marantz®

Service Manual Ver. 1

Integrated Amplifier

PM8006

Click here!

On-line service parts list

http://dmedia.dmglobal.com/Document/DocumentDetails/23855

Online Parts List (P5 to P7)

WEB owner's manual (Release schedule)

NA: http://manuals.marantz.com/PM8006/NA/EN/index.php (October 2017)

EU: http://manuals.marantz.com/PM8006/EU/EN/index.php (October 2017)

AP: http://manuals.marantz.com/PM8006/AP/ZH/index.php (November 2017)

- 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.

CAUTION IN SERVICING

SAFETY PRECAUTIONS

NOTE FOR SCHEMATIC DIAGRAM

NOTE FOR PARTS LIST

INSTRUCTIONS FOR HANDLING SEMICONDUCTORS AND OPTICAL UNIT

Online Parts List

CAUTION IN SERVICING.

SAFETY PRECAUTIONS

The following items should be checked for continued protection of the customer and the service technician.

Leakage current check

Before returning the set to the customer, be sure to carry out 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 set is defective.
Be sure to test for leakage current with the AC plug in both polarities, in addition, when the set's power is in each state (on, off and standby mode), if applicable.

CAUTION **Please heed the following cautions and instructions during servicing and inspection.**

◎ Heed the cautions!

Cautions which are delicate in particular for servicing are labeled on the cabinets, the parts and the chassis, etc. Be sure to heed these cautions and the cautions described in the handling instructions.

◎ Cautions concerning electric shock!

(1) An AC voltage is impressed on this set, so if you touch internal metal parts when the set is energized, you may get an electric shock. Avoid getting an electric shock, by using an isolating transformer and wearing gloves when servicing while the set is energized, or by unplugging the power cord when replacing parts, for example.
(2) There are high voltage parts inside. Handle with extra care when the set is energized.

◎ Caution concerning disassembly and assembly!

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

◎ Use only designated parts!

The set's parts have specific safety properties (fire resistance, voltage resistance, etc.). Be sure to use parts which have the same properties for replacement. The burrs have the same properties. In particular, for the important safety parts that are indicated by the ⚠ mark on schematic diagrams and parts lists, be sure to use the designated parts.

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

For safety seasons, some parts use tapes, 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 by arranging them and using clamps to keep them away from heating and high voltage parts, so be sure to set everything back as it was originally placed.

◎ Make a safety check after servicing!

Check that all screws, parts and wires removed or disconnected when servicing have been put back in their original positions, check that no serviced parts have deteriorate the area around. Then make 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 on the power. Using a 500V insulation resistance tester, check that the insulation resistance value between the inplug and the externally exposed metal parts (antenna terminal, headphones terminal, input terminal, etc.) is 1M Ω or greater. If it is less, the set must be inspected and repaired.

CAUTION **Concerning important safety parts**

Many of the electric and the structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and the use of 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 the parts list in this service manual. Be sure to replace them with the parts which have the designated part number.

(1) Schematic diagrams Indicated by the ⚠ mark.
(2) Parts lists Indicated by the ⚠ mark.
The use of parts other than the designated parts could cause electric shocks, fires or other dangerous situations.

NOTE FOR SCHEMATIC DIAGRAM

WARNING:

Parts indicated by the ⚠ mark have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

CAUTION:

Before returning the set to the customer, be sure to carry out 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 set is defective.

WARNING:

DO NOT return the set to the customer unless the problem is identified and remedied.

NOTICE:

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM / M=1,000,000 OHM
ALL CAPACITANCE VALUES ARE EXPRESSED IN MICRO FARAD, UNLESS OTHERWISE INDICATED. P INDICATES MICRO-MICRO FARAD. N INDICATES NANO FARAD. EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION. CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

NOTE FOR PARTS LIST

1. Parts indicated by "**nsp**" on this table cannot be supplied.
2. When ordering a part, make a clear distinction between "1" and "I" (i) to avoid mis-supplying.
3. A part ordered without specifying its part number can not be supplied.
4. Part indicated by "**@**" mark is not illustrated in the exploded view.

WARNING: Parts indicated by the ⚠ mark have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

INSTRUCTIONS FOR HANDLING SEMICONDUCTORS AND OPTICAL UNIT

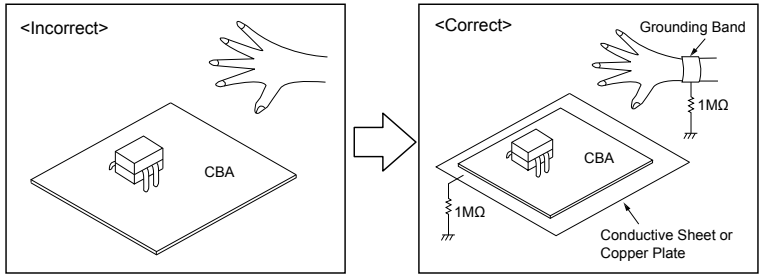
Electrostatic breakdown of the semi-conductors or optical pickup may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band (1 M ohm) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

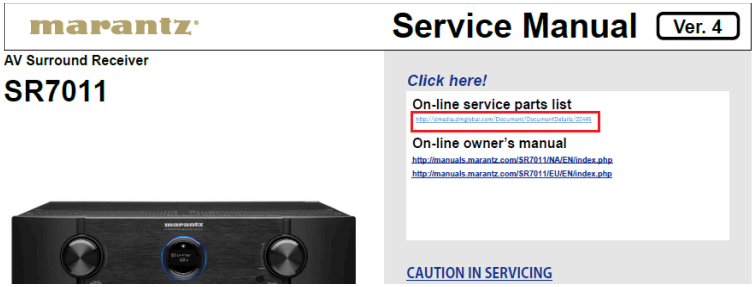
Be sure to place a conductive sheet or copper plate with proper grounding (1 M ohm) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing



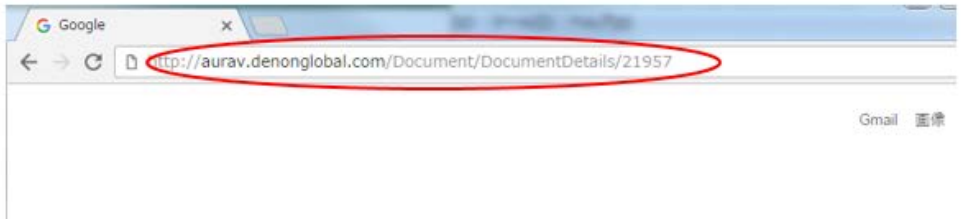
Online Parts List

Accessing the Parts List

(1) Click the URL link on the cover of the service manual.
Examples of display



NOTE : If the web browser does not open automatically, copy the URL and paste it into the address bar of the web browser and then press Enter.



(2) When the login screen is displayed, enter your username and password.
(3) Enter the 5 letters shown as the blue CAPTCHA code as single-byte characters.
If the text is unclear, click "**Refresh**" to change the CAPTCHA code, and enter it again.

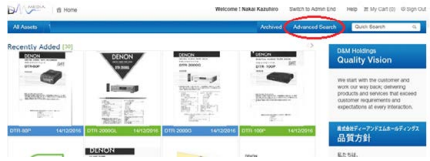
(4) Press the "**Login**" button.

Logging in to New SDI and Accessing the Parts List

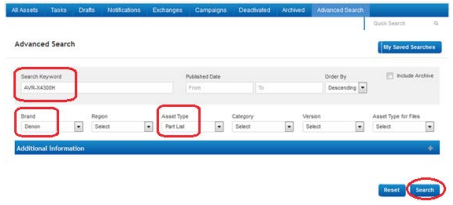
(1) Access New SDI from the URL below.
<http://dmedia.dmglobal.com>

(2) When the login screen is displayed, enter your username and password.
(3) Enter the 5 letters shown as the blue CAPTCHA code as single-byte characters.
If the text is unclear, click "**Refresh**" to change the CAPTCHA code, and enter it again.

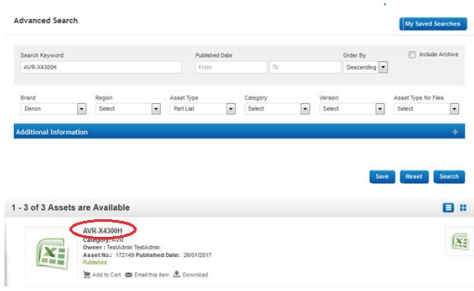
(4) Press the "**Login**" button.
(5) When the Home screen is displayed, click "**Advanced Search**".



(6) Enter the following search conditions and click "**Search**".
Keyword : Model name Brand : brand name Asset Type : Part list

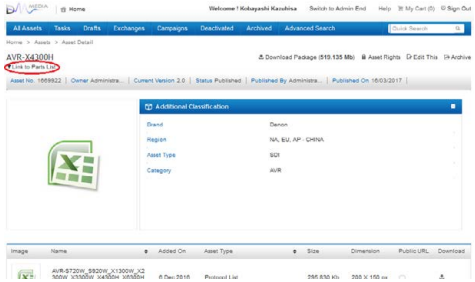


(7) Click the model name when the search results are displayed.



Accessing the Part List from the Model Asset Screen

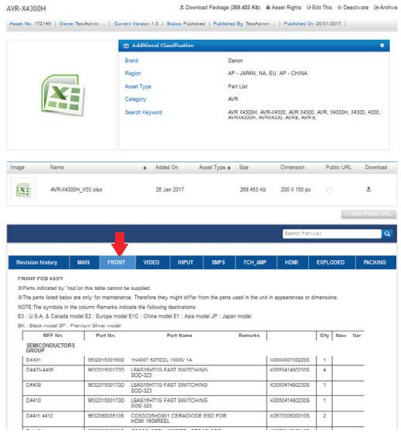
(1) Display Model Asset from New SDI.
(2) Click the section displayed as ▼ Link to Part Lists under the model name.



NOTE : If the ▼ Link to Parts List section is not displayed, download the parts table from the Asset list.

PRINTED CIRCUIT BOARDS Parts Table

(1) Display the Parts List. Click the PCB name in the blue bar to display the parts list for the board.

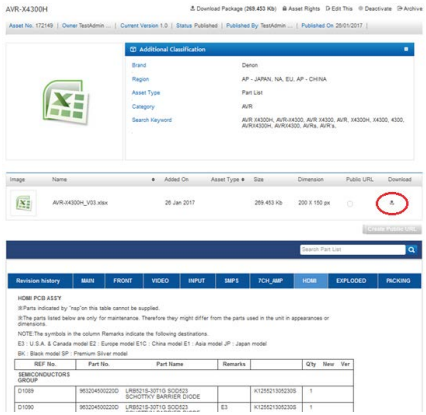


Left and right arrow icons are displayed if the circuit board name does not fit in the blue bar.
Click these icons to display a different part of the name when necessary.

← Icons to move the circuit board name left and right in the blue bar

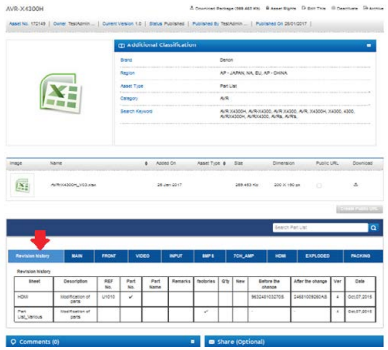
Downloading the Parts List as an Excel File

(1) Displays the Parts List. Click the Download icon.



Revision History

(1) Click "**Revision history**" in the blue bar.



The following details are displayed.

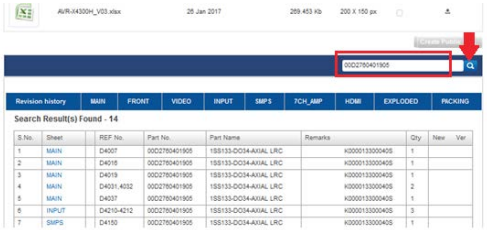
Sheet : Name of the changed sheet
Description : Description of the changes
Remarks : Destination, color information
Factories : Factory number
Ver : Version number after revision if changes were made to the parts list
Date : Date of changes

Searching Part Numbers or Ref. Numbers

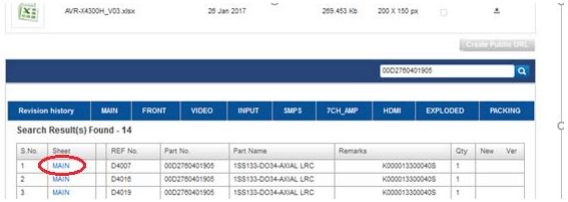
You can search a Parts List for part numbers or Ref. numbers.

(1) Enter the part number or Ref. number in the search window of the Parts List, and press the search button.

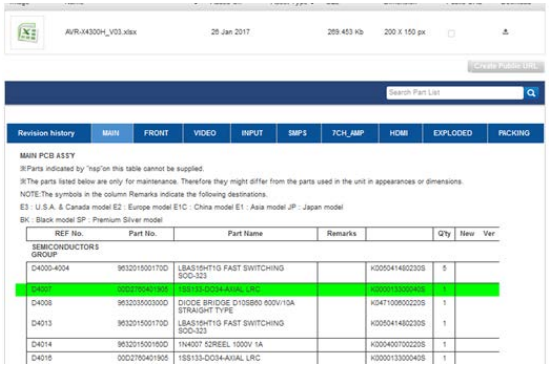
(2) The search results are displayed.
The name of the sheet in which the search part is used and the part's line are displayed.



(3) Next, click the "**Sheet**" section of the search results.



(4) The Board Part Table opens and the line on which the searched part number appears is highlighted.

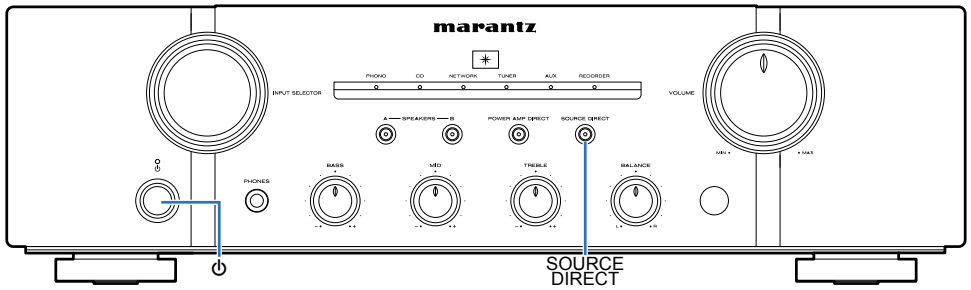


Initializing This Unit

Make sure to initialize this unit after replacing the microcomputer or any peripheral equipment, or the digital PCB.

1. Press the power button to turn off the power.
2. While holding down the "**SOURCE DIRECT**" button, press the power button to turn on the power.
3. Check the set entered the service mode.
   (See 1. Service mode)

NOTE:
- If the unit fails to enter the service mode in step 3, repeat the procedure from step 1.
- Initializing the device restores the customized settings to the factory settings. Write down your settings in advance and reconfigure the settings after initialization.



