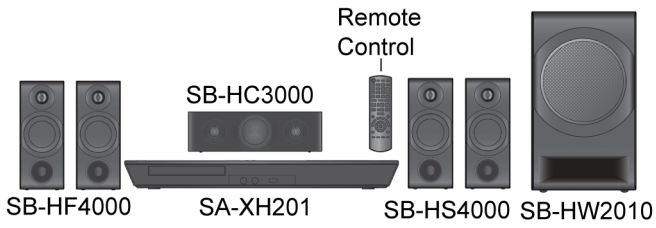
PSG1303046CE

Service Manual

DVD Home Theater Sound System

Model No. SA-XH201GW

Product Color: (K)...Black Type



Note: Please refer to the original service manual for:
- **DVD Mechanism Unit, Order No. PSG1201015AE**
- **Speaker system SB-XH201GW-K, Order No. PSG1303047CE**

⚠ 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.

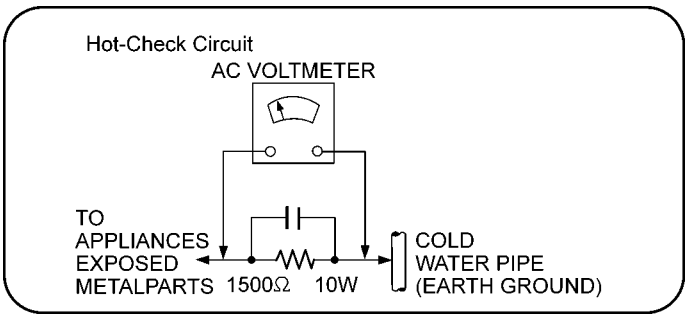

Figure 1-1

1.2. Before Repair and Adjustment

Disconnect AC power to discharge unit AC Capacitors (C5700, C5701, C5702, C5704, C5705, C5706) through a 10 Ω, 10 W resistor to ground.

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 240V, 50 Hz in NO SIGNAL mode at volume minimal should be ~ 500 mA.

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. Caution For Fuse Replacement

CAUTION:

Replace with the same type fuse:
(Manufacturer: LITTELFUSE, Type: 215, F1, T3.15AH, 250V)

1.5. Safety Part Information

Safety Parts List:

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

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

Safety	Ref No.	Part No.	Part Name & Description	Remarks
⚠	6	REXX1186-J	1P RED WIRE (AC INLET-SMPS)	
⚠	7	REXX1187-J	1P BLACK WIRE (AC INLET-SMPS)	
⚠	10	RGR0428K-G	REAR PANEL	
⚠	17	RKM0708-K	TOP CABINET	
⚠	301	RAY1104A-V	TRAVERSE ASS'Y	
⚠	A2	K2CQ2YY00119	AC CORD	
⚠	A3	RQT9809-G	O/I BOOK (En)	
⚠	PCB7	REP4761B	SMPS P.C.B.	(RTL)
⚠	PCB8	REP4761B	AC INLET P.C.B	(RTL)
⚠	DZ5701	ERZV10V511CS	ZNR	(E.S.D)
⚠	L5701	G0C123M00001	INDUCTOR	
⚠	L5702	G0C123M00001	INDUCTOR	
⚠	T5701	ETS61BA126AD	MAIN TRANSFORMER	
⚠	T5751	ETS19AB2E6AG	SUB TRANSFORMER	
⚠	PC5702	B3PBA0000579	PHOTO COUPLER	
⚠	PC5720	B3PBA0000579	PHOTO COUPLER	
⚠	PC5799	B3PBA0000579	PHOTO COUPLER	
⚠	PC5901	B3PBA0000579	PHOTO COUPLER	
⚠	F1	K5D312BNA005	FUSE	
⚠	P5701	K2AA2B000011	AC INLET	
⚠	R5700	ERJ8GEYJ155V	1.5M 1/4W	
⚠	R5701	ERJ8GEYJ155V	1.5M 1/4W	
⚠	C5700	F1BAF1020020	1000pF	
⚠	C5701	F0CAF224A105	0.22uF	
⚠	C5702	F0CAF104A105	0.1uF	
⚠	C5704	F1BAF471A013	470pF	
⚠	C5705	F1BAF471A013	470pF	
⚠	C5706	F1BAF471A013	470pF	

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: 655 nm (DVD)/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.

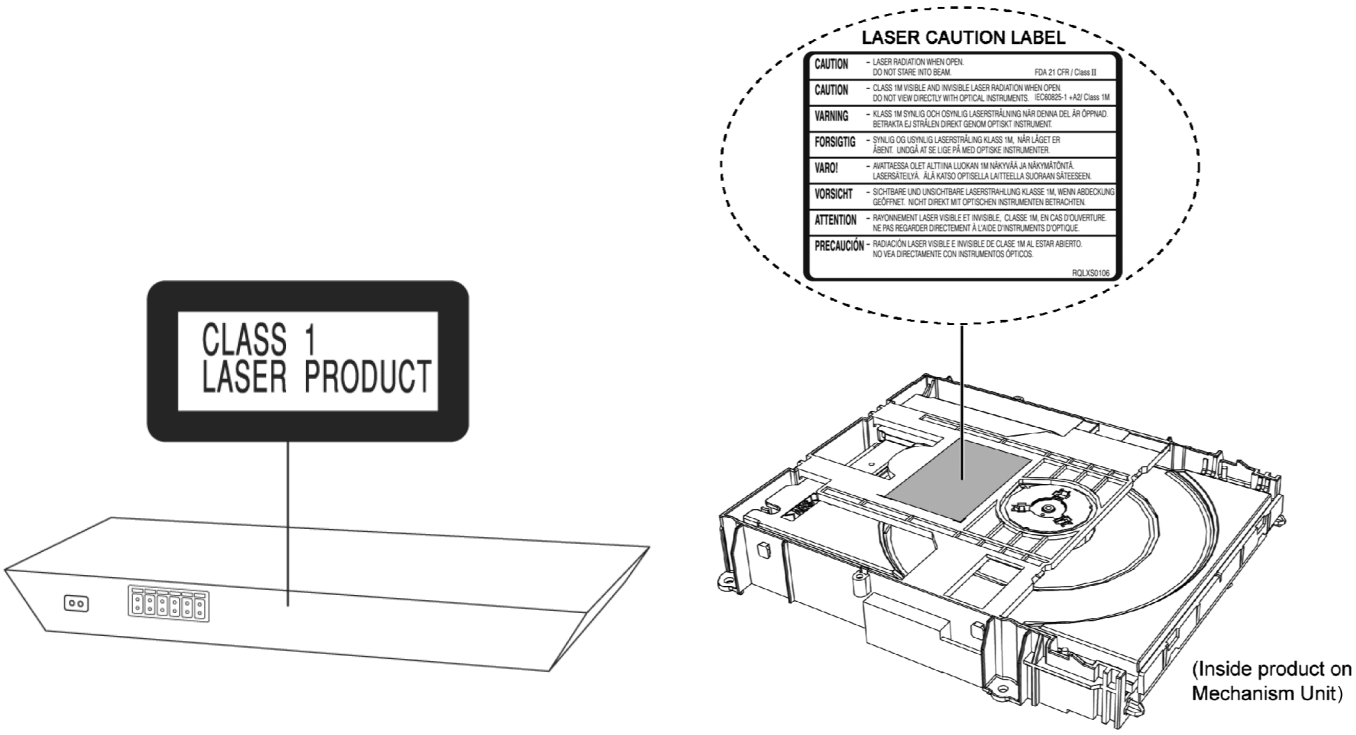


Figure 2-1

2.3. Service caution based on Legal restrictions

2.3.1. General description about Lead Free Solder (PbF)

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

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

Definition of PCB Lead Free Solder being used

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

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

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

Recommended Lead Free Solder (Service Parts Route.)

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

Note

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

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 FPC is connected to the new optical pickup unit. After replacing the optical pickup unit and connecting the flexible cable, cut off the antistatic FPC.

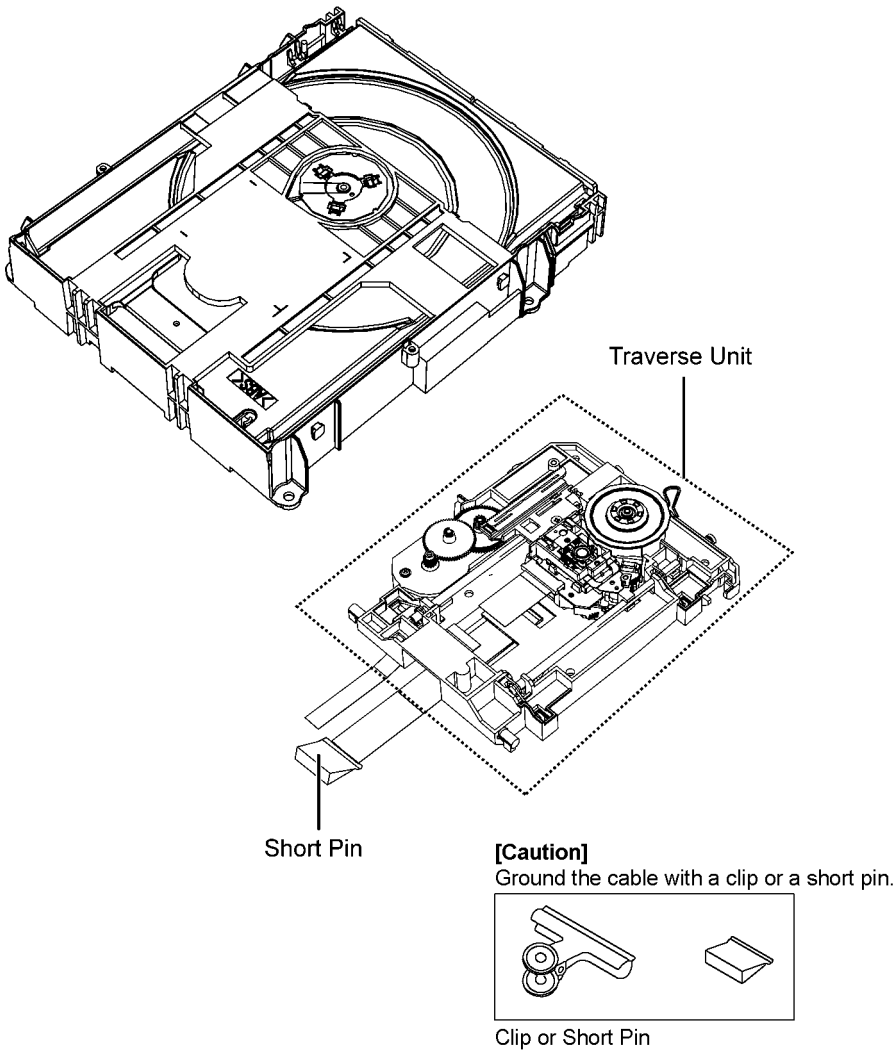


Figure 2-2

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.

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.

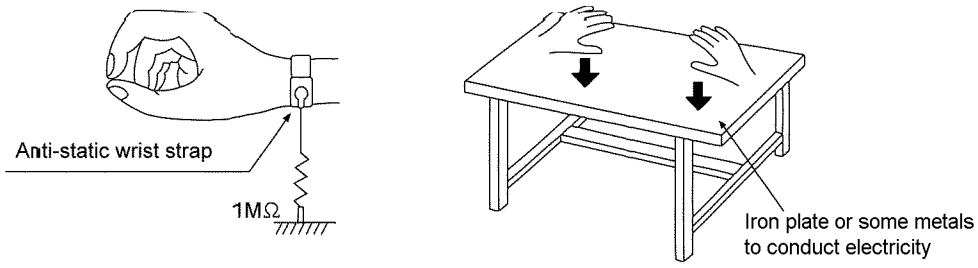


Figure 2-3

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.

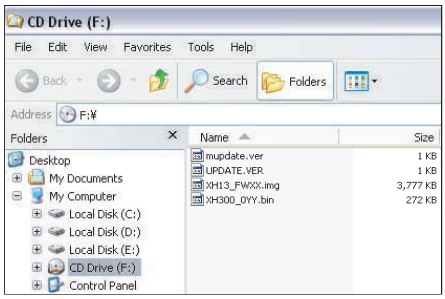
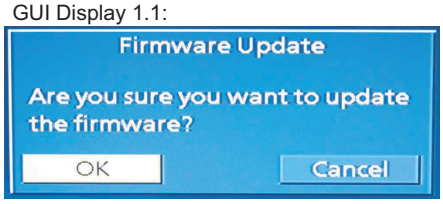
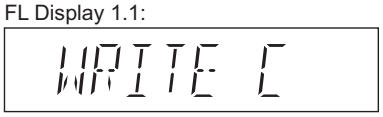
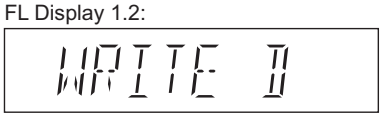
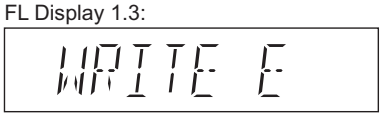
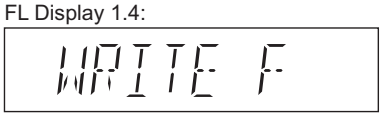
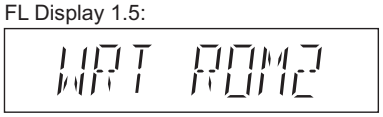
If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

- **Micro-processor:**

1) The following components are supplied as an assembled part.
   - Micro-processor IC, IC2300 (RFKWMXH300GS)

3.2. Firmware Version-Up Information

3.2.1. Process Flow (1/2)

Item			FL/ GUI Display	Remarks
Process		Description		
1	Collect ROM Files (Copy files into CD-R/RW)	**Step 1** Unzip the firmware update file. **Step 2** Burn below files into root folder of the CD disc. **Step 3** 1. UPDATE.ver 2. XH13_FWXX.img (Where the XX is the version number for firmware) 3. mupdate.ver 4. XH300_0YY.bin (Where the YY is the version number for firmware) **Notes:** 1. Software update files = "mupdate.ver" & "XH300_0YY.bin" 2. Firmware update files = "UPDATE.ver" & "XH13_FWXX.img"	Display 1: 	User can put both files into the same root directory. DVD MODEL will choose the right ROM files to update its firmware.
2	Load disc into unit (To update rate)	**Step 1** Power on main unit. **Step 2** Change selector to DVD/CD mode (default is CD/DVD mode) **Step 3** Load in the disc with software/ firmware update data. ➡ After disc reading, GUI will display as: "GUI Display 1.1: Are you sure you want to update the firmware?" **Step 4** Use remote control to select "OK" button and press remote control [OK] key. ➡ Wait about 15~20 min to finish update process. ➡ After disc reading, GUI will display as: "GUI Display 1.2: Updating in progress. Please wait...Please do not turn off power during update." ➡ FL will display in the sequence of " WRITE C", "WRITE D", " WRITE E", "WRITE F" and "WRT ROM2" as FL display 1.1~1.5 shown.	GUI Display 1.1:  GUI Display 1.2:  FL Display 1.1:  FL Display 1.2:  FL Display 1.3:  FL Display 1.4:  FL Display 1.5: 	All panel keys and remote controller keys, including [⏻/ I] key, are invalid during CD Update. **Caution:** Make sure the power supply during CD update. If the power supply cable is unplugged during update stage, CD update will fail. The DVD model can't work, and can't be recovered by CD update again.

3.2.2. Process Flow (2/2)

Item		FL/ GUI Display	Remarks
Process	Description		
	Update Completed • If firmware software update completes successfully: ➡ *GUI Display 1.3:* "Firmware update is completed, please open the tray and remove the disc." ➡ *FL Display (Main Unit) will display* "GOOD" as "FL Display 1.6" shown. **Step 5** Eject the disc and power off main unit. **Step 6** Power on the unit and do system initialize. **Step 7** Update process finish.	GUI Display 1.3:  FL Display 1.6:  	To initialize, press and hold main unit [OPEN/CLOSE] then press remote control key [≧10].

4 Specifications

●GENERAL

Power supply:
AC 220 V to 240 V, 50 Hz

Power consumption: 75 W

Dimensions (W×H×D): 460 mm × 48.5 mm × 265 mm

Mass Main unit 2.4 kg

Operating temperature range:
0 °C to +40 °C

Operating humidity range:
35 % to 80 % RH (no condensation)

Power Consumption in standby mode:
approx. 0.4 W

●AMPLIFIER SECTION

RMS Output Power: Dolby Digital Mode

Front Ch:
160 W per channel (3 Ω), 1 kHz, 10% THD

Surround Ch:
160 W per channel (3 Ω), 1 kHz, 10% THD

Center Ch:
160 W per channel (3 Ω), 1 kHz, 10% THD

Subwoofer Ch:
200 W per channel (3 Ω), 100 Hz, 10% THD

Total RMS Dolby Digital mode power 1000 W

PMPO Output Power 7500 W

●FM TUNER, TERMINALS SECTION

Preset Memory: FM 30 stations

Frequency Modulation (FM)

Frequency range:
87.50 MHz to 108.00 MHz (50-kHz step)

Antenna terminals: 75 Ω (unbalanced)

Digital audio input

Optical digital input Optical terminal

Sampling frequency 32 kHz, 44.1 kHz, 48 kHz

USB Port

USB standard USB 2.0 Full Speed

Media file format support MP3 (*.mp3)
JPEG (*.jpg, *.jpeg)
Xvid (*.xvid, *.avi)

USB device file system FAT12, FAT16, FAT32

USB Port power Max. 1000 mA

Bit rate Up to 4 Mbps (Xvid)

●DISC SECTION

Discs played (8 cm or 12 cm)

(1) DVD (DVD-Video, Xvid[*4, 5])

(2) DVD-R (DVD-Video, MP3[*2, 4], JPEG[*3, 4], Xvid[*4, 5])

(3) DVD-R DL (DVD-Video, Xvid[*4, 5])

(4) DVD-RW (DVD-Video, MP3[*2, 4], JPEG[*3, 4], Xvid[*4, 5])

(5) +R/+RW (Video)

(6) +R DL (Video)

(7) CD, CD-R/RW (CD-DA, Video CD, SVCD[*1], MP3[*2, 4], JPEG[*3, 4], Xvid[*4, 5])

[*1] Conforming to IEC62107

[*2] MPEG-1 Layer 3, MPEG-2 Layer 3, MPEG-2.5 Layer 3

[*3] Exif Ver 2.1 JPEG Baseline files
Picture resolution:
16:9 min. size 4 x 4, max.size (720 x 8) x (405 x 8);
4:3 min. size 4 x 4, max.size (720 x 8) x (540 x 8)

[*4] The total combined maximum number of recognizable audio, picture and video content and groups: 2600 audio, picture and video contents and 259 groups. (Excluding Root folder)

[*5] Plays Xvid Video

Pick up

Wavelength (DVD/CD): 655/790 nm

●VIDEO SECTION

Video system: PAL, NTSC

Composite video output

Output level: 1 Vp-p (75 Ω)

Terminal: Pin jack (1 system)

HDMI AV output

Terminal: 19-pin type A connector

HDAVI Control:
This unit supports “HDAVI Control 5” function.

Note:

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

Solder:

This model uses lead free solder (PbF).

System	SC-XH201GW-K
Main unit	SA-XH201GW-K
Speaker System	SB-XH201GW-K[*1]

Refer to their respective original service manuals for *1.

4.1. Others (Licences)

Manufactured under license from Dolby Laboratories.
Dolby, Pro Logic, and the double-D symbol are trademarks of Dolby Laboratories.

This item incorporates copy protection technology that is protected by U.S. patents and other intellectual property rights of Rovi Corporation. Reverse engineering and disassembly are prohibited.

HDMI, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

HDAVI Control™ is a trademark of Panasonic Corporation.

“DVD Logo” is a trademark of DVD Format/Logo Licensing Corporation.

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

5 General/Introduction

5.1. Power-Saving Features

POWER-SAVING FEATURES

The main unit is designed to conserve its power consumption and save energy.

■ **Auto power-down function**

- The main unit will automatically switch to standby mode after 30 minutes of inactivity.
  e.g.
  – There is no audio signal from an external device.
  – Media playback is stopped/paused.
  – The disc menu is displayed and play is not selected. (This function may not work depending on the application type of discs.)
- When the main unit is turned back on, “POWER ON FROM AUTO POWER DOWN MODE” appears on the main unit’s display.

5.2. Linked Operations with the TV (VIERA Link “HDAVI Control™”)

What is VIERA Link “HDAVI Control”?
VIERA Link “HDAVI Control” is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) under “HDAVI Control”. You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment for operational details.

Preparation

- Confirm that the HDMI connection has been made .

1 Set “VIERA Link” to “On”.
(The default setting is “On”.)
2 Set the “HDAVI Control” operations on the connected equipment (e.g., TV).
3 Turn on all “HDAVI Control” compatible equipment and select this unit’s input channel on the connected TV so that the “HDAVI Control” function will work properly.

Whenever the connection or settings are changed, repeat this procedure and reconfirm the points in “Setting the audio link”.

Setting the audio link

■ Setting the audio link with the TV

Select “AUX”, “ARC”※1 or “DIGITAL IN” for TV audio link.
Refer to TV audio setting in Easy setup or “TV Audio” in HDMI menu .
Confirm the TV audio connection to the AUX terminal (for “AUX”), HDMI AV OUT terminal (for “ARC”※1) or DIGITAL AUDIO IN OPTICAL terminal (for “DIGITAL IN”) on the main unit .

■ Setting the audio link with the STB

Select “D-IN” for STB audio link.
Refer to STB setting in “Making settings for digital audio input”
Confirm the STB audio connection to the DIGITAL AUDIO IN OPTICAL terminal (for “D-IN”) on the main unit .

- VIERA Link “HDAVI Control”, based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers’ equipment that supports HDMI CEC cannot be guaranteed.
- This unit supports “HDAVI Control 5” function. “HDAVI Control 5” is the standard for Panasonic’s HDAVI Control compatible equipment. This standard is compatible with Panasonic’s conventional HDAVI equipment.
- Please refer to individual manuals for other manufacturers’ equipment supporting VIERA Link function.

Auto lip-sync

(For “HDAVI Control 3 or later”)

This function automatically provides synchronised audio and video output. (This works only when the source is “DVD/CD”, “USB”, “AUX”※2, “ARC”※1, 2 or “D-IN”※2, 3.)

- When using “DVD/CD” or “USB” as the source, set “Time Delay” in Video menu to “0ms/Auto”.

Auto input switching (Power on link)

When the following operations are performed, the TV will automatically switch the input channel and display the corresponding action.
Additionally when the TV is off, the TV will automatically turn on:
– When play starts on the unit
– When an action that uses the display screen is performed (e.g., START menu)

- When you switch the TV input to TV tuner mode or the STB input channel, this unit will automatically switch to “AUX”※2, “ARC”※1, 2 or “D-IN”※2, 3.
- When you start disc play, the TV will automatically switch its input mode for this unit.

Power off link

All connected equipment compatible with “HDAVI Control”, including this unit, automatically turn off when you switch the TV off.
To continue audio playback even when the TV is turned off, select “Video” (“Power Off Link” in HDMI menu).

When you press [⏻]①, only this unit turns off. Other connected equipment compatible with VIERA Link “HDAVI Control” stays on.
For details, refer also to the operating instructions for your TV.

Speaker selection

You can select whether audio will output from this unit’s speakers or the TV speakers by using the TV menu settings. For details, refer to the operating instructions for your TV.

Home Cinema
This unit’s speakers are active.

- When you turn on this unit, this unit’s speakers will be automatically activated.
- When this unit is in standby mode, changing the TV speakers to this unit’s speakers in the TV menu will automatically turn this unit on and select “AUX”※2, “ARC”※1, 2 or “D-IN”※2, 3 as the source.
- The TV speakers are automatically muted.
- You can control the volume setting using the volume or mute button on the TV’s remote control. (The volume level is displayed on the main unit’s display.)
- To cancel muting, you can also use this unit’s remote control
- If you turn off this unit, TV speakers will be automatically activated.

TV
TV speakers are active.

- The volume of this unit is set to “0”.
  – This function works only when “DVD/CD”, “USB”, “AUX”※2, “ARC”※1, 2 or “D-IN”※2, 3 is selected as the source on this unit.
- Audio output is 2-channel audio.

When switching between this unit speakers and TV speakers, the TV screen may go blank for several seconds.

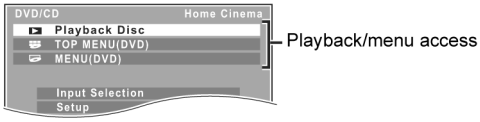
※1	The selection works only when using an ARC compatible TV.
※2	“AUX”, “ARC” or “D-IN” (DIGITAL IN) works depending on the TV audio setting (Setting the audio link with the TV).
※3	“D-IN” (DIGITAL IN) works depending on the STB audio setting (Setting the audio link with the STB).

5.2.1. Easy Control With Viera Remote Control

Easy control only with VIERA remote control

(For "HDAVI Control 2 or later")
You can control the playback menus of this unit with the TV's remote control. When operating the TV's remote control, refer to the below illustration for operation buttons.

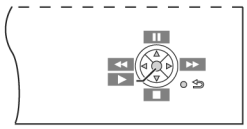
1 Select this unit's operation menu by using the TV menu settings.
(For details, refer to the operating instructions for your TV.)
The START menu will be shown.
e.g. DVD-V



- The START menu can also be shown by using a button on the TV's remote control (e.g. [OPTION]).
  – When "DVD/CD" or "USB" is selected as the source, the TV's remote control works only during stop mode.

2 Select the desired item on the START menu.

When the on-screen control panel appears
e.g. DVD-V (when "Playback Disc" is selected from the START menu.)



You can operate the playback with the indicated controls.
- The on-screen control panel can also be shown by using a button on the TV's remote control (e.g. [OPTION]).
  – This works only during "DVD/CD" or "USB" playback and resume modes.

- Depending on the menu, some button operations cannot be performed from the TV's remote control.
- You cannot input numbers with the numbered buttons on the TV's remote control ([0] to [9]). Use this unit's remote control to select the play list etc.

5.3. Disc Information

5.3.1. Media that can be played

Commercial discs

Type of media/ Logo	Remarks	Indicated as
DVD-Video	High quality movie and music discs	DVD-V
Video CD	Music discs with video Including SVCD (Conforming to IEC62107)	VCD
CD	Music discs	CD

Recorded discs and USB devices

Type of media/ Logo	Formats	Indicated as
DVD-R/RW	● DVD-Video Format ● MP3 format ● JPEG format ● Xvid format	DVD-V MP3 JPEG Xvid
DVD-R DL	● DVD-Video Format ● Xvid format	DVD-V Xvid
+R/+RW/+R DL	● +VR (+R/+RW Video Recording) Format	DVD-V
CD-R/RW	● CD-DA format ● MP3 format ● JPEG format ● Xvid format	CD MP3 JPEG Xvid
USB device	● MP3 format ● JPEG format ● Xvid format	MP3 JPEG Xvid

- Before playback, finalise the disc on the device it was recorded on.
- It may not be possible to play all the above-mentioned medias in some cases due to the type of media, the condition of the recording, the recording method, or how the files were created (About MP3/ JPEG/Xvid files).
- During playback of DTS source, there will be no sound from the speakers.

Note about using a DualDisc
The digital audio content side of a DualDisc does not meet the technical specifications of the Compact Disc Digital Audio (CD-DA) format so playback may not be possible.

Discs that cannot be played

Blu-ray Discs, HD DVD, AVCHD discs, DVD-RW version 1.0, DVD-Audio, DVD-ROM, DVD-VR, CD-ROM, CDV, CD-G, SACD, DTS Music Discs, WMA discs, DivX discs and Photo CD, DVD-RAM, and “Chaoji VCD” available on the market including CVD, DVCD and SVCD that do not conform to IEC62107.

Video systems

This unit can play PAL and NTSC, but the “TV System” of this unit must match the system of your TV.

Depending on the PAL video on the disc, the image may not be displayed correctly on an NTSC TV.

Disc handling precautions

- Do not attach labels or stickers to discs. This may cause disc warping, rendering it unusable.
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, liquids which prevent static electricity, or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not use the following discs:
  – Discs with exposed adhesive from removed stickers or labels (rented discs, etc.).
  – Discs that are badly warped or cracked.
  – Irregularly shaped discs, such as heart shapes.

5.3.2. File Extension Type Support (MP3/JPEG/Xvid)

MP3 (Extension: ".MP3", ".mp3")
- Sampling frequency and compression rate:
  – 8 kHz, 11.02 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz (8 kbps to 160 kbps), 32 kHz, 44.1 kHz and 48 kHz (32 kbps to 320 kbps)
- ID3 tags: version 1, 2

JPEG (Extension: ".JPG", ".jpg", ".JPEG", ".jpeg")
- JPEG files taken on a digital camera that conform to DCF Standard (Design rule for Camera File system) Version 1.0 are displayed.
  – Files that have been altered, edited or saved with computer picture editing software may not be displayed.
- This unit cannot display moving pictures, MOTION JPEG and other such formats, still pictures other than JPEG (e.g. TIFF), or play pictures with attached audio.

Xvid (Extension: ".XVID", ".xvid", ".AVI", ".avi")
- Xvid files greater than 2 GB or have no index may not be played properly on this unit.
- This unit supports all resolutions up to maximum of 720×480 (NTSC)/720×576 (PAL).

- There may be differences in the display order on the menu screen and computer screen.
- This unit cannot play files recorded using packet write.

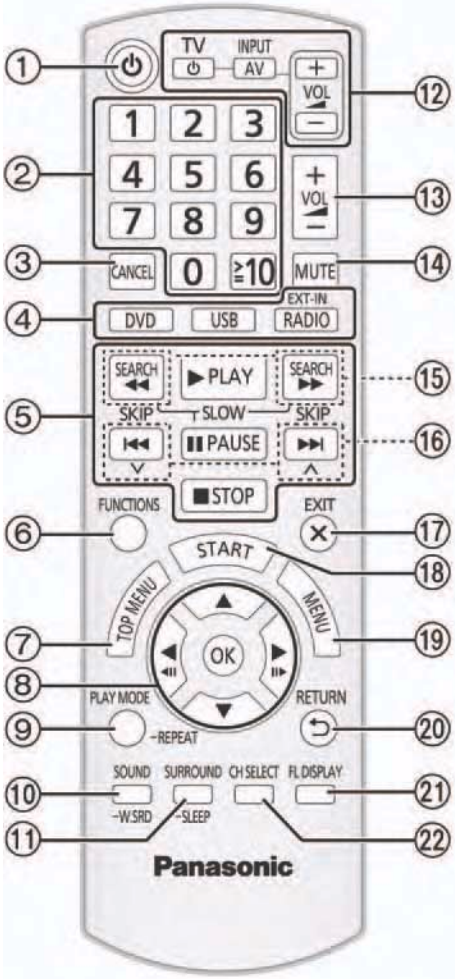
DVD-R/RW
- Discs must conform to UDF bridge (UDF 1.02/ISO9660).
- This unit does not support multi-session. Only the default session is played.

CD-R/RW
- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- This unit supports multi-session but if there are many sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.

USB device
- This unit does not guarantee connection with all USB devices.
- This unit does not support USB device charging.
- FAT12, FAT16 and FAT32 file systems are supported.
- This unit supports USB 2.0 Full Speed.

6 Location of Controls and Components

6.1. Remote Control Key Button Operations

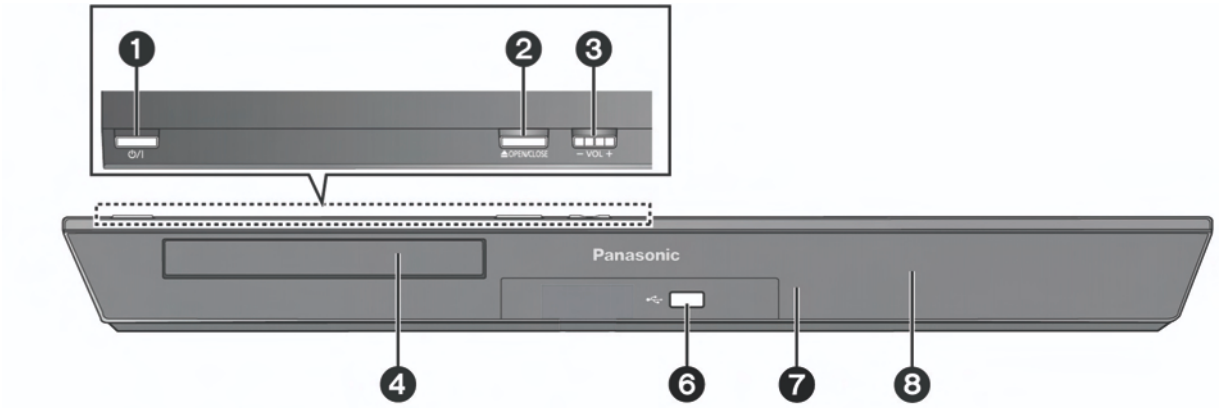


① Turn the main unit on/off
② Select channels and title numbers etc. / Enter numbers
③ Cancel
④ **Source select**
[DVD]: Select disc as the source
[USB]: Select USB as the source
[EXT-IN, RADIO]: Select the FM tuner or the external audio as the source
FM → AUX → ARC → D-IN
⑤ Basic operations for play
⑥ Show on-screen menu
⑦ Show a disc top menu
⑧ Select or confirm menu items / Frame-by-frame
⑨ Select the play mode / Set the repeat mode
⑩ Turn Whisper-mode Surround on/off
⑪ Select surround sound effects
or
Set the Sleep timer
Press and hold [−SLEEP].
While the time is shown on the main unit's display, press [−SLEEP] repeatedly.
Each time you press the button:
SLEEP 30 → SLEEP 60 → SLEEP 90 → SLEEP120
↑ OFF (Cancel) ←
- To confirm the remaining time, press and hold the button again.

⑫ **TV operations**
Aim the remote control at the Panasonic TV and press the button.
[TV, ⏻]: Turn the TV on/off
[INPUT, AV]: Change the TV's video input mode
[+, VOL, −]: Adjust the TV volume
This may not work properly with some models.
⑬ Adjust the volume of the main unit
⑭ **Mute the sound**
- "MUTE" flashes on the main unit's display while the function is on.
- To cancel, press the button again or adjust the volume.
- Muting is cancelled when you switch the unit to standby.

⑮ Select radio stations manually
⑯ Select preset radio stations
⑰ Exit the display
⑱ Show START menu
⑲ Show a disc menu
⑳ Return to previous screen
㉑ Switch information on the main unit's display
㉒ Select speaker channel

6.2. Main Unit Key Button Operations



❶ **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.
❷ Open/Close the disc tray
❸ Adjust the volume of the main unit
❹ Disc tray
❻ Connect USB device
❼ Remote control signal sensor
❽ Display (FL display)

7 Installation Instructions

Turn off all equipment before connection and read the appropriate operating instructions.
Do not connect the AC power supply cord until all other connections are completed.

7.1. Speaker Connections

Pay attention to the type of speaker and the connector colour when you place the speakers.

Speakers (rear)

Use of the speaker cable stickers is convenient when making cable connections.
Insert the wire fully, taking care not to insert beyond the wire insulation.

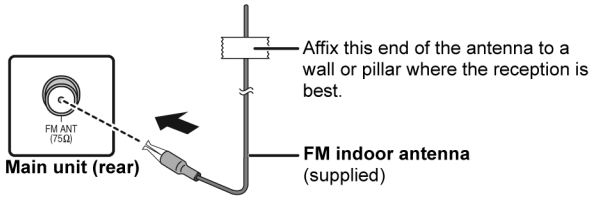
+: White
−: Blue line

- Be careful not to cross (short circuit) or reverse the polarity of the speaker wires as doing so may damage the speakers.

Main unit (rear)

Connect to the terminals of the same colour.

7.2. Radio Antenna connection

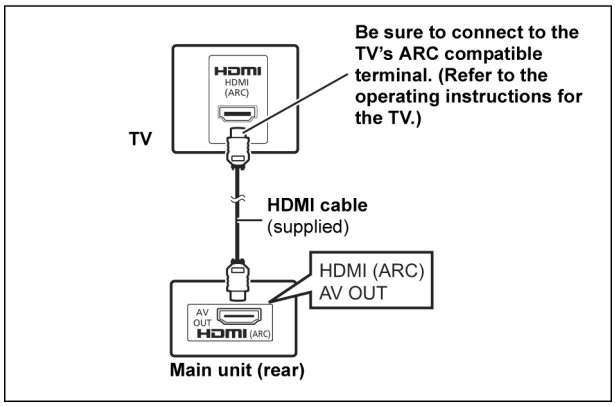


Use an FM outdoor antenna if radio reception is poor.

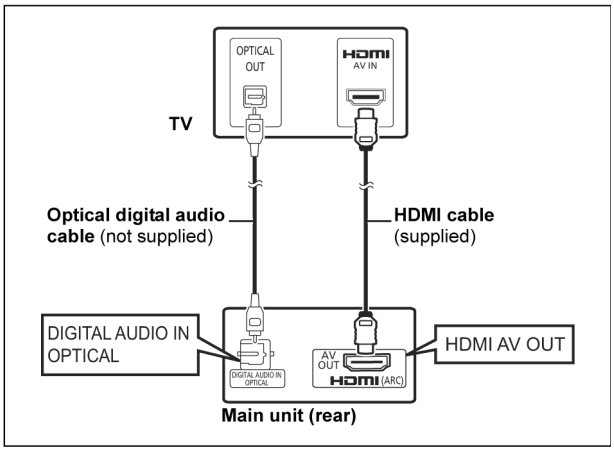
7.3. Connection with an ARC compatible TV

What is ARC?
ARC is an abbreviation of Audio Return Channel, also known as HDMI ARC. It refers to one of the HDMI functions. If the TV is ARC compatible, audio from the TV can be sent to this unit via the HDMI cable without the need to make an extra audio connection.

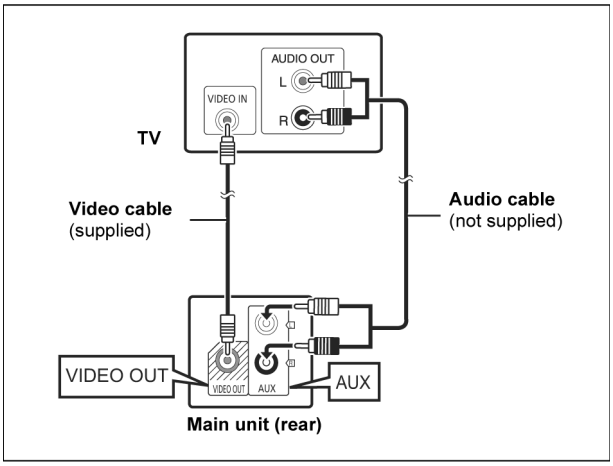
- Refer to the operating instructions of the TV for details.



■ Connection without an ARC compatible TV



Alternative connection to a TV



Set Top Box (cable/satellite/Blu-ray Disc player, etc) connection

Use this connection when you want to output the original surround audio from your STB, etc. to this unit.
Connect the optical digital audio cable (not supplied) from the DIGITAL AUDIO IN OPTICAL terminal on the main unit to the OPTICAL OUT terminal on your STB.

- If the DIGITAL AUDIO IN OPTICAL terminal is already in use for the TV audio, reconnect the TV audio to the AUX terminal using an audio cable.

If you have various sound sources (such as Blu-ray Disc player, DVD recorder, VCR, etc.), connect them to the available inputs on the TV and the TV output should then be connected to the AUX, HDMI AV OUT or DIGITAL AUDIO IN OPTICAL terminal of the main unit.

8 Operating Instructions

8.1. Removing of disc during abnormality

8.1.1. Using main unit key buttons.

8.1.1.1. When the power can be turned off.

1. Turn off the power and press & hold [OPEN/CLOSE] button on main unit and [SKIP FWD] button on remote for 5 seconds

8.1.1.2. When the power cannot be turned off

1. Press & hold the [POWER] button to turn off the power forcibly, then press & hold [SKIP FWD] button on remote and [OPEN/CLOSE] button on main unit for 5 seconds.

8.1.2. When the Forcible Disc Eject cannot be done.

1. Turn off the power and remove AC cord.
2. Insert Paper Clip into the hole on the bottom of unit and slide the Paper Clip on the direction of the arrow to eject tray slightly. The tray will open automatically. (Refer to Figure 8-1)

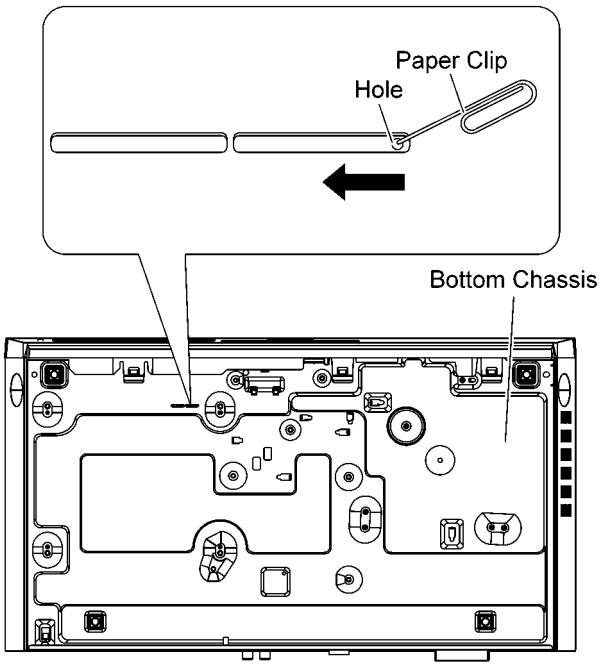


Figure 8-1

3. Gently pull out the tray. (Refer to Figure 8-2)

Caution:

If the tray is not able to move, do not use force as it may damage the gears & drive mechanism.

4. Remove the disc

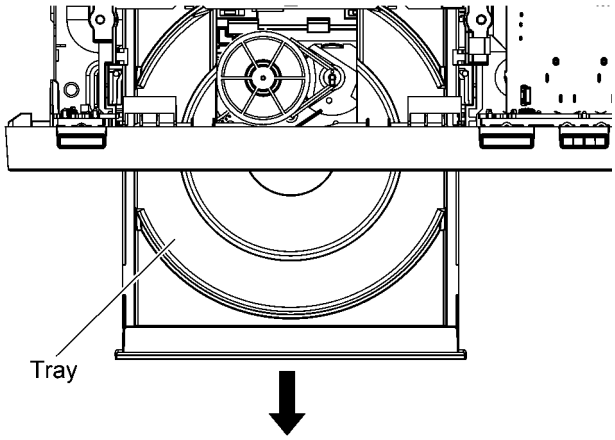


Figure 8-2

9 Service Mode

9.1. Cold-Start

Here is the procedure to carry out cold-start for initialize to shipping mode.

1. Unplug AC power cord
2. Press & hold [⏻/I] button
3. Plug AC power cord while [⏻/I] button being pressed
   FL Display will show "_ _ _ _ _ _ _ _"
4. Release [⏻/I] button

9.2. Panel Code Setting Operation

9.2.1. Checking of Panel Code

1. In STOP (no disc) mode, press [OPEN/CLOSE] button on main unit, and [6] button on the remote control unit.

   FL Display:

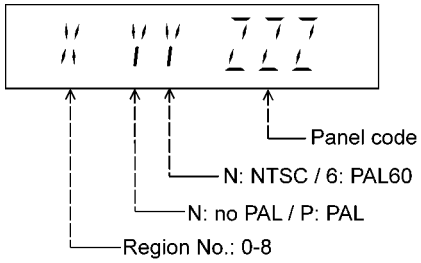


Figure 9-1

Display is automatically clear after 5 seconds.

Note: Refer to Figure 9-2 for "Video Design Information".

Series Code	Country	DVD Region Code	TV Broadcasting System	Product			
				Selected TV System	Region Display (Default)	OSD Default	OSD Menu Language
P, PC, PX, PP	USA, Canada, US Military	1	NTSC	AUTO2 (*A)	1PN	English	English (NA), Spanish (NA), Canadian French
(blank)	Japan	2	NTSC	AUTO2 (*A)	2PN	Japanese	Japanese, English
EP	Poland, E.Europe	2	PAL	PAL (*C)	2PP	English	English (EU), French, German, Spanish (EU), Polish, Russian, Czech, Hungarian
EB, EG,	UK, Germany, W.Europe	2	PAL	PAL (*C)	2PP	English	English (EU), French, German, Italian, Spanish (EU), Polish, Swedish, Dutch
GC, GS	Middle East, Africa, S.E.A	2	PAL	PAL (*C)	2PP	English	English (NA), French, German, Spanish (EU), Polish, Russian, Czech, Hungarian
GA, GD, GJ	South East Asia, Korea	3	PAL /NTSC	Auto (*B)	3PN	English	English (NA), Traditional Chinese
GT	Taiwan	3	PAL /NTSC	NTSC (*E)	3PN	Traditional Chinese	English (NA), Traditional Chinese
GN	New Zealand, Australia	4	PAL	PAL (*C)	4PP	English	English (EU), French, German, Italian, Spanish (EU), Polish, Swedish, Dutch
PN	Central & S.America, Brazil	4	NTSC	NTSC (*D)	4PN	Spanish	English (NA), Spanish (Panama), French, Brazilian Portuguese
PB	Central & S.America, Brazil	4	NTSC	NTSC (*D)	4PN	Portuguese	English (NA), Spanish (Panama), French, Brazilian Portuguese
PU,PH, PR	South/Centrial America, Argentina	4	NTSC	NTSC (*D)	4PN	English	English (NA), Spanish (Panama), French, Brazilian Portuguese
EE	CIS	5	SECAM	PAL (*C)	5PP	English	English (EU), French, German, Spanish (EU), Polish, Russian, Czech, Hungarian
GW	India	5	PAL	PAL (*C)	5PP	English	English (NA), Traditional Chinese
GK	China	6	PAL	Auto (*B)	6PN	Simplified Chinese	English (NA), Simplified Chinese

NA: North America, EU: Europe

Auto2 (*A) ※= default

Select TV System		No
TV sys	**Source**	**Output**
PAL	--	--
NTSC	--	--
Auto	--	--
Auto2 ※	NTSC	NTSC
	PAL DVD-V	PAL
	PAL VCD	NTSC

Wallpaper = NTSC

Auto (*B) ※= default

Select TV System		Yes
TV sys	**Source**	**Output**
PAL	PAL / NTSC	PAL
NTSC	PAL / NTSC	NTSC
Auto ※	PAL / NTSC	same as source
Auto2	--	--

Wallpaper = NTSC

PAL (*C) ※= default

Select TV System		Yes
TV sys	**Source**	**Output**
PAL※	PAL / NTSC	PAL
NTSC	PAL / NTSC	NTSC
Auto	PAL / NTSC	same as source
Auto2	--	--

Wallpaper = PAL

NTSC (*D) ※= default

Select TV System		No
TV sys	**Source**	**Output**
PAL	--	--
NTSC ※	PAL / NTSC	NTSC
Auto	--	--
Auto2	--	--

Wallpaper = NTSC

NTSC (*E) ※= default

Select TV System		No
TV sys	**Source**	**Output**
PAL	PAL / NTSC	PAL
NTSC ※	PAL / NTSC	NTSC
Auto	PAL / NTSC	same as source
Auto2	--	--

Wallpaper = NTSC

Explanation of Display

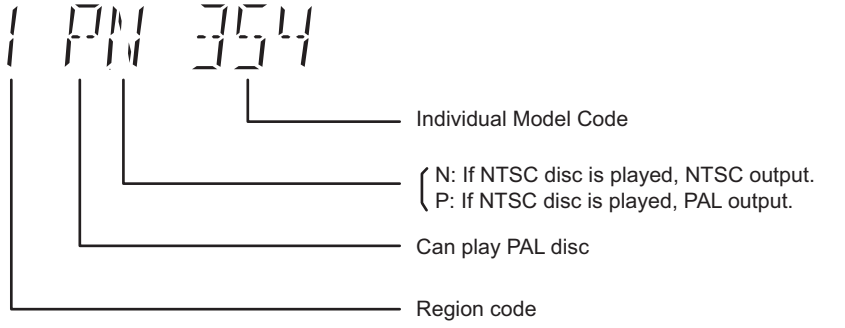


Figure 9-2

9.2.2. Setting of Panel Code

This section describes the procedure necessary after replacement with a new Main P.C.B. (Refer to Section 17.1. for the assigned Main P.C.B. part number).

Step1 : Press [OPEN/CLOSE] button on main unit, follow by [4] and [7] on remote control (To enter into Doctor Mode).

Step2 : Press [CANCEL] button on remote control, then press [2], [2], [8] and [0] on remote control.

Step3 : Key in new panel code using remote control (refer to Figure 9-3).

Step4 : Press [OK] on remote control.

Step5 : Unplug AC power cord.

Step6 : Plug AC power cord.

Step7 : Press [⏻/I] button on main unit.

Step8 : Check panel code (refer to section 9.2.1).

	Main P.C.B. Part No.	REP4923A	REP4923D	REP4943A	REP4943B
	Default Code	661	870	261	422
Support Model Panel Code	XH60GA			360	
	XH60GS			370	
	XH60PH			380	
	XH60GW			361	
	XH100GA			260	
	XH100GS			270	
	XH100GW			261	
	XH100PH			280	
	XH160GA			460	
	XH160GS			470	
	XH201GW	561			
	XH300GS	670			
	XH301GW	661			
	XH300PH	680			
	XH330GA	760			
	XH330GS	770			
	XH330LJ	790			
	XH330PH	780			
	XH380GS		870		
	XH330GW	761			
	XH370GA	660			

Figure 9-3

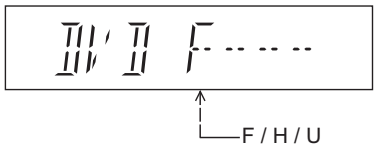
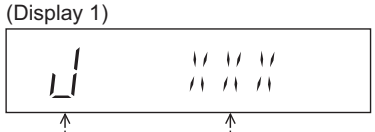
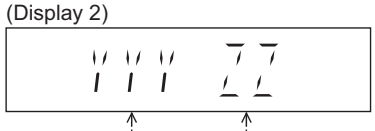
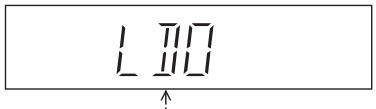
9.3. Self Diagnostic

By pressing various button combinations on the main unit and remote control unit, you can activate the various service modes for checking.

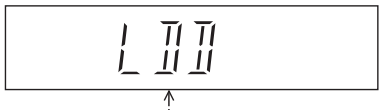
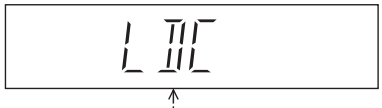
Special Note:

- Due to the limitations of the no. characters that can be shown on the FL Display, the “FL Display” button on the remote control unit can be used to show the two display pages. (Display 1 / Display 2).
- Refer to Section 6.1 for the section on “Remote Control Key Buttons Operations”.

