RECEIVER

R-S500

SERVICE MANUAL

IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel.
It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

■ CONTENTS

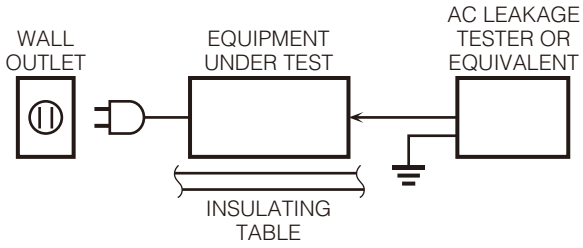
101190

YAMAHA
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan
'10.10

■ TO SERVICE PERSONNEL

1. Critical Components Information
   Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Models Only)
   When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohms shunted by 0.15 µF.



- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.

For U model

"CAUTION"

"F1: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 8A, 125V FUSE."

For C model

CAUTION

F1: REPLACE WITH SAME TYPE 8A, 125V FUSE.

ATTENTION

F1: UTILISER UN FUSIBLE DE RECHANGE DE MÉME TYPE DE 8A, 125V.

WARNING: CHEMICAL CONTENT NOTICE!

This product contains chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

About lead free solder

All of the P.C.B.s installed in this unit and solder joints are soldered using the lead free solder.

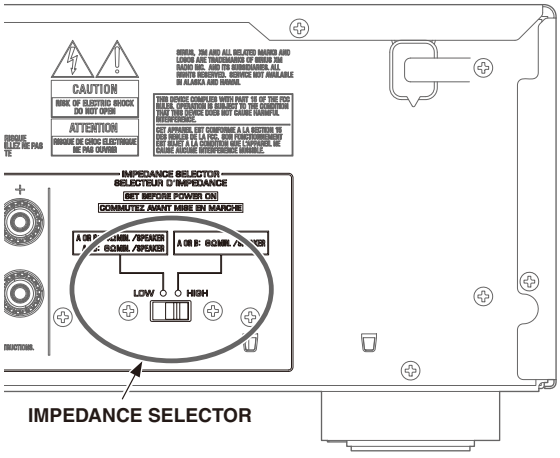
Among some types of lead free solder currently available, it is recommended to use one of the following types for the repair work.

- Sn + Ag + Cu (tin + silver + copper)
- Sn + Cu (tin + copper)
- Sn + Zn + Bi (tin + zinc + bismuth)

Caution:

As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.

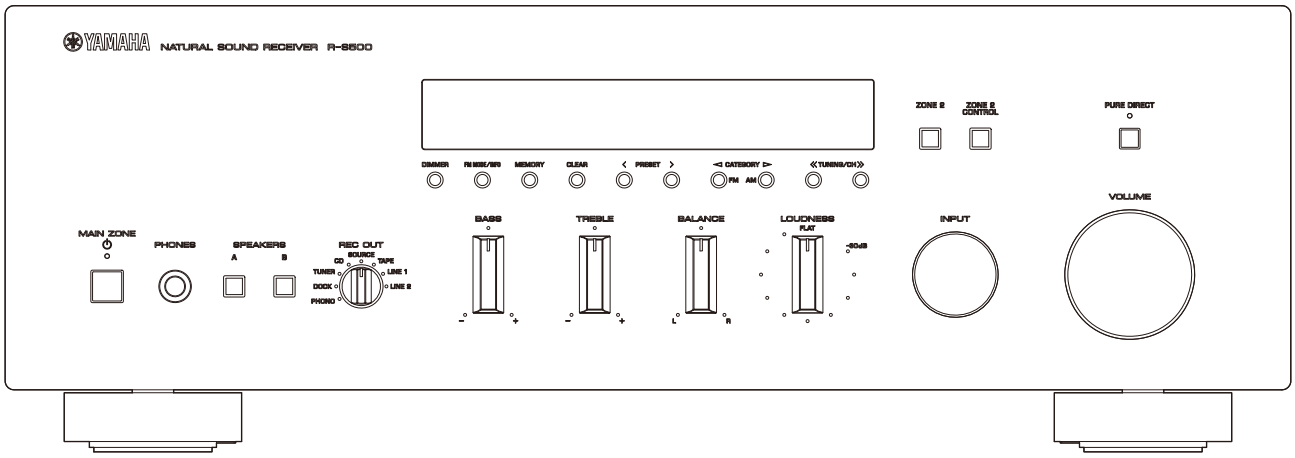
■ IMPEDANCE SELECTOR



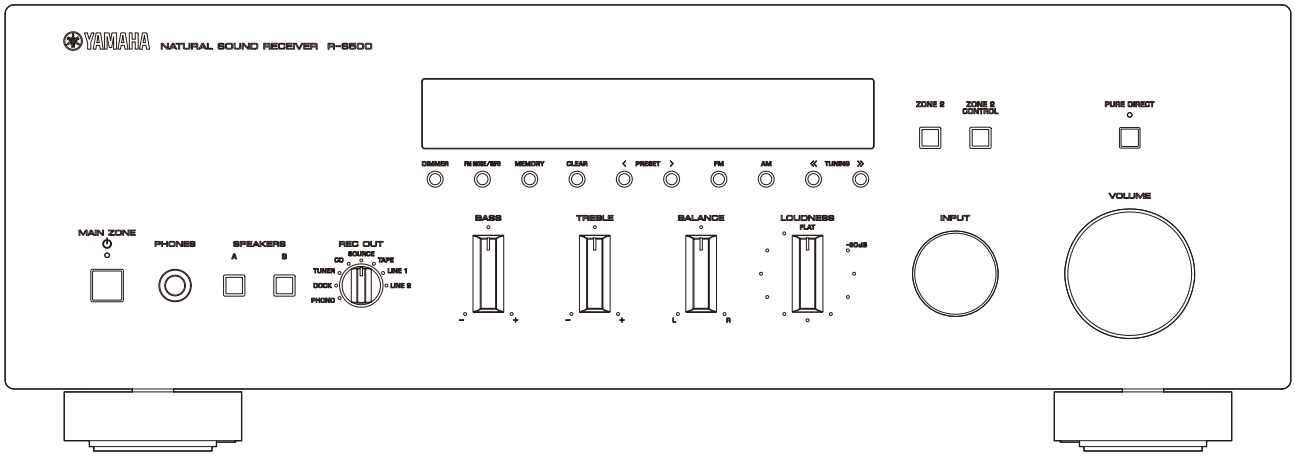
WARNING:
Do not change the setting of the IMPEDANCE SELECTOR switch when the unit power is switched on, as doing so may damage the unit.

■ FRONT PANELS

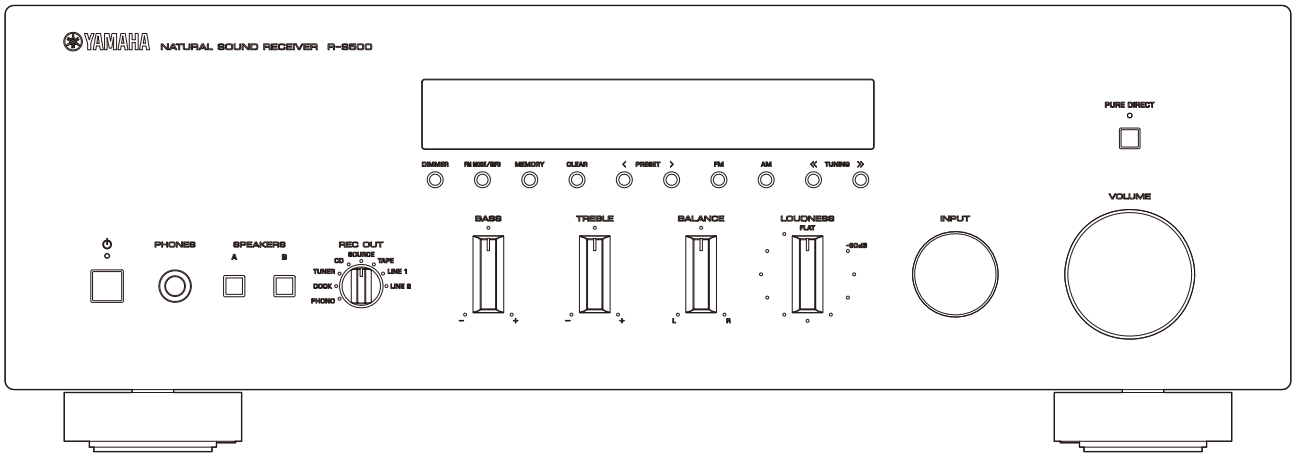
R-S500 (U model)



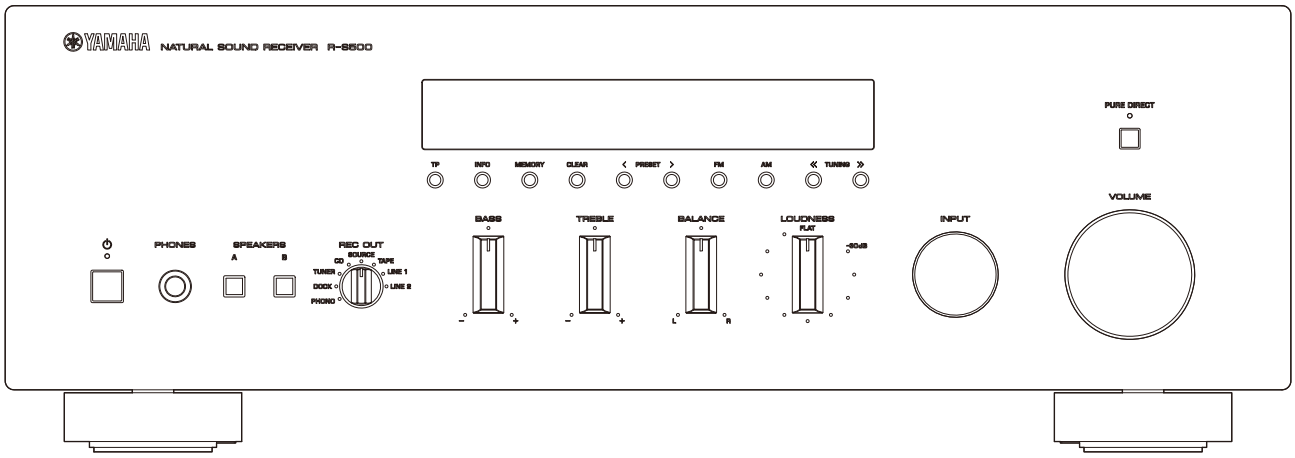
R-S500 (C, A models)



R-S500 (R, L models)

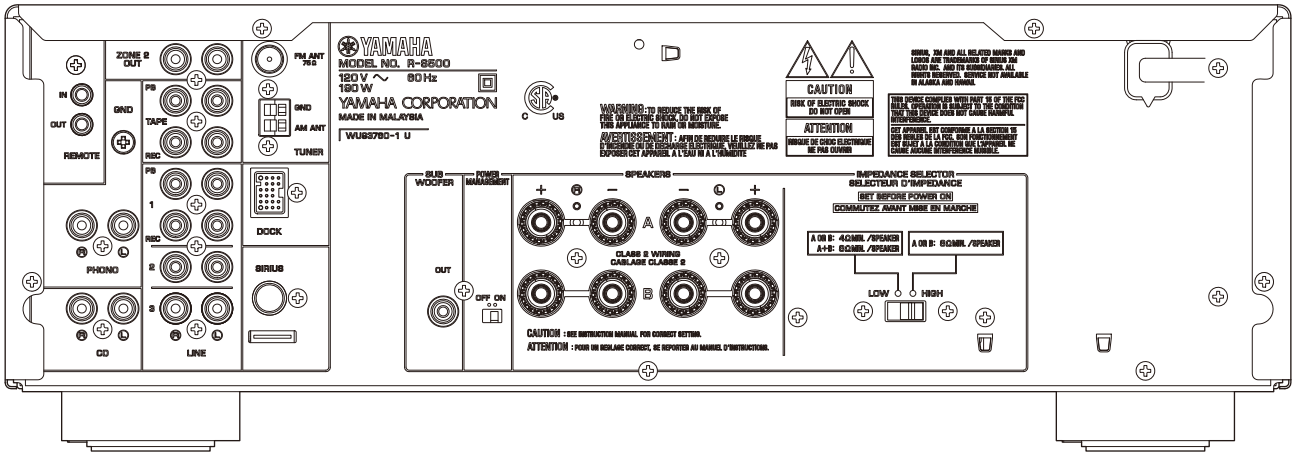


R-S500 (G model)

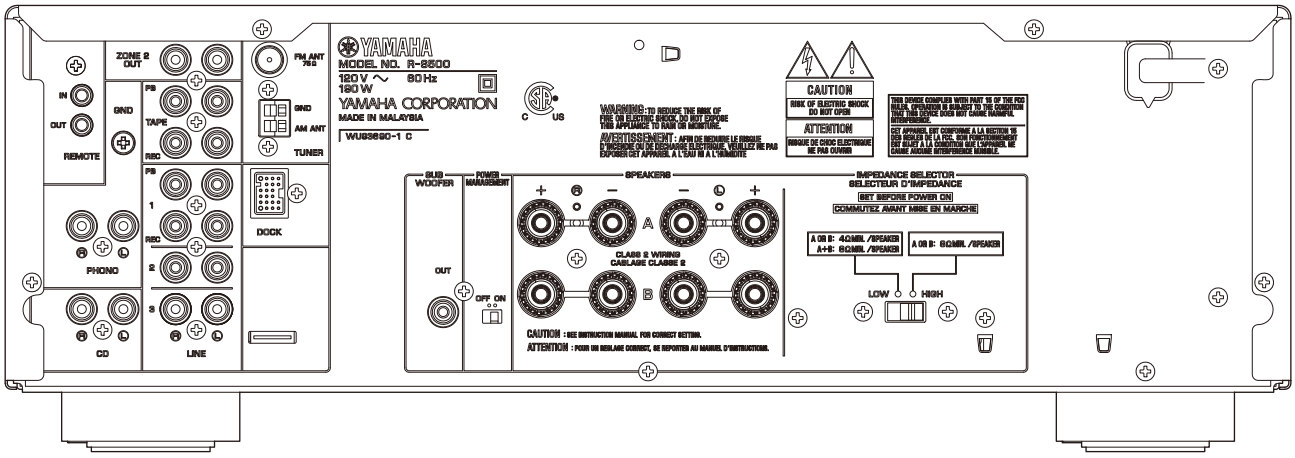


■ REAR PANELS

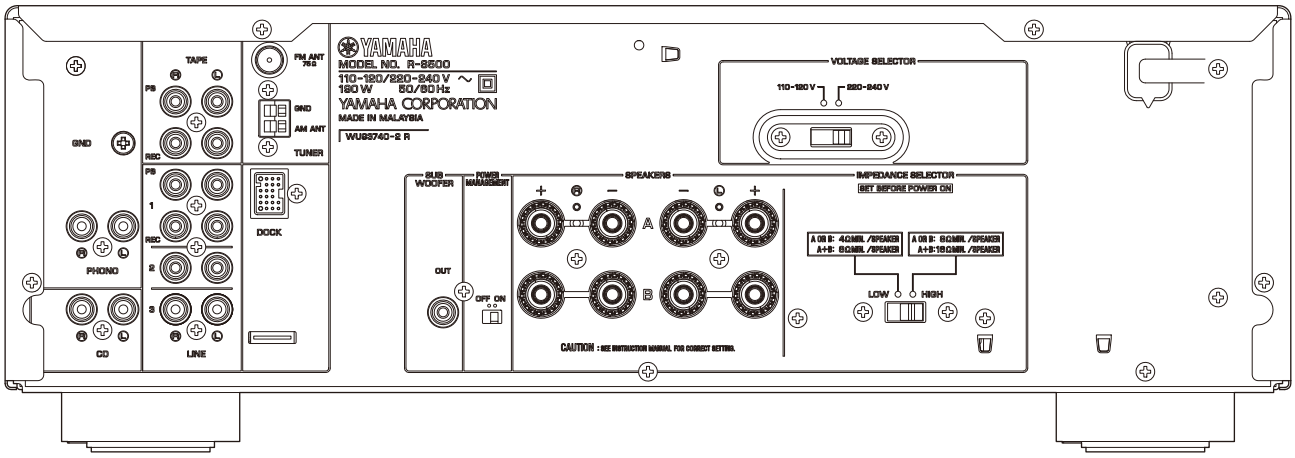
R-S500 (U model)



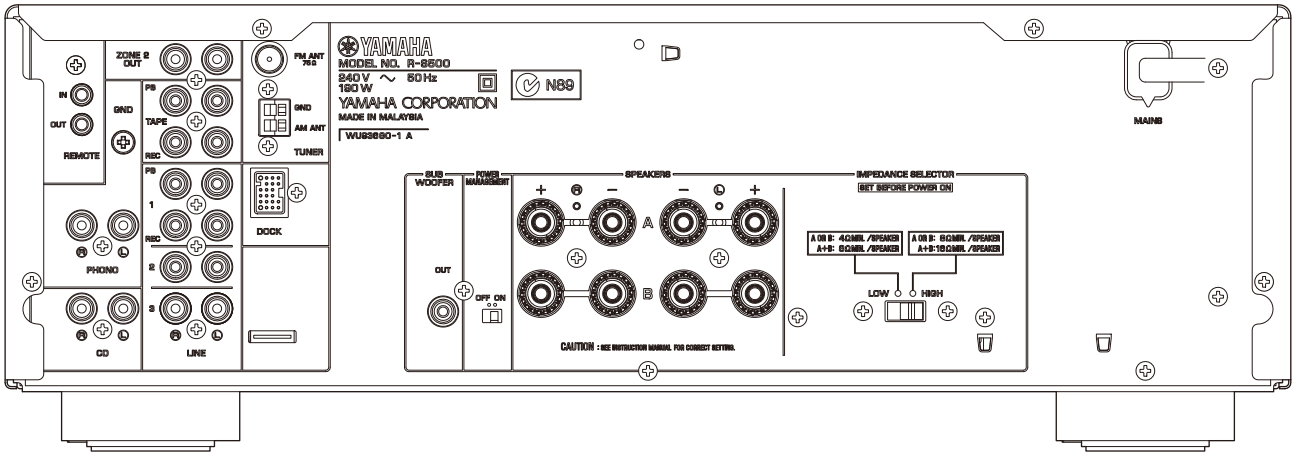
R-S500 (C model)



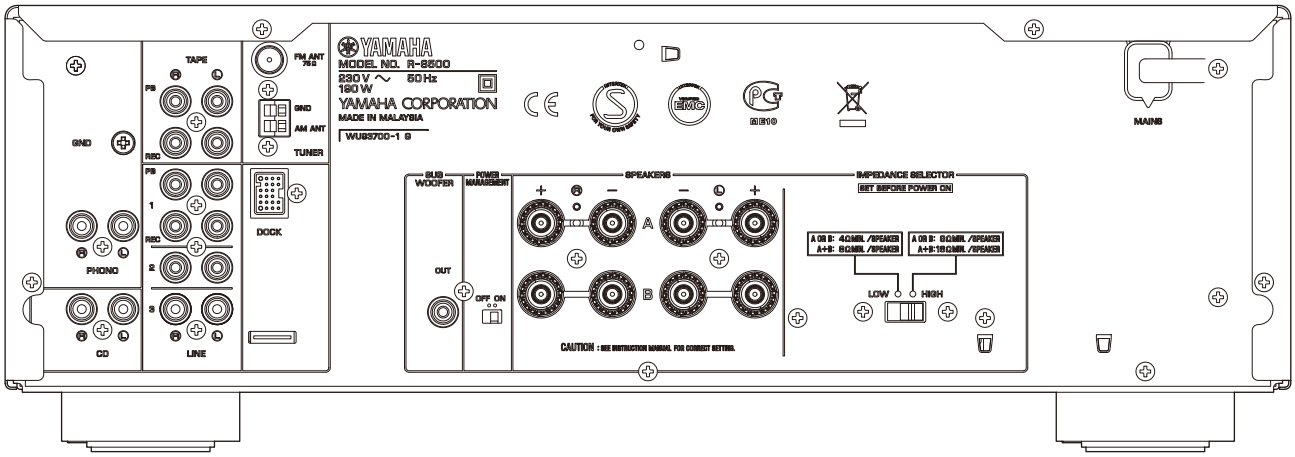
R-S500 (R model)



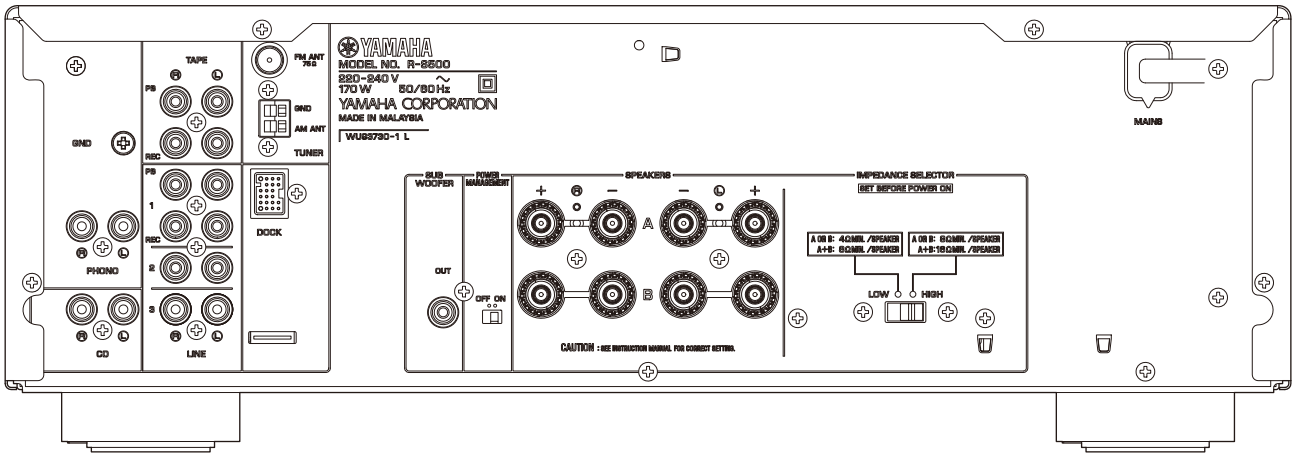
R-S500 (A model)



R-S500 (G model)

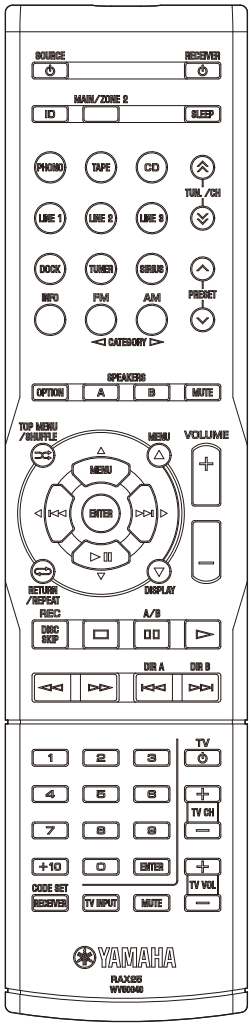


R-S500 (L model)

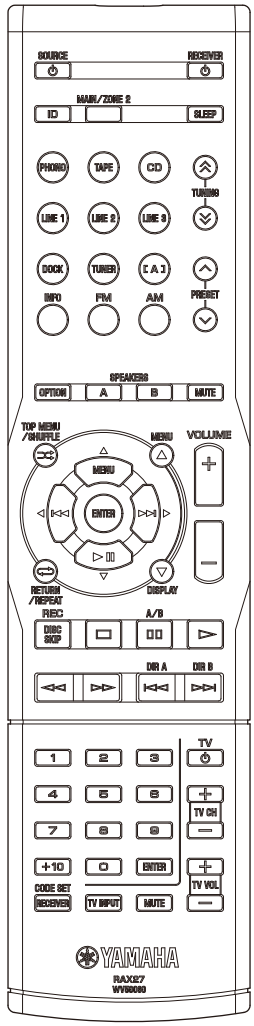


■ REMOTE CONTROL PANELS

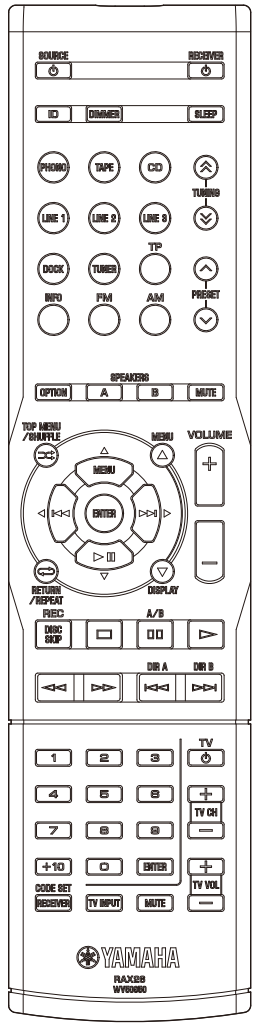
RAX25
(U model)



RAX27
(C, A models)



RAX26
(R, G, L models)



■ SPECIFICATIONS

■ Audio Section

Minimum RMS Output Power (Power Amp. Section)
(20 Hz to 20 kHz)
(8 ohms, 0.04 % THD) ..... 75 W + 75 W

Dynamic Power Per Channel (IHF)
(8/6/4/2 ohms) ..... 105/125/150/178 W

MAX Power Per Channel (1 kHz, 0.7 % THD, 4 ohms)
G model ..... 105 W

IEC Power (1 kHz, 0.04 % THD, 8 ohms)
G model ..... 84 W

Power Band Width
(0.06 % THD, 37.5 W, 8 ohms) ..... 10 Hz to 50 kHz

Damping Factor (SPEAKER-A)
(1 kHz, 8 ohms) ..... 150 or more

Maximum Effective Output Power (1 kHz, 10 % THD, JEITA)
R, L models
(8 ohms) ..... 115 W

Input Sensitivity/Input Impedance
PHONO (MM) ..... 3.5 mV / 47 k-ohms
CD, etc. ..... 200 mV / 47 k-ohms

Maximum Input Signal (1 kHz)
PHONO (MM) (0.003 % THD) ..... 60 mV or more
CD, etc. (0.5 % THD) ..... 2.2 V or more

Output Level/Output Impedance
CD, etc. (Input, 1 kHz, 200 mV)
REC OUT ..... 200 mV / 1.0 k-ohms
CD, etc. (Input, 1 kHz, 200 mV, 8 ohms load)
Headphone Jack ..... 410 mV / 470 ohms

Frequency Response
CD, etc. (20 Hz to 20 kHz)
..... 0 ±0.5 dB
CD, etc. Pure DIRECT ON (10 Hz to 100 kHz)
..... 0 ±1.0 dB

RIAA Equalization Deviation
PHONO (MM) ..... ±0.5 dB

Total Harmonic Distortion (20 Hz to 20 kHz)
PHONO (MM) to REC OUT (3 V) ..... 0.025 % or less
CD, etc. to SP OUT (37.5 W, 8 ohms) ..... 0.015 % or less

Signal to Noise Ratio (IHF-A Network)
PHONO (MM) (5 mV Input shorted)
..... 87 dB or more
CD, etc. (Pure DIRECT ON) (200 mV input shorted)
..... 100 dB or more

Residual Noise (IHF-A Network)
..... 30 µV

Channel Separation
CD, etc. (Input 5.1 k-ohms shorted)
1 kHz ..... 65 dB or more
10 kHz ..... 50 dB or more

Tone Control Characteristics
BASS
Boost/Cut (50 Hz) ..... ±10 dB
Turnover frequency ..... 350 Hz
TREBLE
Boost/Cut (20 kHz) ..... ±10 dB
Turnover frequency ..... 3.5 kHz

Continuous Loudness Control
Attenuation (1 kHz) ..... -30 dB

Gain Tracking Error
(0 to -99 dB) ..... 0.5 dB or less

■ FM Section

Tuning Range
U, C models ..... 87.5 to 107.9 MHz
R, A, G, L models ..... 87.50 to 108.00 MHz

50 dB Quieting Sensitivity (IHF)
(1 kHz, 100 % MOD.)
Mono ..... 3.0 µV (20.8 dBf)

Signal to Noise Ratio (IHF)
Mono/Stereo ..... 74 dB/70 dB

Harmonic Distortion (1 kHz)
Mono/Stereo ..... 0.3 %

Antenna Input
..... 75 ohms unbalanced

■ AM Section

Tuning Range
U, C models ..... 530 to 1,710 kHz
R, A, G, L models ..... 531 to 1,611 kHz

Antenna
..... Loop antenna

■ General

Power Supply
U, C models ..... AC 120 V, 60 Hz
R model ..... AC 110-120/220-240 V, 50/60 Hz
A model ..... AC 240 V, 50 Hz
G model ..... AC 230 V, 50 Hz
L model ..... AC 220-240 V, 50/60 Hz

Power Consumption
U, C, R, A, G models ..... 190 W
L model ..... 170 W

Standby Power Consumption
..... 0.5 W or less

YID-W10 Standby Power Consumption (YID-W10 connect)
..... 1.2 W or less

iPod Charge Power Consumption
..... 35 W or less

Maximum Power Consumption
(1 kHz, 8 ohms, 10 % THD)
R model ..... 380 W

Dimensions (W x H x D)
..... 435 x 151 x 387 mm (17-1/8" x 6" x 15-1/4")

Weight
..... 10.2 kg (22.5 lbs.)

Finish
Black color ..... U, C, R, A, G, L models
Silver color ..... R, A, G, L models

Accessories
Remote control ..... x 1
Indoor FM antenna (1.4 m) ..... x 1
AM loop antenna (1.2 m) ..... x 1
Batteries (R03, AAA, UM-4) ..... x 2

*** Specifications are subject to change without notice.**

U*.....*U.S.A. model
C*.....*Canadian model
R*.....*General model
A*.....*Australian model
G*.....*European model
L*.....*Singapore model

SIRIUS READY

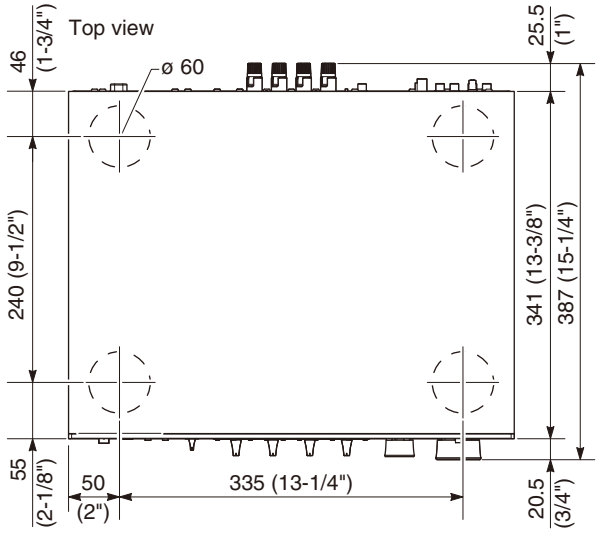
iPhone, iPod

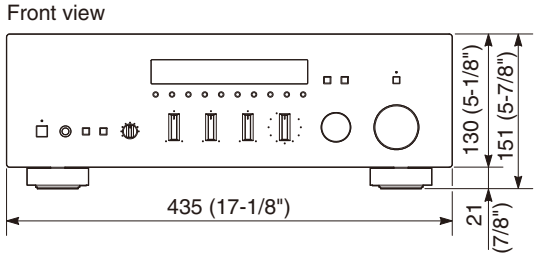
iPhone, iPod, iPod classic, iPod nano and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries.

Bluetooth™

Bluetooth is a registered trademark of the Bluetooth SIG and is used by Yamaha in accordance with a license agreement.

- **DIMENSIONS**

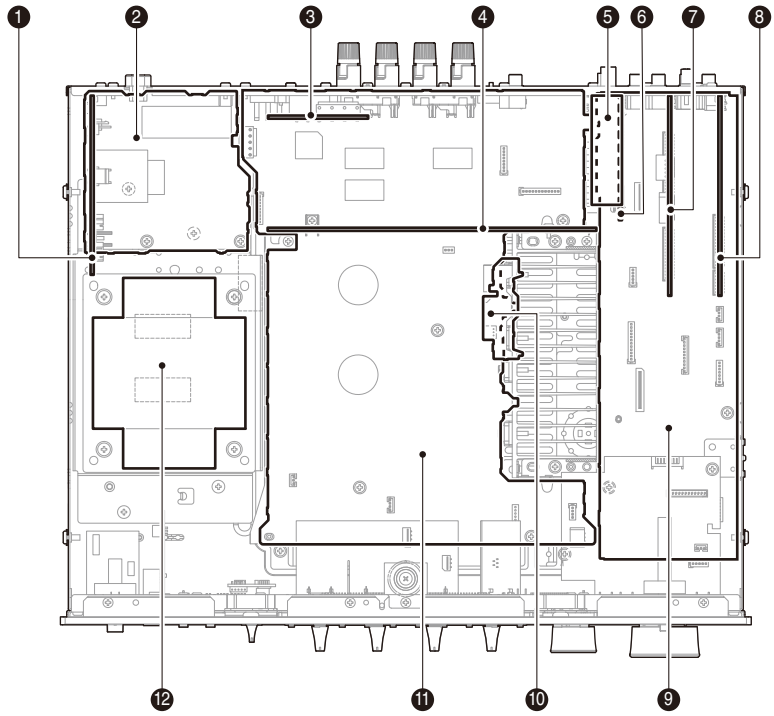




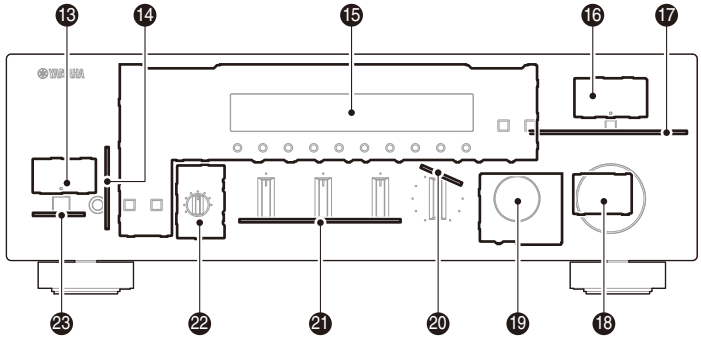
Unit: mm (inch)

■ INTERNAL VIEW

Top view



Front view



1. OPERATION (12) P.C.B.
2. OPERATION (13) P.C.B.
3. OPERATION (14) P.C.B. (R model)
4. MAIN (3) P.C.B.
5. AM/FM TUNER
6. DOCK P.C.B.
7. FUNCTION (2) P.C.B.
8. FUNCTION (3) P.C.B.
9. FUNCTION (1) P.C.B.
10. MAIN (2) P.C.B.
11. MAIN (1) P.C.B.
12. POWER TRANSFORMER
13. OPERATION (11) P.C.B.
14. OPERATION (6) P.C.B.
15. OPERATION (1) P.C.B.
16. OPERATION (10) P.C.B.
17. OPERATION (2) P.C.B.
18. OPERATION (7) P.C.B.
19. OPERATION (5) P.C.B.
20. OPERATION (4) P.C.B.
21. OPERATION (3) P.C.B.
22. OPERATION (9) P.C.B.
23. OPERATION (8) P.C.B.

■ SERVICE PRECAUTIONS

Safety measures

- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there.
  Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each.

  C135, C136 on MAIN (1) P.C.B.

  For details, refer to “PRINTED CIRCUIT BOARDS: MAIN (1) P.C.B.”.

■ DISASSEMBLY PROCEDURES

(Remove parts in the order as numbered.)
Disconnect the power cable from the AC outlet.

1. Removal of Top Cover

a. Remove 4 screws (①), 4 screws (②) and screw (③). (Fig. 1)
b. Remove the top cover. (Fig. 1)

2. Removal of Front Panel Unit

a. Remove screw (④) and then remove the support top. (Fig. 1)
b. Remove the knobs and caps. (Fig. 1)
c. Remove 7 screws (⑤). (Fig. 1)
d. Remove the front panel unit. (Fig. 1)

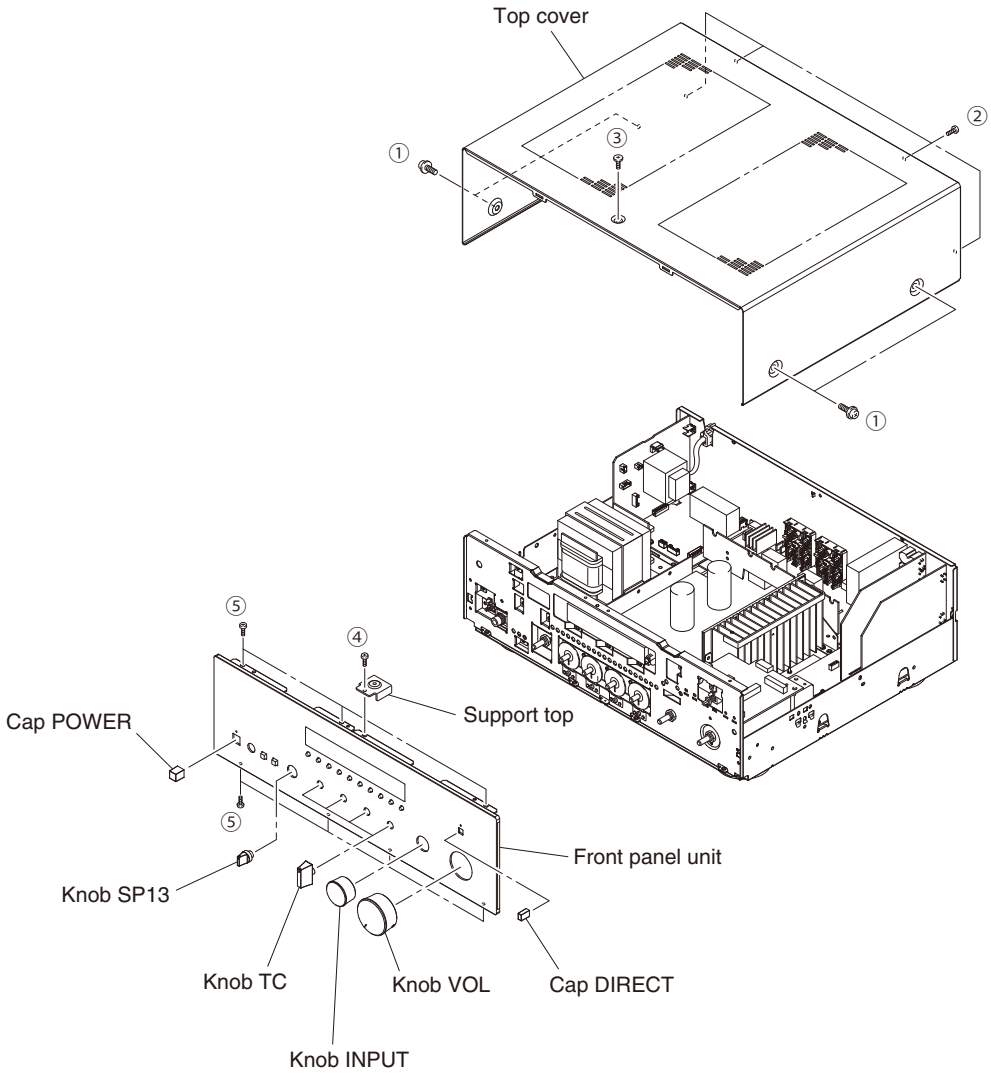


Fig. 1

3. Removal of Sub-chassis Unit

a. Remove 2 screws (⑥) and screw (⑦). (Fig. 2)
b. Remove CB11, CB101, CB503-505, CB513, CB706, CB801 and CB805. (Fig. 2)
c. Release 2 hooks and then remove the sub-chassis unit. (Fig. 2)

4. Removal of AM/FM Tuner

a. Remove 2 screws (⑧). (Fig. 3)
b. Remove CB403. (Fig. 2)
c. Remove the AM/FM tuner. (Fig. 2)

5. Removal of FUNCTION (1)-(3) and DOCK P.C.B.s

a. Remove 10 screws (U model) / 9 screws (C, A models) / 8 screws (R, G, L models) (⑨). (Fig. 3)
b. Remove screw (⑩) and screw (⑪). (Fig. 2)
c. Remove CB2, CB14, CB21 and CB506. (Fig. 2)
d. Remove the FUNCTION (1)–(3) P.C.B.s and DOCK P.C.B. together. (Fig. 2)

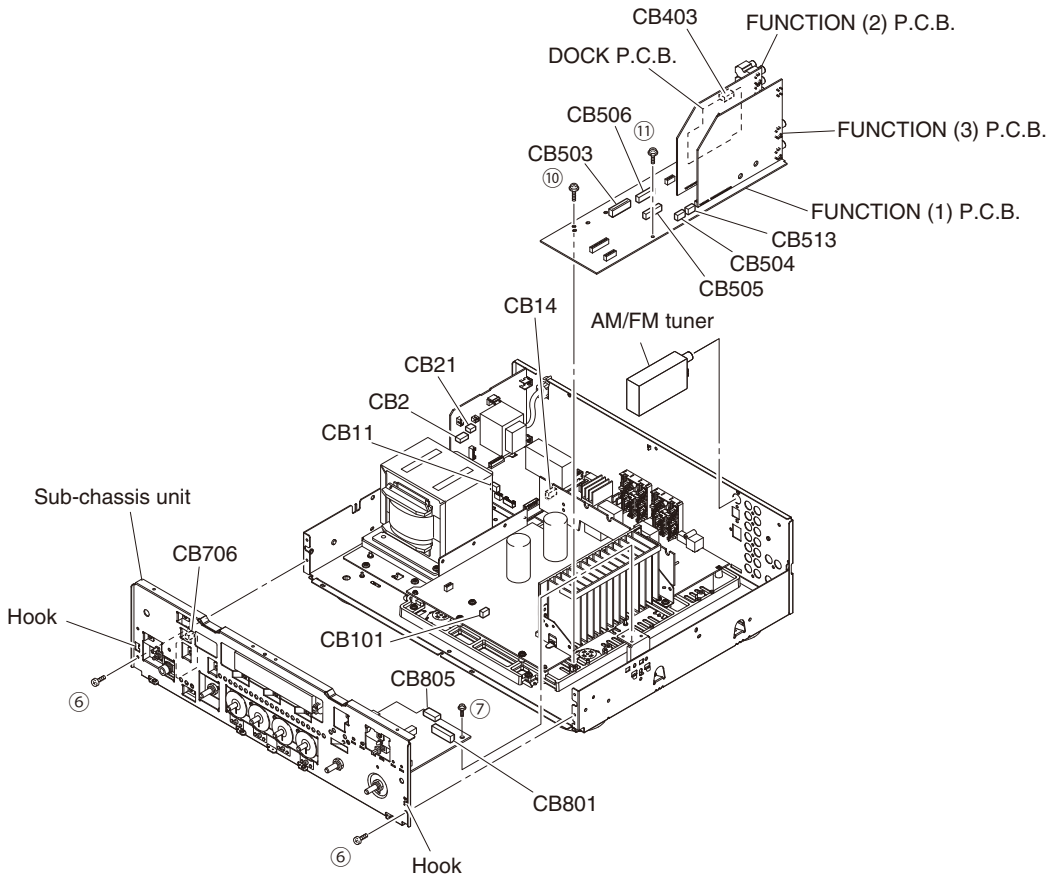


Fig. 2

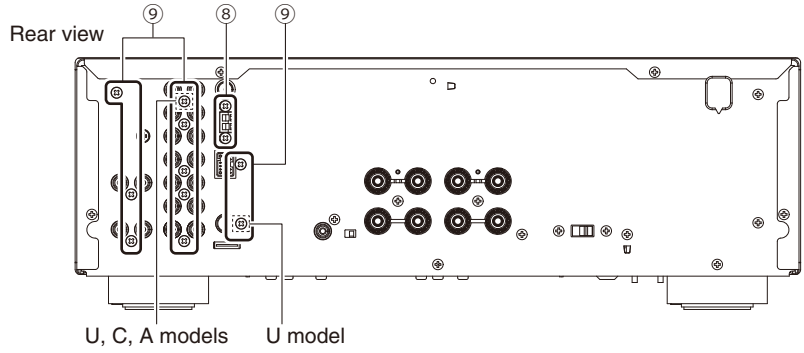


Fig. 3

When checking the P.C.B.s:

- Put the rubber sheet and cloth over this unit. Then place the sub-chassis unit on the cloth and check it. (Fig. 4)
- Connect the ground point of the sub-chassis unit to the chassis with a ground lead or the like. (Fig. 4)
- Reconnect all cables (connectors) that have been disconnected.
- When connecting the flexible flat cable, be careful with polarity.

