

SERVICE MANUAL

MODEL	JP	E3	E2	EK	E2A	E1C	E1K	EUT
PMA-510AE			✓					

INTEGRATED STEREO AMPLIFIER

- For purposes of improvement, specifications and design are subject to change without notice.

- Please use this service manual with referring to the operating instructions without fail.

- Some illustrations using in this service manual are slightly different from the actual set.

DENON

D&M Holdings Inc.

SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is defective.

CAUTION Please heed the points listed below during servicing and inspection.

◎ Heed the cautions!

Spots requiring particular attention when servicing, such as the cabinet, parts, chassis, etc., have cautions indicated on labels or seals. Be sure to heed these cautions and the cautions indicated in the handling instructions.

◎ Caution concerning electric shock!

(1) An AC voltage is impressed on this set, so touching internal metal parts when the set is energized could cause electric shock. Take care to avoid electric shock, by for example using an isolating transformer and gloves when servicing while the set is energized, unplugging the power cord when replacing parts, etc.

(2) There are high voltage parts inside. Handle with extra care when the set is energized.

◎ Caution concerning disassembly and assembly!

Though great care is taken when manufacturing parts from sheet metal, there may in some rare cases be burrs on the edges of parts which could cause injury if fingers are moved across them. Use gloves to protect your hands.

◎ Only use designated parts!

The set's parts have specific safety properties (fire resistance, voltage resistance, etc.). For replacement parts, be sure to use parts which have the same properties. In particular, for the important safety parts that are marked \triangle on wiring diagrams and parts lists, be sure to use the designated parts.

◎ Be sure to mount parts and arrange the wires as they were originally!

For safety reasons, some parts use tape, tubes or other insulating materials, and some parts are mounted away from the surface of printed circuit boards. Care is also taken with the positions of the wires inside and clamps are used to keep wires away from heating and high voltage parts, so be sure to set everything back as it was originally.

◎ Inspect for safety after servicing!

Check that all screws, parts and wires removed or disconnected for servicing have been put back in their original positions, inspect that no parts around the area that has been serviced have been negatively affected, conduct an insulation check on the external metal connectors and between the blades of the power plug, and otherwise check that safety is ensured.

(Insulation check procedure)

Unplug the power cord from the power outlet, disconnect the antenna, plugs, etc., and turn the power switch on. Using a 500V insulation resistance tester, check that the insulation resistance between the terminals of the power plug and the externally exposed metal parts (antenna terminal, headphones terminal, microphone terminal, input terminal, etc.) is $1M\Omega$ or greater. If it is less, the set must be inspected and repaired.

CAUTION Concerning important safety parts

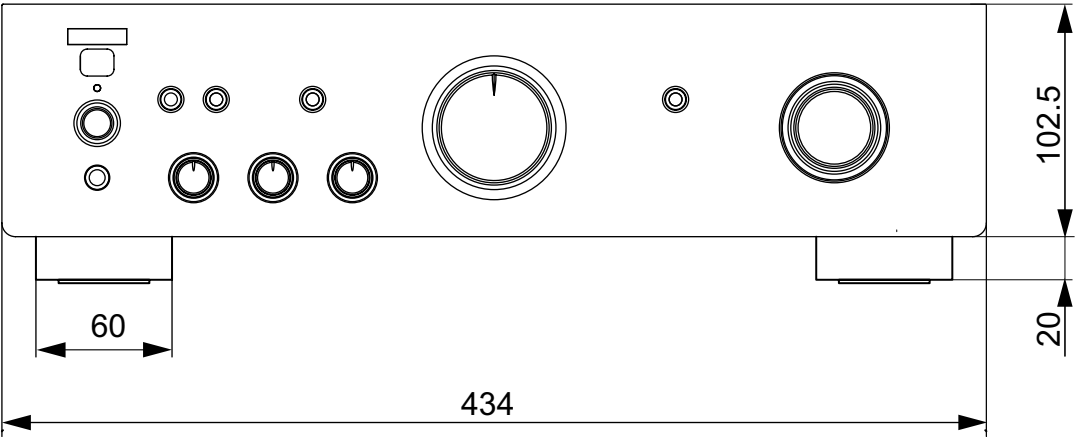
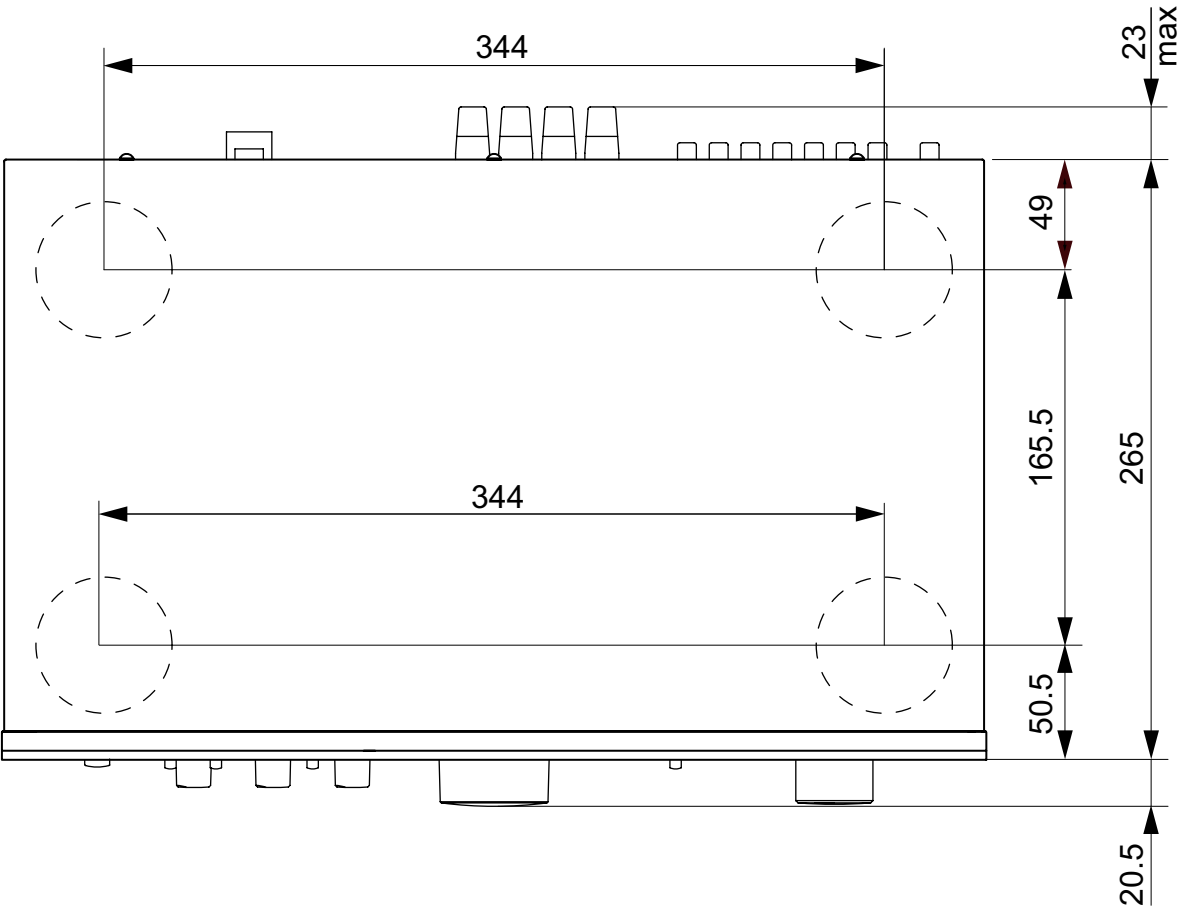
Many of the electric and structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and using replacement parts with higher ratings (rated power and withstand voltage) does not necessarily guarantee that safety performance will be preserved. Parts with safety properties are indicated as shown below on the wiring diagrams and parts lists in this service manual. Be sure to replace them with parts with the designated part number.

(1) Schematic diagrams ... Indicated by the \triangle mark.

(2) Parts lists ... Indicated by the \triangle mark.

Using parts other than the designated parts could result in electric shock, fires or other dangerous situations.

DIMENSION

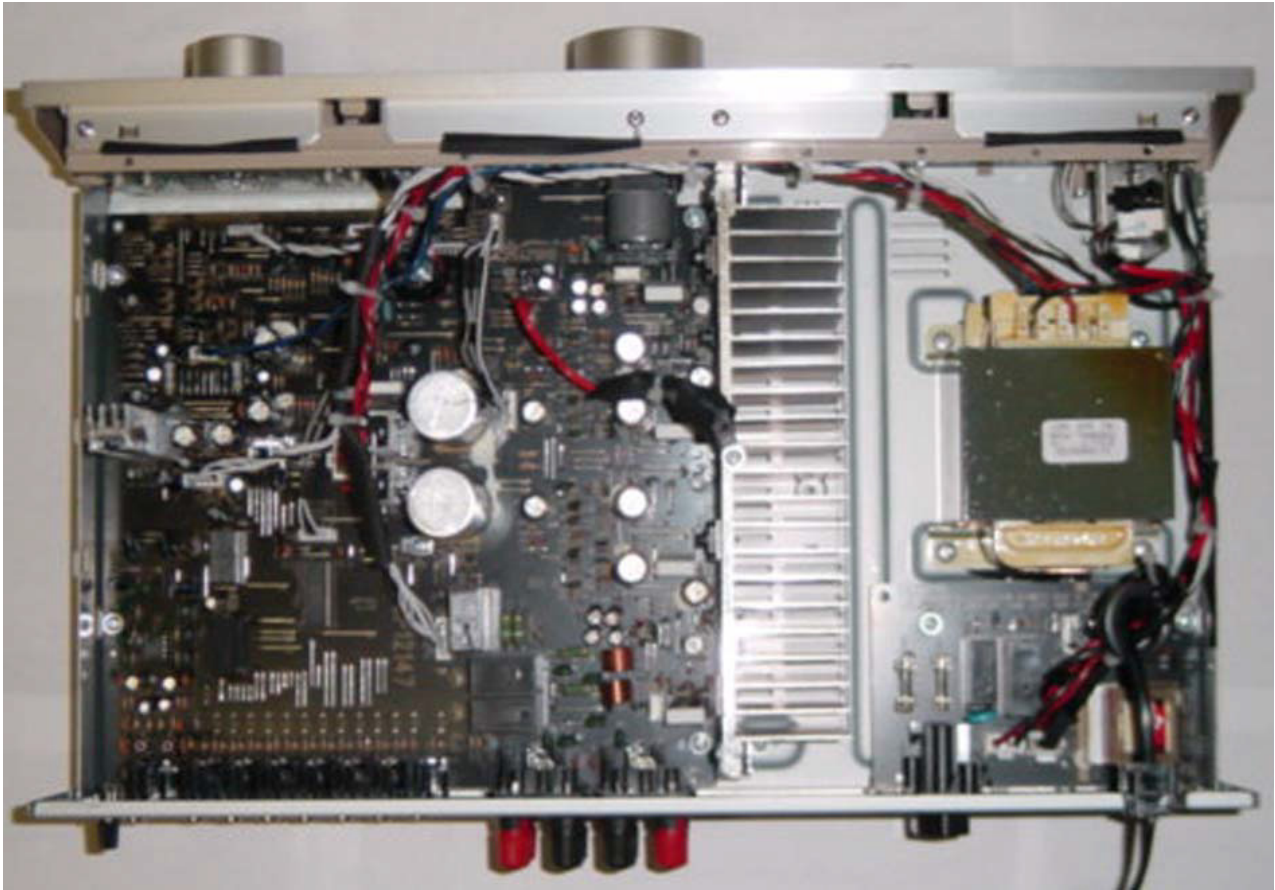


WIRE ARRANGEMENT

If wire bundles are untied or moved to perform adjustment or parts replacement etc., be sure to rearrange them neatly as they were originally bundled or placed afterward.
Otherwise, incorrect arrangement can be a cause of noise generation.

