Service Manual

Compact Stereo System

Model No. SC-AP01P
SC-AP01PC

Product Color: (K)...Black Type

AirPlay

b|g Wi Fi CERTIFIED®

WI-FI PROTECTED SETUP

Energy ENERGY STAR

SC-AP01

⚠ 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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Panasonic®

1 Safety Precautions

1.1.   General Guidelines

1. 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.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, carry out the following leakage current checks to prevent the customer from being exposed to shock hazards.

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.
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.
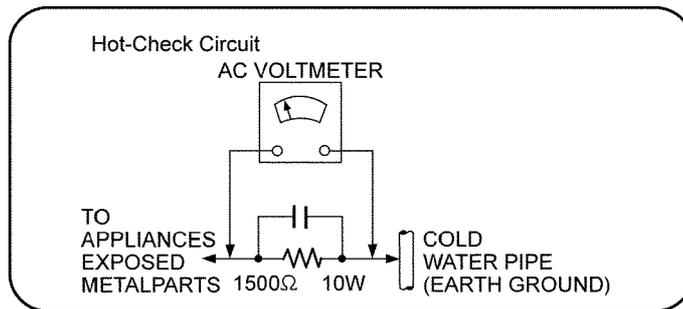
Figure. 1

1.2.   Before Repair and Adjustment

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 120V, at 60Hz in NO SIGNAL mode (at volume min and no link) should be ~200 mA.

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 Part 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
⚠	4	RYP1783A-K	REAR CABINET ASS'Y	P
⚠	4	RYP1783B-K	REAR CABINET ASS'Y	PC
⚠	12	RGN3206A-K1	NAME PLATE	PC
⚠	A1	RFEA228C-AG	AC ADAPTOR	
⚠	A2	RQT9655-P	O/I BOOK (En, Sp)	
⚠	A3	RQT9656-C	O/I BOOK (Cf)	PC
⚠	FP101	K5H5022A0031	FUSE PROTECTOR	

2 Warning

2.1. Prevention of Electro Static 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 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-equiped 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 equiped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up 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 remover 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, aluminium 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).

2.2. Service caution based on Legal restrictions

2.2.1. 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%

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.

- **Micro-processor:**

  1) The following components are supplied as an assembled part.
     - Micro-processor IC, (IC6002) (RFKWMAP01P)

3.2. AirPlay Operation

3.2.1. Outline

This function is that the sound in iTunes on PC or iPhone/iPod touch (describe as iPhone) can be output from the speakers of this unit (AP01) through the wireless LAN. Selecting a song and or selecting speakers are done on iTunes or iPhone.

3.2.2. Operation buttons

Basically this function is operated from iTunes or iPhone and there are no operations from this unit (AP01) or its remote control.
- Repeat or shuffle setting is not controlled from this unit (AP01) or its remote control.
- Playback control is not done from this unit (AP01) or its remote control.

3.2.3. Switch Selector

- By playback requirement from iTunes or iPhone, it will change selector to AirPlay.
- It will not change selector to AirPlay by this unit (AP01) or its remote control.
  (Because operation of song selection cannot be done from the unit (AP01) and need operations on iTunes or iPhone.)
- During power on, it will change selector to AirPlay by playback requirement not depending on selector. If CD or USB or iPod is in the playback condition, it stops playback and change selector to AirPlay.
- During power off and if NETWORK STANDBY setting is on, by playback requirement, it will power on and change selector to Air-Play. If NETWORK STANDBY setting is off, it will not respond for playback requirement.

3.2.4. Multiple Speakers

- If the source is on iTunes, this song can be output from multiple speakers. However, only one song can be played at the same time.
- If the source is on iPhone, it can select only one speaker. (iPhone behavior)

3.2.5. Volume control

- If change speaker volume on iTunes or iPhone side, the volume of this unit (AP01) will be changed. And if change volume on this unit (AP01), the volume level on iTunes or iPhone will be changed.
- If volume level is changed through AirPlay, the volume level will be shown on the FL display of this unit (AP01). The volume display is same as the case of operation on the main set.
- When change selector to AirPlay, if the volume level through AirPlay is different from volume level on main set, it will show volume level on FL display. The volume display is same as the case of operation of this unit (AP01).
- If volume is changed by this unit (AP01) button or remote control during AirPlay, the volume level is reflected to iTunes or iPhone side. If this unit (AP01) is in muting condition, it releases muting by volume change through AirPlay. (same as operation on main set)
- If volume is changed by this unit (AP01) button or remote control during other than AirPlay, the volume level is not reflected to iTunes or iPhone side. (It cannot be linked)

3.2.6. LED related to AirPlay

Related to AirPlay, there are below 2 kind of LED.

Wireless LAN connection status (2 color LED)
- Depending on network condition and when during connecting to network, it will control the LED as below.
- During power on, it will control the LED (lighting up/blinking). see below table of LED control.
- During power off, it will turn the LED off. (including iPod charging and standby with Network Standby on)
- After cold start (no network setting), it will not light up both of colors. After it success to connect (SUCCESS display) by network connection (WPS push button, WPS pin code, manual setting), it will start to control LED as below. Once success to connect, it will continue controlling LED until cold start.

Condition	LED control
Connecting to network	Blue : Solid
Not connection to network	Red : Blink (ON: 0.5s/OFF: 0.5s)
Firmware error	Red: Fast blink (ON: 0.25s/OFF: 0.25s)
During WPS push button mode (until start connection process)	Blue : Slow blink (ON: 1s/OFF: 1s)
During WPS pin code mode (until start connection process)	Purple (Blue + Red) : Blink (ON: 0.5s/OFF: 0.5s)
During Net Setup mode (until start connection process)	Purple (Blue + Red) : Slow blink (ON: 1s/OFF: 1s)
Processing network connection	Blue : Blink (ON: 0.5s/OFF: 0.5s)

Connecting to network: Condition that connected to wireless LAN and allocated IP address.

3.3.   AirPlay Firmwave Version Up Method

3.3.1.   Setting Up

Here is the required items to carry out the upgrade of the firmware
- WiFi router (x1)
- Windows PC (x1) : (Window XP, Window VISTA or Window 7)
- Ethernet cable (x1)

3.3.1.1.   Process

Step 1 : Connect WiFi router and WindowsPC by a ethernet cable. Router side to the LAN connector instead of a WAN connector.
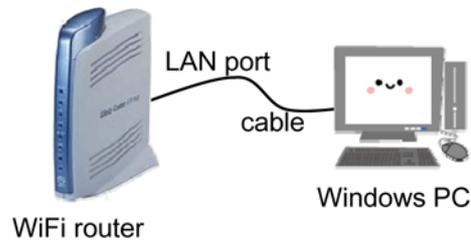
Step 2 : WiFi router settings
Set up the following for this unit (AP01).
Refer to the operation manual of a router for the concrete operation method.

SSID	HC57NET7
Authentication	WPA-PSK
Data encryption	AES
Network Key	12345678
Pre Shared Key	ASCII

IP address	192.168.11.1
Net mask	255.255.255.0

Step 3 : Windows PC settings
network settings as follows

DHCP	Off
IP address	192.168.11.20
Net mask	255.255.255.0

Step 4 : Download apache (HTTP Server) from http://www.meisei-u.ac.jp/mirror/apache/dist//httpd/binaries/win32/httpd-2.2.21-win32-x86-no_ssl.msi. and run this file.

Step 5 : Apache installation application (For setting Apache installed HTTP Server)

5-1

5-2

5-3

5-4

5-5

5-6

5-7

5-8

5-9
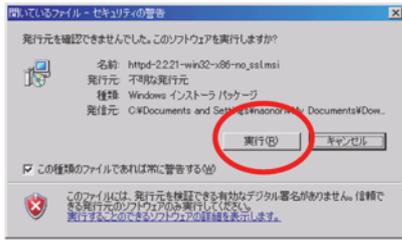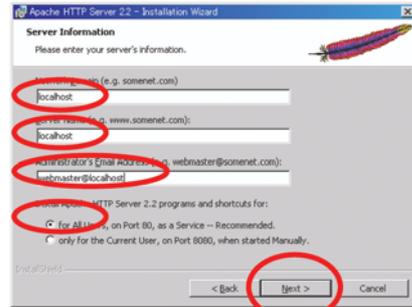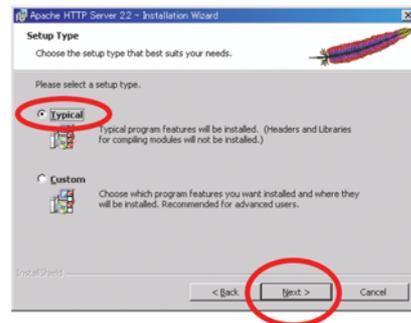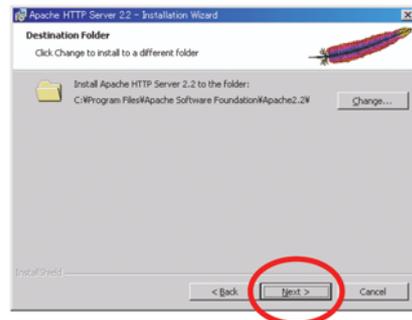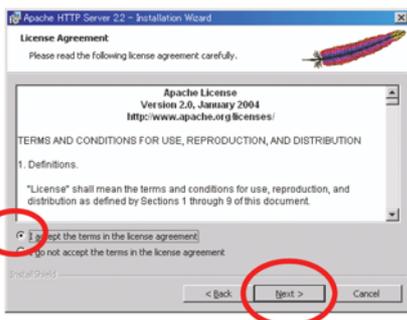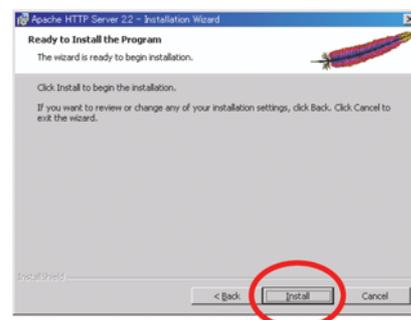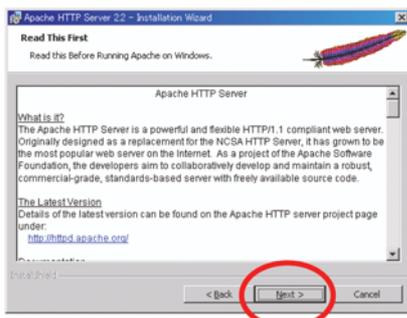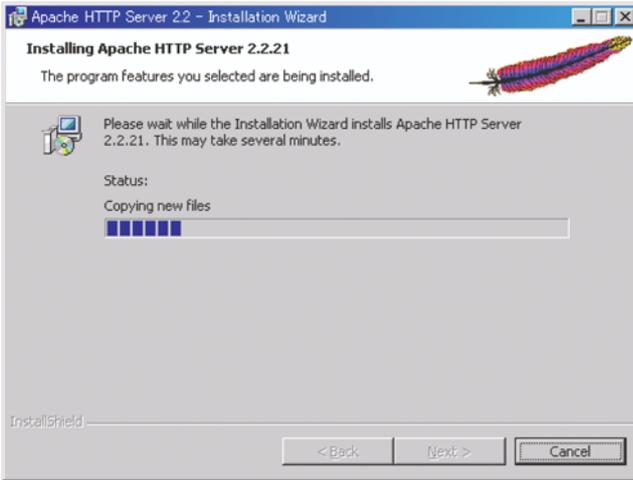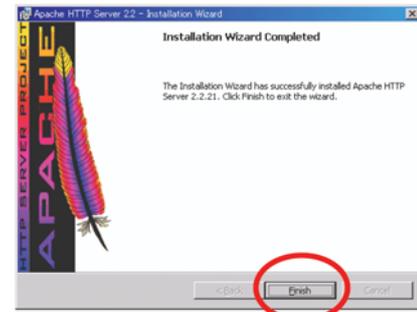
Step 6 : Make download folder. (C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\ap01)
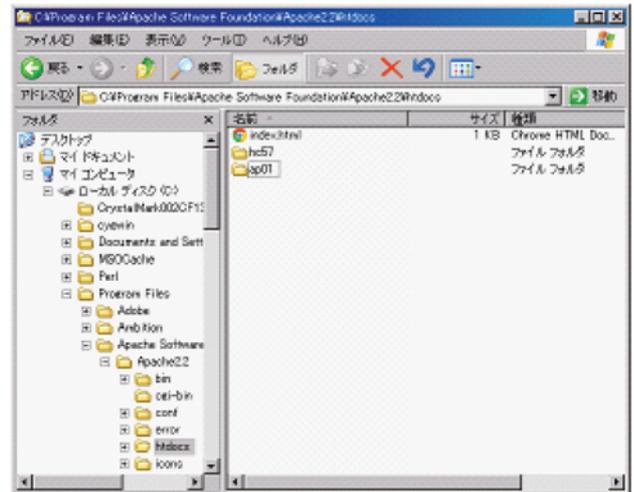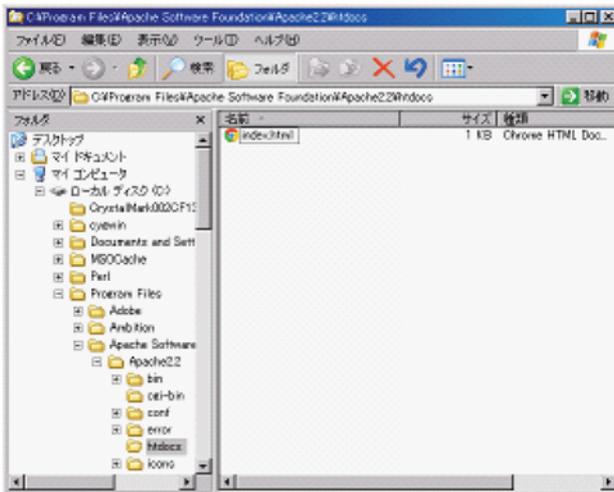
Step 7 : Install to Http Server.
- index.xml
- AP01_xxx_xxx.fw
(e.g. AP01_018_005.fw)
AP01 : copy 2 files to AP01 folder

Step 8 : Update.
1. Disconnect AC cable.
2. Keep pressing WPS button + connect AC cable.
   FL : "UD MODE _" blinking.
3. Press [7] of remote controller.
   FL : "UD MODE 7" display
   after keep this status about 30 seconds,
   start to blink blue led (this means download firmware and update)
4. SUCCESS: LED change blue lighting.
   FAIL : LED change red blinking
5. Disconnect AC cable
* **Information**
 • If already it is latest version, it is displayed "NO NEED" after STEP2.

Apache installed
HTTP Server

WiFi router   Windows PC

AP01
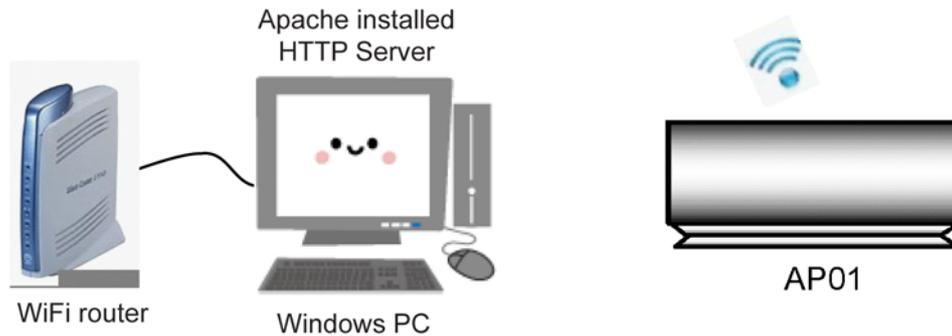
4 Specifications

■ General

General

Main set rating	DC 12 V, 20 W

System

Power consumption (With USB port charging)	Approx. 22 W
Power consumption in standby mode (When "NET STANDBY" is "OFF")	Approx. 0.15 W
Power consumption in standby mode (When "NET STANDBY" is "ON")	Approx. 3.7 W

AC Adaptor

Input	AC 100 V to 240 V, 50/60 Hz
Output	DC 12 V, 3 A
Dimensions (W x H x D)	430 mm x 128 mm x 59 mm (16 15/16" x 5 1/32" x 2 5/16")
Mass	Approx. 1 kg (2.2 lbs)
Operating temperature range	0 °C to +40 °C (+32 °F to +104 °F)
Operating humidity range	20% to 80 % RH (no condensation)

■ Amplifier Section

Output power:

RMS Output Power Stereo Mode

Front Ch (both ch driven)	5 W per channel (6 Ω), 1 kHz, 10% THD
Total RMS Stereo mode power	10 W

FTC Output Power Stereo mode

Front Ch (both ch driven)	3.5 W per channel (6 Ω), 60Hz to 20 kHz, 1% THD
Total FTC Stereo mode power	7 W

■ Speaker System Section

Type	1 way, 1 speaker system (Bass Reflex)

Speaker unit(s)

Full range	4 cm (1 9/16") Cone type x 2
Impedance	6 Ω

■ Wi-Fi® / AirPlay Section

Wi-Fi®

WLAN Standards	IEEE802.11b/g
Frequency range	2.4 GHz band
Security	WEP, WPA™, WPA2™
WPS version	Version 2.0 (WEP not support)

■ Terminal Section

USB Port

USB Port Power	DC OUT 5 V, 2.1 A Max (charging only)

- Specifications are subject to change without notice. Mass and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

5 General/Introduction

5.1. Remote control app operations

By installing the remote control app "Panasonic Stereo System Remote 2012" onto your iPhone or iPod touch, it is possible to adjust the volume, turn the unit on and off, and adjust various other features of this unit.
• The following operations and settings cannot be performed from a computer.

Visit the following website for details on how to operate the remote control app "Panasonic Stereo System Remote 2012":
http://panasonic.jp/support/global/cs/
(This site is in English only.)

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• This application is specially made for iPhone and iPod touch.
• Some operations and settings can only be performed by using the remote control app.
• Refer to the operating instructions of the iPhone or iPod touch for details about its operations.

Installing the app

Preparation
Connect the iPhone or iPod touch to the Internet.

1 On the iPhone or iPod touch:
Start the "**App Store**" app.

2 Select "**Search**" and search for "**Panasonic Stereo System Remote 2012**".

3 Select "**Panasonic Stereo System Remote 2012**" and install it onto your iOS device.

   • The remote control app icon named "**StereoRemote**" is added to your home screen.

Operations from the remote control app

Preparation
• Complete the network settings.
• Turn the unit on.
   - Check that the Wi-Fi® status indicator lights blue.
     If it continues to blink red, check the wireless network settings.
• Turn on the iPhone or iPod touch.
   (Make sure that the iPhone or iPod touch is connected to the same wireless network as this unit.)

1 On the iPhone or iPod touch:
Start the "**StereoRemote**" app.

2 If the "**Device List**" is displayed, select "**Panasonic AP01 _ _ _ _ _ _**".[1, 2]

   ↳ A menu screen is displayed.
      – The operation indicator blinks green.

*1: " _ " stands for a digit that is unique to each set.
*2: If you have not changed the name, this unit will be displayed as "Panasonic AP01 _ _ _ _ _ _".
   The name that is displayed for this unit can be changed from the "Edit STEREO SYSTEM name" settings in "Method 2".

Compatibility CD, iPod/iPhone & USB
• For compatibility of CD, iPod/iPhone & USB please refer to Operating Instructions.

5.2. Using AirPlay with this unit's speakers

Preparation
- Complete the network settings.
- Connect the iOS device or Mac/PC to the same **home wireless network** as this unit.

1 Turn the unit on.
- Check that the Wi-Fi® status indicator **lights blue**.

Blinks red

Lights blue
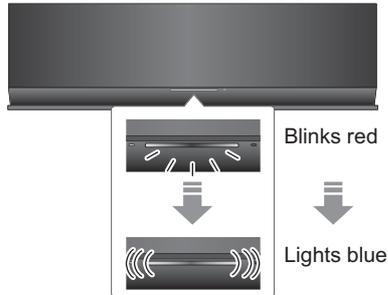
- If it continues to blink red, check the wireless network settings.

2 iOS device:
  Start the "**Music**" (or iPod) app.
  Mac/PC:
  Start "**iTunes**".

- If the Music app on your iOS device is used, select the audio file you want to play.

3 Select "**Panasonic AP01 _ _ _ _ _ _**"*1, 2 from the AirPlay ⬛ icon at the bottom right-hand corner of the display.

  ↳ Check the volume settings before starting the playback. (When AirPlay is used for the first time, the volume may be output at the maximum setting.)

e.g., iPhone iOS 5.0
(When held vertically)

e.g., iTunes 10.5
(Bottom right)

4 Start play.
- The playback will start with a slight delay.

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- This unit can be set to turn on automatically when this unit is selected as the output speakers.
- Volume changes on the iOS device or iTunes will be applied to this unit. (Refer to the iTunes Help for the required settings in iTunes.)
- With some iOS and iTunes versions, it may not be possible to restart the AirPlay playback if the unit is turned off during the AirPlay playback.
  In this case, select a different device from the AirPlay icon of the Music app or iTunes and then re-select this unit as the output speakers.
- AirPlay will not work when playing back videos on iTunes.
- If the AirPlay ⬛ icon is not displayed even if Wi-Fi® status indicator lights blue, try restarting the wireless network router.

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*1: " _ " stands for a digit that is unique to each set.
*2: If you have not changed the name, this unit will be displayed as "Panasonic AP01 _ _ _ _ _ _".
    The name that is displayed for this unit can be changed from the "Edit STEREO SYSTEM name" settings in "Method 2".

5.3. AirPlay Network operations

5.3.1. Method 1

Network settings

To use the AirPlay function, this unit must join the same wireless network as the compatible device.

1 Press **[⏻/I]** to turn the unit on.

- Only the power on indicator lights when the wireless network is not set.

Lights red
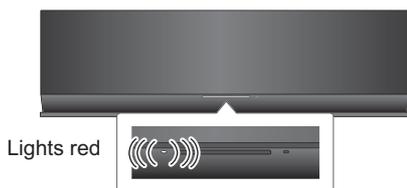
2 Check which type of wireless network router you are using.

■ **"Method 1" :**

If your wireless network router supports WPS (Wi-Fi Protected Setup™).

■ **"Method 2" :**

If your wireless network router does not support WPS (Wi-Fi Protected Setup™).

- Refer to the operating instructions of the wireless network router for details.

If you do not know which type of wireless network router you are using, use "Method 2".

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- When performing the network settings, place this unit close to the wireless router.
- Simultaneous use with other 2.4 GHz devices, such as microwaves, cordless telephones, etc., may result in connection interruptions.
- Immediately after this unit is turned on, the network setup may take longer to start.
- This unit cannot join a wireless network using WEP security settings with "Method 1". Use "Method 2" to join the wireless network.
- To cancel the setting in the middle, press [Í /I] to turn off the unit.
- For up-to-date compatibility information on your Wireless router refer to
  http://panasonic.jp/support/global/cs/
  (This site is in English only.)

Method 1
If your wireless network router supports WPS.

■ Using the WPS Push Button Configuration (PBC)

The WPS identifier mark.

WPS Push Button Configuration (PBC) compatible wireless router may have this mark.
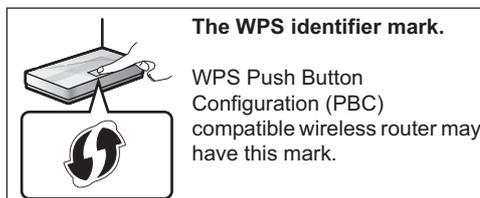
1 Press and hold **[– WPS]** on the unit for more than 2 seconds.

- Complete step 2 within 2 mins.

Blinks blue

2 Press the WPS button on the wireless router.

3 The unit's settings are completed when the Wi-Fi® status indicator **stops blinking** after about 2 minutes and **lights blue**.

The Wi-Fi® status indicator turns off if the connection was not made within the set time limit. Try the setting again. If the Wi-Fi® status indicator still turns off, try "Method 2".

4 To use AirPlay.

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- To use the WPS PIN code.
- To edit this system's name, it is necessary to use "Method 2".

5.3.2. Method 2

Method 2
If your wireless network router does not support WPS.

With this method, you will access this unit's wireless network settings from the Internet browser of your compatible device.
• The following explanations are based on an iPhone.

Preparation
• Turn on your iPhone.

1 Press and hold both **[VOLUME +]** and **[– WPS]** on this unit for more than 2 seconds.

Blinks purple
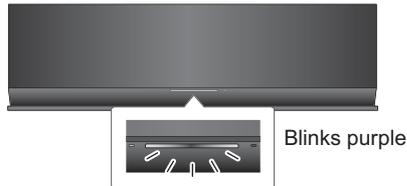
• If the indicator blinks blue, turn the unit off and on and repeat step 1.

2 Connect your iPhone to this unit's wireless network named "**Setup _ _ _ _ _ _**".*1, 2

• Once "Setup _ _ _ _ _ _" is selected, continue to step 3.

3 Start "**Safari**" on your iPhone and type "**http://192.168.1.12/**" into the URL address field and display the page.
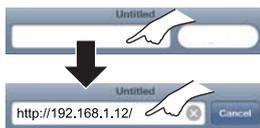
↳ This unit's setup window is displayed.

