PSG1704003CE
A6

Service Manual

Stereo Integrated Amplifier

Model No. SU-G700E
SU-G700PP

Product Color: (S)...Silver Type

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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1 Safety Precautions

1.1. General Guidelines

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

(This "Safety Precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞

1.1.2. Leakage Current Hot Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1-1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

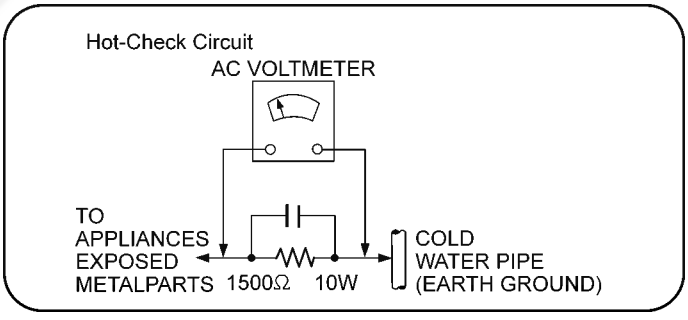

Figure 1-1

1.2. Before Repair and Adjustment

Disconnect Power Supply AC to discharge AC capacitor in SMPS P.C.B. and AC Inlet P.C.B. through a 10 Ω, 10 W resistor to ground.

1.2.1. SMPS P.C.B.

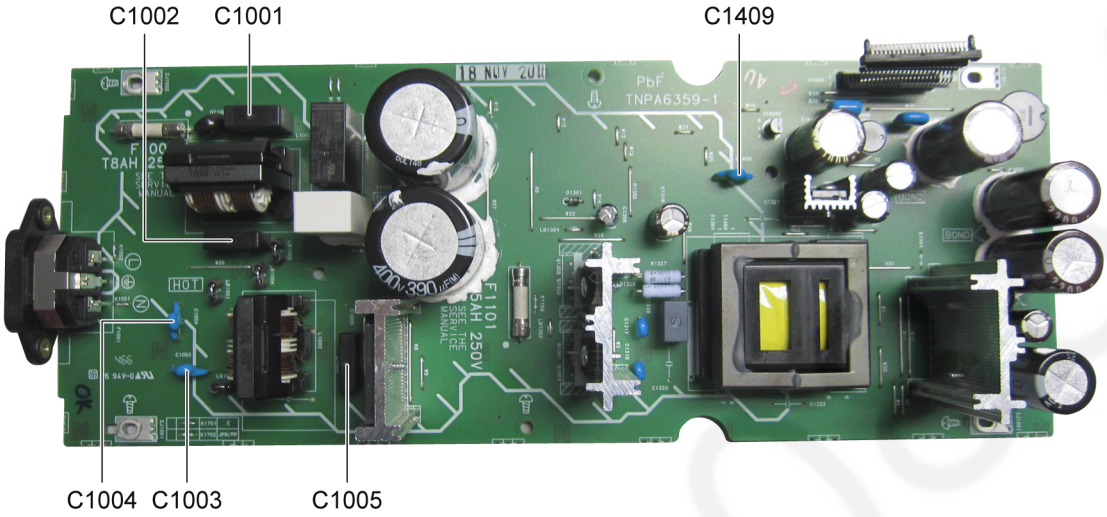

Figure 1-2

Caution:

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices. After repairs are completed, restore power gradually using a variac to avoid overcurrent.

- Current consumption at AC 220V - 240V, should be 50/60 Hz during power on (In Standby mode) should be ~0.30W. (E)
- Current consumption at AC 120V, 60 Hz during power on (In Standby mode) should be ~0.30W. (PP)

1.3. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

1.4. Safety Parts Information

Safety Parts List:

There are special components used in this equipment which are important for safety.

These parts are marked by ⚠ in the Schematic Diagrams, Exploded View & Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

Safety	Ref No.	Part No.	Part Name & Description	Remarks
⚠	20	RFKKSUG700ES	TOP CABINET ASS'Y	
⚠	38	TKFA22401A	REAR PANEL	G700E-S
⚠	38	TKFA22501A	REAR PANEL	G700PP-S
⚠	A2	K2CM3YY00041	AC CORD	G700E-S
⚠	A2	K2CS3YY00033	AC CORD	G700E-S
⚠	A2	K2CG3YY00191	AC CORD	G700PP-S
⚠	A3	TQBM0061	OI(En/Ge/Fr/It/Du)	G700E-S
⚠	A3	TQBM0062	OI(Sp/Sw/Da/Fi/Po)	G700E-S
⚠	A3	TQBM0060	OI(En/Cf)	G700PP-S
⚠	PCB4	TNPA6359AA	SMPS P.C.B	G700E-S
⚠	PCB4	TNPA6359AB	SMPS P.C.B	G700PP-S

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices.

Examples of typical ES devices are IC (integrated circuits) and some field-effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as “anti-static (ESD protected)” can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION:
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

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2.2. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of “PbF” is printed either foil side or components side on the PCB using the lead free solder. (See right figure)	PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.
  (Definition: The letter of “PbF” is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.

• Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).

Recommended Lead Free Solder (Service Parts Route.)

• The following 3 types of lead free solder are available through the service parts route.
RFKZ03D01K----------(0.3mm 100g Reel)
RFKZ06D01K----------(0.6mm 100g Reel)
RFKZ10D01K----------(1.0mm 100g Reel)

Note

* Ingredient: tin (Sn), 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

2.3. Grounding for electrostatic breakdown prevention

• As for parts that use optical pick-up (laser diode), the optical pick-up is destroyed by the static electricity of the working environment.
Repair in the working environment that is grounded.

2.3.1. Worktable grounding

• Put a conductive material (sheet) or iron sheet on the area where the optical pickup is placed and ground the sheet.

2.3.2. Human body grounding

• Use the anti-static wrist strap to discharge the static electricity form your body Figure 2-2.

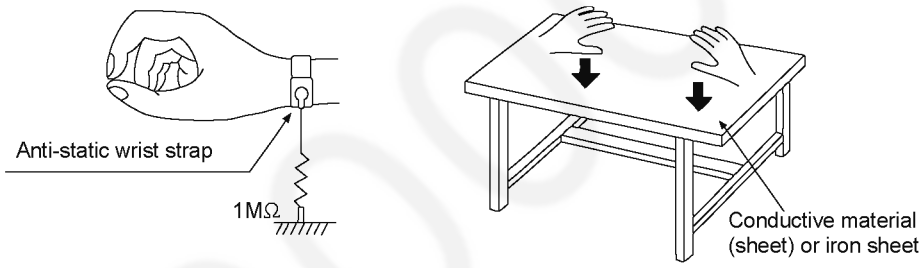


Figure 2-2

3 Service Navigation

3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

- **Adjustment of Meter Unit.**
  Refer to Section 10.1 for procedures to adjust the Meter Unit after replacement of Meter Unit and Meter Drive P.C.B..

4 Specifications

■ General

Power supply	AC 220 V to 240 V, 50/60 Hz (E) AC 120 V, 60 Hz (PP)
Power consumption	85 W
Power Consumption in standby mode	Approx. 0.3 W
Dimensions (W x H x D)	430 mm (16 $^{15}/_{16}$") × 148 mm (5 $^{13}/_{16}$") × 428 mm (16 $^{27}/_{32}$")
Mass	Approx. 12.3 kg (27.2 lbs)
Operating temperature range	0 °C to +40 °C (+32 °F to +104 °F)
Operating humidity range	35% to 80% RH (no condensation)

■ Amplifier section

Output power	70 W + 70 W (1 kHz, T.H.D. 0.5 %, 8 Ω, 20 kHz LPF) 140 W + 140 W (1 kHz, T.H.D. 0.5 %, 4 Ω, 20 kHz LPF)
Load impedance	4 Ω - 16 Ω
Frequency response	
PHONO (MM)	20 Hz to 20 kHz (RIAA DEVIATION ±1 dB, 8 Ω)
LINE	5 Hz to 80 kHz (—3 dB, 8 Ω)
DIGITAL	5 Hz to 90 kHz (—3 dB, 8 Ω)
Input sensitivity/Input impedance	
PHONO (MM)	2.5 mV / 47 kΩ
LINE	200 mV / 22 kΩ

■ Terminals section

Headphones Jack	Stereo, Ø6.3 mm ($^{1}/_{4}$") 0.75 mW, 32 Ω
PC	REAR USB Type B Connector
Analogue input	
LINE IN × 2	Pin jack
PHONO (MM)	Pin jack
Digital input	
OPT IN × 2	Optical terminal
COAX IN × 2	Pin jack
Format support	LPCM
Analogue output	
LINE OUT	Pin jack
PRE OUT	Pin jack
System port	
System control	Ø3.5 mm ($^{1}/_{8}$"), jack

■ Format section

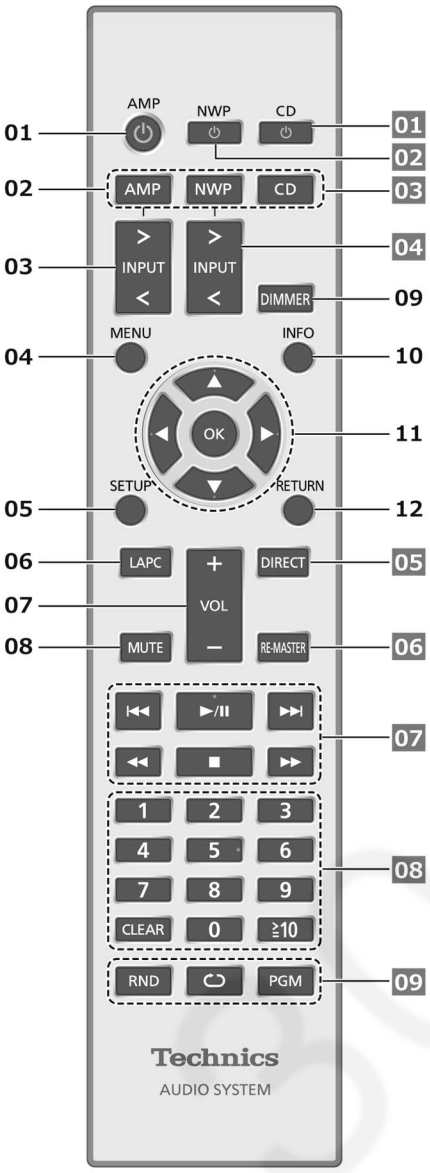
USB-B	
USB Standard	USB 2.0 high-speed USB Audio Class 2.0, Asynchronous mode
DSD control mode	ASIO Native mode, DoP mode

Note:

- Specifications are subject to change without notice.
- Mass and dimension are approximate.
- DSD is a trademark of Sony Corporation.

5 Location of Controls and Components

5.1. Remote Control Key Button Operation



01 [AMP ⏻]: Standby/on button
- Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

02 [AMP]/[NWP]/[CD]: Select the device to be operated

03 [>INPUT<]: Switch the input source

04 [MENU]: Enter menu

05 [SETUP]: Enter setup menu

06 [LAPC]: Measure the output signal of the amplifier when speakers are connected, and correct its output

07 [+VOL-]: Adjust the volume
- Volume range: -- (min), 1 to 100 (max)

08 [MUTE]: Mute the sound
- Press [MUTE] again to cancel. "MUTE" is also cancelled when you adjust the volume with this unit or when you turn the unit to standby.

09 [DIMMER]: Adjust the brightness of the peak power meter light, display, etc.
- When the display is turned off, it will light up for a few seconds only when you operate this unit. Before the display turns off, "Display Off" will be displayed for a few seconds.
- Press repeatedly to switch the brightness.
- Peak power meter does not work while the light is turned off.

10 [INFO]: View content information*
- Press this button to display sampling frequency and other information. (The information varies depending on the input source.)

11 [▲], [▼], [◄], [►]/[OK]: Selection/OK*

12 [RETURN]: Return to the previous display*

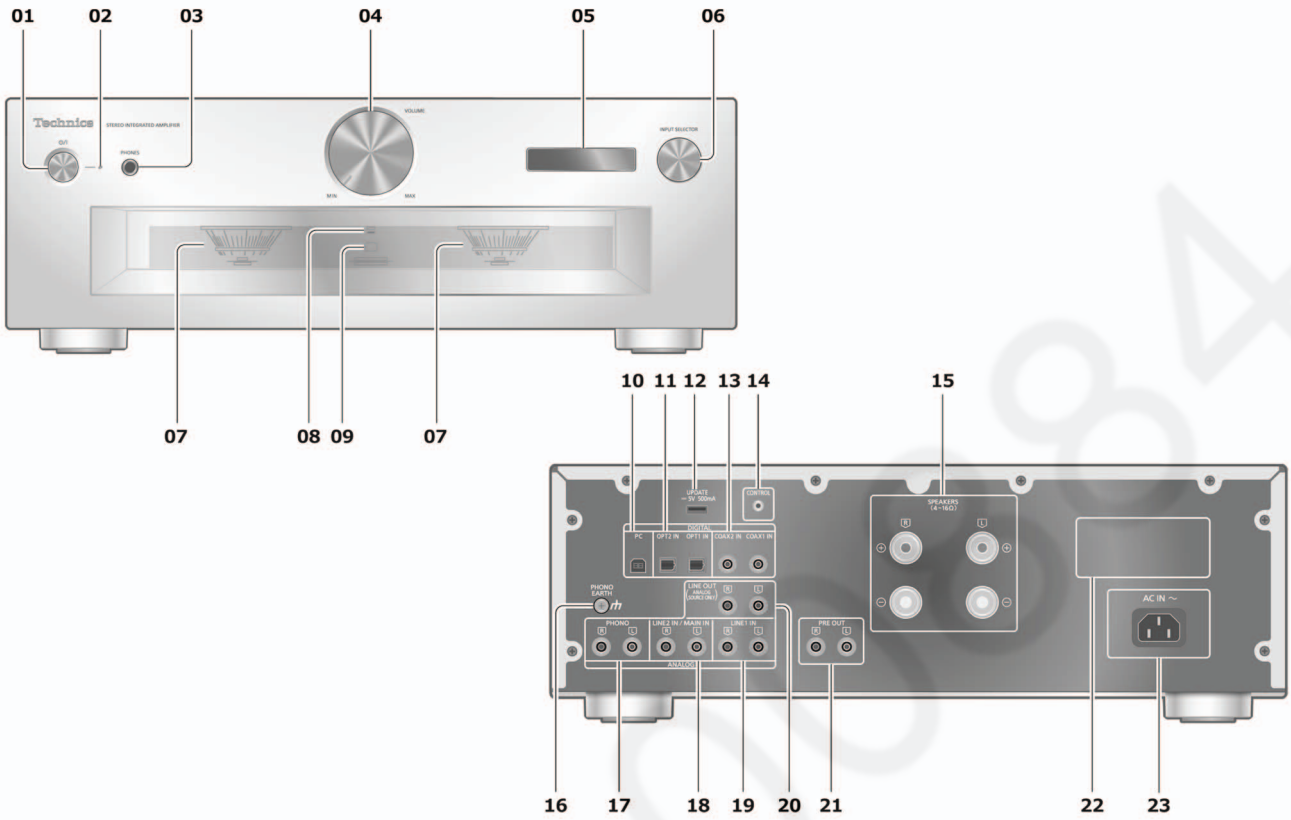
*: Press [AMP] first to operate this unit. (The remote control may work for other Technics devices and may not for this unit when pressing [NWP] or [CD].)

■ Buttons that work for Technics devices supporting system control function

The remote control of this unit also works for Technics devices supporting system control function (Network Audio Player, Compact Disc Player, etc.). For information on the operations of the devices, please also refer to their operating instructions.

01 [⏻] Standby/on switch for the Compact Disc Player
02 [⏻] Standby/on switch for the Network Audio Player
03 Select the device to be operated
04 Select the input source of the Network Audio Player
05 Turn on/off Direct mode
06 Turn on/off Re-master
07 Playback control buttons
08 Numeric buttons, etc.
09 Playback control buttons

5.2. Main Unit Key Button Operation



01 Standby/on button (⏻/I)
- Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

02 Power indicator
- Blue: The unit is on.
- Off: The unit is in standby mode.

03 Headphones jack
- When a plug is connected, the speakers and PRE OUT terminals do not output sound.
- Sound is not output from headphones jack while "MAIN IN" is selected as input source of this unit.
- Excessive sound pressure from earphones and headphones can cause hearing loss.
- Listening at full volume for long periods may damage the user's ears.

04 Volume knob
- -- (min), 1 to 100 (max)
- To display the volume, set "VOLUME Display" to "On".

05 Display
- Information such as input source, etc. is displayed.

06 Input selector knob
- Turn this knob clockwise or anticlockwise to switch the input source.

07 Peak power meter
- Display the output level. 100 % is the rated output.
- Peak power meter does not work while the light is turned off.

08 LAPC indicator

09 Remote control signal sensor
- Reception distance: Within approx. 7 m directly in front
- Reception angle: Approx. 30° left and right

10 USB-B terminal
- For connecting to a PC, etc.

11 Optical digital input terminal (OPT1 IN/OPT2 IN)

12 UPDATE terminal (USB-A) (⎓ DC 5 V 500 mA)

13 Coaxial digital input terminals (COAX1 IN/COAX2 IN)

14 System terminal (CONTROL)

15 Speaker output terminals

16 PHONO EARTH terminal
- For connecting the ground wire of a turntable.

17 Analogue audio input terminals (PHONO)
- MM cartridges are supported.

18 Analogue audio input terminals (LINE2 IN/MAIN IN)
- These input terminals are combined with LINE2 and MAIN IN. Switch the function according to the connected equipment.

19 Analogue audio input terminals (LINE1 IN)

20 Analogue audio output terminals (LINE OUT)

21 Analogue audio output terminals (PRE OUT)

22 Product identification marking
- The model number is indicated.

23 AC IN terminal (~)

6 Service Mode

6.1. Doctor Mode

• Normal Operation

Step 1 Disconnect AC.

Step 2 Power switch (Main Unit) in OFF condition.

Step 3 Connect AC.

Step 4 Press and hold the [AMP] button on remote control.

Step 5 Power on the Main Unit while holding the [AMP] button on remote control.

Step 6 Adjust the volume knob from around center to minimum while holding the [AMP] on remote control.

The indication of Doctor Mode is:

- OLED shows the icon of “Doctor Mode” with flashing (1Hz) continously.

6.1.1. Doctor Mode Table 1

Item		OLED Display	Key Operation
Mode Name	Description		
Model Name and Region Check	To check model name and region	 Select Knob on main unit to normal display (maintain Doctor Mode)	Step 1 Enter into Doctor Mode. Step 2 Press one time [AMP] button on remote control. To exit, power off on remote control.
Main Version Check	To check main firmware version	 “001” / “0001” means each version number. Select Knob on main unit to normal display (maintain Doctor Mode)	Step 1 Enter into Doctor Mode. Step 2 Press two time [AMP] button on remote control. To exit, power off on remote control.
Display Check	To check the display version	 “001” / “0001” means each version number. Select Knob on main unit to normal display (maintain Doctor Mode)	Step 1 Enter into Doctor Mode. Step 2 Press three time [AMP] button on remote control. To exit, power off on remote control.
USB DAC Check	To check USB DAC firmware version	 “001” / “0001” means each version number. Select Knob on main unit to normal display (maintain Doctor Mode)	Step 1 Enter into Doctor Mode. Step 2 Press four time [AMP] button on remote control. To exit, power off on remote control.
Font Check	To check font verify confirmation	 (Check sum [lower 7 characters of 4 Byte]) for the font area in EEPROM). - The check sum will be included in every official F/W release. - It will take several seconds before display of the check sum result Select Knob on main unit to normal display (maintain Doctor Mode)	Step 1 Enter into Doctor Mode. Step 2 Press five time [AMP] button on remote control. To exit, power off on remote control.

6.1.2. Doctor Mode Table 2

<table>
<tr><th colspan="2">Item</th><th rowspan="2">OLED Display</th><th rowspan="2">Key Operation</th></tr>
<tr><th>Mode Name</th><th>Description</th></tr>
<tr><td>Main Set Key Check</td><td>To check main set key button and switch</td><td>After finish the confirmation of firmware version of FONT, next [AMP] key starts the all main set key check

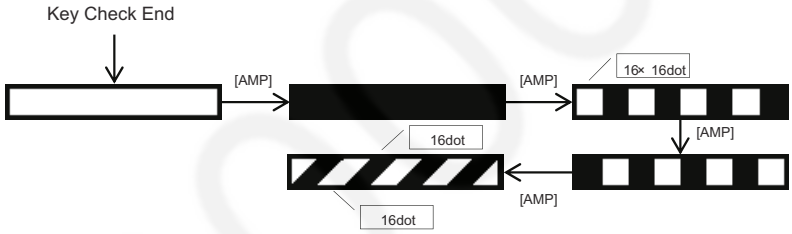
(6th [AMP] press) Main set key check

P V+ VC V- S+ S-

<table><tr><th>Key</th><th>OLED</th></tr><tr><td>Power Switch press</td><td>P</td></tr><tr><td>Volume knob around maximum (Vol:100)</td><td>V+</td></tr><tr><td>Volume knob around medium (Vol:45-55)</td><td>VC</td></tr><tr><td>Volume knob around minimum (Vol:0)</td><td>V-</td></tr><tr><td>Detect the clockwise of selector knob</td><td>S+</td></tr><tr><td>Detect the counterclockwise of selector knob</td><td>S-</td></tr></table>Press [AMP] key to skip key check. Go to the next LED and OLED confirmation.</td><td>Step 1 Enter into Doctor Mode.
Step 2 Press six time [AMP] button on remote control.

To exit, power off on remote control.</td></tr>
<tr><td>All LED and OLED Confirmation</td><td>To confirm LED and OLED</td><td>After success the key check, key starts the all LAPC LED and OLED confirmation

(7th [AMP] press) LED and OLED Confirmation

 
<table><tr><th>STEP</th><th>OLED</th><th>LAPC LED</th></tr><tr><td>Key Check End
or
if skip Key Check by press 7th [AMP] Key</td><td>ALL ON</td><td rowspan="5">ON</td></tr><tr><td>Next [AMP]</td><td>ALL OFF</td></tr><tr><td>Next [AMP]</td><td>Grid Pattern</td></tr><tr><td>Next [AMP]</td><td>Grid Pattern (Reversed)</td></tr><tr><td>Next [AMP]</td><td>diagonal</td></tr></table>Select Knob on main unit to normal display (maintain Doctor Mode)</td><td>Step 1 Enter into Doctor Mode.
Step 2 Press seven time [AMP] button on remote control.

To exit, power off on remote control.</td></tr>
<tr><td>Dimmer Check</td><td>To change the level of brightness</td><td>You can change the level of brightness by pressing the [DIMMER] on remote. This spec is same as normal mode.

Standard -> Dimmer level 1 -> Dimmer level 2 -> Display Off -> Standard
Standard: OLED brightness is Standard
Dimmer level 1: OLED brightness is Level 1
Dimmer level 2: OLED brightness is Level 2
Display Off: OLED is Off

<table><tr><th>Part of DIMMER</th><th>Standard</th><th>Level1</th><th>Level2</th><th>Off</th></tr><tr><td>OLED</td><td>Standard</td><td>Dimmer Level1</td><td>Dimmer Level2</td><td>Display Off</td></tr><tr><td>Backlight to Peak Power Meter</td><td>Standard</td><td>Dimmer Level1</td><td>Dimmer Level2</td><td>Off</td></tr><tr><td>Power LED</td><td>Standard</td><td>Dimmer</td><td>Off ※</td><td>Off ※</td></tr><tr><td>LACP LED</td><td>Standard</td><td>Dimmer</td><td>Off ※</td><td>Off ※</td></tr></table>* Please be careful because these results by DIMMER operation in Doctor Mode are not same as that of normal DIMMER operation.</td><td>Step 1 Enter into Doctor Mode.
Step 2 Press [DIMMER] button on remote control.

To exit, power off on remote control.</td></tr>
</table>

6.1.3. Doctor Mode Table 3

Item		OLED Display	Key Operation
Mode Name	Description		
Volume Maximum, Volume Minimum	To setup the volume	[INPUT+] key, it setup the Volume Maximum. [INPUT-] key, it setup the Volume Medium. During this test, it does not work the volume knob on main unit.   Select Knob on main unit to normal display (maintain Doctor Mode)	Step 1 Enter into Doctor Mode. Step 2 Press [INPUT+] button or [INPUT-] button on remote control. To exit, power off on remote control.
System Combination Check	To check the system combination	Before start this test, please connect the SU-G700 to ST-C700D/ST-C700 with Control cable. When press [NWP] key on remote control, it starts communicate with SU-G700 and ST-C700D/ST-C700 for System Combination function.  NWP Tx： Send the command to NWP NWP Rx： Receive the respond from NWP -- : Checking Rx : Success Blank: Fail Select Knob on main unit to normal display (maintain Doctor Mode)	Step 1 Enter into Doctor Mode. Step 2 Press [NWP] button on remote control. To exit, power off on remote control.
Shipment Mode	To initialize all of the information	- Switch off main unit during Doctor Mode => exit Doctor Mode and it initialize as shipment. (recommend) - Power off by remote control during Doctor Mode => exit Doctor Mode and it initialize as shipment - AC Off => exit Doctor Mode and all memory in EEPROM should be initialized (include Error code history and Accumulation time)	Step 1 Enter into Doctor Mode. To exit, power off on main unit.

