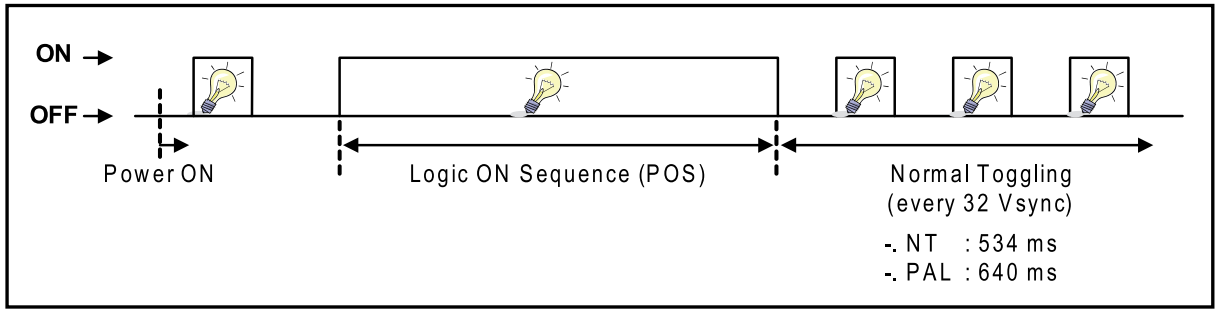
Operating Logic LED

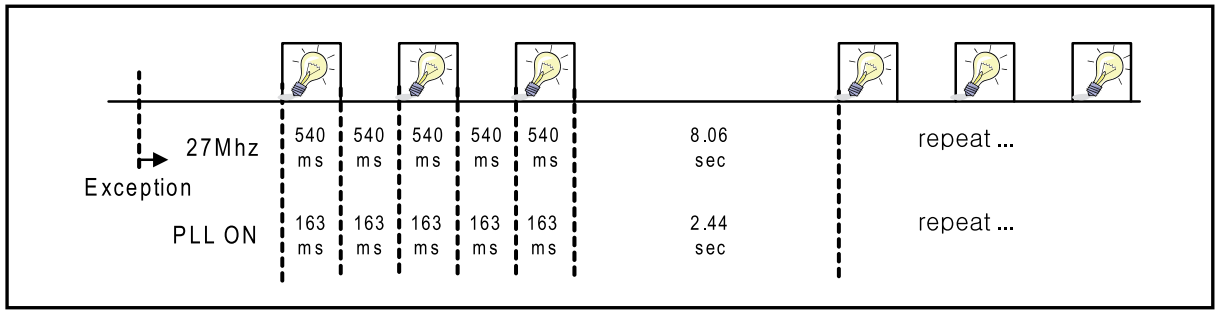
■ Normal

- LED ON/OFF for 0.5s



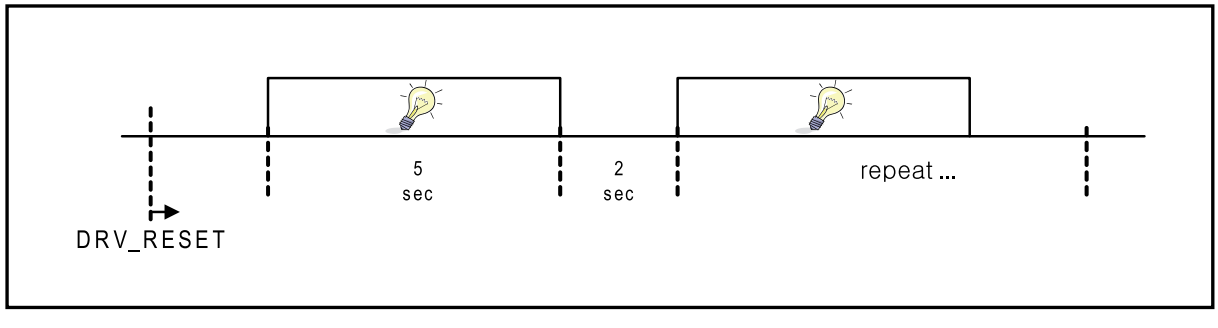
■ Abnormal

- LED ON/OFF three times for 8.1s



■ DRV_RESET

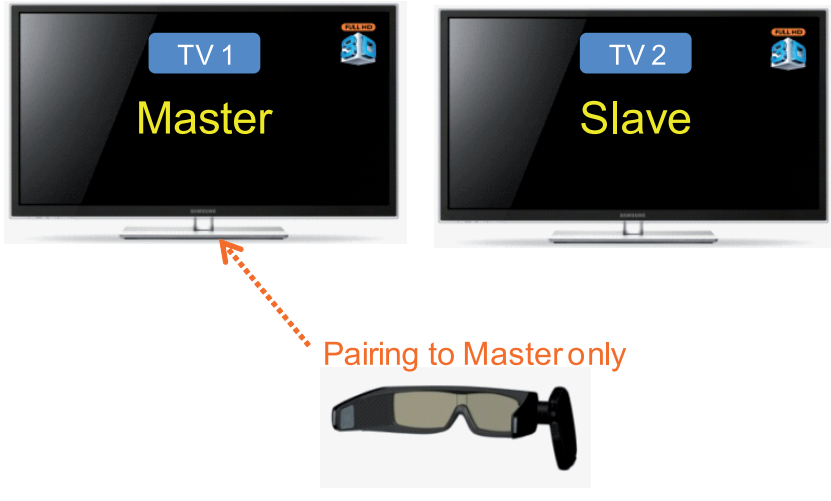
- LED ON for 5s and LED OFF for 2s



Blue-tooth Pairing

1. Multi Display Pairing

* Max 10 sets of 3D TV can be connected as a "Master"



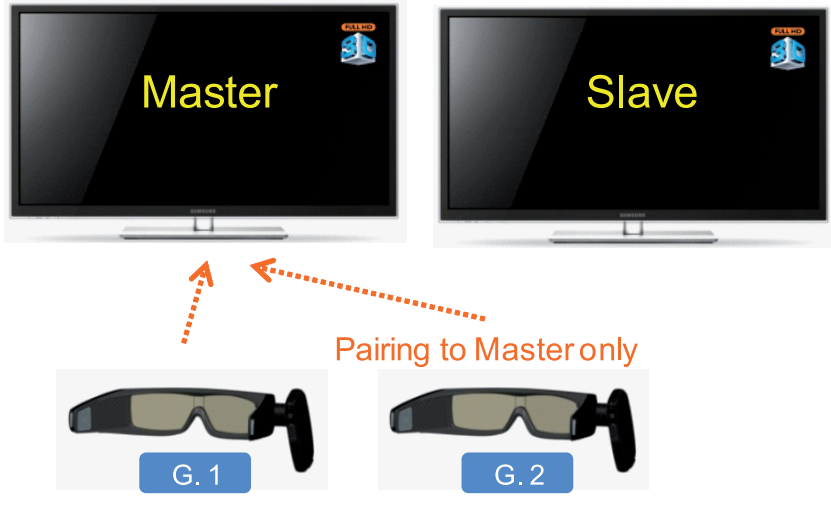
- Set "TV 1" as a Master and Do Pairing with 3D Glasses.
- Set "TV 2" as a Slave TV of Master "TV 1".

* Slave TVs should be inside BT covering area of Master TV (6m)

2. Multi Glasses Pairing

* Unlimited Glasses can be paired with a 3D TV.

* Always Pairing to "Master TV".



- Press "Pairing Key" on "G.1" glasses for 3ec within 50cm distance from the "Master TV" set.
- Press "Pairing Key" on "G.2" glasses for 3ec within 50cm distance from the "Master TV" set.

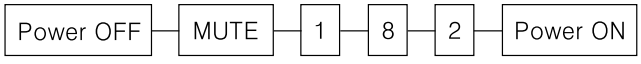
CAUTION

