

RECEIVER

R-S201

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

TO SERVICE PERSONNEL	2	DISPLAY DATA	27
FRONT PANEL	3	IC DATA	28–29
REAR PANELS	3–4	BLOCK DIAGRAM	30
REMOTE CONTROL PANEL	5	WIRING DIAGRAM	31
SPECIFICATIONS	5–6	PRINTED CIRCUIT BOARDS	32–37
INTERNAL VIEW	7	PIN CONNECTION DIAGRAMS	38
SERVICE PRECAUTIONS	7	SCHEMATIC DIAGRAM	39
DISASSEMBLY PROCEDURES	8–10	REPLACEMENT PARTS LIST	41–47
UPDATING FIRMWARE	11–16	REMOTE CONTROL	48
SELF-DIAGNOSTIC FUNCTION	17–26	ADVANCED SETUP	49

■ TO SERVICE PERSONNEL

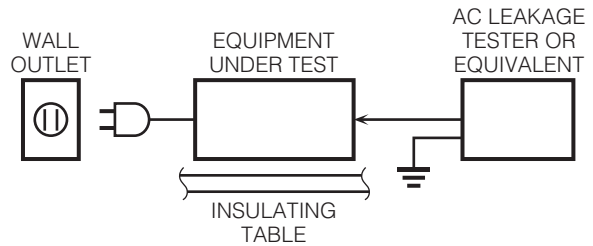
1. Critical Components Information

Components having special characteristics are marked Δ 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 μ F.



- 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 MÊME 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.

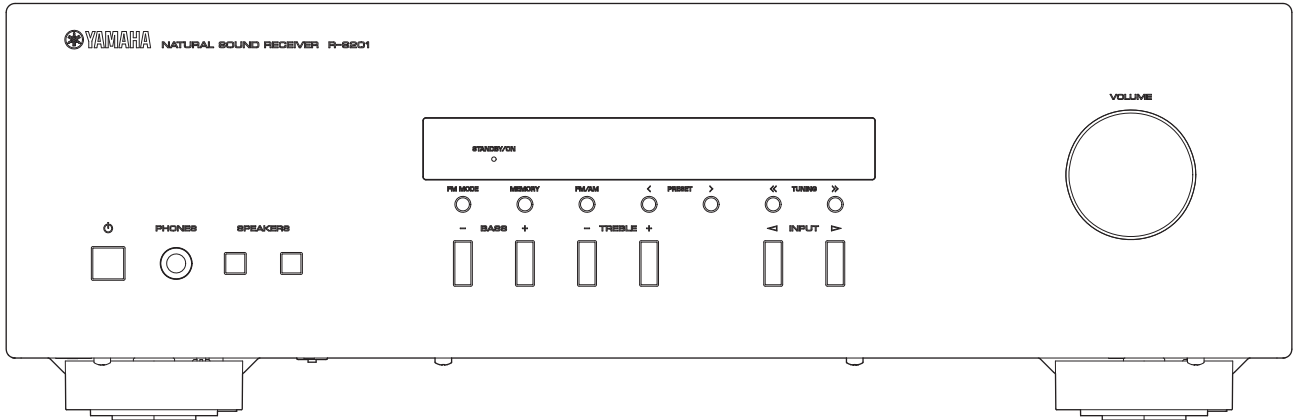
Among some types of lead free solder currently available, it is recommended to use one of the following types for the repair work.

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

Caution:

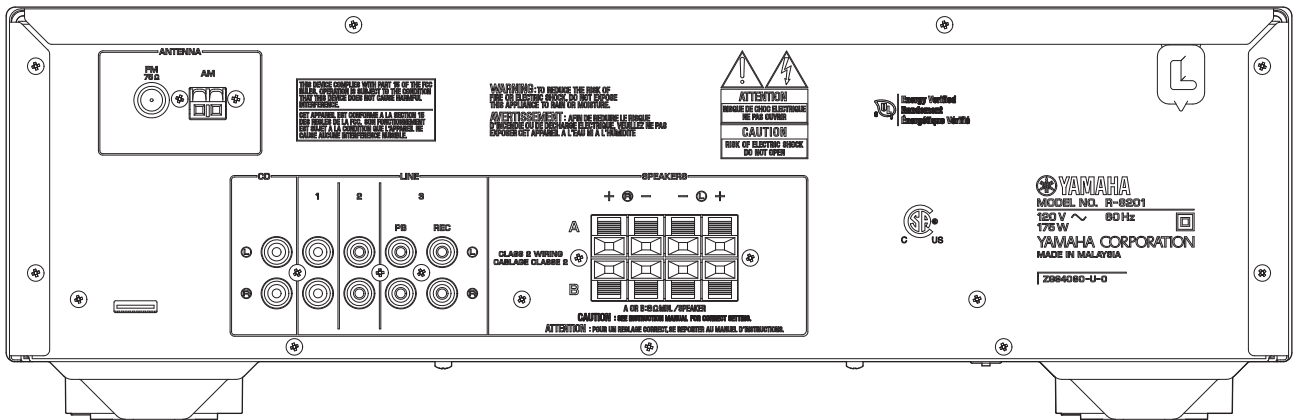
As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.

FRONT PANEL

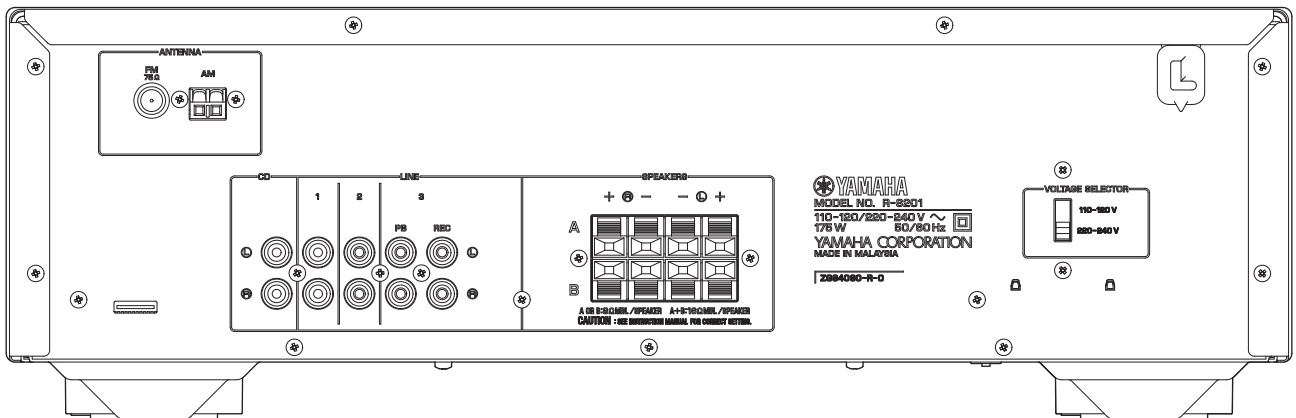


REAR PANELS

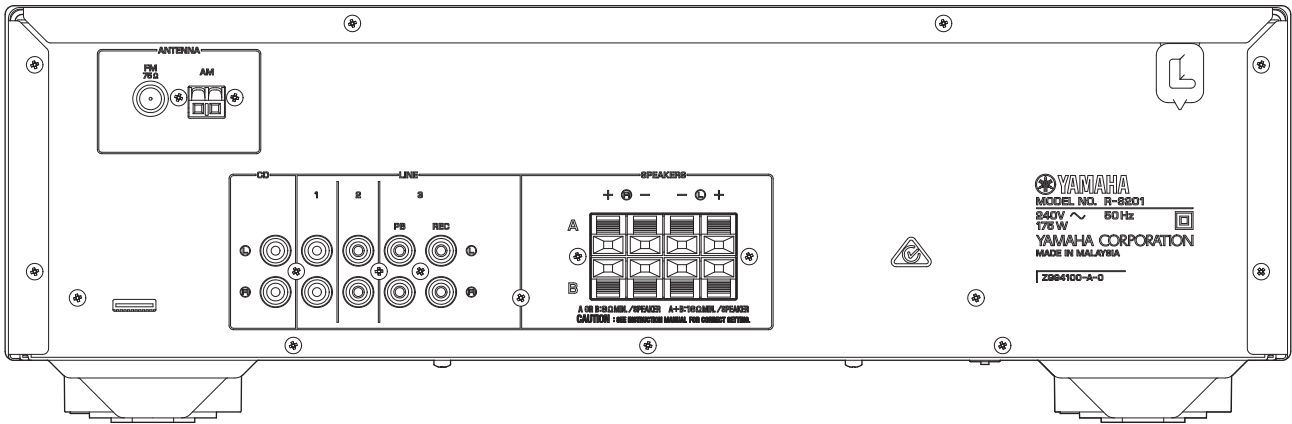
U, C models



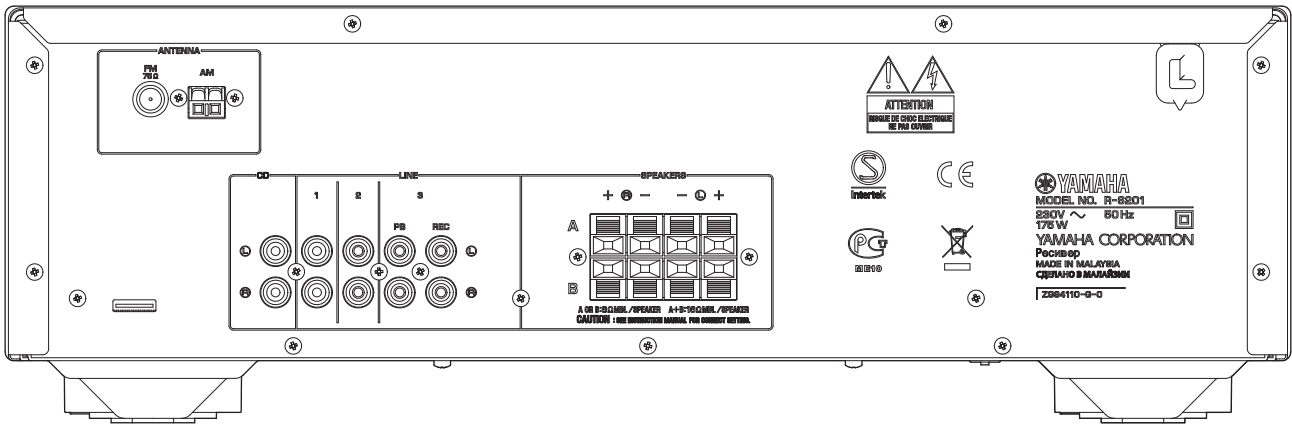
R model



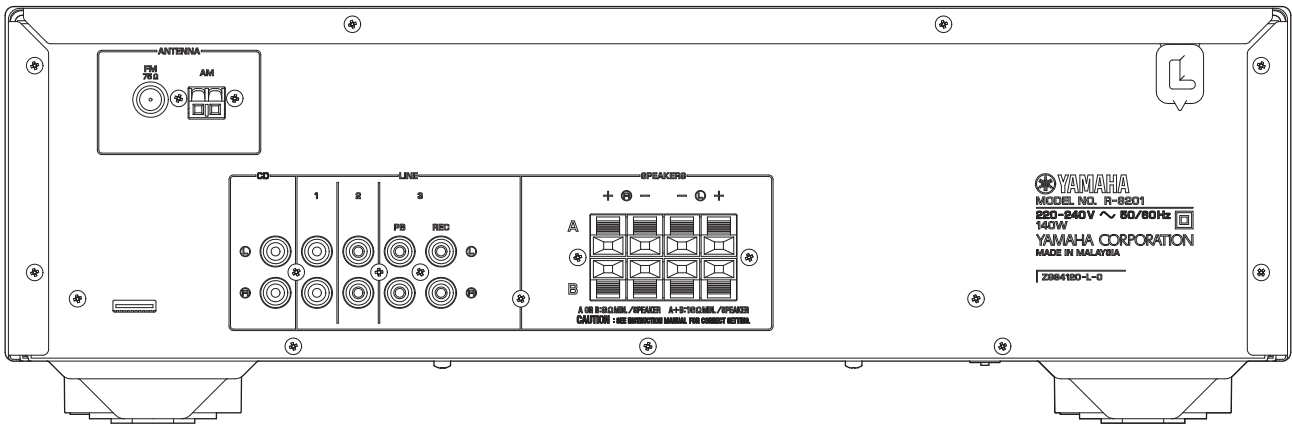
A model



G model

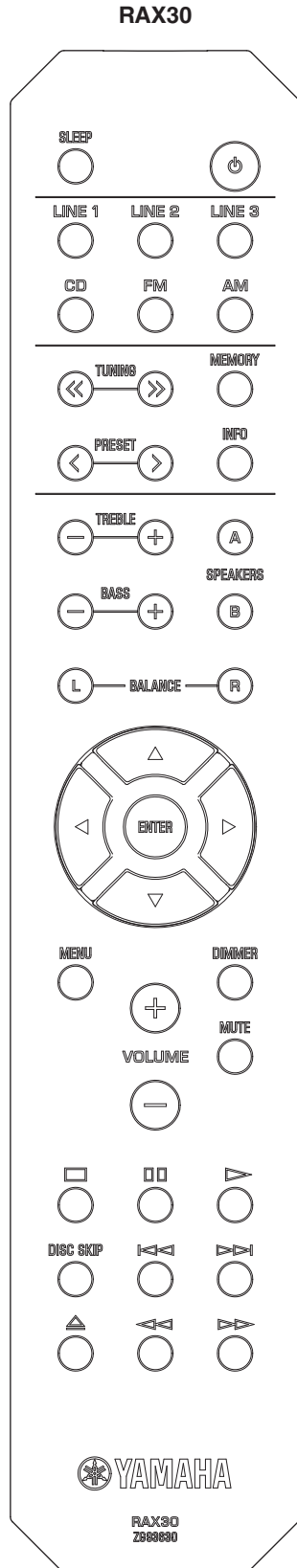


L model



R-S201

■ REMOTE CONTROL PANEL



■ SPECIFICATIONS

■ Audio Section

Minimum RMS Output Power (Power Amp. Section)

(40 Hz to 20 kHz, 0.2 % THD, 8 ohms / L/R drive)

U, C, R, A, G models 100 W + 100 W
L model 85 W + 85 W

Dynamic Power Per Channel (IHF) [U, C, R, A, G models]

8 / 6 / 4 / 2 ohms 125 / 150 / 165 / 180 W

Maximum Power Per Channel (1 kHz, 0.7 % THD, 4 ohms)

[G model]

..... 115 W

Maximum Effective Output Power (JEITA)

(1 kHz, 10 % THD, 8 ohms) [R, L models]

R model 140 W
L model 125 W

Input Sensitivity/Input Impedance (1 kHz, 100 W/8 ohms)

CD etc. 500 mV / 47 k-ohms

Output Level/Output Impedance

REC OUT 500 mV / 2.2 k-ohms

Headphone Jack Rated Output/Output Impedance

(1 kHz, 500 mV, 8 ohms load / CD etc. input)

..... 470 mV / 470 ohms

Frequency Response (CD etc.)

20 Hz to 20 kHz 0 ±0.5 dB
10 Hz to 100 kHz 0 ±3.0 dB

Total Harmonic Distortion (20 Hz to 20 kHz, 50 W/8 ohms)

CD etc. to SP OUT 0.2 % or less

Signal to Noise Ratio (IHF-A Network)

CD etc., Input shorted 500 mV 100 dB or more

Residual Noise (IHF-A Network)

..... 70 µV

Tone Control Characteristics

Bass

Boost/Cut (50 Hz) ±10 dB
Turnover frequency 170 Hz

Treble

Boost/Cut (20 kHz) ±10 dB
Turnover frequency 3.0 kHz

■ FM Section

Tuning Range

U, C models 87.5 to 107.9 MHz
R, L models 87.5 to 108.0 / 87.50 to 108.00 MHz
A, G models 87.50 to 108.00 MHz

50 dB Quieting Sensitivity (IHF) (1 kHz, 100 % MOD.)

Mono 3 µV (20.8 dBf)

Signal to Noise Ratio (IHF)

Mono / Stereo 72 dB / 70 dB

Harmonic Distortion (1 kHz)

Mono / Stereo 0.3 % / 0.5 %

Antenna Input

..... 75 ohms unbalanced

AM Section

Tuning Range

U, C models 530 to 1,710 kHz
 R, L models 530 to 1,710 / 531 to 1,611 kHz
 A, G 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 175 W
 L model 140 W

Standby Power Consumption [U, C, A, G, L models]

..... 0.5 W or less

Dimensions (W x H x D)

..... 435 x 141 x 322 mm (17-1/8" x 5-1/2" x 12-5/8")

Weight

..... 6.7 kg (14.8 lbs.)

Finish

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

Accessories

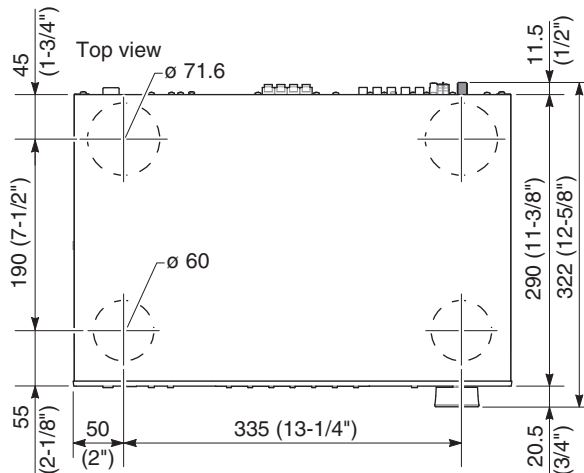
Remote control x 1
 Battery (LR6, AA, UM-3) x 2
 FM antenna (1.4 m) x 1
 AM antenna (1.0 m) x 1

* Specifications are subject to change without notice.

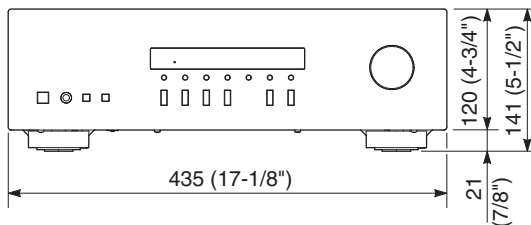
U U.S.A. model
C Canadian model
R General model

A Australian model
G European model
L Singapore model

DIMENSIONS

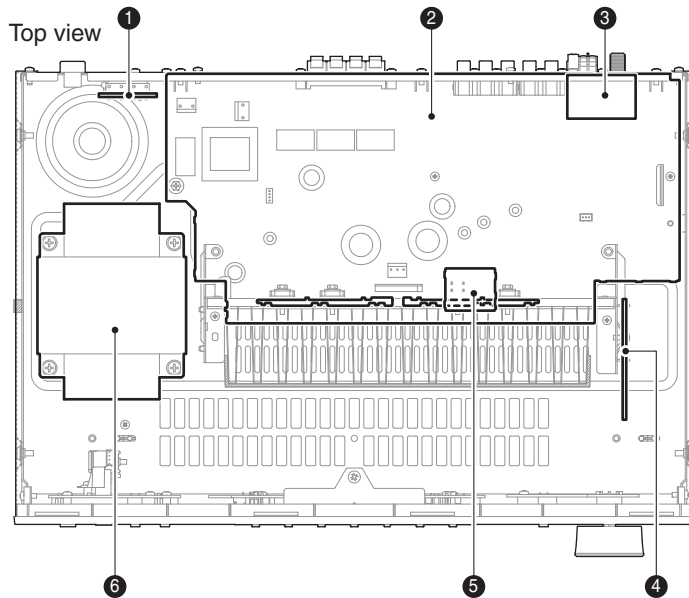


Front view



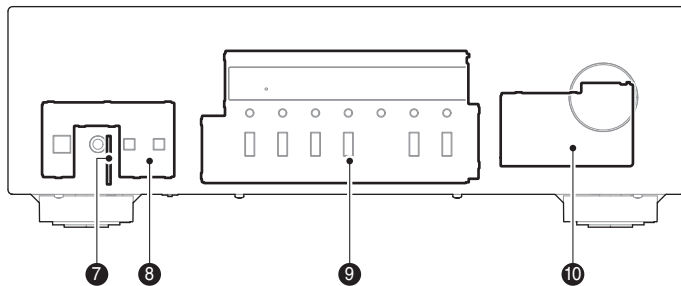
Unit: mm (inch)

INTERNAL VIEW



- ① MAIN (5) P.C.B. (R model)
- ② MAIN (1) P.C.B.
- ③ AM/FM TUNER
- ④ MAIN (8) P.C.B.
- ⑤ MAIN (7) P.C.B.
- ⑥ POWER TRANSFORMER
- ⑦ MAIN (6) P.C.B.
- ⑧ MAIN (3) P.C.B.
- ⑨ MAIN (2) P.C.B.
- ⑩ MAIN (4) P.C.B.

Front view



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.

C140, C143, C149 and C150 on MAIN (1) P.C.B.

For details, refer to "PRINTED CIRCUIT BOARDS".

■ DISASSEMBLY PROCEDURES

(Remove parts in the order as numbered.)

Disconnect the power cable from the AC outlet.

