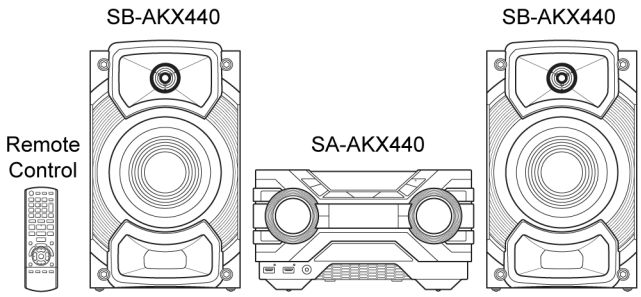
PSG1601001CE

Service Manual

CD Stereo System

Model No. SA-AKX220PN
SA-AKX220PS
SA-AKX440PN
SA-AKX440PS

The illustration shows SC-AKX440.



Product Color: (K)...Black Type
(W)...White Type (For SA-AKX220)

Please refer to the original service manual for:
- **CD Mechanism Unit (BRS12C) , Order No. PSG1303059AE**
- **Speaker system SB-AKX220PN, Order No. PSG1601002CE**
- **Speaker system SB-AKX440PN, Order No. PSG1601002CE**

⚠ 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®

1 Safety Precautions

1.1. General Guidelines

1. **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 Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. 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.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞

1.1.2. Leakage Current Hot Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1-1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

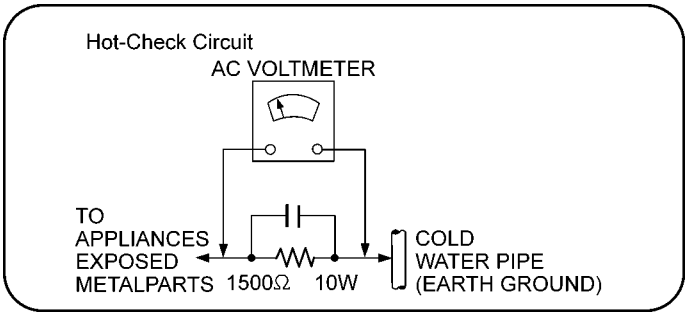

Figure 1-1

1.2. Before Repair and Adjustment

Disconnect AC power to discharge AC capacitor (in SMPS Module) as indicate below diagram through a 10 Ω, 10 W resistor to ground.

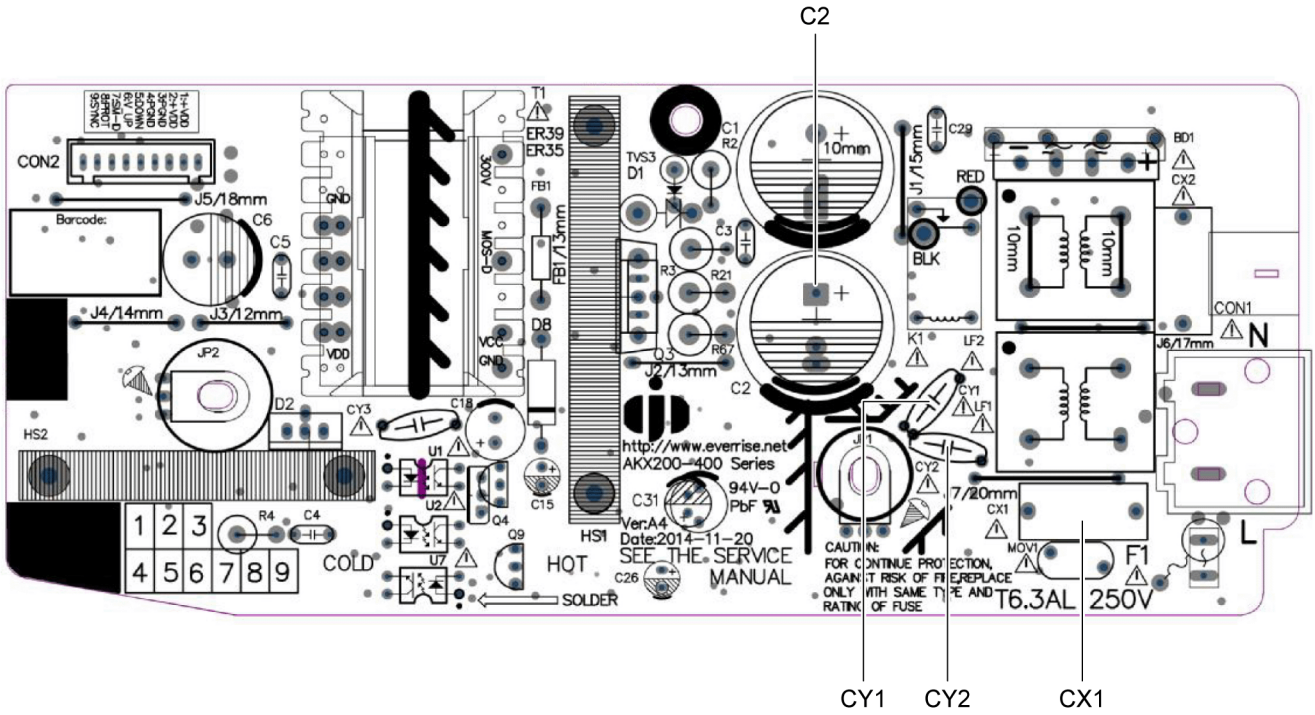

Figure 1-2

Caution:

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.

After repairs are completed, restore power gradually using a variac to avoid overcurrent.

Current consumption at AC 120 V, 60 Hz in Power ON, FM Tuner at volume minimal mode should be ~ 350 mA (AKX220PN/ AKX440PN).

Current consumption at AC 220~240 V, 50/60 Hz in Power ON, FM Tuner at volume minimal mode should be ~ 350 mA (AKX220PS/AKX440PS).

1.3. 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.

1.4. Power Supply using SMPS Module

This model uses Switching Mode Power Supply (SMPS Module) to provide the power supply to the unit. Here is the supplied part no. for the SMPS Module

1) N0AB1GK00001 (For SA-AKX220PN)
3) N0AD1GK00003 (For SA-AKX220PS)
2) N0AB1GL00001 (For SA-AKX440PN)
4) N0AD1GL00001 (For SA-AKX440PS)

1.4.1. How to Identify SMPS

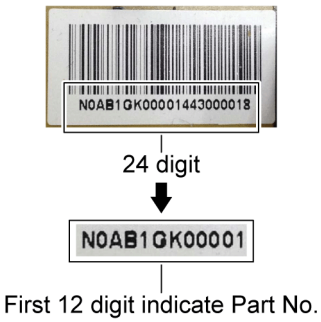

Figure 1-3

1.4.2. For SA-AKX220PN

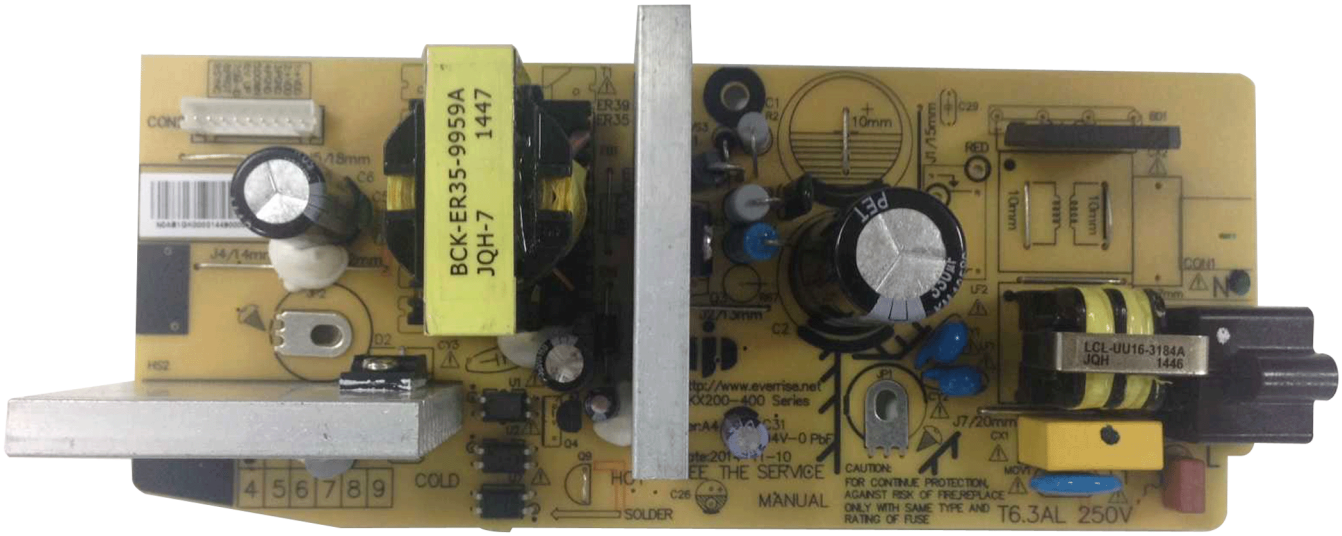

Figure 1-4

1.4.3. For SA-AKX220PS

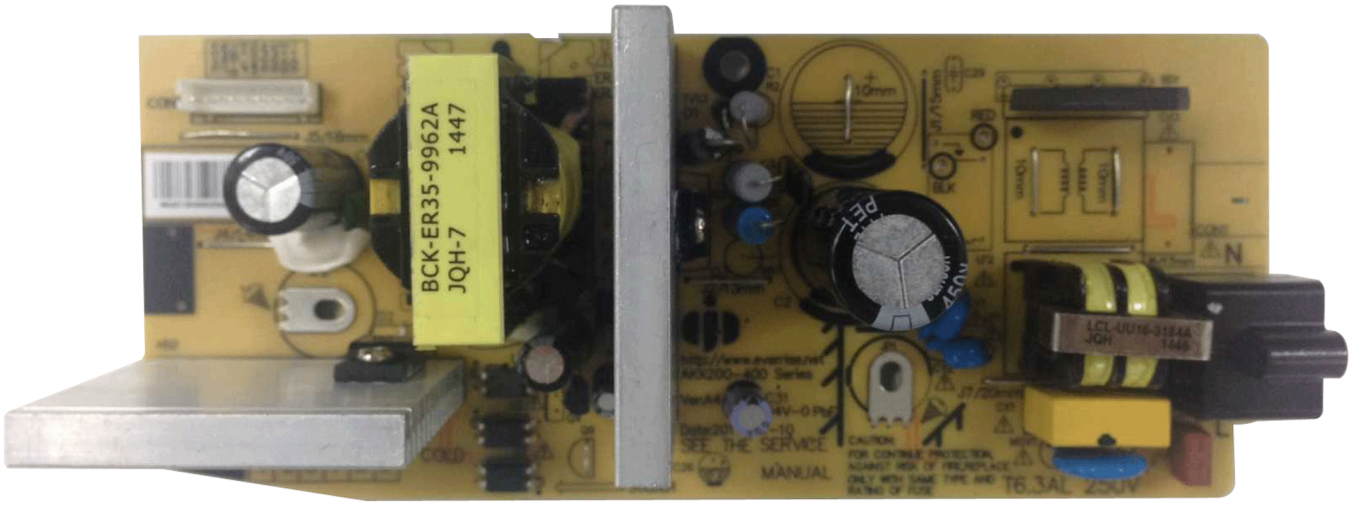

Figure 1-5

1.4.4. For SA-AKX440PN

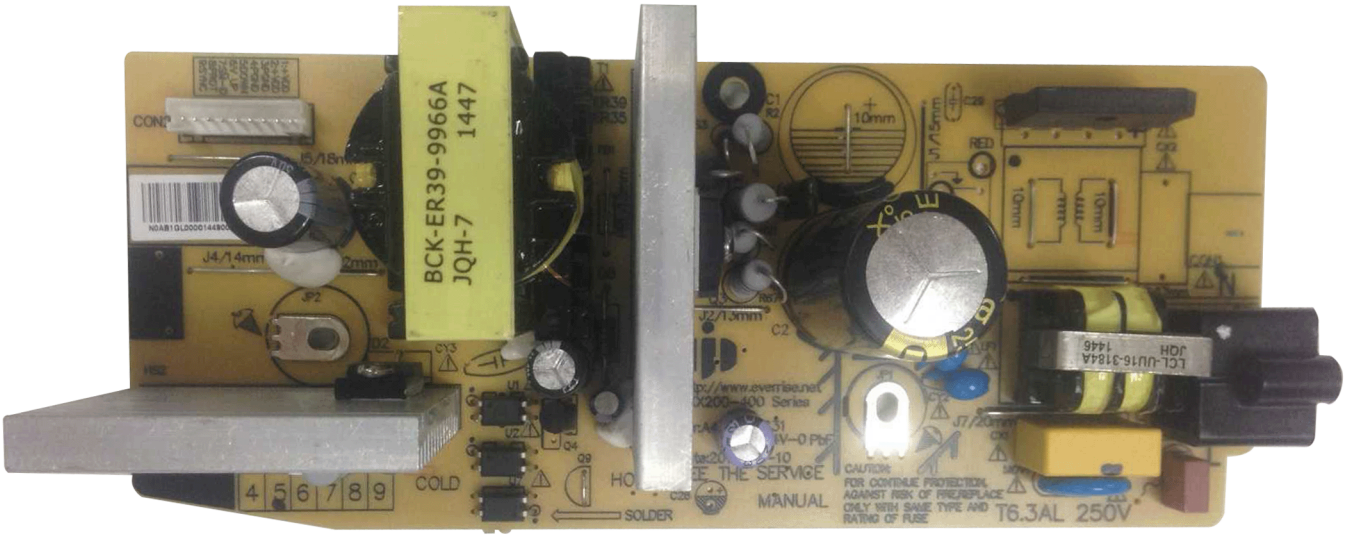

Figure 1-6

1.4.5. For SA-AKX440PS

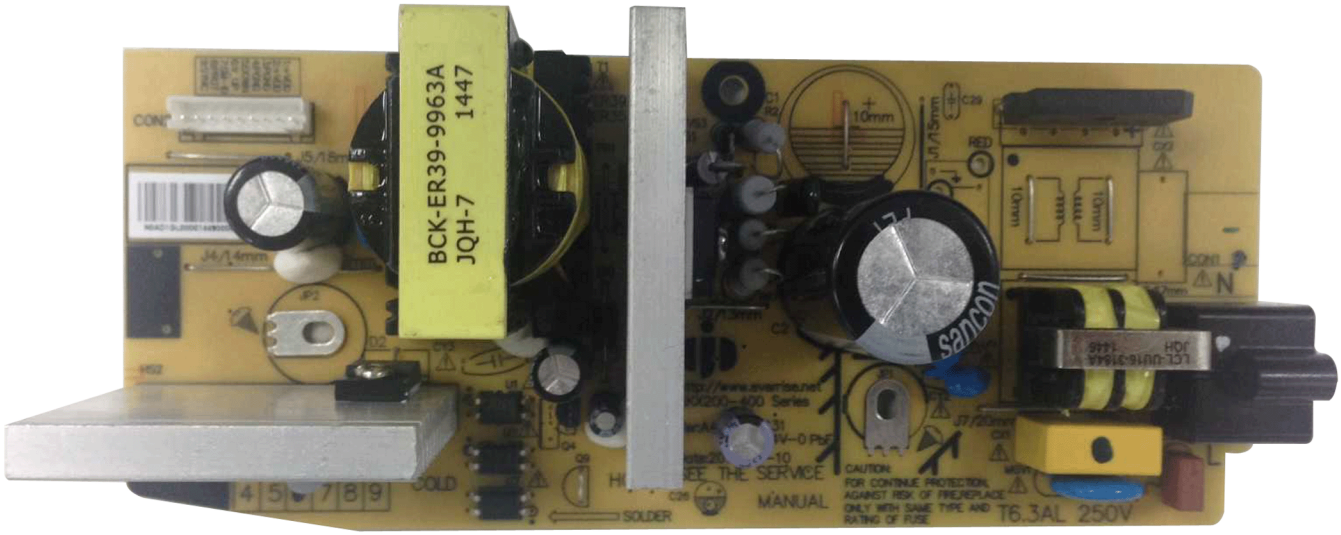

Figure 1-7

1.5. Safety Parts 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
⚠	12	RGR0473A-PB	REAR PANEL	AKX220PN
⚠	12	RGR0473A-QB	REAR PANEL	AKX220PS
⚠	12	RGR0473A-UB	REAR PANEL	AKX440PN
⚠	12	RGR0473A-VB	REAR PANEL	AKX440PS
⚠	20	RKM0764-K	TOP CABINET	K
⚠	20	RKM0764-W	TOP CABINET	W
⚠	301	RAE1052Z-V	TRAVERSE ASS'Y	(E.S.D)
⚠	A2	K2CB2CB00022	AC CORD	PN
⚠	A2	K2CQ2YY00119	AC CORD	PS
⚠	A3	RQT0A55-M	O/I BOOK (En/Sp)	AKX220
⚠	A3	RQT0A60-M	O/I BOOK (Sp)	AKX440
⚠	A3	RQT0A61-B	O/I BOOK (En)	AKX440
⚠	PCB6	N0AB1GK00001	SMPS MODULE	AKX220PN
⚠	PCB6	N0AB1GL00001	SMPS MODULE	AKX440PN
⚠	PCB6	N0AD1GK00003	SMPS MODULE	AKX220PS
⚠	PCB6	N0AD1GL00001	SMPS MODULE	AKX440PS

2 Warning

2.1. Prevention of Electrostatic 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 IC (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-equipped 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 equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup 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 removal 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, aluminum 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. Precaution of Laser Diode

CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Caution:

This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pickup lens.
Wavelength: 790 nm (CD)
Maximum output radiation power from pickup: 100 μW/VDE
Laser radiation from the pickup unit is safety level, but be sure the followings:

1. Do not disassemble the pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

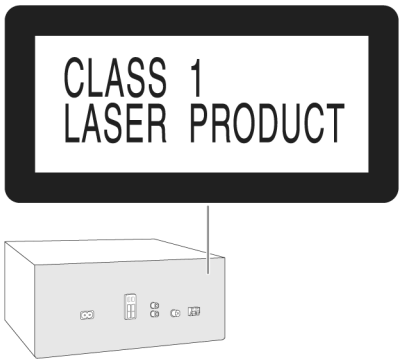


Figure 2-1

2.3. 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%

2.4. Handling Precautions for Traverse Unit

The laser diode in the optical pickup unit may break down due to static electricity of clothes or human body. Special care must be taken avoid caution to electrostatic breakdown when servicing and handling the laser diode in the traverse unit.

2.4.1. Cautions to Be Taken in Handling the Optical Pickup Unit

The laser diode in the optical pickup unit may be damaged due to electrostatic discharge generating from clothes or human body. Special care must be taken avoid caution to electrostatic discharge damage when servicing the laser diode.

1. Do not give a considerable shock to the optical pickup unit as it has an extremely high-precise structure.
2. To prevent the laser diode from the electrostatic discharge damage, the flexible cable of the optical pickup unit removed should be short-circuited with a short pin or a clip.
3. The flexible cable may be cut off if an excessive force is applied to it. Use caution when handling the flexible cable.
4. The antistatic FFC is connected to the new optical pickup unit. After replacing the optical pickup unit and connecting the flexi-

ble cable, cut off the antistatic FFC.

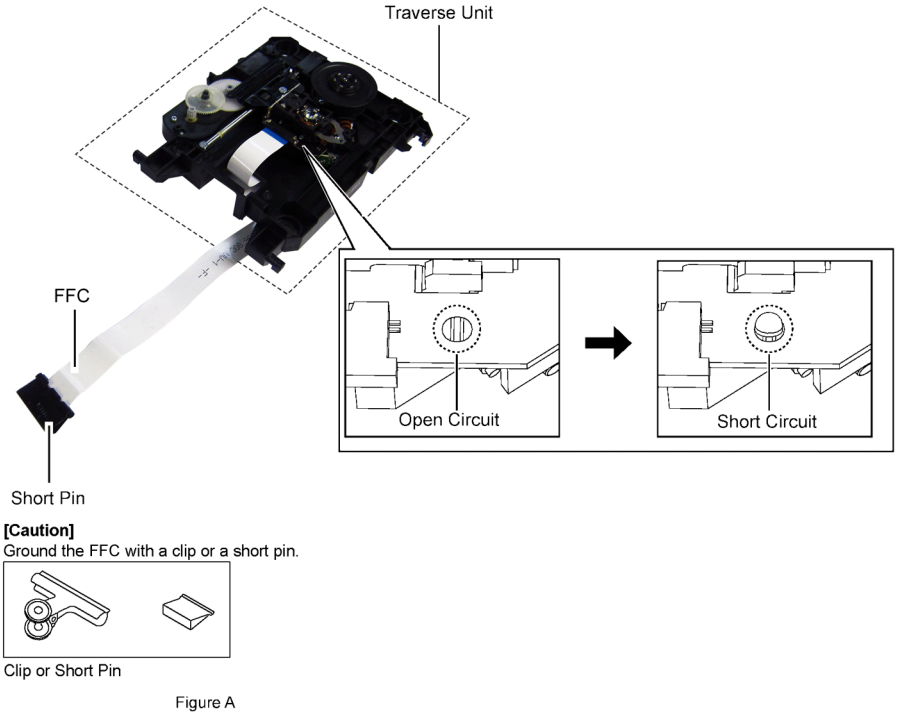


Figure 2-2

2.5. Grounding for electrostatic breakdown prevention

- As for parts that use optical pick-up (laser diode), the optical pick-up is destroyed by the static electricity of the working environment.
  Repair in the working environment that is grounded.

2.5.1. Worktable grounding

- Put a conductive material (sheet) or iron sheet on the area where the optical pickup is placed and ground the sheet.

2.5.2. Human body grounding

- Use the anti-static wrist strap to discharge the static electricity form your body (Figure 2-3).

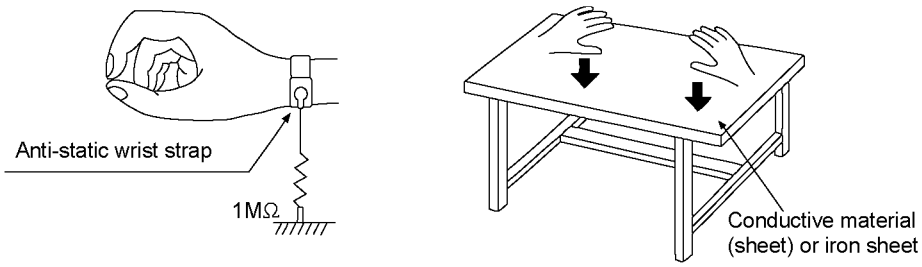


Figure 2-3

3 Service Navigation

3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

3.1.1. Software Update Procedure

UPDATE PROCEDURE

Perform the following steps.
- Step 1: Preparing the USB device
- Step 2: Software Update

Step 1: Preparing the USB device

Before start creating the update USB, it is nessesary to check the update file.
It is important to use the correct file otherwise USB version up process will not working.

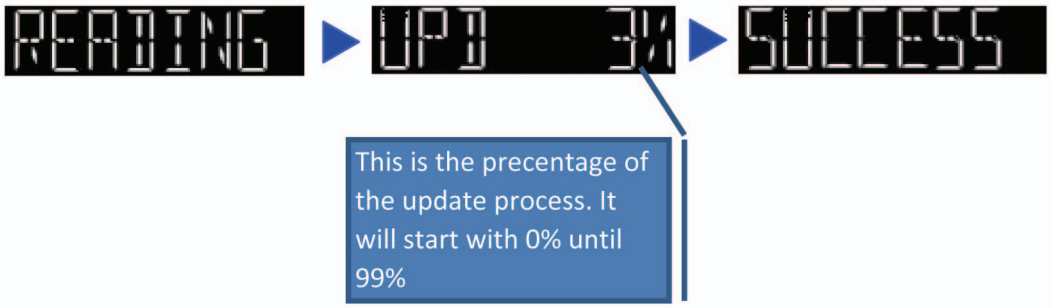
Note: Please do not rename the file as the updation process will look for above naming. If different name, version up process will not work.

To create USB update, copy the desired FRM file (depends on model) into USB.
Please make sure there is no other file inside the USB device.

Step 2: Software Update

<Caution>
► During the update process, do not disconnect the AC power supply cord.
► Do not press any buttons, except as instructed. Failure to do so may result in the set becoming unresponsive which will require repair.

Step:
► Set need to be turn ON in order to support USB update process.
► Go to USB selector until the display show "NODEVICE".
1. Insert USB device (With FRM file inside)
2. During the update process, the below message will shown on the display.



3. When "SUCCESS" display appear, unplug USB then ac out supply. Firmware updation process completed.

4 Specifications

■ Amplifier section

RMS output power stereo mode

Front Ch (both ch driven)	225 W per channel (4 Ω), 1 kHz, 30% THD (for AKX220) 325 W per channel (3 Ω), 1 kHz, 30% THD (for AKX440)
Total RMS stereo mode power	450 W (for AKX220) 650 W (for AKX440)

■ Tuner, terminals section

Preset memory	FM 30 stations AM 15 stations
Frequency modulation (FM)	
Frequency range	87.5 MHz to 108.0 MHz (100 kHz step) (for PN) 87.9 MHz to 107.9 MHz (220 kHz step) (for PN) 87.50 MHz to 108.00 MHz (50 kHz step) (for PS)
Antenna terminals	75 Ω (unbalanced)
Amplitude modulation (AM)	
Frequency range	520 kHz to 1710 kHz (10 kHz step) (for PN) 522 kHz to 1629 kHz (9 kHz step) (for PS) 520 kHz to 1630 kHz (10 kHz step) (for PS)
AUX 1	
Audio input	Pin jack (1 system)
AUX 2 (for AKX440)	
Sensitivity	100 mV, 4.7 k Ω

■ Disc section

Discs played (8 cm or 12 cm)	CD, CD-R/RW (CD-DA, MP3*)

* MPEG-1 Layer 3

Pick up	
Wavelength	790 nm (CD)

■ USB section

USB Port	
USB standard	USB 2.0 full speed
Media file format support	MP3 (*.mp3)
USB device file system	FAT12, FAT16, FAT32
USB recording	
Bit rate	128 kbps
USB recording speed	1x, 3x (CD only)
Recording file format	MP3 (*.mp3)

■ Internal memory section (for AKX440)

Memory	
Memory size	4 GB
Media file format support	MP3 (*.mp3)
Memory recording	
Bit rate	128 kbps
Memory recording speed	1x, 3x (CD only)
Recording file format	MP3 (*. Mp3)

■ Bluetooth® section

Version	Bluetooth® Ver.2.1 + EDR
Class	Class 2
Supported profiles	A2DP, AVRCP, SPP, FTP (for AKX220) A2DP, AVRCP, SPP, OPP, FTP (for AKX440)
Operating frequency	2.4 GHz band, FH-SS
Operating distance	10 m line of sight

■ General

Power supply	AC 120 V, 60 Hz (for PN) AC 220 to 240 V, 50/60 Hz (for PS)
Power consumption	53 W (for AKX220PN) 60 W (for AKX220PS) 86 W (for AKX440)
Dimensions (W x H x D)	348 mm x 193 mm x 251 mm
Mass	2.5 kg (for AKX220) 2.6 kg (for AKX440)
Operating temperature range	0 °C to +40 °C
Operating humidity range	35% to 80% RH (no condensation)
Power Consumption in standby mode (approximate)	0.3 W (for PN) 0.5 W (for PS)
Power Consumption in standby mode (approximate) (With "BLUETOOTH STANDBY" set to "ON")	0.4 W (for PN) 0.6 W (for PS)

Note:

1. Specifications are subject to change without notice. Mass and dimension are appropriate
2. Total harmonic distortion is measured by the digital spectrum analyzer.

■ System: SC-AKX220PN

Main Unit: SA-AKX220PN
Speakers: SB-AKX220PN

■ System: SC-AKX220PS

Main Unit: SA-AKX220PS
Speakers: SB-AKX220PN

■ System: SC-AKX440PN

Main Unit: SA-AKX440PN
Speakers: SB-AKX440PN

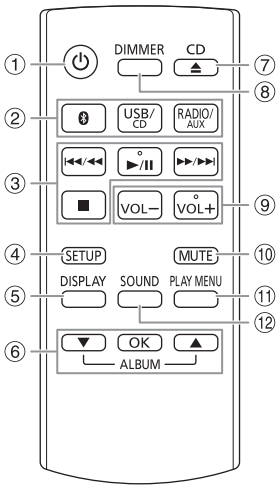
■ System: SC-AKX440PS

Main Unit: SA-AKX440PS
Speakers: SB-AKX440PN

5 Location of Controls and Components

5.1. Remote Control Key Button Operation

5.1.1. For SA-AKX220



① **Standby/on switch [⏻], [⏻/I]**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

② **Select the audio source**
On the main unit:
To start Bluetooth® pairing, press and hold [–PAIRING].

③ Basic playback control

④ View the setup menu

⑤ View the content information

⑥ Select or confirm the option

⑦ Open or close the disc tray

⑧ **Decrease the brightness of the display panel**
To cancel, press the button again.

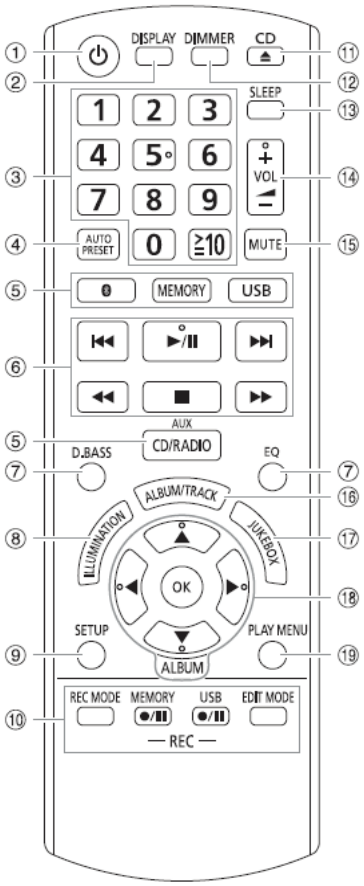
⑨ Adjust the volume level

⑩ **Mute the sound**
To cancel, press the button again.
"MUTE" is also canceled when you adjust the volume or when you switch off the system.

⑪ View the play menu

⑫ Select the sound effects

5.1.2. For SA-AKX440



① **Standby/on switch [⏻], [⏻/I]**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

② View the content information

③ **Numeric buttons**
To select a 2-digit number
Example: 16: [≧10]→[1]→[6]

④ Auto preset the radio station

⑤ **Select the audio source**
On the main unit:
To start Bluetooth® pairing, press and hold [–PAIRING].

⑥ Basic playback control

⑦ Select the sound effects

⑧ Select the illumination effects

⑨ View the setup menu

⑩ Recording operation control

⑪ Open or close the disc tray

⑫ **Decrease the brightness of the display panel**
To cancel, press the button again.

⑬ Set the sleep timer

⑭ Adjust the volume level

⑮ **Mute the sound**
To cancel, press the button again.
"MUTE" is also canceled when you adjust the volume or when you switch off the system.

