Plasma TV

Chassis	F5GB
Model Code	PS43F4500AWXZG

SERVICE MANUAL

Plasma TV

PS43F4500AW

Contents

Refer to the service manual in the GSPN (see the rear cover) for more information.

Contents

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1. Precaution

To avoid possible damage, electric shocks or exposure to radiation, follow the instructions below with regard to safety, installation, service and ESD.

1.1. Safety Precautions

1) Make sure all protective devices are properly installed including non-metallic handles and compartment covers when installing or re-installing the chassis or chassis assemblies.

2) Make sure that no gaps exist between the cabinets for children to insert their fingers in to prevent children from receiving electric shocks. Gaps mentioned above include ventilation holes of a too great magnitude between the PDP module and the cabinet mask, and the improper installation of the rear cabinet.

   Errors may occur when the resistance is below 1.0MΩ or over 5.2MΩ. In these cases, make sure that the device is repaired before sending it back to the customer.

3) Check for Electricity Leakage (AC Leakage Test)

WARNING

Do not use an insulated transformer for checking the leakage. Use only those current leakage testers or mirroring systems that comply with ANSIC 101.1 and the Underwriter Laboratory's specifications (UL1410, 59.7).

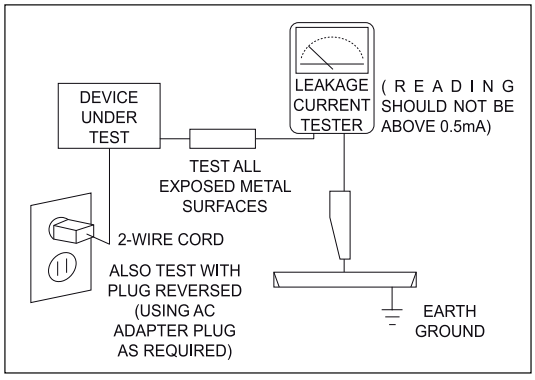

Figure 1.1 AC Leakage Test

4) A high voltage is maintained within the specified limits using safety parts, calibration and tolerances. When voltage exceeds the specified limits, check each special part.

5) Warning for Engineering Changes:

   Never make any changes or additions to the circuit design or the internal part for this product.

   Ex: Do not add any audio or video accessory connectors. This might cause physical damage.

   Furthermore, any changes or additions to the original design/engineering will invalidate the warranty.

6) Warning - Hot Chassis:

   Some TV chassis are directly connected to one end of the AC power cord for electrical reasons. Without insulated transformers, the product can only be repaired safely when the chassis is connected to the earthed end of the AC power source.

   To make sure the AC power cord is properly connected, follow the instructions below. Use the voltmeter to measure the voltage between the chassis and the earthed ground. If the measurement is over 1.0V, unplug the AC power cord and change the polarity before reinserting it. Measure the voltage between the chassis and the ground again.

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7) Some TV chassis are shipped with an additional secondary grounding system. The secondary system is adjacent to the AC power line. These two grounding systems are separated in the circuit using an unbreakable/unchangeable insulation material.

8) When any parts, material or wiring appear overheated or damaged, replace them with new regular ones immediately. When any damage or overheating is detected, correct this immediately and make a regular check of possible errors.

9) Check for the original shape of the lead, especially that of the antenna wiring, any sharp edges, the AC power and the high voltage power. Carefully check if the wiring is too tight, incorrectly placed or loose. Never change the space between the part and the printed circuit board. Check the AC power cord for possible damages. Keep the part or the lead away from any heat-emitting materials.

10) Safety Indication:

    Some electrical circuits or device related materials require special attention to their safety features, which cannot be viewed by the naked eye. If an original part is replaced with another irregular one, the safety or protective features will be lost even if the new one has a higher voltage or more watts.

    Critical safety parts should be bracketed with (⚠, ⚠). Use only regular parts for replacements (in particular, flame resistance and dielectric strength specifications). Irregular parts or materials may cause electric shock or fire.

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1.2. Servicing Precautions

WARNING

1) First carefully read the "Safety Instruction" in this service manual.
When there is a conflict between the service and the safety instructions, follow the safety instruction at all times.

2) Any electrolytic capacitor with the wrong polarity will explode.

1) The service instructions are printed on the cabinet, and should be followed by any service personnel.

2) Make sure to unplug the AC power cord from the power source before starting any repairs.
   a) Remove or re-install parts or assemblies.
   b) Disconnect the electric plug or connector, if any.
   c) Connect the test part in parallel with the electrolytic capacitor.

3) Some parts are placed at a higher position than the printed board. Insulated tubes or tapes are used for this purpose. The internal wiring is clamped using buckles to avoid contact with heat emitting parts. These parts are installed back to their original position.

4) After the repair, make sure to check if the screws, parts or cables are properly installed. Make sure no damage is caused to the repaired part and its surroundings.

5) Check for insulation between the blade of the AC plug and that of any conductive materials (i.e. the metal panel, input terminal, earphone jack, etc).

6) Insulation Check Process:

   Unplug the power cord from the AC source and turn the switch on. Connect the insulating resistance meter (500V) to the AC plug blade. The insulating resistance between the blade of the AC plug and that of the conductive material should be more than 1MΩ.

7) Any B+ interlock should not be damaged.

   If the metal heat sink is not properly installed, no connection to the AC power should be made.

8) Make sure the grounding lead of the tester is connected to the chassis ground before connecting to the positive lead. The ground lead of the tester should be removed last.

9) Beware of risks of any current leakage coming into contact with the high-capacity capacitor.

10) The sharp edges of the metal material may cause physical damage, so protect yourself by wearing gloves during the repair.

11) Due to the nature of plasma display panels, partial after-images may appear if a still picture is displayed on the screen for a long period of time.

    This is caused by brightness deterioration due to the storage effect of the panel, and to prevent this from happening, we recommend that the brightness and contrast are reduced. (e.g.) Contrast: 25, Brightness: 50

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1.3. Static Electricity Precautions

1) Some semi-conductive (“solid state”) devices are vulnerable to static electricity. These devices are known as ESD. ESD includes the integrated circuit and the field effect transistor. To avoid any materials damage from electrostatic shock, follow the instructions described below.

2) Remove any static electricity from your body by connecting the earth ground before handling any semi-conductive parts or assemblies. Alternatively, wear a dischargeable wrist-belt.

   (Make sure to remove any static electricity before connecting the power source - this is a safety instruction for avoiding electric shock)

3) Remove the ESD assembly and place it on a conductive surface such as aluminum foil to prevent accumulating static electricity.

4) Do not use any Freon-based chemicals. Such chemicals will generate static electricity that causes damage to the ESD.

5) Use only grounded-tip irons for soldering purposes.

6) Use only anti-static solder removal devices.

   Most solder removal devices do not support an anti-static feature. A solder removal device without an anti-static feature can store enough static electricity to cause damage to the ESD.

7) Do not remove the ESD from the protective box until the replacement is ready. Most ESD replacements are covered with lead, which will cause a short to the entire unit due to the conductive foam, aluminum foil or other conductive materials.

8) Remove the protective material from the ESD replacement lead immediately after connecting it to the chassis or circuit assembly.

9) Take extreme caution in handling any uncovered ESD replacements. Actions such as brushing clothes or lifting your leg from the carpet floor can generate enough static electricity to damage the ESD.

CAUTION

These servicing instructions are for use by qualified service personnel only.

To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

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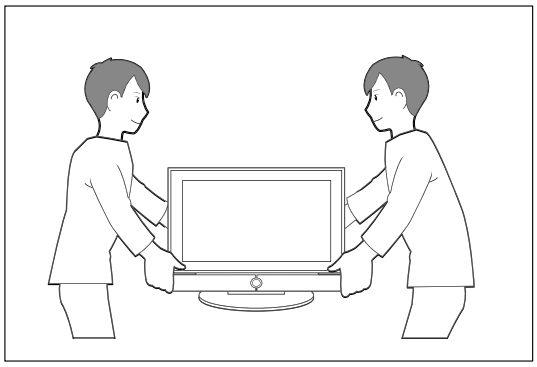
1.4. Installation Precautions

1) For safety reasons a minimum of two people are required to carry this product.



2) Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.

3) Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.

4) Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.

5) Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.

6) Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the high-voltage cable or the antenna falling over may cause fire or electric shock.

7) When connecting the RF antenna, check for a DTV receiving system and install a separate DTV reception antenna for areas with no DTV signal.

8) When installing the product, leave enough space (4”) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

9) When moving a PDP with removable speakers, detach the speakers first before moving the main body. Moving the PDP main body without separating the speakers may cause the speakers to detach, possibly causing damage or injury.

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2. Product Specification

2.1. Model Comparison

Series			PE4500
Front View			
Front Color			Steam Mold
Dimensions W x D x H (inch)	43"	Without Stand	1009.7 x 617.5 x 55.7 mm
			39.75 x 24.31 x 2.19 inch
		With Stand	1009.7 x 698.8 x 235.0 mm
			39.76 x 27.51 x 9.25 inch
	51"	Without Stand	1185.2 x 702.1 x 55.7 mm
			46.65 x 27.64 x 2.19 inch
		With Stand	1185.2 x 783.0 x 235.0 mm
			46.65 x 30.82 x 9.25 inch
Weight (lbs)	43"	Without Stand	13.6 kg
			29.98 lb
		With Stand	15.0 kg
			33.06 lb
	51"	Without Stand	17.7 kg
			37.69 lb
		With Stand	19.1 kg
			41.88 lb
Feature			Zero Black Panel / ConnectShare

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Inch			PE4900
Front View			
Front Color			Steam Mold
Dimensions W x D x H (inch)	43"	Without Stand	1009.7 x 617.5 x 55.7 (mm)
			39.75 x 24.31 x 2.19 (inch)
		With Stand	1009.7 x 692.3 x 305.0 (mm)
			39.75 x 27.25 x 12.00 (inch)
	51"	Without Stand	1185.2 x 702.1 x 55.7 (mm)
			46.65 x 27.64 x 2.19 (inch)
		With Stand	1185.2 x 776.5 x 305.0 (mm)
			46.65 x 30.57 x 12.00 (inch)
Weight (lbs)	43"	Without Stand	13.6 kg
			29.98 lb
		With Stand	15.0 kg
			39.68 lb
	51"	Without Stand	18.0 kg
			37.69 lb
		With Stand	22.1 kg
			48.72 lb
Feature			Zero Black Panel / ConnectShare

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2.2. Feature & Specifications

■ Features

- Digital-TV, RF, 2-HDMI, 1-Component(AV), 1-USB2.0, Optical
- Brightness : 1500cd/m2
- Contrast Ratio : 1000000:1
- 3D, All Share, Content

Model	PS**F4500 PS**F4900
PDP Panel	Clear Image Panel
Scanning Frequency	Horizontal : 60 kHz ~ 73 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)
Display Colors	16.7M color
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated
Input Sync Signal	H/V Separate, TTL, P. or N.
Maximum Pixel Clock rate	74.25 MHz
AC Power Voltage & Frequency	AC 220-240 V, 50/60 Hz
Power Consumption	194 W (43") 206 W (51")
TV System	Tuning : Frequency Synthesize (Refer to detailed Frequency Table) System : DVB-T/C Sound : BK, DK, NICAM, MPEG1
Environmental Considerations	Operating Temperature : 32 ˚F ~ 122 ˚F (0 ˚C ~ 50 ˚C) Operating Humidity : 20 % ~ 90 % Storage Temperature : -4 ˚F ~ 140 ˚F (-20 ˚C ~ 60 ˚C) Storage Humidity : 10 % ~ 90 %
Audio Spec.	MAX Internal Audio Output Power : Each 3W (Left/Right) Equalizer : 5 band Output Frequency : RF : 20 Hz ~ 15.4 kHz AV/Componet/HDMI : 20 Hz ~ 20 kHz

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■ Specification

Model		PS**F4500	PS**F4900
Dimensions (W x H x D)	With Stand	1009.7 x 698.8 x 235.0 (mm) (43") 1185.2 x 783.0 x 235.0 (mm) (51")	1009.7 x 692.3 x 305.0 (mm) (43") 1185.2 x 776.5 x 305.0 (mm) (51")
	Without Stand	1009.7 x 617.5 x 55.7 (mm) (43") 1185.2 x 702.1 x 55.7 (mm) (51")	1009.7 x 617.5 x 55.7 (mm) (43") 1185.2 x 702.1 x 55.7 (mm) (51")
Weight	With Stand	15.0 kg (43") 19.1 kg (51")	18.0 kg (43") 22.1 kg (51")
	Without Stand	13.6 kg (43") 17.7 kg (51")	13.6 kg (43") 17.7 kg (51")
Screen Size		43 Inches (16:9) 51 Inches (16:9)	
PC Resolution		1920(H) x 1080(V)	
Power Consumption		43FH : 194W ±10% and Less 51FH : 206W ±10% and Less	
Antenna Input		ANT - AIR/CABLE IN 75Ω unbalanced	
Video Input		AV COMPONENT1 - 480i/480p/720p/1080i/1080p SCART - 21P, Sn, BLK HDMI1 : 480p/720p/1080i/1080p HDMI2(DVI Compatible) - 480p/720p/1080i/1080p * 480i can be displayed on HDMI, however it is not contained in EDID data	
Audio Input		AV COMPONENT1 - 480i/480p/720p/1080i/1080p DVI	
Audio Output		AUDIO (L/R)	
Speaker Output		10W+10W (40dB+40dB)	
New Features		Zero Black Panel / ConnectShare	

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2.3. Specifications Analysis

