PSG1210003CE

Service Manual

FM-MW-SW1-SW2 Portable Radio

Model No. RF-800UGA
RF-800UGS

Product Color : (K)...Black Type

RF-800U

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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Panasonic

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1 Safety Precautions

1.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, carry out the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

1.3. Safety Part Information

Safety Parts List:

There are special components used in this equipment which are important for safety.

These parts are marked by ⚠ in the Schematic Diagrams, Exploded View & Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	19	RKSN0018A-K	BACK CABINET	
⚠	A1	RQT9727-G	O/I BOOK (En/Ar)	
⚠	FP1	K5G502A00039	FUSE PROTECTOR	
⚠	IP1	D4FB1R100026	FUSE PROTECTOR	

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2 Warning

2.1. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equiped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equiped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder remover device. Some solder removal devices not classified as “anti-static (ESD protected)” can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   Caution :
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

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2.2. Service caution based on Legal restrictions

2.2.1. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of “PbF” is printed either foil side or components side on the PCB using the lead free solder. (See right figure)	PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used. (Definition: The letter of “PbF” is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
  RFKZ03D01K----------(0.3mm 100g Reel)
  RFKZ06D01K----------(0.6mm 100g Reel)
  RFKZ10D01K----------(1.0mm 100g Reel)

Note

* Ingredient: Tin (Sn), 96.5%, Silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

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3 Specifications

■ Power requirement	
Battery	DC 6 V, (4 x R20/LR20, D)
Battery life (Manganese)	Radio: 80 hours
	USB: 25 hours
DC IN	DC 6 V, 1.2 A, ⊕-⊂-⊖
■ Power output (DC 6 V, USB)	2.5 W (Max.)
■ Radio frequency range	
FM	87.5 MHz to 108.0 MHz
	(3.43 m to 2.78 m)
MW	520 kHz to 1610 kHz
	(576.92 m to 186.34 m)
SW1	2.3 MHz to 7.0 MHz
	(130.43 m to 42.86 m)
SW2	7.0 MHz to 22.0 MHz
	(42.86 m to 13.64 m)
■ Speaker	10 cm 8Ω x 1 (Full range)
■ Audio Input	
MUSIC PORT	
Terminal	Ø3.5 mm
USB Standard	USB 2.0 full speed
Media file format support	MP3 (*.mp3)
USB device file system	FAT16, FAT32
USB port power	Max. 500 mA
MP3 bit rate	8 kbps to 320 kbps
Sampling frequency	8 kHz to 48 kHz
USB memory	Up to 32 GB
■ Audio Output	
Earphone	Ø3.5 mm, 8Ω
■ Dimensions (WxHxD)	270 mm x 143 mm x 110 mm
Earphone	
■ Mass	Approx. 1.3 kg (without batteries)
	Approx. 1.9 kg (with batteries)

Notes :
1. Specifications are subject to change without notices.
Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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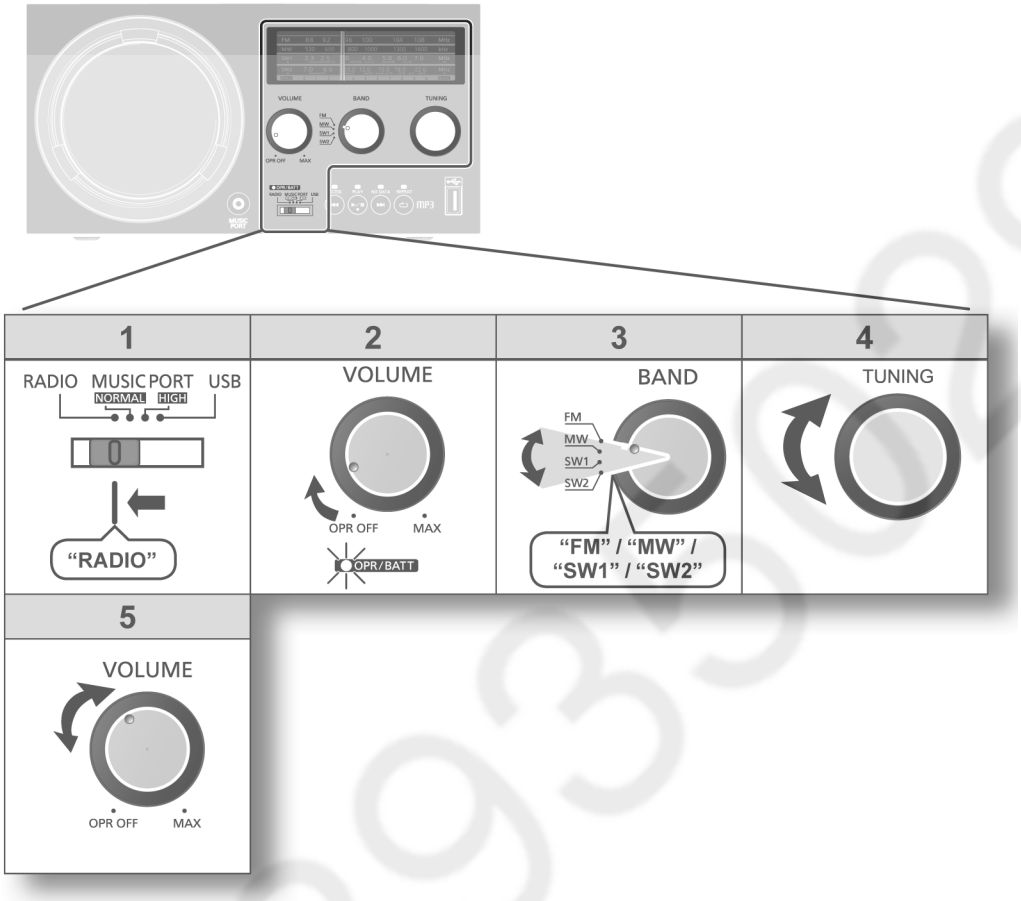
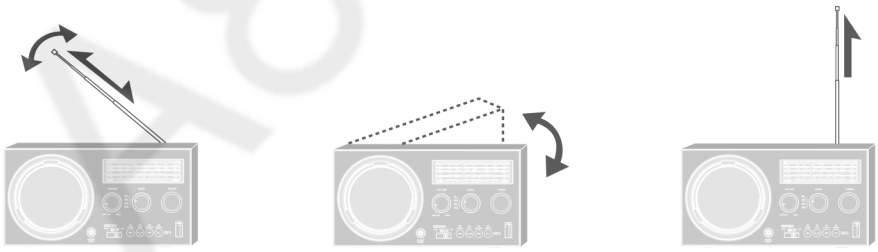
4 Location of Controls and Components

4.1. Listening to Radio (FM, MW, SW1, SW2)



To improve reception



FM **MW/SW1** **SW1/SW2**

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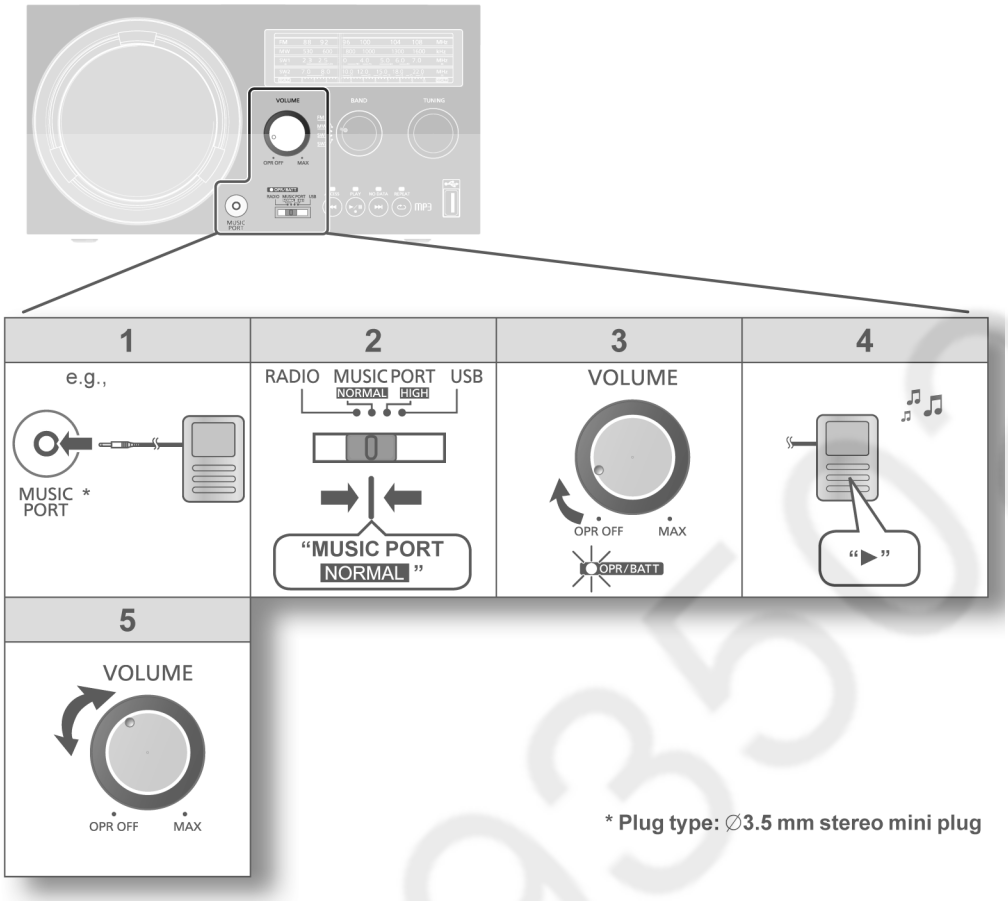
4.2. Playing from Music device using music port



*** Plug type: ∅3.5 mm stereo mini plug**

To change the sound output level

- **If the sound output level is too low:**
  Reduce the volume and set the input selector to "MUSIC PORT HIGH " to increase the output level. Then, adjust the volume to your desired level.
- **If the sound output level is too high:**
  Set the input selector to "MUSIC PORT NORMAL " to prevent distortion.

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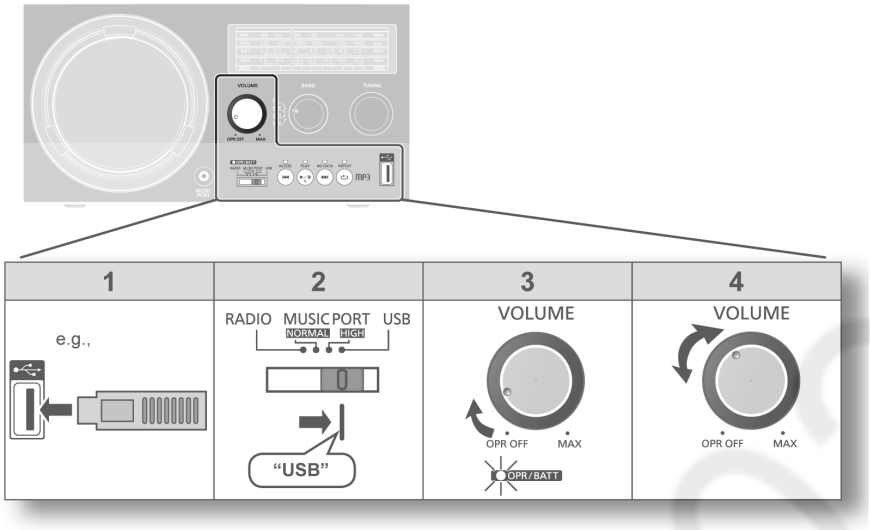
4.3. Playing from USB device



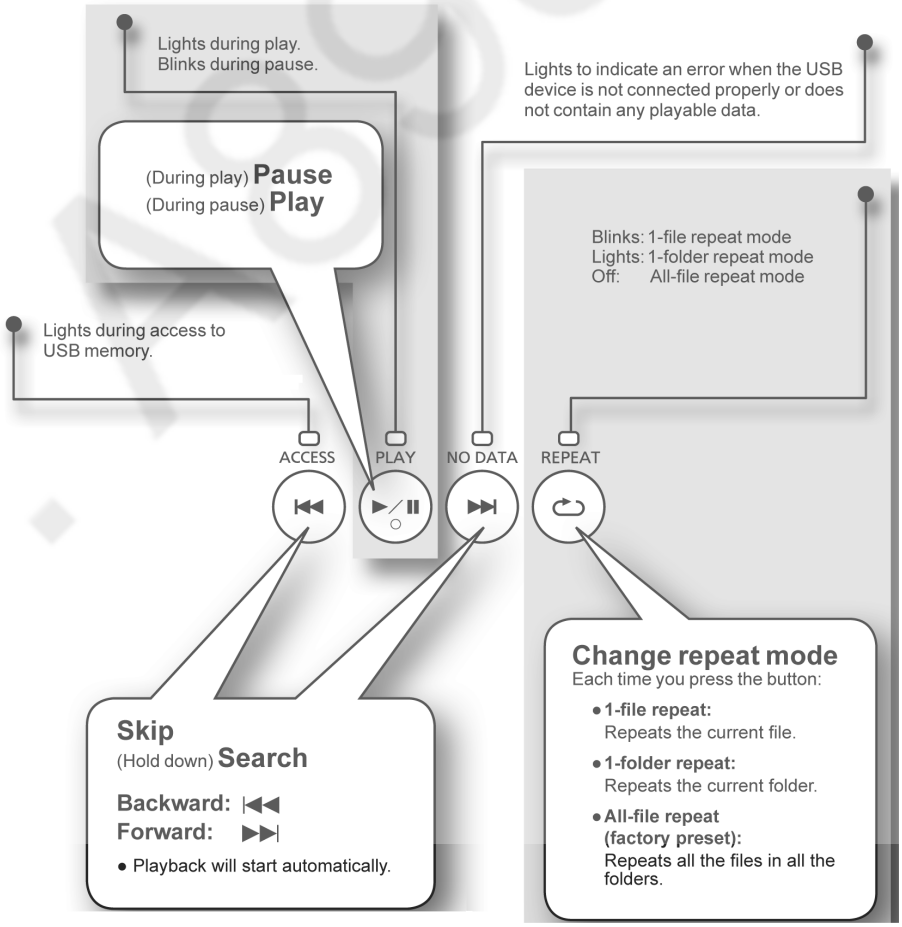
Play begins automatically when the selector is at "USB".
- Repeat mode is on at all times.
  (⇨ right, Change repeat mode)

Compatible USB devices
- This unit supports USB 2.0 full speed.
- This unit supports FAT16 and FAT32 file systems.
- Maximum number of playable files and folders:
  Files + Folders = 10000
  (FAT16 root folder: only 512)
- This unit does not guarantee connection with all USB devices.
- This unit does not support USB device charging.

About MP3 files
- Supported format: Files with the extension ".mp3" or ".MP3".
- This unit supports up to 8 folder layers.
  (Including the Root folder.)
- Depending on how you create the MP3 files, they may not play in the order you numbered them or may not play at all.

MPEG Layer-3 audio coding technology licensed from Fraunhofer IIS and Thomson.

- Insert the USB device directly into the USB port. Do not use any USB extension cable.
- Before removing the USB device, select a source other than "USB".

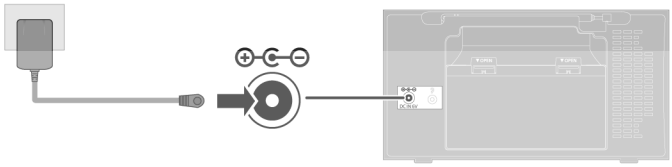


Compatibility USB

• For compatibility of USB please refer to Operating Instructions.