ELECTRICAL

SCHEMATIC DIAGRAMS

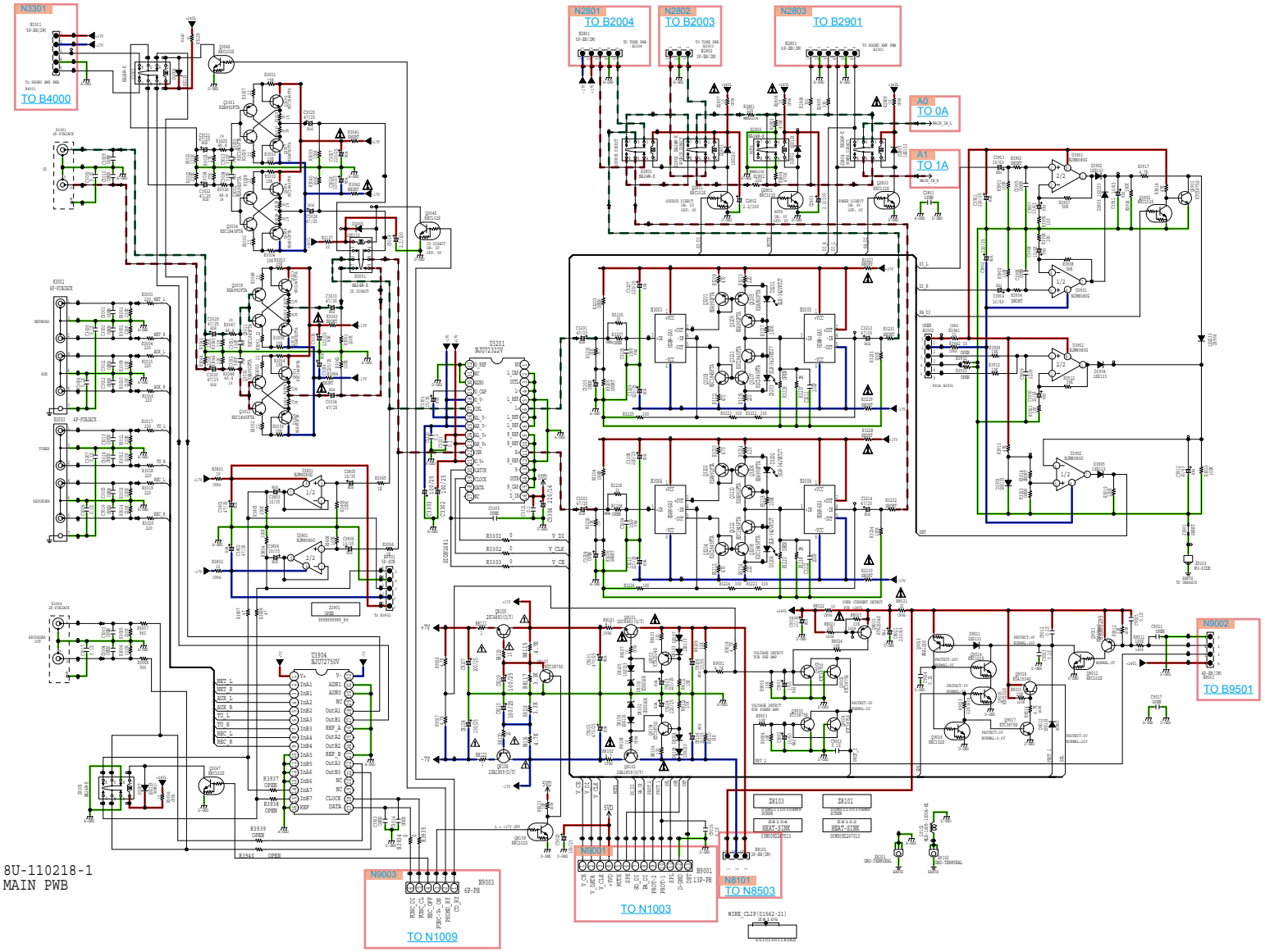
PRINTED CIRCUIT BOARDS

LEVEL DIAGRAM, BLOCK DIAGRAM, POWER DIAGRAM

WIRING DIAGRAM

SEMICONDUCTORS

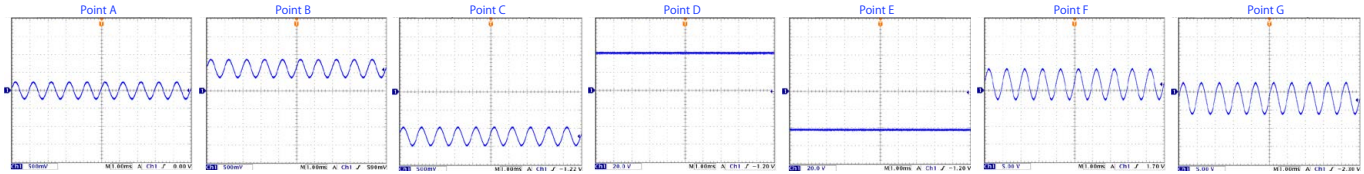
SCH01_MAIN1

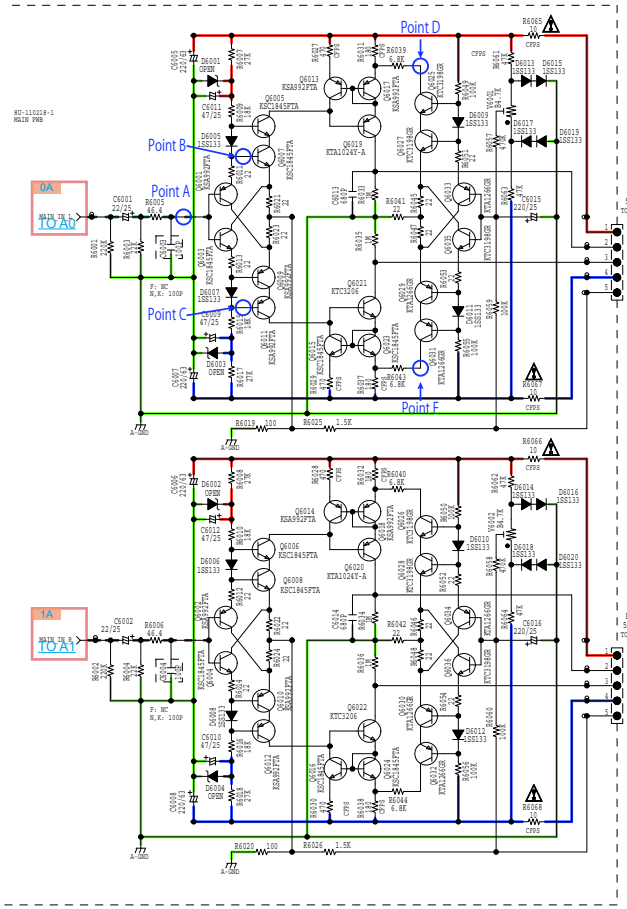


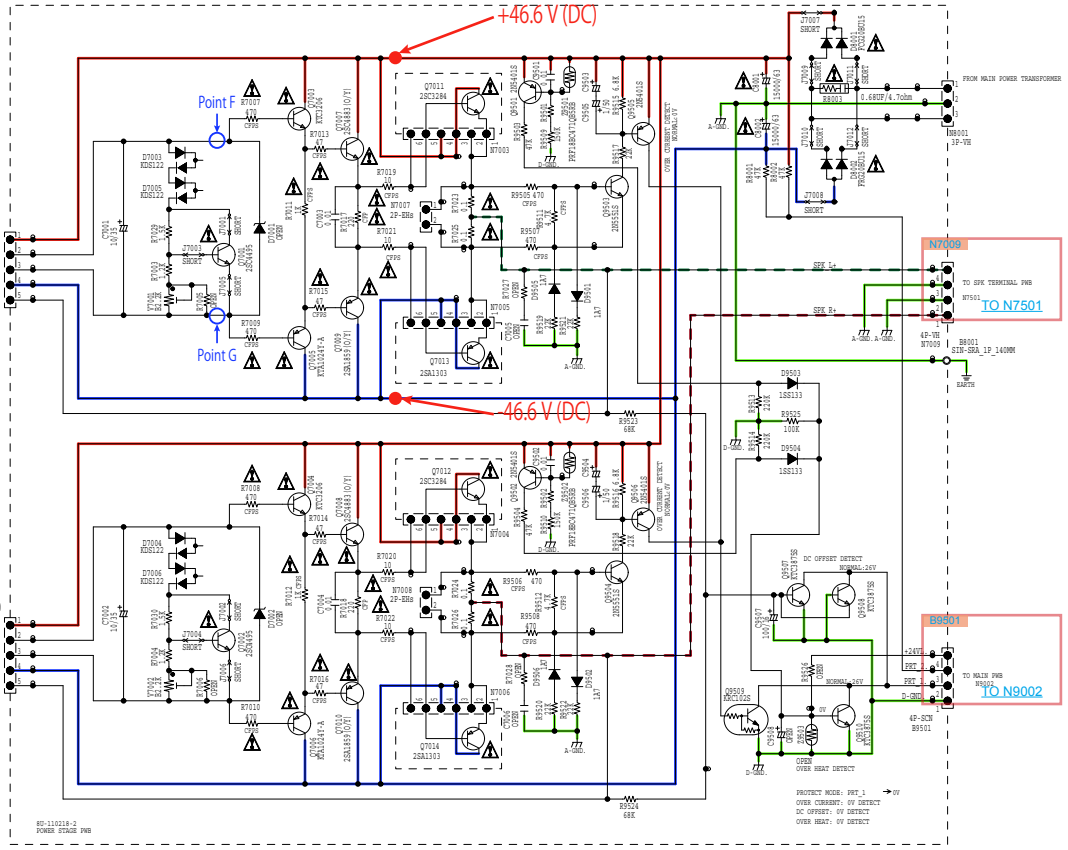
GND LINE POWER+ LINE POWER- LINE ANALOG AUDIO R ANALOG AUDIO L

SCH02_MAIN2 and POWER STAGE

Measurement condition
- Voltage measurement
  No signal
- Waveform measurement
  INPUT: 500mVrms/1KHz(CD)
  OUTPUT: 1W at 8ohmes(2.83Vrms)