4 Select "**Search wireless network**".

5 Select and input the details.
• Check your **home wireless network name** (Network name (SSID)) and **password** for this network. This can often be found on the wireless router itself.
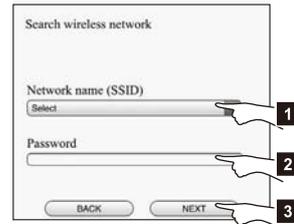
1 Select your **home wireless network name**.*3
2 Type the **password**.
3 Select "**NEXT**".

6 Select "**JOIN**" to apply the settings.
↳ In the pop-up screen, select "OK" to continue.
  – Select "CANCEL" to return to the setup window.
↳ The Wi-Fi® status indicator blinks blue.
  – You can now close the Safari browser.

7 The unit's settings are completed when the Wi-Fi® status indicator **stops blinking** after about 2 minutes and **lights blue**.

If the Wi-Fi® status indicator turns off, turn the unit off and on again, check the wireless network password and other settings and start again from step 1.

8 Make sure to connect your iPhone back to your **home wireless network**.*4

9 To use AirPlay.

---

*1: " _ " stands for a digit that is unique to each set.
*2: Make sure that DHCP is enabled for the network setting on the iPhone.
*3: If you have set your wireless network to be invisible, select "BACK" and refer to "Alternative settings".
*4: To use the AirPlay function, connect the iPhone to the wireless network selected in step 5.

Compatibility devices (AirPlay)
• For compatibility of devices (AirPlay) please refer to Operating Instructions

5.4. Licenses

AirPlay, the AirPlay logo, iPad, iPhone, and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries.

The Wi-Fi CERTIFIED Logo is a certification mark of the Wi-Fi Alliance.
The Wi-Fi Protected Setup Mark is a mark of the Wi-Fi Alliance.
"Wi-Fi", "Wi-Fi Protected Setup", "WPA" and "WPA2" are marks or registered marks of the Wi-Fi Alliance.

6 Location of Controls and Components

6.1. Main Unit Key Button Operations
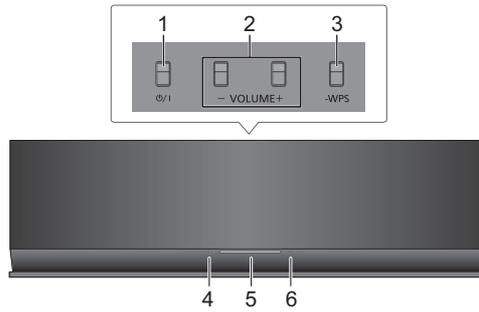
1   Standby/on switch [⏻/I]
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of power.

2   Adjust the volume

3   WPS pairing button

4   Power on indicator

5   Wi-Fi® status indicator

6   Operation indicator

7 Installation Instructions

7.1. Connections

Connect the AC adaptor to the household AC outlet.

This system consumes a small amount of AC power even when turned off.

≥ When leaving the product unused for a long time, turn off the unit and pull the AC adaptor out of the household AC outlet for power saving.

(DC IN 12 V)
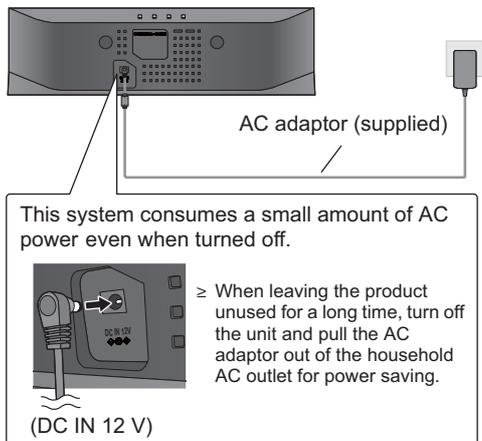
- Do not use any other AC adaptors except the supplied one.
- These speakers do not have magnetic shielding. Do not place them near a television, personal computer or other devices easily influenced by magnetism.
- When moving this unit, be sure to remove the USB cable and turn this unit to standby mode.

Charging from the USB port

When this unit is turned on and a portable music player that is compatible to USB charging is connected to this unit's USB port, charging will start automatically.
- It is not possible to play back the music on the connected device from this unit's speakers or operate the device from this unit through this connection.
- Refer to the operating instructions of the device for details about charging.

Preparation
Turn this unit on.

1 Connect the compatible device to this unit with an appropriate USB cable.

To the compatible device

USB cable*1

(DC OUT 5 V, 2.1 A MAX)
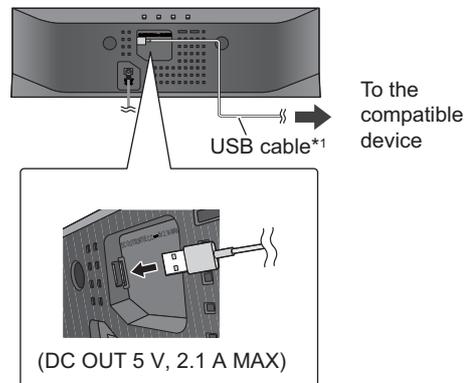
- Refer to the connected device to check if the device is fully charged.

2 Once fully charged, remove the USB cable from this unit.

- There is no charging during standby mode.
- This unit is capable of charging up to a load of 2.1 A.
- When fully charged, this unit will not stop the charging automatically. Remove the USB cable from this unit once the connected device is fully charged.

*1: The USB cable is not supplied with this unit. Use the USB cable that is supplied with the compatible device. If a USB cable is not supplied with the device, be sure to use an appropriate USB cable.
Refer to the operating instructions of the device for details about the appropriate USB cable.

8 Troubleshooting Guide

8.1. Setting up to AirPlay

START

WPS button on Wireless router — N

Y

WPS push button method
- Press and hold WPS button on HC mainset
- Press WPS button on wireless router
- Connected? — N / Y
- Connection Completed

Network setting mode (Setting by using browser)
- Set up HC to NET SETUP mode
- "Setup ******" shown on Wi-Fi of iPhone — N → Malfunction with mainset (AirPlay module)
- Y
- Connect to "Setup ******"
- Input http://192.168.1.12/ on the browser
- Select "Seach wireless network".
- Access point appears? — N → Back to previous screen, select Manual input → Input SSID, encryption method and PW.
- Y
- Select access point and input PW.
- Fixed IP or Proxy setting needed? — N
- Y
- Select Advanced setting
- Input each items on advanced settings
- Click JOINT
- Connected? — N → ①
- Y
- Connection Completed

① Not connected

- SSID for router and PW correct? — N → Try again with correct SSID and PW
- Y
- Any devices to interfere frequency, such as microwave., etc? — N → Turn off the device interfering frequency or place it in the distance
- Y
- Distance to router not too far? — N → Try again near router
- Y
- Other devices can be connected to router? — N → Malfunction with router
- Y
- Malfunction with mainset (AirPlay module)

8.2. AirPlay Check

```
                    ┌─────────────┐
                    │ Run AirPlay │
                    └──────┬──────┘
                           │
                  ╱ Connected to Wi-Fi ╲ ──N──────────────────────────────┐
                  ╲ (LED turn into blue)? ╱                                │
                           │ Y                                             │
                  ╱ iOS4.2 or higher ╲ ──N──┐                              │
                  ╲ or iTune10.2 or higher? ╱    ┌──────────────────┐      │
                           │ Y               └──│ Update to the latest │   │
                                                │   iOS or iTune       │   │
                  ╱ iPhone connected to ╲ ──N──┐ └──────────────────┘      │
                  ╲ the same Wi-Fi network? ╱   ┌──────────────────┐       │
                           │ Y               └──│   Connect to        │    │
                                                │ the same Wi-Fi network │ │
                  ╱ Speaker name ╲ ──N──┐       └──────────────────┘       │
                  ╲ appears?     ╱      │                                   │
                     │ Y    ┌─────────────────────────┐                    │
                           │ Turn Wi-Fi off and off   │                    │
                           │   on iPhone/iPod         │                    │
                           └───────────┬─────────────┘                    │
                              ╱ Speaker name ╲ ──N──┐                      │
                              ╲ appears?     ╱       │                     │
                                   │ Y              │                      │
                           ┌─────────────────────────┐                    │
                           │  Reset main set and router│                   │
                           │     (Power on/off)        │                   │
                           └───────────┬─────────────┘                    │
                              ╱ Speaker name ╲ ──N──┐                      │
                              ╲ appears?     ╱       │                     │
                                   │ Y      ┌──────────────────┐           │
                                 ( 2 )      │ Malfunction with mainset │   │
                                            │   (AirPlay module)       │   │
                                            └──────────────────┘           │
```

```
                  ╱ Any devices ╲
                  ╱ to interfere frequency, such ╲ ──N──┐
                  ╲ as microwave., etc? ╱                │
                           │ Y                    ┌──────────────────┐
                                                  │ Turn off the device │
                                                  │ interfering frequency│
                                                  │ or place it in the distance│
                  ╱ Distance to router ╲ ──N──┐   └──────────────────┘
                  ╲ not too far? ╱             │
                           │ Y          ┌──────────────┐
                                        │ Try again near│
                                        │    router     │
                  ╱ Other devices ╲     └──────────────┘
                  ╱ can be connected to ╲ ──N──┐
                  ╲ router? ╱                   │
                           │ Y          ┌──────────────────┐
                  ┌──────────────────┐  │ Malfunction with router│
                  │ Malfunction with mainset │ └──────────────────┘
                  │   (AirPlay module)       │
                  └──────────────────┘
```

```
                         ( 2 )
                           │
                  ┌──────────────────┐
                  │  Select speaker  │
                  └────────┬─────────┘
                  ╱ Not play back, or ╲
                  ╱ sound interrupted while ╲ ──N──┐
                  ╲ played back ╱                   │
                           │ Y               ┌────────┐
                  ┌──────────────────┐       │   OK   │
                  │ Check frequency strength │ └────────┘
                  └────────┬─────────┘
                  ╱ Level 3 ? ╲ ──N──┐
                  ╲          ╱        │
                      │ Y      ┌──────────────────┐
                              │ · Closer to router  │
                              │ · Separate from interference│
                  ╱ iPhone is not too far ╲ ──N──┐ └──────────────────┘
                  ╲ from router? ╱                │
                           │ Y          ┌──────────────────┐
                                        │ Close iPhone to router│
                  ╱ Same as in playing ╲ ──N──┐  └──────────────────┘
                  ╲ back from iTune? ╱          │
                           │ Y          ┌──────────────────┐
                                        │ Malfunction with iPhone│
                  ╱ Same as with ╲ ──N──┐      └──────────────────┘
                  ╲ other AirPlay devices? ╱    │
                           │ Y          ┌──────────────────┐
                  ┌──────────────────┐  │ Malfunction with mainset│
                  │ Malfunction with router│ │   (AirPlay module)  │
                  └──────────────────┘  └──────────────────┘
```

9 Disassembly and Assembly Instructions

Caution Note:

- **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 the 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. (See caution as described below)**

```
CAUTION: HOT!!
PLEASE DO NOT
TOUCH THE HEAT SINK
```

- **During disassembly and assembly, please ensure proper service tools, equipments or jigs is being used.**
- **During replacement of component parts, please refer to the section of "Replacement Parts List" as described in the service manual.**
- **Select items from the following indexes when disassembly or replacement are required.**

- **Disassembly of Net Frame Assembly**
- **Disassembly of Base Ornament Block**
- **Disassembly of LED P.C.B.**
- **Disassembly of Main P.C.B. and AirPlay Module**
- **Disassembly of DC In P.C.B.**
- **Disassembly of Front Speaker (R)**
- **Disassembly of Port Unit (R)**
- **Disassembly of Front Speaker (L)**
- **Disassembly of Port Unit (L)**

9.1. Disassembly flow chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.

```
┌─────────────────────────┐
│  9.4 Net Frame Assembly  │
└─────────────────────────┘
             │
             ▼
┌─────────────────────────┐
│       9.5 Base          │
│    Ornament Block       │
└─────────────────────────┘
   │         │         │
   ▼         ▼         ▼
┌──────────┐ ┌──────────────┐ ┌──────────────┐
│9.11 Front│ │9.7 Main P.C.B.│ │9.6 LED P.C.B.│
│Speaker(L)│ │and AirPlay   │ │              │
│          │ │Module        │ │              │
└──────────┘ └──────────────┘ └──────────────┘
    │              │
    ▼              ▼
┌──────────┐ ┌──────────────┐
│9.12 Port │ │9.8 DC In     │
│Unit (L)  │ │P.C.B.        │
└──────────┘ └──────────────┘
                   │
                   ▼
             ┌──────────────┐
             │9.9 Front     │
             │Speaker (R)   │
             └──────────────┘
                   │
                   ▼
             ┌──────────────┐
             │9.10 Port     │
             │Unit (R)      │
             └──────────────┘
```
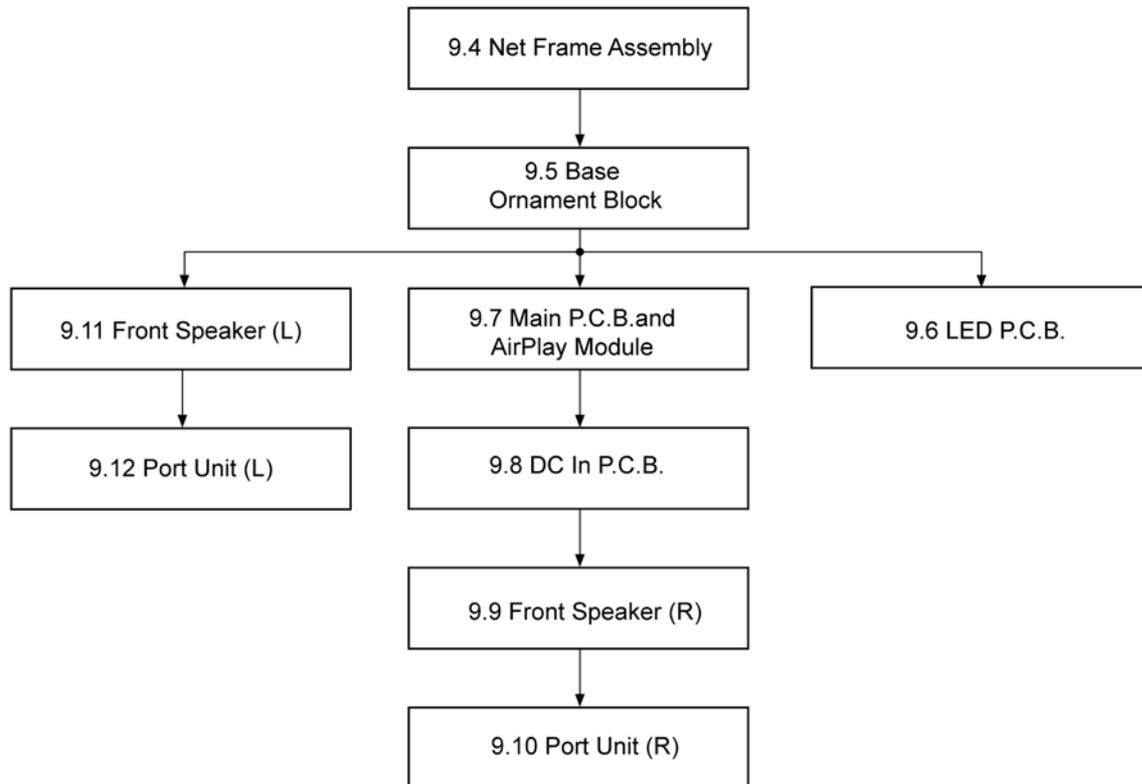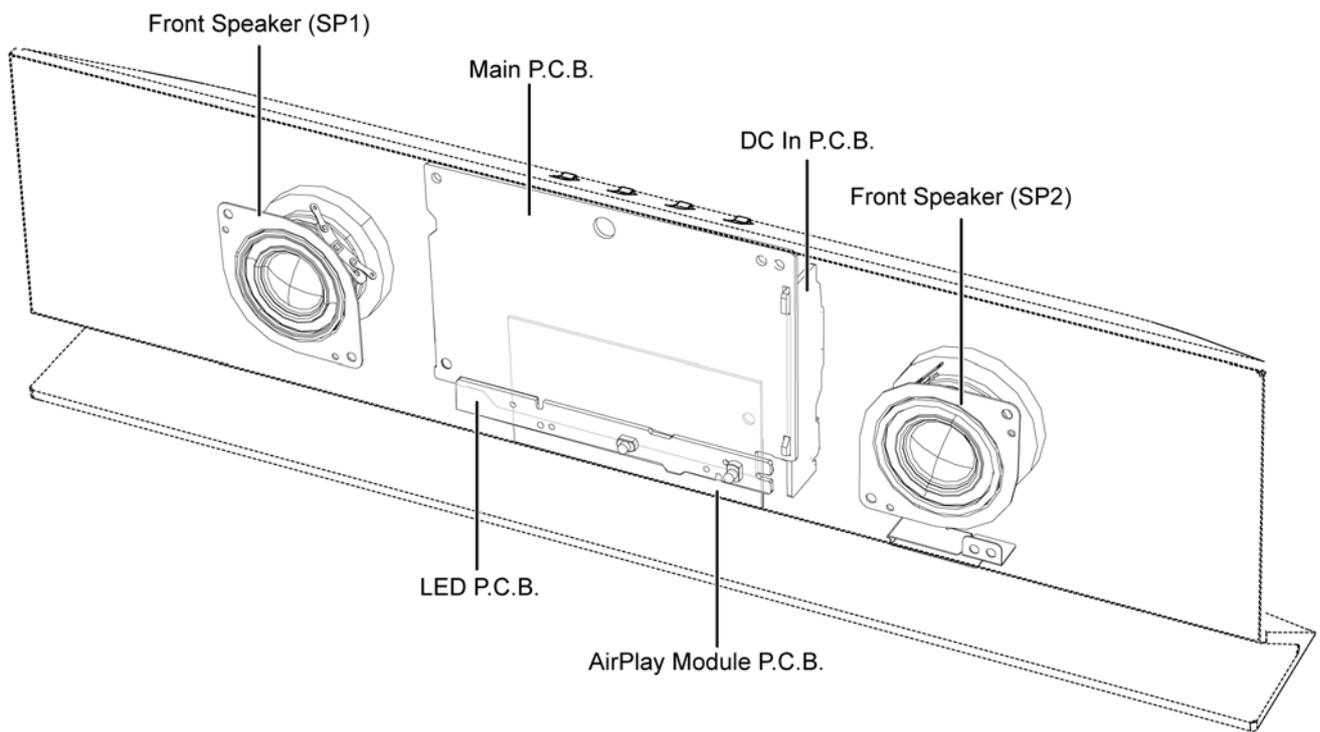
9.2. Types of Screws

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

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

a : RHD26046-K

b : RHD26046

c : VHD1224-1

d : XTW3+12TFJK

9.3. Main Parts Location Diagram

9.4. Disassembly of Net Frame Assembly

Step 1 : Slightly lift up the Net Frame Assembly to release the Bosses.

Caution 1 : Do not use strong force when lifting up the Net Frame Assembly.

Caution 2 : During assembling, ensure that the Bosses of the Net Frame Assembly are fully insert and press down.
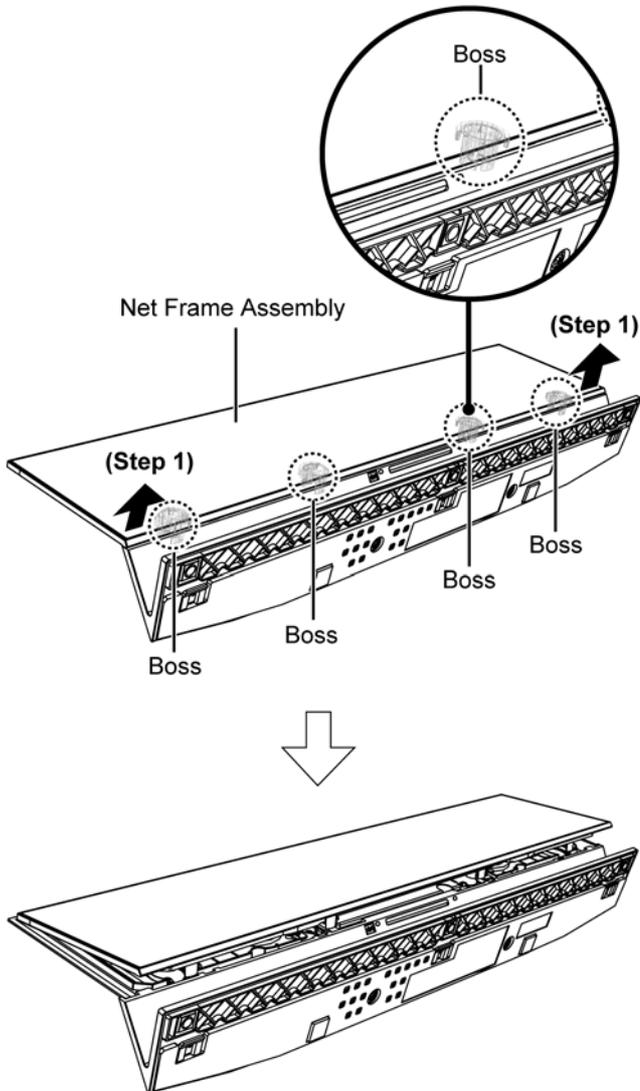
Step 2 : Remove the Net Frame Assembly as shown.

Caution : Do not exert too much force as it may damage the catches of the Net Frame Assembly.
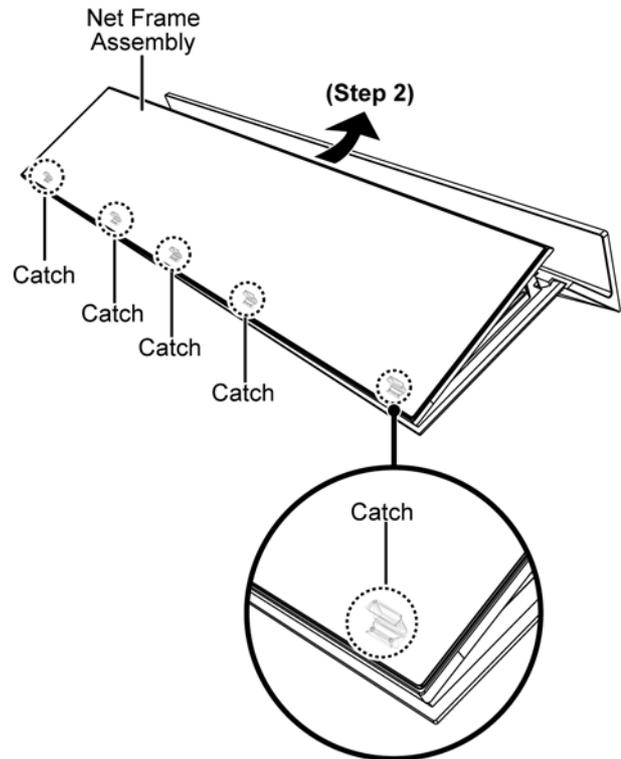
Caution : During assembling, ensure that the Net Frame Assembly is properly inserted and fully catches onto the guides of the unit.
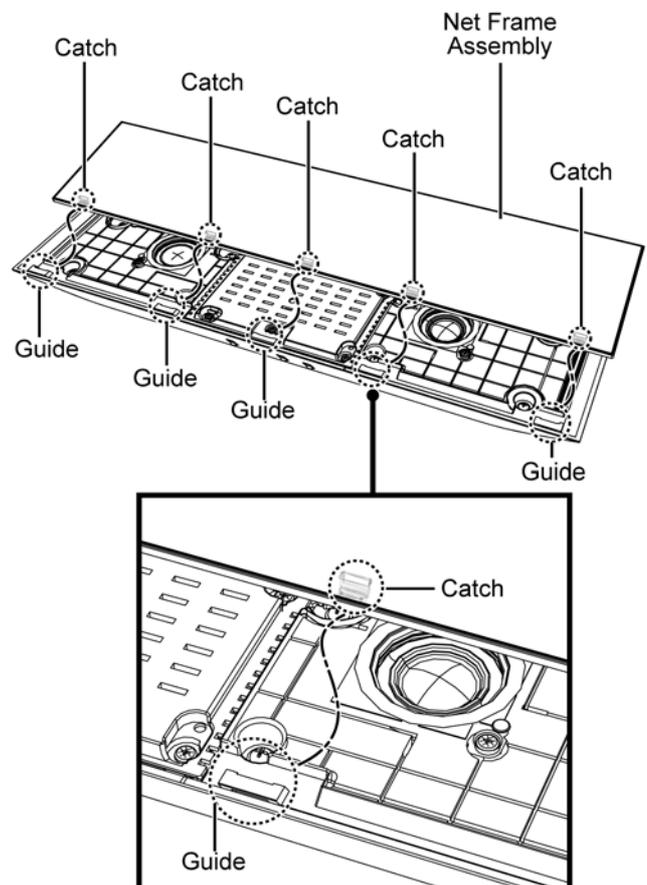
9.5. Disassembly of Base Ornament Block

• Refer to "Disassembly of Net Frame Assembly"

Step 1 : Remove 5 screws.
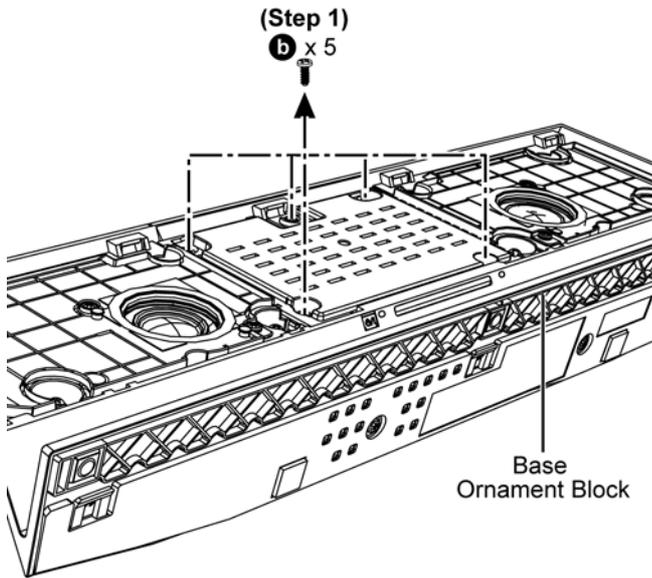
Step 2 : Remove the Front Panel as shown.