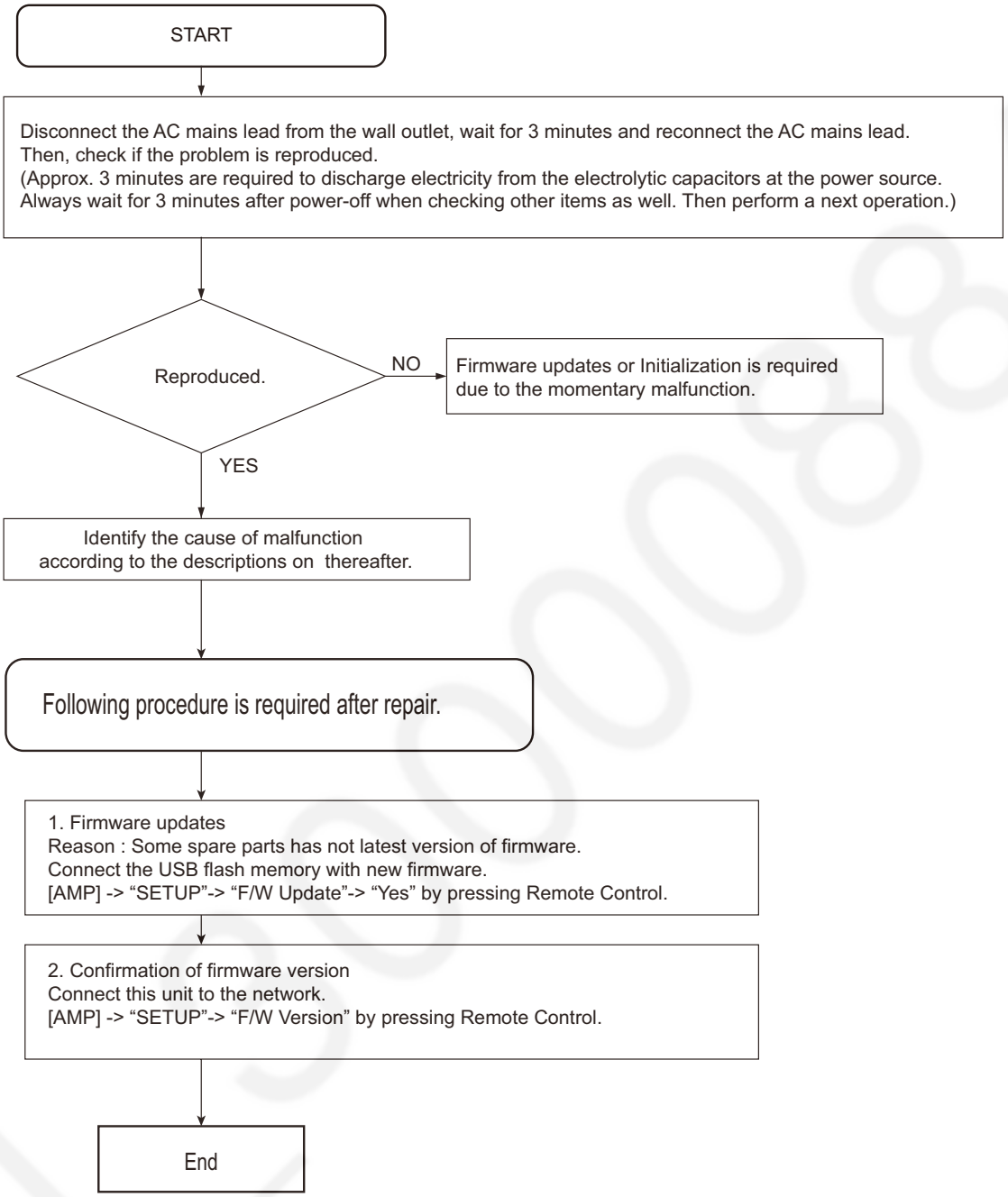
6.2. Error Code Table

- When any abnormal state occurs, there are some error indication with LED displayed.
- This feature implemented in the model in order to help in indentifying and troubleshooting abnormal conditions.

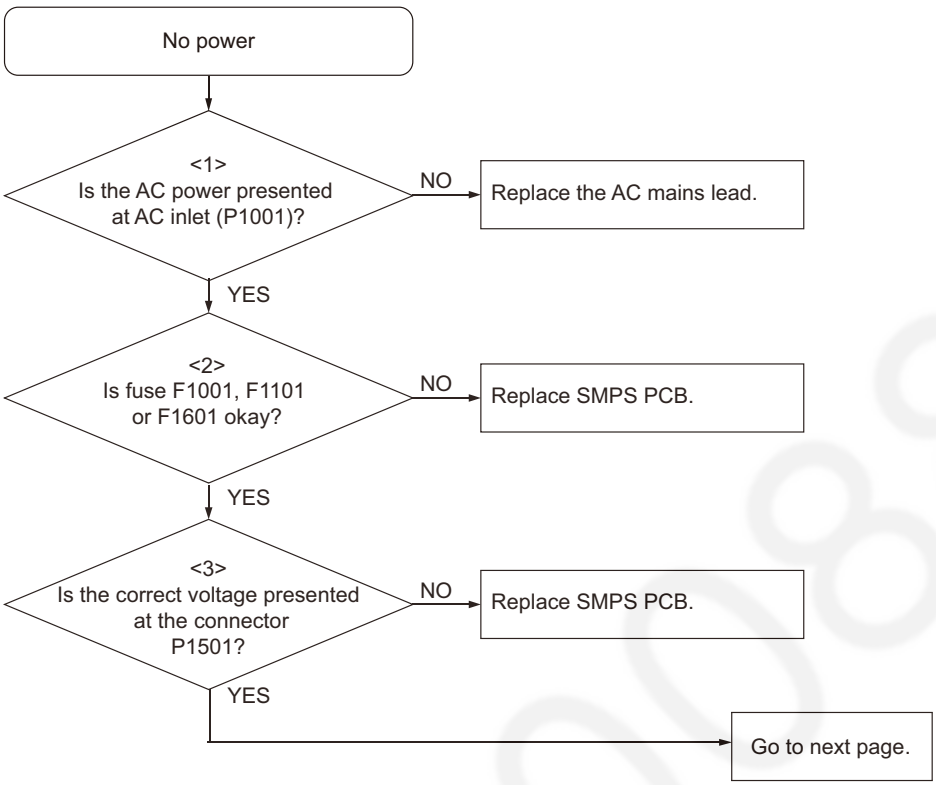
Item		OLED Display	Key Operation
Mode Name	Description		
Error Code F76	Current Abnormality	 Output in Log: F76	To exit, power off on remote control.
Error Code F61	1) Short Speaker 2) AMP Error	 Output in Log: F61	To exit, power off on remote control.
Error Code F70	DSP Error	 Output in Log: F70(DSP)	
	DAP Error	 Output in Log: F70(DAP)	
	USB Error	 Output in Log: F70(USB-DAC)	
	EEPROM Error	 Output in Log: F70(EEPROM) *F70(EEPROM) only show during Doctor Mode.	To exit, power off on remote control.
Error Code F78	VirtualBatt Error	 Output in Log: F78(VirtualBatt)	To exit, power off on remote control.

7 Troubleshooting Guide

7.1. Check the problem is reproduced



7.2. No power



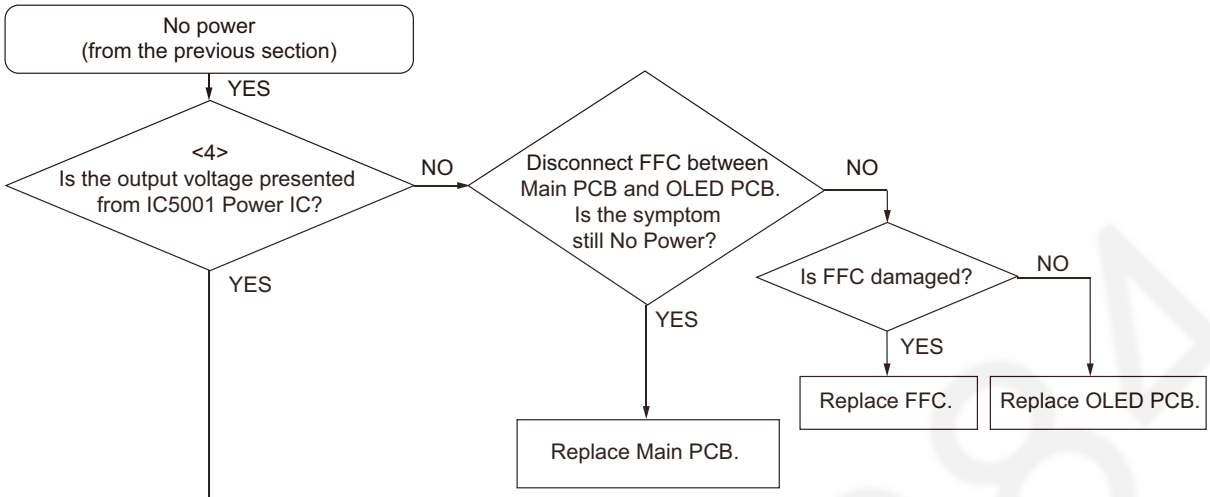
SMPS PCB

<3> Connector P1501 (to AMP PCB)

1	SMPS_REGION
2	GND
3	GND
4	PW_14R0V
5	PW_14R0V
6	AC_SYNC
7	TH-DET
8	BURST_SW
9	P_CONT
10	PGNG
11	PGNG
12	PGNG
13	PGNG
14	PGNG
15	PGNG
16	PGNG
17	PW_42R0V
18	PW_42R0V
19	PW_42R0V
20	PW_42R0V
21	PW_42R0V
22	PW_42R0V
23	PW_48R0V

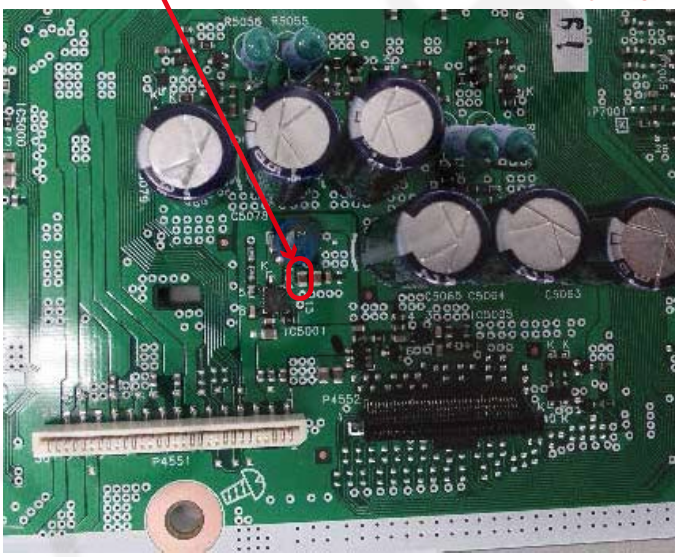
1) Power OFF/Burst mode
Pin 23 : PW_48R0V = 0V
Pin 17 - 22 : PW_42R0V = 30 to 40V
Pin 8 : Burst_SW = +3.3V
Pin 4 - 5 : PW_14R0V = 10 to 12V

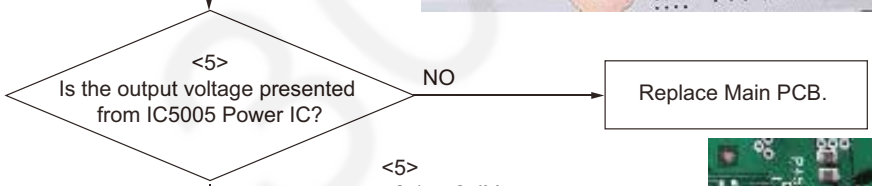
2) Power ON
Pin 23 : PW_48R0V = 48 to 52V
Pin 17 - 22 : PW_42R0V = 42 to 47V
Pin 8 : Burst_SW = 0V
Pin 4 - 5 : PW_14R0V = 14 to 15V



<4>
+4.8 to 5.2V : between both side of C5026

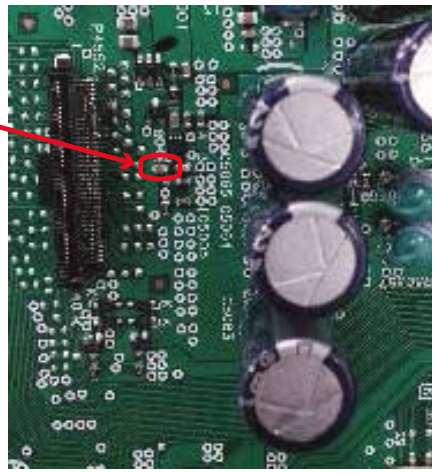
Main PCB



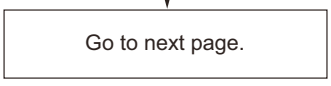


<5>
+3.1 to 3.4V :
between both side of C5056

Main PCB



IC5005 operates when connecting
AC mains lead to the wall outlet.
+3.3 V is output in both power on
and off condition.
If no +3.3V is output, main
microcomputer won't function.



Main microcomputer controls all function of this unit and it operates both power switch ON and OFF condition.
4 MHz clock will stop for energy save after some minutes passes in stand-by mode,
but 32kHz clock operates continuously.
4 MHz clock will operate again after turn on the unit.

No power
(from the previous section)

YES

<5>
Is the clock for main microcomputer (IC3001) oscillated?

NO → Replace Main PCB.

YES

Is the voltage changed at SWITCH (Between pin 1 and 2 of P8003 on OLED PCB) when pressing Power button?
Not pressing : +2.7V and over
Pressing : 0V

NO → Not 0V when Pressing → Replace Main SW PCB.

Not +2.7V and over when not pressing

YES

Confirm connection between Pin 2 of P8003 on OLED PCB and Pin 30 of P7005 on Main PCB.

NO → Is FFC damaged?

NO → Replace OLED PCB.

YES → Replace FFC.

YES

Confirm connection between Pin 2 of P8003 and Pin 1 of P8001 on OLED PCB.

NO → Not short (over 100 kohm) → Replace Main PCB.

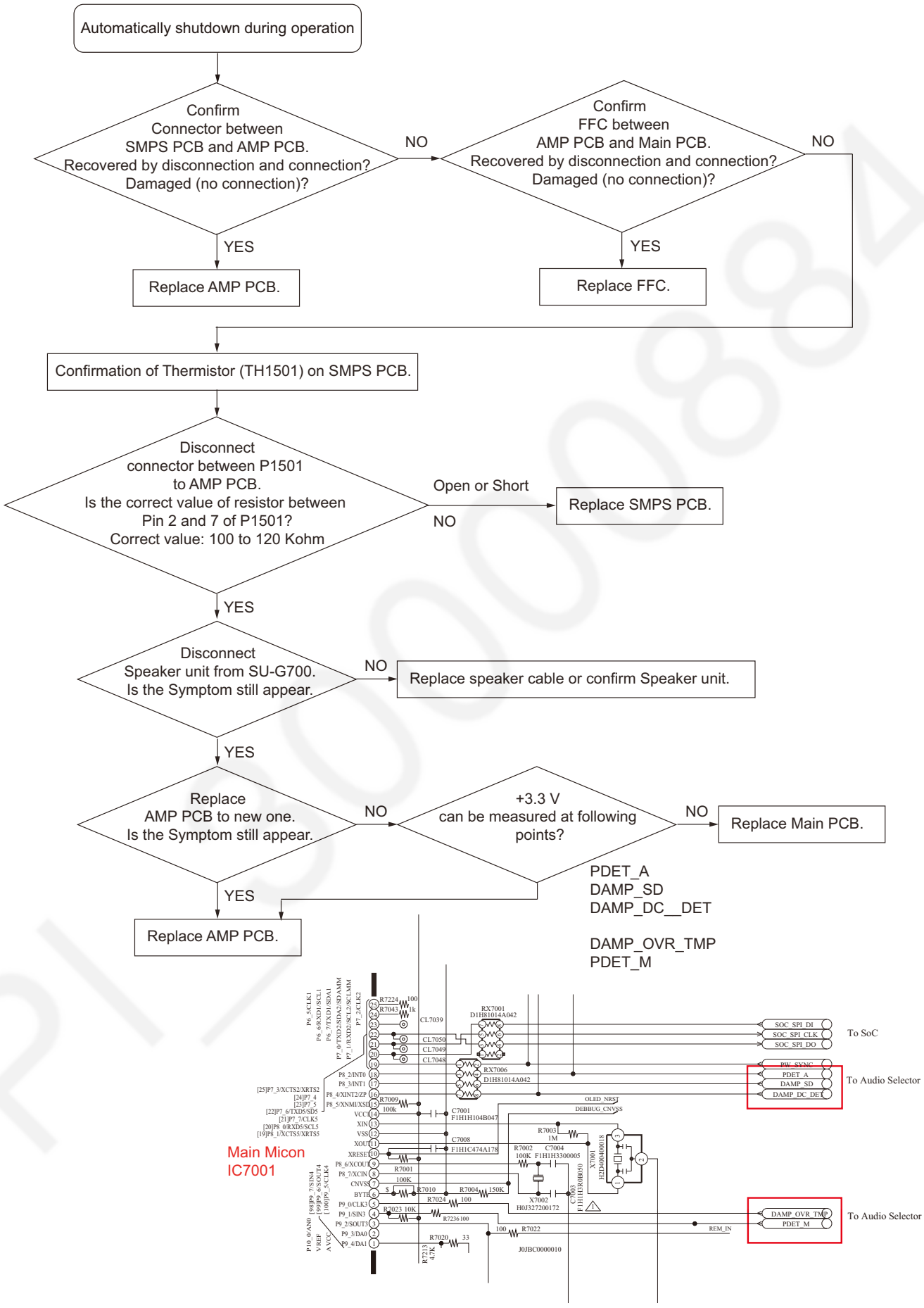
YES

Short (0 ohm) →

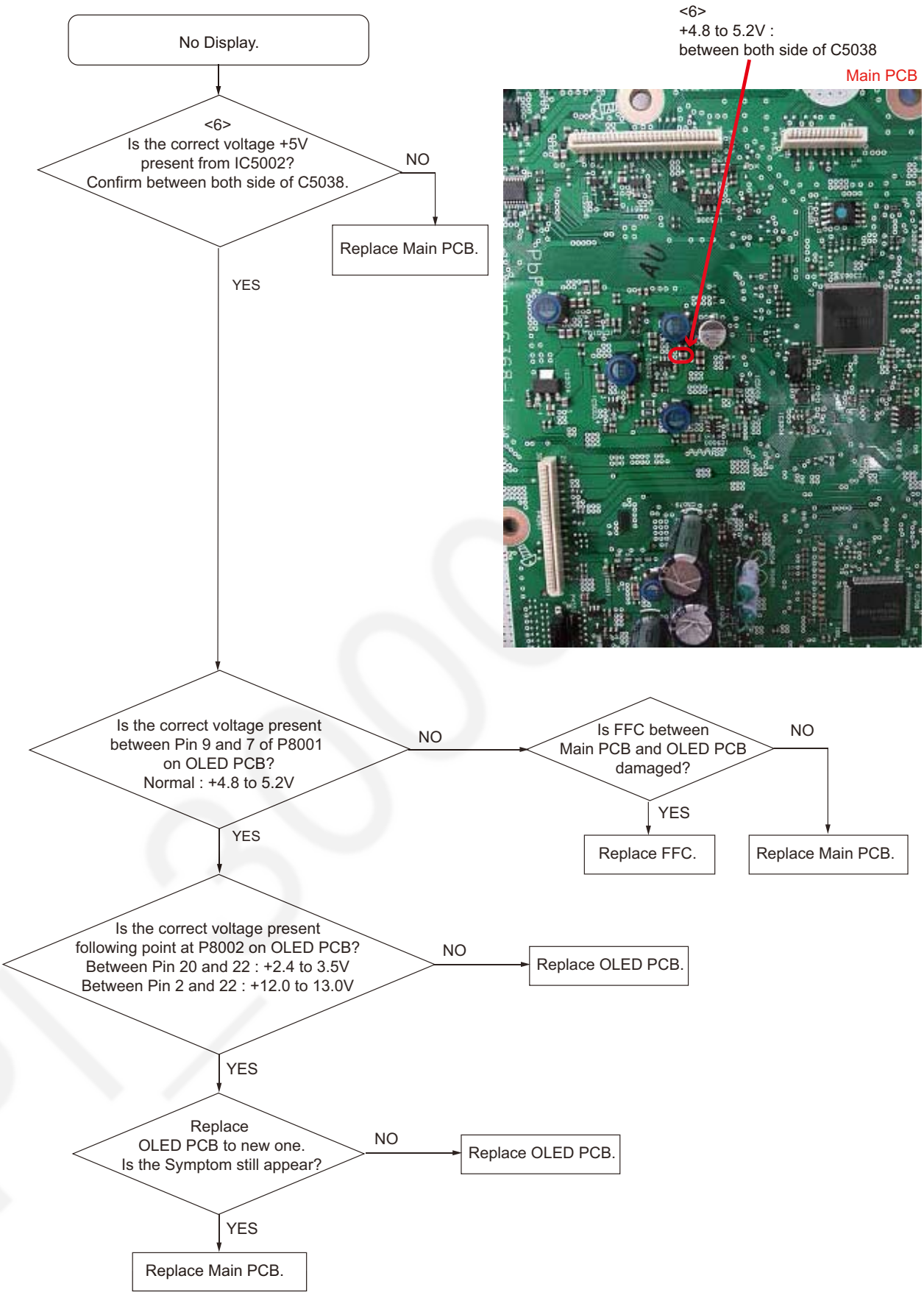
1) Disconnect FFC between Main PCB and OLED PCB, between OLED PCB and Main SW PCB.
2) If the connection of the followings, replace PCB.
Main PCB : Pin 24 and 30 of P7505
OLED PCB : Pin 1 and 2 of P8003
Main SW PCB : Pin 6 and 7 of P8401

Replace Main PCB.

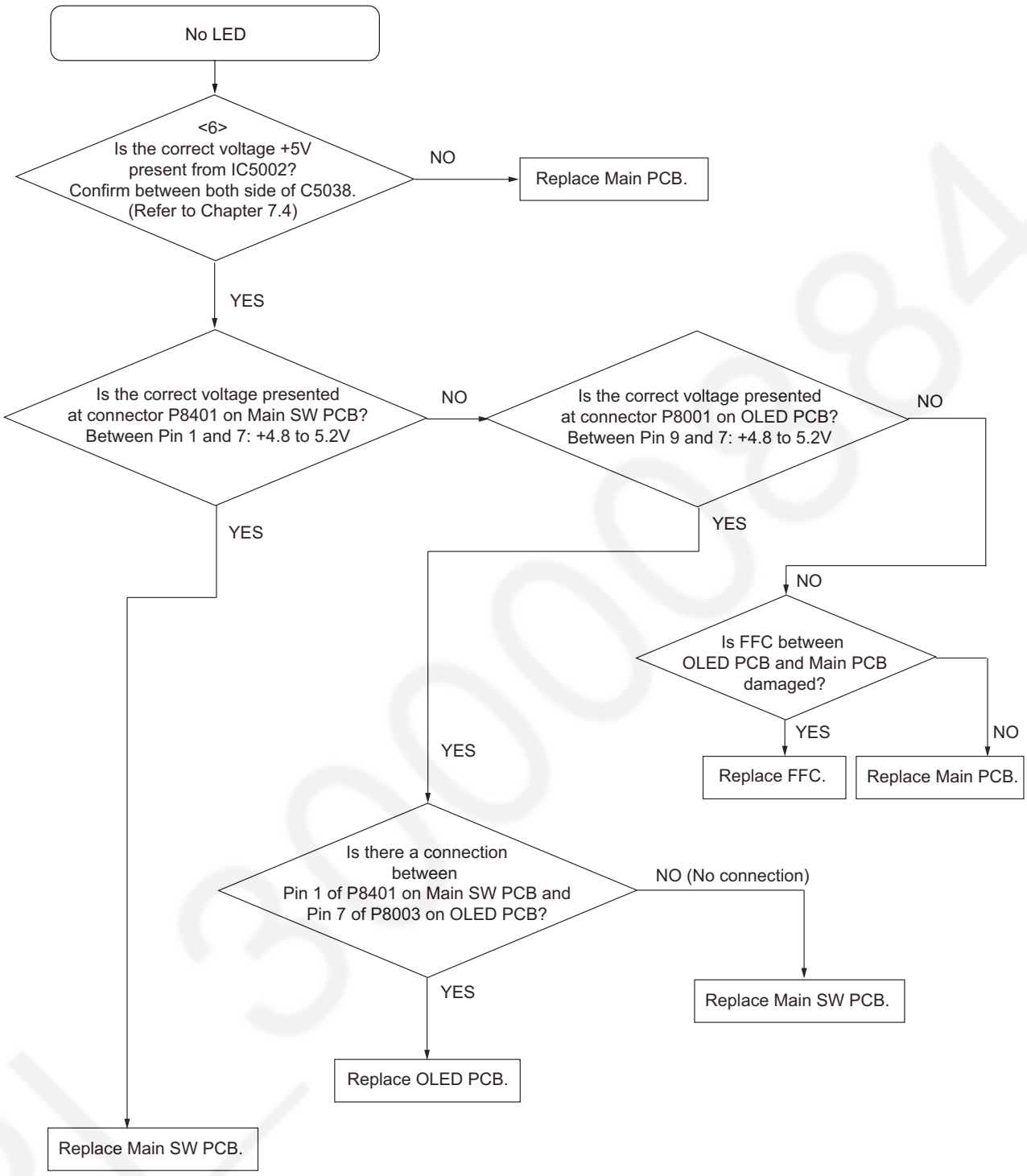
7.3. Automatically shutdown during operation



7.4. No Display



7.5. Power Indicator - Not Light



7.6. Meter Illumination - No Light

No Meter Illumination.