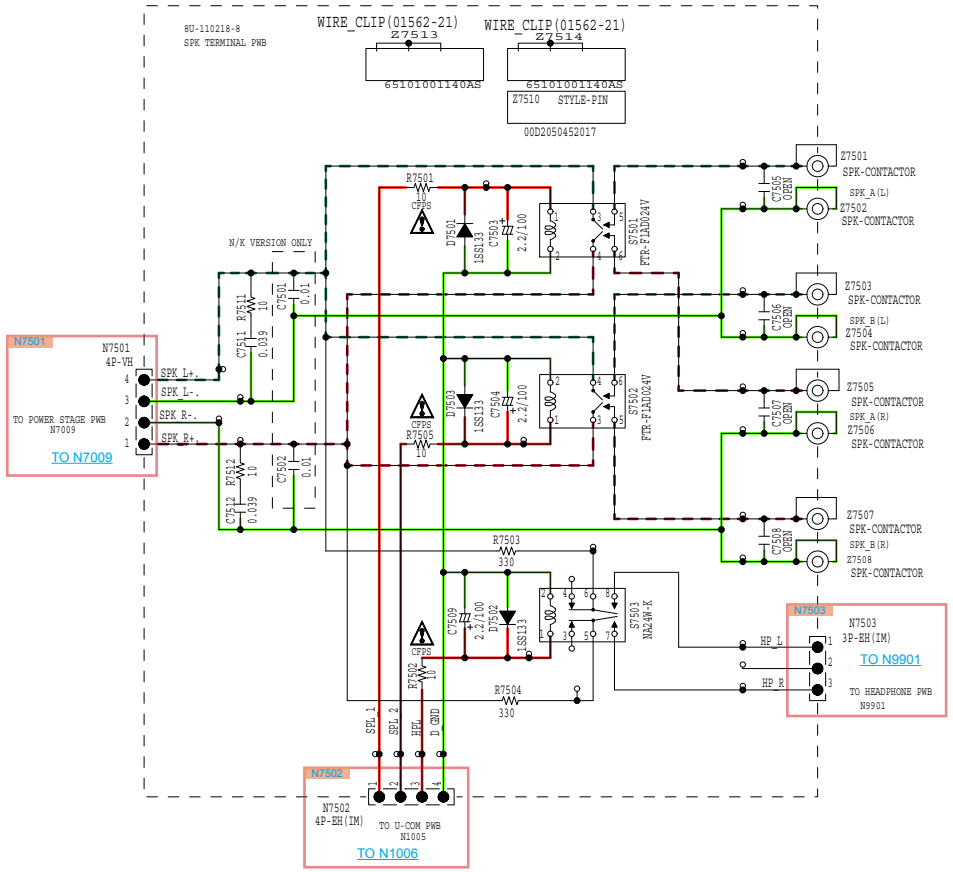






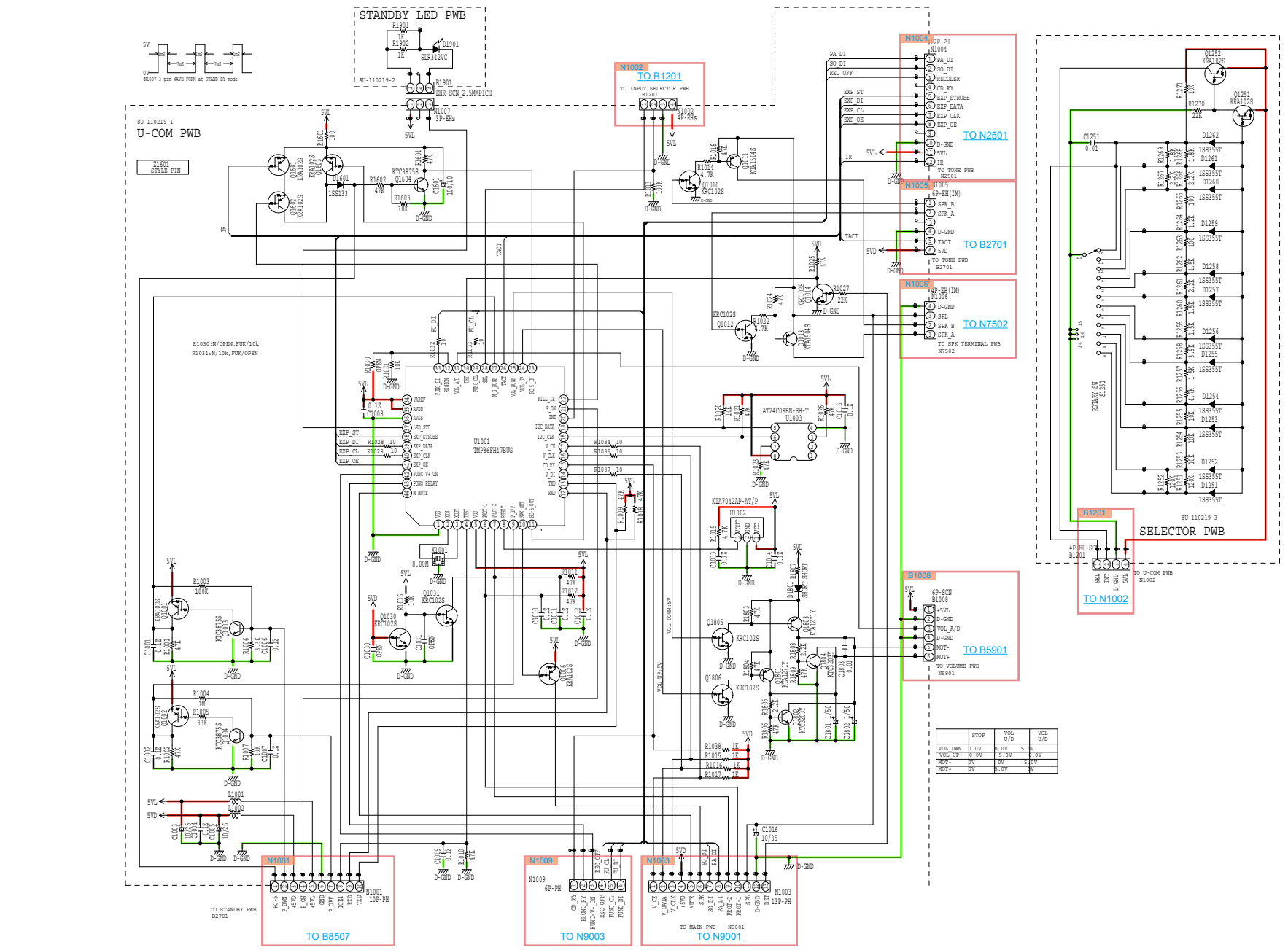
GND LINE POWER+ LINE POWER- LINE ANALOG AUDIO R ANALOG AUDIO L

SCH03_SPK TERMINAL

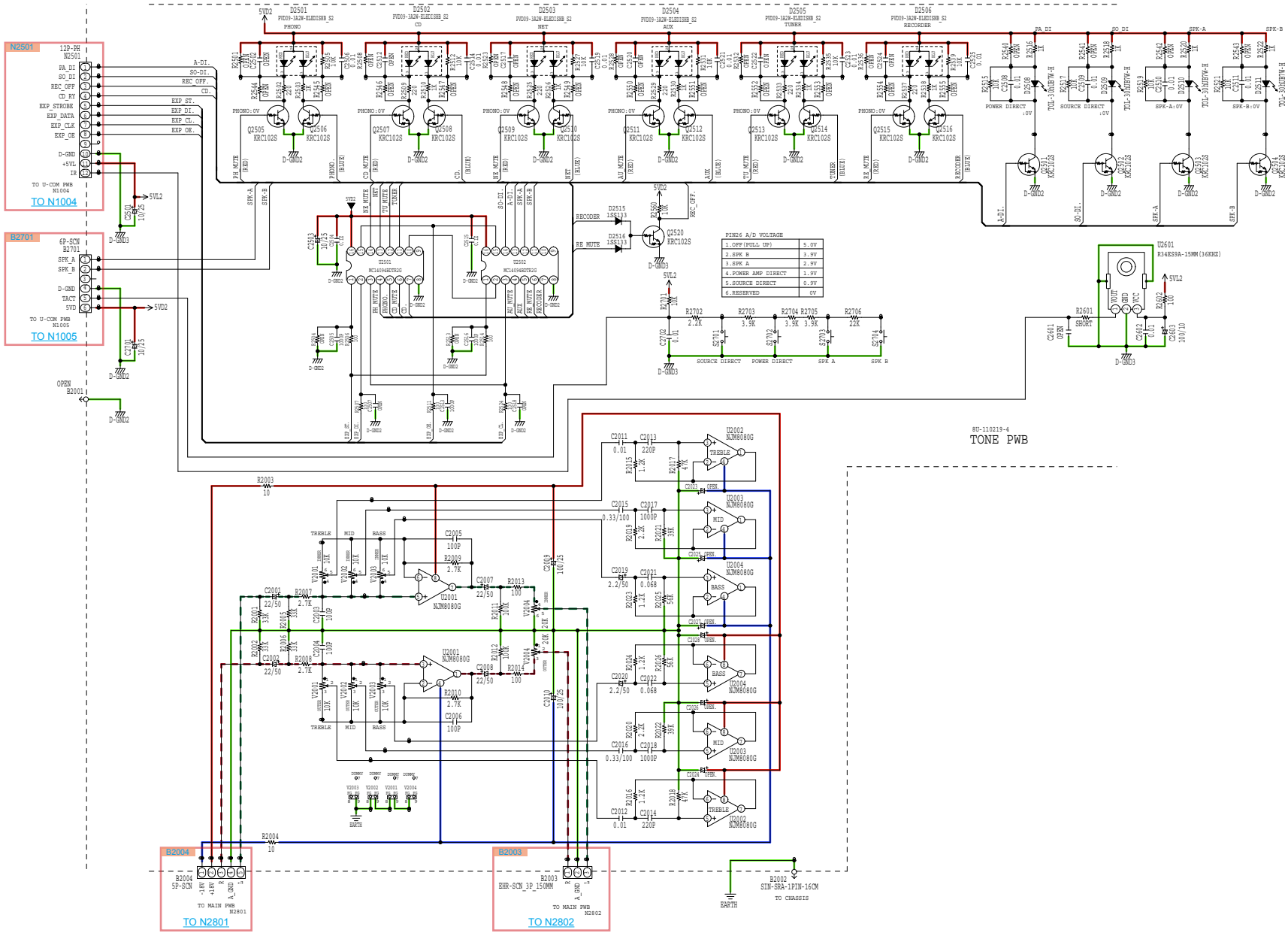


GND LINE POWER+ LINE POWER- LINE ANALOG AUDIO R ANALOG AUDIO L

SCH04_U-COM and SELECTOR

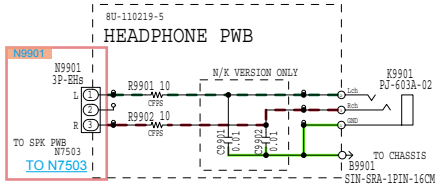


SCH05_TONE

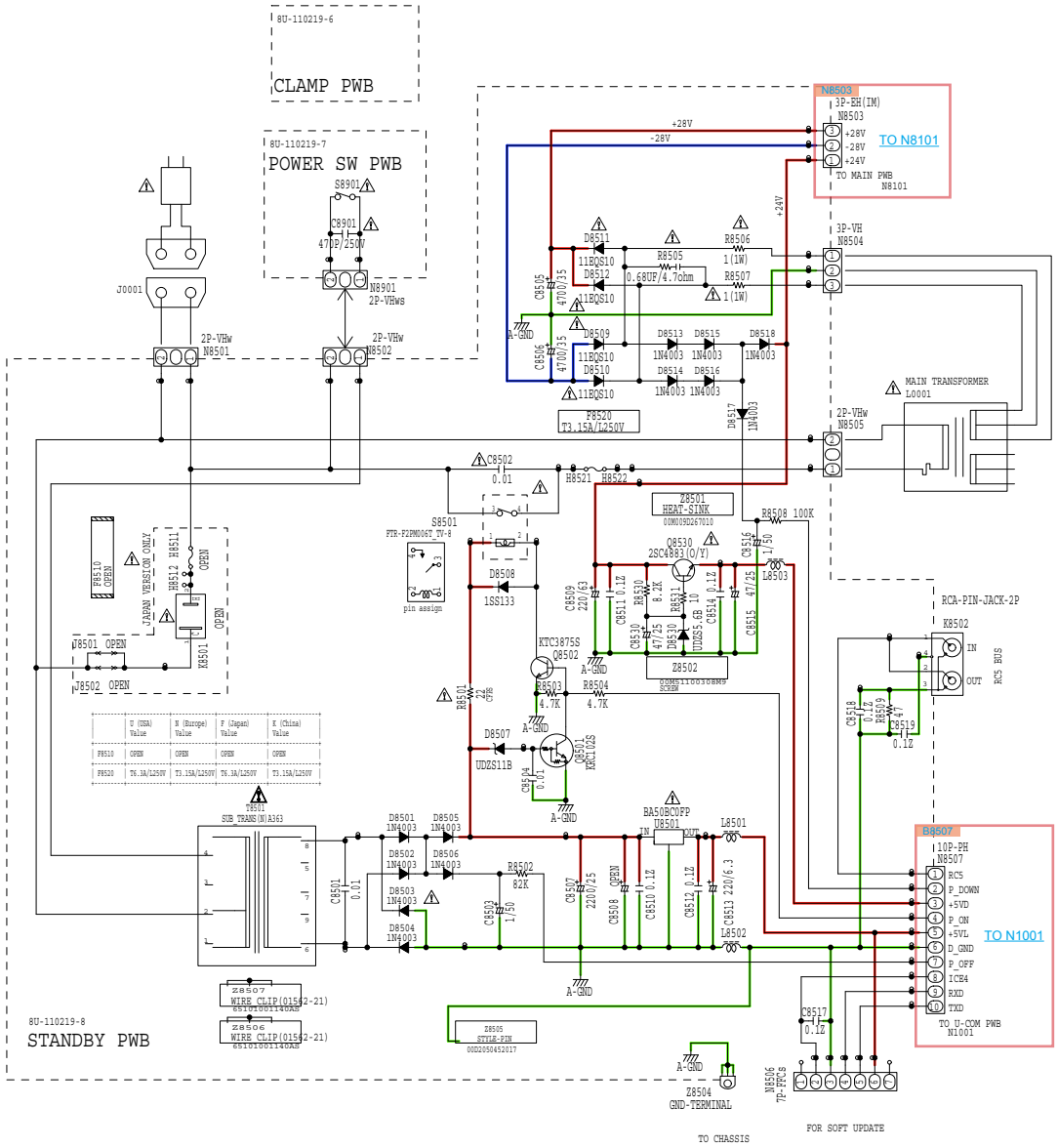


GND LINE POWER+ LINE POWER- LINE ANALOG AUDIO R ANALOG AUDIO L

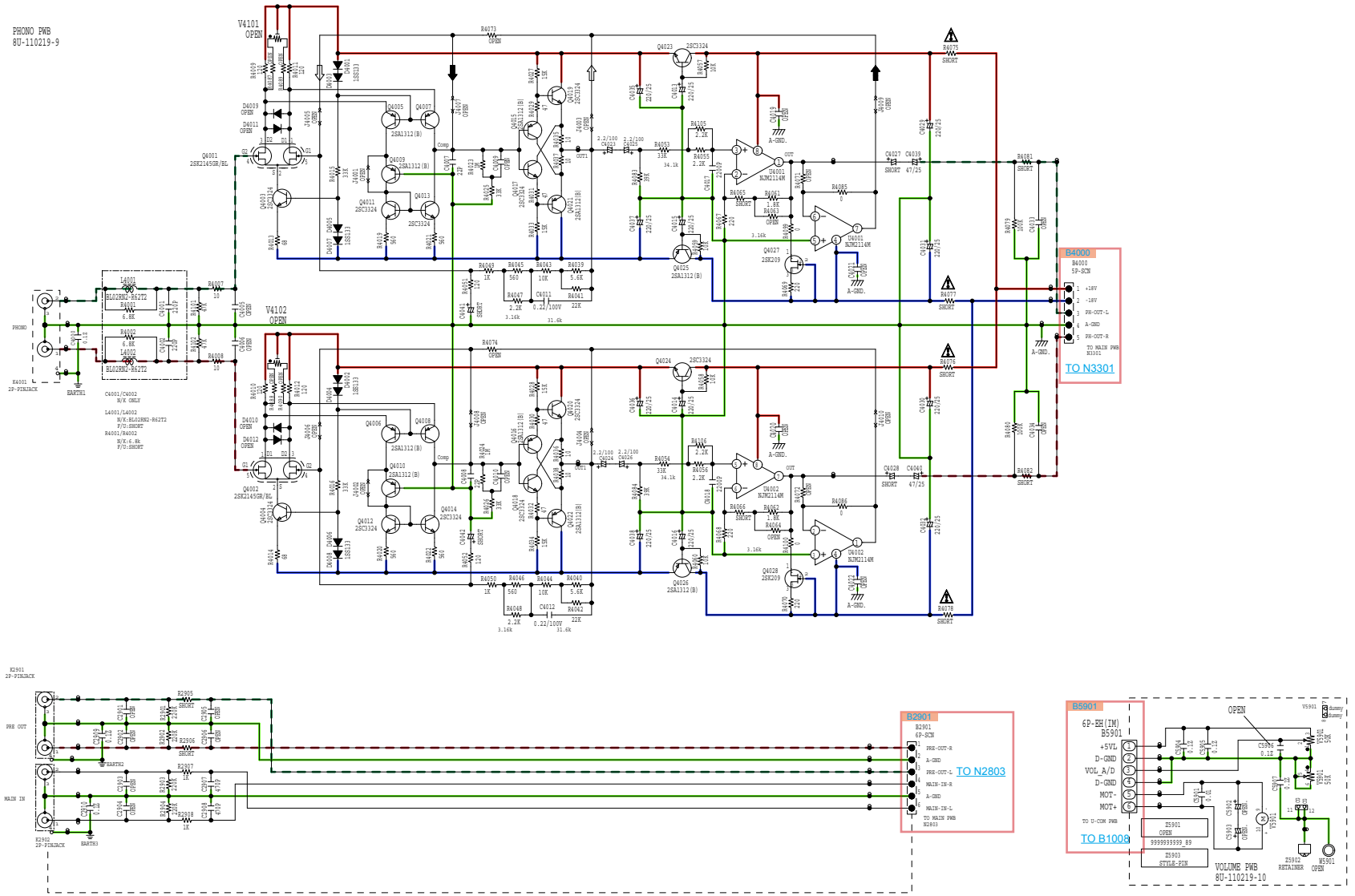
SCH06_HEADPHONE and POWER SW and STANDBY



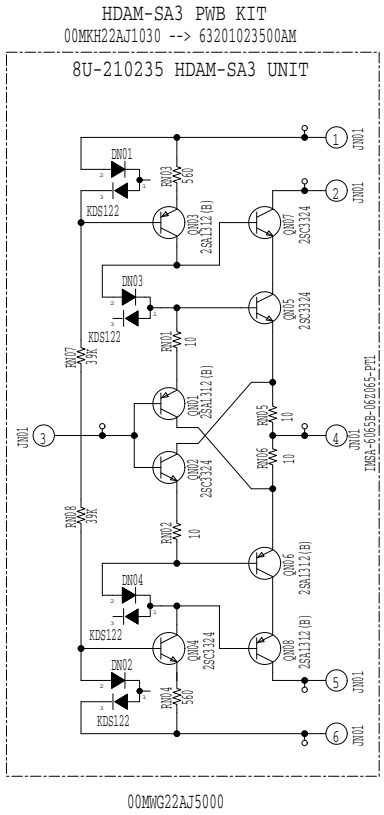
GND LINE POWER+ LINE POWER- LINE ANALOG AUDIO R ANALOG AUDIO L



SCH07_PHONO and VOLUME



GND LINE POWER+ LINE POWER- LINE ANALOG AUDIO R ANALOG AUDIO L



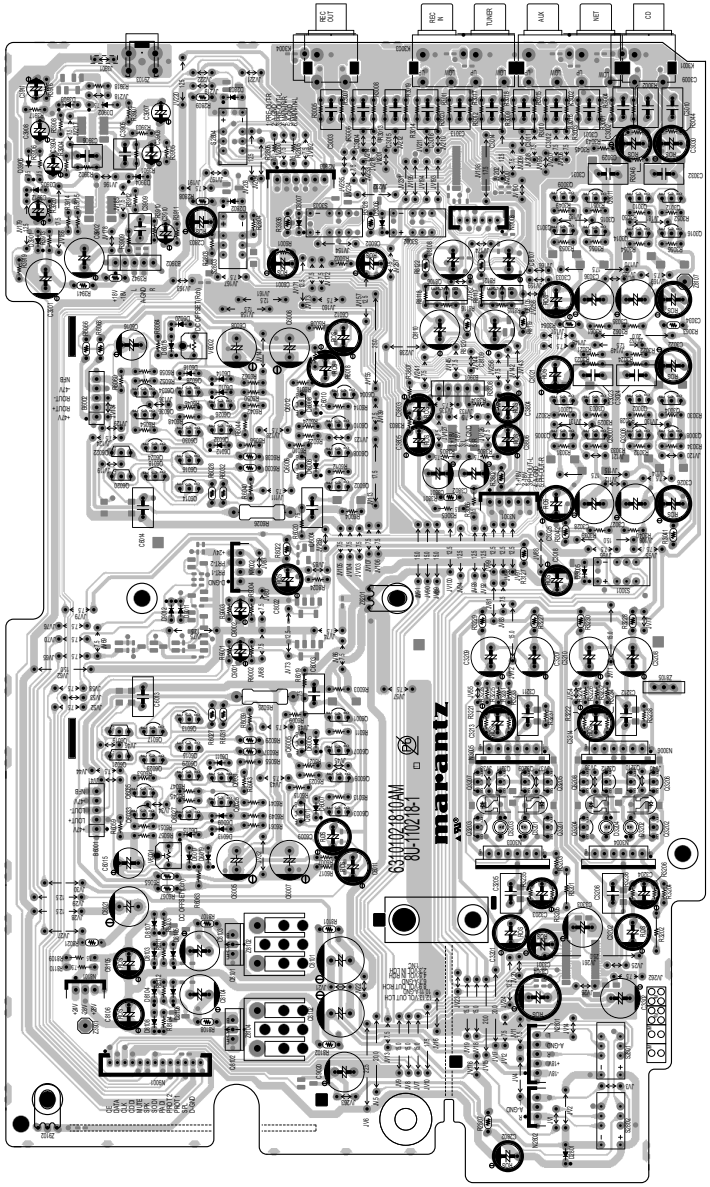
GND LINE POWER+ LINE POWER- LINE ANALOG AUDIO R ANALOG AUDIO L

PRINTED CIRCUIT BOARDS

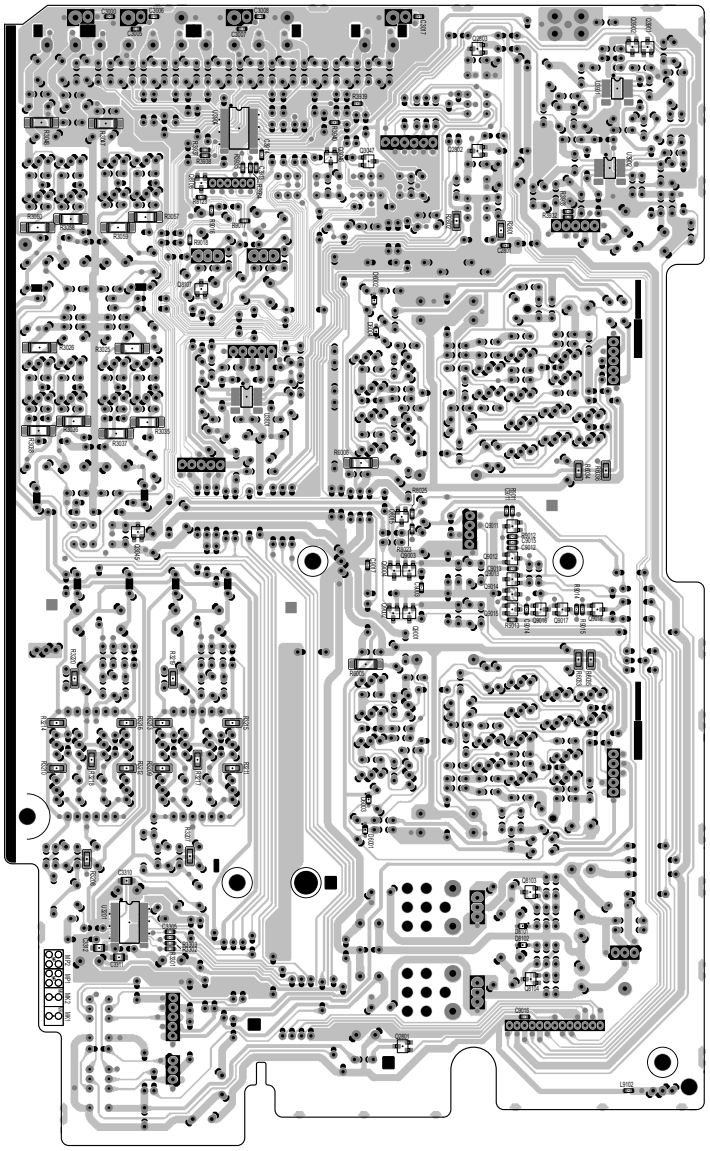
MAIN, HDAM SA3, R WIRE PROTECTION, L WIRE PROTECTION, POWER STAGE

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

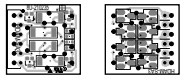
MAIN (A SIDE)