3D glasses in 2010 did not work at 2011 model TV. (Working mechanism is different.)

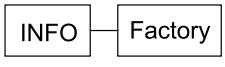
4.2.1. Entering Factory Mode

To enter ‘Service Mode’ Press the remote-control keys in this sequence.

- If you do not have Factory remote-control.



- If you have Factory remote-control.



- If you don’t have Factory remote control, can’t control some menu.

Option
Control
SVC
Expert
ADC/WB
Advanced
T-MST5AUSC-xxxx T-MST5AUSS-xxxx E-Manual : X6ATSCA-0003 EDID : SUCCESS HDCP : SUCCESS CALIB : AV/COMP/PC/HDMI OPTION : xxxxx xxx SDAL-x.xx.x.x RFS."Mastar-X6 xxxx" KERNEL MODULE VERSION: "xxxx_xxx" xxxx-xx-xx Type : 51DSArD Model : PN51D6900 MAC SUCCESS LOCK X Factory Data Ver : XX EERC Version : XXX DTP-AP-COMP-XXX DTP-BP-HAL-XXXX-X Data of purchase : xx/xx/xxxx

Factory Data

■ Option

Item	Data	Remark
Factory Reset	-	
Type	51DSArd	19A6TH0C ~ 22A6TF0E
Local Set	US	US ~ SA_BOLIVIA
Model	PD6900	LD400 ~ LD567H
Tuner	SI_ATC	SEC_ATSC ~ SI_TW
Front Color	W-Violet	S-C-Gray ~ W-Violet

