DENON

Ver. 8

Please refer to the MODIFICATION NOTICE.

SERVICE MANUAL

MODEL	JP	E3	E2	EK	E2A	E1C	E1K	EUT
PMA-710AE			✓			✓		

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.

S0279-0V08DM/DG1105

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 ⚠ 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 1MΩ or greater. If it is less, the set must be inspected and repaired.

CAUTION Concerning important safety parts

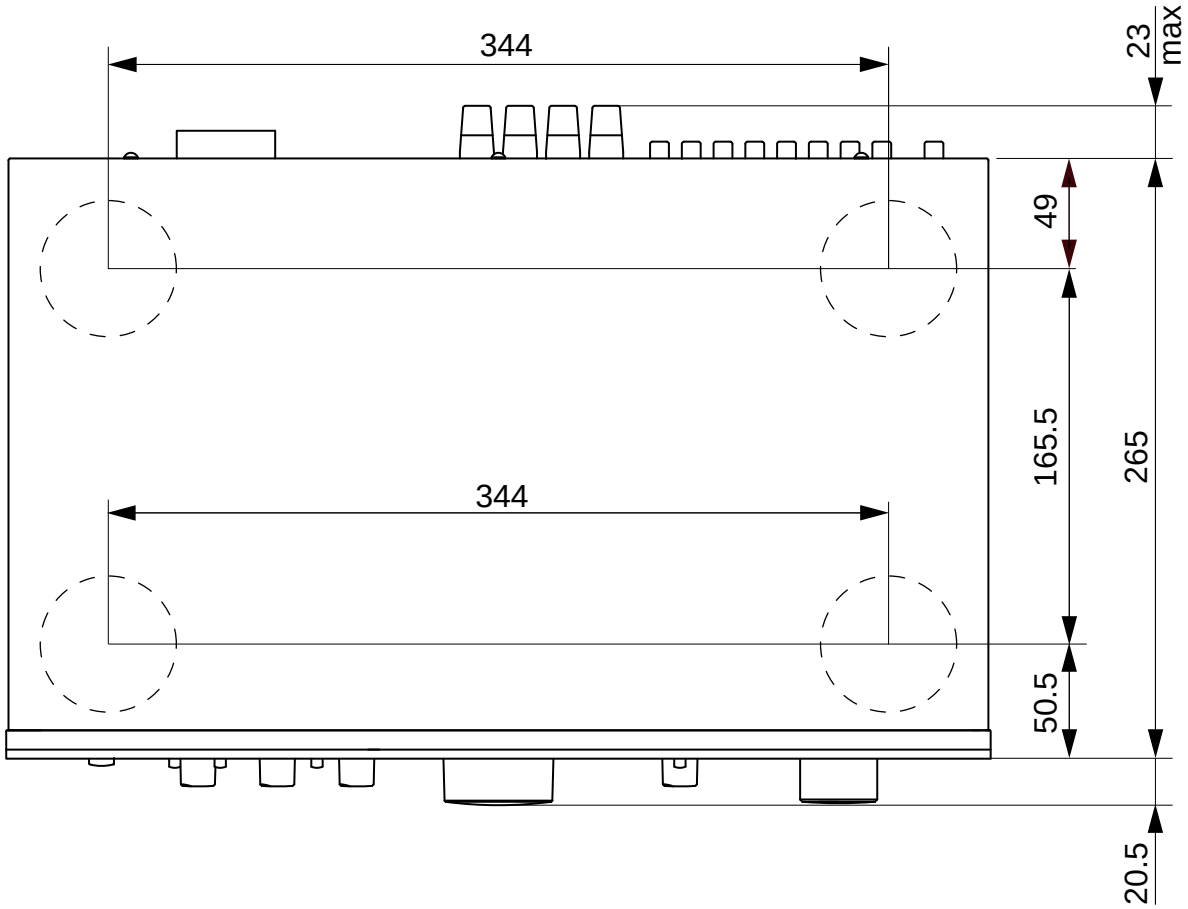
Many of the electric and structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and using replacement parts with higher ratings (rated power and withstand voltage) does not necessarily guarantee that safety performance will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

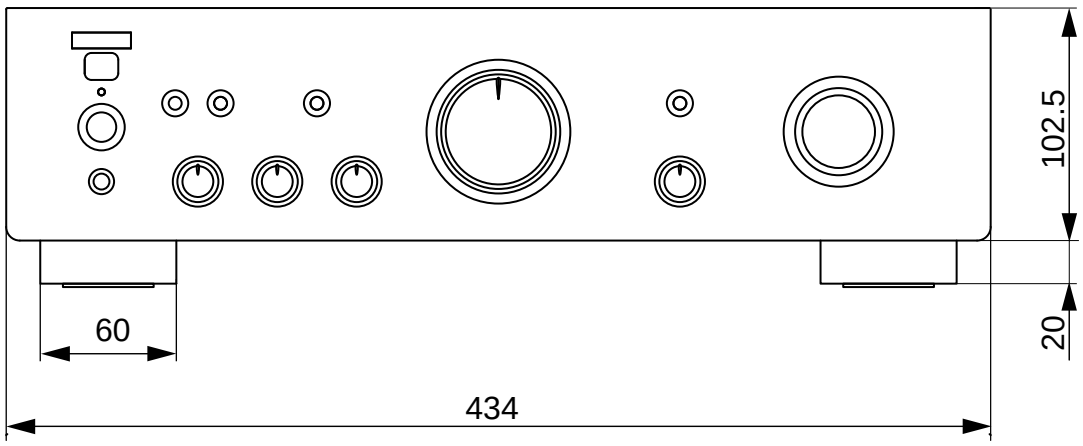
(1) Schematic diagrams ... Indicated by the ⚠ mark.

(2) Parts lists ... Indicated by the ⚠ mark.

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

DIMENSION



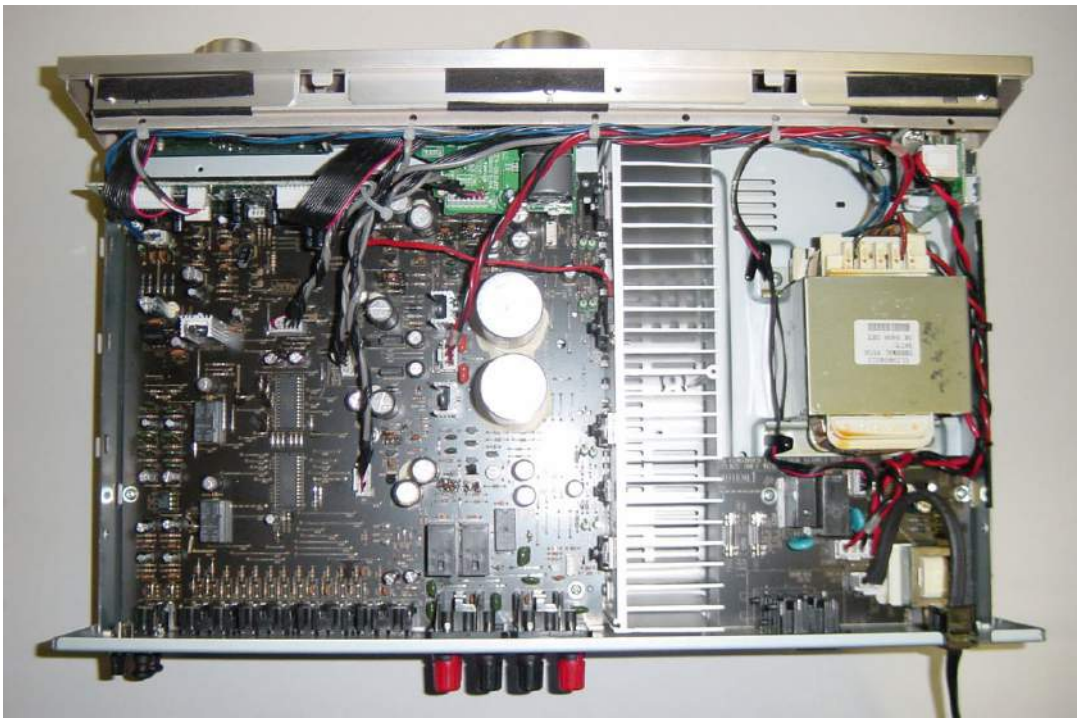


WIRE ARRANGEMENT

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

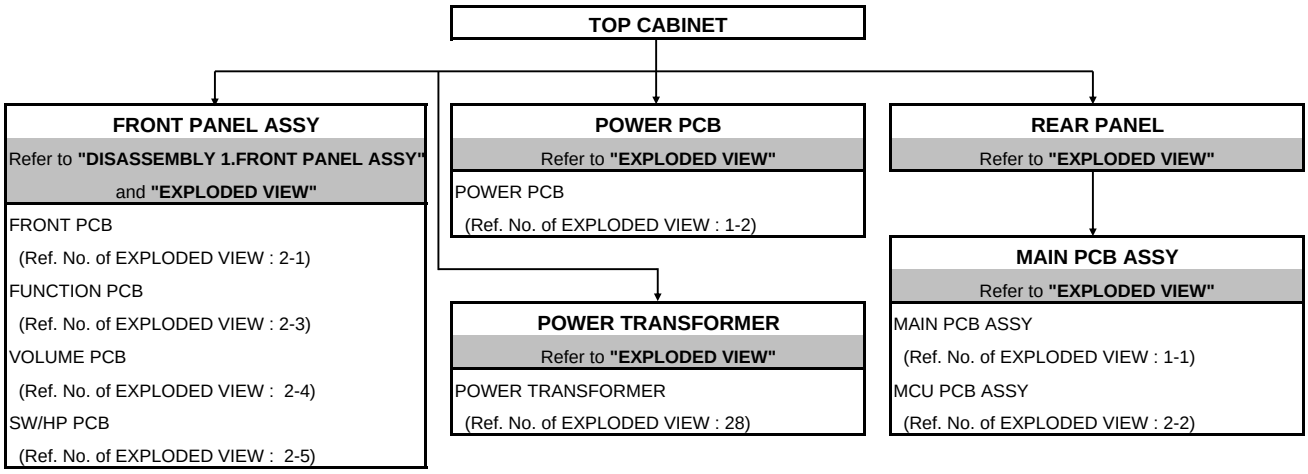
Front Panel side



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
(Photografy direction)

[View from above]

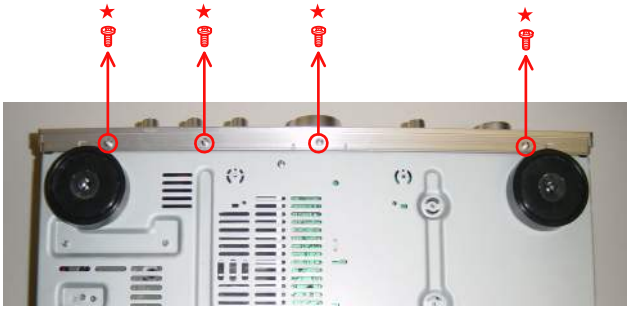
Front side

1. FRONT PANEL ASSY

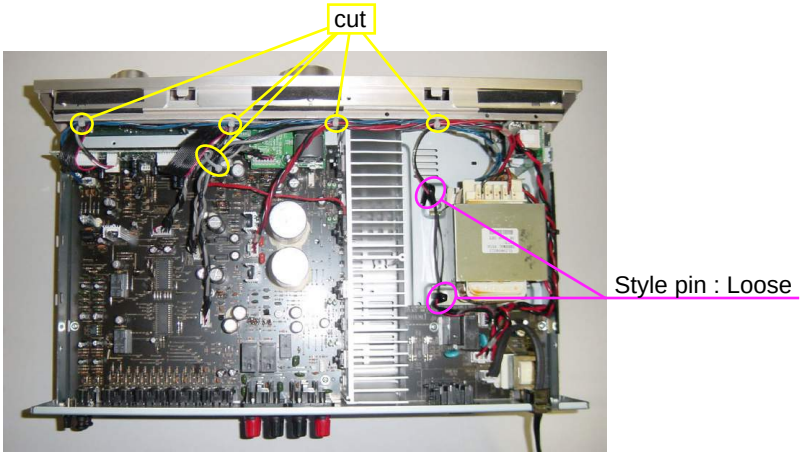
Proceeding : CABINET TOP → FRONT PANEL ASSY

(1) Remove the screws.