Caution : During assembling, ensure that the Front Panel is properly located onto the Rear Cabinet Unit before screwing.
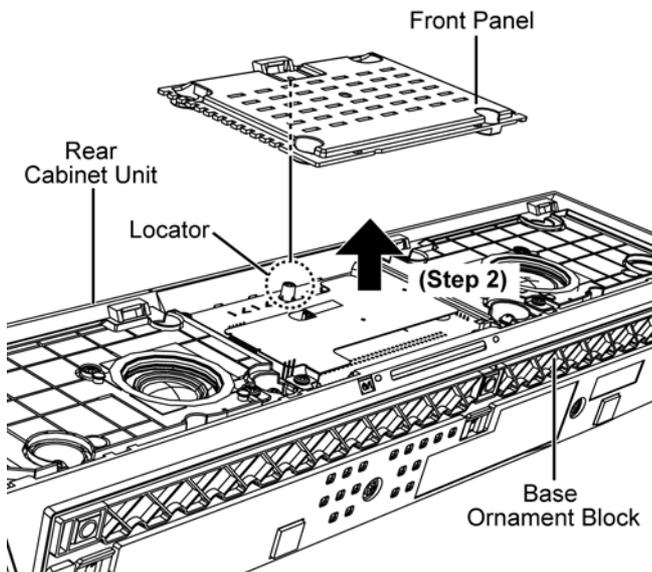
Step 3 : Remove 2 screws.
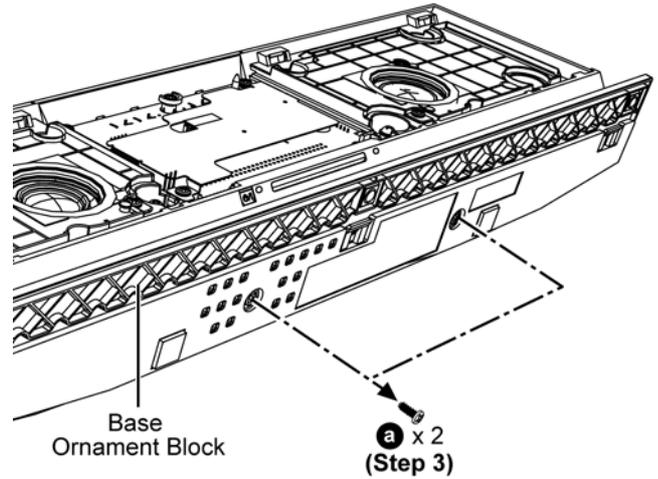
Step 4 : Remove 2 screws.
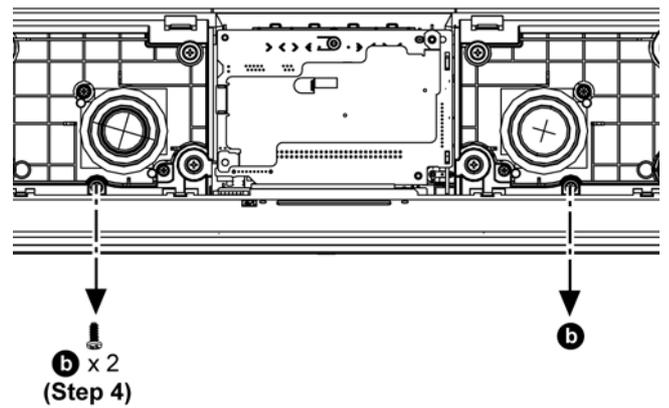
Step 5 : Release 4 catches.

(Front View)
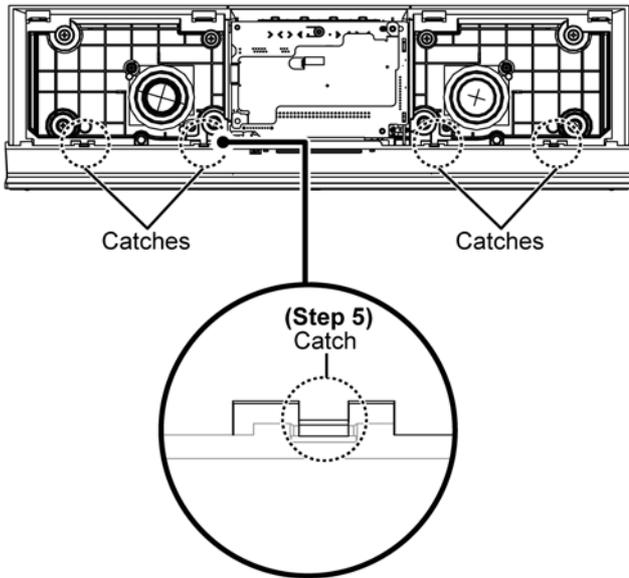
Catches   Catches

(Step 5)
Catch

Caution : During assembling, ensure that the Base Ornament Block are properly inserted and fully catches onto the Rear Cabinet Unit with a "Click" sound.

Base
Ornament Block

Rear
Cabinet Unit

Fully
Located   Fully
                 Inserted
Fully   Fully
Catched   Catched

Fully   Fully
Inserted   Located
     Fully   Fully
     Catched   Catched
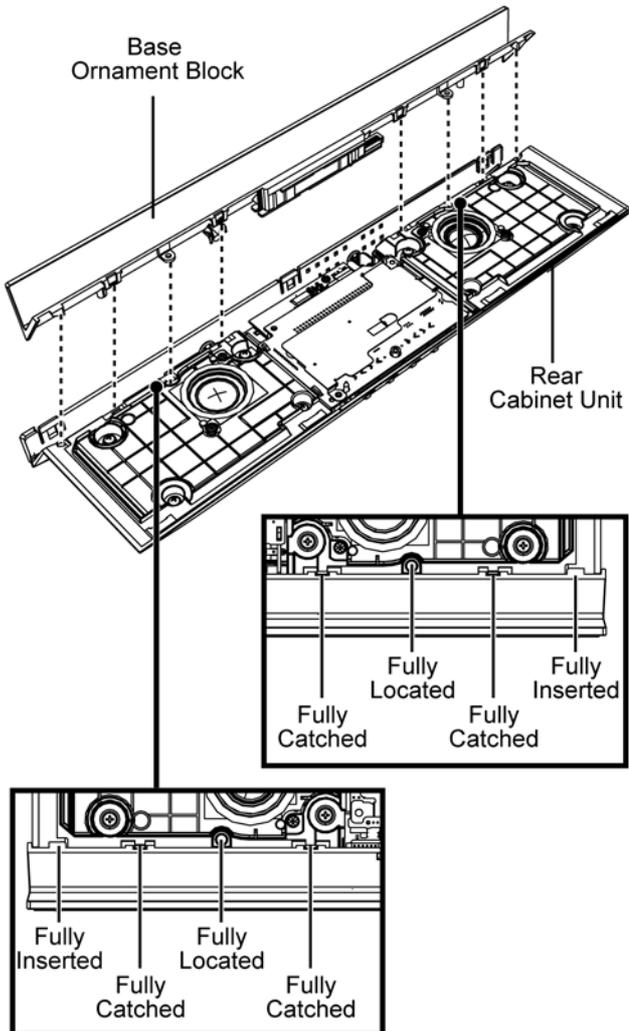
Step 6 : Release 3 catches.

Caution : During assembling, ensure that the Base Ornament Block are properly inserted and fully catched onto the Rear Cabinet Unit with a "Click" sound.

Base
Ornament Block

Catch

Catch

Rear
Cabinet Unit

Catch
(Step 6)

Step 7 : Lift up the Base Ornament Block as shown.

Base
Ornament Block   (Step 7)

28
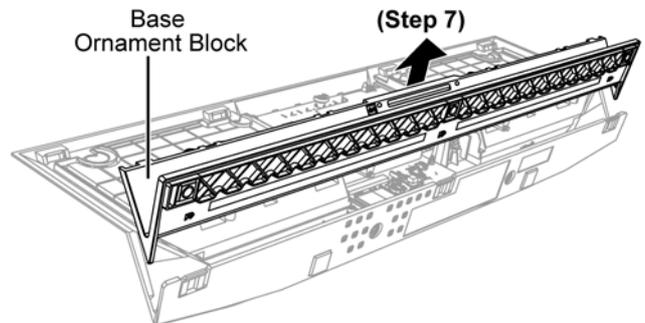
Step 8 : Detach 8P Cable Wire at the connector (CN6008) on the LED P.C.B..

Step 9 : Remove the Base Ornament Block as shown.

LED P.C.B.

CN6008
(Step 8)

(Step 9)

Base
Ornament Block

Caution 1 : During assembling, ensure that the 8P Cable Wire is properly dressed as shown.

8P
Cable Wire

Base
Ornament Block
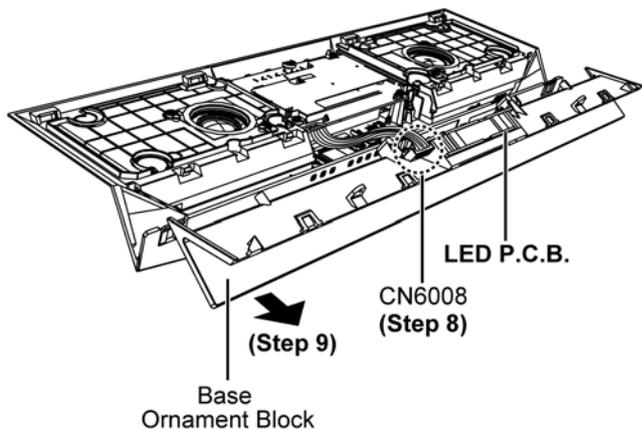
Caution 2 : During assembling, press down and push the 8P Cable Wire as shown to avoid obstructing the screw boss.

8P
Cable Wire

Base
Ornament Block
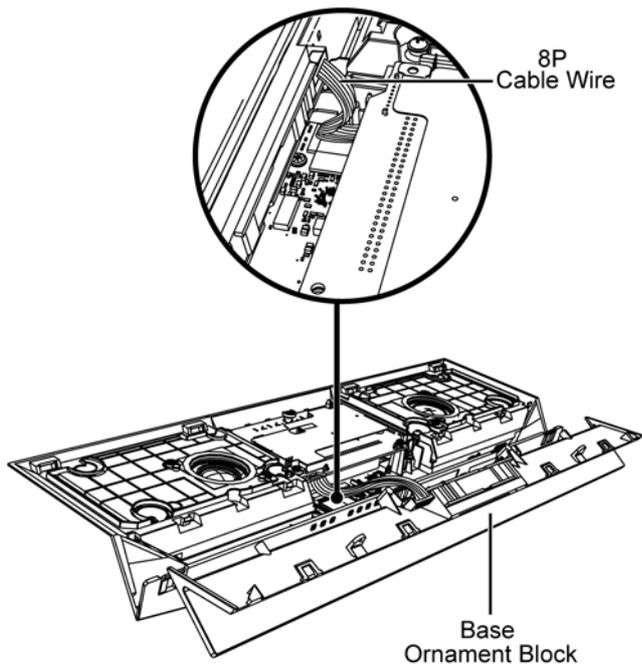
9.6.   Disassembly of LED P.C.B.

• Refer to "Disassembly of Net Frame Assembly"
• Refer to "Disassembly of Base Ornament Block"

Step 1 : Remove 2 screws.
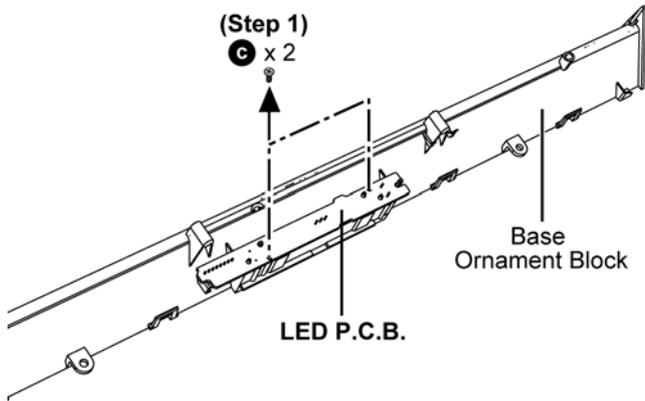
Step 2 : Remove the LED P.C.B..
Caution : During assembling, ensure that the LED P.C.B. is properly seated onto the locators.
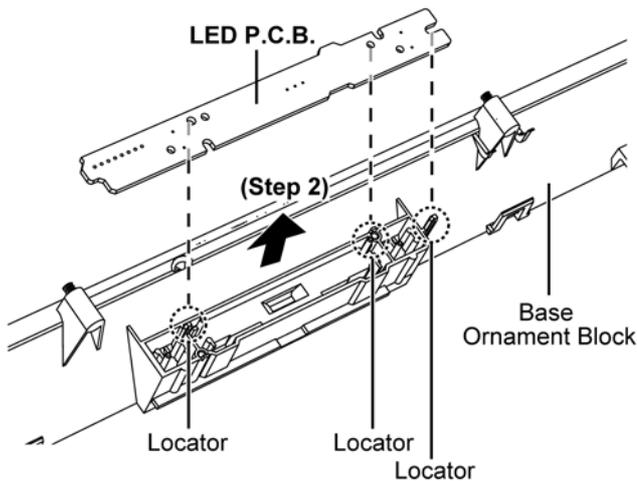
9.7.   Disassembly of Main P.C.B. and AirPlay Module

• Refer to "Disassembly of Net Frame Assembly"
• Refer to "Disassembly of Base Ornament Block"

Step 1 : Remove 2 screws.
Step 2 : Lift up the Himelon.
Caution : Replace the Himelon if they is torn during disassembling.
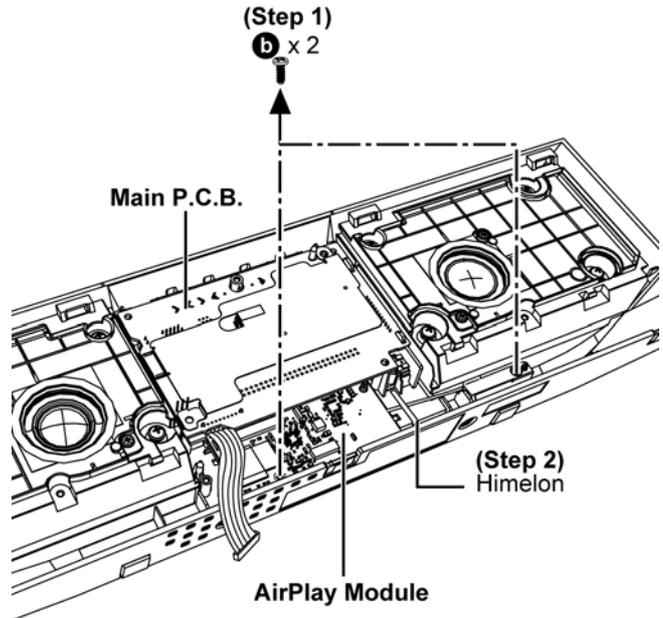
Step 3 : Remove the Ground Plate.
Caution : Keep the Ground Plate in safe place and place them back during assembling.

30
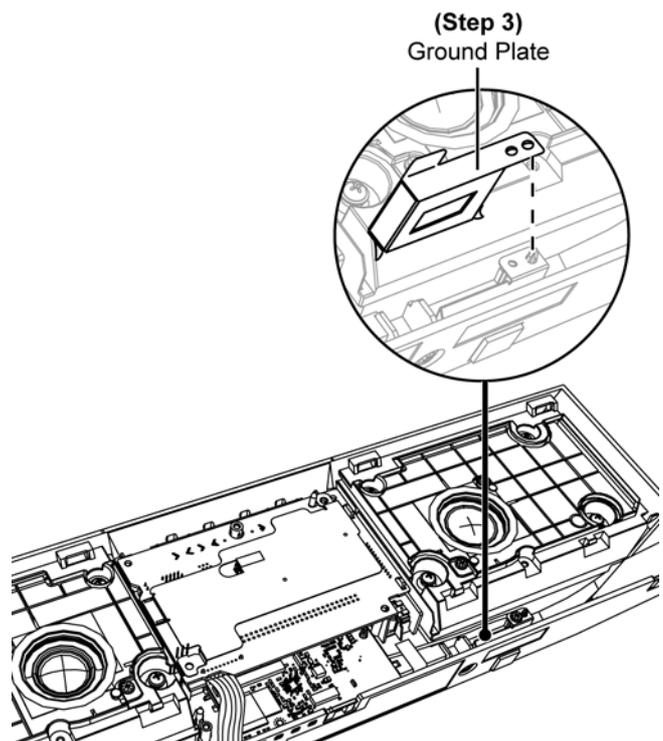
Step 4 : Slightly lift up the Main P.C.B. to detach 12P connnector (CN1100) on the DC In P.C.B..
Caution : During assembling, ensure that the board to board connector fully connected.
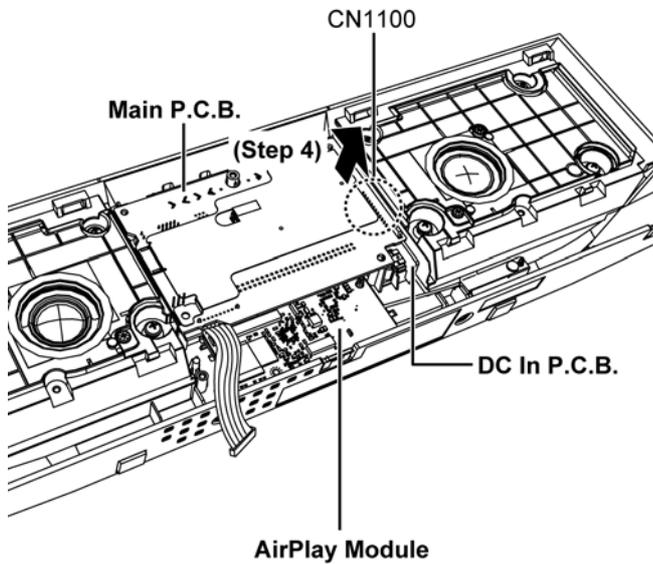
Caution 1 : During assembling, ensure that the Main P.C.B. is properly seated onto the locators.
Caution 2 : During assembling, ensure that the DC In P.C.B. is properly inserted into the holes of the Main P.C.B..
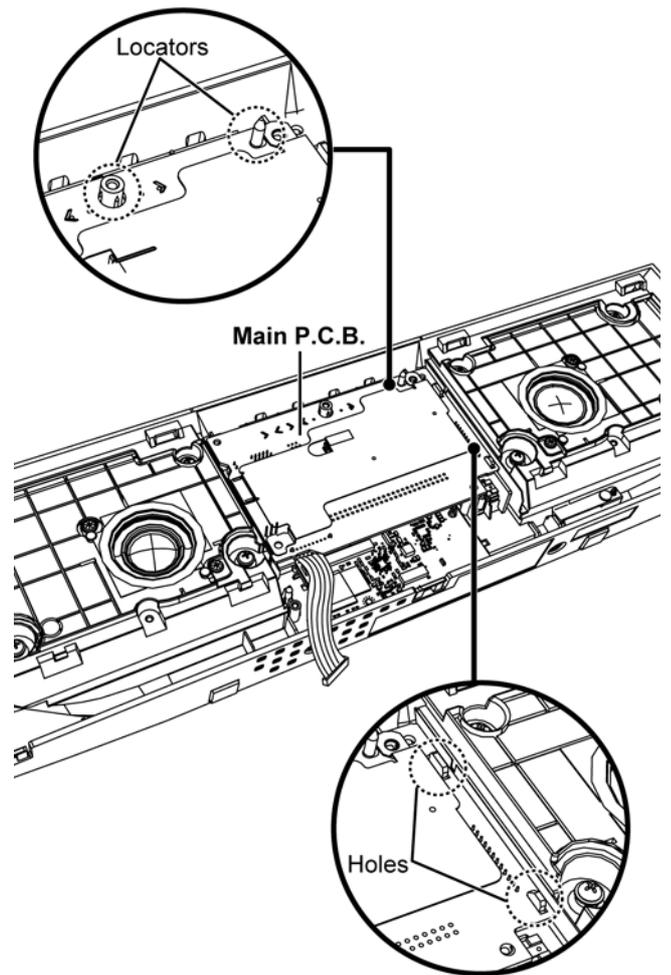
Step 5 : Slightly lift up the Main P.C.B., AirPlay Module and AirPlay Antenna as shown.
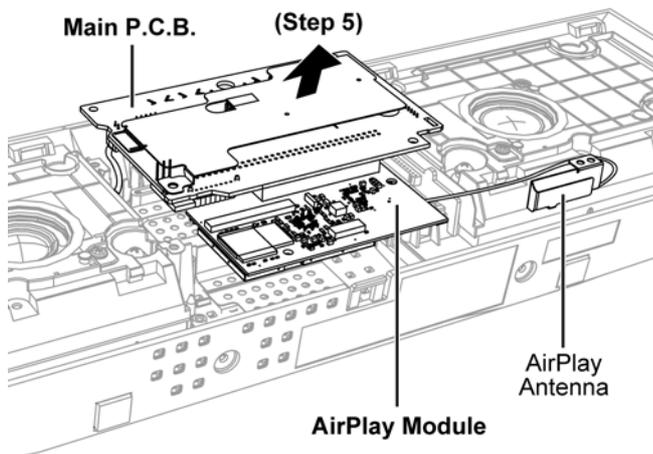
Caution 3 : During assembling, ensure that the AirPlay Module is properly seated onto the locator.
Caution 4 : During assembling, ensure that the AirPlay Antenna is properly seated onto the locator.
Caution 5 : During assembling, ensure that the AirPlay Antenna Wire is properly dressed into the slots.
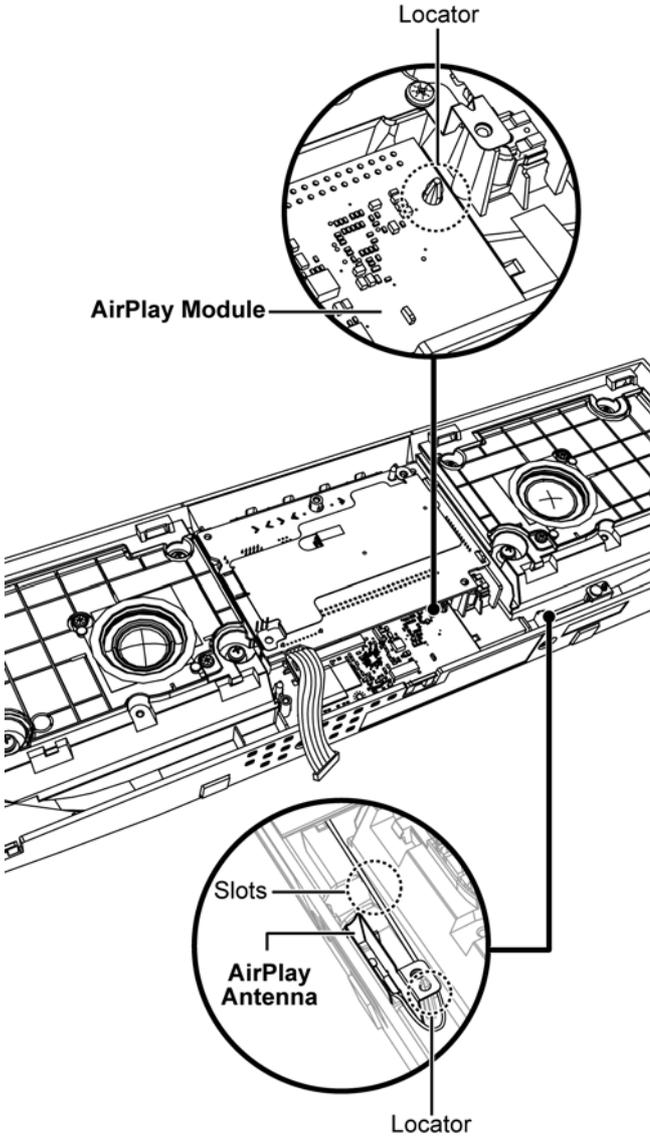
Step 6 : Detach 2P Cable Wire at the connector (CN401) on the Main P.C.B..
Step 7 : Detach 2P Cable Wire at the connector (CN400) on the Main P.C.B..
Step 8 : Remove the Main P.C.B. Unit., AirPlay Module and AirPlay Antenna.
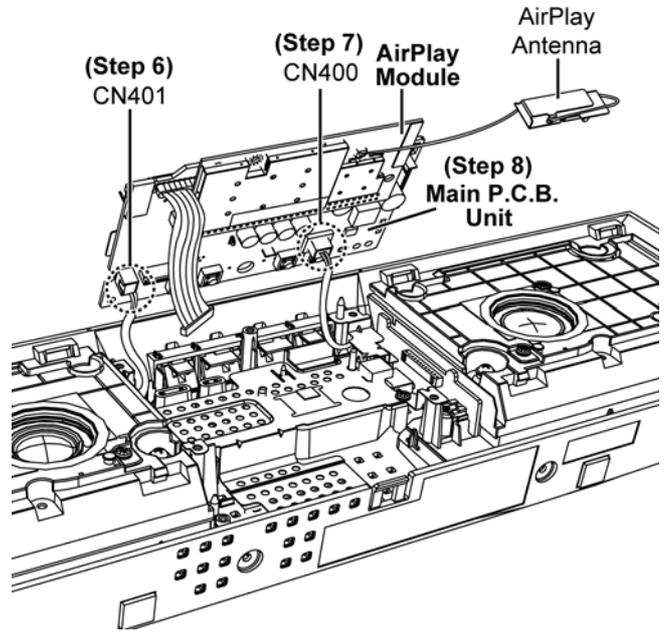
Step 9 : Slightly lift up the Main P.C.B. to detach 48P connnector (P800) on the Main P.C.B..
Step 10 : Remove the Main P.C.B. Unit as shown.
Caution : During assembling, ensure that the board to board connector fully connected.
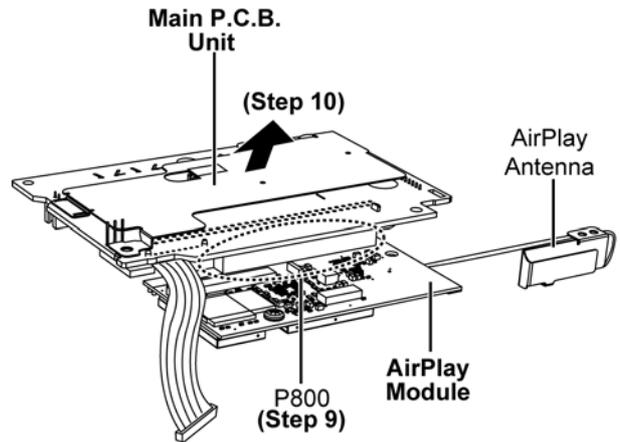
Step 11 : Remove the DAMP Heatsink Unit.