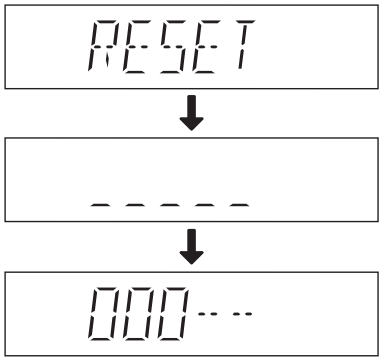
9.3.1. Self Diagnostic Table 1 (For DVD)

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Error code check	Error code check The latest error code stored in the EEPROM IC is displayed. Note: Refer to "(Section 9.4) Error Code" for more detailed information on the error codes.	 F / H / U Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: → DVDnn U12 Error code = 0 x DBXX is expressed: → DVDnn H12 Error code = 0 x DXXX is expressed: → DVDnn F123 Error code = 0 x 0000 is expressed: → DVDnn F--- * "xx" denotes the error code	In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [0] button on the remote control unit. *With pointing of cursor up and down on display. To exit, press [⏻/ I] on main unit or remote control.
Jitter check	Jitter check. Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more. FL Display sequence: Display 1→2.	(Display 1)  Jitter check mode Jitter rate Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation. (Display 2)  Lead Error Counter Focus Drive Value	In STOP (with disc inside tray) mode, press [OPEN/CLOSE] button on the main unit, and [5] button on the remote control unit. Press [⏻/ I] to exit. Press [FL Display] on remote control unit for next page (FL Display).
Initial setting of laser drive current	Initial setting of laser drive current.	 Laser current measurement mode The value denotes the current in decimal notation.	In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [PAUSE] button on the remote control unit. To exit, press [OPEN/CLOSE] button on the main unit and [CANCEL] button on the remote control unit.

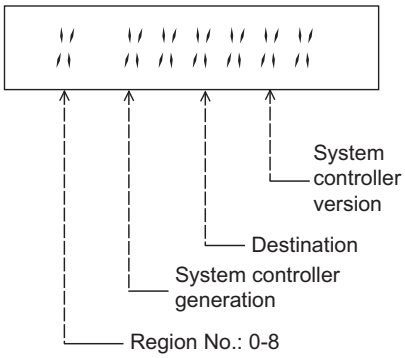
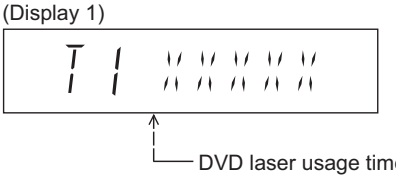
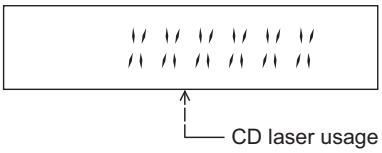
9.3.2. Self Diagnostic Table 2 (For DVD)

Item		FL Display	Key Operation
Mode Name	Description		Front Key
DVD laser drive current measurement	DVD laser drive current measurement. For DVD laser drive current, refer to Troubleshooting Guide (Section 10.2)	 DVD laser current measurement mode The value denotes the current in decimal notation.	In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [FUNCTIONS] button on the remote control unit. To exit, press [OPEN/CLOSE] button on the main unit and [CANCEL] button on the remote control unit.
CD laser drive current measurement	CD laser drive current measurement. For CD laser drive current, refer to Troubleshooting Guide (Section 10.2)	(Display 1)  CD laser current measurement mode	In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [3] button on the remote control unit. To exit, press [OPEN/CLOSE] button on the main unit and [CANCEL] button on the remote control unit.

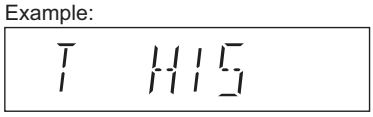
9.3.3. Self Diagnostic Table 3 (For DVD)

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Micro-processor firmware version display & EEPROM checksum display.	Micro-processor firmware version display & EEPROM checksum display. EEPROM checksum is only available due to existence of EEPROM IC. Note: Condition 1/2/3 shows the state of EEPROM IC. FL Display sequence: Display 1→2	(Display 1)  (Display 2)  (Condition 1)  If the version of the EEPROM does not match, [NG] is displayed. (Condition 2)  (a) If there is NO EEPROM header string OR (b) If there is no EEPROM (no data is received by Micro-processor), [NO] is displayed. (Condition 3)  If the EEPROM version matches, checksum [YYYY] is displayed.	In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [7] button on the remote control unit. Cancelled automatically 5 seconds later. Press [FL Display] button on remote control unit for next page. (FL Display)
Reset	User settings are cancelled and player is initialized to factory setting. It is necessary when after replacement of Micro-processor IC (IC2300), FLASH ROM IC (IC8651) & Main P.C.B.		In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [≧10] button on the remote control unit.

9.3.4. Self Diagnostic Table 4 (For DVD)

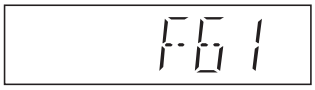
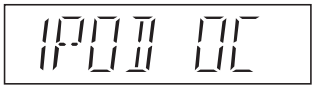
Item		FL Display	Key Operation
Mode Name	Description		Front Key
Region and Firmware version display	DVD firmware version is displayed on the FL Display. Note: It is necessary to check for firmware version before carrying out the version up using the disc.		In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [8] button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 1 check	Timer 1 check Laser operation timer is measured separately for DVD laser and CD laser. FL Display sequence: Display 1➞2.	(Display 1)  Shown to the above is DVD laser usage time, and to the below is CD laser usage time. Time is shown in 5 digits of decimal notation in a unit of 10 hours. "00000" will follow "99999". (DVD laser) (Display 2)  Time is shown in 6 digits of decimal notation in a unit of 10 hours. "000000" will follow "999999". (CD laser)	In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [▲] button on the remote control unit. Cancelled automatically 5 seconds later. Press [FL Display] button for next page of FL Display.
Timer 1 reset	Timer 1 reset Laser operation timer of both DVD laser and CD laser is reset all at once.	 Time is shown in 5 digits of decimal notation in a unit of 10 hours. It will clear to "00000" upon reset.	While displaying Timer 1 data, press [OPEN/CLOSE] button on the main unit, and [▼] button on the remote control unit. Cancelled automatically 5 seconds later
Timer 2 check	Timer 2 check Spindle motor operation timer	 Time is shown in 5 digits of decimal notation in a unit of 1 hour. "00000" will follow "99999".	In STOP (no disc) mode, press [OPEN/CLOSE] button on the main unit, and [▶] button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 2 reset	Timer 2 reset Spindle motor operation timer	 Time is shown in 5 digits of decimal notation in a unit of 1 hour. It will be cleared to "00000" upon activating this.	While displaying Timer 2 data, press [OPEN/CLOSE] button on the main unit, and [◀] button on the remote control unit. Cancelled automatically 5 seconds later.

9.3.5. Self Diagnostic Table 5

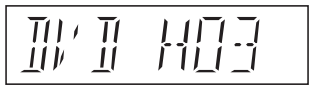
Item		FL Display	Key Operation
Mode Name	Description		Front Key
Self-Diagnostic Mode	To enter into self-diagnostic checking		Press & hold [OPEN/CLOSE] on main unit, follow by [4] then [9] on remote control. (When no disc in tray)
Error code information	System will perform a check on any unusual/error code from the memory	Error code will display Example: 	In self-diagnostic mode, press [OPEN/CLOSE] on remote control. To exit, press [⏻ / I] on main unit or remote control.
Delete Error Codes	System will clear all of the contents of unusual/error code from the memory		In self-diagnostic mode, press [CANCEL] on remote control. To exit, press [⏻ / I] on main unit or remote control.

9.4. Error Code

9.4.1. Error Code Table 1

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F61	The abnormalities in the Power Amp output or power supply	In normal operation, when DCDET2 goes to L, immediately PCNT is set to L (not normal POWER OFF sequence), and Error Code F61 is displayed, without displaying 'GOODBYE' scroll on the FL. When happen error, it memorizes the contents and displays unusual contents in self-diagnostic error detection mode.		Press [OPEN/CLOSE] on main unit for next error.
F76	Abnormality in the output voltage of stabilized power supply	In normal operation when DCDET1 is detected L(Low) for two consecutive times, F76 is displayed on FL for 1 seconds and after that PCONT will be turned to L (Low).		Press [OPEN/CLOSE] on main unit for next error.
IPOD OVER CURRENT	Over current occurs in Power Supply for iPod charging	In normal operation when IPOD_OC is detected "L" (Low) for two consecutive times, the message will display on FL once and Power Supply to iPod shall be cut.		Power off the main unit and power on again.
F0C1	Disc Region	DVD: Prohibited by the restricted region code.		
F0C3		DVD: Parental lock setting prohibits the playback of the entire title.		

9.4.2. Error Code Table 2

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
H01	Tray loading error	The tray opening and closing is abnormal. CLOSE and OPEN of the tray cannot be carried out properly. Loading motor error, DV5 LSI IC (IC8001) error.		Press [OPEN/CLOSE] on main unit for next error. (OPEN time: OPEN → CLOSE → OPEN → H01 at CLOSE: CLOSE → OPEN → CLOSE H01)
H03	Traverse motor error	The traverse is abnormal. (Traverse servo, DV5 LSI IC (IC8001), TRV motor error.)		Press [OPEN/CLOSE] on main unit for next error.
U11	Focus servo error	Focus coil, FE signal error. Disc may be dirty.		Press [OPEN/CLOSE] on main unit for next error. (Unfinalized DVD-R is likely to become U11.)
U702	HDMI/DVI I2C communication error	HDMI/DVI HDCP non-HDCP compliance: Occurs when the equipment is not compatible with the HDCP receiver. [HDCP: copyright protection technology. Digital image signal encryption scheme.]		Press [OPEN/CLOSE] on main unit for next error.
U703	HDMI/DVI authentication error	When authentication (HDCP) with the TV side fails when connecting it with HDMI/DVI, it is generated.		Press [OPEN/CLOSE] on main unit for next error.
U704	HDMI/DVI SRM error	It is generated at the equipment to which the TV set is connected with HDMI/DVI.		Press [OPEN/CLOSE] on main unit for next error.
U705	HDMI/DVI SRM disk falsification check error	It is generated at the time of it is time when illegal the SRM data of the reproducing disk (verify error), when connecting it with HDMI/DVI.		Press [OPEN/CLOSE] on main unit for next error.
F899	The communication specification disagreement between micro-processor	Unsuitable combination of number of system com and panel com used. (Firmware)		Press [OPEN/CLOSE] on main unit for next error.

9.5. Sales Demonstration Lock Function

This function prevents discs from being lost when the unit is used for sales demonstrations by disabling the disc eject function. “LOCKED” is displayed on the unit, and ordinary operation is disabled.

9.5.1. Entering into Sales Demonstration Lock Function

- **Prohibiting removal of disc**
  1. Select the DVD/CD function.
  2. Power on the main unit
  3. Press and hold down [⏏OPEN/CLOSE] button and [- VOL] button on the main unit for three seconds or more.(“LOCKED” appears when the function is activated.)

Note:

OPEN/CLOSE ⏏ button is invalid and the main unit displays “LOCKED” while the lock function mode is entered.

- **Prohibiting operation of selector and disc**
  1. Select the DVD/CD function.
  2. Power on the main unit
  3. Press and hold down [⏏OPEN/CLOSE] button and [VOL +] button on the main unit for three seconds or more. (“LOCKED” appears when the function is activated.)

Note:

The following buttons are invalid and the main unit displays “LOCKED” while the lock function mode is entered.

Main unit	⏏OPEN/CLOSE
Remote controller unit	AV/INPUT, VOL (+/-), NUMERIC KEYS 0~9, ≧10, CANCEL, DVD, RADIO/EXT-IN, ◀◀ , ▶ , ▶▶ , ⏮ , ⏸ , ⏭ , ■ , FUNCTIONS, EXIT, TOP MENU, ◀/◀⏸ , ▲, ▶/▶⏸ , ▼, OK, START, MENU, RETURN, PLAY MODE/-REPEAT, CH SELECT, FL DISPLAY

9.5.2. Cancellation of Sales Demonstration Lock Function

The lock can be cancelled by the same procedure as used in locking. (“UNLOCKED” is displayed upon cancellation).

10 Troubleshooting Guide

10.1. Troubleshooting Guide for F61 and/or F76

This section illustrates the checking procedures when upon detecting the error of “F61” and/or “F76” after power up of the unit. It is for purpose of troubleshooting and checking in SMPS P.C.B..

Symptom(s)		Checking items		Possible Fault(s)	Remarks
Set cannot Power ON: Condition 1: With Stanby LED on	1	Photocoupler PC5702, PC5799	1	PC5702/PC5799 solder crack, dry joint , short circuit, open circuit, etc	1) Refer to Figure 10-1 SMPS P.C.B. 2) Refer to Schematic Diagram of SMPS Circuit (Item 17.6)
	2	Switching IC IC5701	2	Faulty IC5701, pin 1 and 2 shorted, VCC short to GND, etc	
	3	Switching IC IC5799	3	Faulty IC5799, pin 5 and 7 shorted, VCC short to GND, etc	
Condition 2: With Stanby LED Off or flickering	1	AC cord	1	Faulty AC cord, loose connection	
	2	AC Inlet P5701	2	P5701 solder crack, dry joint etc	
	3	Fuse F1	3	F1 Fuse open	
Set can Power ON then F61	1	Transformer T5701	1a	Pin 11/12 shorted to pin 13/14	Refer to Schematic Diagram of SMPS Circuit (Item 17.6) for terminal pin count on primary and secondary terminals
			1b	Pin 16 shorted to pin 17	
	2	Photocoupler PC5720	2	Solder crack, dry joint, short circuit, open circuit, etc	Refer to Figure 10-1 SMPS P.C.B.
Set can Power ON then F76	1	DC-DC circuit	1a	L2902 Open (no input to IC2901)	1) Refer to Figure 10-2 Main P.C.B. 2) Refer to Schematic diagram of Main Circuit (Item 17.2)
			1b	Faulty IC2901 (no output voltage at pin 10 and 11)	
			1c	Faulty Q2902 and Q2903 (regulator)	
			1d	L2908 open (No DC +5V)	
			1e	R2399 open (No DC +9V)	
	2	SMPS FFC loose	2	Check FFC connection/ alignment from SMPS (JW2) to Main (CN2004)	Refer to Figure 10-1 SMPS P.C.B.
	3	LDO regulator	3a	Faulty Q2904 Transistor diode check (cannot switch ON then NO +9V)	1) Refer to Figure 10-2 Main P.C.B. 2) Refer to Schematic diagram of Main Circuit (Item 17.2)
			3b	LB2761 Open (+9V line going to Panel PCB CN2002)	
	4	Photocoupler PC5720	4	Solder crack, dry joint, short circuit,open circuit,etc	
Set can Power ON working normally for sometime then F61	1	Thermal Diode D5802	1a	Improper contact between D5802 to heatsink	Refer to Figure 10-1 SMPS P.C.B.
			1b	OTP (thermal) protection trigger prematurely	

10.1.1. SMPS P.C.B.

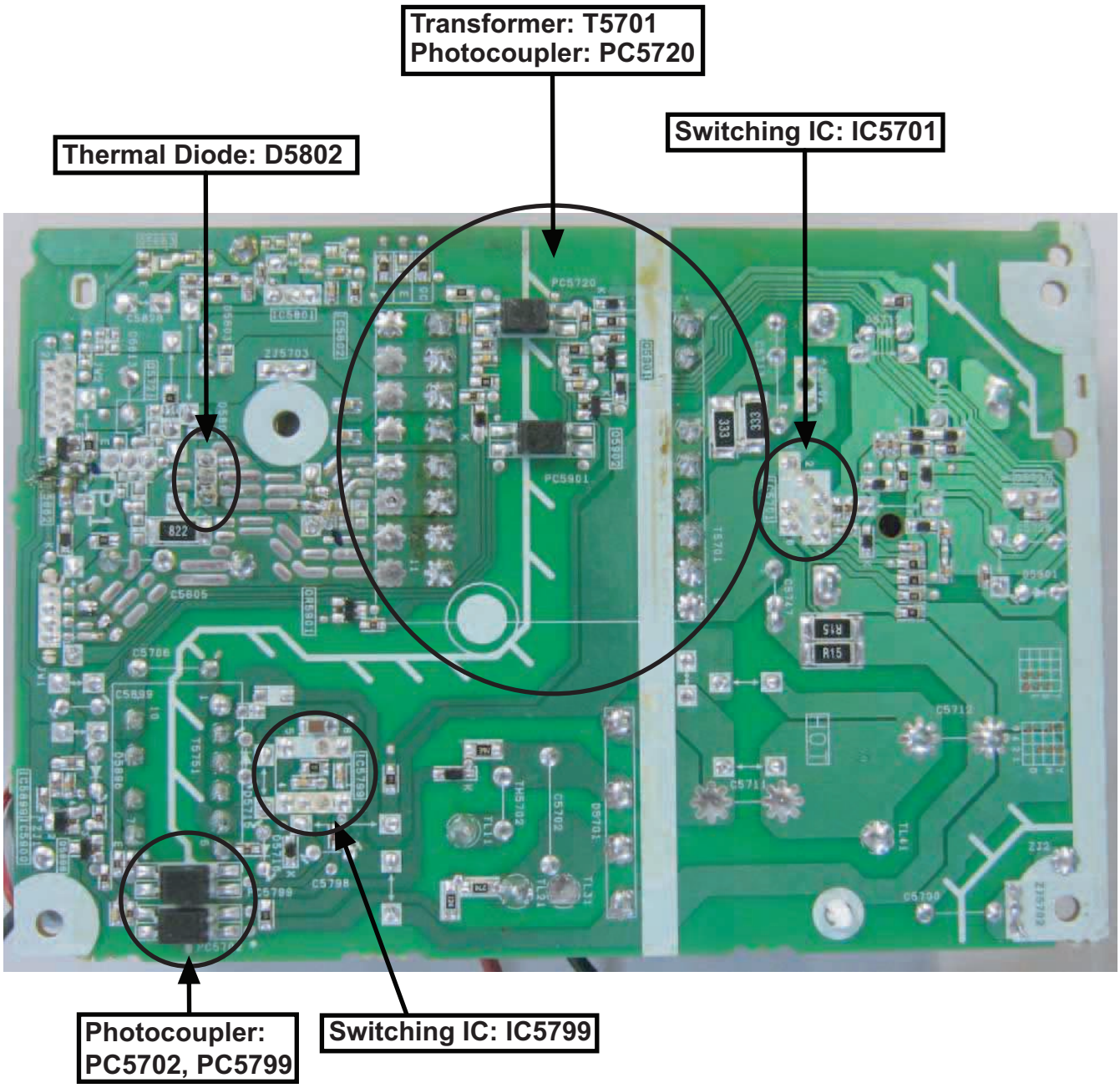
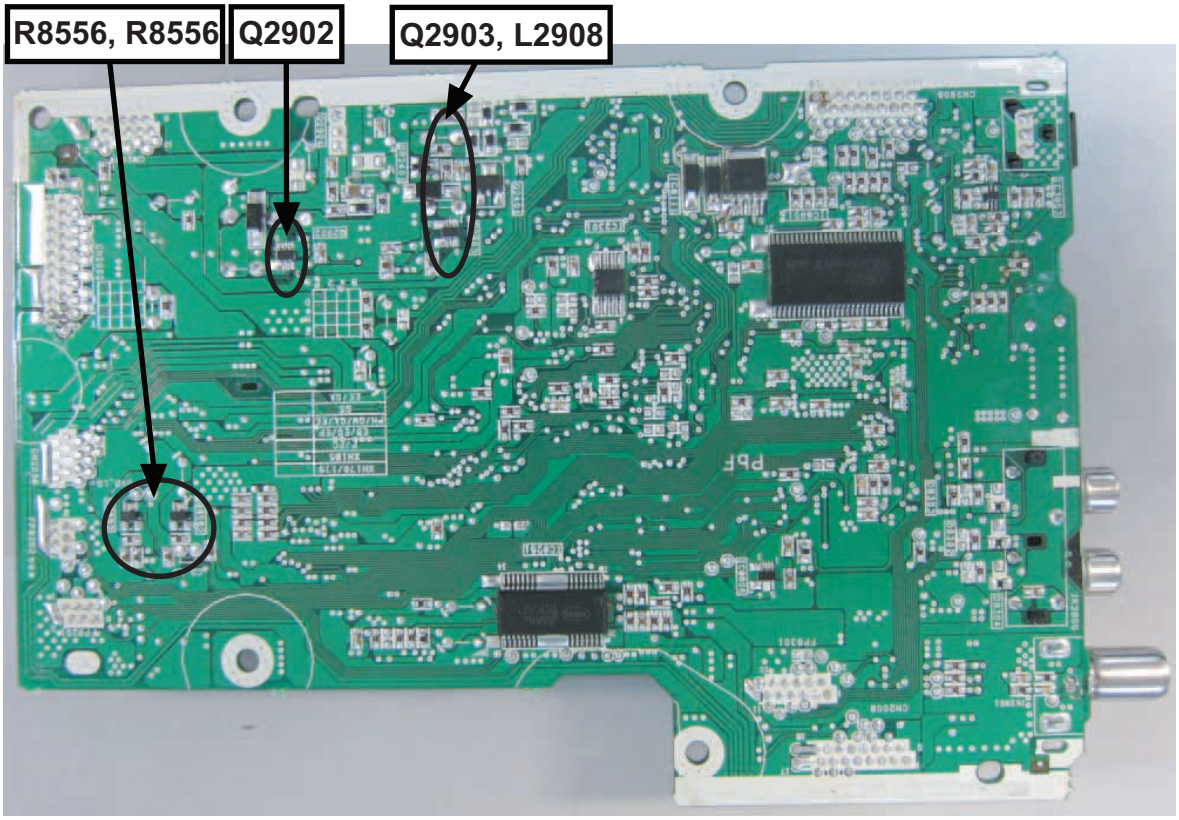


Figure 10-1 SMPS P.C.B.

10.1.2. Main P.C.B

(Side A of Main P.C.B.)



(Side B of Main P.C.B.)

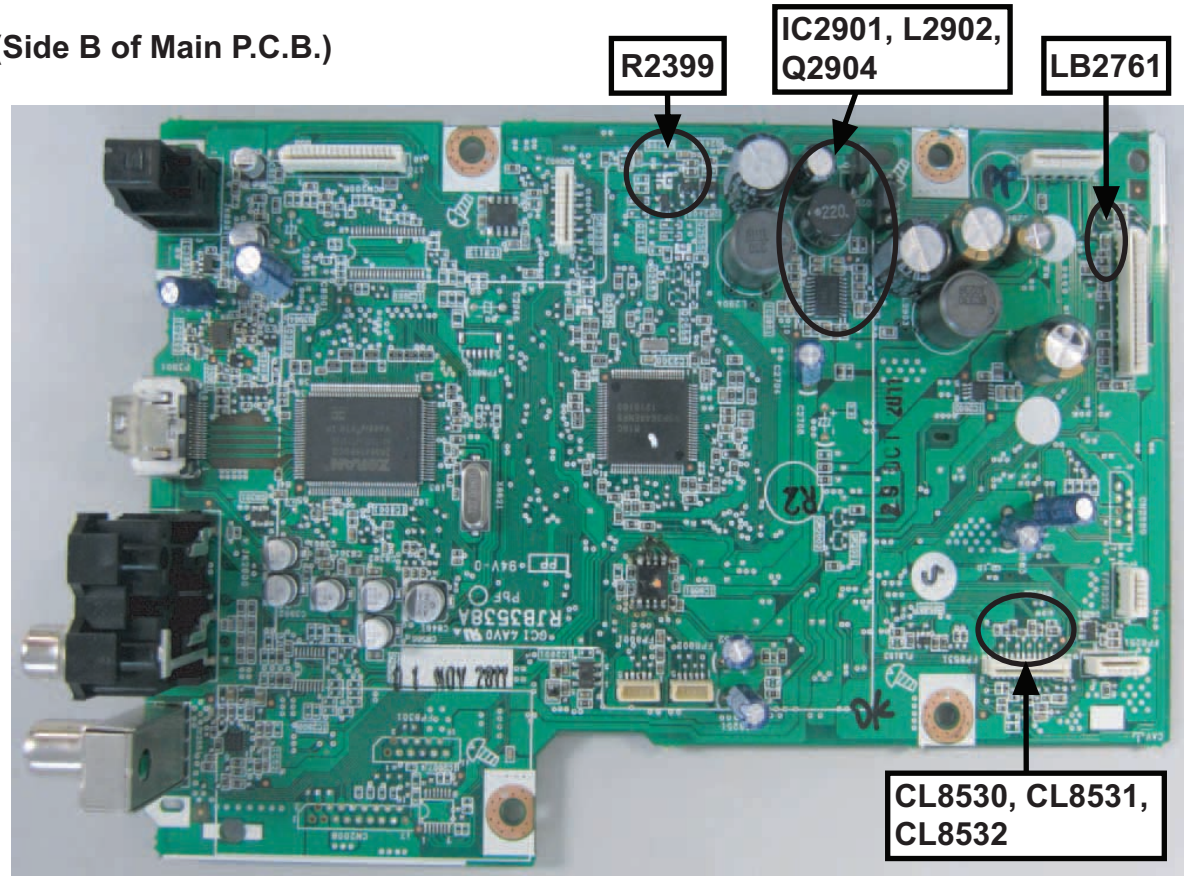


Figure 10-2 Main P.C.B.

10.2. DVD/CD Laser Diode current measurement

This section will illustrate proceddures of measuring & deriving DVD/CD Laser Diode Current.

Item Description	Checking Item/Formula	Remarks
CD Laser Diode Current Measurement	1. Measurement the voltage (V_{CD}) on the testpoints CL8530(+) & CL8531(-). This is voltage across R8566 which has a resistance value of 4.7 ohm. 2. Calculate the CD Laser current by the following formula: **CD_LD=VCD/4.7** 3. Specification for CD laser current is ⩽ 58 mA	Refer to 10.1.2. Main P.C.B. (Figure 10-2 Main P.C.B.)
DVD Laser Diode Current Measurement	1. Measurement the voltage (V_{DVD}) on the testpoints CL8530(+) & CL8532(-). This is voltage across R8556 which has a resistance value of 4.7 ohm. 2. Calculate the DVD Laser current by the following formula: **DVD_LD=VCD/4.7** 3. Specification for DVD laser current is ⩽ 58 mA	Refer to 10.1.2. Main P.C.B. (Figure 10-2 Main P.C.B.)

10.3. Basic Troubleshooting Guide for Traverse Unit (Main P.C.B.)

Problems	Checking Points	Checking components
1) Distorted picture or abnormal sound is head during the initialization	a) Check SDRAM address, data bus, CLK and other control signals waveform	IC8051
	b) Check video signals (CVBS)	LB8317, R8325, IC8011 (Pin 63)
	c) Check audio DAC circuitry * Compare the above with OK condition DVD Module P.C.B	LB8422 till LB8428 *Check for solder short and/or component missing/damaged
2) No TOC/Long TOC	a) Check motor driver circuitry (VCC PVCC)	IC8251 Pin 8, (+9V), 19 (+5V)
	b) Check laser drive circuitry (Voltages & current)	Q8552, CL8532 (For DVD), Q8562, CL8530 (For CD)
	c) Check LSI IC connection to motor drive circuitry	IC8001 Pin 90, 93, 94, 95 IC8251 Pin 11 to 18 * Check for solder short and/or component missing/damaged
3) Disc not spinning 4) Traverse not moving 5) Traverse and spindle abnormal movement	a) Check connection from Main to Traverse unit	FP8251
	b) Check motor driver circuitry on the voltages and control signals	IC8251 * Check for solder short and/or component damaged
6) Cannot read the disc but spindle motor is spinning - Cannot read CD/DVD	a) Check laser drive circuitry (voltages and current) - Check CD Laser Drive - Check DVD Laser Drive * Check voltages and LD current and compare with OK condition Main P.C.B.	Q8552, LB8551 (For DVD Laser Drive current) Q8562, LB8561 (For CD Laser Drive current)
7) Block Noise during play	a) Check SDRAM address and data bus signal	IC8051
8) Jitter out of specification	a) Check LD current b) Check OPU (Change to other unit and confirmed operating condition)	OPU Unit (Traverse unit), FPC connection (FP8531 & FP8251)

10.4. Basic Troubleshooting Guide for HDMI AV output

Problems	Checking Points	Checking components
1) TV does not have any display. Set FL display shows U702/U703	1) Check setting of the set in Setup Menu whether the HDMI Video output is turned ON	* This year HDMI always ON. No need to check Setup Menu. If no resolution selection GUI, then only check SETUP.
	2) +5V Supply to the TV	IC3952 (Pin 4)
	3) HDMI Connector Solderability condition	P3901
	4) HDMI Output TDMS signal lines (IC3901) - Clock (TXCP/TXCN => Pin 50, 49) - Data (TXD0P/TXD0N => Pin 52, 51) - Data (TXD1P/TXD1N => Pin 54, 53) - Data (TXD2P/TXD2N => Pin 56, 55)	HDMI Connector (P3901) - Clock (TXCP/TXCN => Pin 10, 12) - Data (TXD0P/TXD0N => Pin 7, 9) - Data (TXD1P/TXD1N => Pin 4, 6) - Data (TXD2P/TXD2N => Pin 1, 3)
	5) HDMI Transmitter communication lines to TV - Data, DDCDAT (Pin 46, IC8001) - Clock, DDCCLK (Pin 47, IC8001)	LB3905, R3905, Q3902, R3904 LB3904, R3907, Q3903, R3906
	6) HDMI Transmitter communication from DVD Decorder (IC8001) +3.3V Supply	LB3901 (Pin 57)
	7) HDMI Transmitter DVD Decorder (IC8001) +1.8 V Supply	LB3902, LB3910, R3910 (Pin 59)
	8) Hot-Plug Signal	LB3906, R3902, R3903, Q3901
	9) HDMI Interface Reference Resistor	R3901
2) When switching the video output mode from 480p to 720p /1080i, TV display become blank	1) Supply to HDMI transmitter intergrated (IC8001) 2) Check for Capacitor short to GND	C8034, C8006, C8029, C8028, LB3901 (Pin 57), LB3902, LB3910 (Pin 59)
3) Error Video Output. TV screen shows green Display	Check Digital Signal Data communication lines from IC8001 to Serial Flash IC (IC8651)	Pin 1, 2, 5, 6 (IC8651) Pin 105, 106, 107, 109 (IC8001)
4) No audio output from HDMI	Check the setting under '**SETUP**' menu if HDMI Audio Output option is turned '**ON**'	* Check for solder short/or component missing on TDMS line as well as signal intergrity HDMI Connector (P3901) - Clock (TXCP/TXCN => Pin 10, 12) - Data (TXD0P/TXD0N => Pin 7, 9) - Data (TXD1P/TXD1N => Pin 4, 6) - Data (TXD2P/TXD2N => Pin 1, 3)

11 Service Fixture & Tools

Prepare service tools before process service position.

Ref. No	Service Tools		Remarks
SFT1	Main P.C.B. (CN2006) - D-Amp P.C.B. (CN5402)	RFKZBTT270K3 (18P FFC)	

12 Disassembly and Assembly Instructions

Caution Note:

- **This section describes the disassembly and/or assembly procedures for all major printed circuit boards & main components for the unit. (You may refer to the section of "Main components and P.C.B Locations" as described in the service manual)**
- **Before carrying out the disassembly process, please ensure all the safety precautions & procedures are followed.**
- **During the disassembly and/or assembly process, please handle with care as there may be chassis components with sharp edges.**
- **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
- Replacement of Tray Ornament
- Disassembly of Front Panel Block
- Disassembly of Operation Button P.C.B. and Power Button P.C.B.
- Disassembly of Panel P.C.B.
- Disassembly of Rear Panel
- Disassembly of Fan Unit
- Disassembly of Main P.C.B.
- Disassembly of D-Amp P.C.B.
- Disassembly of AC Inlet P.C.B. and SMPS P.C.B.
- Disassembly of DVD Mechanism Unit
- Replacement of Traverse Unit.

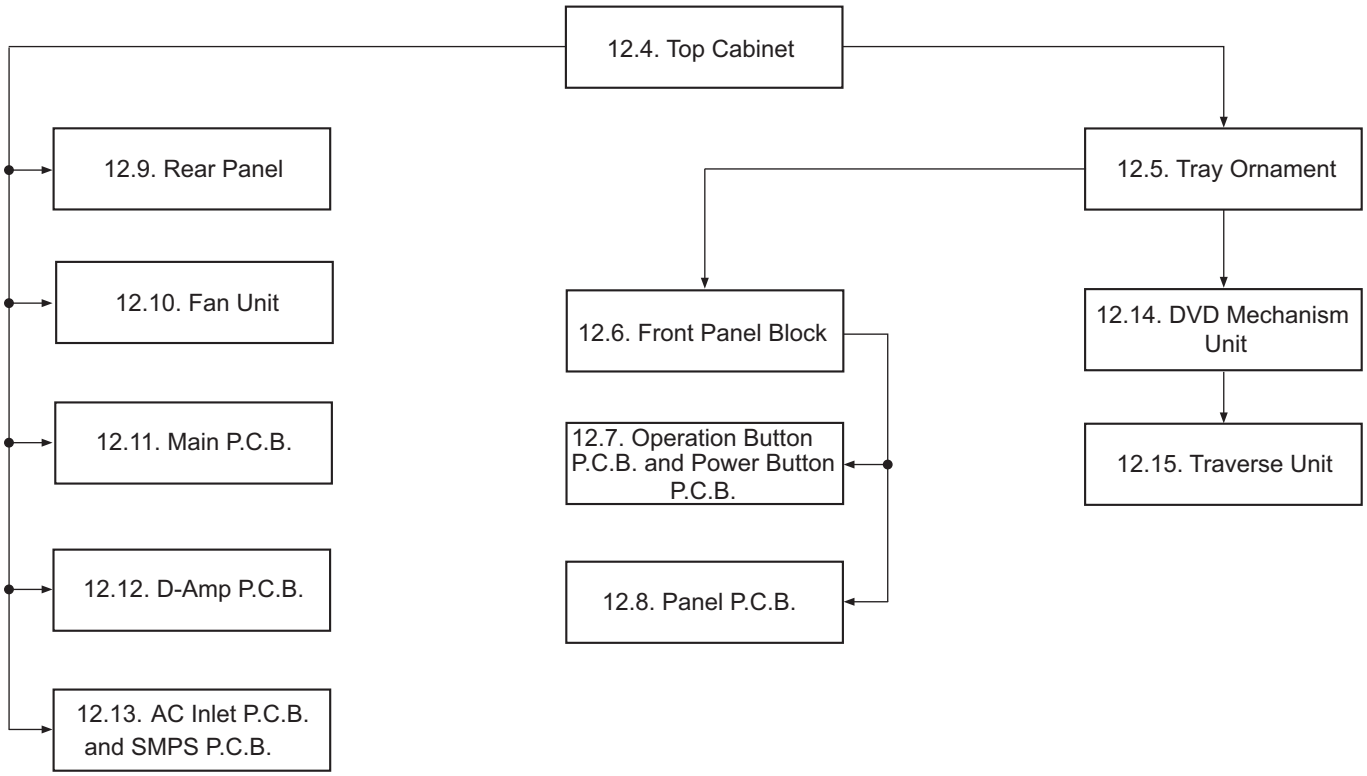
12.1. Type of Screws

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

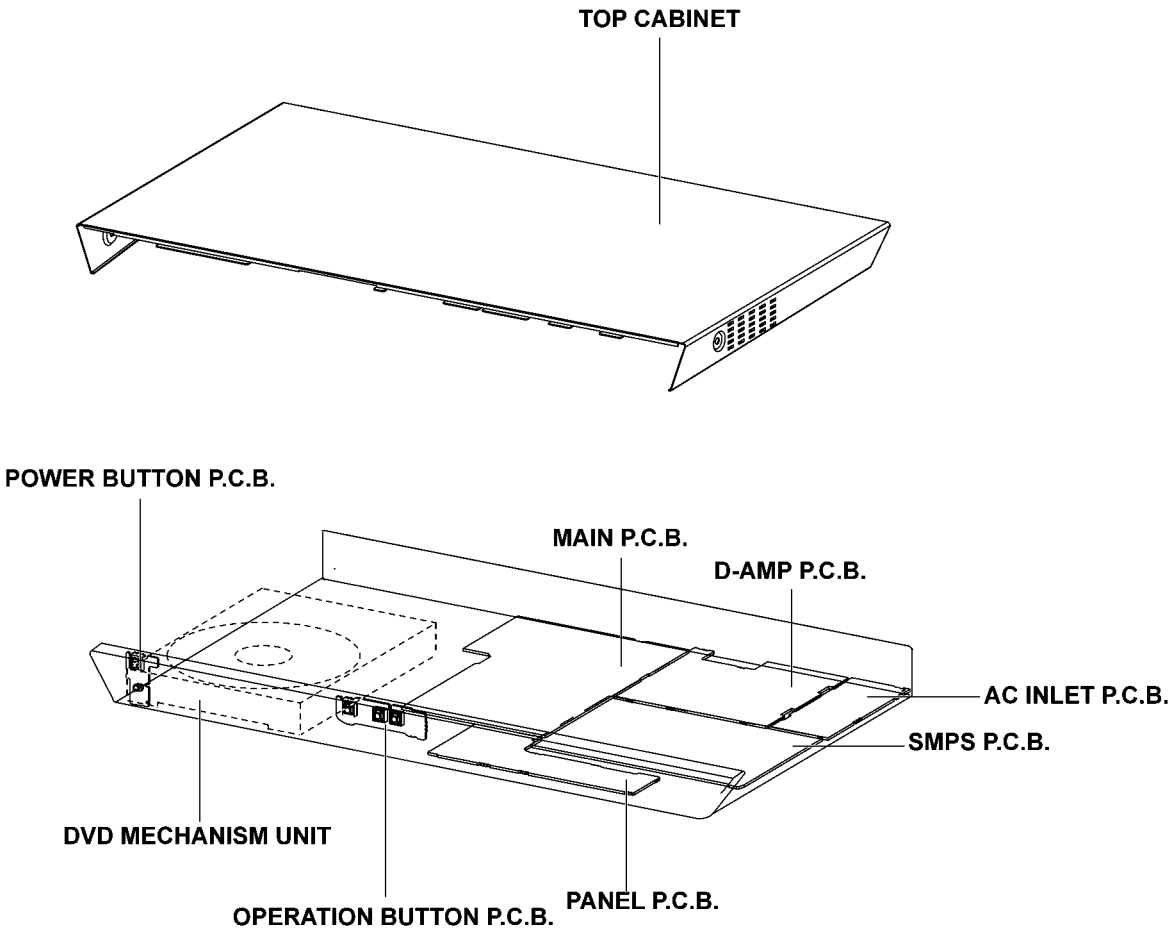
Below shown is part no. of different screw types used:

ⓐ :RHD30007-K2J
ⓑ :RHD30119-S
ⓒ :RHD26046
ⓓ :RHDX301003
ⓔ :RHDX261002

12.2. Disassembly Flow Chart

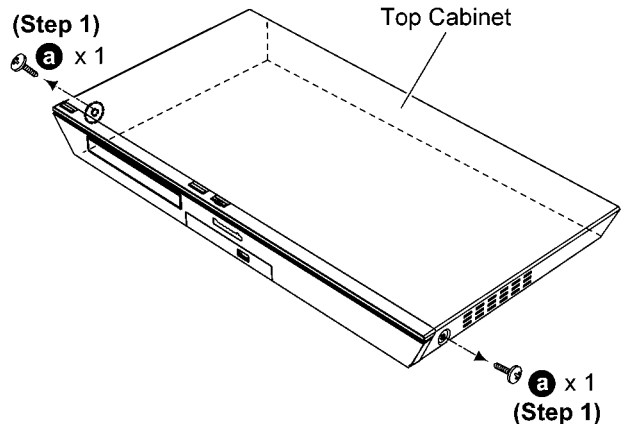


12.3. Main Components and P.C.B. Locations

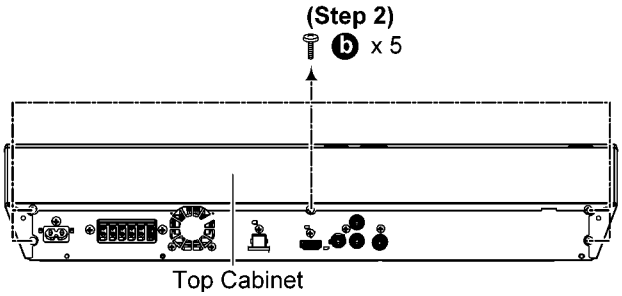


12.4. Disassembly of Top Cabinet

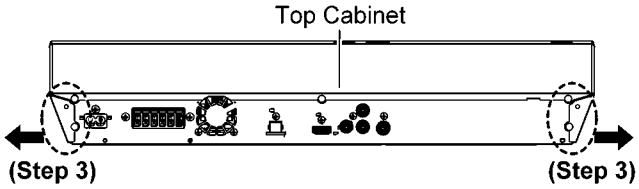
Step 1 Remove 2 screws.



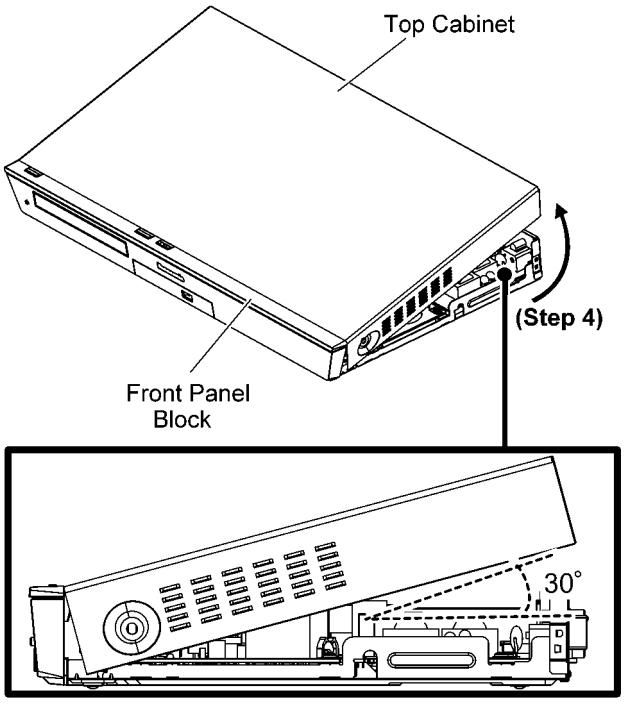
Step 2 Remove 5 screws.



Step 3 Slightly release both sides of the Top Cabinet as diagram shown.

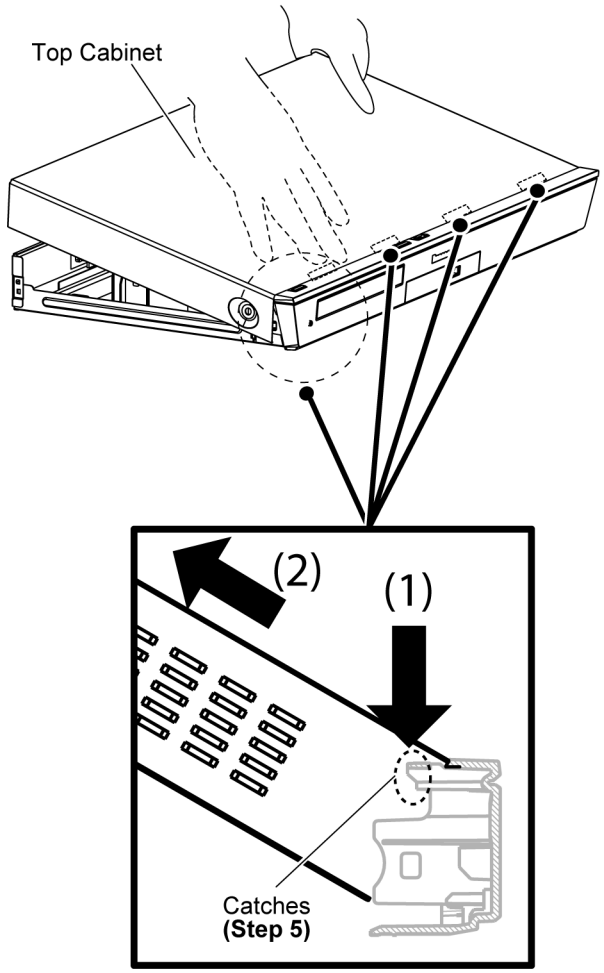


Step 4 Slightly lift both sides of the Top Cabinet in an upward direction about 30°.

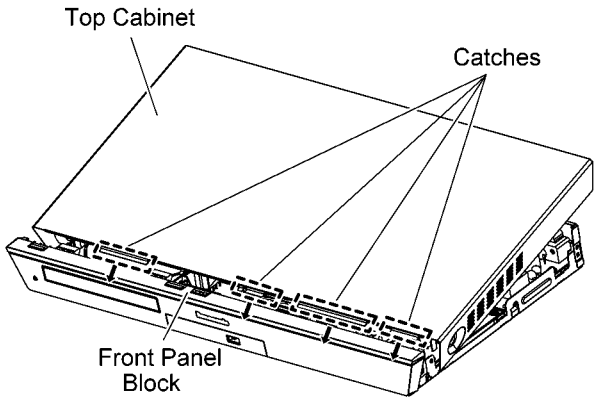


Step 5 Press gentlely the Front Panel Block and remove the Top Cabinet as arrow shown in sequence.

Caution: Avoid touching electrical components when hand is inserted under the Top Cabinet.



Caution: During assembling, ensure that the Top Cabinet is inserted into the Front Panel Block.

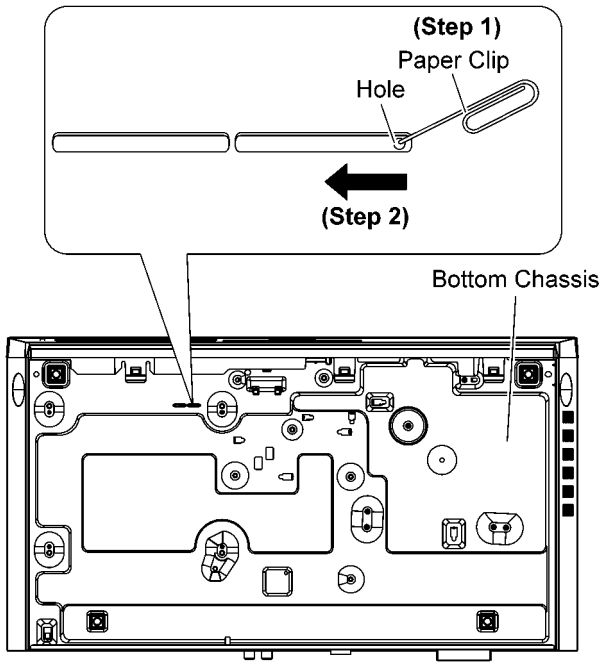


12.5. Replacement of Tray Ornament

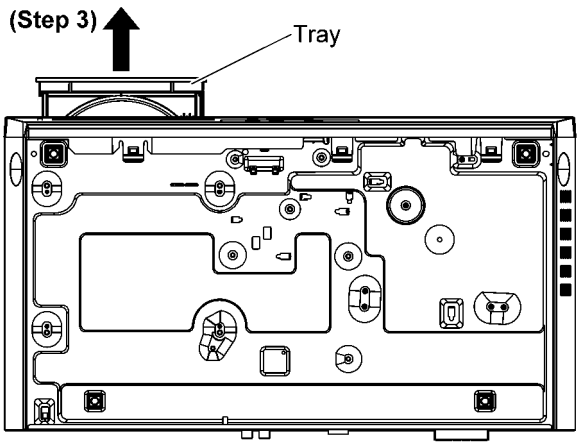
12.5.1. Disassembly of Tray Ornament

Step 1 Use a Paper Clip and insert into the hole at the bottom of the unit.

Step 2 Push the Paper Clip sideway in the direction of the arrow to eject the Tray.

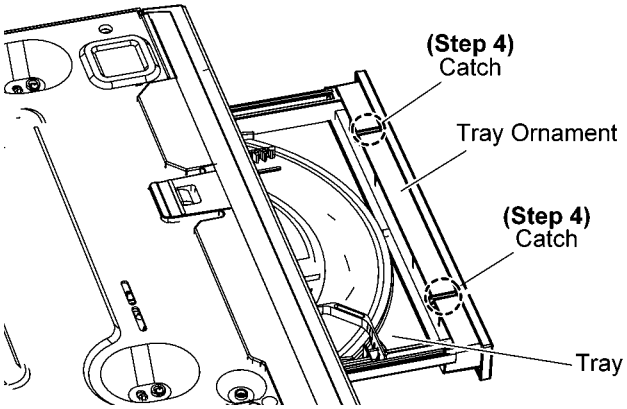


Step 3 Slide the Tray out as direction of arrow.

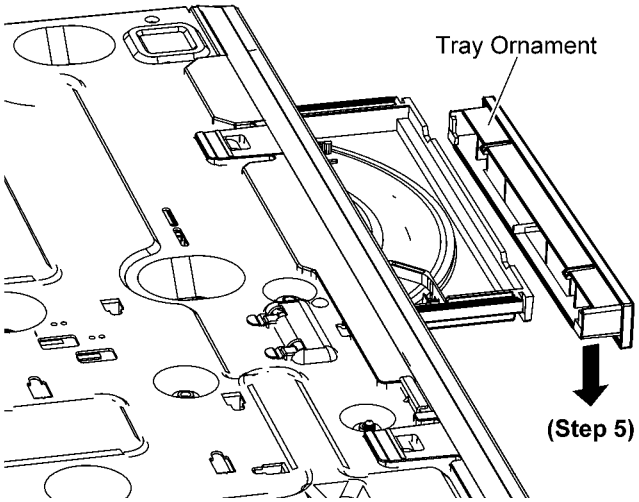


Step 4 Release catches.

Caution: During assembling, ensure that the Tray Ornament is inserted & fully catched onto the Tray.



Step 5 Remove the Tray Ornament in the direction of arrow.

