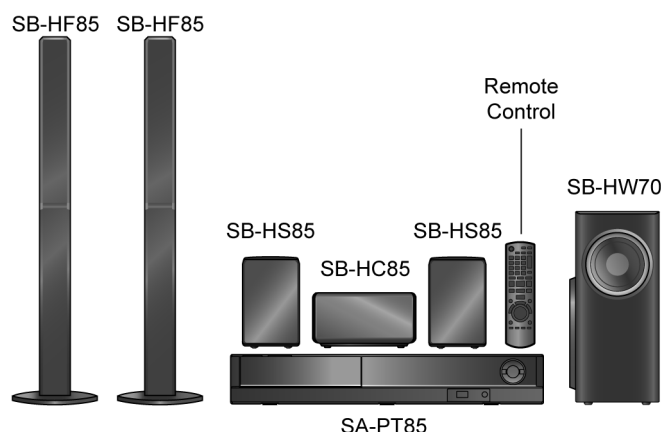


Service Manual

DVD Home Theater Sound System

Model No. **SA-PT85GS**

Product Color: (K)...Black Type



Note: Please refer to the original service manual for:

- DVD Mechanism Unit (DLS6E), Order No. PSG0909002AE
- Speaker system SB-PT85EP-K, Order No. PSG1002027CE

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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1 Safety Precautions

1.1. GENERAL GUIDELINES

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

1.1.1. 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 $1M\Omega$ and $5.2M\Omega$.

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 $1.5k\Omega$, 10 watts resistor, in parallel with a $0.15\mu F$ capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 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.

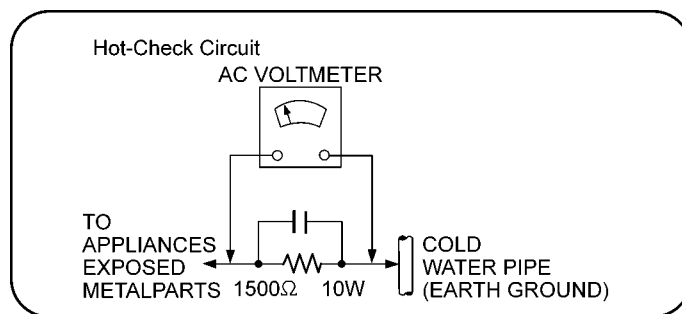


Figure 1

1.2. Before Repair and Adjustment

Disconnect AC power to discharge unit AC Capacitors as such (C5700, C5701, C5702, C5703, C5704, C5706, C5708) through a 10Ω , 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 230 V, 50 Hz in NO SIGNAL mode volume minimal should be ~ 500 mA.

1.2.1. Caution for fuse replacement

CAUTION:

- i) Replace with the same type fuse:
(Manufacturer: LITTELFUSE, INC, Type: 215, F1, T2.5AH, 250V)

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. Safety Parts Information

Safety Parts List:

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

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

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	9	RGRX0073C-F	REAR PANEL	
	20	RKMX0151-K	TOP CABINET	
	33	REXX1034	1P WHITE WIRE (VOLTAGE-SMPS)	
	34	REXX1035	1P BLUE WIRE (VOLTAGE SMPS)	
	401	RAEX0017Z-V	TRAVERSE UNIT	
	A2	K2CQ2CA00007	AC CORD	
	A2	K2CZ3YY00005	AC CORD	
	A3	RQTX1144-G	O/I BOOK (Pe/Ar)	
	A3	RQTX1143-B	O/I BOOK (En)	
	PCB6	REPX0767C	SMPS P.C.B	(RTL)
	PCB7	REPX0767C	VOLTAGE SELECTOR P.C.B	(RTL)
	DZ5701	ERZV10V511CS	ZNR	
	S5701	K0ABCA000007	SW VOLTAGE SELECTOR	
	L5701	ELF17N010A	LINE FILTER	
	L5702	G0B353G00001	LINE FILTER	
	T2900	G4D1A0000118	SWITCHING TRANSFORMERS	
	T5701	ETS35BC2T6AD	MAIN TRANSFORMER	
	T5751	ETS19AB2A6AG	SUB TRANSFORMER	
	RY5701	K6B1AEA00003	RELAY	
	F1	K5D252BNA005	FUSE	
	FP2901	K5H1022A0011	PROTECTOR	
	IP100	K5H302100004	PROTECTOR	
	TH5702	D4CAA5R10001	THERMISTOR	
	P5701	K2AA2B000011	AC INLET	
	C5700	F1BAF1020020	1000pF	
	C5701	F0CAF224A105	0.22uF	
	C5702	F0CAF224A105	0.22uF	
	C5703	F0CAF224A105	0.22uF	
	C5704	F1BAF1020020	1000pF	
	C5706	F1BAF1020020	1000pF	
	C5708	F1BAF1020020	1000pF	

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices

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

1. Immediately before handling any semiconductor component or semiconductor-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 build up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder 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).

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:

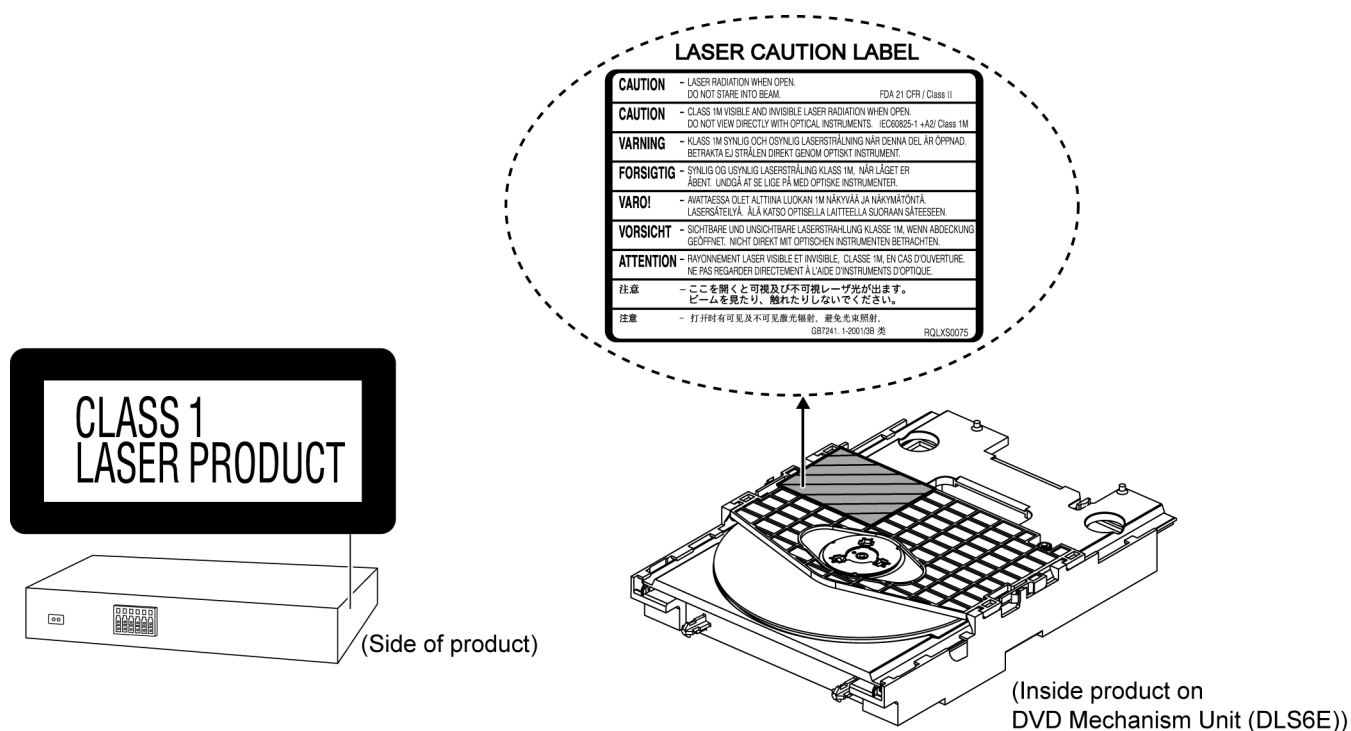
This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pickup lens.

Wavelength: 655 nm (DVD)/790 nm (CD)

Maximum output radiation power from pickup: 100 μ W/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.



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%

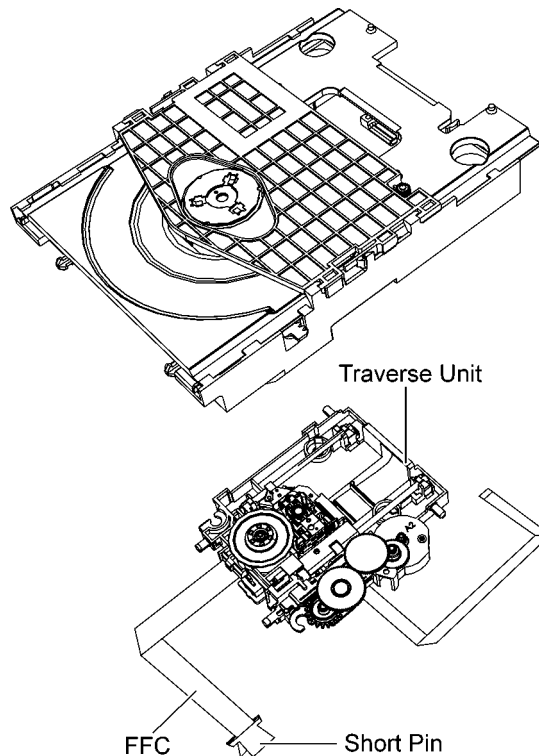
2.4. Handling Precautions for Traverse Unit

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

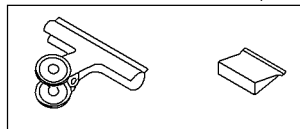
The laser diode in the optical pickup unit may be damaged due to electrostatic discharge generating from clothes or human body. Special care must be taken avoid caution to electrostatic discharge damage when servicing the laser diode.

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.



[Caution]

Ground the cable with a clip or a short pin.



Clip or Short Pin

Figure 1

2.4.2. Grounding for electrostatic breakdown prevention

Some devices such as the DVD player use the optical pickup (laser diode) and the optical pickup will be damaged by static electricity in the working environment. Proceed servicing works under the working environment where grounding works is completed.

2.4.2.1. Worktable grounding

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

2.4.2.2. Human body grounding

1. Use the anti-static wrist strap to discharge the static electricity form your body.

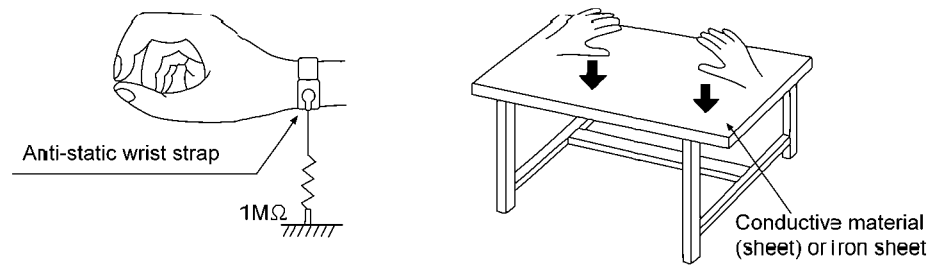


Figure 2

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.

- **DVD Mechanism Unit (DLS6E):**

1) This model uses DVD Mechanism Unit (DLS6E).

- **Micro-processor:**

1) The following components are supplied as an assembled part.

- Micro-processor IC, IC200 (RFKWMPT85EP)

4 Specifications

Main unit SA-PT85GS

●GENERAL

Power supply:	AC110V to 127V/ 220 V to 240V, 50/60Hz
Power consumption:	This unit 47 W
Power consumption in standby mode:	approx. 0.48 W
Dimensions (W×H×D):	360 mm×58 mm×239 mm
Mass:	This unit 2 kg
Operating temperature range:	0 °C to +40 °C
Operating humidity range:	35 % to 80 % RH (no condensation)

●AMPLIFIER SECTION

RMS Output Power: Dolby Digital Mode

Front Ch:	55 W per channel (5 Ω), 1 kHz, 10 % THD
Surround Ch:	55 W per channel (5 Ω), 1 kHz, 10 % THD
Center Ch:	55 W per channel (5 Ω), 1 kHz, 10 % THD
Subwoofer Ch:	55 W per channel (5 Ω), 100 Hz, 10 % THD
Total RMS Dolby Digital mode power:	330 W

PMPO Output Power:

3000W

●FM TUNER, TERMINALS SECTION

Preset Memory: FM 30 stations

Frequency Modulation (FM)

Frequency range:	87.50 MHz-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) WMA (*.wma) JPEG (*.jpg) (*.jpeg) DivX (*.divx) (*.avi) MPEG4 (*.asf)
USB device file system:	FAT12, FAT16, FAT32
USB Port power:	Max. 500 mA
Bit rate:	Up to 4Mbps (DivX)

Music Port (Front)

Sensitivity	100mV, 6.8 kΩ
Terminal	Stereo, 3.5 mm jack

●DISC SECTION

Discs played (8 cm or 12 cm):

- (1) DVD (DVD-Video, DivX^{*5, 6})
- (2) DVD-R (DVD-Video, DVD-VR, MP3^{*2, 5}, JPEG^{*4, 5}, MPEG4^{*5, 7}, DivX^{*5, 6})
- (3) DVD-R DL (DVD-Video, DVD-VR, DivX^{*5, 6})
- (4) DVD-RW (DVD-Video, DVD-VR, MP3^{*2, 5}, JPEG^{*4, 5}, MPEG4^{*5, 7}, DivX^{*5, 6})
- (5) +R/+RW (Video)
- (6) +R DL (Video)
- (7) CD, CD-R/RW (CD-DA, Video CD, SVCD^{*1}, MP3^{*2, 5}, WMA^{*3, 5}, JPEG^{*4, 5}, MPEG4^{*5, 7}, DivX^{*5, 6})

*1 Conforming to IEC62107

*2 MPEG-1 Layer 3, MPEG-2 Layer 3

*3 Windows Media Audio Ver.9.0 L3

●Not compatible with Multiple Bit Rate (MBR)

*4 Exif Ver 2.1 JPEG Baseline files

●Picture resolution: between 160 x 120 and 6144 x 4096 pixels (Sub sampling is 4:0:0, 4:2:0, 4:2:2 or 4:4:4). Extremely long and narrow pictures may not be displayed.

