
4. Troubleshooting

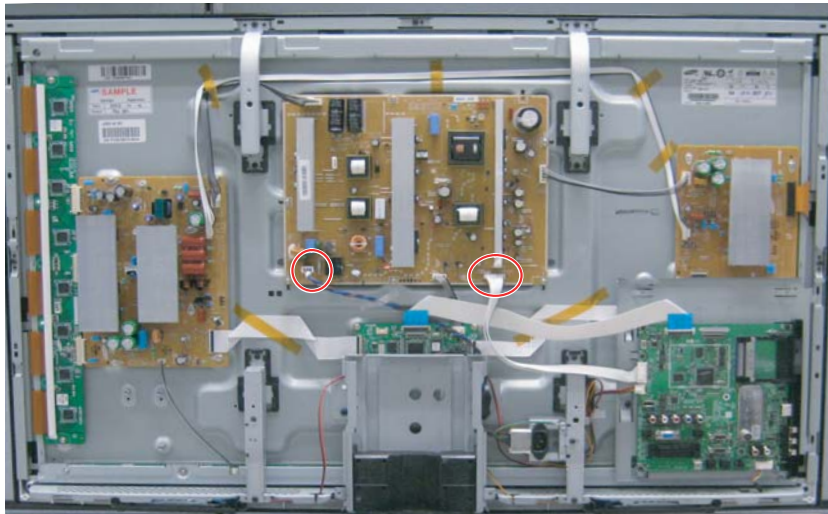
4-1 Troubleshooting

4-1-1 First Checklist for Troubleshooting

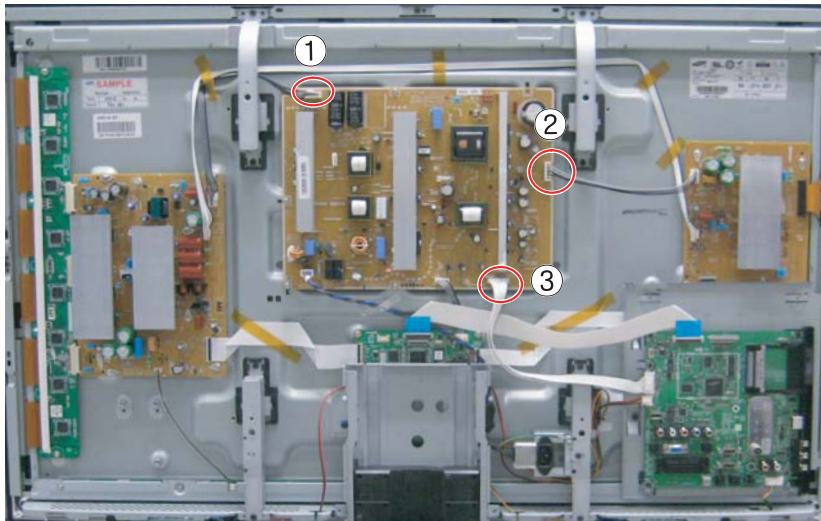
1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. Check the voltage in and out between the SMPS ↔ Main Board, between the SMPS ↔ X, Y Main Board, and between the Logic Boards.

4-1-2 Checkpoints by Error Mode

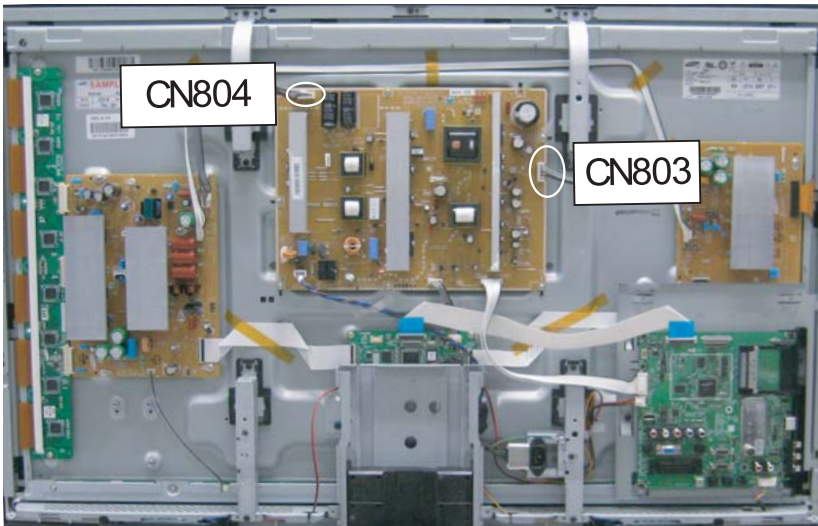
■ No Power

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 Checklist	<p>The SMPS 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.
Troubleshooting Procedures	 <pre> graph TD Q1[① Is the AC IN socket connector and the SMPS CN800S connected?] -- No --> A1[Insert the AC in connector and the SMPS CN800S connector] Q1 -- Yes --> Q2[① Is the Fuse (F801S) of the SMPS Power Input Part blown?] Q2 -- Yes --> A2[Replace Fuse (F801S)] Q2 -- No --> Q3[② SMPS CN801 Pin 3 : STB 5V Pin 2 PS-ON : Check to see if it is 0V] Q3 -- No --> A3[Replace the SMPS] Q3 -- Yes --> A4[Replace the Main Board] </pre>

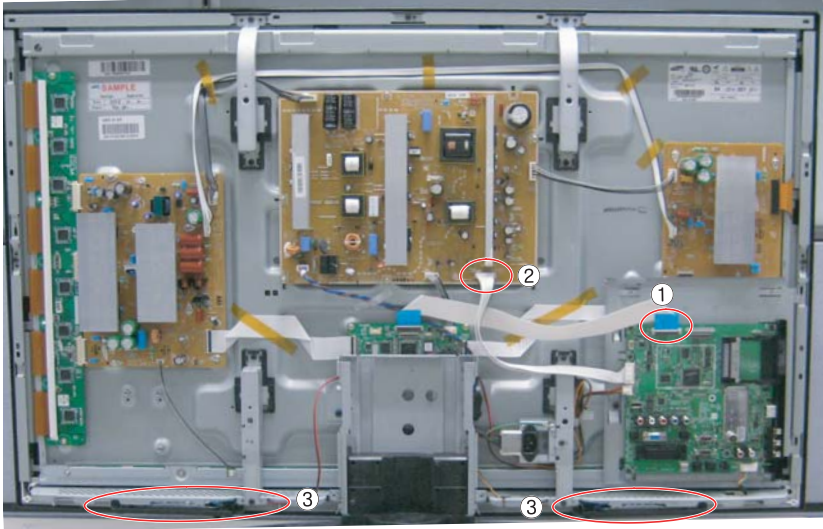
■ When the unit is repeatedly turned on and off

Symptom	- The SMPS relay is repeatedly turned on and off.
Major Checklist	<p>In general, the SMPS relay repeatedly turns on and off by the protection function due to a defect on a board connected to the SMPS.</p> <ul style="list-style-type: none"> - Disconnect all cables from the SMPS, operate the SMPS alone and check if the SMPS works properly and if each voltage output is correct. - If the symptom continues even when SMPS is operated alone, replace the SMPS. - If the symptom is not observed when operating the SMPS alone, find any defective assemblies by connecting the cables one by one.
Troubleshooting Procedures	 <pre> graph TD Q1["① Does the symptom continue when connecting the power after removing CN810 from the SMPS?"] Q2["② Does the symptom continue when connecting the power after removing CN809 from the SMPS?"] Q3["③ Does the symptom continue when connecting the power after removing CN807 from the SMPS?"] R1["Replace the Y Main Board"] R2["Replace the X Main Board"] R3["Replace the Logic Board"] R4["Replace the SMPS"] Q1 -- No --> R1 Q1 -- Yes --> Q2 Q2 -- No --> R2 Q2 -- Yes --> Q3 Q3 -- No --> R3 Q3 -- Yes --> R4 </pre>
Caution	When separating and connecting the cables such as CN810, CN809, CN808, CN807 of the Main SMPS, CN4701 of the X Main Board, and CN5707 of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.


