

8. Alignments

Index of this chapter:

1. General Alignment Conditions
2. Hardware Alignments
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Note: The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the 'CURSOR UP, DOWN, LEFT or RIGHT' keys of the remote control transmitter.

8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:

- Mains voltage and frequency: according to country's standard.
- Connect the set to the Mains via an isolation transformer.
- Allow the set to warm up for approximately 20 minutes.
- Measure the voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply). Never use the cooling fins/plates as ground.
- Test probe: $R_i > 10 \text{ M}\Omega$; $C_i < 2.5 \text{ pF}$.
- Use an **isolated** trimmer/screwdriver to perform the alignments.

8.2 Hardware Alignments

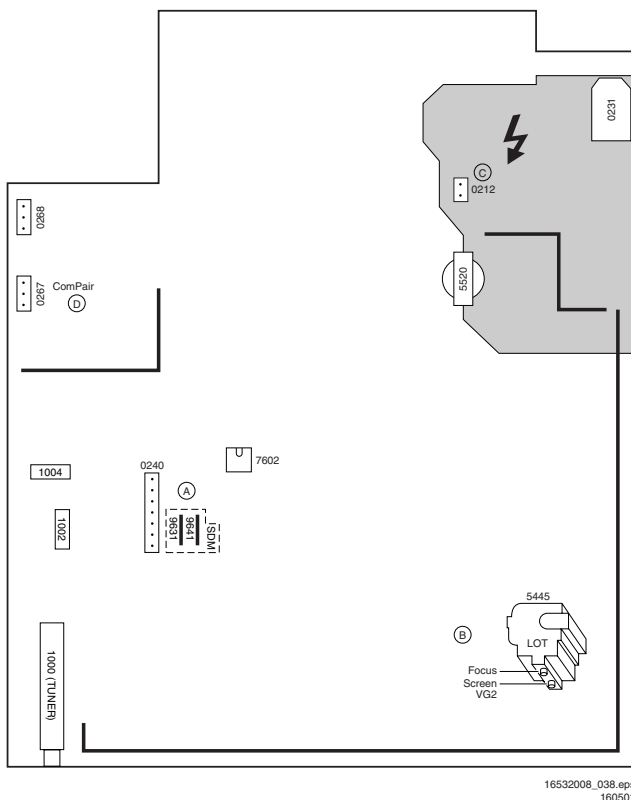


Figure 8-1

8.2.1 Vg2 Adjustment

1. Activate the SAM.
2. Go to the WHITE TONE sub menu.
3. Set the values of NORMAL RED, GREEN and BLUE to 40.
4. Go, via the MENU key, to the normal user menu and set – CONTRAST to zero.

- BRIGHTNESS to minimum (OSD just visible in a dark room).
5. Return to the SAM via the MENU key.
6. Connect the RF output of a pattern generator to the antenna input. Test pattern is a 'black' picture (blank screen on CRT **without** any OSD info).
7. Set the channel of the oscilloscope to 50 V/div and the time base to 0.2 ms (external triggering on the vertical pulse).
8. Ground the scope at the CRT panel and connect a 10:1 probe to one of the cathodes of the picture tube socket (see diagram B).
9. Measure the cut off pulse during first full line after the frame blanking (see Fig. 8-2). You will see two pulses, one being the cut off pulse and the other being the white drive pulse. Choose the one with the lowest value, this is the cut off pulse.
10. Select the cathode with the highest V_{DC} value for the alignment. Adjust the V_{cutoff} of this gun with the SCREEN potentiometer (see Fig. 8-1) on the LOT to the correct value (see table below).
11. Restore BRIGHTNESS and CONTRAST to normal (= 31).

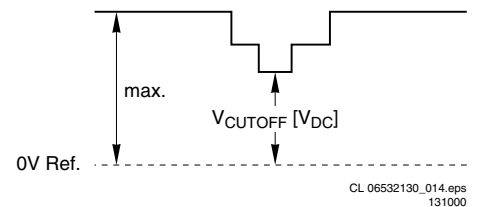


Figure 8-2

CUT-OFF VOLTAGE (L01 LARGE)	
Screen size	Cut-off [V]
21"	125 ± 4
24", 25", 27", 28", 29", 32", 35"	145 ± 10

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Figure 8-3

8.2.2 Focusing

1. Tune the set to a circle or crosshatch test pattern (use an external video pattern generator).
2. Choose picture mode NATURAL (or MOVIES) with the 'SMART PICTURE' button on the remote control transmitter.
3. Adjust the FOCUS potentiometer (see Fig. 8-1) until the vertical lines at 2/3 from east and west, at the height of the centreline, are of minimum width without visible haze.

