

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		60 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

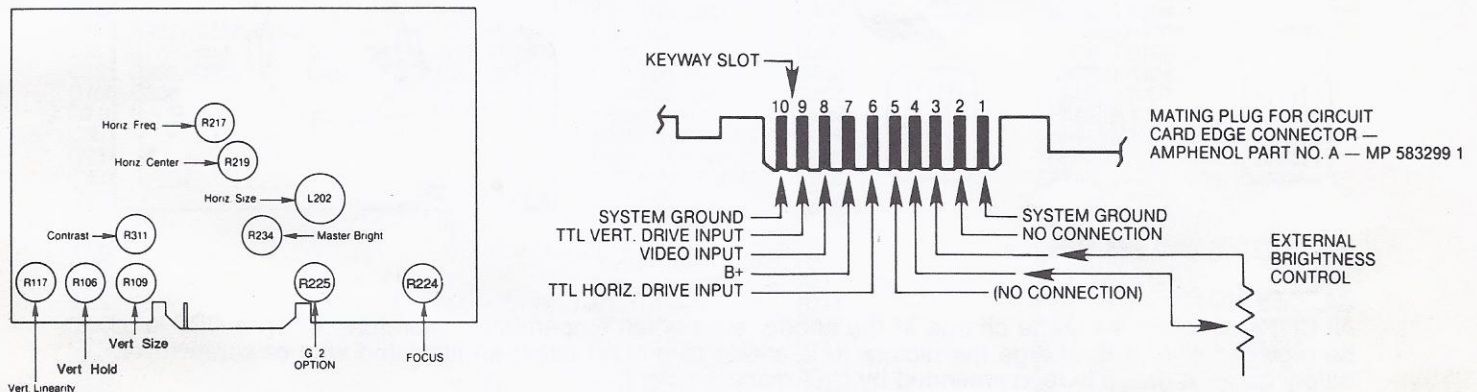


Fig. 1 Monitor circuit card edge connector--component side view and adjustments.

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.

2. 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.

3. 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.

C. Reset the remote brightness control for normal viewing level.

4. Check Focus

- 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 geometry 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.

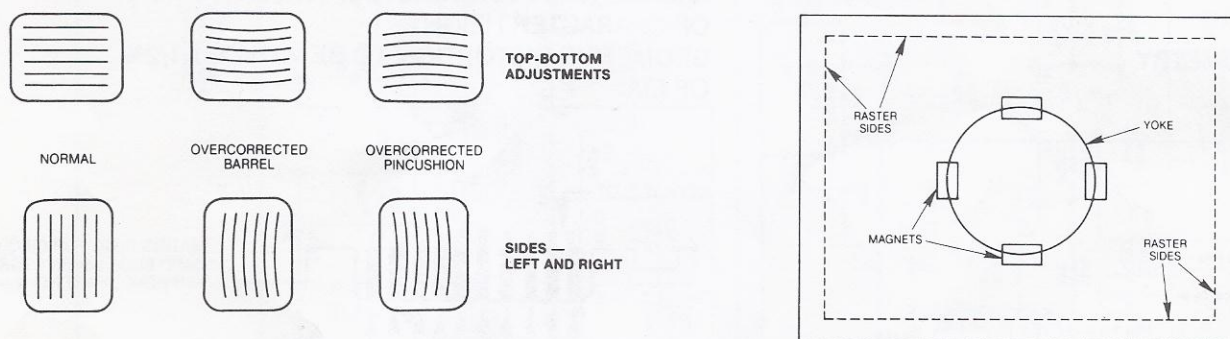


Fig. 2 Geometry adjustments

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 Q302. 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 10V check C109.

D.Shunt C108 and C102 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.

Check negative voltage on D205. Possible open C222. Check B+ at collector of video (Q302). Output to be around 40VDC.

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.

Check yoke leads, yoke, C221

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

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

If 11VDC replace chip.

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

Check for pulses on pin of IC202 if pulses exist IC202 is OK.

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.

[illegible]

C223, C218	CAPACITOR, CER. DISC.	0.01-500-Z5U
C217, C110	" " "	0.001-1KV-Z5U
C222	" " "	0.01-1KV-Z5U
C106, C227, C214, C229	" " "	" 0.1-100-Z5U
C211	CAPACITOR, MYLAR FILM	0.22-75
C101, C302, C303	CAPACITOR, CER. DISC.	0.01-100-Z5U
C105, C306	" " "	33PF-500-NPO
C210	" " "	0.0047-100-NPO
C301	" " "	560PF-100V-NPO
C231	" " "	68PF-100V-NPO
C301	" " "	220PF-100V-NPO
C207	CAPACITOR, MYLAR FILM	0.022-50-10%
C111, C112	" " "	0.1-100-10%
C102	" " "	0.15-100-10%
C220	" " "	.1-630-10%
C215	" " "	0.023-400V-5%
C208, C209	CAPACITOR, ALUM. LYTIC, RAD.	1UF-50V
C212	" " "	RAD. 4.7-35V
C213	" " "	RAD. 1500UF-16V
C401	" " "	AXIAL, 1UF-50V
C109	" " "	RAD. 10UF-25V
C305	" " "	RAD. 220UF-16V
C103, C104	" " "	RAD. 100UF-25V
C108	" " "	RAD. 2200UF-25V
C216	" " "	RAD. 220UF-35V
C304	" " "	RAD. 33UF-63V
C228	" " "	RAD. 22UF-35V
C221	CAPACITOR, BI POLAR,	10UF-25V
SG301, SG201, SG202	SPARK GAP, 0.001-1 TO 2KV	
D208, D302, D102, D201	DIODE, 1N4148	

SCHEMATIC DESIGNATOR	DESCRIPTION
D301	DIODE, ZENER (6.2V) 1N4627
D204	DIODE, 1N4936
D203	DIODE, FR304
D101	DIODE, 1N4001
D205	DIODE, FR105
D206	DIODE, FR102
D207	DIODE, FR107
Q303	TRANSISTOR, PNP, MPSA55
Q302	TRANSISTOR, NPN, D40P5
Q301	TRANSISTOR, NPN, 2N4400
Q201	TRANSISTOR, NPN, 2N3904
IC101	IC, TDA 1170S
IC202	IC, TDA 1180P
R306	RESISTOR, WIRE WOUND 1.5K-5-10%
R306	RESISTOR, WIRE WOUND 1K-3-10%
R217	POT, 30K CERMET
R311	POT, 500 OHM-PIHER CARBON
R106	POT, 100K-PIHER CARBON
R117	POT, 200K-PIHER CARBON
R109	POT, 500K-PIHER CARBON
R224	POT, 2MEG, CTS 5X-201-RS
R234	POT, 250K-CERMET
R219	POT, 200K-PIHER CERMET
L301	COIL, PEAKING 4.7UH
L301	COIL, PEAKING 12UH
L202	COIL, WIDTH
L201	COIL, LINEARITY
----	YOKE
T101	TRANSFORMER FLYBACK
HS-1	HEATSINK ASSY
----	SOCKET, CRT ASSY

