

## AK37 CHASSIS MANUAL ADJUSTMENT PROCEDURE

In order to enter service menu, first enter the main menu and then press the digits 4, 7, 2 and 5 respectively. To select adjust parameters, use ù or ú buttons. To change the selected parameter, use < or > buttons. Selected parameter will be highlighted.

Entire service menu parameters of AK37 CHASSIS are listed below. For some of parameters the default values are given on the same table.

REGISTER	PARAMETER	NOTE
OSD	OSD Horizontal Position	ADJUST HORIZONTAL POSITION FOR OSD
IF1	IF Coarse Adjust	
IF2	IF Fine Adjust	
IF3	IF Coarse Adjust for L-Prime	
IF4	IF Fine Adjust for L-Prime	
AGC	Automatic Gain Control	
VLIN	Vertical Linearity	ADJUST VERTICAL LINEARITY
VS1A	Vertical Size for 50 Hz / 4:3 (AK30)	
VS1B	Vertical Size for 50 Hz / 16:9 (AK30)	
VP1	Vertical Position for 50 Hz (AK30)	
HP1	Horizontal Position for 50 Hz (AK30)	
VS2A	Vertical Size for 60 Hz / 4:3 (AK30)	
VS2B	Vertical Size for 60 Hz / 16:9 (AK30)	
VP2	Vertical Position for 60 Hz (AK30)	
HP2	Horizontal Position for 60 Hz (AK30)	
RGBH	RGB Horizontal Shift Offset	CVBS – RGB HORIZONTAL POSITION COMPENSATION
VSOF	Vertical Size Offset for 60Hz (AK37)	ADJUST AFTER SETTING ALL GEOMETRY VALUES IN 50 HZ
VPOF	Vertical Position Offset for 60 Hz (AK37)	ADJUST AFTER SETTING ALL GEOMETRY VALUES IN 50 HZ
HSOF	Horizontal Size Offset for 60 Hz (AK37)	ADJUST AFTER SETTING ALL GEOMETRY VALUES IN 50 HZ
HPOF	Horizontal Position Offset for 60 Hz (AK37)	ADJUST AFTER SETTING ALL GEOMETRY VALUES IN 50 HZ
HTOF	Horizontal Trap Correction Offset for 60 Hz (AK37)	ADJUST AFTER SETTING ALL GEOMETRY VALUES IN 50 HZ
WR	White Point Adjust for RED	
WG	White Point Adjust for GREEN	
WB	White Point Adjust for BLUE	
BR	Bias for RED	
BG	Bias for GREEN	
APR	APR Threshold	
FMP1	FM Prescaler when AVL is OFF	STEREO ONLY
NIP1	NICAM Prescaler when AVL is OFF	STEREO ONLY
SCP1	SCART Prescaler when AVL is OFF	STEREO ONLY
FMP2	FM Prescaler when AVL is ON	STEREO ONLY
NIP2	NICAM Prescaler when AVL is ON	STEREO ONLY
SCP2	SCART Prescaler when AVL is ON	STEREO ONLY
S1V	SCART1 Volume	STEREO ONLY
S2V	SCART2 Volume	STEREO ONLY
F1H	High Byte of crossover frequency for VHF1-VHF3	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
F1L	Low Byte of crossover frequency for VHF1-VHF3	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
F2H	High Byte of crossover frequency for VHF3-UHF	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
F2L	Low Byte of crossover frequency for VHF3-UHF	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
BS1	Band Switch Byte for VHF1 Meaningful for only	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
BS2	Band Switch Byte for VHF3 Meaningful for only	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
BS3	Band Switch Byte for UHF Meaningful for only	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
CB	Control Byte Meaningful for only PLL Tuner	MEANINGFUL FOR ONLY PLL TUNER (see tuner setting table)
OP1	Option 1 (see the Option List)	PERIPHERAL OPTIONS (see option table)
OP2	Option 2 (see the Option List)	RECEPTION STANDART OPTIONS (see option table)
OP3	Option 3 (see the Option List)	VIDEO OPTIONS (see option table)
OP4	Option 4 (see the Option List)	TV FEATURE OPTIONS (see option table)
OP5	Option 5 (see the Option List)	CHANNEL TABLE OPTIONS (see option table)
TX1	Teletext Option 1 (see the Option List)	TELETEXT OPTIONS (see option table)
GEOM	Geometry Option (see the Option List) (AK37)	GEOMETRY OPTIONS (see option table)

