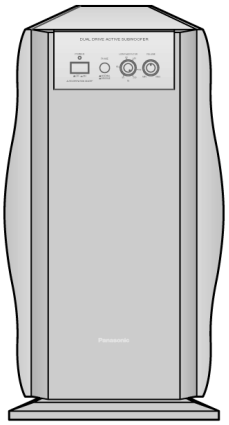
ORDER NO. MD0410487C2

Service Manual

Active Subwoofer System



SB-WA800

SB-WA800E
SB-WA800EB

Colour

(M)... Wood Grain Type

Specification

n SPEAKER SECTION

Type	1 way 2 speaker system Bass-reflex type
Woofer	17 cm cone type x 2
Sound pressure level	83 dB/W (1.0 m)
Frequency range (with amp)	28-300 Hz (at -16 dB)
	32-250 Hz (at -10 dB)

n AMPLIFIER SECTION

Output power	100 W (6 Ω) x 2 (THD 0.9%)
Input sensitivity/Input Impedance	300 mV/33 kΩ (RCA jack)
Phase switching	NORMAL/REVERSE
Low pass filter	50-200 Hz Variable

n GENERAL

Power supply	AC 230-240 V, 50Hz (EB)
	AC 230 V, 50Hz (E)
Power consumption	165 W
Dimensions (W x H x D)	255 mm x 462.5 mm x 467 mm (with the stand)
Mass	21 kg

Note :

Specifications are subject to change without notice.

Mass and dimensions are approximate.

⚠ 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.

CONTENTS

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, make 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 5.2Ω.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

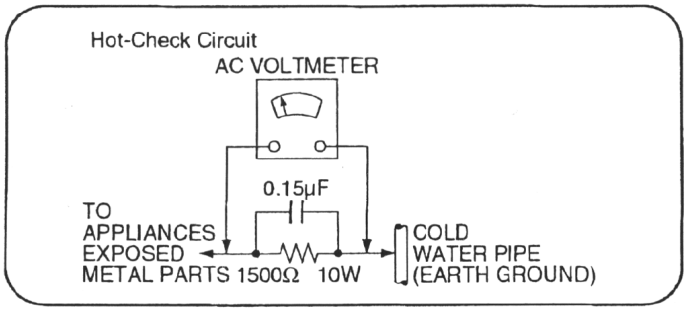


Fig. 1

1.1.2. LEAKAGE CURRENT HOT CHECK (See Figure 1.)

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.

2 Caution for AC Mains Lead

(For "EB" area code model only.)

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-ampere and that 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 when 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 dealer.

CAUTION!
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 OFF 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.

IMPORTANT

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

Blue: Neutral
Brown: Live

As these colours 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 which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

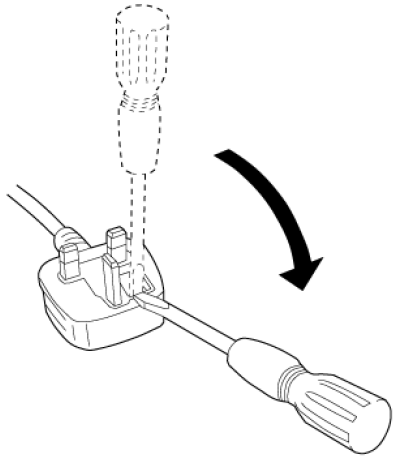
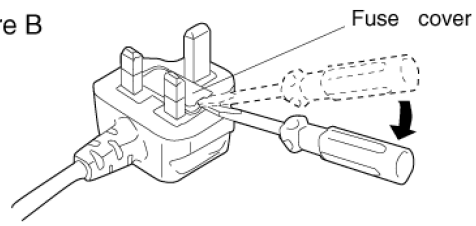


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

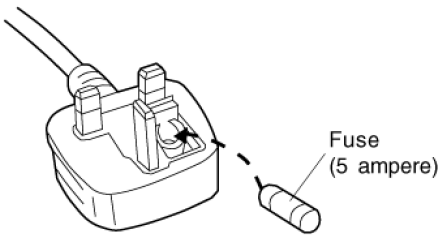
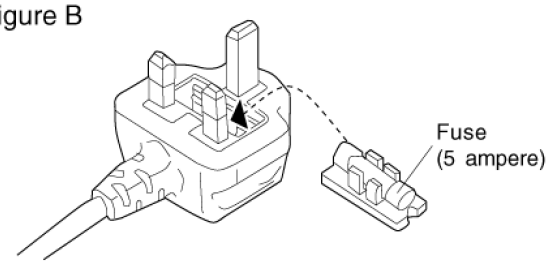


Figure B



3 Handling the Lead-free Solder

3.1. About lead free solder (PbF)

Distinction of PbF P.C.B. :

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

4 Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C613, C614, C616, C617 through a 10 Ω, 1 W resistor to ground.

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 230V, 50Hz in NO SIGNAL mode should be 200~700 mA.

5 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.
- 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.

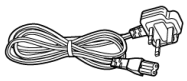
If this occurs, follow the procedure outlines below:

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:

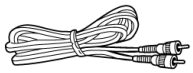
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

6 Accessories



AC cord (For EB only).....1 pc

AC cord (For E only).....1 pc



RCA cord.....1 pc

7 Connection of the Speaker Cables

Connect to a receiver or amplifier (a) with a pin-type output terminal for an active subwoofer.

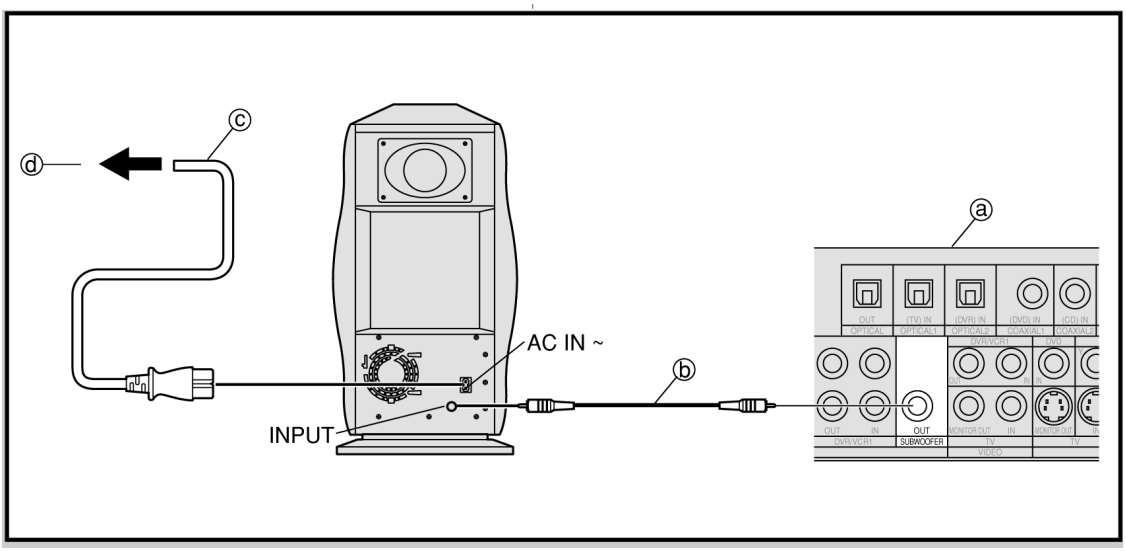
- Before connection, turn off the other equipment.

  Do not connect the AC mains lead until all other cables and cords are connected.
- The load impedance of any speaker used with this unit must be 6Ω.

1. Connect with the included monaural connection cable (b) to the receiver or amplifier's subwoofer output terminal.
2. Connect the AC mains lead (c) to the household AC outlet (d).

   The included AC mains lead is for use with this unit only.

   Do not use it with other equipment.



8 Disassembly Procedure

“ATTENTION SERVICER”

Some chassis components may have sharp edges.

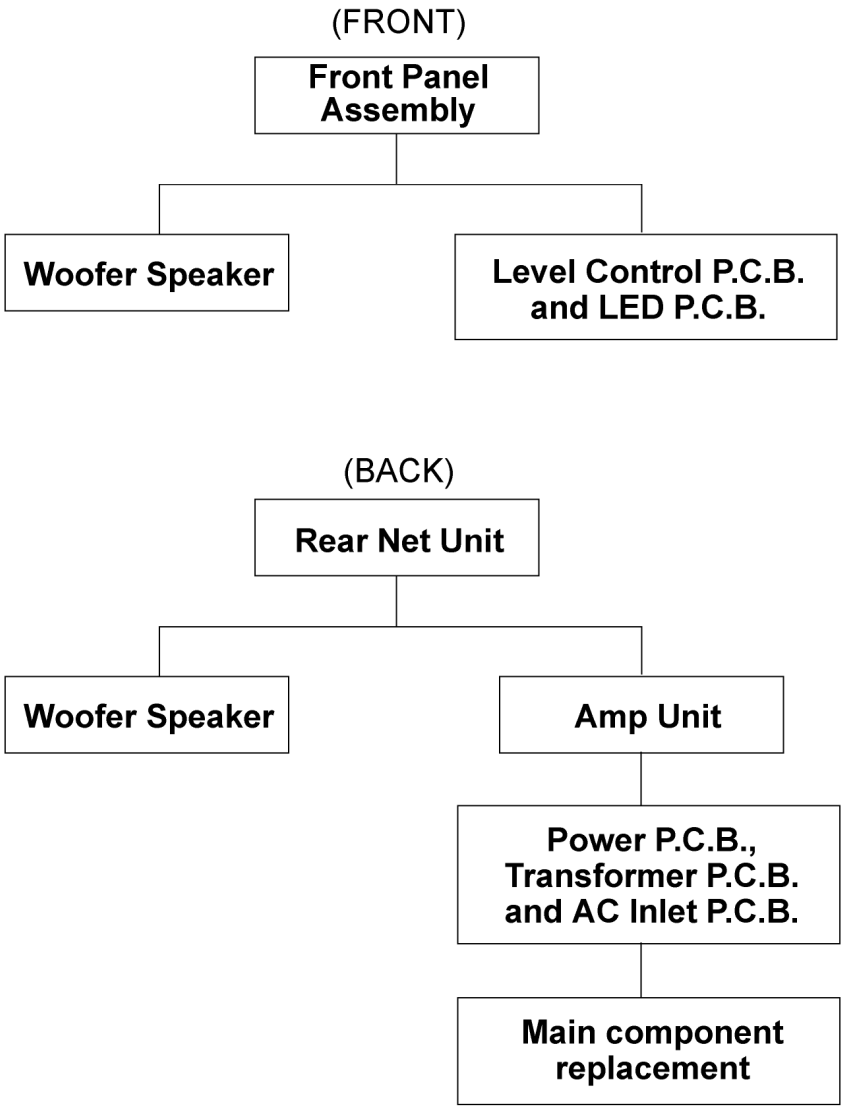
Be careful when disassembling and servicing.

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures.**
   Special reassembly procedures are described only when required.
3. **Select items from the following index when checks or replacement are required.**

8.1. Disassembly flow chart

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

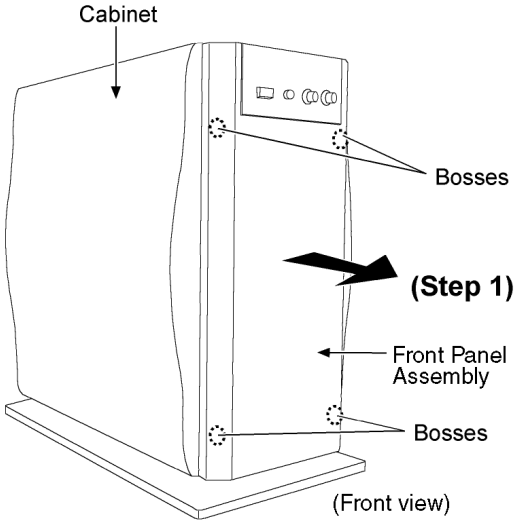
To assemble the unit, reverse the steps shown in the chart below.



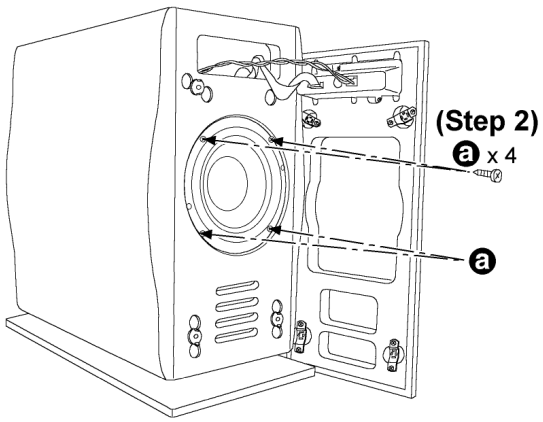
8.2. Disassembly of the Speaker Unit and checking of the P.C.B.