⑯ Select MP3 album or track

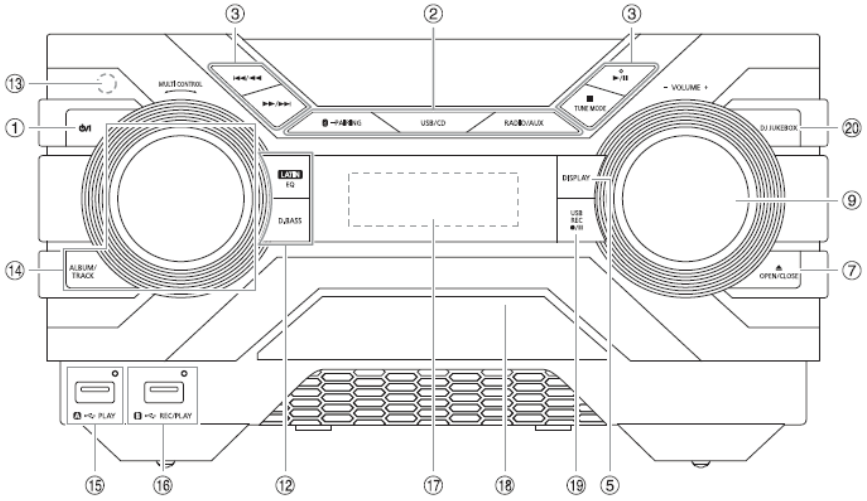
⑰ Select DJ jukebox

⑱ Select or confirm the option

⑲ View the play menu

5.2. Main Unit Key Button Operation

5.2.1. For SA-AKX220



① **Standby/on switch [⏻], [⏻/I]**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

② **Select the audio source**
On the main unit:
To start Bluetooth® pairing, press and hold [–PAIRING].

⑤ View the content information

⑦ Open or close the disc tray

⑨ Adjust the volume level

⑫ Select the sound effects

⑬ **Remote control sensor**
Distance: Within approximately 7 m
Angle: Approximately 20° up and down, 30° left and right

⑭ **Select MP3 album or track**
Press [ALBUM/TRACK] to select album or track.
Browse tracks or albums
Turn [MULTI CONTROL] to browse.
To start playback from the selection, press [▶/II].

⑮ **USB A**
USB port (•<)
USB status indicator
Play MP3 tracks.

⑯ **USB B**
USB port (•<)
USB status indicator
Play MP3 tracks.
Record sound or music tracks.

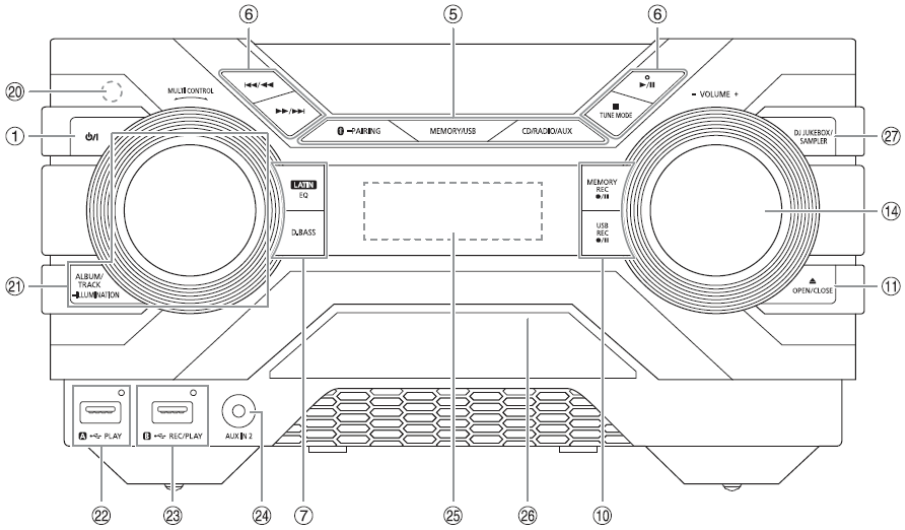
⑰ Display panel

⑱ Disc tray

⑲ Recording operation control

⑳ Select DJ jukebox

5.2.2. For SA-AKX440



① **Standby/on switch [⏻], [⏻/I]**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

⑤ **Select the audio source**
On the main unit:
To start Bluetooth® pairing, press and hold [–PAIRING].

⑥ Basic playback control

⑦ Select the sound effects

⑩ Recording operation control

⑪ Open or close the disc tray

⑭ Adjust the volume level

⑮ **Mute the sound**
To cancel, press the button again.
"MUTE" is also canceled when you adjust the volume or when you switch off the system.

⑯ Select MP3 album or track

⑰ Select DJ jukebox

⑱ Select or confirm the option

⑲ View the play menu

⑳ **Remote control sensor**
Distance: Within approximately 7 m
Angle: Approximately 20° up and down, 30° left and right

㉑ **Select MP3 album or track**
Press [ALBUM/TRACK] to select album or track.
Browse tracks or albums
Turn [MULTI CONTROL] to browse.
To start playback from the selection, press [▶/❚❚].
Select the illumination effects
Press and hold [–ILLUMINATION] and then turn [MULTI CONTROL] to select the setting.

㉒ **USB A**
USB port (•⇐)
USB status indicator
Play MP3 tracks.

㉓ **USB B**
USB port (•⇐)
USB status indicator
Play MP3 tracks.
Record sound or music tracks.

㉔ AUX IN 2 jack

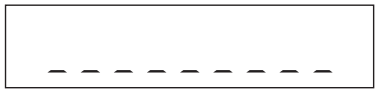
㉕ Display panel

㉖ Disc tray

㉗ Select the DJ functions

6 Service Mode

6.1. Cold-Start

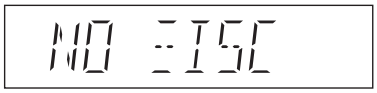
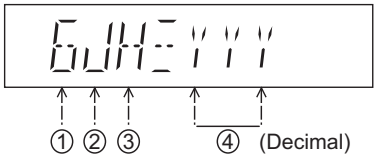
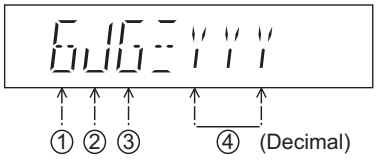
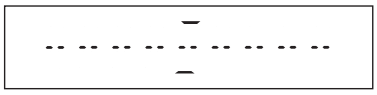
Item		FL Display	Key Operation
Mode Name	Description		Front Key
Cold Start	To carry out cold-start or initialize to shipping mode		1. Unplug AC power cord. 2. Press & hold [POWER] button. 3. Plug in AC power cord while [POWER] button being pressed. 4. Release [POWER] button.

6.2. Sales Demonstration Lock Function

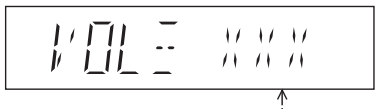
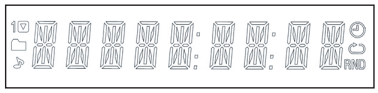
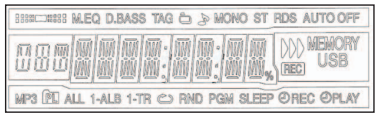
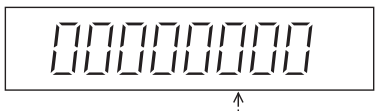
Item		FL Display	Key Operation
Mode Name	Description		Front Key
Entering into Sales Demonstration Lock Mode	To enter into the sales demonstration lock mode.		1. Turn on the unit. 2. Select to any mode function. (For AKX220) 3. Press and hold [▲OPEN/CLOSE] and [USB/CD] keys for 5 sec or more. (For AKX440) 3. Press and hold [▲OPEN/CLOSE] and [CD/RADIO/AUX] keys for 5 sec or more. The display will show upon entering into this mode for 2 sec. Note: [▲OPEN/CLOSE] button is invalid and the main unit displays "LOCKED" while the lock function mode is entered.
Cancellation of Sales Demonstration Lock Mode	To cancel the sales demonstration lock mode.		1. Turn on the unit. 2. Select to CD mode function. 3. Set volume to Vol 19. (For AKX220) 4. Press and hold [▲OPEN/CLOSE] and [USB/CD] keys for 5 sec or more. (For AKX440) 4. Press and hold [▲OPEN/CLOSE] and [CD/RADIO/AUX] keys for 5 sec or more. The display will show upon entering into this mode for 2 sec.

6.3. Doctor Mode Table

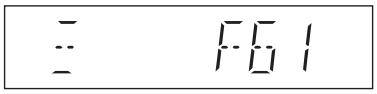
6.3.1. Doctor Mode Table 1

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Doctor Mode	To enter into Doctor Mode		In CD Mode: 1. Press [■] button on main unit follow by [4] and [7] on remote control. 2. To exit, press [SLEEP] button on remote control or, press [POWER, ⏻/I] button on Main Unit
EEPROM checksum check	Displaying of 1. Year Develop. 2. Model Type. 3. ROM Type. 4. Firmware Version.	(Display 1) (For AKX220)  ① ② ③ ④ (Decimal) (Display 1) (For AKX440)  ① ② ③ ④ (Decimal) Version No. (001 ~ 999) → specific for each firmware	In CD mode: 1. Enter into Doctor Mode
Cold Start	To active cold start upon next AC power up when reset start is execute the next time.		In Doctor Mode: 1. Press [4] button on the remote control.

6.3.2. Doctor Mode Table 2

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Volume Setting Check	To check the volume setting of the main unit.	 Press [7]: VOL50 Press [8]: VOL35 Press [9]: VOL0 └ Volume	In Doctor Mode: 1. Press [7], [8], [9] button on the remote control.
FL Display Check	To check the FL segment display. All segments will light up while all LED blink at 0.5s intervals.	(For AKX220)  (For AKX440) 	In Doctor mode: 1. Press [1] button on the remote control. 2. To cancel this mode, press [0] button on the remote control.
Traverse Test	To determine the traverse unit operation for inner & outer access track. In this mode, ensure the CD is in the main unit.	 The counter will increment by one. When reach 99999999 will change to 00000000 Cancellation Display 	In Doctor Mode: 1. Press [10]→[1]→[2] button on the remote control. 2. To cancel this mode, press [0] button on the remote control.
Reliability Test (Combination)	To determine the traverse unit operation & open/close operation of the mechanism. In this mode, ensure the CD is in the main unit.	 The counter will increment by one. When reach 99999999 will change to 00000000 Cancellation Display 	In Doctor Mode: 1. Press [10]→[1]→[5] button on the remote control. 2. To cancel this mode, press [0] button on the remote control.
Loading Test	To determine the open & close operation of the CD Mechanism Unit. In this mode, the tray will open & close automatically.	 The counter will increment by one. When reach 99999999 will change to 00000000 Cancellation Display 	In Doctor Mode: 1. Press [10]→[2]→[1] button on the remote control. 2. To cancel this mode, press [0] button on the remote control.

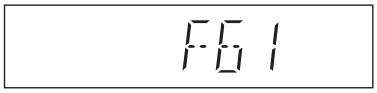
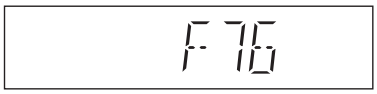
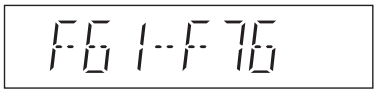
6.4. Self-Diagnostic Mode

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Self Diagnostic Mode	To enter into self diagnostic checking		Step 1: Select CD mode (Ensure no disc is inserted). Step 2: Press & hold [■] button follow by [▶▶/▶▶|] on main unit for 2 seconds.
Error Code Information	System will perform a check on any unusual/error code from the memory	Example: 	Step 1: In self diagnostic mode, Press [■] on main unit. To exit, press [⏻/I] on main unit or remote control.
Delete error code	To clear the stored in memory (EEPROM IC)		Step 1: In self diagnostic mode, Press [OK] on remote control for 5 seconds. To exit, press [⏻/I] on main unit or remote control.

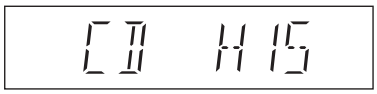
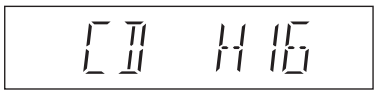
6.5. Self-Diagnostic Error Code Table

Self-Diagnostic Function provides information on any problems occurring for the unit and its respective components by displaying the error codes. These error code such as U**, H** and F** are stored in memory and held unless it is cleared.
The error code is automatically display after entering into self-diagnostic mode.

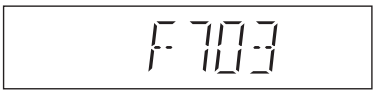
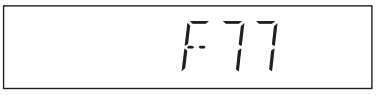
6.5.1. Power Supply Error Code Table

Item		FL Display	Key Operation	Solution (PCB exchange repair)
Mode Name	Description		Front Key	
Error Code F61	Diagnosis Contents: Power Amp IC output abnormal. Upon power on, PCONT=HIGH, DC_DET_AMP after checking LSI.		Press [■] on main unit for next error.	Check main (IC6000).
Error Code F76	Diagnosis Contents: Power Amp IC output abnormal. DC_DET_PWR.		Press [■] on main unit for next error.	Check SMPS module (Main IC1002 / IC1003).
Error Code F61-76	Diagnosis Contents: Power Amp IC output abnormal. Both DCDET (NG).		Press [■] on main unit for next error.	DAMP and power supply abnormal.

6.5.2. CD Mechanism Error Code Table

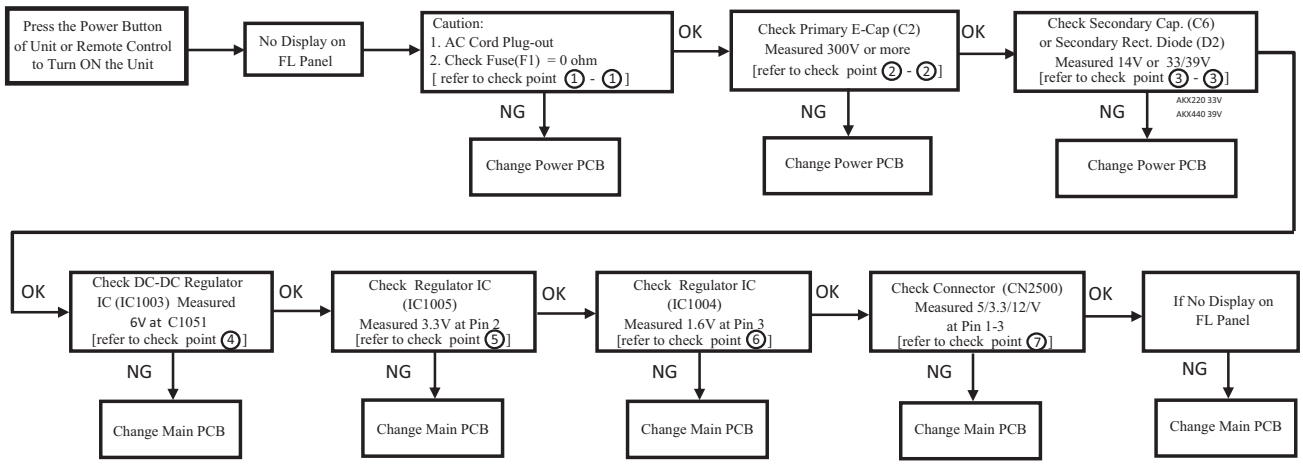
Item		FL Display	Key Operation	Solution (PCB exchange repair)
Mode Name	Description		Front Key	
Error Code CD H15	Diagnosis Contents: CD Open Abnormal. During operation POS_SW_R On fail to be detected within 4 sec. Error No. shall be clear by force or during cold start.		Press [■] on main unit for next error.	Check CD Interface P.C.B..
Error Code CD H16	Diagnosis Contents: CD Closing Abnormal. During operation POS_SW_CEN On fail to be detected within 4 sec. Error No. shall be clear by force		Press [■] on main unit for next error.	Check CD Interface P.C.B..

6.5.3. Bluetooth Error Code Table

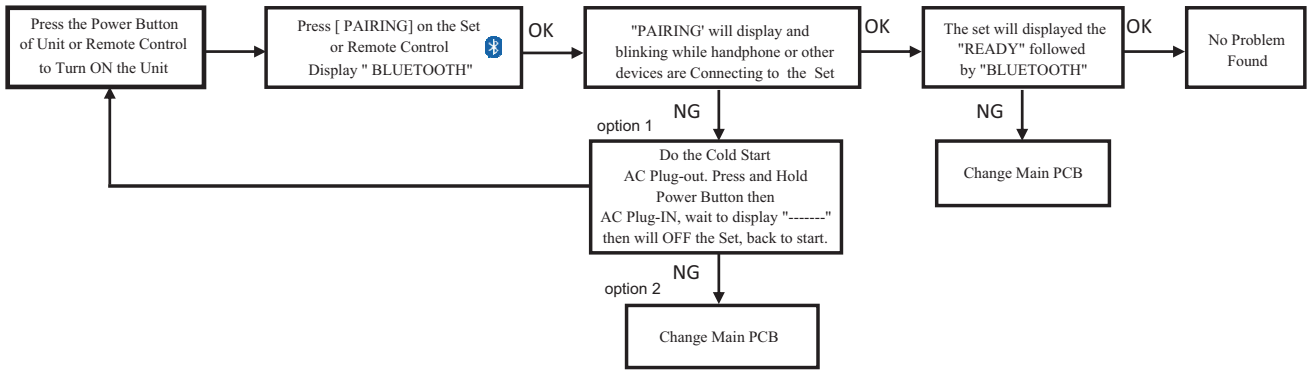
Item		FL Display	Key Operation	Solution (PCB exchange repair)
Mode Name	Description		Front Key	
Error Code F703	Diagnosis Contents: Bluetooth Communication. Communication between Bluetooth module and micro-p abnormal.		Press [■] on main unit for next error.	Check NFC/Bluetooth P.C.B..
Error Code F77	Diagnosis Contents: Bluetooth Address Error If there is no valid Bluetooth address stored in the EEPROM IC.		Press [■] on main unit for next error.	Check IC2002.

7 Troubleshooting Guide

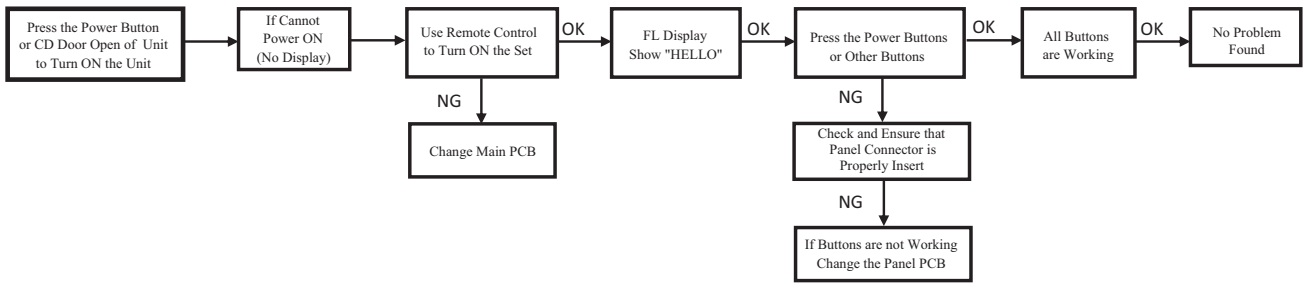
7.1. No Power or No Display



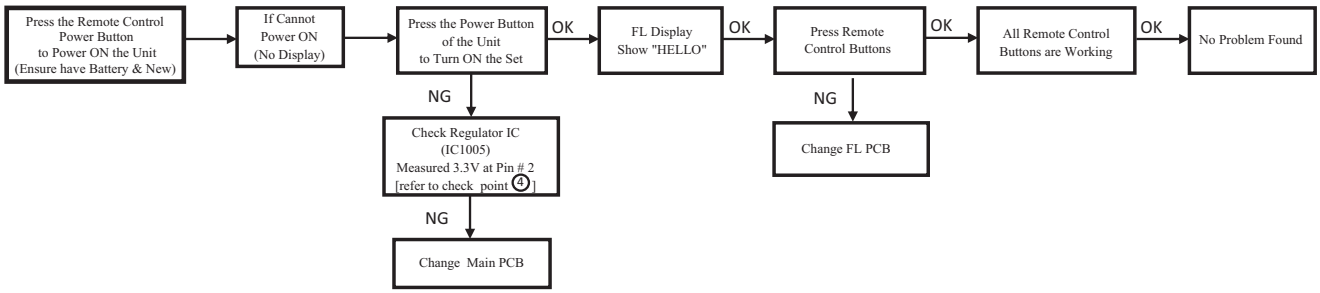
7.2. Bluetooth® Pairing Failure



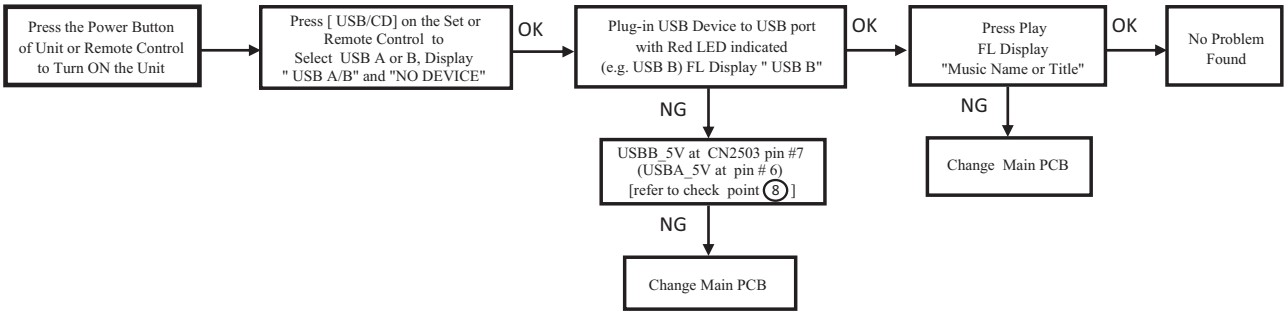
7.3. No Key Function



7.4. No Remote Control Function

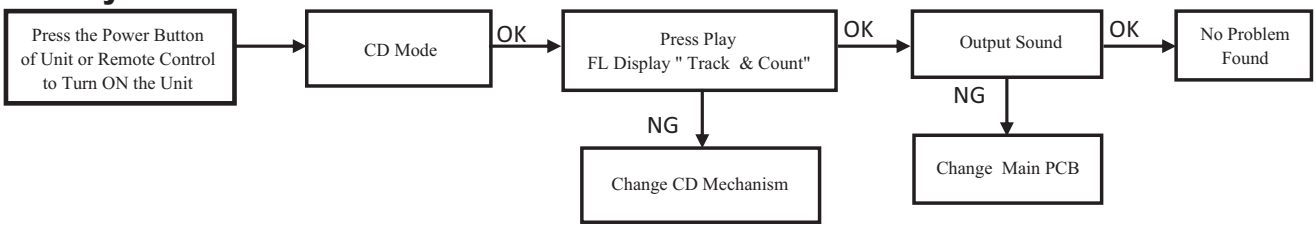


7.5. USB Device Cannot Detect

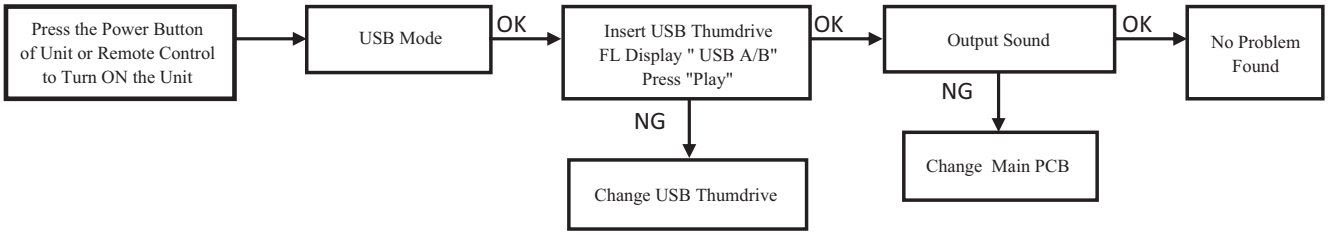


7.6. No Output Sound

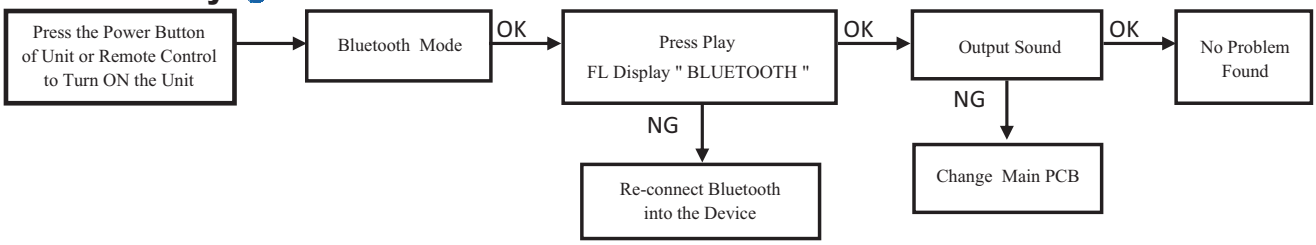
CD Play



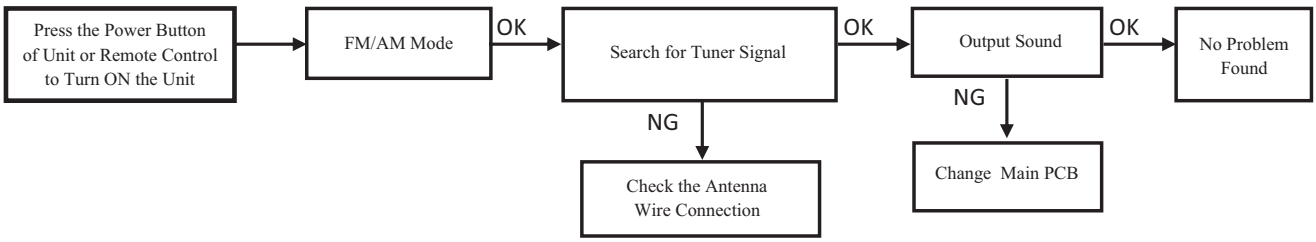
USB Play



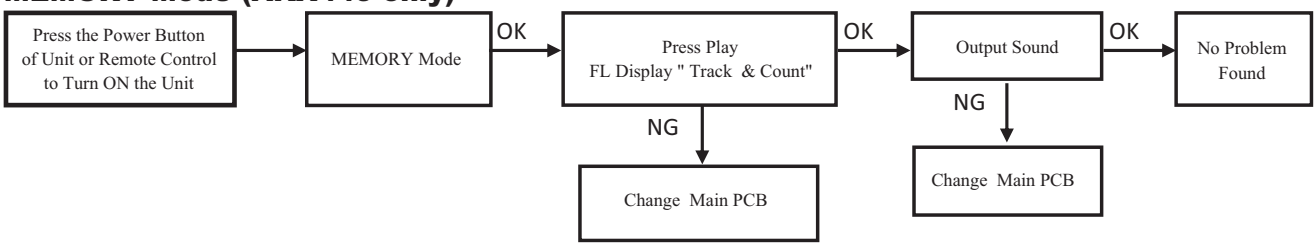
Bluetooth Play



Tuner Mode

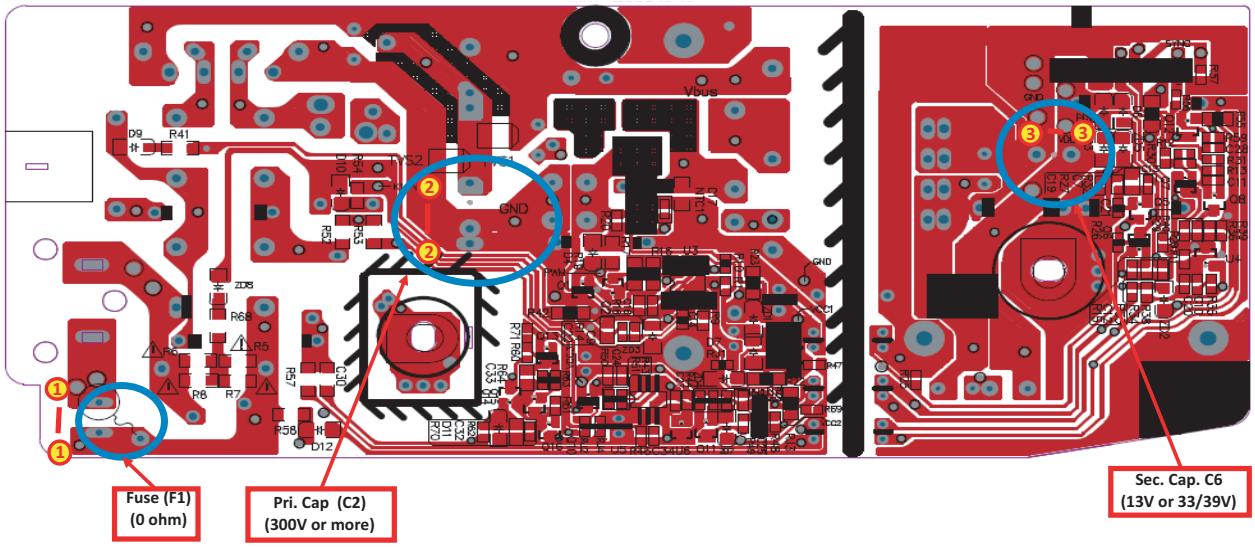


MEMORY Mode (AKX440 only)

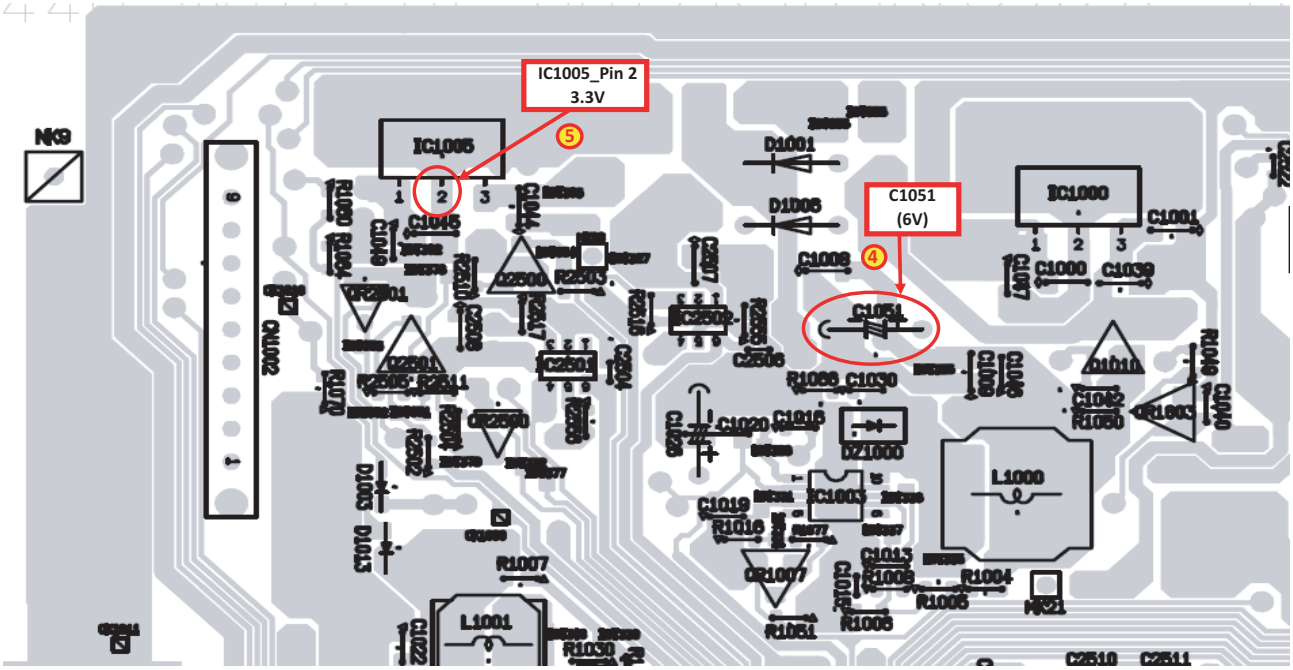


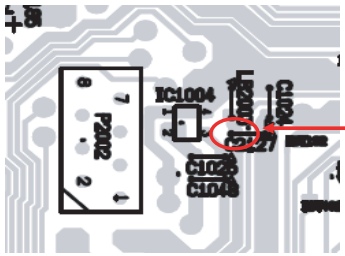
7.7. Check Point

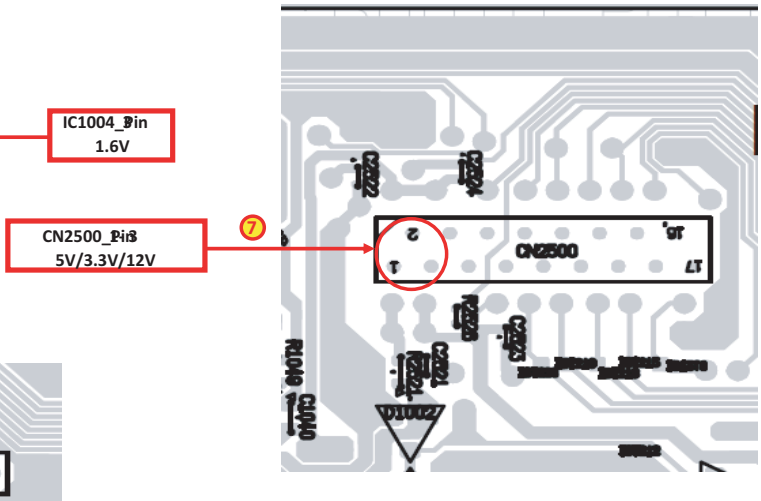
Power PCB

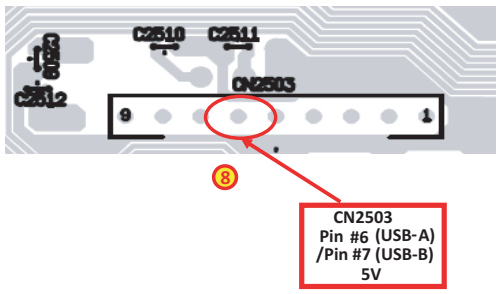


Main PCB


IC1005_Pin 2
3.3V
5
C1051
(6V)
4


6
IC1004_Pin
1.6V


CN2500_Pin3
5V/3.3V/12V
7


8
CN2503
Pin #6 (USB-A)
/Pin #7 (USB-B)
5V

8 Disassembly and Assembly Instructions

- **Illustration is based on SA-AKX440PN/PS.**

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.**
- **Avoid touching heatsinks due to its high temperature after prolong use. (See caution as described below)**

CAUTION: HOT!!
PLEASE DO NOT
TOUCH THE HEAT SINK

- **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 Top Cabinet
- Disassembly of Front Panel Unit
- Disassembly of Panel P.C.B.
- Disassembly of USB P.C.B.
- Disassembly of Music Port P.C.B. (For AKX440)
- Disassembly of LED P.C.B.
- Disassembly of Rear Panel
- Disassembly of Main P.C.B.
- Disassembly of SMPS Module
- Disassembly of CD Mechanism Unit
- Disassembly of CD Interface P.C.B.

