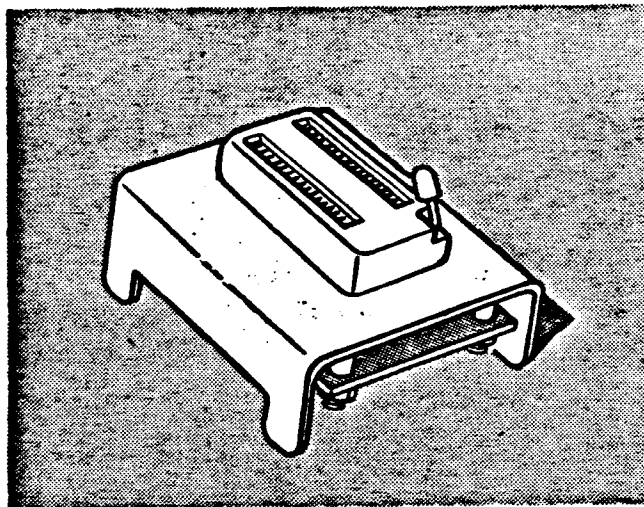# Socket Adapter 715-1097

Fig. 1. SOCKET ADAPTER 715-1097

Socket Adapters consist of a zero insertion force socket with interface circuitry mounted on an adapter frame. They are used with Data I/O programmers to match programmer electronics to PROM pinout, byte size, and word limit requirements. Refer to the Data I/O Comparison Chart to match device configurations to Socket Adapter part numbers.

In use, the Socket Adapter is installed into a socket receptacle on the programmer front panel. The device to be programmed or read is inserted into the socket (with device pin 1 to upper left) and locked into place by means of a locking arm on the socket.

CAUTION

Do not switch programmer power while a device is installed in the Socket Adapter-- voltage transients may cause spurious programming. Do not change devices when a programming operation is occuring (EXECUTE or START indicator illuminated).

STORAGE AND MAINTENANCE

The Socket Adapter should be stored in a location free of dust, excessive moisture, and extremes of temperature and humidity, assuring that top and bottom connectors are protected from possible physical damage.

Periodically inspected each socket contact for accumulation of dirt and debris. Also inspect each contact for smooth opening and closing operation. Dirt and debris can usually be removed with compressed air.

The socket itself is constructed of a polysulfone, material and should be cleaned only with methyl alcohol, freon TE, or detergent and water. Do not lubricate. If the socket fails in use, it is most probably caused by mechanical damage to the socket itself, which must be replaced in whole, as replacement parts are not from Data I/O. Inspect each contact for opening and closing ability to ascertain when unit should be replaced.

CIRCUIT DESCRIPTION

The 715-1097 Socket Adapter is used to adapt the Data I/O 909-1226-2 (Signetics Generic) Program Card Set to the Signetics 82S115 PROM. For a Read operation, the socket adapter simply alters the program card pinout to agree with the respective PROM pinout. This pinout alteration is accomplished on the top card of the two-card socket adapter by the 715-1097 card. alteration.

During a program cycle, certain voltage waveforms from the program card set are also altered. The waveforms affected are Vcc, FE_1 and FE_2. The 715-1089 bottom card in the socket adapter provides these waveform changes. Waveforms are altered as shown in the Timing Diagram of Figure 2.

The normal program waveform of 8.5 volts is clipped to 5 volts by the circuitry of transistor Q1 through Q4. Q1 provides 5 volts Vcc during program, while Q2 provides 4.8 volts Vcc during Read. Transistors Q7 and Q8 provide the FE_1 and FE_2 waveforms.

Transistor Q5 input is connected to address lines A8 or A9, as determined by JP1. This circuit provides the word limit signal to the programmer.

