INTERFACING THE 1080

The input output (I/O) connector at the rear of the 1080 provides a method for connecting digital logic to the 1080. This connector is designed so that one can connect standard computer I/O devices such as tape readers or punches. However, it is so versatile that it would be possible to connect an external computer and have it control the memory and arithmetic capabilities of the 1080.

Obviously, all intermediate capabilities are also present, making it possible to design logic modules for control of experiments. These modules can then be programmed to give information to the 1080 and to accept signals from it using the I/O connector. The list of available signals is shown on the next page.

INPUT/OUTPUT CONNECTOR

R3

EVEN PINS		ODD PINS	
2	BACØ	1	SACØ-
4	BAC1	3	SAC1-
6	BAC2	5	SAC2-
8	BAC3	7	SAC3-
1Ø	BAC4	9	SAC4-
12	BAC5	11	SAC5-
14	BAC6	13	SAC6-
16	BAC7	15	SAC7-
18	BAC8	17	SAC8-
2Ø	BAC9	19	SAC9-
22	BAC1Ø	21	SAC1Ø-
24	BAC11	23	SAC11-
26	BAC12	25	SAC12-
28	BAC13	27	SAC13-
3Ø	BAC14	29	SAC14-
32	BAC15	31	SAC15-
34	BAC16	33	SAC16-
36	BAC17	35	SAC17-
38	BAC18	37	SAC18-
4Ø	GND	39	GND
42	BAC19	41	SAC19-
44	BIR3	43	XRAC-
46	BIR4	45	XREAD-
48	BIR5	47	XWRITE-
5Ø	BIR6	49	XLAC-
52	BIR7	51	XLMB-
54	BL	53	XTDBMB-
56	IOP	55	XTDBAC-
58	IOP1	57	XADPC-
6Ø	IOP2	59	XIPC-
62	IOP3	61	XTMBPC-
64	ACTIVE-	63	XSTART-
66	SKIP-	65	XSTOP-
78	+5	67	PSTART-
8Ø	GND	77	+5
		79	GND

SIGNAL	
BACØ - BAC 19	Buffered Accumulator contents Active pull-ups inside 1080 High = 1 Used to transfer data from 1080
BIR3 - BIR7	Buffered Instruction Register contents High = 1 Gated with IOP for selecting I/O devices
BL	Buffered Link contents Active pull-up inside 1080 High = 1 Used to transfer data from 1080
IOP	Input-Output indicates external I/O instruction Active pull-up in 1080 High = 1
IOP1	Input-Output timing pulse 1 Occurs during I/O instruction when Bit 2 is set Active pull-up High = 1
IOP2, IOP3	Same as IOP1 except caused by Bits 1 and Ø
Active-	Asserted by the 1080 when it is in either hardwired or stored program operation. Low = 1 = Assertion
Skip-	Used to cause the 1080 to skip an instruction. Should be asserted only during an I/O instruction. Low = 1 = Assertion
SACØ- to SAC19-	Set Accumulators. Used to transfer data to the 1080 accumulator. Should be asserted only during an I/O instruction. Low = 1 = Assertion
XRAC-	External Reset Accumulator. Allows the accumulator to be cleared externally. Care must be exercised to prevent destruction of data or program. Low = 1 = Assertion
XREAD-	External Read. Used to cause a 1080 Memory Read cycle. Should be asserted for ~750 nsec. Low = 1 = Assertion

