

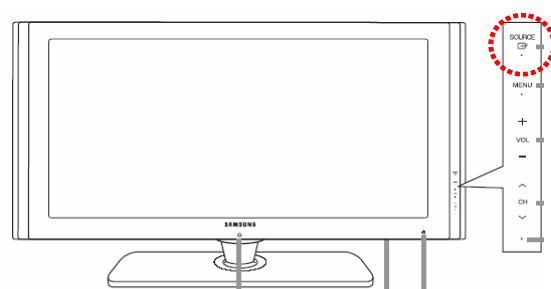
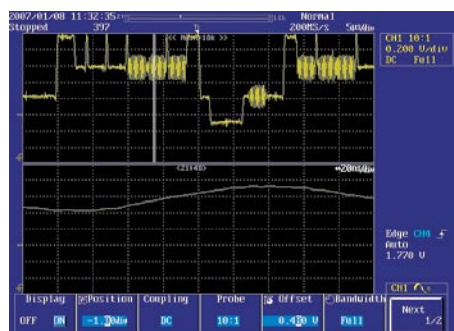
4. Troubleshooting

4-1. Troubleshooting

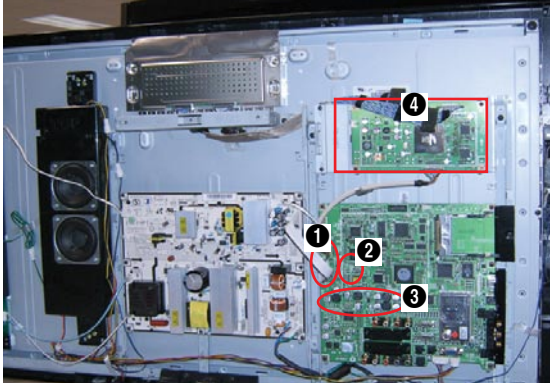
1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. Check the Power input to the FRC(Frame Rate Conversion) Board.
 Check internal Pattern both of FRC and FBE2 if there is some picture noise.
 FRC: Factory mode(Info - MENU - MUTE - power on) -> 5. Option Block -> FRC Option-> FRCS_PRE_PATT_SEL-> Press right button of Remocon.
 FRC-M (Micom name : T-PONFMPEUMD : Factory Mode(Info - MENU - MUTE - power on) -> 5. Option Block -> FRC(Micronas) -> TP Before DDR and TP After DDR -> Press right Button of Remocon.
 FBE2: Factory mode(Info - MENU - MUTE - power on_ -> 5. Option Block -> FBE2-> Pattern Select-> Press right button of Remocon.
 Case1: FBE2 ok,FRC NG: change the FRC Board Case2: FBE2 NG, FRC NG: change the main Board

Check the LED lamp for source button on front

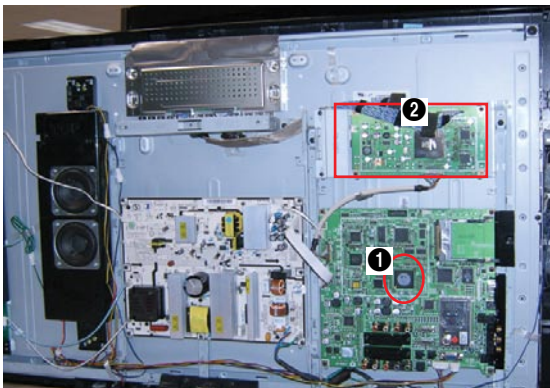
If this LED blank frequently then FRC board is defective(communication problem via Main board)
 in this case change the FRC board



4-1-1. No Power

Symptom	<ul style="list-style-type: none"> - The LEDs on the front panel do not work when connecting the power cord. - The SMPS relay does not work when connecting the power cord. - The units appears to be dead.
Major checkpoints	<p>The IP relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following:</p> <ul style="list-style-type: none"> - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Diagnostics	 <pre> graph TD Q1[LAMP off, power indicator LED red color?] -- No --> A1[Check a connection a power cable.] Q1 -- Yes --> Q2[1 Does proper DC 13V appear at pin20 of CN1101?] Q2 -- No --> A2[Change a Assy PCB Power.] Q2 -- Yes --> Q3[2 Does proper DC A3.3V appear at C1160?] Q3 -- No --> A3[Check a IC1110 Change a main PCB ass'y] Q3 -- Yes --> Q4[3 Does proper DC 5V, 3.3V, 1.2V appear at C1120, C1134, C1183?] Q4 -- No --> A4[Check a IC1106, IC1104. Change a main PCB ass'y] Q4 -- Yes --> Q5[4 Check FRC board(Peony model). Check Local dimming board (Rose model). Change a FRC(Peony)/Local dimming(Rose) PCB ass'y.] Q5 -- No --> A5[Check a other function. (No picture part) Replace a lcd panel.] Q5 -- Yes --> Q6[A power is supplied to set?] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

4-1-2. No Video (Analog PC signal)

Symptom	<ul style="list-style-type: none"> Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> Check the PC source Check the SVP-WX This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp on, no video.] -- Yes --> Q1[Check a PC source and check the connection of DSUB cable?] Q1 -- No --> A1[Input a analog PC signal and connected cable(DPMS).] Q1 -- Yes --> Q2[1 Does the signal appear at C2436, C2434, C2427(R,G,B) of IC2401] Q2 -- No --> A2[PC cable. Change a PC cable. Change a main PCB ass'y.] Q2 -- Yes --> Q3[2 Does the digital data appear at the output of LVDS (RA2601~2606)?] Q3 -- No --> A3[Check a IC2601. Change a main PCB ass'y] Q3 -- Yes --> Q4[3 Check Local dimming board Change a Local dimming(Rose) PCB ass'y.] Q4 -- Yes --> Q5[Check a LVDS cable? Replace a lcd panel?] Q5 -- No --> A4[Please, Call to Samsung Co. LTD.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

