2	74LS112	74LS112-1	REQERR	C4
	C03-09(12)	!	TIP	-0.40	0.02	2.5		74LS27	74LS27	REQERR	A7
				-0.60(0.04)/8.00(-0.40)				13.5			
								"WIRE-OR", OUTPUTS ON DIFFERENT DIPS			____ 2
-XBUS0	BE1	.					CON		CXBUS	A4	
	F27-15(17)	!	TOC	100.00		2.3	-BUS3	26S10	26S10	XD	D8
				0.00/100.00							
-XBUS1	BD2	.					CON		CXBUS	A4	
	F27-09(11)	!	TOC	100.00		1.8	-BUS2	26S10	26S10	XD	D8
				0.00/100.00							

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-XBUS10	AT2 F28-07(09)	I	TOC	100.00 0.00/100.00		1.0	CON -BUS1	26S10	CXBUS 26S10	B4 XD	D5
-XBUS11	AS2 F28-02(04)	I	TOC	100.00 0.00/100.00		1.5	CON -BUS0	26S10	CXBUS 26S10	B4 XD	D5
-XBUS12	AS1 E28-15(17)	I	TOC	100.00 0.00/100.00		2.8	CON -BUS3	26S10	CXBUS 26S10	B4 XD	D3
-XBUS13	AR2 E28-09(11)	I	TOC	100.00 0.00/100.00		2.0	CON -BUS2	26S10	CXBUS 26S10	B4 XD	D3
-XBUS14	AR1 E28-07(09)	I	TOC	100.00 0.00/100.00		2.2	CON -BUS1	26S10	CXBUS 26S10	B4 XD	D3
-XBUS15	AP2 E28-02(04)	I	TOC	100.00 0.00/100.00		2.6	CON -BUS0	26S10	CXBUS 26S10	B4 XD	D3
-XBUS16	AP1 F29-15(17)	I	TOC	100.00 0.00/100.00		1.8	CON -BUS3	26S10	CXBUS 26S10	C4 XD	B8
-XBUS17	AN2 F29-09(11)	I	TOC	100.00 0.00/100.00		1.1	CON -BUS2	26S10	CXBUS 26S10	C4 XD	B8
-XBUS18	AM2 F29-07(09)	I	TOC	100.00 0.00/100.00		1.0	CON -BUS1	26S10	CXBUS 26S10	C4 XD	B8
-XBUS19	AM1 F29-02(04)	I	TOC	100.00 0.00/100.00		1.7	CON -BUS0	26S10	CXBUS 26S10	C4 XD	B8
-XBUS2	BD1 F27-07(09)	I	TOC	100.00 0.00/100.00		1.7	CON -BUS1	26S10	CXBUS 26S10	A4 XD	D8
-XBUS20	AL2 E29-15(17)	I	TOC	100.00 0.00/100.00		2.6	CON -BUS3	26S10	CXBUS 26S10	C4 XD	B6
-XBUS21	AL1 E29-09(11)	I	TOC	100.00 0.00/100.00		2.2	CON -BUS2	26S10	CXBUS 26S10	C4 XD	B6
-XBUS22	AK2 E29-07(09)	I	TOC	100.00 0.00/100.00		2.1	CON -BUS1	26S10	CXBUS 26S10	C4 XD	B6

LISPM Bus Interface CADR1:XAUG WLR -DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-XBUS23	AK1 E29-02(04)	I	TOC	100.00 0.00/100.00	2.8	CON -BUS0	26S10	CXBUS 26S10	C4 XD	B6
-XBUS24	AJ2 F30-15(17)	I	TOC	100.00 0.00/100.00	1.6	CON -BUS3	26S10	CXBUS 26S10	C4 XD	B5
-XBUS25	AJ1 F30-09(11)	I	TOC	100.00 0.00/100.00	1.3	CON -BUS2	26S10	CXBUS 26S10	C4 XD	B5
-XBUS26	AH2 F30-07(09)	I	TOC	100.00 0.00/100.00	1.0	CON -BUS1	26S10	CXBUS 26S10	D4 XD	B5
-XBUS27	AH1 F30-02(04)	I	TOC	100.00 0.00/100.00	1.7	CON -BUS0	26S10	CXBUS 26S10	D4 XD	B5
-XBUS28	AF2 E30-15(17)	I	TOC	100.00 0.00/100.00	2.6	CON -BUS3	26S10	CXBUS 26S10	D4 XD	B3
-XBUS29	AE2 E30-09(11)	I	TOC	100.00 0.00/100.00	2.0	CON -BUS2	26S10	CXBUS 26S10	D4 XD	B3
-XBUS3	BC1 F27-02(04)	I	TOC	100.00 0.00/100.00	1.9	CON -BUS0	26S10	CXBUS 26S10	A4 XD	D8
-XBUS30	AE1 E30-07(09)	I	TOC	100.00 0.00/100.00	2.3	CON -BUS1	26S10	CXBUS 26S10	D4 XD	B3
-XBUS31	AD2 E30-02(04)	I	TOC	100.00 0.00/100.00	2.6	CON -BUS0	26S10	CXBUS 26S10	D4 XD	B3
-XBUS32	AD1					CON		CXBUS D4	ONE PIN RUN ____ 0 NO INPUTS OR OUTPUTS ____ 3	
-XBUS33	AC1					CON		CXBUS D4	ONE PIN RUN ____ 0 NO INPUTS OR OUTPUTS ____ 3	
-XBUS34	AB1					CON		CXBUS D4	ONE PIN RUN ____ 0 NO INPUTS OR OUTPUTS ____ 3	
-XBUS35	AA1					CON		CXBUS D4	ONE PIN RUN ____ 0 NO INPUTS OR OUTPUTS ____ 3	