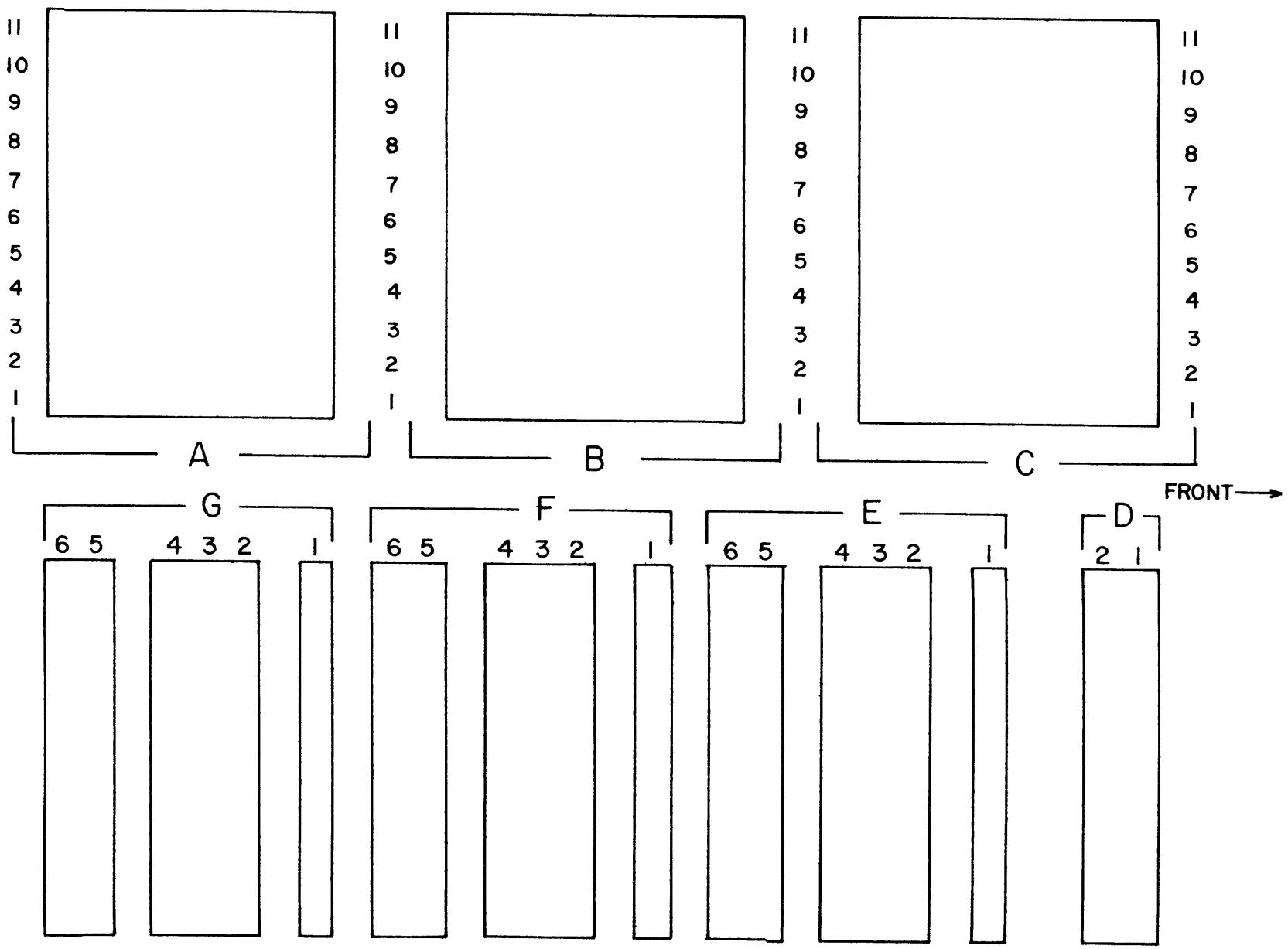
XWRITE-	External Write. Used to cause a 1080 Memory Write cycle. Should be asserted for ~ 750 nsec. Low = 1 = Assertion
XLAC-	External Load Accumulator into Arithmetic unit. Low = 1 = Assertion
XLMB-	External Load Memory Buffer into Arithmetic unit. Low = 1 = Assertion
XTDBMB-	External Transfer Data Bus to Memory Buffer. Low = 1 = Assertion
XTDBAC-	External Transfer Data Bus to Accumulator. Low = 1 = Assertion
XADPC-	External Transfer Address Data to Program Counter. Low = 1 = Assertion
XIPC-	External Increment Program Counter. Used for sequential addressing. Low = 1 = Assertion
XTMBPC-	External Transfer Memory Buffer to Program Counter. Low = 1 = Assertion
XSTART-	External Start. Equivalent of "Continue-Execute." Starts stored program operation at the current contents of the Program Counter. Low = 1 = Assertion
XSTOP-	External Stop. Equivalent to pushing Stored Program "STOP" Low = 1 = Assertion
PSTART-	Program Start. Equivalent to pushing Stored Program "START" Low = 1 = Assertion

1080 WIRING LIST

The following wiring list contains an alphabetical list of signals by mnemonic followed by the pin positions in the wire wrap bed where they can be found.