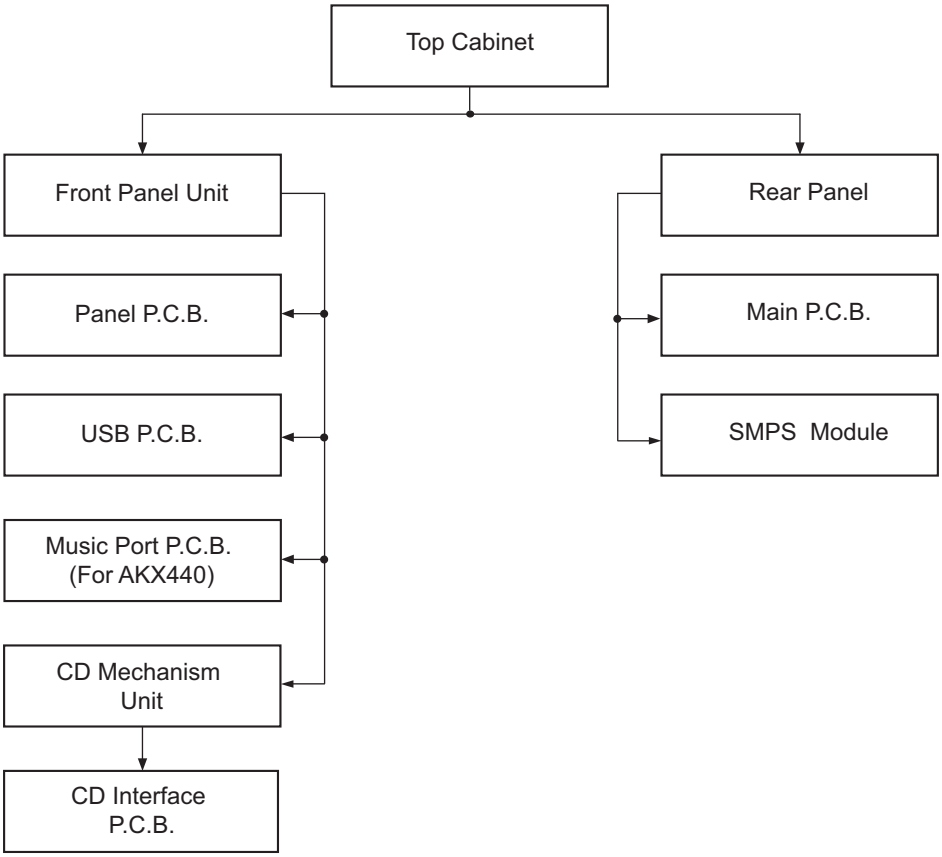
8.1. Types of Screws

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

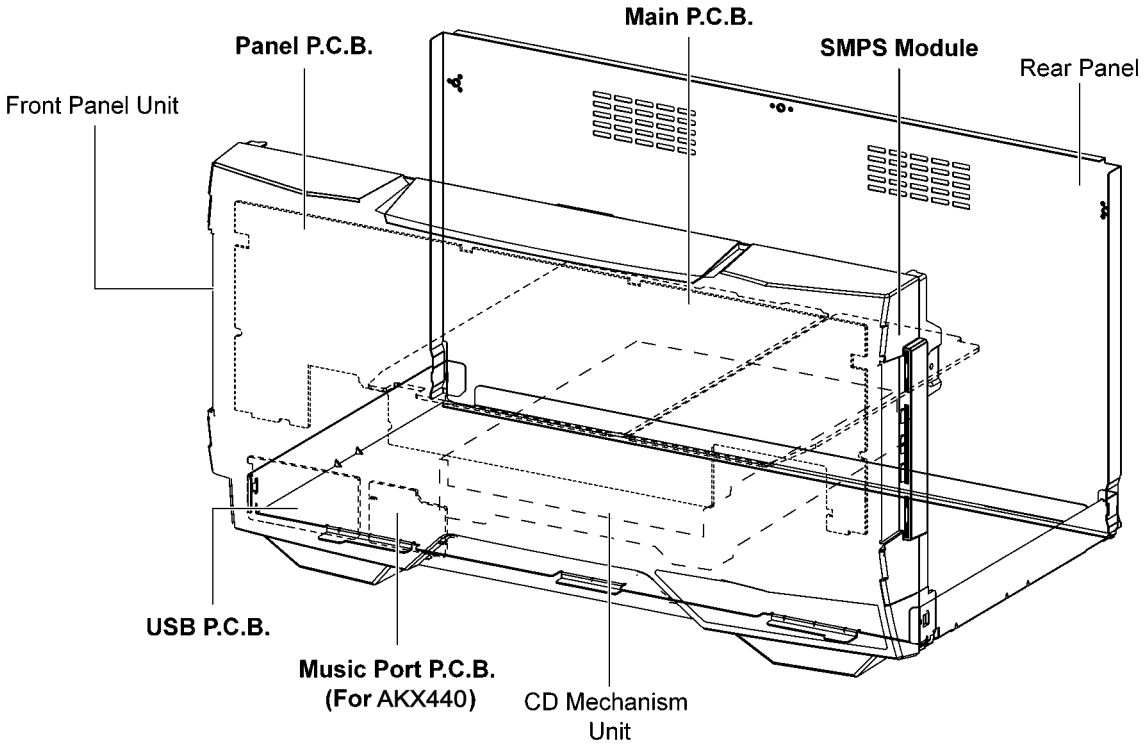
Below shown is part no. of different screw types used:

- ⓐ :RHD30007-K2J
- ⓑ :RHD30119-S
- ⓒ :RHD26046-L
- ⓓ :RHD30092-1
- ⓔ :RHD30111-31
- ⓕ :RHDX031008
- ⓖ :XTN2+6GFJ

8.2. Disassembly Flow Chart

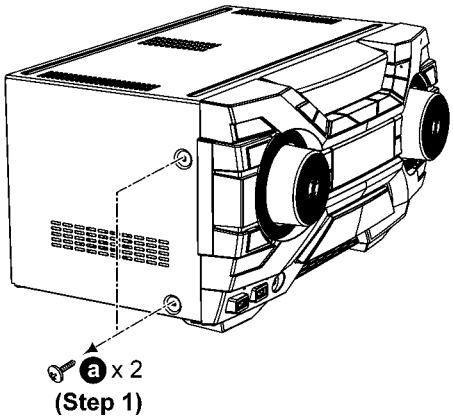


8.3. Main Components and P.C.B. Locations

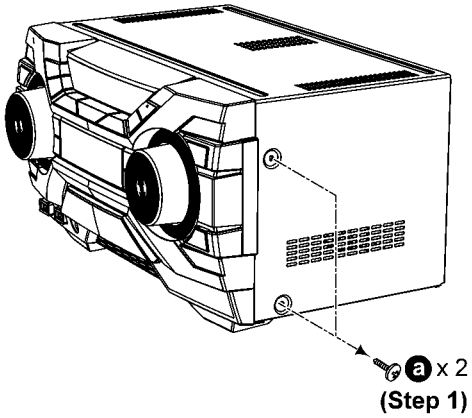


8.4. Disassembly of Top Cabinet

Step 1 Remove 2 screws.

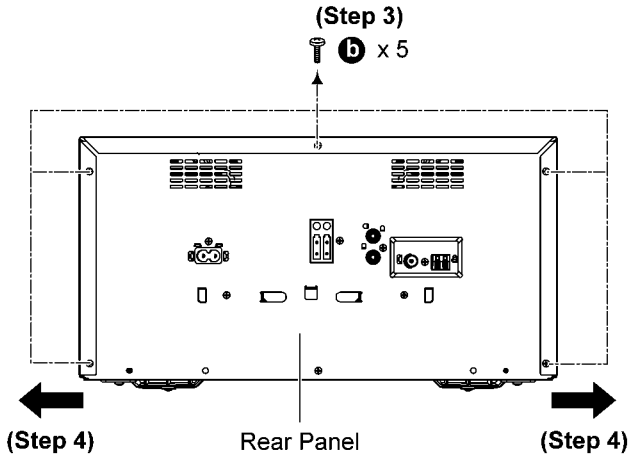


Step 2 Remove 2 screws.

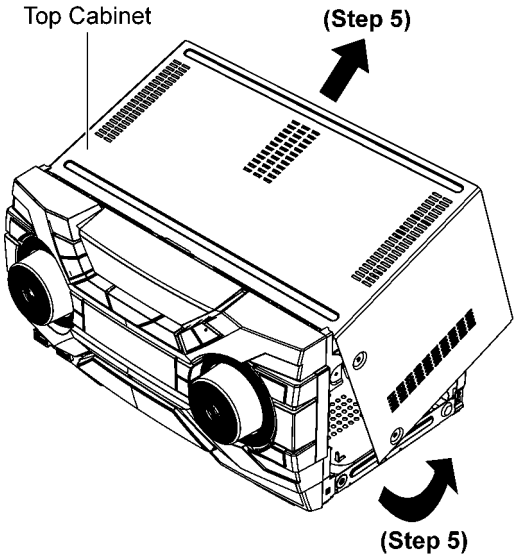


Step 3 Remove 5 screws.

Step 4 Slightly release both sides of Top Cabinet as arrow shown.



Step 5 Lift up to remove Top Cabinet.



8.5. Disassembly of Front Panel Unit

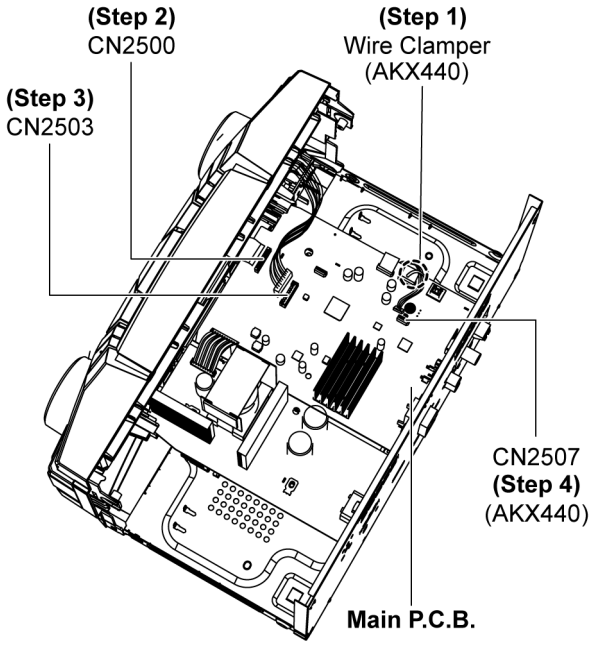
- **Refer to "Disassembly of Top Cabinet".**

Step 1 Lift up Wire Clamper. (For AKX440)

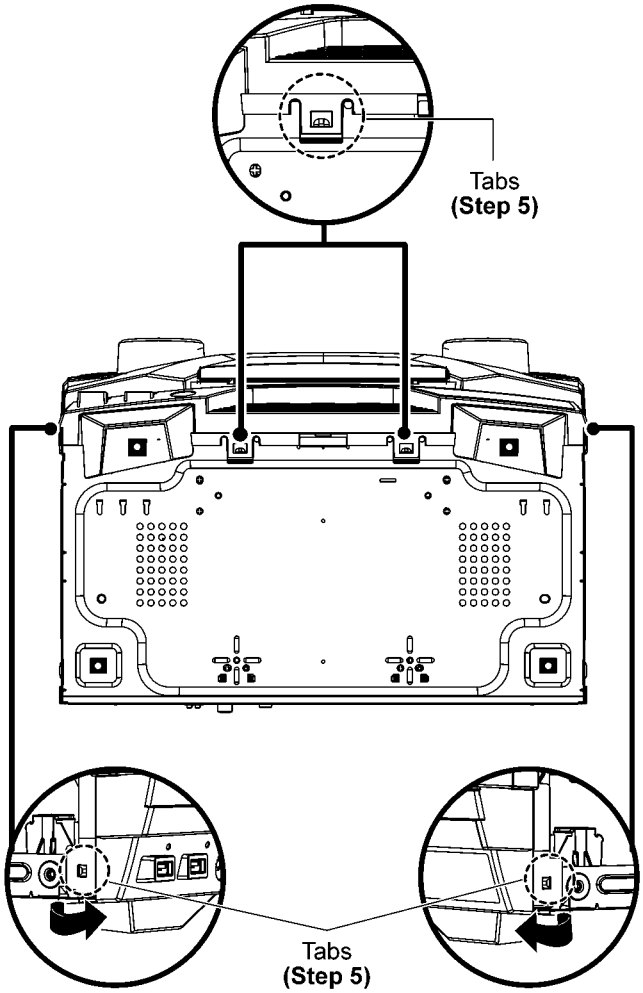
Step 2 Detach 17P FFC at connector (CN2500) on Main P.C.B..

Step 3 Detach 9P Wire at connector (CN2503) on Main P.C.B..

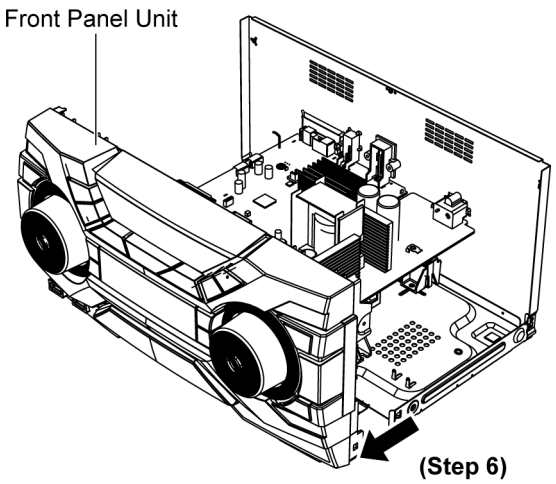
Step 4 Detach 4P Wire at connector (CN2507) on Main P.C.B.. (For AKX440)



Step 5 Release tabs at bottom of unit.



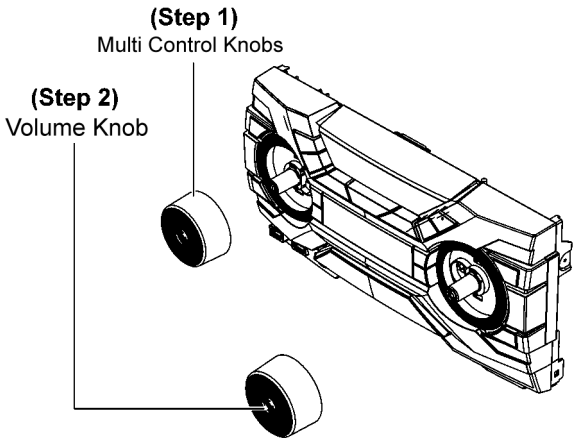
Step 6 Remove Front Panel Unit.



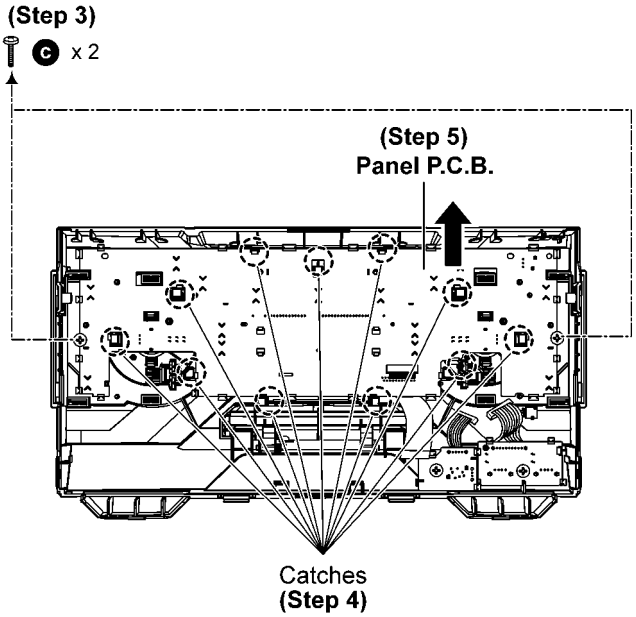
8.6. Disassembly of Panel P.C.B.

- **Refer to "Disassembly of Top Cabinet".**
- **Refer to "Disassembly of Front Panel Unit".**

Step 1 Remove Multi Control Knob.
Step 2 Remove Volume Knob.



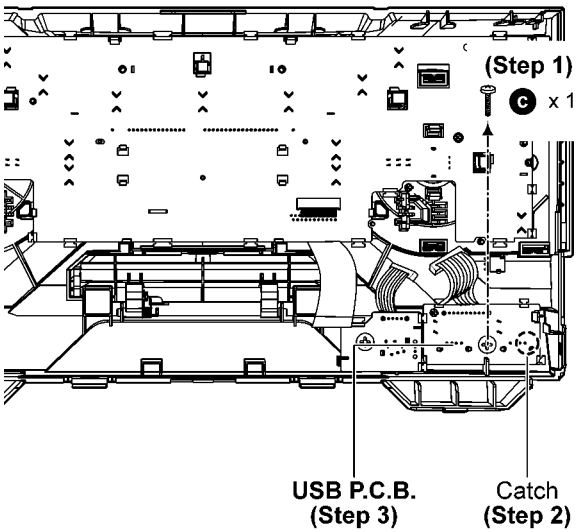
Step 3 Remove 2 screws.
Step 4 Release catches.
Step 5 Lift up to remove Panel P.C.B..



8.7. Disassembly of USB P.C.B.

- **Refer to "Disassembly of Top Cabinet".**
- **Refer to "Disassembly of Front Panel Unit".**

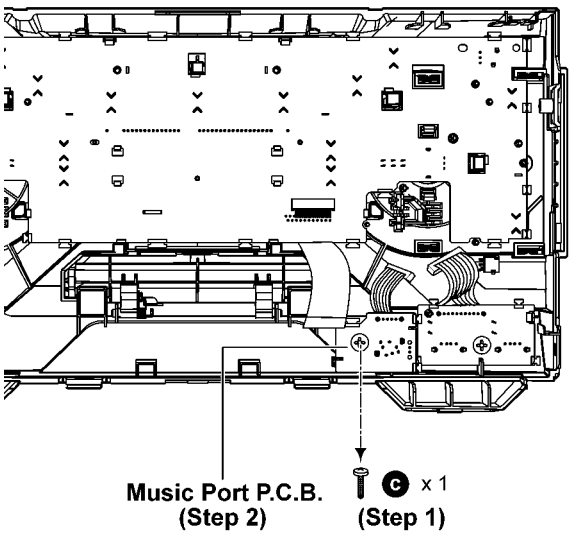
Step 1 Remove screw.
Step 2 Release catch.
Step 3 Remove USB P.C.B..



8.8. Disassembly of Music Port P.C.B. (For AKX440)

- **Refer to "Disassembly of Top Cabinet".**
- **Refer to "Disassembly of Front Panel Unit".**

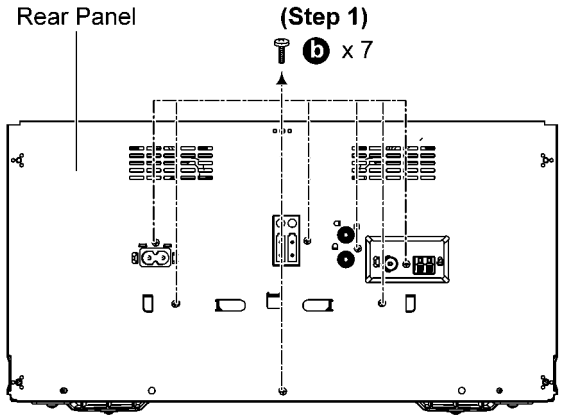
Step 1 Remove screw.
Step 2 Remove Music Port P.C.B..



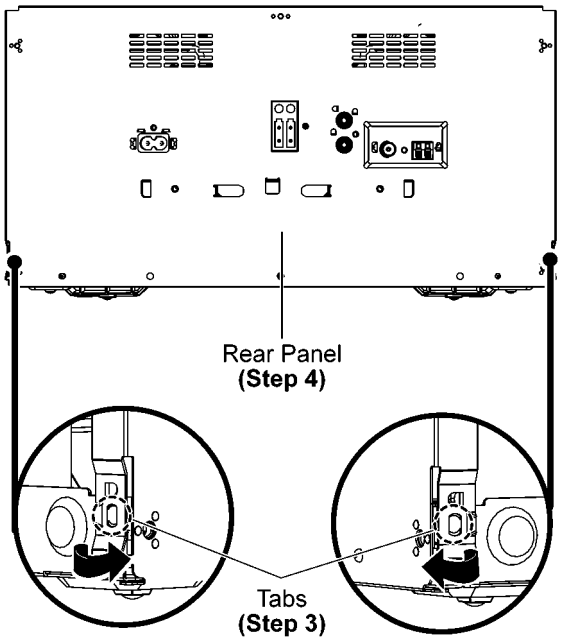
8.9. Disassembly of Rear Panel

- **Refer to "Disassembly of Top Cabinet".**

Step 1 Remove 7 screws.



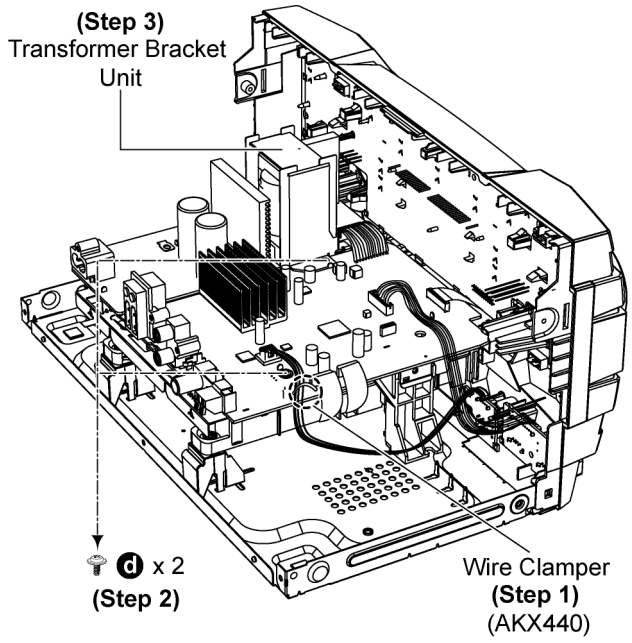
Step 2 Release tabs.
Step 3 Remove Rear Panel.



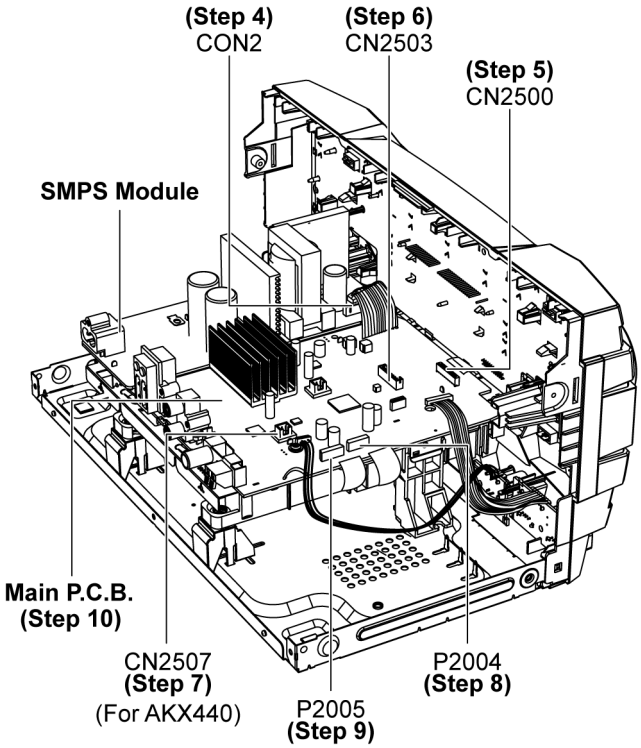
8.10. Disassembly of Main P.C.B.

- **Refer to “Disassembly of Top Cabinet”.**
- **Refer to “Disassembly of Rear Panel”.**

Step 1 Lift up Wire Clamper. (For AKX440)
Step 2 Remove 2 screws.
Step 3 Remove Transformer Bracket Unit.



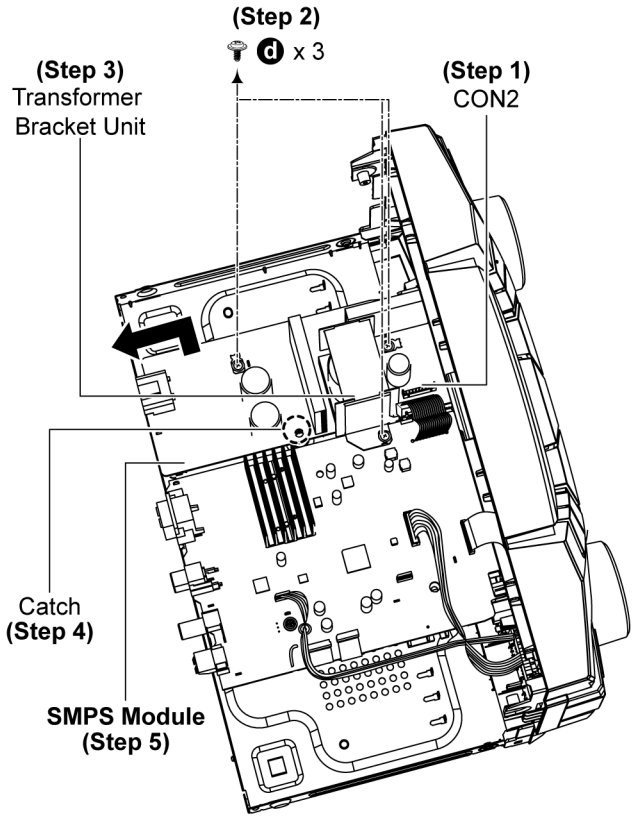
Step 4 Detach 9P Wire at connector (CON2) on SMPS Module.
Step 5 Detach 17P FFC at connector (CN2500) on Main P.C.B..
Step 6 Detach 9P Wire at connector (CN2503) on Main P.C.B..
Step 7 Detach 4P Wire at connector (CN2507) on Main P.C.B.. (For AKX440)
Step 8 Detach 10P FFC at connector (P2204) on Main P.C.B..
Step 9 Detach 24P FFC at connector (P2205) on Main P.C.B..
Step 10 Remove Main P.C.B..



8.11. Disassembly of SMPS Module

- **Refer to “Disassembly of Top Cabinet”.**
- **Refer to “Disassembly of Rear Panel”.**

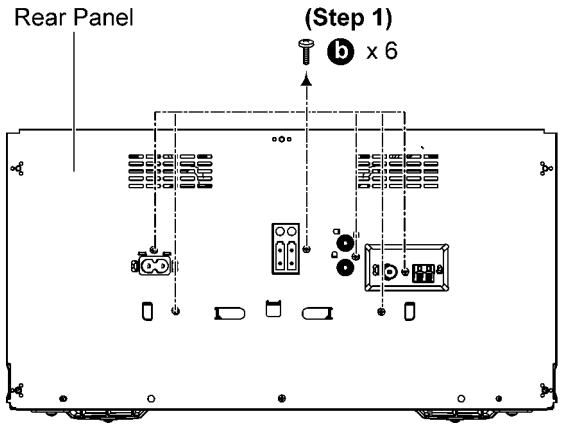
Step 1 Detach 9P Wire at connector (CON2) on SMPS Module.
Step 2 Remove 3 screws.
Step 3 Remove Transformer Bracket Unit.
Step 4 Release catch.
Step 5 Remove SMPS Module.



