4. Troubleshooting

4-1 Troubleshooting

4-1-1 First Checklist for Troubleshooting

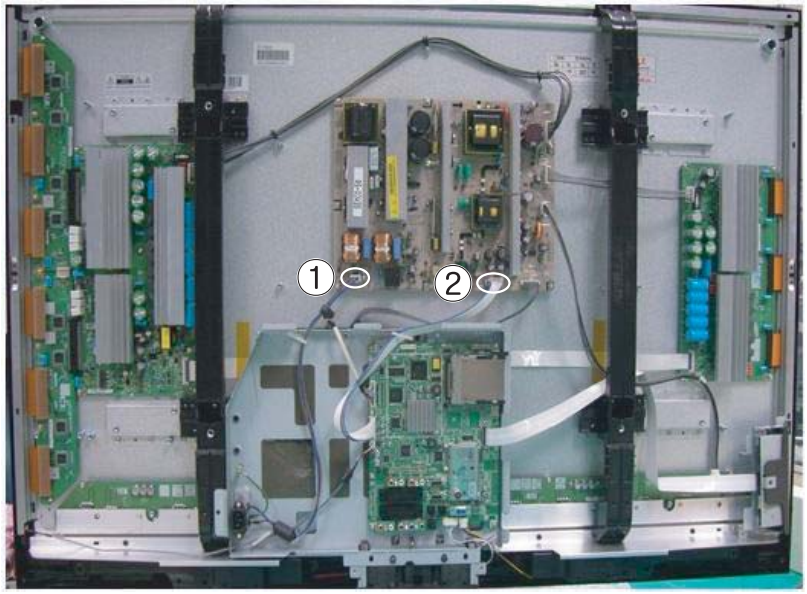
1. Check the various cable connections first.
   - Check to see if there is a burnt or damaged cable.
   - Check to see if there is a disconnected or loose cable connection.
   - Check to see if the cables are connected according to the connection diagram.

2. Check the power input to the Main Board.

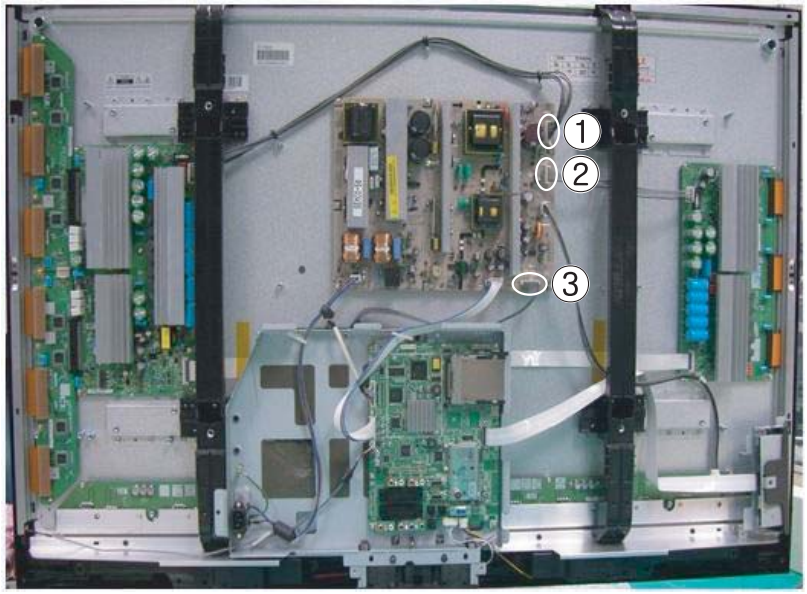
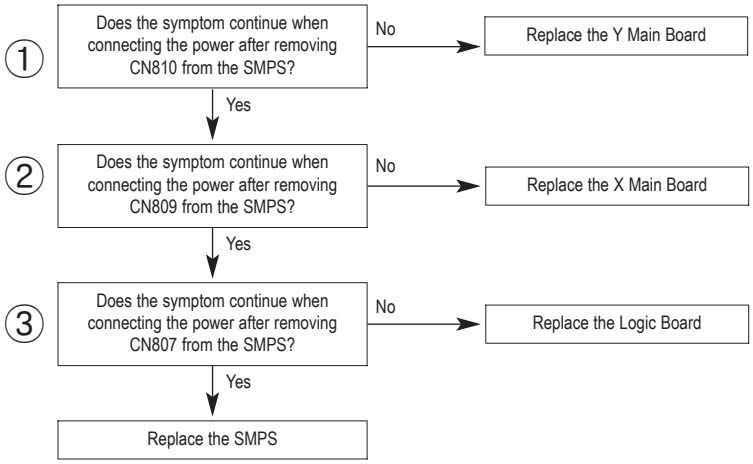
3. Check the voltage in and out between the SMPS ↔ Main Board, between the SMPS ↔ X, Y Main Board, and between the Logic Boards.

4-1-2 Checkpoints by Error Mode

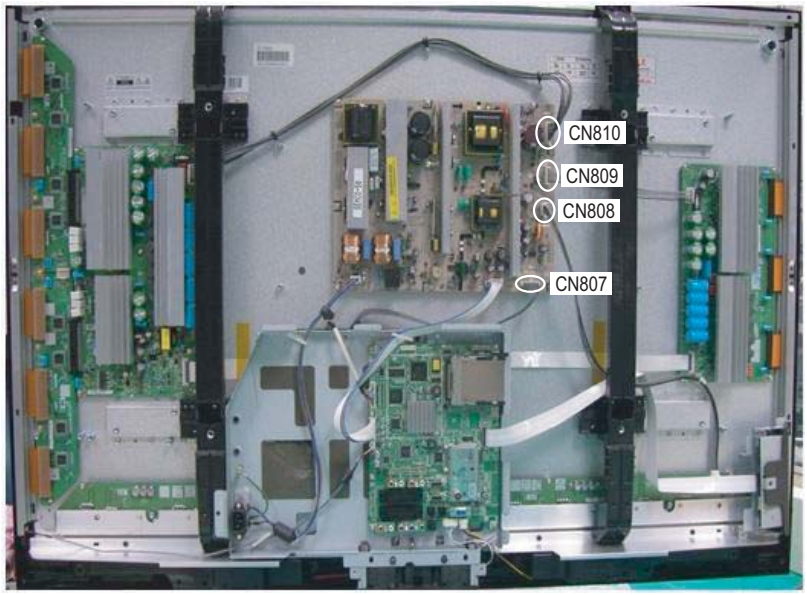
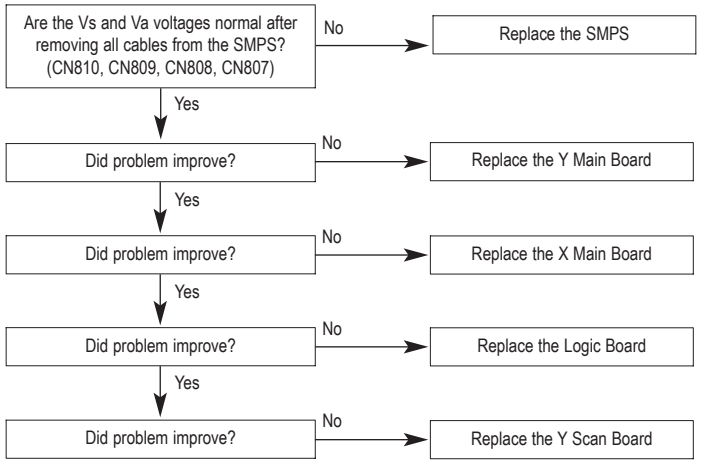
■ No Power

Symptom	- 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 unit appears to be dead.
Major Checklist	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: - Check the internal cable connection. - Check the fuses. - Check the output voltage of the SMPS. - Replace the Main Board.
Troubleshooting Procedures	 ① Is the AC IN socket connector and the SMPS CN800 connected? — No → Insert the AC in connector and the SMPS CN800 connector Yes ↓ ① Is the Fuse (F801S) of the SMPS Power Input Part blown? — Yes → Replace Fuse (F801S) No ↓ ② SMPS CN801 Pin 3 : STB 5V Pin 2 PS-ON : Check to see if it is 0V — No → Replace the SMPS Yes ↓ Replace the Main Board

