



PDP-TELEVISION

Chassis: F33B(P_Europe_HD)_Lily2 Ready
Model : PS50C62HX/XEC

SERVICE *Manual*

PDP-TELEVISION



PS-50C62HX

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2. Product Specification
3. Disassembly & Reassembly
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Refer to the service manual in the GSPN (see the rear cover) for the more information.



GSPN (Global Service Partner Network)

Area	Web Site
North America	service.samsungportal.com
Latin America	latin.samsungportal.com
CIS	cis.samsungportal.com
Europe	europe.samsungportal.com
China	china.samsungportal.com
Asia	asia.samsungportal.com
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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 between the PDP module and the cabinet mask, and the improper installation of the rear cabinet.

Errors may occur when the resistance is below $1.0\text{ M}\Omega$ or over $5.2\text{ M}\Omega$.

In these cases, make sure that the device is repaired before sending it back to the customer.

3. Check for Electricity Leakage (Figure 1-1)
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).

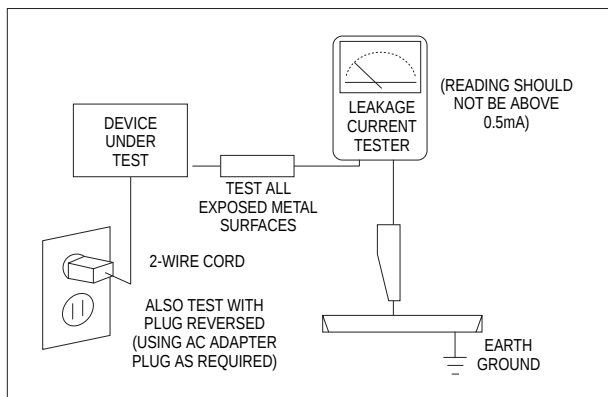


Fig. 1-1 AC Leakage Test

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 earth 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 earth ground. If the measurement is over 1.0V, unplug the AC power cord and change the polarity before re-inserting it. Measure the voltage between the chassis and the ground again.

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 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.

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.

Warning 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.
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

The insulating resistance between the blade of the AC plug and that of the conductive material should be more than 1 MΩ.

1-3 Static Electricity Precautions

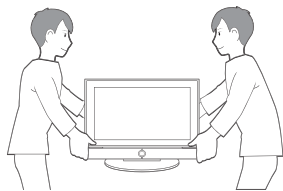
1. Some semi-conductive ("solid state") devices are vulnerable to static electricity. These devices are known as ESD. ESD includes the integrated circuit and the field effect transistor. To avoid any materials damage from electrostatic shock, follow the instructions described below.
2. Remove any static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

1-4 Installation Precautions

1. For safety reasons, more than two people are required for carrying the 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.

MEMO

2. Product Specification

2-1 Product Specification

Features			
Block	Specification	Major IC	Remark
RF	Tuner	TDHG6-K02A	ALPS
PDP Module	Samsung SDI W2A	42"HD / 50"HD	SAMSUNG SDI
Power	Input Voltage: AC 100~240V, 50/60Hz		
Video	Scaler	MST69981	MSTAR
	Video Decoder		
Sound	Sound AMP	NTP3000	Neo Fidelity
Cabinet	C6 Design		
Specification			
Model	PS-42C62H	PS-50C62H	
Screen Size	42 Inches (16:9)	50 Inches (16:9)	
Dimensions (WxHxD)	1155 x 440 x 878 mm (With Stand)	1355 x 460 x 984 mm (With Stand)	
Weight	42.8 kg (With Stand)	53.9 kg (With Stand)	
Voltage	AC 100~240V, 50/60Hz		
Colour System	PAL, SECAM, NTSC4.43, NTSC 3.58		
Sound System	BG, DK, I, M		
PC Resolution	1024 x 768 @ 85Hz	1365 x 768 @ 60Hz	
ANTENNA input	AIR IN (75Ω unbalanced)		
VIDEO input	SCART1, SCART2 COMPONENT IN (480i/P, 576i/P, 720P, 1080i) PC IN (MINI D-SUB 15P) HDMI1		
AUDIO input	SCART1, SCART2 Component PC DVI		
Audio Output	AUDIO (L/R)		
Speaker Output	10W + 10W		

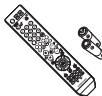
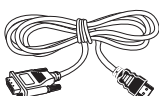
2-2 Specifications Analysis

※ ○: application, X: non-application

Model		PS-42C62H (Lily2-42HD)	PS-50C62H (Lily2-50HD)	PS-42C96HD (Lily-42HD)	PS-50C96HD (Lily-50HD)
Design					
Basic	Display Type	PDP TV	PDP TV	PDP TV	PDP TV
	Built-In Tuner	O	O	O	O
	PC Resolution	1024 x 768 @ 85Hz	1365 x 768 @ 60Hz	1024 x 768 @ 85Hz	1365 x 768 @ 60Hz
	PDP Module	W2A	W2A	W2A	W2A
	Screen Size	42 inches	50 inches	42 inches	50 inches
	Aspect Ratio	16 : 9	16 : 9	16 : 9	16 : 9
	Dimensions (WxHxD)	1155 x 440 x 878 mm (With Stand)	1355 x 460 x 984 mm (With Stand)	1055 x 759 x 316 mm (With Stand)	1231 x 848.5 x 316 mm (With Stand)
	Weight	42.8 kg (With stand)	53.9 kg (With stand)	33.2 kg (With stand)	44 kg (With stand)
Picture	Brightness	1,500 Cd/m ²	1,300 Cd/m ²	1,500 Cd/m ²	1,300 Cd/m ²
	Contrast Ratio	10000:1	10000:1	10000:1	10000:1
	Image Enhancer	FBE2X	FBE2X	FBE2X	FBE2X
Audio	Equalizer	O	O	O	O
	Auto Volume	O	O	O	O
	Surround Sound	SRS TruSurround	SRS TruSurround	SRS TruSurround	SRS TruSurround
	Speaker Output	10 W + 10 W	10 W + 10 W	10 W + 10 W	10 W + 10 W
	Speaker	2CH	2CH	2CH	2.2CH (2Way)
Features	PIP	O	O	O	O
	Double Screen	O	O	O	O
	Caption	X	X	X	X
	Still Image	O	O	O	O
	My Color Control	O	O	O	O
	Color Weakness	X	X	X	X
	Energy Saving	O	O	O	O
	Screen Burn Protection	O	O	O	O
Connections	Antenna	1 Input	1 Input	1 Input	1 Input
	CVBS	X	X	1AV(Side)	1AV(Side)
	S-Video	X	X	O	O
	Component(Y/PB/PR)	1 Input	1 Input	1 Input	1 Input
	PC(D-SUB)	1 Input	1 Input	1 Input	1 Input
	HDMI	1 Input	1 Input	2 Input	2 Input
	Scart	2 Input	2 Input	2 Input	2 Input
	Optical	O	O	O	O
	Coaxial	X	X	X	X

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

2-3 Accessories

Accessories		Item	Item code	Remark
Supplied Accessories		Remote Control Batteries	BN59-00609A 4301-000103	Samsung Service center
		Power Cord	3903-000145	
		Owner's Instructions	BN68-01337B	
		Warranty Card Registration Card Safety Guide Manual	BN68-00514E AA68-03575D AA68-03242K	
		Ferrite Core for Earphone/Power Cord	3301-001110	
		Ferrite Core for S-VIDEO/Power Cord	3301-001305	
Accessories that can be purchased additionally		HDMI Cable 3000mm	BN39-00641A	Electronics Store/ Internal shopping mall
		HDMI/DVI cable 3000mm	BN39-00643A	
		Component Cables (RCA) 1500mm	BN39-00279A	
		Scart Cable	None	
		PC Cable	1830mm	
		BN39-00115A	PC Audio Cable	
		2000mm	BN39-00061B	

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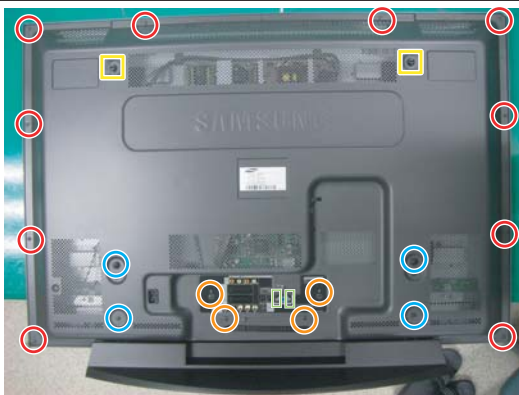
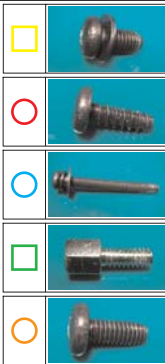
3. Disassembly & Reassembly

3-1 Overall Disassembly & Reassembly

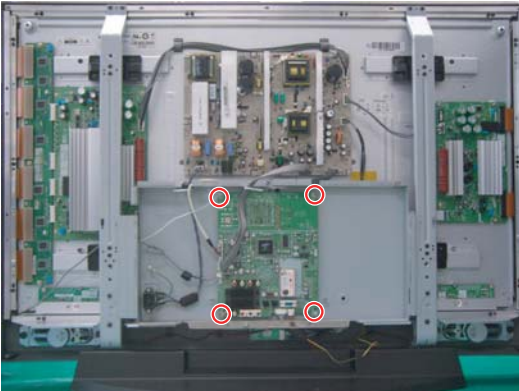
⚠ Notice

- Be sure to separate the power cord before disassembling the unit.
- Discharge the capacitors first when separating PCB's with high capacity capacitors such as SMPS, X Main Board, Y Main Board, etc. (A spark may be generated by the electric charge, and there is danger of electronic shock.)
- Check that the cables are properly connected referring to the circuit diagram when disassembling or assembling the unit taking care not to damage the cables.
- Take care not to scratch the Glass Filter in the front.
- Assemble the boards in the reverse order of the disassembly.
- The plasma must be layed down on a flat padded surface for disassembly and reassembly.

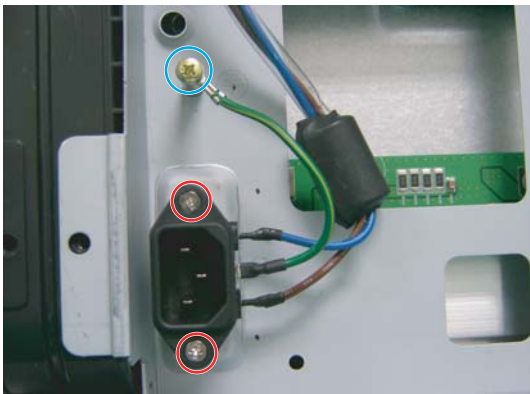
3-1-1 Separation of ASSY COVER P-REAR

Part Name	Description	Description Photo
Cover Rear	① Remove 2 screws. (□) : M8,L16,ZPC(BLK),SWRCH18A,WP ② Remove 10 screws. (○) : BH,+,B,M4,L3,ZPC(BLK) ③ Remove 4 screws. (○) : PH,+,WSP,S,M4,L35,ZPC(BLK) ④ Remove the 2 Hex nuts for the PC input. (□) : #4-40,L6,NI PLT,C3601,- ⑤ Remove 4 screws. (○) : BH,+,S,M4,L10,ZPC(BLK) ⑥ Remove the Cover Rear. ⚠: Please lay the PDP unit face down on a soft surface when removing the stand.	 

3-1-2 Separation of ASSY PCB MISC-MAIN

Part Name	Description	Description Photo
Main Board	① Detach all connectors from the Main Board. ② Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the Main Board.	 

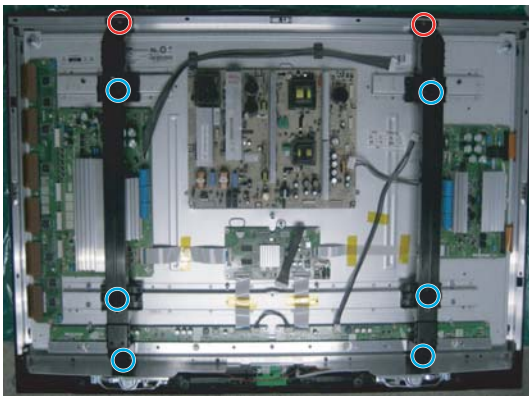
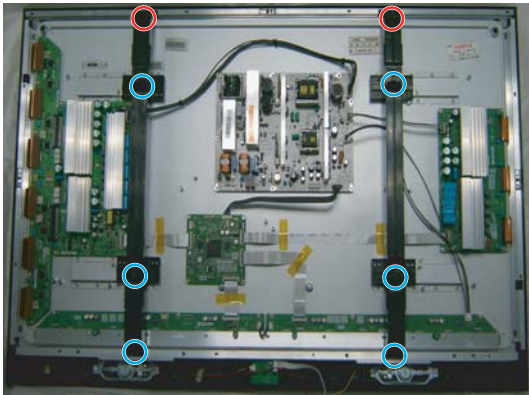
3-1-3 Separation of FILTER-EMI AC LINE

Part Name	Description	Description Photo
FILTER-EMI AC LINE	① Detach connector from Main SMPS. ② Remove 2 screws. (○) : PH,+,WWP,M3,L8,NI PLT ③ Remove a screw. (○) : BH,+,S,M4,L10,ZPC(BLK) ④ Remove FILTER-EMI AC LINE.	  

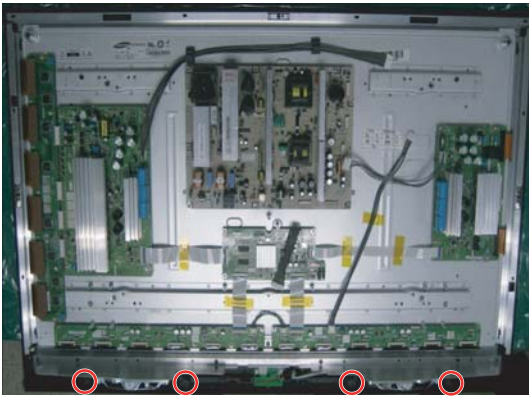
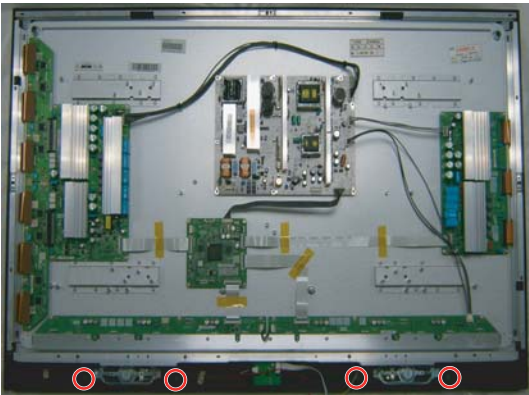
3-1-4 Separation of BRACKET-PCB

Part Name	Description	Description Photo
Bracket PCB	① Remove a screw. : BH,+,S,M4,L10,ZPC(BLK) ② Remove the BRACKET-PCB.	 

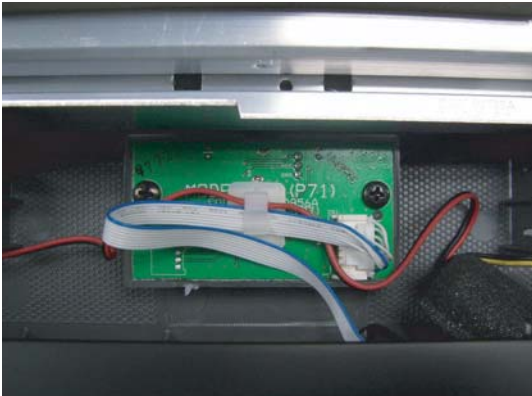
3-1-5 Separation of ASSY BRACKET P-WALL

Part Name	Description	Description Photo
42" Wall Bracket	① Remove 2 screws. (○) : BH,+,B,M4,L3,ZPC(BLK) ② Remove 6 screws. (○) : BH,+,S,M4,L10,ZPC(BLK) ③ Remove Wall Bracket. ⚠: Please lay the PDP panel face down on a soft surface when separating front cover.	  
50" Wall Bracket	① Remove 2 screws. (○) : BH,+,B,M4,L3,ZPC(BLK) ② Remove 6 screws. (○) : BH,+,S,M4,L10,ZPC(BLK) ③ Remove Wall Bracket. ⚠: Please lay the PDP panel face down on a soft surface when separating front cover.	  

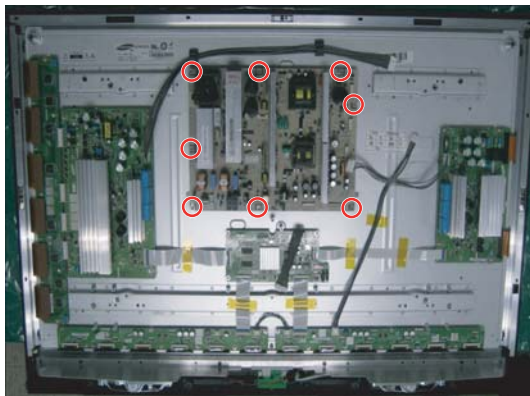
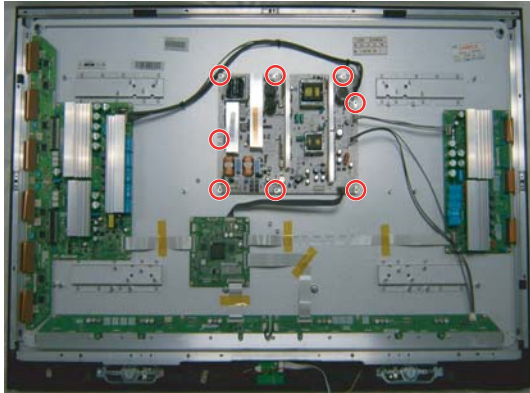
3-1-6 Separation of ASSY SPEAKER P

Part Name	Description	Description Photo
42" Speaker	① Remove 4 screws. : BH,+,WP,B,M4.0,L3,ZPC(BLK), SWRCH18A ② Remove the Speaker.	 
50" Speaker	① Remove 4 screws. : BH,+,WP,B,M4.0,L3,ZPC(BLK), SWRCH18A ② Remove the Speaker.	 