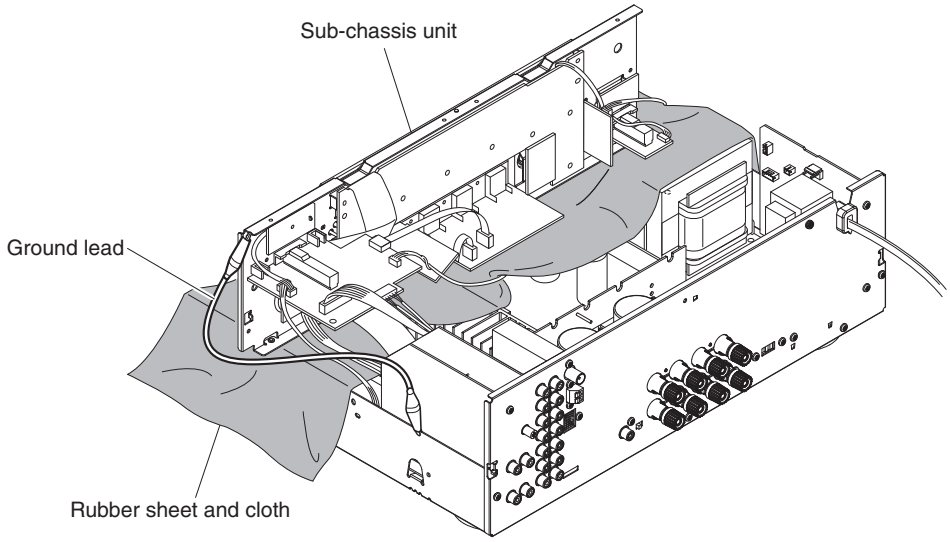


Fig. 4

When checking the MAIN (1) P.C.B.:

- Spread the rubber sheet and the cloth. Then place this unit on the cloth upside down. (Fig. 5)
- Remove 6 screws (⑫) and then remove the chassis cover. (Fig. 5)

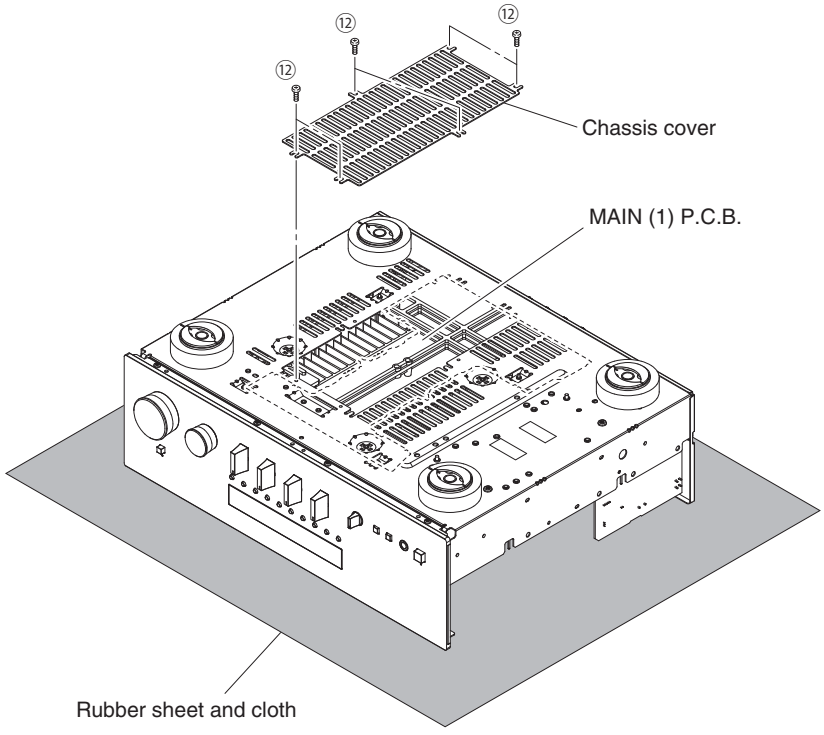


Fig. 5

■ UPDATING FIRMWARE

When the following parts are replaced, the firmware must be updated to the latest version.

FUNCTION P.C.B.

Microprocessor (IC502 on FUNCTION P.C.B.)

● Confirmation of firmware version and checksum

Before and after updating the firmware, check the firmware version and checksum by using the self-diagnostic function menu.

Start up the self-diagnostic function and select “1. FIRMWARE VERSION” menu.

Using the sub-menu, have the firmware version and checksum displayed, and note them down.
(See “SELF-DIAGNOSTIC FUNCTION”)

* When the firmware version is different from written one, perform the UPDATING FIRMWARE from the beginning.

● Initializing the back-up IC (EEPROM: IC503 on FUNCTION P.C.B.)

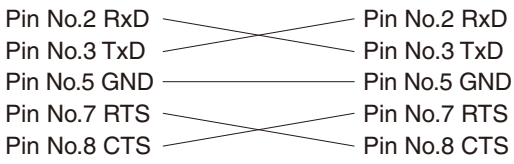
After updating the firmware, the back-up IC MUST be initialized by the following procedure to have proper memorization of the set up information.

Start up the self-diagnostic function and select “3. FACTORY PRESET” menu.
(See “SELF-DIAGNOSTIC FUNCTION”)

Select “3. PRESET RSRV”, press the “MAIN ZONE ⏻” key (U, C, A models) / “⏻” (Power) key (R, G, L models) to turn off the power once and press the “MAIN ZONE ⏻” key (U, C, A models) / “⏻” (Power) key (R, G, L models) to turn on the power again. Then the back-up IC is initialized.

● Required Tools

- Firmware downloader program
  ..... FlashSta.exe
- Firmware
  ..... RSx00_xxx.mot
  RSx00_xxx.id
- RS-232C cross cable “D-sub 9 pin female”
  (Specifications)



- RS-232C conversion adaptor (Part No.: WR492800)

● Preparation and precautions

- Download the firmware downloader program and the latest firmware from the specified download source to the same folder of the PC.
- Prepare the above specified RS-232C cross cable.
- While writing the firmware, keep the other application software on the PC closed.
  It is also recommended to keep the software on the task tray closed as well.

● Connection

* Disconnect the power cable of this unit from the AC outlet.

- Set the switch (SW7) of RS-232C conversion adaptor to the “FLASH UCOM” position. (Fig. 1)
- Connect the writing port (CB509 on FUNCTION P.C.B.) located on the rear panel of this unit to the serial port (RS-232C) of the PC with RS-232C cross cable, RS-232C conversion adaptor and flexible flat cable as shown below. (Fig. 1)

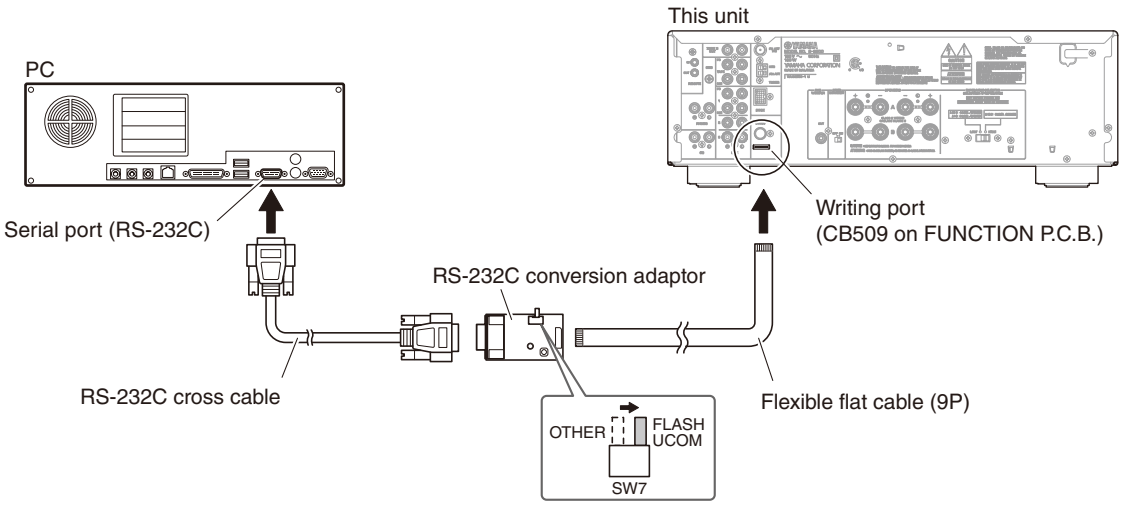


Fig. 1

● Operation procedure

1. Connect the power cable of this unit to the AC outlet.
   The power to this unit is supplied and the microprocessor is in the writing mode.
2. Start up FlashSta.exe.
   The screen appears as shown below. (Fig. 2)
3. Select the data to be transmitted and port. (Fig. 2)
   - Select Program
     Select Internal flash memory.
   - RS-232C
     Select the port of RS-232C.

   * For selection of the port, COM1 to 4 can be used.
   As COM5 or higher port cannot be used, select out of COM 1 to 4 of the setting on the PC side.

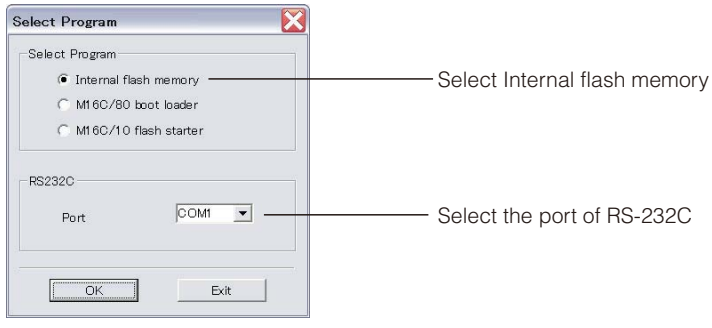


Fig. 2

4. Click [Refer...] and select the firmware name. (Fig. 3)
   * The ID and MCU Type are loaded automatically when the file is selected. (Fig. 3)
   Click [OK]. (Fig. 3)

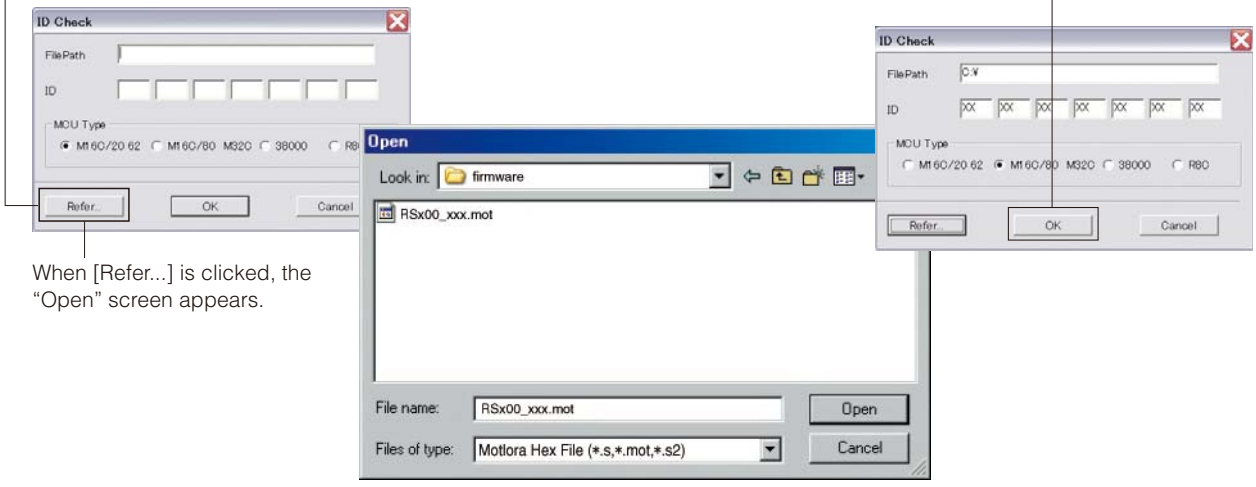


Fig. 3

5. Click [Setting], and set the baud rate. (Fig. 4)

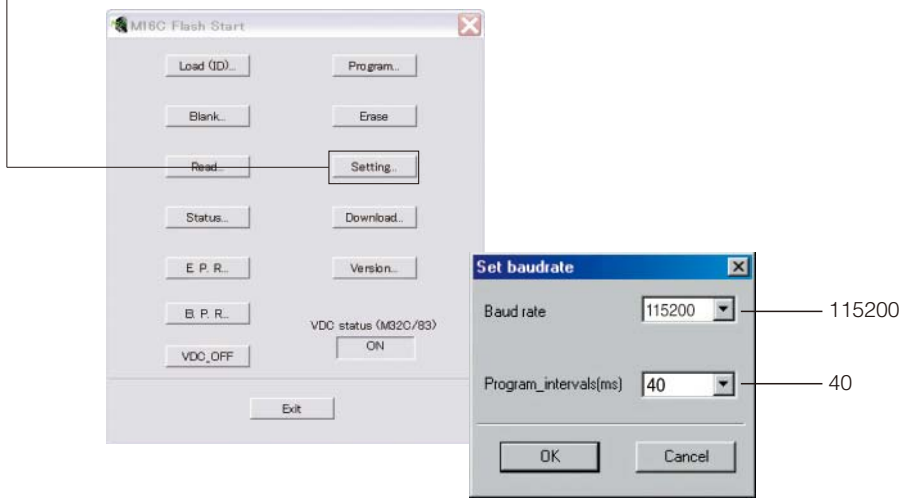


Fig. 4

6. Click [E.P.R.], then the “Erase” screen appears. (Fig. 5)
7. Click [OK] to start writing. (Fig. 5)

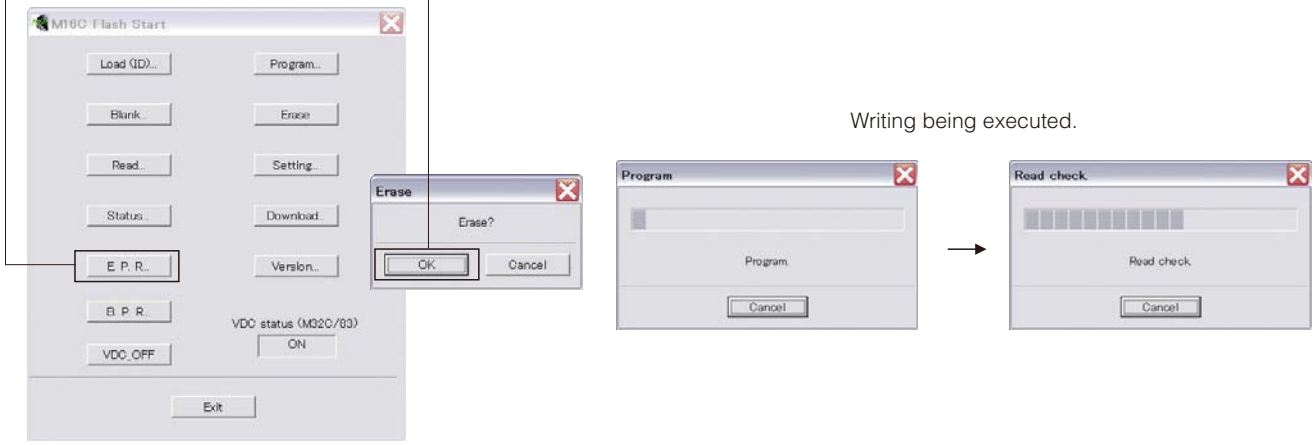


Fig. 5

8. When writing of the firmware is completed, the screen appears as shown below. (Fig. 6)
   Click [OK]. (Fig. 6)
9. Click [Exit] to end FlashSta.exe. (Fig. 6)

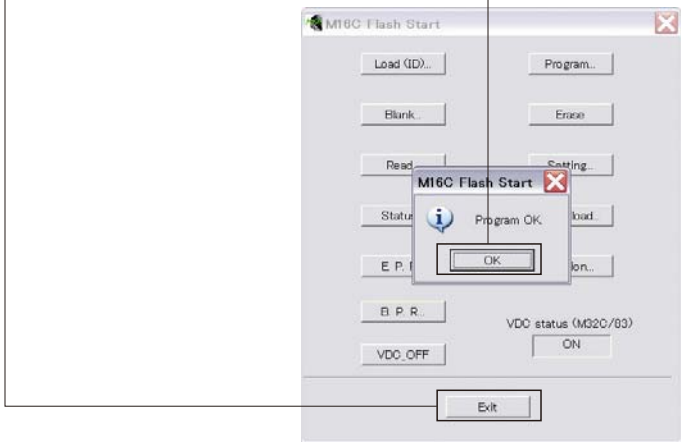


Fig. 6

10. Disconnect the power cable of this unit from the AC outlet.
11. Remove the RS-232C conversion adaptor and flexible flat cable from the writing port of this unit.
12. Connect the power cable of this unit to the AC outlet, start up the self-diagnostic function and check that the firmware version is the same as written one. (See “Confirmation of firmware version and checksum”)

■ SELF-DIAGNOSTIC FUNCTION

This unit has self-diagnostic functions that are intended for inspection, measurement and location of faulty point.

There are 8 main menu items, each of which has sub-menu items.

Listed in the table below are main menu items and sub-menu items.

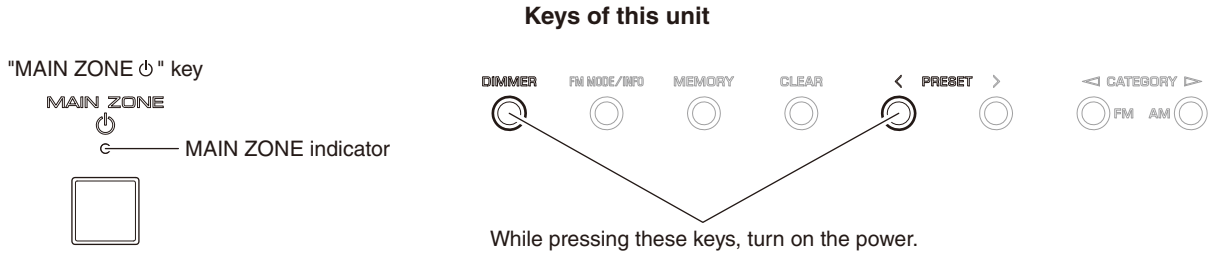
Note that not all menu items listed will apply to the models covered in this service manual.

No.	Main menu	No.	Sub-menu
1	VERSION	1	FIRMWARE VERSION
		2	FIRMWARE CHECKSUM
		3	SIRIUS VERSION (U model)
		4	MODEL/DESTINATION
		5	VERIFY ERROR (Not for service)
2	DISPLAY	1	VFD CHECK
		2	ALL SEGMENT OFF
		3	ALL SEGMENT ON
		4	ALL SEGMENT DIMMER
		5	CHECK PATTERN
3	FACTORY PRESET	1	PRESET INHIBIT
		2	PRESET RESERVE
4	AD DATA	1	PS/DC
		2	TA/TB
		3	KEY 0/KEY 1
		4	REC OUT SWITCH/DOCK TYPE
		5	MODEL/DESTINATION
5	DOCK	1	LOOP BACK CHECK
		2	BT VERSION
6	PROTECTION HISTORY	1	HISTORY 1
		2	HISTORY 2
		3	HISTORY 3
		4	HISTORY 4
7	SIRIUS (U model)	1	SIRIUS
		2	SR
		3	SSP
		4	MAC
		5	ADP
		6	PRDID
		7	SEQID
8	POWER OFF FACTOR HISTORY	1	LAST
		2	HISTORY 1
		3	HISTORY 2
		4	HISTORY 3
		5	HISTORY 4

● Starting Self-Diagnostic Function

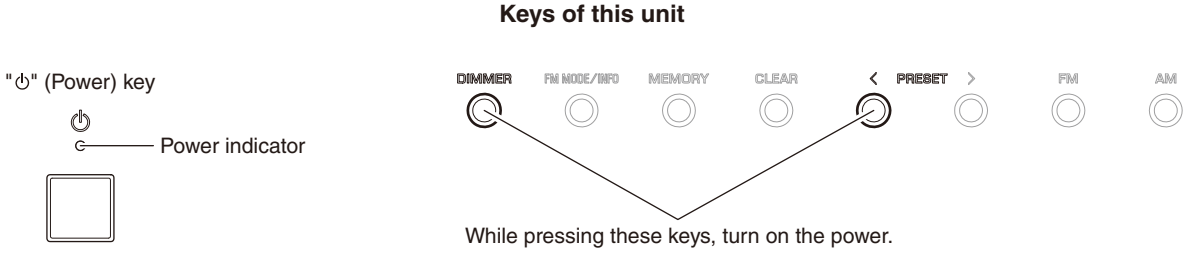
— U, C, A models —

While pressing the “DIMMER” and “PRESET <” keys, press the “MAIN ZONE ⏻” key to turn on the power.
The self-diagnostic function mode is activated.



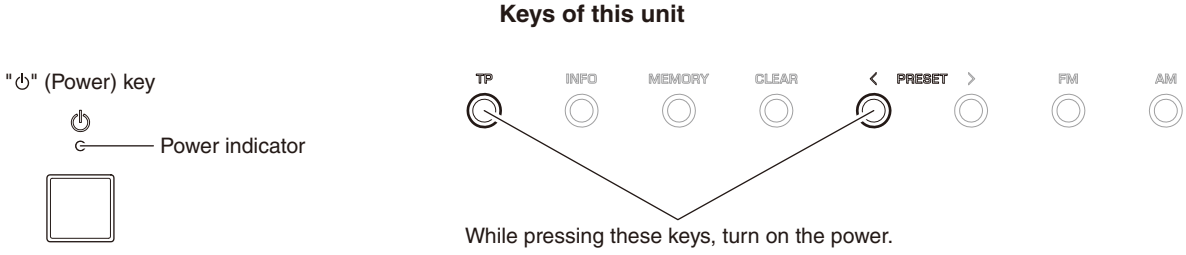
— R, L models —

While pressing the “DIMMER” and “PRESET <” keys, press the “⏻” (Power) key to turn on the power.
The self-diagnostic function mode is activated.



— G model —

While pressing the “TP” and “PRESET <” keys, press the “⏻” (Power) key to turn on the power.
The self-diagnostic function mode is activated.



● Starting Self-Diagnostic Function in the protection cancel mode

If the protection function works and causes hindrance to trouble shoot, cancel the protection function as described below, and it will be possible to enter the self-diagnostic function mode. The protection functions other than the excess current detect function will be disabled.

While pressing the “DIMMER” key (U, C, R, A, L models) / “TP” key (G model) and “PRESET <” key as shown in the figure above, press the “MAIN ZONE ⏻” key (U, C, A models) / “⏻” (Power) key (R, G, L models) to turn on the power and keep pressing those 2 keys for 3 seconds or longer.

The self-diagnostic function mode is activated with the protection functions disabled.

In this mode, the “SLEEP” segment of the FL display flashes to indicate that the mode is self-diagnostic function mode with the protection functions disabled.

CAUTION!
Using this product with the protection function disabled may cause further damage to this unit. Use special care for this point when using this mode.

● Canceling Self-Diagnostic Function

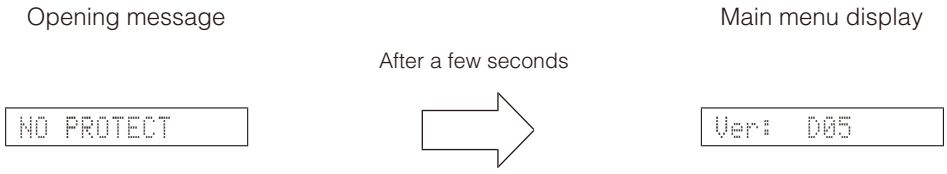
1. Before canceling self-diagnostic function, execute setting for FACTORY PRESET of main menu No. 3. (Memory initialization inhibited or Memory initialized).
   * In order to keep the user memory preserved, be sure to select PRESET INHIBIT (Memory initialization inhibited).
2. Press the "MAIN ZONE ⏻" key (U, C, A models) / "⏻" (Power) key (R, G, L models) to turn off the power.

● Display provided when Self-Diagnostic Function started

The display is as described below depending on the situation the last time the power to this unit is turned off.

1. When the power is turned off by usual operation:

"NO PROTECT" is displayed. Then the "1-1. FIRMWARE VERSION" menu is displayed in a few seconds.



2. When the protection function worked to turn off the power:

The data of protection function which worked at the moment is displayed. Then "1-1. FIRMWARE VERSION" menu is displayed in a few seconds.

Note: At that time if you reactivate the self-diagnostic function after turning off the power once by pressing the "MAIN ZONE ⏻" key (U, C, A models) / "⏻" (Power) key (R, G, L models), "NO PROTECT" will be displayed because that situation is equal to "1. When the power is turned off by usual operation:" described above.

However the protection function history is stored in a back-up IC with a backup. For details, refer to main menu "6. PROTECTION HISTORY."

2-1. When there is a history of protection function due to excess current.

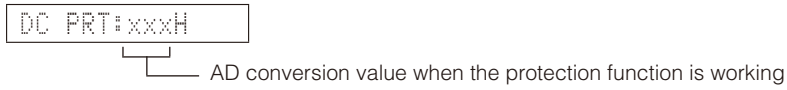
Display: The MAIN ZONE indicator is flashing. (U, C, A models)
The Power indicator is flashing. (R, G, L models)
Cause: An excessive current flowed through the power amplifier.
Supplementary information: As current of the power amplifier is detected, the abnormal channel can be identified by checking the current detect transistor.

Turning on the power without correcting the abnormality will cause the protection function to work immediately and the power supply will instantly be shut off.

Notes)

- **Applying the power to this unit without correcting the abnormality can be dangerous and cause additional circuit damage. To avoid this, if protection function due to excess current works 1 time, the power will not turn on even when the "MAIN ZONE ⏻" key (U, C, A models) / "⏻" (Power) key (R, G, L models) is pressed. In order to turn on the power again, disconnect the power cable of this unit from the AC outlet once and then reconnect it again.**
- **The output transistors in each amplifier channel should be checked for damage before applying power to this unit.**
- **Amplifier current should be monitored by measuring DC voltage across the emitter resistors for each channel.**

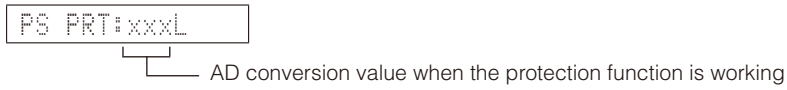
2-2. When the protection function worked due to abnormal DC output.



Cause: DC output of the power amplifier is abnormal.
Supplementary information: The protection function worked due to a DC voltage appearing at the speaker terminal.
A cause could be a defect in the amplifier.

Turning on the power without correcting the abnormality will cause the protection function to work in 3 seconds and the power supply will be shut off.

2-3. When the protection function worked due to abnormal voltage in the power supply section.



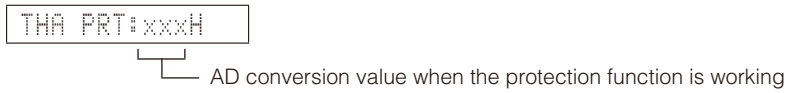
Cause: The voltage in the power supply section is abnormal.
Supplementary information: The protection function worked due to a defect or overload in the power supply.

Turning on the power without correcting the abnormality will cause the protection function to work in 1 seconds and the power supply will be shut off.

Notes)

- **Applying the power to this unit without correcting the abnormality can be dangerous and cause additional circuit damage. To avoid this, if "PS" and "DC" protection function works 3 times consecutively, the power will not turn on even when the "MAIN ZONE ⏻" key (U, C, A models) / "⏻" (Power) key (R, G, L models) is pressed. In order to turn on the power again, disconnect the power cable of this unit from the AC outlet once and then reconnect it again.**
- **The output transistors in each amplifier channel should be checked for damage before applying power to this unit.**
- **Amplifier current should be monitored by measuring DC voltage across the emitter resistors for each channel.**

2-4. When the protection function worked due to excessive heatsink temperature.



Cause: The temperature of the heatsink is excessive.
Supplementary information: The protection function worked due to the temperature limit being exceeded. Causes could be poor ventilation or a defect related to the thermal sensor.

Turning on the power without correcting the abnormality will cause the protection function to work in 1 seconds and the power supply will be shut off.

● **History of protection function**

When the protection function has worked, its history is stored in memory with a backup.

Even if no abnormality is noted while servicing the unit, an abnormality which has occurred previously can be defined as long as the backup data has been stored.

For details, refer to main menu 6 PROTECTION HISTORY.

● Operation procedure of Main menu and Sub-menu

There are 8 main menu items, each of which has sub-menu items.

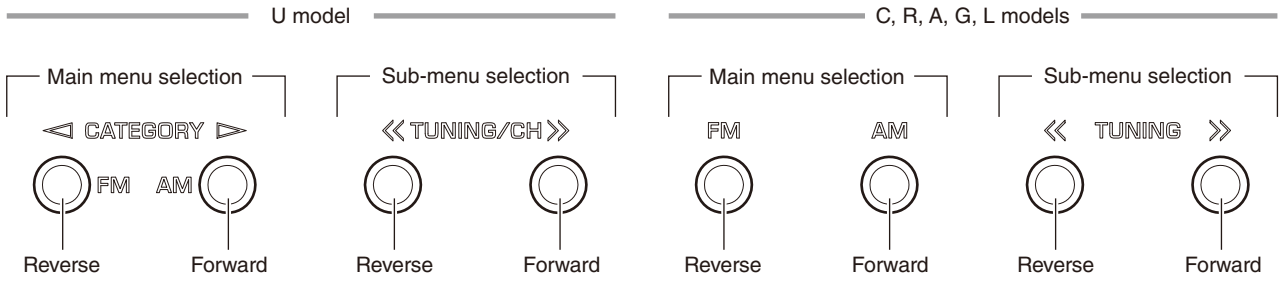
Main menu selection

Select the main menu using “AM” (forward) and “FM” (reverse) keys.

Sub-menu selection

Select the sub-menu using “TUNING >>” (forward) and “TUNING <<” (reverse) keys.

Keys of this unit



● Functions in Self-Diagnostic Function mode

In addition to the self-diagnostic function menu items, functions as listed below are available.

- Power ON/OFF
- Master volume
- Tone control
- PURE DIRECT ON/OFF
- ZONE 2 ON/OFF (U, C, A models)

* Functions related to the tuner and the set menu are not available.

● Initial settings when Self-Diagnostic Function started

The following initial settings are used when starting self-diagnostic function.
When self-diagnostic function is canceled, these settings are restored to those before starting self-diagnostic function.

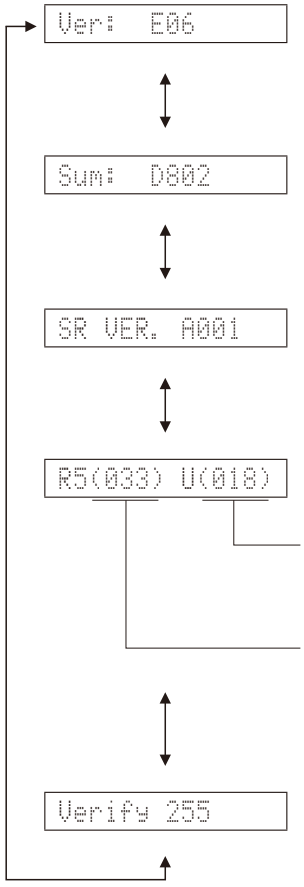
- Master volume: -20 dB
- Input: CD
- ZONE 2: ON (U, C, A models)
- SPEAKER: SP A on

● Details of Self-Diagnostic Function menu

1. VERSION

The firmware version and checksum values are displayed.
The checksum is obtained by adding the data at every 8-bit and expressing the result as a 4-figure hexadecimal notation.

* Numeric values in the figure are given as reference only.



1-1. FIRMWARE VERSION

The firmware version of the microprocessor (IC502 on FUNCTION P.C.B.) is displayed.

1-2. FIRMWARE CHECKSUM

The checksum value of the microprocessor (IC502 on FUNCTION P.C.B.) is displayed.

1-3. SIRIUS VERSION (U model)

The firmware version of the SIRIUS is displayed.

1-4. MODEL/DESTINATION

The model name and destination are displayed.

Destination

Destination	U	C	R	A	G
A/D conversion value (5.0 V=255)	9 – 25	26 – 43	44 – 67	128 – 158	187 – 210

Model

Model name	R5 (R-S500)
A/D conversion value (5.0 V=255)	26 – 43

1-5. VERIFY

Not for service.

2. DISPLAY

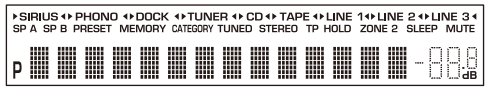
This menu is used to check the FL display.

FL display

2-1. INITIAL DISPLAY

2-2. ALL SEGMENT OFF

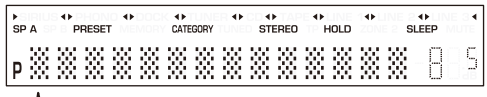
2-3. ALL SEGMENT ON



* After check, change to next sub-menu at once.

2-4. ALL SEGMENT DIMMER

2-5. CHECK PATTERN



Lighting on segments in lattice.

Short

Normal

Segment conditions of the FL driver and the FL tube are checked by turning ON and OFF all segments.

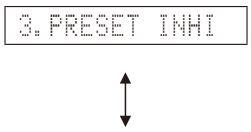
Next, the operation of the FL driver is checked by using the dimmer control.

Then a short between segments next to each other is checked by turning ON and OFF all segments alternately (in lattice).

(In the above example, the segments in the second row from the top are shorted.)

3. FACTORY PRESET

This menu is used to reserve/inhibit initialization of the back-up IC (EEPROM: IC503 on FUNCTION P.C.B.).



3-1. PRESET INHIBIT (Initialization inhibited)

Initialization of the back-up IC is not executed. Select this sub-menu to protect the values set by the user.

3-2. PRESET RESERVED (Initialization reserved)

Initialization of the back-up IC is reserved. (Actual initialization is executed the next time the power is turned on.) To reset to the original factory settings or to reset the backup IC, select this sub-menu and press the "MAIN ZONE ⏻" key (U, C, A models) / "⏻" (Power) key (R, G, L models) to turn off the power.

CAUTION: Before setting to the PRESET RESERVED, write down the existing preset memory content of the tuner. (This is because setting to the PRESET RESERVED will cause the user memory content to be erased.)

4. AD DATA

This menu is used to display the A/D conversion value of the microprocessor which detects panel keys and protection functions by using the sub-menu.

When "4-3. KEY 0/KEY 1" sub-menu is selected, keys become non-operable due to detection of the values of all keys. However, it is possible to advance to the next sub-menu by turning the "INPUT" knob.

* Numeric values in the figure are given as reference only.

4-1. PS/DC

PS: Power supply voltage protection detection
The voltage at 93 pin (PRV) of the IC502 is displayed.

Voltage detects:
PS: ACL, AC15, ±15, +5S, +15UNREG (R model)

Normal value:
PS: 36 to 77 (Reference voltage: 5.0 V=255)

* If PS becomes out of the normal value range, the protection function works to turn off the power.

DC: Power amplifier DC (DC voltage) output is detected.
The voltage at 89 pin (PRD) of the IC502 is displayed.

Normal value: 48 to 128 (Reference voltage: 5.0 V=255)

* If DC becomes out of the normal value range, the protection function works to turn off the power.

4-2. TA/TB

Temperature of the heatsink is detected.

TA: The voltage at 84 pin (THM_L) of the IC502 is displayed.
TB: Not for service.

Normal value: TA 10 to 85 (Reference voltage: 5.0 V=255)

* If TA becomes out of the normal value range, the protection function works to turn off the power.

4-3. KEY 0/KEY 1

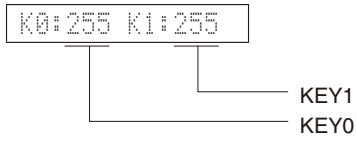
Panel key is detected.

KEY 0: The voltage at 95 pin (KEY0) of the IC502 is displayed.
KEY 1: The voltage at 94 pin (KEY1) of the IC502 is displayed.
(Reference voltage: 5.0 V=255)

When the A/D conversion value of the panel key becomes out of the specified range, normal operation will not be available.
In that case, check the constant of voltage dividing resistor, solder condition, etc. Refer to table.

* When “4-3. KEY 0/KEY 1” sub-menu is selected, keys become non-operable due to detection of the values of all keys. However, it is possible to advance to the next sub-menu by turning the “INPUT” knob of this unit.

(Reference voltage: 5.0 V=255)



Display	K0	
0 – 11	DIMMER	(U, C, R, A, L models)
	TP	(G model)
12 – 32	FM MODE / INFO	(U, C, R, A, L models)
	INFO	(G model)
33 – 54	MEMORY	
55 – 79	CLEAR	
80 – 107	ZONE 2 CONTROL	(U, C, A models)
108 – 134	SPEAKERS A	
135 – 156	SPEAKERS B	
157 – 255	Key off	

Display	K1	
0 – 11	PRESET <	
12 – 32	PRESET >	
33 – 54	FM	
55 – 79	AM	
80 – 107	TUNING/CH <<	(U model)
	TUNING <<	(C, R, A, G, L models)
108 – 134	TUNING/CH >>	(U model)
	TUNING >>	(C, R, A, G, L models)
135 – 156	ZONE 2	(U, C, A models)
157 – 255	Key off	

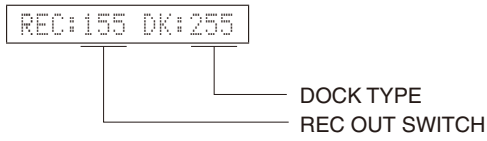
4-4. REC OUT SWITCH/DOCK TYPE

REC OUT SWITCH: REC OUT switch is detected.

The voltage at 97 pin (REC) of the IC502 is displayed. (Reference voltage: 5.0 V=255)
When the A/D conversion value of the REC OUT switch becomes out of the specified range, normal operation will not be available.
In that case, check the constant of voltage dividing resistor, solder condition, etc. Refer to table.

DOCK TYPE: DOCK type is detected.

The voltage at 69 pin (DOCK_TYP) of the IC502 is displayed. (Reference voltage: 5.0 V=255)



REC OUT SWITCH

A/D conversion value (5.0 V=255)	16 – 46	47 – 77	78 – 108	109 – 139	140 – 171	172 – 203	204 – 237	238 – 255
REC OUT selector	PHONO	DOCK	TUNER	CD	SOURCE	TAPE	LINE 1	LINE 2

DOCK TYPE

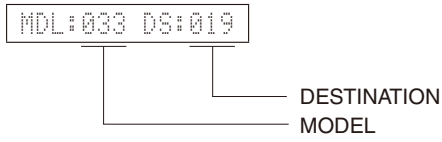
DOCK type	Bluetooth (YBA-10)	Wireless iPod (YID-W10)	iPod		No connected
			(YDS-11/12 (B*))	(YDS-12 (A*))	
A/D conversion value (5.0 V=255)	0 – 32	82 – 109	110 – 146	147 – 175	238 – 255

* Mode switch setting of the YDS-12

4-5. MODEL/DESTINATION

MODEL: Model name is detected.
The voltage at 72 pin (MODEL) of the IC502 is displayed. (Reference voltage: 5.0 V=255)

DESTINATION: Destination is detected.
The voltage at 71 pin (DEST) of the IC502 is displayed. (Reference voltage: 5.0 V=255)



MODEL

A/D conversion value (5.0 V=255)	26 – 43
Model name	R-S500

DESTINATION

A/D conversion value (5.0 V=255)	9 – 25	26 – 43	44 – 67	128 – 158	187 – 210
Destination	U	C	R	A	G

5. DOCK

5-1. LOOP BACK CHECK

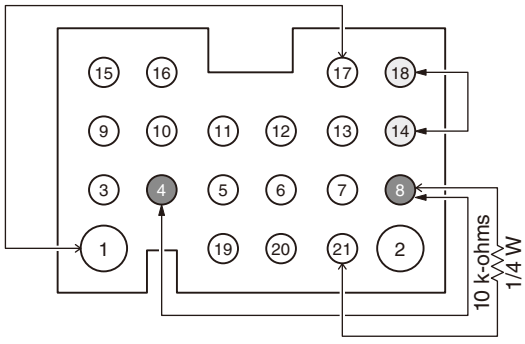
This menu is used to check the DOCK connector without the iPod itself.

With the power turned off, short the pins of the DOCK connector as shown in the figure below.

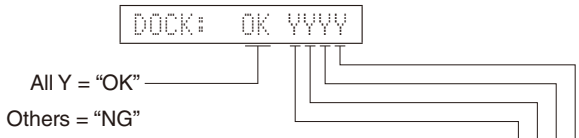
Start up the self-diagnostic function and select this menu.

The check result is displayed according to the following display specifications.

Note) Be sure to return the shorted pins to their original condition after executing this test.



DOCK CONNECTOR



Check item	Result		Display
UART loop back test	OK		Y
	NG		N
IPD_N_APDET (iPod accessory power) detection	IC502 pin No. 23	Low = YES	Y
		High = NO	N
IPD_N_DET (iPod installation to DOCK) detection	IC502 pin No. 68	Low = installed	Y
		High = not installed	N
DOCK_TYP (DOCK ID) detection	IC502 pin No. 69	10 k-ohms, 1/4 W pull down	Y
		Other	N

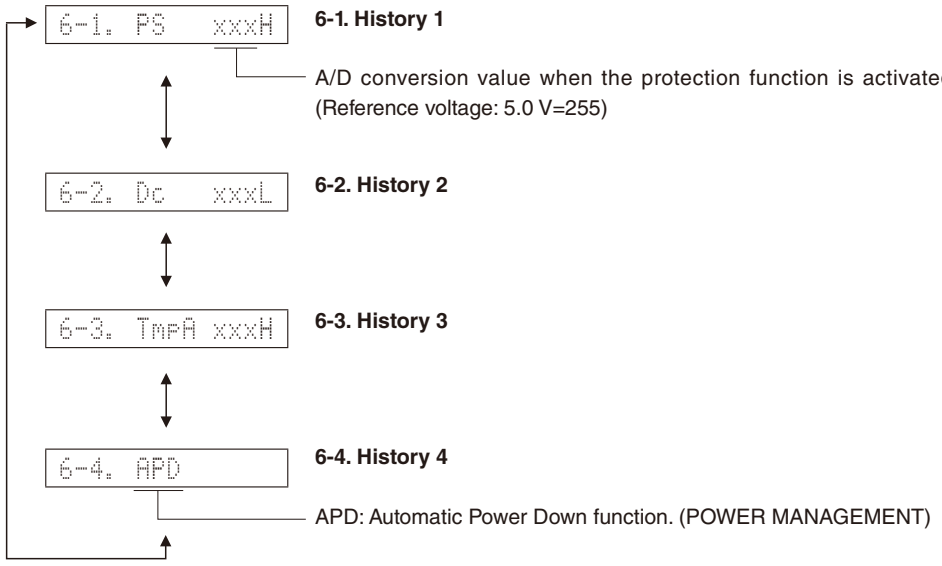
5-2. BT VERSION

The DOCK (Bluetooth module: YBA-10) version is displayed.

6. PROTECTION HISTORY

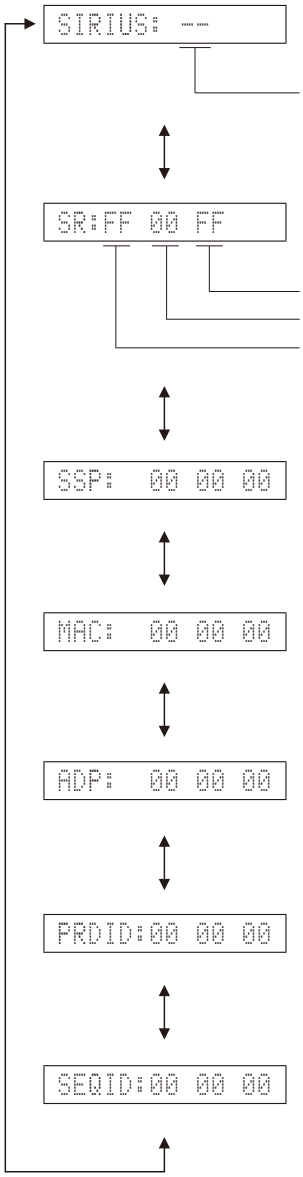
This menu is used to display the history of protection function.
All history of protection function will be erased by pressing the “CLEAR” key.

* Numeric values in the figure are given as reference only.



7. SIRIUS (U model)

This menu is used to display the information of SIRIUS.



7-1. SIRIUS

Connection of the SIRIUS antenna module is checked.

OK : Normal
NG : Abnormal
- - : No connected

7-2. SR

The connection information of the SIRIUS antenna module is displayed.

The result of antenna diagnostic mode (status)
Antenna error history (SSP Error Codes)
Antenna generation (gen_ID)

7-3. SSP

The SIRIUS version #0 (SSP) is displayed.

7-4. MAC

The SIRIUS version #1 (MAC) is displayed.

7-5. ADP

The SIRIUS version #2 (ADP) is displayed.