■ No Picture (When audio is normal)

Symptom	- Audio is normal but no picture is displayed on the screen.
Major Checklist	<ul style="list-style-type: none"> - This may happen when the Main Board is functioning but the X, Y Main Board, Logic Board, or Y Buffer Boards are not. - The output voltage of the Main SMPS. - This may happen when the LVDS cable connecting the Main Board and the Logic Board is disconnected.
Troubleshooting Procedures	 <pre> graph TD A[Check the LED operation of Logic Board Is it normally operating?] -- No --> B[Replace the Logic Board] A -- Yes --> C[Check the output of LVDS Is it normally operating?] C -- No --> D[Replace the Main Board] C -- Yes --> E[Check the each output of the SMPS Is it normally operating?] E -- No --> F[Replace the SMPS] E -- Yes --> G[Check the each output of the SMPS after disconnecting the power cable from SMPS. And replace X-main, Y-main Board, Y-scan Board.] G -- No --> H[Replace the Y Scan Board] </pre>
Caution	When separating and connecting the cables such as CN810, CN809, CN807 of the Main SMPS, CN4701 of the X Main Board, and CN5707 of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.

■ No Sound

Symptom	- Video is normal but there is no sound.
Major Checklist	- When the speaker connectors are disconnected or damaged. - When the sound processing part of the Main Board is not functioning. - Speaker defect.
Troubleshooting Procedures	<div></div> <div><div><div>①</div><div>Is the cable connection between the Main Board and the speaker properly connected?</div><div>No</div><div>Connect the cable properly or replace the cable, if necessary.</div></div><div><div>Yes</div><div>②</div><div>Is the output voltage of SMPS normal? (CN801 #13)</div><div>No</div><div>Replace the SMPS</div></div><div><div>Yes</div><div>Is the speaker output terminal of the Main Board normal?</div><div>No</div><div>Replace the Main Board</div></div><div><div>Yes</div><div>③</div><div>Replace the Speaker</div></div></div>

No Video

Symptom	- A normal/cable network analog broadcast screen is blank or abnormal but OSD is OK.
Major Checklist	<div>- Check the antenna connection settings (Air: NTSC / ATSC, Cable: NTSC)</div> <div>- Check the CVBS cable connection.</div> <div>- Check the power input of the Main board.</div>
Troubleshooting Procedures	<div></div> <div><div>Is the antenna connection setting properly configured?</div><div>No<div>Configure properly</div></div><div>Yes<div>Check CN1001 pin2 for +5V</div><div>No<div>Replace the SMPS</div></div><div>Yes<div>Replace the Main Board</div></div></div></div>

■ Drive Board Troubleshooting

1) Troubleshooting Summary

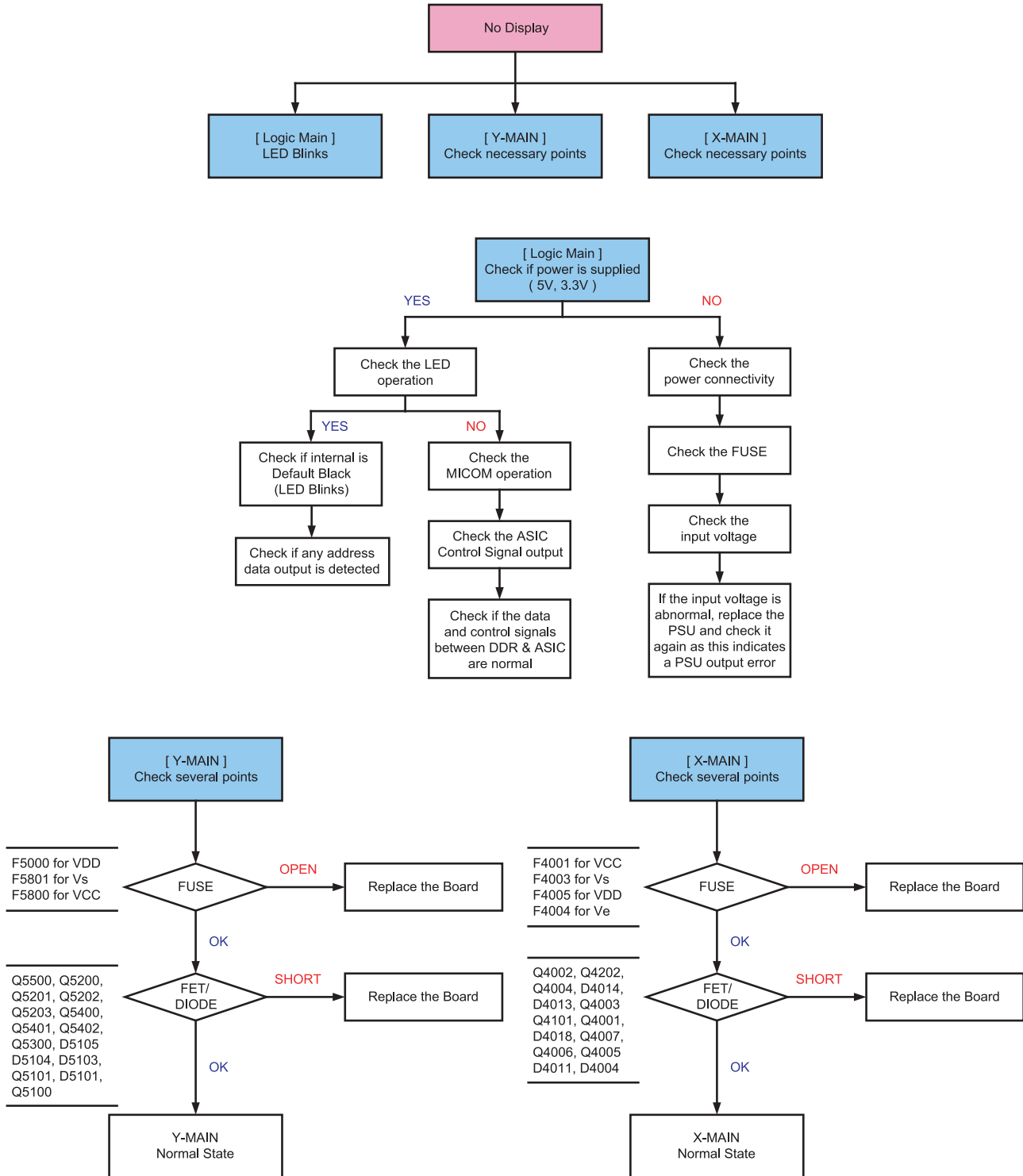
Condition Name	Description	Related Board
No Voltage Output	Operating Voltage don't exist	PSU
No Display	Operating Voltage exist, but an Image doesn't exist on screen	Y-MAIN, X-MAIN, Logic Main, Cable
Abnormal Display	Abnormal Image (not open or short) is no screen	Y-MAIN, X-MAIN, Logic Main
Sustain Open	Some horizontal lines don't exist on screen	Scan Buffer, FPC of X/Y
Sustain Short	Some horizontal lines appear to be linked on screen	Scan Buffer, FPC of X/Y
Address Open	Some vertical lines don't exist on screen	Logic Main, Logic Buffer, TCP
Address Short	Some vertical lines appear to be linked on screen	Logic Main, Logic Buffer, TCP