5 Installation Instructions

5.1. Connections



AC adaptor

Output: DC 6 V, 1.2 A
Plug size: 5.5 mm (OD)×2.1 mm (ID)
Type: Transformer type

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6 Disassembly and Assembly Instructions

Caution Note:

- **This section describes the disassembly and/or assembly procedures for all major printed circuit boards & main components for the unit. (You may refer to the section of "Main components and P.C.B Locations" as described in the service manual)**
- **Before carrying out the disassembly process, please ensure all the safety precautions & procedures are followed.**
- **During the disassembly and/or assembly process, please handle with care as there may be chassis components with sharp edges.**
- **During disassembly and assembly, please ensure proper service tools, equipments or jigs is being used.**
- **During replacement of component parts, please refer to the section of "Replacement Parts List" as described in the service manual.**
- **Select items from the following indexes when disassembly or replacement are required.**

- **Disassembly of Rear Cabinet Block**
- **Disassembly of Battery P.C.B.**
- **Disassembly of Jack P.C.B.**
- **Disassembly of Front Cabinet Block**
- **Disassembly of Speaker Unit**
- **Disassembly of Tuner P.C.B.**
- **Disassembly of USB P.C.B.**

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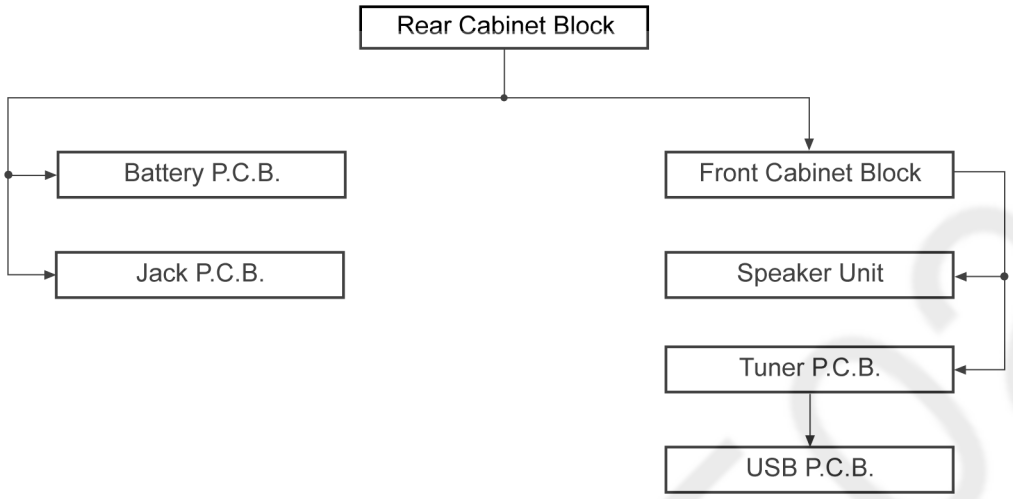
6.1. Disassembly flow chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.
To assemble the unit, reverse the steps shown in the chart below.



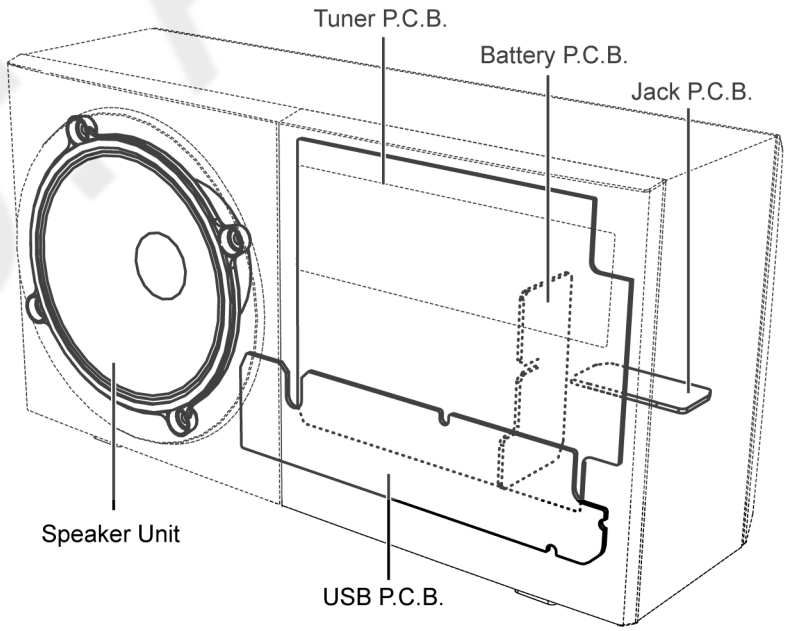
6.2. Types of Screws

CAUTION NOTE:
Please use original screw and at correct locations.

Below shown is part no. of different screw types used:

- ⓐ : XTV3+14GFJ
- ⓑ : XTW3+W8TFJ
- ⓒ : XTW3+16FFJ
- ⓓ : XTV3+10GFJ

6.3. Main Parts Location Diagram



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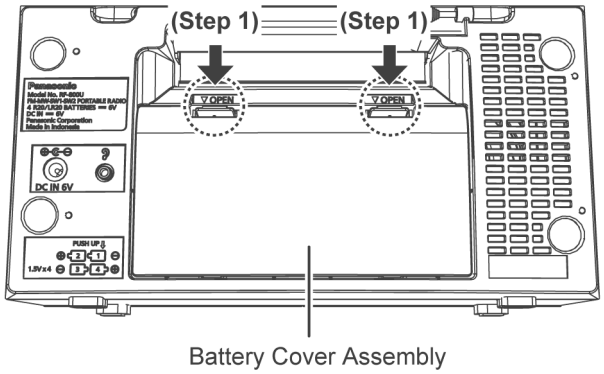
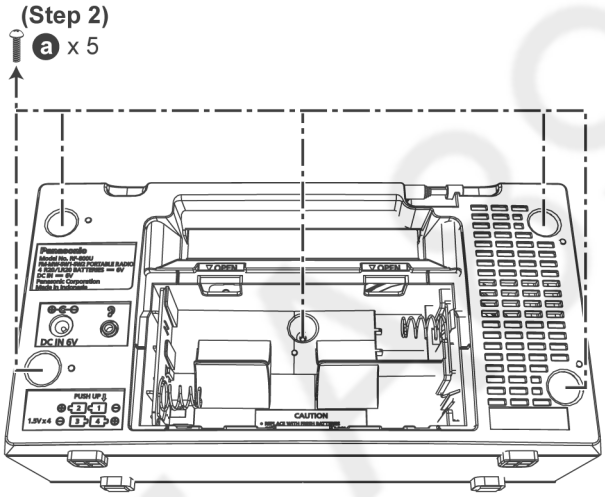
6.4. Disassembly of Rear Cabinet Block

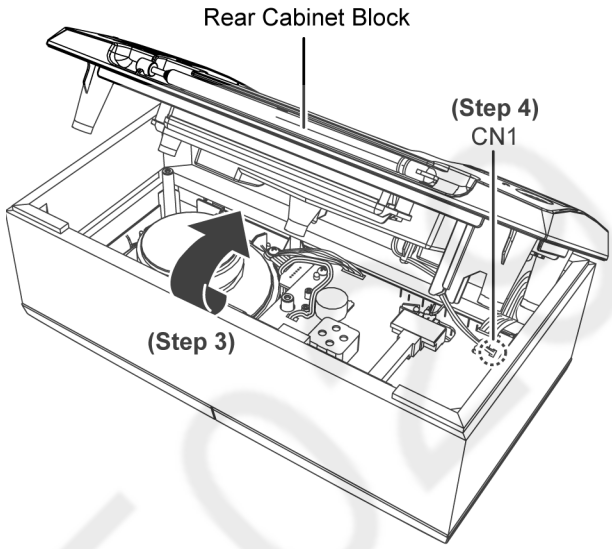
Step 1 : Press the OPEN button to open the Battery Cover Assembly.



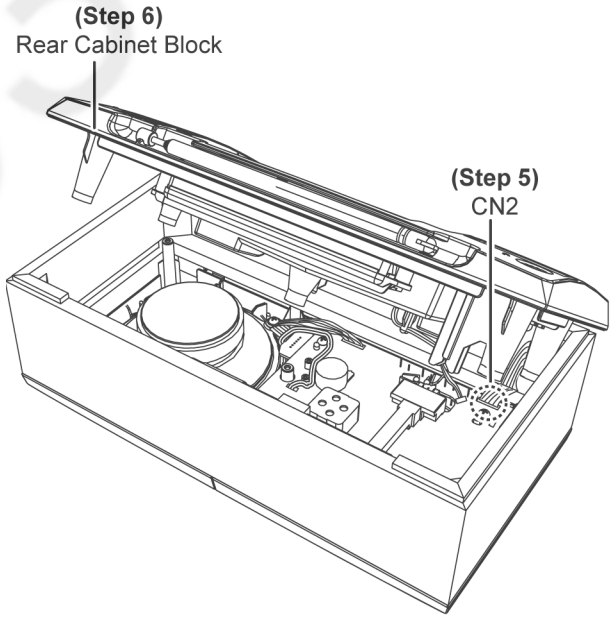
Step 2 : Remove 5 screws.



Step 3 : Slightly lift up the Rear Cabinet Block.
Step 4 : Detach 2P cable at the connector (CN1) on the Tuner P.C.B..



Step 5 : Detach 6P cable at the connector (CN2) on the Tuner P.C.B..
Step 6 : Lift up to remove the Rear Cabinet Block.



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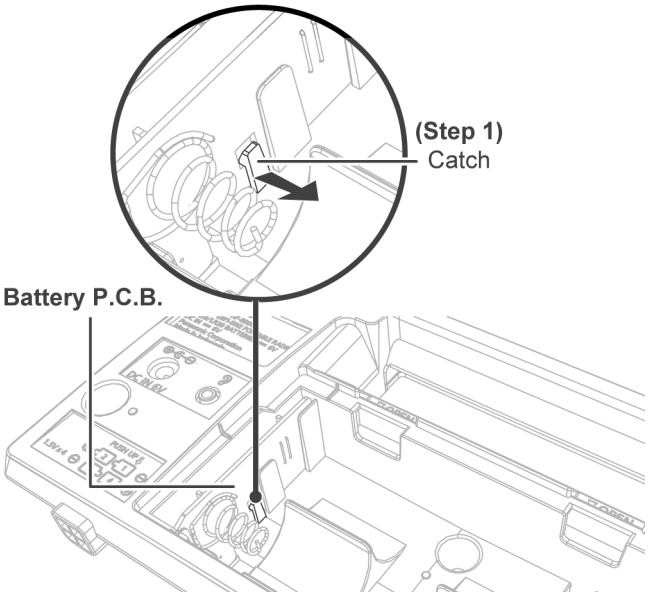
6.5. Disassembly of Battery P.C.B.

• Refer to “Disassembly of Rear Cabinet Block”.

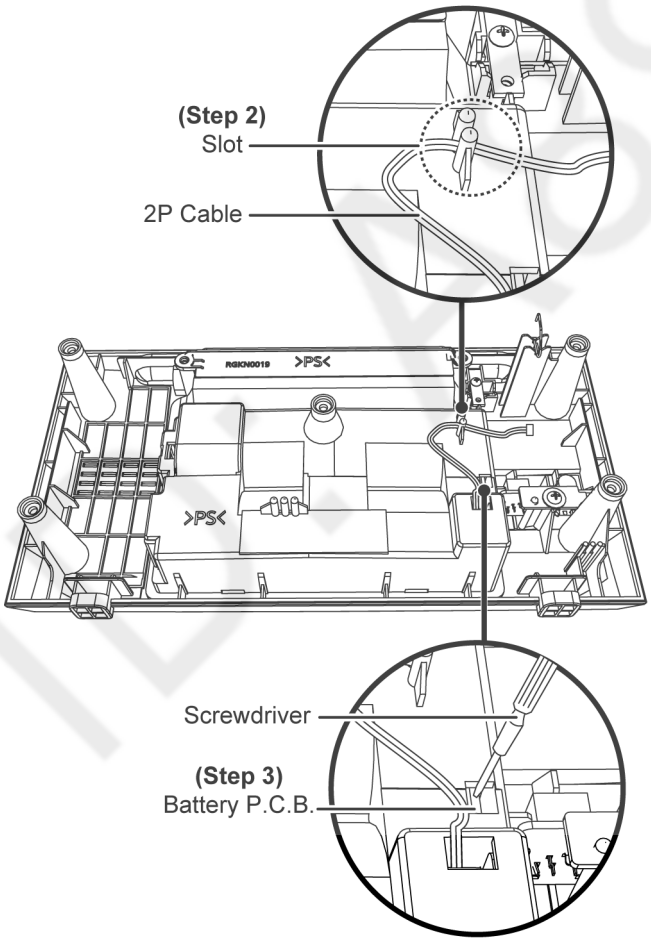
Step 1 : Release the catch.



Step 2 : Release the 2P Cable from the slot.

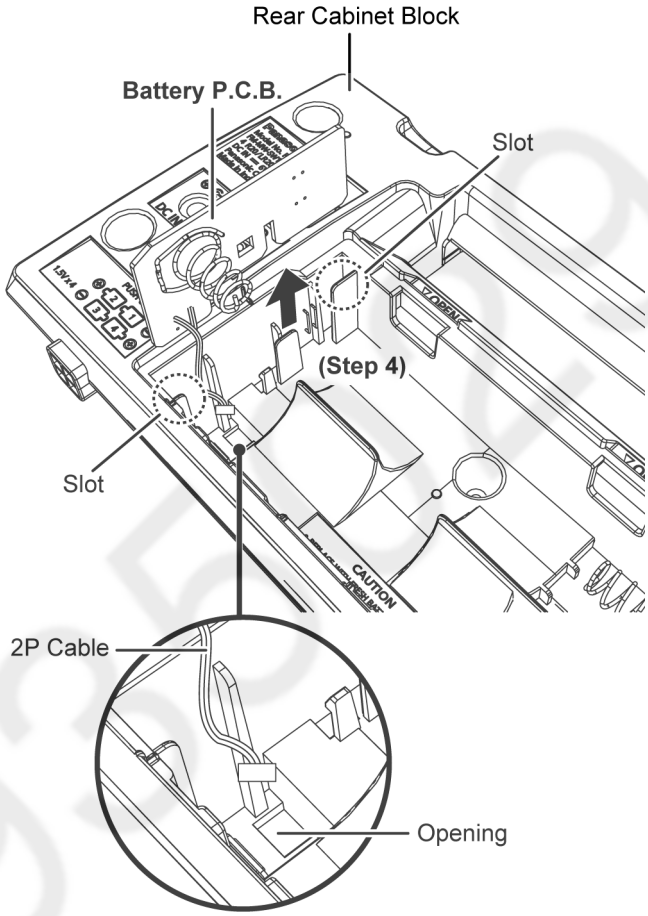
Caution : During assembling, ensure that the 2P cable is properly inserted into the slot.

Step 3 : Slightly press the Battery P.C.B. by using screwdriver.



Step 4 : Remove the Battery P.C.B..

Caution : During assembling, inserted the 2P Cable into the opening of Rear Cabinet Block as diagram shown. Ensure the Battery P.C.B. is seated properly into the slots.