7-6. PRDID

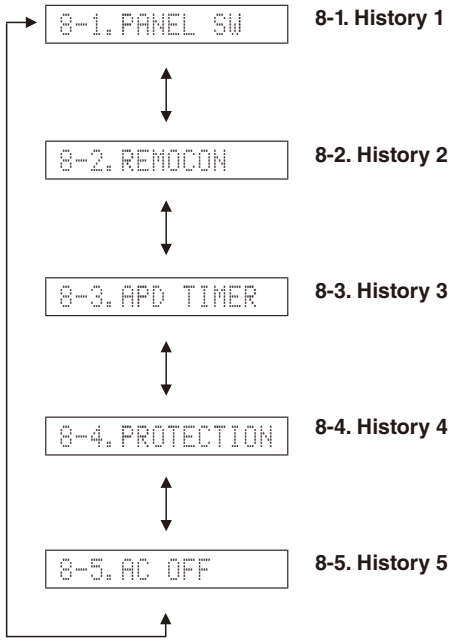
The PRD ID (Product ID) is displayed.

7-7. SEQID

The SEQ ID (Sequence ID) is displayed.

8. POWER OFF FACTOR HISTORY

This menu is used to display the history of power off factor.



Power off factor are as follows.

8-x PANEL SW	“MAIN ZONE ⏻” key (U, C, A models) / “⏻” (Power) key (R, G, L models) of this unit
8-x REMOCON	“RECEIVER ⏻” key on the remote control
8-x SLEEP	SLEEP timer
8-x APD TIMER	POWER MANAGEMENT (Automatic Power Down) timer
8-x PROTECTION	Protection
8-x AC OFF	AC OFF
8-x NO HISTORY	No history

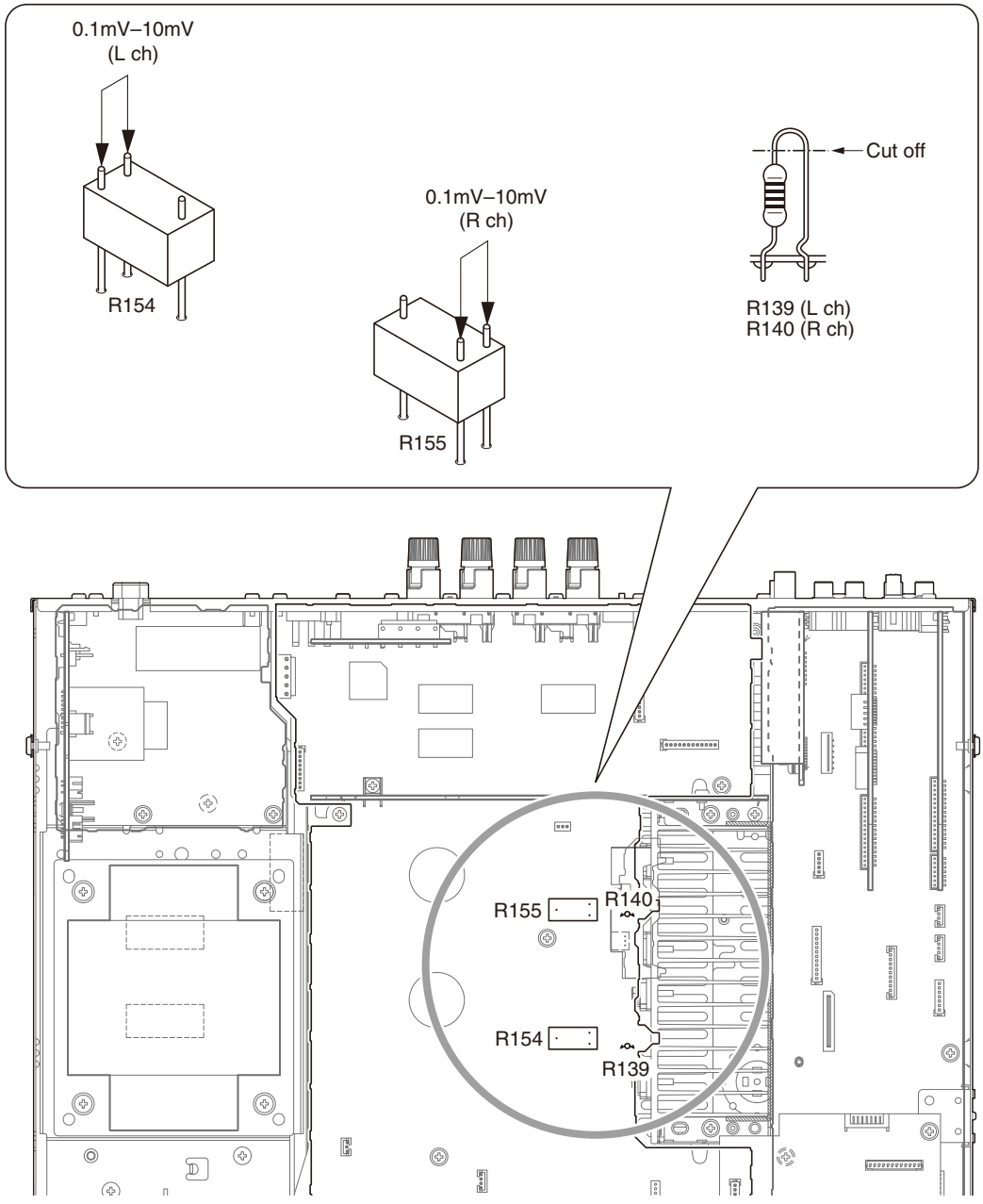
■ AMP ADJUSTMENT

● CONFIRMATION OF IDLING CURRENT

1. Right after power is turned on, confirm that the voltage across the terminals of R154 (L ch) and R155 (R ch) are between 0.1 mV and 10 mV.
2. If measured voltage exceeds 10 mV, open (cut off) R139 (L ch), R140 (R ch) and reconfirm the voltage.

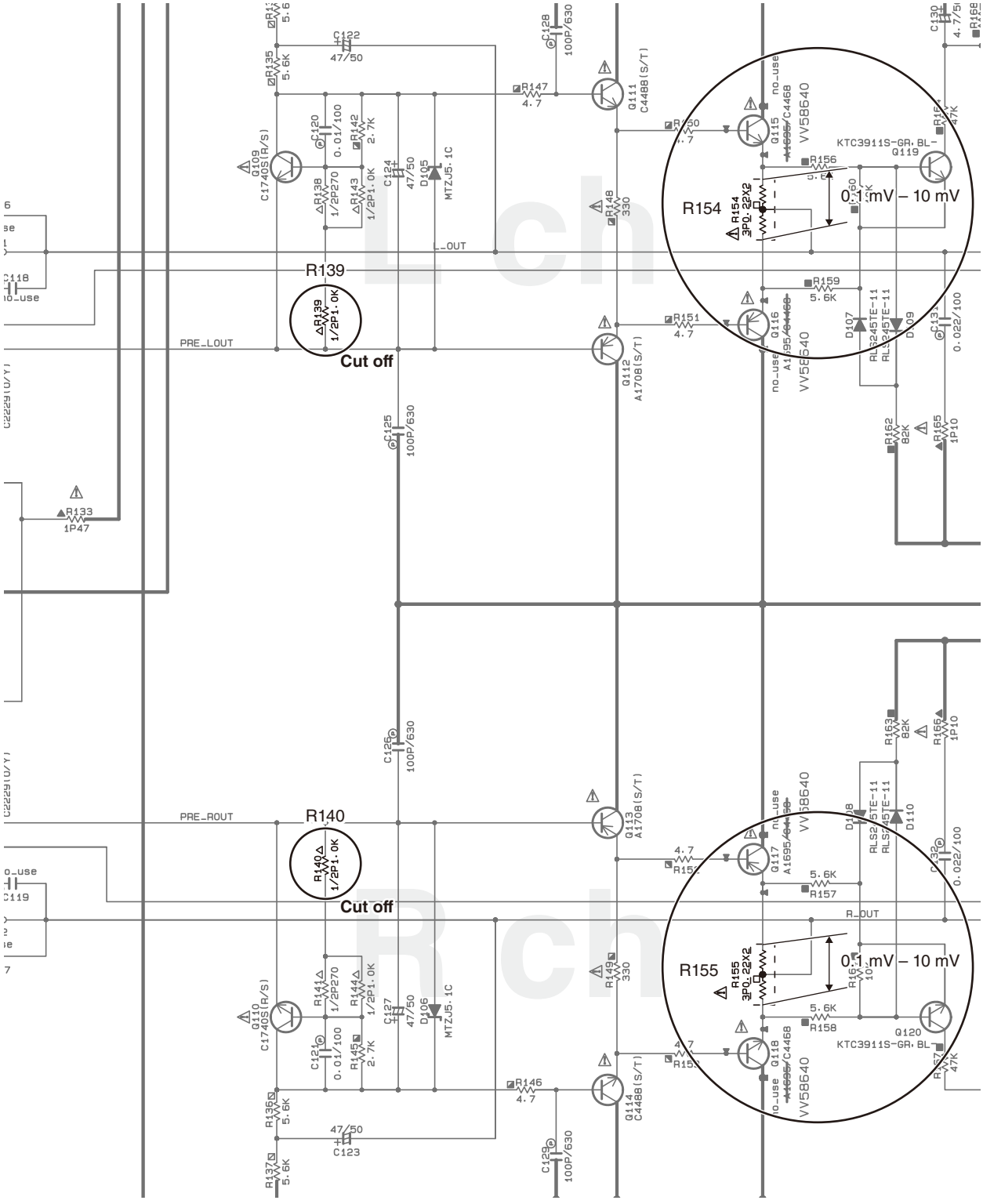
   Attention

   If the measured voltage exceeds 10 mV after repairing the power amplifier, check other parts again for any possible defect before cutting the resistor.
3. Confirm that the voltage is between 0.2 mV and 15 mV after 60 minutes.



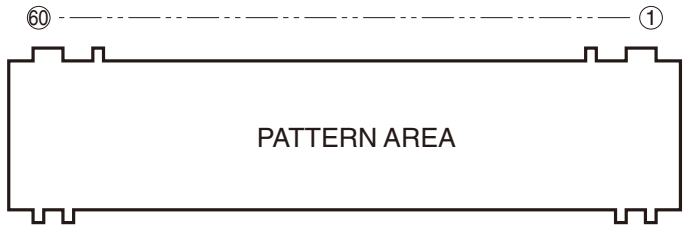
SCHEMATIC DIAGRAM

MAIN (1)



■ DISPLAY DATA

● V701 : 16-BT-164GNK (OPERATION P.C.B.)



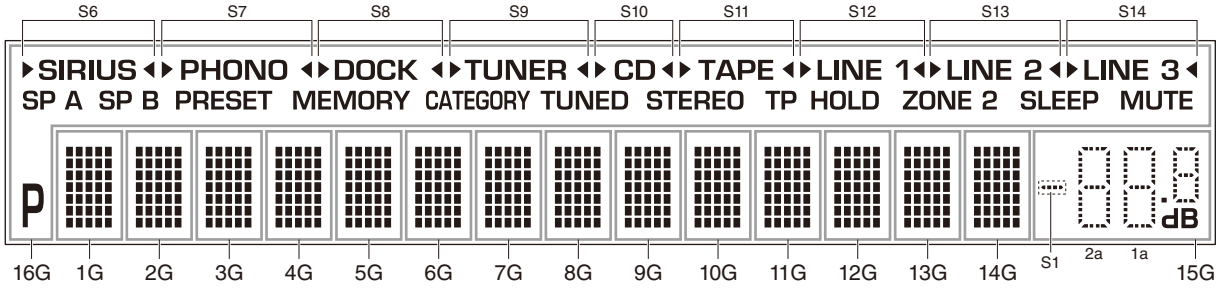
● PIN CONNECTION

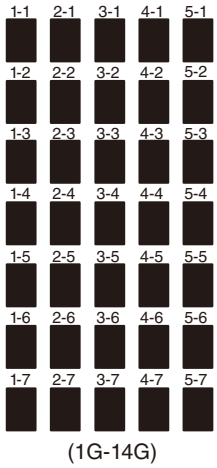
Pin No.	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
Connection	F2	NX	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31

Pin No.	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Connection	P32	P33	P34	P35	NX	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	NX	F1

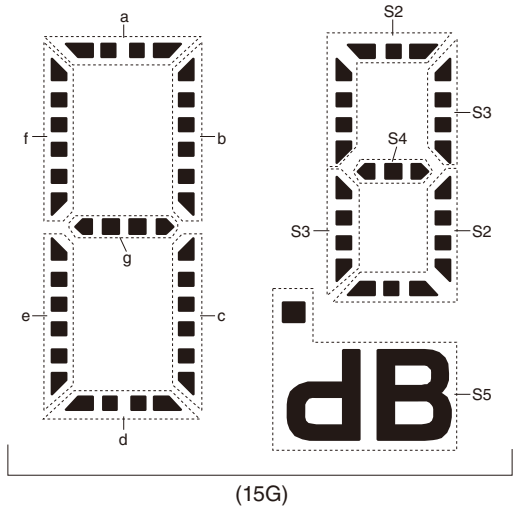
Note : 1) F1, F2 ..... Filament pin 2) NP ..... No pin 3) NX ..... No extend pin 4) DL ..... Datum line 5) 1G-16G ..... Grid pin

● GRID ASSIGNMENT





(1G-14G)



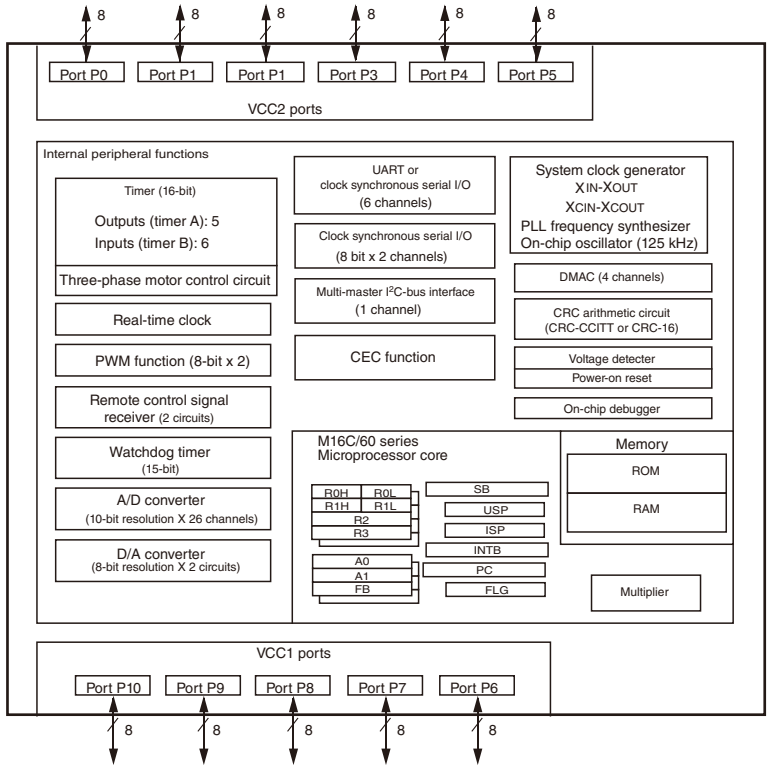
(15G)

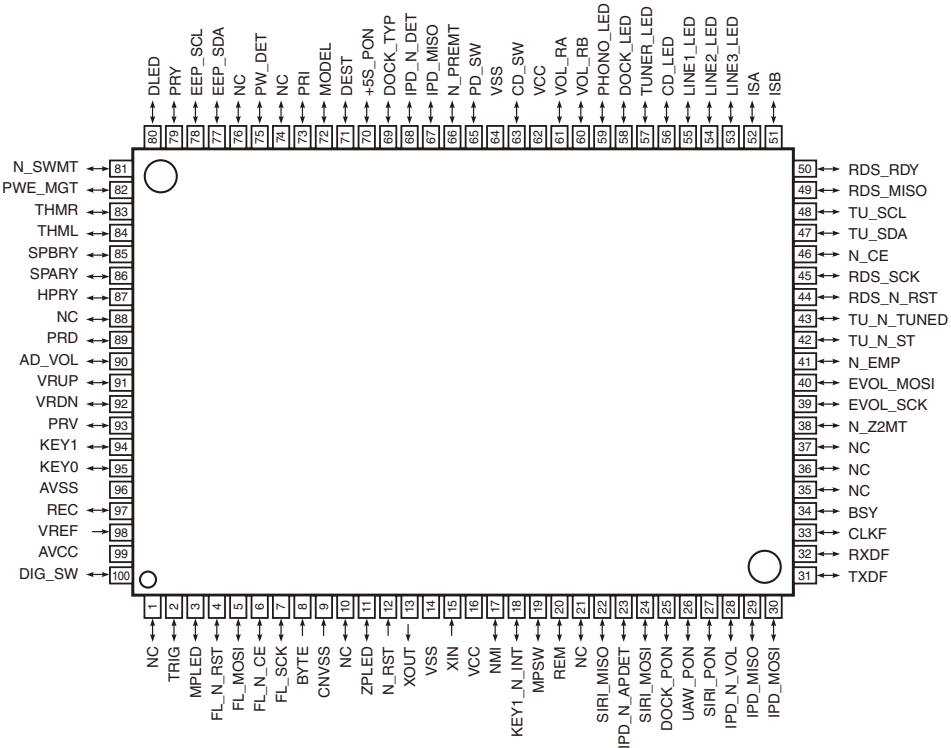
● **ANODE CONNECTION**

	1G-14G	15G	16G
P1	1-1	–	SP A
P2	2-1	–	SP B
P3	3-1	–	PRESET
P4	4-1	–	MEMORY
P5	5-1	–	CATEGORY
P6	1-2	–	TUNED
P7	2-2	–	STEREO
P8	3-2	–	TP
P9	4-2	–	HOLD
P10	5-2	S1	ZONE 2
P11	1-3	2a	SLEEP
P12	2-3	1a	MUTE
P13	3-3	2f	S6
P14	4-3	1f	SIRIUS
P15	5-3	2b	S7
P16	1-4	1b	PHONO
P17	2-4	2g	S8
P18	3-4	1g	DOCK
P19	4-4	2e	S9
P20	5-4	1e	TUNER
P21	1-5	2c	S10
P22	2-5	1c	CD
P23	3-5	2d	S11
P24	4-5	1d	TAPE
P25	5-5	S2	S12
P26	1-6	S3	LINE 1
P27	2-6	S4	S13
P28	3-6	S5	LINE 2
P29	4-6	–	S14
P30	5-6	–	LINE 3
P31	1-7	–	P
P32	2-7	–	–
P33	3-7	–	–
P34	4-7	–	–
P35	5-7	–	–

■ IC DATA

IC502: R5F364AENFA (FUNCTION P.C.B.)
Single chip 16-bit microprocessor





Pin No.	Port Name	Function Name (P.C.B.)	I/O			Detail of Function
			Power On	Standby	MCU Sleep [AC OFF]	
1	P9_6/ANEX1/SOUT4	NC	O	O	O	
2	P9_5/ANEX0/CLK4	TRIG	O	O	O	CONTROL +12V control
3	P9_4/DA1/TB4IN	MPLED	O	O	O	LED control for MAIN POWER ON display
4	P9_3/DA0/TB3IN	FL_N_RST	O	O	O	FL initial clear control
5	P9_2/TB2IN/SOUT3	FL_MOSI	SO	O	O	FL communication serial data
6	P9_1/TB1IN/SIN3	FL_N_CE	O	O	O	FL communication chip select
7	P9_0/TB0IN/CLK3	FL_SCK	SO	O	O	FL communication serial clock
8	BYTE	BYTE	MCU	MCU	MCU	Connect to Vss when in the single chip mode (External data bus width change: 16 bit)
9	CNVss	CNVSS	MCU	MCU	MCU	Low: processor mode select: single chip mode Hi: To the FLASH included boot mode
10	P8_7/XCIN	NC	O	O	O	
11	P8_6/XCOUT	ZPLED	O	O	O	
12	RESET	N_RST	MCU	MCU	MCU	Reset input
13	Xout	XOUT	MCU	MCU	MCU	Main clock 20MHz output
14	Vss	VSS	MCU	MCU	MCU	
15	Xin	XIN	MCU	MCU	MCU	Main clock 20MHz input
16	Vcc1	VCC	MCU	MCU	MCU	
17	P8_5/NMI/SD * Nch Open Drain	NMI	MCU	MCU	MCU	Unused, Pull Up
18	P8_4/INT2/ZP	KEY1_N_INT	IRQ	IRQ	I	Tuner control SW/ZONE2 POWER SW detection interrupt input With this interrupt, the KEY 1 voltage is read
19	P8_3/INT1	MPSW	I	IRQ	I	MAIN POWER SW detection interrupt input
20	P8_2/INT0	REM	IRQ	IRQ	I	Remote control pulse input detection interrupt input
21	P8_1/TA4IN/U/CTS5/ RTS5	NC	O	O	O	Free terminal
22	P8_0/TA4OUT/U// RXD5/SCL5	SIRI_MISO	SI	O	O	SIRIUS UART communication
23	P7_7/TA3IN/CLK5	IPD_N_APDET	I	I	I	iPod accessory power control
24	P7_6/TA3OUT/TXD5/ SDA5	SIRI_MOSI	SO	O	O	SIRIUS UART communication
25	P7_5/TA2IN/W	DOCK_PON	O	O	O	DOCK power supply ON/OFF control Hi = ON, Low = Off
26	P7_4/TA2OUT/W	UAW_PON	O	O	O	UAW power supply ON/OFF control Hi = ON, Low = Off
27	P7_3/CTS2/RTS2/ TA1IN/V	SIRI_PON	O	O	O	SIRIUS power supply ON/OFF control Hi = ON, Low = Off
28	P7_2/CLK2/TA1OUT/ V	IPD_N_VON	O	O	O	
29	P7_1/RXD2/SCL2/ TA0IN/TB5IN * Nch Open Drain	IPD_MISO	SI	IRQ	I	iPod UART communication iPod communication detection interrupt input when in the standby mode
30	P7_0/TXD2/SDA2/ TA0OUT * Nch Open Drain	IPD_MOSI	SO	O	O	iPod UART communication
31	P6_7/TXD1/SDA1	TXDF	SO	SO	[MCU]	For easy emulation For writing FLASH (Rx)
32	P6_6/RXD1/SCL1	RXDF	SI	SI	[MCU]	For easy emulation For writing FLASH (Tx)
33	P6_5/CLK1	CLKF	SO	SO	[MCU]	For easy emulation For writing FLASH (Clock)
34	P6_4/CTS1/RTS1/ CTS0/CLKS1	BSY	O	O	[MCU]	For easy emulation BUSY signal output for writing FLASH
35	P6_3/TXD0/SDA0	NC	O	O	O	I2C fs = 100k/400k
36	P6_2/RXD0/SCL0	NC	O	O	O	I2C fs = 100k/400k
37	P6_1/CLK0	NC	O	O	O	
38	P6_0/CTS0/RTS0	N_Z2MT	O	O	O	ZONE2 MUTE control Low = MUTE ON
39	P5_7/RDY/CLKOUT	EVOL_SCK	O	O	O	Electronic VOLUME control serial clock
40	P5_6/ALE	EVOL_MOSI	O	O	O	Electronic VOLUME control serial data
41	P5_5/HOLD	N_EPM	I	–	–	For writing FLASH (Low) Pull it down as it may fall in the Hiz state while the emulator is working
42	P5_4/HLDA	TU_N_ST	I	I	I	TUNER STEREO detection input
43	P5_3/BCLK	TU_N_TUNED	I	I	I	TUNER TUNED input
44	P5_2/RD	RDS_N_RST	O	O	O	RDS preset control
45	P5_1/WRH/BHE	RDS_SCK	O	O	O	Serial clock for RDS communication
46	P5_0/WRL/WR	N_CE	I	–	–	For writing FLASH (Hi)
47	P4_7/TXD7/SDA7/ /CS3	TU_SDA	SIO	O	O	TUNER communication I2C bus data
48	P4_6/RXD7/SCL7/ CS2	TU_SCL	SO	O	O	TUNER communication I2C bus clock
49	P4_5/CLK7/CS1	RDS_MISO	I	I	I	Serial data for RDS communication
50	P4_4/CTS7/RTS7/ CS0	RDS_RDY	I	I	I	RDS READY input terminal
51	P4_3/A19	ISB	I	I	I	Encoder phase detection input/output for Input selector
52	P4_2/A18	ISA	I	I	I	Encoder phase detection input/output for Input selector
53	P4_1/A17	LINE3_LED	O	O	O	LINE3 LED lighting control
54	P4_0/A16	LINE2_LED	O	O	O	LINE2 LED lighting control
55	P3_7/A15	LINE1_LED	O	O	O	LINE1 LED lighting control
56	P3_6/A14	CD_LED	O	O	O	CD LED lighting control
57	P3_5/A13	TUNER_LED	O	O	O	TUNER LED lighting control
58	P3_4/A12	DOCK_LED	O	O	O	DOCK LED lighting control
59	P3_3/A11	PHONO_LED	O	O	O	PHONO LED lighting control
60	P3_2/A10	VOL_RB	I	I	I	Encoder input for VOLUME UP/DOWN
61	P3_1/A9	VOL_RA	I	I	I	Encoder input for VOLUME UP/DOWN

Pin No.	Port Name	Function Name (P.C.B.)	I/O			Detail of Function
			Power On	Standby	MCU Sleep [AC OFF]	
62	Vcc2	VCC	MCU	MCU	MCU	
63	P3_0/A8	CD_SW	I	I	I	
64	Vss	VSS	MCU	MCU	MCU	
65	P2_7/AN2_7/A7	PD_SW	I	I	I	Pure Direct detection
66	P2_6/AN2_6/A6	N_PREMT	O	O	O	PRE OUT MUTE control Low = MUTE ON
67	P2_5/INT7/AN2_5/A5	IPD_MISO	IRQ	IRQ	IRQ	iPod communication detection interrupt input when in the standby mode (Used when 29 pin common terminal is not available)
68	P2_4/INT6/AN2_4/A4	IPD_DET	IRQ	IRQ	IRQ	iPod detection interrupt input
69	P2_3/AN2_3/A3	DOCK_TYPE	AD	AD	AD	Equipment type detection AD value input
70	P2_2/AN2_2/A2	+5S_PON	O	O	O	+5S drive control
71	P2_1/AN2_1/A1	DEST	AD	AD	AD	Destination discrimination AD value input
72	P2_0/AN2_0/A0	MODEL	AD	AD	AD	MODEL discrimination AD value input
73	P1_7/INT5/D15	PRI	IRQ	IRQ	IRQ	POWER AMP current protection detection interrupt input Low = Normal, Hi = Abnormal
74	P1_6/INT4/D14	NC	O	O	O	Free terminal
75	P1_5/INT3/D13	PW_DET	IRQ	IRQ	IRQ	PW_DET detection interrupt input
76	P1_4/D12	NC	O	O	O	Free terminal
77	P1_3/TXD6/SDA6/ D11	EEP_SDA	SO	O	O	EEPROM I2C communication bus data
78	P1_2/RXD6/SCL6/ D10	EEP_SCL	SO	O	O	EEPROM I2C communication bus clock
79	P1_1/CLK6/D9	PRY	O	O	O	Power relay control
80	P1_0/CTS6/RTS6/D8	DLED	O	O	O	Direct LED power supply control
81	P0_7/AN0_7/D7	N_SWMT	O	O	O	SUBWOOFER MUTE control Low = MUTE ON
82	P0_6/AN0_6/D6	PWR_MGT	I	I	I	Power management detection input
83	P0_5/AN0_5/D5	THMR	AD	AD	AD	Right-hand side heatsink temperature detection AD value input
84	P0_4/AN0_4/D4	THML	AD	AD	AD	Left-hand side heatsink temperature detection AD value input
85	P0_3/AN0_3/D3	SPBRY	O	O	O	Speaker B relay control
86	P0_2/AN0_2/D2	SPARY	O	O	O	Speaker A relay control
87	P0_1/AN0_1/D1	HPRY	O	O	O	Headphone relay control
88	P0_0/AN0_0/D0	NC	O	O	O	Free terminal
89	P10_7/AN7/KI3	PRD	AD	AD	AD	DC protection detection
90	P10_6/AN6/KI2	AD_VOL	AD	AD	AD	
91	P10_5/AN5/KI1	VRUP	O	O	O	
92	P10_4/AN4/KI0	VRDN	O	O	O	
93	P10_3/AN3	PRV	AD	AD	AD	Protection voltage detection AD value taken input
94	P10_2/AN2	KEY1	AD	AD	AD	KEY1 AD value taken input
95	P10_1/AN1	KEY0	AD	AD	AD	
96	Avss	AVSS	MCU	MCU	MCU	
97	P10_0/AN0	REC	AD	AD	AD	REC OUT selector voltage detection AD value taken input
98	Vref	VREF	MCU	MCU	MCU	
99	Avcc	AVCC	MCU	MCU	MCU	
100	P9_7/ADTRG/SIN4	DIG_SW	I	I	I	DIG_SW input

Key detection for A/D port
Key input (A/D) pull-up resistance 10 k-ohms

Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 2.2 k	+ 3.3 k	+ 4.7 k
V	0 – 0.22	0.23 – 0.64	0.65 – 1.06	1.07 – 1.55	1.56 – 2.09	2.10 – 2.62	2.63 – 3.94
A/D conversion value (5.0 V=255)	0 – 11	12 – 32	33 – 54	55 – 79	80 – 107	108 – 134	135 – 156
KEY0 (95 pin of the microprocessor)	DIMMER (U, C, R, A, L models) TP (G model)	FM MODE / INFO (U, C, R, A, L models) INFO (G model)	MEMORY	CLEAR	ZONE2 CONTROL (U, C, A models)	SPEAKERS A	SPEAKERS B

Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 2.2 k	+ 3.3 k	+ 4.7 k
V	0 – 0.22	0.23 – 0.64	0.65 – 1.06	1.07 – 1.55	1.56 – 2.09	2.10 – 2.62	2.63 – 3.94
A/D conversion value (5.0 V=255)	0 – 11	12 – 32	33 – 54	55 – 79	80 – 107	108 – 134	135 – 156
KEY1 (94 pin of the microprocessor)	PRESET <	PRESET >	FM	AM	TUNING/CH << (U model) TUNING << (C, R, A, G, L models)	TUNING/CH >> (U model) TUNING >> (C, R, A, G, L models)	ZONE 2 (U, C, A models)

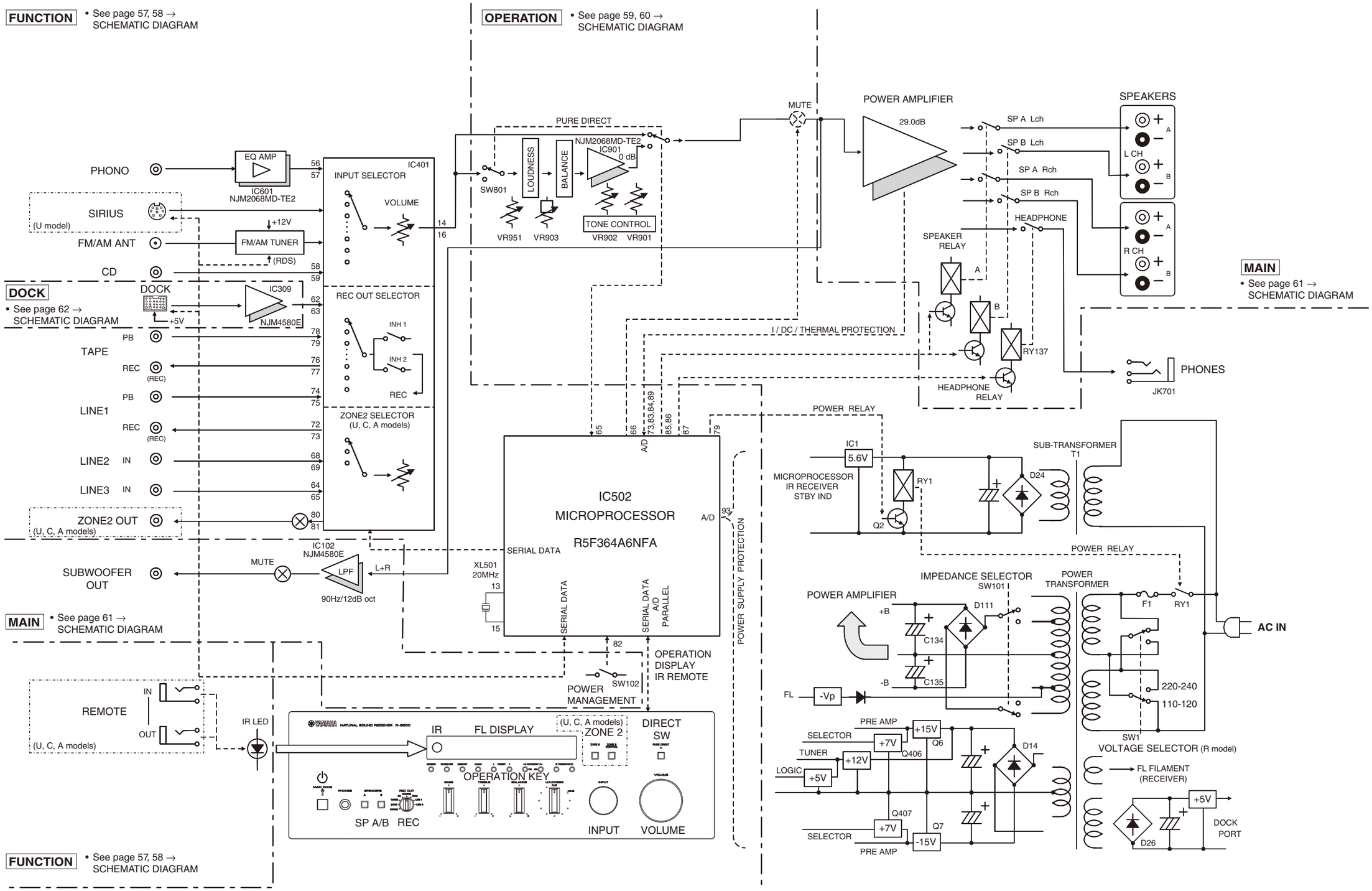
Destination detection for AD port
Pull-up resistance 10 k-ohms

R550 (FUNCTION P.C.B.)	820	1.5 k	2.7 k	12 k	33 k
V	0.15 – 0.49	0.5 – 0.84	0.85 – 1.88	1.89 – 3.29	3.3 - 4.47
Destination	U	C	R, L	A	G
A/D conversion value (5.0 V=255)	9 – 25	26 – 43	44 – 67	128 – 158	187 – 210

Model detection for A/D port
Model input (A/D) pull-up resistance 10 k-ohms

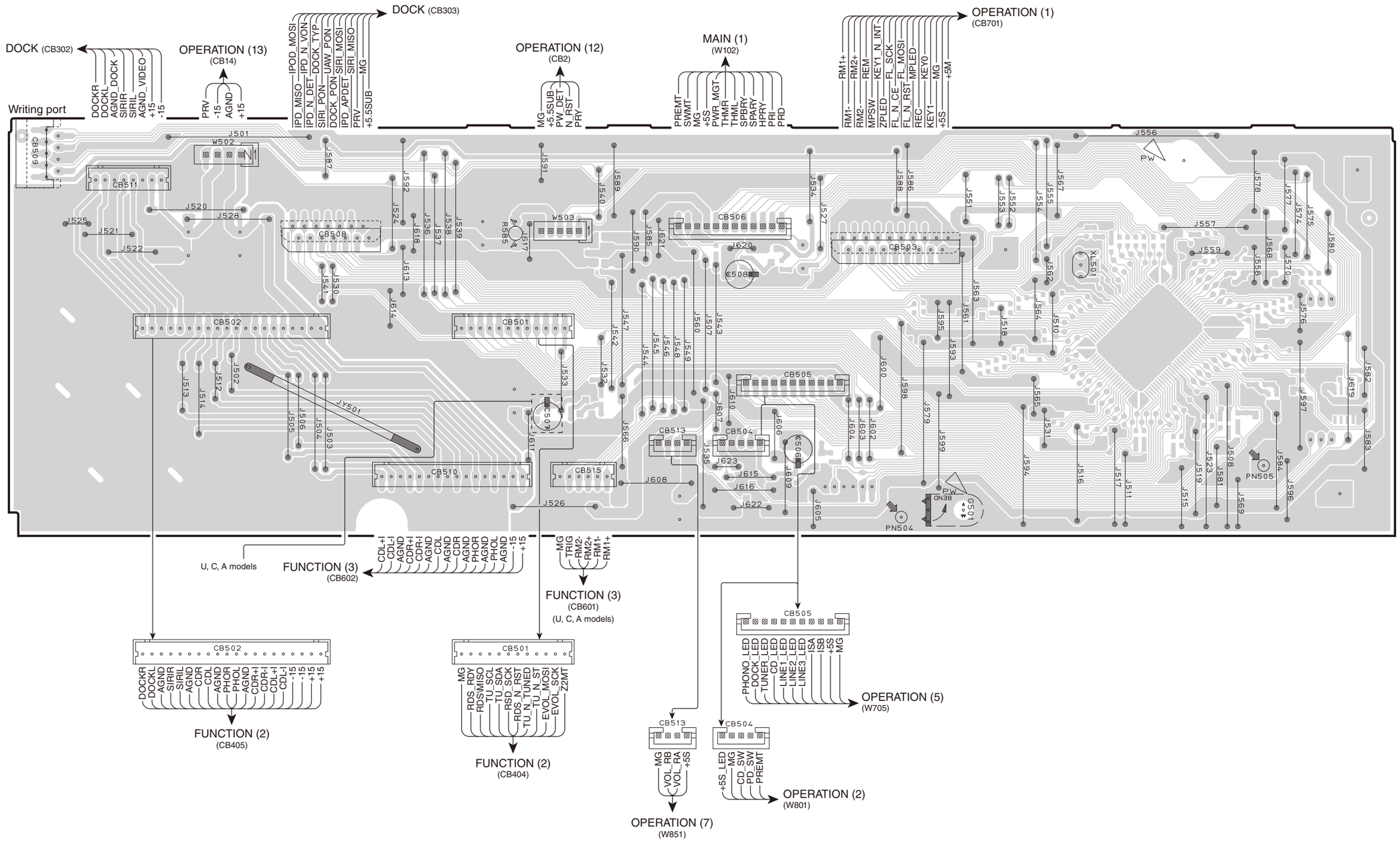
R516 (FUNCTION P.C.B.)	1.5 k
V	0.5 – 0.84
Model name	R5 (R-S500)
A/D conversion value (5.0 V=255)	26-43

■ BLOCK DIAGRAM



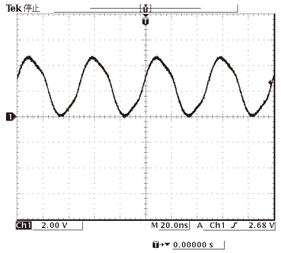
■ PRINTED CIRCUIT BOARDS

FUNCTION (1) P.C.B. (Side A)

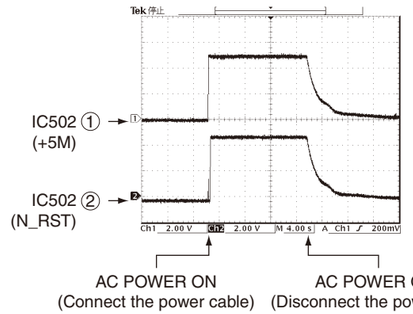


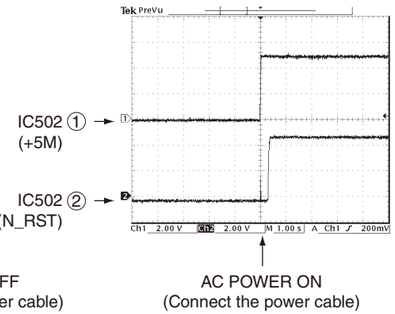
FUNCTION (1) P.C.B. (Side B)

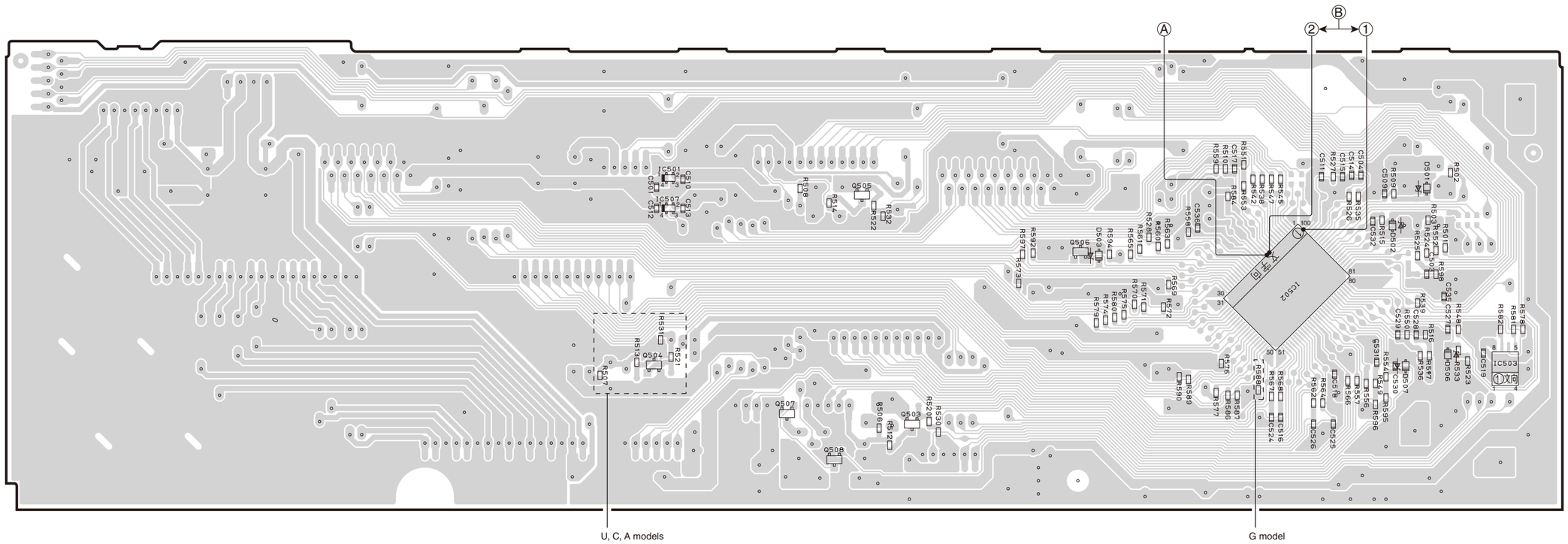
POINT Ⓐ XL501 (Pin 13 of IC502)



POINT Ⓑ ①/ IC502 (99 pin, +5M), ②/ IC502 (12 pin, N_RST)