8.3 Software Alignments and Settings

Enter the Service Alignment Mode (see chapter 5). The SAM menu will now appear on the screen.

Select one of the following alignments:

1. Options
2. Tuner
3. White Tone
4. Geometry
5. Audio

8.3.1 Options

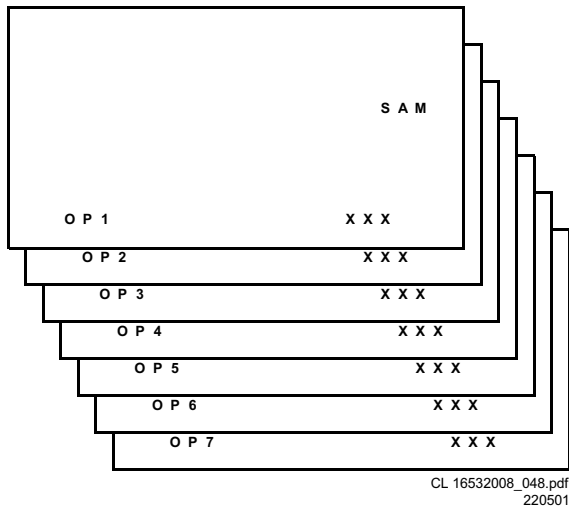


Figure 8-4

Options are used to control the presence/absence of certain features and hardware.

How to change an Option Byte

An Option Byte represents a number of different options. Changing these bytes directly makes it possible to set all options very fast. All options are controlled via seven option bytes. Select the option byte (OB1.. OB7) with the MENU UP/DOWN keys, and enter the new value.

Leaving the OPTION submenu saves changes in the Option Byte settings. Some changes will only take effect after the set has been switched OFF and ON with the Mains switch (cold start).

How to calculate the value of an Option Byte

Calculate an Option Byte value (OB1 .. OB7) in the following way:

1. Check the status of the single option bits (OP): are they enabled (1) or disabled (0).
2. When an option bit is enabled (1) it represents a certain value (see first column 'value between brackets' in first table below). When an option bit is disabled, its value is 0.
3. The total value of an Option Byte is formed by the sum of its eight option bits. See second table below for the correct option numbers per typenumber.

Bit (value)	OB1	OB2	OB3	OB4	OB5	OB6	OB7
0 (1)	OP10	OP20	OP30	OP40	OP50	OP60	OP70
1 (2)	OP11	OP21	OP31	OP41	OP51	OP61	OP71
2 (4)	OP12	OP22	OP32	OP42	OP52	OP62	OP72
3 (8)	OP13	OP23	OP33	OP43	OP53	OP63	OP73
4 (16)	OP14	OP24	OP34	OP44	OP54	OP64	OP74
5 (32)	OP15	OP25	OP35	OP45	OP55	OP65	OP75
6 (64)	OP16	OP26	OP36	OP46	OP56	OP66	OP76
7 (128)	OP17	OP27	OP37	OP47	OP57	OP67	OP77
Total:	Sum	Sum	Sum	Sum	Sum	Sum	Sum

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Figure 8-5

Typenumber	OB1	OB2	OB3	OB4	OB5	OB6	OB7
21PT5306/01	220	246	193	184	244	54	67
21PT5506/01	220	246	225	184	244	54	67
21PT5506/05	220	246	225	184	244	54	67
21PT5506/58	220	246	225	184	244	54	65
24PW6006/01	220	246	159	184	244	54	67
24PW6006/05	220	246	159	184	244	54	67
25PT4457/01	220	246	225	56	244	2	67
25PT4457/05	220	246	225	56	244	2	67
25PT4457/58	220	246	225	56	244	2	65
25PT5107/01	220	246	225	184	244	54	67
25PT5107/05	220	246	225	56	244	2	67
25PT5107/58	220	246	225	184	244	54	65
25PT5506/01	28	174	129	152	128	32	67
25PT5506/58	28	174	129	152	128	32	65
28PT4406/58	4	196	224	40	228	0	65
28PT4406/01	4	196	224	40	228	0	67
28PT4457/01	220	246	225	56	244	2	67
28PT4457/05	220	246	225	56	244	2	67
28PT4457/58	220	246	225	56	244	2	65
28PT5107/01	220	246	225	184	244	54	67
28PT5107/05	220	246	225	184	244	2	67
28PT5107/58	220	246	225	184	244	54	65
28PW5407/01	28	214	158	40	244	2	67
28PW6006/05	220	246	159	184	244	54	67
28PW6006/01	220	246	159	184	244	54	67
28PW6006/58	220	246	158	40	244	54	65
29PT5306/01	220	246	225	184	244	54	67
29PT5306/58	220	246	225	184	244	54	65
29PT5506/01	220	246	225	184	244	54	67
29PT5506/58	220	246	225	184	244	54	65
32PW5407/01	28	222	158	40	244	2	67
32PW6006/01	220	254	159	184	244	54	67
32PW6006/05	220	254	159	184	244	54	67
32PW6006/21	220	254	159	184	244	54	67
32PW6006/25	220	254	159	184	244	54	67
32PW6006/48	28	246	158	40	244	0	67
32PW6006/58	28	246	158	40	244	0	65
63TA5216/03	28	22	224	40	244	0	67
63TA5216/11	28	22	224	40	244	0	67
63TA5216/18	28	22	224	40	244	0	67
70WA6216/03	28	22	158	40	244	0	67
70WA6216/11	28	22	158	40	244	0	67
70WA6216/18	28	22	158	40	244	0	67
82PW6216/18	28	30	158	40	244	0	67