WAVEFORMS

1

R,G,B Output Signal

2007-01-00 10:45:29
Stopped 204

Normal

200MS/s 10µs/div

CH1 10:1
0.500 0.510
EC Full

Edge CH 1
auto
1.770 U

Thumbnail

Format
JPEG

Color
ON

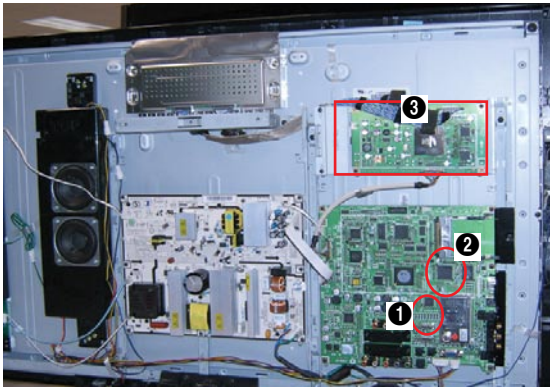
Comment

File List

File Name
TR 0000

4-4

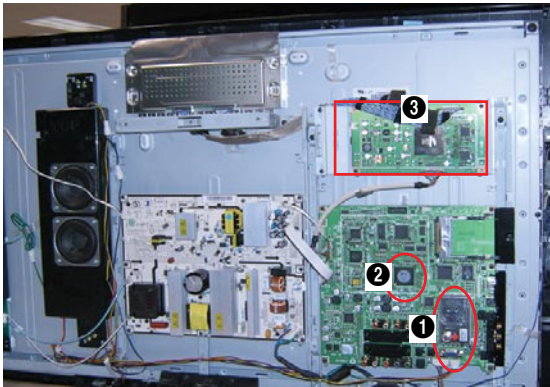
4-1-3. No Video (HDMI - Digital Signal)

Symptom	<ul style="list-style-type: none"> Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> Check the HDMI source Check the SVP-WX This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp on, no video.] -- Yes --> Q1{1 Check the connection of HDMI cable?} Q1 -- No --> A1[Input a HDMI cable.] Q1 -- Yes --> Q2{2 Does the digital data appear at R1442~1449?} Q2 -- No --> A2[Check a IC1402. Change a main PCB ass'y.] Q2 -- Yes --> Q3{3 Does the digital data appear at output of IC1401(RA1401~RA1407)?} Q3 -- No --> A3[Check a IC1401. Change a main PCB ass'y.] Q3 -- Yes --> A4[Check Local dimming board Change a Local dimming(Rose) PCB ass'y.] A4 -- Yes --> Q4{Check the LVDS cable? Replace the LCD panel?} Q4 -- No --> A5[Please, Contact Tech support] </pre> <p>Power Indicator is off. Lamp on, no video.</p> <p>Yes</p> <p>1 Check the connection of HDMI cable?</p> <p>No → Input a HDMI cable.</p> <p>Yes</p> <p>2 Does the digital data appear at R1442~1449?</p> <p>No → Check a IC1402. Change a main PCB ass'y.</p> <p>Yes</p> <p>3 Does the digital data appear at output of IC1401(RA1401~RA1407)?</p> <p>No → Check a IC1401. Change a main PCB ass'y.</p> <p>Yes</p> <p>Check Local dimming board Change a Local dimming(Rose) PCB ass'y.</p> <p>Yes</p> <p>Check the LVDS cable? Replace the LCD panel?</p> <p>No → Please, Contact Tech support</p>
Caution	Make sure to disconnect the power before working on the IP board.

WAVEFORMS

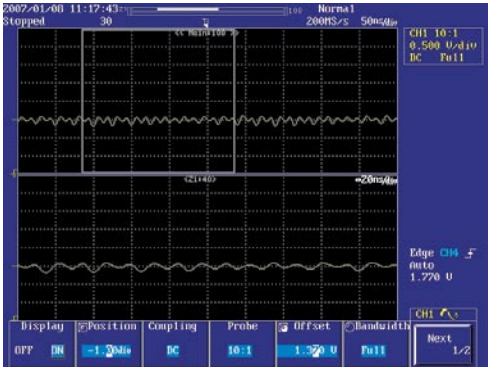
2	Digital Output Data
3	Signal of HDMI(Data)

4-1-4. No Video (Tuner_CVBS)

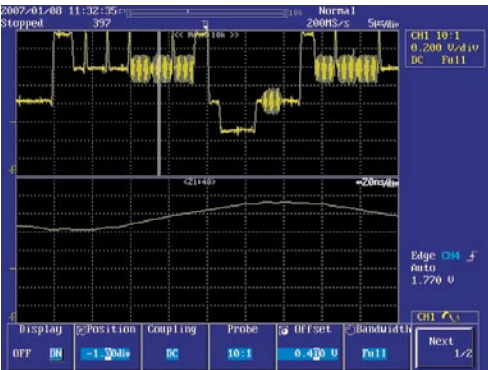
Symptom	<ul style="list-style-type: none"> Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> Check the Tuner CVBS source Check the SVP-WX This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp on, no picture.] -- No --> RF[Connect the RF cable and check RF signal.] Start -- Yes --> Q1{1 Does the signal appear at R2710?} Q1 -- No --> B1[Check a B+ voltage (#3 of Tuner) 5V, change a main PCB ass'y.] Q1 -- Yes --> Q2{2 [4] Does the signal appear at C2617 of IC2601?} Q2 -- No --> B2[Change a main PCB ass'y.] Q2 -- Yes --> B3[3 Check FRC board(Peony model). Check Local dimming board Change a Local dimming(Rose) PCB ass'y.] B3 -- Yes --> Q3[Check the LVDS cable? Replace the LCD panel?] Q3 -- No --> End[Please, Call to Samsung Co. LTD.] </pre> <p>Power Indicator is off. Lamp on, no picture.</p> <p>No → Connect the RF cable and check RF signal.</p> <p>Yes → 1 Does the signal appear at R2710?</p> <p>No → Check a B+ voltage (#3 of Tuner) 5V, change a main PCB ass'y.</p> <p>Yes → 2 [4] Does the signal appear at C2617 of IC2601?</p> <p>No → Change a main PCB ass'y.</p> <p>Yes → 3 Check FRC board(Peony model). Check Local dimming board Change a Local dimming(Rose) PCB ass'y.</p> <p>Yes → Check the LVDS cable? Replace the LCD panel?</p> <p>No → Please, Call to Samsung Co. LTD.</p>
Caution	Make sure to disconnect the power before working on the IP board.

