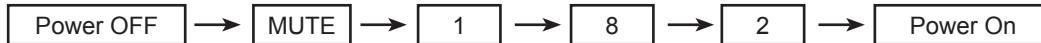## 4-3. Factory Mode Adjustments

4-3-1 Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote - control

| Power OFF | → | MUTE | → | 1 | → | 8 | → | 2 | → | Power On |

4-3-2 How to Access Service Mode

Using the Customer Remote

1. Turn the power off and set to stand-by mode

2. Press the remote buttons in this order; POWER OFF-MUTE-1-8-2-POWER ON to turn the set on.

3. The set turns on and enters service mode. This may take approximately 20 seconds.

4. Press the Power button to exit and store data in memory.
   - If you fail to enter service mode, repeat steps 1 and 2 above.

5. Initial SERVICE MODE DISPLAY State

ADC	Expert D-Settings
ADC Target	Expert Gray Scale
ADC Result	Expert C-Space
Option Byte	Expert Others
White Balance	CHECKSUM 0x0000
W/B Movie	VisualTEST
EPA Standard	Font Data Viewer
Video/Scaler	T-PRLAUSC-0038
Enhancement	T-PRLAUSM-0017
SOUND	MTK-DRV 2.0.25.0
Dynamic Contrast	RFS : T-PRLAUS-20071127
LNA+	2007-12-07
Hotel Option	PANEL : 46AM
EDID	LN46A550P1FXZA
	EDID Success
Expert Setting	Option :
	0311 1110 5120 8000 0c18 0010 0000 00
	DTP-COMP-0052
	DTP-LM-0064
	Date of purchase : 12/9/2007

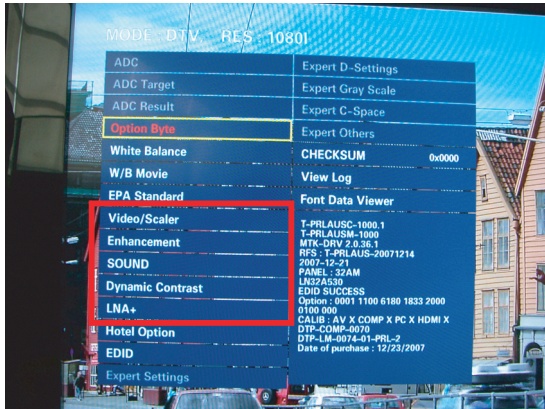- "T-TULPUS0-0025" and "T-TULPAUS5-C007" are firmware.......

4. Troubleshooting

* How to enter the hidden factory mode.
  a. into the factory mode
  b. key input : 0 + 2 + 1 + 4 + exit
  c. select option byte menu -> in menu -> out menu
     (... hidden menu appear...)
  ** hidden menu : Video/Scaler, Enhancement, SOUND, Dynamic Contrast, LNA+
- FBE3(image enhance IC) generate internal pattern

** hidden menu

6. Buttons operations withn Service Mode

Menu	Full Menu Display/Move to Parent Menu
Direction Keys ▲/▼	Item Selection by Moving the Cursor
Direction Keys ◄/►	Data Increase / Decrease for the Selected Item
Source	Cycles through the active input source that are connected to the unit

4-3-3 Factory Data

ADC		
	AV Calibration	success
	COMP Calibration	success
	PC Calibration	success
	HDMI Calibration	success

ADC Target				
	1st_AV_Low	16	2nd_AV_Delta	2
	1st_AV_High	220	2nd_COMP_R_Low	1
	1st_AV_Delta	2	2nd_COMP_G_Low	1
	1st_COMP_YLow	16	2nd_COMP_B_Low	1
	1st_COMP_CbLow	128	2nd_COMP_High	235
	1st_COMP_CrLow	128	2nd_COMP_Delta	1
	1st_COMP_High	235	2st_PC_Low	1
	1st_COMP_Delta	1	2st_PC_High	235
	1st_PC_Low	4	2st_PC_Delta	1
	1st_PC_High	235	2st_HDMI_Low	1
	1st_PC_Delta	1	2st_HDMI_High	235
	2nd_AV_R_Low	1	2st_HDMI_Delta	1
	2nd_AV_G_Low	1		
	2nd_AV_B_Low	1		
	2nd_AV_High	235		

ADC Result		
	1ST_Y_GH	124
	1ST_Y_GL	135
	1ST_Cb_BH	202
	1ST_Cb_BL	184
	1ST_Cr_RH	118
	1ST_Cr_RL	184
	2nd_R_L	113
	2nd_G_L	113
	2nd_B_L	113
	2nd_R_H	164
	2nd_G_H	164
	2nd_B_H	164