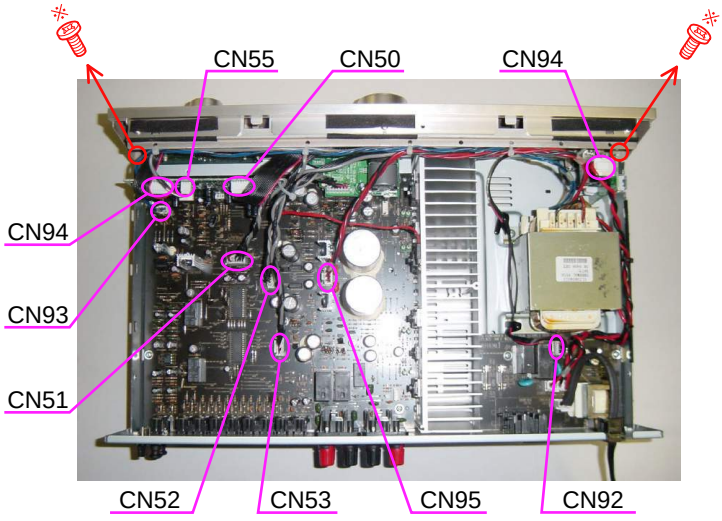
View from bottom



(2) Cut the wire clamp bands, then loose the style pins.



(3) Disconnect the connector wires, then remove the screws.



Please refer to "EXPLODED VIEW" for the disassembly method of each P.W.B included in FRONT PANEL ASSY.

2. POWER PCB

Proceeding : TOP CABINET → POWER PCB

Please refer to "EXPLODED VIEW" for the disassembly method in POWER PCB.

3. REAR PANEL

Proceeding : TOP CABINET → REAR PANEL

Please refer to "EXPLODED VIEW" for the disassembly method in REAR PANEL.

4. MAIN PCB ASSY

Proceeding : TOP CABINET → REAR PANEL → MAIN PCB ASSY

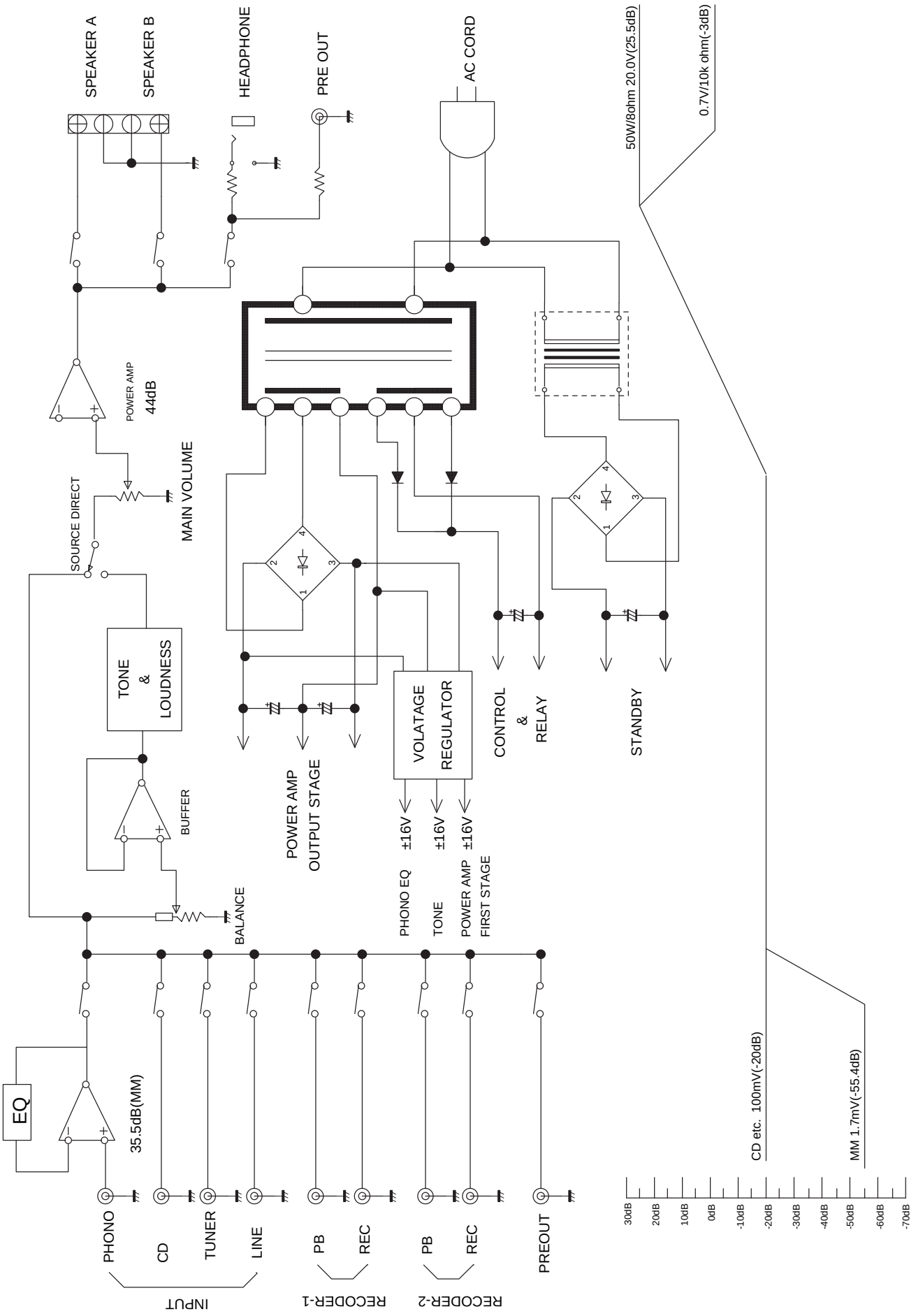
Please refer to "EXPLODED VIEW" for the disassembly method in MAIN PCB ASSY.

5. POWER TRANSFORMER

Proceeding : TOP CABINET → POWER TRANSFORMER

Please refer to "EXPLODED VIEW" for the disassembly method in POWER TRANSFORMAER.

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 (Ω min.)
- SPEAKER terminals → open: do not connect the speakers, dummy load etc.

2. Adjustment

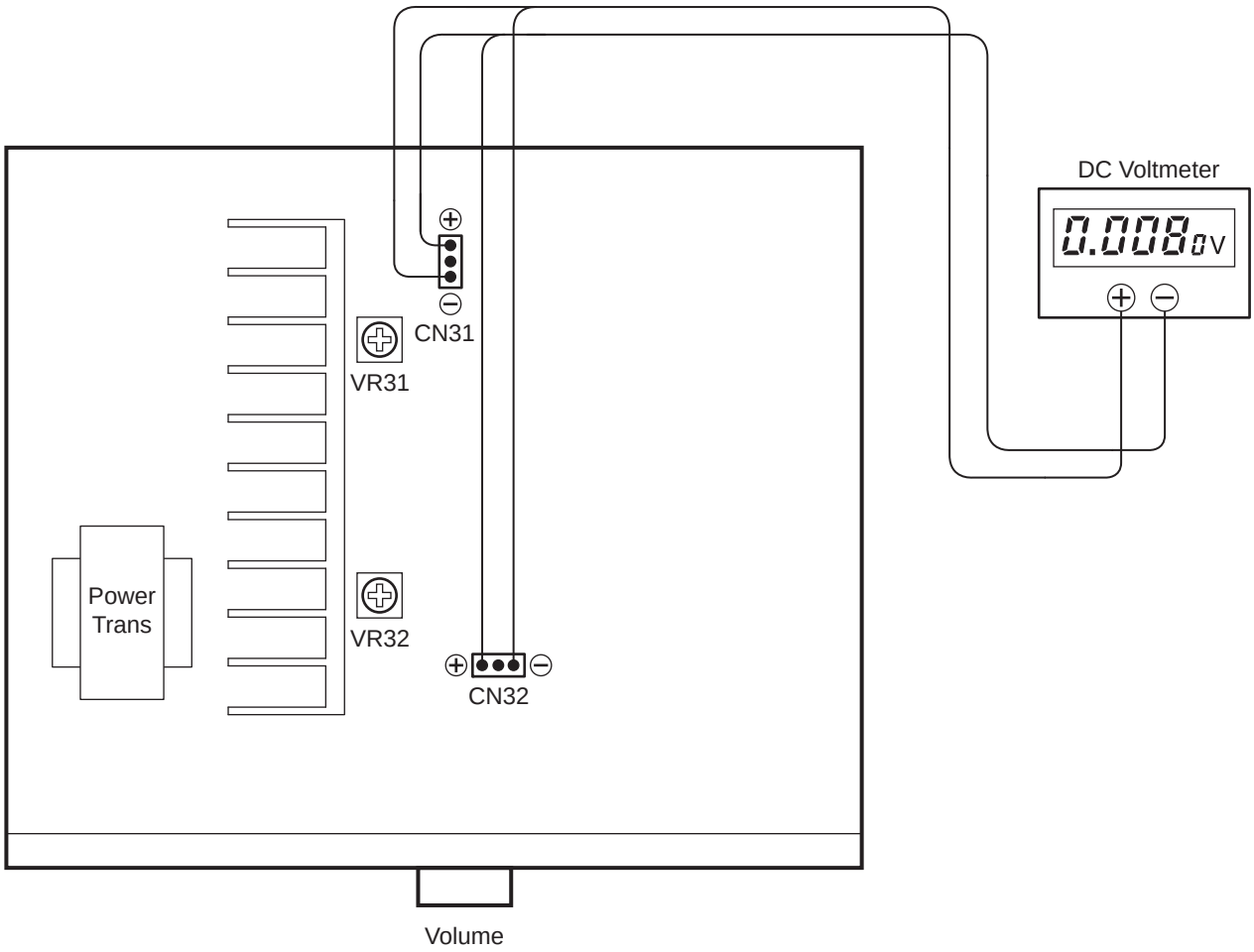
(1) Remove top cover. And then connect DC Voltmeter to the test points CN31 and CN32 of CUP12196B Main PCB.

(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 ±1mV.

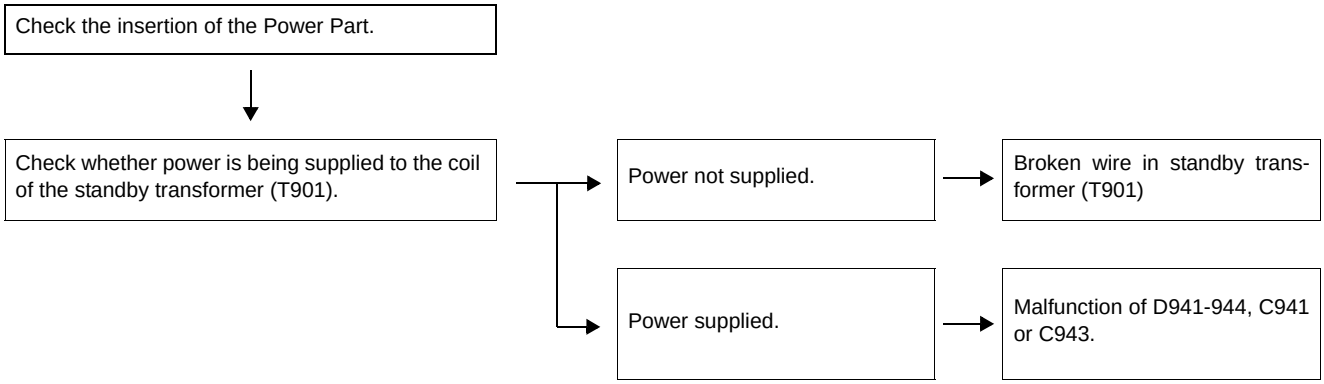
(4) Then after 2 minutes warm up adjust VR31 and VR32 so that the DC voltmeter reads 10 ±1mV.

(5) And after 10 minutes warm up adjust VR31 and VR32 so that the DC voltmeter reads 10 ±0.5mV.