2) Troubleshooting Procedure in Abnormal Conditions

① No Display

- No Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

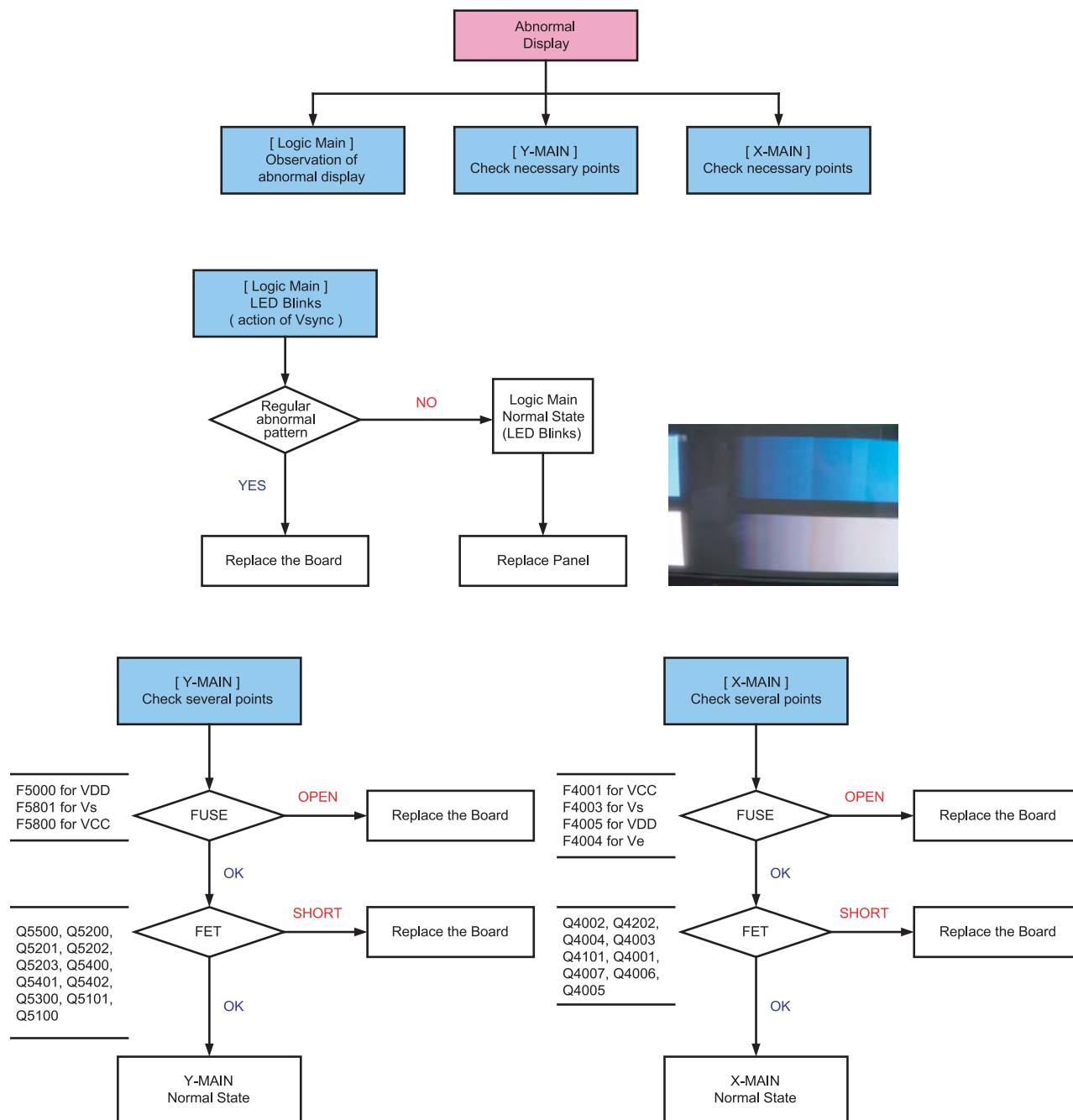
This page shows you how to check the boards, and the following pages show you how to find the defective board.



② Abnormal Display(Abnormal Image is on Screen.(except abnormality in Sustain or Address))

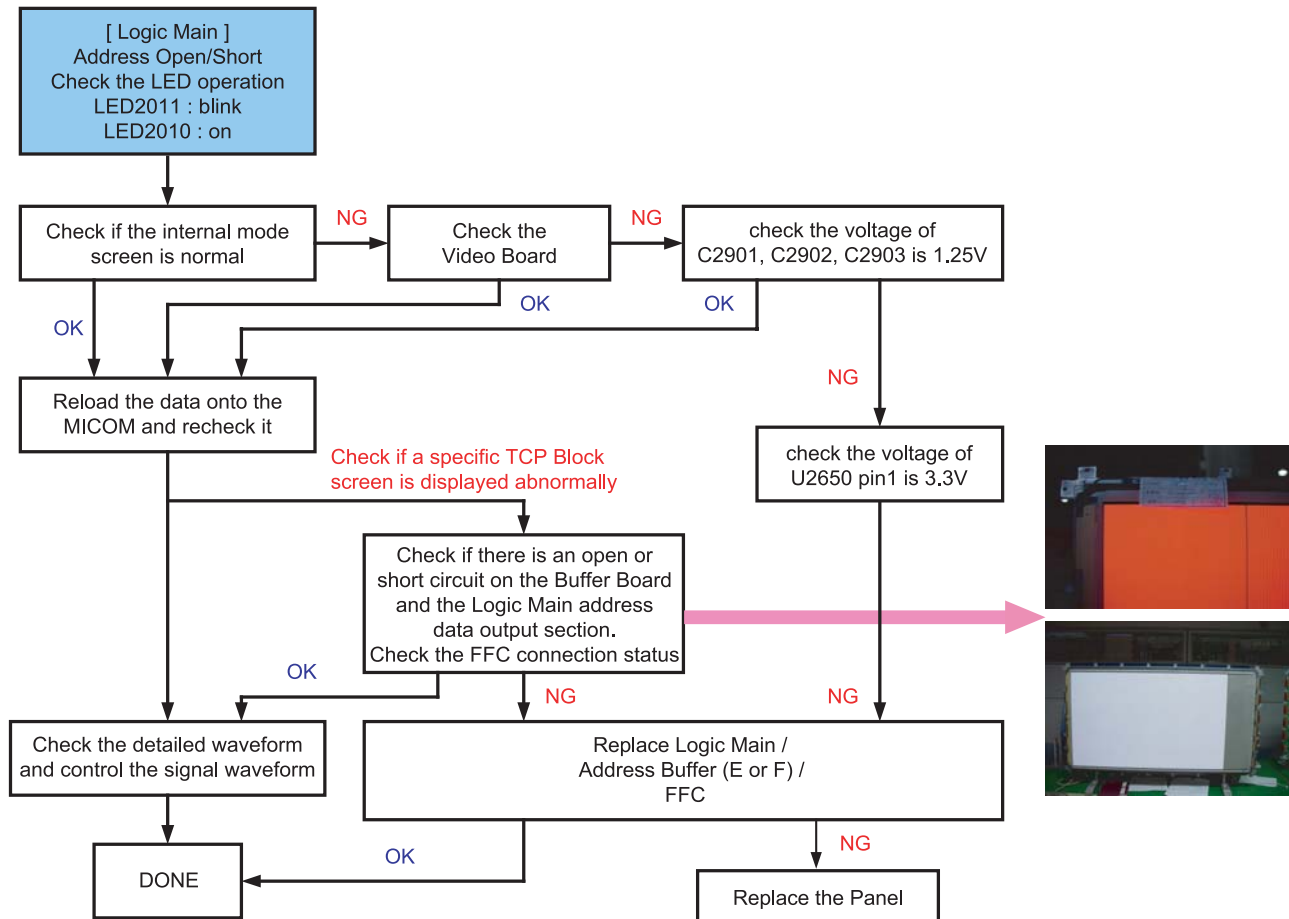
- Abnormal Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