In order to enter the geometry menu, press the green button on the remote control :

REGISTER	PARAMETER	NOTE
VSIZ	Vertical Size	ADJUST VERTICAL SIZE (50 HZ)
VPOS	Vertical Position	ADJUST VERTICAL POSITION (50 HZ)
VSCO	Vertical S Correction.	ADJUST VERTICAL S CORRECTION (50HZ)
VCCO	Vertical C Correction.	ADJUST VERTICAL C CORRECTION (50HZ)
HSIZ	Horizontal Size	ADJUST HORIZONTAL SIZE (50 HZ)
HPOS	Horizontal Position.	ADJUST HORIZONTAL POSITION (50 HZ)
HPCO	Horizontal Pincushion Correction for	ADJUST HORIZONTAL PINCUSHION CORRECTION (50 HZ)
HCCO	Horizontal Corner Correction.	ADJUST HORIZONTAL CORNER CORRECTION (50HZ)
HTCO	Horizontal Trap Correction.	ADJUST HORIZONTAL TRAP CORRECTION (50HZ)
VZSZ	Zoom Vertical Size.	ADJUST VERTICAL SIZE FOR ZOOM MODE (50HZ)

**USING REMOTE CONTROL BUTTONS**

**RED BUTTON** (For Stereo models only): It switches the AVL to ON or OFF mode on service menu.

AVL word is visible on service menu when AVL is on.

**GREEN BUTTON** : It is used to enter the geometry menu.

**YELLOW BUTTON** : It switches to VERTICAL SCAN DISABLE mode on service menu. It is useful to adjust screen voltage. It is also used as Program Down button on geometry menu.

**BLUE BUTTON** : It is used to adjust AGC and IF automatically on service menu. It is also used as Program Up button on geometry menu.

**TTX UPDATE BUTTON** : It is used to change the picture mode on geometry menu.

**WHITE BALANCE ADJUSTMENT**

The following three parameters are used to make white balance adjustment. To do this, use a Colour Analyser. Using WR (White point adjust for RED), WG (White point adjust for GREEN), WB (White point adjust for BLUE) parameters, insert the + sign in the square which is in the middle of the screen.

The suggested values for these parameters are given on the table above.

**AGC ADJUSTMENT**

In order to do AGC adjustment, enter a **60dBmV** RF signal level from channel C-12 (224.25 MHz)

Select AGC parameter from service menu. Press BLUE (INSTALL) button from remote controller. The adjustment will be done automatically by software. See the AGC indicator on service menu, it must be 1. Check that picture is normal at 90dBmV signal level.

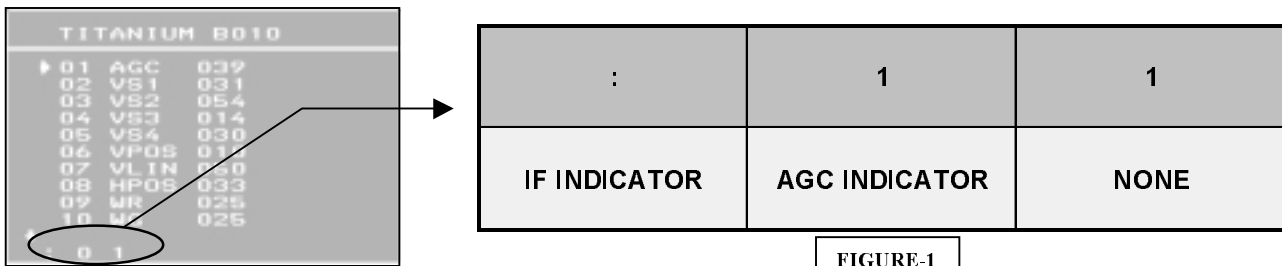


FIGURE-1

**IF NEGATIVE ADJUSTMENT (WITHOUT L' SYSTEMS)**

Set the video pattern to a **PAL colour bar** pattern with frequency **38.9 MHz**. Apply this IF signal to PIN-10 and PIN-11 of tuner. Press PROG-1 and after that BLUE (INSTALL) button from remote controller. Select the standart as **BG** or **I**. (if BG is not available) Enter service menu. Select **IF1** parameter from service menu and press BLUE (INSTALL) button from remote controller. IF adjustment will be done automatically by software. See the IF indicator on service menu, it must be like on FIGURE-1 shown above.