WAVEFORMS

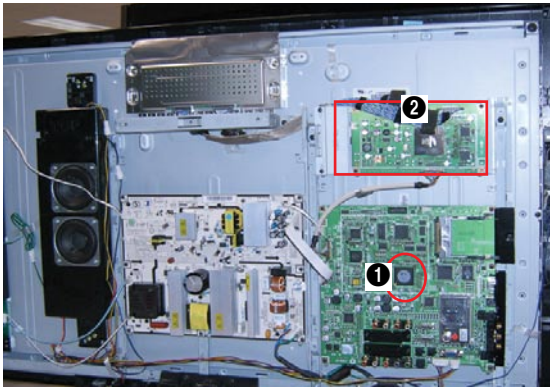
3 CVBS Output Signal



4 Tuner_CVBS Output Signal



4-1-5. No Picture (Video_CVBS)

Symptom	<ul style="list-style-type: none"> Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> Check the Video Source Check the SVP-WX This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD A[Power Indicator is off. Lamp on, no picture.] -- No --> B[Check a A/V cable and video signal.] A -- Yes --> C{1 Does the signal appear at C2630 of IC2601?} C -- No --> D[Check a connection harness.] C -- Yes --> E{2 Check Local dimming board Change a Local dimming(Rose) PCB ass'y.} E -- Yes --> F[Check a LVDS cable? Replace lcd panel?] F -- No --> G[Please, Call to Samsung Co. LTD.] </pre> <p>Power Indicator is off. Lamp on, no picture.</p> <p>No → Check a A/V cable and video signal.</p> <p>Yes → 1 Does the signal appear at C2630 of IC2601?</p> <p>No → Check a connection harness.</p> <p>Yes → 2 Check Local dimming board Change a Local dimming(Rose) PCB ass'y.</p> <p>Yes → Check a LVDS cable? Replace lcd panel?</p> <p>No → Please, Call to Samsung Co. LTD.</p>
Caution	Make sure to disconnect the power before working on the IP board.

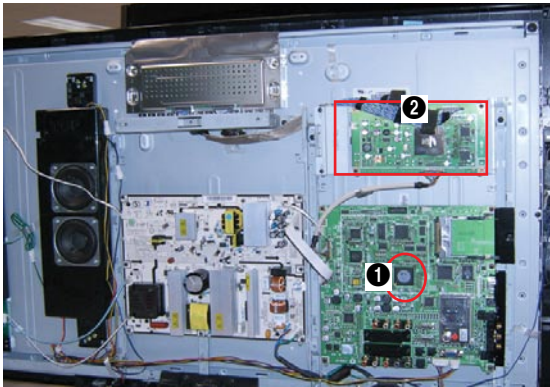
WAVEFORMS

4

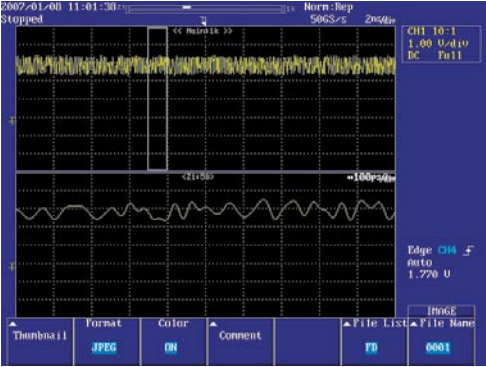
CVBS Output Signal



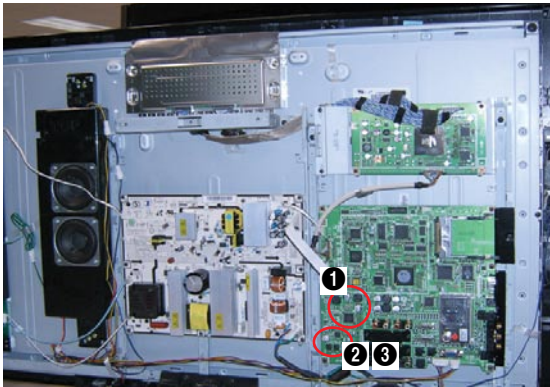
4-1-6. No Picture (S-VIDEO_Y,C)

Symptom	<ul style="list-style-type: none"> Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> Check the S-Video_Y,C source Check the SVP-WX This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD A[Power Indicator is off. Lamp on, no picture.] -- No --> B[Connect the s-video cable. Operating a video player.] A -- Yes --> C{1 Does the Y/C signal appear at C2619, C2622 of IC2601?} C -- No --> D[Check a connection harness.] C -- Yes --> E{2 Check Local dimming board Change a Local dimming(Rose) PCB ass'y.} E -- Yes --> F{Check a LVDS cable? Replacea lcd panel?} F -- No --> G[Please, Call to Samsung Co. LTD.] </pre> <p>Power Indicator is off. Lamp on, no picture.</p> <p>No → Connect the s-video cable. Operating a video player.</p> <p>Yes → 1 Does the Y/C signal appear at C2619, C2622 of IC2601?</p> <p>No → Check a connection harness.</p> <p>Yes → 2 Check Local dimming board Change a Local dimming(Rose) PCB ass'y.</p> <p>Yes → Check a LVDS cable? Replacea lcd panel?</p> <p>No → Please, Call to Samsung Co. LTD.</p>
Caution	Make sure to disconnect the power before working on the IP board.