LISP Bus Interface CADR1:XAUG WLR 11-DEC-80 1608

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-XBUS4 BB1						CON		CXBUS	A4	
E27-15(17)	I	TOC	100.00		3.0	-BUS3	26S10	26S10	XD	D6
			0.00/100.00							
-XBUS5 BA1						CON		CXBUS	A4	
E27-09(11)	I	TOC	100.00		2.4	-BUS2	26S10	26S10	XD	D6
			0.00/100.00							
-XBUS6 AV2						CON		CXBUS	B4	
E27-07(09)	I	TOC	100.00		2.1	-BUS1	26S10	26S10	XD	D6
			0.00/100.00							
-XBUS7 AV1						CON		CXBUS	B4	
E27-02(04)	I	TOC	100.00		2.8	-BUS0	26S10	26S10	XD	D6
			0.00/100.00							
-XBUS8 AU2						CON		CXBUS	B4	
F28-15(17)	I	TOC	100.00		1.6	-BUS3	26S10	26S10	XD	D5
			0.00/100.00							
-XBUS9 AU1						CON		CXBUS	B4	
F28-09(11)	I	TOC	100.00		1.3	-BUS2	26S10	26S10	XD	D5
			0.00/100.00							
-XBUS ACK										
CD1						CON		CXBUS	A8	
F21-09(11)	I	TOC	100.00		1.5	-BUS2	26S10	26S10	XA	D2
			0.00/100.00							
XBUS ACK IN										
F21-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XA	D2
C11-06(09)	I	TIS	-2.00	0.05	6.7		74S64	74S64	REQLM	D6
C11-02(05)	I	TIS	-2.00	0.05	.8		74S64	74S64	REQLM	D6
C09-01(04)	I	TI	-2.00	0.05	1.5	IN	1D100	TD100	REQLM	D4
			-6.00(0.15)/20.00(-1.00)				12.0			
-XBUS BUSY										
CM1						CON		CXBUS	A8	
F22-02(04)	I	TOC	100.00		2.7	-BUS0	26S10	26S10	XA	B2
			0.00/100.00							
XBUS BUSY IN H										
F22-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XA	B2
A05-06(09)	I	TI	-2.00	0.05	10.6		74S02	74S020	RQSYNC	C2
			-2.00(0.05)/20.00(-1.00)							
XBUS EXTGRANT OUT										
F22-11(13)	.	TI	-0.54	0.03		IN2	26S10	26S10	XA	B2
A05-01(04)	I	TO	20.00	-1.00	11.3		74S02	74S020	RQSYNC	A5
			-0.54(0.03)/20.00(-1.00)							
-XBUS EXTGRANT OUT										
CV1						CON		CXBUS	B8	
F22-09(11)	I	TOC	100.00		3.5	-BUS2	26S10	26S10	XA	B2
			0.00/100.00							