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Figure 8-6

Option Bit Assignment

Following are the option bit assignments for all L01 software clusters.

- **Option Byte 1 (OB1)**
 - OP10: CHINA
 - OP11: VIRGIN_MODE
 - OP12: UK_PNP
 - OP13: ACI
 - OP14: ATS
 - OP15: LNA
 - OP16: FM_RADIO
 - OP17: PHILIPS_TUNER
- **Option Byte 2 (OB2)**
 - OP20: HUE
 - OP21: COLOR_TEMP
 - OP22: CONTRAST_PLUS
 - OP23: TILT

- OP24: NOISE_REDUCTION
- OP25: CHANNEL_NAMING
- OP26: SMART_PICTURE
- OP27: SMART_SOUND
- **Option Byte 3 (OB3)**
 - OP30: AVL
 - OP31: WSSB
 - OP32: WIDE_SCREEN
 - OP33: SHIFT_HEADER_SUBTITLE
 - OP34: CONTINUOUS_ZOOM
 - OP35: COMPRESS_16_9
 - OP36: EXPAND_4_3
 - OP37: EW_FUNCTION
- **Option Byte 4 (OB4)**
 - OP40: STEREO_NON_DBX
 - OP41: STEREO_DBX
 - OP42: STEREO_PB
 - OP43: STEREO_NICAM_2CS
 - OP44: DELTA_VOLUME
 - OP45: ULTRA_BASS
 - OP46: VOLUME_LIMITER
 - OP47: INCR_SUR
- **Option Byte 5 (OB5)**
 - OP50: PIP
 - OP51: HOTEL_MODE
 - OP52: SVHS
 - OP53: CVI
 - OP54: AV3
 - OP55: AV2
 - OP56: AV1
 - OP57: NTSC_PLAYBACK
- **Option Byte 6 (OB6)**
 - OP60: Reserved (value = 0)
 - OP61: SMART_TEXT
 - OP62: SMART_LOCK
 - OP63: VCHIP
 - OP64: WAKEUP_CLOCK
 - OP65: SMART_CLOCK
 - OP66: SMART_SURF
 - OP67: PERSONAL_ZAPPING
- **Option Byte 7 (OB7)**
 - OP70: SOUND_SYSTEM_AP_3/
MULTI_STANDARD_EUR/SYSTEM_LT_2
 - OP71: SOUND_SYSTEM_AP_2/WEST_EU/
SYSTEM_LT_1
 - OP72: SOUND_SYSTEM_AP_1
 - OP73: COLOR_SYSTEM_AP
 - OP74: Reserved (value = 0)
 - OP75: Reserved (value = 0)
 - OP76: TIME_WIN2
 - OP77: TIME_WIN1

Option bit definition

OP10: CHINA

0 : Tuning is not for China set, or this option bit is not applicable,

1 : Tuning is for China set,

Default setting : 0.

OP11: VIRGIN_MODE

0 : Virgin mode is disabled or not applicable,

1 : Virgin mode is enabled. Plug and Play menu item will be displayed to perform installation at the initial start-up of the TV when VIRGIN_MODE is set to 1. After installation is finished, this option bit will be automatically set to 0,

Default setting : 0.

OP12: UK_PNP

0 : UK's default Plug and Play setting is not available or not applicable,

1 : UK's default Plug and Play setting is available. When UK_PNP and VIRGIN_MODE are set to 1 at the initial set-up, LANGUAGE = ENGLISH, COUNTRY = GREAT BRITAIN

and after exiting from menu, VIRGIN_MODE will be set automatically to 0 while UK_PNP remains 1, Default setting : 0.

