

## 8. Electrical Alignments

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### 8.1 General Alignment Conditions

#### 8.1.1 Default Alignment Settings

Perform all electrical adjustments under the following conditions:

- Power supply voltage: 230 V<sub>ac</sub> / 50 Hz ( $\pm 10\%$ ).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 20 to 30 minutes.
- Measure voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply).

**Caution:** never use heatsinks as ground.

- Test probe:  $R_i > 10\text{ Mohm}$ ,  $C_i < 20\text{ pF}$ .
- Use an isolated trimmer/screwdriver to perform alignments.

Perform all electrical adjustments with the following default settings (for all CRTs):

- Choose "Natural" picture mode with the "Smart Picture" button on the remote control.
- Set "Dynamic Contrast" and "Active Control" to "off" (if either one of them is present).
- Set "Brightness" to aligned value unless otherwise specified.

#### 8.1.2 Adjustment Sequence

Use the following adjustment sequence:

1. Set the correct TV-set OPTIONS as described in paragraph "Options". After storing, re-start the set.
2. Rough adjustment of VG2 and FOCUS.
3. RF-AGC alignment.
4. IF-PLL OFFSET adjustment.
5. Rough adjustment of GEOMETRY.
6. Allow the set to warm up.
7. Precise adjustment of VG2 and FOCUS.
8. Precise adjustment of GEOMETRY.
9. PIP alignments (if present).
10. COLOUR alignments.
11. Other software alignments.

### 8.2 Hardware Alignments

#### Notes:

- The Service Alignment Mode (SAM) is described in chapter 5 "Service Modes, Error Codes, and Fault Finding".
- Use the cursor-, menu-, and OK-buttons of the remote control (RC) transmitter for navigation.

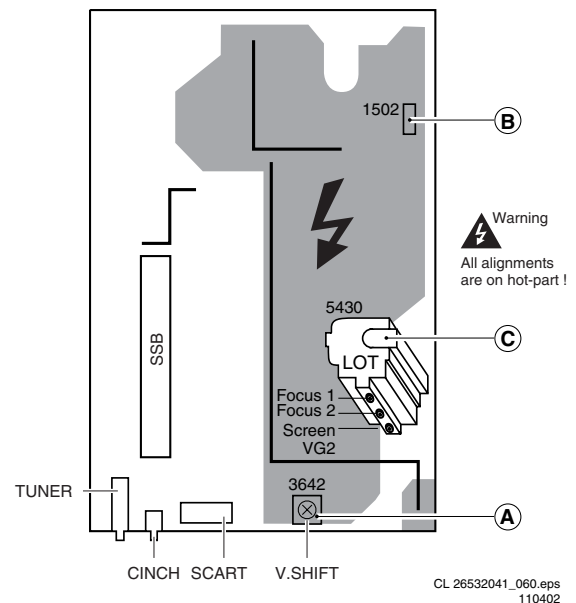


Figure 8-1 Top view LSP

#### 8.2.1 Vg2 Adjustment

##### Notes:

- For adjusting the VG2 in A10 sets, the vertical scan could be disabled by the VSD bit (Vertical Scan Disable). However, do **not** use this option in this chassis, as it will lead to a "beam current" protection!
- Also, the option "VG2" in the SAM does not function yet. Please, do **not** use!

In the frame-blanking period of the R, G, and B signals applied to the CRT, the video processor inserts a measuring pulse with different DC levels. Measure the black level pulse during the vertical flyback at the RGB cathodes of the CRT.