*5 The total combined maximum number of recognizable audio, picture and video contents and groups: 4000 audio, picture and video contents and 255 groups. (Excluding Root Folder)

*6 Plays DivX[®] video.

*7 MPEG4 data recorded with the Panasonic SD multi cameras or DVD video recorders.

●Conforming to SD VIDEO specifications (ASF standard)/MPEG4 (Simple Profile) video system/G.726 audio system.

Pick up

Wavelength (DVD/CD):	655/790 nm
Laser power (DVD/CD):	CLASS 1M/CLASS 1M

Audio output (Disc)

Number of channels: 5.1 ch (FL, FR, C, SL, SR, SW)

●VIDEO SECTION

Video system: PAL625/50, PAL525/60, NTSC

Composite video output

Output level:	1 Vp-p (75 Ω)
Terminal:	Pin jack (1 system)

Component video output

Y output level:	1 Vp-p (75 Ω)
P _B output level:	0.7 Vp-p (75 Ω)
P _R output level:	0.7 Vp-p (75 Ω)
Terminal:	Pin jack (Y: green, P _B : blue, P _R : red) (1 system)

HDMI AV output

Terminal: 19-pin type A connector

HDAVI Control:

This unit supports "HDAVI Control 4" 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-PT85GS-K
Main unit	SA-PT85GS-K
Speakers system	SB-PT85EP-K ^{*1}

Refer to their respective original service manuals for *1.

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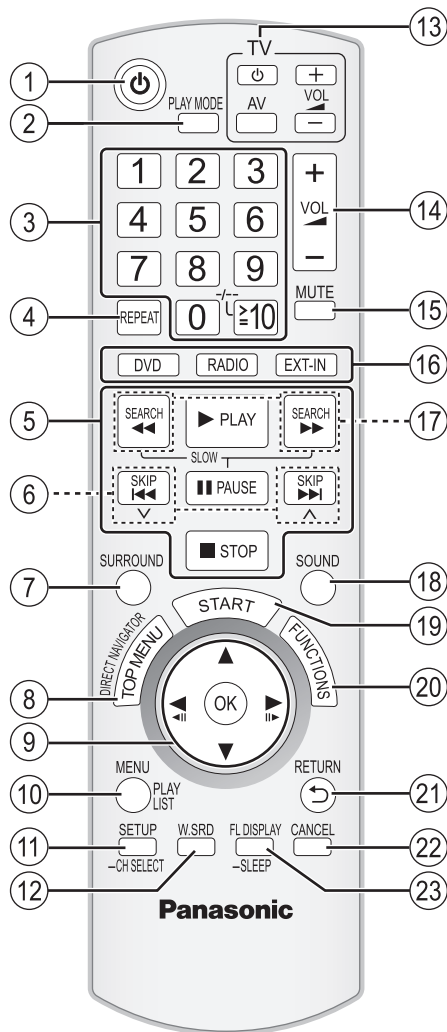
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Plays DivX® video
DivX® is a registered trademark of DivX, Inc., and is used under license.

5 Location of Controls and Components

5.1. Remote Control Key Button Operations



- ① Turn this unit on/off
- ② Select the play mode
- ③ Select channels and title numbers etc. / Enter numbers
- ④ Set the repeat mode
- ⑤ Basic operations for play
- ⑥ Select preset radio stations
- ⑦ Select surround sound effects
- ⑧ Show a disc top menu or program list
- ⑨ Select or confirm menu items / Frame-by-frame
- ⑩ Show a disc menu or play list
- ⑪ Show setup menu or select speaker channel
- ⑫ Turn Whisper-mode Surround on/off
- ⑬ **TV operations**

Aim the remote control at the Panasonic TV and press the button.

[TV]: Turn the TV on/off

[AV]: Change the TV's video input mode

[+, -]: Adjust the TV volume

This may not work properly with some models.

- ⑭ Adjust the volume of this unit

- ⑮ **Mute the sound**

- "MUTE" flashes on this 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.

- ⑯ **Source select**

[DVD]: Select disc as the source

[RADIO]: Select FM tuner

[EXT-IN]: Select external audio as the source

USB → AUX* → D-IN* → MUSIC P.

* "(TV)" will appear beside "AUX" or "D-IN", indicating the TV audio setting for VIERA Link "HDAVI Control".

- ⑰ Select radio stations manually
- ⑱ Select sound mode
- ⑲ Show START menu
- ⑳ Show on-screen menu
- ㉑ Return to previous screen
- ㉒ Cancel
- ㉓ Switch information on the main unit's display

or

Set the Sleep timer

Press and hold [—SLEEP].

While the time is shown on the main unit's display, press

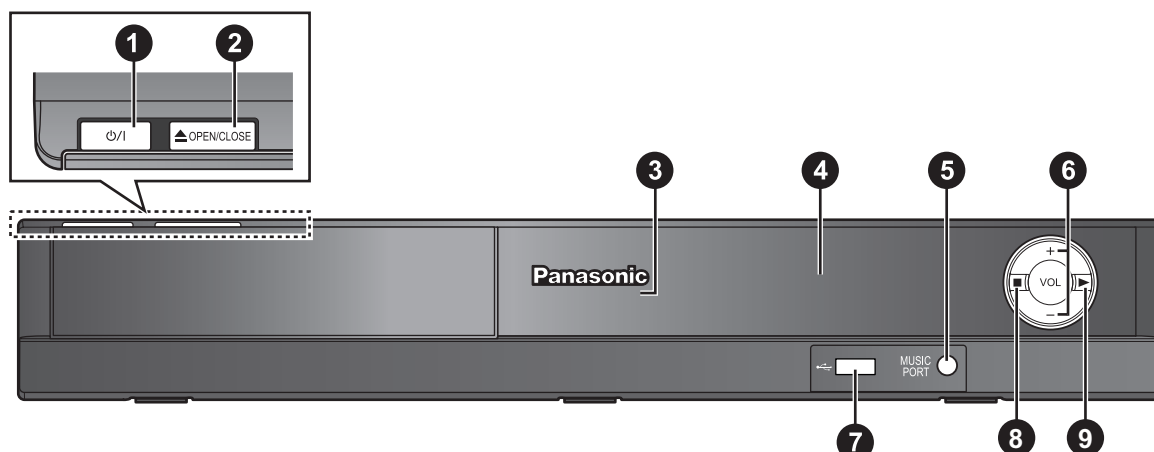
[—SLEEP] repeatedly.

SLEEP 30 → SLEEP 60 → SLEEP 90 → SLEEP 120

↑ OFF (Cancel) ↓

- To confirm the remaining time, press and hold the button again.

5.2. Main Unit Key Button Operations



- 1 Standby/on switch (⏻/⏻)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- 2** Open/Close the disc tray
- 3** Remote control signal sensor
- 4** Display
- 5** Connect external music device
- 6** Adjust the volume of the main unit
- 7** Connect USB Device
- 8** Stop playing
- 9** Play disc

5.3. Speaker Connection

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

Main unit (rear)

Connect to the terminals of the same colour.

Use of the speaker cable stickers is convenient when making cable connections.

Speakers (rear)

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.

5.4. Using the VIERA Link “HDAVI Control™”

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.

- 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 4” function. “HDAVI Control 4” is the newest standard (current as of December, 2008) 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.

The TV with “HDAVI Control 2 or later” function enables the following operation: VIERA Link Control only with TV’s remote control (for “HDAVI Control 2 or later”)

Preparation

- Confirm that the HDMI connection has been made
- Set “VIERA Link” to “ON”
- To complete and activate the connection correctly, turn on all VIERA Link “HDAVI Control” compatible equipment and set the TV to the corresponding HDMI input mode for this unit.

Setting the TV audio for VIERA Link “HDAVI Control”

Select “AUX” or “DIGITAL IN” to work with the linked operations.

Refer to TV audio setting in Easy setup or “TV AUDIO” in HDMI menu.

Confirm the audio connection to the AUX terminal (for “AUX”) or OPTICAL IN terminal (for “DIGITAL IN”).

Whenever the connection or settings are changed, reconfirm the points above.

※ “AUX” or “D-IN” (“DIGITAL IN”) works depending on the TV audio setting.

Auto lip sync

(Available when using VIERA Link “HDAVI Control” with “HDAVI Control 3 or later” compatible TV)

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

- When using “DVD/CD” as the source, set “TIME DELAY” in VIDEO menu to “0 ms/AUTO”

One touch play

You can turn on this unit and the TV, and start playing the disc with a single press of a button.

(Remote control only)

During standby mode, press [▶PLAY] ⑤ to start disc playback

This unit’s speakers will be automatically activated (⇒ below).

Note

Playback may not be immediately displayed on the TV. If you miss the beginning portion of playback, press [◀◀] ⑤ or [◀◀] ⑤ to go back to where playback started.

Auto input switching

- When you switch the TV input to TV tuner mode, this unit will automatically switch to “AUX” or “D-IN”.
- When this unit is in “DVD/CD” mode, the TV will automatically switch its input mode for this unit.
- When playback stops (DVD-V|VCD) or when this unit turns off, the TV will automatically return to TV tuner mode.
- When you select “AUX” or “DIGITAL IN” from “Input Selection” in START menu, the TV will automatically switch to TV tuner mode.

Power off link

When the TV is turned off, this unit goes into standby mode automatically. To continue audio playback even when the TV is turned off, select “VIDEO”.

Note

When you press [⏻], 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 control

You can select whether audio is 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 *or "D-IN"* 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 *or "D-IN" * 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 be blank for several seconds.

VIERA Link Control only with TV's remote control (for HD AVI 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**

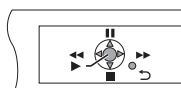


- The START menu can also be shown by using a button on the TV's remote control (e.g. [OPTION]).
When DVD/CD or "USB" is selected as the source, the TV's remote control works only during stop mode.

- 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.

Note

- 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.

5.5. Disc Information

5.5.1. Disc Playability (Media)

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

Type of media/Logo	Formats	Indicated as
DVD-R/RW  	- DVD-Video Format - Version 1.1 of the DVD Video Recording Format - MP3 format - JPEG format - DivX format - MPEG4	DVD-V DVD-VR MP3 JPEG DivX MPEG4
DVD-R DL 	- DVD-Video Format - Version 1.2 of the DVD Video Recording Format - DivX format	DVD-V DVD-VR DivX
+ R/+ RW/ + R DL	+VR (+R/+RW Video Recording) Format	DVD-V
CD-R/RW	- MP3 format - JPEG format - DivX format - MPEG4 - WMA	MP3 JPEG DivX MPEG4 WMA

- Before playback, finalize the disc on the device it was recorded on.
- It may not be possible to play all the above-mentioned discs in some cases due to the type of disc, the condition of the recording, the recording method, or how the files were created.

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, HD DVD, AVCHD discs, DVD-RW version 1.0, DVD-Audio, DVD-ROM, CD-ROM, CDV, CD-G, SACD, 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 your TV must match the system used on the disc.
- PAL discs cannot be correctly viewed on an NTSC TV.
- This unit can convert NTSC signals to PAL 60 for viewing on a PAL 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.

5.5.2. File Extension Type Support (WMA/MP3/JPEG/MPEG4/DivX)

WMA (Extension: “.WMA”, “.wma”) Disc: CD-R/RW • Compatible compression rate: between 48 kbps and 320 kbps • You cannot play WMA files that are copy-protected.
MP3 (Extension: “.MP3”, “.mp3”) Disc: DVD-R/RW, CD-R/RW • This unit does not support ID3 tags. • Sampling frequency and compression rate: – DVD-R/RW: 11.02, 12, 22.05, 24 kHz (8 to 160 kbps), 44.1 and 48 kHz (32 to 320 kbps) – CD-R/RW: 8, 11.02, 12, 16, 22.05, 24 kHz (8 to 160 kbps), 32, 44.1 and 48 kHz (32 to 320 kbps)
JPEG (Extension: “.JPG”, “.jpg”, “.JPEG”, “.jpeg”) Disc: DVD-R/RW, CD-R/RW • 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.
MPEG4 (Extension: “.ASF”, “.asf”) Disc: DVD-R/RW, CD-R/RW • The recording date may differ from that of the actual date.
DivX (Extension: “.DIVX”, “.divx”, “.AVI”, “.avi”) Disc: DVD-R/RW, CD-R/RW • DivX 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 720X480 (NTSC)/720X576 (PAL). • You can select up to 8 types of audio and subtitles on this unit.

- 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.

6 Self-Diagnostic and Special Mode Setting

6.1. Cold-Start

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

1. Unplug AC power cord
2. Press & hold [POWER] button
3. Plug AC power cord while [POWER] button being pressed
FL Display will show “_ _ _ _ _ _ _ _”
4. Release [POWER] button

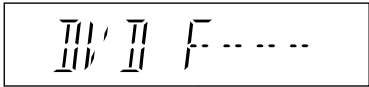
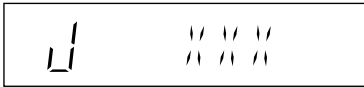
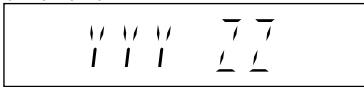
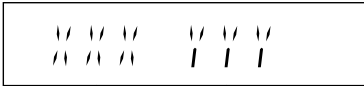
6.2. Service Mode Table

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

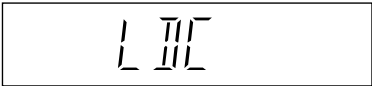
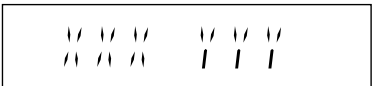
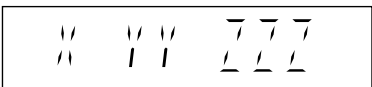
Special Note:

- 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 5.1 for the section on “Remote Control Key Buttons Operations”.