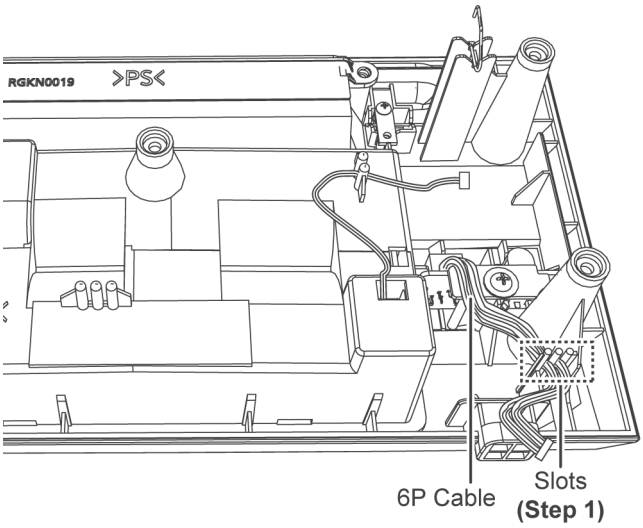


6.6. Disassembly of Jack P.C.B.

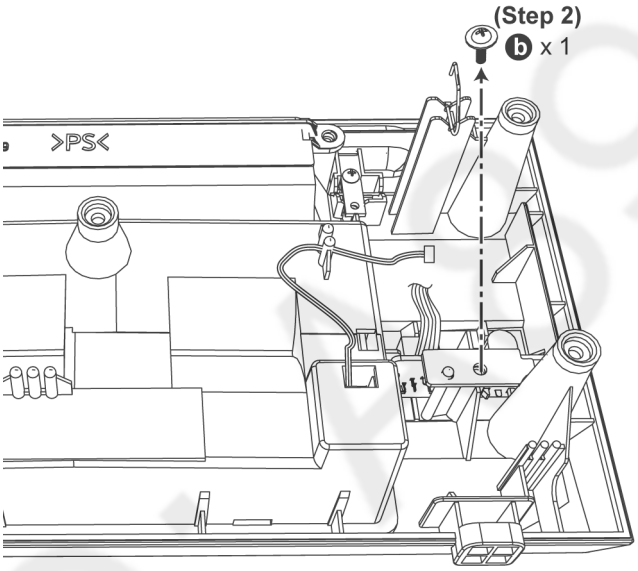
• Refer to “Disassembly of Rear Cabinet Block”.

Step 1 : Release the 6P Cable from the slots.

Caution : During assembling, ensure that the 6P cable is properly inserted into the slots.

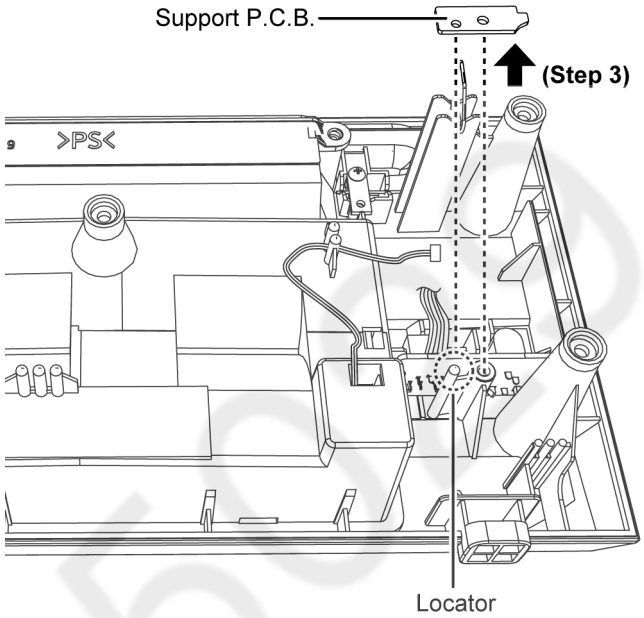


Step 2 : Remove 1 screw.



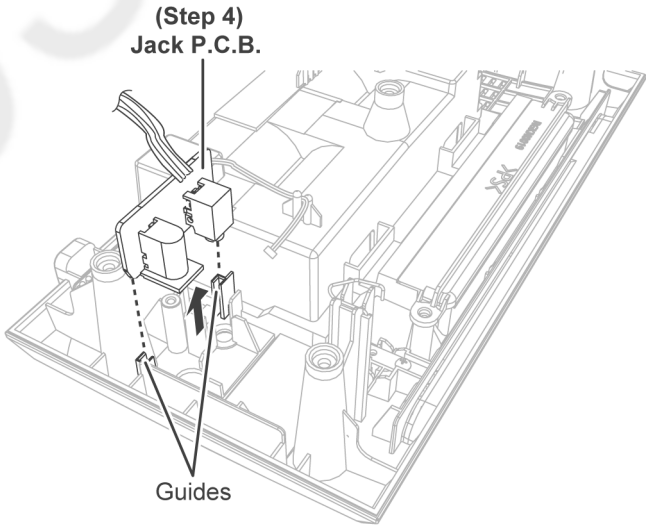
Step 3 : Remove the Support P.C.B..

Caution 1 : Keep the Support P.C.B. in safe place and place it back during assembling.



Step 4 : Remove the Jack P.C.B..

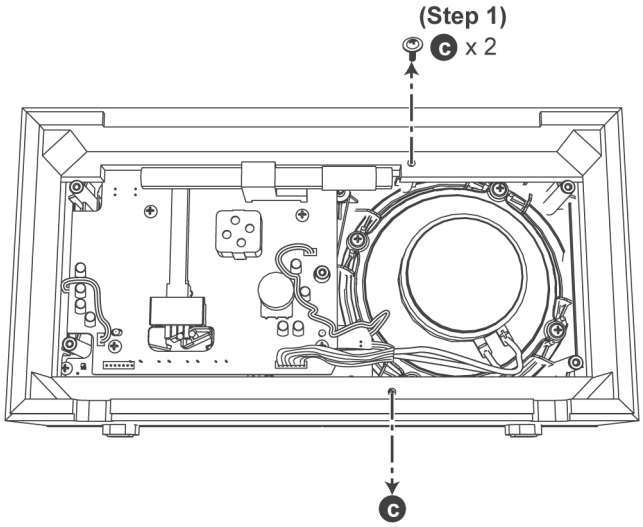
Caution : During assembling, ensure that the Jack P.C.B. is fully inserted into the guides.



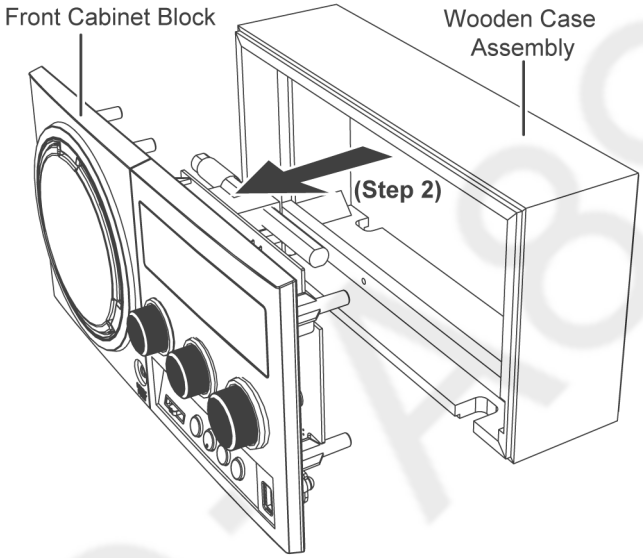
6.7. Disassembly of Front Cabinet Block

• Refer to “Disassembly of Rear Cabinet Block”.

Step 1 : Remove 2 screws.



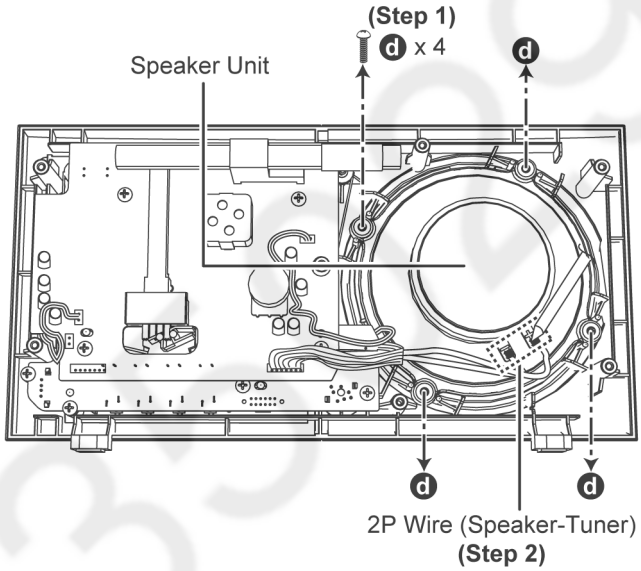
Step 2 : Remove the Front Cabinet Block.



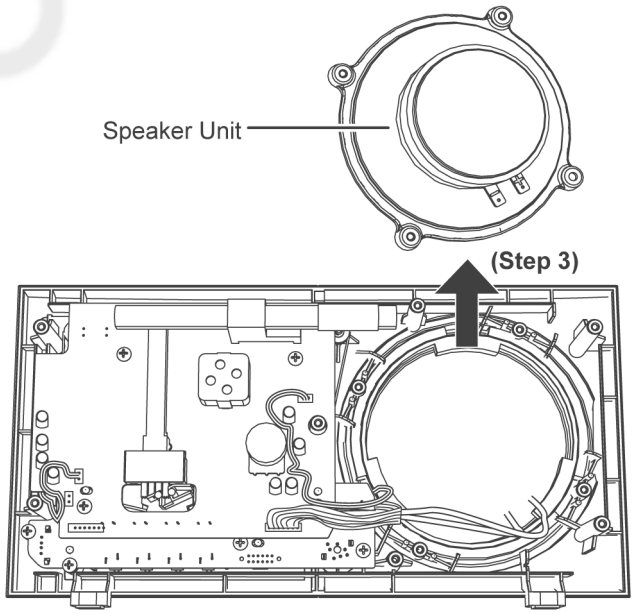
6.8. Disassembly of Speaker Unit

• Refer to “Disassembly of Rear Cabinet Block”.
• Refer to “Disassembly of Front Cabinet Block”.

Step 1 : Remove 4 screws.
Step 2 : Desolder the 2P Wire (Speaker-Tuner) at the terminals on the Speaker Unit.
Caution : During assembling, ensure the speaker wire is solder at the correct polarity.



Step 3 : Remove the Speaker Unit.



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6.9. Disassembly of Tuner P.C.B.

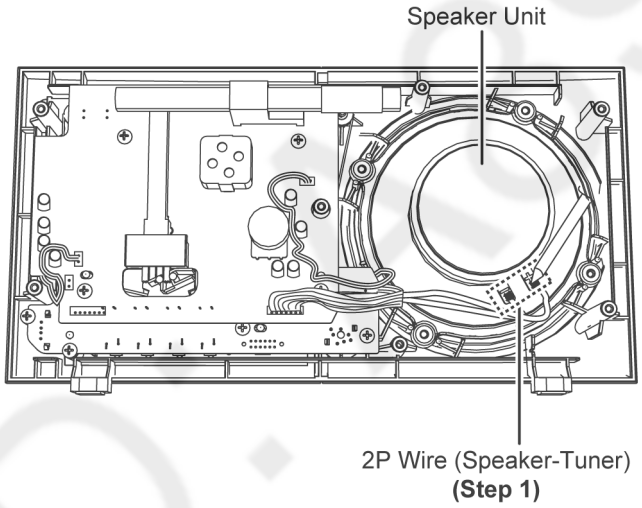
- Refer to “Disassembly of Rear Cabinet Block”.
- Refer to “Disassembly of Front Cabinet Block”.

Preparation before assembling:
Turn the Dial Pointer to the end position.

This illustration is for GA model

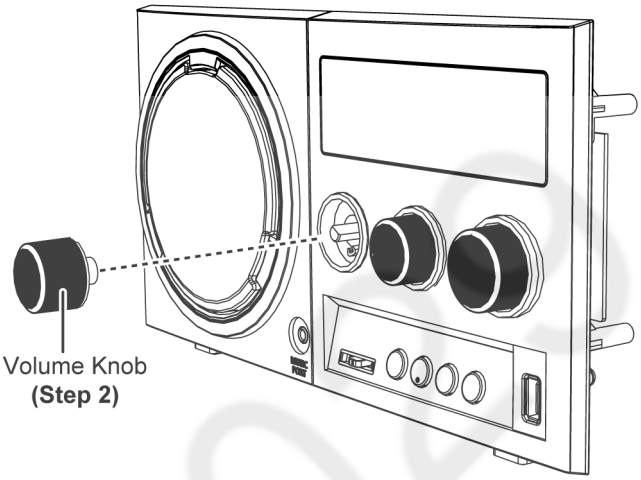
Step 1 : Desolder the 2P Wire (Speaker-Tuner) at the terminals on the Speaker Unit.

Caution : During assembling, ensure the speaker wire is solder at the correct polarity.

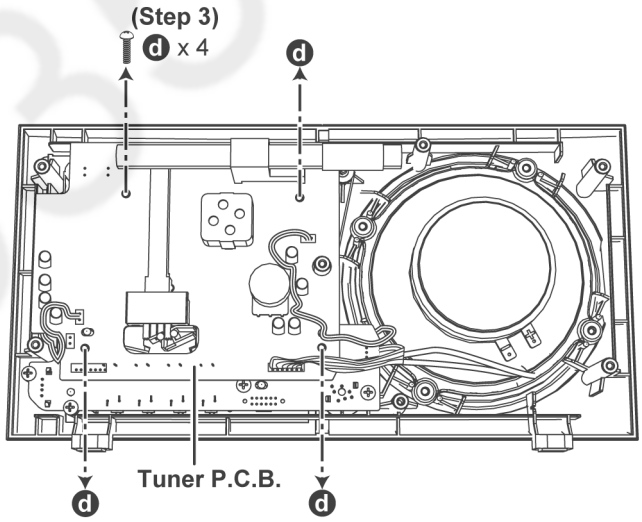


Step 2 : Remove the Volume Knob.

Caution : Keep the Volume Knob in safe place and place it back during assembling.



Step 3 : Remove 4 screws.



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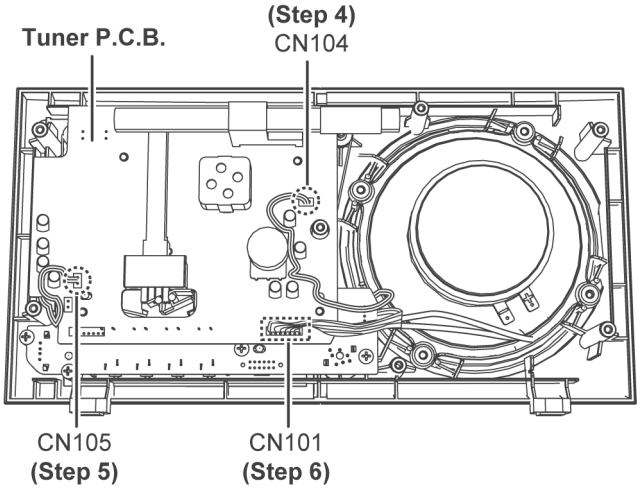
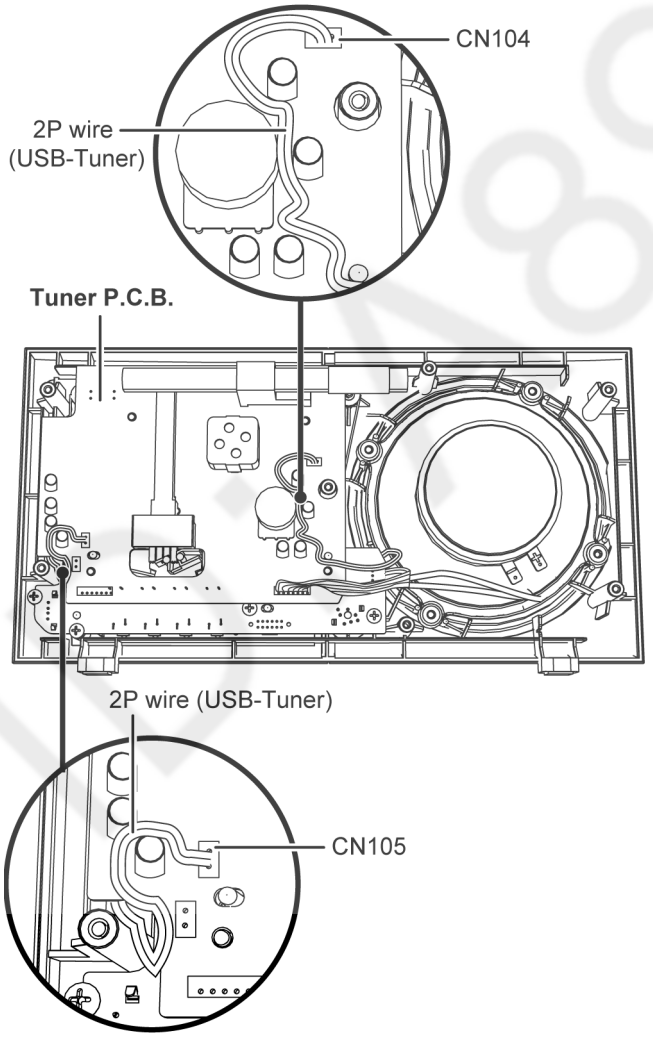
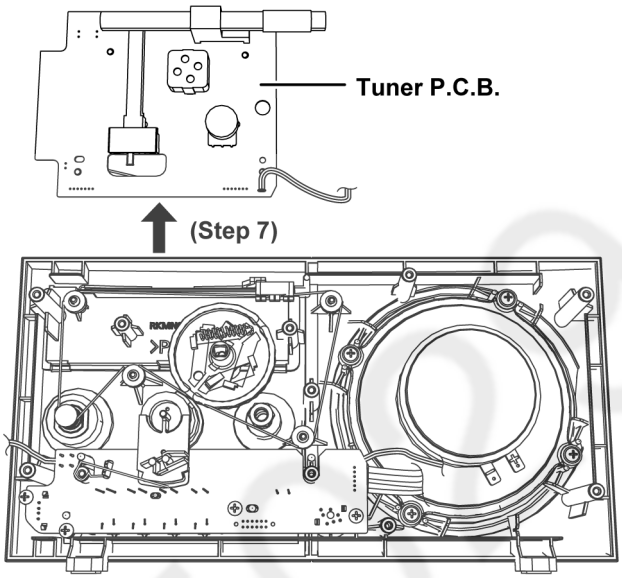
Step 4 : Detach 2P cable at the connector (CN104) on the Tuner P.C.B..
Step 5 : Detach 2P cable at the connector (CN105) on the Tuner P.C.B..
Step 6 : Detach 6P cable at the connector (CN101) on the Tuner P.C.B..



