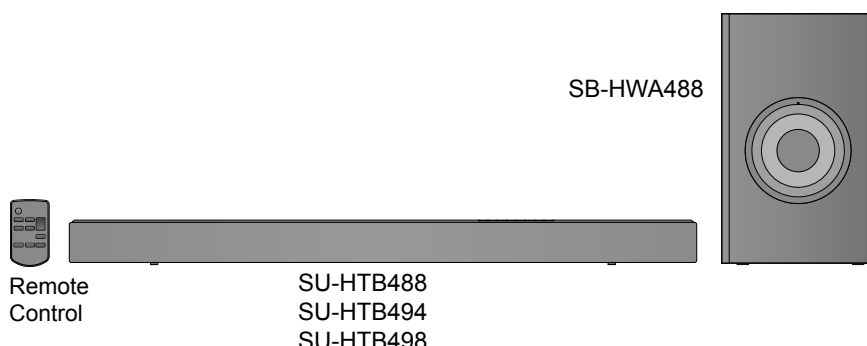


Service Manual

Home Theater Audio System

Model No. **SC-HTB488EB**
SC-HTB488EG
SC-HTB494EG
SC-HTB498EB
SU-HTB488EB
SU-HTB488EG
SU-HTB494EG
SU-HTB498EB
SB-HWA488EB
SB-HWA488EG



Colour:(K).....Black Type

WARNING

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

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1 Safety Precautions

1.1. General Guidelines

1. IMPORTANT SAFETY NOTICE

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

1.2. Leakage Current Cold Check

- Unplug the AC cord and connect a jumper between the two prongs on the plug.
- 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 1 M Ω and 5.2 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.3. Leakage Current Hot Check (See Figure. 1)

- Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
- Connect a 1.5 k Ω , 10 W resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure. 1.
- Use an AC voltmeter, with 1 k Ω /V or more sensitivity, to measure the potential across the resistor.
- Check each exposed metallic part, and measure the voltage at each point.
- Reverse the AC plug in the AC outlet and repeat each of the above measurements.
- The potential at any point should not exceed 0.75 V 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 mA. 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.

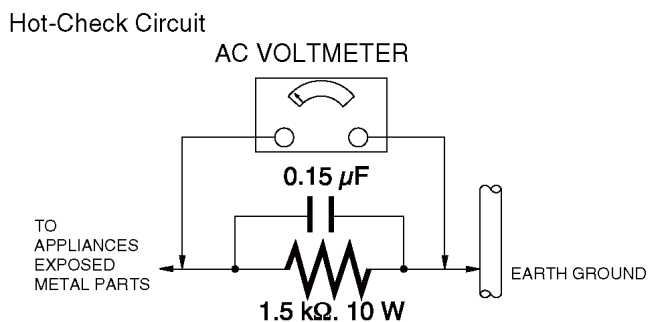


Figure. 1

1.4. 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

2 Warning

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

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

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

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


1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION :

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

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 View 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.

2.2. Caution for AC Cord (For EB)

2.2.1. Information for Your Safety

IMPORTANT

Your attention is drawn to the fact that recording of prerecorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

2.2.2. Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.



If the plug contains a removable fuse cover you must ensure that it is refitted after the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safely.

There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt, please consult a qualified electrician.

2.2.2.1. Important

The wires in this mains lead are coloured in accordance with the following code:

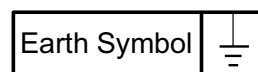
Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

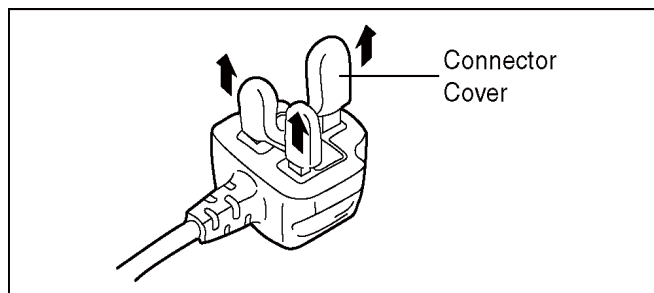
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.



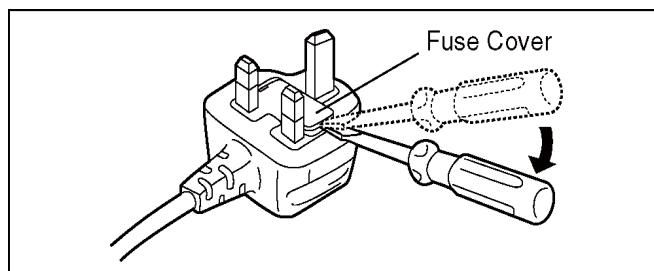
2.2.2.2. Before Use

Remove the Connector Cover as follows:

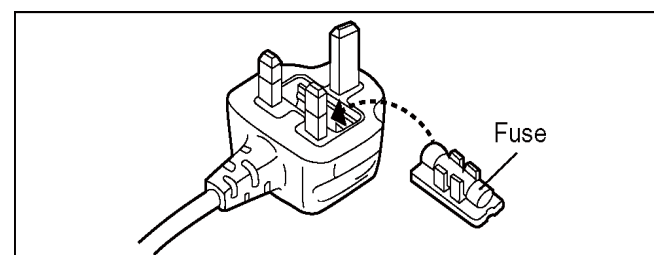


2.2.2.3. How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the Fuse and attach the Fuse cover.



2.3. Service Caution Based on Legal Restrictions

2.3.1 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°C (86°F) more than that of the normal solder.

Distinction of P.C.B. Lead Free Solder being used

The letter of " PbF" is printed either foil side or components side on the P.C.B. 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 P.C.B. 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 P.C.B. 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°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.
SVKZ000001----- (0.3mm 100g Reel)
SVKZ000002----- (0.6mm 100g Reel)
SVKZ000003----- (1.0mm 100g Reel)

Note

- * Ingredient: Tin (Sn) 96.5%, Silver (Ag) 3.0%, Copper (Cu) 0.5%. (Flux cored)

3 Service Navigation

3.1. Service Information

This service manual contains technical information, which allow service personnels to understand and service this model. Please place orders with the numbers in the parts list and not the numbers in the exploded views.

If the circuit is changed or modified, the information will be followed by service manual to be controlled with original service manual.

In case of repair of parts, please refer as follow:

Defective Parts	Repair Method
1) Main P.C.B.	Change by Main P.C.B. Unit
2) Wireless Antenna P.C.B.	Change by Main P.C.B. Unit
3) Bluetooth Antenna P.C.B.	Change by LED P.C.B. Unit
4) LED P.C.B.	Change by LED P.C.B. Unit
5) Back Panel	Change by Back Panel Unit
6) AC CORD	Change by Back Panel Unit

4 Specifications

■ AMPLIFIER SECTION

RMS output power: Dolby Digital Mode

HTB498

Front ch (L, R ch)

45 W per channel (6 Ω), 1 kHz, 10%, THD

Subwoofer ch

90 W per channel (3 Ω), 100 Hz, 10%, THD

Total RMS Dolby Digital mode power

180 W

HTB488 HTB494

Front ch (L, R ch)

50 W per channel (6 Ω), 1 kHz, 10%, THD

Subwoofer ch

100 W per channel (3 Ω), 100 Hz, 10%, THD

Total RMS Dolby Digital mode power

200 W

■ TERMINAL SECTION

HDMI output (ARC)

Output connector

Type A (19 pin)

Digital audio input

1

Optical digital input

Optical terminal

Sampling frequency

32 kHz, 44.1 kHz, 48 kHz

Audio format

LPCM, Dolby Digital, DTS Digital Surround™

USB Port

For service use only.

■ GENERAL

Power consumption

Main unit

19 W

Active subwoofer

18 W

In standby condition

Main unit

When Bluetooth® standby is off

Approx. 0.5 W

When Bluetooth® standby is on

Approx. 2 W

When all wired network ports are connected
and all wireless networks are activated in
network standby:

Approx. 5.1 W

Active subwoofer

Approx. 0.5 W

When wireless activated in network standby

Approx. 2.3W

Power supply

AC 220 V to 240 V, 50 Hz

Dimensions (W x H x D)

Main unit

For table top layout

853 mm x 60.5 mm x 90 mm

For wall mounting layout

853 mm x 60.5 mm x 111 mm

Active subwoofer

185 mm x 303 mm x 337 mm

Mass

Main unit

For table top layout

Approx. 1.9 kg

For wall mounting layout

Approx. 2.0 kg

Active subwoofer

Approx. 4.8kg

Operating temperature range

0°C to +40°C

Operating humidity range

20% to 80%RH(no condensation)

■ SPEAKER SECTION

Front speakers (Built-in)

Full range

4.5x12 cm (cone type) x 1/ch

Active subwoofer

Woofers

16cm cone type x 1

■ WIRELESS SECTION

Wireless module

Frequency Range

2.404 GHz to 2.478 GHz

Maximum RF Power

- 0.09dBm

No. of channels

38

■ Bluetooth® SECTION

Version

Bluetooth® Ver.4.0

Class

Class 2

Supported profiles

A2DP

Operating frequency

2402MHz to 2480MHz

Maximum RF Power

7.1dBm

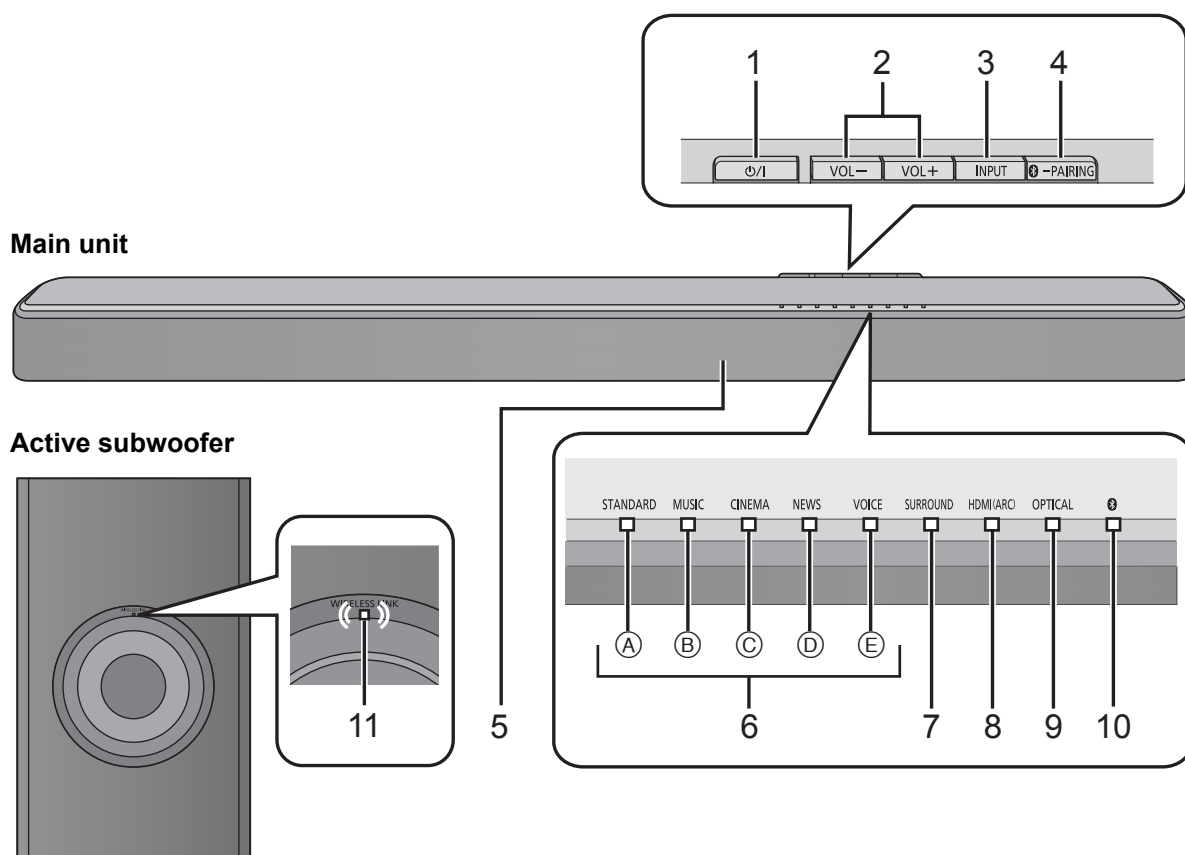
Operating distance

10 m Line of Sight

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

5 Location of Controls and Components

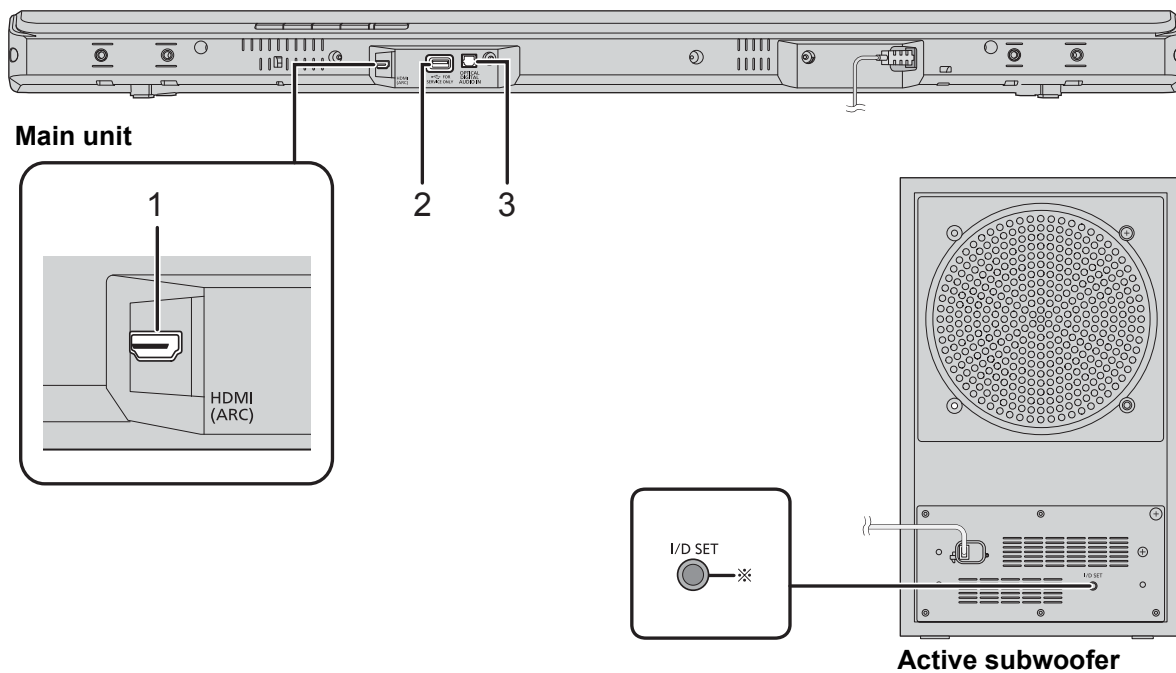
This system (Front)