WAVEFORMS

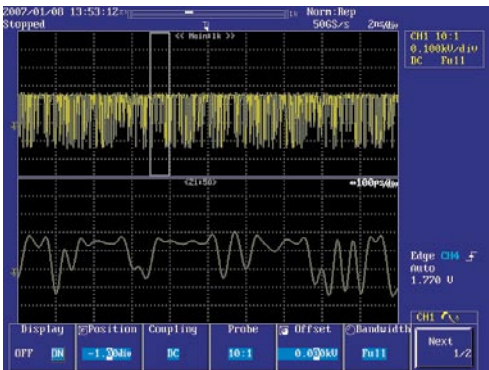
2	Digital Output Data
	
5	Analog Signal(Y,C)
	

4-1-7. No Sound

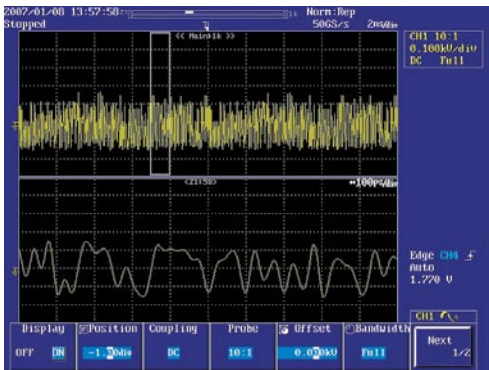
Symptom	<ul style="list-style-type: none"> Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> Check the RF Source Check the SVP-WX This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Picture is display, no sound.] -- No --> Step1[Connect a sound cable. control a volume.] Start -- Yes --> Step2{1 Does the signal appear at pin #10, #12, #13, #9(I2S_CLK, I2S_SCLK, I2S_LRCLK, I2S_DATA) of IC1201?} Step2 -- No --> Step2a[Check a connection harness and headphone jack./Side AV Check Sound Processor IC1201 (SGTV5810)] Step2 -- Yes --> Step3{2 Check the DC 12V of IC1202?} Step3 -- No --> Step3a[Check a B12V Line. Change a main PCB ass'y.] Step3 -- Yes --> Step4{3 Does the signal appear at Pin #47 or 48, #53 or 54(CH1_L, R Sound) And Pin #36 or 37, #30 or 31 (CH2_L, R Sound) of IC1202?} Step4 -- No --> Step4a[Change a main PCB ass'y.] Step4 -- Yes --> Step5[Replace the speaker ass'y?] </pre> <p>Picture is display, no sound.</p> <p>No → Connect a sound cable. control a volume.</p> <p>Yes → 1 Does the signal appear at pin #10, #12, #13, #9(I2S_CLK, I2S_SCLK, I2S_LRCLK, I2S_DATA) of IC1201?</p> <p>No → Check a connection harness and headphone jack./Side AV Check Sound Processor IC1201 (SGTV5810)</p> <p>Yes → 2 Check the DC 12V of IC1202?</p> <p>No → Check a B12V Line. Change a main PCB ass'y.</p> <p>Yes → 3 Does the signal appear at Pin #47 or 48, #53 or 54(CH1_L, R Sound) And Pin #36 or 37, #30 or 31 (CH2_L, R Sound) of IC1202?</p> <p>No → Change a main PCB ass'y.</p> <p>Yes → Replace the speaker ass'y?</p>
Caution	Make sure to disconnect the power before working on the IP board.

WAVEFORMS



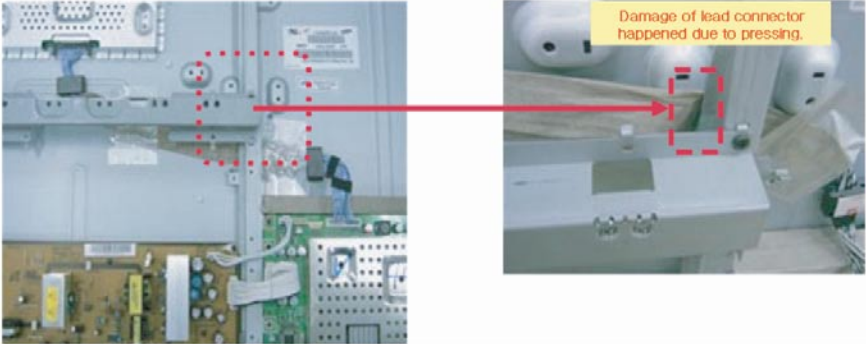
6 The Signal are Inputed to IC1201



7 The Signal are Inputed to IC1202



4-1-8. Defect Analysis ahead of models.

Defective image	Defective Symptoms
	No Picture and normal sound in case of defective a local dimming board or a defective connector
Another kind of defect	<div data-bbox="547 568 1010 801"></div> <div data-bbox="547 869 1417 1211"><p>Damage of lead connector happened due to pressing.</p></div> <div data-bbox="539 1263 724 1292">LVDS Connector</div>

4-2. Alignments and Adjustments

4-2-1. General Alignment Instruction

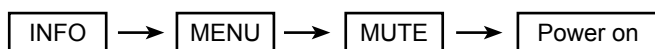
1. Usually, a color LCD-TV needs only slight touch-up adjustment upon installation.
Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
7. To protect against shock hazard, use an isolation transformer.

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



- If you have Factory remote - control



- The buttons are active in the service mode.

1. Remote - Control Key : Power, Arrow Up, Arrow Down, Arrow Left

Arrow Right, Menu, Enter, Number Key(0~9)

2. Function - Control Key : Power, CH +, CH -, VOL +, VOL -,
Menu, TV/VIDEO(Enter)

4-3-2 Panel Check

You have to check Panel Maker Because of different adjustments as follows.

First of all, Check the label rating!

1) Label Rating File

- LCD PANEL MARK

A:ACER(AUO) S : SEC C : CMO

* If not printed you could consider S(sec) panel mark.

4-3-3 Factory Data

1. Calibration
2. Option Table(Service)
3. White Balance
4. SVP-UX
5. Option Block
6. SGTV5810/NTP3000
7. YC Delay
8. Option Table
9. I2C Check
10. W/B MOVIE
11. Checksum
12. Reset
13. Spread Spectrum

(In case of FRC-M : T-PONFMPEUMD-xxxx)

T-PONPEUMD-xxxx (Main Micom Ver)

T-PNRPEUS-xxxx (Sub Micom Ver)

PEONY_ROSE_TR-xxxx

Month / Day / Year / Hour / Min. / Sec.