**IF POSITIVE ADJUSTMENT (WITH L' SYSTEMS)**

Set the video pattern to a **SECAM-L colour bar** pattern with frequency **33.9 MHz**. Apply this IF signal to PIN-10 and PIN-11 of tuner. Press PROG-1 and after that BLUE (INSTALL) button from remote controller. Select the BAND VHF-1 (S1 – S4 for PLL tuners) and standart as **L'**. Enter service menu. Select **IF1** parameter from service menu and press BLUE (INSTALL) button from remote controller. IF adjustment will be done automatically by software. See the IF indicator on service menu, it must be like on FIGURE-1 shown above.

## OSD HORIZONTAL POSITION ADJUSTMENT

Select OSD parameter on service menu. Adjust the horizontal position of OSD to the middle of screen, by using the reference bar on bottom of service menu.

## TELETEXT BRIGHTNESS ADJUSTMENT

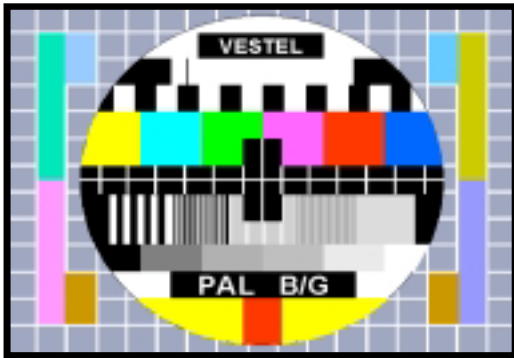
Set the TV set to a channel with Teletext. Enter service menu. Press TEXT  button from remote controller. Adjust BRIGHTNESS parameter to value 39 by using left-right buttons from remote controller. Press TV button and MENU button from remote controller respectively. Adjustment is done.

## GEOMETRY ADJUSTMENTS

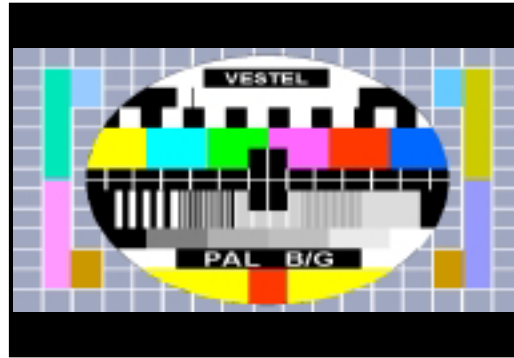
First adjust all the 50 Hz geometry values defined in geometry menu for each picture mode. Then, enter service menu and adjust 60 Hz geometry values for each picture mode by using offset adjustment items.

<p><b>Vertical Size for 50 Hz (VSIZ and VZSZ)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change VSIZ till the picture format becomes the required format. Check and readjust Vertical Size item if the adjustment becomes improper after some other geometric adjustments are done. Repeat this for every picture mode. Use VZSZ for proper vertical size adjustment in zoom, subtitle and cinema modes.</p>
<p><b>Vertical Position for 50 Hz (VPOS)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change Vertical Position till the test pattern is vertically centred. Horizontal line at the centre pattern is in equal distance both to upper and lower side of the picture tube. Check and readjust Vertical Position item if the adjustment becomes improper after some other geometric adjustments are done. Repeat this for every picture mode.</p>
<p><b>Horizontal Size for 50 Hz (HSIZ)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change HSIZ (Horizontal Size) till the picture format becomes the required format. Check and readjust Horizontal Size item if the adjustment becomes improper after some other geometric adjustments are done. Repeat this for every picture mode.</p>
<p><b>Horizontal Position for 50 Hz (HPOS)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change Horizontal Position till the picture is horizontally centred. Check and readjust Horizontal Position item if the adjustment becomes improper after some other geometric adjustments are done. Repeat this for every picture mode.</p>
<p><b>Horizontal Trap Correction for 50 Hz (HTCO)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change HTCO till the picture format becomes the required format. Repeat this for every picture mode.</p>
<p><b>Vertical S Correction for 50 Hz (VSCO)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change VSCO till the picture format becomes the required format. Repeat this for every picture mode.</p>
<p><b>Vertical C Correction for 50 Hz (VCCO)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change VCCO till the picture format becomes the required format. Repeat this for every picture mode.</p>
<p><b>Horizontal Pincushion Correction for 50 Hz (HPCO)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change HPCO till the picture format becomes the required format. Repeat this for every picture mode.</p>
<p><b>Horizontal Corner Correction for 50 Hz (HCCO)</b> Enter a PAL B/G circle test pattern via RF. Enter geometry menu and press TTX UPDATE button from remote controller to switch to any picture mode on geometry menu. Change HCCO till the picture format becomes the required format. Repeat this for every picture mode.</p>
<p><b>Vertical Size Offset for 60 Hz (VSOF)</b> Enter a NTSC-M circle test pattern in any picture mode via RF. Enter service menu. By changing VSOF value adjust vertical size for 60Hz. Repeat this for every picture mode.</p>
<p><b>Vertical Position Offset for 60 Hz (VPOF)</b> Enter a NTSC-M circle test pattern in any picture mode via RF. Enter service menu. By changing VPOF value adjust vertical position for 60Hz. Repeat this for every picture mode.</p>
<p><b>Horizontal Size Offset for 60 Hz (HSOF)</b> Enter a NTSC-M circle test pattern in any picture mode via RF. Enter service menu. By changing HSOF value adjust horizontal size for 60Hz. Repeat this for every picture mode.</p>
<p><b>Horizontal Position Offset for 60 Hz (HPOF)</b> Enter a NTSC-M circle test pattern via RF. Enter service menu. By changing HPOF value adjust horizontal position for 60Hz. Repeat this for every picture mode.</p>
<p><b>Horizontal Trap Correction Offset for 60 Hz (HTOF)</b> Enter a NTSC-M circle test pattern via RF. Enter service menu. By changing HTOF value adjust horizontal trap correction for 60Hz. Repeat this for every picture mode.</p>
<p><b>RGB MODE Horizontal Position (RGBH)</b> Enter a RGB circle test pattern via video inputs. Force the TV to RGB mode by pressing AV button from remote controller. Change RGB Horizontal Position till the picture is horizontally centred. Check and readjust RGBH item if the adjustment becomes improper after some other geometric adjustments are done.</p>

