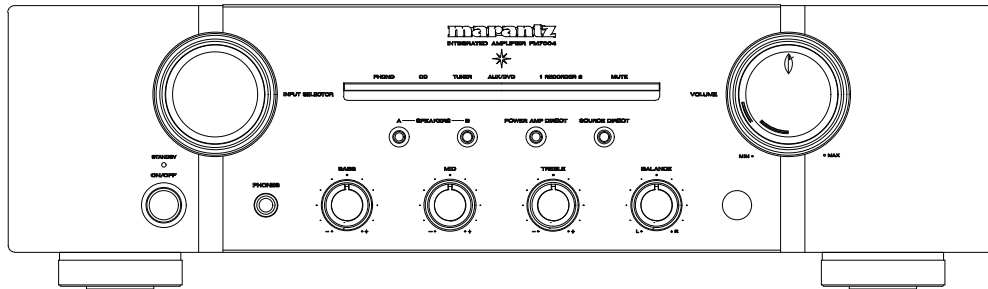


Service Manual

PM7004 /K1B/N1SG/N1B

Integrated Amplifier



PM7004

• 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.

marantz®

PM7004

Ver. 1

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC
100 CORPORATE DRIVE
MAHWAH, NEW JERSEY 07430
USA

EUROPE / TRADING

D&M EUROPE B. V.
P. O. BOX 8744, BUILDING SILVERPOINT
BEEMDSTRAAT 11, 5653 MA EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2507844
FAX : +31 - 40 - 2507860

CANADA

D&M Canada Inc.
5-505 APPLE CREEK BLVD.
MARKHAM, ONTARIO L3R 5B1
CANADA
PHONE : 905 - 415 - 9292
FAX : 905 - 475 - 4159

JAPAN

D&M Holdings Inc.
D&M BUILDING, 2-1 NISSHIN-CHO,
KAWASAKI-KU, KAWASAKI-SHI,
KANAGAWA, 210-8569 JAPAN

株式会社 ディーアンドエムホールディングス

本 社 〒210-8569
神奈川県川崎市川崎区日進町2-1 D&Mビル

KOREA

D&M SALES AND MARKETING KOREA LTD.
2F, YEON BLDG.,
88-5, BANPO-DONG, SEOCHO-GU,
SEOUL KOREA
PHONE : +82 - 2 - 715 - 9041
FAX : +82 - 2 - 715 - 9040

CHINA

D&M SALES AND MARKETING SHANGHAI LTD.
ROOM.808 SHANGHAI AIRPORT CITY TERMINAL
NO.1600 NANJING (WEST) ROAD, SHANGHAI,
CHINA. 200040
TEL : 021 - 6248 - 5151
FAX : 021 - 6248 - 4434

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚠.

Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

⚠がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 60065.

In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

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.

Be sure to test for leakage current with the AC plug in both polarities, in addition, in each power ON, OFF and STANDBY mode, if applicable.

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. 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!

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

⊙ Only use designated parts!

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

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

For safety reasons, some parts use tape, tubes or other insulating materials, and some parts are mounted away from the surface of printed circuit boards. Care is also taken with the positions of the wires 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 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 structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and using replacement parts with higher ratings (rated power and withstand voltage) does not necessarily guarantee that safety performance will be preserved. Parts with safety properties are indicated as shown below on the wiring diagrams and parts lists in this service manual. Be sure to replace them with parts with the designated part number.

- (1) Schematic diagrams Indicated by the $\triangle$ mark.
- (2) Parts lists Indicated by the $\triangle$ mark.

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

NOTE FOR SCHEMATIC DIAGRAM

WARNING:

Parts marked with this symbol $\triangle$ 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.

NOTE FOR PARTS LIST

PARTS INFORMATION

RESISTORS

1) 00MGD05 $\times \times \times$ 140, Carbon film fixed resistor, $\pm 5\%$ 1/4W

2) 00MGD05 $\times \times \times$ 160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① — Resistance value

Examples ;

① Resistance value

0.1 Ω001	10 Ω100	1k Ω102	100k Ω104
0.5 Ω005	18 Ω180	2.7k Ω272	680k Ω684
1 Ω010	100 Ω101	10k Ω103	1M Ω105
6.8 Ω068	390 Ω391	22k Ω223	4.7M Ω475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

CERAMIC CAP.

3) 00MDD1 $\times \times \times$ 370,

② — Ceramic capacitor
Disc type
Temp.coeff.P350 ~ N1000, 50V
③ — Capacity value
Tolerance

Examples ;

② Tolerance (Capacity deviation)

$\pm 0.25\text{pF}$0
$\pm 0.5\text{pF}$1
$\pm 5\%$5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~	5pF..... $\pm 0.25\text{pF}$
6pF ~	10pF..... $\pm 0.5\text{pF}$
12pF ~	560pF..... $\pm 5\%$

③ Capacity value

0.5pF.....005	3pF.....030	100pF.....101
1pF.....010	10pF.....100	220pF.....221
1.5pF.....015	47pF.....470	560pF.....561

CERAMIC CAP.

4) 00MDK16 $\times \times \times$ 300,

④ — High dielectric constant ceramic capacitor
Disc type
Temp.chara. 2B4, 50V
Capacity value

Examples ;

④ Capacity value

100pF.....101	1000pF.....102	10000pF.....103
470pF.....471	2200pF.....222	

ELECTROLY CAP. ($\frac{\square}{\text{Z}}$)

5) 00MEA $\times \times \times \times \times \times$ 10,

⑤ — Electrolytic capacitor
One-way lead type, Tolerance $\pm 20\%$
⑥ — Working voltage
Capacity value

Examples ;

⑤ Capacity value

0.1 μF104	4.7 μF475	100 μF ...107
0.33 μF334	10 μF106	330 μF ...337
1 μF105	22 μF226	1100 μF ...118
		2200 μF ...228

⑥ Working voltage

6.3V.....006	25V.....025
10V.....010	35V.....035
16V.....016	50V.....050

FILM CAP. ($\frac{\square}{\text{Z}}$)

6) 00MDF15 $\times \times \times$ 350

00MDF15 $\times \times \times$ 310

00MDF16 $\times \times \times$ 310

⑦ — Plastic film capacitor
One-way type, Mylar $\pm 5\%$ 50V
Plastic film capacitor
One-way type, Mylar $\pm 10\%$ 50V
Capacity value

Examples ;

⑦ Capacity value

0.001 μF (1000pF).....102	0.1 μF104
0.0018 μF182	0.56 μF564
0.01 μF103	1 μF105
0.015 μF153	

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
00MNH05 $\times \times \times$ 140	RF25S $\times \times \times \times \times \times \Omega$ J	($\pm 5\%$ 1/4W)
00MNH05 $\times \times \times$ 120	RF50S $\times \times \times \times \times \times \Omega$ J	($\pm 5\%$ 1/2W)
00MNH85 $\times \times \times$ 110	RF73B2A $\times \times \times \times \times \times \Omega$ J	($\pm 5\%$ 1/10W)
00MNH95 $\times \times \times$ 140	RF73B2E $\times \times \times \times \times \times \Omega$ J	($\pm 5\%$ 1/4W)

* Resistance value Resistance value (0.1 – 10k Ω)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
00MNF05 $\times \times \times$ 140	ERD-2FCJ $\times \times \times$	($\pm 5\%$ 1/4W)
00MRF05 $\times \times \times$ 140		
00MNF02 $\times \times \times$ 140	ERD-2FCG $\times \times \times$	($\pm 2\%$ 1/4W)
00MRF02 $\times \times \times$ 140		

* Resistance value * Resistance value

Examples ;

* Resistance value

0.1 Ω001	10 Ω100	1k Ω102	100k Ω104
0.5 Ω005	18 Ω180	2.7k Ω272	680k Ω684
1 Ω010	100 Ω101	10k Ω103	1M Ω105
6.8 Ω068	390 Ω391	22k Ω223	4.7M Ω475

ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ -PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL

NOTE ON FUSE :

Regarding to all parts of parts code **00MFS20xxx2xx**, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

NOTE ON SAFETY :

Symbol $\triangle$ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol $\triangle$. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

$\triangle$ がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

TECHNICAL SPECIFICATIONS

Power output
(20 Hz – 20 kHz simultaneous drive of both channels)
[N] 70W x 2 (8Ω load)
[K] 65W x 2 (8Ω load)
[N] 100W x 2 (4Ω load)
[K] 9W x 2 (4Ω load)

Total harmonic distortion
(20Hz – 20kHz simultaneous drive of both channels, 8Ω load)
..... 0.02%

Output band width (8Ω load, 0.05%)
..... 5Hz – 60kHz

Frequency response (CD, 1W, 8Ω load)
..... 5Hz – 100kHz ±3dB

Dumping factor (8Ω load, 20Hz – 20kHz)
..... 100

Input sensitivity/Input impedance
PHONO (MM)..... 2mV/47kΩ
CD, TUNER, AUX/DVD, RECORDER
..... 200mV/20kΩ
MAIN IN 1.6V/15kΩ

Output band width/Output impedance
PRE OUT 1.6V/600Ω

Maximum allowable PHONO input level (1kHz)
MM 100mV

RIAA deviation (20Hz ~ 20kHz)
..... ±0.5dB

S/N (IHF-A, 8Ω load)
PHONO (MM)..... 85dB (5mV input, 1W output)
CD, TUNER, AUX/DVD, RECORDER
..... 104dB (2V input, Rated output)
POWER AMP DIRECT IN 125dB (Rated output)

Tone control
Bass (50Hz) ±10dB
Mid (900Hz) ±6dB
Treble (15kHz) ±10dB

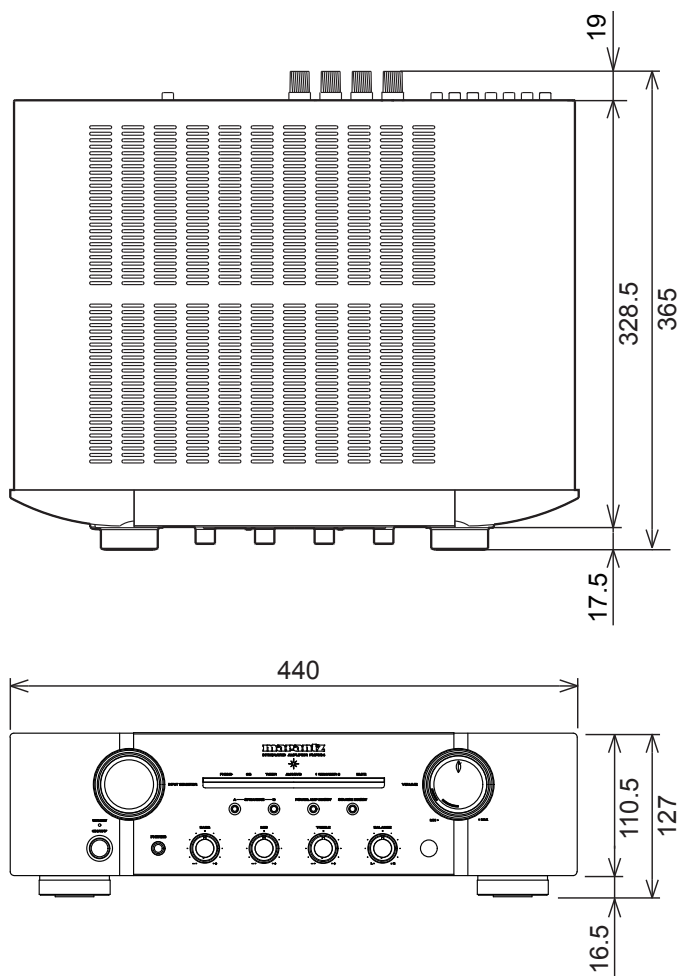
Power requirement
[N] AC 230 V, 50/60 Hz
[K] AC 220V,50Hz

Power consumption
(EN60065) 200W
Standby power consumption 0.3W

Maximum outer dimensions (Amplifier)
..... 10.5kg

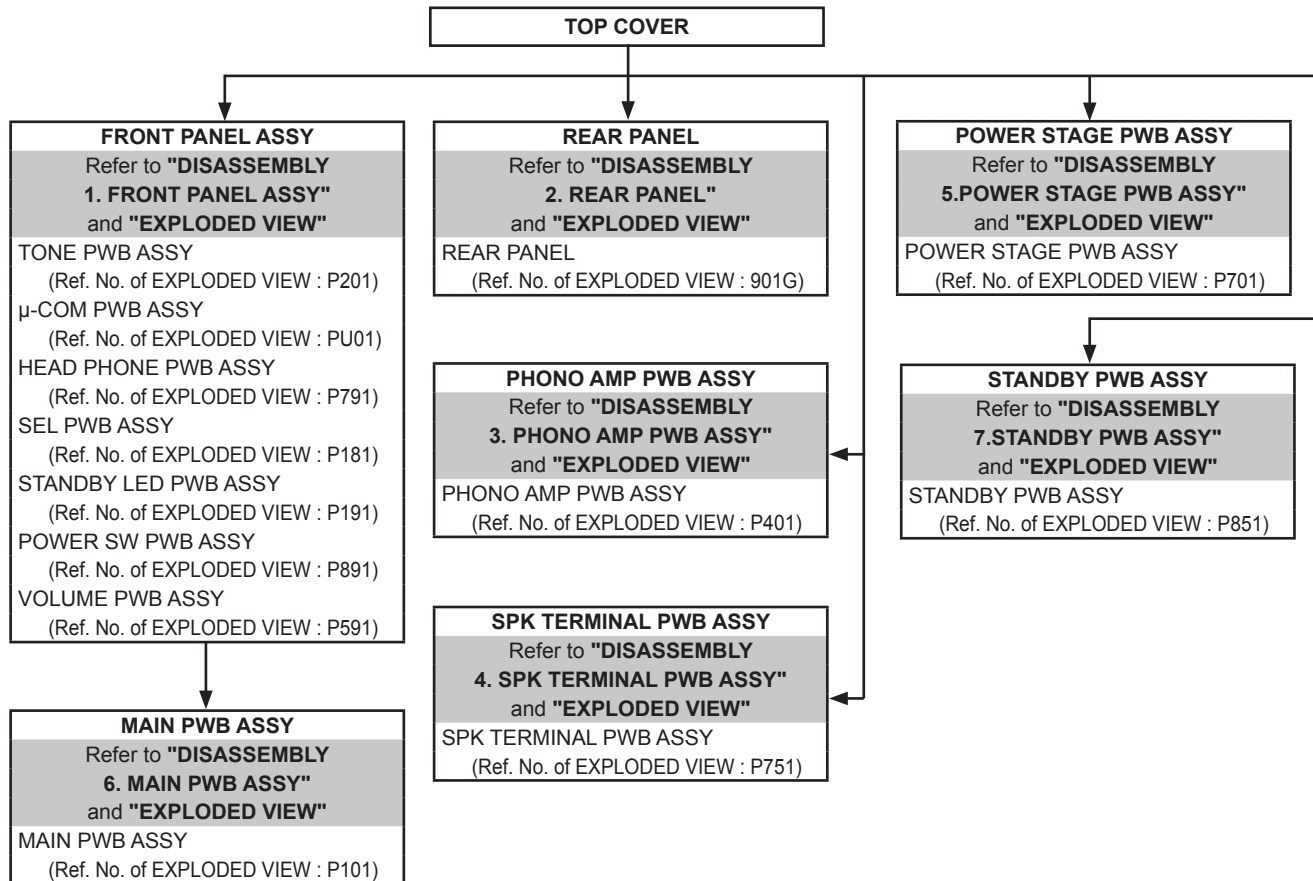
* SPECIFICATION for China is different from SPECIFICATION of instruction manual in description.

DIMENSION



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.
- 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.



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 photograph is PM7004.

The viewpoint of each photograph (Photography direction)

[View from above]

Direction of
photograph: C →



Direction of photograph: B ↓

Front side ↑

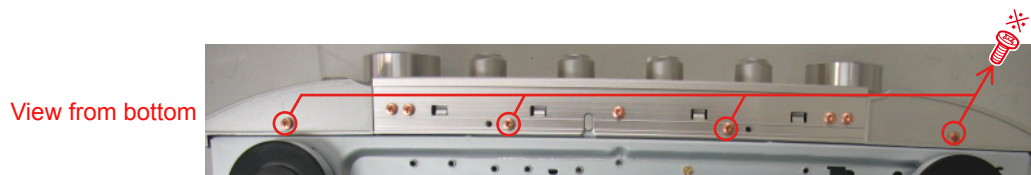
← Direction of
photograph: D

↑
Direction of photograph: A

1. FRONT PANEL ASSY

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

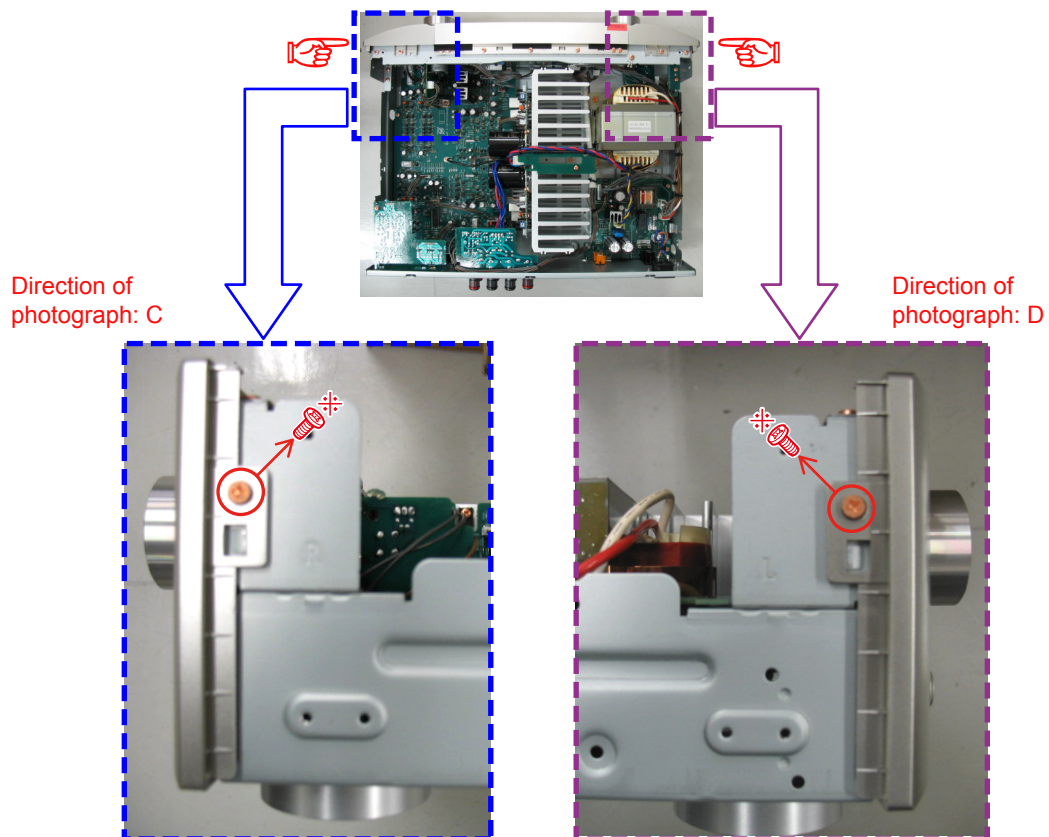
(1) Remove the screws.



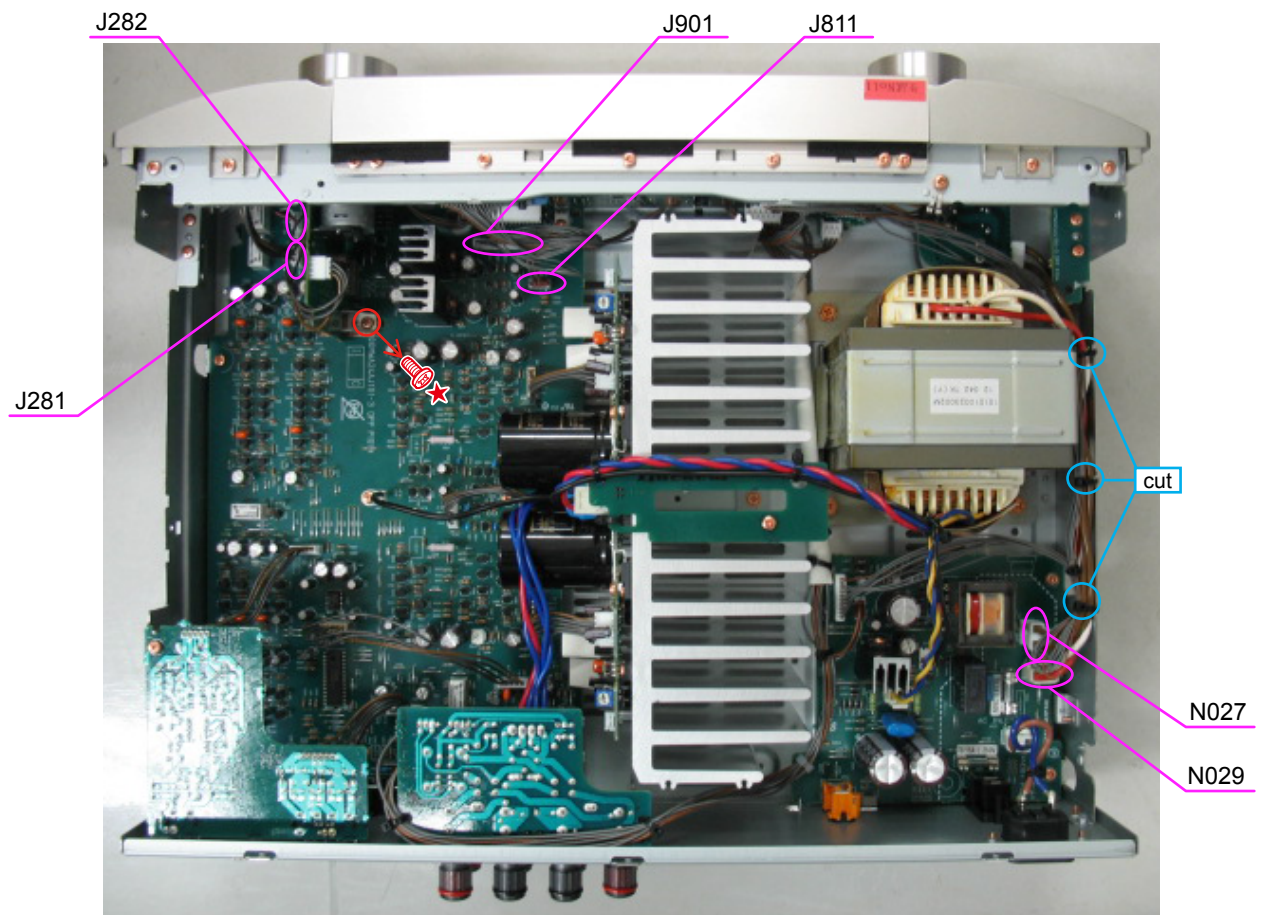
(2) Remove the screws.



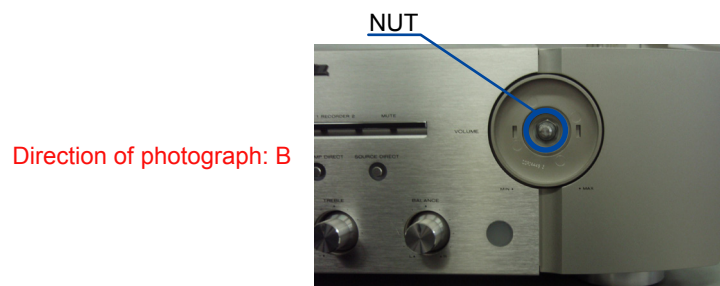
(3) Remove the screws.



(4) Cut the wire clamp band, then disconnect the connector wires. Remove the screws.



(5) Remove the nut.

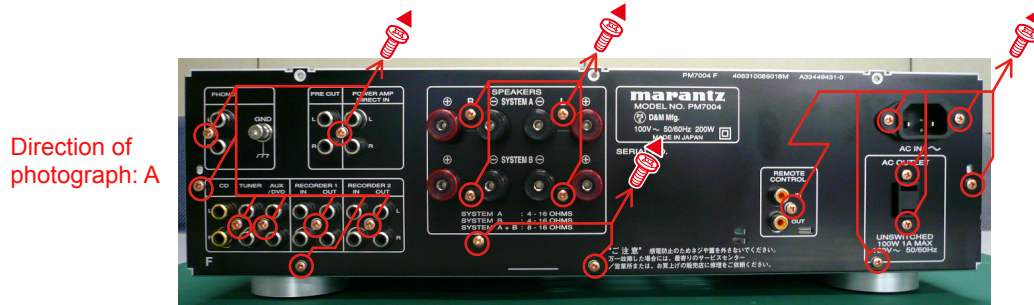


Please refer to "EXPLODED VIEW" for the disassembly method of each PCB included in FRONT PANEL ASSY.

2. REAR PANEL

Proceeding : **TOP COVER** → **REAR PANEL**

- (1) Remove the screws.



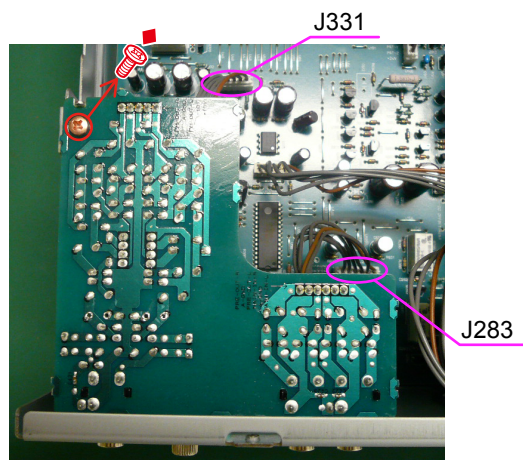
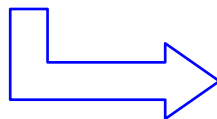
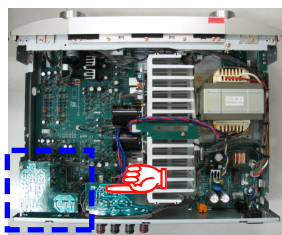
3. PHONO AMP PWB ASSY

Proceeding : **TOP COVER** → **PHONO AMP PWB ASSY**

- (1) Remove the screws.



- (2) Disconnect the connector wires. Remove the screws.



4. SPK TERMINAL PWB ASSY

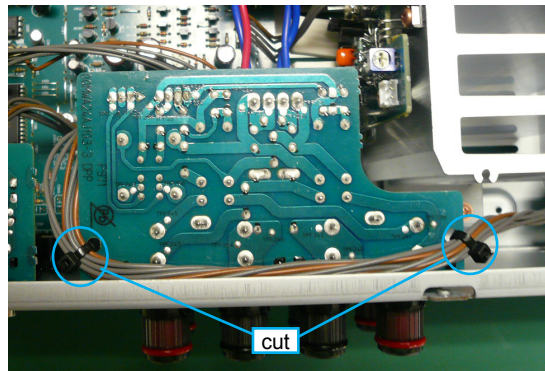
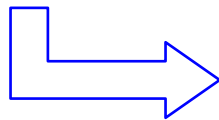
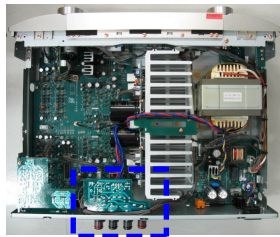
Proceeding : **TOP COVER** → **SPK TERMINAL PWB ASSY**

- (1) Remove the screws.

