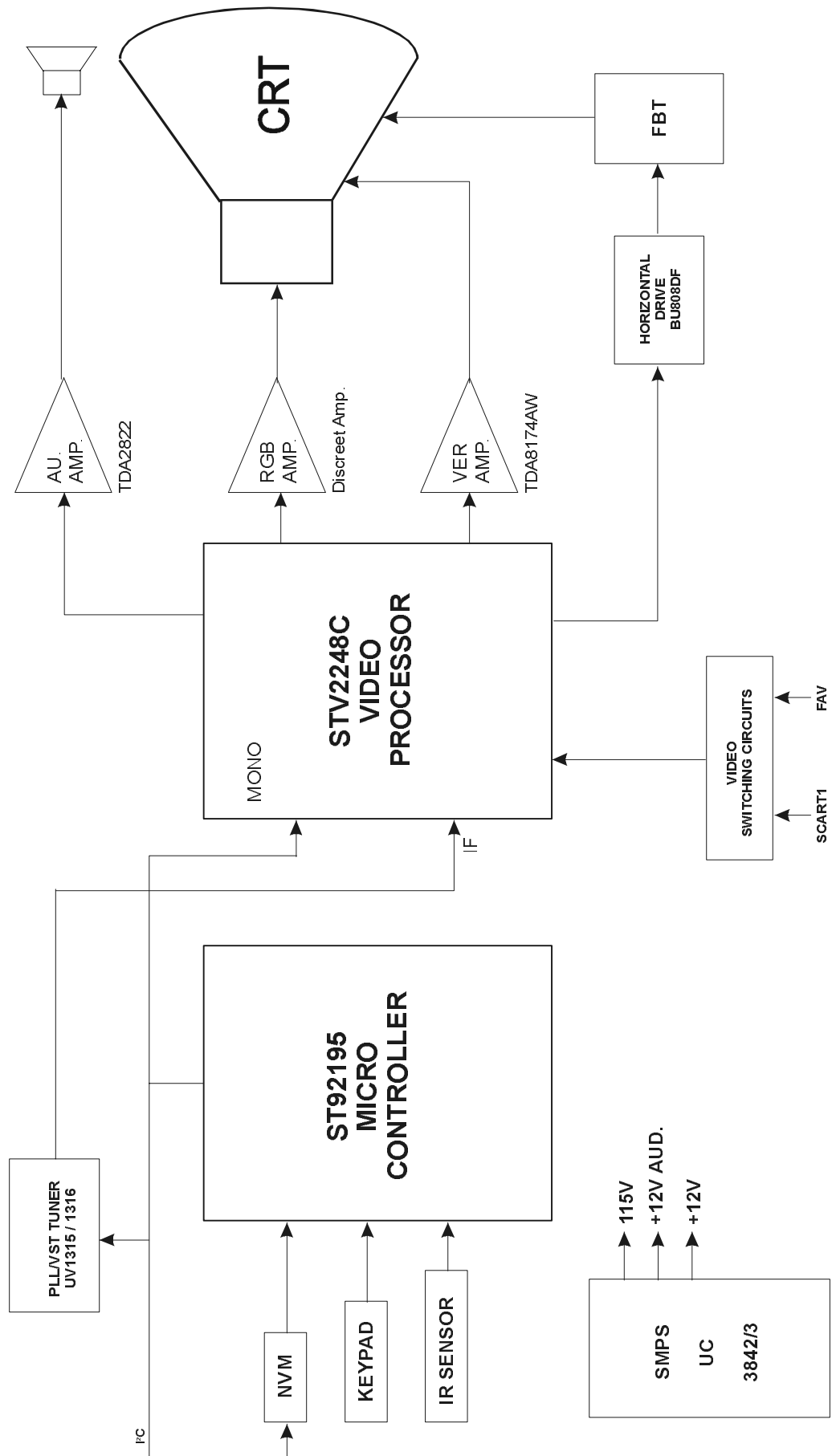


GENERAL BLOCK DIAGRAM OF CHASSIS 11AK36



AK36/TITANIUM TELETXT – Languages Groups

GROUP 1 - WEST

- ENGLISH
- FRENCH
- SWEDISH
- CZECH
- GERMAN
- PORTUGUESE
- ITALIAN
- RUMANIAN

GROUP 2 – WEST / EAST

- POLISH
- FRENCH
- SWEDISH
- CZECH
- GERMAN
- SERBIAN
- ITALIAN
- RUMANIAN

GROUP 3 – WEST / TURKEY

- ENGLISH
- FRENCH
- SWEDISH
- TURKISH
- GERMAN
- PORTUGUESE
- ITALIAN
- RUMANIAN

GROUP 4 – EAST / CYRILLIC

- ENGLISH
- CYRILLIC
- SWEDISH
- CZECH
- GERMAN
- SERBIAN
- LETTISH
- RUMANIAN

GROUP 5 - ARABIC

- ENGLISH
- FRENCH
- SWEDISH
- TURKISH
- GERMAN
- HEBREW
- ITALIAN
- ARABIC

Using Coloured Buttons

RED : No function.