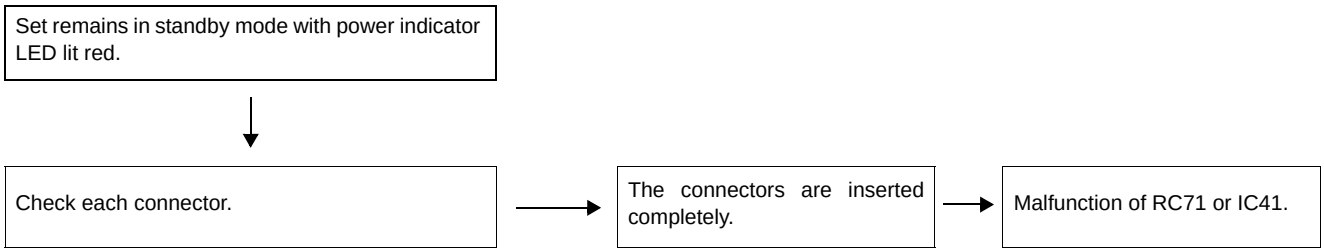
TROUBLE SHOOTING

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

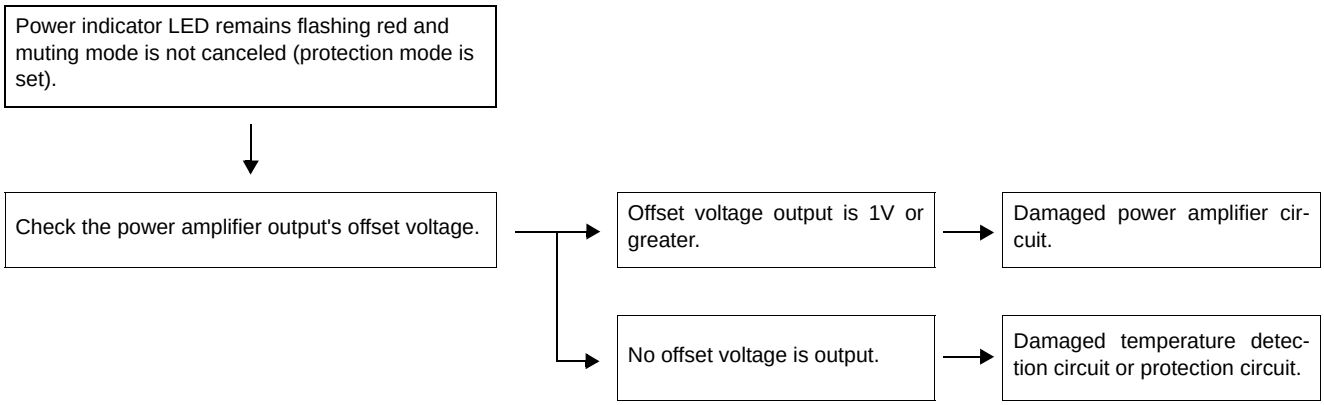


2. The power turned on, but a sound does not output normally. (Both channels)

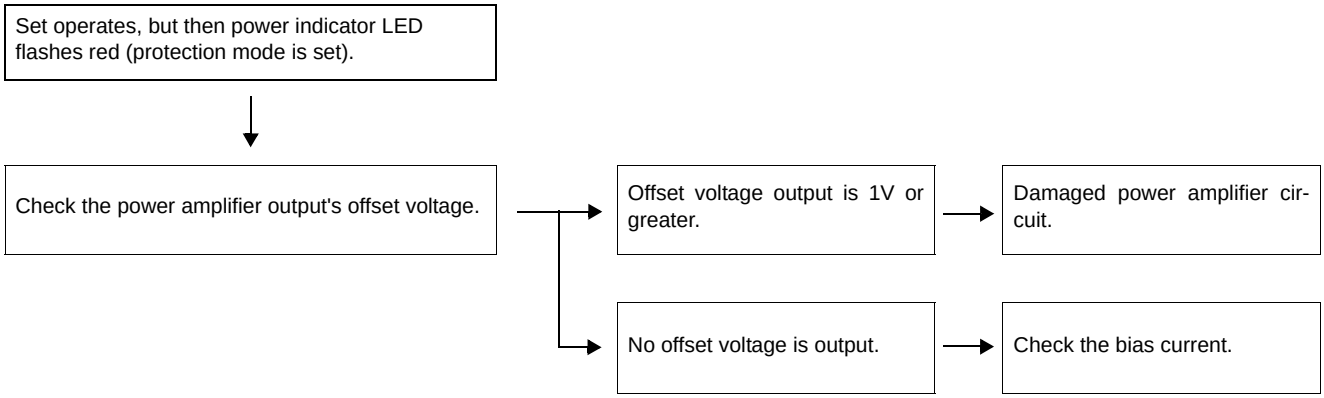
2.1.



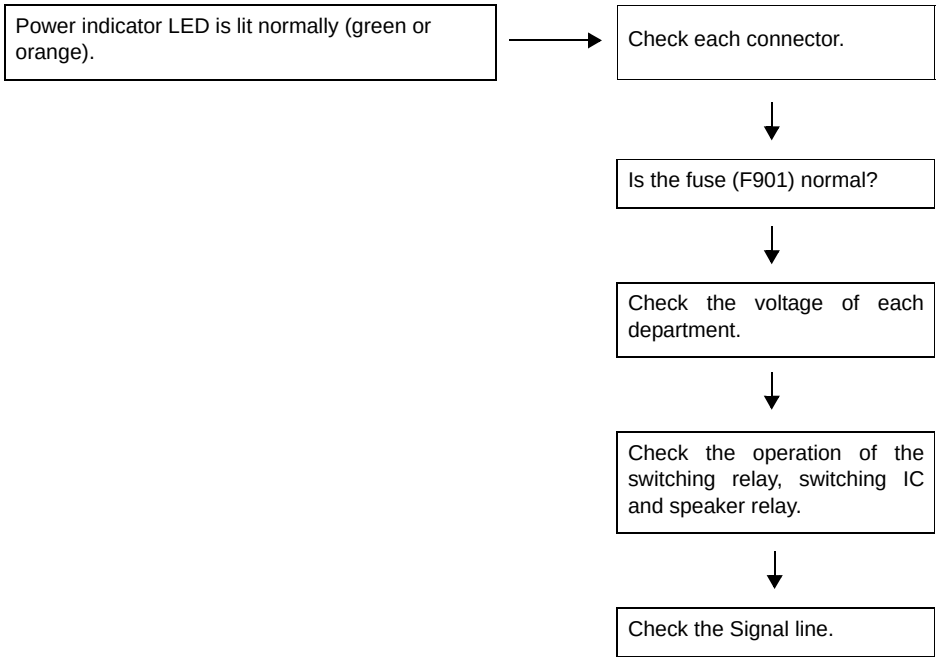
2.2.



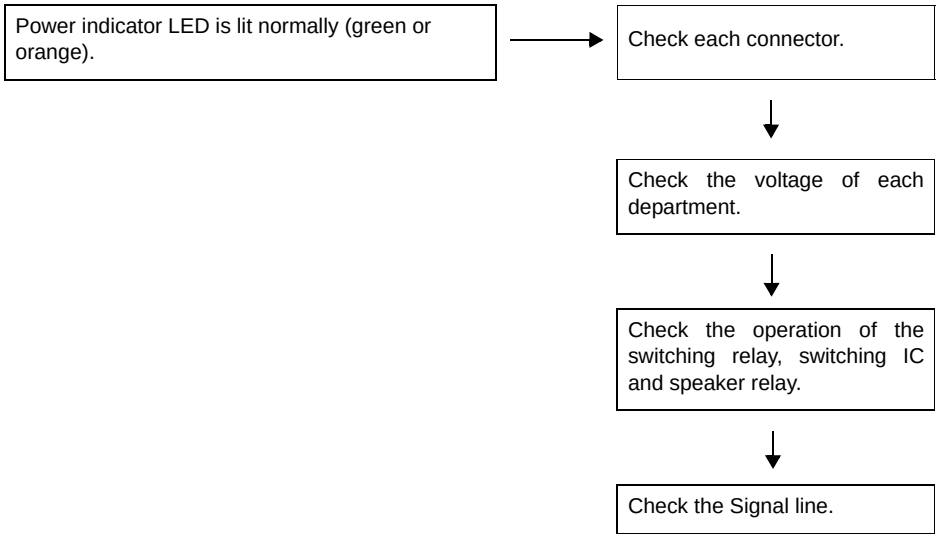
2.3.



2.4.



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

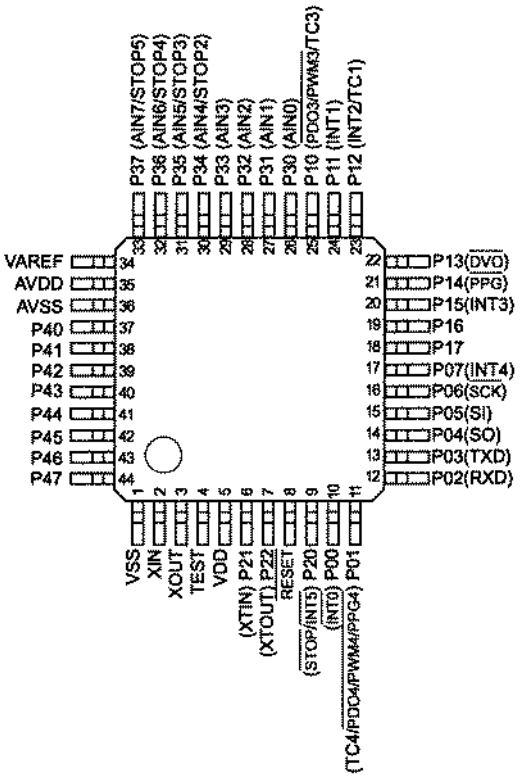


SEMICONDUCTORS

Only major semiconductors are shown, general semiconductors etc. are omitted to list.
The semiconductor which described a detailed drawing in a schematic diagram are omitted to list.

1. IC's

TMP86FH47AUG (IC41)



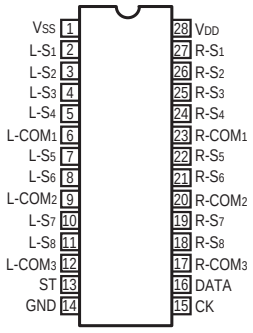
TMP86FH47AUG Terminal Function

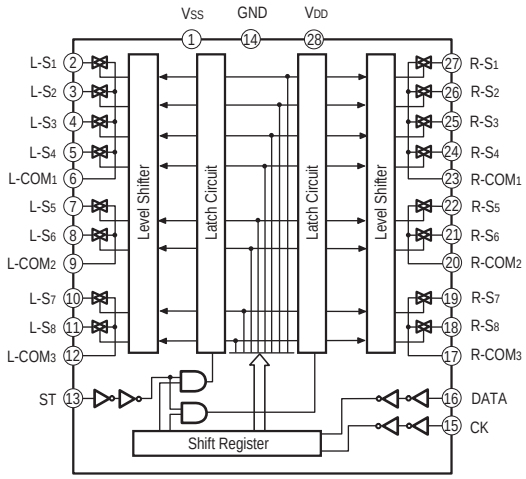
Pin No.	Port Name			I/O	Function
1	VSS				VSS
2	XIN				X IN
3	XOUT				X OUT
4	TEST				TEST
5	VDD				VDD
6	P21	XTIN		O	MUTE/STANDBY LED
7	P22	XTOUT		O	
8	$\overline{\text{RESET}}$			I	$\overline{\text{RESET}}$
9	P20	$\overline{\text{INT5}}$	STOP	I	STOP ACT.
10	P00	$\overline{\text{INT0}}$		I	PROTECTOR
11	P01	$\overline{\text{PDO4/PWM4/PPG4}}$	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	$\overline{\text{SCK}}$		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	$\overline{\text{PPG}}$		O	VOLUME UP
22	P13	$\overline{\text{DVO}}$		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

Pin No.	Port Name			I/O	Function
27	P31	AIN1		AI	SP A/B
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 (IC22)

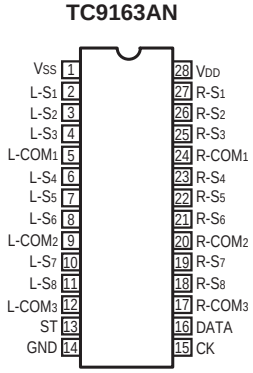
TC9164AN

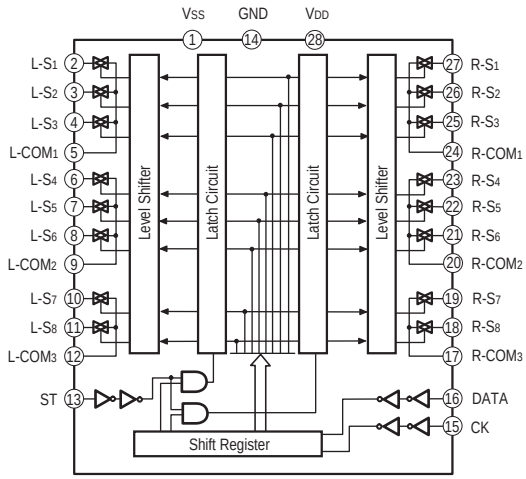




TC9163AN (IC21)