1. Connect the RF output of a pattern generator to the antenna input. Input a "black" picture (blank screen on CRT without any OSD info) test pattern.
2. Use the MENU key to enter the "user" menu, select "Picture", and set "Brightness" and "Contrast" to minimum.
3. Set the oscilloscope to 20 V/div and the time base to 20  $\mu$ s/div. Use external triggering on the vertical pulse.  
**Caution:** use a trigger point on the "cold" side!
4. Ground the scope on the CRT panel ("cold" side) and connect a 10:1 probe to one of the cathodes of the picture tube socket (see circuit diagram F).
5. Measure at test points F017, F018 and F019 on the picture tube socket the DC-level of the measuring pulse (1st full line after the frame blanking) with respect to earth.
6. Select the pin with the highest level found and adjust V<sub>cutoff</sub> by means of the Vg2-potmeter (lowest-one) on the Line Output Transformer (LOT) to 165  $\pm$  5 V<sub>dc</sub> (for all screen sizes).
7. Reset "Contrast" and "Brightness" to their original values.

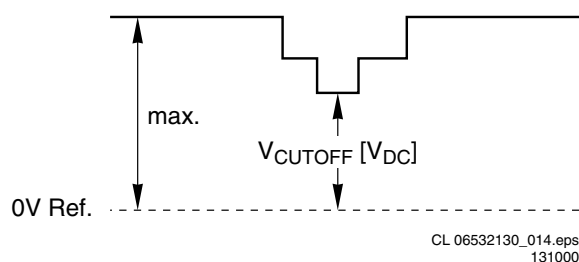


Figure 8-2 Waveform Vg2 alignment

### 8.2.2 Focus alignment

The LOT has the following outline:

- Focus 1 (F1) = Static alignment (black wire).
- Focus 2 (F2) = Dynamic alignment (red wire).

1. Use an external video pattern generator to input a "circle" or "crosshatch" test pattern to the set.
2. Choose "Natural" picture mode with the "Smart Picture" button on the remote control transmitter.
3. Adjust the "dynamic focus 2" potentiometer (in the middle on the LOT) until the horizontal lines at the centre of the screen are of minimum width without introducing a visible haze.
4. Adjust the "static focus 1" potentiometer (highest of the LOT) until the horizontal lines at the sides of the screen are of minimum width without introducing a visible haze.
5. Repeat these two steps to achieve the best result.

## 8.3 Software Alignments

Put the set in the SAM (see the "Service Modes, Error Codes and Fault Finding" section). The SAM menu will now appear on the screen. The different alignment parameters are described further on.

#### Notes:

- All changes to menu items and alignments must be stored manually.
- If an empty EARM (permanent memory) is detected, all settings are set to pre-programmed default values, so the set must be re-aligned.

### 8.3.1 TUNER

#### AGC

1. Set an external pattern generator to a colour bar video signal and connect the RF output to the aerial input of the TV. Set the amplitude to 10 mV and the frequency to 475.25 MHz. Use system PAL B/G if possible, otherwise match the system of your generator with the received signal in the set.
2. Put the set in the SAM mode.
3. Select via the TUNER menu, the AGC sub-menu.
4. Connect a DC multi-meter to pin 1 of the tuner (item 1200 on the LSP).
5. Adjust the AGC until the voltage at pin 1 of the tuner is 3.3 V (+/- 0.1 V). The value can be incremented or decremented by pressing the right/left CURSOR button on the RC.
6. After alignment, save the value(s) with the STORE command in the SAM main menu.

#### IF PLL OFFSET

No adjustments needed: default value is "35".

If the mentioned default value does not give the required result, use the following alignment method:

1. Set an external pattern generator to a crosshatch video signal and connect the RF output to the aerial input of the TV. Set the amplitude to 10 mV and the frequency to 475.25 MHz. Use system PAL B/G if possible, otherwise match the system of your generator with the received signal in the set.
  - For "Negative modulation", the **sound** signal must be a non-modulated FM signal.
  - For "Positive modulation", the **video** signal must have high modulation (100% or above).
2. Put the set in the SAM mode.
3. Select via the TUNER menu, the IF-PLL OFFSET sub-menu.
4. Measure and align:
  - For "Negative modulation", on SCART pin 1 or 3 (**audio** out): Adjust IF-PLL OFFSET until the largest Signal Noise Ratio (SNR) is reached.
  - For "Positive modulation", on SCART pin 19 (**video** out): Adjust IF-PLL OFFSET until you get minimal V-sync disturbance.