MAIN (B SIDE)

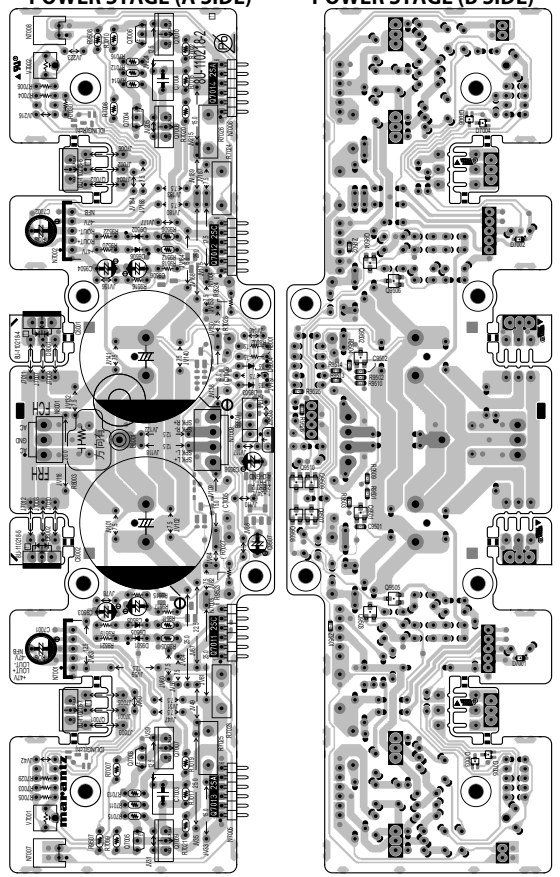


HDAM SA3 (A SIDE) HDAM SA3 (B SIDE)



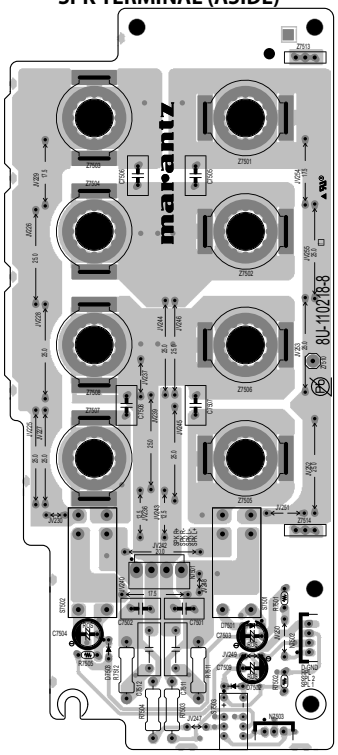
R WIRE PROTECTION (A SIDE) L WIRE PROTECTION (A SIDE)

POWER STAGE (A SIDE) POWER STAGE (B SIDE)

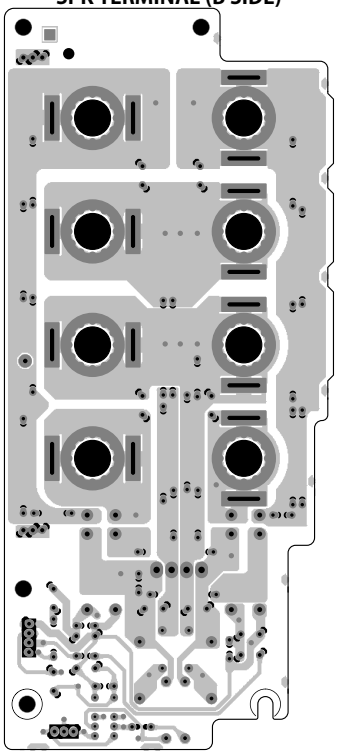


SPK TERMINAL, STANDBY, POWER SW, VOLUME

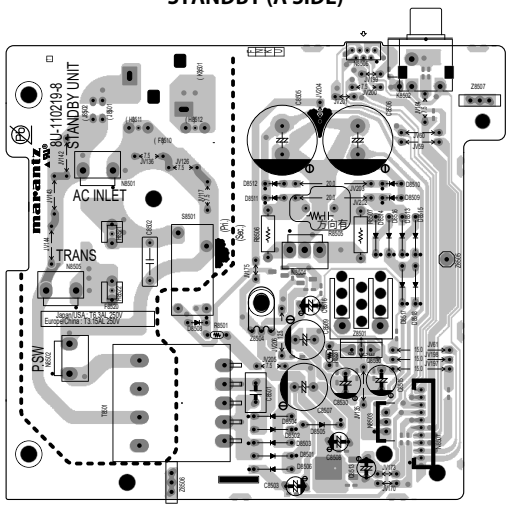
SPK TERMINAL (ASIDE)



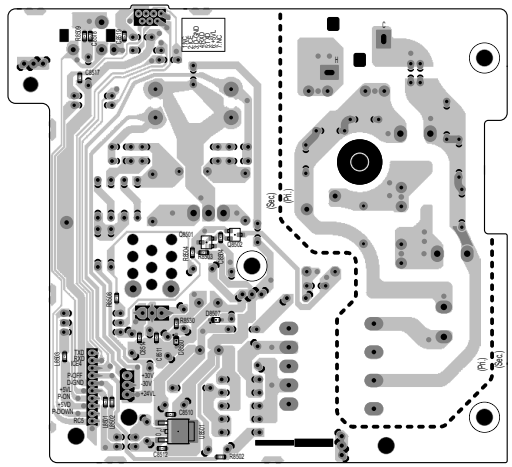
SPK TERMINAL (B SIDE)



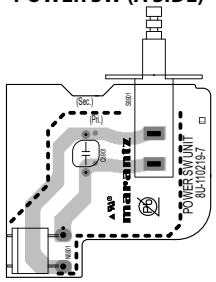
STANDBY (A SIDE)



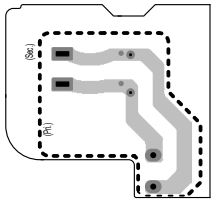
STANDBY (B SIDE)



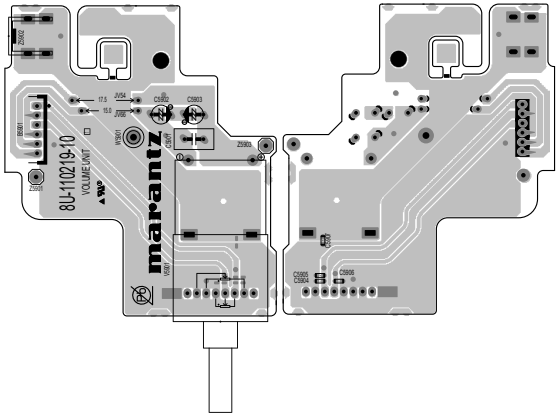
POWER SW (A SIDE)



POWER SW (B SIDE)



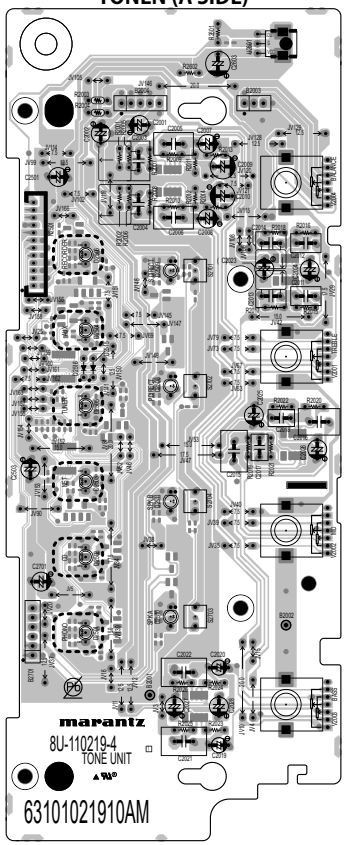
VOLUME (A SIDE)



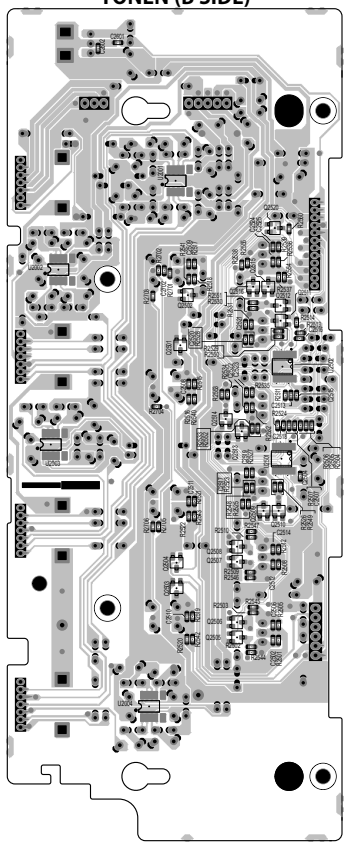
VOLUME (B SIDE)

TONE, u-COM, PHONO AMP, HEADPHONE, STANDBY LED, INPUT SEL, CLAMP

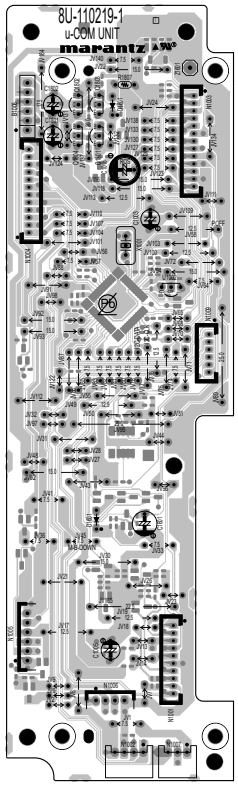
TONEN (A SIDE)



TONEN (B SIDE)



u-COM (A SIDE)



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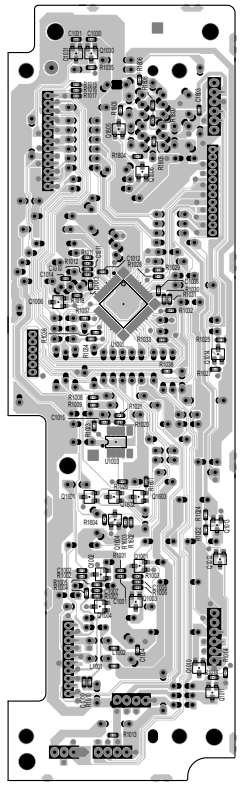
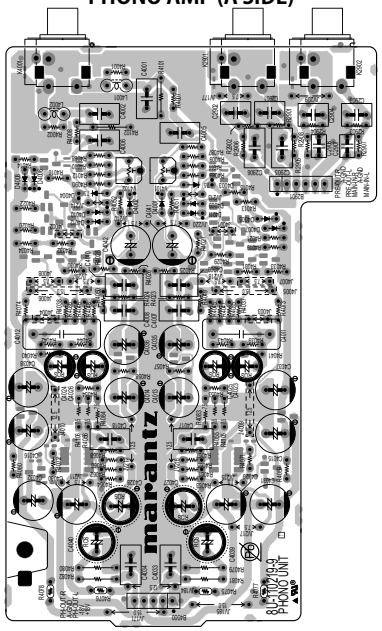
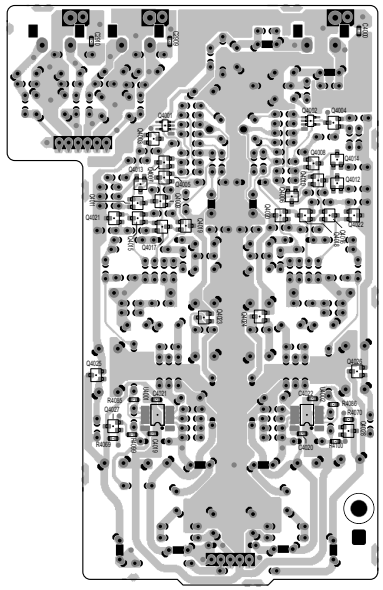


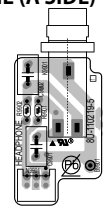
PHONO AMP (A SIDE)



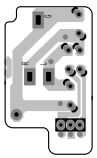
PHONO AMP (B SIDE)



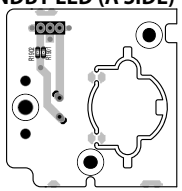
HEADPHONE (A SIDE)



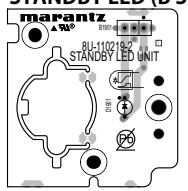
HEADPHONE (B SIDE)



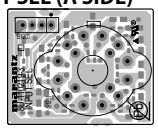
STANDBY LED (A SIDE)



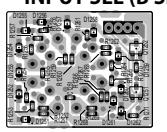
STANDBY LED (B SIDE)



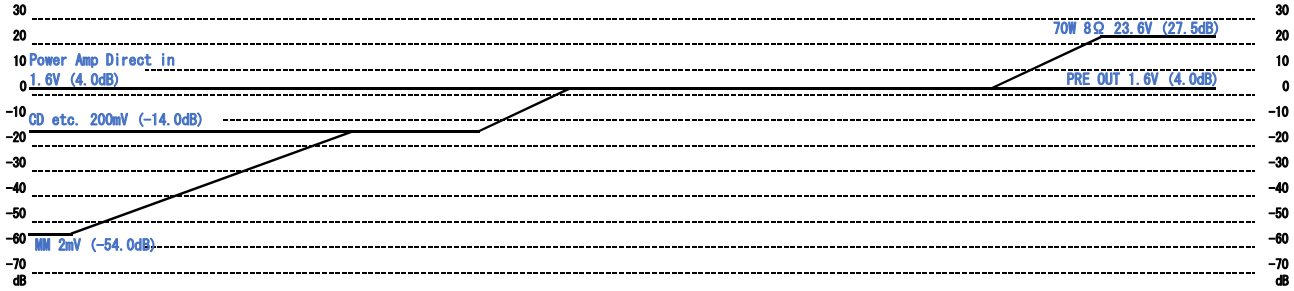
INPUT SEL (A SIDE)