Model		PS**F4500	PS**E450
Design			
Basic	Display Type	PDP TV	PDP TV
	Built-In Tuner	O	O
	Resolution	1024 x 768	1024 x 768
	PDP Module	FH	EH
	Picture ratio	16:9	16:9
Picture	Brightness	1,500 Cd/m2	1,500 Cd/m2
	Contrast Ratio	10000:1	10000:1
	Picture Enhancer	DNIe (SENK13)	DNIe (SEMS23)
Audio	Equalizer	5 Band	5 Band
	Auto Volume Control	O	O
	Surround Sound	SRS Theater Sound	SRS Theater Sound HD
	Speaker Output	10W + 10W	10W + 10W
Features	PIP	O	X
	Double Screen	X	X
	Caption	O	O
	Still Image	X	X
	EPG	O	O
	My color Control	X	X
	Energy Saving	O	O
	Screen Burn Protection	O	O
	Anynet	X	X
Connections	Antenna	1 (Cable/Air)	1 (Cable/Air)
	AV Input	1 Input	1 Input
	S-Video	X	X
	Component	1 Input	1 Input
	PC (D-SUB)	X	1 Input
	DVI	1 Input [HDMI2]	1 Input
	HDMI	2 Input	2 Input
	USB	1	1
	Sub Woofer	X	X
	Optical	1	1
ETC	Speaker / Stand	Built-in Speaker	Built-in Speaker

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Model		PS**F4900	PS**E490
Design			
Basic	Display Type	PDP TV	PDP TV
	Built-In Tuner	O	O
	Resolution	1024 x 768	1024 x 768
	PDP Module	FH	EH
	Picture ratio	16:9	16:9
Picture	Brightness	1,500 Cd/m2	1,500 Cd/m2
	Contrast Ratio	10000:1	10000:1
	Picture Enhancer	DNIe (SENK13)	DNIe (SEMS23)
Audio	Equalizer	5 Band	5 Band
	Auto Volume Control	O	O
	Surround Sound	SRS Theater Sound	SRS Theater Sound HD
	Speaker Output	10W + 10W	10W + 10W
Features	PIP	O	1 Tuner PIP
	Double Screen	X	X
	Caption	O	O
	Still Image	X	X
	EPG	O	O
	My color Control	X	X
	Energy Saving	O	O
	Screen Burn Protection	O	O
	Anynet	X	X
Connections	Antenna	1 (Cable/Air)	1 (Cable/Air)
	AV Input	1 Input	1 Input
	S-Video	X	X
	Component	1 Input	1 Input
	PC (D-SUB)	X	1 Input
	DVI	1 Input [HDMI2]	1 Input
	HDMI	2 Input	2 Input
	USB	1	1
	Sub Woofer	X	X
	Optical	1	1
ETC	Speaker / Stand	Built-in Speaker	Built-in Speaker

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TIP

O : Supported

X : Not Supported

NOTE

For the power supply and power consumption, refer to the label attached to the product.

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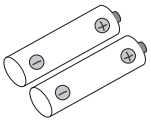
2.4. Accessories

2.4.1. Supplied Accessories

Accessories	Item	Item code
	Ferrite Core	3301-002053
	Power Cord	3903-000551
	Batteries (AAA x 2)	4301-000103
	Remote Control	AA59-00741A
	Stand Wire Holder	BN61-08370A
	Cleaning Cloth	BN63-01798B
	Owner`s Instructions	BN68-04819B

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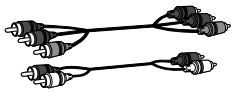
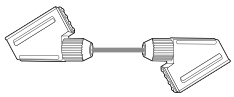
2.4.2. Sold Separately

Accessories	Item	Item code
	HDMI	-
	HDMI-DVI	-
	Component	-
	Composite (AV)	-
	Audio connection (OPTICAL)	-
	SCART connection (EXT)	-
	Cable (VHF/UHF Antenna)	-

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3. Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedures for the PDP TV.

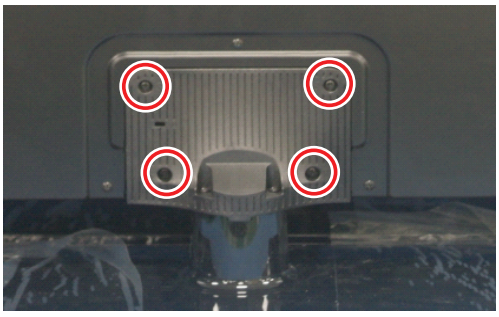
WARNING

This PDP TV contains electrostatically sensitive devices. Use caution when handling these components.

3.1. Overall Disassembly and Reassembly

CAUTION

- **Disconnect the PDP TV from the power source before disassembly.**
- **Follow these directions carefully; never use metal instruments to pry apart the cabinet.**
- **If there is no additional comment, it is same for all inches.**

Description	Description Photo	Screw
1. Place monitor face down on cushioned table. Remove screws from the stand. Remove stand.	 <43">  <43">	 6003–001782 M4 * L12

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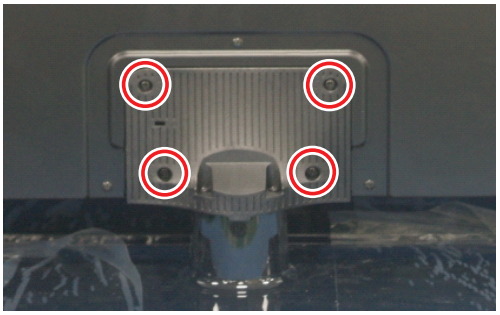
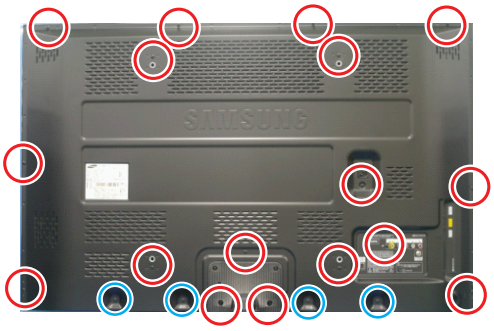
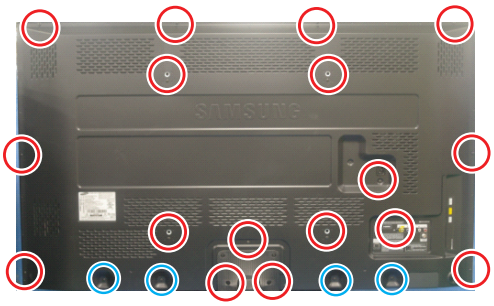
Description	Description Photo	Screw
	 <51">  <51">	 6003–001782 M4 * L12
2. Remove the screws of rear-cover.	 <43">  <51">	 6003–001782 M4 * L12  6003–000337 M4 * L10  6003–001782 M4 * L12  6003–000337 M4 * L10

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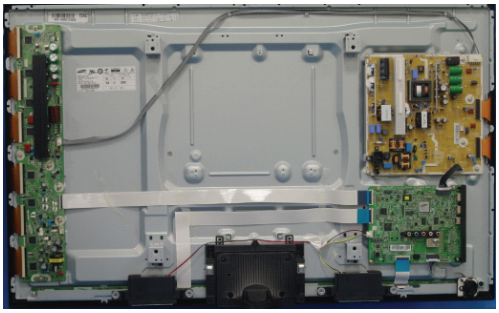
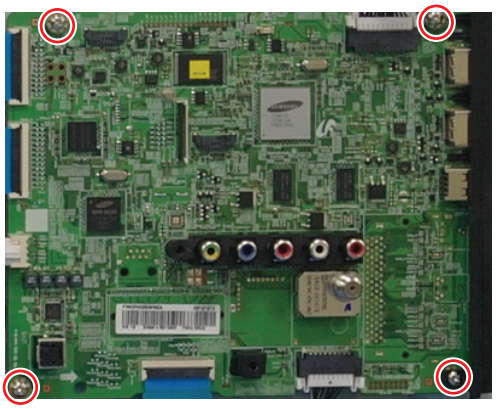
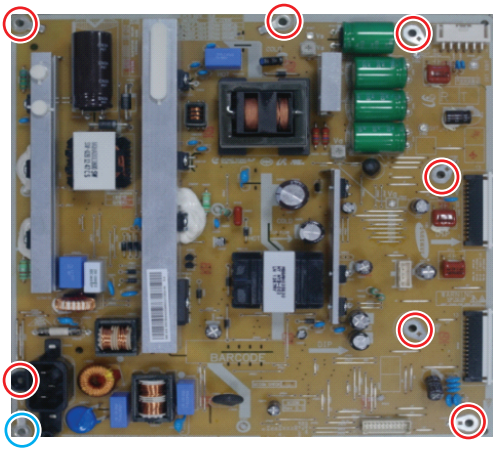
Description	Description Photo	Screw
3. Lift up and remove the rear-cover.	 <43">  <51">	
4. Remove the screws of main board. **CAUTION** **Disconnect all connectors prior to removing boards.**		 6001–002606 M3 * L10
5. Remove the screws of SMPS. Remove the SMPS.	 <43" >	 6001–002606 M3 * L10

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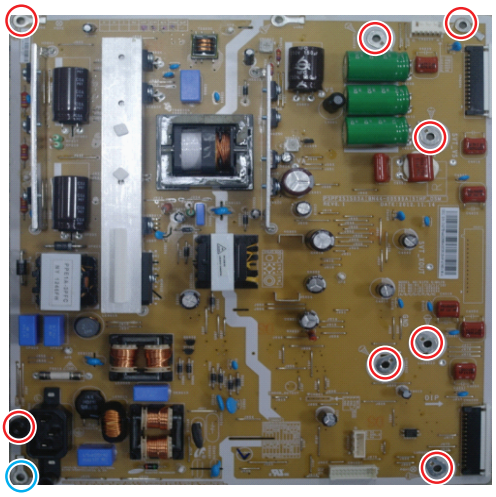
Description	Description Photo	Screw
	 <51" >	 6003–001439 M3 * L10
6. Remove the screw of Function. Remove the Function.		 6001–002606 M3 * L10
7. Remove the speakers (R / L).	 	

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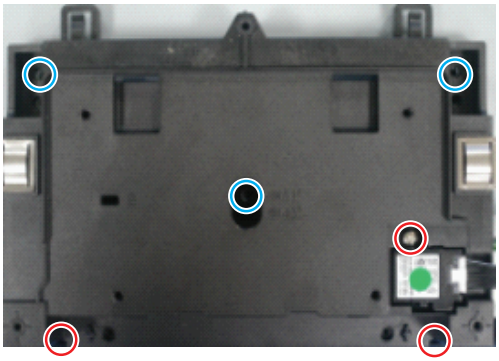
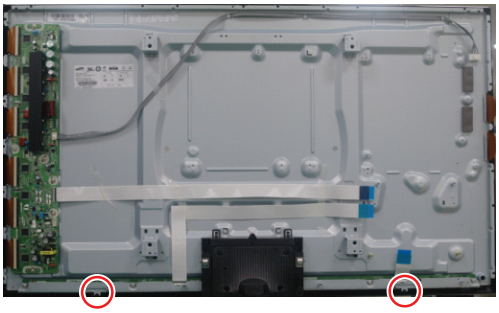
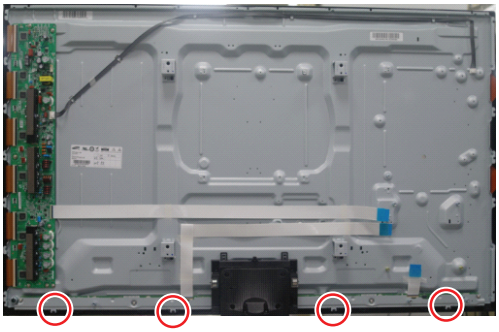
Description	Description Photo	Screw
8. Remove the screws of Cover bottom (Bluetooth screw PF4900 only.)		 6003–001782 M4 * L12  6003–000337 M4 * L10  6001–002606 M3 * L10
9. Remove the screws of the front-cover.	 <43">  <51">	 6003–001782 M4 * L12  6003–001782 M4 * L12

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4. Troubleshooting

4.1. 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) How to distinguish if the problem is caused by Main board or Logic Board.
   - No Video : If the problem is No Video but Logic Board is on and Indication LED is blinking repeatedly and faster than normal booting, replace the Logic board.
   - Distorted Picture : Check the inner patterns.

Inner pattern	Picture	Problem
OK	NG	Main Board
NG	NG	Main / Logic Board or Panel.

   - How to check Logic test pattern?
     a. Entering Factory mode
     b. Move to SVC menu
     c. Move to Test Pattern
     d. Check test patterns.