Direction of photograph: A

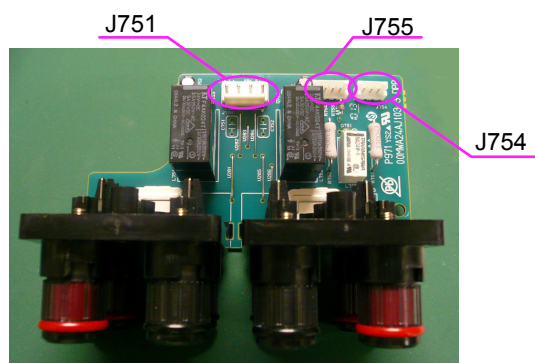


- (2) Cut the wire clamp band.



- (3) Disconnect the connector wires.

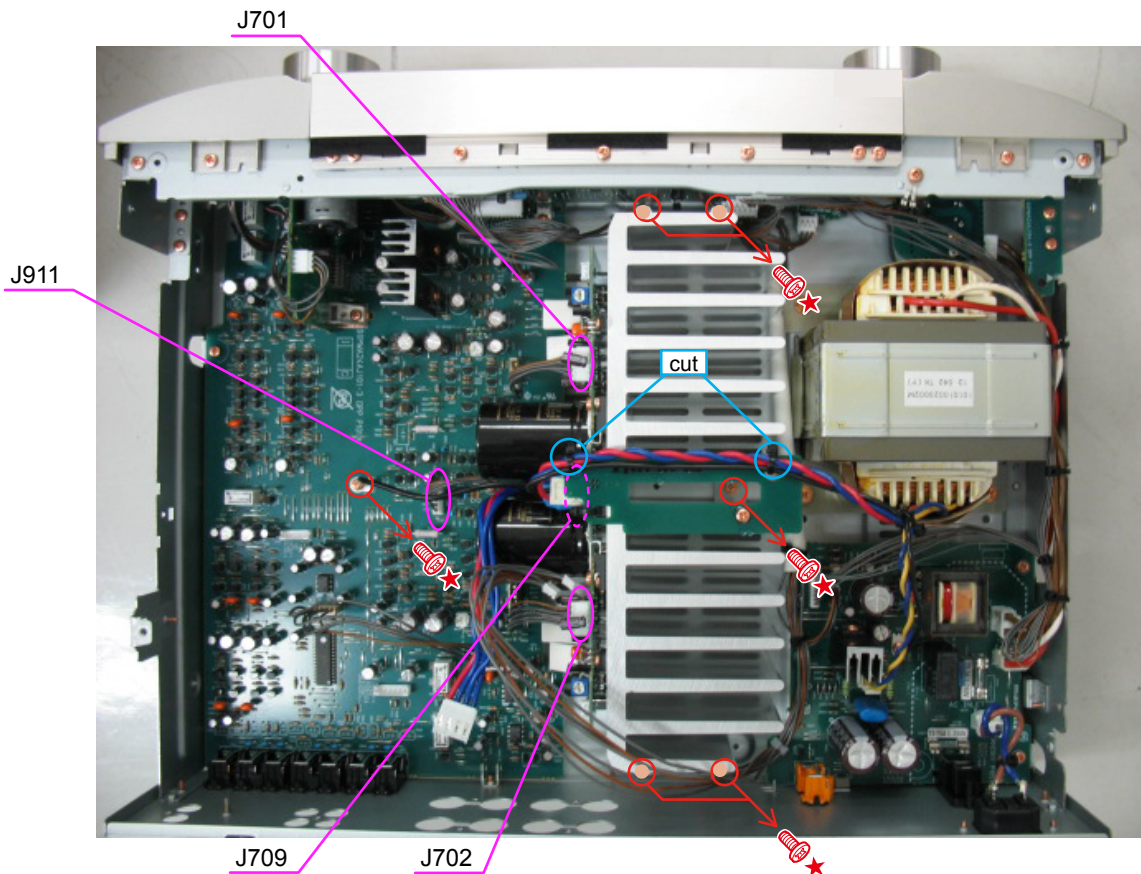
View from bottom



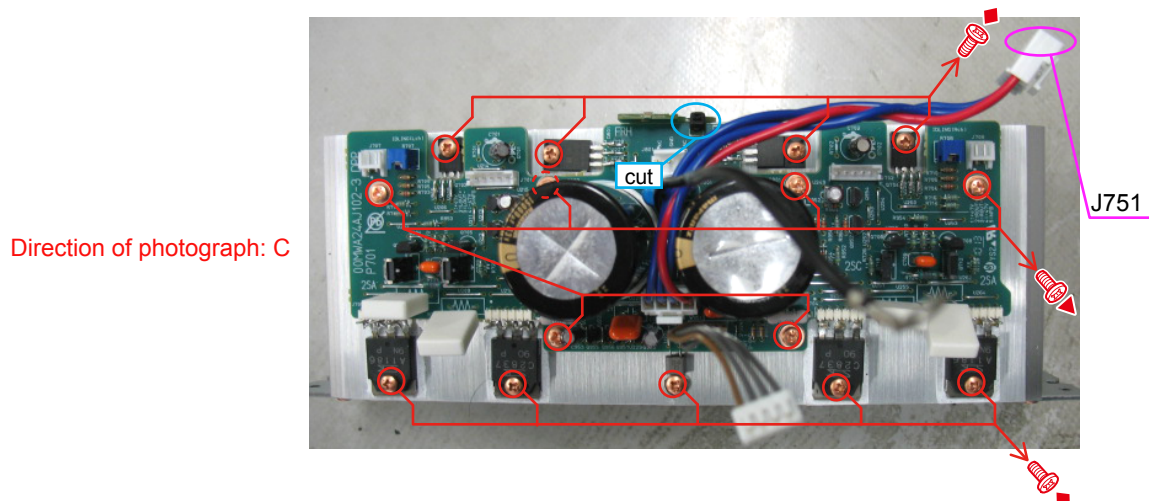
5. POWER STAGE PWB ASSY

Proceeding : **TOP COVER** → **POWER STAGE PWB ASSY**

(1) Cut the wire clamp band, then disconnect the connector wires. Remove the screws.



(2) Cut the wire clamp band, then disconnect the connector wires. Remove the screws.



6. MAIN PWB ASSY

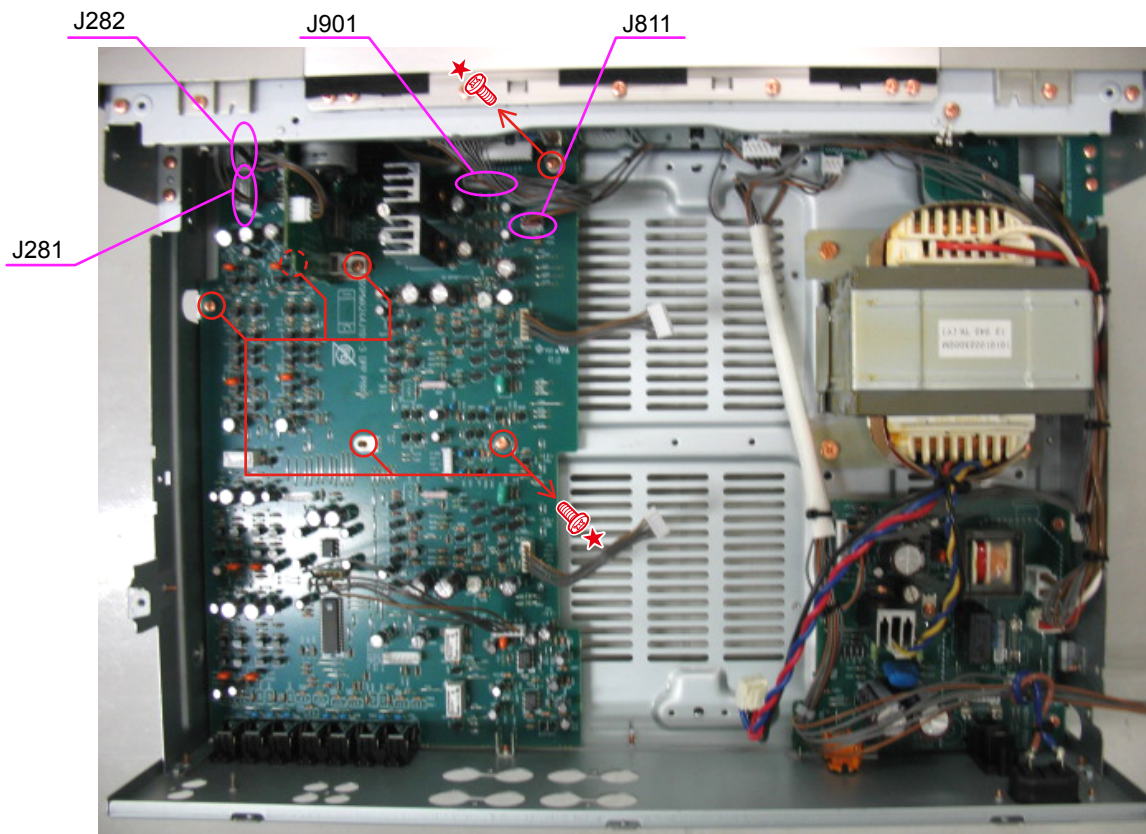
Proceeding : **TOP COVER** → **FRONT PANEL ASSY** → **MAIN PWB ASSY**

(1) Remove the screws.

Direction of photograph: A



(2) Disconnect the connector wires. Remove the screws.

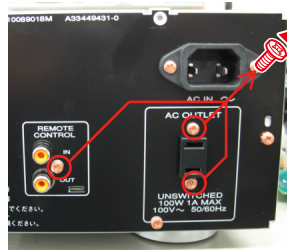


7. STANDBY PWB ASSY

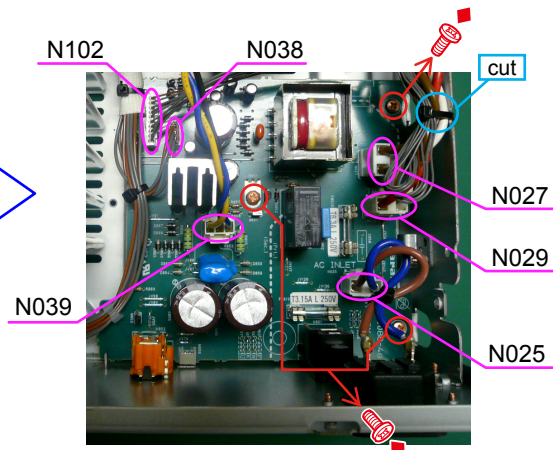
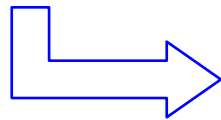
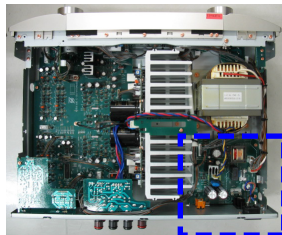
Proceeding : **TOP COVER** → **STANDBY PWB ASSY**

- (1) Remove the screws.

Direction of photograph: A



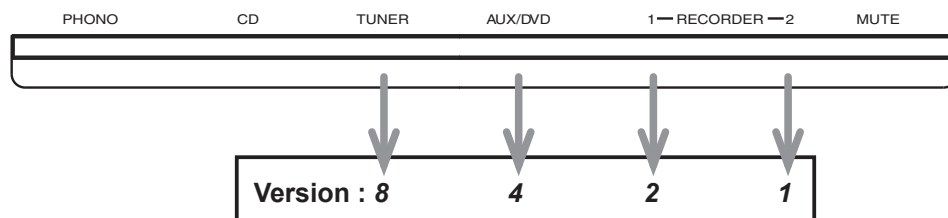
- (2) Cut the wire clamp band, then disconnect the connector wires. Remove the screws.



SERVICE MODE

Microprocessor (U101) version check

- (1) Connect the mains cord into the unit.
- (2) Press the POWER button with pressing the SOURCE DIRECT button on the Unit.
- (3) The firmware version is displayed on the front LED. (Display time is only for 3 seconds.)



The firmware version is displayed in the lighting position of LED.

Ex. :

Light up RECORDER-2 [1], **Version : 1**

Light up RECORDER-2 [1] and AUX/DVD [4], **Version : 5**

Light up RECORDER-2 [1] and CD [8], **Version : 9**

- (4) Each LED light up then all LED light up.
- (5) Turn off the power to quit Service Mode. (The unit to the default status)

PROTECTION MODE

Explanation of microprocessor (U101) [PROT-1 (pin6) and PROT-2 (pin7)].

1. The PROT-1 (pin6) is the port to detect the following abnormalities of the Power AMP

- (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), Q955 or Q956 will turn on and the signal from the PROT-1 terminal will change to "L" from "H".
- (2) Detection of an abnormal current from the power transistors (Q713 ~ Q716).
If an electric current of over 7A flows in Q713 or Q715, Q951, Q953 and Q957 turn on, and the signal from the PROT-1 terminal will change to "L" from "H".
If an electric current of over 7A flows in Q714 or Q716, Q952, Q954 and Q957 turn on, and the signal from the PROT-1 terminal will change to "L" from "H".
- (3) Detection of an abnormal temperature of the Heat Sink.
If the temperature of the Heat Sink exceeds approximately +110 degrees C, the posistor (R969) will turn on Q958 and the signal from the PROT-1 terminal will change to "L" from "H".

If any of the above three abnormalities is detected, the signal from the PROT-1 terminal will change to "L" from "H", and the protection circuit will be activated, the signal from the SPK_OUT (pin10) changing to "H" from "L" and the speaker relays L751, L752 and L753 immediately turned off.

What this protection operation results in after this depends on how long the signal from the PROT-1 has to remain "L".

- If the PROT-1 (pin6) recovers to "H" within as short a period of time as one second or less.
The MUTE indicator starts flickering, thereby indicates that the protection circuit has come into operation and automatically turns down the volume. 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 the situation wherein the user has misused the unit temporarily and automatically resets the unit while the amp circuit is functioning properly.
- If the PROT-1 (pin6) remains "L" for more than one second.
The amp will be powered off by the P_ON (pin15) changing to "H" from "L" and Power relay S851 turned off Then, the STANDBY indicator flickers, thereby indicating that an error has occurred. This protection operation is intended for a failure in the amp circuit and immediately turns the power off to avoid the risk of any damage.
Depending on how the user is handling the unit, this operation may be performed no matter if the amp is functioning properly.

To check if the amp is in order, switch off the unit and switch it on again one minute later. This action will deactivate the protection operation. If the PROT-1 (pin6) remains "L", which constitutes an abnormality, the unit shuts down approximately 3 seconds later and the STANDBY indicator starts flickering.

If the protection operation will not be deactivated after the power is turned on again, the amp circuit may be broken.

2. The PROT-2 (pin7) is the port to detect abnormalities of the power supply circuit.

- (1) Detection of an abnormality in the power amp power supply circuit.
This port monitors the midpoint voltage of the power amp power supply between +49V and -49V. If the voltage at the connection point of R801 and R802 exceeds DC $\pm 1.2V$, Q903 or Q904 will turn on to change the signal from the PROT-2 (pin7) to "L" from "H".
- (2) Detection of an abnormality in the preamp power supply circuit.
Q901 and Q902 monitor the midpoint voltage between +28V and -28V. If the voltage at the connection point of R905 and R906 exceeds DC $\pm 1.2V$, Q901 or Q902 will turn on to change the signal from the PROT-2 (pin7) to "L" from "H".
- (3) 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 80 mA, Q815 and Q901 will turn on to change the signal from the PROT-2 (pin7) to "L" from "H".

If any of the above three abnormalities is detected, the signal from the P_ON (pin15) terminal will be changed to "L" from "H", the power relay S851 will be turned off and the unit will be shut down. Then, the STANDBY indicator flickers and indicates that an abnormality has occurred.

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

To check if the amp circuit or the power supply circuit is broken, switch off the power and then switch it on again one minute later. This action will deactivate the protection operation.

If the RROT-2 (pin7) remains "L" after the power is switched on again, the unit will be shut down again three seconds later with the STANDBY indicator flickering.

If the unit is powered on again and yet cannot get the protection operation deactivated, the amp circuit or the power supply circuit may be broken.

VERSION UPGRADE PROCEDURE OF FIRMWARE

ABOUT REPLACE THE MICROPROCESSOR WITH A NEW ONE

When replaced of the U-PRO (Microprocessor) or the Flash ROM, confirm contents of the following.

PWB Name	Ref. No.	Description	After replaced	Remark
FRONT	U101	TMP86FH47UG	C	

After replaced

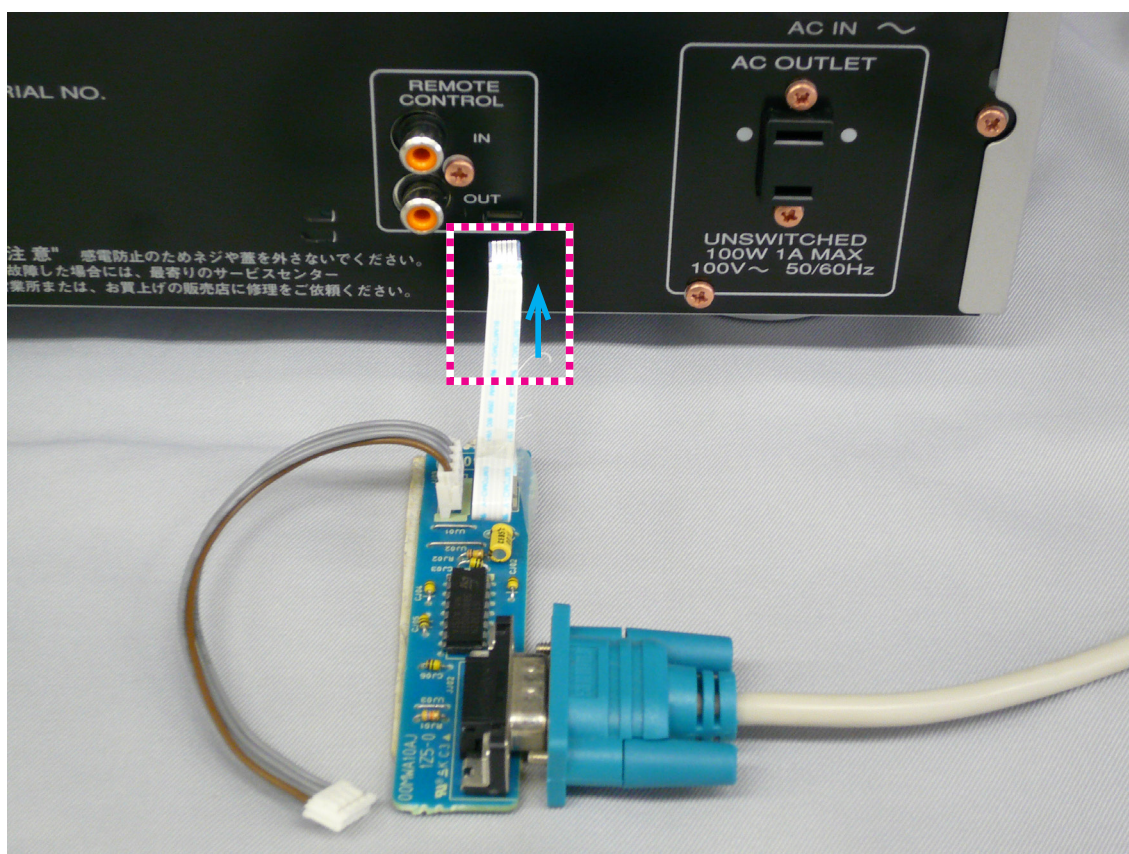
- A :** Mask ROM (With software). No need write-in of software to the microprocessor.
- B :** Flash ROM (With software). Usually, no need write-in of software. But, when the software was updated, you should be write-in of the new software to the microprocessor or flash ROM. Please check the software version.
- C :** Empty Flash ROM (Without software). You should be write-in of the software to the microprocessor or flash ROM. Refer to "Update procedure" or "writing procedure", when you should be write-in the software.

Necessary Equipment

- Windows PC (OS: Windows 2000 or Windows XP) with Serial port.
- RS-232C Cable straight type (9 Pin female - 9 Pin female)
- Connection JIG (90M-PM11S1JIG)
- Writing Tool and some files (FlashProg.exe, etc... in TM86FH47pass folder)
- Writing data (PM7004_XXXX.h16)

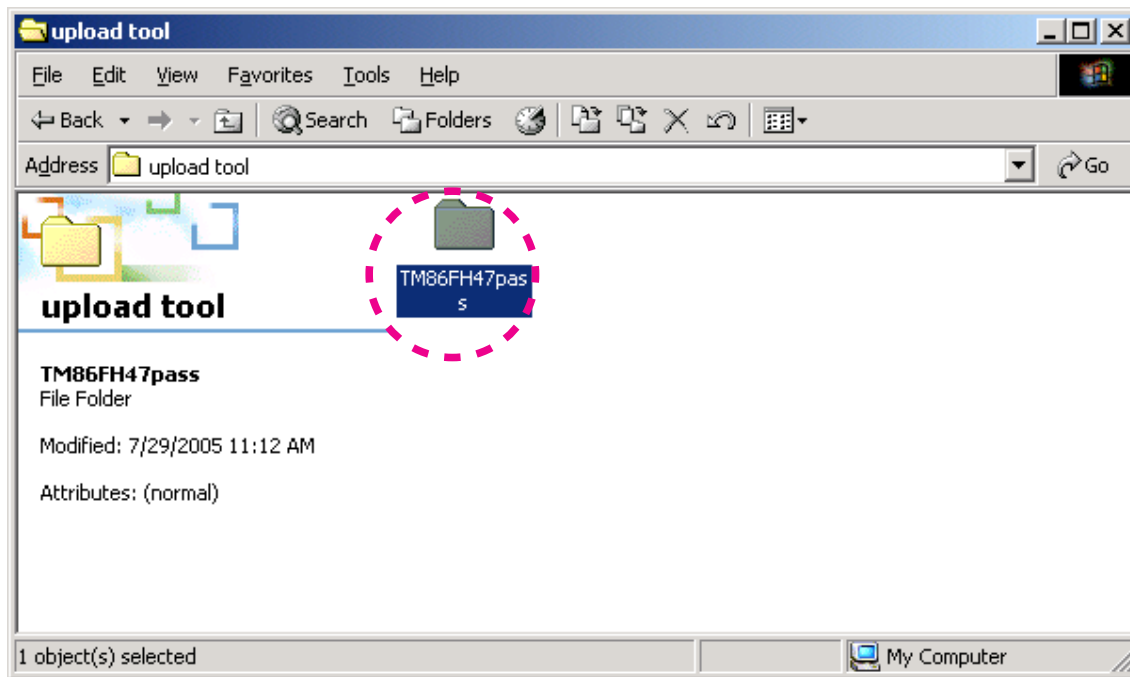
WRITING PROCEDURE

- (1) Disconnect the mains cord from the unit.
- (2) Connect RS-232C on the connection JIG and Serial Port of windows PC with RS-232C cable.
- (3) Connect FPC (upside contact) to the rear panel of the unit from connection JIG.

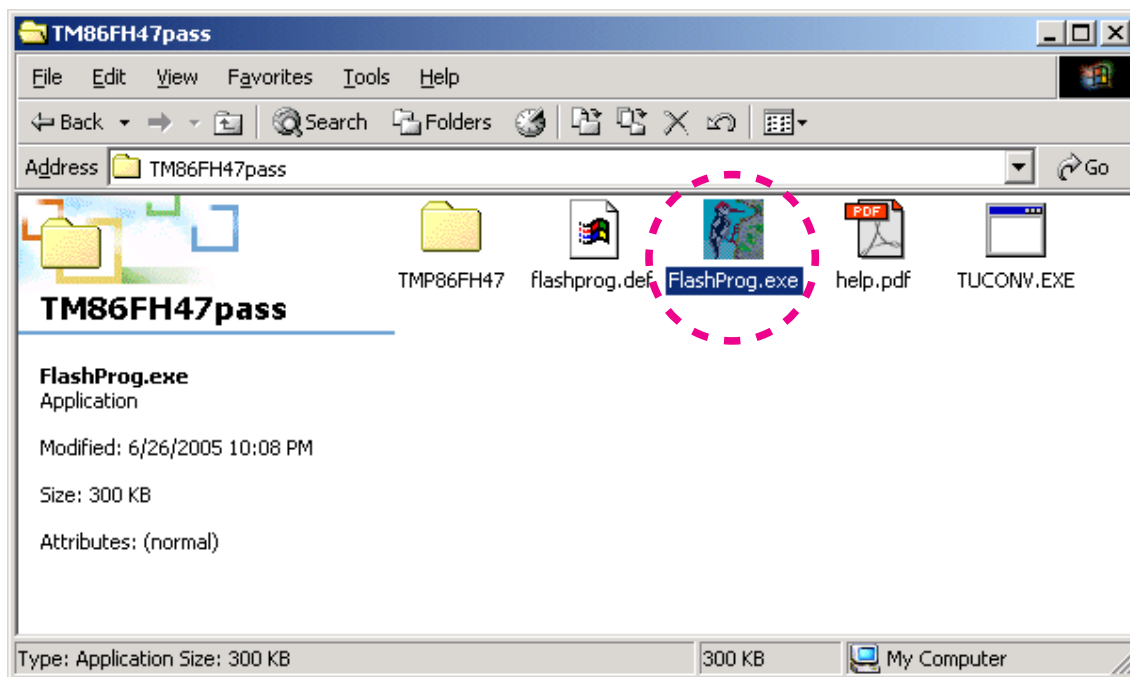


- (4) Reconnect the mains cord to the unit.
- (5) Put the "TM86FH47pass" folder into anywhere on your PC's hard disc.

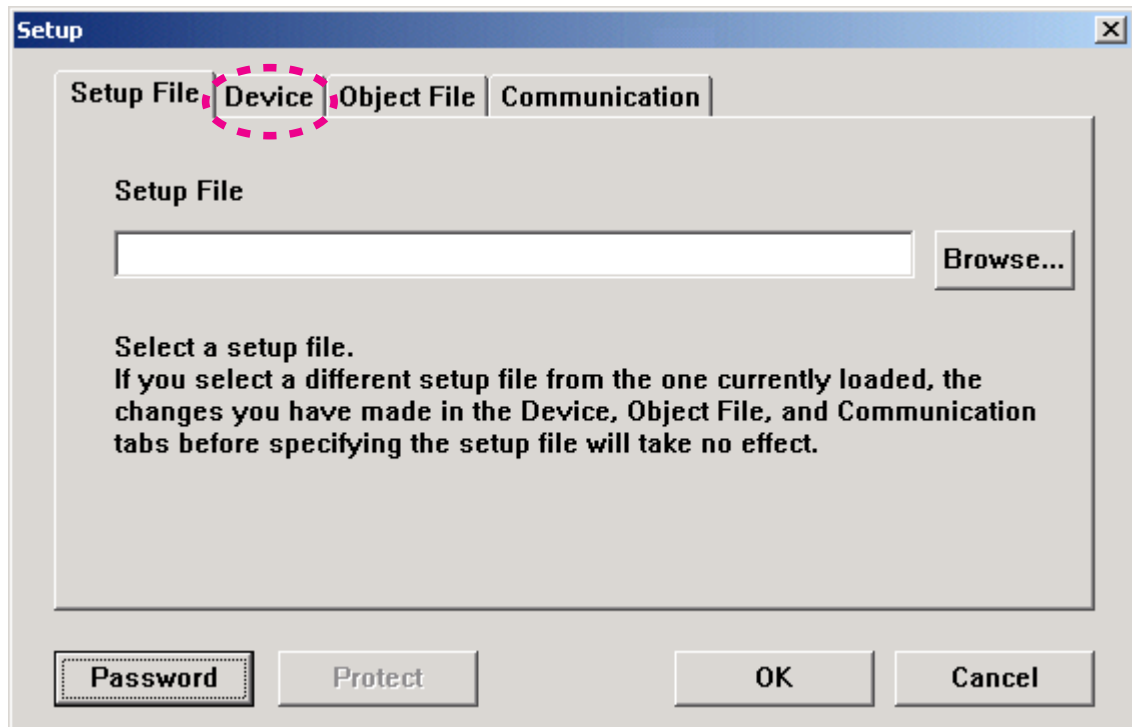
(6) Double click the TM86FH47pass folder.