This page shows you how to check the boards, and the following pages show you how to find the defective board.


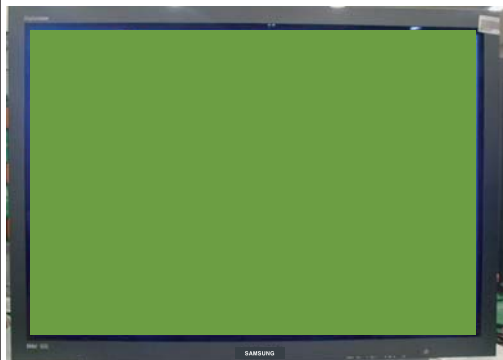

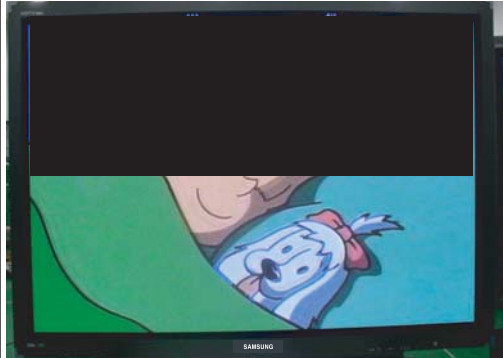


③ Address Open, Short

- ▶ Address Open and Short is related with Logic Main, Logic Buffer, FFC, TCP film and so on.
This page shows you how to check the boards, and the following pages show you how to find the defective board.



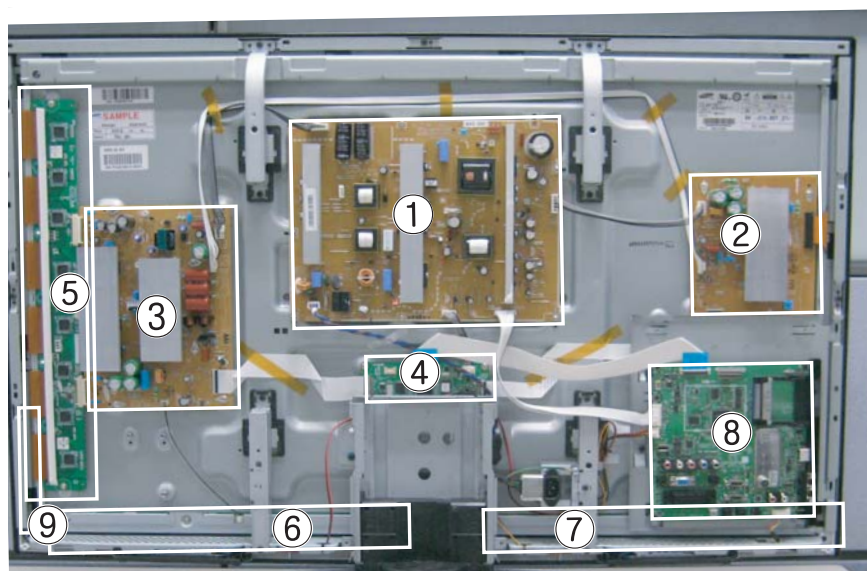
4-1-3 Troubleshooting

Symptom	Related Image	Causes and Countermeasures
A blank vertical cell (block) appears on the screen.		<p>Address buffer defect</p> <ul style="list-style-type: none"> - Replace the corresponding upper/lower buffers (E, F) <p>COF defect (burnt)</p> <ul style="list-style-type: none"> - Replace the module
A green screen appears when the TV is turned on.		<p>The Scale is not resetting</p> <ul style="list-style-type: none"> - Replace the Main board
The OSD box appears but there is no text.		<p>Incorrect program version</p> <ul style="list-style-type: none"> - Check the version of each program - Replace the Main board
A blank upper (or lower) block appears on the screen.		<p>Upper/Lower Y Buffer defect</p> <ul style="list-style-type: none"> - Replace the corresponding upper/lower buffers (E, F)

Symptom	Related Image	Causes and Countermeasures
Either the main or sub picture does not appear.		Replace the Main board
A vertical green line appears on the screen.		The SMPS voltage is incorrect - Adjust the SMPS voltage according to the voltage printed on the module label
Dim screen (blurred in red)		X-Main board defect - Replace the X-Main board
A blank screen appears		- Replace the Y-Main board

4-1-4 Troubleshooting Procedures by assembly

No	Assembly	Major Symptoms
1	SMPS-PDP TV	No power, Blank screen, the Relay repeats On and Off.
2	ASSY PDP MODULE P-X-MAIN	Blank screen
3	ASSY PDP MODULE P-Y-MAIN	Blank screen
4	ASSY PDP MODULE P-LOGIC MAIN	Blank screen, Screen noise
5	ASSY PDP MODULE P-Y-MAIN SCAN BUFFER	Row Bar screen is blank (42" Only)
6	ASSY PDP MODULE P-ADDRESS E BUFFER	Corresponding Buffer Board block screen is blank.
7	ASSY PDP MODULE P-ADDRESS F BUFFER	Corresponding Buffer Board block screen is blank.
8	ASSY PCB MISC-MAIN	No Power, Abnormal screen for each input source, PIP screen trouble, Sound trouble
9	ASSY BOARD P-FUNCTION	The side function key does not work properly



4-2 Adjustment

4-2-1 Service Instruction

■ Before performing service

1. Check if the measurement and test equipment is working properly.
2. Secure sufficient work space for disassembling the product.
3. Prepare a soft pad for disassembling the product.

■ Service adjustment item after replacement of Board

<If adjustment equipment is available>

- ① PDP Option of Factory Mode → set the Factory Data Type item as the suitable value of relevant model.
- ② Adjust Calibration of Factory Mode for each mode.
- ③ Adjust White Balance of Factory Mode.