During calibration, the 909-1226-2 card set is calibrated first. Then the additional Vcc, FE_1 and FE_2 waveforms must be verified with the socket adapter connected to the program card set. With the programmer set up (refer to card set manual) to AC dynamic waveform tests:

(1) plug in the Socket Adapter. (2) Load 36 ohm (1 watt) between pin 24 and 12, and observe Vcc output waveform. (3) With 330 ohm load resister from pin 11 to 12 observe FE_2 output waveform. (4) With 330 ohm load resistor from 13 to 12, observe FE_1 waveform.
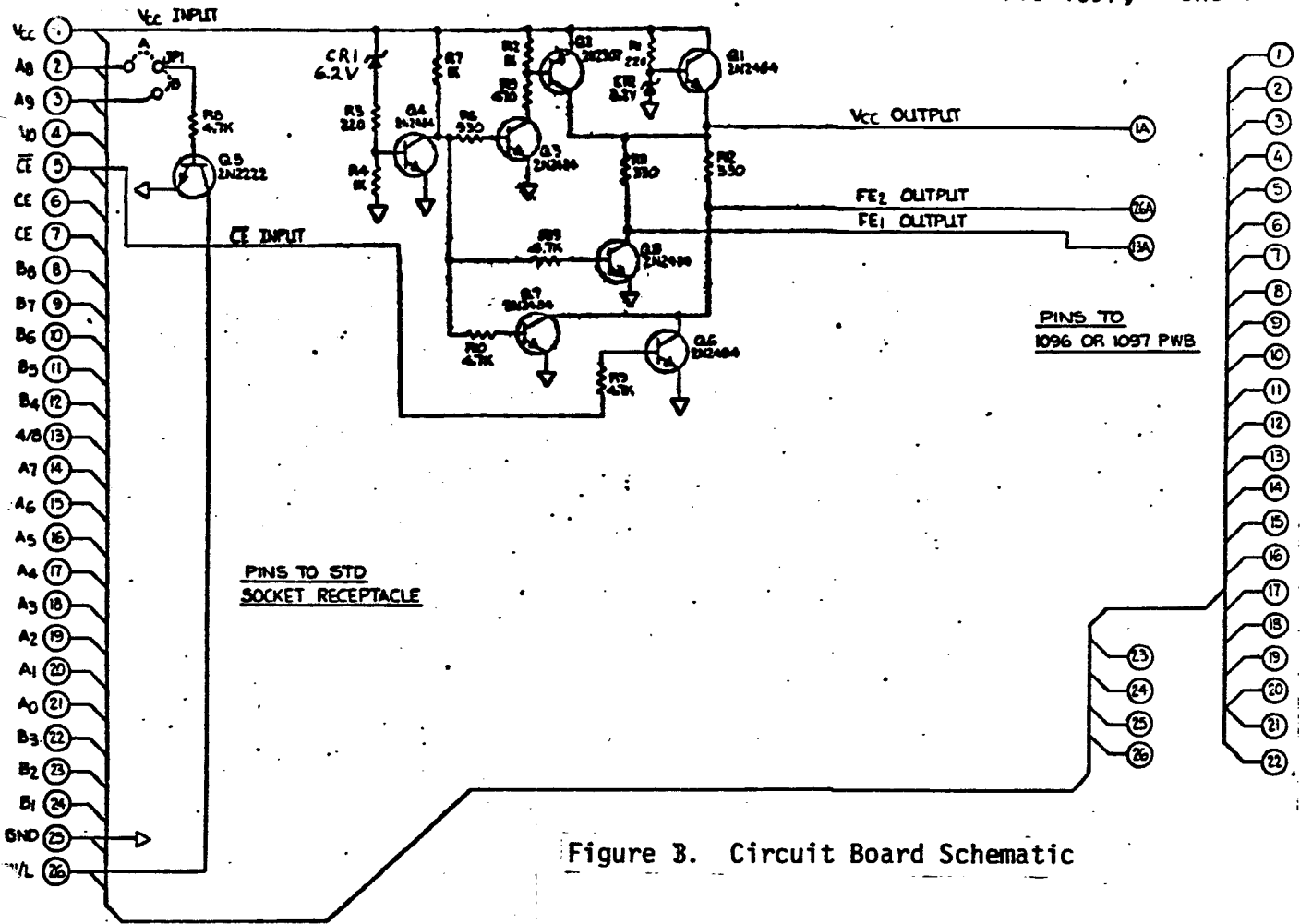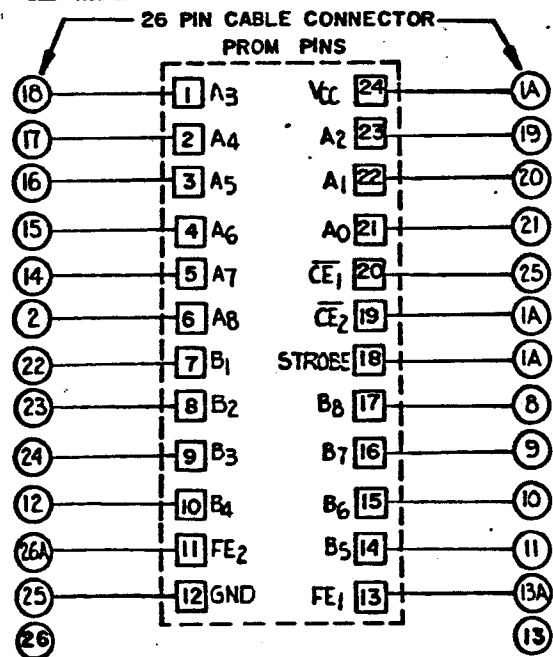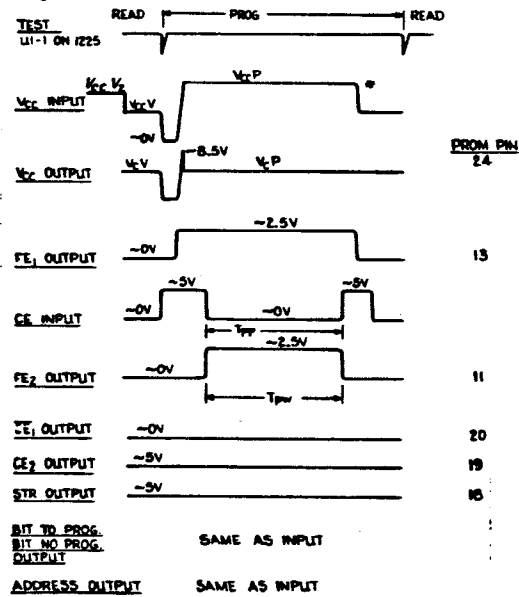
Figure 3. Circuit Board Schematic