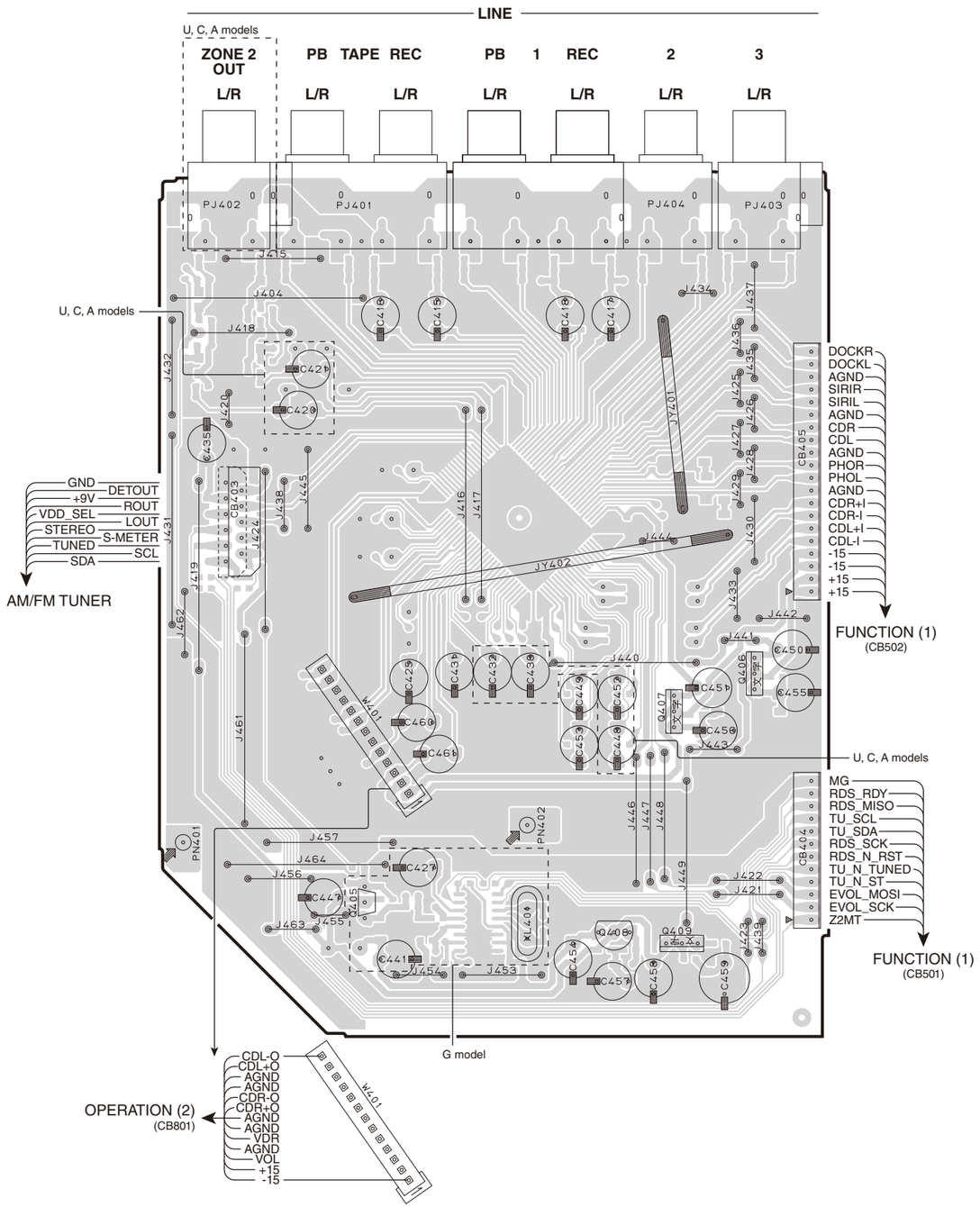




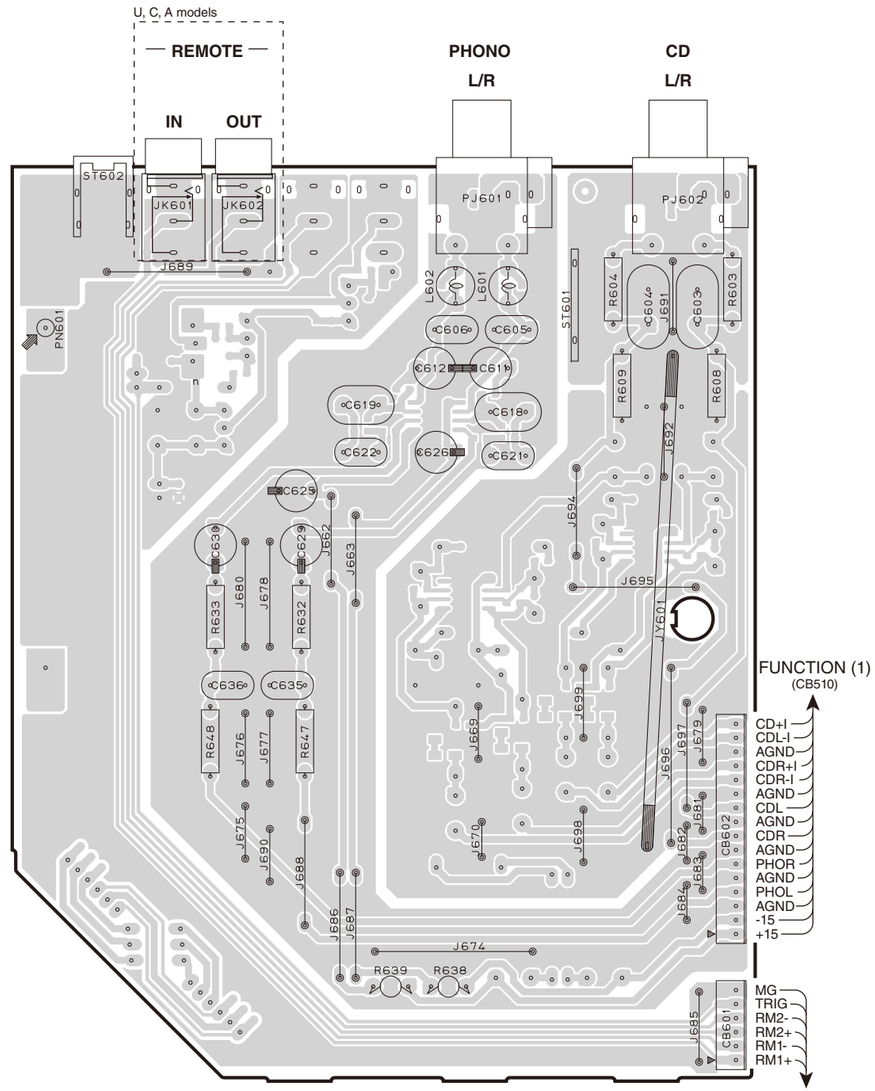
• Semiconductor Location

Ref no.	Location
D501	I3
D502	I4
D503	G4
D506	I4
D507	I4
IC501	E3
IC502	H4
IC503	I4
IC507	E3
Q503	F5
Q504	E4
Q505	F3
Q506	G4
Q507	E5
Q508	F5

FUNCTION (2) P.C.B. (Side A)



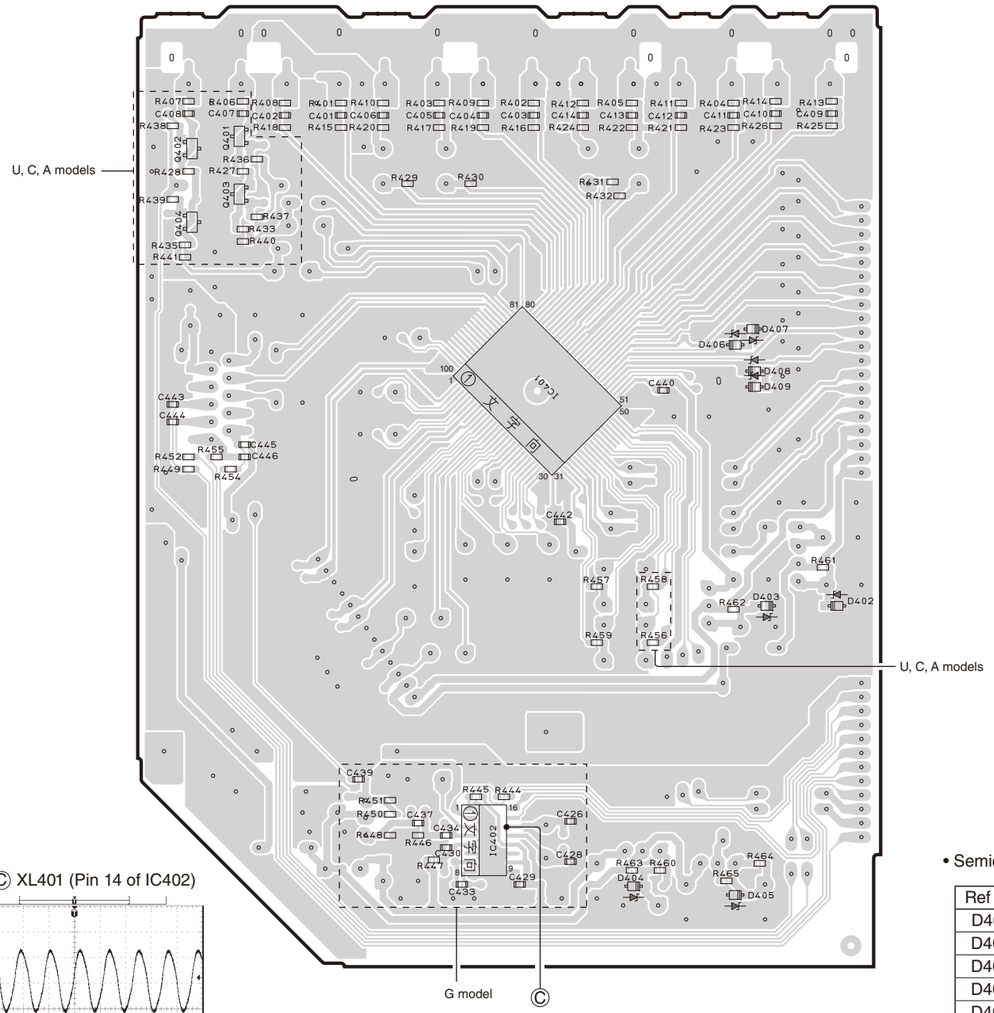
FUNCTION (3) P.C.B. (Side A)



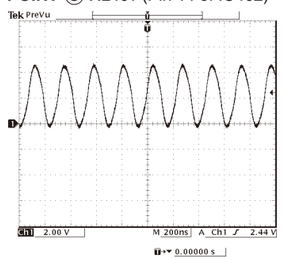
• Semiconductor Location

Ref no.	Location
Q405	C6
Q406	D5
Q407	D5
Q408	D6
Q409	D6

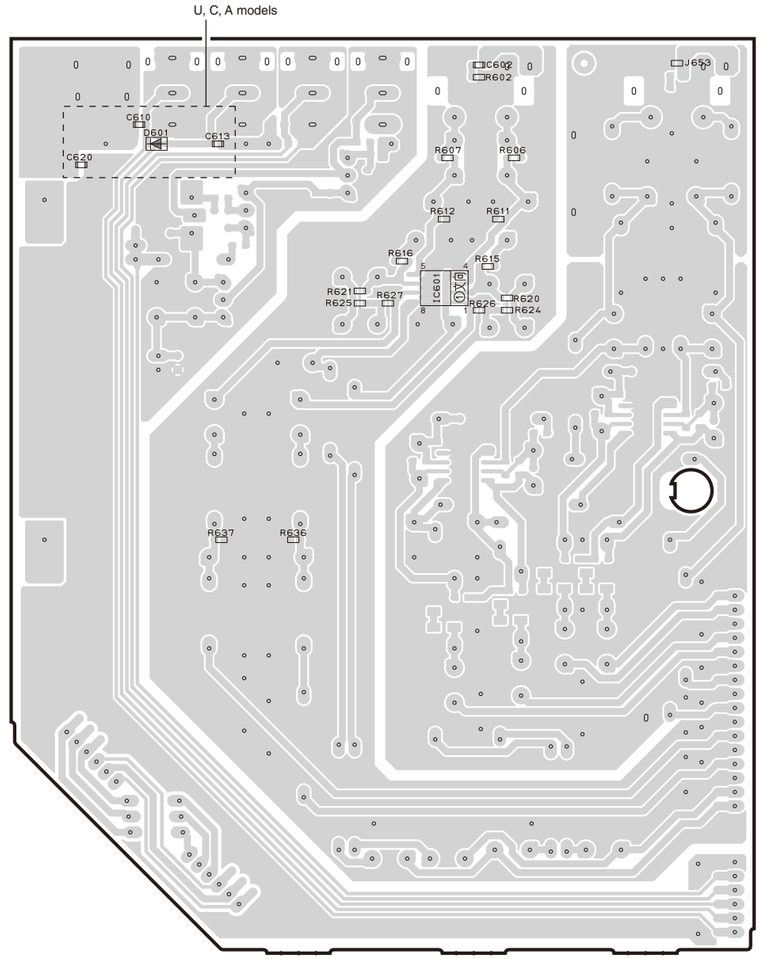
FUNCTION (2) P.C.B. (Side B)



POINT Ⓒ XL401 (Pin 14 of IC402)



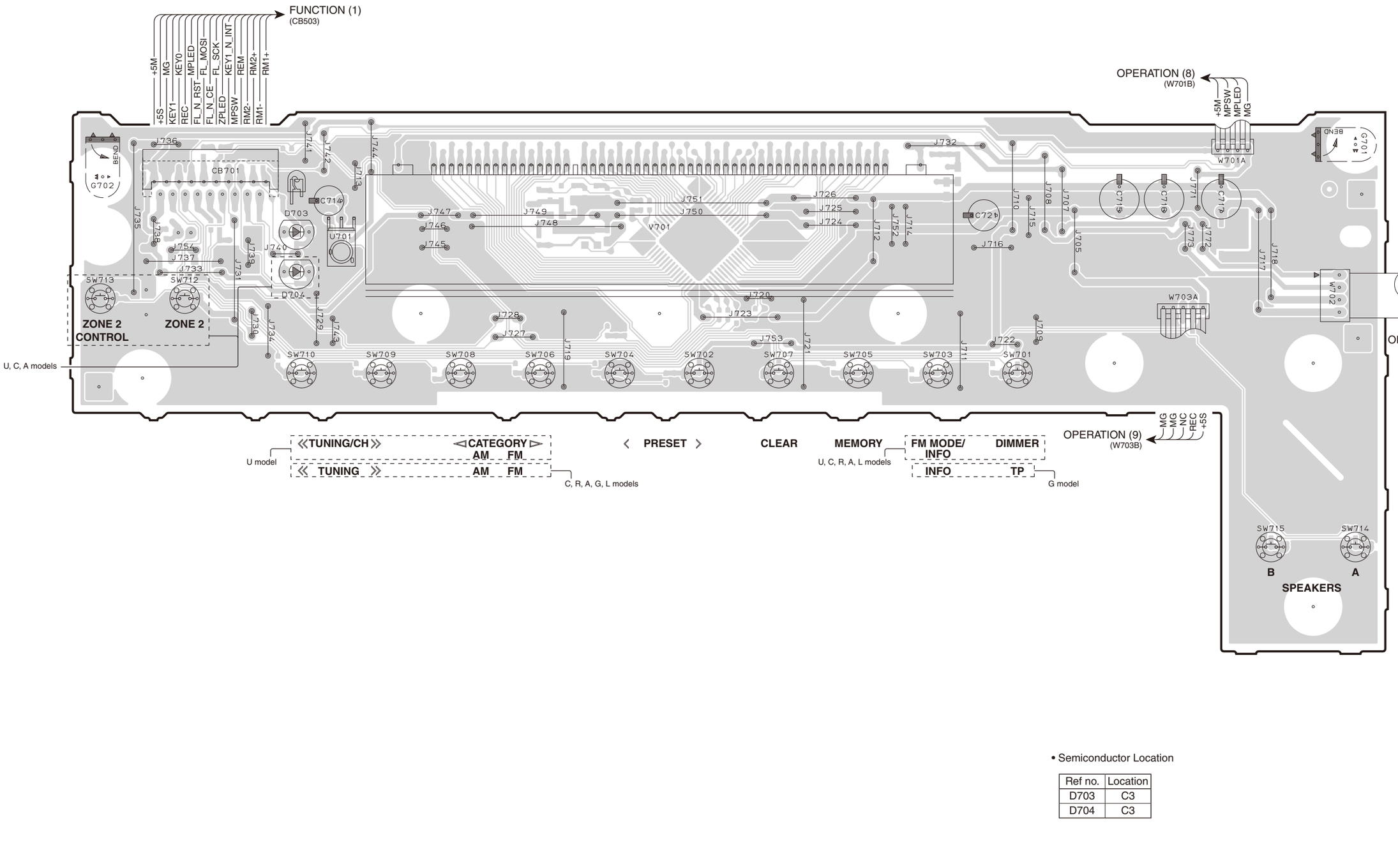
FUNCTION (3) P.C.B. (Side B)



• Semiconductor Location

Ref no.	Location	Ref no.	Location
D401	C6	D601	G3
D402	E5	IC401	C4
D403	D5	IC402	C6
D404	D6	IC601	H4
D405	D6	Q401	B3
D406	D4	Q402	B3
D407	D4	Q403	B3
D408	D4	Q404	B3
D409	D4		

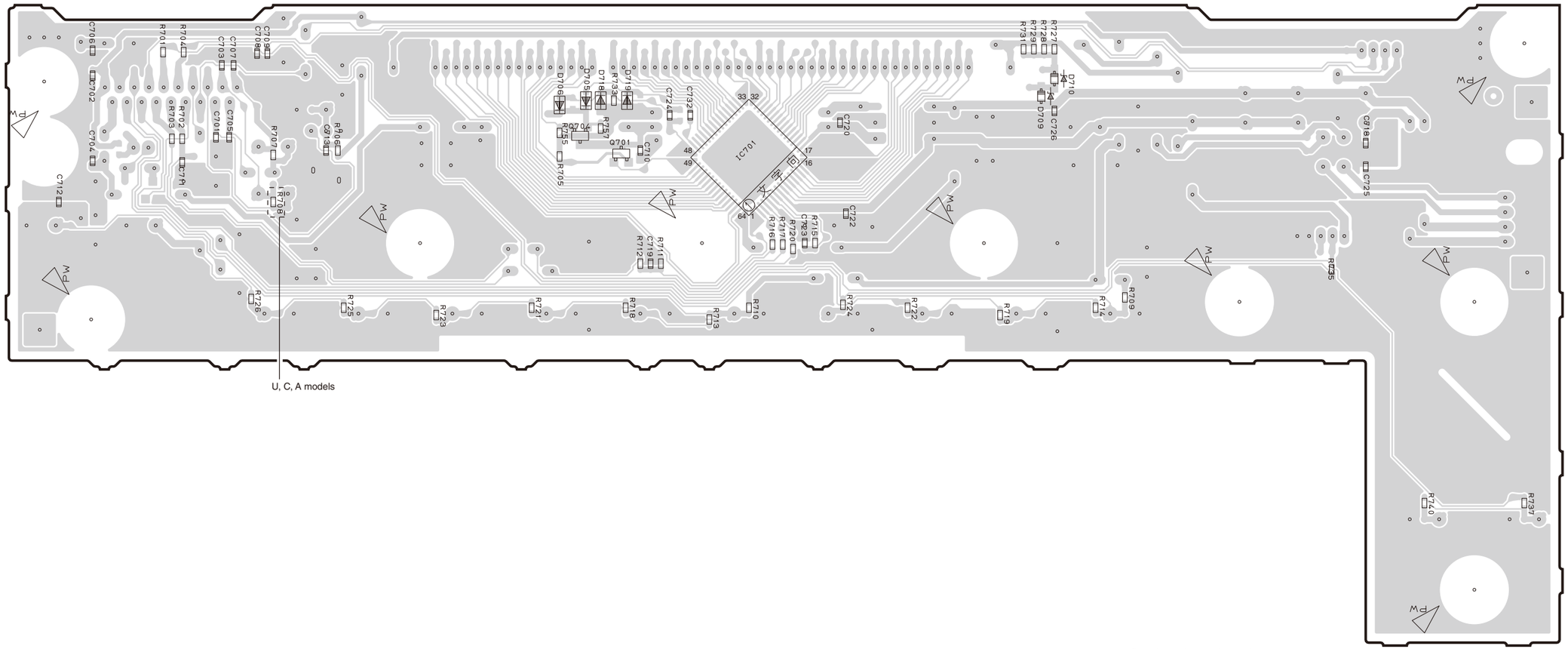
OPERATION (1) P.C.B. (Side A)



• Semiconductor Location

Ref no.	Location
D703	C3
D704	C3

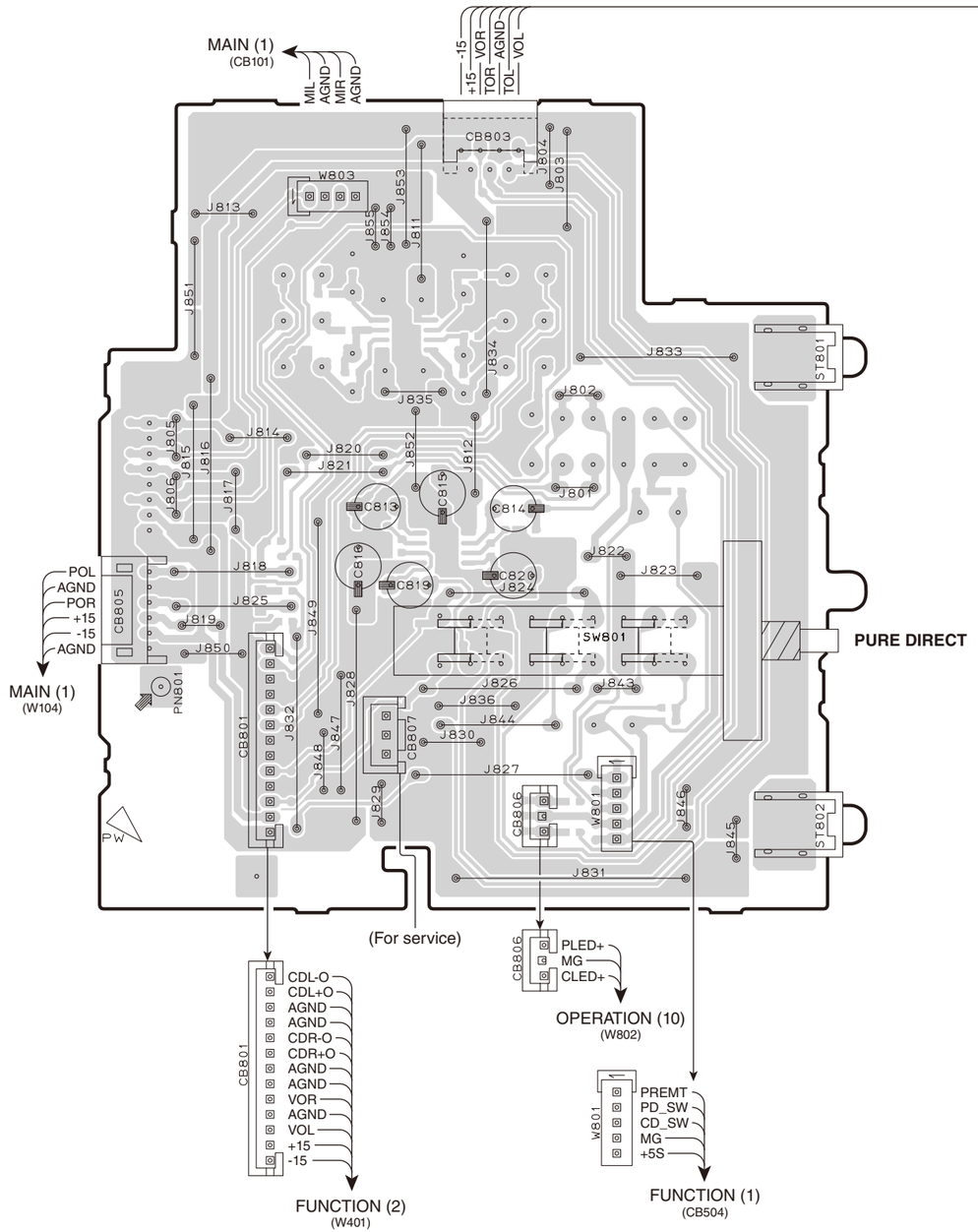
OPERATION (1) P.C.B. (Side B)



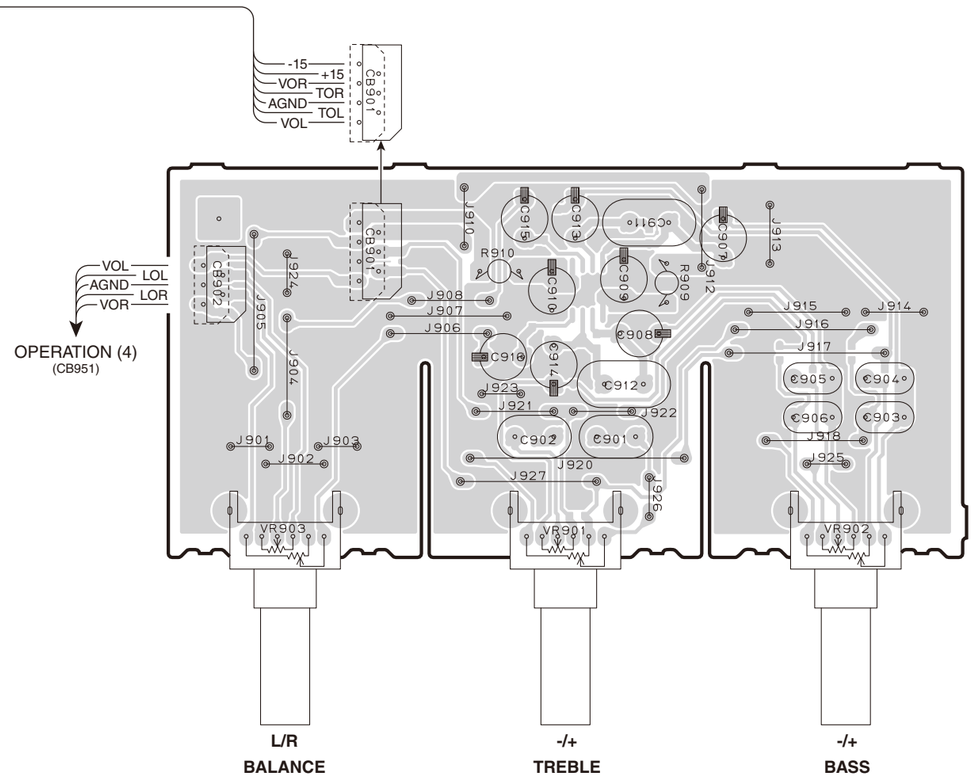
• Semiconductor Location

Ref no.	Location
D705	D3
D706	D3
D709	G3
D710	G3
D718	E3
D719	E3
IC701	E3
Q701	E3
Q704	D3

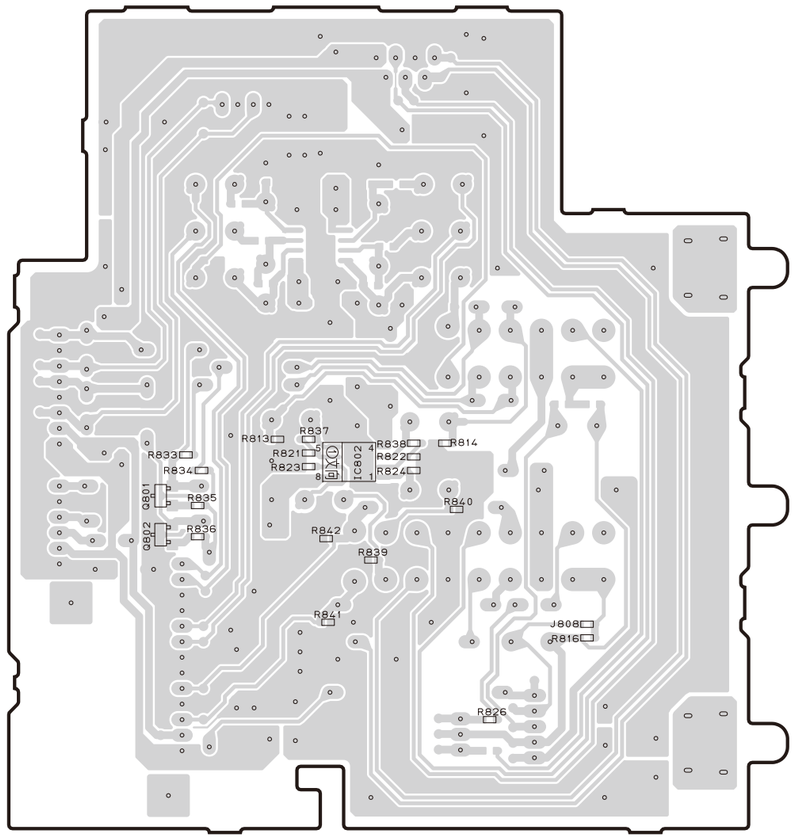
OPERATION (2) P.C.B. (Side A)



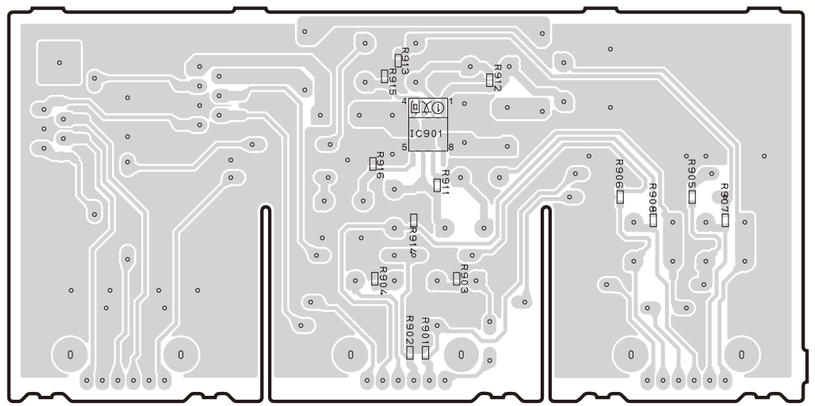
OPERATION (3) P.C.B. (Side A)



OPERATION (2) P.C.B. (Side B)



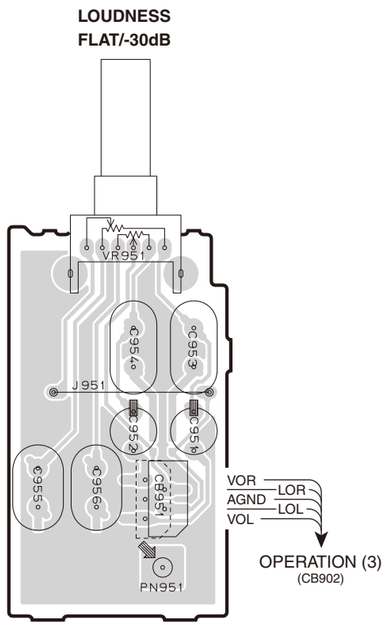
OPERATION (3) P.C.B. (Side B)



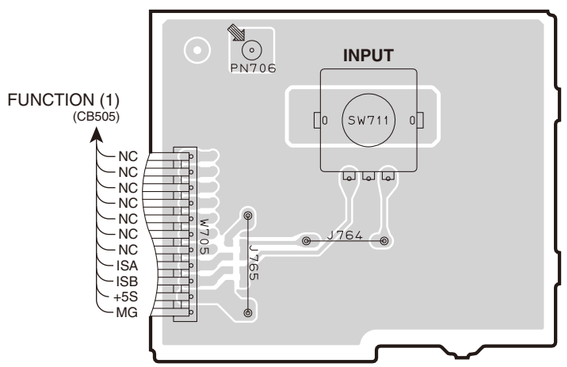
• Semiconductor Location

Ref no.	Location
IC802	C4
IC901	H3
Q801	B4
Q802	B5

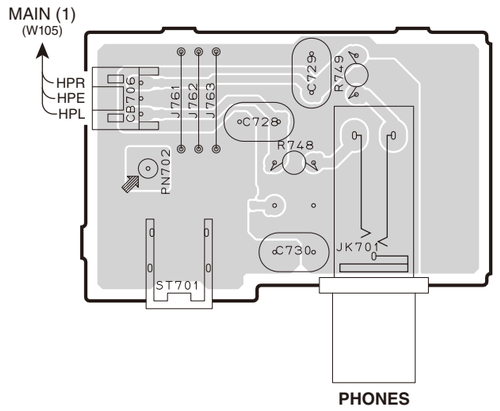
OPERATION (4) P.C.B. (Side A)



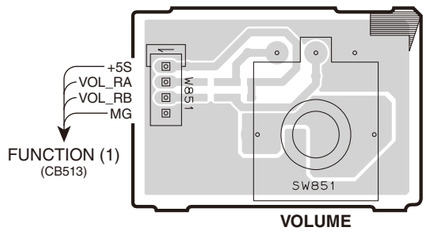
OPERATION (5) P.C.B. (Side A)



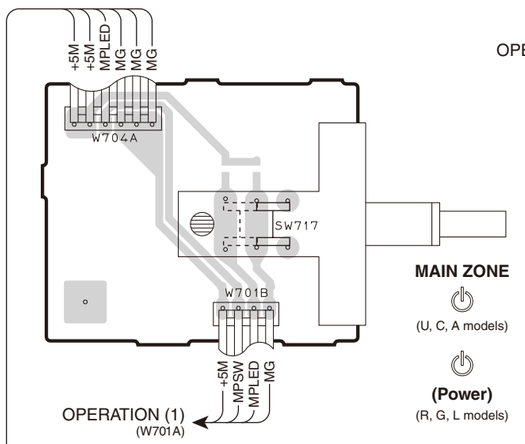
OPERATION (6) P.C.B. (Side A)



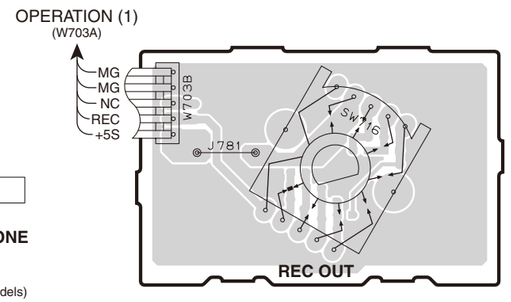
OPERATION (7) P.C.B. (Side A)



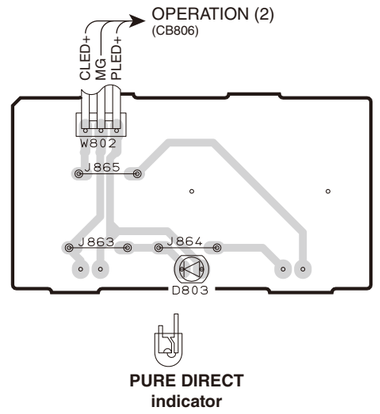
OPERATION (8) P.C.B. (Side A)



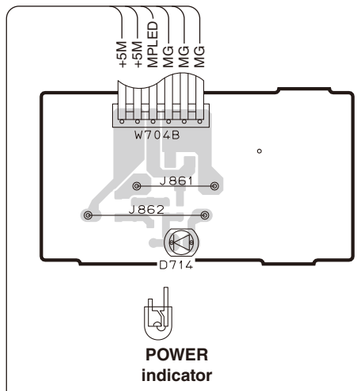
OPERATION (9) P.C.B. (Side A)



OPERATION (10) P.C.B. (Side A)



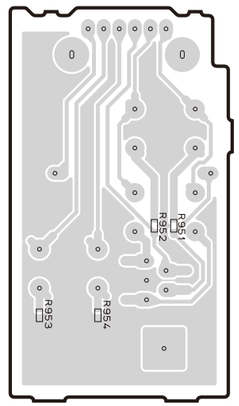
OPERATION (11) P.C.B. (Side A)



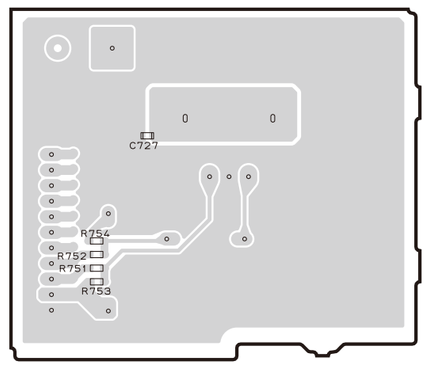
• Semiconductor Location

Ref no.	Location
D714	I6
D803	G6

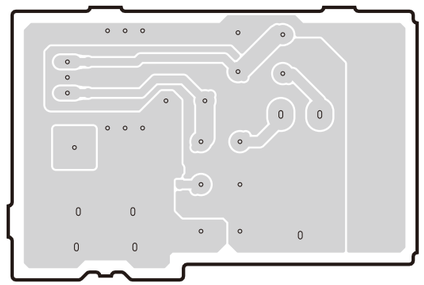
OPERATION (4) P.C.B. (Side B)



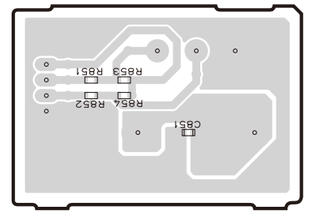
OPERATION (5) P.C.B. (Side B)



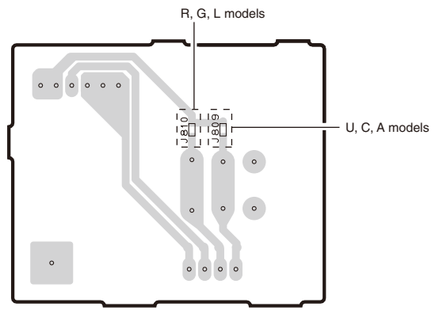
OPERATION (6) P.C.B. (Side B)



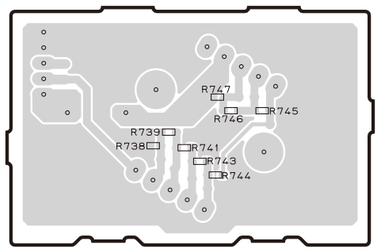
OPERATION (7) P.C.B. (Side B)



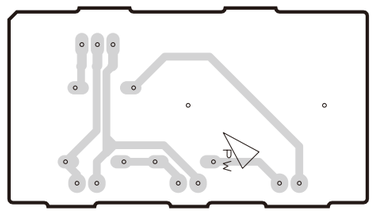
OPERATION (8) P.C.B. (Side B)



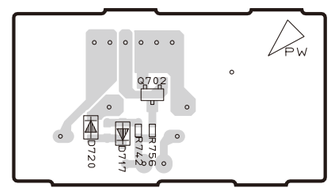
OPERATION (9) P.C.B. (Side B)



OPERATION (10) P.C.B. (Side B)



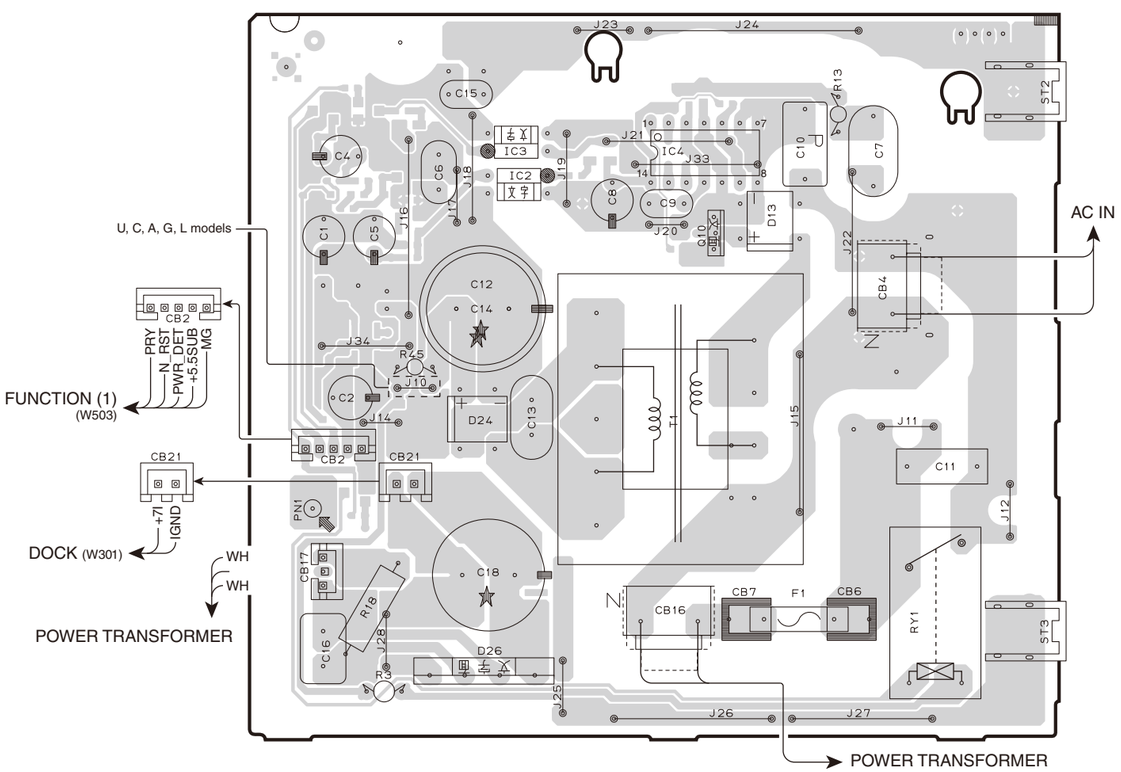
OPERATION (11) P.C.B. (Side B)



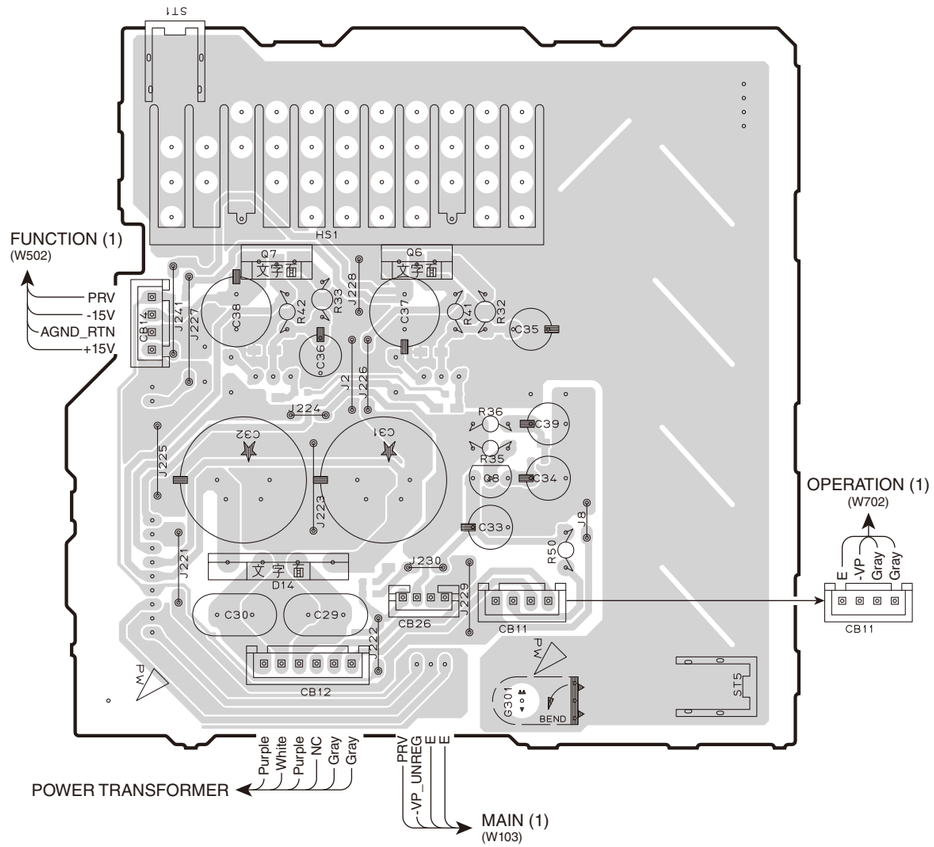
• Semiconductor Location

Ref no.	Location
D717	I6
D720	I6
Q702	I6

OPERATION (12) P.C.B. (Side A)

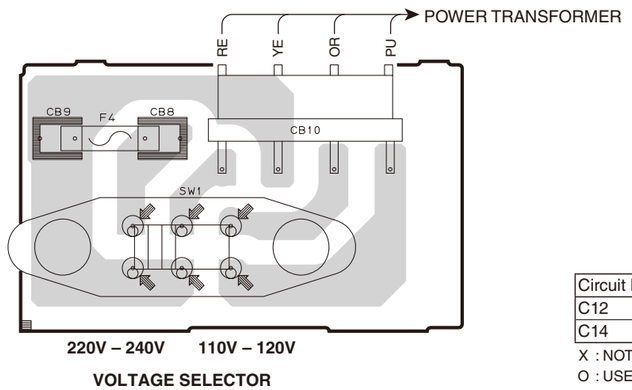


OPERATION (13) P.C.B. (Side A)



OPERATION (14) P.C.B. (Side A)

R model



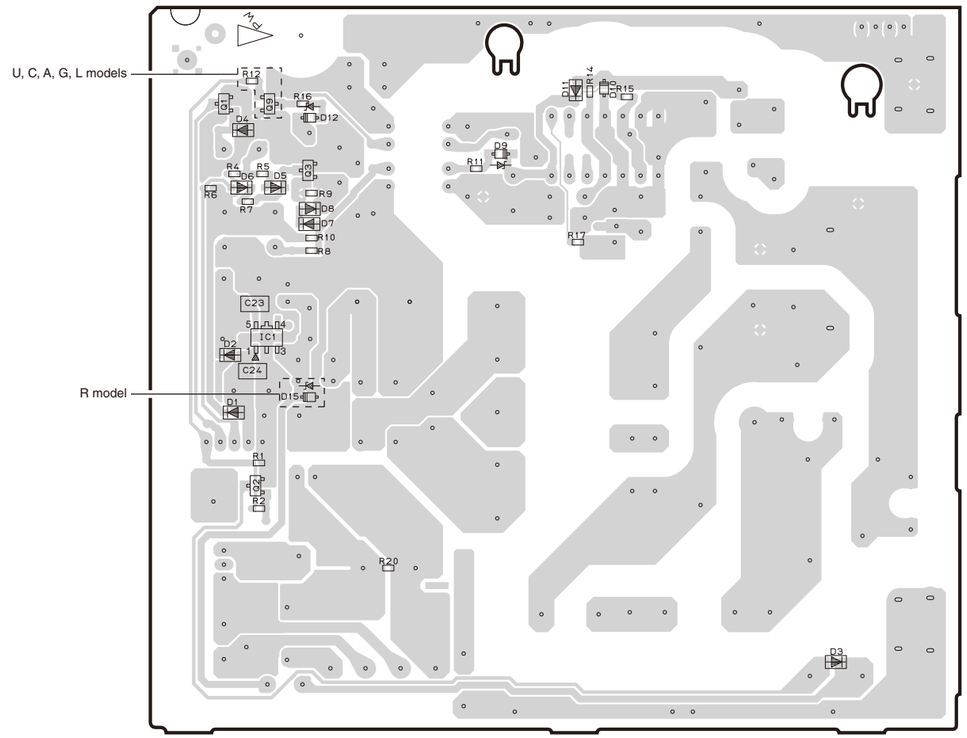
Circuit No.	U, C, A, G, L	R
C12	X	O
C14	O	X