- 1 **Standby/on switch (⏻/⏻)**
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 of this system
- 3 Select the input source
"HDMI (ARC)" → "OPTICAL" → "Bluetooth®"
↑
- 4 Select the Bluetooth® device as the source

Bluetooth® pairing
Disconnecting a Bluetooth® device
- 5 Remote control signal sensor
- 6 Sound mode indicators
Lights when the corresponding sound mode is selected
 - (A) STANDARD indicator
 - (B) MUSIC indicator
 - (C) CINEMA indicator
 - (D) NEWS indicator
 - (E) VOICE indicator
- 7 SURROUND indicator
Lights when the surround effect is activated
- 8 HDMI (ARC) indicator
Lights when the device connected to the HDMI (ARC) terminal is the audio source
- 9 OPTICAL indicator
Lights when the device connected to the OPTICAL DIGITAL AUDIO IN terminal is the audio source
- 10 Bluetooth® indicator
Lights when the Bluetooth® device is the audio source
- 11 WIRELESS LINK indicator

This system (Rear)



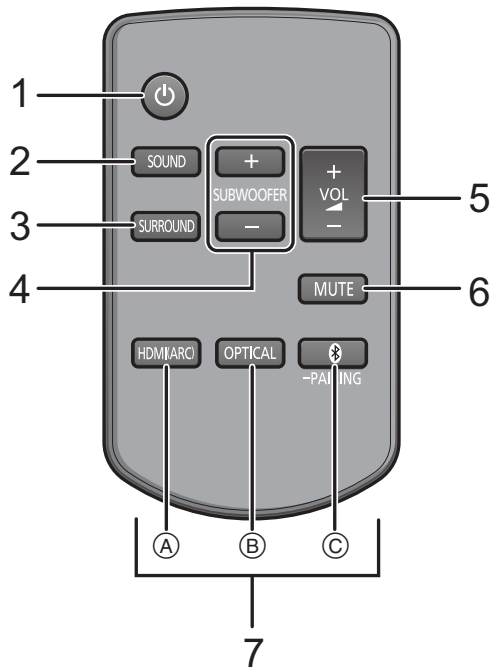
1 HDMI (ARC) terminal (ARC compatible)

2 USB port (for service use only)

3 OPTICAL DIGITAL AUDIO IN terminal

※ The I/D SET button is only used when the main unit is not paired with the active subwoofer.

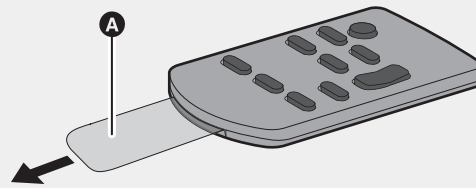
Remote control



- 1 Turn the main unit on or off
- 2 Select the sound mode
- 3 Set the surround mode
- 4 Adjust the subwoofer level
- 5 Adjust the volume of this system
- 6 Mute the sound
- 7 Select the input source
 - (A) Select the HDMI (ARC) device as the source
 - (B) Select the Optical device as the source
 - (C) Select the Bluetooth® device as the source
 - Bluetooth® pairing
 - Disconnecting a Bluetooth® device

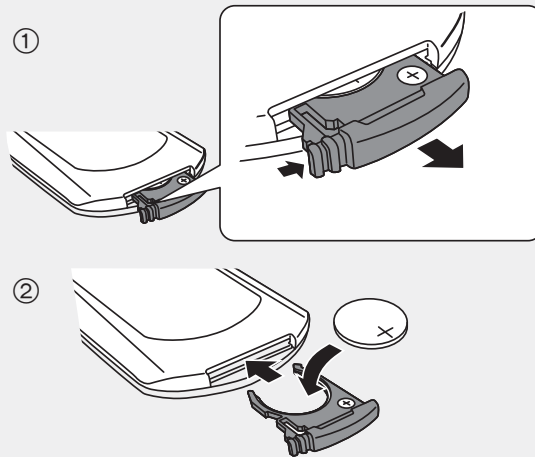
■ Before using for the first time

Remove the insulation sheet (A).



■ To replace a button-type battery

Battery type: CR2025 (Lithium battery)



- Set the button-type battery with its (+) mark facing upward.

■ About remote control signal sensor The remote control signal sensor is located on the main unit.

- Use the remote control within the correct operation range.
 - Distance: Within approx. 7 m directly in front
 - Angle: Approx. 30° left and right

6 Service Mode

This unit has Service Mode function that can resave the operation record of unit keys or the remote controller from the flash memory to USB stick for service personnel confirmation use.

Steps

1. Turn on the unit.
2. Switch the input mode to HDMI(ARC).
3. Insert a USB stick to the Unit.
⇒ Start to save records to USB automatically.
4. Insert the USB stick to the computer and find a file named "service_mode.txt".
5. Open the file with Binary Editor to confirm the operation record.

Display Example when using Binary Editor

※ The display image may differ due to various software being used.

The first number shows the save position address of the last operation.

The from the third number values show the operation records.
⇒ Refer to How to read the Operation Record.


Latest operation
(last operation)

Earliest operation
(prior to 200 times operations)

The second number shows the software version.
(hexadecimal number 2A=decimal number 42, it means software version is V.42)

How to read the Operation Record

- Last 200 times operations are recorded. (May more or less due to different status. This chapter describes the case based on the 200 times.)
 - Before delivery all records show as FF. (When performing factory delivery settings, the record will be all restored as FF.)
 - The last 200 times operations are recorded following left to right, top to down order started from the third number at the up left corner.
 - When exceeding 200 times, the 3rd operation record will be covered once the 201st operation occurs, then covering the forth, the fifth.....in sequence.
 - Please follow below steps to confirm the last operation of this unit.
 - 1) .Confirm the 1st number (address).
 - 2) .Confirm the value which shown at the step 1) address.
 - 3) .Check the last operation with below shown list.
- ※ Refer to the display shown above,
- 1) the first number is [B3].
 - 2) Value at address B3 is [C5].
 - 3) Check with the below list, C5 indicates the unit last operation is [software update].

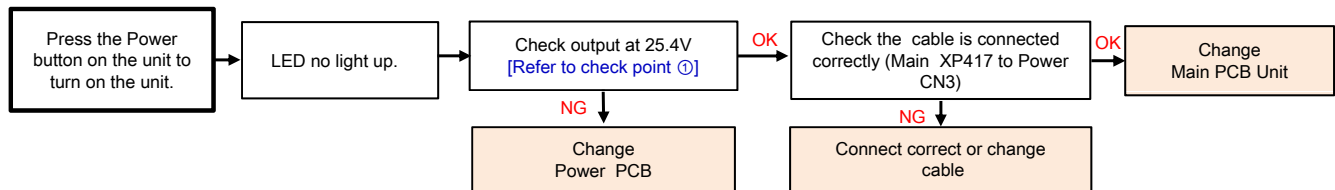
Value	Operation
4F	Key operation: VOL+
50	Key operation: VOL-
4E	Key operation: MUTE
70	Key operation:(Main unit) INPUT
8C	Key operation: SOUND
5B	Key operation: POWER
9A	Key operation:  -PAIRING
78	Key operation: HDMI (ARC)
75	Key operation: OPTICAL
7D	Key operation: SUBWOOFER +
7E	Key operation: SUBWOOFER-
46	Key operation: SURROUND
9A	Bluetooth pairing
97	Pairing of active subwoofer
D8	Volume limit function enabled / disabled
98	Factory setting

76	Save operation record
C5	Firmware update
A1	Firmware version check

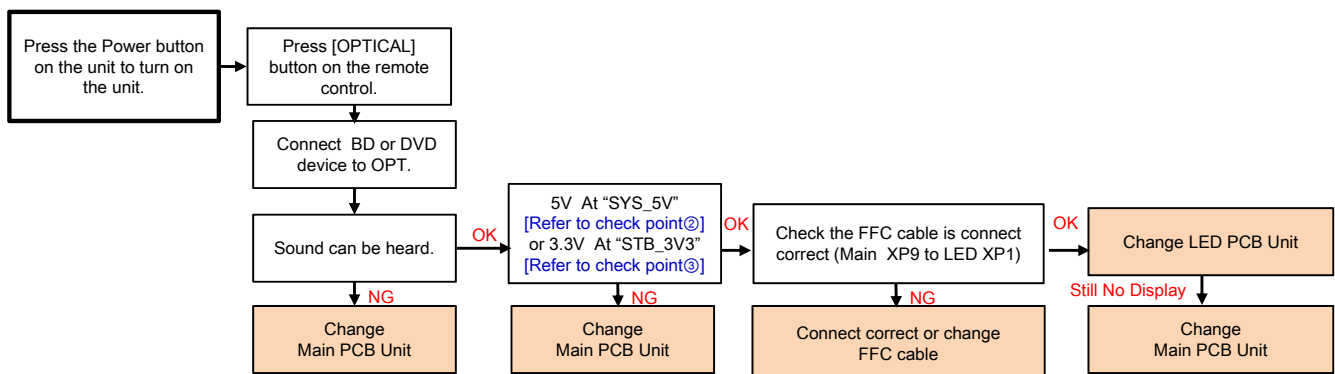
7 Troubleshooting Guide

7.1 Main Unit (SU-HTB488/494/498)

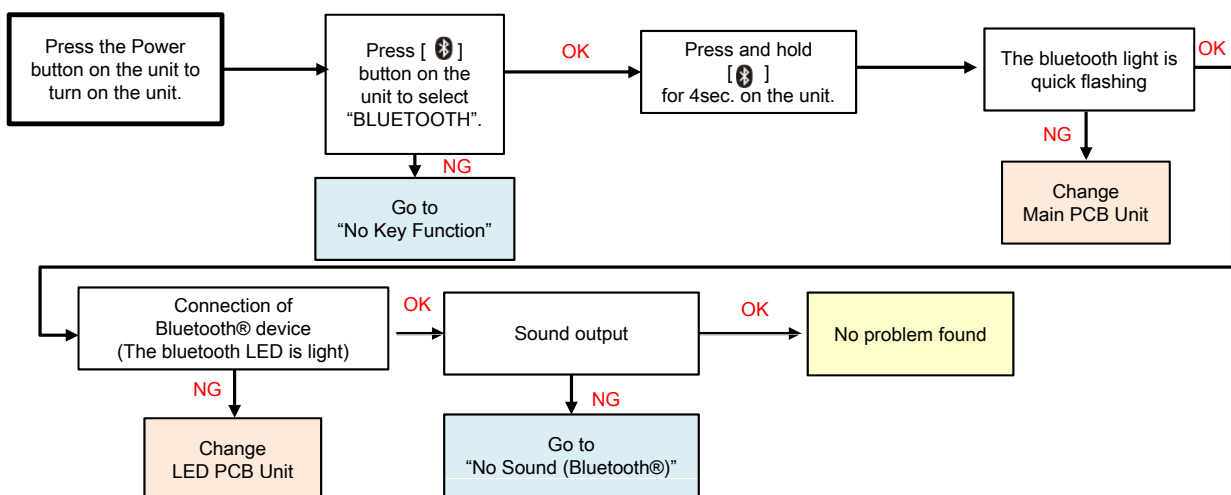
7.1.1 No power



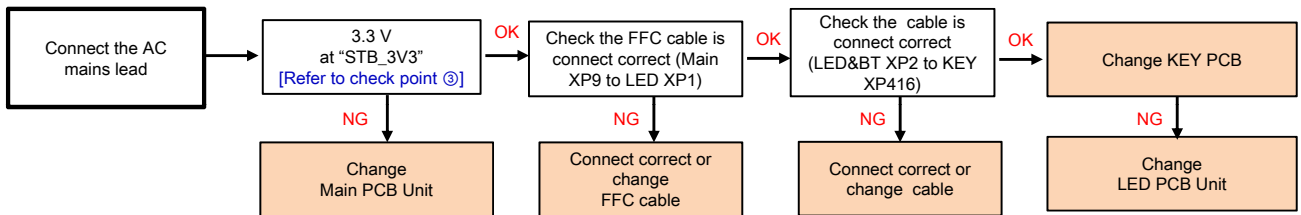
7.1.2. Function indicator LED no light up