1. Removal of Top Cover

- a. Remove screw (①), 4 screws (②) and 6 screws (③). (Fig. 1)
- b. Remove the top cover. (Fig. 1)

2. Removal of Front Panel Unit

- a. Remove screw (④) and 6 screws (⑤). (Fig. 1)
- b. Remove screw (⑥) and then remove W501. (Fig. 1)
- c. Remove CB102, CB204 and CB502. (Fig. 1)
- d. Release 2 hooks and then remove the front panel unit. (Fig. 1)

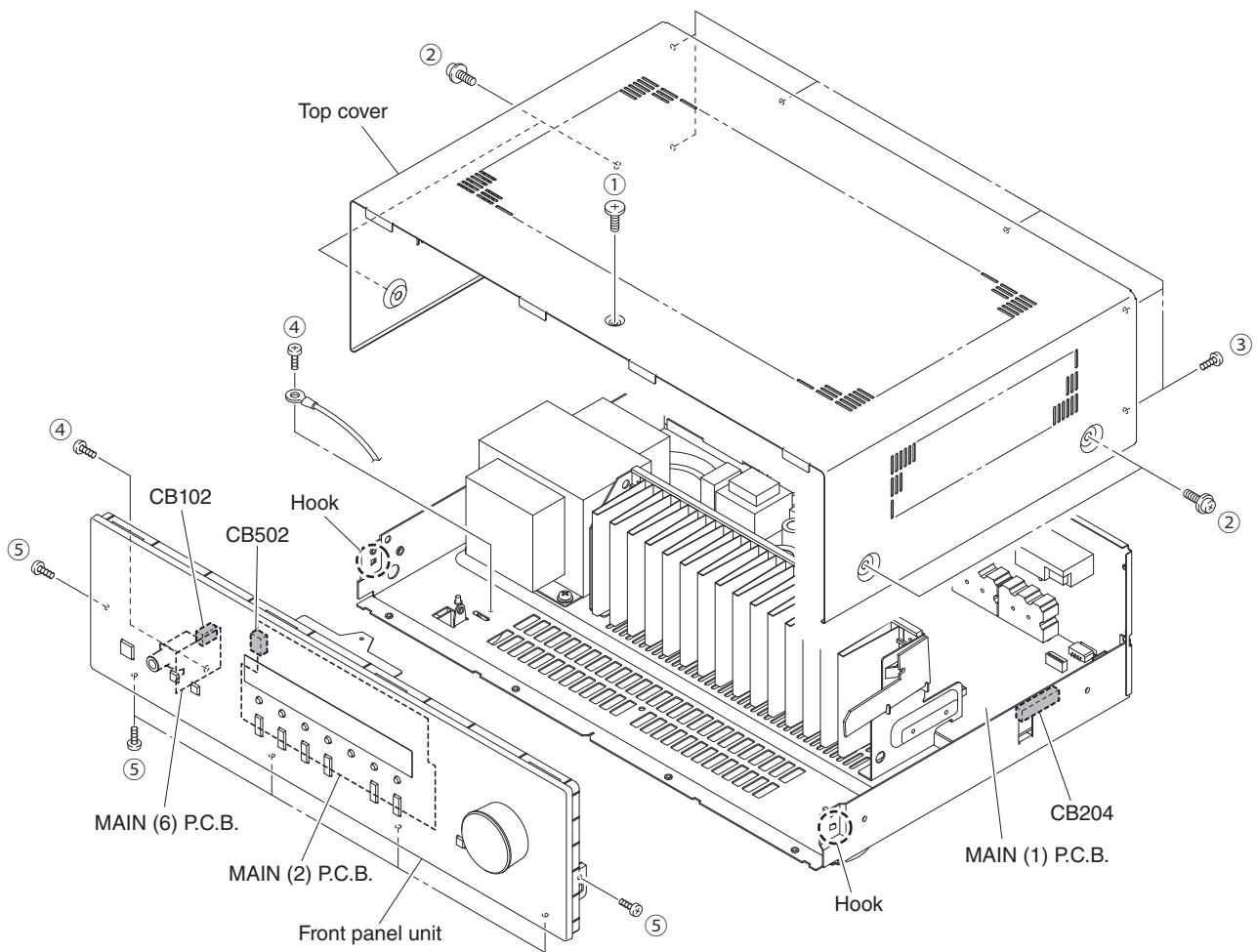


Fig. 1

3. Removal of AMP Unit

- a. Remove 12 screws (⑦). (Fig. 3)
- b. Remove 4 screws (⑧) and screw (⑨). (Fig. 2)
- c. Remove CB4, CB7, CB103 and CB202. (Fig. 2)
- d. Remove the AMP unit. (Fig. 2)

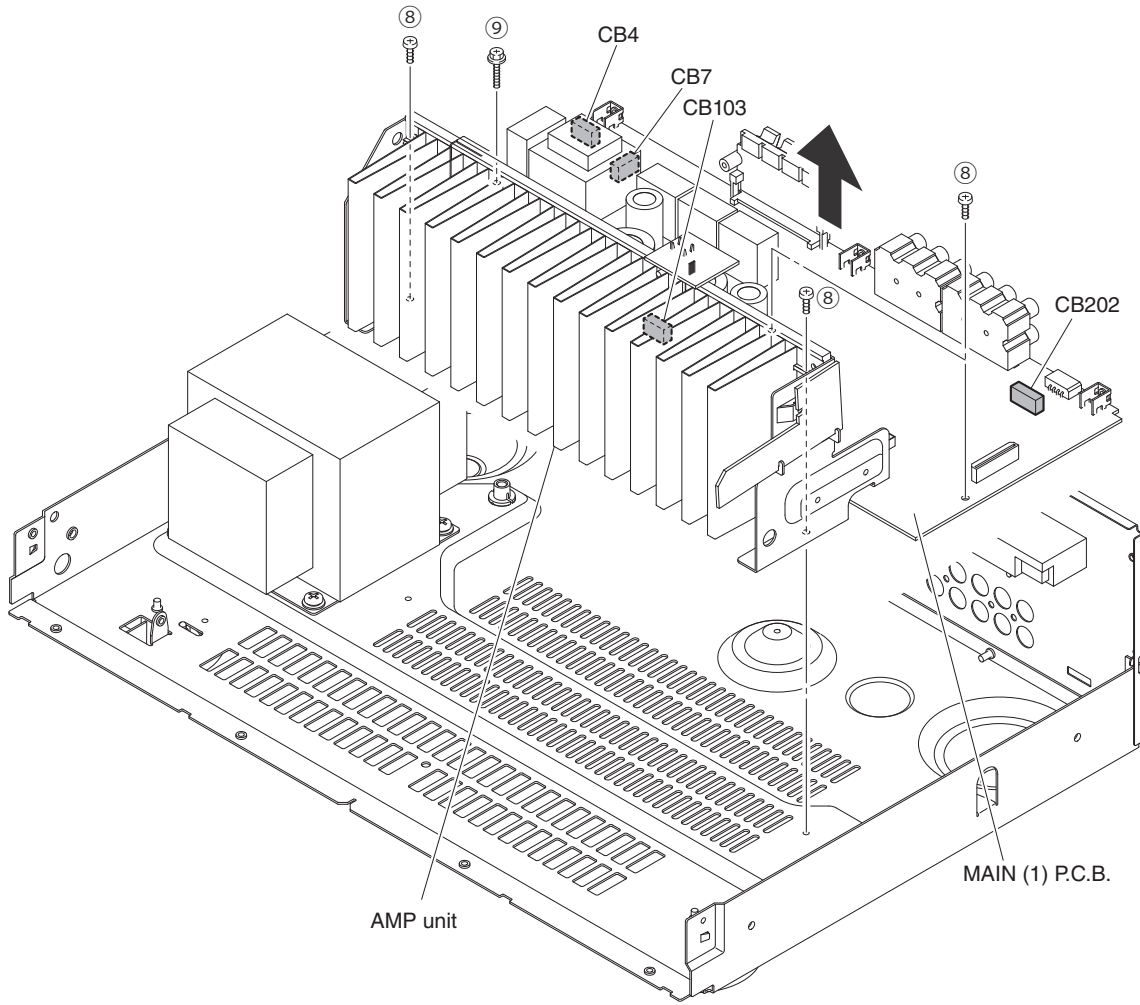


Fig. 2

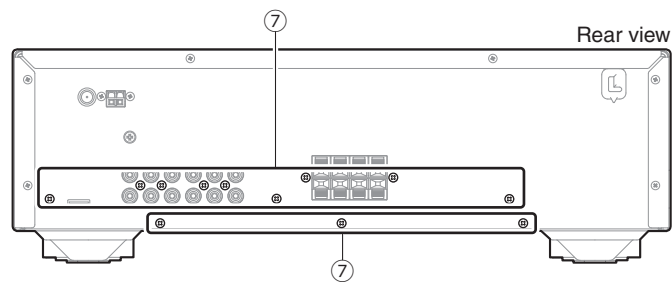
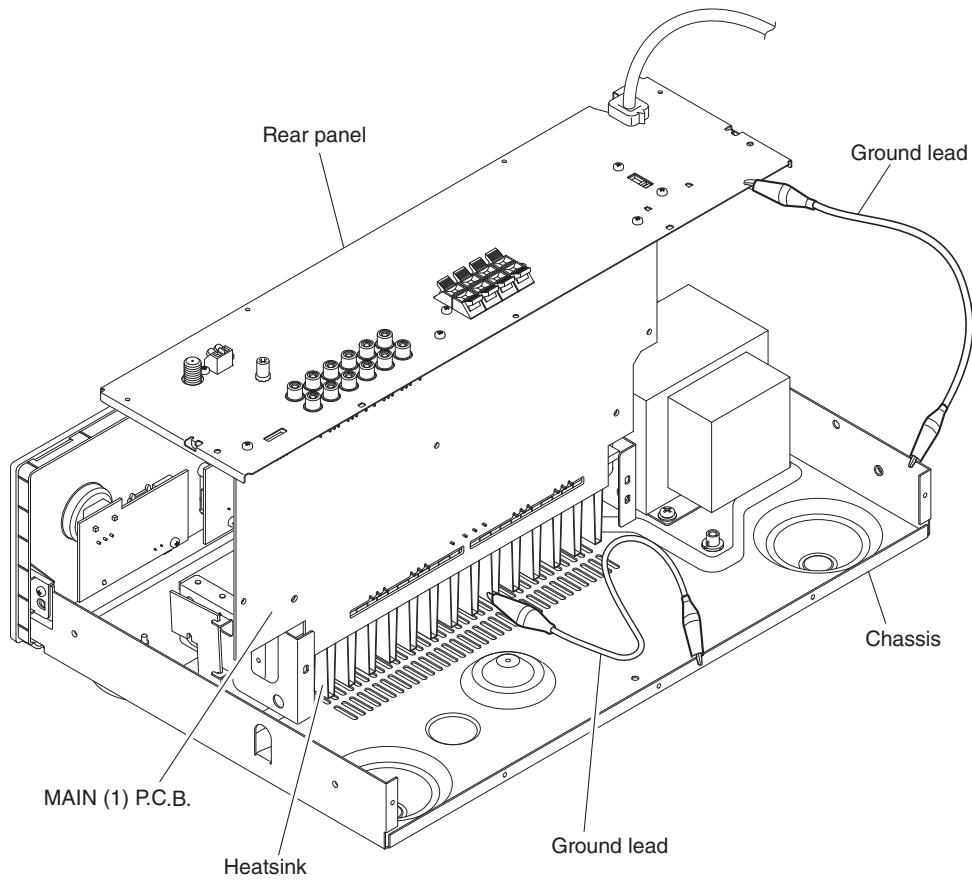


Fig. 3

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

- Place the P.C.B.s (with rear panel) upright. (Fig. 4)
- Connect the heatsink and rear panel 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**

■ UPDATING FIRMWARE

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

MAIN P.C.B.

Microprocessor: IC203 on FUNCTION (1) 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/CHECK SUM” menu.

Using the sub-menu, have the firmware version and checksum displayed, and note them down.

(For details, refer to “SELF-DIAGNOSTIC FUNCTION”)

* When the firmware version is different from written one after updating, perform the updating procedure again from the beginning.

● Initializing the back-up IC

After updating the firmware, the back-up IC MUST be initialized by the following procedure to store the setting information properly.

Start up the self-diagnostic function and select “3. FACTORY PRESET” menu.

(For details, refer to “SELF-DIAGNOSTIC FUNCTION”)

Select “PRST RSRV”, press the “ Φ ” (Power) key to turn off the power once and turn on the power again. Then the back-up IC is initialized.

● Required Tools

- Firmware downloader program
..... RFP.exe
- Firmware
..... RS_201_xxx.mot
- RS-232C conversion adaptor (Part No.: ZK189200)
- Flexible flat cable
(9 pin 150 mm pitch = 1.25, Part No.: ZD896000)
- USB to Serial converter
(USB type-A to D-sub 9 pin)
- * Recommendation: BUFFALO
(Part No.: BSUSRC0605BS)
FTDI Ltd.
(Part No.: DS-US232R-10)

● 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.
- Connect the writing port (CB201 on MAIN (1) P.C.B.) located on the rear panel of this unit to the USB port of the PC with USB to serial converter, RS-232C conversion adaptor and flexible flat cable as shown below. (Fig. 1)

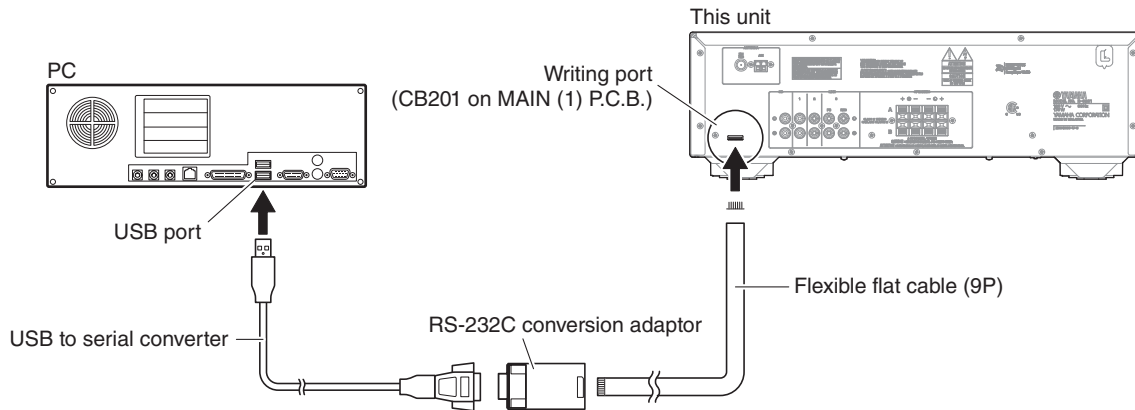


Fig. 1

● 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 RFP.exe.
The screen appears as shown below. (Fig. 2)
3. Select the Basic mode and click [Next]. (Fig. 2)

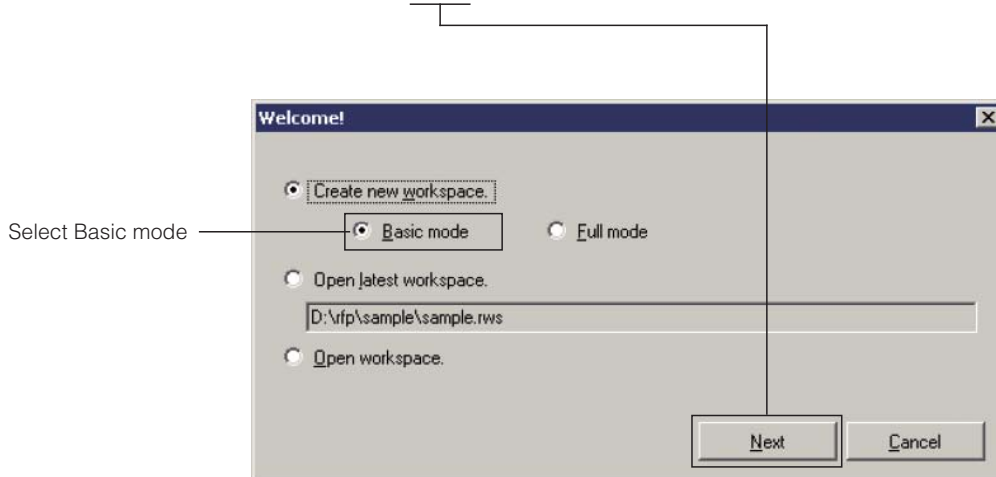


Fig. 2

4. Select the type of the microprocessor and make the workspace. (Fig. 3)

- Microcontroller: RL78
- Using Target Microcontroller: RL78/G13, R5F100JE
- Workspace Name: Any name
- Project Name: Any name
- Folder: Any place
 - * Click [Browse...] and specify the place where the workspace is made. (Fig.3)

5. Click [Next]. (Fig. 3)

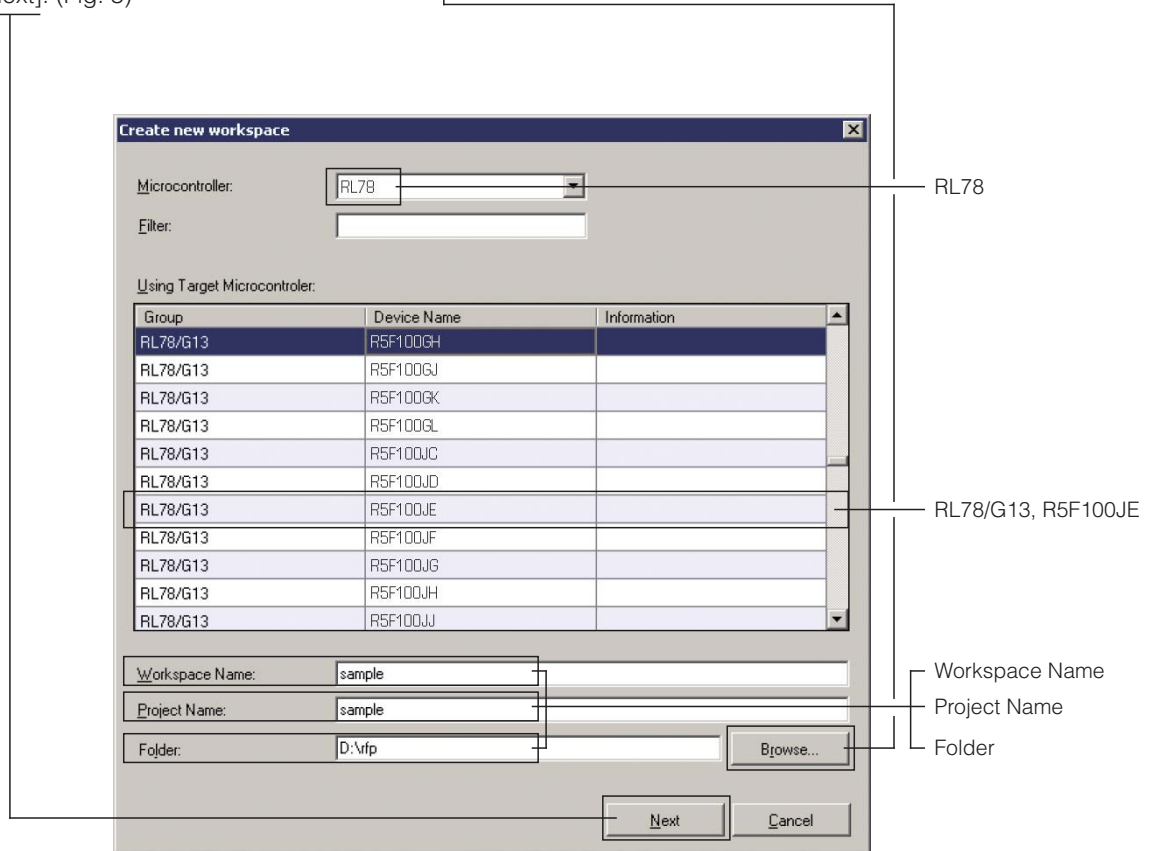


Fig. 3

6. Select COMx with the Tool and click [Next]. (Fig. 4)
 - * Do not proceed to other settings until clicking [Next] is completed. (Fig. 4)

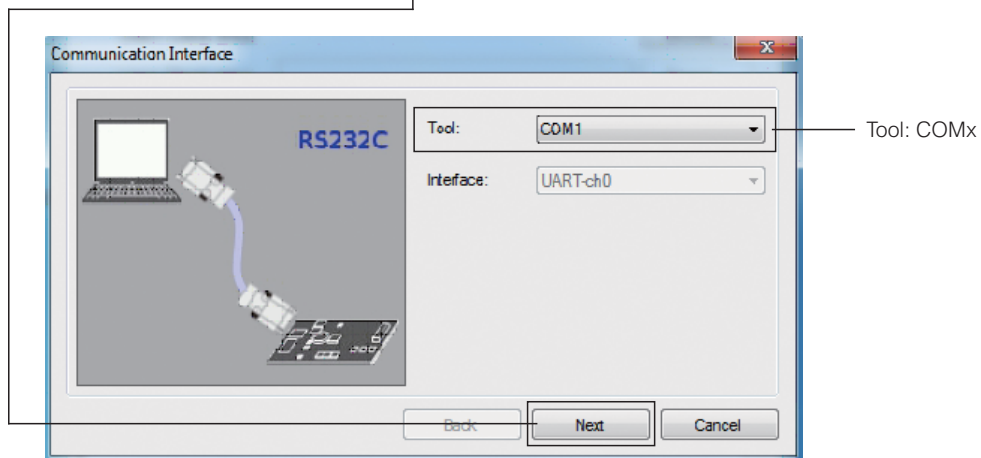


Fig. 4

7. Make the port (COMx) setting. (Fig. 5)
 - a. Access the device manager. (Fig. 5)
 - * To access the device manager, click [Start], [Control panel], [System], [Hardware] and [Device manager] in this order.
 - b. Right click the communication port (COMx) of the port (COM and LPT) to open the property. (Fig. 5)
 - * COMx: Enter the port number of the PC to which the USB to serial converter is connected in place of "x".
 - c. Using the port setting function, set the Bit/second to "115200". (Fig. 5)
8. Click [OK]. (Fig. 5)