### 8.3.2 GEOMETRY

#### Notes:

- Set an **external** pattern generator to a crosshatch video signal and connect the RF output to the aerial input of the TV. Set the amplitude at least 1 mV<sub>rms</sub> (60 dBuV) and the frequency to 475.25 MHz. Use system PAL B/G if possible, otherwise match the system of your generator with the received signal in the set.  
**Note:** Do **not** use the internal test pattern from the GEOMETRY menu!
- Use the default alignment settings, but set "Brightness" to "32".
- For wide screen models, set to "wide screen" mode, for "classic" models, set to "4:3".
- After alignment, save the value(s) with the STORE command in the SAM main menu.

**Service tip:** When the set is equipped with a rotation coil, use this menu item to check its correct alignment. If alignment is not correct, go to the user MENU, choose FEATURES, and select ROTATION. With the use of a crosshatch test pattern, align it to a correct horizontal picture.

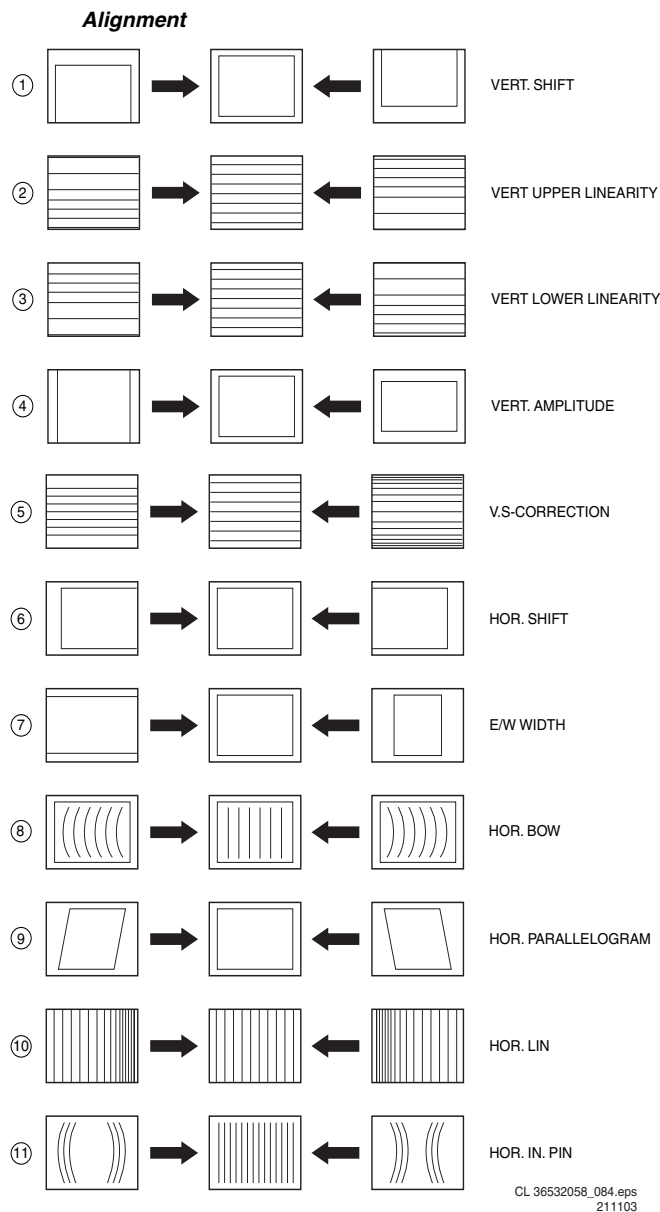


Figure 8-3 Geometry Alignments

- Before starting the vertical alignment, set (in SAM) the following parameters to "0":
  - VERT. SHIFT,
  - VERT. SCOR,
  - VERT. U\_LIN,
  - VERT. L\_LIN.
- Set SERV. BLK to "on", to blank the lower half of the screen.
- Adjust the "VERTICAL SHIFT" potentiometer (R3642 on the LSP) until the picture is centred (to the mechanical centre of the picture tube), and switch SERV. BLK to "off".
- Adjust VERT. U\_LIN and VERT. L\_LIN such, that upper and lower horizontal lines of the crosshatch pattern are just visible.