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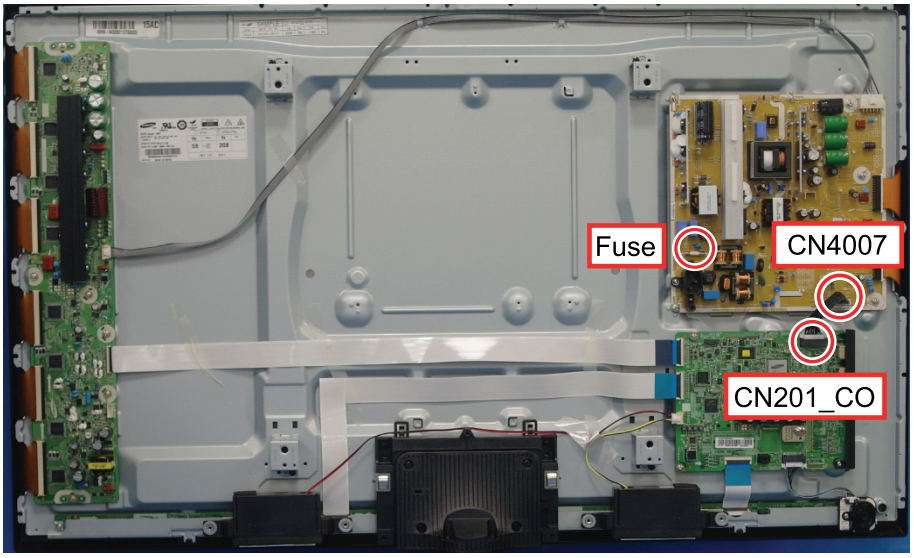
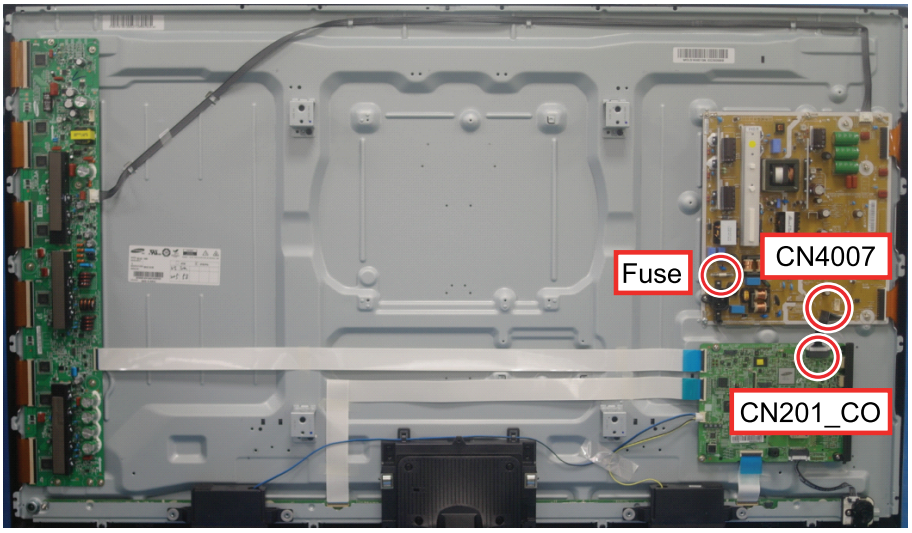
4.2. Checkpoints by Error Mode

■ 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 status inside the unit. • Check the fuses of each part. • Check the output voltages of the SMPS. • Replace the Main Board.
Diagnostics	 <43" PDP>  <51" PDP>

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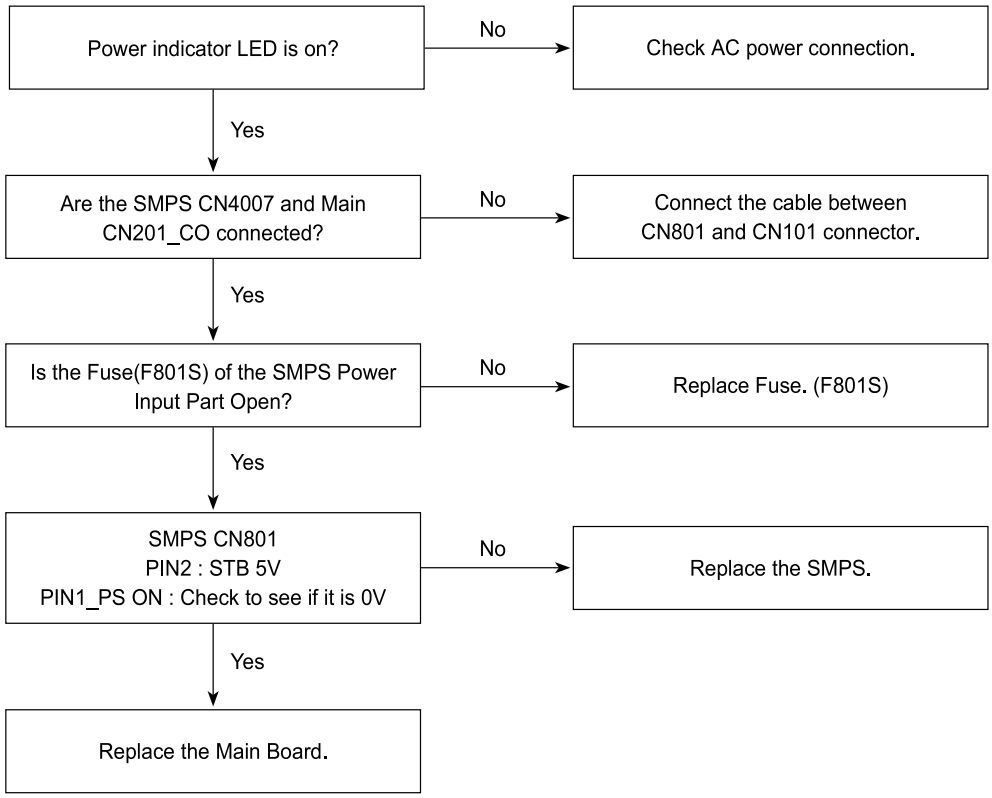

CAUTION

Make sure to disconnect the power before working on the SMPS board.

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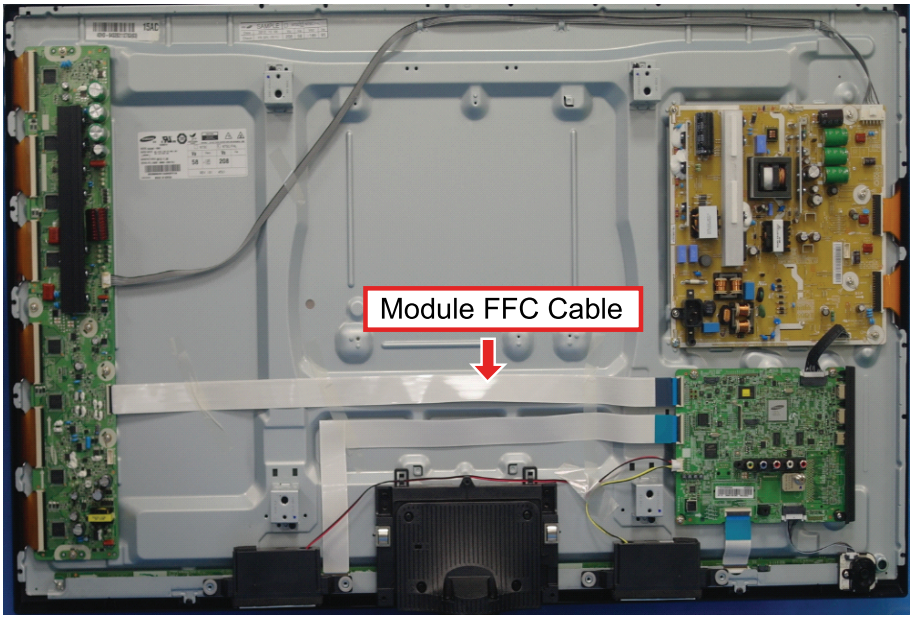
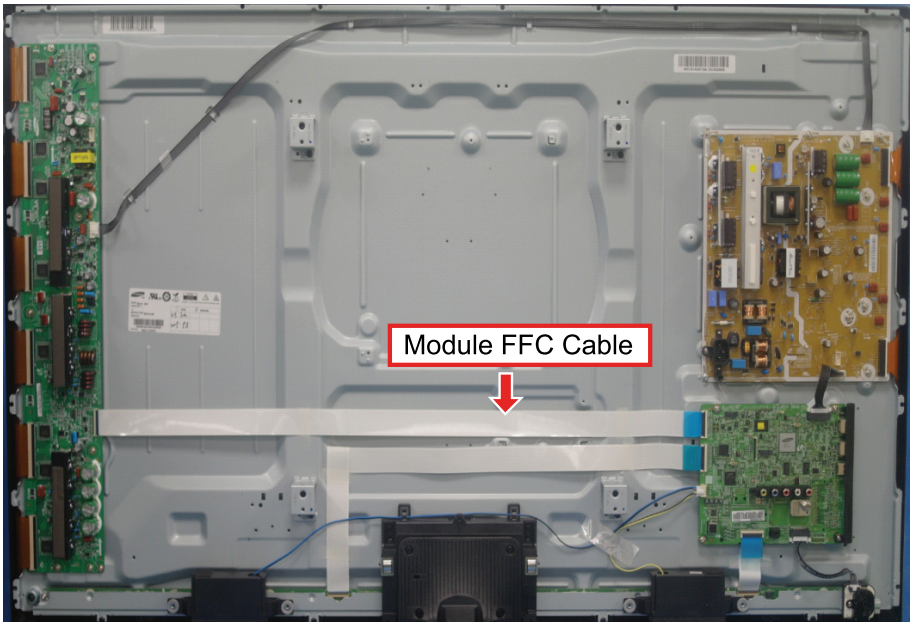
■ No Video

Symptom	• Audio is normal but no picture is displayed on the screen.
Major Checklist	• The output voltage of the Main SMPS. • This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <43" PDP>  <51" PDP>

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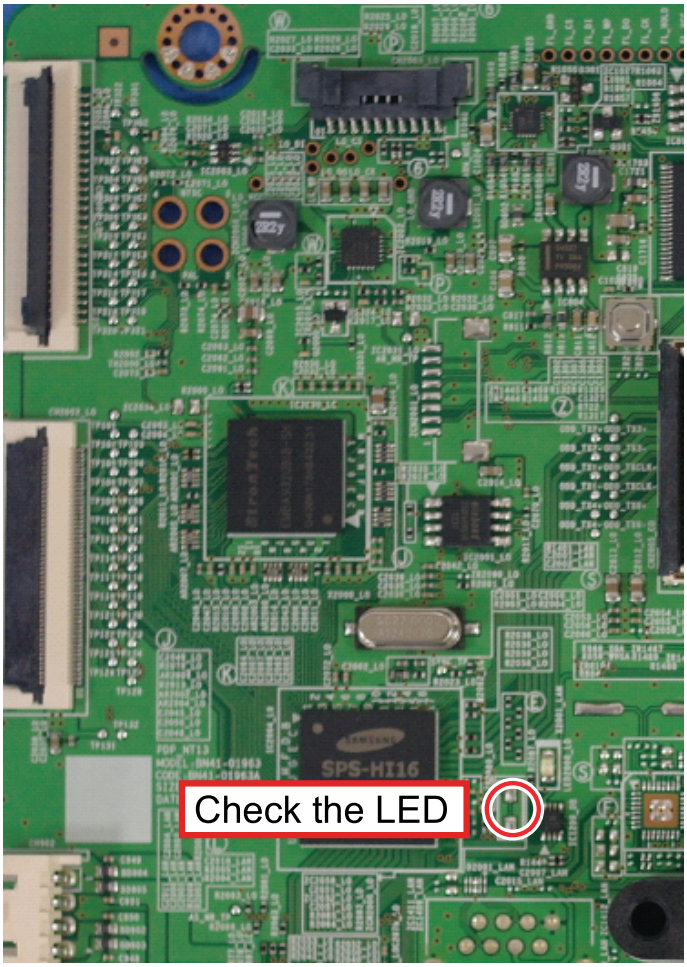

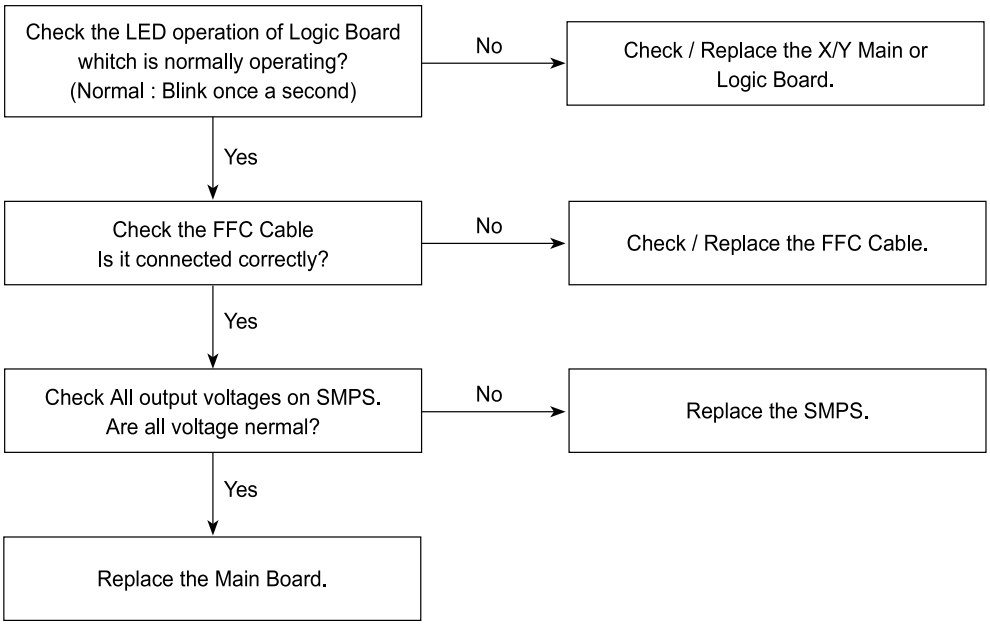

CAUTION

Make sure to disconnect the power before working on the SMPS board.