<If adjustment equipment is not available>

- ① Write down the value of HDMI White Balance of Factory Mode before replacing Board.
- ② PDP Option of Factory Mode → set the Factory Data Type item as the suitable value of relevant model.
- ③ Set the value of HDMI White Balance with the value written down before.

4-2-2 How to Access Service Mode

1. General Remote

1) Stand by

- Europe: **INFO** → **MENU** → **MUTE** → **POWER ON**

2. Factory Remote

1) You can enter as pushing Display + Factory in state of power-on.

2) Push Factory Key again, and you can enter Aging mode. Push Factory Key again, and you can go back Factory mode.
(Factory ↔ Aging)

3) Push Display + 3 Speed Key, and you can enter aging mode.

3. Settings when entering Factory mode

- Sharp Screen (Dynamic), Color Tone (Cool1), Factory (Dynamic CE Off)

4. The contents to change when entering Service Mode

5. Adjustment Procedures

No	Item	Mode	Remark
1	Picture Mode	Dynamic	
2	Color Tone Mode	Cool 1	
3	Picture Size	Wide	
4	Dynamic Contrast	Off	
5	Digital NR	Off	
6	PIP	Off	
7	Gama	Off	OSD is ON

- Channel ▲ ▼ Key: Select an item.

- Volume ◀ ▶ Key: Adjust the value up or down.

- MENU Key: Save the changes to the EEPROM and return to the higher-level mode.

- Using the Numeric (0~9) keys, you can select a channel.

- Using the SOURCE key, you can switch AV modes.

6. Initial SERVICE MODE DISPLAY State

```

Option
ADC/WB
Control
Advanced
Expert
T-CRLPEUC-XXXX
T-CRLPEUHC-XXXX
T-CRLPEUS-XXXX
DTP-LP-XXXX-XX
DTP-LP-App-XXXX-XX
Option : 2010 0100
ADC : HDMI X COMP X PC X AV X
EDID : FAIL
HDCP : SUCCESS
PDP : P45E_42Sp
Bulld Date : XX-XX-XXXX

```

※ The version of the firmware displayed at the bottom of the screen may differ and the firmware is subject to change for the improvement of product functions.

※ If you have adjusted the settings in Service Mode, you have to reset the product.

4-2-3 Factory Data

1. Option

Item	Data	Range
Factory Reast		
Type	42FSpM3	50FSpL4/42HSpB3/50HSpB4/42HSpB3D/50HSpB4D/42FSpM3
Model	PB450	PB530/PB430/PB450
TUNER	Auto	Sem_SL/Alps_SL/Auto
Region	EU	ND/ASIA/CHN/EU/
DDR	SAMSUNG	Etron/SAMSUNG
Light Effect	ON	Off/ON
Inch		
Ch	SUWON	SESK/SHE/TTSEC/SDMA/SERK/SEIN/ASVIA/SIEL/TSE/SUWON
Medialink Type		
Local Set	Others	Russia/Others
PDP GROUP	P45E_42SP	"P45E_50Sp/P45N_42Sp/P45N_50Sp/P45A_42Sp/P45A_50Sp/P43E_42Sn/P43E_50Sn/P43N_42Sn/P43N_50Sn/P43A_42Sn/P43A_50Sn/P45E_Sp"

2. CONTROL

EDID

Item	Default data	Range
EDID ON/OFF	Off	on
EDID WRITE ALL	Failure	wait/Success
EDID WRITE PC	Failure	wait/Success
EDID WRITE DVI	Failure	wait/Success
EDID WRITE HDMI1	Failure	wait/Success
EDID WRITE HDMI2	Failure	wait/Success
EDID WRITE HDMI3	Failure	wait/Success
EDID WRITE HDMI4	Failure	wait/Success
EDID VERSION	HDMI 1.2	HDMI 1.3

Sud Page

Item	Default data	Range
Mute Time(VIDEO)	4	5/6/7/8/9/10/0/1/2/3
ready	Failure	Success
TTX LIST	Flof	List
TTX	On	Off
TTX Group	Lang OSD	"W Europe/E Europe/Russia/Greek/Turkey/Arab/Farsi/Arabhdw"
1	On	Off
Hotplugcontrol	On	Off
Spread Spectrum	On	Off
(Step1)	149	0/255
(Step2)	0	0/3
(Range1)	215	0/255
(Range2)	0	0/63
(DDR Spread)	2% Spread	Off/1% Spread
Auto Power	On	Off
DDR		
Arab	Off	
NT Conversion	Off	
Mirror	Off	On
HDMI EQ1	Middle	High/Strong/Low
HDMI EQ2	Middle	High/Strong/Low
HDMI EQ3	Middle	High/Strong/Low
HDMI EQ4		
EER Count	24205	
WM Calib		OK
Panel Enter Key		
Panel Display Time	0hr	
CHECKSUM	0x0000	WAIT/0x4F7A
View Log		
Font Date Viewer		
Dimm Type	INT	INT_NEG/EXT_POS/EXT_NEG/EXT
Gamma	Off	0.85/0.88/0.90/0.93/0.95/0.98
Carrier Mute	Off	On
Anynet+	On	Off
HPD Polarity		
High Devi	Off	On
Volume Curve	EU	EA/
Hotplug Delay	9	0/63
HP Ident	High	Low
PC Ident	On	Off
Language	Chiha	French/English
Info Live		
Watchdog	Off	On
LVDS Format	JEDIA	VESA
OSD Resolution	1024*768	
Bus Stop		
OTA Code		
Panel Auto Setting		
OTA Duration Test		
Alternate Del		

PDP Option

Item	Default data	Range
PIXEL SHIFT TEST	Off	On
LOGIC CIONNECT	Off	On
PATTERN SELECT		
PANEL VERSION	VF1P	
PANEL INCH	50HD	
PANEL TYPE	aOH	
PANEL TEMPERATURE	47	
LOGIC SW VERSION	2008-12-02	
LOGICSW CHECKSUM	9AB5H	
SAPC_Timer	On	Off
APC_Speed	Slow	Fast
LOGIC USB/D/L	Off	Success

Hotel Option

Item	Default data	Range
Hotle Mode	Off	On
Power On Channel	1	0/99
Power On Source	ATV	Scart/AV/Comp/PC/HDMI1/HDMI2/HDMI3/DTV
Power On Volume	10	0/100
Min Volume	0	0/100
Max Volume	100	0/100
Panel Btten Lock	Off	On/PowerSound
Pic Menu Lock	Off	On
Video Mute Ch	1	0/99
Video Mute Ch On/Off	Off	On
Music Mode (AV)	Off	On
Music Mode (PC)	Off	On
Music Mode (Comp)	Off	On
Music Mode Backlight	Off	On
Menu Display	On	Off
Power On Option	Last Option	Standby/Power On
Auto PC	Off	On
Energy Saving	Off	Low/Mid/High/Auto
Cloning : TV to USB		
Cloning : USB to TV		

Shop Option

Item	Default data	Range
Shop Mode	Off	On
USB DEMO ON(SEC)		
USB DEMO OFF(SEC)		