TC9163AN

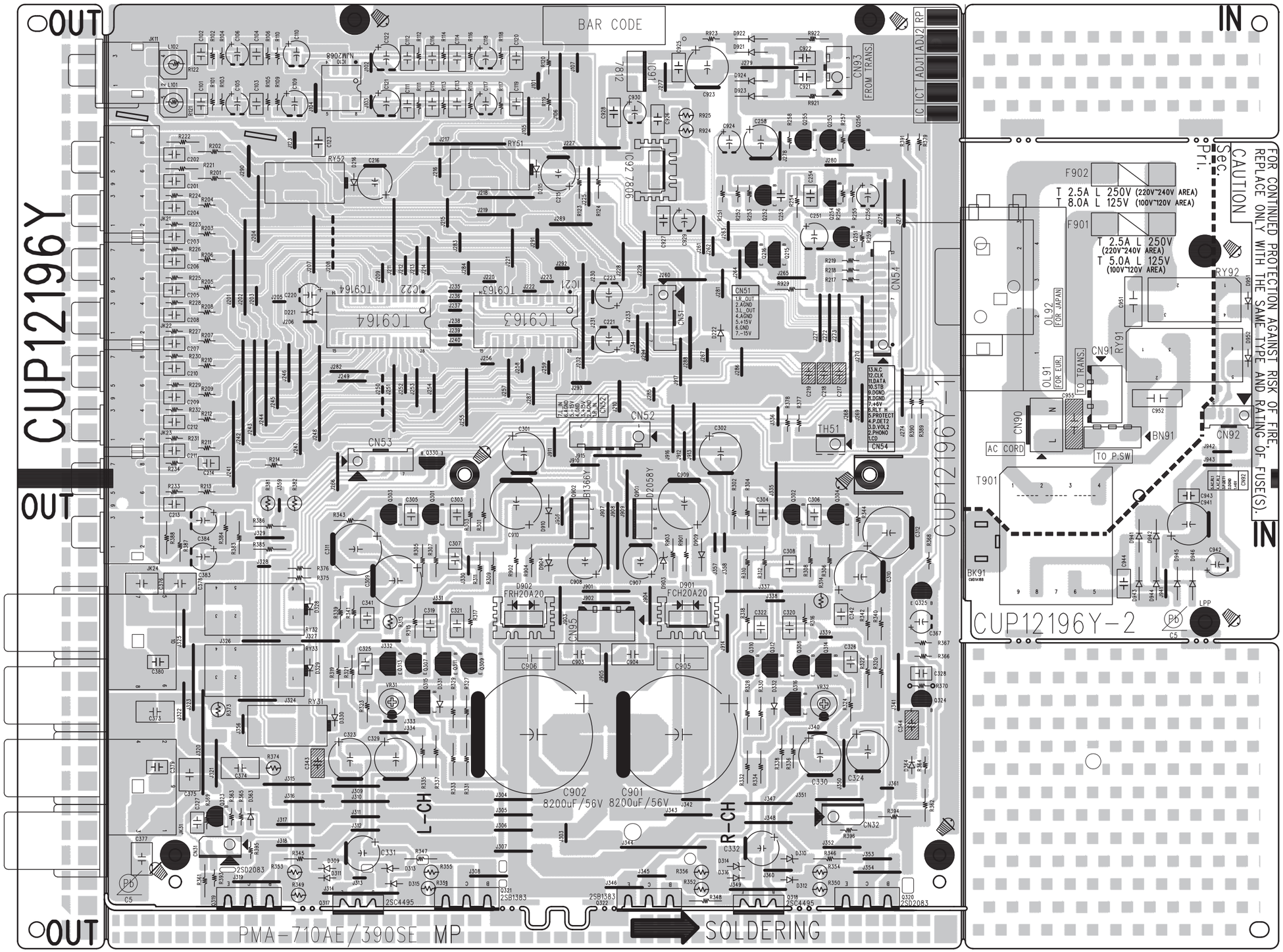




---MEMO---

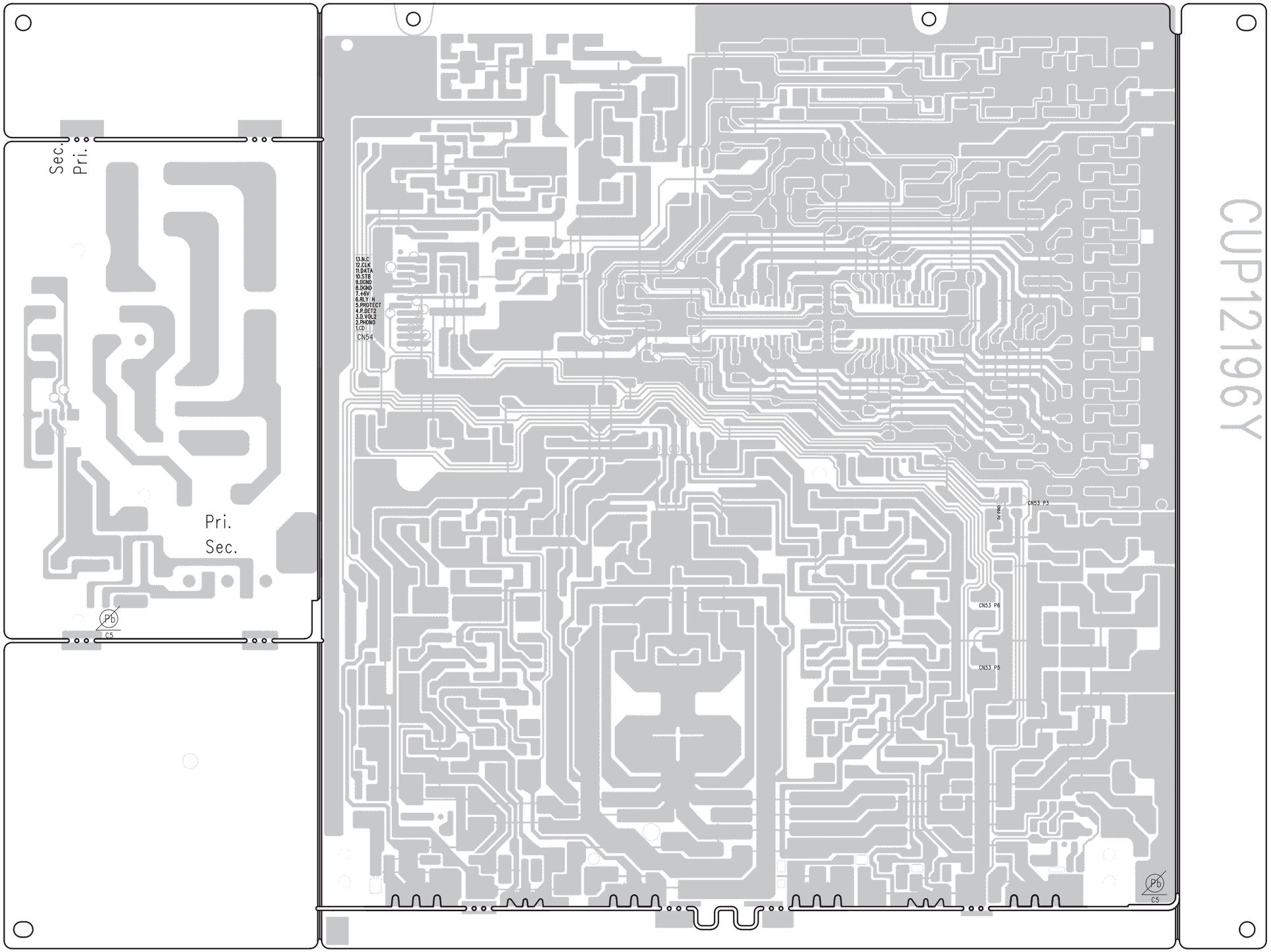
PRINTED WIRING BOARDS

MAIN PCB ASSY (1/2)



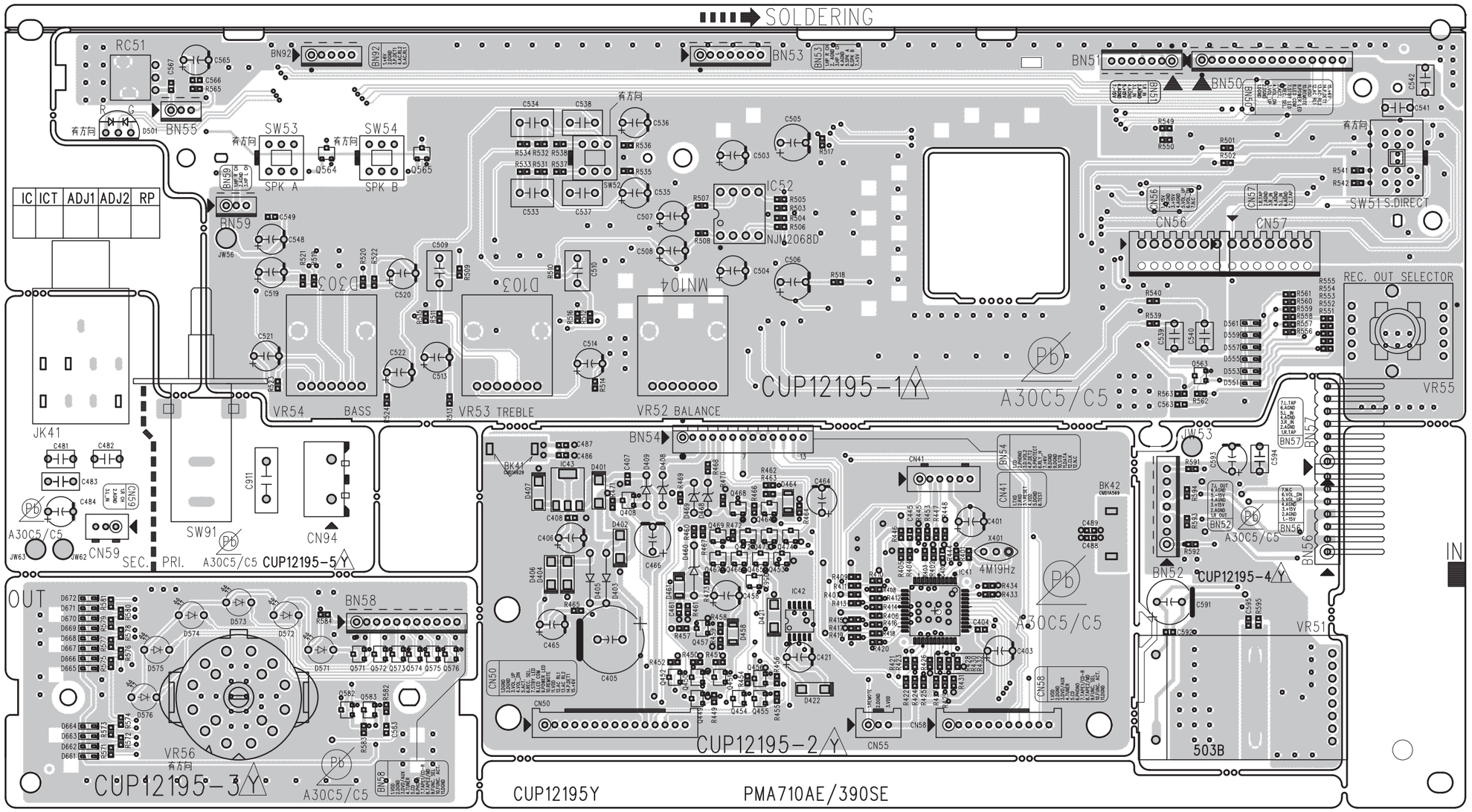
COMPONENT SIDE

MAIN PCB ASSY (2/2)



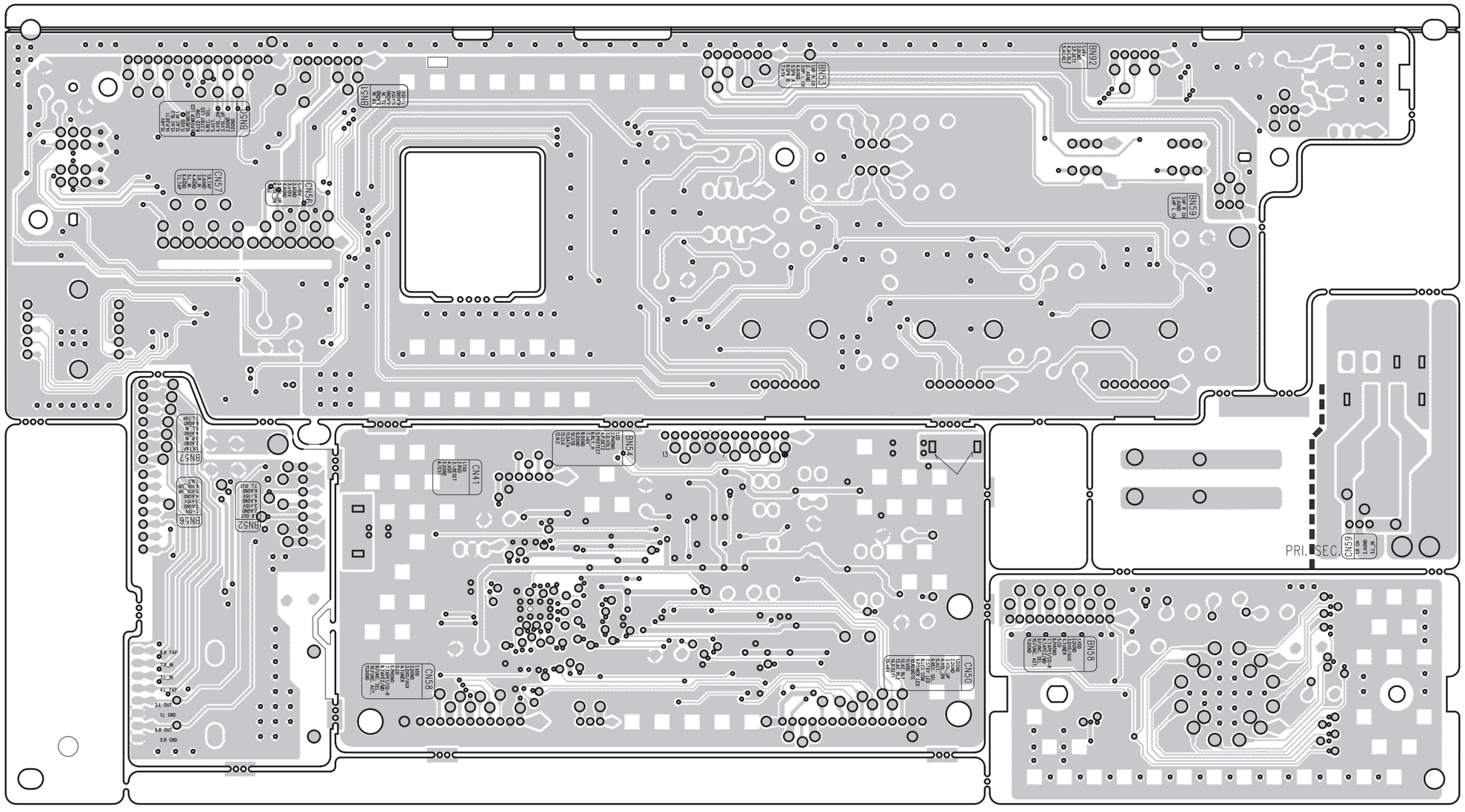
FOIL SIDE

FRONT PCB ASSY (1/2)