Use then the following software regulations to modify the geometry:

- VERT. AMPL (Vertical Amplitude): Align for the vertical picture centre, range from -32 to +32.
- VERT. SHIFT (Vertical Shift): Compensating for any gain error in amplifier, adjust range from -32 to +32 to the proper amplitude.
- VERT. SCOR (Vertical S-Correction): Align for equal height of the blocks in the top, the bottom and the middle, range from -63 to +63.

- HOR. SHIFT (Horizontal Shift): Adjust for the horizontal centre of the screen, range from -127 to +128.

Next step is to align the East/West geometry.

- First, set the parameters EW\_5 and EW\_6 to "0"
- EW. WIDTH (East-West Width): This sets the (overall) horizontal size of the picture on the screen. Range from -63 to +63 (with the following EW alignments, these lines can be straightened).
- EW\_1 (East-West parameter 1): Has effect on the length of the upper part of the vertical E/W lines.
- EW\_2 (East-West parameter 2): Has effect on the length of the vertical E/W lines just below EW\_1.
- EW\_3 (East-West parameter 3): Has effect on the length of the vertical E/W lines just below EW\_2.
- EW\_4 (East-West parameter 4): Has effect on the length of the vertical E/W lines just below EW\_3.
- EW\_5 (East-West parameter 5): Has effect on the length of the vertical E/W lines just below EW\_4.
- EW\_6 (East-West parameter 6): Has effect on the length of the vertical E/W lines just below EW\_5.
- EW\_7 (East-West parameter 7): Has effect on the length of the vertical E/W lines just below EW\_6.
- EW\_8 (East-West parameter 8): Has effect on the length of the vertical E/W lines just below EW\_7.
- EW\_9 (East-West parameter 9): Has effect on the length of the vertical E/W lines just below EW\_8.
- EW\_10 (East-West parameters 10): Has effect on the length of the lowest part of the vertical E/W lines.
- HOR. BOW (Horizontal Bow): Align the EW parabola to be symmetrical, range from -63 to +63.
- HOR. PARALLEL (Horizontal Parallel): Align for straight vertical lines on the picture sides, range from -63 to +63.
- HOR. LIN (Horizontal Linearity): Align for equal width of horizontal blocks on the left, the right and the centre, range from 0 to +127.
- HOR. IN\_PIN (Horizontal Inner Pincushion): Align for the inner straight vertical lines, range from 0 to +32.

### 8.3.3 WHITE TONE

In the WHITE TONE sub menu, the colour values for the different colour temperatures can be changed.

The colour temperature mode (NORMAL, DELTA COOL, DELTA WARM) can be selected per colour (R, G, and B) with the RIGHT/LEFT cursor keys. The mode or value can be changed with the UP/DOWN cursor keys.

First, the values for the NORMAL colour temperature must be selected. Then the offset values for the DELTA COOL and DELTA WARM mode can be selected. Note that the alignment values are non-linear.

**Alignment**

No adjustments needed. Use the given default values:

- BMT CutOffFrq: "50Hz".
- Incredible SND: "60%".
- VDolby: "100%".