■ Control

Menu	Item	Data	Remark
EDID	EDID ON/OFF	ON	ON/OFF
	EDID WRITE ALL		
	EDID WRITE PC		
	EDID WRITE HDMI		
	EDID WRITE HDMI1		
	EDID WRITE HDMI2		
	EDID WRITE HDMI3		
	EDID WRITE HDMI5		
	EDID VER		
	EDID PORT		
	EDID WRITE DVI		
Sub Option	RF Mute Time	600ms	0ms ~ 1000ms
	RS-232 Jack	Debug	Debug/UART/Logic
	Watchdog	OFF	ON/OFF
	WD Count	0	
	Dimm Type		
	LVDS Format	PDP	PDP/JEIDA/ VESA/19INCH
	OTN Server Type	operating	operating /development
	OTN Test Server	OFF	ON/OFF
	OTN Support	ON	ON/OFF
	OTN Reset		
	OTN Duration	OFF	ON/OFF
	View Log		
	H.264 Margin	8	1 ~
	MPEG Margin	1000	1~
	Tuner Margin	10	0 ~

Menu	Item	Data	Remark
	Region	USA	USA/KOR/SA_ATV
	PC Auto Ident	Enable	Enable/Auto
	OTP Lock		
	Auto Power	MEMORY	MEMORY/ALWAYS ON/ALWAYS OFF
	KEY SENSITIVITY	120	Not used ~ 255
	FANET	OFF	ON/OFF
	S-MICOM Upgrade	Off	ON/OFF
	OTA Support	OFF	ON/OFF
	FKPDown		
PDP Option			
Hotel Option	Hotel Mode	OFF	ON/OFF
	Power On Channel EN		
	Power On Channel		
	Channel Type		
	Power On Volume EN		
	Power On Volume		
	Min Volume		
	Max Volume		
	Panel Button Lock		
	Power On Source		
	Picture Menu Lock		
	Music Mode AV		
	Music Mode PC		
	Music Mode Comp		
	Music Mode Backlight		
	Menu Display		
	Power On Option		
	Auto Source		
	Energy Saving		
	Clone TV to USB		
	Clone USB to TV		
	Setting Auto Initialize		
	SIRCH Update Time		
	MONITOR OUT CVBS		
Shop Option	Shop Mode	OFF	ON/OFF
	Exhibition Mode	OFF	ON/OFF
Sound	High Devi	OFF	ON/OFF
	Carrier_Mute	ON	ON/OFF
	Speaker Delay Normal	50	0 ~ 150

Menu	Item	Data	Remark
	Pilot Level High Thld	0x28h	0x00h ~ 0xEFh
	Pilot Level Low Thld	0x10h	0x00h ~ 0xEFh
	Speaker EQ	ON	ON/OFF

■ SVC

Menu	Item		Data	Remark
Test Pattern	Pattern Sel			
	Logic Pattern Sel		0	0 ~ 31
	Logic Level Sel		255	0 ~ 255
Panel Display Time			2Hr	2Hr
Tuner Status	DVB	SNR		
		BER		
		Signal Strength		
		Bandwidth		
		Frequency		
		LNA Status		
		FFT		
		Modulation		
		Code Rate		
		GI		
		Hier Modulation		
		Frequency Offset		
		Timing Offset		
		AGC		
		UCB		
		PLL Type		
		DEMOD Type		
		TPS Lock		
		RS Lock		
		SSI		
		SQI		
		Firmware Version		
		C_BER_0		
Micom Upgrade	ISDB-T	FFT Size_1		
		Guard Interval_1		
		Freq. Offset_1		
		SNR_1		
		IF AGC_1		
		TMCC Lock_1		
		TS Packet_1		
		Master Lock_1		
		A_Modulation_1		
		A_Code Rate_1		
		A_Timer InterLeave_1		
		A_Segments Num_1		

Menu	Item		Data	Remark
		A_BER_1		
		B_Modulation_1		
		B_Code Rate_1		
		B_Timer InterLeave_1		
		B_Segments Num_1		
		B_BER_1		
		C_Modulation_1		
		C_Code Rate_1		
		C_Timer InterLeave_1		
		C_Segments Num_1		
		C_BER_1		
T-CON Usb Download			Failure	