X : NOT USED
O : USED/APPLICABLE

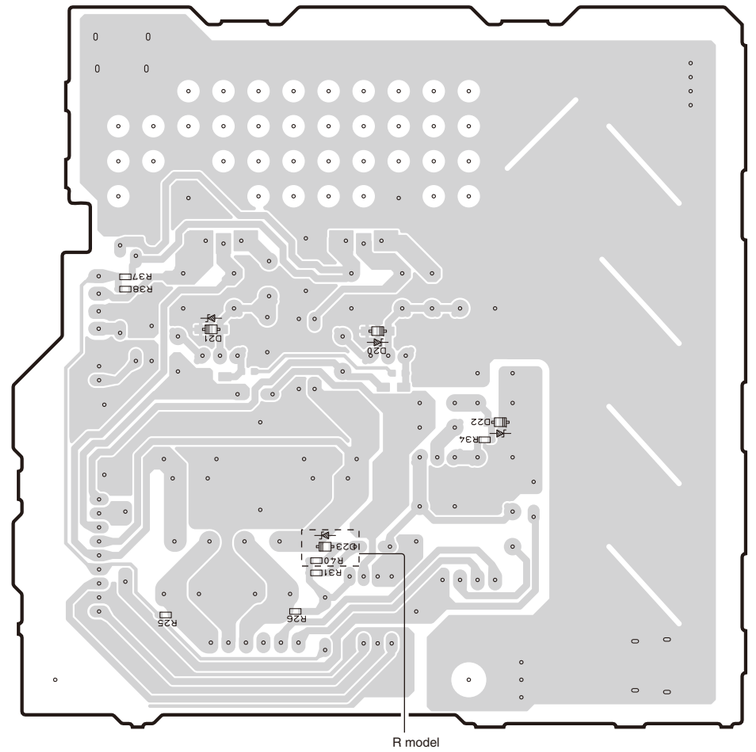
• Semiconductor Location

Ref no.	Location
D13	D3
D14	G4
D24	C4
D26	C5
IC2	C3
IC3	C2
IC4	D3
Q6	H3
Q7	G3
Q8	H4
Q10	D3

OPERATION (12) P.C.B. (Side B)

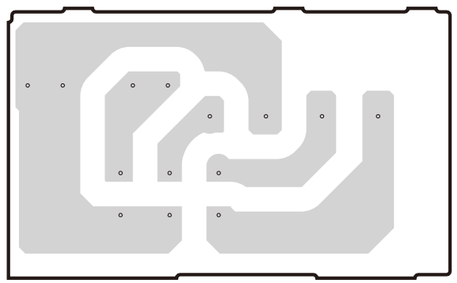


OPERATION (13) P.C.B. (Side B)



OPERATION (14) P.C.B. (Side B)

R model



• Semiconductor Location

Ref no.	Location	Ref no.	Location
D1	B4	D12	C2
D2	B3	D15	C4
D3	E5	D20	H3
D4	B2	D21	G3
D5	B3	D22	I4
D6	B3	D23	H4
D7	C3	IC1	B3
D8	C3	Q1	B2
D9	C3	Q2	B4
D10	D2	Q3	C3
D11	D2	Q9	B2

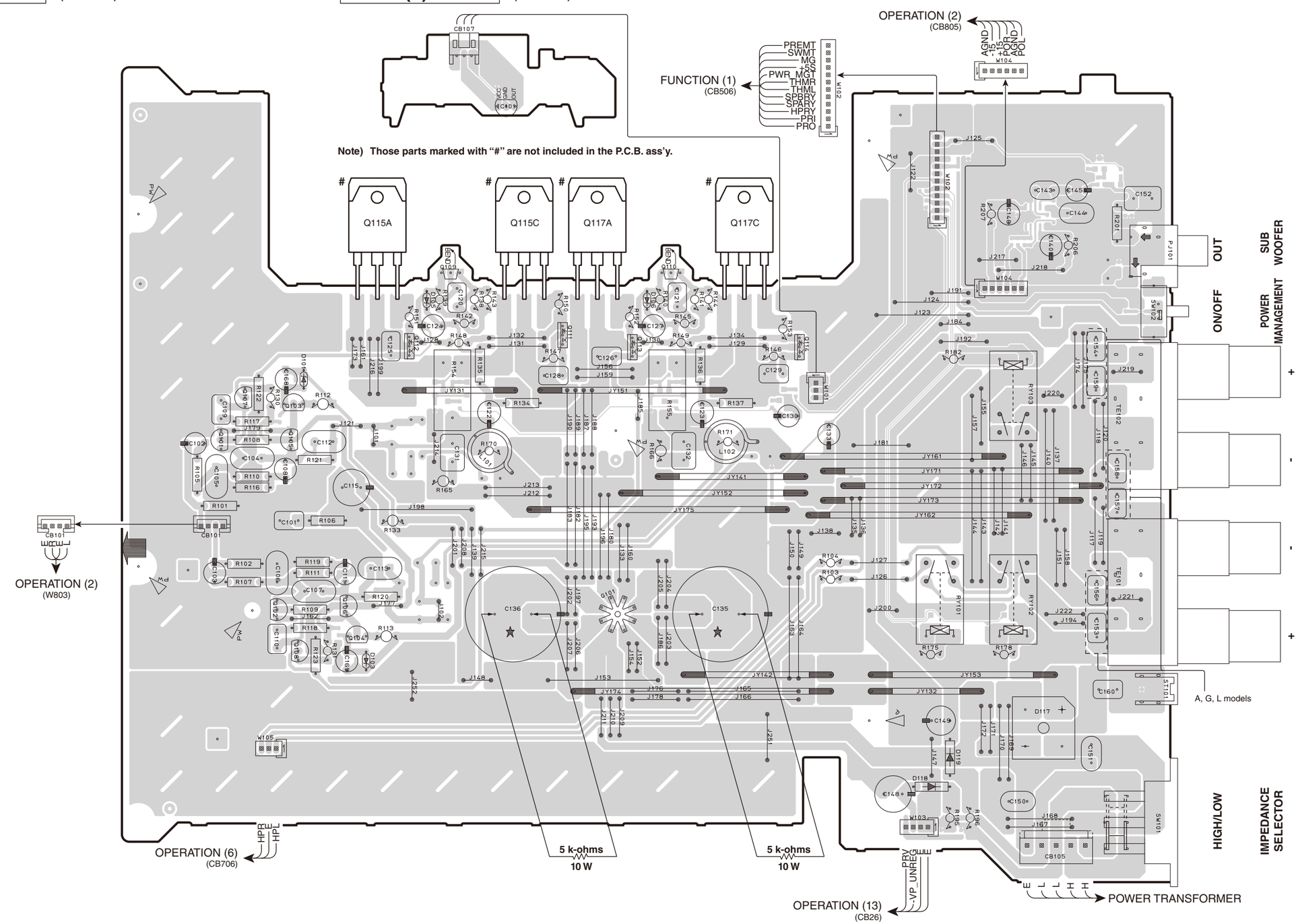
Notes)

Safety measures

- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5k-ohms/10W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each.
  C134 and C135 on MAIN (1) P.C.B.

MAIN (1) P.C.B. (Side A)

MAIN (2) P.C.B. (Side A)

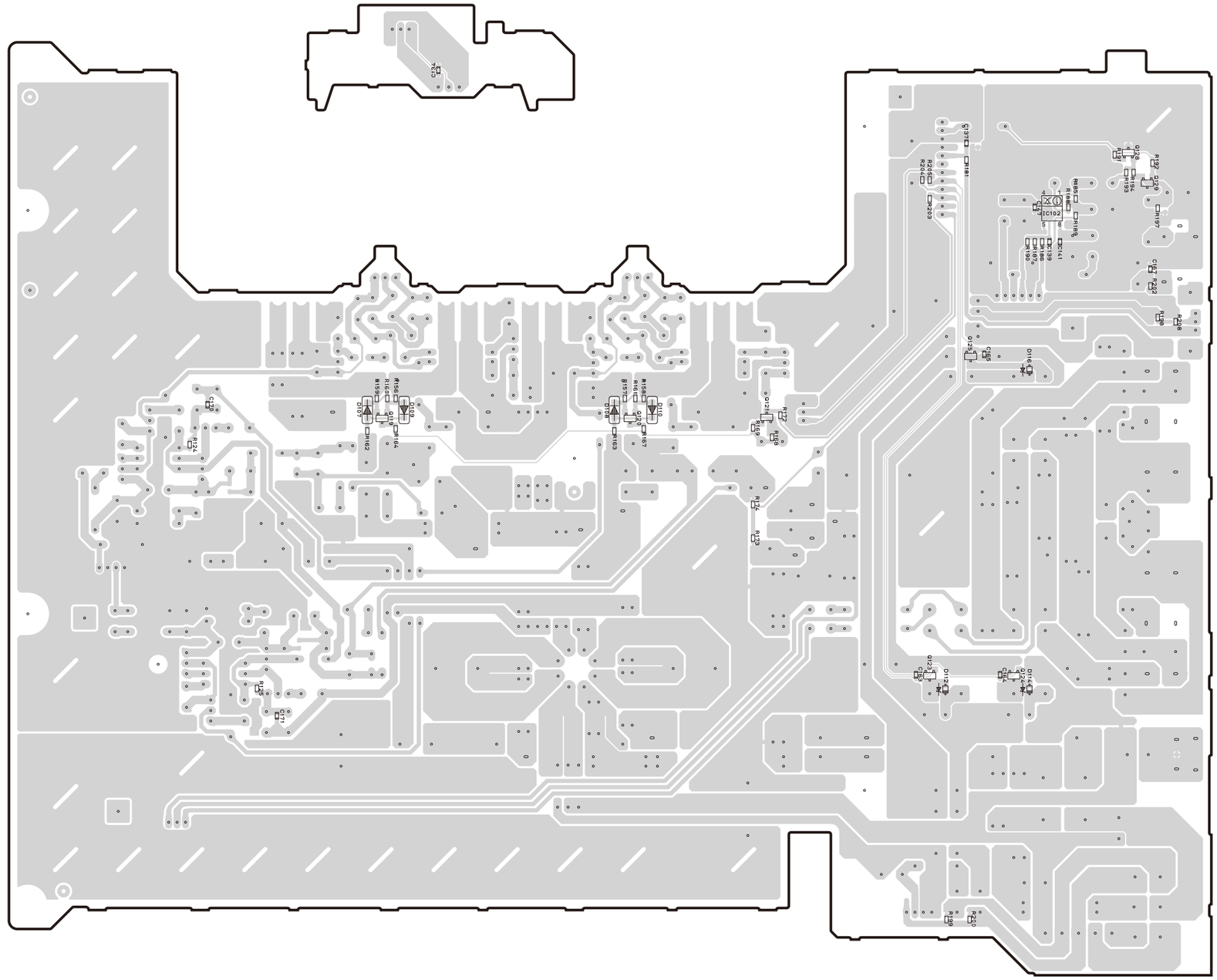


- Semiconductor Location

Ref no.	Location
D101	D4
D103	D6
D105	E3
D106	F3
D117	H6
D118	H6
D119	H6
IC101	E2
Q101	C4
Q102	D5
Q103	D4
Q104	D5
Q105	D4
Q106	D5
Q107	C4
Q108	D6
Q109	E3
Q110	F3
Q111	E4
Q112	E4
Q113	F4
Q114	G4
Q115A	E3
Q116C	D3
Q117C	F3
Q118A	G3

MAIN (1) P.C.B. (Side B)

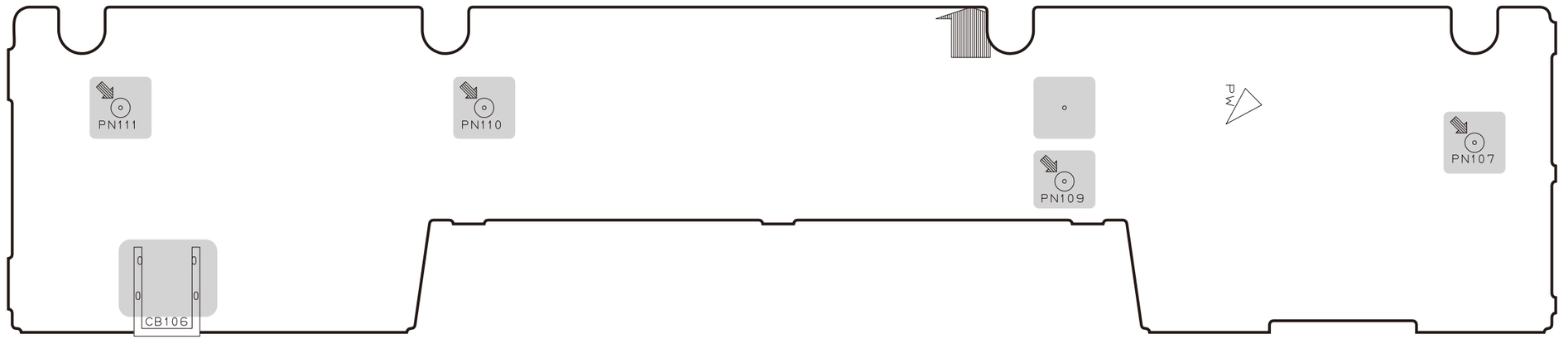
MAIN (2) P.C.B. (Side B)



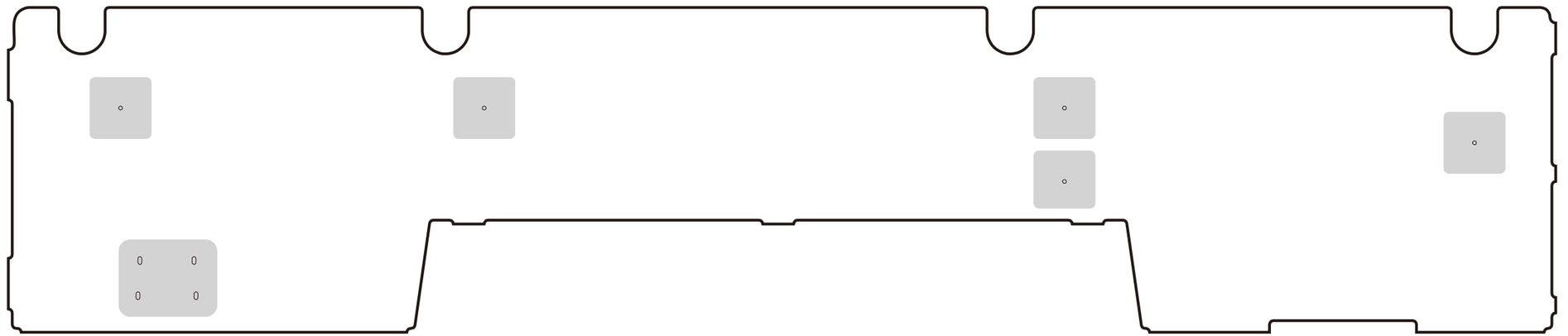
• Semiconductor Location

Ref no.	Location
D107	D4
D108	F4
D109	E4
D110	F4
D112	H5
D114	H5
D116	H4
IC102	H3
Q119	E4
Q120	F4
Q121	G4
Q123	H5
Q124	H5
Q125	H4
Q128	I3
Q129	I3

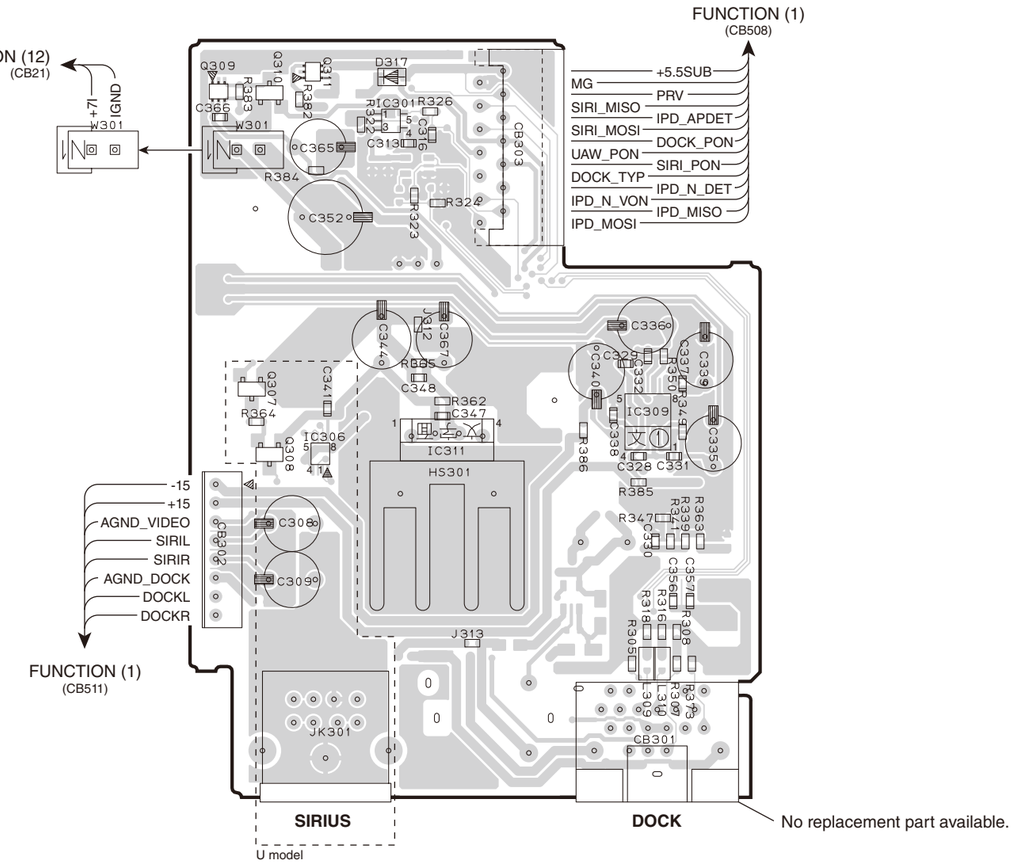
MAIN (3) P.C.B. (Side A)



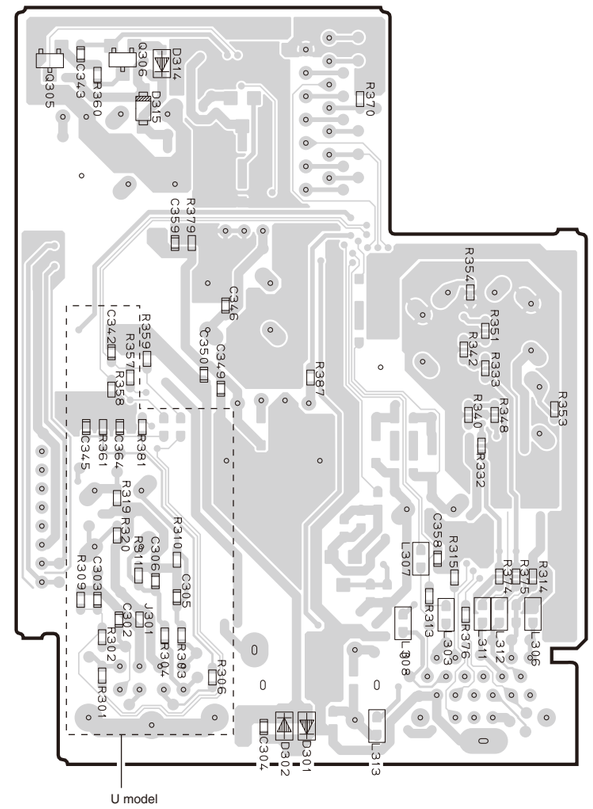
MAIN (3) P.C.B. (Side B)



DOCK P.C.B. (Side A)



DOCK P.C.B. (Side B)



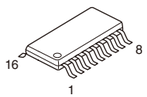
• Semiconductor Location

Ref no.	Location
D301	H5
D302	H5
D314	G2
D315	G3
D317	C2
IC301	C2
IC306	C4
IC309	D4
IC311	C4
Q305	G2
Q306	G2
Q307	B4
Q308	B4
Q309	B2
Q310	B2
Q311	C2

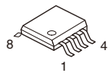
■ PIN CONNECTION DIAGRAMS

• ICs

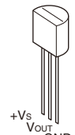
LC72725KM-UY-TLM-E



LE24C023M-TLM-E

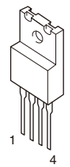


LM61CIZ



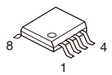
NJM2068MD-TE2

NJM2388F05

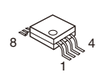


1. V_{IN}
2. V_{OUT}
3. GND
4. ON/OFF CONTROL

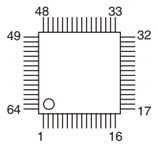
NJM4580E



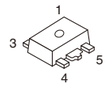
NJM5532M-D



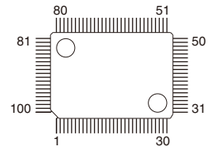
M66003-0131FP-R



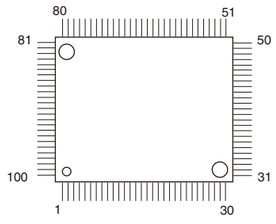
R1190H055B-T1-FE



R2A15220FP

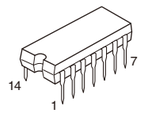


R5F364AENFA



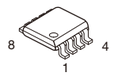
RP130Q501D-TR-F

TC4013BP



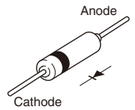
TC7SET32FU

TC7WZ32FK (TE85L, F)

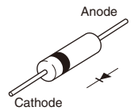


• Diodes

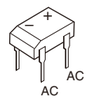
1SS133
1SS176



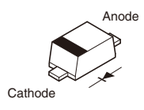
1T2



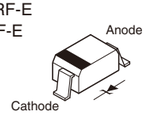
DB105



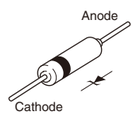
HSU119TRF



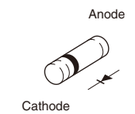
HZU3.3B2 TRF-E
HZU5.1B2 TRF-E
HZU5.6B1 TRF-E
HZU5.6B2 TRF-E
HZU6.2B3 TRF-E
HZU6.8B2 TRF-E
HZU7.5B1 TRF-E
HZU7.5B3 TRF-E
HZU10B1 TRF-E
HZU10B2
HZU15B3 TRF-E
HZU16B2 TRF-E
HZU22B3 TRF-E
HZU30B TRF-E



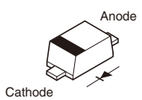
MTZJ5.1C
MTZJ10A



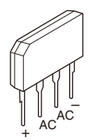
RLS245



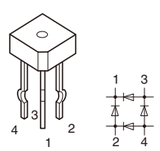
RR264M-400TR



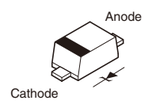
RS203M-B-C-J80



S4VB60

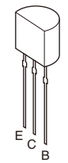


UDZS3.0B 3.0V
UDZS30B 30V



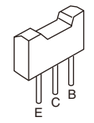
• Transistors

2SA1015-Y

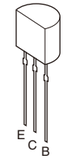


2SA1037K

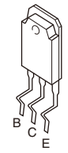
2SA1708
2SC4488



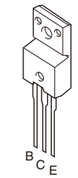
2SA970-GR, BL



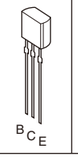
2SA1695 O,P,Y
2SC4468 O,P,Y



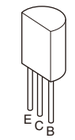
2SB1257



2SC1740S

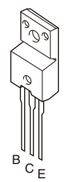


2SC1815 Y
2SC2229



2SC2412K

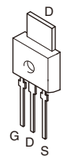
2SD2014



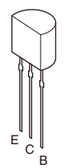
2SD2704 K

2SK2158-T2B-A

2SK3850



2N5401C-AT/P



DTA114EKA
DTA143EKA
DTA144EKA
DTC114EKA

1: GND
2: IN
3: OUT

KRC104S-RTK

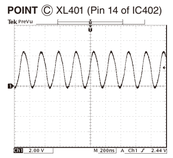
KTA1517S
KTC3875S
KTC3911S

MCH6336-TL-E

1. Drain
2. Drain
3. Gate
4. Source
5. Drain
6. Drain

■SCHEMATIC DIAGRAMS
FUNCTION 1/2

POINT Ⓒ XL401 (Pin 14 of IC402)



FFC connector 1.25mm Pitch

to TUNER PACK CB403 — to AM/FM TUNER

Page 59 B5 to OPERATION (2)_W801
Page 59 B9 to OPERATION (1)_CB701
Page 59 I8 to OPERATION (5)_W705
to OPER(2)
to OPER(1)
to OPER(5)

ZONE 2 OUT (U, C, A models)

PB TAPE IN

TAPE

REC TAPE OUT

PB LINE1 IN

REC LINE1 OUT

LINE

LINE2 IN

LINE3 IN

[RDS] (G model)

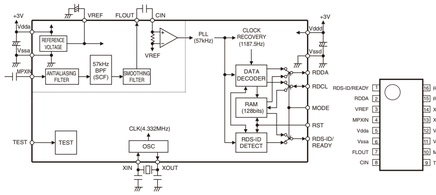
IC401 YA361A0 R2A15220FP

CD IN

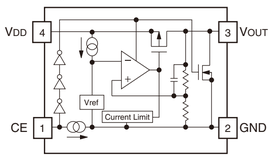
VOL OUT

B to B

IC402: LC72725KM-UY-TLM-E
RDS signal demodulation IC

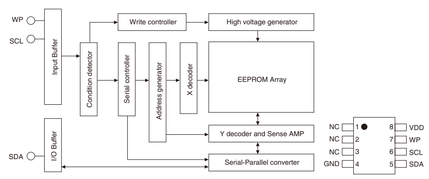


IC501, 507: RP130Q501D-TR-F
Voltage regulator

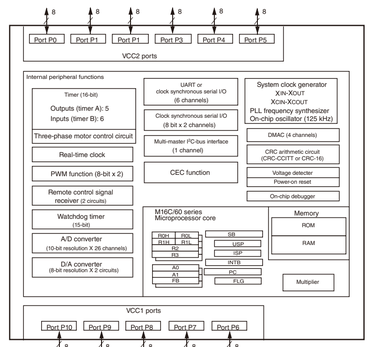


Pin No.	Symbol	Description
1	CE	Chip Enable ("H" Active)
2	GND	Ground Pin
3	VOUT	Output Pin
4	VDD	Input Pin

IC503: LE24C023M-TLM-E
Two wire serial interface EEPROM



IC502: R5F364AENFA
Single chip 16-bit microprocessor



MICROPROCESSOR
IC502
YC806A0
R5F364AENFA
FLASH U-COM +YC731A0
FLASH U-COM(Written by YEW) +YCB06A0

FUNCTION (1)

FUNCTION (2)

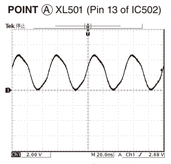
Page 59 J5 to OPERATION (7)_W851
Page 61 J10 to MAIN (1)_W102
Page 62 I3 to DOCK_CB303
to OPER(7)
to MAINS(1)
to DOCK
Page 58 G6 to FUNCTION (3)_CB602
Page 58 G3 to FUNCTION (3)_CB601 (U, C, A models)
Page 62 F10 to DOCK_CB302
Page 60 G8 to OPERATION (12)_CB2
Page 60 G4 to OPERATION (13)_CB14
Page 59 B4 to OPERATION (2)_CB801
to FUNC(3)
to FUNC(2)

RESISTOR	
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
	CARBON FILM RESISTOR (P=10)
	METAL OXIDE FILM RESISTOR
	METAL FILM RESISTOR
	METAL PLATE RESISTOR
	FIRE PROOF CARBON FILM RESISTOR
	CEMENT MOLDED RESISTOR
	SEMI VARIABLE RESISTOR
	CHIP RESISTOR

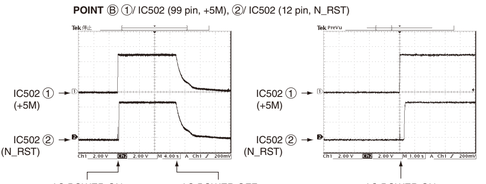
CAPACITOR		
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⫴
	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⫴
	CERAMIC TUBULAR CAPACITOR	
	POLYESTER FILM CAPACITOR	
	POLYSTYRENE FILM CAPACITOR	
	MICA CAPACITOR	
	POLYPROPYLENE FILM CAPACITOR	
	SEMICONDUCTIVE CERAMIC CAPACITOR	
	POLYPHENYLENE SULFIDE FILM CAPACITOR	

NOTICE (model)
(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
(R)····· GENERAL
(T)····· CHINA
(K)····· KOREA
(A)····· AUSTRALIA
(B)····· BRITISH
(E)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN
(P)····· LATIN AMERICA
(S)····· BRAZIL

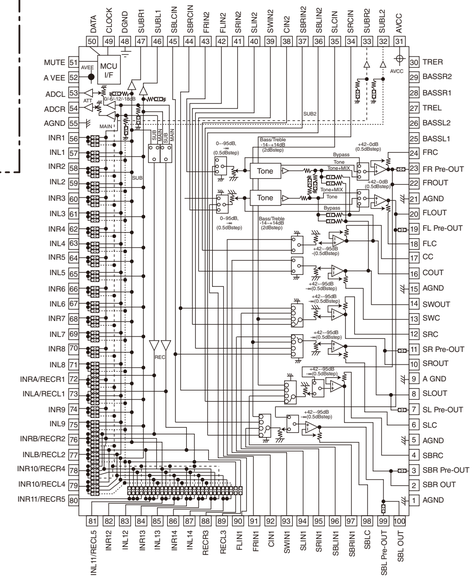
POINT Ⓐ XL501 (Pin 13 of IC502)



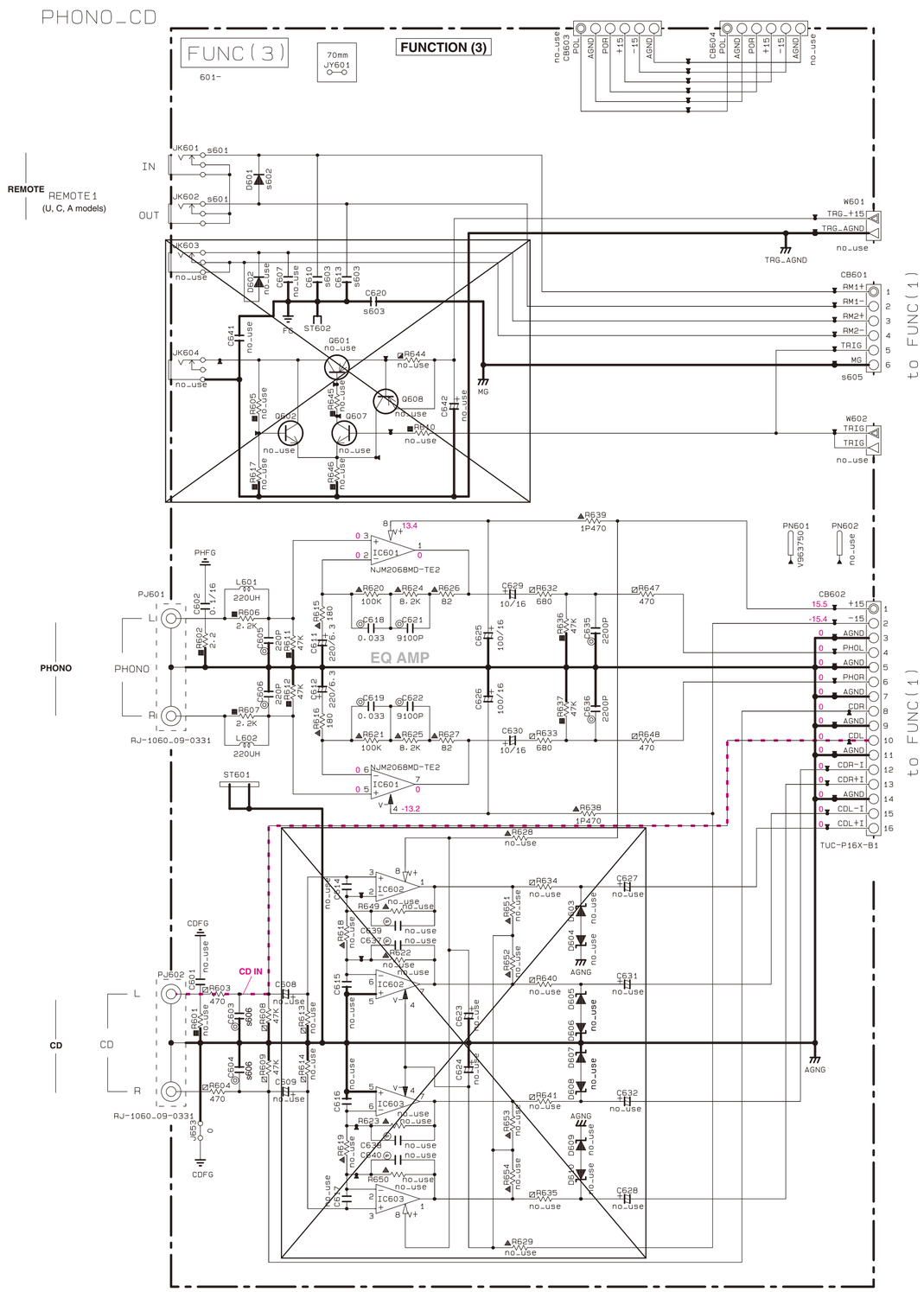
POINT Ⓑ ①/ IC502 (99 pin, +5M), ②/ IC502 (12 pin, N_RST)



IC401: R2A15220FP
8-channel electronic volume with 11 input selector and tone control

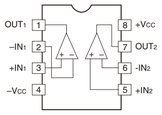


FUNCTION 2/2



P.C.B.	sXXX	LOC	U	C	RL	A	G
(2)	s401	PJ402	WD19510 RJ-1060_09-0331	WD19510 RJ-1060_09-0331	X	WD19510 RJ-1060_09-0331	X
	s402	R406 R407	RD35522 220	RD35522 220	X	RD35522 220	X
	s403	C407 C408	US06210 100P/50 (B)	US06210 100P/50 (B)	X	US06210 100P/50 (B)	X
	s404	Q401 Q402 Q403 Q404	WC88340 D2704 (K)	WC88340 D2704 (K)	X	WC88340 D2704 (K)	X
	s405	R427 R428 R433 R435	RD35547 470	RD35547 470	X	RD35547 470	X
	s406	R436 R437 R438 R439	RD35722 22K	RD35722 22K	X	RD35722 22K	X
	s407	R440 R441	RD35622 2.2K	RD35622 2.2K	X	RD35622 2.2K	X
	s408	C420 C421	UR23710 10/16	UR23710 10/16	X	UR23710 10/16	X
	s409	R456 R458	RD35622 2.2K	RD35622 2.2K	X	RD35622 2.2K	X
	s410	C452 C448	UR26710 10/50	UR26710 10/50	X	UR26710 10/50	X
	s411	C432 C438	UR23810 100/16	UR23810 100/16	X	UR23810 100/16	X
	s412	C426 C428	X	X	X	X	US06127 27P/50 (B)
	s413	XL401	X	X	X	X	V273110 4.332MHZ
	s414	C429 C430 C439	X	X	X	X	US03510 0.1/16 (B)
	s415	R444 R447	X	X	X	X	RD35510 100
	s416	C427	X	X	X	X	UR03710 10/16
	s417	C433	X	X	X	X	US06256 560P/50 (B)
	s418	R445	X	X	X	X	RD35651 5.1K
	s419	C434 C437	X	X	X	X	US06233 330P/50 (B)
	s420	R446	X	X	X	X	RD35722 22K
	s421	R448	X	X	X	X	RD35633 3.3K
	s422	Q405	X	X	X	X	iC17402 C1740S (Q/R/S)
	s423	R450	X	X	X	X	RD35810 100K
	s424	R451	X	X	X	X	RD35733 33K
	s427	C441	X	X	X	X	UR03747 47/16
	s428	IC402	X	X	X	X	X82235A0 LC72725KM
	s429	C460 C461	UR23710 10/16	UR23710 10/16	UR23710 10/16	UR23710 10/16	UU23710 10/16
(1)	s501	R550	RD35582 820	RD35615 1.5K	RD35627 2.7K	RD35712 12K	RD35733 33K
	s511	R507 R531	RD35810 100K	RD35810 100K	X	RD35810 100K	X
	s512	R513	RD35510 100	RD35510 100	X	RD35510 100	X
	s513	R521	RD35647 4.7K	RD35647 4.7K	X	RD35647 4.7K	X
	s514	C507	UR06622 2.2/50	UR06622 2.2/50	X	UR06622 2.2/50	X
	s515	Q504	VV55650 A1037AK (Q/R/S)	VV55650 A1037AK (Q/R/S)	X	VV55650 A1037AK (Q/R/S)	X
	s516	CB515	V782560 224202106W1	V782560 224202106W1	X	V782560 224202106W1	X
	s517	R588	X	X	X	X	RD35747 47K
	s521	C449 C453	UR26710 10/50	UR26710 10/50	UR26710 10/50	UR26710 10/50	UU23710 10/16
(3)	s601	JK601 JK602	WE26000 LGY6501-0900FC	WE26000 LGY6501-0900FC	X	WE26000 LGY6501-0900FC	X
	s602	D601	V959920 HSU119	V959920 HSU119	X	V959920 HSU119	X
	s603	C610 C613 C620	US06310 1000P/50 (B)	US06310 1000P/50 (B)	X	US06310 1000P/50 (B)	X
	s605	CB601	V782730 TUC-P06X-B1	V782730 TUC-P06X-B1	X	V782730 TUC-P06X-B1	X
	s606	C603 C604	WJ60310 220P/50	WJ60310 220P/50	WJ60310 220P/50	WJ60310 220P/50	WJ60830 220P/100

IC601: NJM2068MD-TE2
Dual operational amplifier



RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊘	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⫼
⊘	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⫼
◉	CERAMIC TUBULAR CAPACITOR	
ⓞ	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
Ⓘ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	
Ⓢ	POLYPHENYLENE SULFIDE FILM CAPACITOR	

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(B)····· BRITISH
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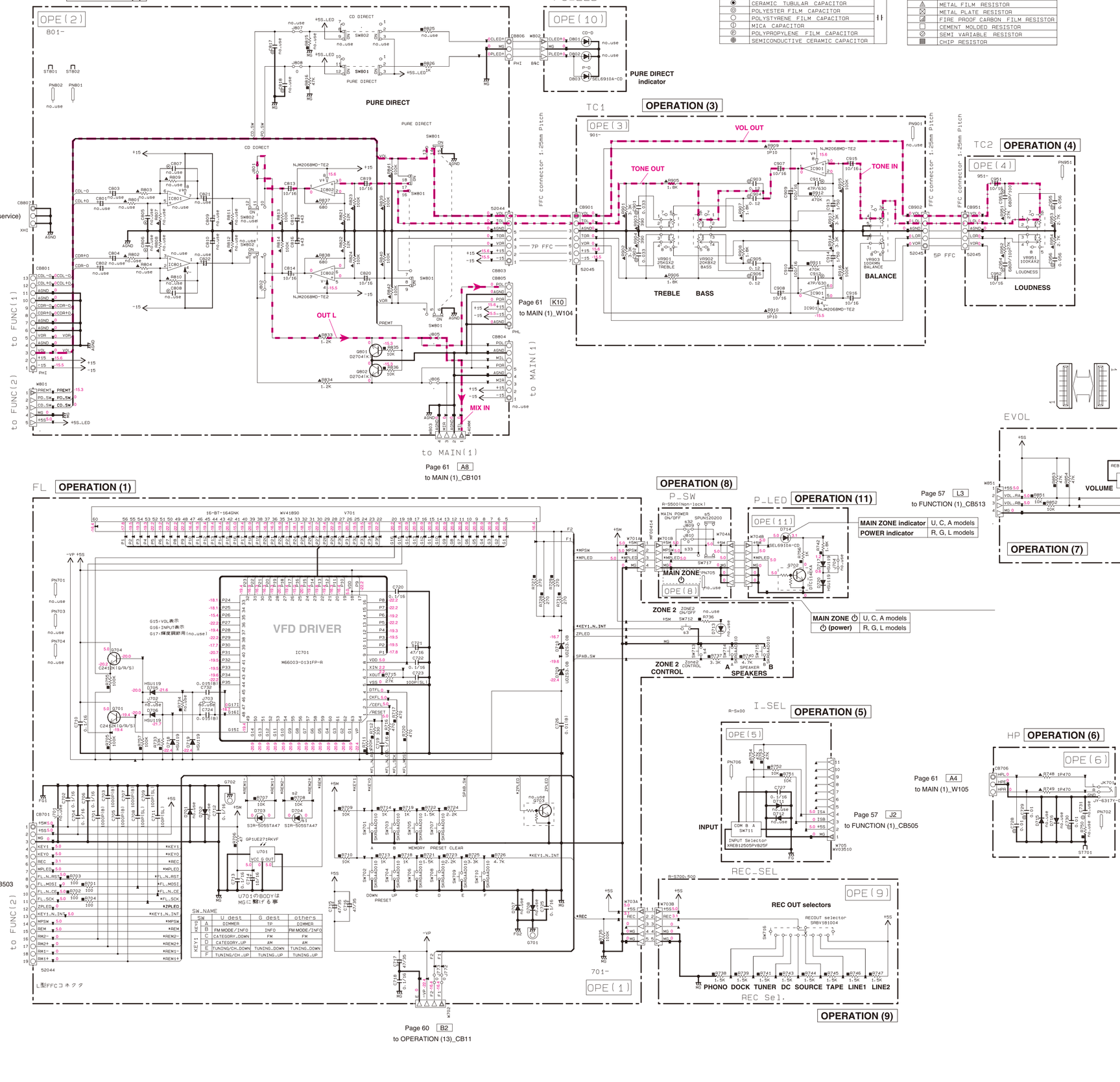
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN
(P)····· LATIN AMERICA
(S)····· BRAZIL

★ All voltages are measured with a 10MΩ/V DC electronic voltmeter.
★ Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

OPERATION 1/2



CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	‖
⊗	TANTALUM CAPACITOR	‖
NO MARK	CERAMIC CAPACITOR	‖
◉	CERAMIC TUBULAR CAPACITOR	‖
◎	POLYESTER FILM CAPACITOR	‖
○	POLYSTYRENE FILM CAPACITOR	‖
Ⓘ	MICA CAPACITOR	‖
Ⓟ	POLYPROPYLENE FILM CAPACITOR	‖
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	‖

RESISTOR

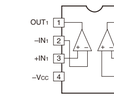
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
◰	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
◬	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	VARIABLE RESISTOR
■	CHIP RESISTOR