8.2.1. Disassembly of the Woofer Unit (Front)

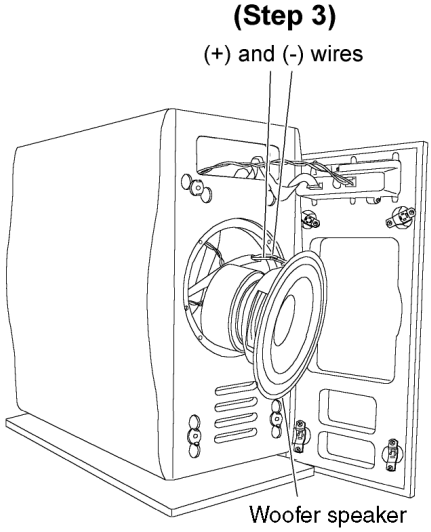
Step 1: Detach the net frame as arrow shown. (Be careful of the bosses attached to the unit).



Step 2: Remove 4 screws.

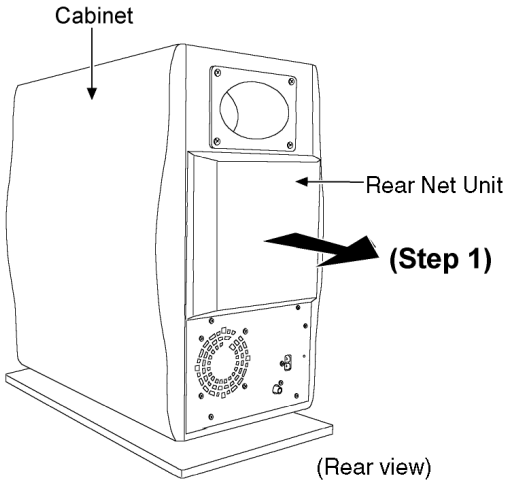


Step 3: Detach the (+) and (-) wires from the front woofer.

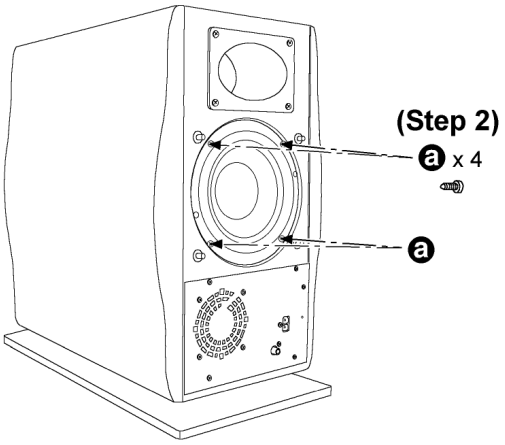


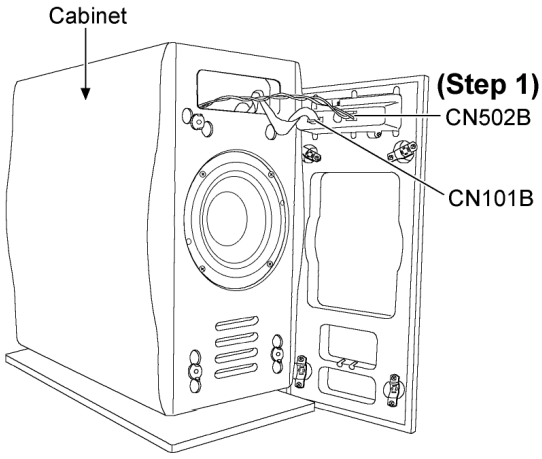
8.2.2. Disassembly of the Woofer Unit (Rear)

Step 1: Remove the rear net unit as arrow shown.



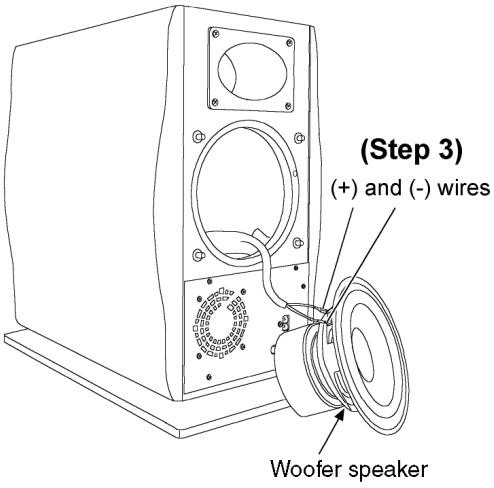
Step 2: Remove 4 screws.

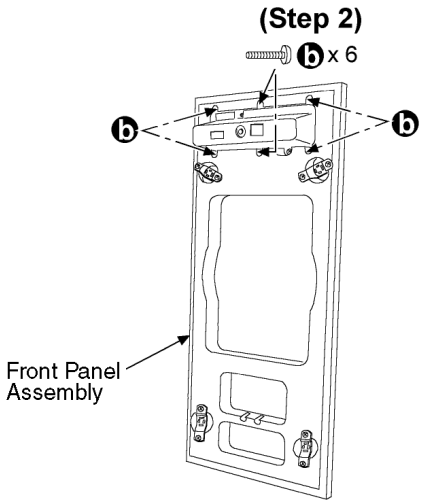




Step 3: Detach the (+) and (-) wires from the woofer speaker.

Step 2: Remove 6 screws.



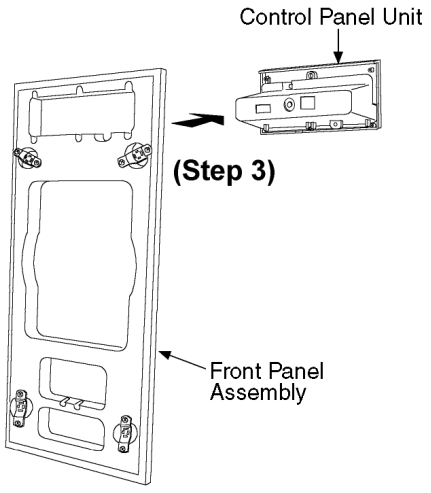


8.2.3. Disassembly and Checking of Level Control P.C.B. and LED P.C.B.

・Follow Step 1 described in Item 6.2.1

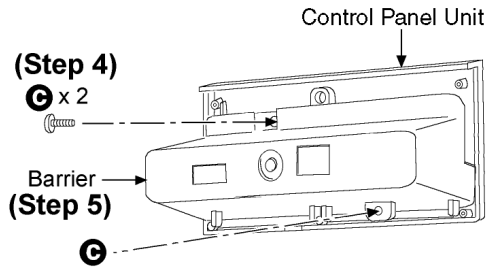
Steps 1: Detach the connectors (CN502B and CN101B).

Step 3: Remove the control panel unit from the front panel assembly as arrow shown.

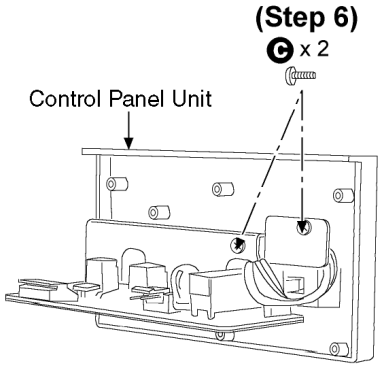


Step 4: Remove 2 screws.

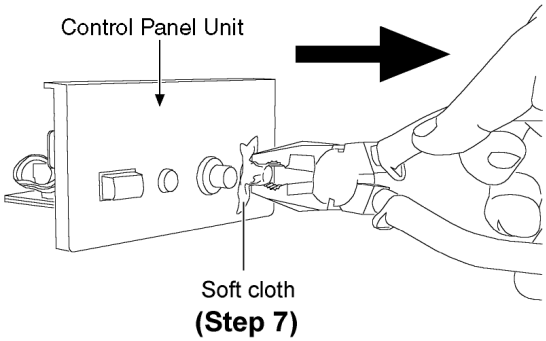
Step 5: Remove the barrier.



Step 6: Remove 2 screws.

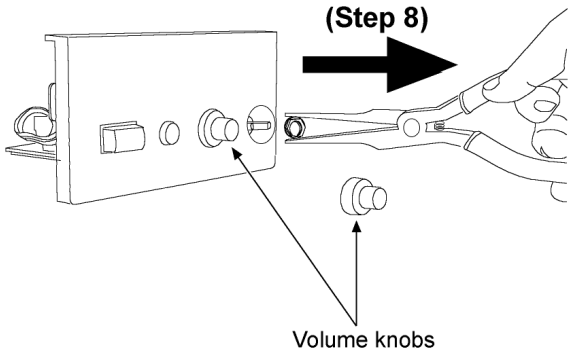


Step 7: Cover with a soft cloth and pull out the volume knob as arrow shown.

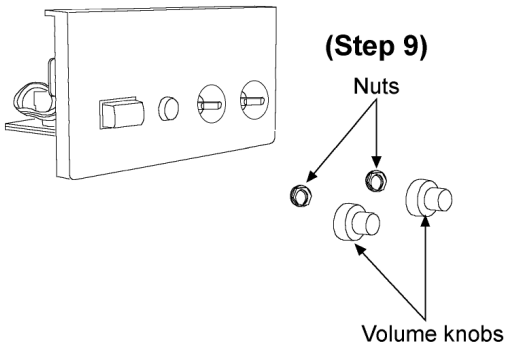


Step 8: Use a plier to unscrew and remove the nuts as arrow shown.

・Repeat the same step for the next volume knob.

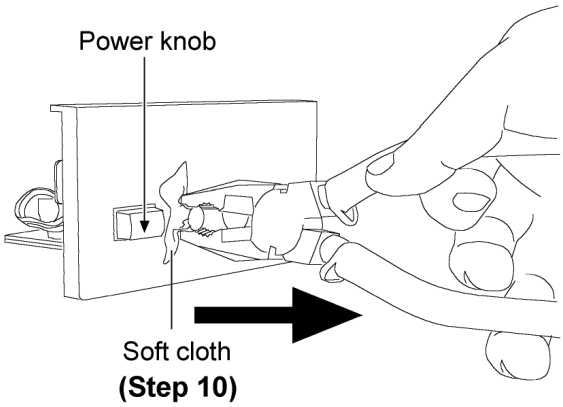


Step 9: Remove both volume knobs and nuts.

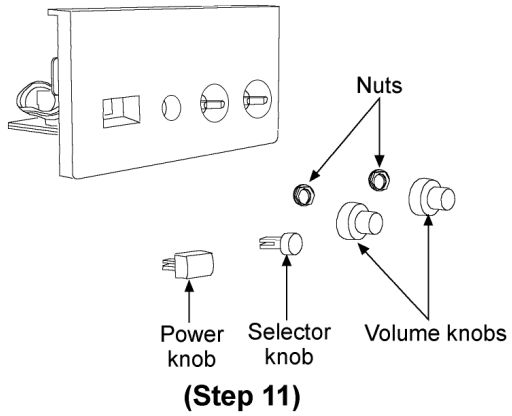


Step 10: Cover with a soft cloth and pull out the selector knob as arrow shown.

・Repeat the same step for the power knob.

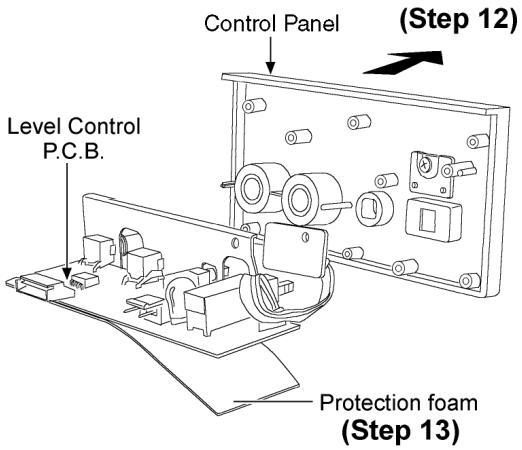


Step 11: Remove power and selector knobs.

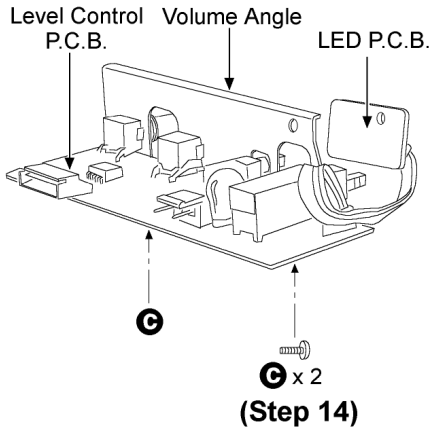


Step 12: Pull out the control panel as arrow shown.

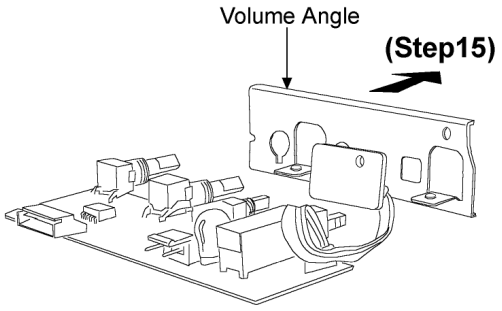
Step 13: Remove the protection foam from the bottom of the Level Control P.C.B.



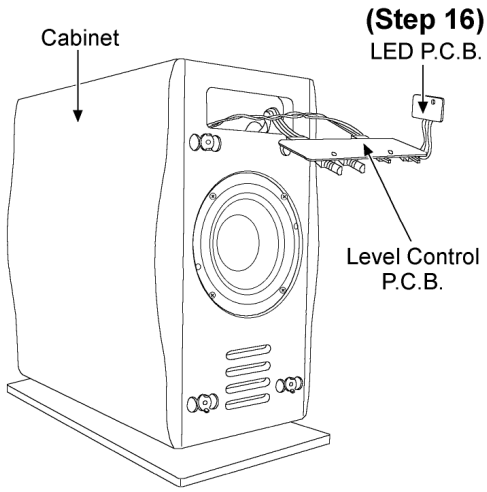
Step 14: Remove 2 screws at the bottom of the Level Control P.C.B.