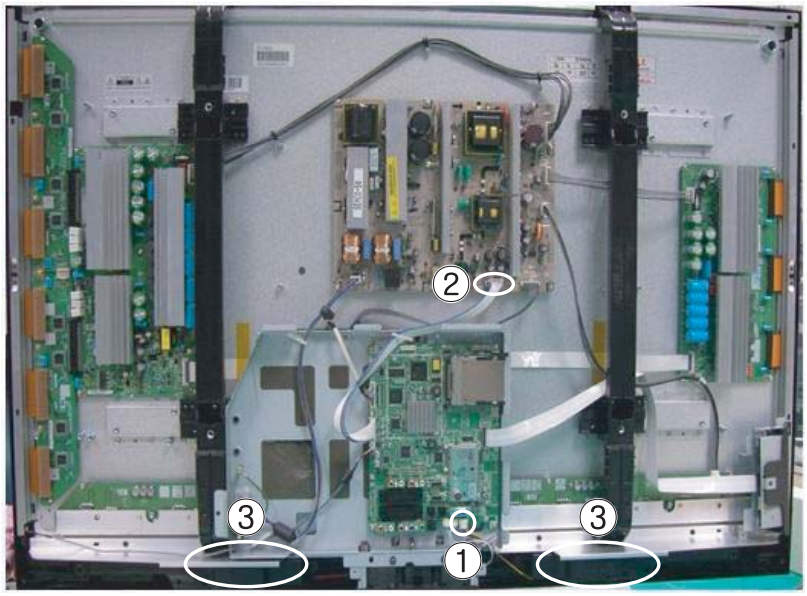
■ When the unit is repeatedly turning on and off

Symptom	- The SMPS relay is repeatedly turning on and off.
Major Checklist	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. - 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	 
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.

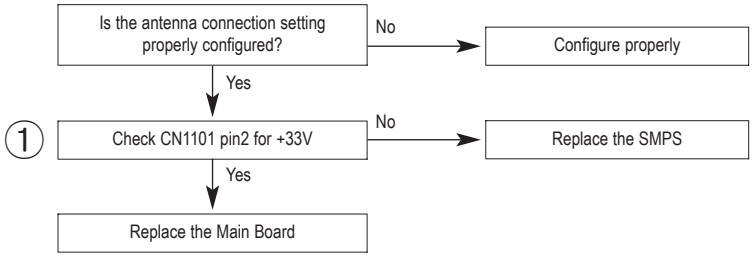
■ No Picture (When audio is normal)

Symptom	- Audio is normal but no picture is displayed on the screen.
Major Checklist	- 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	 
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.

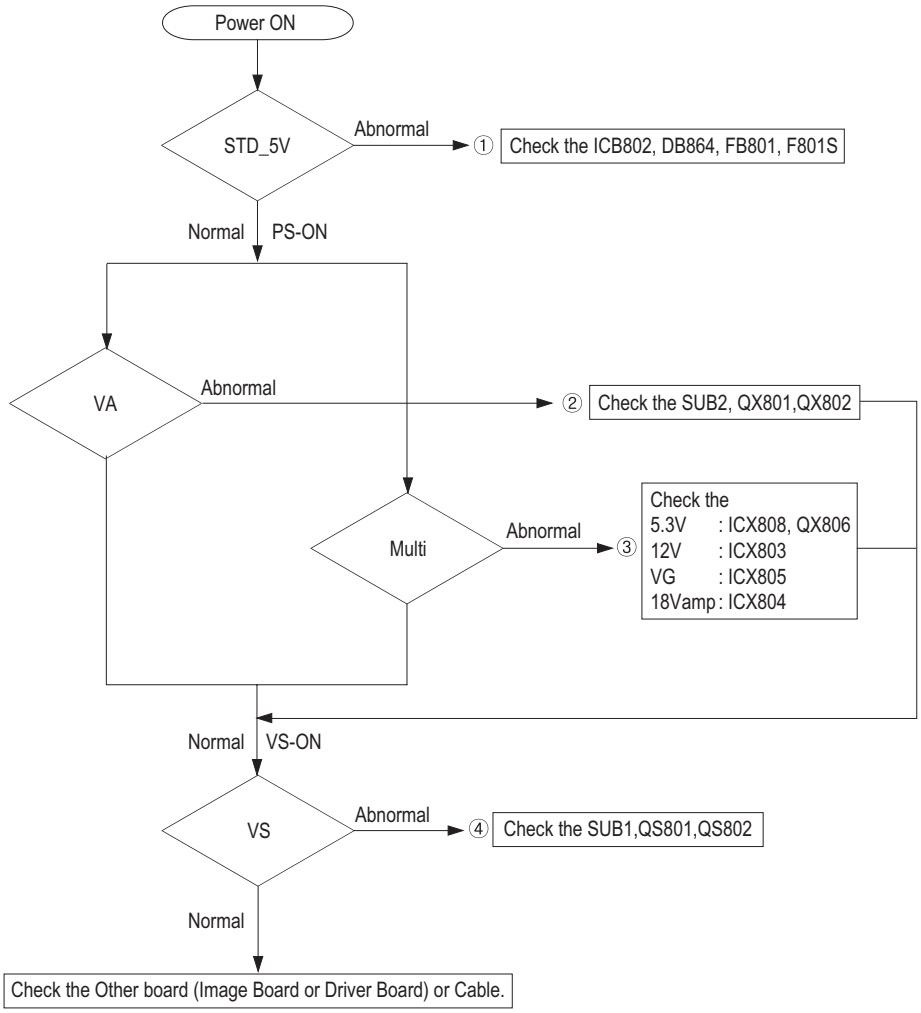
■ No Sound

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	 ① Is the cable connection between the Main Board and the speaker properly connected? — No → Connect the cable properly or replace the cable, if necessary. Yes ② Is the output voltage of SMPS normal? (CN801 #13) — No → Replace the SMPS Yes Is the speaker output terminal of the Main Board normal? — No → Replace the Main Board Yes ③ Replace the Speaker

No Video

Symptom	- A normal/cable network analog broadcast screen is blank or abnormal but OSD is OK.
Major Checklist	- Check the antenna connection settings (Air: NTSC / ATSC, Cable: NTSC) - Check the CVBS cable connection. - Check the power input of the Main board.
Troubleshooting Procedures	 

■ SMPS Troubleshooting



■ Drive Board Troubleshooting

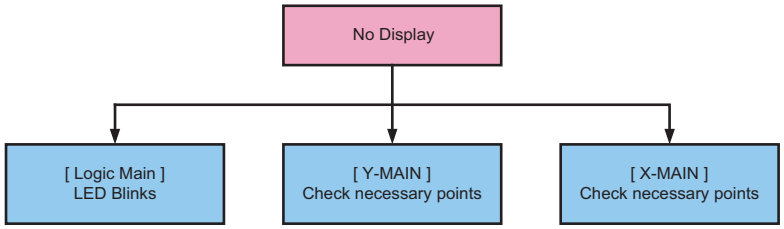
1) Troubleshooting Summary

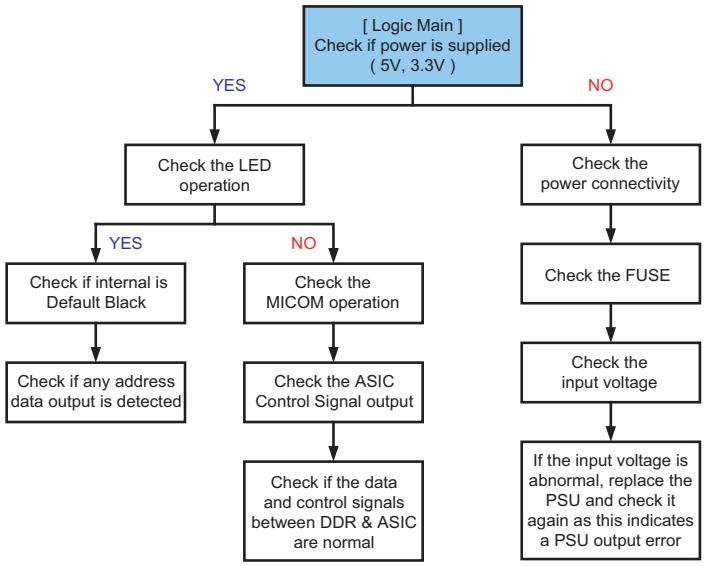
Condition Name	Description	Related Board
No Voltage Output	Operating Voltage don't exist	PSU
No Display	Operating Voltage exist, but an Image doesn't exist on screen	Y-MAIN, X-MAIN, Logic Main, Cable
Abnormal Display	Abnormal Image (not open or short) is no screen	Y-MAIN, X-MAIN, Logic Main
Sustain Open	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