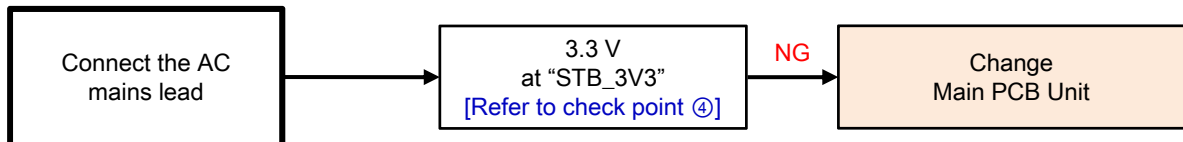
7.1.3. Bluetooth® Pairing failure



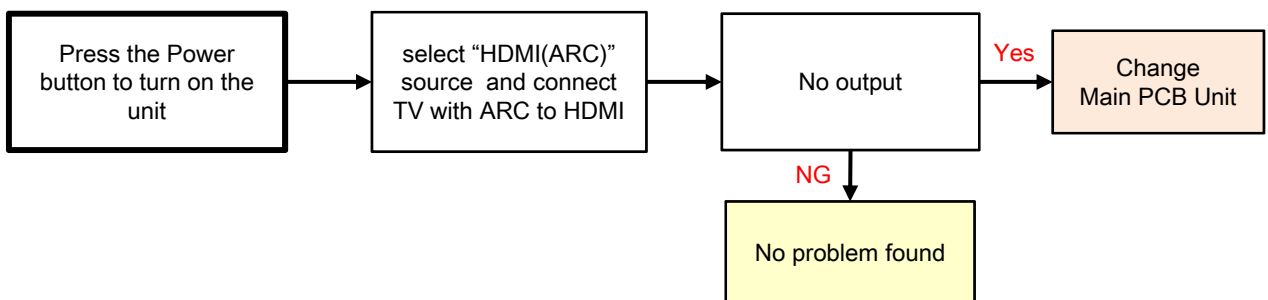
7.1.4. No Key Function



7.1.5. No remote control function

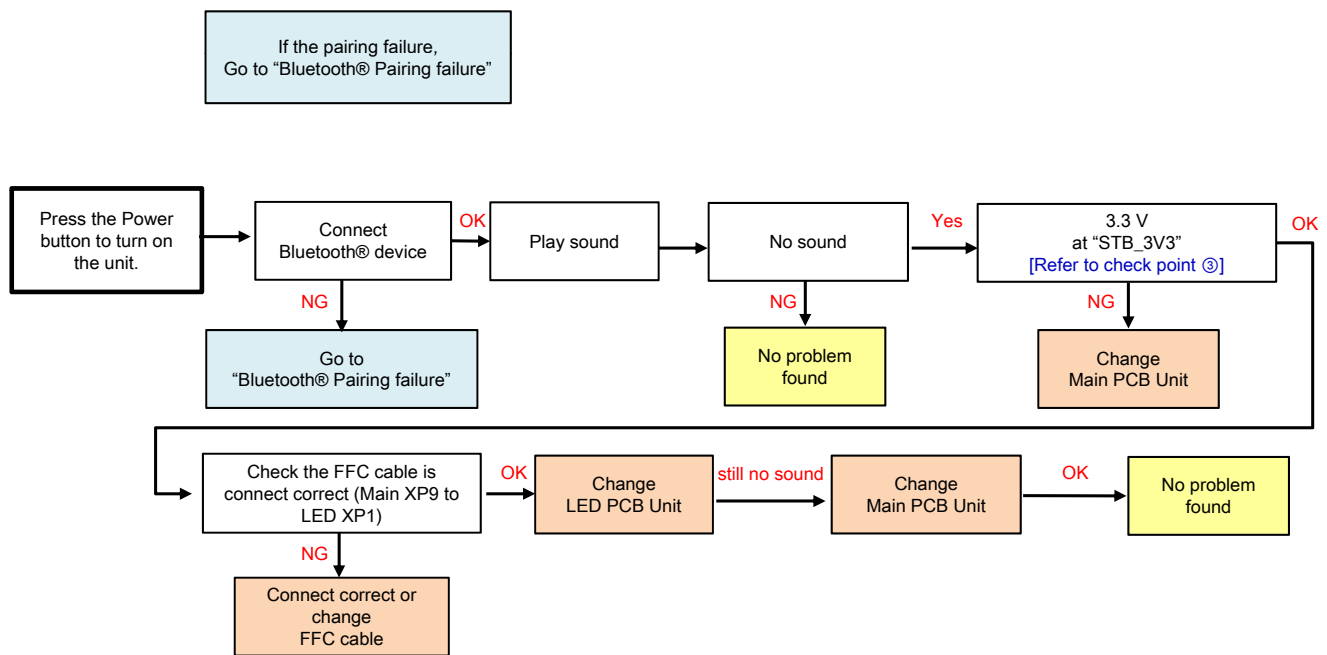


7.1.6. No HDMI out

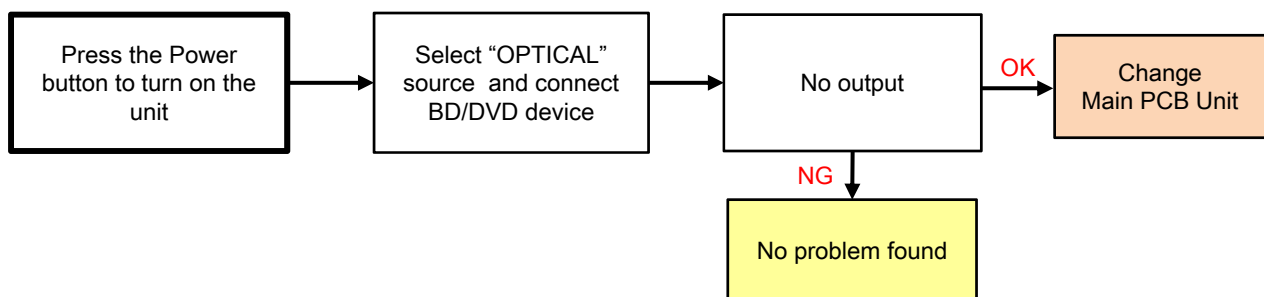


7.1.7. No Sound

7.1.7.1. No Sound (Bluetooth®)



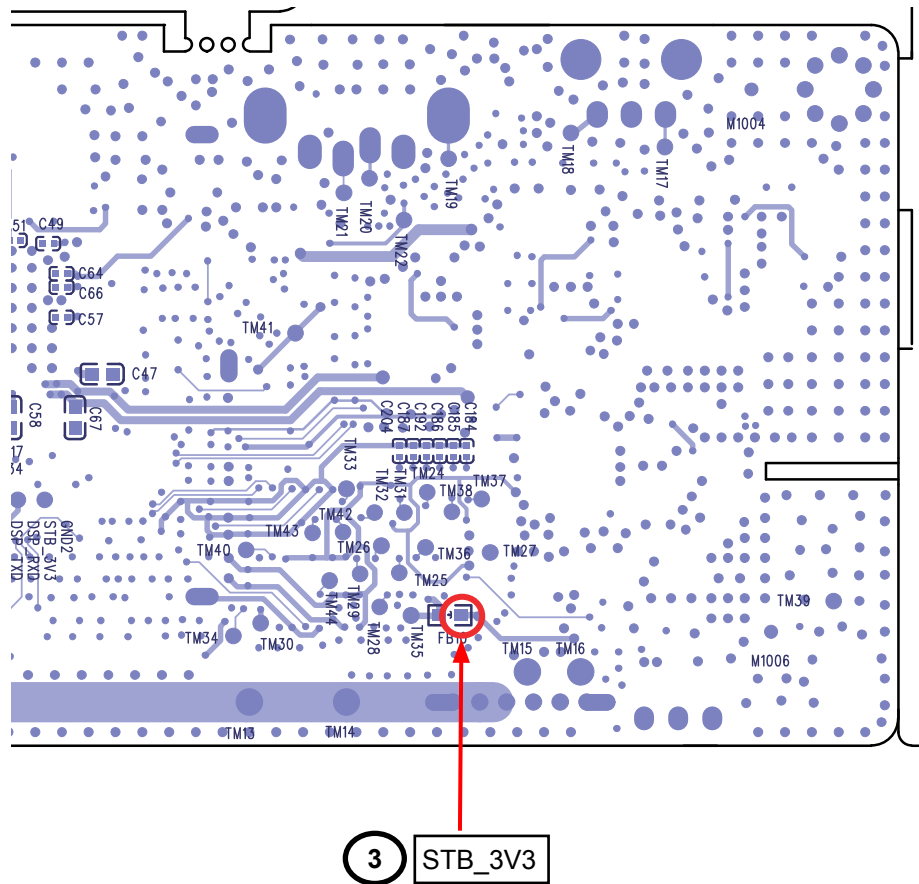
7.1.7.2. No Sound (Optical)



POWER P.C.B.

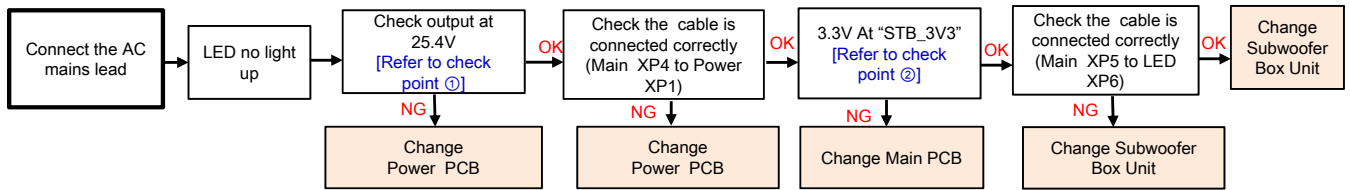


MAIN P.C.B.

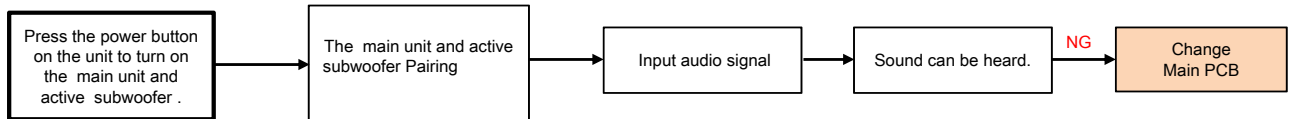


7.2 Active Subwoofer (SB-HWA488)

7.2.1 No power

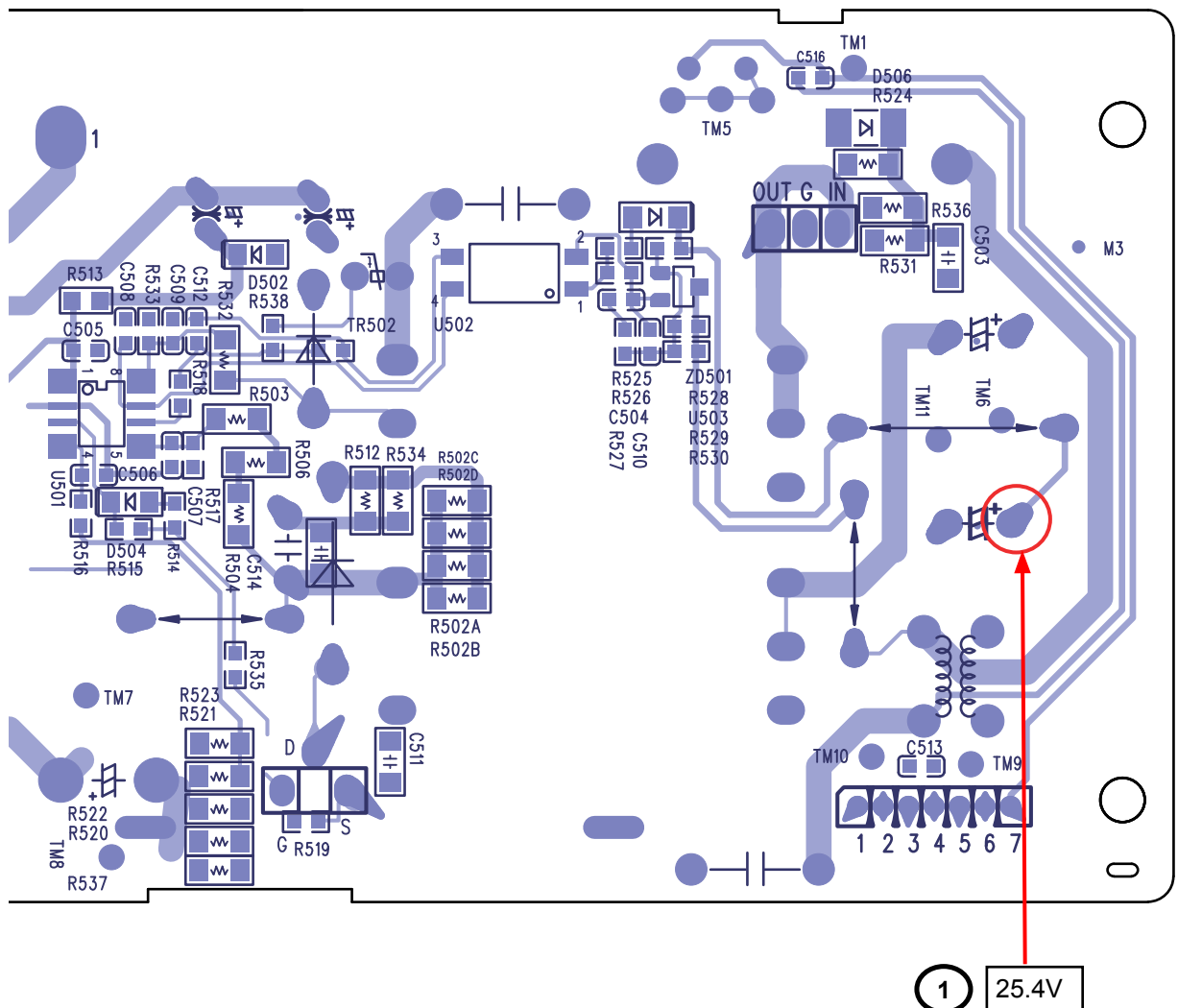


7.2.2 No sound

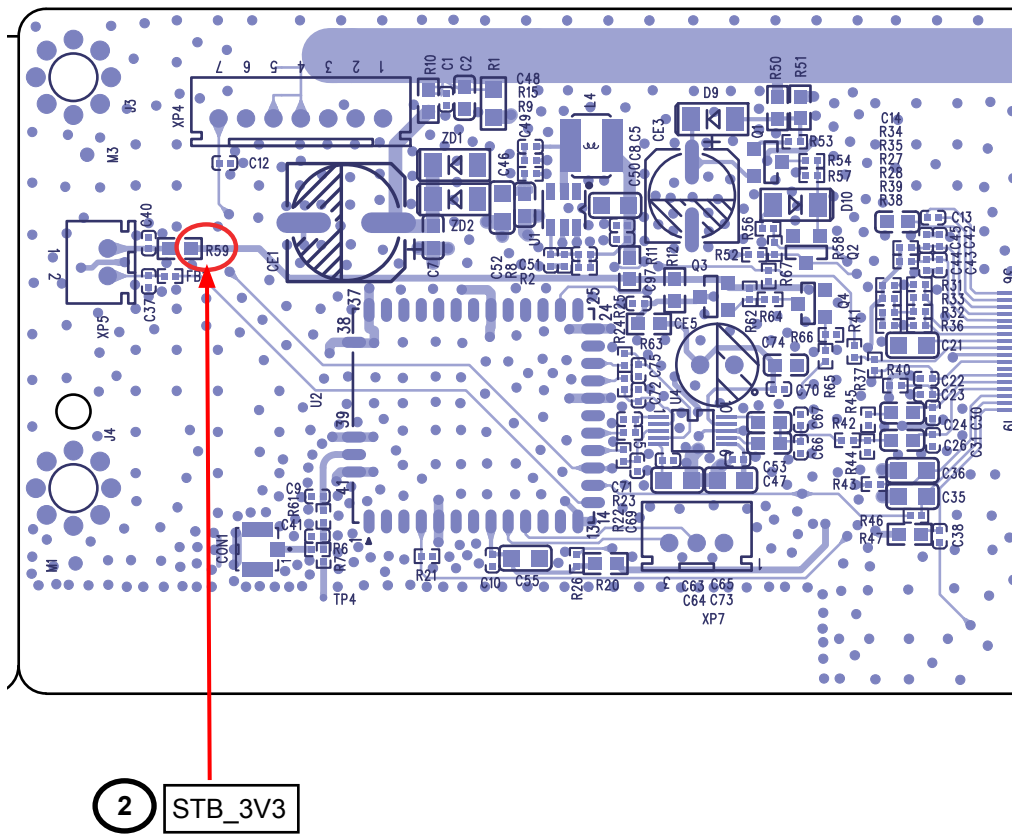


7.2.3. Check Points

POWER P.C.B.