COMPONENT SIDE

FRONT PCB ASSY (2/2)



FOIL SIDE

NOTE FOR PARTS LIST

1. Parts for which "nsp" is indicated on this table cannot be supplied.
2. When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
3. Ordering part without stating its part number can not be supplied.
4. Part indicated with the mark "★" is not illustrated in the exploded view.
5. Not including General-purpose Carbon Film Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
6. 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		2B : 1/8 W	F : ±1%		P : Pulse-resistant type
RC : Composition		2E : 1/4 W	G : ±2%		NL : Low noise type
RS : Metal oxide film		2H : 1/2 W	J : ±5%		NB : Non-burning type
RW: winding		3A : 1 W	K : ±10%		FR : Fuse-resistor
RN : Metal film		3D : 2 W	M : ±20%		F : Lead wire forming
RK : Metal mixture		3F : 3 W			
		3H : 5 W			

* Resistance

1 8 2 ⇨ 1800ohm=1.8kohm
- 2: Indicates number of zeros after effective number.
- 1 8: 2-digit effective number.

1 R 2 ⇨ 1.2ohm
- 2: 1-digit effective number.
- 1 R: 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		0J : 6.3 V		F : ±1%	HS : High stability type
CA : Aluminium solid electrolytic		1A : 10 V		G : ±2%	BP : Non-polar type
CS : Tantalum electrolytic		1C : 16 V		J : ±5%	HR : Ripple-resistant type
CQ : Film		1E : 25 V		K : ±10%	DL : For change and discharge
CK : Ceramic		1V : 35 V		M : ±20%	HF : For assuring high requency
CC : Ceramic		1H : 50 V		Z : ±80%	U : UL part
CP : Oil		2A : 100 V		: - 20%	C : CSA part
CM : Mica		2B : 125 V		P : +100%	W : UL-CSA part
CF : Metallized		2C : 160 V		C : ±0.25pF	F : Lead wire forming
CH : Metallized		2D : 200 V		D : ±0.5pF	
		2E : 250 V		= : Others	
		2H : 500 V			
		2J : 630 V			

* Capacity (electrolyte only)

2 2 2 ⇨ 2200 μF
- 2: Indicates number of zeros after effective number.
- 2 2: 2-digit effective number.

・Units: μF.

2 R 2 ⇨ 2.2 μF
- 2: 1-digit effective number.
- 2 R: 2-digit effective number, decimal point indicated by R

・Units: μF.

* Capacity (except electrolyte)

2 2 2 ⇨ 2200pF=0.0022 μF
- 2: Indicates number of zeros after efective number. (More than 2)
- 2 2: 2-digit effective number.

・Units:pF

2 2 1 ⇨ 220pF
- 1: Indicates number of zeros after effective numver. (0 or 1)
- 2 2: 2-digit effective number.

・Units:pF

・ When the dielectric strength is indicated in AC,"AC" is included after the dieelectric 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.

Note: The symbols in the column "Remarks" indicate the following destinations.
E2 : Europe model E1C : China model

MAIN PCB UNIT ASS'Y

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
SEMICONDUCTORS GROUP							
	IC10	00D9430198207	IC NJM2068DD		HVINJM2068DD	1	
	IC21	00D2622487009	IC TC9163AN		CVITC9163AN	1	
	IC22	00D9430198401	IC TC9164AN		HVITC9164AN	1	
	IC91	00D2631100021	IC KIA7812API-U/P		HVIKIA7812API	1	3
	IC92	00D2631100018	IC KIA7806API-U/P		HVIKIA7806API	1	3
	Q215,216	00D9430107804	TR KRC102M		HVTKRC102MT	2	
	Q251,252	00D9430154404	TR KTC3198Y		HVTKTC3198YT	2	
	Q253	90M-HT600010R	TR KTA1266Y		HVTKTA1266YT	1	
	Q254	00D9430154200	TR KRA102M		HVTKRA102MT	1	
	Q255,256	00D9430154404	TR KTC3198Y		HVTKTC3198YT	2	
	Q301-304	00D9430198906	TR KTC3200GR		HVTKT3200GRT	4	
	Q307-310	00D9430198906	TR KTC3200GR		HVTKT3200GRT	4	
	Q311-314	00D9430198702	TR KTA1024Y		HVTKTA1024YT	4	
	Q315,316	00D9430199002	TR KTC3206YA		HVTKTC3206YAT	2	
	Q317,318	943219005820S	TR 2SC4495 FM20		CVT2SC4495	2	
	Q319,320	00D9430200700	TR 2SD2083P		CVT2SD2083P-OKM	2	
	Q321,322	00D9430197004	TR 2SD1383P		CVT2SB1383P-OKM	2	
	Q323,324	00D9430198906	TR KTC3200GR		HVTKT3200GRT	2	
	Q325	00D9430006206	TR KTA1268GR		HVTKA1268GRT	1	
	Q330	00D9430107804	TR KRC102M		HVTKRC102MT	1	
	Q901	00D2720164004	TR KTD2058Y		HVTKTD2058Y	1	
	Q902	00D2740202001	TR KTB1366Y		HVTKTB1366Y	1	
	D215,216	00D9430182609	DIODE 1SS133		HVD1SS133MT	2	
	D221,222	00D9430182609	DIODE 1SS133		HVD1SS133MT	2	
	D309,310	00D9430196102	DIODE,ZENER MTZJ3.3B 1/2W		HVDMTZJ3.3BT	2	
	D311,312	00D9430182609	DIODE 1SS133		HVD1SS133MT	2	
	D313,314	00D9430196102	DIODE,ZENER MTZJ3.3B 1/2W		HVDMTZJ3.3BT	2	
	D315,316	00D9430182609	DIODE 1SS133		HVD1SS133MT	2	
	D328-332	00D9430182609	DIODE 1SS133		HVD1SS133MT	5	
	D363,364	00D9430182609	DIODE 1SS133		HVD1SS133MT	2	
	D901	943203003140S	DIODE FCH20A20		CVDFCH20A20	1	
	D902	943203004970S	DIODE FRH20A20		CVDFRH20A20	1	
	D903,904	00D9430195909	ZENER DIODE ZJ16B		HVDMTZJ16BT	2	
	D909,910	00D9430182502	DIODE 1N4003		CVD1N4003ST	2	
	D921-924	00D9430182502	DIODE 1N4003		CVD1N4003ST	4	
	D941-946	00D9430182502	DIODE 1N4003		CVD1N4003ST	6	
	D951,952	00D9430182609	DIODE 1SS133		HVD1SS133MT	2	
RESISTORS GROUP							
	R313,314	nsp	METAL OXIDE RES 3900 ohm 1W J		KRG1SANJ392RT	2	
	R345-348	00MGG05033160	CARBON FILM RES 3.3ohm 1/4W J	NB	-	4	6
	R349-356	nsp	METAL OXIDE RES 0.47 ohm 2W J		KRG2SANJR47RT	8	
	R373,374	nsp	METAL OXIDE RES 10 ohm 1W J		KRG1SANJ100RT	2	
	R381,382	nsp	METAL OXIDE RES 390 ohm 1W J		KRG1SANJ391RT	2	
	R901,902	00MGG05010160	CARBON FILM RES 1ohm 1/4W J	NB	-	2	6
	R921,922	00MGG05010160	CARBON FILM RES 1ohm 1/4W J	NB	-	2	6
	R923	00D9430194308	RES. FUSE 0.3ohm 1/6W K		CRQ16AKR30T	1	6
	R924,925	nsp	METAL OXIDE RES 68 ohm 1W J		KRG1SANJ680RT	2	6
	R929	00MGG05022140	CARBON FILM RES 2.2ohm 1/4W J	NB	-	1	6
	VR31,32	00D9430196908	SEMI FIXED RESISTOR 500 ohm		CVN1GE501B01T	2	

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
CAPACITORS GROUP							
	C101-104	nsp	CERAMIC CAP 100pF 50V KB		CCKT1H101KB	4	
	C105,106	nsp	ELECT CAP 10uF 50V		CCEA1HH100T	2	
	C109,110	nsp	ELECT CAP 220uF 50V		CCEA1CH221T	2	
	C111,112	nsp	MYLAR CAP 6800pF 50V J		HCQI1H682JZT	2	
	C113,114	nsp	MYLAR CAP 0.018pF 50V J		HCQI1H183JZT	2	
	C115,116	nsp	MYLAR CAP 6800pF 50V J		HCQI1H682JZT	2	
	C117,118	nsp	ELECT CAP 10uF 50V		CCEA1HH100T	2	
	C119,120	nsp	MYLAR CAP 3900pF 50V J		HCQI1H392JZT	2	
	C121,122	00D2544569924	ELECT CAP RA3-25V 101MF3		CCEA1ERA38P101T	2	
	C209,210	nsp	CERAMIC CAP 100PF 50V K		CCKT1H101KB	2	
	C213,214	nsp	CERAMIC CAP 100PF 50V K		CCKT1H101KB	2	
	C215,216	00D2544702956	ELECT CAP RFS-50V 100MG3		CCEA1HRFSA100E	2	
	C220	00D2544573994	ELECT CAP RA3-50V 220ME3		CCEA1HRA38P220T	1	
	C221	00D2544569924	ELECT CAP RA3-25V 101MF3		CCEA1ERA38P101T	1	
	C223	00D2544569924	ELECT CAP RA3-25V 101MF3		CCEA1ERA38P101T	1	
	C251	nsp	ELECT CAP 33UF 50V		CCEA1HH330T	1	
	C252	nsp	CEMICONDUCTOR CAP 0.022uF 50VZF		CCFT1H223ZF	1	
	C254	nsp	CEMICONDUCTOR CAP 0.047uF 50VZF		CCFT1H473ZF	1	
	C256	nsp	ELECT CAP 47uF 25V		CCEA1EH470T	1	
	C258	943134006150S	ELECT CAP RA3-10V 471MG3		CCEA1ARA38P471T	1	
	C301,302	00D2544703751	ELECT CAP RFS-50V 220MH3		CCEA1HRFSA220E	2	
	C303,304	nsp	CERAMIC CAP 220PF 50V K		CCKT1H221KB	2	
	C305,306	nsp	CERAMIC CAP 100pF 50V K		CCKT1H101KB	2	
	C307,308	nsp	CERAMIC CAP 1000pF 50V K		CCKT1H102KB	2	
	C309-312	00D2544774719	ELECT CAP RFS-25V 221MI5		CCEA1ERFSA221E	4	
	C319-322	nsp	MYLAR CAP 3900pF 50V J		HCQI1H392JZT	4	
	C323,324	00D2544703777	ELECT CAP RFS-50V 470MH4		CCEA1HRFSA470T	2	
	C325,326	nsp	CERAMIC CAP 22PF 50V J		CCCT1H220JC	2	
	C327,328	nsp	CERAMIC CAP 1000PF 50V K		CCKT1H102KB	2	
	C329,330	00D2544703777	ELECT CAP RFS-50V 470MH4		CCEA1HRFSA470T	2	
	C331,332	00D2544702956	ELECT CAP RFS-50V 100MG3		CCEA1HRFSA100E	2	
	C341,342	nsp	CERAMIC CAP 33PF 50V J		CCCT1H330JC	2	
	C367	nsp	ELECT CAP 4.7uF 50V		CCEA1HH4R7T	1	
	C373,374	nsp	MYLAR CAP 0.1UF 50V J		HCQI1H104JZT	2	
	C375-378	nsp	MYLAR CAP 0.047upF 50V J	E2	HCQI1H473JZT	4	
	C379,380	nsp	CERAMIC CAP 0.01UF/50V	E2	CCKT1H103KB	2	
	C383,384	00D2544569924	ELECT CAP RA3-25V 101MF3		CCEA1ERA38P101T	2	
	C901,902	00D2546262009	ELECT CAP LAO-56V 822MS49WP		CCET56VLAO822NZ	2	
	C903,904	nsp	METALLIZED CAP 0.1uF 250V J		KCME2E104JP04T	2	
	C907,908	00D2544702956	ELECT CAP RFS-50V 100MG3		CCEA1HRFSA100E	2	
	C909,910	00D2544664706	ELECT CAP RFS-63V 101MI6		CCEA1JRFSA101E	2	
	C921,922	nsp	CERAMIC CAP 0.01uF 50V Z		CCFT1H103ZF	2	
	C923	nsp	ELECT CAP 1000uF 25V		CCEA1EH102E	1	
	C924	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T	1	
	C925-928	nsp	CEMICONDUCTOR CAP 0.1uF 50VZF		CCFT1H104ZF	4	
	C929,930	00D2544569911	ELECT CAP RA3-25V 470ME3		CCEA1ERA38P470T	2	
	C941	nsp	ELECT CAP 1000uF 25V		CCEA1EH102T	1	
	C942	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T	1	
	C943	nsp	CERAMIC CAP 0.01uF 50V Z		CCFT1H103ZF	1	
	C944	nsp	CEMICONDUCTOR CAP 0.1uF 50VZF		CCFT1H104ZF	1	
	C951,952	nsp	CERAMIC CAP 0.0047uF 2.5KV		KCKDKS472ME	2	
OTHERS PARTS GROUP							
	BK91	nsp	PCB BRACKET (A)		CMD1A188	1	
	BN91	nsp	WIRE ASSY(2P, 300MM, 7.9MM)		CWB4DA32300UZ	1	
	CN31,32	nsp	WAFER 3PIN 2MM		CJP03GA01ZY	2	
	CN51	nsp	STRAIGHT WAFER 7PIN 2MM		CJP07GI236ZW	1	
	CN52	nsp	STRAIGHT WAFER 7PIN 2.5MM		CJP07GI237ZW	1	