The numbers to the left of the hyphen refer to the coordinates of the pin row and those to the right to the actual pin number in that row. The attached diagram shows the 1080 bed, containing the seven blocks A - G. Blocks A, B and C each contain 11 rows of pins, block D contains two rows, and blocks E, F and G six rows each.

As an example, BAC$\emptyset$, bit $\emptyset$ of the buffered AC, can be found at 5C-60, or block C, row 5, pin 60. Each of these numbers is actually printed on the wire wrap bed. Connector R refers to the rear connector.


11 10 9 8 7 6 5 4 3 2 1
A
B
C
FRONT
G
6 5
4 3 2
1
F
6 5
4 3 2
1
E
6 5
4 3 2
1
D
2 1

ALPHABETICAL LIST 1080 WIRING

AAUS-	1D-18	2D-75	9A-70	10A-70		
A14	2A-38	GND				
ACTIVE-	3R-64	3C-42	4C-26	5C-22	9A-78	10A-78
AC0	1C-10	4A-58	3A-55			
AC0-	1C-8	5C-62	11C-12	3A-75		
AC1-	1C-18	5C-64	11C-14	3A-73		
AC2-	1C-26	5C-70	11C-18	3A-71		
AC3-	1C-44	5C-72	11C-20	3A-69		
AC4-	1C-56	5B-2	11C-28	3A-67		
AC5-	1C-72	5B-4	11C-30	3A-65		
AC6-	1B-2	5B-10	11C-34	3A-63		
AC7-	1B-12	5B-12	11C-36	3A-61		
AC8-	1B-18	5B-18	3A-59			
AC9-	1B-30	5B-20	3A-57			
AC10-	1B-44	5B-26	3A-19			
AC11-	1B-58	5B-28	3A-17			
AC12-	1B-68	5B-42	3A-15			
AC13-	1A-2	5B-44	3A-13			
AC14-	1A-8	5A-23	3A-11			
AC15-	1A-18	5A-25	3A-9			
AC16-	1A-30	5A-27	3A-7			
AC17-	1A-42	5A-29	3A-5			
AC18-	1A-52	5A-31	3A-3			
AC19	1A-68	4A-64				
AC19-	1A-66	4A-74	5A-33	3A-1		
ADA	2C-69	4B-24				
ADD	2D-6	9A-46	10A-46			
ADD1-	2A-34	9A-72	10A-72			
ADD2-	2A-36	9A-74	10A-74			
ADIA	2C-67	4B-20				
ADIR	2C-71	4B-28				
ADPCL	2C-73	4B-26				
ADPCU	2C-75	4B-22				
AMAS	2B-22	9A-1	10A-1			
AND	4B-58	1A-58				
ARAS	9A-11	10A-11	2B-24	3C-66		
AUSOF	1D-14	9A-76	10A-76			
AUTOSLEW		3C-3	1D-70			
AXD-	3C-62	5C-34	9A-9	10A-9		
BAC0	5C-60	9A-55	10A-55	3R-2		
BAC1	5C-66	3R-4				
BAC2	5C-68	3R-6				
BAC3	5C-74	3R-8				
BAC4	5C-76	3R-10				
BAC5	5B-6	3R-12				
BAC6	5B-8	3R-14				
BAC7	5B-14	3R-16				
BAC8	5B-16	3R-18				
BAC9	5B-22	3R-20				
BAC10	5B-24	3R-22				
BAC11	5B-30	3R-24				
BAC12	5B-32	3R-26				
BAC13	5B-46	3R-28				
BAC14	5A-14	3R-30				
BAC15	5A-16	3R-32				

```
BAC16    5A-18    3R-34
BAC17    5A-20    3R-36
BAC18    5A-22    3R-38
BAC19    5A-24    3R-42
BIR3     5B-76    9A-57    10A-57   3R-44
BIR4     5B-50    9A-59    10A-59   3R-46
BIR5     5B-52    9A-61    10A-61   3R-48
BIR6     5B-60    9A-63    10A-63   3R-50
BIR7     5A-4     9A-65    10A-65   3R-52
BL       5A-42    3R-54
CAL-     5C-16    1D-62
CIN      1C-3     4B-56
CLAMP    5A-63    1D-64
CMAS-    2B-36    9A-3     10A-3
CM01     5C-52
CONT-    3C-10    2D-31
COUT     1A-72    4A-68    3B-42
CRAS-    9A-13    10A-13   2B-38    3C-48
CRT      3C-4     1D-66
CRTREAL  3C-1     1D-68
DIGIN-   1D-72
DIGOUT-  1D-74
DISABLE-          3C-24    9A-15    10A-15
DISVD-   1D-44    9A-62    10A-62
DP       2A-49    3B-22    4C-24
DPLITE   2D-33    4C-28    4R-41
DPSHIF-  4A-14    3B-16
DPSTOPLITE        2D-35    4C-30    4R-43
DWELL    3C-7     9A-17    10A-17
ENABTTY  11B-60   TTY-4
ERASE-   3C-26    2D-27
FDATA-   11B-42   TTY-2
GDB      1A-71    3C-68
GND      PINS 39-40-79-80           ALL BOARDS
IN ADDITION:
1E,1F,1G,3E,3F,3G,6E,6F,6G          41-42
2E,2F,2G          1-2-41-42         1SD-27   1SD-28
1SW-27   1SW-28   PWR-3-5-7         TTY-5

GO       3C-2     5A-56
HDP      3A-60    4B-5
HOLD     3A-62    4C-34
HP       3A-70    4A-49
HQGND    5A-60-62-64-66   PWR-11-14
ICO      4A-10    9A-64    10A-64   5B-64    2D-53    3A-66
IMHER-   2E-52    2F-52    2G-52    2A-10    1R-52
INPUT-   2D-14    9A-50    10A-50
INTENSIFY         5A-65    5C-44
IOP      3R-56    4A-17    11B-56
IOP1     3R-58    4A-43    9A-66    10A-66   11C-6    2D-55    5C-26    3B-74
IOP2     5C-32    11C-68   9A-75    10A-75   4A-45    3R-60    3B-60
IOP3     3R-62    4A-47    9A-77    10A-77   11C-64   5C-56    3B-70
IOP1     3B-74    4A-43
IOP2     3B-60    4A-45
IOP3     3B-70    4A-47
IPC      2C-49    4B-63    4A-34    3B-64
IR0      2C-15    3B-24    4A-70    4R-76
IR0-     2C-30
```