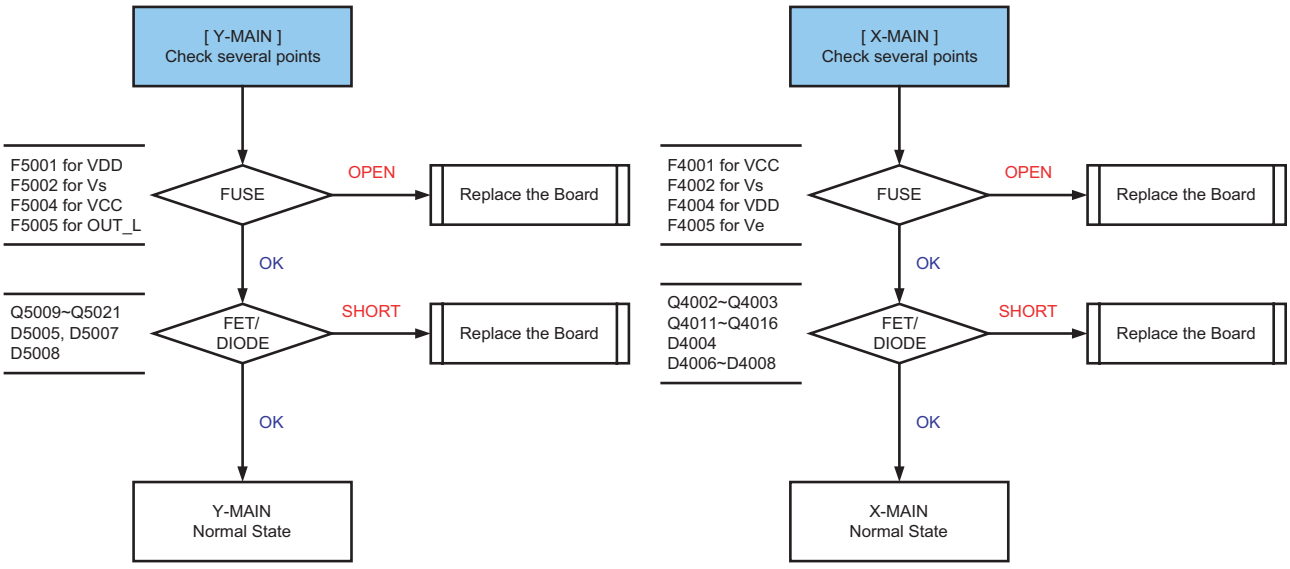
2) Troubleshooting Procedure in Abnormal Conditions

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.

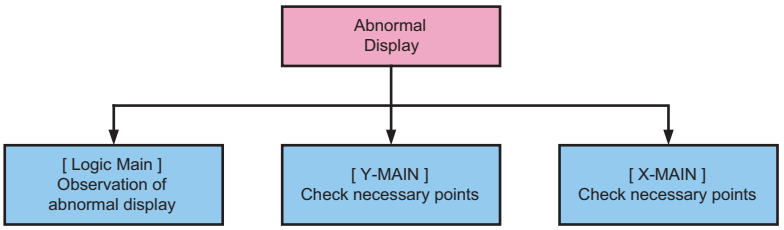


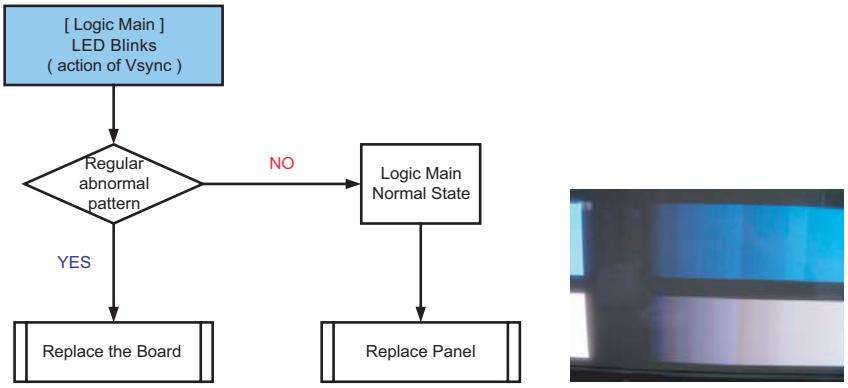


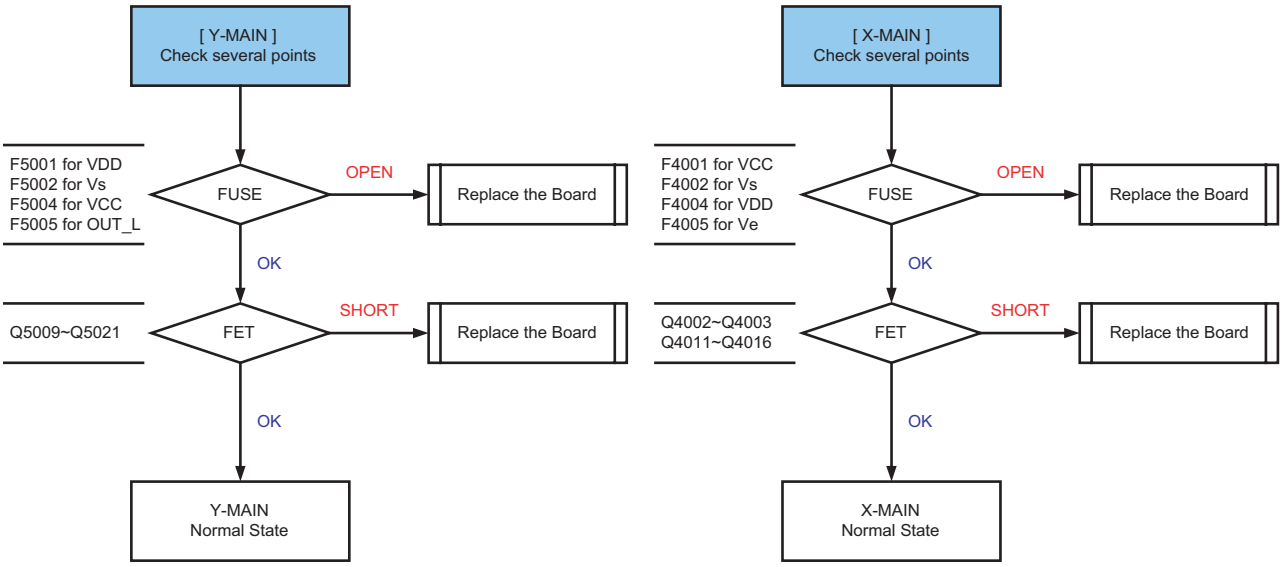


② Abnormal Display(Abnormal Image is on Screen.(except abnormality in Sustain or Address))

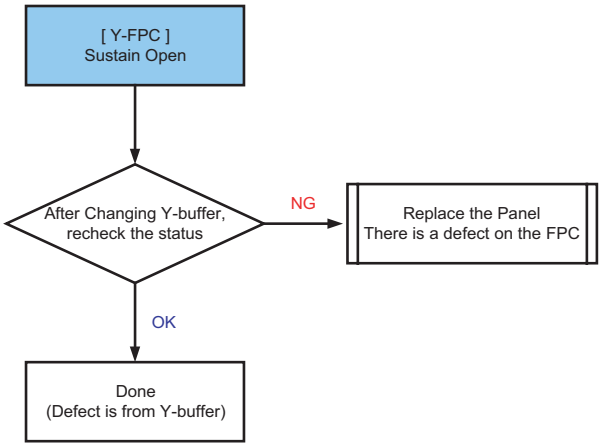
▶ Abnormal Display is related with Y-MAIN, X-MAIN, Logic Main and so on.
This page shows you how to check the boards, and the following pages show you how to find the defective board.