■ Expert

Menu	Item	Data	Remark
N/D ADJ		OFF	ON/OFF/FIX
Source			

■ ADC/WB

Menu	Item	Data	Remark
ADC	AV Calibration	/	
	Comp Calibration	/	
	PC Calibration	/	
	HDMI Calibration	/	
ADC Target	1st_AV_Low	64	0 ~
	1st_AV_High	880	0 ~
	1st_AV_Delta	2	0 ~
	1st_COMP_Y_Low	64	0 ~
	1st_COMP_Cb_Low	512	0 ~
	1st_COMP_Cr_Low	512	0 ~
	1st_COMP_Y_High	940	0 ~
	1st_COMP_Cb_High	512	0 ~
	1st_COMP_Cr_High	512	0 ~
	1st_COMP_Delta	2	0 ~
	1st_PC_Low	4	0 ~
	1st_PC_High	1004	0 ~
	1st_PC_Delta	2	0 ~
	2nd_ACH_Low	4	0 ~
	2nd_ACH_High	940	0 ~
	2nd_PC_Low	40	0 ~

Menu	Item	Data	Remark
	2nd_PC_High	940	0 ~
	2nd_Delta	2	0 ~
ADC Result	1st_Y_GH		
	1st_Y_GL		
	1st_Cb_BH		
	1st_Cb_BL		
	1st_Cr_RH		
	1st_Cr_RL		
	2nd_R_L	133	0 ~
	2nd_G_L	133	0 ~
	2nd_B_L	133	0 ~
	2nd_R_H	70	0 ~
	2nd_G_H	70	0 ~
	2nd_B_H	70	0 ~
White Balance	Sub Brightness	128	0 ~ 255
	R-Offset	128	0 ~ 255
	G-Offset	128	0 ~ 255
	B-Offset	128	0 ~ 255
	Sub Contrast	128	0 ~ 255
	R-Gain	128	0 ~ 255
	G-Gain	128	0 ~ 255
	B-Gain	128	0 ~ 255
	Movie R-Offset		
	Movie B-Offset		
	Movie R-Gain		
	Movie B-Gain		

■ Advanced

Menu	Item		Data	Remark
Picture_2D	ColorMapping			
Picture_3D	Sub Setting_3D			
	EPA_3D			
	WB Movie_3D	3D_C_Rgain		
		3D_C_Bgain		
		3D_C_Roffset		
		3D_C_Boffset		
	WCE_3D			
	ColorMapping_3D			
	Sharpness_3D	3D_Post_H1	16	0 ~ 64
		3D_Post_H2	8	0 ~ 64
		3D_Post_H3	8	0 ~ 64
		3D_Post_H4	8	0 ~ 64
		3D_Post_V1	20	0 ~ 64
		3D_Post_V2	14	0 ~ 64
		3D_Post_H2 Overshoot	16	0 ~ 255
		3D_Post_H2 Undershoot	16	0 ~ 255
		3D_Post_H3 Overshoot	16	0 ~ 255
		3D_Post_H3 Overshoot	16	0 ~ 255
		3D_Core Gain1	1	0 ~ 15
		3D_Core Gain2	2	0 ~ 15
		3D_D_Tot_Gain	20	0 ~ 63
		3D_S_Tot_Gain	20	0 ~ 63
	Enhance_3D	3D_BLE_Gain	22	0 ~ 127
		3D_D Sub Color	65	0 ~ 100
		3D_D Skin Hue	100	0 ~ 127
		3D_D Skin Sat	18	0 ~ 31
		3D_S Sub Color	65	0 ~ 100
		3D_S Skin Hue	72	0 ~ 127
		3D_S Skin Sat	16	7
		3D_M Sub Color	55	0 ~ 100
		3D_M Skin Hue	64	0 ~ 127
		3D_M Skin Sat	16	0 ~ 31
		3D_Sub_Tint	50	0 ~ 100
		3D_CE_Normal _Left_Gain	30	0 ~ 50
		3D_CE_Normal _Right_Gain	15	0 ~ 50
		3D_CE_Normal_Offset	-10	-50 ~ 50
		3D_CE_Special_Left_Gain	15	0 ~ 50