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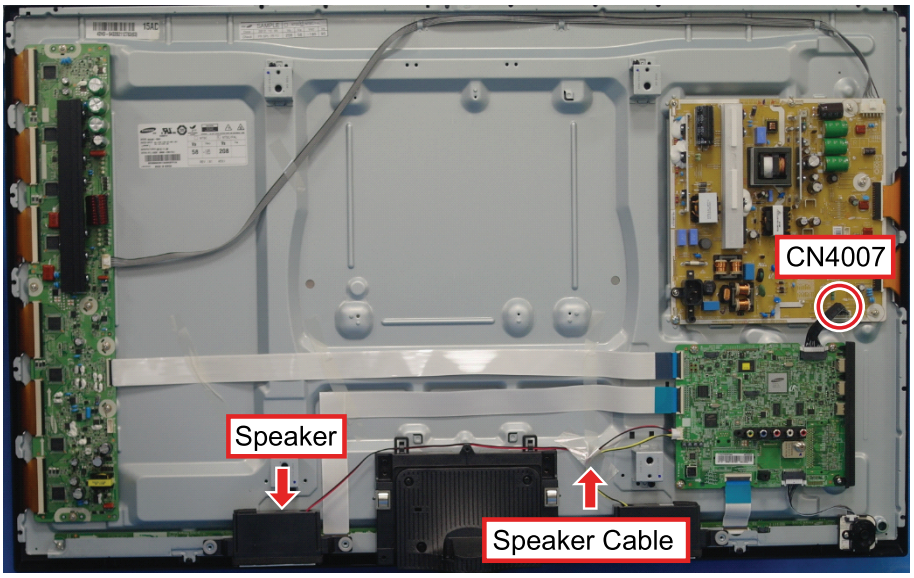
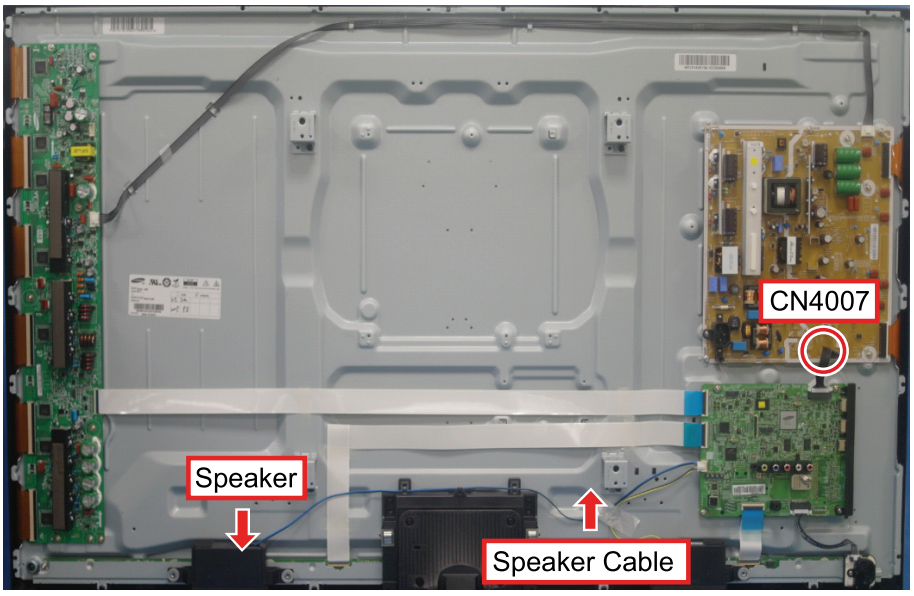
■ No Sound

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. • SMPS not supplying voltage to the main board.
Diagnostics	 <43" PDP>  <51" PDP>

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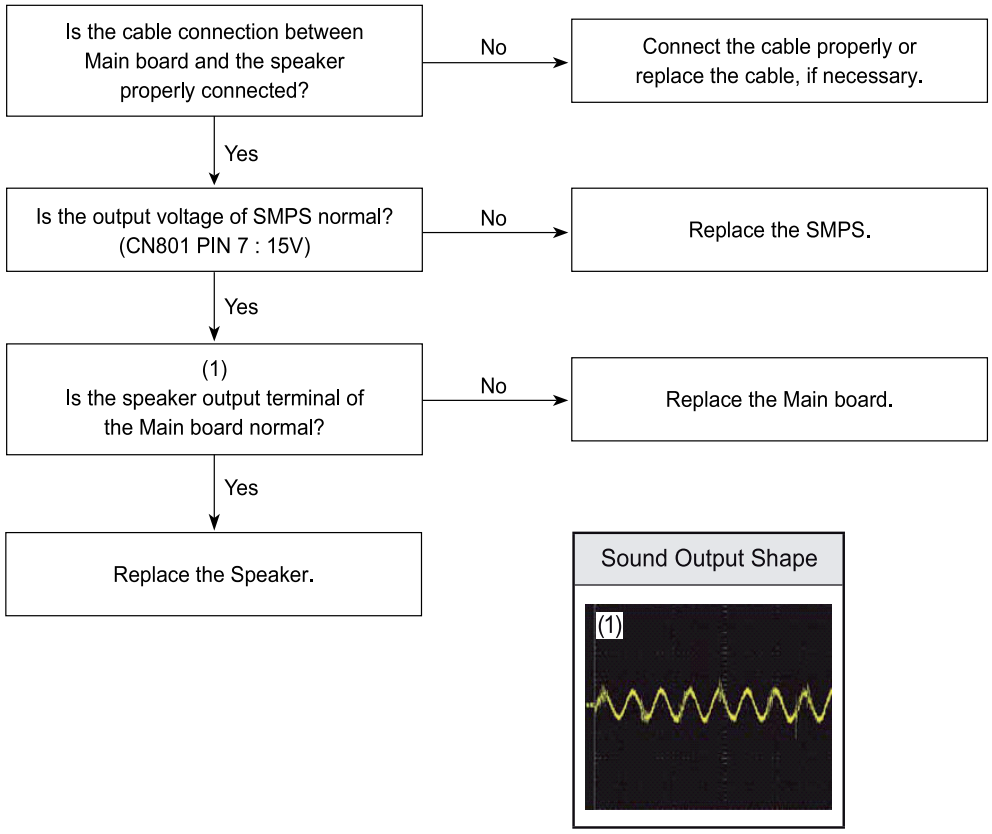

CAUTION

Make sure to disconnect the power before working on the IP board.

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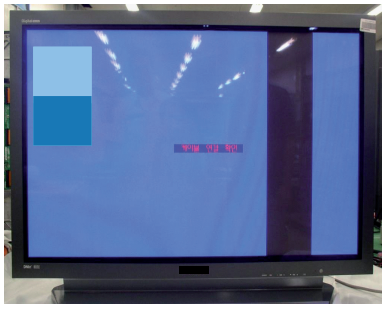
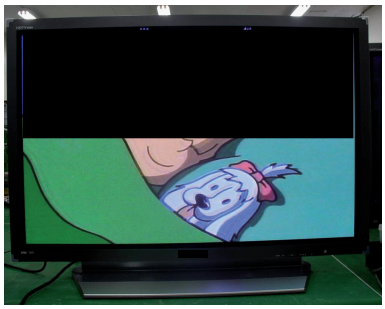
4.2.1. Example of Trouble Shooting

Symptom	Related Image	Causes and Countermeasures

A blank vertical cell (block) appears on the screen.		• Address buffer defect
		  • Replace the corresponding upper/lower buffers.
		• COF defect (burnt)
		  • Replace the module.

A green screen appears when the TV is turned on.		• The Scale is not resecting. • 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.
Either the main or sub picture does not appear.		• Replace the Main board.

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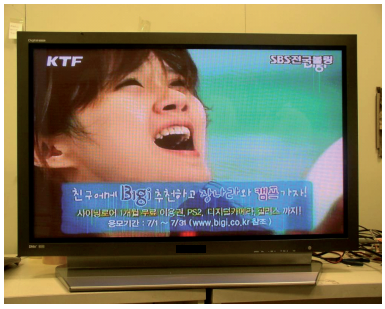
Symptom	Related Image	Causes and Countermeasures
A vertical green line appears on the screen.		• The SMPS voltage is incorrect. • Adjust the SMPS voltage according to the voltage printed on the module label.
Dim screen (blurred in red)		• X-Main board defect • Replace the X-Main board.
A blank screen appears.		• Replace the Y-Main board.

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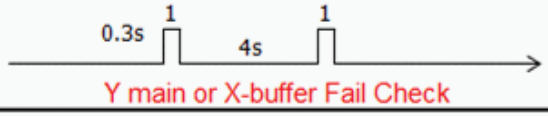
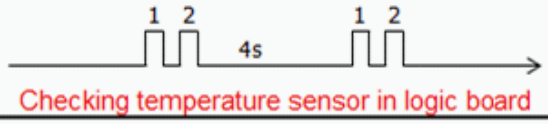
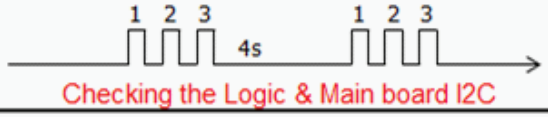
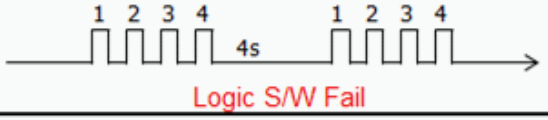
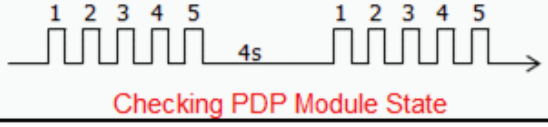
4.2.2. Operating Logic LED

■ Normal

- LED blink time is once per 0.5s

■ Abnormal

- LED Blink interver is 0.3s and Off time 4s

Error Part	Operation / Bilnk		Error Code(Hex)
X,Y Driver Fail	Off	1	 Y main or X-buffer Fail Check
Temp Protect		2	 Checking temperature sensor in logic board
Logic Board Fail		3	 Checking the Logic & Main board I2C
Err code Detect		4	 Logic S/W Fail
Module Protection		5	 Checking PDP Module State

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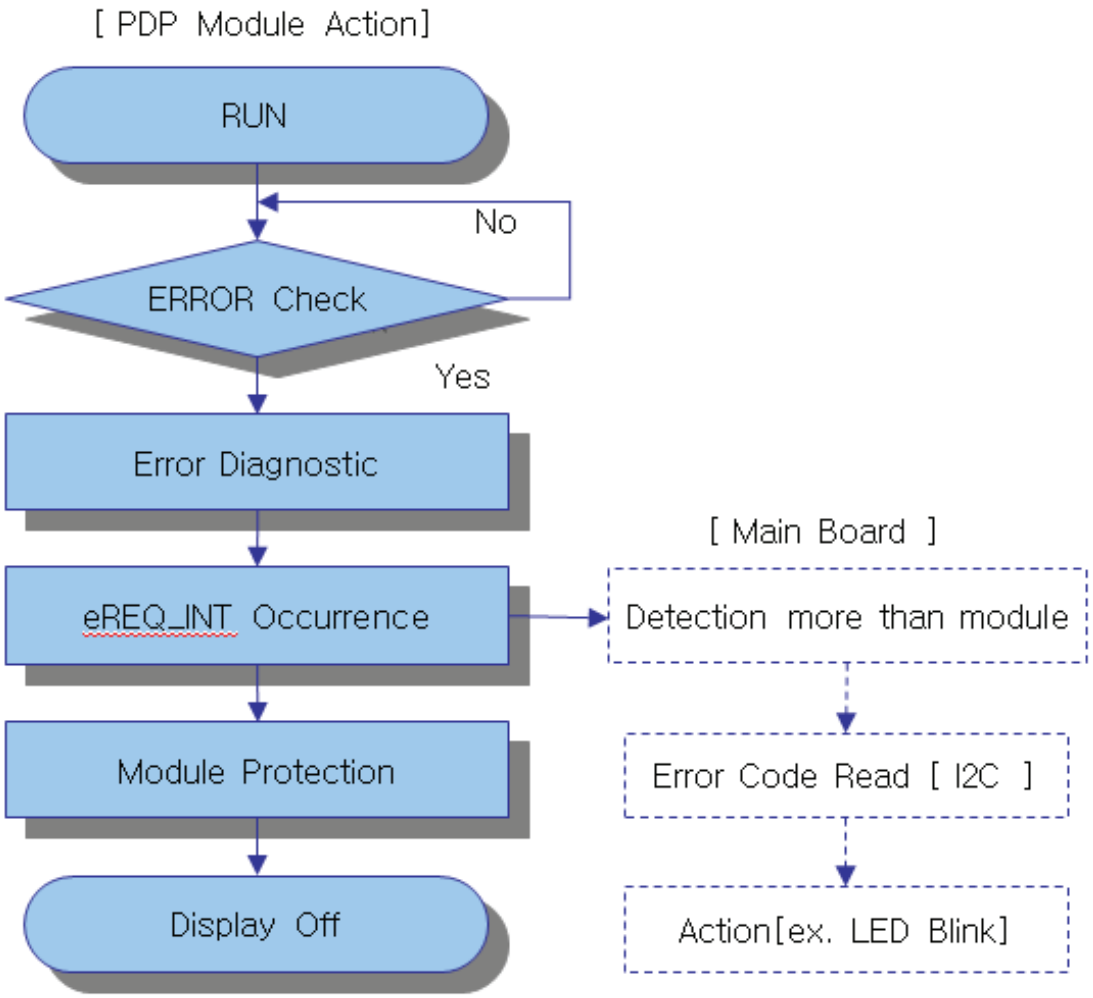
■ PDP Module Action



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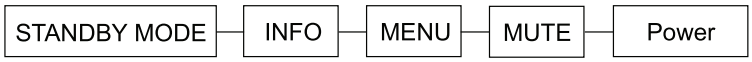
4.3. Factory Mode Adjustments

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.