Is the correct voltage presented at connector P8901 on Meter Illumi LED R PCB? Between Pin 2 and 6: +11.8 to 12.2V

NO

YES

NO

<7>
Is the correct voltage +12V present from IC5004? Confirm between both side of C5021.

NO

Replace Main PCB.

YES

Is FFC between Main PCB and Meter PCB damaged?

YES

Replace FFC.

NO

Is cable between Meter PCB and Meter Illumi LED R PCB damaged?

YES

Replace cable.

NO

Replace Meter Illumi LED R PCB.

Is cable between Meter Illumi LED R PCB and Meter Illumi LED L PCB damaged?

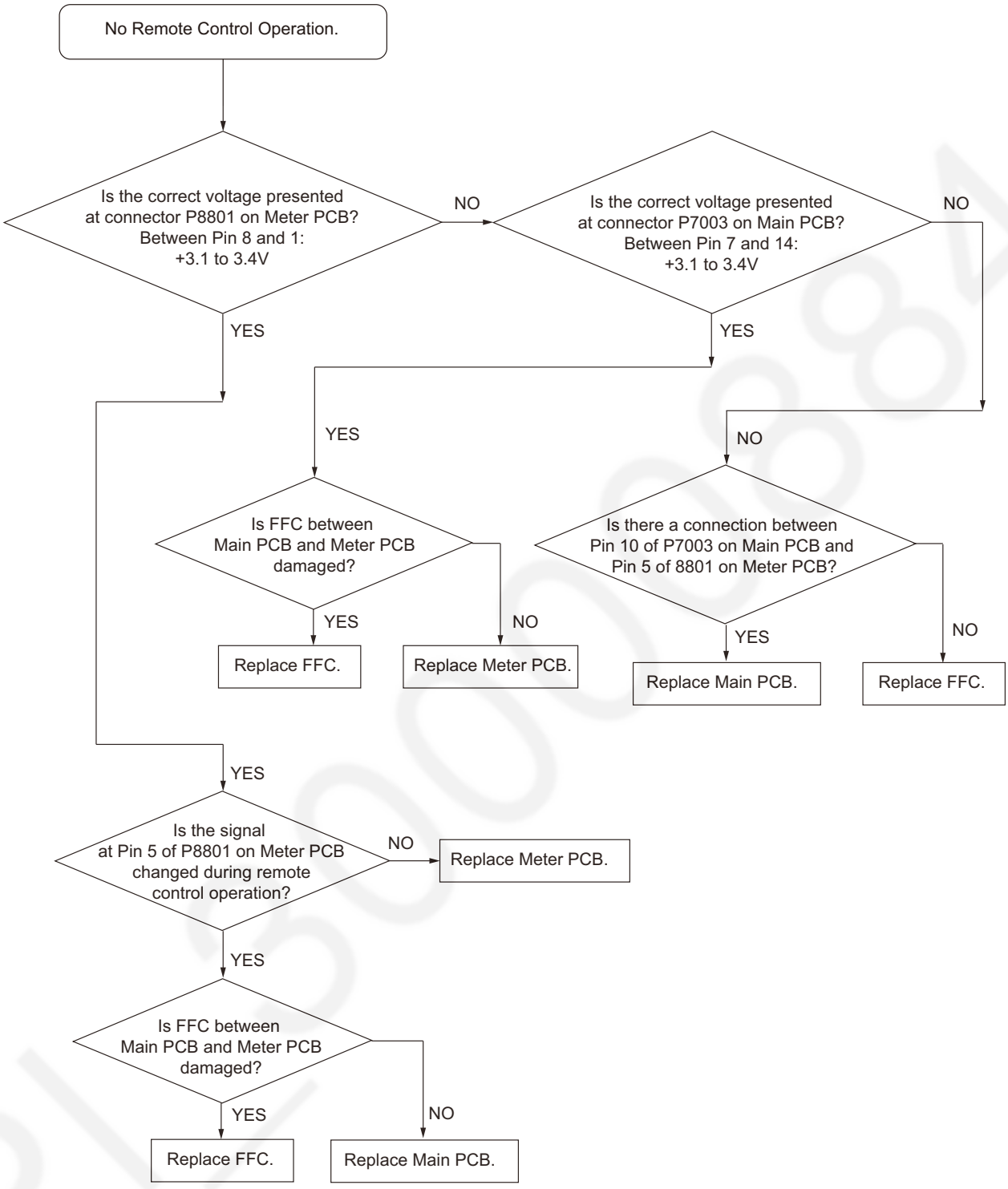
YES

Replace cable.

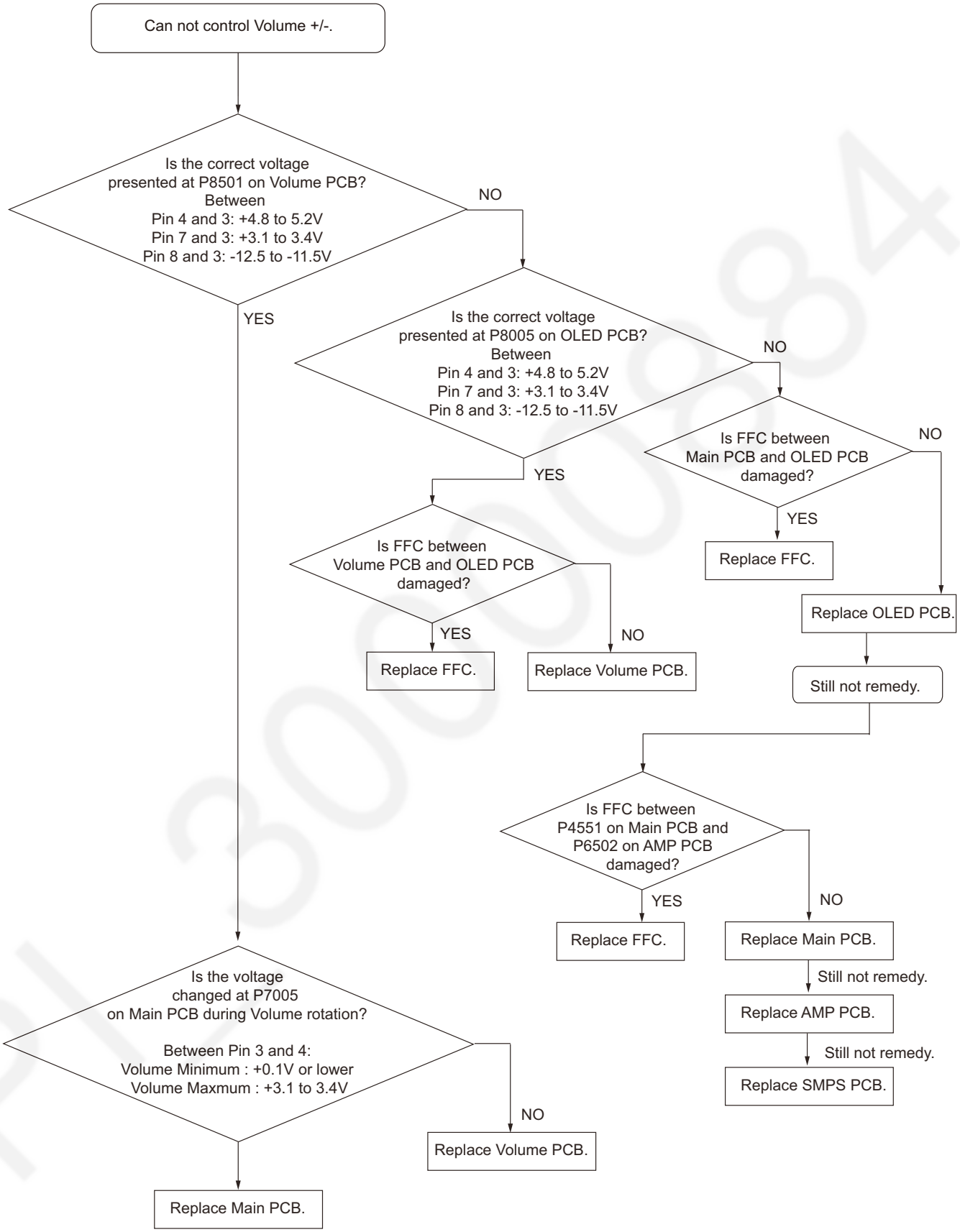
NO

Replace Meter Illumi LED L PCB.

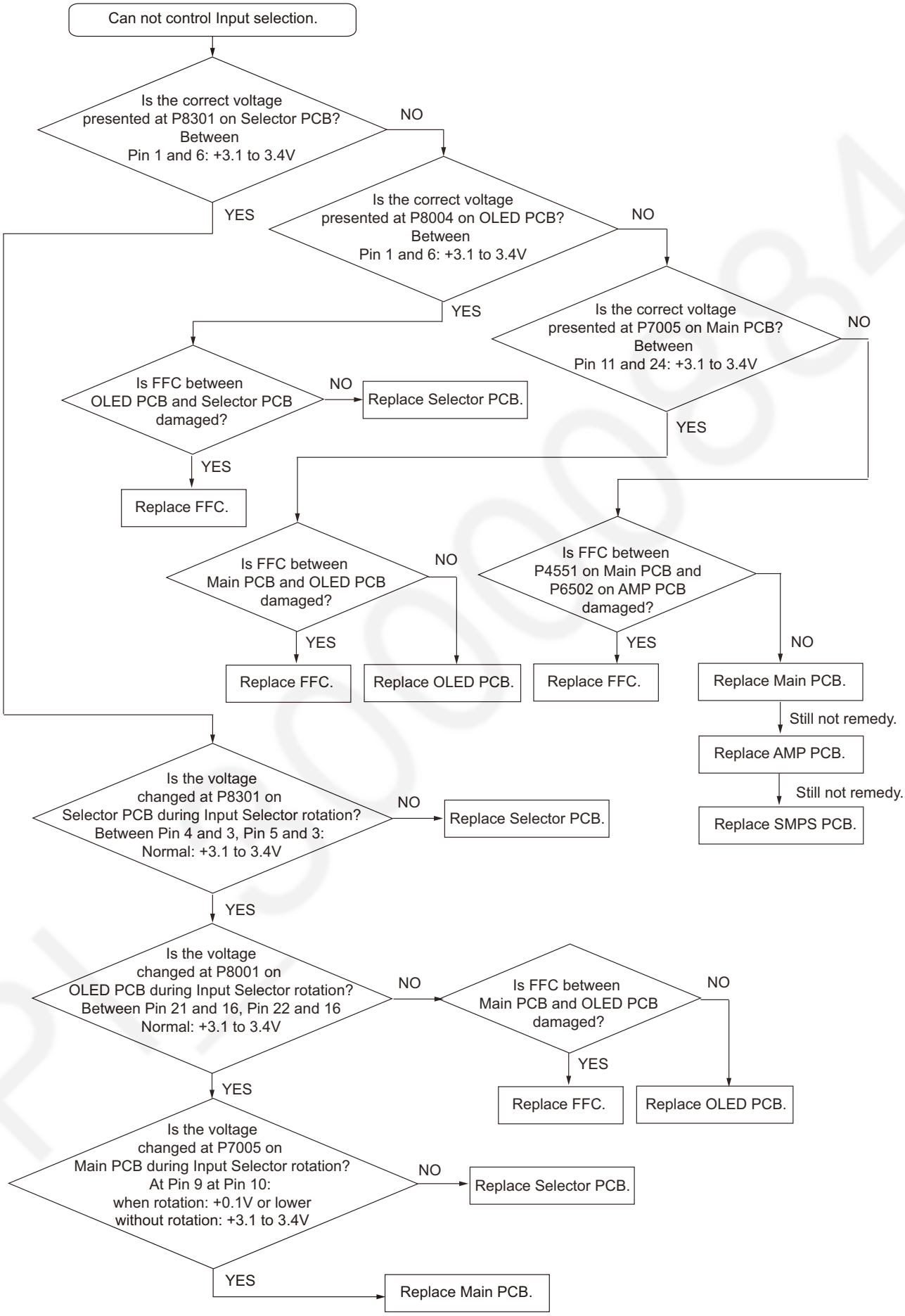
7.7. No Remote Control Operation



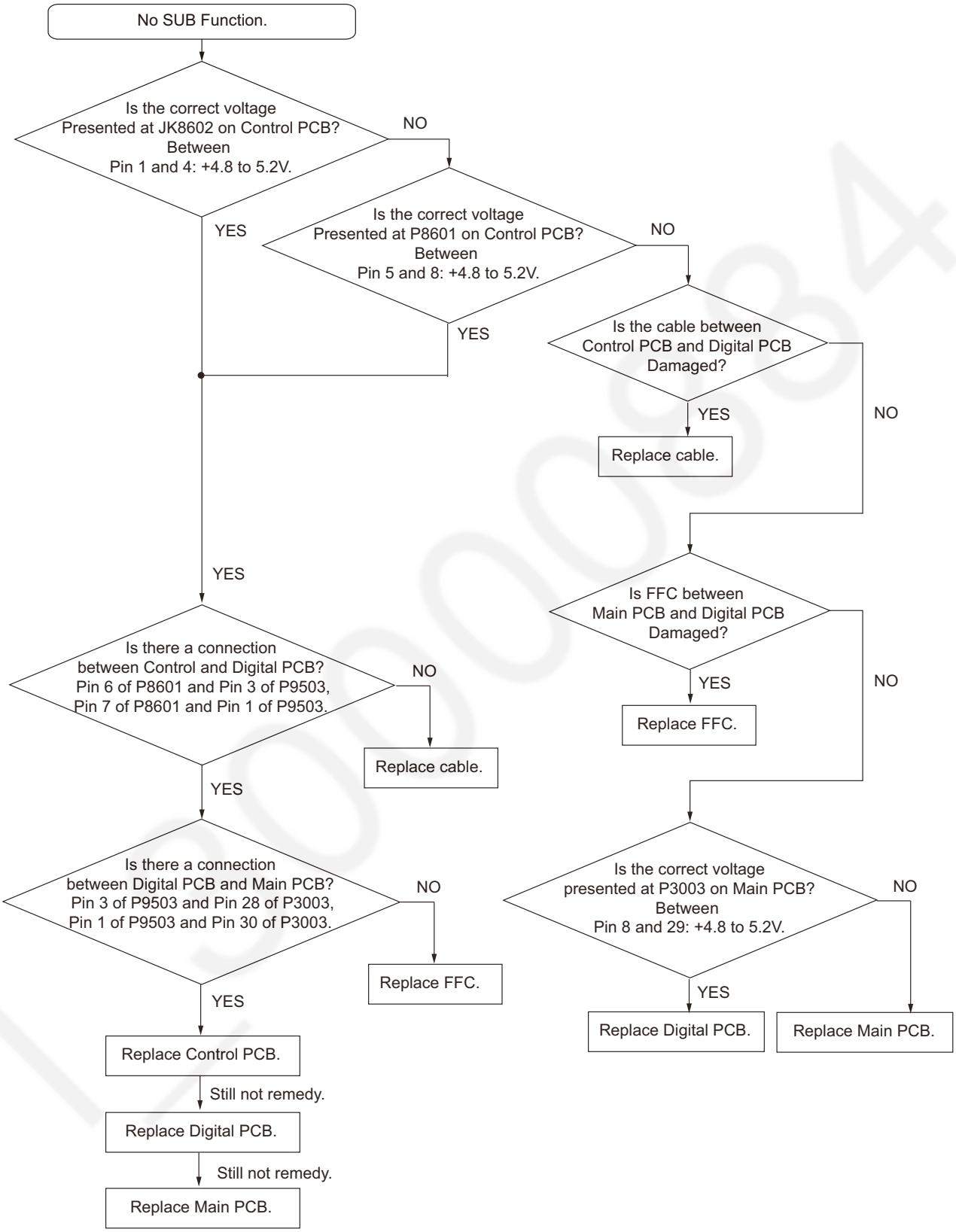
7.8. Can not control Volume +/-



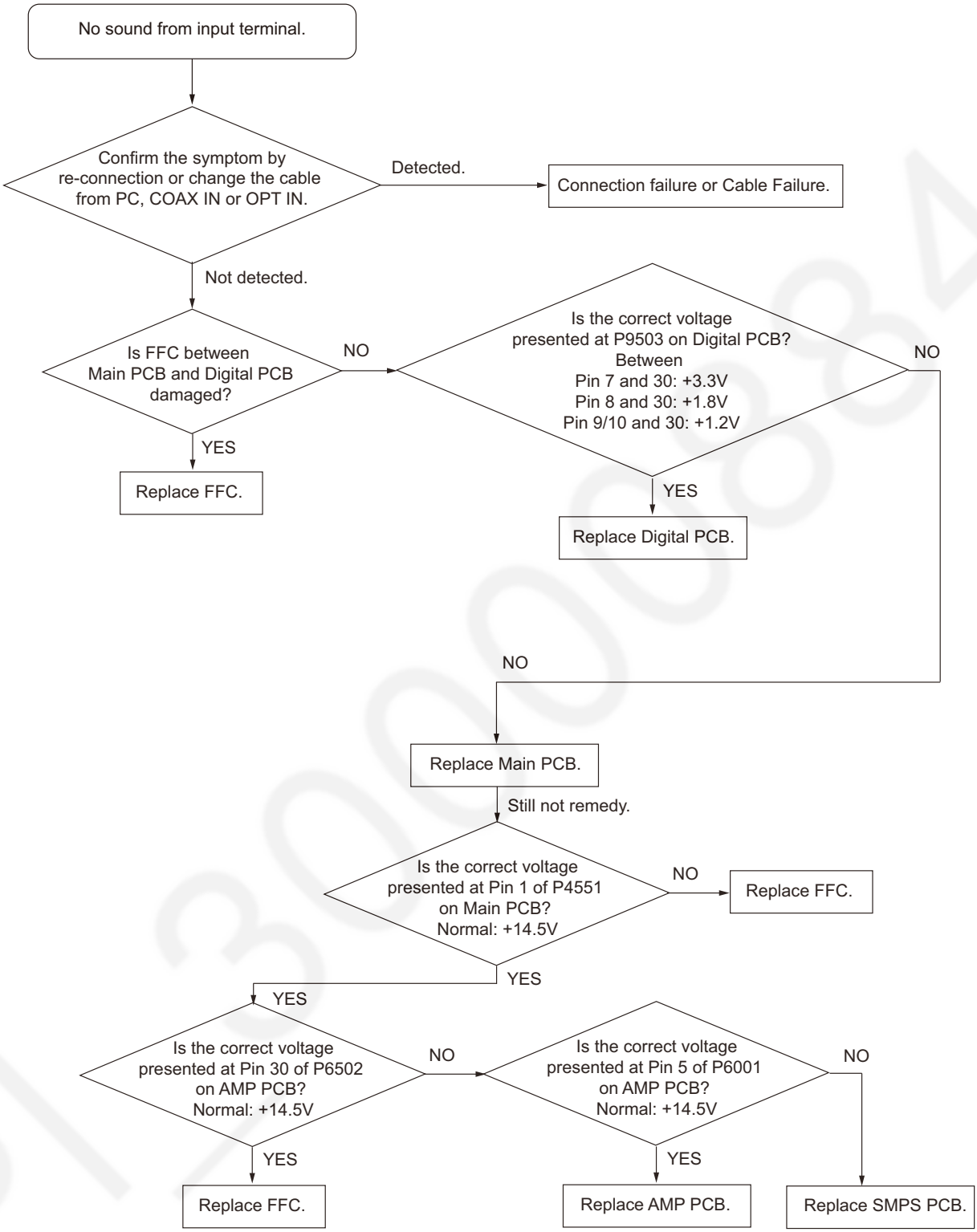
7.9. Can not control Input Selection



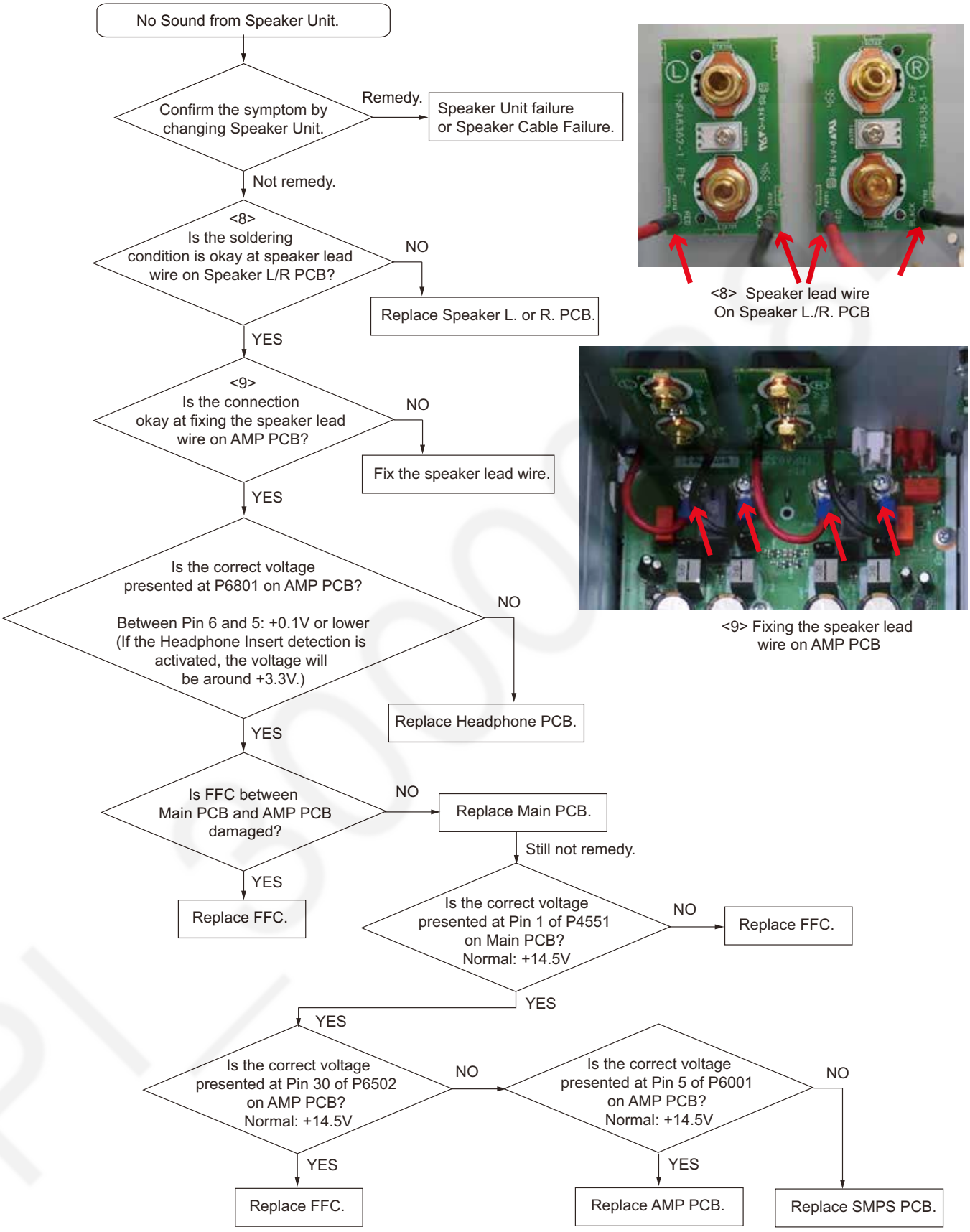
7.10. No SUB Function (Firmware UPDATE terminal)