Menu	Item			Data	Remark
		3D_CE_Special_Right_Gain		10	0 ~ 50
		3D_CE_Special_Offset		-15	-50 ~ 50
		3D_CE_S_Left_Gain		10	0 ~ 50
		3D_CE_S_Right_Gain		40	0 ~ 50
		3D_CE_S_Normal_Offset		-2	-50 ~ 50
	3D Setting	LED_BT_IR	BTPairDis_Ho	2	1 ~ 10
			BTPairDis_Sh	25	0 ~
			BTTransDis	10	0 ~ 10
			BTSlaveDelay48	0	
			BTSlaveDelay50	0	
			BTSlaveDelay60	0	
			BTEmiDel_48	0	
			BTEmiDel_50	0	
			BTEmiDel_60	0	
			BTGlsDUTY	100	50 ~ 100
			IREmiDel_48	0	
			IREmiDel_50	0	
			IREmiDel_60	0	
			IREmiMask	1	0 ~ 15
			IRMASKPRD	1	0 ~ 15
			IREmiNum	1	0 ~ 15
			SlaveDelay48	0	
			SlaveDelay50	0	
			SlaveDelay60	0	
		PDP_BT_IR	BTPairDis_Ho_PDP	2	1 ~ 10
			BTPairDis_Sh_PDP	25	0 ~
			BTTransDis_PDP	10	0 ~ 10
			BTEmiDel_48_D	0	
			BTEmiDel_50_D	0	
			BTEmiDel_60_D	0	
			BTGlsDUTY_D	100	50 ~ 100
			BTEmiDel_48_S	0	
			BTEmiDel_50_S	0	
			BTEmiDel_60_S	0	
			BTGlsDUTY_S	100	50 ~ 100
			BTEmiDel_48_R	0	
			BTEmiDel_50_R	0	
			BTEmiDel_60_R	0	
			BTGlsDUTY_R	100	50 ~ 100
			BTEmiDel_48_M	0	

Menu	Item			Data	Remark
			BTEmiDel_50_M	0	
			BTEmiDel_60_M	0	
			BTGlsDUTY_M	100	50 ~ 100
			IREmiMask_PDP	1	0 ~ 15
			IRMASKPRD_PDP	1	0 ~ 15
			IREmiNum_PDP	1	0 ~ 15
			SlaveDelay48_PDP	0	
			SlaveDelay50_PDP	0	
			SlaveDelay60_PDP	0	
		DUTY	PDUTY192	25	10 ~ 70
			PDUTY200	25	10 ~ 70
			PDUTY240_Dyn	25	10 ~ 70
			PDUTY240_Mov	25	10 ~ 70
		DCC	Glimit_LBT0	88	0 ~ 100
			Glimit_LBT1	89	0 ~ 100
			Glimit_LBT2	90	0 ~ 100
			Glimit_LBT3	91	0 ~ 100
			Glimit_LLT0	95	0 ~ 100
			Glimit_LLT1	96	0 ~ 100
			Glimit_LLT2	97	0 ~ 100
			Glimit_LLT3	98	0 ~ 100
			DCC X1	0	0 ~ 255
			DCC X2	0	
			DCC X3	0	
			DCC Y1	0	
			DCC Y2	0	
			DCC h1	0	0 ~ 63
			DCC h2	0	
			DCC h3	0	
			DCC v1	0	0 ~ 63
			DCC v2	0	
			Temp Read	0	0 ~ 100
			Time_HOT	120	0 ~ 240
			Time_Cold	120	0 ~ 140
			Temp_ST	16	0 ~ 50
			Temp_TH	40	0 ~ 50
			delta	5	0 ~ 20
		Effect	Depth_Min	10	0 ~ 255
			Depth_Max	100	0 ~ 255
			Viewp_Min_2D3D	64	0 ~ 255

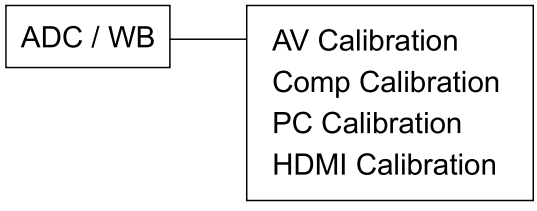
Menu	Item			Data	Remark
			Viewp_Max_2D3D	192	0 ~ 255
			Viewpoint_Min	64	0 ~ 255
			Viewpoint_Max	192	0 ~ 192
		Debug	Dubug	OFF	ON/OFF
			DccMode	0	0/1
			DccSele0_0	0	0 ~ 7
			DccSele0_1	0	0 ~ 7
			DccSele0_2	0	0 ~ 7
			DccSele0_3	0	0 ~ 7
			DccSele0_4	0	0 ~ 7
			DccSele0_5	0	0 ~ 7
			DccSele0_6	0	0 ~ 7
			DccSele0_7	0	0 ~ 7
			PosiSel_0_0	0	0 ~ 3
			PosiSel_0_1	0	0 ~ 3
			PosiSel_0_2	0	0 ~ 3
			PosiSel_0_3	0	0 ~ 3
			PosiSel_0_4	0	0 ~ 3
			PosiSel_0_5	0	0 ~ 3
			PosiSel_0_6	0	0 ~ 3
			PosiSel_0_7	0	0 ~ 3
			PosiSel_0_8	0	0 ~ 3
			PosiSel_0_9	0	0 ~ 3
			PosiSel_0_10	0	0 ~ 3
			PosiSel_0_11	0	0 ~ 3
		Bypass		OFF	ON/OFF

