

**TABLE 4-4 (CONT.)**  
**Recommended CRT Circuitry Troubleshooting Sequence**

Trouble Symptom	Recommended Procedure	Proceed to Step:
8. Focusing problems; charging phenomena may be observed (cont.).	2. Check following CRT pin connections (cont.):  f. Spot Demagnification Lens, pin 5. g. Cathode, pin 2. h. Isolation Shield, P1813-pin 6.	Y S N
9. Waveform and readout displays do not focus simultaneously.	1. Check Auto Focus circuit.	K
10. Low writing rate.	1. Check Microchannel Plate Supply circuit. 2. Check Grid Bias Supply circuit. 3. Check Anode Multiplier circuit.	C E A
11. Unacceptable background scintillation appears in photographs.	1. Check Microchannel Plate Supply circuit.	C
12. Display present with background glow.	1. Check CRT Exit Electrode.	M

**NOTE**

*The output impedance of the anode supply is 100 M $\Omega$ . When measuring the anode voltage the loading of the voltmeter should be taken into account. Due to the 100 M $\Omega$  output impedance, the Anode Voltage Multiplier is short-proof.*

5. Check the input voltage to the Anode Voltage Multiplier at R1750. This should be a square-wave signal roughly centered about ground with an amplitude of 2500 volts peak-to-peak and a frequency of approximately 25 kHz. If this voltage is correct, turn the instrument off and remove the High Voltage board (see Fig. 8-1 for the board location). Check to see if the input and ground leads of the Anode Voltage Multiplier are connected.

6. Replace the High Voltage board.

**Step B: Check CRT Heater Supply**

1. Visually check for loose connections to the crt. Then check to see if the heater glows.

**WARNING**

*Potential shock hazard exists when measuring the heater supply. The heater supply is elevated to -2565 volts.*

2. Disconnect harmonica P1702 and measure the heater voltage with a true rms voltmeter. The voltage should be

6.3 volts rms; frequency about 25 kHz. If a low reading of the supply is obtained, the high voltage transformer may be defective.

3. Turn the instrument off. Check for continuity between pins 1 and 2 of P1702, and between pins 1 and 14 of the crt.

**Step C: Check Microchannel Plate (MCP) Supply****WARNING**

*Potential shock hazard exists: the MCP voltage can be as high as +1200 volts.*

1. Visually check for loose connections on the High Voltage board. (See Fig. 8-1 for board location.)

2. Turn all INTENSITY controls counterclockwise. Measure the MCP output voltage at TP1775 and note the reading.

3. Turn R1720 (MCP Gain) clockwise. The voltage reading should be about 860 volts. Turn R1720 counterclockwise. The voltage reading should be about 460 volts. Reset R1720 to the voltage reading noted in part 2.

a. If the MCP voltage at TP1775 is low, ground TP1707 and again note the MCP voltage reading. If the voltage now reads about 1250 volts; check components Q1708, U1714A, CR1707, CR1708, C1707 and C1708. If the voltage is still low, check components CR1710, CR1711, C1710, and C1711.