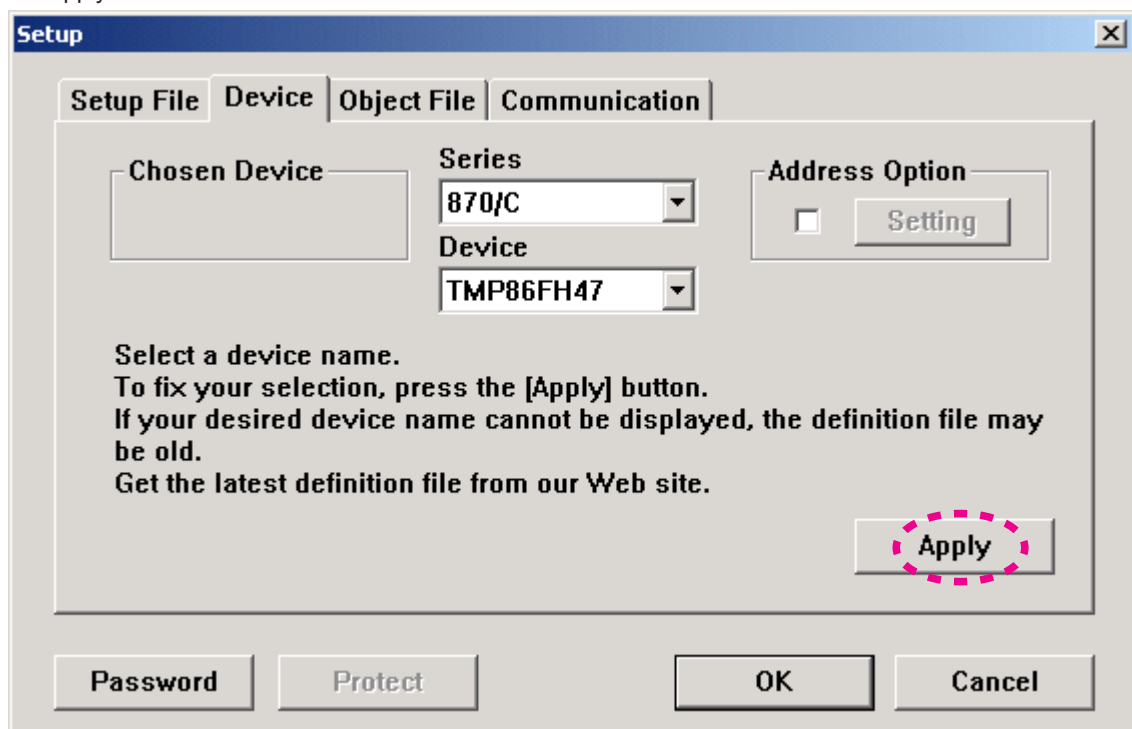
(7) Double click FlashProg.exe.



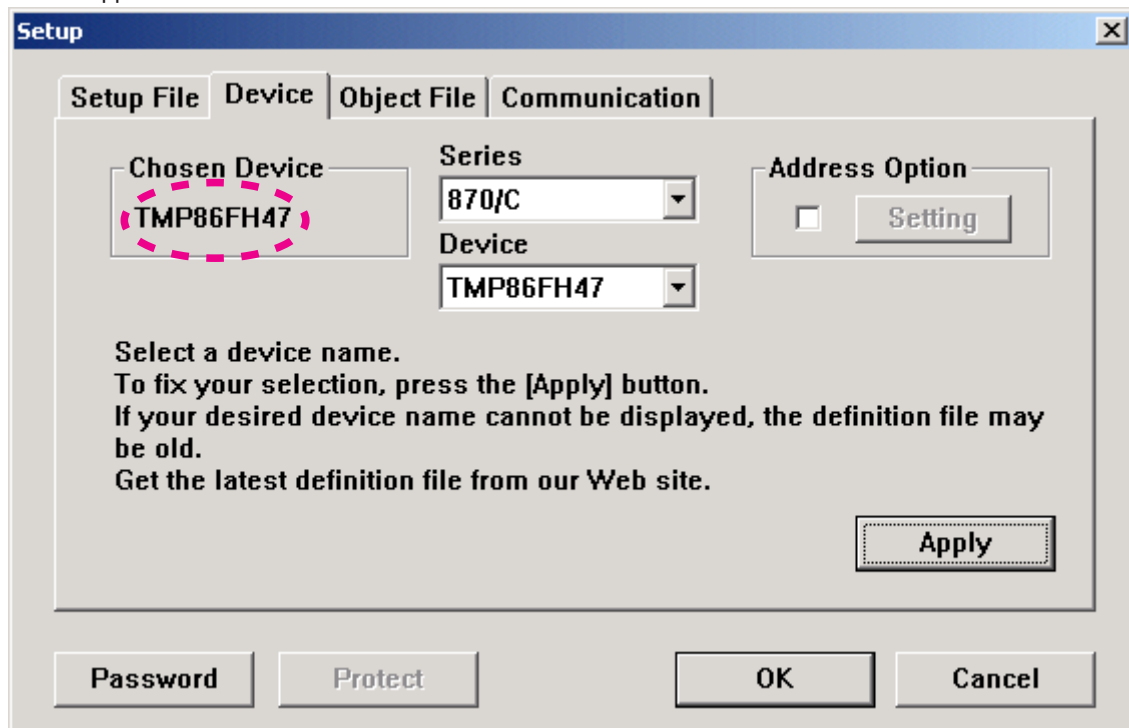
(8) Click Device tab.



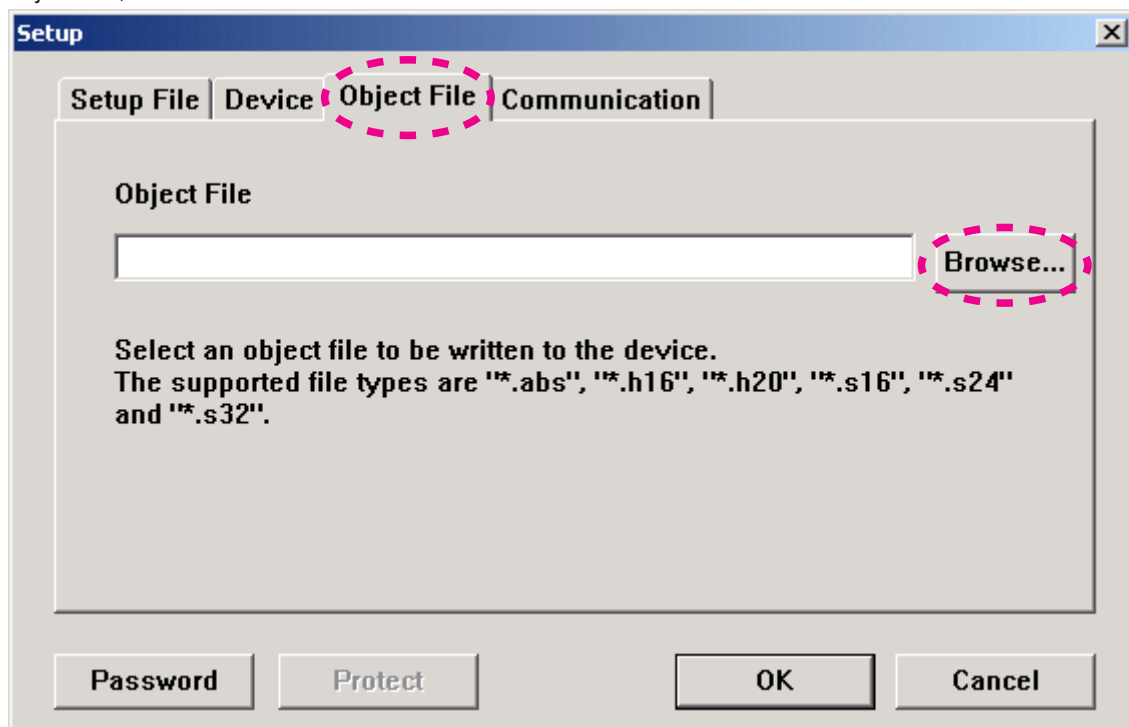
(9) Click Apply.



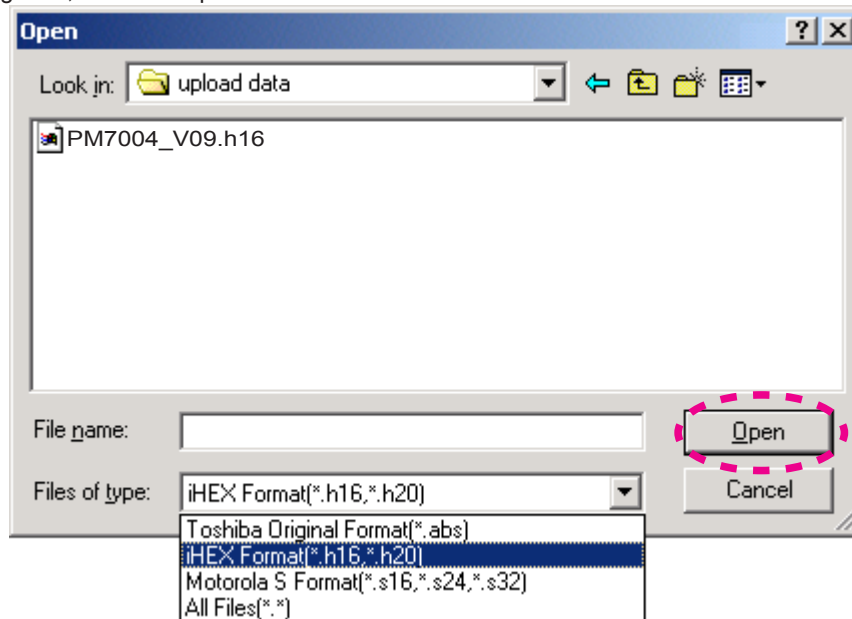
(10) TMP86FH47 appear in Chosen Device.



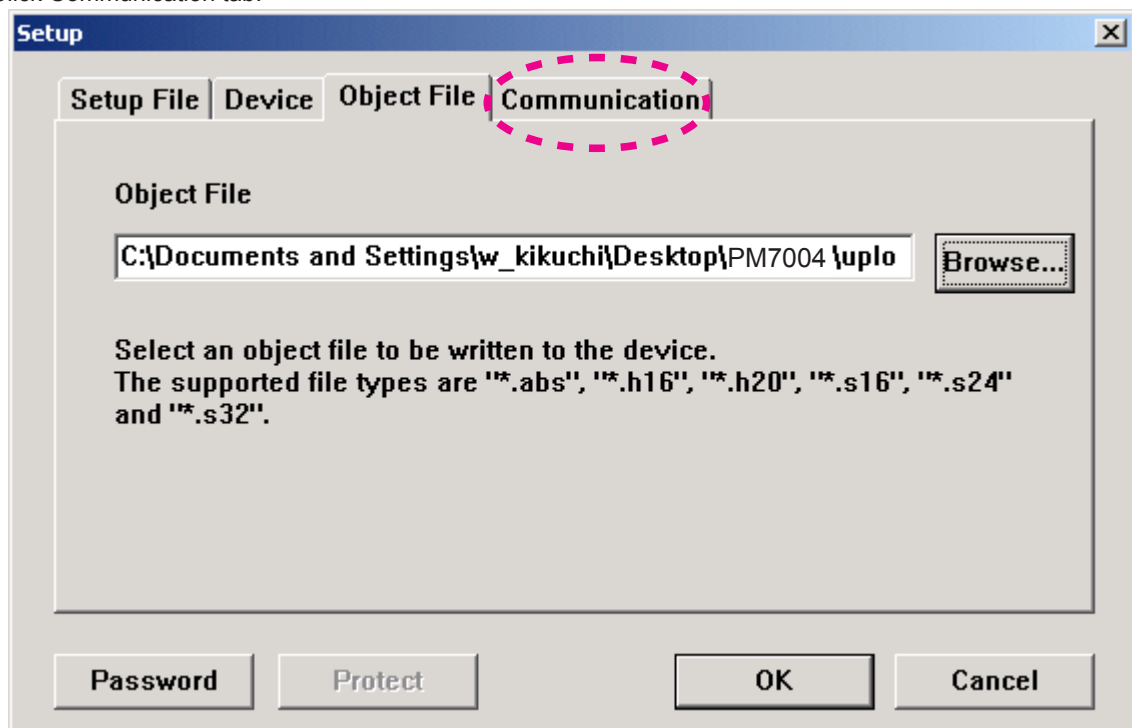
(11) Click Object File, and click Browse...



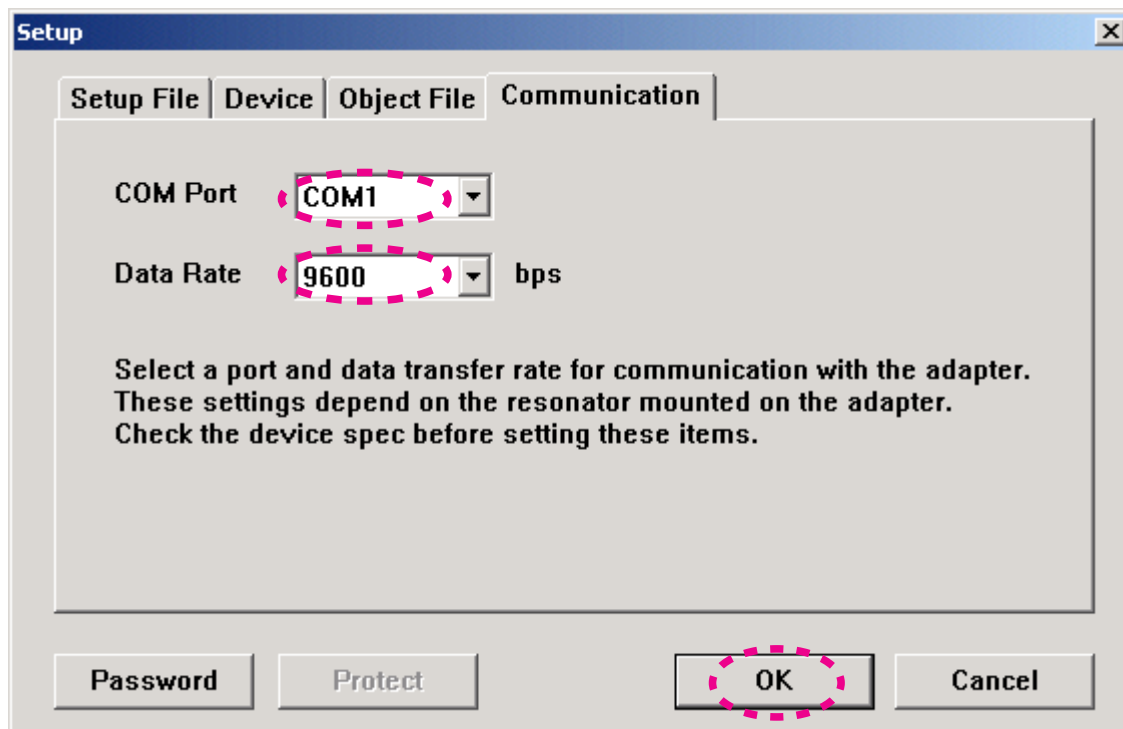
- (12) Choose iHEX Format[* .h16,* .h20] in Files of type.
Choose writing data, and click Open.



- (13) Click Communication tab.

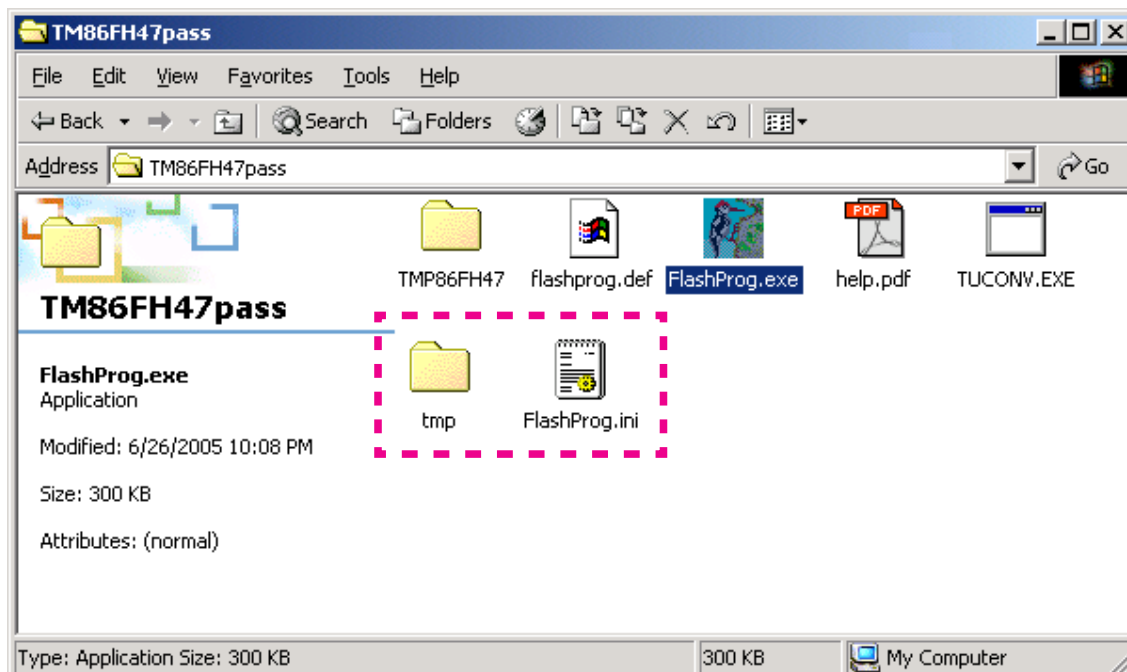


- (14) Choose COM port number in COM port.
Choose 9600 in Data Rate.
Click OK.



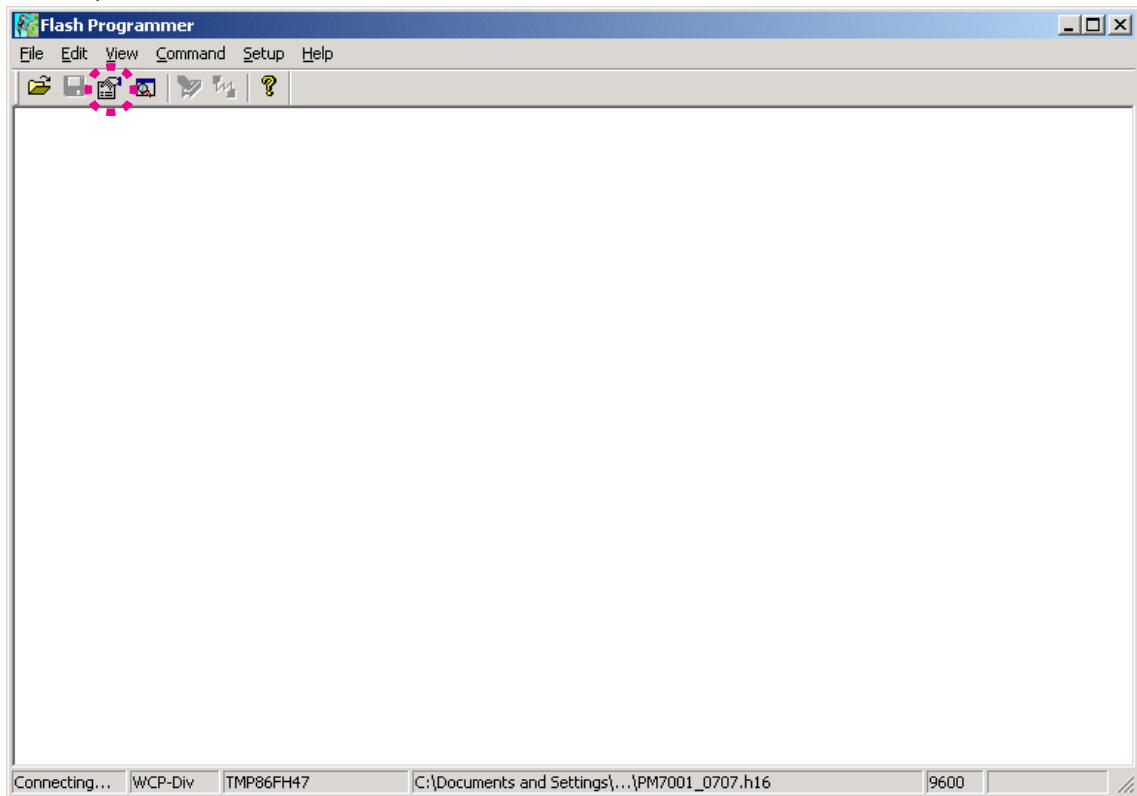
- (15) When Setup window is closed, the tmp folder and FlashProg.ini file are created simultaneously.
Click Yes.

NOTE : These are the original set-up configuration files for that PC. They do not operate, if these files moved to another PC. When you make it operate with other PC, delete the tmp folder and the FlashProg.ini file and redo a setup.

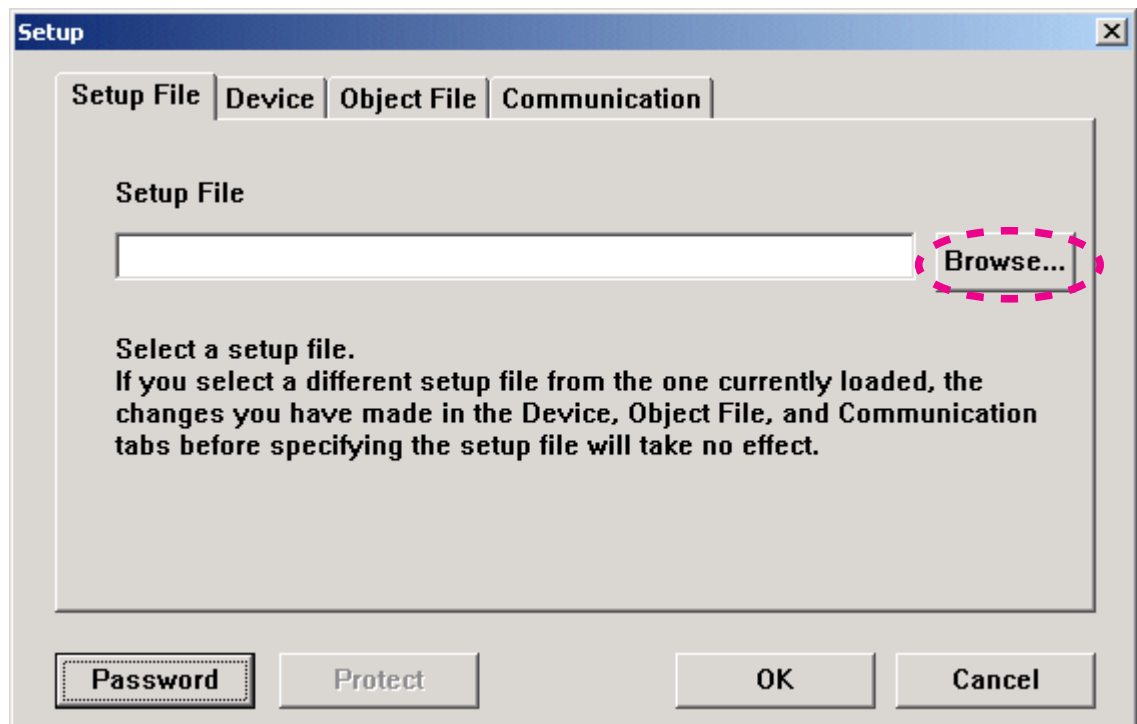


(16) The Flash Programmer is launched.

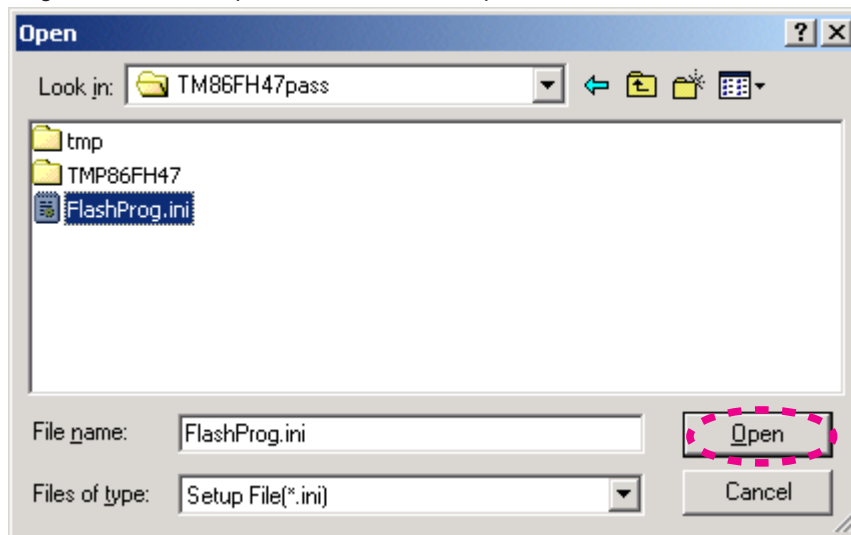
Click setup icon.



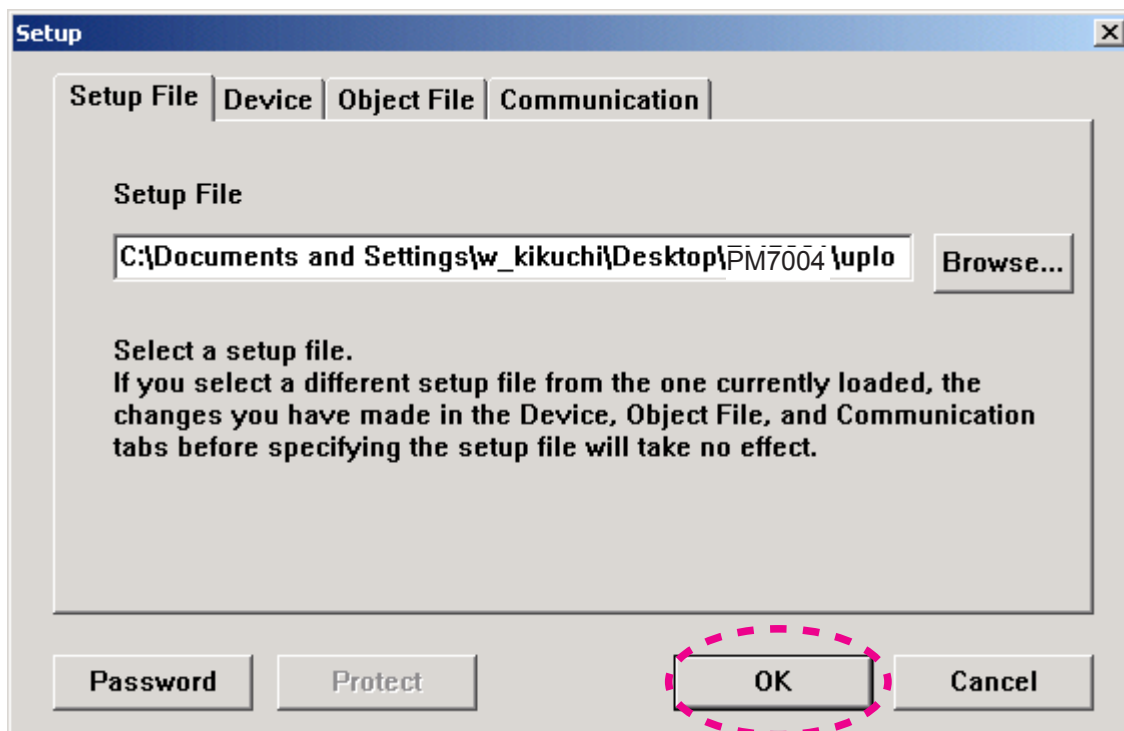
(17) Click Browse....