Sound

Item	Default data	Range
FM Prescsacle	28	0/40
AM Prescale	9	0/40
Nicam Prescale	32	0/40
A2 M2S Threshold	32	0/40
A2 S2M Threshold	0x0A	0x00/0x7F
A2 PilotPhaseOn	0x00	0x00/0x7F
A2 PilotPhaseOff	0X00	0x00/0x7F
A2 IdentOn	0X00	0x00/0x7F
A2 IdentOff	0X00	0x00/0x7F
A2 Carr1AmpOnThr	0X00	0XFF
A2 Carr1AmpOffThr	0X14	0xFF
A2 Carr1SnOnThr	0x00	0xFF
A2 Carr1SnOffThr	0x00	0XFF
A2 Carr2AmpOnThr	0X00	0XFF
A2 Carr2AmpOffThr	0x00	0XFF
A2 Carr2AmpOffThr	0x00	0XFF
A2 Carr2SnrOnThr	0x00	0XFF
A2 Carr2SnrOffThr	0x00	0XFF
Nicam Sig Error On	0x16	0x7F
Nicam Sig Error Off	0x14	0x7F
Compression mode	On	Off
Dolby Test Mode	On	Off
DTV Level	-12dB	0dB
Master Vol	30	0/47
PWM Modulation	208	0/255
DRC1 Threshold	0x37	0xFF
DRC2 Threshold	0x50	0xFF
SPEAKER EQ	On	Off
SC1 Vol	16	0/40
SC2 Vol	16	0/40
Audio delay	60ms	0ms/150ms

Config Option

Item	Default data	Range
AV Number	1	0/2
SVIDEO Number	0	1
COMP Number	1	0/2
HDMI Number	3	0/4
SCART Number	1	0/2
DVI Number	0	1
HP Number	0	1
USB PORT		
LNA SUPPORT	Off	On
MFT OFFSET		

3. ADC Wb

ADC

Item	Default data	Range
AV Calibration		Wait/Failure
COMP Calibration		
PC Calibration		
HDMI Calibration		

ADC Target

Item	Default data	Range
1st_AV_Low	18	0/255
1st_AV_High	220	0/255
1st_AV_Delta	1	0/255
1st_Comp_Low	16	0/255
1st_Comp_High	235	0/255
1st_Comp_Delta	1	0/255
1st_PC_Low	2	0/255
1st_PC_High	235	0/255
1st_PC_Delite	1	0/255
2nd_Low	1	0/255
2nd_High	235	0/255
2nd_Delta	1	0/255

ADC RESULT

Item	Default data	Range
1st_AV_Gain	125	0/255
1st_AV_Offset	139	0/255
1st_Comp_Gain	73	
1st_Comp_Gian_Cb	73	
1st_Comp_Gian_Cr	73	
1st_Comp_Offset	127	
1st_Comp_Offset_Cb	127	
1st_Comp_Offset_Cr	127	
1st_PC_R_Gain	96	
1st_PC_G_Gain	95	
1st_PC_B_Gain	95	
1st_PC_R_Offset	144	
1st_PC_G_Offset	139	
1st_PC_B_Offset	139	
2nd_R_Offset	108	0/255
2nd_G_Offset	108	0/255
2nd_B_Offset	108	0/255
2nd_R_Gain	168	0/255
2nd_G_Gain	168	0/255
2nd_B_Gain	168	0/255

WB

Item	Default data	Range
Sub Brightness	128	0/255
R_Offset	128	0/255
G_Offset	128	0/255
B_Offset	128	0/255
Sud Contrast	128	0/255
R_Gain	128	0/255
G_Gain	128	0/255
B_Gain	128	0/255

4. Advanced FBE

Item	Default data	Range
Pattern Select		
B-Slpe Gain		
B-Tilt Min		
B-Tilt Max		
Lfunc-Basis		
Hfunc-Basic		
Mean_Offset1		
Mean_Offset2		
Mean Slope		
ACR Offset		
ACR Th1		
ACR Th2		
Skin Enable		
Skin Uv		
Mskin Uv		
Sub Color		

WB Movie

Item	Default data	Range
WB Movie	Off	On
Color Mode	Movie	Standard/Dynamic
Color Tone	Cool	Normal/Warm1/Warm2
Msub Brigh	128	0/255
MsubContr	128	0/255
W1_Rgain	138	0/255
W1_Bgain	109	0/255
W1_ROFFS	128	0/255
W1_BOFFS	128	0/255
W2_RGAIN	144	0/255
W2_BGAIN	84	0/255
W2_ROFFS	128	0/255
W2_BOFFS	128	0/255
N_RGAIN	128	0/255
N_BGAIN	128	0/255
N_ROFFS	128	0/255
N_BOFFS	128	0/255
Movie Contr	100	0/100
Movie Brigh	45	0/100
Movie Color	55	0/100
Movie Sharp	75	0/100
Movie Tint	50	0/100
Move BkLight	10	0/10
M.Gamma	Off	0.85/0.88/0.90/0.93/0.95/0.98/M1/M2/M3/M4
M_Sub Gamma	0	3/-3

EPA Standard

Item	Default data	Range
Std Contr	95	0/100
Std Bright	45	0/100
Std Sharp	50	0/100
Std Color	50	0/100
Std Tint	50	0/100
Std Backlight	4	0/10

ADJUST

Item	Default data	Range
Dynamic Dimming	Off	on
LNA Plus		
(RF dB1 Level)	3	0/255
(RF dB2 Level)	6	0/255
(RF dB3 Level)	12	0/255
(RF dB4 Level)	31	0/255
Power Key Protect	Off	On
Uart Select	Auto Wall	Debug/MDC/On1/On2
Debug Mode	DeBug Off	Debug Smart/DeBug RunTi
Back End Mute		
PDP FRC		
Visual Test	Disable	Enable
Standby Mode Time	45 Min	2 Min
Delete alt.ver	2 Flash	
OTA confirm Time	90Min	2 Min
OTA limit Time	3 hour	3 Min
Dynamic CE	Off	on
FWC	Off	on
1080p 48Hz	On	Off
PWM Max	100	1/100

YC_Delay

Item	Default data	Range
PAL BG	1	0/3
PAL DK	1	0/3
PAL I	1	0/3
SECAM BG	4	0/7
SECAM DK	4	0/7
SECAM L	4	0/7
NTSC 358	1	0/3
NTSC 443	1	0/3
AV PAL	1	0/3
AV SECAM	4	0/7
AV NT358	1	0/3
AV NT 443	1	0/3
AV PAL 60	1	0/3

SHARPNESS

Item	Default data	Range
H1 Gain	0x16	0x00/0x3f
H2 Gain	0x18	0x00/0x3f
H3 Gain	0x18	0x00/0x3f
H4 Gain	0x12	0x00/0x3f
V1 Gain	0x0D	0x00/0x3f
V2 Gain	0x0D	0x00/0x3f
H overshoot	0x20	0x00/0FF
V overshoot	0x20	0x00/0FF
H undershoot	0x20	0x00/0FF
V undershoot	0x20	0x00/0FF
Coring TH2	0x03	0x01/0x0F
Coring TH1	0x01	0x01/0x0F