Step 15: Remove the volume angle as arrow shown.

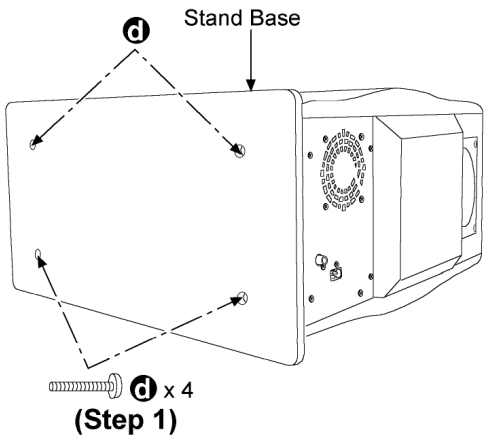


Step 16: Reconnect the connectors CN502B and CN101B to check the LED P.C.B. and Level Control P.C.B.



8.2.4. Disassembly of the Stand Base

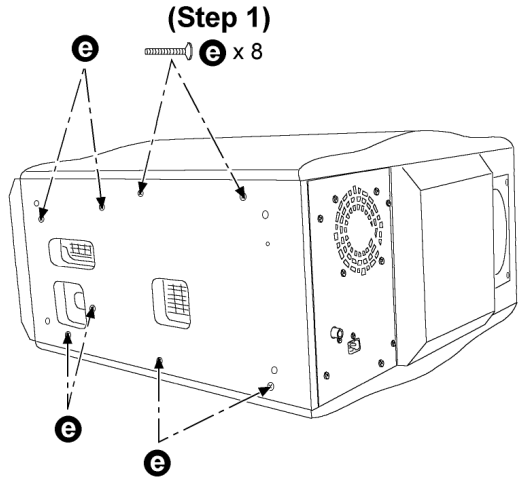
Step 1: Remove 4 screws.



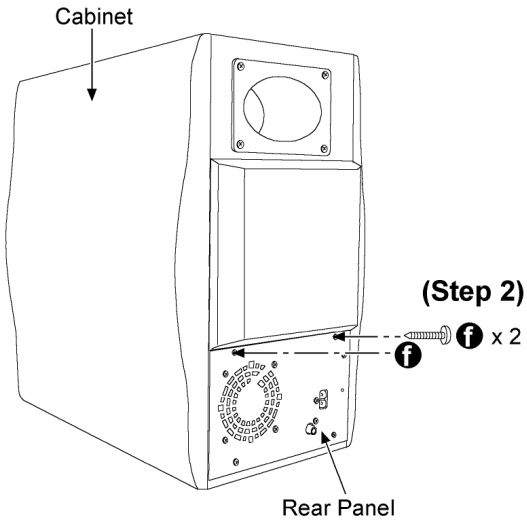
8.2.5. Disassembly of the Amp Unit

・Follow Step (1) described in Item 8.2.4

Step 1: Remove 8 screws from the bottom of the cabinet.

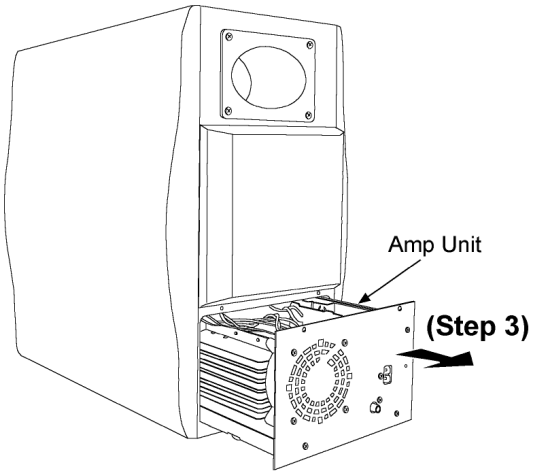


Step 2: Remove 2 screws from the rear panel.

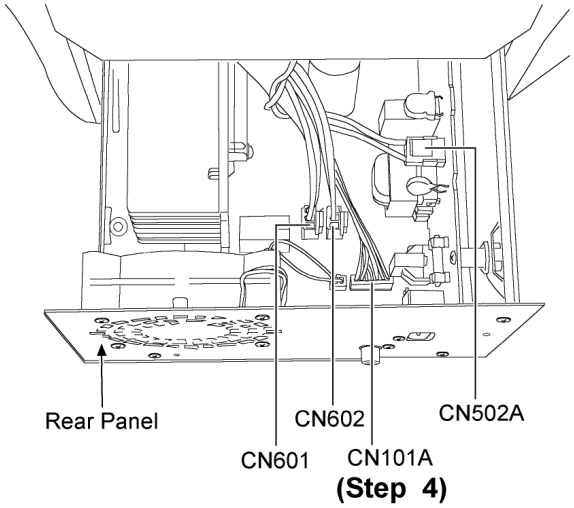


Step 3: Slightly pull out the Amp unit as arrow shown.

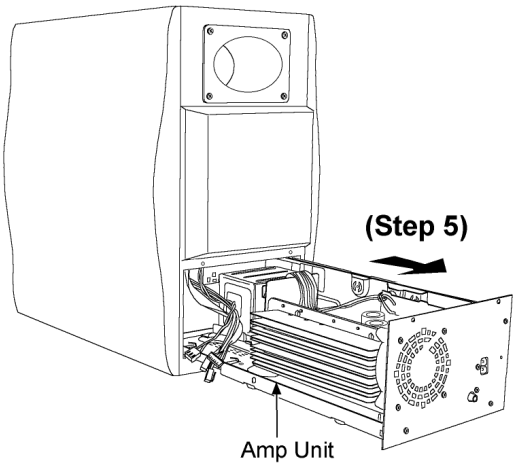
・Take note of the attached connectors.



Step 4: Disconnect the connectors (CN601, CN602, CN502A and CN101A).



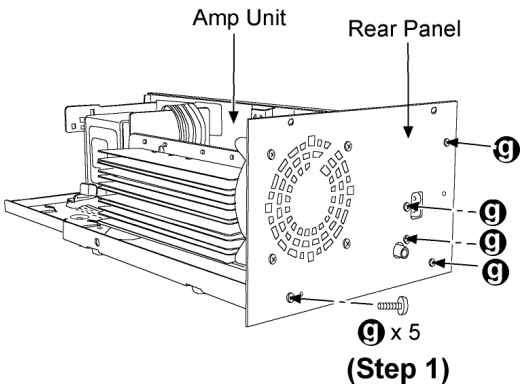
Step 5: Pull out the entire Amp unit.



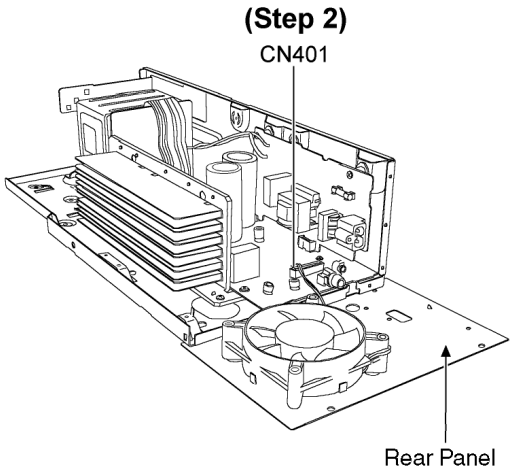
8.2.6. Disassembly of the Rear Panel

- Follow Step (1) described in Item 8.2.4
- Follow Step (1) to Step (5) described in Item 8.2.5

Step 1: Remove 5 screws from the rear panel.



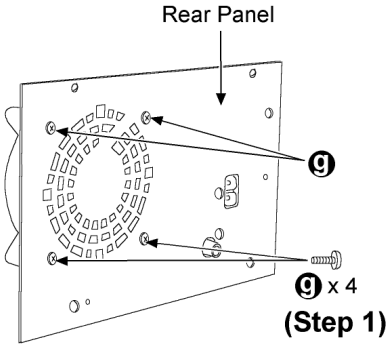
Step 2: Disconnect the connector CN401 then remove the rear panel.



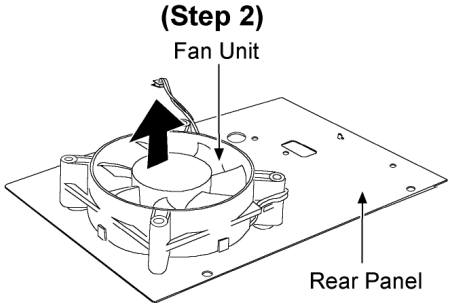
8.2.7. Disassembly of the Fan Unit

- Follow Step 1 described in Item 8.2.4
- Follow Step (1) to Step (5) described in Item 8.2.5
- Follow Step (1) to step (2) described in Item 8.2.6

Step 1: Remove 4 screws from the rear panel.



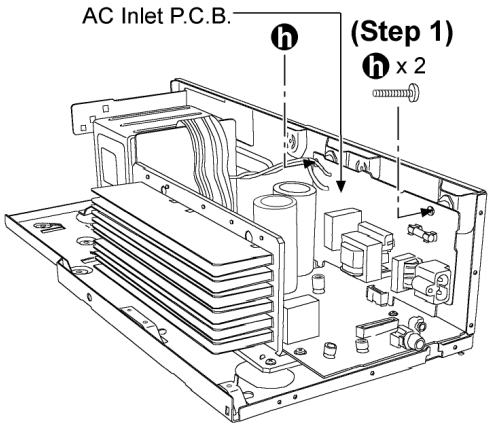
Step 2: Lay the rear panel and remove the fan unit as arrow shown.



8.2.8. Disassembly and checking of the AC Inlet P.C.B., Power P.C.B. and Transformer P.C.B.

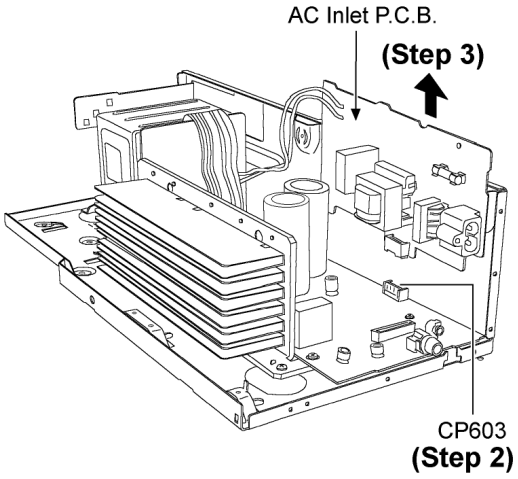
- Follow Step (1) described in Item 8.2.4
- Follow Step (1) to Step (5) described in Item 8.2.5
- Follow Step (1) to Step (2) described in Item 8.2.6

Step 1: Remove 2 screws.

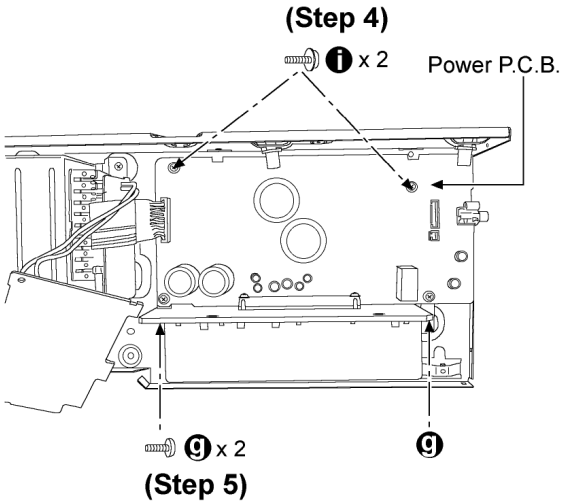


Step 2: Detach the connector CP603.

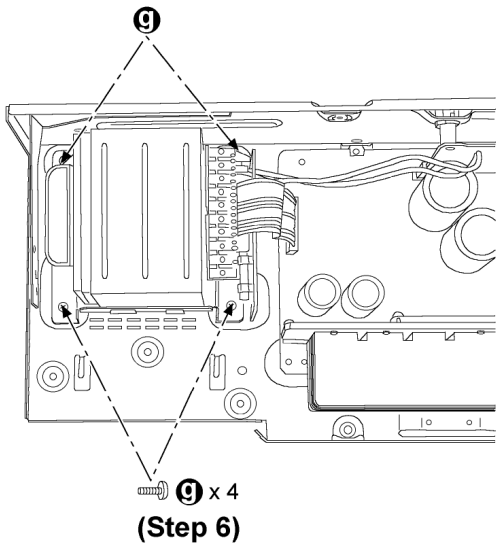
Step 3: Lift up the AC Inlet P.C.B. as arrow shown.