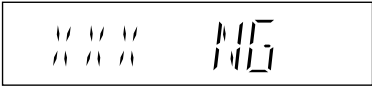
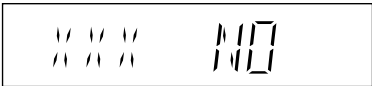
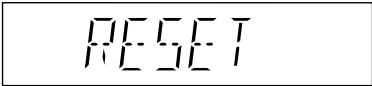
6.2.1. Service Mode Table 1 (For DVD)

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 6.5] DVD Self Diagnostic Function-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 [STOP] 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 [POWER] button 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 Jitter rate mode Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation. (Display 2)  ↑ ↑ Lead Focus Drive Error Value Counter	In STOP (with disc inside tray) mode, press [STOP] button on the main unit, and [5] button on the remote control unit. Press [POWER] or [STOP] button 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. Initial current value for the DVD laser and CD laser is separately saved in the EEPROM IC. FL Display sequence: Display 1→2.	(Display 1)  ↑ Laser current measurement mode The value denotes the current in decimal notation. (Display 2)  ↑ ↑ CD DVD Laser Laser The above example shows the initial current is XXXmA and YYYmA for CD laser and DVD laser respectively when the laser is switched on.	In STOP (no disc) mode, press [STOP] button on the main unit, and [PAUSE] button on the remote control unit. Press [FL Display] on remote control unit for next page (FL Display) on values of laser drive current.

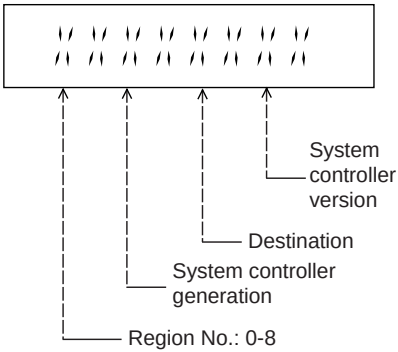
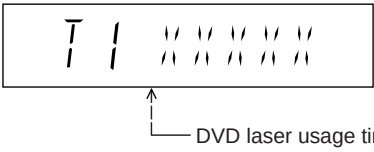
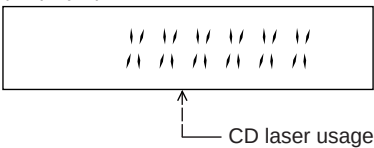
6.2.2. Service Mode Table 2 (For DVD)

Item		FL Display	Key Operation
Mode Name	Description		Front Key
DVD laser drive current measurement	DVD laser drive current measurement. DVD laser drive current is measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. FL Display sequence: Display 1→2.	(Display 1)  DVD laser current measurement mode The value denotes the current in decimal notation. (Display 2)  DVD Laser Initial Value DVD Laser Value The above example shows the initial current is XXXmA and the measured value is YYYmA.	In STOP (no disc) mode, press [STOP] button on the main unit, and [FUNCTIONS] button on the remote control unit. Press [FL Display] on remote control unit for next page (FL Display) on values of dvd drive current.
CD laser drive current measurement	CD laser drive current measurement. CD laser drive current is measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. FL Display sequence: Display 1→2.	(Display 1)  CD laser current measurement mode The value denotes the current in decimal notation. (Display 2)  CD laser initial value CD laser value The above example shows the initial current is XXXmA and the measured value is YYYmA.	In STOP (no disc) mode, press [STOP] button on the main unit, and [3] button on the remote control unit. Press [FL Display] on remote control unit for next page. (FL Display)
Region display	Region code display, TV broadcasting system & the model no. information. Note: Refer to Figure 6.1 for "Video Design Information".	 Model No. Information N: NTSC / 6: PAL60 N: no PAL / P: PAL Region No.: 0-8	In STOP (no disc) mode, press [STOP] button on the main unit, and [6] button on the remote control unit. Display is automatically clear after 5 seconds.
CPPM/CRM Keys Check	CPPM/CRM refers to the Content Protection for Recordable Media and Pre-Recorded Media. It displays the existence of the keys as "1" or "0". OK: Existing of keys. NG: Non existing of keys.	 0: NG 0: NG 1: OK 1: OK	In STOP (no disc) mode, press [STOP] button on the main unit, and [SOUND] button on the remote control unit. Cancelled automatically 5 seconds later.

6.2.3. Service Mode 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→3.	(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. (Display 3)  ↑ Opecon Version ↑ EEPROM Checksum (If applicable, refer below.)	In STOP (no disc) mode, press [STOP] 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)
Initialization	Initialization. User settings are cancelled and player is initialized to factory setting. It is necessary when after replacement of Micro-processor (DV5 LSI) IC, FLASH ROM IC (IC8651), EEPROM IC (IC8611) & DVD Module P.C.B.		In STOP (no disc) mode, press [STOP] button on the main unit, and [≧10] button on the remote control unit.
DVD Module P.C.B. Reset	To reset DVD Module P.C.B. This process is used when the DVD Module P.C.B. or FLASH ROM IC is replaced with a new one.		While in initialization mode, press & hold [STOP] button on the main unit for 3 seconds, follow by [ENTER] button on the remote control unit.

6.2.4. Service Mode Table 4 (For DVD)

Item		FL Display	Key Operation
Mode Name	Description		Front Key
DVD Module P.C.B. firmware version display	DVD Module P.C.B. firmware version is displayed on the FL Display. The firmware version can be updated using recovery disc. Note: It is necessary to check for firmware version before carrying out the version up using the disc.		In STOP (no disc) mode, press [STOP] 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 [STOP] 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 [STOP] 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 [STOP] 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 [STOP] button on the main unit, and [◀] button on the remote control unit. Cancelled automatically 5 seconds later.

Model Series	Country Region	Region Code	TV Broadcasting System	Product			
				Signal System (Default)	Region Display (Default)	OSD Default	OSD Menu Language
P, PC, PX	USA, Canada, US Military	1	NTSC	NTSC (*A)	1PN	English	English (NA), Spanish (NA), Canadian, French
(S)	Japan	2	NTSC	NTSC (*A)	2PN	Japanese	Japanese, English
EP	Poland, E.Europe	2	PAL	PAL (*C)	2P6	English	English (EU), French, German, Spanish (EU), Polish, Russian, Czech, Hungarian
EB, EG, ES	UK, Germany, W.Europe	2	PAL	PAL (*C)	2P6	English	English (EU), French, German, Italian, Spanish (EU), Polish, Swedish, Dutch
GC, GS	Middle East, Africa, S.E.A	2	PAL	PAL (*C)	2P6	English	English (NA), French, German, Spanish (EU), Polish, Russian, Czech, Hungarian
GA, GD, GT, GJ	South East Asia, Korea, Taiwan	3	PAL NTSC	NTSC (*B)	3PN	English	English (NA), Traditional Chinese
GN	New Zealand, Australia	4	PAL	PAL (*C)	4P6	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
PH, PU, PR	South/Central America, Argentina	4	NTSC	NTSC (*D)	4PN	English	English (NA), Spanish (Panama), French, Brazilian Portuguese
EE	CIS	5	SECAM	PAL (*C)	5P6	English	English (EU), French, German, Spanish (EU), Polish, Russian, Czech, Hungarian
GW	India	5	PAL	PAL (*C)	5P6	English	English (NA), Traditional Chinese
GK	China	6	PAL	NTSC (*B)	6PN	Simplified Chinese	English (NA), Simplified Chinese

NTSC (*A)

Source	Output
Screen Saver	NTSC
NTSC disc	NTSC
PAL disc	PAL (DVD-V)
	NTSC (DVD-A/VCD)

NTSC (*B)

Source	Output
Screen Saver	NTSC
NTSC disc	NTSC (default)
	PAL60
PAL disc	PAL

PAL (*C)

Source	Output
Screen Saver	PAL
NTSC disc	PAL60 (default)
	NTSC
PAL disc	PAL

NTSC (*D)

Source	Output
Screen Saver	NTSC
NTSC disc	NTSC
PAL disc	NTSC

Explanation of Display

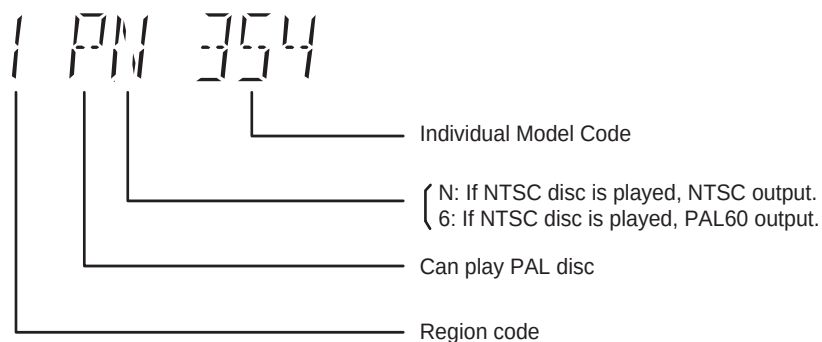
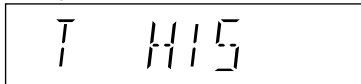
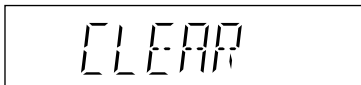


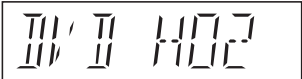
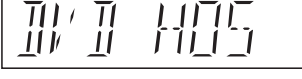
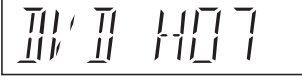
Figure 6.1 Video Design Information

6.3. Self-Diagnostic Mode

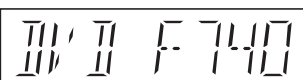
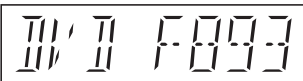
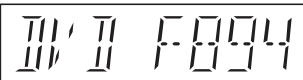
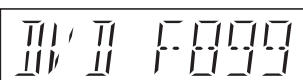
Item		FL Display	Key Operation
Mode Name	Description		Front Key
Self-Diagnostic Mode	To enter into self-diagnostic checking for DLS6E Mechanism		Press & hold [STOP] on main unit, follow by [4] then [9] on remote control. (When no disc in mechanism)
Error code information	System will perform a check on any unusual/error code from the memory	Error code will display Example: 	In self-diagnostic mode, press [STOP] on remote control. To exist, 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 exist, press [⏻ / I] on main unit or remote control.

6.4. DVD Self Diagnostic Function-Error Code

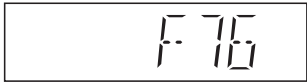
6.4.1. Mechanism Error Code Table

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 [■STOP] on main unit for next error. (OPEN time: OPEN → CLOSE → OPEN → H01 at CLOSE: CLOSE → OPEN → CLOSE H01)
H02	Spindle servo error	The spindle servo/motor is abnormal. The FG pulse is abnormal. CLV servo error.		Press [■STOP] on main unit for next error.
H03	Traverse motor error	The traverse is abnormal. (Traverse servo, DV5 LSI IC (IC8001), TRV motor error.)		Press [■STOP] on main unit for next error.
H04	Tracking servo error	Tracking coil NG (OPU unit abnormal), DV5 LSI IC (IC8001) error.		Press [■STOP] on main unit for next error.
H05	Seek time out error	It is not possible to access the disc. TOC cannot read. Abnormal disc etc. Pickup abnormal or disk is dirty. (TRV motor error, DV5 LSI IC (IC8001) error.)		Press [■STOP] on main unit for next error.
H07	Driver IC thermal shut down	The spindle motor is abnormal. (short between brushes)		Press [■STOP] on main unit for next error.
U11	Focus servo error	Focus coil, FE signal error. Disc may be dirty.		Press [■STOP] on main unit for next error. (Unfinalized DVD-R is likely to become U11.)

6.4.2. DVD Module Error Code Table

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
U702	HDMI/DVI I2C communication error	The communication error of I2C when connecting it with HDMI/DVI. For instance, when EDID information to which information on the TV set side has been described cannot be read, it is generated.		Press [■STOP] on main unit for next error.
U703	HDMI/DVI attestation error	When attestation (HDCP) with the TV side fails when connecting it with HDMI/DVI, it is generated.		Press [■STOP] on main unit for next error.
U704	HDMI/DVI SRM Riborcerar	It is generated at the equipment to which the TV set is Riborced when connecting it with HDMI/DVI.		Press [■STOP] 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 [■STOP] on main unit for next error.
F740	HDMI device key	I2C error when writing HDMI Key device into transmitter.		Press [■STOP] on main unit for next error.
F893	FLASH ROM IC data falsification error	Firmware error, DV5.0 LSI IC (IC8651) error.		Press [■STOP] on main unit for next error.
F894	EEPROM IC abnormality error	When failing in the access to EEPROM IC located in the DVD Module P.C.B. (IC8611).		Press [■STOP] on main unit for next error.
F895	Language area abnormal	Firmware version agreement check for factory preset setting failure prevention.		Press [■STOP] on main unit for next error.
F897	Initialization error	Incomplete initialization after writing of new firmware (Factory preset setting failure prevention)		Press [■STOP] 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. (Frimware)		Press [■STOP] on main unit for next error.

6.4.3. Power Supply & Digital Amplifier Error Code Table

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F61	The abnormalities in the D-Amp related problem (over-temperature/shutdown)	In normal operation, when DCDET2 goes to "L" (Low) (Not during POWER OFF condition), F61 appears on FL Display for 1 second and PCONT goes to "L" (Low). This is due to speaker output has DC voltage.		Press [■STOP] 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 second and after that PCONT will be turned to "L" (Low). This is due to any of the DC voltages (+9V, +7V, -7V, +5V, +5.3V etc.) not available.		Press [■STOP] on main unit for next error.

6.5. 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.

6.5.1. Setting

• Prohibiting removal of disc

1. Select the DVD/CD function.
2. At POWER ON condition, press and hold down the [■] button and the [POWER] button on the main unit for at least three seconds. (The message, "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. At POWER ON condition, press and hold down the [▶] button and the [POWER] button on the main unit for at least three seconds. (The message, "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.