IR1	2C-11	3B-28	4A-66	4R-74		
IR1-	2C-20					
IR2	2C-13	3B-26	4A-62	4R-72		
IR2-	2C-22					
IR3	2D-41	2C-9	3B-30	11B-46	4A-60	4R-70
IR3-	2C-18	5B-74	11B-44			
IR4	2D-57	2C-7	4C-74	3B-4	4A-46	4R-68
IR4-	2C-16	3B-6	5B-72	11B-48		
IR5	2C-3	3B-14	11B-50	4A-52	4R-66	
IR5-	2D-59	2C-8	5B-70	4A-44		
IR6	2C-5	4A-26	4R-64	3B-56		
IR6-	2D-61	2C-10	5B-68	11B-52	4A-20	
IR7	2C-1	4A-18	4R-62	3B-54		
IR7-	2D-63	2C-2	11B-54	5A-2	4A-22	
IR8	2B-17	4A-12	4R-60			
IR8-	2B-14	4A-19	3B-50			
IR9	2B-15	4A-16	4R-58	3B-48		
IR9-	2C-76	4A-31				
IR10	2B-6	4A-32	4R-56			
IR10-	2B-4	4B-60				
IR11	2C-74	4B-73	4R-54	3B-46		
IR11-	2C-72	4B-62	4A-28			
IR12	2C-64	4A-24	4R-52			
IR12-	2C-70	4B-64				
IR13	2B-3	4B-72	4R-50			
IR13-	2C-58	4B-66				
IR14	2C-62	4B-74	4A-72	4R-48		
IR14-	2C-60	4B-68				
IR15	2B-1	3B-20	4B-76	4R-46		
IR15-	2C-52	3B-18	4B-70			
IR16	4B-69	4R-44				
IR17	4B-71	4R-42				
IR18	4B-11	4R-38				
IR19	4R-36	4A-30	4B-67			
IR19-	3B-44	4B-9				
ISAC19-	1A-64	4A-4				
IZ	5C-58					
L	4A-54	5A-44				
LAC	1A-74	4B-48	3B-1			
LCAC	1A-60	4B-50				
LCMB-	1C-24	4B-52				
LINK1	1SD-1	1SW-1				
LINK2	1SD-2	1SW-2				
LINK3	1SD-3	1SW-3				
LINK4	1SD-4	1SW-4				
LINK5	1SD-5	1SW-5				
LINK6	1SD-6	1SW-6				
LINK7	1SD-7	1SW-7				
LINK8	1SD-8	1SW-8				
LINK9	1SD-9	1SW-9				
LINK10	1SD-10	1SW-10				
LLSH	1C-4	3C-72				
LMB-	1B-66	4B-54				
LONE	3A-64	1C-1				
LP0	1C-20	4R-75				
LP1	1C-21	4R-73				
LP2	1C-28	4R-71				
LP3	1C-42	4R-69				

