

SERVICE ADJUSTMENT

• SERVICE MODE FUNCTION

All required adjustments for servicing this TV set, may be done in “service mode”, excepting G2 and FOCUS.

How to access “Service Mode”

1. Plug in the TV set to main.
2. Connect a test pattern to the antenna terminal.
3. Tune the receiver to this signal.
4. Turn the receiver off using the mains switch (O|).
5. Press the volume down and channel up buttons on the front of the receiver at the same time (v / CH ^). See Fig.1.
6. Keeping these buttons pressed, turn the mains on (O|). See Fig.1.
7. When the set is on «SHARP5 1 V01.30» will appear on screen. The TV set is now in “service mode”. See Fig.2.
8. Release the two buttons.

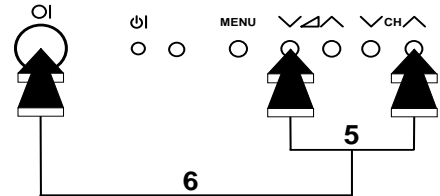


Fig.1

- Use the channel up and down buttons (CH^ / CHv) to move between the options. See Fig.3.
- Use the volume control buttons (v / ^) to change the data. See Fig.3.
- The data is stored automatically when out of service mode by pressing the power key on the remote control or the mains switch.

Fig. 2

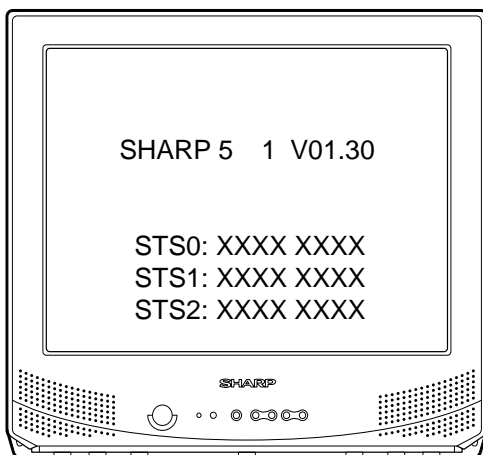
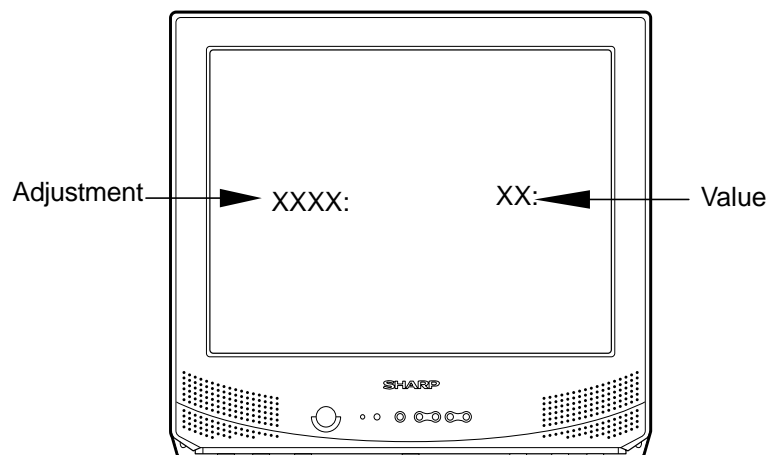


Fig. 3



SERVICE MODE ADJUSTMENT LIST

In the below table there are details about all the adjustments that can be carried out into service mode.

- No: Adjust number. Sequential from 1 to 80.
- OSD: On Screen Display indication.
- Function: Short adjustment description.
- Range: Decimal range of values in which the adjustment may be modified.
- Initial: This is the value that is recorded automatically when the EEPROM (NVM) is replaced.
NOTE: Some of these values must be modified with the value shown in the Default column. They are pointed out in shaded tone.

Example:

Adjust no. 9, S-COR (S-Correction):

Initial value (the one recorded automatically after replacing the EEPROM ... 0

Default value (to modify manually for this model) 22

- FIX / ADJ (Fixed value / necessary to be adjusted).