Wire arrangement viewed from the top

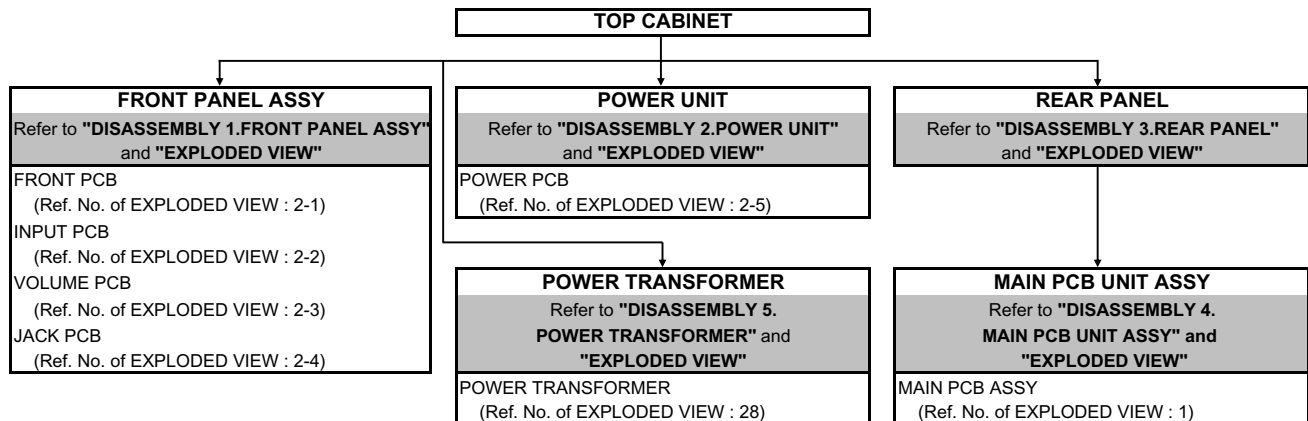
Front Panel side



Back Panel side

DISASSEMBLY

- Disassemble in order of the arrow of the figure of following flow.
- In the case of the re-assembling, assemble it in order of the reverse of the following flow.
- In the case of the re-assembling, observe "attention of assembling" it.

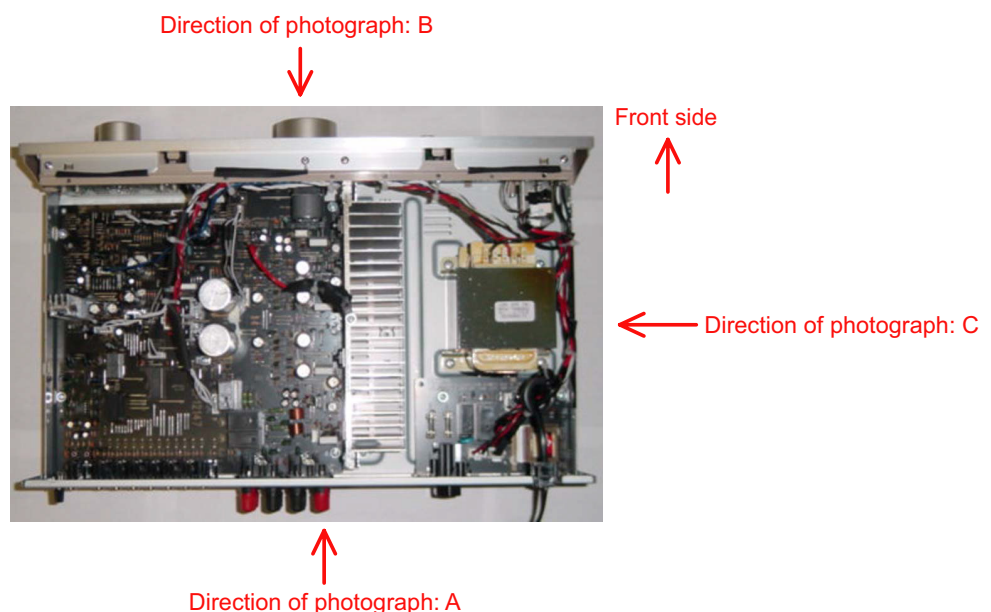


About the photos used for descriptions in the “DISASSEMBLY” section.

- The direction from which the photographs used herein were photographed is indicated at "Direction of photograph: ****" at the left of the respective photographs.
- Refer to the table below for a description of the direction in which the photos were taken.
- Photographs for which no direction is indicated were taken from above the product.

The viewpoint of each photograph (photography direction)

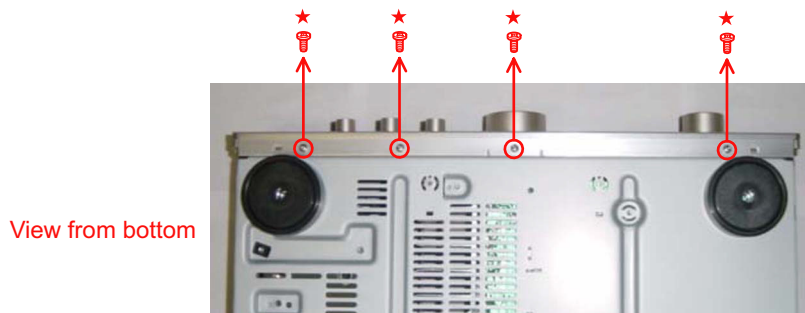
[View from above]



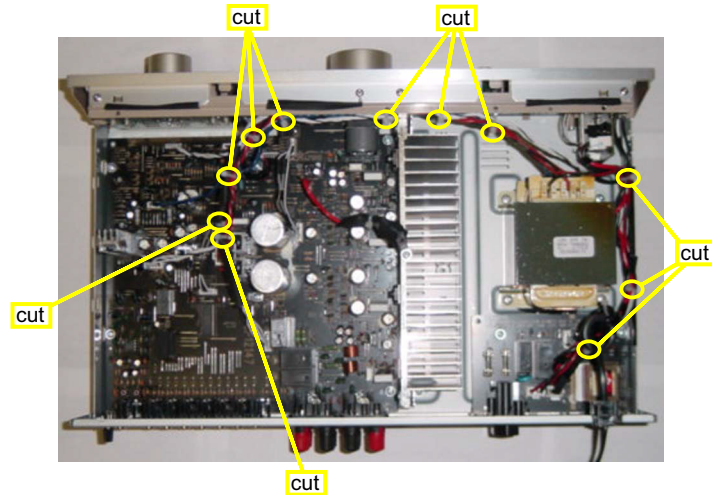
1. FRONT PANEL ASSY

Proceeding : **TOP CABINET** → **FRONT PANEL ASSY**

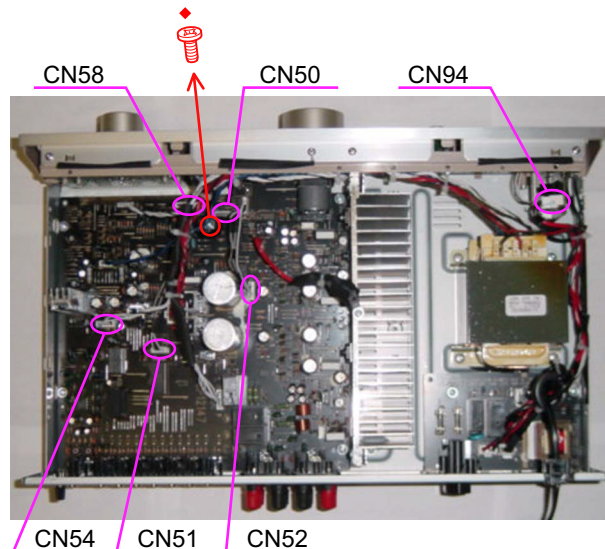
- (1) Remove the screws.



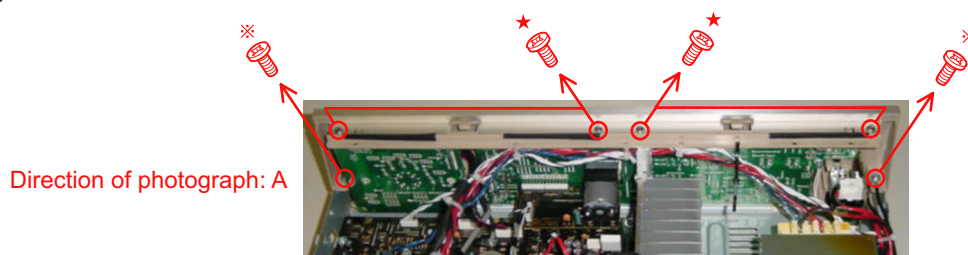
- (2) Cut the wire clamp bands.



- (3) Disconnect the connector wires and remove the screw.



- (4) Remove the screws.

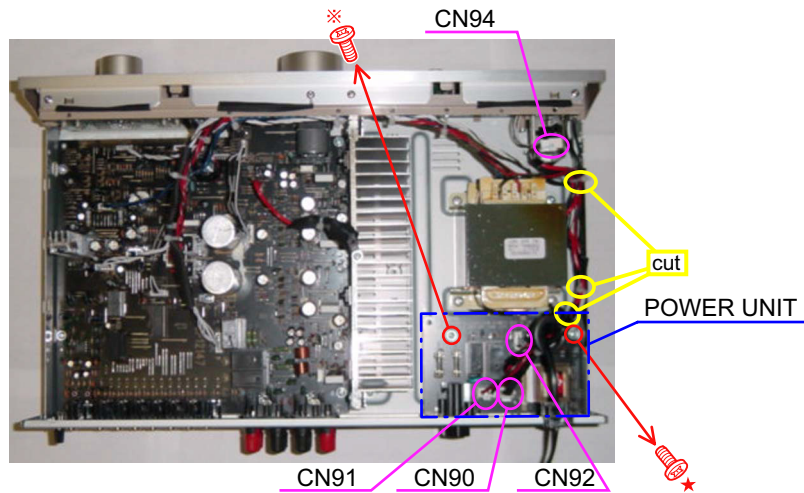


Please refer to **"EXPLODED VIEW"** for the disassembly method of each PCB included in FRONT PANEL ASSY.

2. POWER UNIT

Proceeding : **TOP CABINET** → **POWER UNIT**

- (1) Cut the wire clamp bands, disconnect the connector wires and remove the screws.



- (2) Remove the screws.

Direction of photograph: A



3. REAR PANEL

Proceeding : **TOP CABINET** → **REAR PANEL**

- (1) Remove the screws.

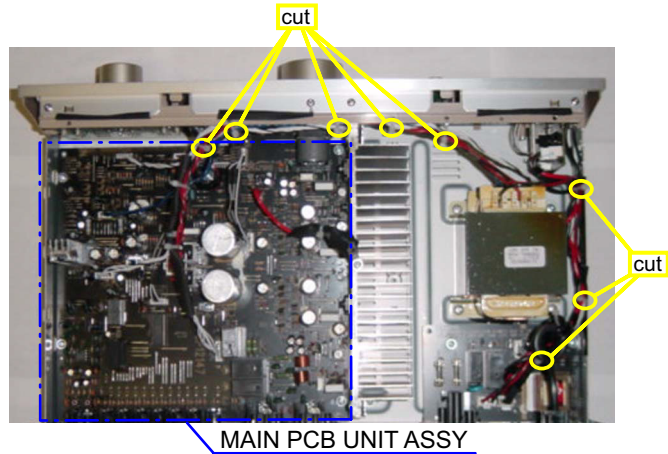
Direction of photograph: A



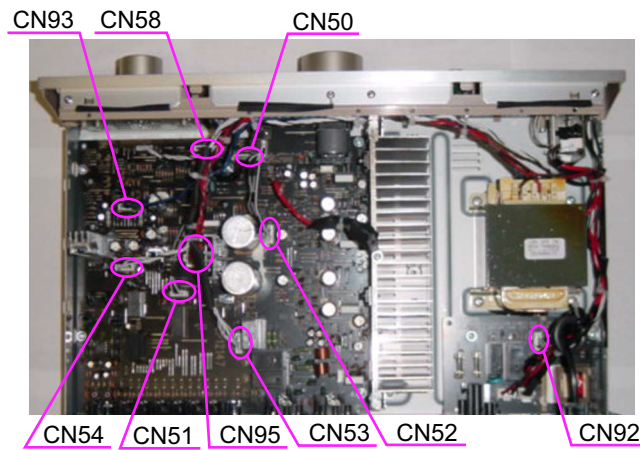
4. MAIN PCB UNIT ASSY

Proceeding : **TOP COVER** → **REAR PANEL** → **MAIN PCB UNIT ASSY**

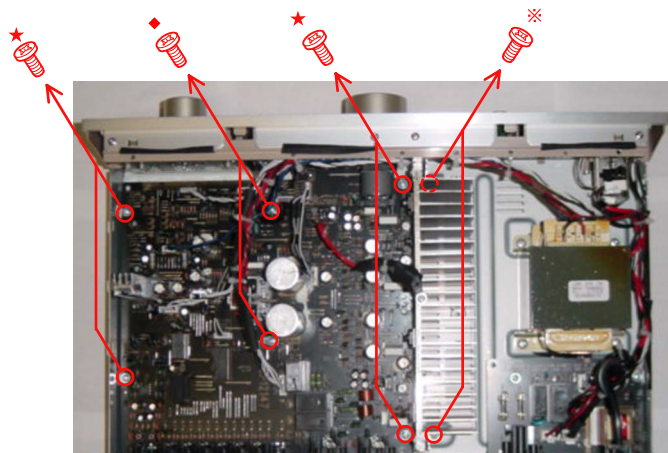
(1) Cut the wire clamp bands.