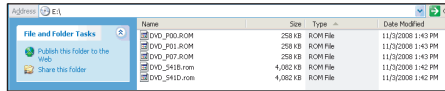
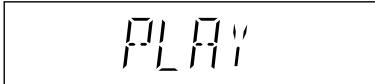
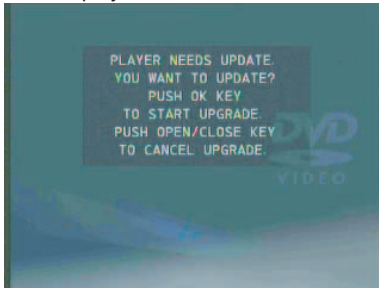
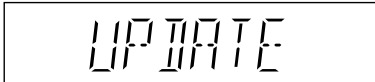
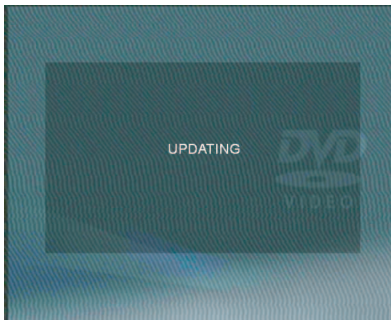
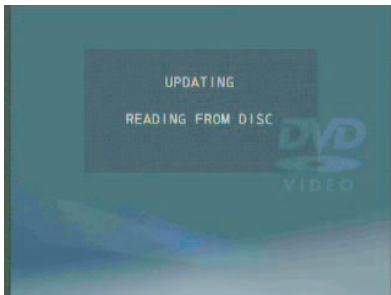
Main unit	▲OPEN/CLOSE, ■, ▶
Remote con- troller unit	EXT-IN, REPEAT, RADIO, NUMERIC KEYS 0~9, ≥10, I◀◀, ▶▶I, ◀◀, ▶▶, ■, II, ▶ RETURN, FUNCTIONS, FL DISPLAY/SLEEP, MUTE

6.5.2. Cancellation

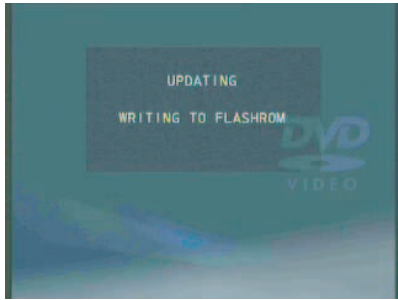
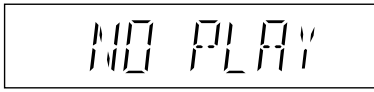
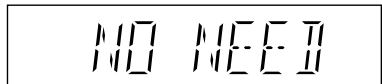
The lock can be cancelled by the same procedure as used in setting. ("UNLOCK" is displayed on cancellation) At normal Power ON/OFF the LOCKED condition is not cleared. However AC Power ON/OFF should clear LOCKED condition).

6.6. Firmware Version-Up Information

6.6.1. Process Flow (1/3)

Item		FL/ GUI Display	Remarks
Process	Description		
1	Collect ROM Files (Copy files into CD-R/RW)	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)	FL Display 1.1:  GUI Display 1.1:  FL Display 1.2:  GUI Display 1.2:  GUI Display 1.3.1: 	All panel keys and remote controller keys, including [POWER] key, are invalid during CD Update. Caution: Make sure the powersupply 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.

6.6.2. Process Flow (2/3)

Item			FL/ GUI Display	Remarks
Process	Description			
		➔ <i>GUI Display 1.3.2:</i> UPDATING WRITING TO FLASHROM	GUI Display 1.3.2: 	
2-1	Check Correct ROM file type	ROM files doesn't fit to the product type. If the ROM files doesn't fit for the product type, then CD update "STOP" and display as below: ➔ <i>FL Display 2:</i> "NO PLAY" . ➔ <i>GUI Display 2 :</i> THIS TYPE OF DISC CANNOT BE PLAYER. PLEASE INSERT A DIFFERENT DISC.	FL Display 2:  GUI Display 2: 	Update stop (Wrong ROM Type)
2-2	Check ROM version type	Update not Necessary If the ROM files has the same (latest) version or an older version than the product: ➔ <i>FL Display 3:</i> "NO NEED" . ➔ <i>GUI Display 3:</i> THIS PLAYER DOES NOT REQUIRE THE UPDATE	FL Display 3:  GUI Display 3: 	Update stop (product has the latest firmware)

6.6.3. Process Flow (3/3)

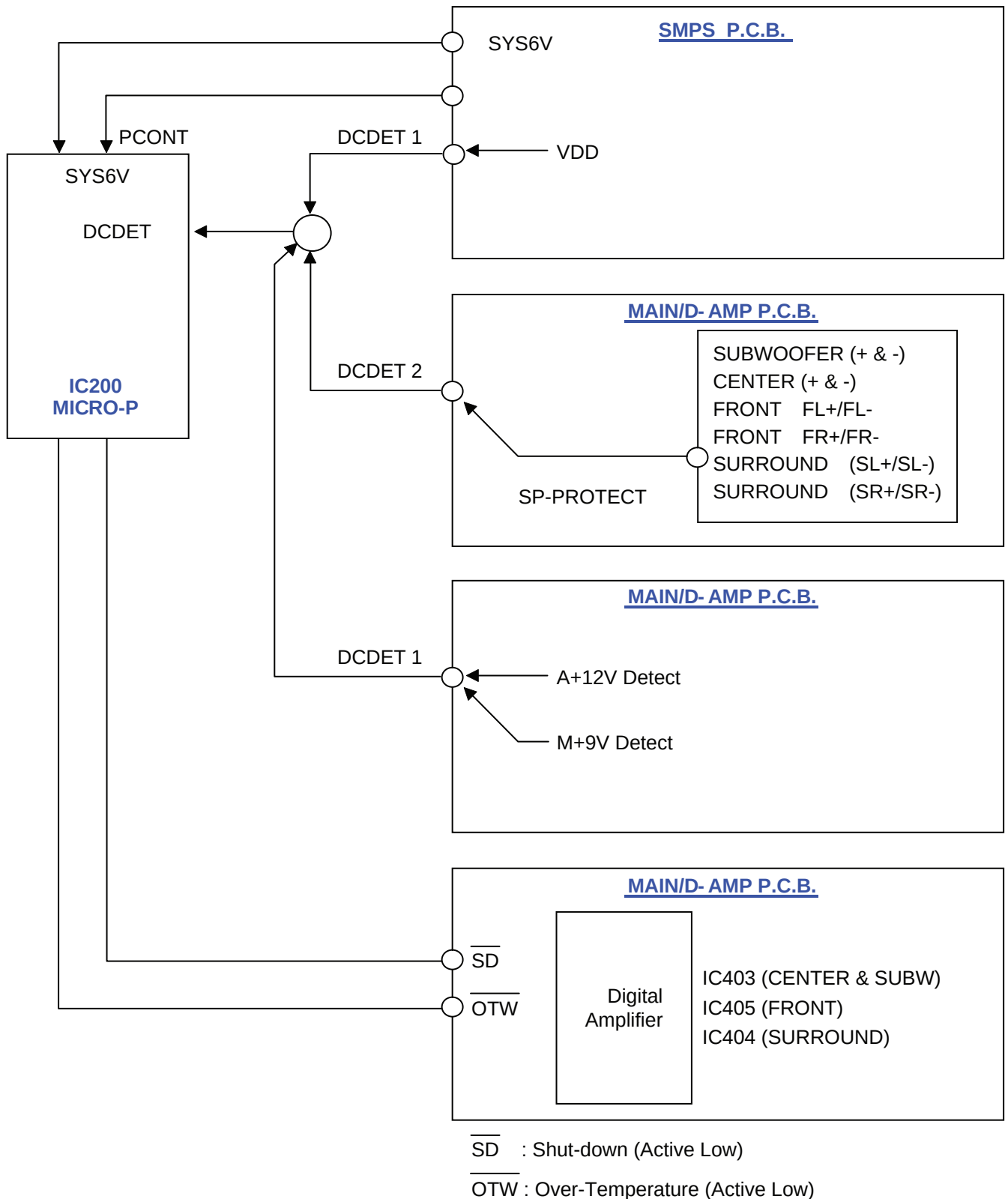
Item		FL/ GUI Display	Remarks
Process	Description		
3	Update software (Opecon)	1. Update Failed If Opecon software update fail: → FL Display 3: "FAIL" . → GUI Display 3:"UPDATE FAIL"	Update stop. The theater set can't work, and can't be recovered by CD update again.
		2. Update Completed - If Opecon software update completes successfully: → FL Display 3: "GOOD" . → GUI Display 3: COMPLETED PLEASE EJECT THE DISC → Open the tray and take out the CD, the update procedure has been finished successfully. → Power off, then remove AC Cord.	The theater set will reboot automatically.

7 Troubleshooting Guide

7.1. 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, D-Amp & Main P.C.B.