No.	OSD	Function	Range	Initial	Default	FIX/ADJ
1	AGC	AGC Take Over Point	0..63	14	14	ADJ
2	V-LIN	Vertical Slope [VS]	0..63	32	32	ADJ
3	V-AMP	Vertical Amplitude [VA]	0..63	32	32	ADJ
4	V-CENT	Vertical Shift [VSH]	0..63	32	32	ADJ
5	H-CENT	Horizontal shift [HS]	0..63	32	32	ADJ
6	H-CENT60	offset to H-CENT for60 Hz	0..31 data(-16..+15)	16	20	FIX
7	EW //	Horizontal Parallelogram [HP]	0..63	32	32	FIX
8	HB	Horizontal Bow	0..63	32	32	FIX
9	S-COR	S-Correction [SC]	0..63	0	22	FIX
10	DRI-RS	White point Red Standard white temp.	0..63	32	42	ADJ
11	DRI-GS	White point Green Standard white temp.	0..63	32	42	ADJ
12	DRI-BS	White point Blue Standard white temp	0..63	32	42	ADJ
13	DRI-RW	White point Red Warm white temp.	0..32	16	16	FIX
14	DRI-GW	White point Green Warm white temp.	0..32	16	9	FIX
15	DRI-BW	White point Blue Warm white temp.	0..32	16	9	FIX
16	DRI-RC	White point Red Cold white temp.	0..32	16	9	FIX
17	DRI-GC	White point Green Cold white temp.	0..32	16	9	FIX
18	DRI-BC	White point Blue Cold white temp.	0..32	16	16	FIX
19	SUB-VOL	Max Volume	0..63	60	60	FIX
20	SUB-CON	Sub Contrast	0..63	63	63	FIX
21	SUB-COL	Sub Colour	0..63	32	25	FIX
22	SUB-BRI	Sub Brightness	0..63	32	34	FIX
23	TINT	Sub Tint	0..63	32	32	FIX
24	SUB-SHP	Sub Sharpness	0..63	32	11	FIX
25	HTL-VOL	Max Hotel Volume	0..63	30	30	FIX