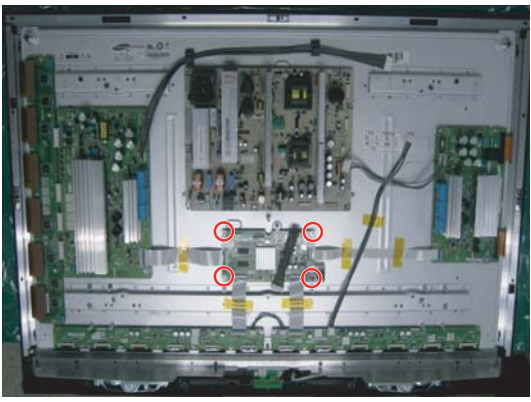
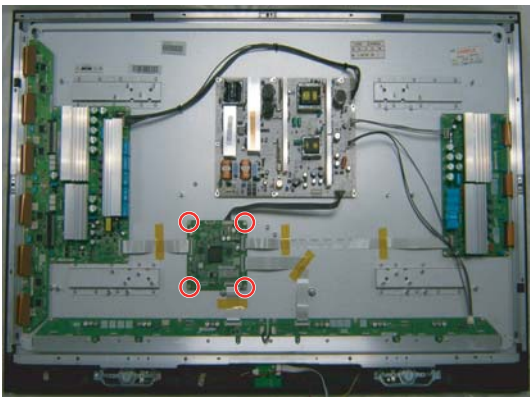
3-1-7 Separation of ASSY BOARD P-POWER&IR

Part Name	Description	Description Photo
Power & IR Board	① Detach all connectors from the Power&IR Board. ② Remove the Power&IR PCB unlocking the 2 holders.	

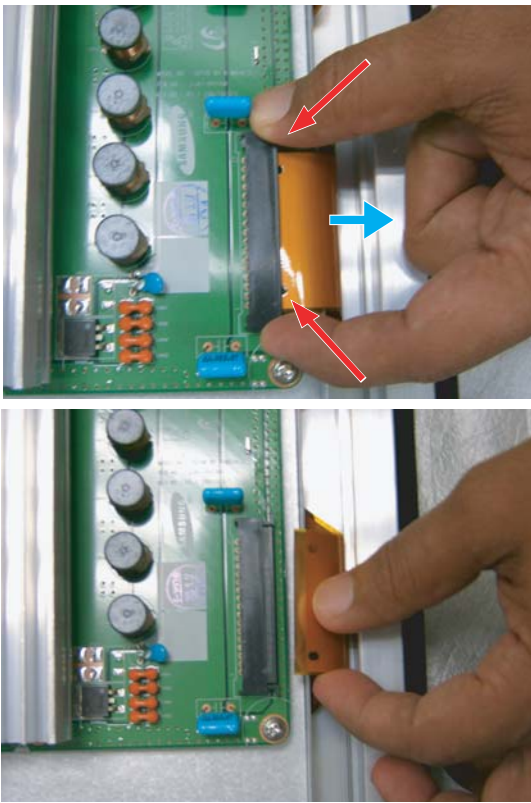
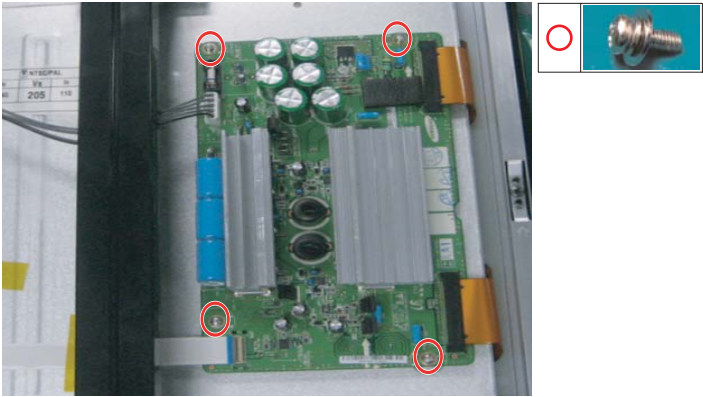
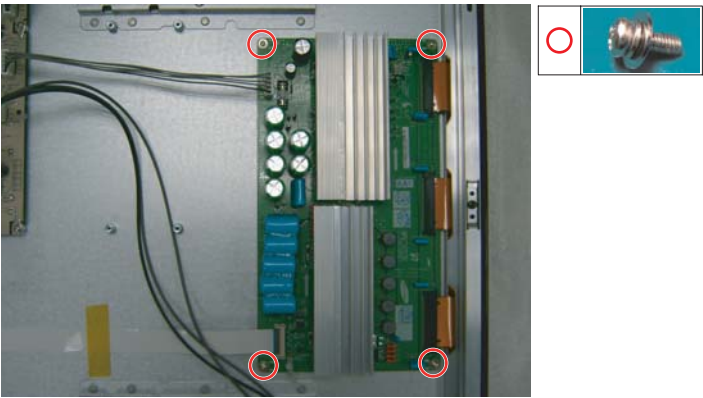
3-1-8 Separation of SMPS-PDP TV

Part Name	Description	Description Photo
42" SMPS	① Detach all connectors from the SMPS. ② Remove 8 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the SMPS. ⚠: Wear gloves when handling the power board as there may be some remaining electrical charge in the capacitor. Specifically, avoid touching any part of the capacitor.	 
50" SMPS	① Detach all connectors from the SMPS. ② Remove 8 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the SMPS. ⚠: Wear gloves when handling the power board as there may be some remaining electrical charge in the capacitor. Specifically, avoid touching any part of the capacitor.	 

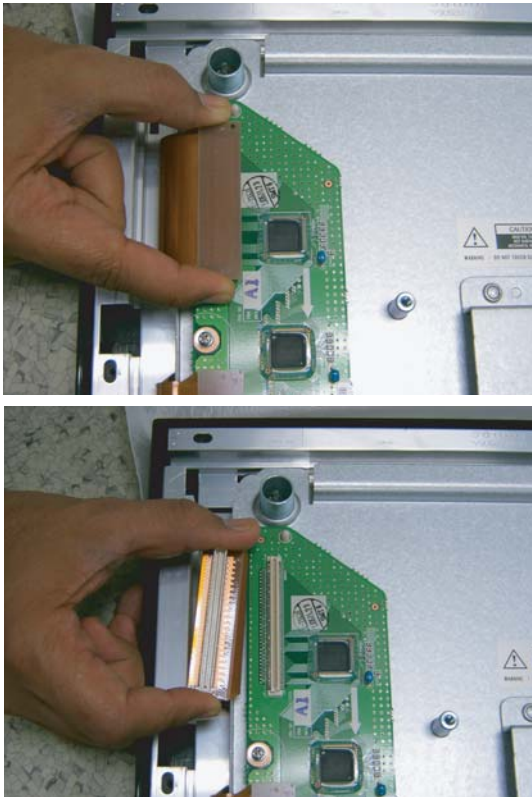
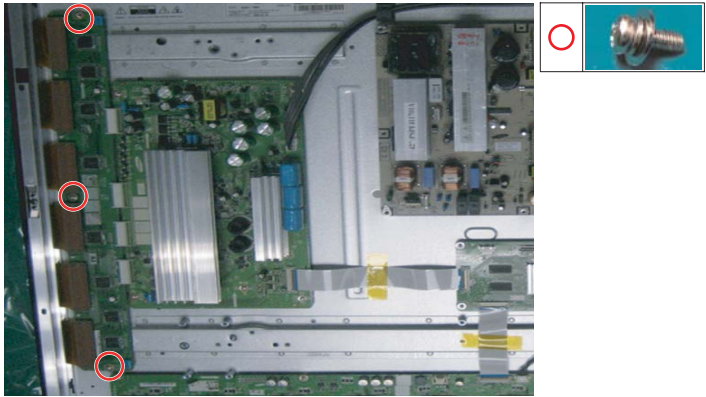
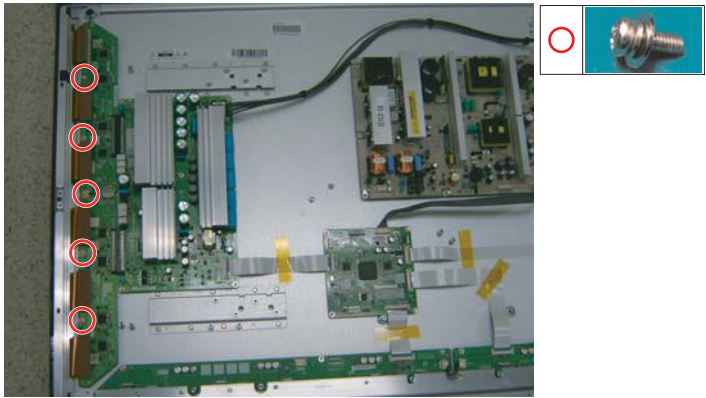
3-1-9 Separation of ASSY PDP MODULE P-LOGIC MAIN BOARD

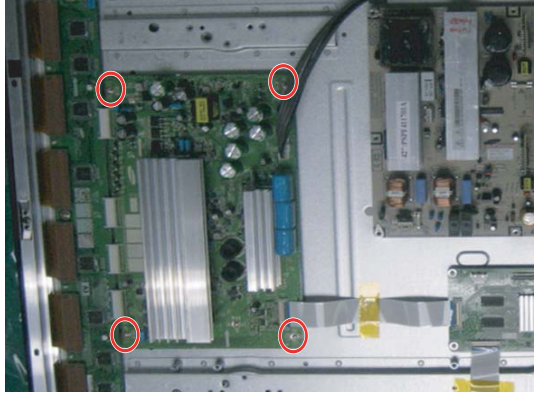
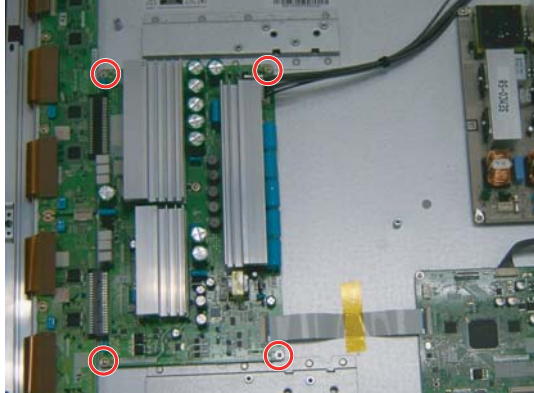
Part Name	Description	Description Photo
42" Logic Board	① Detach all connectors from the Logic Main Board. ② Remove 4 screws. : WSP,PH,+,M3,L8,NI PLT ③ Remove the Logic Main Board.	 
50" Logic Board	① Detach all connectors from the Logic Main Board. ② Remove 4 screws. : WSP,PH,+,M3,L8,NI PLT ③ Remove the Logic Main Board.	 

3-1-10 Separation of ASSY PDP MODULE P-X MAIN BOARD

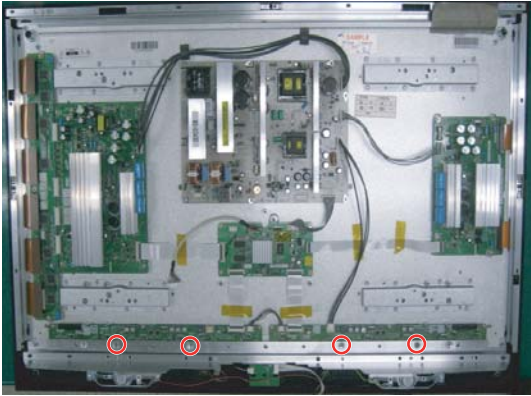
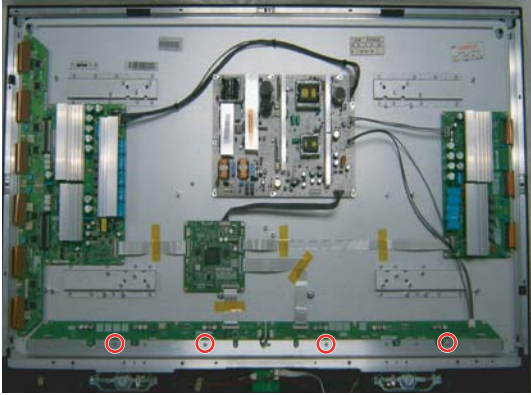
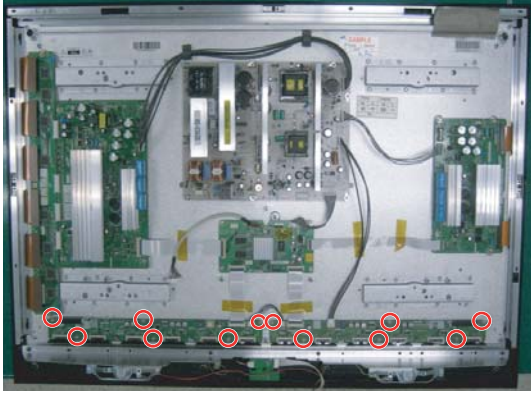
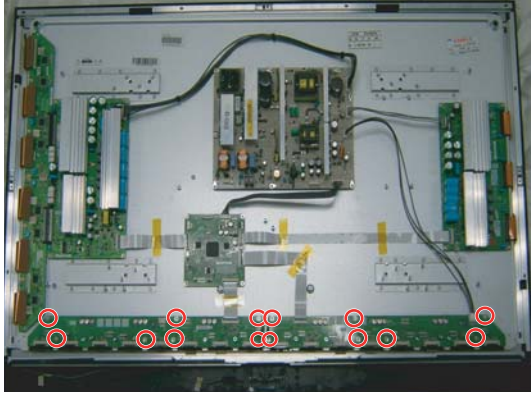
Part Name	Description	Description Photo
Flat Cable	① Detach all Connectors from the X-Main Board. ※ To separate the Flat Cable of the X-Board, press the upper and the lower sides of the connector.	
42" X-Main Board	① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Remove the X-Main Board.	
50" X-Main Board	① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Remove the X-Main Board.	

3-1-11 Separation of ASSY PDP MODULE P-Y MAIN BOARD

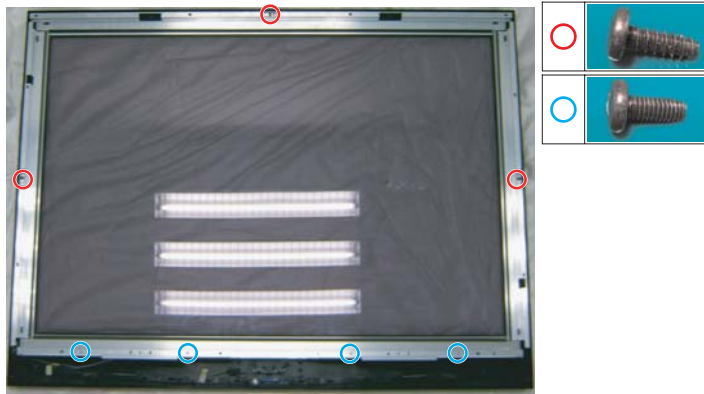
Part Name	Description	Description Photo
Flat Cable	① Detach the 6 scan board connectors from the panel by pulling the holder from both the top and bottom ends.	
42" Y-Scan Board	① Remove 3 screws. : PH,+,WWP,M3,L8,NI PLT	
50" Y-Scan Board	① Remove 5 screws. : PH,+,WWP,M3,L8,NI PLT	

Part Name	Description	Description Photo
42" Y-Main Board	① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Detach all connectors from the Y-Main Board.	 
50" Y-Main Board	① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Detach all connectors from the Y-Main Board.	 

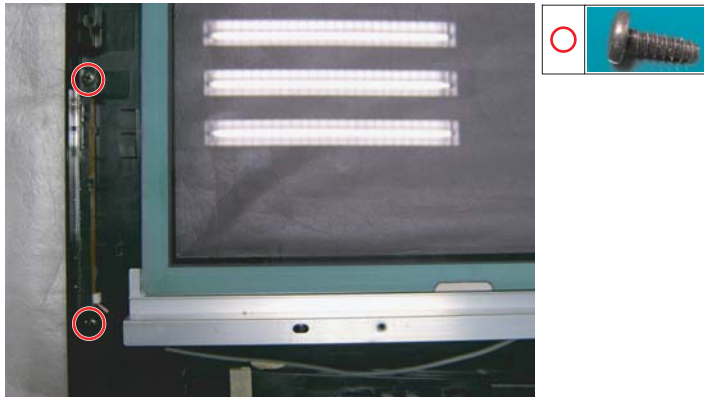
3-1-12 Separation of ASSY PDP MODULE P-ADDRESS BUFFER BOARD

Part Name	Description	Description Photo
42" Still Bar	① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Remove the Still Bar.	 
50" Still Bar	① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Remove the Still Bar.	 
42" Buffer Board	① Detach the all connectors from the buffer board. ② Remove 3 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the E-Board and F-Board.	 
50" Buffer Board	① Detach the all connectors from the buffer board. ② Remove 14 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the E-Board and F-Board.	 