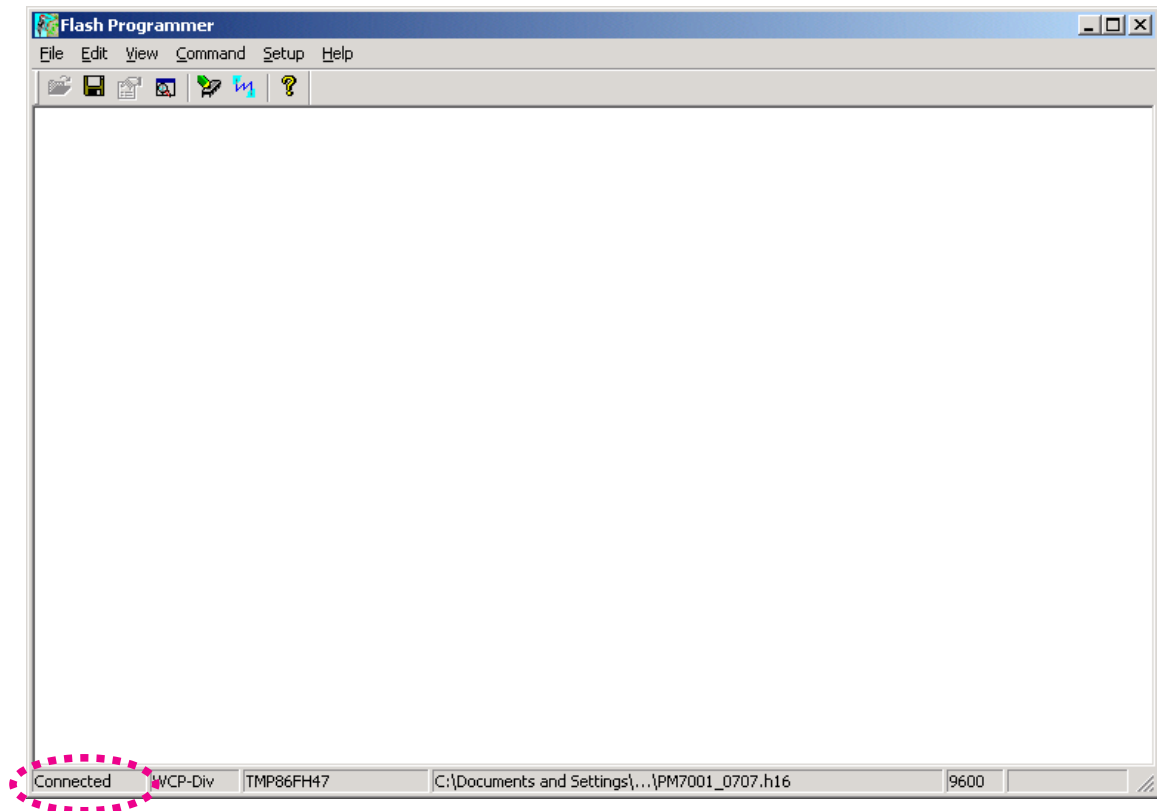
(18) Choose FlashProg.ini in TM86FH47pass folder, and click Open.



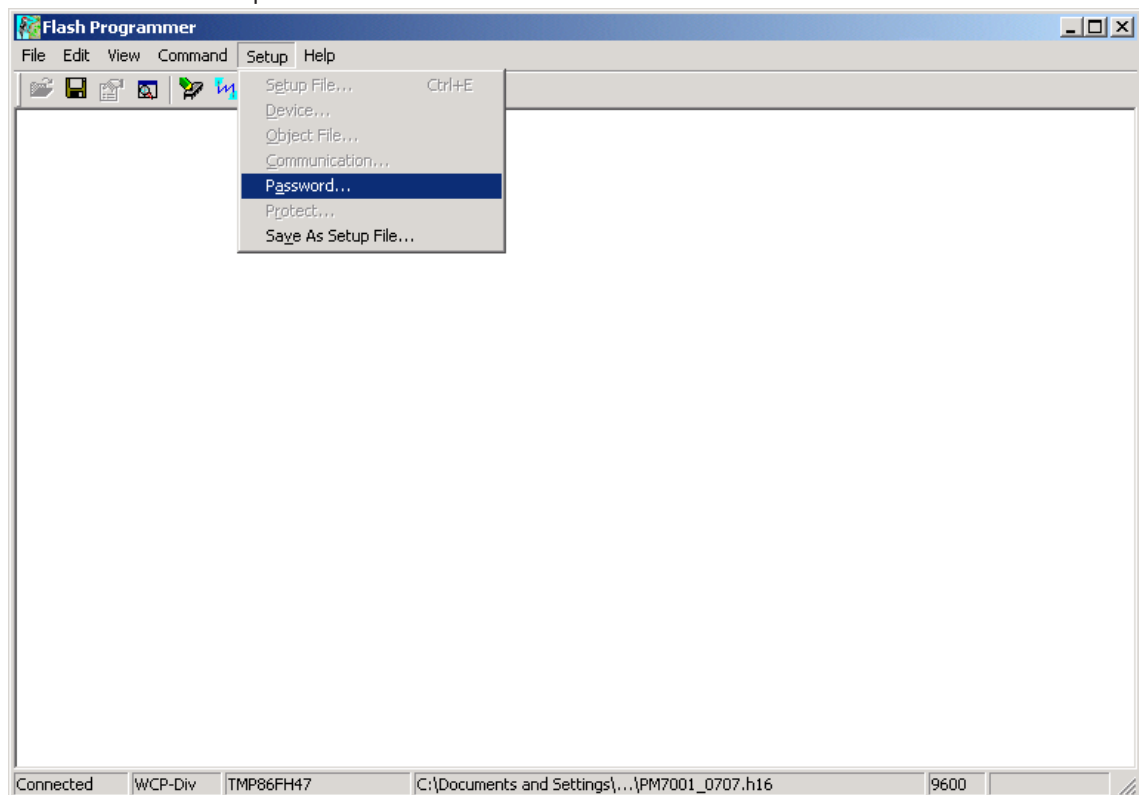
(19) Click OK.



- (20) Press the POWER ON/OFF button, and turn on the unit.
Status indication at lower left in Flash Programming window is changed to "Connected" from "Connecting".
When it did not changed, check the connection of FPC or RS-232C cable.



- (21) Select Password in Setup.



(22) Setup Password opens.

Setup Password

Address Mode

☒ Single Chip Mode ☐ Single Boot Mode

Device Password

☐ Device is BLANK

Input Type ☒ Ascii ☐ Hex

Password

Password Character Number Address

Password Compare Start Address

Object File Password

☐ Use Device Password

☐ BLANK Password

Input Type ☒ Ascii ☐ Hex

Password

Password Character Number Address

Password Compare Start Address

Help **OK** **Cancel**

- When writing in a blank microprocessor (Refer to next page).
- When writing (update) in the already written-in microprocessor (Refer to 00 page).

When writing in a blank microprocessor

Check Single Boot Mode in Address Mode.

Setting in Device Password

- Check Device is BLANK.
- Check Hex in input type.
- Since they are inputted automatically, please do not change text box of "Password", "Password Character Number Address" and "Password Compare Start Address".

Setting in Object File Password

- Do not check BLANK password.
- Check Hex in Input Type.
- Type 0102030405060708 into Password.
- Type 0xFF00 into Password Character Number Address.
- Type 0xFF01 into Password Compare Start Address.

Click OK.

The screenshot shows the 'Setup Password' dialog box with two sections: 'Address Mode' and 'Device Password'. In the 'Address Mode' section, 'Single Boot Mode' is selected. The 'Device Password' section has 'Device is BLANK' checked, 'Input Type' set to 'Hex', and the 'Password' field filled with asterisks. The 'Object File Password' section has 'Use Device Password' selected, 'BLANK Password' unchecked, 'Input Type' set to 'Hex', and the 'Password' field filled with asterisks. The 'Password Character Number Address' is 0xFF00 and the 'Password Compare Start Address' is 0xFF01. The 'OK' button is highlighted with a red dashed circle.

Setup Password

Address Mode

☐ Single Chip Mode ☒ Single Boot Mode

Device Password

☒ Device is BLANK

Input Type ☐ Ascii ☒ Hex

Password *****

Password Character Number Address 0xc000

Password Compare Start Address 0xc000

Object File Password

☐ Use Device Password

☐ BLANK Password

Input Type ☐ Ascii ☒ Hex

Password *****

Password Character Number Address 0xFF00

Password Compare Start Address 0xFF01

Help **OK** **Cancel**

When writing in the already written-in microcomputer (update)

Check Single Boot Mode in Address Mode.

Setting in Device Password

- Check Device is BLANK.
- Check Hex in input type.
- Type 0102030405060708 into Password.
- Type 0xFF00 into Password Character Number Address.
- Type 0xFF01 into Password Compare Start Address.

Setting in Object File Password

- Do not check BLANK password.
- Check Hex in Input Type.
- Type 0102030405060708 into Password.
- Type 0xFF00 into Password Character Number Address.
- Type 0xFF01 into Password Compare Start Address.

Click OK.

The screenshot shows the 'Setup Password' dialog box with the following fields and settings highlighted by red dashed boxes:

- Address Mode:** ☒ Single Boot Mode
- Device Password:**
 - ☒ Device is BLANK
 - Input Type:** ☒ Hex
 - Password:** *****
 - Password Character Number Address:** 0xFF00
 - Password Compare Start Address:** 0xFF01
- Object File Password:**
 - ☐ BLANK Password
 - Input Type:** ☒ Hex
 - Password:** *****
 - Password Character Number Address:** 0xFF00
 - Password Compare Start Address:** 0xFF01
- Buttons:** Help, OK, Cancel

(23)Auto Programming opens.

Auto Programming

Flash Memory Programming

- ☐ All Erase
- ☐ Programming
- ☐ Verify with SUM
- ☐ File Compare

Recover Process by Programming Error

- ☐ Auto Retry Number times
- ☐ Manual

Execute Result

Complete: Recover Error:

Display Message

- ☐ Protect Check

Start **Cancel**

- (24) Check All Erase, Programming, Verify with SUM and File Compare in Flash Memory Programming.
Check Manual in Recover Process by Programming Error.
Click Start.

Auto Programming

Flash Memory Programming

- ☒ All Erase
- ☒ Programming
- ☒ Verify with SUM
- ☒ File Compare

Recover Process by Programming Error

☐ Auto Retry Number times

☒ **Manual**

Execute Result

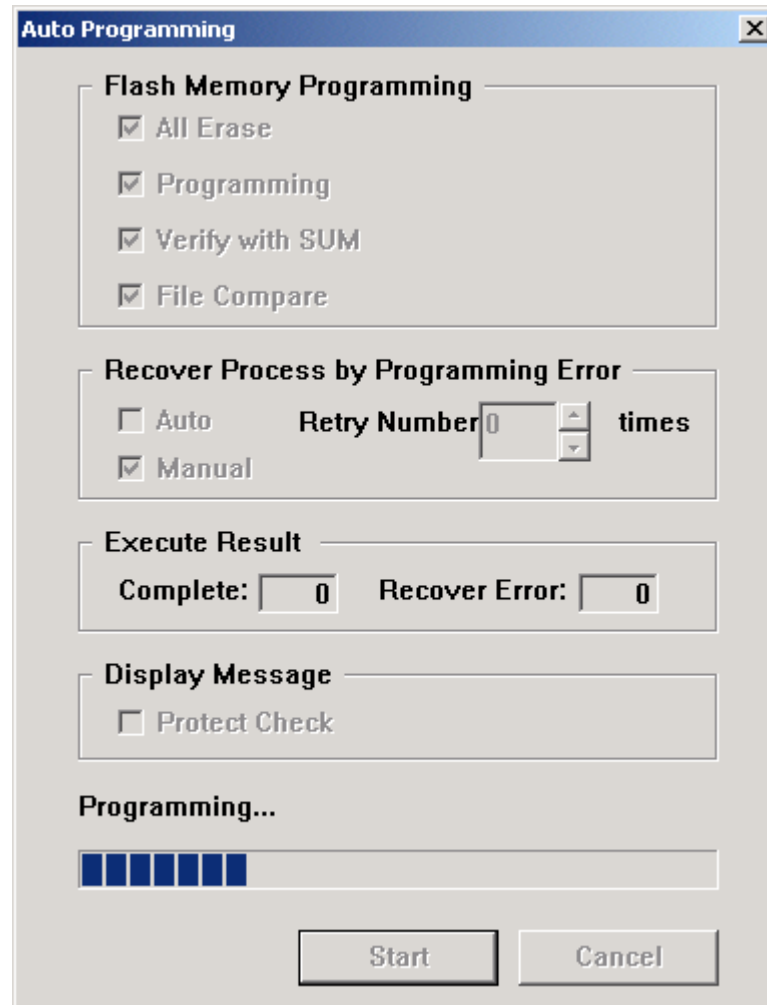
Complete: Recover Error:

Display Message

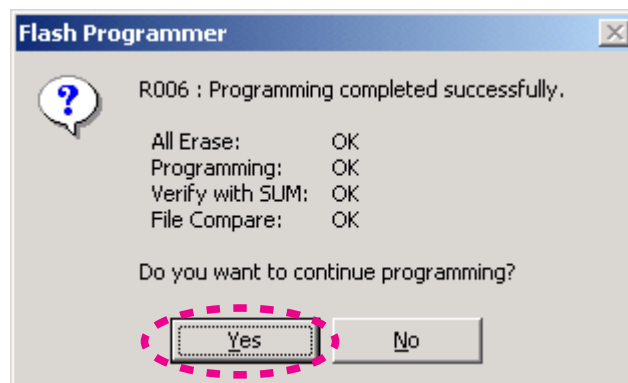
☐ Protect Check

Start **Cancel**

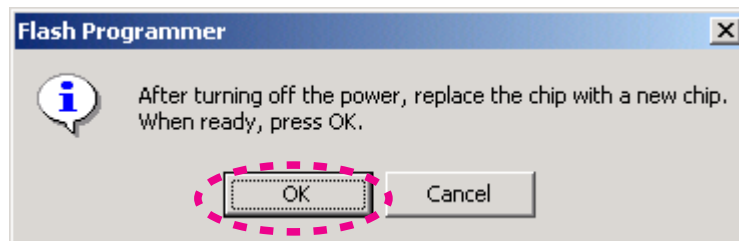
(25) Writing data is written into the microprocessor (U101).



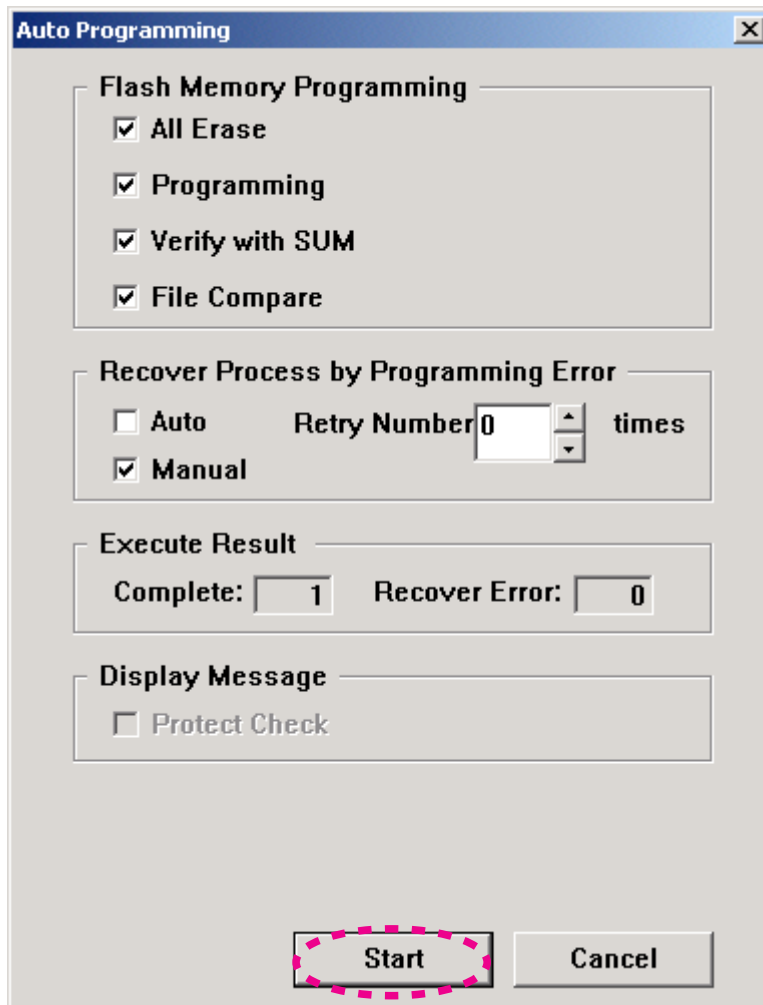
(26) Click Yes, when writing is successful.



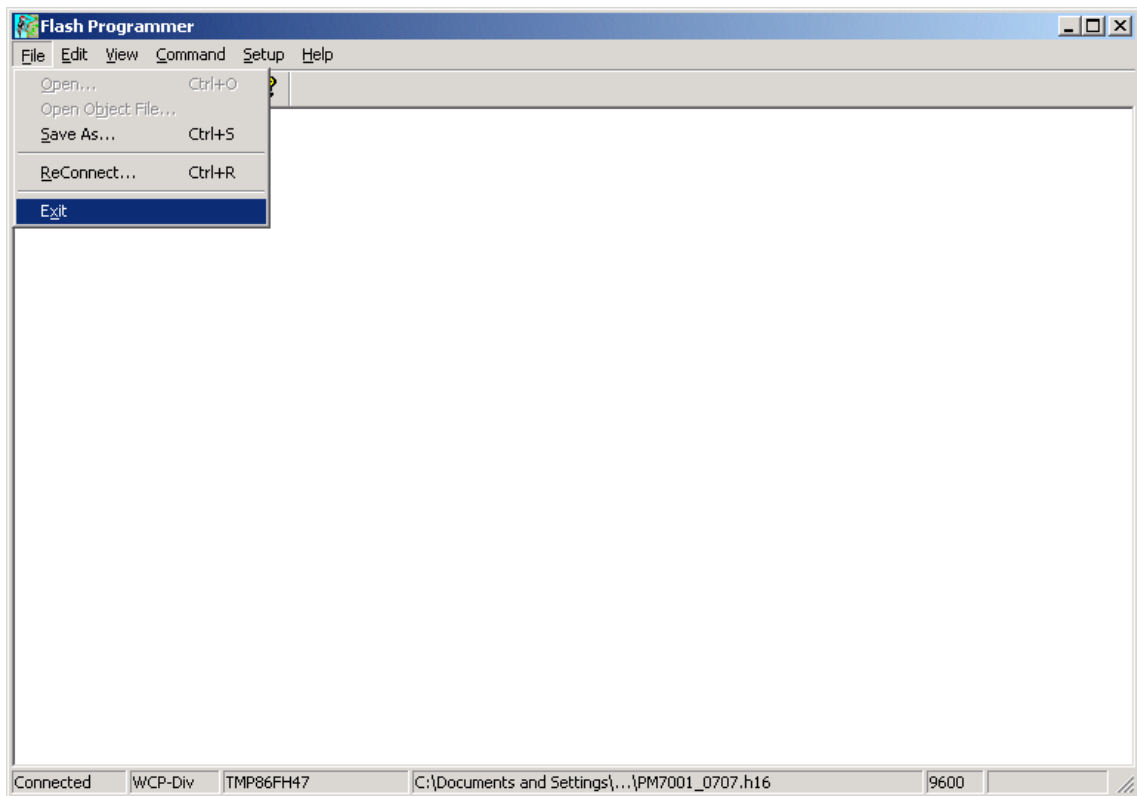
(27) Click Cancel.



(28) Click Cancel.



(29) Select the Exit in File, and finish.

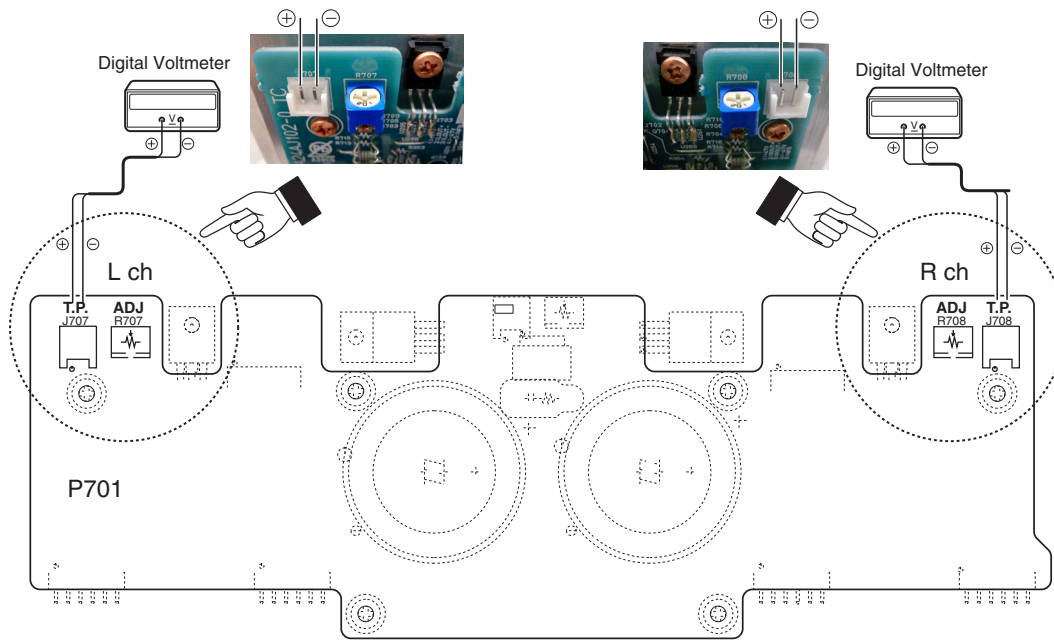


(30) Press the POWER ON/OFF button, and turn off the unit.
Disconnect each cable.

(31) Check the software version.
Refer to "3. SERVICE MODE" on page 4.

ADJUSTMENT

IDLING CURRENT ALIGNMENT



Adjustment Procedure

Set the power voltage to rated voltage for this adjustment.

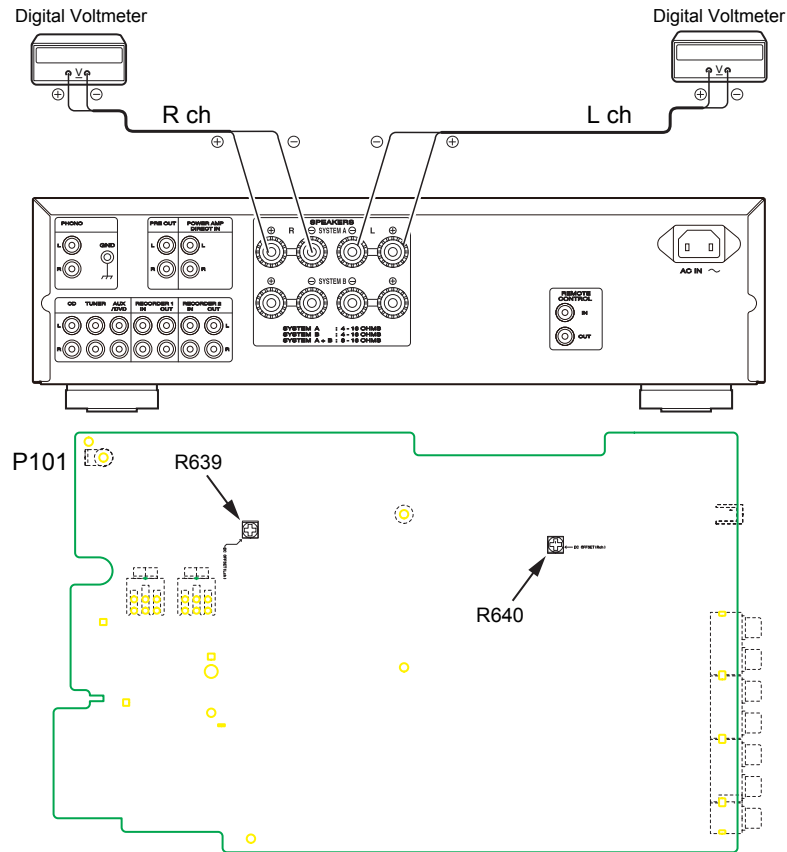
- (1) Adjust the Idling Current with the variable resistor R707 and R708 on the PWB P701.
- (2) Turn off the power.
- (3) "+" of Connect Digital Voltage is connected to the No. 1 pin and connected "-" to No. 2 pin of J707.
- (4) "+" of Connect Digital Voltage is connected to the No. 1 pin and connected "-" to No. 2 pin of J708.
- (5) Before turning on the power, R707 and R708 have been counter clockwise turned with the adjustment driver.
- (6) Turn on the power, VOLUME is set as $-\infty$.
- (7) After 2 minutes.
 - With seeing the digital voltage meter turn the variable resistor clockwise slowly to adjust the idling current.
 - Idling adjustment with R707 (R708).
 - Turn R707 (R708) clockwise to increase the idling current.
 - The adjustment value of idling current is $3 \text{ mV}(15 \text{ mA}) \pm 0.5 \text{ mV}(2.5 \text{ mA})$ each.
- (8) After 6 minutes.
 - Repeat the same procedure as 7.
 - The adjustment value of idling current is $12.5 \text{ mV}(62.5 \text{ mA}) \pm 0.5 \text{ mV}(2.5 \text{ mA})$ each.

Adjustment is completed.

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

NOTE : Idling current decreases with the temperature rise inside the unit, and it is set to $10 \text{ mV} (50 \text{ mA})$ of setting value in about 30 minutes after turn on the power.

DC Offset Voltage Adjustment



Adjustment Procedure

Set the power voltage to rated voltage for this adjustment.