No.	OSD	Function	Range	Initial	Default	FIX/ADJ
25	HTL-VOL	Max Hotel Volume	0...63	30	30	FIX
26	HTL-PRG	Hotel Program number	0...99 or > 99 for none	255	255	FIX
27	RGB	OSD RGB Reference	0...15	15	0	FIX
28	SEARCH-SYS	Sound system for auto turning	0(L-BG),1(BG),2(I),3(DK)	1	2	FIX
29	CUT-G	Black Level off-set R [BLR]	0...63	0	0	FIX
30	CUT-B	Black Level off-set B [BLB]	0...63	0	10	FIX
31	CDL	Cathode Drive Level [CL]	0...15	0	5	FIX
32	DL-PT	Y-Delay time for PAL (TV) [YD]	0...15	12	4	FIX
33	DL-ST	Y-Delay time for SECAM (TV) [YD]	0...15	15	8	FIX
34	DL-4T	Y-Delay time for N443 (TV) [YD]	0...15	12	8	FIX
35	COL-OP	COLOUR OFFSET (PAL)	0...15	8	8	FIX
36	COL-OS	COLOUR OFFSET (SECAM)	0...15	8	8	FIX
37	COL-O4	COLOUR OFFSET (NTSC443)	0...15	4	4	FIX
38	SHP-OP	SHARPNESS OFFSET(PAL)	0...15	8	8	FIX
39	SHP-OS	SHARPNESS OFFSET(SECAM)	0...15	4	4	FIX
40	SHP-O4	SHARPNESS OFFSET(NTSC443)	0...15	8	8	FIX
41	SC-VOL	SCART volume	0..255	115	115	FIX
42	PRE-SC	Prescaler SCART input	0..127	25	25	FIX
43	PRE-FM	Prescaler FM/AM	0..127	72	72	FIX
44	PRE-NICAM	Prescaler SCART input	0..127	0	0	FIX
45	AVC-DKY	AVC Decay	1...4 data(1.2.4.8.)	2	2	FIX
46	AC-OFF-TIM	Time to set the AC-OFF timer is in steps of 10minutes	0..15	0	0	FIX
47	DISP	Language or symbols	0(symbolos), 1(English), 2(French)	0	1	FIX
48	TXT-EUR	Teletext pan-European language	0 (teletext pan-european language) 1 (second language;cyrillic) 2(third language;Greek)	0	0	FIX
49	BKS	Black Stretch	0 (disable) or 1 (enable)	1	1	FIX
50	AVC	Automatic Volume Control(AVL)	0 (disable) or 1 (enable)	0	1	FIX
51	FFI	Fast Filter IF-PLL	0 (disable) or 1 (enable)	0	0	FIX
52	ACL	Auto Colour Limit	0 (disable) or 1 (enable)	0	1	FIX
53	S-L	Sound system L	0 (disable) or 1 (enable)	0	0	FIX
54	S-DK	Sound system DK	0 (disable) or 1 (enable)	1	0	FIX
55	S-I	Sound system I	0 (disable) or 1 (enable)	1	1	FIX
56	S-BG	Sound system BG	0 (disable) or 1 (enable)	1	0	FIX
57	BLUE-BACK	Video mute at Ident loss	0 (disable) or 1 (enable)	1	1	FIX
58	VMC	Video Mute at program/source Change	0 (disable) or 1 (enable)	1	1	FIX
59	HTL	Hotel mode	0 (disable) or 1 (enable)	0	0	FIX
60	BTSC	Reduced FM demodulator Gain (for BTSC sig)	0 (disable) or 1 (enable)	0	0	FIX
61	AV	Number of external AV sources	0 for 1 AV or 1 for 2 AV	1	0	FIX
62	FMWS	FM Window Selection	0 (disable) or 1 (enable)	0	0	FIX
63	SM0	Sound Mute bit 0	0 (disable) or 1 (enable)	1	1	FIX
64	SM1	Sound Mute bit 1	0 (disable) or 1 (enable)	0	0	FIX
65	AGC0	IF AGC speed bit0	0 (disable) or 1 (enable)	1	1	FIX
66	AGC1	IF AGC speed bit1	0 (disable) or 1 (enable)	0	0	FIX
67	FOA-FE	Phi 1 time constant for FE(RF)	0 (disable) or 1 (enable)	0	0	FIX
68	FOB-FE	Phi 2 time constant for FE(RF)	0 (disable) or 1 (enable)	0	0	FIX
69	FOA-AV	Phi 1 time constant for AV	0 (disable) or 1 (enable)	1	1	FIX
70	FOB-AV	Phi 2 time constant for AV	0 (disable) or 1 (enable)	1	1	FIX
71	TXT	Teletext	0 (disable) or 1 (enable)	0	1	FIX
72	TXT-WE	Teletext Western or Eastern characters	0 (western) or 1 (eastern)	0	0	FIX
73	FSL	Forced V-SYNC slicing level	0 (disable) or 1 (enable)	0	0	FIX
74	HP2	Sync of OSD	0 for Ph1 or 1 for Ph2	0	0	FIX
75	CP	Charge pump	0 (fast tuning) or 1 (moderate speed tuning)	0	0	FIX
76	NICAM	NICAM decoding enabled	0 (disable) or 1 (enable)	0	0	FIX
77	IGR	IGR decoding enabled	0 (disable) or 1 (enable)	0	0	FIX
78	AUTO	Start auto tuning at POWER-ON	0 (disable) or 1 (enable)	0	0	FIX
79	TXT-TGL	Function of TXT key	0 or 1	0	1	FIX
80	EVG	Enable Vertical Guard	0 (disable) or 1 (enable)	1	1	FIX