7.11. No Sound input from PC (USB-B), COAX IN or OPT IN



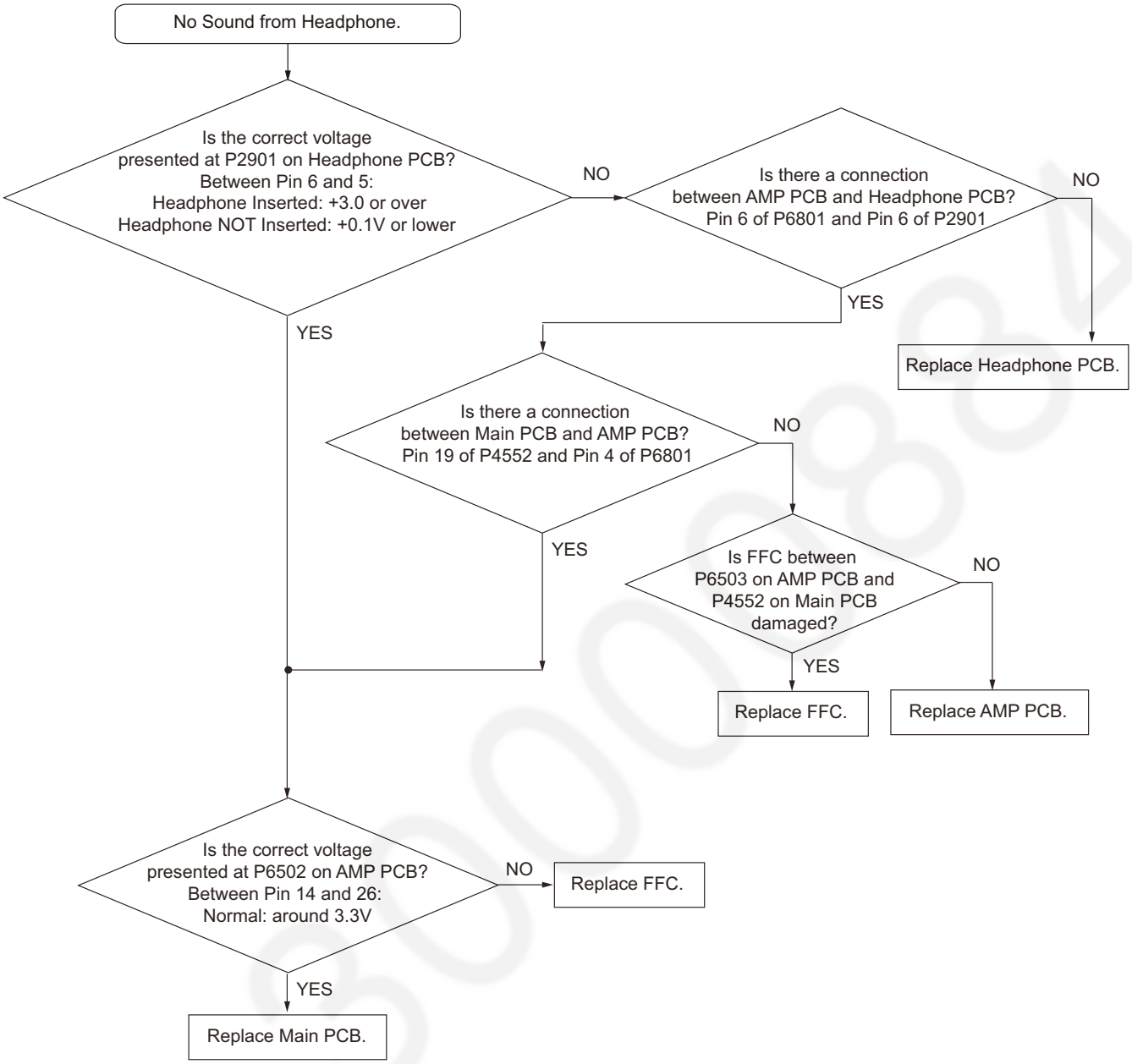
7.12. No Sound from Speaker Unit



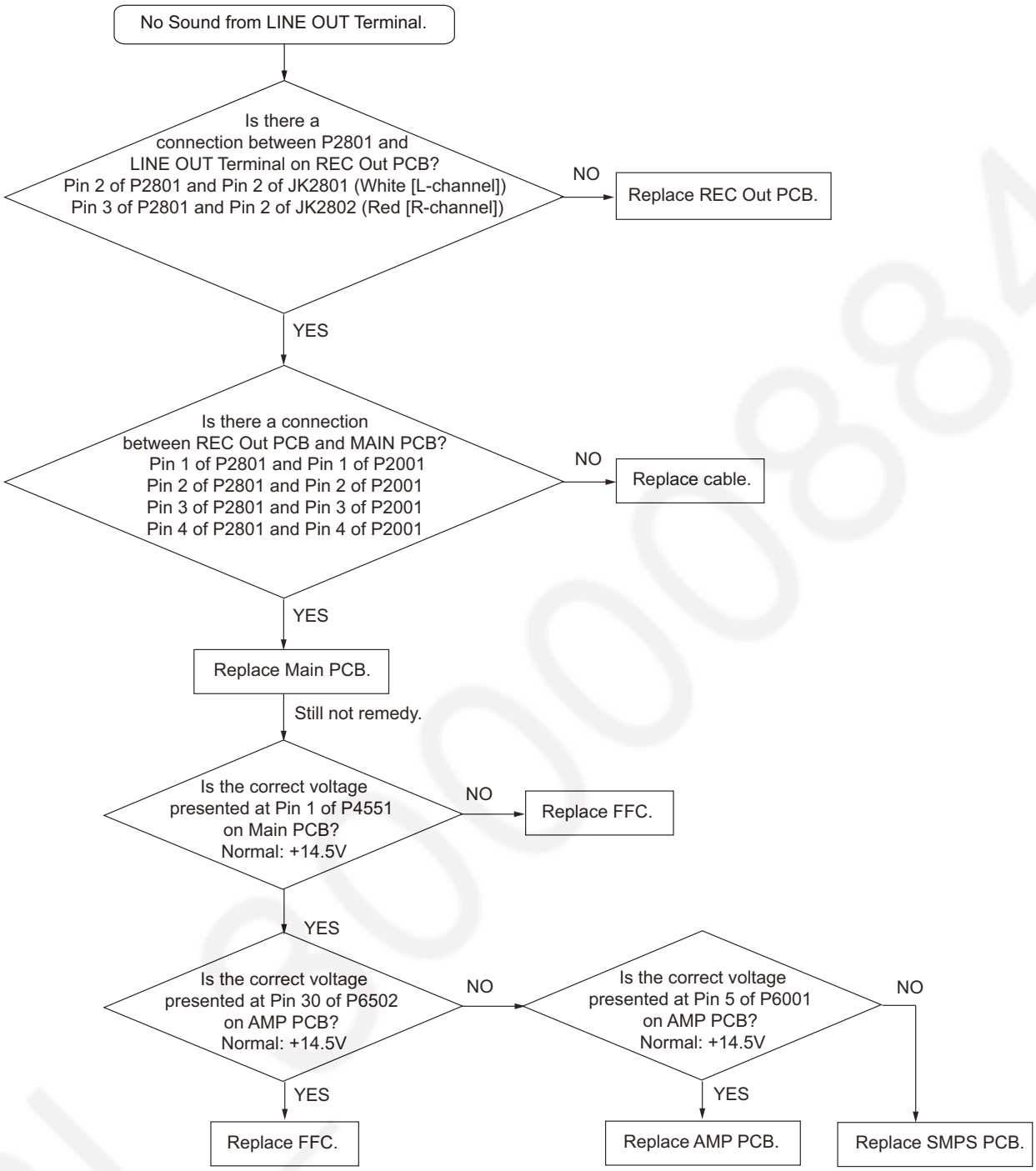
<8> Speaker lead wire On Speaker L./R. PCB

<9> Fixing the speaker lead wire on AMP PCB

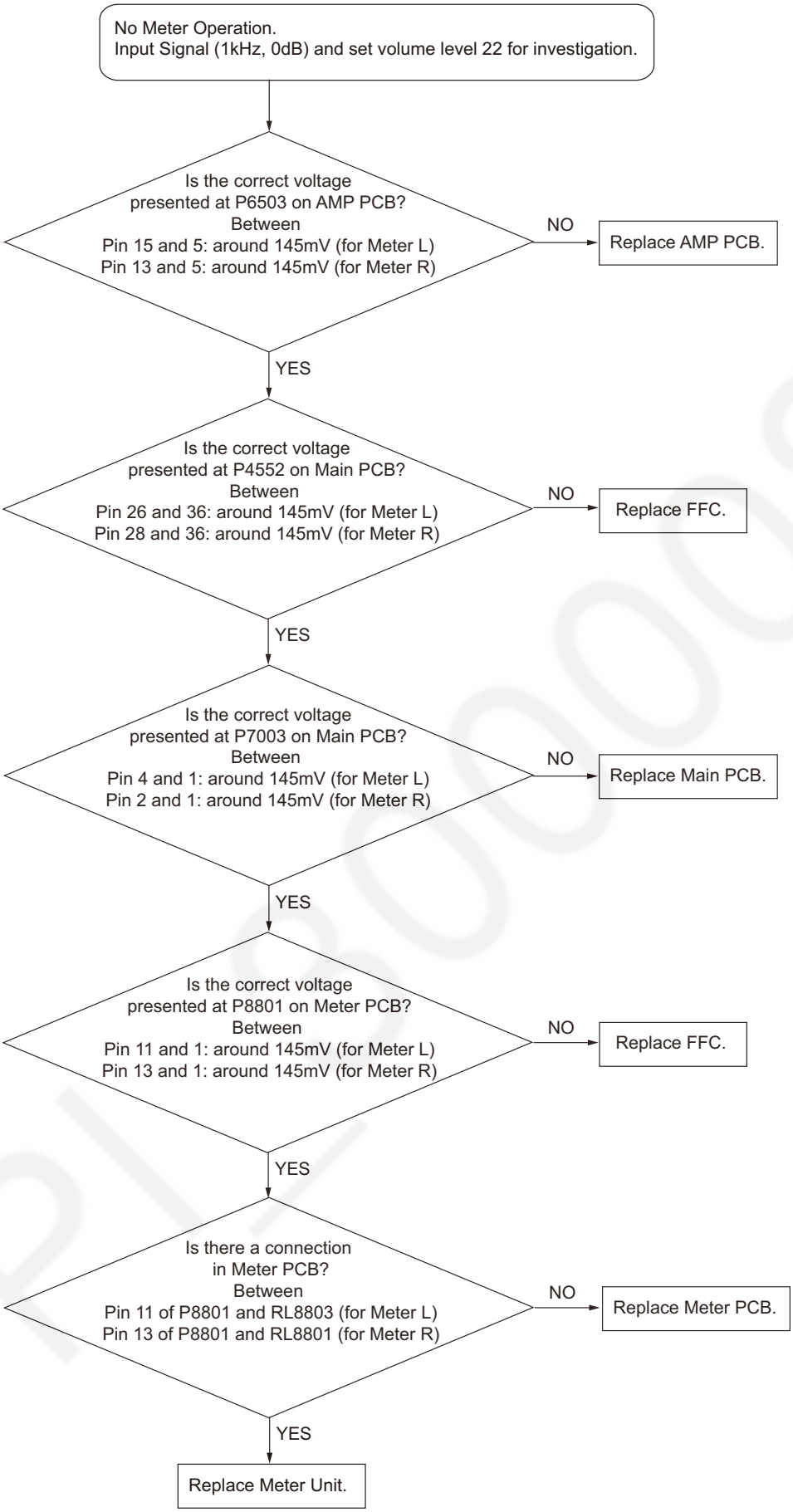
7.13. No Sound from Headphone



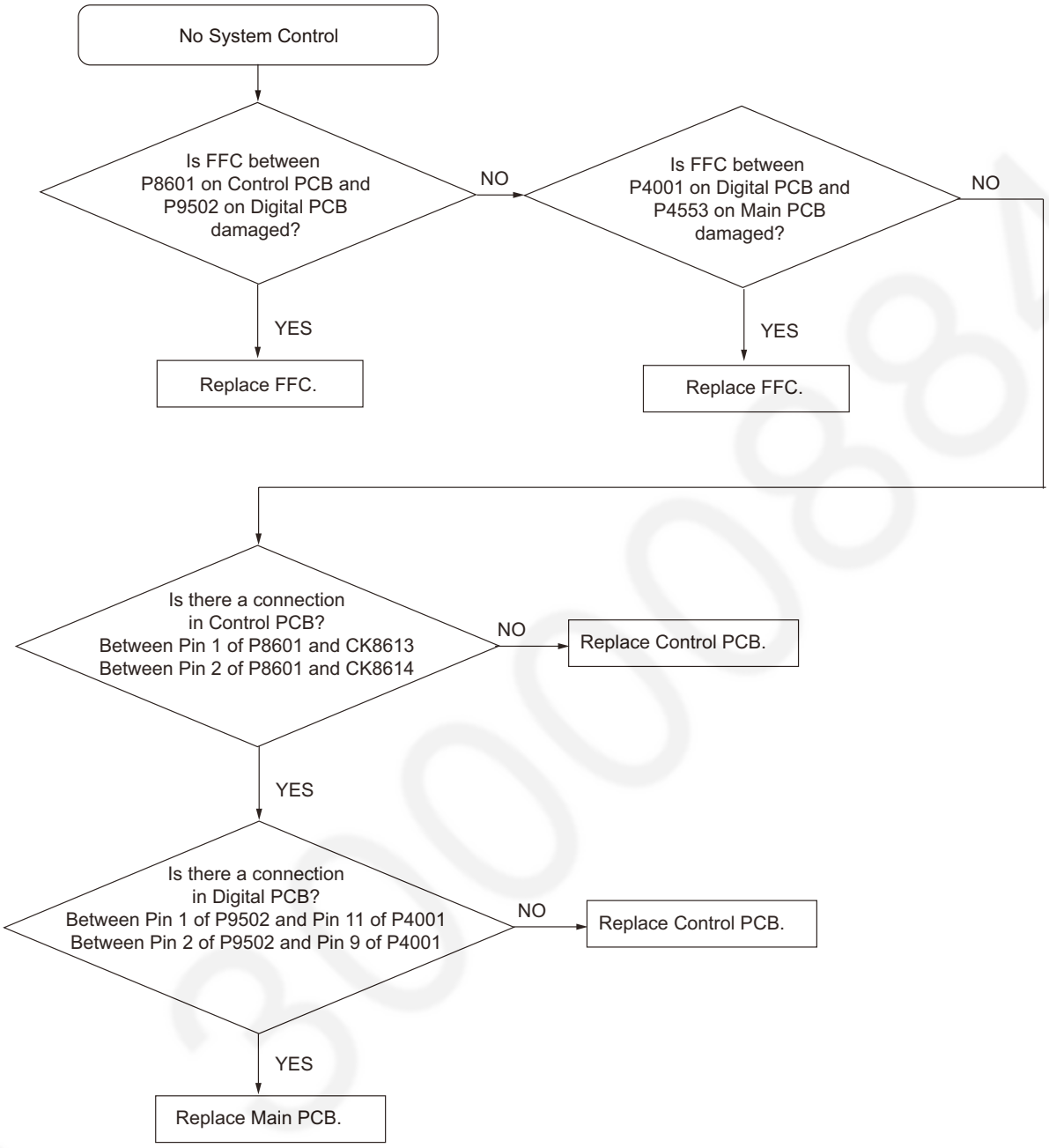
7.14. No Sound from LINE OUT Terminal



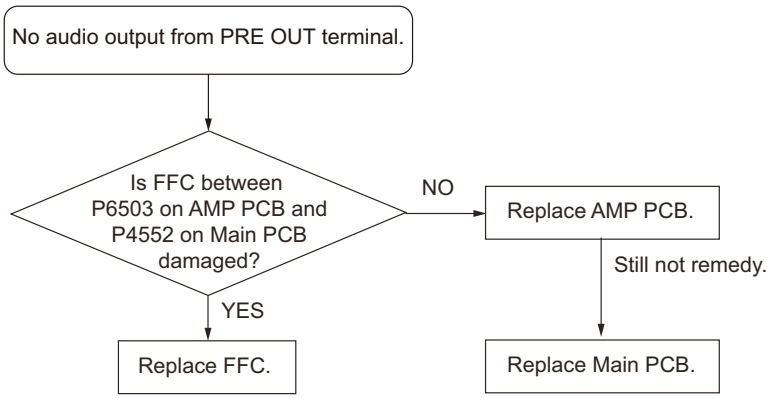
7.15. No Meter Operation



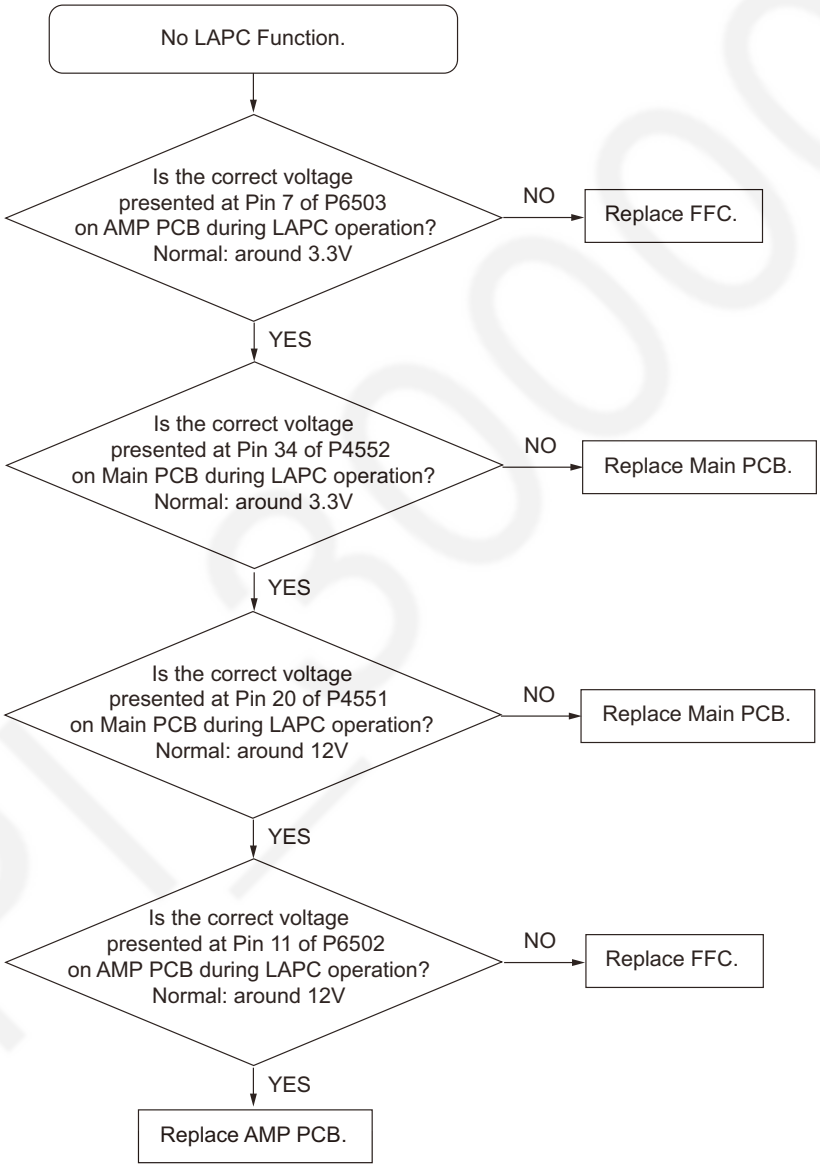
7.16. No System Control (Control Terminal)



7.17. No Audio Output from PRE OUT terminal



7.18. No LAPC Function



7.19. Pin function of each connectors

Main PCB P1501		AMP PCB P6001	
1	SMPS_REGION	1	SMPS_REGION
2	GND	2	GND
3	GND	3	GND
4	PW_14R0V	4	PW_14R0V
5	PW_14R0V	5	PW_14R0V
6	AC_SYNC	6	AC_SYNC
7	TH-DET	7	TH-DET
8	BURST_SW	8	BURST_SW
9	P_CONT	9	P_CONT
10	PGNG	10	PGNG
11	PGNG	11	PGNG
12	PGNG	12	PGNG
13	PGNG	13	PGNG
14	PGNG	14	PGNG
15	PGNG	15	PGNG
16	PGNG	16	PGNG
17	PW_42R0V	17	PW_42R0V
18	PW_42R0V	18	PW_42R0V
19	PW_42R0V	19	PW_42R0V
20	PW_42R0V	20	PW_42R0V
21	PW_42R0V	21	PW_42R0V
22	PW_42R0V	22	PW_42R0V
23	PW_48R0V	23	PW_48R0V

Main PCB P4551		AMP PCB P6502	
1	PW_XSW_13R0V	30	PW_XSW_13R0V
2	PW_XSW_13R0V	29	PW_XSW_13R0V
3	PW_XSW_13R0V	28	PW_XSW_13R0V
4	PW_XSW_13R0V	27	PW_XSW_13R0V
5	DGND	26	DGND
6	DGND	25	DGND
7	SMPS_REGION	24	SMPS_REGION
8	SMPS_BURST_SW	23	SMPS_BURST_SW
9	PCONT	22	PCONT
10	PW_TDET	21	PW_TDET
11	PW_SYNC	20	PW_SYNC
12	DGND	19	DGND
13	DGND	18	DGND
14	PW_SW_5R0V	17	PW_SW_5R0V
15	PW_SW_5R0V	16	PW_SW_5R0V
16	PW_SW_5R0V	15	PW_SW_5R0V
17	PW_SW_3R3V	14	PW_SW_3R3V
18	PW_SW_3R3V	13	PW_SW_3R3V
19	PW_SW_3R3V	12	PW_SW_3R3V
20	PW_relay_12R0V	11	PW_relay_12R0V
21	DGND	10	DGND
22	PW_BAT_5R0V	9	PW_BAT_5R0V
23	PW_BAT_5R0V	8	PW_BAT_5R0V
24	DGND	7	DGND
25	PW_12R0V	6	PW_12R0V
26	PW_12R0V	5	PW_12R0V
27	AGND	4	AGND
28	AGND	3	AGND
29	PW_M12R0V	2	PW_M12R0V
30	PW_M12R0V	1	PW_M12R0V

Main PCB P4552		AMP PCB P6503	
1	DGND	40	DGND
2	PON_GDV_H	39	PON_GDV_H
3	PON_PLL_H	38	PON_PLL_H
4	PDET_A	37	PDET_A
5	SP_ON_H	36	SP_ON_H
6	DGND	35	DGND
7	DAMP_XRST	34	DAMP_XRST
8	DAMP_MUTE	33	DAMP_MUTE
9	DGND	32	DGND
10	DAMP_SDA	31	DAMP_SDA
11	DAMP_SCL	30	DAMP_SCL
12	DGND	29	DGND
13	SDATA1	28	SDATA1
14	SDATA2	27	SDATA2
15	LRCK	26	LRCK
16	DGND	25	DGND
17	BCLK	24	BCLK
18	DGND	23	DGND
19	DAMP_HP_DET	22	DAMP_HP_DET
20	DAMP_HP_MUTE	21	DAMP_HP_MUTE
21	SW_MUTE	20	SW_MUTE
22	DGND	19	DGND
23	DAMP_SD	18	DAMP_SD
24	DAMP_OVR_TMP	17	DAMP_OVR_TMP
25	DGND	16	DGND
26	METER_L_OUT	15	METER_L_OUT
27	METER_L_N	14	METER_L_N
28	METER_R_OUT	13	METER_R_OUT
29	METER_R_N	12	METER_R_N
30	METER_MUTE_L	11	METER_MUTE_L
31	TH_DET_AMPREG	10	TH_DET_AMPREG
32	DAMP_DC_DET	9	DAMP_DC_DET
33	DGND	8	DGND
34	CAL_ON	7	CAL_ON
35	DGND	6	DGND
36	DGND	5	DGND
37	ANA_CAL_LH	4	ANA_CAL_LH
38	ANA_CAL_LN	3	ANA_CAL_LN
39	ANA_CAL_RH	2	ANA_CAL_RH
40	ANA_CAL_RN	1	ANA_CAL_RN

AMP PCB P6801		Headphone PCB P2901	
1	AGND_R	1	AGND_R
2	HP_R	2	HP_R
3	AGND_L	3	AGND_L
4	HP_L	4	HP_L
5	DGND	5	DGND
6	HP_DET	6	HP_DET
7	SW_12V for Relay	7	SW_12V for Relay