OP13: ACI

0 : ACI feature is disabled or not applicable,

1 : ACI feature is enabled,

Default setting : 0.

OP14: ATS

0 : ATS feature is disabled or not applicable,

1 : ATS feature is enabled. When ATS is enabled, it sorts the program in an ascending order starting from program 1,

Default setting : 0.

OP15: LNA

0 : Auto Picture Booster is not available or not applicable,

1 : Auto Picture Booster is available,

Default setting : 0.

OP16: FM_RADIO

0 : FM radio feature is disabled or not applicable,

1 : FM radio feature is enabled,

Default setting : 0.

OP17: PHILIPS_TUNER

0 : ALPS/MASCO compatible tuner is in use,

1 : Philips compatible tuner is in use,

Default setting : 0.

OP20: HUE

0 : Hue/Tint Level is disabled or not applicable,

1 : Hue/Tint Level is enabled,

Default setting : 0.

OP21: COLOR_TEMP

0 : Colour Temperature is disabled or not applicable,

1 : Colour Temperature is enabled,

Default setting : 0.

OP22: CONTRAST_PLUS

0 : Contrast+ is disabled or not applicable,

1 : Contrast+ is enabled,

Default setting : 0.

OP23: TILT

0 : Rotate Picture is disabled or not applicable,

1 : Rotate Picture is enabled,

Default setting : 0.

OP24: NOISE_REDUCTION

0 : Noise Reduction (NR) is disabled or not applicable,

1 : Noise Reduction (NR) is enabled,

Default setting : 0.

OP25: CHANNEL_NAMING

0 : Name FM Channel is disabled or not applicable,

1 : Name FM Channel is enabled,

Default setting : 0.

Note: Name FM channel can be enabled only when FM_RADIO = 1.

OP26: SMART_PICTURE

0 : Smart Picture is disabled or not applicable,

1 : Smart Picture is enabled,

Default setting : 1

OP27: SMART_SOUND

0 : Smart Sound is disabled or not applicable,

1 : Smart Sound is enabled,

Default setting : 1

AP30: AVL

0 : AVL is disabled or not applicable,
1 : AVL is enabled,
Default setting : 0.

OP31: WSSB

0 : WSSB is disabled or not applicable,
1 : WSSB is enabled,
Default setting : 0. **Note:** This option bit can be set to 1 only when WIDE_SCREEN = 1.

OP32: WIDE_SCREEN

0 : Software is used for 4:3 set or not applicable,
1 : Software is used for 16:9 set,
Default setting : 0.

OP33: SHIFT_HEADER_SUBTITLE

0 : Shift Header/Subtitle is disabled or not applicable,
1 : Shift Header/Subtitle is enabled,
Default setting : 0. **Note:** This option bit can be set to 1 only when WIDE_SCREEN = 1.

OP34: CONTINUOUS_ZOOM

0 : Continuous Zoom is disabled or not applicable,
1 : Continuous Zoom is enabled,
Default setting : 0. **Note:** This option bit can be set to 1 only when WIDE_SCREEN = 1.

OP35: COMPRESS_16_9

0 : COMPRESS 16:9 selection is not applicable. Item should not be in the FORMAT menu list,
1 : COMPRESS 16:9 selection is applicable. Item should not be in the FORMAT menu list,
Default setting : 0.

OP36: EXPAND_4_3

0 : Expand 4:3 selection is not applicable. Item should not be in the FORMAT menu list,
1 : Expand 4:3 selection is applicable. Item should be in the FORMAT menu list,
Default setting : 0.

OP37: EW_FUNCTION

0 : EW function is disabled. In this case, only Expand 4:3 is allowed, Compress 16:9 is not applicable.
1 : EW function is enabled. In this case, both Expand 4:3 and Compress 16:9 are applicable.
Default setting : 0.

OP40: STEREO_NON_DBX

0 : For AP_NTSC, chip TDA 9853 is not present,
1 : For AP_NTSC, chip TDA 9853 is present,
Default setting : 0.

OP41: STEREO_DBX

0 : For AP_NTSC, chip MSP 3445 is not present,
1 : For AP_NTSC, chip MSP 3445 is present,
Default setting : 0.

OP42: STEREO_PB

0 : For AP_PAL, chip MSP3465 is not present,
1 : For AP_PAL, chip MSP3465 is present,
Default setting : 0.