Service Adjustment

- You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

■ White Balance - Calibration

- Factory



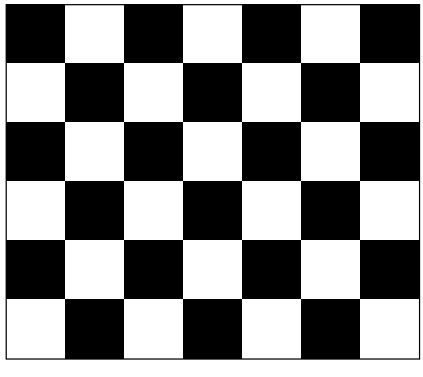
■ Color Calibration

- Adjust spec.

1) Source : HDMI

2) Setting Mode : 1280*720@60Hz

3) Pattern : Pattern #24 (Chess Pattern)



4) Use Equipment : CA210 & Master MSPG925 Generator

Use other equipment only after comparing The result with that of The Master equipment.

Input mode	Calibration	Pattern
CVBS IN (Model_#1)	Perform in NTSC/PAL B&W Pattern #24	Lattice
Component IN (Model_#6)	Perform in 720p B&W Pattern #24	Lattice
PC Analog IN (Model_#21)	Perform in VESA XGA (1024x768) B&W Pattern #24	Lattice
HDMI IN	Perform in 720p B&W Pattern #24	Lattice

- **Method of Color Calibration (AV)**

  1) Apply the NTSC/PAL Lattice (N0. 3) pattern signal to the AV IN 1 port.
  2) Press the Source key to switch to “AV1” mode.
  3) Enter Service mode.
  4) Select the “ADC” menu.
  5) Select the “AV Calibration” menu.
  6) In “AV Calibration Off” status, press the “ ►” key to perform Calibration.
  7) When Calibration is complete, it returns to the high-level menu.
  8) You can see the change of the “AV Calibration” status from Failure to Success.

- **Method of Color Calibration (Component)**

  1) Apply the 720p Lattice (N0. 6) pattern signal to the Component IN 1 port.
  2) Press the Source key to switch to “Component1” mode.
  3) Enter Service mode.
  4) Select the “ADC” menu.
  5) Select the “Comp Calibration” menu.
  6) In “Comp Calibration Off” status, press the “► ” key to perform Calibration.
  7) When Calibration is complete, it returns to the high-level menu.
  8) You can see the change of the “Comp Calibration” status from Failure to Success.

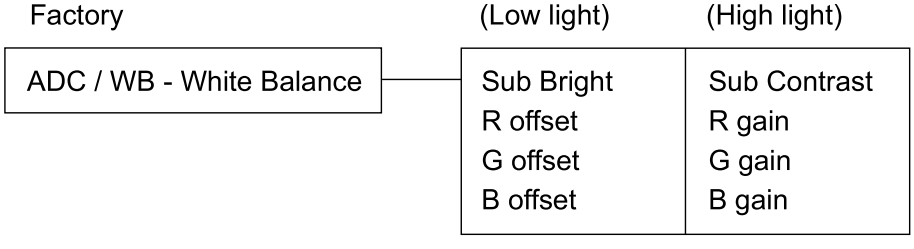
- **Method of Color Calibration (PC)**

  1) Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port.
  2) Press the Source key to switch to “PC” mode.
  3) Enter Service mode.
  4) Select the “ADC” menu.
  5) Select the “PC Calibration” menu.
  6) In “PC Calibration Off” status, press the “► ” key to perform Calibration.
  7) When Calibration is complete, it returns to the high-level menu.
  8) You can see the change of the “PC Calibration” status from Failure to Success.

- **Method of Color Calibration (HDMI)**

  1) Apply the 720p Lattice (N0. 6) pattern signal to the HDMI1/DVI IN port.
  2) Press the Source key to switch to “HDMI1” mode.
  3) Enter Service mode.
  4) Select the “ADC” menu.
  5) Select the “HDMI Calibration” menu.
  6) In “HDMI Calibration Off” status, press the “► ” key to perform Calibration.
  7) When Calibration is complete, it returns to the high-level menu.
  8) You can see the change of the “HDMI Calibration” status from Failure to Success.