3-1-13 Separation of ASSY PANEL BRACKETS

Part Name	Description	Description Photo
Panel Brackets	① Remove 3 screws. (○) : BH,+,B,M4,L3,ZPC(BLK) ② Remove 4 screws. (○) : BH,+,S,M4,L10,ZPC(BLK) ③ Remove the Side Panel Brackets.	

3-1-14 Separation of ASSY PCB FUNCTION

Part Name	Description	Description Photo
Function Board	① Remove 2 screws. : BH,+,B,M4,L3,ZPC(BLK) ② Remove the Function Board.	

MEMO

4. Troubleshooting

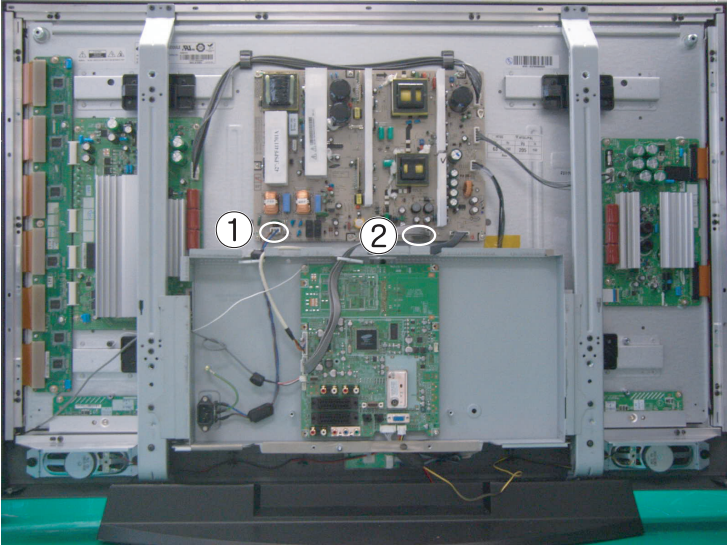
4-1 Troubleshooting

4-1-1 First Checklist for Troubleshooting

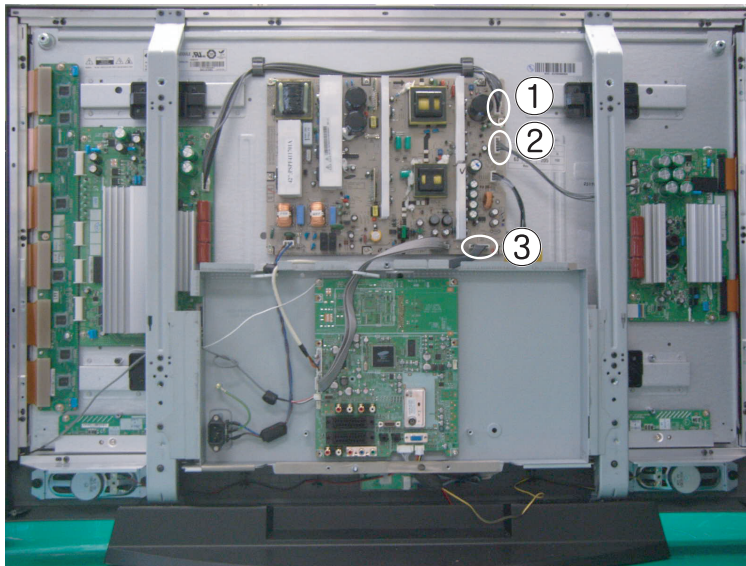
1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. Check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

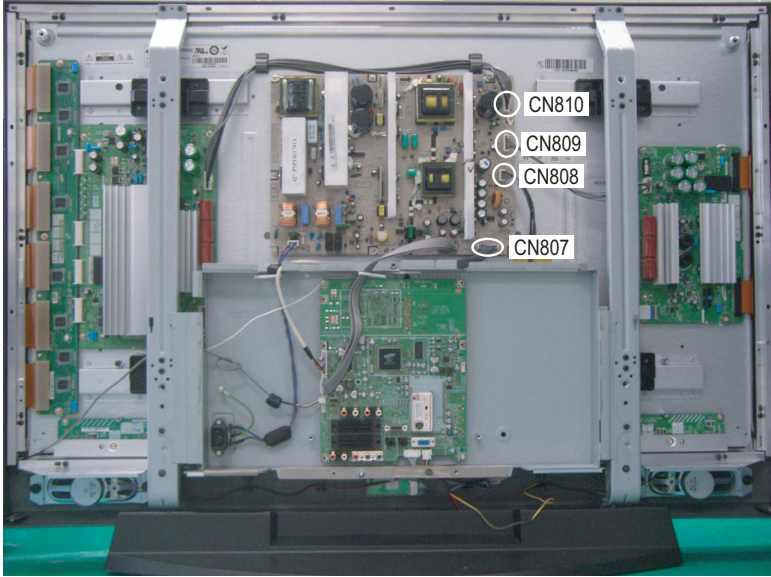
No Power

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

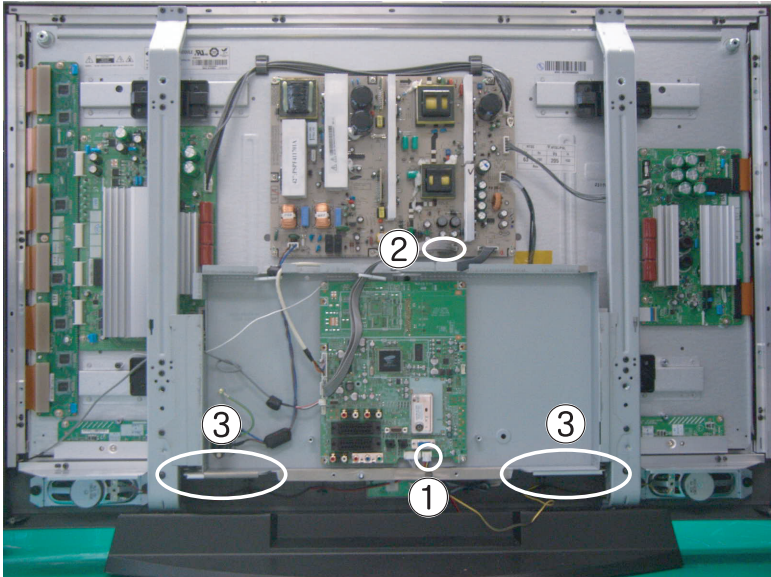
■ When the unit is repeatedly turning on and off

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	 <pre> graph TD Q1["① Does the symptom continue when connecting the power after removing CN810 from the SMPS?"] Q2["② Does the symptom continue when connecting the power after removing CN809 from the SMPS?"] Q3["③ Does the symptom continue when connecting the power after removing CN807 from the SMPS?"] R1["Replace the Y Main Board"] R2["Replace the X Main Board"] R3["Replace the Logic Board"] R4["Replace the SMPS"] Q1 -- No --> R1 Q1 -- Yes --> Q2 Q2 -- No --> R2 Q2 -- Yes --> Q3 Q3 -- No --> R3 Q3 -- Yes --> R4 </pre>
Caution	When separating and connecting the cables such as CN810, CN809, CN808, CN807 of the Main SMPS, CN4701 of the X Main Board, and CN5707 of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.

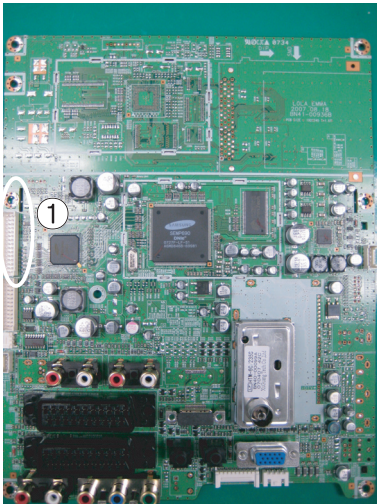
■ No Picture (When audio is normal)

Symptom	- Audio is normal but no picture is displayed on the screen.
Major Checklist	- This may happen when the Main Board is functioning but the X, Y Main Board, Logic Board, or Y Buffer Boards are not. - The output voltage of the Main SMPS. - This may happen when the LVDS cable connecting the Main Board and the Logic Board is disconnected.
Troubleshooting Procedures	 <pre> graph TD Q1[Are the Vs and Va voltages normal after removing all cables from the SMPS? (CN810, CN809, CN808, CN807)] -- No --> A1[Replace the SMPS] Q1 -- Yes --> Q2[Did problem improve?] Q2 -- No --> A2[Replace the Y Main Board] Q2 -- Yes --> Q3[Did problem improve?] Q3 -- No --> A3[Replace the X Main Board] Q3 -- Yes --> Q4[Did problem improve?] Q4 -- No --> A4[Replace the Logic Board] Q4 -- Yes --> Q5[Did problem improve?] Q5 -- No --> A5[Replace the Y Scan Board] </pre>
Caution	When separating and connecting the cables such as CN810, CN809, CN808, CN807 of the Main SMPS, CN4701 of the X Main Board, and CN5707 of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.

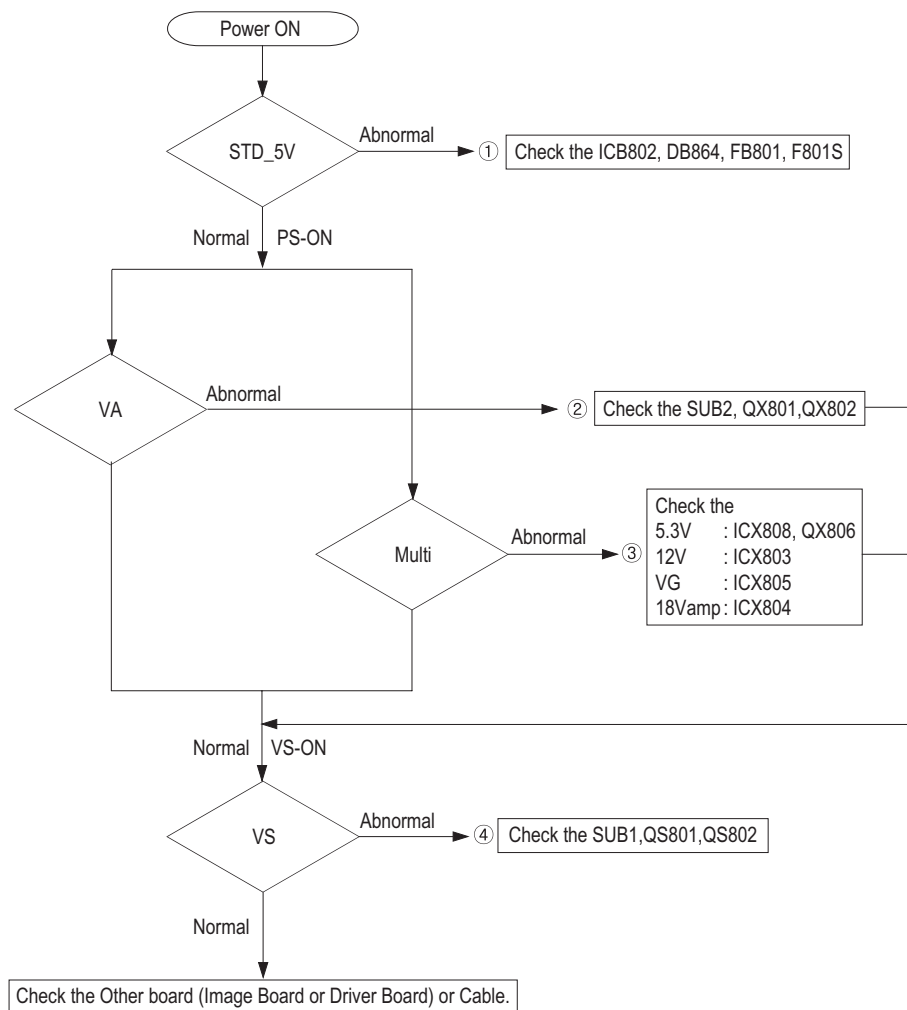
■ No Sound

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 - Check the CVBS cable connection. - Check the power input of the Main board.
Troubleshooting Procedures	 <pre> graph TD A[Is the antenna connection setting properly configured?] -- No --> B[Configure properly] A -- Yes --> C[Check CN1101 pin2 for +33V] C -- No --> D[Replace the SMPS] C -- Yes --> E[Replace the Main Board] </pre> The troubleshooting procedure is as follows: - Is the antenna connection setting properly configured? - If No, Configure properly. - If Yes, proceed to step 1. 1 Check CN1101 pin2 for +33V - If No, Replace the SMPS. - If Yes, Replace the Main Board.

■ SMPS Troubleshooting



■ Drive Board Troubleshooting

1) Troubleshooting Summary

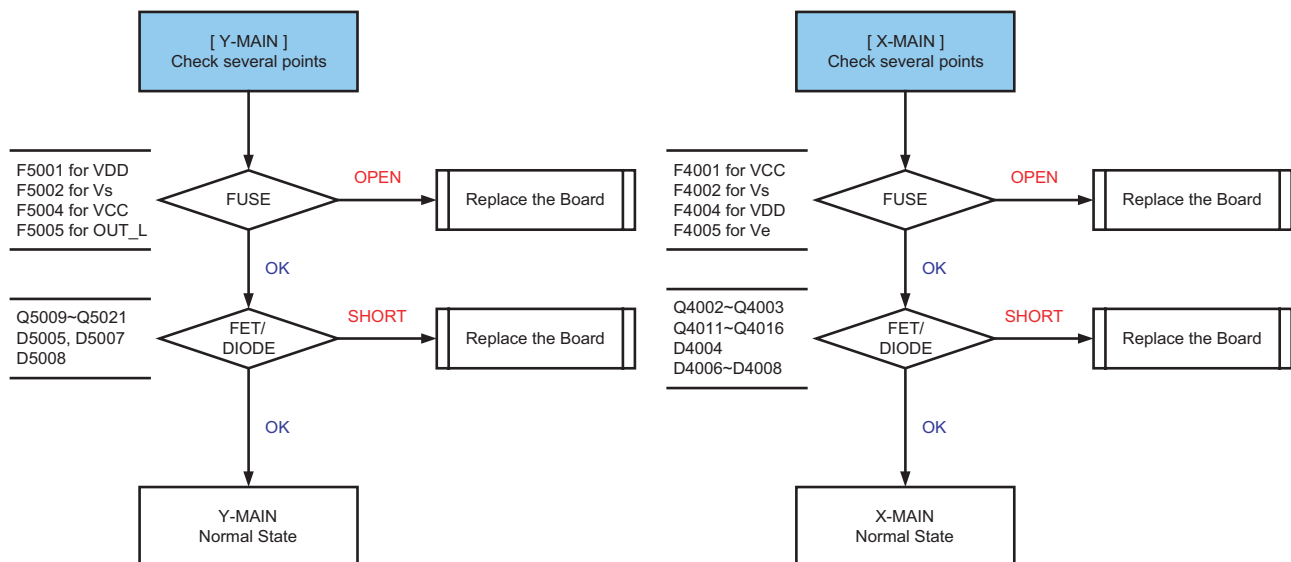
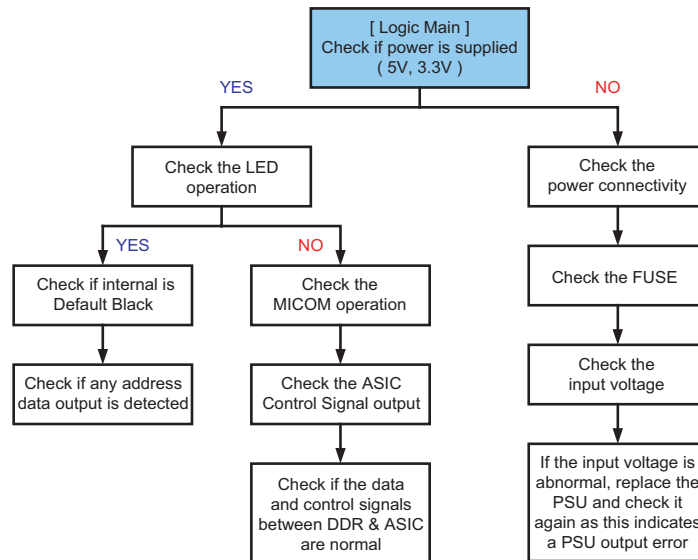
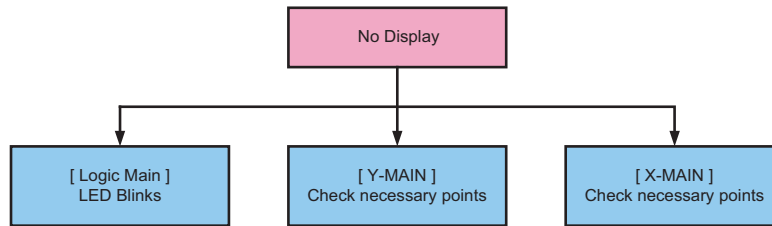
Condition Name	Description	Related Board
No Voltage Output	Operating Voltage don't exist	PSU
No Display	Operating Voltage exist, but an Image doesn't exist on screen	Y-MAIN, X-MAIN, Logic Main, Cable
Abnormal Display	Abnormal Image (not open or short) is no screen	Y-MAIN, X-MAIN, Logic Main
Sustain Open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