Main PCB P7005		OLED PCB P8001	
1	PW_M12R0V	30	PW_M12R0V
2	PW_SW_3R3V	29	PW_SW_3R3V
3	VOL_SIG	28	VOL_SIG
4	VOL_GND	27	VOL_GND
5	PW_SW_5R0V	26	PW_SW_5R0V
6	PDET_M	25	PDET_M
7	VOL_DOWN	24	VOL_DOWN
8	VOL_UP	23	VOL_UP
9	SEL_ENC2	22	SEL_ENC2
10	SEL_ENC1	21	SEL_ENC1
11	PW_SW_3R3V	20	PW_SW_3R3V
12	A0	19	A0
13	DISP_ON_H	18	DISP_ON_H
14	CS	17	CS
15	DGND	16	DGND
16	D1(SPI_WDATA)	15	D1(SPI_WDATA)
17	D0(SPI_CLK)	14	D0(SPI_CLK)
18	RST	13	RST
19	LCD_DIM	12	LCD_DIM
20	DGND	11	DGND
21	PW_SW_5R0V	10	PW_SW_5R0V
22	PW_SW_5R0V	9	PW_SW_5R0V
23	PW_SW_5R0V	8	PW_SW_5R0V
24	DGND	7	DGND
25	PW_XSW_5R0V	6	PW_XSW_5R0V
26	PW_XSW_3R3V	5	PW_XSW_3R3V
27	LED_DIM	4	LED_DIM
28	LED_BLUE	3	LED_BLUE
29	LED_RED	2	LED_RED
30	SWICH	1	SWICH

Digital PCB P4001		Main PCB P4553	
1	PW_DIR_3R3V	15	PW_DIR_3R3V
2	PW_DIR_3R3V	14	PW_DIR_3R3V
3	PW_DIR_3R3V	13	PW_DIR_3R3V
4	PW_SW_5R0V	12	PW_SW_5R0V
5	PW_SW_5R0V	11	PW_SW_5R0V
6	IEC_INT	10	IEC_INT
7	IEC_XPDN	9	IEC_XPDN
8	DGND	8	DGND
9	COM_RX	7	COM_RX
10	DGND	6	DGND
11	COM_TX	5	COM_TX
12	DGND	4	DGND
13	COM_DET	3	COM_DET
14	MCLK_EN	2	MCLK_EN
15	MCLK_SEL	1	MCLK_SEL

Main PCB P2001		REC Out PCB P2801	
1	DGND	1	DGND
2	REC_OUT_L	2	REC_OUT_L
3	REC_OUT_R	3	REC_OUT_R
4	AGND_IN	4	AGND

Main PCB P7003		Meter PCB P8801	
1	METER_R_N	14	METER_R_N
2	METER_R_OUT	13	METER_R_OUT
3	METER_L_N	12	METER_L_N
4	METER_L_OUT	11	METER_L_OUT
5	PW_SW_5R0V	10	PW_SW_5R0V
6	LED_LINER_P_2	9	LED_LINER_P_2
7	PW_XSW_3R3V	8	PW_XSW_3R3V
8	LED_LINER_P_1	7	LED_LINER_P_1
9	PW_RELAY_12R0V	6	PW_RELAY_12R0V
10	REM_IN	5	REM_IN
11	LED_METER_1	4	LED_METER_1
12	LED_METER_2	3	LED_METER_2
13	LED_METER_3	2	LED_METER_3
14	DGND	1	DGND

Main PCB P9502		Control PCB P8601	
1	COM_TX	1	COM_TX
2	COM_RX	2	COM_RX
3	COM_DET	3	COM_DET
4	GND	4	GND
5	GND	5	GND
6	+D	6	+D
7	-D	7	-D
8	PW_VBUS_5R0V	8	PW_VBUS_5R0V

OLED PCB P8005		Volume PCB P8501	
1	VOL_UP	1	VOL_UP
2	VOL_DOWN	2	VOL_DOWN
3	DGND	3	DGND
4	PW_SW_5R0V	4	PW_SW_5R0V
5	VOL_GND	5	VOL_GND
6	VOL_SIG	6	VOL_SIG
7	PW_SW_3R3V	7	PW_SW_3R3V
8	PW_M12R0V	8	PW_M12R0V

Digital PCB P9503		Main PCB P3003	
30	DGND	1	DGND
29	G_IEC_BCLK	2	G_IEC_BCLK
28	DGND	3	DGND
27	G_IEC_SDATA	4	G_IEC_SDATA
26	G_IEC_LRCK	5	G_IEC_LRCK
25	PW_CLK_3R3V	6	PW_CLK_3R3V
24	PW_CLK_3R3V	7	PW_CLK_3R3V
23	PW_VBUS_5R0V	8	PW_VBUS_5R0V
22	PW_VBUS_5R0V	9	PW_VBUS_5R0V
21	PW_SW_3R3V	10	PW_SW_3R3V
20	PW_SW_3R3V	11	PW_SW_3R3V
19	USBB_DSDPCM	12	USBB_DSDPCM
18	IEC_SEL	13	IEC_SEL
17	USB_INT	14	USB_INT
16	USB_CLKREQ	15	USB_CLKREQ
15	USBB_MREQ	16	USBB_MREQ
14	USBB_STATUS	17	USBB_STATUS
13	USBB_RST	18	USBB_RST
12	USBB_OVD	19	USBB_OVD
11	USBB_VBUS_ON	20	USBB_VBUS_ON
10	PW_USB_1R2V	21	PW_USB_1R2V
9	PW_USB_1R2V	22	PW_USB_1R2V
8	PW_USB_1R8V	23	PW_USB_1R8V
7	PW_USB_3R3V	24	PW_USB_3R3V
6	I2C_CH1_SDA	25	I2C_CH1_SDA
5	I2C_CH1_SCL	26	I2C_CH1_SCL
4	DGND	27	DGND
3	+D	28	+D
2	DGND	29	DGND
1	-D	30	-D

Meter PCB P8802		Meter Illumi LED R PCB P8901	
1	PW_relay_12R0V	1	PW_relay_12R0V
2	PW_relay_12R0V	2	PW_relay_12R0V
3	LED_METER_1	3	LED_METER_1
4	LED_METER_2	4	LED_METER_2
5	LED_METER_3	5	LED_METER_3
6	D_GND	6	D_GND

OLED PCB P8004		Selector PCB P8301	
1	DGND	6	DGND
2	SEL_ENC2	5	SEL_ENC2
3	SEL_ENC1	4	SEL_ENC1
4	DGND	3	DGND
5	DGND	2	DGND
6	PW_SW_3R3V	1	PW_SW_3R3V

Meter Illumi LED R PCB P8902		Meter Illumi LED L PCB P8961	
1	PW_GDV_12R0V	1	PW_GDV_12R0V
2	PW_GDV_12R0V	2	PW_GDV_12R0V
3	LED_K	3	LED_K
4	LED_K	4	LED_K

OLED PCB P8003		Main SW PCB P8401	
1	GND	7	GND
2	SWITCH	6	SWITCH
3	LED_RED	5	LED_RED
4	LED_BLUE	4	LED_BLUE
5	LED_DIM	3	LED_DIM
6	PW_XSW_3R3V	2	PW_XSW_3R3V
7	PW_XSW_5R0V	1	PW_XSW_5R0V

7.20. Function and Possible failure PCB or Module

This is a table for shown the possible failure PCB or Module for each function.

Item No.	Function	Possible failure PCB or Module
1	LINE IN 1/2, PHONO	Main
2	COAX1/2, OPT1/2	Main / Digital
3	PC (USB-B)	Main / Digital
4	LINE OUT	Main / REC Out
5	PRE OUT	Main / AMP
6	LAPC	Main / AMP
7	Display (OLED)	Main / OLED
8	VOL	Main / OLED / Volume
9	Selector	Main / OLED / Selector
10	Speaker Out	Main / AMP
11	HeadPhone Out	Main / AMP
12	IR	Main / Meter
13	Meter	Main / Meter
14	Meter Illumination	Main / Meter / Meter Illumi LED R , L
15	Controller	Main / Digital / Control
16	Firm up data	Main / Digital / Control

8 Disassembly and Assembly Instructions

- **This section describes the disassembly and/or assembly procedures for all major printed circuit boards & main components for the unit. (You may refer to the section of "Main components and P.C.B. Locations" as described in this service manual)**
- **Before carrying out the disassembly process, please ensure all the safety precautions & procedures are followed.**
- **During the disassembly and/or assembly process, please handle with care as there may be chassis components with sharp edges.**
- **Avoid touching heatsinks due to its high temperature after prolong use.**
- **Be sure to use proper service tools, equipments or jigs during repair.**
- **Select items from the following indexes when disassembly or replacement are required.**
- Disassembly of Top Cabinet Ass'y
- Disassembly of SMPS P.C.B.
- Disassembly of AMP P.C.B.
- Disassembly of Speaker L P.C.B. and Speaker R P.C.B.
- Disassembly of Control P.C.B.
- Disassembly of Digital P.C.B.
- Disassembly of REC Out P.C.B.
- Disassembly of Main P.C.B.
- Disassembly of Front Panel Unit
- Disassembly of Selector P.C.B.
- Disassembly of Volume P.C.B.
- Disassembly of Main SW P.C.B.
- Disassembly of OLED P.C.B.
- Disassembly of Shade Sheet B
- Disassembly of Headphone P.C.B.
- Disassembly of Meter Illumi LED L P.C.B. and Meter Illumi LED R P.C.B.
- Disassembly of Meter P.C.B.
- Disassembly of Meter Unit

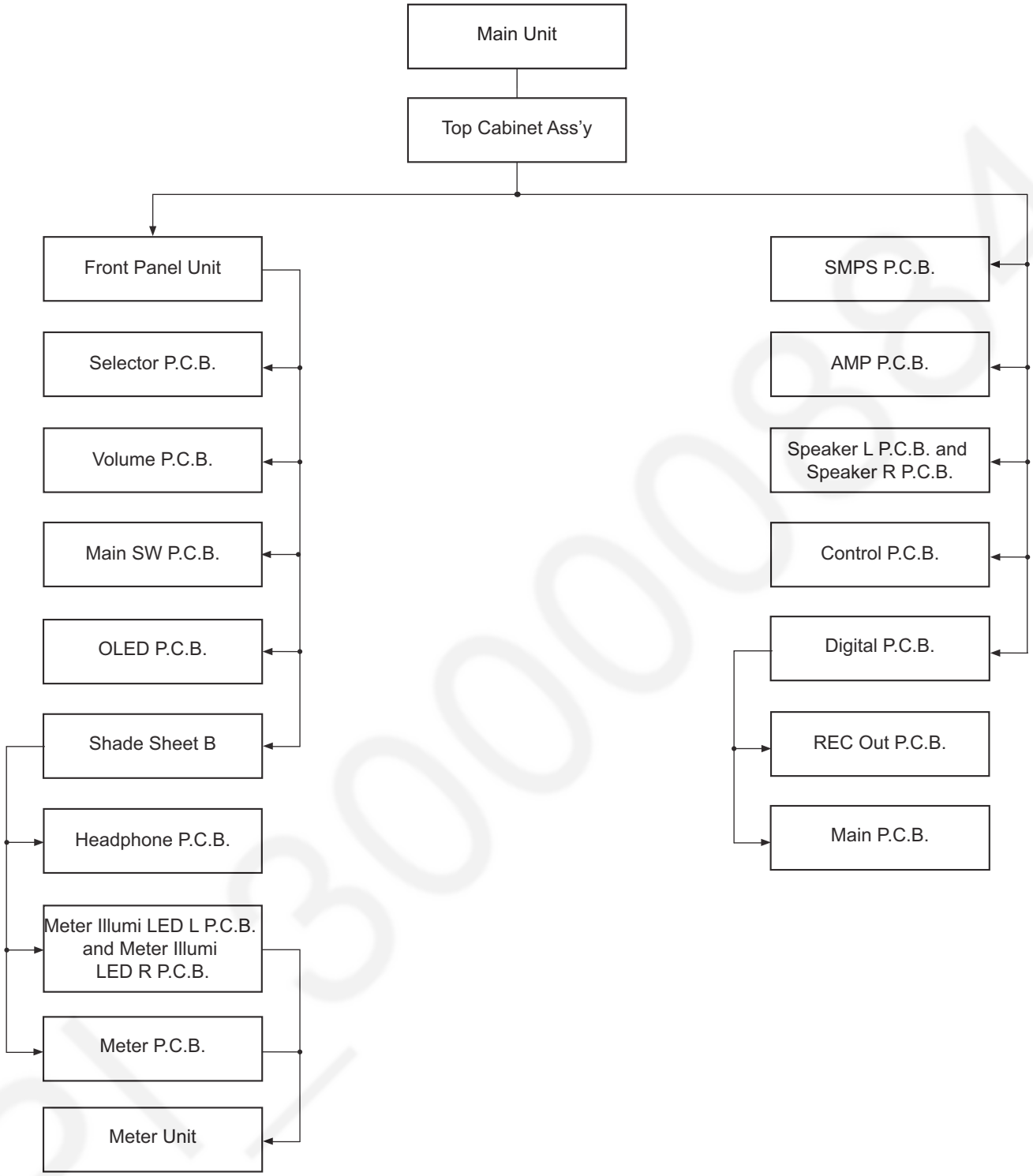
8.1. Type of Screws

CAUTION NOTE:
Please use original screw and at correct locations.

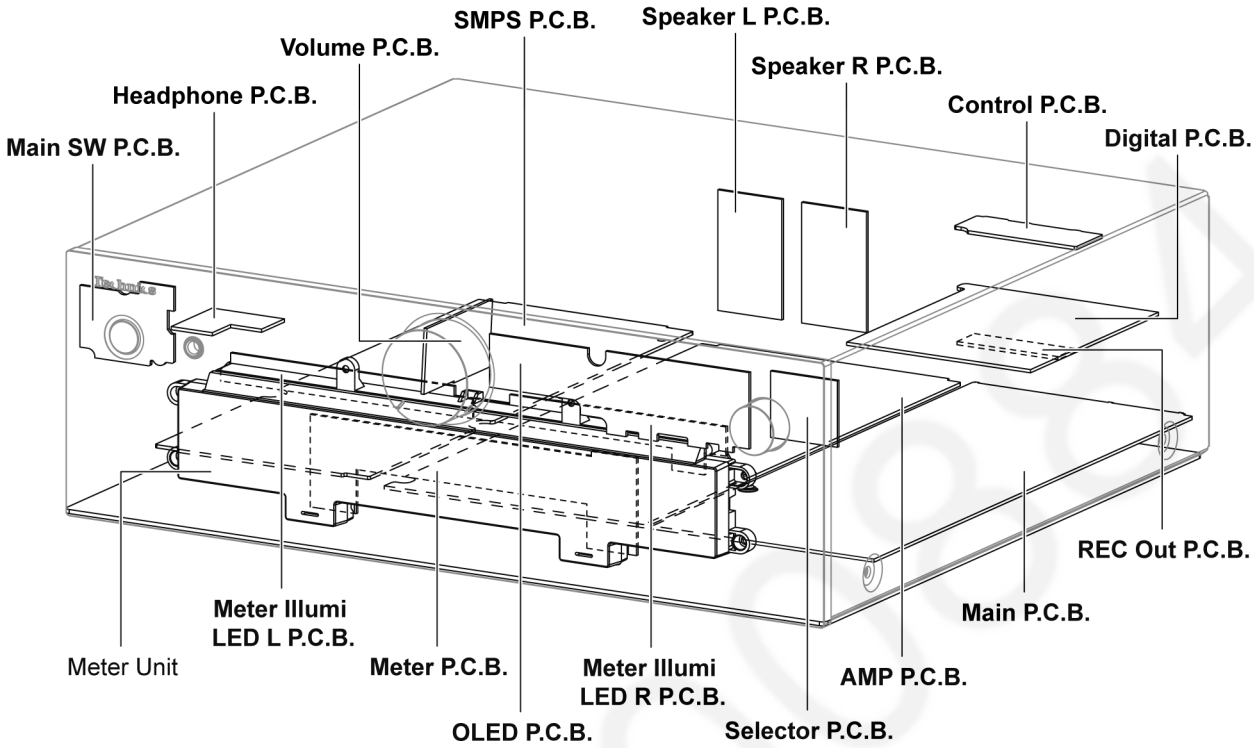
Below shown is part no. of different screw types used:

a :RHD30119-K	g :XYN3+F5FJK
b :THEC283N	h :XYN3+F5FN
c :RHD30111-31	i :XSB3+8FN
d :XYN3+C8FJK	j :XXE4D8FJK
e :RHDC0023	k :RHD26045-L
f :XYM4+F8FJ	l :RHD26016-1L

8.2. Disassembly Flow Chart

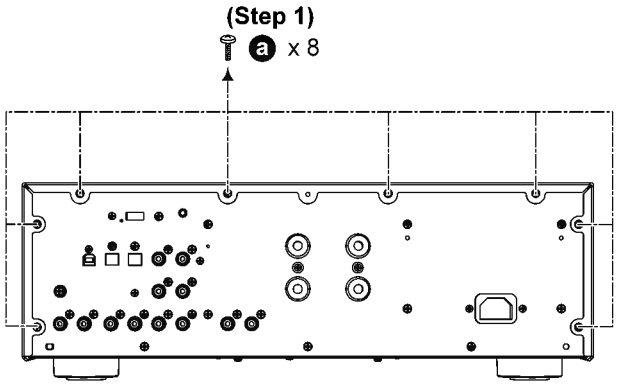


8.3. Main Components and P.C.B. Locations

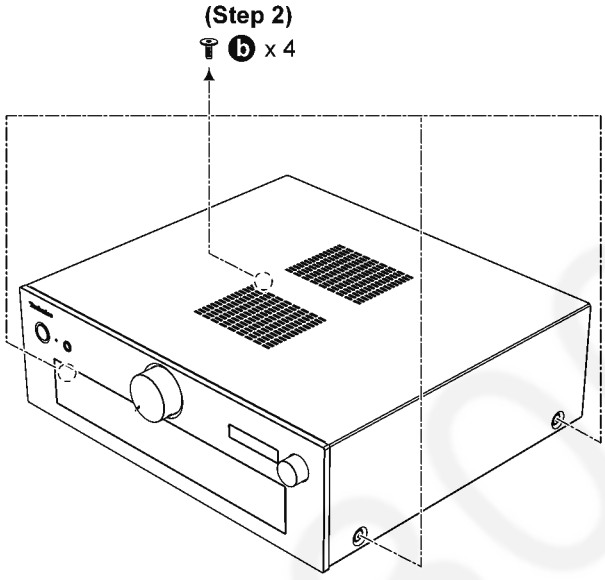


8.4. Disassembly of Top Cabinet Ass'y

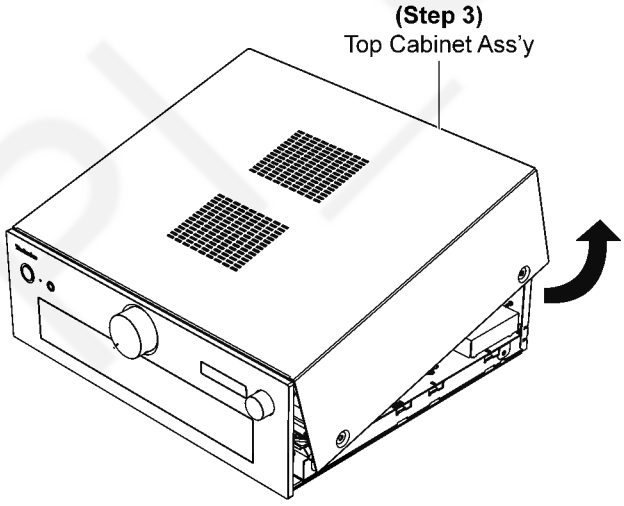
Step 1 Remove 8 screws.



Step 2 Remove 4 screws.



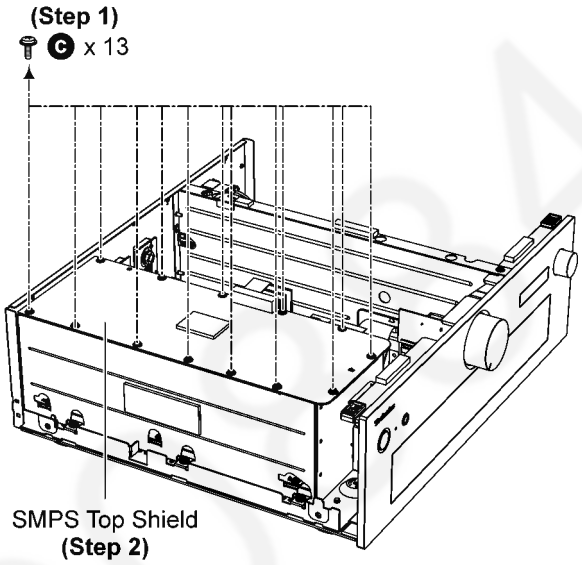
Step 3 Lift up to remove Top Cabinet Ass'y.



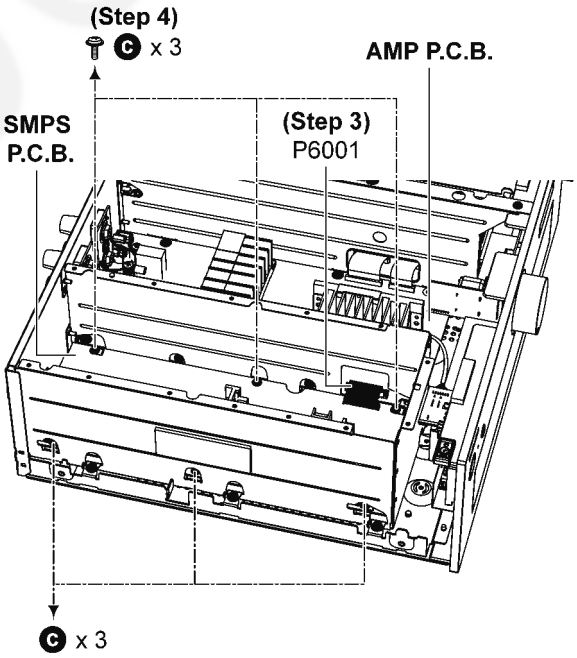
8.5. Disassembly of SMPS P.C.B.

• **Refer to "Disassembly of Top Cabinet Ass'y".**

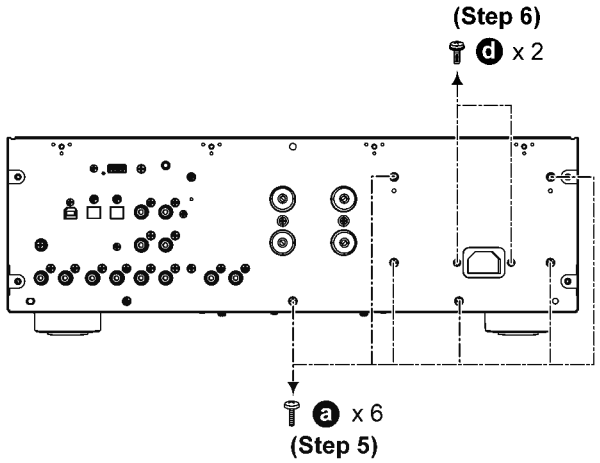
Step 1 Remove 13 screws.
Step 2 Remove SMPS Top Shield.



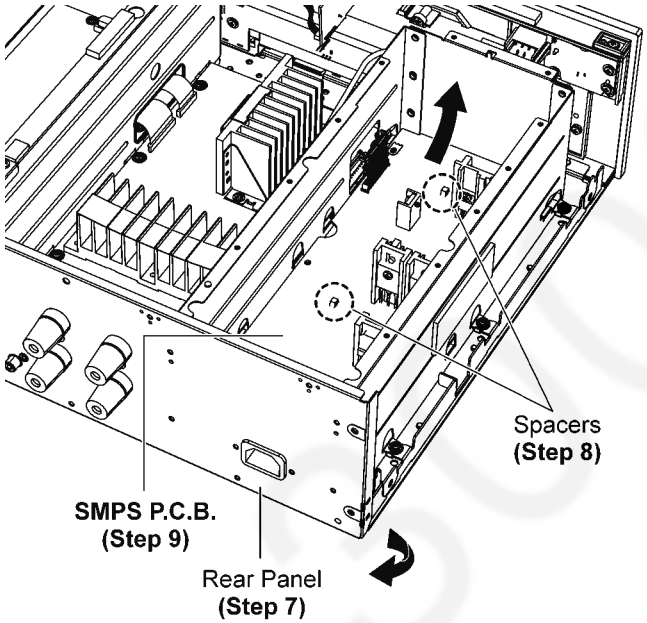
Step 3 Detach 23P Bridge Connector at the connector (P6001) on AMP P.C.B..
Step 4 Remove 6 screws.



Step 5 Remove 6 screws.
Step 6 Remove 2 screws.