■ White Balance - Adjustment



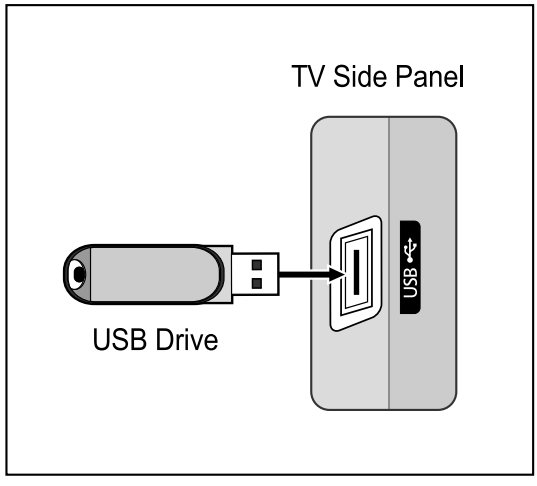
Software Upgrade

Samsung may offer upgrades for the TV's firmware in the future.

These upgrades can be performed via the TV.

Upgrades will be possible by connecting a USB drive to the USB port.

- 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.



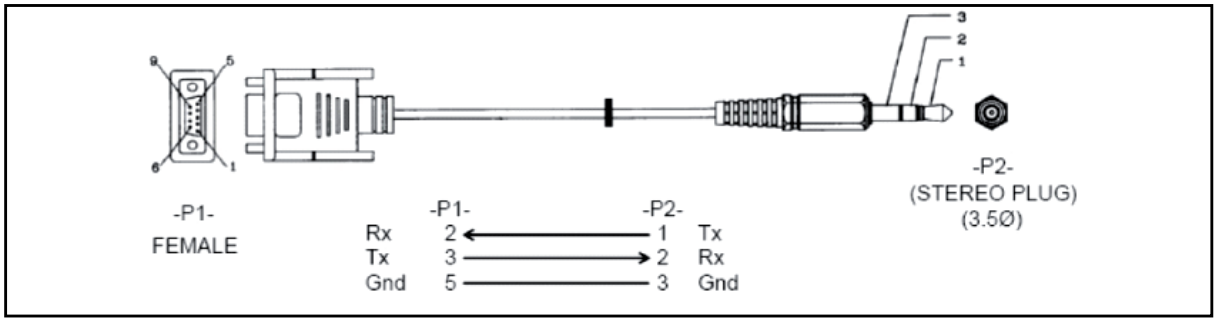
RS-232C

1. To RS232C control

- Port : COM# (Serial)
- Bit rate : 115200
- Data Bit : 8 bit
- Parity : None
- Stop Bits : 1
- Flow Control : None

2. Description of RS232C

Pin#	Name	Full Name
1	CD	Carrier Detect
2	RxD	Received Data
3	TxD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator



AV control code

Control Item				Cmd1	Cmd2	Cmd3	Value
General	Power	Power		0x00	0x00	0x00	0x00
		Off					0x01
		On					0x02
	Volume	Direct		0x01	0x00	0x00	(0~100)
		Up				0x01	0x00
		Down				0x02	0x00
	Mute			0x02	0x00	0x00	0x00
	Ch.	Direct		0x04	-		
		Continuous	Up	0x03	0x00	0x01	0x00
			Down			0x02	0x00
Input	Source List	TV	TV	0x0a	0x00	0x00	0x00
		AV	AV1			0x01	0x00
			AV2				0x01
			AV3				0x02
		S-Video	S-Video1			0x02	0x00
			S-Video2				0x01
			S-Video3				0x02
		Component	Component1			0x03	0x00
			Component2				0x01
			Component3				0x02
		PC	PC1			0x04	0x00
			PC2				0x01
			PC3				0x02
		HDMI	HDMI1			0x05	0x00
			HDMI2				0x01
			HDMI3				0x02
			HDMI4				0x03
		DVI	DVI1			0x06	0x00
			DVI2				0x01
			DVI3				0x02
Picture	Mode	Dynamic(Entertain)		0x0b	0x00	0x00	0x00
		Standard					0x01
		Movie					0x02
		Natural					0x03
		CAL-NIGHT					0x04
		CAL-DAY					0x05
		BD Wise					0x06
	BackLight	0~20			0x01	0x00	(0~20)