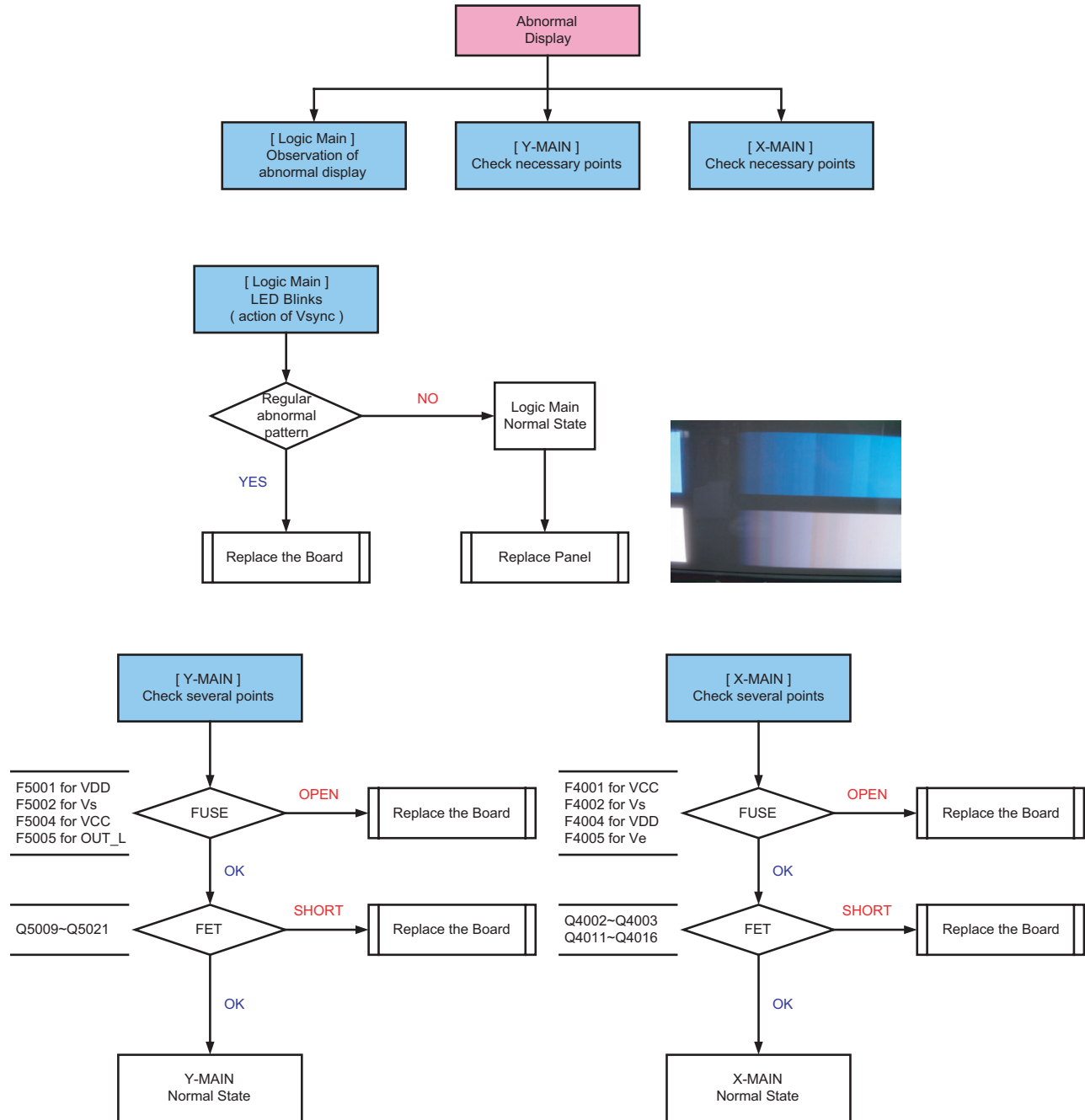
This page shows you how to check the boards, and the following pages show you how to find the defective board.



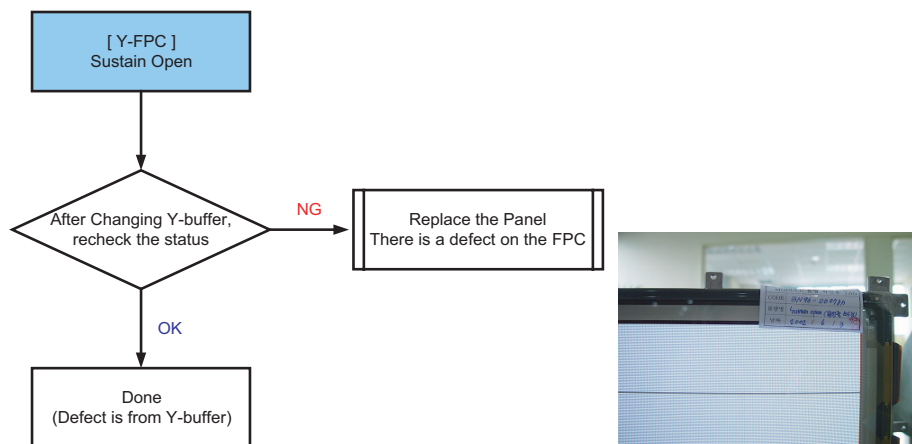
② Abnormal Display(Abnormal Image is on Screen.(except abnormality in Sustain or Address))

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

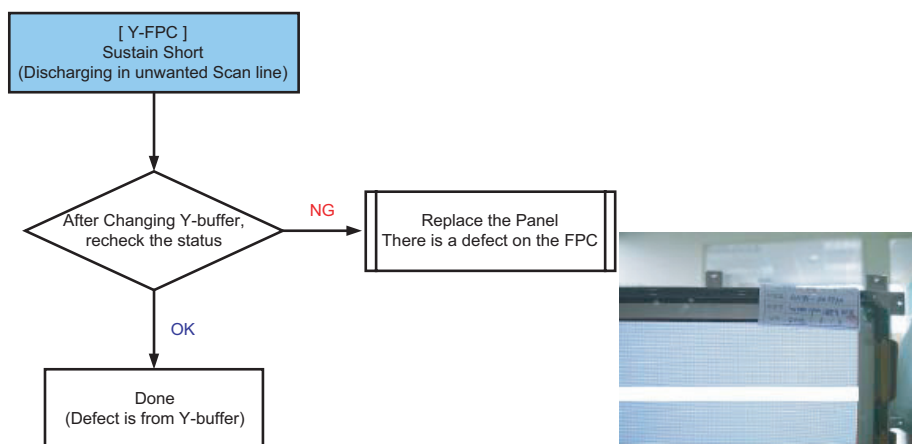
This page shows you how to check the boards, and the following pages show you how to find the defective board.



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



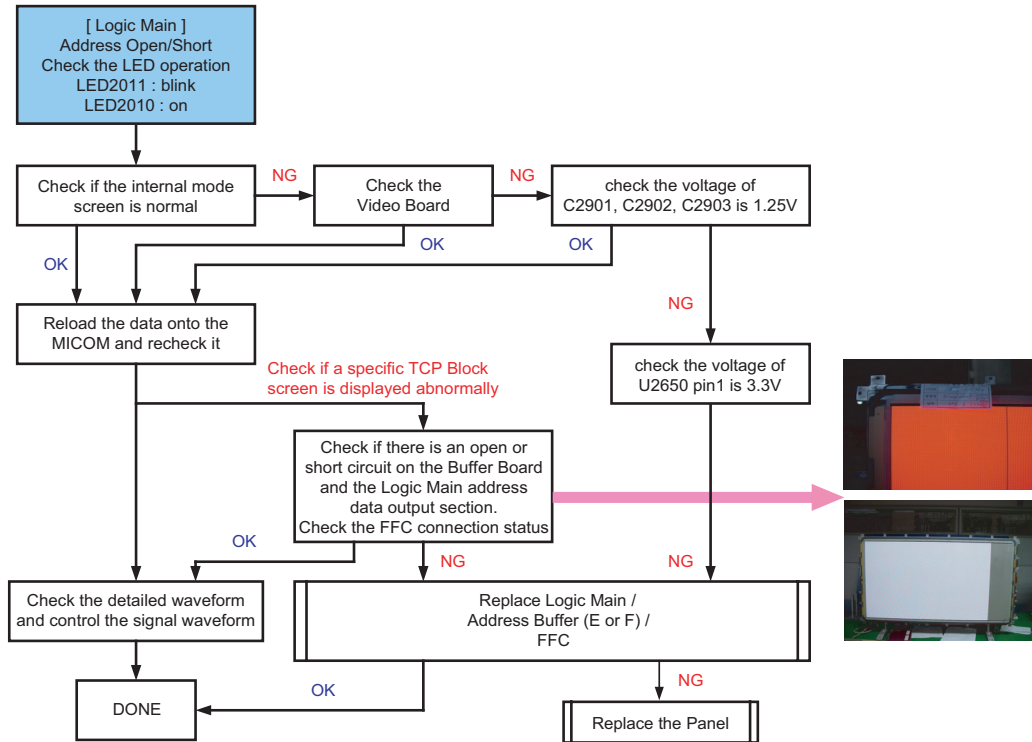
④ Sustain Short (some horizontal lines appear to be linked on Video)



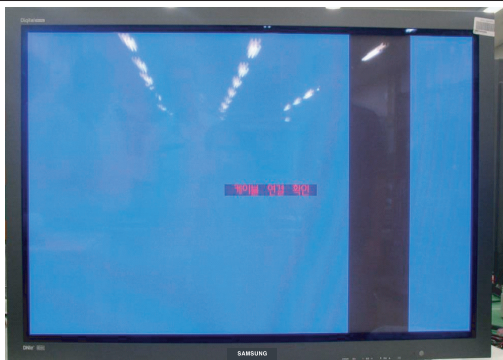
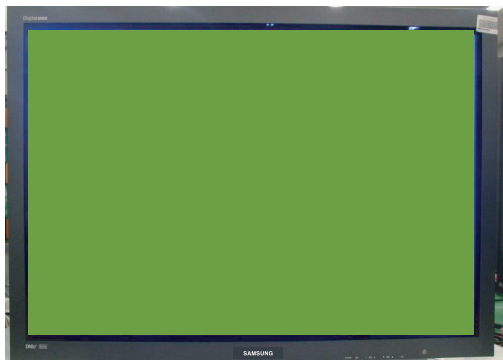
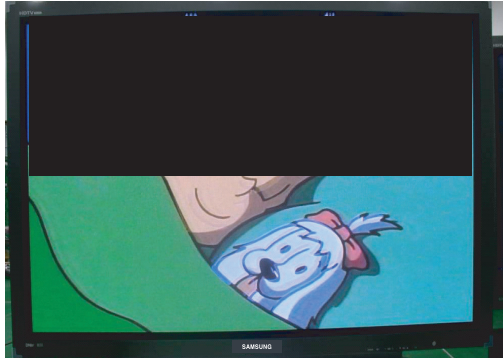
⑤ Address Open, Short

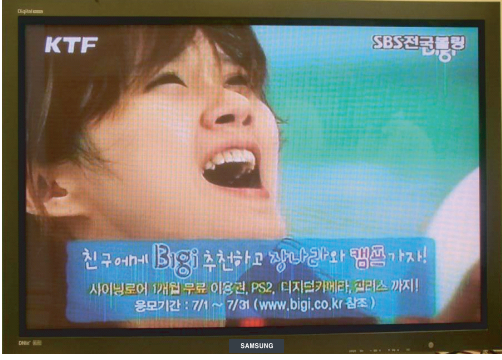
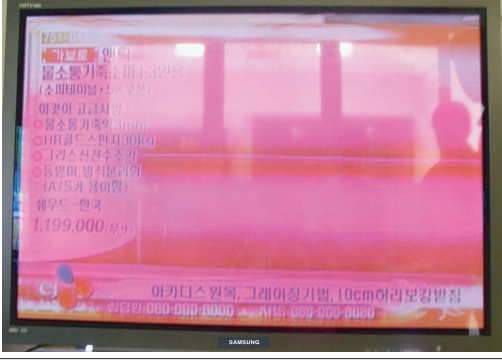
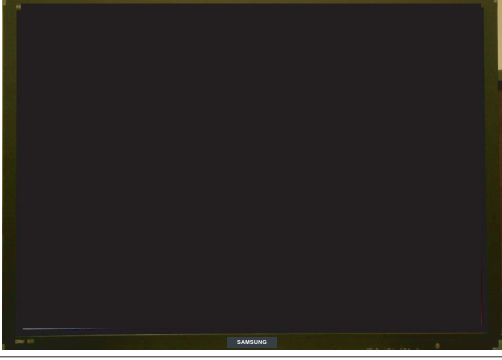
► Address Open and Short is related with Logic Main, Logic Buffer, FFC, TCP film and so on.

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



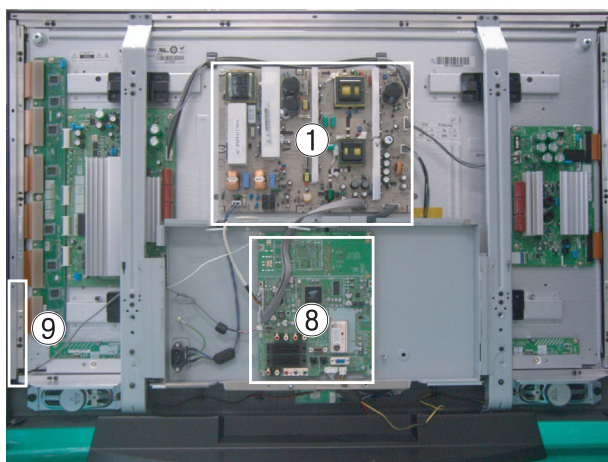
4-1-3 Faults and Corrective Actions

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 resetting - 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

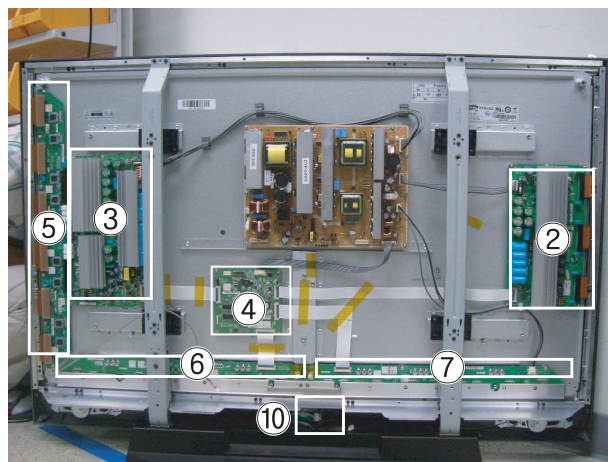
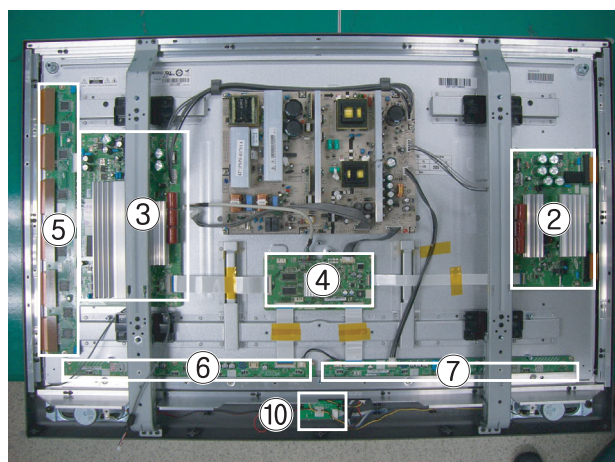
4-1-4 Troubleshooting Procedures by assembly

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.



