

SERVICE ADJUSTMENT

SERVICE MODE FUNCTION

This mode function is provided to assist with the settings of those adjustments that may vary from one Picture Tube to another, or between models.

In order to use the Service Mode

1. Press main switch to OFF.
2. Connect Test Pattern signal to antenna terminal.
3. Press ∇ \triangleleft and CH \triangleleft buttons and main switch to ON simultaneously.
4. —SERV— will appear on screen. Service mode is now entered.
5. Select adjustment using buttons \triangleleft CH ∇ .

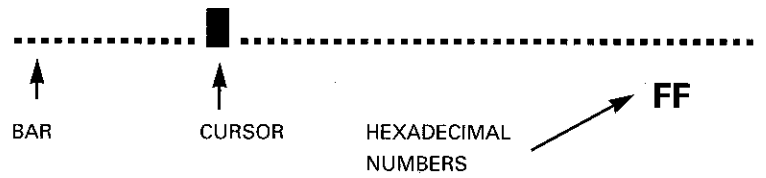
To exit service mode, press main switch to OFF or press MODE button on R/C.

	Displayed on Screen	Hexadecimal Range	Function
	—SERV—		Indicates operative Service Mode.
a.	AGC	00 ~ FF	Auto Gain Control.
b.	AFT	00 ~ FF	Auto Frequency Control
c.	BL PHA	00 ~ 3F	Blanking Pulse shift.
d.	VER PO	00 ~ 3F	Vertical Position shift.
e.	VER AM	00 ~ 3F	Vertical Amplitude shift.
f.	VER SM	00 ~ 3F	Vertical Symmetry alteration.
g.	LUMA-D	00 ~ 05	Luma Delay
h.	GII		Indication of G2 adjustment.
i.	V-B-CO	00 ~ 3F	Vertical Breathing Correction (DON'T TOUCH).
j.	GAIN R	00 ~ 3F	Red Gain.
k.	GAIN G	00 ~ 3F	Green Gain.
l.	GAIN B	00 ~ 3F	Blue Gain.
m.	NVM		Access to NVM memory.

6. For "a" thru "l" selections.

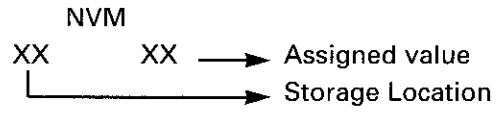
Adjustment to a selection can be made by pressing buttons \triangleleft \triangleleft ∇ . (Not for GII adjustment).

A colour bar is displayed on the OSD to indicate the adjustment position, together with hexadecimal numbers (Not for GII adjustment).



For "m" Selection.

NVM storage location settings variants.



In order to have access to the desired storage location, buttons \triangleleft \triangleleft ∇ should be pressed, as required, to obtain a higher or lower location, respectively. Bear in mind that, for storage location indication a hexadecimal numerical system is used, instead of a decimal system.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, 10, 11, 19, 1A, 1B, 1C, 1D, 1E, 1F, 20, 21, 99, 9A, 9B, 9C, 9D, 9E, 9F, A0, A1, B0, C0, D0, E0, F0, F1, F2, F3, F4, F5, F6, F7, F8, F9, FA, FB, FC, FD, FE, FF.

From the last location FF to the first 00 can be reached by increasing and from first to last by decreasing. Once the storage location to be varied has been selected, its value can be modified by the bits that form part of the storage location numerical buttons, numbers $\boxed{0}$ to $\boxed{7}$, respectively. This switches its binary number from and between 0 and 1 each time one of the buttons is pressed.

$\boxed{0} = 2^0 = 1, \quad \boxed{1} = 2^1 = 2, \quad \boxed{2} = 2^2 = 4, \dots$

■ PIF / AGC Adjustment

1. VCO + AFT Adjustment

1. Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal.
 - SSG output: 39.5 MHz (CW) ± 5 kHz.
 - SSG output level: approx. 90 dB μ V.
2. Enter into Service Mode.
3. Push CH \wedge until AFT appears.
4. Press \square / $\text{O} \rightarrow$ button on R/C. Setting is made automatically. During this setting the colour bar shall go from red to yellow. When setting is finished, colour bar disappears and B-STOP (bus stop) is shown on screen.
5. Switch set OFF and ON again, setting is now memorized.

2. RF-AGC Take over Adjustment (I2C BUS)

1. Receive the "COLOUR BAR" signal (Channel E-42).
 - Signal strength: 57 dB μ V.
2. Enter into Service Mode.
3. Push CH \wedge until AGC appears.
4. Press \square / $\text{O} \rightarrow$ button on R/C. Setting is made automatically. During this setting the colour bar shall go from red to yellow. When setting is finished, colour bar disappears and B-STOP (bus stop) is shown on screen.
5. Switch set OFF and ON again. Setting is now memorized.