Control Item				Cmd1	Cmd2	Cmd3	Value
Contrast	0~100				0x02	0x00	(0~100)
Brightness	0~100				0x03	0x00	(0~100)
Sharpness	0~100				0x04	0x00	(0~100)
Color	0~10				0x05	0x00	(0~100)
Tint	G/R				0x06	0x00	(0~100)
Advanced Settings	Black Tone	Off			0x07	0x00	0x00
		Dark					0x01
		Darker					0x02
		Darkest					0x03
	Dynamic Contrast	Off				0x01	0x00
		Low					0x01
		Medium					0x02
		HIgh					0x03
	Shadow Detail	-2 ~ 2				0x02	(-2~2)
	Gamma	-3 ~ 3				0x03	(-3~3)
	RGB Only Mode	Off				0x05	0x00
		Red					0x01
		Green					0x02
		Blue					0x03
	Color Space	Auto				0x06	0x00
		Native					0x01
		Custom					0x02
	White Balance	R-Offset(LCD)				0x07	(0~50)
	White Balance	G-Offset(LCD)				0x08	(0~50)
	White Balance	B-Offset(LCD)				0x09	(0~50)
	White Balance	R-Gain(LCD)				0x0a	(0~50)
	White Balance	G-Gain(LCD)				0x0b	(0~50)
	White Balance	B-Gain(LCD)				0x0c	(0~50)
	White Balance	Reset(LCD)				0x0d	0x00
	Flesh Tone	-15 ~ 15				0x0e	(-15~15)
	Edge Enhancement	Off				0x0f	0x00
		On					0x01
	xvYCC	Off				0x10	0x00
		On					0x01
	Motion Lighting	Off				0x11	0x00
		On					0x01
	LED Motion Plus	Off				0x07	0x00
		On(Normal)					0x01
		Cinema					0x02
		Ticker					0x03

Control Item				Cmd1	Cmd2	Cmd3	Value
	Picture Option	Color Tone	Cool		0x0a	0x00	0x00
			Normal				0x01
			Warm1				0x02
			Warm2				0x03
		Digital Noise Filter	Off			0x02	0x00
			Low				0x01
			Medium				0x02
			High				0x03
			Auto				0x04
			Auto Visualization				0x05
		MPEG Noise Filter	Off			0x03	0x00
			Low				0x01
			Medium				0x02
			High				0x03
			Auto				0x04
		HDMI Black Level	Normal			0x04	0x00
			Low				0x01
		Film Mode	Off			0x05	0x00
			Auto1				0x01
			Auto2				0x02
		Auto Motion Plus	Off			0x06	0x00
			Clear				0x01
			Standard				0x02
			Smooth				0x03
			Custom				0x04
			Demo				0x05
	Screen Adjustment	Picture Size	16:9	0x0b	0x0a	0x01	0x00
			Zoom1				0x01
			Zoom2				0x02
			Wide Fit				0x03
			4:3				0x04
			Screen Fit				0x05
			Smart View I				0x06
			Smart View II				0x07
	Reset Picture	Reset Picture		0x0b	0x0b	0x00	0x00
	3D	3D Mode	Off	0x0b	0x0c	0x00	0x00
			2D->3D				0x01
			Side By Side				0x02
			Top Bottom				0x03
			Line By Line				0x04

Control Item				Cmd1	Cmd2	Cmd3	Value
			Vertical Line				0x05
			Checker BD				0x06
			Frame Sequence				0x07
		3D->2D	Off			0x01	0x00
			On				0x01
		3D View Point				0x02	(-5~5)
		Depth				0x03	(1~10)
		Picture Correction				0x04	0x00
		3D Auto View	Off			0x05	0x00
			Message Notice				0x01
			On				0x02
Sound	SRS TheaterSound(Genoa)	Standard		0x0c	0x00	0x00	0x00
	Sound Mode(X6)	Music					0x01
		Movie					0x02
		Clear Voice					0x03
		Amplify					0x04
	Equalizer	Balance			0x01	0x00	(0~20)
		100hz				0x01	(0~20)
		300hz				0x02	(0~20)
		1khz				0x03	(0~20)
		3khz				0x04	(0~20)
		10khz				0x05	(0~20)
		Reset				0x06	0x00
	SRS TruSurround HD(Genoa)	Off			0x02	0x00	0x00
	Virtual Surrond(X6)	On					0x01
	SRS TruDialog(Genoa)	Off			0x03	0x00	0x00
	Dialog Clarify(X6)	On					0x01
	Preferred Language	English			0x04	0x00	0x00
		Spanish					0x01
		French					0x02
		Korean					0x03
		Japanese					0x04
	Multi-Track Sound	Mono			0x05	0x00	0x00
		Stereo					0x01
		SAP					0x02
	Auto Volume	Off			0x06	0x00	0x00
		Normal					0x01
		Night					0x02
	Speaker Select	TV Speaker			0x07	0x00	0x00

Control Item			Cmd1	Cmd2	Cmd3	Value
		External Speaker				0x01
	Sound Select	Main		0x08	0x00	0x00
		Sub				0x01
	Sound Reset	Sound Reset		0x09	0x00	0x00
KEY	Key Generation		0x0d	0x00	0x00	refer to the table of below

Key value	Value
Up	96 (0x60)
Down	97 (0x61)
Left	101 (0x65)
Right	98 (0x62)
Menu	26 (0x1A)
Internet	147 (0x93)
Enter (OK)	104 (0x68)
EXIT	45 (0x2D)