**Table 8-1 White tone alignment (default values)**

Parameter	28PW8609/12	29PT8509/12	32PW8609/12
Normal Red	-4	+11	+1
Normal Green	-9	+4	-7
Normal Blue	-6	+12	-2
Red BL Offset	7		
Green BL Offset	7		
Blue BL Offset	7		
Delta Cool Red	7		
Delta Cool Green	15		
Delta Cool Blue	33		
Delta Warm Red	2		
Delta Warm Green	3		
Delta Warm Blue	7		

If the mentioned default value does not give the required result, use the following alignment method:

1. Set the external pattern generator to a 100% white pattern, and connect the RF output to the aerial input of the TV. Set the amplitude at least 1 mV<sub>rms</sub> (60 dBuV) and the frequency to 475.25 MHz. Use system PAL B/G if possible, otherwise match the system of your generator with the received signal in the set.
2. Set "Smart Picture" to "Natural".
3. Set "Dynamic NR" to "off".
4. Put the set in the SAM mode.
5. Select via the WHITE TONE menu, the PATTERN sub-menu.
6. Set PATTERN to "on".
7. Set NORMAL GREEN to "32".
8. Measure with the colour analyser (Minolta CA100 Colour Analyser or equivalent), calibrated with the spectra, on the centre of the screen.
9. Adjust with the cursor left/right command the Red and Blue register for the right xy-coordinates (see the table below).
10. Repeat the white tone adjustment also for the colour temperatures COOL and WARM.

**Table 8-2 White tone alignment (with colour analyser)**

White D mode	Temperature	DUV	x	y
Normal	8500 K	+/-0.004	288 +/- 4	300 +/- 4
Cool	11500 K	+/-0.005	273 +/- 5	282 +/- 5
Warm	7000 K	+/-0.005	305 +/- 5	312 +/- 5

**8.3.4 SOUND**

No adjustments needed. Use the given default values:

- PRESCALE LEVEL
  - FM: "+1".
  - NICAM: "+3".
  - EXTAM Gain: "0".
  - PIPMONO: "0".
  - ExtLR-in: "0".
- TRESHOLD LEVEL
  - Over Mod Tresh: "+3dB".
  - NIC ErrLmt\_Hi: "60".
  - NIC ErrLmt\_Lo: "20".
  - NoiseTres SC2: "+2".
  - NoiseHyst SC2: "+4".
- EFFECTS LEVEL

**8.3.5 SMART SETTINGS**

No adjustments needed. Use the given default values:

**Table 8-3 Smart settings (default values)**

Smart setting		Default
RICH	BGT	55
	COL	55
	CON	100
	SHP	6
	HUE	51
NATURE	BGT	51
	COL	48
	CON	80
	SHP	5
	HUE	51
SOFT	BGT	49
	COL	45
	CON	65
	SHP	4
	HUE	51
MULTI	BGT	51
	COL	48
	CON	85
	SHP	6
	HUE	51
BGT= Brightness, COL= Colour, CON= Contrast, SHP= Sharpness, HUE= Hue (not valid for Europe).		

**8.4 Option Settings****8.4.1 Introduction**

The microprocessor communicates with a large number of I2C ICs in the set. To ensure good communication and to make digital diagnosis possible, the microprocessor has to know which ICs to address. The presence / absence of these specific ICs (or functions) is made known by the option codes.

**Notes:**

- After changing the option(s), save them with the STORE command.
- All changes are disregarded when the OPTIONS submenu is left without using the STORE command.
- The new option setting is only active after the TV is switched "off" and "on" again with the Mains switch (the EAROM is then read again).

**8.4.2 Changing options**

Options are used to control the presence / absence of certain features and hardware. There are two ways to change the option settings. All changes in the option settings are saved by selecting STORE and pressing the CURSOR RIGHT key. Some changes will only take affect after the set has been switched OFF and ON with the mains switch (cold start).

**Changing multiple options by changing option byte values**

Option Bytes (OB) makes it possible to set all options very fast. An option byte represents a number of different options. All

options are controlled via eight option bytes (OB0 to OB7). Select an Option Byte you want to change with the CURSOR UP/DOWN keys, and key in the new value. See table for more details. An explanation per option is listed in paragraph "Option Bit Definition".