<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

Panel ON time(Hour) 00002 L24E_RS TV P 1	
1. Calibration	7. YC Delay
2. Option Table (Service)	8. Adjust
3. White Balance	9. Bus Stop
4. MST68981	10. W/B MOVIE
5. Option Block	11. Checksum
6. Sound	12. Reset
T-LIL2PEUMD-XXXX	13. Spread Spectrum
Month/ Day/ Year	
Hour/ Min/ Sec	

- ※ 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
Ready	ON	ON	ON/OFF
Inch Option	42"	50"	42"/50"
Model Option	Lily	Lily	Call / Lily / Brod Plus / Jasmine
Anynet+	OFF		ON / OFF
Auto Power	ON		ON / OFF
Nordic	ON		ON / OFF
LNA Menu	OFF		ON / OFF
TTX On/Off	ON		ON / OFF
TTX List	FLOF		FLOF/List
Carrier Mute	OFF		ON / OFF
High Devi	OFF		ON / OFF
Volume Curve	Small		Small / Large
Hotplug	ON		ON / OFF
HotplugCtrl	ON		ON / OFF
HotplugDelay	12		0~63
Hotel Option	OFF		ON / OFF
Shop Mode	OFF		ON / OFF
Color Space	ON		ON / OFF
PC Ident	ON		ON / OFF
Language	English		English / German...
Ch.Table	SUWON		SUWON / SESK / SEH / TTSEC
TTX Group	Lang OSD		Lang OSD/ West Europe...
IDTV_Country	UK		UK / France...
PDP Filter	EU SPU	EU SPU	
PDP Group	L24E_RS	L25E_RS	

3. White Balance

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

4. MST68981

① ADC Calibration

Item	Range	Tv/AV/Scart
CVBS Y Gain	128	0 ~ 255
CVBS Y Offs	128	0 ~ 255
Ana Y Offs	127	0 ~ 255
Ana Pb Offs	128	0 ~ 255
Ana Pr Offs	128	0 ~ 255
Ana Y Gain	90	0 ~ 255
Ana Pb Gain	90	0 ~ 255
Ana Pr Gain	90	0 ~ 255
Out R Offs	62	0 ~ 255
Out B Offs	62	0 ~ 255
Out G Offs	62	0 ~ 255

② Calibration Target

Item	Range	Tv/AV/Scart
AV ADC Target		
Low	12	0 ~ 255
High	234	0 ~ 255
Delta	3	0 ~ 255
Comp ADC Target		
Low	17	0 ~ 255
High	234	0 ~ 255
Delta	3	0 ~ 255
Pc ADC Target		
Low	1	0 ~ 255
High	254	0 ~ 255
Delta	3	0 ~ 255
All ADC Target		
Low	2	0 ~ 255
High	235	0 ~ 255
Delta	1	0 ~ 255

③ Sharpness

Item	Range	Tv/AV/Scart
H1 Gain	28	
H2 Gain	28	
H3 Gain	20	
H4 Gain	20	
V1 Gain	24	
V2 Gain	24	
D1 Gain	32	
D2 Gain	32	
Over Shoot2	48	
Over Shoot3	48	
Under Shoot2	48	
Under Shoot3	48	
Sub Color	65	

5. Option Block

① FRC(Micronas)

② FRC2X

③ FBE2

ITEM	Range	RF	AV/S-Video	Comp480i/ 576i	Comp480p/ 576p	Comp720p/ 1080i/1080 p	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 SkinT V	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 Select	0	0 ~ 63
CDC Sw	OFF	ON/OFF
CDC Strength Th	1	0~31
BRE Sw	OFF	ON/OFF
FRC Repeat Mode	OFF	ON/OFF
FRC DBG Mark On	0	0~15
FRC Bypass	OFF	ON/OFF
CDC L Gain	0	0~31
CDC U Gain	0	0~31

6. SOUND

ITEM	Range	Initial value
Saturation Mute	OFF	ON/OFF
FM Prescale	20	0~40
AM Prescale	20	0~40
Nicam Prescale	20	0~40
FM M Prescale	20	0~40
SC1 Vol	20	0~40
SC2 Vol	20	0~40
Audio Delay	ON	ON/OFF
Audio Delay Time	8	0 ~ 255
Ch1 BW	2	0 ~3
Ch2 BW	1	0/1
Num of Check	1	1~60
Num of Double Check	5	5~60
Mono Weight	1	1~20
Stereo Weight	1	1~20
Dual Weight	1	1~20
BG M2S Threshold	144	0~255
DK M2S Threshold	80	0~255
BG S2M Threshold	176	0~255
DK S2M Threshold	0	0~255
FINE VOL	20	0~40
Detection Threshold		
Ext Volume Scale	0	0~100
Ext Prescale Speaker	0	0~255
R2E Scart2 Offset	0	0~40
NTP 3000		
NTP Master Volume	20	0~48
NTP PWM Modulation	243	128~242
NTP DRC Thresh	12	0~127
NTP Speaker EQ	ON	ON/OFF

7. YC Delay

ITEM	Range	Initial value
PAL BG	17	0~31
PAL DK	17	0~31
PAL I	17	0~31
SECAM BG	17	0~31
SECAM DK	17	0~31
SECAM L	17	0~31
NTSC 358	17	0~31
NTSC 443	17	0~31
AV PAL	17	0~31
AV SECAM	17	0~31
AV NT358	17	0~31
AV NT443	17	0~31
AV PAL60	17	0~31

8. Adjust

ITEM	Range	Initial value
V Mute Time	15	0~99
Dynamic Contrast	ON	ON/OFF
Dynamic Dimming	OFF	ON/OFF
Dynamic CE	ON	ON/OFF
LNA Plus		
Megazine LNA	OFF	ON/OFF
PixelShift Test	OFF	ON/OFF
Debug	NORMAL	normal/smart DBG/MSTAR
ACR	ON	ON/OFF
D-Watchdog	ON	ON/OFF
UART Select	OFF	OFF/MAIN/IDTV/LVDS ON
FBE Select	FBE2X	FBE2X/FBE
Tuner	ALPS	ALPS/SEMCO/AUTO
Tuner TOP Semco	10	1~30
Tuner TOP Alps	13	
D.Gamma	22	
M.Gamma	OFF	OFF/0.88/0.95;1
A-Watchdog	OFF	ON/OFF
Hp Detect	LOW	LOW/HIGH
PDP FRC	ON	ON/OFF
WM Calib	OFF	ON/OFF

9. Bus Stop

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 1	28
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
Mv BackLight	0 ~ 100	10	10	10	10	10

11. Checksum xxxx

12. Reset

4-2-4 Service Adjustment

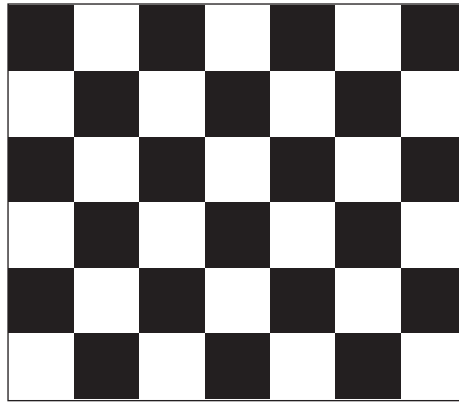
■ White Balance - Calibration

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



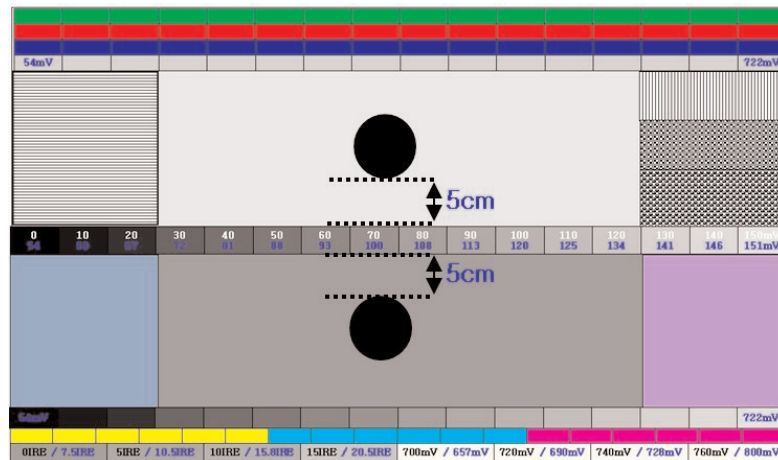
(Chess Pattern)

■ White Balance - Adjustment

If picture color is wrong, check White Balance condition.

Equipment : CA210, Pattern : 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

- 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
- 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)

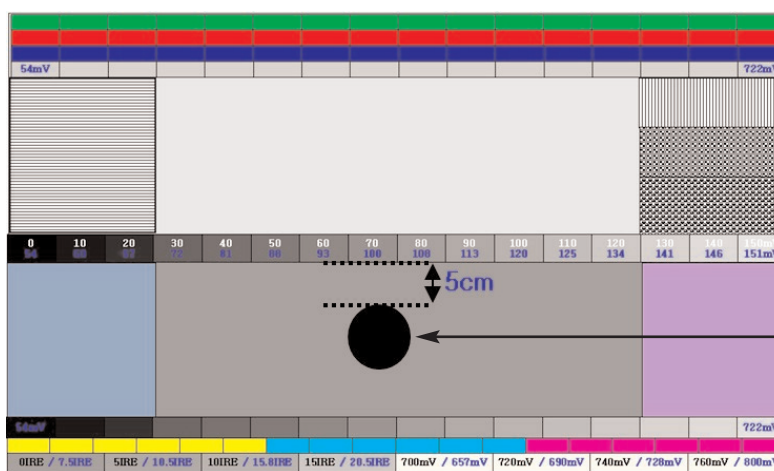
a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC → DVI).

- * 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.

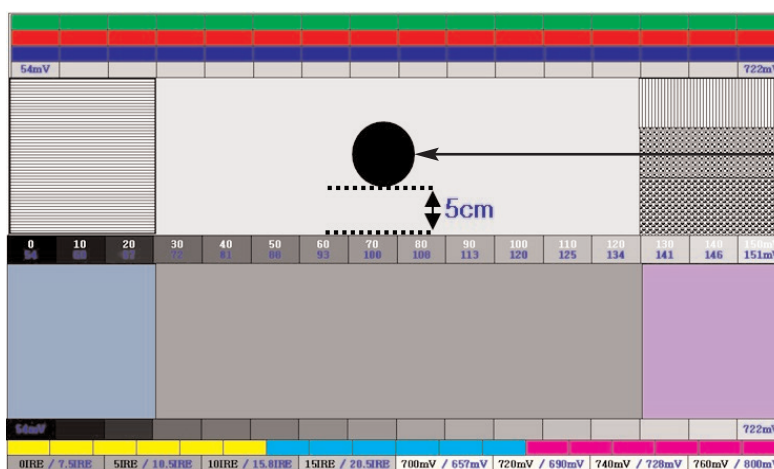


(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* 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	

* PDP 50" Check items listed after changing each

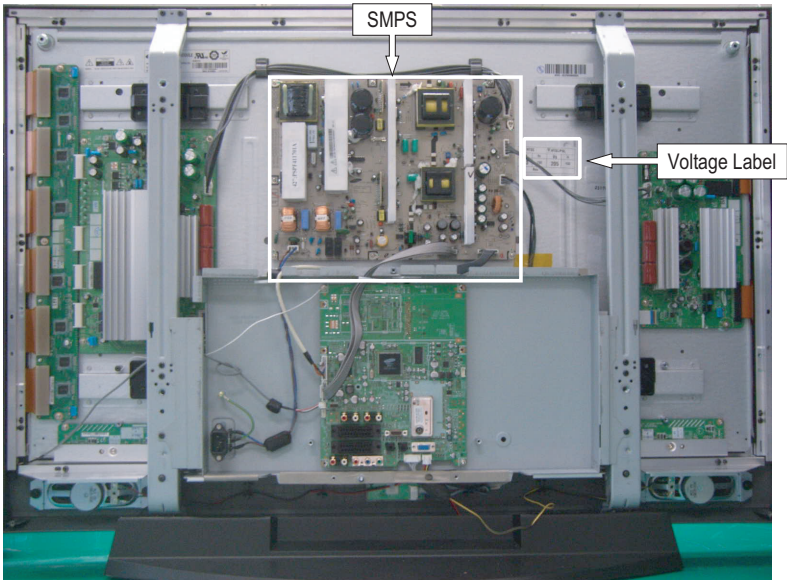
Replaced assembly items	Check Items
ASSY PCB MISC-MAIN	1) Auto Program 2) White Balance Adjust
SMPS-PDP TV	Vs, Va voltage check and adjust
ASSY PDP MODULE P-LOGIC MAIN	Not to be adjusted
ASSY PDP MODULE P-X-MAIN	
ASSY PDP MODULE P-Y-MAIN	
ASSY PDP MODULE P-Y-MAIN SCAN BUFFER	
ASSY PDP MODULE P-Y-MAIN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

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

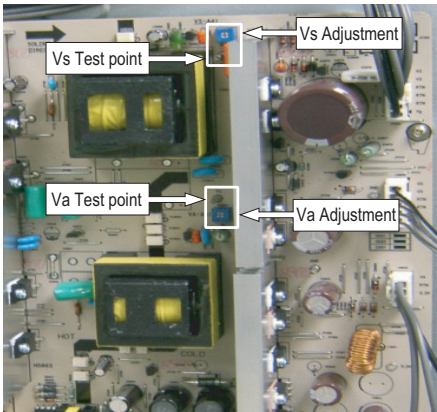
■ Voltage Adjustment

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.)

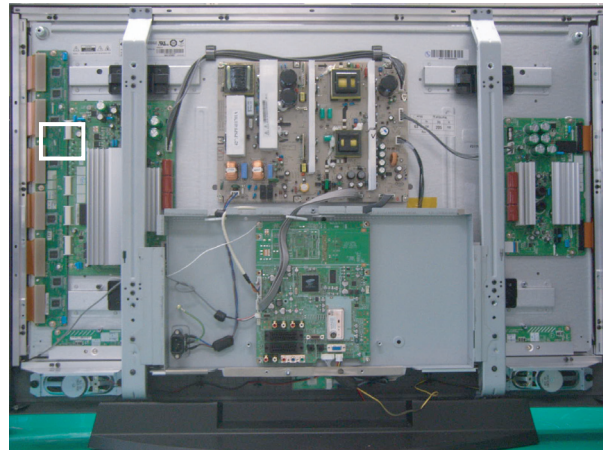
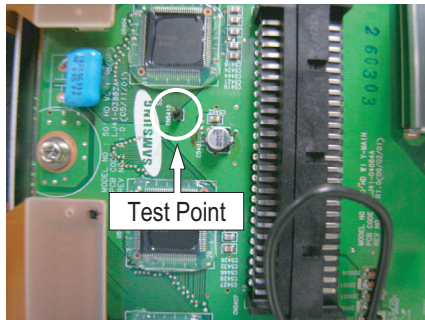
	Value	Board Adjustment
Vs	210	SMPS
Va	63	
Vset	-	
Ve	94	
Vscan	-190	



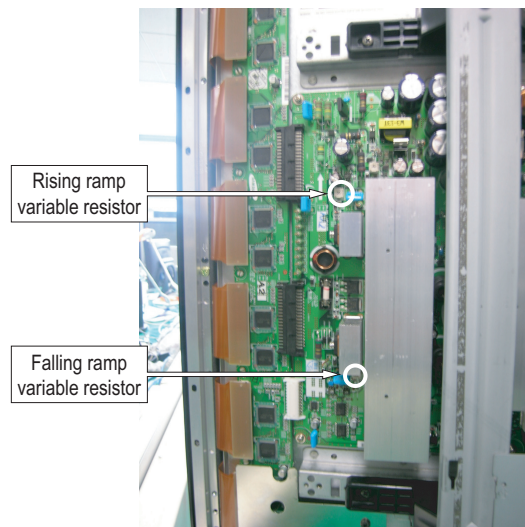
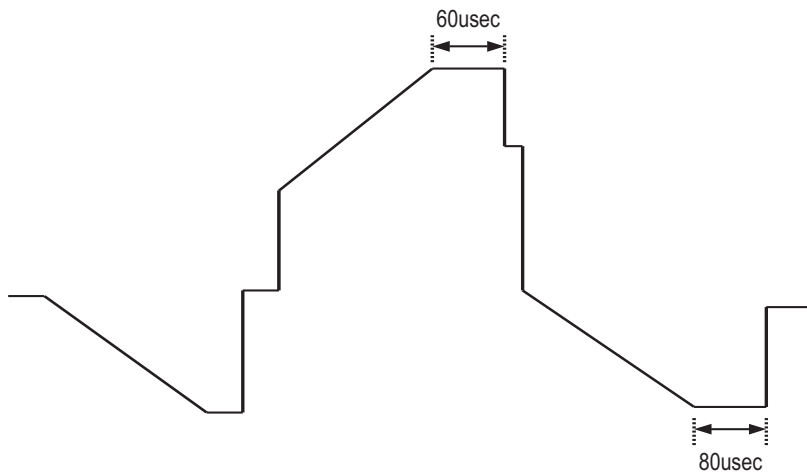
2. A point of adjusting SMPS-MAIN voltage.