7.1.1. Block Diagram

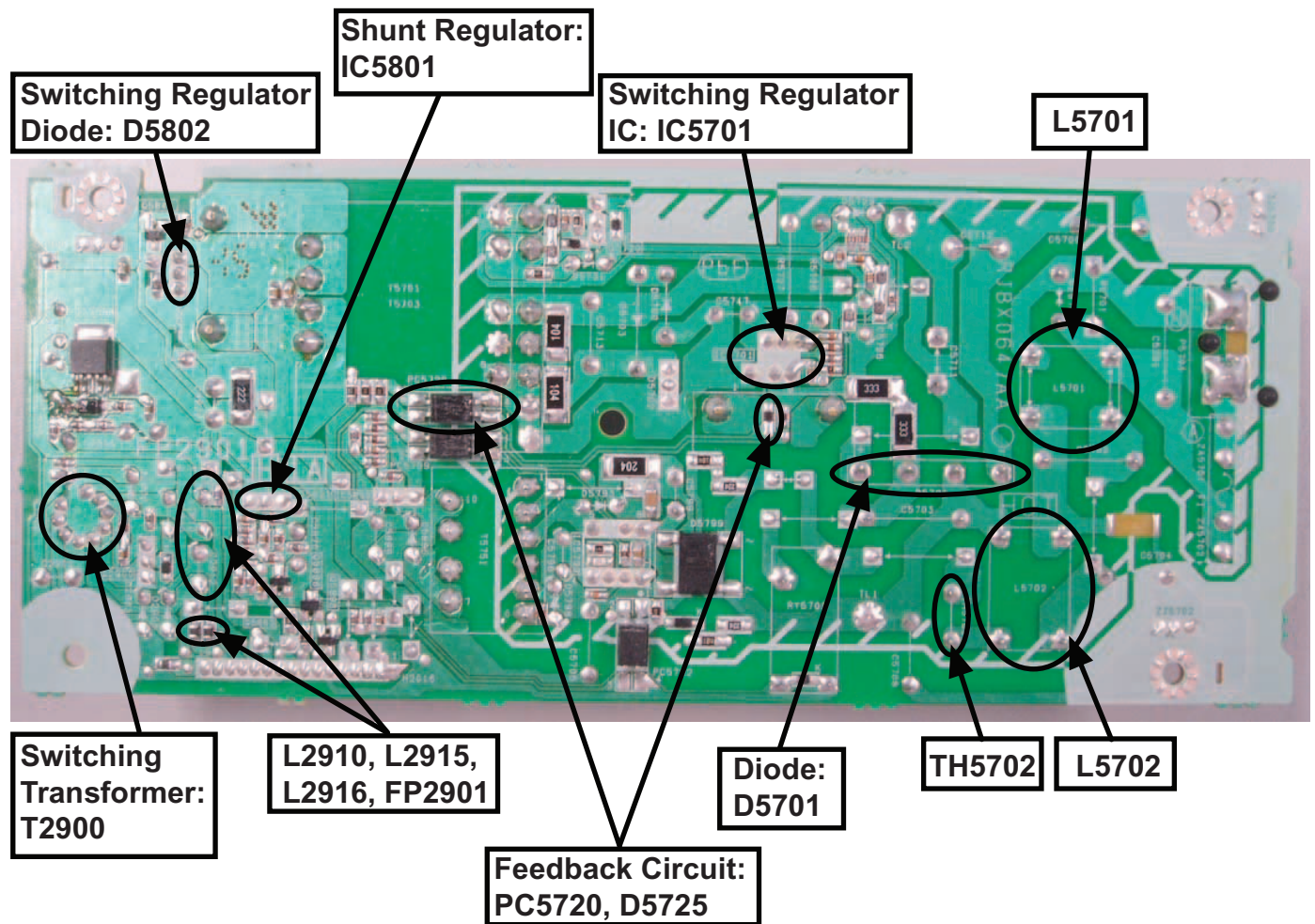


7.1.2. Troubleshooting Guide

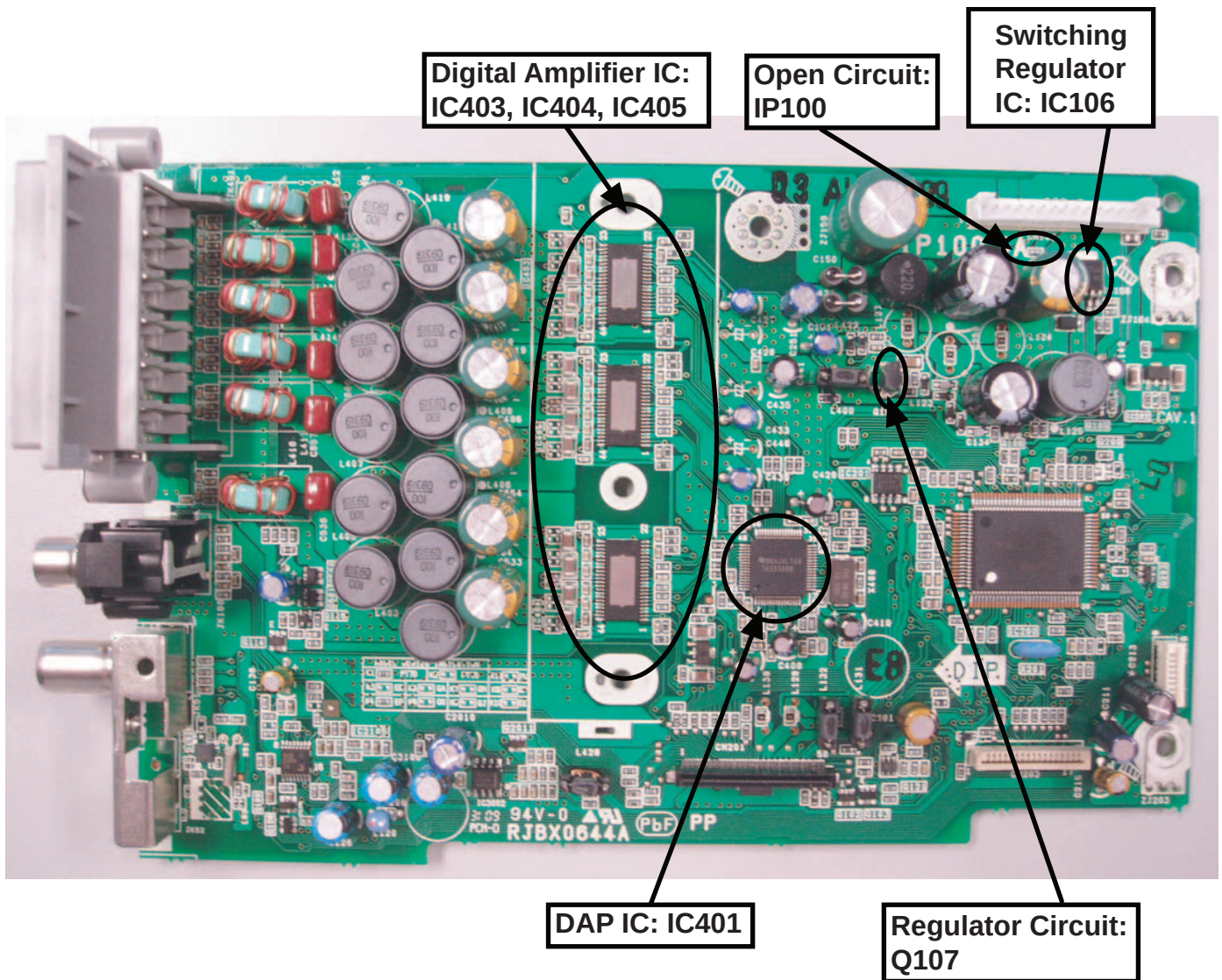
Symptom	Checking items	Possible Fault(s)	Remarks
Unit cannot power up (No standby LED)	1) Check AC cord connection 2) Fuse, F1 3) AC inlet, P5701	1) Faulty AC cord (No Power) 2) Fuse, F1 blow (open circuit) 3) AC inlet, P5701 solder crack, dry-joint etc 4) L5701 and/or L5702 open circuit 5) TH5702 faulty	SMPS P.C.B Refer to Figure 1
Power on for a while then trigger "F61"	1) Check Speaker connections 2) Check pin 21 & pin 22 of IC200 (micro-p) 3) Check +VDD & feedback circuit	1) Speakers short-circuit (check individual channels) 2) Over-temperature 3) Shunt regulator, IC5801 faulty 4) Feedback circuit: PC5720, D5725 faulty 5) Main Transformer faulty, T5701 (Primary circuit) 6) Switching regulator, IC5701 faulty 7) Diode, D5701 faulty	SMPS P.C.B Refer to Figure 1
Power on for a while and then trigger "F76"	1) Check VDD & SYS6V at pin 1,2,5 at H2016 of SMPS P.C.B. 2) Check voltage: -Vp, FL1 & FL2 at pin 15, 12 & 13 of H2016 (FL no display) 3) Check Pin 2 of Switching regulator, IC106 (For DVD + 5V & +3.3V) 4) Check E of Q107 (For M+9V)	1) Cable/Wire not connected properly between Main/D-Amp P.C.B & SMPS P.C.B or broken. 2) Main Transformer, T5701 short/open or broken. 3) Switching regulator, D5802 faulty. 4) Switching Transformer, T2900 faulty 5) L2915/L2916 Open circuit 6) L2910 Open circuit 7) FP2901 open circuit. 8) Switching regulator IC, IC106 faulty (No DVD +5V/ +3.3V & SW5V) 9) IP100 faulty (open circuit) – No +12V supply to Q107 (regulator circuit)	a) SMP P.C.B Refer to Figure 1 b) Main / D-Amp P.C.B Refer to Figure 2
No audio output to speaker	1) Check O/P of Digital Amplifier IC (Pin 28, 31, 36 & 39, 36) 2) Check I/P to Digital Amplifier IC (Pin 6, 8, 16, 18) 3) Check supply to Digital Amplifier IC (IC403, IC404, IC405) , VDD (Pin 21) 4) Check DAP IC I/P (Pin 28, 30, 31) 5) Check DAP IC, IC401 (Pin 40 to 52) 6) Check speaker connection	1) Digital Amplifier (IC403, IC404 or IC405) IC faulty (There is voltage supply & I/P but no O/P) 2) DAP IC, IC401 faulty (There is supply to DAP IC & I/P but no O/P) 3) No oscillating signal, X401 faulty	Main / D-Amp P.C.B Refer to Figure 2

7.1.3. Part Location

7.1.3.1. SMPS P.C.B.



7.1.3.2. Main/D-Amp P.C.B.



7.2. Basic Troubleshooting Guide for Traverse Unit (DVD Module P.C.B.)

Problems	Checking Points	Checking components
1) Distorted picture or abnormal sound is heard during the initialization	a) Check SDRAM address, data bus, CLK and other control signals waveform	IC8051
	b) Check video signals (Y,C)	LB8315, R8321, (Y) LB8316, R8325 (C)
	c) Check audio DAC circuitry * Compare the above with OK condition DVD Module P.C.B	IC8422 (Pin 9 to 11 & 17 to 22) LB8426, LB8427, LB8428 *Check for solder short and/or component missing/damaged
2) No TOC/Long TOC	a) Check motor driver circuitry (+5V)	IC8251 Pin 8, 21
	b) Check laser drive circuitry (Voltages & current)	Q8551, Q8552 (For DVD), Q8561, Q8562 (For CD)
	c) Check LSI IC connection to motor drive circuitry * Compare the above with OK condition DVD Module P.C.B.	IC8001 Pin 66, 67 IC8251 Pin 15 to 16 * 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 DVD Module to Traverse unit	FP8251
	b) Check motor driver circuitry on the voltages and control signals * Compare the above with OK condition DVD Module P.C.B.	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 DVD Module P.C.B.	Q8551, Q8552, LB8551 (For DVD Laser Drive current) Q8561, 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)

7.3. 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 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) - Data (TX0P/M => 14, 16) - Data (TX1P/M => 18, 20) - Data (TX2P/M => Pin 22, 24) - Clock (TXCP/TXCM => Pin 10, 12)	L3905 L3904 L3903 L3906
	5) HDMI Transmitter communication lines to TV - Data, SDA (Pin 120, IC3901) - Clock, SCL (Pin 121, IC3901)	LB3905, R3905, Q3902, R3904 LB3904, R3907, Q3903, R3906
	6) HDMI Transmitter communication from LSI (IC8001) (I2C_SCL/I2C_SDA signals)	RX3901
	7) Local Port Slave Address setting resistor at Pin 99 of HDMI Transmitter LSI IC (IC3901) for LPSA signal	R3921
	8) HDMI Transmitter LSI IC (IC3901) +3.3V Supply	LB3901, LB3902, IC3901 (Pin 9, 13, 17, 21, 25, 124)
	9) HDMI Transmitter LSI IC (IC3901) +1.2V Supply	IC3901 (Pin 5, 26, 42, 47, 55, 75, 85, 102, 109, 116, 123), LB3908, IC8151 (Pin 4), LB8001, IC8001 (Pin 20, 44, 83, 158, 187, 211)
	10) HDMI Up-Con +3.3V Supply	LB3901
	11) HDMI Pixel Clock Output from Up-Con to HDMI Transmitter (VCLK)	LB8901
	12) Up-Con IC I2C Data and Clock Line	RX3901

Problems	Checking Points	Checking components
1) TV does not have any display. Set FL display shows U702/U703	13) Hot-Plug Signal	LB3906, R3902, R3903, Q3901, D3901
	14) TDMS Output swing amplitude control resistor	R3901
	15) Host Interface External Input Clock from LSI (IC8001) to Up-Con IC (IC3901) - OSC27M	LB8702
	16) Video Data Lines from LSI (IC8001) to Up-Con (IC3901)	RX3707, RX3708, IC3901 (Pin 92 to 95, Pin 87 to 90)
2) When switching the video output mode from 480p to 720p/1080i, TV display becomes blank	1) Supply for Up-Con (IC3901) - Pin 9,124 2) GND for Up-Con - Pin 7,125 3) Check for capacitor short to GND	LB3902 C3902, C3928, C3925
3) Color Problem. TV Screen is White/Blue/Purple	1) Check digital video data line from LSI(IC8001) to Up-Converter (IC3901), VOUT0-VOUT7.	RX3707, RX3708
4) HDMI got no audio output	1) Audio data lines 2) Check setting of the set in Setup Menu whether the HDMI Audio output is turned On	R8402, RX8402 * Check for solder short and/or component missing/damaged as well as signal condition.

8 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
- Disassembly of Component Video P.C.B.
- Disassembly of Rear Panel
- Disassembly of DVD Mechanism Unit (DLS6E)
- Disassembly of DVD Module P.C.B.
- Disassembly of SMPS P.C.B.
- Replacement of Switching Regulator IC (IC5701)
- Replacement of Diode (D5802)
- Disassembly of Main/D-Amp P.C.B.
- Replacement of Digital Amplifier IC (IC403/IC404/IC405)
- Disassembly of Front Panel Assembly
- Disassembly of FL P.C.B.
- Disassembly of Volume Button P.C.B.
- Disassembly of Power Button P.C.B.
- Disassembly of DVD Lid Assembly

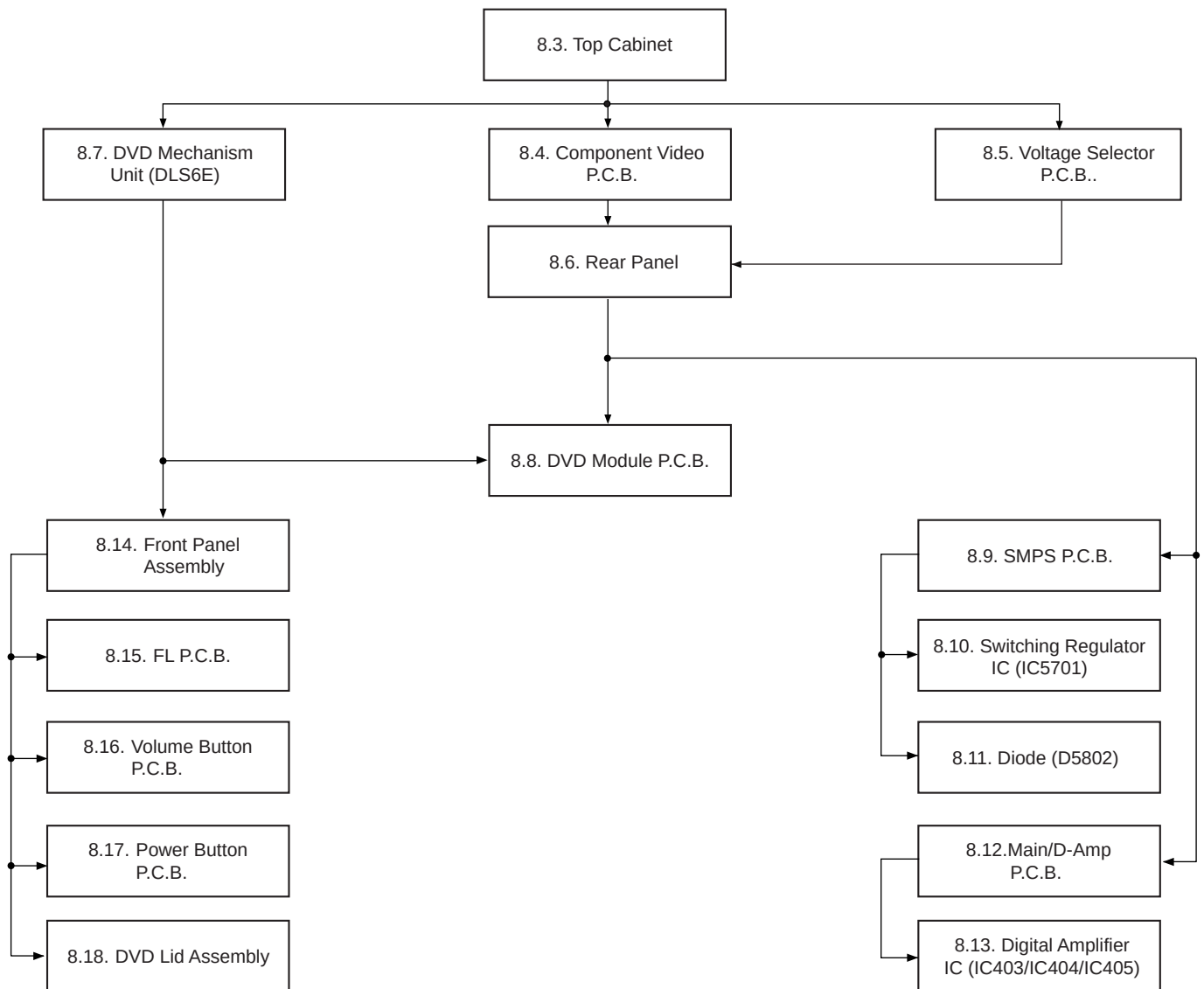
CAUTION NOTE:

Please use original screw and at correct locations.