Destination Part List

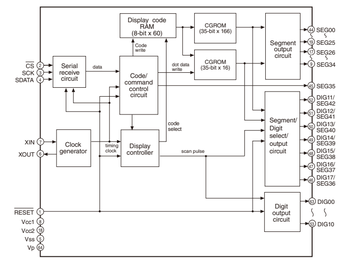
P.C.B.	sXX	LOC	UC	R	A	G	L
(1)	s1	D704	V259820 SIR-505STA47	X	V259820 SIR-505STA47	X	X
	s2	R708	RD35710 10K	X	RD35710 10K	X	X
	s3	SW712	WD48310 SKRGAAD010	X	WD48310 SKRGAAD010	X	X
	s4	SW713	WD48310 SKRGAAD010	X	WD48310 SKRGAAD010	X	X
(8)	s5	SW717	V357310 SPUN120200	V357310 SPUN120200	V357310 SPUN120200	WG27000 SPUN122100	WG27000 SPUN122100
(12)	s11	C7	WJ36120 0.047/400	WD05420 0.047/630	WJ36120 0.047/400	WJ36120 0.047/400	WJ36120 0.047/400
	s12	C10	WB69630 0.1/400	WF08150 0.047/630	WF08150 0.047/630	WF08150 0.047/630	WF08150 0.047/630
	s13	C12	X	WD04730 3300/50	X	X	X
	s14	C14	WJ24933 3300/25	X	WJ24933 3300/25	WJ24933 3300/25	WJ24933 3300/25
(14)	s15	CB9 CB8	X	WN10300 TP00351-31	X	X	X
	s16	CB10	X	V937790 B4P75-VH	X	X	X
(12)	s17	D15	X	WS69820 HZU15B3	X	X	X
(13)	s18	D23	X	WS70040 HZU30B	X	X	X
(14)	s19	F4	X	V937180 4A250V	X	X	X
(12)	s20	J9	X	X	X	X	X
	s21	J10	VN50000	X	VN50000	VN50000	VN50000
	s22	G9	WC52940 KTC38755-Y,GR-R	X	WC52940 KTC38755-Y,GR-R	WC52940 KTC38755-Y,GR-R	WC52940 KTC38755-Y,GR-R
	s23	R12	RD35747 47K	X	RD35747 47K	RD35747 47K	RD35747 47K
(13)	s24	R40	X	RD35710 10K	X	X	X
(12)	s25	R45	X	HY75322 0.2	X	X	X
(14)	s26	SW1	X	VZ07550 SL14-22AMSF	X	X	X
(12)	s28	F1	WG21110 8A125V	WG21110 8A125V	VV07180 4A250V	VV07180 4A250V	VV07180 4A250V
	s29	T1	YC772A0 YC772	YC773A0 YC773	YC774A0 YC774	YC774A0 YC774	YD161A0 YD161
(13)	s30	C32 C31	UR24958 6800/25	UR25947 4700/35	UR24958 6800/25	UR25947 4700/35	UR25947 4700/35
(8)	s32	JB09	RD35000 0	X	RD35000 0	X	X
	s33	JB10	X	RD35000 0	X	RD35000 0	RD35000 0
(13)	s41	C29 C30	WN16530 0.01/100	WN16530 0.01/100	WN16530 0.01/100	WJ61020 0.01/100	WN16530 0.01/100
	s42	C37 C38	UR04833 330/25	UR04833 330/25	UR04833 330/25	UR04847 470/25	UR04847 470/25
(2)	s43	CB15 CB16	UR03810 100/16	UR03810 100/16	UR03810 100/16	UR03822 220/16	UR03822 220/16
(13)	s45	D20 D21	WS69850 HZU16B2	WS69850 HZU16B2	WS69850 HZU16B2	VU17310 UZS16B	VU17310 UZS16B
	s46	D22	WS69980 HZU22B2	WS69980 HZU22B2	WS69980 HZU22B2	VU17340 UZS22B	WS69980 HZU22B2

NOTICE (mode1)
(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
(R)····· GENERAL
(T)····· CHINA
(K)····· KOREA
(A)····· AUSTRALIA
(B)····· BRITISH
(G)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN
(P)····· LATIN AMERICA
(S)····· BRAZIL

IC802, 901: NJM2068MD-TE2
Dual operational amplifier



IC701: M66003-0131FP-R
18 digit 5 x 7 segment VFD controller/driver



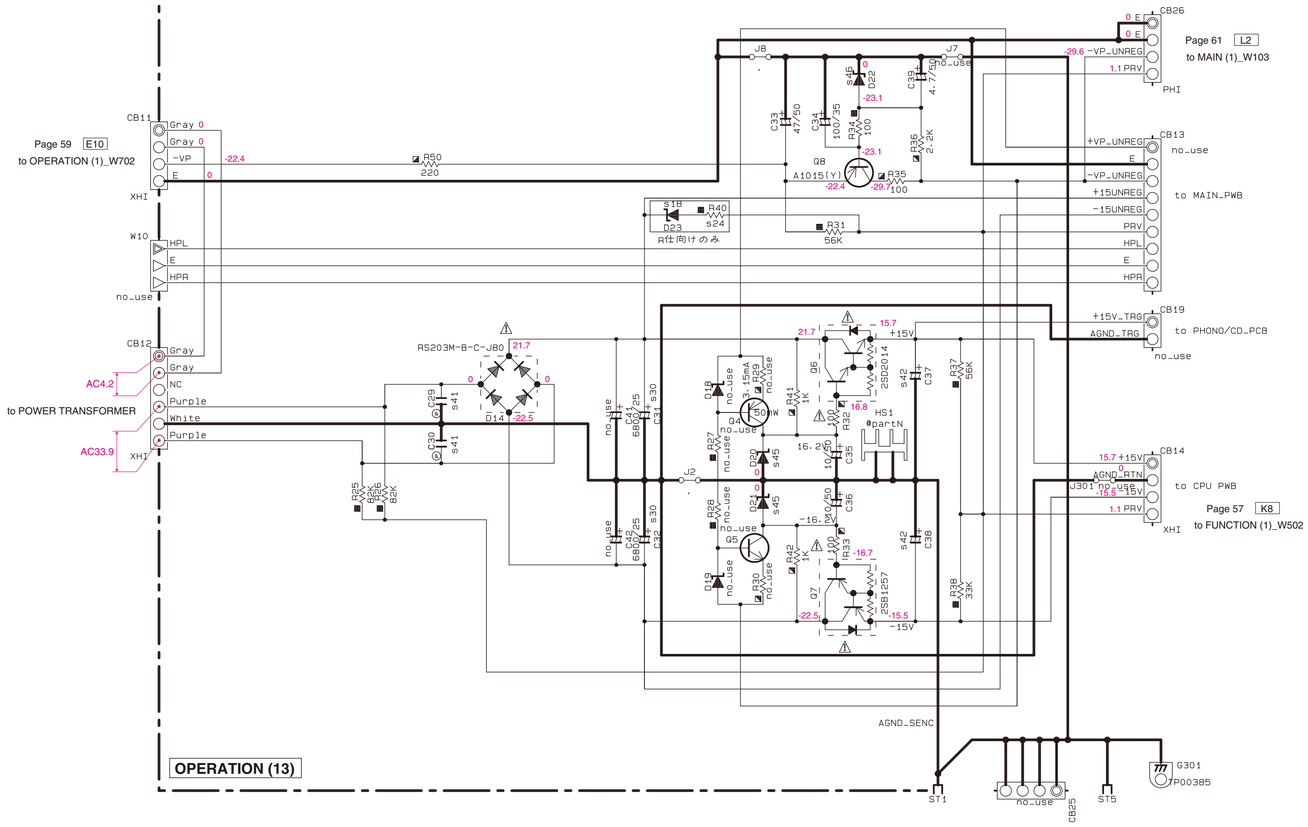
Key detection for A/D port
Key input (A/D) pull-up resistance 10 k-ohms

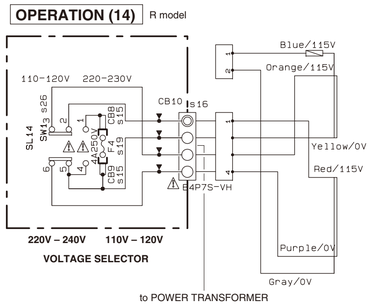
Ohm	0	÷ 1.0 k	÷ 1.0 k	÷ 1.5 k	÷ 2.2 k	÷ 3.3 k	÷ 4.7 k
V	0 – 0.22	0.23 – 0.64	0.65 – 1.06	1.07 – 1.55	1.56 – 2.09	2.10 – 2.62	2.63 – 3.94
A/D conversion value (5.0 V×255)	0 – 11	12 – 32	33 – 54	55 – 79	80 – 107	108 – 134	135 – 156
KEY0 (95 pin of the microprocessor)	DIMMER (U, C, R, A, L models)	FM MODE INFO (U, C, R, A, L models)	MEMORY	CLEAR	ZONE2 CONTROL (U, C, A models)	SPEAKERS A	SPEAKERS B

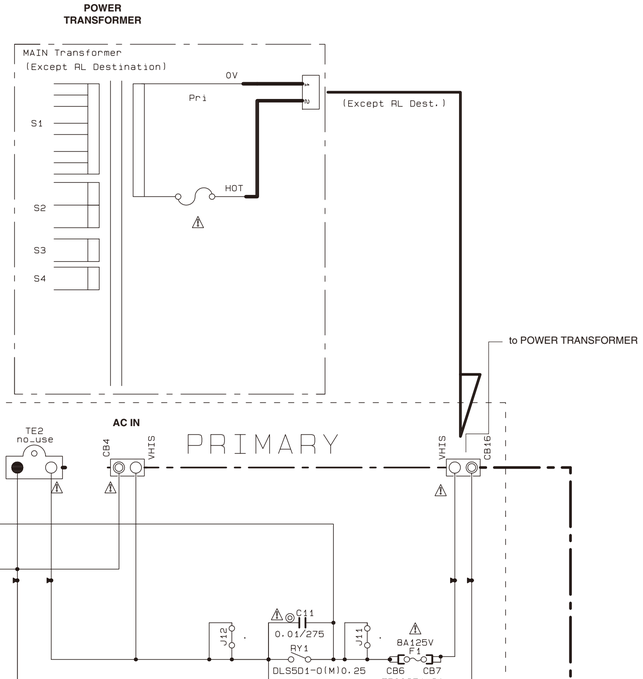
Ohm	0	÷ 1.0 k	÷ 1.0 k	÷ 1.5 k	÷ 2.2 k	÷ 3.3 k	÷ 4.7 k
V	0 – 0.22	0.23 – 0.64	0.65 – 1.06	1.07 – 1.55	1.56 – 2.09	2.10 – 2.62	2.63 – 3.94
A/D conversion value (5.0 V×255)	0 – 11	12 – 32	33 – 54	55 – 79	80 – 107	108 – 134	135 – 156
KEY1 (94 pin of the microprocessor)	PRESET <	PRESET >	FM	AM	TUNING/CH << (U model) TUNING << (C, R, A, G, L models)	TUNING/CH >> (U model) TUNING >> (C, R, A, G, L models)	ZONE 2 (U, C, A models)

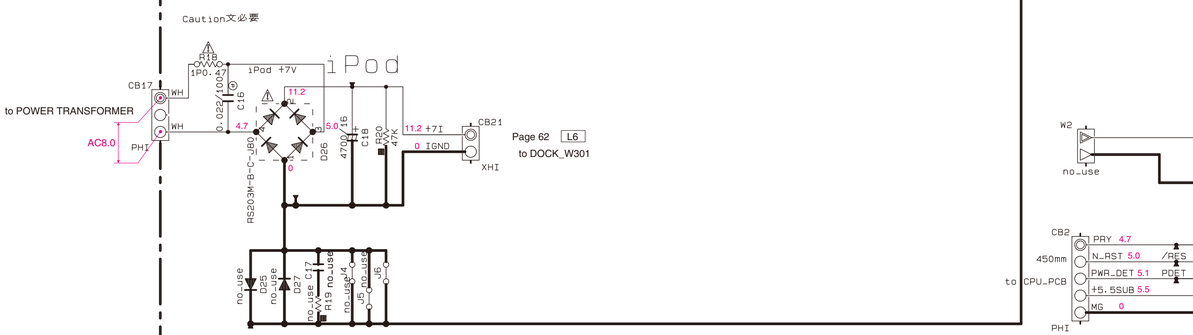
★ All voltages are measured with a 10MΩ/V DC electronic voltmeter.
★ Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

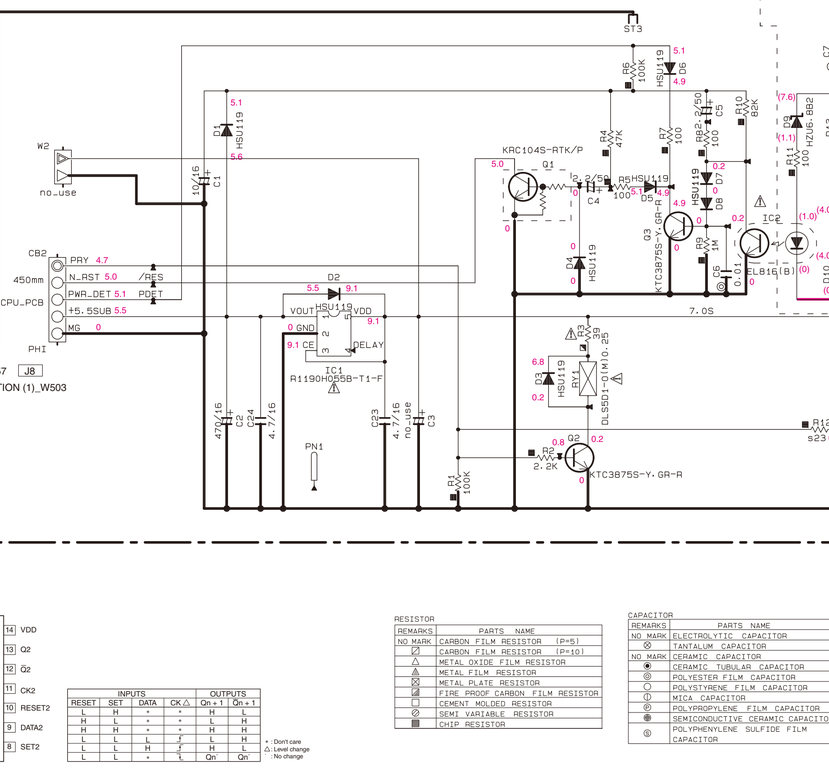
OPERATION 2/2



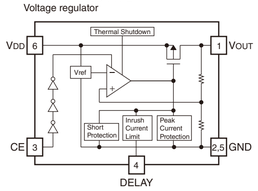






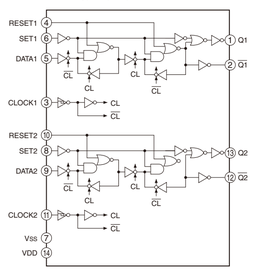


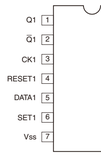
IC1: R1190H055B-T1-FE
Voltage regulator



Pin No.	Symbol	Description
1	VOUT	Output Pin
2	GND	Ground Pin
3	CE	Chip Enable Pin ("H" Active)
4	DELAY	Delay Pin (for setting Inrush Current Limit Time)
5	GND	Ground Pin
6	VDD	Input Pin

IC4: TC4013BP
Dual D-type flip flop





INPUTS				OUTPUTS	
RESET	SET	DATA	CK △	Qn + 1	Qn + 1
L	H	*	*	H	L
H	L	*	*	L	H
H	H	*	*	H	H
L	L	L	↑	L	H
L	L	H	↑	H	L
L	L	*	↓	Qn	Qn

* : Don't care
△ : Level change
: No change

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
	CARBON FILM RESISTOR (P=10)
	METAL OXIDE FILM RESISTOR
	METAL FILM RESISTOR
	METAL PLATE RESISTOR
	FIRE PROOF CARBON FILM RESISTOR
	CEMENT MOLDED RESISTOR
	SEMI VARIABLE RESISTOR
	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⊟
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊣⊢
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
Ⓜ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	
Ⓢ	POLYPHENYLENE SULFIDE FILM CAPACITOR	

NOTICE (model)
(J)····· JAPAN
(U)····· U.S.A
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(F)····· RUSSIAN
(P)····· LATIN AMERICA
(S)····· BRAZIL

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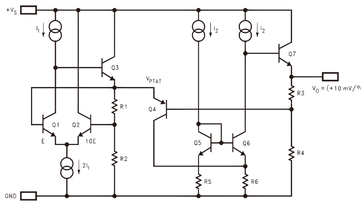
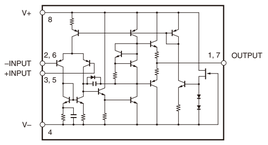
★ Schematic diagram is subject to change without notice.

MAIN

IC101: LM61CIZ
Temperature sensor



IC102: NJM4580E
Dual operational amplifier



Notes)
Safety measures
- Some internal parts in this product contain high voltages and are dangerous. Be sure to take safety measures during servicing, such as wearing insulating gloves.
- Note that the capacitors indicated below are dangerous even after the power is turned off because an electric charge remains and a high voltage continues to exist there. Before starting any repair work, connect a discharging resistor (5 k-ohms/10 W) to the terminals of each capacitor indicated below to discharge electricity. The time required for discharging is about 30 seconds per each.
C135, C136 on MAIN (1) P.C.B.

NOTICE (model)
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(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN
(P)····· LATIN AMERICA
(S)····· BRAZIL

Destination Part List

sXX	LOC	UC	R	A	G	L
s101	TE101	WU98700 MST-224VD-03-76	WU98700 MST-224VD-03-76	WU98700 MST-224VD-03-76	WU98720 MST-224VD-03-76	WU98720 MST-224VD-03-76
s102	TE102	WU98690 MST-224VD-02-76	WU98690 MST-224VD-02-76	WU98690 MST-224VD-02-76	WU98710 MST-224VD-02-76	WU98710 MST-224VD-02-76
s103	C153 C154 C159 C157 C158 C156	x	x	WN16530 0.01/100	WU81020 0.01/100	WN16530 0.01/100
S104	C150 C151	WJ61140 0.1/100	WJ61100 0.047/100	WJ61100 0.047/100	WW91470 0.033/100	WJ61100 0.047/100

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	‡‡
⊗	TANTALUM CAPACITOR	‡‡
NO MARK	CERAMIC CAPACITOR	‡
◉	CERAMIC TUBULAR CAPACITOR	‡
◎	POLYESTER FILM CAPACITOR	‡
○	POLYSTYRENE FILM CAPACITOR	‡
ⓘ	MICA CAPACITOR	‡
ⓟ	POLYPROPYLENE FILM CAPACITOR	‡
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	‡

RESISTOR

REMARKS	PARTS NAME
☑	CARBON FILM RESISTOR (P=5)
△	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
△	METAL FILM RESISTOR
☒	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

MAIN (3)
PN107 PN108 PN109 PN110 PN111 CB106
L=50 ⌀18 no.use L=50 ⌀18 L=50 ⌀18 L=50 ⌀18
MAIN(3)

Page 60 G2
to OPERATION (13)_CB26

TO OPE(13)

■Relay Spec.
@ 19.2VDC < RelayVolutage < 31.2VDC
@ Relay R = 1100ohm

100mm

RY1 (HP) RY2 (SP_A) RY3 (SP_B)
+41V~+24V@15%

W103 5.A.N-P H 4P 100MM B&C

-VP_UNREG

Q123 2SK2158A-T2B-AT
Q124 2SK2158A-T2B-AT
Q125 2SK2158A-T2B-AT

D118 11Y1A1 10
D119 11Y1A1 10
D120 11Y1A1 10

SW101 SL13B-022ASC40
AC75.5
AC56.6
TRANSFORMER
to POWER TRANSFORMER

D117 S4VB60-5001L15

LOW HIGH
IMPEDANCE SELECTOR

Page 59 J8
to OPERATION (6)_CB706

TO OPE(7)
HPL
E
HPR
W105 5.A.N-P H 3P 140MM B&C
PN102 no.use

HP_L
HP_R

■H1
NoLoad MAX. 60.4V@+15%
FullPower typ. 43.0V
FullPower min. 35.5V@-15%

■Low
NoLoad MAX. 44.5V@+15%
FullPower typ. 32.4V
FullPower min. 27.2V@-15%

C136 ⌀800/63
C135 ⌀800/63
5 k-ohms 10 W
5 k-ohms 10 W
E3.4
G101 EZ.R STAR EARTH
E1

C160 0.01/100

W104 5.A.N-P H 6P 400MM B&C BL

LEFT
RIGHT
SPEAKERS
A
B
W WU98700
W/C WU98720 G-L
W WU98690
W/C WU98710 G-L
TE101 MST-224VD-03-76
TE102 MST-224VD-02-76

SW102 SSSF110500 LOW HI POW_MGT OFF POW_MGT ON
ON/OFF
POWER MANAGEMENT

PJ101 MSP-241V1-01NI V718970
SW PREOUT
OUT
SUBWOOFER

SUBWOOFER OUT

PN101 no.use
OUT L
PRE_L
PRE_AGND
PRE_R
CB101
TO OPE(2)

Page 59 E5
to OPERATION (2)_W803

L_OUT2
R_OUT2
L_OUT
R_OUT
PRE_LOUT
PRE_ROUT

70mm

W102 5.A.N-P H 12P 160MM B&C
TO FUNC(1)
160mm

Page 57 L4
to FUNCTION (1)_CB506

W104 5.A.N-P H 6P 400MM B&C BL
TO OPE(2)
400mm

Page 59 F4
to OPERATION (2)_CB805

Note) Those parts marked with "#" are not included in the P.C.B. ass'y.

MAIN (1)
101-250
MAIN(1)

MAIN(2)
MAIN (2)

★ All voltages are measured with a 10MΩ/V DC electronic voltmeter.
★ Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

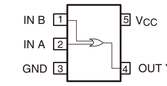
DOCK

No replacement part available.

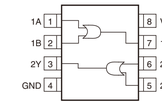
Destination Part List

sXX	LOC	U	CRAGL
s301	JK301	VV26950 MD-SB130-9D	X
s302	R301 R302	RD35522 220	X
s303	R303 R304	RD35610 1K	X
s304	C305 C306 C302 C303	US06222 220PI(SL)	X
s305	R306	RD35410 10	X
s306	R311 R320 R309 R310 R319	RD35822 220K	X
s307	C308 C309	UR83710 10/16	X
s308	J301	RD35000 0	X
s309	IC306	X8531A0 TC7WZ32FK	X
s310	R381	RD35510 100	X
s311	C342 C364	US06210 100PI(SL)	X
s312	C341 C345	US13510 0.1/16	X
s313	R361 R358	RD35747 47K	X
s314	R357 R364	RD35610 1K	X
s315	Q308	VV65500 DTA114EKA	X
s316	Q307	VV65540 DTC114EKA	X

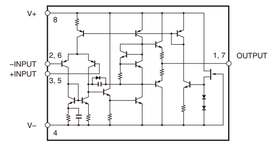
IC301: TC7SET32FU
2-input OR gate



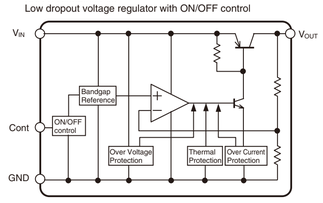
IC306: TC7WZ32FK (TE85L, F)
Dual 2-input OR gate



IC309: NJM4580E
Dual operational amplifier



IC311: NJM2388F05
Low dropout voltage regulator with ON/OFF control



Page 57 L6
to FUNCTION (1)_CB508

Page 60 C7
to OPERATION (12)_CB21

TO OPE(12)

TO OPE(2)

Page 57 I8
to FUNCTION (1)_CB511

TO FUNC(1)

DOCK
301-399

U dest only

NOTICE (model)
(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
(R)····· GENERAL
(T)····· CHINA
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(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN
(P)····· LATIN AMERICA
(S)····· BRAZIL

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	H
⊗	TANTALUM CAPACITOR	H
NO MARK	CERAMIC CAPACITOR	H
◉	CERAMIC TUBULAR CAPACITOR	H
◎	POLYESTER FILM CAPACITOR	H
○	POLYSTYRENE FILM CAPACITOR	H
①	MICA CAPACITOR	H
②	POLYPROPYLENE FILM CAPACITOR	H
●	SEMICONDUCTIVE CERAMIC CAPACITOR	H

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊠	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
▨	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

★ All voltages are measured with a 10MΩ/V DC electronic voltmeter.
★ Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

■ REPLACEMENT PARTS LIST

• ELECTRICAL COMPONENT PARTS

WARNING

- Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

C.A.EL.CHP	: CHIP ALUMI.ELECTROLYTIC CAP
C.CE	: CERAMIC CAP
C.CE.ARRAY	: CERAMIC CAP ARRAY
C.CE.CHP	: CHIP CERAMIC CAP
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP
C.CE.TUBLR	: CERAMIC TUBULAR CAP
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP
C.EL	: ELECTROLYTIC CAP
C.EL.BP	: BIPOLAR ELECTROLYTIC CAP
C.EL.CHP	: CHIP ELECTROLYTIC CAP
C.MICA	: MICA CAP
C.ML.FLM	: MULTILAYER FILM CAP
C.MP	: METALLIZED POLYESTER FILM CAP
C.MYLAR	: MYLAR FILM CAP
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP
C.NIOB.OXD	: NIOBIUM OXIDE CAP
C.PAPER	: PAPER CAPACITOR
C.PLS	: POLYSTYRENE FILM CAP
C.POL	: POLYESTER FILM CAP
C.PP	: POLYPROPYLENE FILM CAP
C.PP.CHP	: CHIP POLYPROPYLENE FILM CAP
C.TNTL	: TANTALIUM CAP
C.TNTL.CHP	: CHIP TANTALIUM CAP
C.TRIM	: TRIMMER CAP
CN	: CONNECTOR
CN.BS.PIN	: CONNECTOR,BASE PIN
CN.CANNON	: CONNECTOR,CANNON
CN.DIN	: CONNECTOR,DIN
CN.FLAT	: CONNECTOR,FLAT CABLE
CN.FFC	: CONNECTOR,FLEXIBLE FLAT CABLE
CN.HDMI	: HDMI CONNECTOR
CN.PHOTO.R	: PHOTO FIBER SENSOR,RECEIVED
CN.PHOTO.T	: PHOTO FIBER SENSOR,TRANSMITTED
DIODE.ARRAY	: DIODE ARRAY
DIODE.BRG	: DIODE BRIDGE
DIODE.CHP	: CHIP DIODE
DIODE.VAR	: VARACTOR DIODE
DIODE.ZENR	: ZENER DIODE
DIODE.Z.CHP	: CHIP ZENER DIODE
DIODE.SCHOTTKY	: SCHOTTKY BARRIER DIODE
DIODE.PHOT	: PHOTO DIODE
FER.BEAD	: FERRITE BEADS
FER.CORE	: FERRITE CORE
FET.CHP	: CHIP FET
FL.DSPLY	: FLUORESCENT DISPLAY
FLTR.CE	: CERAMIC FILTER
FLTR.COMB	: COMB FILTER MODULE
FLTR.LC.RF	: LC FILTER,EMI
FUSE.CHP	: CHIP FUSE
GND.MTL	: GROUND PLATE
GND.TERM	: GROUND TERMINAL
JUMPER.CN	: JUMPER CONNECTOR
JUMPER.TST	: JUMPER,TEST POINT
L.DTCT	: LIGHT DETECTING MODULE
LED.CHP	: CHIP LED
LED.DSPLY	: LED DISPLAY
LED.INFRD	: LED,INFRARED
PHOT.CPL	: PHOTO COUPLER
PHOT.INTR	: PHOTO INTERRUPTER
PHOT.RFLCT	: PHOTO REFLECTOR
PHOT.TR	: PHOTO TRANSISTOR
PIN.TEST	: PIN,TEST POINT
R.ARRAY	: RESISTOR ARRAY
R.CAR.	: CARBON RESISTOR
R.CAR.CHP	: CHIP RESISTOR
R.CAR.FP	: FLAME PROOF CARBON RESISTOR
R.CEMENT	: CEMENT RESISTOR
R.FUS	: FUSIBLE RESISTOR
R.MTL.CHP	: CHIP METAL FILM RESISTOR
R.MTL.FLM	: METAL FILM RESISTOR
R.MTL.OXD	: METAL OXIDE FILM RESISTOR
R.MTL.PLAT	: METAL PLATE RESISTOR
RSNR.CE	: CERAMIC RESONATOR
RSNR.CRYS	: CRYSTAL RESONATOR
SCR.BND.HD	: BIND HEAD B-TIGHT SCREW
SCR.TERM	: SCREW TERMINAL
SCR.TR	: SCREW,TRANSISTOR
SURG.PRTCT	: SURGE PROTECTOR
SUPRT.PCB	: P.C.B. SUPPORT
SW.LEVER	: LEVER SWITCH
SW.MICRO	: MICRO SWITCH
SW.LEAF	: LEAF SWITCH
SW.PUSH	: PUSH SWITCH
SW.RT	: ROTARY SWITCH
SW.RT.ENC	: ROTARY ENCODER
SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
SW.SLIDE	: SLIDE SWITCH
SW.TACT	: TACT SWITCH
TERM.SP	: SPEAKER TERMINAL
TERM.WRAP	: WRAPPING TERMINAL
THRMST.CHP	: CHIP THERMISTOR
TR	: TRANSISTOR
TR.CHP	: CHIP TRANSISTOR
TR.DGT	: DIGITAL TRANSISTOR
TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
TR.PAIR	: PAIR TRANSISTOR
TRANS	: TRANSFORMER
TRANS.PULS	: PULSE TRANSFORMER
TRANS.PWR	: POWER TRANSFORMER
VOLT.SELCT	: VOLTAGE SELECTOR
VR	: ROTARY POTENTIOMETER
VR.MTR	: POTENTIOMETER WITH MOTOR
VR.SLIDE	: SLIDE POTENTIOMETER
VR.SW	: POTENTIOMETER WITH SWITCH
VR.TRIM	: TRIMMER POTENTIOMETER

P.C.B. FUNCTION

	Ref No.	Part No.	Description	Markets
*		WV014600	P.C.B. FUNCTION	U
*		WV014700	P.C.B. FUNCTION	C
*		WV014800	P.C.B. FUNCTION	RL
*		WV015000	P.C.B. FUNCTION	A
*		WV015100	P.C.B. FUNCTION	G
	CB403	VM859500	CN.BS.PIN 11P	
	CB404	V7827900	SOCKET 12P TE TUC SERIES	
	CB405	V7828700	SOCKET 20P SE TUC SERIES	
	CB501	V7826200	CN 12P TE TUC SERIES	
	CB502	V7827000	CN 20P TE TUC SERIES	
	CB503	VQ047400	CN.BS.PIN 19P	
	CB504	VB390100	CN.BS.PIN 5P	
	CB505	VB390700	CN.BS.PIN 11P	
	CB506	VB390800	CN.BS.PIN 12P	
	CB508	VN394900	CN.BS.PIN 14P	
	CB509	VQ044400	CN.BS.PIN 9P	
	CB510	V7826600	CN 16P TE TUC SERIES	
	CB511	V7825800	CN 8P TE TUC SERIES	
	CB513	VB390000	CN.BS.PIN 4P	
	CB515	V7825600	CN 6P TE TUC SERIES	UCA
	CB601	V7827300	SOCKET 6P TE TUC SERIES	UCA
	CB602	V7828300	SOCKET 16P TE TUC SERIES	
	C401-404	US062220	C.CE.CHP 220pF 50V B	
	C405-406	US062100	C.CE.CHP 100pF 50V B	
	C407-408	US062100	C.CE.CHP 100pF 50V B	UCA
	C409-412	US062220	C.CE.CHP 220pF 50V B	
	C413-414	US062100	C.CE.CHP 100pF 50V B	
	C415-418	UR237100	C.EL 10uF 16V	
	C420-421	UR237100	C.EL 10uF 16V	UCA
	C425	UR238100	C.EL 100uF 16V	
	C426	US061270	C.CE.CHP 27pF 50V B	G
	C427	UR037100	C.EL 10uF 16V	G
	C428	US061270	C.CE.CHP 27pF 50V B	G
	C429-430	US035100	C.CE.CHP 0.1uF 16V B	G
	C431	UR238100	C.EL 100uF 16V	
	C432	UR238100	C.EL 100uF 16V	UCA
	C433	US062560	C.CE.CHP 560pF 50V B	G
	C434	US062330	C.CE.CHP 330pF 50V B	G
*	C435	UR037330	C.EL 33uF 16V	
	C437	US062330	C.CE.CHP 330pF 50V B	G
	C438	UR238100	C.EL 100uF 16V	UCA
	C439	US035100	C.CE.CHP 0.1uF 16V B	G
	C440	US035100	C.CE.CHP 0.1uF 16V B	
	C441	UR037470	C.EL 47uF 16V	G
	C442	US035100	C.CE.CHP 0.1uF 16V B	
	C443-446	US062100	C.CE.CHP 100pF 50V B	
	C447	UR037470	C.EL 47uF 16V	
	C448	UR267100	C.EL 10uF 50V	UCA
	C449	UR267100	C.EL 10uF 50V	UCRAL
	C449	UU237100	C.EL 10uF 16V	G
	C450-451	UR067470	C.EL 47uF 50V	
	C452	UR267100	C.EL 10uF 50V	UCA
	C453	UR267100	C.EL 10uF 50V	UCRAL
	C453	UU237100	C.EL 10uF 16V	G
	C454	UR037470	C.EL 47uF 16V	
	C455-456	UR067100	C.EL 10uF 50V	
	C457	UR037470	C.EL 47uF 16V	

✻ New Parts

	Ref No.	Part No.	Description	Markets
	C458	UR037100	C.EL 10uF 16V	
*	C459	UR038330	C.EL 330uF 16V	
	C460	UR237100	C.EL 10uF 16V	UCRAL
	C460	UU237100	C.EL 10uF 16V	G
	C461	UR237100	C.EL 10uF 16V	UCRAL
	C461	UU237100	C.EL 10uF 16V	G
	C501	US046100	C.CE.CHP 1uF 25V	
	C503	US135100	C.CE.CHP 0.1uF 16V	
	C504	US062100	C.CE.CHP 100pF 50V B	
	C506	UR066220	C.EL 2.2uF 50V	
	C507	UR066220	C.EL 2.2uF 50V	UCA
	C508	UR066220	C.EL 2.2uF 50V	
	C509	US062100	C.CE.CHP 100pF 50V B	
	C510-513	US046100	C.CE.CHP 1uF 25V	
	C514-516	US062100	C.CE.CHP 100pF 50V B	
	C517-519	US135100	C.CE.CHP 0.1uF 16V	
	C520-521	UR038100	C.EL 100uF 16V	
	C524-526	US062100	C.CE.CHP 100pF 50V B	
	C527	US135100	C.CE.CHP 0.1uF 16V	
	C528-529	US062100	C.CE.CHP 100pF 50V B	
	C530-531	US135100	C.CE.CHP 0.1uF 16V	
	C532	US062100	C.CE.CHP 100pF 50V B	
	C534	UR038100	C.EL 100uF 16V	
	C535	US064100	C.CE.CHP 0.01uF 50V B	
	C536	US035100	C.CE.CHP 0.1uF 16V B	
	C602	US135100	C.CE.CHP 0.1uF 16V	
	C603	WJ603100	C.MYLAR 220pF 50V	UCRAL
	C603	WJ608300	C.MYLAR 220pF 100V	G
	C604	WJ603100	C.MYLAR 220pF 50V	UCRAL
	C604	WJ608300	C.MYLAR 220pF 100V	G
	C605-606	WJ603100	C.MYLAR 220pF 50V	
	C610	US063100	C.CE.CHP 1000pF 50V B	UCA
	C611-612	UR218220	C.EL 220uF 6.3V	
	C613	US063100	C.CE.CHP 1000pF 50V B	UCA
*	C618-619	WJ605600	C.MYLAR 0.033uF 50V	
	C620	US063100	C.CE.CHP 1000pF 50V B	UCA
*	C621-622	WJ604900	C.MYLAR 9100pF 50V	
	C625-626	UR038100	C.EL 100uF 16V	
	C629-630	UR237100	C.EL 10uF 16V	
*	C635-636	WJ604100	C.MYLAR 2200pF 50V	
	D402-403	VU172300	DIODE.ZENR UDZS7.5B 7.5V	
*	D404	WS694400	DIODE.ZENR HZU5.6B2 TRF-E	
*	D405	WS696600	DIODE.ZENR HZU10B1 TRF-E	
*	D406-409	WS694900	DIODE.ZENR HZU6.2B3 TRF-E	
	D501	WS695500	DIODE.ZENR HZU7.5B1 TRF-E	
*	D502	WS694000	DIODE.ZENR HZU5.1B2 TRF-E	
	D503	WS695500	DIODE.ZENR HZU7.5B1 TRF-E	
*	D506	WS694000	DIODE.ZENR HZU5.1B2 TRF-E	
	D507	WS695500	DIODE.ZENR HZU7.5B1 TRF-E	
*	D601	V9599200	DIODE.CHP HSU119 TRF-E	UCA
*	IC401	YA361A00	IC R2A15220FP	
	IC402	X8235A00	IC LC72725KM	G
*	IC501	YC289A00	IC RP130Q501D-TR	
*	IC502	YC731A00	IC.CPU R5F364AENFA	(unwritten)
*	IC503	YA765A00	IC LE24C023M	
*	IC507	YC289A00	IC RP130Q501D-TR	
	IC601	X3505A00	IC NJM2068MD-TE2	

✻ New Parts

P.C.B. FUNCTION and P.C.B. OPERATION

	Ref No.	Part No.	Description		Markets
	JK601-602	WE260000	JACK. MNI	LGY6501-0900FC	UCA
	PJ401	WD195200	JACK. PIN	4P	
	PJ402	WD195100	JACK. PIN	2P	UCA
	PJ403	WD195100	JACK. PIN	2P	
	PJ404	WD195400	JACK. PIN	6P	
	PJ601-602	WD195100	JACK. PIN	2P	
	Q401-404	WC883400	TR	2SD2704 K	UCA
	Q405	iC174020	TR	2SC1740S QRS	G
	Q406	WG408900	TR	2SC5291 S,T	
	Q407	WG408800	TR	2SA2168 S,T	
	Q408	iC181510	TR	2SC1815 Y	
	Q409	VP872700	TR	2SC4488 S,T	
	Q503	VV556500	TR	2SA1037K Q,R,S	
	Q504	VV556500	TR	2SA1037K Q,R,S	UCA
	Q505	VV556500	TR	2SA1037K Q,R,S	
	Q506	VV556400	TR	2SC2412K Q,R,S	
	Q507	VV655200	TR. DGT	DTA143EKA	
	Q508	VV655400	TR. DGT	DTC114EKA	
	R585	V8070000	R. MTL. FLM	1Ω 1W	
	R638-639	V8071300	R. MTL. FLM	470Ω 1W	
	ST602	V4040500	SCR. TERM	M3	
	XL401	V2731100	RSNR. CRYS	4.332M HC-49/U	G
	XL501	WV402100	RSNR. CE	20MHz CSTLS20M0X51	
*		WV018000	P. C. B.	OPERATION	UC
*		WV018100	P. C. B.	OPERATION	R
*		WV018200	P. C. B.	OPERATION	A
*		WV018300	P. C. B.	OPERATION	G
*		WV018400	P. C. B.	OPERATION	L
	CB2	VB390100	CN. BS. PIN	5P	
⚠	CB4	VG879900	CN. BS. PIN	2P	
	CB6-7	WN103000	CLIP. FUSE	TP00351-31	
	CB8-9	WN103000	CLIP. FUSE	TP00351-31	R
⚠	CB10	V9377900	CN. BS. PIN	4P	R
	CB11	VL844800	CN. BS. PIN	4P	
	CB12	VL845000	CN. BS. PIN	6P	
	CB14	VL844800	CN. BS. PIN	4P	
⚠	CB16	VG879900	CN. BS. PIN	2P	
	CB17	VB389900	CN. BS. PIN	3P	
	CB21	LB918020	CN. BS. PIN	2P	
	CB26	VB390000	CN. BS. PIN	4P	
	CB701	VQ044900	CN. BS. PIN	19P	
	CB706	VB858200	CN. BS. PIN	3P	
	CB801	VF283100	CN. BS. PIN	13P	
	CB803	VQ044300	CN. BS. PIN	7P	
	CB805	VB858500	CN. BS. PIN	6P	
	CB806	VB389900	CN. BS. PIN	3P	
	CB807	VL844700	CN. BS. PIN	3P	G
	CB901	VQ047100	CN. BS. PIN	7P	
	CB902	VQ046900	CN. BS. PIN	5P	
	CB951	VQ046900	CN. BS. PIN	5P	
	C1	UR237100	C. EL	10uF 16V	
	C2	UR038470	C. EL	470uF 16V	
	C4	UU266220	C. EL	2.2uF 50V	
	C5	UR266220	C. EL	2.2uF 50V	

✻ New Parts

	Ref No.	Part No.	Description		Markets
	C6	WJ605000	C. MYLAR	0.01uF 50V J	
	C7	WJ361200	C. POL. MTL	0.047uF 400V	UCAGL
	C7	WD054200	C. POL. MTL	0.047uF 630V	R
	C8	UU266100	C. EL	1uF 50V	
*	C9	WJ604500	C. MYLAR	4700pF 50V	
	C10	WB696300	C. POL. MTL	0.1uF 400V	UC
	C10	WF081500	C. PP	0.047uF 630V J	RAGL
⚠	C11	V6185300	C. CE. SAFTY	0.01uF 275V	
	C12	WD047300	C. EL	3300uF 50V	R
	C13	WE102900	C. PP	0.01uF 100V J	
	C14	UU249330	C. EL	3300uF 25V	UCAGL
	C15	WJ608900	C. MYLAR	1000pF 100V	
*	C18	UR239470	C. EL	4700uF 16V	
	C23-24	WH046700	C. CE. M. CHP	4.7uF 16V	
	C29	WN165300	C. PP	0.01uF 100V	UCRAL
	C29	WJ610200	C. MYLAR	0.01uF 100V	G
	C30	WN165300	C. PP	0.01uF 100V	UCRAL
	C30	WJ610200	C. MYLAR	0.01uF 100V	G
	C31	UR049680	C. EL	6800uF 25V	UCG
*	C31	UR259470	C. EL	4700uF 35V	RAL
	C32	UR049680	C. EL	6800uF 25V	UCG
*	C32	UR259470	C. EL	4700uF 35V	RAL
	C33	UR067470	C. EL	47uF 50V	
	C34	UR058100	C. EL	100uF 35V	
	C35	UR267100	C. EL	10uF 50V	UCRAL
	C35	WM098100	C. EL	4.7uF 50V	G
	C36	UR267100	C. EL	10uF 50V	UCRAL
	C36	WM098100	C. EL	4.7uF 50V	G
*	C37	UR048330	C. EL	330uF 25V	UCRAL
	C37	UR048470	C. EL	470uF 25V	G
*	C38	UR048330	C. EL	330uF 25V	UCRAL
	C38	UR048470	C. EL	470uF 25V	G
	C39	UR066470	C. EL	4.7uF 50V	
	C701	US063100	C. CE. CHP	1000pF 50V B	
	C703	US063100	C. CE. CHP	1000pF 50V B	
	C705	US063100	C. CE. CHP	1000pF 50V B	
	C707	US063100	C. CE. CHP	1000pF 50V B	
	C708-709	US062100	C. CE. CHP	100pF 50V B	
	C711	US062100	C. CE. CHP	100pF 50V B	
	C712-713	US035100	C. CE. CHP	0.1uF 16V B	
	C714	UM397100	C. EL	10uF 16V	
*	C715-717	WQ711900	C. EL	47uF 35V	
	C719-720	US035100	C. CE. CHP	0.1uF 16V B	
	C721	UM397470	C. EL	47uF 16V	
	C722	US035100	C. CE. CHP	0.1uF 16V B	
	C723	US062100	C. CE. CHP	100pF 50V B	
	C724	US064150	C. CE. CHP	0.015uF 50V B	
	C726	US064100	C. CE. CHP	0.01uF 50V B	
	C728	WJ605000	C. MYLAR	0.01uF 50V J	UCRAL
	C728	WJ610200	C. MYLAR	0.01uF 100V	G
	C729	WJ605000	C. MYLAR	0.01uF 50V J	UCRAL
	C729	WJ610200	C. MYLAR	0.01uF 100V	G
	C730	WJ605000	C. MYLAR	0.01uF 50V J	UCRAL
	C730	WJ610200	C. MYLAR	0.01uF 100V	G
	C732	US064150	C. CE. CHP	0.015uF 50V B	
	C813-814	UR237100	C. EL	10uF 16V	
	C815	UR038100	C. EL	100uF 16V	UCRAL