1. Calibration
 - 1) AV Calibration
 - 2) COMP Calibration
 - 3) PC Calibration
 - 4) HDMI Calibration
 - 5) DTV Calibration

2. Option Table(Service)

No	Item	Range	Rose	Peony	
1	Ready	ON/OFF	OFF	OFF	OFF
2	Inch Option	23/26/32/37/40/46/57/27/42/50 /52/63/70	52"	40"	46"
3	Panel Vender	AUO_EXT_P / AUO_EXT_N...	Digital	AMLCD_EXT	AMLCD_EXT
4	DDR	SAMSUNG/ETRON	ETRON	ETRON	ETRON
5	Panel Type	40"SC100/46"SC100/52"CM LED/70"LED	52" CM LED	40" SC100	46" SC100
6	Model Option	Lily/ Peony/Rose / Jasmine...	Peony/Rose	Peony/Rose	Peony/Rose
7	PDP Filter	-	EU MRT	EU MRT	EU MRT
8	Anynet +	ON/OFF	ON	ON	ON
9	Light Effect	ON/OFF	ON	ON	ON
10	WM Calib	ON/OFF	OFF	OFF	OFF
11	Auto Power	ON/OFF	ON	ON	ON
12	NT Conversion	ON/OFF	-	-	-
13	LNA Menu	ON/OFF	ON	ON	ON
14	TTX On/Off	ON/OFF	ON	ON	ON
15	TTX List	List/Flof	Flof	Flof	Flof
16	Carrier Mute	ON/OFF	OFF	OFF	OFF
17	High Deviation	ON/OFF	OFF	OFF	OFF
18	VOL.Curve	Small/Large	Large	Large	Large
19	HDMI HotPlug	1/0	1	1	1

No	Item	Range	Rose	Peony	
20	HDMI Clk Ctrl	1/0	1	1	1
21	HDMI HP Dly	3 ~ 50	9	9	9
22	Hotel Option				
	Hotel Mode	ON/OFF	OFF	OFF	OFF
	Power On Channel	1~99	1	1	1
	Power On Volume	1~100	10	10	10
	Max Volume	1~100	100	100	100
	Local Key Lock	ON/OFF	OFF	OFF	OFF
	Power On Source	RF/Ext.1/Ext.2/AV/S-Video/ Component/PC/HDMI1/HDMI2/ HDMI3/DTV	RF	RF	RF
	Music Mode	ON/OFF	OFF	OFF	OFF
23	Shop Mode	ON/OFF	OFF	OFF	OFF
24	Color Space	ON/OFF	ON	ON	ON
25	PC Ident	ON/OFF	ON	ON	ON
26	Language	English/German/French/ Italian...	English	English	English
27	Ch. Table	SUWON/SESK//SHE/CHINA/ SEIN/SDMA/TSE/SAVINA/SIEL	SUWON	SUWON	SUWON
28	TTX Group	Auto/West Europe...	Auto	Auto	Auto
29	Nordic	ON/OFF	ON	ON	ON
30	PDP Group	-	C5E_DMA	C5E_DMA	C5E_DMA

3. White Balance

No	Item	Range	RF/AV/S_Video	Comp/iDTV	PC	HDMI
1	Sub-Briteness	00H~FFH	128	128	128	128
2	R-offset	00H~FFH	128	128	128	128
3	G-offset	00H~FFH	128	128	128	128
4	B-offset	00H~FFH	128	128	128	128
5	Sub-Contrast	00H~FFH	145	145	145	145
6	R-Gain	00H~FFH	128	128	128	128
7	G-Gain	00H~FFH	128	128	128	128
8	B-Gain	00H~FFH	128	128	128	128

4. SVP-UX

1) ComB Filter

No	Item	Range	
1	Y-Filter	00H~FFH	00H

4. Troubleshooting

2) Sharpness

No	Item	Range	RF/AV/ S_Video	Comp 480i/576i	Comp 480p/576p	Comp 720p/1080i	HDMI_ 480p/576p	HDMI_ 720p/1080i	PC	iDTV
1	H2Gain	00 ~ 1FH	10H	0CH	0CH	08H	0DH	08H	0AH	04H
2	H4Gain	00 ~ 1FH	0AH	08H	08H	08H	08H	08H	0AH	04H
3	V2Gain	00 ~ 1FH	10H	14H	14H	16H	16H	16H	02H	0AH
4	V4Gain	00 ~ 1FH	10H	14H	14H	16H	16H	16H	02H	0AH
5	Sr2Gain	00 ~ 1FH	02H	02H	02H	02H	02H	02H	12H	00H
6	Sr4Gain	00 ~ 1FH	01H	01H	01H	01H	01H	01H	12H	00H
7	Sl2Gain	00 ~ 1FH	02H	02H	02H	02H	02H	02H	00H	00H
8	Sl4Gain	00 ~ 1FH	01H	01H	01H	01H	01H	01H	00H	00H
9	Peakth1	00H~FFH	02H	02H	02H	02H	02H	02H	06H	03H
10	Peakth2	00H~FFH	2FH	2FH	2FH	2FH	2FH	2FH	2FH	2FH
11	Sub Color	00H~FFH	43H	4CH	4CH	50H	4CH	4CH	40H	43H

3) NR

No	Item	Range	
1	Y_NR_OFF	00H~FFH(Y_NR_OFF)	00H
2	C_NR_OFF	00H~FFH(C_NR_OFF)	00H
3	Y_NR_ON	00H~FFH(Y_NR_ON)	00H
4	C_NR_ON	00H~FFH(C_NR_ON)	00H

4) RGB Calibration

No	Item	Range	TV/AV/S_Video	Component	PC	HDMI
1	R-Offset	00H~FFH	3AH	40H	3AH	41H
2	G-Offset	00H~FFH	3AH	40H	3AH	41H
3	B-Offset	00H~FFH	3AH	40H	3AH	41H
4	R-Gain	00H~FFH	A6H	92H	A5H	91H
5	G-Gain	00H~FFH	A6H	92H	A5H	91H
6	B-Gan	00H~FFH	A6H	92H	A5H	91H

