

DISPLAY MONITOR - ENGLISH DATA MODEL 5000 - 1
 The display consists of a 9" amber monitor. Input is 75 OHM composite video into pin 8 of edge connector at the back of the monitor. Power (+ 12V, 1.2 amp) is supply to pin 7 with pins 1 and 10 being system ground. Connections and adjustments are shown in Figure 1.

GENERAL DISPLAY

SPECIFICATIONS AND CHARACTERISTICS

HORIZONTAL FREQUENCY	15.75 KHZ
VERTICAL FREQUENCY	80 HZ
SIGNAL POLARITY	POSITIVE • THE WHITES ARE HIGH
VIDEO	COMPOSITE • AMPLITUDE 2.5 TO 5 VPP
TERMINATION IMPEDANCE	75 OHMS
RESOLUTION	900 TV LINES, CENTER
BANDWIDTH	DC TO 18 MHZ AT -3db
LINEARITY	CHARACTERS ARE TO BE WITHIN +/- 10% OF ADJACENT CHARACTERS AND WITHIN +/- 10% OF CHARACTER HEIGHT
GEOMETRY	GEOMETRIC DISTORTION TO BE WITHIN 1 1/2% OF EIA

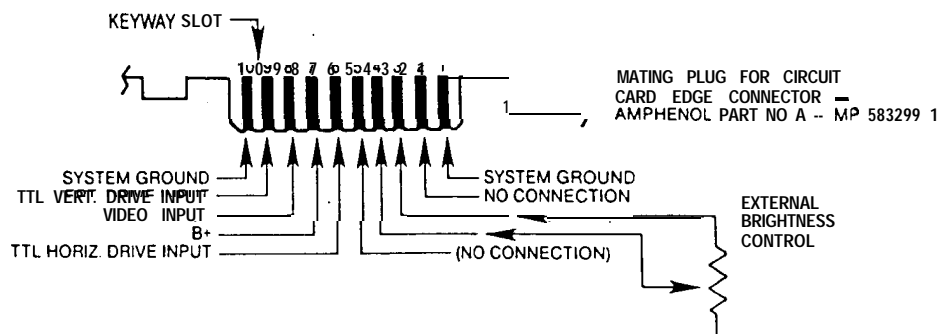
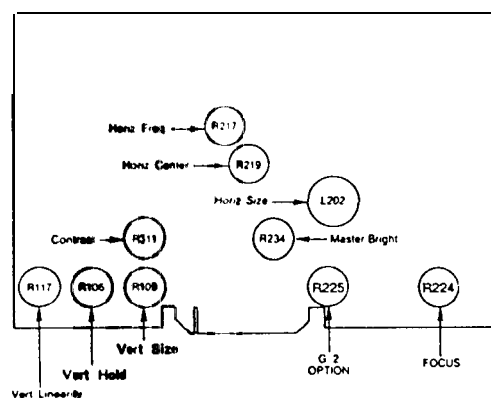


Fig. 1 Monitor circuit card edge connector--component side view and adjustments.

Although the monitor alignment adjustments are preset at the factory, alignment procedure is given below in case adjustments would be necessary.

1. Check size--horizontal and vertical

- If the horizontal size requires readjustment, use width coil L102 to set size to + 1/4 inch of spec.
 - If vertical size requires readjustment, use height control (R109) to set size to + 1/4 inch of spec. Readjustment of linearity control (R117) may be necessary.
- Check brightness adjustment-increase remote brightness control to maximum. Raster lines should be just barely visible.
 - Increase master brightness control (R234) until raster lines are visible.
 - Reset remote brightness to normal viewing level.
 - Check horizontal centering-increase remote brightness control until raster lines are just visible. No more than one (1) character width difference should be measured when comparing the right side spacing, between the raster edge and the video, to the left side spacing.
 - If necessary adjust the horizontal delay control (R219) only for minor correction.
 - If considerable adjustment is required, the following steps should be taken.
 - Disable horizontal sync input.
 - Adjust horizontal hold control (R217) to achieve a single vertical band of the horizontal blanking interval floating thru the video presented.
 - Reenable the horizontal sync input.
 - Adjust horizontal delay control (R219) to center video in raster.
 - Reset the remote brightness control for normal viewing level.