✻ New Parts

P.C.B. OPERATION

	Ref No.	Part No.	Description		Markets
	C815	UR038220	C. EL	220uF 16V	G
	C816	UR038100	C. EL	100uF 16V	UCRAL
	C816	UR038220	C. EL	220uF 16V	G
	C819	UR237100	C. EL	10uF 16V	UCRAL
	C819	UU237100	C. EL	10uF 16V	G
	C820	UR237100	C. EL	10uF 16V	UCRAL
	C820	UU237100	C. EL	10uF 16V	G
*	C901-902	WJ605600	C. MYLAR	0.033uF 50V	
	C903-906	VR168400	C. MYLAR	0.12uF 50V	
	C907-908	UR237100	C. EL	10uF 16V	
	C909-910	UR038100	C. EL	100uF 16V	
	C911-912	WE100400	C. PP	47pF 630V K	
	C913-914	UR266100	C. EL	1uF 50V	
	C915-916	UR237100	C. EL	10uF 16V	
	C951-952	UR237100	C. EL	10uF 16V	
	C953-954	WE101500	C. PP	680pF 100V J	
*	C955-956	WJ605900	C. MYLAR	0.056uF 50V	
*	D1-8	V9599200	DIODE. CHP	HSU119 TRF-E	
*	D9	WS695200	DIODE. ZENR	HZU6.8B2 TRF-E	
*	D10	V2425200	DIODE. ZENR	HZU10B2	
*	D11	V9599200	DIODE. CHP	HSU119 TRF-E	
*	D12	WS694300	DIODE. ZENR	HZU5.6B1 TRF-E	
⚠	D13	WH471700	DIODE. BRG	DB105 1A 600V	
⚠	D14	WH487300	DIODE. BRG	RS203M 2.0A 200V	
⚠*	D15	WS698200	DIODE. ZENR	HZU15B3 TRF-E	R
*	D20	WS698500	DIODE. ZENR	HZU16B2 TRF-E	UCRAL
	D20	VU173100	DIODE. ZENR	UDZS16B 16V	G
*	D21	WS698500	DIODE. ZENR	HZU16B2 TRF-E	UCRAL
	D21	VU173100	DIODE. ZENR	UDZS16B 16V	G
*	D22	WS699800	DIODE. ZENR	HZU22B3 TRF-E	UCRAL
	D22	VU173400	DIODE. ZENR	UDZS22B 22V	G
*	D23	WS700400	DIODE. ZENR	HZU30B TRF-E	R
⚠	D24	WH471700	DIODE. BRG	DB105 1A 600V	
⚠	D26	WH487300	DIODE. BRG	RS203M 2.0A 200V	
	D703	V2598200	LED	SIR-505ST	
	D704	V2598200	LED	SIR-505ST	UCA
*	D705-706	V9599200	DIODE. CHP	HSU119 TRF-E	
	D709-710	VU171300	DIODE. ZENR	UDZS3.0B 3.0V	
	D714	WA467800	LED	SEL6910A-CD	
*	D717-720	V9599200	DIODE. CHP	HSU119 TRF-E	
	D803	WA467800	LED	SEL6910A-CD	
⚠*	F1	WQ211100	FUSE	8A 125V	UCR
⚠*	F1	VV071800	FUSE	4A 250V	AGL
⚠*	F4	VV071800	FUSE	4A 250V	R
⚠*	IC1	YC730A00	IC	R1190H055B-T1-FE	
⚠*	IC2-3	WJ688100	PHOT. CPL	EL816(B)	
⚠	IC4	iG001180	IC	TC4013BP FF	
	IC701	X6386A00	IC	M66003-0131FP	
	IC802	X3505A00	IC	NJM2068MD-TE2	UCRAL
	IC802	X9127A00	IC	NJM5532M-D	G
	IC901	X3505A00	IC	NJM2068MD-TE2	
	JK701	V4478300	JACK. PHONE	JY-6317Y-03-030	
	Q1	WC435100	TR. DGT	KRC104S-RTK	
	Q2-3	WC529400	TR	KTC3875S Y GR RTK	
⚠	Q6	WF691400	TR	2SD2014	
⚠	Q7	WF691300	TR	2SB1257	
	Q8	iA101510	TR	2SA1015 Y	

* New Parts

	Ref No.	Part No.	Description		Markets
	Q9	WC529400	TR	KTC3875S Y GR RTK	UCAGL
⚠	Q10	WC741200	FET	2SK3850	
	Q701	VV556400	TR	2SC2412K Q,R,S	
	Q702	VV655400	TR. DGT	DTC114EKA	
	Q704	VV556400	TR	2SC2412K Q,R,S	
	Q801-802	WC883400	TR	2SD2704 K	
⚠	R3	HV754390	R. CAR. FP	39Ω 1/4W	
	R13	HF356220	R. CAR	2.2KΩ 1/2W	
⚠	R18	WH819500	R. FUS	0.47Ω 1W	
⚠	R32-33	V8070900	R. MTL. FLM	100Ω 1W	
	R35	HV755100	R. CAR. FP	100Ω 1/4W	
	R36	HV756220	R. CAR. FP	2.2KΩ 1/4W	
	R41-42	V8071600	R. MTL. FLM	1KΩ 1W	
⚠	R45	HV753220	R. CAR. FP	2.2Ω 1/4W	R
	R50	HV755220	R. CAR. FP	220Ω 1/4W	
	R748-749	V8071300	R. MTL. FLM	470Ω 1W	
	R909-910	V8070300	R. MTL. FLM	10Ω 1W	
⚠*	RY1	WQ804100	RELAY	DC DLS5D1-0(M)0.25	
	ST1-3	V4040500	SCR. TERM	M3	
	ST5	V4040500	SCR. TERM	M3	
	ST701	WG095100	SCR. TERM	M3	
	ST801-802	WG095100	SCR. TERM	M3	
⚠	SW1	VZ075500	SW. SLIDE	SL14-22AM5F	R
	SW701-710	WD483100	SW. TACT	SKRGAAD010	
*	SW711	WU974300	SW. RT. ENC	XREB12505PVB25FINA	
	SW712-713	WD483100	SW. TACT	SKRGAAD010	UCA
	SW714-715	WD483100	SW. TACT	SKRGAAD010	
*	SW716	WU720700	SW. RT	SRBV181004	
	SW717	V3573100	SW. PUSH	SPUN120200	UCA
*	SW717	WQ270000	SW. PUSH	SPUN122100	RGL
	SW801	VV399800	SW. PUSH	SPUN12	
*	SW851	WU974000	SW. RT. ENC	REB161(9X7)PVB20FI	
⚠*	T1	YC772A00	TRANS. SUB		UC
⚠*	T1	YC773A00	TRANS. SUB		R
⚠*	T1	YC774A00	TRANS. SUB		AG
⚠	T1	YD161A00	TRANS		L
	U701	WK918500	L. DTCT	GP1UE271RKVF	
	V701	WV418900	FL. DSPLY	16-BT-164GNK	
*	VR901	WP293500	VR	G 25kΩ	(EVJC50FA3GF4)
*	VR902	WP293400	VR	B 20kΩ	(EVJC50FA3B2)
*	VR903	WP293600	VR	BH 100kΩ	(EVJC50FA3375)
*	VR951	WP293300	VR	A 100kΩ	(EVJC20FA3A15)
*		WP324200	SHEET		
		VR380100	SPACER	FL-T6	
		WE774300	SCR. BND. HD	3x8 MFZN2W3	
		WN440100	DAMPER	15x80 t=2	G

* New Parts

P.C.B. MAIN

	Ref No.	Part No.	Description			Markets
*		WV021500	P. C. B.	MAIN		UC
*		WV021600	P. C. B.	MAIN		R
*		WV021800	P. C. B.	MAIN		A
*		WV021900	P. C. B.	MAIN		G
*		WV022000	P. C. B.	MAIN		L
	CB101	VB390000	CN. BS. PIN	4P		
	CB105	LB932050	CN. BS. PIN	5P		
	CB106	WA246200	SCR. TERM	3. 5		
	CB107	VB858200	CN. BS. PIN	3P		
*	C101	WP420700	C. PP	100pF	100V	UCRAL
	C101	WJ608100	C. MYLAR	100pF	100V	G
	C102	UR266470	C. EL	4. 7uF	50V	UCRAL
	C102	UU237100	C. EL	10uF	16V	G
	C103	UR266470	C. EL	4. 7uF	50V	UCRAL
	C103	UU237100	C. EL	10uF	16V	G
	C104-107	WE100400	C. PP	47pF	630V K	
	C108	UR238100	C. EL	100uF	16V	
*	C109	WN164600	C. PP	1000pF	100V	UCRAL
	C109	WJ608900	C. MYLAR	1000pF	100V	G
*	C110	WN164600	C. PP	1000pF	100V	UCRAL
	C110	WJ608900	C. MYLAR	1000pF	100V	G
	C111	UR238100	C. EL	100uF	16V	
	C112-113	WE100200	C. PP	22pF	630V K	
*	C115	UR278330	C. EL	330uF	63V	UCRAL
	C115	UR078470	C. EL	470uF	63V	G
	C122-123	UR267470	C. EL	47uF	50V	
	C124	UR267470	C. EL	47uF	50V	UCRAL
	C124	UR348100	C. EL	100uF	25V	G
	C125-126	WE100500	C. PP	100pF	630V K	
	C127	UR267470	C. EL	47uF	50V	UCRAL
	C127	UR348100	C. EL	100uF	25V	G
	C128-129	WE100500	C. PP	100pF	630V K	
	C130	UR866470	C. EL	4. 7uF	50V	UCRAL
	C130	UR266470	C. EL	4. 7uF	50V	G
	C131	WN165500	C. PP	0. 022uF	100V	UCRAL
	C131	WJ610600	C. MYLAR	0. 022uF	100V	G
	C132	WN165500	C. PP	0. 022uF	100V	UCRAL
	C132	WJ610600	C. MYLAR	0. 022uF	100V	G
	C133	UR818100	C. EL	100uF	6. 3V	UCRAL
	C133	UR038100	C. EL	100uF	16V	G
	C134	US135100	C. CE. CHP	0. 1uF	16V	
	C135-136	WG399600	C. EL	6800uF	63V	
	C137	US064100	C. CE. CHP	0. 01uF	50V B	
	C139	US163100	C. CE. CHP	1000pF	50V	UCRAL
	C139	US062100	C. CE. CHP	100pF	50V B	G
	C140	UR237470	C. EL	47uF	16V	UCRAL
	C140	UR038100	C. EL	100uF	16V	G
	C143	VR168300	C. MYLAR	0. 1uF	50V	
	C144	VR169100	C. MYLAR	0. 39uF	50V	
	C145	UR237470	C. EL	47uF	16V	
	C146	UR237470	C. EL	47uF	16V	UCRAL
	C146	UR038100	C. EL	100uF	16V	G
⚠	C148	UU268100	C. EL	100uF	50V	
⚠	C149	UR868100	C. EL	100uF	50V	UCRAL
	C149	UU268100	C. EL	100uF	50V	G
⚠	C150	WJ611400	C. MYLAR	0. 1uF	100V J	UC
⚠	C150	WJ611000	C. MYLAR	0. 047uF	100V	RAL

✻ New Parts

	Ref No.	Part No.	Description			Markets
⚠	C150	WW314700	C. PP	0. 033uF	100V	G
⚠	C151	WJ611400	C. MYLAR	0. 1uF	100V J	UC
⚠	C151	WJ611000	C. MYLAR	0. 047uF	100V	RAL
⚠	C151	WW314700	C. PP	0. 033uF	100V	G
	C152	WN165500	C. PP	0. 022uF	100V	UCRAL
	C152	WJ610600	C. MYLAR	0. 022uF	100V	G
	C153	WN165300	C. PP	0. 01uF	100V	AL
	C153	WJ610200	C. MYLAR	0. 01uF	100V	G
	C154	WN165300	C. PP	0. 01uF	100V	AL
	C154	WJ610200	C. MYLAR	0. 01uF	100V	G
	C155	WJ608900	C. MYLAR	1000pF	100V	G
	C156	WN165300	C. PP	0. 01uF	100V	AL
	C156	WJ610200	C. MYLAR	0. 01uF	100V	G
	C157	WN165300	C. PP	0. 01uF	100V	AL
	C157	WJ610200	C. MYLAR	0. 01uF	100V	G
	C158	WN165300	C. PP	0. 01uF	100V	AL
	C158	WJ610200	C. MYLAR	0. 01uF	100V	G
	C159	WN165300	C. PP	0. 01uF	100V	AL
	C159	WJ610200	C. MYLAR	0. 01uF	100V	G
	C160	WN165300	C. PP	0. 01uF	100V	UCRAL
	C160	WJ610200	C. MYLAR	0. 01uF	100V	G
	C167	US163100	C. CE. CHP	1000pF	50V	
	C168-169	UR237100	C. EL	10uF	16V	
	D101	VG439400	DIODE. ZENR	MTZJ10A	10V	
	D103	VG439400	DIODE. ZENR	MTZJ10A	10V	
	D105-106	VG437500	DIODE. ZENR	MTZJ5. 1C	5. 1V	
	D107-110	VH282500	DIODE	RLS245		
	D112	VU173700	DIODE. ZENR	UDZS30B TE-17 30V		
	D114	VU173700	DIODE. ZENR	UDZS30B TE-17 30V		
	D116	VU173700	DIODE. ZENR	UDZS30B TE-17 30V		
⚠ *	D117	WV196100	DIODE. BRG	S4VB60 2. 6A 600V		
⚠	D118-119	VS997800	DIODE	1T2		
	G101	V5995800	PLATE. GND			
*	IC101	X0515B00	IC	LM61CIZ THERMAL		
	IC102	X2331A00	IC	NJM4580E OP AMP		
	PJ101	V7189700	JACK. PIN	1P		
⚠	Q101-102	iA097030	TR	2SA970 GR, BL		
	Q103-104	WC397700	TR	2N5401C-AT		
⚠	Q105-106	iA097030	TR	2SA970 GR, BL		
⚠	Q107-108	VR325600	TR	2SC2229 O, Y		
⚠	Q109-110	iC174020	TR	2SC1740S QRS		
⚠	Q111	VP872700	TR	2SC4488 S, T		
⚠	Q112-113	VP872600	TR	2SA1708 S, T		
⚠	Q114	VP872700	TR	2SC4488 S, T		
# ⚠	Q115	VV586400	TR. PAIR	2SA1695/C4468 OPY		(IX630850/IX630860)
# ⚠	Q117	VV586400	TR. PAIR	2SA1695/C4468 OPY		(IX630850/IX630860)
	Q119-120	WC139600	TR	KTC3911S GR BL		
	Q121	WH372100	TR	KTA1517S GR TP		
*	Q123-125	WV155200	FET	2SK2158A-T2B-AT		
	Q128-129	WC883400	TR	2SD2704 K		
	R103-104	HV753470	R. CAR. FP	4. 7Ω	1/4W	
*	R112-113	WA622400	R. MTL. OXD	8. 2KΩ	1W	
⚠	R130-131	HL004470	R. MTL. OXD	47Ω	1/2W	
⚠	R133	V8070700	R. MTL. FLM	47Ω	1W	
	R138	HL005270	R. MTL. OXD	270Ω	1/2W	
	R139-140	HL006100	R. MTL. OXD	1KΩ	1/2W	
	R141	HL005270	R. MTL. OXD	270Ω	1/2W	

✻ New Parts

Note) Those parts marked with "#" are not included in the P.C.B. ass'y.

P.C.B. MAIN and P.C.B. DOCK

	Ref No.	Part No.	Description			Markets
	R142	HV756270	R. CAR. FP	2. 7KΩ	1/4W	
	R143-144	HL006100	R. MTL. OXD	1KΩ	1/2W	
	R145	HV756270	R. CAR. FP	2. 7KΩ	1/4W	
	R146-147	HV753470	R. CAR. FP	4. 7Ω	1/4W	
⚠	R148	HV755330	R. CAR. FP	330Ω	1/4W	UCRAL
⚠	R148	V8071200	R. MTL. OXD	330Ω	1W J	G
⚠	R149	HV755330	R. CAR. FP	330Ω	1/4W	UCRAL
⚠	R149	V8071200	R. MTL. OXD	330Ω	1W J	G
	R150	HV753470	R. CAR. FP	4. 7Ω	1/4W	UCRAL
	R150	V8070200	R. MTL. FLM	4. 7Ω	1W	G
	R151	HV753470	R. CAR. FP	4. 7Ω	1/4W	UCRAL
	R151	V8070200	R. MTL. FLM	4. 7Ω	1W	G
	R152	HV753470	R. CAR. FP	4. 7Ω	1/4W	UCRAL
	R152	V8070200	R. MTL. FLM	4. 7Ω	1W	G
	R153	HV753470	R. CAR. FP	4. 7Ω	1/4W	UCRAL
	R153	V8070200	R. MTL. FLM	4. 7Ω	1W	G
⚠	R154-155	V3873200	R. CEMENT	0. 22Ω	3W	
⚠	R165-166	V8070300	R. MTL. FLM	10Ω	1W	
	R170	HV754100	R. CAR. FP	10Ω	1/4W	UCRAL
	R170	V8070300	R. MTL. FLM	10Ω	1W	G
	R171	HV754100	R. CAR. FP	10Ω	1/4W	UCRAL
	R171	V8070300	R. MTL. FLM	10Ω	1W	G
	R175	HL005390	R. MTL. OXD	390Ω	1/2W	
	R178	HL005390	R. MTL. OXD	390Ω	1/2W	
	R182	HL005390	R. MTL. OXD	390Ω	1/2W	
	R195	HV754100	R. CAR. FP	10Ω	1/4W	UCRAL
⚠	R195	V8070300	R. MTL. FLM	10Ω	1W	G
⚠	R196	HV754100	R. CAR. FP	10Ω	1/4W	UCRAL
	R196	V8070300	R. MTL. FLM	10Ω	1W	G
	R206-207	HV754330	R. CAR. FP	33Ω	1/4W	
⚠	RY101-103	WJ122400	RELAY	981-2A-24DS-SP7		
	ST101	V4040500	SCR. TERM	M3		
	SW101	V4104200	SW. SLIDE	SL13B-022-AMCS		
	SW102	VF541200	SW. SLIDE	SSSF11		
*	TE101	WU987000	TERM. SP	4P MST-224VD-03		UCRA
*	TE101	WU987200	TERM. SP	4P MST-224VD-03		GL
*	TE102	WU986900	TERM. SP	4P MST-224VD-02		UCRA
*	TE102	WU987100	TERM. SP	4P MST-224VD-02		GL
*		WV024700	P. C. B.	DOCK		U
*		WV024800	P. C. B.	DOCK		CRAGL
	CB302	V7827500	SOCKET	8P SE TUC SERIES		
	CB303	VF982200	CN. BS. PIN	14P		
	C302-303	US062220	C. CE. CHP	220pF	50V B	U
	C304	US064100	C. CE. CHP	0. 01uF	50V B	
	C305-306	US062220	C. CE. CHP	220pF	50V B	U
	C308-309	UR837100	C. EL	10uF	16V	U
	C313	US035100	C. CE. CHP	0. 1uF	16V B	
	C316	US062100	C. CE. CHP	100pF	50V B	
	C328-332	WB570100	C. MYLA. CHP	0. 0001uF	16V	
	C335-336	UR237100	C. EL	10uF	16V	
	C339-340	UR038100	C. EL	100uF	16V	
	C341	US135100	C. CE. CHP	0. 1uF	16V	U
	C342	US062100	C. CE. CHP	100pF	50V B	U
	C343	US064100	C. CE. CHP	0. 01uF	50V B	

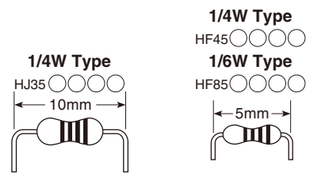
	Ref No.	Part No.	Description			Markets
	C344	UR018470	C. EL	470uF	6. 3V	
	C345	US135100	C. CE. CHP	0. 1uF	16V	U
	C346-349	US035100	C. CE. CHP	0. 1uF	16V B	
	C352	UR048220	C. EL	220uF	25V	
	C356-357	WB571300	C. MYLA. CHP	0. 0010uF	16V	
	C358	US061330	C. CE. CHP	33pF	50V B	
	C364	US062100	C. CE. CHP	100pF	50V B	U
	C365	UR038100	C. EL	100uF	16V	
	C367	UR038100	C. EL	100uF	16V	
*	D301-302	V9599200	DIODE. CHP	HSU119 TRF-E		
*	D314	V9599200	DIODE. CHP	HSU119 TRF-E		
*	D315	WR897300	DIODE	RR264M-400TR		
*	D317	V9599200	DIODE. CHP	HSU119 TRF-E		
	IC301	XW814A00	IC	TC7SET32FU		
	IC306	X8531A00	IC	TC7WZ32FK		U
	IC309	X2331A00	IC	NJM4580E OP AMP		
	IC311	X6143A00	IC	NJM2388F05 5. 0V		
	JK301	VV269500	CN	8P DIN		U
	Q305	VV655400	TR. DGT	DTC114EKA		
	Q306	VV655300	TR. DGT	DTA144EKA		
	Q307	VV655400	TR. DGT	DTC114EKA		U
	Q308	VV655000	TR. DGT	DTA114EKA		U
	Q309	WQ381000	FET	MCH6336-TL-E		
	Q310	VV655400	TR. DGT	DTC114EKA		
	Q311	WQ381000	FET	MCH6336-TL-E		
		WE774300	SCR. BND. HD	3x8	MFZN2W3	
		WK020500	DAMPER	15x40x2		

* New Parts

* New Parts

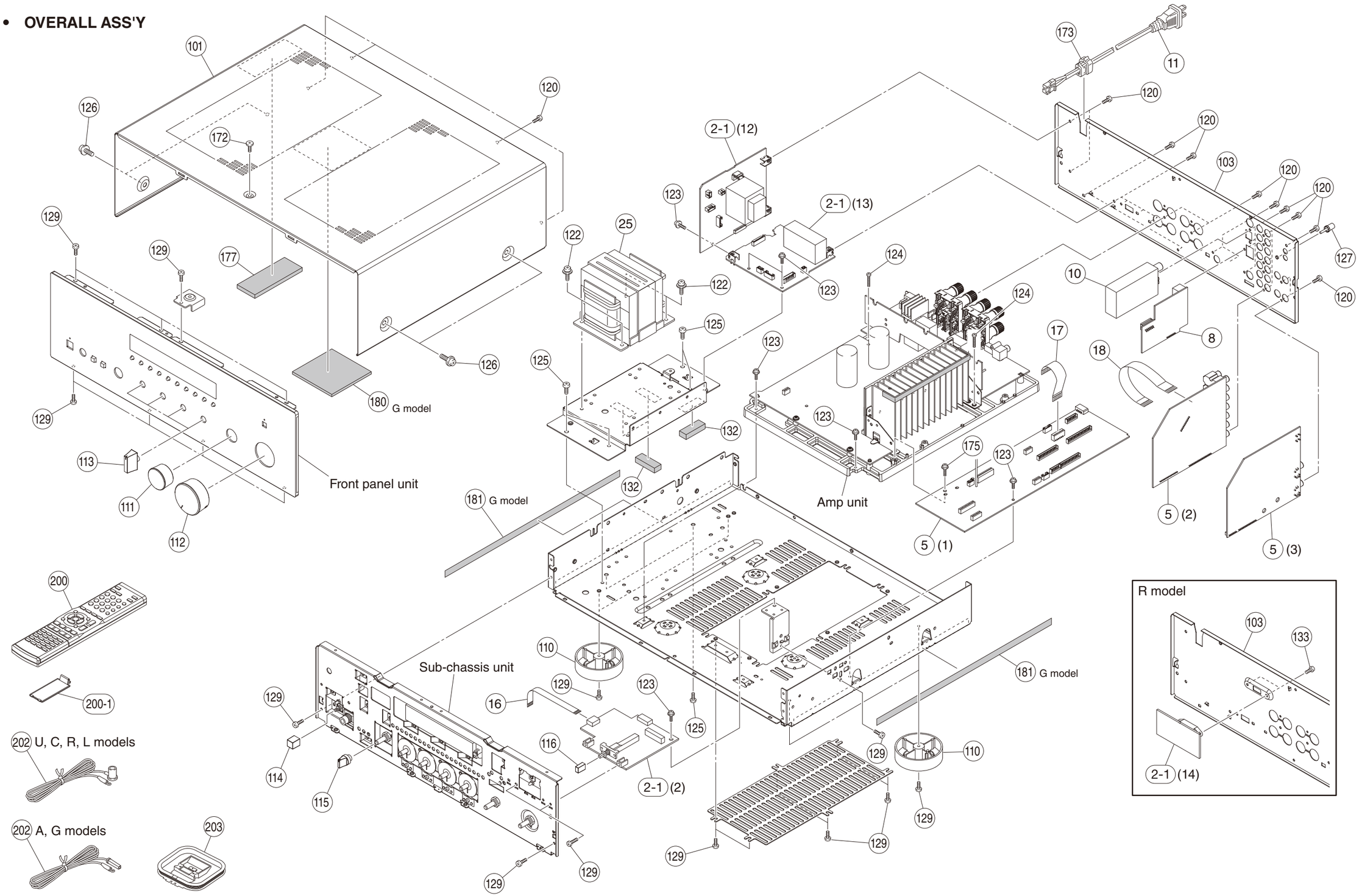
Carbon Resistors

Value	**1/4W** Type Part No.	**1/6W** Type Part No.	Value	**1/4W** Type Part No.	**1/6W** Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	11 kΩ	HF45 7110	HF45 7110
1.8 Ω	HJ35 3180	✻	12 kΩ	HJ35 7120	HF85 7120
2.2 Ω	HJ35 3220	HF85 3220	13 kΩ	HF45 7130	HF45 7130
3.3 Ω	HJ35 3330	HF85 3330	15 kΩ	HF45 7150	HF45 7150
4.7 Ω	HJ35 3470	HF85 3470	18 kΩ	HF45 7180	HF45 7180
5.6 Ω	HJ35 3560	HF85 3560	22 kΩ	HF45 7220	HF45 7220
10 Ω	HF45 4100	HF45 4100	24 kΩ	HF45 7240	HF45 7240
15 Ω	HJ35 4150	HF85 4150	27 kΩ	HJ35 7270	HF85 7270
22 Ω	HF45 4220	HF45 4220	30 kΩ	HF45 7300	HF45 7300
27 Ω	HJ35 4270	HF85 4270	33 kΩ	HF45 7330	HF45 7330
33 Ω	HF45 4330	HF45 4330	36 kΩ	HF45 7360	HF45 7360
39 Ω	HJ35 4470	HF85 4390	39 kΩ	HF45 7390	HF45 7390
47 Ω	HF45 4470	HF45 4470	47 kΩ	HF45 7470	HF45 7470
56 Ω	HF45 4560	HF45 4560	51 kΩ	HF45 7510	HF45 7510
68 Ω	HF45 4680	HF45 4680	56 kΩ	HF45 7560	HF45 7560
75 Ω	HF45 4750	HF45 4750	62 kΩ	HF45 7620	HF45 7620
82 Ω	HF45 4820	HF45 4820	68 kΩ	HF45 7680	HF45 7680
91 Ω	HF45 4910	HF45 4910	82 kΩ	HF45 7820	HF45 7820
100 Ω	HF45 5100	HF45 5100	91 kΩ	HF45 7910	HF45 7910
110 Ω	HJ35 5110	HF85 5110	100 kΩ	HF45 8100	HF45 8100
120 Ω	HF45 5120	HF45 5120	110 kΩ	HF45 8110	HF45 8110
150 Ω	HF45 5150	HF45 5150	120 kΩ	HF45 8120	HF45 8120
160 Ω	HJ35 5160	✻	130 kΩ	HF45 8130	✻
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	✻
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	✻
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			
10 kΩ	HF45 7100	HF45 7100			



✻ : Not available

- **OVERALL ASS'Y**



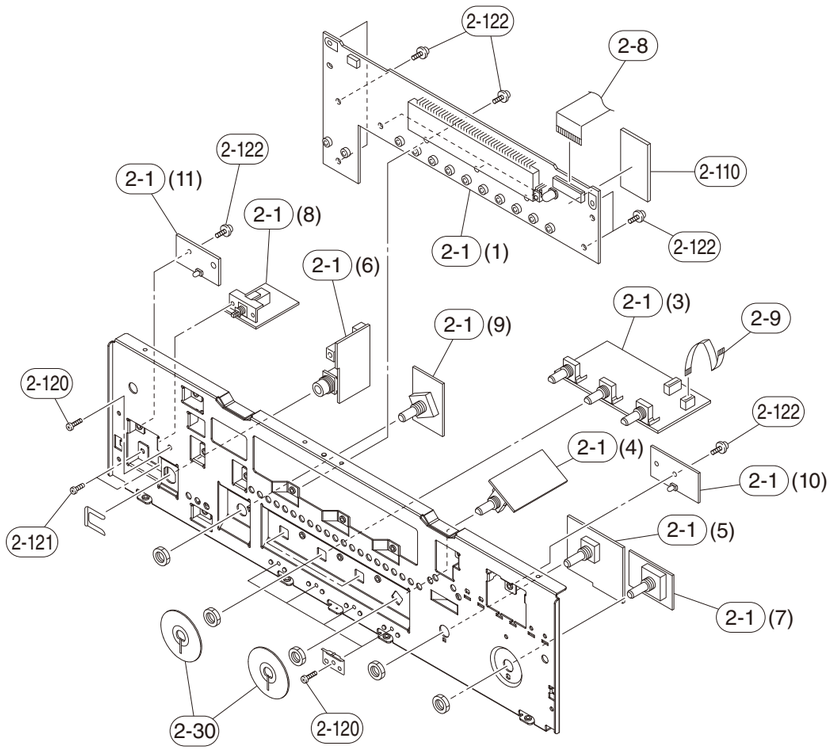
	Ref No.	Part No.	Description			Remarks	Markets
*	2-1	WV018000	P.C.B. ASS'Y	OPERATION			UC
*	2-1	WV018100	P.C.B. ASS'Y	OPERATION			R
*	2-1	WV018200	P.C.B. ASS'Y	OPERATION			A
*	2-1	WV018300	P.C.B. ASS'Y	OPERATION			G
*	2-1	WV018400	P.C.B. ASS'Y	OPERATION			L
*	5	WV014600	P.C.B. ASS'Y	FUNCTION			U
*	5	WV014700	P.C.B. ASS'Y	FUNCTION			C
*	5	WV014800	P.C.B. ASS'Y	FUNCTION			RL
*	5	WV015000	P.C.B. ASS'Y	FUNCTION			A
*	5	WV015100	P.C.B. ASS'Y	FUNCTION			G
*	8	WV024700	P.C.B. ASS'Y	DOCK			U
*	8	WV024800	P.C.B. ASS'Y	DOCK			CRAGL
	10	WQ756600	AM/FM TUNER	FAEH06-A			UCRL
	10	WQ756700	AM/FM TUNER	FAEH06-E			AG
⚠	11	WB120500	POWER CABLE	2m			UC
⚠	11	WC992700	POWER CABLE	2m			R
⚠	11	WC743700	POWER CABLE	2m			A
⚠ *	11	WR336900	POWER CABLE	2m			GL
*	16	MF107140	FLEXIBLE FLAT CABLE	7P 140mm P=1.25			
	17	MF114070	FLEXIBLE FLAT CABLE	14P 70mm P=1.25			
	18	MF111100	FLEXIBLE FLAT CABLE	11P 100mm P=1.25			
⚠ *	25	YC888A00	POWER TRANSFORMER				UC
⚠ *	25	YC889A00	POWER TRANSFORMER				R
⚠ *	25	YC890A00	POWER TRANSFORMER				AL
⚠ *	25	YC891A00	POWER TRANSFORMER				G
	101	WQ616500	TOP COVER			BL	
	101	WQ616600	TOP COVER			SI	
*	103	WU937600	REAR PANEL				U
*	103	WU936900	REAR PANEL				C
*	103	WU937400	REAR PANEL				R
*	103	WU936800	REAR PANEL				A
*	103	WU937000	REAR PANEL				G
*	103	WU937300	REAR PANEL				L
*	110	WQ379900	LEG	D60 H21			
*	111	WV002800	KNOB	INPUT		BL	
*	111	WV002700	KNOB	INPUT		SI	
*	112	WV004900	KNOB	VOLUME		BL	
*	112	WV004800	KNOB	VOLUME		SI	
	113	WP083200	KNOB	TC		BL	
	113	WP083100	KNOB	TC		SI	
	114	WP084000	CAP	POWER		BL	
	114	WP083900	CAP	POWER		SI	
	115	WP083600	KNOB	SP13		BL	
	115	WP083500	KNOB	SP13		SI	
*	116	WU966300	CAP	DIRECT			
*	116	WU966400	CAP	DIRECT			
	120	WE774100	BIND HEAD BONDING B-T. SCREW	3x8	MFZN2B3		
	122	WU048900	BIND HEAD S-TIGHT SCREW	4x10	MFZN2W3		
	123	WF002600	PW HEAD B-TIGHT SCREW	3x8	MFZN2W3		
	124	WE973300	BIND HEAD B-TIGHT SCREW	3x16	MFZN2B3		
	125	WF821300	BIND HEAD S-TIGHT SCREW	4x7	MFZN2W3		
	126	VH313200	PW HEAD S-TIGHT SCREW	4x8-10	MFNI3BL	BL	
	126	VD069600	PW HEAD S-TIGHT SCREW	4x8-10	MFNI33	SI	
	127	AA627310	GROUND TERMINAL				
	128	WE998100	BIND HEAD B-TIGHT SCREW	3x12	MFZN2B3		
	129	WE774300	BIND HEAD B-TIGHT SCREW	3x8	MFZN2W3		
	132	WQ790900	DAMPER	15x35x10			
	133	WE877900	BIND HEAD S-TIGHT SCREW	3x6	MFZN2W3		R
	172	WE200500	DISH HEAD B-TIGHT SCREW	3x6	MFNI3BL	BL	
	172	WE200400	DISH HEAD B-TIGHT SCREW	3x6	MFNI33	SI	

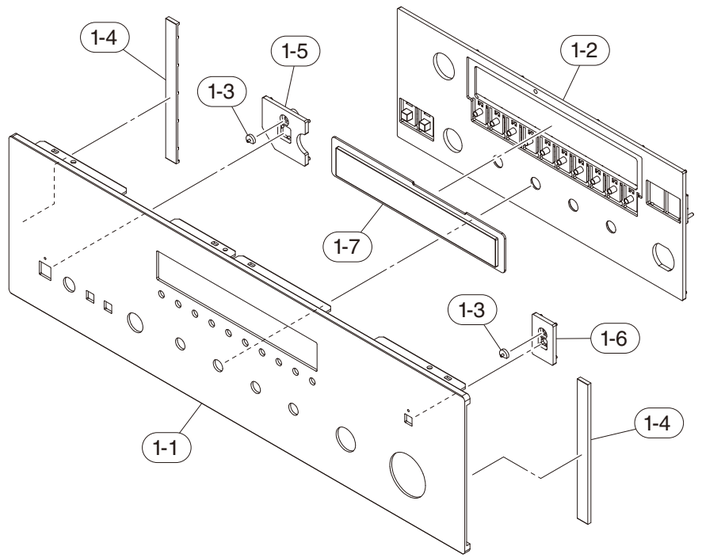
※ New Parts

	Ref No.	Part No.	Description		Remarks	Markets
	173	V2438700	CORD STOPPER	10P1		
	175	VB770200	PW HEAD P-TIGHT SCREW	3x10-8 MFC2		
	177	WT770800	DAMPER	30x90x8		
	180	WT769600	DAMPER	70x70x2		G
	181	WQ621800	DAMPER	10x310x10		G
			ACCESSORIES			
*	200	WV500400	REMOTE CONTROL	RAX25	000-001101460	U
*	200	WV500600	REMOTE CONTROL	RAX27	000-001101480	CA
*	200	WV500500	REMOTE CONTROL	RAX26	000-001101470	RGL
*	200-1	WW606600	BATTERY COVER	CG-2209 Gray	10030-0057100	
	202	V6267000	INDOOR FM ANTENNA	1.4m 1pc		UCRL
	202	VQ147100	INDOOR FM ANTENNA	1.4m 1pc		AG
	203	VQ307400	AM LOOP ANTENNA	1.2m 1pc		
			BATTERY	R03,AAA,UM-4 2pcs		
			SERVICE TOOL			
		WR492800	RS-232C CONVERSION ADAPTOR	3.3Vtype with FFC9P		

※ New Parts

- **FRONT PANEL UNIT and SUB-CHASSIS UNIT**

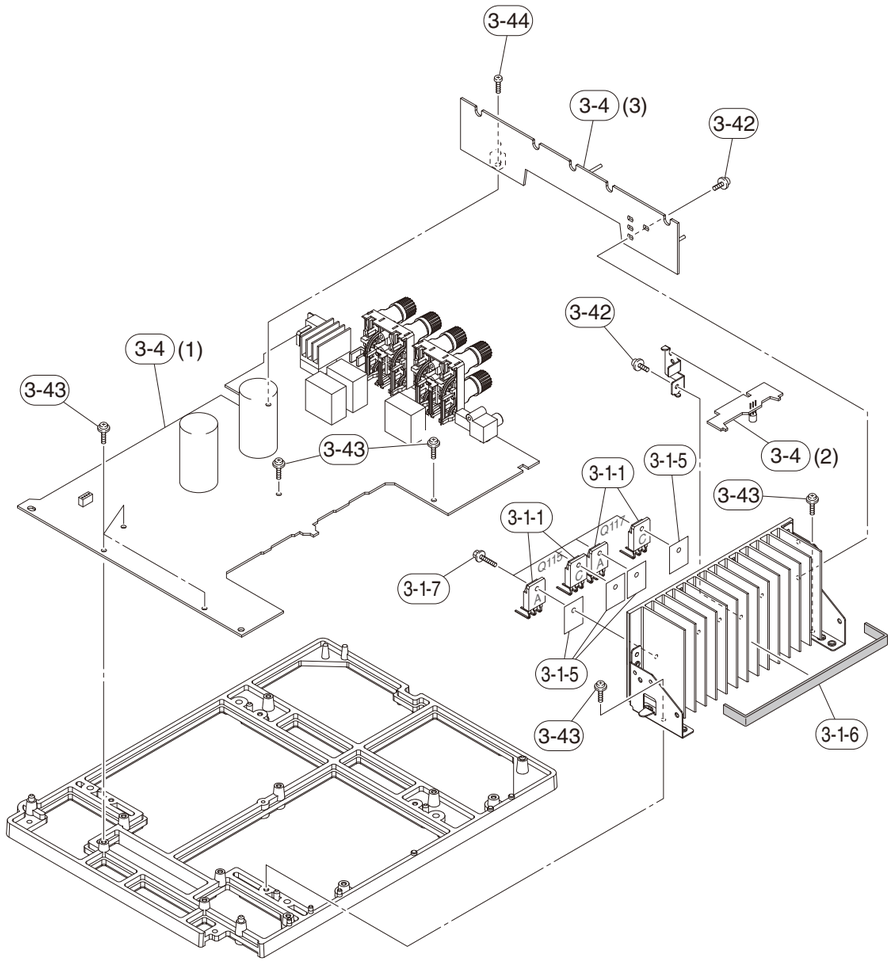




	Ref No.	Part No.	Description		Remarks	Markets
*	1-1	WU982500	FRONT PANEL		BL	U
*	1-1	WU982600	FRONT PANEL		BL	CA
*	1-1	WV046900	FRONT PANEL		SI	A
*	1-1	WU982800	FRONT PANEL		BL	RL
*	1-1	WU982400	FRONT PANEL		SI	RL
*	1-1	WU982700	FRONT PANEL		BL	G
*	1-1	WU982300	FRONT PANEL		SI	G
*	1-2	WU965700	SUB-PANEL		BL	UCA
*	1-2	WU965600	SUB-PANEL		SI	A
*	1-2	WU965900	SUB-PANEL		BL	RGL
*	1-2	WU965800	SUB-PANEL		SI	RGL
	1-3	WP080600	LED LENS			
	1-4	WP081200	SIDE PLATE		BL	
	1-4	WP081100	SIDE PLATE		SI	
*	1-5	WW649000	LENS SUPPORT	POWER		
*	1-6	WW649200	LENS SUPPORT	DIRECT		
*	1-7	WU961700	WINDOW PANEL LID			U
*	1-7	WU961600	WINDOW PANEL LID			CARGL
*	2-1	WV018000	P.C.B. ASS'Y	OPERATION		UC
*	2-1	WV018100	P.C.B. ASS'Y	OPERATION		R
*	2-1	WV018200	P.C.B. ASS'Y	OPERATION		A
*	2-1	WV018300	P.C.B. ASS'Y	OPERATION		G
*	2-1	WV018400	P.C.B. ASS'Y	OPERATION		L
	2-8	MF119350	FLEXIBLE FLAT CABLE	19P 350mm P=1.25		
*	2-9	MF105060	FLEXIBLE FLAT CABLE	5P 60mm P=1.25		
*	2-30	WU966500	DISC	TONE CONTROL		
	2-110	V3422200	DAMPER			
	2-120	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3		
	2-121	WE877900	BIND HEAD S-TIGHT SCREW	3x6 MFZN2W3		
	2-122	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3		

* New Parts

• AMP UNIT



	Ref No.	Part No.	Description		Remarks	Markets
# ⚠	3-1-1	VV586400	PAIR TRANSISTOR	2SA1695/C4468 OPY	Q115, Q117	
	3-1-5	VV849300	RADIATION SHEET	19x24		
	3-1-6	VP922500	DAMPER	2x10x170		
	3-1-7	VK173200	TRANSISTOR SCREW	3x15 SP MFC2		
*	3-4	WV021500	P.C.B. ASS'Y	MAIN		UC
*	3-4	WV021600	P.C.B. ASS'Y	MAIN		R
*	3-4	WV021800	P.C.B. ASS'Y	MAIN		A
*	3-4	WV021900	P.C.B. ASS'Y	MAIN		G
*	3-4	WV022000	P.C.B. ASS'Y	MAIN		L
	3-42	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3		
	3-43	VB770200	PW HEAD P-TIGHT SCREW	3x10-8 MFC2		
	3-44	WF268000	BIND HEAD P-TIGHT SCREW	3x10 MFZN2B3		

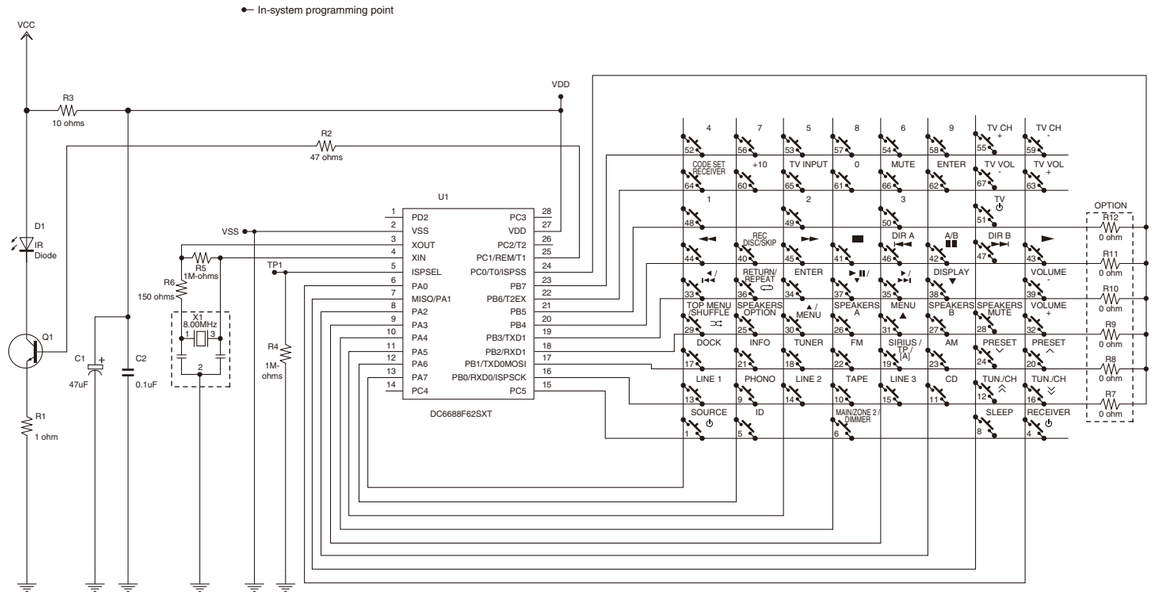
* New Parts

Note) Those parts marked with "#" are not included in the P.C.B. ass'y.