5) ADC Calibration

No	Item	Range	TV/AV/S_Video	Component	PC	HDMI
1	TCD3 Contrast	00H~FFH	79H	78H	78H	78H
2	TCD3 Brightness	00H~FFH	29H	20H	20H	20H
3	TCD3 CR	00H~FFH	80H	80H	80H	80H
4	TCD3 CB	00H~FFH	80H	80H	80H	80H
5	TCD3 Delay	00H~FFH	00H	00H	00H	00H
6	Analog Y Offset	00H~FFH	40H	A0H	9EH	40H
7	Analog PB Offset	00H~FFH	80H	80H	9EH	80H
8	Analog PR Offset	00H~FFH	80H	80H	9EH	80H
9	Analog Y Gain	00H~FFH	D6H	26H	29H	80H
10	Analog PB Gain	00H~FFH	80H	26H	29H	80H
11	Analog PR Gain	00H~FFH	80H	26H	29H	80H
12	Black Level	00H~FFH	00H	00H	00H	00H
13	Svp Brightness	00H~FFH	00H	00H	00H	00H

6) Calibration Target

No	Item	Range	low	high	Delta
1	AV ADC	00H~FFH	10H	DCH	02H
2	COMP ADC	00H~FFH	10H	EBH	02H
3	PC ADC	00H~FFH	10H	DCH	04H
4	ALL RGB	00H~FFH	00H	EBH	0AH

7) Color Management

No	Item	Range	
1	Skin Direction	Reddish/Yellowish	Reddish
2	Skin Enhance	00H~FFH	00H
3	Green Stretch	00H~FFH	00H
4	Blue Stretch	00H~FFH	00H

8) Sync Control

No	Item	Range	
1	HSync Tip End	00H~FFH	0FH
2	VSyn AGC Mn	00H~FFH	6CH
3	VSyn AGC MAX	00H~FFH	33H
4	VSyn Clamp Mode	0~3	1
5	VSyn Thresh	00H~FFH	B3H

4. Troubleshooting

4. Option Block

1) FRC (Micronas)

No	Item	Range	Data
1	SprdSpec.Width	ON	-
2	SS Width	00 ~ 30	20
3	SS Freq	00 ~ 70	60
4	Film Low	0~7	4
5	Film Medium	0~7	2
6	TP Before DDR	0~9	0
7	TP After DDR	0~7	0
8	FMD Demo	OFF/ON	OFF
9	Video Judder	00~32	00
10	SD FilmLow22Jud	00~32	20
11	SD FilmLow32Jud	00~32	20
12	SD FilmMed22Jud	00~32	10
13	SD FilmMed32Jud	00~32	10
14	HD FilmLow22Jud	00~32	12
15	HD FilmLow32Jud	00~32	12
16	HD FilmMed22Jud	00~32	06
17	HD FilmMed32Jud	00~32	06
18	SD FilmHigh22Jud	00~32	00
19	SD FilmHigh32Jud	00~32	00
20	HD FilmHigh22Jud	00~32	00
21	HD FilmHigh22Jud	00~32	00

2) FRC2X

No	Item	Range	
1	OUTCON	1~3	0
2	GAMMA	1~7	0
3	OCC_MODE	0/1	0
4	FALLBACK	0/1	0
5	DBG_MARK	0/1	0
6	SPR_CBR	0/1	0
7	BIT_EXPAND	0/1	0
8	BIT_EXPAND	0/1	0
9	REPEAT_MODE	0/1	0
10	DEMO_ON_OFF	0/1	0
11	MMU_RD_START	00H~FFH	00H
12	ME_RD_START	00H~FFH	00H
13	MC_RD_START	00H~FFH	00H
14	CMZL(0x36E)	00H~FFH	0H
15	BLOL(0x2A7)	00H~FFH	0H
16	LOGO(0x2A7)	00H~FFH	0H

3) FBE2

No	Item	Range	RF	AV/ S-VIDEO	COMP (480i/576i)	COMP (480p/576p)	COMP(720p/ 1080i/1080p)	HDMI	PC	DTV
1	Pattern Select	0~20	0	0	0	0	0	0	0	0
2	BS-On	0/1	1	1	1	1	1	1	1	1
3	B-Slope Gain	0~255	70	70	60	60	70	70	70	70
4	B-Tilt Min	0~255	20	20	20	20	20	20	20	20
5	B-Tilt Max	0~255	120	120	120	120	120	120	120	120
6	B-Tilt Slope	0~255	128	128	128	128	128	128	128	128
7	LFunc-Basis	0~255	50	50	60	60	60	50	50	60
8	Hfunc-Basis	0~255	60	60	70	70	70	60	60	70
9	Mean-Offset1	0~255	30	30	30	30	30	30	30	30
10	Mean-Offset2	0~255	235	235	235	235	235	235	235	235
11	Mean Slope	0~255	112	112	112	112	112	112	112	112
12	Input Offset	0~255	128	128	128	128	128	128	128	128
13	Input Gain	0~255	128	128	128	128	128	128	128	128
14	ACR Offset	0~128	10	10	10	10	10	10	10	10
15	ACR Th1	0~255	10	10	10	10	10	10	10	10
16	ARC Th2	0~255	110	110	110	110	110	110	110	110
17	Skin Enable	0/1	1	1	1	1	1	1	1	1
18	Skin Tu	0~255	128	128	133	133	128	128	128	133
19	Skin Tv	0~255	128	128	133	133	128	128	128	133
20	M Skin Tu	0~255	128	128	128	128	128	128	128	128
21	M Skin TV	0~255	128	128	128	128	128	128	128	128
22	Sub Color	0~255	138	138	138	138	138	138	138	138
23	M-Au-Sub Color	0~255	128	128	128	128	128	128	128	128
24	M-Wi-Sub Color	0~255	128	128	128	128	128	128	128	128
25	MW-Skin-Tu	0~255	128	128	128	128	128	128	128	128
26	MW-Skin-Tv	0~255	128	128	128	128	128	128	128	128