Caution : During assembling, ensure that the locator of the DAMP Heatsink Unit is properly inserted into the hole of Main P.C.B..

Locator

DAMP Heatsink Unit

(Step 11)

Main P.C.B.

Hole
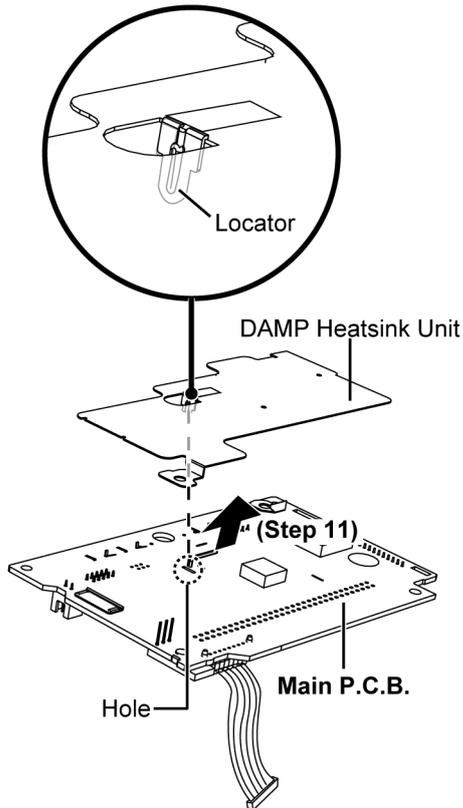
Step 12 : Lift up the Himelon.

Caution : Replace the Himelon if they is torn during disassembling.

Step 13 : Detach AirPlay Antenna Wire at the connector (CON2) on the AirPlay Module.

Step 14 : Remove the AirPlay Module.

AirPlay Antenna

(Step 14) AirPlay Module

(Step 12) Himelon

CON2 **(Step 13)**
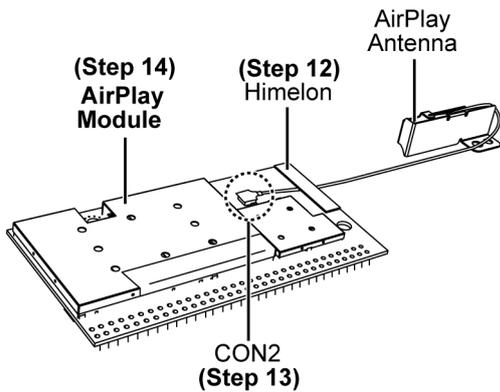
9.8.   Disassembly of DC In P.C.B.

• Refer to "Disassembly of Net Frame Assembly"
• Refer to "Disassembly of Base Ornament Block"
• Refer to "Disassembly of Main P.C.B. and AirPlay Module"

Step 1 : Remove 1 screw.

(Step 1)
b x 1
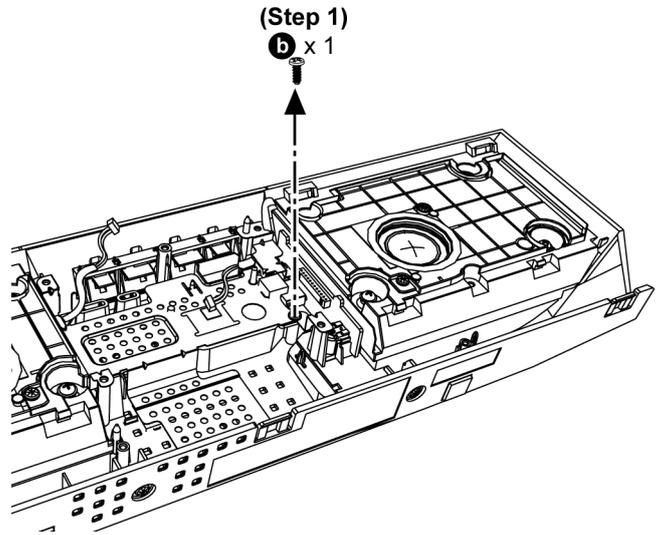
Step 2 : Remove the Main P.C.B. Shield Unit as shown.

Main P.C.B. Shield Unit

(Step 2)
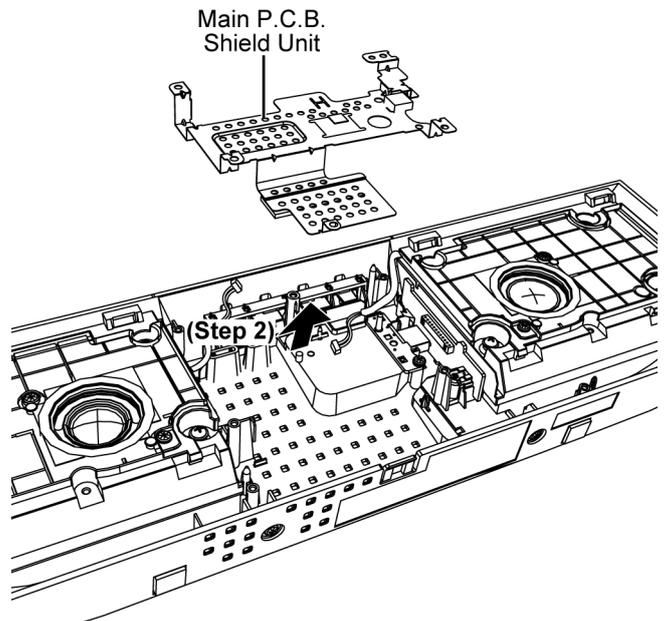
Caution 1 : During assembling, ensure that the Main P.C.B. Shield Unit is properly seated onto the ribs.
Caution 2 : During assembling, ensure that the 2P Speaker Wire R is properly dressed in between the Rear Cabinet Block and the Main P.C.B. Shield Unit.
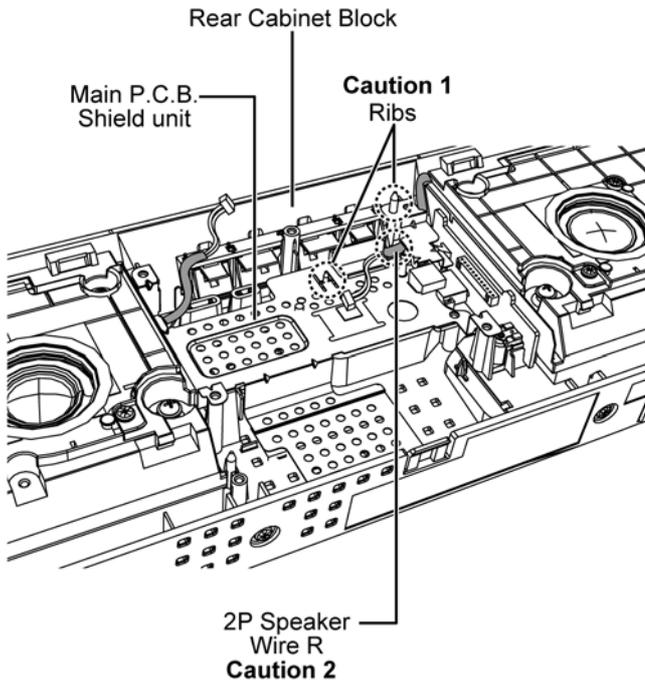
Caution 3 : During assembling, ensure that the 2P Speaker Wire L is properly dressed on top of the Main P.C.B. Shield Unit.
Caution 4 : During assembling, ensure that the 2P Speaker Wire L not be seated on the boss of the Rear Cabinet Block.
Caution 5 : During assembling, ensure that the 2P Speaker Wire L is properly dressed between Main P.C.B. Shield Unit and the wall of the Rear Cabinet Block.

Rear Cabinet Block

Main P.C.B. Shield unit

Caution 1
Ribs

2P Speaker Wire R
Caution 2

Caution 5
Main P.C.B. Shield unit

Wall of Rear Cabinet Block

Rear Cabinet Block

Caution 4
Boss

Caution 3
2P Speaker Wire L
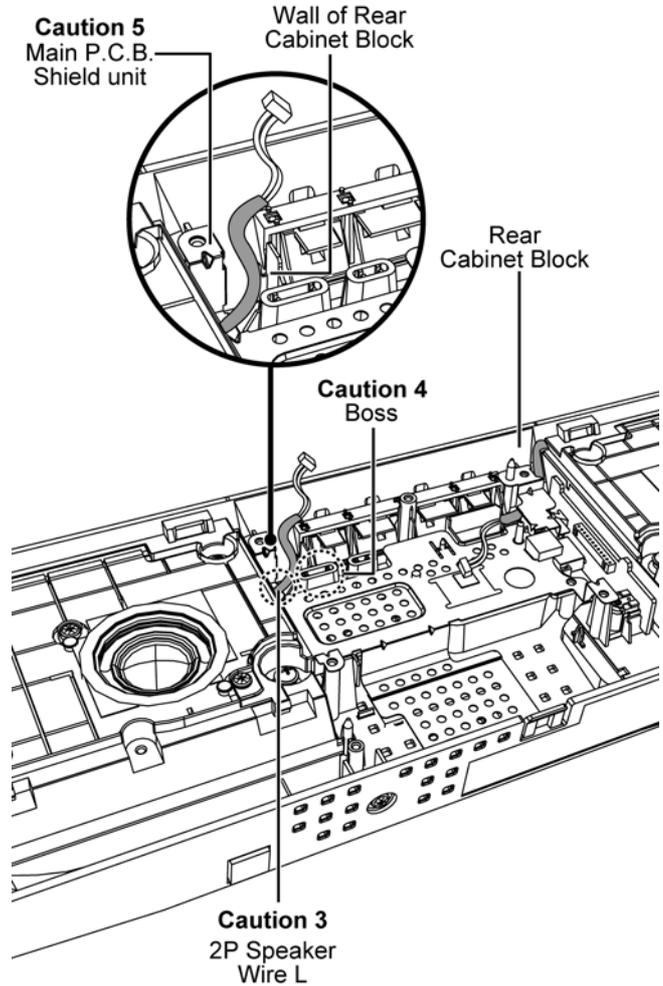
Step 3 : Remove the USB Holder as shown.

Caution : Keep the USB Holder in safe place and place them back during assembling.
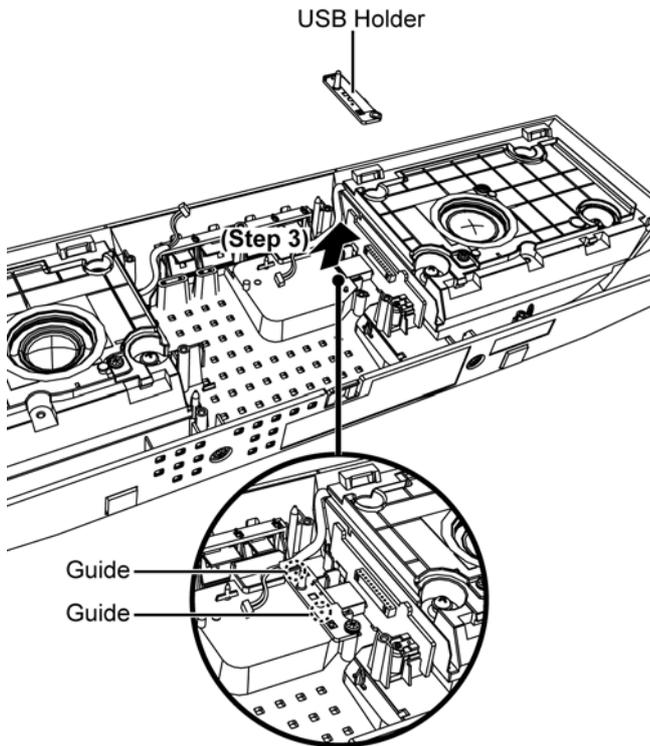
Caution : During assembling, ensure that the DC In P.C.B. is properly inserted into the slots of the Rear Cabinet Block.

USB Holder

(Step 3)

Guide
Guide

DC In P.C.B.

Rear Cabinet Block

Slots
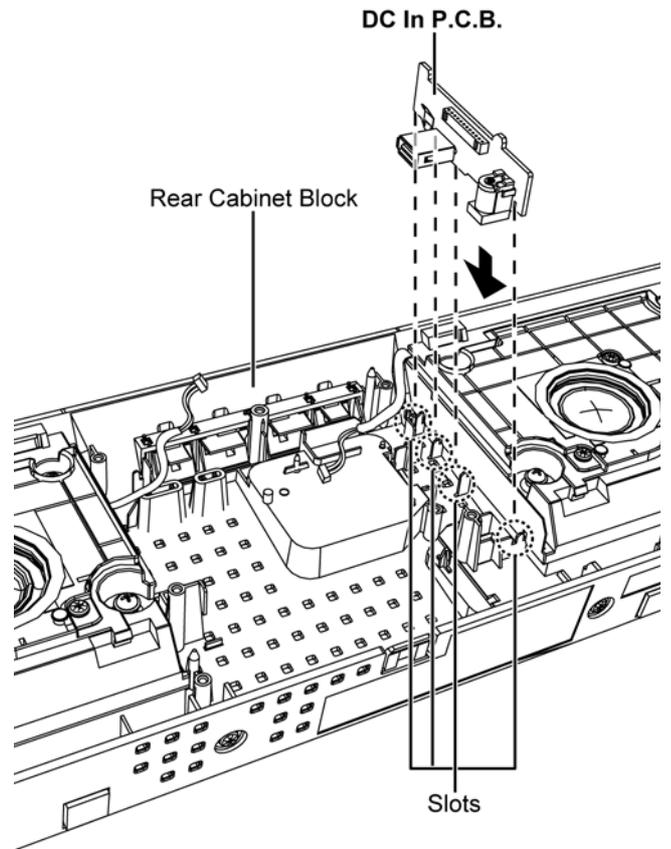
Step 4 : Remove the DC In P.C.B. as shown.

DC In P.C.B.

(Step 4)
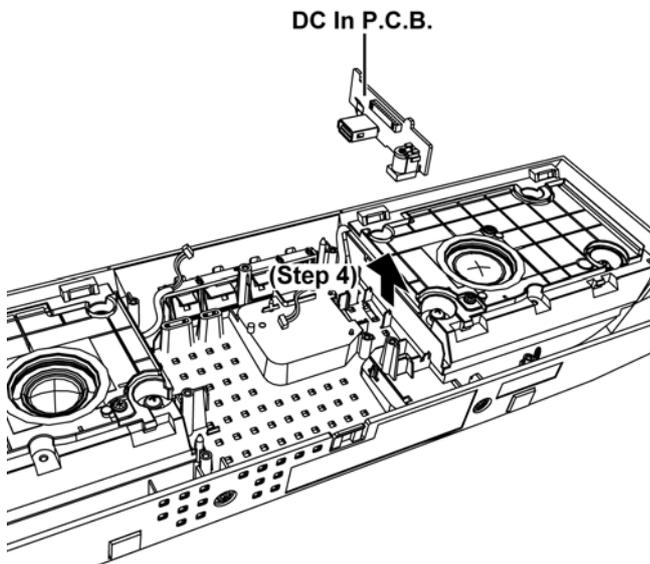
9.9. Disassembly of Front Speaker (R)

• Refer to "Disassembly of Net Frame Assembly"
• Refer to "Disassembly of Base Ornament Block"
• Refer to (Step 1) to (Step 8) of item 9.7
• Refer to (Step 1) to (Step 2) of item 9.8

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

(Step 1) ⓓ x 4 (Step 2) ⓑ x 2
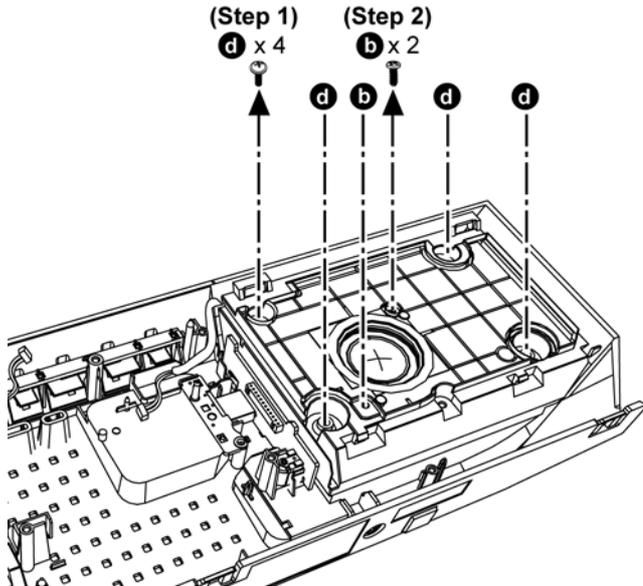
Step 3 : Remove the Speaker Cabinet R as shown.
Caution : During assembling, ensure that the Speaker Cabinet R is properly seated onto the Rear Cabinet Block.
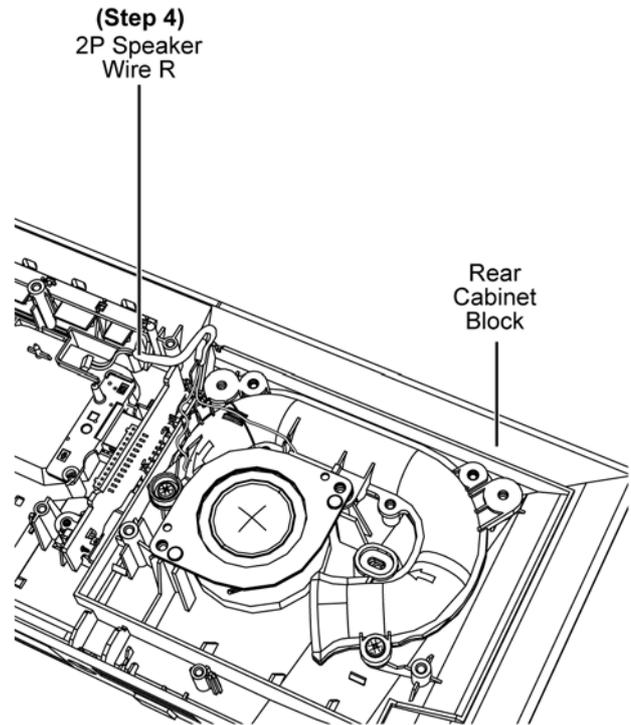
Speaker Cabinet R
Rear Cabinet Block
(Step 3)

Step 4 : Release 2P Speaker Wire R.

(Step 4)
2P Speaker Wire R
Rear Cabinet Block

Caution 1 : During assembling, dress the 2P Speaker Wire R into the ribs.

2P Speaker Wire R
Caution 1 Ribs
Rear Cabinet Block
Ribs
Caution 1
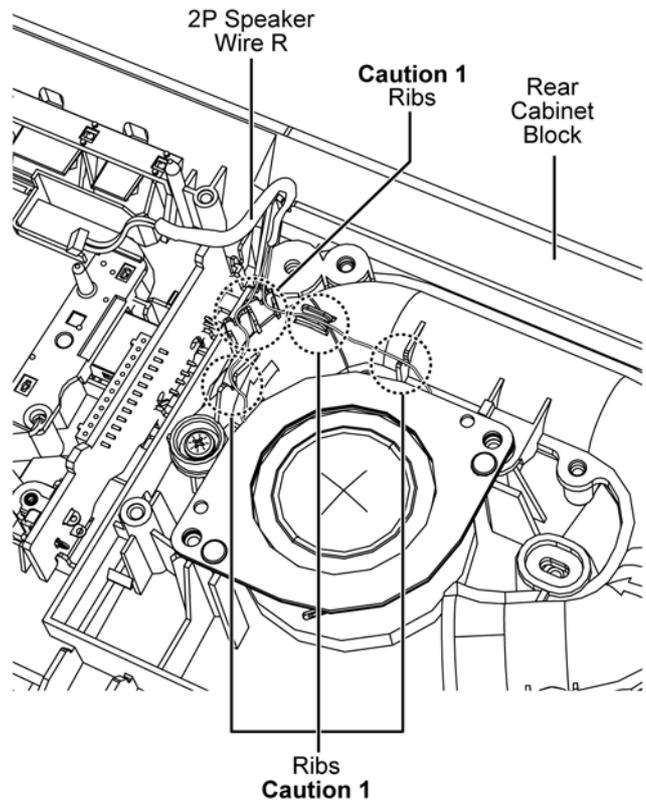
Caution 2 : During assembling, dress the 2P Speaker Wire R into the boss of the Rear Cabinet Block.
Caution 3 : During assembling, dress the 2P Speaker Wire R into the slot of the Rear Cabinet Block.
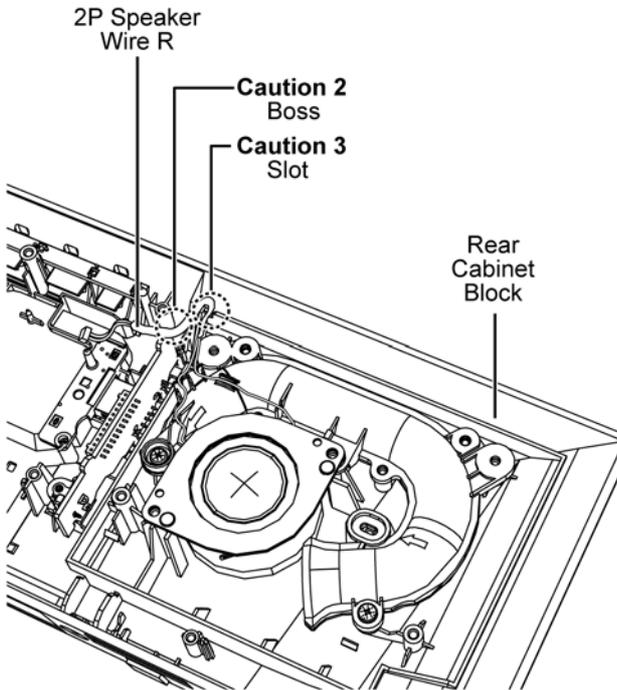
**Step 5 :** Remove the Front Speaker (R) as shown.
Caution 1 : During assembling, ensure that the Front Speaker (R) is properly seated onto the locators.
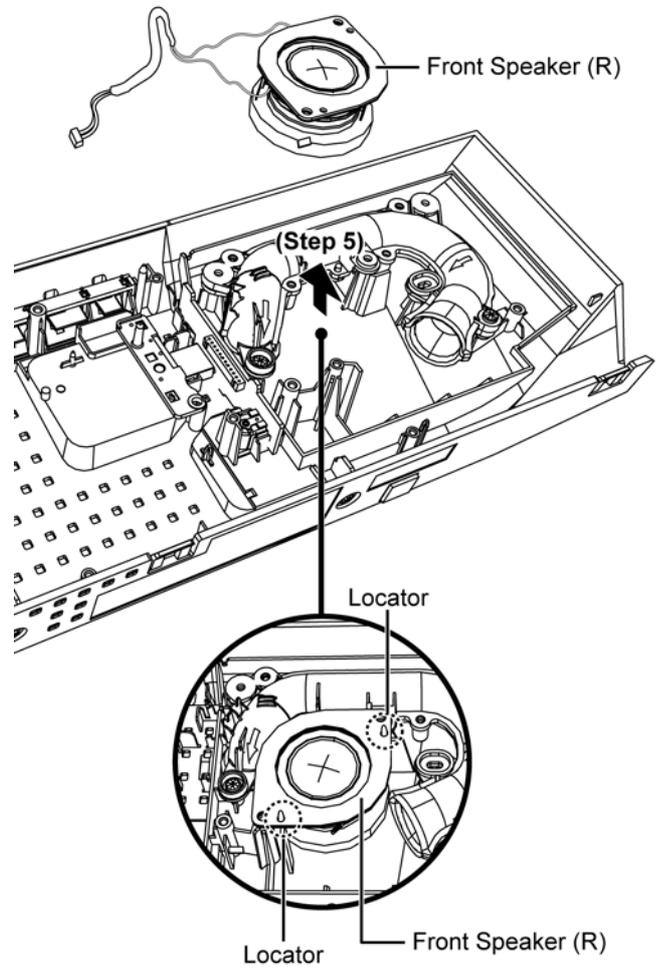
Caution : During assembling, ensure that the Absorber is properly place onto the Rear Cabinet Block.
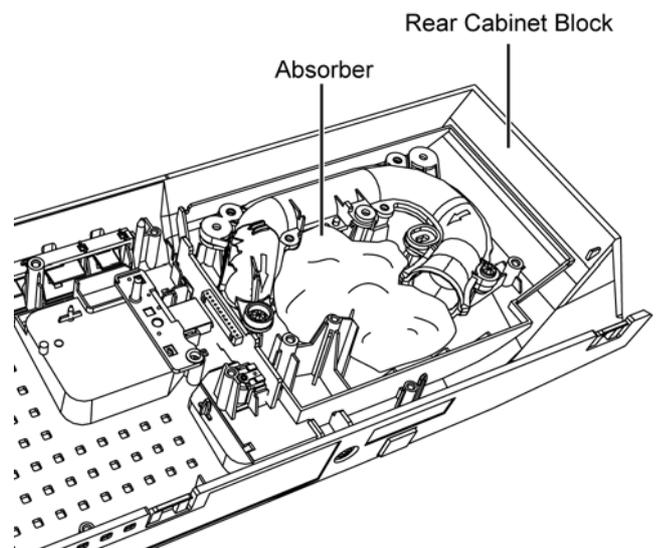
9.10. Disassembly of Port Unit (R)

• Refer to "Disassembly of Net Frame Assembly"
• Refer to "Disassembly of Base Ornament Block"
• Refer to (Step 1) to (Step 8) of item 9.7
• Refer to (Step 1) to (Step 2) of item 9.8
• Refer to "Disassembly of Front Speaker (R)"

Step 1 : Remove 2 screws.