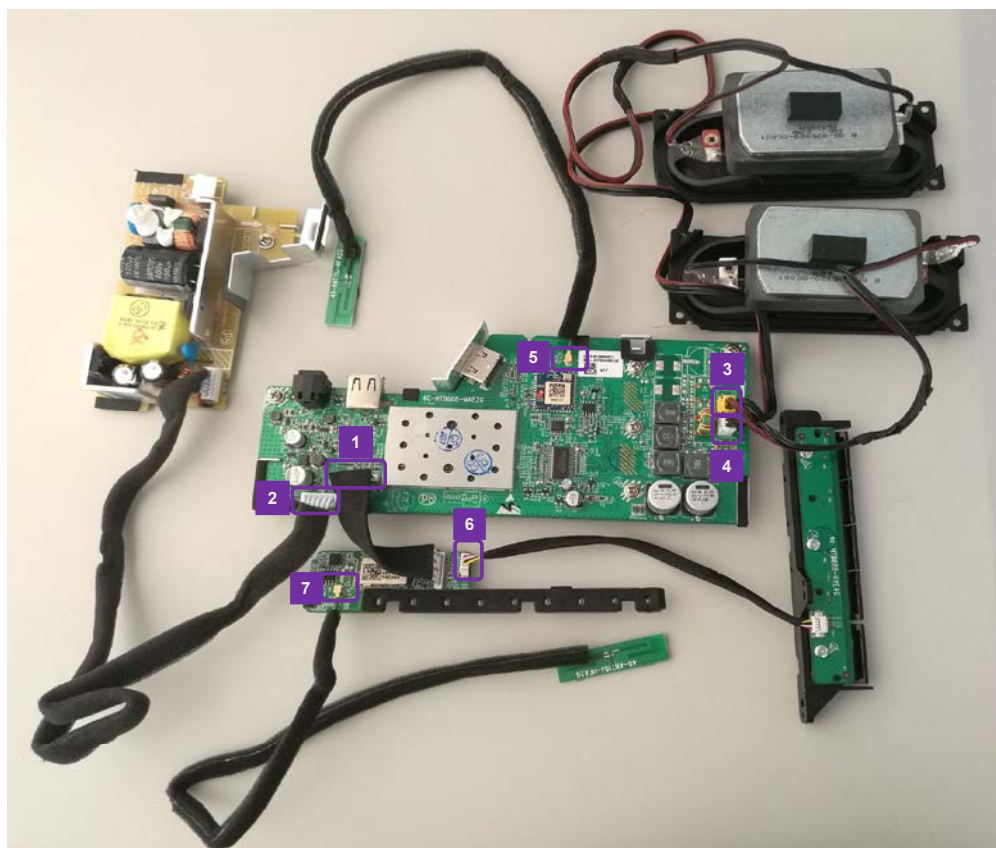
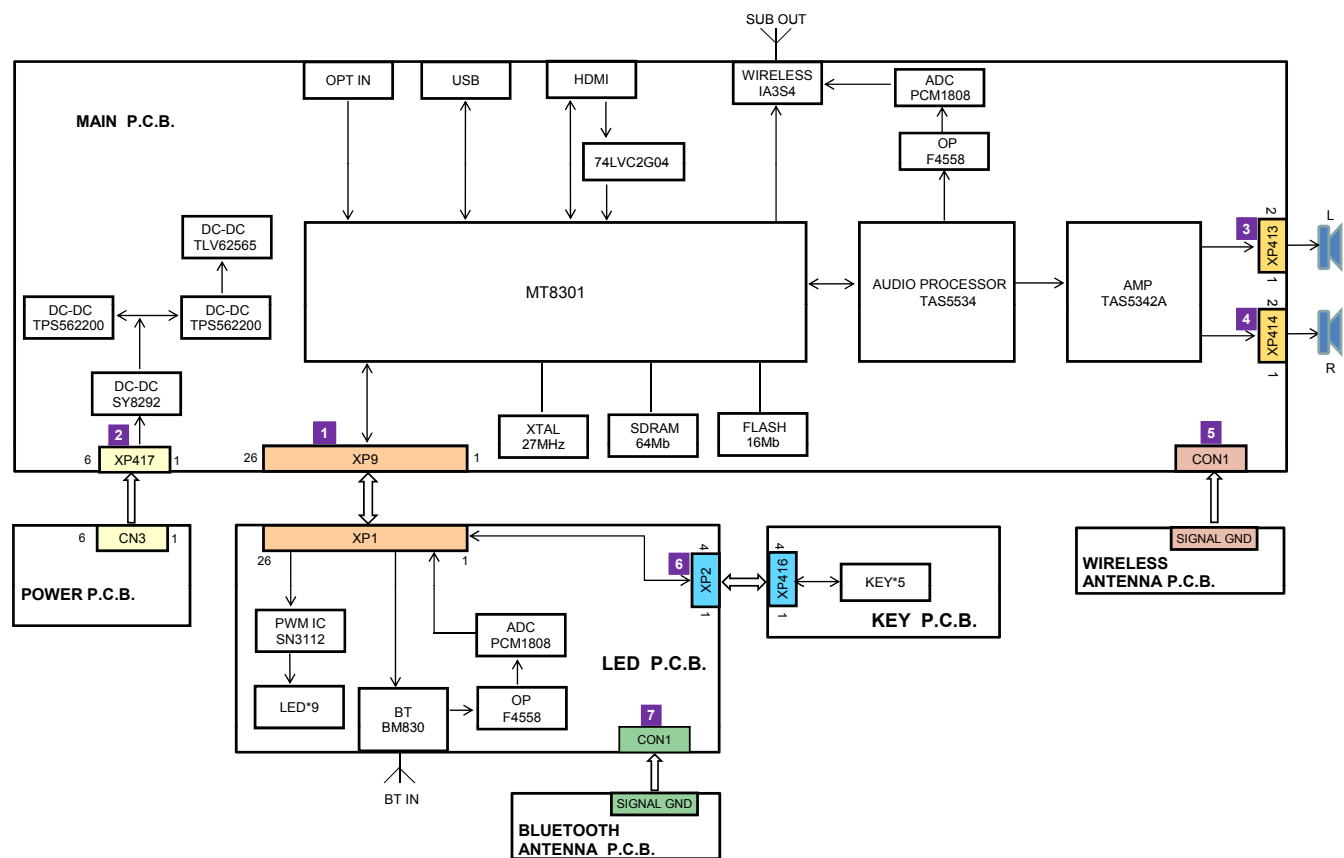


MAIN P.C.B.

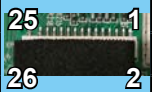



8 Wiring Connection and Voltage Data


8.1 Main Unit (SU-HTB488/494/498)




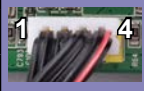
VOLTAGE DATA (measurement status:Power On and No any external signal input)


1	PIN NO.	VALUE
 <p>XP9</p>	1	3.3V
	2	3.3V
	3	0V
	4	12V
	5	0V
	6	5V
	7	0V
	8	1.6V
	9	1.6V
	10	0V
	11	1.6V
	12	0V
	13	3.3V
	14	3.3V
	15	3.3V
	16	0.5V
	17	0V
	18	1.2V
	19	0V
	20	0V
	21	0V
	22	3.3V
	23	3.3V
	24	3.3V
	25	0V
	26	3V


3	PIN NO.	VALUE
 <p>XP413</p>	1	0.78V
	2	0.78V

4	PIN NO.	VALUE
 <p>XP414</p>	1	0.78V
	2	0.78V

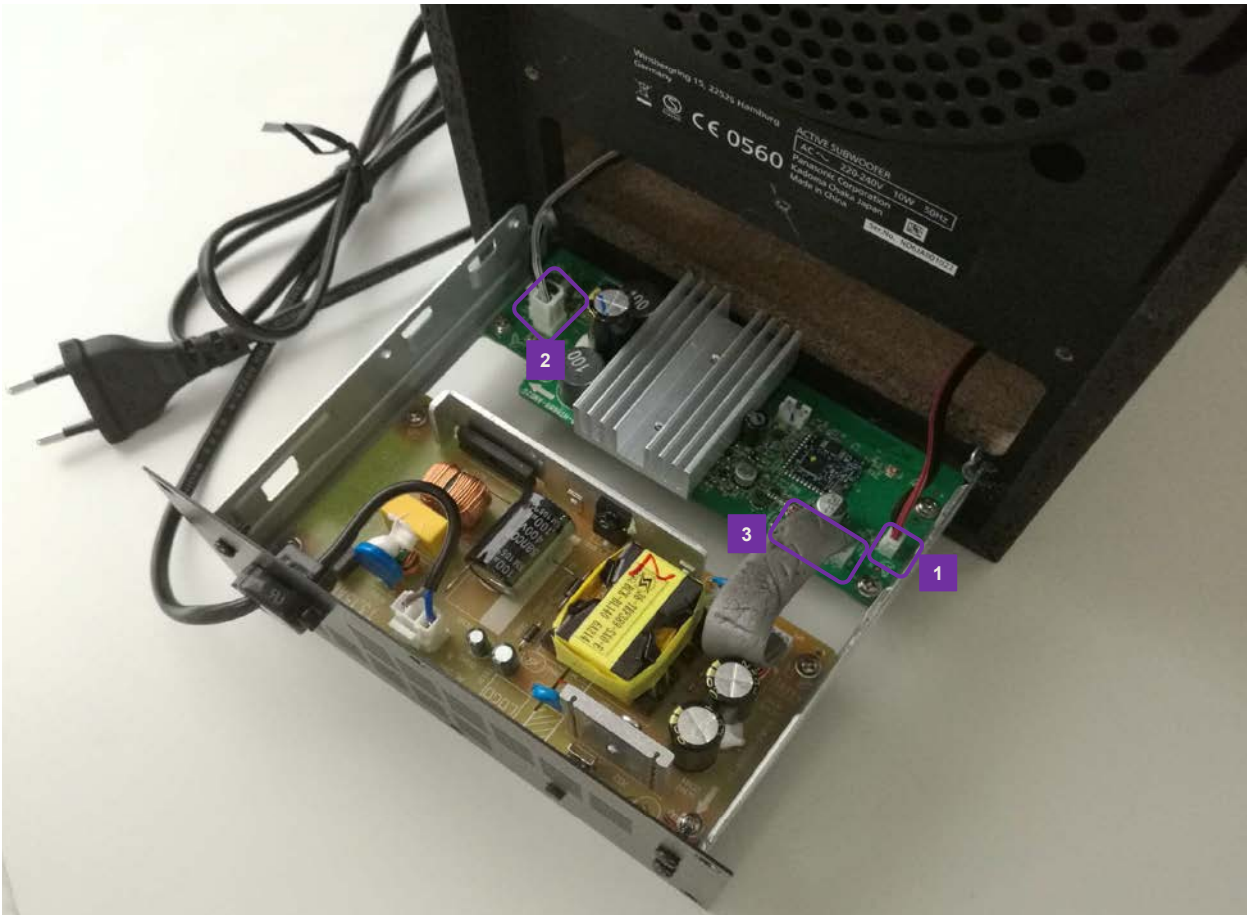
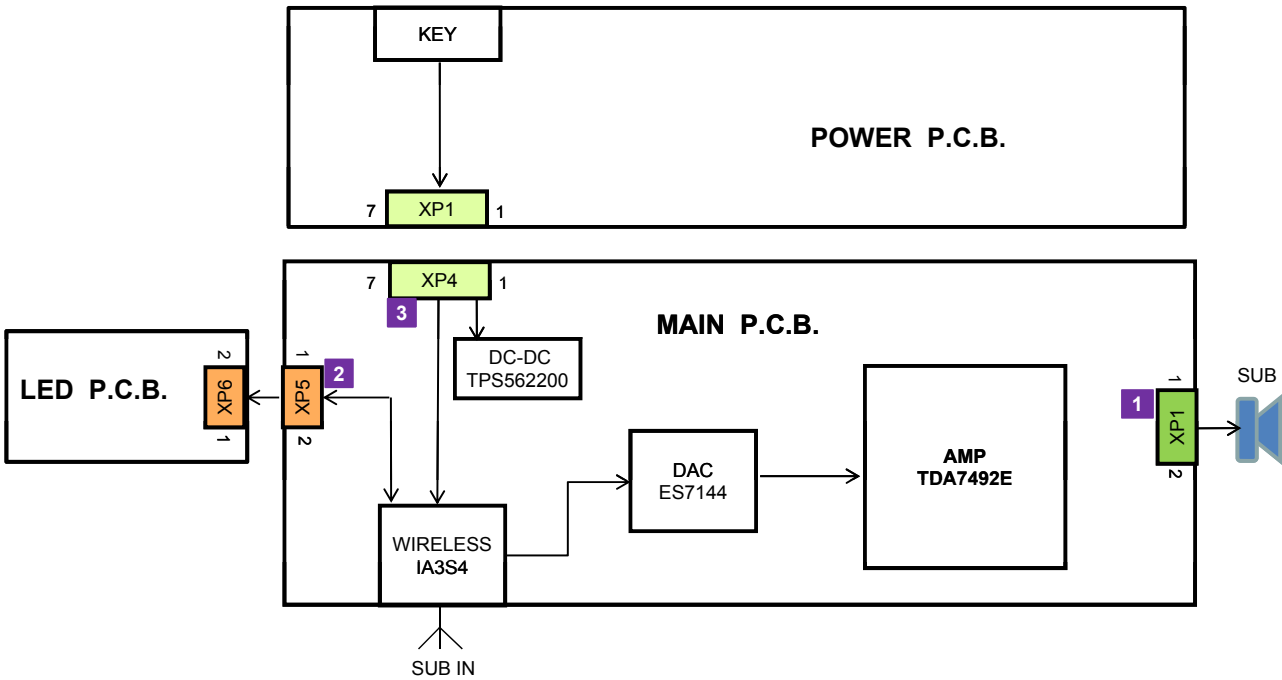
5	PIN NO.	VALUE
 <p>CON1</p>	1	0V

6	PIN NO.	VALUE
 <p>XP2</p>	1	3.3V
	2	3.3V
	3	3.3V
	4	0V


7	PIN NO.	VALUE
 <p>CON1</p>	1	0V

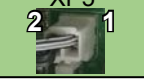
2	PIN NO.	VALUE
 <p>XP417</p>	1	25.4V
	2	25.4V
	3	25.4V
	4	0V
	5	0V
	6	0V


8.2 Active Subwoofer (SB-HWA488)



VOLTAGE DATA (measurement status:Power On and No any external signal input)

1	PIN NO.	VALUE
	1	9.6V
	2	9.6V

2	PIN NO.	VALUE
	1	2.8V
	2	0.1V

3	PIN NO.	VALUE
	1	0V
	2	0V
	3	0V
	4	25.4V
	5	25.4V
	6	25.4V
	7	3.3V

9 Service Fixture & tools

For better servicing purpose,prepare service tool.