PE

Item	Default data	Range
Skin_x	0x00	0x00/0x0A
Skin_y	0x00	0x00/0x0A
B_slope	0x90	0xA0/0x9F
DLC_ML	0x70	0xA0/0x9F
DLC_MH	0x70	0xA0/0x9F
DLC_H	0xEB	0x00/0xFF
Skin_SAT	0x00	0x00/0x0F
Skin_HUE	0x40	0x00/0x7F
M_Skin_HUE	0x40	0x00/0x7F
M_Skin_X	0x00	0x00/0x0A
M_Skin_Y	0x00	0x00/0x0A
Mid_color_level	0xB4	0x00/0xFF

PQ Others

Item	Default data	Range
7.5 IRE NTSC	Off	On
7.5 IRE	16	0/60

Color Space

Item	Default data	Range
Red Sat	0x10	0x00/0x1E
Red Hue	0x40	0x00/0x7F
Green Sat	0x1A	0x00/0x1E
GreenHue	0x70	0x00/0x7F
Blue Sat	0x19	0x00/0x1E
BlueHue	0x50	0x00/0x7F
Cyan Sat	0x19	0x00/0x1E
Cyan Hue	0x50	0x00/0x7F
Magenta Sat	0x10	0x00/0x1E
Magenta Hue	0x40	0x00/0x7F
Yellow Sat	0x15	0x00/0x1E
Yellow Hue	0x10	0x00/0x7F
FWC Blue	0x15	0x00/0x1E
FWC Red	0x0F	0x00/0x1E

EEPROM RESET

Item	Default data	Range
EEPROM RESET	Off	
NVR ALL Clear	Off	On

Expert

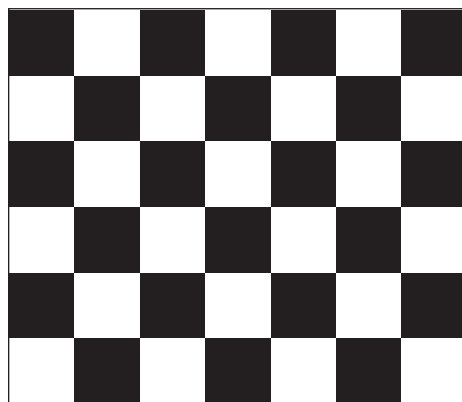
Item	Default data	Range
N/D ADJ	OFF	On/FIX
SOURCE	Current	All

4-2-4 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.

■ White Balance

Adjust spec.

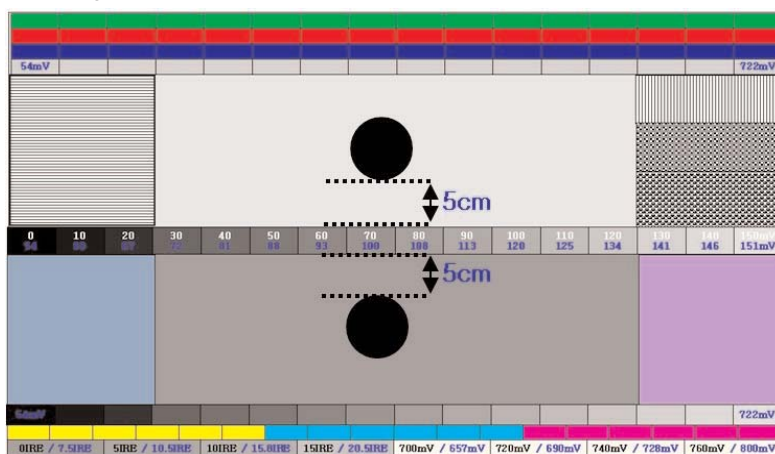
1. Source : HDMI
2. Setting Mode : 1280*720@60Hz
3. Pattern : Pattern #92
4. Use Equipment : MIK-7256 (MSPG925L)



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

5. Work order

- ① Connect HDMI (DVI) output terminal of MIK-7256 (MSPG925L) to the HDMI input in main set
- ② Set the input to HDMI mode
- ③ Enter the White Balance menu of service mode
- ④ Contact CA-210 sensor to glass filter



(Fixed Position of CA210 Probe)

- ⑤ Adjust the low light
 - Adjust Sub-Bright (LBE) to set the 'Y' value
 - Adjust R-Offset ('x') and B-Offset ('y') to the color coordinates.
 - * Do not adjust G-Offset data
- ⑥ Adjust the high light.
 - Adjust Sub-Contrast (LBE) to set the 'Y' value
 - Adjust R-Gain ('x') and B-Gain ('y') to the color coordinates.
 - * Do not adjust the G-gain data

Input mode		(CA-210)		
		x	Y(L)	T(K), MPCD
CVBS (NTSC)	H/L	278	FIX	10,500 (± 0)
			(Sub_CT:128)	
	L/L	278	10.5 cd/m ²	11,000 (-3)
			(3.0 Ft)	
COMP (720P)	H/L	278	FIX	10,500 (± 0)
			(Sub_CT:128)	
	L/L	278	10.3 cd/m ²	11,000 (-6)
			(3.0 Ft)	
HDMI (720P)	H/L	278	FIX	10,500 (± 0)
			(Sub_CT:128)	
	L/L	278	10.3 cd/m ²	10,500 (± 0)
			(3.0 Ft)	

4-2-5 Replacements & Calibration

* PDP 42" Check items listed after changing each

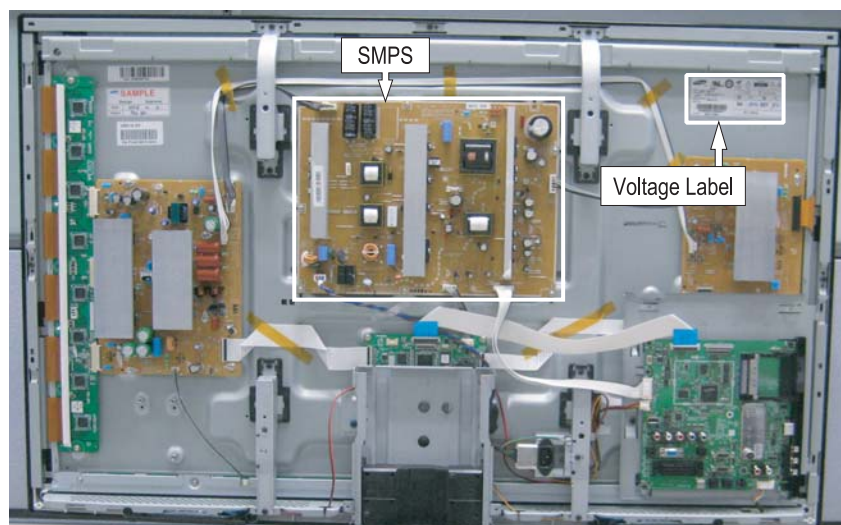
Replaced assembly items	Check Items
ASSY PCB MISC-MAIN	1) Auto Program 2) White Balance Adjust
SMPS-PDP TV	Vs, Va voltage check and adjust
ASSY PDP MODULE P-LOGIC MAIN	Not to be adjusted
ASSY PDP MODULE P-X-MAIN	
ASSY PDP MODULE P-Y-MAIN	
ASSY PDP MODULE P-Y-MAIN SCAN BUFFER	
ASSY PDP MODULE P-ADDRESS E BUFFER	
ASSY PDP MODULE P-ADDRESS F BUFFER	
ASSY BOARD P-SIDE HDMI A/V	

※ When replacing the SMPS or PDP panel, you have to check the voltage printed on the panel sticker and adjust it.