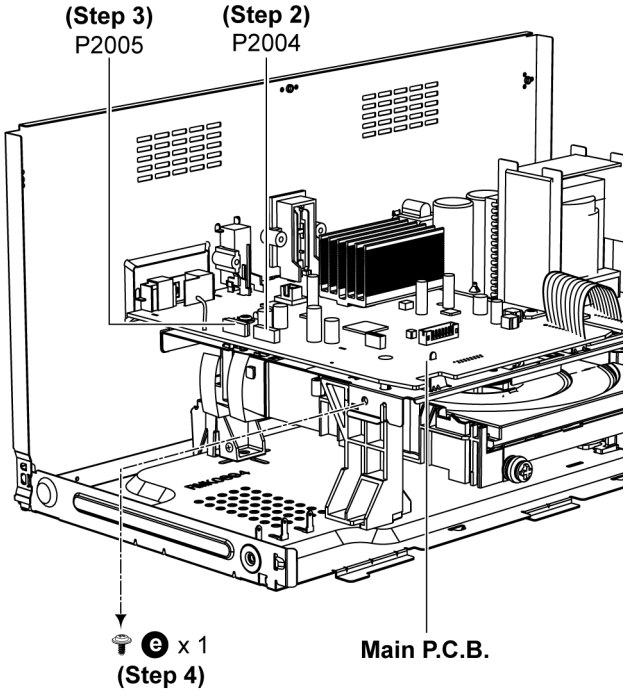
8.12. Disassembly of CD Mechanism Unit

- **Refer to “Disassembly of Top Cabinet”.**
- **Refer to “Disassembly of Front Panel Unit”.**

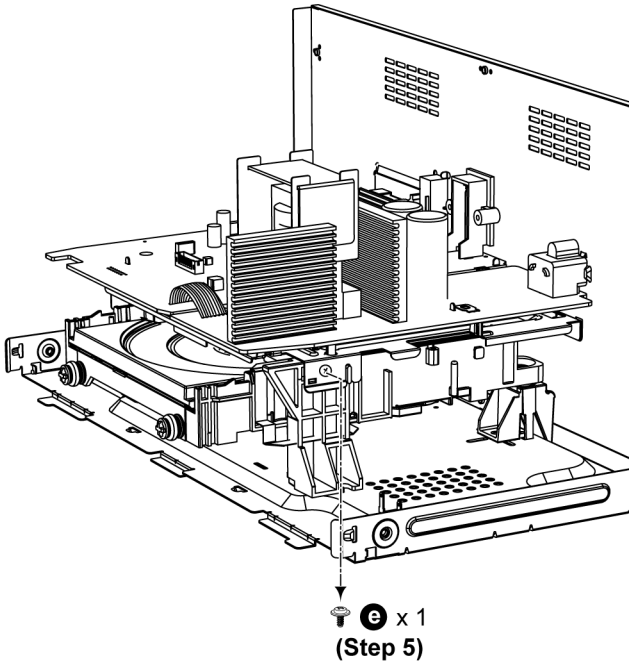
Step 1 Remove 6 screws.



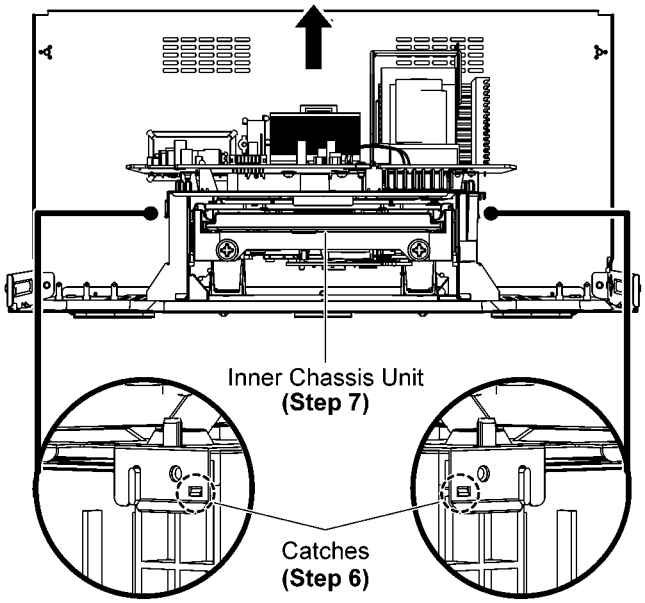
Step 2 Detach 10P FFC at connector (P2004) on Main P.C.B..
Step 3 Detach 24P FFC at connector (P2005) on Main P.C.B..
Step 4 Remove screw.



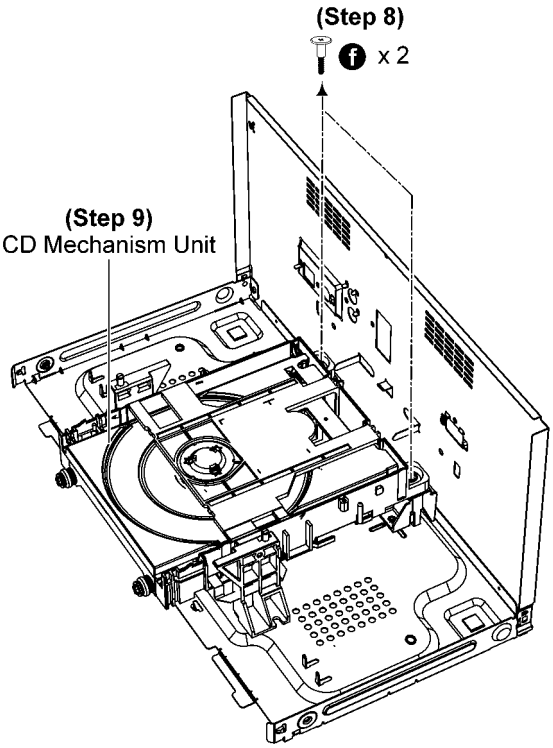
Step 5 Remove screw.



Step 6 Release catches.
Step 7 Lift up to remove Inner Chassis Unit.



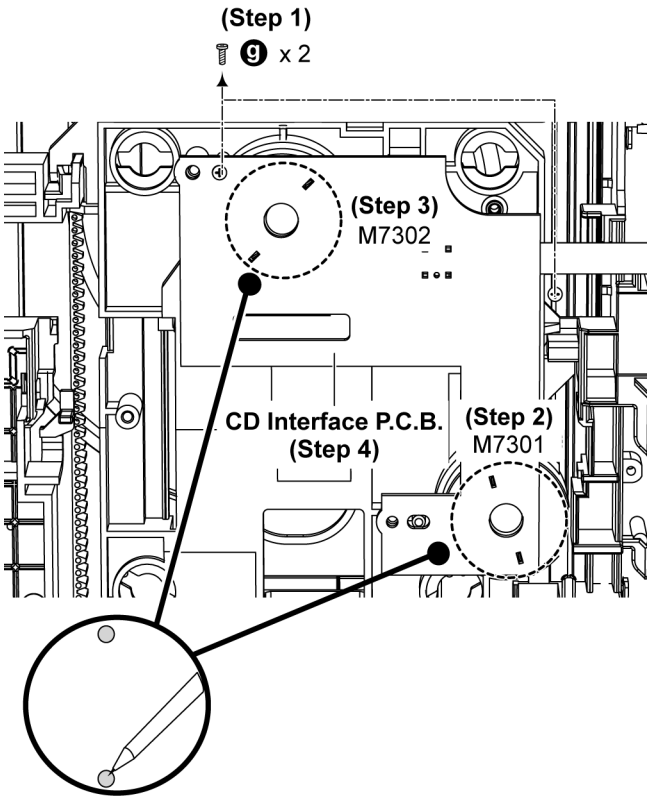
Step 8 Remove 2 screws.
Step 9 Remove CD Mechanism Unit.



8.13. Disassembly of CD Interface P.C.B.

- **Refer to “Disassembly of Top Cabinet”.**
- **Refer to “Disassembly of Front Panel Unit”.**
- **Refer to “Disassembly of CD Mechanism Unit”.**

Step 1 Remove 2 screws.
Step 2 Desolder pins of the motor (M7301).
Step 3 Desolder pins of the motor (M7302).
Step 4 Remove CD Interface P.C.B..

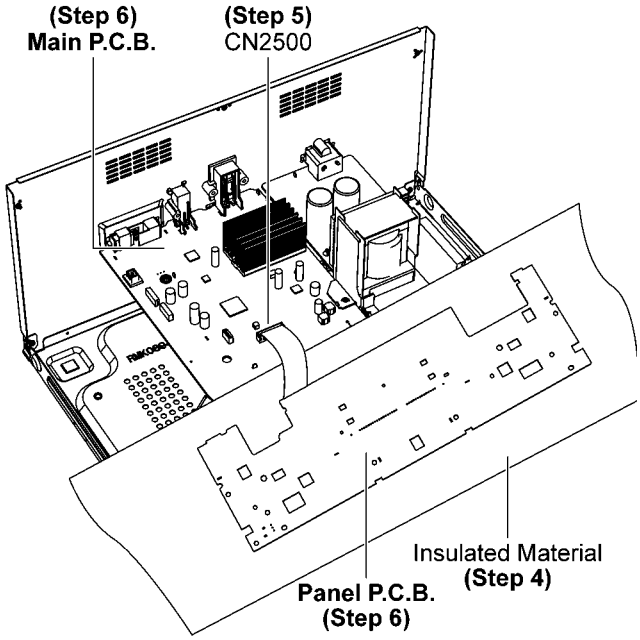


9 Service Position

Note: Refer to Section 8 for disassembly instruction for the related parts.

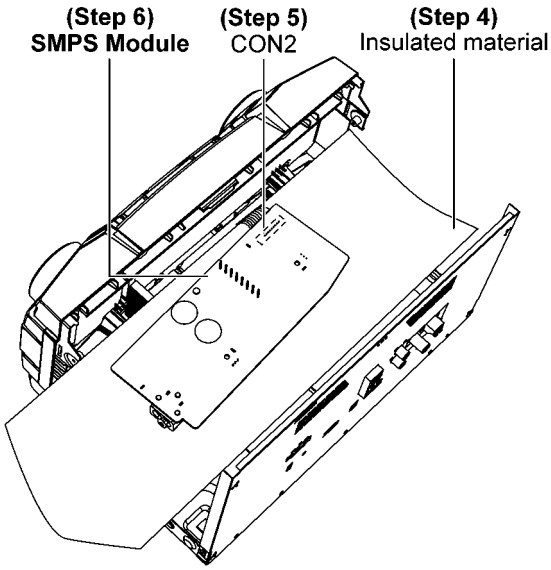
9.1. Checking of Panel P.C.B. and Main P.C.B.

Step 1 Remove Top Cabinet.
Step 2 Remove Front Panel Unit.
Step 3 Remove Panel P.C.B..
Step 4 Place Panel P.C.B. on the insulated material as shown.
Step 5 Attach 17P FFC at connector (CN2500) on Main P.C.B..
Step 6 Panel P.C.B. and Main P.C.B. can be checked as diagram shown.



9.2. Checking of SMPS Module

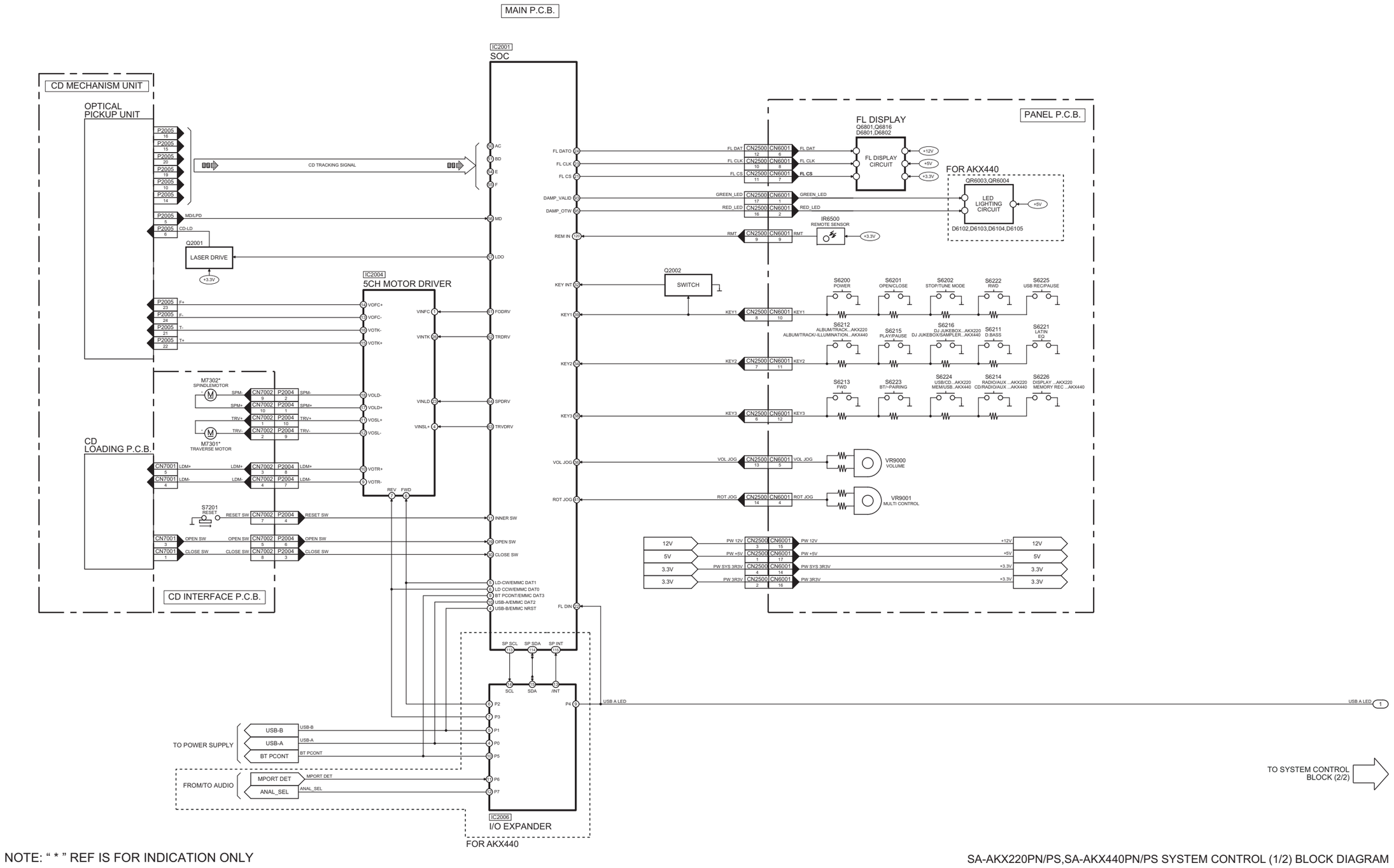
Step 1 Remove Top Cabinet.
Step 2 Remove Rear Panel.
Step 3 Remove SMPS Module.
Step 4 Place SMPS Module on the insulated material.
Step 5 Attach 9P Wire at connector (CON2) on SMPS Module.
Step 6 SMPS Module can be checked as diagram shown.



10 Block Diagram

10.1. System Control

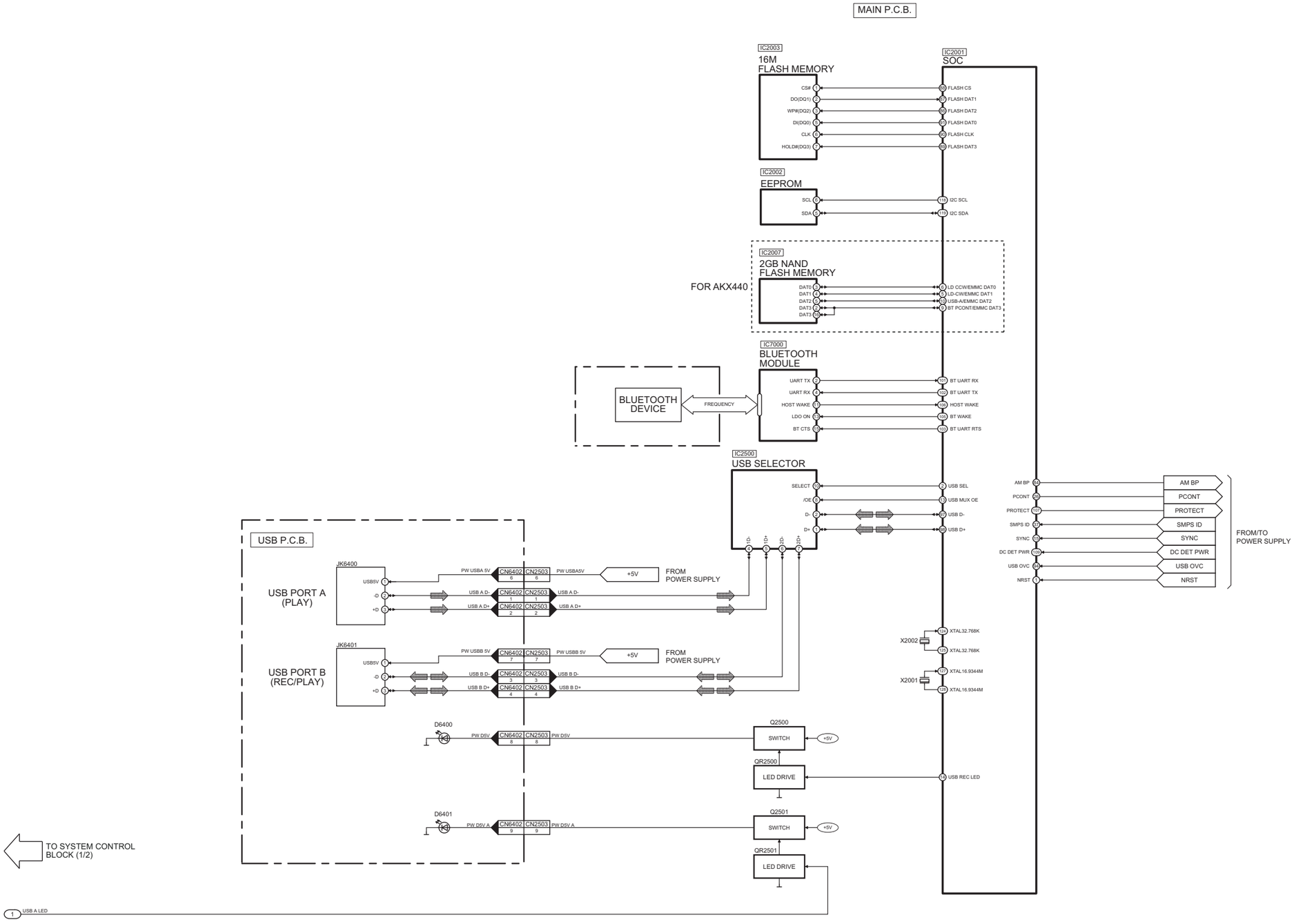
: CD SIGNAL LINE : USB SIGNAL LINE



NOTE: “ * ” REF IS FOR INDICATION ONLY

SA-AKX220PN/PS,SA-AKX440PN/PS SYSTEM CONTROL (1/2) BLOCK DIAGRAM

: CD SIGNAL LINE : USB SIGNAL LINE

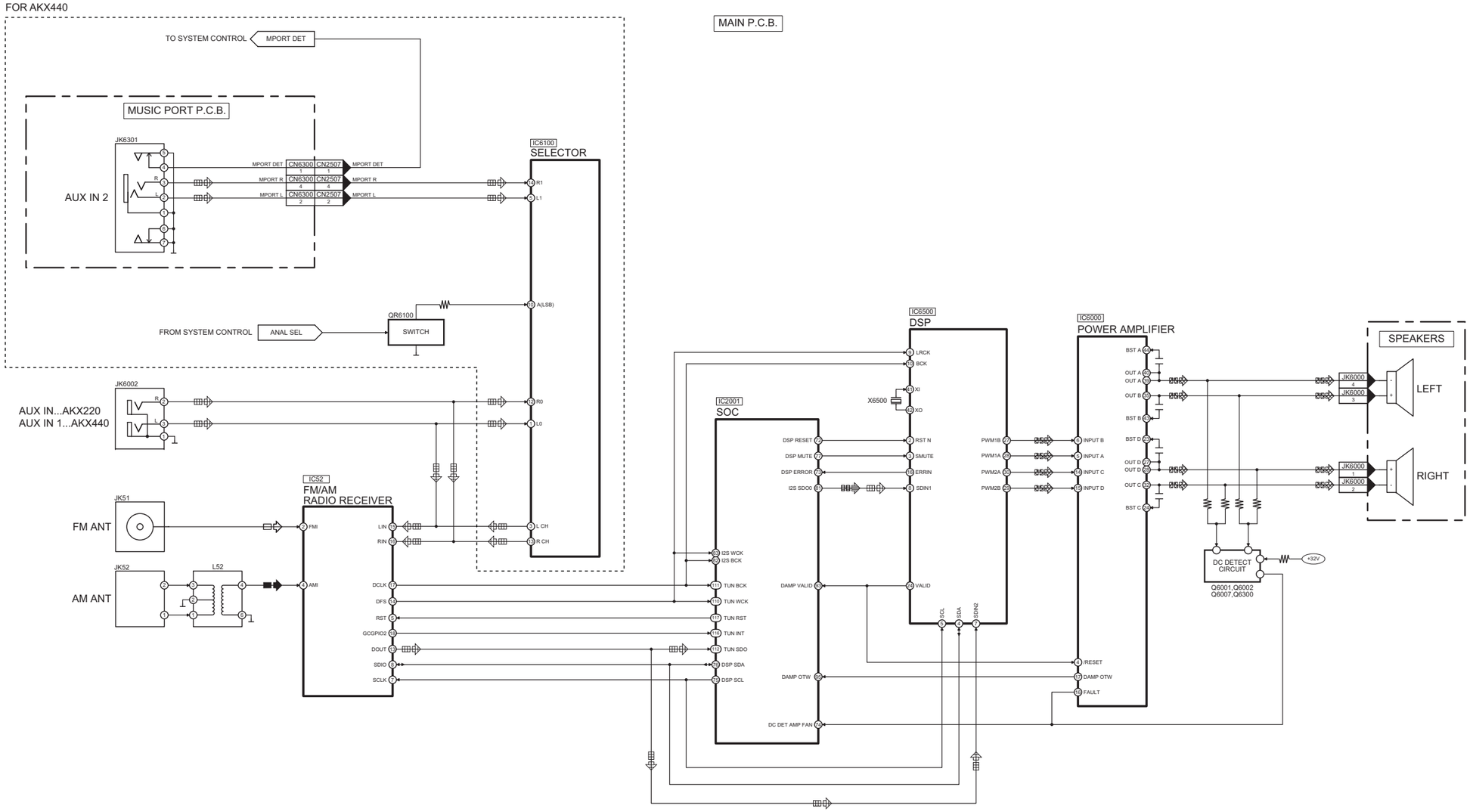


NOTE: “ * ” REF IS FOR INDICATION ONLY

SA-AKX220PN/PS,SA-AKX440PN/PS SYSTEM CONTROL (2/2) BLOCK DIAGRAM

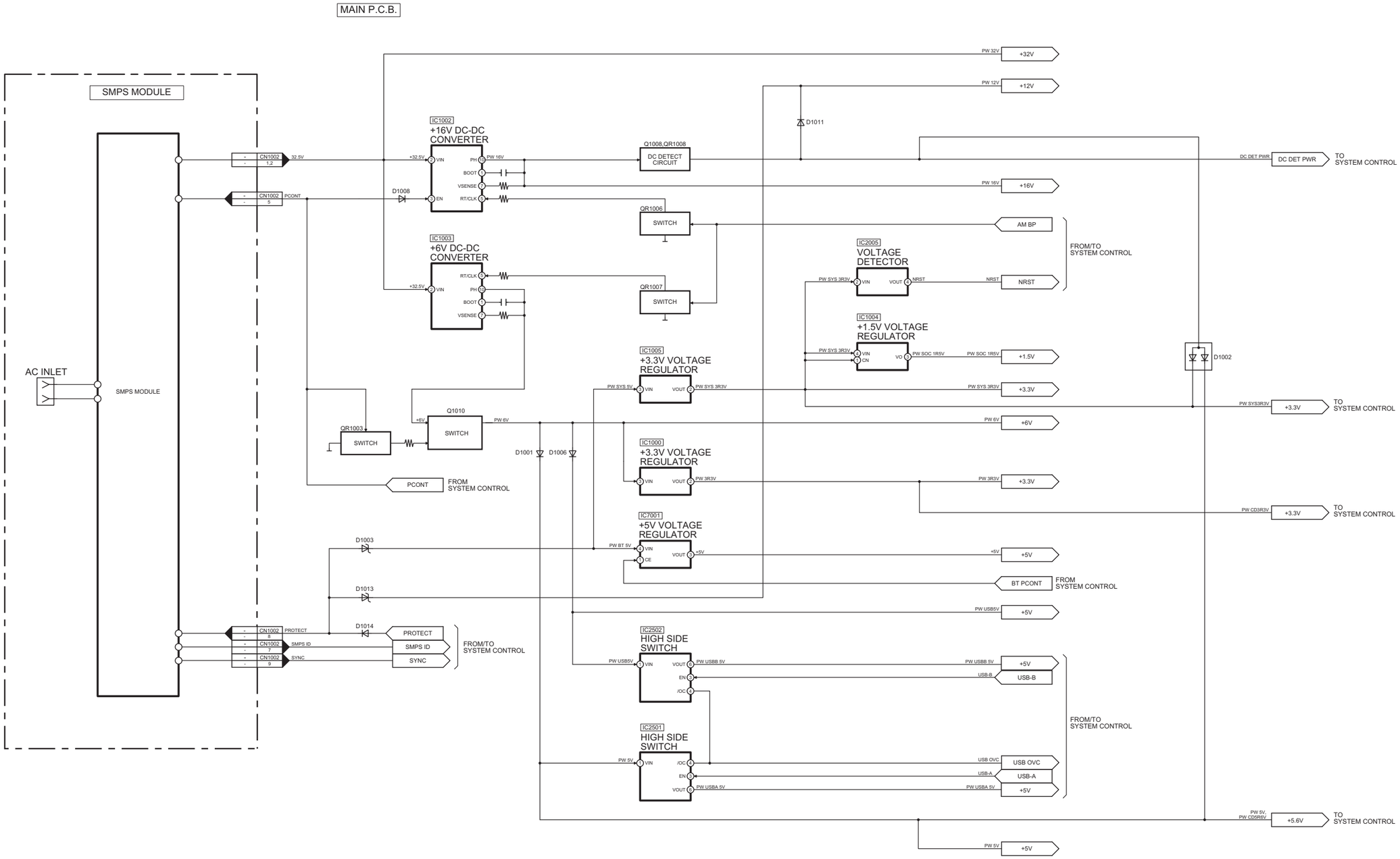
10.2. Audio

: CD SIGNAL LINE : TUNER/AUX SIGNAL LINE : AUDIO SIGNAL LINE : FM SIGNAL LINE : AM SIGNAL LINE



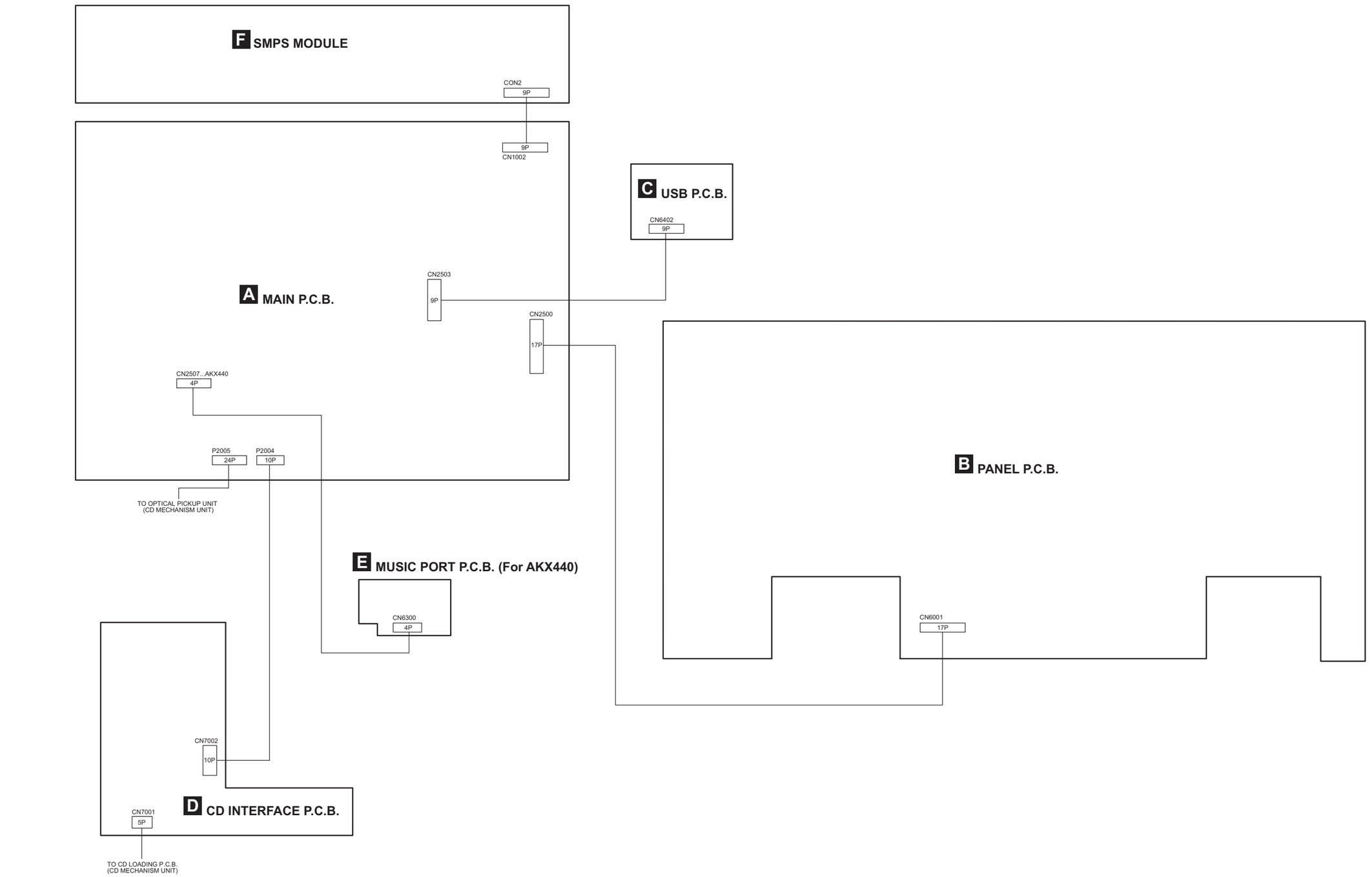
SA-AKX220PN/PS,SA-AKX440PN/PS AUDIO BLOCK DIAGRAM

10.3. Power Supply



SA-AKX220PN/PS,SA-AKX440PN/PS POWER SUPPLY BLOCK DIAGRAM

11 Wiring Connection Diagram



NOTE: " * " REF IS FOR INDICATION ONLY.

SA-AKX220PN/PS, SA-AKX440PN/PS WIRING CONNECTION DIAGRAM

12 Schematic Diagram

12.1. Schematic Diagram Notes

- **This schematic diagram may be modified at any time with the development of new technology.**

Notes:

S6200:	Power switch (⏻/|).
S6201:	Open/Close switch (⏏).
S6202:	Stop (■) switch. Stop Tunemode.
S6211:	D.Bass switch.
S6212:	Album/Track (AKX220). Album/Track switch/ -Illumination (AKX440).
S6213:	Forward (▶▶/▶▶|) switch.
S6214:	Radio/AUX switch (AKX220). CD/Radio/AUX switch (AKX440).
S6215:	Play/Pause (▶/▮▮) switch.
S6216:	DJ Jukebox (AKX220).
S6216:	DJ Jukebox/Sampler (AKX440).
S6221:	Latin/EQ switch.
S6222:	Rewind (|◀◀/◀◀) switch.
S6223:	Bluetooth/-Pairing switch.
S6224:	USB/CD switch (AKX220).
S6224:	Memory/USB switch (AKX440).
S6225:	USB Rec/Pause.
S6226:	Display switch (AKX220).
S6226:	Memory Rec switch (AKX440).
S7201:	Reset switch
VR9000:	Volume Jog.
VR9001:	Multi Control Jog.