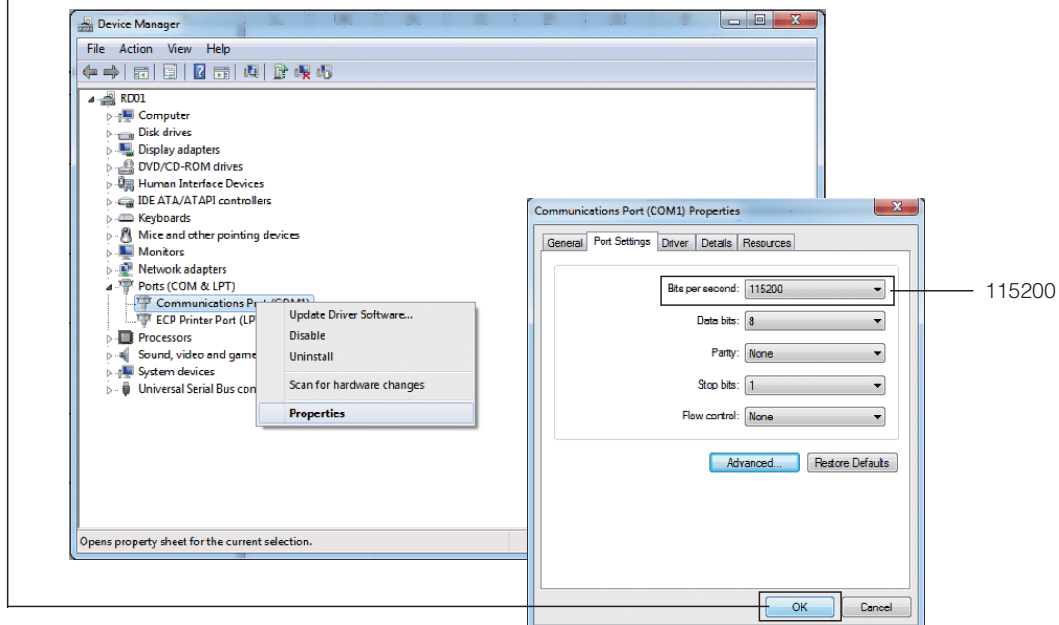


Fig. 5

9. Click [Browse...] and select the firmware name. (Fig. 6)

10. Click [Start] to start writing. (Fig. 6)

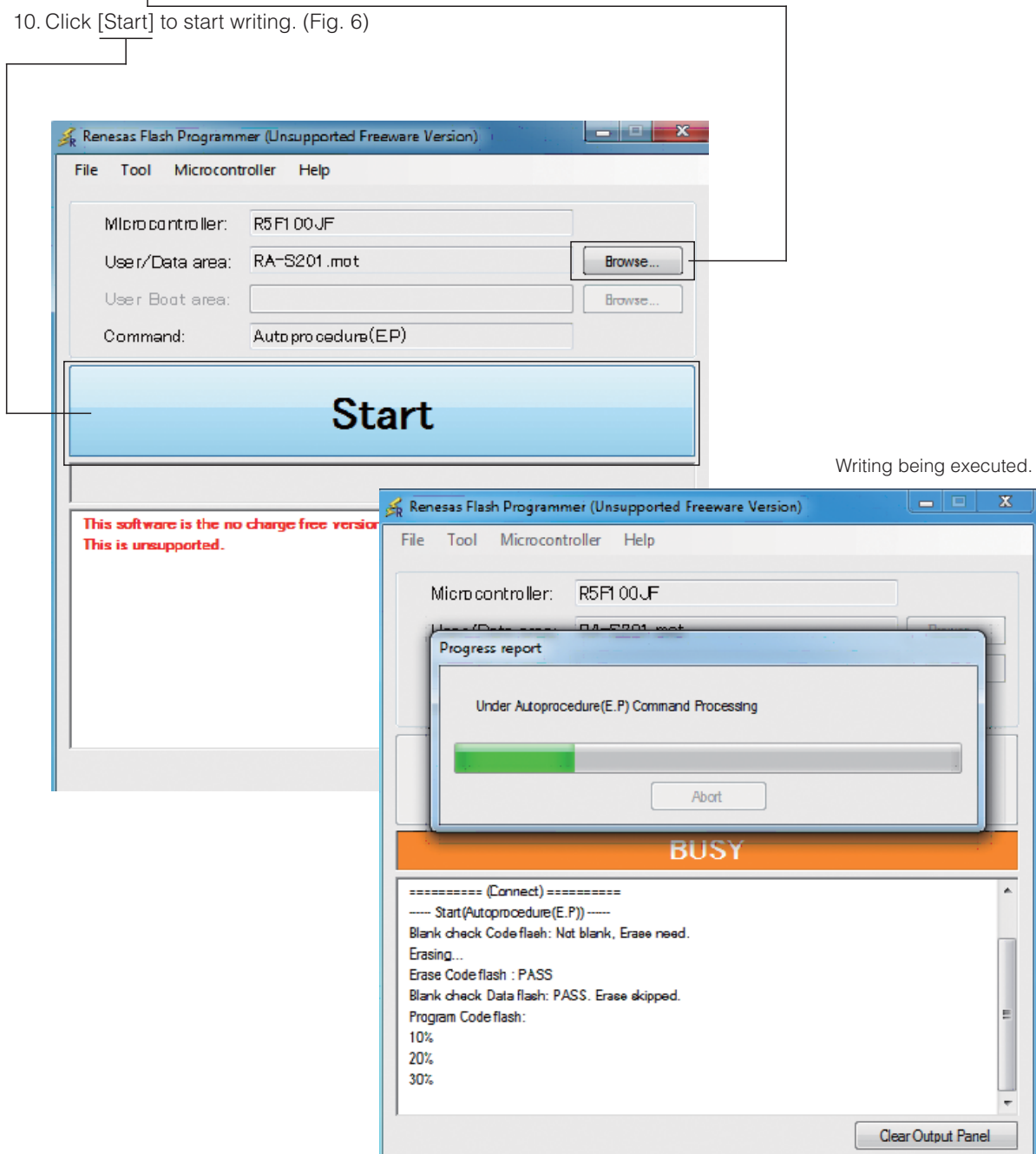


Fig. 6

11. When writing of the firmware is completed, the screen appears as shown below. (Fig. 7)
12. Click [X] to end RFP.exe. (Fig. 7)

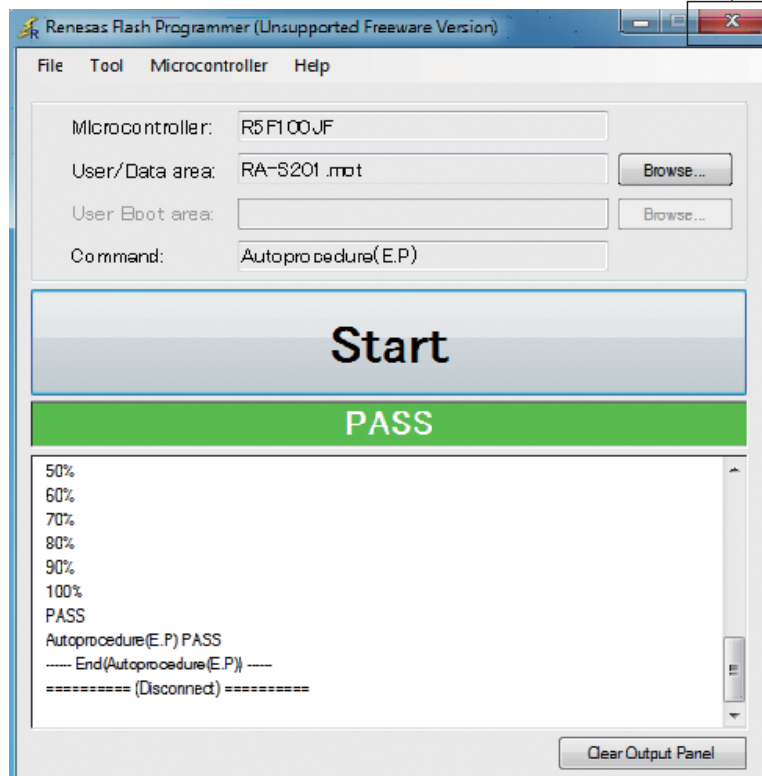


Fig. 7

13. Disconnect the power cable of this unit from the AC outlet.
14. Remove the RS-232C conversion adaptor and flexible flat cable from the writing port (CB201 on MAIN (1) P.C.B.) of this unit.
15. Connect the power cable of this unit to the AC outlet, start up the self-diagnostic function and check that the firmware version and checksum are the same as written ones. (For details, refer to “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 6 main menu items, each of which has sub-menu items.

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

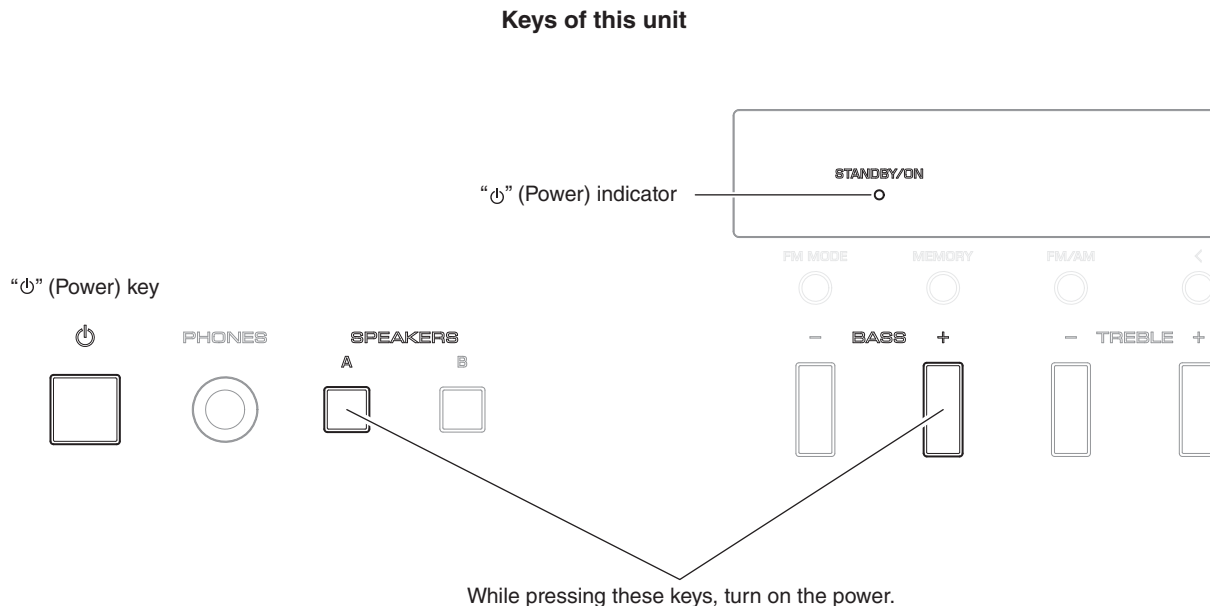
Note: Some of the menu items listed below may not apply to the models covered in this service manual.

No.	Main menu	No.	Sub-menu
1	FIRMWARE VERSION/CHECK SUM	1	FIRMWARE VERSION
		2	FIRMWARE CHECKSUM
		3	MODEL/DESTINATION
2	DISPLAY CHECK	1	VFD CHECK
		2	ALL SEGMENT OFF
		3	ALL SEGMENT ON
3	FACTORY RESET	1	PRESET INHIBIT
		2	PRESET RESERVE
4	AD DATA CHECK	1	PS
		2	DC
		3	TA
		4	DESTINATION
		5	KEY
5	PROTECTION HISTORY	1	HISTORY 1
		2	HISTORY 2
		3	HISTORY 3
		4	HISTORY 4
6	POWER OFF FACTOR HISTORY	1	LAST
		2	HISTORY 1
		3	HISTORY 2
		4	HISTORY 3
		5	HISTORY 4

● Starting Self-Diagnostic Function

While pressing the “BASS +” and “SPEAKERS A” keys, press the “⏻” (Power) key to turn on the power, and release those 2 keys.

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 troubleshooting, cancel the protection function by the procedure 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 “BASS +” and “SPEAKERS A” keys, press the “⏻” (Power) key to turn on the power and keep pressing those 2 keys and “⏻” (Power) key 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 unit 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

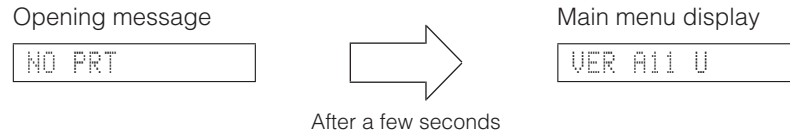
1. Before canceling self-diagnostic function, execute setting for “3. FACTORY PRESET” menu. (Memory initialization inhibited or Memory initialized).
 - * In order to keep the user memory preserved, be sure to select PRESET INHIBIT (Memory initialization inhibited).
2. Press the “⏻” (Power) key to turn off the power.

● Display provided when Self-Diagnostic Function started

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

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

“NO PROTECT” is displayed. Then “1. VERSION/SUM” is displayed in a few seconds.



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

The information of protection function which worked at that time is displayed. Then “1. VERSION/SUM” is displayed in a few seconds.

Note: At that time if you restart the self-diagnostic function after turning off the power once, “NO PROTECT” will be displayed. That is because that situation is equal to “1. When the power is turned off by usual operation:”.

However history of the protection function is stored in memory as backup data. For details, refer to “5. PROTECTION HISTORY” menu.

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

I PRT


Display: The Power indicator is flashing.

Cause: An excessive current flowed through the power amplifier.

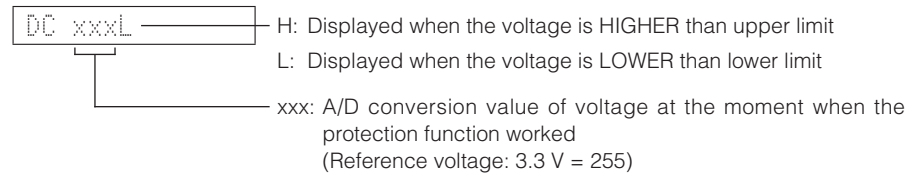
Supplementary information: As current of the power amplifier is detected, the abnormal channel can be identified by checking the current detect transistor.

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 “” (Power) key 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.

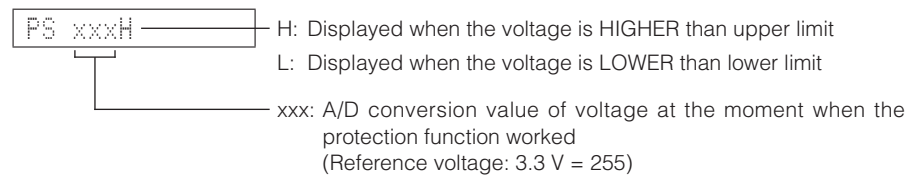


Cause: DC output of the power amplifier is abnormal.

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.

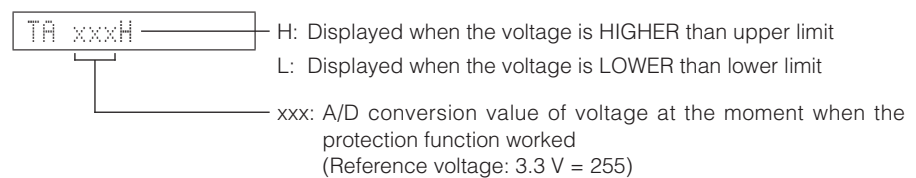
Supplementary information: The protection function worked due to a defect or overload in the power supply.

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 "⏻" (Power) key 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 as backup data.

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 "5. PROTECTION HISTORY" menu.

● Operation procedure of Main menu and Sub-menu

There are 6 main menu items, each of which has sub-menu items.

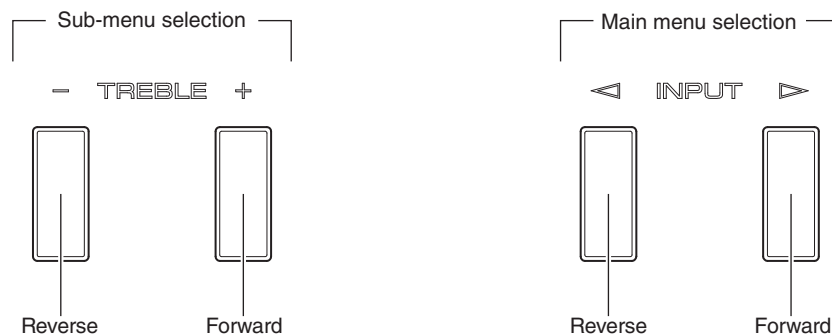
Main menu selection

Select the main menu using "INPUT ►" (forward) and "INPUT ◀" (reverse) keys.

Sub-menu selection

Select the sub-menu using "TREBLE +" (forward) and "TREBLE -" (reverse) keys.

Keys of this unit



● Functions in Self-Diagnostic Function mode

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

- Power ON/OFF
- Master volume
- SPEAKERS A ON/OFF

* 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 self-diagnostic function is started.

When self-diagnostic function is canceled, these settings are restored to those before starting self-diagnostic function.

- Master volume: 60
- Input: CD
- SPEAKER: SPEAKERS A on

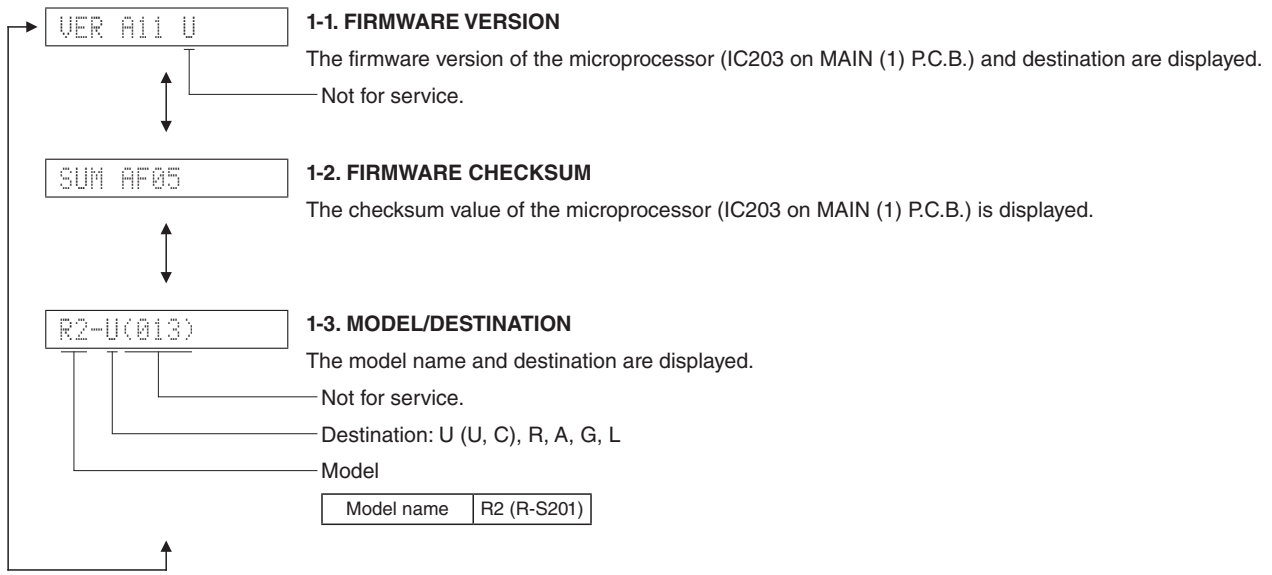
● Details of Self-Diagnostic Function menu

1. FIRMWARE VERSION/CHECK SUM

This menu is used to display the firmware version and checksum.

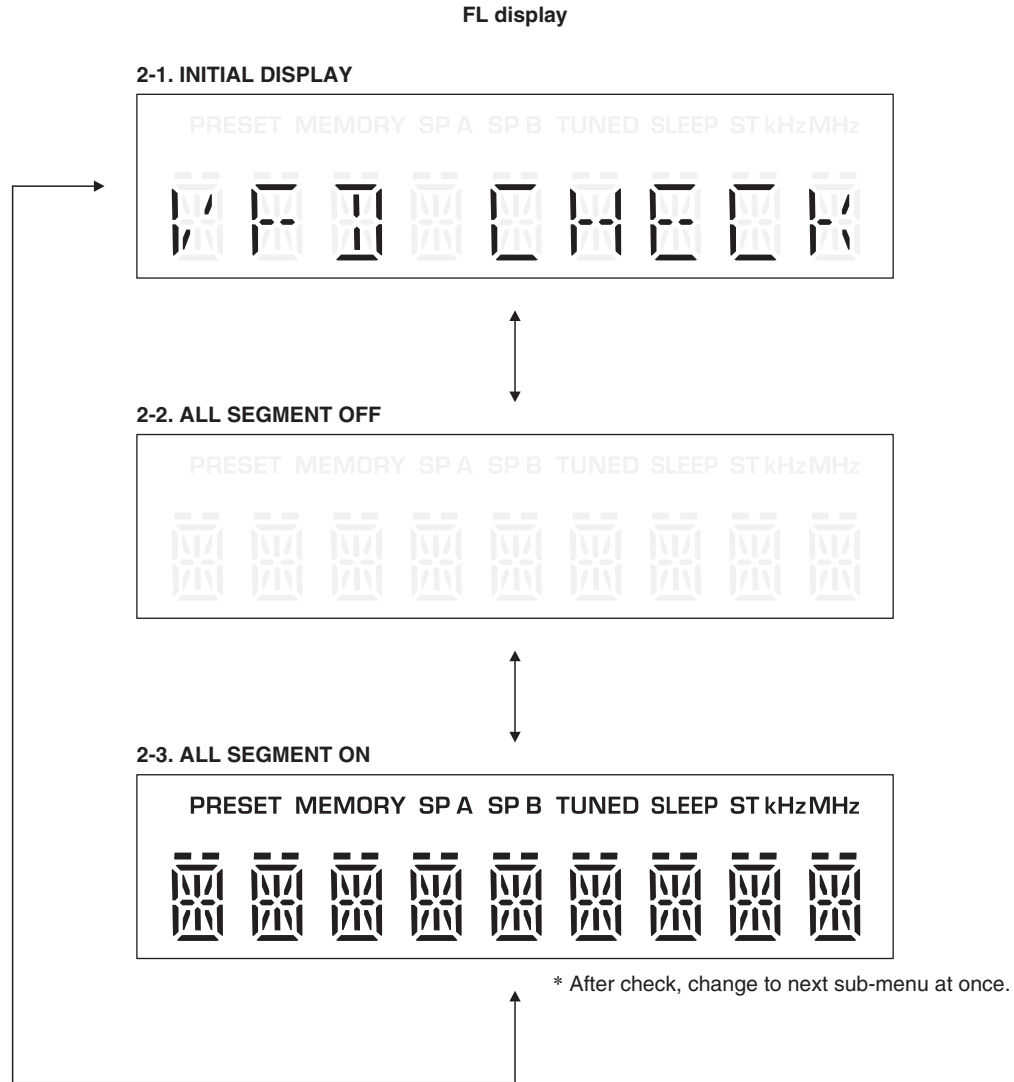
The checksum is obtained by adding the data at every 8-bit and expressing the result as a 4-digit hexadecimal notation.

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



2. DISPLAY CHECK

This menu is used to check operation of the FL display.
Using the sub-menu, the display varies as shown below.



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

3. FACTORY PRESET

This menu is used to reserve/inhibit initialization of the back-up IC.

PRST INHI

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.



PRST RSRV

3-2. PRESET RESERVED (Initialization reserved)

Initialization of the back-up IC is reserved. (Actual initialization is executed when the power is turned on next.)