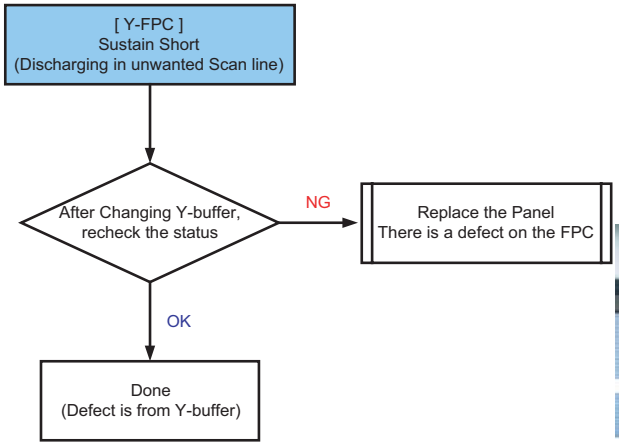




③ Sustain Open (some horizontal lines don't exist on screen)

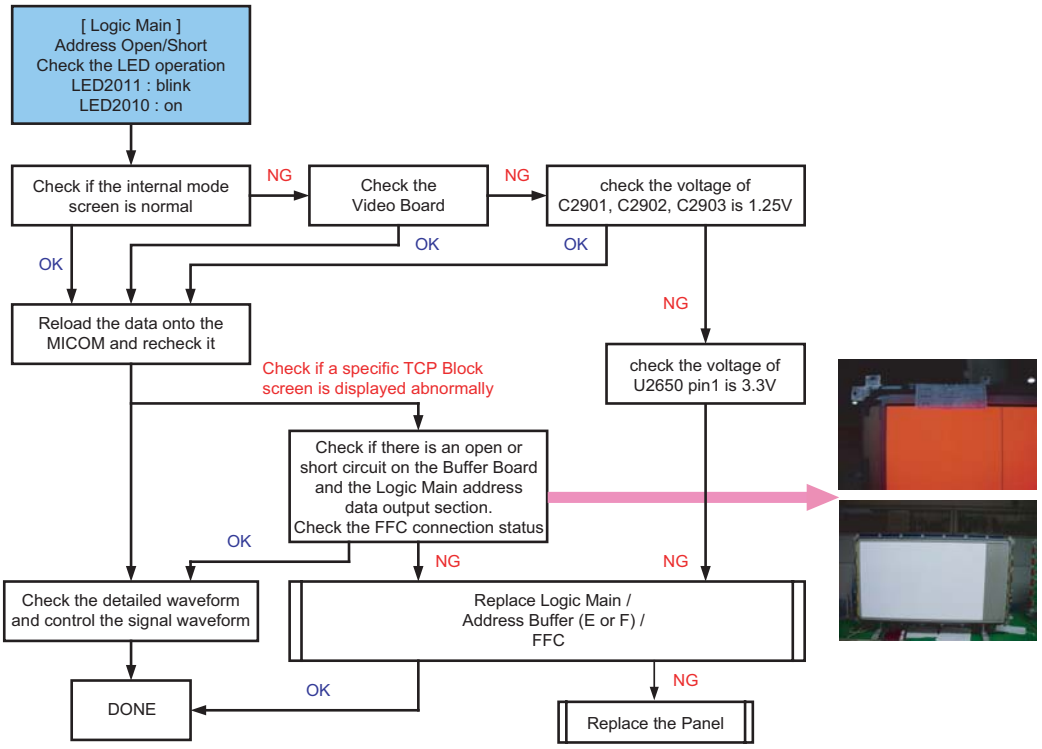


④ Sustain Short (some horizontal lines appear to be linked on Video)



⑤ 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.



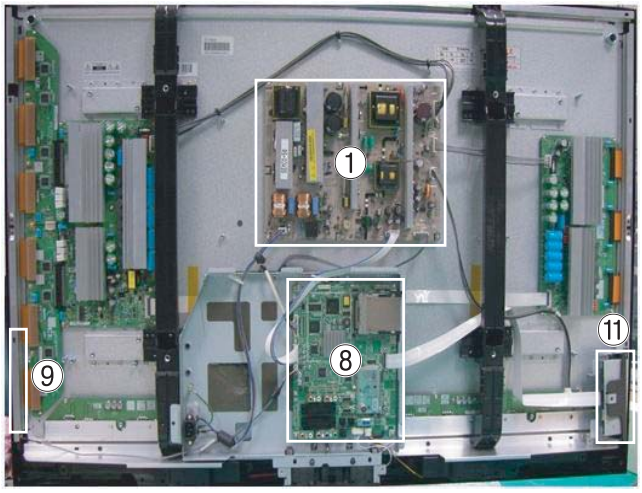
4-1-3 Faults and Corrective Actions

Symptom	Related Image	Causes and Countermeasures
A blank vertical cell (block) appears on the screen.		Address buffer defect - Replace the corresponding upper/lower buffers (E, F) COF defect (burnt) - Replace the module
A green screen appears when the TV is turned on.		The Scale is not reseting - Replace the Main board
The OSD box appears but there is no text.		Incorrect program version - Check the version of each program - Replace the Main board
A blank upper (or lower) block appears on the screen.		Upper/Lower Y Buffer defect - Replace the corresponding upper/lower buffers (E, F)

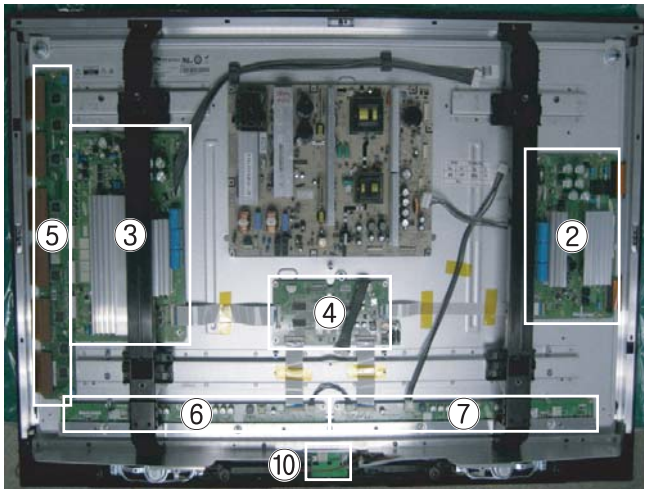
Symptom	Related Image	Causes and Countermeasures
Either the main or sub picture does not appear.		Replace the Main board
A vertical green line appears on the screen.		The SMPS voltage is incorrect - Adjust the SMPS voltage according to the voltage printed on the module label
Dim screen (blurred in red)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

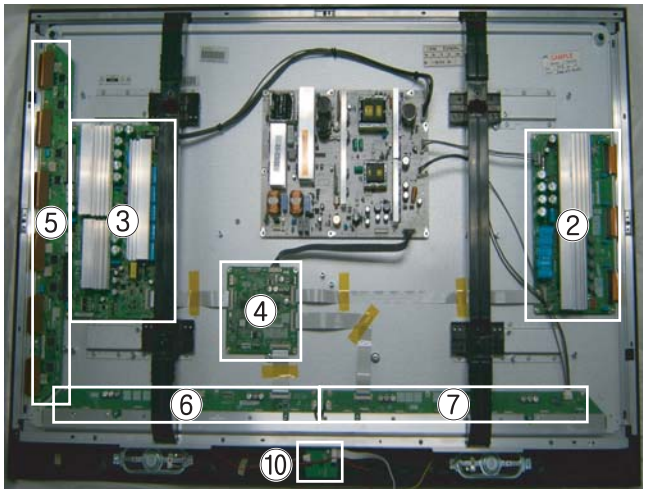
No	Assembly	Major Symptoms
1	SMPS-PDP TV	No power, Blank screen, the Relay repeats On and Off.
2	ASSY PDP MODULE P-X-MAIN	Blank screen
3	ASSY PDP MODULE P-Y-MAIN	Blank screen
4	ASSY PDP MODULE P-LOGIC MAIN	Blank screen, Screen noise
5	ASSY PDP MODULE P-Y-MAIN SCAN BUFFER	Row Bar screen is blank
6	ASSY 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
10	ASSY BOARD P-POWER&IR	The remote control does not work properly, the LED does not work properly.
11	ASSY BOARD P-SIDE AV	The AV2 and S-VIDEO2 modes do not work properly



<PDP 42”>



<PDP 50”>



4-2 Adjustment

4-2-1 Service Instruction

■ Before Performing After Sales Services

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

To Enter: **POWER OFF** → **INFO** → **MENU** → **MUTE** → **POWER ON**
(Interval between key strokes: less than 3 sec)