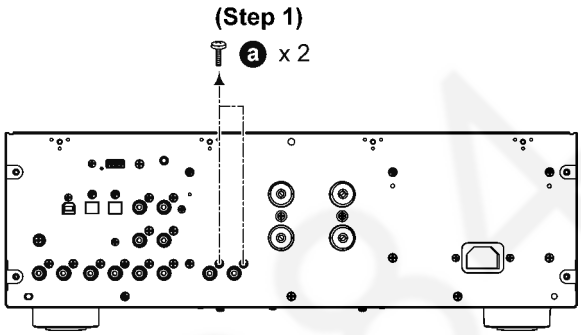
Step 7 Slightly release the side of the rear panel.
Step 8 Release 2 spacers.
Step 9 Remove SMPS P.C.B..



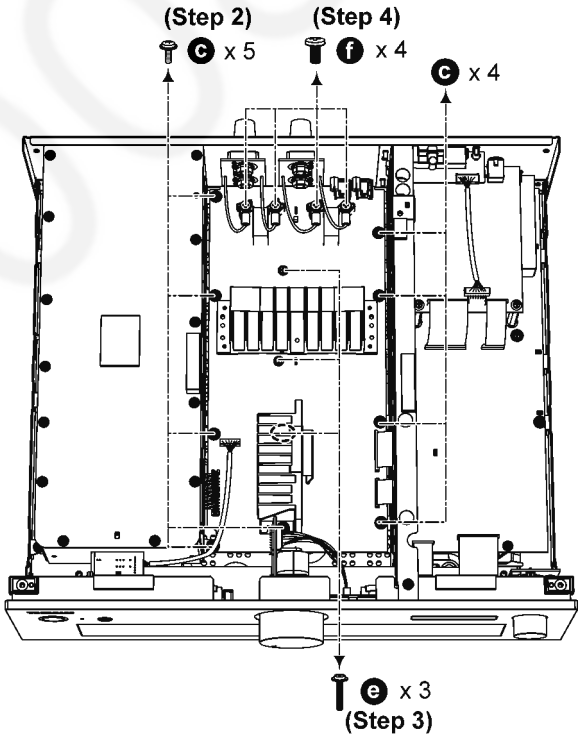
8.6. Disassembly of AMP P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**

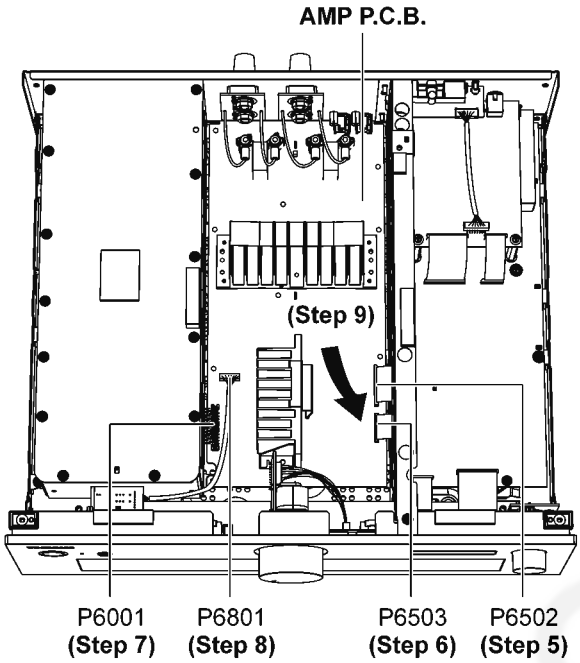
Step 1 Remove 2 screws.



Step 2 Remove 9 screws.
Step 3 Remove 3 screws.
Step 4 Remove 4 screws.



Step 5 Detach 30P FFC at the connector (P6502) on AMP P.C.B..
Step 6 Detach 40P FFC at the connector (P6503) on AMP P.C.B..
Step 7 Detach 23P Bridge Connector at the connector (P6001) on AMP P.C.B..
Step 8 Detach 7P Cable at the connector (P6801) on AMP P.C.B..
Step 9 Remove AMP P.C.B..

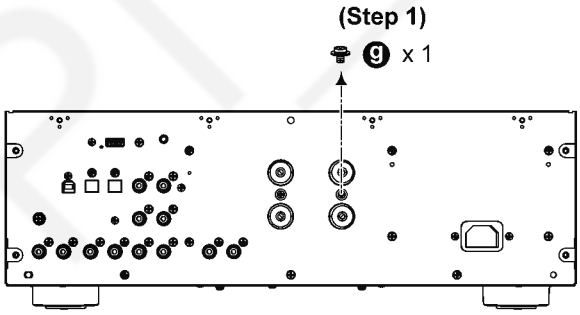


8.7. Disassembly of Speaker L P.C.B. and Speaker R P.C.B.

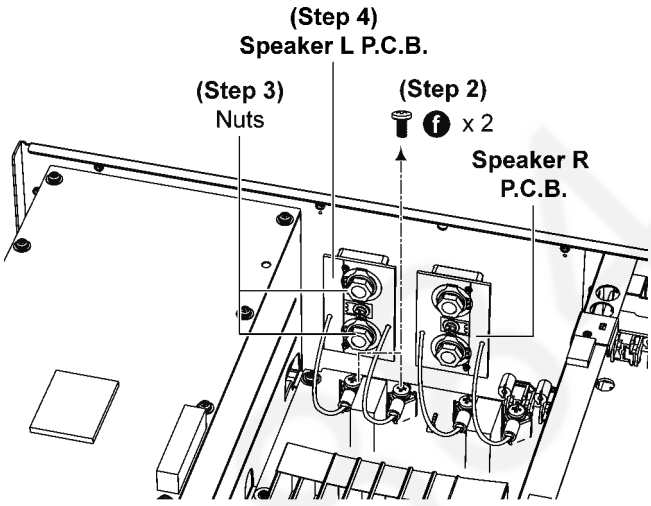
• **Refer to "Disassembly of Top Cabinet Ass'y".**

Note:
The disassembling procedure for Speaker L P.C.B. will be described here.
For Speaker R P.C.B., please refer to the same prodecure described here.

Step 1 Remove 1 screw.



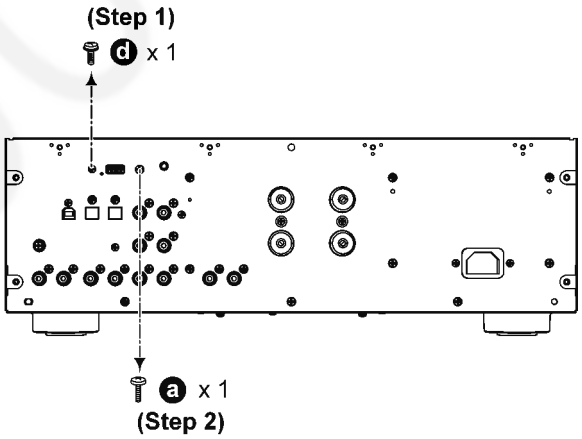
Step 2 Remove 2 screws.
Step 3 Remove 2 nuts.
Step 4 Remove Speaker L P.C.B..



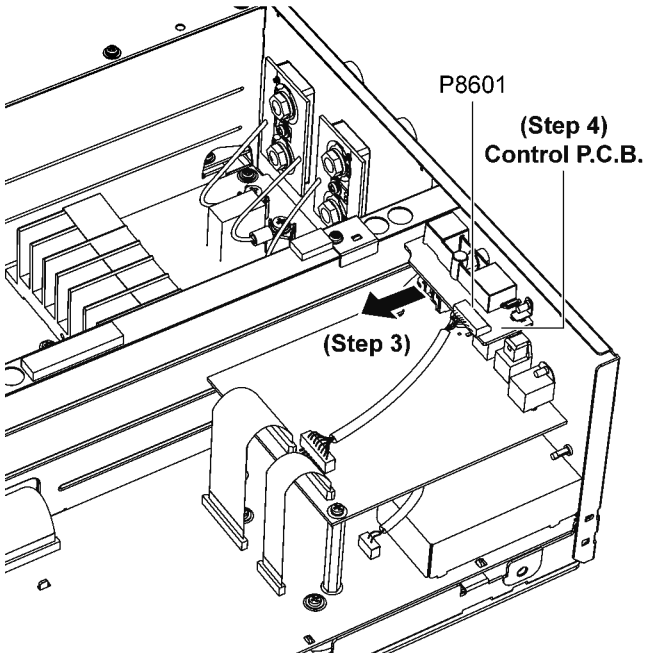
8.8. Disassembly of Control P.C.B.

• **Refer to "Disassembly of Top Cabinet Ass'y".**

Step 1 Remove 1 screw.
Step 2 Remove 1 screw.



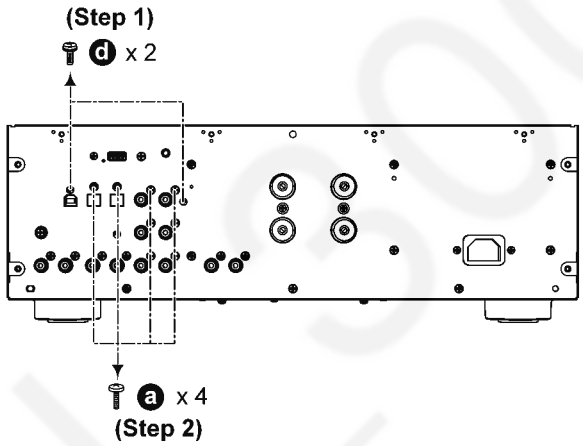
Step 3 Detach 8P Cable at the connector (P8601) on Control P.C.B..
Step 4 Remove Control P.C.B..



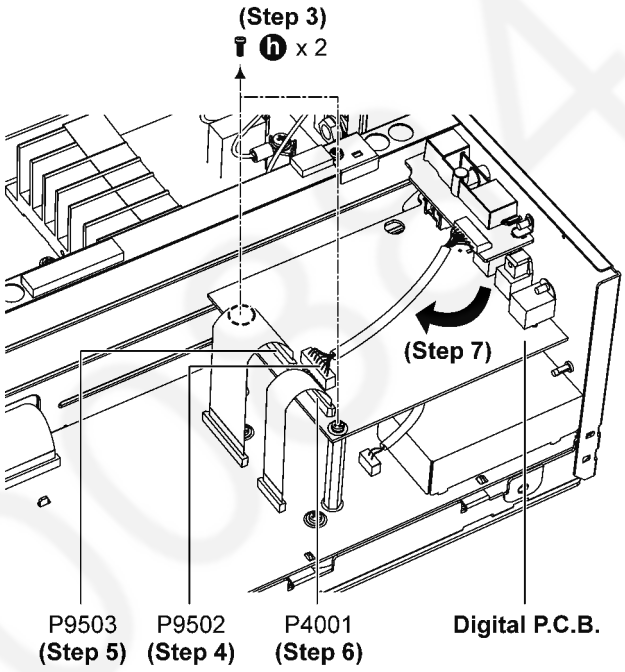
8.9. Disassembly of Digital P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**

Step 1 Remove 2 screws.
Step 2 Remove 4 screws.



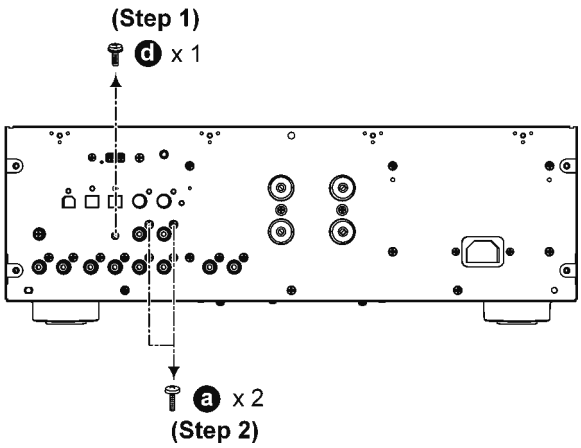
Step 3 Remove 2 screws.
Step 4 Detach 8P Cable at the connector (P9502) on Digital P.C.B..
Step 5 Detach 30P FFC at the connector (P9503) on Digital P.C.B..
Step 6 Detach 15P FFC at the connector (P4001) on Digital P.C.B..
Step 7 Remove Digital P.C.B..



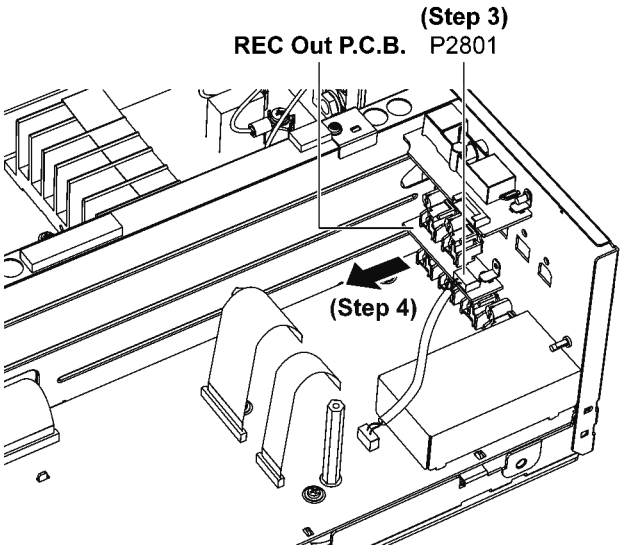
8.10. Disassembly of REC Out P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Digital P.C.B.".**

Step 1 Remove 1 screw.
Step 2 Remove 2 screws.



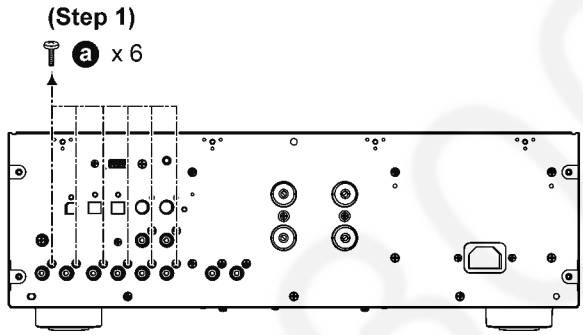
Step 3 Detach 4P Cable at the connector (P2801) on REC Out P.C.B..
Step 4 Remove REC Out P.C.B..



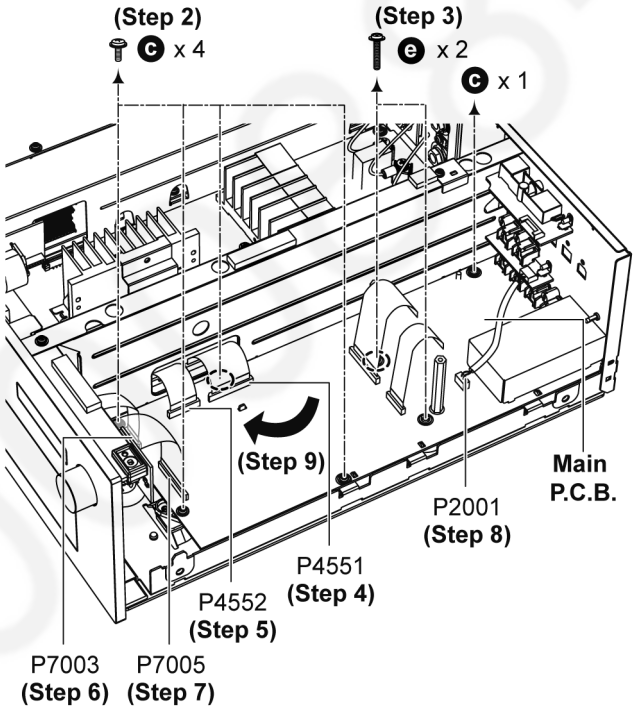
8.11. Disassembly of Main P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Digital P.C.B.".**

Step 1 Remove 6 screws.



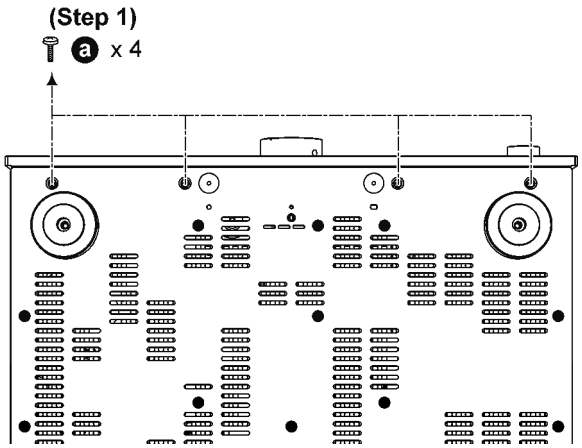
Step 2 Remove 5 screws.
Step 3 Remove 2 screws.
Step 4 Detach 30P FFC at the connector (P4551) on Main P.C.B..
Step 5 Detach 40P FFC at the connector (P4552) on Main P.C.B..
Step 6 Detach 14P FFC at the connector (P7003) on Main P.C.B..
Step 7 Detach 30P FFC at the connector (P7005) on Main P.C.B..
Step 8 Detach 4P Cable at the connector (P2001) on Main P.C.B..
Step 9 Remove Main P.C.B..



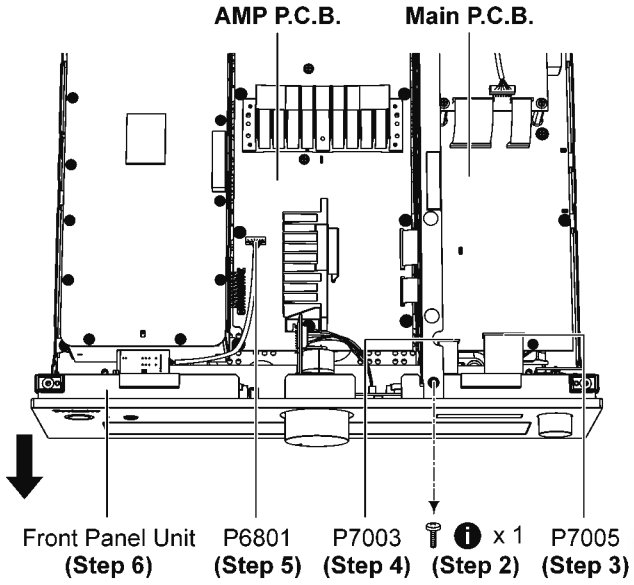
8.12. Disassembly of Front Panel Unit

- **Refer to "Disassembly of Top Cabinet Ass'y".**

Step 1 Remove 4 screws.



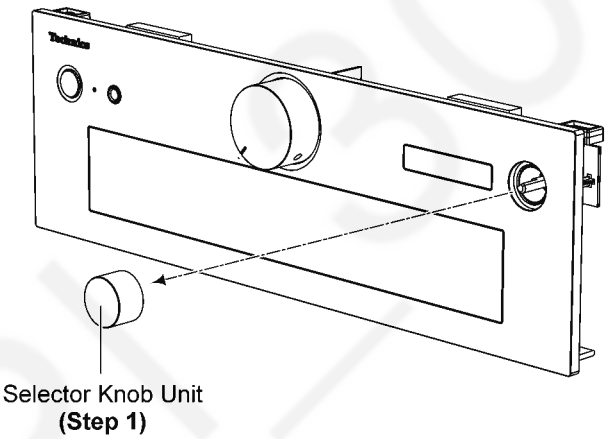
Step 2 Remove 1 screw.
Step 3 Detach 30P FFC at the connector (P7005) on Main P.C.B..
Step 4 Detach 14P FFC at the connector (P7003) on Main P.C.B..
Step 5 Detach 7P Cable at the connector (P6801) on AMP P.C.B..
Step 6 Remove Front Panel Unit.



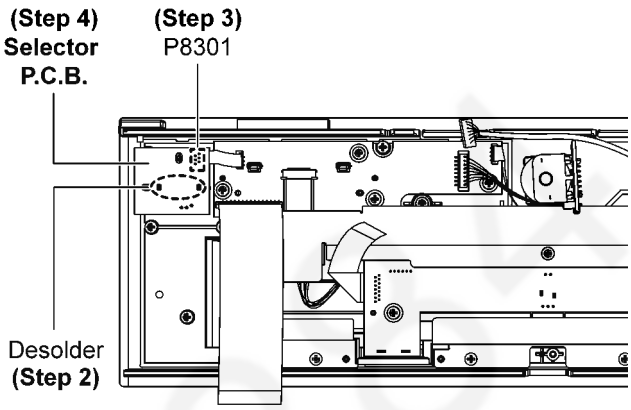
8.13. Disassembly of Selector P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Front Panel Unit".**

Step 1 Detach Selector Knob Unit.



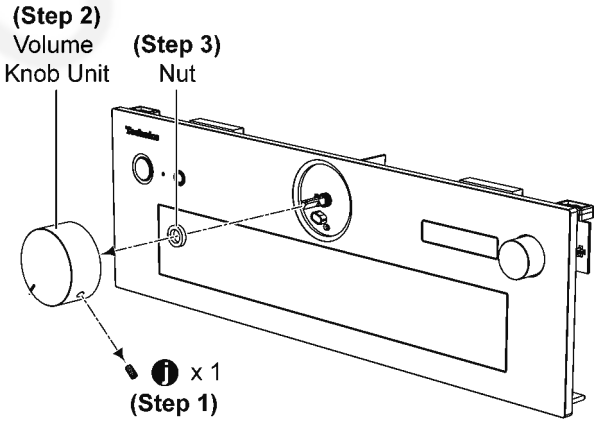
Step 2 Desolder the pins of Selector P.C.B..
Step 3 Detach 6P FFC at the connector (P8301) on Selector P.C.B..
Step 4 Remove Selector P.C.B..



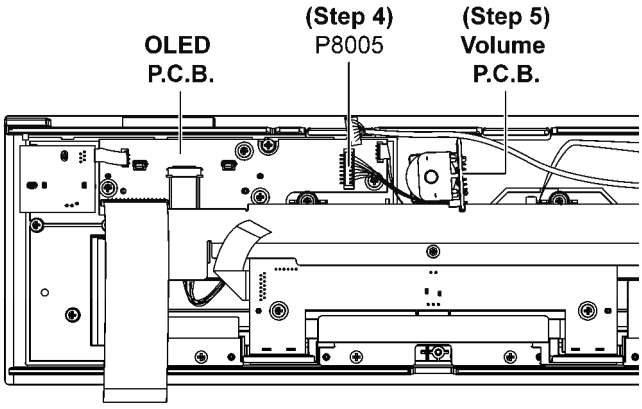
8.14. Disassembly of Volume P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Front Panel Unit".**

Step 1 Remove 1 screw.
Step 2 Detach Volume Knob Unit.
Step 3 Remove nut.



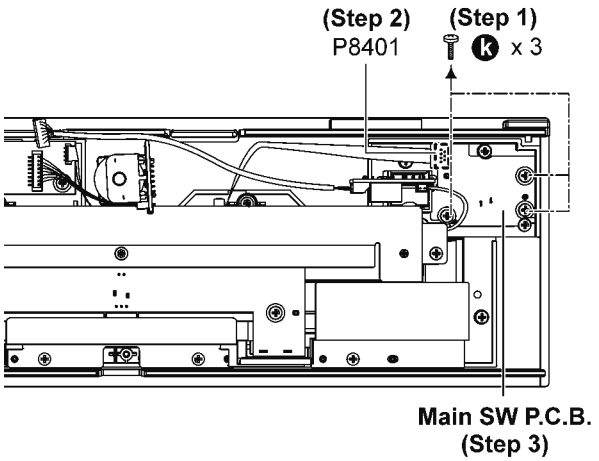
Step 4 Detach 8P Cable at the connector (P8005) on OLED P.C.B..
Step 5 Remove Volume P.C.B..



8.15. Disassembly of Main SW P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Front Panel Unit".**

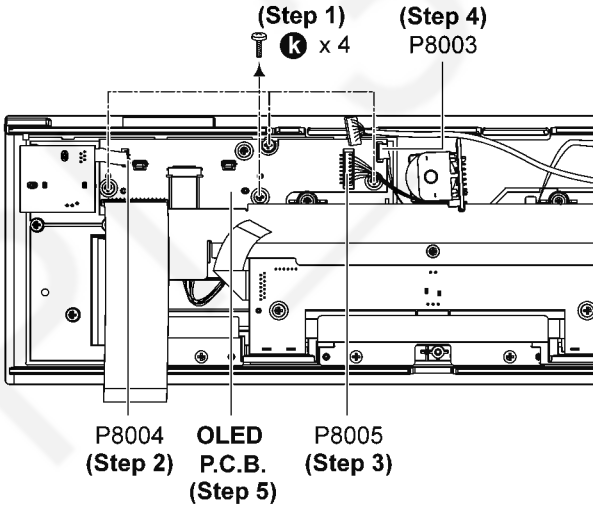
Step 1 Remove 3 screws.
Step 2 Detach 7P FFC at the connector (P8401) on Main SW P.C.B..
Step 3 Remove Main SW P.C.B..