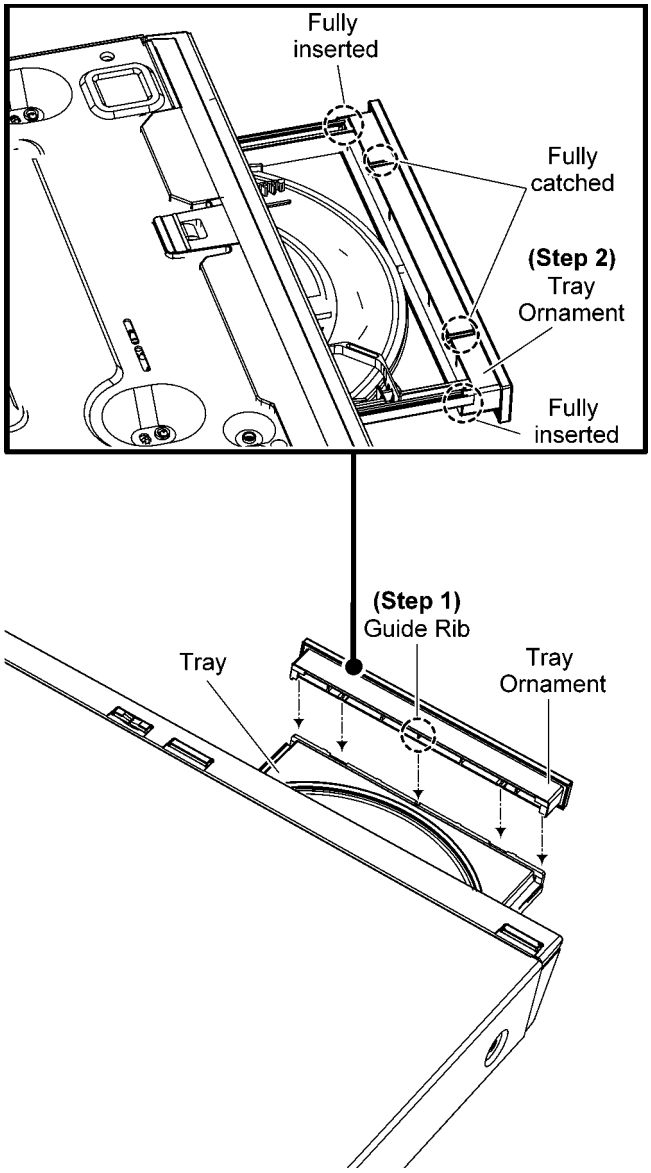


12.5.2. Assembly of Tray Ornament

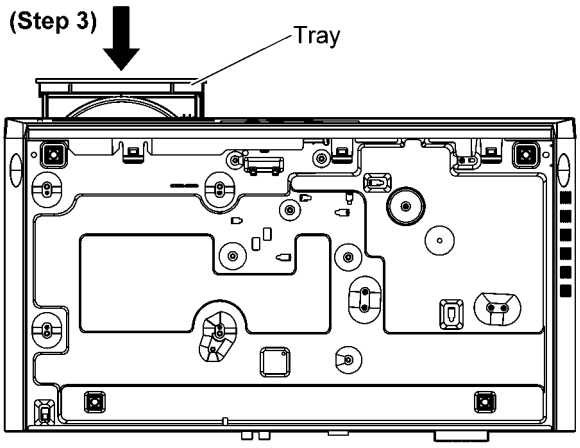
Step 1 Align the guide rib of Tray Ornament with the Tray.

Step 2 Insert the Tray Ornament into the Tray.

Caution: Ensure that the Tray Ornament is fully catched onto the Tray.



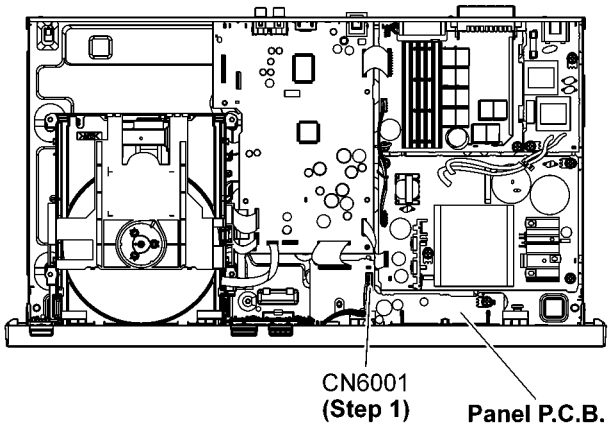
Step 3 Slide the Tray until it is fully closed.



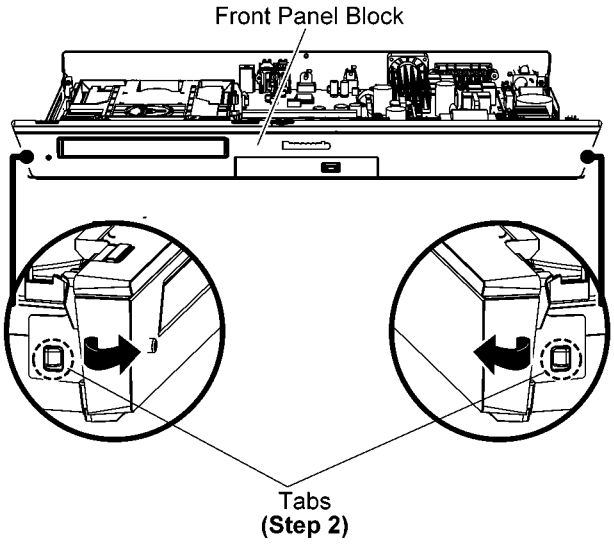
12.6. Disassembly of Front Panel Block

- **Refer to “Disassembly of Top Cabinet”.**
- **Refer to “Disassembly of Tray Ornament”.**

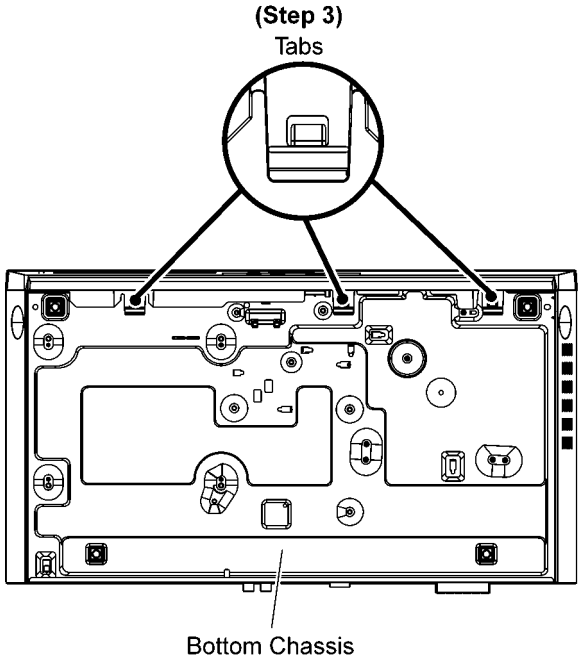
Step 1 Detach 4P Cable at the connector (CN6001) on Panel P.C.B..



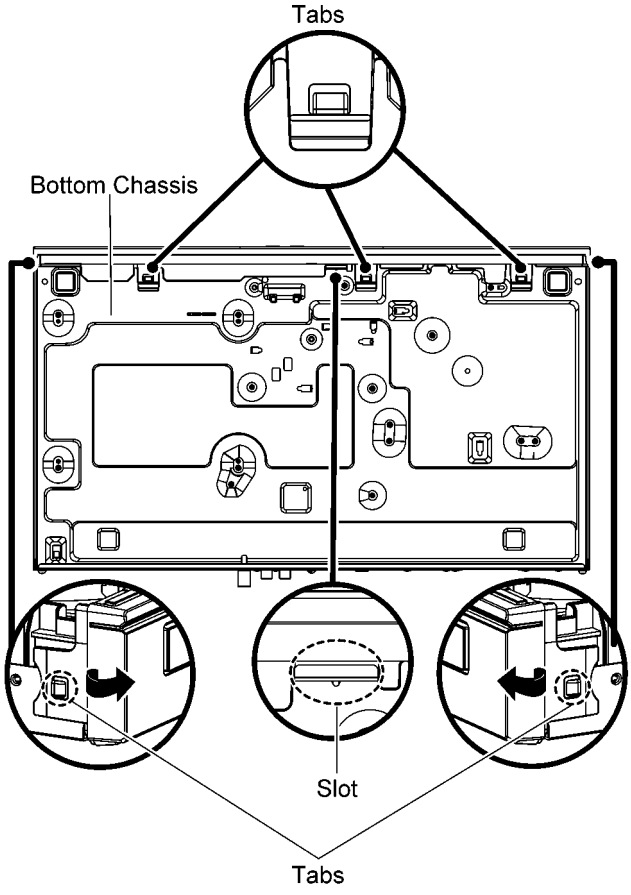
Step 2 Release tabs on both sides of the Front Panel Block in the direction of arrow.



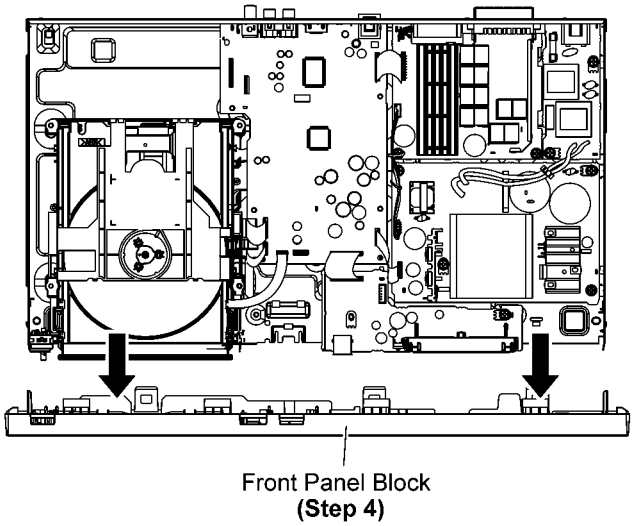
Step 3 Release tabs at the bottom of the unit.
Caution: Do not exert strong force when releasing the tabs.



Caution: During assembling, ensure that the Front Panel Block is properly inserted and fully catched onto the Bottom Chassis



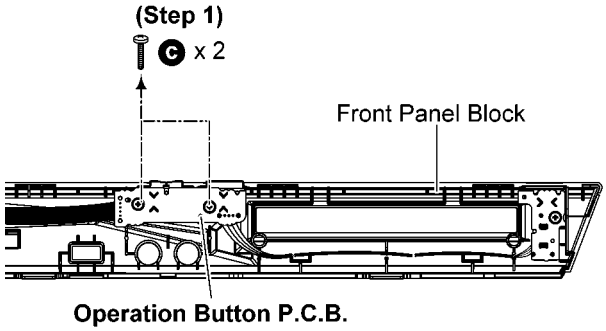
Step 4 Remove the Front Panel Block.



12.7. Disassembly of Operation Button P.C.B. and Power Button P.C.B.

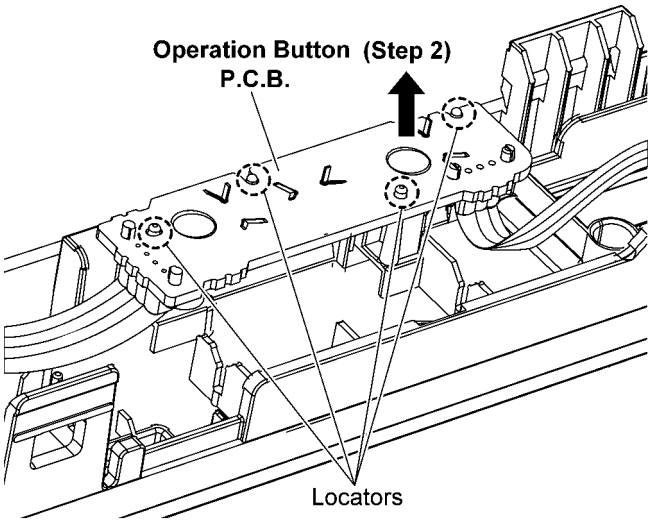
- **Refer to "Disassembly of Top Cabinet".**
- **Refer to "Disassembly of Tray Ornament".**
- **Refer to "Disassembly of Front Panel Block".**

Step 1 Remove 2 screws.

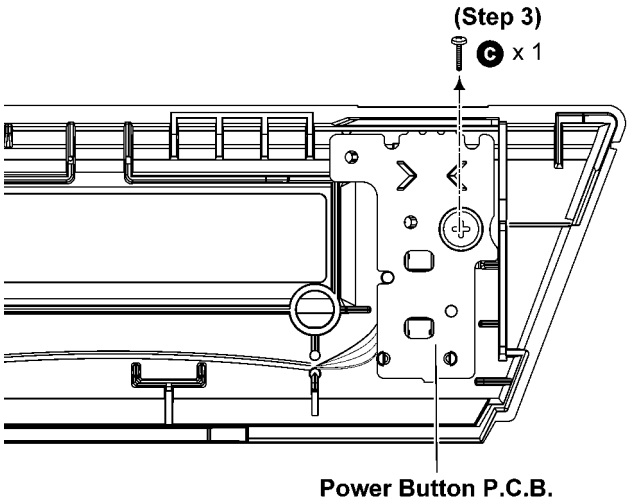


Step 2 Lift up the Operation Button P.C.B..

Caution: During assembling, ensure that the Operation Button P.C.B. is properly located and fully seated onto the Front Panel Block.

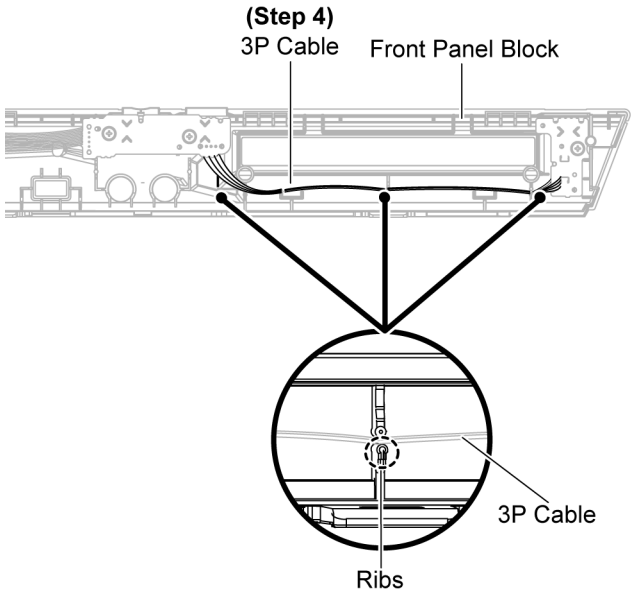


Step 3 Remove 1 screw.

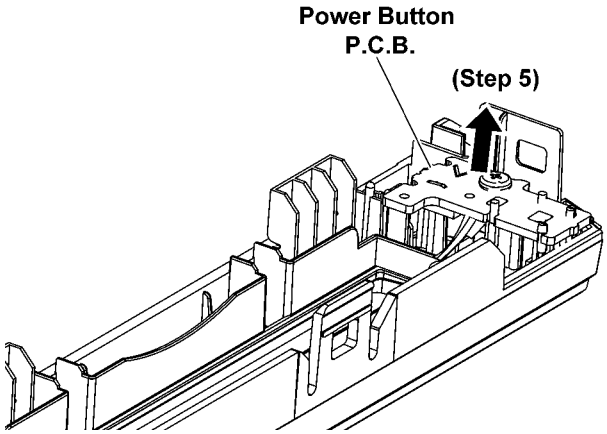


Step 4 Release 3P Cable from the ribs of the Front Panel Block.

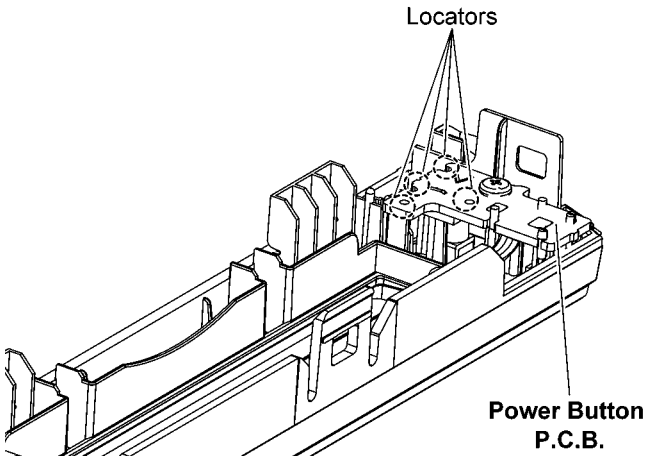
Caution: During assembling, dressed the 3P Cable into the ribs of the Front Panel Block.



Step 5 Lift up to remove the Power Button P.C.B..



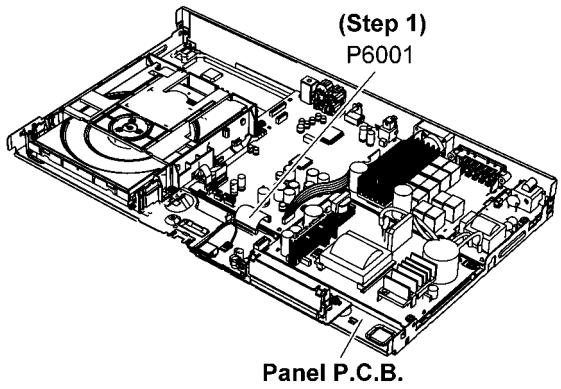
Caution: During assembling, ensure that the Power Button P.C.B. is properly located and fully seated onto the Front Panel Block.



12.8. Disassembly of Panel P.C.B.

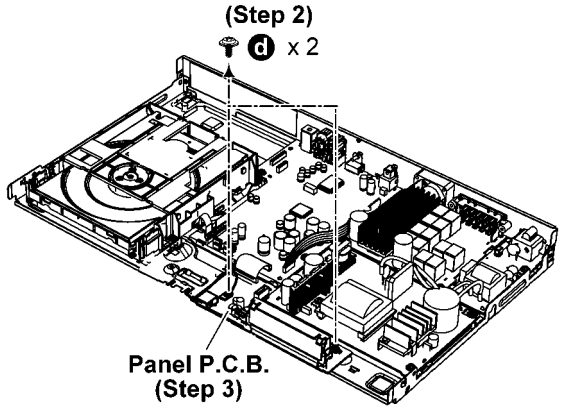
- **Refer to "Disassembly of Top Cabinet".**
- **Refer to "Disassembly of Tray Ornament".**
- **Refer to "Disassembly of Front Panel Block".**

Step 1 Detach 21P FFC at the connector (P6001) on Panel P.C.B..

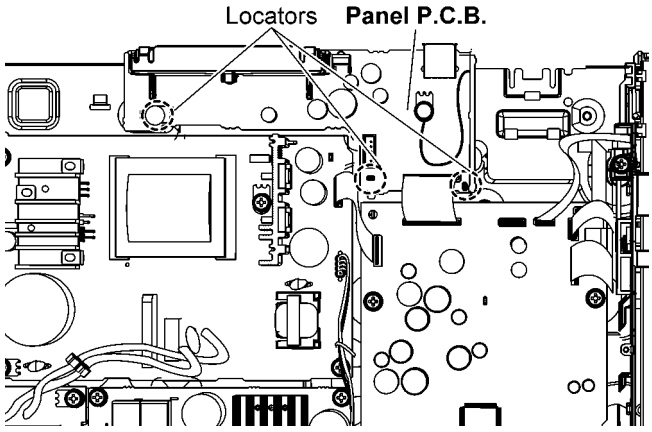


Step 2 Remove 2 screws.

Step 3 Remove the Panel P.C.B..



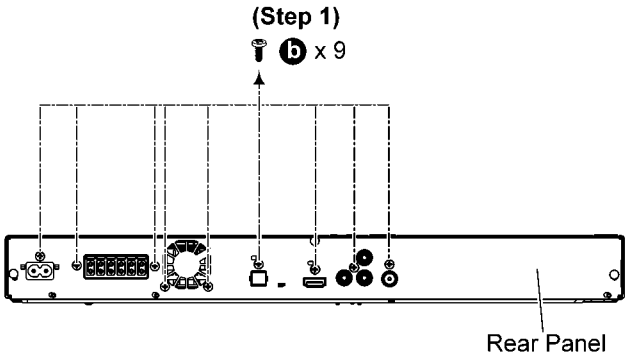
Caution: During assembling, ensure that the Panel P.C.B. is properly located & fully seated onto the bottom chassis.



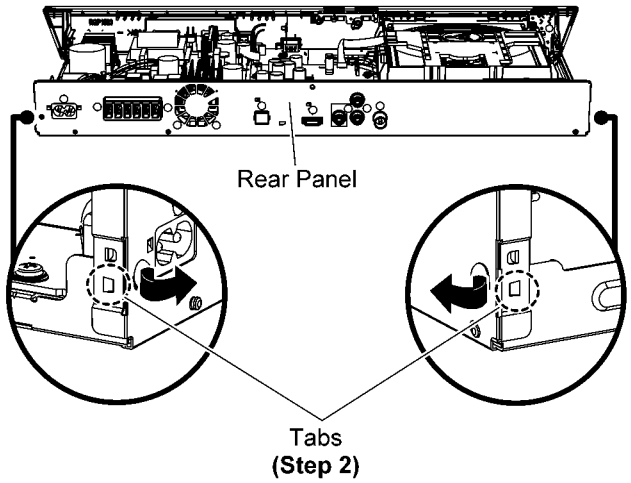
12.9. Disassembly of Rear Panel

• **Refer to "Disassembly of Top Cabinet"**

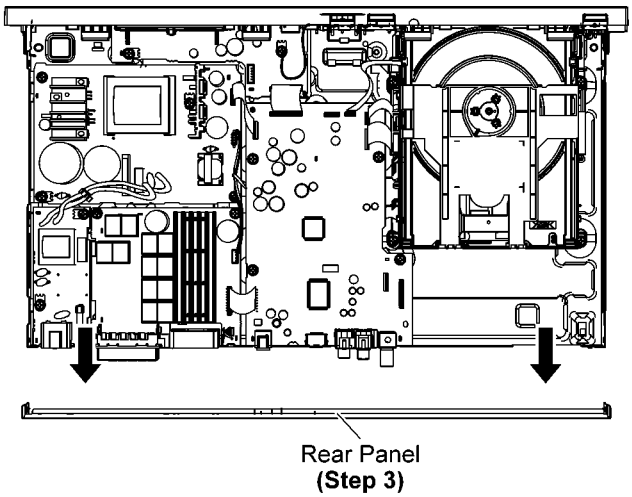
Step 1 Remove 9 screws.



Step 2 Release tabs at each side of the Rear Panel in the direction of arrow.



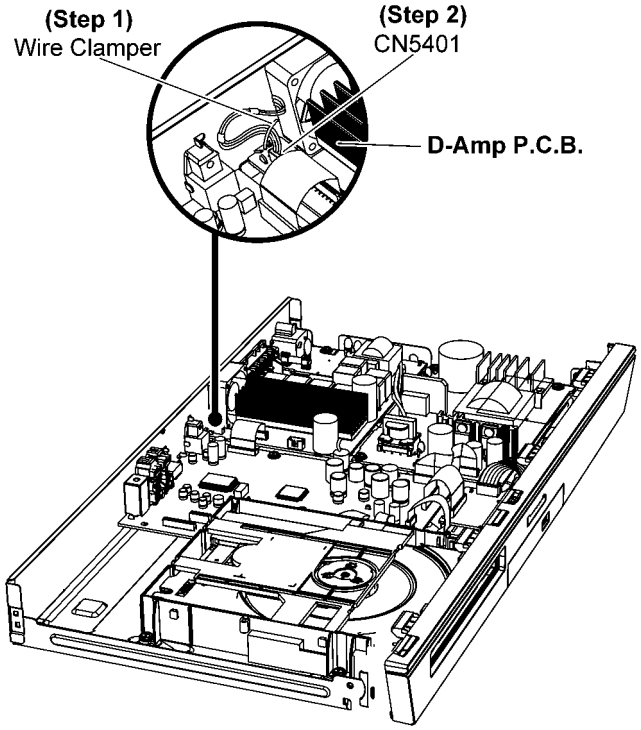
Step 3 Remove the Rear Panel.



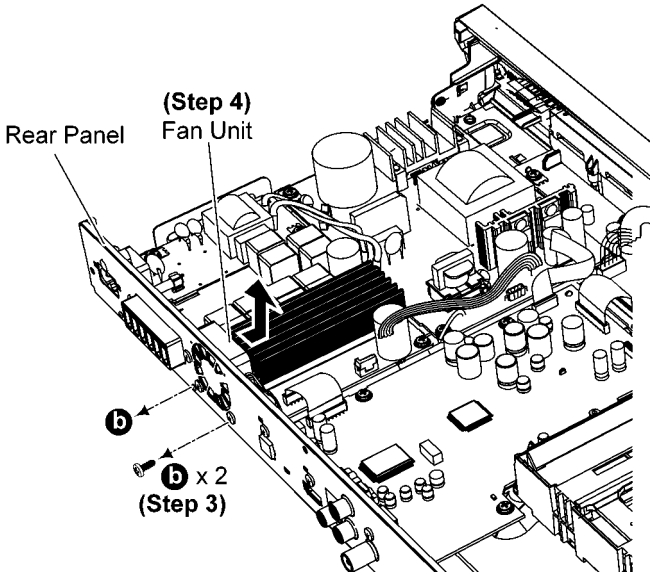
12.10. Disassembly of Fan Unit

• **Refer to "Disassembly of Top Cabinet"**

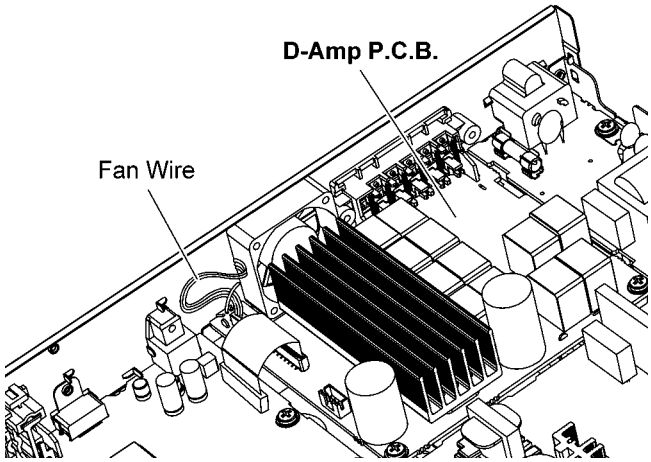
Step 1 Lift up the Wire Clamper.
Step 2 Detach the 3P Fan Wire at connector (CN5401) on D-Amp P.C.B..



Step 3 Remove 2 screws.
Step 4 Lift up to remove the Fan Unit.



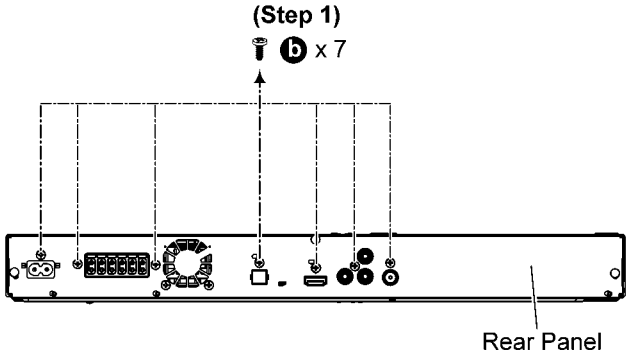
Caution: During assembling, ensure that the 3P Fan Wire is attached to the connector (CN5401) at D-Amp P.C.B..



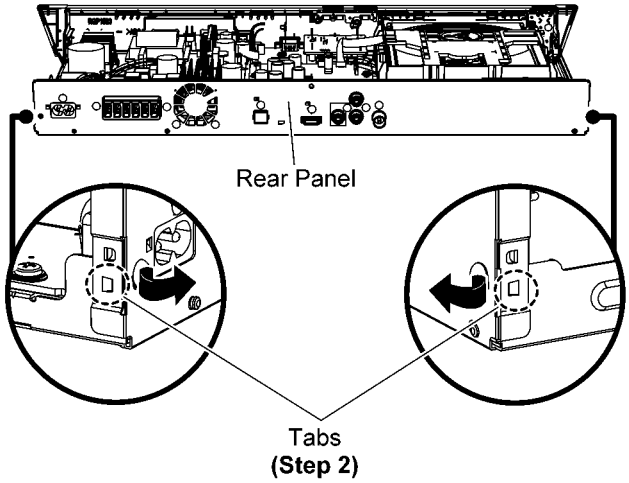
12.11. Disassembly of Main P.C.B.

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

Step 1 Remove 7 screws.



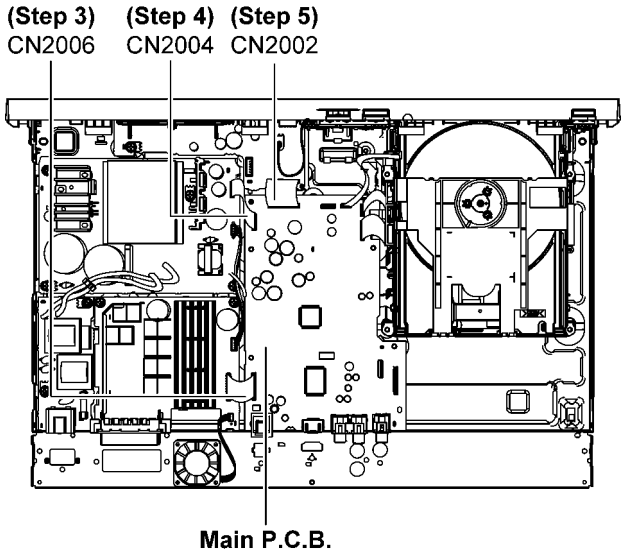
Step 2 Release tabs at each side of the Rear Panel in the direction of arrow.



Step 3 Detach 18P FFC at the connector (CN2006) on Main P.C.B..

Step 4 Detach 10P FFC at the connector (CN2004) on Main P.C.B..

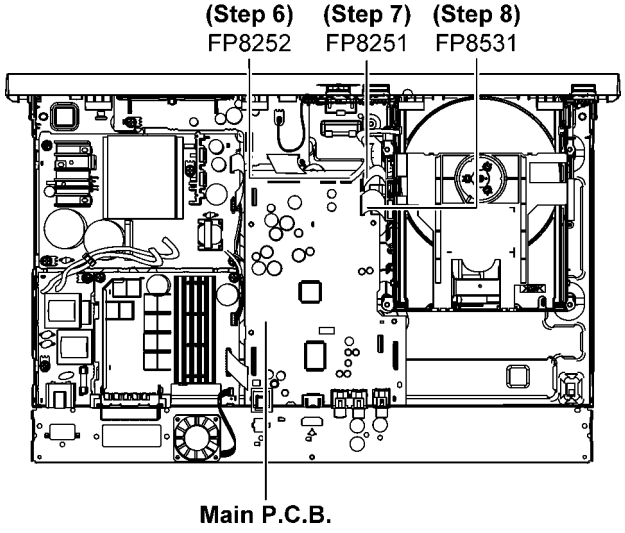
Step 5 Detach 21P FFC at the connector (CN2002) on Main P.C.B..



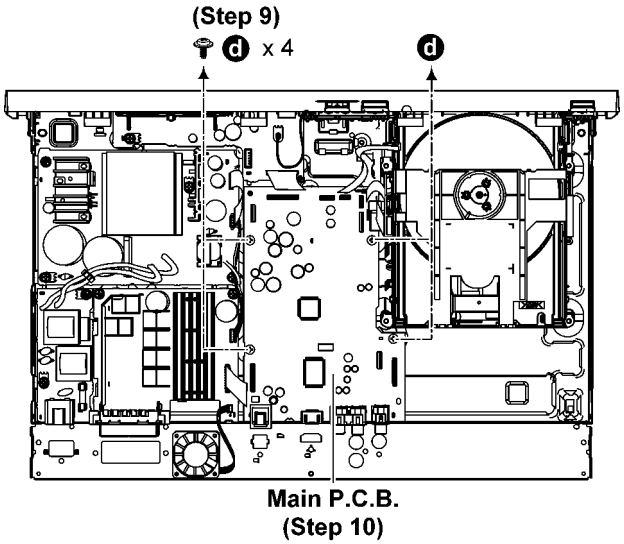
Step 6 Detach 5P FFC at the connector (FP8252) on Main P.C.B..

Step 7 Detach 6P FFC at the connector (FP8251) on Main P.C.B..

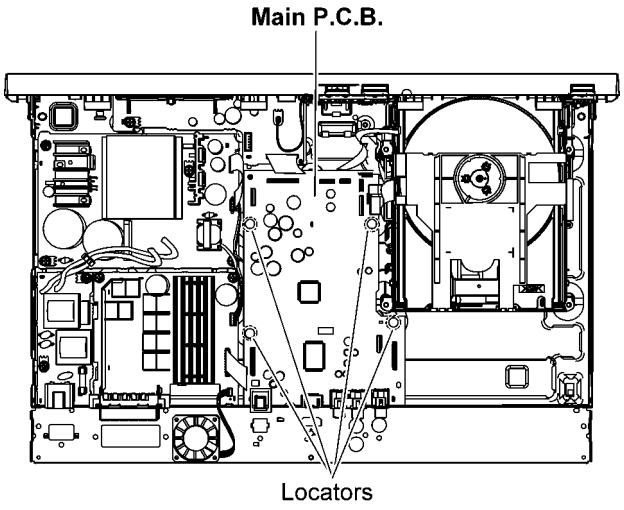
Step 8 Detach 24P FFC at the connector (FP8531) on Main P.C.B..



Step 9 Remove 4 screws.
Step 10 Remove the Main P.C.B..



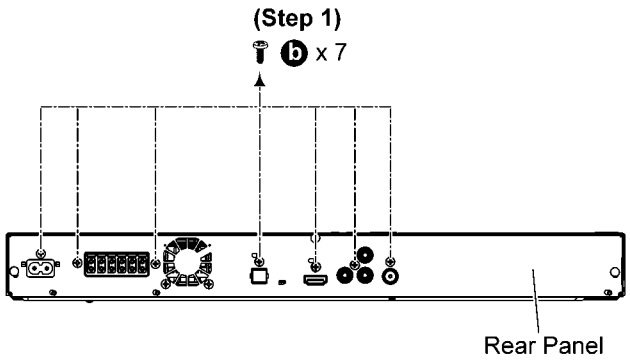
Caution: During assembling, ensure that the Main P.C.B. is properly located & seated onto the Bottom Chassis.



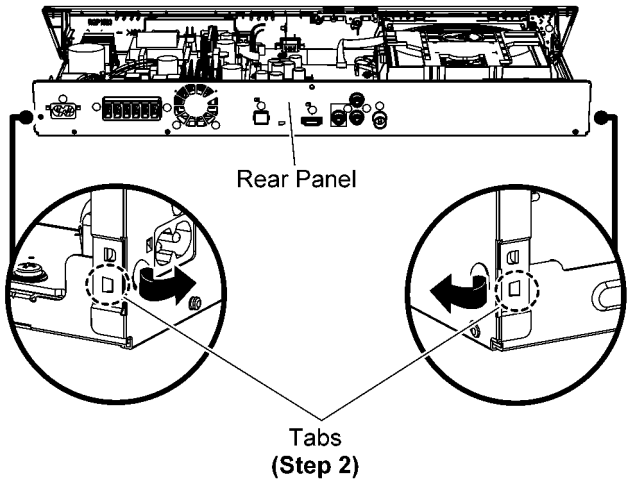
12.12. Disassembly of D-Amp P.C.B.

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

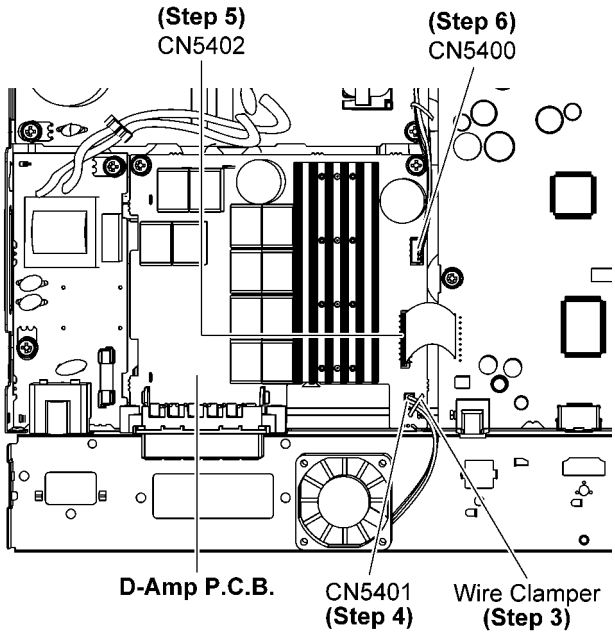
Step 1 Remove 7 screws.



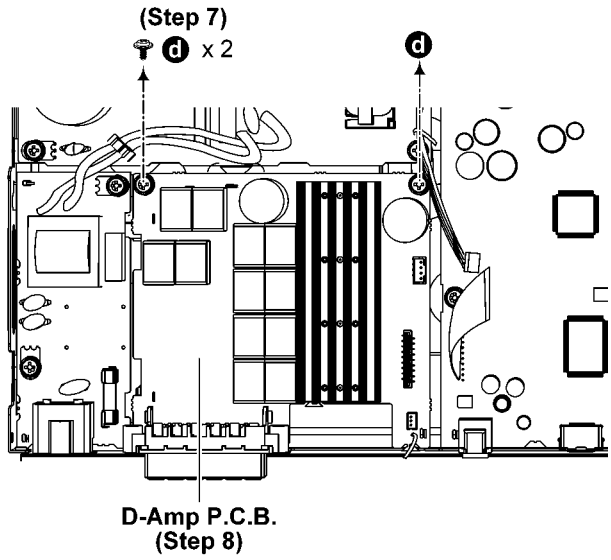
Step 2 Release tabs at each side of the Rear Panel in the direction of arrow.



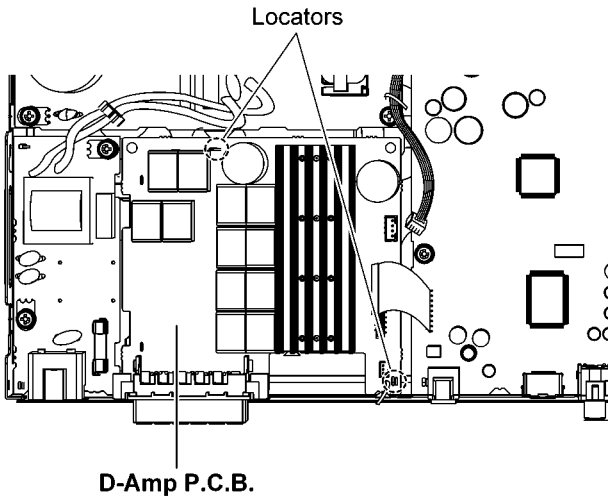
Step 3 Lift up the Wire Clamper.
Step 4 Detach 3P Fan Wire at the connector (CN5401) on D-Amp P.C.B..
Step 5 Detach 18P FFC at the connector (CN5402) on D-Amp P.C.B..
Step 6 Detach 4P Cable at the connector (CN5400) on D-Amp P.C.B..



Step 7 Remove 2 screws.
Step 8 Remove the D-Amp P.C.B..



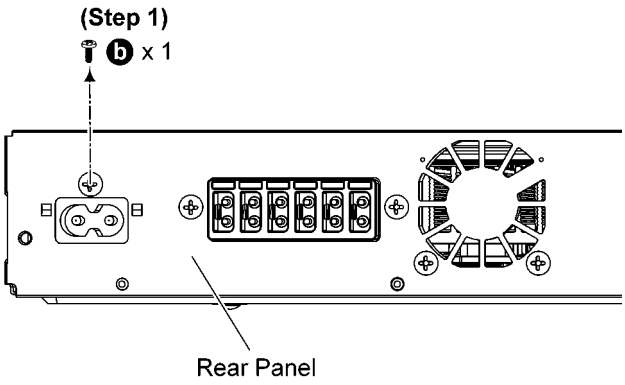
Caution: During assembling, ensure that the D-Amp P.C.B. is properly located & seated onto the Bottom Chassis.



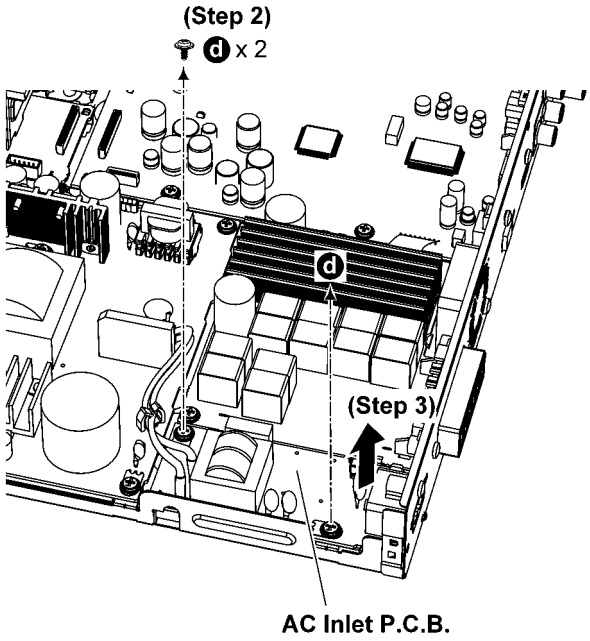
12.13. Disassembly of AC Inlet P.C.B. and SMPS P.C.B.

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

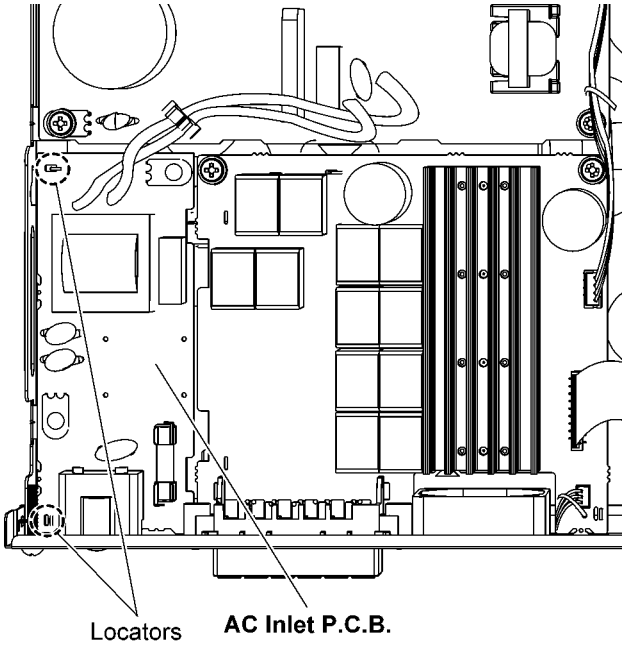
Step 1 Remove 1 screw.



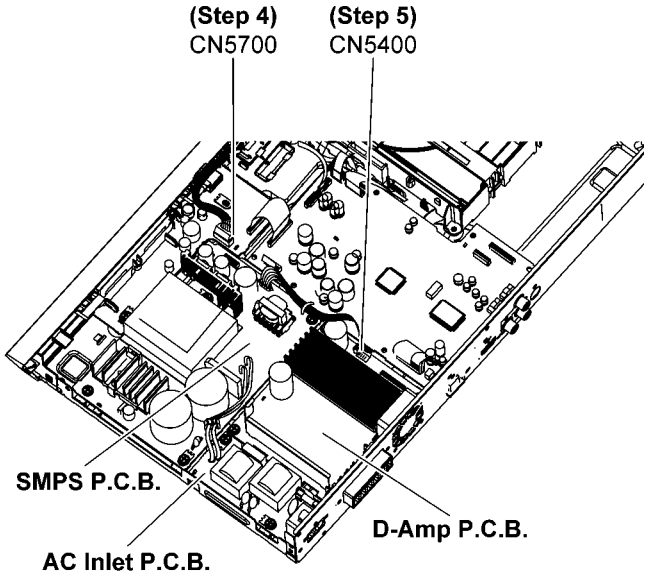
Step 2 Remove 2 screws.
Step 3 Lift up to remove the AC Inlet P.C.B..



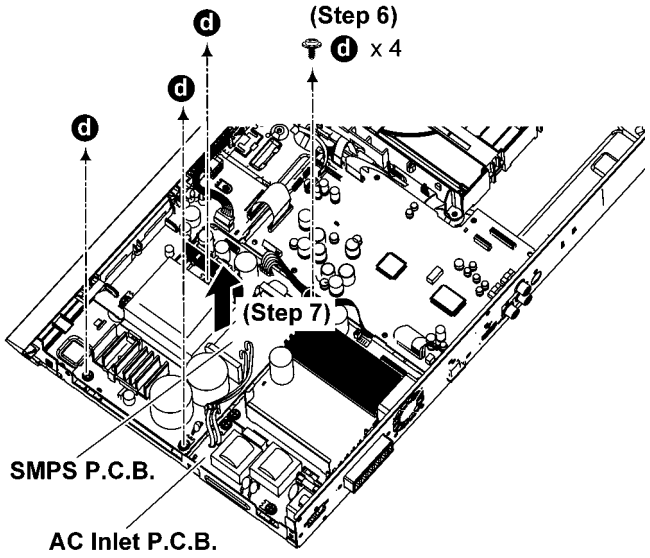
Caution: During assembling, ensure that the AC Inlet P.C.B. is properly located & seated onto the Bottom Chassis.



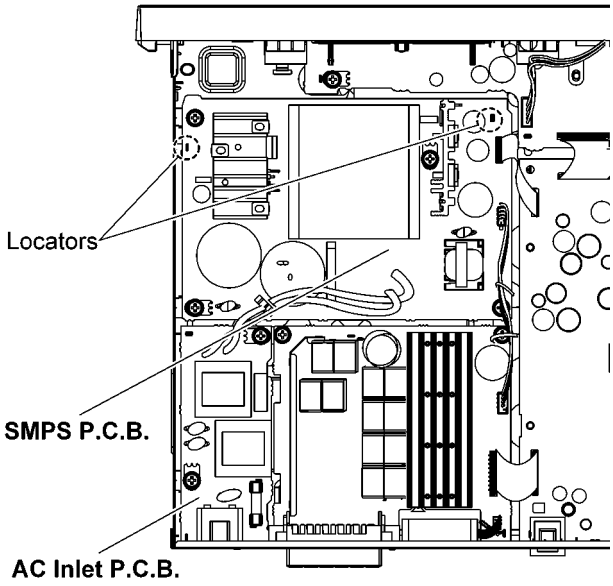
Step 4 Detach 10P FFC at the connector (CN5700) on SMPS P.C.B..
Step 5 Detach 4P Cable at the connector (CN5400) on D-Amp P.C.B..



Step 6 Remove 4 screws.
Step 7 Lift up to remove the SMPS P.C.B. and AC Inlet P.C.B..



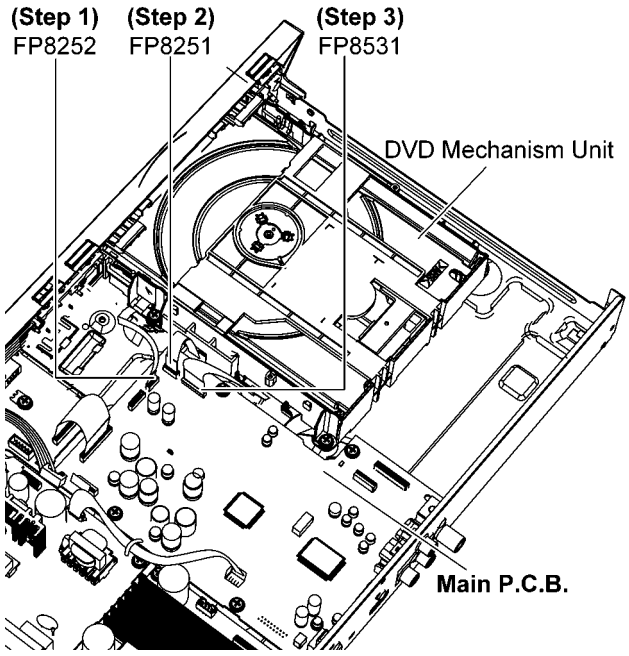
Caution: During assembling, ensure that the SMPS P.C.B. is properly located & seated onto the Bottom Chassis.



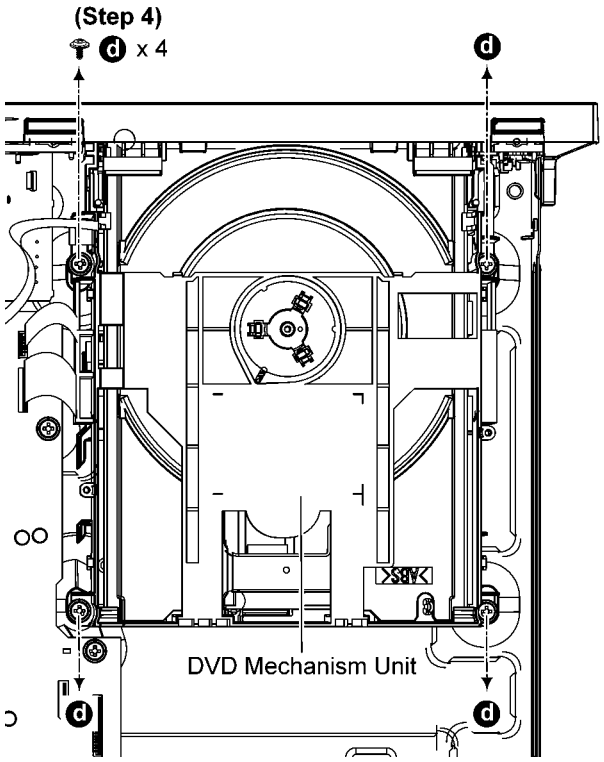
12.14. Disassembly of DVD Mechanism Unit

- **Refer to “Disassembly of Top Cabinet”**
- **Refer to “Disassembly of Tray Ornament”**

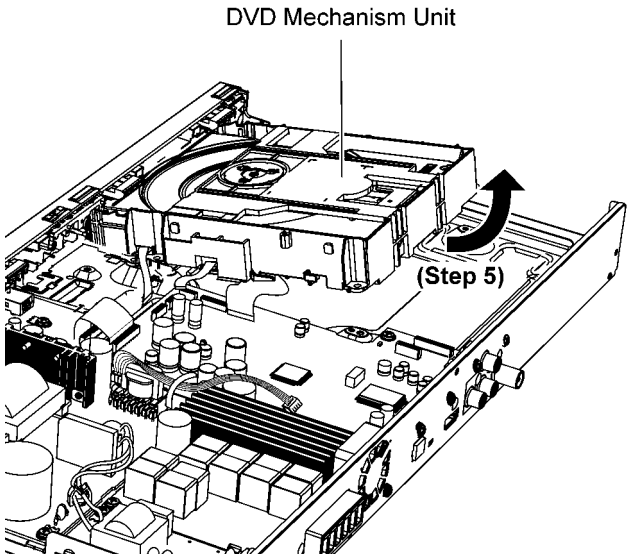
Step 1 Detach 5P FFC at the connector (FP8252) on Main P.C.B..
Step 2 Detach 6P FFC at the connector (FP8251) on Main P.C.B..
Step 3 Detach 24P FFC at the connector (FP8531) on Main P.C.B..