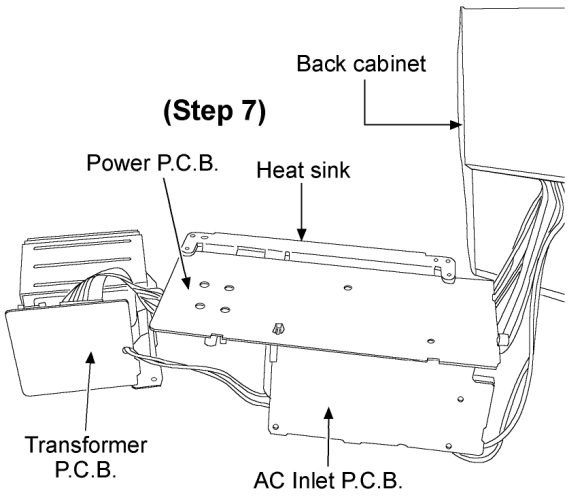
Steps 4 & 5: Remove 4 screws.



Step 6: Remove 4 screws.

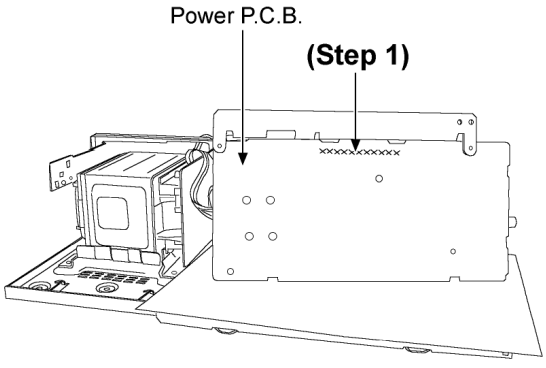


Step 7: Reconnect the Power P.C.B., Transformer P.C.B. and AC Inlet P.C.B. for checking.

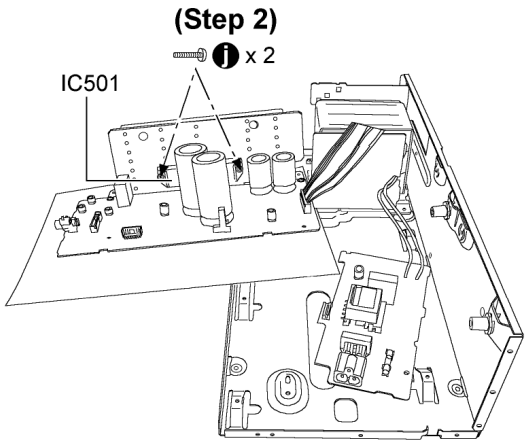


· Replacement of the Power IC

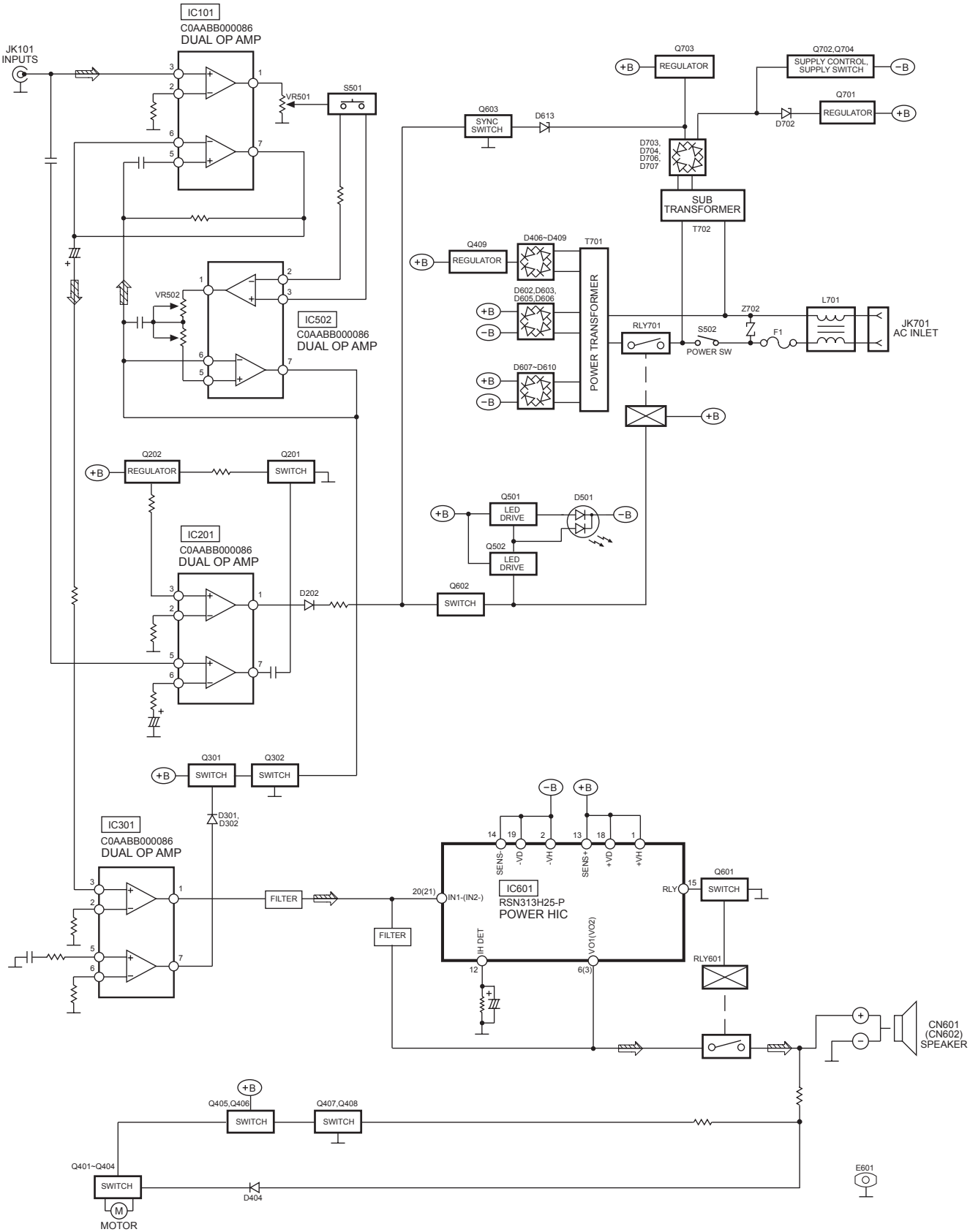
Step 1: Desolder the Power IC terminal.



Step 2: Remove 2 screws from the IC601.



9 Block Diagram



10 Notes of Schematic Diagram

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

Note:

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
- **Importance 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.

Caution !

IC, LSI and VLSI are sensitive to static electricity.

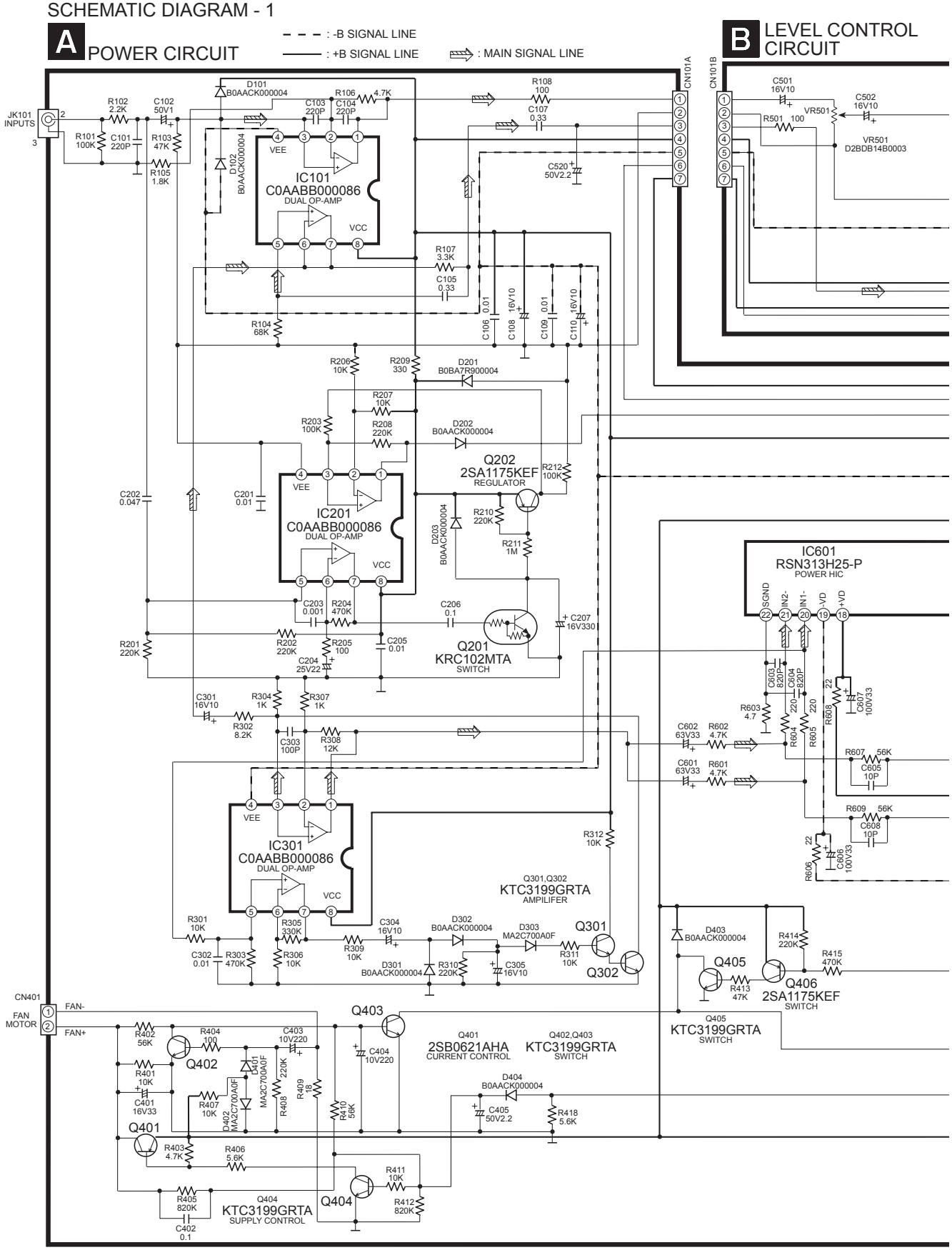
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