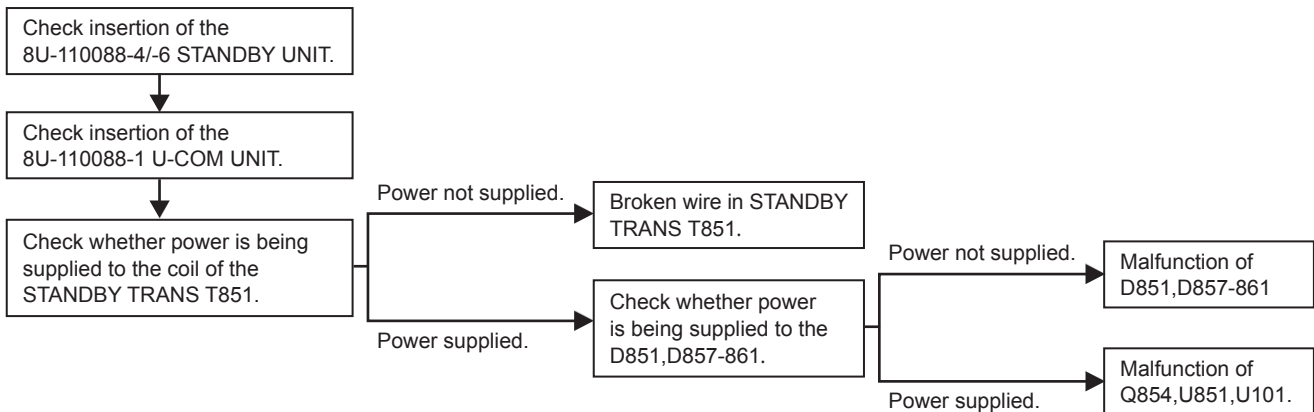
- (1) Before turning on the power, Insert Digital Voltage Meter between the SPEAKERS SYSTEM A (L CH) "+" and "-". Insert Digital Voltage Meter between the SPEAKERS SYSTEM A (R CH) "+" and "-".
- (2) Adjust the VOLUME to MIN.
- (3) Turn on the power. Then turn the SPAKERS SW to A.
Adjustment is started immediately after a speaker relay turns on.
- (4) First L CH is adjusted.
The variable resistor R639 on P101 is turned with adjustment driver, and the Digital Voltage Meter is adjusted to "0 mV $\pm$ 3 mV".
- (5) Then, R CH is adjusted.
The variable resistor R640 on P101 is turned with adjustment driver, and the Digital Voltage Meter is adjusted to "0 mV $\pm$ 3 mV".

NOTE : DC offset voltage drops when turn the semi-fixed resistor (R639 and R640) clockwise. DC offset voltage rises when turn the semi-fixed resistor un-clockwise. Please turn it slowly, because value of Digital Voltage Meter changes slowly.

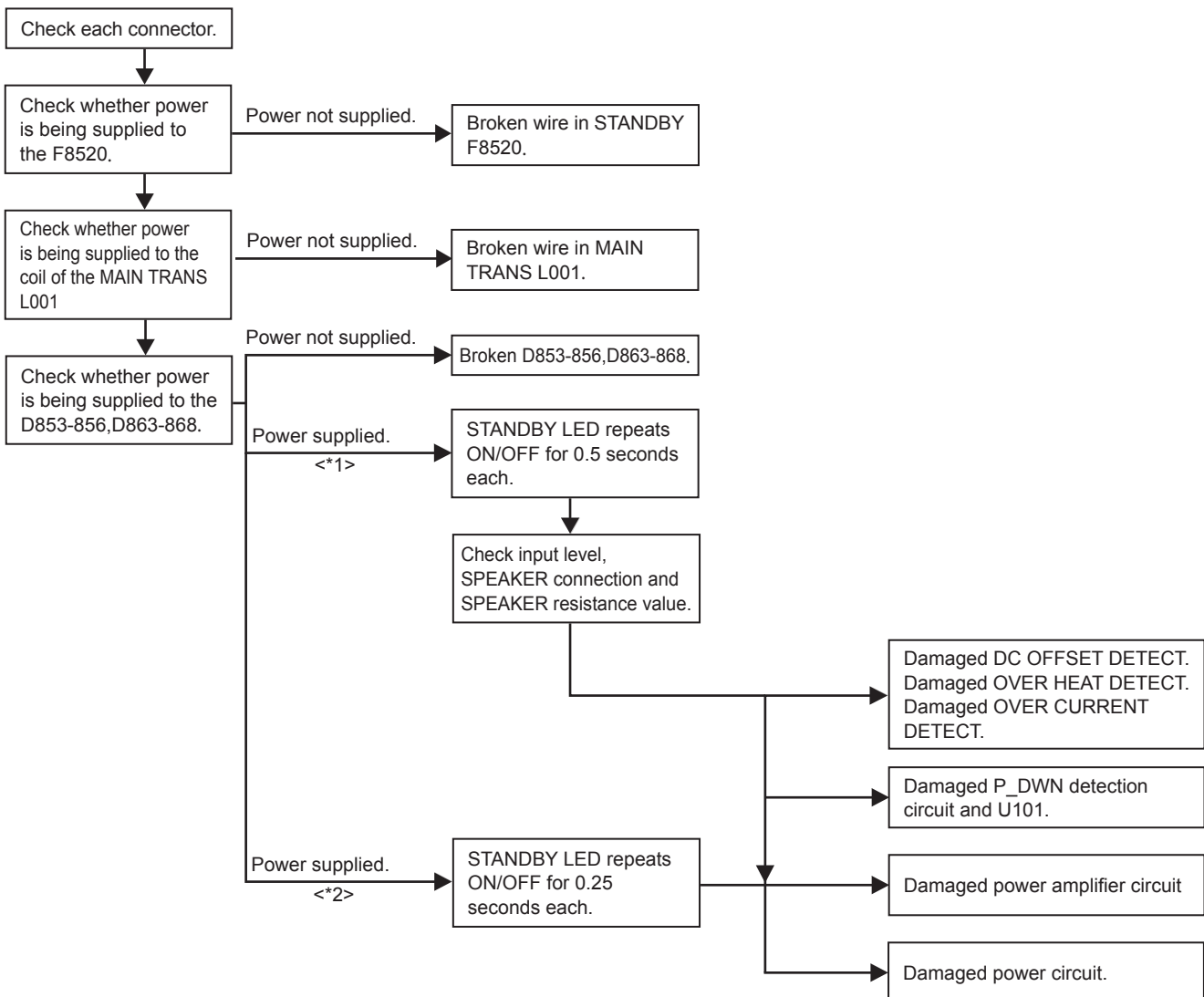
- (6) Although after-adjustment DC offset voltage has some change, Please check that the range of DC offset voltage between L ch (R ch) "+" and L ch (R ch) "-" terminal of SPEAKERS SYSTEM A is "0 mV $\pm$ 20 mV". CHART OF FACTORY MODE.

TROUBLE SHOOTING

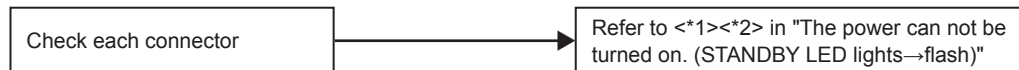
1. The power can not be turned on. (STANDBY LED does not light (STANDBY MODE))



2. The power can not be turned on. (STANDBY LED lights→flash)

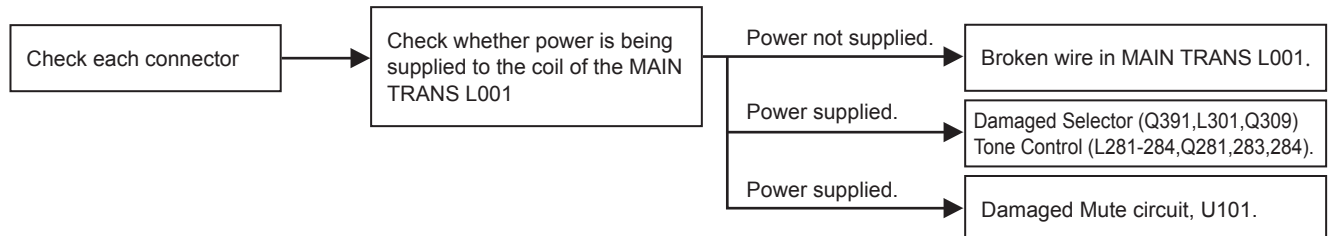


3. STANDBY LED flashes while using unit. (protection circuit is set)



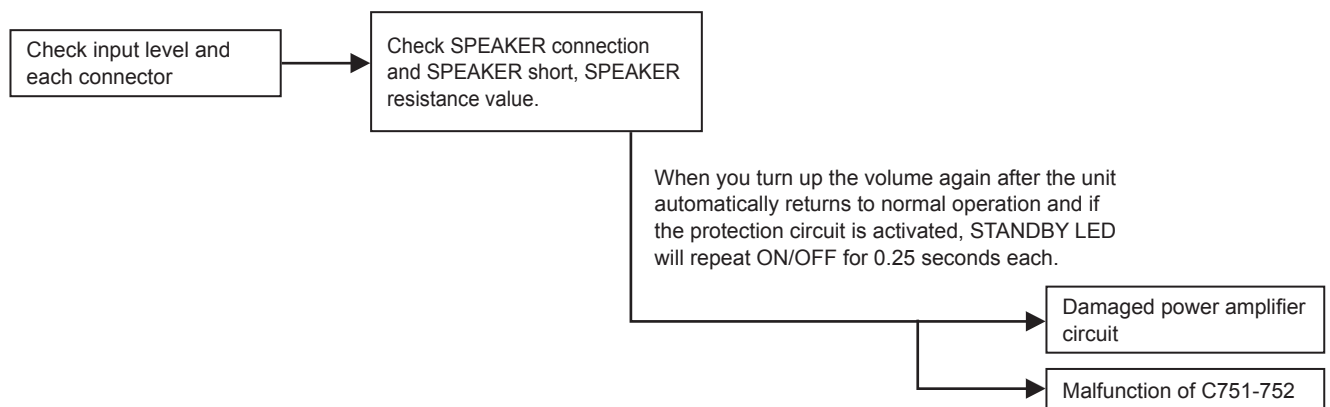
4. The power turned on, but a sound does not output normally. (Both channels)

4.1 STANDBY LED does not flash (protection mode is not set)



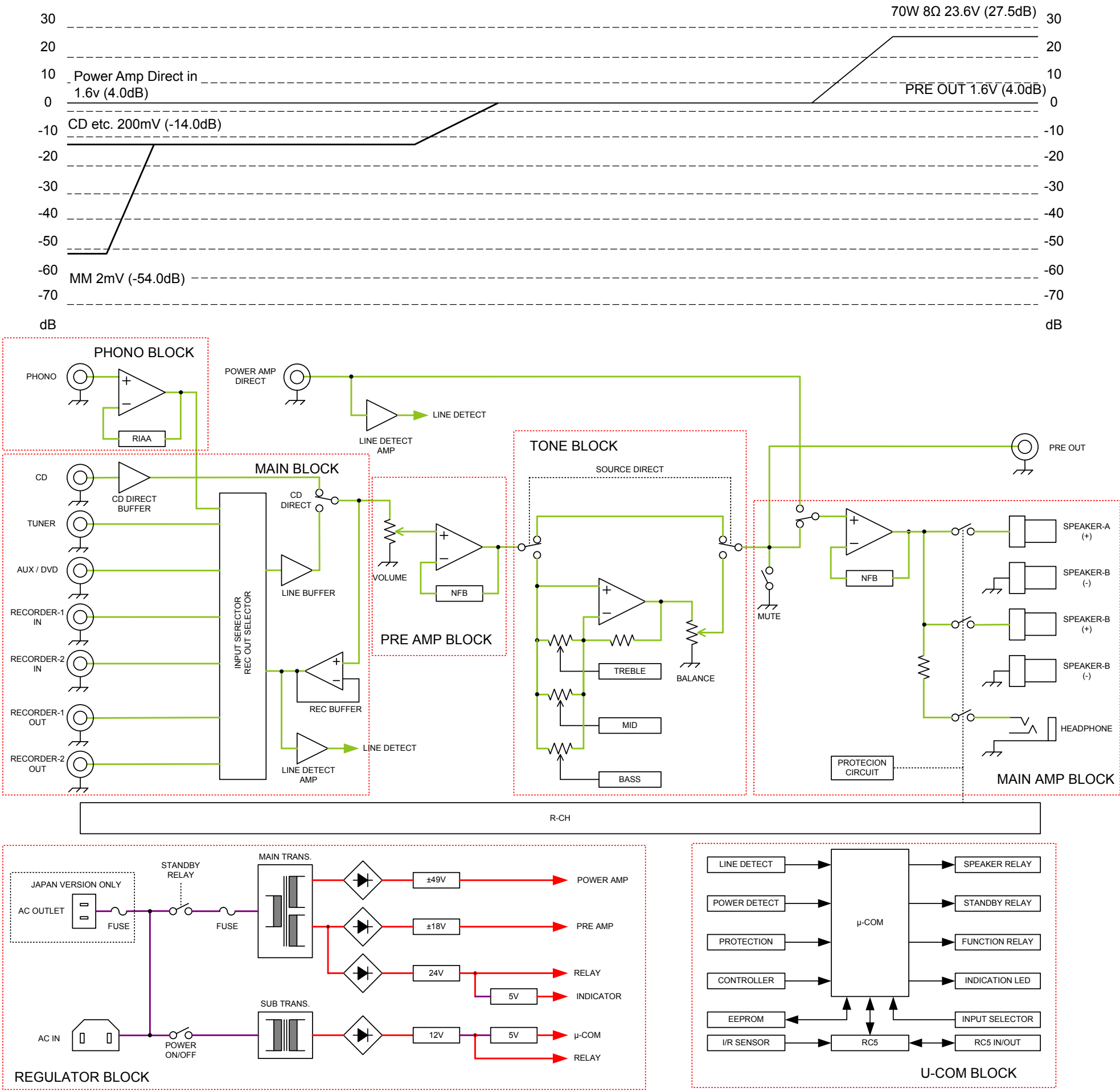
4.2 When the volume is turned up, Mute LED flashes. (protection mode is set)

Repeats ON/OFF for 0.5 second each, and automatically returns to normal operation.



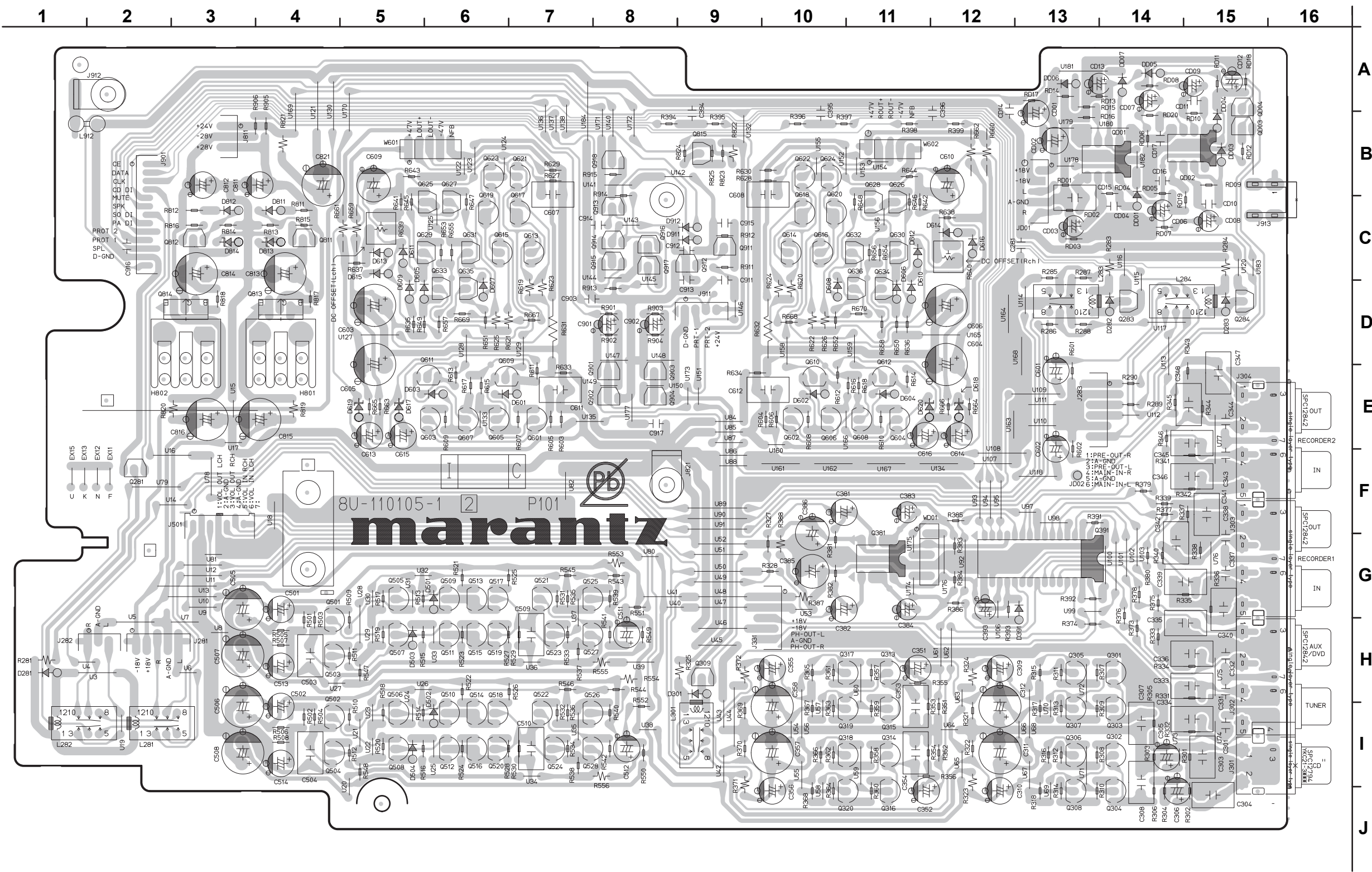
[illegible]

BLOCK DIAGRAM AND LEVEL DIAGRAM



PRINTED WIRING BOARDS

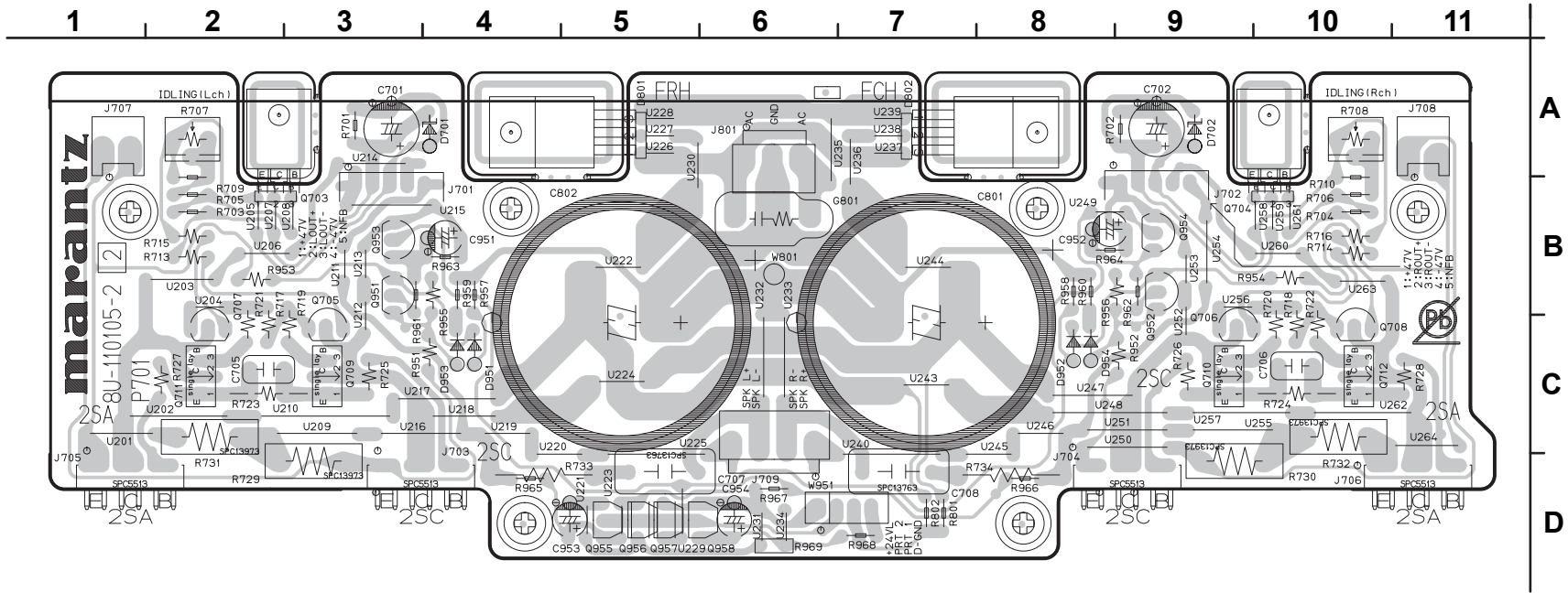
MAIN (COMPONENT SIDE)



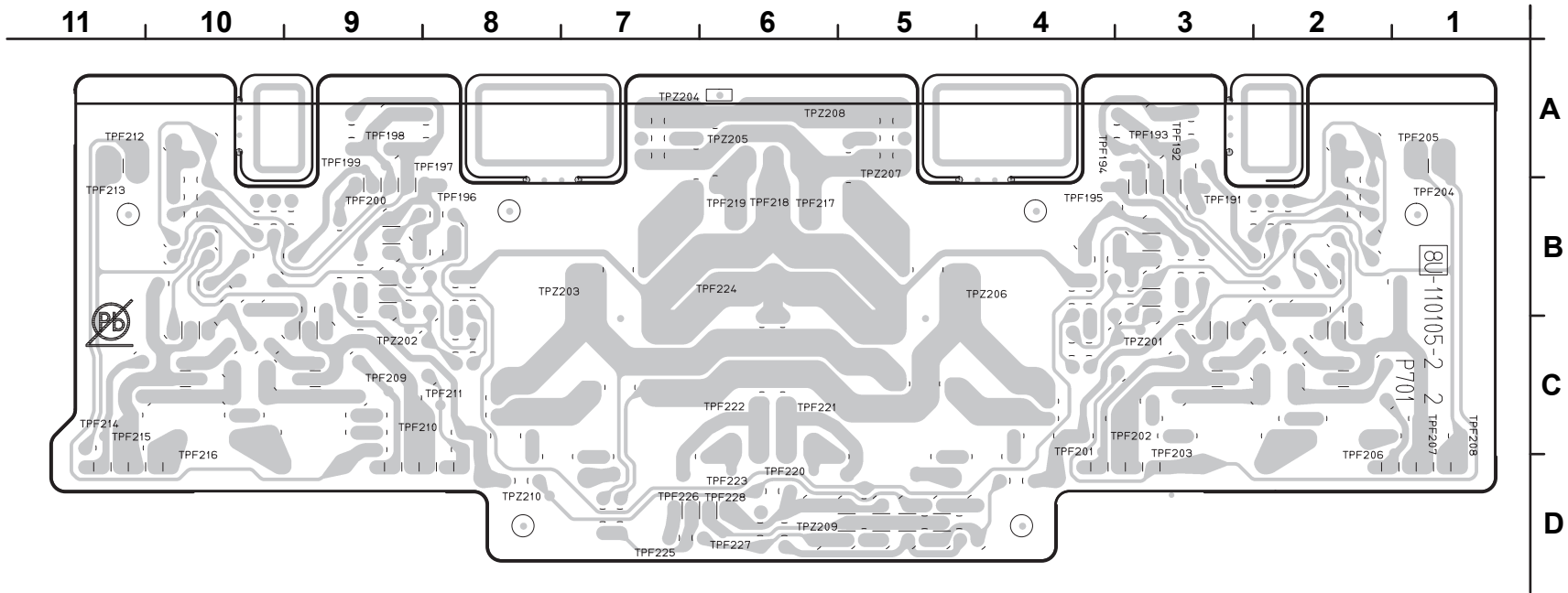
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

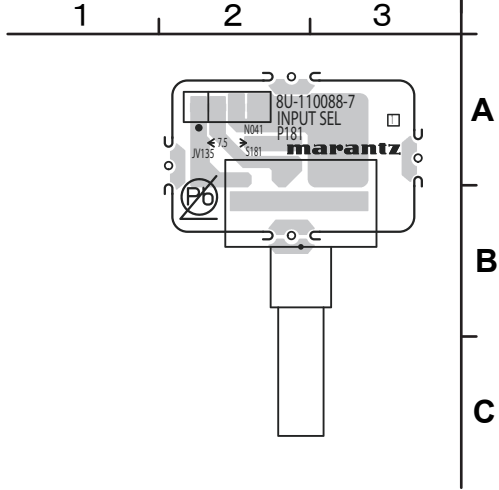
POWER STAGE (COMPONENT SIDE)



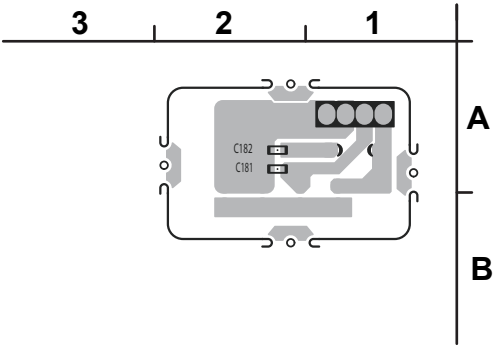
POWER STAGE (FOIL SIDE)



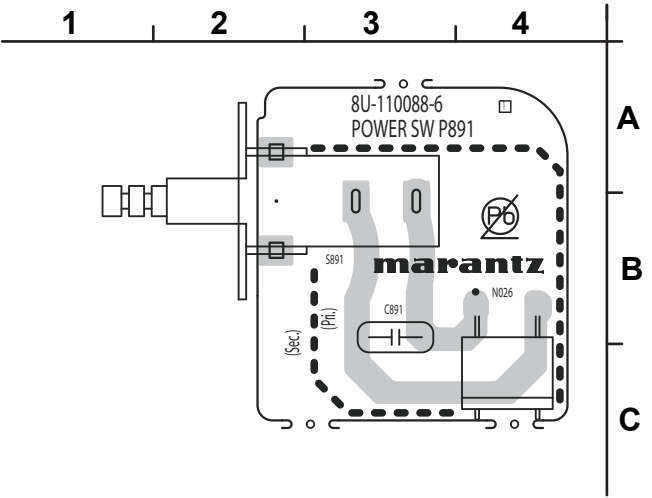
SEL (COMPONENT SIDE)



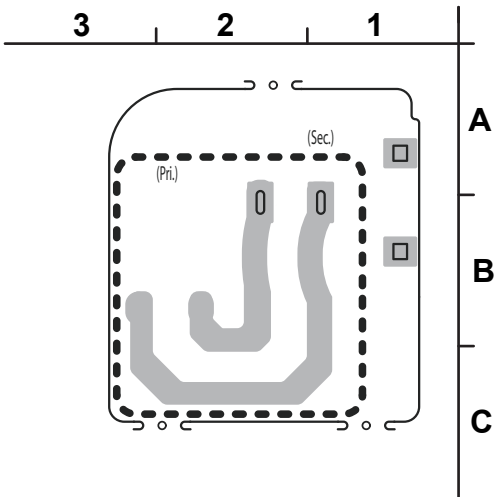
SEL (FOIL SIDE)



POWER SW (COMPONENT SIDE)



