

General Information

1994
CRT: 6"

Specifications

System:	PAL-I
Destination:	UK
Channel Coverage UHF:	21 - 69 CH
Frequency Range UHF:	471.25 855.25 MHz
Scanning:	Lines: 625 Lines
	Horizontal: 15625 Hz
	Vertical: 50 Hz
IF Frequency:	Video: 39.5 MHz
	Sound: 33.5 MHz
Vision/Sound Separation:	6 MHz
Sensitivity UHF:	80uV
Radio Receiving Range:	AM: 520 KHz-1620 KHz
	FM: 87.5 MHz-108 MHz
Radio Frequencies:	AM: 455 KHz
	FM: 10.7 MHz
Output Power:	Maximum: 800 mW
	10% THD: 600mW
C.R.T.:	6" Colour Tube
Speaker:	3" (7.62 cm) 8W
Antenna Impedance:	75W
Power Supply:	AC: 240V - 50 Hz
	DC: 12V -15V
Power Consumption:	35 Watts
Video Input:	Ivp-p (Positive Video)
	75W Impedance
Audio Input:	0.5 r.m.s. (1 KHz)
	47K W Impedance

Service Adjustments

Colour Television Alignment Instructions

Please Read Before Attempting Service

- 1: Never disconnect any leads while receiver is in operation.
- 2: Disconnect all power before attempting any repairs.
- 3: Do not short any portion of the circuit while power is on.
- 4: For reasons of safety, all parts replaced should be identical, (for parts numbers see parts list).
- 5: Before alignment the set must be pre-heated for 30 minutes or more and erase magnetism thoroughly from CRT front chassis frame by erase coil.

Test Equipment

- 1: VIF Sweep Generator
- 2: SIF Sweep Generator
- 3: Colour Bar/Dot/Cross Hatch
- 4: DC Power Supply (24V 3A)
- 5: Oscilloscope
- 6: Vacuum Tube Voltmeter
- 7: Volt Ohm Meter
- 8: High Voltage Meter
- 9: Ampere Meter (0.5 Class, DC 3mA Max)
- 10: Demagnetising Coil

Note: Unsolder the solder link (A) on the foil side of the main board before alignment steps.

Tank Coil Alignment

Preparation Step (see fig. 2.)

- 1: Connect OUTPUT lead of VIF Sweep Generator between tuner test point TP and tuner case.
- 2: Connect lead of FROM DET between TP102 and GND.
- 3: Short Q301 base to GND and set S102 to OFF mode.
- 4: Supply DC +14V to REG lead of D304 and through resistor 39 ohm W to TP 801 (between R257 and R228).
- 5: Supply RF AGC bias voltage to TP103 (see fig. 1)

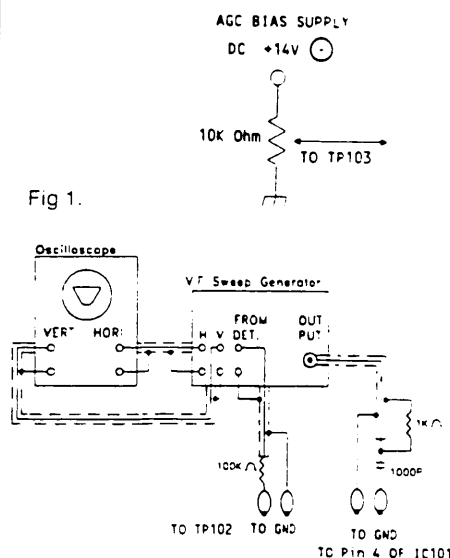


Fig 2.

Alignment Step (see fig. 3)

- 1: Adjust AGC bias voltage for maximum amplitude of waveform.
- 2: Adjust the level of Sweep Generator to achieve 1Vp-p output.
- 3: Adjust T102 to obtain maximum amplitude of response cause at PC. (39.5MHz).