- A. If necessary, adjust focus control (R224) to obtain best overall focus. Center focus will be compromised in order to gain better corner focus.

5. Check geometry-rectangular presentation of video display

- A. If correction is required, adjust magnets on yoke ring as required.

GEOMETRY

The display monitors are supplied with yokes on which a special retainer has been designed to accommodate adjustable magnets. The tabs on this retainer hold the magnets which retain their position and do not vibrate loose in transit.

The magnets can be rotated in either direction until satisfactory geometry has been achieved.

NOTE! The geomet has been adjusted at the factory prior to shipment. If however, adjustments are to be made on the yoke, the directions on this page should be of assistance.

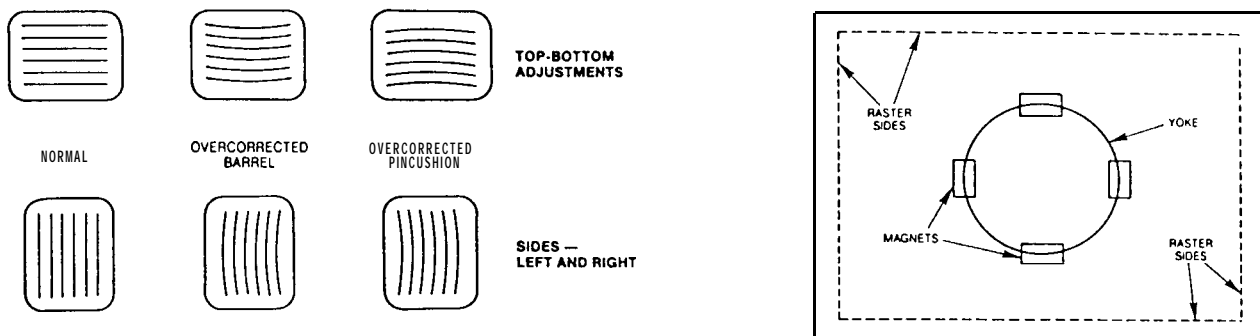


Fig. 2 Geometry adjustments

SAFETY NOTE

All CRT's maintain a voltage charge at the anode, even when inoperative. Therefore, when a CRT is to be replaced always discharge the picture tube anode to ground using an insulated wire or screwdriver. Safety goggles usage is recommended by CRT manufacturers.

TROUBLE SHOOTING

1.NO RASTER

Check to see if high voltage exists at second anode by marginal arcing to chassis, (signal should be disconnected) or check with high voltage meter (approx. 12KV). Check to see if G2 voltage is 600 volts or more. Check grid lead for a negative to positive voltage swing by varying the brightness pot.

-100 to +30 VDC should be present at green lead (Grid 1). Check positive and negative voltages derived from flyback.

2.NO VIDEO

Make sure the raster is visible. Verify that video lead is not broken.

A. Check voltage on collector of Q302. Should be about 40 VDC

B. Check bias voltage at 0302. Should be about 6 VDC

C. Check SG301 and SG302 for defective components.

3.NO VERTICAL SWEEP

A. Check for B + (12V) to pins no.2 & 5 of IC101.

B. Make sure yoke and leads are hooked up properly.

C. Check voltage on pin 4 of IC101. Should be 6 to 7 volts if the voltage is 1 OV check CI 09.

D. Shunt CI08 and CI02 with new capacitors.

4.HIGH CURRENT FROM POWER SUPPLY

Unsolder one end of C212. If high current still exists horizontal output stage Q202 is at fault.

Normal current is from .7A to 1 .0A.

Check for shorted Q202, D207, D205, D206. Defective flyback is last probability.

If disconnecting C212 does not correct high current IC101 may be shorted.

5.POOR LINEARITY

Vertical • check C109.

Horizontal • check C212, reversed linearity control wrong value C221.

to be around 4VDC.