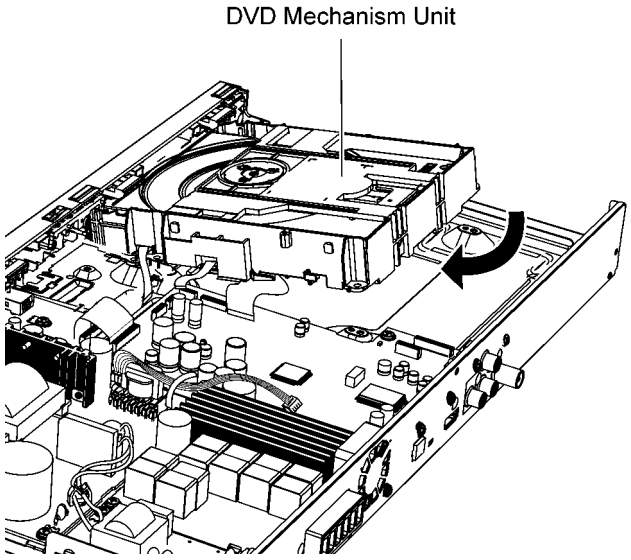
Step 4 Remove 4 screws.



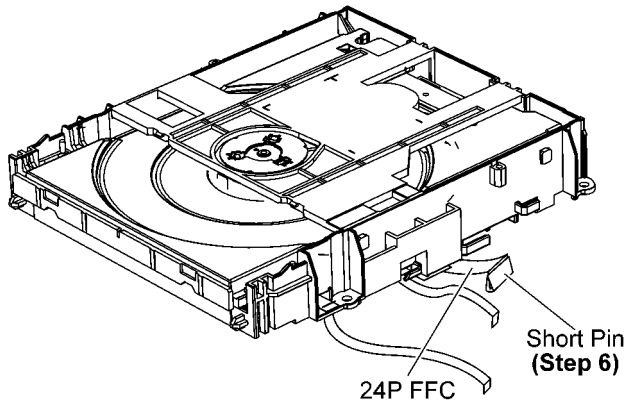
Step 5 Slightly lift up to remove the DVD Mechanism Unit from the unit.



Caution: During assembling, ensure that the DVD Mechanism Unit is properly located & seated on the bottom chassis before screwing.



Step 6 Attach a short pin to the 24P FFC of the DVD Mechanism.



12.15. Replacement of Traverse unit

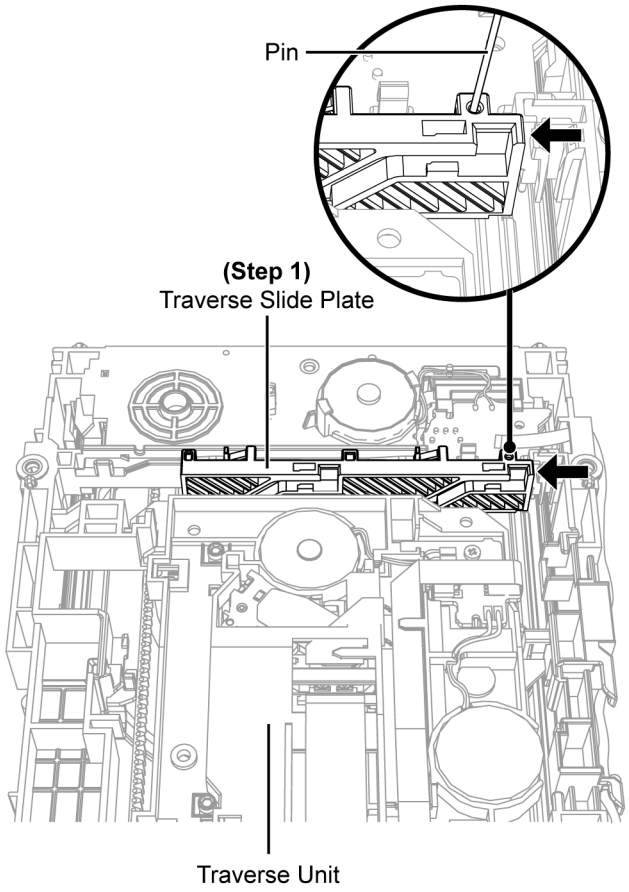
- **Refer to “Disassembly of DVD Mechanism Unit”.**

Caution: Refer to 2.4 “Handling Precaution for Traverse Unit” to prevent static damage to the Optical Pickup unit.
Note:

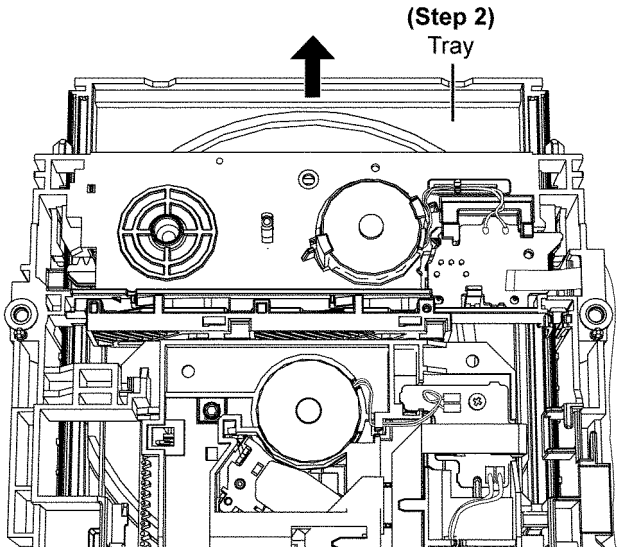
1. When the optical pickup unit is defective, the overall traverse unit needs replacement.
2. Please note that appropriate actions need to be taken to prevent static damage.

12.15.1. Disassembly of Traverse unit

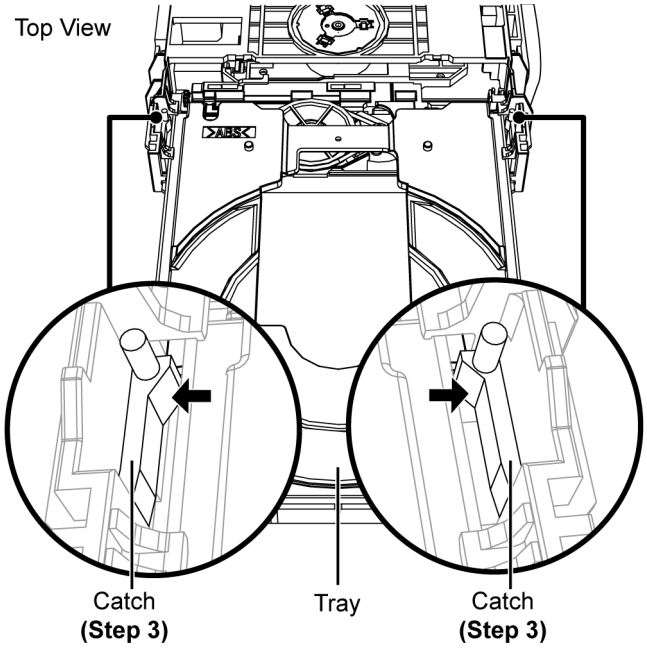
Step 1 Use a pin to slide the Traverse Slide Plate until it comes to a stop.



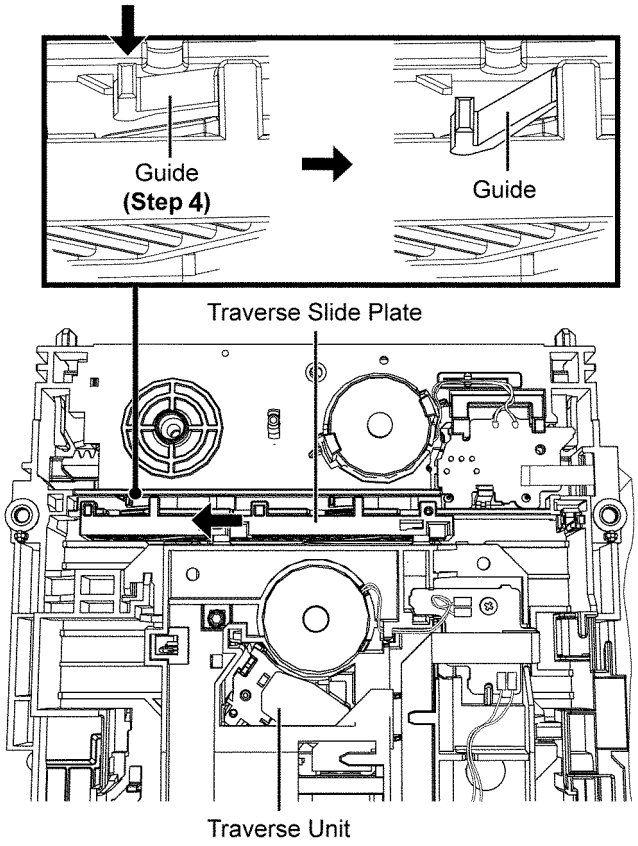
Step 2 Slide the tray out fully.



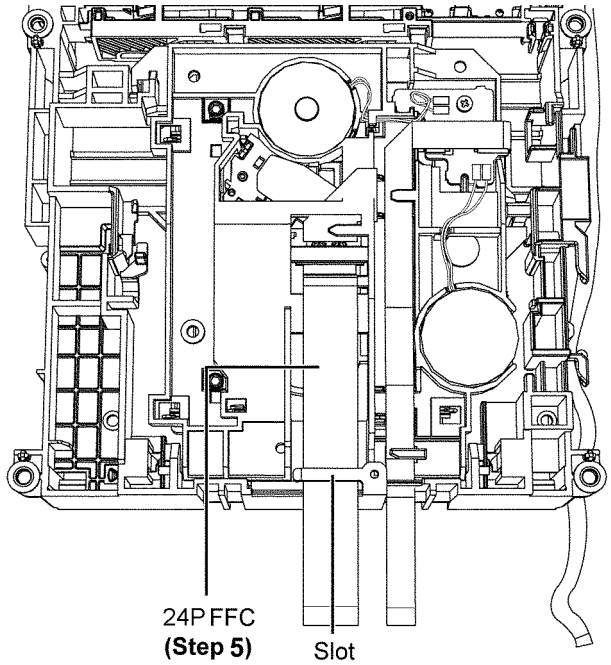
Step 3 Press inwards to release the catches & remove the tray.



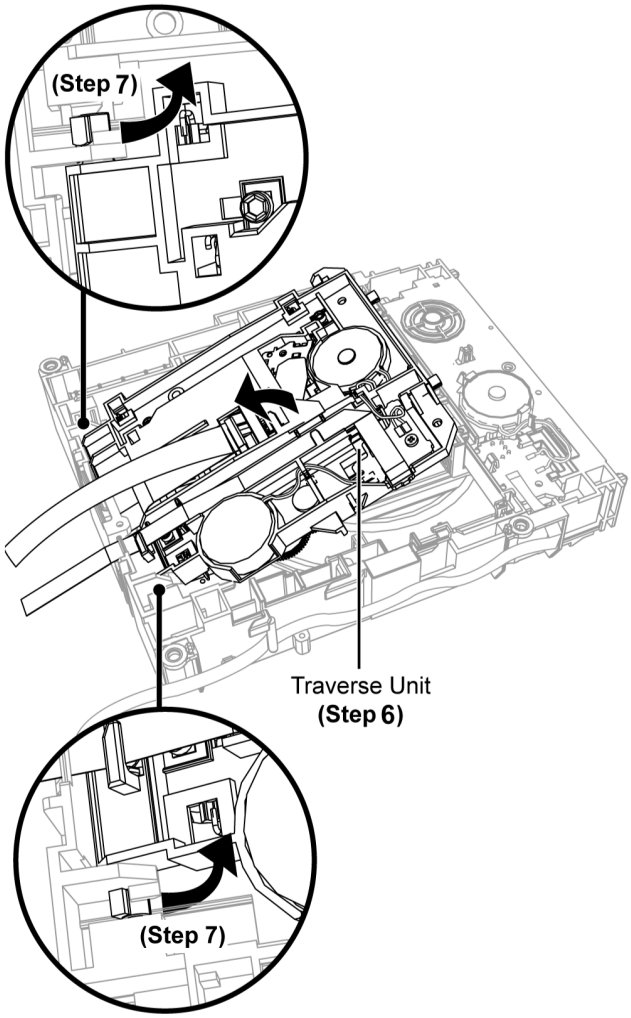
Step 4 Press & release the guide as shown & slide the Traverse Slide Plate to the end.



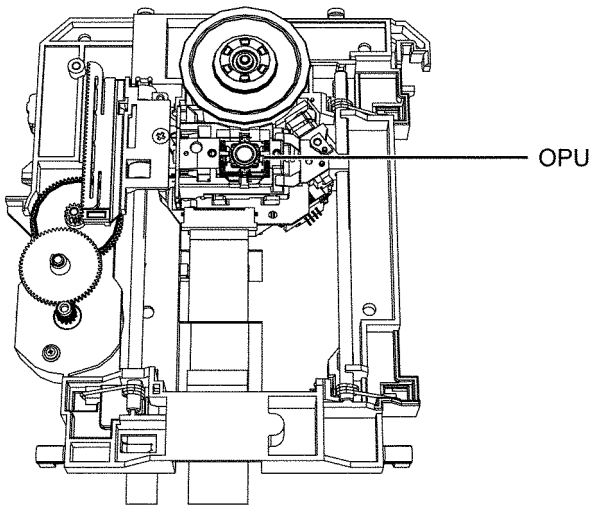
Step 5 Release the 24P FFC from the slot.



Step 6 Lift up the Traverse Unit by approximately 45°.
Step 7 Remove the traverse unit as arrow shown.

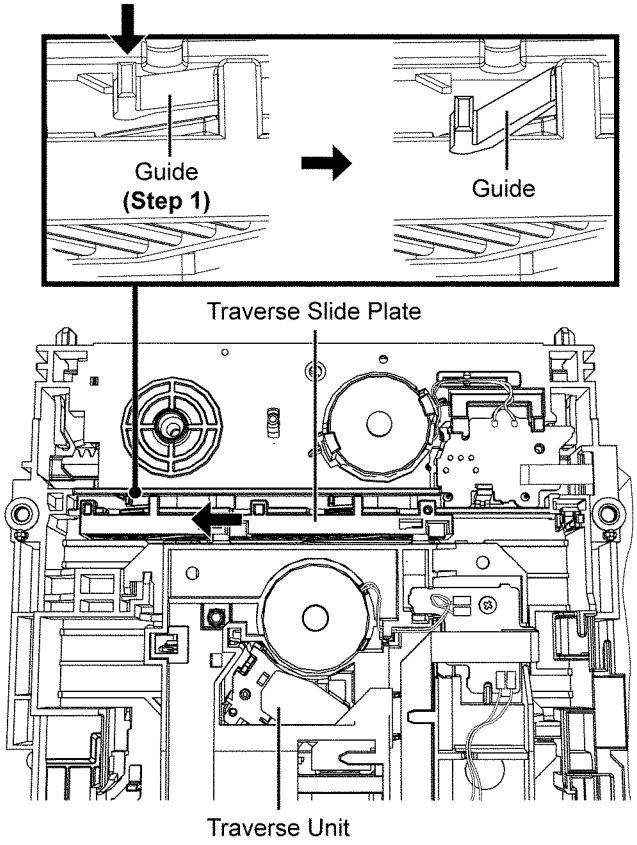


Caution: Avoid touching the surface of the OPU on the traverse unit.

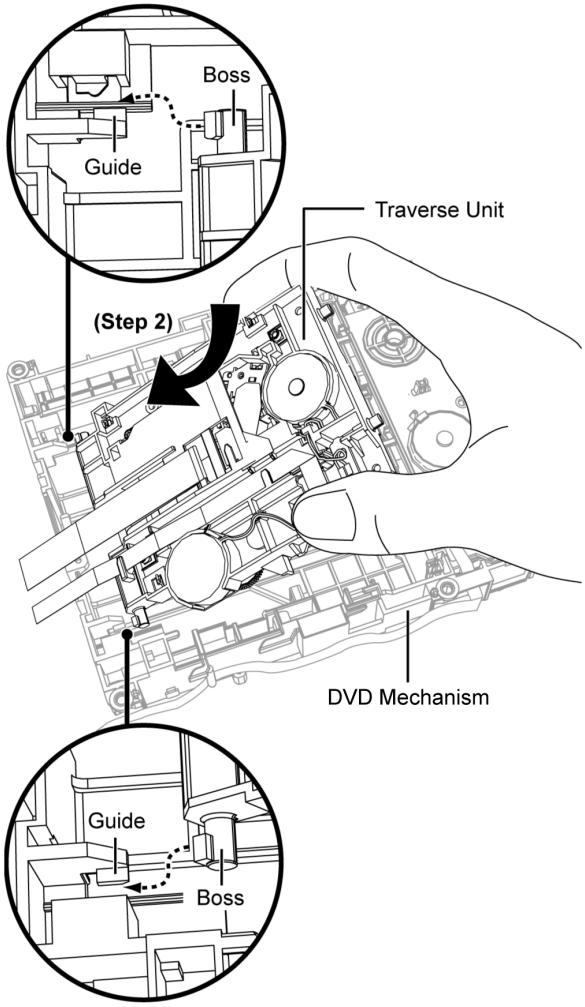


12.15.2. Assembly of Traverse Unit

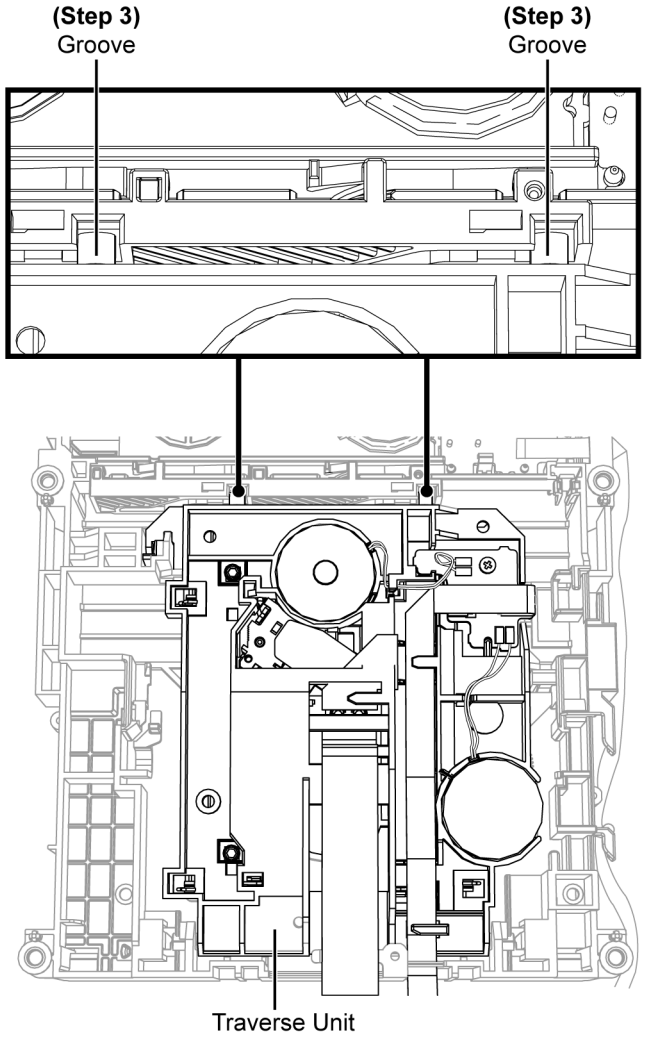
Step 1 Press & release the guide as shown & slide the Traverse Slide Plate to the end.



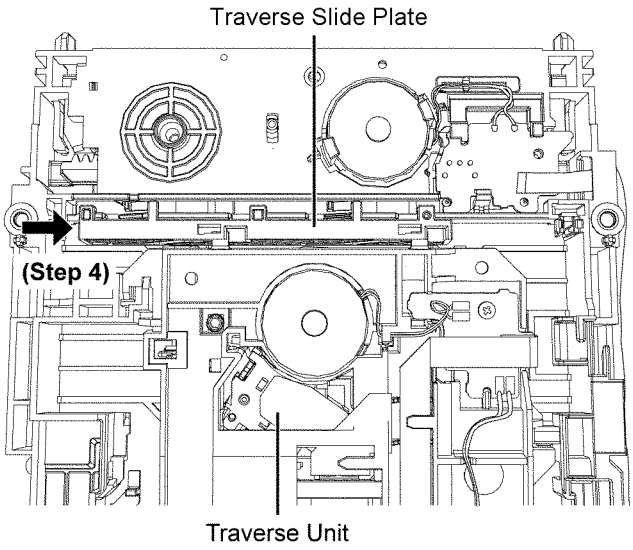
Step 2 Insert the Traverse unit at approximately 45° into the DVD Mechanism as arrow shown.



Step 3 Insert the Traverse Unit into the grooves.

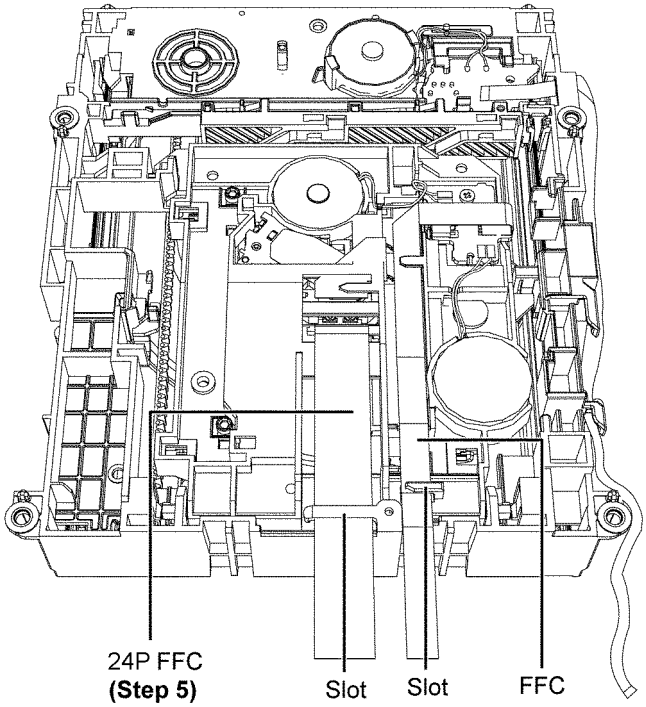


Step 4 Slide the Traverse Slide Plate to lock the Traverse Unit as shown.

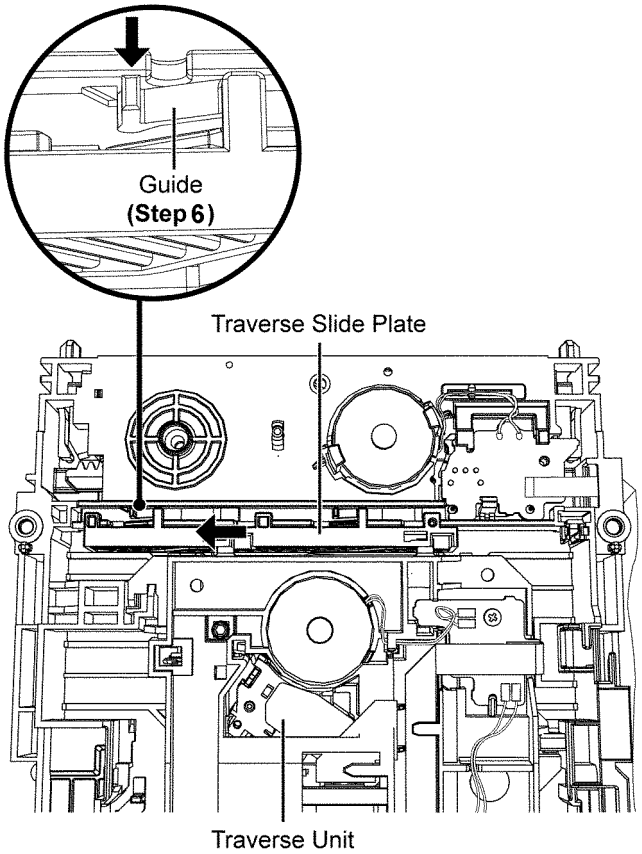


Step 5 Insert the 24P FFC into the slot.

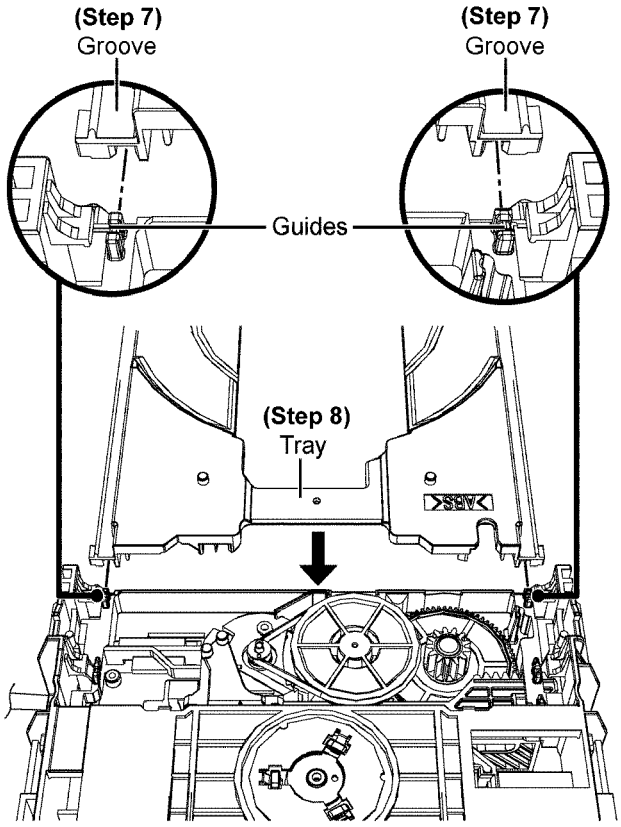
Caution : Ensure that the 24P FFC are properly inserted into the slots as shown.



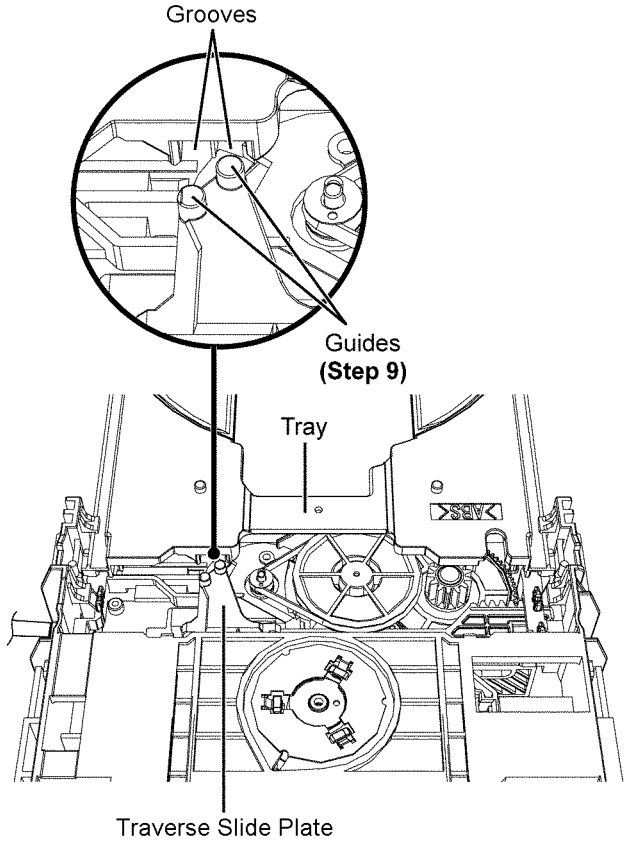
Step 6 Slide the Traverse Slide Plate until it stop at the Guide.



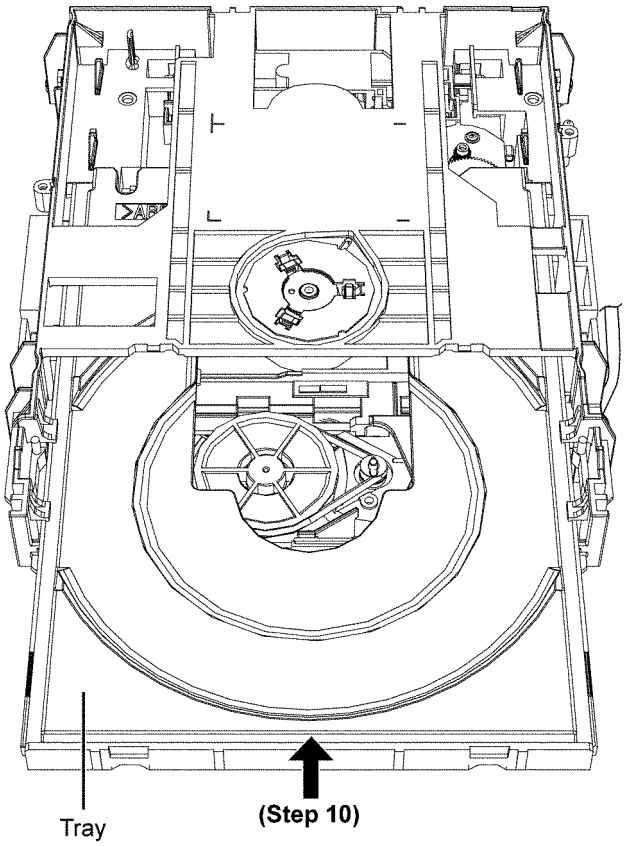
Step 7 Align the grooves of the tray with the guides of the mechanism.
Step 8 Insert the Tray.



Step 9 Align the guides of the Traverse Slide Plate with the grooves when sliding the tray in.



Step 10 Slide the tray in fully.

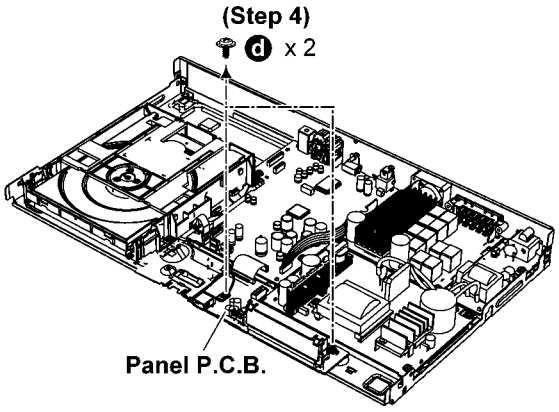


13 Service Position

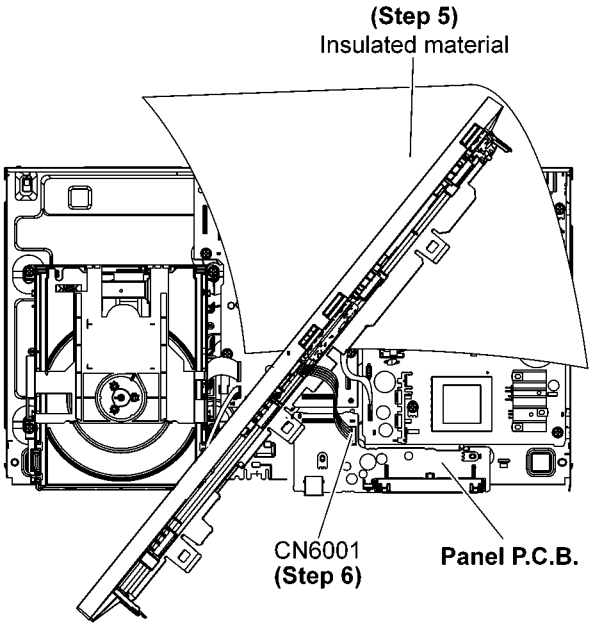
Note: For description of the disassembly procedures, see the Section 12.

13.1. Checking of Panel P.C.B.

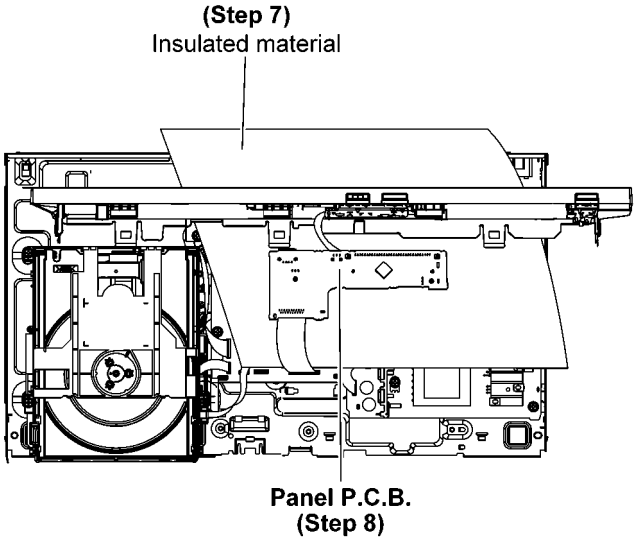
Step 1 Remove Top Cabinet.
Step 2 Remove Tray Ornament.
Step 3 Remove Front Panel Block.
Step 4 Remove 2 screws.



Step 5 Place the Front Panel Block on the insulated material as diagram shown.
Step 6 Connect 4P Cable at the connector (CN6001) on Panel P.C.B..



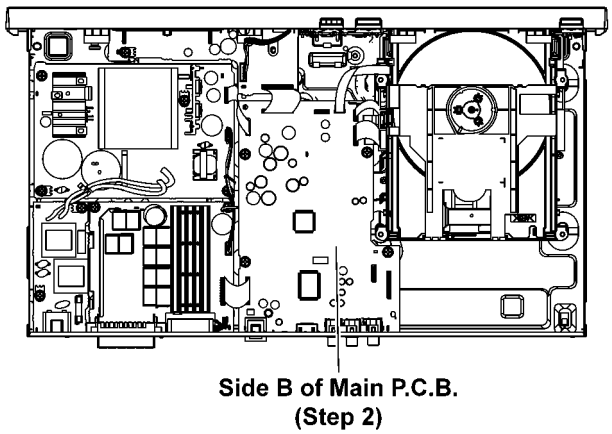
Step 7 Upset the Panel P.C.B. and place it on an insulated material.
Step 8 Proceed to check the Panel P.C.B..



13.2. Checking of Main P.C.B.

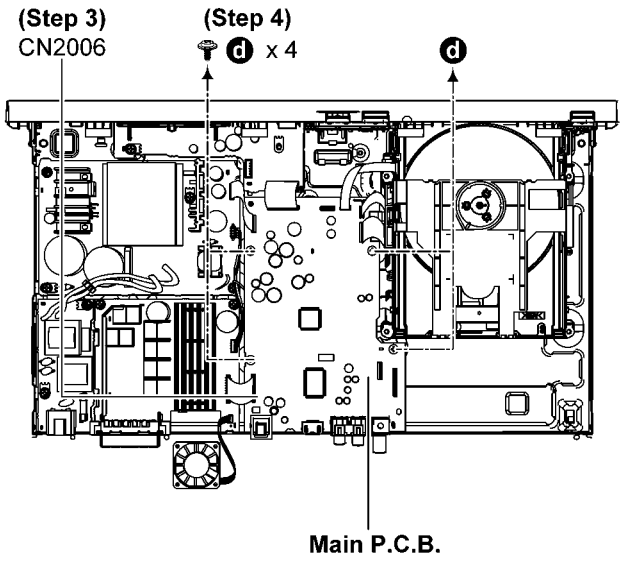
13.2.1. Checking of Main P.C.B. (Side B)

Step 1 Remove Top Cabinet.
Step 2 Proceed to check Side B of Main P.C.B..

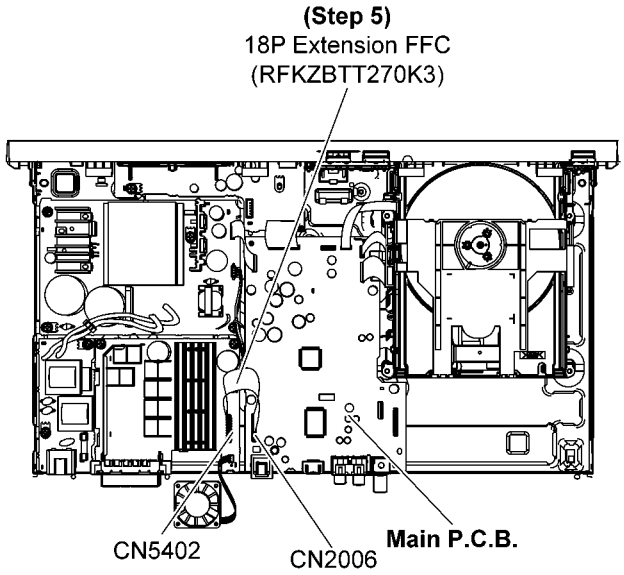


13.2.2. Checking of Main P.C.B. (Side A)

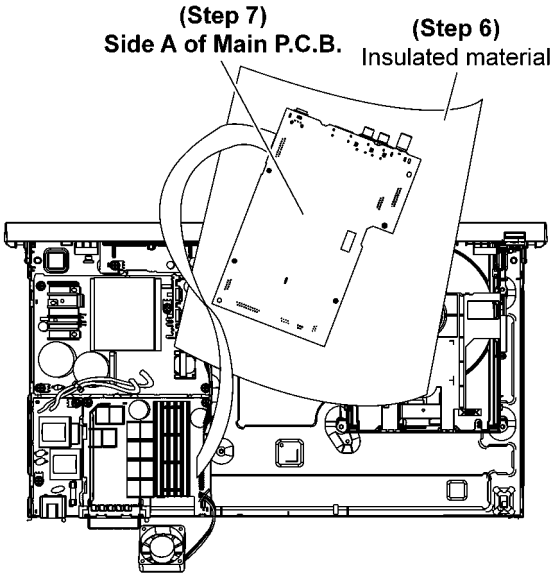
Step 1 Remove Top Cabinet.
Step 2 Remove Rear Panel.
Step 3 Detach 18P FFC at the connector (CN2006) on Main P.C.B..
Step 4 Remove 4 screws.



Step 5 Connect 18P Extension FFC (RFKZBTT270K3) from (CN2006) to (CN5402).

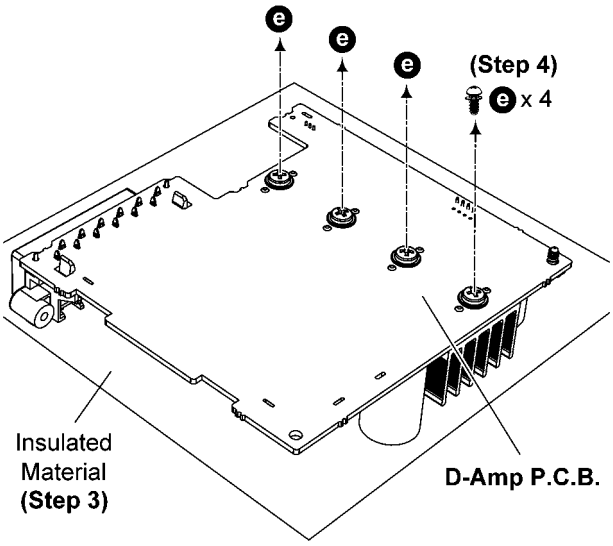


Step 6 Upset the Main P.C.B. and place it onto the insulated material.
Step 7 Proceed to check Side A of Main P.C.B..

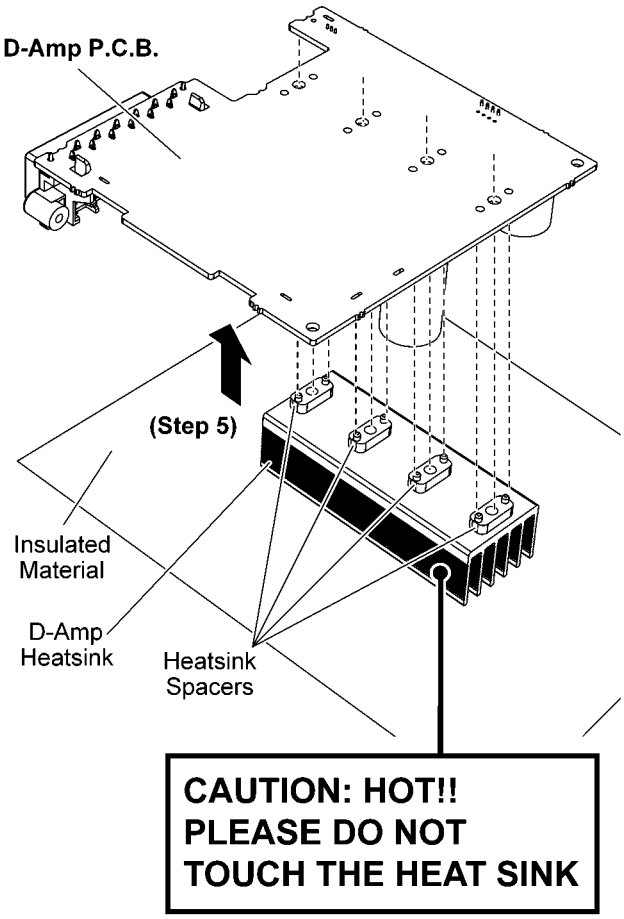


13.3. Checking of D-Amp P.C.B.

Step 1 Remove Top Cabinet.
Step 2 Remove D-Amp P.C.B..
Step 3 Place D-Amp P.C.B. on an insulated material.
Step 4 Remove 4 screws.



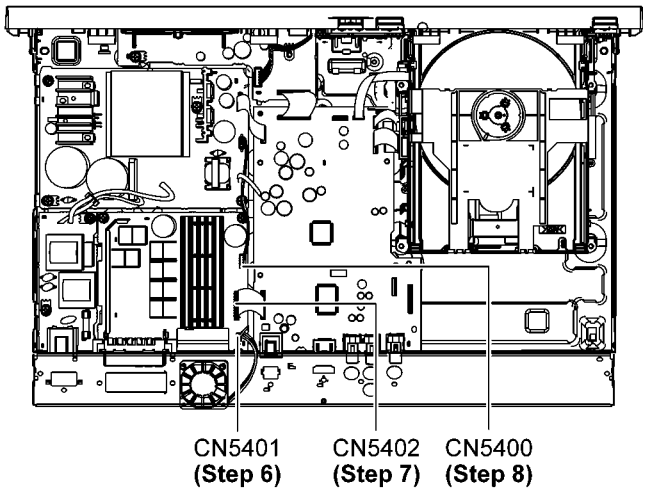
Step 5 Lift up to remove the D-Amp P.C.B. as arrow shown.



Step 6 Connect 3P Fan Wire at the connector (CN5401) on D-Amp P.C.B..

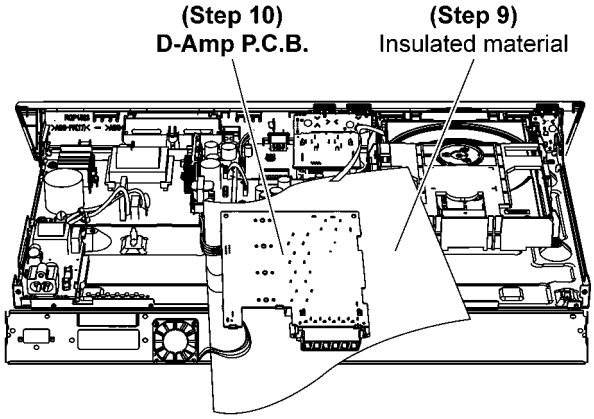
Step 7 Connect 18P FFC at the connector (CN5402) on D-Amp P.C.B..

Step 8 Connect 4P Cable at the connector (CN5400) on D-Amp P.C.B..



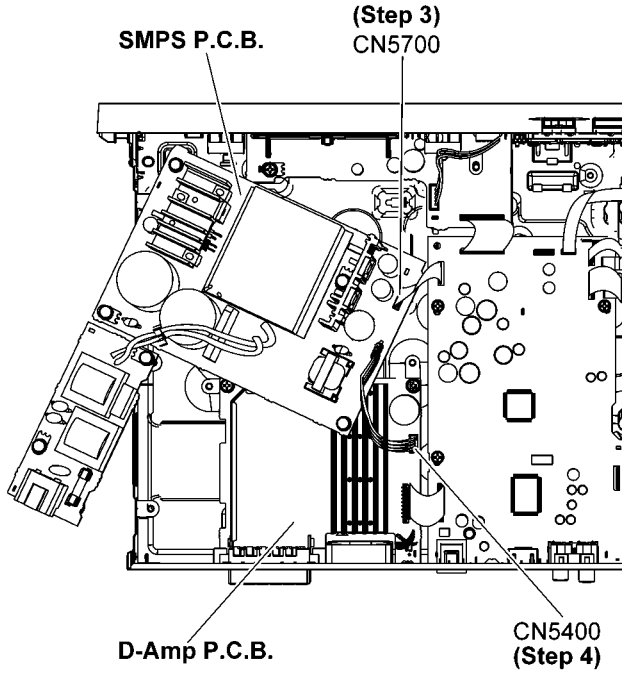
Step 9 Upset the D-Amp P.C.B. and place it on an insulated material.

Step 10 Proceed to check Side A of D-Amp P.C.B..

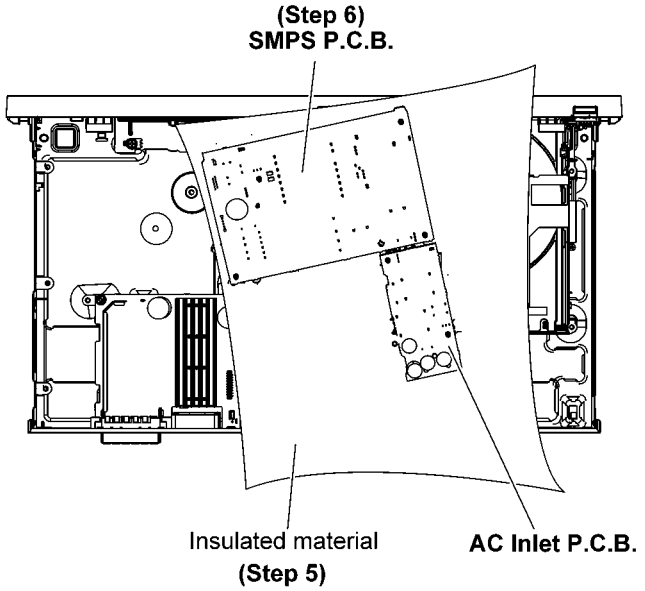


13.4. Checking of SMPS P.C.B. and AC Inlet P.C.B.

Step 1 Remove Top Cabinet.
Step 2 Remove the Voltage Selector P.C.B., AC Inlet P.C.B. and SMPS P.C.B..
Step 3 Connect 10P FFC at the Connector (CN5700) on SMPS P.C.B..
Step 4 Connect 4P Cable at the Connector (CN5400) on D-Amp P.C.B..

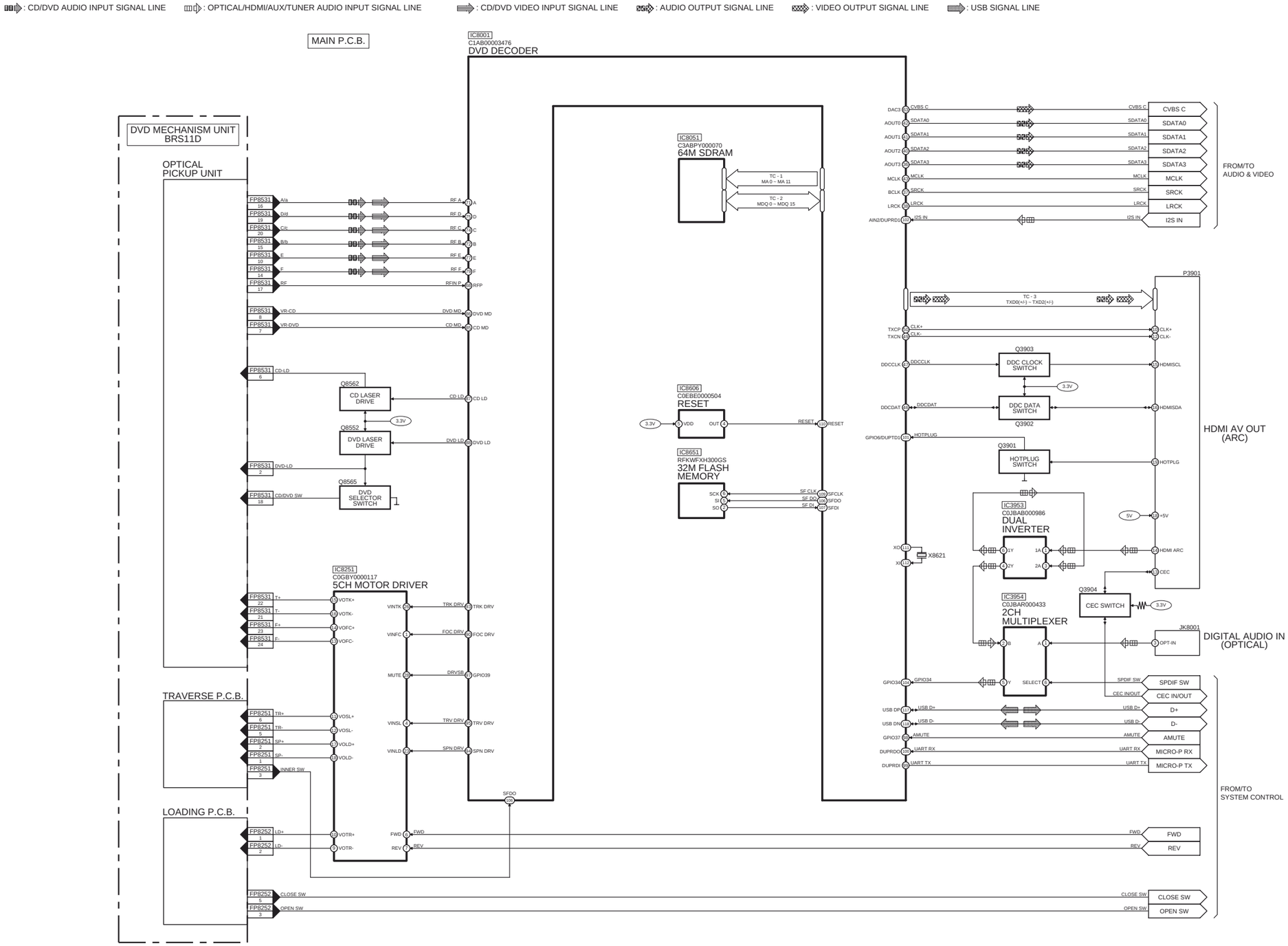


Step 5 Upset the AC Inlet P.C.B. and SMPS P.C.B. and placed onto the insulated material.
Step 6 Proceed to check AC Inlet P.C.B and SMPS P.C.B..