To Exit: **POWER OFF** → **POWER ON**

2. Factory Remote

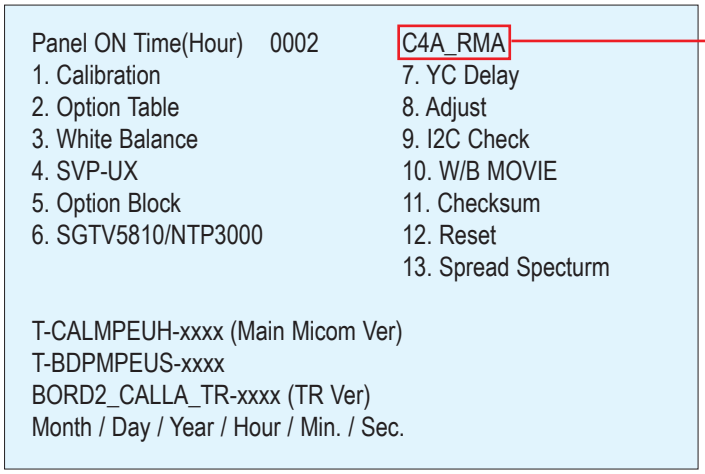
To Enter: **POWER ON** → **INFO** → **FACTORY Key** (Interval between key strokes: less than 3 sec)

To Exit: **POWER OFF** → **POWER ON**
Press the Factory key twice with a key stroke interval of more than 1 second (Pressing once enters Aging Mode)

3. Settings when entering Factory mode
- Sharp Screen (Dynamic), Color Tone (Cool1), Factory (Dynamic CE Off)

4. Adjustment Procedures
- 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.

5. Initial SERVICE MODE DISPLAY State



50": C5A_RMA

※ 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 ★ The underlined are items applied during the service adjustment. None of the others should be adjusted.

1. Calibration

Item	Data
AV Calibration	Success
Comp Calibration	Success
PC Calibration	Success
HDMI Calibration	Success

2. Option Table(Service)

Item	PDP 42"	PDP 50"	Option index
	C4A_RMA initial value	C5A_RMA initial value	
Ready	OFF	OFF	ON / OFF
Inch Option	42"	50"	42" / 50"...
Panel Vender	AMLCDINT	AMLCDINT	AUO/CMO...
Gamma	OFF	OFF	ON / OFF
Panel Type	Normal1	Normal1	Normal1 / Normal2...
Model Option	Bord Plus	Bord Plus	Call / Lily / Brod Plus / Jasmine
Tuner	SEMCO	SEMCO	SEMCO / ALPS
Tuner TOP	8	8	0 ~ 31
Auto Power	ON	ON	ON / OFF
Nordic	OFF	OFF	ON / OFF
LNA Menu	ON	ON	ON / OFF
TTX On/Off	ON	ON	ON / OFF
TTX List	Flof	Flof	Flof / List
Carrier Mute	OFF	OFF	ON / OFF
High Deviation	OFF	OFF	ON / OFF
VOL.Curve	Small	Small	Small / Large
HDMI Hotplug	1	1	0 / 1
HDMI Clock Ctrl	1	1	0 / 1
HDMI Hotplug Dly	9	9	3~50
Hotel Option			
Hotel Mode	OFF	OFF	ON / OFF
Power On Channel	1	1	1 ~ 99
Power On Volume	10	10	1 ~ 100
Max Volume	100	100	1 ~ 100
Local Key Lock	OFF	OFF	ON / OFF
Power On Source	RF	RF	RF/Ext.1...
Shop Mode	OFF	OFF	ON / OFF
Color Space	ON	ON	ON / OFF
PC Ident	OFF	OFF	ON / OFF

Item	PDP 42"	PDP 50"	Option index
	C4A_RMA initial value	C5A_RMA initial value	
Language	English	English	English / German...
ANYNET+	ON	ON	ON / OFF
Ch.Table	SUWON	SUWON	SUWON / SESK / SEH / TTSEC
TTX Group	Auto	Auto	Auto / West Europe...
iDTV_Cntry	UK	UK	UK / France...

3. White Balance

Item	Range	Tv/AV/Scart	Comp/iDTV	PC	HDMI
Sub-Briteness	00H ~ FFH	128	128	128	128
R-offset	00H ~ FFH	128	128	128	128
G-offset	00H ~ FFH	128	128	128	128
B-offset	00H ~ FFH	128	128	128	128
Sub-Contrast	00H ~ FFH	128	128	128	128
R-Gain	00H ~ FFH	128	128	128	128
G-Gain	00H ~ FFH	128	128	128	128
B-Gain	00H ~ FFH	128	128	128	128

4. SVP-UX

① ComB Filter

Item	Range
Y-Filter	00H ~ FFH

② Sharpness

Item	Range	RF	AV	Comp 480i	Comp 480p	Comp 720p	Comp 1080i	HDMI	PC	iDTV
H2Gain	00 ~ 1FH	05H	05H	05H	05H	04H	04H	0AH	05H	05H
H4Gain	00 ~ 1FH	04H	0AH	05H	05H	02H	02H	0AH	05H	05H
V2Gain	00 ~ 1FH	0CH	0CH	0AH	0CH	0AH	0AH	10H	0AH	0AH
V4Gain	00 ~ 1FH	0CH	10H	0CH	0CH	0AH	0AH	10H	0AH	0AH
Sr2Gain	00 ~ 1FH	00H	00H	00H	00H	00H	00H	00H	00H	00H
Sr4Gain	00 ~ 1FH	00H	02H	00H	00H	02H	02H	04H	02H	02H
Sl2Gain	00 ~ 1FH	00H	00H	00H	00H	00H	00H	00H	00H	00H
Sl4Gain	00 ~ 1FH	00H	02H	00H	00H	02H	02H	04H	02H	02H
Peakth1	00H ~ FFH	06H	02H	03H	03H	03H	03H	03H	08H	04H
Peakth2	00H ~ FFH	2FH	2FH	2FH	2FH	2FH	2FH	2FH	2FH	2FH
Peskth3	00H ~ FFH	3FH	3FH	3FH	3FH	3FH	3FH	3FH	3FH	3FH

③ NR

Item	Range	Initial value
Y_NR_OFF	00H ~ FFH	00H
C_NR_OFF	00H ~ FFH	00H
Y_NR_ON	00H ~ FFH	00H
C_NR_ON	00H ~ FFH	00H

④ RGB Calibration

Item	Range	TV/AV/S_Video	Component	PC	HDMI
R-Offset	00H ~ FFH	3AH	40H	32H	82H
G-Offset	00H ~ FFH	3AH	40H	32H	82H
B-Offet	00H ~ FFH	3AH	40H	32H	82H
R-Gain	00H ~ FFH	A6H	92H	A9H	6CH
G-Gain	00H ~ FFH	A6H	92H	A9H	6CH
B-Gain	00H ~ FFH	A6H	92H	A9H	6CH

⑤ ADC Calibration

Item	Range	TV/AV/S_Video	Component	PC	HDMI
TCD3 Contrast	00H ~ FFH	79H	78H	78H	78H
TCD3 Brightness	00H ~ FFH	29H	20H	20H	20H
TCD3 CR	00H ~ FFH	80H	80H	80H	80H
TCD3 CB	00H ~ FFH	80H	80H	80H	80H
TCD3 Delay	00H ~ FFH	00H	00H	00H	00H
Analog Y Offset	00H ~ FFH	40H	3DH	44H	40H
Analog PB Offset	00H ~ FFH	80H	80H	44H	80H
Analog PR Offset	00H ~ FFH	80H	80H	44H	80H
Analog Y Gain	00H ~ FFH	D6H	B3H	A4H	80H
Analog PB Gain	00H ~ FFH	80H	B3H	ACH	80H
Analog PR Gain	00H ~ FFH	80H	B3H	A7H	80H
Black Level	00H ~ FFH	00H	00H	00H	00H
Svp Brightness	00H ~ FFH	00H	00H	00H	00H

⑥ Calibration Target

Item	Range	low	high	Delta
AV ADC	00H ~ FFH	10H	DCH	02H
COMP ADC	00H ~ FFH	10H	EBH	02H
PC ADC	00H ~ FFH	10H	DCH	04H
ALL RGB	00H ~ FFH	01H	EBH	0AH

⑦ Color Management

Item	Range	Initial value
Skin Direction	Reddish / Yellowish	Reddish
Skin Enhance	00H ~ FFH	00H
Green Stretch	00H ~ FFH	00H
Blue Stretch	00H ~ FFH	00H

5. Option Block

① FRC(Micronas)