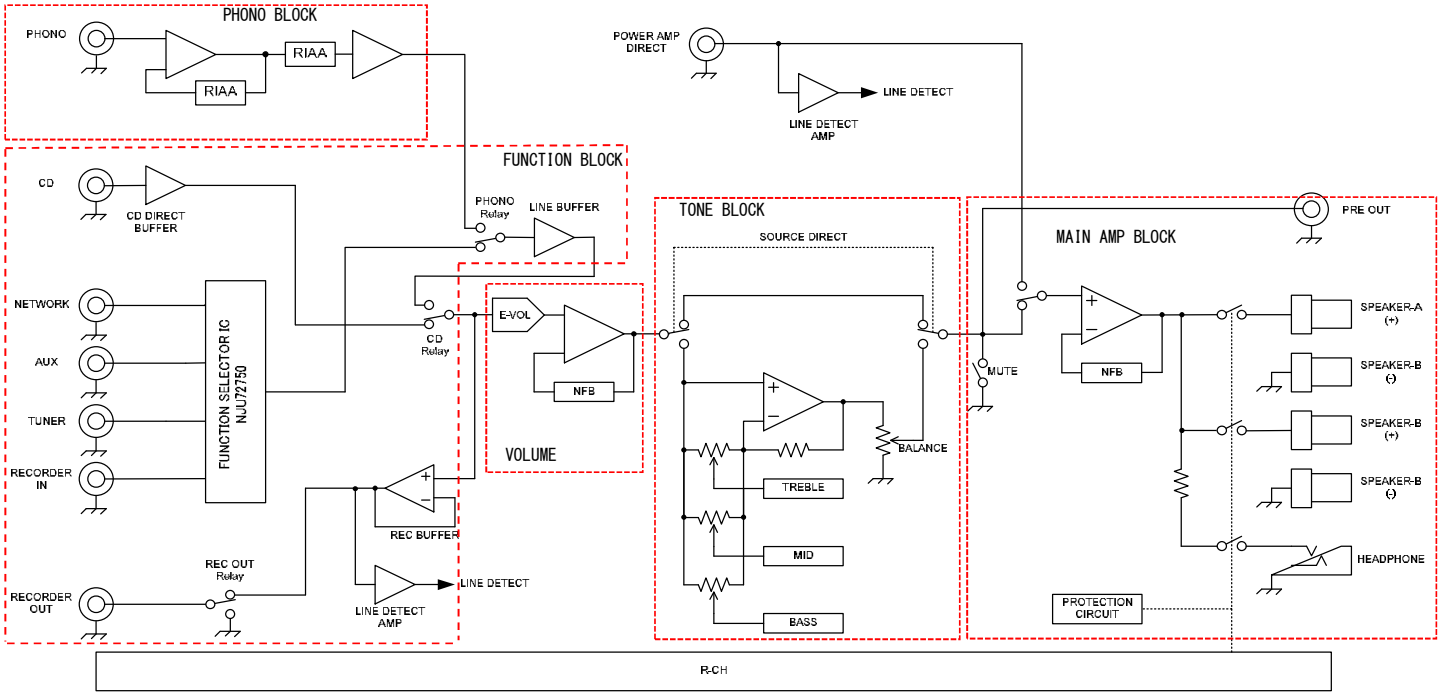


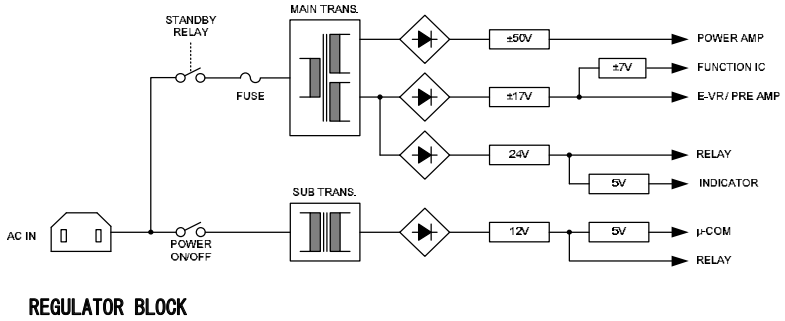
INPUT SEL (B SIDE)



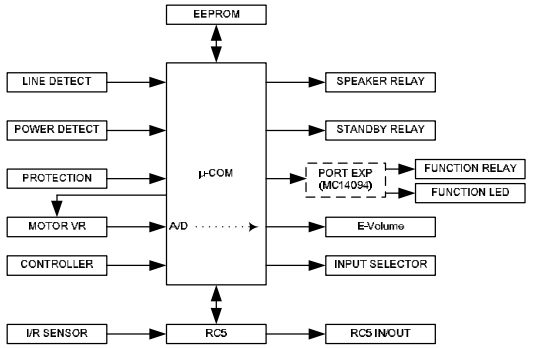
CLAMP (A SIDE)



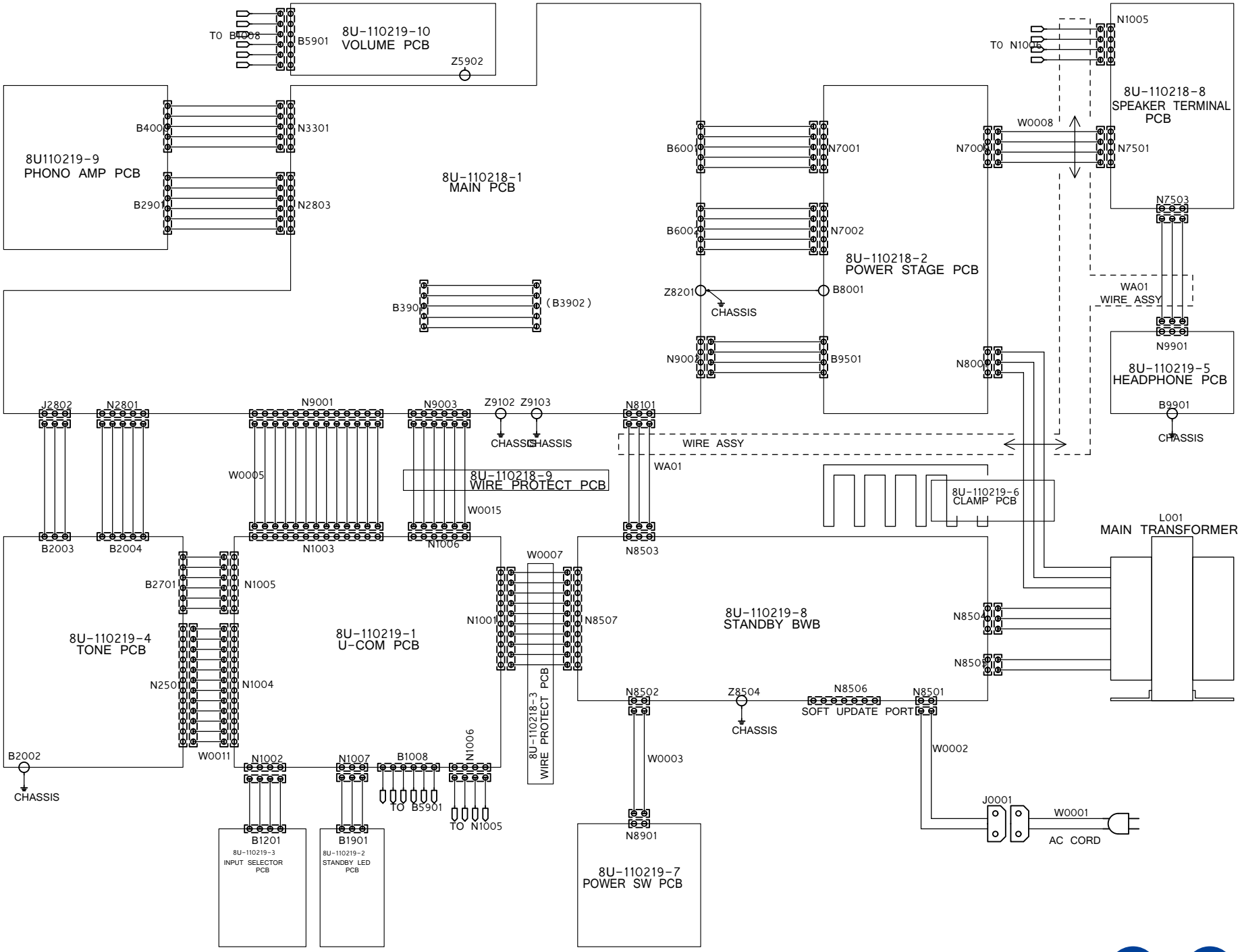




REGULATOR BLOCK



U-COM BLOCK

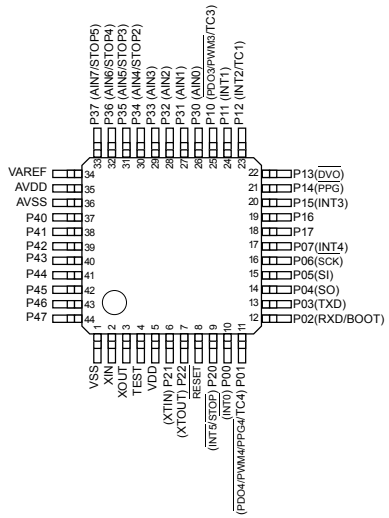

8U-110219-10
VOLUME PCB
B5901
Z5902
TO B1008
8U110219-9
PHONO AMP PCB
B400
N3301
B2901
N2803
8U-110218-1
MAIN PCB
B390
(B3902)
B6001
N7001
B6002
N7002
Z8201
B8001
CHASSIS
N9002
B9501
8U-110218-2
POWER STAGE PCB
N1005
TO N1001
8U-110218-8
SPEAKER TERMINAL
PCB
W0008
N7006
N7501
N7503
WA01
WIRE ASSY
N9901
8U-110219-5
HEADPHONE PCB
B9901
CHASSIS
N8001
J2802
N2801
N9001
N9003
Z9102
Z9103
CHASSIS
CHASSIS
N8101
WIRE ASSY
WA01
W0005
8U-110218-9
WIRE PROTECT PCB
W0015
8U-110219-6
CLAMP PCB
B2003
B2004
N1003
N1006
N8503
L001
MAIN TRANSFORMER
W0007
B2701
N1005
8U-110219-4
TONE PCB
N2501
N1004
W0011
8U-110219-1
U-COM PCB
N1001
N8507
8U-110219-8
STANDBY BWB
N8504
N8505
8U-110218-3
WIRE PROTECT PCB
N8502
Z8504
N8506
N8501
SOFT UPDATE PORT
CHASSIS
W0003
W0002
B2002
CHASSIS
N1002
N1007
B1008
N1006
TO B5901
TO N1005
J0001
W0001
AC CORD
B1201
8U-110219-3
INPUT SELECTOR
PCB
B1901
8U-110219-2
STANDBY LED
PCB
N8901
8U-110219-7
POWER SW PCB

SEMICONDUCTORS

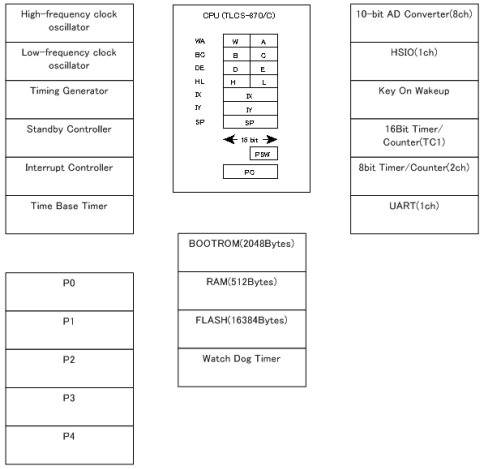
Only major semiconductors are shown, general semiconductors etc. are omitted to list.
The semiconductor which described a detailed drawing in a schematic diagram are omitted to list.

1. IC's

TMP86FH47BUG (U1001)



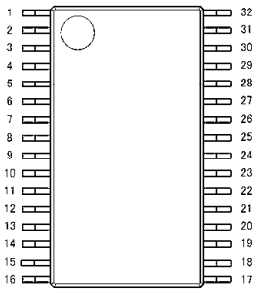
TMP86FH47BUG Block Diagram



TMP86FH47BUG Terminal Functions

Pin	Port Name	I/O	Use	Name	Port Setting				Note
					ACT	INIT	STBY	EXT.R	
1	VSS	-	-	VSS	-	-	-	-	0 V
2	XIN	-	-	XIN	-	-	-	-	8M Clock in
3	XOUT	-	-	XOUT	-	-	-	-	8M Clock out
4	TEST	I	I	TEST	H	-	L	47k	L->H : PROM Mode(Program rewriting)
5	VDD	-	-	VDD	-	-	-	-	u-com power supply 5V
6	P21 (XTIN)	I/O	I	PROT-1	L	-	H	47k	PROTECT_1:DC Offset / Over Current / Over Current
7	P22 (XTOUT)	I/O	I	PROT-2	L	-	H	47k	PROTECT_2:Vol.tage Abnormal Detect
8	RESET	I/O	I	RESET	L	-	H	4.7k	u-com reset connector
9	P20 (STOP/INT5)	I/O	I	P_OFF	L	-	H	10K	Detect Power Down (primary power supply on/off detection). Observe at power supply cutting, interrupt input.
10	P00 (INT0)	I/O	O	SPK_OUT	L	H	H	-	Speaker Relay On (Audio Out)
11	P01 (TC4/PD04/PPG4/ PWM4)	I/O	O	RC-5_OUT	L	H	H	-	RC-5 Output
12	P02 (RXD)	I/O	O	RXD	-	-	-	47k	Pull Up (For rewriting)
13	P03 (TXD)	I/O	O	TXD	-	-	-	47k	Pull Up (For rewriting)
14	P04 (SO)	I/O	O	V_DI	H	L	L	10K	NJU72322 (E.VR) Data
15	P05 (SI)	I/O	O	CD RY	H	L	L	-	CD Relay Control (H=CD Relay ON)
16	P06 (SCK)	I/O	O	V_CLK	H	L	L	10K	NJU72322 (E.VR) Clock
17	P07 (INT4)	I/O	O	V_CE	H	L	L	10K	NJU72322 (E.VR) Latch
18	P17	I/O	O	I2C_CLK	-	H	H	47k	I2C (EEPROM) (Pull up)
19	P16	I/O	I/O	I2C_DATA	-	H	H	10K	I2C (EEPROM) (Pull up)
20	P15 (INT3)	I/O	I	INT	H	-	-	100k	Input Selector Interrupt
21	P14 (PPG)	I/O	O	P_ON	H	L	L	-	Primary Relay ON
22	P13 (DVO)	I/O	O	KILL IR	H	L	L	-	RC-5 Kill IR
23	P12 (INT2/TC1)	I/O	I	RC-5_IN	L	-	H	47k	RC-5 Input
24	P11 (INT1) (BOOT2)	I/O	O	VOL_UP	L	H	H	10k	Volume Up
25	P10 (PWM3/TC3/PD03) (BOOT1)	I/O	O	VOL_DOWN	L	H	H	10k	Volume Down
26	P30 (AIN0)	I/O	I (AD)	TACT	-	-	-	10K	Source Direct / Power Amp Direct SW / SPK A / SPK B
27	P31 (AIN1)	I/O	I	M_B_DOWN	L	-	H	-	Checking port for amp power supply off confirm
28	P32 (AIN2)	I/O	I	SEL	L	-	-	-	Input Selector A/D
29	P33 (AIN3)	I/O	O	FUNC_CL	H	L	L	-	NJU72570A (Function sel) CLK
30	P34 (AIN4/STOP2)	I/O	I	DET	L	-	L	47k	Power down : L (for signal detection circuit)
31	P35 (AIN5/STOP3)	I/O	I (AD)	VOL_A/D	-	-	-		Volume A/D Input
32	P36 (AIN6/STOP4)	I/O	I	Region	-	-	-	-	Region SEL
33	P37 (AIN7/STOP5)	I/O	O	FUNC_DI	H	L	L	-	NJU72570A (Function sel) DATA
34	VAREF	-	-	VAREF	-	-	-	-	A/D Reference
35	AVDD	-	-	AVDD	-	-	-	-	5 V
36	AVSS	-	-	AVSS	-	-	-	-	0 V
37	P40	I/O	O	LED_STD	L	H	L	-	STANDBY LED (flashing in protection mode 1/2)
38	P41	I/O	O	EXP_STROBE	H	L	L	-	Port EXP (CD4094BPWR) STB
39	P42	I/O	O	EXP_DATA	H	L	L	-	Port EXP (CD4094BPWR) DATA
40	P43	I/O	O	EXP_CLK	H	L	L	-	Port EXP (CD4094BPWR) CLK
41	P44	I/O	O	EXP_OE	H	L	L	-	Port EXP (CD4094BPWR) OE
42	P45	I/O	O	FUNC_V+ON	H	L	L	-	NJU72570A (Function IC) V+ ON
43	P46	I/O	O	PHONO RELAY	H	L	L	-	PHONO Relay Control (H=PHONO Relay ON)
44	P47	I/O	O	M_MUTE	L	H	L	-	Manual Mute（Mute on :L）

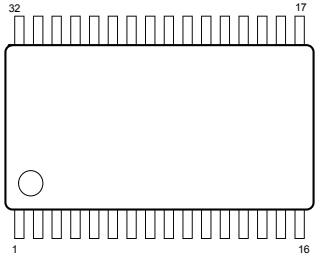
NJU72322V (U3201)



ピン配置

1. NC	17. NC
2. L_CAP	18. DATA
3. OUTL	19. CLOCK
4. L−	20. LATCH
5. L_REF	21. D_V+
6. L+	22. INR
7. L_REF	23. AR_V+
8. L_REF	24. AL_V+
9. R_REF	25. AR_V−
10. R_REF	26. AL_V−
11. R+	27. INL
12. R_REF	28. D_V−
13. R−	29. D_CAP
14. OUTR	30. ADR0
15. R_CAP	31. NC
16. D_IN	32. D_REF

NJU72750A (U3904)