(2) Disconnect the connector wires.



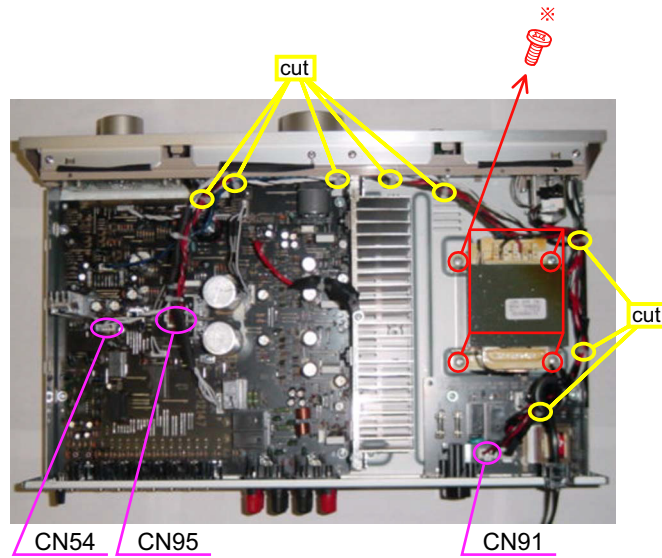
(3) Remove the screws.



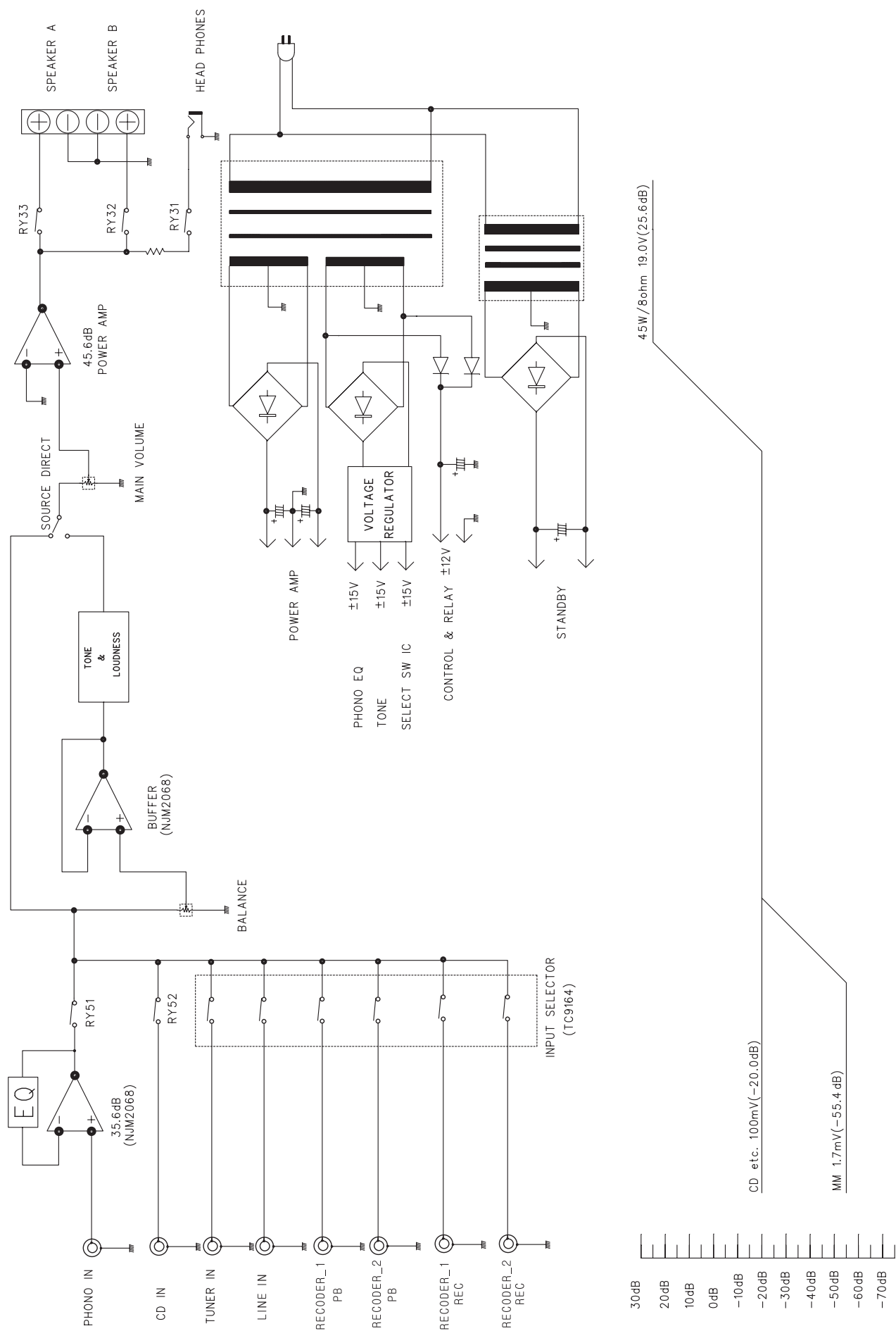
5. POWER TRANSFORMER

Proceeding : **TOP CABINET** → **POWER TRANSFORMER**

(1) Cut the wire clamp bands, disconnect the connector wires and remove the screws.



BLOCK AND LEVEL DIAGRAM





ADJUSTMENT


Idling Current

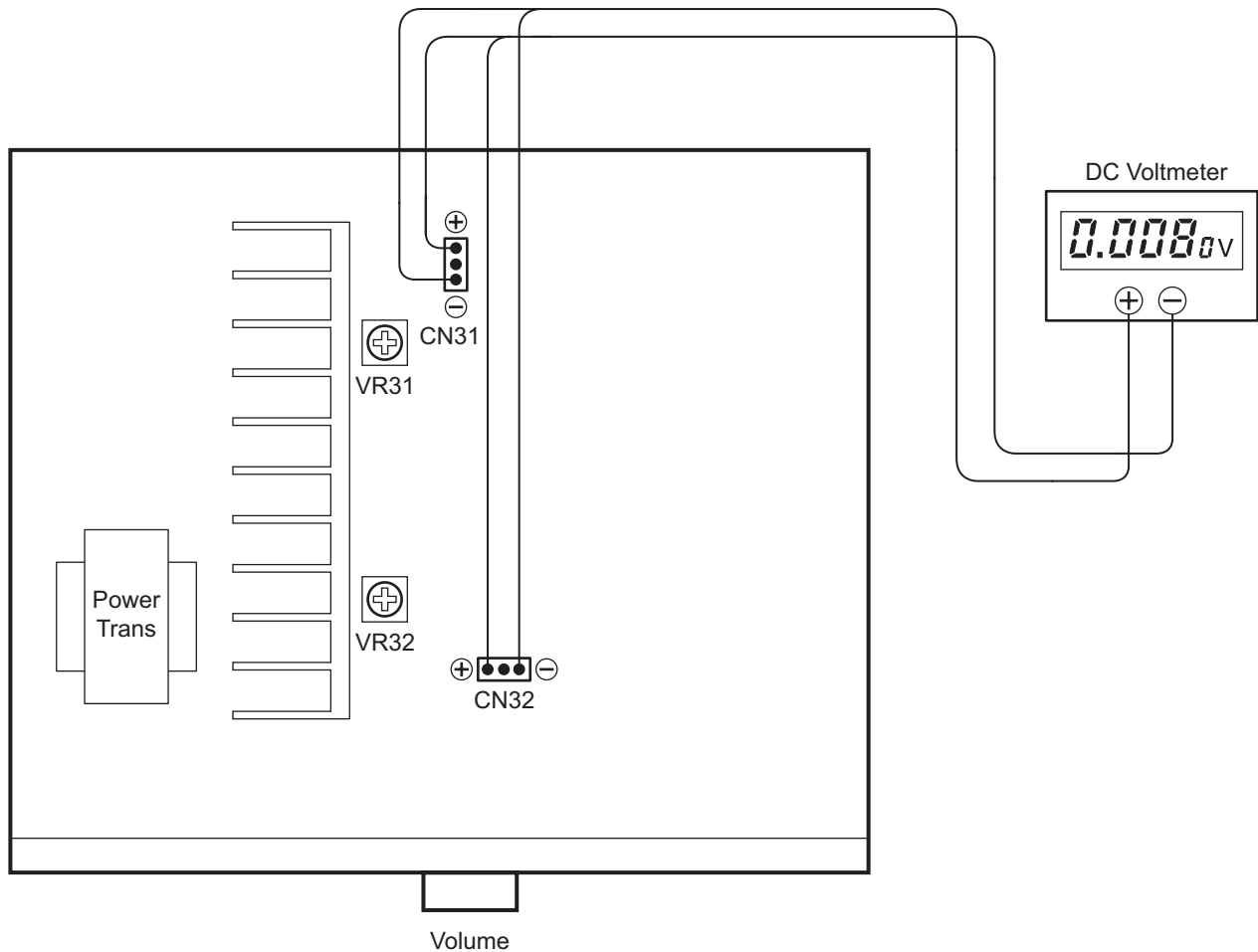
Required measurement equipment: DC Voltmeter

1. Setup

- (1) Place the unit at an ordinary position avoiding direct air flow from an air-conditioner or fan. Do the adjustment at a temperature between 15 °C (59 °F) and 30 °C (86 °F).
- (2) Set control as follows.
 - POWER switch → OFF ().
 - VOLUME control → fully counterclockwise ( min.)
 - SPEAKER terminals → open: do not connect the speakers, dummy load etc.

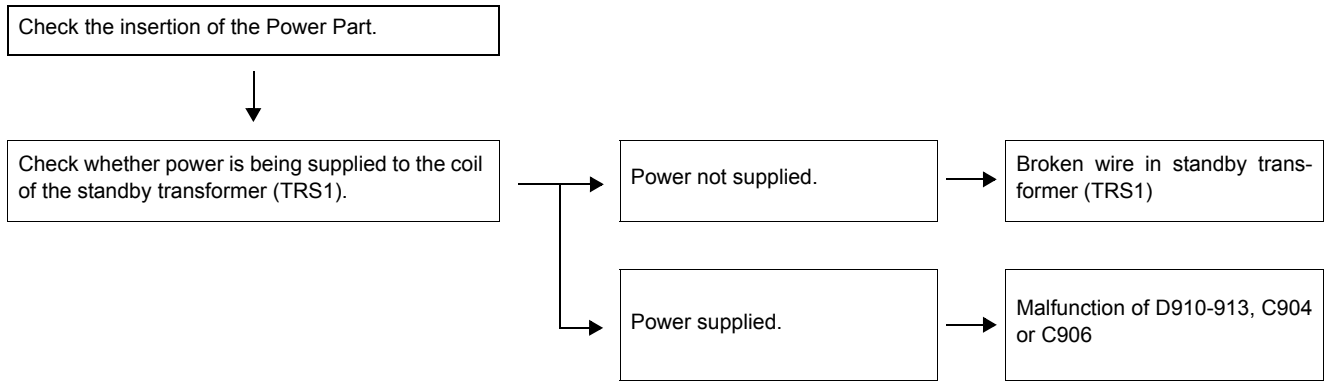
2. Adjustment

- (1) Remove top cover. And then connect DC Voltmeter to the test points CN31 and CN32 of CUP12147 Main P.W.B.
- (2) Connect power cord to AC wall outlet, and turn POWER switch "ON" ().
- (3) Right after power on, adjust VR31 and VR32 so that the DC voltmeter reads $10 \pm 1\text{mV}$.
- (4) Then after 2 minutes warm up adjust VR31 and VR32 so that the DC voltmeter reads $10 \pm 1\text{mV}$.
- (5) And after 10 minutes warm up adjust VR31 and VR32 so that the DC voltmeter reads $10 \pm 0.5\text{mV}$.