7.NO SYNC

Check pin 8 of IC202 to have sync pulses. Also check for feed back pulses to pin 6 of IC202 from horizontal out section. If both pulses are there replace chip. If composite signal is used and present to pins 8 and 9 of IC202 pin 10 should have vertical sync as output.

8.NO HORIZONTAL DEFLECTION (line up and down)

Check yoke leads, yoke, C221

No Vertical Deflection (line left to right)

Check for open yoke, check for broken yoke leads (blue and yellow), check for open D101 or C108.

8. NO HORIZONTAL DEFLECTION NO HIGH VOLTAGE

Check pin 2 of IC202 if DC voltage is 4.5VDC the chip is O.K.

If 1 VDC replace chip.

Check for voltage on pin 1 of IC202 if not 10VDC look for open Fi 230, 15 to 27 ohms.

Check for pulses on pin of IC202 if pulses exist IC202 is O.K.

Base of Q202 should have a square waveform if not open C212, or shorted Q202, or open Q101. If pulses are not present on pin 2 of IC202, C210 may be open.

REPLACEMENT PARTS LIST

SCHEMATIC DESIGNATOR DESCRIPTION

C223, C218
C217, C110
C222
C106, C227, C214, C229
C211
C101, C302, C303
C105, C306
C210
C301
C231
C301
C207
C111, C112
C102
C220
C215
C208, C209
C212
C213
C401
C109
C305
C103, C104
C108
C216
C304
C228
C221
SG301, SG201, SG202
D208, D302, D102, D201

CAPACITOR, CER. DISC.
CAPACITOR, MYLAR FILM
CAPACITOR, CER. DISC.
CAPACITOR, MYLAR FILM
CAPACITOR, ALUM. LYTIC, RAD. 1 UF-50V
CAPACITOR, BIPOLAR,
SPARK GAP, 0.001-1 TO 2KV
DIODE, 1N4148

0.01-500-Z5U
0.001-1KV-Z5U
0.01-1KV-Z5U
0.1-100-Z5U
0.22-75
0.01-100-Z5U
33PF-500-NPO
0.0047-100-NPO
560PF-100V-NPO
68PF-100V-NPO
220PF-100V-NPO
0.022-50-10%
0.1-100-10%
0.15-100-10%
.1-630-10%
0.023-400V-5%
RAD. 1 UF-50V
RAD. 4.7-35V
RAD. 1500UF-16V
AXIAL, 1 UF-50V
RAD. 10UF-25V
RAD. 220UF-16V
RAD. 100UF-25V
RAD. 2200UF-25V
RAD. 220UF-35V
RAD. 33UF-63V
R A D. 22UF-35V L201
1 0UF-25V

SCHEMATIC DESIGNATOR DESCRIPTION

0301
0204
D203
0101
D205
D206
D207
Q303
Q302
Q301
Q201
IC101
IC202
R306
R306
R217
R311
R106
R117
R109
R224
R234
R219
L301
L301
L202

T101
HS-1

DIODE, ZENER (6.2V) 1 N4627
DIODE, 1N4936
DIODE, FR304
DIODE: 1 N4001
DIODE, FR105
DIODE, FR102
DIODE, FR107
TRANSISTOR, PNP, MPSA55
TRANSISTOR, NPN, D40P5
TRANSISTOR, NPN, 2N4400
TRANSISTOR, NPN, 2N3904
IC, TDA 1170S
IC, TDA 1180P
RESISTOR, WIRE WOUND 1.5K-5-10%
RESISTOR, WIRE WOUND 1K-3-10%
POT, 30K CERMET
POT, 500 OHM-PIHER CARBON
POT, 100K-PIHER CARBON
POT, 200K-PIHER CARBON
POT, 500K-PIHER CARBON
POT, 2MEG, CTS 5X-201-RS
POT, 250K-CERMET
POT, 200K-PIHER CERMET
COIL, PEAKING 4.7UH
COIL, PEAKING 12UH
COIL, WIDTH
COIL, LINEARITY
YOKE
TRANSFORMER FLYBACK
HEATSINK ASSY
SOCKET, CRT ASSY