② FRC2X

Item	Range	Initial value
OUTCON	1 ~ 3	0
GAMMA	1 ~ 7	0
OCC_MODE	0 / 1	0
FALLBACK	0 / 1	0
DBG_MARK	0 / 1	0
SPR_CBR	0 / 1	0
BIT_EXPAND	0 / 1	0
INV_BIT_EXPAND	0 / 1	0
REPEAT_MODE	0 / 1	0
DEMO_ON_OFF	0 / 1	0
MMU_RD_START	00H ~ FFH	00H
ME_RD_START	00H ~ FFH	00H
MC_RD_START	00H ~ FFH	00H
CMZL(0x36E)	00H ~ FFH	0H
BLOL(0x2A7)	00H ~ FFH	0H
LOGO(0x2A7)	00H ~ FFH	0H

③ FBE2

ITEM	Range	RF	AV/ S-Video	Comp 480i/576i	Comp 480p/576p	Comp 720p/1080i/1080p	HDMI	DTV	PC
Pattern Select	0 ~ 20	0	0	0	0	0	0	0	0
BS-On	0 / 1	1	1	1	1	1	1	1	1
B-Slope Gain	0 ~ 255	34	44	64	64	64	64	64	64
B-Tilt Min	0 ~ 255	20	20	20	20	20	20	20	20
B-Tilt Max	0 ~ 255	120	120	120	120	120	120	120	120
B-Tilt Slope	0 ~ 255	128	128	128	128	128	128	128	128
LFunc-Basis	0 ~ 255	30	20	50	40	70	55	75	55
Hfunc-Basis	0 ~ 255	30	40	50	40	75	65	88	65
Mean-Offset1	0 ~ 255	20	100	75	75	75	75	75	75
Mean Offset2	0 ~ 255	120	200	155	155	225	225	225	225
Mean Slope	0 ~ 255	56	56	45	45	85	85	85	85
Input Offset	0 ~ 255	128	128	128	128	128	128	128	128
Input Gain	0 ~ 255	128	128	128	128	128	128	128	128
ACR Offset	0 ~ 128	15	15	15	15	15	15	15	15
ACR Th1	0 ~ 255	30	30	30	30	30	30	30	30
ARC Th2	0 ~ 255	130	130	100	130	130	130	130	130
Skin Enable	0 / 1	1	1	1	1	1	1	1	1
Skin Tu	0 ~ 255	165	165	150	150	165	165	128	165
Skin Tv	0 ~ 255	140	140	140	140	128	128	128	128
M Skin Tu	0 ~ 255	128	128	128	128	128	128	128	128
M Skin TV	0 ~ 255	128	128	128	128	128	128	128	128
Sub Color	0 ~ 255	115	128	135	135	140	150	143	150
M-Au-Sub Color	0 ~ 255	128	128	128	128	128	128	128	128
M-Wi-Sub Color	0 ~ 255	128	128	128	128	128	128	128	128
MW-Skin-Tu	0 ~ 255	128	128	128	128	128	128	128	128
MW-Skin-Tv	0 ~ 255	128	128	128	128	128	128	128	128

④ Pdp Logic

ITEM	Range	Initial value
Pattern Srlect	0 ~ 63	0
Data updata	ON / OFF	OFF
Data Type	42"EU MRT/42"EU MESH/...	42"EU MRT
CDC Sw	ON / OFF	OFF
CDC Strengh Th	0 ~ 31	0
BRE Sw	ON / OFF	OFF
FRC Repeat Mode	ON / OFF	OFF
FRC CBG Mark On	0 ~ 15	0
ERC Bypass	ON / OFF	OFF
Panel Type	-	0H
Panel Inch	-	SD
Panel Version	-	
Logic Sw Version	-	0H 0H 0H

6. SGTV5810/NTP3000

ITEM	Range	Initial value
ID Tone Shift	1H ~ FH	01H
ID Tone Thresh	00H ~ FFH	7FH
Demod Prescaler	00H ~ 20H	13H
Master Volume	00H ~ 30H	13H
PWM Modulation	80H ~ F2H	F1H
DRC Threshold	00H ~ 7FH	06H
Speaker EQ	ON / OFF	OFF

7. YC Delay

ITEM	Range	Initial value
RF PAL-B/G	00H ~ FFH	AAH
RF PAL-D/K	00H ~ FFH	99H
RF PAL-I	00H ~ FFH	99H
RF SECAM-B/G	00H ~ FFH	88H
RF SECAM-D/K	00H ~ FFH	44H
RF SECAM-L/L'	00H ~ FFH	88H
RF NTSC 3.58	00H ~ FFH	44H
RF NTSC 4.43	00H ~ FFH	CCH
AV PAL	00H ~ FFH	AAH
AV SECAM	00H ~ FFH	88H
AV NTSC 3.58	00H ~ FFH	30H
AV NTSC 4.43	00H ~ FFH	AAH
AV PAL60	00H ~ FFH	77H

8. Adjust

ITEM	Range	Initial value
Video Mute Time	0 ~ 255	10
Dynamic Contrast	ON / OFF	ON
Dynamic Dimming	ON / OFF	ON
Dynamic CE	ON / OFF	OFF
LNA PLUS		
RFDB-1 Level	0 ~ 255	2
RFDB-2 Level	0 ~ 255	5
RFDB-3 Level	0 ~ 255	7
RFDB-4 Level	0 ~ 255	24
Magazine LNA	ON / OFF	OFF
PixelShift Test	ON / OFF	OFF
Debug	ON / OFF	OFF
ACR	ON / OFF	OFF
D-Watchdog	ON / OFF	ON
UART Select	MAIN / IDTV / PDP Lvds ON / PDP Lvds /OFF	OFF

9. I2C Check

10. W/B MOVIE

ITEM	Range	TV/AV/S_Video	Component	PC	HDMI	Scart1/2
WB Movie	ON / OFF	OFF	OFF	OFF	OFF	OFF
Color Mode	Movie	Movie	Dynamic	Dynamic	Dynamic	Dynamic
Color Tone		Cool1	Cool1	Cool1	Cool1	Cool1
Msub Brigh	0 ~ 255	128	128	128	128	128
Msub Contr	0 ~ 255	128	128	128	128	128
W1_RGAIN	0 ~ 255	157	161	144	161	157
W1_BGAIN	0 ~ 255	76	74	117	76	76
W1_R_OFFS	0 ~ 255	119	119	127	118	119
W1_B_OFFS	0 ~ 255	138	140	110	141	138
W2_RGAIN	0 ~ 255	142	143	149	142	142
W2_BGAIN	0 ~ 255	48	47	93	51	48
W2_R_OFFS	0 ~ 255	129	127	124	128	129
W2_B_OFFS	0 ~ 255	143	145	110	143	143
NO_RGAIN	0 ~ 255	141	139	137	141	141
NO_BGAIN	0 ~ 255	104	102	123	104	104
NO_R_OFFS	0 ~ 255	126	125	126	121	126
NO_B_OFFS	0 ~ 255	136	133	114	133	136
C2_RGAIN	0 ~ 255	124	122	123	125	124
C2_BGAIN	0 ~ 255	142	141	156	143	142
C2_R_OFFS	0 ~ 255	128	129	117	128	128
C2_B_OFFS	0 ~ 255	128	127	116	128	128
Movie Contr	0 ~ 100	100	100	100	100	100
Movie Brigh	0 ~ 100	45	45	45	45	45
Movie Color	0 ~ 100	55	55	55	55	55
Movie Sharp	0 ~ 100	75	75	75	75	75

11. Checksum xxxx

12. Reset

13. Spread Spectrun

ITEM	Range	Initial value
Spectrum	ON / OFF	ON
Delta	-128 ~ +128	0
Positive	0 ~ 99	8
Negative	0 ~ 99	2
Speed	0 ~ 7	0
Time	0 ~ 7	4
FBE Spectrum	ON / OFF	OFF
FEE Delta	0 ~ 5	0

4-2-4 Service Adjustment

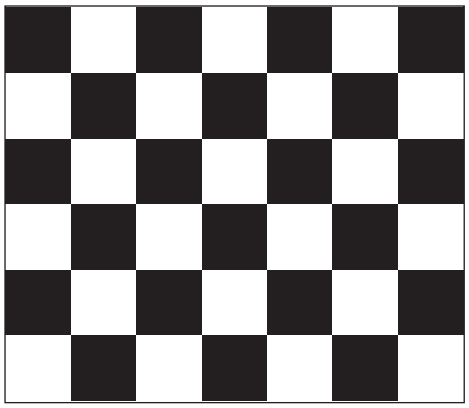
■ White Balance - Calibration

If picture color is wrong, do calibration first.