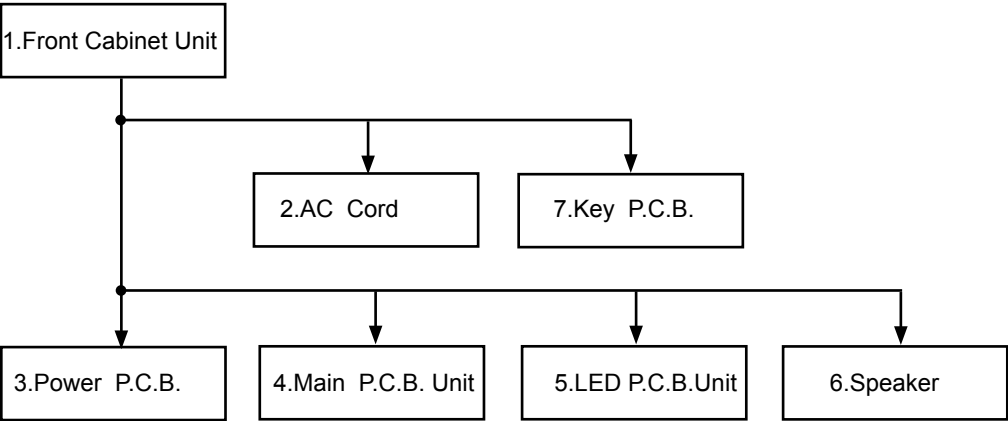
Service tool	Part no
Main P.C.B.-LED P.C.B.	TNMX064

10 Disassembly and Assembly Instructions

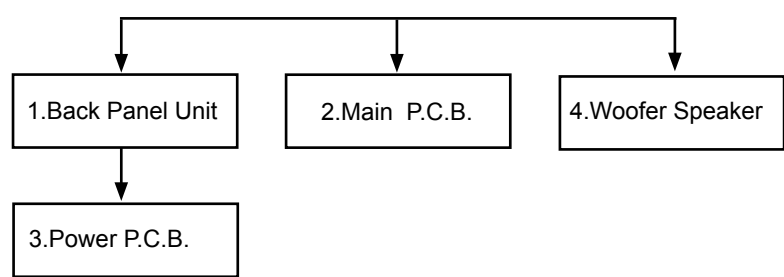
10.1. Disassembly Flow Chart

The following chart is the procedure of 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.

10.1.1 Main Unit (SU-HTB488/494/498)

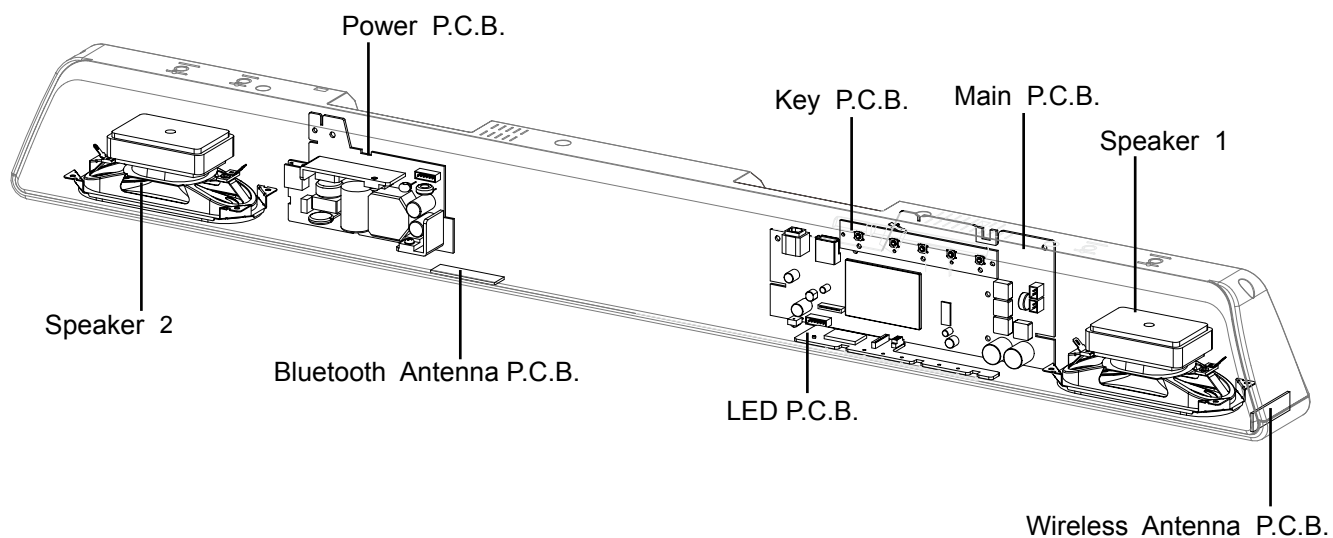


10.1.2 Active Subwoofer (SB-HWA488)

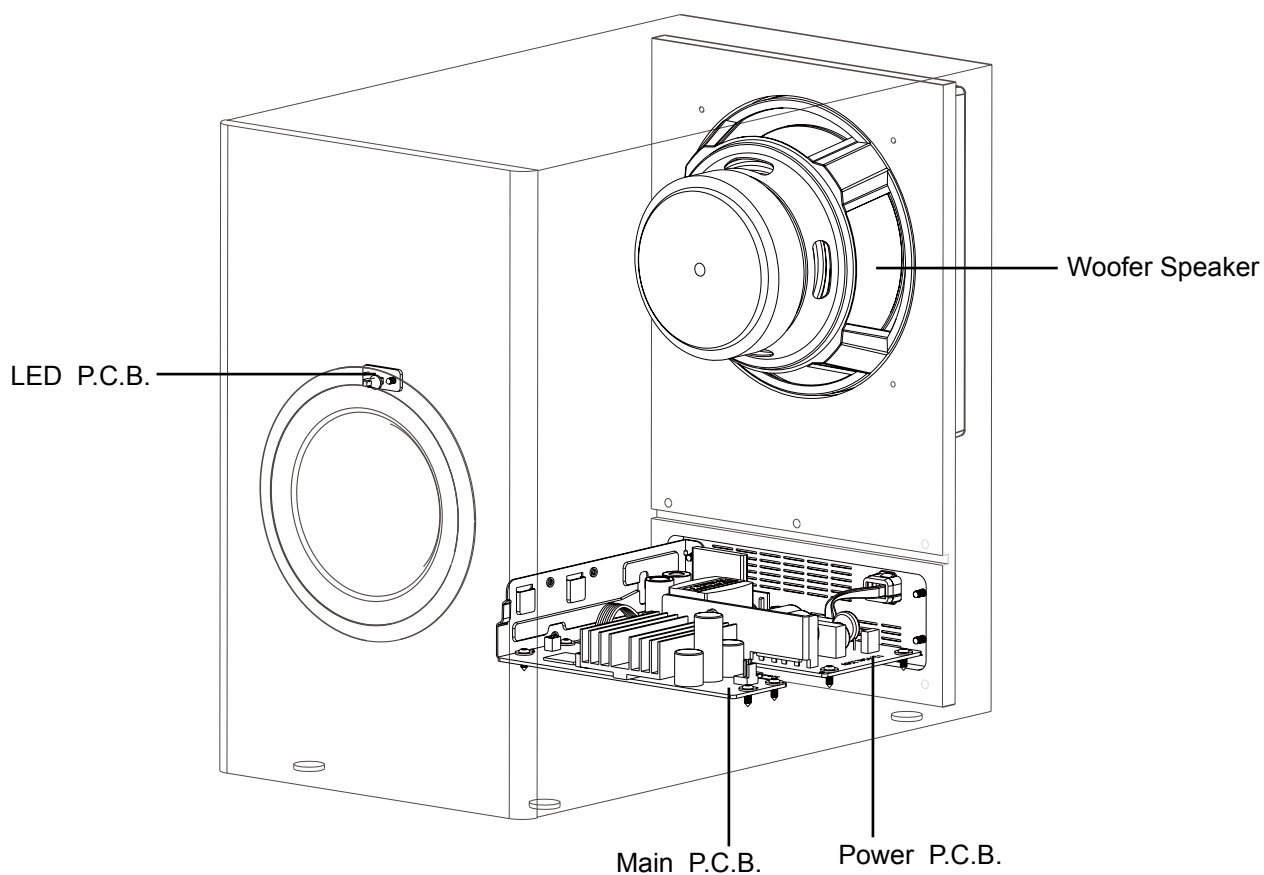


10.2. P.C.B. Positions

10.2.1 Main Unit (SU-HTB488/494/498)



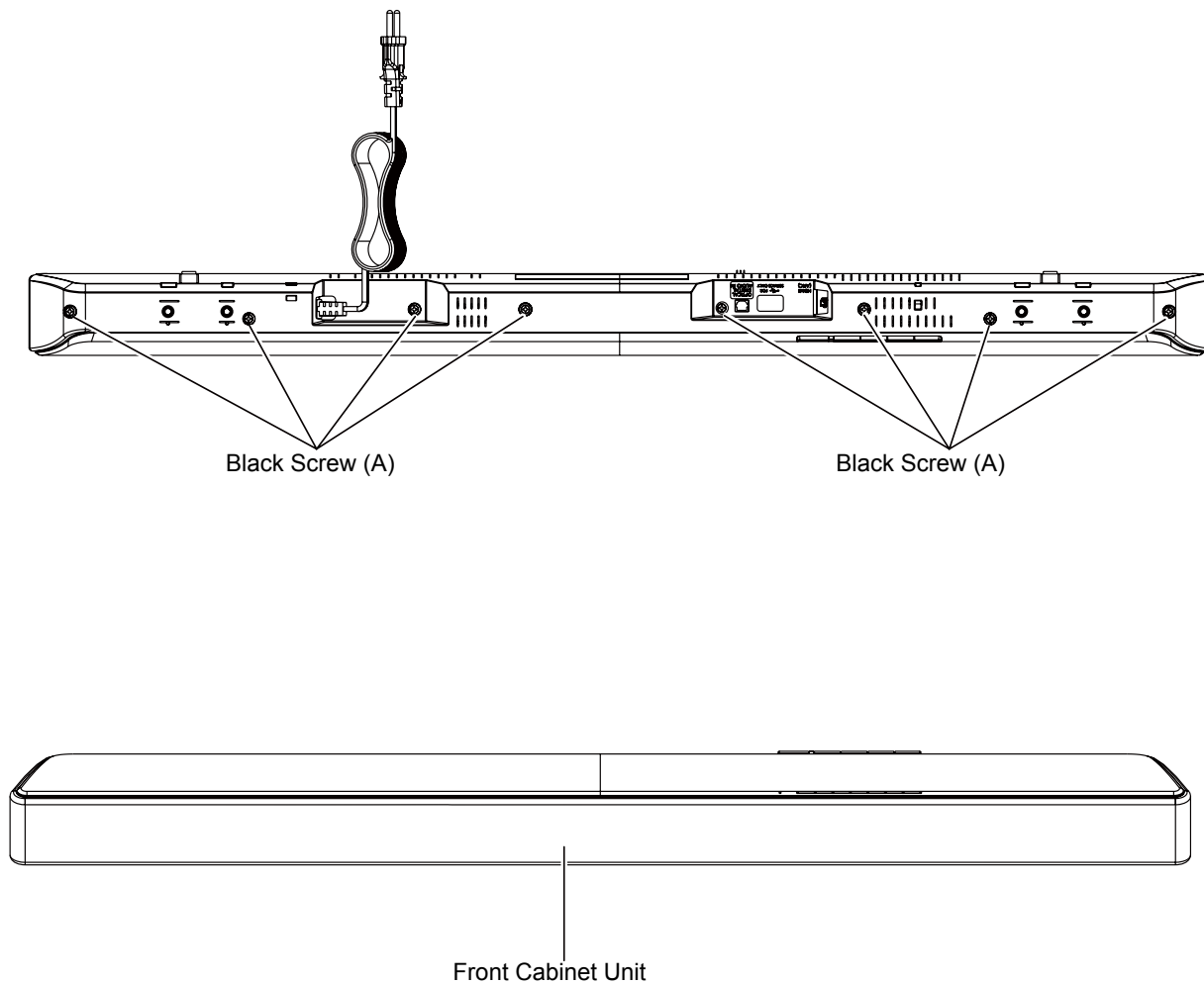
10.2.2 Active Subwoofer (SB-HWA488)