- 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
  : -B signal line
  : CD signal line
  : Tuner/AUX signal line
  : Audio signal line
  : USB signal line
  : FM signal line
  : AM signal line

12.2. Main (Micon) Circuit (1/3)

SCHEMATIC DIAGRAM - 1

A MAIN (MICON) CIRCUIT

—— : +B SIGNAL LINE : CD SIGNAL LINE : TUNER/AUX SIGNAL LINE : USB SIGNAL LINE

TO MAIN (MICON) CIRCUIT (2/3)

IC2001
C1AB00004188
SOC

IC2005
C0EBY0000664
VOLTAGE DETECTOR

Q2002
B1ABCF000176
SWITCH

FOR AKX440

US: MAIN (USB): SCHEMATIC DIAGRAM - 4
TU: MAIN (TUNER AUX): SCHEMATIC DIAGRAM - 5
DS: MAIN (DSP BLUETOOTH): SCHEMATIC DIAGRAM - 6
DA: MAIN (DAMP): SCHEMATIC DIAGRAM - 7
VR: MAIN (VOLTAGE REGULATOR): SCHEMATIC DIAGRAM - 8

1/3 | 2/3 | 3/3

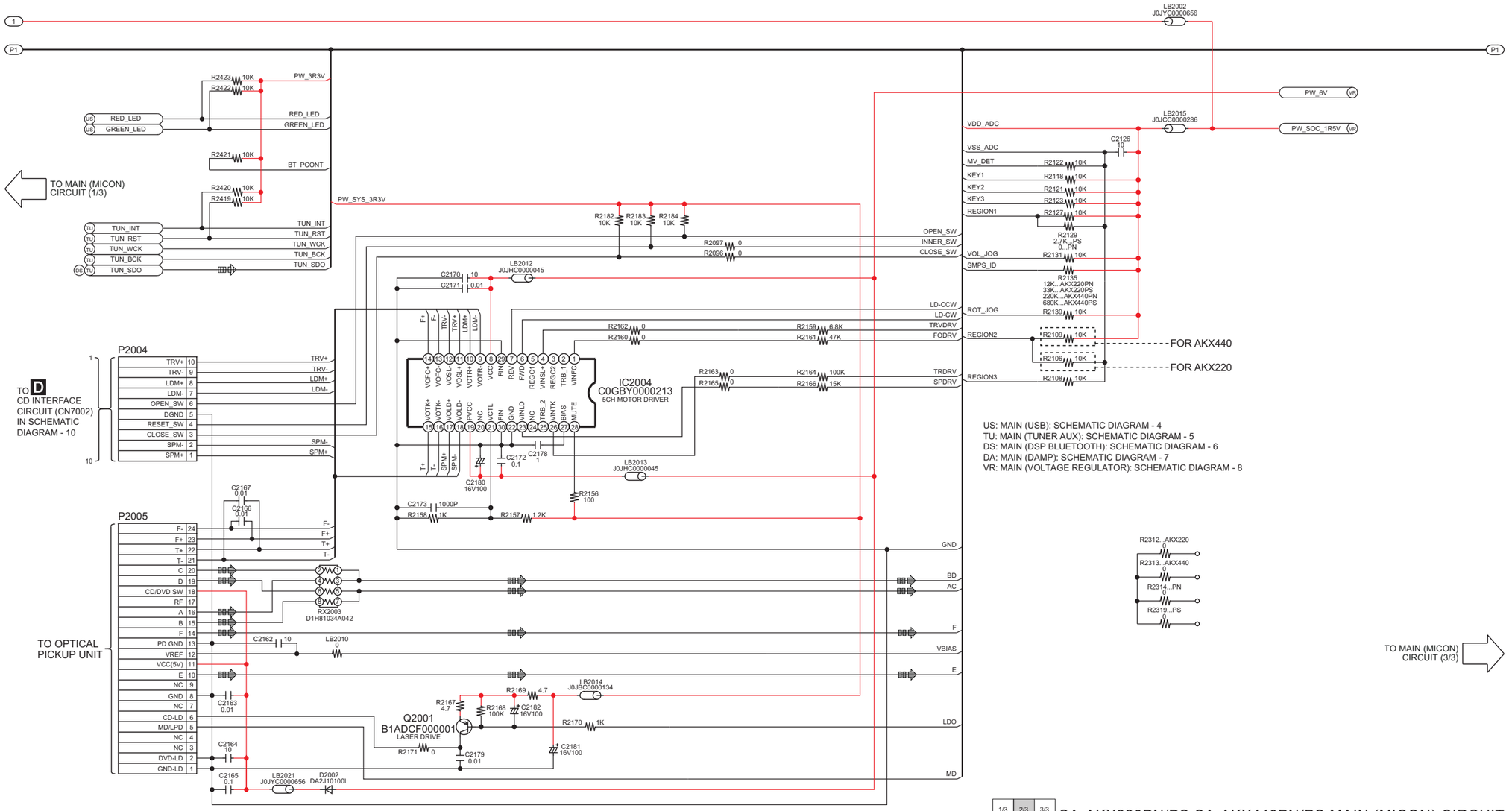
SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (MICON) CIRCUIT

12.3. Main (Micon) Circuit (2/3)

SCHEMATIC DIAGRAM - 2

A MAIN (MICON) CIRCUIT

—— : +B SIGNAL LINE : CD SIGNAL LINE : TUNER/AUX SIGNAL LINE : USB SIGNAL LINE



US: MAIN (USB): SCHEMATIC DIAGRAM - 4
TU: MAIN (TUNER AUX): SCHEMATIC DIAGRAM - 5
DS: MAIN (DSP BLUETOOTH): SCHEMATIC DIAGRAM - 6
DA: MAIN (DAMP): SCHEMATIC DIAGRAM - 7
VR: MAIN (VOLTAGE REGULATOR): SCHEMATIC DIAGRAM - 8

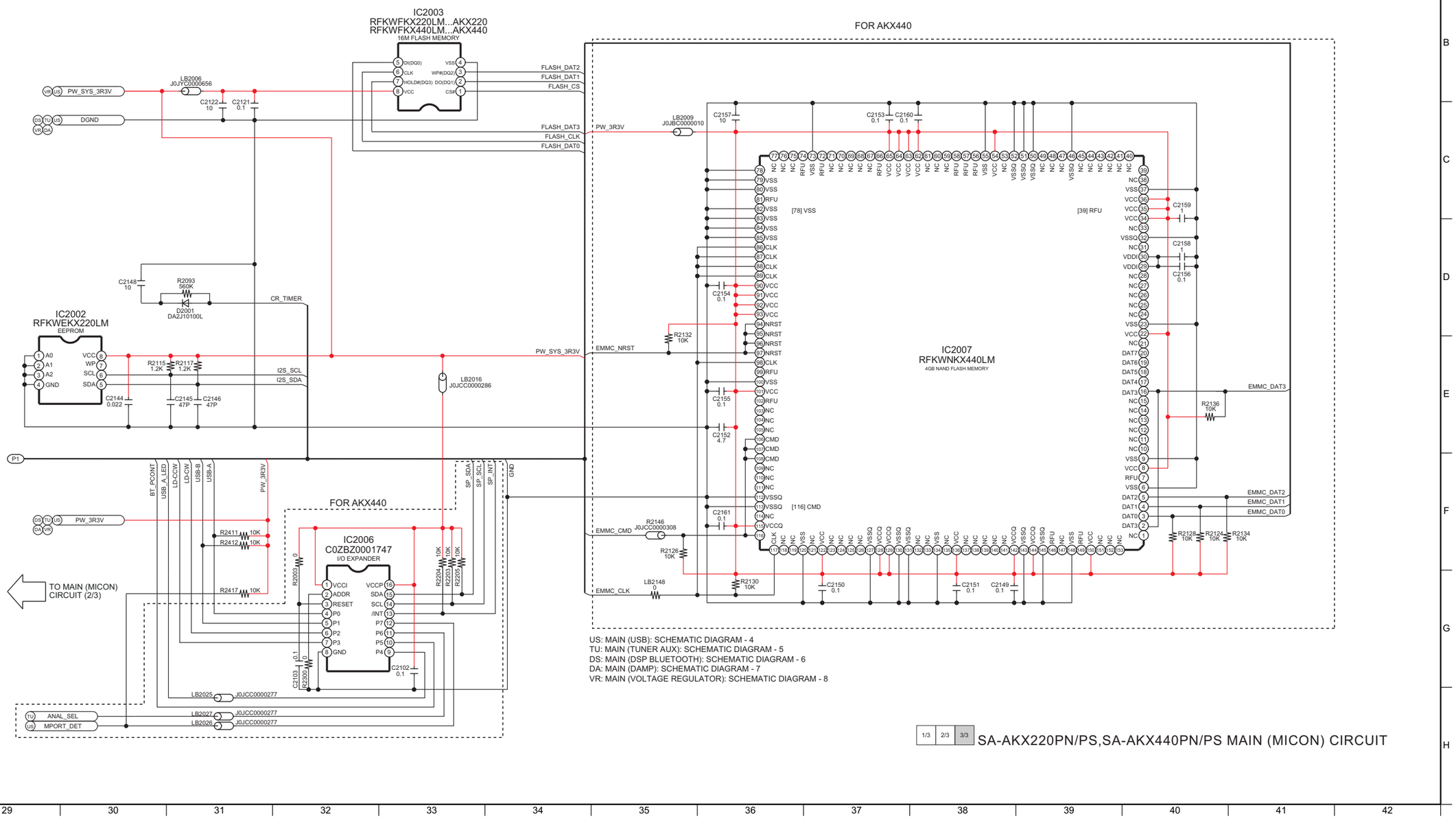
1/3 | 2/3 | 3/3 SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (MICON) CIRCUIT

12.4. Main (Micon) Circuit (3/3)

SCHEMATIC DIAGRAM - 3

A MAIN (MICON) CIRCUIT

—— : +B SIGNAL LINE : CD SIGNAL LINE : TUNER/AUX SIGNAL LINE : USB SIGNAL LINE



US: MAIN (USB): SCHEMATIC DIAGRAM - 4
TU: MAIN (TUNER AUX): SCHEMATIC DIAGRAM - 5
DS: MAIN (DSP BLUETOOTH): SCHEMATIC DIAGRAM - 6
DA: MAIN (DAMP): SCHEMATIC DIAGRAM - 7
VR: MAIN (VOLTAGE REGULATOR): SCHEMATIC DIAGRAM - 8

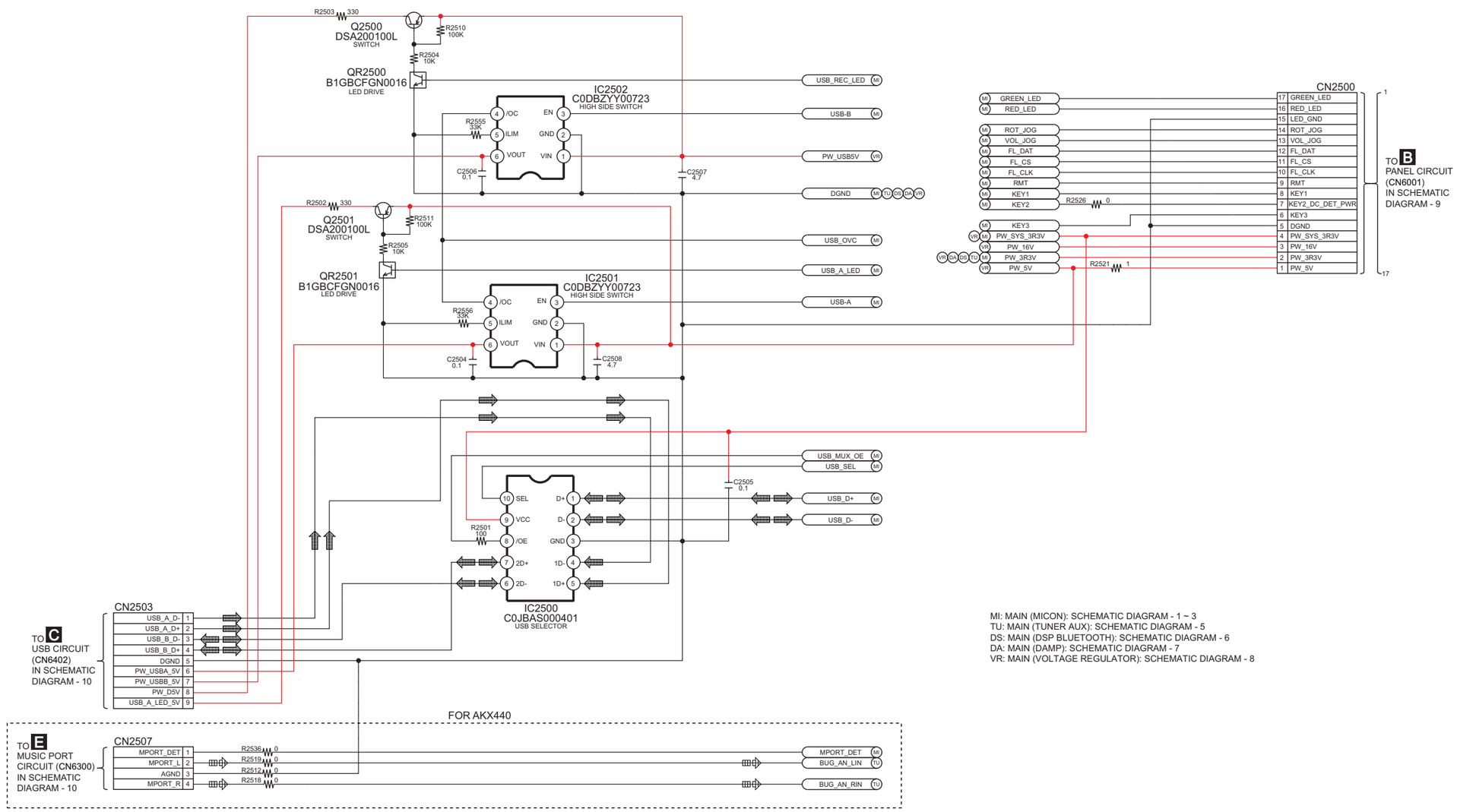
1/3 | 2/3 | 3/3 SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (MICON) CIRCUIT

12.5. Main (USB) Circuit

SCHEMATIC DIAGRAM - 4

A MAIN (USB) CIRCUIT

—— : +B SIGNAL LINE : AUX SIGNAL LINE : USB SIGNAL LINE



MI: MAIN (MICON): SCHEMATIC DIAGRAM - 1 ~ 3
TU: MAIN (TUNER AUX): SCHEMATIC DIAGRAM - 5
DS: MAIN (DSP BLUETOOTH): SCHEMATIC DIAGRAM - 6
DA: MAIN (DAMP): SCHEMATIC DIAGRAM - 7
VR: MAIN (VOLTAGE REGULATOR): SCHEMATIC DIAGRAM - 8

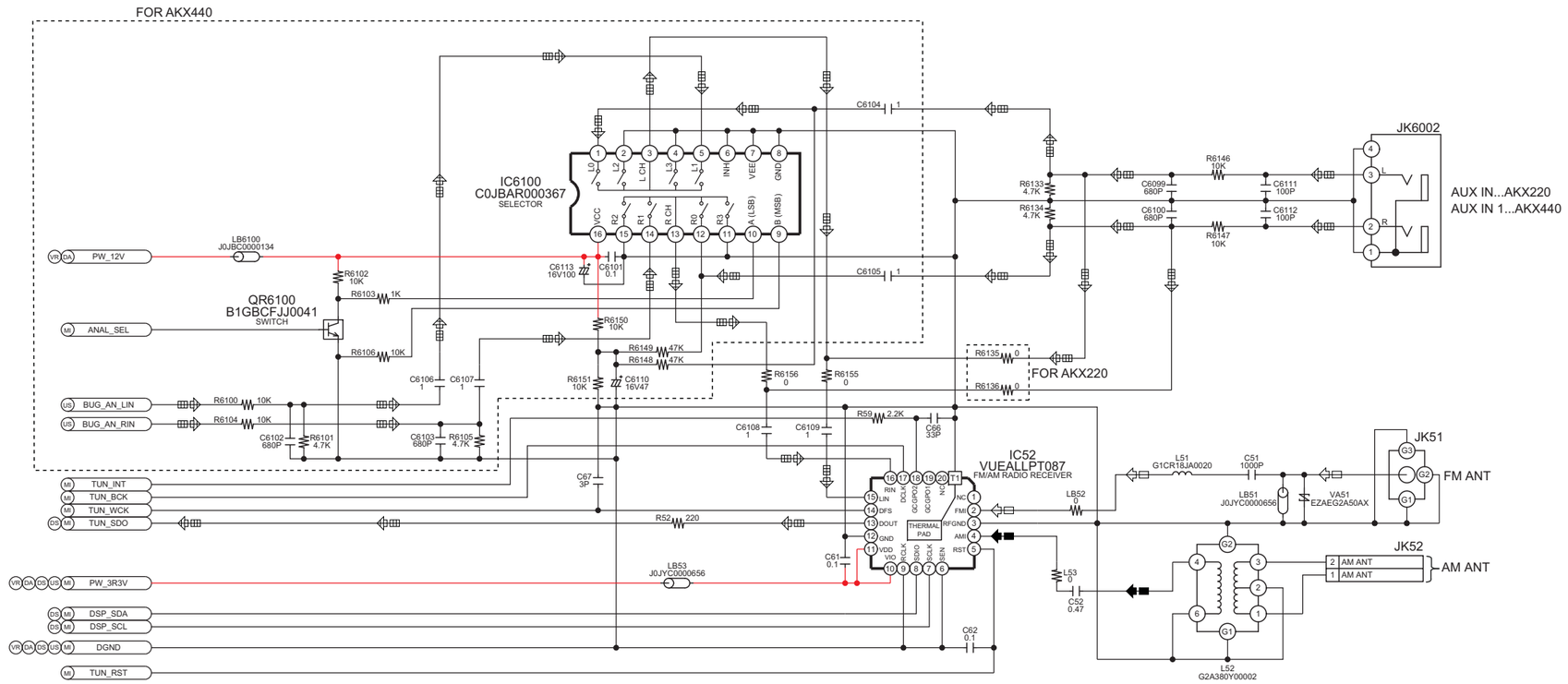
SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (USB) CIRCUIT

12.6. Main (Tuner AUX) Circuit

SCHEMATIC DIAGRAM - 5

A MAIN (TUNER AUX) CIRCUIT

: +B SIGNAL LINE : TUNER/AUX SIGNAL LINE : FM SIGNAL LINE : AM SIGNAL LINE



MI: MAIN (MICON): SCHEMATIC DIAGRAM - 1 ~ 3
US: MAIN (USB): SCHEMATIC DIAGRAM - 4
DS: MAIN (DSP BLUETOOTH): SCHEMATIC DIAGRAM - 6
DA: MAIN (DAMP): SCHEMATIC DIAGRAM - 7
VR: MAIN (VOLTAGE REGULATOR): SCHEMATIC DIAGRAM - 8

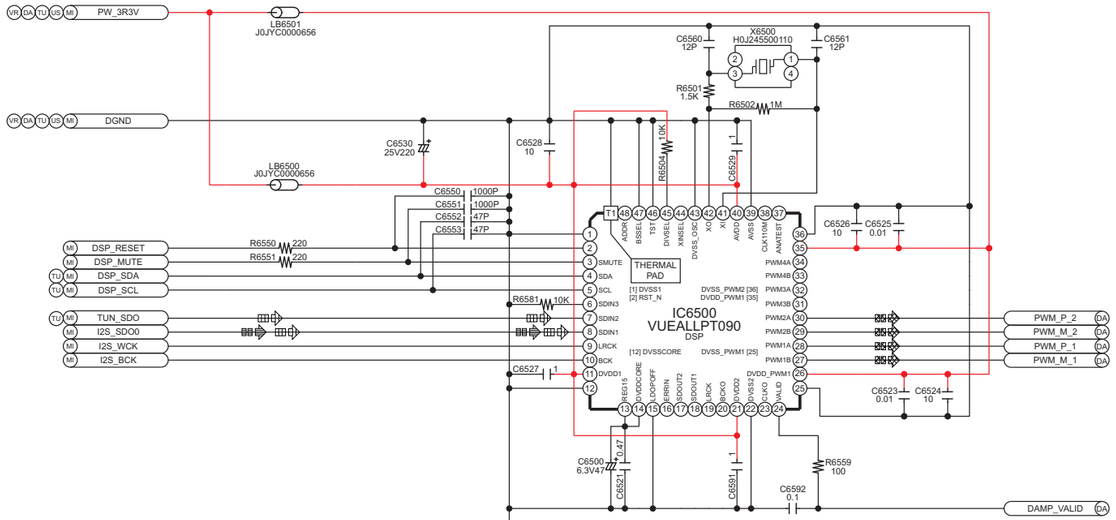
SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (TUNER AUX) CIRCUIT

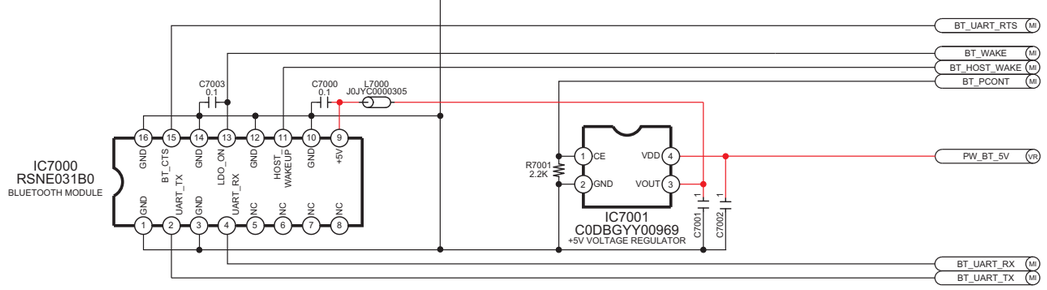
12.7. Main (DSP Bluetooth) Circuit

SCHEMATIC DIAGRAM - 6

A MAIN (DSP BLUETOOTH) CIRCUIT

—— : +B SIGNAL LINE : CD SIGNAL LINE : TUNER/AUX SIGNAL LINE : AUDIO SIGNAL LINE





MI: MAIN (MICON): SCHEMATIC DIAGRAM - 1 ~ 3
US: MAIN (USB): SCHEMATIC DIAGRAM - 4
TU: MAIN (TUNER AUX): SCHEMATIC DIAGRAM - 5
DA: MAIN (DAMP): SCHEMATIC DIAGRAM - 7
VR: MAIN (VOLTAGE REGULATOR): SCHEMATIC DIAGRAM - 8

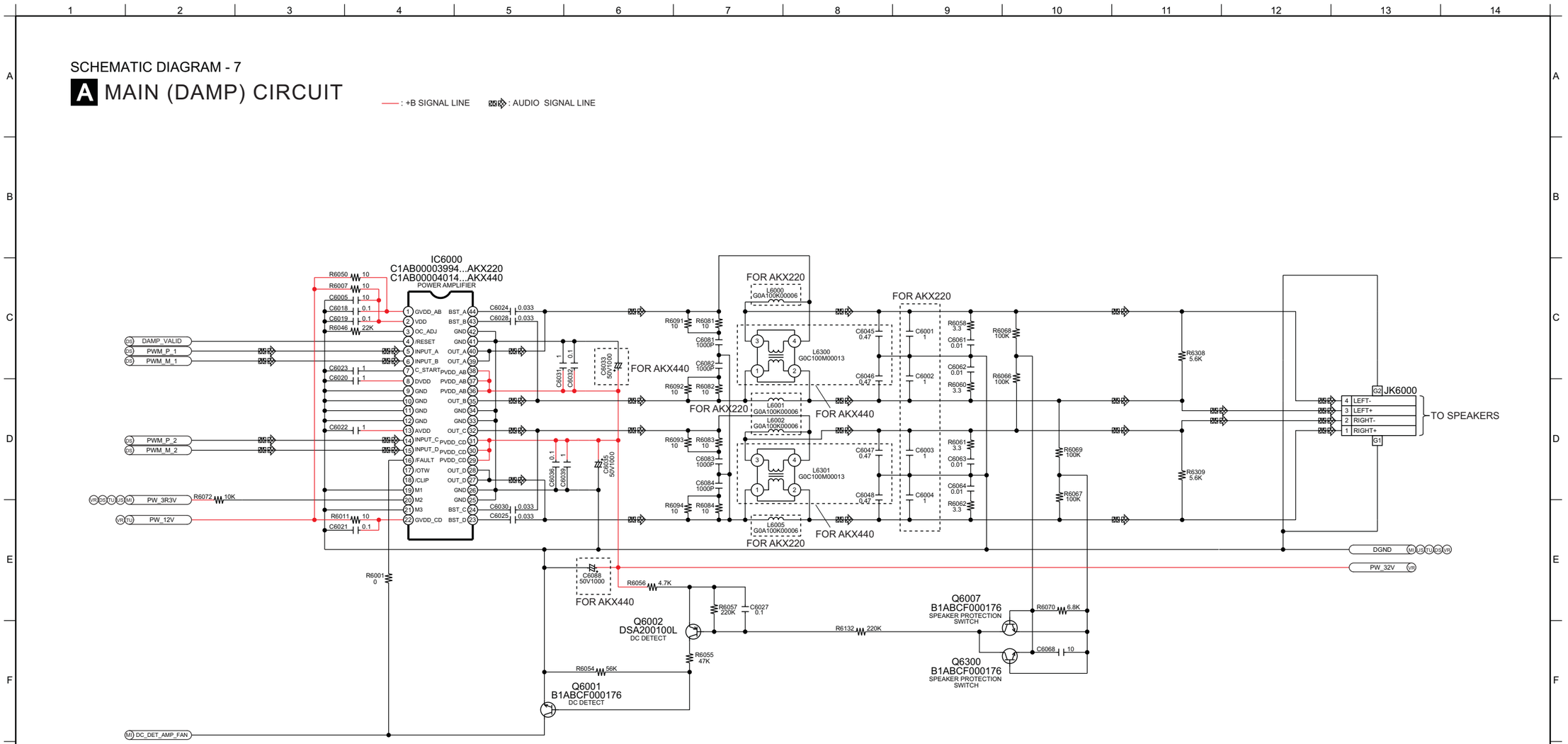
SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (DSP BLUETOOTH) CIRCUIT

12.8. Main (Damp) Circuit

SCHEMATIC DIAGRAM - 7

A MAIN (DAMP) CIRCUIT

—— : +B SIGNAL LINE ▨ : AUDIO SIGNAL LINE



MI: MAIN (MICON): SCHEMATIC DIAGRAM - 1 ~ 3
US: MAIN (USB): SCHEMATIC DIAGRAM - 4
TU: MAIN (TUNER AUX): SCHEMATIC DIAGRAM - 5
DS: MAIN (DSP BLUETOOTH): SCHEMATIC DIAGRAM - 6
VR: MAIN (VOLTAGE REGULATOR): SCHEMATIC DIAGRAM - 8

SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (DAMP) CIRCUIT

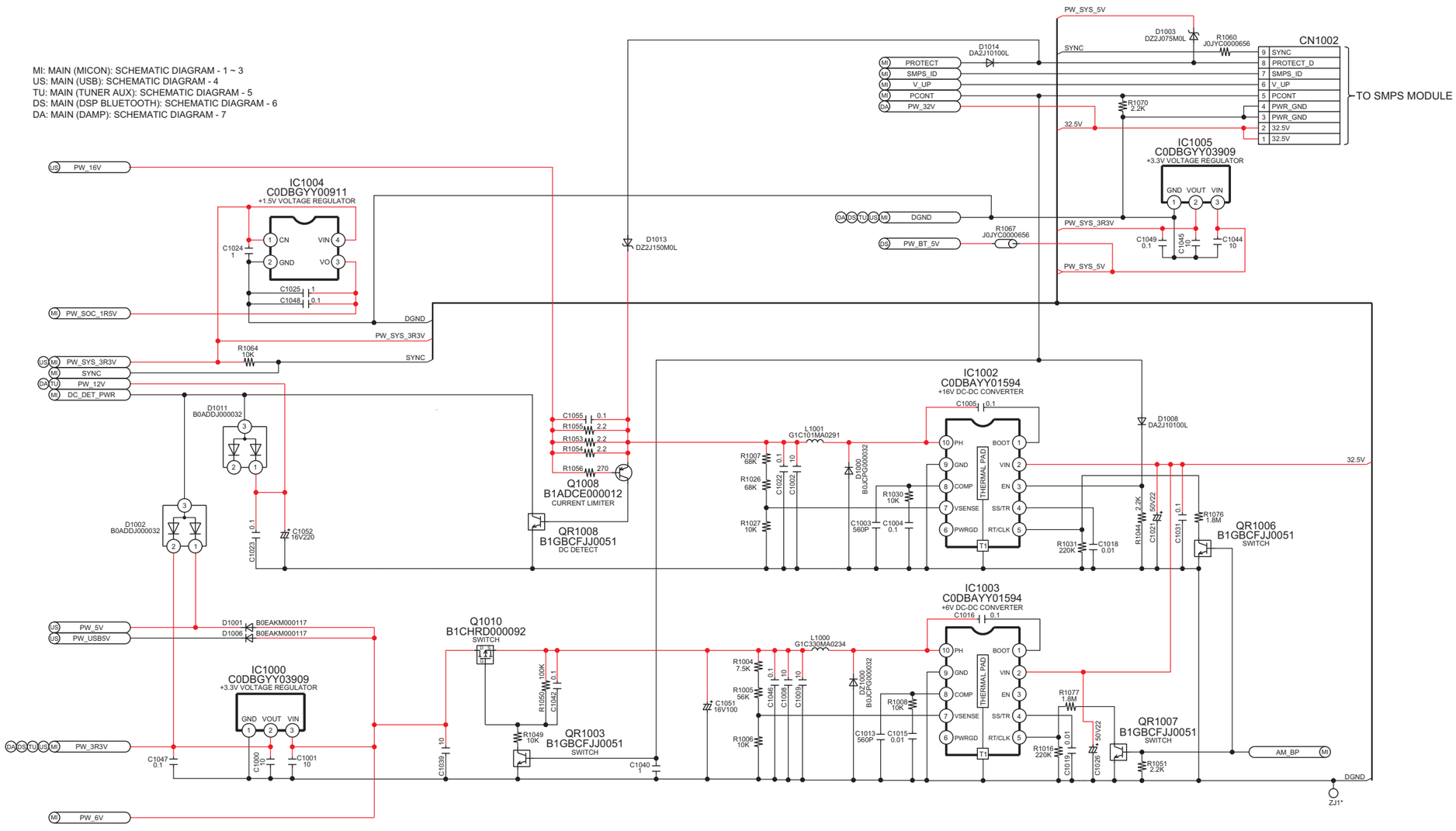
12.9. Main (Voltage Regulator) Circuit

SCHEMATIC DIAGRAM - 8

A MAIN (VOLTAGE REGULATOR) CIRCUIT

—— : +B SIGNAL LINE

MI: MAIN (MICON): SCHEMATIC DIAGRAM - 1 ~ 3
US: MAIN (USB): SCHEMATIC DIAGRAM - 4
TU: MAIN (TUNER AUX): SCHEMATIC DIAGRAM - 5
DS: MAIN (DSP BLUETOOTH): SCHEMATIC DIAGRAM - 6
DA: MAIN (DAMP): SCHEMATIC DIAGRAM - 7