Execute calibration in Factory Mode

1. Source : VIDEO
2. Setting Mode : PAL Video (MODE : #2)
3. Pattern : Pattern #24 (Chess Pattern)
4. Use Equipment : K-7256 or Equipment of equality level
5. Work order
   1) Enter by Factory Mode select "1. CALIBRATION".
   2) Select "AV CALIBRATION" again in CALIBRATION MENU.
   3) After Completing Calibration, come out "Av success". OSD on the screen (bottom-side) for about 3 seconds.

Source AV : PAL composite, Component : 1280*720/60Hz
PC : 1024*768/60Hz



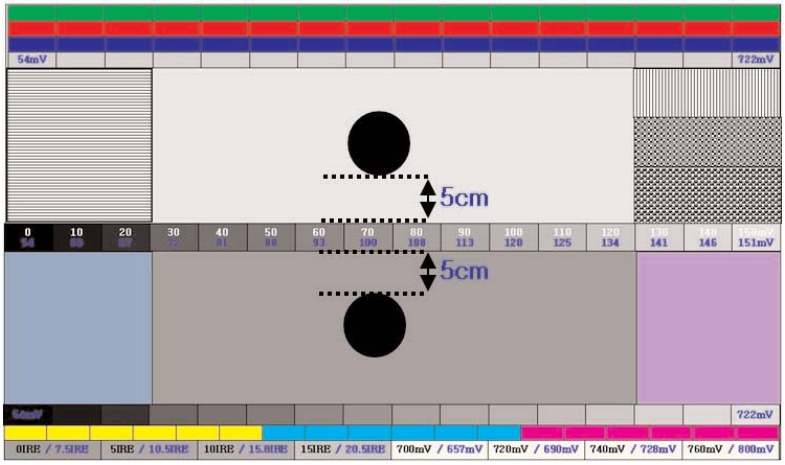
(Chess Pattern)

■ White Balance - Adjustment

If picture color is wrong, check White Balance condition.

Equipment : CA210, Patten : Toshiba
Adjust W/B in Factory Mode

Sub brightness and R/G/B Offset controls low light region
Sub contrast and R/G/B Gain controls high light region
Source AV : PAL composite, Component : 1280*720/60Hz,
HDMI[DVI] : 1280*720/60Hz



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

[Test Pattern : MSPG-945 Series Pattern #16]

* Color temperature
  1500K +/-500, -6 ~-20 MPCD

* Color coordinate
  H/L : 270/280 +/- 2
  L/L : 270/280 +/- 3, 2.1 Ft +/-0.05 Ft

■ Conditions for Measurement

1. On the basis of toshiba ABL pattern : High Light level (57 IRE)
   - INPUT SIGNAL GENERATOR : MSPG-925LTH
   * Mode No 2 : 744X484@60 Hz
     No 6 : 1280X720@60 Hz
     No 21 : 1024X768@60 Hz
   * Pattern No 36 : 16 Color Pattern
     No 16 : Toshiba ABL Pattern

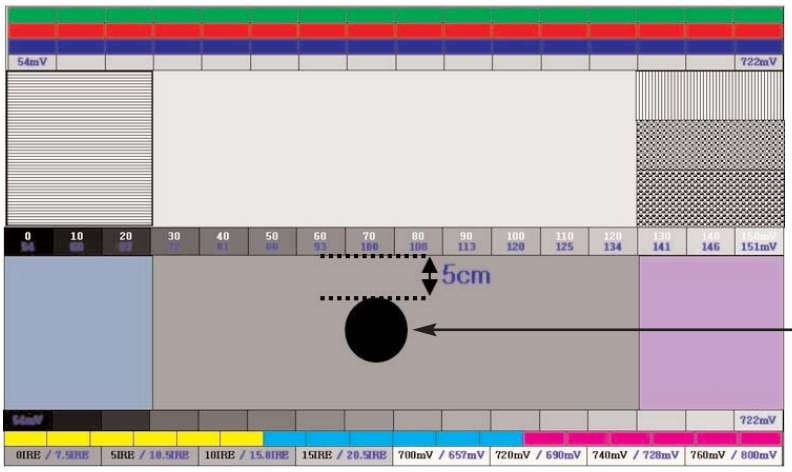
2. Optical measuring device : CA210 (FL)
   Please use the MSPG-925 LTH generator for model PS-42Q96HD, PS-50Q96HD.

■ Method of Adjustment

1. Adjust the white balance of AV, Component and DVI Modes.
   (AV → Component)
   a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC → DVI).
      * Input signal - VIDEO Mode : Model #2 (744*484 Mode), Pattern #16
                     - DTV, DVI Mode : Model #6 (1280*720 Mode), Pattern #16
                     - HDMI Mode : Model #6 (1280*720 Mode), Pattern #16

   b) Enter factory color control, confirm the data.

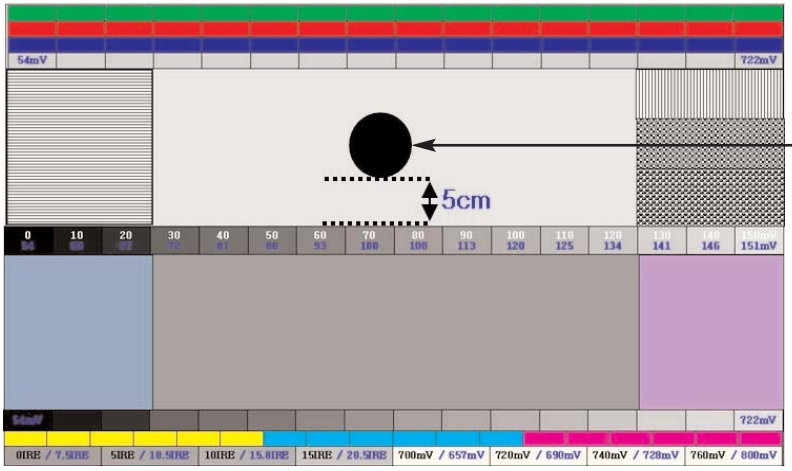
   c) Adjust the low light. (Refer to table 1, 2 in adjustment position by mode)
      - Adjust sub - Brightness to set the 'Y' value.
      - Adjust red offset ('x') and blue offset ('y') to the color coordinates.



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

   * Do not adjust green offset data.

   d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)
      - Adjust red gain ('x') and blue gain ('y') to the color coordinates.



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

   * Do not adjust the green gain and sub-contrast (Y) data.

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 A/V	

* PDP 50" Check items listed after changing each

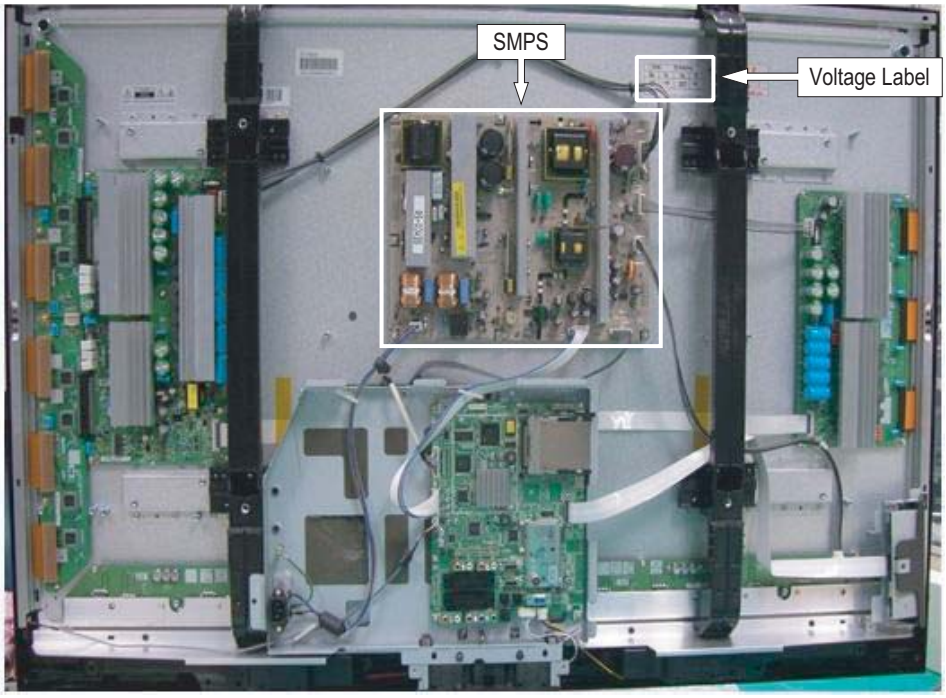
Replaced assembly items	Check Items
ASSY PCB MISC-MAIN	1) Auto Program 2) White Balance Adjust
SMPS-PDP TV	Vs, Va voltage check and adjust
ASSY PDP MODULE P-LOGIC MAIN	Not to be adjusted
ASSY PDP MODULE P-X-MAIN	
ASSY PDP MODULE P-Y-MAIN	
ASSY PDP MODULE P-Y-MAIN SCAN BUFFER	
ASSY PDP MODULE P-Y-MAIN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