■ REMOTE CONTROL

● RAX25: U model / RAX27: C, A models / RAX26: R, G, L models

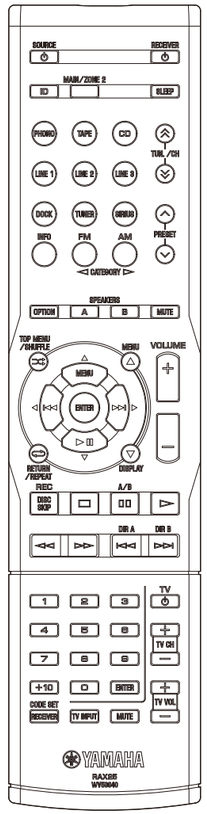
SCHEMATIC DIAGRAM



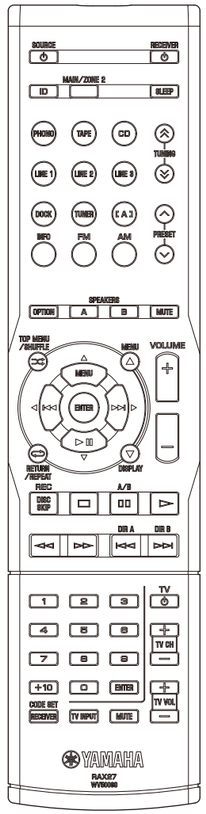
model \ option	R7	R8	R9	R10	R11	R12
RAX25	✓	X	X	X	X	X
RAX26	X	✓	X	X	X	X
RAX27	X	X	✓	X	X	X

PANELS

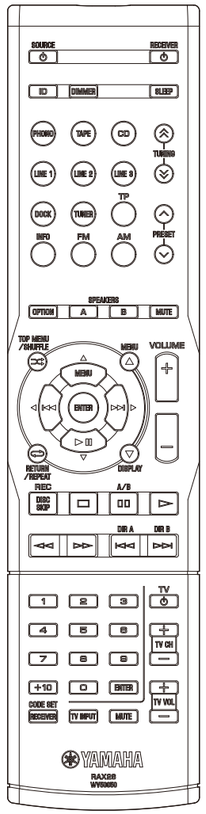
RAX25
(U model)



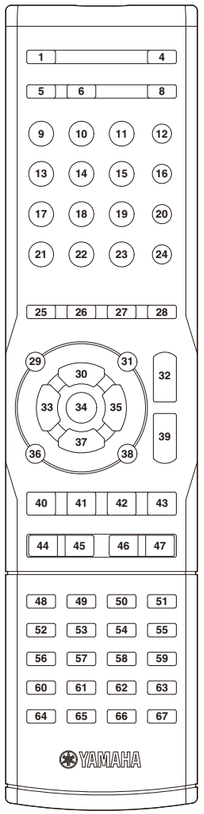
RAX27
(C, A models)



RAX26
(R, G, L models)



KEY NO. LAYOUT



KEY CODE (RAX25/RAX27)

Key No.	RAX25/27 FUNCTION	RECEIVER / DEVICE				SIRIUS or [A]	TUNER	DOCK	LINE3 (BD)	LINE2 (DVD)	LNE1 (CD-R)	CD	TAPE	PHONO
		MAIN		ZONE2										
		ID1	ID2 (default)	ID1	ID2 (default)				(Default: 2064)	(Default: 2082)	(Default: 5083)	(Default: 5082)	(Default: 5087)	
K4	⏻ (RECEIVER)	7E 81-2A D5	7E 81-2AD4	7A 85-453A	7A 85-453B	RECEIVER								
K8	SLEEP	7A 85-30 CF	7A 85-30CE	7A 85-31 CE	7A 85-31CF									
K9	PHONO	7A 85-14 EB	7A 85-14EA	7A 85-D0 2F	7A 85-D02E									
K10	TAPE	7A 85-18 E7	7A 85-18E6	7A 85-D3 2C	7A 85-D32D									
K11	CD	7A 85-15 EA	7A 85-15EB	7A 85-D1 2E	7A 85-D12F									
K12	⏫ TUN./CH (RAX25) / ⏫ TUNING (RAX27)	7F01-611E	7F01-611F	7F01-621D	7F01-621C									
K13	LINE 1	7A 85-19 E6	7A 85-19E7	7A 85-D4 2B	7A 85-D42A									
K14	LINE 2	7A 85-C1 3E	7A 85-C13F	7A 85-CD 32	7A 85-CD33									
K15	LINE 3	7A 85-C0 3F	7A 85-C03E	7A 85-CC 33	7A 85-CC32									
K16	⏬ TUN./CH (RAX25) / ⏬ TUNING (RAX27)	7F01-641B	7F01-641A	7F01-651A	7F01-651B									
K17	DOCK	7F01-4A B5	7F01-4AB4	7F01-4B B4	7F01-4BB5									
K18	TUNER	7A 85-16 E9	7A 85-16E8	7A 85-D2 2D	7A 85-D22C									
K19	SIRIUS (RAX25) / [A] (RAX27)	7A 85-39 C6	7A 85-39C7	7A 85-3A C5	7A 85-3AC4									
K20	⏫ PRESET	7F01-5B24	7F01-5B25	7F01-5C23	7F01-5C22									
K21	INFO	7A 85-2758	7A 85-2759	7A 85-2857	7A 85-2856									
K22	FM/CATEGORY (RAX25) / FM (RAX27)	7F01-5827	7F01-5826	7F01-5926	7F01-5927									
K23	AM/CATEGORY (RAX25) / AM (RAX27)	7F01-552A	7F01-552B	7F01-5629	7F01-5628									
K24	⏬ PRESET	7F01-5E21	7F01-5E20	7F01-5F20	7F01-5F21									
K26	SPEAKERS A	7A 85-9A 65	7A 85-9A64	–	–									
K27	SPEAKERS B	7A 85-9B 64	7A 85-9B65	–	–									
K28	MUTE	7A 85-1C E3	7A 85-1CE2	7A 85-DC 23	7A 85-DC22									
K32	VOLUME (+)	7A 85-1A E5	7A 85-1AE4	7A 85-DA 25	7A 85-DA24									
K39	VOLUME (-)	7A 85-1B E4	7A 85-1BE5	7A 85-DB 24	7A 85-DB25									
K25	OPTION	7A 85-6B14	7A 85-6B15	7A 85-6C13	7A 85-6C12									
K64	RECEIVER / CODE SET	SUCCESS: 7D 82-AA 55, FAIL: 7D 82-AB 54												
K5	ID	SUCCESS: 7D 82-AA 55, FAIL: 7D 82-AB 54												
K6	MAIN/ZONE 2	SUCCESS: 7D 82-AA 55, FAIL: 7D 82-AB 54												
K29	⤮ TOP MENU/SHUFFLE	7F01-46 B9	7F01-46B8	–	–	RECEIVER	RECEIVER	RECEIVER	7C 83-B1 4E	7C 83-B1 4E	–	–	–	RECEIVER
K30	MENU	7A 85-9D 62	7A 85-9D63	7A 85-2B54	7A 85-2B55				7C 83-B4 4B	7C 83-B4 4B	–	–	–	
K31	▲ MENU	7F01-61 9E	7F01-619F	7F01-81 7E	7F01-817F	ID1/MAIN	ID1/MAIN	ID1/MAIN	7C 83-CF 30	7C 83-B2 4D	–	–	–	ID1/MAIN
K33	⏮ (LEFT)	7A 85-9F 60	7A 85-9F61	7A 85-2D52	7A 85-2D53	ID1/ZONE2	ID1/ZONE2	ID1/ZONE2	7C 83-B5 4A	7C 83-B5 4A	–	–	–	ID1/ZONE2
K34	ENTER	7A 85-DE 21	7A 85-DE20	7A 85-2F50	7A 85-2F51	ID2/MAIN	ID2/MAIN	ID2/MAIN	7C 83-B8 47	7C 83-B8 47	–	–	–	ID2/MAIN
K35	⏭ (RIGHT)	7A 85-9E 61	7A 85-9E60	7A 85-2E51	7A 85-2E50	ID2/ZONE2	ID2/ZONE2	ID2/ZONE2	7C 83-B6 49	7C 83-B6 49	–	–	–	ID2/ZONE2
K36	RETURN/REPEAT	7A 85-AA 55	7A 85-AA54	7A 85-3C43	7A 85-3C42				7C 83-B7 48	7C 83-B7 48	–	–	–	
K37	▶⏸ (DOWN)	7A 85-9C 63	7A 85-9C62	7A 85-2C53	7A 85-2C52				7C 83-B3 4C	7C 83-B3 4C	–	–	–	
K38	▼ DISPLAY	7F01-65 9A	7F01-659B	7F01-85 7A	7F01-857B				7C 83-A6 59	7C 83-A6 59	7F 80-9E 61	79 86-0A F5	–	
K48	1	7F01-51 AE	7F01-51AF	7F01-71 8E	7F01-718F				7C 83-94 6B	7C 83-94 6B	7F 80-91 6E	79 86-11 EE	–	
K49	2	7F01-52 AD	7F01-52AC	7F01-72 8D	7F01-728C				7C 83-95 6A	7C 83-95 6A	7F 80-92 6D	79 86-12 ED	–	
K50	3	7F01-53 AC	7F01-53AD	7F01-73 8C	7F01-738D				7C 83-96 69	7C 83-96 69	7F 80-93 6C	79 86-13 EC	–	
K52	4	7F01-54 AB	7F01-54AA	7F01-74 8B	7F01-748A				7C 83-97 68	7C 83-97 68	7F 80-94 6B	79 86-14 EB	–	
K53	5	7F01-55 AA	7F01-55AB	7F01-75 8A	7F01-758B				7C 83-98 67	7C 83-98 67	7F 85-95 6A	79 86-15 EA	–	
K54	6	7F01-56 A9	7F01-56A8	7F01-76 89	7F01-7688				7C 83-99 66	7C 83-99 66	7F 80-96 69	79 86-16 E9	–	
K56	7	7F01-57 A8	7F01-57A9	7F01-77 88	7F01-7789				7C 83-9A 65	7C 83-9A 65	7F 80-97 68	79 86-17 E8	–	
K57	8	7F01-58 A7	7F01-58A6	7F01-78 87	7F01-7886				7C 83-9B 64	7C 83-9B 64	7F 80-98 67	79 86-18 E7	–	
K58	9	7F01-59 A6	7F01-59A7	7F01-79 86	7F01-7987				7C 83-9C 63	7C 83-9C 63	7F 80-99 66	79 86-19 E6	–	
K60	+10	7F01-5B A4	7F01-5BA5	7F01-7B 84	7F01-7B85				7C 83-9D 62	7C 83-9D 62	7F 80-9A 65	79 86-1A E5	–	
K61	0	7F01-5A A5	7F01-5AA4	7F01-7A 85	7F01-7A84				7C 83-93 6C	7C 83-93 6C	7F 80-90 6F	79 86-10 EF	–	
K62	ENTER	7F01-5C A3	7F01-5CA2	7F01-7C 83	7F01-7C82				7C 83-B8 47	7C 83-B8 47	7F 80-8A 75	79 86-0B F4	–	
K1	⏻ (SOURCE)	Press to DEVICE				–	–	–	7C 83-80 7F	7C 83-80 7F	7F 80-80 7F	79 86-60 9F	–	–
K40	DISC SKIP / REC					–	–	–	7C 83-8B 74	7C 83-8B 74	–	79 86-4F B0	7A 85-04 FB	–
K41	■ (STOP)					–	–	–	7C 83-85 7A	7C 83-85 7A	7F 80-84 7B	79 86-56 A9	7A 85-03 FC	–
K42	▮▮ (PAUSE) A/B					–	–	–	7C 83-83 7C	7C 83-83 7C	7F 80-83 7C	79 86-55 AA	7A 85-06 F9	–
K43	▶ (PLAY)					–	–	–	7C 83-82 7D	7C 83-82 7D	7F 80-82 7D	79 86-02 FD	7A 85-00 FF	–
K44	◀◀ (SEARCH - / REW)					–	–	–	7C 83-86 79	7C 83-86 79	7F 80-88 77	79 86-05 FA	7A 85-01 FE	–
K45	▶▶ (SEARCH + / FF)					–	–	–	7C 83-87 78	7C 83-87 78	7F 80-89 76	79 86-06 F9	7A 85-02 FD	–
K46	⏮ (SKIP -) DIR A					–	–	–	7C 83-B9 46	7C 83-B9 46	7F 80-86 79	79 86-04 FB	7A 85-07 F8	–
K47	⏭ (SKIP +) DIR B					–	–	–	7C 83-BA 45	7C 83-BA 45	7F 80-87 78	79 86-07 F8	7A 85-40 BF	–
K51	⏻ TV	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)
K55	TV CH +	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)
K59	TV CH -	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)
K63	TV VOLUME +	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)
K65	TV INPUT	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)
K66	MUTE	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)
K67	TV VOLUME -	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)

KEY CODE (RAX26)

Key No.	RAX26 FUNCTION	RECEIVER / DEVICE		TUNER	DOCK	LINE3 (BD)	LINE2 (DVD)	LNE1 (CD-R)	CD	TAPE	PHONO
		ID1	ID2 (default)								
		MAIN	MAIN			(Default: 2064)	(Default: 2082)	(Default: 5083)	(Default: 5082)	(Default: 5087)	
K4	⏻ (RECEIVER)	7E 81-2A D5	7E 81-2AD4								
K8	SLEEP	7A 85-30 CF	7A 85-30CE								
K9	PHONO	7A 85-14 EB	7A 85-14EA								
K10	TAPE	7A 85-18 E7	7A 85-18E6								
K11	CD	7A 85-15 EA	7A 85-15EB								
K12	⏫ TUNING	7F01-611E	7F01-611F								
K13	LINE 1	7A 85-19 E6	7A 85-19E7								
K14	LINE 2	7A 85-C1 3E	7A 85-C13F								
K15	LINE 3	7A 85-C0 3F	7A 85-C03E								
K16	⏬ TUNING	7F01-641B	7F01-641A								
K17	DOCK	7F01-4A B5	7F01-4AB4								
K18	TUNER	7A 85-16 E9	7A 85-16E8								
K19	TP (RDS)	7A 85-A5 5A	7A 85-A55B								
K20	⏶ PRESET	7F01-5B24	7F01-5B25	RECEIVER							
K21	INFO	7A 85-2758	7A 85-2759								
K22	FM	7F01-5827	7F01-5826								
K23	AM	7F01-552A	7F01-552B								
K24	⏷ PRESET	7F01-5E21	7F01-5E20								
K26	SPEAKERS A	7A 85-9A 65	7A 85-9A64								
K27	SPEAKERS B	7A 85-9B 64	7A 85-9B65								
K28	MUTE	7A 85-1C E3	7A 85-1CE2								
K32	VOLUME (+)	7A 85-1A E5	7A 85-1AE4								
K39	VOLUME (-)	7A 85-1B E4	7A 85-1BE5								
K25	OPTION	7A 85-6B14	7A 85-6B15								
K64	RECEIVER / CODE SET	SUCCESS: 7D 82-AA 55, FAIL: 7D 82-AB 54									
K5	ID	SUCCESS: 7D 82-AA 55, FAIL: 7D 82-AB 54									
K6	DIMMER	7A 85-82FD	7A 85-82FC								
K29	TOP MENU/SHUFFLE	7F01-46 B9	7F01-46B8	RECEIVER	RECEIVER	7C 83-B1 4E	7C 83-B1 4E	–	–	–	RECEIVER
K30	MENU	7A 85-9D 62	7A 85-9D63			7C 83-B4 4B	7C 83-B4 4B	–	–	–	
K31	▲ MENU	7F01-61 9E	7F01-619F	ID1/MAIN	ID1/MAIN	7C 83-CF 30	7C 83-B2 4D	–	–	–	ID1/MAIN
K33	⏮ (LEFT)	7A 85-9F 60	7A 85-9F61	ID1/ZONE2	ID1/ZONE2	7C 83-B5 4A	7C 83-B5 4A	–	–	–	ID1/ZONE2
K34	ENTER	7A 85-DE 21	7A 85-DE20	ID2/MAIN	ID2/MAIN	7C 83-B8 47	7C 83-B8 47	–	–	–	ID2/MAIN
K35	⏭ (RIGHT)	7A 85-9E 61	7A 85-9E60	ID2/ZONE2	ID2/ZONE2	7C 83-B6 49	7C 83-B6 49	–	–	–	ID2/ZONE2
K36	RETURN/REPEAT	7A 85-AA 55	7A 85-AA54			7C 83-B7 48	7C 83-B7 48	–	–	–	
K37	▶⏸ (DOWN)	7A 85-9C 63	7A 85-9C62			7C 83-B3 4C	7C 83-B3 4C	–	–	–	
K38	▼ DISPLAY	7F01-65 9A	7F01-659B			7C 83-A6 59	7C 83-A6 59	7F 80-9E 61	79 86-0A F5	–	
K48	1	7F01-51 AE	7F01-51AF			7C 83-94 6B	7C 83-94 6B	7F 80-91 6E	79 86-11 EE	–	
K49	2	7F01-52 AD	7F01-52AC			7C 83-95 6A	7C 83-95 6A	7F 80-92 6D	79 86-12 ED	–	
K50	3	7F01-53 AC	7F01-53AD			7C 83-96 69	7C 83-96 69	7F 80-93 6C	79 86-13 EC	–	
K52	4	7F01-54 AB	7F01-54AA			7C 83-97 68	7C 83-97 68	7F 80-94 6B	79 86-14 EB	–	
K53	5	7F01-55 AA	7F01-55AB			7C 83-98 67	7C 83-98 67	7F 85-95 6A	79 86-15 EA	–	
K54	6	7F01-56 A9	7F01-56A8			7C 83-99 66	7C 83-99 66	7F 80-96 69	79 86-16 E9	–	
K56	7	7F01-57 A8	7F01-57A9			7C 83-9A 65	7C 83-9A 65	7F 80-97 68	79 86-17 E8	–	
K57	8	7F01-58 A7	7F01-58A6			7C 83-9B 64	7C 83-9B 64	7F 80-98 67	79 86-18 E7	–	
K58	9	7F01-59 A6	7F01-59A7			7C 83-9C 63	7C 83-9C 63	7F 80-99 66	79 86-19 E6	–	
K60	+10	7F01-5B A4	7F01-5BA5			7C 83-9D 62	7C 83-9D 62	7F 80-9A 65	79 86-1A E5	–	
K61	0	7F01-5A A5	7F01-5AA4			7C 83-93 6C	7C 83-93 6C	7F 80-90 6F	79 86-10 EF	–	
K62	ENTER	7F01-5C A3	7F01-5CA2			7C 83-B8 47	7C 83-B8 47	7F 80-8A 75	79 86-0B F4	–	
K1	⏻ (SOURCE)	Press to DEVICE		–	–	7C 83-80 7F	7C 83-80 7F	7F 80-80 7F	79 86-60 9F	–	–
K40	DISC SKIP / REC			–	–	7C 83-8B 74	7C 83-8B 74	–	79 86-4F B0	7A 85-04 FB	–
K41	■ (STOP)			–	–	7C 83-85 7A	7C 83-85 7A	7F 80-84 7B	79 86-56 A9	7A 85-03 FC	–
K42	▮▮ (PAUSE) A/B			–	–	7C 83-83 7C	7C 83-83 7C	7F 80-83 7C	79 86-55 AA	7A 85-06 F9	–
K43	▶ (PLAY)			–	–	7C 83-82 7D	7C 83-82 7D	7F 80-82 7D	79 86-02 FD	7A 85-00 FF	–
K44	◀◀ (SEARCH - / REW)			–	–	7C 83-86 79	7C 83-86 79	7F 80-88 77	79 86-05 FA	7A 85-01 FE	–
K45	▶▶ (SEARCH + / FF)			–	–	7C 83-87 78	7C 83-87 78	7F 80-89 76	79 86-06 F9	7A 85-02 FD	–
K46	⏮ (SKIP -) DIR A			–	–	7C 83-B9 46	7C 83-B9 46	7F 80-86 79	79 86-04 FB	7A 85-07 F8	–
K47	⏭ (SKIP +) DIR B			–	–	7C 83-BA 45	7C 83-BA 45	7F 80-87 78	79 86-07 F8	7A 85-40 BF	–
K51	⏻ TV	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)	(TV POWER A)
K55	TV CH +	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)	(TV CH + A)
K59	TV CH -	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)	(TV CH - A)
K63	TV VOLUME +	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)	(TV VOL + A)
K65	TV INPUT	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)	(TV INPUT A)
K66	MUTE	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)	(TV MUTE A)
K67	TV VOLUME -	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)	(TV VOL - A)

PRESET CODE

How to set the preset method	RAX25 RAX26	1st.	Press and hold K64 [CODE SET] key on the RC for more than 3 seconds.	
		2nd	Press the “INPUT” key (K10 [TAPE] or K11 [CD] or K13 [LINE1] or K14 [LINE2] or K15 [LINE3]).	(Choose the preset area)
		3rd	Press the “numeric” key of the preset code number.	
	RAX27	1st.	Press and hold K64 [CODE SET] key on the RC for more than 3 seconds.	
		2nd	Press the “INPUT” key (K10 [TAPE] or K11 [CD] or K13 [LINE1] or K14 [LINE2] or K15 [LINE3] or K19 [[A]])	(Choose the preset area)
		3rd	Press the “numeric” key of the preset code number.	

How to set the TV preset method	1st.	Press and hold K64 [CODE SET] key on the RC for more than 3 seconds.	
	2nd	Press the K51 [TV POWER] key.	(Choose the preset area)
	3rd	Press the “numeric” key of the preset code number.	

How to reset all remote control codes	1st.	Press and hold K64 [CODE SET] key on the RC for more than 3 seconds.
	2nd	Press the K25 [OPTION] key.
	3rd	Press the numeric buttons to enter the code number “9981”.

How to 30 sec. ON (Default)	1st.	Press and hold K64 [CODE SET] key on the RC for more than 3 seconds.
	2nd	Press the K25 [OPTION] key.
	3rd	Press the numeric buttons to enter the code number “9999”.

How to 30 sec. OFF (Continue to transmit permanent)	1st.	Press and hold “K28 (MUTE)”
	2nd	Press and release “K21 (INFO)”
	3nd	iii. Press and release “K22 (FM/CATEGORY DOWN)”

PRESET AREA	SIRIUS or [A]	TUNER	DOCK	LINE3	LINE2	LINE1	CD	TAPE	PHONO	TV POWER
RAX25	Impossible	Impossible	Impossible	Possible	Possible	Possible	Possible	Possible	Impossible	Possible
RAX26	Impossible	Impossible	Impossible	Possible	Possible	Possible	Possible	Possible	Impossible	Possible
RAX27	Possible	Impossible	Impossible	Possible	Possible	Possible	Possible	Possible	Impossible	Possible

RAX25, RAX27

Key No.	Label	SIRIUS or [A]	TUNER	DOCK	LINE3 (BD) 2064	LINE2 (DVD) 2082	LINE1 (CD-R) 5067	CD 5085	TAPE 0082	PHONO	TV POWER 0080
		ID2 (Default)	ID2 (Default)	ID2 (Default)	MAIN	MAIN	MAIN	MAIN	MAIN	ID2 (Default)	MAIN
K1	⏻ (SOURCE)	–	–	–	7C 83-80 7F	7C 83-80 7F	7F01-D0 2F	D1 2E-1B E4	* empty *	–	* empty *
K29	TOP MENU/SHUFFLE	7F01-46B8	7F01-46B8	7F01-46B8	7C 83-B1 4E	7C 83-B1 4E	7F01-DD 22	7A 85-AE 51	–	7F01-46B8	–
K31	▲ MENU	7F01-619F	7F01-619F	7F01-619F	7C 83-CF 30	7C 83-B2 4D	7F01-DE 21	7A 85-AB 54	D1 2E D3 2C	7F01-619F	50 AF 70 8F
K30	MENU	7A 85-9D63	7A 85-9D63	7A 85-9D63	7C 83-B4 4B	7C 83-B4 4B	7F01-E1 1E	7A 85-10 EF	D1 2E CC 33	7A 85-9D63	50 AF 53 AC
K33	⏮ (LEFT)	7A 85-9F61	7A 85-9F61	7A 85-9F61	7C 83-B5 4A	7C 83-B5 4A	7F01-E2 1D	7A 85-AC 53	D1 2E CE 31	7A 85-9F61	50 AF 73 8C
K34	ENTER	7A 85-DE20	7A 85-DE20	7A 85-DE20	7C 83-B8 47	7C 83-B8 47	7F01-E3 1C	7A 85-AD 52	D1 2E D0 2F	7A 85-DE20	50 AF 33 CC
K35	⏭ (RIGHT)	7A 85-9E60	7A 85-9E60	7A 85-9E60	7C 83-B6 49	7C 83-B6 49	7F01-E4 1B	7A 85-12 ED	D1 2E CF 30	7A 85-9E60	50 AF 72 8D
K36	RETURN/REPEAT	7A 85-AA54	7A 85-AA54	7A 85-AA54	7C 83-B7 48	7C 83-B7 48	7F01-DF 20	7A 85-AF 50	D1 2E D5 2A	7A 85-AA54	50 AF 0A F5
K37	▶⏸ (DOWN)	7A 85-9C62	7A 85-9C62	7A 85-9C62	7C 83-B3 4C	7C 83-B3 4C	7F01-E5 1A	7A 85-11 EE	D1 2E CD 32	7A 85-9C62	50 AF 71 8E
K38	▼ DISPLAY	7F01-659B	7F01-659B	7F01-659B	7C 83-A6 59	7C 83-A6 59	7F01-E0 1F	7A 85-B0 4F	–	7F01-659B	50 AF 10 EF
K40	DISC SKIP / REC	–	–	–	7C 83-8B 74	7C 83-8B 74	7F01-E6 19	–	* empty *	–	* empty *
K41	■ (STOP)	–	–	–	7C 83-85 7A	7C 83-85 7A	7F01-E9 16	–	* empty *	–	* empty *
K42	▮▮ (PAUSE) A/B	–	–	–	7C 83-83 7C	7C 83-83 7C	7F01-E7 18	–	* empty *	–	* empty *
K43	▶ (PLAY)	–	–	–	7C 83-82 7D	7C 83-82 7D	7F01-E8 17	–	* empty *	–	* empty *
K44	◀◀ (SEARCH - / REW)	–	–	–	7C 83-86 79	7C 83-86 79	7F01-EA 15	–	* empty *	–	* empty *
K45	▶▶ (SEARCH + / FF)	–	–	–	7C 83-87 78	7C 83-87 78	7F01-EB 14	7A 85-A5 5A	* empty *	–	* empty *
K46	⏮ (SKIP -) DIR A	–	–	–	7C 83-B9 46	7C 83-B9 46	7F01-EC 13	7A 85-A6 59	* empty *	–	* empty *
K47	⏭ (SKIP +) DIR B	–	–	–	7C 83-BA 45	7C 83-BA 45	7F01-ED 12	7A 85-A7 58	* empty *	–	* empty *
K48	1	7F01-51AF	7F01-51AF	7F01-51AF	7C 83-94 6B	7C 83-94 6B	7F01-D1 2E	7A 85-E5 1A	D1 2E E1 1E	7F01-51AF	50 AF 0D F2
K49	2	7F01-52AC	7F01-52AC	7F01-52AC	7C 83-95 6A	7C 83-95 6A	7F01-D2 2D	7A 85-E6 19	D1 2E E2 1D	7F01-52AC	50 AF 0E F1
K50	3	7F01-53AD	7F01-53AD	7F01-53AD	7C 83-96 69	7C 83-96 69	7F01-D3 2C	7A 85-E7 18	D1 2E E3 1C	7F01-53AD	50 AF 0F F0
K52	4	7F01-54AA	7F01-54AA	7F01-54AA	7C 83-97 68	7C 83-97 68	7F01-D4 2B	7A 85-E8 17	D1 2E E4 1B	7F01-54AA	50 AF 1C E3
K53	5	7F01-55AB	7F01-55AB	7F01-55AB	7C 83-98 67	7C 83-98 67	7F01-D5 2A	7A 85-E9 16	D1 2E E5 1A	7F01-55AB	50 AF 1D E2
K54	6	7F01-56A8	7F01-56A8	7F01-56A8	7C 83-99 66	7C 83-99 66	7F01-D6 29	7A 85-EA 15	D1 2E E6 19	7F01-56A8	50 AF 1E E1
K56	7	7F01-57A9	7F01-57A9	7F01-57A9	7C 83-9A 65	7C 83-9A 65	7F01-D7 28	7A 85-EB 14	–	7F01-57A9	50 AF 1F E0
K57	8	7F01-58A6	7F01-58A6	7F01-58A6	7C 83-9B 64	7C 83-9B 64	7F01-D8 27	7A 85-EC 13	–	7F01-58A6	50 AF 04 FB
K58	9	7F01-59A7	7F01-59A7	7F01-59A7	7C 83-9C 63	7C 83-9C 63	7F01-D9 26	7A 85-B1 4E	–	7F01-59A7	50 AF 05 FA
K60	+10	7F01-5BA5	7F01-5BA5	7F01-5BA5	7C 83-9D 62	7C 83-9D 62	7F01-DB 24	–	–	7F01-5BA5	50 AF 06 F9
K61	0	7F01-5AA4	7F01-5AA4	7F01-5AA4	7C 83-93 6C	7C 83-93 6C	7F01-DA 25	7A 85-B2 4D	–	7F01-5AA4	50 AF 0C F3
K62	ENTER	7F01-5CA2	7F01-5CA2	7F01-5CA2	7C 83-9E 61	7C 83-9E 61	7F01-DC 23	7A 85-B3 4C	–	7F01-5CA2	50 AF 06 F9
K51	⏻ TV	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	D1 2E C2 3D	50 AF 17 E8	50 AF 17 E8
K55	TV CH +	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	–	50 AF 19 E6	50 AF 19 E6
K59	TV CH -	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	–	50 AF 18 E7	50 AF 18 E7
K63	TV VOLUME +	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	–	50 AF 12 ED	50 AF 12 ED
K65	TV INPUT	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	D1 2E D6 29	50 AF 09 F6	50 AF 09 F6
K66	MUTE	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	–	50 AF 0B F4	50 AF 0B F4
K67	TV VOLUME -	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	–	50 AF 15 EA	50 AF 15 EA

RAX26

Key No.	Label	SIRIUS or [A]	TUNER	DOCK	LINE3 (BD) 2064	LINE2 (DVD) 2082	LINE1 (CD-R) 5067	CD 5085	TAPE 0082	PHONO	TV POWER 0080
		ID2 (Default)	ID2 (Default)	ID2 (Default)	MAIN	MAIN	MAIN	MAIN	MAIN	ID2 (Default)	MAIN
K1	⏻ (SOURCE)	Press to DEVICE	–	–	7C 83-80 7F	7C 83-80 7F	7F01-D0 2F	D1 2E-1B E4	* empty *	–	* empty *
K29	TOP MENU/SHUFFLE	7F01-46B8	7F01-46B8	7F01-46B8	7C 83-B1 4E	7C 83-B1 4E	7F01-DD 22	7A 85-AE 51	–	7F01-46B8	–
K31	▲ MENU	7F01-619F	7F01-619F	7F01-619F	7C 83-CF 30	7C 83-B2 4D	7F01-DE 21	7A 85-AB 54	D1 2E D3 2C	7F01-619F	50 AF 70 8F
K30	MENU	7A 85-9D63	7A 85-9D63	7A 85-9D63	7C 83-B4 4B	7C 83-B4 4B	7F01-E1 1E	7A 85-10 EF	D1 2E CC 33	7A 85-9D63	50 AF 53 AC
K33	⏮ (LEFT)	7A 85-9F61	7A 85-9F61	7A 85-9F61	7C 83-B5 4A	7C 83-B5 4A	7F01-E2 1D	7A 85-AC 53	D1 2E CE 31	7A 85-9F61	50 AF 73 8C
K34	ENTER	7A 85-DE20	7A 85-DE20	7A 85-DE20	7C 83-B8 47	7C 83-B8 47	7F01-E3 1C	7A 85-AD 52	D1 2E D0 2F	7A 85-DE20	50 AF 33 CC
K35	⏭ (RIGHT)	7A 85-9E60	7A 85-9E60	7A 85-9E60	7C 83-B6 49	7C 83-B6 49	7F01-E4 1B	7A 85-12 ED	D1 2E CF 30	7A 85-9E60	50 AF 72 8D
K36	RETURN/REPEAT	7A 85-AA54	7A 85-AA54	7A 85-AA54	7C 83-B7 48	7C 83-B7 48	7F01-DF 20	7A 85-AF 50	D1 2E D5 2A	7A 85-AA54	50 AF 0A F5
K37	▶⏸ (DOWN)	7A 85-9C62	7A 85-9C62	7A 85-9C62	7C 83-B3 4C	7C 83-B3 4C	7F01-E5 1A	7A 85-11 EE	D1 2E CD 32	7A 85-9C62	50 AF 71 8E
K38	▼ DISPLAY	7F01-659B	7F01-659B	7F01-659B	7C 83-A6 59	7C 83-A6 59	7F01-E0 1F	7A 85-B0 4F	–	7F01-659B	50 AF 10 EF
K40	DISC SKIP / REC	Press to DEVICE	–	–	7C 83-8B 74	7C 83-8B 74	7F01-E6 19	–	* empty *	–	* empty *
K41	■ (STOP)	Press to DEVICE	–	–	7C 83-85 7A	7C 83-85 7A	7F01-E9 16	–	* empty *	–	* empty *
K42	▮▮ (PAUSE) A/B	Press to DEVICE	–	–	7C 83-83 7C	7C 83-83 7C	7F01-E7 18	–	* empty *	–	* empty *
K43	▶ (PLAY)	Press to DEVICE	–	–	7C 83-82 7D	7C 83-82 7D	7F01-E8 17	–	* empty *	–	* empty *
K44	◀◀ (SEARCH - / REW)	Press to DEVICE	–	–	7C 83-86 79	7C 83-86 79	7F01-EA 15	–	* empty *	–	* empty *
K45	▶▶ (SEARCH + / FF)	Press to DEVICE	–	–	7C 83-87 78	7C 83-87 78	7F01-EB 14	7A 85-A5 5A	* empty *	–	* empty *
K46	⏮ (SKIP -) DIR A	Press to DEVICE	–	–	7C 83-B9 46	7C 83-B9 46	7F01-EC 13	7A 85-A6 59	* empty *	–	* empty *
K47	⏭ (SKIP +) DIR B	Press to DEVICE	–	–	7C 83-BA 45	7C 83-BA 45	7F01-ED 12	7A 85-A7 58	* empty *	–	* empty *
K48	1	7F01-51AF	7F01-51AF	7F01-51AF	7C 83-94 6B	7C 83-94 6B	7F01-D1 2E	7A 85-E5 1A	D1 2E E1 1E	7F01-51AF	50 AF 0D F2
K49	2	7F01-52AC	7F01-52AC	7F01-52AC	7C 83-95 6A	7C 83-95 6A	7F01-D2 2D	7A 85-E6 19	D1 2E E2 1D	7F01-52AC	50 AF 0E F1
K50	3	7F01-53AD	7F01-53AD	7F01-53AD	7C 83-96 69	7C 83-96 69	7F01-D3 2C	7A 85-E7 18	D1 2E E3 1C	7F01-53AD	50 AF 0F F0
K52	4	7F01-54AA	7F01-54AA	7F01-54AA	7C 83-97 68	7C 83-97 68	7F01-D4 2B	7A 85-E8 17	D1 2E E4 1B	7F01-54AA	50 AF 1C E3
K53	5	7F01-55AB	7F01-55AB	7F01-55AB	7C 83-98 67	7C 83-98 67	7F01-D5 2A	7A 85-E9 16	D1 2E E5 1A	7F01-55AB	50 AF 1D E2
K54	6	7F01-56A8	7F01-56A8	7F01-56A8	7C 83-99 66	7C 83-99 66	7F01-D6 29	7A 85-EA 15	D1 2E E6 19	7F01-56A8	50 AF 1E E1
K56	7	7F01-57A9	7F01-57A9	7F01-57A9	7C 83-9A 65	7C 83-9A 65	7F01-D7 28	7A 85-EB 14	–	7F01-57A9	50 AF 1F E0
K57	8	7F01-58A6	7F01-58A6	7F01-58A6	7C 83-9B 64	7C 83-9B 64	7F01-D8 27	7A 85-EC 13	–	7F01-58A6	50 AF 04 FB
K58	9	7F01-59A7	7F01-59A7	7F01-59A7	7C 83-9C 63	7C 83-9C 63	7F01-D9 26	7A 85-B1 4E	–	7F01-59A7	50 AF 05 FA
K60	+10	7F01-5BA5	7F01-5BA5	7F01-5BA5	7C 83-9D 62	7C 83-9D 62	7F01-DB 24	–	–	7F01-5BA5	50 AF 06 F9
K61	0	7F01-5AA4	7F01-5AA4	7F01-5AA4	7C 83-93 6C	7C 83-93 6C	7F01-DA 25	7A 85-B2 4D	–	7F01-5AA4	50 AF 0C F3
K62	ENTER	7F01-5CA2	7F01-5CA2	7F01-5CA2	7C 83-9E 61	7C 83-9E 61	7F01-DC 23	7A 85-B3 4C	–	7F01-5CA2	50 AF 06 F9
K51	⏻ TV	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	50 AF 17 E8	D1 2E C2 3D	50 AF 17 E8	50 AF 17 E8
K55	TV CH +	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	50 AF 19 E6	–	50 AF 19 E6	50 AF 19 E6
K59	TV CH -	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	50 AF 18 E7	–	50 AF 18 E7	50 AF 18 E7
K63	TV VOLUME +	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	50 AF 12 ED	–	50 AF 12 ED	50 AF 12 ED
K65	TV INPUT	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	50 AF 09 F6	D1 2E D6 29	50 AF 09 F6	50 AF 09 F6
K66	MUTE	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	50 AF 0B F4	–	50 AF 0B F4	50 AF 0B F4
K67	TV VOLUME -	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	50 AF 15 EA	–	50 AF 15 EA	50 AF 15 EA

■ ADVANCED SETUP

(U, C, A models)

■ ADVANCED SETUP menu parameters

Change the initial settings to reflect the needs of your listening environment.

The default settings are marked with "*".

REMOTE ID

Choices: ID1, ID2*

Changes the remote control ID of this unit.

- Select ID1 to operate this unit using an alternative code.
- Select ID2 to operate this unit using the default code.

Note

The remote control's ID must be set to the same ID as this unit.

SR PIN (SIRIUS Personal Identification Number)

(U model)

Choices: CANCEL*, RESET

Resets the Parental Lock code used to lock/unlock SIRIUS satellite radio channels.

APD (Automatic Power Down) TIMER

Choices: 4H (4 hours), 8H* (8 hours), 12H (12 hours)

When the POWER MANAGEMENT switch on the rear panel of this unit is set to ON, this unit's Main zone and Zone 2 automatically enters standby mode if this unit is not operated for the specified amount of time.

Note

When the POWER MANAGEMENT switch is set to OFF, "APD TIMER -OFF" is displayed.

INITIALIZE

Choices: NO*, YES

Resets all parameters to their factory presets.

- Select NO to cancel without resetting all parameters to their factory presets.
- Select YES to reset all parameters to their factory presets.

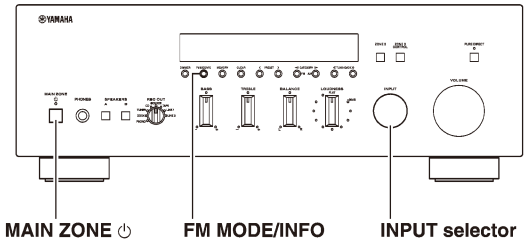
Note

If "YES" is selected the parameters are reset the next time you turn on the power of this unit.

Changing the ADVANCED SETUP menu parameters

The ADVANCED SETUP menu is displayed in the front panel display.

- Audio output is muted while setting parameters in the ADVANCED SETUP menu.
- While setting parameters in the ADVANCED SETUP menu, most controls on the front panel are disabled; only MAIN ZONE ⏻, the INPUT selector and FM MODE/INFO are operational.



1 Press and hold FM MODE/INFO on the front panel, and then press MAIN ZONE ⏻.

This unit turns on, and the ADVANCED SETUP menu is displayed on the front panel display.

2 Rotate the INPUT selector on the front panel to select the parameter you want to change.

See "ADVANCED SETUP menu parameters" for a complete list of available parameters.

3 Press FM MODE/INFO on the front panel repeatedly to change the selected parameter setting.

To change other settings, repeat steps 2 and 3.

4 Press MAIN ZONE ⏻ to set this unit to standby mode to confirm your setting.

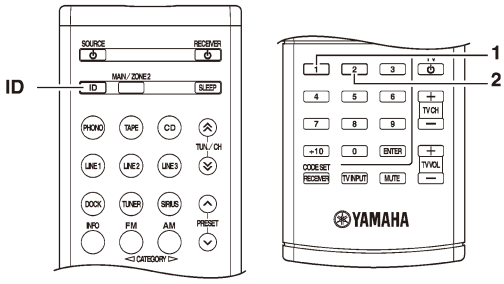
Note

The settings you made take effect the next time you turn on this unit.

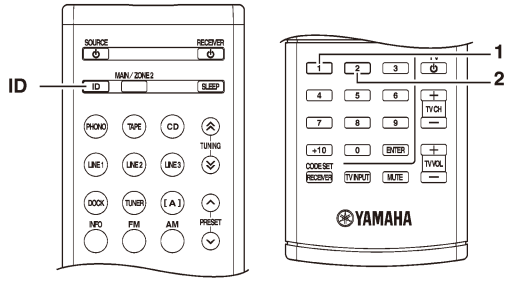
Switching the remote control ID

When using multiple Yamaha receivers or amplifiers with the same default code setting, you may unintentionally operate those components simultaneously. In this case, set one of the alternative codes for this unit to operate this unit separately.

(U model)



(C, A models)



- Switching to ID1
  Press and hold the ID button and the numeric button "1" on the remote control together for about 3 seconds.
- Switching to ID2
  Press and hold the ID button and the numeric button "2" on the remote control together for about 3 seconds.

Remote control ID* (this unit's setting)	Function
ID1	To operate this unit using an alternative code.
ID2 (default setting)	To operate this unit using the default code.

* When you change the remote control ID, you must change the remote control ID of this unit .

Note

If the remote control batteries are weak or removed, the remote control ID will switch to the default setting (ID2). In this case, replace the batteries and set the remote control ID again.

(R, G, L models)

■ ADVANCED SETUP menu parameters

Change the initial settings to reflect the needs of your listening environment.

The default settings are marked with "*".

REMOTE ID

Choices: ID1, ID2*

Changes the remote control ID of this unit.

- Select ID1 to operate this unit using an alternative code.
- Select ID2 to operate this unit using the default code.

Note

The remote control's ID must be set to the same ID as this unit.

APD (Automatic Power Down) TIMER

Choices: 4H (4 hours), 8H* (8 hours), 12H (12 hours)

When the POWER MANAGEMENT switch on the rear panel of this unit is set to ON, this unit automatically enters standby mode if it is not operated for the specified amount of time.

Note

When the POWER MANAGEMENT switch is set to OFF, "APD TIMER -OFF" is displayed.

INITIALIZE

Choices: NO*, YES

Resets all parameters to their factory presets.

- Select NO to cancel without resetting all parameters to their factory presets.
- Select YES to reset all parameters to their factory presets.

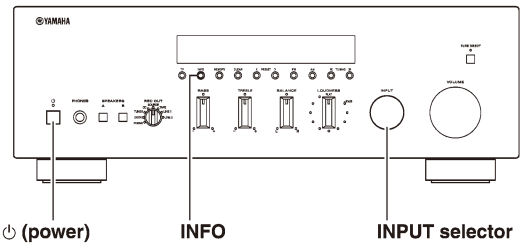
Note

If "YES" is selected the parameters are reset the next time you turn on the power of this unit.

Changing the ADVANCED SETUP menu parameters

The ADVANCED SETUP menu is displayed in the front panel display.

- Audio output is muted while setting parameters in the ADVANCED SETUP menu.
- While setting parameters in the ADVANCED SETUP menu, most controls on the front panel are disabled; only ⏻ (power), the INPUT selector and INFO are operational.



1 Press and hold INFO on the front panel, and then press ⏻ (power) inward.

This unit turns on, and the ADVANCED SETUP menu is displayed on the front panel display.

2 Rotate the INPUT selector on the front panel to select the parameter you want to change.

See "ADVANCED SETUP menu parameters" for a complete list of available parameters.

3 Press INFO on the front panel repeatedly to change the selected parameter setting.

To change other settings, repeat steps 2 and 3.

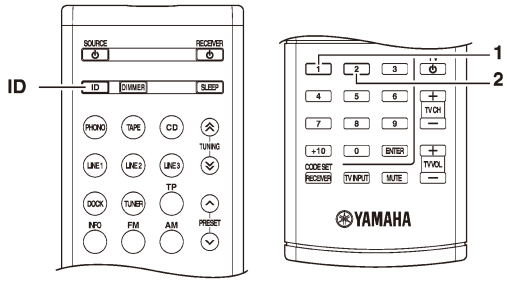
4 Press ⏻ (power) on the front panel outward to turn off this unit to confirm your setting.

Note

The settings you made take effect the next time you turn on this unit.

Switching the remote control ID

When using multiple Yamaha receivers or amplifiers with the same default code setting, you may unintentionally operate those components simultaneously. In this case, set one of the alternative codes for this unit to operate this unit separately.



- Switching to ID1
  Press and hold the ID button and the numeric button "1" on the remote control together for about 3 seconds.
- Switching to ID2
  Press and hold the ID button and the numeric button "2" on the remote control together for about 3 seconds.

Remote control ID* (this unit's setting)	Function
ID1	To operate this unit using an alternative code.
ID2 (default setting)	To operate this unit using the default code.

* When you change the remote control ID, you must change the remote control ID of this unit .

Note

If the remote control batteries are weak or removed, the remote control ID will switch to the default setting (ID2). In this case, replace the batteries and set the remote control ID again.

MEMO

R-S500

YAMAHA