10.3. Disassembly Procedure of Main Unit (SU-HTB488/494/498)

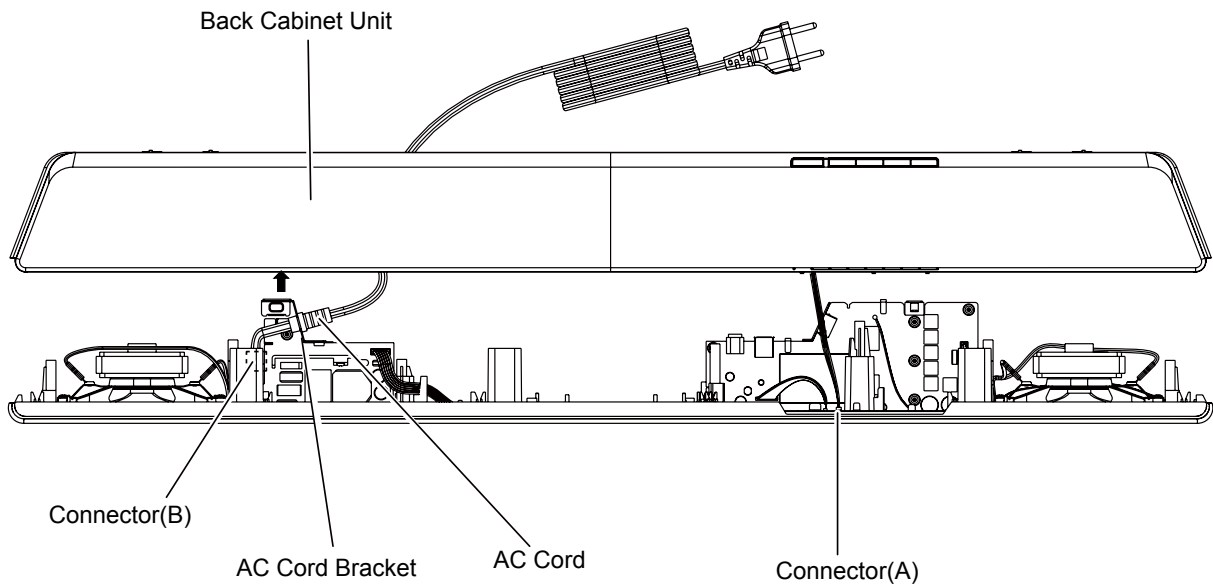
10.3.1. Front Cabinet Unit

1. Remove 8 Black Screws (A).
2. Lift up Main Unit.
3. Pull the Front Cabinet Unit in the direction of your side.



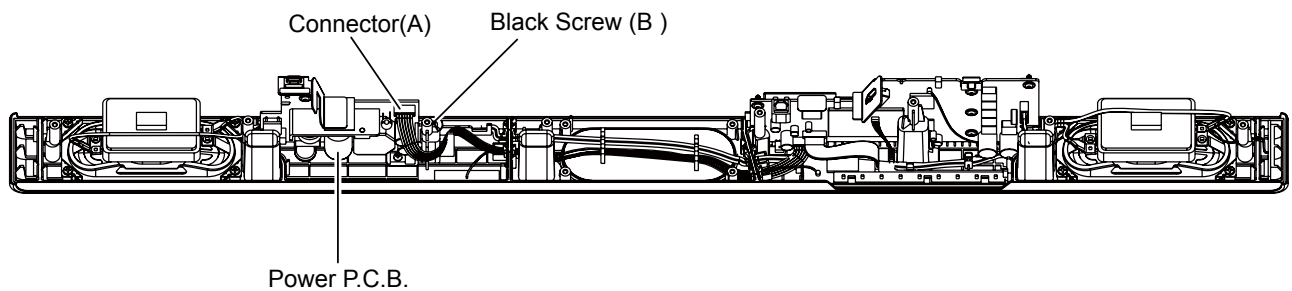
10.3.2. AC Cord

1. Disconnect connector (A),(B).
2. Pull up the AC Cord from the AC Cord Bracket in the direction of arrow.
3. Pull the AC Cord out from the rear side of the Back Cabinet Unit.



10.3.3. Power P.C.B.

1. Remove 1 Black Screw (B).
2. Disconnect connector (A).
3. Remove the Power P.C.B..

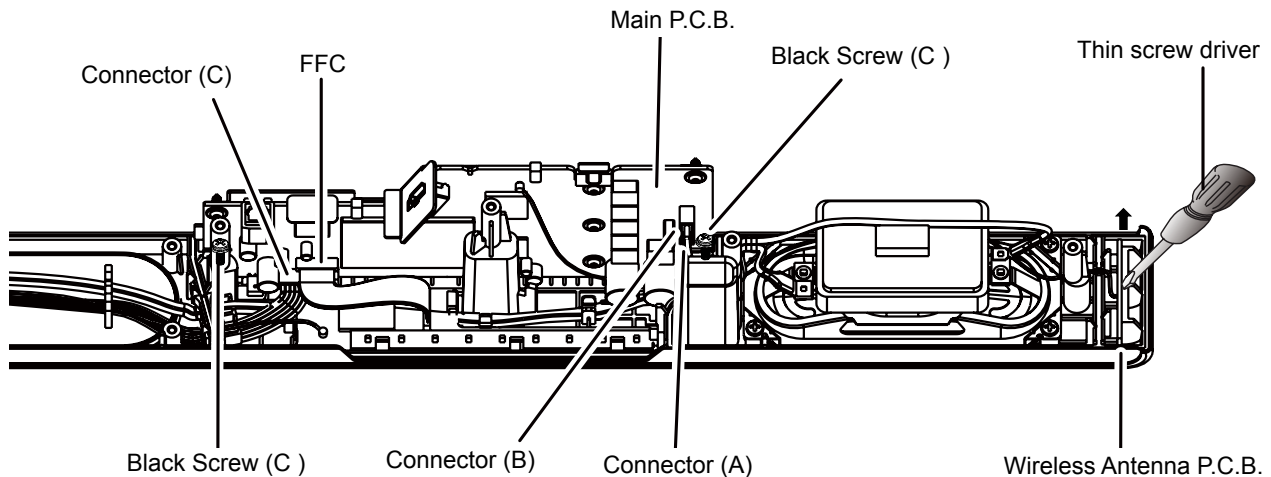


10.3.4. Main P.C.B. Unit (Main P.C.B.+ Wireless Antenna P.C.B.)

- 1.Remove 2 Black Screws (C).
- 2.Disconnect FFC cable.
- 3.Disconnect connector (A),(B),(C).
- 4.Remove the Main P.C.B..
- 5.Pull out the Wireless Antenna P.C.B. by thin screw driver in the direction of arrow.

Caution:

Before the installment completely wipe off the double sticky tape left on the front cabinet unit, otherwise the Antenna sensitivity will be effected.Moreover when installing press the Wireless Antenna P.C.B. tightly onto the front cabinet unit.

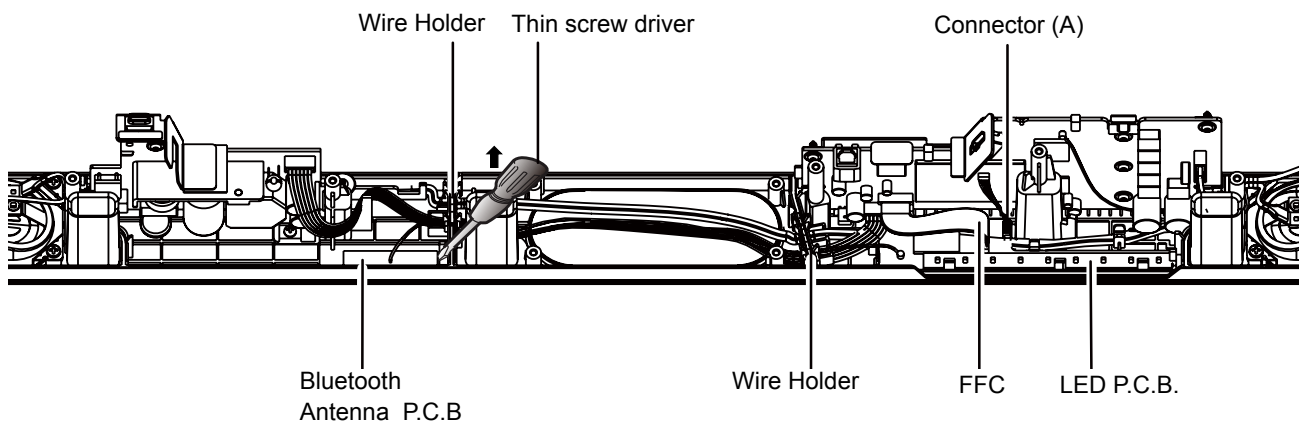


10.3.5. LED P.C.B. Unit (LED P.C.B.+ Bluetooth Antenna P.C.B.)

- 1.Disconnect FFC cable.
- 2.Disconnect connector (A).
- 3.Open two Wire Holders.
- 4.Remove the LED P.C.B..
- 5.Pull out the Bluetooth Antenna P.C.B. by a thin screw driver in the direction of arrow.

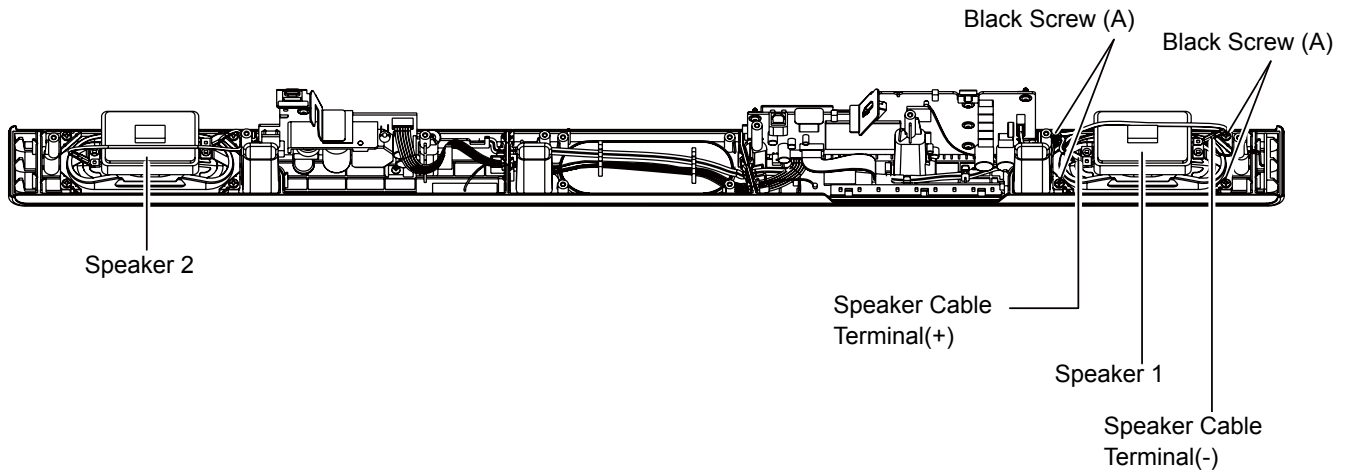
Caution:

Before the installment completely wipe off the double sticky tape left on the front cabinet unit, otherwise the Antenna sensitivity will be effected.Moreover when installing press the Bluetooth Antenna P.C.B. tightly onto the front cabinet unit.



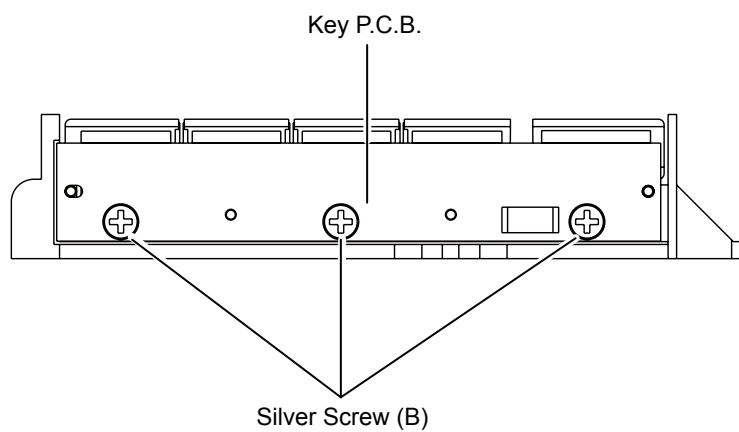
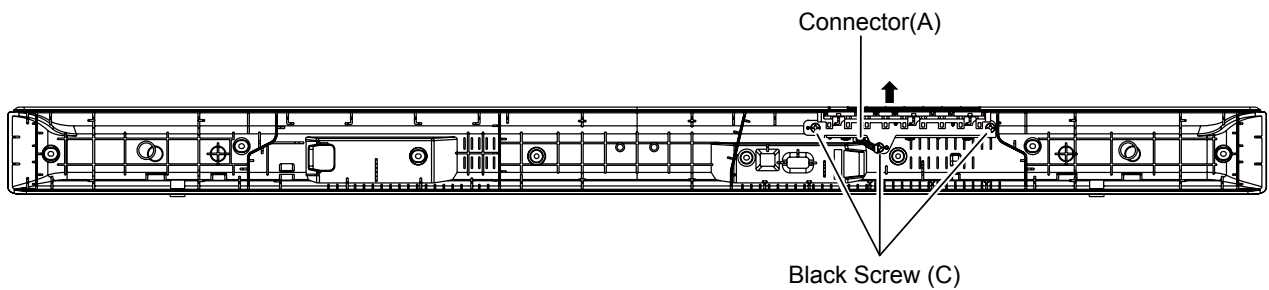
10.3.6. Speaker

1. Disconnect 2 Speaker Cable Terminals.
2. Remove 4 Black Screws (A).
3. Remove the Speaker 1.
(Remove Speaker 2 in the same way.)