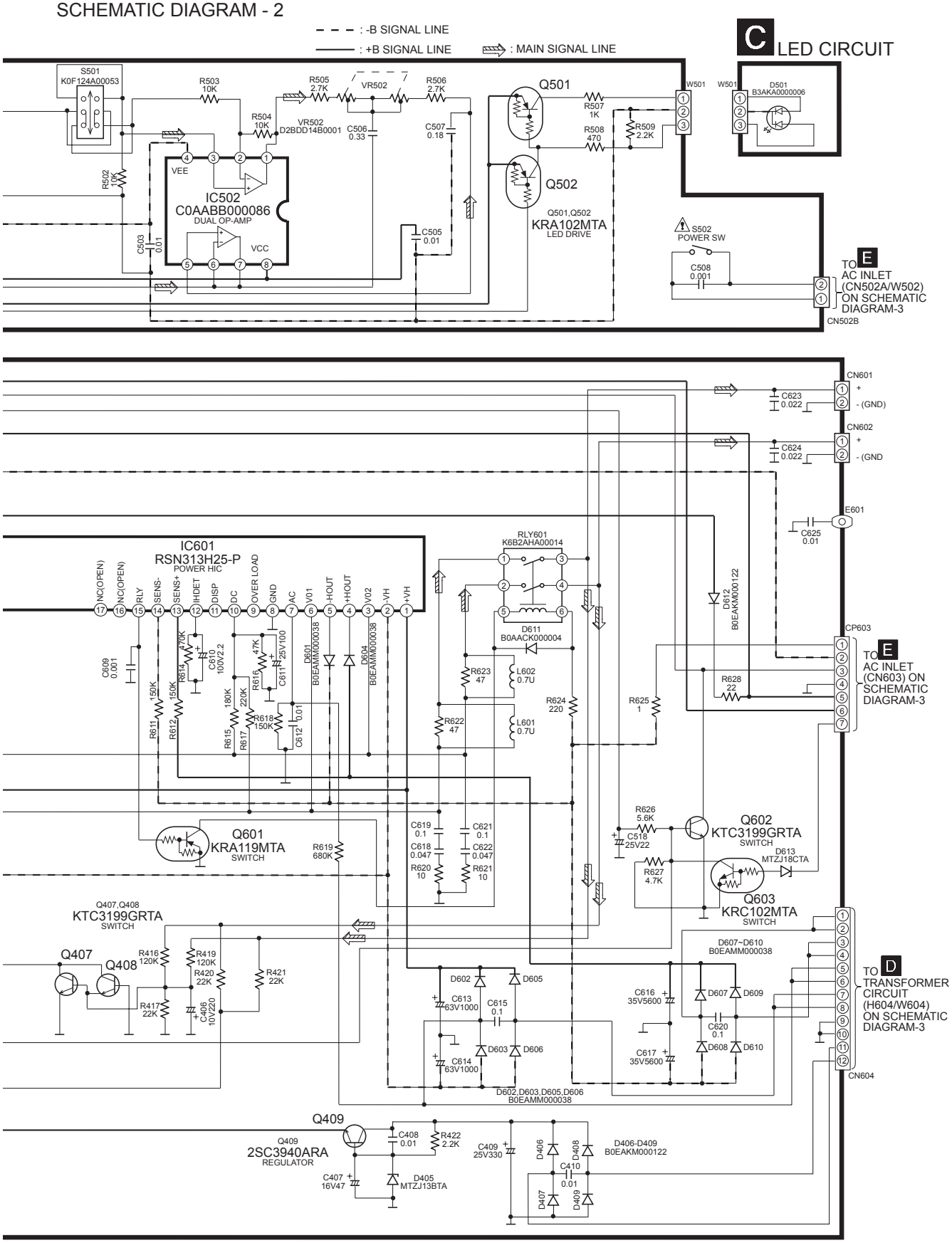
11 Schematic Diagram

11.1. Power Circuit, Level Control Circuit and LED Circuit

SCHEMATIC DIAGRAM - 1

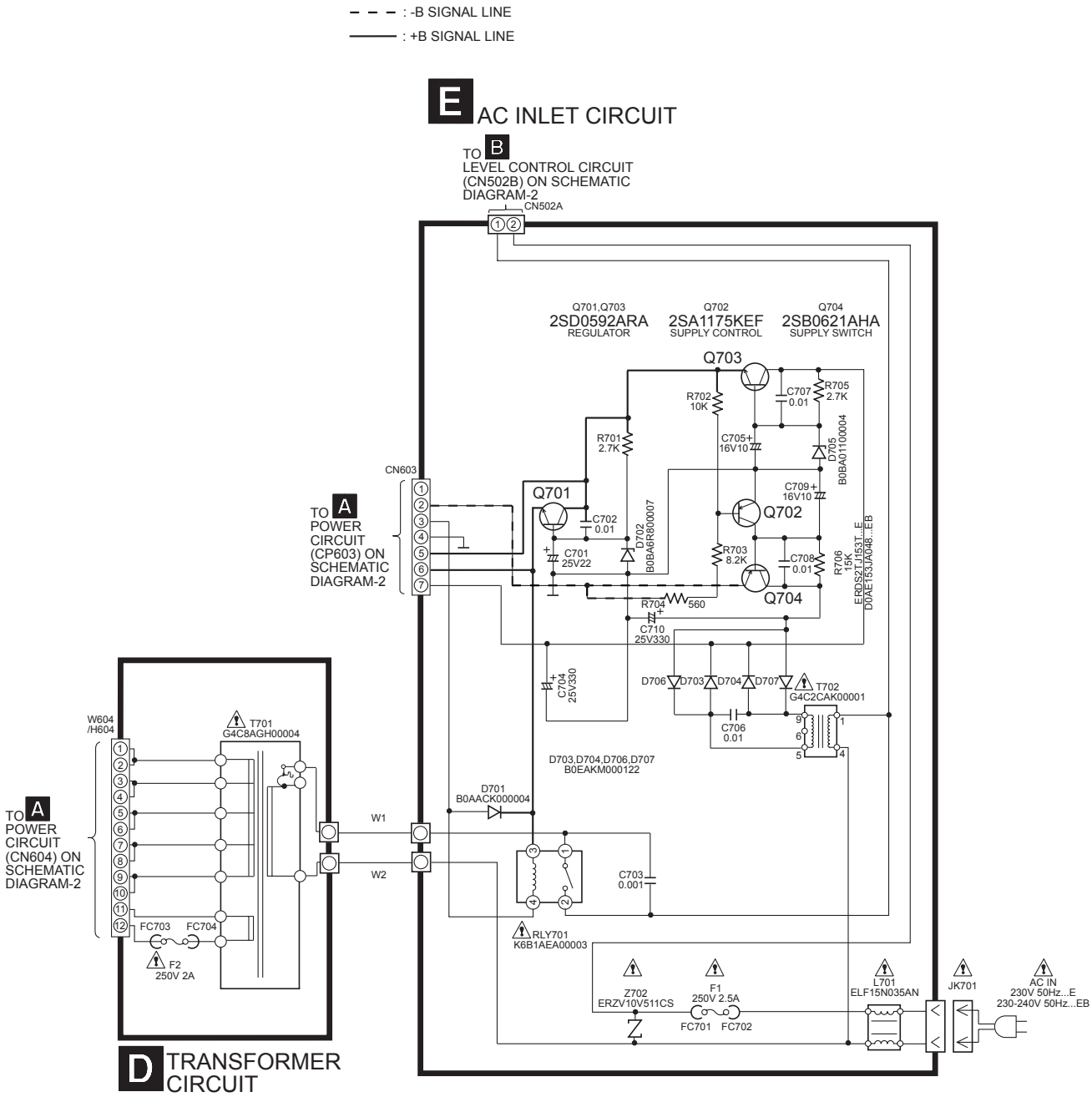


SCHEMATIC DIAGRAM - 2



11.2. AC Inlet Circuit and Transformer Circuit

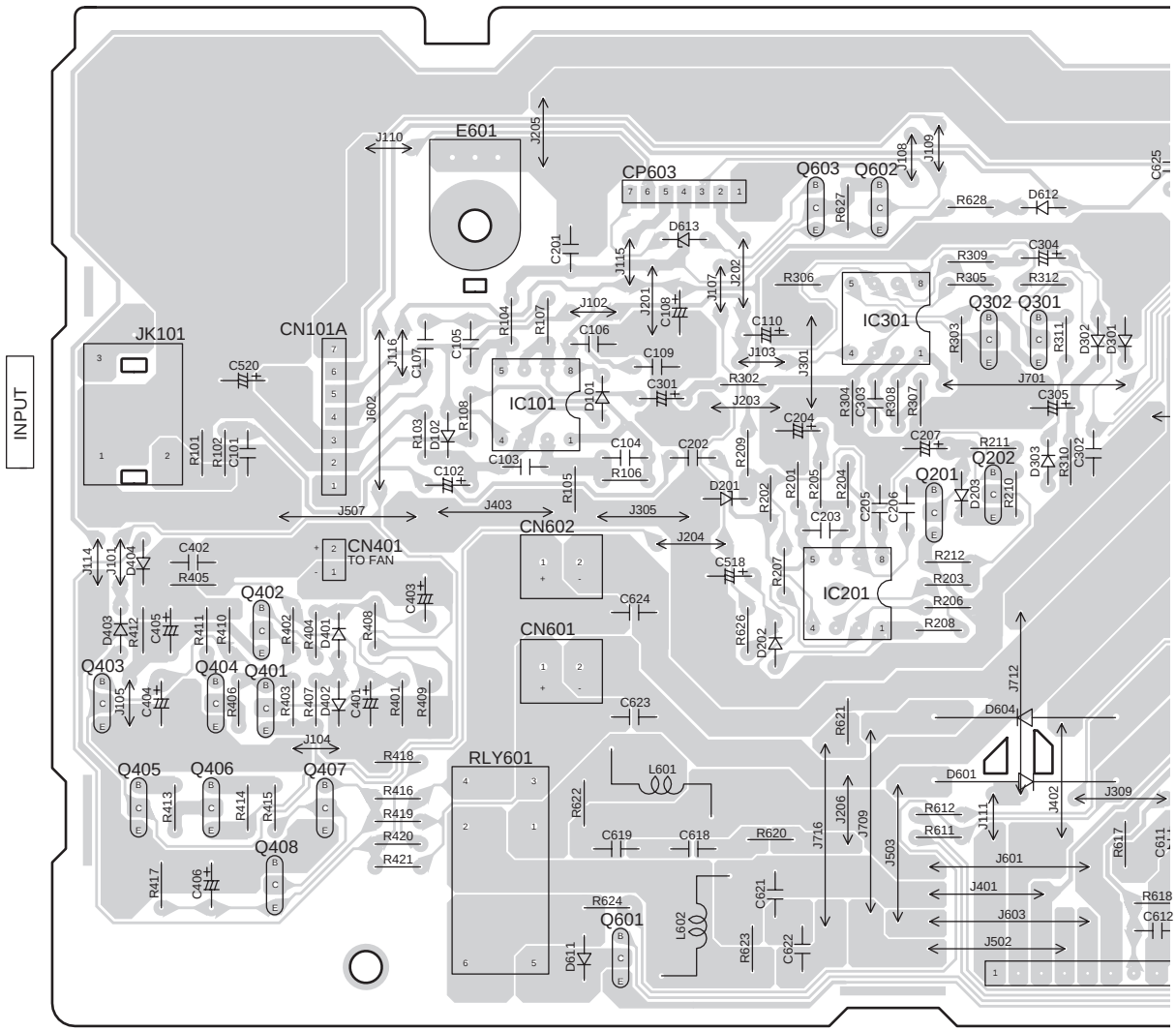
SCHEMATIC DIAGRAM - 3



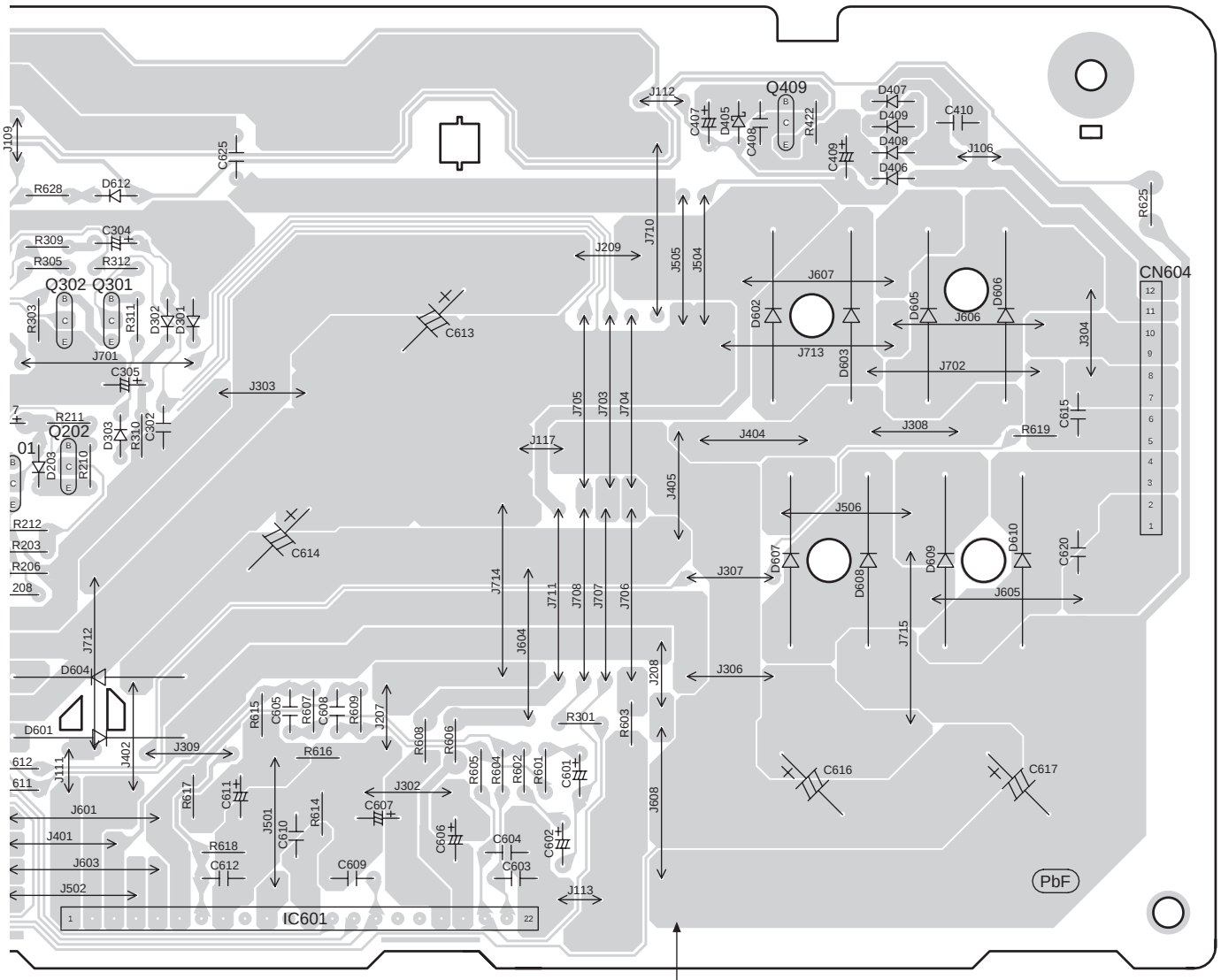
12 Printed Circuit Board

12.1. Power P.C.B. and LED P.C.B.

A POWER P.C.B (REPV0047B)...E
(REPV0047C)...EB

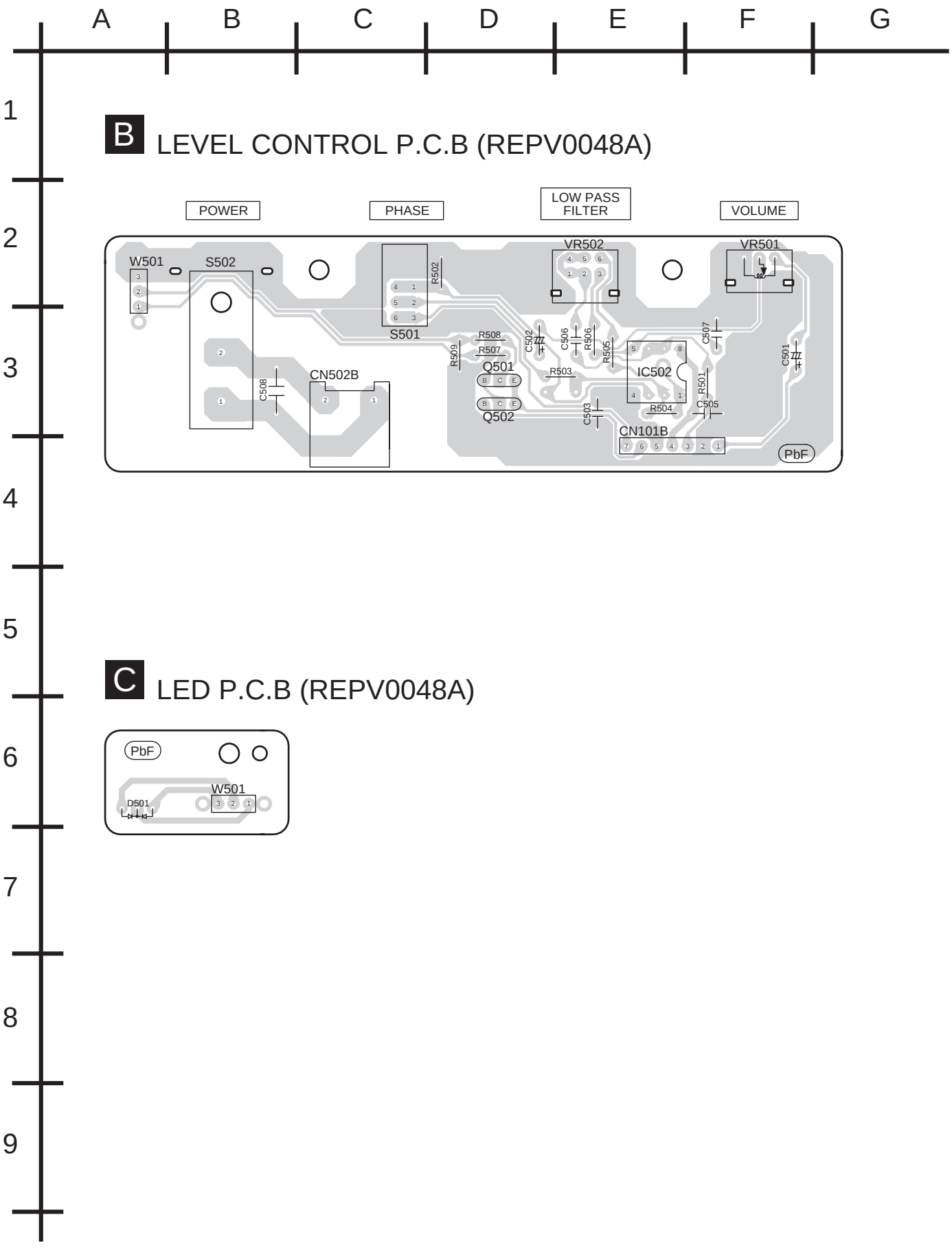


G H I J K L M

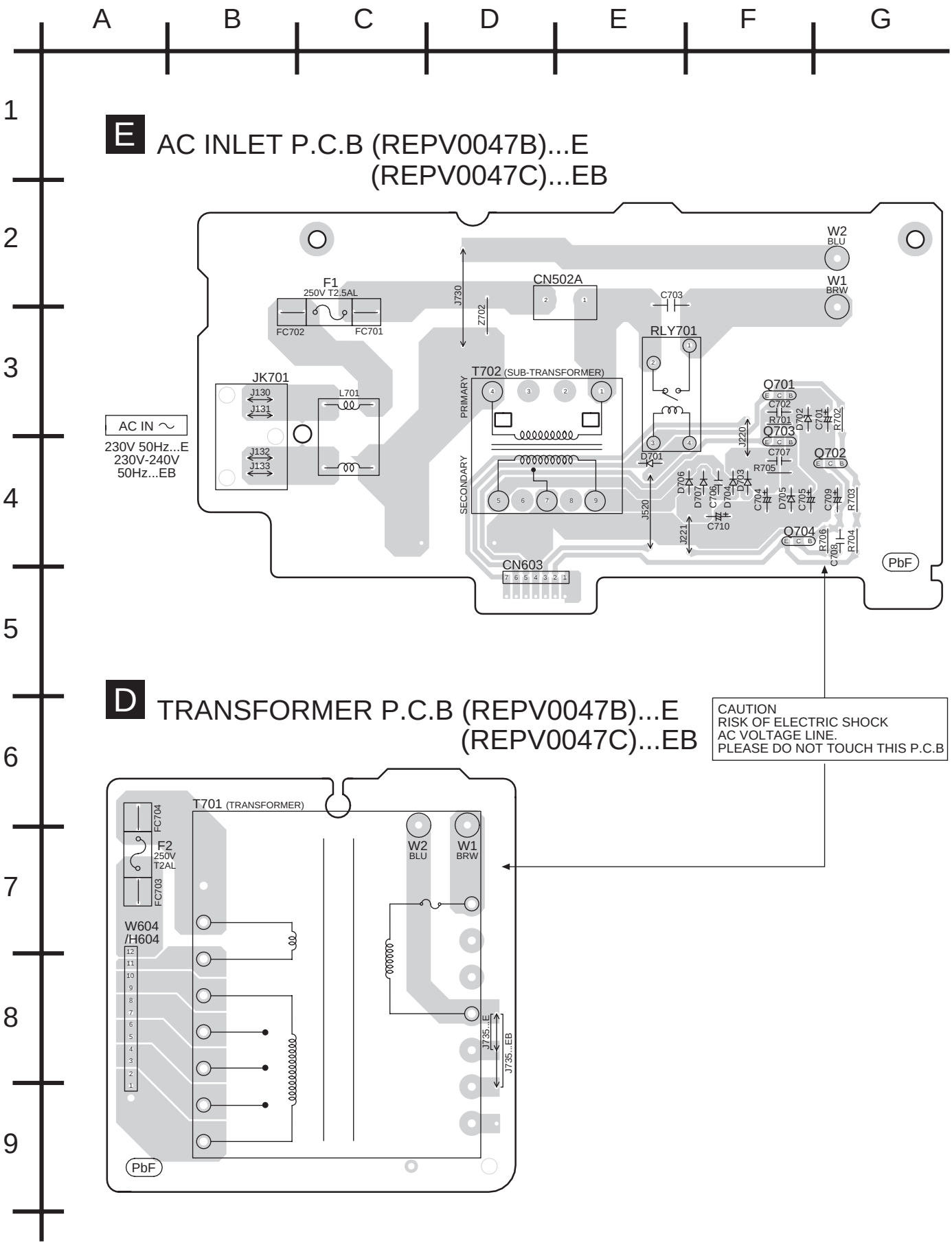


CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B

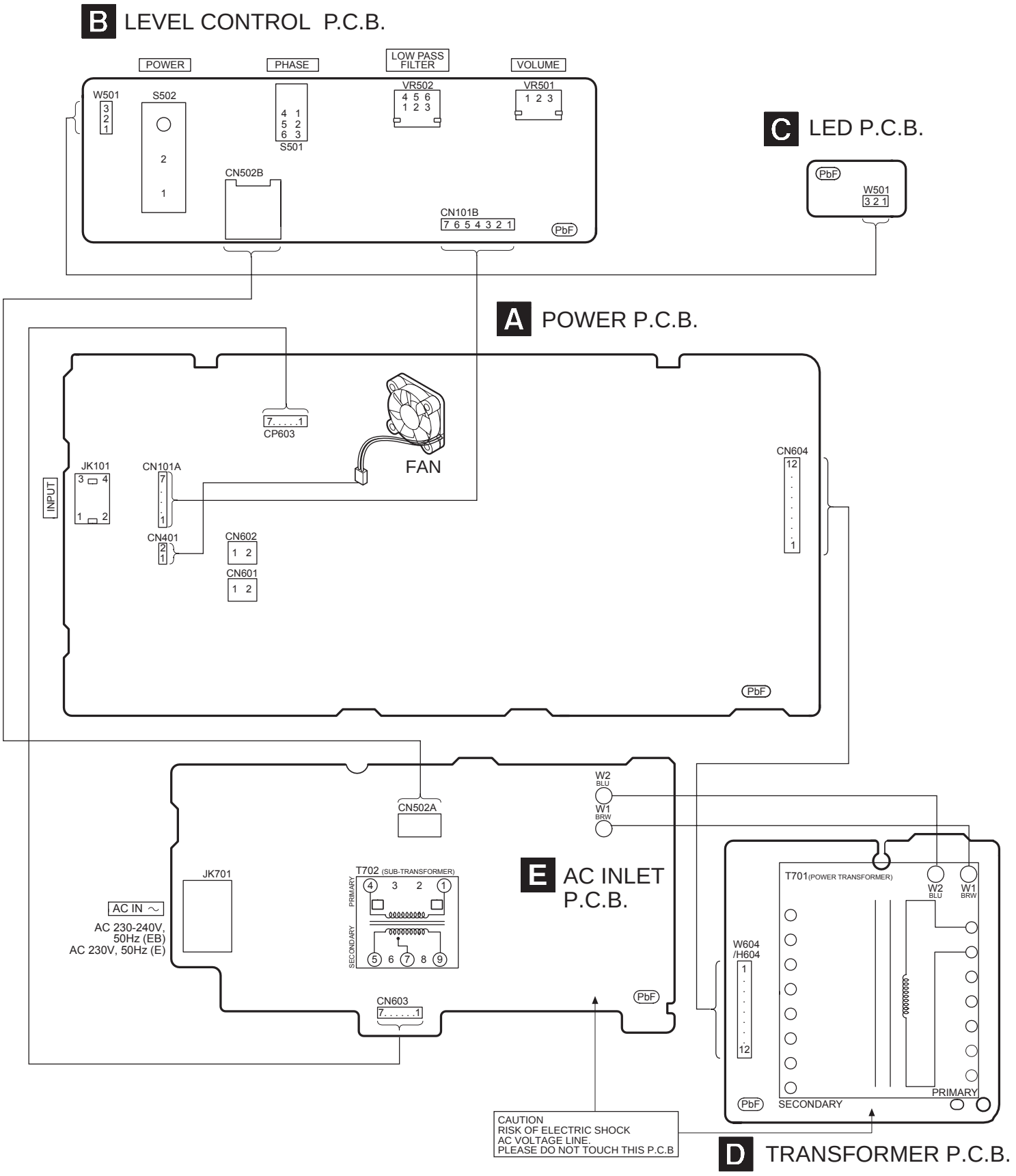
12.2. Level Control P.C.B. and LED P.C.B.



12.3. AC Inlet P.C.B. and Transformer P.C.B.



13 Wiring Connection Diagram



14 Illustration of ICs, Transistors and Diodes

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 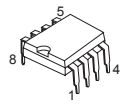
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 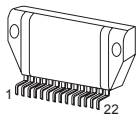
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 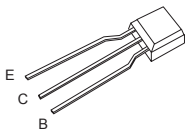