•SCREEN ADJUSTMENT

1. G2 Adjustment

1. Apply mains voltage of 220V ac / 50Hz to TV.
2. Go into service mode (refer to "How to access service mode" section).
3. Use **CH▲** / **CH▼** buttons in order to select «BLUE-BACK: 1».
4. Use the volume down button (**⏮**) to deactivate the blue-back feature. «BLUE-BACK: 0» will appear on screen.
5. Re-start the TV set with the mains switch button (**⏻**) to store the adjustment and exit service mode.
6. Normalise the picture control settings (contrast, colour, brightness...)
7. Press TV/VIDEO button in order to select «SCART» (without video signal: black screen).
8. Apply the oscilloscope test probe to the test point <TP851> (Red output of IC801) to see the signal shown in Fig.4.
9. Adjust SCREEN VR (G2) to obtain 3 Vdc \pm 0.1 Vdc.
10. Go into service mode (refer to "How to access service mode" section).
11. Use **CH▲** / **CH▼** buttons in order to select «BLUE-BACK: 0».
12. Use the volume up button (**⏭**) to deactivate the blue-back feature. «BLUE-BACK: 1» will appear on screen.
13. Re-set the TV with the mains switch button (**⏻**) to store the adjustment and exit service mode.

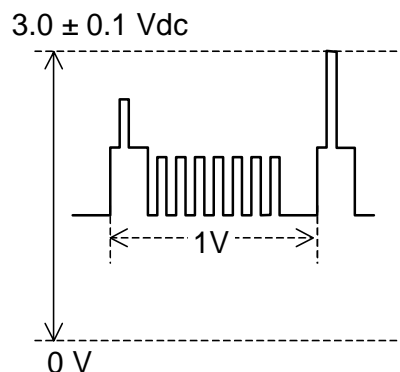


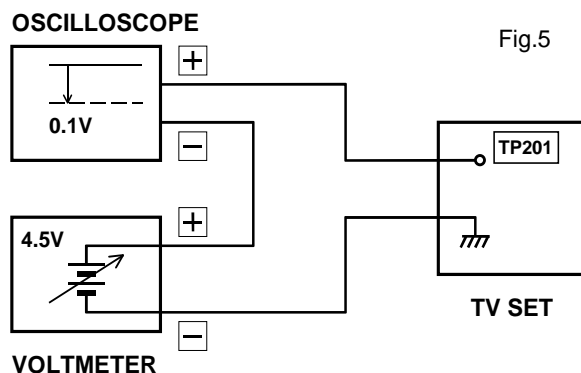
Fig.4

2. Focus Adjustment




1. Apply mains voltage of 220V ac / 50Hz to TV.
2. Receive the «MONOSCOPE» pattern signal to a level between 60 and 80 dB μ V.
3. Normalise the picture control settings (contrast, colour, brightness...)
4. Adjust focus potentiometer to obtain maximum definition.

• AGC ADJUSTMENT



1. Receive the «COLOUR BAR» signal (Channel E-12). Signal Strength: 57 dB μ V \pm 1 dB μ V (50 ohm open) or 59 dB μ V \pm 1 dB μ V (75 ohm open).
2. Connect the oscilloscope to test point <TP201> (R201 lead) and the voltmeter c.c., as shown in Fig.5.
3. Go into service mode (refer to "How to access service mode" section).
4. Use **CH▲** / **CH▼** buttons in order to select «AGC».
5. Use **⏮** / **⏭** to obtain the Tuner output pin drop: 0.1 V \sim 0.3 V below maximum voltage.
6. Change the antenna input signal to 66-70dB μ V, and make sure there is no noise.
7. Turn up the input signal to 90-95 dB μ V to be sure that there is no cross.
8. Re-set the TV with the mains switch button (**⏻**) to store the adjustment and exit service mode.



• GEOMETRY ADJUSTMENT PROCEDURE

1. Receive Philips.
2. Go into service mode (refer to "How to access service mode" section).
3. Use  /  buttons in order to select the required adjust.
4. Re-set the TV with the mains switch button () to store the adjustment and exit service mode.