#### Changing a single option

It is also possible to change an option one at a time. Therefore, select the option with the CURSOR UP/DOWN keys and change its setting with the LEFT/RIGHT keys.

### 8.4.3 Option Settings

In the table, you will find the option settings.

Table 8-4 Option bit overview

Byte number	Bit number	Decimal value	Name	28PW8609/12	29PT8509/12	32PW8609/12
OB1	1	2	SCAVM	1	1	1
	5	32	RCMX	0	0	0
	6	64	EQTO	0	0	0
	8	256	WSSB	1	0	1
	12	4096	DGSC	1	1	1
	14	16384	SSHT	1	0	1
OB2	5	32	DBYV	1	1	1
	9	512	P50	0	0	0
	11	2048	QPEAK	0	0	0
	12	4096	EPG	0	0	0
OB3	0	1	AV3	1	1	1
	1	2	SCT3	0	0	0
	5	32	SOSD	0	0	0
	8	256	ASPR	1	0	1
	9	512	ROTI	1	0	1
OB4	3	8	PITN *	0	0	0
	4	16	PITN *	0	0	0
OB5	6	64	AAVL	1	1	1
OB8	4	16	PIPC	0	0	0
	5	32	PIPT	0	0	0
OB9	0	1	APC	1	1	1
	5	32	VMOD	0	0	0
	7	128	TIME	1	1	1
	8	256	DNR	1	1	1
	9	512	BBD	0	0	0
	10	1024	ASF	0	0	0
OB10	5	32	UKPNP	0	0	0
	6	64	DTXT	1	0	1
	8	256	SBNP	1	1	1
	9	512	AUSB	0	0	0
	10	1024	CZOM	1	0	1
	11	2048	HSHT	1	0	1
	14	16384	CHLK	1	1	1
OB11	9	512	T1H0	1	1	1
	13	8192	FAPG	1	1	1
	14	16384	ACI	1	1	1
OB12	8	256	PLST	1	1	1
OB13	0	1	T2H5	1	1	1
	2	4	T12H	1	1	1
	3	8	EWEU	0	0	0
	7	128	SMCK	1	1	1
	8	256	ATS	1	1	1
* = There are 2 bits for this option: 00 = Philips, 01 = Other						
Unused options have a default value of "0"						

### 8.4.4 Option Bit Definition

#### Sources

**AV3:** Side AV source.

Function: Disable/Enable side AV source.

Values: OFF= Disabled, side AV source is not available. ON= Enabled, side AV source is available.

**SCT3:** SCART 3 input.

Function: Disable/Enable Scart3 input.

Values: OFF= Disabled. ON= Enabled.

#### Video

**ASPR:** Aspect Ratio Setting.

Function: Select between 4 by 3 or 16 by 9 set.

Values: OFF= 4 by 3 set. ON= 16 by 9 set.

**DNR:** Dynamic Noise Reduction.

Function: Disable/Enable (Dynamic) Noise Reduction function.

Values: OFF=Disabled. ON= Enabled.

**BBD:** Black Bar Detection.

Function: Disable/Enable Black Bar Detection.

Values: OFF=Disabled, Black Bar Detection not available. ON= Enabled, Black Bar Detection available.

Note: The Auto Screen Fit will not be included in the picture size loop when BBD is OFF.

**ASF:** Auto Screen Fit.

Function: Disable/Enable Auto Screen Fit.

Values: OFF=Disabled, Auto Screen Fit is not available. ON= Enabled, Auto Screen is Fit available.

**CZOM:** Continuous Zoom.

Function: Disable/Enable Continuous Zoom.

Values: OFF=Disabled. ON= Enabled.

**HSHT:** Heading Shift.

Function: Disable/Enable Heading Shift.

Values: OFF=Disabled. ON= Enabled.

**SSHT:** Subtitle Shift.

Function: Disable/Enable Subtitle Shift.

Values: OFF=Disabled. ON= Enabled.

**APC:** Auto Picture Control (Auto TV).

Function: Disable/Enable Auto picture control.