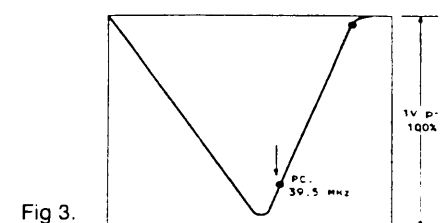


Fig 3.

VIF Alignment

Preparation Step (see fig. 2)

- 1: Connect output lead of VIF Sweep Generator between tuner test point TP and tuner case.
- 2: Connect resistor (100 Ohm) between TP105 and TP106.
- 3: Connect lead of FROM DET between TP102 and GND.
- 4: Short Q301 base to GND and set S102 to OFF mode.
- 5: Supply DC +14V to REG lead of D304 and through resistor 39 Ohm W to TO801 (between R257 and R228).
- 6: Supply RF AGC bias voltage to TP103 (see fig. 1).

Alignment Step

- 1: Adjust AGC bias voltage for maximum amplitude of waveform.

- 2: Adjust level of Sweep Generator to achieve 1Vp-p output.
- 3: Decrease the output level of Sweep Generator into 30dB.
- 4: Adjust AGC bias voltage to achieve 1Vp-p output (on Oscilloscope).
- 5: Adjust tuner converter coil to obtain the waveform as in fig. 4.

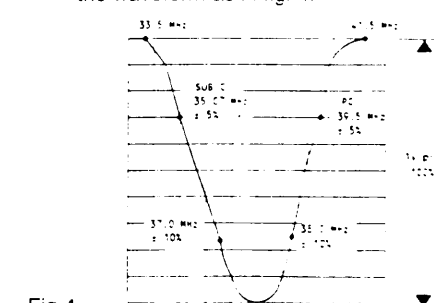


Fig 4.

AFC Alignment

Preparation Step

- 1: Remove the damping resistor (100 ohm) at TP105, TP106.
- 2: Connect output lead of Sweep Generator to the tuner point TP and tuner case.
- 3: Connect lead of FROM DET between TP108 and GND.
- 4: Short Q301 base to GND.
- 5: Supply DC +14V to REG lead of D304 and Resistor 39 ohm W to TP801 (between R257 and R228).
- 6: Supply RF AGC bias voltage to TP103.

Alignment Step

- 1: Adjust the AGC bias voltage for maximum amplitude of waveform 9Vp-p output.
- 2: Adjust T101 so that the picture carrier 39.5 MHz is as centred as in Fig. 5a.
- 3: Adjust VR102 obtain the waveform is balance a in Fig 5b.

Note: Solder the solder link (A) on the foil side main board after alignment steps.

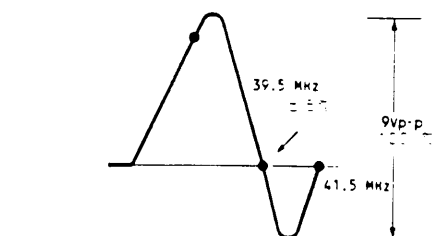


Fig 5a.

SIF Alignment

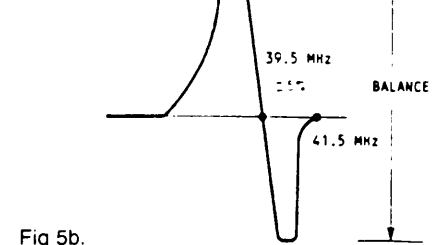


Fig 5b.

SIF Alignment

Preparation Step

- 1: Connect output lead of SIF Sweep Generator between TP102 and GND.
- 2: Connect lead of FROM DET between TP104 and GND.
- 3: Short Q301 base to GND and set S102 to OFF mode.
- 4: Supply DC +14V to REG lead of D304

- 5: and through resistor 39 ohm W to TP801 (between R257 and R228). Supply RF AGC bias voltage 6.7V to TP103.