50 Hz. 4:3 Geometry Adjustment for 4:3 Tube



50 Hz. 16:9 Geometry Adjustment for 4:3 Tube



50 Hz. 14:9 Geometry Adjustment for 16:9 Tube



### OPTION SETTINGS

Select concerned OPTION from service menu. To change a bit on selected option press the same number from remote controller. So this bit will be changed from 1 to 0 or from 0 to 1. If any option is selected on service menu you will see an indicator row shows the bit numbers.

OP1 – Peripheral Options		
		NOTE
BIT-7	NOT USED	0 default value
BIT-6	1, Display "AV-3" as "F-AV" 0, Display "AV-3" as "B-AV"	FAV or BAV IN selection option
BIT-5	1, Turn back TV mode after the last AV (with AV key) 0, Turn back first AV mode after the last AV	
BIT-4	1, SVHS is available in AV key stream 0, SVHS is NOT available in AV key stream	1, if AV-2 is selected
BIT-3	1, RGB is available in AV key stream 0, RGB is NOT available in AV key stream	1, if AV-1 is selected
BIT-2	1, AV-3 is available in AV key stream 0, AV-3 is NOT available in AV key stream	1, if FAV-IN or BAV-IN available
BIT-1	1, AV-2 is available in AV key stream 0, AV-2 is NOT available in AV key stream	
BIT-0	1, AV-1 is available in AV key stream 0, AV-1 is NOT available in AV key stream	

OP2 – Reception Standard Options		
		NOTE
BIT-7	1, 3-button keyboard (V-, P+, V+) 0, 4/5 button keyboard (V-, V+, P-, P+, Menu)	0, default value
BIT-6	1, L/L' is available 0, L/L' is not available	
BIT-5	1, I is available 0, I is not available	
BIT-4	1, DK is available 0, DK is not available	
BIT-3	1, BG is available 0, BG is not available	
BIT-2	1, 3D PANORAMA is visible 0, DOLBY VIRTUAL is visible	
BIT-1	1, For Secam LLP, EXT MONO INPUT is available 0, Inner demodulation is available for SECAM LLP	
BIT-0	1, Low power consumption at standby is available 0, low power consumption at standby is not available	1, default value