(Step 1)
ⓑ x 2
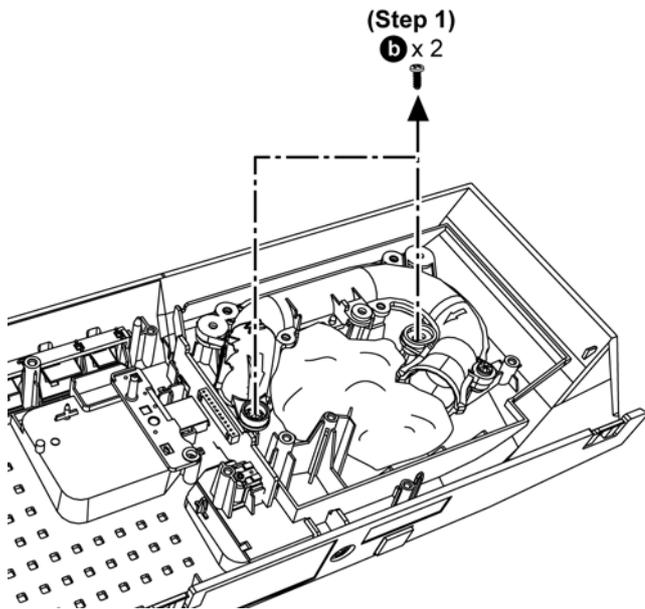
Step 2 : Remove the Port Unit (R) as shown.
Caution : During assembling, ensure that the Port Unit (R) is properly seated onto the Rear Cabinet Block.

Port Unit (R)

Rear
Cabinet Block
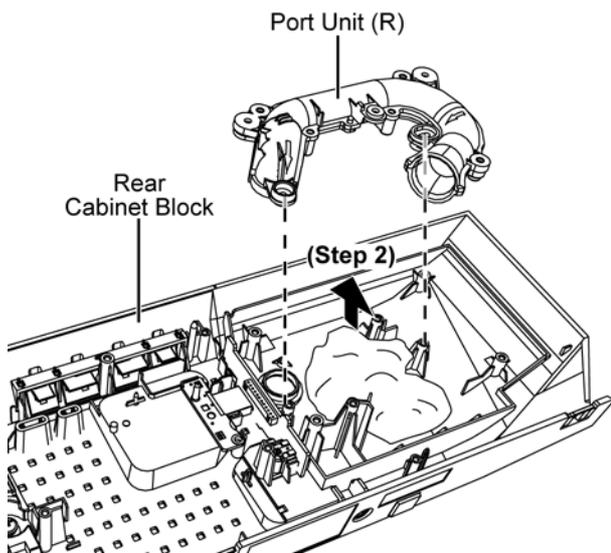
(Step 2)

9.11. Disassembly of Front Speaker (L)

• Refer to "Disassembly of Net Frame Assembly"
• Refer to "Disassembly of Base Ornament Block"

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

(Step 1)
ⓓ x 4

(Step 2)
ⓑ x 2

ⓑ

ⓓ   ⓓ   ⓓ

ⓓ
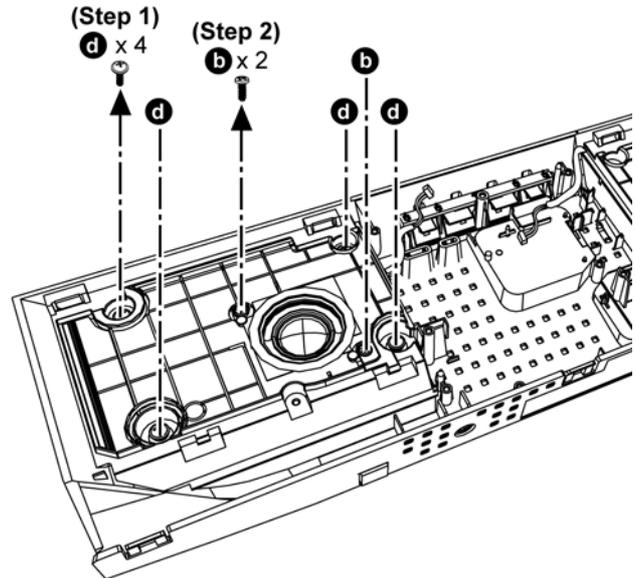
Step 3 : Remove the Speaker Cabinet L as shown.
Caution : During assembling, ensure that the Speaker Cabinet L is properly seated onto the Rear Cabinet Block.

Speaker Cabinet L

Rear Cabinet Block

(Step 3)

Step 4 : Release 2P Speaker Wire L.
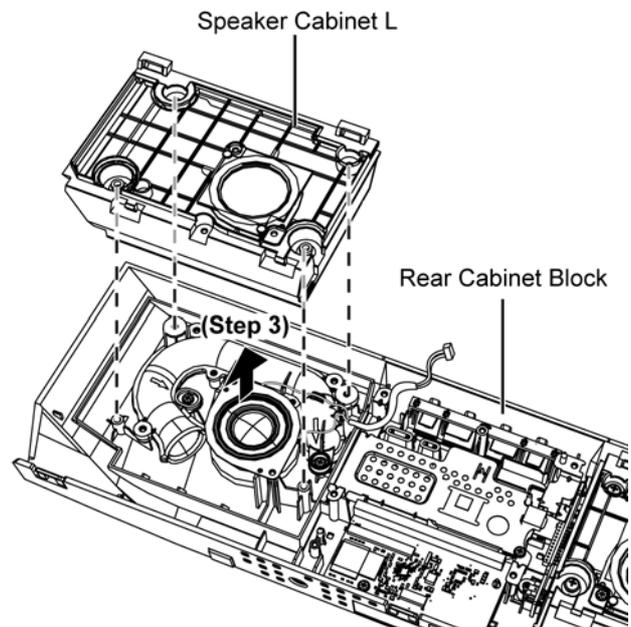
Rear
Cabinet
Block

(Step 4)
2P Speaker
Wire L
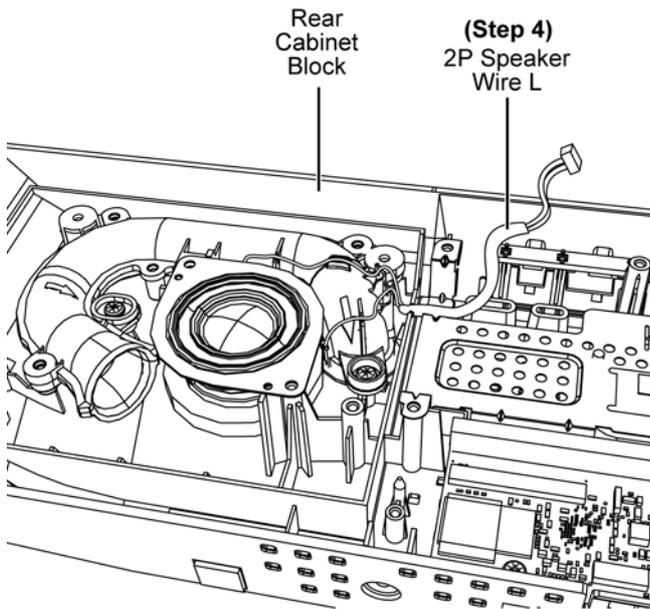
Caution 1 : During assembling, dress the 2P Speaker Wire L into the slot of the Rear Cabinet Block.
Caution 2 : During assembling, dress the 2P Speaker Wire L into the ribs.

Caution 1
Ribs

Caution 2
Slot

Rear
Cabinet
Block
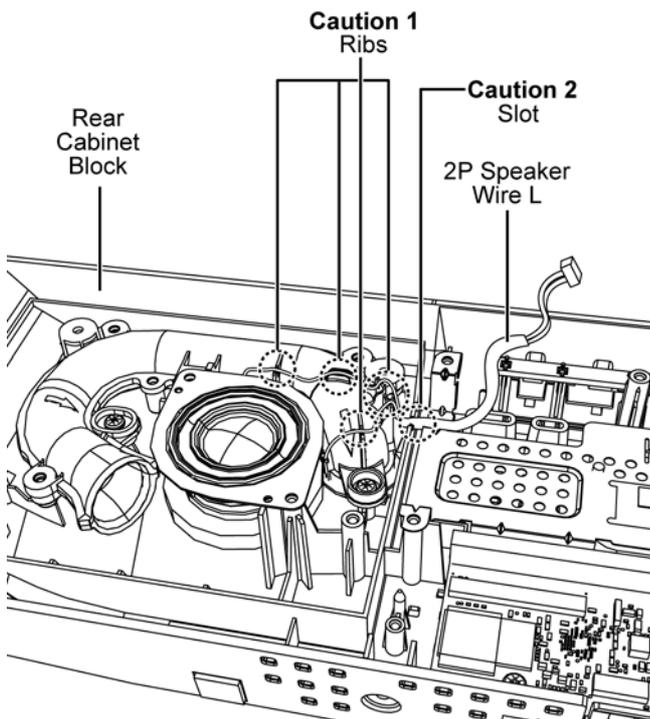
2P Speaker
Wire L

Step 5 : Remove the Front Speaker (L) as shown.
Caution : During assembling, ensure that the Front Speaker (L) is properly seated onto the locators.

Front Speaker (L)

(Step 5)

Locator

Front Speaker (L)

Locator

Caution : During assembling, ensure that the Front Speaker (L) is properly seated onto the locators.

Rear Cabinet Block

Absorber
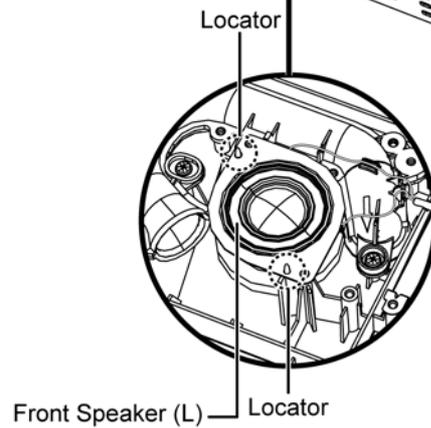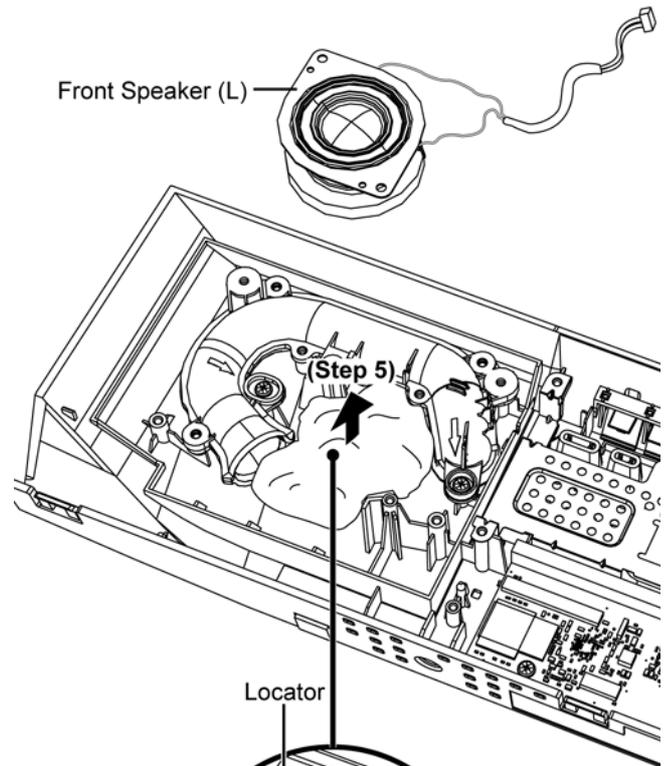
9.12. Disassembly of Port Unit (L)

• Refer to "Disassembly of Net Frame Assembly"
• Refer to "Disassembly of Base Ornament Block"
• Refer to "Disassembly of Front Speaker (L)"

Step 1 : Remove 2 screws.

(Step 1)
b x 2
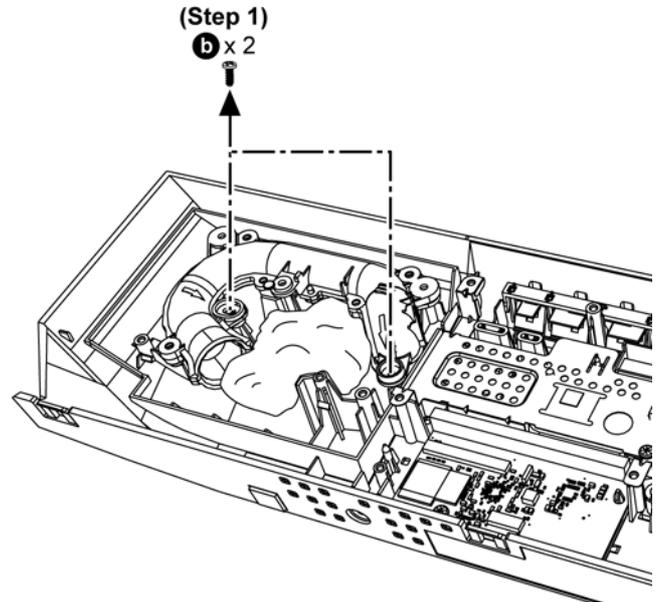
Step 2 : Remove the Port Unit (L) as shown.

Caution : During assembling, ensure that the Port Unit (L) is properly seated onto the Rear Cabinet Block.

Port Unit (L)

Rear Cabinet Block
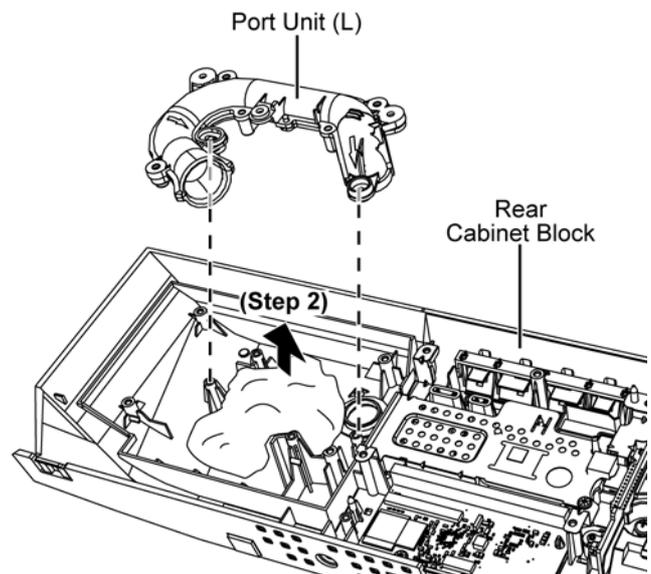
(Step 2)

# 10 Service Position

Note: For description of the disassembly procedures, see the Section 9

10.1. Checking & Repairing of Main P.C.B. (Side B)

Step 1 : Remove Net Frame Assembly.
Step 2 : Remove Base Ornament Block.
Step 3 : Remove LED P.C.B..
Step 4 : Remove Main P.C.B. and AirPlay Module.
Step 5 : Remove DC In P.C.B..
Step 6 : Remove Front Speaker (R).
Step 7 : Remove Front Speaker (L).
Step 8 : Place the Main P.C.B. and AirPlay Module on the Insulating Material.
Step 9 : Attach 12P connnector (CN1101) on the DC In P.C.B..
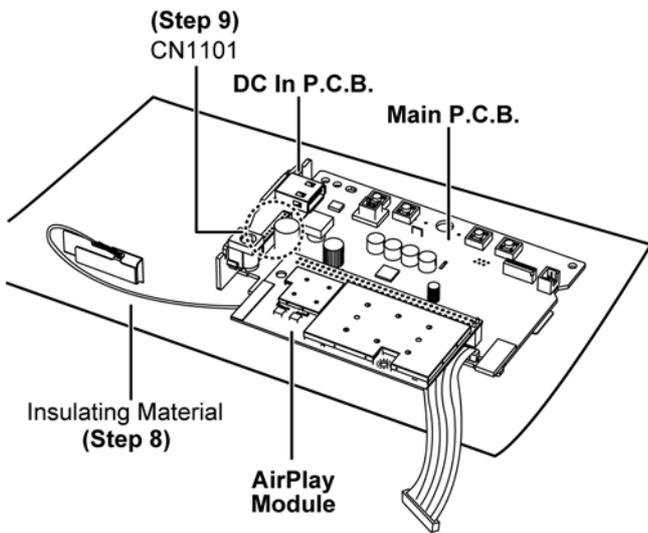
Step 10 : Attach 8P Cable Wire at the connector (CN6008) on the LED P.C.B..
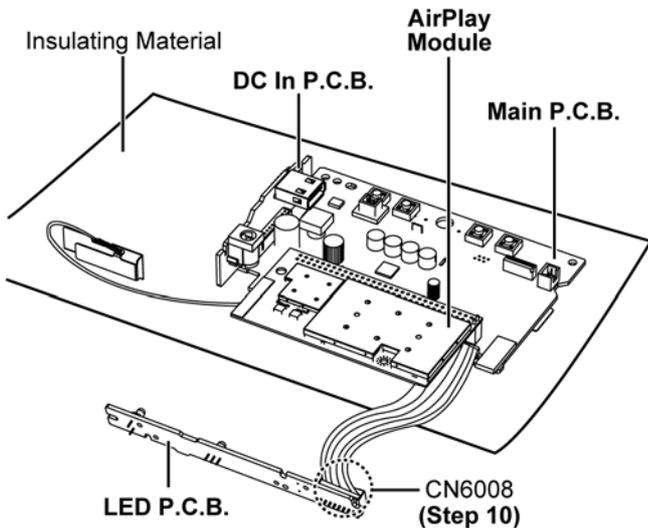
Step 11 : Detach 2P Cable Wire at the connector (CN400) on the Main P.C.B..
Step 12: Detach 2P Cable Wire at the connector (CN401) on the Main P.C.B..
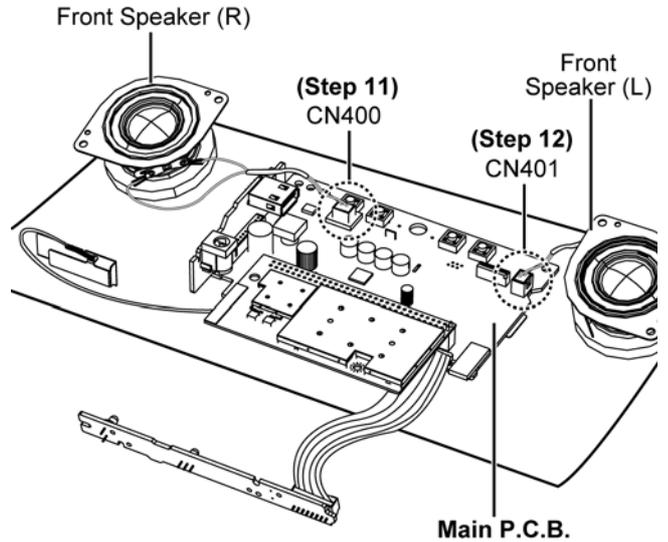
Step 13 : Main P.C.B. (Side B) can be checked and repaired as diagram shown.
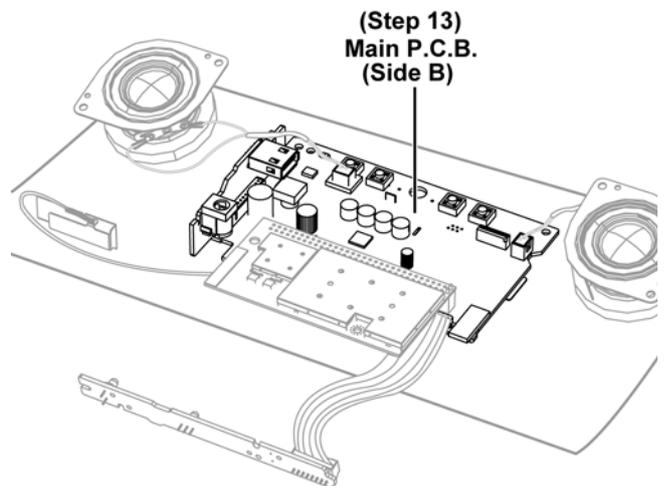
10.2. Checking & Repairing of Main P.C.B. (Side A)

• Refer to (Step 1) - (Step 12) of item 10.1.