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

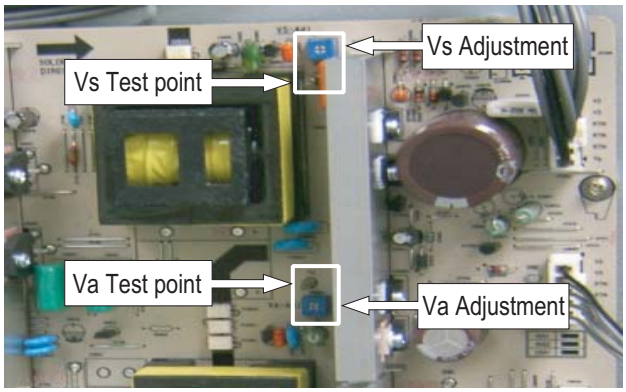
■ Voltage Adjustment

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.)

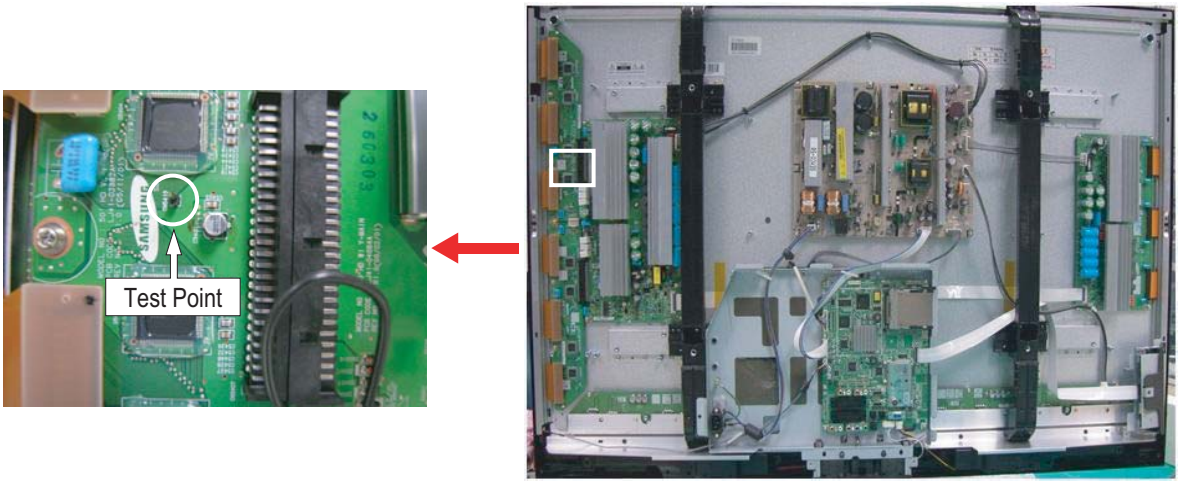
	Value	Board Adjustment
Vs	210	SMPS
Va	63	
Vset	-	
Ve	94	
Vscan	-190	



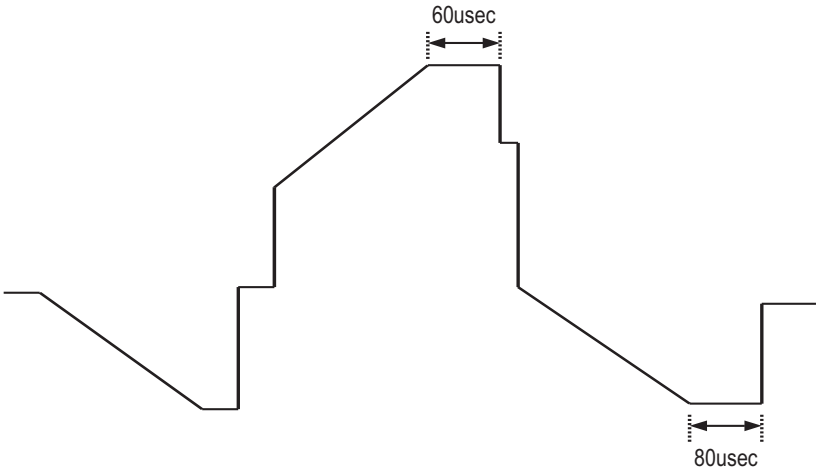
2. A point of adjusting SMPS-MAIN voltage.

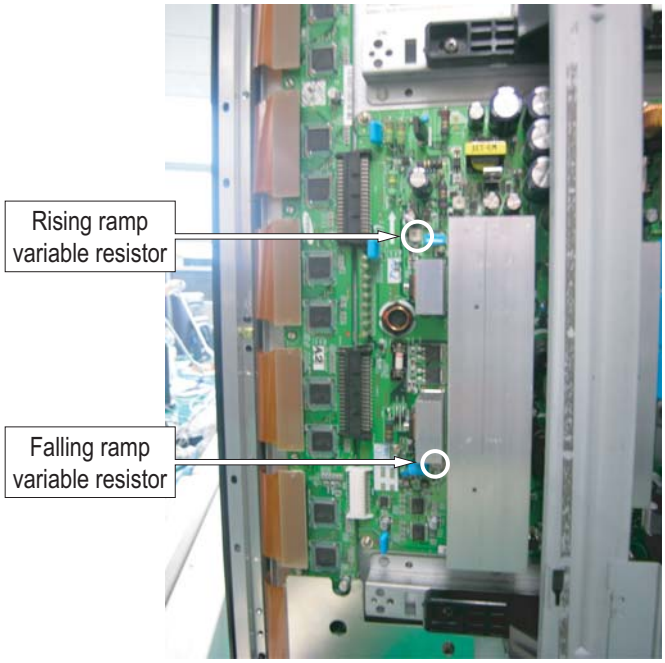


■ Y-RR and Y-FR controls



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



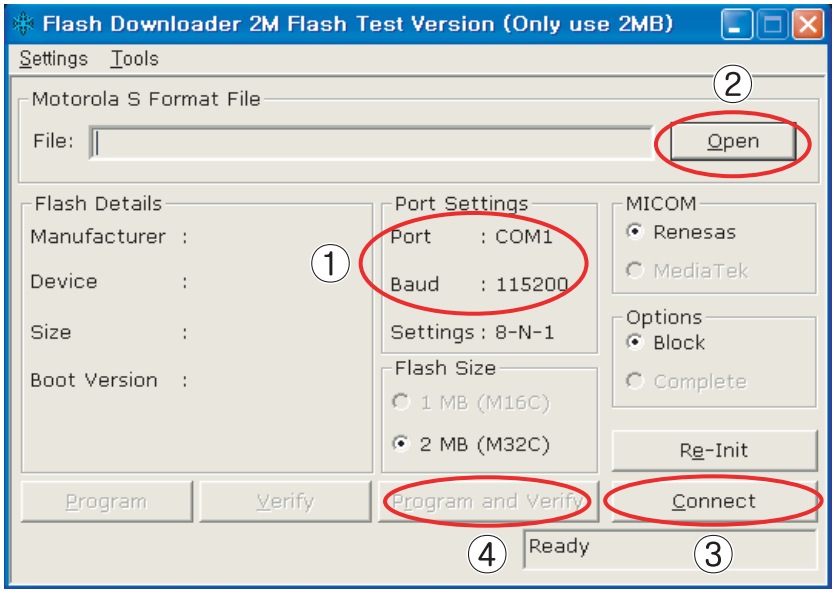


4-3 Upgrade

4-3-1 How to Update Flash ROM (with RS-232C Cable)

1. Connect Set (Service Jack) and Jig Cable to execute Program Update.

2. Turn Off (On Stand by mode) the Set
   - Run Down load tool



   1) Check ①
   2) Select MOT file by Open ②
   3) Click Connect Button ③
   4) Turn On the Set
   5) Click ④

3. Turn off (= AC Power off) the Set (waiting a few seconds) and turn on again.
   S/W Down Load Time: 6min

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

1. Procedures for checking in the Factory Menu.
   When entering Factory Mode, the version of the software is displayed at the bottom of the menu as described on page 4-17.