To reset to the original factory settings or to reset the backup IC, select this sub-menu and press the “” (Power) key 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 CHECK

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 “4-5. KEY” sub-menu is selected, keys become inoperable due to detection of the values of all keys. However, it is possible to advance to the next menu by pressing the “▲” (forward) key or “▼” (reverse) key on the remote control.

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

4-1. PS

Power supply voltage (PS) protection detection.

The voltage at 44 pin (PRPS) of IC203 is displayed.

Normal value: 113 to 175

(Reference voltage: 3.3 V = 255)

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

PS 148

4-2. DC

Power amplifier DC (DC voltage) output is detected.

The voltage at 42 pin (PRD) of IC203 is displayed.

Normal value: 27 to 136

(Reference voltage: 3.3 V = 255)

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

DC 088

4-3. TA

Temperature of the heatsink (TA) is detected.

The voltage at 43 pin (THM) of IC203 is displayed.

Normal value: 15 to 134 (U, R, A, G models)
15 to 130 (L model)

(Reference voltage: 3.3 V = 255)

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



4-4. DESTINATION

Destination of this unit is detected.

The voltage at 45 pin (DEST) of IC203 is displayed.

(Reference voltage: 3.3 V = 255)



Destination	U (U, C)	R	A	G	L
A/D value (3.3 V = 255)	009 – 019	162 – 178	031 – 047	048 – 059	115 – 123

4-5. KEY

Panel key is detected.

KEY0: The voltage at 40 pin (KEY0) of IC203 is displayed.

KEY1: The voltage at 41 pin (KEY1) of IC203 is displayed.

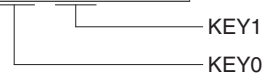
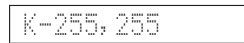
When the A/D conversion value of the panel key becomes out of the specified range, normal operation will not be available.

In that case, check the constant of voltage dividing resistor, solder condition, etc. Refer to table.

* When “4-5. KEY” menu is selected, keys become inoperable due to detection of the values of all keys.

However, it is possible to advance to the next menu by pressing the “▲” (forward) key or “▼” (reverse) key on the remote control.

(Reference voltage: 3.3 V = 255)



Display	KEY0
000 – 011	INPUT ►
012 – 032	INPUT ◀
033 – 054	TREBLE +
055 – 079	TREBLE –
080 – 107	BASS +
108 – 134	BASS –
135 – 160	—

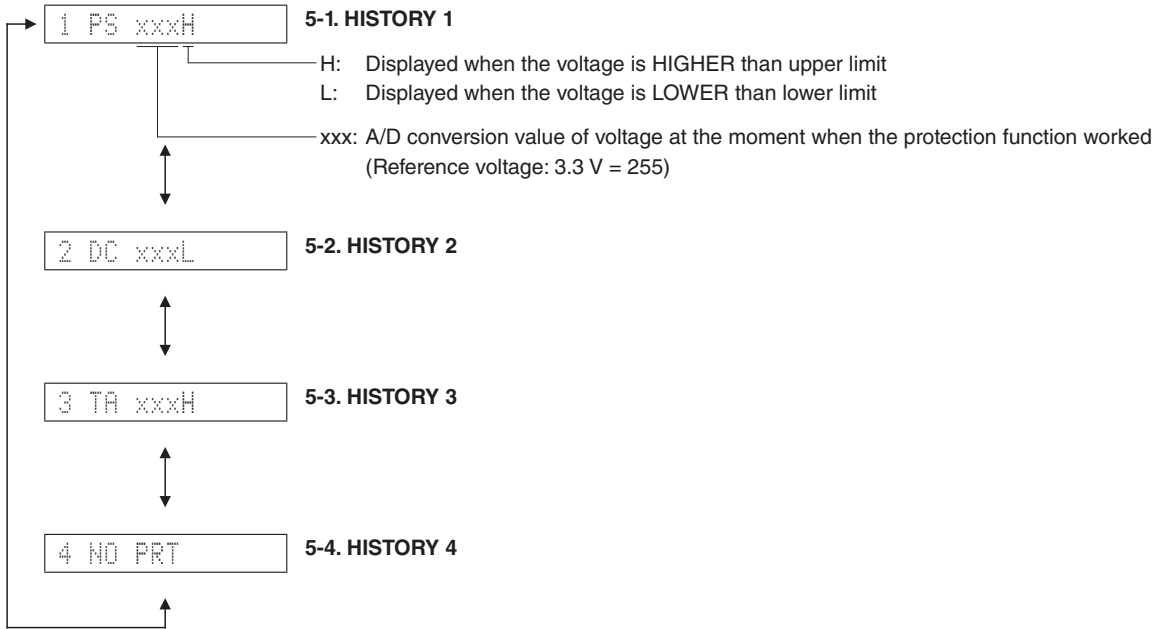
Display	KEY1
000 – 011	TUNING »
012 – 032	TUNING «
033 – 054	PRESET >
055 – 079	PRESET <
080 – 107	FM/AM
108 – 134	MEMORY
135 – 160	FM MODE
161 – 187	SPEAKER A
188 – 214	SPEAKER B

5. PROTECTION HISTORY

This menu is used to display the history of protection function.

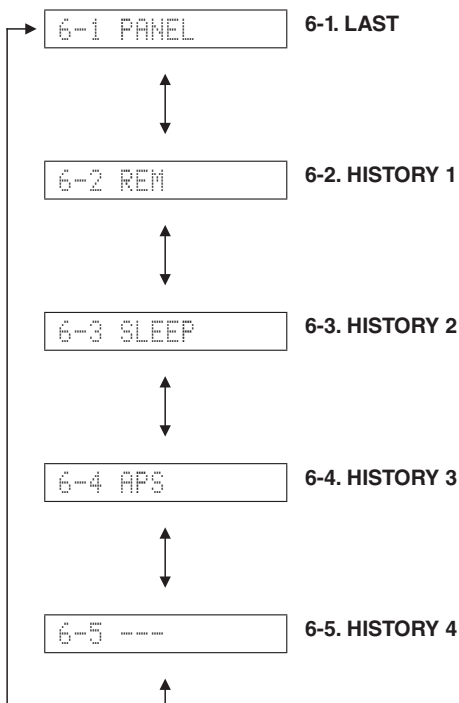
When the "SPEAKERS B" key is pressed, the protection history being displayed will be cleared.

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



6. POWER OFF FACTOR HISTORY

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

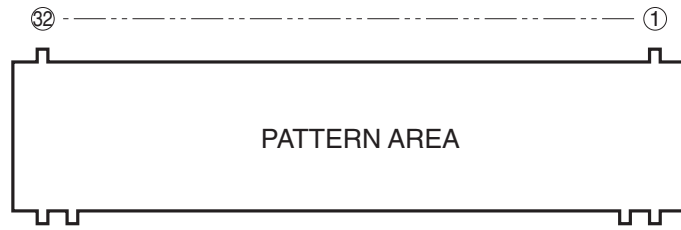


Power off factor are as follows.

6-x PANEL	"⏻" (Power) key of this unit
6-x REM	"⏻" (Power) key on the remote control
6-x SLEEP	SLEEP timer
6-x APS	POWER MANAGEMENT (Automatic Power Down) timer
6-x PRT	Protection
6-x AC	AC OFF
6-x ---	No history

■ DISPLAY DATA

● V501 : HNV-10SS61 (MAIN P.C.B.)



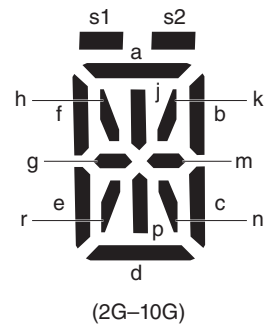
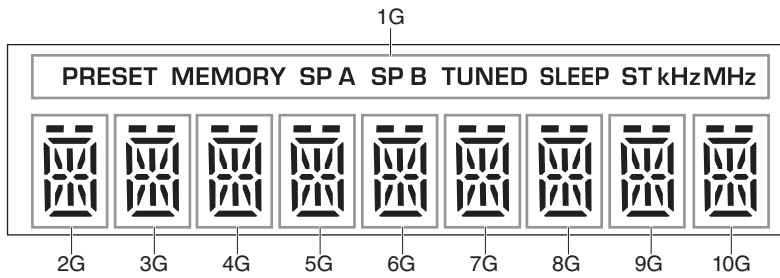
● PIN CONNECTION

Pin No.	32	31	30	29	28	27	26	25	24	23	22	21
Connection	F2	F2	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G

Pin No.	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Connection	10G	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	F1	F1

Note : 1) Fn Filament pin 2) nG Grid pin 3) Pn Anode pin 4) NP No pin

● GRID ASSIGNMENT



● ANODE CONNECTION

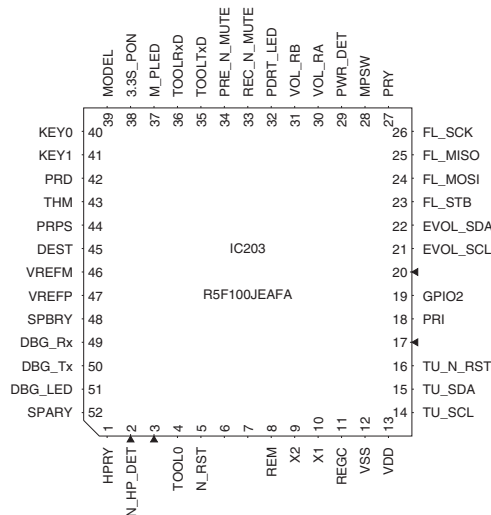
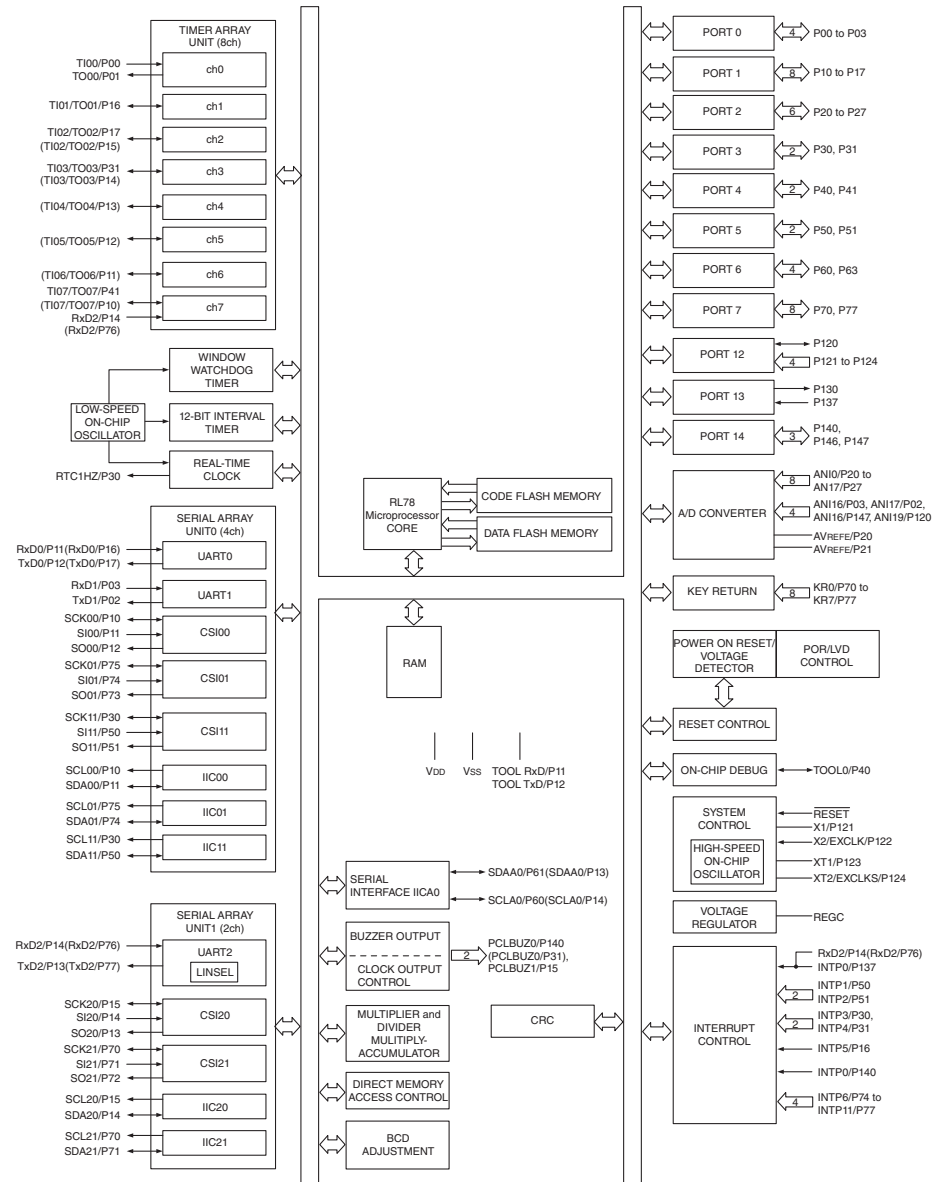
	1G	2G - 10G		1G	2G - 10G
P1	MHz	s2	P9	PRESET	g
P2	kHz	s1	P10		m
P3	ST	a	P11		c
P4	SLEEP	b	P12		e
P5	TUNED	f	P13		r
P6	SP A	h	P14		p
P7	SP B	j	P15		n
P8	MEMORY	k	P16		d

IC DATA

IC203: R5F100JEAF (MAIN (1) P.C.B.)

Microprocessor

* No replacement part available.



Pin No.	Port Name	Function Name	I/O		Detail of Function
			Related Power Supply		
			OFF	ON	
1	P140/PCLBUZ0/INTP6	HPRY	O	O	HP relay (HIGH = ON)
2	P120/ANI19	(Vacant)			Detection of HP insertion (LOW = inserted) (HP_N_DET spare)
3	P41/TI07/TO07	(Vacant)			
4	P40/TOOL0	TOOL0	I	I	For E1 debugging
5	RESET	N_RST	I	I	For debugging
6	P124/XT2/EXCLKS	(Vacant)	I	I	
7	P123/XT1	(Vacant)	I	I	
8	P137/INTP0	REM	I	IRQ	IR light receiving unit
9	P122/X2/EXCLK	(Vacant)	I	I	Ceramic lock (X2 spare)
10	P121/X1	(Vacant)	I	I	Ceramic lock (X1 spare)
11	REGC	REGC	I	I	Regulator (Connected to VSS via capacitor)
12	VSS	VSS	I	I	GND
13	VDD	VDD	I	I	+5V power supply
14	P60/SCLA0	TU_SCL	I	I2C	Tuner pack
15	P61/SDAA0	TU_SDA	I	I2C	Tuner pack
16	P62	TU_N_RST	O	O	Tuner pack
17	P63	(Vacant)	O	O	
18	P31/TI03/TO03/INTP4/(PCLBUZ0)	PRI	I	I	I protection detection
19	P77/KR7/INTP11/(TXD2)	GPIO2	I	IRQ	Tuner pack
20	P76/KR6/INTP10/(RXD2)	(Vacant)	O	O	
21	P75/KR5/INTP9/SCK01/SCL01	EVOL_SCL	I	I2C	VOL IC
22	P74/KR4/INTP8/SI01/SDA01	EVOL_SDA	I	I2C	VOL IC
23	P73/KR3/SO01	FL_STB	O	O	FL driver
24	P72/KR2/SO21	FL_MOSI	O	SPI	FL driver
25	P71/KR1/SI21/SDA21	FL_MISO	O	SPI	FL driver (spare)
26	P70/KR0/SCK21/SCL21	FL_SCK	O	SPI	FL driver
27	P30/INTP3/RTC1HZ/SCK11/SCL11	PRY	O	O	Power relay control
28	P50/INTP1/SI11/SDA11	MPSW	I	IRQ	Main power SW (Tact SW)
29	P51/INTP2/SO11	PWR_DET	I	IRQ	Power detect (LOW = AC-OFF)
30	P17/TI02/TO02/(TXD0)	VOL_RA	I	I	Volume encoder clockwise
31	P16/TI01/TO01/INTP5/(RXD0)	VOL_RB	I	I	Volume encoder counterclockwise
32	P15/PCLBUZ1/SCK20/SCL20/(TI02)/(TO02)	PDRT_LED	O	O	-----
33	P14/RxD2/SI20/SDA20/(SCLA0)/(TI03)/(TO03)	REC_N_MUTE	O	O	REC OUT mute (LOW = MUTE ON)
34	P13/TxD2/SO20/(SDAA0)/(TI04)/(TO04)	PRE_N_MUTE	O	O	PRE OUT mute (LOW = MUTE ON)
35	P12/SO00/TxD0/TOOLTxD/(TI05)/(TO05)	(Vacant)	O	O	Flash writing (TOOL TxD spare)
36	P11/SI00/RxD0/TOOLRxD/SDA00/(TI06)/(TO06)	(Vacant)	O	O	Flash writing (TOOL RxD spare)
37	P10/SCK00/SCL00/(TI07)/(TO07)	PLED	O	O	Power LED (HIGH = ON)
38	P146	3.3S_PON	O	O	Power supply (VFD driver power supply)
39	P147/ANI18	MODEL	I	I	Model discrimination (LOW = R-S201)
40	P27/ANI7	KEY0	I	I	INPUT (◀, ▶) / BASS (+, -) / TREBLE (+, -) /
41	P26/ANI6	KEY1	I	I	SPEAKERS (A, B) / FM MODE / MEMORY / FM/AM PRESET (<, >) / TUNING (<<, >>)
42	P25/ANI5	PRD	I	I	DC protection detection (AMP DC / Voltage detection)
43	P24/ANI4	THM	I	I	Temperature protection detection (Thermal detection)
44	P23/ANI3	PRPS	I	I	PS protection detection (Power supply / Power voltage detection)
45	P22/ANI2	DEST	I	I	Destination discrimination
46	P21/ANI1/AVREFM	VREFM	I	I	Analog reference voltage minus
47	P20/ANI0/AVREFP	VREFP	I	I	Analog reference voltage plus
48	P130	SPBRY	O	O	Speaker B relay ON/OFF (HIGH = ON)
49	P03/ANI16/RxD1	DEB_RX	I	—	For debugging
50	P02/ANI17/TxD1	DEB_TX	O	—	For debugging
51	P01/TO00	DEB_LED	I/O	I/O	For debugging
52	P00/TI00	SPARY	O	O	Speaker A relay ON/OFF (HIGH = ON)

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

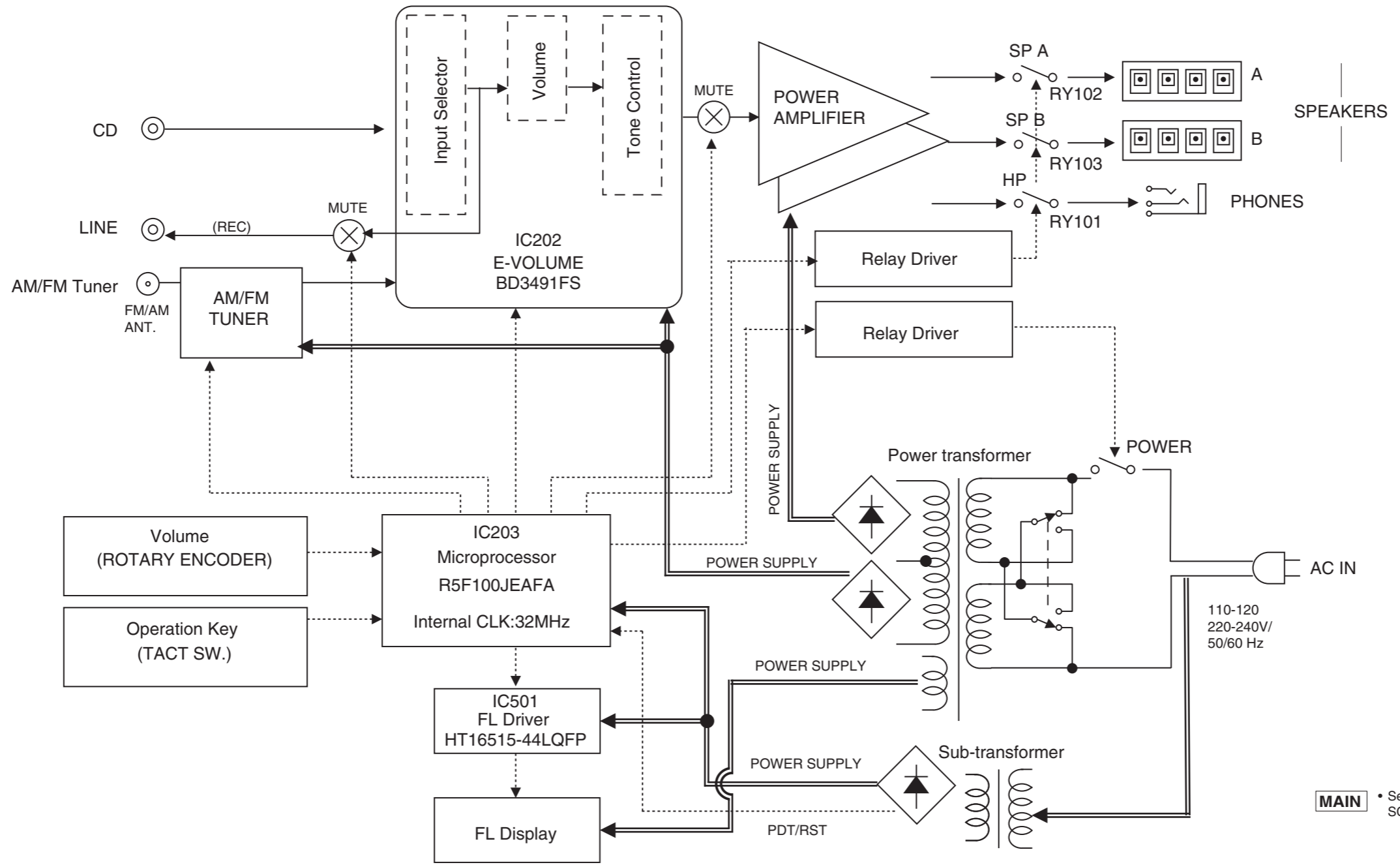
	0 Ω	+ 1.0 kΩ	+ 1.0 kΩ	+ 1.5 kΩ	+ 2.2 kΩ	+ 3.3 kΩ	+ 4.7 kΩ
Detected voltage value at 40 pin	0 – 0.22 V	0.23 – 0.64 V	0.65 – 1.06 V	1.07 – 1.55 V	1.56 – 2.09 V	2.10 – 2.62 V	2.63 – 3.12 V
A/D value (3.3 V = 255)	000 – 011	012 – 032	033 – 054	055 – 079	080 – 107	108 – 134	135 – 160
KEY0	INPUT ▶	INPUT ◀	TREBLE +	TREBLE -	BASS +	BASS -	