GREEN : Is used to switch the aspect ratio between 4:3 and 16:9.

YELLOW : Is used to prepare the system for screen-adjustments.

BLUE : No function.

AK36 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 \wedge or \vee buttons. To change the selected parameter, use \leftarrow or \rightarrow buttons. Selected parameter will be highlighted.

Entire service menu parameters of AK36 CHASSIS are listed below. For some of parameters the default values are given on the same table.

REGISTER	PARAMETER	NOTE (NUMBERS ARE DEFAULT VALUES FOR CONCERNED ARAMETER)
OSD	OSD Horizontal Position	ADJUST HORIZONTAL POSITION FOR OSD
IF1	IF Coarse Adjust	IF1 Adjust Course Neg. Adj. (WO / L')
IF2	IF Fine Adjust	IF2 Adjust Fine Neg. Adj. (WO / L')
IF3	IF Coarse Adjust for L-Prime	IF3 Adjust Course Pos. Adj. (W / L')
IF4	IF Fine Adjust for L-Prime	IF4 Adjust Fine Pos. Adj. (W / L')
AGC	Automatic Gain Control	AGC Adjust AGC
VLIN	Vertical Linearity	ADJUST VERTICAL LINEARITY
VS1A	Vertical Size for 50 Hz / 4:3	ADJUST VERTICAL SIZE FOR 4:3 MODE (50 HZ)
VS1B	Vertical Size for 50 Hz / 16:9	ADJUST VERTICAL SIZE FOR 16:9 MODE (50 HZ)
VP1	Vertical Position for 50 Hz	ADJUST VERTICAL POSITION (50 HZ)
HP1	Horizontal Position for 50 Hz	ADJUST HORIZONTAL POSITION (50 HZ)
VS2A	Vertical Size for 60 Hz / 4:3	ADJUST VERTICAL SIZE FOR 4:3 MODE (60 HZ)
VS2B	Vertical Size for 60 Hz / 16:9	ADJUST VERTICAL SIZE FOR 16:9 MODE (60 HZ)
VP2	Vertical Position for 60 Hz	ADJUST VERTICAL POSITION (60 HZ)
HP2	Horizontal Position for 60 Hz	ADJUST HORIZONTAL POSITION (60 HZ)
RGBH	RGB Horizontal Shift Offset	CVBS – RGB HORIZONTAL POSITION COMPENSATION
WR	White Point Adjust for RED	40
WG	White Point Adjust for GREEN	40
WB	White Point Adjust for BLUE	40
BR	Bias for RED	31
BG	Bias for GREEN	31
APR	APR Threshold	10
FMP1	FM Prescaler when AVL is OFF	9 (STEREO ONLY)
NIP1	NICAM Prescaler when AVL is OFF	20 (STEREO ONLY)
SCP1	SCART Prescaler when AVL is OFF	13 (STEREO ONLY)
FMP2	FM Prescaler when AVL is ON	13 (STEREO ONLY)
NIP2	NICAM Prescaler when AVL is ON	16 (STEREO ONLY)
SCP2	SCART Prescaler when AVL is ON	13 (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)

USING COLOUR BUTTONS ON SERVICE MENU

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 switched the PICTURE MODE to 4:3 or 16:9 on service menu. It is usefull when it is necessary to adjust 16:9 picture mode vertical size.

YELLOW BUTTON : It switches to VERTICAL SCAN DISABLE mode. It is usefull to adjust screen voltage.

BLUE BUTTON : It is used to adjust AGC and IF automatically on service 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.

TITANIUM B010		
01 AGC	039	
02 VS1	031	
03 VS2	054	
04 VS3	014	
05 VS4	030	
06 VP05	010	
07 VL IN	020	
08 HP05	033	
09 WR	025	
10 WB	025	
: 0 1		

:	1	1
IF INDICATOR	AGC INDICATOR	NONE

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 (C1 – C4 for PLL tuners) and standart as **L'** (L for PLL Tuner). 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. (OSD adjust also Horizontal position for text screen)

TELETEXT BRIGHTNESS ADJUSTMENT

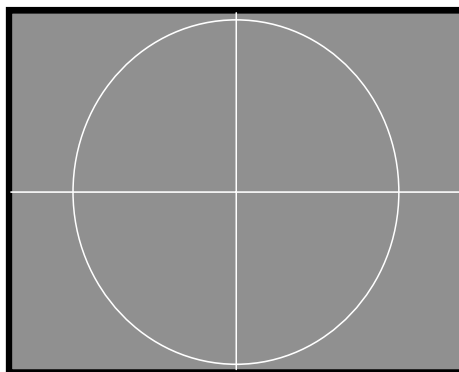
Set the TV set to a channel with TeleText. Enter service menu. Press TEXT  button from remote controller. Adjust BRIGHTNESS parameter to value **30** by using left-right buttons from remote controller. Press TV button and MENU button from remote controller respectively. Adjustment is done.