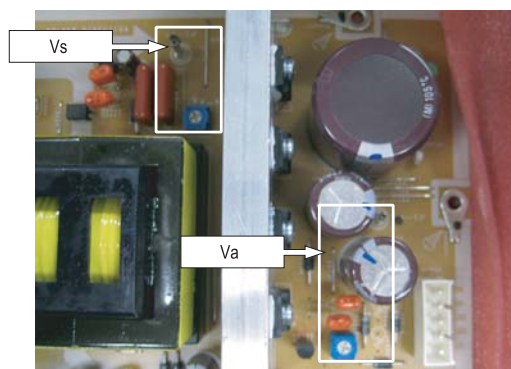
■ Voltage Adjustment

1. After replacing the SMPS or PDP panel, you must adjust the voltage referring to the voltage label printed on the panel.
(If you do not adjust the voltage, an abnormal discharge symptom may appear.)

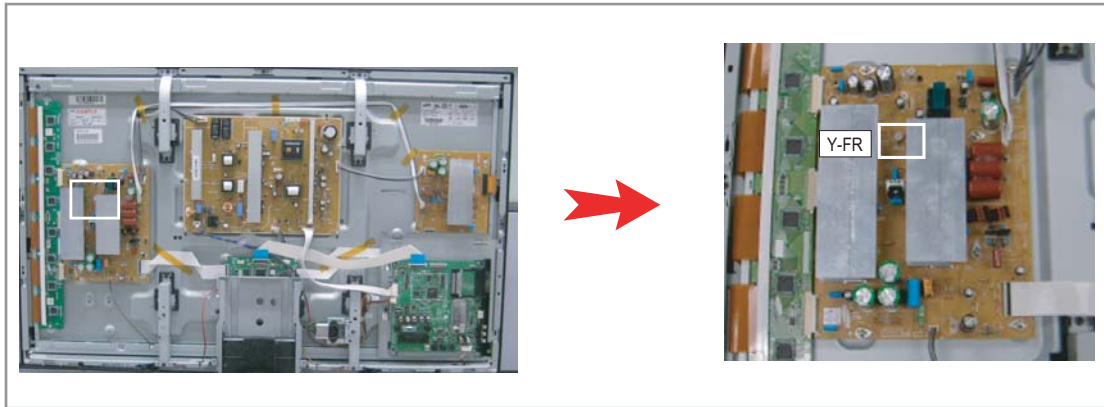
	Value	Board Adjustment
Vs	207	SMPS
Va	54	
Vset	-	
Ve	95	
Vscan	-190	



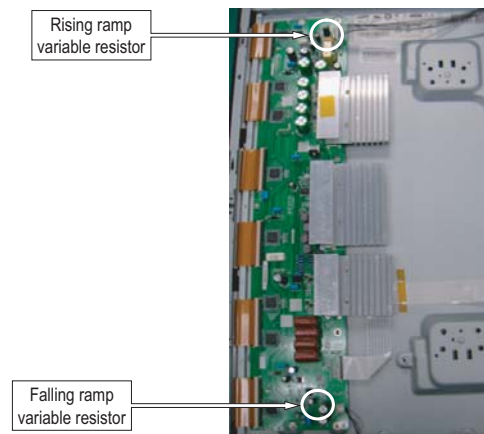
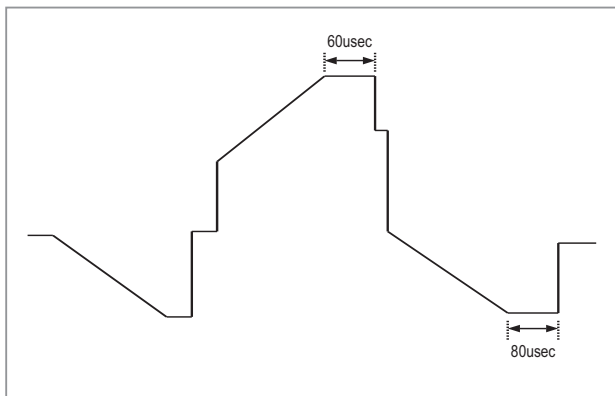
2. A point of adjusting SMPS-MAIN voltage.



■ Y-RR and Y-FR controls



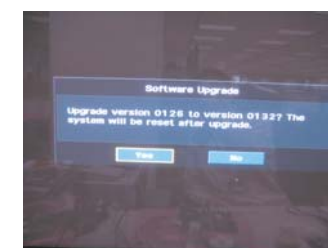
Set the main reset (rising : 60usec, falling : 80usec) by change the value of variable resistor.



4-3 Upgrade

4-3-1 USB Download Method

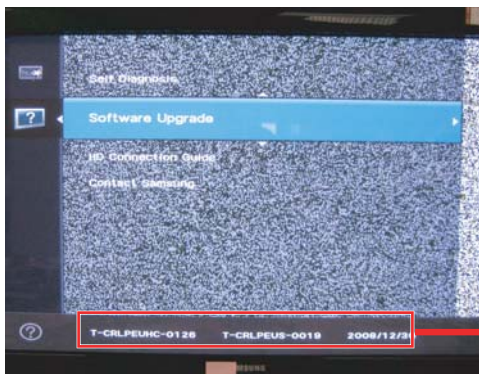
1. Copy the Upgrade Files into the path "T-CRLAUSC" in USB flash driver.
2. USB Download
 - ① Insert the USB Memory Stick to the USB port in Stand-by mode.
 - ② Turn the power on.
 - ③ Press "MENU" and find "SW Upgrade" in Menu "SETUP".
 - ④ Select the "SW Upgrade" from the menu.
 - ⑤ Select "USB" from the menu.
 - ⑥ The banner OSD "Scanning for USB..." is displayed.
 - ⑦ The banner OSD "Upgrade version **** to version *****" is displayed. Select "Yes".
 - ⑧ The banner OSD "Upgrade version **** to version *****" is displayed. It takes about 30 sec.
(Warning: Don't remove USB flash driver during upgrade.)
 - ⑨ The banner OSD "Upgrade is completed" is displayed when the upgrade is completed.
 - ⑩ Remove the USB flash driver from PDP TV and check the program version.



4-3-2 How to Check the Version of the Program

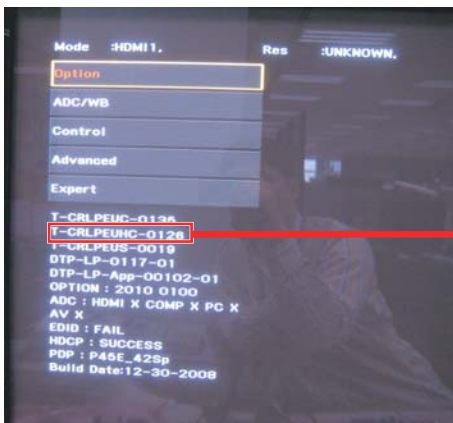
1. Procedures for checking in the User Menu

- ① Select the "Setup" menu in the Menu screen
- ② Place the cursor over the "SW Upgrade" of "Setup" and press the "info" key on the remote control.
- ③ The version of the program is displayed at the bottom of the Menu screen



PROGRAM VERSION

2. How to check Program Version on factory mode.



PROGRAM VERSION