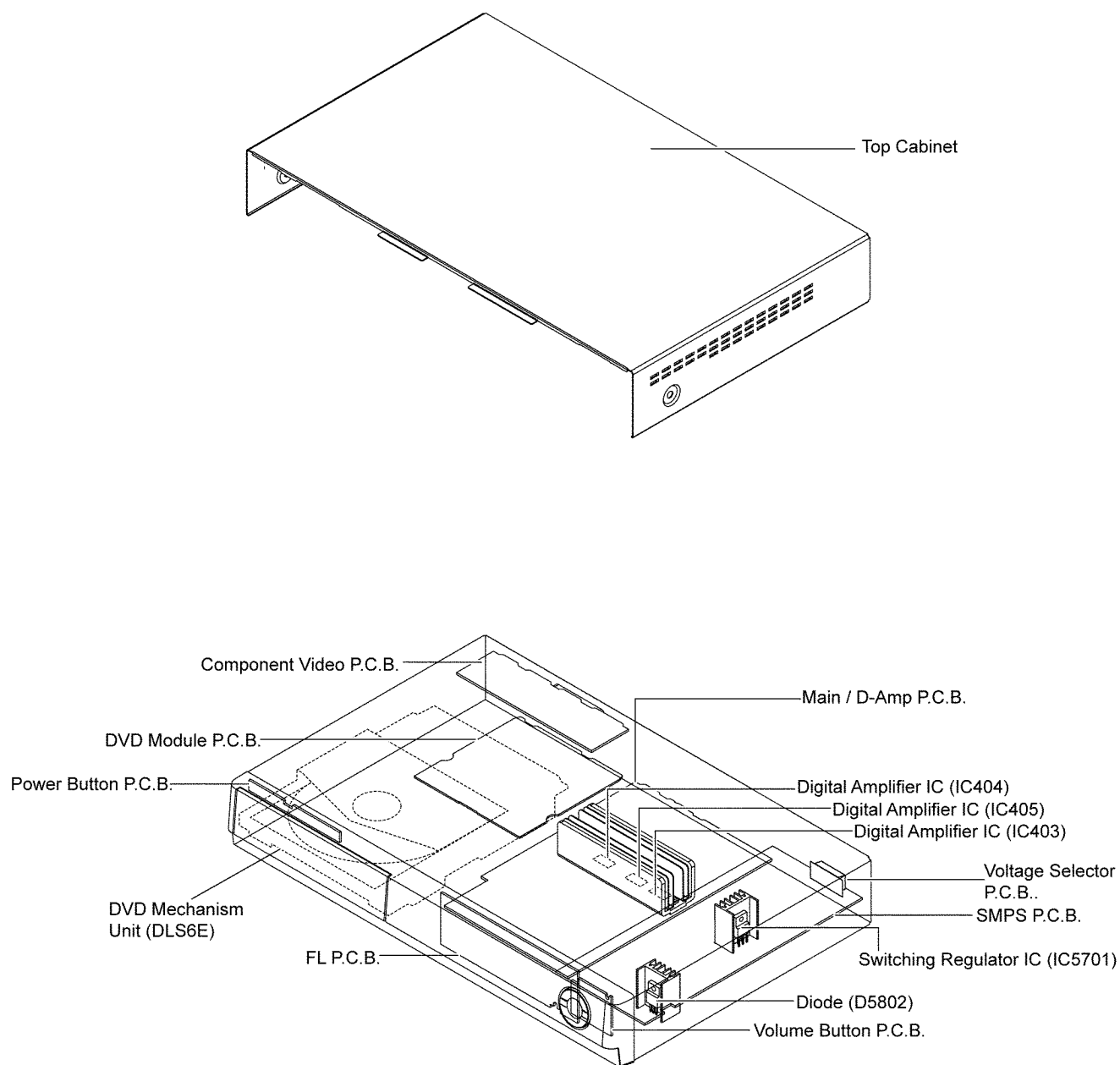
Below shown is part no. of different screw types used:

- | | |
|------------------------|-----------------------|
| a :RHD30007-K2J | f :RHD30111-31 |
| b :RHD30119-S | g :XTB3+10JFJ |
| c :XSN3+4FJ | h :RHD26046 |
| d :RHDV30006 | i :RHD26043-1 |
| e :RHDX30005-1 | |

8.1. Disassembly Flow Chart

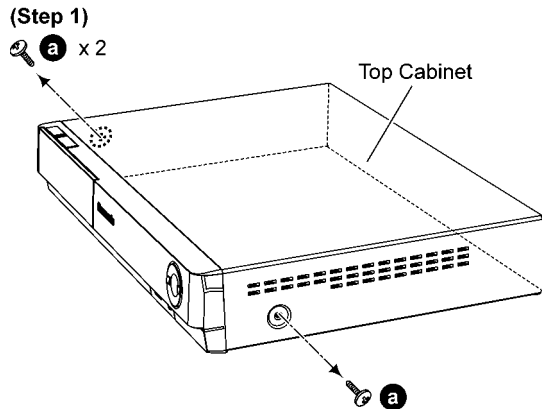


8.2. Main Components and P.C.B. Locations

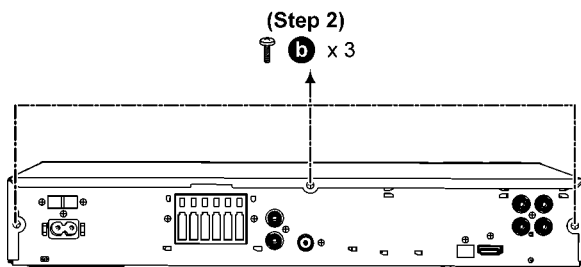


8.3. Disassembly of Top Cabinet

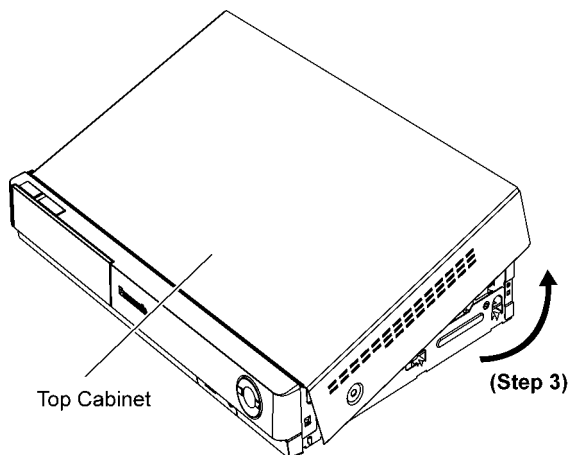
Step 1 Remove 2 screws at the side of Top Cabinet



Step 2 Remove 3 screws at the rear of Top Cabinet.

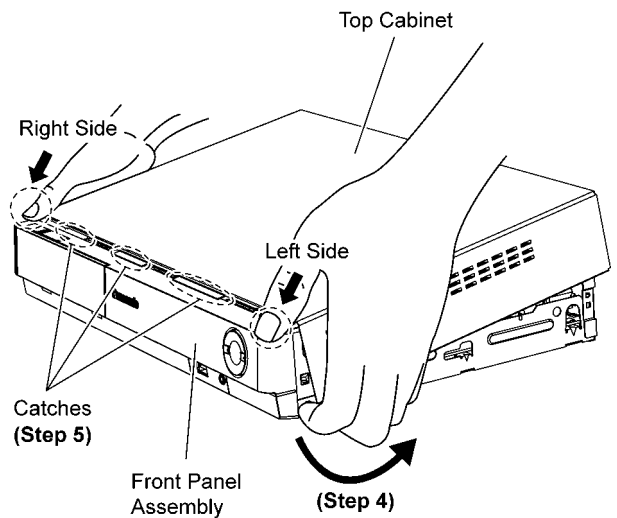


Step 3 Lift up the back portion of Top Cabinet as arrow shown.

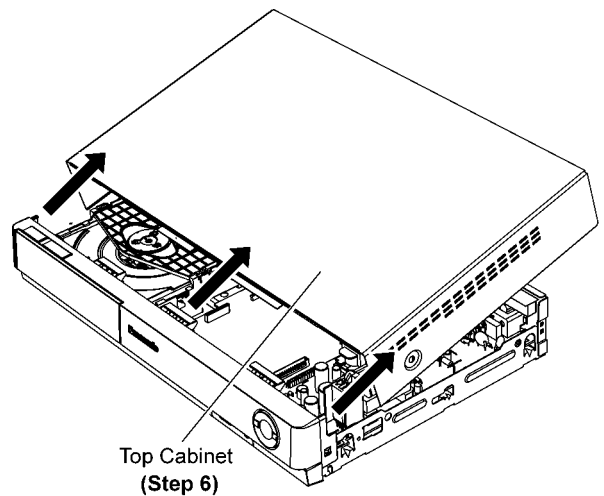


Step 4 Slightly lift both side of Top Cabinet in an outward direction as arrow shown.

Step 5 Press left & right side at the top of front panel assembly to release the catches and pull out Top Cabinet as arrow shown.



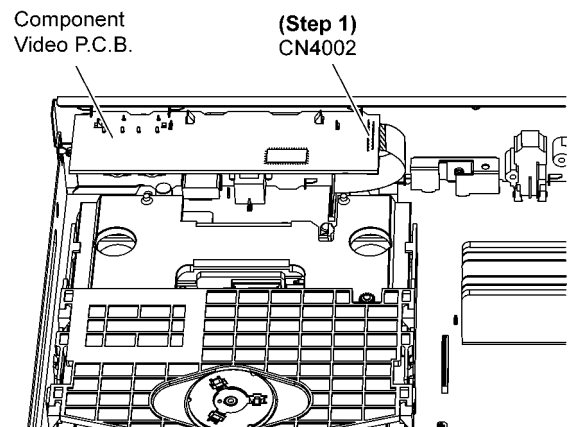
Step 6 Remove Top Cabinet as arrow shown.



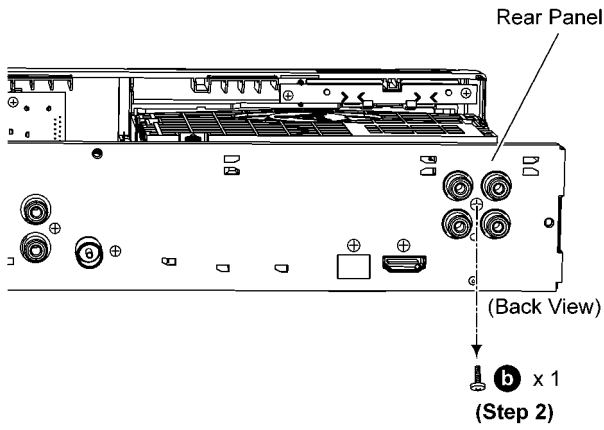
8.4. Disassembly of Component Video P.C.B.

• Refer to "Disassembly of Top Cabinet".

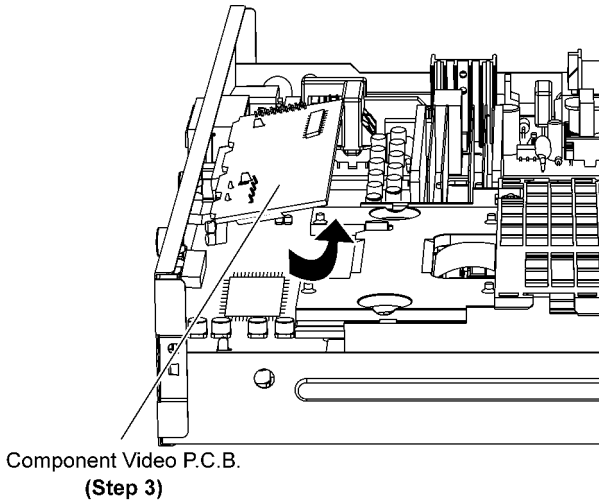
Step 1 Detach 11P FFC at the connector (CN4002) on Component Video P.C.B..



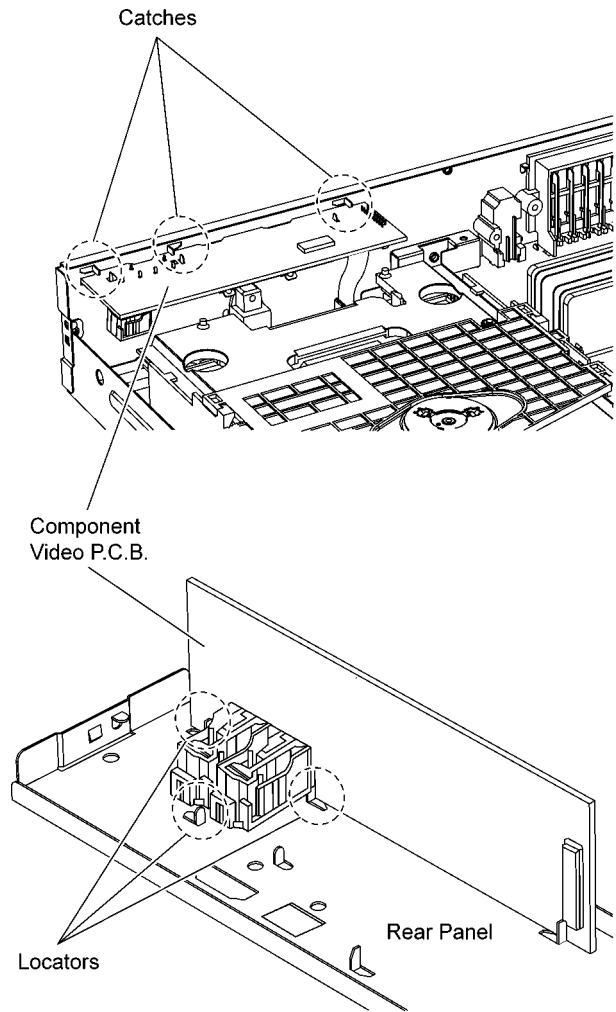
Step 2 Remove 1 screw at the Rear Panel.



Step 3 Lift up to remove Component Video P.C.B..



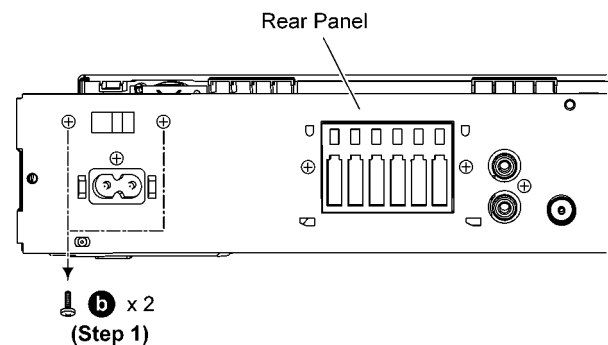
Caution: During assembling, ensure that Component Video P.C.B. is properly located & fully caught onto rear panel.