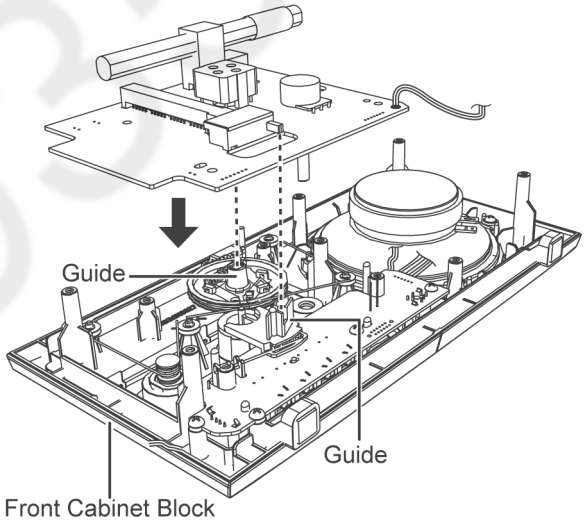
Caution : During assembling, dressed the 2P wires as shown.



Step 7 : Remove the Tuner P.C.B..

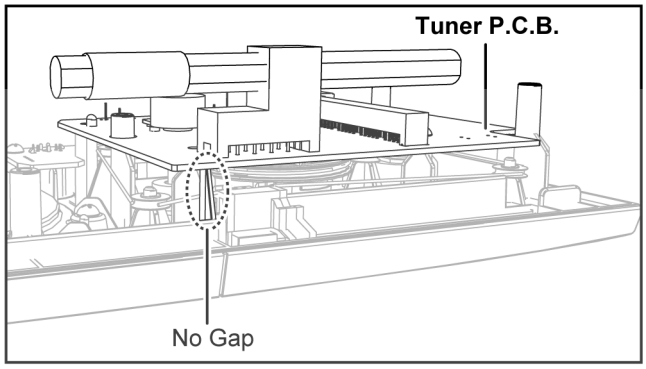


Caution : During assembling, align the Tuner P.C.B. with the guides & inserted into the Front Cabinet Block.

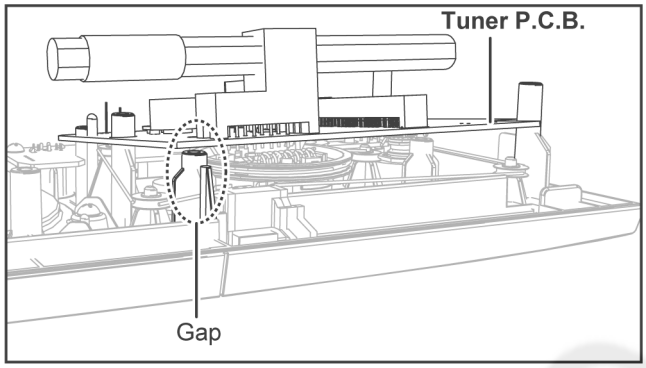


Caution : Ensure that the Tuner P.C.B. is fully seated on to the guide as shown.

OK Condition



NG Condition

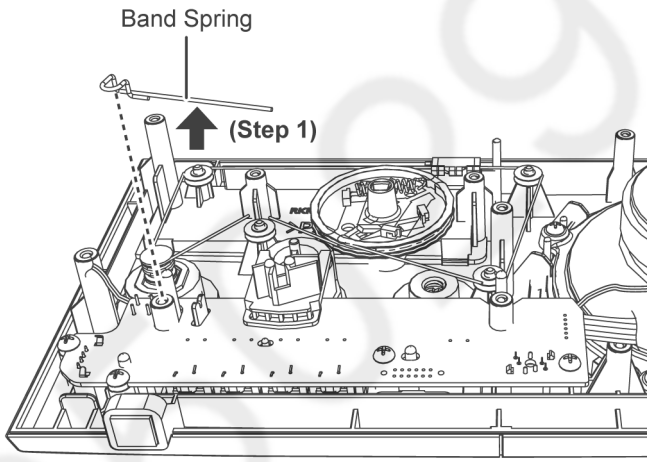


6.10. Disassembly of USB P.C.B.

- Refer to “Disassembly of Rear Cabinet Block”.
- Refer to “Disassembly of Front Cabinet Block”.
- Refer to “Disassembly of Tuner P.C.B.”.

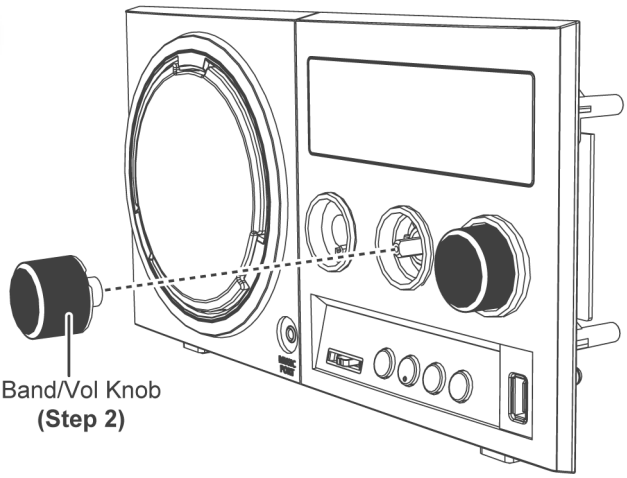
Step 1 : Remove the Band Spring.

Caution : Keep the Band Spring in safe place and place it back during assembling.



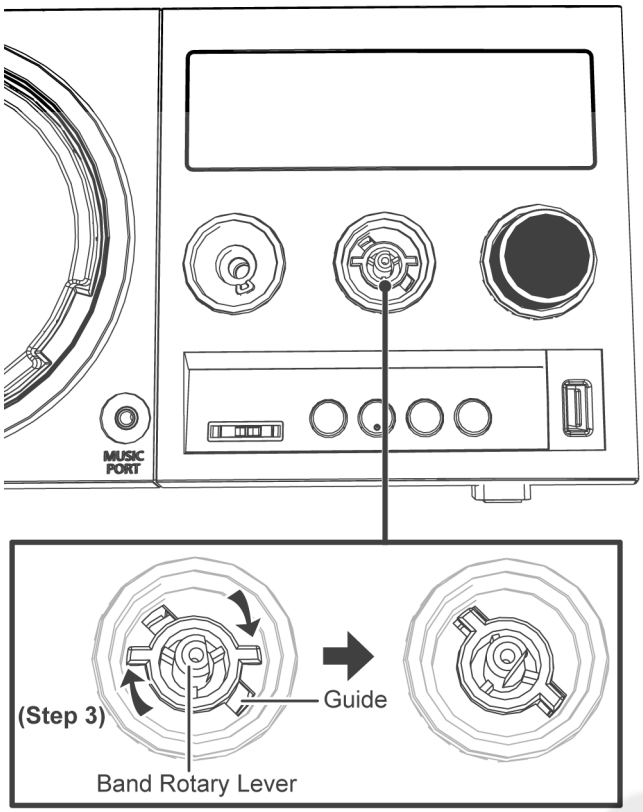
Step 2 : Remove the Band/Vol Knob.

Caution : Keep the Band/Vol Knob in safe place and place them back during assembling.



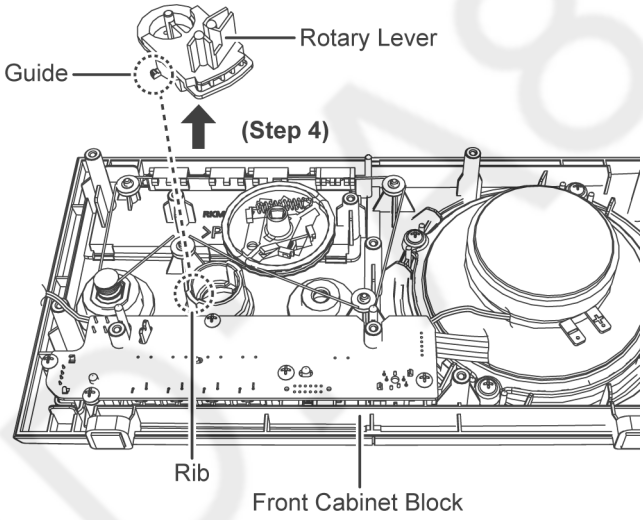
ID: A89399

Step 3 : Turn the Band Rotary Lever clockwise towards to the guide as shown.

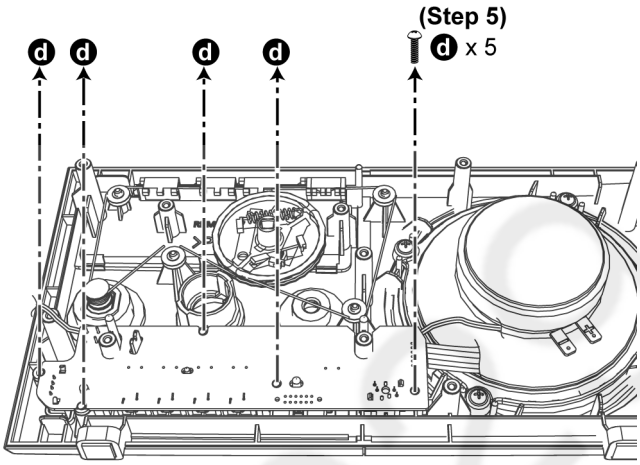


Step 4 : Lift up to remove the Band Rotary Lever.

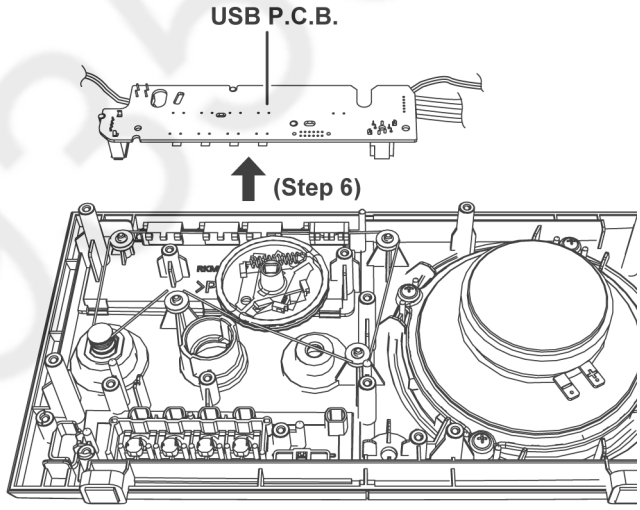
Caution : During assembling, align the guide of the Band Rotary Lever with the rib of the Front Cabinet Block .



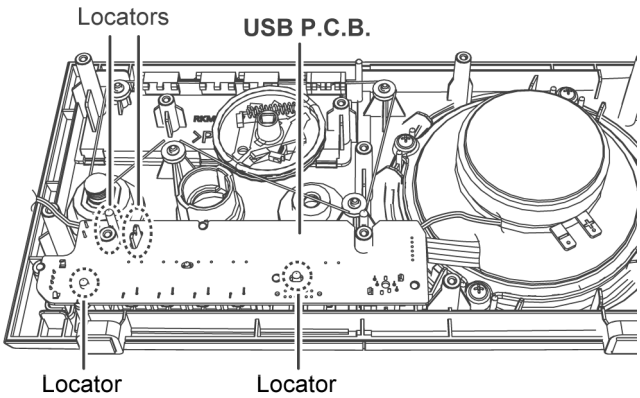
Step 5 : Remove 5 screws.



Step 6 : Remove the USB P.C.B..



Caution : During assembling, ensure that the USB P.C.B. is properly seated onto the locators.



7 Measurements and Adjustments (Tuner)

7.1. FM IF Alignment

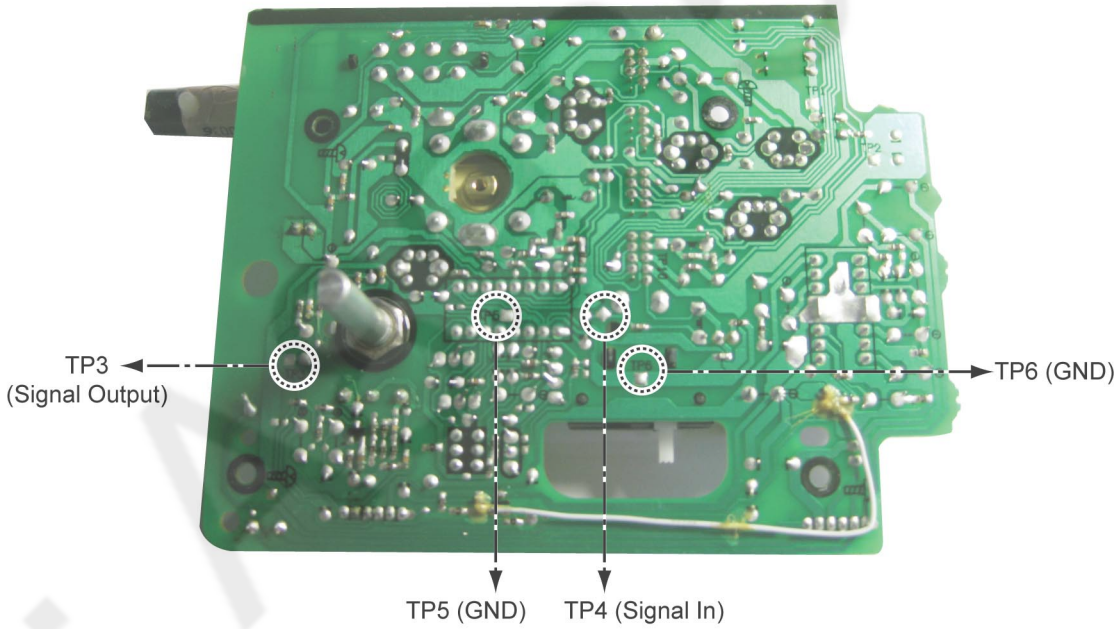
7.1.1. Setting up for FM IF Alignment

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT
1. Set selector switch to FM, MW, SW1 or SW2. 2. Set volume level to maximum. 3. Output of signal.