■ Y-RR and Y-FR controls



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

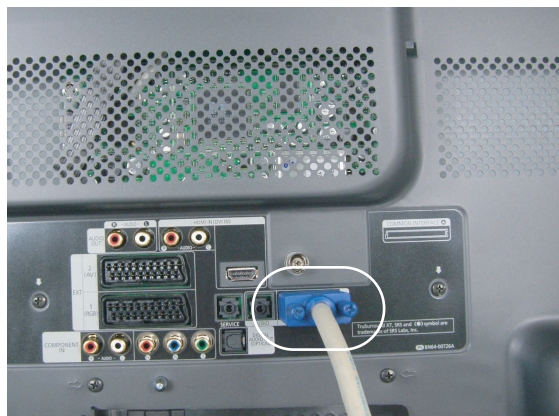


4-3 Upgrade

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

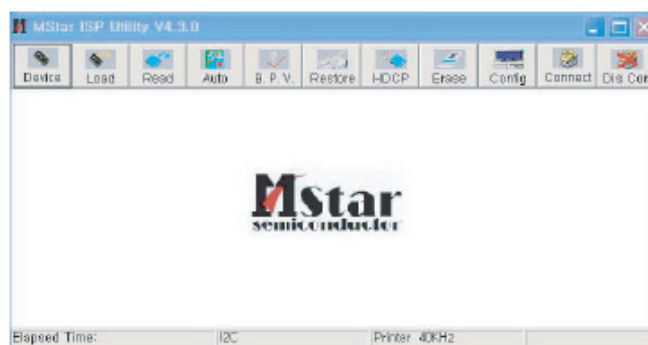
1. Install the Flash Downloader

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



2. Flash Downloader program update

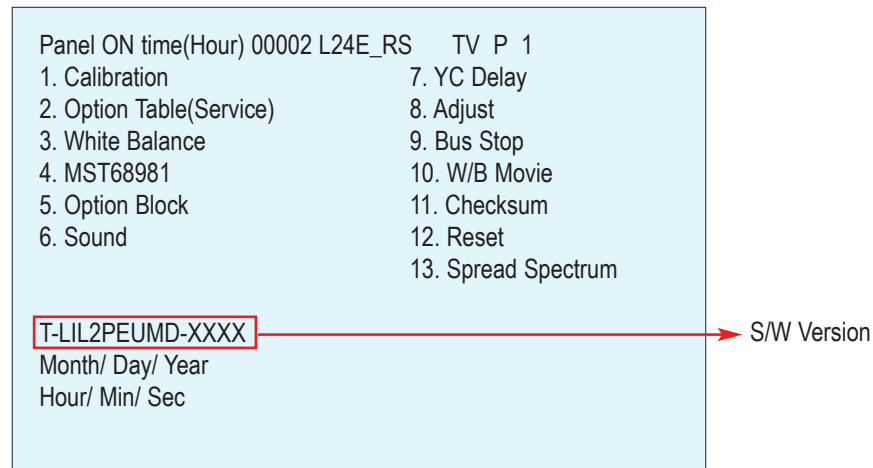
- Turn on the TV Set
- Click "Connect" icon on the MSTAR tool.
- Click "Read", and Choose a new S/W.
- Click "Auto", and "Run"



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

1. Procedures for checking in the Factory Menu.

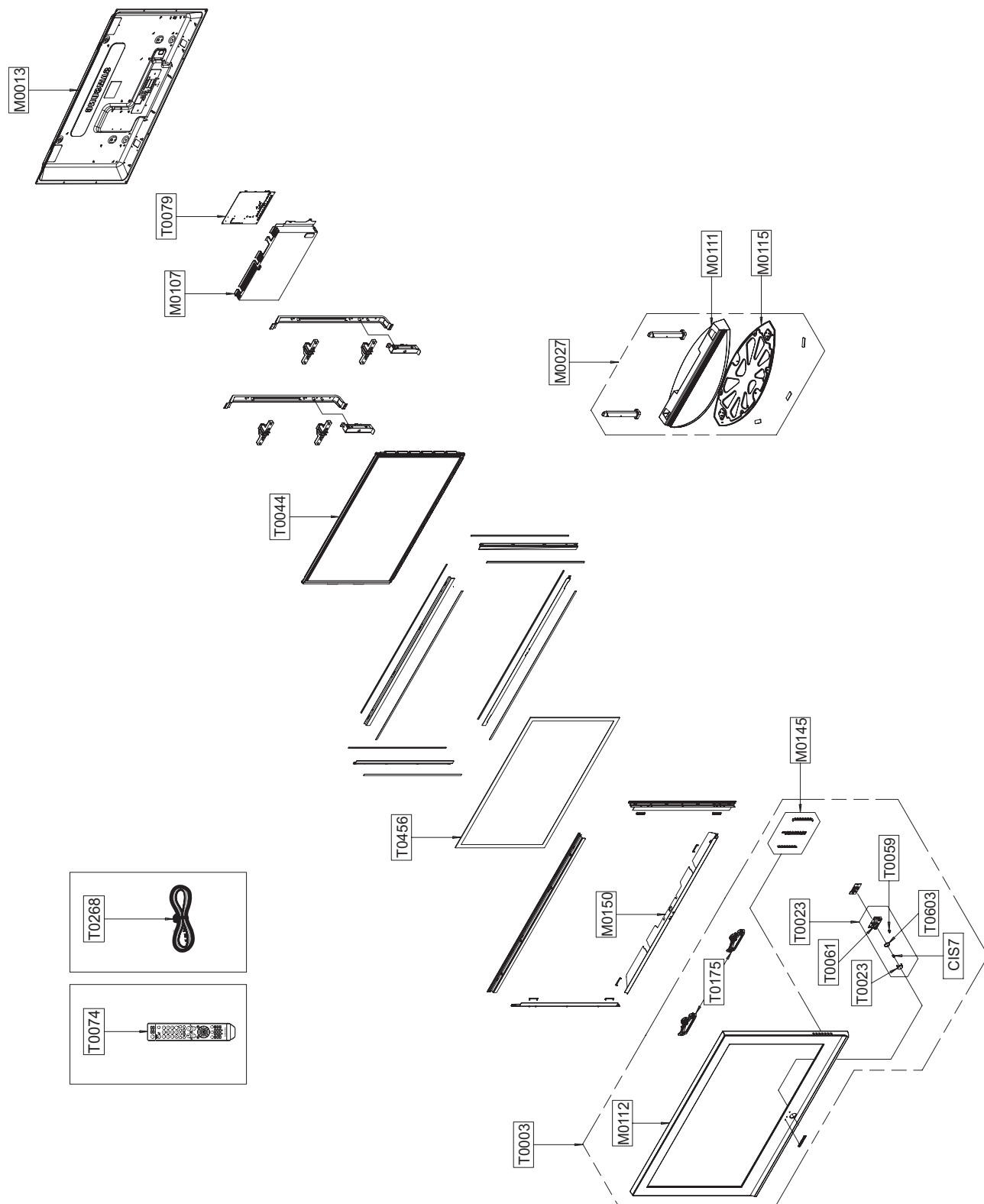
When entering Factory Mode, the version of the software is displayed at the bottom of the menu as described on page 4-17.



MEMO

5. Exploded View & Part List

5-1 PS50C62HX/XEC Exploded View



Loc. No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
CIS7	AA61-60003B	SPRING ETC-CS	-,SUS304,-,-,OD11.2,N7,OD1	1	S.N.A	
M0013	BN96-06219B	ASSY COVER P-REAR	50C67,,PCM,T0.5,,,EUP(	1	S.A	
M0027	BN96-03154B	ASSY STAND P-BASE	-,C7,-,HGI T3.0,-,BKP-	1	S.A	
M0107	BN61-03487A	BRACKET-PCB	42C6/50C6,SECC,0.8	1	S.N.A	
M0111	BN63-02387A	COVER-STAND	42C7,HIPS,HB,BKP-1526	1	S.N.A	
M0112	BN63-02388G	COVER-FRONT	50C62,HIPS,HB,EUP(Ready),GRA	1	S.N.A	
M0115	BN61-02659A	BRACKET-STAND	42C7,HGI,T2.0	1	S.N.A	
M0145	BN96-04853B	ASSY BOARD P-FUNCTION	Lily/Calla,CT5000-	1	S.A	
M0150	BN96-04400A	ASSY BRACKET P-FILTER BOTTOM	-,50C7,-,AL	1	S.A	
T0003	BN96-03124G	ASSY COVER P-FRONT	50C62HX,XEC,HIPS HB,,	1	S.A	
T0023	BN96-03173A	ASSY COVER P-KNOB POWER	42P7,,ABS,,,	1	S.A	
T0023	BN64-00459A	KNOB POWER	42P7,PC,Violet	1	S.N.A	
T0044	BN96-06516A	ASSY PDP MODULE P	S50HW-YB02,PL50HW026A,	1	S.A	△
T0059	BN64-00461A	INDICATOR LED	42P7,PMMA	1	S.N.A	
T0061	BN64-00462A	WINDOW-REMOCON	42P7,ACRYL,5%	1	S.N.A	
T0074	BN59-00609A	REMOCON	JASMINE / LILY,TM86,samsung 24p+	1	S.A	
T0079	BN94-01155C	ASSY PCB MISC-MAIN	PS50C62H,EU,F33B,F33B	1	S.A	△
T0175	BN96-02785A	ASSY SPEAKER P	8ohm,Twister,42inch,10W	1	S.A	
T0268	3903-000145	CBF-POWER CORD	DT,EU,FP3/YES,U(IEC C13-R	1	S.A	
T0456	BN67-00134A	GLASS-FILTER EMI	50 W2, C9,Sputter, with	1	S.A	△
T0603	BN64-00460A	KNOB-DECORATION POWER	42P7,ABS,HB,AL	1	S.N.A	

5-2 PS50C62HX/XEC Service Item

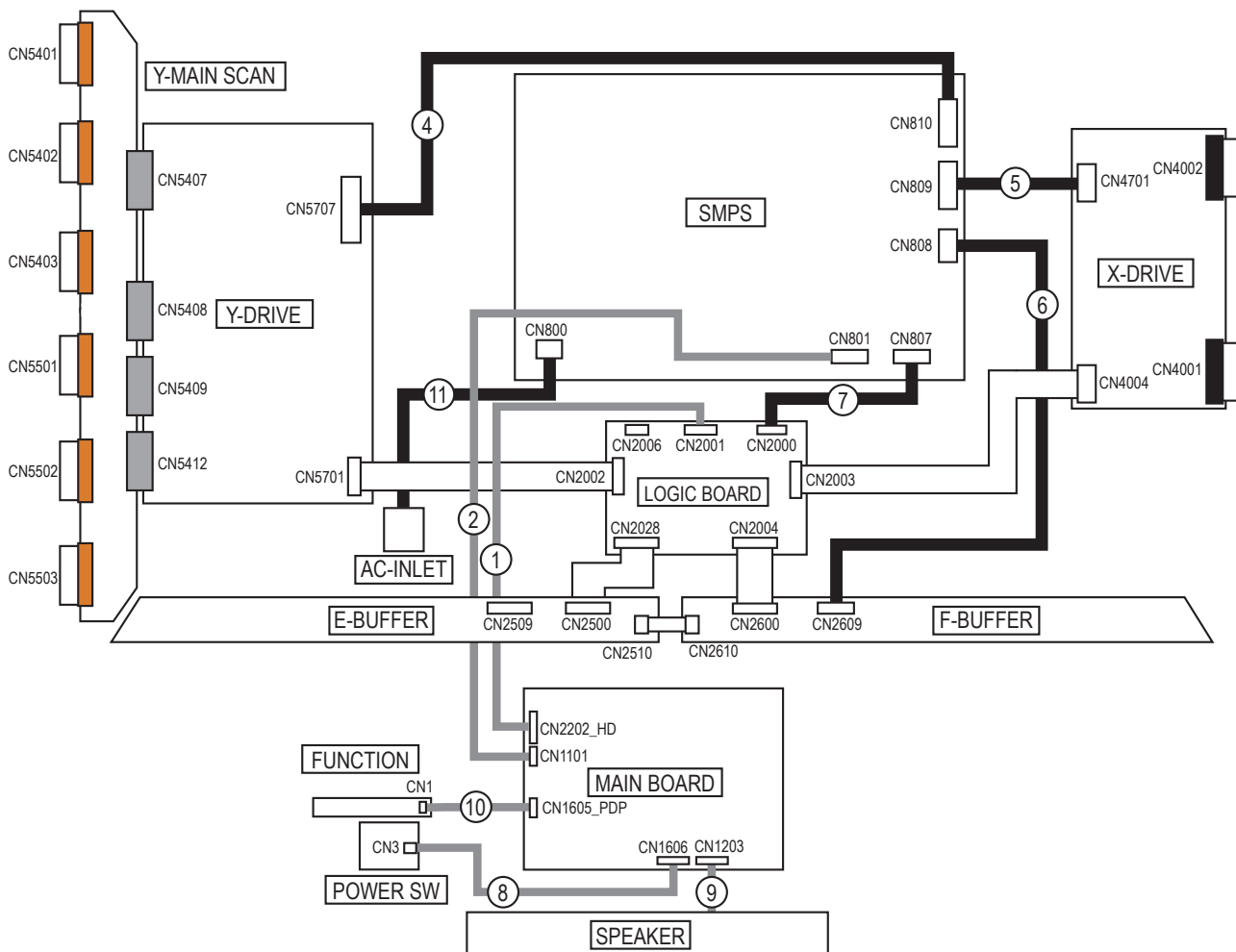
※ This is the list which is available to repair the real material at the time of service.

Loc. No.	Code No.	Description	Specification	Q'ty	Remark
CIS3	BN40-00099A	TUNER	HTM-6C/235S,HTM-6C/235S,PAL BG,DK,	1	
M0013	BN96-06219B	ASSY COVER P-REAR	50C67,,PCM,T0.5,,,EUP(	1	
M0027	BN96-03154B	ASSY STAND P-BASE	-,C7,-,HGI T3.0,-,BKP-	1	
M2893	BN39-00802S	LEAD CONNECTOR	LILY2 50",UL1007#26,24p/2	1	
M2893	BN39-00817A	LEAD CONNECTOR	LILLY 50",UL20276#30,UL/C	1	
T0003	BN96-03124G	ASSY COVER P-FRONT	50C62HX,XEC,HIPS HB,,	1	
T0023	BN96-03173A	ASSY COVER P-KNOB POWER	42P7,,ABS,,,	1	
T0037	BN96-06522A	ASSY PDP P-LOGIC MAIN BOARD	S50HW-YB02,L	1	
T0044	BN96-06516A	ASSY PDP MODULE P	S50HW-YB02,PL50HW026A,	1	△
T0045	BN96-06518A	ASSY PDP P-X-MAIN BOARD	S50HW-YB02,X-Mai	1	△
T0047	BN96-06520A	ASSY PDP P-Y-MAIN SCAN UPPER	S50HW-YB02,	1	
T0048	BN96-06521A	ASSY PDP P-Y-MAIN SCAN LOWWER	S50HW-YB02	1	
T0074	BN59-00609A	REMOCON	JASMINE / LILY,TM86,samsung 24p+	1	
T0079	BN94-01155C	ASSY PCB MISC-MAIN	PS50C62H,EU,F33B,F33B	1	△
T0175	BN96-02785A	ASSY SPEAKER P	8ohm,Twister,42inch,10W	1	
T0245	BN39-00164D	LEAD CONNECTOR-ASSY	HURRICANE,UL1015#18,	1	
T0262	BN96-06519A	ASSY PDP P-Y-MAIN BOARD	S50HW-YB02,Y-Mai	1	△
T0764	BN44-00162A	SMPS-PDP TV	HPS5053,SEM,AC/DC,460W,AC100	1	△

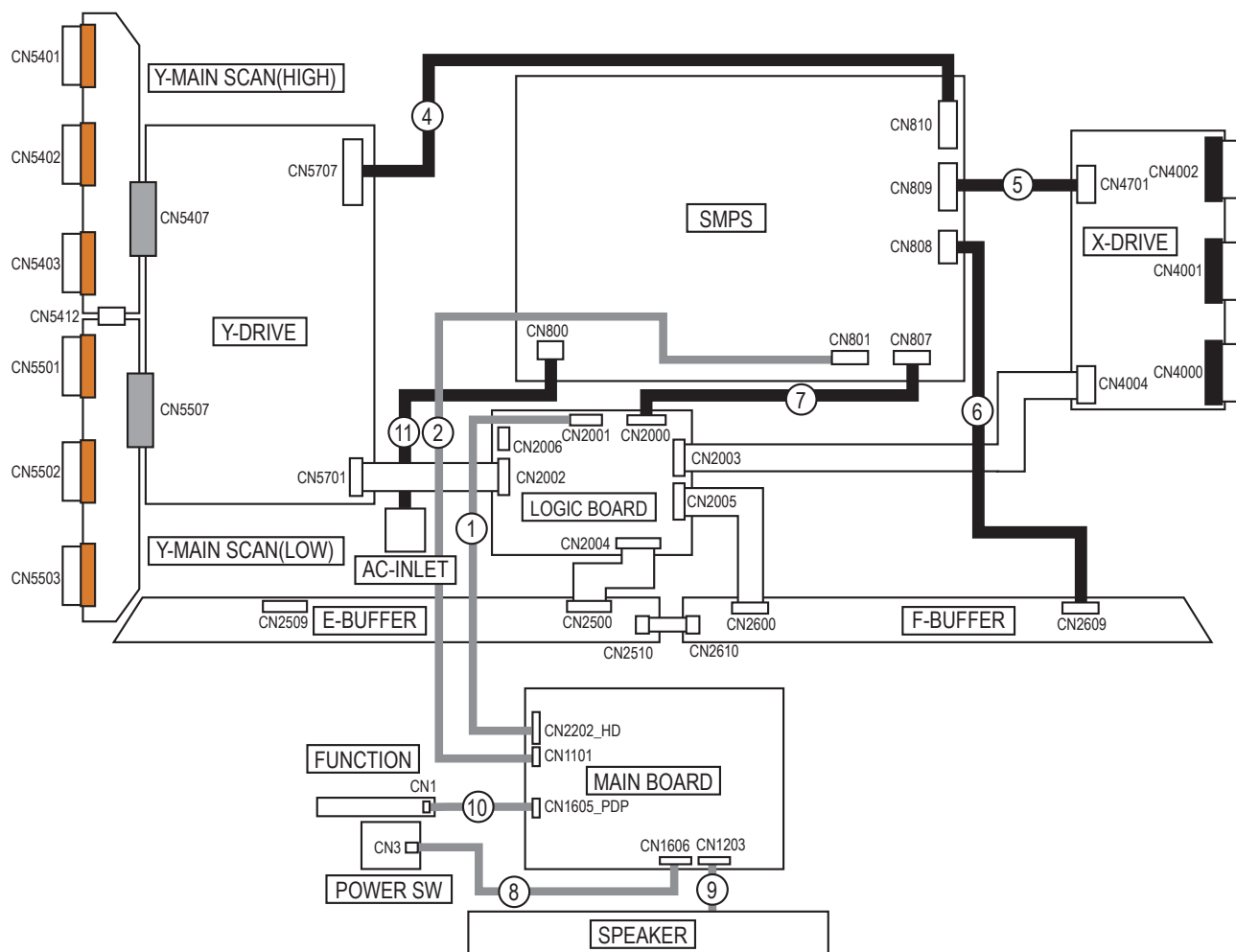
6. Wiring Diagram

6-1 Overall Wiring

<42" Overall Wiring>



<50" Overall Wiring>



※ The code number of cable(Lead-connector) can be changed, see "5. Exploded View & Part List."