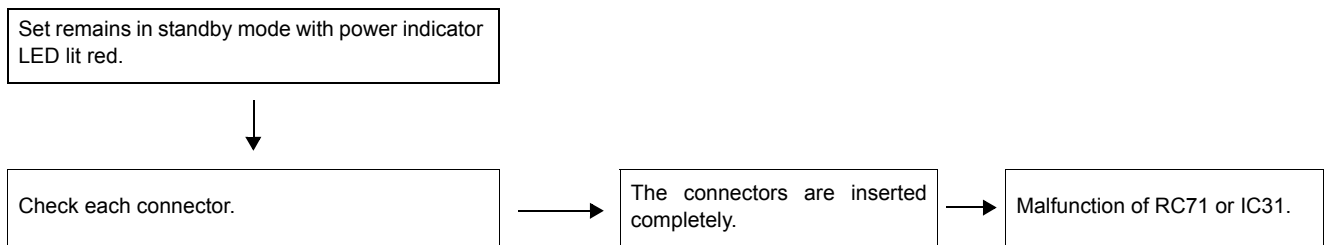
TROUBLE SHOOTING

1. The power can not be turned on. (Power indication LED does not light.)

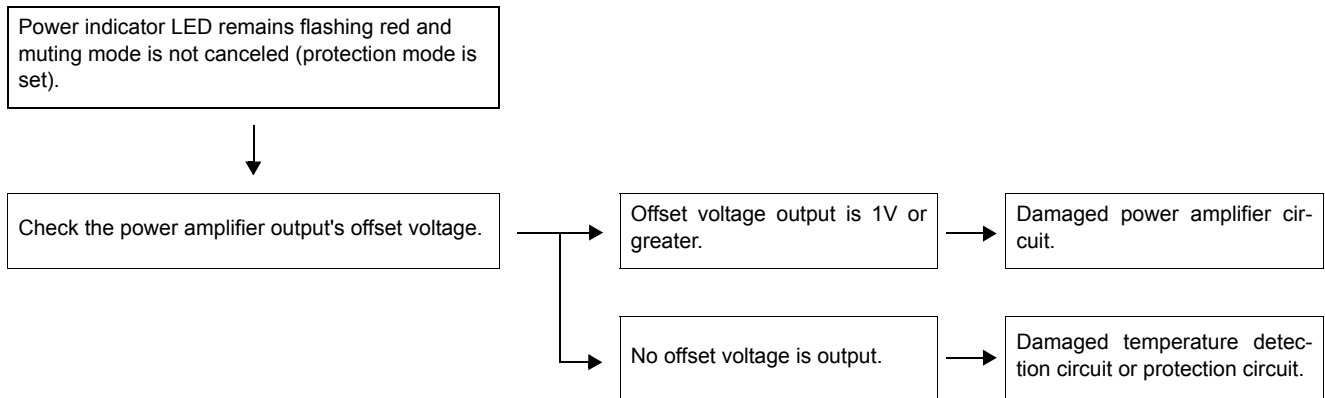


2. The power turned on, but a sound does not output normally. (Both channels)

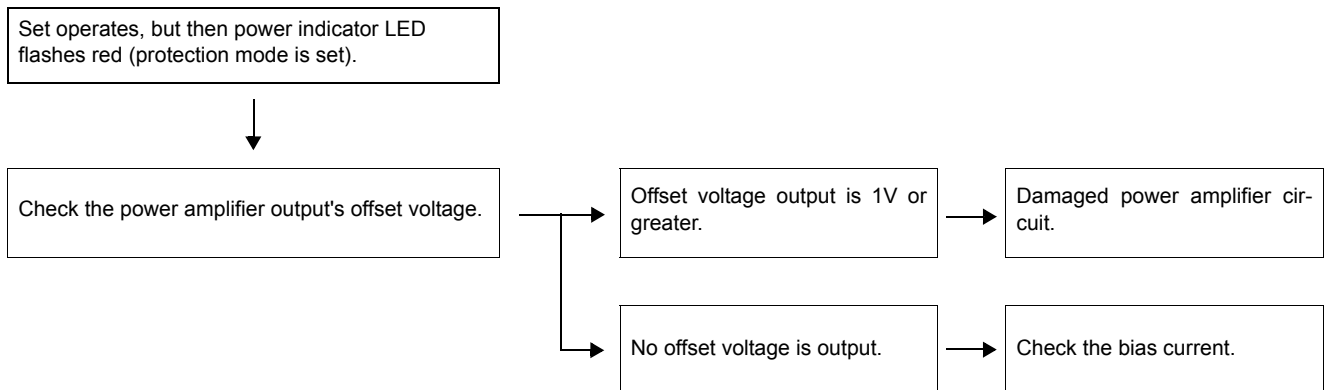
2.1.



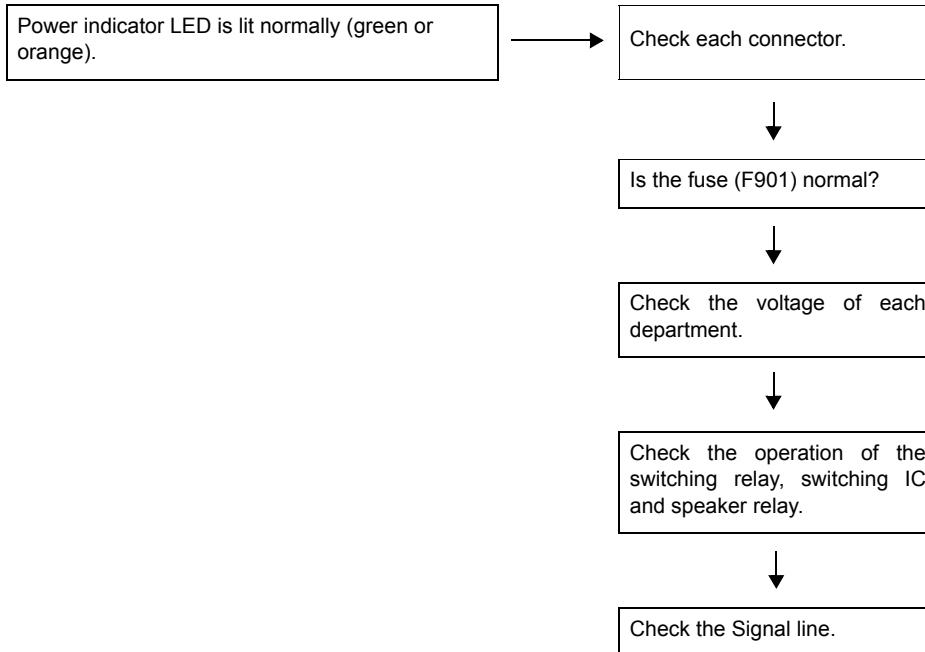
2.2.



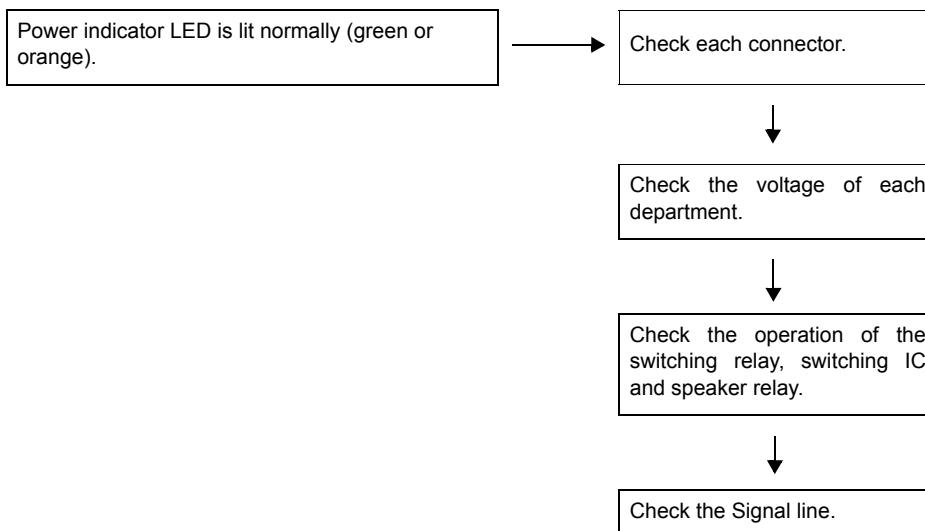
2.3.



2.4.



3. The power turned on, but a sound does not output normally. (Single channel)

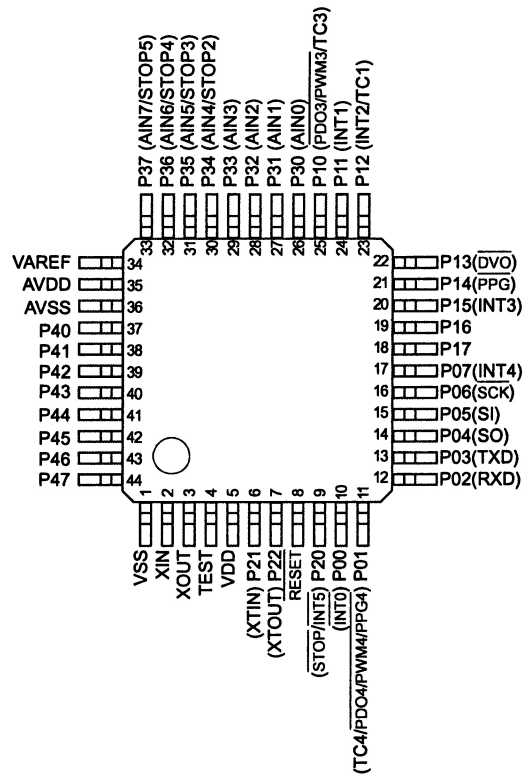


SEMICONDUCTORS

Only major semiconductors are shown, general semiconductors etc. are omitted to list.

1. IC's

TMP86FH47AUG (IC51)