10.3.7. Key P.C.B.

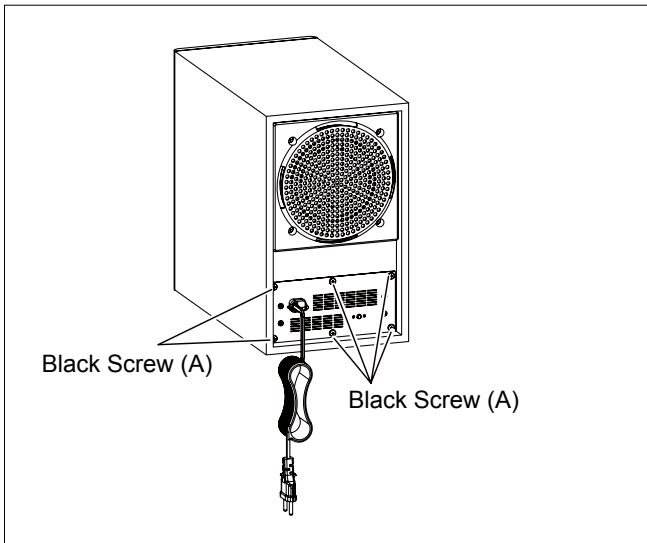
1. Disconnect connector (A).
2. Remove 3 Black Screws (C).
3. Pull the Key P.C.B. & key button in the direction of arrow.
4. Remove 3 Silver Screws (B).
5. Remove the Key P.C.B..



10.4. Disassembly Procedure of Active Subwoofer (SB-HWA488)

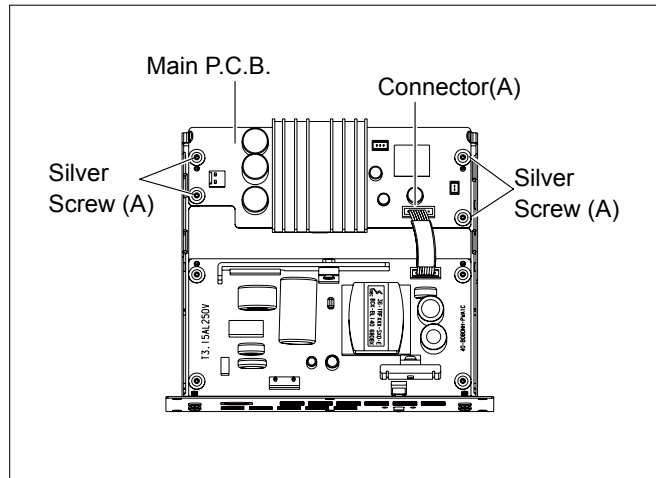
10.4.1. Back Panel Unit (Back Panel+AC Cord)

1. Remove 6 Black Screws (A).

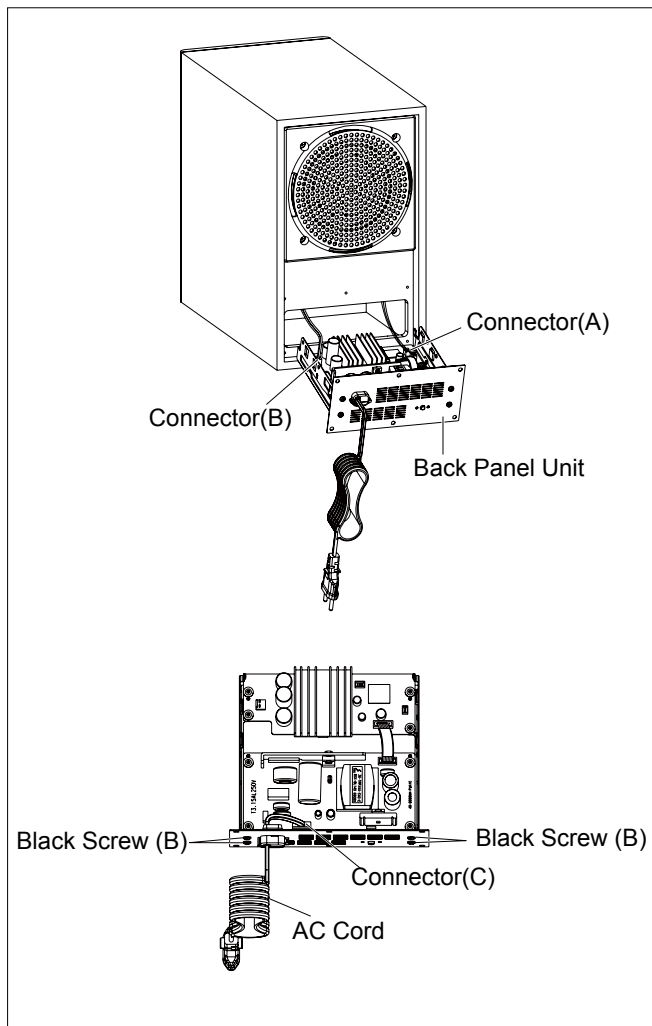


10.4.2. Main P.C.B.

1. Remove 4 Silver Screws (A).
2. Disconnect connector (A).
3. Remove the Main P.C.B. .

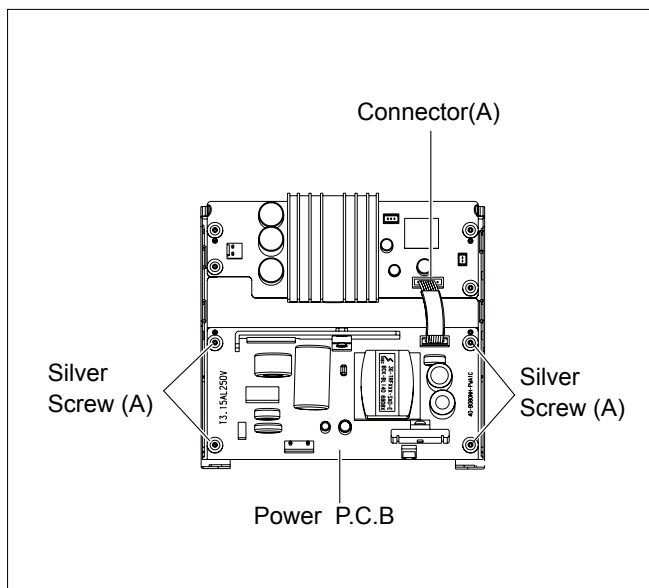


2. Pull the Back Panel Unit in the direction of your side.
3. Disconnect connector (A),(B),(C).
4. Remove 4 Black Screws (B).
5. Remove the Back Panel Unit.



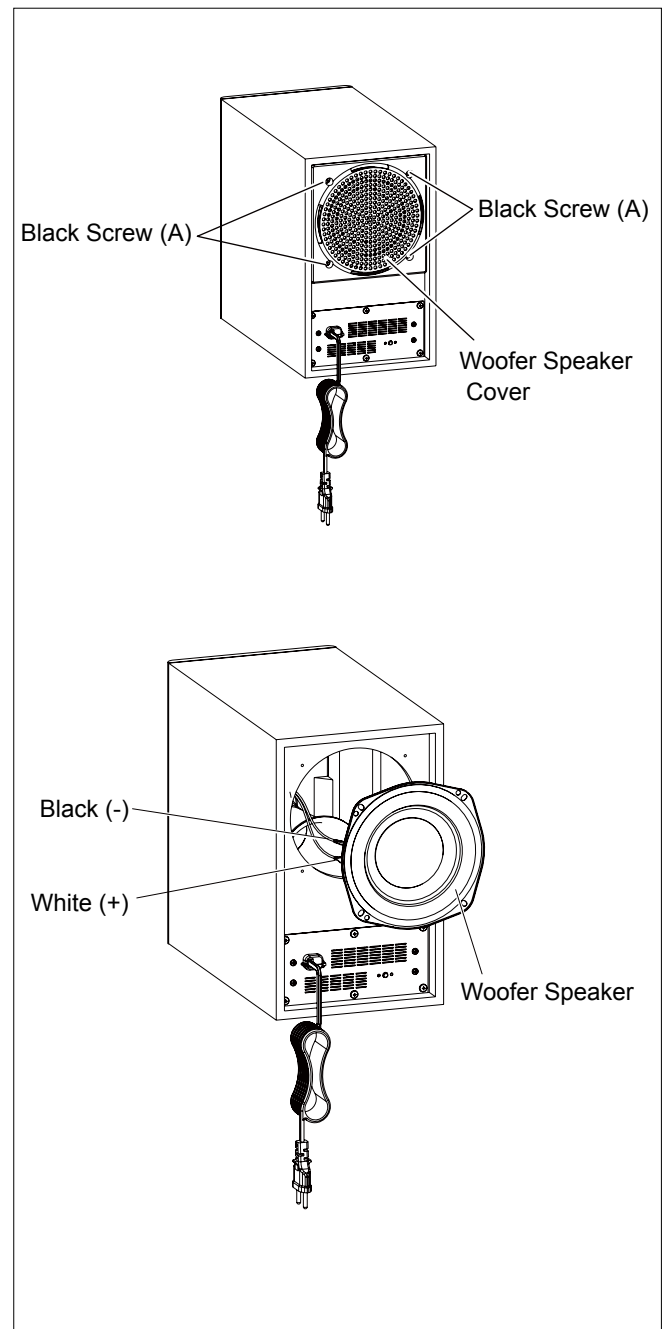
10.4.3. Power P.C.B

1. Disconnect connector (A).
2. Remove 4 Silver Screws (A).
3. Remove the Power P.C.B. .



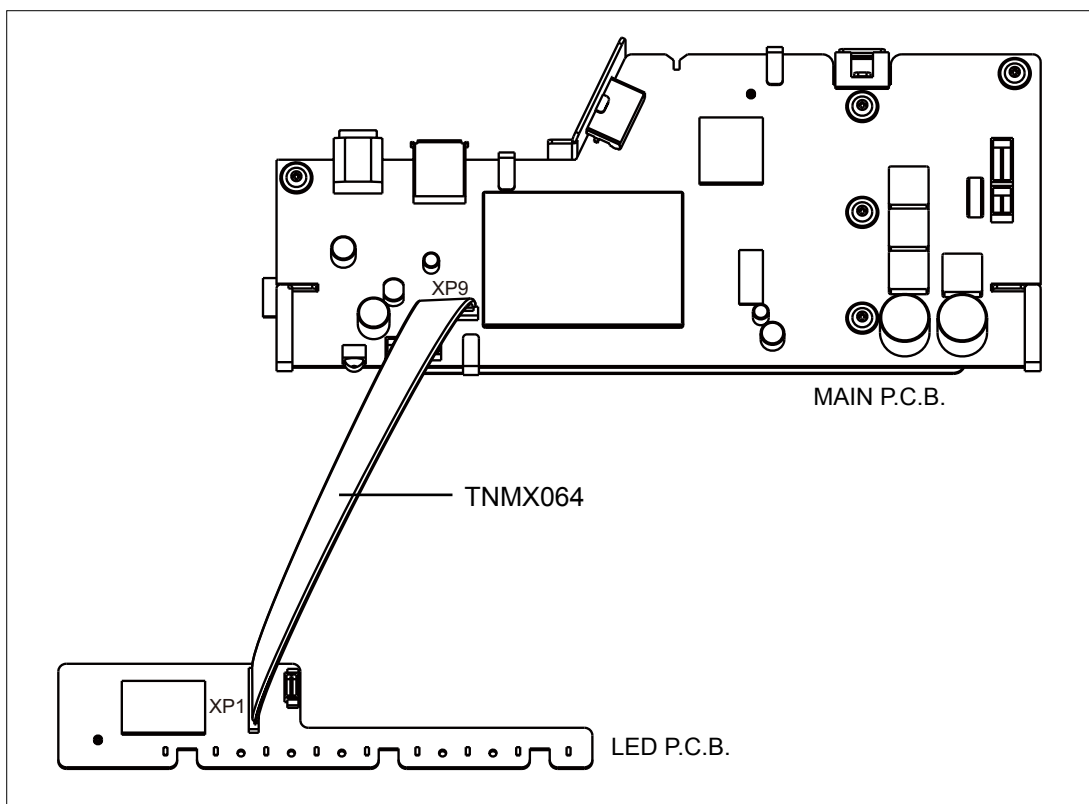
10.4.4. Woofer Speaker

1. Remove 4 Black Screws (A).
2. Remove the Woofer Speaker Cover.
3. Pull the Woofer Speaker in the direction of your side.
4. Disconnect 2 Speaker Cable Terminals.
5. Remove Woofer Speaker