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 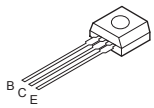
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 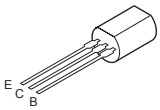
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 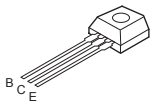
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 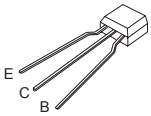
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 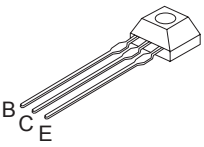
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 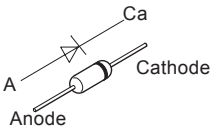
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 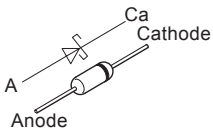
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 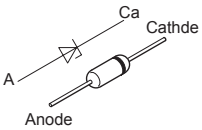
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 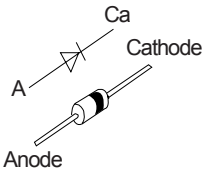
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 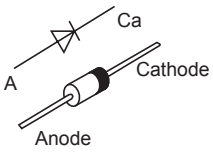
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 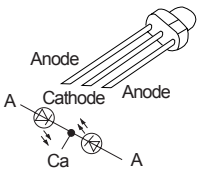
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15 Parts Location and Replacement Parts List

Notes:

- 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.