14 Block Diagram

14.1. Backend



SA-XH201GW BACKEND BLOCK DIAGRAM

14.2. IC Terminal Chart

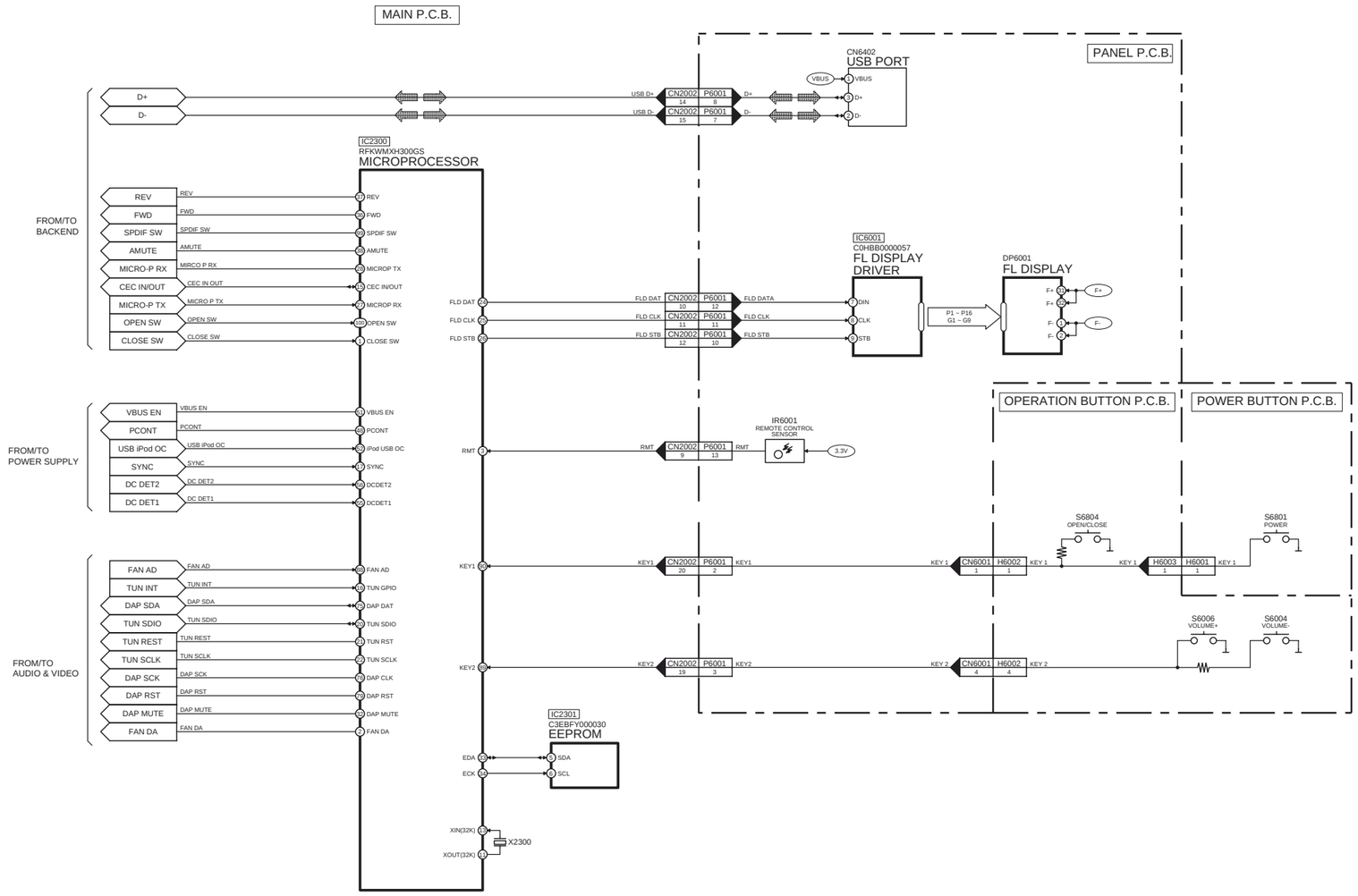
TC	IC8001 DVD DECODER		SIGNAL NAME	IC8051 64M SDRAM	
	PORT NAME	PIN NO		PIN NO	PORT NAME
1	MA0	1	MA 0	23	A0
	MA1	126	MA 1	24	A1
	MA2	124	MA 2	25	A2
	MA3	122	MA 3	26	A3
	MA4	121	MA 4	29	A4
	MA5	123	MA 5	30	A5
	MA6	125	MA 6	31	A6
	MA7	127	MA 7	32	A7
	MA8	3	MA 8	33	A8
	MA9	5	MA 9	34	A9
	MA10	4	MA 10	22	A10
	MA11	6	MA 11	35	A11

TC	IC8001 DVD DECODER		SIGNAL NAME	P3901 HDMI AV OUT (ARC)	
	PORT NAME	PIN NO		PIN NO	PORT NAME
3	TXD0P	52	TXD0+	7	D0+
	TXD0N	51	TXD0-	9	D0-
	TXD1P	54	TXD1+	4	D1+
	TXD1N	53	TXD1-	6	D1-
	TXD2P	56	TXD2+	1	D2+
	TXD2N	55	TXD2-	3	D2-

TC	IC8001 DVD DECODER		SIGNAL NAME	IC8051 64M SDRAM	
	PORT NAME	PIN NO		PIN NO	PORT NAME
2	DQ0	33	MDQ 0	2	DQ0
	DQ1	31	MDQ 1	4	DQ1
	DQ2	29	MDQ 2	5	DQ2
	DQ3	26	MDQ 3	7	DQ3
	DQ4	24	MDQ 4	8	DQ4
	DQ5	22	MDQ 5	10	DQ5
	DQ6	20	MDQ 6	11	DQ6
	DQ7	18	MDQ 7	13	DQ7
	DQ8	17	MDQ 8	42	DQ8
	DQ9	19	MDQ 9	44	DQ9
	DQ10	21	MDQ 10	45	DQ10
	DQ11	23	MDQ 11	47	DQ11
	DQ12	25	MDQ 12	48	DQ12
	DQ13	28	MDQ 13	50	DQ13
	DQ14	30	MDQ 14	51	DQ14
	DQ15	32	MDQ 15	53	DQ15

14.3. System Control

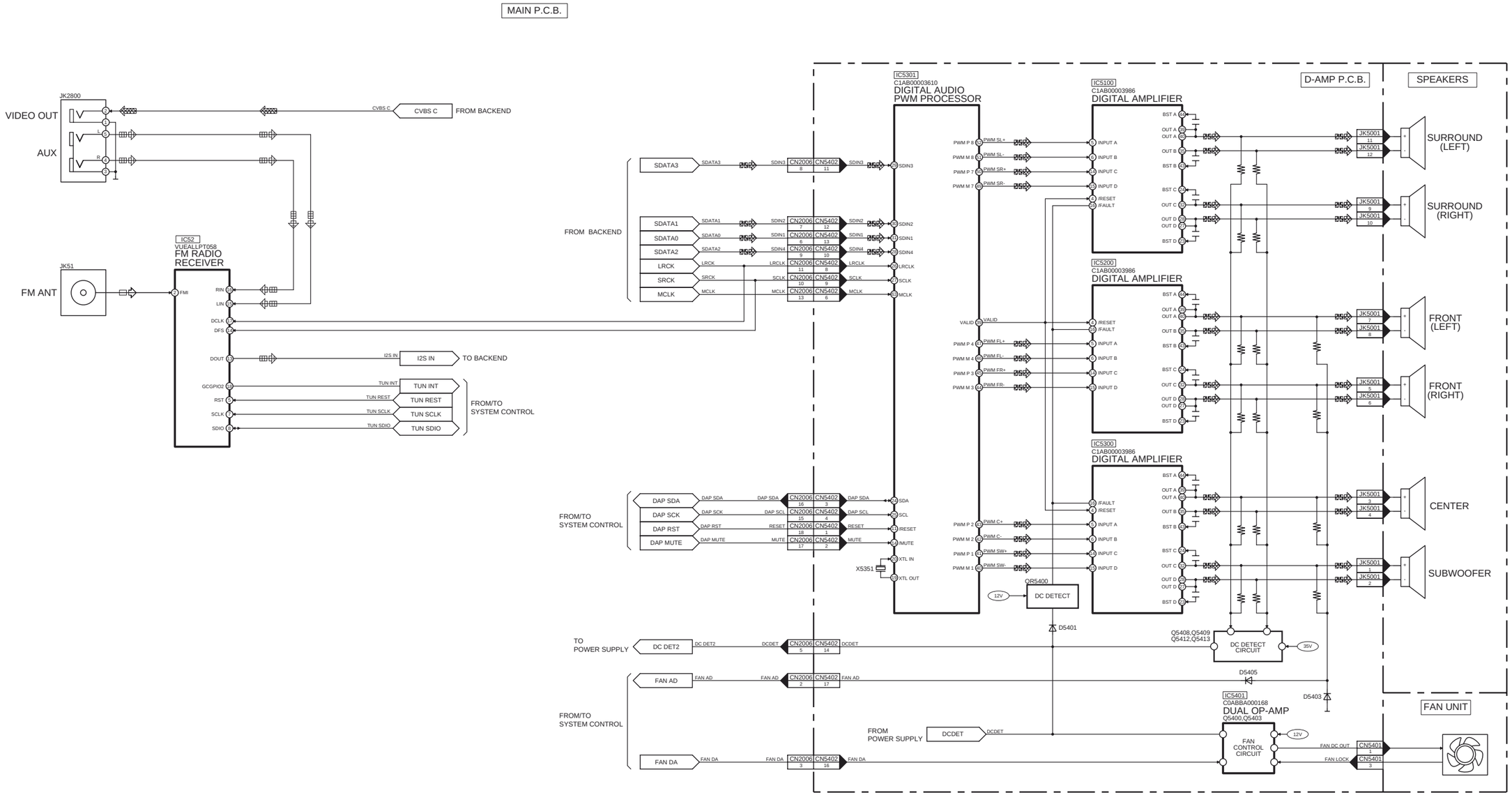
: USB SIGNAL LINE



SA-XH201GW SYSTEM CONTROL BLOCK DIAGRAM

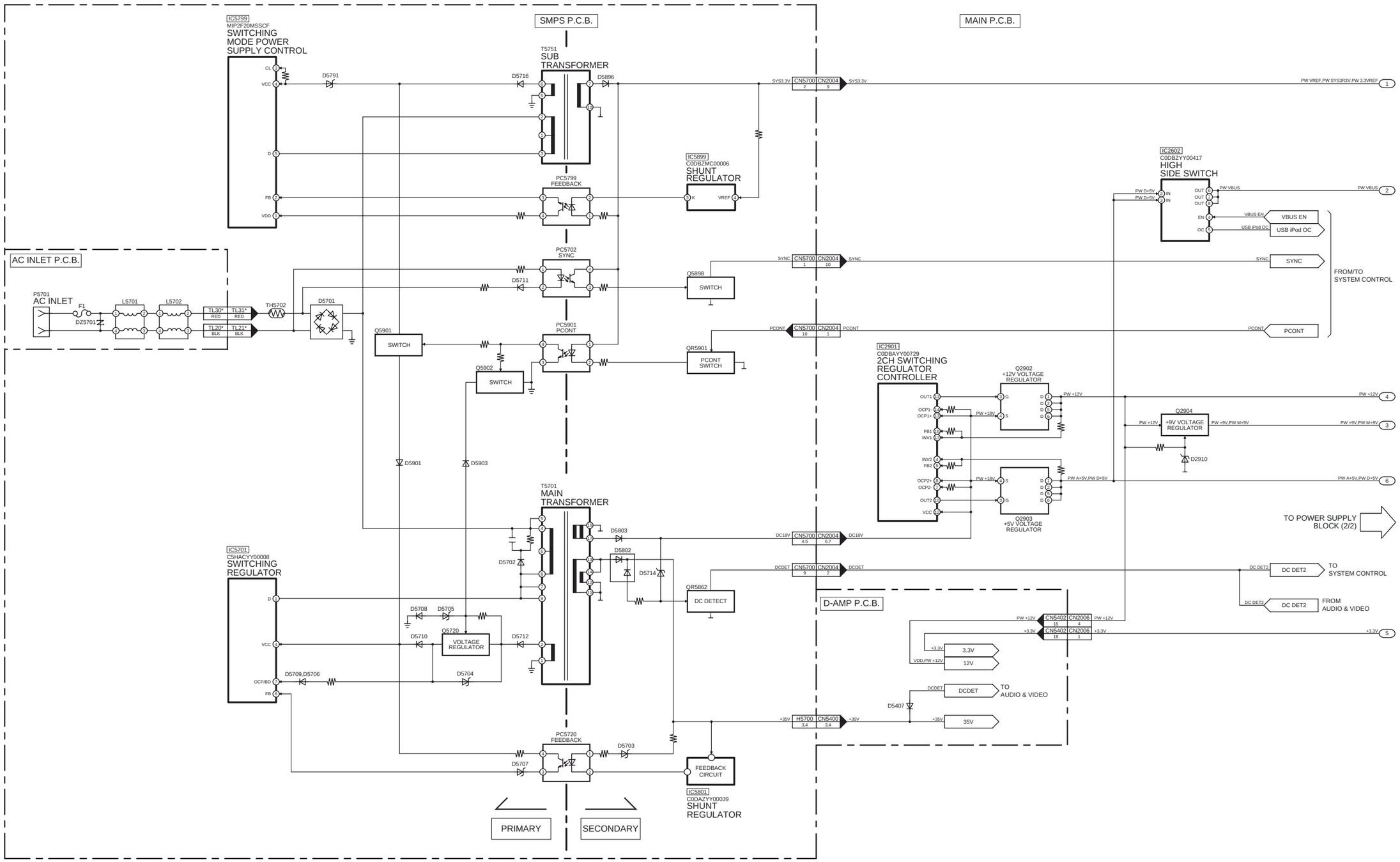
14.4. Audio and Video

: AUX/TUNER AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : VIDEO OUTPUT SIGNAL LINE : FM SIGNAL LINE



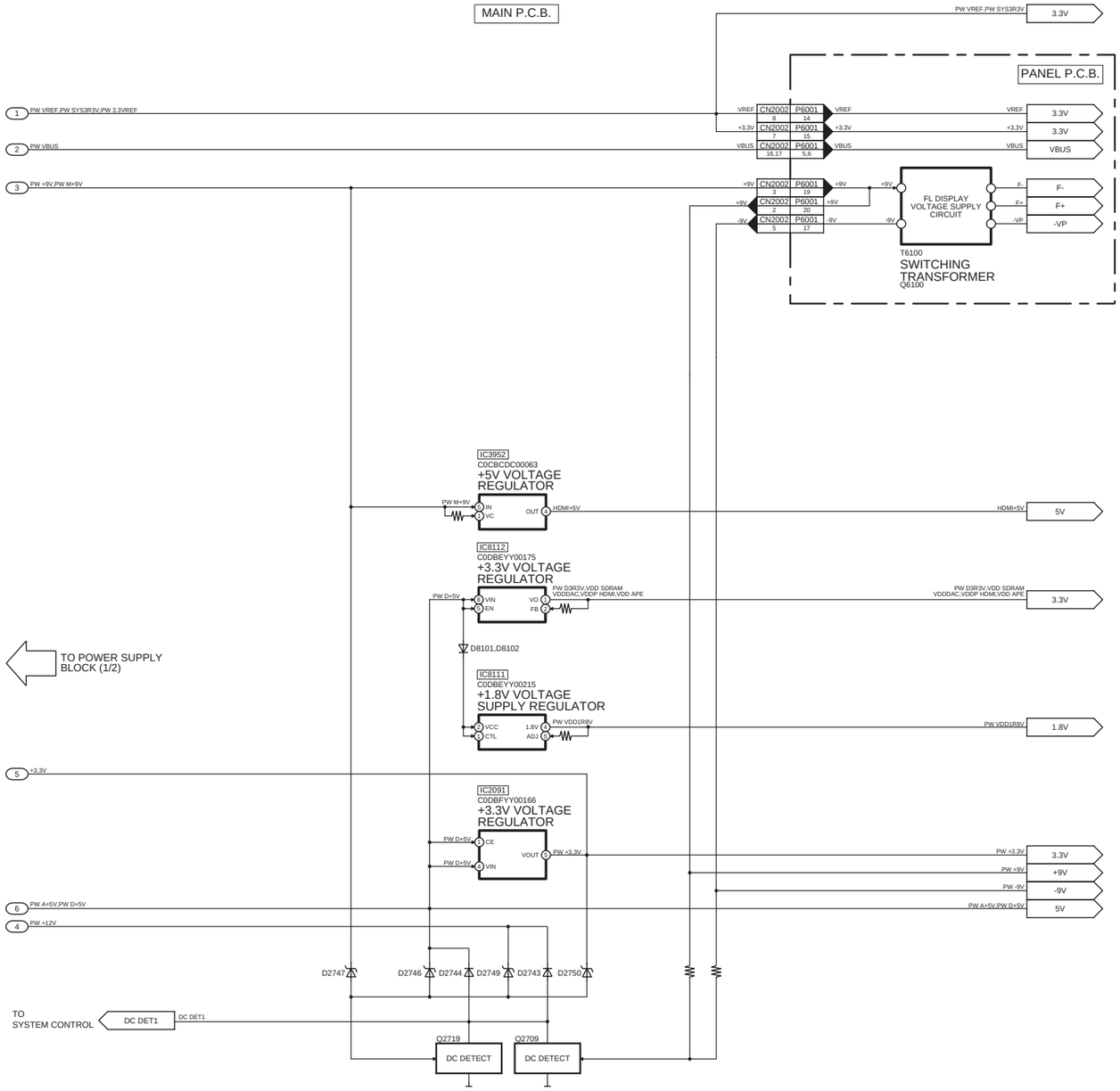
SA-XH201GW AUDIO & VIDEO BLOCK DIAGRAM

14.5. Power Supply



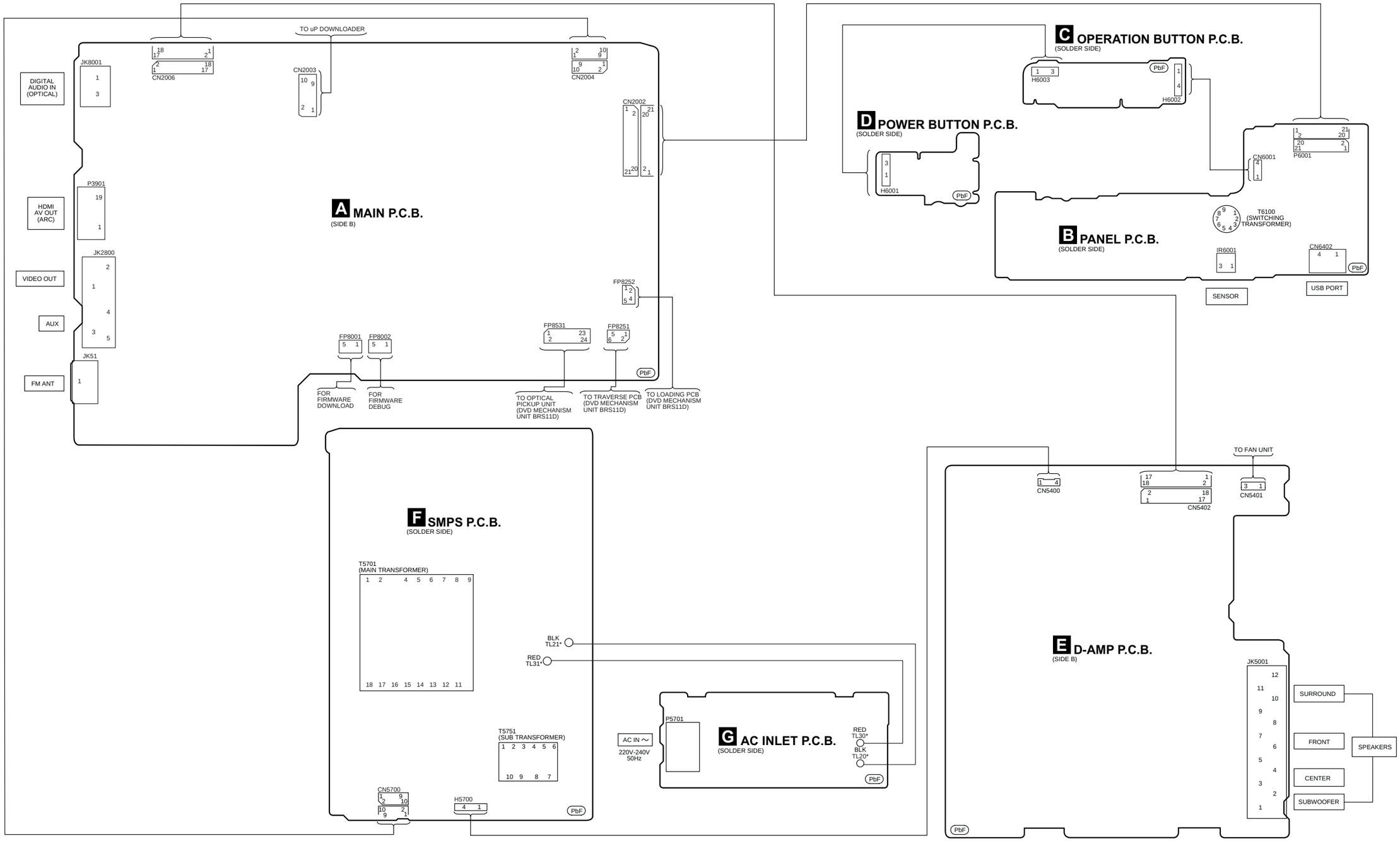
NOTE: " * " REF IS FOR INDICATION ONLY

SA-XH201GW POWER SUPPLY (1/2) BLOCK DIAGRAM



SA-XH201GW POWER SUPPLY (2/2) BLOCK DIAGRAM

15 Wiring Connection Diagram



NOTE: " * " REF IS FOR INDICATION ONLY.

SA-XH201GW WIRING CONNECTION DIAGRAM

16 Schematic Diagram

16.1. Schematic Diagram Notes

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

Notes:

S6004:	Vol (-) switch.
S6006:	Vol (+) switch.
S6801:	Power switch (⏻/|).
S6804:	Open/Close switch (⏏ OPEN/CLOSE).

- 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.

- In case of AC rated voltage Capacitors, the part no. and values will be indicated in the Schematic Diagram.
  AC rated voltage capacitors:
  C5700, C5701, C5702, C5704, C5705, C5706

- **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.

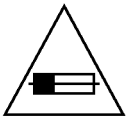
- **Coil**
  Unit of inductance is H, unless otherwise noted.

- *****
  REF is for indication only.

- Voltage and signal line

: +B signal line
: -B signal line
: Audio output signal line
: Video output signal line
: CD/DVD Audio input signal line
: CD/DVD Video input signal line
: HDMI/Optical/AUX/Tuner/Mic Audio input signal line
: FM signal line
: USB/ signal line

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE F1 T3.15AH 250V FUSE



RISK OF FIRE-REPLACE FUSE AS MARKED.

FUSE CAUTION

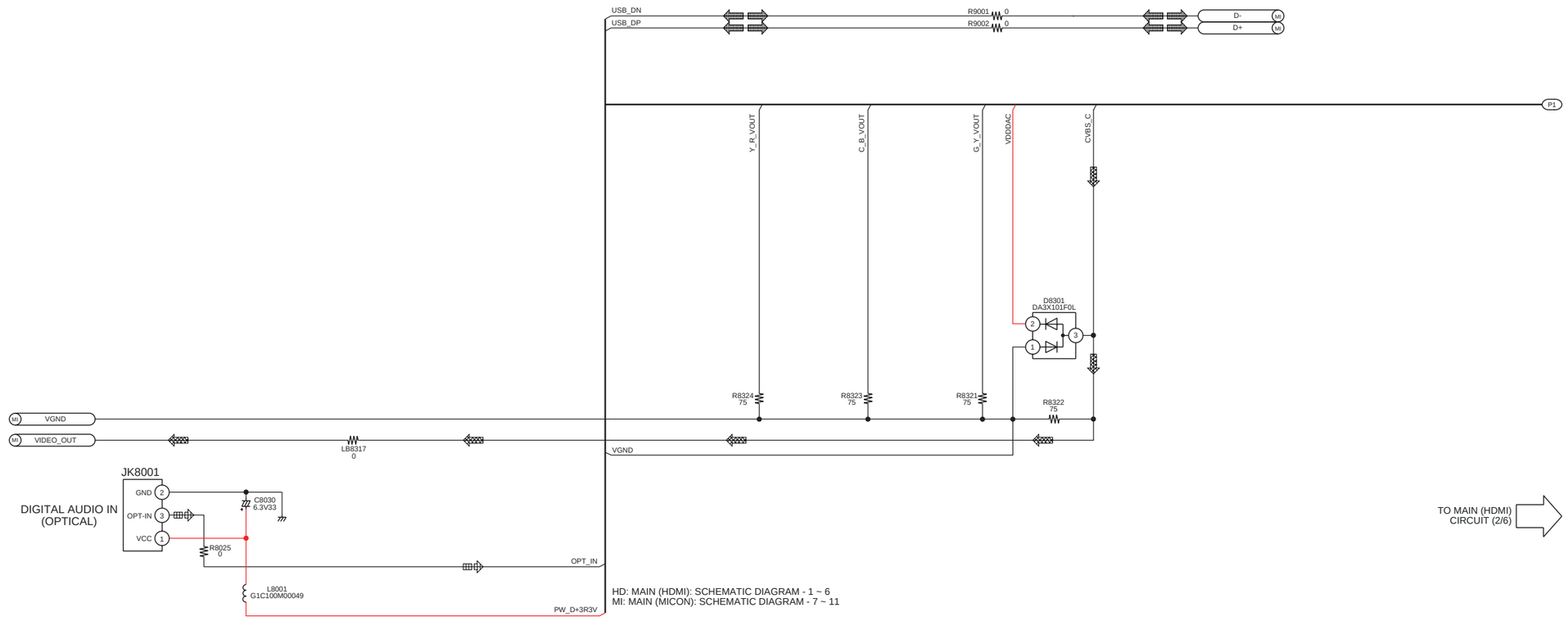
These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection againts fire harzard, replace with the same type fuse. fro rating, refer to the marking adjacent to the symbol.

16.2. Main (HDMI/Micon) Circuit

SCHEMATIC DIAGRAM - 1

A MAIN (HDMI) CIRCUIT

—— : +B SIGNAL LINE
: CD/DVD VIDEO INPUT SIGNAL LINE
: AUDIO OUTPUT SIGNAL LINE
: USB SIGNAL LINE
: CD/DVD AUDIO INPUT SIGNAL LINE
: HDMI/OPTICAL/AUX/TUNER/MIC AUDIO INPUT SIGNAL LINE
: VIDEO OUTPUT SIGNAL LINE



HD: MAIN (HDMI): SCHEMATIC DIAGRAM - 1 ~ 6
MI: MAIN (MICON): SCHEMATIC DIAGRAM - 7 ~ 11

TO MAIN (HDMI) CIRCUIT (2/6)

TO MAIN (HDMI) CIRCUIT (4/6)

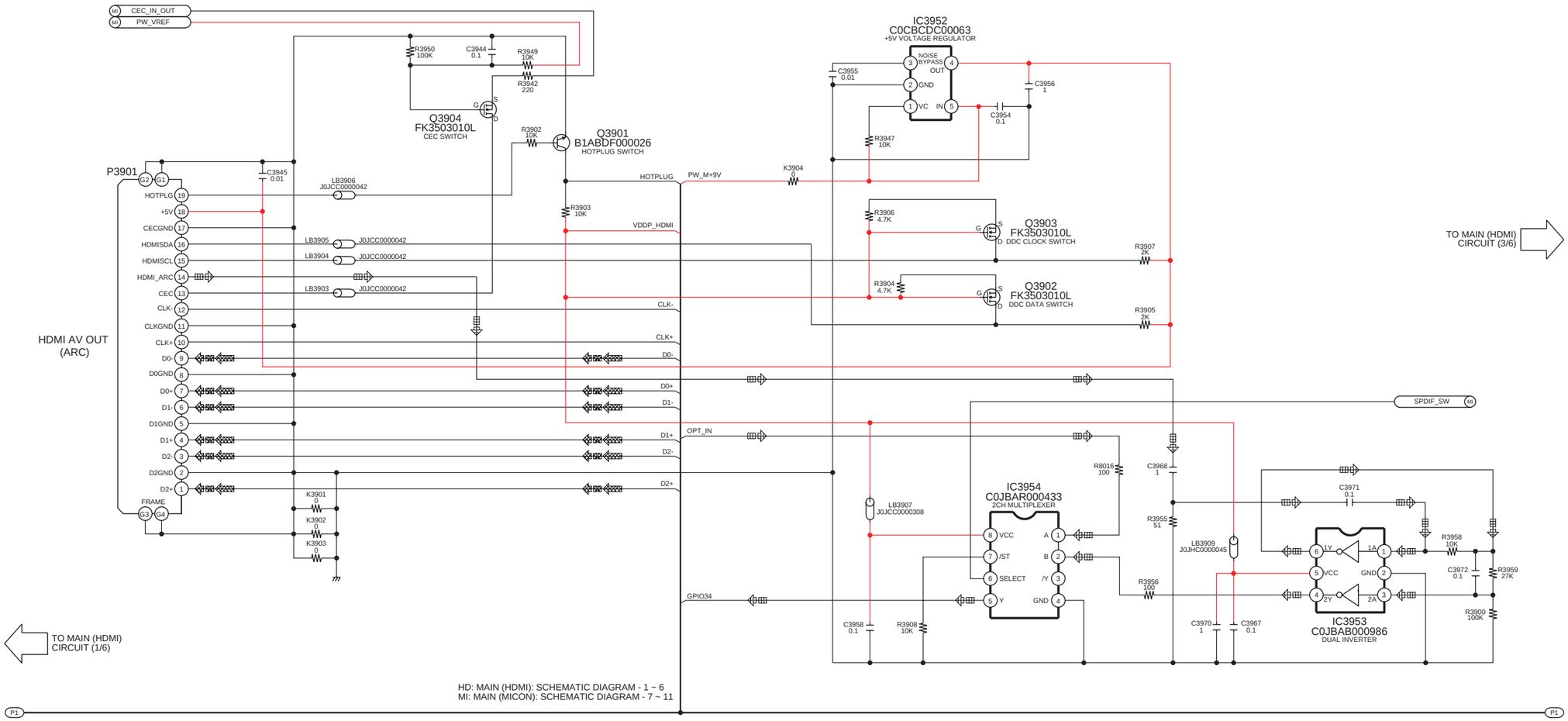
1/6	2/6	3/6
4/6	5/6	6/6

SA-XH201GW MAIN (HDMI) CIRCUIT

SCHEMATIC DIAGRAM - 2

A MAIN (HDMI) CIRCUIT

—— : +B SIGNAL LINE
: CD/DVD VIDEO INPUT SIGNAL LINE
: AUDIO OUTPUT SIGNAL LINE
: USB SIGNAL LINE
: CD/DVD AUDIO INPUT SIGNAL LINE
: HDMI/OPTICAL/AUX/TUNER/MIC AUDIO INPUT SIGNAL LINE
: VIDEO OUTPUT SIGNAL LINE



TO MAIN (HDMI) CIRCUIT (5/6)

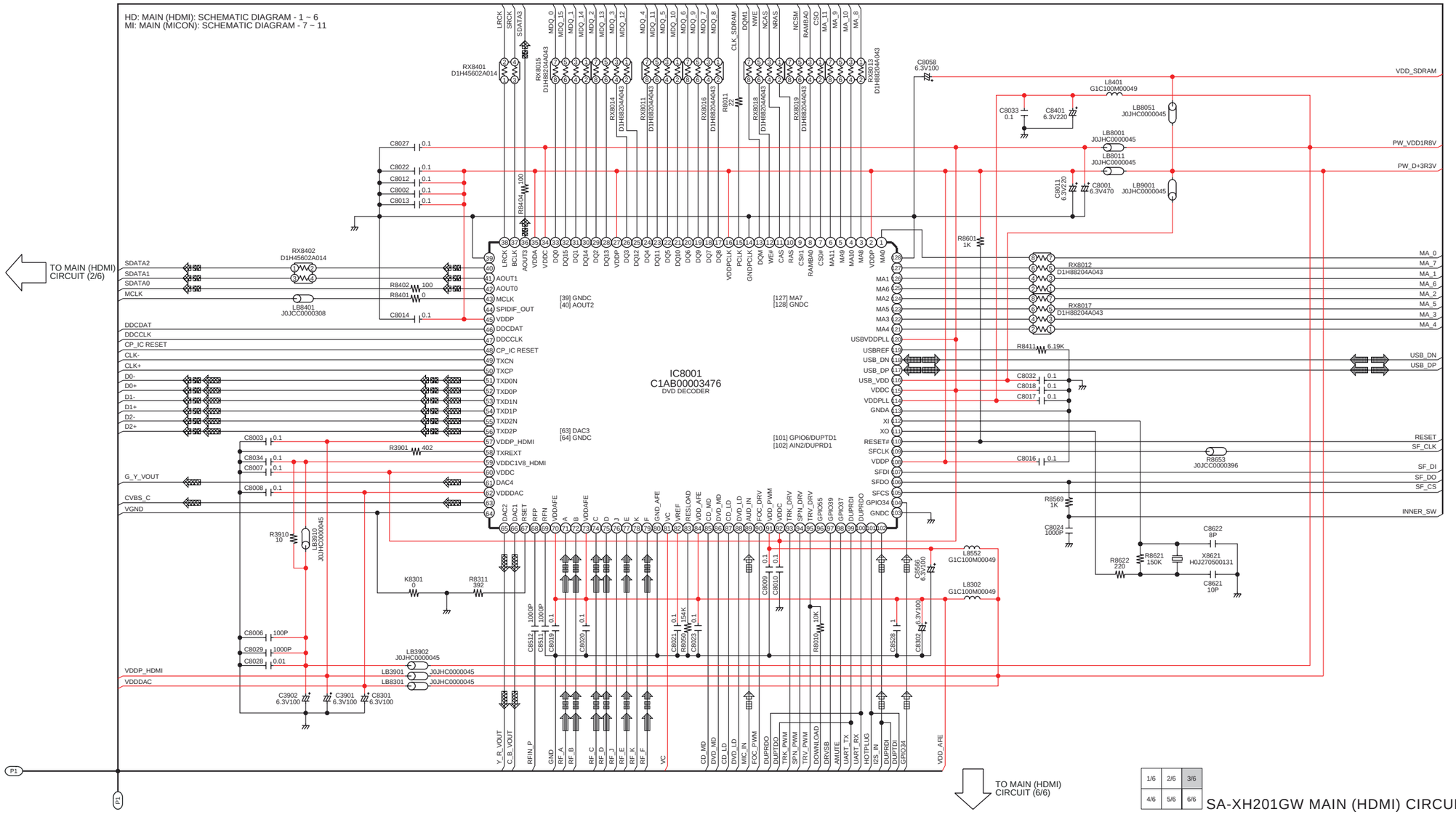
1/6	2/6	3/6
4/6	5/6	6/6

SA-XH201GW MAIN (HDMI) CIRCUIT

SCHEMATIC DIAGRAM - 3

A MAIN (HDMI) CIRCUIT

: +B SIGNAL LINE
: CD/DVD VIDEO INPUT SIGNAL LINE
: AUDIO OUTPUT SIGNAL LINE
: USB SIGNAL LINE
: CD/DVD AUDIO INPUT SIGNAL LINE
: HDMI/OPTICAL/AUX/TUNER/MIC AUDIO INPUT SIGNAL LINE
: VIDEO OUTPUT SIGNAL LINE



1/6 | 2/6 | 3/6
4/6 | 5/6 | 6/6

SA-XH201GW MAIN (HDMI) CIRCUIT

SCHEMATIC DIAGRAM - 4

A MAIN (HDMI) CIRCUIT

: +B SIGNAL LINE
: CD/DVD VIDEO INPUT SIGNAL LINE
: AUDIO OUTPUT SIGNAL LINE
: USB SIGNAL LINE
: CD/DVD AUDIO INPUT SIGNAL LINE
: HDMI/OPTICAL/AUX/TUNER/MIC AUDIO INPUT SIGNAL LINE
: VIDEO OUTPUT SIGNAL LINE

TO MAIN (HDMI) CIRCUIT (1/6)

HD: MAIN (HDMI): SCHEMATIC DIAGRAM - 1 ~ 6
MI: MAIN (MICON): SCHEMATIC DIAGRAM - 7 ~ 11

P1

TO MAIN (HDMI) CIRCUIT (5/6)

IC8251
C0GBY0000117
5CH MOTOR DRIVER

IC8111
C0DBEYY00215
+1.8V VOLTAGE SUPPLY REGULATOR

IC8112
C0DBEYY00175
+3.3V VOLTAGE REGULATOR

FP8251
TO TRAVERSE P.C.B (DVD MECHANISM UNIT BRS11D)

FP8252
TO LOADING P.C.B (DVD MECHANISM UNIT BRS11D)

FP8001
FOR FIRMWARE DOWNLOAD

FP8002
FOR FIRMWARE DEBUG

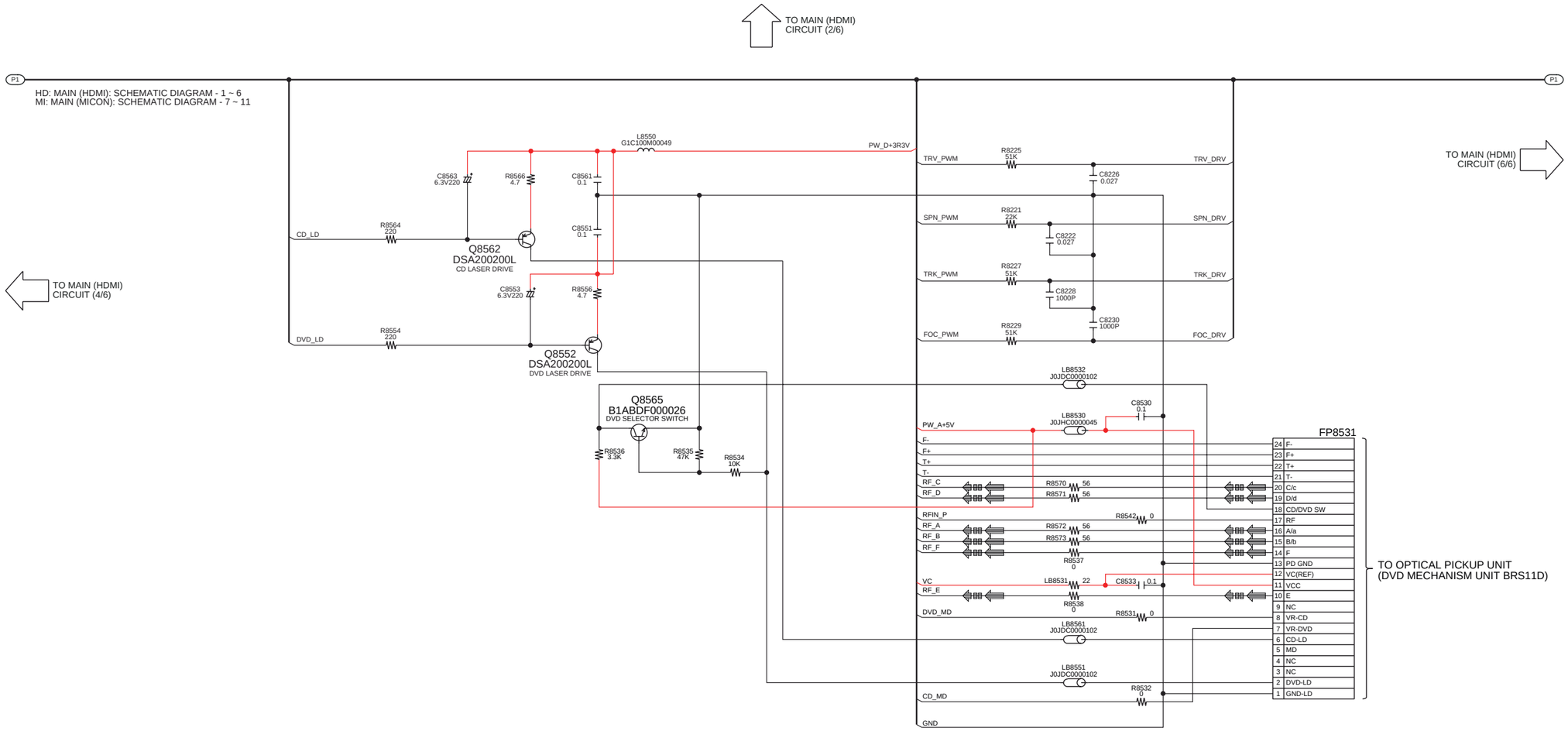
1/6	2/6	3/6
4/6	5/6	6/6

SA-XH201GW MAIN (HDMI) CIRCUIT

SCHEMATIC DIAGRAM - 5

A MAIN (HDMI) CIRCUIT

—— : +B SIGNAL LINE
: CD/DVD VIDEO INPUT SIGNAL LINE
: AUDIO OUTPUT SIGNAL LINE
: USB SIGNAL LINE
: CD/DVD AUDIO INPUT SIGNAL LINE
: HDMI/OPTICAL/AUX/TUNER/MIC AUDIO INPUT SIGNAL LINE
: VIDEO OUTPUT SIGNAL LINE



1/6	2/6	3/6
4/6	5/6	6/6

SA-XH201GW MAIN (HDMI) CIRCUIT

15 16 17 18 19 20 21 22 23 24 25 26 27 28

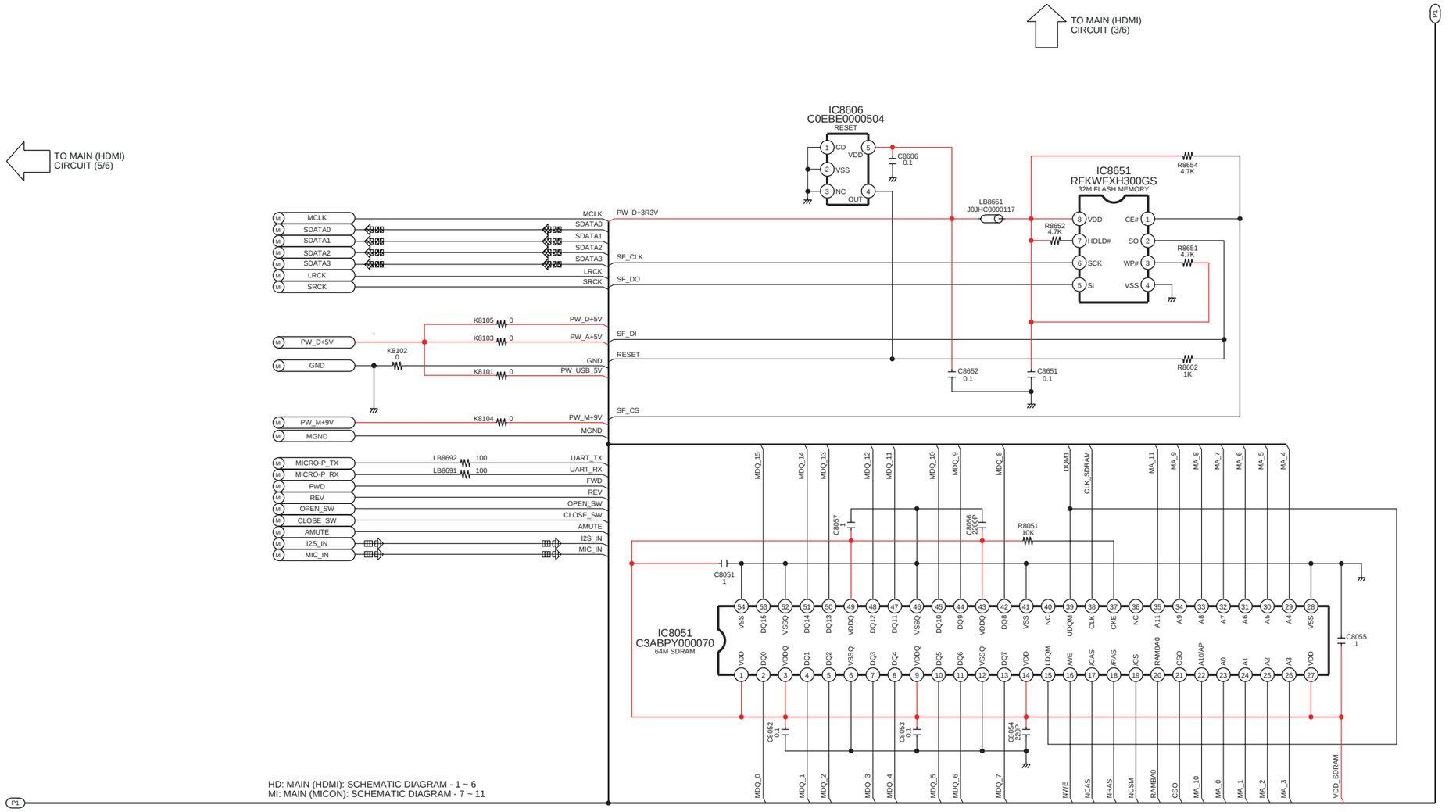
SCHEMATIC DIAGRAM - 6

A MAIN (HDMI) CIRCUIT

: +B SIGNAL LINE
: CD/DVD VIDEO INPUT SIGNAL LINE
: AUDIO OUTPUT SIGNAL LINE
: USB SIGNAL LINE
: CD/DVD AUDIO INPUT SIGNAL LINE
: HDMI/OPTICAL/AUX/TUNER/MIC AUDIO INPUT SIGNAL LINE
: VIDEO OUTPUT SIGNAL LINE

TO MAIN (HDMI) CIRCUIT (3/6)

TO MAIN (HDMI) CIRCUIT (5/6)



HD: MAIN (HDMI): SCHEMATIC DIAGRAM - 1 ~ 6
MI: MAIN (MICON): SCHEMATIC DIAGRAM - 7 ~ 11

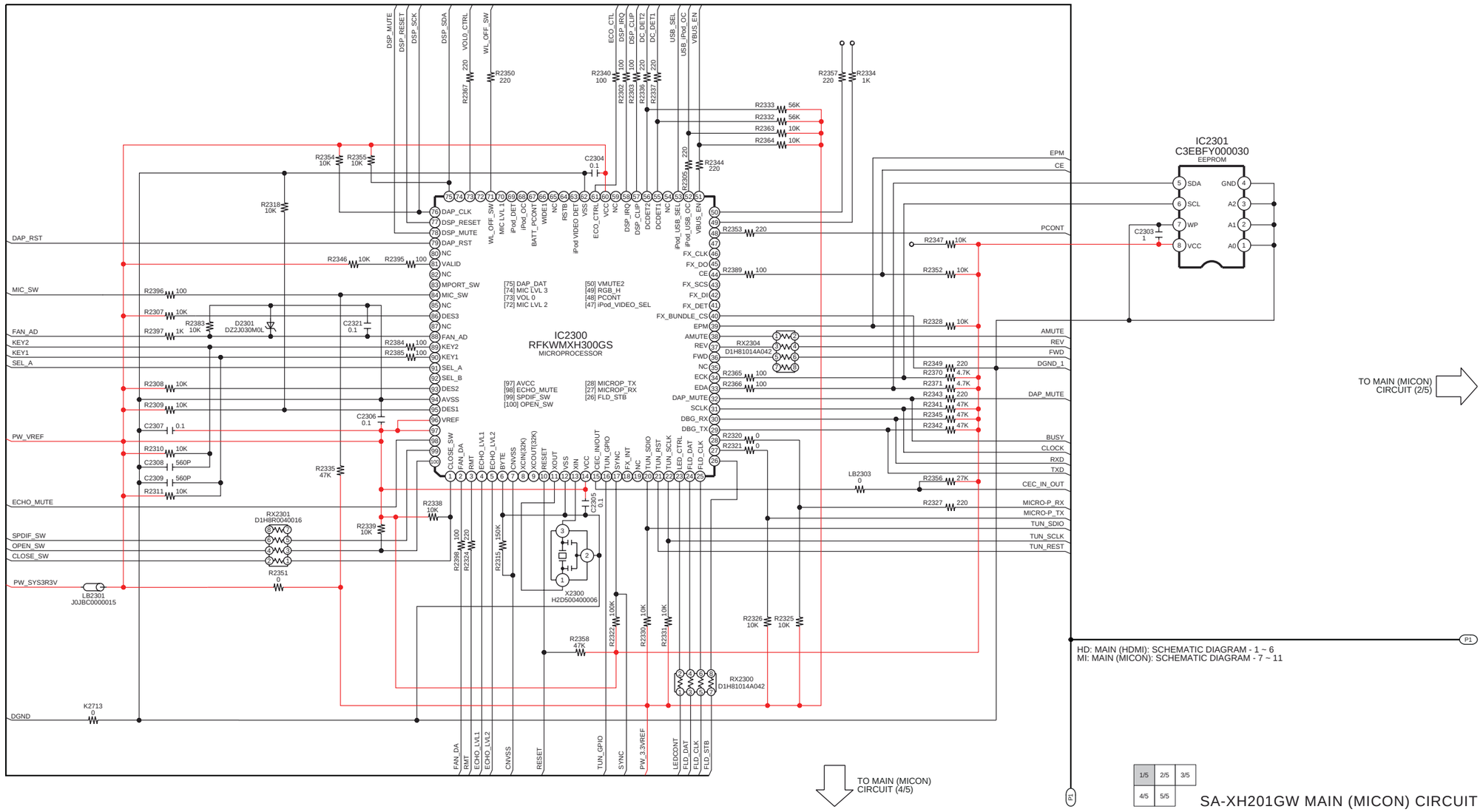
1/6	2/6	3/6
4/6	5/6	6/6

SA-XH201GW MAIN (HDMI) CIRCUIT

SCHEMATIC DIAGRAM - 7

A MAIN (MICON) CIRCUIT

: +B SIGNAL LINE : -B SIGNAL LINE : TUNER/AUX/MIC AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : VIDEO OUTPUT SIGNAL LINE : FM SIGNAL LINE : USB SIGNAL LINE