LP4	1C-58	4R-67				
LP5	1C-60	4R-65				
LP6	1B-4	4R-63				
LP7	1B-14	4R-61				
LP8	1B-20	4R-59				
LP9	1B-32	4R-57				
LP10	1B-46	4R-55				
LP11	1B-60	4R-53				
LP12	1B-70	4R-51				
LP13	1A-4	4R-49				
LP14	1A-20	4R-47				
LP15	1A-10	4R-45				
LPC	1C-6	4B-57				
LREAD	2E-19	3E-17	6E-17			
LREAD	2F-19	3F-17	6F-17			
LREAD	2G-19	3G-17	6G-17			
LSH	1A-75	3C-70				
LWRITE	2E-33	3E-15	6E-15			
LWRITE	2F-33	3F-15	6F-15			
LWRITE	2G-33	3G-15	6G-15			
LSTROBE	1E-56	2E-23				
LSTROBE	1F-56	2F-23				
LSTROBE	1G-56	2G-23				
M-	3C-9	9A-19	10A-19			
MA0-	2C-65	3E-3	3F-3	3G-3	IR-47	
MA1-	2C-63	3E-5	3F-5	3G-5	IR-49	
MA2-	2C-47	3E-7	3F-7	3G-7	IR-51	
MA3-	2C-37	6E-3	6F-3	6G-3	IR-53	
MA4-	2C-61	6E-5	6F-5	6G-5	IR-55	
MA5-	2C-59	6E-7	6F-7	6G-7	IR-57	
MA6-	2C-35	6E-9	6F-9	6G-9	IR-59	
MA7-	2C-31	6E-11	6F-11	6G-11	IR-61	
MA8-	2B-55	6E-13	6F-13	6G-13	IR-63	
MA9-	2B-53	3E-9	3F-9	3G-9	IR-65	
MA10-	2B-45	3E-11	3F-11	3G-11	IR-67	
MA11-	2B-29	3E-13	3F-13	3G-13	IR-69	
MACRY	2A-32					
MASOF	2B-62	9A-5	10A-5			
MAS1	2A-47	2D-42				
MAS2	2B-54	2D-38				
MAS4	2A-45	2D-48				
MAS8	2B-56	2D-32				
MB0	2C-32	1C-12	2E-6	2F-6	2G-6	IR-6
MB1	2C-26	1C-22	2E-8	2F-8	2G-8	IR-8
MB2	2C-28	1C-30	2E-10	2F-10	2G-10	IR-10
MB3	2C-24	1C-52	2E-12	2F-12	2G-12	IR-12
MB4	2C-14	1C-64	2E-14	2F-14	2G-14	IR-14
MB5	2C-6	1C-76	2E-16	2F-16	2G-16	IR-16
MB6	1B-6	2C-12	2E-18	2F-18	2G-18	IR-18
MB7	1B-16	2C-4	2E-20	2F-20	2G-20	IR-20
MB8	1B-22	2B-16	2E-22	2F-22	2G-22	IR-22
MB9	2B-10	1B-34	2E-24	2F-24	2G-24	IR-24
MB10	2B-12	1B-48	2E-56	2F-56	2G-56	IR-26
MB11	2B-8	1B-62	2E-58	2F-58	2G-58	IR-28
MB12	1B-72	2C-68	2E-60	2F-60	2G-60	IR-30
MB13	1A-6	2C-56	2E-62	2F-62	2G-62	IR-32
MB14	1A-12	2C-66	2E-64	2F-64	2G-64	IR-34
MB15	1A-22	2C-54	2E-66	2F-66	2G-66	IR-36