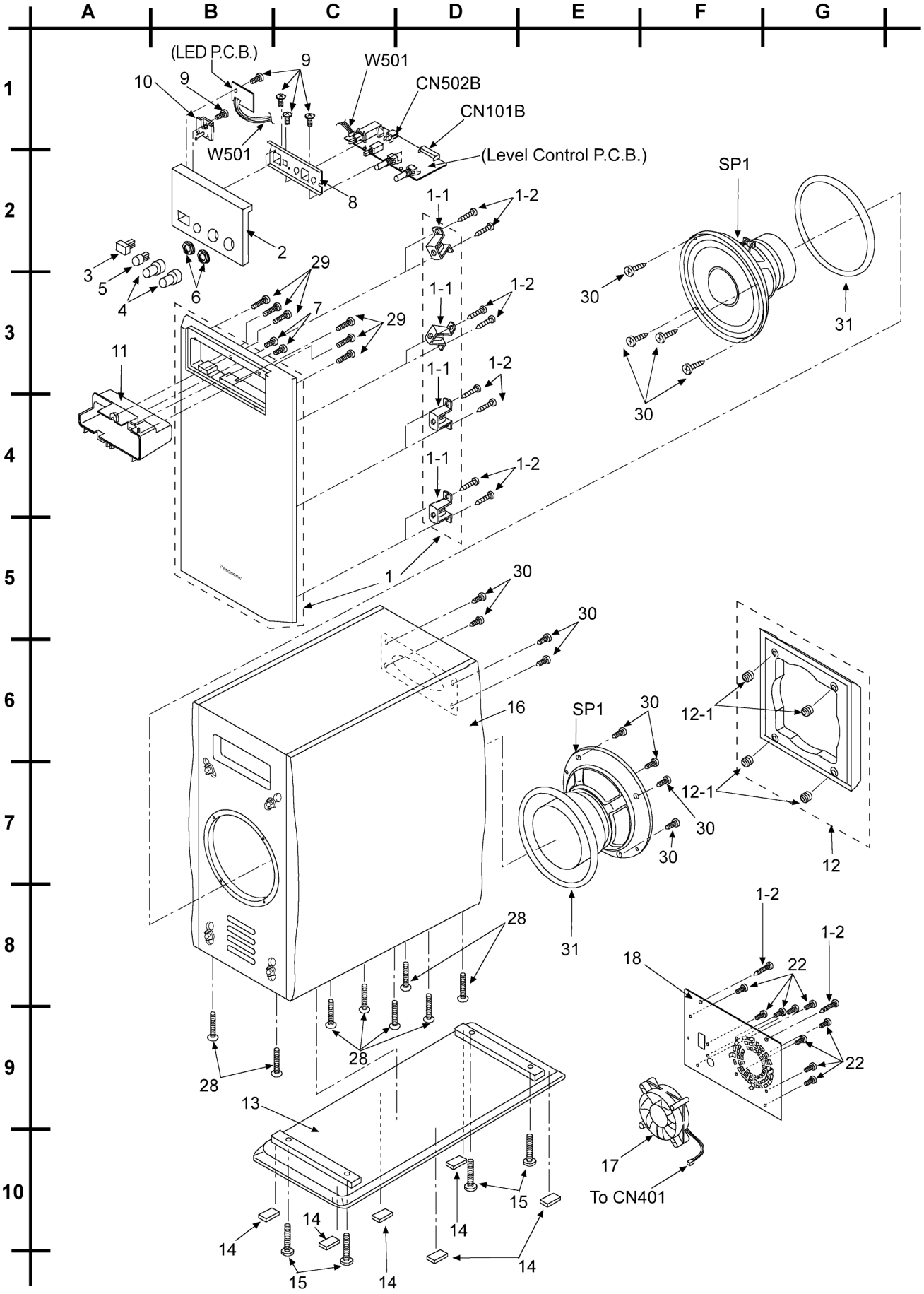
  When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.
- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)

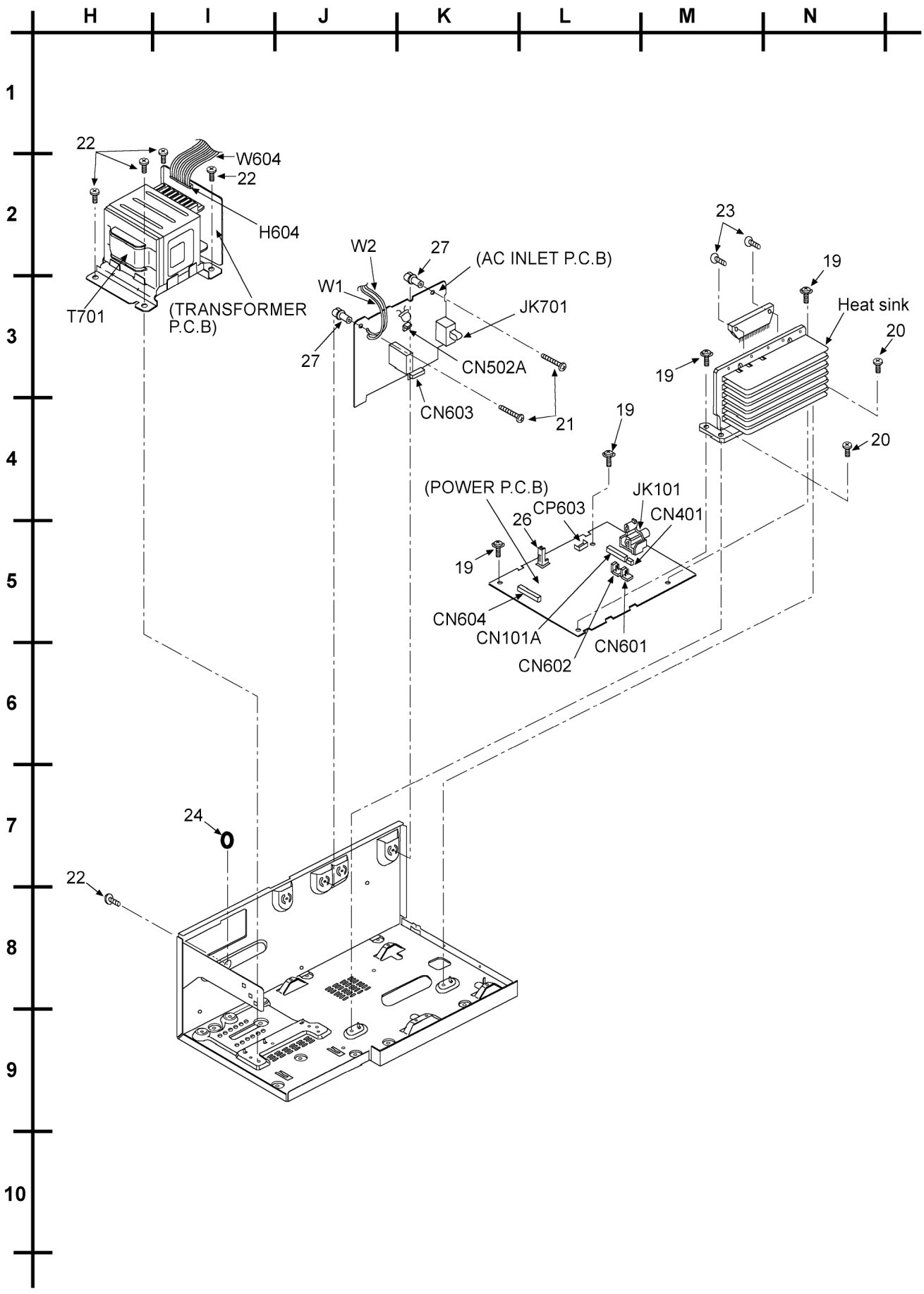
  Parts without these indications can be used for all areas.
- Capacitor values are in microfarads (μF) unless specified otherwise, P= Pico-farads (pF), F= Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).
- The marking (RTL) indicates that the Retention Time is limited for this items. 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 a availability is dependent 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.
- [M] Indicates in the Remarks columns indicates parts supplied by **PAVCSG.**
- The "(SF)" mark denotes the standard part.
- 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
Per:	Persian						

15.1. Cabinet

15.1.1. Cabinet Parts Location

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W604
22
H604
T701
(TRANSFORMER P.C.B)
W2
27
(AC INLET P.C.B)
W1
JK701
27
CN502A
CN603
21
23
19
Heat sink
20
19
20
19
(POWER P.C.B)
JK101
CP603
26
CN401
19
CN604
CN101A
CN602
CN601
24
22

15.1.2. Cabinet Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RFKGBWA800M	FRONT PANEL ASS'Y	[M]
1-1	RMN0802	CATCHER	[M]
1-2	XTB3+16AFZ	SCREW	[M]
2	RGP1299-K	CONTROL PANEL	[M]
3	RGU2182A-K	POWER KNOB	[M]
4	RGW0397A-K	VOLUME KNOB	[M]
5	RGU2183-AK	SELECTOR KNOB	[M]
6	RHN90001	M9 NUT	[M]
7	XTB3+8J	SCREW	[M]
8	RMA1881	VOLUME ANGLE	[M]
9	XTBS26+8J	SCREW	[M]
10	RGL0630-Q	LIGHT GUIDE	[M]
11	RMN0803	BARRIER	[M]
12	RYB0324	REAR NET UNIT	[M]
12-1	RMG0513-K	NET CATCH	[M]
13	RKA0171-K	STAND ORNAMENT	[M]
14	RKA0147-K	LEG RUBBER	[M]
15	XST5+30FN	SCREW	[M]
16	RYK1442-M	SPK CABINET ASS'Y	[M]
17	REM0072-4	FAN	[M]
18	RGR0352C-A	REAR PANEL	[M]E
18	RGR0352D-A	REAR PANEL	[M]EB
19	RHD30092	SCREW	[M]
20	XTB3+10JFZ	SCREW	[M]
21	XTB3+20JFZ	SCREW	[M]
22	XTBS3+8JFZ1	SCREW	[M]
23	XTW3+15T	SCREW	[M]
24	RMG0623-K	TRANS RUBBER	[M]
26	RMN0203	PCB HOLDER	[M]
27	RKQ0089A	PCB SUPPORT	[M]
28	XTS4+20JFZ	SCREW	[M]
29	XTBS26+12J	SCREW	[M]
30	XTB4+16AFZ	SCREW	[M]
31	RMF0375	EVA PACKING (WOOFER)	[M]