	0 Ω	+ 1.0 kΩ	+ 1.0 kΩ	+ 1.5 kΩ	+ 2.2 kΩ	+ 3.3 kΩ	+ 4.7 kΩ	+ 7.5 kΩ	+ 15 kΩ
Detected voltage value at 41 pin	0 – 0.14 V	0.15 – 0.42 V	0.43 – 0.7 V	0.71 – 1.02 V	1.03 – 1.38 V	1.39 – 1.73 V	1.74 – 2.07 V	2.08 – 2.41 V	2.42 – 2.77 V
A/D value (3.3 V = 255)	000 – 011	012 – 032	033 – 054	055 – 079	080 – 107	108 – 134	135 – 160	161 – 187	188 – 214
KEY1	TUNING >>	TUNING <<	PRESET >	PRESET <	FM/AM	MEMORY	FM MODE	SPEAKER A	SPEAKER B

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

R280 on MAIN (1) P.C.B.	560 Ω	20 kΩ	1.8 kΩ	2.7 kΩ	9.1 kΩ
Detected voltage value at 45 pin	0.12 – 0.25 V	2.1 – 2.3 V	0.4 – 0.61 V	0.62 – 0.76 V	1.49 – 1.59 V
A/D value (3.3 V = 255)	009 – 019	162 – 178	031 – 047	048 – 059	115 – 123
Destination	U (U, C)	R	A	G	L

■ BLOCK DIAGRAM



MAIN • See page 39 → SCHEMATIC DIAGRAM

1 ■ **WIRING DIAGRAM**
 • **OVERALL ASSEMBLY**

2

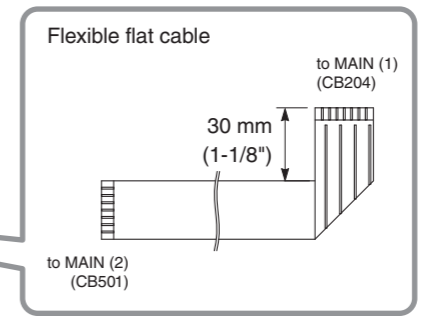
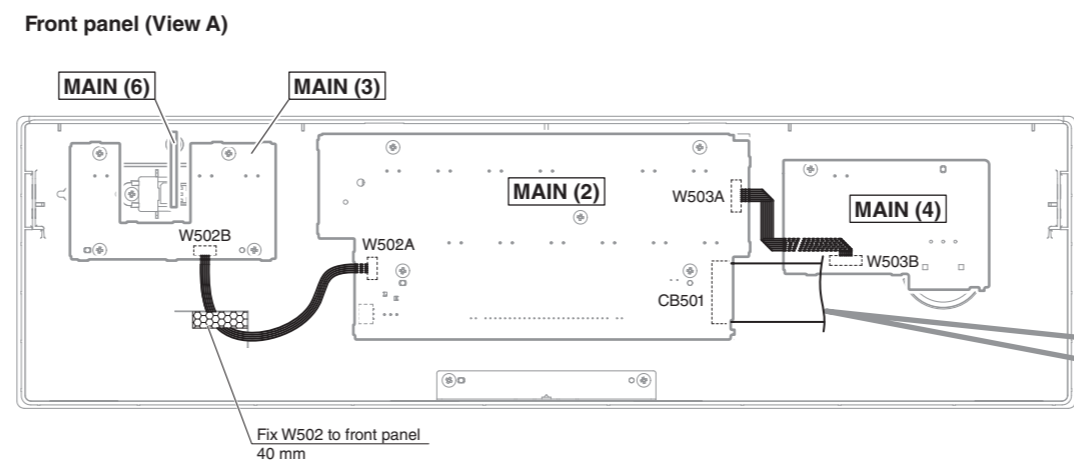
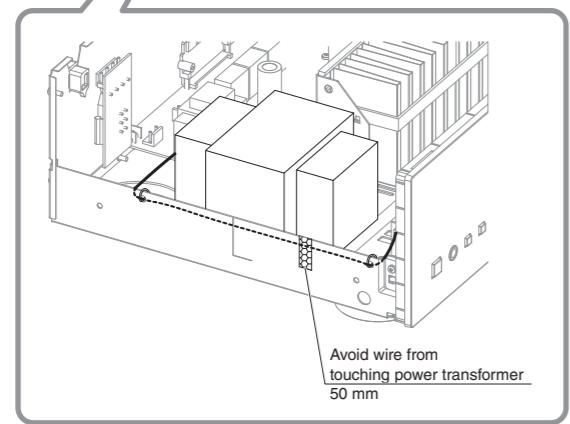
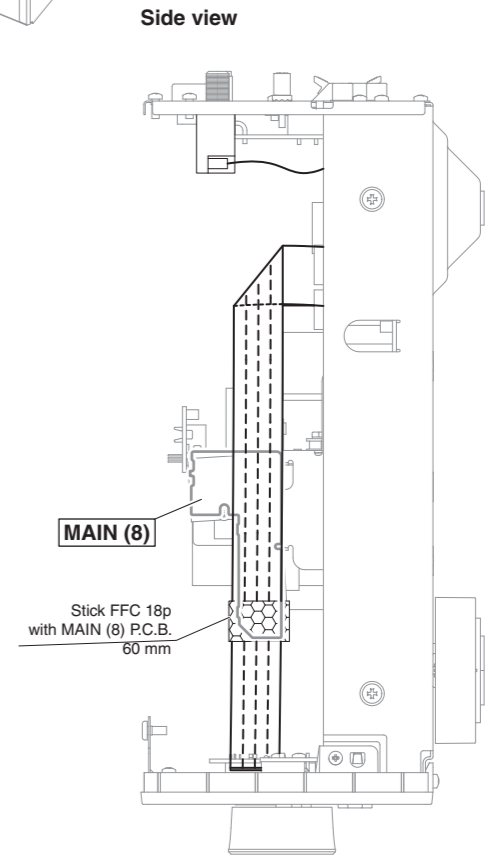
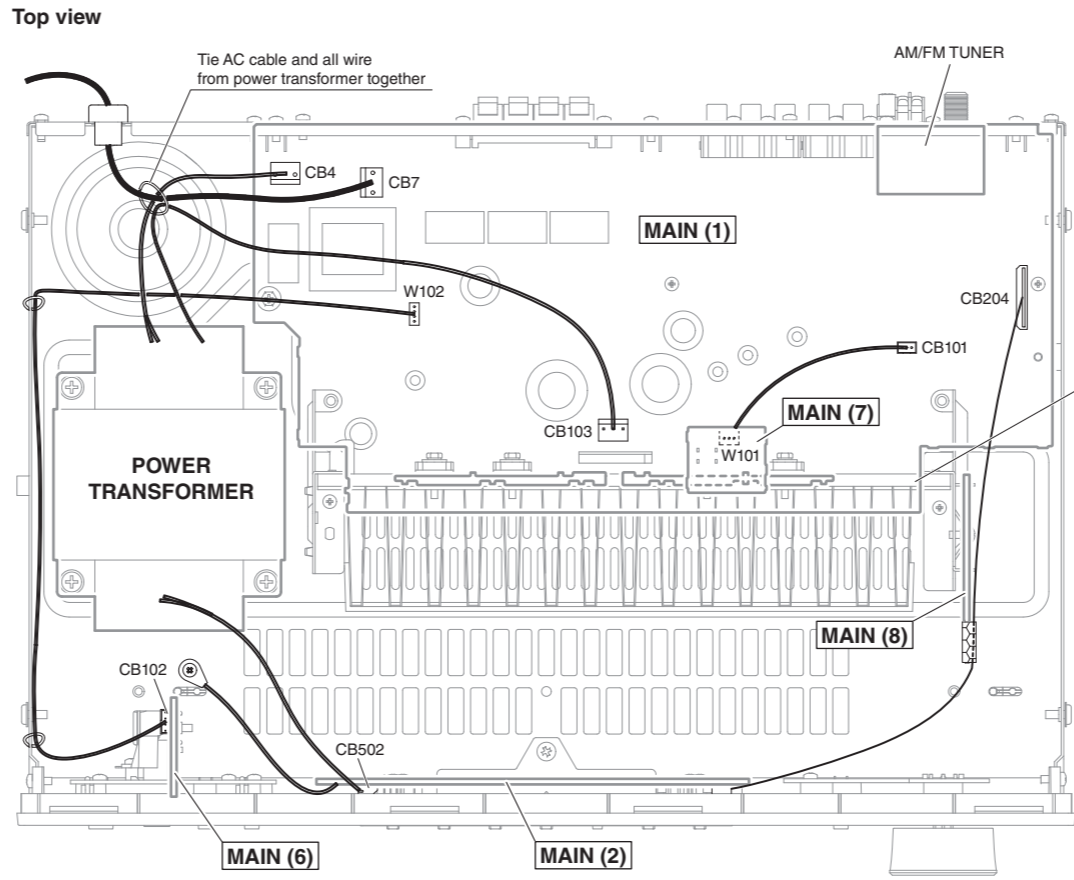
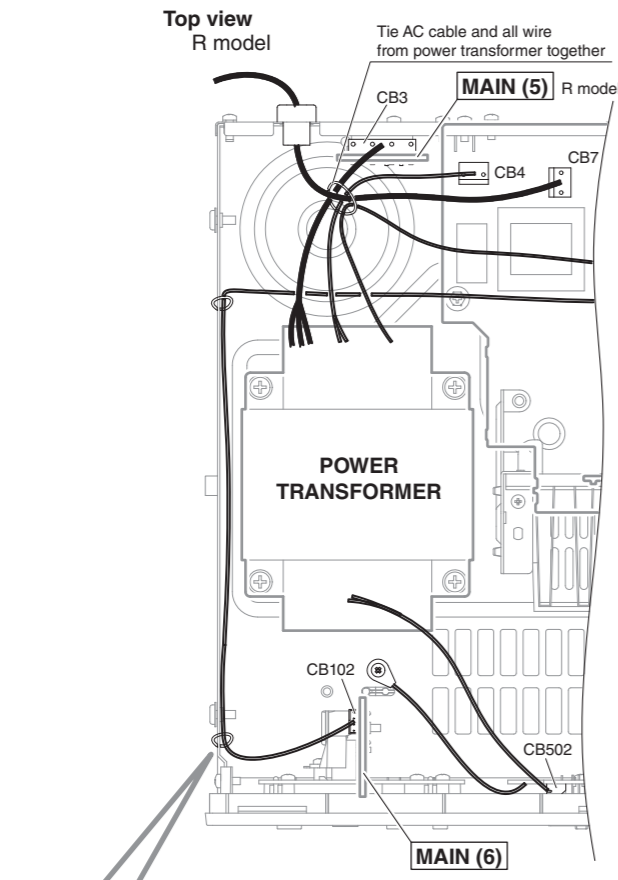
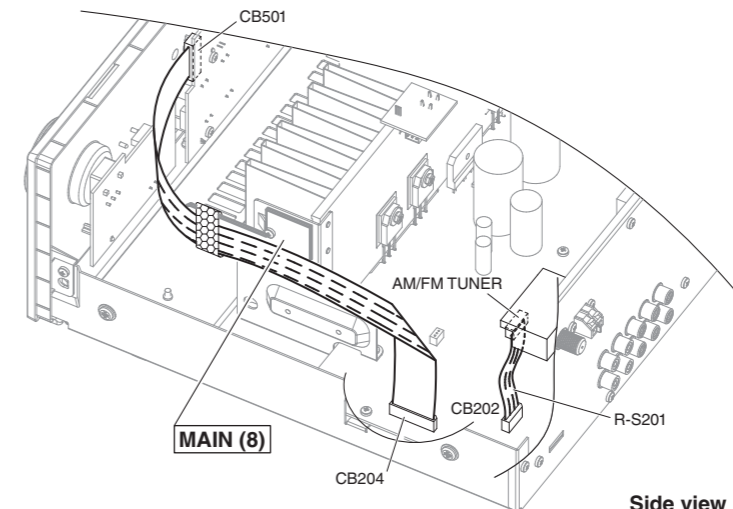
3

4

5

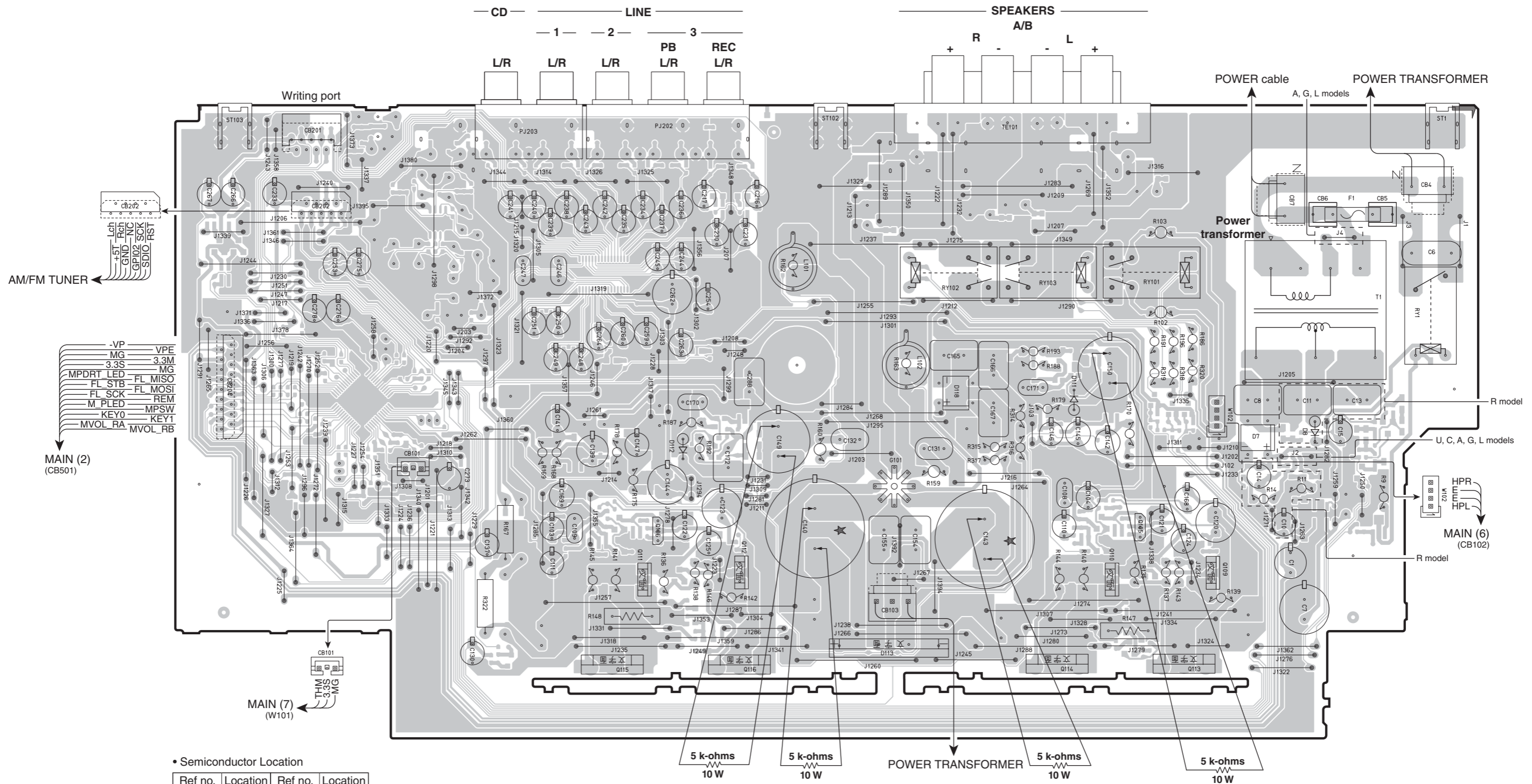
6

7



PRINTED CIRCUIT BOARDS

MAIN (1) (Side A)



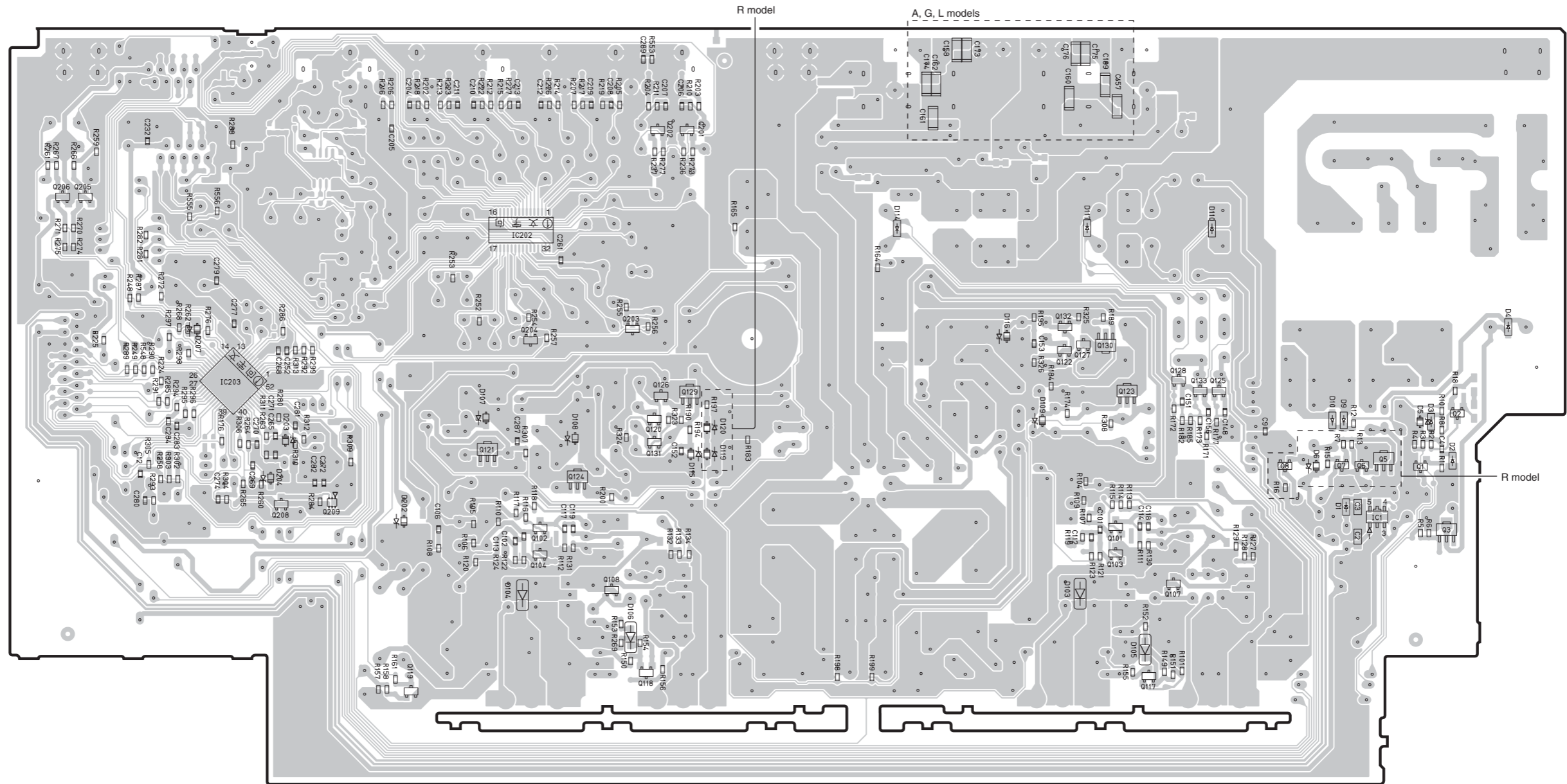
• Semiconductor Location

Ref no.	Location	Ref no.	Location
D7	I4	Q109	H5
D8	I4	Q110	H5
D111	H4	Q111	E5
D112	D4	Q112	F5
D113	F6	Q113	H6
D118	G4	Q114	G6
Q105	H5	Q115	E6
Q106	E5	Q116	F6

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. C140, C143, C149, C150 on MAIN (1) P.C.B.