Values: OFF= Disabled. ON= Enabled.

**WSSB:** Wide Screen Signalling Bit.

Function: Disable/Enable Wide screen Signalling bit function.

Values: OFF= Disabled. ON= Enabled.

**ROTI:** Rotation Tilt.

Function: Change the tilt level of picture tube.

Values: OFF= Disabled, menu item ROTATION is not available. ON= Enabled, menu item ROTATION is available.

**DGSC:** Digital Scan.

Function: Enable/Disable the Digital Scan in the DIGITAL OPT menu.

Values: OFF= Disabled, menu item DIG SCAN is not available. ON= Enabled, menu item DIG SCAN is available.

**SCAVM:** SCAVEM.

Function: Enable/Disable SCAVEM.

Values: OFF= Disabled. ON= Enabled.

#### Audio

**AAVL:** Automatic Volume Level control.

Function: Disable/Enable automatic volume leveller function.

Values: OFF=Disabled, menu item AVL is not available. ON= Enabled, menu item AVL is available.

**DBYV:** Dolby Virtual.

Function: Select surround setting.

Values: OFF= Disabled, DOLBY VIRTUAL setting is not available. ON= Enabled, DOLBY VIRTUAL setting is available.  
Note: Incredible surround & Dolby virtual are mutually exclusive.

**EQTO:** Equalizer or Tone control.

Function: Selection between Equalizer and Tone control (Bass and Treble).

Values: OFF= Tone control (Bass and Treble). ON= Equalizer.  
Note: Equalizer and Tone (Bass and treble) control are mutually exclusive.

**QPEAK:** AV Sound Mode detection.

Function: The current Sound Mode detection in AV is not working correctly. The optimal threshold value for the correct sound mode detection is still being investigated. Therefore, this is needed to disable the Sound Mode detection in AV until the correct threshold is identified.

Value: OFF= Disabled, AV sound auto detection is not available. ON= Enabled. AV sound auto detection is available.

**Tuning****PITN:** Philips Tuner.

Function: Choose the tuner type that is configured in the hardware.

Values: OFF= Disabled, ALPS compatible tuner is used. ON= Enabled, Philips compatible tuner is used.

**Installation****ACI:** Automatic Channel Installation.

Function: Disable/Enable automatic channel installation.

Values: OFF= Disabled Automatic Channel Installation. ON= Enabled Automatic Channel Installation.

Note: Download present program when ACI is ON.

**ATS:** Automatic Tuning System.

Function: Disable/Enable automatic tuning system.

Values: OFF= Disabled, automatic tuning system is ignored.  
ON= Enabled Automatic Tuning System, sort the program in an ascending order starting from Program 1.

Note: Sort the program in an ascending order starting from Program 1 when ATS is ON.

**VMOD:** Virgin Mode.

Function: Disable/Enable virgin mode.

Values: OFF= Disabled, cannot access virgin mode. ON= Enabled, can access virgin mode.

Note: Plug and Play menu item will be displayed to perform installation at the initial start up of the TV when MOD is ON and after installation is done, VMOD will be automatically set to OFF.

**UKPNP:** UK Plug and Play.

Function: Disable/Enable UK's default Plug and Play setting.

Values: OFF= Disabled, UK's default Plug and Play setting is not available. ON= Enabled, UK's default Plug and Play setting is available.

Note: When UKPNP and VMOD are ON at the initial set-up, LANGUAGE= ENGLISH, COUNTRY= GREAT BRITAIN and after auto store is complete, VMOD will be set automatically to OFF while UKPNP remain ON.

**Program Selection****PLST:** Program List.

Function: Disable/Enable Program List function.

Values: OFF= Disabled, the access to Program List Command is ignored. ON= Enabled, the access to Program List Command is processed.