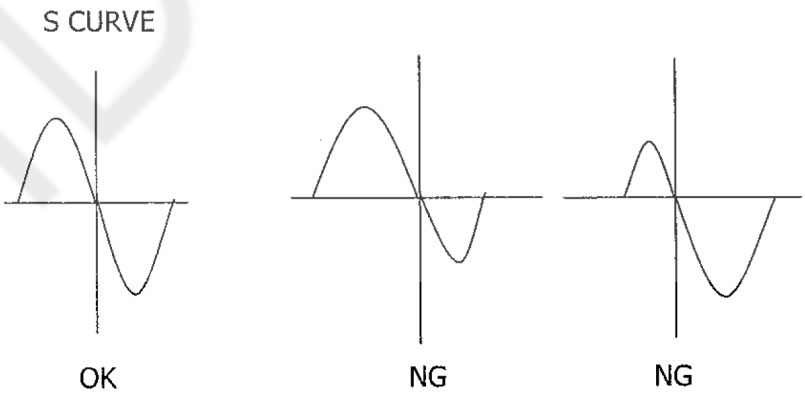
ALIGNMENT: MGS - WS42 - 01
INSTRUMENT: IF SWEEMAR SCOPE
SIGNAL INJETION I/P: TP 4 (SIGNAL), TP 6 (GND)
JIG O/P TEST: TP 3 (SIGNAL), TP 5 (GND)

7.1.2. Alignment Part

	'S' CURVE
PART LOCATION	T1
PART NUMBER	RLI4B153-C



EXPECTED RESULT
A Well 'S' Curve should be like the picture as shown below



7.2. RF Alignment

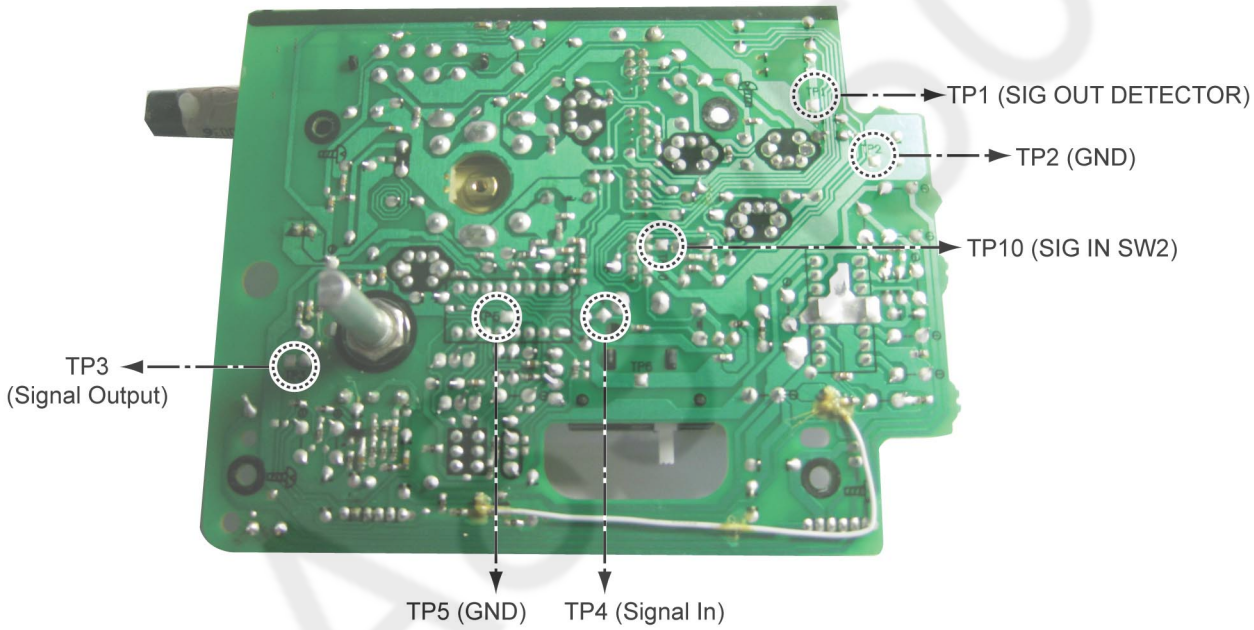
7.2.1. Setting up for RF Alignment

ALIGNMENT STANDARD : MGS - WS41 - 03, 04, 05 (For AM)
: MGS - WS42 - 02, 03 (For FM)
INSTRUMENT : AM AND FM SWEEMAR SCOPE

7.2.2. Method of signal injection and O/P test point

BAND	FM	MW, SW1	SW2
SIGNAL INPUT	DIRECT	RADIATED	DERECT
INJECTION DUMMY LOAD	50 Ω UNBALANCED DUMMY ANT	1 TURN LOOP ANT	10 pF DUMMY ANT
JIG I/P TEST POINT	TP1 (SIG), TP2 (GND)	-	TP10 (SIG), TP2
JIG O/P TEST POINT	TP4 (SIG), TP5 (GND)	TP3, TP5 (GND)	TP3, TP5 (GND)

Note : SW2 injection point

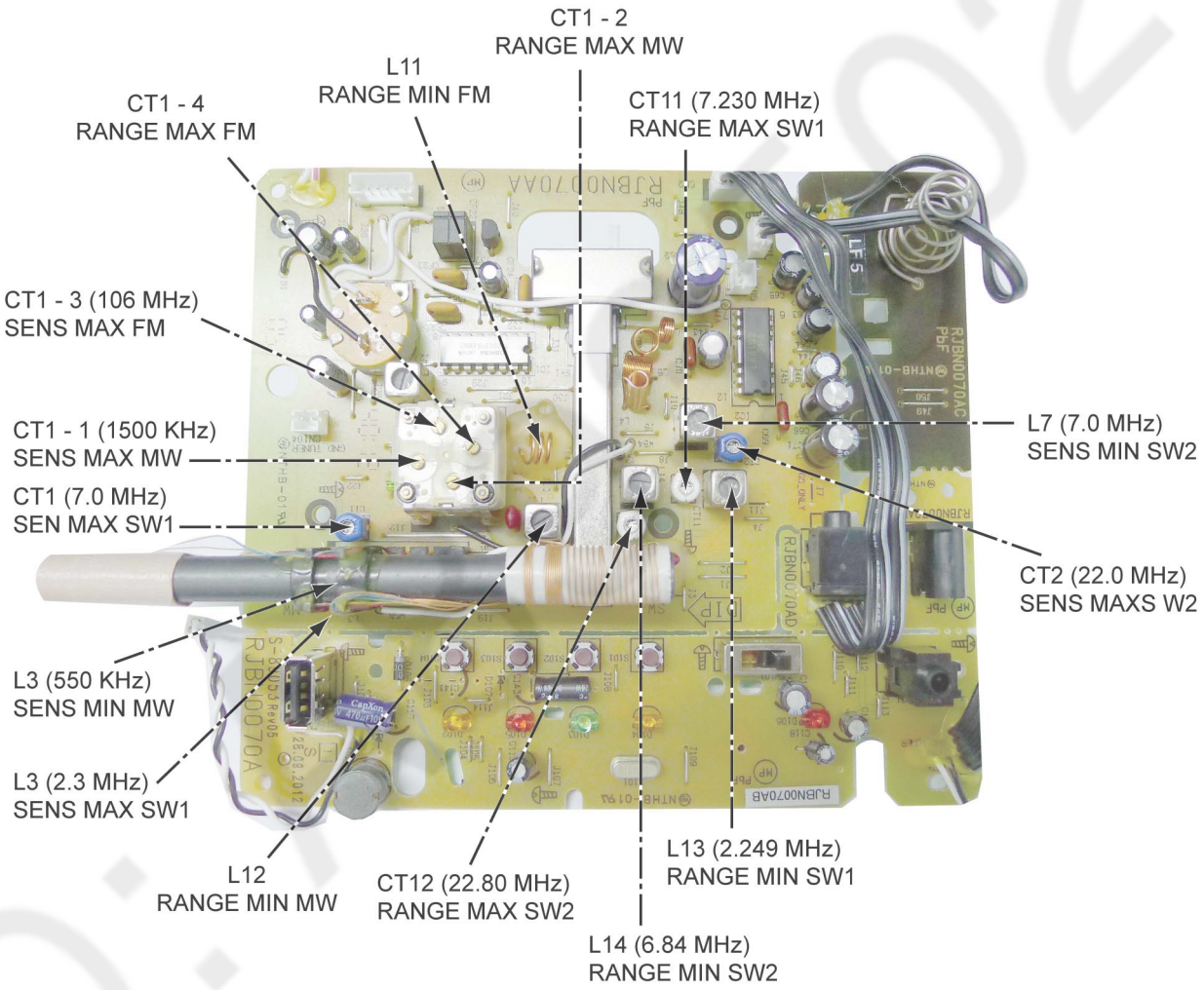


ID: AS0029

7.2.3. Alignment frequencies

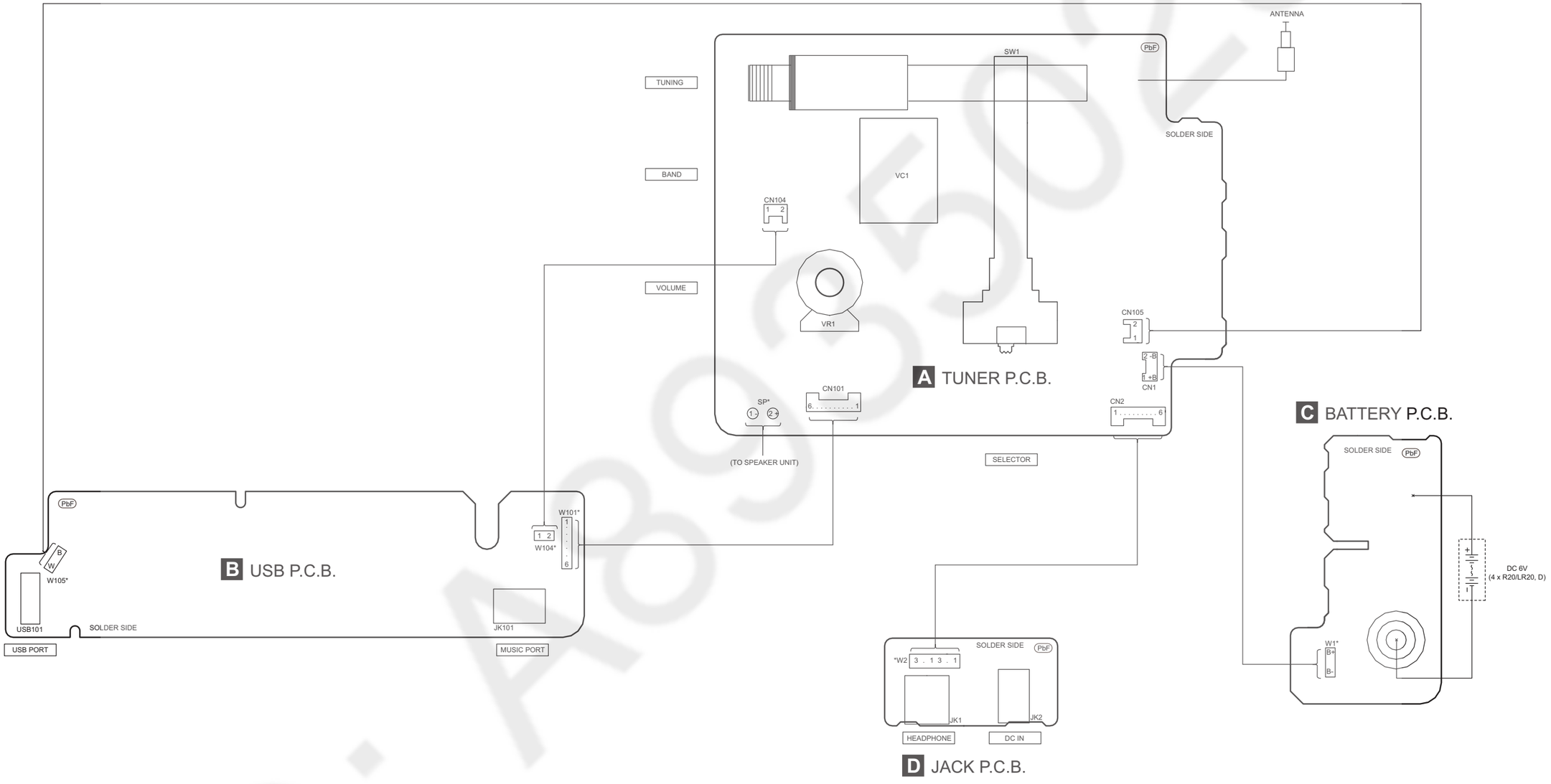
BAND		OSC BLOCK LOCATION (RANGE ALIGNMENT)		ANT BLOCK LOCATION (SENS ALIGNMENT)	
FM	FREQUENCY	(GA).....86,2 MHz (GS).....87,40 MHz	(GA).....109,2 MHz (GS).....108,30 MHz		106 MHz
	CR-NO	L11	CT1 - 4		CT1-3
MW	FREQUENCY	(GA).....511 KHz (GS).....520 KHz	(GA).....1650 KHz (GS).....1640 KHz	550 KHz	1500 KHz
	CR-NO	L12	CT1-2	L3	CT1 - 1
SW1	FREQUENCY	2.249 MHz	7.230 MHz	2.3 MHz	7.0 MHz
	CR-NO	L13	CT11	L3	CT1
SW2	FREQUENCY	6.84 MHz	22.80 MHz	7.0 MHz	22.0 MHz
	CR-NO	L14	CT12	L7	CT2

Note : ~ Follow the sequence of alignment : MW → SW1 → SW2 → FM.



ID: A893502 9

8 Wiring Connection Diagram



NOTE "*" REF IS FOR INDICATION ONLY

RF-800UGA/GS
WIRING CONNECTION DIAGRAM

ID: A835029

9 Schematic Diagram

9.1. Schematic Diagram Notes

(All schematic diagrams may be modified at any time with the development of new technology)

Notes:

S101:	REW switch
S102:	PLAY/PAUSE switch
S103:	FF switch
S104:	REPEAT switch
SW1:	SELECTOR switch.
SW101:	FUNCTION switch.

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high quality sound (capacitors), low-noise (resistors), etc are used.
  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- **Resistor**
  Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).

- **Capacitor**
  Unit of capacitance is μF, unless otherwise noted. F=Farads, pF=pico-Farad.

- **Coil**
  Unit of inductance is H, unless otherwise noted.

- *****

  REF IS FOR INDICATION ONLY.