MB16	4B-32	1A-34	2E-68	2F-68	2G-68	IR-38
MB17	2E-70	2F-70	2G-70	1A-46	4B-36	IR-56
MB18	2E-72	2F-72	2G-72	1A-56	4B-30	IR-58
MB19	2E-74	2F-74	2G-74	1A-70	4B-38	IR-60
MEM-	2D-8	9A-48	10A-48			
MIDX	5A-6	2D-19				
MIDY	5B-48	2D-13				
MLITE	3C-56	1D-58				
MNO	2D-3	9A-42	10A-42			
MNC	2D-5	9A-44	10A-44			
NXMLIT	2A-6	1D-60				
P6	3B-52	4C-32				
PC0	1C-14	2C-57				
PC1	1C-16	2C-55				
PC2	1C-34	2C-45				
PC3	1C-36	2C-43				
PC4	1C-68	2C-53				
PC5	1C-70	2C-51				
PC6	1B-8	2C-33				
PC7	1B-10	2C-29				
PC8	1B-26	2B-59				
PC9	1B-28	2B-51				
PC10	1B-52	2B-35				
PC11	1B-54	2B-33				
PC12	1B-74	2B-49				
PC13	1B-76	2B-47				
PC14	1A-14	2B-27				
PC15	1A-16	2B-25				
PROT-	2A-51	2D-25				
PSTART-	2D-67	4C-72	3R-67			
R-	3C-22	9A-21	10A-21			
RAC-	1C-54	4A-6				
RAC19-	1A-62	4A-8				
RASH	1A-73	3C-76				
RASOF	3C-6	2B-26	9A-7	10A-7		
RAS1	2B-52	2D-71				
RAS2	2B-58	2D-74				
RAS4	2B-50	2D-50				
RAS8	2B-60	2D-72				
RAUS-	1D-12	2D-29	9A-60	10A-60		
REALPLOT		3C-5	1D-52			
READ	2E-54	2F-54	2G-54	2A-14	4B-16	IR-54
REAR1	5A-43					
REAR2	5A-45					
REAR3	5A-47					
REAR4	5A-59					
REAR5	5A-61					
REAR6	5A-67					
REAR7	5A-69					
RLITE	3C-50	1D-54				
RLSH	1A-76	3C-74				
RMBL-	2A-18	1B-38	4B-3	3C-16		
RMBU-	1A-36	4B-1	3C-14			
RNO	3C-46	2D-7				
RPC-	2B-23	2C-27	4C-17			
RSH	1C-2	3B-2				
RX	5C-12	2D-17				
RXD-	3C-58	5C-10	9A-79	10A-79		