Option Byte						
Option Byte	Factory Reset		PC Mode Ident	Auto	Expert Adj	OFF
	Panel Option	46AM	7.5 IRE	…	WB Reset	OFF
	Model	PEARL	7.5 IRE Offset	…	EER Reset	
	Watchdog Enable	ON	HDMI Hot Plug	Enable		
	Spread Spectrum	1%	HDMI Delay Time	600ms		
	Spectrum Period	1000ns	HDMI Mode Ident	Auto		
	Dimming Selection	PWM_EXT	Wall Calib.			
	RS-232 jack	Debug	Caption Level	ON		
	Gamma	0.95	Watchdog Count	0		
	LVDS OUT Format	JEIDA	Out Clock INV	0		
	Panel Display Time	0HR	Out Clock Phase	0		
	Panel Time Reset		SUB MICOM DOWN	OFF		
	Mute Time[RF]	600ms	EPROM COUNT	594		
	Shop Mode[Aft. F/R]	OFF	IC BUS STOP	OFF		
	DDC WP	OFF	SIDE AV OPTION	46Inch		

White Balance		
White Balance	Sub Brightness	128
	R-Offset	512
	G-Offset	512
	B-Offset	512
	Sub Contrast	128
	R-Gain	512
	G-Gain	512
	B-Gain	512

W/B Movie				
W/B Movie	W/B Movie	OFF	NOR_Roffset	…
	Mode	…	NOR_Boffset	…
	Color Tone	…	C2_Rgain	…
	Msub Brightness	…	C2_Bgain	…
	Msub Contrast	…	C2_Roffset	…
	W1_Rgain	…	C2_Boffset	…
	W1_Bgain	…	Movie Gamma	…
	W1_Roffset	…	Movie Contrast	…
	W1_Boffset	…	Movie Brightness	…
	W2_Rgain	…	Movie Color	…
	W2_Bgain	…	Movie Sharpness	…
	W2_Roffset	…	Movie Tint	…
	W2_Boffset	…	Movie Backlight	…
	NOR_Rgain	…		
	NOR_Bgain	…		

EPA Standard		
	Standard Contrast	90
	Standard Brightness	45
	Standard Sharpness	50
	Standard Color	50
	Standard Tint	0
	Standard Backlight	7

Video/Scaler				
	manual AGC	OFF	Gain2	5
	MIN_HWIDTH	7	Gain3	5
	MAX_HWIDTH	20	Gain4	5
	TH_HIGH	7	Gain5	5
	TH_SUPER	26	Gain6	10
	Noise Level	101	Gain7	2
	Low Gain	64	Gain8	10
	Middle Gain	80	LTI_Gain	2
	High Gain	80	ECTI_Gain	3
	Local Low	64	PIP_CTI_GAIN	4
	Local Middle	96	PIP_CTI_FGAIN	32
	Local High	96	U delay	0
	Limit Pos	64	V delay	0
	Limit Neg	64	Color_mid_value	156
	Gain1	5	Chip_th	40

Enhancement				
	Patt-Sel	0	M-Skin-UV	-
	B-Slope gain	80	M-Sub color	-
	B-Tilt min	30		
	B-Tilt-max	110		
	Lfunc-Basis	60		
	Hfunc-Basis	90		
	Mean-Offset1	50		
	Mean-Offset2	235		
	Mean-Slope	100		
	ACR-Offset	10		
	ACR-Th1	10		
	ACR-Th2	110		
	Skin-Enable	ON		
	Skin-UV	128		
	Sub color	128		

SOUND		
	FM/AM Prescale	3ch
	Carrier Mute	ON
	High Devision	OFF
	Pilot Low	1eh
	Melody Volume	fh
	Audio Delay	10
	STA Amp Vol.	36
	STA Limit Att.	29h
	STA Limit Rel.	9h
	STA Post Scale	fh
	STA Speaker EQ	7fh
		ON

Dynamic Contrast		
	Dynamic CE	OFF
	Dynamic Dimming	ON
	LBE Y_MEAN	708

LNA+		
	LNA PLUS	ON
	RF_dB0_TH	2
	RF_dB1_TH	4
	RF_dB2_TH	8
	RF_dB3_TH	21
	NR1_Coring	0
	NR2_Coring	1
	NR3_Coring	2
	NR4_Coring	4

Hotel Option	Hotel Mode	ON
	Power On Channel	3
	Power On Band	Air
	Power On Volume	10
	Max Volume	100
	Panel Button Lock	UnLock
	Power On Source	TV

EDID	EDID ON/OFF	ON
	ALL EDID	Success
	PC EDID	Success
	HDMI1 EDID	Success
	HDMI2 EDID	Success
	HDMI3 EDID	…
	EDID VERSION	HDMI 1.3

CHECKSUM	0X0000

VisualTEST	VisualTEST	Disable

4-4. White Balance - Calibration

4-4-1 White Balance -Calibration

1. Calibration

→

AV Calibration
Comp Calibration
PC Calibration
HDMI Calibration
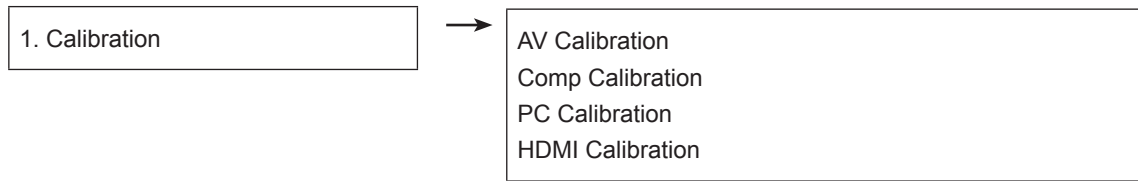
4-4-2 White Balance - Adjustment