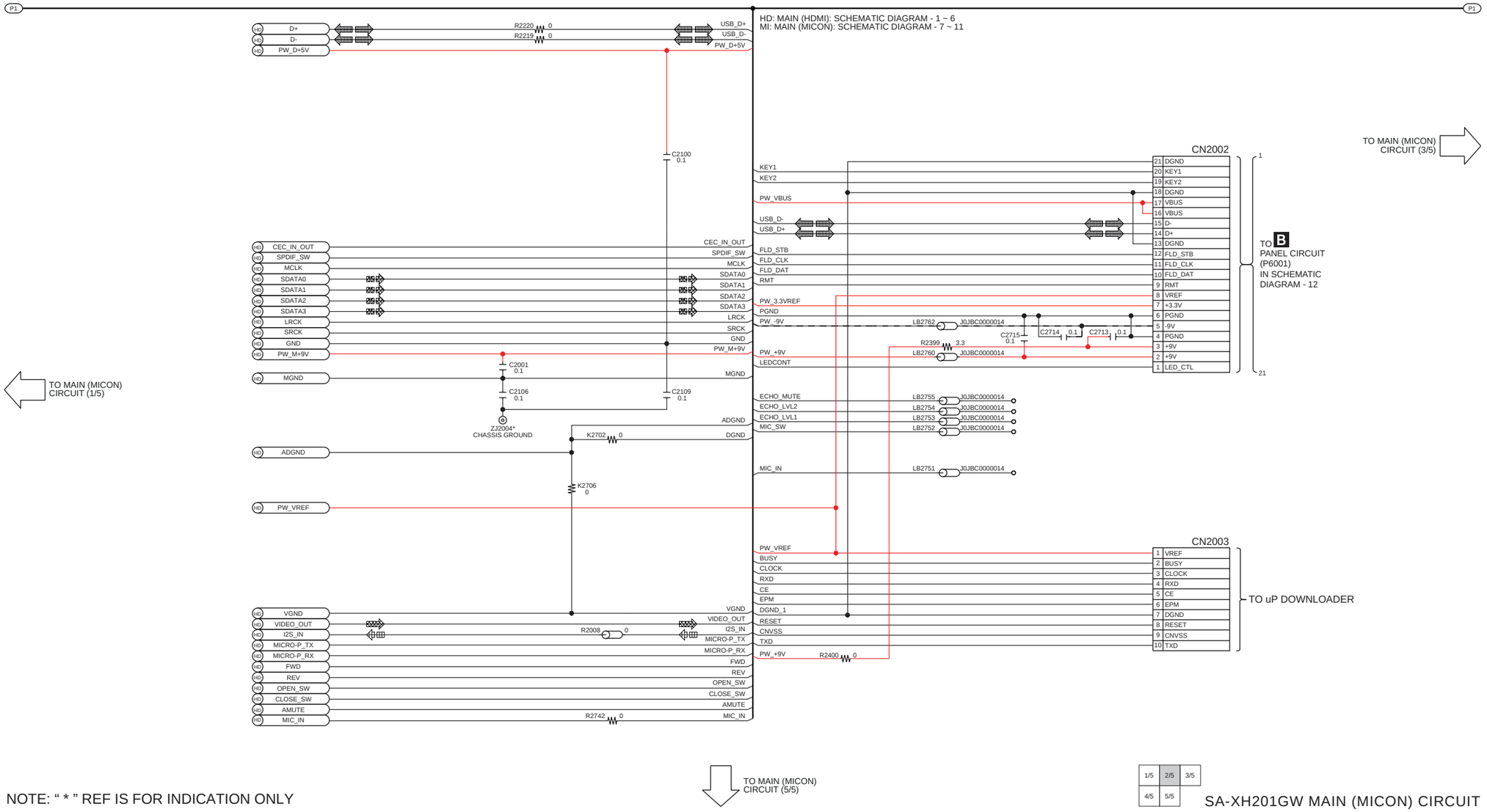
1/5	2/5	3/5
4/5	5/5	

SA-XH201GW MAIN (MICON) CIRCUIT

SCHEMATIC DIAGRAM - 8

A MAIN (MICON) CIRCUIT

: +B SIGNAL LINE : -B SIGNAL LINE : TUNER/AUX/MIC AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : VIDEO OUTPUT SIGNAL LINE : FM SIGNAL LINE : USB SIGNAL LINE



NOTE: “ * ” REF IS FOR INDICATION ONLY

1/5 | 2/5 | 3/5 | 4/5 | 5/5

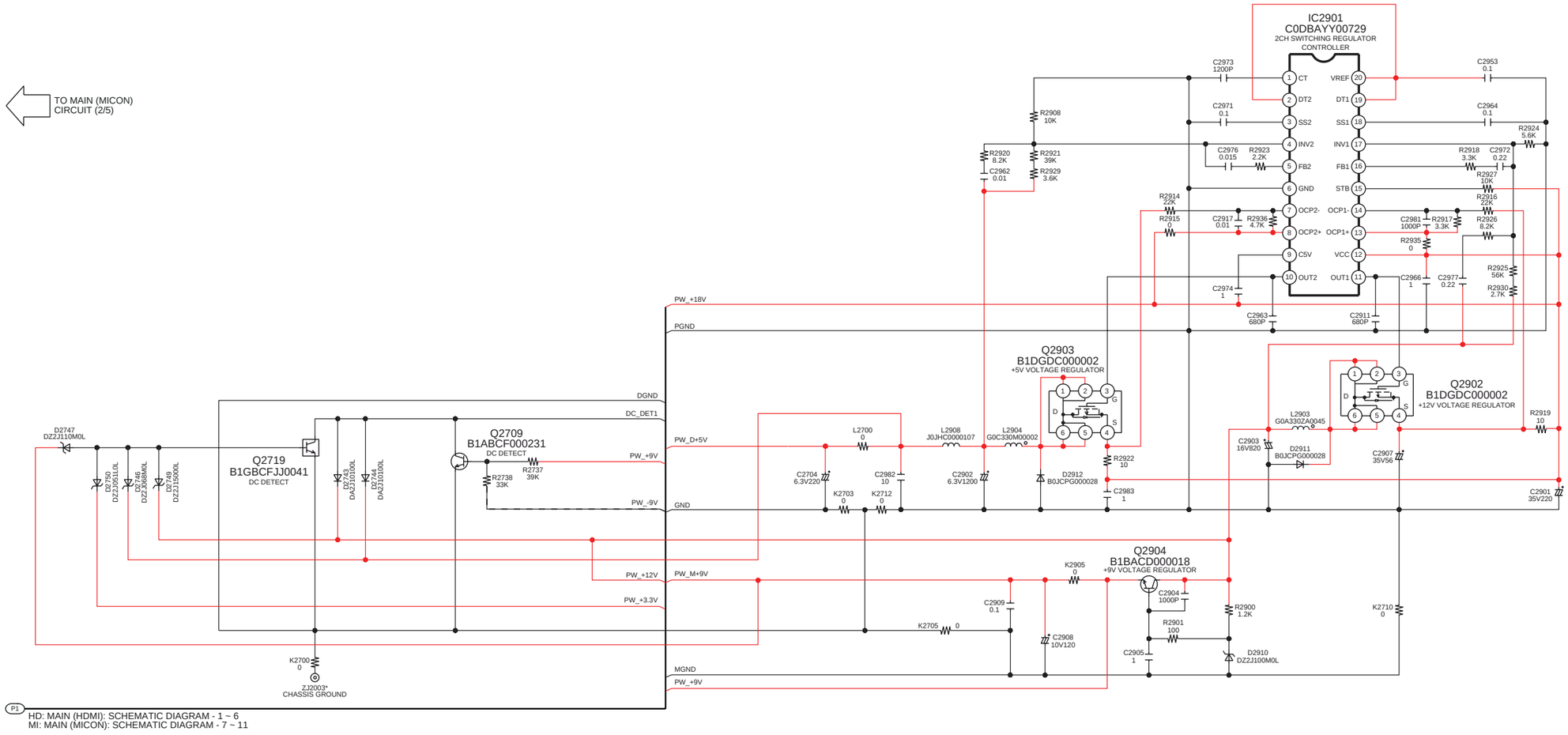
SA-XH201GW MAIN (MICON) CIRCUIT

SCHEMATIC DIAGRAM - 9

A MAIN (MICON) CIRCUIT

: +B SIGNAL LINE : -B SIGNAL LINE : TUNER/AUX/MIC AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : VIDEO OUTPUT SIGNAL LINE : FM SIGNAL LINE : USB SIGNAL LINE

TO MAIN (MICON) CIRCUIT (2/5)



HD: MAIN (HDMI): SCHEMATIC DIAGRAM - 1 ~ 6
MI: MAIN (MICON): SCHEMATIC DIAGRAM - 7 ~ 11

NOTE: " * " REF IS FOR INDICATION ONLY

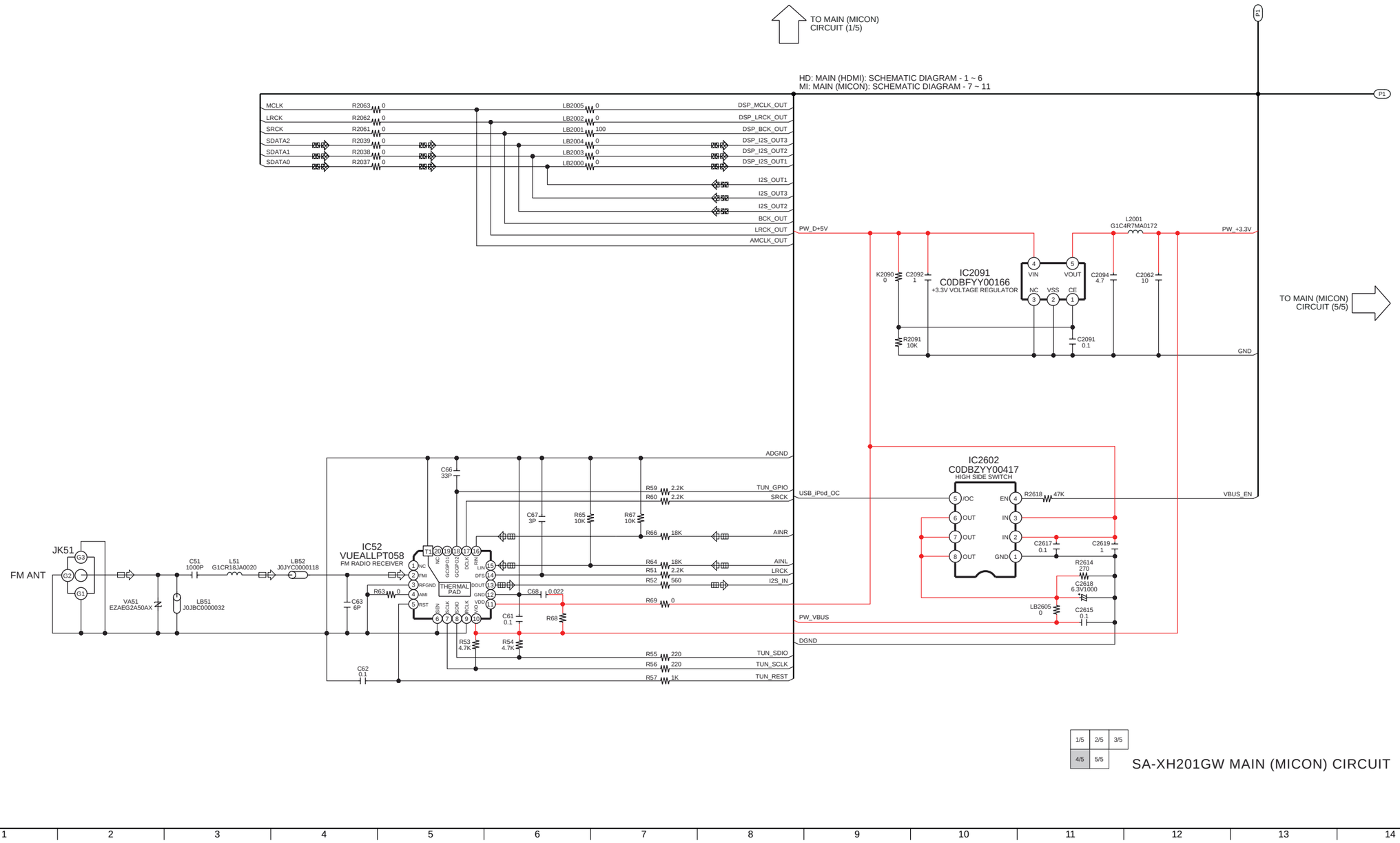
1/5	2/5	3/5
4/5	5/5	

SA-XH201GW MAIN (MICON) CIRCUIT

SCHEMATIC DIAGRAM - 10

A MAIN (MICON) CIRCUIT

: +B SIGNAL LINE : -B SIGNAL LINE : TUNER/AUX/MIC AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : VIDEO OUTPUT SIGNAL LINE : FM SIGNAL LINE : USB SIGNAL LINE



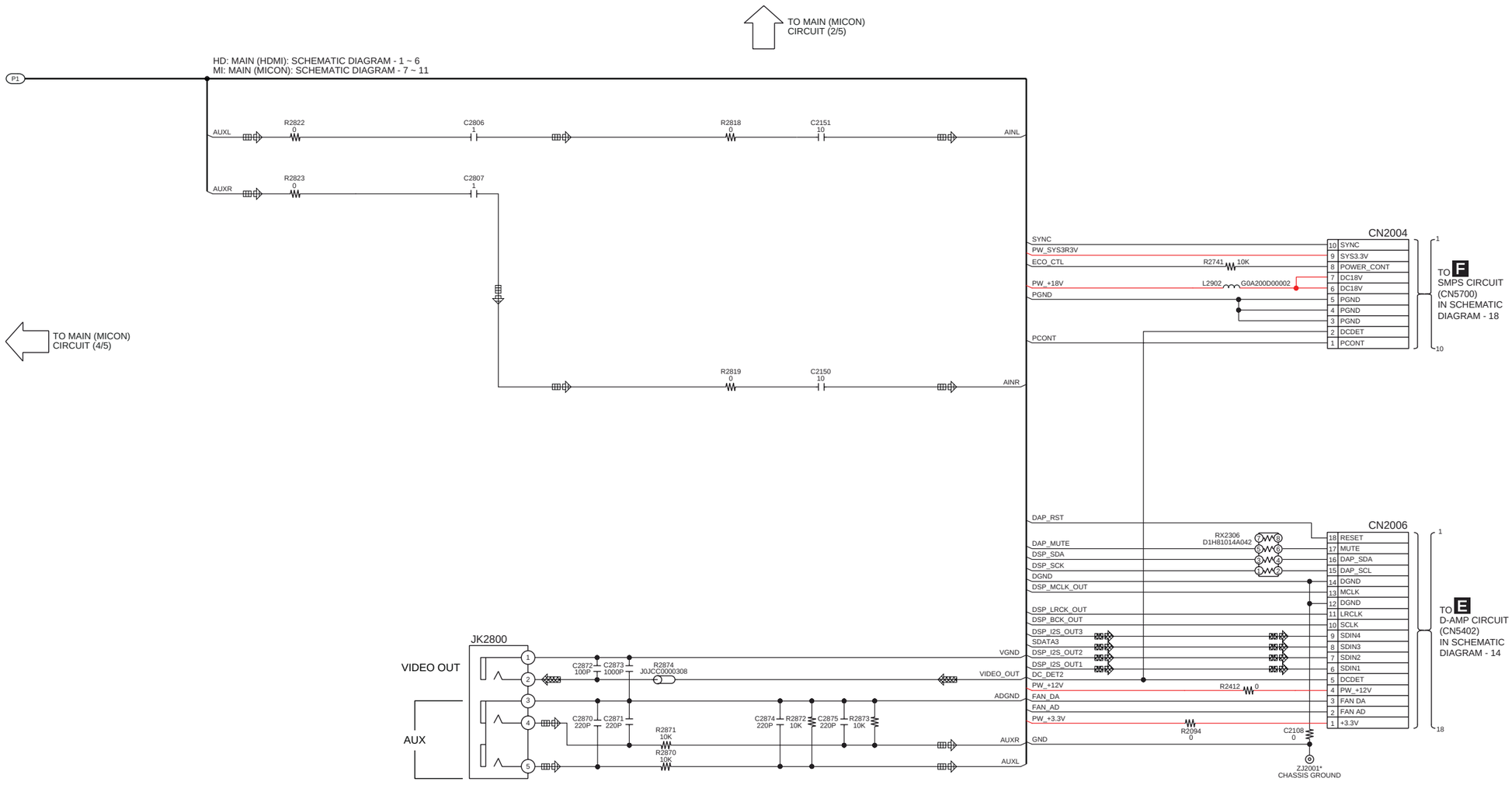
1/5	2/5	3/5
4/5	5/5	

SA-XH201GW MAIN (MICON) CIRCUIT

SCHEMATIC DIAGRAM - 11

A MAIN (MICON) CIRCUIT

—— : +B SIGNAL LINE —— : -B SIGNAL LINE : TUNER/AUX/MIC AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : VIDEO OUTPUT SIGNAL LINE : FM SIGNAL LINE : USB SIGNAL LINE



1/5	2/5	3/5
4/5	5/5	

NOTE: " * " REF IS FOR INDICATION ONLY

SA-XH201GW MAIN (MICON) CIRCUIT

15 16 17 18 19 20 21 22 23 24 25 26 27 28

16.3. Panel Circuit

SCHEMATIC DIAGRAM - 12

B PANEL CIRCUIT

—— : +B SIGNAL LINE —— : -B SIGNAL LINE : USB SIGNAL LINE

TO **C** OPERATION BUTTON CIRCUIT (H6002) IN SCHEMATIC DIAGRAM - 13

CN6001: KEY 1, LED, DGND, KEY 2

TO **A** MAIN (MICON) CIRCUIT (CN2002) IN SCHEMATIC DIAGRAM - 8

P6001: LED CTL, +9V, +9V, PGND, -9V, PGND, +3.3V, VREF, RMT, FLD_DAT, FLD_CLK, FLD_STB, DGND, D+, D-, VBUS, VBUS, DGND, KEY2, KEY1, DGND

IR6001 REMOTE SENSOR (VCC, GND, OUT)

DP6001 A2BB00000183 FL DISPLAY

T6100 G4D1A0000142 SWITCHING TRANSFORMER

Q6100 B1BAAL000018 POWER SAVE CONTROL

IC6001 C0HBB0000057 FL DISPLAY DRIVER

CN6402 USB PORT

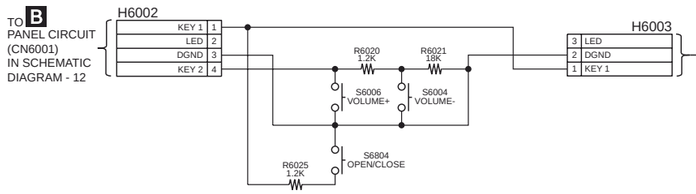
NOTE: " * " REF IS FOR INDICATION ONLY

SA-XH201GW PANEL CIRCUIT

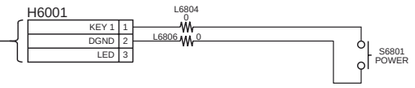
16.4. Operation Button, Power Button and AC Inlet Circuit

SCHEMATIC DIAGRAM - 13

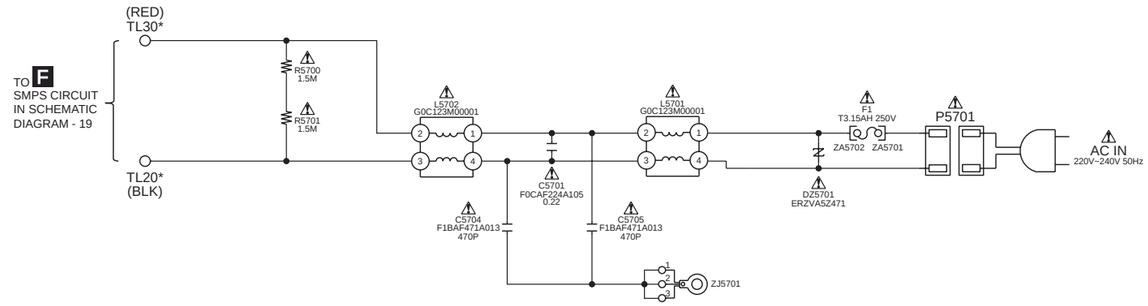
C OPERATION BUTTON CIRCUIT



D POWER BUTTON CIRCUIT



G AC INLET CIRCUIT



NOTE: " * " REF IS FOR INDICATION ONLY

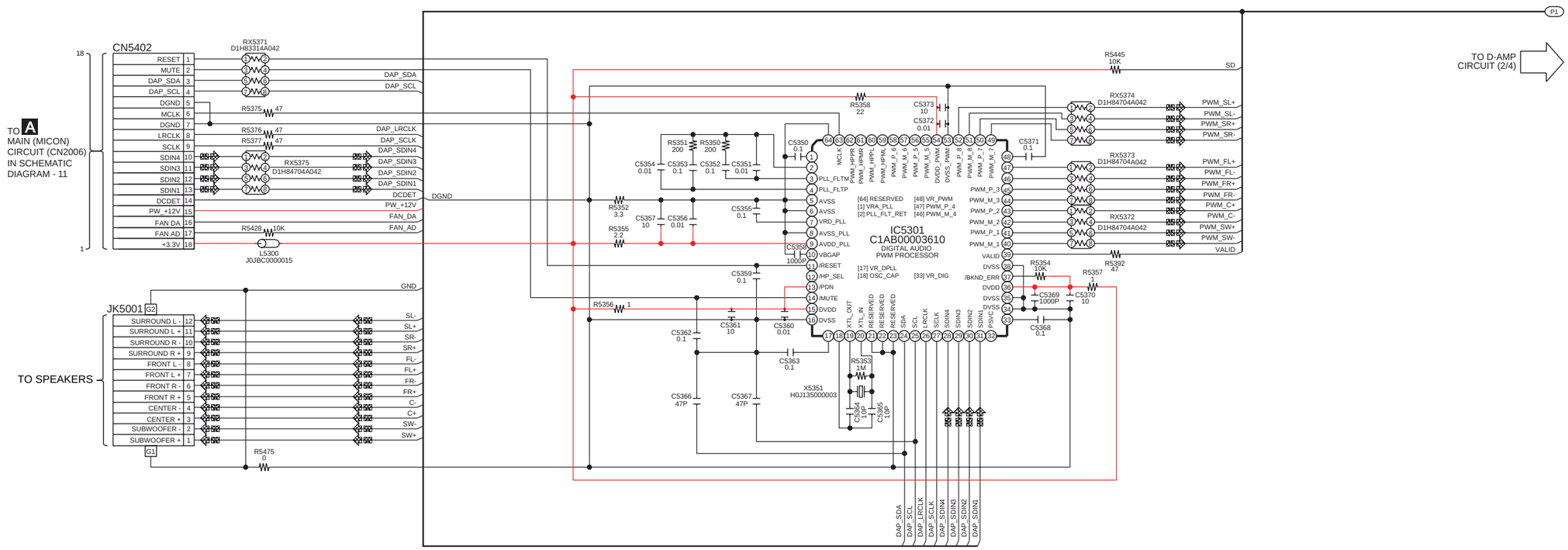
SA-XH201GW OPERATION BUTTON / POWER BUTTON / AC INLET CIRCUIT

16.5. D-Amp Circuit

SCHEMATIC DIAGRAM - 14

E D-AMP CIRCUIT

—— : +B SIGNAL LINE ⋙ : AUDIO OUTPUT SIGNAL LINE



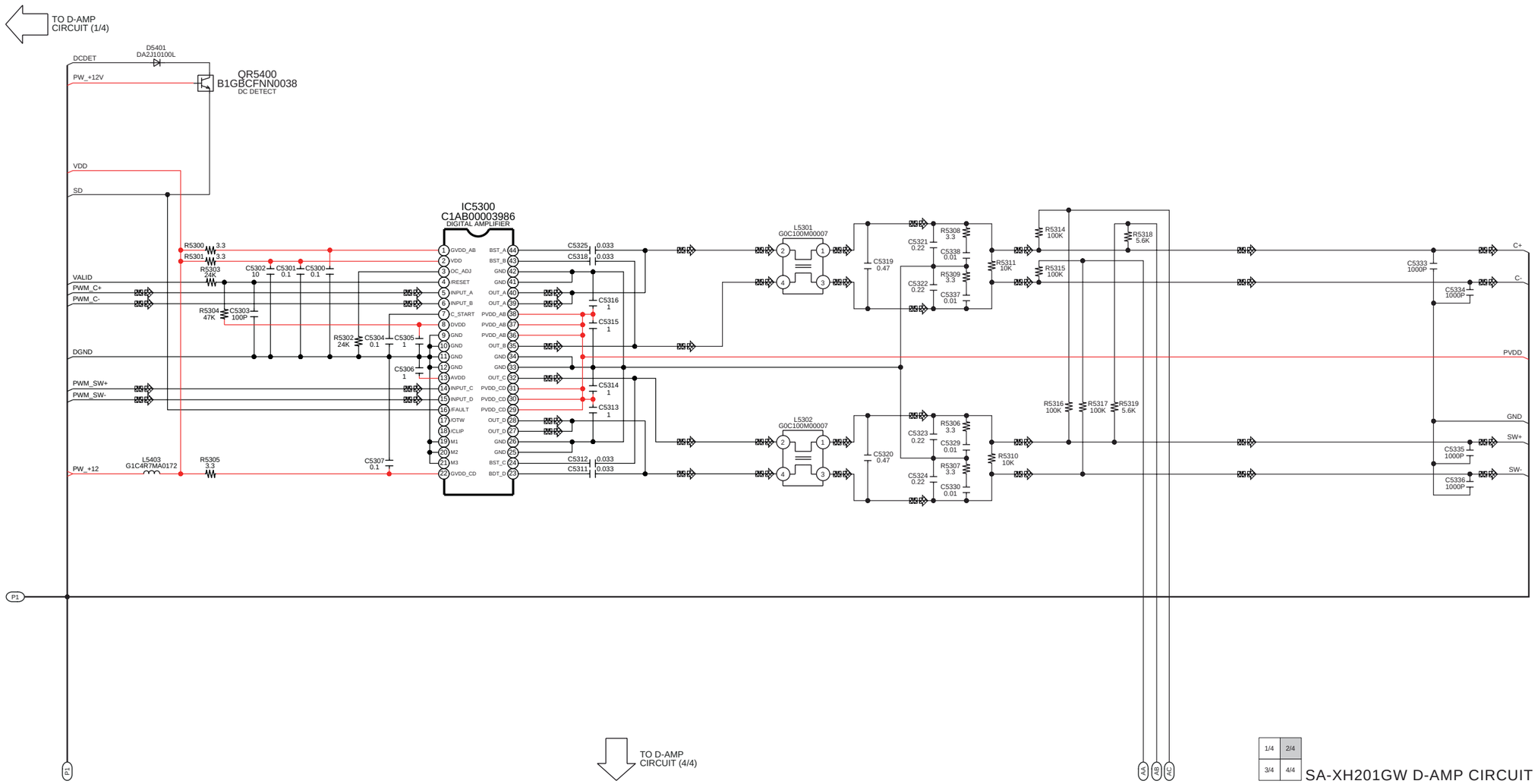
1/4	2/4
3/4	4/4

SA-XH201GW D-AMP CIRCUIT

SCHEMATIC DIAGRAM - 15

E D-AMP CIRCUIT

—— : +B SIGNAL LINE ⋙ : AUDIO OUTPUT SIGNAL LINE



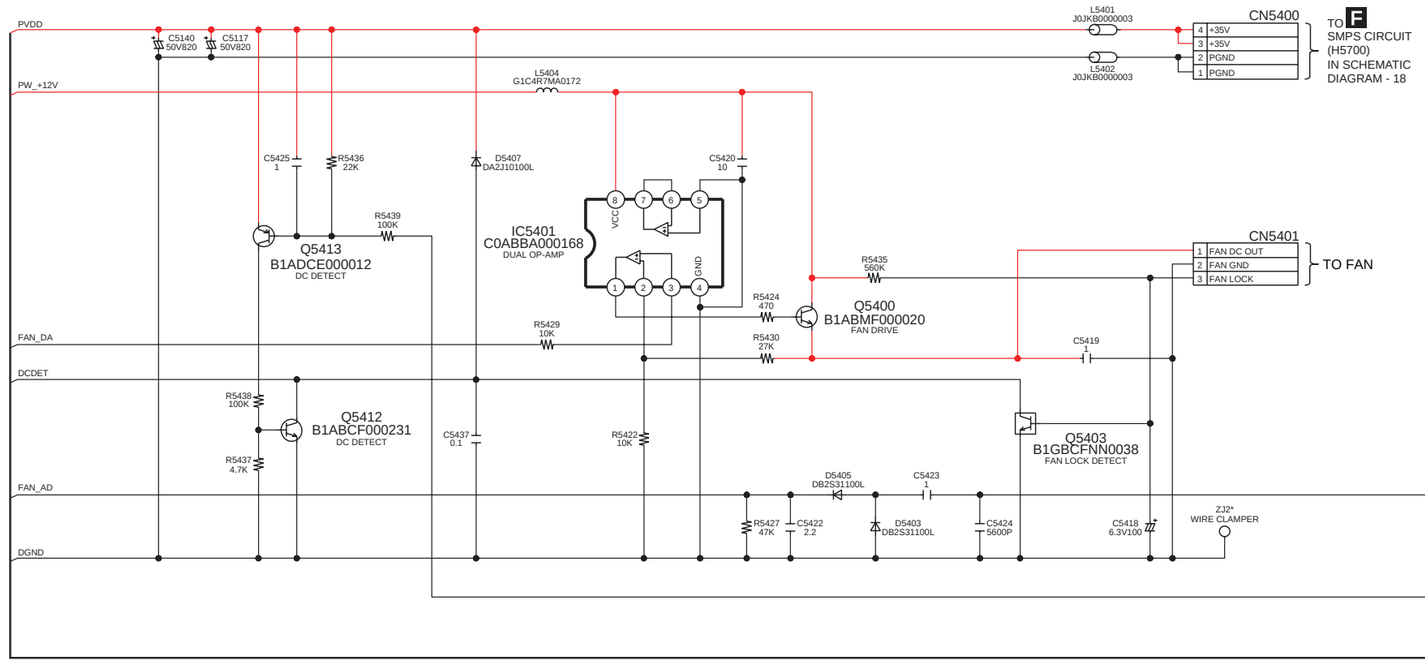
SA-XH201GW D-AMP CIRCUIT

SCHEMATIC DIAGRAM - 16

E D-AMP CIRCUIT

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

TO D-AMP CIRCUIT (1/4)



TO D-AMP CIRCUIT (4/4)

NOTE: “ * ” REF IS FOR INDICATION ONLY

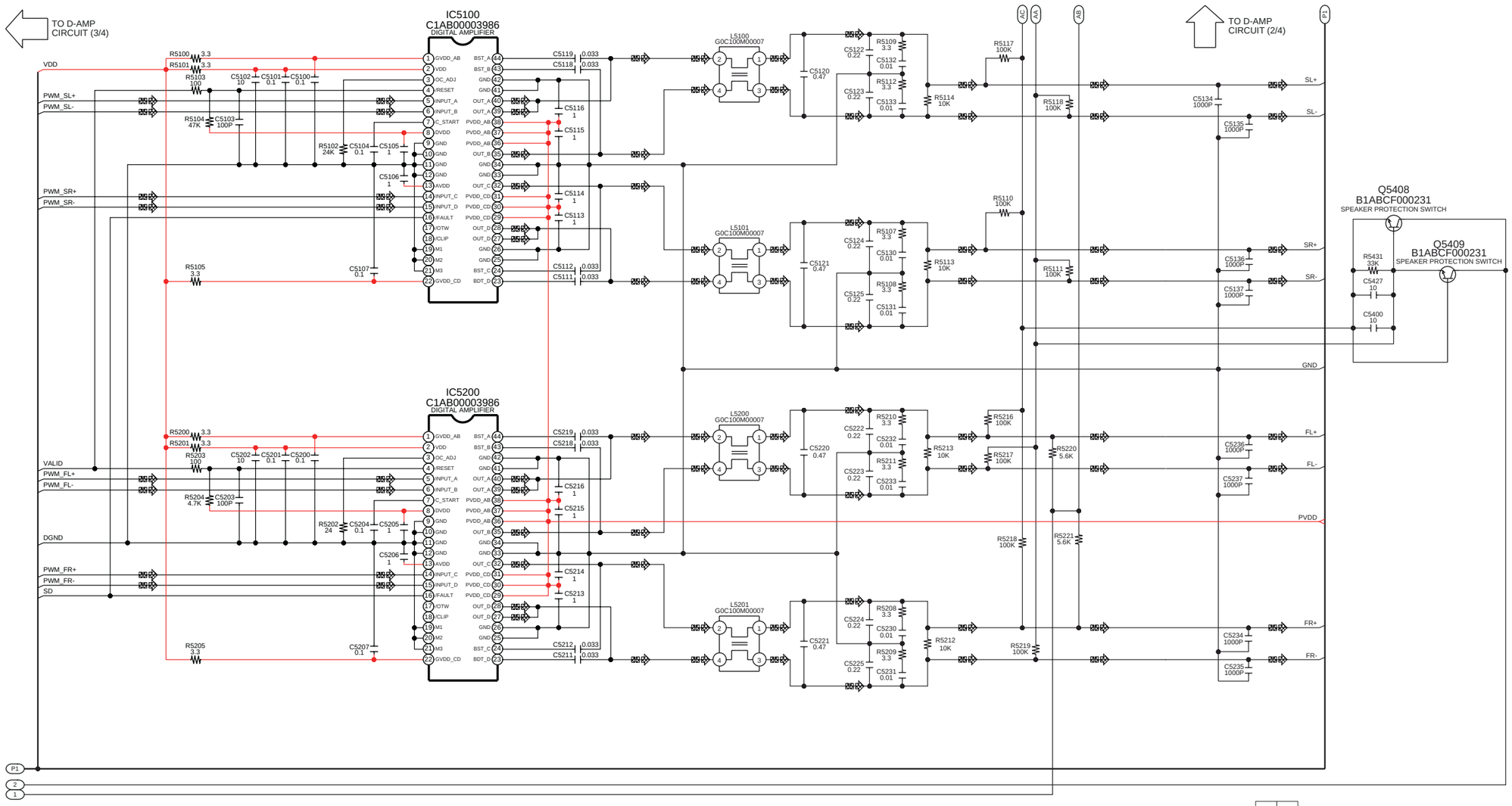
1/4	2/4
3/4	4/4

SA-XH201GW D-AMP CIRCUIT

SCHEMATIC DIAGRAM - 17

E D-AMP CIRCUIT

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



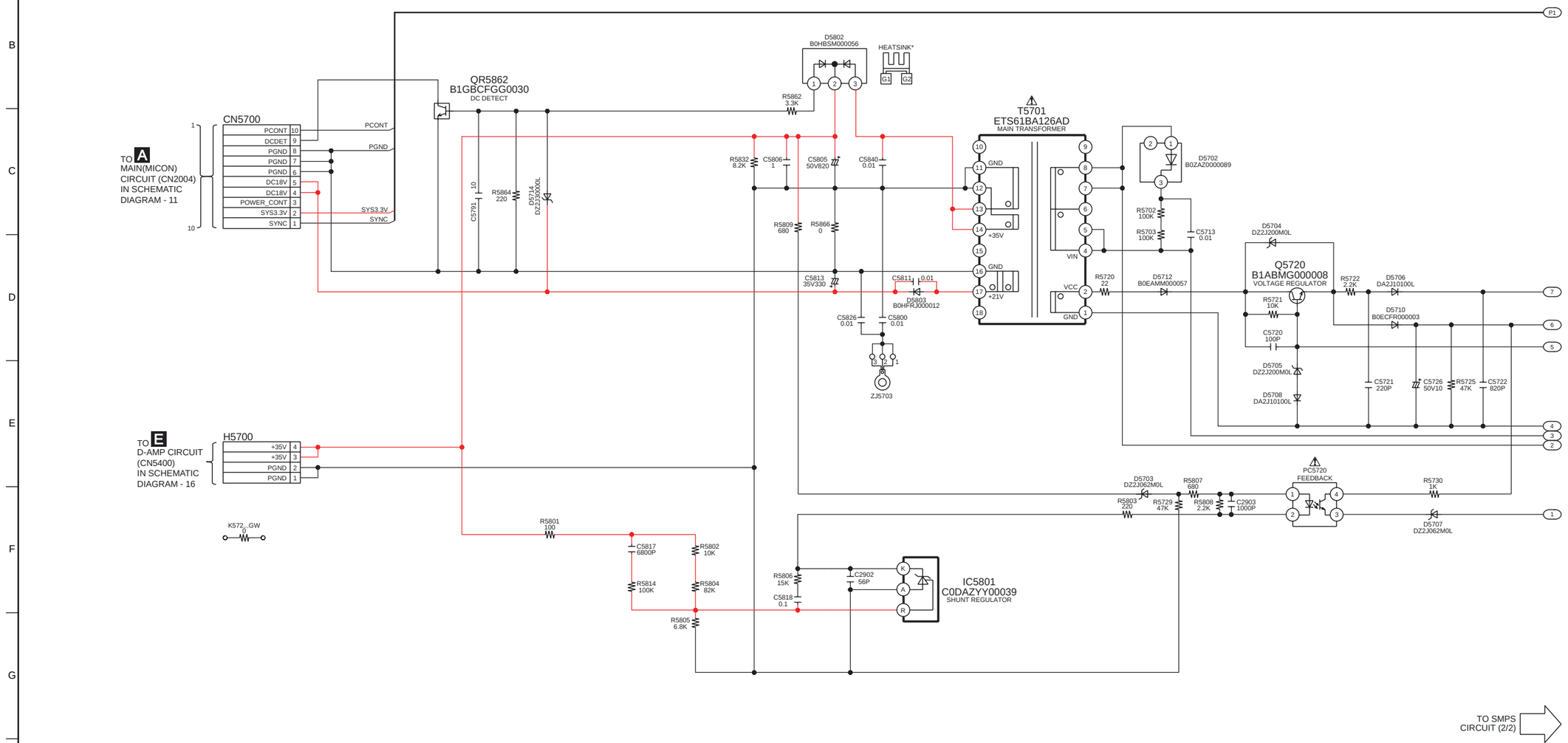
1/4 2/4 3/4 4/4 SA-XH201GW D-AMP CIRCUIT

16.6. SMPS Circuit

SCHEMATIC DIAGRAM - 18

F SMPS CIRCUIT

—— : +B SIGNAL LINE —— : -B SIGNAL LINE



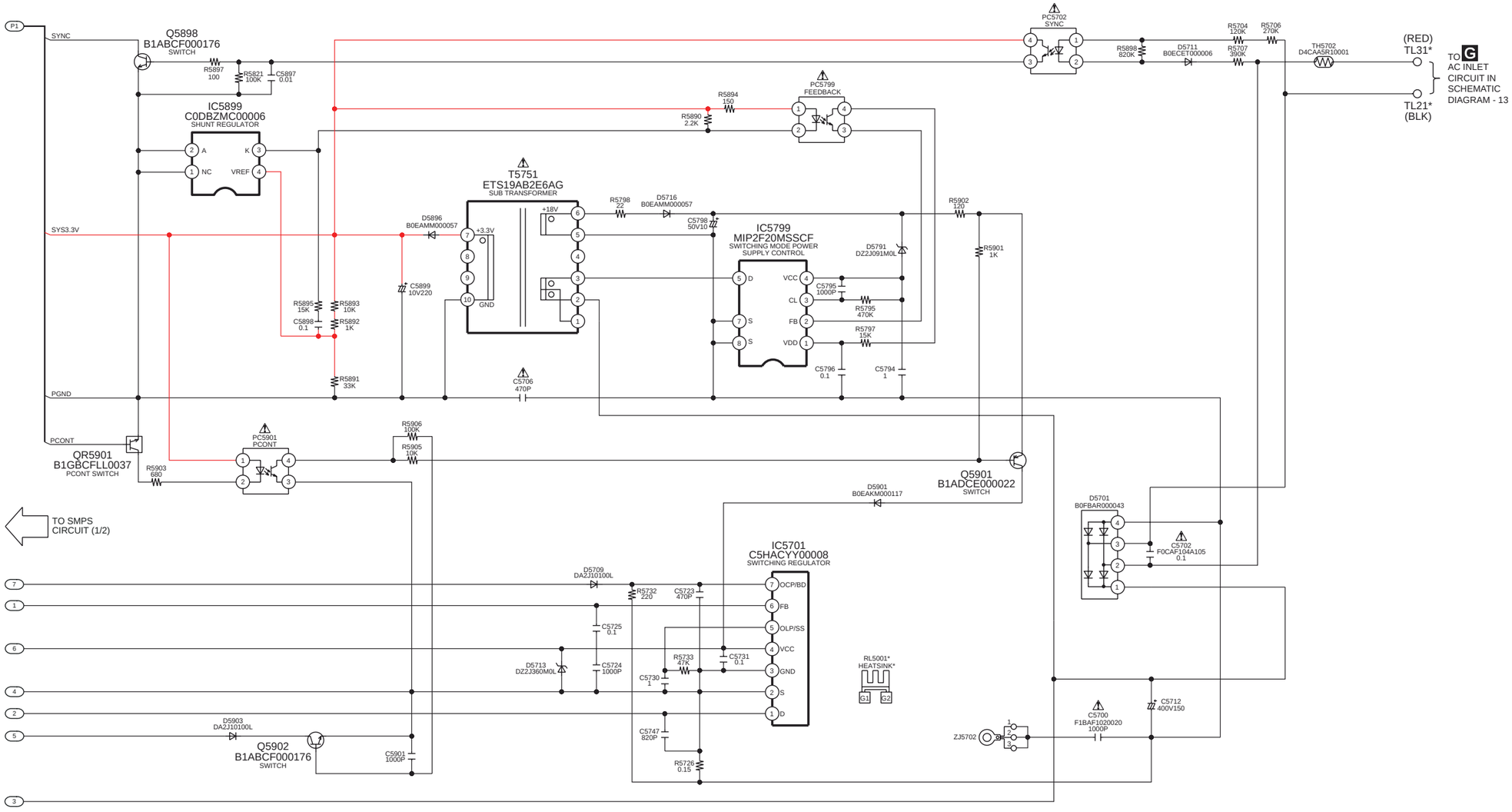
NOTE: " * " REF IS FOR INDICATION ONLY

1/2 2/2 SA-XH201GW SMPS CIRCUIT

SCHEMATIC DIAGRAM - 19

F SMPS CIRCUIT

: +B SIGNAL LINE : -B SIGNAL LINE



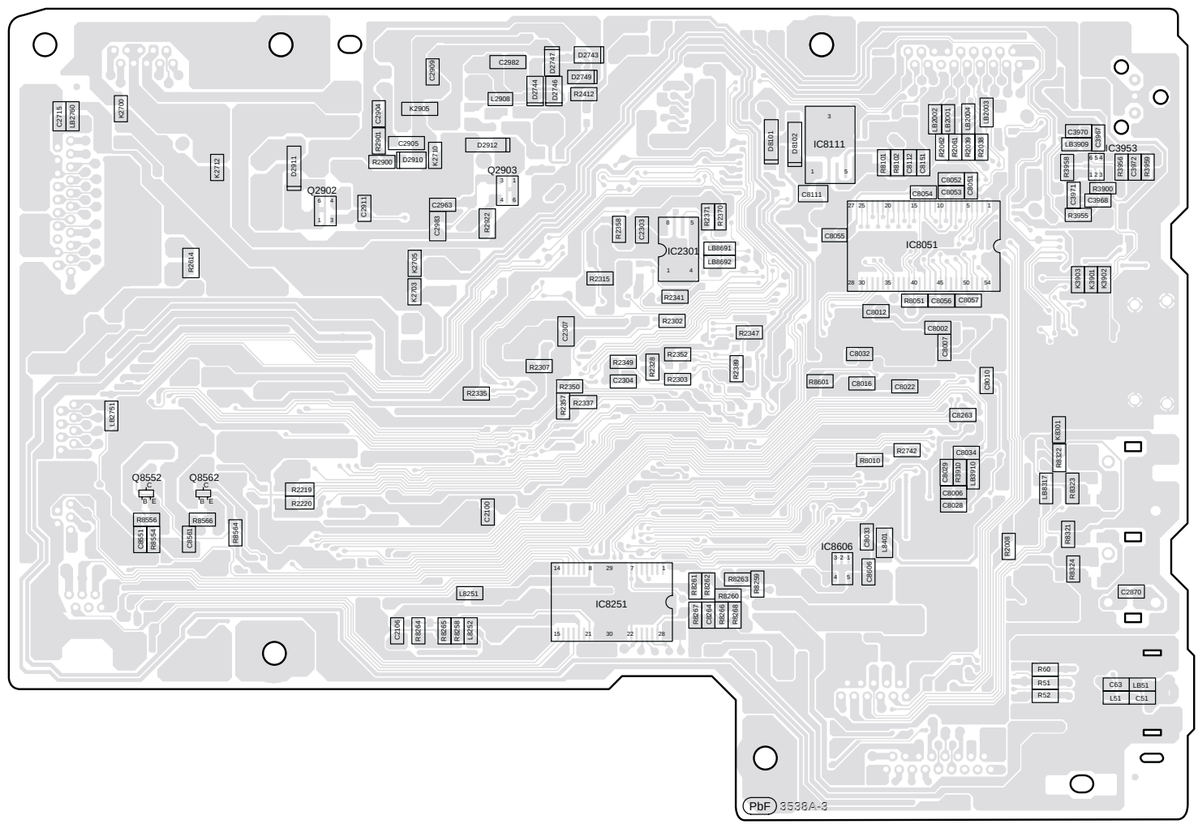
NOTE: " * " REF IS FOR INDICATION ONLY

1/2 2/2 SA-XH201GW SMPS CIRCUIT

17 Printed Circuit Board

17.1. Main P.C.B.

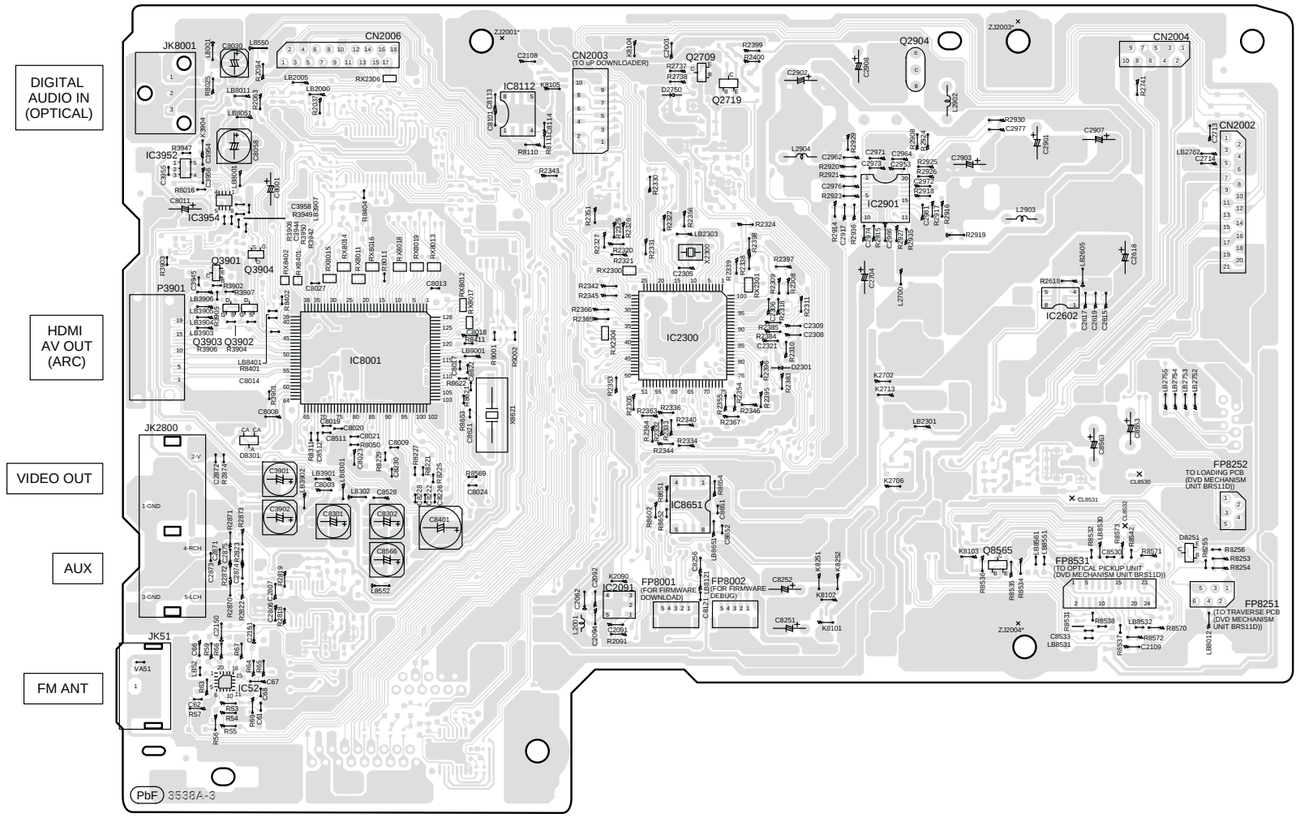
A MAIN P.C.B. (REP4923AT)



(SIDE A)

SA-XH201GW
MAIN P.C.B.

A MAIN P.C.B. (REP4923AT)



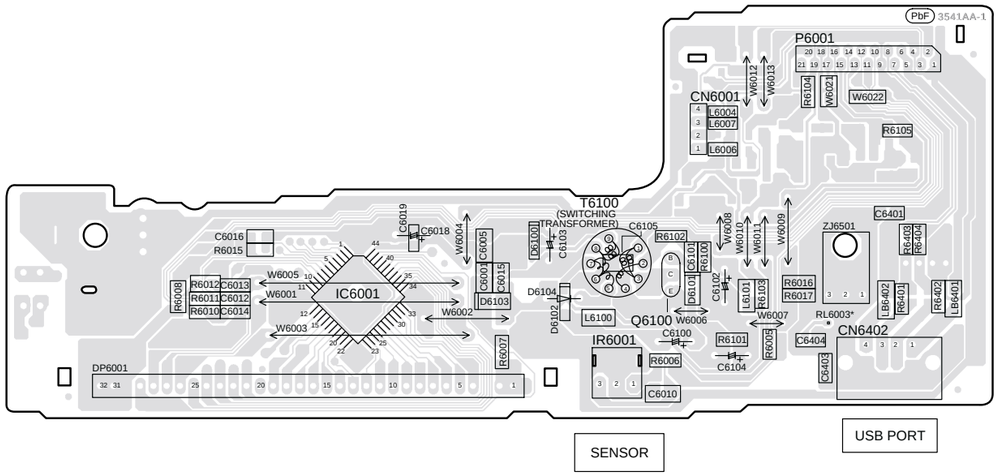
(SIDE B)

NOTE: " * " REF IS FOR INDICATION ONLY.

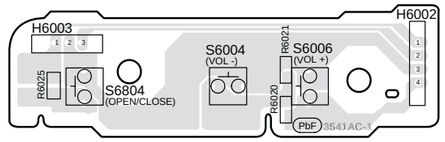
SA-XH201GW
MAIN P.C.B.