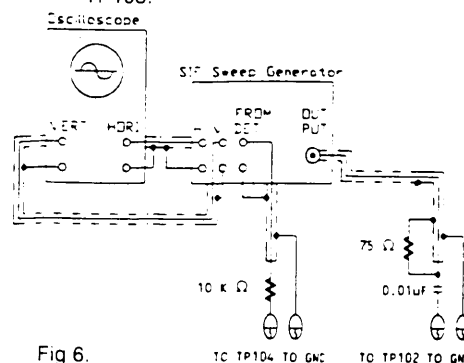


Fig 6.

Alignment Step

- 1: Adjust output of Sweep Generator to achieve 3Vp-p between markers of 100 kHz.
- 2: Adjust T103 so sound carrier is centred as in Fig. 7.
- 3: Confirm the waveform as in Fig. 7.

Note: Input level: -30 to 0 dB.

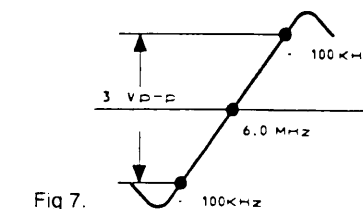


Fig 7.

B+ Adjustment

- 1: Connect the Digital Voltmeter to TP101.
- 2: Adjust semi-fixed resistor VR701 for the reading of DC 9.5V.

Vertical Height Adjustment

- 1: Receive the Monoscope pattern.
- 2: Adjust VR301 to obtain normal picture.

White Balance Adjustment

- 1: Set the SCREEN Control and SUB-BRIGHTNESS (VR206) control to middle position.
- 2: Turn the blue and red LOW-LIGHT (VR403, VR402) controls to minimum position (counter clockwise) and turn the DRIVE (VR403, VR401) controls to the middle position.
- 3: Turn the SCREEN control to minimum position.
- 4: Set the SERVICE switch (S105) to SERVICE position.
- 5: Slowly turn the SCREEN control clockwise to the point where a colour just illuminates.
- 6: On CRT a green horizontal line will appear.
- 7: Clockwise turn (VR402) to get a yellow horizontal line on CRT.
- 8: Clockwise turn (VR404) to get a white horizontal line on CRT.
- 9: Reset the SERVICE switch (S105) to NORMAL position.
- 10: Turn BRIGHTNESS control to middle position.
- 11: Receive the black and white picture signal.
- 12: Adjust blue and red DRIVE (VR403, VR401) control to obtain a white picture.

Focus Adjustment

- 1: Set CONTRAST control to maximum position and BRIGHTNESS control to middle position.
- 2: Adjust FOCUS control (on the FBT) to obtain a sharpest and clearest picture on CRT.

RF AGC Alignment

- 1: Receive the signal of UHF High Channel.
- 2: Set the input field strength in 60 dB \pm 2 dB.
- 3: Adjust RF-AGC control (VR101) to the point where noise has disappeared.
- 4: Set the input field strength in 90 dB. Do not overload.

Colour Demodulator Alignment, Delay Line Alignment

- 1: Receive Phillips pattern.
- 2: Set COLOUR control (VR201) to maximum position.
- 3: Connect oscilloscope to TP202 (B out).
- 4: Adjust T301 and VR203 to obtain the waveform as in fig. 8.

Note: Cores of T201 should be adjusted equal height of core.

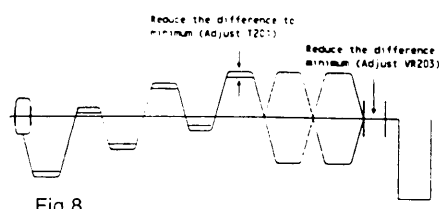


Fig 8.

Sub-Brightness Adjustment

- 1: Receive grey scale pattern.
- 2: Set controls as follows:
BRIGHTNESS Control - MID position.
CONTRAST Control - MIN position.
COLOUR Control - MIN position.
- 3: Adjust the SUB-BRIGHTNESS control (VR401) until grey scale just appears on the screen.

Vertical Linearity Adjustment

- 1: Receive a Crosshatch pattern.
- 2: Set VR801 to centre point for standard position.
- 3: Apply DC 11V - 15V to EXT DC JACK.
- 4: Check linearity and stability of vertical display between 11V and 15V.
- 5: Adjust VR801 to the best point if necessary.