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	CN53	nsp	STRAIGHT WAFER 7PIN 2MM		CJP07GI236ZW	1	
	CN54	nsp	WAFER 13PIN 2MM BMW200		CJP13GA98ZY	1	
	CN90	nsp	WAFER 2PIN 2MM		CJP02KA060ZY	1	
	CN91	nsp	WAFER 2PIN 2MM		CJP02GA89M	1	
	CN92	nsp	STRAIGHT WAFER 5PIN 2MM		CJP05GI236ZW	1	
	CN93	nsp	STRAIGHT WAFER 3PIN 2.5MM		CJP03GI237ZW	1	
	CN95	nsp	STRAIGHT WAFER 3PIN		CJP03GA90ZY	1	
⚠	F901	00D9430199109	FUSE 2.5A 250V	E2	KBA2C2500TLEY	1	
⚠	F901	00D9430199109	FUSE 2.5A 250V	E1C	KBA2C2500TLEY	1	
⚠	F902	00D9430199109	FUSE 2.5A 250V	E2	KBA2C2500TLEY	1	
	JK11	00D9430191700	2P JACK,IN/OUT		CJJ4N034Z	1	
	JK21-24	00D9430191807	4P JACK,IN/OUT		CJJ4P028Z	4	
	JK31	00D9430191904	SPEAKER TERMINAL		CJJ5Q006Z	1	
	L101,102	00D9430193601	TOROIDAL COIL		CLU9S004Z	2	
	OL91	943641005850S	AC OUTLET JACK (230V , 3P)	E2	CJJ7A031Z	1	*
	RY31	00D9430195103	RELAY G5V-2-H1		CSL4A015ZU	1	
	RY32,33	00D9430195006	RELAY G5PA-28		CSL3A018ZE	2	
	RY51,52	00D9430195103	RELAY G5V-2-H1		CSL4A015ZU	2	
	RY91	00D9430200807	POWER RERAY G2R-14		CSL2C002ZE	1	
	RY92	00D9430194900	POWER RERAY G5PA-1		CSL1E002ZE	1	
	TH09	00D9430194609	POSISTOR PTFM04BB222QN34		CRTPTFM04BB222Q	1	
	TH51	00D9430194502	THERMISTOR ASSY(170MM)		CRT0217025MM	1	
⚠	T901	00D9430193203	SUB TRANSFORMER	E2	CLT5I008ZE	1	
⚠	T901	943101005870S	SUB TRANSFORMER	E1C	CLT5I008ZH	1	*
		nsp	HFUSE HOLDER		KJCFC5S	4	
		nsp	HEAT SINK		CMY2A048	3	
		nsp	SCREW 3X8		CTB3+8JR	3	

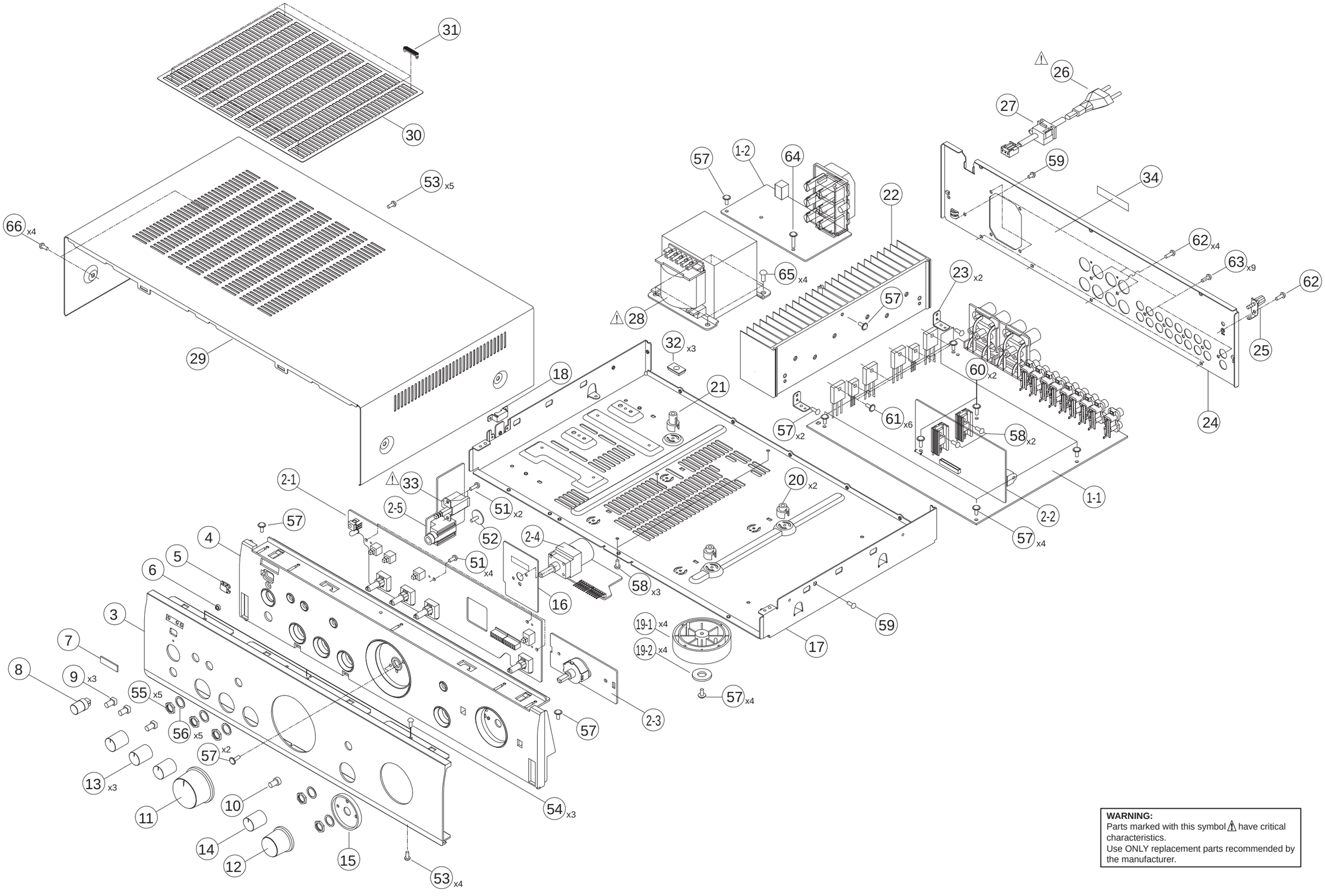
FRONT PCB UNIT ASS'Y

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
SEMICONDUCTORS GROUP							
	IC41	943243100670D	CVIANAM1468A MICOM PMA510AE		IC U-COM PMA510AE (CVITMP86FH47BUG)	1	*
	IC42	00D9430196500	IC LB1930M		CVILB1930M	1	
	IC43	00D9430038902	IC KIA1117S/F33, SOT-223		CVIKIA1117S33	1	
	IC52	00D9430198207	IC NJM2068DD		HVINJM2068DD	1	
	Q408	00D9430037903	CHIP TR KRC102S		HVTKRC102S	1	
	Q449,450	00D9430037903	CHIP TR KRC102S		HVTKRC102S	2	
	Q451	00D9430072502	CHIP TR KTC2875B		HVTKTC2875B	1	
	Q452,453	00D9430037903	CHIP TR KRC102S		HVTKRC102S	2	
	Q454-457	00D9430072502	CHIP TR KTC2875B		HVTKTC2875B	4	
	Q464	00D9430037903	CHIP TR KRC102S		HVTKRC102S	1	
	Q465-467	00D9430038009	CHIP TR KRA102S		HVTKRA102S	3	
	Q468	00D9430072502	CHIP TR KTC2875B		HVTKTC2875B	1	
	Q469	00D9430037903	CHIP TR KRC102S		HVTKRC102S	1	
	Q472,473	00D9430037903	CHIP TR KRC102S		HVTKRC102S	2	
	Q474	00D9430038009	CHIP TR KRA102S		HVTKRA102S	1	
	Q562,563	00D9430038009	CHIP TR KRA102S		HVTKRA102S	2	
	Q564,565	00D9430037903	CHIP TR KRC102S		HVTKRC102S	2	
	Q571-576	00D9430037903	CHIP TR KRC102S		HVTKRC102S	6	
	Q582,583	00D9430038009	CHIP TR KRA102S		HVTKRA102S	2	
	D401,402	90M-HD201840R	DIODE 1SR159		HVD1SR159-200	2	
	D403	00D9430182502	DIODE 1N4003		CVD1N4003T	1	
	D404	90M-HD201840R	DIODE 1SR159		HVD1SR159-200	1	
	D405	00D9430182502	DIODE 1N4003		CVD1N4003T	1	
	D406,407	90M-HD201840R	DIODE 1SR159		HVD1SR159-200	2	
	D408	90M-HD302310R	ZENER DIODE MTZJ27B		HVDMTZJ27BT	1	
	D409	943202005890S	ZENER DIODE MTZJ9.1B		HVDMTZJ9.1BT	1	
	D421,422	90M-HD201840R	RECTIFIER DIODE 1SR159		HVD1SR159-200	2	
	D458	90M-HZ200190R	SWITCHING DIODE RSL4148		HVDRLS4148SR	1	
	D461	90M-HZ200190R	SWITCHING DIODE RSL4148		HVDRLS4148SR	1	
	D464	90M-HZ200190R	SWITCHING DIODE RSL4148		HVDRLS4148SR	1	
	D468	00D9430196306	ZENER DIODE MTZJ7.5B		HVDMTZJ7.5BT	1	
	D469	00D9430196209	ZENER DIODE MTZJ4.7B		HVDMTZJ4.7BT	1	
	D501	00D9430198100	2 COLOR LED SML1216W		HVDSML1216W	1	
	D551	943209001080S	CHIP DIODE 1SS355		CVD1SS355T	1	
	D553	943209001080S	CHIP DIODE 1SS355		CVD1SS355T	1	
	D555	943209001080S	CHIP DIODE 1SS355		CVD1SS355T	1	
	D557	943209001080S	CHIP DIODE 1SS355		CVD1SS355T	1	
	D559	943209001080S	CHIP DIODE 1SS355		CVD1SS355T	1	
	D561	943209001080S	CHIP DIODE 1SS355		CVD1SS355T	1	
	D571-576	00D9430195705	LED, ORANGE TITNED SEL2915A		CVDSEL2915A	6	
	D661-672	943209001080S	CHIP DIODE 1SS355		CVD1SS355T	12	
RESISTORS GROUP							
	VR51	00D9430197305	MOTOR VR		CVV9Y13B503Z	1	
	VR52	00D9430197101	VARIABLE RES RA1450GOE0D-HA1		CVV2X13M104Z	1	
	VR53	00D9430197208	TONE VR D103-Q1-FB200B1		CVV2X18D103Z	1	
	VR54	00D9430215504	TONE VR D303-Q1-FB200B1		CVV2X19D303Z	1	
	VR55	943663005900S	ROTARY SW		CSR6A001Z	1	
	VR56	00D9430195200	ROTARY SW		CSRCA001Z	1	
CAPACITORS GROUP							
	C401	nsp	ELECT CAP 100uF 16V		CCEA1CH101T	1	
	C402	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	1	
	C403	nsp	ELECT CAP 100uF 16V		CCEA1CH101T	1	
	C404	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	1	
	C405	nsp	ELECT CAP 3300uF 16V		CCEA1CH332E	1	
	C406	nsp	ELECT CAP 22uF 50V		CCEA1HH220T	1	