4. Troubleshooting

4) Pdp Logic

No	Item	Range	
1	Pattern Srlct	0~63	000
2	CDC Sw	ON/OFF	OFF
3	CDC Strenght	0~31	001
4	BRE Sw	ON/OFF	OFF
5	FRC Repeat Mode	ON/OFF	OFF
6	FRC CBG Mark On	0~15	000
7	FRC Bypass	ON/OFF	OFF
8	CDC L Gain	0~31	004
9	CDC U Gain	0~31	006
10	Panel Type	-	00H
11	Panel Inch	-	SD
12	Panel Version	-	
13	Logic Sw Version	-	00Y 00M 00D
14	Panel Temp.	-	0

5) FRCS

No	Item	Range	
1	LVDS_RX_FMT	000~002	0
2	PRE_PATT_SEL	000~025	0
3	SP_SPMODE	000~003	0
4	FD_ON	000~001	0
5	FALLBACK_ON	000~001	0
6	EN_CON_B	000~001	0
7	EN_CON_C	000~001	0
8	EN_CON_c	000~001	0
9	EN_CON_P	000~001	0
10	EN_CON_H	000~001	0
11	EN_CON_V	000~001	0
12	POST_FILTER	000~001	0
13	S_WINDOW_ON	000~001	0
14	DBLK_ON.	000~001	0
15	PERIODIC_ON	000~001	0

6) Local Dimming (1)

No	Item	Range	
1	LD_SW	00~01	00H
2	BC_LEVEL	00~0F	04H
3	SF_ON	00~01	01H
4	SF_Option	00~03	01H
5	TF-ON	00~01	01H
6	Thr_TR_Ratio	00~3F	04H
7	ABL_MODE	00~03	00H
8	ABL_MIN	00~FF	B4H
9	ABL_MID	00~FF	7DH
10	ABL_MAX	00~FF	37H
11	POWER_S_MODE	00~03	00H
12	POWER_MIN	00~FF	CCH
13	POWER_MID	00~FF	80H
14	POWER_MAX	00~FF	4CH
15	ABL_TF_RATIO	00~3F	04H
16	ABL_TF_ON	00~01	01H
17	LIMIT_COE	00~FF	FFH
18	L3DD_ON	00~01	01H
19	L3DD_PATIO	00~FF	08H
20	L3DD_LD2_OR_LD3	00~01	01H
21	L3DD_SAT_LEVEL	00~07	04H

7) Local Dimming (2)

No	Item	Range	
1	VSYC_START_H	00~FF	01H
2	VSYC_START_L	00~FF	00H
3	AS_TH	00~FF	04H
4	LVDS_SEL	00~01	01H
5	SHIFT_SEL	00~01	00H
6	OUT_LVDS_SEL	00~01	01H
7	OUT_SHIFT_SEL	00~01	00H
8	MOTION_SW	00~01	01H
9	TH_H	00~3F	00H
10	TH_L	00~FF	F0H
11	SCANNING	00~01	00H
12	WHITE	00~01	00H
13	TP_SEL	00~10	00H
14	LD_DEMO2.	00~01	00H
15	SC_DEMO	00~01	00H
16	IES_SW	00~01	00H
17	IES_TH	00~FF	80H
18	IES_COEFF	00~FF	DCH
19	LD_DEMO1	00~01	00H

4. Troubleshooting

6. SGTV5810/NTP3000

No	Item	Range	
1	ID Tone Shift	1H~FH	01H
2	ID Tone Thresh	00H~FFH	7FH
3	Demod Prescaler	00H~20H	0EH
4	Master Volume	00H~30H	1FH
5	PWM Modulation	80H~F2H	E7H
6	DRC Threshold	00H~7FH	11H
7	Speaker EQ	ON/OFF	ON

7. YC Delay

No	Item	Range	
1	RF PAL-B/G	00H~FFH	33H
2	RF PAL - D/K	00H~FFH	42H
3	RF PAL - I	00H~FFH	42H
4	RF SECAM - B/G	00H~FFH	42H
5	RF SECAM - D/K	00H~FFH	11H
6	RF SECAM -L/L'	00H~FFH	88H
7	RF NTSC 3.58	00H~FFH	40H
8	RF NTSC 4.43	00H~FFH	CCH
9	AV PAL	00H~FFH	77H
10	AV SECAM	00H~FFH	49H
11	AV NTSC 3.58	00H~FFH	95H
12	AV NTSC 4.43	00H~FFH	AAH
13	AV PAL60	00H~FFH	77H

8. Adjust

No	Item	Range	
1	Video Mute Time	0~255	10
2	Dynamic Contrast	ON/OFF	ON
3	Dynamic Dimming	ON/OFF	OFF
4	Dynamic CE	ON/OFF	OFF
5	LNA PLUS	-	
	RFDB-1 Level	0~255	1
	RFDB-2 Level	0~255	2
	RFDB-3 Level	0~255	3
	RFDB-4 Level	0~255	24
6	Magazine LNA	ON/OFF	OFF
7	PixelShift Test	ON/OFF	OFF
8	Debug	ON/OFF	OFF
9	ACR	ON/OFF	OFF
10	D-Watchdog	ON/OFF	ON
	Watchdog	ON/OFF	ON
11	UART Select	MAIN / IDTV / PDP Lvds ON / PDP Lvds OFF	OFF
12	FBE Select	FBE2 / FBE2X	FBE2X
13	Tuner	Auto / ALPS / SAMCO	Auto
14	Tuner Top Semco	1~31	10
15	Tuner Top Alps	1~31	13
16	D. Gamma	Off,0_85,0_88,0_90,0_93,0_95,S_1~10	OFF
17	M. Gamma	Off,0_85,0_88,0_90,0_93,0_95,S_1~10	OFF
18	MJC/PDP FRC	FRC on,MJC on,All off,All on	All ON