(low light)   (hight light)

3. W/B

→

| Sub Bright	Sub Contrast
R offset	R gain
G offset	G gain
B offset	B gain
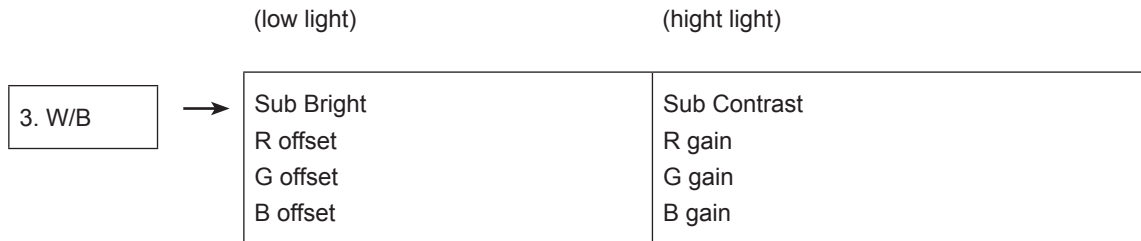
(W/B adjustment Condition refer next page)

4-5. White Ratio (Balance) Adjustment

1. You can adjust the white ratio in factory mode (1:Calibration, 3:White-Balance).

2. Since the adjustment value and the data value vary depending on the input source, you have to adjust these in CVBS, Component 1 and HDMI 1 modes.

3. The optimal values for each mode are configured by default. (Refer to Table 1, 2)
   It varies with Panel's size and Specification.

- Equipment : CS-210
- Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
- Use other equipment only after comparing the result with that of the Master equipment.
- Set Aging time : 60min
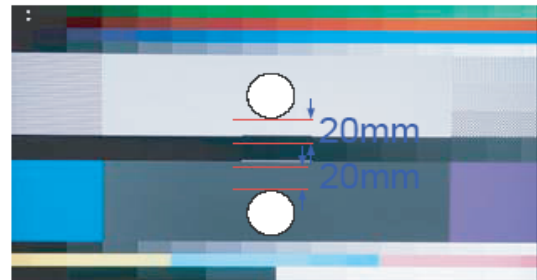
- Calibration and Manual setting for WB adjustment.

HDMI : Calibration at #24 Chessboard Pattern → Manual adjustment #92 pattern (720p)

COMP: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (720p)

CVBS: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (NTSC)

- If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.

- White Balance Manual Adjustment

		Adjustment Coordinate			
		x	y	Y(L)	T(K) + MPCD
CVBS (NTSC)	H/L	266	288	- (Sub_CT:130)	12,000 (±0)
	L/L	266	288	12.6cd/m² (3.7 Ft)	12,000 (±0)
COMP (720P)	H/L	266	288	- (Sub_CT:130)	12,000 (±0)
	L/L	266	288	13.0cd/m² (3.8 Ft)	12,000 (±0)
HDMI (720P)	H/L	266	288	- (Sub_CT:130)	12,000 (±0)
	L/L	266	288	13.0cd/m² (3.8 Ft)	12,000 (±0)

- Adjustment Specification

 White Balance : High light ($\pm$2), Low light ($\pm$3)

 Luminance : High light (Don't care), Low light ($\pm$0.2 Ft/L)

4-6. Servicing Information

4-6-1 USB Download Method

Samsung may offer upgrades for TV's firmware in the future. Please contact the Samsung call center at 1-800-SAMSUNG (726-7864) to receive information about downloading upgrades and using a USB drive. Upgrades will be possible by connecting a USB drive to the USB port located on your TV.

1. Insert a USB drive containing the firmware upgrade into the WISELINK port on the side of the TV.

2. Press the **MENU** button to display the menu.
   Press the ▲ or ▼ button to select "Setup", then press the **ENTER** button.

3. Press the ▲ or ▼ button to select "SW Upgrade", then press the **ENTER** button.

4. Press the **ENTER** button.
   The message "Scanning for USB... It may take up to 30 seconds." is displayed.

5. The message "Upgrade version XXXX to version XXXX? The system will be reset after upgrade." is displayed.
   Press the ◄ or ► to select the "OK", then press the **ENTER** button.

Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied. The TV will turn off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete. When software is upgraded, video and audio settings you have made will return to their default (factory) settings. We recommend you write down your settings so that you can easily reset them after the upgrade.

TV Rear Panel · USB Drive

Energy Saving	: Off
PIP	
SW Upgrade	►

Software Upgrade

Scanning for USB.....
It may take up to 30 seconds.

Software Upgrade

Upgrade version XXXX to version XXXX? The system will be reset after upgrade.

OK   Cancel