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

Option
Control
SVC
Expert
ADC/WB
Advanced
T-NVTF6AKUC-XXX T-NVTFAUSS-XXX Logic S/W : L-xxFH-XXX / E-Manual : NVDVBEU4F-xxxx EDID SUCCESS CALIB : AV / COM / PC / HDMI / Option : XXXX XXXX XXXX X USB RS232C DTP-SDAL-NT13-MAIN : xxx RFS : NT13 KERNEL Backend IC[9], Data Ver : DTP-DTVTD-XXX Model: PNxxxx Wireless MAC CIP SUCCESS Factory Data Ver : EERC VERSION : XXX DTP-BP-HAL-XXXX DTP-AP-CNC-XXXX DTP-AP-MM-XXXX DTP-BP-MV-XXXX DTP-BP-APP-XXXX POP-PNG DATE OF PURCHASE : XX/XX/XX

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4.3.2. Factory Data

■ Option

Menu	Data	Remark
Factory Reset	-	
Type	43FHHc / 51FHHc	
Local set	EU	
SW Model	PF4500 / PF4900	
BOM Model	4500 / 4900	
TUNER	SI_ADI	
Ch table	NONE	
MRT Option		
Front Color	P-W-D-49	
Lvds Format	PDP	
Language_Arabic	EU	
Region	PANEURO	
PnP Language	ENG	
WIFI REGION	5	
OTN Support	OFF	
TTX	OFF	
China HD	OFF	
NT Conversion	OFF	
Num of DTV	1	
Num of AV	1	
Num of COMP	1	
Num of HDMI	2	
Num of SCART	1	
Num of USB Port	1	
Num of HeadPhone	0	
Num of RVU	0	
Num of Display	2	
Num of IPTV	0	
Num of RUI	0	
TOOLS Support	57	
LNA Support	0	
24Px4 Support	ON	
BD Wise Support	OFF	
Data Service Support	OFF	
PVR Support	OFF	
CI Support	OFF	
OTA Support	OFF	

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Menu	Data	Remark
LEDMotionPlus Support	OFF	
Natural Mode Support	OFF	
Relax Mode Support	OFF	
HDMI/DVI SEL	2	
Select LCD/PDP	PDP	
Wall Mount	OFF	
HV Flip	OFF	
PVR RECORD NUM	0	
Ligth Effect	OFF	
e-Pop Default	ON	
CAMERA Support	OFF	
NETWORK Support	Not Support	
EcoSensor Support	ON	
3D Support	OFF	
BT Support	OFF	
BT ADDRESS	0	
Engineer Option		
Auto Power	MEMORY	
Type Of PANEL KEY	Horizontal	
5 Way Function Key	L_BOTTOM	
Contents Bar	0	
Cable Modulation		
Standby led on/off	OFF	
Recognition Support	OFF	
IF AGC	0	
D AGC	0	
PH BW	3	
FQ BW	3	
PH RATE	4	
PD EN	1	
PEQ Inx	3	
WF Scale		
Num of Network Stream	0	
DP V Size	1	
Backend Device	NT13	
BT_AUDIO_ON_OFF	OFF	
Config_AV_PATH		
V_HDMI IDENT TYPE	1234	
V_HDMI PATH TYPE	ABCD	
V_EDIT TYPE	PDP_HD	

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Menu	Data	Remark
V_ATV	CVBS_PORT_2	
V_AV1	AV_COMP_G1	
V_AV2	None	
V_COMP1	ADC_PORT_1	
V_COMP2	None	
V_PC	ADC_PORT_0	
V_SCART1_CVBS	CVBS_PORT_3	
V_SCART1_RGB	CVBS_PORT_2	
V_SCART2_CVBS	None	
V_SCART2_RGB	None	
A_ATV	SIF	
A_DTV	DECODER	
A_AV1	AUIN1	
A_AV2	AUIN3	
A_COMP1	AUIN1	
A_COMP2	None	
A_PC	AUIN0	
A_SCART1A_SCART1	AUIN2	
A_SCART1A_SCART2	None	
A_DVI	None	
A_HDMI	None	
A_Media	DECODER	
Fast Logo Delay	0	
Num_of PANEL KEY	6	

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■ Control

Menu			Data	Remark
EDID	EDID ON/OFF		ON	
	EDID WRITE ALL		Success	
	EDID WRITE PC		Success	
	EDID WRITE HDMI			
	EDID WRITE HDMI1		Success	
	EDID WRITE HDMI2		Success	
	EDID WRITE HDMI3		Success	
	EDID WRITE HDMI4		Success	
	HDMI EDID Ver		HDMI 1.3	
	HDMI EDID Port		NONE	
	EDID WRITE DVI			
Sub Option	RS-232 Jack		Debug	
	Watchdog		OFF	
	Checksum		0x0000	
	Fast Boot in Production		OFF	
	USB Serial		OFF	
	Eeprom Reset			
	EER Reset			
	NVR All Clear			
	ECO IC TYPE		MC8121_REV	
	Info Link Server Type		operating	
	Info Link Country		None	
	OPTION_SWU			
	OTN Server Type		operating	
	OTN Test Server		OFF	
	SWU Reset			
	SWU Duration		OFF	
	SWU Fail Test		OFF	
	SWU_Diag_Code			
	OPTION_NUM			
	Num of ATV		1	
	Num of SVIDEO		0	
	Num of PC		0	
	Num of DVI		0	
	Num of OPTICAL Link		1	
	Num of MEDIA		1	
	Num of Tuner		1	
	Num of PVR RECORD		0	
	RF Remocon Supporty		OFF	

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Menu			Data	Remark
	DPMS Support		OFF	
	Num of IPTV CIP		OFF	
	Num of CI		0	
	Num of DECODER		0	
	T-CON Device			
	BOARD CONTROL		OFF	
	HP LINE		NONE	
	RM			
	Server Type		operating	
	RTS mode		0	
	PSA			
	FKP Download 1			
	FKP Download 2			
	LMK threshold		0	
	Low threshold		0	
	High threshold		0	
	CSB		ON	
	CLB		ON	
PDP Option	PIXEL SHIFT TEST		OFF	
	LOGIC SW			
	Panel Temperature			
	LOGIC Waveform Day			
	LOGIC CheckSum			
	MRT			
	SAPC TIMER		ON	
	APC SPEED		SLOW	
Hotel Option	Hospitality Mode			
	Power On			
	Menu OSD			
	Operation			
	Music Mode			
	External Source			
	Eco Solution			
	Cloning			
Shop Option	Shop Mode		OFF	
	Exhibition Mode		OFF	
Asia Option	Sepco 120Hz		OFF	
	Unbalance		OFF	
	FMTransmitter Support		OFF	
	FMTransmitter Carrier		OFF	

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Menu			Data	Remark
Sound	AF Level adjust		3	
	TX power Level		0	
	Mono Last Memory		OFF	
	H Shaking		OFF	
	High Devi		OFF	
	Carrier Mute		ON	
	Speaker Delay Normal		0	
	Wiselink Delay Menu		0	
	Pilot Level High Thid		0x0Fh	
	Pilot Level Low Thid			
	FM Prescale		0	
	AM Prescale		0	
	NICAM Prescale		0	
	Amp Model		TAS5745	
	Amp Volume		0xc7h	
	Amp Scale		0x7ah	
	Amp Check Sum		0x0215EFCA	
	SubWoofer Support		0	
	Woofer Type		0	
	Woofer Volme		0xcbh	
	Woofer Scale		0x8ah	
	Woofer Check Sum		NONE	
	Woofer Local Check Sum		NONE	
	Amp Local Check Sum		NONE	
	Speaker EQ		ON	
	PEQ Test		Ready	
	Amp Model		0	
	Speaker cut-off Freq		NTP7411	
	SPDIF PCM Gain		-9 dB	
	FM M Prescale			
	BTSC Mono Prescale			
	BTSC stereo Prescale			
	SAP Prescale			
	A2 Ident High Thld			
	A2 Ident Low Thld		2	
Config Option	Carrier2 Amp High Thld		4	
	Carrier2 Amp Low Thld		3	
	Carrier2 SNR High THR			
	Carrier2 SNR Low THR			
	Audio-IP Test		Ready	

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Menu			Data	Remark
	SRS Tuning Param		0	
	TruBass-Checksum		0x200190E2	
	Mic Scale		0	
	India Sound		OFF	
	Wall Filter Type		0	
	SAP Hign Thid			
	SAP Low Thid			

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■ Debug

Menu			Data	Remark
Spread Spectrum	LVDS Spread		ON	
	LVDS Period		40K	
	LVDS Amplitude		1	
	DDR Spread		OFF	
	DDR Period		20K	
	DDR Amplitude		0	
	FRC LVDS SSC ON/OFF		ON	
	FRC LVDS SSC MER'		1	
	FRC LVDS SSC MRR			
	FRC LVDS SSC Period		0	
	FRC LVDS SSC Modulation		1	
	FRC DDR SSC ON/OFF		ON	
	FRC DDR SSC MER'		1	
	FRC DDR SSC MRR			
	FRC DDR SSC Period		1	
	FRC DDR SSC Modulation		1	
DDR Margin	A CTRL_OFFSET_0_3			
	A CTRL_OFFSET_D			
	B CTRL_OFFSET_0_3			
	B CTRL_OFFSET_D			
ND ADJ Support			0	
MICOM POWER OFF			0	
RF Mute Time			6ms	
CI +1.3			0	
FRC				
Tuner Margin			0	
MPEG Margin			1000	
H.264 Margin			8	
CAM Wait Time			0	
TS Clock delay			0	
MultiACC Checksum				
IIC Bus Stop				
Tuner Status				

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■ SVC

Menu			Data	Remark
Test Pattern	Pattern Sel		…	
	LOGIC Pattern Sel		0	
	LOGIC Level Sel		255	
PANEL DISPLAY TIME				
SVC Info				
Dlete S/N				
Upgrade	LOGIC USB D/L			
	SUBMICOM UPGRADE			
	BT UPGRADE			
	BT FREEPAIRING			
	Function Upgrade			
	FRC3D FW Upgrade			
	Camera Upgrade			
	Mic Upgrade			
	JP MICOM UPGRADE			
	DP MICOM UPGRADE			
	Jump Upgrade			
Smart Hub Reset				
ER Count	WD Count			
	AR Count			
	WIFI ER Count			
	BT ER Count			
	HDMI Err Cnt			
	Camera ER Count			
LOG	Select Log Type			
	Log View			
	Delete Log			
	Debug Log Down			
Self Diagnosis				
Loop Back	LAN Test			
	AV Audio Test			
	DVIN Audio Test			
	CVBS Test			
	COMP Test			
	USB HUB Test			
	HDMI Test			
	SCART Audio Test			
	SCART CVBS Test			
	SCART RGB Test			

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Menu			Data	Remark
	CPU			
	DDR			
	FLASH			
	Eeprom Reset			
	X-TAL			
	Tuner1			
	Sound AMP			
	HDMI Switch IC			
	WIFI ER Count			
	LVDS			
	T-CON/FRC			
	PCB Test			
	MOIP			
	BT			
	EcoSensor Support			
	Voltage			
	Divece Self Test			
	App Self Test			
	EXT Sound Inspection			
	Woofer Sound Inspection			
	ATV CH Inspection			
	DTV CH Inspection			
	Satellite CH Inspection			
IPERF			Stopped	
OPTION_HDMI	DVI/HDMI SOUND		Auto	
	HDMI HOT PLUG		Disable	
	HOT PLUG SWITCHING		Boot	
	HOT PLUG DURATION		200ms	
	CLK TERM DURATION		200ms	
	HDMI FLT CNT SIG		100ms	
	HDMI LFT CNT LOS		100ms	
	UNSTABLE BAN CNT		3500ms	
	HDMI ROBIN		1	
	HDMI Callback		0	
	HDMI CTS Thid		8	
	HDMI CTS Cnt1		1	
	HDMI EQ		AUTO	
	HDMI Write Type		Combine	
	HDMI Switch IC		NOEN	
	DVI SET TIME		300ms	

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Menu			Data	Remark
	DHMI Sync		DE	
	HDMI 3D DET		0	
	HOT PLUG OFF HOLD TIME		0	
DVB CI	TS Clock delay TC			
	TS Clock delay S			
	CI Control Buf ON		ON	
	TS Clock delay CPU		-1	
CAL Data Restore_Copy			0	
Expert	N/D ADJ			
	Source			

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■ ADC/WB

Menu		Data	Remark
ADC	AV Calibration	/	
	Comp Calibraion	/	
	PC Calibration	/	
	HDMI Calibration	/	
ADC Target	1st_AV_Low	64	
	1st_AV_High	880	
	1st_AV_Delta	2	
	1st_COMP_Y_Low	64	
	1st_COMP_Cb_Low	512	
	1st_COMP_Cr_Low	512	
	1st_COMP_Y_High	940	
	1st_COMP_Cb_High	512	
	1st_COMP_Cr_High	512	
	1st_COMP_Delta	2	
	1st_PC_Low	4	
	1st_PC_High	1004	
	1st_PC_Delta	2	
	2nd_ACH_Low	4	
	2nd_ACH_High	940	
	2nd_PC_Low	4	
	2nd_PC_High	940	
	2nd_Delta	2	
ADC Result	1st_Y_GH	258	
	1st_Y_GL	128	
	1st_Cb_BH	…	
	1st_Cb_BL	…	
	1st_Cr_RH	…	
	1st_Cr_RL	…	
	2nd_R_L	133	
	2nd_G_L	133	
	2nd_B_L	133	
	2nd_R_H	70	
	2nd_G_H	70	
	2nd_B_H	70	
White Balance	Sub Brightness	128	
	R-Offset	128	
	G-Offset	128	
	B-Offset	128	
	Sub Contrast	128	

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Menu		Data	Remark
	R-Gain	128	
	G-Gain	128	
	B-Gain	128	
	Movie R-Offset	…	
	Movie B-Offset	…	
	Movie R-Gain	…	
	Movie B-Gain	…	

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■ Advanced

Menu			Data	Remark
Picture_2D	Sub Setting	Gamma	1	
		Natural Gamma	0	
		Pwm Max	100	
		PWM Min	0	
		Pwm Mid	0	
		Contrast Dimming	OFF	
		7.5 IRE NTSC	OFF	
		7.5 IRE Offset		
		Comp Phase	110	
		Led Peak OnOff	OFF	
		Dither Bypass	OFF	
		D Motion Light	On	
		Dynamic Contrast	On	
	EPA Standard	Standard Contrast	100	
		Standard Brightness	45	
		Standard Sharpness	50	
		Standard Color	50	
		Standard Tint	0	
		Standard Backlight	10	
	WB Movie	W/B Movie On/Off	OFF	
		Model	...	
		Color Tone	...	
		Msub Brightness	...	
		Msub Contrast	...	
		N_Rgain	...	
		N_Bgain	...	
		N_Roffset	...	
		N_boffset	...	
		W2_Rgain	...	
		W2_Bgain	...	
		W2_Roffset	...	
		W2_Boffset	...	
		Movie Contrast	...	
		Movie Bright	...	
		Movie Color	...	
		Movie Sharpness	...	
		Movie Tint	...	
		Movie Backlight	...	
		Movie Gamma	...	