OP3 – Video Options		NOTE
BIT-7	Xtal Configuration	
BIT-6	00, 1 Xtal PAL 4.43 01, 2 Xtal PAL/NTSC 4.43/3.58 10, 1 Xtal PAL/SEC/NTSC 4.43 11, 2 Xtal PAL/SEC/NTSC 4.43/3.58	
BIT-5	1, Enable Blue back when no signal in AV mode 0, blank back when no signal in AV mode	1, default value
BIT-4	1, White Insertion is ON 0, White Insertion is OFF	1, default value
BIT-3	1, Blue Background when no signal in TV mode 0, Disable Blue Background in TV mode	
BIT-2	1, Semi-transparent background for OSD 0, Solid Menu background for OSD	1, default value
BIT-1	1, Black Stretch is ON 0, Black Stretch is OFF	0, default value
BIT-0	1, APR is ON 0, APR is OFF	1, default value

OP4 – TV Features		NOTE
BIT-7	1, Headphone is available (for STEREO models) 0, Headphone is not available	
BIT-6	1, Arabic/Persian is available in menu languages (for A,D,E,F, and later) 0, Arabic/Persian is not available in menu languages	
BIT-5	1, Hebrew is available in menu languages (for A,D,E,F, and later) 0, Hebrew is not available in menu languages	
BIT-4	1, Hotel Mode can be activated 0, Hotel Mode can not be activated	
BIT-3	1, No Signal Timer is enabled 0, No Signal Timer is disabled	3 min. countdown and switch off when no signal
BIT-2	1, Frequency based search for PLL tuner 0, Channel table based search for PLL tuner no meaning for VST tuner	
BIT-1	1, 3-band tuning (VHF1, VHF3, UHF) 0, 1-band tuning (only UHF)	1, default value
BIT-0	1, Extra 200 msec blanking for VST 0, no extra blanking	1, default value

OP5 – Channel Tables		NOTE
BIT-7	1, Extra 150 msec blanking more for VST 0, no extra blanking	1, default value
BIT-6	1, "Programme" item in AUTOSTORE menu is visible 0, "Programme" item in AUTOSTORE menu is invisible	1, default value
BIT-5	1, Force both channel on even no carrier (carrier mute disable) 0, Default value after reset	
BIT-4	1, French OS Channel Table is available 0, French OS Channel Table is not available	1, when L/L' is available
BIT-3	1, French Channel Table is available 0, French Channel Table is not available	1, when L/L' is available
BIT-2	1, England Channel Table is available 0, England Channel Table is not available	1, when I/I' is available
BIT-1	1, East Europe Channel Table is available 0, East Europe Channel Table is not available	1, when B/G is available
BIT-0	1, West Europe Channel Table is available 0, West Europe Channel Table is not available	1, when DK is available

TX1 – Teletext Options		
		NOTE
BIT-7	1, AUTO_APS is available after power_on 0, AUTO_APS is not available	
BIT-6	RESERVED (must be 0)	0, default value
BIT-5	<b>5 4 3 Teletext Language Groups</b>	
BIT-4	<b>000, Group 1 – West</b>	
BIT-3	(English, French, Swedish, Czech, German, Portuguese, Italian, Rumanian)	
	<b>001, Group 2 – West/East</b>	
	(Polish, French, Swedish, Czech, German, Serbian, Italian, Rumanian)	
	<b>010, Group 3 – West/Turkish</b>	
	(English, French, Swedish, Turkish, German, Portuguese, Italian, Rumanian)	
	<b>011, Group 4 – East/Cyrillic</b>	
	(English, Cyrillic, Swedish, Czech, German, Serbian, Lettish, Rumanian)	
	<b>100, Group 5 – Arabic</b>	
	(English, French, Swedish, Turkish, German, Hebrew, Italian, Arabic)	
BIT-2	<b>2 1 0 Device type selection</b>	101, default value
BIT-1	000, EPROM M6 A	
BIT-0	001, ROM H5 P	
	010, ROMLESS H5 P	
	011, EPROM M6 R	
	100, ROM M6 R	
	101, OSDEPROM M6 R	
	110, ROM M6 P	
	111, Read Auto Gain Table for the device from EEPROM	

GEOM – Geometry Options		
		NOTE
BIT-7	NOT USED	0, default value
BIT-6	1, SVHS audio input in FAV/BAV in 0, SVHS in AV2	1, default value.
BIT-5	1, AK37 adjustment values are valid(default for AK37) 0, AK30 adjustment values are valid	
BIT-4	1, Zoom mode is available 0, Zoom mode is not available	
BIT-3	1, Subtitle mode is available 0, Subtitle mode is not available	
BIT-2	1, Cinema mode is available 0, Cinema mode is not available	
BIT-1	1, 14:9 mode is available 0, 14:9 mode is not available	
BIT-0	1, 16:9 tube is used 0, 4:3 tube is used	