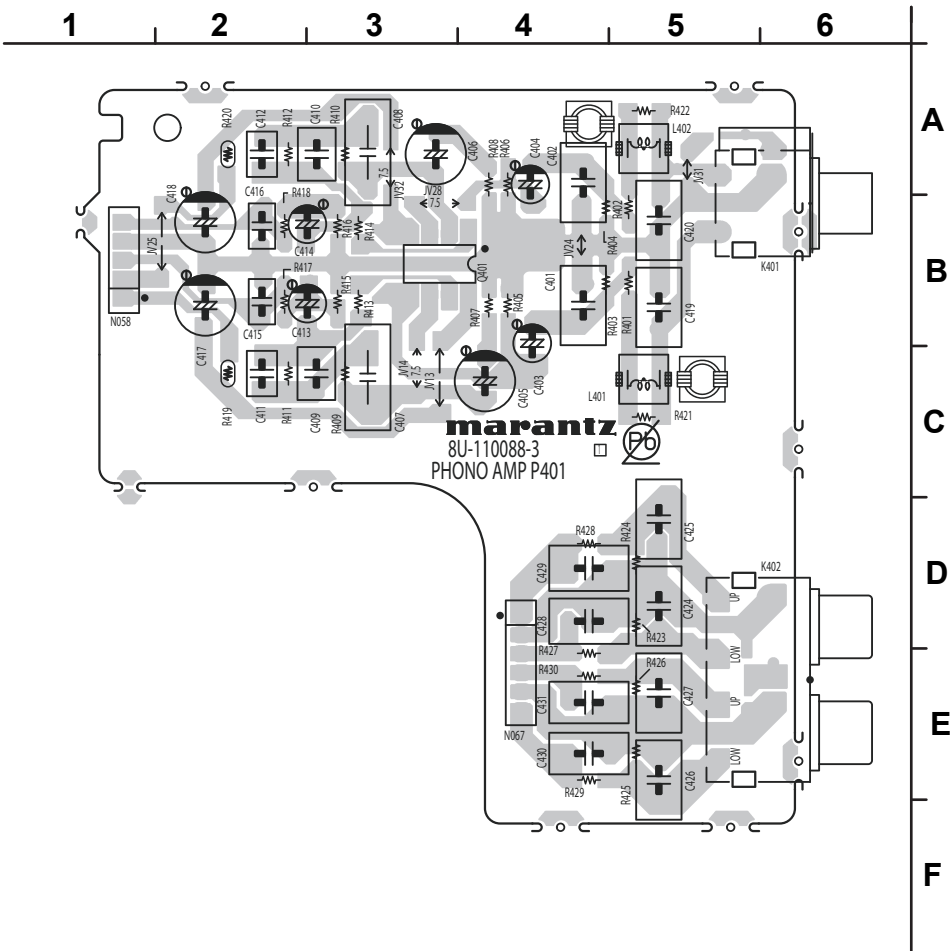
POWER SW (FOIL SIDE)



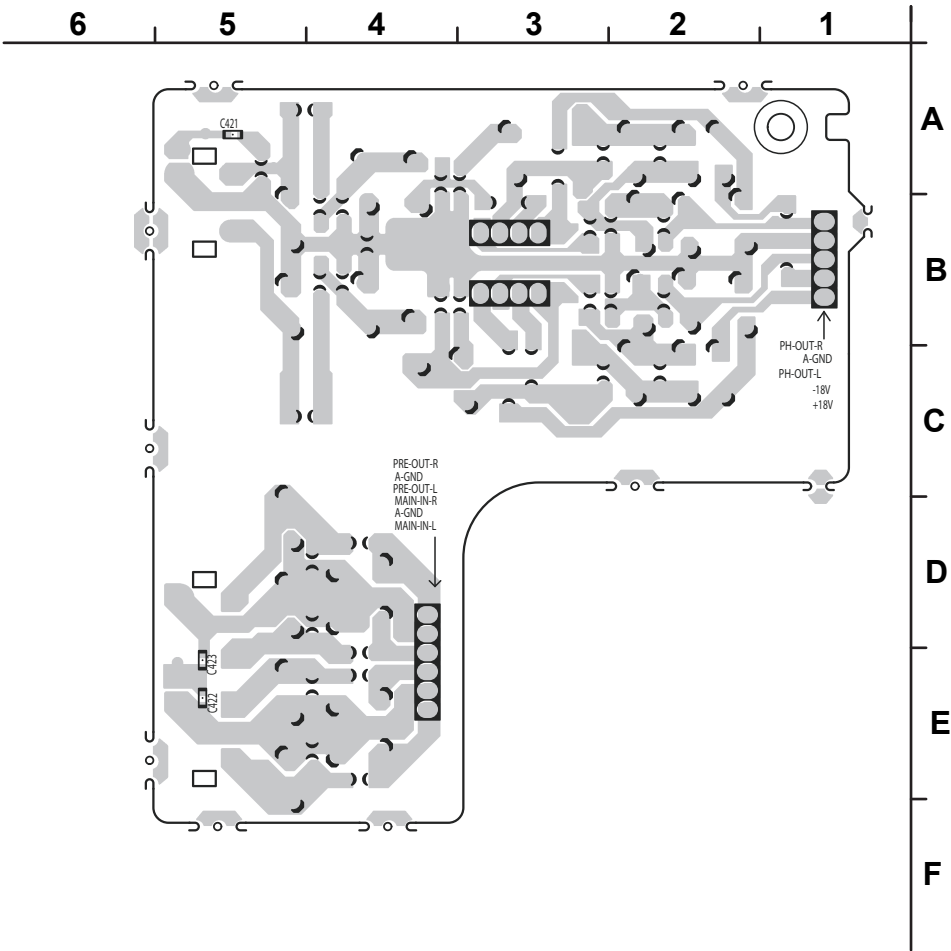
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

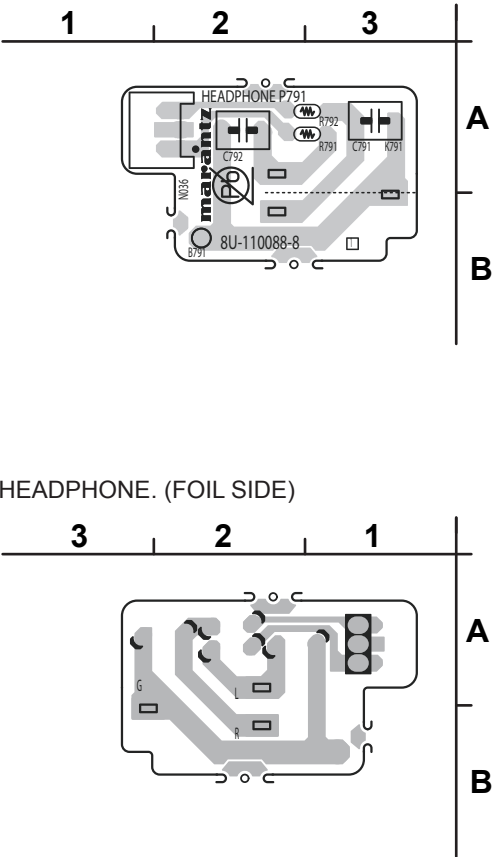
PHONO AMP (COMPONENT SIDE)



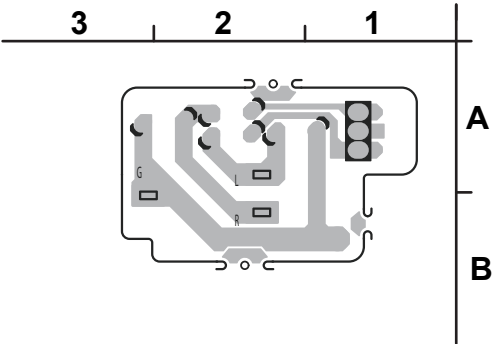
PHONO AMP (FOIL SIDE)



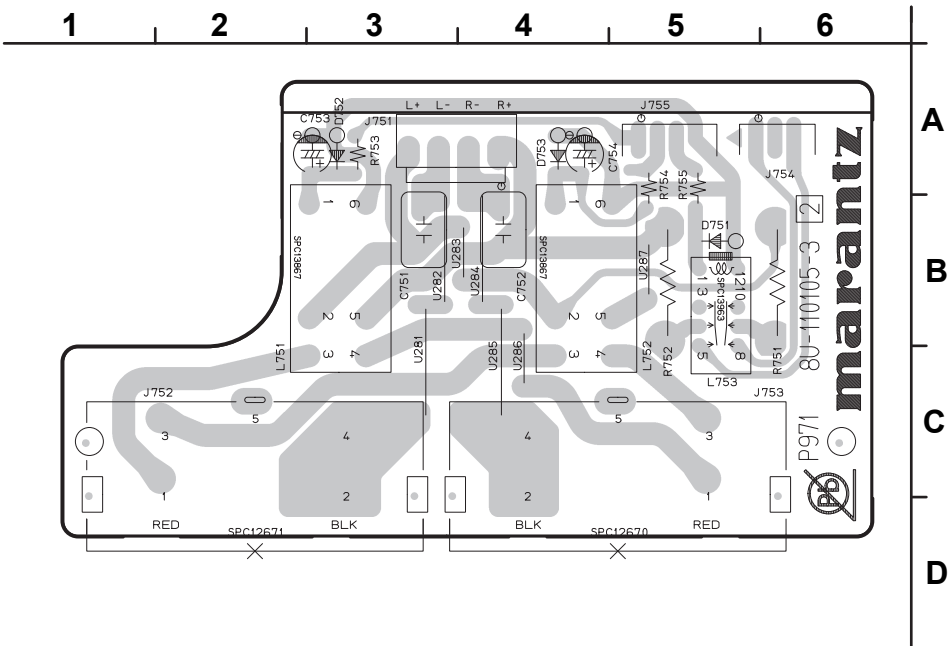
HEADPHONE. (COMPONENT SIDE)



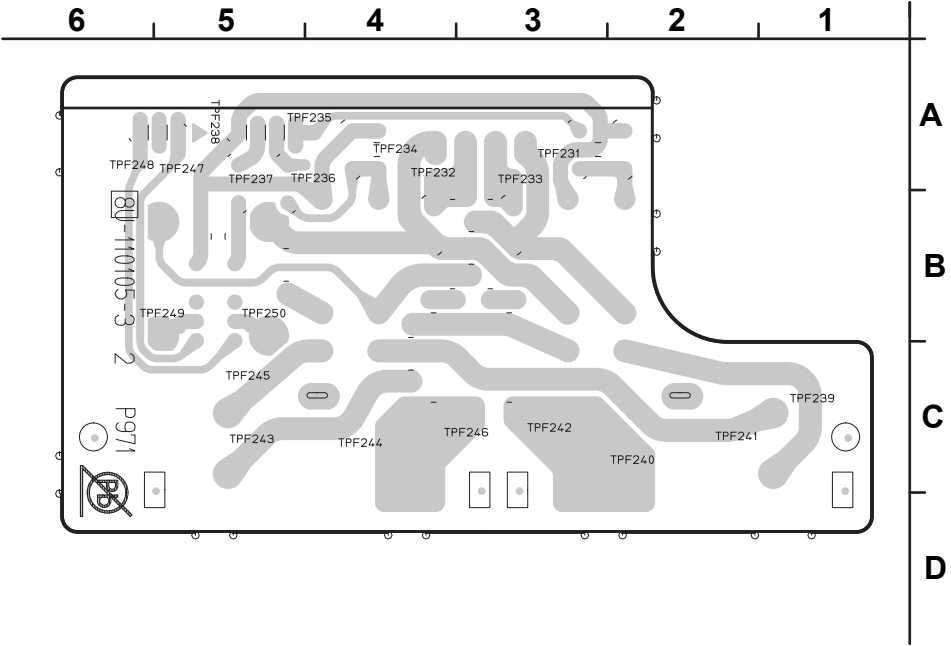
HEADPHONE. (FOIL SIDE)



SPK TERMINAL (COMPONENT SIDE)



SPK TERMINAL (FOIL SIDE)



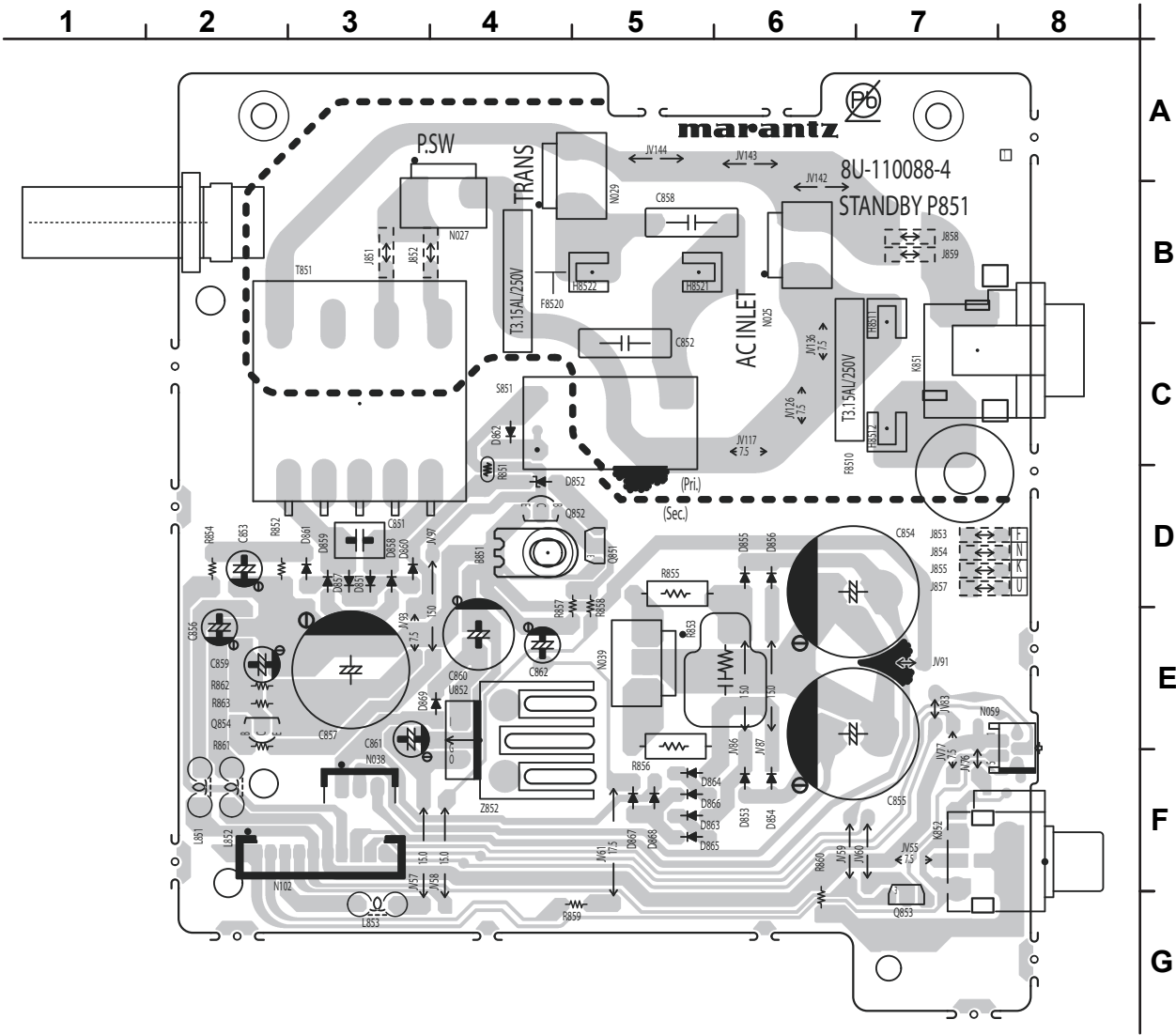
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

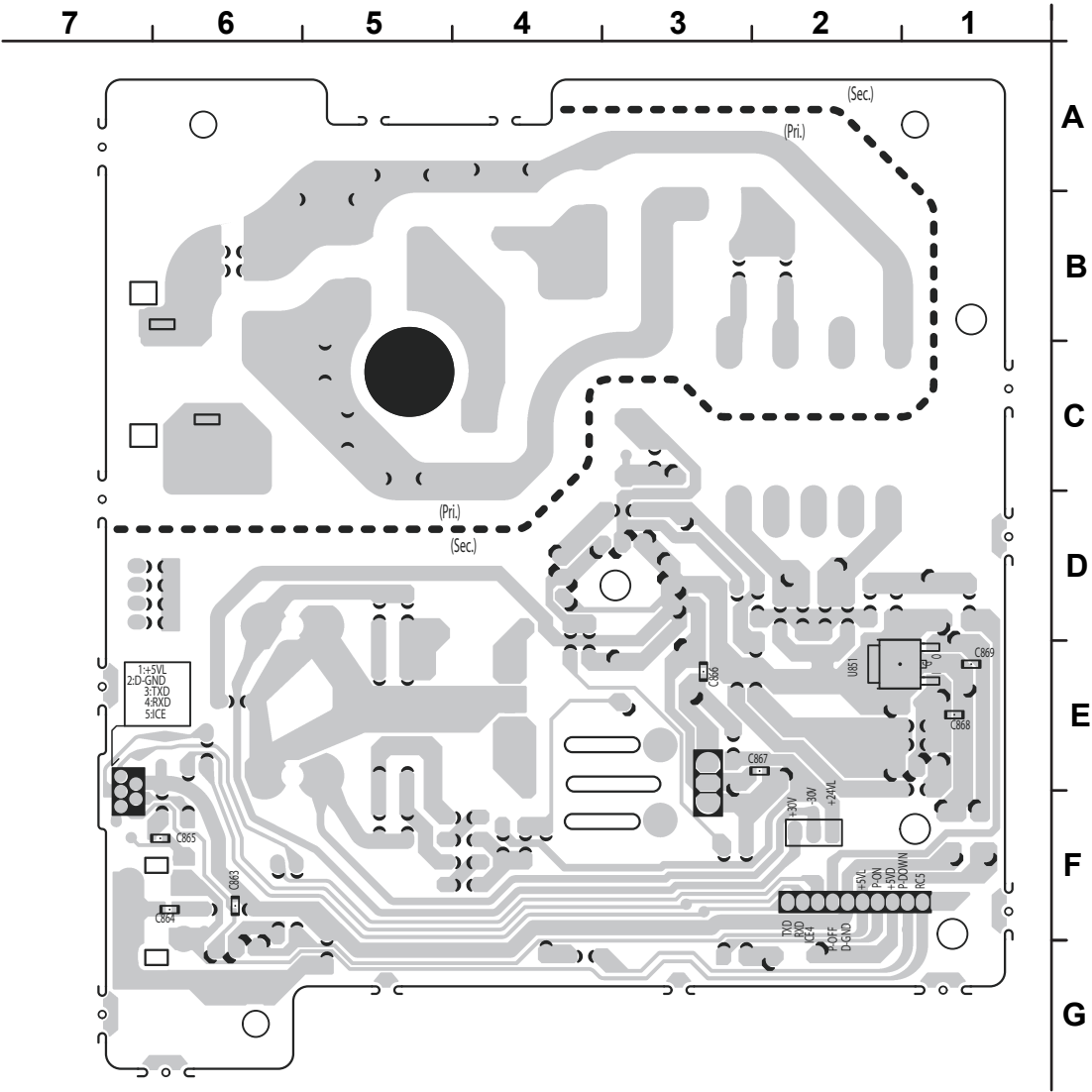
The image displays two PCB layout diagrams for the Marantz 8U-110088-5. The top diagram shows the component side with a grid from 1 to 5 and A to E. The bottom diagram shows the volume (component side) with a grid from 1 to 5 and A to F. Both diagrams include component labels like C391, C392, N075, and B591, and the Marantz logo.

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

STANDBY (COMPONENT SIDE)



STANDBY (FOIL SIDE)

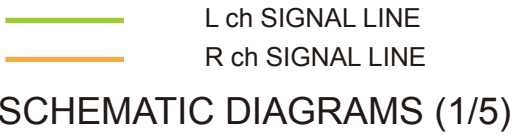


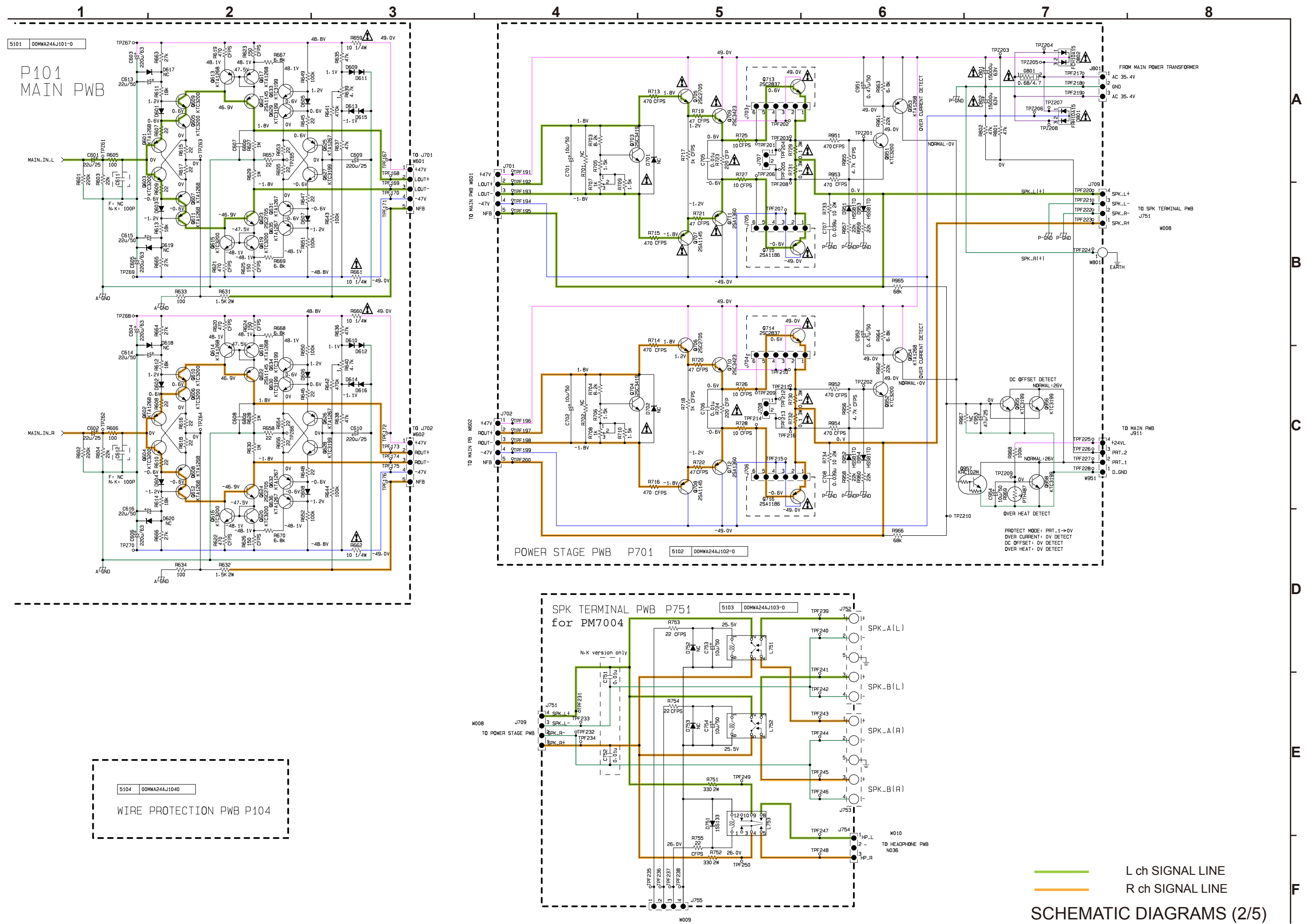
marantz

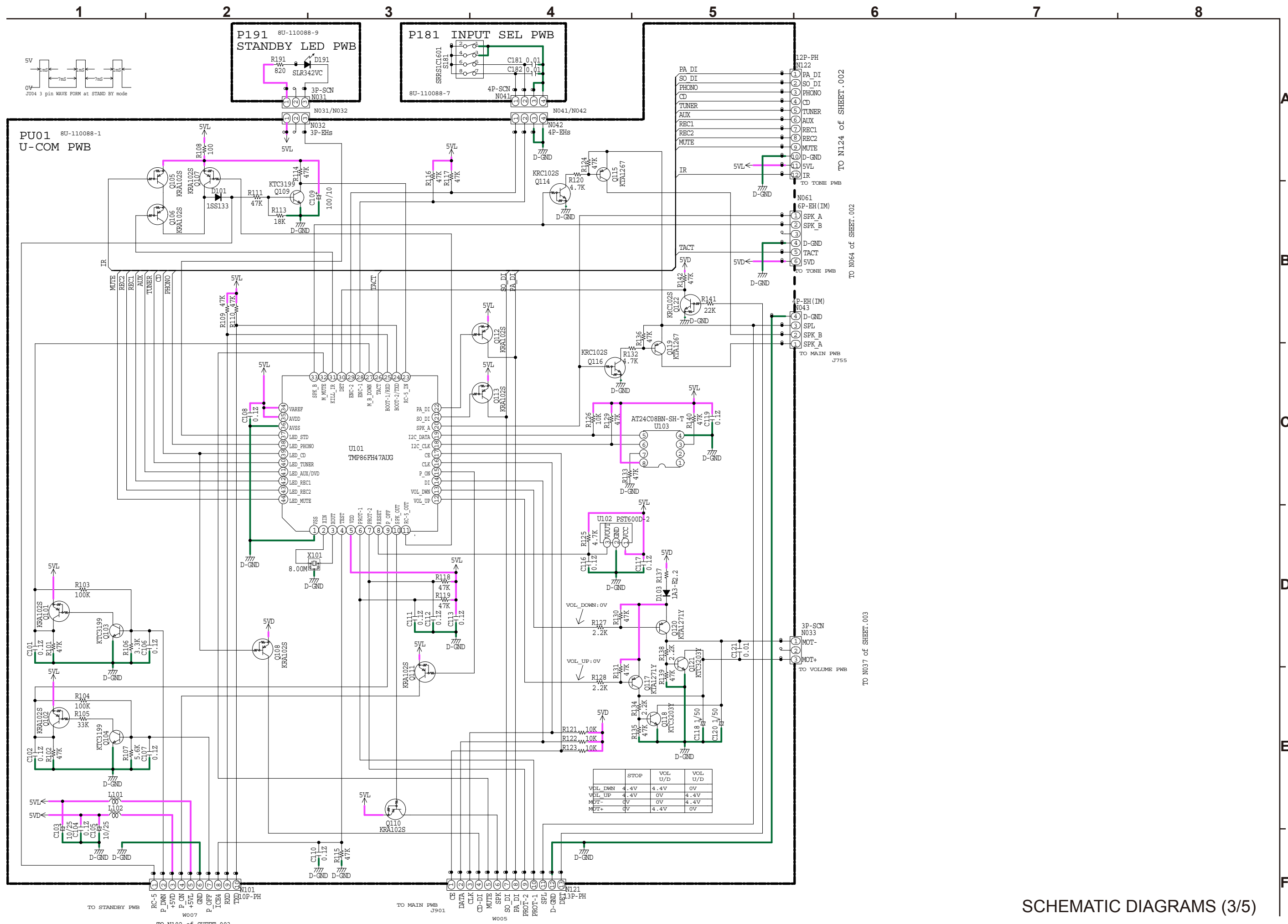
8U-110088-2
TONE P201

631010088104M

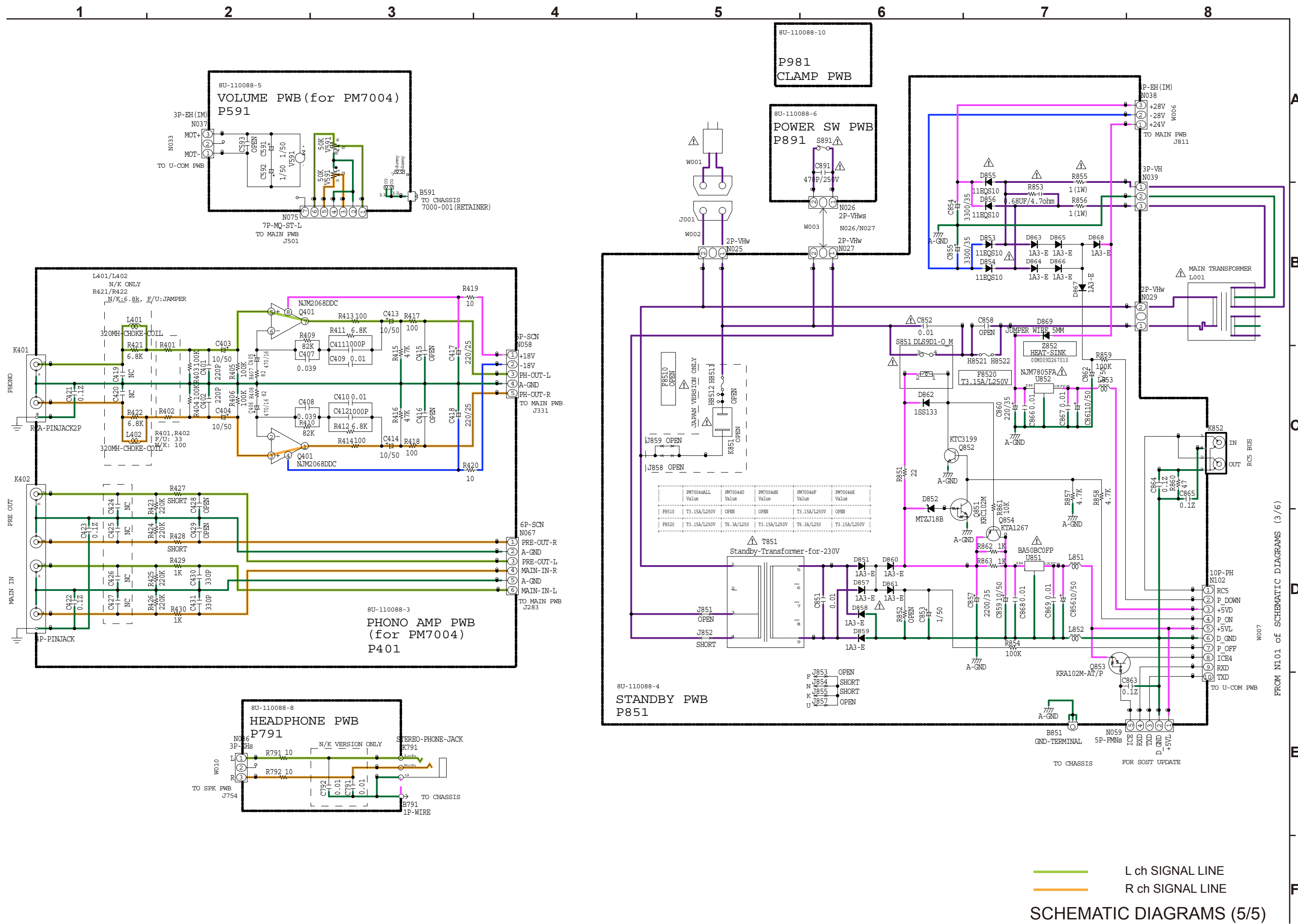
Diagram of the Marantz ND31 standby LED P191 component. The component is a square package with a large, irregularly shaped cutout on the left side. The text "marantz" is printed in bold at the top. Below it, "ND31" is printed. The part number "8U-110088-9" and "STANDBY LED P191" are printed in the center. A small rectangular area on the right side is labeled "LED". A circular symbol with an upward arrow and the text "DIP" is located below the LED area. A circular symbol with a diagonal line through it and the text "Pb" is located below the "DIP" symbol. The component is shown with mounting holes and a central pad.