NOTE: " * " REF IS FOR INDICATION ONLY

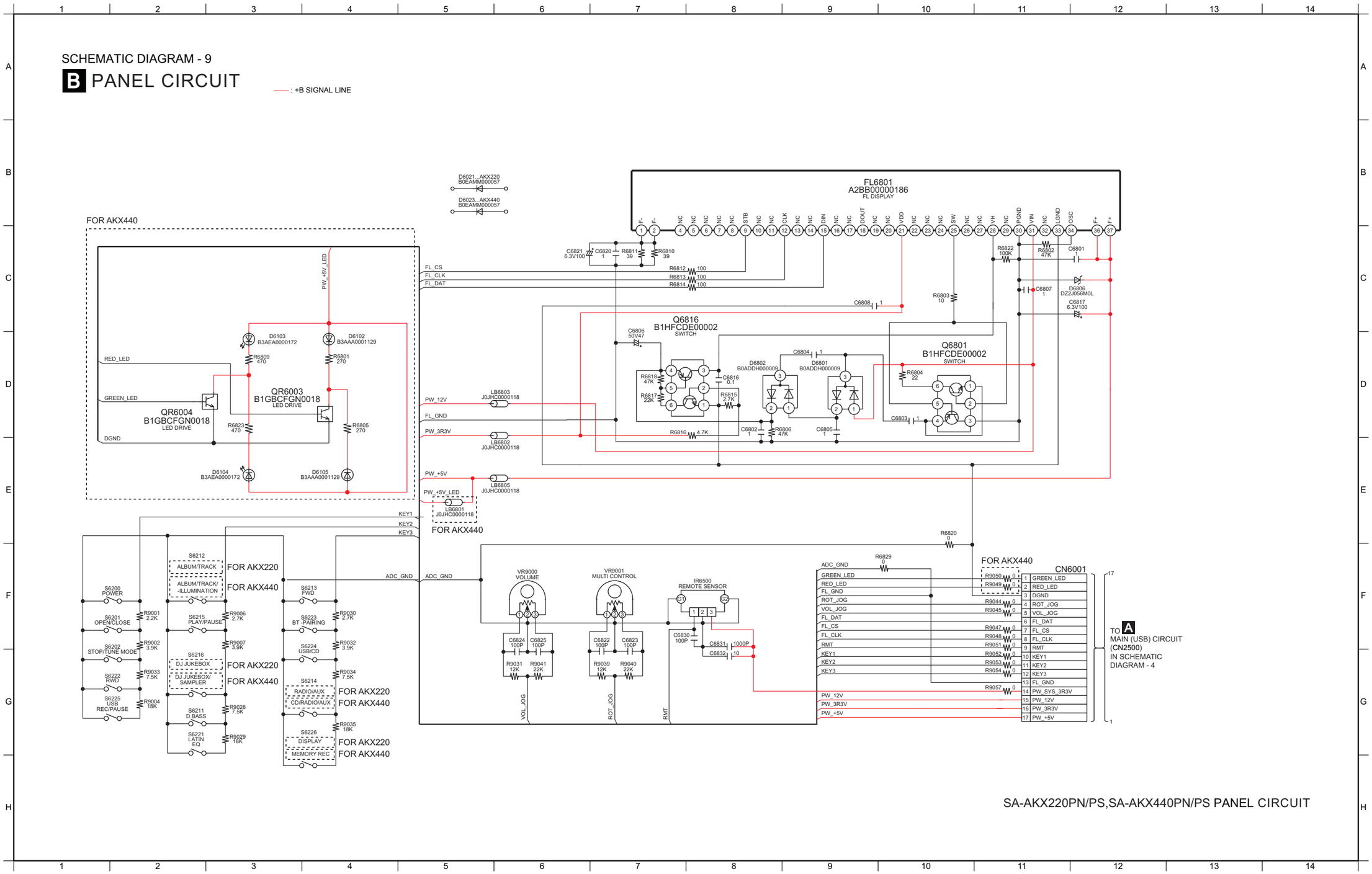
SA-AKX220PN/PS,SA-AKX440PN/PS MAIN (VOLTAGE REGULATOR) CIRCUIT

12.10. Panel Circuit

SCHEMATIC DIAGRAM - 9

B PANEL CIRCUIT

—— : +B SIGNAL LINE



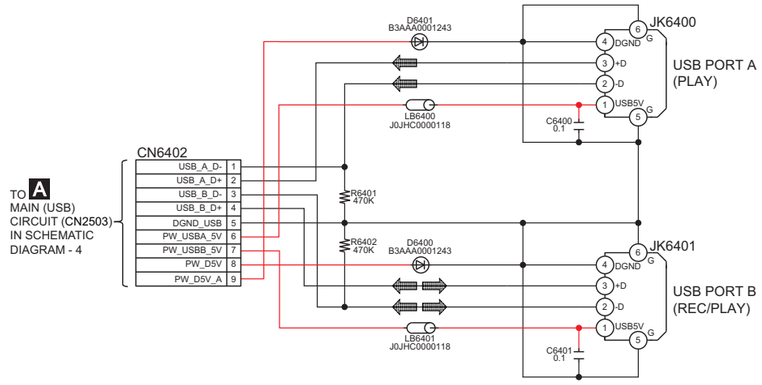
SA-AKX220PN/PS,SA-AKX440PN/PS PANEL CIRCUIT

12.11. USB, CD Interface and Music Port Circuit

SCHEMATIC DIAGRAM - 10

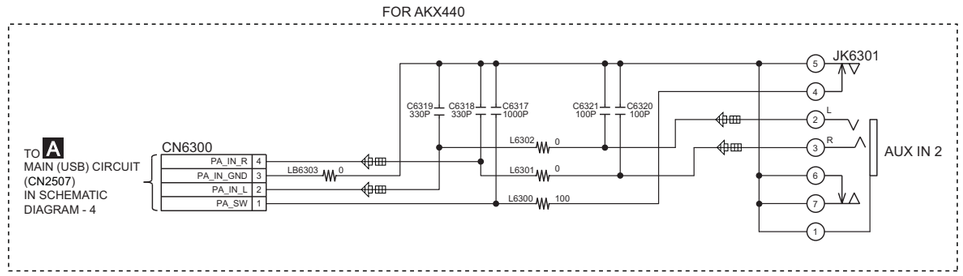
C USB CIRCUIT

: +B SIGNAL LINE : USB SIGNAL LINE

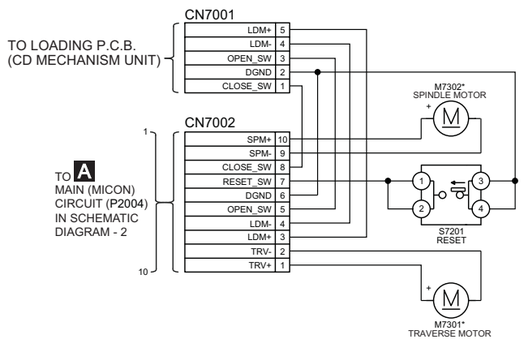


E MUSIC PORT CIRCUIT

: AUX SIGNAL LINE



D CD INTERFACE CIRCUIT



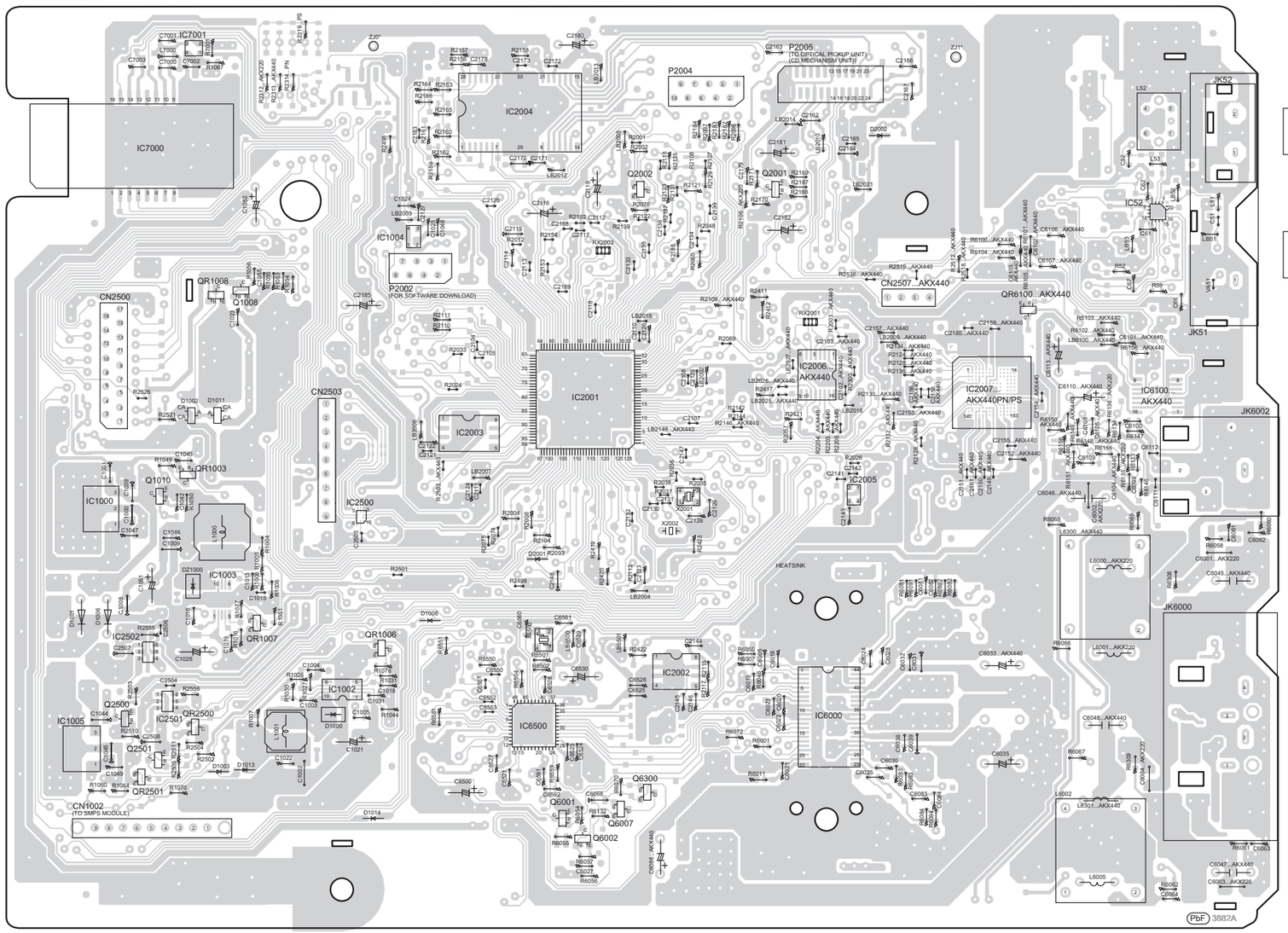
NOTE: " * " REF IS FOR INDICATION ONLY

SA-AKX220PN/PS,SA-AKX440PN/PS USB / CD INTERFACE / MUSIC PORT CIRCUIT

13 Printed Circuit Board

13.1. Main P.C.B.

A MAIN P.C.B. (REP5298A...AKX220PN)(RFKB5298F...AKX440PN)
(REP5298B...AKX220PS)(RFKB5298G...AKX440PS)

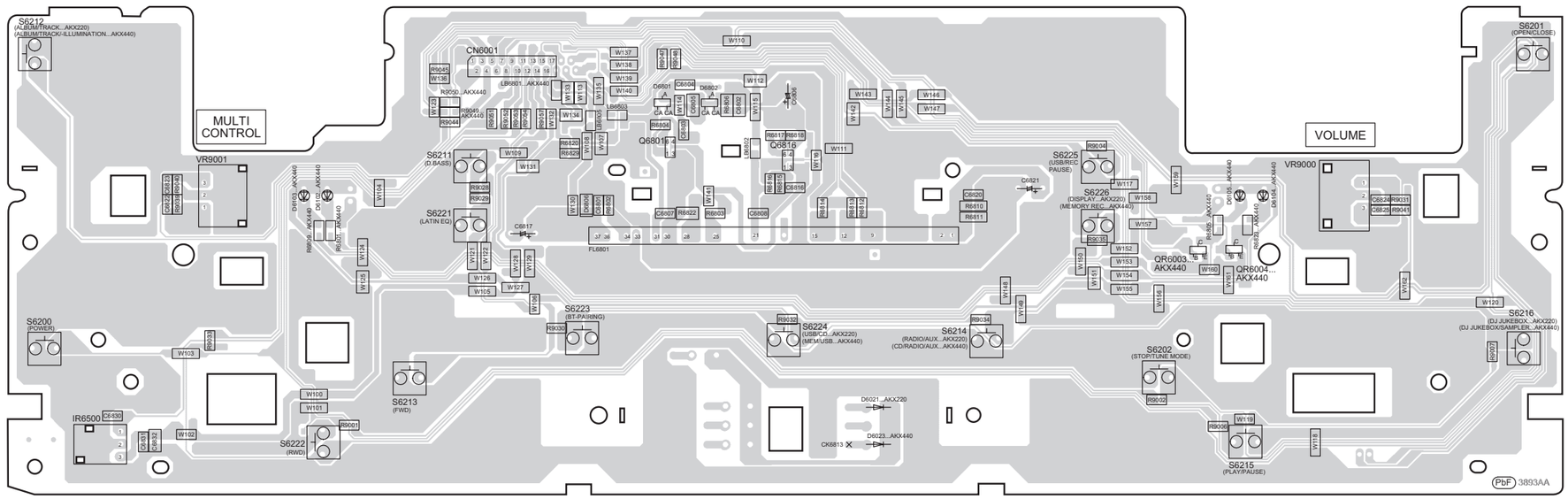


NOTE: " * " REF IS FOR INDICATION ONLY

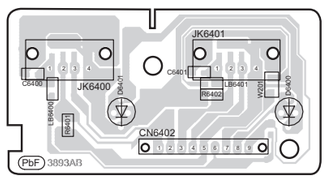
SA-AKX220PN/PS,SA-AKX440PN/PS
MAIN P.C.B.

13.2. Panel, USB P.C.B., CD Interface P.C.B. (For AKX220PN/PS, AKX440PN/PS) and Music Port P.C.B (For AKX440PN/PS)

B PANEL P.C.B. (REP5144DA...AKX220)
(REP5144FA...AKX440)



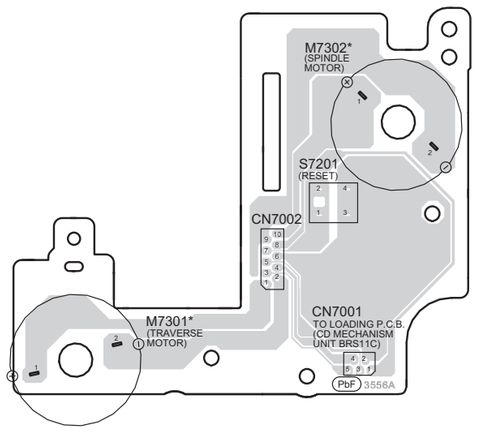
C USB P.C.B. (REP5144DB...AKX220)
(REP5144FB...AKX440)



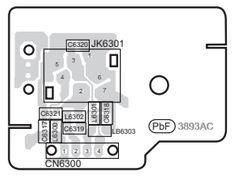
USB PORT A (PLAY)

USB PORT B (REC/PLAY)

D CD INTERFACE P.C.B. (REP4945B)



E MUSIC PORT P.C.B. (REP5144FC...AKX440)



AUX IN 2

NOTE: " * " REF IS FOR INDICATION ONLY

SA-AKX220PN/PS,SA-AKX440PN/PS
PANEL / USB / CD INTERFACE / MUSIC PORT P.C.B.

14 Voltage and Waveform Measurement

14.1. Voltage Measurement

Note:

- Indication Voltage Values are in standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
  Therefore, there may exist some errors in voltage values, depending on the internal impedance of the DC circuit tester.
- Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point because it may differ from actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

14.1.1. Main P.C.B. (1/3)

REF NO.	IC1000																			
MODE	1	2	3																	
CD PLAY	0	3.3	5.9																	
STANDBY	0	3.3	5.9																	

REF NO.	IC1002																			
MODE	1	2	3	4	5	6	7	8	9	10										
CD PLAY	21.8	32.7	2.9	2.3	0.5	2.6	0.8	0.9	0	15.6										
STANDBY	21.8	32.7	2.9	2.3	0.5	2.6	0.8	0.9	0	15.6										

REF NO.	IC1003																			
MODE	1	2	3	4	5	6	7	8	9	10										
CD PLAY	12	13.4	2.9	2.4	0.5	2.6	0.8	0.8	0	5.9										
STANDBY	12	13.4	2.9	2.4	0.5	2.6	0.8	0.8	0	5.9										

REF NO.	IC1004																			
MODE	1	2	3	4																
CD PLAY	3.2	0	1.6	3.2																
STANDBY	3.2	0	1.6	3.2																

REF NO.	IC1005																			
MODE	1	2	3																	
CD PLAY	0	3.2	4.2																	
STANDBY	0	3.2	4.2																	

REF NO.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	3.2	3.2	3.2	3.2	3.1	3.2	0	0	0	1.1	3.2	0	0	0	0	0	3.2	1.6	0	0
STANDBY	3.2	3.2	3.2	3.2	0	0	0	0	3.1	0	3.2	0	0	0	0	0	3.2	1.6	0	0

REF NO.	IC2001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	2.6	3.2	0.1	3.2	2.9	2.9	0	0	3.3	0	3.3	0.1	1.6	1.6	0.5	0.9	0.8	1.6	1.6	1
STANDBY	2.6	3.2	0	3.2	2.9	2.9	0	0	3.3	0	3.3	0	1.6	1.6	0	1.6	0.8	1.6	1.6	1

REF NO.	IC2001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0	0	1.6	1.6	2	2	3.2	3.2	3.2	3.2	1.6	1.6	0	1.6	1.6	0	1.9	1.6	1.7	1.7
STANDBY	1	0	1.6	1.6	1.6	2	3.2	1.5	3.2	1.6	1.6	1.6	0	1.6	1.6	0	3.3	0	1.6	1.6

REF NO.	IC2001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	1.6	1.6	1.6	1.6	1.6	0	1.6	1.6	1.6	1.6	0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	0
STANDBY	1.6	1.6	1.6	1.6	1.6	0	1.6	1.5	1.5	1.3	0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	0

REF NO.	IC2001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0.7	1.6	1.6	0	0	2.9	1.1	2.7	2.9	0.2	0.2	1.6	3.3	3.3	0	3.2	0	0	0	0
STANDBY	0	1.6	1.6	0	0	3.2	1.6	3.2	3.2	0	0	1.6	3.3	3.3	0	3.2	0	0	0	1.2

SA-AKX220/440PN/PS MAIN P.C.B.

14.1.2. Main P.C.B. (2/3)

REF NO.	IC2001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
CD PLAY	3.2	3.2	0	0	3.2	0	0	3.2	3.2	1.6	1.6	1.6	0	0	0	3.3	3.2	3.2	3.2	3.2
STANDBY	2	2	2	0	3.1	2	0.2	3.2	1.2	1.2	1.1	1.2	3.2	3.2	3.2	1.2	1.4	3.2	3.2	3.2

REF NO.	IC2001																			
MODE	121	122	123	124	125	126	127	128												
CD PLAY	1.8	3.3	0	1.5	1.4	0	1.4	1.4												
STANDBY	1.8	1	0	1.4	1.5	1.5	1.4	1.4												

REF NO.	IC2004																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.6	5.9	2.6	1.6	2.6	0	0	5.9	0	0	3.1	2.9	2.9	3.1	3	3.1	3.6	2.5	5.9	2.4
STANDBY	1.6	5.9	2.6	1.6	2.6	0	0	5.9	0	0	3	3	3	3	3	3	3	3	5.9	2.4

REF NO.	IC2004																			
MODE	21	22	23	24	25	26	27	28	29	30										
CD PLAY	1.5	0	1.8	5.9	5.9	1.6	1.6	3.3	0	0										
STANDBY	1.5	0	1.6	5.9	5.9	1.6	1.6	3.3	0	0										

REF NO.	IC2005																			
MODE	1	2	3	4																
POWER ON	0	3.3	0	3.3																

REF NO.	IC2006																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
CD PLAY	3.2	0	3.2	0	3.2	0	0	0	0	0	0	0	3.2	3.2	3.2	3.2				
STANDBY	3.2	0	3.2	0	3.2	0	0	0	0	0	0	0	3.2	3.2	3.2	3.2				

REF NO.	IC2500																			
MODE	1	2	3	4	5	6	7	8	9	10										
USB B ON	3	0	0	0.2	3	0	3	0	3.3	3.3										

REF NO.	IC2501																			
MODE	1	2	3	4	6															
USB A ON	5	0	5	5	5															

REF NO.	IC2502																			
MODE	1	2	3	4	6															
USB B ON	5	0	5	5	5															

REF NO.	IC6000 (For SA-AKX440)																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	12.6	12.6	1.2	3.3	1.7	1.7	3.2	3.3	0	0	0	0	7.8	1.7	1.7	3.3	3.3	3.3	0	2.8
STANDBY	12.6	12.6	1.2	3.3	1.7	1.7	3.2	3.3	0	0	0	0	7.8	1.7	1.7	3.3	3.3	3.3	0	2.8

REF NO.	IC6000 (For SA-AKX440)																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	12.6	30.1	30.1	0	0	18.7	18.7	38.4	38.4	38.4	18.7	0	0	18.6	38.4	38.4	38.4	18.6	18.6
STANDBY	0	12.6	30.1	30.1	0	0	18.7	18.7	38.4	38.4	38.4	18.7	0	0	18.6	38.4	38.4	38.4	18.6	18.6

REF NO.	IC6000 (For SA-AKX440)																			
MODE	41	42	43	44																
CD PLAY	0	0	30.1	30.1																
STANDBY	0	0	30.1	30.1																

SA-AKX220/440PN/PS MAIN P.C.B.

14.1.3. Main P.C.B. (3/3)

REF NO.	IC6000 (For SA-AKX220)																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	12.5	12.5	1.2	3.3	1.7	1.7	2.7	2.7	3.3	0	0	0	7.8	1.7	1.7	3.3	3.3	3.3	0	2.8
STANDBY	12.6	12.5	1.2	3.3	1.7	1.7	2.7	3.3	0	0	0	0	7.8	1.7	1.7	3.3	3.3	3.3	0	2.8

REF NO.	IC6000 (For SA-AKX220)																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	12.6	27.9	27.7	0	0	16.3	16.3	32.6	32.6	1.4	16.3	0	0	16.3	32.6	32.6	32.6	16.3	16.3
STANDBY	0	12.6	27.9	27.9	0	0	16.3	16.3	32.6	32.6	2.3	16.3	0	0	16.3	32.6	32.6	32.6	16.3	16.3

REF NO.	IC6000 (For SA-AKX220)																			
MODE	41	42	43	44																
CD PLAY	0	0	27.8	27.8																
STANDBY	0	0	27.9	27.9																

REF NO.	IC6100																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
CD PLAY	6.5	0	6.5	0	0.1	0	0	0	0	0	0	6.5	6.5	0.1	0	13				
STANDBY	6.5	0	6.5	0	0.1	0	0	0	0	0	0	6.5	6.5	0.1	0	13				

REF NO.	Q1000				Q2001				Q6001				Q6002				Q6007			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	12.8	16.1	13.4		2.9	1.9	2.2		0	3.2	0		32.6	0	12		16.3	11.7	0	
STANDBY	12.8	16.1	13.4		2.9	1.9	2.2		0	3.2	0		32.6	0	12		16.3	11.7	0	

REF NO.	Q6300				QR6100															
MODE	E	C	B		E	C	B													
CD PLAY	16.3	11.7	0		0	0	3.2													
STANDBY	16.3	11.7	0		0	0	3.2													

REF NO.	Q1007							Q1008				QR1003				QR1008				
MODE	1	2	3	4	5	6		E	C	B		E	C	B		E	C	B		
POWER ON	6	6	0	6	6	6		12	0	12		0	0	3.3		0	3.3	0		

REF NO.	Q2500				QR2500															
MODE	E	C	B		E	C	B													
USB B (ON)	5	5	0		0	0	5													

REF NO.	Q2501				QR2501															
MODE	E	C	B		E	C	B													
USB A (ON)	5	5	0		0	0	5													

REF NO.	QR1006				QR1007															
MODE	E	C	B		E	C	B													
AM BP (ON)	0	0	3.3		0	0	3.3													

SA-AKX220/440PN/PS MAIN P.C.B.

14.1.4. Panel P.C.B.

REF NO.	IC6000																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	0	0	0	1.9	3.3	1.3	0.1	2.9	0	0	0	3.3	-15.9	-15.9	-19.6	-23.3	-21.4	-23.3	-21.4
STANDBY	0	0	0	0	1.9	3.3	1.3	0.1	2.9	0	0	0	3.3	-15.9	-15.9	-19.6	-23.3	-21.4	-23.3	-21.4

REF NO.	IC6000																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	-23.3	-23.3	-21.4	-23.3	-15.9	-19.6	-15.9	-21.4	-23.3	-23.7	-22	-21.6	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4
STANDBY	-23.3	-23.3	-21.4	-23.3	-15.9	-19.6	-15.9	-21.4	-23.3	-23.7	-22	-21.6	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4

REF NO.	IC6000																			
MODE	41	42	43	44																
CD PLAY	-21.5	-21.8	3.3	0																
STANDBY	-21.5	-21.8	3.3	0																

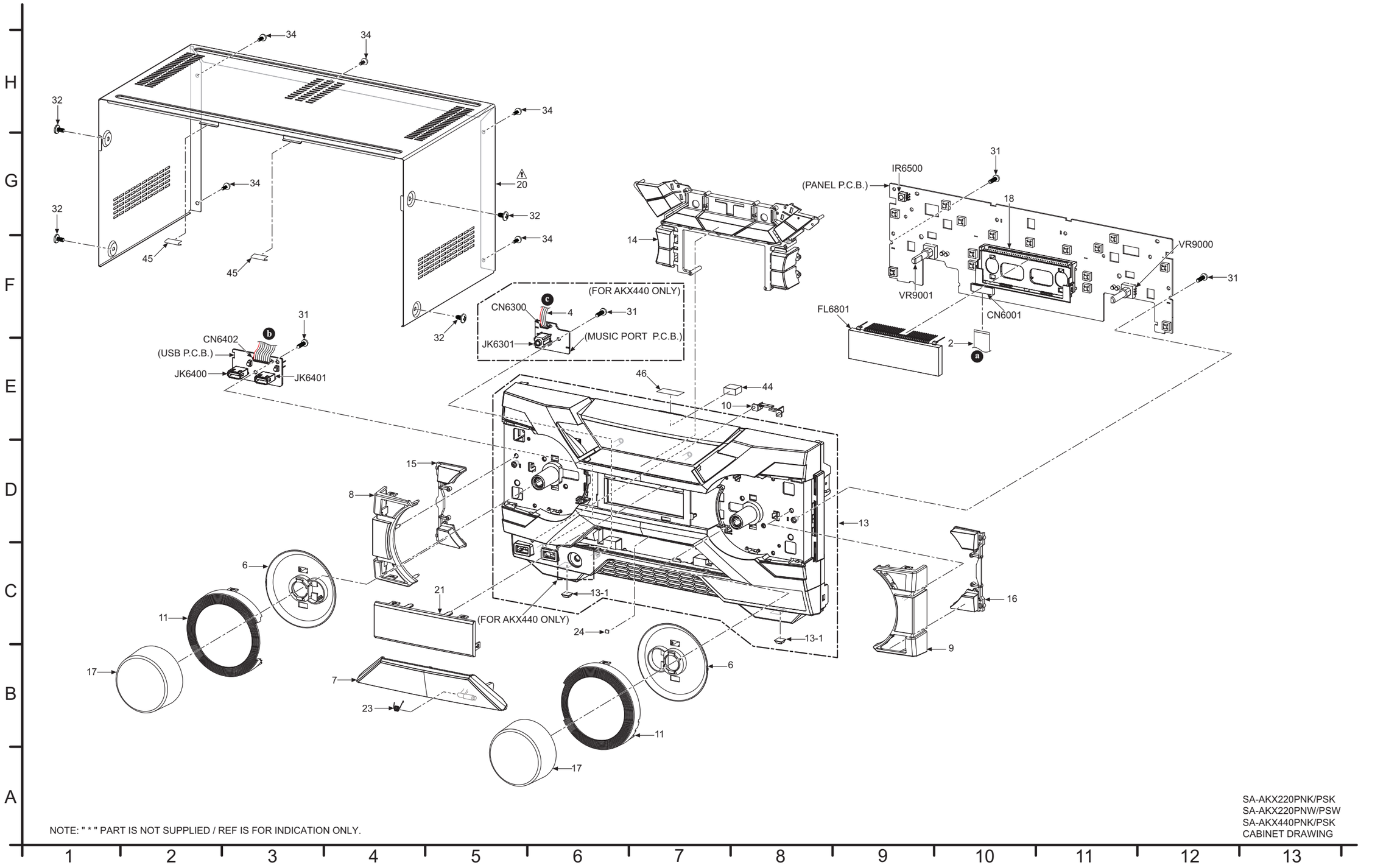
REF NO.	Q6001				QR6003				QR6004											
MODE	E	C	B		E	C	B		E	C	B									
CD PLAY	0	15.5	-0.2		0	0.2	3.2		0	4.3	0									
STANDBY	0	15.5	-0.2		0	0.2	3.2		0	4.3	0									

REF NO.	QR6001																			
MODE	E	C	B																	
POWER ON	0	3.3	0																	

SA-AKX220/440PN/PS PANEL P.C.B.