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Menu			Data	Remark
		M_Sub_Gamma	...	
		HDMI Black Level	...	
	WCE	WRHue	64	
		WRSat	16	
		WYHue	64	
		WYSat	16	
		WGHue	64	
		WGSat	16	
		WCHue	64	
		WCSat	16	
		WBHue	64	
		WBSat	16	
		WMHue	64	
		WMSat	16	
		ARHue	64	
		ARSat	16	
		AYHue	64	
		AYSat	16	
		AGHue	64	
		AGSat	16	
		ACHUE	64	
		ACSat	16	
		ABHue	64	
		ABSat	16	
		AMHue	64	
		AMSat	16	
	VDEC	AGC mode	3	
		AGC manual gain	72	
		Ifcomptype	1	
		Ifcompsel	15	
		Saturain Cb/Cr	145	
		Secam Filter Sel	0	
		RGB Delay	150	
		Peaking Gain	0	
		Coring Gain	3	
		Chroma Peak	10	
		2D V Peaking	0	
		2D H Peaking	0	
		2D Peaking Gain	0	
	Sharpness	Post_H1	20	

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Menu			Data	Remark
		Post_H2	26	
		Post_H3	20	
		Post_H4	15	
		Post_v1	20	
		Post_v2	18	
		Post_H2 Overshoot	128	
		Post_H2 Undershoot	128	
		Post_H3 Overshoot	128	
		Post_H3 undershoot	128	
		Core Gain1	2	
		CoreGain2	3	
		D_Tot_Gain	24	
		S_Tot_Gain	24	
	ColorMapping	A_Red_R	60	
		A_Red_G	0	
		A_Red_B	0	
		A_Green_R	67	
		A_Green_G	100	
		A_Green_B	0	
		A_Blue_R	0	
		A_Blue_G	49	
		A_Blue_B	100	
		A_Yellow_R	100	
		A_Yellow_G	100	
		A_Yellow_B	0	
		A_Cyan_R	0	
		A_Cyan_G	46	
		A_Cyan_B	100	
		A_Magenta_R	27	
		A_Magenta_G	0	
		A_Magenta_B	67	
		N_Red_R	50	
		N_Red_G	0	
		N_Red_B	0	
		N_Green_R	0	
		N_Green_G	50	
		N_Green_B	0	
		N_Blue_R	0	
		N_Blue_G	0	
		N_Blue_B	50	

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Menu			Data	Remark
		N_Yellow_R	50	
		N_Yellow_G	50	
		N_Yellow_B	0	
		N_Cyan_R	0	
		N_Cyan_G	50	
		N_Cyan_B	50	
		N_Magenta_R	50	
		N_Magenta_G	0	
		N_Magenta_B	50	
	Enhance	BLE_Gain	22	
		D Sub Color	80	
		D Skin Hue	84	
		D Skin Sat	18	
		S Sub Color	80	
		S Skin Hue	72	
		S Skin Sat	16	
		M Sub Color	55	
		M Skin Hue	64	
		M Skin Sat	16	
		Sub Tint	45	
		CE_Normal_Left_Gain	35	
		CE_Normal_Right_Gain	20	
		CE_Normal_Offset	-10	
		CE_Special_Left_Gain	15	
		CE_Special_Right_Gain	10	
		CE_Special_Offset	-50	
		CE_S_Left_gain	10	
		CE_S_Right_Gain	40	
		CE_S_Normal_Offset	-2	
	LNA_Plus	Synctip_Noise	102	
		dB01_th	3	
		dB12_th	4	
		dB23_th	6	
		dB34_th	8	
		dB45_th	10	
		dB56_th	12	
		dB67_th	15	
		dB78_th	28	
		LNA_Plus_Yfiller	3	
	YC_Delay	RF PAL BG	10	

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Menu			Data	Remark
		RF PAL DK	11	
		RF PAL I	13	
		RF PAL M	6	
		RF PAL n	11	
		RF SECAM BG	5	
		RF SECAM DK	8	
		RF SECAM L	8	
		RF NT 358	14	
		RF NT 443	8	
		AV PAL	9	
		AV PAL M	7	
		AV PAL N	9	
		AV SECAM	9	
		AV NT 358	10	
		AV NT 443	4	
		AV Pal 60	6	
		SCART PAL	9	
		SCART PAL M	9	
		SCART PAL N	9	
		SCART SECAM	4	
		SCART NT 358	10	
		SCART NT 443	4	
		SCART PAL 60	6	
		SCART RGB PAL	8	
		SCART RGB PAL M	8	
		SCART RGB PAL N	8	
		SCART RGB SECAM	8	
		SCARTRGB NT 358	8	
		SCARTRGB NT 443	8	
		SCARTRGB PAL 60	8	
	Picture Update			
Picture_3D	Sub Setting_3D	3D_Gamma	0.95	
		3D_Natural Gamma	0	
		3D_Pwm Max	100	
		3D_PWM Min	0	
		3D_Pwm Mid	0	
		3D_Contrast Dimming	OFF	
		3D_Led Peak OnOff	OFF	
		3D_Dither Bypass	OFF	
		3D_D Motion Light	OFF	

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Menu			Data	Remark
		3D_Dynamic Contrast	OFF	
	EPA_3D	3D Contrast	100	
		3D Brightness	45	
		3D Standard Sharpness	50	
		3D Standard Color	50	
		3D Standard Tint	0	
		3D Standard Backlight	7	
	WB Movie_3D	3D_W/B Movie On/Off	OFF	
		3D_Model	...	
		3D_Color Tone	...	
		3D_Msub Brightness	...	
		3D_Msub Contrast	...	
		3D_C_Rgain	...	
		3D_C_Bgain	...	
		3D_C_Roffset	...	
		3D_C_boffset	...	
		3D_N_Rgain	...	
		3D_N_Bgain	...	
		3D_N_Roffset	...	
		3D_n_Boffset	...	
		3D_W2_Rgain		
		3D_W2_Bgain		
		3D_W2_Roffset		
		3D_W2_Boffset		
		3D_Movie Contrast	...	
		3D_Movie Bright	...	
		3D_Movie Color	...	
		3D_Movie Sharpness	...	
		3D_Movie Tint	...	
		3D_Movie Backlight	...	
		3D_Movie Gamma	...	
		3D_M_Sub_Gamma	...	
		3D_HDMI Black Level	...	
		3D_Sub Contrast	128	
		3D_Sub_Brightness	128	
	WCE_3D	3D_WRHue	64	
		3D_WRSat	17	
		3D_WYHue	72	
		3D_WYSat	17	
		3D_WGHue	47	

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Menu			Data	Remark
		3D_WGSat	17	
		3D_WCHue	58	
		3D_WCSat	17	
		3D_WBHue	54	
		3D_WBSat	18	
		3D_WMHue	64	
		3D_WMSat	17	
		3D_ARHue	64	
		3D_ARSat	16	
		3D_AYHue	64	
		3D_AYSat	16	
		3D_AGHue	64	
		3D_AGSat	16	
		3D_ACHUE	64	
		3D_ACSat	16	
		3D_ABHue	64	
		3D_ABSat	16	
		3D_AMHue	64	
		3D_AMSat	16	
	ColorMapping_3D	3D_A_Red_R	50	
		3D_A_Red_G	0	
		3D_A_Red_B	0	
		3D_A_Green_R	0	
		3D_A_Green_G	50	
		3D_A_Green_B	0	
		3D_A_Blue_R	0	
		3D_A_Blue_G	0	
		3D_A_Blue_B	50	
		3D_A_Yellow_R	50	
		3D_A_Yellow_G	50	
		3D_A_Yellow_B	0	
		3D_A_Cyan_R	0	
		3D_A_Cyan_G	50	
		3D_A_Cyan_B	50	
		3D_A_Magenta_R	50	
		3D_A_Magenta_G	0	
		3D_A_Magenta_B	50	
		3D_N_Red_R	50	
		3D_N_Red_G	0	
		3D_N_Red_B	0	

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Menu			Data	Remark
		3D_N_Green_R	0	
		3D_N_Green_G	50	
		3D_N_Green_B	0	
		3D_N_Blue_R	0	
		3D_N_Blue_G	0	
		3D_N_Blue_B	50	
		3D_N_Yellow_R	50	
		3D_N_Yellow_G	50	
		3D_N_Yellow_B	0	
		3D_N_Cyan_R	0	
		3D_N_Cyan_G	50	
		3D_N_Cyan_B	50	
		3D_N_Magenta_R	50	
		3D_N_Magenta_G	0	
		3D_N_Magenta_B	50	
	Sharpness_3D	3D_Post_H1	16	
		3D_Post_H2	10	
		3D_Post_H3	10	
		3D_Post_H4	10	
		3D_Post_v1	20	
		3D_Post_v2	14	
		3D_Post_H2 Overshoot	32	
		3D_Post_H2 Undershoot	32	
		3D_Post_H3 Overshoot	16	
		3D_Post_H3 undershoot	16	
		3D_Core Gain1	1	
		3D_CoreGain2	2	
		3D_D_Tot_Gain	28	
		3D_S_Tot_Gain	28	
	Enhance_3D	3D_BLE_Gain	22	
		3D_D Sub Color	65	
		3D_D Skin Hue	100	
		3D_D Skin Sat	18	
		3D_S Sub Color	65	
		3D_S Skin Hue	72	
		3D_S Skin Sat	16	
		3D_M Sub Color	55	
		3D_M Skin Hue	64	
		3D_M Skin Sat	16	
		3D_Sub Tint	50	

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Menu				Data	Remark
		3D_CE_Normal_Left_Gain		20	
		3D_CE_Normal_Right_Gain		30	
		3D_CE_Normal_Offset		-10	
		3D_CE_Special_Left_Gain		15	
		3D_CE_Special_Right_Gain		10	
		3D_CE_Special_Offset		-50	
		3D_CE_S_Left_gain		10	
		3D_CE_S_Right_Gain		40	
		3D_CE_S_Normal_Offset		-2	
	3D Setting	LED_BT_IR	BTPairDis_Ho	2	
			BTPairDis_sh	25	
			BTTransDis	10	
			BTSlaveDelay48	0	
			BTSlaveDelay50	0	
			BTSlaveDelay60	0	
			BTEmiDel_48	0	
			BTEmiDel_50	0	
			BTEmiDel_60	0	
			BTGlsDUTY	100	
			IREmiDel_48	0	
			IREmiDel_50	0	
			IREmiDel_60	0	
			IREmiMask	1	
			IRMASKPRD	1	
			IREmiNum	1	
			SlavDelay48	0	
			SlavDelay50	0	
			SlavDelay60	0	
		PDP_BT_IR	BTPairDis_Ho_PDP	2	
			BTPairDis_sh_PDP	25	
			BTTransDis_PDP	10	
			BTSlaveDelay48_D	0	
			BTSlaveDelay50_D	0	
			BTSlaveDelay60_D	0	
			BTGlsDUTY_D	100	
			BTEmiDel_48_S	0	
			BTEmiDel_50_S	0	
			BTEmiDel_60_S	0	
			BTGlsDUTY_S	100	
			IREmiDel_48_R	0	

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Menu				Data	Remark
			IREmiDel_50_R	0	
			IREmiDel_60_R	0	
			BTGlsDUTY_R	100	
			BTEmiDel_48_M	0	
			BTEmiDel_50_M	0	
			BTEmiDel_60_M	0	
			BTGlsDUTY_M	100	
			IREmiMask_PDP	1	
			IRMASKPRD_PDP	1	
			IREmiNum_PDP	1	
			SlavDelay48_PDP	0	
			SlavDelay50_PDP	0	
			SlavDelay60_PDP	0	
		Duty	PDuty192	25	
			PDuty200	25	
			PDuty240_Dyn	25	
			PDuty210_Mov	25	
		Dcc	Glmit_LBT0	88	
			Glmit_LBT1	89	
			Glmit_LBT2	90	
			Glmit_LBT3	91	
			Glmit_LLT0	95	
			Glmit_LLT1	96	
			Glmit_LLT2	97	
			Glmit_LLT3	98	
			DCCX1	0	
			DCCX2	0	
			DCCX3	0	
			DCCY1	0	
			DCCY2	0	
			DCCH1	0	
			DCCH2	0	
			DCCH3	0	
			DCCV1	0	
			DCCV2	0	
			Temp Read	0	
			Time_HOT	120	
			Time_Cold	120	
			Temp_ST	16	
			Temp_TH	40	