No.	Symbol	Function	No.	Symbol	Function
1	V+	+ Power Pin	17	DATA	IC Control data input
2	InA1	Ach Input 1	18	CLOCK	IC control clock input
3	InB1	Bch Input 1	19	NC	-
4	InA2	Ach Input 2	20	NC	-
5	InB2	Bch Input 2	21	OutB3	Bch Output 3
6	InA3	Ach Input 3	22	OutA3	Ach Output 3
7	InB3	Bch Input 3	23	REF_B	Bch Reference potential pin
8	InA4	Ach Input 4	24	OutB2	Bch Output 2
9	InB4	Bch Input 4	25	OutA2	Ach Output 2
10	InA5	Ach Input 5	26	REF_A	Ach Reference potential pin
11	InB5	Bch Input 5	27	OutB1	Bch Output 1
12	InA6	Ach Input 6	28	OutA1	Ach Output 1
13	InB6	Bch Input 6	29	NC	-
14	InA7	Ach Input 7	30	ADR0	Address selection Pin 0
15	InB7	Bch Input 7	31	ADR1	Address selection Pin 1
16	REF	BIAS	32	V-	- Power Pin

2. Remote Code Table

PM8006 (RC-5)

		RC-5/RC-5 Ext.					
RC001PMND		Code1: AMP (Initial)			Code2: Variable		
KEY No.	Key Name	System	Command	Extension	System	Command	Extension
K1	⏻ POWER (Network)	25	12	00	<=		
K2	SLEEP	25	38	01	<=		
K3	DIMMER	25	71	00	<=		
K4	⏻ AMP POWER	16	12	- -	<=		
K5	INTERNET RADIO	25	63	51	<=		
K6	USB	25	63	21	<=		
K7	MUSIC SERVER	25	63	50	<=		
K8	OPTICAL1	25	63	31	<=		
K9	OPTICAL2	25	63	33	<=		
K10	COAXIAL	25	63	32	<=		
K11	CD	25	63	20	<=		
K12	Bluetooth	25	63	38	<=		
K13	USB-DAC	25	63	37	<=		
K14	I◀◀	25	33	00	<=		
K15	▶/II	25	53	00	<=		
K16	▶▶I	25	32	00	<=		
K17	FAVORITES CALL	25	119	21	<=		
K18	■	25	54	00	<=		
K19	FAVORITES ADD	25	119	22	<=		
K20	INPUT ▲	16	00	13	<=		
K21	INPUT ▼	16	00	14	<=		
K22	SOURCE DIRCET	16	34	- -	<=		
K23	MUTE	16	13	- -	25	13	10
K24	VOLUME ▲	16	16	- -	25	16	10
K25	VOLUME ▼	16	17	- -	25	17	10
K26	QUEUE	25	36	10	<=		
K27	BACK	25	87	10	<=		
K28	OPTION	25	82	20	<=		
K29	SETUP	25	82	00	<=		
K30	▲ (UP)	25	80	00	<=		
K31	▼ (DOWN)	25	81	00	<=		
K32	◀ (LEFT)	25	85	00	<=		
K33	▶ (RIGHT)	25	86	00	<=		
K34	ENTER	25	87	00	<=		
K35	1 ./@	25	01	00	<=		
K36	2 ABC	25	02	00	<=		
K37	3 DEF	25	03	00	<=		
K38	4 GHI	25	04	00	<=		
K39	5 JKL	25	05	00	<=		
K40	6 MNO	25	06	00	<=		
K41	7 PQRS	25	07	00	<=		
K42	8 TUV	25	08	00	<=		
K43	9 WXYZ	25	09	00	<=		
K44	+10 a/A	25	10	00	<=		
K45	0 "Space" *	25	00	00	<=		
K46	CLEAR	25	49	00	<=		
K47	PROGRAM	25	36	00	<=		
K48	RANDOM	25	28	00	<=		
K49	REPEAT	25	29	00	<=		
K50	INFO	25	11	00	<=		

Extended Code: AMP
PM8006 must receive following codes.
These codes are not included in the RC001PMND

		RC-5/RC-5 Ext.		
No.	Name	System	Command	Extension
P1	Power On	16	12	01
P2	Power Off	16	12	02
P3	MUTE On	16	13	00
P4	MUTE Off	16	13	01
P5	PHONO	21	63	- -
P6	CD	20	63	- -
P7	TUNER	17	63	- -
P8		17	63	10
P9	AUX	16	00	06
P10	DVD (AUX)	16	00	10
P11	RECORDER	26	63	- -
P12	NETWORK	25	63	10
P13	Speaker A/B	16	29	- -
P14	Speaker A On	16	35	00
P15	Speaker A Off	16	35	01
P16	Speaker B On	16	39	00
P17	Speaker B Off	16	39	01
P18	SERVICE MODE	16	63	63
P19	Power AMP Direct On	16	01	30
P20	Power AMP Direct Off	16	01	31

MECHANICAL

DISASSEMBLY

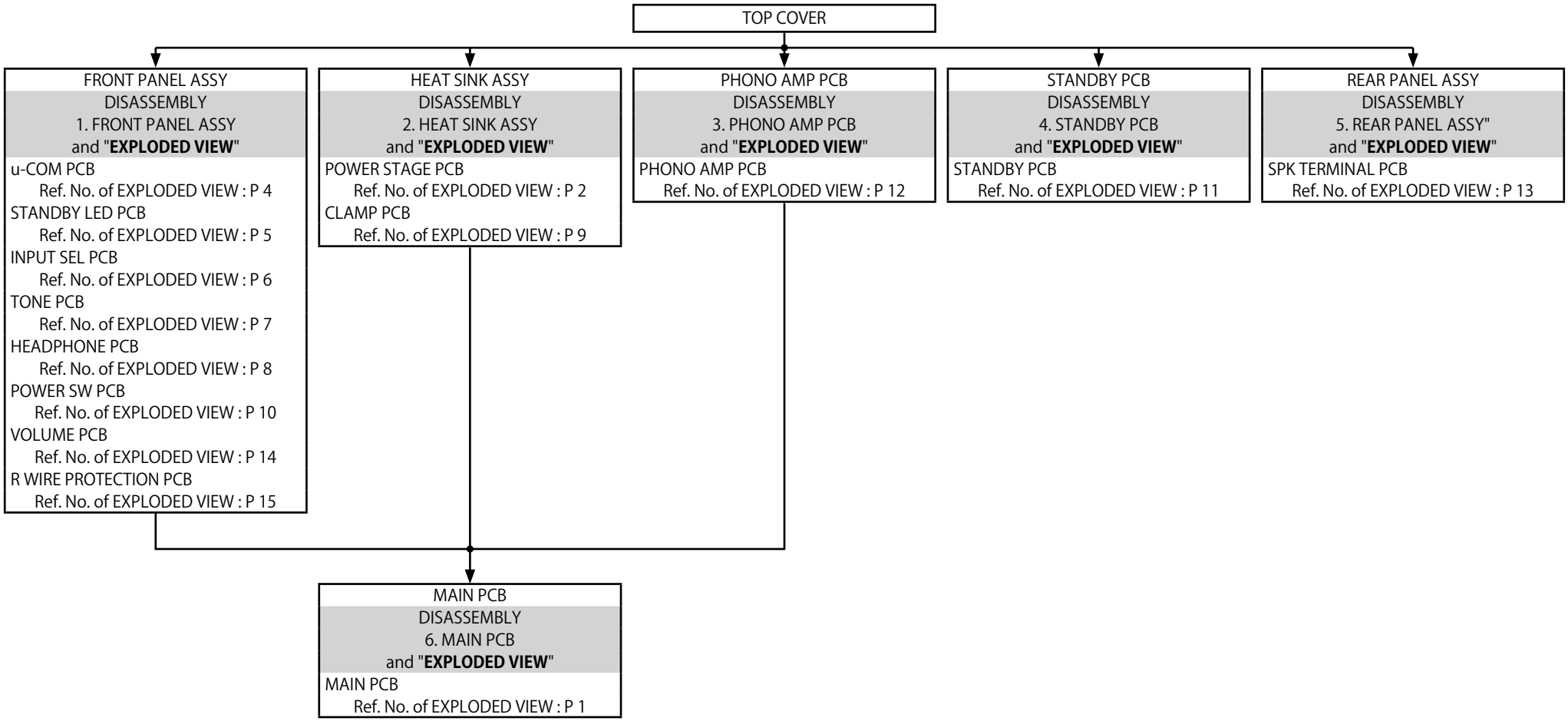
EXPLODED VIEW

PACKING VIEW

DISASSEMBLY

Flowchart

- Remove each part following the flow below.
- Reassemble the removed parts in the reverse order.
- Read "SAFETY PRECAUTIONS" before reassembling the removed parts.
- If wire bundles are removed or moved during adjustment or part replacement, reshape the wires after completing the work. Failure to shape the wires correctly may cause problems such as noise.
- See "EXPLODED VIEW"

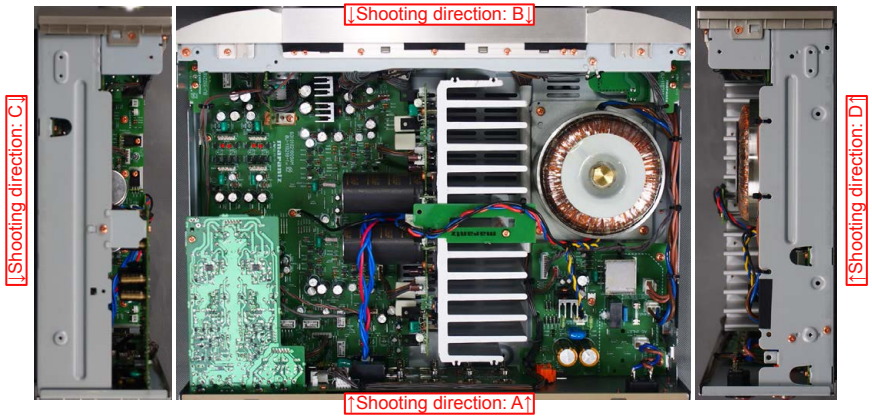


Explanatory Photos for DISASSEMBLY

• For the shooting direction of each photos used in this manual, see the photo below.
• **A, B, C and D** in the photo below indicate the shooting directions of photos.
• The photographs with no shooting direction indicated were taken from the top of the unit.
• Photos of PM8006 N1SG are used in this manual.

The viewpoint of each photograph

(Shooting direction : X) [View from the top]

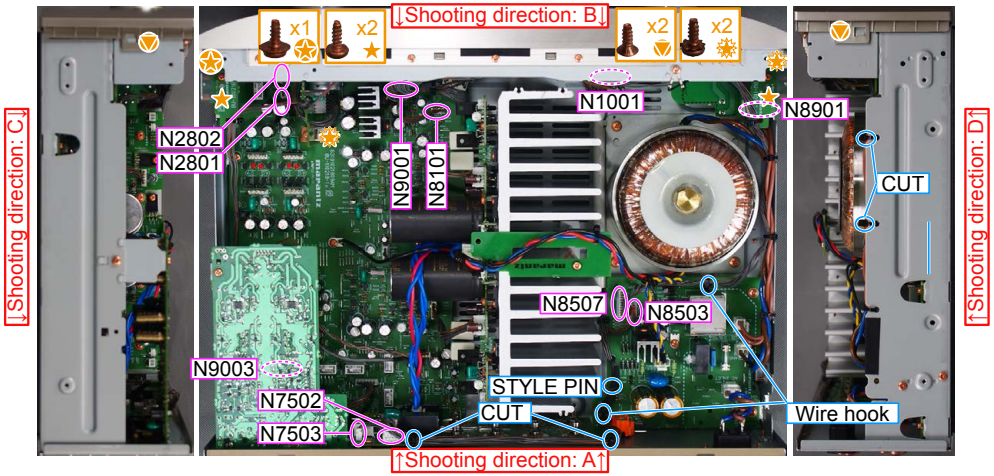


1. FRONT ASSY

Proceeding : TOP COVER → FRONT ASSY

(1) Remove the screws.

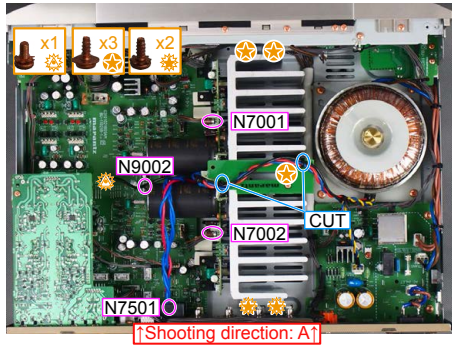
(2) Remove the screws. Remove the STYLE PIN and connectors.
Cut the wire clamps.



2. HEAT SINK ASSY

Proceeding : TOP COVER → HEAT SINK ASSY

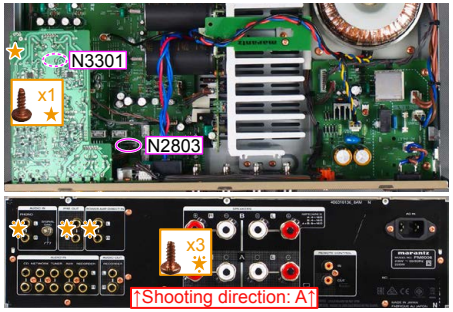
(1) Remove the screws. Cut the wire clamp, then remove the connector.



3. PHONO AMP PCB

Proceeding : TOP COVER → PHONO AMP PCB

(1) Remove the screws. Remove the connector.



4. STANDBY PCB

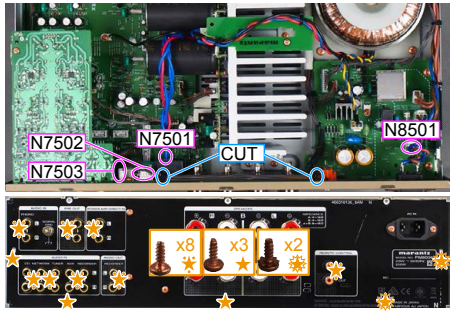
Proceeding : TOP COVER → STANDBY PCB

(1) Remove the screws. Remove the connector.
Remove the STYLE PIN.

5. REAR PANEL ASSY

Proceeding : TOP COVER → REAR PANEL ASSY

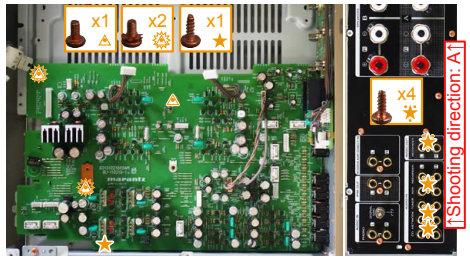
(1) Remove the screws. Cut the wire clamp, then remove the connector.



6. MAIN PCB

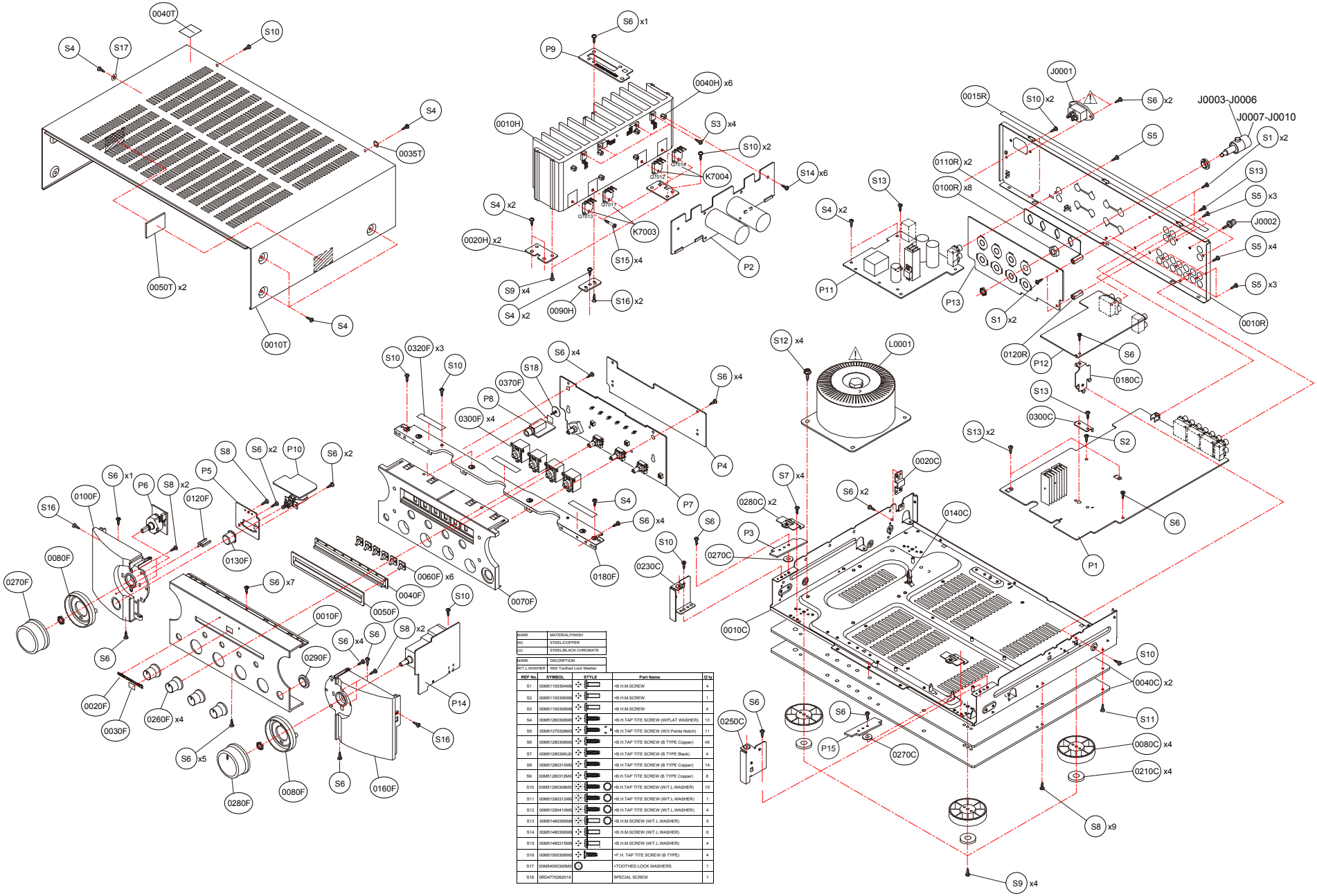
Proceeding : TOP COVER → FRONT ASSY → HEAT SINK ASSY → PHONO AMP PCB → MAIN PCB

(1) Remove the screws.