LISPM R s Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
-XBUS EXTRQ										
CL1	.					CON		CXBUS	A8	
F22-07(09)	!	TOC	100.00		2.4	-BUS1	26S10	26S10	XA	B2
			0.00/100.00							
XBUS EXTRQ IN										
F22-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XA	B2
A08-04(06)	!	TI	-2.00	0.05	9.7	1D	74S175	74S175	RQSYNC	B2
			-2.00(0.05)/20.00(-1.00)							
-XBUS IGNPAR										
CJ1	.					CON		CXBUS	A8	
F20-07(09)	!	TOC	100.00		1.4	-BUS1	26S10	26S10	XD	B1
			0.00/100.00							
XBUS IGNPAR IN										
F20-06(08)	\	TO	20.00	-1.00		OUT1	26S10	26S10	XD	B1
B13-03(06)	.!	TI	-2.00	0.05	6.2		74S04	74S04	REQERR	C1
B12-02(05)	!	TI	-2.00	0.05	1.0		74S02	74S02	REQLM	A7
			-4.00(0.10)/20.00(-1.00)				8.7			
-XBUS IGNPAR IN H										
B13-04(07)	.	TO	20.00	-1.00			74S04	74S04	REQERR	C1
B05-09(12)	!	TIS	-2.00	0.05	4.2		74S11	74S11	REQERR	C3
			-2.00(0.05)/20.00(-1.00)							
-XBUS INIT										
CK1	.					CON		CXBUS	A8	
F21-02(04)	!	TOC	100.00		2.1	-BUS0	26S10	26S10	XA	D2
			0.00/100.00							
-XBUS INTR										
CS1	.					CON		CXBUS	B8	
F22-15(17)	!	TOC	100.00		3.4	-BUS3	26S10	26S10	XA	B2
			0.00/100.00							
XBUS INTR IN										
F22-14(16)	\	TO	20.00	-1.00		OUT3	26S10	26S10	XA	B2
E05-11(14)	.!	TI	-2.00	0.05	9.2		74S04	74S04	UBINTC	D6
E04-10(13)	!	TI	-2.00	0.05	1.0	IN	74S32	74S32	UBINTC	D6
			-4.00(0.10)/20.00(-1.00)				11.7			
-XBUS INTR IN H										
E05-10(13)	.	TO	20.00	-1.00			74S04	74S04	UBINTC	D6
D18-11	!	TI	-0.20	0.02	7.0	IN8	74LS240	74LS240	UBINTC	B6
			-0.20(0.02)/20.00(-1.00)							
-XBUS PAR										
BE2	.					CON		CXBUS	A4	
F20-15(17)	!	TOC	100.00		2.8	-BUS3	26S10	26S10	XD	B1
			0.00/100.00							
XBUS PAR IN										
F20-14(16)	\	TO	20.00	-1.00		OUT3	26S10	26S10	XD	B1
D20-05(08)	.!	TI	-2.00	0.05	2.4		74S86	74S86	REQERR	C2
B04-15	!	TI	-0.40	0.05	8.8	IN6	74S241	74S241	DBGOUT	D5
			-2.40(0.10)/20.00(-1.00)				12.7			

LISPM Bus Interface CADR1;XAUG WLR -DEC-80 1608

SIGNAL NAME / LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS		
XBUS PAR OUT												
F20-13(15)	.	TI	-0.54	0.03		IN3	26S10	26S10	XD	B1		
B13-10(13)	!	TO	20.00	-1.00	5.9		74S04	0S04L	REQERR	D2		
			-0.54(0.03)/20.00(-1.00)									
XBUS POWER OK												
											NULL RUN	0
											NULL WIRE	0
-XBUS POWER RESET	H											
CU1	\					CON		CXBUS	B8			
F21-15(17)	.!	TOC	100.00		3.1	-BUS3	26S10	26S10	XA	D2		
A22@20-05(16)	!	TZ	-15.00	0.00	5.9		SIP330/470-8		SIP330/470-8		CLM	D3
			-15.00/100.00		10.5				HEAVILY LOADED		0	
XBUS REQUEST												
J01-06	\					CON		CTP	A3			
A03-13(15)	.!	TI	-0.80	0.08	1.9	-CLK2	74LS112	74LS112-1		REQERR	C4	
B02-12	!.	TI	-1.60	0.04	1.9	J3	74 276	74276	REQERR	B4		
C10-01(04)	.!	TIS	-2.00	0.05	4.2		74S64	74S64	REQLM	D8		
C11-10(13)	!.	TIS	-2.00	0.05	1.3		74S64	74S64	REQLM	D6		
B14-05(08)	.!	TO	20.00	-1.00	2.1	Q1	74S74	74S74	REQLM	C4		
E26-04(06)	!	TI	-0.54	0.03	7.2	IN0	26S10	26S10	XA	B4		
			-6.94(0.25)/20.00(-1.00)				26.1					
-XBUS REQUEST												
B14-06(09)	.	TO	20.00	-1.00		-Q1	74S74	74S74	REQLM	C4		
B05-02(05)	!	TIS	-2.00	0.05	5.0		74S11	74S110	RQSYNC	C5		
			-2.00(0.05)/20.00(-1.00)									
-XBUS RQ												
CC1	.					CON		CXBUS	A8			
E26-02(04)	!	TOC	100.00		4.2	-BUS0	26S10	26S10	XA	B4		
			0.00/100.00									
-XBUS SYNC												
CP1	.					CON		CXBUS	B8			
F21-07(09)	!	TOC	100.00		2.3	-BUS1	26S10	26S10	XA	D2		
			0.00/100.00									
-XBUS WR												
CE1	.					CON		CXBUS	A8			
F20-09(11)	!	TOC	100.00		1.2	-BUS2	26S10	26S10	XD	B1		
			0.00/100.00									
XDI0 F27-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	D8		
D27-17	!	TI	-0.20	0.02	2.7	IN5	74LS244	74LS244	XBD	D8		
			-0.20(0.02)/20.00(-1.00)									
XDI1 F27-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	D8		
D27-15	!	TI	-0.20	0.02	2.9	IN6	74LS244	74LS244	XBD	D8		
			-0.20(0.02)/20.00(-1.00)									
XDI10 F28-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	D5		
D28-13	!	TI	-0.20	0.02	2.7	IN7	74LS244	74LS244	XBD	D6		
			-0.20(0.02)/20.00(-1.00)									