Step 1 : Upset the Main P.C.B..
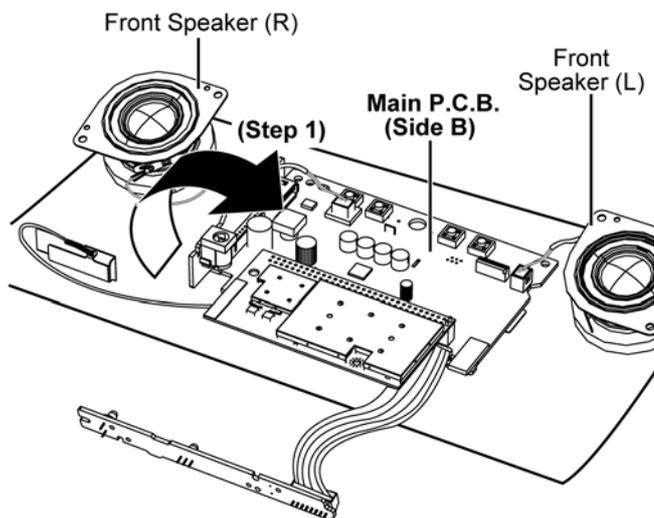
Step 2 : Main P.C.B. (Side A) can be checked and repaired as diagram shown.
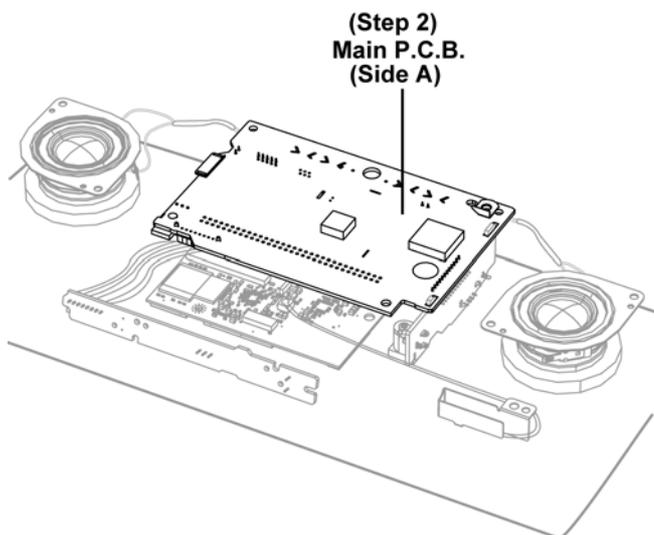
11 Block Diagram

11.1. SYSTEM CONTROL & AUDIO BLOCK DIAGRAM

▯▯▷ : AirPlay AUDIO INPUT SIGNAL LINE   ▯▯▷ : AUDIO OUTPUT SIGNAL LINE
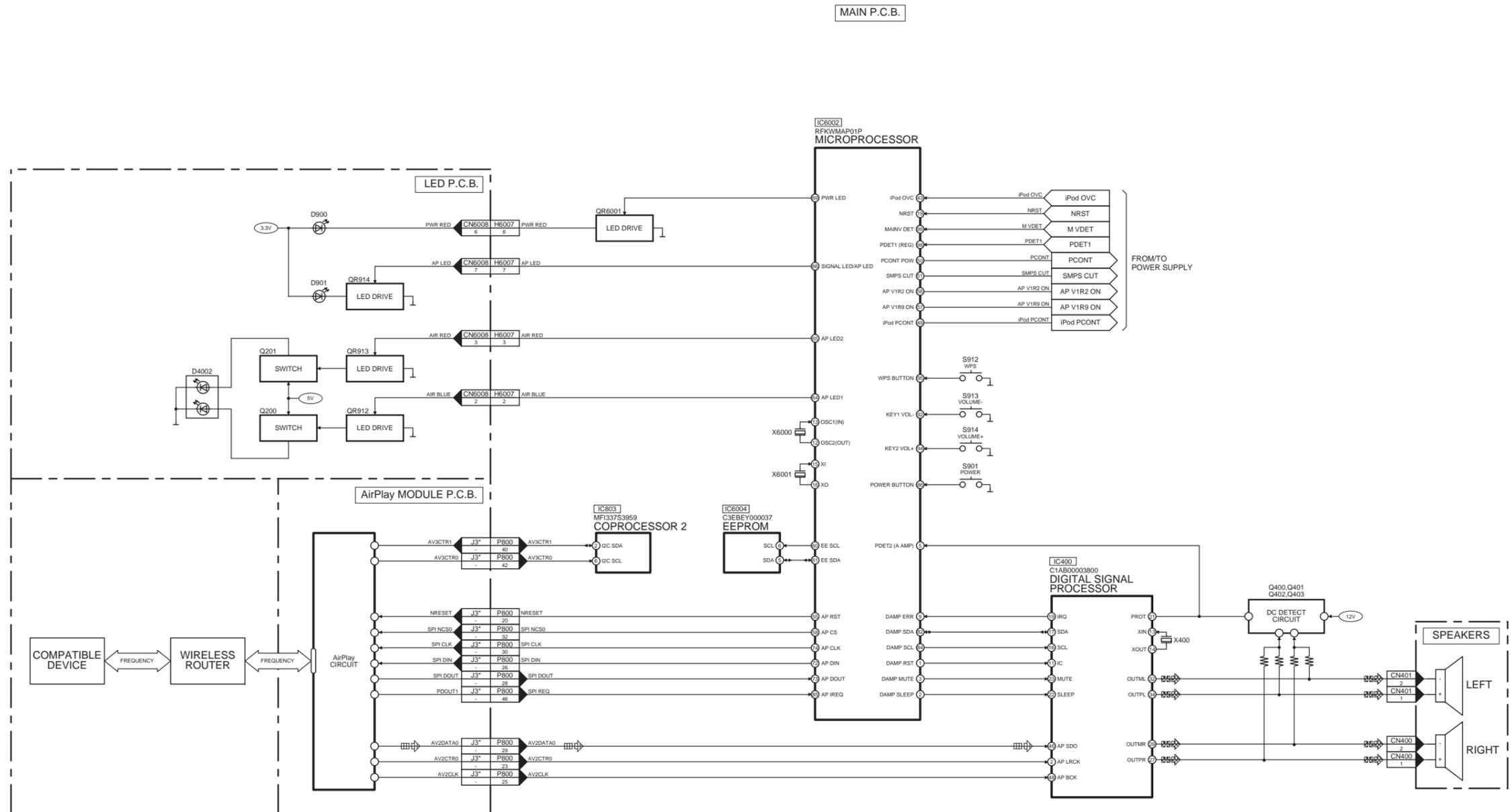
NOTE: " * " REF IS FOR INDICATION ONLY

SC-AP01P/PC SYSTEM CONTROL & AUDIO BLOCK DIAGRAM

11.2. POWER SUPPLY BLOCK DIAGRAM

MAIN P.C.B.

IC1102
C0DBEYY00146
+3.3V VOLTAGE REGULATOR
12V — VIN | VOUT — PW STNBY3.3V → 3.3V
12V — CE | ADJ

IC6003
C0EBE0000434
RESET
PW STNBY3.3V — IN | OUT — NRST → NRST

M VDET → M VDET
SMPS CUT → SMPS CUT
PCONT → PCONT
PDET1 → PDET1

D1104

QR6003
PCONT SWITCH

D1105 D1107   D1101 D1102

IC1100
C0DBAYY01300
+5V SWITCHING VOLTAGE REGULATOR
12V — VIN | SW(VOUT) — PW DC5V
EN | BOOT
FB

FROM/TO SYSTEM CONTROL & AUDIO

IC6009
C0DBZYY00555
HIGH SIDE SWITCH
IN | PW DC5V
PW iPod5V — OUT
/OC — iPod OVC → iPod OVC
EN — iPod PCONT → iPod PCONT

IC1104
C0DBAYY01300
+3.3V SWITCHING VOLTAGE REGULATOR
12V — VIN | SW(VOUT) — PW DC3.3V → 3.3V
EN | BOOT
FB

IC401
C0DBGYY02205
+1.8V VOLTAGE REGULATOR
PW DC3.3V — IN | OUT — PW 1.8V → 1.8V
PW DC3.3V — ON/OFF

Q404
+12V POWER SUPPLY
12V — S | D
12V — S | D — PW DAMP12V → 12V
12V — S | D
G | D

SWITCH
QR400

DC IN P.C.B.

USB PORT FOR CHARGING
JK6000
USB5V

DC IN
JK100
FP101

CN1101 CN1100 iPod 5V
3,4   3,4

CN1101 CN1100 DC 12V
10   10

CN1101 CN1100 DC 12V
11   11

FROM SYSTEM CONTROL & AUDIO

AP V1R2 ON — AP V1R2 ON

AP V1R9 ON — AP V1R9 ON

D801

IC802
C0DBGYY01640
+1.2V VOLTAGE REGULATOR
EN | VO — PW 1.2V
VCC

IC801
C0DBGYY01654
+1.9V VOLTAGE REGULATOR
EN | VO — PW 1.9V
PW DC3.3V — VCC

AirPlay MODULE P.C.B.

P800 J3* VIN(+1.2V) — VIN(+1.2V) → 1.2V
9,11   -

P800 J3* VIN(+1.9V) — VIN(+1.9V) → 1.9V
10,12 -

VIN(+3.3V) — P800 J3* VIN(+3.3V) — VIN(+3.3V) → 3.3V
4,6   -

LED P.C.B.

DC 3.3V — H6007 CN6008 DC 3.3V — DC 3.3V → 3.3V
5   5
DC 5V — H6007 CN6008 DC 5V — DC 5V → 5V
1   1

NOTE: " * " REF IS FOR INDICATION ONLY

SC-AP01P/PC POWER SUPPLY BLOCK DIAGRAM

12 Wiring Connection Diagram

C LED P.C.B.
CN6008
8 1
SOLDER SIDE
PbF

TO AirPlay MODULE

B DC IN P.C.B. (Side B)
SOLDER SIDE

USB PORT
(FOR CHARGING)

DC IN 12V
1 2 3 4
JK6000

8 1
H6007

47. 1
48. 2
P800

CN1100
12

1

JK100

CN1101
12 1
PbF

A MAIN P.C.B. (Side B)
SOLDER SIDE

(TO LEFT SPEAKER)
CN401
2
1

2 10
1 9
CN6010
(TO JIG)

2 4 6
1 3 5
CN6009
(FOR DEBUG)

2 1
CN400
(TO RIGHT SPEAKER)

PbF
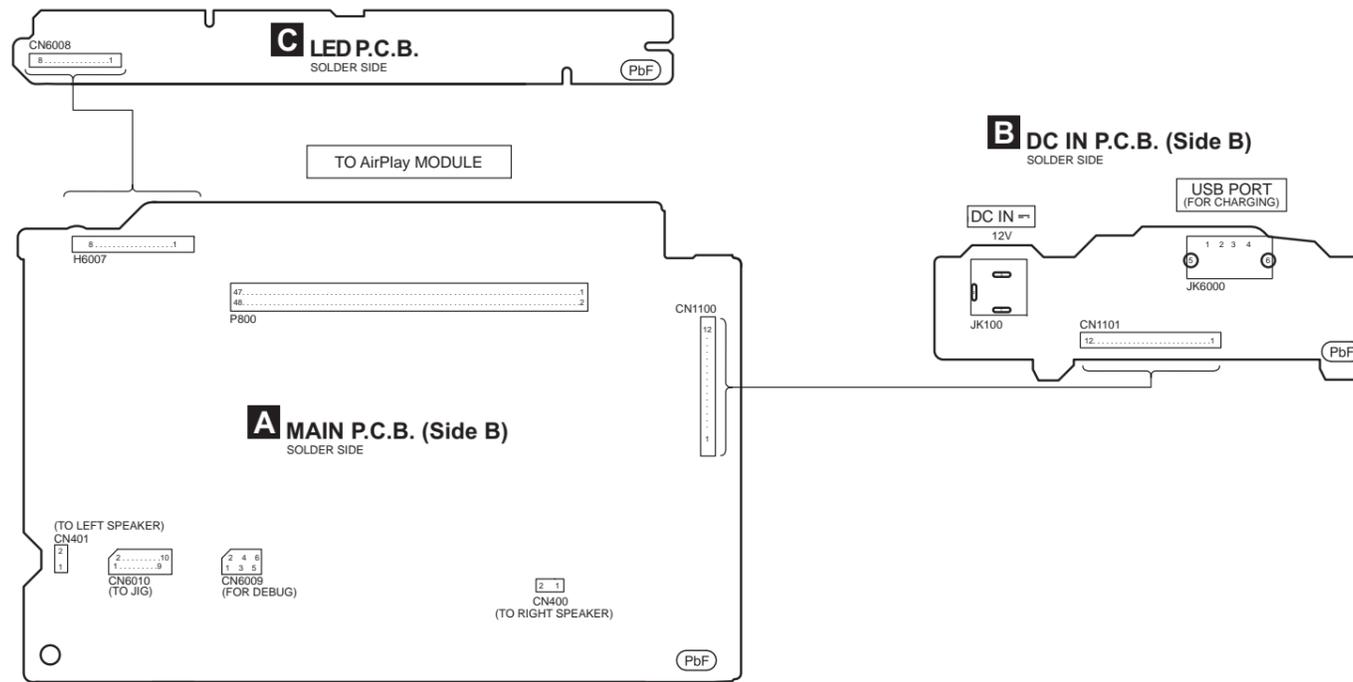
NOTE: " * " REF IS FOR INDICATION ONLY.

SC-AP01P/PC
WIRING CONNECTION DIAGRAM

13 Schematic Diagram

13.1. Schematic Diagram Notes

(All schematic diagrams may be modified at any time with the development of new technology)

Notes:

S901:   POWER switch (⏻/l).
S912:   WPS switch
S913:   VOL- switch.
S914:   VOL+ switch.

• Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high quality sound (capacitors), low-noise (resistors), etc are used.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

• **Resistor**

Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).

• **Capacitor**

Unit of capacitance is μF, unless otherwise noted. F=Farads, pF=pico-Farad.

• **Coil**

Unit of inductance is H, unless otherwise noted.

• *****

REF IS FOR INDICATION ONLY.

• Voltage and signal line

▬▬▬   : +B Signal Line

▭▭▷   : AirPlay Audio Input Signal Line

▨▨◈   : Audio Output Signal Line

SCHEMATIC DIAGRAM - 1

A MAIN CIRCUIT

: +B SIGNAL LINE   : AirPlay AUDIO INPUT SIGNAL LINE   : AUDIO OUTPUT SIGNAL LINE

NOTE: " * " REF IS FOR INDICATION ONLY

SC-AP01P/PC MAIN CIRCUIT

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SCHEMATIC DIAGRAM - 2

A MAIN CIRCUIT

: +B SIGNAL LINE   : AirPlay AUDIO INPUT SIGNAL LINE   : AUDIO OUTPUT SIGNAL LINE

IC6002
RFKWMAP01P
MICROPROCESSOR

IC6003
C0EBE0000434
RESET

IC6004
C3EBEY000037
EEPROM

Q404
B1CHRC000041
+12V POWER SUPPLY

QR400
B1GBCFNN0038
SWITCH

CN6009   FOR DEBUG

CN6010   TO JIG

CN1100

TO **B**
DC IN
CIRCUIT
(CN1101)
IN SCHEMATIC
DIAGRAM - 4

TO MAIN
CIRCUIT (1/3)

TO MAIN
CIRCUIT (3/3)

1/3 2/3
3/3
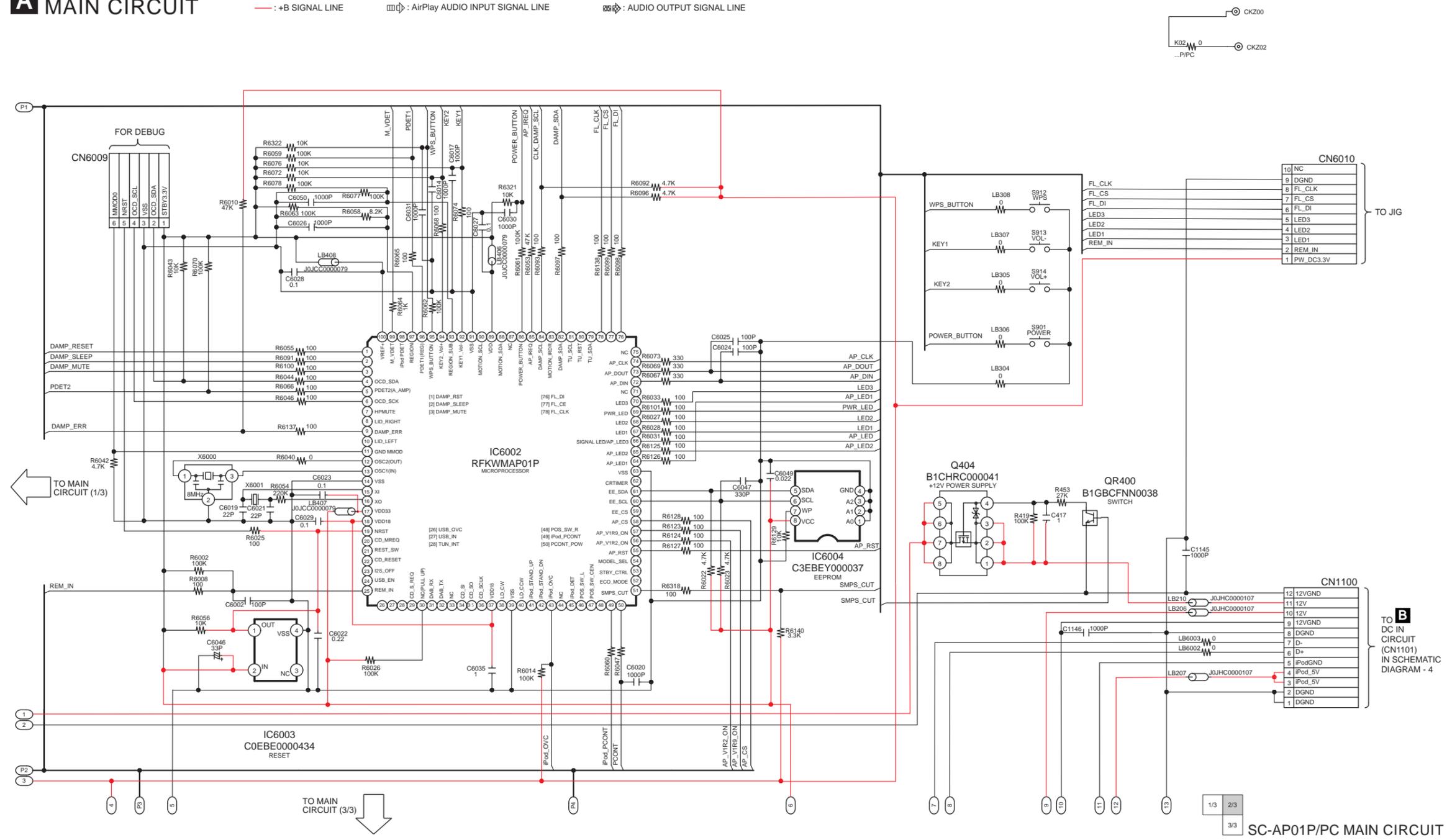
SC-AP01P/PC MAIN CIRCUIT

SCHEMATIC DIAGRAM - 3

A MAIN CIRCUIT

: +B SIGNAL LINE   : AirPlay AUDIO INPUT SIGNAL LINE   : AUDIO OUTPUT SIGNAL LINE

NOTE: " * " REF IS FOR INDICATION ONLY

SC-AP01P/PC MAIN CIRCUIT

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13.5. DC IN & LED CIRCUIT

SCHEMATIC DIAGRAM - 4

B DC IN CIRCUIT — : +B SIGNAL LINE

C LED CIRCUIT — : +B SIGNAL LINE

NOTE: " * " REF IS FOR INDICATION ONLY

SC-AP01P/PC
DC IN / LED CIRCUIT

14 Printed Circuit Board

14.1. MAIN (Side A) & DC In (Side A) & LED (Side A) P.C.B.

A MAIN P.C.B. (REP4786BA)

(SIDE A)

B DC IN P.C.B. (REP4786BB)

(SIDE A)

C LED P.C.B. (REP4786BD)

(SIDE A)

NOTE: " * " REF IS FOR INDICATION ONLY

SC-AP01P/PC
MAIN / DC IN / LED P.C.B.

14.2. MAIN (Side B) & DC In (Side B) & LED (Side B) P.C.B.

A MAIN P.C.B. (REP4786BA)

B DC IN P.C.B. (REP4786BB)

(SIDE B)

(SIDE B)

C LED P.C.B. (REP4786BD)

(SIDE B)

NOTE: " * " REF IS FOR INDICATION ONLY

SC-AP01P/PC
MAIN / DC IN / LED P.C.B.
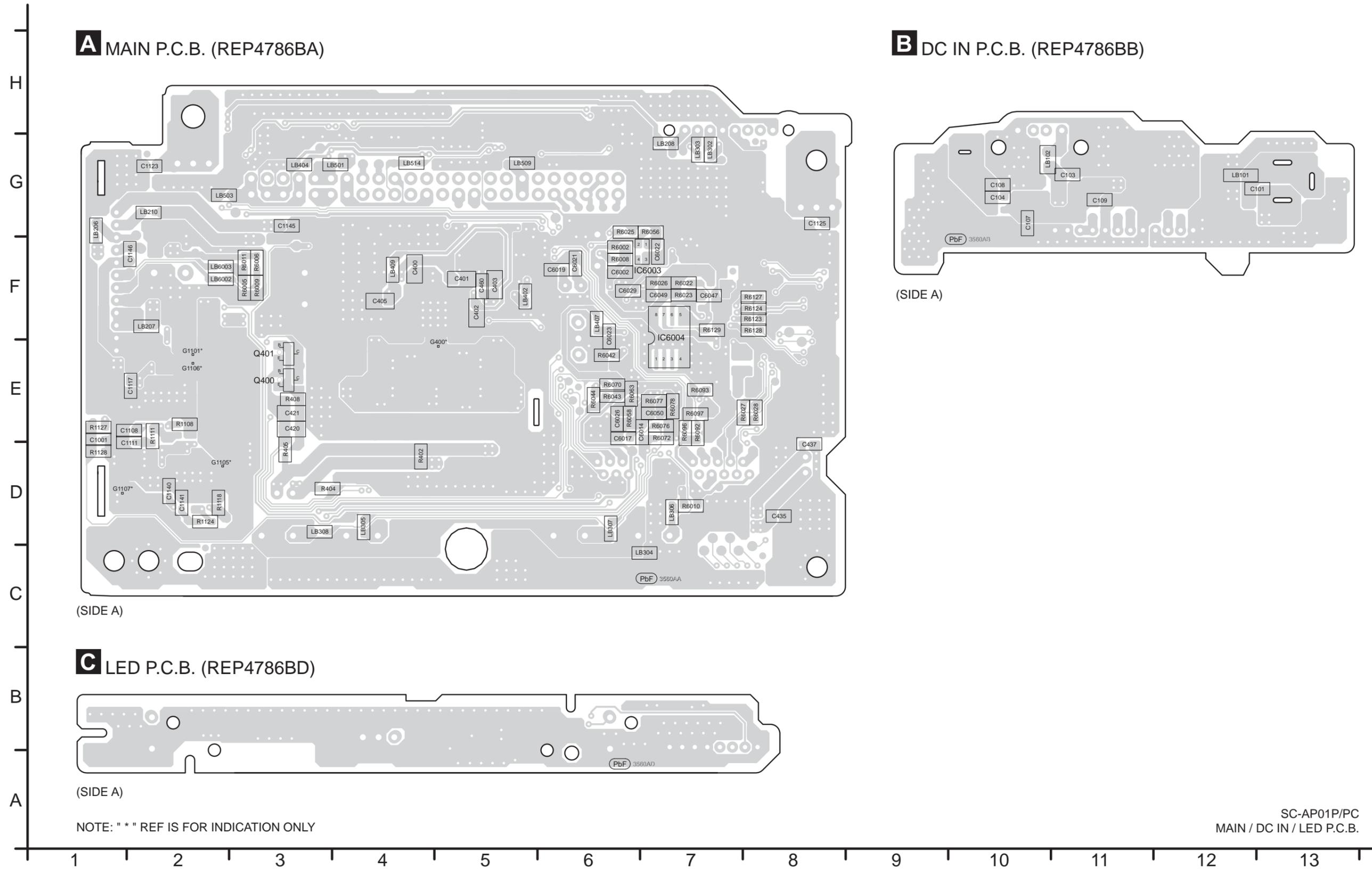
15 Appendix Information of Schematic Diagram

15.1. Voltage Measurement & Waveform Chart

Note:
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
  Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point because it may differ from actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

15.1.1. MAIN P.C.B. (1/2)

REF NO.	IC400																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER ON	1.6	1.5	1.8	1.9	1.9	0	1.8	1.8	1.9	0	3.1	0	0	1.5	3.3	0	3.3	1.8	3.3	1.5
STANDBY	1.8	1.5	2.1	2.1	2.1	0	2.1	2.1	2.1	1.8	3.3	0	0	1.5	3.2	3.1	3.1	1.7	3.2	1.4

REF NO.	IC400																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
POWER ON	3.3	3.3	1.7	0	2.4	12.1	1.9	0	1.9	12.1	12.1	2.2	0	2.2	12.1	2.4	0	3.3	0	1.6
STANDBY	0	2.1	3.2	0	1.7	12.1	1.9	0	1.9	12.1	12.1	2.2	0	2.1	12.1	2.6	0	3.3	0	1.6

REF NO.	IC400																			
MODE	41	42	43	44	45	46	47	48												
POWER ON	0	0	2.2	2.4	2.4	0	3.3	1.6												
STANDBY	0	0	1.2	1.1	1.3	0	3.3	1.6												

REF NO.	IC401																			
MODE	1	2	3	4	5															
POWER ON	3.3	0	3.3	0	1.8															
STANDBY	3.3	0	3.1	0	1.8															

REF NO.	IC801																			
MODE	1	2	3	4	5															
POWER ON	3.2	0	0	3.1	1.8															
STANDBY	2.9	0	0	3.1	1.8															

REF NO.	IC802																			
MODE	1	2	3	4	5															
POWER ON	2.9	0	0	3.3	1.2															
STANDBY	2.9	0	0	3.3	1.2															

REF NO.	IC803																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	0	5.0	0	0	0	5.0	0.5	3.3												
STANDBY	0	5.0	0	0	0	5.0	0.5	3.3												

REF NO.	IC1100																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	9.5	12.1	5.3	0	5	0.8	3.3	3.5												
STANDBY	9.5	12.1	5.3	0	5	0.8	3.3	3.5												

REF NO.	IC1102																			
MODE	1	2	3	4	5															
POWER ON	3.3	0	12.1	2.5	12.1															
STANDBY	3.3	0	12.1	2.5	12.1															

REF NO.	IC1104																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	7.8	12.1	3.3	0	0.8	1.1	3.3	3.7												
STANDBY	7.8	12.1	3.3	0	0.8	1.1	3.3	3.7												

SC-AP01P/PC MAIN P.C.B.