OP43: STEREO_NICAM_2CS

0 : For EU and AP_PAL, chip MSP 3415 is not present,
1 : For EU and AP_PAL, chip MSP 3415 is present,
Default setting : 0.

OP44: DELTA_VOLUME

0 : Delta Volume Level is disabled or not applicable,
1 : Delta Volume Level is enabled,
Default setting : 0.

OP45: ULTRA_BASS

0 : Ultra Bass is disabled or not applicable,
1 : Ultra Bass is enabled,
Default setting : 0.

OP46: VOLUME_LIMITER

0 : Volume Limiter Level is disabled or not applicable,
1 : Volume Limiter Level is enabled,
Default setting : 0.

OP47: INCR_SUR

0 : Incredible Surround feature is disabled,
1 : Incredible Surround feature is enabled,
Default setting : 1

OP50: PIP

0 : PIP is disabled or not applicable,
1 : PIP is enabled,
Default setting : 0.

OP51: HOTEL_MODE

0 : Hotel mode is disabled or not applicable,
1 : Hotel mode is enabled,
Default setting : 0.

OP52: SVHS

0 : SVHS source is not available,
1 : SVHS source is available,
Default setting : 0.
Note: This option bit is not applicable for EU.

OP53: CVI

0 : CVI source is not available,
1 : CVI source is available,
Default setting : 0.

OP54: AV3

0 : Side/Front AV3 source is not present,
1 : Side/Front AV3 source is present,
Default setting : 0.

OP55: AV2

0 : AV2 source is not present,
1 : AV2 source is present,
Default setting : 0.
Note: For EU, when AV2=1, both EXT2 and SVHS2 should be included in the OSD loop.

OP56: AV1

0 : AV1 source is not present,
1 : AV1 source is present,
Default setting : 0.

OP57: NTSC_PLAYBACK

0 : NTSC playback feature is not available,
1 : NTSC playback feature is available,
Default setting : 0.

OP60: Reserved

Default setting : 0.

OP61: SMART_TEXT

0 : Smart Text Mode and Favourite Page are disabled or not applicable,
1 : Smart Text Mode and Favourite Page are enabled,
Default setting : 1.

OP62: SMART_LOCK

0 : Child Lock and Lock Channel are disabled or not applicable for EU,
1 : Child Lock and Lock Channel are enabled for EU,
Default setting : 1.

OP63: VCHIP

0 : VCHIP feature is disabled,
1 : VCHIP feature is enabled,
Default setting : 1.

OP64: WAKEUP_CLOCK

0 : Wake up clock feature is disabled or not applicable,
1 : Wake up clock feature is enabled,
Default setting : 1.

OP65: SMART_CLOCK

0 : Smart Clock Using Teletext and Smart Clock Using PBS is disabled or not applicable,
1 : Smart Clock Using Teletext and Smart Clock Using PBS is enabled. For NAFTA, menu item AUTOCHRON is present in the INSTALL submenu,
Default setting : 0.

OP66: SMART_SURF

0 : Smart Surf feature is disabled or not applicable,
1 : Smart Surf feature is enabled,
Default setting : 0.

OP67: PERSONAL_ZAPPING

0 : Personal Zapping feature is disabled or not applicable,
1 : Personal Zapping feature is enabled,
Default setting : 0.

OP70: MULTI_STANDARD_EUR

0 : Not for Europe multi standard set, or this option bit is not applicable,
1 : For Europe multi standard set.
Default setting : 0.

Note: This option bit is used to control the SYSTEM selection in Manual Store : If MULTI_STANDARD_EUR = 1 then SYSTEM = Europe, West Europe, East Europe, UK, France otherwise SYSTEM = 'Europe, West Europe, UK for West Europe' (WEST_EU=1) or SYSTEM = 'Europe, West Europe, East Europe for East Europe' (WEST_EU=0)

OP71: WEST_EU

0 : For East Europe set, or this option bit is not applicable,
1 : For West Europe set,
Default setting : 0.

OP71 and 70: SYSTEM_LT_1, SYSTEM_LT_2

These two option bits are allocated for LATAM system selection.

00 : NTSC-M
01 : NTSC-M, PAL-M
10 : NTSC-M, PAL-M, PAL-N
11 : NTSC-M, PAL-M, PAL-N, PAL-BG
Default setting : 00

OP70, 71 and 72: SOUND_SYSTEM_AP_1, SOUND_SYSTEM_AP_2, SOUND_SYSTEM_AP_3

These three option bits are allocated for AP_PAL sound system selection.

000 : BG
001 : BG/DK
010 : I/DK
011 : BG/I/DK
100 : BG/I/DK/M
Default setting : 00

OP73: COLOR_SYSTEM_AP

This option bit is allocated for AP-PAL colour system selection.