- Voltage and signal line

  : +B Signal Line

  : FM Signal Line

  : Audio Output Signal Line

  : USB Signal Line

ID: A8935029

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9.2. TUNER CIRCUIT (1/2)

SCHEMATIC DIAGRAM - 1

A TUNER CIRCUIT

—— : +B SIGNAL LINE □▷ : FM SIGNAL LINE ▨▷ : AUDIO OUTPUT SIGNAL LINE

ANTENNA

IC1
C1BA00000481
AM / FM RADIO

Q1
KTC3192-0-AT
AMPLIFIER

TO TUNER CIRCUIT (2/2)

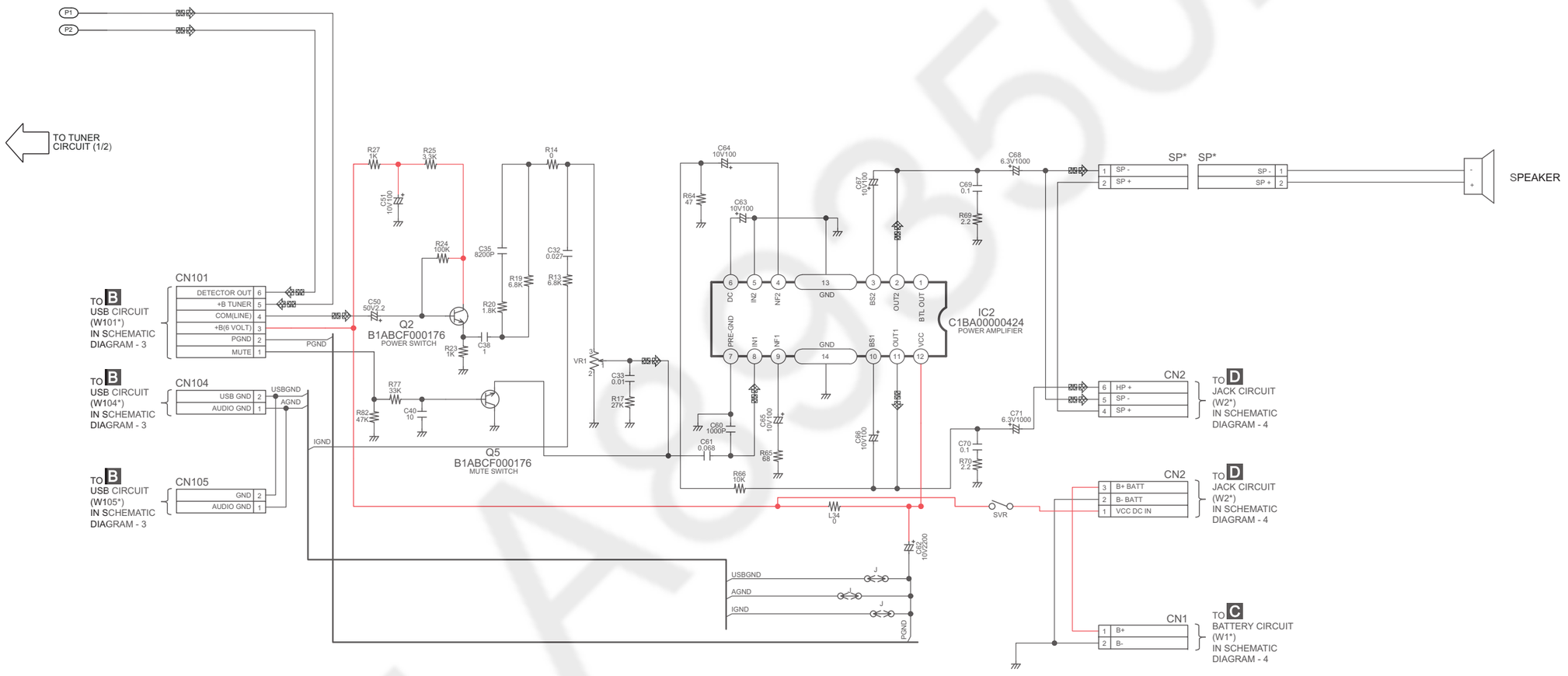
1/2 2/2 RF-800UGA/GS TUNER CIRCUIT

9.3. TUNER CIRCUIT (2/2)

SCHEMATIC DIAGRAM - 2

A TUNER CIRCUIT

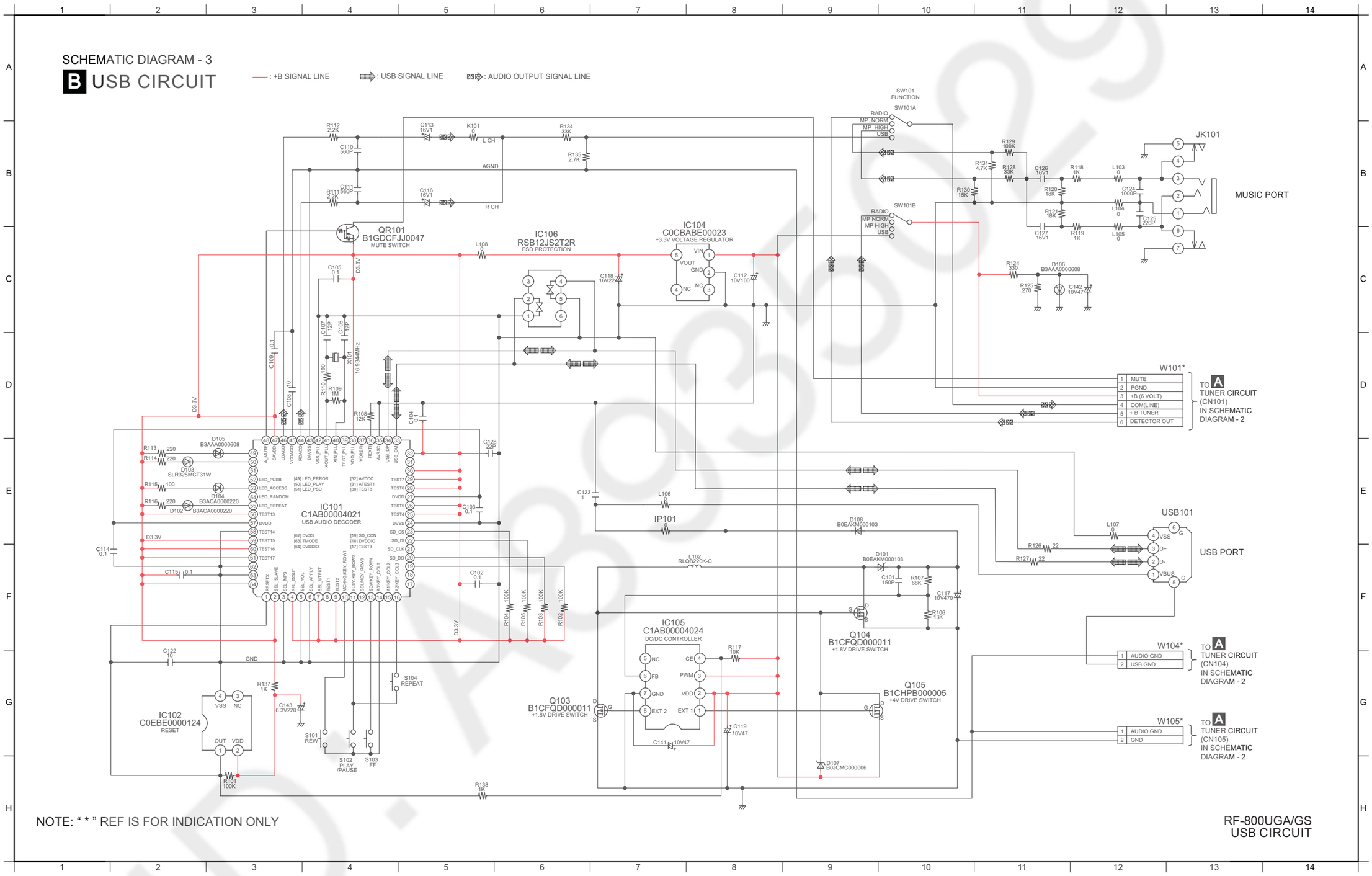
: +B SIGNAL LINE : FM SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE



NOTE: " * " REF IS FOR INDICATION ONLY

1/2 2/2 RF-800UGA/GS TUNER CIRCUIT

9.4. USB CIRCUIT



9.5. BATTERY & JACK CIRCUIT

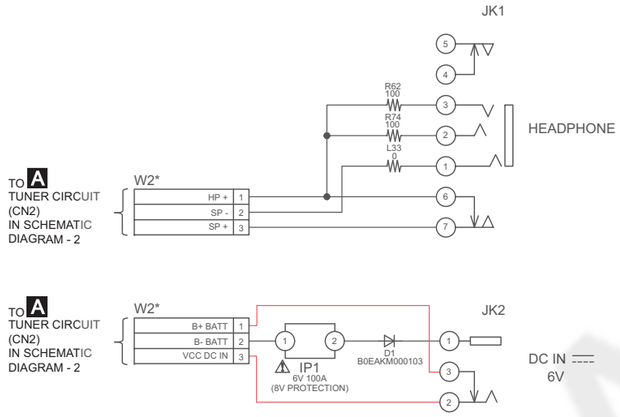
SCHEMATIC DIAGRAM - 4

C BATTERY CIRCUIT

—— : +B SIGNAL LINE

D JACK CIRCUIT

—— : +B SIGNAL LINE



NOTE: " * " REF IS FOR INDICATION ONLY

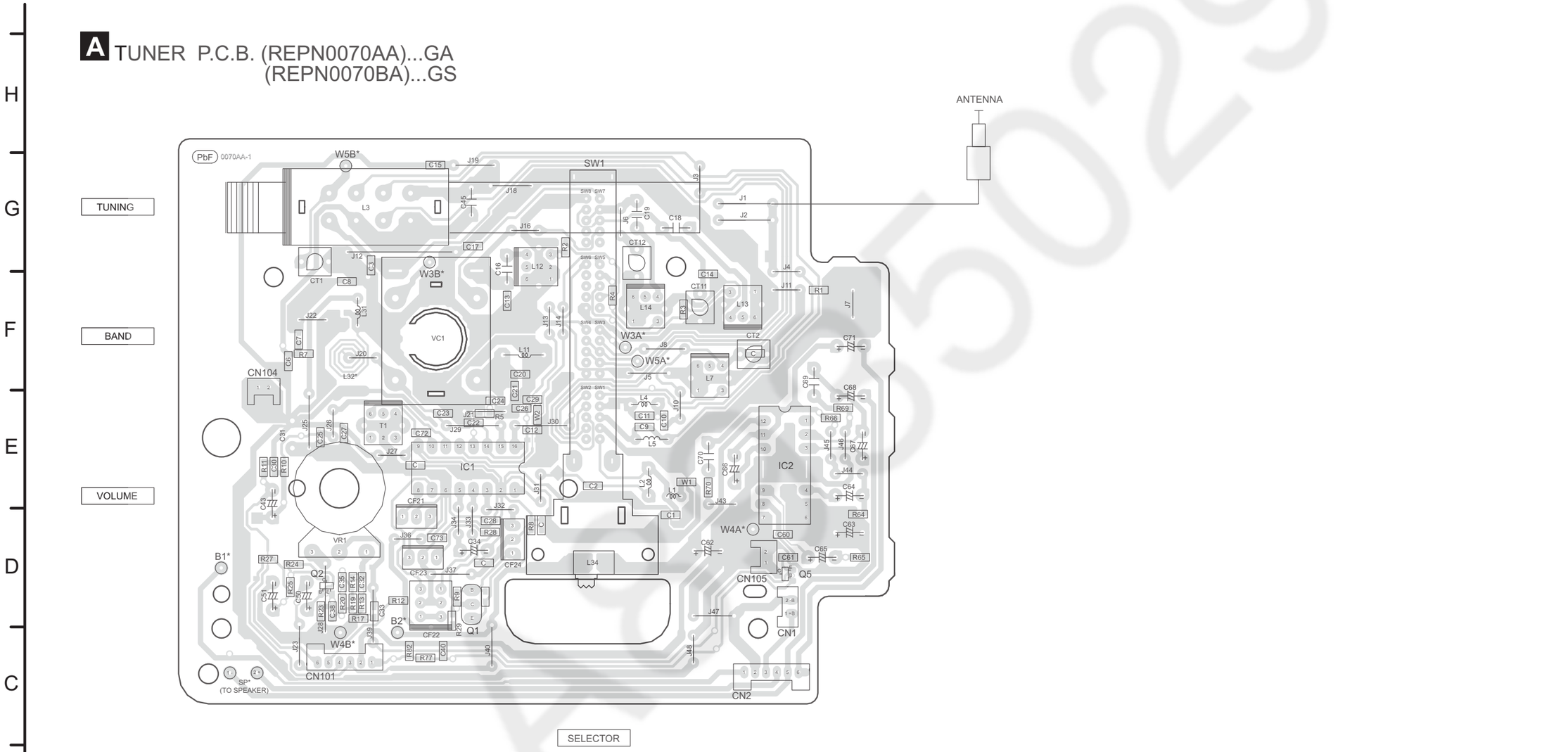
RF-800UGA/GS
BATTERY / JACK CIRCUIT

ID: A8G35029

10 Printed Circuit Board

10.1. TUNER P.C.B.

A TUNER P.C.B. (REPN0070AA)...GA
(REPN0070BA)...GS

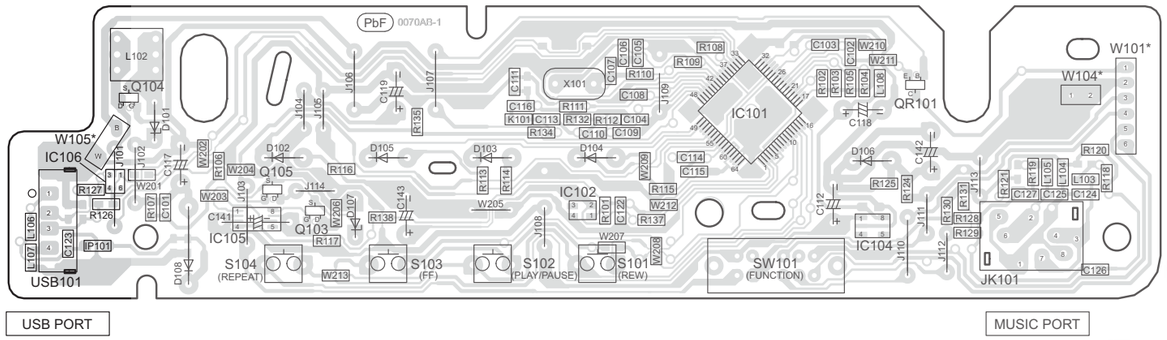


NOTE: " * " REF IS FOR INDICATION ONLY

RF-800UGA/GS
TUNER P.C.B.

10.2. USB, BATTERY, JACK & SUPPORT P.C.B.

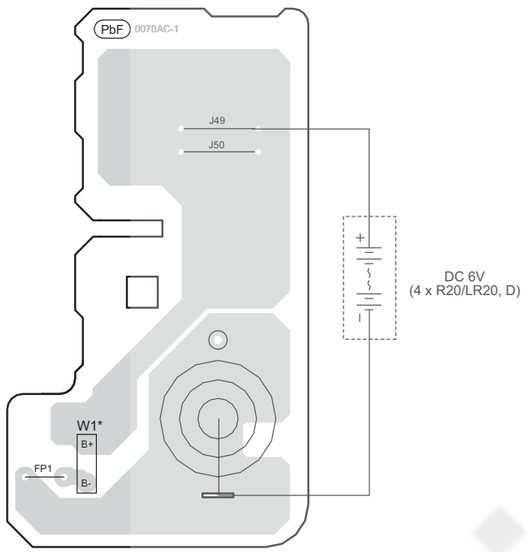
B USB P.C.B. (REPN0070AB)...GA
(REPN0070BB)...GS



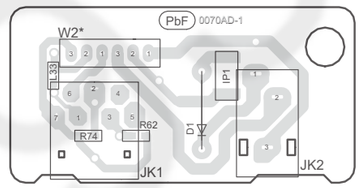
USB PORT

MUSIC PORT

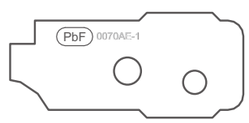
C BATTERY P.C.B. (REPN0070AC)...GA
(REPN0070BC)...GS



D JACK P.C.B. (REPN0070AD)...GA
(REPN0070BD)...GS



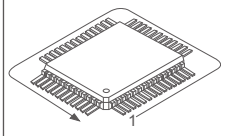
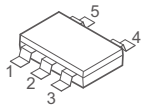
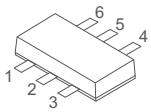
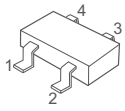
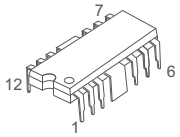
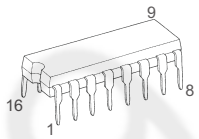
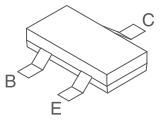
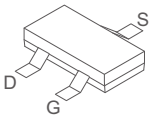
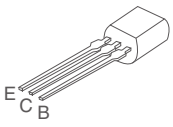
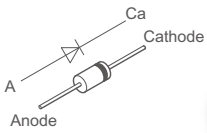
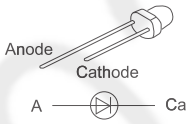
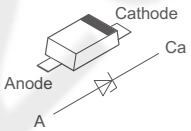
E SUPPORT P.C.B. (REPN0070AE)...GA
(REPN0070BE)...GS