EXPLODED VIEW

Parts List : http://dmedia.dmglobal.com/Document/DocumentDetails/23855



MARK	MATERIAL/FINISH
(M)	STEEL/COPPER
(U)	STEEL/BLACK CHROMATE

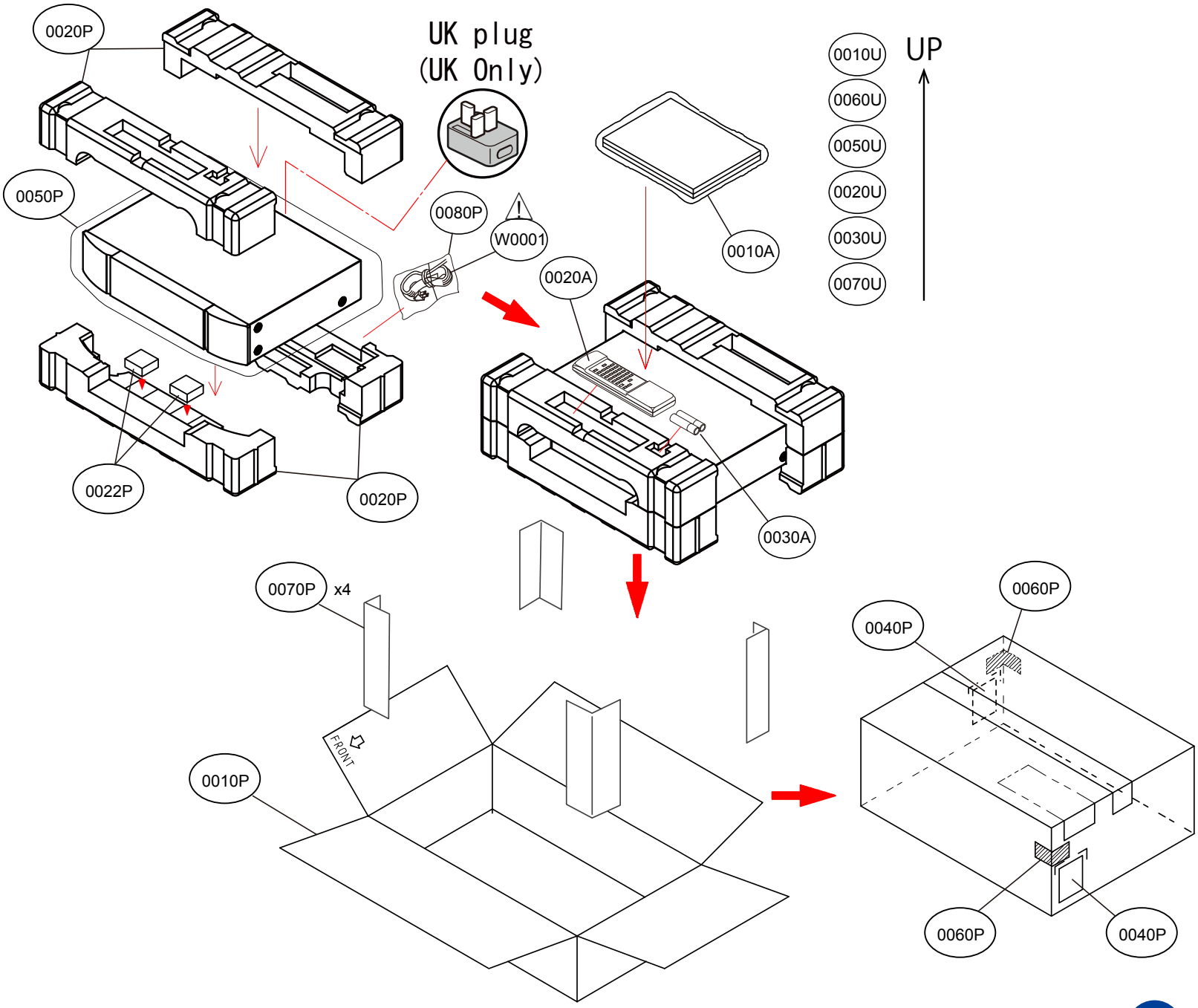
MARK	DISCRIPTION
W/T.L.WASHER	With Toothed Lock Washer

REF No.	SYMBOL	STYLE	Part Name	Q'ty
S1	00M5110304M6		+B.H.M.SCREW	4
S2	00M5110306M6		+B.H.M.SCREW	1
S3	00M5110308M6		+B.H.M.SCREW	4
S4	00M5126030M6		+B.H.TAP TITE SCREW (W/FLAT WASHER)	13
S5	00M5127030M6		+B.H.TAP TITE SCREW (W/3 Points Notch)	11
S6	00M5128030M6		+B.H.TAP TITE SCREW (B TYPE Copper)	48
S7	00M5128030U0		+B.H.TAP TITE SCREW (B TYPE Black)	4
S8	00M5128031M6		+B.H.TAP TITE SCREW (B TYPE Copper)	14
S9	00M5128312M6		+B.H.TAP TITE SCREW (B TYPE Copper)	8
S10	00M5129030M6		+B.H.TAP TITE SCREW (W/T.L.WASHER)	10
S11	00M5129312M6		+B.H.TAP TITE SCREW (W/T.L.WASHER)	1
S12	00M5129041M6		+B.H.TAP TITE SCREW (W/T.L.WASHER)	4
S13	00M5146030M6		+B.H.M.SCREW (W/T.L.WASHER)	5
S14	00M5148030M6		+B.H.M.SCREW (W/T.L.WASHER)	6
S15	00M5148031M6		+B.H.M.SCREW (W/T.L.WASHER)	4
S16	00M5150030M6		+F.H. TAP TITE SCREW (B TYPE)	4
S17	00M5405030M0		+TOOTHED LOCK WASHERS	1
S18	0RD4770262018		SPECIAL SCREW	1

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

PACKING VIEW

Parts List : http://dmedia.dmglobal.com/Document/DocumentDetails/23855



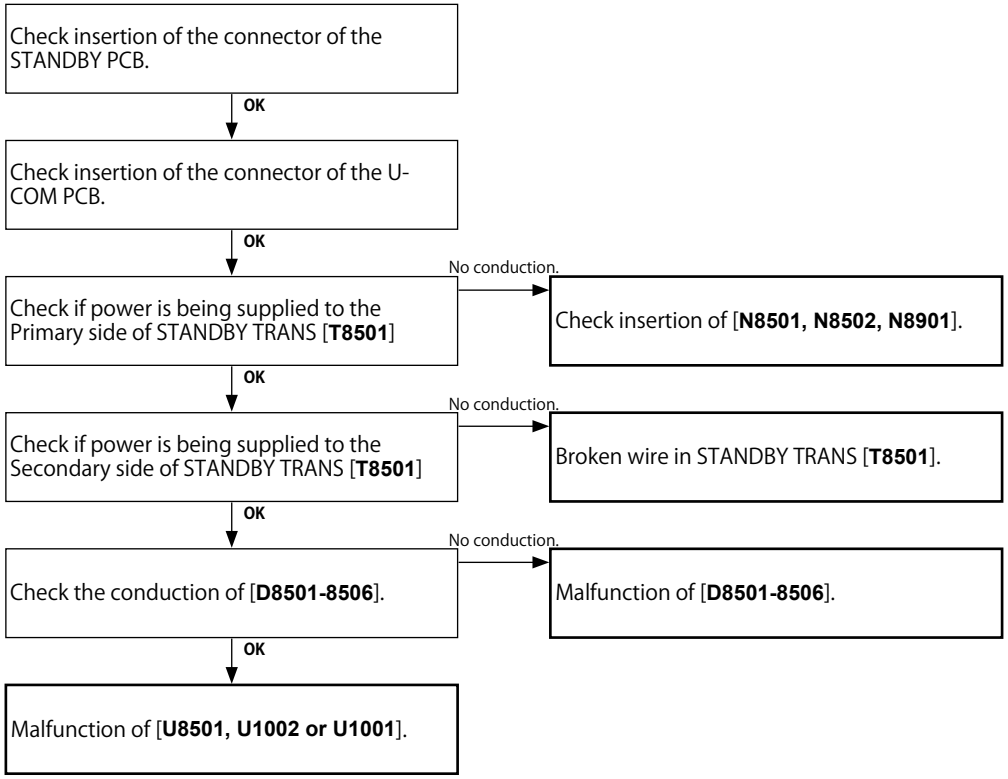
REPAIR INFORMATION

TROUBLE SHOOTING

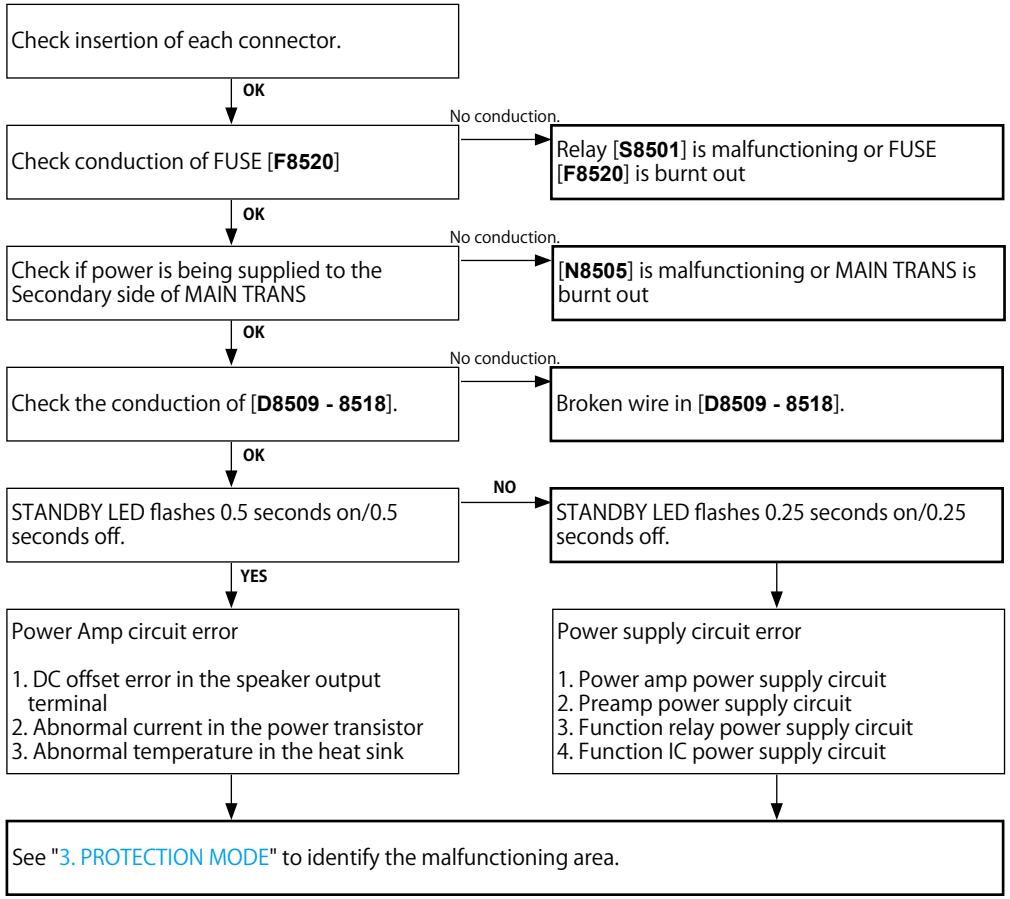
SPECIAL MODE

ADJUSTMENT

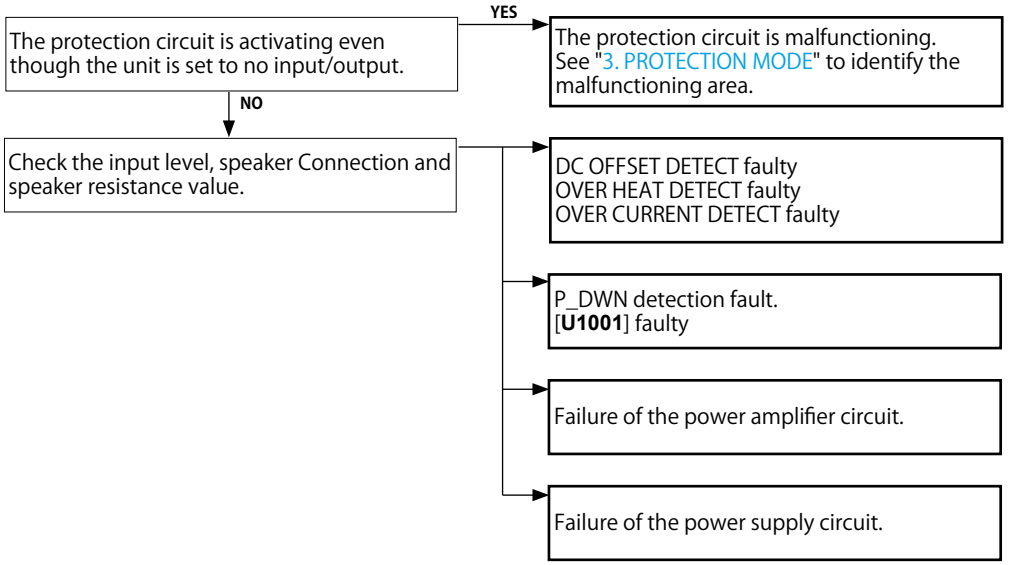
1. The power cannot be turned on (STANDBY LED is not lit(STANDBY MODE))



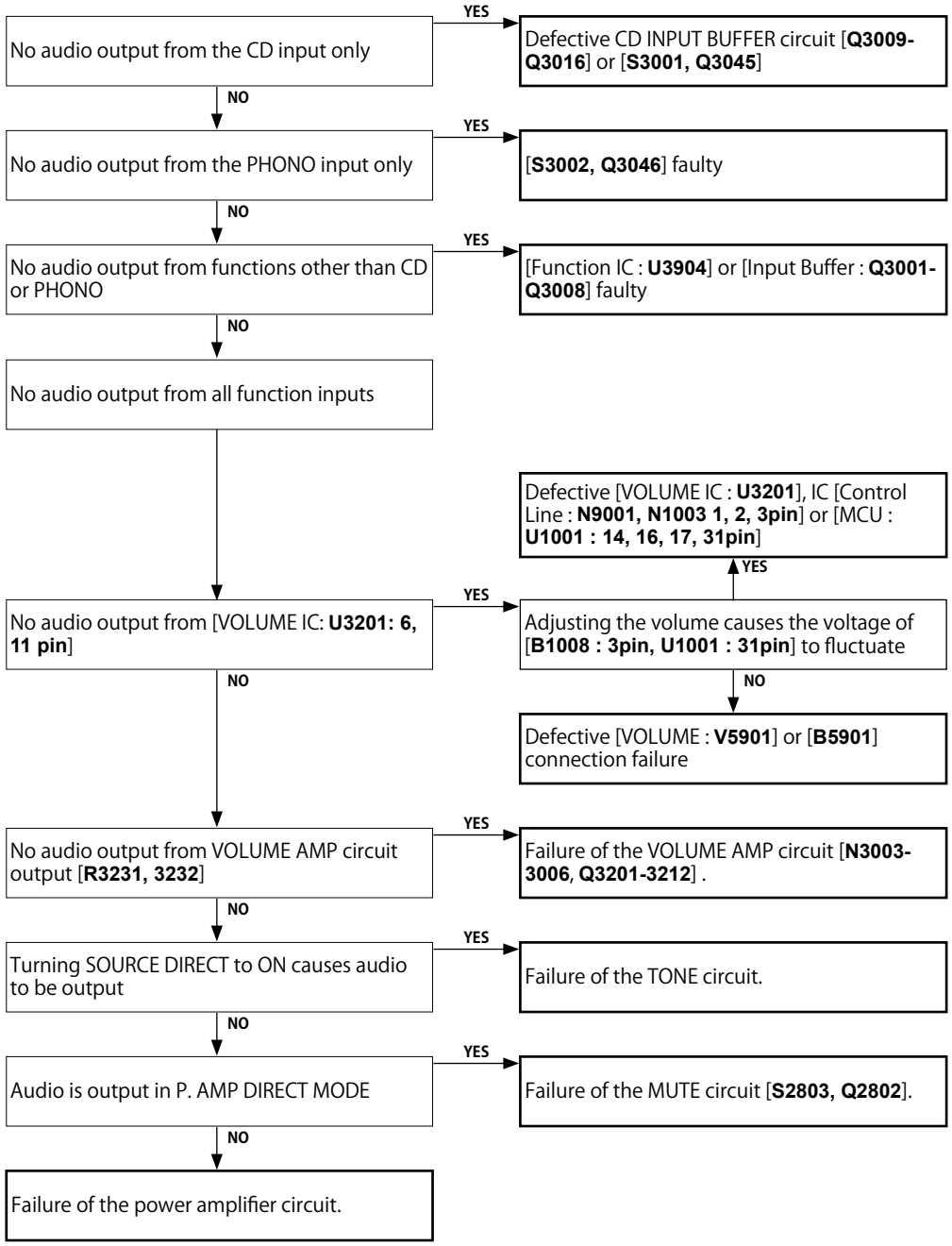
2. The power cannot be turned on (STANDBY LED is lit → light flashes)



3. STANDBY LED flashes while using the unit (Protection circuit becomes activated)



4. The power turns on but no sound is output



SPECIAL MODE

Special mode setting button

※ No. 1, 2 : While holding down the "**A**" button, press the power button to turn on the power.