0 : Auto, PAL 4.43, NTSC 4.43, NTSC 3.58
1 : Auto, PAL 4.43, NTSC 4.43, NTSC 3.58, SECAM
Default setting : 0

OP74: Reserved

Default setting : 0.

OP75: Reserved

Default setting : 0.

OP77 and 76: TIME_WIN1, TIME_WIN2

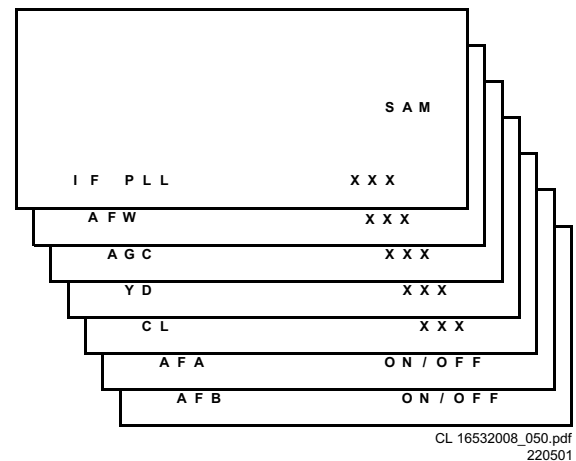
00 : The time window is set to 1.2s
01 : The time window is set to 2s
10 : The time window is set to 5s
11 : not in use

Default setting : 01

Note: The time-out for all digit entries depend on this setting.

8.3.2 Tuner

Note: Described alignments are only necessary when the NVM (item 7602) is replaced.



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Figure 8-7

IFPLL

This adjustment is auto-aligned. Therefore, no action is required.
Default value is 30.

AFW (AFC window)

Select the lowest value.

AGC (AGC take over point)

Set the external pattern generator to a colour bar video signal and connect the RF output to aerial input.
Set amplitude to 10 mV and set frequency to 475.25 MHz (PAL/SECAM) or 61.25 MHz (NTSC).

Connect a DC multi-meter to pin 1 of the tuner (item 1000 on the main panel).

1. Activate the SAM.
2. Go to the TUNER sub menu.
3. Select AFW with the UP/DOWN cursor keys and set to ON.
4. Select AGC with the UP/DOWN cursor keys.
5. Adjust the AGC-value with the LEFT/RIGHT cursor keys until the voltage at pin 1 of the tuner lies between 3.8 and 2.3 V. Default value is 28.
6. Select AFW with the UP/DOWN cursor keys and set to OFF.
7. Switch the set to STANDBY.

YD (Y-delay adjustment)

Fixed value is 7.

CL (Cathode drive level)

Fixed value is 8.

AFA/AFB

Read only bit, for monitoring purpose only.

8.3.3 White Tone

S A M			
N O R M A L	>	(1)	
C O O L	>	(2)	
W A R M	>	(3)	
(1) N O R M A L	R E D	X X	
N O R M A L	G R E E N	X X	
N O R M A L	B L U E	X X	
(2) D	C O O L	R E D	X X
D	C O O L	G R E E N	X X
D	C O O L	B L U E	X X
(3) D	W A R M	R E D	X X
D	W A R M	G R E E N	X X
D	W A R M	B L U E	X X

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Figure 8-8

In the WHITE TONE sub menu, the values of the black cut off level can be adjusted. Normally, no alignment is needed for the WHITE TONE. You can use the given default values. The colour temperature mode (NORMAL, COOL and WARM) and the colour (R, G, and B) can be selected with the UP/DOWN RIGHT/LEFT cursor keys. The value can be changed with the LEFT/RIGHT cursor keys. First, select the values for the NORMAL colour temperature. Then select the values for the COOL and WARM mode. After alignment, switch the set to standby, in order to store the alignments.

Default settings:

1. **NORMAL** (colour temperature = 10500 K):
 - NORMAL R = 26
 - NORMAL G = 32
 - NORMAL B = 27
2. **COOL** (colour temperature = 14000 K):
 - DELTA COOL R = -3
 - DELTA COOL G = 0
 - DELTA COOL B = 5
3. **WARM** (colour temperature = 8200 K):
 - DELTA WARM R = 2
 - DELTA WARM G = 0
 - DELTA WARM B = -6

8.3.4 Geometry

The geometry alignments menu contains several items to align the set, in order to obtain a correct picture geometry.