17.2. Panel, Operation Button and Power Button P.C.B.

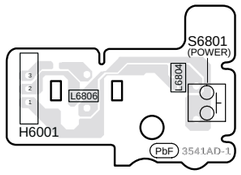
B PANEL P.C.B. (REP4759EA)



C OPERATION BUTTON P.C.B. (REP4759EC)



D POWER BUTTON P.C.B. (REP4759EC)

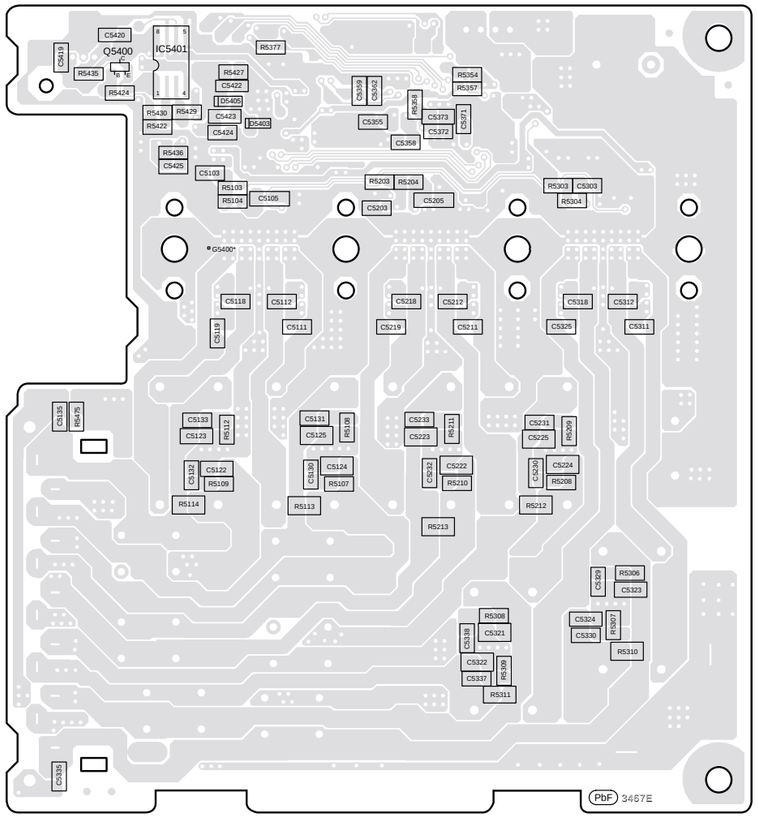


NOTE: " * " REF IS FOR INDICATION ONLY.

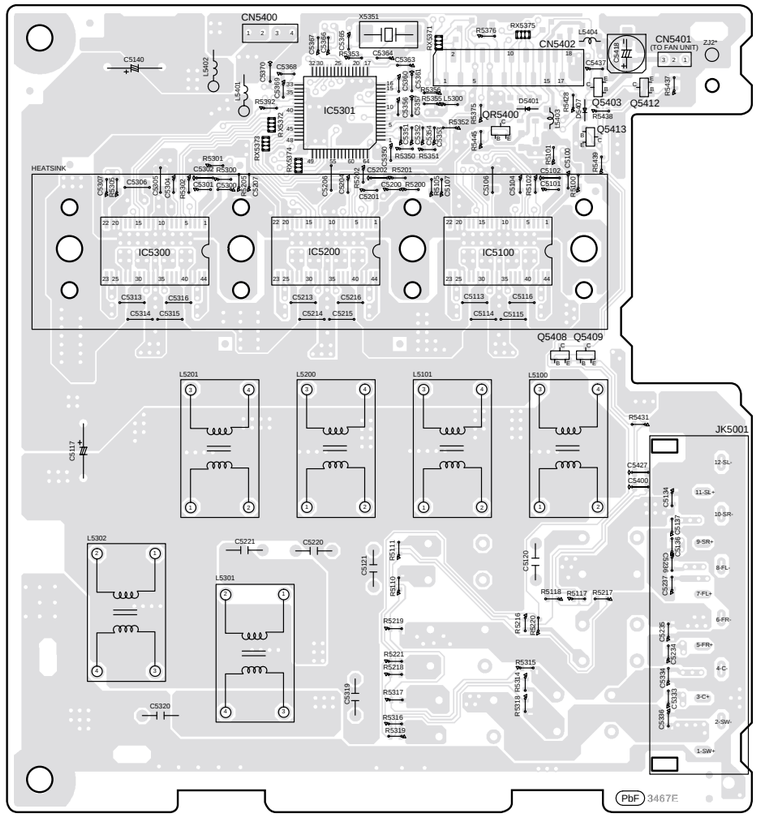
SA-XH201GW
PANEL / OPERATION BUTTON / POWER BUTTON P.C.B.

17.3. D-Amp P.C.B.

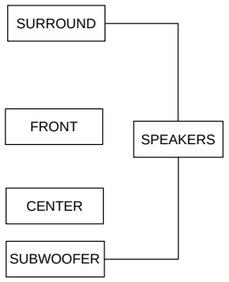
E D-AMP P.C.B. (REP4932A)



(SIDE A)



(SIDE B)

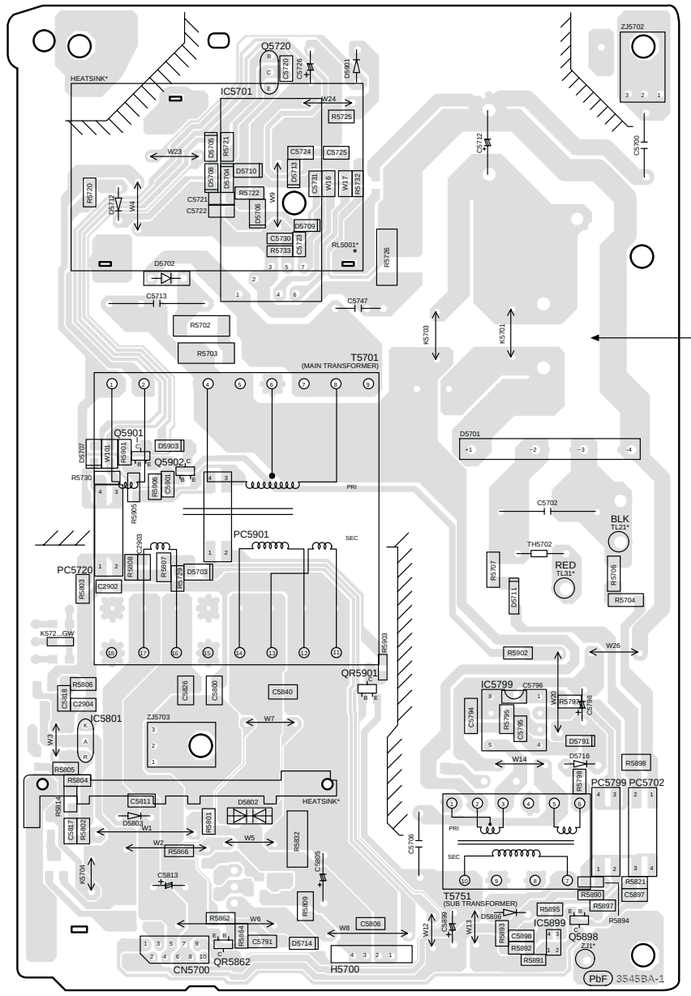


NOTE: " * " REF IS FOR INDICATION ONLY.

SA-XH201GW
D-AMP P.C.B.

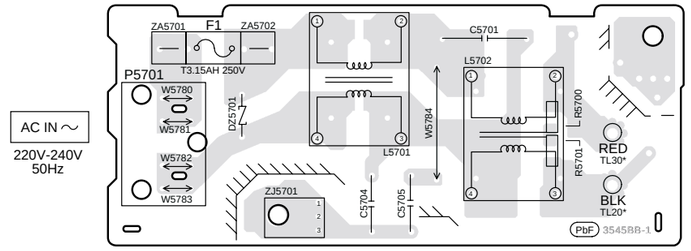
17.4. SMPS and AC Inlet P.C.B.

F SMPS P.C.B. (REP4761B)



CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B

G AC INLET P.C.B. (REP4761B)



NOTE: " * " REF IS FOR INDICATION ONLY.

SA-XH201GW
SMPS / AC INLET P.C.B.

18 Appendix Information of Schematic Diagram

18.1. Voltage & Waveform Chart

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.

18.1.1. Main P.C.B. (1/4)

REF NO.	IC2091																			
MODE	1	2	3	4	5															
POWER ON	3.0	0	0	5.1	3.2															
STANDBY	3.0	0	0	5.1	3.3															

REF NO.	IC2300																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER ON	0	1.2	3.3	0	0	0	3.3	0	0	3.3	1.6	3.3	1.5	3.3	3.3	0	0	0.9	0	3.3
STANDBY	0	1.2	3.3	0	0	0	3.3	0	0	3.3	1.6	3.3	1.5	3.3	3.3	0	0	0.9	0	3.3

REF NO.	IC2300																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
POWER ON	3.3	3.3	3.3	1.3	2.5	1.8	3.0	3.1	0	0	0	3.2	3.3	3.3	0	3.3	3.3	0	0	0
STANDBY	3.3	3.3	3.3	1.3	2.5	1.8	3.0	3.1	0	0	0	3.2	3.3	3.3	0	3.3	3.3	3.3	0	0

REF NO.	IC2300																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
POWER ON	0.8	0.8	3.3	0	3.3	0	0	3.3	3.3	3.3	3.3	3.3	0	0	3.3	3.3	0	0	0	3.3
STANDBY	0.8	0.8	3.3	0	3.3	0	0	3.3	3.3	3.3	3.3	3.3	0	0	3.3	3.3	0	0	0	3.3

REF NO.	IC2300																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
POWER ON	3.3	0	0	0	0	3.2	0	0	0	0	0	0	3.3	0	3.3	3.3	0	0	3.3	0
STANDBY	3.3	0	0	0	0	3.2	0	0	0	0	0	0	3.3	0	3.3	3.3	0	0	3.3	0

REF NO.	IC2300																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
POWER ON	3.3	0	0	0	0	3.3	0	2.0	2.1	3.2	0	0	3.2	0	3.3	3.3	3.3	0	3.0	0
STANDBY	3.3	0	0	0	0	3.3	0	2.0	2.1	3.2	0	0	3.2	0	3.3	3.3	3.3	0	3.0	0

REF NO.	IC2301																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	0	0	0	0	3.3	3.3	0	3.3												
STANDBY	0	0	0	0	3.3	3.3	0	3.3												

REF NO.	IC2602																			
MODE	1	2	3	4	5	6	7	8												
USB	0	5.0	5.0	3.2	3.2	5.0	5.0	5.0												
STANDBY	0	5.0	5.0	3.2	3.2	5.0	5.0	5.0												

REF NO.	IC2901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
USB	1.6	2.3	2.0	1.0	1.5	0	16.0	15.6	10.6	12.0	12.7	16.2	16.3	16.3	14.3	1.7	1.0	1.9	2.4	2.4
STANDBY	1.6	2.3	2.0	1.0	1.5	0	16.0	15.6	10.6	12.0	12.5	15.7	15.7	15.9	14.0	1.7	1.0	1.9	2.4	2.4

REF NO.	IC3952																			
MODE	1	2	3	4	5															
POWER ON	9.0	0	1.3	5.1	9.4															
STANDBY	9.1	0	1.3	5.0	9.4															

SA-XH201GW MAIN P.C.B.

18.1.2. Main P.C.B. (2/4)

REF NO.	IC3953																			
MODE	1	2	3	4	5	6														
POWER ON	1.7	0	1.2	3.0	3.3	1.7														
STANDBY	1.7	0	1.3	3.0	3.3	1.7														

REF NO.	IC3954																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	0.3	3.0	0	0	1.8	3.3	3.3	3.3												
STANDBY	0.3	3.0	0	0	1.7	3.3	3.3	3.3												

REF NO.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HDMI	1.0	3.0	0	0	0	0	3.0	0	3.0	3.1	3.1	3.1	2.7	0	0.3	3.1	0.6	0.2	1.1	0.4
STANDBY	0.9	3.0	0	0	0	0	3.0	0	2.9	3.0	3.0	3.0	2.8	0	0.2	3.3	1.9	0	0.6	1.6

REF NO.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HDMI	1.1	1.0	0.5	1.1	1.1	0.6	3.0	0.7	1.1	0.1	1.1	0.6	0.6	1.7	3.0	0	1.5	1.5	0	0
STANDBY	1.5	3.1	2.8	1.6	0.3	2.8	3.3	0.6	0.4	0.5	0.5	0	2.6	1.8	3.2	0	1.5	1.5	0	0

REF NO.	IC8001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
HDMI	0	0	1.4	1.5	3.0	3.0	3.0	2.9	0	0	0	0	0	0	0	0	3.0	0.9	1.7	1.7
STANDBY	0	0	1.5	1.5	3.1	3.0	3.1	3.0	0	0	0	0	0	0	0	0	3.1	0.9	1.7	1.7

REF NO.	IC8001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
HDMI	0	3.0	0.4	0	3.3	3.3	3.3	1.6	1.6	3.0	2.0	2.0	3.0	2.0	1.9	1.7	2.0	1.8	2.0	0
STANDBY	0	3.1	0.4	0	3.3	3.3	3.3	0	0	3.1	2.0	1.9	3.1	1.9	2.0	1.3	1.9	1.3	2.0	0

REF NO.	IC8001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
HDMI	1.9	1.5	0.9	3.0	0	0.2	3.0	2.2	0	1.6	3.2	1.7	1.6	2.5	1.7	0.3	3.2	0	3.0	3.1
STANDBY	1.9	1.6	0.9	3.1	0	0	3.1	3.1	0	0	3.1	1.7	0	0	0	0.1	0	3.1	3.1	3.1

REF NO.	IC8001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
HDMI	3.0	1.2	0	1.6	2.1	1.3	2.6	3.2	0.6	3.0	1.6	1.6	0	1.8	1.8	3.2	0.8	1.2	1.3	1.8
STANDBY	3.1	1.3	0	1.6	3.1	3.1	3.1	3.1	0	3.1	1.5	1.5	0	1.8	1.7	3.1	0.7	1.2	1.2	1.8

REF NO.	IC8001																			
MODE	121	122	123	124	125	126	127	128												
HDMI	1.7	1.7	1.7	1.2	1.6	1.3	1.6	0												
STANDBY	1.6	1.6	1.6	0.9	1.6	1.6	1.5	0												

REF NO.	IC8051																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HDMI	3.3	1.5	3.3	1.0	1.0	0	0.7	1.2	3.3	0.7	0.7	0	0.7	3.3	2.9	3.3	3.3	3.3	3.3	0.1
STANDBY	3.3	1.7	3.3	0.3	0.4	0	1.6	0.8	3.3	1.9	1.0	0	0.1	3.3	2.9	3.3	3.3	3.3	3.3	0.1

SA-XH201GW MAIN P.C.B.

18.1.3. Main P.C.B. (3/4)

REF NO.	IC8051																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HDMI	3.3	0.1	1.2	1.7	1.2	1.6	3.3	0	1.6	1.6	1.7	1.7	0.1	0.1	0.1	0	3.3	0.3	2.9	0
STANDBY	3.3	0	0.1	1.7	1.3	1.9	3.3	0	0	1.8	1.7	1.7	0.1	0	0	0	3.3	0.3	2.9	0

REF NO.	IC8051																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
HDMI	0	0.8	3.3	1.0	1.0	0	0.7	1.2	3.3	0.7	0.7	0	0.8	0						
STANDBY	0	1.2	3.3	0.4	0.8	0	1.6	0.2	3.3	1.3	0.3	0	0.7	0						

REF NO.	IC8111																			
MODE	1	2	3	4	5															
POWER ON	3.4	3.4	0	1.9	0.6															
STANDBY	3.5	3.5	0	1.9	0.6															

REF NO.	IC8112																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	3.1	0.8	0	0	4.7	0	0	4.7												
STANDBY	3.1	0.8	0	0	4.7	0	0	4.8												

REF NO.	IC8251																			
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	0	0	1.6	0	3.1	3.1	8.9	3.1	3.0	4.5	4.5	2.4	2.5	2.5	2.5	3.4	1.6	4.8	0
STANDBY	1.3	0	0	1.3	0	3.2	3.2	9.2	0	0.8	0.6	0	0	0	0.6	0	0	0	4.9	0

REF NO.	IC8251																			
MODE	21	22	23	24	25	26	27	28	29	30										
CD PLAY	1.4	0	1.9	0	0	1.6	1.6	3.1	0	0										
STANDBY	1.5	0	1.1	0	0	0	1.6	0	0	0										

REF NO.	IC8606																			
MODE	1	2	3	4	5															
POWER ON	0	0	0	3.1	3.3															
STANDBY	0	0	0	3.3	3.3															

REF NO.	IC8651																			
MODE	1	2	3	4	5	6	7	8												
HDMI	2.2	2.7	3.3	0	1.2	0.6	3.3	3.3												
STANDBY	2.9	3.1	3.3	0	1.1	0.2	3.3	3.3												

REF NO.	Q2709				Q2719				Q2902											
MODE	E	C	B		E	C	B		1	2	3	4	5	6						
POWER ON	0	3.3	0		0	3.3	0		12.0	12.0	12.5	18.0	12.0	12.0						
STANDBY	0	3.3	0		0	3.3	0		12.0	12.0	12.5	18.0	12.0	12.0						

REF NO.	Q2903							Q2904				Q8552				Q8562				
MODE	1	2	3	4	5	6		E	C	B		E	C	B		E	C	B		
POWER ON	5.0	5.0	5.0	5.0	5.0	5.0		9.0	12.0	10.0		3.3	5.0	3.3		3.3	5.0	3.3		
STANDBY	5.0	5.0	5.0	5.0	5.0	5.0		9.0	12.0	10.0		3.3	5.0	3.3		3.3	5.0	3.3		

SA-XH201GW MAIN P.C.B.

18.1.4. Main P.C.B. (4/4)

REF NO.	Q8565																			
MODE	E	C	B																	
POWER ON	0	5.0	5.0																	
STANDBY	0	5.0	5.0																	

REF NO.	Q3901				Q3902				Q3903				Q3904							
MODE	E	C	B		S	D	G		S	D	G		S	D	G					
HDMI	0	0	3.0		3.0	3.0	3.3		3.0	3.0	3.3		3.3	3.3	0					
STANDBY	0	0	3.0		3.0	3.0	3.3		3.0	3.0	3.3		3.3	3.3	0					

SA-XH201GW MAIN P.C.B.

18.1.5. Panel P.C.B.

REF NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER ON	3.3	0	0	0	1.9	0	1.3	2.8	2.0	0	0	0	3.3	-20.6	-20.6	-20.6	-16.7	-11.0	-12.9	-10.9
STANDBY	0	0	0	0	1.9	0	1.4	2.8	1.9	0	0	0	3.3	-20.6	-20.6	-20.6	-20.6	-12.9	-14.8	-9.0

REF NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
POWER ON	-20.6	-20.6	-20.6	-16.7	-16.7	-20.6	-20.6	-12.9	-14.8	-21.0	-9.2	-20.8	-18.8	-18.8	-18.8	-18.8	-18.8	-18.8	-18.8	-18.9
STANDBY	-18.7	-20.6	-18.7	-12.9	-12.9	-18.7	-20.6	-12.9	-11.0	-21.0	-15.0	-20.8	-18.9	-18.9	-18.9	-18.9	-18.9	-18.9	-18.9	-18.9

REF NO.	IC6001																			
MODE	41	42	43	44																
POWER ON	-18.8	-18.8	3.3	0																
STANDBY	-18.8	-18.8	3.3	0																

REF NO.	Q6100																			
MODE	E	C	B																	
POWER ON	0	0	8.0																	
STANDBY	0	0	8.0																	

SA-XH201GW PANEL P.C.B.

18.1.6. D-Amp P.C.B. (1/2)

REF NO.	IC5100																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	11.4	11.4	1.2	3.0	1.5	1.5	3.0	3.3	0	0	0	0	7.8	1.5	1.5	3.3	3.3	3.3	0	0
STANDBY	11.2	11.2	1.2	3.0	1.5	1.5	3.0	3.3	0	0	0	0	7.7	1.5	1.5	3.3	3.3	3.3	0	0

REF NO.	IC5100																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	11.4	28.0	28.0	0	0	17.4	17.4	36.0	36.0	36.0	17.4	0	0	17.4	36.0	36.0	38.0	17.4	17.4
STANDBY	0	11.2	28.0	28.0	0	0	17.4	17.4	36.0	36.0	36.0	17.4	0	0	17.4	36.0	36.0	38.0	17.4	17.4

REF NO.	IC5100																			
MODE	41	42	43	44																
CD PLAY	0	0	28.0	28.0																
STANDBY	0	0	28.0	28.0																

REF NO.	IC5200																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	11	11	1.1	2.9	1.5	1.5	2.8	3.1	0	0	0	0	7.4	1.5	1.5	3.3	3.3	3.1	0	0
STANDBY	11.2	11.2	1.2	3.0	1.5	1.5	3.0	3.3	0	0	0	0	7.7	1.5	1.5	3.3	3.3	3.3	0	0

REF NO.	IC5200																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	11.2	28.0	28.0	0	0	17.4	17.4	36.0	36.0	36.0	17.4	0	0	17.4	36.0	36.0	36.0	17.4	17.4
STANDBY	0	11.2	28.0	28.0	0	0	17.4	17.4	36.0	36.0	36.0	17.4	0	0	17.4	36.0	36.0	36.0	17.4	17.4

REF NO.	IC5200																			
MODE	41	42	43	44																
CD PLAY	0	0	28.0	28.0																
STANDBY	0	0	28.0	28.0																

REF NO.	IC5300																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	10.0	11.0	1.2	3.0	1.5	1.5	3.0	3.3	0	0	0	0	7.8	1.5	1.5	3.3	3.3	3.3	0	0
STANDBY	10.0	11.0	1.2	3.0	1.5	1.5	3.0	3.3	0	0	0	0	7.7	1.5	1.5	3.3	3.3	3.3	0	0

REF NO.	IC5300																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	11.4	28.0	28.0	0	0	17.4	17.4	36.0	36.0	36.0	17.4	0	0	17.4	36.0	36.0	38.0	17.4	17.4
STANDBY	0	11.2	28.0	28.0	0	0	17.4	17.4	36.0	36.0	36.0	17.4	0	0	17.4	36.0	36.0	38.0	17.4	17.4

REF NO.	IC5300																			
MODE	41	42	43	44																
CD PLAY	0	0	28.0	28.0																
STANDBY	0	0	28.0	28.0																

REF NO.	IC5301																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.7	0	0.8	0.7	0	0	0	0	3.0	1.1	3.0	0	2.8	3.1	2.9	0	1.7	0	0.5	1.8
STANDBY	1.6	0	0.8	0.7	0	0	0	0	3.0	1.2	3.2	0	3.0	3.2	2.9	0	1.8	0	0.5	0.8

SA-XH201GW D-AMP P.C.B.

18.1.7. D-Amp P.C.B. (2/2)

REF NO.	IC5301																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	0	0	3.2	3.2	1.6	1.5	3.0	3.0	3.0	3.0	0	1.7	0	0	3.0	2.6	0	2.9	3.0
STANDBY	0	0	0	3.2	3.2	1.6	1.6	3.0	3.0	3.0	3.0	0	1.7	0	0	3.0	3.0	0	2.9	3.0

REF NO.	IC5301																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	1.6	1.6	1.6	3.2	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6	0	3.0	0	0	0	0	0	0
STANDBY	1.6	1.6	1.6	3.2	1.6	1.6	1.6	1.8	1.6	1.6	1.6	1.6	0	3.0	0	0	0	0	0	0

REF NO.	IC5301																			
MODE	61	62	63	64																
CD PLAY	0	0	1.6	0																
STANDBY	0	0	1.6	0																

REF NO.	IC5401																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	1.5	1.5	1.4	0	0	1.2	1.2	11.3												
STANDBY	1.5	1.5	1.5	0	0	1.2	1.2	11.5												

REF NO.	Q5400				Q5403				Q5408				Q5409				Q5412			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
POWER ON	3.3	11.4	1.5		0	3.3	0		17.3	3.0	17.4		17.3	3.0	17.4		0	3.3	0	
STANDBY	3.3	12.0	1.5		0	3.2	0		17.3	3.0	17.4		17.3	3.0	17.4		0	3.3	0	

REF NO.	Q5413				QR5400															
MODE	E	C	B		E	C	B													
POWER ON	35.0	0	28.6		3.4	3.4	11.5													
STANDBY	35.0	0	28.6		3.4	3.4	11.5													

SA-XH201GW D-AMP P.C.B.

18.1.8. SMPS P.C.B.

REF NO.	IC5701																			
MODE	1	2	3	4	5	6	7													
POWER ON	164.2	0	0	19.0	0	1.4	0													
STANDBY	164.2	0	0	19.0	0	1.4	0													

REF NO.	IC5799																			
MODE	1	2	3	4	5	6	7	8												
POWER ON	5.9	1.0	2.3	11.0	164.2	0	0	0												
STANDBY	5.9	1.0	2.3	11.0	164.2	0	0	0												

REF NO.	IC5801																			
MODE	A	K	R																	
POWER ON	0	12.0	2.0																	
STANDBY	0	12.0	2.0																	

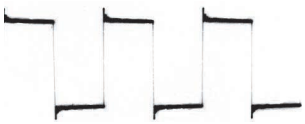
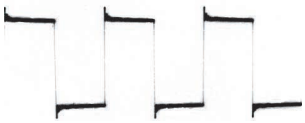
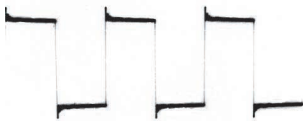
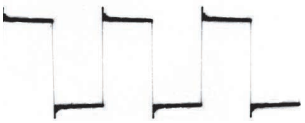
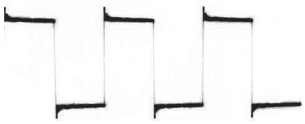
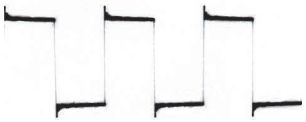
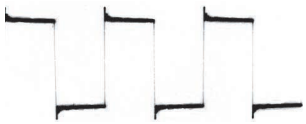
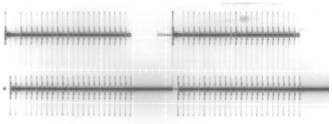
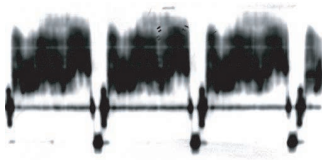
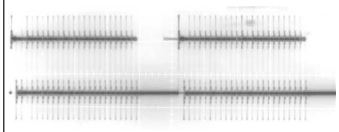
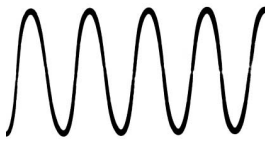
REF NO.	IC5899																			
MODE	1	2	3	4																
POWER ON	0	0	1.0	2.5																
STANDBY	0	0	1.0	2.5																

REF NO.	Q5720				Q5898				Q5901				Q5902				QR5862			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
POWER ON	20.0	0	20.0		0	2.0	2.8		18.0	19.0	0		0	3.8	2.0		0	3.3	0	
STANDBY	20.6	21.0	20.0		0	2.0	2.8		18.0	19.0	0		0	3.9	2.0		0	3.3	0	

REF NO.	QR5901																			
MODE	E	C	B																	
POWER ON	0	0	3.3																	
STANDBY	0	0	3.3																	

SA-XH201GW SMPS P.C.B.

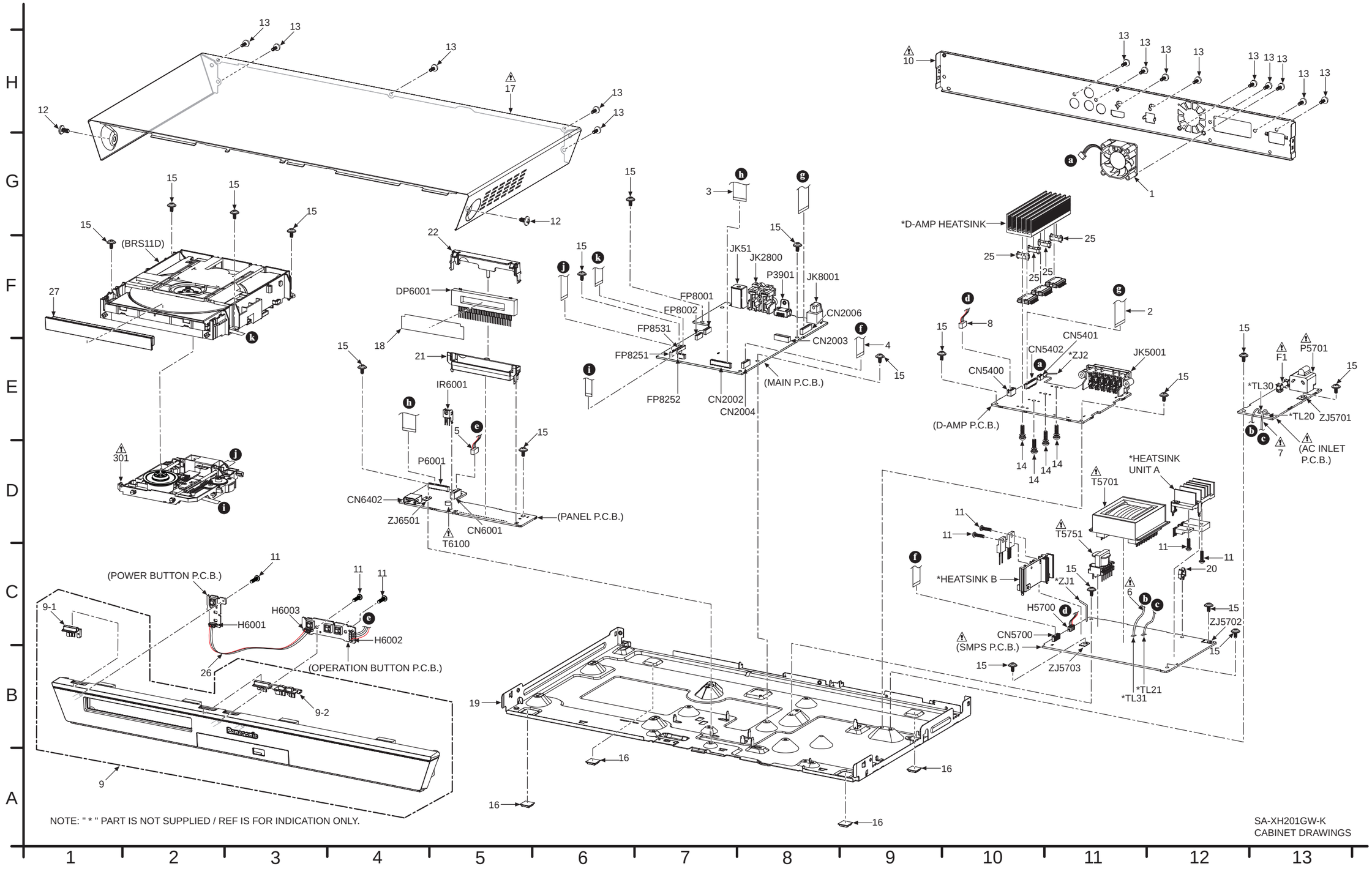
18.1.9. Waveform Table

WF No. IC2300-11 (PLAY)  3Vp-p(50nsec/div)	WF No. IC2300-13 (PLAY)  2Vp-p(50nsec/div)	WF No. IC5100-5,6,14,15 (PLAY)  3.2Vp-p(1usec/div)	WF No. IC5100-27,28,32,35, 39,40 (PLAY)  32Vp-p(1usec/div)
WF No. IC5200-5,6,14,15 (PLAY)  3.2Vp-p(1usec/div)	WF No. IC5200-27,28,32,35, 39,40 (PLAY)  32Vp-p(1usec/div)	WF No. IC5300-5,6,14,15 (PLAY)  3.2Vp-p(1usec/div)	WF No. IC5300-27,28,32,35, 39,40 (PLAY)  32Vp-p(1usec/div)
WF No. IC5301-19 (PLAY)  2Vp-p(20nsec/div)	WF No. IC5301-20 (PLAY)  1Vp-p(20nsec/div)	WF No. IC5301-29,30,31 (PLAY)  1.8Vp-p(5usec/div)	WF No. IC5301-40,41,42,43,44,45, 46,47,49,50,51,52 (PLAY)  3.2Vp-p(1usec/div)
WF No. IC8001-36,40,41,42 (PLAY)  4.8Vp-p(2usec/div)	WF No. IC8001-63 (PLAY)  1.25Vp-p(50usec/div)	WF No. IC8001-102 (PLAY)  5Vp-p(1usec/div)	WF No. IC8001-111,112 (PLAY)  2Vp-p(20nsec/div)

19 Exploded View and Replacement Parts List

19.1. Exploded View and Mechanical Replacement Parts List

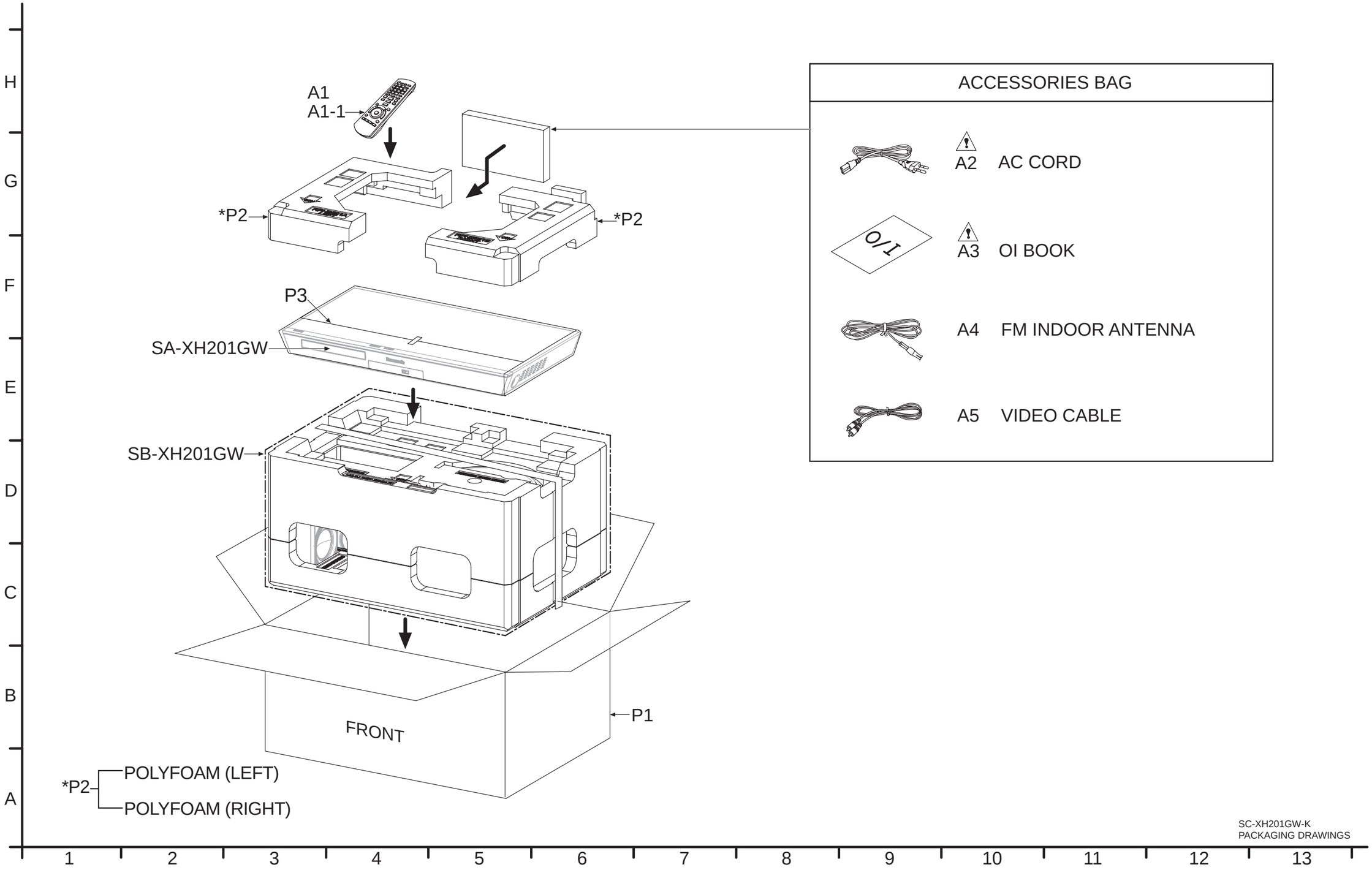
19.1.1. Cabinet Parts Location



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

SA-XH201GW-K
CABINET DRAWINGS

19.1.2. Packaging



19.1.3. 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	L6FAYYYG0005	FAN UNIT	1	
	2	REE1586	18P FFC (MAIN-D-AMP)	1	
	3	REE1640	21P FFC (PANEL - MAIN)	1	
	4	REE1642	10P FFC (SMPS - MAIN)	1	
	5	REX1500	4P CABLE WIRE (OPERATION BTN - PANEL)	1	
⚠	6	REXX1186-J	1P RED WIRE (AC INLET-SMPS)	1	
⚠	7	REXX1187-J	1P BLACK WIRE (AC INLET-SMPS)	1	
	8	REXX1202-1	4P CABLE WIRE (SMPS -D-AMP)	1	
	9	RYP1861E-K	FRONT PANEL ASS'Y	1	
	9-1	RGUX1033-K1	POWER BUTTON	1	
	9-2	RGUX1034-K1	OPEN/CLOSE BUTTON	1	
⚠	10	RGR0428K-G	REAR PANEL	1	
	11	RHD26046	SCREW	7	
	12	RHD30007-K2J	SCREW	2	
	13	RHD30119-S	SCREW	14	
	14	RHDX261002	SCREW	4	
	15	RHDX301003	SCREW	18	
	16	RKA0253-H	LEG CUSHION	4	
⚠	17	RKM0708-K	TOP CABINET	1	
	18	RKW1003-R	FL FILTER	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	19	RMK0810	BOTTOM CHASSIS	1	
	20	RMN0971	WIRE CLAMPER	1	
	21	RMN1015	FL HOLDER BOTTOM	1	
	22	RMN1020	FL HOLDER TOP	1	
	25	RMZ1358	HEATSINK SPACER	4	
	26	RWJA003200XX	3P CABLE WIRE (OPERATION BTN-POWER BTN)	1	
	27	RGK2450-K	TRAY ORNAMENT	1	
			TRAVERSE DECK		
⚠	301	RAY1104A-V	TRAVERSE ASS'Y	1	
			PACKING MATERIALS		
	P1	RPG0F81	PACKING CASE	1	
	P2	RPN2581	POLYFOAM	1	
	P3	RPH0311	MIRAMAT SHEET	1	
			ACCESSORIES		
	A1	N2QAYB000853	REMOTE CONTROL	1	
	A1-1	RKK-PM500EBK	R/C BATTERY COVER	1	
⚠	A2	K2CQ2YY00119	AC CORD	1	
⚠	A3	RQT9809-G	O/I BOOK (En)	1	
	A4	RSAX0002	FM INDOOR ANTENNA	1	
	A5	K2KA2BA00001	VIDEO CABLE	1	

19.2. Electrical Replacement Parts List

Important Safety Notice

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

RTL (Retention Time Limited)

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

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- 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 CIR-CUITS BOARDS		
	PCB1	REP4923AT	MAIN P.C.B.	1	(RTL)
	PCB2	REP4759EA	PANEL P.C.B.	1	(RTL)
	PCB3	REP4759EB	MIC P.C.B.	1	(RTL)
	PCB4	REP4759EC	OPEARTION BUT-TON P.C.B.	1	(RTL)
	PCB5	REP4759EC	POWER BUTTON P.C.B.	1	(RTL)
	PCB6	REP4932A	D-AMP P.C.B.	1	(RTL)
⚠	PCB7	REP4761B	SMPS P.C.B.	1	(RTL)
⚠	PCB8	REP4761B	AC INLET P.C.B	1	(RTL)
			INTEGRATED CIR-CUITS		
	IC52	VUEALLPT058	IC	1	(E.S.D), [SPG]
	IC2091	C0DBFYY00166	IC	1	(E.S.D)
	IC2300	RFKWMXH300GS	IC	1	(E.S.D), JIGS & ADJ
	IC2301	C3EBFY000030	IC	1	(E.S.D)
	IC2602	C0DBZYY00417	IC	1	(E.S.D)
	IC2901	C0DBAYY00729	IC	1	(E.S.D)
	IC3952	C0CBCDC00063	IC	1	(E.S.D)
	IC3953	C0JBAB000986	IC	1	(E.S.D)
	IC3954	C0JBAR000433	IC	1	(E.S.D)
	IC5100	C1AB00003986	IC	1	(E.S.D)
	IC5200	C1AB00003986	IC	1	(E.S.D)
	IC5300	C1AB00003986	IC	1	(E.S.D)
	IC5301	C1AB00003610	IC	1	(E.S.D)
	IC5401	C0ABBA000168	IC	1	(E.S.D)
	IC5701	C5HACYY00008	IC	1	(E.S.D)
	IC5799	MIP2F20MSSCF	IC	1	(E.S.D)
	IC5801	C0DAZYY00039	IC	1	(E.S.D)
	IC5899	C0DBZMC00006	IC	1	(E.S.D)
	IC6001	C0HBB0000057	IC	1	(E.S.D)
	IC8001	C1AB00003476	IC	1	(E.S.D)
	IC8051	C3ABPY000070	IC	1	(E.S.D)
	IC8111	C0DBEYY00215	IC	1	(E.S.D)
	IC8112	C0DBEYY00175	IC	1	(E.S.D)
	IC8251	C0GBY0000117	IC	1	(E.S.D)
	IC8606	C0EBE0000504	IC	1	(E.S.D)
	IC8651	RFKWFXH300GS	IC	1	(E.S.D)
			TRANSISTORS		
	Q2709	B1ABCF000231	TRANSISTOR	1	(E.S.D)
	Q2719	B1GBCFJJ0041	TRANSISTOR	1	(E.S.D)
	Q2902	B1DGDC000002	TRANSISTOR	1	(E.S.D)
	Q2903	B1DGDC000002	TRANSISTOR	1	(E.S.D)
	Q2904	B1BACD000018	TRANSISTOR	1	(E.S.D)
	Q3901	B1ABDF000026	TRANSISTOR	1	(E.S.D)
	Q3902	FK3503010L	TRANSISTOR	1	(E.S.D)
	Q3903	FK3503010L	TRANSISTOR	1	(E.S.D)
	Q3904	FK3503010L	TRANSISTOR	1	(E.S.D)
	Q5400	B1ABMF000020	TRANSISTOR	1	(E.S.D)
	Q5403	B1GBCFNN0038	TRANSISTOR	1	(E.S.D)
	Q5408	B1ABCF000231	TRANSISTOR	1	(E.S.D)
	Q5409	B1ABCF000231	TRANSISTOR	1	(E.S.D)
	Q5412	B1ABCF000231	TRANSISTOR	1	(E.S.D)
	Q5413	B1ADCE000012	TRANSISTOR	1	(E.S.D)
	Q5720	B1ABMG000008	TRANSISTOR	1	(E.S.D)
	Q5898	B1ABCF000176	TRANSISTOR	1	(E.S.D)
	Q5901	B1ADCE000022	TRANSISTOR	1	(E.S.D)
	Q5902	B1ABCF000176	TRANSISTOR	1	(E.S.D)