Vcc INPUT
CR1 6.2V
Vcc OUTPUT
FE₂ OUTPUT
FE₁ OUTPUT
CE INPUT

PINS TO 1096 OR 1097 PWB

PINS TO STD SOCKET RECEPTACLE

Figure 4. Socket Interconnects

26 PIN CABLE CONNECTOR
PROM PINS

1	A3	Vcc	24
2	A4	A2	23
3	A5	A1	22
4	A6	A0	21
5	A7	CE1	20
6	A8	CE2	19
7	B1	STROBE	18
8	B2	B8	17
9	B3	B7	16
10	B4	B6	15
11	FE2	B5	14
12	GND	FE1	13

Figure 2. Timing Diagram

TEST
U1-1 ON 1225

READ — PROG — READ

Vcc INPUT
Vcc OUTPUT
FE₁ OUTPUT
CE INPUT
FE₂ OUTPUT
CE₁ OUTPUT
CE₂ OUTPUT
STR OUTPUT

	PROM PIN
Vcc OUTPUT	24
FE₁ OUTPUT	13
FE₂ OUTPUT	11
CE₁ OUTPUT	20
CE₂ OUTPUT	19
STR OUTPUT	18

BIT TO PROG.
BIT NO PROG. OUTPUT   SAME AS INPUT

ADDRESS OUTPUT   SAME AS INPUT

INPUT WAVEFORM VARIABLES
$V_{cc}V_1 = 4.5 \pm 0.1V$
$V_{cc}V_2 = 5.5 \pm 0.1V$
$V_{cc}P = 8.75 \pm 0.25V$
$T_{PP} = 110 \pm 10 \mu SEC$

OUTPUT WAVEFORM VARIABLES
$V_rV = 4.9 \pm 0.2V$
$V_rP = 4.9 \pm 0.2V$
$T_{PW} = 110 \pm 10 \mu SEC$