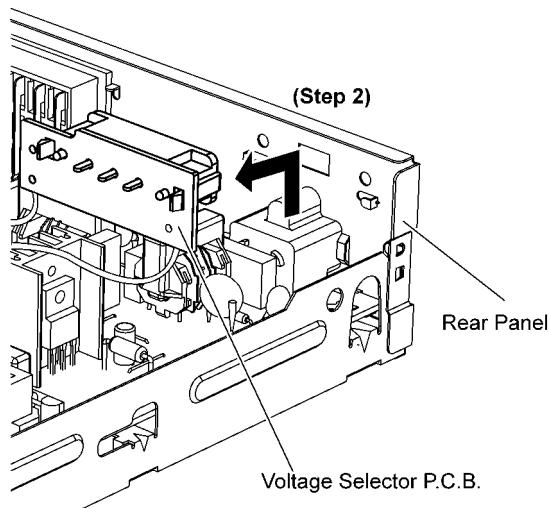
8.5. Disassembly of Voltage Selector P.C.B.

- Refer to "Disassembly of Top Cabinet"..

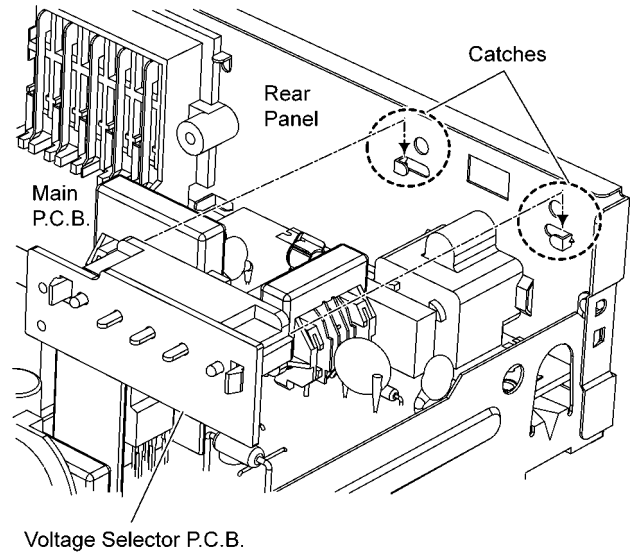
Step 1 Remove 2 screws.



Step 2 Lift up Voltage Selector P.C.B. according to arrow shown.

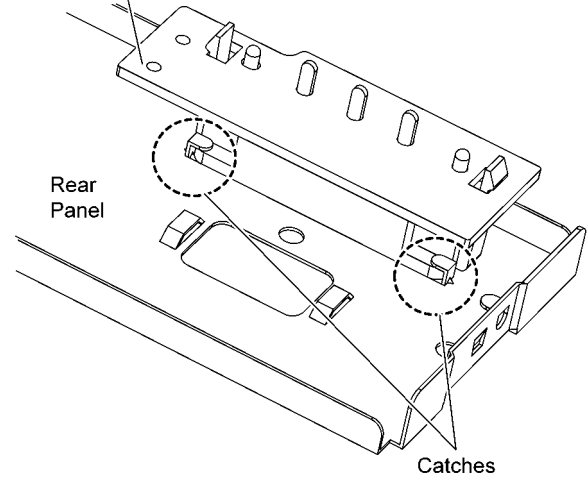
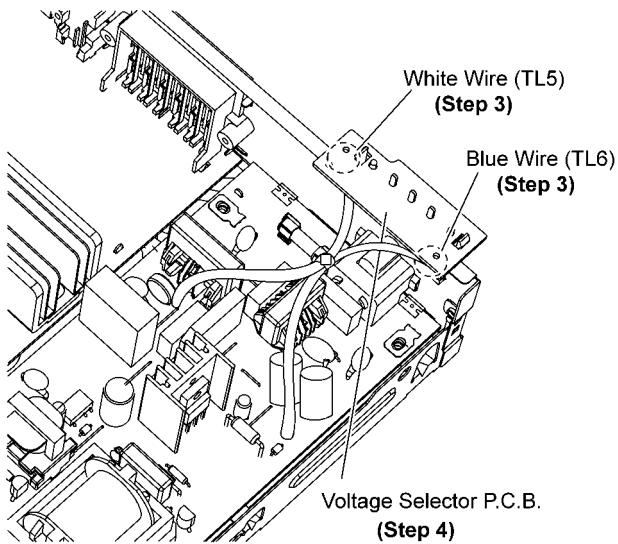


Caution: During assembling, ensure that Voltage Selector P.C.B. is properly inserted & fully caught onto Rear Panel.



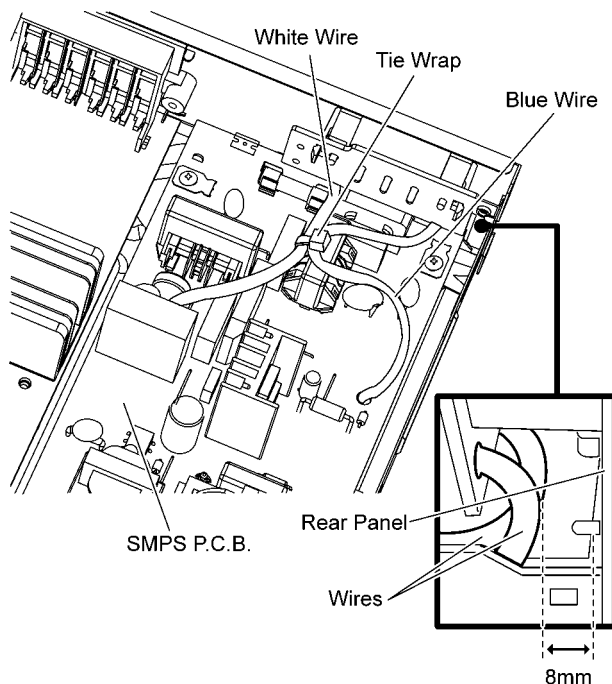
Step 3 Desolder White wire (TL5) and Blue wire (TL6) at solder side of Voltage Selector P.C.B..

Step 4 Remove Voltage Selector P.C.B..



Caution: During assembling, ensure that wires are properly dressed and tied together to prevent wires from touching any heated parts according to diagram shown.

Note: Do keep an approx 8mm distance from wire & rear panel.

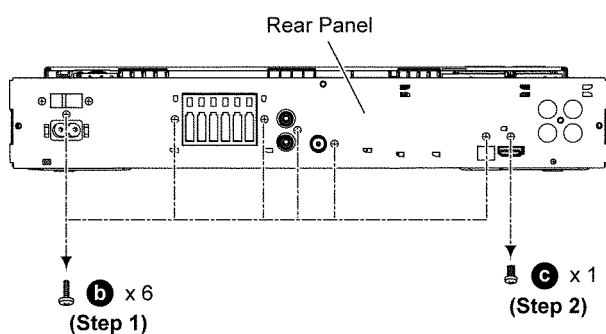


8.6. Disassembly of Rear Panel

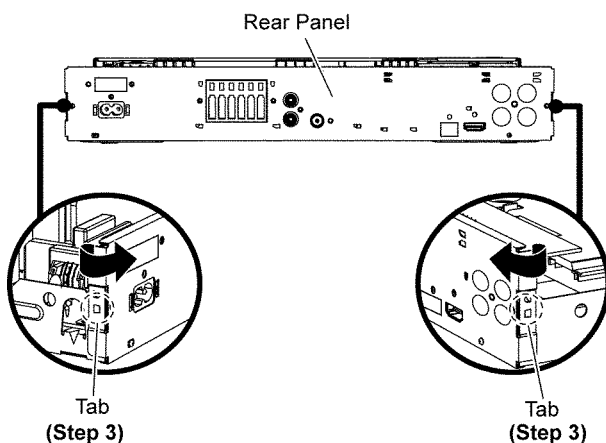
- Refer to “Disassembly of Component Video P.C.B.”.
- Refer (Step 1) to (Step 2) of item 8.5..

Step 1 Remove 6 screws.

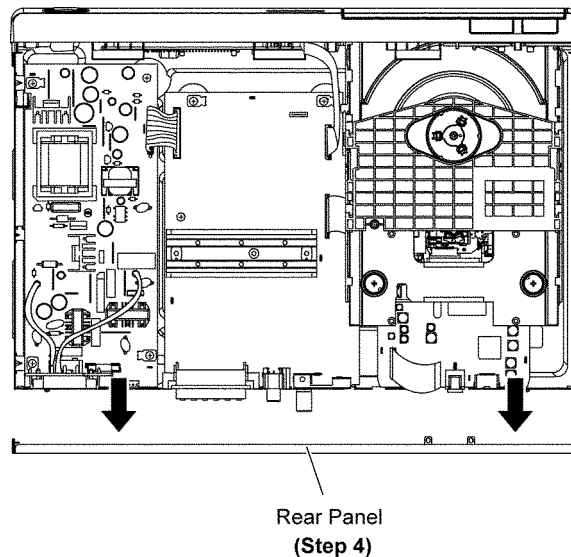
Step 2 Remove 1 screw.



Step 3 Release the tab of each side of the Rear Panel in the direction of arrow.



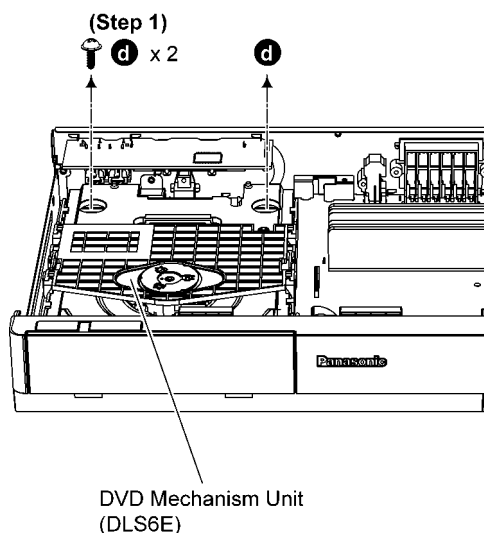
Step 4 Remove Rear Panel.



8.7. Disassembly of DVD Mechanism Unit (DLS6E)

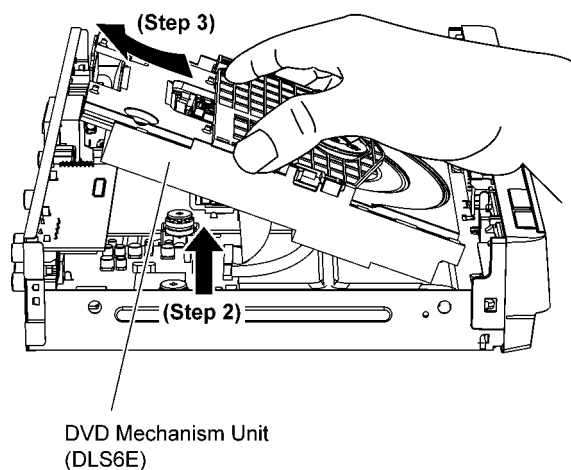
- Refer to “Disassembly of Top Cabinet”.

Step 1 Remove 2 screws.



Step 2 Slightly lift up the of DVD Mechanism Unit (DLS6E).

Step 3 Lift up DVD Mechanism Unit (DLS6E) according to direction of arrow shown.

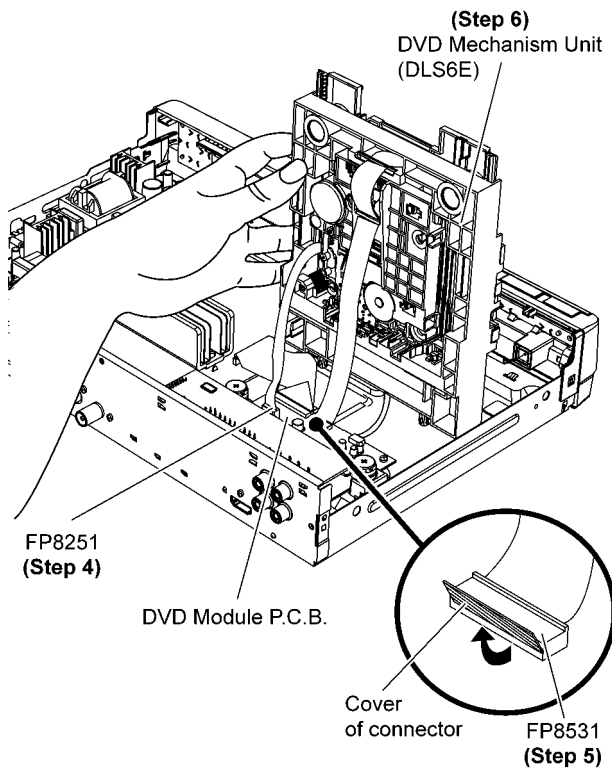


Step 4 Detach 7P FFC at the connector (FP8251) on DVD Module P.C.B..

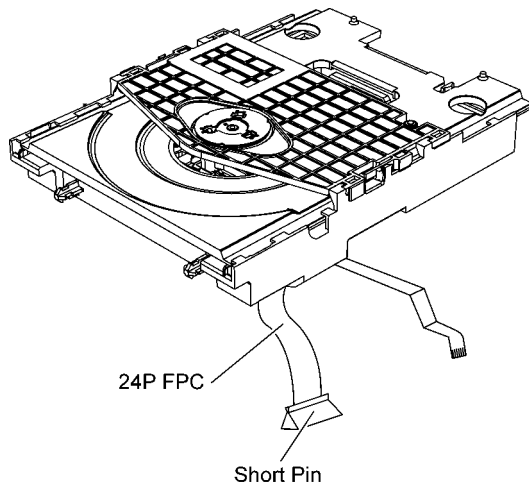
Step 5 Lift up cover of connector (FP8531) to detach 24P FFC at the connector on DVD Module P.C.B..

Caution: Ensure FFC is inserted properly before closing the cover of the connector.

Step 6 Remove DVD Mechanism Unit (DLS6E).