No.	Mode	Button A	Descriptions
1	Service mode	SOURCE DIRECT	The firmware version is shown on the display. (See 1. Service mode)
2	Special mode for Motor Volume	POWER AMP DIRECT	This is a special mode for fixing a malfunction in the Motor volume used for this unit that keeps the Volume from muting even when it is reduced to MIN (very low audio can still be heard).

1. Service mode

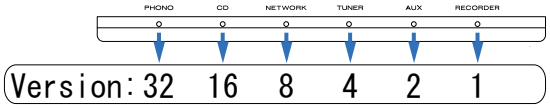
1.1. Actions

Version information is displayed when the device is started in this mode. U-COM (U1001)

1.2. Starting up

(1) While holding down the "**SOURCE DIRECT**" button, press the power button to turn on the power.

(2) FIRMWARE version is displayed by LED. (Only displayed for 3 seconds)
※ Section where LED is lit indicates the version.
N Only : Speakers A LED is lit.
Example display
Light up RECORDER [1], Version : 1
Light up RECORDER [1] and TUNER [4], Version : 5
Light up RECORDER [1] and NETWORK [8], Version : 9



(3) Front panel LEDs light in order, after which all are lit.
(3-1) Each Input Source LED lights in red then in blue for 1 second each.
RED [PHONO] → [CD] → [NETWORK] → [TUNER] → [AUX] → [RECORDER]
BLUE [PHONO] → [CD] → [NETWORK] → [TUNER] → [AUX] → [RECORDER]
(3-2) Standby LED lights in red for 1 second.
(3-3) The LEDs listed below light in red then in blue for 1 second each
[Speaker A] → [Speaker B] → [Power AMP Direct] → [Source Direct]

(4) Turn off power to exit from service mode.
(All of the settings on this unit are returned to the default values, and the unit is returned to the factory state)

(5) This completes the process for N only. Otherwise, perform (6) and (7).

(6) Press the power button to turn on the power.

(7) While the power is On, hold down buttons "**SOURCE DIRECT**" for at least 5 seconds.
Power indicator flashes once then auto start mode turns off.

(8) Turn off power to exit from service mode. All of the settings on this unit are returned to the default values, and the unit is returned to the factory state.

2. Special mode for Motor Volume

This is a special mode for fixing a malfunction in the Motor volume [**V5901**] used for this unit that keeps the Volume from muting even when it is reduced to MIN (very low audio can still be heard).

2.1. Caution

This is a special mode to fix the malfunction indicated above.
Never use this mode when this malfunction is not occurring.
(Doing so may cause malfunctions in volume operations)

2.2. Starting up

(1) Reduce MOTOR VOLUME to MIN.

(2) While holding down the "**POWER AMP DIRECT**" button, press the power button to turn on the power.

(3) Volume is reduced for 15 seconds when special mode is entered and the PHONO and CD Function LEDs light up one after the other.
At this time, check that MOTOR VOLUME is reduced to the MIN position and do not adjust the volume knob.

(4) The STANDBY, PHONO and CD LEDs light in red for 3 seconds.

(5) STANDBY and PHONO are lit in red and CD is lit in blue when the process is complete.
Restart the unit and check if the issue has been improved.

NOTE : Your unit's MOTOR VOLUME does not have this issue if STANDBY is lit in RED and PHONO and CD are lit in BLUE during step (5).
There are several causes of this issue.

3. PROTECTION MODE

Explanations pertaining to [**PROT_1 : 6pin**] and [**PROT_2 : 7pin**] of microprocessor [**U1001**]

[A] The [PROT_1 : 6pin] is the port to detect the following abnormalities of the Power Amplifiers

1. Detection of an abnormality in the DC offset voltage from the Speaker Output terminal.
   If the voltage from the Speaker Output terminal exceeds approximately 1.2V (DC), [**Q9507 or Q9508**] will turn on, then the signal from the [**PROT_1**] terminal will change to "**Hi**" → "**Lo**".

2. Detection of an abnormal current from the power transistors [**Q7011, Q7013, Q7012, Q7014**].
   The [**PROT_1**] terminal changes from "**Hi**" → "**Lo**" when the current in [**Q7011 or Q7013, Q9503, Q9505 and Q9509**] exceeds approximately 7A.
   The [**PROT_1**] terminal changes from "**Hi**" → "**Lo**" when the current in [**Q7012 or Q7014, Q9504, Q9506 and Q9509**] exceeds approximately 7A.

3. Detection of an abnormal temperature of the Heat Sink.
   If the temperature of the Heat Sink exceeds approximately 110 degrees C, the posistor [**Z9501, Z9502**] will turn on [**Q9501 and Q9502**], then the signal from the [**PROT_1**] terminal will change to "**Hi**" → "**Lo**".

When detection of any of the above 3 malfunctions causes the [**PROT_1**] terminal to change from "**Hi**" → "**Lo**", the protection circuit engages, [**SPK : 10pin**] of micro-computer [**U1001**] changes from "**Hi**" → "**Lo**" and speaker relays [**S7501, S7502 and S7503**] turn off.

After this, the PROTECTION functions depending on how long the signal from the[**PROT_1**] remains "**Lo**".

• If the [**PROT_1**] recovers to "**Hi**" within 1 second or less.
The mute indicator starting to blink indicates PROTECTION operations are being performed, and the volume is lowered automatically.
The protection circuit is deactivated after approximately 15 seconds so that readjusting the volume will allow normal use of the unit again.
This protection operation is intended for when a failure occurs the user has misused the unit temporarily. If the amplifier circuit functions properly, the unit automatically restores.

• If the [**PROT_1**] remains "**Lo**" for 1 second or more.
[**P_ON : 21pin**] changes from "**Lo**" → "**Hi**" and both the power relay [**S8501**] and the amp turn OFF.
The STANDBY indicator flickers to inform that an error has occurred.
This protection operation is intended for when a failure occurs in the amplifiers circuit and immediately turns the power off to avoid the risk of any damage.
Depending on the usage condition, this operation may be executed even if the amplifiers is functioning properly.

To check whether the amplifier is broken, turn off the unit, then wait for about 1 minute and turn it on again.
This action will deactivate the protection operation.
If the [**PROT_1**] remains in the "**Lo**" abnormal state, which constitutes an abnormality, the unit shuts down approximately 3 seconds later and the STANDBY indicator starts flickering.
If the protection operation is not deactivated even after the power is turned on again, the amplifiers circuit may be broken.

[B] The [PROT_2 : 7pin] is the port to detect abnormalities of the power supply circuit

1. Detection of an abnormality in the power amplifiers power supply circuit.
   The median power amp power supply voltage is monitored between +49V and -49V
   When the connection point voltage of [**R8001 and R8002**] exceeds approximately 1.2V (DC), [**Q9003 or Q9004**] turns ON and [**PROT_2**] changes from "**Hi**" → "**Lo**".

2. Detection of an abnormality in the pre-amplifier power supply circuit.
   [**Q9001 and Q9002**] monitor the median voltage between +28V and -28V.
   When the connection point voltage of [**R8109 and R8110**] exceeds approximately 0.9V (DC), [**Q9001 or Q9002**] turns ON and [**PROT_2**] changes from "**Hi**" → "**Lo**".

3. A malfunction is detected in the Function IC power supply circuit.
   [**Q9001 and Q9002**] monitor the median voltage between +7V and -7V.
   When the connection point voltage of [**R9016 and R9017**] exceeds approximately 0.9V (DC), [**Q9001 or Q9002**] turns ON and [**PROT_2**] changes from "**Hi**" → "**Lo**".

4. Detection of an abnormality in the function relay power supply circuit.
   If the +24VL of the relay power supply receives an electric current of over 80mA, [**Q8302, Q8303**] will turn on to change the signal from the [**PROT_2**] to "**Hi**" → "**Lo**".

When any of the 4 malfunctions above are detected, the setting changes from "**Hi**" → "**Lo**", the power relay [**S8051**] is turned off and the unit shuts down.

The STANDBY indicator flickers to inform that an error has occurred.

This protection operation is intended for when a breakdown of the Amplifiers circuit or the power supply circuit occurs and immediately shuts off the power in order to avoid the risk of damage.

To check whether the amplifiers circuit or the power supply circuit is broken, turn off the unit, then wait for about 1 minute and turn it on again.
This action will deactivate the protection operation.
If the [**PROT_2**] remains in the "**Lo**" abnormal state, which constitutes an abnormality, the unit shuts down approximately 3 seconds later and the STANDBY indicator starts flickering.
If the protection operation is not deactivated even after the power is turned on again, the amplifiers circuit or the power supply circuit may be broken.

ADJUSTMENT

1. DC Offset Voltage Adjustment

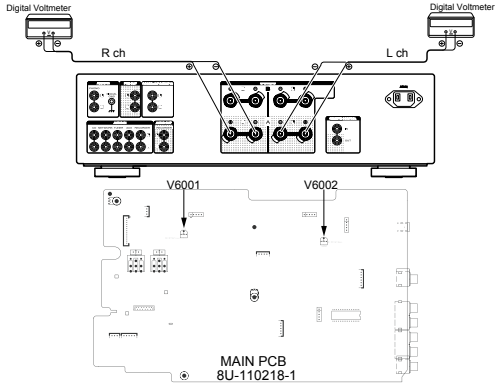
1. Preparation

(1) Prepare a DC voltmeter.
(2) Place the unit under normal usage conditions, away from highly ventilated areas such as next to an air conditioning machine or electric fan.
The set requires an ambient temperature of 15℃ to 30℃ and standard humidity.
(3) Settings of This Unit
- POWER (Power source switch) OFF
- SPEAKER (Speaker terminal) No load

(Do not connect equipment such as speakers or dummy resistors.)

2. Adjustment Procedure

Set the power voltage to the rated voltage for this adjustment.



(1) Before turning on the power
Connect SPEAKER SYSTEMS A [**L CH**] "**+**" terminal and "**–**" terminal to the DC Voltmeter.
Connect SPEAKER SYSTEMS A [**R CH**] "**+**" terminal and "**–**" terminal to the DC Voltmeter.

(2) Turn the volume to the lowest setting.

(3) Turn on the power and set the **SPEAKER SW** button to A.
Begin adjusting after the speaker relay turns on.

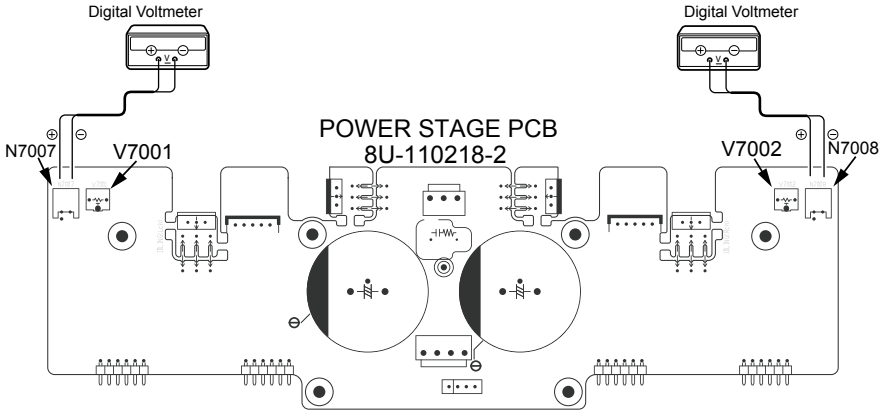
(4) Adjust the [**L CH]** first.
Rotate the semi-fixed resistor [**V6001**] using an adjustment screwdriver to change the voltage of the DC Voltmeter to "**0 mV ± 3 mV**".

(5) Next, adjust the [**R CH**].
Rotate the semi-fixed resistor [**V6002**] using an adjustment screwdriver to change the voltage of the DC Voltmeter to "**0 mV ± 3 mV**".
NOTE : Rotate the semi-fixed resistors [**V6001** and **V6002**] clockwise to lower the DC voltage.
Rotate the semi-fixed resistors counter-clockwise to raise the DC voltage.
Slowly turn to gradually change the value indicated on the DC Voltmeter.

(6) Although DC offset voltage fluctuates slightly after it has been adjusted, make sure that the DC offset voltage between each "**+**" and "**-**" terminal of SPEAKER SYSTEMS A [**L CH** and **R CH**] is around "**0 mV ± 20 mV**".

2. Idling Current Adjustment

Adjusting Procedure



(1) After adjusting the DC Offset Voltage, adjust the Idling Current with the semi-fixed variable resistor [**V7001** and **V7002**] on the PCB **8U-110218-2**.

(2) Turn off the power.

(3) Connect the DC Voltmeter to [**N7007**]. Connect pin 1 and pin 2 of the DC Voltmeter to "**+**" and "**–**", respectively.

(4) Connect the DC Voltmeter to [**N7008**]. Connect pin 1 and pin 2 of the DC Voltmeter to "+" and "–", respectively.

(5) Before turning on the power, use the adjustment screwdriver to turn the semi-fixed resistor [**V7001** and **V7002**] all the way counter-clockwise.

(6) Turn on the power, then set **VOLUME** to - ∞ .

(7) Wait 1 minute, then while monitoring the voltage indicated by the DC Voltmeter, slowly turn the semi-fixed variable resistor clockwise.
- Perform the Idling adjustment with [**V7001 (V7002)**].
- Turn [**V7001 (V7002)**] clockwise to increase the idling current.
- Adjust the value of all idling currents to "**10 mV**(**50 mA**) **± 0.5 mV**(**2.5 mA**)".

(8) Wait "**5 minutes**", then repeat the procedure in "**step 7**".
- Turn [**V7001 (V7002)**] clockwise to increase the idling current.
- Adjust the value of all idling currents to "**17 mV**(**85 mA**) **± 0.5 mV**(**2.5 mA**)".

Adjustment is completed.

(9) Remove the connection cable, then attach the top cover.

NOTE : Idling current decreases with the temperature rise inside the unit, and in about 30 minutes after turning on the power, the current will be "**14mV (70mA)**".

PROCEDURE AFTER REPLACING THE U-COM, ETC.

PROCEDURE AFTER REPLACING THE U-COM, ETC.

The procedure after replacing the u-COM (microprocessor), flash ROM, etc. is as follows.

PCB Name	Ref. No.	Description	Procedure after Re-placement	Remark
u-COM	U1001	TMP86FH47BUG	A	SOFTWARE : Main

Procedure after Replacement

A : The software has been written. The software is not written at the time of replacement.

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