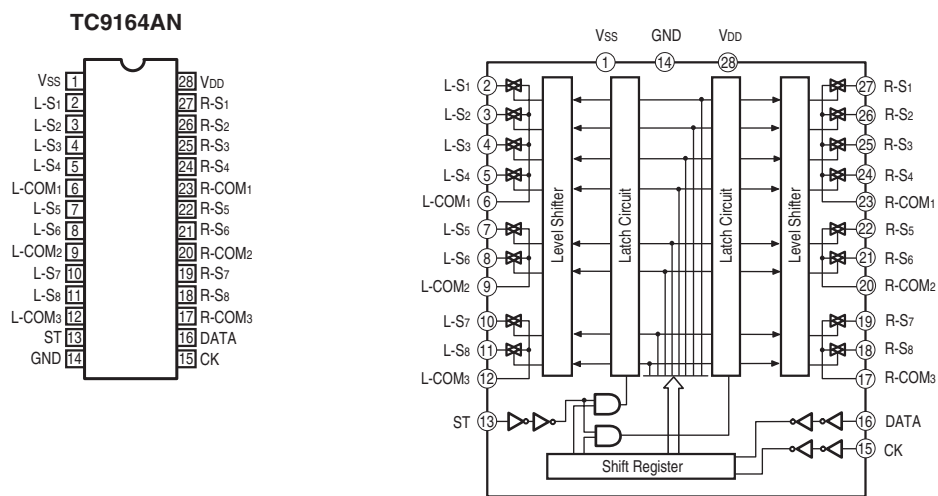


TMP86FH47AUG Terminal Function

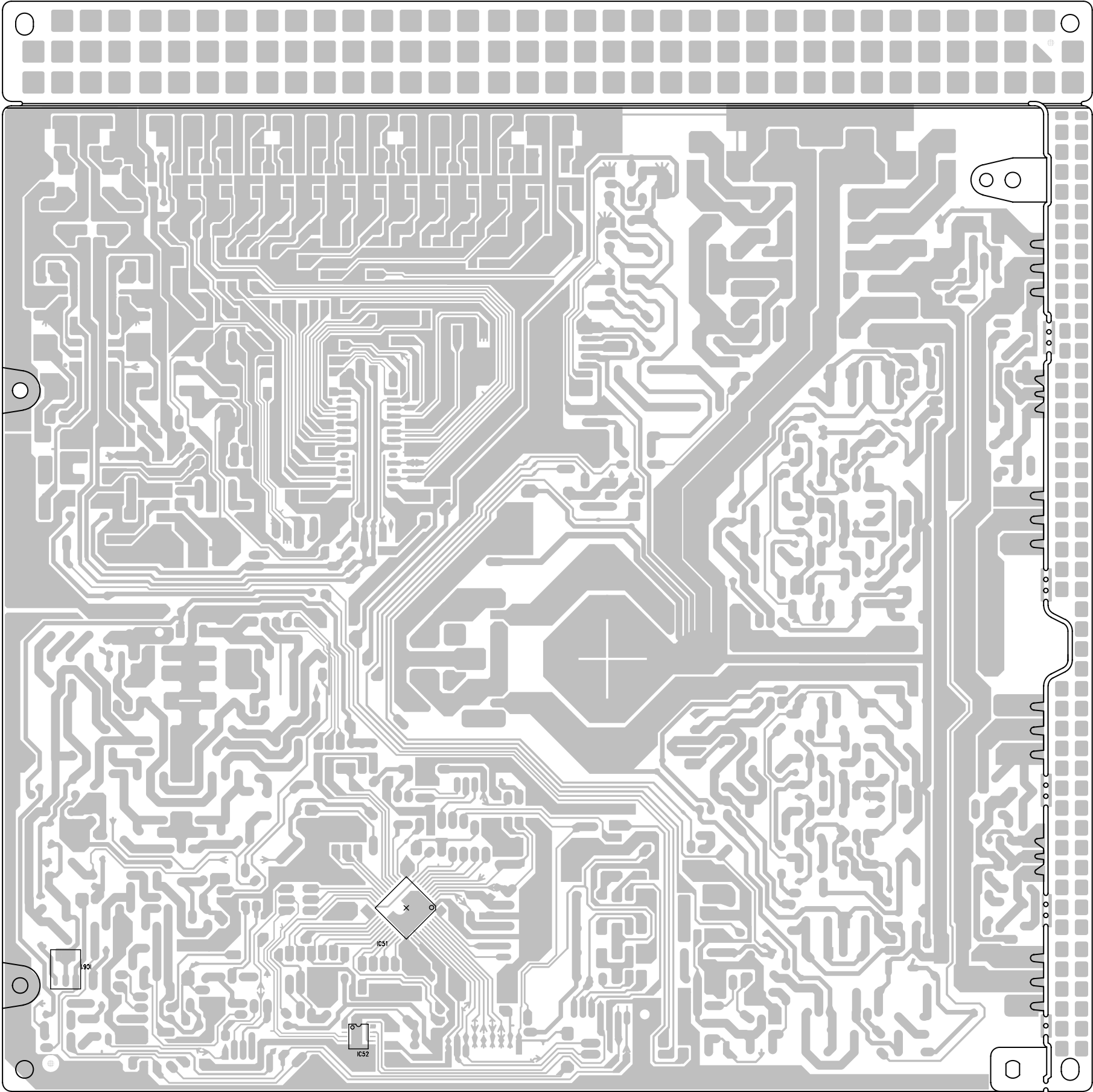
Pin No.	Port Name			I/O	Function
1	VSS				VSS
2	XIN				X IN
3	XOUT				X OUT
4	TEST				TEST
5	VDD				VDD
6	P21	XTIN		O	MUTE/STANDBY LED
7	P22	XTOUT		O	
8	RESET			I	RESET
9	P20	INT5	STOP	I	STOP ACT.
10	P00	INT0		I	PROTECTOR
11	P01	PDO4/PWM4/PPG4	TC4	O	P. DIRECT RELAY
12	P02	RXD		I	RXD
13	P03	TXD		O	TXD
14	P04	SO		O	DATA
15	P05	SI		O	STROBE
16	P06	SCK		O	CLK
17	P07	INT4		O	S. DIRECT RELAY
18	P17			I	P. DIRECT SW
19	P16			I	S. DIRECT SW
20	P15	INT3			AC RELAY 1
21	P14	PPG		O	VOLUME UP
22	P13	DVO		O	VOLUME DOWN
23	P12	INT2	TC1	I	REMOTE IN
24	P11	INT1		I	POWER OFF
25	P10	PDO3/PWM3	TC3		AC RELAY 2
26	P30	AIN0		AI	MODEL
27	P31	AIN1		AI	SP A/B

Pin No.	Port Name			I/O	Function
28	P32	AIN2		AI	REC. SEL
29	P33	AIN3		AI	FUNC. SEL
30	P34	AIN4	STOP2	O	H/P MUTE
31	P35	AIN5	STOP3	O	SP A
32	P36	AIN6	STOP4	O	SP B
33	P37	AIN7	STOP5		
34	VAREF				Vref
35	AVDD				AVDD
36	AVSS				AVSS
37	P40			O	PHONO
38	P41			O	CD
39	P42			O	TUNER
40	P43			O	AUX-1
41	P44			O	AUX-2
42	P45			O	AUX-3
43	P46			O	TAPE-1
44	P47			O	TAPE-2

TC9164AN (IC20)

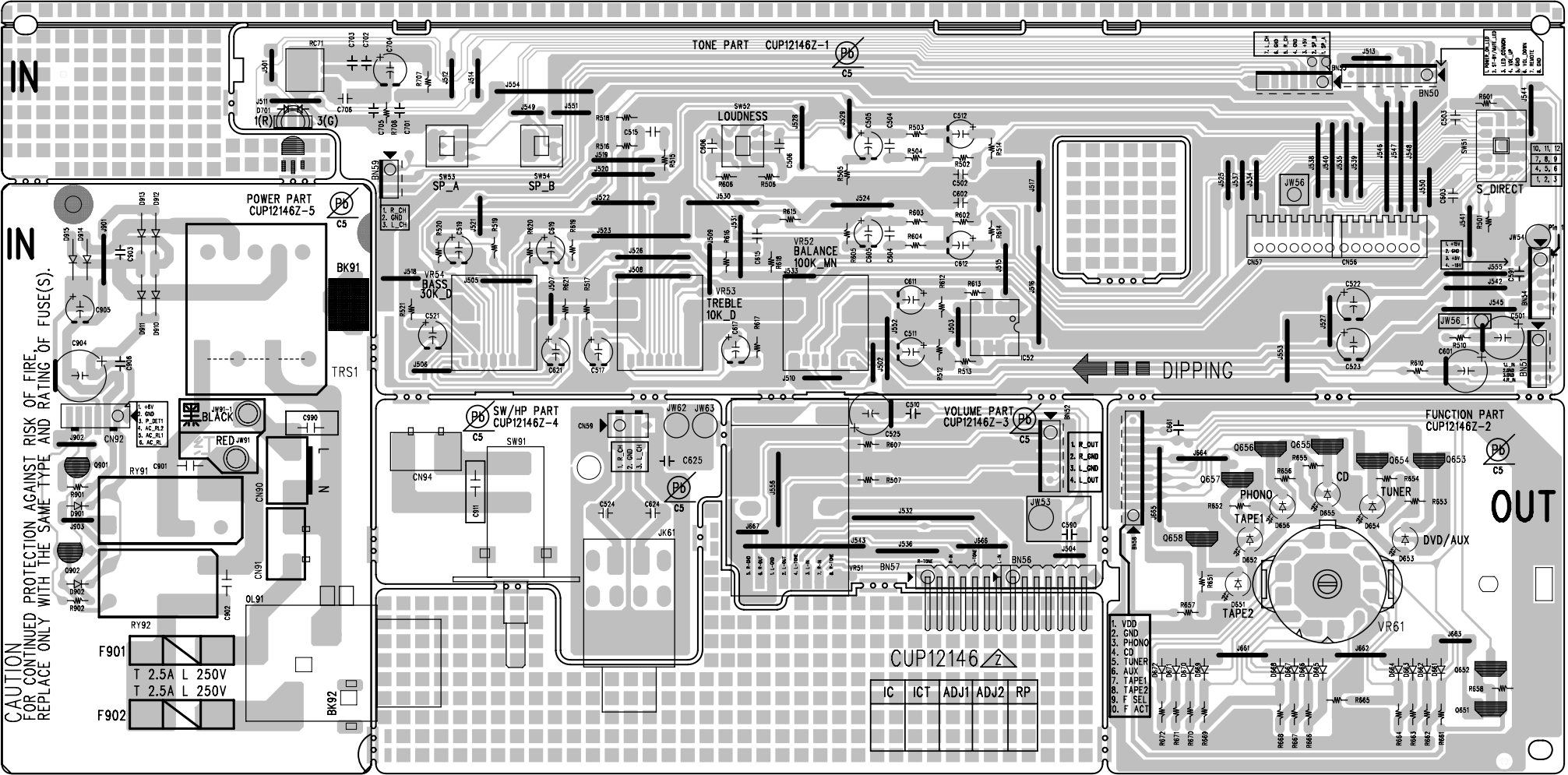


---MEMO---



FOIL SIDE

FRONT PCB UNIT



COMPONENT SIDE

---MEMO---

NOTE FOR PARTS LIST

- Parts for which "nsp" is indicated on this table cannot be supplied.
- When ordering of part, clearly indicate "I" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including General-purpose Carbon Film Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
- Not including General-purpose Carbon Chip Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.:	RN	14K	2E	182	G	FR
	Type	Shape and performance	Power	Resistance	Allowable error	Others
	↓	↓	↓	↓	↓	↓
	RD: Carbon RC: Composition RS: Metal oxide film RW: winding RN: Metal film RK: Metal mixture	2B: 1/8 W 2E: 1/4 W 2H: 1/2 W 3A: 1 W 3D: 2 W 3F: 3 W 3H: 5 W	F: ±1% G: ±2% J: ±5% K: ±10% M: ±20%	P: Pulse-resistant type NL: Low noise type NB: Non-burning type FR: Fuse-resistor F: Lead wire forming		

* Resistance

$\frac{1}{\uparrow} \frac{8}{\uparrow} \frac{2}{\uparrow} \Rightarrow 1800\text{ohm}=1.8\text{kohm}$
 Indicates number of zeros after effective number.
 2-digit effective number.

$\frac{1}{\uparrow} \frac{R}{\uparrow} \frac{2}{\uparrow} \Rightarrow 1.2\text{ohm}$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.
 : Units: ohm

● Capacitors

Ex.:	CE	04W	1H	3R2	M	BP
	Type	Shape and performance	Dielectric strength	Capacity	Allowable error	Others
	↓	↓	↓	↓	↓	↓
	CE: Aluminum foil electrolytic CA: Aluminium solid electrolytic CS: Tantalum electrolytic CQ: Film CK: Ceramic CC: Ceramic CP: Oil CM: Mica CF: Metallized CH: Metallized	0J: 6.3 V 1A: 10 V 1C: 16 V 1E: 25 V 1V: 35 V 1H: 50 V 2A: 100 V 2B: 125 V 2C: 160 V 2D: 200 V 2E: 250 V 2H: 500 V 2J: 630 V	F: ±1% G: ±2% J: ±5% K: ±10% M: ±20% Z: ±80% P: +100% C: ±0.25pF D: ±0.5pF =: Others	HS: High stability type BP: Non-polar type HR: Ripple-resistant type DL: For charge and discharge HF: For assuring high frequency U: UL part C: CSA part W: UL-CSA part F: Lead wire forming		

* Capacity (electrolyte only)

$\frac{2}{\uparrow} \frac{2}{\uparrow} \frac{2}{\uparrow} \Rightarrow 2200 \mu F$
 Indicates number of zeros after effective number.
 2-digit effective number.
 • Units: μF .

$\frac{2}{\uparrow} \frac{R}{\uparrow} \frac{2}{\uparrow} \Rightarrow 2.2 \mu F$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R
 • Units: μF .

* Capacity (except electrolyte)

$\frac{2}{\uparrow} \frac{2}{\uparrow} \frac{2}{\uparrow} \Rightarrow 2200\text{pF}=0.0022 \mu F$
 Indicates number of zeros after effective number.
 (More than 2)
 2-digit effective number.
 • Units:pF

$\frac{2}{\uparrow} \frac{2}{\uparrow} \frac{1}{\uparrow} \Rightarrow 220\text{pF}$
 Indicates number of zeros after effective number.
 (0 or 1)
 2-digit effective number.
 • Units:pF

- When the dielectric strength is indicated in AC,"AC" is included after the dielectric strength value.

PARTS LIST OF PCB UNIT

* Parts for which "nsp" is indicated on this table cannot be supplied.

* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

MAIN PCB UNIT ASS'Y

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	SEMICONDUCTORS GROUP						
	IC10	00D9430198207	IC NJM2068DD		HVINJM2068DD		
	IC20	00D9430198401	IC TC9164AN		HVITC9164AN		
	IC51	943243100670D	CVIANAM1468A MICOM PMA510AE		IC U-COM PMA510AE (CVITMP86FH47BUG)		
	IC52	00D9430196500	IC LB1930M		CVILB1930M		
⚠	IC61	00D9430038902	IC 1117S-3.3V		HVILM1117S-3V3		
	IC91	00D9430200302	IC MC7812C		HVIMC7812C		
	IC92	00D9430198304	IC NJM7806FA		HVINJM7806FA		
	Q201,202	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q301-304	00D9430198906	TR KTC3200GR		HVTKT3200GRT		
	Q307-310	00D9430198906	TR KTC3200GR		HVTKT3200GRT		
	Q311,312	00D9430006206	TR KTA1268GR		HVTKA1268GRT		
	Q313,314	00D9430198702	TR KTA1024Y		HVKTA1024YT		
	Q315,316	00D9430199002	TR KTC3206YA		HVKTC3206YAT		
⚠	Q317,318	00D9430198809	TR KTC3114A		HVTKTC3114A		
⚠	Q319,320	00D9430200700	TR 2SD2083P		CVT2SD2083P-OKM		
	Q321,322	00D9430197004	TR 2SD1383P		CVT2SB1383P-OKM		
	Q323,324	00D9430198906	TR KTC3200GR		HVTKT3200GRT		
	Q325	00D9430006206	TR KTA1268GR		HVTKA1268GRT		
	Q326	00MHT600141B1	TR KTA1271Y		HVTKTA1271YT		
	Q327-330	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q552	00D9430154200	TR KRA102M		HVTKRA102MT		
	Q553,554	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q556,557	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q558	00D9430072609	TR KTC3199Y		HVTKTC3199YT		
	Q559	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q565	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q601	00D9430108104	TR KTC2874B		HVTKTC2874BT		
	Q602	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q603	00D9430072609	TR KTC3199Y		HVTKTC3199YT		
	Q604,605	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q606-608	00D9430154200	TR KRA102M		HVTKRA102MT		
	Q609	00D9430072609	TR KTC3199Y		HVTKTC3199YT		
	Q610	00D9430154404	TR KTC3198Y		HVTKTC3198YT		
	Q611	00D9430154200	TR KRA102M		HVTKRA102MT		
	Q612	00D9430154404	TR KTC3198Y		HVTKTC3198YT		
	Q613	00D9430072609	TR KTC3199Y		HVTKTC3199YT		
	Q614	00D9430107804	TR KRC102M		HVTKRC102MT		
	Q902	00D9430059004	TR KSC2316Y		HVTKSC2316YT		
	Q903	00D9430198605	TR KSA916Y		HVTKSA916YT		
	D307,308	nsp	COPPER WIRE		C3A206		
	D309,310	00D9430196102	ZENER DIODE ZJ3.0B		HVDMTZJ3.0BT		
	D311,312	00D9430182609	DIODE 1SS133		HVD1SS133MT		
	D313,314	00D9430196102	ZENER DIODE ZJ3.0B		HVDMTZJ3.0BT		
	D315-319	00D9430182609	DIODE 1SS133		HVD1SS133MT		
	D363,364	00D9430182609	DIODE 1SS133		HVD1SS133MT		
	D561	00D9430182609	DIODE 1SS133		HVD1SS133MT		

③ ④

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	D603	00D9430182502	DIODE 1N4003		CVD1N4003ST		
	D604-607	00D9430209400	DIODE 1N4003		CVD1N4003SRT		
	D608,609	00D9430182502	DIODE 1N4003		CVD1N4003ST		
	D610	00D9430196306	ZENER DIODE ZJ7.5B		HVDMTZJ7.5BT		
	D611	00D9430196209	ZENER DIODE ZJ4.7B		HVDMTZJ4.7BT		
	D612	00D9430182609	DIODE 1SS133		HVD1SS133MT		
	D613,614	nsp	COPPER WIRE		C3A206		
	D615	00D9430182609	DIODE 1SS133		HVD1SS133MT		
△	D901	943203003140S	DIODE FCH20A20		CVDFCH20A20		
△	D902	943203004970S	DIODE FRH20A20		CVDFRH20A20		
	D903-908	00D9430182502	DIODE 1N4003		CVD1N4003ST		
	D911,912	00D9430182502	DIODE 1N4003		CVD1N4003ST		
	D913,914	00D9430195909	ZENER DIODE ZJ16B		HVDMTZJ16BT		
	D915-917	00D9430209400	DIODE 1N4003		CVD1N4003SRT		
RESISTORS GROUP							
	R349-352	00D9430194201	CEMENT RES 0.22 ohm 5W K		CRF5EKR22H		
	R370	00D9430200409	METAL OXIDE RES 390 ohm 1W J		CRG1ANJ391H		
	R372	00D9430200409	METAL OXIDE RES 390 ohm 1W J		CRG1ANJ391H		
	R373,374	00D9430200506	METAL OXIDE RES 10 ohm 1W J		CRG1ANJ100H		
	R904,905	00D2412387908	RD14B2E010JNBST		CRD00D2412387908-DE		
	R912	00D9430194308	FUSE RES 0.3 ohm 1/6W K		CRQ16AKR30T		
	VR31,32	00D9430196908	SEMI FIXED RESISTOR 500 ohm		CVN1GE501B01T		
CAPACITORS GROUP							
	C101-104	nsp	CERAMIC CAP 100pF 50V KB		CCKT1H101KB		
	C105,106	nsp	ELECT CAP 10uF 50V		CCEA1HH100T		
	C109,110	nsp	ELECT CAP 220uF 16V		CCEA1CH221T		
	C111,112	nsp	MYLAR CAP 6800pF 50V J		HCQ1H682JZT		
	C113,114	nsp	MYLAR CAP 0.018uF 50V J		HCQ1H183JZT		
	C115,116	nsp	MYLAR CAP 6800pF 50V J		HCQ1H682JZT		
	C117,118	nsp	ELECT CAP 10uF 50V		CCEA1HH100T		
	C119,120	nsp	MYLAR CAP 3900pF 50V J		HCQ1H392JZT		
	C121,122	nsp	ELECT CAP 22uF 50V		CCEA1HH220T		
	C123,124	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C201-214	nsp	CERAMIC CAP 22000pF 50V		CCBS1H223ZFT		
	C215	nsp	ELECT CAP 10uF 50V		CCEA1HH100T		
	C216	00D2544702956	ELECT CAP RFS-50V 100MG3		CCEA1HRFSA100E		
	C217	nsp	CERAMIC CAP 47pF 50V JC		CCCT1H470JC		
	C235,236	nsp	CERAMIC CAP 0.022uF 50V ZF		CCFT1H223ZF		
	C301,302	00D2544703751	ELECT CAP RFS-50V 220MH3		CCEA1HRFSA220E		
	C303,304	nsp	CERAMIC CAP 220pF 50V KB		CCKT1H221KB		
	C305,306	nsp	CERAMIC CAP 1000pF 50V KB		HCBS1H102KBT		
	C309-312	00D2544569924	ELECT CAP RA3-25V 101MF3		CCEA1ERA38P101T		
	C313,314	nsp	CERAMIC CAP 5pF 50V CC		CCCT1H050CC		
	C315-318	nsp	MYLAR CAP 3900pF 50V J		HCQ1H392JZT		
	C319,320	00D2544703751	ELECT CAP RFS-50V 220MH3		CCEA1HRFSA220E		
	C321,322	nsp	CERAMIC CAP 15pF 50V JC		CCCT1H150JC		
	C323-326	00D2544664706	ELECT CAP RFS-63V 101MI6		CCEA1JRFSA101E		
	C327,328	nsp	CERAMIC CAP 1000pF 50V KB		CCKT1H102KB		
	C367	nsp	ELECT CAP 4.7uF 50V		CCEA1HH4R7T		
	C373-378	nsp	MYLAR CAP 0.047uF 50V J		HCQ1H473JZT		
	C379,380	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103Z		
	C381-384	00D2544569924	ELECT CAP RA3-25V 101MF3		CCEA1ERA38P101T		
	C553	nsp	ELECT CAP 100uF 16V		CCEA1CH101T		

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	C554,555	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103ZF		
	C556	nsp	ELECT CAP 100uF 16V		CCEA1CH101T		
	C557	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C558	nsp	ELECT CAP 100uF 16V		CCEA1CH101T		
	C602	nsp	ELECT CAP 22uF 50V		CCEA1HH220T		
	C603	00D9430188302	ELECT CAP 3300uF 16V		CCEA1CH332E		
	C604	nsp	ELECT CAP 470uF 10V		CCEA1AH471T		
	C605	nsp	ELECT CAP 10uF 50V		CCEA1HH100T		
	C606	nsp	ELECT CAP 1uF 50V		CCEA1HH1R0T		
	C607	nsp	ELECT CAP 2.2uF 50V		CCEA1HH2R2T		
	C608	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103ZF		
	C610	nsp	ELECT CAP 470uF 10V		CCEA1AH471T		
	C613	nsp	ELECT CAP 47uF 25V		CCEA1EH470T		
	C614	nsp	CERAMIC CAP 0.047uF 50V ZF		CCFT1H473ZF		
	C615	nsp	CERAMIC CAP 0.022uF 50V ZF		CCFT1H223ZF		
	C616	nsp	ELECT CAP 470uF 16V		CCEA1C471T		
	C901-903	nsp	METALLIZED CAP 0.1uF 100V J		CCME2A104JXT		
	C904,905	00D9430189408	ELECT CAP 8200uF 56V (LAO)		CCET56VLAO822N		
	C906,907	nsp	CERAMIC CAP 0.01uF 50V ZF		CCBS1H103ZFT		
	C908	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T		
	C909,910	00D9430188603	ELECT CAP 1000uF 25V		CCEA1EH102E		
	C911,912	nsp	ELECT CAP 100uF 25V		CCEA1EH101T		
	C915	nsp	METALLIZED CAP 0.1uF 100V J		CCME2A104JXT		
	C917-919	nsp	ELECT CAP 47uF 25V		CCEA1EH470T		
	C920	00D9430188603	ELECT CAP 1000uF 25V		CCEA1EH102E		
	C921	nsp	ELECT CAP 47uF 25V		CCEA1EH470T		
	C922	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
OTHERS PARTS GROUP							
	BN92	nsp	WIRE ASSY 2.0MM/650MM/6P		CWB2B906650EN		
	CN10	nsp	STRAIGHT WAFER 7PIN		CJP07GA19ZY		
	CN31,32	nsp	WAFER		CJP03GA01ZY		
	CN50	nsp	STRAIGHT WAFER 9PIN		CJP09GA19ZY		
	CN51	nsp	STRAIGHT WAFER 4PIN		CJP04GA19ZY		
	CN52	nsp	STRAIGHT WAFER 4PIN		CJP04GA01ZY		
	CN53	nsp	STRAIGHT WAFER 7PIN		CJP07GA19ZY		
	CN54	nsp	STRAIGHT WAFER 5PIN		CJP05GA01ZY		
	CN58	nsp	STRAIGHT WAFER 11PIN		CJP11GA19ZY		
	CN93	nsp	STRAIGHT WAFER 3PIN		CJP03GA01ZY		
	CN95	nsp	STRAIGHT WAFER 3PIN		CJP03GA90ZY		
	JK11	00D9430191700	2P JACK,IN/OUT		CJJ4N034Z		
	JK21-23	00D9430191807	4P JACK,IN/OUT		CJJ4P028Z		
	JK24	00D9430191700	2P JACK,IN/OUT		CJJ4N034Z		
	JK31	00D9430191904	SPEAKER TERMINAL		CJJ5Q006Z		
	L101,102	00D9430193601	TOROIDAL TRANS		CLU9S004Z		
	L301,302	00D9430193106	SPEAKER COIL (0.5UH)		CLEY0R5KAK		
	RY31-33	00D9430195006	RELAY G5PA-28		CSL3A018ZE		
	RY51,52	00D9430195103	RELAY		CSL4A015ZU		
	TH09	00D9430194609	POSISTOR PTFM04BB222QN34		CRTPTFM04BB222Q		

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	X501	00D9430196403	CERAMIC RESONATOR CSTLS4M19G56-A0		CVFCSTLS4M19G56-A0		
		nsp	BRACKET		CMD1A596		
		nsp	HEAT SINK BRACKET		CMD1A597		
		nsp	HEAT SINK		CMY1A268		
		nsp	HEAT SINK		CMY2A048		
		nsp	HEAT SINK		CMY1A218		
		nsp	HEAT SINK		CMY1A043		
		nsp	SPECIAL SCREW		CHD1A012R		
		nsp	SCREW 3X6		CBT3+6JR		
		nsp	SCREW 3X8		CTW3+8JR		
		nsp	SCREW 3X8		CTB3+8J		
		nsp	SCREW 3X8		CTB3+8JR		