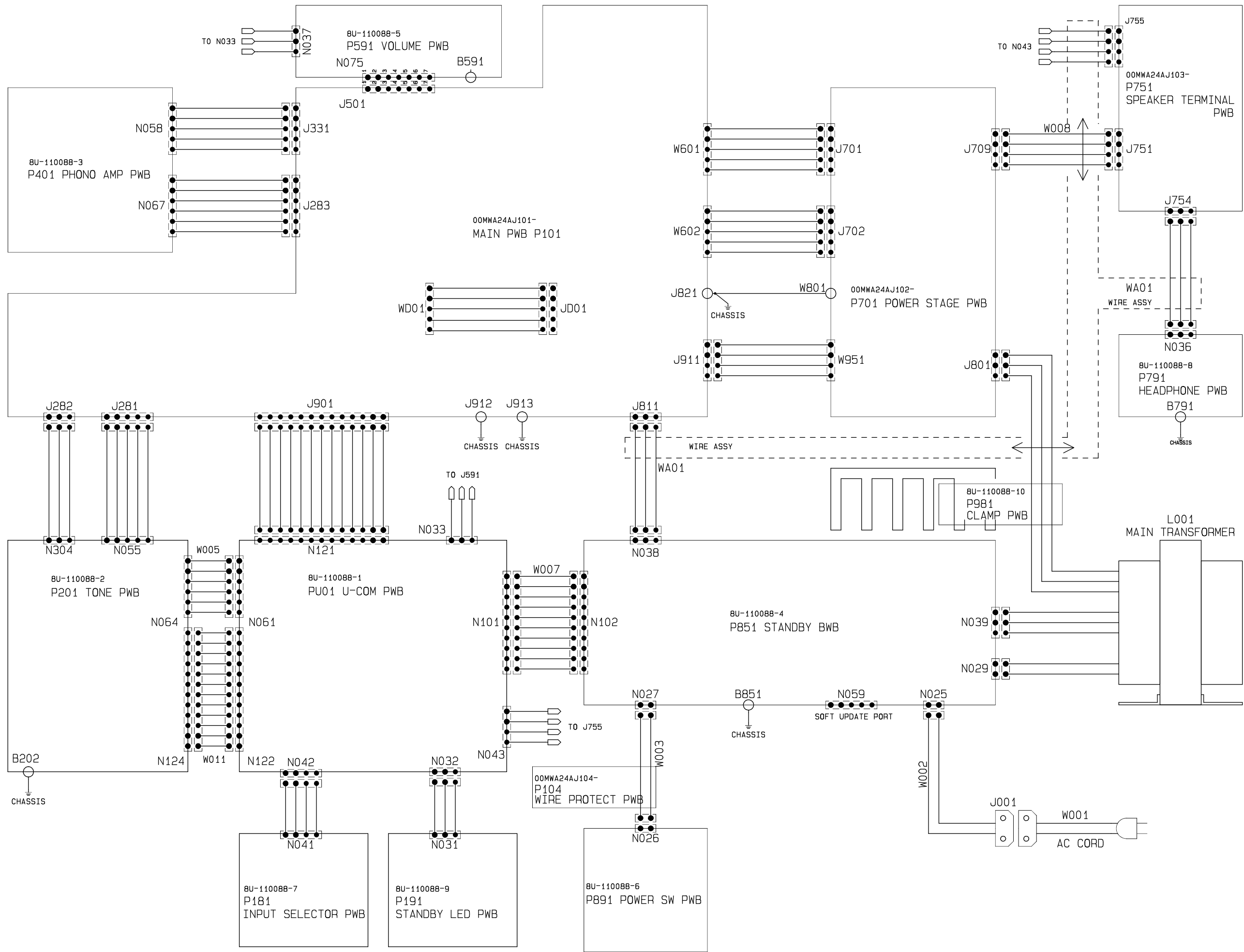




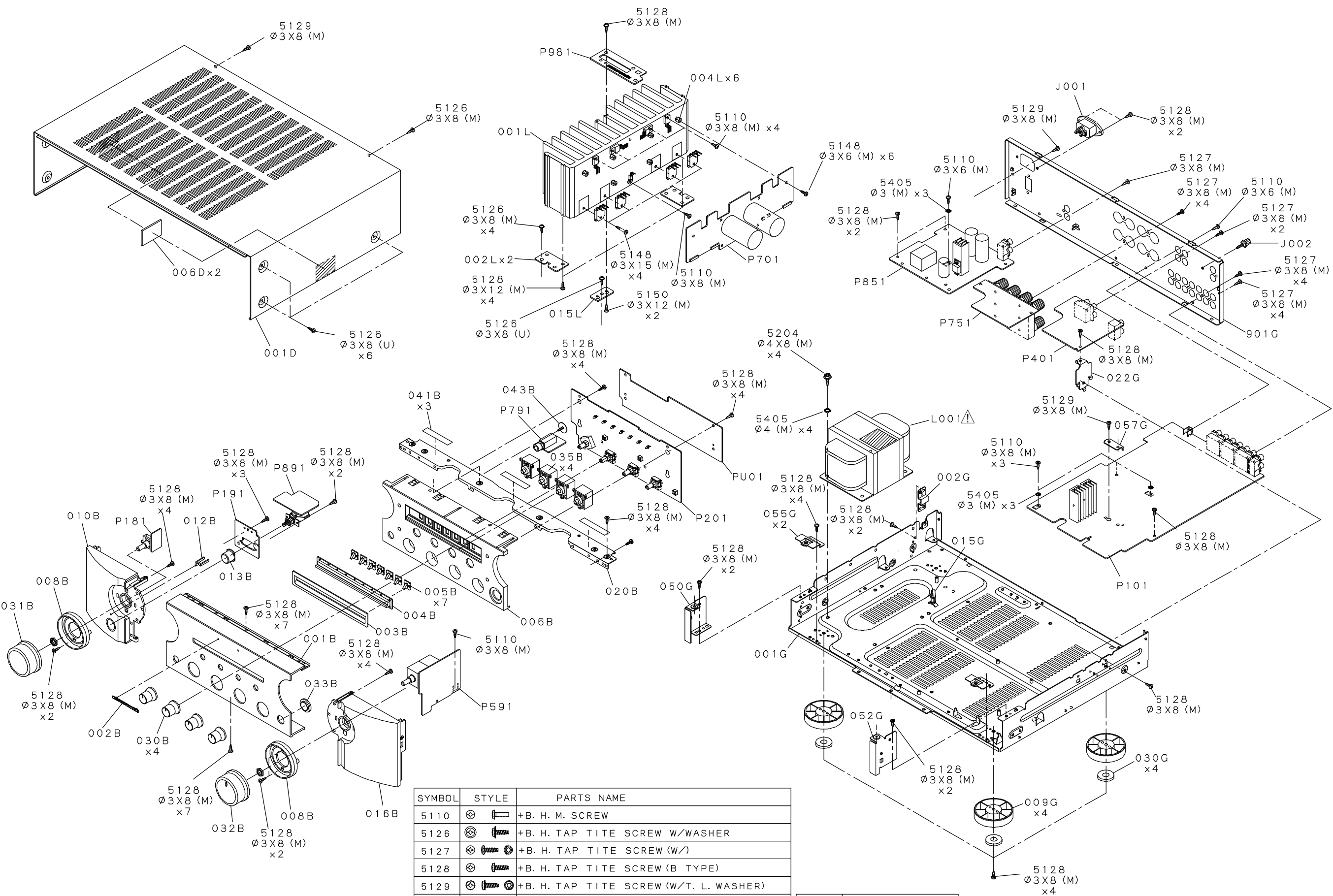
SCHEMATIC DIAGRAMS (3/5)



WIRING DIAGRAM



EXPLODED VIEW



SYMBOL	STYLE	PARTS NAME
5110		+B. H. M. SCREW
5126		+B. H. TAP TITE SCREW W/WASHER
5127		+B. H. TAP TITE SCREW (W/)
5128		+B. H. TAP TITE SCREW (B TYPE)
5129		+B. H. TAP TITE SCREW (W/T. L. WASHER)
5150		+F. H. TAP TITE SCREW (B TYPE)
5204		+H. H. TAPT. BOLTS WITH FLANGE (S TITE)
5405		TOOTHED LOCK WASHERS

MARK	MATERIAL/FINISH
(M)	STEEL/COPPER
(K)	STEEL/NICKEL

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.

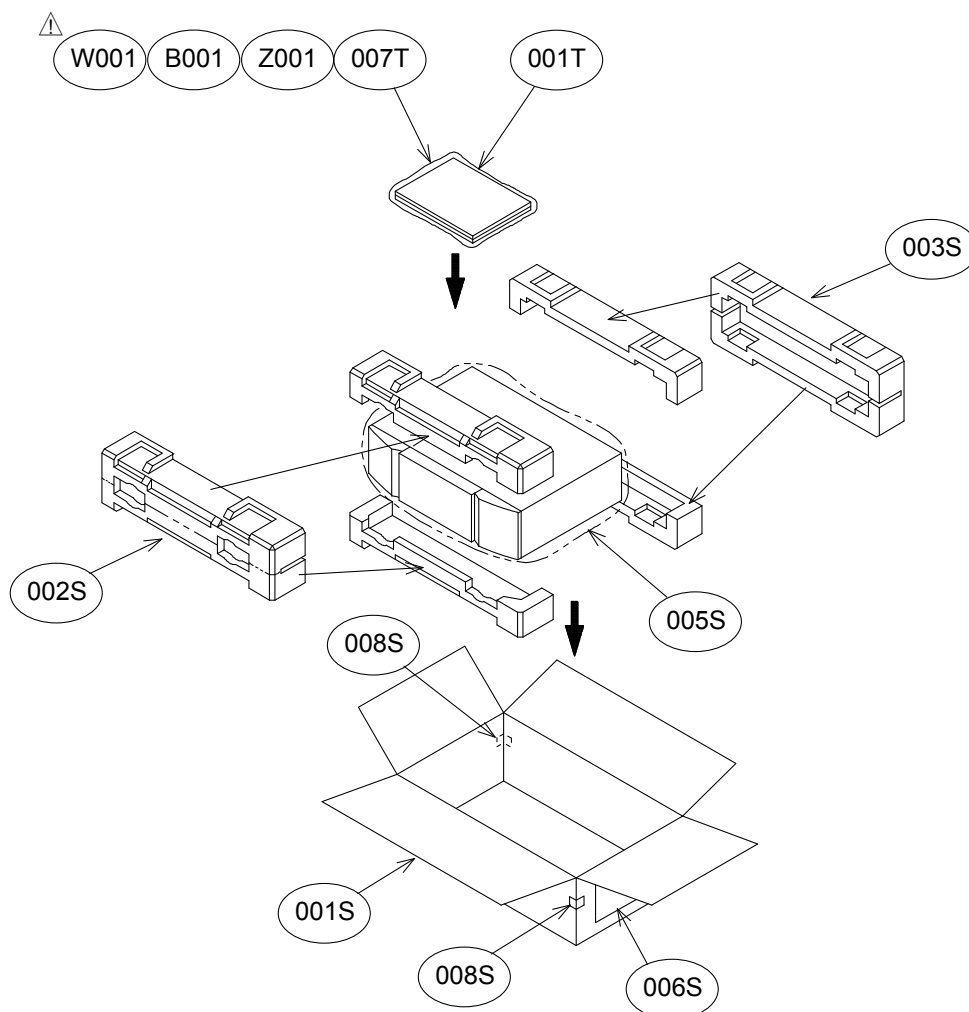
*Part indicated with the mark "★" is not illustrated in the exploded view.

*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.						
N : Europe model			K : China model			
B : Black model			SG : Silver gold model			
Ref. No.	Part No.	Part Name	Remarks	Q'ty	New	
A	nsp	MAIN PWB ASSY (M01) FOR N K		1		
P101	-	MAIN PWB(P101) UNIT				
P104		WIRE PROTECTION PWB(P104) UNIT				
P701	-	POWER STAGE PWB(P701) UNIT				
B	nsp	FRONT PWB ASSY (M02) FOR N K		1		
P181	-	SEL PWB(P181) UNIT				
P191	-	STANDBY LED PWB(P191) UNIT				
P201	-	TONE AMP PWB(P201) UNIT				
P401	-	PHONO AMP PWB(P401) UNIT				
P751	-	SPK TERMINAL PWB(P751)				
P591	-	VOLUME PWB(P591) UNIT				
P791	-	HEADPHONE PWB(P791) UNIT				
P851	-	STANDBY PWB(P851) UNIT				
P891	-	POWER SW PWB((P891)				
P981	-	CLAMP PWB(P981) UNIT				
PU01	-	U-COM PWB(PU01) UNIT				
001B	402410116108M	FRONT AL PANEL BL PM7004 A334	B	1	*	
001B	402410116139M	FRONT AL PANEL SG PM7004 A334	SG	1	*	
001D	00M14AJ257320	TOP COVER BL PM7003 24AJ	B	1		
001D	00M14AJ257312	TOP COVER SG PM7003 24AJ	SG	1		
001G	nsp	CHASSIS		1		
001L	00M14AJ267010	MAIN HEATSINK		1		
002B	421410006004M	MARANTZ BADGE (AL) FOR M1 MODEL		1		
002G	nsp	SCREW STOPPER		1		
002L	nsp	HEATSINK BRACKET		2		
003B	nsp	ESCUTCHEON CENTER PM7003 24AJ		1		
004B	nsp	ESCUTCHEON CENTER BASE BL PM7003 24AJ	B	1		
004B	nsp	ESCUTCHEON CENTER BASE SG PM7003 24AJ	SG	1		
004L	nsp	SUPPORT PM7004 A334		6	*	
005B	nsp	LENS FUNCTION PM7003 24AJ		7		
006B	nsp	FRONT CENTER MOLD BL PM7004 A334	B	1	*	
006B	nsp	FRONT CENTER MOLD SG PM7004 A334	SG	1	*	
006D	nsp	BUFFER TOP COVER INSIDE PM7003 24AJ		2		
008B	424510004006M	RING VOLUME BL PM7003 24AJ	B	2		
008B	424510004037M	RING VOLUME SG PM7003 24AJ	SG	2		
009G	nsp	LEGS SL		4		
010B	402410032057M	ESCUTCHEON L BL PM7004 A334	B	1	*	
010B	402410032088M	ESCUTCHEON L SG PM7004 A334	SG	1	*	
012B	481510003006M	LENS		1		
013B	411510027003M	BUTTON PUSH BL PM7003 24AJ	B	1		
013B	411510027034M	BUTTON PUSH SG PM7003 24AJ	SG	1		
015L	nsp	BRACKET		1		
016B	402410034008M	ESCUTCHEON R BL PM7003 24AJ	B	1		
016B	402410034039M	ESCUTCHEON R SG PM7003 24AJ	SG	1		
020B	nsp	STAY SA7003 33AK		1		
022G	nsp	PHONO PCB BRACKET		1		
030B	412510059003M	TONE KNOB BL PM7004 A334	B	4	*	
030B	412510059034M	TONE KNOB SG PM7004 A334	SG	4	*	
030G	nsp	LEGS CUSHION		4		
031B	412410006000M	KNOB AL CAP BL PM7003 24AJ	B	1		
031B	412410006031M	KNOB AL CAP SG PM7003 24AJ	SG	1		
032B	412410008006M	KNOB AL CAP POINTER BL PM7003 24AJ	B	1		
032B	412410008037M	KNOB AL CAP POINTER SG PM7003 24AJ	SG	1		
033B	481510004009M	LENS IR BL PM7003 24AJ	B	1		
033B	481510004047M	LENS IR WH PM7003 24AJ	SG	1		
035B	411510028006M	BUTTON BL PM7003 24AJ	B	4		
035B	411510028037M	BUTTON SG PM7003 24AJ	SG	4		
041B	nsp	TOP COVER SHEET		3		

Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
043B	nsp	SPECIAL SCREW		1	
050G	nsp	SIDE RETAINER L PM7003 24AJ		1	
052G	nsp	SIDE RETAINER R PM7003 24AJ		1	
055G	nsp	BRACKET SA7003 33AK		2	
057G	nsp	CONTACTOR PM7003 24AJ		1	
901G	nsp	REAR PANEL PM7004 (N) A334	N	1	*
901G	nsp	REAR PANEL PM7004 (K) A334	K	1	*
J001	00D2033996008	AC INLET (2P)		1	
J002	nsp	TERMINAL		1	
L001	1013100010098	POWER TRANSFORMER FOR 230V		1	
★ 001K	00M227J259010	CAP T10336		8	
★ 005D	nsp	LABEL (HOT SURFACE CAUTION)		1	
★ 015G	nsp	PCB SUPPORT RICHICO		1	
★ 042B	nsp	WIRE CLAMPER		1	
★ 044B	nsp	LABEL PET BLACK PM-13S2(K) 28AJ	B	1	
★ 048G	nsp	WIRE CLAMPER		1	
★ 062G	00M28AK259012	BUSH SCREW		1	
★ 801G	nsp	WIRE CLAMPER		18	
★ D801	00MHE10004100	!FRH10A15		1	
★ D802	00MHE10003100	!FCH10A15		1	
★ KT01	2170500010040	2SA1186/2SC2837 RANK Y,P		1	
★ KT02	2170500010040	2SA1186/2SC2837 RANK Y,P		1	
★ Q703,704	00MHT334191Y0	TRANSISTOR C3419 Y 40V 0.8A PC=1.2W (5W)		2	
★ Q713	00MHT328372A0	2SC2837		1	
★ Q714	00MHT328372A0	2SC2837		1	
★ Q715	00MHT111862A0	2SA1186-Y/P-LF101		1	
★ Q716	00MHT111862A0	2SA1186-Y/P-LF101		1	
★ R969	00D2790034054	PTH9M04BC222TS2F333		1	
WIRES					
★ W002	nsp	VAR-NO CN7.92MMPICH1PIN:BR,2PIN:BL10CM		1	
★ W003	nsp	VAR-VAR 7.92MMPICH 1PIN:BR,2PIN:BR22CM		1	
★ W005	nsp	PH-PH 13PIN L=14CM		1	
★ W007	nsp	PHR-PHR 2.0MMPICH 10PIN 50CM		1	
★ W008	nsp	VHR-VHR(N TYPE) 3.96MMPICH4PIN 14CM		1	
★ W011	nsp	PHR-PHR 2.0MMPICH 12PIN 14CM		1	
★ WA01	nsp	EHR3 EHR3 EHR4 CORD ASSY		1	

PACKING VIEW



PARTS LIST OF PACKING VIEW

* 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.

N : Europe model
B : Black model

K : China model
SG : Silver Gold model

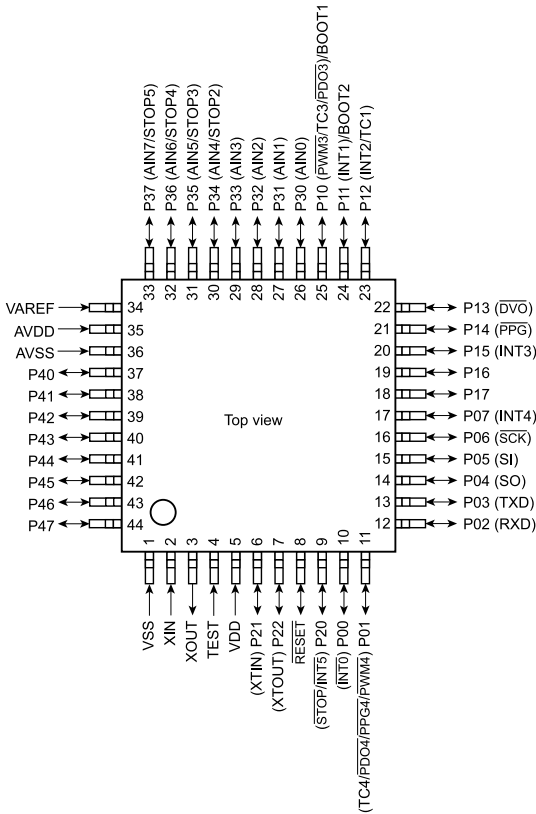
Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
001S	531210139001M	PACKING CASE PM7004 A334		1	*
001T	541110491035M	USER MANUAL PM7004/PM8004 (N) A335	N	1	*
001T	541110491059M	USER MANUAL PM7004/PM8004 (K) A335	K	1	*
002S	533510071108M	CUSHION SA8004 FRONT		1	*
003S	533510071115M	CUSHION SA8004 REAR		1	*
005S	nsp	SHEET (AF+PE)		1	
006S	nsp	CONT.LABEL BASE(D&M)		1	
007T	nsp	POLYETHY BAG		1	
008S	nsp	LABEL FOR PKG SG	N1SG	2	
B001	nsp	BATTERY(R03X2)		1	
△ W001	00MZC01803080	# 2P AC CORD 10A 250V CLASS2	N	1	
△ W001	00D2062249001	AC CORD (E1C)	K	1	
Z001	307010030006M	RC003PM		1	

SEMICONDUCTORS

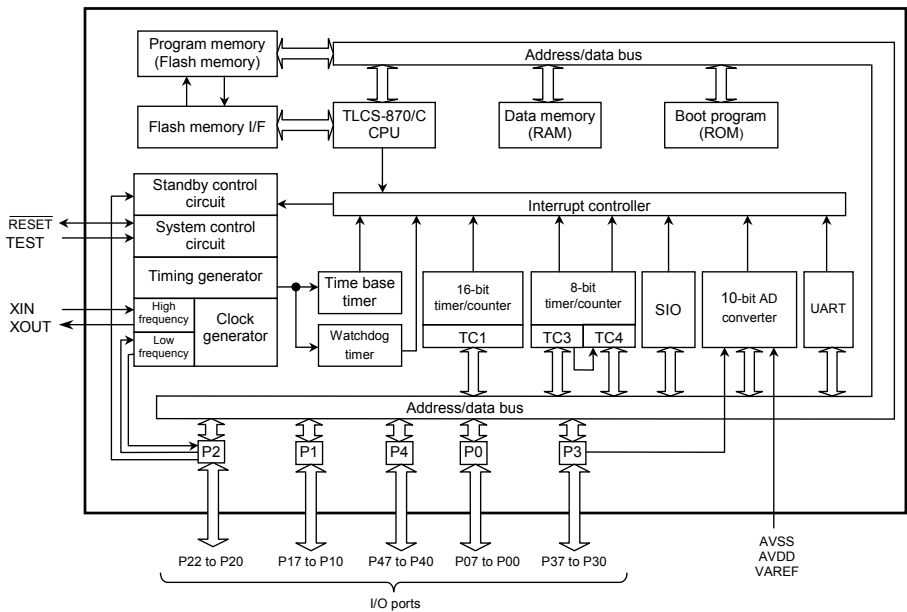
Only major semiconductors are shown, general semiconductors etc. are omitted to list.
The semiconductor which described a detailed drawing in a schematic diagram are omitted to list.