11 Measurements and Adjustments

11.1. Service Position



Model No. : SC-HTB488EB/EG,494EG,498EB Parts List Note

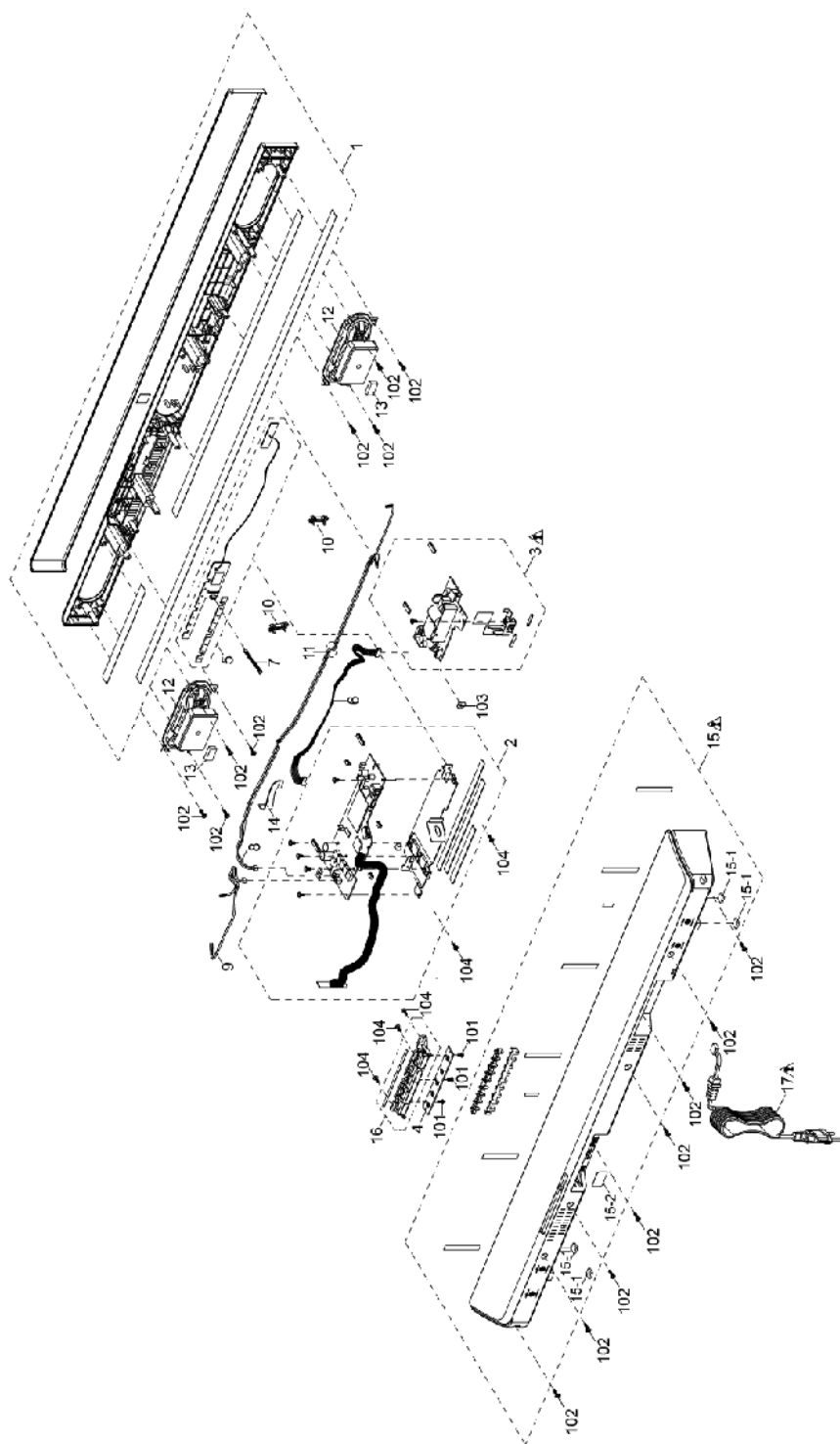
- Note:
1. * Be sure to make your orders of replacement parts according to this list.
 2. **IMPORTANT SAFETY NOTICE**
Components identified with the mark  have the special characteristics for safety.
When replacing any of these components, use only the same type.
 3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
 4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

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







Definition of Parts supplier:

1. All Parts are supplied by PHK.

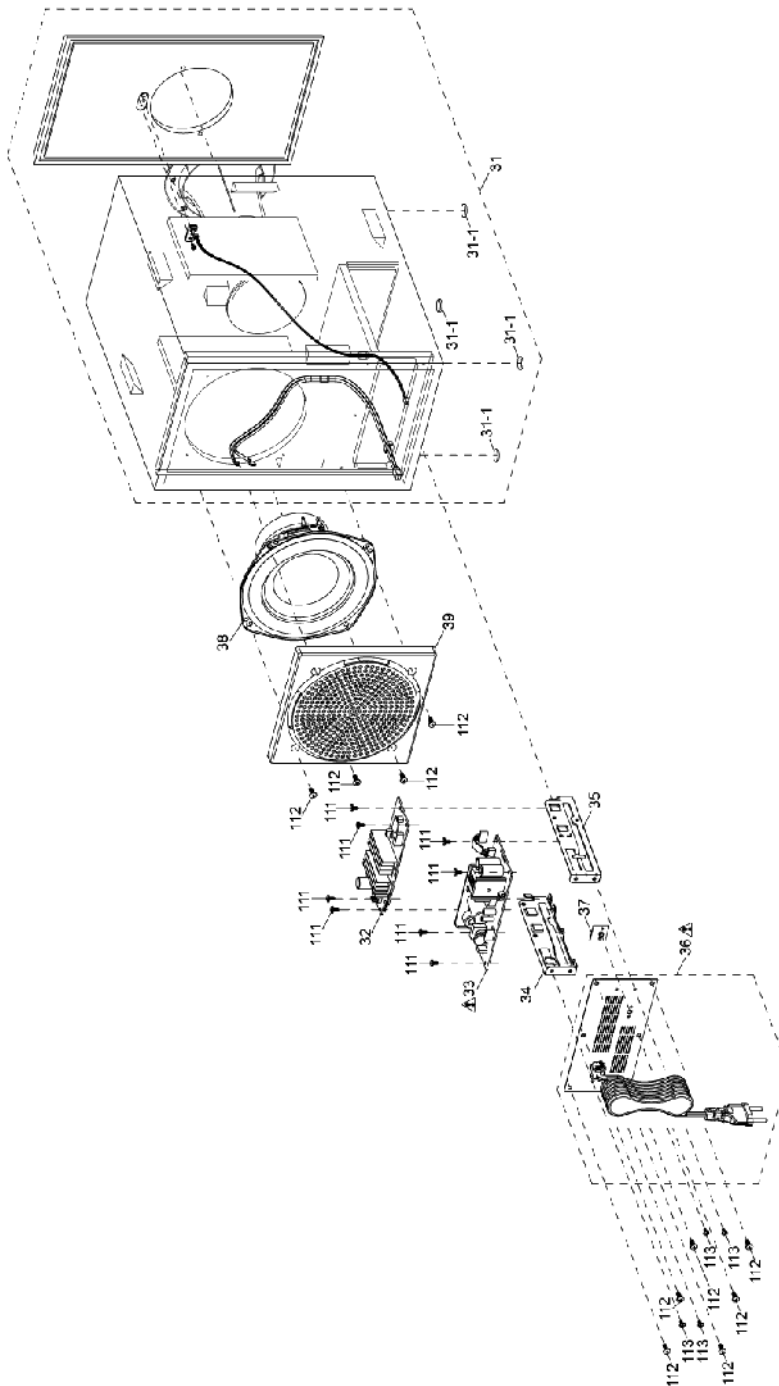
Model No. : SC-HTB488EB/EG,494EG,498EB Casing Parts & Mechanism Section (SU-HTB488/494/498)






Model No. : SC-HTB488EB/EG,494EG,498EB Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		1	TTPA0752	FRONT CABINET UNIT	1	488EG,494EG,488EB
		1	TTPA0762	FRONT CABINET UNIT	1	498EB
		2	RFKBT488MNV	MAIN P.C.B. UNIT	1	488EG,494EG,488EB
		2	RFKBT498MNV	MAIN P.C.B. UNIT	1	498EB
		3	TNPA6565	POWER P.C.B.	1	
		4	TNPA6566	KEY P.C.B.	1	
		5	RFKBT488LAV	LED P.C.B. UNIT	1	488EG,488EB
		5	RFKBT494LAV	LED P.C.B. UNIT	1	494EG
		5	RFKBT498LAV	LED P.C.B. UNIT	1	498EB
		6	TNMX065	CORD (A)	1	
		7	TNMX066	CORD (B)	1	
		8	TNMX067	CORD (C)	1	
		9	TNMX068	CORD (D)	1	
		10	TKXA30701	WIRE HOLDER	2	
		11	TMKB429	EVA	1	
		12	RFZA0021	SPEAKER	2	
		13	TMKK671	PROTECTION PAD	2	
		14	TNMX069	FFC (A)	1	
		15	TTFA0369	BACK CABINET UNIT	1	488EG,488EB
		15	TTFA0377	BACK CABINET UNIT	1	494EG
		15	TTFA0376	BACK CABINET UNIT	1	498EB
		15-1	RKA0327-K	RUBBER LEG	4	
		15-2	TMKE194	PC SHEET	1	
		16	TKXA30801	KEY BUTTON	1	
		17	RSQ0143	AC CORD	1	488EG,494EG
		17	RSQ0144	AC CORD	1	488EB,498EB
		101	THEC307C	SILVER SCREW (B)	3	
		102	RHD30234-1	BLACK SCREW (A)	16	
		103	THEJ071Z	BLACK SCREW (B)	1	
		104	THEC306C	BLACK SCREW (C)	5	

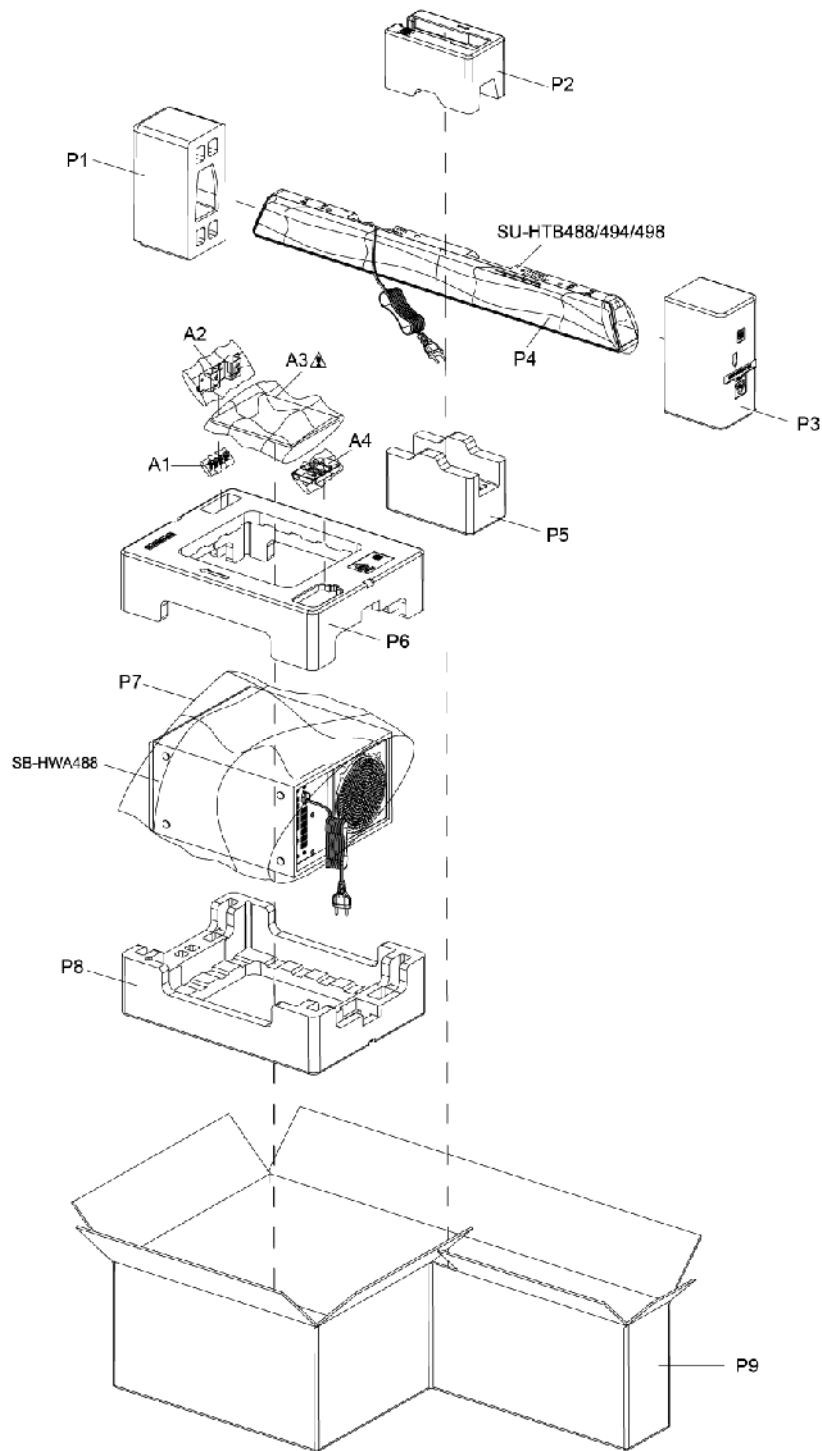
Model No. : SC-HTB488EB/EG,494EG,498EB Casing Parts & Mechanism Section (SB-HWA488)






Model No. : SC-HTB488EB/EG,494EG,498EB Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		31	TTPA0753	SUBWOOFER BOX UNIT	1	
		31-1	TBMX4181	RUBBER LEG	4	
		32	TNPA6570	MAIN P.C.B.	1	
		33	TNPA6571	POWER P.C.B.	1	
		34	TENH5009	BRACKET (L)	1	
		35	TENH5010	BRACKET (R)	1	
		36	TEKX097	BACK PANEL UNIT	1	488EG
		36	TEKX098	BACK PANEL UNIT	1	488EB
		37	TEFX5008	I/D SET BUTTON	1	
		38	RFZA0020	WOOFER SPEAKER	1	
		39	TKXA30901	WOOFER SPEAKER COVER	1	
		111	THEJ070C	SILVER SCREW (A)	8	
		112	RHD30236	BLACK SCREW (A)	10	
		113	THEC309Z	BLACK SCREW (B)	4	

Model No. : SC-HTB488EB/EG,494EG,498EB Packing & Accessories Section



Model No. : SC-HTB488EB/EG,494EG,498EB Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		A1	XYN5+J14FJK	SCREWS PACK	1	
		A2	TPBGA004	WALL MOUNT BRACKET PACK (PAIR)	1	
		A3	TQBJ2019-1	OPERATING INSTRUCTIONS	1	488EG, 488EB, 498EB
		A3	TQBJ2020-1	OPERATING INSTRUCTIONS	1	488EG, 494EG
		A3	TQBJ2021-1	OPERATING INSTRUCTIONS	1	488EG
		A4	N2QAYC000115	REMOTE CONTROLLER	1	
		P1	TPDA31621	POLYFOAM (L)	1	
		P2	TPDA31641	POLYFOAM M (T)	1	
		P3	TPDA31631	POLYFOAM (R)	1	
		P4	TPEH873	MAIN UNIT BAG	1	
		P5	TPDA31651	POLYFOAM M (B)	1	
		P6	TPDA31661	POLYFOAM (T)	1	
		P7	TPEH874	SUBWOOFER BAG	1	
		P8	TPDA31661	POLYFOAM (B)	1	
		P9	TPCD74401A	PACKING CASE	1	488EG
		P9	TPCD77001A	PACKING CASE	1	494EG
		P9	TPCD74301A	PACKING CASE	1	488EB
		P9	TPCD77101A	PACKING CASE	1	498EB