15.1.2. MAIN P.C.B. (2/2)

REF NO.	IC6002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER ON	3.1	3.2	3.1	3.1	3.1	0	0	0	3.1	0	0	1.5	1.5	0	1.0	1.6	3.2	1.7	3.2	0
STANDBY	3.3	3.3	3.3	3.3	3.3	0	0	0	3.3	0	0	1.5	1.5	0	1.1	1.7	3.3	1.8	3.3	0

REF NO.	IC6002																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
POWER ON	0	0	0	0	3.3	0	0	0	0	3.3	0	0	0	0	1.4	0	1.8	0	0	0
STANDBY	0	0	0	0	3.3	0	0	0	0	3.3	0	0	0	0	1.3	0	1.8	0	0	0

REF NO.	IC6002																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
POWER ON	0	0	3.3	0	0	0	0	0	3.3	3.3	3.1	0	0	1.3	3.1	3.1	3.1	3.1	0	3.1
STANDBY	0	0	3.3	0	0	0	0	0	3.3	3.3	3.3	0	0	1.5	3.3	3.3	3.3	3.3	0	3.3

REF NO.	IC6002																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
POWER ON	3.1	0	0	3.0	0	0	0	0	3	0	0	3.1	3.0	3.1	0	3.1	2.5	1.4	0.2	3.2
STANDBY	3.3	0	0	3.3	0	0	0	0	3.3	0	0	3.3	3.2	3.3	0	0	1.5	0	0	0

REF NO.	IC6002																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
POWER ON	3.3	3.3	1.6	3.3	0	0	3.3	0	0	3.3	0	3.3	0	3.1	0	0	0	0	1.3	0
STANDBY	0	3.1	0	3.2	0	3.2	0	0	3.1	0	0	3.3	1.6	3.2	3.2	3.3	0	1.3	2.6	3.3

REF NO.	IC6003																			
MODE	1	2	3	4																
POWER ON	3.3	3.2	0	0																
STANDBY	3.3	3.2	0	0																

REF NO.	IC6004																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	0	0	0	0	3.1	3.0	0	3.3												
STANDBY	0	0	0	0	3.1	3.0	0	3.3												

REF NO.	IC6009																			
MODE	1	2	3	4	5	6														
POWER ON	5.0	0	3.3	3.3	0	5.2														
STANDBY	5.0	0	3.2	3.2	0	5.2														

REF NO.	Q400				Q401				Q402				Q403							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
POWER ON	0	12.1	1.9		0	12.1	1.9		12.1	0	12.1		0	3.3	0					
STANDBY	0	12.1	1.9		0	12.1	1.9		12.1	0	12.1		0	3.3	0					

REF NO.	Q404									QR400				QR6001				QR6003		
MODE	1	2	3	4	5	6	7	8		E	C	B		E	C	B		E	C	B
POWER ON	12.1	12.1	12.1	2.6	12.1	12.1	12.1	12.1		0	0	3.1		0	0	3.1		0	3.3	0
STANDBY	12.1	12.1	12.1	2.6	12.1	12.1	12.1	12.1		0	0	3.3		0	0	3.2		0	3.2	0

SC-AP01P/PC MAIN P.C.B.

15.1.3. LED P.C.B.

REF NO.	Q200				Q201				QR912				QR913				QR914			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
POWER ON	5.3	0	4.6		5.3	0	5.3		0	0	3.3		0	5.3	0		0	3.0	3.3	
STANDBY	5.4	0	4.6		5.4	0	5.3		0	0	3.3		0	5.3	0		0	3.0	3.3	

SC-AP01P/PC LED P.C.B.

15.1.4. Waveform Chart

WF No. IC400-27,29,32,34 (PLAY)	WF No. IC400-46 (PLAY)	WF No. IC6002-12 (PLAY)	WF No. IC6002-13 (PLAY)
21Vp-p(500nsec/div)	4Vp-p(500nsec/div)	4.2Vp-p(50nsec/div)	3.6Vp-p(50nsec/div)
WF No. IC6002-15 (PLAY)	WF No. IC6002-16 (PLAY)		
1.7Vp-p(50nsec/div)	2.4Vp-p(10usec/div)		
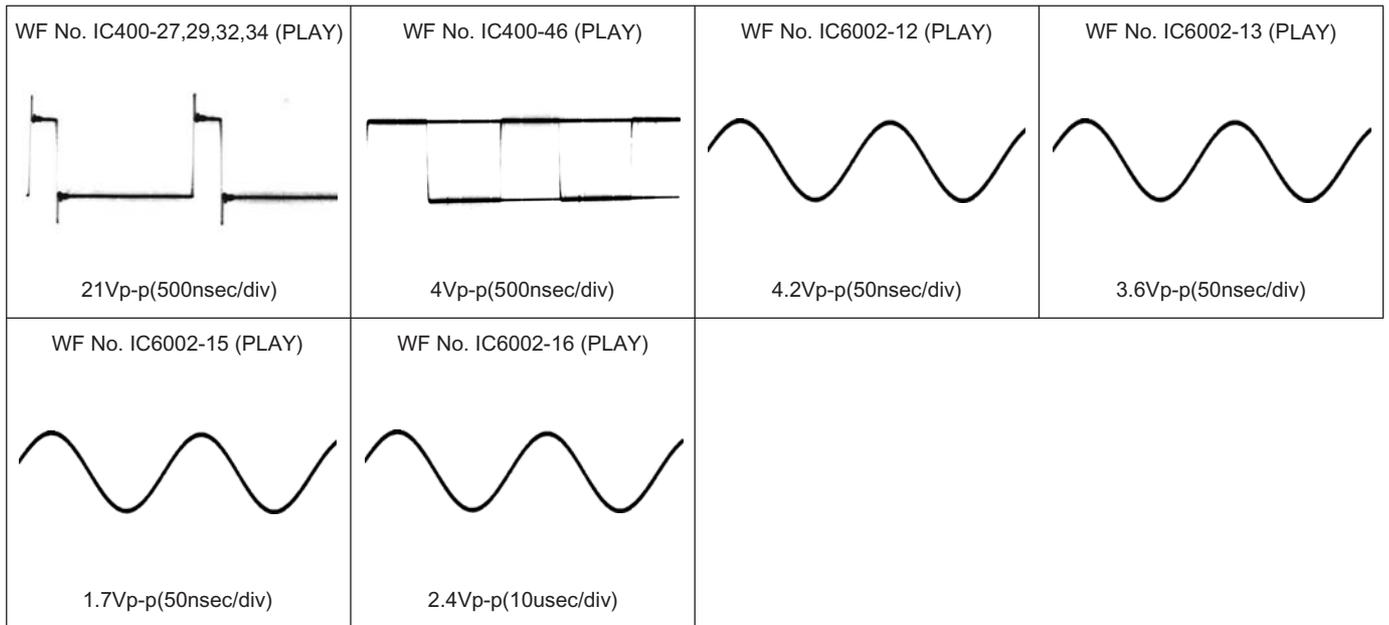
15.2. Illustration of IC's, Transistors and Diodes

C3EBEY000037 (8P)	RFKWMAP01P (100P)	C0DBGYY01640 C0DBGYY01654	C0DBEYY00146 C0DBGYY02205	C0DBAYY01300	C0EBE0000434
MFI337S3959	C0DBZYY00555	C1AB00003800 (48P)	B1GBCFJJ0041	B1ABCF000011 B1GBCFNN0038 B1GBCFJN0038 B1ADCE000012	B1CHRC000041
DZ2J15000L	B0ACCK000012	B0ECKM000008	B3AAA0000487	B3ABA0000187	B3AKA0000022
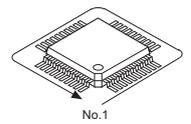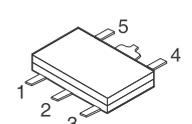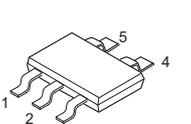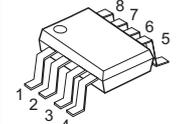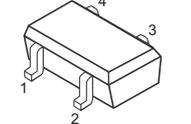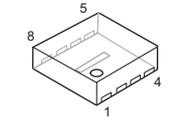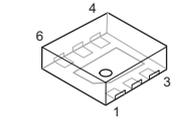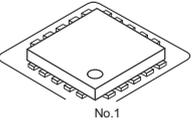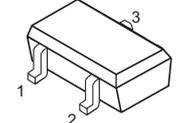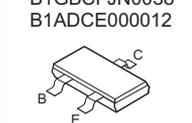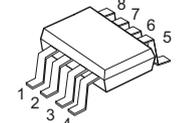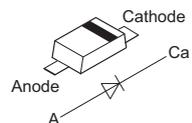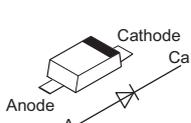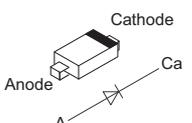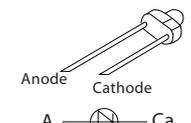
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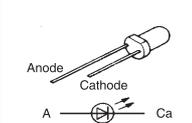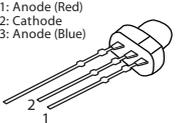
15.3. Terminal Function of IC's

15.3.1. IC6002 (RFKWMAP01P) MICRO PROCESSOR IC

Pin No.	Mark	I/O	Function
1	DAMP_RST	O	DAMP RESET
2	DAMP_SLEEP	O	DAMP SLEEP MODE
3	DAMP_MUTE	O	DAMP MUTING
4	OCD_SDA	O	OCD SERIAL DATA
5	PDET2 (A_AMP)	I	D-AMP WARNING / ERROR DETECT (ACTIVE LOW= ERROR)
6	OCD_SCK	O	OCD SERIAL DATA CLOCK
7	HPMUTE	-	NO CONNECTION
8	LID_RIGHT	-	NO CONNECTION
9	DAMP_ERR	I	DAMP ERROR
10	LID_LEFT	-	NO CONNECTION
11	GND_MM0D	-	GROUND
12	OSC2(OUT)	O	OSCILLATOR OUTPUT
13	OSC1(IN)	I	OSCILLATOR INPUT
14	VSS	-	GROUND
15	XI	O	OSCILLATOR OUTPUT
16	XO	O	OSCILLATOR INPUT
17	VDD33	-	+3.3 VOLTAGE SUPPLY
18	VDD18	-	+1.8 VOLTAGE SUPPLY
19	NRST	I	ACTIVE LOW RESET
20	CD_MREQ	-	NO CONNECTION
21	REST_SW	-	NO CONNECTION
22	CD_RESET	-	NO CONNECTION
23	I2S_OFF	-	NO CONNECTION
24	USB_EN	-	NO CONNECTION
25	REM_IN	I	REMOTE CONTROL INPUT
26	USB_OVC	-	NO CONNECTION
27	USB_IN	-	NO CONNECTION
28	TUN_INT	-	NO CONNECTION
29	CD_S_REQ	-	NO CONNECTION
30	NC (PULL UP)	-	NO CONNECTION
31	DAB_RX	-	NO CONNECTION
32	DAB_TX	-	NO CONNECTION
33	NC	-	NO CONNECTION
34	CD_SI	-	NO CONNECTION
35	CD_SO	-	NO CONNECTION
36	CD_SCLK	-	NO CONNECTION
37	VDD18	-	+1.8 VOLTAGE SUPPLY
38	TRV_CW	-	NO CONNECTION
39	VSS	-	GROUND
40	LD_CCW	-	NO CONNECTION
41	iPod_STAND_UP	-	NO CONNECTION
42	iPod_STAND_DN	-	NO CONNECTION
43	iPod_OVC	I	iPod OVERCURRENT PROTECTION
44	NC	-	NO CONNECTION
45	iPod_DET	-	NO CONNECTION
46	POS_SW_L	-	NO CONNECTION
47	POS_SW_CEN	-	NO CONNECTION
48	POS_SW_R	-	NO CONNECTION
49	iPod_PCONT	O	iPod POWER CONTROL
50	PCONT_POW	O	POWER CONTROL
51	SMPS_CUT	O	SMPS CUTOFF
52	ECO_MODE	-	NO CONNECTION
53	STBY_CTRL	-	NO CONNECTION
54	MODEL_SEL	-	NO CONNECTION
55	AP_RESET	O	AirPlay RESET
56	AP_V1R2_ON	-	NO CONNECTION
57	AP_V1R9_ON	O	AirPlay Tuner
58	AP_CS	O	AirPlay CHIP SELECT

Pin No.	Mark	I/O	Function
59	EE_CS	-	NO CONNECTION
60	EE_SCL	O	EEPROM SERIAL CLOCK
61	EE_SDA	I/O	EEPROM SERIAL DATA
62	CRTIMER	-	NO CONNECTION
63	VSS	-	GROUND
64	AP_LED1	O	AirPlay LED DRIVE
65	AP_LED2	O	AirPlay LED DRIVE
66	SIGNAL LED/ AP_LED3	O	AirPlay LED DRIVE
67	LED1	I/O	LED DRIVE
68	LED2	I/O	LED DRIVE
69	PWR_LED	I/O	POWER LED DRIVE
70	LED3	I/O	LED DRIVE
71	NC	-	NO CONNECTION
72	AP_DIN	O	AirPlay DATA IN
73	AP_DOUT	O	AirPlay DATA OUT
74	AP_CLK	O	AirPlay CLOCK
75	NC	-	NO CONNECTION
76	FL_DI	O	FL DISPLAY DATA INPUT
77	FL_CS	O	FL DISPLAY CHIP SELECT
78	FL_CLK	O	FL DISPLAY CLOCK
79	TU_SDA	I/O	TUNER SERIAL DATA
80	TU_RST	-	NO CONNECTION
81	TU_SCL	-	NO CONNECTION
82	DAMP_SDA	I/O	DAMP SERIAL DATA
83	MOTION_IRDR	-	NO CONNECTION
84	DAMP_SCL	O	DAMP SERIAL CLOCK
85	AP_IREQ	O	AirPlay INTERUPT REQUEST
86	POWER_BUTTON	I/O	POWER BUTTON SWITCH DETECT
87	NC	-	NO CONNECTION
88	MOTION_SDA	-	NO CONNECTION
89	VDD	-	VOLTAGE SUPPLY
90	MOTION_SCL	-	NO CONNECTION
91	VSS	-	GROUND
92	KEY1_Vol-	I	KEY INPUT 1 (Volume -)
93	REGION_SUB	I	REGION SETTING
94	KEY2_Vol+	I	KEY INPUT 2 (Volume +)
95	WPS_BUTTON	I	WPS BUTTON DETECT
96	PDET1 (REG)	I	REGULATOR POWER RISE DETECT
97	REGION	I	TUNER REGION SETTING
98	iPod PDET	-	NO CONNECTION
99	M_VDET	I	SMPS POWER DETECT / POWER DROP DETECTION
100	VREF+	-	VOLTAGE SUPPLY

16 Exploded View and Replacement Parts List

16.1. Exploded View and Mechanical replacement Parts List

16.1.1. Cabinet Parts Location
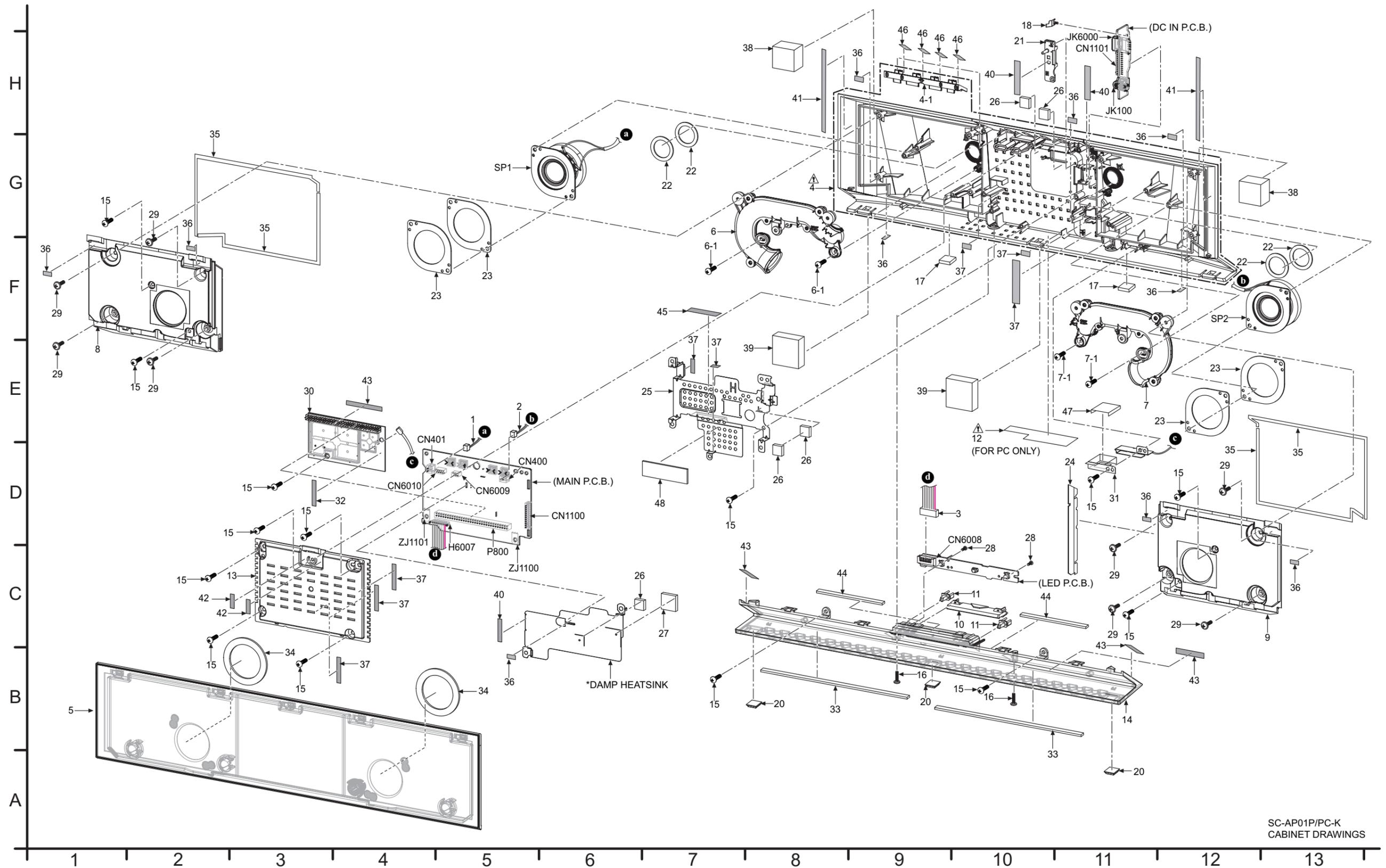
SC-AP01P/PC-K
CABINET DRAWINGS

16.1.2. Packaging

ACCESSORIES BAG

A2 O/I BOOK

A4 FM INDOOR ANTENNA

*P2

P3

A1
AC ADAPTOR

*P2

SC-AP01P/PC

*P2

FRONT

P1

POLYFOAM (TOP/RIGHT)

P2* — POLYFOAM (LEFT)

POLYFOAM (BOTTOM/RIGHT)
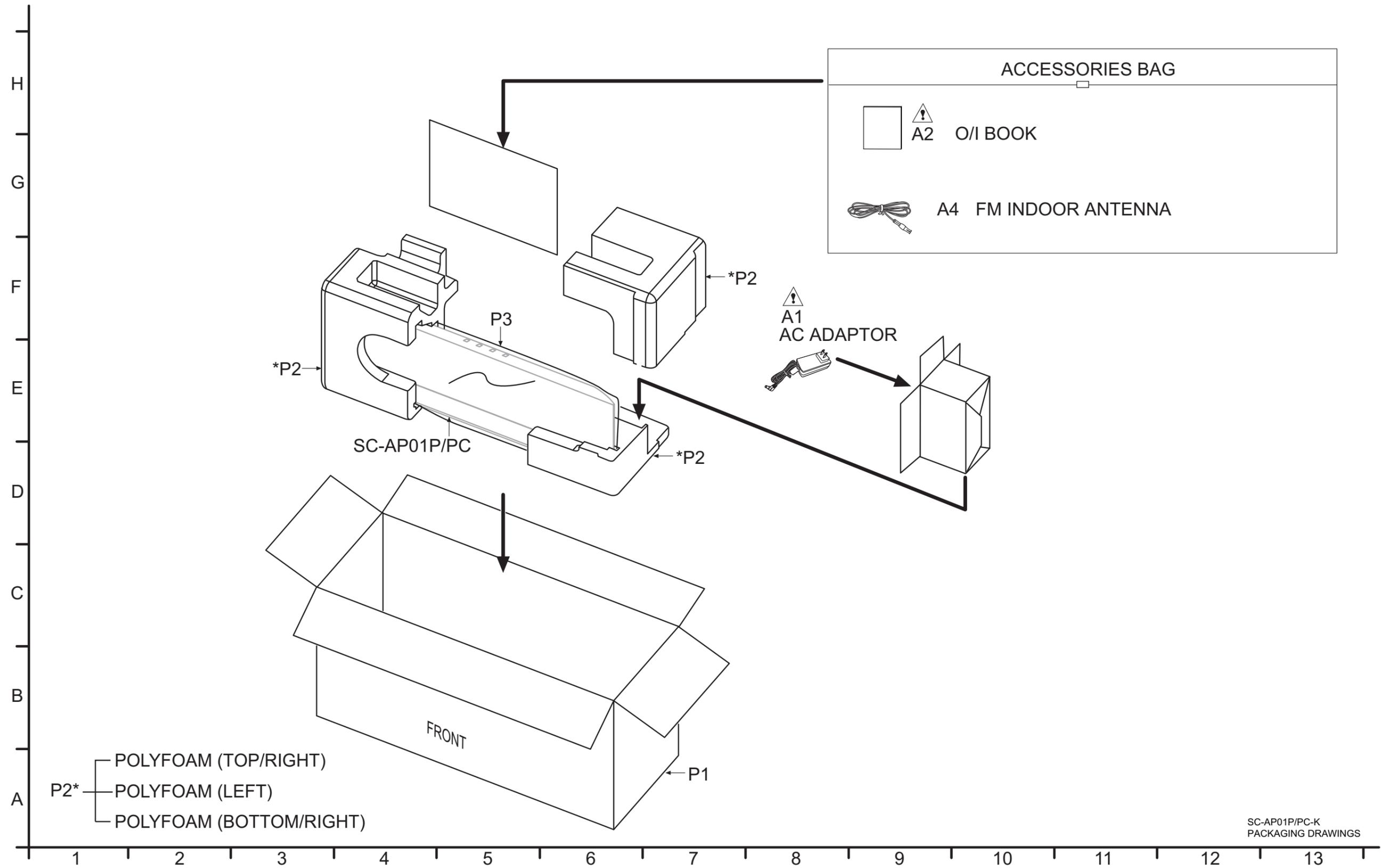
SC-AP01P/PC-K
PACKAGING DRAWINGS

16.1.3. Mechanical Replacement Parts List

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┌─────────────────────────────────────────────────────┐
│              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.                     │
└─────────────────────────────────────────────────────┘
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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 PAVCSG unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by PAVC-CSG.
- 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		

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
			CABINET AND CHASSIS		
	1	REX1501	2P CABLE WIRE (SPEAKER L - MAIN)	1	
	2	REX1502	2P CABLE WIRE (SPEAKER R - MAIN)	1	
	3	REX1503	8P CABLE WIRE (MAIN - LED)	1	
⚠	4	RYP1783A-K	REAR CABINET ASS'Y	1	P
⚠	4	RYP1783B-K	REAR CABINET ASS'Y	1	PC
	4-1	RGU2760-K	OPERATION BUTTON	1	
	5	RFKNAP01PC-K	NET FRAME ASS'Y	1	
	6	RYT0023	BASS REFLEX PORT UNIT (L)	1	
	6-1	RHD26046	SCREW	2	
	7	RYT0024	BASS REFLEX PORT UNIT (R)	1	
	7-1	RHD26046	SCREW	2	
	8	RKP0149-K	SPEAKER CABINET (L)	1	
	9	RKP0150-K	SPEAKER CABINET (R)	1	
	10	RGL0760-C	AIRPLAY LIGHT PIECE	1	
	11	RGL0761-C	FUNCTION LIGHT PIECE	2	
⚠	12	RGN3206A-K1	NAME PLATE	1	PC
	13	RGP1506-K	FRONT PANEL	1	
	14	RYQ1078A-K	BASE ORNAMENT	1	
	15	RHD26046	SCREW	14	
	16	RHD26046-K	SCREW	2	
	17	RKAX0028-K	LEG FELT	2	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	18	RMC0667	EARTH SPRING	1	
	20	RKA0072-KJ	LEG	3	
	21	RMN0995	USB HOLDER	1	
	22	RMQ2035	EVA PACKING (PORT)	4	
	23	RMQ2072	EVA PACKING (SPEAKER)	4	
	24	RMZ1279	PC INSULATOR SHEET	1	
	25	RSC1085	MAIN PCB SHIELD	1	
	26	RSC1104	THERMAL ABSORBER	5	
	27	RSC1105	THERMAL ABSORBER	1	
	28	VHD1224-1	SCREW	2	
	29	XTW3+12TFJK	SCREW	8	
	30	N5HBZ0000066	AIRPLAY MODULE P.C.B.	1	
	31	RMN1038	GROUND PLATE (For AirPlay Antenna)	1	
	32	RMFX0102	HIMELON	1	
	33	RMQX0358	EPT SEALER	2	
	34	RMQ2082-1	EPT SEALER	2	
	35	RMQ2057	EPT SEALER	4	
	36	RMF0585	HIMELON	10	
	37	RMQ2093	EPT SEALER	8	
	38	RMF0589	ACOUSTIC ABSORBER	2	
	39	RMF0588	ACOUSTIC ABSORBER	2	
	40	RMF0587	HIMELON	3	
	41	RMF0586	HIMELON	2	
	42	RMF0590	HIMELON	2	
	43	RMQ2094	EPT SEALER	4	
	44	RMQ2092	EPT SEALER	2	
	45	RMQ2058	EPT SEALER (FOR MAIN P.C.B. SHIELD)	1	
	46	RMF0591	HIMELON (FOR OPERATION BUTTON)	4	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	47	RMF0519	HIMELON (FOR GROUND PLATE)	1	
	48	RMQ1956	EPT SEALER (FOR MAIN P.C.B. SHIELD)	1	
			SPEAKERS		
	SP1	EAS4P129A	SPEAKER	1	
	SP2	EAS4P129A	SPEAKER	1	
			PACKING MATERIALS		
	P1	RPG9869	PACKING CASE	1	P
	P1	RPG9870	PACKING CASE	1	PC
	P2	RPN2407	POLYFOAM	1	
	P3	RPF0596	MIRAMAT SHEET	1	
			ACCESSORIES		
⚠	A1	RFEA228C-AG	AC ADAPTOR	1	
⚠	A2	RQT9655-P	O/I BOOK (En, Sp)	1	
⚠	A2	RQT9656-C	O/I BOOK (Cf)	1	PC
	A4	N1EYYY000008	FM ANTENNA	1	

16.2. Electrical Replacement Parts List

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┌────────────────────────────────────────────────────────────────────────┐
│                        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 PAVCSG unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by PAVC-CSG.