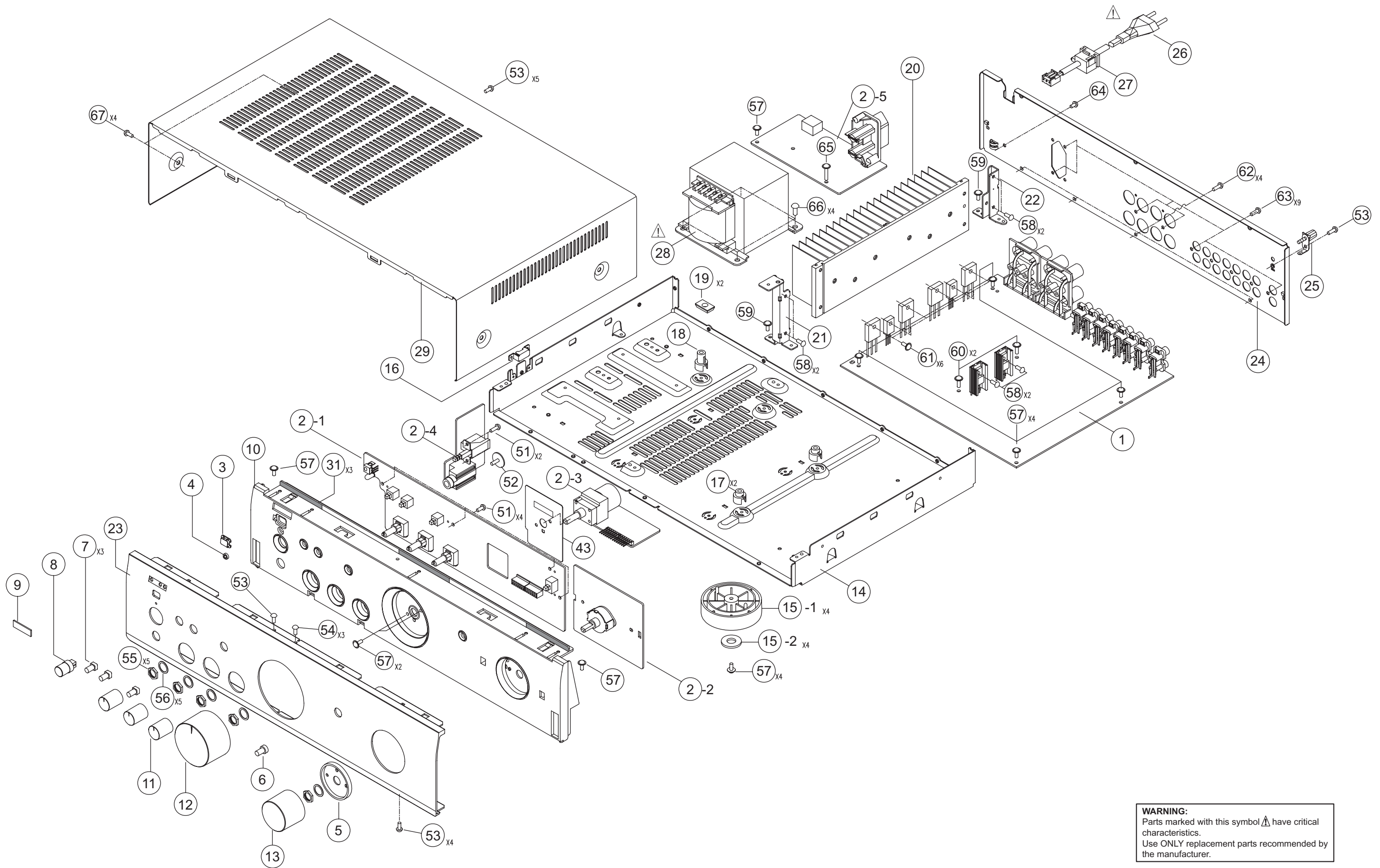
FRONT PCB UNIT ASS'Y


Ref No.	Part No.	Part Name	Remark		Q'ty	New
SEMICONDUCTORS GROUP						
IC52	00D9430198207	IC NJM2068DD		HVINJM2068DD		
Q651-658	00D9430154200	TR KRA102M		HVTKRA102MT		
Q901,902	00D9430108104	TR KTC2874B		HVTKTC2874BT		
D651-656	00D9430195705	LED SEL2915A	Orange	CVDSEL2915A		
D661-672	00D9430182609	DIODE 1SS133		HVD1SS133MT		
D680,681	00D9430182609	DIODE 1SS133		HVD1SS133MT		
D682686	00D9430182502	DIODE 1N4003		CVD1N4003ST		
D701	00D9430198100	LED SML1216W	Red/Green	HVDSML1216W		
D910	00D9430182502	DIODE 1N4003		CVD1N4003ST		
RESISTORS GROUP						
VR51	00D9430197305	MOTOR VR		CVV9Y13B503Z		
VR52	00D9430197101	VARIABLE RES RA1450GOE0D-HA1		CVV2X13M104Z		
VR53	00D9430197208	TONE VR D103-Q1-FB200B1		CVV2X18D103Z		
VR54	00D9430197208	TONE VR D303-Q1-FB200B1		CVV2X18D303Z		
VR61	00D9430195200	ROTARY SW SSRM1C7800		CSRCA001Z		
CAPACITORS GROUP						
C501	00D2544702956	ELECT CAP RFS-50V 100MG3		CCEA1HRFSA100E		
C502	nsp	CERAMIC CAP 39pF 50V JC		CCCT1H390JC		
C503	nsp	MYLAR CAP 3300pF 50V J		HCQI1H332JZT		
C504	nsp	MYLAR CAP 0.047uF 50V J		HCQI1H473JZT		
C505	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T		
C510	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103ZF		
C511	nsp	ELECT CAP 4.7uF 50V		CCEA1HH4R7T		
C512	nsp	ELECT CAP 10uF 50V		CCEA1HH100T		
C515	nsp	MYLAR CAP 0.033uF 50V J		HCQI1H333JZT		
C517	nsp	ELECT CAP 0.22uF 50V		CCEA1HHR22T		
C519	nsp	ELECT CAP 0.1uF 50V		CCEA1HH0R1T		
C521	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T		
C522,523	nsp	ELECT CAP 100uF 25V		CCEA1EH101T		
C524	nsp	CERAMIC CAP 1000PF 50V K		CCKT1H102KB		
C525	nsp	ELECT CAP 22uF 16V		CCEA1CN220T		
C591	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
C601	00D2544702956	ELECT CAP RFS-50V 100MG3		CCEA1HRFSA100E		
C602	nsp	CERAMIC CAP 39pF 50V JC		CCCT1H390JC		
C603	nsp	MYLAR CAP 3300pF 50V J		HCQI1H332JZT		
C604	nsp	MYLAR CAP 0.047uF 50V J		HCQI1H473JZT		
C605	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T		
C606	nsp	MYLAR CAP 0.033uF 50V J		HCQI1H333JZT		
C611	nsp	ELECT CAP 4.7uF 50V		CCEA1HH4R7T		
C612	nsp	ELECT CAP 10uF 50V		CCEA1HH100T		
C615	nsp	MYLAR CAP 0.033uF 50V J		HCQI1H333JZT		
C617	nsp	ELECT CAP 0.22uF 50V		CCEA1HHR22T		
C619	nsp	ELECT CAP 0.1uF 50V		CCEA1HH0R1T		
C621	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T		
C624	nsp	CERAMIC CAP 1000PF 50V K		CCKT1H102KB		
C625	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
C661	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103ZF		
C650,651	nsp	CERAMIC CAP 0.0047UF 2.5KV		KCKDKS472ME		
C652	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104Z		
C653		ELECT CAP 1000uF 25V		CCEA1EH102E		

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	C654	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T		
	C655	nsp	CERAMIC CAP 39pF 50V JC		CCCT1H390JC		
	C656	nsp	MYLAR CAP 3300pF 50V J		HCQI1H332JZT		
	C657	nsp	MYLAR CAP 0.047uF 50V J		HCQI1H473JZT		
	C658	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T		
	C659	nsp	MYLAR CAP 0.033uF 50V J		HCQI1H333JZT		
	C660,661	nsp	CERAMIC CAP 0.01uF 50V ZF		CCBS1H103ZFT		
	C701-703	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103ZF		
	C704	nsp	ELECT CAP 220uF 16V		CCEA1CH221T		
	C705	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103ZF		
	C706	nsp	CERAMIC CAP 47pF 50V JC		CCCT1H470JC		
OTHERS PARTS GROUP							
	BK91	nsp	BRACKET, PCB(A)		CMD1A188		
	BN50		WIRE ASS'Y 2.0MM/150MM/9P		CWB2B009150EN		
	BN51	nsp	WIRE ASS'Y 2.0MM/220MM/4P		CWZPMA500AEBN51		
	BN52	nsp	WIRE ASS'Y 2.5MM/80MM/4P		CWZPMA500AEBN52		
	BN53	nsp	WIRE ASS'Y 2.0MM/270MM/7P		CWB2B907270EN		
	BN54	nsp	WIRE ASS'Y		CWB1C905220BM		
	BN56,57	nsp	WAFER		CJP07GF107ZY		
	BN58	nsp	WIRE ASS'Y		CWB2B011100EN		
	BN59	nsp	WIRE ASS'Y		CWB2B903080EN		
	CN56,57	nsp	WAFER		CJP07HA37ZM		
	CN59	nsp	WAFER, STRAIGHT, 3PIN		CJP03GA19ZY		
	CN90	nsp	WAFER		CJP02KA060ZY		
	CN91	nsp	WAFER		CJP02GA89ZY		
	CN92	nsp	WAFER, STRAIGHT, 6PIN		CJP06GA19ZY		
	CN94	nsp	WAFER		CJP02GA89ZY		
⚠	F901,902	00D9430199109	FUSE 2.5A/250V		KBA2C2500TLEY		
	JK61	00D9430198003	PHONE JACK		HJJ2E018Z		
	JW54	nsp	WIRE ASS'Y(1P)		CWE8202080RV		
	JW62,63	nsp	WIRE ASS'Y		CWE8202110RV		
	JW91	nsp	WIRE ASS'Y (RED/N.C/BLACK)		CWB4FA32300PU		
⚠	OL91	00D9430199206	AC OUTLET(EUR/1P)		KJJ7A022Z		
	RC71	00D9430194706	REMOTE SENSOR (KSM603TH2E)		CRVKSM603TH2E		
⚠	RY91	00D9430200807	RELAY, G2R-14 (DC 5V)		CSL2C002ZE		
⚠	RY92	00D9430194900	RELAY, G5PA-1 (DC 6V)		CSL1E002ZE		
	SW51	00D9430194803	PUSH SW (JPS-4281SA)		CSH2D013Z		
	SW52-54	00D9430199400	PUSH SW(220014)		KSH2B003Z		
	SW91	00D9430140609	PUSH SW (CSH1A010ZV)		CSH1A010ZV		
⚠	TRS1	00D9430193203	SUB TRANSFORMER		CLT5I008ZE		
		nsp	FUSE HOLDER		KJCFC5S		

---MEMO---

EXPLODED VIEW



WARNING:
Parts marked with this symbol  have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

---MEMO---

PARTS LIST OF EXPLODED VIEW

* Parts for which "nsp" is indicated on this table cannot be supplied.

* P.W.B. ASS'Y for which "nsp" is indicated on this table cannot be supplied. When repairing the P.W.B. ASS'Y, check the board parts table and order replacement parts.

* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate the following destinations.