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	C407,408	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	2	
	C421	nsp	ELECT CAP 10uF 50V		CCEA1HH100T	1	
	C445	nsp	CHIP CAP 0.1uF 50V		CCUS1H104KC	1	
	C458	nsp	ELECT CAP 2.2uF 50V		CCEA1HH2R2T	1	
	C461	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	1	
	C464	nsp	ELECT CAP 1uF 50V		CCEA1HH1R0T	1	
	C465	nsp	ELECT CAP 10uF 50V		CCEA1HH100T	1	
	C466	nsp	ELECT CAP 470uF 10V		CCEA1AH471T	1	
	C481,482	nsp	CERAMIC CAP 1000pF 50V		CCKT1H102KB	2	
	C486-489	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	4	
	C503,504	nsp	ELECT CAP 4.7uF 50V		CCEA1HH4R7T	2	
	C505,506	00D2544569924	ELECT CAP RA3-25V 101MF3		CCEA1ERA38P101T	2	
	C507,508	nsp	ELECT CAP 10uF 50V		CCEA1HH100T	2	
	C509,510	nsp	MYLAR CAP 0.033uF 50V		HCQI1H333JZT	2	
	C513,514	nsp	ELECT CAP 0.22uF 50V		CCEA1HHR22T	2	
	C519,520	nsp	ELECT CAP 0.1uF 50V		CCEA1HH0R1T	2	
	C521,522	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T	2	
	C533,534	nsp	MYLAR CAP 0.047uF 50V		HCQI1H473JZT	2	
	C535,536	nsp	ELECT CAP 0.47uF 50V		CCEA1HHR47T	2	
	C537,538	nsp	MYLAR CAP 0.033uF 50V		HCQI1H333JZT	2	
	C539,540	nsp	CERAMIC CAP 39pF 50V		CCCT1H390JC	2	
	C541,542	nsp	MYLAR CAP 3300pF 50V		HCQI1H332JZT	2	
	C563	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	1	
	C565	nsp	ELECT CAP 100uF 10V		CCEA1AH101T	1	
	C566	nsp	CHIP CAP 0.1uF 50V		CCUS1H104KC	1	
	C583	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	1	
	C591	nsp	ELECT CAP 22uF 16V		CCEA1CN220T	1	
	C592	nsp	CHIP CAP 0.01uF 50V		CCUS1H103KC	1	
	C595	nsp	CHIP RES		CRJ10DJ0R0T	1	
OTHERS PARTS GROUP							
	BK41	nsp	PCB BRACKET		CMD1A629	1	
	BK42	nsp	PCB BRACKET		CMD1A569	1	
	BN50	nsp	WIRE ASS'Y(15P, 120MM, 2.0MM)		CWB1B01512047	1	
	BN51	nsp	WIRE ASSY(LOCK TYPE, 7P, 200MM, 2.0MM)		CWB1C00720046001	1	
	BN52	nsp	WIRE ASSY(LOCK TYPE, 7P, 200MM, 2.5MM)		CWB1C00718058001	1	
	BN53	nsp	WIRE ASSY(LOCK TYPE, 7P, 320MM, 2.5MM)		CWB1B00732047001	1	
	BN54	nsp	WAFER 2MM		CJP13GB99ZY	1	
	BN55	nsp	WIRE ASS'Y (LOCK TYPE, 3P, 450MM, 2.0MM)		CWB1B00345047001	1	
	BN56,57	nsp	WAFER		CJP07GF107ZY	2	
	BN58	nsp	WIRE ASSY(11P, 100MM, 2.0MM)		CWB1B01110047	1	
	BN59	nsp	WIRE ASSY(3P, 80MM, 2.0MM)		CWB1B00308047001	1	
	BN92	nsp	WIRE ASSY(5P, 320MM, 2.0MM)		CWB1B00532047	1	
	CN41	nsp	STRAIGHT WAFER		CJP06GA19ZY	1	
	CN50	nsp	LOCKING TYPE, STRAIGHT WAFER 2MM		CJP15GI236ZW	1	
	CN55	nsp	LOCKING TYPE, STRAIGHT WAFER 2MM		CJP03GI236ZW	1	
	CN56,57	nsp	WAFER		CJP07HA37ZM	2	
	CN58	nsp	LOCKING TYPE, STRAIGHT WAFER 2MM		CJP11GI236ZW	1	
	CN59	nsp	LOCKING TYPE, STRAIGHT WAFER 2MM		CJP03GI236ZW	1	
	CN94	nsp	WAFER		CJP02GA89ZM	1	
	JK41	00D9430198003	PHONE JACK		HJJ2E018Z	1	
	RC51	00D9430194706	REMOTE SENSOR(KSM603TH2E)		CRVKSM603TH2E	1	
	SW51	00D9430194803	PUSH SW(JPS-4281SA)		CSH2D013Z	1	
	SW52-54	00D9430199400	PUSH SW(220014)		KSH2B003Z	3	
⚠	SW91	00D9430140609	PUSH SW(CSH1A010ZV)		CSH1A010ZV	1	
	X401	00D9430196403	CERAMIC RESONATOR, CSTLS4M19G56-A0		CVFCSTLS4M19G56-A0	1	

---MEMO---

EXPLODED VIEW



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

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.

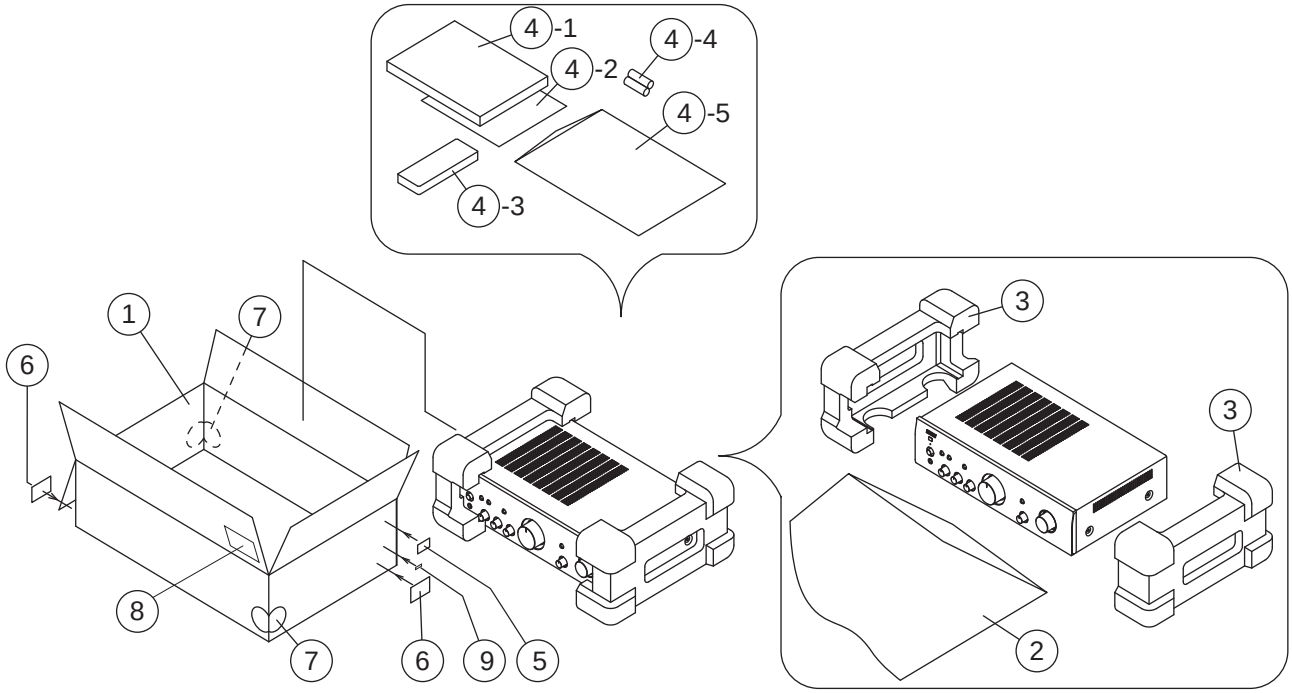
* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate the following destinations.
E2: Europe model E1C : China model
BK : Black model SP : Premium silver model

	Ref No.	Part No.	Part Name	Remarks		Q'ty	New	
	1	nsp	MAIN PCB ASSY		CUP12196B	1	*	
	1-1	-	MAIN PCB					
	1-2	-	POWER PCB					
	2	nsp	FRONT PCB ASSY		CUP12195B	1	*	
	2-1	-	FRONT PCB					
	2-2	-	MCU PCB					
	2-3	-	FUNCTION PCB					
	2-4	-	VOLUME PCB					
	2-5	-	SW/HP PCB					
	3	943402005910D	FRONT PANEL	BK	CKM2A179TC45	1	*	
	3	943402005930D	FRONT PANEL	SP	CKM2A179UC62	1	*	
	4	943443005920D	INNER PANEL	BK	CGW3A425B28	1	*	
	4	943443005960D	INNER PANEL	SP	CGW3A425RGG45	1	*	
	5	00D9430190206	REMOCON WINDOW	BK	CGU1A396A8	1		
	5	00D9430190109	REMOCON WINDOW	SP	CGU1A396	1		
	6	00D9430189903	LENS		CGL1A254	1		
	7	00D1310158049	DENON BADGE	BK	CGB1A140U	1		△4
	7	00D1310158052	DENON BADGE	SP	CGB1A140T	1		△4
	8	00D9430179502	POWER KNOB	BK	CGK1A124ZA	1		
	8	00D9430179609	POWER KNOB	SP	CGK1A124YA	1		
	9	00D9430201505	PUSH KNOB	BK	CBC2A155B28	3		
	9	00D9430201602	PUSH KNOB	SP	CBC1A155RGG45	3		
	10	00D9430187109	DIRECT KNOB	BK	CBC1A154B28	1		
	10	00D9430187206	DIRECT KNOB	SP	CBC1A154RGG45	1		
	11	412510040016D	VOLUME KNOB	BK	CBN1A228	1		
	11	412510040009D	VOLUME KNOB	SP	CBN1A228MBC73	1		
	12	412510041019D	INPUT KNOB	BK	CBN1A229	1		△2
	12	412510041002D	INPUT KNOB	SP	CBN1A229MBC73	1		△2
	13	412510047017D	ROTARY KNOB	BK	CBN1A236	3	*	
	13	412510047000D	ROTARY KNOB	SP	CBN1A236MBC73	3	*	
	14	412510047031D	ROTARY KNOB	BK	CBN412510047024DD	1	*	
	14	412510047024D	ROTARY KNOB	SP	CBN412510047031DD	1	*	
	15	943423004870D	FUNCTION LENS	BK	CGL1A255Z	1		
	15	00D9430190002	FUNCTION LENS	SP	CGL1A255Y	1		
	16	nsp	SHIELD PLATE		CMC2A307	1		
	17	nsp	BOTTOM CHASSIS		CUA3A269	1	*	
	18	nsp	SCREW COVER		CMD1A495	1		
	19-1	nsp	FOOT		CKL1A093	4		
	19-2	nsp	FOOT CUSHION		CHG2A289	4		
	20	nsp	PCB HOLDER		CHE170	2		
	21	nsp	PCB HOLDER		CHE1A030	1		
	22	nsp	MAIN HEATSINK		CMY1A329	1		
	23	nsp	PCB BRACKET		CMD1A417	2		
	24	943406005970D	REAR PANEL	E2	CKF3A317V	1	*	
	24	943406005980D	REAR PANEL	E1C	CKF5A317T	1	*	
	25	00D9430199303	GROUND TERMINAL		KMA1A006	1		
⚠	26	00D9430180407	AC CORD	E2	CJA2B043ZA	1		
⚠	26	90M-YC000790R	AC CORD	E1C	CJA2N047ZA	1	*	
	27	00D9430095505	AC CORD BUSHING		KHR1A028	1		