1. IC's

TMP86FH47UG (U101)

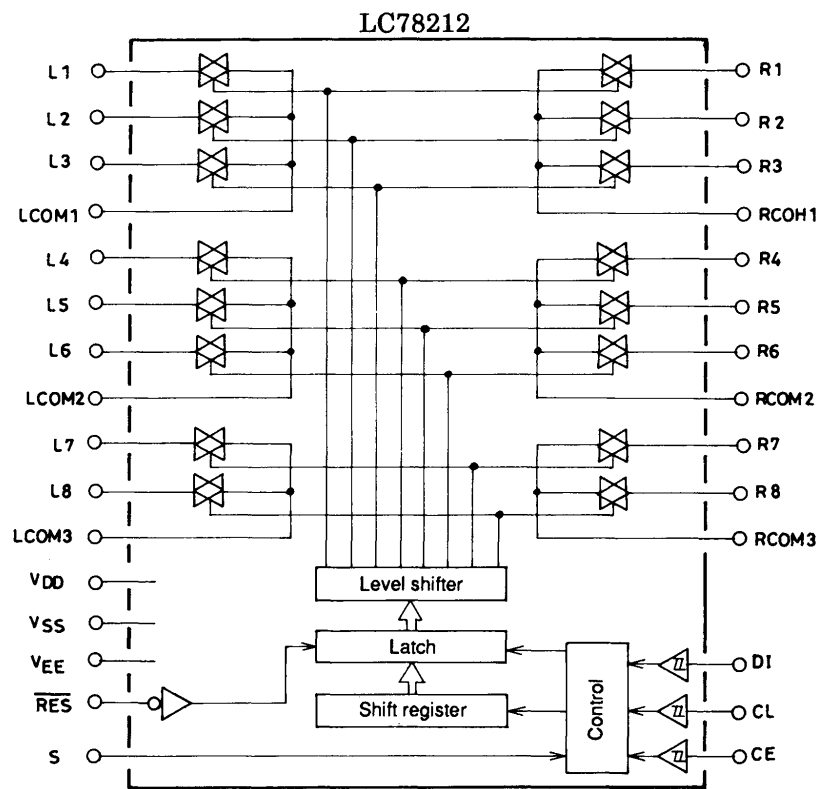


Block Diagram



Terminal Function

Pin	Port Name	I/O	Use	Name	Port Setting				Note
					ACT	INIT	STBY	EXT.R	
1	VSS	-	-		-	-	-	-	0 V
2	XIN	-	-		-	-	-	-	8M Clock in
3	XOUT	-	-		-	-	-	-	8M Clock out
4	TEST	I	I		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: Voltage Abnormal Detect
8	RESET	I/O	I		L	-	H	4.7k	u-com Reset connector
9	P20 (STOP/INT5)	I/O	I	P_OFF	L	-	H	47K	Detect Power Down(primary power supply ON/OFF detection). Overserve 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	VOL_UP	L	H	H	47K	Volume up
13	P03 (TXD)	I/O	O	VOL_DWN	L	H	H	47K	Volume down
14	P04 (SO)	I/O	O	DI	-	L	L	10K	Data (LC78212)
15	P05 (SI)	I/O	O	P_ON	L	H	H	-	Primary Relay ON
16	P06 (SCK)	I/O	O	CLK	-	-	L	10K	Clock (LC78212)
17	P07 (INT4)	I/O	O	CE	H	L	L	10K	CE (LC78212)
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	O	SPK_A	H	L	L	-	Speaker A Relay On
21	P14 (PPG)	I/O	O	SD_DI	L	H	H	-	Relay operation port on power amp direct source direct mode
22	P13 (DVO)	I/O	O	PA_DI	L	H	H	-	Relay operation port on power amp direct
23	P12 (INT2/TC1)	I/O	I	RC-5_IN	L	-	H	47k	RC-5 Input
24	P11 (INT1)(BOOT2)	I/O	I	BOOT-2/ TXD	-	-	-	47k	Pull Up
25	P10(PWM3/TC3/PD03) (BOOT1)	I/O	I	BOOT-1/ RXD	-	-	-	47k	Pull Up
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	47k	Checking port for amp power supply off confirm
28	P32 (AIN2)	I/O	I	ENC_1	L	-	H	47k	Input Sel. Rotary Enc.
29	P33 (AIN3)	I/O	I	ENC_2	L	-	H	47k	Input Sel. Rotary Enc.
30	P34 (AIN4/STOP2)	I/O	I	DET	L	-	L	47k	Power down : L (for Signal detection circuit)
31	P35 (AIN5/STOP3)	I/O	O	KILL IR	H	L	L	-	RC-5 Kill
32	P36 (AIN6/STOP4)	I/O	O	M_MUTE	L	H	L	-	Manual Mute (Mute on :L)
33	P37 (AIN7/STOP5)	I/O	O	SPK_B	H	L	L	-	Speaker B Relay On
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/Protecting warning flushes
38	P41	I/O	O	LED_PHONO	L	H	H	-	PHONO LED
39	P42	I/O	O	LED_CD	L	H	H	-	CD LED
40	P43	I/O	O	LED_TUNER	L	H	H	-	TUNER LED
41	P44	I/O	O	LED_AUX/ DVD	L	H	H	-	AUX/DVD LED
42	P45	I/O	O	LED_REC1	L	H	H	-	REC1 LED
43	P46	I/O	O	LED_REC2	L	H	H	-	REC2 LED
44	P47	I/O	O	LED_MUTE	L	H	H	-	MUTE LED/Protecting1 warning flushes



PARTS LIST OF P.C.B. 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.

N : Europe model

K : China model

B : Black model

SG : Silver gold model

MAIN PWB ASS'Y

	Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
SEMICONDUCTORS GROUP						
	D281-283	nsp	1SS133T77 (TAPE)			
	D301	nsp	1SS133T77 (TAPE)			
	D391	nsp	1SS133T77 (TAPE)			
	D501-503	nsp	1SS133T77 (TAPE)			
	D504	nsp	1SS133T77 (TAPE)			
	D601-607	nsp	1SS133T77 (TAPE)			
	D608-615	nsp	1SS133T77 (TAPE)			
	D616	nsp	1SS133T77 (TAPE)			
	D751	nsp	1SS133T77 (TAPE)			
	D811,812	nsp	1SS133T77 (TAPE)			
	D813,814	00D2760761975	MTZJ18B T77			
	D911,912	nsp	1SS133T77 (TAPE)			
	D951-954	00MHD20027011	HSS81TD-E 150V 150MA AXIAL TAPG.			
	Q281	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q283,284	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q301,302	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q303-306	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q307,308	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q309	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q313,314	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q315-318	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q319,320	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q381	00D2630609002	NJM2068DDC +T			
	Q391	00MHC10309030	IC LC78212:CMOS LOGIC SANYO			
	Q501,502	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q503-506	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q507,508	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q509,510	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q511-514	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q515,516	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q517,518	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q519,520	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q521,522	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q523-526	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q527,528	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q601,602	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q603,604	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q605,606	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q607,608	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q609,610	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q611-614	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q615,616	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q617,618	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q619,620	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q621,622	00D2710168900	2SA1145 (O)/(Y)TPE6			
	Q623,624	00D2730281919	2SC2705 (Y)TPE6			
	Q625,626	00D2710311906	KTA1267-GR-AT/P			
	Q627-630	00D2730468907	KTC3199-GR-AT/P			
	Q631,632	00D2710311906	KTA1267-GR-AT/P			
	Q633,634	00D2730468907	KTC3199-GR-AT/P			
	Q635,636	00D2710311906	KTA1267-GR-AT/P			
△	Q705,706	00D2730281919	2SC2705 (Y)TPE6			
△	Q707,708	00D2710168900	2SA1145 (O)/(Y)TPE6			
△	Q709	00MHT334232A0	TRANSISTOR 2SC3423 O OR Y			
△	Q710	00MHT334232A0	TRANSISTOR 2SC3423 O OR Y			

	Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
⚠	Q711	00MHT113602A0	TRANSISTOR 2SA1360 O OR Y			
⚠	Q712	00MHT113602A0	TRANSISTOR 2SA1360 O OR Y			
	Q811	00D2710311906	KTA1267-GR-AT/P			
	Q812	00D2730468907	KTC3199-GR-AT/P			
⚠	Q813	00MHT41415100	TRANSISTOR 2SD1415			
⚠	Q814	00MHT21020100	2SB1020			
	Q815	00D2710311906	KTA1267-GR-AT/P			
	Q901	00D2730468907	KTC3199-GR-AT/P			
	Q902-904	00D2730468907	KTC3199-GR-AT/P			
	Q911	00D2710311906	KTA1267-GR-AT/P			
	Q912	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q913	00D2690204900	KRA102M-AT/P (10K-10K)			
	Q914-916	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q917	00D2730468907	KTC3199-GR-AT/P			
	Q918	00D2710311906	KTA1267-GR-AT/P			
	Q951,952	00MHT800931A1	KTC3200 NPN TRANSISTOR RANK=GR			
	Q953,954	00MHT600121A1	KTA1268 PNP TRANSISTOR RANK=GR			
	Q955,956	00D2730468907	KTC3199-GR-AT/P			
	Q957	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q958	00D2730468907	KTC3199-GR-AT/P			
RESISTORS GROUP						
	R281	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R283,284	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R323-325	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R371,372	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R387,388	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R553-556	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R619-622	00MGG05471160	470 OHM +- 5% 1/6W FLAMERETARDANT			
	R623-626	00MGG05151160	150 OHM +- 5% 1/6W FLAMERETARDANT			
	R631,632	1240500030090	MOS2CL15A152J 1.5KOHM +-5% 2W			
	R639,640	00MRA04720781	4.7KOHM NVZ6TLTA B472			
⚠	R659-662	1210500024030	CFP1/4CGTA100J FLAMERETARDANT			
	R707,708	00MRA01020761	1KOHM NVZ6THT B102			
	R713-716	00MGG05471160	470 OHM +- 5% 1/6W FLAMERETARDANT			
	R717,718	00MGG05102160	1K OHM +- 5% 1/6W FLAMERETARDANT			
	R719-722	00MGG05470160	47 OHM +- 5% 1/6W FLAMERETARDANT			
	R723,724	1210500034060	CFP1/4CGTA221J FLAMERETARDANT			
	R725-728	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
⚠	R729-732	00MGO05001056	0.1 OHMS +-5% 5W PBR58			
	R733,734	1240500010030	MOS2CL15A100J10OHM +-5% 2W			
	R751,752	1240500020060	MOS2CL15A331J330OHM +-5% 2W			
	R753-755	00MGG05220160	22 OHM +- 5% 1/6W FLAMERETARDANT			
⚠	R819,820	00MGG05047160	4.7 OHM +- 5% 1/6W FLAMERETARDANT			
	R821	00MGG05220160	22 OHM +- 5% 1/6W FLAMERETARDANT			
	R822	00MGG05100160	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R951-954	00MGG05471160	470 OHM +- 5% 1/6W FLAMERETARDANT			
	R955,956	00MGG05472160	4.7K OHM +- 5% 1/6W FLAMERETARDANT			
CAPACITORS GROUP						
	C301	00MDD38104011	50V DC 0.1UF +80 -20%			
	C305,306	00MOA10605021	10 UF M 50V RA-2			
	C307,308	00MOF55331581	330PF 100V +- 5% FNS			
	C309,310	00MOA22605021	22 UF M 50V RA-2			
	C311,312	00MOA22702521	220 UF M 25V RA-2			
	C331,332	00MDD38104011	50V DC 0.1UF +80 -20%			
	C337,338	00MDD38104011	50V DC 0.1UF +80 -20%			
	C343,344	00MDD38104011	50V DC 0.1UF +80 -20%			
	C351,352	00MOA10605021	10 UF M 50V RA-2			
	C353,354	00MOF55331581	330PF 100V +- 5% FNS			
	C355,356	00MOA22605021	22 UF M 50V RA-2			
	C357,358	00MOA22702521	220 UF M 25V RA-2			
	C381-384	00MOA10605021	10 UF M 50V RA-2			
	C385,386	00MOA22702521	220 UF M 25V RA-2			
	C393	00MOA10605021	10 UF M 50V RA-2			

	Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
	C501,502	00MOA22605021	22 UF M 50V RA-2			
	C503,504	00MOF55101591	100PF 200V +- 5% FAS			
	C505,506	00MOA22702521	220 UF M 25V RA-2			
	C507,508	00MOA22702521	220 UF M 25V RA-2			
	C509,510	00MOF55101591	100PF 200V +- 5% FAS			
	C511,512	00MOA226025Z1	ROS-25V 220M - F3#PE - T2 (22UF 25V)			
	C601,602	00MOA226025Z1	ROS-25V 220M - F3#PE - T2 (22UF 25V)			
	C603,606	00MOA22706326	220 UF M 63V RA-2			
	C607,608	00MOF55681581	680PF 100V +-5% FNS			
	C609,610	00MOA22702521	220 UF M 25V RA-2			
	C611,612	00MOF55101591	100PF 200V +- 5% FAS			
	C613,614	00MOA22605021	22 UF M 50V RA-2			
	C615,616	00MOA22605021	22 UF M 50V RA-2			
	C701,702	00MOA10605021	10 UF M 50V RA-2			
	C705,706	133050076599S	CQ93M2E103J(LP)			
	C707,708	00MOF55393586	0.039UF 100V +- 5% FAS			
	C751,752	00MOF55103581	0.01UF 100V +- 5% FNS			
	C753,754	00MOA10605021	10 UF M 50V RA-2			
⚠	C801,802	1340500010008	15000uF/63V(marantz Original)			
	C811,812	00MOA22605021	22 UF M 50V RA-2			
	C813-816	00MOA22702521	220 UF M 25V RA-2			
	C821	00MOA22703521	220UF 35V M RA-2			
	C901	00D2544573949	CE04W1H010MT(RA3)			
	C902	00MOA10605021	10 UF M 50V RA-2			
	C903	00MDD38104011	50V DC 0.1UF +80 -20%			
	C911-916	00MDD38104011	50V DC 0.1UF +80 -20%			
	C951,952	00D2544573936	CE04W1HR47MT(RA3)			
	C953	00MOA47602521	47 UF M 25V RA-2			
	C954	00MOA10605021	10 UF M 50V RA-2			
OTHERS PARTS GROUP						
	CD01-03	00MOA10605021	10 UF M 50V RA-2			
	CD06-08	00MOA10605021	10 UF M 50V RA-2			
	CD09	00MOA10605021	10 UF M 50V RA-2			
	CD12,13	00MOA10605021	10 UF M 50V RA-2			
	CD15	133050074500S	CQ93M2E101J(LP)			
	DD01	nsp	1SS133T77 (TAPE)			
	DD03,04	nsp	1SS133T77 (TAPE)			
	DD05-07	nsp	1SS133T77 (TAPE)			
⚠	G801	00MBF68400016	0.68UF/4.7OHM			
	H801	nsp	HEAT SINK			
	H802	nsp	HEAT SINK			
	H803	nsp	SCREW			
	H804	nsp	SCREW			
	J281	00MYP06010450	B5B-EH-TS (LF)(SN) 5P RADIAL TAPING			
	J282	00MYP06003830	B3B-EH-TS (LF)(SN) 3P RADIAL TAPING			
	J283	00MYP06003840	B6B-EH-TS (LF)(SN) 6P RADIAL TAPING JST			
	J301	643810029001S	RCA PIN JACK 2P AU MSP-242V3-12 GILT LF			
	J302-304	643810025009S	RCA PIN JACK 4P NI MSP-244V4-02 NI LF			
	J331	00MYP06010450	B5B-EH-TS (LF)(SN) 5P RADIAL TAPING			
	J501	00MYJ06031590	B07P-MQ-C			
	J701,702	00MYP06010450	B5B-EH-TS (LF)(SN) 5P RADIAL TAPING			
	J703-706	00MYP07005670	IMSA-6065B-06Z065-PT1			
	J707,708	00MYP06003920	S2B-EH			
	J709	00MYP06003890	4P-PLUG B4P-VH			
	J751	00MYP06003890	4P-PLUG B4P-VH			
	J752	646710022000M	SPK TERMINAL T7438-A			
	J753	646710023003M	SPK TERMINAL T7438-B			
	J754	00MYP06003830	B3B-EH-TS (LF)(SN) 3P RADIAL TAPING			
	J755	00MYP06003910	B4B-EH-TS (LF)(SN) 4P RADIAL TAPING			
	J801	00MYP06006860	JST 3P-PLUG B3P-VH P=3.96M/M			
	J811	00MYP06003830	B3B-EH-TS (LF)(SN) 3P RADIAL TAPING			

Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
J821	00MYL01010241	GND TERMINAL FOR PCB			
J901	00MYJ06006330	B13B-PH-K-S (LF)(SN)			
J911	00MYP06003910	B4B-EH-TS (LF)(SN) 4P RADIAL TAPING			
J912	00MYL01010241	GND TERMINAL FOR PCB			
JD01	nsp	B5B-EH-TS (LF)(SN) 5P RADIAL TAPING			
KT03	00MHK136019C0	2SA/360/2SC3423 PAIR O OR Y			
KT04	00MHK136019C0	2SA/360/2SC3423 PAIR O OR Y			
KT05	8Z6531004900M	HEATSINK SUB ASSY FOR 2SD1415 (A334)			
L281-284	00D2140208003	RELAY(NA24W-K)			
L301	00D2140208003	RELAY(NA24W-K)			
L751,752	00D2140213001	RELAY(FTR-F4)			
L753	00D2140208003	RELAY(NA24W-K)			
L912	nsp	BL02RN2-R62T2 FERRITE BEAD			
QD01,02	00D2630609002	NJM2068DDC +T			
QD03	00D2690206908	KRC102M-AT/P (10K-10K)			
QD04	00D2730468907	KTC3199-GR-AT/P			
W601,602	nsp	EHR-SCN 2.5MMPICH DIP TYPE 5PIN 8CM			
W801	nsp	SIN-SRA 1P 140MM			
W951	nsp	EHR-SCN 2.5MMPICH DIP TYPE 4PIN 10CM			
WD01	nsp	EHR-SCN 2.5MMPICH DIP TYPE 5PIN 14CM			

FRONT PWB ASS'Y

	Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
SEMICONDUCTORS GROUP						
	D0101	nsp	1SS133T77 (TAPE)			
	D0103	00MHD20002711	1A3 1A/200V			
	D0191	00D3939607908	SLR342VC(TB7)			
	D0240-0245	263710014404S	SELT2E10C-S TP6 F/G RANK			
	D0246	176010004401S	SELU2610C-S TP6			
	D0247-0250	176010009406S	SELK2E14C-D BLUE LED			*
⚠	D0851	00MHD20002711	1A3 1A/200V			
	D0852	00D2760761975	MTZJ18B T77			
⚠	D0853-0856	00MHD20055101	SHOTTKY 11EQS10 1A 100V			
⚠	D0857-0861	00MHD20002711	1A3 1A/200V			
	D0862	nsp	1SS133T77 (TAPE)			
⚠	D0863-0868	00MHD20002711	1A3 1A/200V			
	U0101	2439100016008	TMP86FH47UG			
	U0102	235010049402S	KIA7042AP-AT/P 4.2V RESET IC			*
	U0103	00MHC1043399Z	AT24C08BN-SH-T			
	U0201-0204	00D2630896909	NJM2068MD-TE1 +C			
	U0270	00MHW10004210	RPM6936-V4 (IR SENSOR)			
⚠	U0851	00D2622977933	BA50BC0FP-E2			
	Q0101,0102	00D2690184907	KRA102S-RTK/P (10K-10K)			
	Q0103,0104	00D2730468907	KTC3199-GR-AT/P			
	Q0105-0108	00D2690184907	KRA102S-RTK/P (10K-10K)			
	Q0109	00D2730468907	KTC3199-GR-AT/P			
	Q0110-0113	00D2690184907	KRA102S-RTK/P (10K-10K)			
	Q0114	00D2690192902	KRC102S-RTK/P (10K-10K)			
	Q0115	00D2710311906	KTA1267-GR-AT/P			
	Q0116	00D2690192902	KRC102S-RTK/P (10K-10K)			
	Q0117	00MHT600141B1	KTA1271 PNP TRANSISTOR RANK=Y			
	Q0118	00MHT800951B1	KTC3203 NPN TRANSISTOR RANK=Y			
	Q0119	00D2710311906	KTA1267-GR-AT/P			
	Q0120	00MHT600141B1	KTA1271 PNP TRANSISTOR RANK=Y			
	Q0121	00MHT800951B1	KTC3203 NPN TRANSISTOR RANK=Y			
	Q0122	00D2690192902	KRC102S-RTK/P (10K-10K)			
	Q0201-0204	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q0401	00D2630609002	NJM2068DDC +T			
	Q0851	00D2690206908	KRC102M-AT/P (10K-10K)			
	Q0852	00D2730468907	KTC3199-GR-AT/P			
	Q0853	00D2690204900	KRA102M-AT/P (10K-10K)			
	Q0854	00D2710311906	KTA1267-GR-AT/P			
RESISTORS GROUP						
	R0137	00MGG0502216X	2.2 OHM +- 5% 1/6W FLAMERETARDANT			
	R0225,0226	00MGG0510016X	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R0419,0420	00MGG0510016X	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R0791,0792	00MGG0510016X	10 OHM +- 5% 1/6W FLAMERETARDANT			
	R0851	00MGG0522016X	22 OHM +- 5% 1/6W FLAMERETARDANT			
⚠	R0853	00MBF68400016	0.68UF/4.7OHM			
⚠	R0855,0856	00MGG05010120	ERD50FJ1R0P or SPRX1CM12.5A J 1R0 FLAMERETARDANT			
	V0201-0203	0750100020070	4K14K124003J			
	V0204	0750100030000	RK14K1240D0P			
	V0591	0753100010018	RK16812MG			
CAPACITORS GROUP						
	C0101,0102	nsp	CK73F1E104ZT +1608			
	C0103	00MEJ10602511	10UF/ 25V			
	C0104	nsp	CK73F1E104ZT +1608			
	C0105	00MEJ10602511	10UF/ 25V			
	C0106-0108	nsp	CK73F1E104ZT +1608			
	C0109	00D2544302974	CE04W1A101MT(SRE)			

NOTE :

When update Firmware, please confirm a last version in SDI.
Use the service board after updating it.

	Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
	C0110-0113	nsp	CK73F1E104ZT +1608			
	C0116,0117	nsp	CK73F1E104ZT +1608			
	C0118	00D2544573949	CE04W1H010MT(RA3)			
	C0119	nsp	CK73F1E104ZT +1608			
	C0120	00D2544573949	CE04W1H010MT(RA3)			
	C0121	nsp	CK73B1H103KT (1608) +1608			
	C0181,0182	nsp	CK73B1H103KT (1608) +1608			
	C0201,0202	00MOA22605021	22 UF M 50V RA-2			
	C0203-0206	133050074500S	CQ93M2E101J(LP)			
	C0207,0208	00MOA22605021	22 UF M 50V RA-2			
	C0209,0210	00MOA10702521	100 UF M 25V RA-2			
	C0211,0212	133050089595S	CQ93P2A103JT(PPF)			*
	C0213,0214	133050086503S	CQ93M2A221JT(PEF)			*
	C0215,0216	00D2561059938	CF93A1H334JT (JL)			
	C0217,0218	133050089526S	CQ93P2A102JT(PPF)			*
	C0219,0220	00MEJ22505011	2.2UF/ 50V			
	C0221,0222	133050090540S	CQ93P2A683JT(PPF)			*
	C0240-0245	nsp	CK73B1H103KT (1608) +1608			
	C0247-0250	nsp	CK73B1H103KT (1608) +1608			
	C0251,0252	00MEJ10602511	10UF/ 25V			
	C0270,0271	nsp	CK73B1H103KT (1608) +1608			
	C0272	00D2544302974	CE04W1A101MT(SRE)			
	C0401,0402	133050074548S	CQ93M2E221J(LP)			
	C0403,0404	00MOA10605021	10 UF M 50V RA-2			
	C0405,0406	00D2544577974	CE04W1C471MT(RA3)			
	C0407,0408	00MOF55393586	0.039UF 100V +- 5% FAS			
	C0409,0410	133050089595S	CQ93P2A103JT(PPF)			*
	C0411,0412	133050089526S	CQ93P2A102JT(PPF)			*
	C0413,0414	00MOA10605021	10 UF M 50V RA-2			
	C0417,0418	00MOA22702521	220 UF M 25V RA-2			
	C0421-0423	nsp	CK73F1E104ZT +1608			
	C0430,0431	00MOF55331581	330PF 100V +- 5% FNS			
	C0591,0592	00D2544573949	CE04W1H010MT(RA3)			
	C0791,0792	133050089595S	CQ93P2A103JT(PPF)			
	C0851	133050076599S	CQ93M2E103J(LP)			
⚠	C0852	133750061200S	PHE840MA5100MA01R05			
	C0853	00D2544573949	CE04W1H010MT(RA3)			
	C0854,0855	134050109201S	RA2-35V332MK8#8-S1			
	C0856	00MOA10605021	10 UF M 50V RA-2			
	C0857	00D2544576700	CE04W1V222MC(RA3)			
	C0859	00MOA10605021	10 UF M 50V RA-2			
	C0860	00MOA22703521	220UF 35V M RA-2			
	C0861	00MOA10605021	10 UF M 50V RA-2			
	C0862	00D2544573949	CE04W1H010MT(RA3)			
	C0863-0865	nsp	CK73F1E104ZT +1608			
	C0866-0869	nsp	CK73B1H103KT (1608) +1608			
⚠	C0891	00D2538029713	CK45F2EAC471KC(KX)			
OTHERS PARTS GROUP						
⚠	F8520	0520100150000	02183.15MXP			
	H0251	nsp	BUFFER IR PM7003 24AJ			
	H8521,8522	nsp	FUSE CLIP(TAPE)			
	L0101,0102	nsp	BL02RN2-R62T2 FERRITE BEAD			
	L0401,0402	nsp	320 MH CHOKE COIL (TOROIDAL)			
	L0851-0853	nsp	BL02RN2-R62T2 FERRITE BEAD			
	N0025	nsp	CONNECTOR 2P B3P-VH			
	N0026	nsp	2P PLUG B2P3S-VH			
	N0027	nsp	CONNECTOR 2P B3P-VH			
	N0029	nsp	CONNECTOR 2P B3P-VH			
	N0031	nsp	EHR-SCN 2.5MMPICH DIP TYPE 3PIN 10CM			
	N0032	nsp	S3B-EH			
	N0033	nsp	EHR-SCN 3PIN 21CM			
	N0036	nsp	S3B-EH			

	Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
	N0037,0038	nsp	B3B-EH-TS (LF)(SN) 3P RADIAL TAPING			
	N0039	nsp	JST 3P-PLUG B3P-VH P=3.96MM			
	N0041	nsp	EHR-SCN 2.5MMPICH DIP TYPE 4PIN 10CM			
	N0042	nsp	S4B-EH			
	N0043	nsp	B4B-EH-TS (LF)(SN) 4P RADIAL TAPING			
	N0055	nsp	EHR-SCN 5PIN 17CM			
	N0058	0120105920040	EHR-SCN 2.5MMPICH DIP TYPE 5PIN 8CM			
	N0059	nsp	05FMN-SSTK-A FFC CONNECTOR			
	N0061	nsp	B6B-EH-TS (LF)(SN) 6P RADIAL TAPING JST			
	N0064	nsp	EHR-SCN 6PIN 14CM			
	N0067	0120105770050	EHR-SCN 2.5MMPICH DIP TYPE 6PIN 8CM			
	N0075	00MYP06902280	07MQ-ST-L			
	N0101,0102	nsp	B10B-PH-K-S (LF)(SN)			
	N0121	nsp	B13B-PH-K-S (LF)(SN)			
	N0122	nsp	B12B-PH-K-S (LF)(SN)			
	N0124	nsp	B12B-PH-K-S (LF)(SN)			
	N0304	nsp	EHR-SCN 3P 150MM(SHIELD WIRE)			
	S0181	0630100020040	SRRSIC			
	S0270-0273	00D2125611903	TACT SWITCH(TAPE H5)			
⚠	S0851	682010022003S	RELAY(DLS9D1-O_M)TV-8			*
⚠	S0891	665010008002D	POWER SWITCH (TV-5)			
	K0401	643810026002S	RCA PIN JACK 2P NI MSP-242V3-02 NI LF			
	K0402	643810025009S	RCA PIN JACK 4P NI MSP-244V4-02 NI LF			
	K0791	6430100050030	YKB26-5009G HP JACK(SILVER)			
	K0852	00MYT02020890	YKC21-3046V 2P RCA PIN JACK			
	B0202	nsp	SIN-SRA 1PIN 16CM			
	B0591	00M320J104010	RETAINER			
	B0791	nsp	SIN-SRA 1PIN 11CM			
	B0851	nsp	GND TERMINAL FOR PCB			
	X0101	00MFQ08004061	CSTS MG 8MHZ TAPING(15PF)			
⚠	T0851	101710067005M	STANDBY TRANS FOR 230V			
⚠	U0852	00D2630809006	NJM7805FA(S)			
	Z0852	nsp	HEAT SINK			
	Z0853	nsp	SCREW			

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.