15 Exploded View and Replacement Parts List

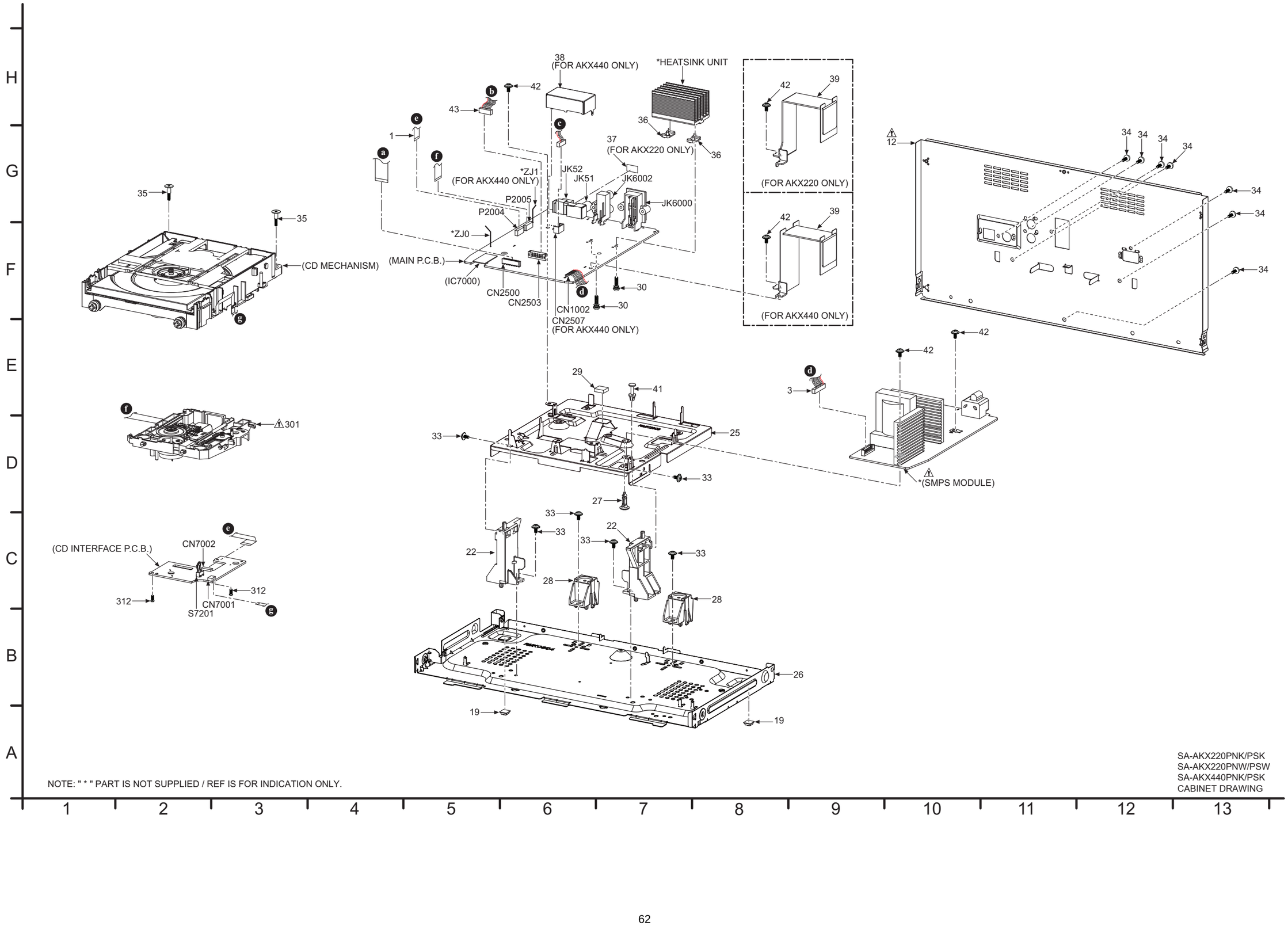
15.1. Cabinet Parts Location 1



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

SA-AKX220PNK/PSK
SA-AKX220PNW/PSW
SA-AKX440PNK/PSK
CABINET DRAWING

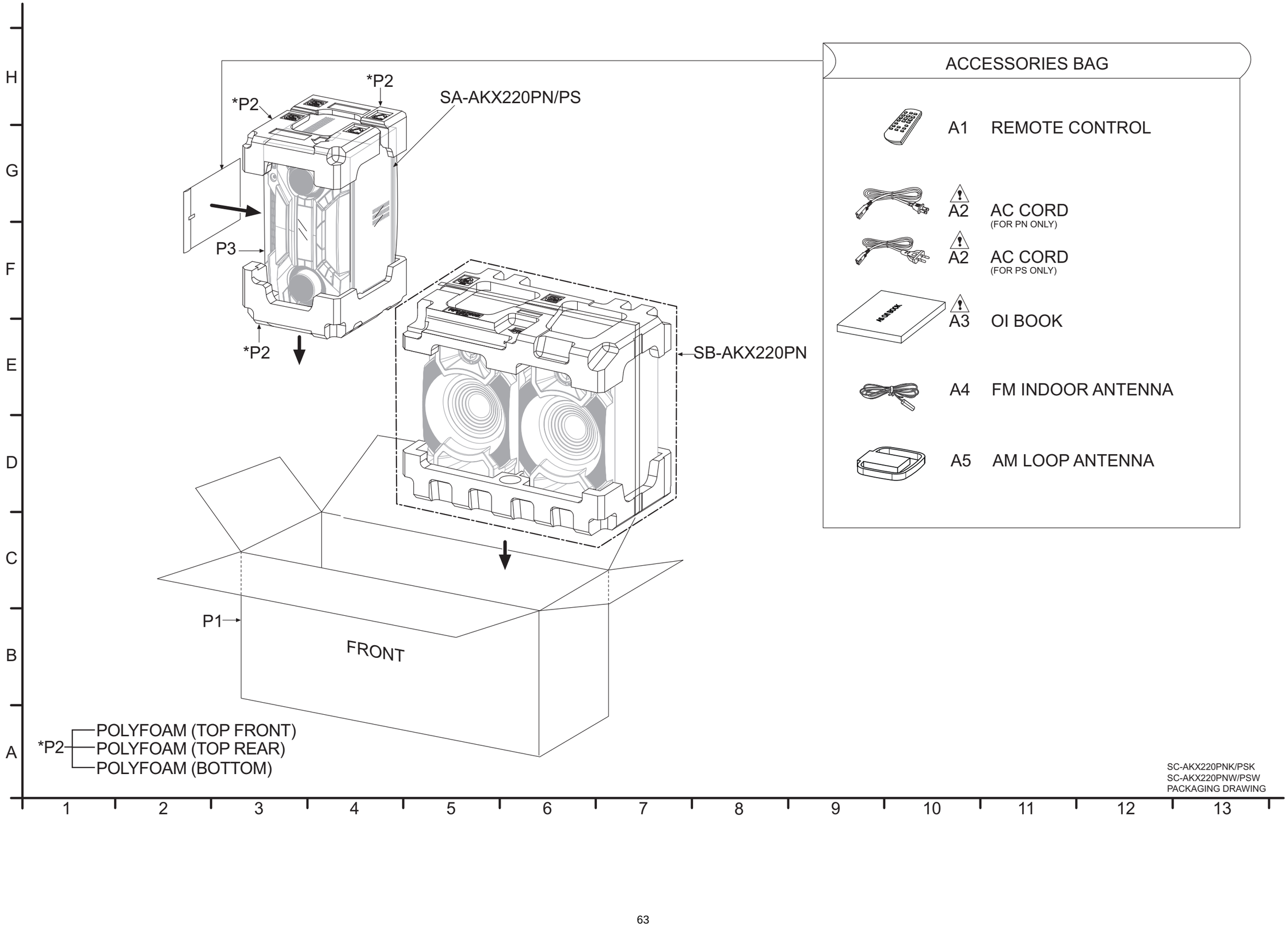
15.2. Cabinet Parts Location 2



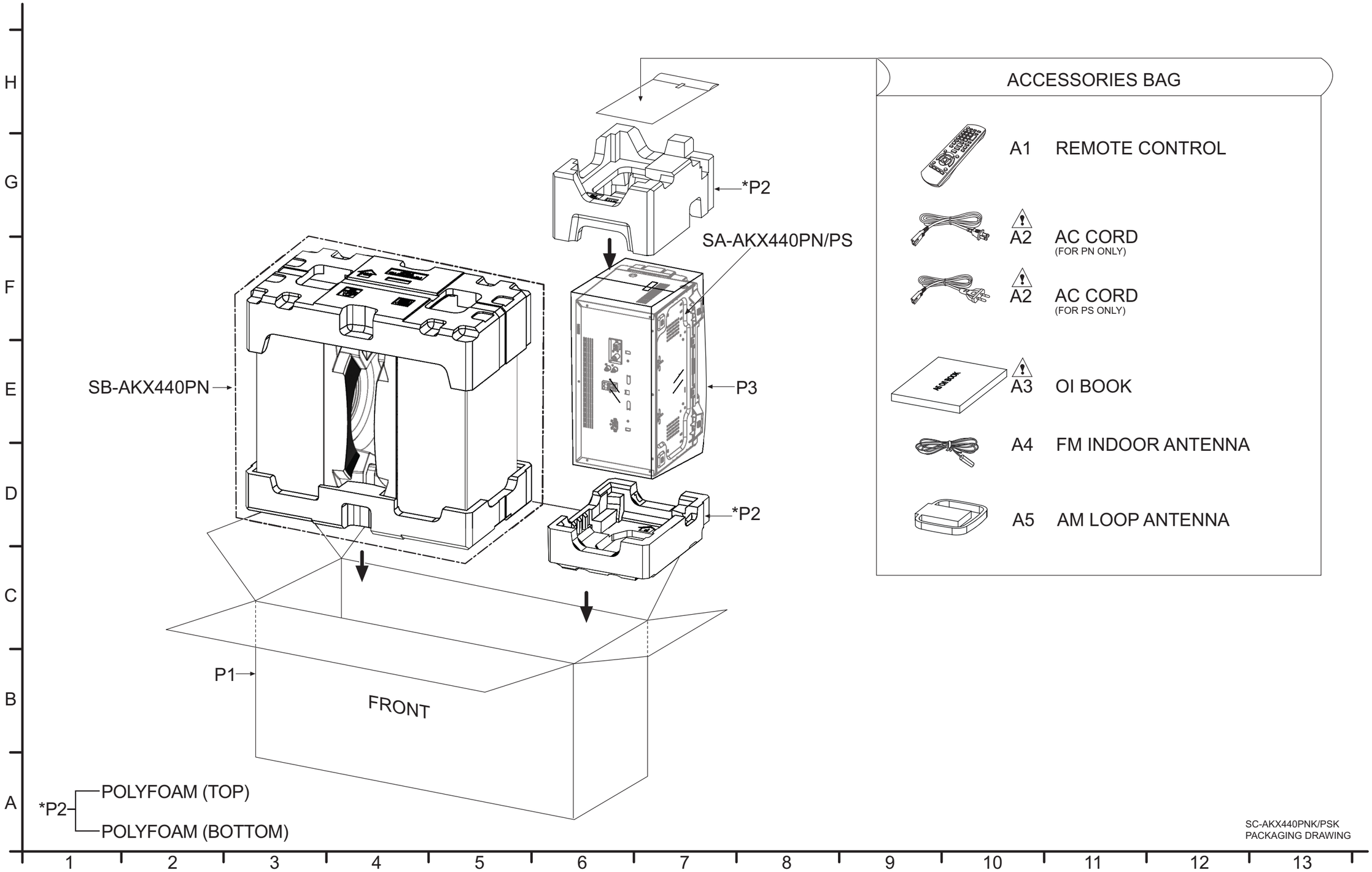
NOTE: " * " PART IS NOT SUPPLIED / REF IS FOR INDICATION ONLY.

SA-AKX220PNK/PSK
SA-AKX220PNW/PSW
SA-AKX440PNK/PSK
CABINET DRAWING

15.3. Packaging (For SC-AKX220PN/PS)



15.4. Packaging (For SC-AKX440PN/PS)



15.5. Mechanical Replacement Part 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.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- 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	REE1730	10P FFC (MAIN-CD INTERFACE)	1	
	2	REE2067-1	17P FFC (MAIN-PANEL)	1	
	3	REX1808	9P WIRE (MAIN-SMPS)	1	
	4	REX1832	4P WIRE (MPORT-MAIN)	1	AKX440PNK, AKX440PSK
	6	RGC0053-W	VOLUME LIGHT REFLECTOR	2	AKX220PNW, AKX220PSW, AKX440PNK, AKX440PSK
	7	RGK2602-K	CD LID	1	AKX220PNK, AKX220PSK
	7	RGK2602-W	CD LID	1	AKX220PNW, AKX220PSW
	7	RGK2602B-K	CD LID	1	AKX440PNK, AKX440PSK
	8	RGK2609-K	LEFT BUTTON ORNAMENT	1	AKX220PNK, AKX220PSK, AKX440PNK, AKX440PSK
	8	RGK2609-W	LEFT BUTTON ORNAMENT	1	AKX220PNW, AKX220PSW
	9	RGK2610-K	RIGHT BUTTON ORNAMENT	1	AKX220PNK, AKX220PSK, AKX440PNK, AKX440PSK
	9	RGK2610-W	RIGHT BUTTON ORNAMENT	1	AKX220PNW, AKX220PSW
	10	RGL0816-Q	USB REC LIGHT PIECE	1	
	11	RGL0817-Q	VOLUME LIGHT RING	2	AKX220PNW, AKX220PSW, AKX440PNK, AKX440PSK
	11	RGL0817-R	VOLUME LIGHT RING	2	AKX220PNK, AKX220PSK
⚠	12	RGR0473A-PB	REAR PANEL	1	AKX220PN
⚠	12	RGR0473A-QB	REAR PANEL	1	AKX220PS
⚠	12	RGR0473A-UB	REAR PANEL	1	AKX440PN
⚠	12	RGR0473A-VB	REAR PANEL	1	AKX440PS
	13	RFKGAKX220LK	FRONT PANEL	1	AKX220PNK, AKX220PSK
	13	RFKGAKX220LW	FRONT PANEL	1	AKX220PNW, AKX220PSW
	13	RFKGAKX440LK	FRONT PANEL	1	AKX440PNK, AKX440PSK
	13-1	RKAX0042-K	LEG CUSHION	2	
	14	RGU2979-K	UPPER FUNCTION BUTTON	1	AKX220PNK, AKX220PSK
	14	RGU2979-W	UPPER FUNCTION BUTTON	1	AKX220PNW, AKX2W0PSW
	14	RGU2979B-K	UPPER FUNCTION BUTTON	1	AKX440PNK, AKX440PSK
	15	RGU2980-K	LEFT FUNCTION BUTTON	1	AKX220PNK, AKX220PSK
	15	RGU2980-W	LEFT FUNCTION BUTTON	1	AKX220PNW, AKX220PSW
	15	RGU2980A-K	LEFT FUNCTION BUTTON	1	AKX440PNK, AKX440PSK

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	16	RGU2981-K	RIGHT FUNCTION BUTTON	1	AKX220PNK, AKX220PSK
	16	RGU2981-W	RIGHT FUNCTION BUTTON	1	AKX220PNW, AKX220PSW
	16	RGU2981A-K	RIGHT FUNCTION BUTTON	1	AKX440PNK, AKX440PSK
	17	RGW0457-K	VOLUME KNOB	2	AKX220PNK, AKX220PSK
	17	RGW0457-S	VOLUME KNOB	2	AKX440PNK, AKX440PSK
	17	RGW0457-W	VOLUME KNOB	2	AKX220PNW/ PSW
	18	RMN1049-1	FL HOLDER	1	
	19	RKAX0042-K	LEG CUSHION	2	
⚠	20	RKM0764-K	TOP CABINET	1	K
⚠	20	RKM0764-W	TOP CABINET	1	W
	21	RKW1088-Q	FL WINDOW	1	
	22	RMA2442-3	CHASSIS SUPPORT	2	
	23	RMB0995	CD LID SPRING	1	
	24	RMGX0033A-K	CD LID CUSHION	1	
	25	RMK0909-1	INNER CHASSIS	1	
	26	RMK0894-1	BOTTOM CHASSIS	1	
	27	RMNX0298	PCB SPACER	1	
	28	RMQ2134	MECHA SUPPORT	2	
	29	RSC1228A	THERMAL PAD	1	
	30	RHD26078	SCREW	2	
	31	RHD26046-L	SCREW	3	AKX220
	31	RHD26046-L	SCREW	4	AKX440
	32	RHD30007-K2J	SCREW	4	
	32	RHD30007-1SJ	SCREW	4	AKX220PNW, AKX220PSW
	33	RHD30111-31	SCREW	6	
	34	RHD30119-S	SCREW	12	
	35	RHDX031008	SCREW	2	
	36	RMZX1022-1	PCB SPACER	2	
	37	RMQ2498	TUNER PC SHEET	1	AKX220
	38	RSC1230	TUNER SHIELD	1	AKX440
	39	RXA0270	TRANSFORMER BRACKET UNIT	1	AKX220
	39	RXA0270A	TRANSFORMER BRACKET UNIT	1	AKX440
	41	VKC0392	PCB SPACER	1	
	42	RHD30092-1	SCREW	4	
	43	REX1895	9P WIRE (MAIN-USB)	1	
	44	RMF0770-1	PCB CUSHION	1	
	45	RMF0771	HIMELON	2	
	46	RMF0772	HIMELON	1	
			TRAVERSE DECK		
⚠	301	RAE1052Z-V	TRAVERSE ASS'Y	1	(E.S.D)
	312	XTN2+6GFJ	SCREW	2	
			PACKING MATERI-ALS		
	P1	RPG0R80-1	PACKING CASE	1	AKX220PNK
	P1	RPG0R81-1	PACKING CASE	1	AKX220PSK
	P1	RPG0R85-1	PACKING CASE	1	AKX440PNK
	P1	RPG0R86-1	PACKING CASE	1	AKX440PSK
	P1	RPG0S52	PACKING CASE	1	AKX220PNW
	P1	RPG0S53	PACKING CASE	1	AKX220PSW
	P2	RPN2727-1	POLYFORM	1	AKX220
	P2	RPN2729-1	POLYFORM	1	AKX440
	P3	RPH0332	MIRAMAT SHEET	1	
			ACCESSORIES		
	A1	N2QAYB001019	REMOTE CONTROL	1	AKX220
	A1	N2QAYB001022	REMOTE CONTROL	1	AKX440
⚠	A2	K2CB2CB00022	AC CORD	1	PN
⚠	A2	K2CQ2YY00119	AC CORD	1	PS
⚠	A3	RQT0A55-M	O/I BOOK (En/Sp)	1	AKX220
⚠	A3	RQT0A60-M	O/I BOOK (Sp)	1	AKX440
⚠	A3	RQT0A61-B	O/I BOOK (En)	1	AKX440
	A4	RSAX0002	FM INDOOR ANTENNA	1	
	A5	N1DYYYY00011	AM LOOP ANTENNA	1	

15.6. 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.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- 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.
- Parts mentioned [SPG] in the Remarks column are supplied by JAPAN.

E.S.D. standards for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATIC SENSITIVE (ES) DEVICES" section.

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			PRINTED CIRCUIT BOARDS		
	PCB1	REP5298A	MAIN P.C.B W/ DATA	1	(RTL) AKX220PN
	PCB1	REP5298B	MAIN P.C.B W/ DATA	1	(RTL) AKX220PS
	PCB1	RFKB5298F	MAIN P.C.B W/ DATA	1	(RTL) AKX440PN
	PCB1	RFKB5298G	MAIN P.C.B W/ DATA	1	(RTL) AKX440PS
	PCB2	REP5144DA	PANEL P.C.B	1	(RTL) AKX220
	PCB3	REP5144DB	USB P.C.B	1	(RTL) AKX220
	PCB2	REP5144FA	PANEL P.C.B	1	(RTL) AKX440
	PCB3	REP5144FB	USB P.C.B	1	(RTL) AKX440
	PCB4	REP5144FC	MUSIC PORT P.C.B	1	(RTL) AKX440
	PCB5	REP4945B	CD INTERFACE P.C.B	1	(RTL)
⚠	PCB6	N0AB1GK00001	SMPS MODULE	1	AKX220PN
⚠	PCB6	N0AB1GL00001	SMPS MODULE	1	AKX440PN
⚠	PCB6	N0AD1GK00003	SMPS MODULE	1	AKX220PS
⚠	PCB6	N0AD1GL00001	SMPS MODULE	1	AKX440PS
			INTEGRATED CIRCUITS		
	IC52	VUEALLPT087	IC	1	(E.S.D)
	IC1000	C0DBGYY03909	IC	1	(E.S.D)
	IC1002	C0DBAYY01594	IC	1	(E.S.D)

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	IC1003	C0DBAYY01594	IC	1	(E.S.D)
	IC1004	C0DBGYY00911	IC	1	(E.S.D)
	IC1005	C0DBGYY03909	IC	1	(E.S.D)
	IC2001	C1AB00004188	IC	1	(E.S.D)
	IC2002	RFKWEKX220LM	IC	1	(E.S.D) AKX220/ 440
	IC2003	RFKWFKX220LM	IC	1	(E.S.D) AKX220
	IC2003	RFKWFKX440LM	IC	1	(E.S.D) AKX440
	IC2004	C0GBY0000213	IC	1	(E.S.D)
	IC2005	C0EBY0000664	IC	1	(E.S.D)
	IC2006	C0ZBZ0001747	IC	1	(E.S.D) AKX440
	IC2007	RFKWNKX440LM	IC	1	(E.S.D) AKX440
	IC2500	C0JBAS000401	IC	1	(E.S.D)
	IC2501	C0DBZYY00723	IC	1	(E.S.D)
	IC2502	C0DBZYY00723	IC	1	(E.S.D)
	IC6000	C1AB00003994	IC	1	(E.S.D) AKX220
	IC6000	C1AB00004014	IC	1	(E.S.D) AKX440
	IC6100	C0JBAR000367	IC	1	(E.S.D) AKX440
	IC6500	VUEALLPT090	IC	1	(E.S.D)
	IC7000	RSNE031B0	IC / BT P.C.B	1	(E.S.D)
	IC7001	C0DBGYY00969	IC	1	(E.S.D)
			TRANSISTORS		
	Q1008	B1ADCE000012	TRANSISTOR	1	(E.S.D)
	Q1010	B1CHRD000092	TRANSISTOR	1	(E.S.D)
	Q2001	B1ADCF000001	TRANSISTOR	1	(E.S.D)
	Q2002	B1ABCF000176	TRANSISTOR	1	(E.S.D)
	Q2500	DSA200100L	TRANSISTOR	1	(E.S.D)

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	Q2501	DSA200100L	TRANSISTOR	1	(E.S.D)
	Q6001	B1ABCF000176	TRANSISTOR	1	(E.S.D)
	Q6002	DSA200100L	TRANSISTOR	1	(E.S.D)
	Q6007	B1ABCF000176	TRANSISTOR	1	(E.S.D)
	Q6300	B1ABCF000176	TRANSISTOR	1	(E.S.D)
	Q6801	B1HFCDE00002	TRANSISTOR	1	(E.S.D)
	Q6816	B1HFCDE00002	TRANSISTOR	1	(E.S.D)
	QR1003	B1GBCFJJ0051	TRANSISTOR	1	(E.S.D)
	QR1006	B1GBCFJJ0051	TRANSISTOR	1	(E.S.D)
	QR1007	B1GBCFJJ0051	TRANSISTOR	1	(E.S.D)
	QR1008	B1GBCFJJ0051	TRANSISTOR	1	(E.S.D)
	QR2500	B1GBCFGN0016	TRANSISTOR	1	(E.S.D)
	QR2501	B1GBCFGN0016	TRANSISTOR	1	(E.S.D)
	QR6003	B1GBCFGN0018	TRANSISTOR	1	(E.S.D) AKX440
	QR6004	B1GBCFGN0018	TRANSISTOR	1	(E.S.D) AKX440
	QR6100	B1GBCFJJ0041	TRANSISTOR	1	(E.S.D) AKX440
			DIODES		
	D1000	B0JCPG000032	DIODE	1	
	D1001	B0EAKM000117	DIODE	1	
	D1002	B0ADDJ000032	DIODE	1	
	D1003	DZ2J075M0L	DIODE	1	
	D1006	B0EAKM000117	DIODE	1	
	D1008	DA2J10100L	DIODE	1	
	D1011	B0ADDJ000032	DIODE	1	
	D1013	DZ2J150M0L	DIODE	1	
	D1014	DA2J10100L	DIODE	1	
	D2001	DA2J10100L	DIODE	1	
	D2002	DA2J10100L	DIODE	1	
	D6021	B0EAMM000057	DIODE	1	AKX220
	D6023	B0EAMM000057	DIODE	1	AKX440
	D6102	B3AAA0001129	DIODE	1	AKX440
	D6103	B3AEA0000172	DIODE	1	AKX440
	D6104	B3AEA0000172	DIODE	1	AKX440
	D6105	B3AAA0001129	DIODE	1	AKX440
	D6400	B3AAA0001243	DIODE	1	
	D6401	B3AAA0001243	DIODE	1	
	D6801	B0ADDH000009	DIODE	1	
	D6802	B0ADDH000009	DIODE	1	
	D6806	DZ2J056M0L	DIODE	1	
	DZ1000	B0JCPG000032	DIODE	1	
			VARIABLE RESISTORS		
	VR9000	EVEKE2F3524B	ENCODER	1	
	VR9001	EVEKE2F3524B	ENCODER	1	
			ESD SUPRESSOR		
	VA51	EZAEG2A50AX	ESD SUPRESSOR	1	
			SWITCHES		
	S6200	EVQ21405RJ	SW POWER	1	
	S6201	EVQ21405RJ	SW OPEN/CLOSE	1	
	S6202	EVQ21405RJ	SW STOP TUNE MODE	1	
	S6211	EVQ21405RJ	SW D.BASS	1	
	S6212	EVQ21405RJ	SW ALBUM/TRACK	1	AKX220
	S6212	EVQ21405RJ	SW ALBUM/TRACK/-ILLUMINATION	1	AKX440
	S6213	EVQ21405RJ	SW FWD	1	
	S6214	EVQ21405RJ	SW RADIO/AUX	1	AKX220
	S6214	EVQ21405RJ	SW CD/RADIO/AUX	1	AKX440
	S6215	EVQ21405RJ	SW PLAY/PAUSE	1	
	S6216	EVQ21405RJ	SW DJ JUKEBOX	1	AKX220
	S6216	EVQ21405RJ	SW DJ JUKEBOX/SAMPLER	1	AKX440
	S6221	EVQ21405RJ	SW LATIN/EQ	1	
	S6222	EVQ21405RJ	SW RWD	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	S6223	EVQ21405RJ	SW BT/-PAIRING	1	
	S6224	EVQ21405RJ	SW USB/CD	1	AKX220
	S6224	EVQ21405RJ	SW MEM/USB	1	AKX440
	S6225	EVQ21405RJ	SW USB REC/PAUSE	1	
	S6226	EVQ21405RJ	SW DISPLAY	1	AKX220
	S6226	EVQ21405RJ	SW MEMORY REC	1	AKX440
	S7201	K0L1BA000158	SW RESET	1	
			CONNECTORS		
	CN1002	K1YA09000001	9P CONNECTOR	1	
	CN2500	K1MN17A00040	17P CONNECTOR	1	
	CN2503	K1KA09AA0193	9P CONNECTOR	1	
	CN2507	K1KA04AA0193	4P CONNECTOR	1	AKX440
	CN6001	K1MN17B00032	17P CONNECTOR	1	
	CN6300	K1ZZ00000832	CONNECTOR	1	AKX440
	CN6402	K1YA09000001	9P CABLE HOLDER	1	
	CN7001	K1MY05BA0565	5P CONNECTOR	1	
	CN7002	K1MN10B00016	10P CONNECTOR	1	
	P2004	K1MN10A00011	10P CONNECTOR	1	
	P2005	K1MY24A00001	24P CONNECTOR	1	
			COILS AND INDUCTORS		
	L51	G1CR18JA0020	CHIP INDUCTOR	1	
	L52	G2A380Y00002	ANTENNA COIL	1	
	L53	D0GBR00J0004	0 1/10W	1	
	L1000	G1C330MA0234	CHIP INDUCTOR	1	
	L1001	G1C101MA0291	CHIP INDUCTOR	1	
	L6000	G0A100K00006	CHOKE COIL	1	AKX220
	L6001	G0A100K00006	CHOKE COIL	1	AKX220
	L6002	G0A100K00006	CHOKE COIL	1	
	L6005	G0A100K00006	CHOKE COIL	1	
	L6300	D0GB101JA065	100 1/10W	1	AKX440
	L6300	G0C100M00013	INDUCTOR	1	AKX440
	L6301	D0GBR00J0004	0 1/10W	1	AKX440
	L6301	G0C100M00013	INDUCTOR	1	AKX440
	L6302	D0GBR00J0004	0 1/10W	1	AKX440
	L7000	J0JYC0000305	INDUCTOR	1	
	LB51	J0JYC0000656	INDUCTOR	1	
	LB52	D0GBR00J0004	0 1/10W	1	
	LB53	J0JYC0000656	INDUCTOR	1	
	LB2002	J0JYC0000656	INDUCTOR	1	
	LB2003	J0JYC0000656	INDUCTOR	1	
	LB2004	J0JYC0000656	INDUCTOR	1	
	LB2005	D0GB100JA065	10 1/10W	1	
	LB2006	J0JYC0000656	INDUCTOR	1	
	LB2007	J0JYC0000656	INDUCTOR	1	
	LB2009	J0JBC0000010	INDUCTOR	1	AKX440
	LB2010	D0GBR00J0004	0 1/10W	1	
	LB2012	J0JHC0000045	INDUCTOR	1	
	LB2013	J0JHC0000045	INDUCTOR	1	
	LB2014	J0JBC0000134	INDUCTOR	1	
	LB2015	J0JCC0000286	INDUCTOR	1	
	LB2016	J0JCC0000286	INDUCTOR	1	
	LB2021	J0JYC0000656	INDUCTOR	1	
	LB2025	J0JCC0000277	INDUCTOR	1	AKX440
	LB2026	J0JCC0000277	INDUCTOR	1	AKX440
	LB2027	J0JCC0000277	INDUCTOR	1	AKX440
	LB2148	D0GAR00J0005	0 1/16W	1	AKX440
	LB6100	J0JBC0000134	INDUCTOR	1	AKX440
	LB6303	D0GBR00J0004	0 1/10W	1	AKX440
	LB6400	J0JHC0000118	INDUCTOR	1	
	LB6401	J0JHC0000118	INDUCTOR	1	
	LB6500	J0JYC0000656	INDUCTOR	1	
	LB6501	J0JYC0000656	INDUCTOR	1	
	LB6801	J0JHC0000118	INDUCTOR	1	AKX440
	LB6802	J0JHC0000118	INDUCTOR	1	
	LB6803	J0JHC0000118	INDUCTOR	1	
	LB6805	J0JHC0000118	INDUCTOR	1	
			OSCILLATORS		