	Vertical Linearity (VLIN) Enter a PAL B/G circle test pattern via RF. Change VLIN till you see circle as round as possible.
50 Hz (PAL PICTURE) ADJUSTMENTS	Vertical Size (VS1A) Enter a PAL B/G circle test pattern via RF. Change VS1A (Vertical Size) till horizontal black lines on both the upper and lower part of the test pattern become very close to the upper and lower horizontal sides of picture tube and nearly about to disappear. Check and readjust Vertical Size item if the adjustment becomes improper after some other geometric adjustments are done.
	Vertical Size (VS1B) Enter a PAL B/G circle test pattern via RF. Enter service menu and press GREEN (PICTURE) button from remote controller to switch to 16:9 picture mode on service menu. Change VS1B (Vertical Size) till the picture becomes 16:9 format. Check and readjust Vertical Size item if the adjustment becomes improper after some other geometric adjustments are done.
	Vertical Position (VP1) Enter a PAL B/G circle test pattern via RF. 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.
	Horizontal Position (HP1) Enter a PAL B/G circle test pattern via RF. 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.
60 Hz (NTSC PICTURE) ADJUSTMENTS	Vertical Size (VS2A) Enter a NTSC-M circle test pattern via RF or video inputs. Change Vertical Size till the checkered parts of test pattern on both of upper and lower side disappear. Check and readjust Vertical Size item if the adjustment becomes improper after some other geometric adjustments are done.
	Vertical Size (VS2B) Enter a NTSC-M circle test pattern via RF or video inputs. Enter service menu and press GREEN (PICTURE) button from remote controller to switch to 16:9 picture mode on service menu. Change Vertical Size till the picture becomes 16:9 format. Check and readjust Vertical Size item if the adjustment becomes improper after some other geometric adjustments are done.
	Vertical Position (VP2) Enter a NTSC-M circle test pattern via RF or video inputs. 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.
	Horizontal Position (HP2) Enter a NTSC-M circle test pattern via RF or video inputs. Change Horizontal Position till the picture is horizontally centred. Check and readjust Vertical Size item if the adjustment becomes improper after some other geometric adjustments are done.
	RGB MODE Horizontal Position (RGBH) 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.

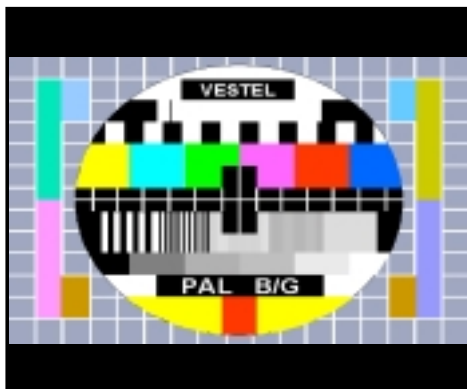
50 Hz. 4:3 Geometry Adjustment



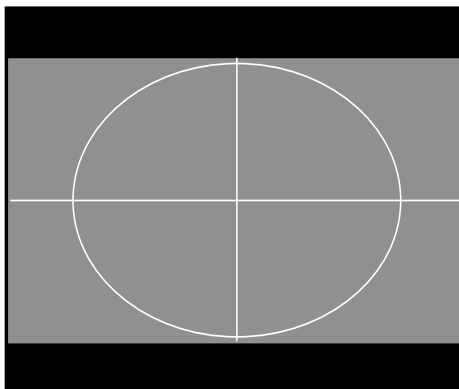
60 Hz. 4:3 Geometry Adjustment



50 Hz. 16:9 Geometry Adjustment



60 Hz. 16:9 Geometry Adjustment



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 you 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	1 default value
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	1, if SCART-2 available
BIT-0	1, AV-1 is available in AV key stream 0, AV-1 is NOT available in AV key stream	1, if SCART-1 available

OP2 Reception Standard Options		
		NOTE
BIT-7	1, 3-button keyboard (V-, P+, V+) 0, 4/5 button keyboard (V-, V+, P-, P+, Menu)	Number of Front Panel Button
BIT-6	1, L/L' is available 0, L/L' is not available	1, if TV system include SECAM L/L'
BIT-5	1, I is available 0, I is not available	1, if TV system include PAL I / I'
BIT-4	1, DK is available 0, DK is not available	1, if TV system include DK
BIT-3	1, BG is available 0, BG is not available	1, if TV system include BG
BIT-2	RESERVED (Keep as "0")	0, default value
BIT-1	RESERVED (Keep as "0")	0, default value
BIT-0	RESERVED (Keep as "0")	0, default value