	Ref No.	Part No.	Part Name	Remarks		Q'ty	New	
⚠	28	943101006010D	POWER TRANSFORMER	E2	CLT5R040ZE	1	*	
⚠	28	943101006020D	POWER TRANSFORMER	E1C	CLT5R040ZH	1	*	
	29	00D9430192408	TOP CABINET	BK	CKC1A176S56	1		
	29	00D9430192301	TOP CABINET	SP	CKC1A176S55	1		
	30	nsp	TOP SHEET	BK	CGX1A382Z	1	*	△5
	30	nsp	TOP SHEET	SP	CGX1A382	1	*	△5
	31	nsp	SHEET STOPPER	BK	CMH1A263Z	4	*	△5
	31	nsp	SHEET STOPPER	SP	CMH1A263	4	*	△5
	32	nsp	RUBBER		CHG1A113	2		
⚠	33	00D9430140609	PUSH SW(CSH1A010ZV)		CSH1A010ZV	1		
	34	nsp	SERIAL NO LABEL		CQB1A622	1		
	★ 35	943649006160D	SHORT PIN		CJT1A100	2	*	
	★ 36	nsp	YEAR LABEL		CQB1A625Z	1		
	★ 37	nsp	HEMELON TAPE		CHS1A032	8		
	★ 38	00D9430164203	RING FERRITE		CLZ9W003Z	1		
	★ 39	nsp	CLAMPER		CHR301	15		
	★ 40	nsp	LOCKER		CRE1A037	8		
	★ 41	nsp	CLOTH TAPE(W20)		CHS1A155	-		
	★ 42	nsp	BUTYL TAPE(W15)		CMX1A189	-		
	★ 43	nsp	NITOFLON TAPE(W15)		CHS1A157	-		
	★ 44	nsp	NITOFLON TAPE(W25)		CHS1A158	-		
	★ 45	nsp	BUTYL TAPE(W25 T2)		CMX1A191	-		
	★ 46	nsp	NITOFLON TAPE(W25)		CHS1A158	-		
	★ 47	nsp	UL TUBE		C4B120122	-		
	★ 48	nsp	WIRE CLAMPER		CHE36-3	2		
SCREWS								
	51	nsp	SCREW 3X10		CTB3+10JR	6		
	52	nsp	SCREW 3X10		CTWS3+10GR	1		
	53	nsp	DOT SCREW 3X8	BK	CTBD3+8JFZR	9		
	53	nsp	DOT SCREW 3X8	SP	CTBD3+8JFN	9		
	54	nsp	SCREW 3X8	BK	CTB3+8JFZR	3		
	54	nsp	SCREW 3X8	SP	CTB3+8GFN	3		
	55	nsp	NUT(M9)			5		
	56	nsp	WASHER			5		
	57	nsp	SCREW 3X8		CTW3+8JR	16		
	58	nsp	SCREW 3X8		CTB3+8JR	5		
	59	nsp	SCREW 3X6		CTB3+6FFZR	2		
	60	nsp	SCREW 3X12		CTW3+12JR	2		
	61	00D9430191001	SPECIAL SCREW		CHD1A012R	6		
	62	nsp	DOT SCREW 3X8		CTBD3+8JFZR	5		
	63	nsp	DOT SCREW 3X10		CTBD3+10GFZR	9		
	64	nsp	SCREW 3X18		CTW3+18JR	1		
	65	nsp	SCREW 4X8		CTB4+8FR	4		
	66	nsp	SCREW 4X6	BK	CTWD4+6FFZR	4		
	66	nsp	SCREW 4X6	SP	CTWD4+6FFN	4		

PACKING VIEW



PARTS LIST OF PACKING & ACCESSORIES

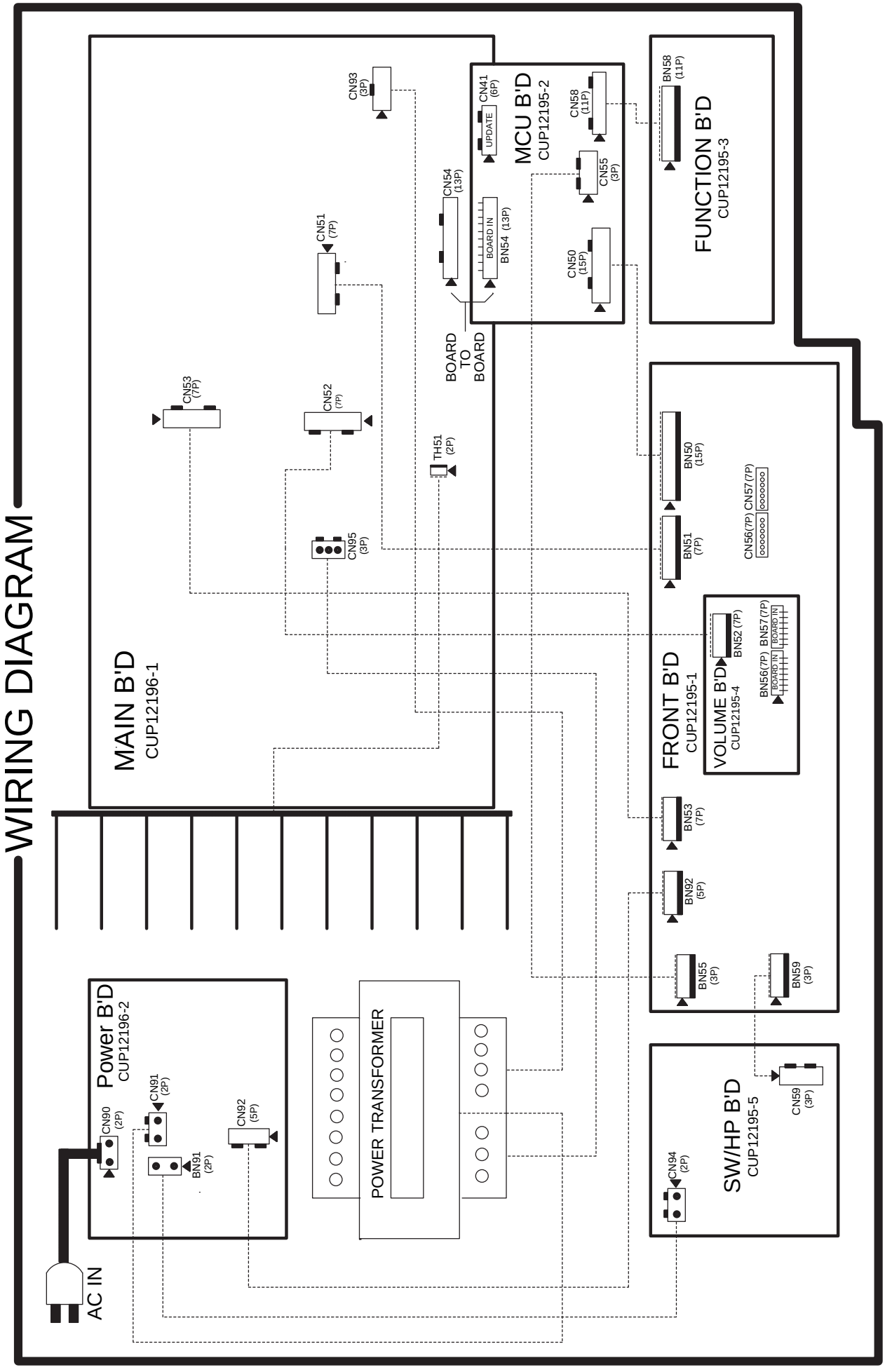
＊ Parts for which "nsp" is indicated on this table cannot be supplied.

＊ 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.
E2: Europe model E1C : China model
BK : Black model SP : Premium silver model

	Ref No.	Part No.	Part Name	Remarks		Q'ty	New
	1	943531006090D	CARTON BOX	E2	CPG2A818V	1	*
	1	943531006100D	CARTON BOX	E1C	CPG2A818T	1	*
	2	nsp	POLY BAG(Set)		CPB1A013Y	1	
	3	943533006080D	SNOW PAD		CPS2A747	2	*
	4-1	943541006050D	INSTRUCTION MANUAL	E2	CQX1A1448Z	1	*
	4-1	943541006060D	INSTRUCTION MANUAL	E1C	CQX1A1450Z	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	POS LABEL	BKE2	CQB1A773T	1	*
	5	nsp	POS LABEL	SPE2	CQB1A773U	1	*
	5	nsp	POS LABEL	E1C	CQB1A773Q	1	*
	6	nsp	CONTROL LABEL		CQB1A627	2	*
	7	00D9430194804	COLOR LABEL	SP	CQB1A676	2	
	8	nsp	CARTON LABEL(C)	E1C	CQB1A940Y	1	*
	9	nsp	DATE LABEL	E1C	CQB1A622	1	

WIRING DIAGRAM



--MEMO--

NOTE FOR SCHEMATIC DIAGRAM

WARNING:

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

CAUTION:

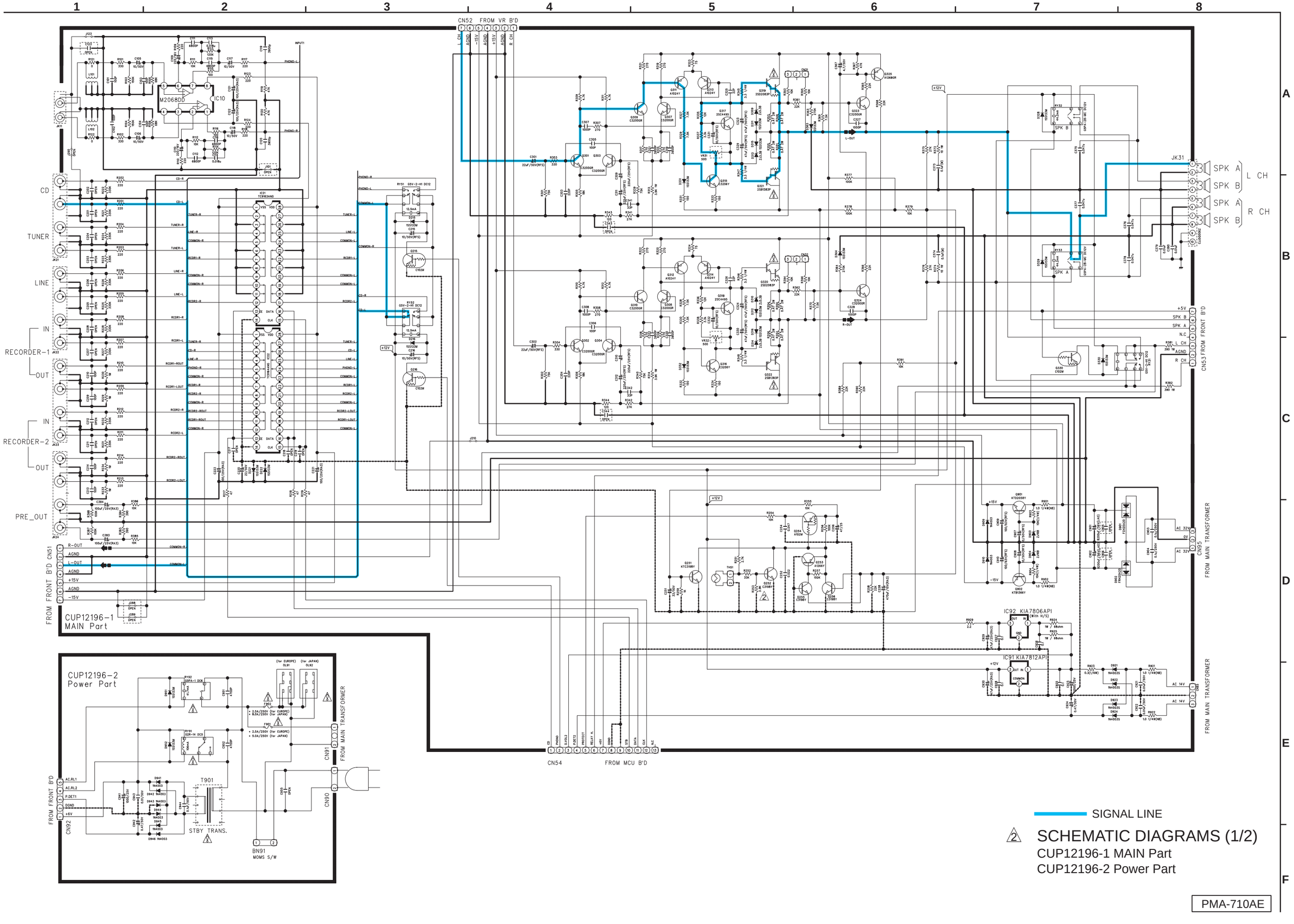
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is defective.

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.



SIGNAL LINE

⚠2 SCHEMATIC DIAGRAMS (1/2)

CUP12196-1 MAIN Part

CUP12196-2 Power Part

CUP12195-3
Function SW Part

CUP12195-2
MCU Part

Update, 2mm pitch

CUP12195-1
Tone Part

CUP12195-4
Volume Part

CUP12195-5
Power SW, H/P Part

SIGNAL LINE

SCHEMATIC DIAGRAMS (2/2)

CUP12195-1 Tone Part
CUP12195-2 MCU Part
CUP12195-3 Function SW Part
CUP12195-4 Volume Part
CUP12195-5 Power SW, H/P Part

PMA-710AE