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	X2001	H0J169500045	OSCILLATOR	1	
	X2002	H0A327200191	OSCILLATOR	1	
	X6500	H0J245500110	OSCILLATOR	1	
			FL DISPLAY		
	FL6801	A2BB00000186	FL DISPLAY	1	
			JACKS		
	JK51	K4ZZ02000103	JK FM ANTENNA	1	
	JK52	K4AC02B00042	JK AM ANTENNA	1	
	JK6000	K4AL04B00001	JK SPEAKERS	1	
	JK6002	K2HA2YYA0009	JK AUX IN	1	AKX220
	JK6002	K2HA2YYA0009	JK AUX IN 1	1	AKX440
	JK6301	K2HC103A0031	JK AUX IN 2	1	AKX440
	JK6400	K1FY104A0034	JK USB PORT A	1	
	JK6401	K1FY104A0034	JK USB PORT B	1	
			CHIP JUMPERS		
	W100	D0GFR00J0005	0 1/4W	1	
	W101	D0GFR00J0005	0 1/4W	1	
	W102	D0GBR00J0004	0 1/10W	1	
	W103	D0GFR00J0005	0 1/4W	1	
	W104	D0GFR00J0005	0 1/4W	1	
	W105	D0GFR00J0005	0 1/4W	1	
	W106	D0GBR00J0004	0 1/10W	1	
	W107	D0GDR00J0004	0 1/8W	1	
	W108	D0GFR00J0005	0 1/4W	1	
	W109	D0GFR00J0005	0 1/4W	1	
	W110	D0GFR00J0005	0 1/4W	1	
	W111	D0GFR00J0005	0 1/4W	1	
	W112	D0GDR00J0004	0 1/8W	1	
	W113	D0GDR00J0004	0 1/8W	1	
	W114	D0GBR00J0004	0 1/10W	1	
	W115	D0GFR00J0005	0 1/4W	1	
	W116	D0GBR00J0004	0 1/10W	1	
	W117	D0GFR00J0005	0 1/4W	1	
	W118	D0GFR00J0005	0 1/4W	1	
	W119	D0GBR00J0004	0 1/10W	1	
	W120	D0GFR00J0005	0 1/4W	1	
	W121	D0GFR00J0005	0 1/4W	1	
	W122	D0GFR00J0005	0 1/4W	1	
	W123	D0GBR00J0004	0 1/10W	1	
	W124	D0GFR00J0005	0 1/4W	1	
	W125	D0GDR00J0004	0 1/8W	1	
	W126	D0GFR00J0005	0 1/4W	1	
	W127	D0GFR00J0005	0 1/4W	1	
	W128	D0GFR00J0005	0 1/4W	1	
	W129	D0GFR00J0005	0 1/4W	1	
	W130	D0GBR00J0004	0 1/10W	1	
	W131	D0GDR00J0004	0 1/8W	1	
	W132	D0GBR00J0004	0 1/10W	1	
	W133	D0GDR00J0004	0 1/8W	1	
	W134	D0GDR00J0004	0 1/8W	1	
	W135	D0GFR00J0005	0 1/4W	1	
	W136	D0GBR00J0004	0 1/10W	1	
	W137	D0GFR00J0005	0 1/4W	1	
	W138	D0GFR00J0005	0 1/4W	1	
	W139	D0GFR00J0005	0 1/4W	1	
	W140	D0GFR00J0005	0 1/4W	1	
	W141	D0GBR00J0004	0 1/10W	1	
	W142	D0GDR00J0004	0 1/8W	1	
	W143	D0GFR00J0005	0 1/4W	1	
	W144	D0GFR00J0005	0 1/4W	1	
	W145	D0GFR00J0005	0 1/4W	1	
	W146	D0GFR00J0005	0 1/4W	1	
	W147	D0GFR00J0005	0 1/4W	1	
	W148	D0GFR00J0005	0 1/4W	1	
	W149	D0GFR00J0005	0 1/4W	1	
	W150	D0GFR00J0005	0 1/4W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	W151	D0GDR00J0004	0 1/8W	1	
	W152	D0GFR00J0005	0 1/4W	1	
	W153	D0GFR00J0005	0 1/4W	1	
	W154	D0GFR00J0005	0 1/4W	1	
	W155	D0GFR00J0005	0 1/4W	1	
	W156	D0GFR00J0005	0 1/4W	1	
	W157	D0GFR00J0005	0 1/4W	1	
	W158	D0GFR00J0005	0 1/4W	1	
	W159	D0GFR00J0005	0 1/4W	1	
	W160	D0GBR00J0004	0 1/10W	1	
	W161	D0GFR00J0005	0 1/4W	1	
	W162	D0GFR00J0005	0 1/4W	1	
	W201	D0GDR00J0004	0 1/8W	1	
			REMOTE SENSOR		
	IR6500	B3RAD0000222	REMOTE SENSOR	1	
			RESISTORS		
	R52	D0GB221JA065	220 1/10W	1	
	R59	D0GB222JA065	2.2K 1/10W	1	
	R1004	D1BB7501A074	7.5K 1/10W	1	
	R1005	D1BB5602A074	56K 1/10W	1	
	R1006	D1BB1002A074	10K 1/10W	1	
	R1007	D0GB683JA065	68K 1/10W	1	
	R1008	D0GB103JA065	10K 1/10W	1	
	R1016	D0GB224JA065	220K 1/10W	1	
	R1026	D0GB683JA065	68K 1/10W	1	
	R1027	D1BB1002A074	10K 1/10W	1	
	R1030	D0GB103JA065	10K 1/10W	1	
	R1031	D0GB224JA065	220K 1/10W	1	
	R1044	D0GB222JA065	2.2K 1/10W	1	
	R1049	D0GB103JA065	10K 1/10W	1	
	R1050	D0GB104JA065	100K 1/10W	1	
	R1051	D0GB222JA065	2.2K 1/10W	1	
	R1053	D0GB2R2JA065	2.2 1/10W	1	
	R1054	D0GB2R2JA065	2.2 1/10W	1	
	R1055	D0GB2R2JA065	2.2 1/10W	1	
	R1056	D0GB271JA065	270 1/10W	1	
	R1060	J0JYC0000656	INDUCTOR	1	
	R1064	D0GB103JA065	10K 1/10W	1	
	R1067	J0JYC0000656	INDUCTOR	1	
	R1070	D0GB222JA065	2.2K 1/10W	1	
	R1076	D0GB185JA065	1.8M 1/10W	1	
	R1077	D0GB185JA065	1.8M 1/10W	1	
	R2001	D0GA103JA023	10K 1/16W	1	
	R2002	D0GB334JA065	330K 1/10W	1	
	R2003	D0GAR00J0005	0 1/16W	1	AKX440
	R2004	D0GBR00J0004	0 1/10W	1	
	R2006	D0GBR00J0004	0 1/10W	1	
	R2012	D0GA471JA023	470 1/16W	1	
	R2024	D0GA221JA023	220 1/16W	1	
	R2026	D0GA102JA023	1K 1/16W	1	
	R2033	D0GA221JA023	220 1/16W	1	
	R2035	D0GA681JA023	680 1/16W	1	
	R2036	D0GA105JA023	1M 1/16W	1	
	R2037	D0GA104JA023	100K 1/16W	1	
	R2038	D0GA106JA023	10M 1/16W	1	
	R2048	D0GAR00J0005	0 1/16W	1	
	R2050	D0GBR00J0004	0 1/10W	1	
	R2057	D0GBR00J0004	0 1/10W	1	
	R2069	D0GAR00J0005	0 1/16W	1	
	R2074	D0GA683JA023	68K 1/16W	1	
	R2075	D0GA153JA023	15K 1/16W	1	
	R2076	D0GBR00J0004	0 1/10W	1	
	R2093	D0GB564JA065	560K 1/10W	1	
	R2096	D0GBR00J0004	0 1/10W	1	
	R2097	D0GBR00J0004	0 1/10W	1	
	R2102	D0GAR00J0005	0 1/16W	1	AKX440
	R2104	D0GBR00J0004	0 1/10W	1	
	R2106	D0GB103JA065	10K 1/10W	1	AKX220
	R2108	D0GB103JA065	10K 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R2109	D0GB103JA065	10K 1/10W	1	AKX440
	R2110	D0GB122JA065	1.2K 1/10W	1	
	R2111	D0GB122JA065	1.2K 1/10W	1	
	R2112	D0GA103JA023	10K 1/16W	1	
	R2115	D0GB122JA065	1.2K 1/10W	1	
	R2117	D0GB122JA065	1.2K 1/10W	1	
	R2118	D0GA103JA023	10K 1/16W	1	
	R2121	D0GB103JA065	10K 1/10W	1	
	R2122	D0GA103JA023	10K 1/16W	1	
	R2123	D0GB103JA065	10K 1/10W	1	
	R2124	D0GA103JA023	10K 1/16W	1	AKX440
	R2126	D0GA103JA023	10K 1/16W	1	AKX440
	R2127	D0GA103JA023	10K 1/16W	1	
	R2128	D0GA103JA023	10K 1/16W	1	AKX440
	R2129	D0GB272JA065	2.7K 1/10W	1	PS
	R2129	D0GBR00J0004	0 1/10W	1	PN
	R2130	D0GB103JA065	10K 1/10W	1	AKX440
	R2131	D0GA103JA023	10K 1/16W	1	
	R2132	D0GB103JA065	10K 1/10W	1	AKX440
	R2134	D0GA103JA023	10K 1/16W	1	AKX440
	R2135	D0GB123JA065	12K 1/10W	1	AKX220PN
	R2135	D0GB224JA065	220K 1/10W	1	AKX440PN
	R2135	D0GB333JA065	33K 1/10W	1	AKX220PS
	R2135	D0GB684JA065	680K 1/10W	1	AKX440PS
	R2136	D0GA103JA023	10K 1/16W	1	AKX440
	R2139	D0GA103JA023	10K 1/16W	1	
	R2142	D0GAR00J0005	0 1/16W	1	
	R2144	D0GAR00J0005	0 1/16W	1	
	R2146	J0JCC0000308	INDUCTOR	1	AKX440
	R2153	D0GA683JA023	68K 1/16W	1	
	R2154	D0GA683JA023	68K 1/16W	1	
	R2156	D0GB101JA065	100 1/10W	1	
	R2157	D0GB122JA065	1.2K 1/10W	1	
	R2158	D0GB102JA065	1K 1/10W	1	
	R2159	D0GB682JA065	6.8K 1/10W	1	
	R2160	D0GBR00J0004	0 1/10W	1	
	R2161	D0GB473JA065	47K 1/10W	1	
	R2162	D0GBR00J0004	0 1/10W	1	
	R2163	D0GBR00J0004	0 1/10W	1	
	R2164	D0GB104JA065	100K 1/10W	1	
	R2165	D0GBR00J0004	0 1/10W	1	
	R2166	D0GB153JA065	15K 1/10W	1	
	R2167	D0GB4R7JA065	4.7 1/10W	1	
	R2168	D0GB104JA065	100K 1/10W	1	
	R2169	D0GB4R7JA065	4.7 1/10W	1	
	R2170	D0GB102JA065	1K 1/10W	1	
	R2171	D0GBR00J0004	0 1/10W	1	
	R2182	D0GB103JA065	10K 1/10W	1	
	R2183	D0GB103JA065	10K 1/10W	1	
	R2184	D0GB103JA065	10K 1/10W	1	
	R2187	D0GAR00J0005	0 1/16W	1	
	R2188	D0GBR00J0004	0 1/10W	1	
	R2192	D0GAR00J0005	0 1/16W	1	
	R2203	D0GA103JA023	10K 1/16W	1	AKX440
	R2204	D0GA103JA023	10K 1/16W	1	AKX440
	R2205	D0GA103JA023	10K 1/16W	1	AKX440
	R2300	D0GAR00J0005	0 1/16W	1	AKX440
	R2312	D0GBR00J0004	0 1/10W	1	AKX220
	R2313	D0GBR00J0004	0 1/10W	1	AKX440
	R2314	D0GBR00J0004	0 1/10W	1	PN
	R2319	D0GBR00J0004	0 1/10W	1	PS
	R2411	D0GB103JA065	10K 1/10W	1	
	R2412	D0GB103JA065	10K 1/10W	1	
	R2417	D0GB103JA065	10K 1/10W	1	
	R2419	D0GB103JA065	10K 1/10W	1	
	R2420	D0GB103JA065	10K 1/10W	1	
	R2421	D0GB103JA065	10K 1/10W	1	
	R2422	D0GB103JA065	10K 1/10W	1	
	R2423	D0GB103JA065	10K 1/10W	1	
	R2498	D0GB473JA065	47K 1/10W	1	
	R2499	D0GA222JA023	2.2K 1/16W	1	
	R2501	D0GA101JA023	100 1/16W	1	
	R2502	D0GB331JA065	330 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R2503	D0GB331JA065	330 1/10W	1	
	R2504	D0GB103JA065	10K 1/10W	1	
	R2505	D0GB103JA065	10K 1/10W	1	
	R2510	D0GB104JA065	100K 1/10W	1	
	R2511	D0GB104JA065	100K 1/10W	1	
	R2512	D0GBR00J0004	0 1/10W	1	AKX440
	R2518	D0GAR00J0005	0 1/16W	1	AKX440
	R2519	D0GAR00J0005	0 1/16W	1	AKX440
	R2521	D0GB1R0JA065	1.0 1/10W	1	
	R2526	D0GAR00J0005	0 1/16W	1	
	R2536	D0GAR00J0005	0 1/16W	1	AKX440
	R2555	D0GB333JA065	33K 1/10W	1	
	R2556	D0GB333JA065	33K 1/10W	1	
	R6001	D0GBR00J0004	0 1/10W	1	
	R6007	D0GB100JA065	10 1/10W	1	
	R6011	D0GB100JA065	10 1/10W	1	
	R6046	D0GB223JA065	22K 1/10W	1	
	R6050	D0GB100JA065	10 1/10W	1	
	R6054	D0GB563JA065	56K 1/10W	1	
	R6055	D0GB473JA065	47K 1/10W	1	
	R6056	D0GB472JA065	4.7K 1/10W	1	
	R6057	D0GB224JA065	220K 1/10W	1	
	R6058	D0GB3R3JA065	3.3 1/10W	1	
	R6060	D0GB3R3JA065	3.3 1/10W	1	
	R6061	D0GB3R3JA065	3.3 1/10W	1	
	R6062	D0GB3R3JA065	3.3 1/10W	1	
	R6066	D0GB104JA065	100K 1/10W	1	
	R6067	D0GB104JA065	100K 1/10W	1	
	R6068	D0GB104JA065	100K 1/10W	1	
	R6069	D0GB104JA065	100K 1/10W	1	
	R6070	D0GB682JA065	6.8K 1/10W	1	
	R6072	D0GB103JA065	10K 1/10W	1	
	R6081	D0GB100JA065	10 1/10W	1	
	R6082	D0GB100JA065	10 1/10W	1	
	R6083	D0GB100JA065	10 1/10W	1	
	R6084	D0GB100JA065	10 1/10W	1	
	R6091	D0GB100JA065	10 1/10W	1	
	R6092	D0GB100JA065	10 1/10W	1	
	R6093	D0GB100JA065	10 1/10W	1	
	R6094	D0GB100JA065	10 1/10W	1	
	R6100	D0GB103JA065	10K 1/10W	1	AKX440
	R6101	D0GB472JA065	4.7K 1/10W	1	AKX440
	R6102	D0GB103JA065	10K 1/10W	1	AKX440
	R6103	D0GB102JA065	1K 1/10W	1	AKX440
	R6104	D0GB103JA065	10K 1/10W	1	AKX440
	R6105	D0GB472JA065	4.7K 1/10W	1	AKX440
	R6106	D0GB103JA065	10K 1/10W	1	AKX440
	R6132	D0GB224JA065	220K 1/10W	1	
	R6133	D0GB472JA065	4.7K 1/10W	1	
	R6134	D0GB472JA065	4.7K 1/10W	1	
	R6135	D0GBR00J0004	0 1/10W	1	AKX220
	R6136	D0GBR00J0004	0 1/10W	1	AKX220
	R6146	D0GB103JA065	10K 1/10W	1	
	R6147	D0GB103JA065	10K 1/10W	1	
	R6148	D0GB473JA065	47K 1/10W	1	AKX440
	R6149	D0GB473JA065	47K 1/10W	1	AKX440
	R6150	D0GB103JA065	10K 1/10W	1	AKX440
	R6151	D0GB103JA065	10K 1/10W	1	AKX440
	R6155	D0GBR00J0004	0 1/10W	1	
	R6156	D0GBR00J0004	0 1/10W	1	
	R6308	D0GB562JA065	5.6K 1/10W	1	
	R6309	D0GB562JA065	5.6K 1/10W	1	
	R6401	D0GB474JA065	470K 1/10W	1	
	R6402	D0GB474JA065	470K 1/10W	1	
	R6501	D0GB152JA065	1.5K 1/10W	1	
	R6502	D0GB105JA065	1M 1/10W	1	
	R6504	D0GB103JA065	10K 1/10W	1	
	R6550	D0GB221JA065	220 1/10W	1	
	R6551	D0GB221JA065	220 1/10W	1	
	R6559	D0GB101JA065	100 1/10W	1	
	R6581	D0GB103JA065	10K 1/10W	1	
	R6801	D0GB271JA065	270 1/10W	1	AKX440
	R6802	D0GB473JA065	47K 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R6803	D0GB100JA065	10 1/10W	1	
	R6804	D0GB220JA065	22 1/10W	1	
	R6805	D0GB271JA065	270 1/10W	1	AKX440
	R6806	D0GD473JA052	47K 1/8W	1	
	R6809	D0GB471JA065	470 1/10W	1	AKX440
	R6810	D0GF390JA048	39 1/4W	1	
	R6811	D0GF390JA048	39 1/4W	1	
	R6812	D0GB101JA065	100 1/10W	1	
	R6813	D0GB101JA065	100 1/10W	1	
	R6814	D0GB101JA065	100 1/10W	1	
	R6815	D0GB272JA065	2.7K 1/10W	1	
	R6816	D0GB472JA065	4.7K 1/10W	1	
	R6817	D0GB223JA065	22K 1/10W	1	
	R6818	D0GB473JA065	47K 1/10W	1	
	R6820	D0GBR00J0004	0 1/10W	1	
	R6822	D0GD104JA052	100K 1/8W	1	
	R6823	D0GB471JA065	470 1/10W	1	AKX440
	R6829	D0GBR00J0004	0 1/10W	1	
	R7001	D0GB222JA065	2.2K 1/10W	1	
	R9001	D0GB222JA065	2.2K 1/10W	1	
	R9002	D0GB392JA065	3.9K 1/10W	1	
	R9004	D0GB183JA065	18K 1/10W	1	
	R9006	D0GB272JA065	2.7K 1/10W	1	
	R9007	D0GB392JA065	3.9K 1/10W	1	
	R9028	D1BB7501A074	7.5K 1/10W	1	
	R9029	D0GB183JA065	18K 1/10W	1	
	R9030	D0GB272JA065	2.7K 1/10W	1	
	R9031	D0GB123JA065	12K 1/10W	1	
	R9032	D0GB392JA065	3.9K 1/10W	1	
	R9033	D1BB7501A074	7.5K 1/10W	1	
	R9034	D1BB7501A074	7.5K 1/10W	1	
	R9035	D0GB183JA065	18K 1/10W	1	
	R9039	D0GB123JA065	12K 1/10W	1	
	R9040	D0GB223JA065	22K 1/10W	1	
	R9041	D0GB223JA065	22K 1/10W	1	
	R9044	D0GBR00J0004	0 1/10W	1	
	R9045	D0GBR00J0004	0 1/10W	1	
	R9047	D0GBR00J0004	0 1/10W	1	
	R9048	D0GBR00J0004	0 1/10W	1	
	R9049	D0GBR00J0004	0 1/10W	1	AKX440
	R9050	D0GBR00J0004	0 1/10W	1	AKX440
	R9051	D0GBR00J0004	0 1/10W	1	
	R9052	D0GBR00J0004	0 1/10W	1	
	R9053	D0GBR00J0004	0 1/10W	1	
	R9054	D0GBR00J0004	0 1/10W	1	
	R9057	D0GBR00J0004	0 1/10W	1	
			RESISTOR NETWORKS		
	RX2001	D1H8R0040016	RESISTOR NETWORK	1	
	RX2003	D1H81034A042	RESISTOR NETWORK	1	
			CAPACITORS		
	C51	F1G1H1020008	1000pF 50V	1	
	C52	F1H1A474A107	0.47uF 10V	1	
	C61	F1H1H104B047	0.1uF 50V	1	
	C62	F1H1H104B047	0.1uF 50V	1	
	C66	F1H1H330B052	33pF 50V	1	
	C67	F1H1H3R0B050	3.0pF 50V	1	
	C1000	F1J1A106A043	10uF 10V	1	
	C1001	F1J1A106A043	10uF 10V	1	
	C1002	F1K1E1060009	10uF 25V	1	
	C1003	F1H1H561B052	560pF 50V	1	
	C1004	F1H1H104B047	0.1uF 50V	1	
	C1005	F1H1H104B047	0.1uF 50V	1	
	C1008	F1J1A106A043	10uF 10V	1	
	C1009	F1J1A106A043	10uF 10V	1	
	C1013	F1H1H561B052	560pF 50V	1	
	C1015	F1G1H103A835	0.01uF 50V	1	
	C1016	F1H1H104B047	0.1uF 50V	1	
	C1018	F1H1H103B047	0.01uF 50V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C1019	F1H1H103B047	0.01uF 50V	1	
	C1021	F2A1H220B411	22uF 50V	1	
	C1022	F1H1H104B047	0.1uF 50V	1	
	C1023	F1H1H104B047	0.1uF 50V	1	
	C1024	F1H1A1050039	1uF 10V	1	
	C1025	F1H1A1050039	1uF 10V	1	
	C1026	F2A1H220B411	22uF 50V	1	
	C1031	F1H1H104B047	0.1uF 50V	1	
	C1039	F1J1A106A043	10uF 10V	1	
	C1040	F1H1A1050039	1uF 10V	1	
	C1042	F1H1H104B047	0.1uF 50V	1	AKX220
	C1042	F1H1A106A135	10uF 50V	1	AKX440
	C1044	F1J1A106A043	10uF 10V	1	
	C1045	F1J1A106A043	10uF 10V	1	
	C1046	F1H1H104B047	0.1uF 50V	1	
	C1047	F1H1H104B047	0.1uF 50V	1	
	C1048	F1H1H104B047	0.1uF 50V	1	
	C1049	F1H1H104B047	0.1uF 50V	1	
	C1051	F2A1C1010033	100uF 16V	1	
	C1052	F2A1C221B456	220uF 16V	1	
	C1055	F1H1H104B047	0.1uF 50V	1	
	C2102	F1G1C104A146	0.1uF 16V	1	AKX440
	C2103	F1G1C104A146	0.1uF 16V	1	AKX440
	C2104	F1G1C104A146	0.1uF 16V	1	
	C2105	F1G1C104A146	0.1uF 16V	1	
	C2107	F1G1C104A146	0.1uF 16V	1	
	C2108	F1G1C104A146	0.1uF 16V	1	
	C2110	F1G1C104A146	0.1uF 16V	1	
	C2111	F1G1C104A146	0.1uF 16V	1	
	C2112	F1G1C104A146	0.1uF 16V	1	
	C2113	F1G1C104A146	0.1uF 16V	1	
	C2114	F1H1C224A178	0.22uF 16V	1	
	C2115	F1J1A335A005	3.3uF 10V	1	
	C2116	F2A1C1010033	100uF 16V	1	
	C2117	F1G1C104A146	0.1uF 16V	1	
	C2118	F1G1H681A830	680pF 50V	1	
	C2119	F2A0J331B035	330uF 6.3V	1	
	C2120	F1G1C104A146	0.1uF 16V	1	
	C2121	F1G1C104A146	0.1uF 16V	1	
	C2122	F1H0J1060003	10uF 6.3V	1	
	C2123	F1H0J1060003	10uF 6.3V	1	
	C2124	F1H0J1060003	10uF 6.3V	1	
	C2125	F1H0J1060003	10uF 6.3V	1	
	C2126	F1H0J1060003	10uF 6.3V	1	
	C2127	F1H0J1060003	10uF 6.3V	1	
	C2128	F1H1H8R0B051	8.0pF 50V	1	
	C2129	F1H1H8R0B051	8.0pF 50V	1	
	C2130	F1G1H270A834	27pF 50V	1	
	C2131	F1G1H270A834	27pF 50V	1	
	C2132	F1G1H101A834	100pF 50V	1	
	C2133	F1G1H102A830	1000pF 50V	1	
	C2134	F1G1H102A830	1000pF 50V	1	
	C2135	F1G1H102A830	1000pF 50V	1	
	C2136	F1G1H101A834	100pF 50V	1	
	C2139	F1G1H102A830	1000pF 50V	1	
	C2141	F1G1C104A146	0.1uF 16V	1	
	C2142	F1G1C104A146	0.1uF 16V	1	
	C2143	F1H1C224A178	0.22uF 16V	1	
	C2144	F1H1H223B047	0.022uF 50V	1	
	C2145	F1H1H470B052	47pF 50V	1	
	C2146	F1H1H470B052	47pF 50V	1	
	C2147	F1G1C104A146	0.1uF 16V	1	
	C2148	F1J1A106A043	10uF 10V	1	
	C2149	F1G1C104A146	0.1uF 16V	1	AKX440
	C2150	F1G1C104A146	0.1uF 16V	1	AKX440
	C2151	F1G1C104A146	0.1uF 16V	1	AKX440
	C2152	F1H0J4750005	4.7uF 6.3V	1	AKX440
	C2153	F1G1C104A146	0.1uF 16V	1	AKX440
	C2154	F1G1C104A146	0.1uF 16V	1	AKX440
	C2155	F1G1C104A146	0.1uF 16V	1	AKX440
	C2156	F1G1C104A146	0.1uF 16V	1	AKX440
	C2157	F1H0J1060003	10uF 6.3V	1	AKX440
	C2158	F1G1A1050004	1uF 10V	1	AKX440

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C2159	F1G1A1050004	1uF 10V	1	AKX440
	C2160	F1G1C104A146	0.1uF 16V	1	AKX440
	C2161	F1G1C104A146	0.1uF 16V	1	AKX440
	C2162	F1J1A106A043	10uF 10V	1	
	C2163	F1H1H103B047	0.01uF 50V	1	
	C2164	F1J1A106A043	10uF 10V	1	
	C2165	F1G1C104A146	0.1uF 16V	1	
	C2166	F1H1H103B047	0.01uF 50V	1	
	C2167	F1H1H103B047	0.01uF 50V	1	
	C2168	F1G1H222A830	2200pF 50V	1	
	C2169	F1G1H222A830	2200pF 50V	1	
	C2170	F1J1A106A043	10uF 10V	1	
	C2171	F1H1H103B047	0.01uF 50V	1	
	C2172	F1G1C104A146	0.1uF 16V	1	
	C2173	F1G1H1020008	1000pF 50V	1	
	C2178	F1H1E105A153	1uF 25V	1	
	C2179	F1H1H103B047	0.01uF 50V	1	
	C2180	F2A1C1010033	100uF 16V	1	
	C2181	F2A1C1010033	100uF 16V	1	
	C2182	F2A1C1010033	100uF 16V	1	
	C2183	F1G1H680A541	68pF 50V	1	
	C2185	F2A0J101A208	100uF 6.3V	1	
	C2504	F1G1C104A146	0.1uF 16V	1	
	C2505	F1G1C104A146	0.1uF 16V	1	
	C2506	F1G1C104A146	0.1uF 16V	1	
	C2507	F1J1A4750011	4.7uF 10V	1	
	C2508	F1J1A4750011	4.7uF 10V	1	
	C6001	F1K1H105A250	1uF 50V	1	AKX220
	C6002	F1K1H105A250	1uF 50V	1	AKX220
	C6003	F1K1H105A250	1uF 50V	1	AKX220
	C6004	F1K1H105A250	1uF 50V	1	AKX220
	C6005	F1J1C1060006	10uF 16V	1	
	C6018	F1H1H104B047	0.1uF 50V	1	
	C6019	F1H1H104B047	0.1uF 50V	1	
	C6020	F1H1E105A153	1uF 25V	1	
	C6021	F1H1H104B047	0.1uF 50V	1	
	C6022	F1H1E105A153	1uF 25V	1	
	C6023	F1H1E105A153	1uF 25V	1	
	C6024	F1H1H333B047	0.033uF 50V	1	
	C6025	F1H1H333B047	0.033uF 50V	1	
	C6027	F1H1H104B047	0.1uF 50V	1	
	C6028	F1H1H333B047	0.033uF 50V	1	
	C6030	F1H1H333B047	0.033uF 50V	1	
	C6031	F1J1H105A918	1uF 50V	1	
	C6032	F1H1H104B047	0.1uF 50V	1	
	C6033	F2A1H102A201	1000uF 50V	1	AKX440
	C6035	F2A1H102A201	1000uF 50V	1	
	C6036	F1H1H104B047	0.1uF 50V	1	
	C6039	F1J1H105A918	1uF 50V	1	
	C6045	F0A1H474A095	0.47uF 50V	1	AKX440
	C6046	F0A1H474A095	0.47uF 50V	1	AKX440
	C6047	F0A1H474A095	0.47uF 50V	1	AKX440
	C6048	F0A1H474A095	0.47uF 50V	1	AKX440
	C6061	F1H1H103B047	0.01uF 50V	1	
	C6062	F1H1H103B047	0.01uF 50V	1	
	C6063	F1H1H103B047	0.01uF 50V	1	
	C6064	F1H1H103B047	0.01uF 50V	1	
	C6068	F1J1A106A043	10uF 10V	1	
	C6081	F1H1H222B047	2200uF 50V	1	
	C6082	F1H1H222B047	2200uF 50V	1	
	C6083	F1H1H222B047	2200uF 50V	1	
	C6084	F1H1H222B047	2200uF 50V	1	
	C6088	F2A1H102A201	1000uF 50V	1	AKX440
	C6099	F1H1H681B052	680pF 50V	1	
	C6100	F1H1H681B052	680pF 50V	1	
	C6101	F1H1H104B047	0.1uF 50V	1	AKX440
	C6102	F1H1H681B047	680pF 50V	1	AKX440
	C6103	F1H1H681B047	680pF 50V	1	AKX440
	C6104	F1H1A105A113	1uF 10V	1	AKX440
	C6105	F1H1A105A113	1uF 10V	1	AKX440
	C6106	F1H1A105A113	1uF 10V	1	AKX440
	C6107	F1H1A105A113	1uF 10V	1	AKX440
	C6108	F1H1A105A113	1uF 10V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C6109	F1H1A105A113	1uF 10V	1	
	C6110	F2A1C470B455	47uF 16V	1	AKX440
	C6111	F1G1H101A834	100pF 50V	1	
	C6112	F1G1H101A834	100pF 50V	1	
	C6113	F2A1C1010033	100uF 16V	1	AKX440
	C6317	F1H1H102B047	1000pF 50V	1	AKX440
	C6318	F1H1H331B052	330pF 50V	1	AKX440
	C6319	F1H1H331B052	330pF 50V	1	AKX440
	C6320	F1H1H101B052	100pF 50V	1	AKX440
	C6321	F1H1H101B052	100pF 50V	1	AKX440
	C6400	F1H1H104B047	0.1uF 50V	1	
	C6401	F1H1H104B047	0.1uF 50V	1	
	C6500	F2A0J470A013	47uF 6.3V	1	
	C6521	F1H1C474A178	0.47uF 16V	1	
	C6523	F1H1H103B047	0.01uF 50V	1	
	C6524	F1H0J1060003	10uF 6.3V	1	
	C6525	F1H1H103B047	0.01uF 50V	1	
	C6526	F1H0J1060003	10uF 6.3V	1	
	C6527	F1H0J1050012	1uF 6.3V	1	
	C6528	F1H0J1060003	10uF 6.3V	1	
	C6529	F1H0J1050012	1uF 6.3V	1	
	C6530	F2A1E221B422	220uF 25V	1	
	C6550	F1G1H1020008	1000pF 50V	1	
	C6551	F1G1H1020008	1000pF 50V	1	
	C6552	F1G1H470A834	47pF 50V	1	
	C6553	F1G1H470A834	47pF 50V	1	
	C6560	F1H1H120B052	12pF 50V	1	
	C6561	F1H1H120B052	12pF 50V	1	
	C6591	F1H0J1050012	1uF 6.3V	1	
	C6592	F1H1H104B047	0.1uF 50V	1	
	C6801	F1H1A105A113	1uF 10V	1	
	C6802	F1J1H105A918	1uF 50V	1	
	C6803	F1H1E105A153	1uF 25V	1	
	C6804	F1H1E105A153	1uF 25V	1	
	C6805	F1J1E105A287	1uF 25V	1	
	C6806	F2A1H470B412	47uF 50V	1	
	C6807	F1H1E105A153	1uF 25V	1	
	C6808	F1H1E105A153	1uF 25V	1	
	C6816	F1H1H104B047	0.1uF 50V	1	
	C6817	F2A0J101A208	100uF 6.3V	1	
	C6820	F1H1A105A113	1uF 10V	1	
	C6821	F2A0J101A208	100uF 6.3V	1	
	C6822	F1H1H101B052	100pF 50V	1	
	C6823	F1H1H101B052	100pF 50V	1	
	C6824	F1H1H101B052	100pF 50V	1	
	C6825	F1H1H101B052	100pF 50V	1	
	C6830	F1H1H101B052	100pF 50V	1	
	C6831	F1H1H102B047	1000pF 50V	1	
	C6832	F1J1A106A043	10uF 10V	1	
	C7000	F1H1H104B047	0.1uF 50V	1	
	C7001	F1H1A105A113	1uF 10V	1	
	C7002	F1H1A105A113	1uF 10V	1	
	C7003	F1H1H104B047	0.1uF 50V	1	