V-LIN (Vertical slope adjust)

- a) Use  /  buttons to move the picture.
- b) Adjust the vertical linearity to obtain picture centring (fig. 6).

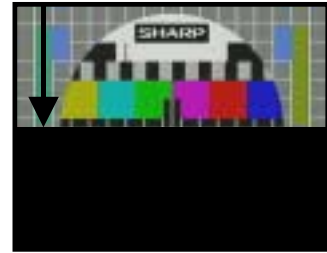




Fig. 6

V-AMP (Vertical amplitude adjust)

- a) When  button is pressed, vertical size of picture increases.
- b) When  button is pressed, vertical size of picture decreases
- c) Adjust the vertical amplitude to obtain picture overscan (Fig. 7).

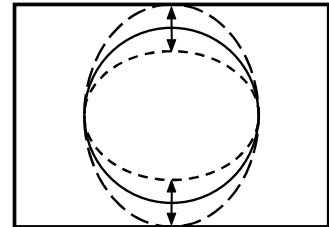




Fig. 7

V-CENT (Vertical shift adjust)

- a) When  button is pressed, picture moves down.
- b) When  button is pressed, picture moves up.
- c) Adjust the vertical shift to obtain picture centring (Fig. 8).

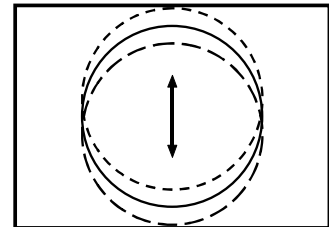




Fig. 8

H-CENT (Horizontal shift adjust)

- d) When  button is pressed, picture moves to right.
- e) When  button is pressed, picture moves to left.
- f) Adjust the vertical shift to obtain picture centring (Fig. 9).

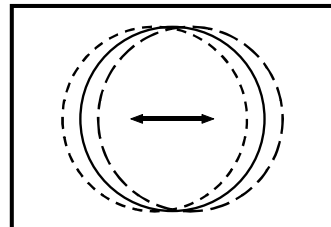


Fig. 9

●COLOUR ADJUSTMENT PROCEDURE

The following adjustments should only be carried out when the CRT or IC801 are replaced.

NOTES:

- This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 700 μ A.
- The red value «DRI-RS» should be fixed to 42. (Refer to “How to access service mode” section).
- «DRI-GS» adjustment alters “Y” co-ordinate.
- «DRI-BS» adjustment alters “X” and “Y” co-ordinates.

ADJUSTMENT METHOD 1 (using the signal generator, varying the picture signal)

1. Adjust G2.
2. Input a white pattern with burst signal from SCART.
3. Position the colorimeter in the centre of screen.
4. Adjusting input signal level, select a luminance of 70 nits.
5. Operate again in “service mode“ and select «DRI-GS» and/or «DRI-BS» locations to obtain colour co-ordinates:

MODEL	X	Y	Screen temperature
21HT-15H	0.290 ± 0.015	0.284 ± 0.015	8900° K-20 MPCD

6. Re-set the TV with the mains switch button (○|) to store the adjustment and exit service mode.
7. Check colour co-ordinates “X” and “Y” at 20 a 120 Nits. It may be necessary to repeat the same procedure to obtain the above values.

ADJUSTMENT METHOD 2 (using the signal generator, with a fixed picture signal)

1. Adjust G2.
2. Tune a white pattern with burst signal.
3. Operate in “service mode”:
4. Using «SUB-CON», select a luminance of 70 nits.
5. Operate again in “service mode“ and select «DRI-GS» and/or «DRI-BS» locations to obtain colour co-ordinates:

MODEL	X	Y	Screen temperature
21HT-15H	0.290 ± 0.015	0.284 ± 0.015	8900° K-20 MPCD

6. Select «SUB-CON». Return data to “63”.
7. Re-set the TV with the mains switch button (○|) to store the adjustment and exit service mode.
8. Check colour co-ordinates “X” and “Y” at 20 a 120 Nits. It may be necessary to repeat the same procedure to obtain the above values.