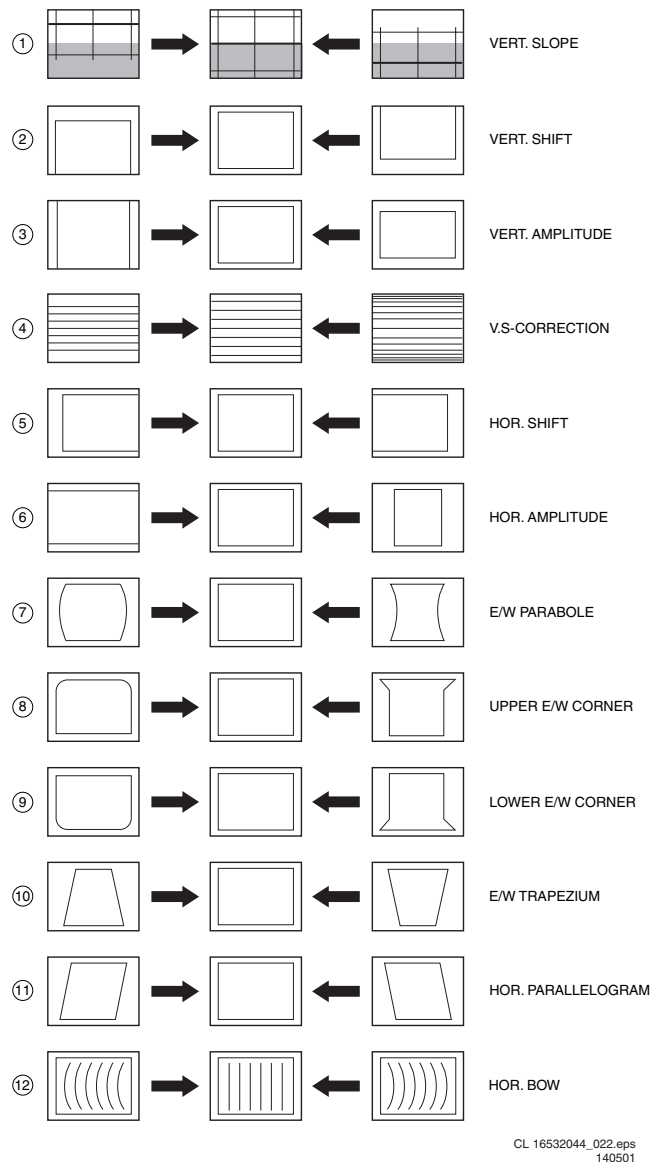


Figure 8-9

How to align

Connect an external video pattern generator to the aerial input of the TV-set and input a crosshatch test pattern. Set amplitude to at least 1 mV and set frequency to 475.25 MHz (PAL/SECAM) or 61.25 MHz (NTSC).

1. Set 'Smart Picture' to NATURAL (or MOVIES).
 2. Activate the SAM menu (see chapter 5).
 3. Go to the GEOMETRY sub menu.
 4. Choose HORIZONTAL or VERTICAL alignment
- Now you can perform the following alignments:

Horizontal alignment

- **Horizontal Parallelogram (HP)**. Align straight vertical lines in the top and the bottom; vertical rotation around the centre.
- **Horizontal Bow (HB)**. Align straight horizontal lines in the top and the bottom; horizontal rotation around the centre.
- **Horizontal Shift (HSH)**. Align the horizontal centre of the picture to the horizontal centre of the CRT.
- **East West Width (EWW)**. Align the picture width until the complete test pattern is visible.
- **East West Parabola (EWP)**. Align straight vertical lines at the sides of the screen.
- **Upper Corner Parabola (UCP)**. Align straight vertical lines in the upper corners of the screen.

- **Lower Corner Parabola (LCP).** Align straight vertical lines in the lower corners of the screen.
- **East West Trapezium (EWT).** Align straight vertical lines in the middle of the screen.