LISPM Bus Interface CADR1;XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
XDI11	F28-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	D5
	D28-11	!	TI	-0.20	0.02	2.2	IN8	74LS244	74LS244	XBD	D6
				-0.20(0.02)/20.00(-1.00)							
XDI12	E28-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	D3
	D28-08	!	TI	-0.20	0.02	1.3	IN4	74LS244	74LS244	XBD	D6
				-0.20(0.02)/20.00(-1.00)							
XDI13	E28-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	D3
	D28-06	!	TI	-0.20	0.02	1.9	IN3	74LS244	74LS244	XBD	D6
				-0.20(0.02)/20.00(-1.00)							
XDI14	E28-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	D3
	D28-04	!	TI	-0.20	0.02	1.9	IN2	74LS244	74LS244	XBD	D6
				-0.20(0.02)/20.00(-1.00)							
XDI15	E28-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	D3
	D28-02	!	TI	-0.20	0.02	1.8	IN1	74LS244	74LS244	XBD	D6
				-0.20(0.02)/20.00(-1.00)							
XDI16	F29-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	B8
	D29-17	!	TI	-0.20	0.02	2.7	IN5	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							
XDI17	F29-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	B8
	D29-15	!	TI	-0.20	0.02	2.9	IN6	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							
XDI18	F29-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	B8
	D29-13	!	TI	-0.20	0.02	2.7	IN7	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							
XDI19	F29-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	B8
	D29-11	!	TI	-0.20	0.02	2.2	IN8	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							
XDI2	F27-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	D8
	D27-13	!	TI	-0.20	0.02	2.7	IN7	74LS244	74LS244	XBD	D8
				-0.20(0.02)/20.00(-1.00)							
XDI20	E29-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	B6
	D29-08	!	TI	-0.20	0.02	1.3	IN4	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							
XDI21	E29-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	B6
	D29-06	!	TI	-0.20	0.02	1.9	IN3	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							
XDI22	E29-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	B6
	D29-04	!	TI	-0.20	0.02	1.9	IN2	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							
XDI23	E29-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	B6
	D29-02	!	TI	-0.20	0.02	1.8	IN1	74LS244	74LS244	XBD	D3
				-0.20(0.02)/20.00(-1.00)							