8.16. Disassembly of OLED P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Front Panel Unit".**

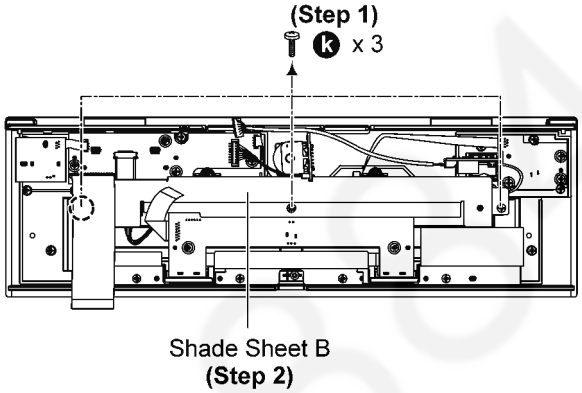
Step 1 Remove 4 screws.
Step 2 Detach 6P FFC at the connector (P8004) on OLED P.C.B..
Step 3 Detach 8P Cable at the connector (P8005) on OLED P.C.B..
Step 4 Detach 7P FFC at the connector (P8003) on OLED P.C.B..
Step 5 Remove OLED P.C.B..



8.17. Disassembly of Shade Sheet B

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Front Panel Unit".**

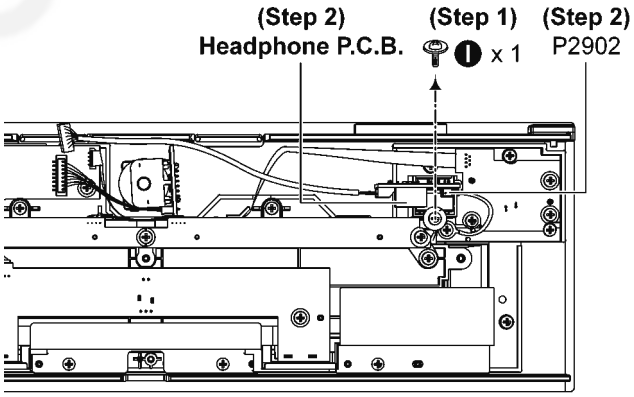
Step 1 Remove 3 screws.
Step 2 Remove Shade Sheet B.



8.18. Disassembly of Headphone P.C.B.

- **Refer to "Disassembly of Top Cabinet Ass'y".**
- **Refer to "Disassembly of Front Panel Unit".**
- **Refer to "Disassembly of Shade Sheet B".**

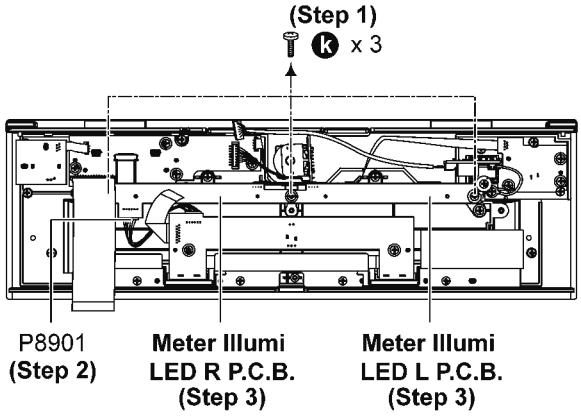
Step 1 Remove 1 screw.
Step 2 Detach 2P Cable at the connector (P2902) on Headphone P.C.B..
Step 3 Remove Headphone P.C.B..



8.19. Disassembly of Meter Illumi LED L P.C.B. and Meter Illumi LED R P.C.B.

- **Refer to “Disassembly of Top Cabinet Ass’y”.**
- **Refer to “Disassembly of Front Panel Unit”.**
- **Refer to “Disassembly of Shade Sheet B”.**

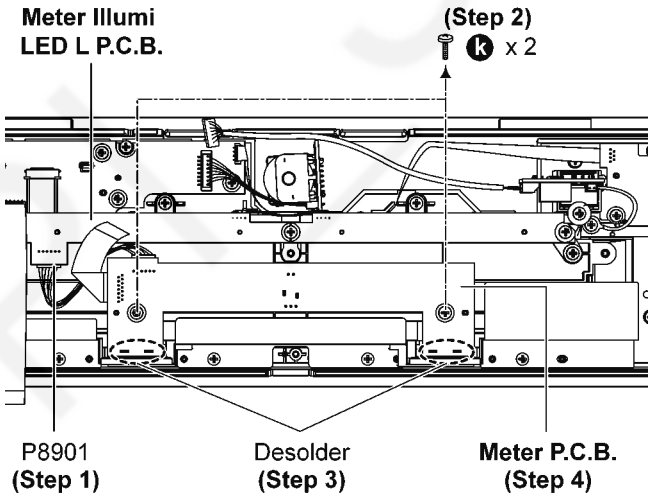
Step 1 Remove 3 screws.
Step 2 Detach 6P Wire at the connector (P8901) on Meter Illumi LED L P.C.B..
Step 3 Remove Meter Illumi LED L P.C.B. and Meter Illumi LED R P.C.B..



8.20. Disassembly of Meter P.C.B.

- **Refer to “Disassembly of Top Cabinet Ass’y”.**
- **Refer to “Disassembly of Front Panel Unit”.**
- **Refer to “Disassembly of Shade Sheet B”.**

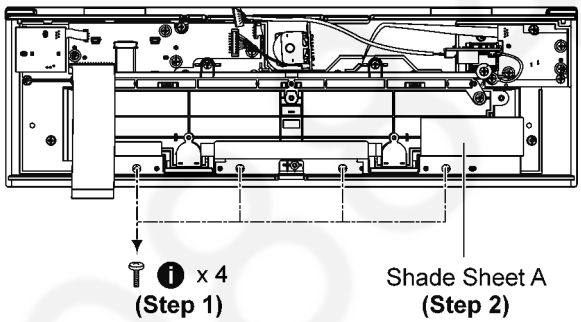
Step 1 Detach 6P Cable at the connector (P8901) on Meter Illumi LED L P.C.B..
Step 2 Remove 2 screws.
Step 3 Desolder the pins of Meter P.C.B..
Step 4 Remove Meter P.C.B..



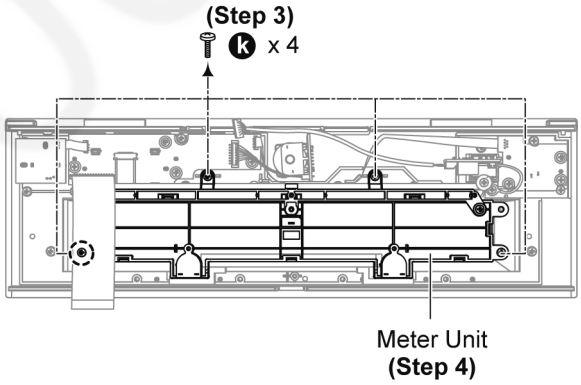
8.21. Disassembly of Meter Unit

- **Refer to “Disassembly of Top Cabinet Ass’y”.**
- **Refer to “Disassembly of Front Panel Unit”.**
- **Refer to “Disassembly of Shade Sheet B”.**
- **Refer to “Disassembly of Meter Illumi LED L P.C.B. and Meter Illumi LED R P.C.B.”.**
- **Refer to “Disassembly of Meter P.C.B.”.**

Step 1 Remove 4 screws.
Step 2 Remove Shade Sheet A.



Step 3 Remove 4 screws.
Step 4 Remove Meter Unit.

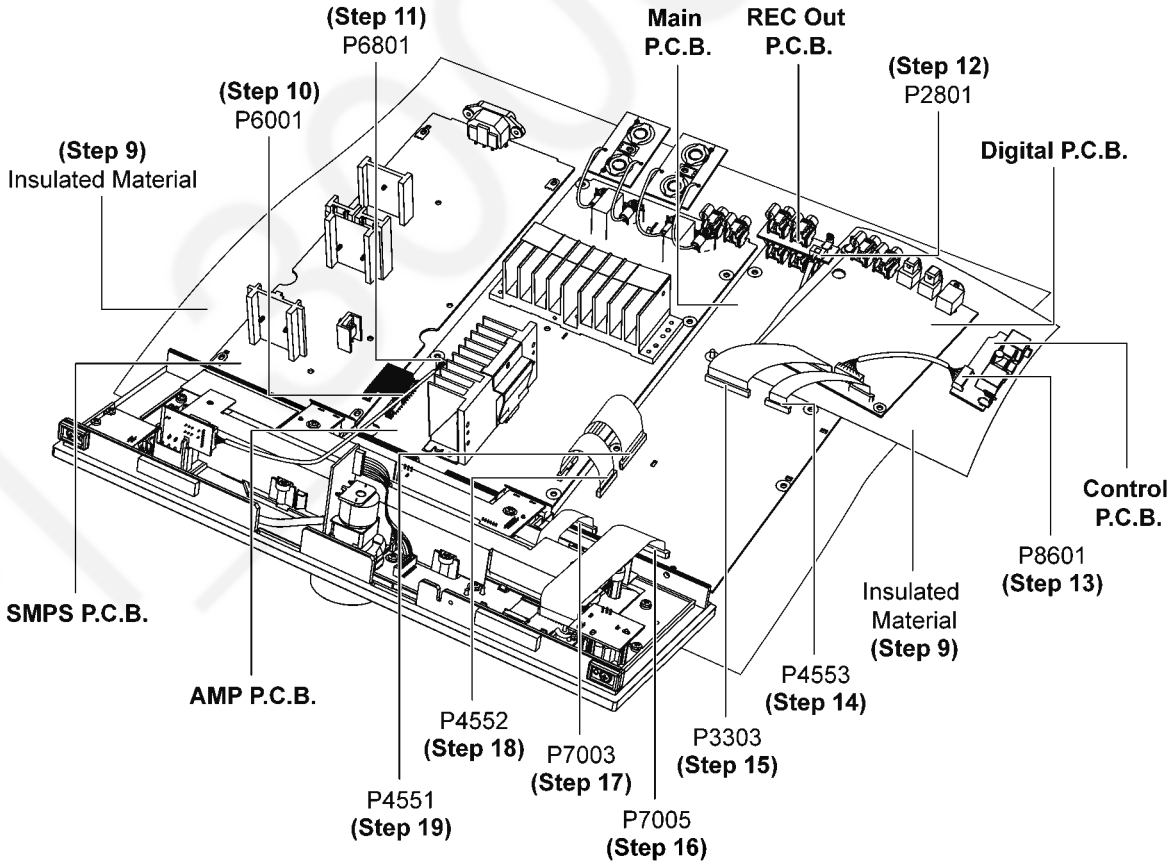


9 Service Position

Note: For description of the disassembly procedures, see the Section 8.

9.1. Checking and Repairing of SMPS P.C.B., AMP P.C.B., Main P.C.B., Control P.C.B., Digital P.C.B. and REC Out P.C.B.

Step 1 Remove Top Cabinet Ass'y.
Step 2 Remove Front Panel Unit.
Step 3 Remove SMPS P.C.B..
Step 4 Remove AMP P.C.B..
Step 5 Remove Main P.C.B..
Step 6 Remove Control P.C.B..
Step 7 Remove Digital P.C.B..
Step 8 Remove REC Out P.C.B..
Step 9 Place SMPS P.C.B., AMP P.C.B., Main P.C.B., Control P.C.B., Digital P.C.B. and REC Out P.C.B. on the insulated material.
Step 10 Attach 23P Bridge Connector at the connector (P6001) on AMP P.C.B..
Step 11 Attach 7P Cable at the connector (P6801) on AMP P.C.B..
Step 12 Attach 4P Cable at the connector (P2801) on REC Out P.C.B..
Step 13 Attach 8P Cable at the connector (P8601) on Control P.C.B..
Step 14 Attach 15P FFC at the connector (P4553) on Main P.C.B..
Step 15 Attach 30P FFC at the connector (P3003) on Main P.C.B..
Step 16 Attach 30P FFC at the connector (P7005) on Main P.C.B..
Step 17 Attach 14P FFC at the connector (P7003) on Main P.C.B..
Step 18 Attach 40P FFC at the connector (P4552) on Main P.C.B..
Step 19 Attach 30P FFC at the connector (P4551) on Main P.C.B..
Step 20 SMPS P.C.B., AMP P.C.B., Main P.C.B., Control P.C.B., Digital P.C.B. and REC Out P.C.B. can be checked as diagram shown.



10 Measurement and Adjustment

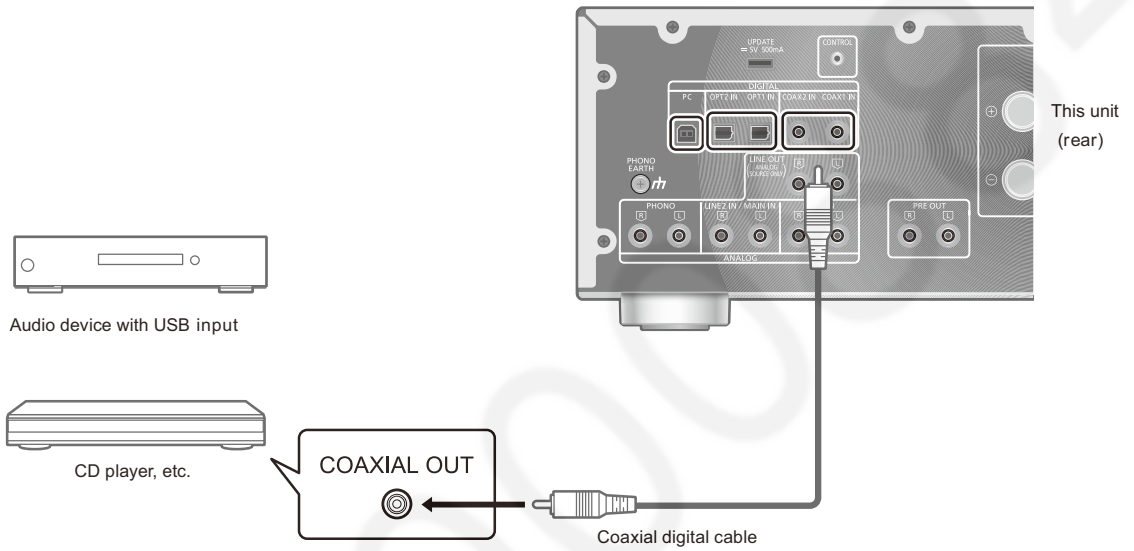
10.1. Adjustment of the Peak Power Meter

Subject

After replacement of METER UNIT or AMP PCB, meter adjustment is required.

Connection

Connect CD Player or Audio device to COAX1 IN terminal to play Audio Test Disc or USB Memory with Audio Test sound.



Test sound preparation:

Following test sound is required.
Download it and make CD test disc or store the USB Memory.

a. MP3 file for 1 kHz sine wave 2 Vrms (0dB)

Go into Meter Adjustment mode:

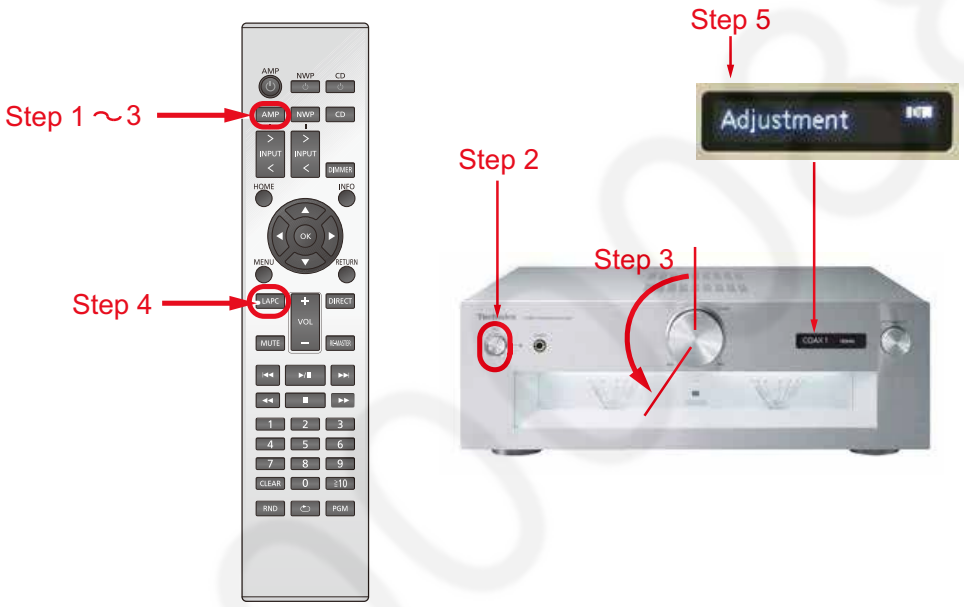
Step 1. Turn the unit off and disconnect the AC mains lead from wall outlet.
Reconnect the AC mains lead.

Step 2. Press “AMP” button on the remote control and keep pressing until step 4.
And then turn the unit on by pressing “Standby/on” button on the unit.

Step 3. Rotate Volume knob from center to minimum (anticlockwise) position.
(Pressing “AMP” button on the remote control continuously.)

Step 4. Release the pressing “AMP” button on the remote control.
Press “LAPC” button on the remote control.

Step 5. The unit goes into Meter Adjustment mode.
“Adjustment” is indicated at Display.



Exit from Meter Adjustment mode to Normal operation:

Press power button for AMP on the remote control or press “Standby/on” button to turn the unit off.

Adjustment procedure:

Step 1. Adjustment of 2Vrms (0dB) Level

Play 2Vrms (0dB) of 1 kHz sine wave from CD player or Audio device.
Adjust each VR to set the needle at -20dB position shown in Figure 01.
L ch: VR6951
R ch: VR6952

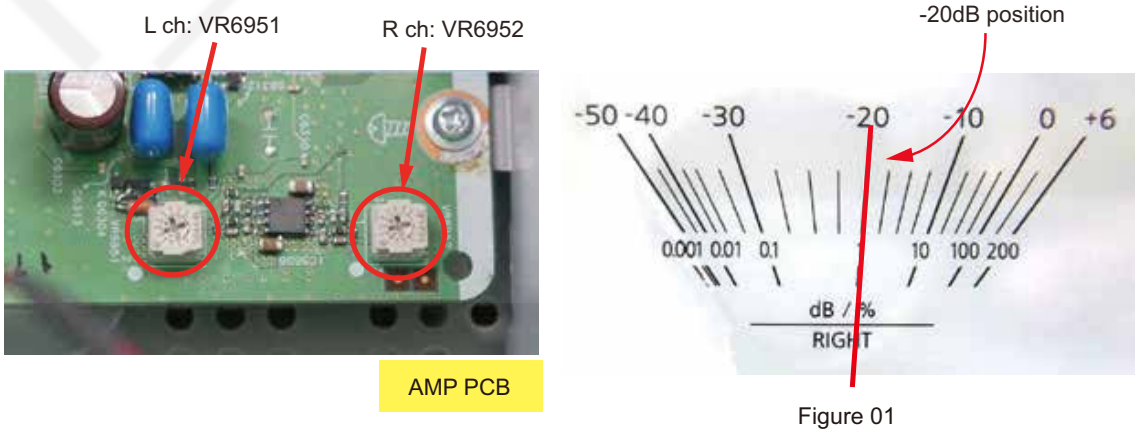
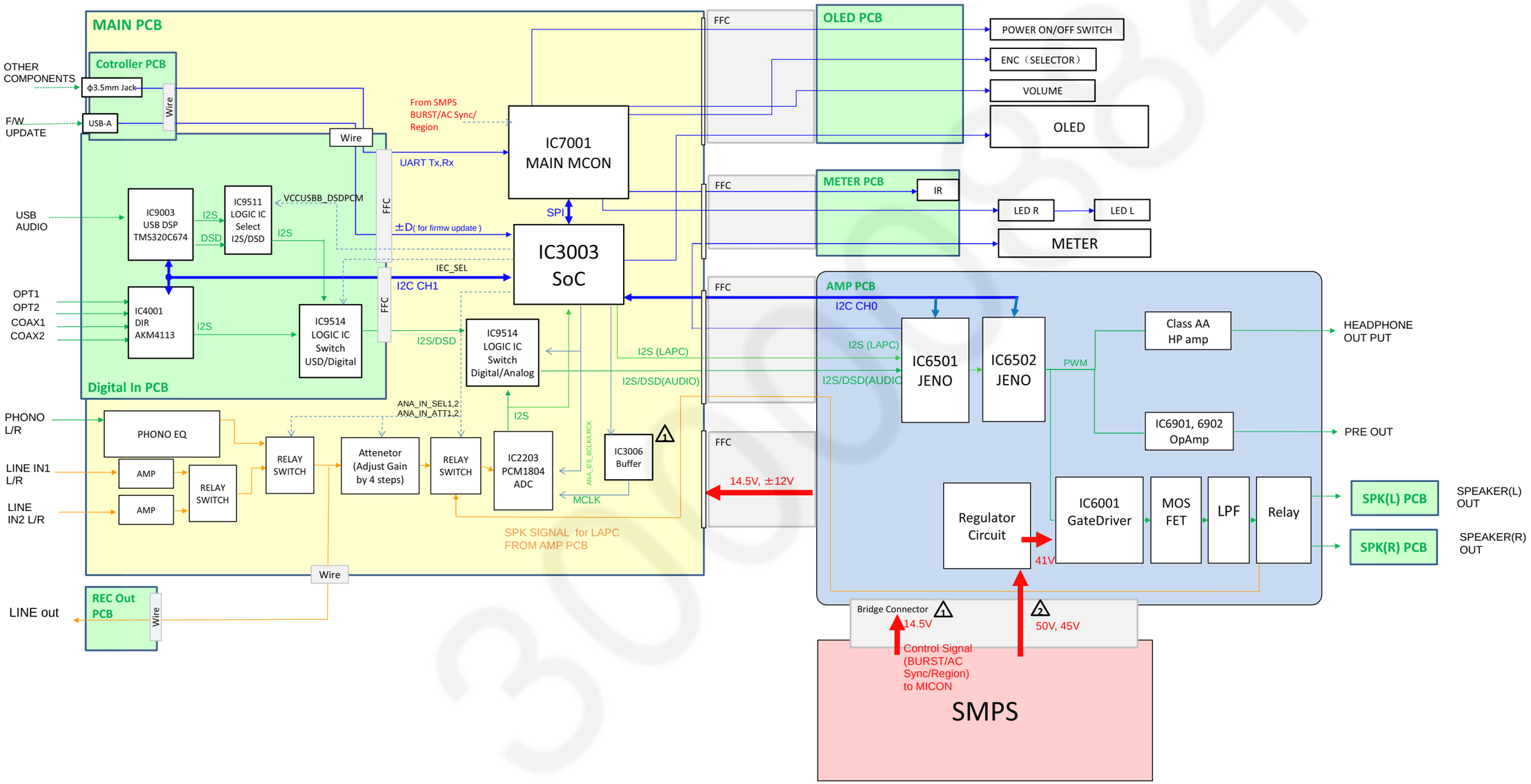


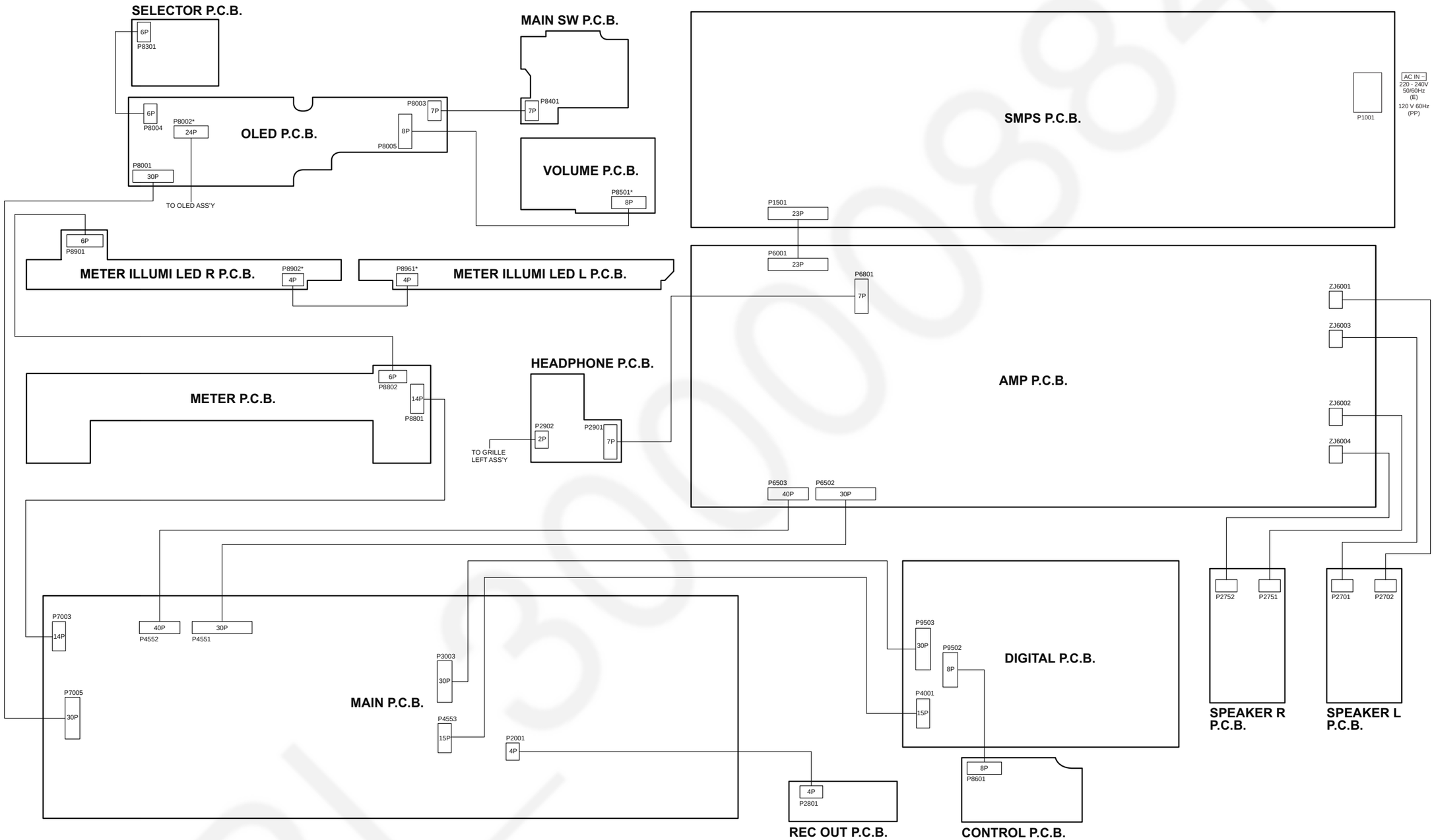
Figure 01

Step 2. Exit from Meter Adjustment mode by turn the unit off.