MAIN (1) (Side B)



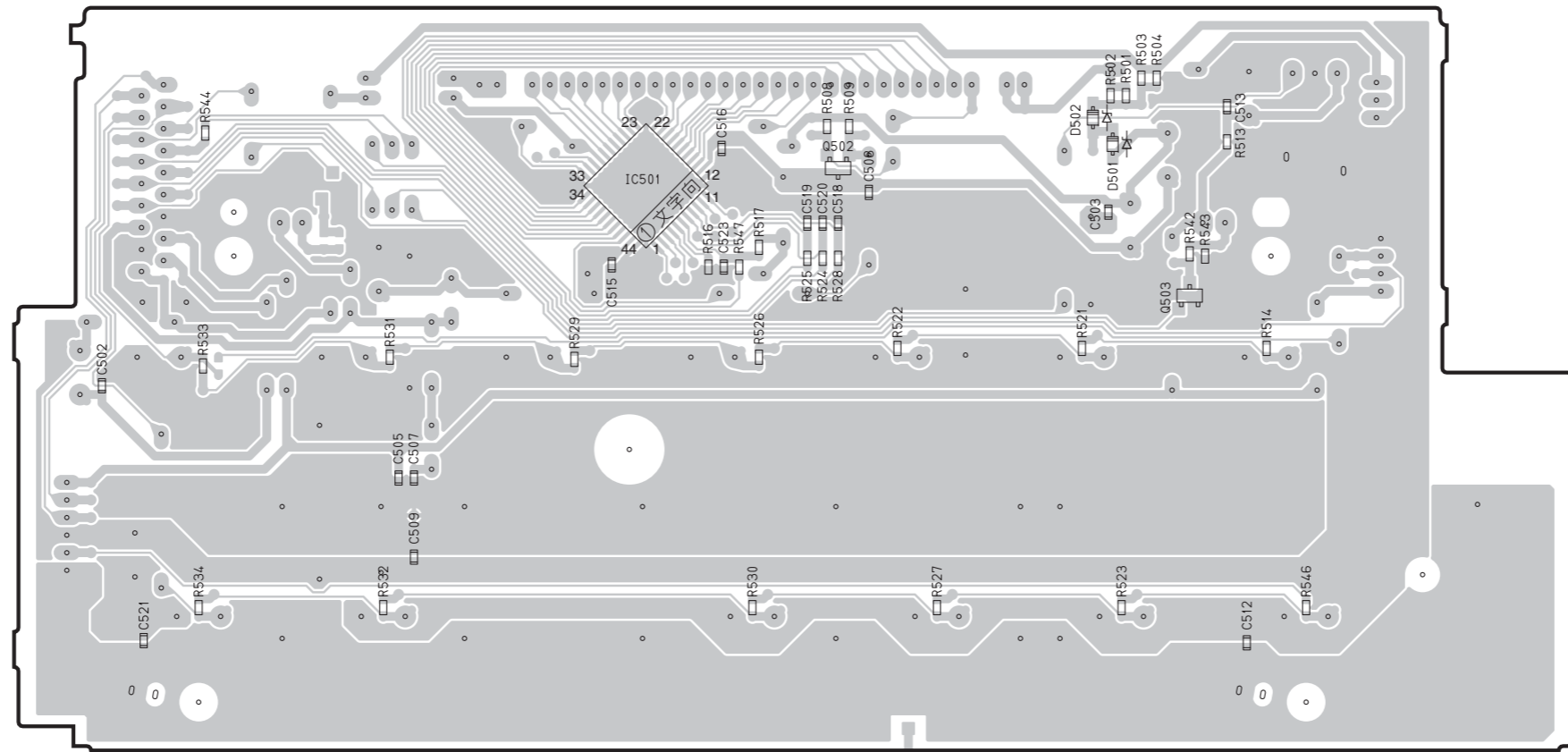
• Semiconductor Location

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
D1	H5	D103	G5	D114	F3	D204	C4	Q5	I4	Q108	E5	Q124	D4	Q132	G4	Q208	C5
D2	I4	D104	D5	D115	E4	D207	B4	Q6	H4	Q117	G6	Q125	H4	Q133	H4	Q209	C5
D3	I4	D105	G5	D116	G4	IC1	I5	Q7	H4	Q118	E5	Q126	E4	Q201	E3		
D4	I4	D106	E5	D117	G3	IC202	D3	Q8	H4	Q119	D6	Q127	G4	Q202	E3		
D5	I4	D107	D4	D119	E4	IC203	C4	Q101	G5	Q120	E4	Q128	H4	Q203	E4		
D6	H4	D108	D4	D120	E4	Q1	I4	Q102	D5	Q121	D4	Q129	E4	Q204	D4		
D9	H4	D109	G4	D202	D5	Q2	I4	Q103	G5	Q122	G4	Q130	G4	Q205	B3		
D10	H4	D110	H3	D203	C4	Q3	I5	Q107	G5	Q123	G4	Q131	E4	Q206	B3		

1

MAIN (2) (Side B)

2



3

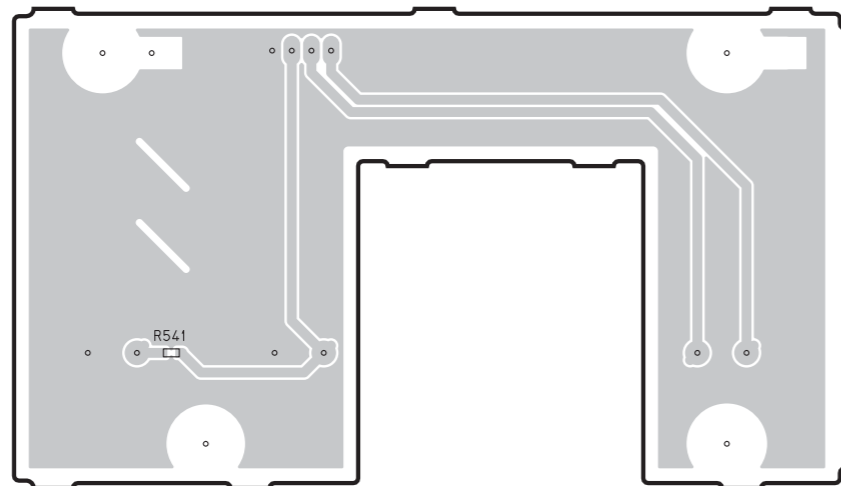
4

• Semiconductor Location

Ref no.	Location
D501	F2
D502	F2
IC501	E2
Q502	E2
Q503	G3

5

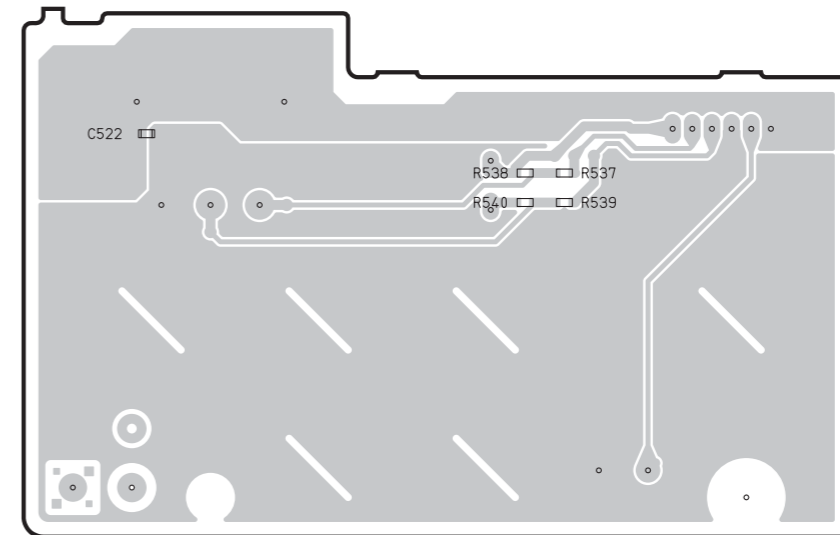
MAIN (3) (Side B)



6

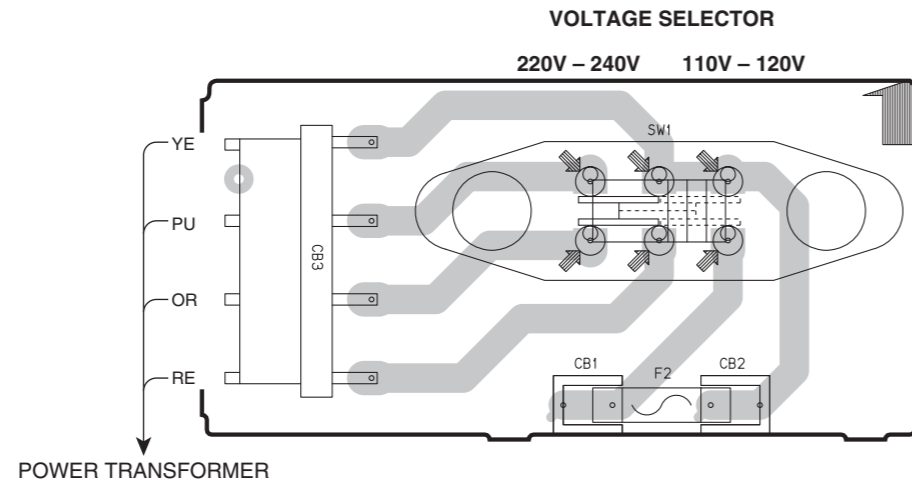
7

MAIN (4) (Side B)

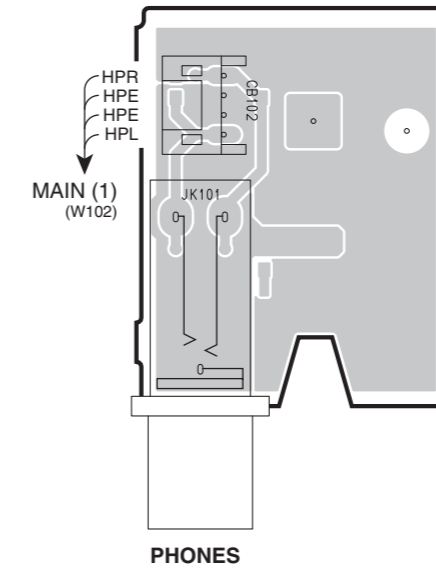


MAIN (5) (Side A)

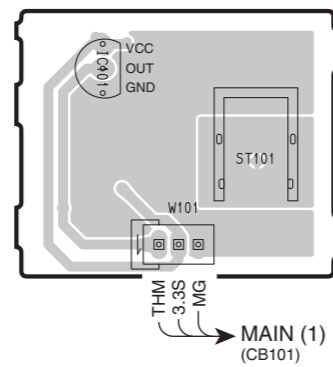
R model



MAIN (6) (Side A)



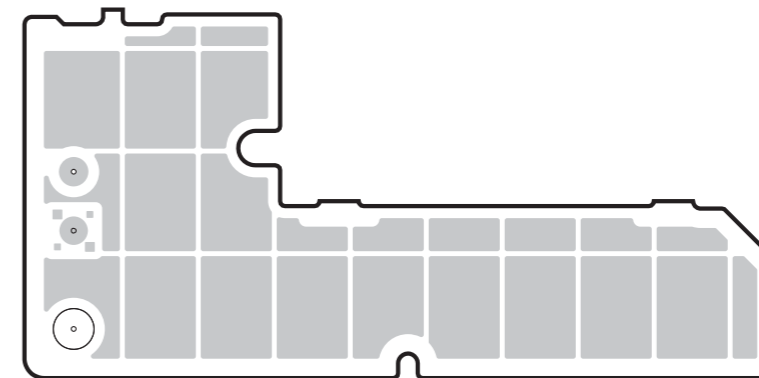
MAIN (7) (Side A)



• Semiconductor Location

Ref no.	Location
IC101	D5

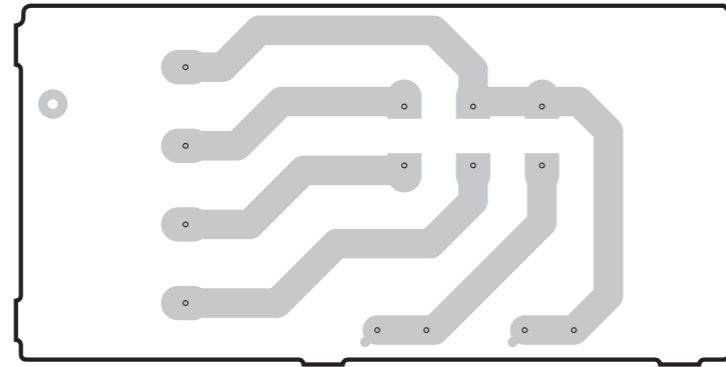
MAIN (8) (Side A)



1

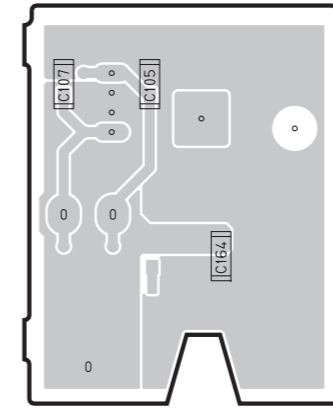
MAIN (5) (Side B)

R model



2

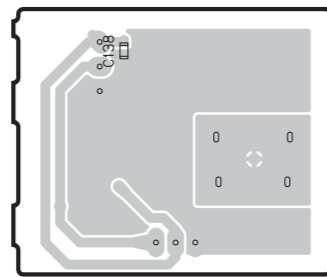
MAIN (6) (Side B)



3

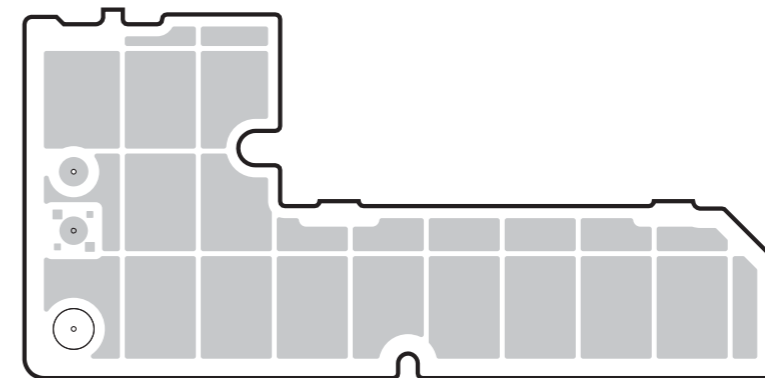
4

MAIN (7) (Side B)



5

MAIN (8) (Side B)

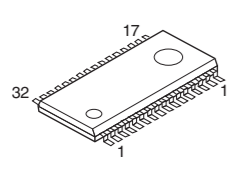
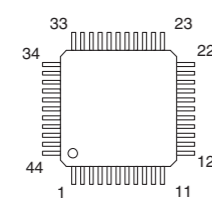
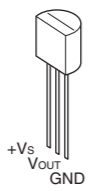
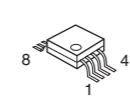
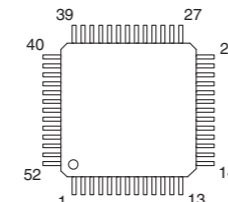
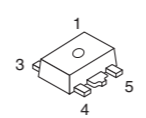


6

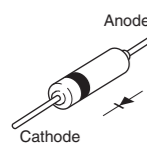
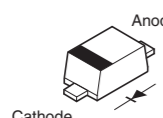
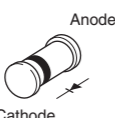
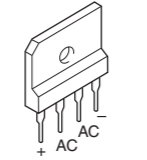
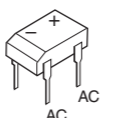
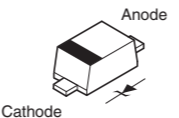
7

PIN CONNECTION DIAGRAMS

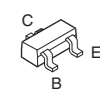



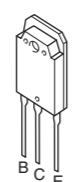

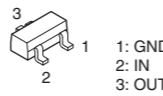
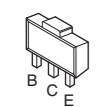
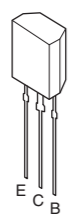
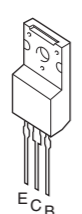
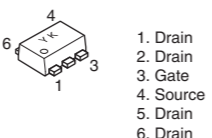
• ICs

<p>BD3491FS-E2</p> 	<p>HT16515-44LQFP</p> 	<p>LM61CIZ</p> 	<p>NJM2068MD-TE2</p> 	<p>R5F100JEAFA</p> 	<p>R1190H033B-T1-FE</p> 
--	---	--	--	---	---

• Diodes

<p>1N4003S</p> 	<p>1SS355VMTE-17</p> 	<p>BAV103</p> 	<p>D5SBA60 5A 600V</p> 	<p>DB105</p> 	<p>UDZV2.4B UDZV4.7B UDZV5.6B UDZV6.2B UDZV9.1B UDZV12B UDZV15B UDZV24B UDZV27B UDZV36B</p> 
--	--	---	--	---	---

• Transistors

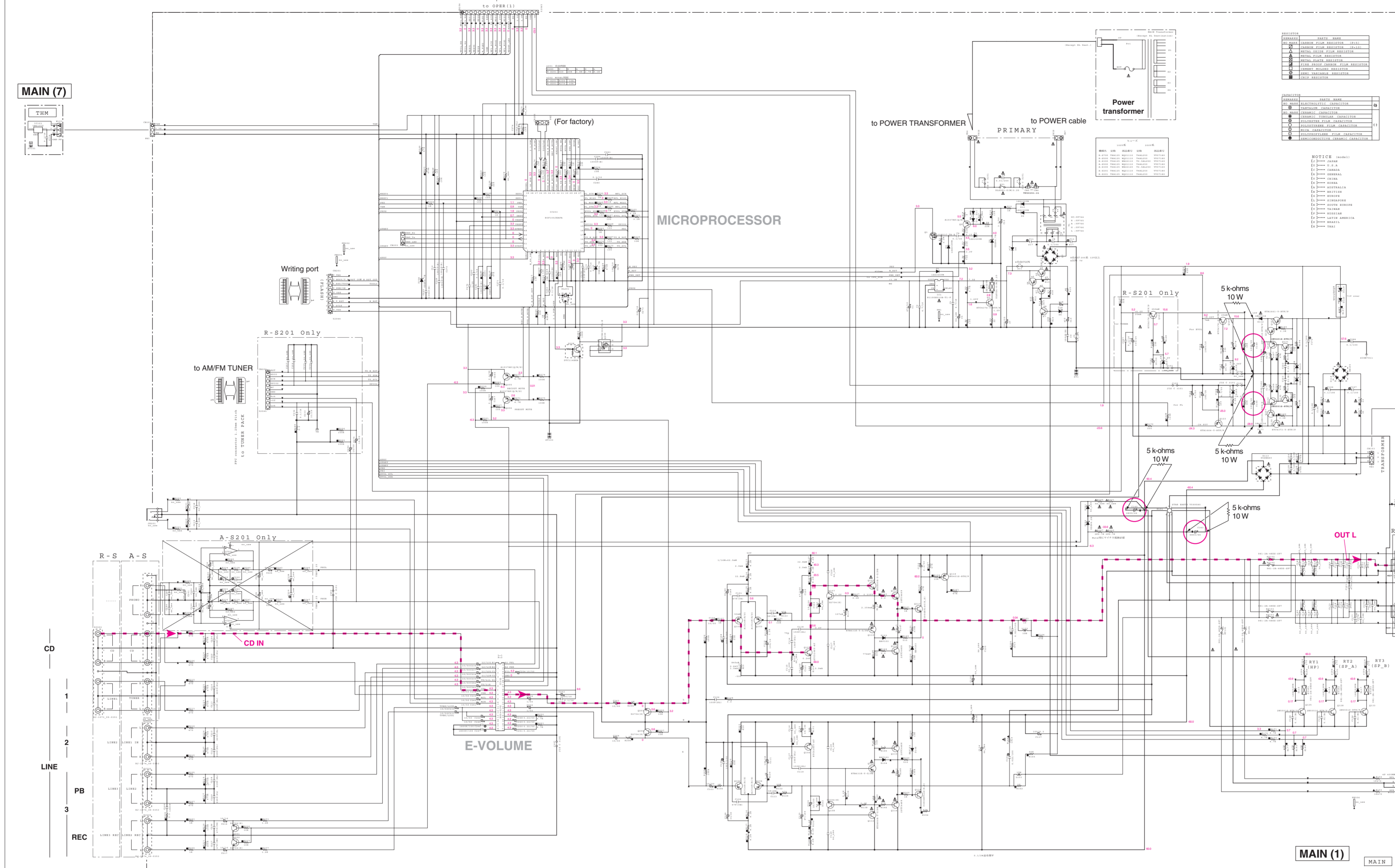
<p>2N5401S-RTK</p> 	<p>2N5551S-RTK 2SA1037K</p> 	<p>2SA1037AK R,S 2SA1514K R,S 2SC3906K 2SD2704 K</p> 	<p>2SC2412K</p> 	<p>2STC4468</p> 	<p>3LN01C-TB-E</p> 	<p>DTC114EKA</p> 
<p>KTA1661-Y-RTF/P KTA1664-Y-RTF/P KTC4373 -Y-RTF/P KTC4376-Y-RTF/P</p> 	<p>KTC3206Y-ATP</p> 	<p>KTB631K-Y-U/PH KTD600K-Y-U/PH</p> 	<p>MCH6336-TL-E</p> 			

SCHEMATIC DIAGRAM
MAIN

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.

C140, C143, C149, C150 on MAIN (1) P.C.B.