BK : Black model

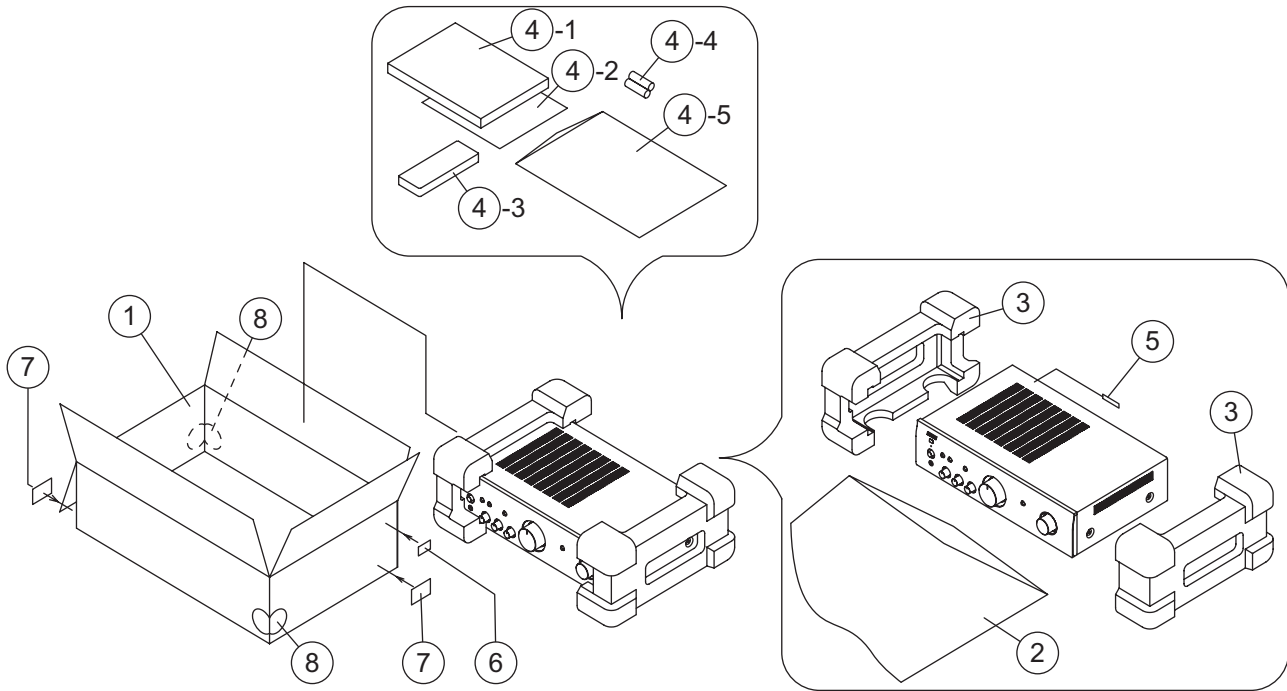
SP : Premium silver model

	Ref No.	Part No.	Part Name	Remarks		Q'ty	New
	1	nsp	MAIN PCB ASSY		CUP12147B	1	*
	2	nsp	FRONT PCB ASSY		CUP12146B	1	*
	2-1	-	FRONT PCB				
	2-2	-	INPUT PCB				
	2-3	-	VOLUME PCB				
	2-4	-	JACK PCB				
	2-5	-	POWER PCB				
	3	00D9430190206	REMOCON WINDOW	BK	CGU1A396A8	1	
	3	00D9430190109	REMOCON WINDOW	SP	CGU1A396	1	
	4	00D9430189903	LENS		CGL1A254	1	
	5	943423004870D	FUNCTION LENS	BK	CGL1A255Z	1	
	5	00D9430190002	FUNCTION LENS	SP	CGL1A255Y	1	
	6	00D9430187109	DIRECT KNOB	BK	CBC1A154B28	1	
	6	00D9430187206	DIRECT KNOB	SP	CBC1A154RGG45	1	
	7	00D9430201505	PUSH KNOB	BK	CBC1A155B28	3	
	7	00D9430201602	PUSH KNOB	SP	CBC1A155RGG45	3	
	8	00D9430179502	POWER KNOB	BK	CGK1A124ZA	1	
	8	00D9430179609	POWER KNOB	SP	CGK1A124YA	1	
	9	00D1310158007	DENON BADGE	BK	CGB1A140U	1	
	9	00D1310158010	DENON BADGE	SP	CGB1A140T	1	
	10	00D9430201709	INNER PANEL	BK	CGW2A425B28	1	
	10	00D9430201806	INNER PANEL	SP	CGW2A425RGG45	1	
	11	00D9430188001	ROTARY KNOB	BK	CBN1A211B28	3	
	11	00D9430188108	ROTARY KNOB	SP	CBN1A211RGG45	3	
	12	412510040016D	VOLUME KNOB	BK	CBN1A228	1	*
	12	412510040009D	VOLUME KNOB	SP	CBN1A228MBC73	1	*
	13	412510041019D	INPUT KNOB	BK	CBN1A229	1	*
	13	412510041002D	INPUT KNOB	SP	CBN1A229MBC73	1	*
	14	nsp	BOTTOM CHASSIS		CUA1A269	1	
	15-1	nsp	FOOT		CKL1A093	4	
	15-2	nsp	FOOT CUSHION		CHG2A289	4	
	16	nsp	SCREW COVER		CMD1A495	1	
	17	nsp	PCB HOLDER		CHE170	2	
	18	nsp	PCB HOLDER		CHE1A030	1	
	19	nsp	RUBBER		CHG1A113	2	
	20	nsp	HEAT SINK		CMY1A268	1	
	21	nsp	HEAT SINK BRACKET		CMD1A597	1	
	22	nsp	BRACKET		CMD1A596	1	
	23	943402004790D	FRONT PANEL	BK	CKM1A179WC45	1	*
	23	943402004800D	FRONT PANEL	SP	CKM1A179VC62	1	*
	24	943406004810D	REAR PANEL		CKF1A317W	1	*
	25	00D9430199303	GROUND TERMINAL		KMA1A006	1	
	26	00D9430180407	AC CORD		CJA2B043ZA	1	
	27	nsp	AC CORD BUSHING		KHR1A028	1	
	28	00D9430193407	POWER TRANSFORMER	CLT5R037ZE	CLT5R037ZE	1	
	29	00D9430192408	TOP CABINET	BK	CKC1A176S56	1	
	29	00D9430192301	TOP CABINET	SP	CKC1A176S55	1	
	31	nsp	HEMELON TAPE		CHS1A032	5	
	★ 32	00D9430164203	RING FERRITE		CLZ9W003Z	1	

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	Ref No.	Part No.	Part Name	Remarks		Q'ty	New
	★ 33	nsp	CLAMPER		CHR301	15	
	★ 34	nsp	LOCKER		CRE1A037	8	
	★ 35	nsp	CLOTH TAPE(W20)		CHS1A155		
	★ 37	nsp	BUTYL TAPE(W15)		CMX1A189		
	★ 38	nsp	NITOFLOX TAPE(W15)		CHS1A157		
	★ 40	nsp	NITOFLOX TAPE(W25)		CHS1A158		
	★ 41	nsp	BUTYL TAPE(W25 T2)		CMX1A191		
	★ 42	nsp	NITOFLOX TAPE(W25)		CHS1A158		
	★ 43	nsp	SHIELD PLATE		CMC2A307	1	
SCREWS							
	51	nsp	SCREW 3X10		CTB3+10JR	6	
	52	nsp	SCREW 3X10		CTWS3+10GR	1	
	53	nsp	DOT SCREW 3X8	BK	CTBD3+8JFZR	11	
	53		DOT SCREW 3X8	SP	CTBD3+8JFN	11	
	54	nsp	SCREW 3X10	BK	CTB3+10JFZR	3	
	54		SCREW 3X8	SP	CTB3+8JFN	3	
	55	nsp	NUT(M9)			4	
	56	nsp	WASHER			4	
	57	nsp	SCREW 3X8		CTW3+8JR	14	
	58	nsp	SCREW 3X8		CTB3+8JR	8	
	59	nsp	SCREW 3X6		CTW3+6JR	2	
	60	nsp	SCREW 3X12		CTW3+12JR	2	
	61	00D9430191001	SPECIAL SCREW		CHD1A012R	6	
	62	nsp	DOT SCREW 3X8		CTBD3+8JFZR	4	
	63	nsp	DOT SCREW 3X10		CTBD3+10GFZR	9	
	64	nsp	SCREW 3X6		CTB3+6FFZR	1	
	65	nsp	SCREW 3X18		CTW3+18JR	1	
	66	nsp	SCREW 4X8		CTB4+8FR	4	
	67	nsp	SCREW 4X6	BK	CTWD4+6FFZR	4	
	67	nsp	SCREW 4X6	SP	CTWD4+6FFN	4	

PACKING VIEW



PARTS LIST OF PACKING & ACCESSORIES

* Parts for which "nsp" is indicated on this table cannot be supplied.

* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

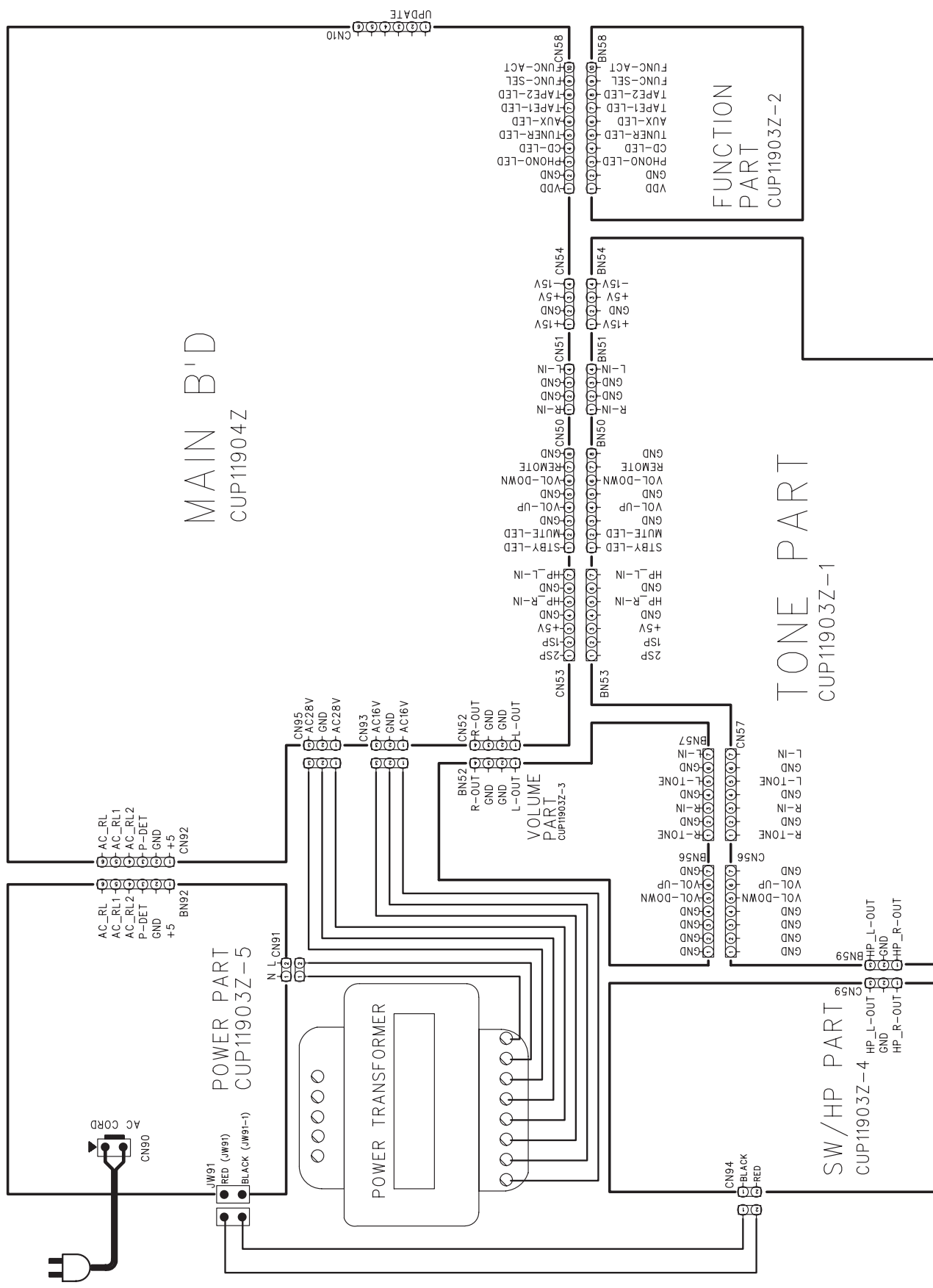
Note: The symbols in the column "Remarks" indicate the following destinations.

BK : Black model

SP : Premium silver model


Ref No.	Part No.	Part Name	Remarks		Q'ty	New
1	943531004820D	CARTON BOX		CPG2A818W	1	*
2	nsp	POLY BAG(Set)		CPB1A013Y	1	
3	00D9430194707	SNOW PAD		CPS1A747	2	
4-1	943541004830D	INSTRUCTION MANUAL		CQX1A1420Z	1	*
4-2	nsp	S.S.LIST(EX)		CQE1A226R	1	
4-3	943307004880D	REMOCON	BK	CARTPMA510AEBK	1	*
4-3	943307004890D	REMOCON	SP	CARTPMA510AESP	1	*
4-4	nsp	BATTERY (SIZE 'AAA')		CABR03PPB	2	
4-5	nsp	POLY BAG		CPB1061W	1	
5	nsp	SERIAL NO LABEL		CQB1A622	1	
6	nsp	POS LABEL	BK	CQB1A773W	1	*
6	nsp	POS LABEL	SP	CQB1A773V	1	*
7	nsp	CONTROL LABEL		CQB1A627	2	*
8	00D9430194804	COLOR LABEL	SP	CQB1A676	2	

WIRING DIAGRAM



NOTE FOR SCHEMATIC DIAGRAM

WARNING:

Parts marked with this symbol  have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is defective.

WARNING:

DO NOT return the unit to the customer until the problem is located and corrected.

NOTICE:

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM

M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD.

P=MICRO-MICRO FARAD

EACH VOLTAGE AND CURRENT ARE MEASURED AT
NO SIGNAL INPUT CONDITION.

CIRCUIT AND PARTS ARE SUBJECT TO CHANGE
WITHOUT PRIOR NOTICE.

---MEMO---