■ Screen Adjustment

3. Focus Adjustment

1. Apply mains voltage of 240 V AC/50 Hz to TV.
2. Receive Philips pattern signal to a level between 60 and 80 dB μ V.
3. Set contrast to 10/10, brightness to 5/10 and colour 0/10.
4. Adjust focus potentiometer to obtain maximum definition.

4. G2 Adjustment

1. Apply mains voltage of 240 V AC/50 Hz to TV.
2. Receive black screen signal to a level between 60 and 80 dB μ V.
3. Set contrast to 10/10, brightness to 0/10 and colour 0/10.
4. Enter into Service Mode.
5. Push CH \wedge until GII appears.
6. Increase G2 potentiometer until flyback appears on screen, and OSD bar is at maximum.
7. Adjust G2 potentiometer until OSD bar is at half way position on screen.
8. Exit Service Mode.

GEOMETRY ADJUSTMENT PROCEDURE

1. "BL PHA".

- Receive Philips pattern signal.
- When $\triangle \wedge$ button is pressed, picture moves to the left.
- When $\triangle \vee$ button is pressed, picture moves to the right.
- Adjust the horizontal location to obtain picture centering (fig. 1).

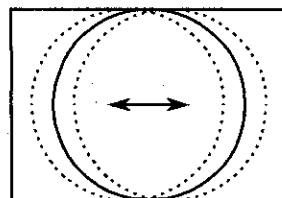


Fig. 1

2. "VER PO".

- Receive Philips pattern signal.
- When $\triangle \wedge$ button is pressed, picture moves up.
- When $\triangle \vee$ button is pressed, picture moves down.
- Adjust the horizontal location to obtain picture centering (fig. 2).

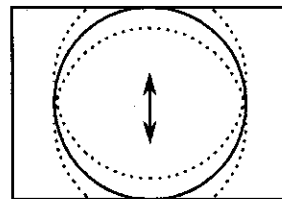


Fig. 2

3. "VER AM".

- Receive Philips pattern signal.
- When $\triangle \wedge$ button is pressed, vertical size of picture increases.
- When $\triangle \vee$ button is pressed, vertical size of picture decreases.
- Adjust the vertical size to obtain overscan (fig. 3).

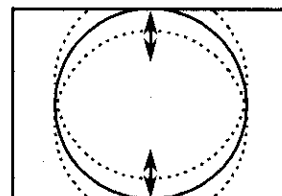


Fig. 3

4. "VER SM".

- Receive Philips pattern signal.
- When $\triangle \wedge$ button is pressed, upper picture scanning decreases and lower picture scanning increases.
- When $\triangle \vee$ button is pressed, upper picture scanning increases and lower picture scanning decreases.
- Adjust the vertical symmetry to obtain symmetrical scanning between upper and lower picture (fig. 4).

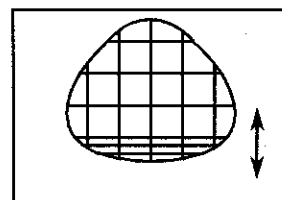


Fig. 4

COLOUR ADJUSTMENT

5. "LUMA D".

- Receive Philips pattern signal.
- When $\triangle \wedge$ button is pressed, luma phase delays.
- When $\triangle \vee$ button is pressed, chroma phase delays.
- Adjust the chroma-luma delay.

The following adjustments are only required when the Picture Tube is changed.

6. "GAIN R", "GAIN G", "GAIN B".

- Adjust G2.
- Tune in white card.
- Adjust colour to minimum.
- Position colourmeter in the center of screen.
- Using brightness and contrast buttons, select a luminance of ≈ 120 nits.
- Operate again in Service Mode and select location GAIN R, GAIN G, GAIN B to obtain colour coordinates:

$$X = 0.290 \pm 0.015$$

$$Y = 0.284 \pm 0.015$$








- Exit Service Mode and check colour coordinates 'X' and 'Y' at 20 and 120 NITS. It may be necessary to repeat procedure.

NOTE:

Locations: GAIN R alter 'X' coordinate; GAIN G alter the 'Y' coordinates; GAIN B alter the 'X' and 'Y' coordinates.

■ CHILD LOCK CANCEL

The following process describes how to cancel actual password (PIN) when the customer forgets code.

1. Switch ON TV set.
2. Press buttons   on TV and  /  on R/C simultaneously.
3. Press MODE button on R/C to input menu.
4. Using buttons  CH  move to  position.
5. Press MODE button again.
6. Select PIN and input new PIN (Please do not forget it)
7. Select EXIT and press MODE button again.