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
			PRINTED CIRCUITS BOARDS		
	PCB1	REP4786BA	MAIN P.C.B.	1	(RTL)
	PCB2	REP4786BB	DC IN P.C.B.	1	(RTL)
	PCB3	REP4786BD	LED P.C.B.	1	(RTL)
			INTEGRATED CIRCUITS		
	IC400	C1AB00003800	IC	1	
	IC401	C0DBGYY02205	IC	1	
	IC801	C0DBGYY01654	IC	1	
	IC802	C0DBGYY01640	IC	1	
	IC803	MFI337S3959	IC	1	
	IC1100	C0DBAYY01300	IC	1	
	IC1102	C0DBEYY00146	IC	1	
	IC1104	C0DBAYY01300	IC	1	
	IC6002	RFKWMAP01P	IC	1	
	IC6003	C0EBE0000434	IC	1	
	IC6004	C3EBEY000037	IC	1	
	IC6009	C0DBZYY00555	IC	1	
			TRANSISTORS		
	Q200	B1ADCE000012	TRANSISTOR	1	
	Q201	B1ADCE000012	TRANSISTOR	1	
	Q400	B1ABCF000011	TRANSISTOR	1	
	Q401	B1ABCF000011	TRANSISTOR	1	
	Q402	B1ADCE000012	TRANSISTOR	1	
	Q403	B1ABCF000011	TRANSISTOR	1	
	Q404	B1CHRC000041	TRANSISTOR	1	
	QR400	B1GBCFNN0038	TRANSISTOR	1	
	QR912	B1GBCFJN0038	TRANSISTOR	1	
	QR913	B1GBCFJN0038	TRANSISTOR	1	
	QR914	B1GBCFJN0038	TRANSISTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	QR6001	B1GBCFJN0038	TRANSISTOR	1	
	QR6003	B1GBCFJJ0041	TRANSISTOR	1	
			DIODES		
	D801	B0ECKM000008	DIODE	1	
	D900	B3AAA0000487	DIODE	1	
	D901	B3ABA0000187	DIODE	1	
	D1101	B0ACCK000012	DIODE	1	
	D1102	B0ACCK000012	DIODE	1	
	D1104	DZ2J15000L	DIODE	1	
	D1105	DZ2J15000L	DIODE	1	
	D1107	DZ2J15000L	DIODE	1	
	D4002	B3AKA0000022	DIODE	1	
			SWITCHES		
	S901	EVQ21405R	SW POWER	1	
	S912	EVQ21405R	SW WPS	1	
	S913	EVQ21405R	SW VOL-	1	
	S914	EVQ21405R	SW VOL+	1	
			CONNECTORS		
	CN400	K1KA02AA0180	2P CONNECTOR	1	
	CN401	K1KA02AA0180	2P CONNECTOR	1	
	CN1100	K1KA12AA0031	12P CONNECTOR	1	
	CN1101	K1KB12B00037	12P CONNECTOR	1	
	CN6008	K1KA08BA0061	8P CONNECTOR	1	
	CN6009	K1MN06AA0003	6P CONNECTOR	1	
	CN6010	K1MN10AA0003	10P CONNECTOR	1	
	P800	K1MY48A00002	48P CONNECTOR	1	
			COILS AND INDUCTORS		
	L400	G1C150MA0426	INDUCTOR	1	
	L401	G1C150MA0426	INDUCTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	L402	G1C150MA0426	INDUCTOR	1	
	L403	G1C150MA0426	INDUCTOR	1	
	L1101	G1C150ZA0083	INDUCTOR	1	
	L1102	G1C100MA0464	INDUCTOR	1	
	LB100	J0JHC0000042	INDUCTOR	1	
	LB101	J0JHC0000042	INDUCTOR	1	
	LB102	J0JHC0000034	INDUCTOR	1	
	LB103	J0JHC0000107	INDUCTOR	1	
	LB104	J0JHC0000107	INDUCTOR	1	
	LB200	J0JHC0000107	INDUCTOR	1	
	LB201	J0JHC0000107	INDUCTOR	1	
	LB203	J0JHC0000107	INDUCTOR	1	
	LB204	J0JHC0000107	INDUCTOR	1	
	LB205	J0JHC0000107	INDUCTOR	1	
	LB206	J0JHC0000107	INDUCTOR	1	
	LB207	J0JHC0000107	INDUCTOR	1	
	LB208	J0JHC0000107	INDUCTOR	1	
	LB210	J0JHC0000107	INDUCTOR	1	
	LB212	J0JHC0000107	INDUCTOR	1	
	LB213	J0JHC0000107	INDUCTOR	1	
	LB302	J0JBC0000014	INDUCTOR	1	
	LB303	J0JBC0000014	INDUCTOR	1	
	LB401	J0JCC0000079	INDUCTOR	1	
	LB402	J0JCC0000079	INDUCTOR	1	
	LB405	J0JFC0000007	INDUCTOR	1	
	LB406	J0JCC0000079	INDUCTOR	1	
	LB407	J0JCC0000079	INDUCTOR	1	
	LB408	J0JCC0000079	INDUCTOR	1	
	LB409	J0JCC0000079	INDUCTOR	1	
	LB410	J0JFC0000007	INDUCTOR	1	
	LB412	J0JHC0000107	INDUCTOR	1	
	LB413	J0JHC0000107	INDUCTOR	1	
	LB414	J0JHC0000107	INDUCTOR	1	
	LB415	J0JHC0000107	INDUCTOR	1	
	LB416	J0JHC0000107	INDUCTOR	1	
	LB502	J0JFC0000007	INDUCTOR	1	
	LB503	J0JGC0000044	INDUCTOR	1	
	LB504	J0JFC0000007	INDUCTOR	1	
	LB505	J0JFC0000007	INDUCTOR	1	
	LB506	J0JFC0000007	INDUCTOR	1	
	LB507	J0JFC0000007	INDUCTOR	1	
	LB508	J0JGC0000044	INDUCTOR	1	
	LB509	J0JGC0000044	INDUCTOR	1	
	LB510	J0JGC0000044	INDUCTOR	1	
	LB511	J0JFC0000007	INDUCTOR	1	
	LB512	J0JFC0000007	INDUCTOR	1	
	LB513	J0JFC0000007	INDUCTOR	1	
	LB514	J0JFC0000007	INDUCTOR	1	
			TERMINALS		
	ZJ1100	K4CZ01000027	TERMINAL	1	
	ZJ1101	K4CZ01000027	TERMINAL	1	
			OSCILLATORS		
	X400	H0J245500110	CRYSTAL OSCILLATOR	1	
	X6000	H2B800400007	CRYSTAL OSCILLATOR	1	
	X6001	H0A327200097	CRYSTAL OSCILLATOR	1	
			CABLE HOLDER		
	H6007	K1YZ08000002	8P CABLE HOLDER	1	
			FUSE PROTECTOR		
⚠	FP101	K5H5022A0031	FUSE PROTECTOR	1	
			JACKS		
	JK100	K2EZYB000008	DC INLET	1	
	JK6000	K1FY104A0031	USB CONNECTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
			CHIP JUMPERS		
	K02	D0GBR00JA008	0 1/10W	1	
	LB304	D0GBR00JA008	0 1/10W	1	
	LB305	D0GBR00JA008	0 1/10W	1	
	LB306	D0GBR00JA008	0 1/10W	1	
	LB307	D0GBR00JA008	0 1/10W	1	
	LB308	D0GBR00JA008	0 1/10W	1	
	LB404	D0GBR00JA008	0 1/10W	1	
	LB500	D0GBR00JA008	0 1/10W	1	
	LB501	D0GBR00JA008	0 1/10W	1	
	LB6002	D0GBR00JA008	0 1/10W	1	
	LB6003	D0GBR00JA008	0 1/10W	1	
			RESISTORS		
	R201	D0GAR00J0008	0 1/16W	1	
	R202	D0GAR00J0008	0 1/16W	1	
	R401	D0GB103JA008	10K 1/10W	1	
	R402	D0GB103JA008	10K 1/10W	1	
	R404	D0GB104JA008	100K 1/10W	1	
	R405	D0GB104JA008	100K 1/10W	1	
	R406	D0GB104JA008	100K 1/10W	1	
	R407	D0GB104JA008	100K 1/10W	1	
	R408	D0GB104JA008	100K 1/10W	1	
	R409	D0GB104JA008	100K 1/10W	1	
	R410	D0GB223JA008	22K 1/10W	1	
	R411	D0GB472JA008	4.7K 1/10W	1	
	R412	D0GB105JA008	1M 1/10W	1	
	R413	D0GB152JA008	1.5K 1/10W	1	
	R415	D0GB101JA008	100 1/10W	1	
	R416	D0GB101JA008	100 1/10W	1	
	R417	D0GB101JA008	100 1/10W	1	
	R418	D0GB104JA008	100K 1/10W	1	
	R419	D0GB104JA008	100K 1/10W	1	
	R444	D0GB473JA008	47K 1/10W	1	
	R449	D0GB473JA008	47K 1/10W	1	
	R451	D0GB221JA008	220 1/10W	1	
	R453	D0GB273JA008	27K 1/10W	1	
	R474	D0GB221JA008	220 1/10W	1	
	R475	D0GB221JA008	220 1/10W	1	
	R476	D0GB221JA008	220 1/10W	1	
	R477	D0GB221JA008	220 1/10W	1	
	R478	D0GB221JA008	220 1/10W	1	
	R479	D0GB221JA008	220 1/10W	1	
	R801	D0GBR00JA008	0 1/10W	1	
	R802	D0GBR00JA008	0 1/10W	1	
	R818	D0GB473JA008	47K 1/10W	1	
	R819	D0GB222JA008	2.2K 1/10W	1	
	R820	D0GB222JA008	2.2K 1/10W	1	
	R821	D0GB472JA008	4.7K 1/10W	1	
	R924	D0GB221JA008	220 1/10W	1	
	R925	D0GB391JA008	390 1/10W	1	
	R927	D0GB473JA008	47K 1/10W	1	
	R928	D0GB473JA008	47K 1/10W	1	
	R929	D0GB472JA008	4.7K 1/10W	1	
	R930	D0GB472JA008	4.7K 1/10W	1	
	R931	D0GB221JA008	220 1/10W	1	
	R932	D0GB391JA008	390 1/10W	1	
	R933	D0GB221JA008	220 1/10W	1	
	R1106	D0GB390JA008	39 1/10W	1	
	R1107	D0HB822ZA002	8.2K 1/16W	1	
	R1108	D0HB152ZA002	1.5K 1/16W	1	
	R1111	D0GB183JA008	18K 1/10W	1	
	R1116	ERJ3RBD153V	15K 1/16W	1	
	R1117	D0GBR00JA008	0 1/10W	1	
	R1118	ERJ3RBD472V	4.7K 1/16W	1	
	R1119	D0GB3R3JA008	3.3 1/10W	1	
	R1123	D0GB390JA008	39 1/10W	1	
	R1124	D0GB123JA008	12K 1/10W	1	
	R1127	ERJ3RBD203V	20K 1/16W	1	
	R1128	ERJ3RBD562V	5.6K 1/16W	1	
	R1129	D0GB104JA008	100K 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description		QTY	Remarks
	R1130	D0GB333JA008	33K	1/10W	1	
	R1131	D0GB3R3JA008	3.3	1/10W	1	
	R6002	D0GB104JA008	100K	1/10W	1	
	R6003	D0GB271JA008	270	1/10W	1	
	R6004	D0GB473JA008	47K	1/10W	1	
	R6005	ERJ3GEYF513V	51K	1/10W	1	
	R6006	ERJ3GEYF433V	43K	1/10W	1	
	R6008	D0GB101JA008	100	1/10W	1	
	R6009	ERJ3GEYF513V	51K	1/10W	1	
	R6010	D0GB473JA008	47K	1/10W	1	
	R6011	ERJ3GEYF753V	75K	1/10W	1	
	R6014	D0GB104JA008	100K	1/10W	1	
	R6022	D0GB472JA008	4.7K	1/10W	1	
	R6023	D0GB472JA008	4.7K	1/10W	1	
	R6025	D0GB101JA008	100	1/10W	1	
	R6026	D0GB104JA008	100K	1/10W	1	
	R6027	D0GB101JA008	100	1/10W	1	
	R6028	D0GB101JA008	100	1/10W	1	
	R6031	D0GB101JA008	100	1/10W	1	
	R6033	D0GB101JA008	100	1/10W	1	
	R6035	D0GB101JA008	100	1/10W	1	
	R6036	D0GB101JA008	100	1/10W	1	
	R6040	D0GBR00JA008	0	1/10W	1	
	R6042	D0GB472JA008	4.7K	1/10W	1	
	R6043	D0GB103JA008	10K	1/10W	1	
	R6044	D0GB101JA008	100	1/10W	1	
	R6046	D0GB101JA008	100	1/10W	1	
	R6047	D0GB101JA008	100	1/10W	1	
	R6053	D0GB473JA008	47K	1/10W	1	
	R6054	D0GB224JA008	220K	1/10W	1	
	R6055	D0GB101JA008	100	1/10W	1	
	R6056	D0GB103JA008	10K	1/10W	1	
	R6058	D0GB822JA008	8.2K	1/10W	1	
	R6059	D0GB104JA008	100K	1/10W	1	
	R6060	D0GB101JA008	100	1/10W	1	
	R6061	D0GB104JA008	100K	1/10W	1	
	R6062	D0GB104JA008	100K	1/10W	1	
	R6063	D0GB104JA008	100K	1/10W	1	
	R6064	D0GB102JA008	1K	1/10W	1	
	R6065	D0GB101JA008	100	1/10W	1	
	R6066	D0GB101JA008	100	1/10W	1	
	R6067	D0GB331JA008	330	1/10W	1	
	R6068	D0GB101JA008	100	1/10W	1	
	R6069	D0GB331JA008	330	1/10W	1	
	R6070	D0GB104JA008	100K	1/10W	1	
	R6072	D0GB103JA008	10K	1/10W	1	
	R6073	D0GB331JA008	330	1/10W	1	
	R6074	D0GB101JA008	100	1/10W	1	
	R6076	D0GB103JA008	10K	1/10W	1	
	R6077	D0GB104JA008	100K	1/10W	1	
	R6078	D0GB104JA008	100K	1/10W	1	
	R6091	D0GB101JA008	100	1/10W	1	
	R6092	D0GB472JA008	4.7K	1/10W	1	
	R6093	D0GB101JA008	100	1/10W	1	
	R6096	D0GB472JA008	4.7K	1/10W	1	
	R6097	D0GB101JA008	100	1/10W	1	
	R6098	D0GB101JA008	100	1/10W	1	
	R6099	D0GB101JA008	100	1/10W	1	
	R6100	D0GB101JA008	100	1/10W	1	
	R6101	D0GB101JA008	100	1/10W	1	
	R6123	D0GB101JA008	100	1/10W	1	
	R6124	D0GB101JA008	100	1/10W	1	
	R6125	D0GB101JA008	100	1/10W	1	
	R6126	D0GB101JA008	100	1/10W	1	
	R6127	D0GB101JA008	100	1/10W	1	
	R6128	D0GB101JA008	100	1/10W	1	
	R6129	D0GB103JA008	10K	1/10W	1	
	R6137	D0GB101JA008	100	1/10W	1	
	R6138	D0GB101JA008	100	1/10W	1	
	R6140	D0GB332JA008	3.3K	1/10W	1	
	R6318	D0GB101JA008	100	1/10W	1	
	R6321	D0GB103JA008	10K	1/10W	1	
	R6322	D0GB103JA008	10K	1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description		QTY	Remarks
	R9101	D0GB331JA008	330	1/10W	1	
			CAPACITORS			
	C100	F2G1C221A079	220uF	16V	1	
	C101	F1H1H1010005	100pF	50V	1	
	C102	F1H1H1010005	100pF	50V	1	
	C103	F1H1C104A120	0.1uF	16V	1	
	C104	F1H1H102A885	1000pF	50V	1	
	C105	F1J2E1030004	0.01uF	250V	1	
	C107	F1H1H102A885	1000pF	50V	1	
	C108	F1H1H102A885	1000pF	50V	1	
	C109	F1H1H102A885	1000pF	50V	1	
	C110	F1H1H102A885	1000pF	50V	1	
	C111	F1J2E1030004	0.01uF	250V	1	
	C300	F1H1C104A120	0.1uF	16V	1	
	C301	F1H1C104A120	0.1uF	16V	1	
	C400	F1J1A106A043	10uF	10V	1	
	C401	F1J1A106A043	10uF	10V	1	
	C402	F1J1A106A043	10uF	10V	1	
	C403	F1J1A106A043	10uF	10V	1	
	C404	F1H1A105A062	1uF	10V	1	
	C405	F1J1A106A043	10uF	10V	1	
	C406	F1J1E105A171	1uF	25V	1	
	C407	F1J1E105A171	1uF	25V	1	
	C408	F1J1E105A171	1uF	25V	1	
	C409	F1J1E105A171	1uF	25V	1	
	C410	F1H1H104A013	0.1uF	50V	1	
	C411	F1H1H104A013	0.1uF	50V	1	
	C412	F1H1H104A013	0.1uF	50V	1	
	C413	F1H1H104A013	0.1uF	50V	1	
	C414	F1J1H224A736	0.22uF	50V	1	
	C415	F1J1H224A736	0.22uF	50V	1	
	C416	F1H1C104A120	0.1uF	16V	1	
	C417	F1H1E105A116	1uF	25V	1	
	C418	F1H1H470A004	47pF	50V	1	
	C419	F1H1H470A004	47pF	50V	1	
	C420	F1J1A106A043	10uF	10V	1	
	C421	F1J1A106A043	10uF	10V	1	
	C422	F1H1E105A116	1uF	25V	1	
	C424	F1H1A105A062	1uF	10V	1	
	C425	F1H1A105A062	1uF	10V	1	
	C426	F1H1H120A889	12pF	50V	1	
	C427	F1H1H120A889	12pF	50V	1	
	C428	F1H1H104A013	0.1uF	50V	1	
	C434	F2A1C101A208	100uF	16V	1	
	C435	F1H1H102A885	1000pF	50V	1	
	C436	F1H1H102A885	1000pF	50V	1	
	C437	F1H1H102A885	1000pF	50V	1	
	C438	F1H1H102A885	1000pF	50V	1	
	C454	F1H1H102A885	1000pF	50V	1	
	C455	F1H1H102A885	1000pF	50V	1	
	C456	F1H1H102A885	1000pF	50V	1	
	C457	F1H1H102A885	1000pF	50V	1	
	C458	F1H1H102A885	1000pF	50V	1	
	C459	F1H1H102A885	1000pF	50V	1	
	C460	F1H1H102A885	1000pF	50V	1	
	C801	F1H1A105A062	1uF	10V	1	
	C802	F1K1C106A062	10uF	16V	1	
	C803	F1K1C106A062	10uF	16V	1	
	C804	F1H1C104A120	0.1uF	16V	1	
	C806	F1H1A105A062	1uF	10V	1	
	C1000	F1K1H105A138	1uF	50V	1	
	C1001	F1H1C104A120	0.1uF	16V	1	
	C1106	F1K1C226A121	22uF	16V	1	
	C1107	F1K1C226A121	22uF	16V	1	
	C1108	F1H1H104A013	0.1uF	50V	1	
	C1111	F1H1H472A219	4700pF	50V	1	
	C1117	F1H1E1050001	1uF	25V	1	
	C1118	F1K1E1060001	10uF	25V	1	
	C1120	F1H0J4750005	4.7uF	6.3V	1	
	C1122	F1J1E4750002	4.7uF	25V	1	
	C1123	F1H1H102A885	1000pF	50V	1	

Safety	Ref. No.	Part No.	Part Name & Description		QTY	Remarks
	C1124	F1H1H102A885	1000pF	50V	1	
	C1125	F1H1H102A885	1000pF	50V	1	
	C1126	F1H1H104A013	0.1uF	50V	1	
	C1129	F1H1H102A885	1000pF	50V	1	
	C1135	F1K1C226A121	22uF	16V	1	
	C1136	F1K1C226A121	22uF	16V	1	
	C1137	F1H1H102A885	1000pF	50V	1	
	C1138	F1H1H104A013	0.1uF	50V	1	
	C1139	F1H1H102A885	1000pF	50V	1	
	C1140	F1H1H153A885	0.015uF	50V	1	
	C1141	F1H1H562A219	5600pF	50V	1	
	C1143	F1K1E1060001	10uF	25V	1	
	C1144	F1K1E1060001	10uF	25V	1	
	C1145	F1H1H102A885	1000pF	50V	1	
	C1146	F1H1H102A885	1000pF	50V	1	
	C1147	F1H1H102A885	1000pF	50V	1	
	C6002	F1H1H1010005	100pF	50V	1	
	C6010	F1H1H104A013	0.1uF	50V	1	
	C6011	F1H1H104A013	0.1uF	50V	1	
	C6012	F2A0J102B059	1000uF	6.3V	1	
	C6013	F1H0J1050013	1uF	6.3V	1	
	C6014	F1H1H102A885	1000pF	50V	1	
	C6017	F1H1H102A885	1000pF	50V	1	
	C6019	F1H1H220A889	22pF	50V	1	
	C6020	F1H1H102A885	1000pF	50V	1	
	C6021	F1H1H220A889	22pF	50V	1	
	C6022	F1H1A224A061	0.22uF	10V	1	
	C6023	F1H1C104A120	0.1uF	16V	1	
	C6024	F1H1H101A889	100pF	50V	1	
	C6025	F1H1H101A889	100pF	50V	1	
	C6026	F1H1H102A885	1000pF	50V	1	
	C6027	F1H1C104A120	0.1uF	16V	1	
	C6028	F1H1C104A120	0.1uF	16V	1	
	C6029	F1H1C104A120	0.1uF	16V	1	
	C6030	F1H1H102A885	1000pF	50V	1	
	C6031	F1H1H102A885	1000pF	50V	1	
	C6035	F1H1A105A062	1uF	10V	1	
	C6046	F2A1A330A010	33uF	10V	1	
	C6047	F1H1H331A885	330pF	50V	1	
	C6049	F1H1H223A219	0.022uF	50V	1	
	C6050	F1H1H102A885	1000pF	50V	1	

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