RY	5A-12	2D-11					
SAC0-	3R-1	9A-2	10A-2	11B-2	1C-5	2D-73	3A-16
SAC1-	3R-3	9A-4	10A-4	11B-1	1C-15	2D-76	3A-18
SAC2-	3R-5	9A-6	10A-6	11B-3	1C-27	2D-54	3A-20
SAC3-	3R-7	9A-8	10A-8	11B-4	1C-43	2D-70	3A-22
SAC4-	3R-9	9A-10	10A-10	11B-8	1C-55	2D-62	3A-24
SAC5-	3R-11	9A-12	10A-12	11B-5	1C-69	2D-68	3A-26
SAC6-	3R-13	9A-14	10A-14	11B-7	1C-75	2D-60	3A-28
SAC7-	3R-15	9A-16	10A-16	11B-10	1B-3	2D-52	3A-30
SAC8-	3R-17	9A-18	10A-18	1B-13	2D-44	3A-32	
SAC9-	3R-19	9A-20	10A-20	1B-29	2D-36	3A-34	
SAC10-	3R-21	9A-22	10A-22	1B-41	2D-46	3A-36	
SAC11-	3R-23	9A-24	10A-24	1B-57	2D-34	3A-38	
SAC12-	3R-25	9A-26	10A-26	1B-69	2D-26	3A-42	
SAC13-	3R-27	9A-28	10A-28	1A-1	2D-28	3A-44	
SAC14-	3R-29	9A-30	10A-30	1A-5	2D-20	3A-46	
SAC15-	3R-31	9A-32	10A-32	1A-15	2D-18	3A-48	
SAC16-	3R-33	9A-34	10A-34	1A-27	2D-4	3A-50	
SAC17-	3R-35	9A-36	10A-36	1A-43	2D-12	3A-52	
SAC18-	3R-37	9A-38	10A-38	1A-55	2D-10	3A-54	
SAC19-	3R-41	9A-40	10A-40	4A-27	2D-2	3A-56	
SELECT	11B-62	TTY-1					
SEL0	2A-60	2E-50					
SEL1	2A-62	1R-62					
SEL10	2A-59	2G-50					
SEL11	2A-61	2F-50					
SEL12	2A-63	1R-64					
SEL13	2A-65	1R-66					
SEL14	2A-67	1R-68					
SEL15	2A-69	1R-70					
SEL16	2A-71	1R-72					
SEL17	2A-73	1R-74					
SHIFT-	3C-34	9A-23	10A-23				
SKIP-	11C-58	9A-33	10A-33	4A-29	3R-66		
SMB0-	1C-7	1E-2	1F-2	1G-2	IR-3		
SMB1-	1C-23	1E-4	1F-4	1G-4	IR-5		
SMB2-	1C-35	1E-6	1F-6	1G-6	IR-7		
SMB3-	1C-49	1E-8	1F-8	1G-8	IR-9		
SMB4-	1C-63	1E-20	1F-20	1G-20	IR-11		
SMB5-	1C-73	1E-22	1F-22	1G-22	IR-13		
SMB6-	1B-1	1E-24	1F-24	1G-24	IR-15		
SMB7-	1B-9	1E-26	1F-26	1G-26	IR-17		
SMB8-	1B-21	1E-32	1F-32	1G-32	IR-19		
SMB9-	1B-37	1E-34	1F-34	1G-34	IR-21		
SMB10-	1B-49	1E-36	1F-36	1G-36	IR-23		
SMB11-	1B-65	1E-38	1F-38	1G-38	IR-25		
SMB12-	1B-75	1E-58	1F-58	1G-58	IR-27		
SMB13-	1A-3	1E-60	1F-60	1G-60	IR-29		
SMB14-	1A-7	1E-62	1F-62	1G-62	IR-31		
SMB15-	1A-23	1E-64	1F-64	1G-64	IR-33		
SMB16-	1A-35	1E-68	1F-68	1G-68	IR-35		
SMB17-	1A-51	1E-70	1F-70	1G-70	IR-37		
SMB18-	1A-63	1E-72	1F-72	1G-72	IR-43		
SMB19-	1A-69	1E-74	1F-74	1G-74	IR-45		
SPARE1	4R-31						
SPARE2	4R-33						
SPARE3	4R-35						
SPARE4	4R-32						

SPARE5	4R-34					
START-	4C-70	2D-65				
STOP-	9A-68	10A-68	3C-64	1D-50		
STOPCAL	5C-14	2D-15				
SX	5C-8	2D-21				
SY	5A-41	2D-23				
TAC	1B-56	3B-12				
TACXD-	5C-24	9A-67	10A-67			
TACYD-	3C-60	5C-30	9A-69	10A-69		
TDBAC-	3B-10	4A-25				
TDBMB	1A-26	4B-46				
TIAPCL-	2C-41	4B-61				
TIAPCU-	2B-31	4B-44				
TMBIA-	2C-19	2B-21	4B-65			
TMBIR	2C-17	2B-19	4B-34			
TRAA	2A-58	3C-20				
VD0	9A-52	10A-52	3B-38	1D-46		
VD1	9A-54	10A-54	3B-34	1D-42		
VD2	9A-56	10A-56	3B-36	1D-48		
VD3	9A-58	10A-58	3B-32	1D-28		
WRITE	4B-12	2E-48	2F-48	2G-48	IR-48	
WSTOPLITE		3C-30	1D-56			
XADPC-	4B-7	3R-57	9A-35	10A-35	3B-76	
XCIN-	4B-75	9A-37	10A-37			
XIPC-	4A-13	3R-59				
XLAC-	4A-7	3R-49	9A-39	10A-39		
XLCAC-	4A-5	9A-41	10A-41			
XLCMB-	4A-1	9A-43	10A-43			
XLMB-	3C-18	4A-3	3R-51	9A-25	10A-25	
XPNDISP-		5A-8	9A-71	10A-71		
XRAC-	4A-15	3R-43	9A-45	10A-45	3B-62	
XREAD-	3C-12	4B-18	3R-45	9A-27	10A-27	
XSTART-	4C-68	3R-63	9A-47	10A-47		
XSTOP-	2D-69	4C-66	3R-65			
XTDBAC-	3C-38	3B-8	3R-55	9A-29	10A-29	
XTDBMB-	3R-53	4A-9	9A-49	10A-49		
XTMBPC-	3R-61	4A-11	9A-51	10A-51		
XWRITE-	3C-36	4B-14	9A-31	10A-31	3R-47	
YPOSDISP-		5A-10	9A-73	10A-73		
ZERO	1A-38	4A-2				
1KM-	2B-64	2D-24				
2KM-	2B-66	2D-30				
4KM-	2B-68	2D-22				
8KM-	2B-70	2D-16				
1KR-	2B-28	2D-64				
2KR-	2B-34	2D-66				
4KR-	2B-32	2D-58				
8KR-	2B-30	2D-56				
1KXD	5C-5	1D-38				
2KXD	5C-7	1D-36				
4KXD	5C-9	1D-34				
8KXD	5C-11	1D-32				
16KXD	5C-13	1D-30				
2MHZ	3C-8	4C-36	9A-53	10A-53		
+5	PINS 77-78		EXCEPT 9A AND 10A			
PWR-4-6-8		1SD-25	1SD-26	1SW-25	1SW-26	
+14	3E-36	3F-36	3G-36	6E-36	6F-36	6G-36 Z14
+15	5A-72	1SD-24	1SW-24	PWR-10		