Use	① LVDS 31P-30P	② POWER 24P	⑪ AC_INPUT
Code	BN39-00859A	BN39-00881A	42" - 2901-001378 50" - 2901-001340
Photo			

6-1-1 Pin Connection

① CN2202(MAIN B'D) ↔ CN2001(LOGIC B'D)				② CN1101(MAIN B'D) ↔ CN801(MAIN SMPS)			
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	RxIN0-	16	NC	1	PS_ON	13	5V
2	RxIN0+	17	GND	2	N/C (Auto_V)	14	5V
3	RxIN1-	18	WP	3	STBY	15	5V
4	RxIN1+	19	SCL	4	GND_STBY	16	5V
5	RxIN2-	20	SDA	5	GND_18V AMP	17	GND_12V
6	RxIN2+	21	LVDS Opt	6	GND_18V AMP	18	GND_12V
7	RxINCLK-	22	DCC Opt	7	18V AMP	19	12V
8	RxINCLK+	23	GND	8	18V AMP	20	GND_12V
9	RxIN3-	24	GND	9	GND_5V	21	12V
10	RxIN3+	25	GND	10	GND_5V	22	12V
11	NC	26	Vdd	11	GND_5V	23	N.C(FAN_ON)
12	NC	27	Vdd	12	GND_5V	24	N.C(FAN_DET)
13	NC	28	Vdd				
14	NC	29	Vdd				
15	NC	30	Vdd				

④ CN810(SMPS) ↔ CN5707(Y B'D)		⑤ CN809(SMPS) ↔ CN4701(X B'D)		⑥ CN808(SMPS) ↔ CN2609(E-BUFFER)		⑦ CN807(SMPS) ↔ CN2000(LOGIC B'D)		⑧ CN1606(MAIN B'D) ↔ POWER&IR	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	Vg	1	Vg	1	Va	1	STBY	1	IR
2	GND	2	GND	2	GND	2	VS_ON	2	GND
3	GND	3	GND	3	5.3V	3	N/C	3	A5V_1
4	GND	4	Vs			4	PS_ON	4	LED_STB
5	Vs	5	Vs			5	RTN	5	BUZZER
6	Vs					6	5.3V	6	KEY_INPUT1
						7	RTN	7	KEY_INPUT2
						8	RTN	8	GND
						9	5.3V	9	B5V
						10	5.3V	10	LED_CTRL

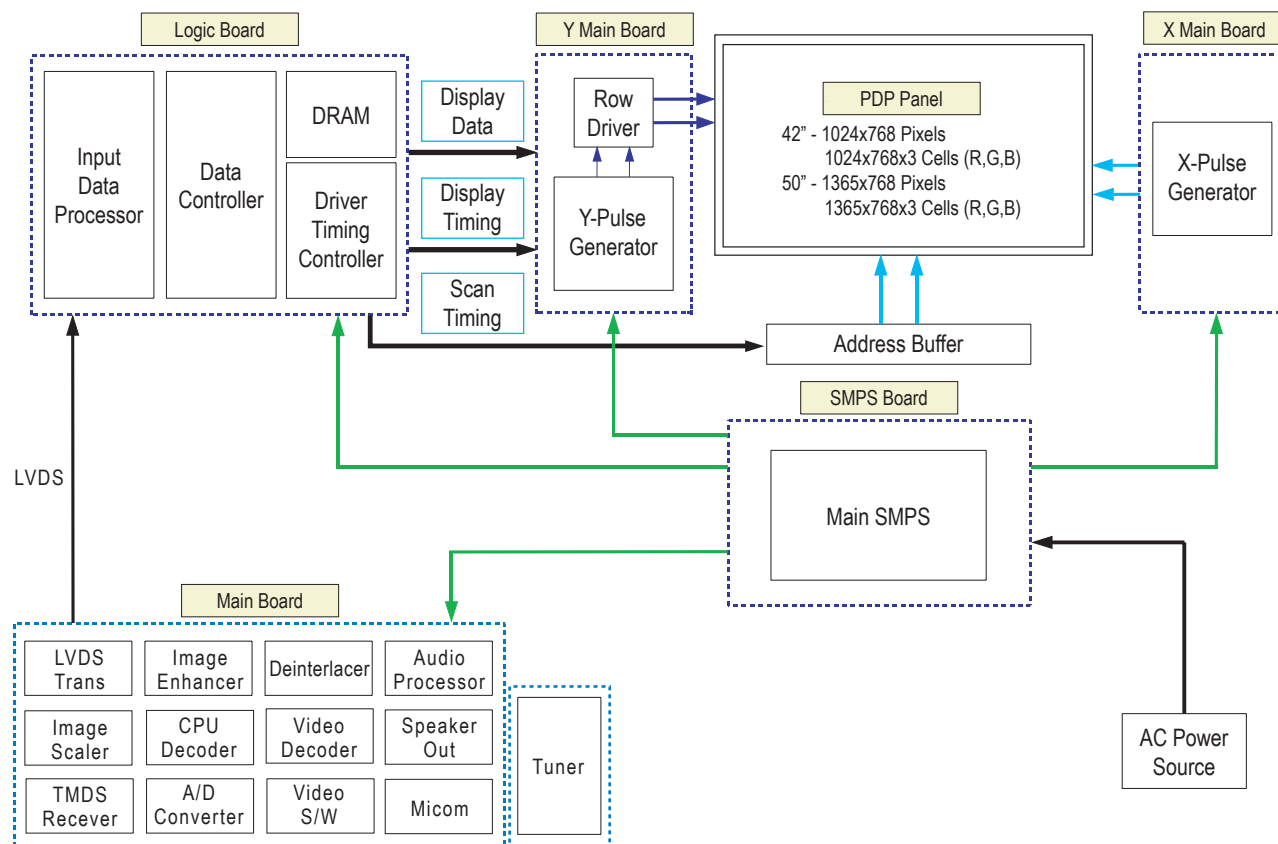
⑨ CN1203(MAIN B'D) ↔ SPEAKER		⑩ CN1605(MAIN B'D) ↔ FUNCTION		⑪ CN800(SMPS) ↔ AC INLET	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	R+_OUT	1	KEY_INPUT1	1	AC Neutral
2	R-_OUT	2	KEY_INPUT2	2	N/C
3	L+_OUT	3	GND	3	AC Live
4	L-_OUT				

6-1-2 Connector role

42" Loc. No.	50" Loc. No.	Description
CN5401	CN5401	Horizontal Y-scan line(1~128) of Module and Y-Main Scan Connect
CN5402	CN5402	Horizontal Y-scan line(129~256) of Module and Y-Main Scan Connect
CN5403	CN5403	Horizontal Y-scan line(256~384) of Module and Y-Main Scan Connect
-	CN5512	Y-Main Scan(High) and Y-Main Scan(Low) Connect
CN5501	CN5501	Horizontal Y-scan line(384~512) of Module and Y-Main Scan Connect
CN5502	CN5502	Horizontal Y-scan line(512~640) of Module and Y-Main Scan Connect
CN5503	CN5503	Horizontal Y-scan line(640~768) of Module and Y-Main Scan Connect
CN5407	CN5407	Upper Y-Drive and Y-Main Scan Connect
CN5507	CN5507	Lower Y-Drive and Y-Main Scan Connect
CN5707	CN5707	Vs(205V),Vg(15v) Power input connect(6Pin) of Y-Drive
CN5701	CN5701	Y-Drive control signal from Logic Board
CN810	CN810	Vs(205V),Vg(15v) Power input connect(6Pin) of SMPS for Y-Drive
CN809	CN809	Vs(205V),Vg(15v) Power input connect(6Pin) of SMPS for X-Drive
CN808	CN808	Va(63V) ,5.3V Power input connect(3Pin) of SMPS for F-Buffer
CN807	CN807	Power input connect(10pin) for Logic Board
CN801	CN801	Image signal(LVDS) connect(41pin) from Main Board
CN800	CN800	AC Power input connect from AC-inlet
CN4002	CN4002	Horizontal X-scan line of Module and X-scan Connect(first Block)
CN4001	CN4001	Horizontal X-scan line of Module and X-scan Connect(second Block)
-	CN4000	Horizontal X-scan line of Module and X-scan Connect(third Block)
CN2000	CN2000	Power input connect(10pin) of Logic Board from SMPS
CN2001	CN2001	Image signal(LVDS) connect(41pin) of Logic board from Main Board
CN2002	CN2002	Y-Drive control signal of Logic Board
CN2004	CN2005	Address Data(684th~1366th) connect for F-Buffer board
CN2028	CN2004	Address Data(1st~683th) connect for E-Buffer board
CN2500	CN2500	Address Data(1st~683th) connect from Logic Board
CN2510	CN2510	Power input connect from F-Buffer Board
CN2610	CN2610	Power input connect to E-Buffer Board
CN2600	CN2600	Address Data(684th~1366th) connect from Logic board
CN2609	CN2609	Va(63V) ,5.3V Power input connect(3Pin) from SMPS
CN1101	CN1101	Power input connect(24Pin) from SMPS
CN2202_HD	CN2202_HD	Image signal(LVDS) connect(30pin) for Logic board
CN1605_PDP	CN1605_PDP	Function input(source,ch up/down...) connect on Main board
CN1606	CN1606	Power SW input connect on Main Board
CN1203	CN1203	Speak out connect on Main Board

7. Schematic Diagram

7-1 Circuit Description



■ SMPS Board

The SMPS used for the PDP has been designed to be efficient, compact and lightweight. For VS and VA outputs, a LLC converter has been used. For the other outputs, a Flyback converter has been used.

■ LOGIC Board

The logic circuit consists of a Logic Main Board and an Address Buffer Board. The Logic Main Board decodes the video signal encoded by the Video Board, outputs the ADDRESS data signal for each pattern and generates X and Y drive signals. The Address Buffer Board buffers and transfers the ADDRESS data output signal using TCP IC.

- LVDS with built-in video signal processing (W/L, error diffusion, APC, FCR, etc.) applied and 1 ASIC chip.
- Outputs the address Drive IC control and data signals to the Buffer Board.
- Outputs the control signal for the X and Y Drive Boards.
- Monitors major drive voltages (Micom Circuit Block); detects if a surge voltage has been applied and protects the Drive Circuit.
- Temperature Adaptive Operating Mode (Low Temperature/Room Temperature/High Temperature); Discharge optimization for each temperature level.

■ X-MAIN Board

Connects to the X terminal block, 1) provides maintaining voltage waveform (including ERC), and 2) maintains the Ve bias in the Scan section.

■ Y-MAIN Board

Connects to the Y terminal block, 1) provides maintaining voltage waveform (including ERC), 2) provides Y Rising, Falling Ramp waveforms, and 3) maintains the Vscan bias.

■ Address Buffer Board

It delivers the data signal and control signal to the TCP.

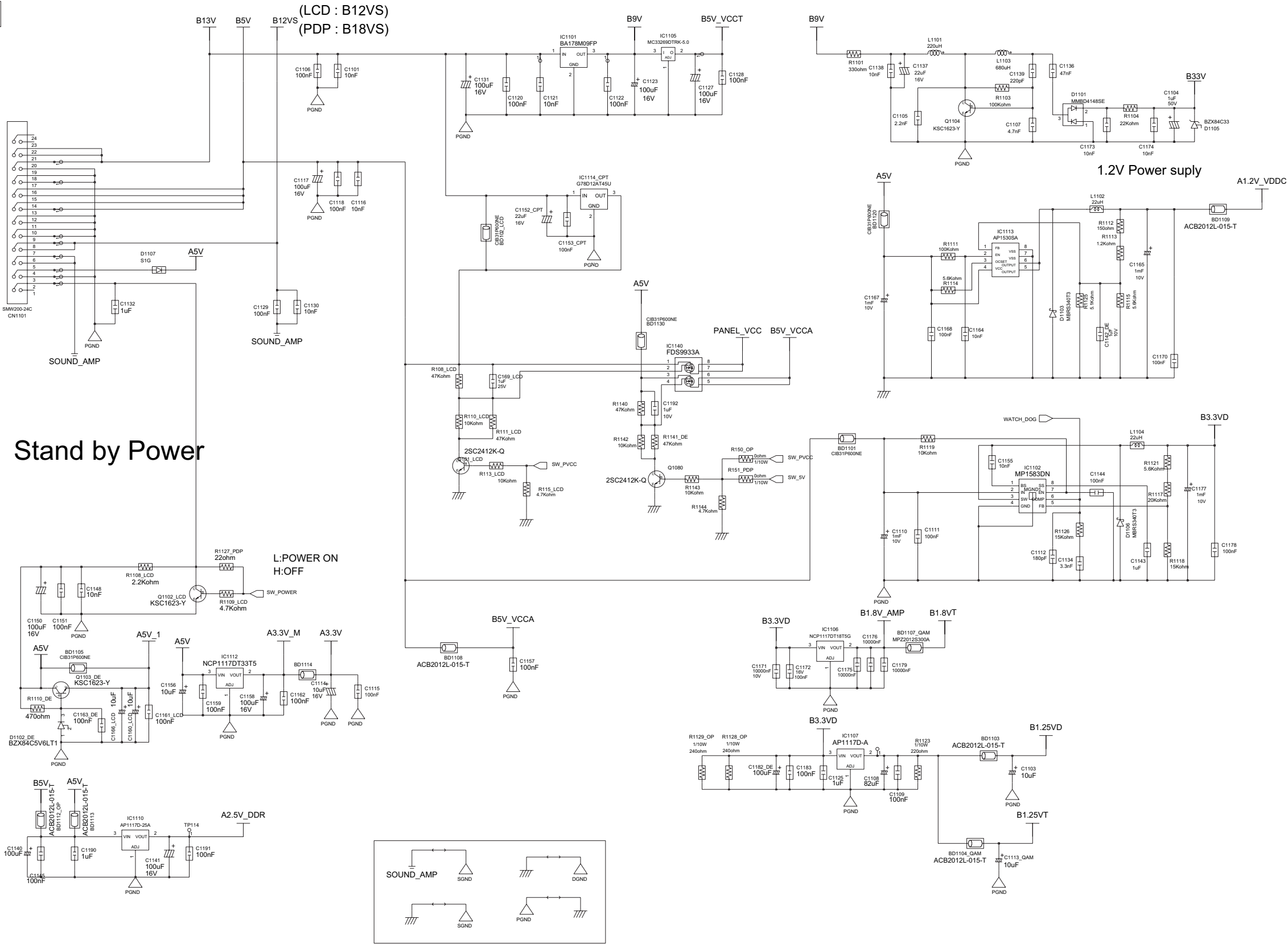
MEMO

7-2 Schematic Diagram

7-2-1 Power

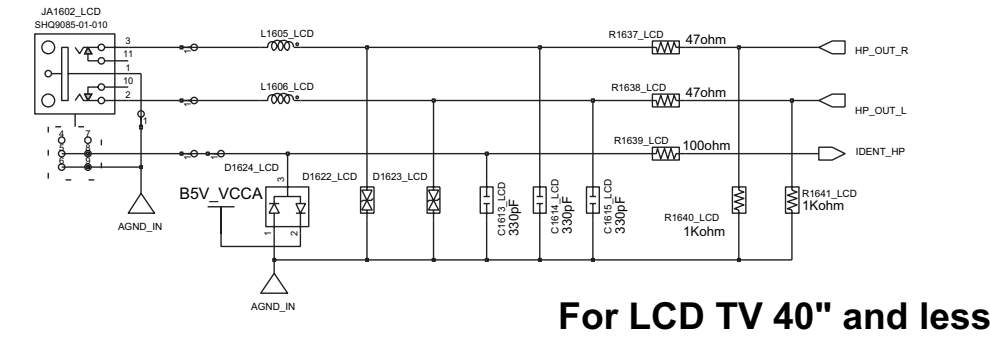
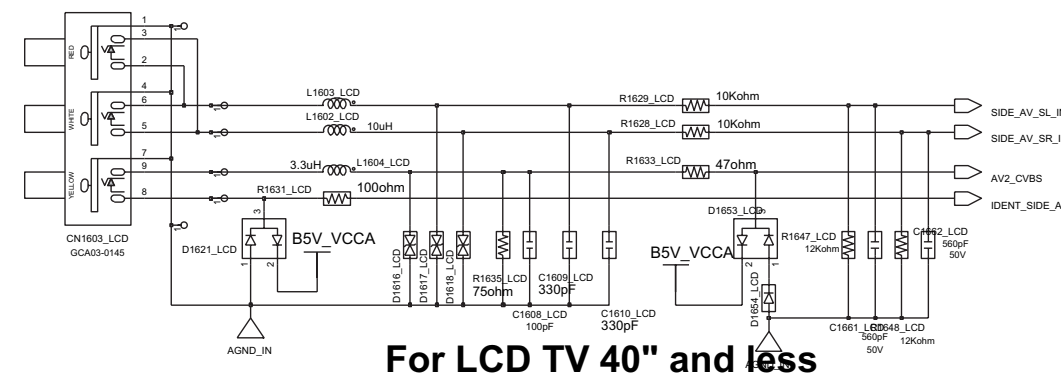
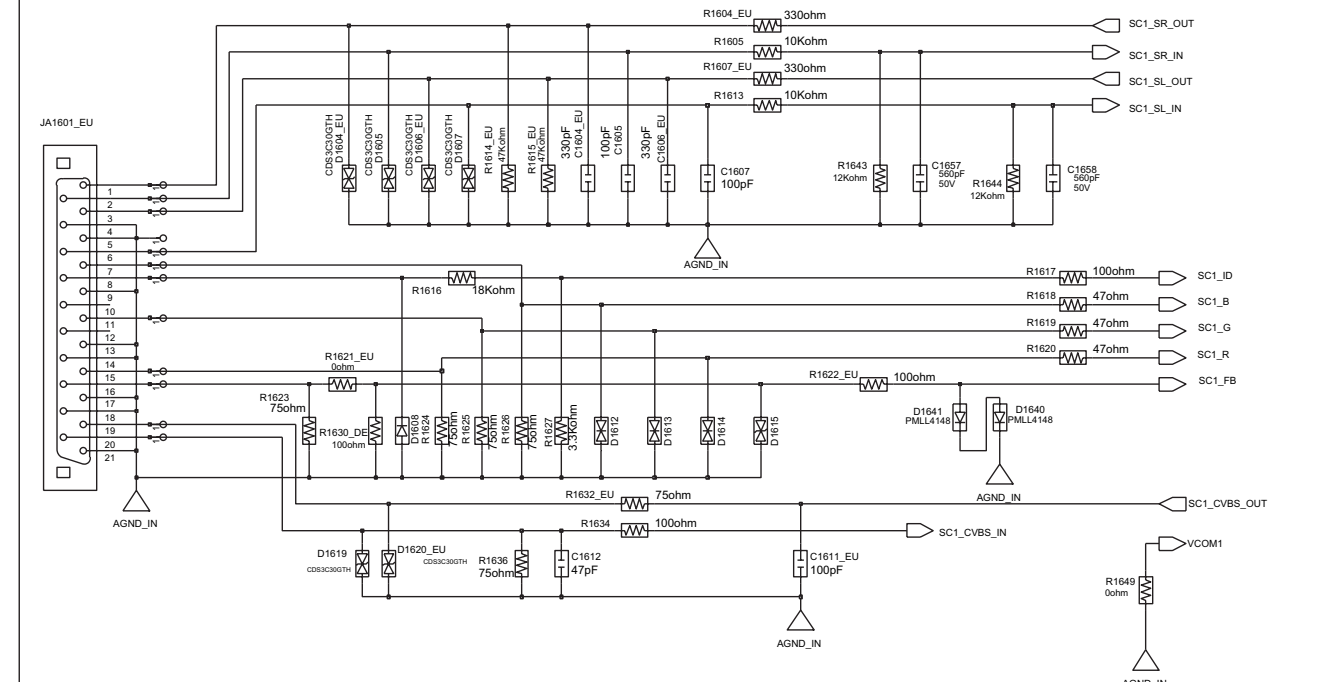
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Power