15.2. Electrical Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REPV0047C	POWER P.C.B./ AC INLET P.C.B./ TRANSFORMER P.C.B.	[M]EB (RTL)
	REPV0047B	POWER P.C.B./ AC INLET P.C.B./ TRANSFORMER P.C.B.	[M]E (RTL)
	REPV0048A	LED P.C.B./ LEVEL CONTROL P.C.B.	[M]E/EB (RTL)
		INTEGRATED CIRCUITS	
IC101	C0AABB000086	IC OP AMP	[M]
IC201	C0AABB000086	IC OP AMP	[M]
IC301	C0AABB000086	IC OP AMP	[M]
IC502	C0AABB000086	IC OP AMP	[M]
IC601	RSN313H25-P	IC HIC	[M]
		TRANSISTORS	
Q201	KRC102MTA	TRANSISTOR	[M]
Q202	2SA1175KEF	TRANSISTOR	[M]
Q301	KTC3199GRTA	TRANSISTOR	[M]
Q302	KTC3199GRTA	TRANSISTOR	[M]
Q401	2SB0621AHA	TRANSISTOR	[M]
Q402	KTC3199GRTA	TRANSISTOR	[M]
Q403	KTC3199GRTA	TRANSISTOR	[M]
Q404	KTC3199GRTA	TRANSISTOR	[M]
Q405	KTC3199GRTA	TRANSISTOR	[M]
Q406	2SA1175KEF	TRANSISTOR	[M]
Q407	KTC3199GRTA	TRANSISTOR	[M]
Q408	KTC3199GRTA	TRANSISTOR	[M]
Q409	2SC3940ARA	TRANSISTOR	[M]
Q501	KRA102MTA	TRANSISTOR	[M]
Q502	KRA102MTA	TRANSISTOR	[M]
Q601	KRA119MTA	TRANSISTOR	[M]
Q602	KTC3199GRTA	TRANSISTOR	[M]
Q603	KRC102MTA	TRANSISTOR	[M]
Q701	2SD0592ARA	TRANSISTOR	[M]
Q702	2SA1175KEF	TRANSISTOR	[M]
Q703	2SD0592ARA	TRANSISTOR	[M]
Q704	2SB0621AHA	TRANSISTOR	[M]
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D102	B0AACK000004	DIODE	[M]
D201	B0BA7R900004	DIODE	[M]
D202	B0AACK000004	DIODE	[M]
D203	B0AACK000004	DIODE	[M]
D301	B0AACK000004	DIODE	[M]
D302	B0AACK000004	DIODE	[M]
D303	MA2C700A0F	DIODE	[M]
D401	MA2C700A0F	DIODE	[M]
D402	MA2C700A0F	DIODE	[M]
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D406	B0EAKM000122	DIODE	[M]
D407	B0EAKM000122	DIODE	[M]
D408	B0EAKM000122	DIODE	[M]
D409	B0EAKM000122	DIODE	[M]
D501	B3AKA0000006	DIODE	[M]
D601	B0EAMM000038	DIODE	[M]
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D611	B0AACK000004	DIODE	[M]
D612	B0EAKM000122	DIODE	[M]
D613	MTZJ18CTA	DIODE	[M]
D701	B0AACK000004	DIODE	[M]
D702	B0BA6R800007	DIODE	[M]
D703	B0EAKM000122	DIODE	[M]
D704	B0EAKM000122	DIODE	[M]
D705	B0BA01100004	DIODE	[M]
D706	B0EAKM000122	DIODE	[M]
D707	B0EAKM000122	DIODE	[M]
		VARIABLE RESISTORS	
VR501	D2BDB14B0003	VOLUME ENCODER	[M]
VR502	D2BDD14B0001	ENCODER	[M]
		SWITCHES	
S501	K0F124A00053	SW	[M]
S502	ESB92S21B	SW PRIMARY	[M]
		SPEAKER	
SP1	EAS17PL07A	WOOFER UNIT	[M]
		CONNECTORS	
CN101A	RJP7G4YA	7P CONNECTOR	[M]
CN101B	K1KA07B00028	7P CONNECTOR	[M]
CN401	K1KA02A00008	FAN CONNECTOR	[M]
CN502A	K1KA02A00104	2P CONNECTOR	[M]
CN502B	K1KA02B00052	2P CONNECTOR	[M]
CN601	K1KA02A00009	2P CONNECTOR	[M]
CN602	K1KA02A00009	2P CONNECTOR	[M]
CN603	K1KB07B00020	7P CONNECTOR	[M]
CN604	K1KA12A00066	12P CONNECTOR	[M]
CP603	K1KA07A00123	7P CONNECTOR	[M]
		COILS & TRANSFORMERS	
L601	RLQYR73MW-B	COIL	[M]
L602	RLQYR73MW-B	COIL	[M]
L701	ELF15N035AN	LINE FILTER	[M] ⚠
T701	G4C8AGH00004	POWER TRANSFOMER	[M] ⚠
T702	G4C2CAK00001	SUB TRANSFORMER	[M] ⚠
		COMPONENT COMBINATION	
Z702	ERZV10V511CS	ZENER	[M]
		RELAY	
RLY601	K6B2AHA00014	RELAY	[M]
RLY701	K6B1AEA00003	POWER RELAY	[M] ⚠
		FUSES	
F1	K5D252BL0004	FUSE	[M] ⚠
F2	K5D202BK0005	FUSE	[M] ⚠
		FUSE HOLDERS	
FC701	EYF52BC	FUSE HOLDER	[M]
FC702	EYF52BC	FUSE HOLDER	[M]
FC703	EYF52BC	FUSE HOLDER	[M]
FC704	EYF52BC	FUSE HOLDER	[M]
		HOLDER	
H604	K1YF12000002	12P WIRE HOLDER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		JACKS	
JK101	K2HA102B0073	JK RCA	[M]
JK701	K2AA2B000004	JK AC INLET	[M] ⚠
		EARTH TERMINAL	
E601	K4CZ01000027	EARTH LUG	[M]
		WIRES	
W501	RWJ1803090SS	WIRE	[M]
W604	REX1146	WIRE UNIT	[M]
W1	REE1205	WIRE UNIT	[M]
W2	REE1204	WIRE UNIT	[M]
		RESISTORS	
R101	D0AE104JA048	100K 1/4W	[M]
R102	ERDS2TJ222T	2.2K 1/4W	[M]
R103	D0AE473JA048	47K 1/4W	[M]
R104	ERDS2TJ683T	68K 1/4W	[M]
R105	ERDS2TJ182T	1.8K 1/4W	[M]
R106	D0AE472JA048	4.7K 1/4W	[M]
R107	ERDS2TJ332T	3.3K 1/4W	[M]
R108	D0AE101JA048	100 1/4W	[M]
R201	ERDS2TJ224T	220K 1/4W	[M]
R202	ERDS2TJ224T	220K 1/4W	[M]
R203	D0AE104JA048	100K 1/4W	[M]
R204	D0AE474JA048	470K 1/4W	[M]
R205	D0AE101JA048	100 1/4W	[M]
R206	D0AE103JA048	10K 1/4W	[M]
R207	D0AE103JA048	10K 1/4W	[M]
R208	ERDS2TJ224T	220K 1/4W	[M]
R209	D0AE331JA048	330 1/4W	[M]
R210	ERDS2TJ224T	220K 1/4W	[M]
R211	ERDS2TJ105T	1M 1/4W	[M]
R212	D0AE104JA048	100K 1/4W	[M]
R301	D0AE103JA048	10K 1/4W	[M]
R302	ERDS2TJ822T	8.2K 1/4W	[M]
R303	D0AE474JA048	470K 1/4W	[M]
R304	D0AE102JA048	1K 1/4W	[M]
R305	ERDS2TJ334T	330K 1/4W	[M]
R306	D0AE103JA048	10K 1/4W	[M]
R307	D0AE102JA048	1K 1/4W	[M]
R308	D0AE123JA048	12K 1/4W	[M]
R309	D0AE103JA048	10K 1/4W	[M]
R310	ERDS2TJ224T	220K 1/4W	[M]
R311	D0AE103JA048	10K 1/4W	[M]
R312	D0AE103JA048	10K 1/4W	[M]
R401	D0AE103JA048	10K 1/4W	[M]
R402	D0AE563JA048	56K 1/4W	[M]
R403	D0AE472JA048	4.7K 1/4W	[M]
R404	D0AE101JA048	100 1/4W	[M]
R405	ERDS2TJ824T	820K 1/4W	[M]
R406	D0AE562JA048	5.6K 1/4W	[M]
R407	D0AE103JA048	10K 1/4W	[M]
R408	ERDS2TJ224T	220K 1/4W	[M]
R409	D0AF180JA039	18 1/4W	[M]
R410	D0AE563JA048	56K 1/4W	[M]
R411	D0AE103JA048	10K 1/4W	[M]
R412	ERDS2TJ824T	820K 1/4W	[M]
R413	D0AE473JA048	47K 1/4W	[M]
R414	ERDS2TJ224T	220K 1/4W	[M]
R415	D0AE474JA048	470K 1/4W	[M]
R416	ERDS2TJ124T	120K 1/4W	[M]
R417	D0AE223JA048	22K 1/4W	[M]
R418	D0AE562JA048	5.6K 1/4W	[M]
R419	ERDS2TJ124T	120K 1/4W	[M]
R420	D0AE223JA048	22K 1/4W	[M]
R421	D0AE223JA048	22K 1/4W	[M]
R422	ERDS2TJ222T	2.2K 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R501	D0AE101JA048	100 1/4W	[M]
R502	D0AE103JA048	10K 1/4W	[M]
R503	D0AE103JA048	10K 1/4W	[M]
R504	D0AE103JA048	10K 1/4W	[M]
R505	D0AE272JA048	2.7K 1/4W	[M]
R506	D0AE272JA048	2.7K 1/4W	[M]
R507	D0AE102JA048	1K 1/4W	[M]
R508	ERDS2TJ471T	470 1/4W	[M]
R509	ERDS2TJ222T	2.2K 1/4W	[M]
R601	D0AE472JA048	4.7K 1/4W	[M]
R602	D0AE472JA048	4.7K 1/4W	[M]
R603	ERD25FVJ4R7T	4.7 1/4W	[M]
R604	D0AE221JA048	220 1/4W	[M]
R605	D0AE221JA048	220 1/4W	[M]
R606	D0AF220JA039	22 1/4W	[M]
R607	D0AE563JA048	56K 1/4W	[M]
R608	D0AF220JA039	22 1/4W	[M]
R609	D0AE563JA048	56K 1/4W	[M]
R611	ERDS2TJ154T	150K 1/4W	[M]
R612	ERDS2TJ154T	150K 1/4W	[M]
R614	D0AE474JA048	470K 1/4W	[M]
R615	ERDS2TJ184T	180K 1/4W	[M]
R616	D0AE473JA048	47K 1/4W	[M]
R617	ERDS2TJ224T	220K 1/4W	[M]
R618	ERDS2TJ154T	150K 1/4W	[M]
R619	ERDS2TJ684T	680K 1/4W	[M]
R620	D0AF100JA039	10 1/4W	[M]
R621	D0AF100JA039	10 1/4W	[M]
R622	ERDS2TJ470T	47 1/4W	[M]
R623	ERDS2TJ470T	47 1/4W	[M]
R624	D0AF221JA039	220 1/4W	[M]
R625	ERDS1FVJ1R0T	1 1/2W	[M]
R626	D0AE562JA048	5.6K 1/4W	[M]
R627	D0AE472JA048	4.7K 1/4W	[M]
R628	ERDS2TJ220T	22 1/4W	[M]
R701	D0AE272JA048	2.7K 1/4W	[M]
R702	D0AE103JA048	10K 1/4W	[M]
R703	ERDS2TJ822T	8.2K 1/4W	[M]
R704	ERDS2TJ561T	560 1/4W	[M]
R705	D0AE272JA048	2.7K 1/4W	[M]
R706	D0AE153JA048	15K 1/4W	[M]EB
R706	ERDS2TJ153T	15K 1/4W	[M]E
		CAPACITORS	
C101	F1D1H221A012	220P 50V	[M]
C102	ECA1HAK010XB	1 50V	[M]
C103	F1D1H221A012	220P 50V	[M]
C104	F1D1H221A012	220P 50V	[M]
C105	ECQV1H334JL3	0.33 50V	[M]
C106	F1E1H1030001	0.01 50V	[M]
C107	ECQV1H334JL3	0.33 50V	[M]
C108	ECA1CAK100XB	10 16V	[M]
C109	F1E1H1030001	0.01 50V	[M]
C110	ECA1CAK100XB	10 16V	[M]
C201	F1E1H1030001	0.01 50V	[M]
C202	F1D1H473A012	0.047 50V	[M]
C203	F1D1H102A012	1000P 50V	[M]
C204	ECA1EAK220XB	22 25V	[M]
C205	F1E1H1030001	0.01 50V	[M]
C206	F1D1H1040002	0.1 50V	[M]
C207	ECA1CAM331XB	330 16V	[M]
C301	ECA1CAK100XB	10 16V	[M]
C302	F1E1H1030001	0.01 50V	[M]
C303	F1D1H101A012	100P 50V	[M]
C304	ECA1CAK100XB	10 16V	[M]
C305	ECA1CAK100XB	10 16V	[M]
C401	ECA1CAK330XB	33 16V	[M]
C402	F1D1H1040002	0.1 50V	[M]
C403	ECA1AAK221XB	220 10V	[M]
C404	ECA1AAK221XB	220 10V	[M]
C405	ECA1HAK2R2XB	2.2 50V	[M]
C406	ECA1AAK221XB	220 10V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C407	ECA1CAK470XB	47 16V	[M]
C408	F1E1H1030001	0.01 50V	[M]
C409	ECA1EAM331XB	330 25V	[M]
C410	F1E1H1030001	0.01 50V	[M]
C501	ECA1CAK100XB	10 16V	[M]
C502	ECA1CAK100XB	10 16V	[M]
C503	F1E1H1030001	0.01 50V	[M]
C505	F1E1H1030001	0.01 50V	[M]
C506	ECQV1H334JL3	0.33 50V	[M]
C507	ECQV1H184JL3	0.18 50V	[M]
C508	ECKWRS102MBC	1000P 400V	[M]
C518	ECA1EAK220XB	22 25V	[M]
C520	ECA1HAK2R2XB	2.2 50V	[M]
C601	ECA1JAM330XB	33 63V	[M]
C602	ECA1JAM330XB	33 63V	[M]
C603	F1D1H821A012	820P 50V	[M]
C604	F1D1H821A012	820P 50V	[M]
C605	F1A1H100A031	10P 50V	[M]
C606	ECA2AAM330XB	33 100V	[M]
C607	ECA2AAM330XB	33 100V	[M]
C608	F1A1H100A031	10P 50V	[M]
C609	F1D1H102A012	1000P 50V	[M]
C610	ECEA2AN2R2SB	2.2 100V	[M]
C611	ECA1EAM101XB	100 25V	[M]
C612	F1E1H1030001	0.01 50V	[M]
C613	ECES1JV103UN	0.01 63V	[M]
C614	ECES1JV103UN	0.01 63V	[M]
C615	ECQE2104KF3	0.1 250V	[M]
C616	ECES1VV562FN	5600 35V	[M]
C617	ECES1VV562FN	5600 35V	[M]
C618	ECQV1H473JZ3	0.047 50V	[M]
C619	ECQV1H104JL3	0.1 50V	[M]
C620	ECQE2104KF3	0.1 250V	[M]
C621	ECQV1H104JL3	0.1 50V	[M]
C622	ECQV1H473JZ3	0.047 50V	[M]
C623	F1B1H223A007	0.022 50V	[M]
C624	F1B1H223A007	0.022 50V	[M]
C625	F1E1H1030001	0.01 50V	[M]
C701	ECA1EAK220XB	22 25V	[M]
C702	F1E1H1030001	0.01 50V	[M]
C703	ECKWRS102MBC	1000P 400V	[M]
C704	ECA1EAM331XB	330 25V	[M]
C705	ECA1CAK100XB	10 16V	[M]
C706	F1E1H1030001	0.01 50V	[M]
C707	F1E1H1030001	0.01 50V	[M]
C708	F1E1H1030001	0.01 50V	[M]
C709	ECA1CAK100XB	10 16V	[M]
C710	ECA1EAM331XB	330 25V	[M]

15.3. Packing Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPG7377	PACKING CASE	[M]E
P1	RPG7378	PACKING CASE	[M]EB
P2	RPN1759	POLYFOAM	[M]
P3	RPF0412	PROTECT BAG	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		ACCESSORIES	
A1	RJA0019-2K	AC CORD (SF)	[M]E ⚠
A1	VJA0733	AC CORD (SF)	[M]EB ⚠
A2	RQT7808-E	O/I BOOK	[M]
A3	RJL1P015B50	RCA CORD	[M]

15.4. Packaging