NOTE: " * " REF IS FOR INDICATION ONLY

11 Appendix Information of Schematic Diagram

11.1. Illustration of IC's, Transistors and Diodes

C1AB00004021 (64P)	C0CBABE00023	RSB12JS2T2R	C0EBE0000124	C1BA00000424	C1BA00000481
					
B1ABCF000176 B1GDCFJJ0047	B1CFQD000011 B1CHPB000005	KTC3192-0-AT	B0EAKM000103	B3AAA0000608 B3ACA0000220 SLR325MCT31W	B0JCMC000006
					

ID: A8935029

11.2. Terminal Function of IC

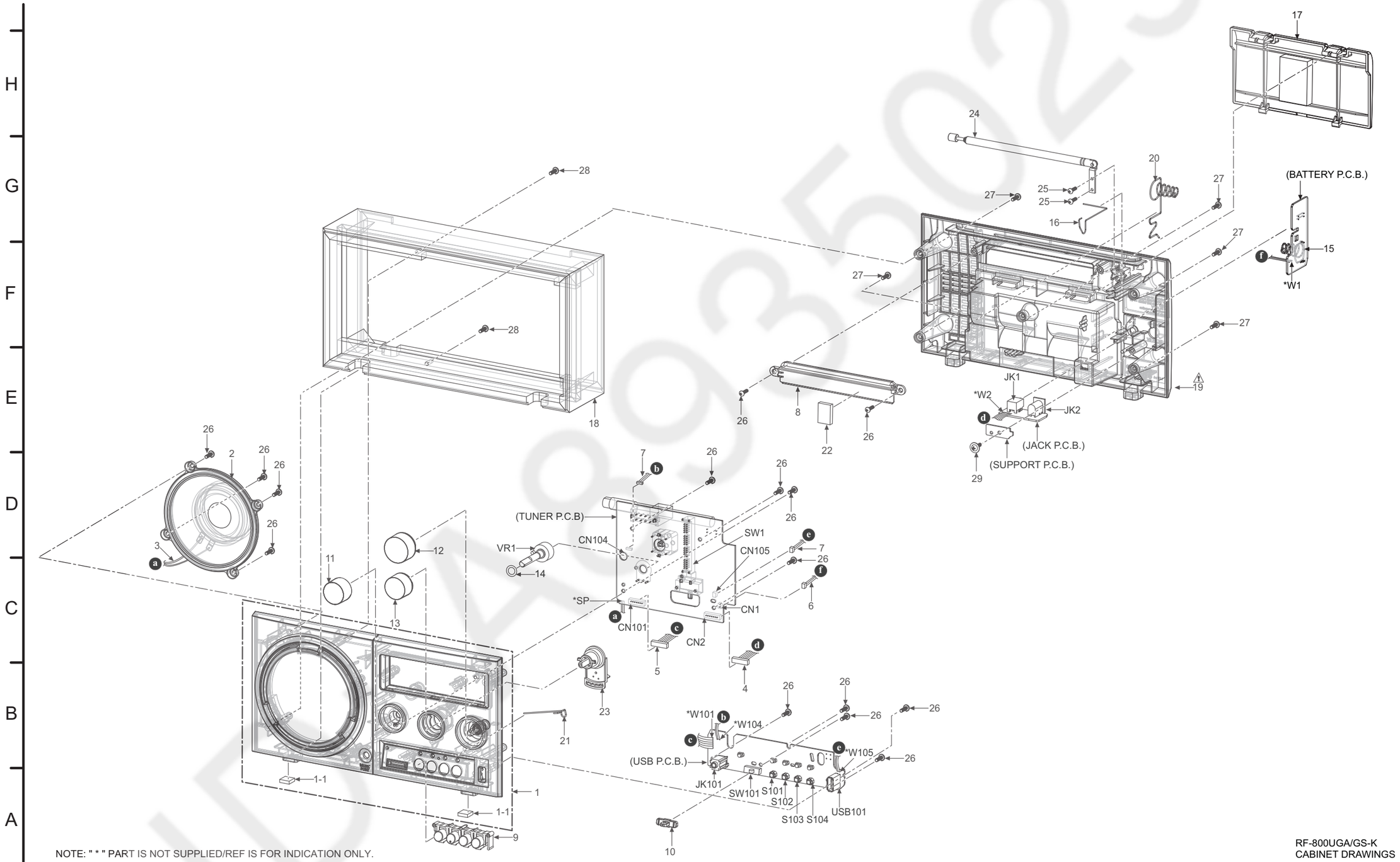
11.2.1. IC101 (C1AB00004021) USB AUDIO DECODER

Pin No.	Mark	I/O	Function
1	RESETX	I	"H: Release Reset, L: Reset"
2	SEL_SLAVE	I	"H: Stand Alone, L: Slave"
3	SEL_MP3	I	"H: Play MP3 only, L: Play MP1, MP2, and MP3
4	SEL_DOUT	I	H: Analog DAC Output, L: Digital Output
5	SEL_VOL	I	H: Volume control valid, L: Volume control invalid
6	SEL_APLAY	I	H: Auto play OFF, L: Auto play
7	SEL_UTPKT	I	"H: Normal Operation, L: USB Test Packet Output
8	TEST1	-	No Connection
9	TEST2	I	Pull up to 3.3V system power supply
10	MCHNG/ KEY_ROW1	I	Key input
11	BUSY/ KEY_ROW2	I	Key input
12	SCL/ KEY_ROW3	-	No Connection
13	SDA/ KEY_ROW4	I	Key Input
14	A0/KEY_COL1	I	Key Input
15	A1/KEY_COL2	-	No Connection
16	SEL_SMAN/ KEY_COL3	I	Key Input
17	TEST3	-	Pull up to 3.3V system power supply
18	DVDDIO	-	No Connection
19	SD_CON	I	Serial data control
20	SD_D0	I	Serial data output
21	SD_CLK	-	No Connection
22	SD_DI	O	Serial data input
23	SD_CS	O	Serial data chip select
24	DVSS	-	Ground
25	TEST4	I	Pull up to 3.3V system power supply
26	TEST5	I	Pull up to 3.3V system power supply
27	DVDD_M2	-	Connect to 57pin
28	TEST6	I	Pull up to 3.3V system power supply
29	TEST7	I	Pull up to 3.3V system power supply
30	TEST8	I	Pull up to 3.3V system power supply
31	ATEST1	-	No Connection
32	AVDDC	-	+3.3V voltage supply
33	USB_DM	I/O	USB data -
34	USB_DP	I/O	USB data +
35	AVSSC	-	Ground
36	REXTI	O	USB Bias
37	VOREFI	-	No Connection
38	VDD_PLL	-	+3.3V voltage supply
39	TEST_PLL	-	No Connection
40	XIN_PLL	I	PLL oscillator I/P
41	XOUT_PLL	O	PLL oscillator O/P
42	VSS_PLL	-	Ground
43	DAVSS	-	Ground
44	RDACO	O	Audio DAC Line Out Rch
45	VCDACO	-	Audio DAC Ref Voltage
46	LDACO	O	Audio DAC Line Out Lch
47	DAVDD	-	+3.3V voltage supply
48	AMUTE	O	Audio Mute (H: Mute cancel, L:Mute)
49	LED_ERROR	O	Error LED
50	LED_PLAY	O	Play LED
51	LED_PSD	-	No Connection
52	LED_PUSB	-	No Connection
53	LED_ACCESS	O	Memory Access LED
54	LED_RANDOM	-	No Connection
55	LED_REPEAT	O	Repeat LED
56	TEST13	-	Pull up to 3.3V system power supply
57	DVDD_M1	-	Connect to bypass condenser.
58	TEST14	-	Ground
59	TEST15	-	Pull up to 3.3V system power supply
60	TEST16	-	Pull up to 3.3V system power supply
61	TEST17	-	Pull up to 3.3V system power supply
62	DVSS	-	Ground
63	TMODE	-	Ground
64	DVDDIO	-	+3.3V voltage supply

12 Exploded View and Replacement Parts List

12.1. Exploded View and Mechanical replacement Parts List

12.1.1. Cabinet Parts Location

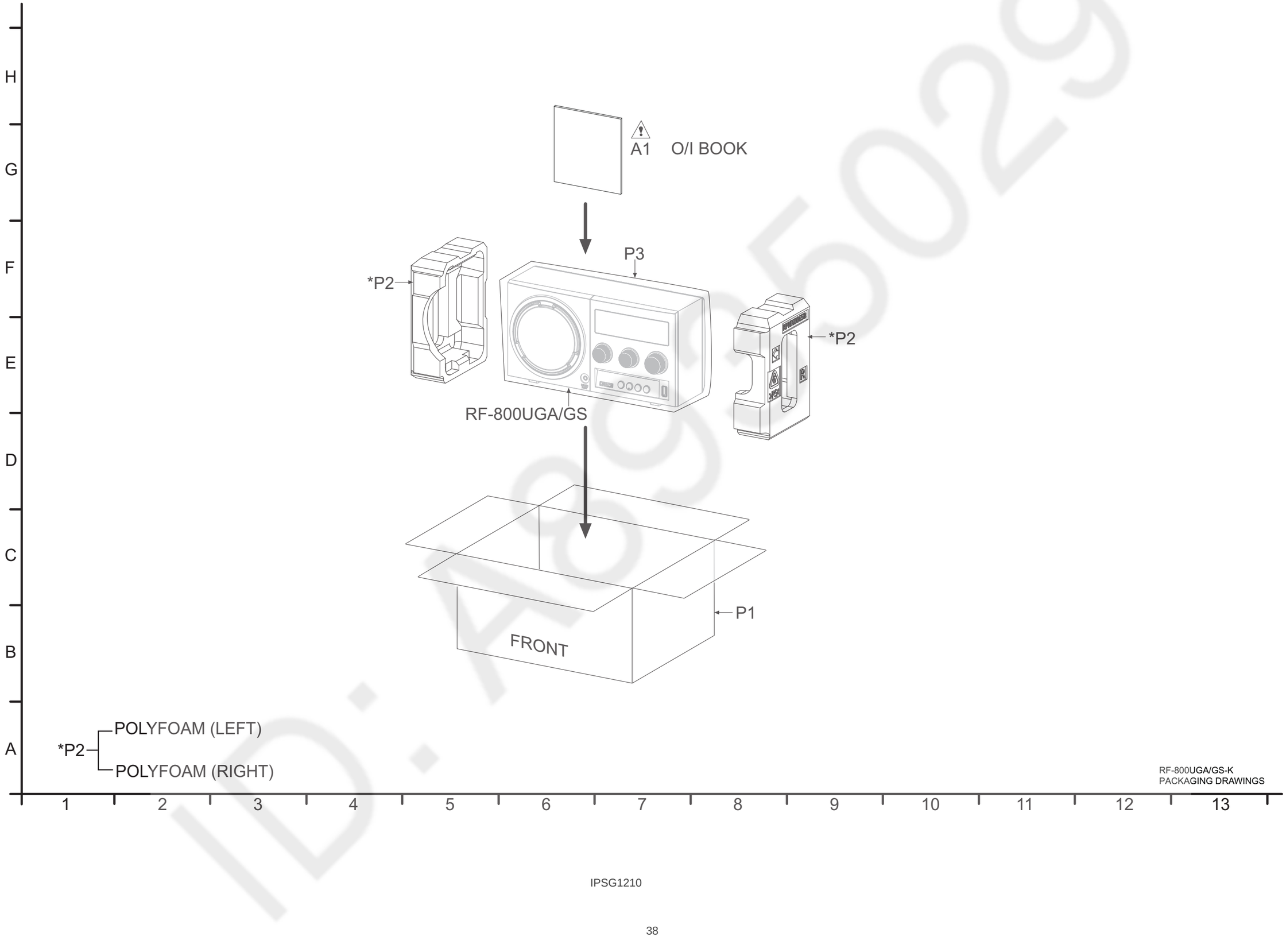


NOTE: " * " PART IS NOT SUPPLIED/REF IS FOR INDICATION ONLY.

RF-800UGA/GS-K
CABINET DRAWINGS

ID:2035029

12.1.2. Packaging



12.1.3. Mechanical Repacement Parts List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- All parts mentioned are supplied by PAVCJM unless indicated likewise.
- Reference for O/I book languages are as follows:

Ar:	Arabic	Du:	Dutch	It:	Italian	Sp:	Spanish
Cf:	Canadian French	En:	English	Ko:	Korean	Sw:	Swedish
Cz:	Czech	Fr:	French	Po:	Polish	Co:	Traditional Chinese
Da:	Danish	Ge:	German	Ru:	Russian	Cn:	Simplified Chinese
Pe:	Persian	Ur:	Ukraine	Pr:	Portuguese	Fi:	Finnish

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			CABINET AND CHASSIS		
	1	RYKN0115A-K	FRONT CABINET UNIT	1	GA
	1	RYKN0115B-K	FRONT CABINET UNIT	1	GS
	1-1	RMGN0014	RUBBER LEG	2	
	2	RASN10PL11-G	SPEAKER	1	
	3	RWJ4202120XG	2P WIRE (SPEAKER-TUNER)	1	
	4	REXN0088	6P CABLE WIRE (JACK-TUNER)	1	
	5	REXN0089	6P CABLE WIRE (USB-TUNER)	1	
	6	REXN0090	2P CABLE WIRE (BATTERY-TUNER)	1	
	7	REXN0091	2P WIRE (TUNER-USB)	2	
	8	RGKN0019-K	HANDLE COVER	1	
	9	RGUN0060-K	USB OPERATION BUTTON	1	
	10	RGVN0011-K	FUNCTION KNOB	1	
	11	RGWN0023-S	BAND/VOL KNOB	1	
	12	RGWN0024-S	TUNING KNOB	1	
	13	RGWN0025-S	BAND KNOB	1	
	14	RHWN0002	WASHER	1	
	15	RJCN0013	BATTERY TERMINAL	1	
	16	RJRN0018	ANTENNA TERMINAL	1	
	17	RYKN0117-K	BATTERY COVER ASS'Y	1	
	18	RKMN0028-K	WOODEN CASE ASS'Y	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
⚠	19	RKSN0018A-K	BACK CABINET	1	
	20	RMBX0002-3	BATTERY SPRING	1	
	21	RMEN0012	BAND SPRING	1	
	22	RMGN0014	RUBBER LEG	1	
	23	RMLN0008-X	BAND ROTARY LEVER	1	
	24	XEARK132GC	ROD ANTENNA	1	
	25	XTN23+7JFJ	SCREW	2	
	26	XTV3+10GFJ	SCREW	15	
	27	XTV3+14GFJ	SCREW	5	
	28	XTW3+16FFJ	SCREW	2	
	29	XTW3+W8TFJ	SCREW	1	
			PACKING MATERIALS		
	P1	RPGN0126-1	PACKING CASE	1	
	P2	RPNN0065	POLYFOAM	1	
	P3	RPH656ZB-1	MIRAMAT SHEET	1	GA
	P3	RPHN0038	MIRAMAT SHEET	1	GS
			ACCESSORIES		
⚠	A1	RQT9727-G	O/I BOOK (En/Ar)	1	

ID: RQ35029

12.2. Electrical Replacement Parts List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- Capacitor value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF), F=Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1000 (OHM).
- All parts mentioned are supplied by PAVCJM unless indicated likewise.