9. I2C Check

4. Troubleshooting

10. W/B MOVIE

No	Item	Range	TV/AV/S_Video	Component	PC	HDMI	Scart1/2
1	WB Movie	ON/OFF	OFF	OFF	OFF	OFF	OFF
2	Color Mode	Movie	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic
3	Color Tone	Cool1	Cool1	Cool1	Cool1	Cool1	Cool1
4	Msub Brigh	0~255	128	128	128	128	128
5	Msub Contr	0~255	128	128	128	128	128
6	W1_RGAIN	0~255	159	159	159	159	Movie
7	W1_BGAIN	0~255	46	46	46	46	76
8	W1_R_OFFS	0~255	128	128	128	128	119
9	W1_B_OFFS	0~255	128	128	128	128	138
10	W2_RGAIN	0~255	171	171	171	171	142
11	W2_BGAIN	0~255	50	50	50	50	48
12	W2_R_OFFS	0~255	130	130	130	130	129
13	W2_B_OFFS	0~255	124	124	124	124	143
14	NO_RGAIN	0~255	143	143	143	143	141
15	NO_BGAIN	0~255	84	84	84	84	104
16	NO_R_OFFS	0~255	127	127	127	127	126
17	NO_B_OFFS	0~255	128	128	128	128	136
18	C2_RGAIN	0~255	119	119	119	119	124
19	C2_BGAIN	0~255	144	144	144	144	142
20	C2_R_OFFS	0~255	126	126	126	127	126
21	C2_B_OFFS	0~255	127	127	127	127	128
22	Movie Contr	0~100	100	100	100	100	100
23	Movie Brigh	0~100	45	45	45	45	45
24	Movie Color	0~100	55	55	55	55	55
25	Movie Sharp	0~100	75	75	75	75	75
26	Movie Tint	0~255	50	50	50	50	128
27	Backlight	0~100	10	10	10	10	10

11. Checksum EE39

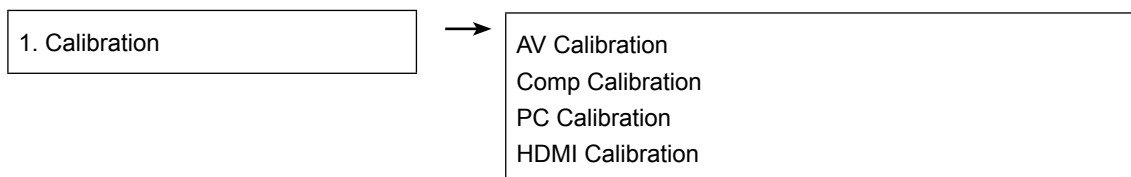
12 Reset

13. Spread Spectrum

No	Item	Range	
1	Spectrum	ON/OFF	ON
2	Delta	-128 ~ +128	0
3	Positive	0~99	0
4	Negative	0~99	0
5	Speed	0~7	0
6	Time	0~7	1
7	FBE Spectrum	OFF~5	2
8	SDP73 Spectrum	0~5	0

4-4. White Balance - Calibration

4-4-1 White Balance -Calibration

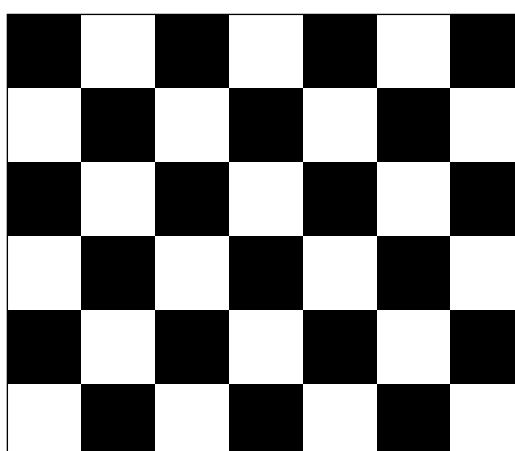


4-4-2 Service Adjustment - You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

■ Color Calibration

Adjust spec.

1. Source : HDMI
2. Setting Mode : 1280*720@60Hz
3. Pattern : Pattern #24 (Chess Pattern)



(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 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

<Table 1>

■ Method of Color Calibration (AV)

- 1) Apply the NTSC 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 "Calibration" 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 "Calibration" 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 "Calibration" 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 "Calibration" 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.

4-4-3 White Balance - Adjustment

	(low light)	(hight light)
3. W/B	Sub Bright R offset G offset B offset	Sub Contrast R gain G gain 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 : Time #6 720P, Pattern #24 Chessboard Calibration	→ Manual adjustment #92 pattern (720p)
COMP: Time #6 720P, Pattern #24 Chessboard Calibration	→ Manual adjustment at #92 pattern (720p)
CVBS: Time #2 PAL, Pattern #24 Chessboard Calibration	→ Manual adjustment at #92 pattern (NTSC)
PC: Time #21 1024*768, Pattern #24 Chessboard Calibration	→ Manual adjustment at #92 pattern (NTSC)

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

	CA-210				
		x	y	Y(L)	T(K) + MPCD
CVBS (NTSC)	H/L	272	287	- (Sub_CT:145)	11,000 (+10)
	L/L	272	287	12.2cd/m ² (3.52 Ft - Sub_BR:128)	11,000 (+10)
COMP (720P)	H/L	272	287	- (Sub_CT:145)	11,000 (+10)
	L/L	272	287	12.1cd/m ² (3.5 Ft - Sub_BR:128)	11,000 (+10)
HDMI (720P)	H/L	272	287	- (Sub_CT:145)	11,000 (+10)
	L/L	272	287	12.0cd/m ² (3.5 Ft - Sub_BR:128)	11,000 (+10)

- Adjustment Specification

White Balance : High light (± 3), Low light (± 5)

Luminance : High light (± 0.1 Ft/L), Low light (± 0.1 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 (7267864) 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 located on the back of 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 Software upgrade, then press the **ENTER** button.
4. Press the **▲** or **▼** button to select USB Upgrade, then press the **ENTER** button.
The message Scanning for USB...
It may take up to 30 seconds is displayed.
Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied.
The TV will shut off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete.

* How to check Program Version

1. Press "MENU"
2. Select "SETUP"
3. Select "INFORMATION HELP"
4. Highlight "ON" option
5. Press "INFO" button on the remote control