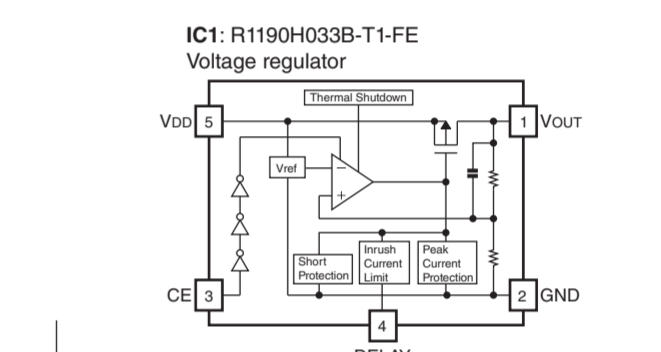


RESISTOR PART LIST

NO.	QTY	RESISTOR VALUE	RESISTOR VALUE	RESISTOR VALUE	RESISTOR VALUE
R1	1	10K	10K	10K	10K
R2	1	10K	10K	10K	10K
R3	1	10K	10K	10K	10K
R4	1	10K	10K	10K	10K
R5	1	10K	10K	10K	10K
R6	1	10K	10K	10K	10K
R7	1	10K	10K	10K	10K
R8	1	10K	10K	10K	10K
R9	1	10K	10K	10K	10K
R10	1	10K	10K	10K	10K
R11	1	10K	10K	10K	10K
R12	1	10K	10K	10K	10K
R13	1	10K	10K	10K	10K
R14	1	10K	10K	10K	10K
R15	1	10K	10K	10K	10K
R16	1	10K	10K	10K	10K
R17	1	10K	10K	10K	10K
R18	1	10K	10K	10K	10K
R19	1	10K	10K	10K	10K
R20	1	10K	10K	10K	10K
R21	1	10K	10K	10K	10K
R22	1	10K	10K	10K	10K
R23	1	10K	10K	10K	10K
R24	1	10K	10K	10K	10K
R25	1	10K	10K	10K	10K
R26	1	10K	10K	10K	10K
R27	1	10K	10K	10K	10K
R28	1	10K	10K	10K	10K
R29	1	10K	10K	10K	10K
R30	1	10K	10K	10K	10K
R31	1	10K	10K	10K	10K
R32	1	10K	10K	10K	10K
R33	1	10K	10K	10K	10K
R34	1	10K	10K	10K	10K
R35	1	10K	10K	10K	10K
R36	1	10K	10K	10K	10K
R37	1	10K	10K	10K	10K
R38	1	10K	10K	10K	10K
R39	1	10K	10K	10K	10K
R40	1	10K	10K	10K	10K
R41	1	10K	10K	10K	10K
R42	1	10K	10K	10K	10K
R43	1	10K	10K	10K	10K
R44	1	10K	10K	10K	10K
R45	1	10K	10K	10K	10K
R46	1	10K	10K	10K	10K
R47	1	10K	10K	10K	10K
R48	1	10K	10K	10K	10K
R49	1	10K	10K	10K	10K
R50	1	10K	10K	10K	10K
R51	1	10K	10K	10K	10K
R52	1	10K	10K	10K	10K
R53	1	10K	10K	10K	10K
R54	1	10K	10K	10K	10K
R55	1	10K	10K	10K	10K
R56	1	10K	10K	10K	10K
R57	1	10K	10K	10K	10K
R58	1	10K	10K	10K	10K
R59	1	10K	10K	10K	10K
R60	1	10K	10K	10K	10K
R61	1	10K	10K	10K	10K
R62	1	10K	10K	10K	10K
R63	1	10K	10K	10K	10K
R64	1	10K	10K	10K	10K
R65	1	10K	10K	10K	10K
R66	1	10K	10K	10K	10K
R67	1	10K	10K	10K	10K
R68	1	10K	10K	10K	10K
R69	1	10K	10K	10K	10K
R70	1	10K	10K	10K	10K
R71	1	10K	10K	10K	10K
R72	1	10K	10K	10K	10K
R73	1	10K	10K	10K	10K
R74	1	10K	10K	10K	10K
R75	1	10K	10K	10K	10K
R76	1	10K	10K	10K	10K
R77	1	10K	10K	10K	10K
R78	1	10K	10K	10K	10K
R79	1	10K	10K	10K	10K
R80	1	10K	10K	10K	10K
R81	1	10K	10K	10K	10K
R82	1	10K	10K	10K	10K
R83	1	10K	10K	10K	10K
R84	1	10K	10K	10K	10K
R85	1	10K	10K	10K	10K
R86	1	10K	10K	10K	10K
R87	1	10K	10K	10K	10K
R88	1	10K	10K	10K	10K
R89	1	10K	10K	10K	10K
R90	1	10K	10K	10K	10K
R91	1	10K	10K	10K	10K
R92	1	10K	10K	10K	10K
R93	1	10K	10K	10K	10K
R94	1	10K	10K	10K	10K
R95	1	10K	10K	10K	10K
R96	1	10K	10K	10K	10K
R97	1	10K	10K	10K	10K
R98	1	10K	10K	10K	10K
R99	1	10K	10K	10K	10K
R100	1	10K	10K	10K	10K

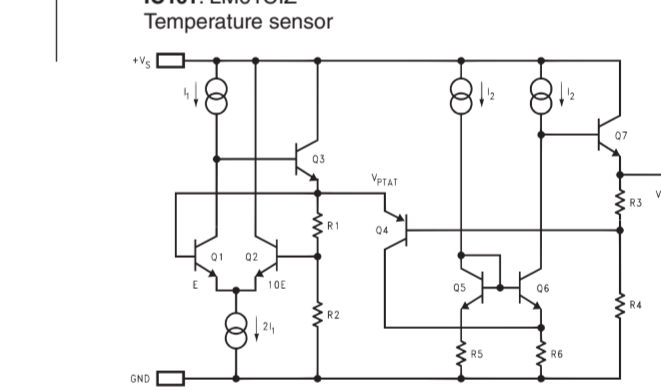
IC1: R1190H038B-T1-FE Voltage regulator

Pin No.	Symbol	Description
1	VDD	Output Pin
2	GND	Ground Pin
3	CE	Chip Enable Pin (1V Active)
4	DELAY	Delay Pin for loading (Current Limit Time)
5	VIN	Input Pin

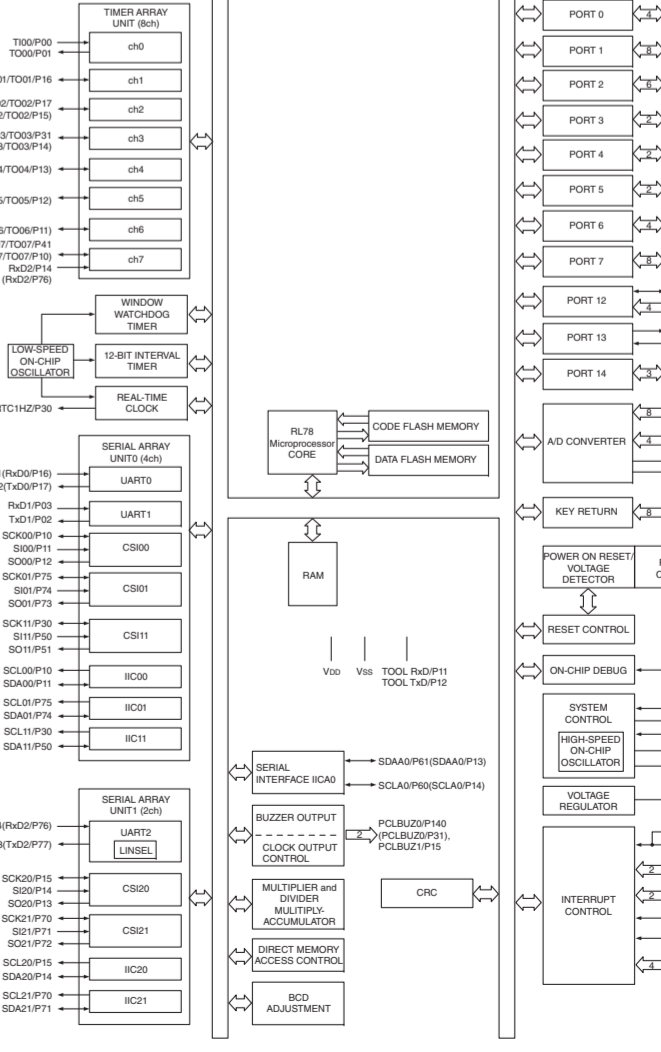


IC101: LM61C1Z Temperature sensor

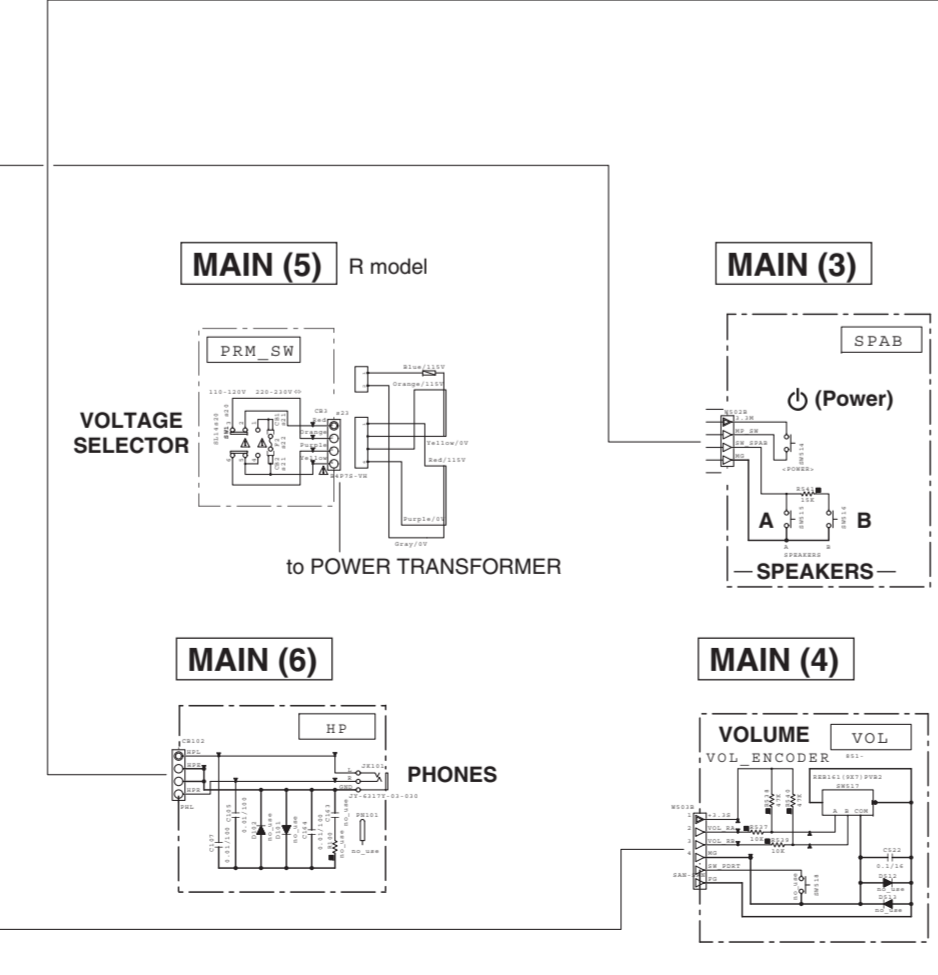
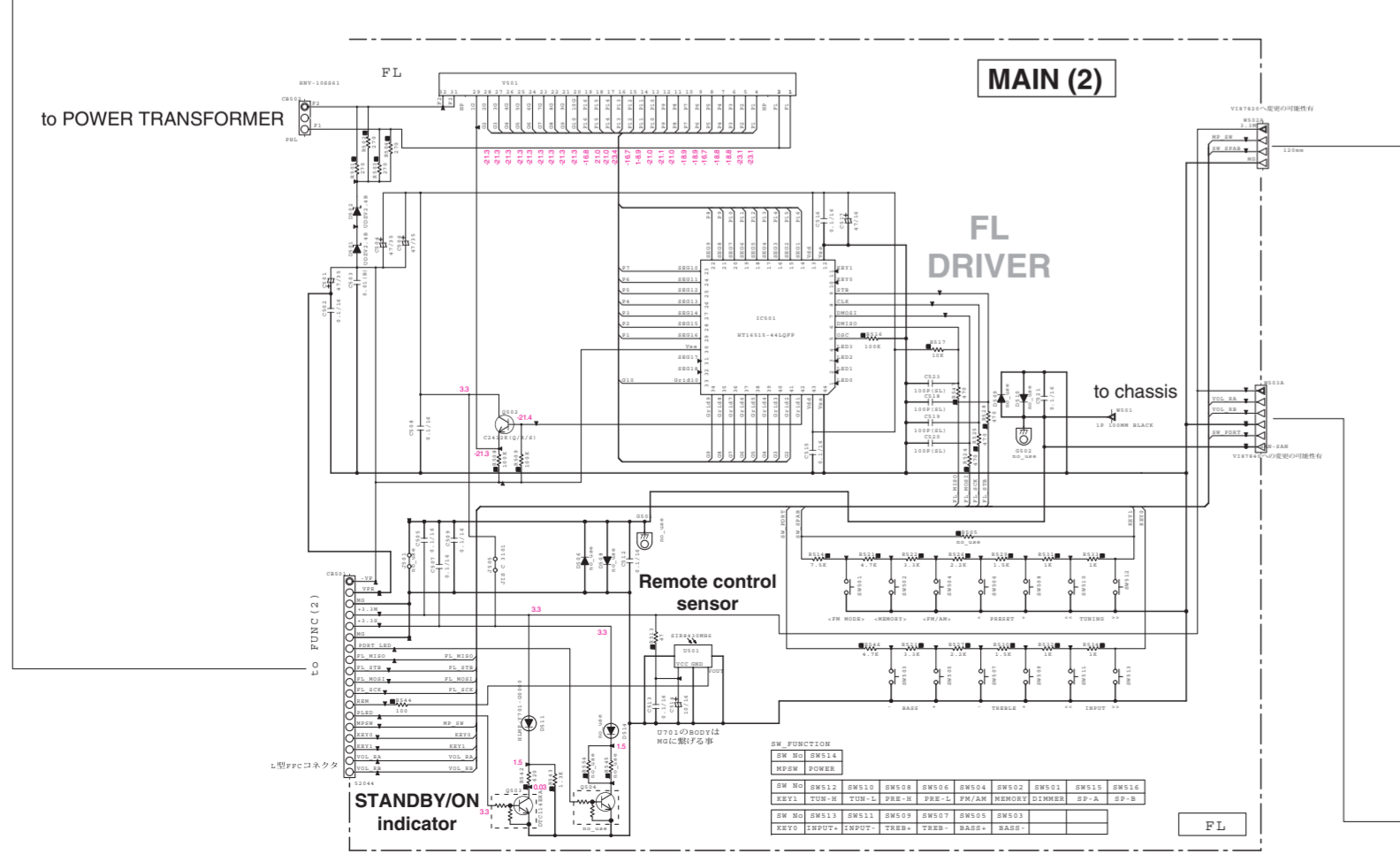
Pin No.	Symbol	Description
1	VDD	Output Pin
2	GND	Ground Pin
3	CE	Chip Enable Pin (1V Active)
4	DELAY	Delay Pin for loading (Current Limit Time)
5	VIN	Input Pin



IC203: R5F100JEFA 16 bit single chip microprocessor

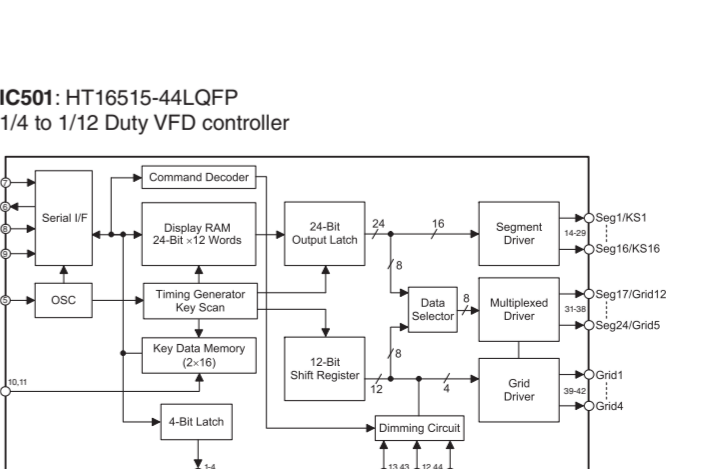
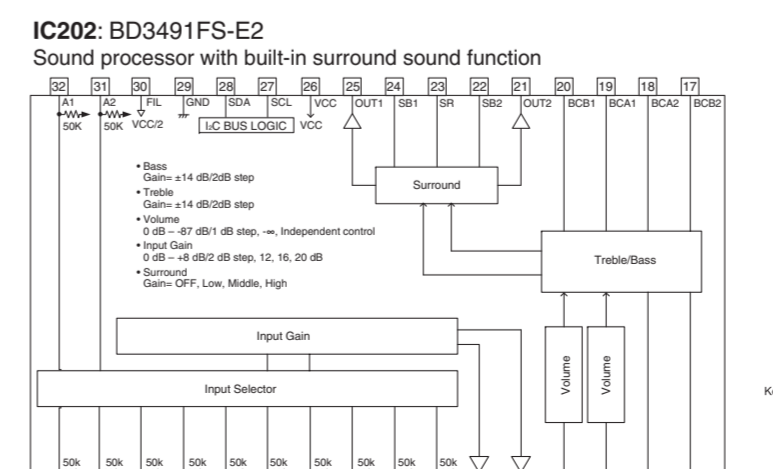


* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.



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

KEY0	INPUT	INPUT	TREBLE	TREBLE	BASS	BASS
000 - 011	012 - 032	033 - 054	055 - 079	080 - 107	108 - 134	135 - 160



■ REPLACEMENT PARTS LIST

• ELECTRICAL COMPONENT PARTS

WARNING

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

MAIN

Ref No.	Part No.	Description	Markets
*		ZH023200 P. C. B. MAIN	UC
*		ZH023300 P. C. B. MAIN	R
*		ZH023400 P. C. B. MAIN	A
*		ZH023500 P. C. B. MAIN	G
*		ZH023600 P. C. B. MAIN	L
	CB1-2	WN103000 CL IP. FUSE TP00351-31	R
	CB3	V9377900 CN. BS. PIN 4P	R
△	CB4	VG879900 CN. BS. PIN 2P	
△	CB5-6	WN103000 CL IP. FUSE TP00351-31	
△	CB7	VG879900 CN. BS. PIN 2P	
	CB101	VB389900 CN. BS. PIN 3P	
	CB102	VB858300 CN. BS. PIN 4P	
	CB103	LB932030 CN. BS. PIN 3P	
	CB201	VQ044400 CN. BS. PIN 9P	
	CB202	VQ047200 CN. BS. PIN 9P	
	CB204	VP573800 CN. BS. PIN 18P	
	CB501	VQ044800 CN. BS. PIN 18P	
	CB502	VB858200 CN. BS. PIN 3P	
	C1	UR828470 C. EL 470uF 10V	
	C2-3	WHO46700 C. CE. M. CHP 4. 7uF 16V	
	C4	US035100 C. CE. CHP 0. 1uF 16V B	
△	C6	WQ939400 C. CE. SAFTY 0. 01uF 250V	
	C7	UR849220 C. EL 2200uF 25V	
*	C8	WW194100 C. MYLAR 0. 1uF 100V	
	C9	US063100 C. CE. CHP 1000pF 50V B	
	C10	UR867100 C. EL 10uF 50V	R
*	C11	WW194100 C. MYLAR 0. 1uF 100V	R
	C12	US063100 C. CE. CHP 1000pF 50V B	
*	C13	WW194100 C. MYLAR 0. 1uF 100V	R
	C14	UR866100 C. EL 1uF 50V	R
	C15	UR866330 C. EL 3. 3uF 50V	
	C101-102	US061470 C. CE. CHP 47pF 50V B	
	C103-104	UR867100 C. EL 10uF 50V	
*	C105	WN200100 C. CE. M. CHP 0. 01uF 100V	
	C106	US062100 C. CE. CHP 100pF 50V B	
*	C107	WN200100 C. CE. M. CHP 0. 01uF 100V	
	C108-109	WJ608100 C. MYLAR 100pF 100V	
	C110-111	UR838100 C. EL 100uF 16V	
	C112-113	US060500 C. CE. CHP 5pF 50V B	
	C114	US062150 C. CE. CHP 150pF 50V B	
	C117-119	US062150 C. CE. CHP 150pF 50V B	
	C120	UR897470 C. EL 47uF 100V	
	C121-122	UR897100 C. EL 10uF 100V	
	C123	UR897470 C. EL 47uF 100V	
	C124-125	UR897100 C. EL 10uF 100V	
	C130	UR866220 C. EL 2. 2uF 50V	
	C131-132	WJ610600 C. MYLAR 0. 022uF 100V	
	C137	UR818100 C. EL 100uF 6. 3V	
	C138	US135100 C. CE. CHP 0. 1uF 16V	
	C139	UR848330 C. EL 330uF 25V	
*	C140	ZH987600 C. EL 6800uF 66V	
	C141	UR867100 C. EL 10uF 50V	
	C142	UR867470 C. EL 47uF 50V	
*	C143	ZH987600 C. EL 6800uF 66V	
	C144	UR829100 C. EL 1000uF 10V	
	C145	UR858100 C. EL 100uF 35V	
	C146	UR866470 C. EL 4. 7uF 50V	

* New Parts

Ref No.	Part No.	Description	Markets
	C147	UR867100 C. EL 10uF 50V	
	C148	US064100 C. CE. CHP 0. 01uF 50V B	
*	C149-150	UR779100 C. EL 1000uF 63V	
	C151-153	US064100 C. CE. CHP 0. 01uF 50V B	
*	C154-155	WW194100 C. MYLAR 0. 1uF 100V	
	C156	US064100 C. CE. CHP 0. 01uF 50V B	
*	C157	WN200100 C. CE. M. CHP 0. 01uF 100V	AGL
*	C158	WN200100 C. CE. M. CHP 0. 01uF 100V	AGL
*	C162	WN200100 C. CE. M. CHP 0. 01uF 100V	AGL
*	C164	WN200100 C. CE. M. CHP 0. 01uF 100V	
*	C165-167	WW194100 C. MYLAR 0. 1uF 100V	
	C168-169	UR877330 C. EL 33uF 63V	
	C170-171	WJ608100 C. MYLAR 100pF 100V	
*	C172	WW194100 C. MYLAR 0. 1uF 100V	
*	C173-176	WN200100 C. CE. M. CHP 0. 01uF 100V	AGL
*	C189-190	WN200100 C. CE. M. CHP 0. 01uF 100V	AGL
	C206-207	US061470 C. CE. CHP 47pF 50V B	
	C208-213	US062220 C. CE. CHP 220pF 50V B	
	C216-217	UR837100 C. EL 10uF 16V	
	C230-231	UR867100 C. EL 10uF 50V	
	C232	US135100 C. CE. CHP 0. 1uF 16V	
	C233	UR837330 C. EL 33uF 16V	
	C234-245	UR867100 C. EL 10uF 50V	
*	C246-247	WJ609200 C. MYLAR 1800pF 100V	
	C248-251	UR865220 C. EL 0. 22uF 50V	
	C252	US135100 C. CE. CHP 0. 1uF 16V	
	C253-254	UR867100 C. EL 10uF 50V	
	C259-260	UR866100 C. EL 1uF 50V	
	C261	US135100 C. CE. CHP 0. 1uF 16V	
	C262	UR829100 C. EL 1000uF 10V	
	C265	US063100 C. CE. CHP 1000pF 50V B	
	C266-267	UR866220 C. EL 2. 2uF 50V	
	C268-270	US063100 C. CE. CHP 1000pF 50V B	
	C271	US135100 C. CE. CHP 0. 1uF 16V	
	C272	US046100 C. CE. CHP 1uF 25V	
	C273	UR828220 C. EL 220uF 10V	
	C274	US062100 C. CE. CHP 100pF 50V B	
	C275	UR867100 C. EL 10uF 50V	
	C276	UR866100 C. EL 1uF 50V	
	C277	US135100 C. CE. CHP 0. 1uF 16V	
	C278	UR828100 C. EL 100uF 10V	
	C279	US062100 C. CE. CHP 100pF 50V B	
	C280	US135100 C. CE. CHP 0. 1uF 16V	
	C281	US063100 C. CE. CHP 1000pF 50V B	
	C282	US135100 C. CE. CHP 0. 1uF 16V	
	C283-284	US063100 C. CE. CHP 1000pF 50V B	
	C287	US135100 C. CE. CHP 0. 1uF 16V	
*	C288	WW194100 C. MYLAR 0. 1uF 100V	
	C289	US163100 C. CE. CHP 1000pF 50V	
	C501	WQ711900 C. EL 47uF 35V	
	C502	US035100 C. CE. CHP 0. 1uF 16V B	
	C503	US064100 C. CE. CHP 0. 01uF 50V B	
	C504	WQ711900 C. EL 47uF 35V	
	C505	US035100 C. CE. CHP 0. 1uF 16V B	
	C506	WQ711900 C. EL 47uF 35V	
	C507-509	US035100 C. CE. CHP 0. 1uF 16V B	
	C512-513	US035100 C. CE. CHP 0. 1uF 16V B	