11 Block Diagram



12 Wiring Connection Diagram

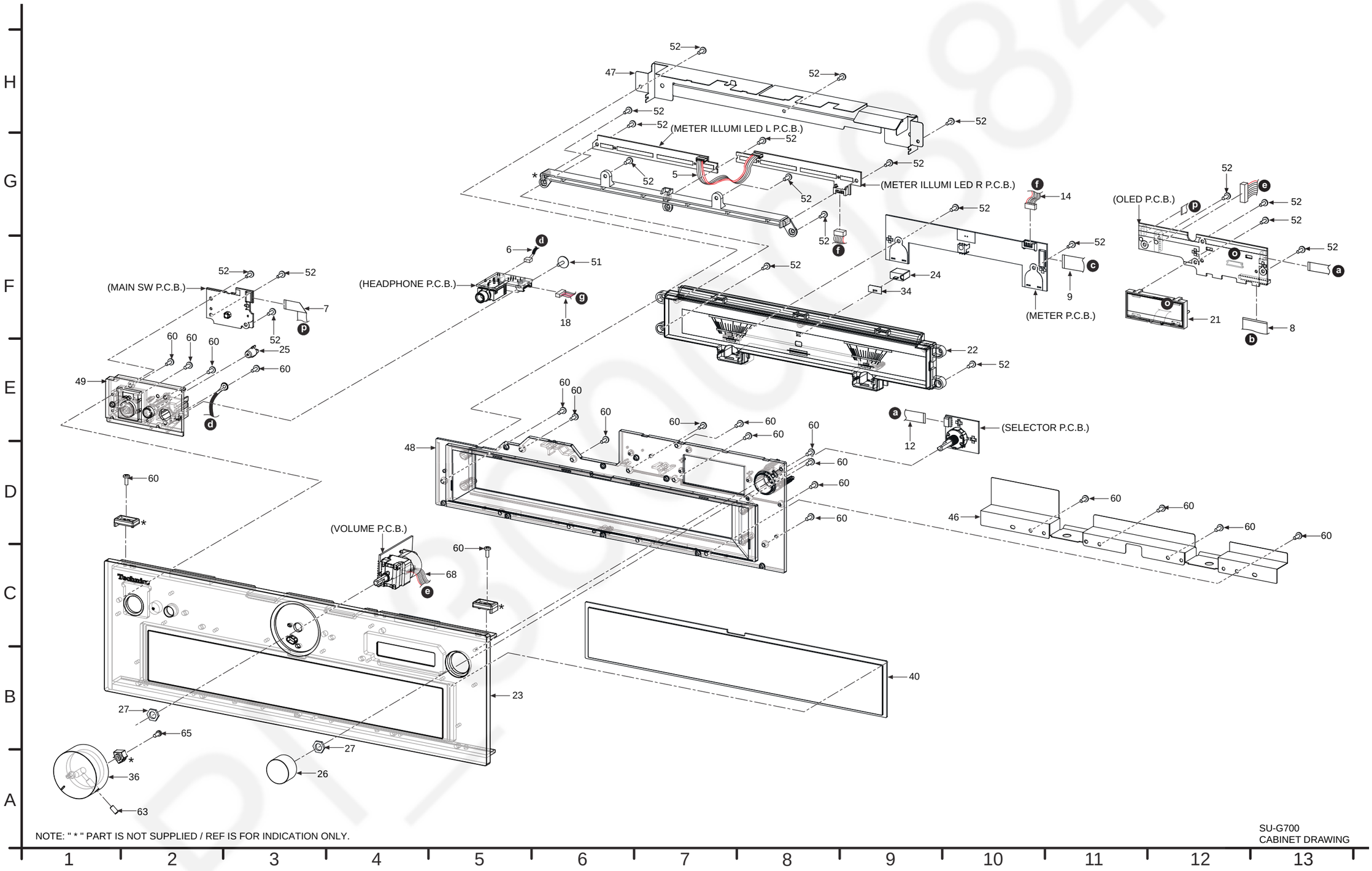


NOTE: " * " REF IS FOR INDICATION ONLY.

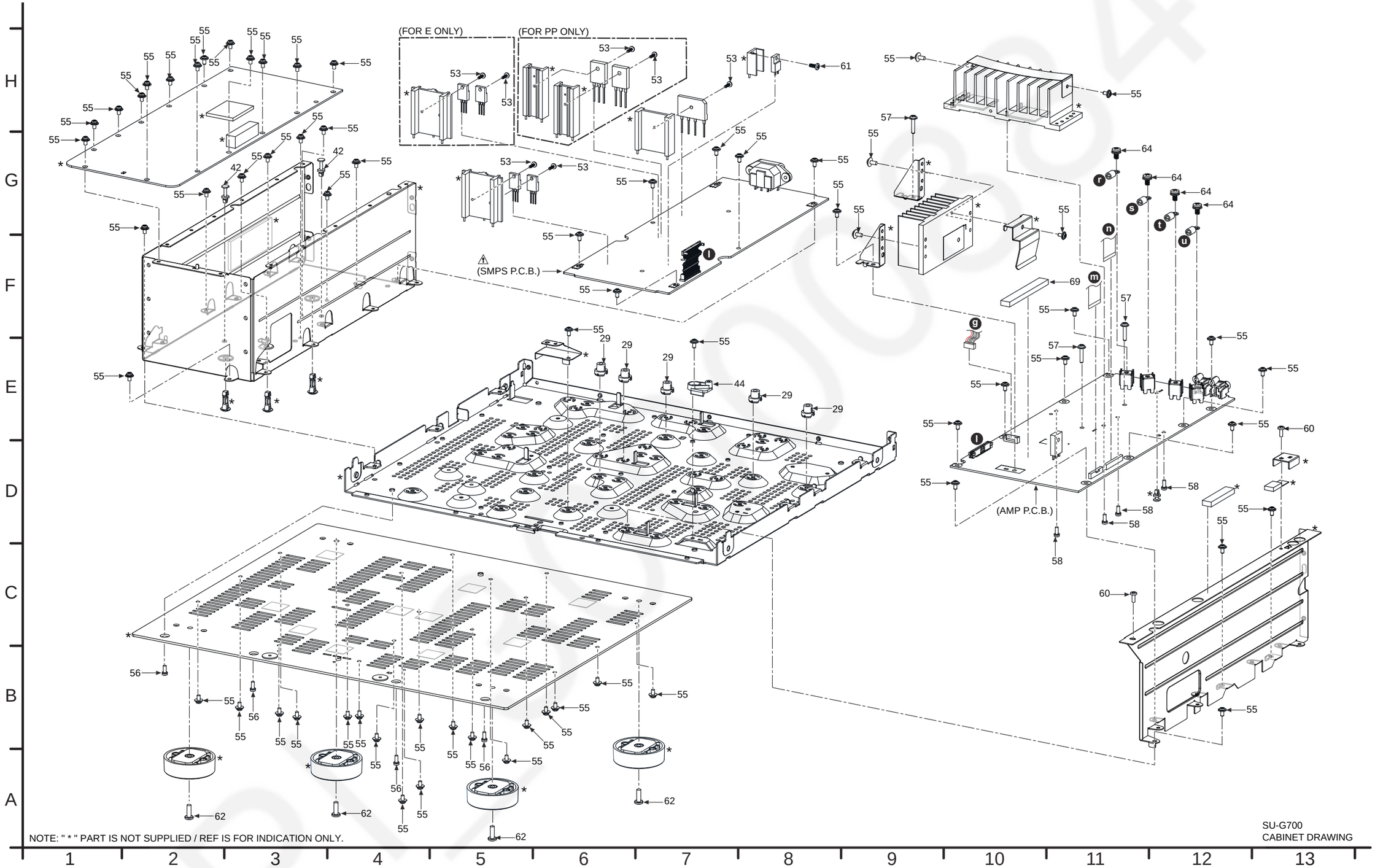
SU-G700E/PP WIRING CONNECTION DIAGRAM

13 Exploded View and Replacement Parts List

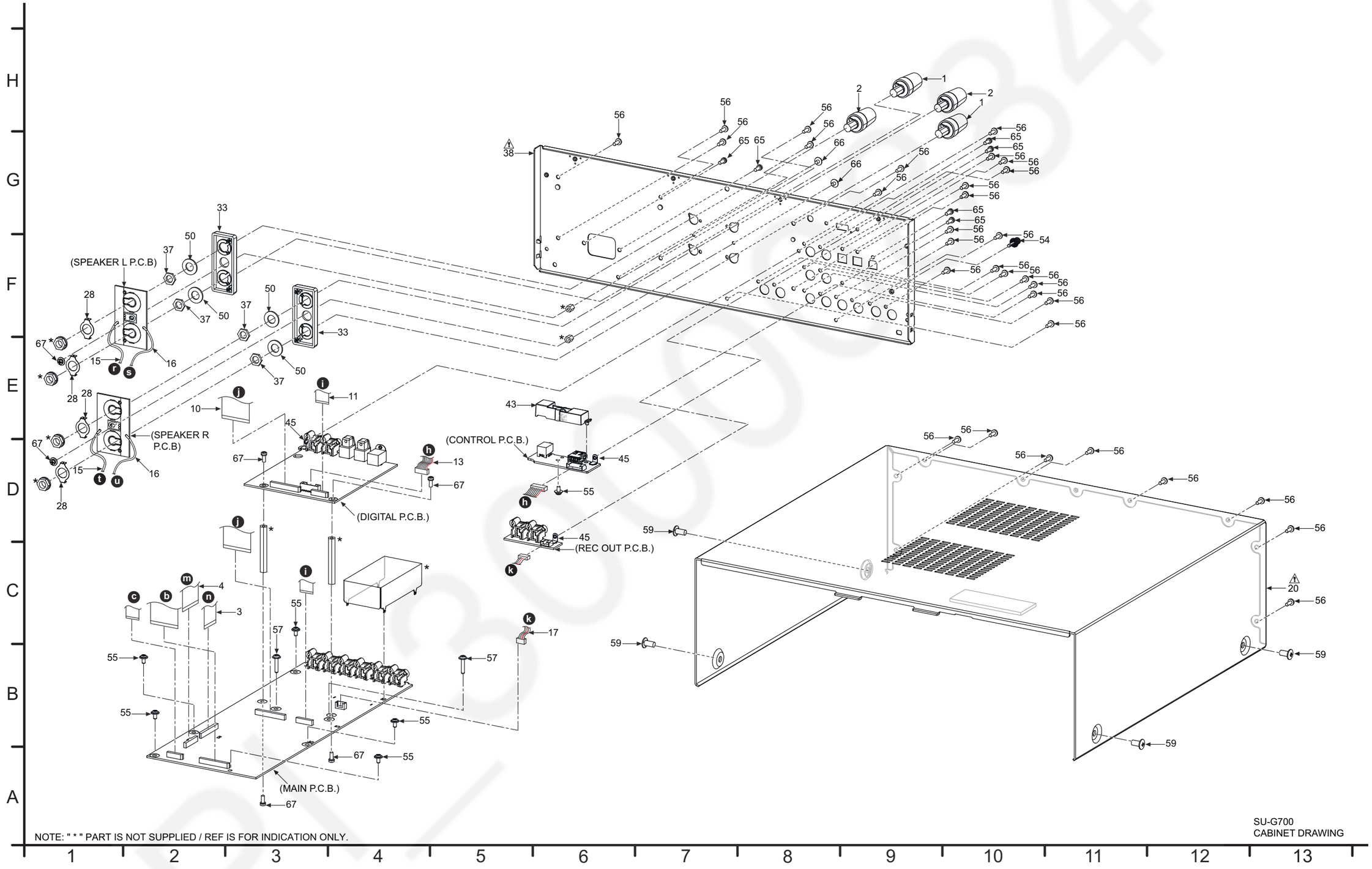
13.1. Cabinet Parts Location 1



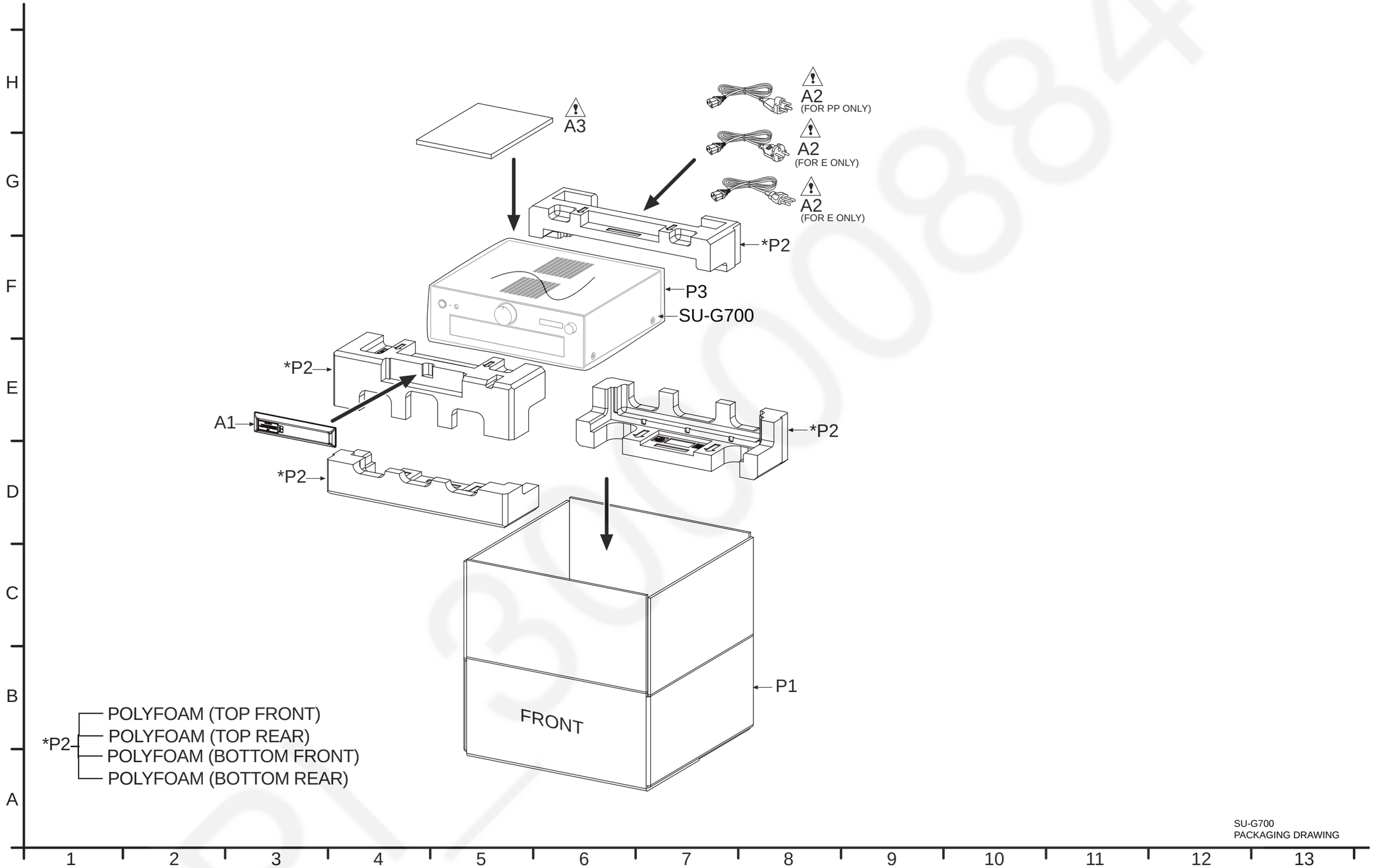
13.2. Cabinet Parts Location 2



13.3. Cabinet Parts Location 3



13.4. Packaging



SU-G700
PACKAGING DRAWING

13.5. Mechanical Replacement Part List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- All parts mentioned are supplied by PAVCJM unless indicated likewise.
- Reference for O/I book languages are as follows:

Ar:	Arabic	Du:	Dutch	It:	Italian	Sp:	Spanish
Cf:	Canadian French	En:	English	Ko:	Korean	Sw:	Swedish
Cz:	Czech	Fr:	French	Po:	Polish	Co:	Traditional Chinese
Da:	Danish	Ge:	German	Ru:	Russian	Cn:	Simplified Chinese
Pe:	Persian	Ur:	Ukraine	Pr:	Portuguese	Fi:	Finnish

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			CABINET AND CHASSIS		
	1	K4AA01J00005	SPEAKER TERMINAL WHITE	2	
	2	K4AA01J00006	SPEAKER TERMINAL RED	2	
	3	REE2127	30P FFC (MAIN-AMP)	1	
	4	REE2128	40P FFC (MAIN-AMP)	1	
	5	REX1784	4P WIRE (METER ILLUMI LED R-METER ILLUMI LED L)	1	
	6	REX1897	2P WIRE(HEADPHONE-SMPS)	1	
	7	TXJ001AJ6E	7P FFC (OLED-MAIN SW)	1	
	8	TXJ002AJ6E	30P FFC (MAIN-OLED)	1	
	9	TXJ003AJ6E	14P FFC (MAIN-METER)	1	
	10	TXJ006AJ6E	30P FFC (MAIN-DIGITAL)	1	
	11	TXJ007AJ6E	15P FFC (MAIN-DIGITAL)	1	
	12	TXJ008AJ6E	6P FFC (OLED-SELECTOR)	1	
	13	TXJ009AJ6E	8P WIRE (CONTROL-DIGITAL)	1	
	14	TXJ010AJ6E	6P WIRE (METER ILLUMI LED R-METER ILLUMI LED L)	1	
	15	TXJ012AJ6E	1P WIRE RED (SPEAKER-AMP)	2	
	16	TXJ013AJ6E	1P WIRE BLACK (SPEAKER-AMP)	2	
	17	TXJ014AJ6E	4P WIRE (MAIN-REC OUT)	1	
	18	TXJ015AJ6E	7P WIRE (HEADPHONE-AMP)	1	
⚠	20	RFKKSUG700ES	TOP CABINET ASS'Y	1	
	21	RFKZSUG700ES	OLED ASS'Y	1	
	22	RFKNSUG700ES	METER UNIT ASS'Y	1	
	23	RFKGSUG700ES	FRONT PANEL ASS'Y	1	
	24	RGL0812-Q	LPD LIGHT GUIDE	1	
	25	RGL0814-Q	LIGHT GUIDE	1	
	26	RGW0452A-S	SELECTOR KNOB UNIT	1	
	27	RHN90001-1	NUT	2	
	28	RMA2534	CONDUCTION TERMINAL	4	
	29	RMN1082	PCB SUPPORT	5	
	33	RMR2182-K	SPEAKER TERMINAL HOLDER	2	
	34	RMX0536	LPD SHEET	1	
	36	TBXA60901	VOLUME KNOB	1	
	37	THNA037J	NUT	4	
⚠	38	TKFA22401A	REAR PANEL	1	G700E-S

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
⚠	38	TKFA22501A	REAR PANEL	1	G700PP-S
	40	TKPB68101	METER WINDOW	1	
	42	TMM23417	PCB SUPPORT	2	
	43	TMWX0891	TERMINAL HOLDER	1	
	44	TMWX0901	MAIN PCB SUPPORT	1	
	45	RMA2255-J	GND ANGLE	3	
	46	TMXX0921	SHADE SHEET A	1	
	47	TMXX0931	SHADE SHEET B	1	
	48	TYL0018	GRILLE METER ASS'Y	1	
	49	TYL0019	GRILLE LEFT ASS'Y	1	
	50	XWE8G16FJ	WASHER	4	
	51	RHD26016-1L	SCREW	1	
	52	RHD26045-L	SCREW	21	
	53	RHD26046-L	SCREW	5	
	54	RHD30070	SCREW	1	
	55	RHD30111-31	SCREW	71	
	56	RHD30119-K	SCREW	36	
	57	RHDC0023	SCREW	5	
	58	RHDX30005-J	SCREW	4	
	59	THEC283N	SCREW	4	
	60	XSB3+8FN	SCREW	22	
	61	XTB3+8JFJ	SCREW	1	
	62	XTB4+12JFJK	SCREW	4	
	63	XXE4D8FJK	SCREW	1	
	64	XYM4+F8FJ	SCREW	4	
	65	XYN3+C8FJK	SCREW	7	
	66	XYN3+F5FJK	SCREW	2	
	67	XYN3+F5FN	SCREW	6	
	68	TXJ011AJ6E	8P WIRE (OLED - VOLUME)	1	
	69	TEEX5017-1	HEATSINK DAMPING SHEET	1	
			PACKING MATERIALS		
	P1	TPCD69301A	PACKING CASE	1	
	P3	TPEH865	MIRAMAT SHEET	1	
	P2	TPH0035	POLYFOAM	1	
			ACCESSORIES		
	A1	N2QAYA000143	REMOTE CONTROL	1	
⚠	A2	K2CM3YY00041	AC CORD	1	G700E-S
⚠	A2	K2CS3YY00033	AC CORD	1	G700E-S
⚠	A2	K2CG3YY00191	AC CORD	1	G700PP-S
⚠	A3	TQBM0061	OI(En/Ge/Fr/It/Du)	1	G700E-S
⚠	A3	TQBM0062	OI(Sp/Sw/Da/Fi/Po)	1	G700E-S
⚠	A3	TQBM0060	OI(En/Cf)	1	G700PP-S

13.6. Electrical Replacement Parts List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- Capacitor value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF), F=Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1000 (OHM).
- All parts mentioned are supplied by PAVCJM unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by JAPAN.

E.S.D. standards for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATIC SENSITIVE (ES) DEVICES" section.

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			PRINTED CIRCUIT BOARDS		
	PCB1	TNPA6368AA	MAIN P.C.B	1	G700E-S
	PCB1	TNPA6368AB	MAIN P.C.B	1	G700PP-S
	PCB2	TNPA6336	DIGITAL P.C.B	1	
	PCB3	TNPA6335	AMP P.C.B	1	
⚠	PCB4	TNPA6359AA	SMPS P.C.B	1	G700E-S
⚠	PCB4	TNPA6359AB	SMPS P.C.B	1	G700PP-S
	PCB5	TNPA6364	REC OUT P.C.B	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	PCB6	TNPA6361	CONTROL P.C.B	1	
	PCB7	TNPA6366	METER P.C.B	1	
	PCB8	TNPA6337	METER ILLUMI LED L P.C.B	1	
	PCB9	TNPA6338	METER ILLUMI LED R P.C.B	1	
	PCB10	TNPA6367	VOLUME P.C.B	1	
	PCB11	TNPA6365	SELECTOR P.C.B	1	
	PCB12	TNPA6339	OLED P.C.B	1	
	PCB13	TNPA6340	MAIN SW P.C.B	1	
	PCB14	TNPA6360	HEADPHONE P.C.B	1	
	PCB15	TNPA6362	SPEAKER L P.C.B	1	
	PCB16	TNPA6363	SPEAKER R P.C.B	1	

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