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	Q6100	B1BAAL000018	TRANSISTOR	1	(E.S.D)
	Q8552	DSA200200L	TRANSISTOR	1	(E.S.D)
	Q8562	DSA200200L	TRANSISTOR	1	(E.S.D)
	Q8565	B1ABDF000026	TRANSISTOR	1	(E.S.D)
	QR5400	B1GBCFNN0038	TRANSISTOR	1	(E.S.D)
	QR5862	B1GBCFGG0030	TRANSISTOR	1	(E.S.D)
	QR5901	B1GBCFLL0037	TRANSISTOR	1	(E.S.D)
			DIODES		
	D2301	DZ2J030M0L	DIODE	1	(E.S.D)
	D2743	DA2J10100L	DIODE	1	(E.S.D)
	D2744	DA2J10100L	DIODE	1	(E.S.D)
	D2746	DZ2J068M0L	DIODE	1	(E.S.D)
	D2747	DZ2J110M0L	DIODE	1	(E.S.D)
	D2749	DZ2J15000L	DIODE	1	(E.S.D)
	D2750	DZ2J051L0L	DIODE	1	(E.S.D)
	D2910	DZ2J100M0L	DIODE	1	(E.S.D)
	D2911	B0JCPG000028	DIODE	1	(E.S.D)
	D2912	B0JCPG000028	DIODE	1	(E.S.D)
	D5401	DA2J10100L	DIODE	1	(E.S.D)
	D5403	DB2S31100L	DIODE	1	(E.S.D)
	D5405	DB2S31100L	DIODE	1	(E.S.D)
	D5407	DA2J10100L	DIODE	1	(E.S.D)
	D5701	B0FBAR000043	DIODE	1	(E.S.D)
	D5702	B0ZAZ0000089	DIODE	1	(E.S.D)
	D5703	DZ2J062M0L	DIODE	1	(E.S.D)
	D5704	DZ2J200M0L	DIODE	1	(E.S.D)
	D5705	DZ2J200M0L	DIODE	1	(E.S.D)
	D5706	DA2J10100L	DIODE	1	(E.S.D)
	D5707	DZ2J062M0L	DIODE	1	(E.S.D)
	D5708	DA2J10100L	DIODE	1	(E.S.D)
	D5709	DA2J10100L	DIODE	1	(E.S.D)
	D5710	B0ECFR000003	DIODE	1	(E.S.D)
	D5711	B0ECET000006	DIODE	1	(E.S.D)
	D5712	B0EAMM000057	DIODE	1	(E.S.D)
	D5713	DZ2J360M0L	DIODE	1	(E.S.D)
	D5714	DZ2J30000L	DIODE	1	(E.S.D)
	D5716	B0EAMM000057	DIODE	1	(E.S.D)
	D5791	DZ2J091M0L	DIODE	1	(E.S.D)
	D5802	B0HBSM000056	DIODE	1	(E.S.D)
	D5803	B0HFRJ000012	DIODE	1	(E.S.D)
	D5896	B0EAMM000057	DIODE	1	(E.S.D)
	D5901	B0EAKM000117	DIODE	1	(E.S.D)
	D5903	DA2J10100L	DIODE	1	(E.S.D)
	D6100	B0JCMD000010	DIODE	1	(E.S.D)
	D6101	DZ2J24000L	DIODE	1	(E.S.D)
	D6102	B0JCMD000010	DIODE	1	(E.S.D)
	D6103	DZ2J02400L	DIODE	1	(E.S.D)
	D6104	B0EAMM000057	DIODE	1	(E.S.D)
	D8101	B0ECKP000062	DIODE	1	(E.S.D)
	D8102	B0ECKP000062	DIODE	1	(E.S.D)
	D8251	DA3X103E0L	DIODE	1	(E.S.D)
	D8301	DA3X101F0L	DIODE	1	(E.S.D)
⚠	DZ5701	ERZV10V511CS	ZNR	1	(E.S.D)
			VARISTOR		
	VA51	EZAEG2A50AX	VARISTOR	1	
			SWITCHES		
	S6004	EVQ21405R	SW VOLUME DOWN	1	
	S6006	EVQ21405R	SW VOLUME UP	1	
	S6801	EVQ21405R	SW POWER	1	
	S6804	EVQ21405R	SW OPEN/CLOSE	1	
			CONNECTORS		
	CN2002	K1MY21AA0267	21P CONNECTOR	1	
	CN2003	K1MN10AA0076	10P CONNECTOR	1	
	CN2004	K1MY10AA0267	10P CONNECTOR	1	
	CN2006	K1MY18AA0267	18P CONNECTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	CN5400	K1KA04AA0193	4P CONNECTOR	1	
	CN5401	K1KA03A00546	3P CONNECTOR	1	
	CN5402	K1MN18AA0046	18P CONNECTOR	1	
	CN5700	K1MY10AA0267	10P CONNECTOR	1	
	CN6001	K1KA04AA0193	4P CONNECTOR	1	
	CN6402	K1FY104B0078	USB CONNECTOR	1	
	P6001	K1MY21AA0267	21P CONNECTOR	1	
	FP8001	K1KA05AA0051	5P CONNECTOR	1	
	FP8002	K1KA05AA0051	5P CONNECTOR	1	
	FP8251	K1MY06AA0124	6P CONNECTOR	1	
	FP8252	K1MN05A00003	5P CONNECTOR	1	
	FP8531	K1MY24AA0021	24P CONNECTOR	1	
			COILS AND INDUC-TORS		
	L51	G1CR18JA0020	INDUCTOR	1	
	L2001	G1C4R7MA0172	INDUCTOR	1	
	L2902	G0A200D00002	CHOKE COIL	1	
	L2903	G0A330ZA0045	CHOKE COIL	1	
	L2904	G0C330M00002	INDUCTOR	1	
	L2908	J0JHC0000107	INDUCTOR	1	
	L5100	G0C100M00007	INDUCTOR	1	
	L5101	G0C100M00007	INDUCTOR	1	
	L5200	G0C100M00007	INDUCTOR	1	
	L5201	G0C100M00007	INDUCTOR	1	
	L5300	J0JBC0000015	INDUCTOR	1	
	L5301	G0C100M00007	INDUCTOR	1	
	L5302	G0C100M00007	INDUCTOR	1	
	L5401	J0JKB0000003	INDUCTOR	1	
	L5402	J0JKB0000003	INDUCTOR	1	
	L5403	G1C4R7MA0172	INDUCTOR	1	
	L5404	G1C4R7MA0172	INDUCTOR	1	
⚠	L5701	G0C123M00001	INDUCTOR	1	
⚠	L5702	G0C123M00001	INDUCTOR	1	
	L6007	J0JBC0000014	INDUCTOR	1	
	L6100	J0JBC0000041	INDUCTOR	1	
	L6101	G1C100K00019	INDUCTOR	1	
	L8001	G1C100M00049	INDUCTOR	1	
	L8251	J0JHC0000117	INDUCTOR	1	
	L8252	J0JHC0000117	INDUCTOR	1	
	L8302	G1C100M00049	INDUCTOR	1	
	L8401	G1C100M00049	INDUCTOR	1	
	L8550	G1C100M00049	INDUCTOR	1	
	L8552	G1C100M00049	INDUCTOR	1	
	LB51	J0JBC0000032	INDUCTOR	1	
	LB52	J0JYC0000118	INDUCTOR	1	
	LB2301	J0JBC0000015	INDUCTOR	1	
	LB2751	J0JBC0000014	INDUCTOR	1	
	LB2752	J0JBC0000014	INDUCTOR	1	
	LB2753	J0JBC0000014	INDUCTOR	1	
	LB2754	J0JBC0000014	INDUCTOR	1	
	LB2755	J0JBC0000014	INDUCTOR	1	
	LB2760	J0JBC0000014	INDUCTOR	1	
	LB2762	J0JBC0000014	INDUCTOR	1	
	LB3901	J0JHC0000045	INDUCTOR	1	
	LB3902	J0JHC0000045	INDUCTOR	1	
	LB3903	J0JCC0000042	INDUCTOR	1	
	LB3904	J0JCC0000042	INDUCTOR	1	
	LB3905	J0JCC0000042	INDUCTOR	1	
	LB3906	J0JCC0000042	INDUCTOR	1	
	LB3907	J0JCC0000308	INDUCTOR	1	
	LB3909	J0JHC0000045	INDUCTOR	1	
	LB3910	J0JHC0000045	INDUCTOR	1	
	LB8001	J0JHC0000045	INDUCTOR	1	
	LB8011	J0JHC0000045	INDUCTOR	1	
	LB8051	J0JHC0000045	INDUCTOR	1	
	LB8121	J0JHC0000045	INDUCTOR	1	
	LB8301	J0JHC0000045	INDUCTOR	1	
	LB8401	J0JCC0000308	INDUCTOR	1	
	LB8530	J0JHC0000045	INDUCTOR	1	
	LB8532	J0JDC0000102	INDUCTOR	1	
	LB8551	J0JDC0000102	INDUCTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	LB8561	J0JDC0000102	INDUCTOR	1	
	LB8651	J0JHC0000117	INDUCTOR	1	
	LB9001	J0JHC0000045	INDUCTOR	1	
	R2008	J0JYC0000339	INDUCTOR	1	
	R2874	J0JCC0000308	INDUCTOR	1	
	R8653	J0JCC0000396	INDUCTOR	1	
			TRANSFORMERS		
⚠	T5701	ETS61BA126AD	MAIN TRANSFORMER	1	
⚠	T5751	ETS19AB2E6AG	SUB TRANSFORMER	1	
⚠	T6100	G4D1A0000142	SWITCHING TRANS-FORMER	1	
			PHOTO COUPLERS		
⚠	PC5702	B3PBA0000579	PHOTO COUPLER	1	
⚠	PC5720	B3PBA0000579	PHOTO COUPLER	1	
⚠	PC5799	B3PBA0000579	PHOTO COUPLER	1	
⚠	PC5901	B3PBA0000579	PHOTO COUPLER	1	
			TERMINALS		
	ZJ5701	K4CZ01000027	TERMINAL	1	
	ZJ5702	K4CZ01000027	TERMINAL	1	
	ZJ5703	K4CZ01000027	TERMINAL	1	
	ZJ6501	K4CZ01000027	TERMINAL	1	
			OSCILLATORS		
	X2300	H2D500400006	OSCILLATOR	1	
	X5351	H0J135000003	OSCILLATOR	1	
	X8621	H0J270500131	OSCILLATOR	1	
			LCD DISPLAY		
	DP6001	A2BB00000183	LCD DISPLAY	1	
			FUSE		
⚠	F1	K5D312BNA005	FUSE	1	
			CABLE HOLDERS		
	H5700	K1YZ04000002	4P CABLE HOLDER	1	
	H6001	K1YZ03000010	3P CABLE HOLDER	1	
	H6002	K1YZ04000002	4P CABLE HOLDER	1	
	H6003	K1YZ03000010	3P CABLE HOLDER	1	
			FUSE HOLDERS		
	ZA5701	K3GE1ZZ00001	FUSE HOLDER	1	
	ZA5702	K3GE1ZZ00001	FUSE HOLDER	1	
			REMOTE SENSOR		
	IR6001	B3RAC0000021	REMOTE SENSOR	1	
			THERMISTOR		
	TH5702	D4CAA5R10001	THERMISTOR	1	
			JACKS		
	JK51	K4ZZ01000276	JK FM ANTENNA	1	
	JK2800	K2HA3YYB0029	JK VIDEO OUT & AUX IN	1	
	JK5001	K4AL06B00006	JK SPEAKERS	1	
	JK8001	B3RAB0000056	JK DIGITAL AUDIO IN (OPTICAL)	1	
	P3901	K1FY119E0045	JK HDMI AV OUT (ARC)	1	
⚠	P5701	K2AA2B000011	AC INLET	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			CHIP JUMPERS		
	K572	D0GDR00JA017	0 1/8W	1	
	K2090	D0GBR00J0004	0 1/10W	1	
	K2700	D0GBR00J0004	0 1/10W	1	
	K2702	D0GBR00J0004	0 1/10W	1	
	K2703	D0GBR00J0004	0 1/10W	1	
	K2705	D0GBR00J0004	0 1/10W	1	
	K2706	D0GBR00J0004	0 1/10W	1	
	K2710	D0GBR00J0004	0 1/10W	1	
	K2712	D0GBR00J0004	0 1/10W	1	
	K2713	D0GBR00J0004	0 1/10W	1	
	K2905	D0GFR00J0005	0 1/4W	1	
	K3901	D0GBR00J0004	0 1/10W	1	
	K3902	D0GBR00J0004	0 1/10W	1	
	K3903	D0GBR00J0004	0 1/10W	1	
	K3904	D0GBR00J0004	0 1/10W	1	
	K8101	D0GBR00J0004	0 1/10W	1	
	K8102	D0GBR00J0004	0 1/10W	1	
	K8103	D0GBR00J0004	0 1/10W	1	
	K8104	D0GBR00J0004	0 1/10W	1	
	K8105	D0GBR00J0004	0 1/10W	1	
	K8251	D0GBR00J0004	0 1/10W	1	
	K8252	D0GBR00J0004	0 1/10W	1	
	K8301	D0GBR00J0004	0 1/10W	1	
	L2700	D0GBR00J0004	0 1/10W	1	
	L6004	D0GBR00J0004	0 1/10W	1	
	L6006	D0GBR00J0004	0 1/10W	1	
	L6804	D0GBR00J0004	0 1/10W	1	
	L6806	D0GBR00J0004	0 1/10W	1	
	LB2000	D0GBR00J0004	0 1/10W	1	
	LB2002	D0GBR00J0004	0 1/10W	1	
	LB2003	D0GBR00J0004	0 1/10W	1	
	LB2004	D0GBR00J0004	0 1/10W	1	
	LB2005	D0GBR00J0004	0 1/10W	1	
	LB2303	D0GBR00J0004	0 1/10W	1	
	LB2605	D0GDR00J0004	0 1/8W	1	
	LB6401	D0GDR00J0004	0 1/8W	1	
	LB6402	D0GDR00J0004	0 1/8W	1	
	LB8012	D0GBR00J0004	0 1/10W	1	
	LB8317	D0GBR00J0004	0 1/10W	1	
	W16	D0GDR00JA017	0 1/8W	1	
	W17	D0GDR00JA017	0 1/8W	1	
	W101	D0GDR00JA017	0 1/8W	1	
	W6021	D0GDR00JA017	0 1/8W	1	
	W6022	D0GFR00JA017	0 1/4W	1	
			RESISTORS		
	LB2001	D0GB101JA065	100 1/10W	1	
	LB8531	D0GA220JA023	22 1/16W	1	
	LB8691	D0GB101JA065	100 1/10W	1	
	LB8692	D0GB101JA065	100 1/10W	1	
	R51	D0GB222JA065	2.2K 1/10W	1	
	R52	D0GB561JA065	560 1/10W	1	
	R53	D0GB472JA065	4.7K 1/10W	1	
	R54	D0GB472JA065	4.7K 1/10W	1	
	R55	D0GB221JA065	220 1/10W	1	
	R56	D0GB221JA065	220 1/10W	1	
	R57	D0GB102JA065	1K 1/10W	1	
	R59	D0GB222JA065	2.2K 1/10W	1	
	R60	D0GB222JA065	2.2K 1/10W	1	
	R63	D0GBR00J0004	0 1/10W	1	
	R64	D0GB183JA065	18K 1/10W	1	
	R65	D0GB103JA065	10K 1/10W	1	
	R66	D0GB183JA065	18K 1/10W	1	
	R67	D0GB103JA065	10K 1/10W	1	
	R69	D0GBR00J0004	0 1/10W	1	
	R2037	D0GBR00J0004	0 1/10W	1	
	R2038	D0GBR00J0004	0 1/10W	1	
	R2039	D0GBR00J0004	0 1/10W	1	
	R2061	D0GBR00J0004	0 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R2062	D0GBR00J0004	0 1/10W	1	
	R2063	D0GBR00J0004	0 1/10W	1	
	R2091	D0GB103JA065	10K 1/10W	1	
	R2094	D0GBR00J0004	0 1/10W	1	
	R2219	D0GBR00J0004	0 1/10W	1	
	R2220	D0GBR00J0004	0 1/10W	1	
	R2302	D0GB101JA065	100 1/10W	1	
	R2303	D0GB101JA065	100 1/10W	1	
	R2305	D0GB221JA065	220 1/10W	1	
	R2307	D0GB103JA065	10K 1/10W	1	
	R2308	D0GB103JA065	10K 1/10W	1	
	R2309	D0GB103JA065	10K 1/10W	1	
	R2310	D0GB103JA065	10K 1/10W	1	
	R2311	D0GB103JA065	10K 1/10W	1	
	R2315	D0GB154JA065	150K 1/10W	1	
	R2318	D0GB103JA065	10K 1/10W	1	
	R2320	D0GBR00J0004	0 1/10W	1	
	R2321	D0GBR00J0004	0 1/10W	1	
	R2322	D0GB104JA065	100K 1/10W	1	
	R2324	D0GB221JA065	220 1/10W	1	
	R2325	D0GB103JA065	10K 1/10W	1	
	R2326	D0GB103JA065	10K 1/10W	1	
	R2327	D0GB221JA065	220 1/10W	1	
	R2328	D0GB103JA065	10K 1/10W	1	
	R2330	D0GB103JA065	10K 1/10W	1	
	R2331	D0GB103JA065	10K 1/10W	1	
	R2332	D0GB563JA065	56K 1/10W	1	
	R2333	D0GB563JA065	56K 1/10W	1	
	R2334	D0GB102JA065	1K 1/10W	1	
	R2335	D0GB473JA065	47K 1/10W	1	
	R2336	D0GB221JA065	220 1/10W	1	
	R2337	D0GB221JA065	220 1/10W	1	
	R2338	D0GB103JA065	10K 1/10W	1	
	R2339	D0GB103JA065	10K 1/10W	1	
	R2340	D0GB101JA065	100 1/10W	1	
	R2341	D0GB473JA065	47K 1/10W	1	
	R2342	D0GB473JA065	47K 1/10W	1	
	R2343	D0GB221JA065	220 1/10W	1	
	R2344	D0GB221JA065	220 1/10W	1	
	R2345	D0GB473JA065	47K 1/10W	1	
	R2346	D0GB103JA065	10K 1/10W	1	
	R2347	D0GB103JA065	10K 1/10W	1	
	R2349	D0GB221JA065	220 1/10W	1	
	R2350	D0GB221JA065	220 1/10W	1	
	R2351	D0GBR00J0004	0 1/10W	1	
	R2352	D0GB103JA065	10K 1/10W	1	
	R2353	D0GB221JA065	220 1/10W	1	
	R2354	D0GB103JA065	10K 1/10W	1	
	R2355	D0GB103JA065	10K 1/10W	1	
	R2356	D0GB273JA065	27K 1/10W	1	
	R2357	D0GB221JA065	220 1/10W	1	
	R2358	D0GB473JA065	47K 1/10W	1	
	R2363	D0GB103JA065	10K 1/10W	1	
	R2364	D0GB103JA065	10K 1/10W	1	
	R2365	D0GB101JA065	100 1/10W	1	
	R2366	D0GB101JA065	100 1/10W	1	
	R2367	D0GB221JA065	220 1/10W	1	
	R2370	D0GB472JA065	4.7K 1/10W	1	
	R2371	D0GB472JA065	4.7K 1/10W	1	
	R2383	D0GB103JA065	10K 1/10W	1	
	R2384	D0GB101JA065	100 1/10W	1	
	R2385	D0GB101JA065	100 1/10W	1	
	R2389	D0GB101JA065	100 1/10W	1	
	R2395	D0GB101JA065	100 1/10W	1	
	R2396	D0GB101JA065	100 1/10W	1	
	R2397	D0GB102JA065	1K 1/10W	1	
	R2398	D0GB101JA065	100 1/10W	1	
	R2399	D0GB3R3JA065	3.3 1/10W	1	
	R2400	D0GBR00J0004	0 1/10W	1	
	R2412	D0GBR00J0004	0 1/10W	1	
	R2614	D0GD271JA052	270 1/8W	1	
	R2618	D0GB473JA065	47K 1/10W	1	
	R2737	D0GB393JA065	39K 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R2738	D0GB333JA065	33K 1/10W	1	
	R2741	D0GB103JA065	10K 1/10W	1	
	R2742	D0GBR00J0004	0 1/10W	1	
	R2818	D0GBR00J0004	0 1/10W	1	
	R2819	D0GBR00J0004	0 1/10W	1	
	R2822	D0GBR00J0004	0 1/10W	1	
	R2823	D0GBR00J0004	0 1/10W	1	
	R2870	D0GB103JA065	10K 1/10W	1	
	R2871	D0GB103JA065	10K 1/10W	1	
	R2872	D0GB103JA065	10K 1/10W	1	
	R2873	D0GB103JA065	10K 1/10W	1	
	R2900	D0GB122JA065	1.2K 1/10W	1	
	R2901	D0GB101JA065	100 1/10W	1	
	R2908	D1BB1002A074	10K 1/10W	1	
	R2914	D0GB223JA065	22K 1/10W	1	
	R2915	D0GBR00J0004	0 1/10W	1	
	R2916	D0GB223JA065	22K 1/10W	1	
	R2917	D0GB332JA065	3.3K 1/10W	1	
	R2918	D0GB332JA065	3.3K 1/10W	1	
	R2919	D1BDR1000003	10 1/8W	1	
	R2920	D0GB822JA065	8.2K 1/10W	1	
	R2921	D1BB3902A074	39K 1/10W	1	
	R2922	D1BDR1000003	10 1/8W	1	
	R2923	D0GB222JA065	2.2K 1/10W	1	
	R2924	D1BB5601A074	5.6K 1/10W	1	
	R2925	D1BB5602A074	56K 1/10W	1	
	R2926	D0GB822JA065	8.2K 1/10W	1	
	R2927	D0GB103JA065	10K 1/10W	1	
	R2929	ERJ3RBD362V	3.6K 1/16W	1	
	R2930	D1BB2701A074	2.7K 1/10W	1	
	R2935	D0GBR00J0004	0 1/10W	1	
	R2936	D0GB472JA065	4.7K 1/10W	1	
	R3900	D0GB104JA065	100K 1/10W	1	
	R3901	D1BA4020A022	402 1/16W	1	
	R3902	D0GA103JA023	10K 1/16W	1	
	R3903	D0GA103JA023	10K 1/16W	1	
	R3904	D0GA472JA023	4.7K 1/16W	1	
	R3905	D0GA202JA023	2K 1/16W	1	
	R3906	D0GA472JA023	4.7K 1/16W	1	
	R3907	D0GA202JA023	2K 1/16W	1	
	R3908	D0GA103JA023	10K 1/16W	1	
	R3910	D0GB100JA065	10 1/10W	1	
	R3942	D0GA221JA023	220 1/16W	1	
	R3947	D0GA103JA023	10K 1/16W	1	
	R3949	D0GA103JA023	10K 1/16W	1	
	R3950	D0GA104JA023	100K 1/16W	1	
	R3955	D0GB510JA065	51 1/10W	1	
	R3956	D0GB101JA065	100 1/10W	1	
	R3958	D0GB103JA065	10K 1/10W	1	
	R3959	D0GB273JA065	27K 1/10W	1	
	R5100	D0GB3R3JA065	3.3 1/10W	1	
	R5101	D0GB3R3JA065	3.3 1/10W	1	
	R5102	D1BB2402A074	24K 1/10W	1	
	R5103	D0GB101JA065	100 1/10W	1	
	R5104	D0GB473JA008	47K 1/10W	1	
	R5105	D0GB3R3JA065	3.3 1/10W	1	
	R5107	D0GB3R3JA065	3.3 1/10W	1	
	R5108	D0GB3R3JA065	3.3 1/10W	1	
	R5109	D0GB3R3JA065	3.3 1/10W	1	
	R5110	D0GB104JA065	100K 1/10W	1	
	R5111	D0GB104JA065	100K 1/10W	1	
	R5112	D0GB3R3JA065	3.3 1/10W	1	
	R5113	D0GD103JA052	10K 1/8W	1	
	R5114	D0GD103JA052	10K 1/8W	1	
	R5117	D0GB104JA065	100K 1/10W	1	
	R5118	D0GB104JA065	100K 1/10W	1	
	R5200	D0GB3R3JA065	3.3 1/10W	1	
	R5201	D0GB3R3JA065	3.3 1/10W	1	
	R5202	D1BB2402A074	24K 1/10W	1	
	R5203	D0GB101JA065	100 1/10W	1	
	R5204	D0GB473JA008	47K 1/10W	1	
	R5205	D0GB3R3JA065	3.3 1/10W	1	
	R5208	D0GB3R3JA065	3.3 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description		Qty	Remarks
	R5209	D0GB3R3JA065	3.3	1/10W	1	
	R5210	D0GB3R3JA065	3.3	1/10W	1	
	R5211	D0GB3R3JA065	3.3	1/10W	1	
	R5212	D0GD103JA052	10K	1/8W	1	
	R5213	D0GD103JA052	10K	1/8W	1	
	R5216	D0GB104JA065	100K	1/10W	1	
	R5217	D0GB104JA065	100K	1/10W	1	
	R5218	D0GB104JA065	100K	1/10W	1	
	R5219	D0GB104JA065	100K	1/10W	1	
	R5220	D0GB562JA065	5.6K	1/10W	1	
	R5221	D0GB562JA065	5.6K	1/10W	1	
	R5300	D0GB3R3JA065	3.3	1/10W	1	
	R5301	D0GB3R3JA065	3.3	1/10W	1	
	R5302	D1BB2402A074	24K	1/10W	1	
	R5303	D0GB101JA065	100	1/10W	1	
	R5304	D0GB473JA008	47K	1/10W	1	
	R5305	D0GB3R3JA065	3.3	1/10W	1	
	R5306	D0GB3R3JA065	3.3	1/10W	1	
	R5307	D0GB3R3JA065	3.3	1/10W	1	
	R5308	D0GB3R3JA065	3.3	1/10W	1	
	R5309	D0GB3R3JA065	3.3	1/10W	1	
	R5310	D0GD103JA052	10K	1/8W	1	
	R5311	D0GD103JA052	10K	1/8W	1	
	R5314	D0GB104JA065	100K	1/10W	1	
	R5315	D0GB104JA065	100K	1/10W	1	
	R5316	D0GB104JA065	100K	1/10W	1	
	R5317	D0GB104JA065	100K	1/10W	1	
	R5318	D0GB562JA065	5.6K	1/10W	1	
	R5319	D0GB562JA065	5.6K	1/10W	1	
	R5350	D0GB201JA065	200	1/10W	1	
	R5351	D0GB201JA065	200	1/10W	1	
	R5352	D0GB3R3JA065	3.3	1/10W	1	
	R5353	D0GB105JA065	1M	1/10W	1	
	R5354	D0GB103JA065	10K	1/10W	1	
	R5355	D0GB2R2JA065	2.2	1/10W	1	
	R5356	D0GB1R0JA065	1	1/10W	1	
	R5357	D0GB1R0JA065	1	1/10W	1	
	R5358	D0GB220JA065	22	1/10W	1	
	R5375	D0GB470JA065	47	1/10W	1	
	R5376	D0GB470JA065	47	1/10W	1	
	R5377	D0GB470JA065	47	1/10W	1	
	R5392	D0GB470JA065	47	1/10W	1	
	R5422	D1BB1002A074	10K	1/10W	1	
	R5424	ERJ3GEYF471V	470	1/10W	1	
	R5427	D0GB473JA065	47K	1/10W	1	
	R5428	D0GB103JA065	10K	1/10W	1	
	R5429	D0GB103JA065	10K	1/10W	1	
	R5430	D0GB273JA065	27K	1/10W	1	
	R5431	D0GB333JA065	33K	1/10W	1	
	R5435	D0GB564JA065	560K	1/10W	1	
	R5436	D0GB223JA065	22K	1/10W	1	
	R5437	D0GB472JA065	4.7K	1/10W	1	
	R5438	D0GB104JA065	100K	1/10W	1	
	R5439	D0GB104JA065	100K	1/10W	1	
	R5445	D0GB103JA065	10K	1/10W	1	
	R5475	D0GBR00J0004	0	1/10W	1	
⚠	R5700	ERJ8GEYJ155V	1.5M	1/4W	1	
⚠	R5701	ERJ8GEYJ155V	1.5M	1/4W	1	
	R5702	ERJ1TYJ104U	100K	1W	1	
	R5703	ERJ1TYJ104U	100K	1W	1	
	R5704	D0GF124JA017	120K	1/4W	1	
	R5706	D0GF274JA017	270K	1/4W	1	
	R5707	D0GF394JA017	390K	1/4W	1	
	R5720	D0GD220JA017	22	1/8W	1	
	R5721	D0GD103JA017	10K	1/8W	1	
	R5722	D0GD222JA017	2.2K	1/8W	1	
	R5725	D0GB473JA008	47K	1/10W	1	
	R5726	ERJ1TRSJR15U	0.15	1W	1	
	R5729	D0GB473JA008	47K	1/10W	1	
	R5730	D0GB102JA008	1K	1/10W	1	
	R5732	D0GD221JA017	220	1/8W	1	
	R5733	D0GB473JA008	47K	1/10W	1	
	R5795	D0GD474JA017	470K	1/8W	1	

Safety	Ref. No.	Part No.	Part Name & Description		Qty	Remarks
	R5797	D0GB153JA008	15K	1/10W	1	
	R5798	D0GB220JA008	22	1/10W	1	
	R5801	D0GB101JA008	100	1/10W	1	
	R5802	D1BB1002A074	10K	1/10W	1	
	R5803	D0GD221JA017	220	1/8W	1	
	R5804	D1BB8202A074	82K	1/10W	1	
	R5805	D1BB6801A074	6.8K	1/10W	1	
	R5806	D0GB153JA008	15K	1/10W	1	
	R5807	D0GD681JA017	680	1/8W	1	
	R5808	D0GB222JA008	2.2K	1/10W	1	
	R5809	D0GD681JA017	680	1/8W	1	
	R5814	D0GB104JA008	100K	1/10W	1	
	R5821	D0GB104JA008	100K	1/10W	1	
	R5832	ERJ1TYJ822U	8.2K	1W	1	
	R5862	D0GD332JA017	3.3K	1/8W	1	
	R5864	D0GB221JA008	220	1/10W	1	
	R5866	D0GDR00JA017	0	1/8W	1	
	R5890	D0GB222JA008	2.2K	1/10W	1	
	R5891	D1BB3302A074	33K	1/10W	1	
	R5892	D0HB102ZA002	1K	1/16W	1	
	R5893	D1BB1002A074	10K	1/10W	1	
	R5894	D0GB151JA008	150	1/10W	1	
	R5895	D0GB153JA008	15K	1/10W	1	
	R5897	D0GB101JA008	100	1/10W	1	
	R5898	D0GD824JA017	820K	1/8W	1	
	R5901	D0GB102JA008	1K	1/10W	1	
	R5902	D0GD121JA017	120	1/8W	1	
	R5903	D0GB681JA008	680	1/10W	1	
	R5905	D0GD103JA017	10K	1/8W	1	
	R5906	D0GB104JA008	100K	1/10W	1	
	R6005	D0GB470JA065	47	1/10W	1	
	R6006	D0GB101JA065	100	1/10W	1	
	R6007	D0GF1R8JA048	1.8	1/4W	1	
	R6008	D0GF1R8JA048	1.8	1/4W	1	
	R6010	D0GB680JA065	68	1/10W	1	
	R6011	D0GB680JA065	68	1/10W	1	
	R6012	D0GD102JA052	1K	1/8W	1	
	R6015	D0GB563JA065	56K	1/10W	1	
	R6016	D0GBR00J0004	0	1/10W	1	
	R6017	D0GBR00J0004	0	1/10W	1	
	R6020	D0GB122JA065	1.2K	1/10W	1	
	R6021	D0GB183JA065	18K	1/10W	1	
	R6025	D0GB122JA065	1.2K	1/10W	1	
	R6100	D0GB472JA065	4.7K	1/10W	1	
	R6101	D0GB104JA065	100K	1/10W	1	
	R6102	D0GB470JA065	47	1/10W	1	
	R6103	D0GBR00J0004	0	1/10W	1	
	R6104	D0GBR00J0004	0	1/10W	1	
	R6105	D0GBR00J0004	0	1/10W	1	
	R6401	D0GBR00J0004	0	1/10W	1	
	R6402	D0GBR00J0004	0	1/10W	1	
	R6403	D0GBR00J0004	0	1/10W	1	
	R6404	D0GBR00J0004	0	1/10W	1	
	R8010	D0GB103JA065	10K	1/10W	1	
	R8011	D0GA220JA023	22	1/16W	1	
	R8016	D0GA101JA023	100	1/16W	1	
	R8025	D0GBR00J0004	0	1/10W	1	
	R8050	D1BA1542A022	15.4K	1/16W	1	
	R8051	D0GB103JA065	10K	1/10W	1	
	R8101	ERJ3RED2703V	270K	1/16W	1	
	R8102	ERJ3RED1303V	130K	1/16W	1	
	R8110	D1BB4702A074	47K	1/10W	1	
	R8111	D1BB1502A074	15K	1/10W	1	
	R8221	D1BA2202A022	22K	1/16W	1	
	R8225	D1BA5102A022	51K	1/16W	1	
	R8227	D1BA5102A022	51K	1/16W	1	
	R8229	D1BA5102A022	51K	1/16W	1	
	R8253	D0GB2R2JA065	2.2	1/10W	1	
	R8254	D0GB2R2JA065	2.2	1/10W	1	
	R8255	D0GA202JA023	2K	1/16W	1	
	R8256	D0GA202JA023	2K	1/16W	1	
	R8258	D1BB6191A012	6.19K	1/10W	1	
	R8259	D0GB103JA065	10K	1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R8260	D0GB103JA065	10K 1/10W	1	
	R8261	D0GB103JA065	10K 1/10W	1	
	R8262	D0GB103JA065	10K 1/10W	1	
	R8263	D0GB472JA065	4.7K 1/10W	1	
	R8264	D1BB1001A012	1K 1/10W	1	
	R8265	D1BB1001A012	1K 1/10W	1	
	R8266	D1BB1001A012	1K 1/10W	1	
	R8267	D1BB1001A012	1K 1/10W	1	
	R8268	D0GB333JA065	33K 1/10W	1	
	R8311	D1BA3920A022	392 1/16W	1	
	R8321	D1BB75R0A012	75 1/10W	1	
	R8322	D1BB75R0A012	75 1/10W	1	
	R8323	D1BB75R0A012	75 1/10W	1	
	R8324	D1BB75R0A012	75 1/10W	1	
	R8401	D0GAR00J0008	0 1/16W	1	
	R8402	D0GA101JA023	100 1/16W	1	
	R8404	D0GA101JA023	100 1/16W	1	
	R8411	D1BA6191A022	6.19K 1/16W	1	
	R8531	D0GAR00J0008	0 1/16W	1	
	R8532	D0GAR00J0008	0 1/16W	1	
	R8534	D0GB103JA065	10K 1/10W	1	
	R8535	D0GB473JA065	47K 1/10W	1	
	R8536	D0GB332JA065	3.3K 1/10W	1	
	R8537	D0GAR00J0008	0 1/16W	1	
	R8538	D0GAR00J0008	0 1/16W	1	
	R8542	D0GAR00J0008	0 1/16W	1	
	R8554	D0GB221JA065	220 1/10W	1	
	R8556	D0GB4R7JA065	4.7 1/10W	1	
	R8564	D0GB221JA065	220 1/10W	1	
	R8566	D0GB4R7JA065	4.7 1/10W	1	
	R8569	D0GA102JA023	1K 1/16W	1	
	R8570	D0GB560JA065	56 1/10W	1	
	R8571	D0GB560JA065	56 1/10W	1	
	R8572	D0GB560JA065	56 1/10W	1	
	R8573	D0GB560JA065	56 1/10W	1	
	R8601	D0GB102JA065	1K 1/10W	1	
	R8602	D0GB102JA065	1K 1/10W	1	
	R8621	D0GA154JA023	150K 1/16W	1	
	R8622	D0GA221JA023	220 1/16W	1	
	R8651	D0GB472JA065	4.7K 1/10W	1	
	R8652	D0GA472JA023	4.7K 1/16W	1	
	R8654	D0GB472JA065	4.7K 1/10W	1	
	R9001	D0GAR00J0008	0 1/16W	1	
	R9002	D0GAR00J0008	0 1/16W	1	
			RESISTOR NET-WORKS		
	RX2300	D1H81014A042	RESISTOR NETWORK	1	
	RX2301	D1H8R0040016	RESISTOR NETWORK	1	
	RX2304	D1H81014A042	RESISTOR NETWORK	1	
	RX2306	D1H81014A042	RESISTOR NETWORK	1	
	RX5371	D1H83314A042	RESISTOR NETWORK	1	
	RX5372	D1H84704A042	RESISTOR NETWORK	1	
	RX5373	D1H84704A042	RESISTOR NETWORK	1	
	RX5374	D1H84704A042	RESISTOR NETWORK	1	
	RX5375	D1H84704A042	RESISTOR NETWORK	1	
	RX8011	D1H88204A043	RESISTOR NETWORK	1	
	RX8012	D1H88204A043	RESISTOR NETWORK	1	
	RX8013	D1H88204A043	RESISTOR NETWORK	1	
	RX8014	D1H88204A043	RESISTOR NETWORK	1	
	RX8015	D1H88204A043	RESISTOR NETWORK	1	
	RX8016	D1H88204A043	RESISTOR NETWORK	1	
	RX8017	D1H88204A043	RESISTOR NETWORK	1	
	RX8018	D1H88204A043	RESISTOR NETWORK	1	
	RX8019	D1H88204A043	RESISTOR NETWORK	1	
	RX8401	D1H45602A014	RESISTOR NETWORK	1	
	RX8402	D1H45602A014	RESISTOR NETWORK	1	
			CAPACITORS		
	C51	F1H1H102B047	1000pF 50V	1	
	C61	F1G1C104A077	0.1uF 16V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C62	F1G1C104A077	0.1uF 16V	1	
	C63	F1H1H6R0B050	6.0pF 50V	1	
	C66	F1H1H330B052	33pF 50V	1	
	C67	F1H1H3R0B050	3pF 50V	1	
	C68	F1G1C223A146	0.022uF 16V	1	
	C2001	F1H1C104A179	0.1uF 16V	1	
	C2062	F1J1A106A043	10uF 10V	1	
	C2091	F1H1C104A179	0.1uF 16V	1	
	C2092	F1H0J105A051	1uF 6.3V	1	
	C2094	F1H0J4750005	4.7uF 6.3V	1	
	C2100	F1H1C104A179	0.1uF 16V	1	
	C2106	F1H1H104B055	0.1uF 50V	1	
	C2108	D0GBR00J0004	0 1/10W	1	
	C2109	F1H1H104B055	0.1uF 50V	1	
	C2150	F1J1A106A043	10uF 10V	1	
	C2151	F1J1A106A043	10uF 10V	1	
	C2303	F1H0J105A051	1uF 6.3V	1	
	C2304	F1H1H104B055	0.1uF 50V	1	
	C2305	F1H1H104B055	0.1uF 50V	1	
	C2306	F1H1H104B055	0.1uF 50V	1	
	C2307	F1J1H104A902	0.1uF 50V	1	
	C2308	F1H1H561B052	560pF 50V	1	
	C2309	F1H1H561B052	560pF 50V	1	
	C2321	F1H1C104A179	0.1uF 16V	1	
	C2615	F1H1H104B055	0.1uF 50V	1	
	C2617	F1H1H104B055	0.1uF 50V	1	
	C2618	F2A0J102B059	1000uF 6.3V	1	
	C2619	F1H0J105A051	1uF 6.3V	1	
	C2704	F2A0J221B034	220uF 6.3V	1	
	C2713	F1H1H104B055	0.1uF 50V	1	
	C2714	F1H1H104B055	0.1uF 50V	1	
	C2715	F1H1H104B055	0.1uF 50V	1	
	C2806	F1H1A105A062	1uF 10V	1	
	C2807	F1H1A105A062	1uF 10V	1	
	C2870	F1H1H221B052	220pF 50V	1	
	C2871	F1H1H221B052	220pF 50V	1	
	C2872	F1G1H101A834	100pF 50V	1	
	C2873	F1G1E102A086	1000pF 25V	1	
	C2874	F1H1H221B052	220pF 50V	1	
	C2875	F1H1H221B052	220pF 50V	1	
	C2901	F2A1V221B149	220uF 35V	1	
	C2902	F1H1H560A889	56pF 50V	1	
	C2902	F2A0J122B058	1200uF 6.3V	1	
	C2903	F1H1H102B047	1000pF 50V	1	
	C2903	F2A1C8210008	820uF 16V	1	
	C2904	F1H1H102B047	1000pF 50V	2	
	C2905	F1K1C1050023	1uF 16V	1	
	C2907	F2A1V560B146	56uF 35V	1	
	C2908	F2A1A121A396	120uF 10V	1	
	C2909	F1H1H104B055	0.1uF 50V	1	
	C2911	F1H1H681A889	680pF 50V	1	
	C2917	F1H1H103B047	0.01uF 50V	1	
	C2953	F1H1H104B055	0.1uF 50V	1	
	C2962	F1H1H103B047	0.01uF 50V	1	
	C2963	F1H1H681A889	680pF 50V	1	
	C2964	F1H1H104B055	0.1uF 50V	1	
	C2966	F1J1V1050001	1uF 35V	1	
	C2971	F1H1H104B055	0.1uF 50V	1	
	C2972	F1H1C224A178	0.22uF 16V	1	
	C2973	F1H1H122B047	1200pF 50V	1	
	C2974	F1H1A105A113	1uF 10V	1	
	C2976	F1H1H153B047	0.015uF 50V	1	
	C2977	F1H1C224A178	0.22uF 16V	1	
	C2981	F1H1H102B047	1000pF 50V	1	
	C2982	F1K1C1060001	10uF 16V	1	
	C2983	F1J1V1050001	1uF 35V	1	
	C3901	F2G0J101A031	100uF 6.3V	1	
	C3902	F2G0J101A031	100uF 6.3V	1	
	C3944	F1G1A1040006	0.1uF 10V	1	
	C3945	F1G1C103A146	0.01uF 16V	1	
	C3954	F1G1A1040006	0.1uF 10V	1	
	C3955	F1G1C103A146	0.01uF 16V	1	
	C3956	F1H0J105A051	1uF 6.3V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C3958	F1G1A1040006	0.1uF 10V	1	
	C3967	F1H1H104B055	0.1uF 50V	1	
	C3968	F1H0J105A051	1uF 6.3V	1	
	C3970	F1H0J105A051	1uF 6.3V	1	
	C3971	F1H1H104B055	0.1uF 50V	1	
	C3972	F1H1H104B055	0.1uF 50V	1	
	C5100	F1H1H104B047	0.1uF 50V	1	
	C5101	F1H1H104B047	0.1uF 50V	1	
	C5102	F1J1C106A059	10uF 16V	1	
	C5103	F1H1H101B052	100pF 50V	1	
	C5104	F1H1H104B047	0.1uF 50V	1	
	C5105	F1K1C105A156	1uF 16V	1	
	C5106	F1K1C105A156	1uF 16V	1	
	C5107	F1H1H104B047	0.1uF 50V	1	
	C5111	F1H1H333B047	0.033uF 50V	1	
	C5112	F1H1H333B047	0.033uF 50V	1	
	C5113	F1K1H105A250	1uF 50V	1	
	C5114	F1K1H105A250	1uF 50V	1	
	C5115	F1K1H105A250	1uF 50V	1	
	C5116	F1K1H105A250	1uF 50V	1	
	C5117	F2A1H8210026	820uF 50V	1	
	C5118	F1H1H333B047	0.033uF 50V	1	
	C5119	F1H1H333B047	0.033uF 50V	1	
	C5120	ECQV1H274JL3	0.27uF 50V	1	
	C5121	ECQV1H274JL3	0.27uF 50V	1	
	C5122	F1J1H2240017	0.22uF 50V	1	
	C5123	F1J1H2240017	0.22uF 50V	1	
	C5124	F1J1H2240017	0.22uF 50V	1	
	C5125	F1J1H2240017	0.22uF 50V	1	
	C5130	F1H1H103B047	0.01uF 50V	1	
	C5131	F1H1H103B047	0.01uF 50V	1	
	C5132	F1H1H103B047	0.01uF 50V	1	
	C5133	F1H1H103B047	0.01uF 50V	1	
	C5134	F1H1H102B047	1000pF 50V	1	
	C5135	F1H1H102B047	1000pF 50V	1	
	C5136	F1H1H102B047	1000pF 50V	1	
	C5137	F1H1H102B047	1000pF 50V	1	
	C5140	F2A1H8210026	820uF 50V	1	
	C5200	F1H1H104B047	0.1uF 50V	1	
	C5201	F1H1H104B047	0.1uF 50V	1	
	C5202	F1J1C106A059	10uF 16V	1	
	C5203	F1H1H101B052	100pF 50V	1	
	C5204	F1H1H104B047	0.1uF 50V	1	
	C5205	F1K1C105A156	1uF 16V	1	
	C5206	F1K1C105A156	1uF 16V	1	
	C5207	F1H1H104B047	0.1uF 50V	1	
	C5211	F1H1H333B047	0.033uF 50V	1	
	C5212	F1H1H333B047	0.033uF 50V	1	
	C5213	F1K1H105A250	1uF 50V	1	
	C5214	F1K1H105A250	1uF 50V	1	
	C5215	F1K1H105A250	1uF 50V	1	
	C5216	F1K1H105A250	1uF 50V	1	
	C5218	F1H1H333B047	0.033uF 50V	1	
	C5219	F1H1H333B047	0.033uF 50V	1	
	C5220	ECQV1H274JL3	0.27uF 50V	1	
	C5221	ECQV1H274JL3	0.27uF 50V	1	
	C5222	F1J1H2240017	0.22uF 50V	1	
	C5223	F1J1H2240017	0.22uF 50V	1	
	C5224	F1J1H2240017	0.22uF 50V	1	
	C5225	F1J1H2240017	0.22uF 50V	1	
	C5230	F1H1H103B047	0.01uF 50V	1	
	C5231	F1H1H103B047	0.01uF 50V	1	
	C5232	F1H1H103B047	0.01uF 50V	1	
	C5233	F1H1H103B047	0.01uF 50V	1	
	C5234	F1H1H102B047	1000pF 50V	1	
	C5235	F1H1H102B047	1000pF 50V	1	
	C5236	F1H1H102B047	1000pF 50V	1	
	C5237	F1H1H102B047	1000pF 50V	1	
	C5300	F1H1H104B047	0.1uF 50V	1	
	C5301	F1H1H104B047	0.1uF 50V	1	
	C5302	F1J1C106A059	10uF 16V	1	
	C5303	F1H1H101B052	100pF 50V	1	
	C5304	F1H1H104B047	0.1uF 50V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C5305	F1K1C105A156	1uF 16V	1	
	C5306	F1K1C105A156	1uF 16V	1	
	C5307	F1H1H104B047	0.1uF 50V	1	
	C5311	F1H1H333B047	0.033uF 50V	1	
	C5312	F1H1H333B047	0.033uF 50V	1	
	C5313	F1K1H105A250	1uF 50V	1	
	C5314	F1K1H105A250	1uF 50V	1	
	C5315	F1K1H105A250	1uF 50V	1	
	C5316	F1K1H105A250	1uF 50V	1	
	C5318	F1H1H333B047	0.033uF 50V	1	
	C5319	ECQV1H274JL3	0.27uF 50V	1	
	C5320	ECQV1H474JL3	0.47uF 50V	1	
	C5321	F1J1H2240017	0.22uF 50V	1	
	C5322	F1J1H2240017	0.22uF 50V	1	
	C5323	F1J1H2240017	0.22uF 50V	1	
	C5324	F1J1H2240017	0.22uF 50V	1	
	C5325	F1H1H333B047	0.033uF 50V	1	
	C5329	F1H1H103B047	0.01uF 50V	1	
	C5330	F1H1H103B047	0.01uF 50V	1	
	C5333	F1H1H102B047	1000pF 50V	1	
	C5334	F1H1H102B047	1000pF 50V	1	
	C5335	F1H1H102B047	1000pF 50V	1	
	C5336	F1H1H102B047	1000pF 50V	1	
	C5337	F1H1H103B047	0.01uF 50V	1	
	C5338	F1H1H103B047	0.01uF 50V	1	
	C5350	F1H1H104B055	0.1uF 50V	1	
	C5351	F1H1H103B047	0.01uF 50V	1	
	C5352	F1H1H104B055	0.1uF 50V	1	
	C5353	F1H1H104B055	0.1uF 50V	1	
	C5354	F1H1H103B047	0.01uF 50V	1	
	C5355	F1H1H104B055	0.1uF 50V	1	
	C5356	F1H1H103B047	0.01uF 50V	1	
	C5357	F1J1A106A043	10uF 10V	1	
	C5358	F1H1H102B047	1000pF 50V	1	
	C5359	F1H1H104B055	0.1uF 50V	1	
	C5360	F1H1H103B047	0.01uF 50V	1	
	C5361	F1J1A106A043	10uF 10V	1	
	C5362	F1H1H104B055	0.1uF 50V	1	
	C5363	F1H1H104B055	0.1uF 50V	1	
	C5364	F1H1H100A888	10pF 50V	1	
	C5365	F1H1H100A888	10pF 50V	1	
	C5366	F1H1H470B052	47pF 50V	1	
	C5367	F1H1H470B052	47pF 50V	1	
	C5368	F1H1H104B055	0.1uF 50V	1	
	C5369	F1H1H102B047	1000pF 50V	1	
	C5370	F1J1A106A043	10uF 10V	1	
	C5371	F1H1H104B055	0.1uF 50V	1	
	C5372	F1H1H103B047	0.01uF 50V	1	
	C5373	F1J1A106A043	10uF 10V	1	
	C5400	F1J1A106A043	10uF 10V	1	
	C5418	EEE0JA101WR	100uF 6.3V	1	
	C5419	F1H1E105A153	1uF 25V	1	
	C5420	F1J1C106A059	10uF 16V	1	
	C5422	F1J1C225A223	2.2uF 16V	1	
	C5423	F1J1V1050001	1uF 35V	1	
	C5424	F1H1H562B047	5600pF 50V	1	
	C5425	F1H1E105A153	1uF 25V	1	
	C5427	F1J1A106A043	10uF 10V	1	
	C5437	F1H1H104B055	0.1uF 50V	1	
⚠	C5700	F1BAF1020020	1000pF	1	
⚠	C5701	F0CAF224A105	0.22uF	1	
⚠	C5702	F0CAF104A105	0.1uF	1	
⚠	C5704	F1BAF471A013	470pF	1	
⚠	C5705	F1BAF471A013	470pF	1	
⚠	C5706	F1BAF471A013	470pF	1	
	C5712	F2A2G1510005	150uF 400V	1	
	C5713	F0C2J1030007	0.01uF 630V	1	
	C5720	F1H1H101B052	100pF 50V	1	
	C5721	F1H1H221B052	220pF 50V	1	
	C5722	F1H1H821A831	820pF 50V	1	
	C5723	F1H1H471B052	470pF 50V	1	
	C5724	F1H1H102B047	1000pF 50V	1	
	C5725	F1H1H104B055	0.1uF 50V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C5726	F2A1H100A454	10uF 50V	1	
	C5730	F1H1E105A153	1uF 25V	1	
	C5731	F1H1H104B055	0.1uF 50V	1	
	C5747	F1B3A821A009	820pF 1000V	1	
	C5791	F1J0J1060025	10uF 6.3V	1	
	C5794	F1K1H105A251	1uF 50V	1	
	C5795	F1H1H102B047	1000pF 50V	1	
	C5796	F1H1H104B055	0.1uF 50V	1	
	C5798	F2A1H100A454	10uF 50V	1	
	C5800	F1J2E1030004	0.01uF 250V	1	
	C5805	F2A1H8210026	820uF 50V	1	
	C5806	F1K1H105A240	1uF 50V	1	
	C5811	F1J2E1030004	0.01uF 250V	1	
	C5813	F2A1V331B150	330uF 35V	1	
	C5817	F1H1H682B047	6800pF 50V	1	
	C5818	F1H1H104B055	0.1uF 50V	1	
	C5826	F1J2E1030004	0.01uF 250V	1	
	C5840	F1J2E1030004	0.01uF 250V	1	
	C5897	F1H1H103B047	0.01uF 50V	1	
	C5898	F1H1H104B055	0.1uF 50V	1	
	C5899	F2A1A221B161	220uF 10V	1	
	C5901	F1H1H102B047	1000pF 50V	1	
	C6001	F1J1V1050001	1uF 35V	1	
	C6005	F1J1V1050001	1uF 35V	1	
	C6010	F1J1A4750011	4.7uF 10V	1	
	C6012	F1H1H101A889	100pF 50V	1	
	C6013	F1H1H101A889	100pF 50V	1	
	C6014	F1H1H101A889	100pF 50V	1	
	C6015	F1J1V1050001	1uF 35V	1	
	C6016	F1H1H101A889	100pF 50V	1	
	C6018	F2A0J1000008	10uF 6.3V	1	
	C6019	F1H1H104B055	0.1uF 50V	1	
	C6100	F2A1C470A913	47uF 16V	1	
	C6101	F1H1H562B047	5600pF 50V	1	
	C6102	F2A1C470A913	47uF 16V	1	
	C6103	F2A0J221B034	220uF 6.3V	1	
	C6104	F2A1V470B146	47uF 35V	1	
	C6105	F1J1C106A059	10uF 16V	1	
	C6401	D0GBR00J0004	0 1/10W	1	
	C6403	D0GBR00J0004	0 1/10W	1	
	C6404	F1H1C104A179	0.1uF 16V	1	
	C8001	F2A0J471B035	470uF 6.3V	1	
	C8002	F1H1C104A179	0.1uF 16V	1	
	C8003	F1H1C104A179	0.1uF 16V	1	
	C8006	F1H1H101A889	100pF 50V	1	
	C8007	F1H1C104A179	0.1uF 16V	1	
	C8008	F1H1C104A179	0.1uF 16V	1	
	C8009	F1G1A1040006	0.1uF 10V	1	
	C8010	F1H1C104A179	0.1uF 16V	1	
	C8011	F2A0J221B034	220uF 6.3V	1	
	C8012	F1H1C104A179	0.1uF 16V	1	
	C8013	F1G1A1040006	0.1uF 10V	1	
	C8014	F1G1A1040006	0.1uF 10V	1	
	C8016	F1H1C104A179	0.1uF 16V	1	
	C8017	F1G1A1040006	0.1uF 10V	1	
	C8018	F1H1C104A179	0.1uF 16V	1	
	C8019	F1G1A1040006	0.1uF 10V	1	
	C8020	F1G1A1040006	0.1uF 10V	1	
	C8021	F1G1A1040006	0.1uF 10V	1	
	C8022	F1H1C104A179	0.1uF 16V	1	
	C8023	F1H1C104A179	0.1uF 16V	1	
	C8024	F1G1H1020008	1000pF 50V	1	
	C8027	F1G1A1040006	0.1uF 10V	1	
	C8028	F1H1E103A161	0.01uF 25V	1	
	C8029	F1H1H102B047	1000pF 50V	1	
	C8030	F2G0J330A231	33uF 6.3V	1	
	C8032	F1H1C104A179	0.1uF 16V	1	
	C8033	F1H1C104A179	0.1uF 16V	1	
	C8034	F1H1C104A179	0.1uF 16V	1	
	C8051	F1H1A105A113	1uF 10V	1	
	C8052	F1H1C104A179	0.1uF 16V	1	
	C8053	F1H1C104A179	0.1uF 16V	1	
	C8054	F1H1H221B052	220pF 50V	1	
	C8055	F1H1A105A113	1uF 10V	1	
	C8056	F1H1H222A885	2200pF 50V	1	
	C8057	F1H1A105A113	1uF 10V	1	
	C8058	F2G0J101A031	100uF 6.3V	1	
	C8101	F1H0J4750005	4.7uF 6.3V	1	
	C8111	F1J1A106A043	10uF 10V	1	
	C8112	F1H1A105A113	1uF 10V	1	
	C8113	F1H0J4750005	4.7uF 6.3V	1	
	C8114	D0GAR00J0008	0 1/16W	1	
	C8121	F1G1A1040006	0.1uF 10V	1	
	C8151	F1H0J4750005	4.7uF 6.3V	1	
	C8222	F1G1C273A146	0.027uF 16V	1	
	C8226	F1G1C273A146	0.027uF 16V	1	
	C8228	F1G1H1020008	1000pF 50V	1	
	C8230	F1G1H1020008	1000pF 50V	1	
	C8251	F2A0J101B034	100uF 6.3V	1	
	C8252	F2A1C470B455	47uF 16V	1	
	C8256	F1H1C104A179	0.1uF 16V	1	
	C8263	F1H1C104A179	0.1uF 16V	1	
	C8264	F1H1C104A179	0.1uF 16V	1	
	C8301	F2G0J101A031	100uF 6.3V	1	
	C8302	F2G0J101A031	100uF 6.3V	1	
	C8401	F2G0J2210020	220uF 6.3V	1	
	C8511	F1G1H1020008	1000pF 50V	1	
	C8512	F1G1H1020008	1000pF 50V	1	
	C8528	F1H1A105A113	1uF 10V	1	
	C8530	F1G1A1040006	0.1uF 10V	1	
	C8533	F1G1A1040006	0.1uF 10V	1	
	C8551	F1H1C104A179	0.1uF 16V	1	
	C8553	F2A0J221B034	220uF 6.3V	1	
	C8561	F1H1C104A179	0.1uF 16V	1	
	C8563	F2A0J221B034	220uF 6.3V	1	
	C8566	F2G0J101A031	100uF 6.3V	1	
	C8606	F1H1C104A179	0.1uF 16V	1	
	C8621	F1G1H100A834	10pF 50V	1	
	C8622	F1G1H8R0A833	8pF 50V	1	
	C8651	F1G1A1040006	0.1uF 10V	1	
	C8652	F1G1A1040006	0.1uF 10V	1	
			SERVICE FIXTURE & TOOLS		
	SFT1	RFKZBTT270K3	18P FFC (Main P.C.B. to D-Amp P.C.B.)	1	