* New Parts

R-S201

MAIN

Ref No.	Part No.	Description	Markets
C514	UM397100	C. EL 10uF 16V	
C515-516	US035100	C. CE. CHP 0. 1uF 16V B	
C517	UM397470	C. EL 47uF 16V	
C518-520	US062100	C. CE. CHP 100pF 50V B	
C521-522	US035100	C. CE. CHP 0. 1uF 16V B	
C523	US062100	C. CE. CHP 100pF 50V B	
D1-4	WW783900	DIODE 1SS355VM	
D5	WY163100	DIODE. ZENR UDZV4. 7B	
D6	WY164100	DIODE. ZENR UDZV12B	R
△ D7	WH471700	DIODE. BRG DB105 1A 600V	R
D8	WU201600	DIODE 1N4003S TP	R
D9-10	WW783900	DIODE 1SS355VM	
D103-106	ZA984400	DIODE BAV103	
D107	WY163300	DIODE. ZENR UDZV5. 6B	
D108	WY163800	DIODE. ZENR UDZV9. 1B	
D109	WY164800	DIODE. ZENR UDZV24B	
D110	WW783900	DIODE 1SS355VM	
△ D111-112	WU201600	DIODE 1N4003S TP	
△ D113	VN953300	DIODE. BRG D5SBA60 5A 600V	
D114	WW783900	DIODE 1SS355VM	
D115	WY164300	DIODE. ZENR UDZV15B	
* D116	WY164900	DIODE. ZENR UDZV27B	
D117	WW783900	DIODE 1SS355VM	
△ D118	WH471700	DIODE. BRG DB105 1A 600V	
D119-120	WY165200	DIODE. ZENR UDZV36B	R
D203-204	WY163100	DIODE. ZENR UDZV4. 7B	
D207	WY163100	DIODE. ZENR UDZV4. 7B	
* D501-502	WZ443400	DIODE. ZENR UDZV2. 4B	
D511	WZ745700	LED HLMP-Y701-G0000	
△ F1	WQ211100	FUSE 8A 125V	UCR
△ F1	VV071800	FUSE 4A 250V	AGL
△ F2	VV071800	FUSE 4A 250V	R
G101	V5995800	PLATE. GND	
△ * IC1	YD268A00	IC R1190H033B-T1-FE	
IC101	X0515B00	IC LM61CIZ THERMAL	
* IC202	YF439A00	IC BD3491FS	
IC203	YF832A00	IC. CPU R5F100JEAFA	(unwritten)
* IC501	YF471A00	IC HT16515-44LQFP	
JK101	V4478300	JACK. PHONE JY-6317Y-03-030	
PJ202	WD195400	JACK. PIN 6P	
PJ203	WD195200	JACK. PIN 4P	
Q1	WH445000	FET 3LN01C-TB-E	
Q2	ZC298400	TR 2SA1037AK R, S TP	
* Q3	ZE933000	TR KTC4376-Y-RTF/P	
△ * Q5	ZG245700	TR KTA1661-Y-RTF/P	R
Q6-7	WC397600	TR 2N5401S-RTK/P	R
Q8	WC398300	TR 2N5551S-RTK/P	R
Q101-104	WD896300	TR 2SA1514K R, S	
Q105-106	WC292200	TR KTC3206Y-AT	
△ Q107-108	WC883400	TR 2SD2704 K	
△ * Q109	ZG214200	TR KTD600K-Y-U/PH	
△ * Q110-111	ZG214100	TR KTB631K Y, GR	
△ * Q112	ZG214200	TR KTD600K-Y-U/PH	
△ # Q113-116	ZD043300	TR. POWER 2STC4468	
Q117-118	WF549900	TR 2SC3906K T146 R, S	
Q119-120	WC397600	TR 2N5401S-RTK/P	
* Q121	ZE933000	TR KTC4376-Y-RTF/P	

* New Parts **Note)** Those parts marked with "#" are not included in the P.C.B. assembly.

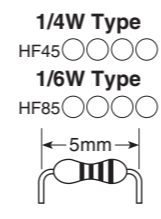
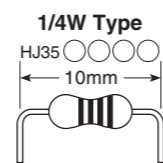
Ref No.	Part No.	Description	Markets
Q122	WC398300	TR 2N5551S-RTK/P	
Q123	ZE918100	TR KTA1664-Y-RTF/P	
* Q124	ZE933000	TR KTC4376-Y-RTF/P	
Q125	WC398300	TR 2N5551S-RTK/P	
Q126	WC397600	TR 2N5401S-RTK/P	
Q127-128	WC398300	TR 2N5551S-RTK/P	
△ * Q129	ZG245700	TR KTA1661-Y-RTF/P	
△ * Q130	ZG245800	TR KTC4373-Y-RTF/P	
Q131	WC397600	TR 2N5401S-RTK/P	
Q132-133	WC398300	TR 2N5551S-RTK/P	
Q201-204	WC883400	TR 2SD2704 K	
Q205-206	VV556500	TR 2SA1037K Q, R, S	
Q208	VV655400	TR. DGT DTC114EKA	
Q209	WQ381000	FET MCH6336-TL-E	
Q502	VV556400	TR 2SC2412K Q, R, S	
Q503-504	VV655400	TR. DGT DTC114EKA	
* R9	WW862500	R. CAR. FP 22Ω 1/4W	
R11	WW975700	R. MTL. OXD 47KΩ 1/4W	R
R14	WW975700	R. MTL. OXD 47KΩ 1/4W	R
R102-103	V8071300	R. MTL. FLM 470Ω 1W	
* R135-136	WW865700	R. CAR. FP 5. 6KΩ 1/4W	
* R137-138	WW865100	R. CAR. FP 2. 2KΩ 1/4W	
△ R139	WW863300	R. CAR. FP 100Ω 1/4W	
* R140-141	WW863900	R. CAR. FP 330Ω 1/4W	
△ R142	WW863300	R. CAR. FP 100Ω 1/4W	
△ R143-146	WW861300	R. CAR. FP 2. 2Ω 1/4W	
△ * R147-148	ZG861500	R. WW 0. 1Ω 2W	
△ R159-160	V8070300	R. MTL. FLM 10Ω 1W	
R162-163	WW862100	R. CAR. FP 10Ω 1/4W	
R168	WW863300	R. CAR. FP 100Ω 1/4W	
* R169	WW864600	R. CAR. FP 1KΩ 1/4W	
* R170	WW863700	R. CAR. FP 220Ω 1/4W	
R175	WW863300	R. CAR. FP 100Ω 1/4W	
* R178	WW864600	R. CAR. FP 1KΩ 1/4W	
* R179	WW865100	R. CAR. FP 2. 2KΩ 1/4W	
* R186	WW863900	R. CAR. FP 330Ω 1/4W	UCAG
* R186	WW863200	R. CAR. FP 82Ω 1/4W	RL
* R187-188	WW865200	R. CAR. FP 2. 4KΩ 1/4W	
* R191	WW863900	R. CAR. FP 330Ω 1/4W	UCAG
* R191	WW863200	R. CAR. FP 82Ω 1/4W	RL
* R192	WW975500	R. MTL. OXD 39KΩ 1/4W	
* R193	WW866600	R. CAR. FP 22KΩ 1/4W	
* R196	WW863900	R. CAR. FP 330Ω 1/4W	UCAG
* R196	WW863200	R. CAR. FP 82Ω 1/4W	RL
△ * R314-317	WW862500	R. CAR. FP 22Ω 1/4W	
* R318-320	WW863800	R. CAR. FP 270Ω 1/4W	
△ RY1	WQ804100	RELAY DC DLS5D1-0(M) 0. 25	
△ * RY101-103	ZJ359600	RELAY 981-2A-48DS-SP7	
ST1	V4040500	SCR. TERM M3	
ST101	WA246200	SCR. TERM 3. 5	
ST102-103	V4040500	SCR. TERM M3	
△ SW1	WV382900	SW. SLIDE SL14	R
SW501-516	WD483100	SW. TACT SKRGAAD010	
SW517	WU974000	SW. RT. ENC REB161 (9X7) PVB20F1	
△ * T1	YF764A00	TRANS. SUB	UC
△ T1	YF765A00	TRANS	R
△ T1	YF766A00	TRANS	AGL

* New Parts

R-S201

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

Ref No.	Part No.	Description	Remarks	Markets	
* 1	ZH023200	P. C. B. ASSEMBLY	MAIN	UC	
* 1	ZH023300	P. C. B. ASSEMBLY	MAIN	R	
* 1	ZH023400	P. C. B. ASSEMBLY	MAIN	A	
* 1	ZH023500	P. C. B. ASSEMBLY	MAIN	G	
* 1	ZH023600	P. C. B. ASSEMBLY	MAIN	L	
△ * 11	YF699A00	POWER TRANSFORMER		UC	
△ * 11	YF700A00	POWER TRANSFORMER		R	
△ * 11	YF703A00	POWER TRANSFORMER		A	
△ * 11	YF705A00	POWER TRANSFORMER		G	
△ * 11	YF704A00	POWER TRANSFORMER		L	
	12	WW891000	AM/FM TUNER	FAEH08-W02	UCRL
	12	WW891100	AM/FM TUNER	FAEH08-E02	AG
	13	MF118300	FLEXIBLE FLAT CABLE	18P 300mm P=1.25	
	14	MF109070	FLEXIBLE FLAT CABLE	9P 70mm P=1.25	
#	15	ZD043300	TRANSISTOR	2STC4468	Q113-116
△	20	WY040900	POWER CABLE	1.8m	UC
△	20	WY042500	POWER CABLE	1.8m	R
△	20	WY042100	POWER CABLE	1.8m	A
△	20	WY041700	POWER CABLE	1.8m	GL
* 31	ZG936500	FRONT PANEL		BL	
* 31	ZG936600	FRONT PANEL		SI	
* 32	ZG936900	BUTTON SET	Ax1, Bx1, Dx1	BL	
* 32	ZG937000	BUTTON SET	Ax1, Bx1, Dx1	SI	
* 33	ZH629500	KNOB	VOLUME	BL	
* 33	ZH629600	KNOB	VOLUME	SI	
* 35	ZG940800	REAR PANEL			UC
* 35	ZG940900	REAR PANEL			R
* 35	ZG941000	REAR PANEL			A
* 35	ZG941100	REAR PANEL			G
* 35	ZG941200	REAR PANEL			L
* 36	ZG942200	TOP COVER		BL	
* 36	ZG942300	TOP COVER		SI	
* 50	ZG943000	WINDOW SHEET			
	52	VV849300	RADIATION SHEET	19x24	
	53	V2438700	CORD STOPPER	10P1	
	54	WQ664500	SUPPORT	H8	
* 56	ZG943200	CUSHION		LEG	
	57	ZC181800	LEG	D60/H21 Black	
	62	VQ368600	PUSH RIVET	P3555-B	
	70	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3	
	71	VK173200	SCREW TRANSISTOR	3x15 SP MFC2	
	72	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
	73	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3	
	74	WE877900	BIND HEAD S-TIGHT SCREW	3x6 MFZN2W3	R

* New Parts

Finish BL: Black color, SI: Silver color

Note) Those parts marked with “#” are not included in the P.C.B. assembly.

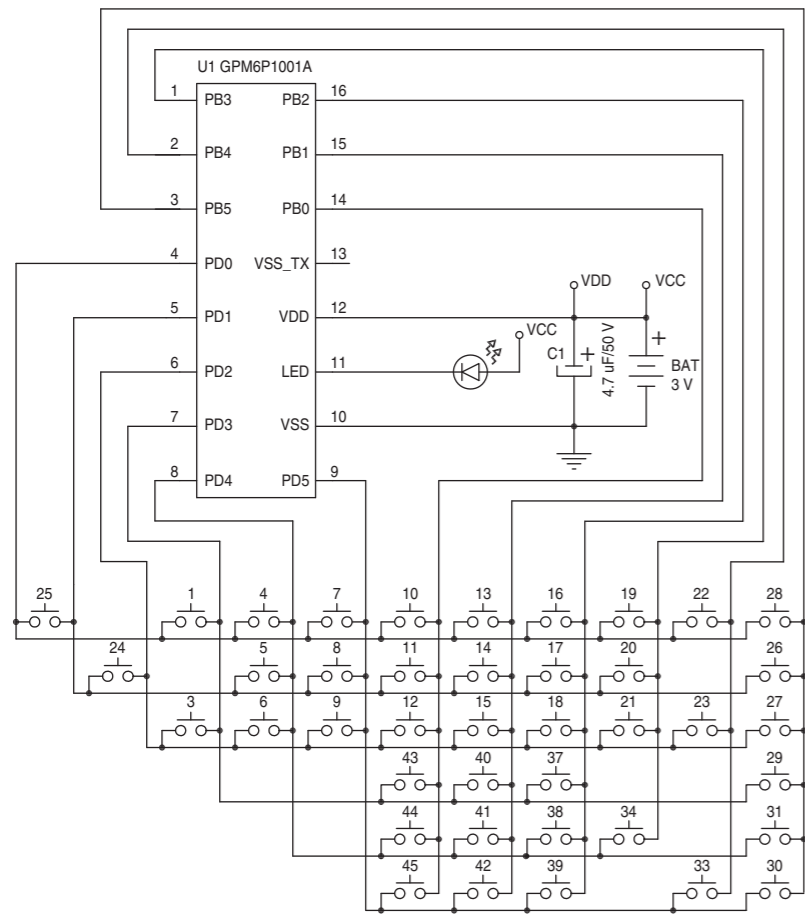
Ref No.	Part No.	Description	Remarks	Markets
75	WE774600	HEXAGONAL HEAD B-TIGHT SCREW	3x18 MFZN2W3	
76	WU048900	BIND HEAD S-TIGHT SCREW	4x10 MFZN2W3	
77	VH313200	PW HEAD S-TIGHT SCREW	4x8-10 MFN13BL	BL
77	VDO69600	PW HEAD S-TIGHT SCREW	4x8-10 MFN133	SI
78	WE200500	DISH HEAD B-TIGHT SCREW	3x6 MFN13BL	BL
78	WE200400	DISH HEAD B-TIGHT SCREW	3x6 MFN133	SI
101	WQ621800	DAMPER	2x10x310	
102	V5881000	DAMPER	2x15x20	
		ACCESSORIES		
* 200	ZG936300	REMOTE CONTROL	RAX30, 7060N-01-0002	
200-1	AAX13340	BATTERY COVER	Black	60050001
202	V6267000	FM ANTENNA	1.4m 1pc	UCRL
202	VQ147100	FM ANTENNA	1.4m 1pc	AG
203	VR248500	AM ANTENNA	1.0m 1pc	
		BATTERY	LR6, AA, UM-3 2pcs	
		SERVICE TOOL		
* 200	ZK189200	RS-232C CONVERSION ADAPTOR	V5.0 without FFC 9P	
	ZD896000	FLEXIBLE FLAT CABLE	9P 150mm P=1.25	SMCD-9X150-BDX2

* New Parts

Finish BL: Black color, SI: Silver color

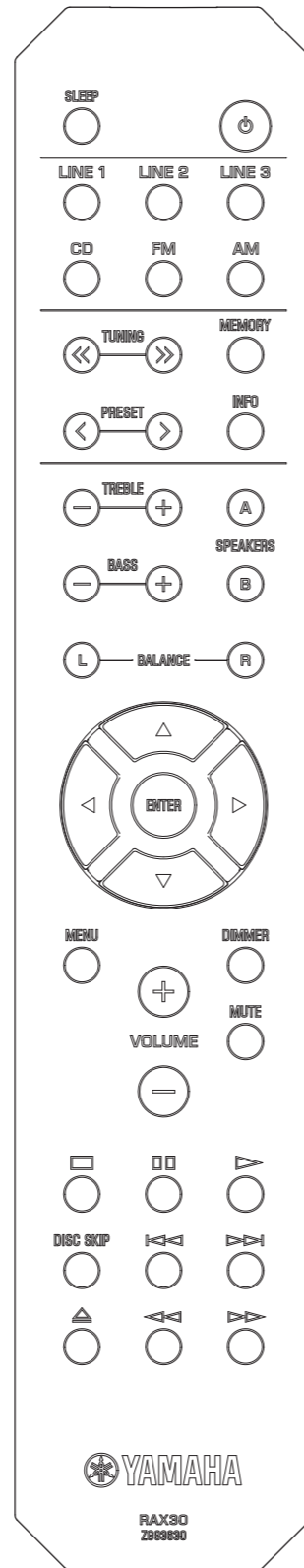
REMOTE CONTROL

SCHEMATIC DIAGRAM

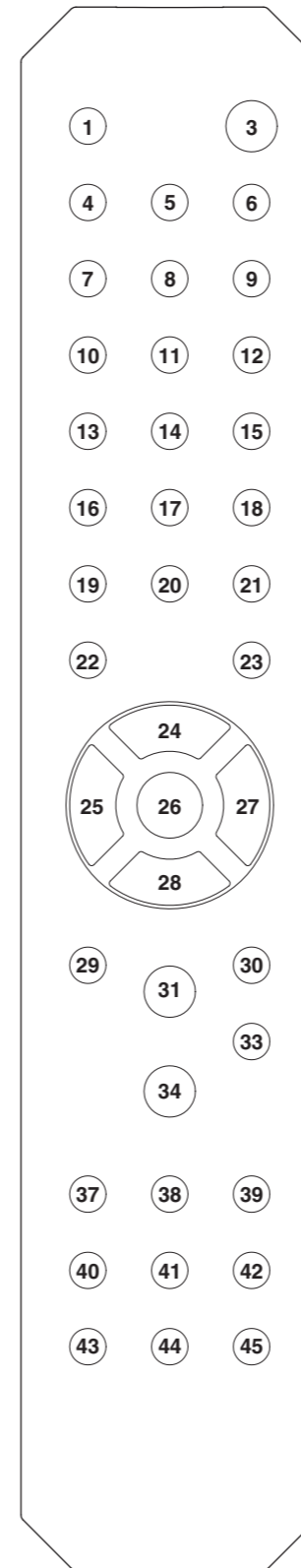


PANEL

RAX30



KEY NO. LAYOUT



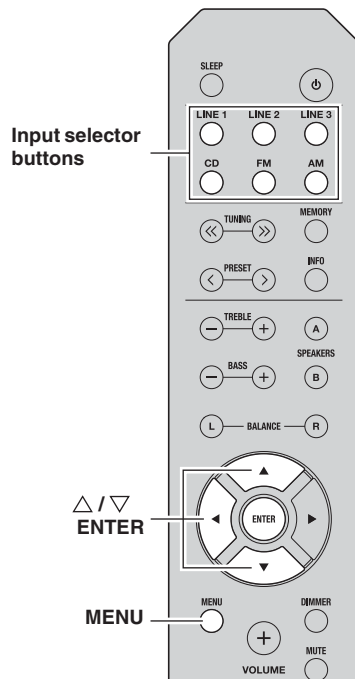
KEY CODE

Key No.	Key Name	Code
1	SLEEP	7A-30CE
3	⏻ STANDBY/ON	7E-2AD4
4	LINE 1	7A-C13F
5	LINE 2	7A-19E7
6	LINE 3	7A-18E6
7	CD	7A-15EB
8	FM	7F01-5826
9	AM	7F01-552B
10	TUNING ⏪	7F01-641A
11	TUNING ⏩	7F01-611F
12	MEMORY	7F01-6719
13	PRESET <	7F01-5E20
14	PRESET >	7F01-5B25
15	INFO	7A-2759
16	TREBLE -	7A-BAC4
17	TREBLE +	7A-B9C7
18	SPEAKERS A	7A-9A64
19	BASS -	7A-B8C6
20	BASS +	7A-B7C9
21	SPEAKERS B	7A-9B65
22	BALANCE L	7A-BBC5
23	BALANCE R	7A-BCC2
24	▲ (up)	7A-9D63
25	◀ (left)	7A-9F61
26	ENTER	7A-DE20
27	▶ (right)	7A-9E60
28	▼ (down)	7A-9C62
29	MENU	7A-847A
30	DIMMER	7A-82FC
31	VOLUME +	7A-1AE4
33	MUTE	7A-1CE2
34	VOLUME -	7A-1BE5
37	■ (stop)	79-56
38	▬▬ (pause)	79-55
39	▶▶ (play)	79-02
40	DISC SKIP	79-4F
41	◀◀ (skip-)	79-04
42	▶▶ (skip+)	79-07
43	▲ (open/close)	79-01
44	◀◀ (search-)	79-05
45	▶▶ (search+)	79-06

■ ADVANCED SETUP

SETTING THE OPTION MENU FOR EACH INPUT SOURCE

The Option menu allows you to configure various settings for each input source and recall those settings automatically when an input source is selected.



- 1 Press one of the Input selector buttons to select the desired input source.
- 2 Press MENU.
- 3 Press Δ / ∇ to select the desired menu item, and then press ENTER.
- 4 Press Δ / ∇ to change the settings.
 - ☀️ For certain menu items, you must press ENTER to save the new setting.
 - ☀️ To return to the screen where you can select menu items, press \triangleleft .
- 5 To exit the Option menu, press MENU.

Option menu items

Available menu items vary depending on the selected input source.

Menu item	Description
MAX VOL	Sets the maximum volume level so that the volume will not be accidentally increased above a certain level. Adjustable range: 01 to 99, MAX*
INITIAL VOLUME (INIT VOL)	Sets the volume at the time this unit is turned on. When this parameter is set to "OFF", the volume level used when this unit was set to standby is applied. Adjustable range: OFF*, MUTE, 01 to 99, MAX
TUNER STEP (TUNER STP) (R, L models)	Sets tuner frequency step. Choices: AM10/FM100, AM9/FM50*
FM MODE	Changes the FM radio wave reception mode. Choices: STEREO*, MONO
AUTO PRESET (A, PREST)	Automatically detects FM radio stations and registers them as preset stations.
CLEAR PRESET (C, PREST)	Clears a selected preset station.
CLEAR ALL PRESET (C, A, PREST)	Clears all preset stations.
AUTO POWER STANDBY (AUTO STBY)	Sets this unit to standby mode automatically if no operation is performed in the specified time. Choices: OFF/2H/4H/8H*/12H



The default settings are marked with "*".

R-S201