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Menu				Data	Remark
			delta	5	
		Effect	Depth_Min	10	
			Depth_Max	100	
			Viewp_Min_2D3D	64	
			Viewp_Max_2D3D	192	
			Viewpoint_Min	64	
			viewpoint_Max	192	
		Debug	Debug	OFF	
			DccMode	0	
			DccSele0_0	0	
			DccSele0_1	0	
			DccSele0_2	0	
			DccSele0_3	0	
			DccSele0_4	0	
			DccSele0_5	0	
			DccSele0_6	0	
			DccSele0_7	0	
			PosiSel_0_0	0	
			PosiSel_0_1	0	
			PosiSel_0_2	0	
			PosiSel_0_3	0	
			PosiSel_0_4	0	
			PosiSel_0_5	0	
			PosiSel_0_6	0	
			PosiSel_0_7	0	
			PosiSel_0_8	0	
			PosiSel_0_9	0	
			PosiSel_0_10	0	
			PosiSel_0_11	0	
		Bypass	IREmiMask	1	
			IRMASKPRD	1	
			IREmiNum	1	
			SlavDelay48	0	
			SlavDelay50	0	
			SlavDelay60	0	
		PDP_BT_IR	BTPairDis_Ho_PDP	2	
			BTPairDis_sh_PDP	25	
			BTTransDis_PDP	10	
			BTSlaveDelay48_D	0	
			BTSlaveDelay50_D	0	

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Menu				Data	Remark
			BTSlaveDelay60_D	0	
			BTGlsDUTY_D	100	
			BTEmiDel_48_S	0	
			BTEmiDel_50_S	0	
			BTEmiDel_60_S	0	
			BTGlsDUTY_S	100	
			IREmiDel_48_R	0	
			IREmiDel_50_R	0	
			IREmiDel_60_R	0	
			BTGlsDUTY_R	100	
			BTEmiDel_48_M	0	
			BTEmiDel_50_M	0	
			BTEmiDel_60_M	0	
			BTGlsDUTY_M	100	
			IREmiMask_PDP	1	
			IRMASKPRD_PDP	1	
			IREmiNum_PDP	1	
			SlavDelay48_PDP	0	
			SlavDelay50_PDP	0	
			SlavDelay60_PDP	0	
		Duty	PDuty192	25	
			PDuty200	25	
			PDuty240_Dyn	25	
			PDuty210_Mov	25	
		Dcc	Glmit_LBT0	88	
			Glmit_LBT1	89	
			Glmit_LBT2	90	
			Glmit_LBT3	91	
			Glmit_LLT0	95	
			Glmit_LLT1	96	
			Glmit_LLT2	97	
			Glmit_LLT3	98	
			DCCX1	0	
			DCCX2	0	
			DCCX3	0	
			DCCY1	0	
			DCCY2	0	
			DCCH1	0	
			DCCH2	0	
			DCCH3	0	

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Menu				Data	Remark
			DCCV1	0	
			DCCV2	0	
			Temp Read	0	
			Time_HOT	120	
			Time_Cold	120	
			Temp_ST	16	
			Temp_TH	40	
			delta	5	
		Effect	Depth_Min	10	
			Depth_Max	100	
			Viewp_Min_2D3D	64	
			Viewp_Max_2D3D	192	
			Viewpoint_Min	64	
			viewpoint_Max	192	
		Debug	Debug	OFF	
			DccMode	0	
			DccSele0_0	0	
			DccSele0_1	0	
			DccSele0_2	0	
			DccSele0_3	0	
			DccSele0_4	0	
			DccSele0_5	0	
			DccSele0_6	0	
			DccSele0_7	0	
			PosiSel_0_0	0	
			PosiSel_0_1	0	
			PosiSel_0_2	0	
			PosiSel_0_3	0	
			PosiSel_0_4	0	
			PosiSel_0_5	0	
			PosiSel_0_6	0	
			PosiSel_0_7	0	
			PosiSel_0_8	0	
			PosiSel_0_9	0	
			PosiSel_0_10	0	
			PosiSel_0_11	0	
		Bypass		OFF	

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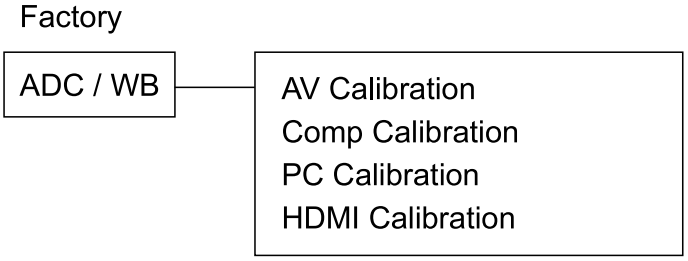
4.4. White Balance – Calibration

4.4.1. White Balance - Calibration



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4.4.2. Service Adjustment

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

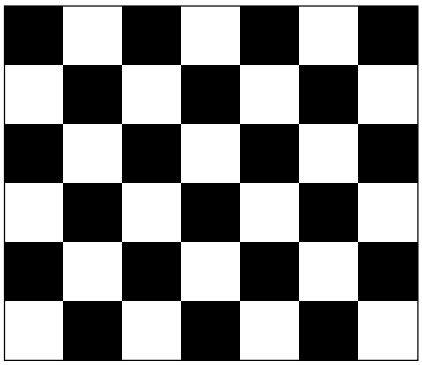
■ Color Calibration

- Adjust spec.

  1) Source : HDMI

  2) Setting Mode : 1280*720@60Hz

  3) Pattern : Pattern #24 (Chess Pattern)



  4) Use Equipment : CA210 & Master MSPG925 Generator
  Use other equipment only after comparing The result with that of The Master equipment.

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

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■ Method of Color Calibration (AV)

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

■ Method of Color Calibration (Component)

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

■ Method of Color Calibration (PC)

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

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■ Method of Color Calibration (HDMI)

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

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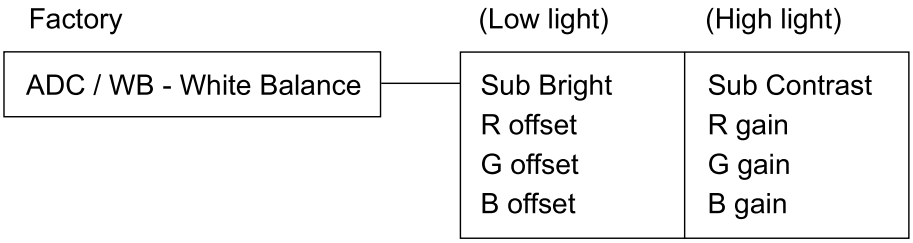
4.4.3. White Balance - Adjustment



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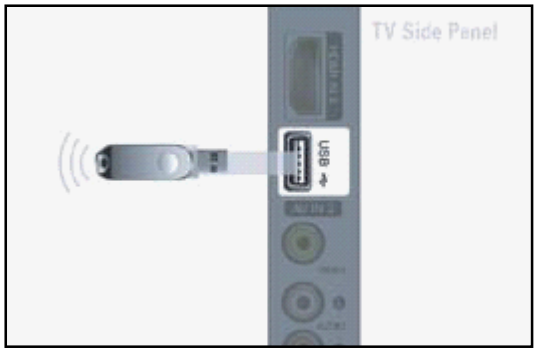
4.5. Software Upgrade

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

These upgrades can be performed via the TV when it is connected to the Internet, or by downloading the new firmware from samsung.com to a USB memory device.

- Alternative Software (Backup) shows The previous version that will be replaced.
- Software is represented as 'Year/Month/Day_Version'.
  The more recent the date, the newer the software version.
  Installing the latest version is recommended.

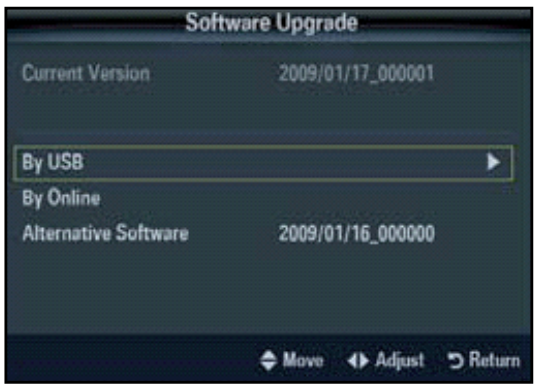
■ By USB



Insert a USB drive containing the firmware upgrade downloaded from samsung.com into the TV.
Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied.

The TV will turn off and turn on automatically after completing the firmware upgrade.
Please check the firmware version after the upgrades are complete (the new version will have a higher number than the older version).

When software is upgraded, video and audio settings you have made will return to their default (factory) settings.
We recommend you write down your settings so that you can easily reset them after the upgrade.



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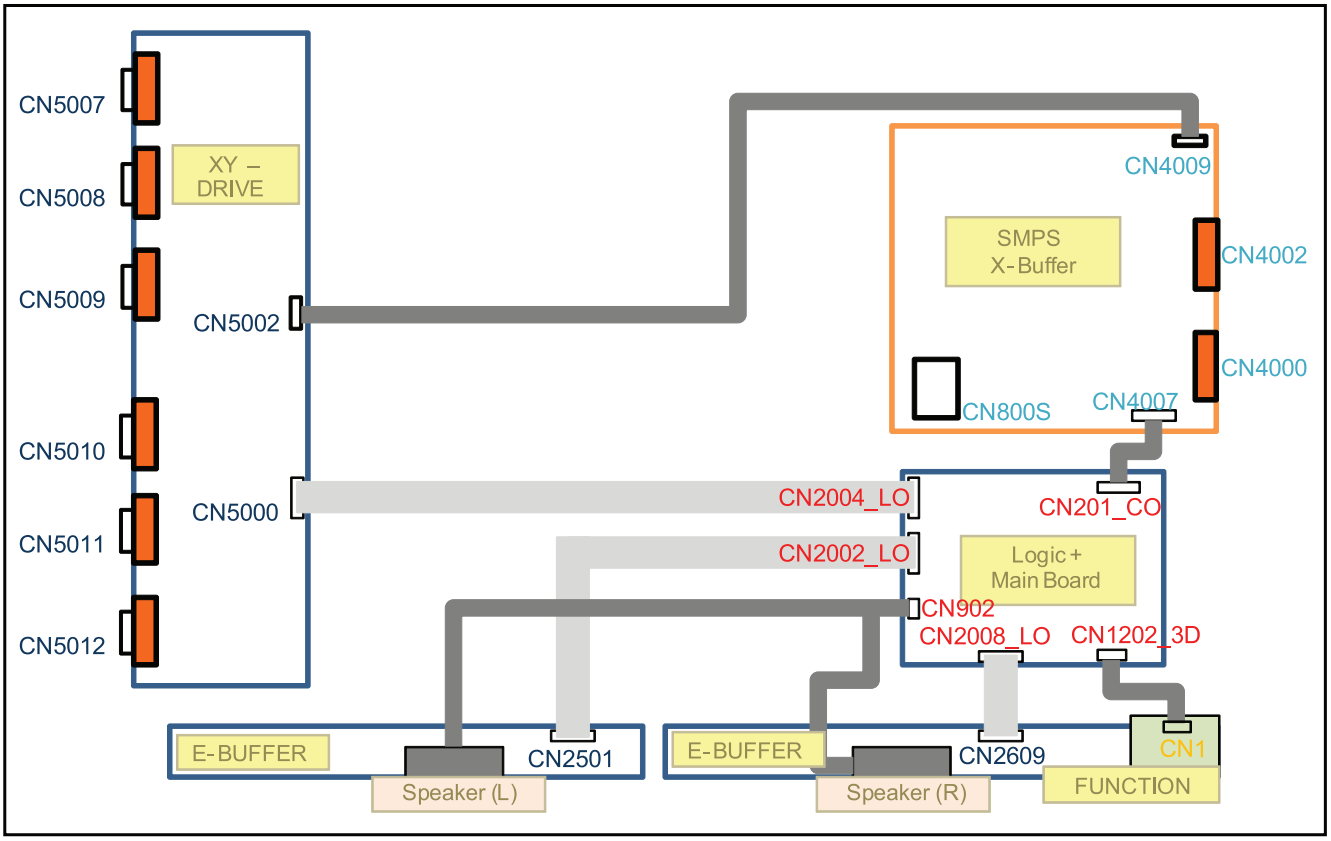
5. Wiring Diagram