LISPM B[illegible] Interface CADR1:XAUG WLR 11-DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
XDI24	F30-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	B5
	D30-17	i	TI	-0.20	0.02	2.7	IN5	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI25	F30-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	B5
	D30-15	i	TI	-0.20	0.02	2.9	IN6	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI26	F30-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	B5
	D30-13	i	TI	-0.20	0.02	2.7	IN7	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI27	F30-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	B5
	D30-11	i	TI	-0.20	0.02	2.2	IN8	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI28	E30-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	B3
	D30-08	i	TI	-0.20	0.02	1.3	IN4	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI29	E30-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	B3
	D30-06	i	TI	-0.20	0.02	1.9	IN3	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI3	F27-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	D8
	D27-11	i	TI	-0.20	0.02	2.2	IN8	74LS244	74LS244	XBD	D8
				-0.20(0.02)/20.00(-1.00)							
XDI30	E30-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	B3
	D30-04	i	TI	-0.20	0.02	1.9	IN2	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI31	E30-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	B3
	D30-02	i	TI	-0.20	0.02	1.8	IN1	74LS244	74LS244	XBD	D1
				-0.20(0.02)/20.00(-1.00)							
XDI4	E27-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	D6
	D27-08	i	TI	-0.20	0.02	1.3	IN4	74LS244	74LS244	XBD	D8
				-0.20(0.02)/20.00(-1.00)							
XDI5	E27-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	D6
	D27-06	i	TI	-0.20	0.02	1.9	IN3	74LS244	74LS244	XBD	D8
				-0.20(0.02)/20.00(-1.00)							
XDI6	E27-06(08)	.	TO	20.00	-1.00		OUT1	26S10	26S10	XD	D6
	D27-04	i	TI	-0.20	0.02	1.9	IN2	74LS244	74LS244	XBD	D8
				-0.20(0.02)/20.00(-1.00)							
XDI7	E27-03(05)	.	TO	20.00	-1.00		OUT0	26S10	26S10	XD	D6
	D27-02	i	TI	-0.20	0.02	1.8	IN1	74LS244	74LS244	XBD	D8
				-0.20(0.02)/20.00(-1.00)							
XDI8	F28-14(16)	.	TO	20.00	-1.00		OUT3	26S10	26S10	XD	D5
	D28-17	i	TI	-0.20	0.02	2.7	IN5	74LS244	74LS244	XBD	D6
				-0.20(0.02)/20.00(-1.00)							

LISPM Bus Interface CADR1;XAUG WLR 1 -DEC-80 1608

SIGNAL NAME	LOC(PIN#)	Z	TYPE	LOW	HI	INCHES	USE	DIPTYPE	BODY	FILE	POS
XDI9	F28-10(12)	.	TO	20.00	-1.00		OUT2	26S10	26S10	XD	D5
	D28-15	!	TI	-0.20	0.02	2.9	IN6	74LS244	74LS244	XBD	D6
				-0.20(0.02)/20.00(-1.00)							
-XDRIVE	H										
XRD	E27-12(14)	\	TI	-0.36	0.02		-ENB	26S10	26S10	XD	D6
	E28-12(14)	.!	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XD	D3
	E29-12(14)	!.	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XD	B6
	E30-12(14)	.!	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XD	B3
	F30-12(14)	!.	TI	-0.36	0.02	1.5	-ENB	26S10	26S10	XD	B5
	F29-12(14)	.!	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XD	B8
	F28-12(14)	!.	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XD	D5
	F27-12(14)	.!	TI	-0.36	0.02	.9	-ENB	26S10	26S10	XD	D8
	F20-12(14)	!.	TI	-0.36	0.02	3.9	-ENB	26S10	26S10	XD	B1
	B19-11(14)	.!	TI	-2.00	0.05	4.9		74S04	74S040	DATCTL	C5
	C17-06(09)	!.	TO	20.00	-1.00	2.3		74S51	74S51A	DATCTL	C4
	C11-05(08)	.!	TIS	-2.00	0.05	3.5		74S64	74S64	REQLM	D6
	B05-10(13)	!	TIS	-2.00	0.05	3.4		74S11	74S11	REQERR	C3
				-9.24(0.33)/20.00(-1.00)				41.4			
XRQS	H										
	C12-11(14)	.	TI	-2.00	0.05			74S260	74S2600	RQSYNC	A5
	A08-02(04)	!.	TO	20.00	-1.00	3.8	1Q	74S175	74S175	RQSYNC	B2
	A07-11(14)	.!	TI	-2.00	0.05	.8		74S260	74S2600	RQSYNC	B5
	A07-02(05)	!	TI	-2.00	0.05	.8		74S260	74S2600	RQSYNC	B5
				-6.00(0.15)/20.00(-1.00)				8.4			
-XRQS	H										
	A08-03(05)	.	TO	20.00	-1.00		-1Q	74S175	74S175	RQSYNC	B2
	A05-02(05)	!	TI	-2.00	0.05	1.9		74S02	74S020	RQSYNC	A5
				-2.00(0.05)/20.00(-1.00)							
XWR	J01-09	\					CON		CTP	B3	
	C11-03(06)	.!	TIS	-2.00	0.05	5.9		74S64	74S64	REQLM	D6
	B19-10(13)	!	TO	20.00	-1.00	4.8		74S04	74S040	DATCTL	C5
				-2.00(0.05)/20.00(-1.00)				12.2			

2085 TOTAL WIRES
749 TOTAL RUNS
7629.8 INCHES OF WIRE