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			PRINTED CIRCUIT BOARDS		
	PCB1	REPN0070AA	TUNER P.C.B.	1	GA (RTL)
	PCB1	REPN0070BA	TUNER P.C.B.	1	GS (RTL)
	PCB2	REPN0070AB	USB P.C.B.	1	GA (RTL)
	PCB2	REPN0070BB	USB P.C.B.	1	GS (RTL)
	PCB3	REPN0070AC	BATTERY P.C.B.	1	GA (RTL)
	PCB3	REPN0070BC	BATTERY P.C.B.	1	GS (RTL)
	PCB4	REPN0070AD	JACK P.C.B.	1	GA (RTL)
	PCB4	REPN0070BD	JACK P.C.B.	1	GS (RTL)
	PCB5	REPN0070AE	SUPPORT P.C.B.	1	GA (RTL)
	PCB5	REPN0070BE	SUPPORT P.C.B.	1	GS (RTL)
			INTEGRATED CIRCUITS		
	IC1	C1BA00000481	IC	1	
	IC2	C1BA00000424	IC	1	
	IC101	C1AB00004021	IC	1	
	IC102	C0EBE0000124	IC	1	
	IC104	C0CBABE00023	IC	1	
	IC105	C1AB00004024	IC	1	
	IC106	RSB12JS2T2R	IC	1	
			TRANSISTORS		

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	Q1	KTC3192-0-AT	TRANSISTOR	1	
	Q2	B1ABCF000176	TRANSISTOR	1	
	Q5	B1ABCF000176	TRANSISTOR	1	
	Q103	B1CFQD000011	TRANSISTOR	1	
	Q104	B1CFQD000011	TRANSISTOR	1	
	Q105	B1CHPB000005	TRANSISTOR	1	
	QR101	B1GDCFJJ0047	TRANSISTOR	1	
			DIODES		
	D1	B0EAKM000103	DIODE	1	
	D101	B0JCMC000006	DIODE	1	
	D102	B3ACA0000220	DIODE	1	
	D103	SLR325MCT31W	DIODE	1	
	D104	B3ACA0000220	DIODE	1	
	D105	B3AAA0000608	DIODE	1	
	D106	B3AAA0000608	DIODE	1	
	D107	B0JCMC000006	DIODE	1	
	D108	B0EAKM000103	DIODE	1	
			VARIABLE RESISTOR		
	VR1	RRVN16G9B14P	VARIABLE RESISTOR	1	
			SWITCHES		
	S101	EVQ11G05R	SW REW	1	
	S102	EVQ11G05R	SW PLAY/PAUSE	1	
	S103	EVQ11G05R	SW FF	1	
	S104	EVQ11G05R	SW REPEAT	1	
	SW1	RSSN4H005-C	SW SELECTOR	1	
	SW101	RSSN4A006-B	SW FUNCTION	1	
			VARIABLE CAPACITOR		

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	VC1	RCV4RCT0V-T	VARIABLE CAPACI-TOR	1	
			CONNECTORS		
	CN1	K1KA02AA0180	2P CONNECTOR	1	
	CN2	K1KA06A00452	6P CONNECTOR	1	
	CN101	K1KA06A00452	6P CONNECTOR	1	
	CN104	K1KA02AA0193	2P CONNECTOR	1	
	CN105	K1KA02AA0193	2P CONNECTOR	1	
			COILS AND INDUC-TORS		
	L1	RLQY10S4-0	CHOKE COIL	1	
	L2	RLQY30S1W	RF CHOKE COIL	1	
	L3	RLVN5D036-C	BAR ANTENNA	1	
	L4	RLQY30S4W	COIL	1	
	L5	RLQY15G5-M	CHOKE COIL	1	
	L7	RLAN3B44-C	SW2 ANT COIL	1	
	L11	RL04P004-C	FM OSC COIL	1	GS
	L11	RLD4Y53W	FM OSC COIL	1	GA
	L12	RL0N2B108-C	MW OSC COIL	1	
	L13	RL0N3B91-C	SW1 OSC COIL	1	
	L14	RL0N3B95-C	SW2 OSC COIL	1	
	L31	G0C100KA0029	INDUCTOR	1	
	L102	RLQB220K-C	CHOKE COIL	1	
			TRIMMERS		
	CT1	F7BAF7R00002	TRIMMER	1	
	CT2	F7BAF7R00002	TRIMMER	1	
	CT11	F7BAF1100005	TRIMMER	1	
	CT12	F7BAF1100005	TRIMMER	1	
			FM IFT COIL		
	T1	RLI4B153-C	FM IFT COIL	1	
			CERAMIC FILTER		
	CF21	J0B1075AA016	CERAMIC FILTER	1	
	CF22	RLFNLTZ455JL	CERAMIC FILTER	1	
	CF23	J0B1075AA016	CERAMIC FILTER	1	
	CF24	J0B1075AA016	CERAMIC FILTER	1	
			OSCILLATOR		
	X101	H0H169500013	OSCILLATOR	1	
			FUSE PROTECTORS		
⚠	FP1	K5G502A00039	FUSE PROTECTOR	1	
⚠	IP1	D4FB1R100026	FUSE PROTECTOR	1	
			JACKS		
	JK1	RJJ37TK09	JK HEADPHONE	1	
	JK2	RJJ43K12	JK DC INLET	1	
	JK101	K2HC103A0031	JK MUSIC PORT	1	
	USB101	K1FY104A0007	USB CONNECTOR	1	
			CHIP JUMPERS		
	K101	ERJ3GEY0R00V	0 1/10W	1	
	IP101	D0GDR00JA055	0 1/8W	1	
	L33	ERJ3GEY0R00V	0 1/10W	1	
	L34	ERJ3GEY0R00V	0 1/10W	1	
	L103	ERJ3GEY0R00V	0 1/10W	1	
	L104	ERJ3GEY0R00V	0 1/10W	1	
	L105	ERJ3GEY0R00V	0 1/10W	1	
	L106	ERJ3GEY0R00V	0 1/10W	1	
	L107	ERJ3GEY0R00V	0 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	L108	ERJ3GEY0R00V	0 1/10W	1	
	W1	ERJ3GEY0R00V	0 1/10W	1	
	W2	ERJ3GEY0R00V	0 1/10W	1	
	W201	ERJ3GEY0R00V	0 1/10W	1	
	W202	D0GDR00JA055	0 1/8W	1	
	W203	ERJ3GEY0R00V	0 1/10W	1	
	W204	ERJ3GEY0R00V	0 1/10W	1	
	W205	D0GDR00JA055	0 1/8W	1	
	W206	ERJ3GEY0R00V	0 1/10W	1	
	W207	ERJ3GEY0R00V	0 1/10W	1	
	W208	D0GDR00JA055	0 1/8W	1	
	W209	D0GDR00JA055	0 1/8W	1	
	W210	ERJ3GEY0R00V	0 1/10W	1	
	W211	D0GDR00JA055	0 1/8W	1	
	W212	ERJ3GEY0R00V	0 1/10W	1	
	W213	ERJ3GEY0R00V	0 1/10W	1	
			RESISTORS		
	R1	ERJ3GEYJ104V	100K 1/10W	1	
	R2	ERJ3GEYJ330V	33 1/10W	1	
	R3	ERJ3GEYJ330V	33 1/10W	1	
	R4	ERJ3GEYJ560V	56 1/10W	1	
	R5	ERJ3GEYJ470V	47 1/10W	1	
	R7	ERJ3GEYJ100V	10 1/10W	1	
	R8	ERJ3GEYJ820V	82 1/10W	1	
	R9	ERJ3GEYJ334V	330K 1/10W	1	
	R10	ERJ3GEYJ183V	18K 1/10W	1	
	R11	ERJ3GEYJ682V	6.8K 1/10W	1	
	R12	ERJ3GEYJ151V	150 1/10W	1	
	R13	ERJ3GEYJ682V	6.8K 1/10W	1	
	R14	ERJ3GEY0R00V	0 1/10W	1	
	R17	ERJ3GEYJ273V	27K 1/10W	1	
	R19	ERJ3GEYJ682V	6.8K 1/10W	1	
	R20	ERJ3GEYJ182V	1.8K 1/10W	1	
	R23	ERJ3GEYJ102V	1K 1/10W	1	
	R24	ERJ3GEYJ104V	100K 1/10W	1	
	R25	ERJ3GEYJ332V	3.3K 1/10W	1	
	R27	ERJ3GEYJ102V	1K 1/10W	1	
	R28	ERJ3GEYJ101V	100 1/10W	1	
	R29	ERJ3GEYJ471V	470 1/10W	1	
	R62	ERJ3GEYJ101V	100 1/10W	1	
	R64	ERJ3GEYJ470V	47 1/10W	1	
	R65	ERJ3GEYJ680V	68 1/10W	1	
	R66	ERJ3GEYJ103V	10K 1/10W	1	
	R69	ERJ3GEYJ2R2V	2.2 1/10W	1	
	R70	ERJ3GEYJ2R2V	2.2 1/10W	1	
	R74	ERJ3GEYJ101V	100 1/10W	1	
	R77	ERJ3GEYJ333V	33K 1/10W	1	
	R82	ERJ3GEYJ473V	47K 1/10W	1	
	R101	ERJ3GEYJ104V	100K 1/10W	1	
	R102	ERJ3GEYJ104V	100K 1/10W	1	
	R103	ERJ3GEYJ104V	100K 1/10W	1	
	R104	ERJ3GEYJ104V	100K 1/10W	1	
	R105	ERJ3GEYJ104V	100K 1/10W	1	
	R106	ERJ3GEYJ133V	13K 1/10W	1	
	R107	ERJ3GEYJ683V	68K 1/10W	1	
	R108	ERJ3GEYJ123V	12K 1/10W	1	
	R109	ERJ3GEYJ105V	1M 1/10W	1	
	R110	ERJ3GEYJ101V	100 1/10W	1	
	R111	ERJ3GEYJ222V	2.2K 1/10W	1	
	R112	ERJ3GEYJ222V	2.2K 1/10W	1	
	R113	ERJ3GEYJ221V	220 1/10W	1	
	R114	ERJ3GEYJ221V	220 1/10W	1	
	R115	ERJ3GEYJ101V	100 1/10W	1	
	R116	ERJ3GEYJ221V	220 1/10W	1	
	R117	ERJ3GEYJ103V	10K 1/10W	1	
	R118	ERJ3GEYJ102V	1K 1/10W	1	
	R119	ERJ3GEYJ102V	1K 1/10W	1	
	R120	ERJ3GEYJ183V	18K 1/10W	1	
	R121	ERJ3GEYJ183V	18K 1/10W	1	
	R124	ERJ3GEYJ331V	330 1/10W	1	
	R125	ERJ3GEYJ271V	270 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R126	ERJ3GEYJ220V	22 1/10W	1	
	R127	ERJ3GEYJ220V	22 1/10W	1	
	R128	ERJ3GEYJ333V	33K 1/10W	1	
	R129	ERJ3GEYJ104V	100K 1/10W	1	
	R130	ERJ3GEYJ153V	15K 1/10W	1	
	R131	ERJ3GEYJ472V	4.7K 1/10W	1	
	R134	ERJ3GEYJ333V	33K 1/10W	1	
	R135	ERJ3GEYJ272V	2.7K 1/10W	1	
	R137	ERJ3GEYJ102V	1K 1/10W	1	
	R138	ERJ3GEYJ102V	1K 1/10W	1	
			CAPACITORS		
	C1	F1H1H180A841	18pF 50V	1	
	C2	F1H1H7R0A503	7pF 50V	1	
	C3	F1H1H4R0A839	4pF 50V	1	
	C6	F1H1H103A842	0.01uF 50V	1	
	C7	F1H1H103A842	0.01uF 50V	1	
	C8	F1H1H223A219	0.022uF 50V	1	
	C9	F1H1H4R0A839	4pF 50V	1	
	C10	F1H1H330A841	33pF 50V	1	
	C11	F1H1H100A841	10pF 50V	1	
	C12	F1H1H103A842	0.01uF 50V	1	
	C13	F1H1H150A841	15pF 50V	1	
	C14	F1H1H4R0A839	4pF 50V	1	
	C15	F1H1H103A842	0.01uF 50V	1	
	C16	F0A2A361A010	360pF 100V	1	
	C17	F1H1H8R0A016	8pF 50V	1	
	C18	F0A2A152A010	1500pF 100V	1	
	C19	F0A2A472A010	4700pF 100V	1	
	C20	F1H1H200A004	20pF 50V	1	
	C21	F1H1H120A841	12pF 50V	1	GS
	C21	F1H1H5R0A839	5pF 50V	1	GA
	C22	F1H1H122A013	1200pF 50V	1	
	C23	F1H1H180A841	18pF 50V	1	
	C24	F1H1H180A841	18pF 50V	1	GA
	C24	F1H1H220A841	22pF 50V	1	GS
	C25	F1H1H331A013	330pF 50V	1	
	C26	F1H1H103A842	0.01uF 50V	1	
	C27	F1H1H103A842	0.01uF 50V	1	
	C28	F1J1C105A149	1uF 16V	1	
	C29	F1H1H103A842	0.01uF 50V	1	
	C30	F1H1H223A219	0.022uF 50V	1	
	C31	F2A0J221A030	220uF 6.3V	1	
	C32	F1H1E273A002	0.027uF 25V	1	
	C33	F1H1H103A842	0.01uF 50V	1	
	C34	RCA1AKA470BT	47uF 10V	1	
	C35	F1H1H822A219	8200pF 50V	1	
	C38	F1J1C105A149	1uF 16V	1	
	C40	F1J1A106A024	10uF 10V	1	
	C43	RCA1HKA0R1BT	0.1uF 50V	1	
	C45	ECQV1H104JL3	0.1uF 50V	1	
	C50	RCA1HKA2R2BT	2.2uF 50V	1	
	C51	RCA1AKA101BT	100uF 10V	1	
	C60	F1H1H102A842	1000pF 50V	1	
	C61	F1H1E683A086	0.068uF 25V	1	
	C62	RCA1AM222EP	2200uF 10V	1	
	C63	RCA1AKA101BT	100uF 10V	1	
	C64	RCA1AKA101BT	100uF 10V	1	
	C65	RCA1AKA101BT	100uF 10V	1	
	C66	RCA1AKA101BT	100uF 10V	1	
	C67	RCA1AKA101BT	100uF 10V	1	
	C68	F2A0J102A030	1000uF 6.3V	1	
	C69	ECQV1H104JL3	0.1uF 50V	1	
	C70	ECQV1H104JL3	0.1uF 50V	1	
	C71	F2A0J102A030	1000uF 6.3V	1	
	C72	F1H1H150A841	15pF 50V	1	
	C73	F1H1H103A842	0.01uF 50V	1	
	C101	F1H1H151A792	150pF 50V	1	
	C102	F1H1H104A913	0.1uF 50V	1	
	C103	F1H1H104A913	0.1uF 50V	1	
	C104	F1H1H104A913	0.1uF 50V	1	
	C105	F1H1H104A913	0.1uF 50V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C106	F1H1H120A841	12pF 50V	1	
	C107	F1H1H120A841	12pF 50V	1	
	C108	F1J1A106A024	10uF 10V	1	
	C109	F1H1H104A913	0.1uF 50V	1	
	C110	F1H1H561A219	560pF 50V	1	
	C111	F1H1H561A219	560pF 50V	1	
	C112	RCA1AKA101BT	100uF 10V	1	
	C113	F1J1C105A149	1uF 16V	1	
	C114	F1H1H104A913	0.1uF 50V	1	
	C115	F1H1H104A913	0.1uF 50V	1	
	C116	F1J1C105A149	1uF 16V	1	
	C117	F2A1A471B139	470uF 10V	1	
	C118	RCA1CKA220BT	22uF 16V	1	
	C119	RCA1AKA470BT	47uF 10V	1	
	C122	F1J1A106A024	10uF 10V	1	
	C123	F1J1C105A149	1uF 16V	1	
	C124	F1H1H221A004	220pF 50V	1	
	C125	F1H1H221A004	220pF 50V	1	
	C126	F1J1C105A149	1uF 16V	1	
	C127	F1J1C105A149	1uF 16V	1	
	C141	RCA1AKA470BT	47uF 10V	1	
	C142	RCA1AKA470BT	47uF 10V	1	
	C143	F2A0J221A030	220uF 6.3V	1	

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