5.1. Overall Wiring

■ **43" F4500**



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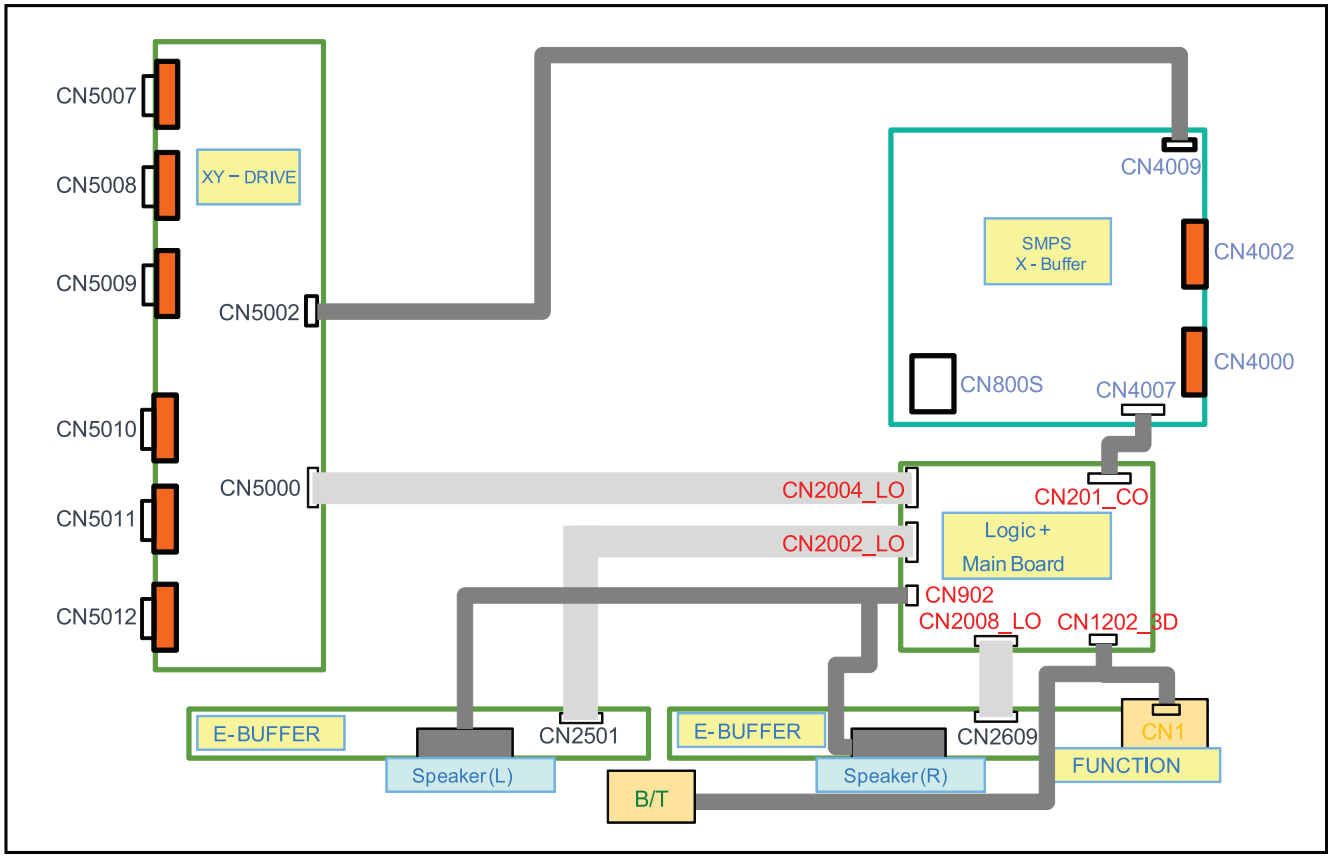
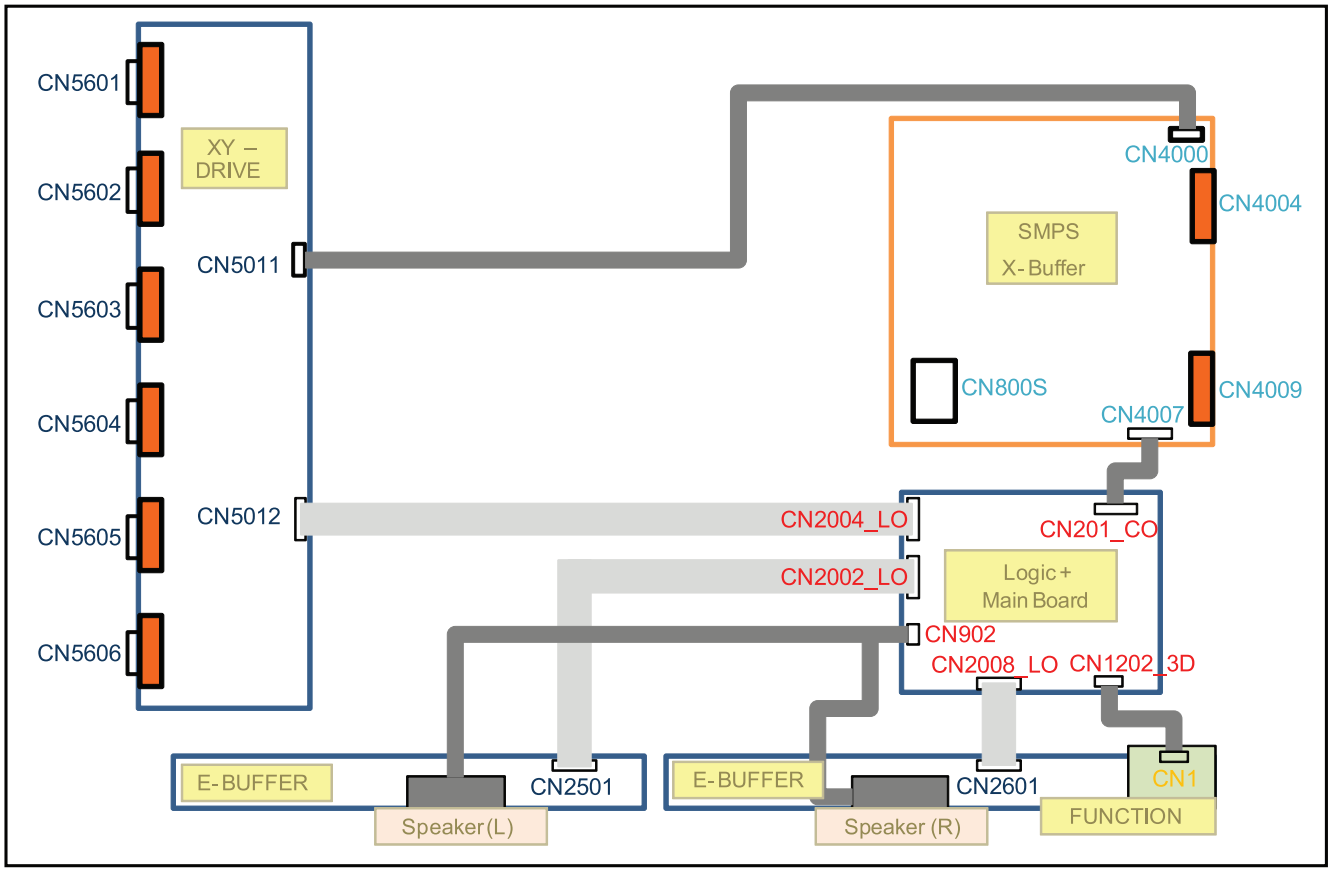
■ 43" F4900



■ 51" F4500



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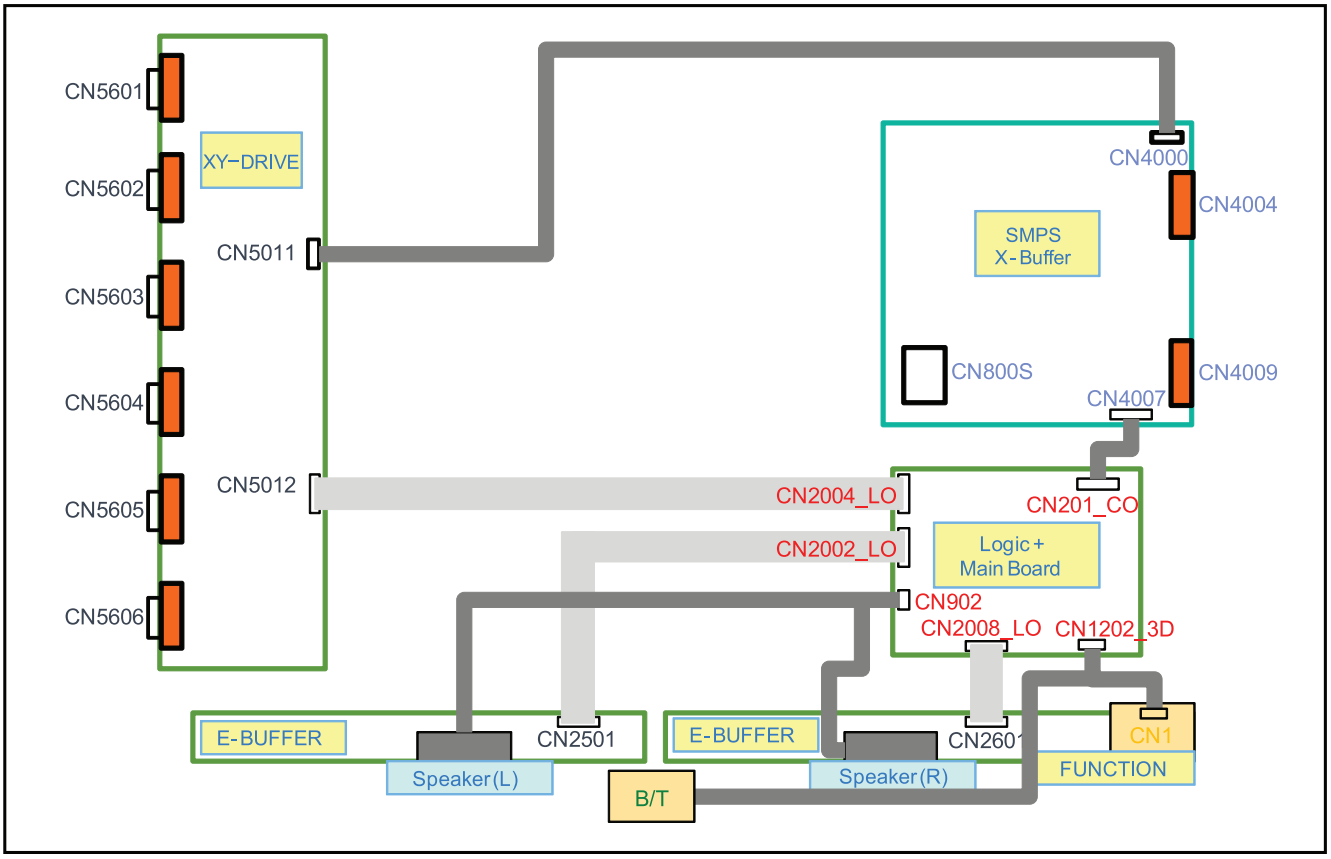
■ 51" F4900



NOTE

The code number of cable (Lead-connector) can be changed, see “Exploded Views and Parts List”.

Use	Power Cable 22 Pin	
Code	43" : BN39-01768A (90 mm)	51" : BN39-01768A (90 mm)
Photo		

Use	F4500 Function Cable 18 Pin / 8 Pin	
Code	43" : BN39-01759B (120 mm)	51" : BN39-01759B (120 mm)
Photo		

Use	F4900 Function – BT Cable 18 Pin / 8 Pin / 10 Pin	
Code	43" : BN39-01760A (330 mm)	51" : BN39-01760B (400 mm)
Photo		

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5.1.1. Pin Connection

CN4007 (SMPS) ↔ CN201_CO (Main Board)			
Pin No. (SMPS)	**Signal (SMPS)**	**Pin No. (Main Board)**	**Signal (Main Board)**
1	XS	1	DRV_RESET
2	DRV_RESET	2	XYOUT_14
3	XG	3	VS_CON
4	VS_SIGNAL	4	XYOUT_15
5	DS_RESET	5	VS_ON
6	VS_ON	6	DS_RESET_X
7	GND	7	GND
8	GND	8	GND
9	D5.3V	9	D5V_PW
10	D5.3V	10	D5V_PW
11	VA	11	VA
12	VA	12	VA
13	GND	13	A5.3V_PW
14	STBY	14	GND
15	PS_ON	15	B15VS_PW
16	D15V	16	SW_POWER
17	GND	17	B5.3V_PW
18	D5.3V	18	GND
19	D5.3V	19	B5.3V_PW
20	D5.3V	20	B5.3V_PW
21	GND	21	B15V_PW
22	D15V	22	GND

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CN1202 (Main Board) ↔ CN1 (Function) / Bluetooth			
Pin No. (SMPS)	**Signal (SMPS)**	**Pin No. (Main Board)**	**Signal (Main Board)**
1	IR	IR_1	IR
2	-	IR_2	GND
3	GND	IR_3	A3.3V
4	-	IR_4	SCL
5	A3.3V	IR_5	SDA
6	-	IR_6	KEY1
7	MSCL	IR_7	KEY2
8	-	IR_8	LED
9	MSDA	BT_1	N_RESET (4900 only)
10	-	BT_2	POWER DECT (4900 only)
11	KEY_INPUT1	BT_3	WAKE UP (4900 only)
12	-	BT_4	VCC (4900 only)
13	KEY_INPUT2	BT_5	USB D- (4900 only)
14	-	BT_6	USB D+ (4900 only)
15	LED_STB	BT_7	GND (4900 only)
16	-	BT_8	3D_SYNC_IN (4900 only)
17	-	BT_9	3D_SYNC_OUT (4900 only)
18	-	BT_10	GND (4900 only)

CN902 (Main Board) ↔ SPEAKER	
Pin No. (SMPS)	**Signal (SMPS)**
1	R+_OUT
2	R-_OUT
3	L+_OUT
4	L-_OUT

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GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Europe, MENA, CIS, Africa	https://gspn1.samsungcsportal.com
E.Asia, W.Asia, China, Japan	https://gspn2.samsungcsportal.com
N.America, S.America	https://gspn3.samsungcsportal.com

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