Colour Purity Adjustment (see fig. 9)

Note: Before all adjustments described below are attempted, V-HOLD, H-HOLD, V-HEIGHT, B+ VOLTAGE and FOCUSING ADJUSTMENT must be completed.

- 1: Place the TV receiver facing North or South.
- 2: Plug in TV receiver and turn it on.
- 3: Operate TV receiver for over 30 minutes.
- 4: Fully degauss the TV receiver by using an external degaussing coil.
- 5: Receive a crosshatch pattern and adjust the static convergence control roughly.
- 6: Loosen the clamp screw of the deflection yoke and pull the deflection yoke towards you.

- 7: Fully turn the red and blue Low Light controls (VR402, VR404) counterclockwise.
- 8: Adjust the purity magnets so that green field is obtained at the centre of the screen.
- 9: Slowly push the deflection yoke toward bell of CRT and set it where a uniform green field is obtained.
- 10: Tighten the clamp screw of the deflection yoke.

Tuning Voltage Adjustment

- 1: Tune PVC to LOW END at TV mode.
- 2: Connect the digital voltmeter to pin 5 of CN101.
- 3: Adjust VR104 for the reading of DC 25.3V - 25.4V.
- 4: Check CH69 pointer position. If it is not correct tune to high end and adjust VR104 to the point that CH69 just breaks down. (DC voltage 23 - 25.4).

Convergence Adjustment (see fig. 9)

- 1: Receive a dotted pattern.
- 2: Unfix the convergence magnet clamber and align red with blue dots at the centre of the screen by rotating (R, B) static convergence magnets.
- 3: Align red/blue with green dots at the centre of the screen by rotating (RB-G) static convergence magnet.
- 4: Fix the convergence magnet by turning the clamber.
- 5: Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good overall convergence.
- 6: Fix the deflection yoke by wedges.
- 7: If purity error is found, follow PURITY ADJUSTMENT instructions.

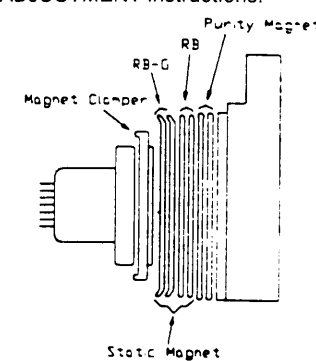


Fig 9.

FM Section

1 - Alignment Frequency:
IF 10.7 MHz

Test Equipment:

- 1: FM IF Sweep Generator
- 2: Alignment Oscilloscope
- 3: Power Supply

Signal IN:

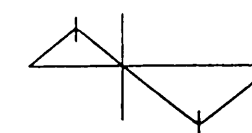
Inject the IF sweep signal through 2PF capacitor to pin 3 of IC601

Signal OUT:

Signals are taken out from R606 through pin 2 of CN101

Adjust:

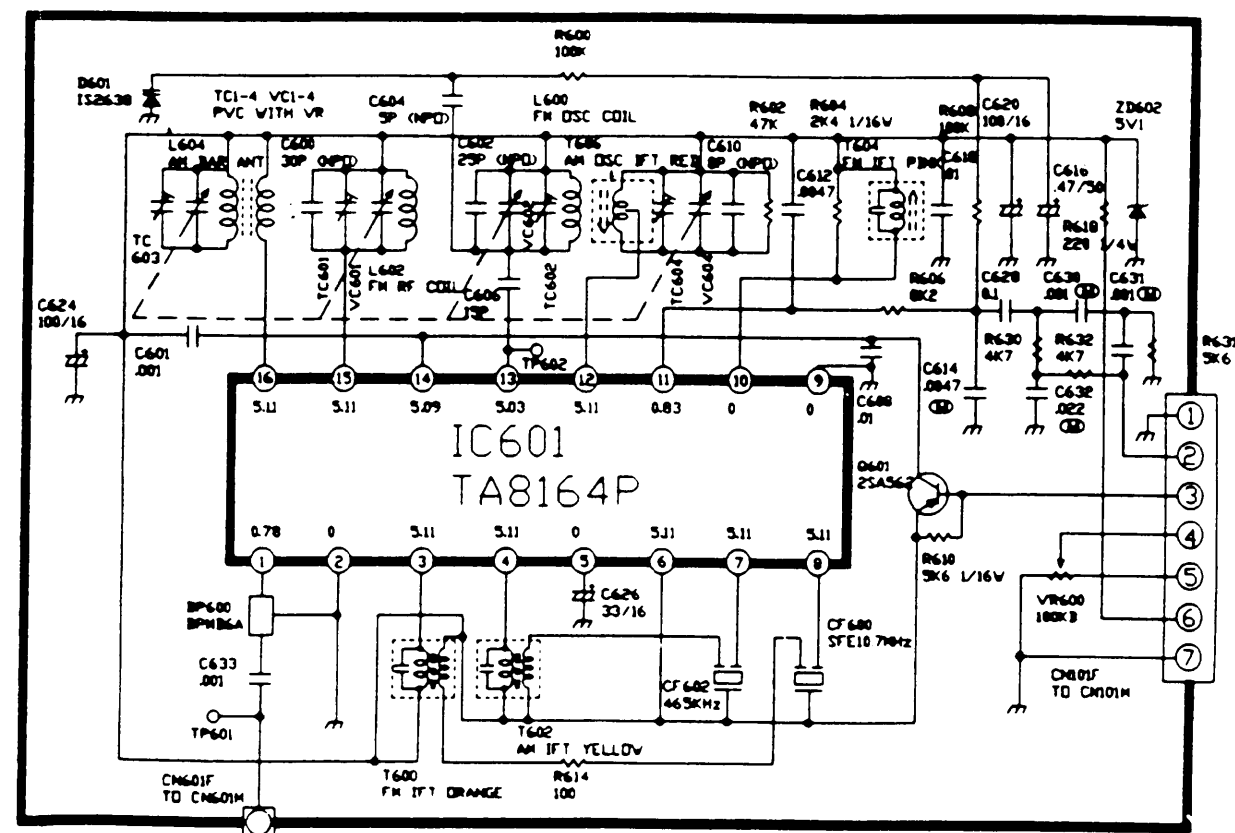
Adjust T604/T600 and repeat to get bet "S" curve with centre at 10.7 KHz



Adjust:
Adjust L602 to get max output

Adjust TC603 (C2)
to get max output at 140

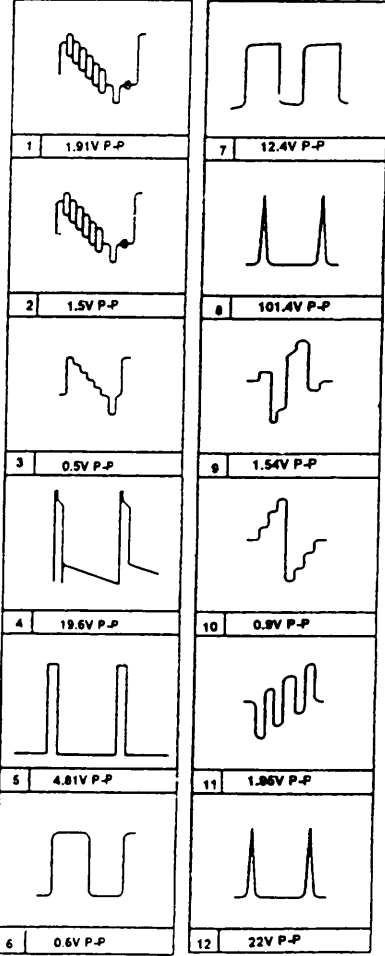
7: Repeat steps 5,6 and then 2,3,5,6, until no further improvement can be made.



IC 601 Diagram

Main
Diagram

Waveforms



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