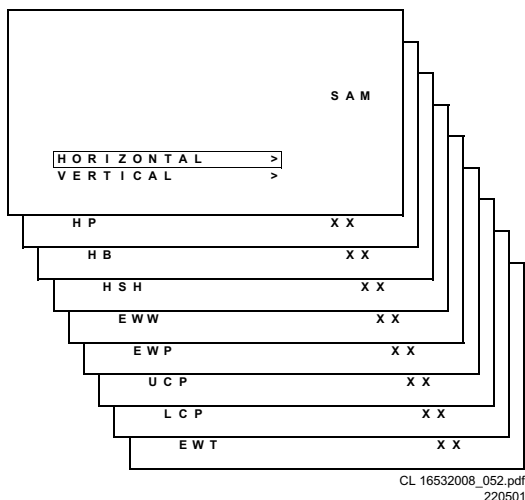


Figure 8-10

Vertical alignment

- **Vertical slope (VSL).** Align the vertical centre of the picture to the vertical centre of the CRT. This is the first of the vertical alignments to perform. For an easy alignment, set SBL to ON.
- **Vertical Amplitude (VAM).** Align the vertical amplitude so that the complete test pattern is visible.
- **Vertical S-Correction (VSC).** Align the vertical linearity, meaning that vertical intervals of a grid pattern must be equal over the entire screen height.
- **Vertical Shift (VSH).** Align the vertical centring so that the test pattern is located vertically in the middle. Repeat the 'vertical amplitude' alignment if necessary.
- **Vertical Zoom (VX).** The vertical zoom is added in for the purpose of development. It helps the designer to set proper values for the movie expand or movie (16x9) compress. Default value is 25.
- **Service blanking (SBL).** Switch the blanking of the lower half of the screen ON or OFF (to be used in combination with the vertical slope alignment).
- **H60.** Align straight horizontal lines if NTSC input (60 Hz) is used i.s.o. PAL (50 Hz).
- **V60.** Align straight vertical lines if NTSC input (60 Hz) is used i.s.o. PAL (50 Hz).

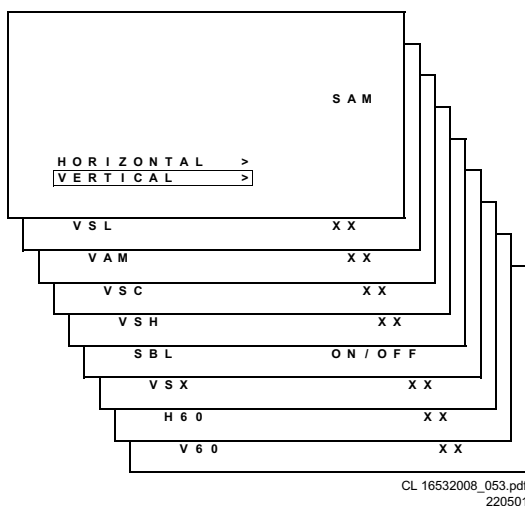


Figure 8-11

In the table below, you will find the GEOMETRY default values for the different sets.

DEFAULT GEOMETRY VALUES (L01 LARGE SCREEN)							
Alignment	Description	21" (4:3)	24" (16:9)	25" (4:3)	28" (4:3)	28" (16:9)	32" (16:9)
HP	Hor. Parallelogram	31	32	31	31	32	32
HB	Hor. Bow	31	32	31	31	32	32
HSH	Hor. Shift	35	27	35	35	27	27
EWW	East West Width	34	36	34	34	36	39
EWP	East West Parabola	33	20	33	33	20	20
UCP	Upper Corner Parabola	35	20	35	35	23	20
LCP	Lower Corner Parabola	35	25	35	35	25	25
EWT	East West Trapezium	35	28	35	35	28	28
VSL	Vert. Slope	33	37	33	33	37	37
VAM	Vert. Amplitude	26	30	26	26	30	30
VSC	Vert. S-correction	23	20	23	23	20	20
VSH	Vert. Shift	31	31	31	31	31	31
VX	Vert. Zoom	25	25	25	25	25	25
H60	Hor. Shift offset (60 Hz)	9	9	9	9	9	9
V60	Vert. Shift offset (60 Hz)	4	4	4	4	4	4

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Figure 8-12

8.3.5 Audio

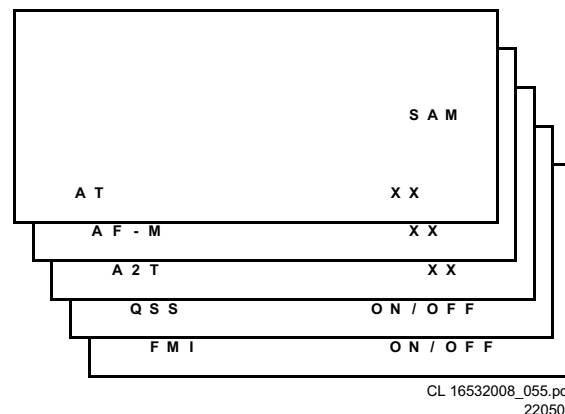


Figure 8-13

No alignments are needed for the audio sub menu. Use the given default values.

AT (Attack Time)

Default value is 8.

AF-M

Default value is 301.

A2T

Default value is 250.

QSS

OFF for mono sets, ON for stereo sets.

FMI

Fixed setting is OFF.