OP3 Video Options		
		NOTE
BIT-7 BIT-6	Xtal Configuration 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	00 - PAL only WO / NTSC Playback 01 - PAL only W / NTSC Playback 02 - PAL, SECAM W / NTSC Playback 03 - PAL SECAM W / NTSC Playbak
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	Stereo Models only. 1 if 1 HP line is visible on sound Menü.
BIT-6	1, Arabic/Persian is available in menu languages 0, Arabic/Persian is not available in menu languages	
BIT-5	1, Hebrew is available in menu languages 0, Hebrew is not available in menu languages	
BIT-4	1, Hotel Mode can be activated 0, Hotel Mode can not be activated	0 default value
BIT-3	1, No Signal Timer is enabled 0, No Signal Timer is disabled	5min. countdown and switch off when no signal 1, default value
BIT-2	1, Frequency based search for PLL tuner 0, Channel table based search for PLL tuner no meaning for VST tuner	if 0 selected needs to select also channel Tables from OPT-5
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	NOT USED	0, default value
BIT-4	1, French OS Channel Table is available 0, French OS Channel Table is not available	1, when L/L' system is available
BIT-3	1, French Channel Table is available 0, French Channel Table is not available	1, when L/L' system is available
BIT-2	1, England Channel Table is available 0, England Channel Table is not available	1, when I/I' system is available
BIT-1	1, East Europe Channel Table is available 0, East Europe Channel Table is not available	1, when D/K system is available
BIT-0	1, West Europe Channel Table is available 0, West Europe Channel Table is not available	1, when B/G system is available

TX1 Teletext Options		
		NOTE
BIT-7	NOT USED	0, default value
BIT-6	RESERVED (must be 0)	0, default value
BIT-5 BIT-4 BIT-3	5 4 3 Teletext Language Groups 000, Group 1 West (English, French, Swedish, Czech, German, Portuguese, Italien, Rumanian) 001, Group 2 West/East (Polish, French, Swedish, Czech, German, Serbian, Italien, Rumanian) 010, Group 3 West/Turkish (English, French, Swedish, Turkish, German, Portuguese, Italien, Rumanian) 011, Group 4 East/Cyrillic (English, Cyrillic, Swedish, Czech, German, Serbian, Lettish, Rumanian) 100, Group 5 Arabic (English, French, Swedish, Turkish, German, Hebrew, Italien, Arabic)	
BIT-2 BIT-1 BIT-0	2 1 0 Device type selection 000, EPROM M6 A 001, ROM H5 P 010, ROMLESS H5 P 011, EPROM M6 R 100, ROM M6 R 101, OSDEPROM M6 R OTP 110, ROM M6 P MASK 111, Read Auto Gain Table for the device from EEPROM	101, for OTP IC use 110- for MASK IC use

Note : TX1 option is visible Service Menü for only with Text SW - Version

TUNER SETTING

	VHF1-VHF3 Frq. (Mhz)	VHF3-UHF Frq. (Mhz)	AK30 SERVICE MENU ITEMS							
			F1H	F1L	F2H	F2L	BS1	BS2	BS3	CB
Philips UV1316S MK3	156,25 MHz	441,25 MHz	00001100	00110010	00011110	00000010	00000001	00000010	00000100	10001110
Thomson CTT5020	114,25 MHz	401,25 MHz	00001001	10010010	00011011	10000010	00000011	00000110	10000101	10001110
Samsung TECC2949PG28B	170,25 MHz	465,25 MHz	00001101	00010010	00011111	10000010	00000001	00000010	00000100	10001110
Samsung TECC2949PG35B	170,25 MHz	449,25 MHz	00001101	00010010	00011110	10000010	00000001	00000010	00001000	10001110
Alps TEDE9X226A	142,25 MHz	425,25 MHz	00001011	01010010	00011101	00000010	00000001	00000010	00001000	10001110
Alps TEDE9-004A	149,25 MHz	424,25 MHz	00001011	11000010	00011100	11110010	00000001	00000010	00001000	10001110

Explanations	
F1H	High byte of VHF1-VHF3 cross-over frequency
F1L	Low byte of VHF1-VHF3 cross-over frequency
F2H	High byte of VHF3-UHF cross-over frequency
F2L	Low byte of VHF3-UHF cross-over frequency
BS1	Band switching byte for VHF1
BS2	Band switching byte for VHF3
BS3	Band switching byte for UHF
CB	Control byte