+24	2E-3-4-75-76		2F-3-4-75-76		2G-3-4-75-76		PWR-15
3E-1	3F-1	3G-1	6E-1	6F-1	6G-1	1R-44	PWR-9
+5Ø	5A-76	1SD-23	1SW-23	PWR-16			
-5	1E-1	1F-1	1G-1	5A-46	1SD-29	1SW-29	PWR-2
-15	5A-7Ø	1SD-3Ø	1SW-3Ø	TTY-3	PWR-12		
-5Ø	5A-74	1SD-31	1SW-31	PWR-13			

TELETYPE CLOCK ADJUSTMENT PROGRAM

The ASR-33 Teletype, provided with the Nicolet 1080, is controlled by circuitry on the Teletype Control Board within the 1080. A part of this circuitry is the Teletype clock which provides the necessary timing pulses for the Teletype-1080 interface.

Although the Teletype clock is a stable oscillator its frequency may change due to vibration in shipment or aging of circuit components.

The clock frequency could be checked in many ways, but the method described here requires no additional equipment. The crystal stabilized clock of the 1080 stored program processor is used to measure the period of the Teletype clock.

Checking the Teletype Clock Frequency

It is not necessary to disassemble the 1080 system. To check the Teletype clock frequency:

(1) Load the Teletype Clock Adjustment program.

(2) Start the program by pressing Stored Program START.

(3) The AC (Accumulator) will now be proportional to the deviation of the Teletype clock from the optimum frequency. If the number in the AC is positive (AC19 = 0) the frequency is high. If the number is negative (AC19 = 1) the frequency is low. The limits for good operation are 3777540_8 and 200_8.

Adjusting the Teletype Clock Frequency

(1) Remove the left side cover of the 1080 and locate the clock adjustment potentiometer. As viewed from the top the potentiometer screw adjustment is along the top edge of the left (outermost) board.

(2) Load and start the Teletype Clock Adjustment program.

(3) Turn the clock adjustment potentiometer until all AC lamps are out. The Teletype clock is now adjusted to the optimum frequency.

Loading the Teletype Clock Adjustment Program

The adjustment program uses 15_8 core locations, although only the first 13_8 are loaded.

To toggle in the Teletype Clock Adjustment program, set the switch register to 0, depress LOAD PC and press EXECUTE.

Next depress DEPOSIT and STEP, toggle in the instructions one by one, pressing EXECUTE to deposit each into memory.

Address	Contents	Assembler Equivalent	
0	2110012	START,	MEMA REF
1	2404014		ACCM COUNT
2	2110013		MEMA HOLD
3	4443		PRTTY
4	2704014	CLOOP,	MMOM COUNT
5	6444		TTYPF
6	4		JMP CLOOP
7	2110014		MEMA COUNT
10	2404013		ACCM HOLD
11	0		JMP START
12	20257	REF,	20257