**Picture In Picture****PIPC:** PIP Control.

Function: Disable/Enable submenu to adjust PIP Picture settings

Values: OFF= Disabled, PIP feature is not available. ON= Enabled, PIP feature is available

Note: PIP is present in FEATURES submenu when PIPC is ON. When PIPC is switched OFF, bits PIPT, W4X3, and W169 must be automatically set to OFF.

**PIPT:** PIP Tuner.

Function: To determine the presence of second tuner.

Values: OFF= Disabled, second tuner is not available. ON= Enabled, second tuner is available.

Note: When PIPC is switched OFF, bits PIPT, W4X3, and W169 must be automatically set to OFF.

**Clock****SMCK:** Smart Clock/Autochron.

Function: Disable/Enable smart clock/AutoChron function.

Values: OFF= Disabled, menu item smart clock function not available. ON= Enabled, menu item smart clock function available.

Note: For NAFTA, AUTOCHRON is present in INSTALL submenu when SMCK is ON. For AP-PAL and EUROPE, Smart clock downloaded from Teletext is enabled when SMCK is ON.

**TIME:** Timer.

Function: Disable/Enable menu item TIMER.

Values: OFF= Disabled, menu item TIMER not available. ON= Enabled, menu item TIMER available.

Note: TIMER submenu is present in FEATURES submenu when TIME is ON.

**Data Service****DTXT:** Dual Text.

Function: Disable/Enable Dual Text.

Values: OFF= Disabled. Dual text is not available. ON= Enabled. Dual text is available.

**RCMX:** RC for Teletext Mix Mode.

Function: Disable/Enable RC for Teletext Mix mode support.

Values: OFF= Disabled. RC for mix mode is not available. ON= Enabled, RC for mix mode is available.

**FAPG:** Favourite Page.

Function: Disable/Enable favourite page in Teletext mode.

Values: OFF= Disabled favourite page in Teletext mode. ON= Enabled favourite page in Teletext mode.

**T1H0:** 100-Page Text.

Function: Disable/Enable 100-page Text.

Values: OFF= Disabled. 100-page text is not available. ON= Enabled, 100-page text is available.

**T2H5:** 250-Page Text.

Function: Disable/Enable 250-page Text.

Values: OFF= Disabled. 250-page text is not available. ON= Enabled, 250-page text is available.

**T12H:** 1200-Page Text.

Function: Disable/Enable 1200-page Text.

Values: OFF= Disabled. 1200-page text is not available. ON= Enabled, 1200-page text is available.

**Lock Features****CHLK:** Child Lock.

Function: Disable / Enabled function to block/unblock channels.

Values: OFF= Disabled. ON= Enabled.

**OSD/Menu Related****SOSD:** Smart OSD.

Function: Disable/Enable full display of SMART SOUND and SMART PICTURE OSD.

Values: OFF= Disabled, full display of SMART SOUND and SMART PICTURE OSD not available. ON= Enabled, full display of SMART SOUND and SMART PICTURE OSD available.

#### **Miscellaneous**

**SBNP:** Auto Standby with No Picture.

Function: Disable/Enable automatic switch to standby after 15 minutes when no ident.

Values: OFF= Disabled, no automatic switch to standby. ON= Enabled, set switches to standby after 15 minutes when no ident.

**AUSB:** Auto Standby Auto On.

Function: Disable/Enable automatic switch to standby if no RC or local keyboard response after 4 hours provided that the set is ON from standby mode by the timer.

Values: OFF= Disabled, no automatic switch to standby. ON= Enabled, set switches to standby after 4 hours.

**EPG:** Electronic Program Guide.

Function: Disable/Enable EPG feature.

Values: OFF= Disabled, EPG feature is not available. ON= Enabled, EPG feature is available.

**P50:** P50 (Easylink).

Function: Disable/Enable P50 feature.

Values: OFF= Disabled, P50 feature not available. ON= Enabled, P50 feature is available.

**EWEU:** East/West Europe region.

Function: Select between East Europe and West Europe.

Values: OFF= West Europe. ON= East Europe