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Power

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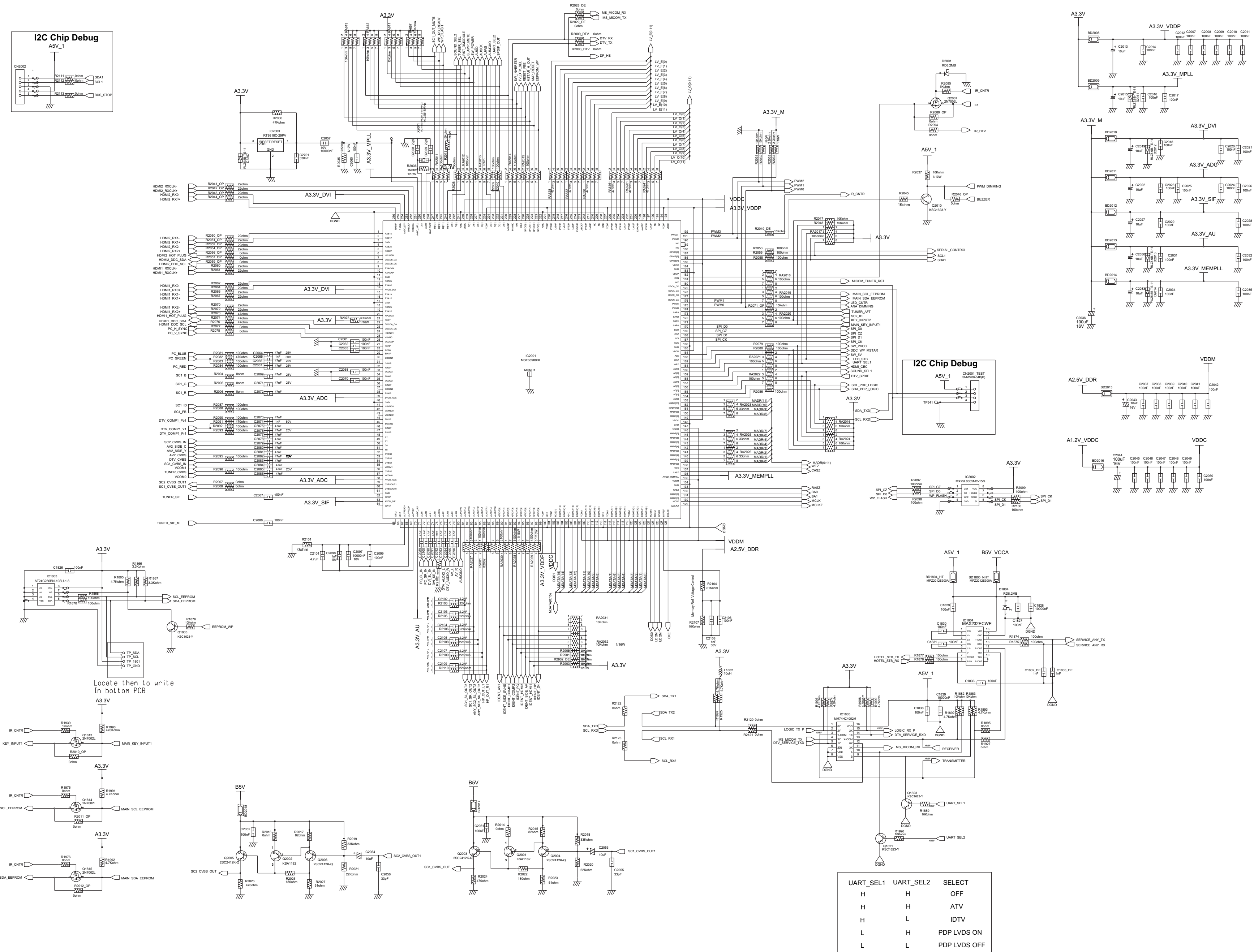
The schematic diagram shows the SPI interface circuit for the FT1601. It includes an RF1612 SPI controller, a C1625 100nF capacitor, a C1626 10000nF capacitor, an AGND_IN pin, a B5V_VCCA pin, and an FT1601 SGM32F1E104-2 component. The SPI controller is connected to the FT1601 via SPIF_OUT and SPIF_IN pins.

The schematic diagram illustrates the internal circuitry of the SC2 module. It features a multi-pin connector on the left labeled J1600_EU, with pins 1 through 21. The circuit includes several digital input/output buffers (D1603, D1601, D1602, D1603, D1604, D1605, D1606, D1607, D1608, D1609, D1610, D1611, D1612, D1613, D1614, D1615, D1616, D1617, D1618, D1619, D1620, D1621, D1622, D1623, D1624, D1625, D1626, D1627, D1628, D1629, D1630, D1631, D1632, D1633, D1634, D1635, D1636, D1637, D1638, D1639, D1640, D1641, D1642, D1643, D1644, D1645, D1646, D1647, D1648, D1649, D1650, D1651, D1652, D1653, D1654, D1655, D1656, D1657, D1658, D1659, D1660, D1661, D1662, D1663, D1664, D1665, D1666, D1667, D1668, D1669, D1670, D1671, D1672, D1673, D1674, D1675, D1676, D1677, D1678, D1679, D1680, D1681, D1682, D1683, D1684, D1685, D1686, D1687, D1688, D1689, D1690, D1691, D1692, D1693, D1694, D1695, D1696, D1697, D1698, D1699, D1700, D1701, D1702, D1703, D1704, D1705, D1706, D1707, D1708, D1709, D1710, D1711, D1712, D1713, D1714, D1715, D1716, D1717, D1718, D1719, D1720, D1721, D1722, D1723, D1724, D1725, D1726, D1727, D1728, D1729, D1730, D1731, D1732, D1733, D1734, D1735, D1736, D1737, D1738, D1739, D1740, D1741, D1742, D1743, D1744, D1745, D1746, D1747, D1748, D1749, D1750, D1751, D1752, D1753, D1754, D1755, D1756, D1757, D1758, D1759, D1760, D1761, D1762, D1763, D1764, D1765, D1766, D1767, D1768, D1769, D1770, D1771, D1772, D1773, D1774, D1775, D1776, D1777, D1778, D1779, D1780, D1781, D1782, D1783, D1784, D1785, D1786, D1787, D1788, D1789, D1790, D1791, D1792, D1793, D1794, D1795, D1796, D1797, D1798, D1799, D1800, D1801, D1802, D1803, D1804, D1805, D1806, D1807, D1808, D1809, D1810, D1811, D1812, D1813, D1814, D1815, D1816, D1817, D1818, D1819, D1820, D1821, D1822, D1823, D1824, D1825, D1826, D1827, D1828, D1829, D1830, D1831, D1832, D1833, D1834, D1835, D1836, D1837, D1838, D1839, D1840, D1841, D1842, D1843, D1844, D1845, D1846, D1847, D1848, D1849, D1850, D1851, D1852, D1853, D1854, D1855, D1856, D1857, D1858, D1859, D1860, D1861, D1862, D1863, D1864, D1865, D1866, D1867, D1868, D1869, D1870, D1871, D1872, D1873, D1874, D1875, D1876, D1877, D1878, D1879, D1880, D1881, D1882, D1883, D1884, D1885, D1886, D1887, D1888, D1889, D1890, D1891, D1892, D1893, D1894, D1895, D1896, D1897, D1898, D1899, D1900, D1901, D1902, D1903, D1904, D1905, D1906, D1907, D1908, D1909, D1910, D1911, D1912, D1913, D1914, D1915, D1916, D1917, D1918, D1919, D1920, D1921, D1922, D1923, D1924, D1925, D1926, D1927, D1928, D1929, D1930, D1931, D1932, D1933, D1934, D1935, D1936, D1937, D1938, D1939, D1940, D1941, D1942, D1943, D1944, D1945, D1946, D1947, D1948, D1949, D1950, D1951, D1952, D1953, D1954, D1955, D1956, D1957, D1958, D1959, D1960, D1961, D1962, D1963, D1964, D1965, D1966, D1967, D1968, D1969, D1970, D1971, D1972, D1973, D1974, D1975, D1976, D1977, D1978, D1979, D1980, D1981, D1982, D1983, D1984, D1985, D1986, D1987, D1988, D1989, D1990, D1991, D1992, D1993, D1994, D1995, D1996, D1997, D1998, D1999, D2000, D2001, D2002, D2003, D2004, D2005, D2006, D2007, D2008, D2009, D2010, D2011, D2012, D2013, D2014, D2015, D2016, D2017, D2018, D2019, D2020, D2021, D2022, D2023, D2024, D2025, D2026, D2027, D2028, D2029, D2030, D2031, D2032, D2033, D2034, D2035, D2036, D2037, D2038, D2039, D2040, D2041, D2042, D2043, D2044, D2045, D2046, D2047, D2048, D2049, D2050, D2051, D2052, D2053, D2054, D2055, D2056, D2057, D2058, D2059, D2060, D2061, D2062, D2063, D2064, D2065, D2066, D2067, D2068, D2069, D2070, D2071, D2072, D2073, D2074, D2075, D2076, D2077, D2078, D2079, D2080, D2081, D2082, D2083, D2084, D2085, D2086, D2087, D2088, D2089, D2090, D2091, D2092, D2093, D2094, D2095, D2096, D2097, D2098, D2099, D2100, D2101, D2102, D2103, D2104, D2105, D2106, D2107, D2108, D2109, D2110, D2111, D2112, D2113, D2114, D2115, D2116, D2117, D2118, D2119, D2120, D2121, D2122, D2123, D2124, D2125, D2126, D2127, D2128, D2129, D2130, D2131, D2132, D2133, D2134, D2135, D2136, D2137, D2138, D2139, D2140, D2141, D2142, D2143, D2144, D2145, D2146, D2147, D2148, D2149, D2150, D2151, D2152, D2153, D2154, D2155, D2156, D2157, D2158, D2159, D2160, D2161, D2162, D2163, D2164, D2165, D2166, D2167, D2168, D2169, D2170, D2171, D2172, D2173, D2174, D2175, D2176, D2177, D2178, D2179, D2180, D2181, D2182, D2183, D2184, D2185, D2186, D2187, D2188, D2189, D2190, D2191, D2192, D2193, D2194, D2195, D2196, D2197, D2198, D2199, D2200, D2201, D2202, D2203, D2204, D2205, D2206, D2207, D2208, D2209, D2210, D2211, D2212, D2213, D2214, D2215, D2216, D2217, D2218, D2219, D2220, D2221, D2222, D2223, D2224, D2225, D2226, D2227, D2228, D2229, D2230, D2231, D2232, D2233, D2234, D2235, D2236, D2237, D2238, D2239, D2240, D2241, D2242, D2243, D2244, D2245, D2246, D2247, D2248, D2249, D2250, D2251, D2252, D2253, D2254, D2255, D2256, D2257, D2258, D2259, D2260, D2261, D2262, D2263, D2264, D2265, D2266, D2267, D2268

Schematic Diagram

7-2-5 MST68980BL (Scaler)

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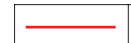
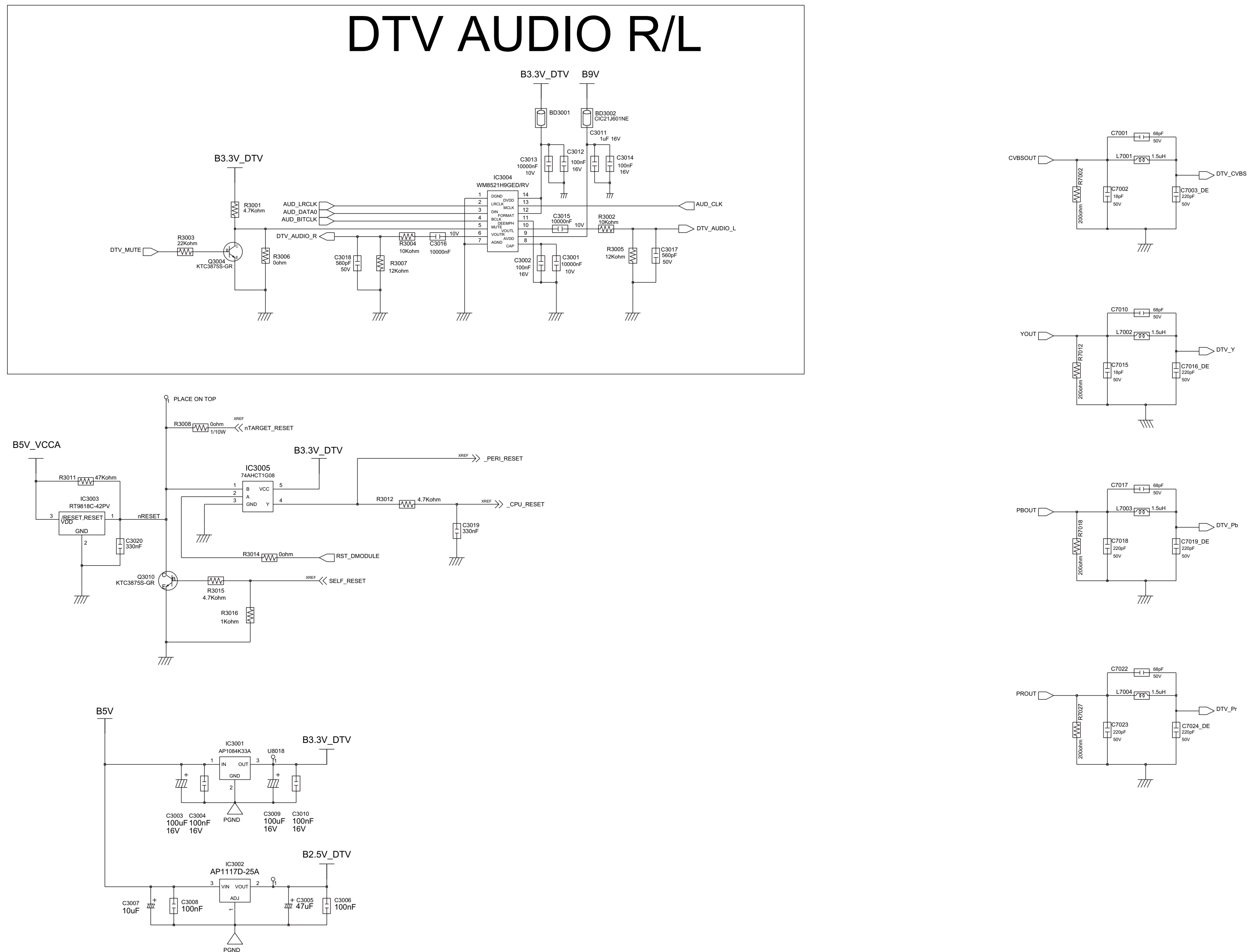


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7-2-7 DTV Reset & AV out

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7-2-8 DTV Memory & EMMA2SL

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