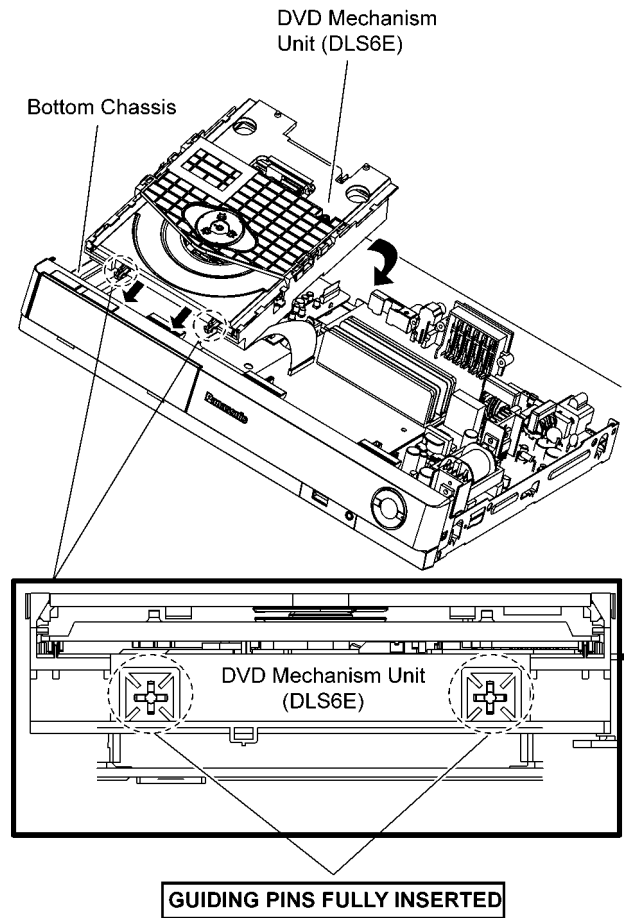


Caution: To prevent damage to the Optical Unit, attach a short pin to short-circuit the 24P FFC.



Caution: During assembling, ensure that DVD Mechanism Unit (DLS6E) is properly located and fully seated on bottom chassis before screwing.

Caution: Ensure that two guiding pins of DVD Mechanism Unit (DLS6E) are fully inserted into the two slots of Front Panel Assembly.



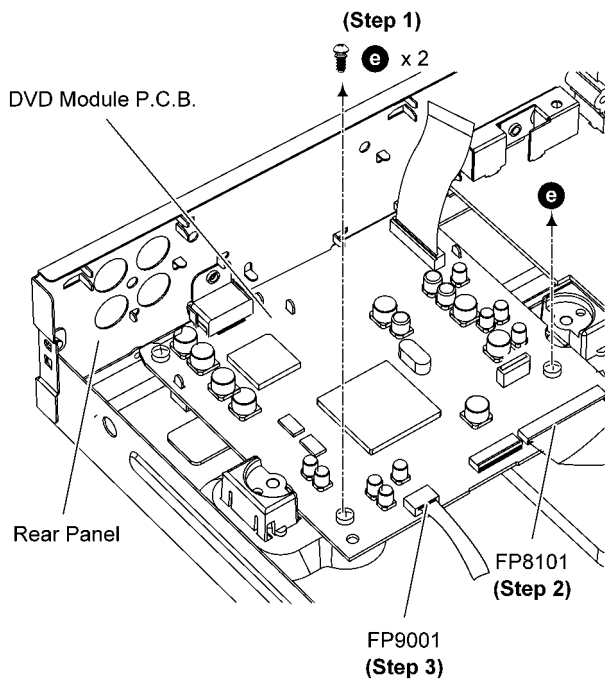
8.8. Disassembly of DVD Module P.C.B.

- Refer to "Disassembly of Component Video P.C.B..".
- Refer to "Disassembly of DVD Mechanism Unit (DLS6E)".

Step 1 Remove 2 screws on DVD Module P.C.B..

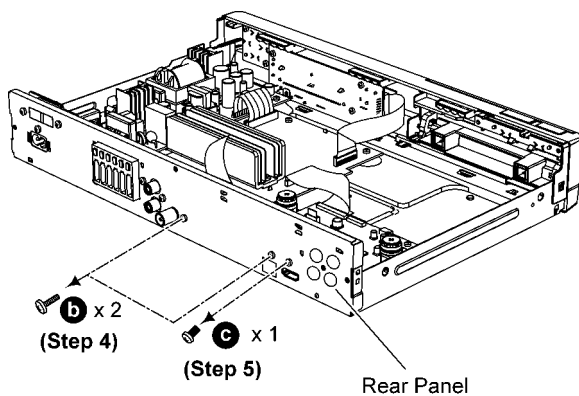
Step 2 Detach 50P FFC at the connector (FP8101) on DVD Module P.C.B..

Step 3 Detach 5P wire at the connector (FP9001) on DVD Module P.C.B..

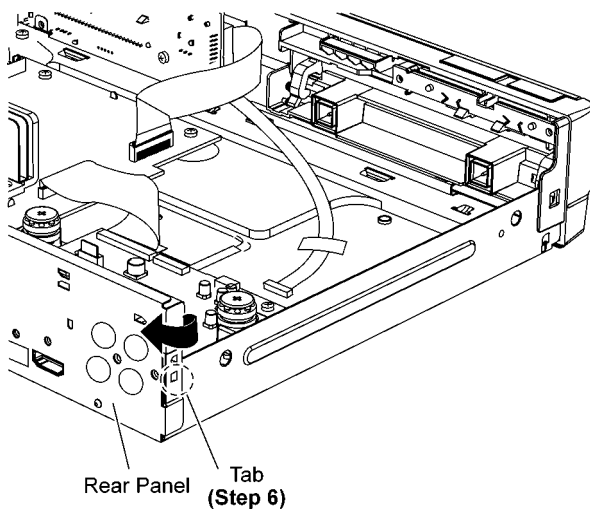


Step 4 Remove 2 screws.

Step 5 Remove 1 screw.

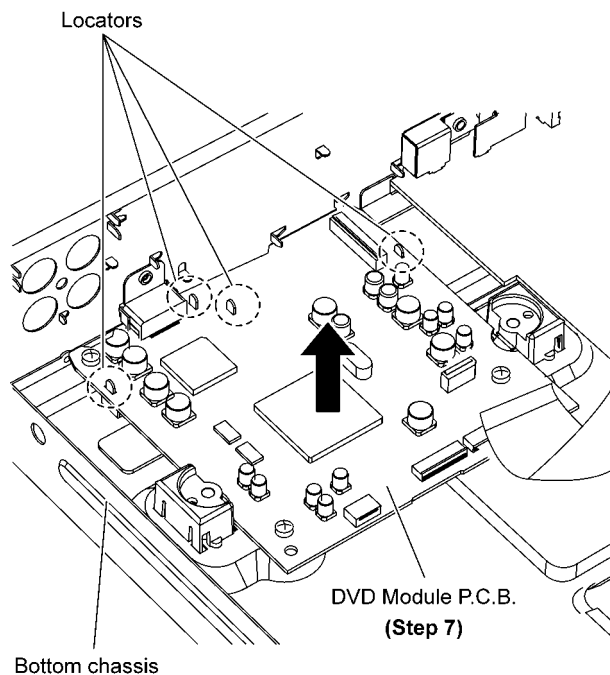


Step 6 Release the tab of the side of the Rear Panel in the direction of arrow.



Step 7 Remove DVD Module P.C.B..

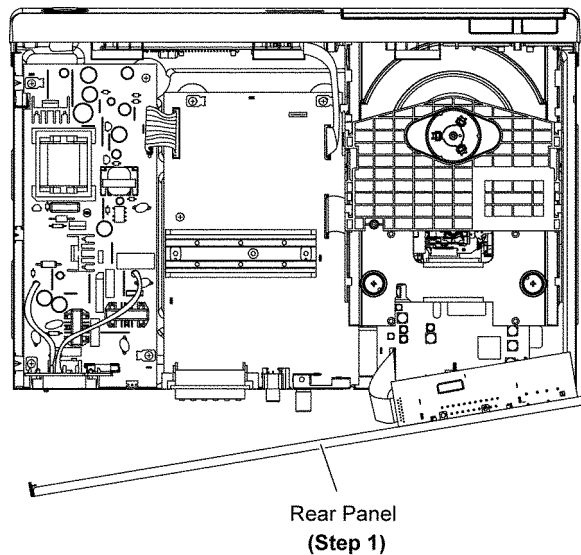
Caution: During assembling, ensure that DVD Module P.C.B. is properly located & fully seated onto bottom chassis.



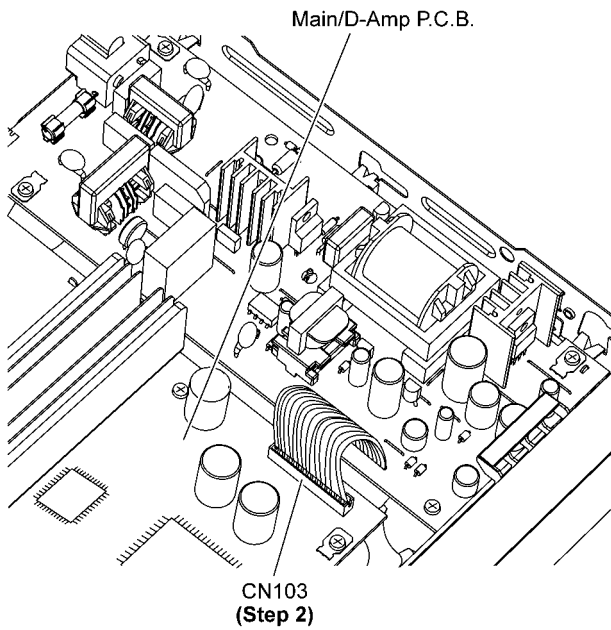
8.9. Disassembly of SMPS P.C.B.

- Refer to "Disassembly of Top Cabinet".
- Refer to (Step 1) to (Step 2) of item 8.5..
- Refer to (Step 1) to (Step 3) of item 8.6.

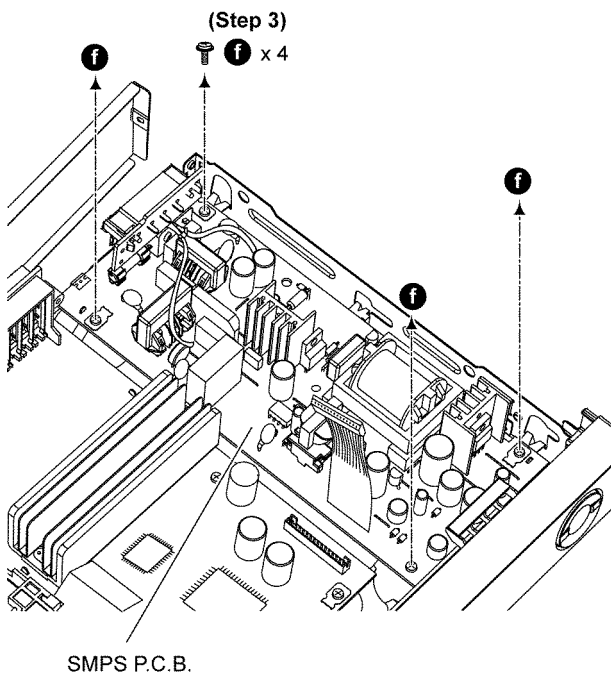
Step 1 Position Rear Panel according to diagram shown.



Step 2 Detach 15P cable at the connector (CN103) on Main/D-Amp P.C.B..

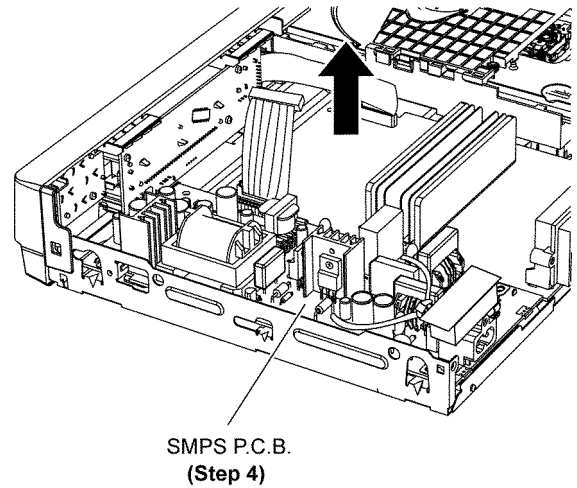


Step 3 Remove 4 screws.

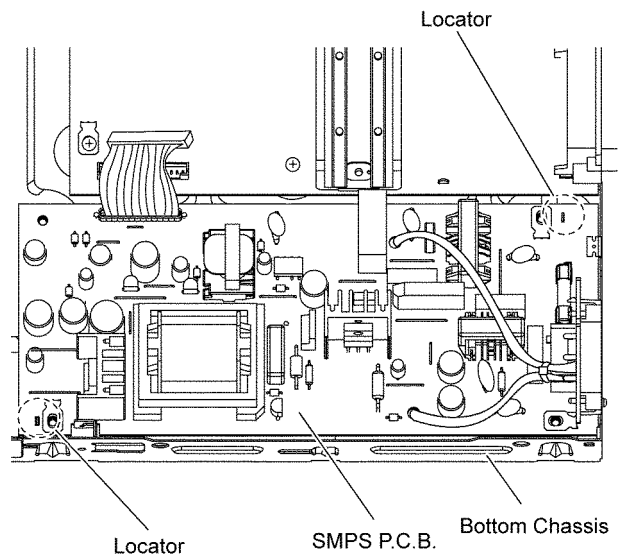


Step 4 Lift up to remove SMPS P.C.B..

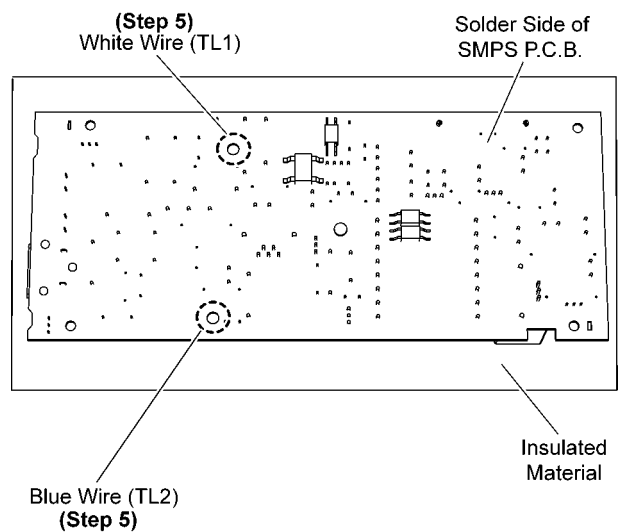
Caution: Handle the SMPS P.C.B. with care. Avoid touching the heatsink due to its prolong use.



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

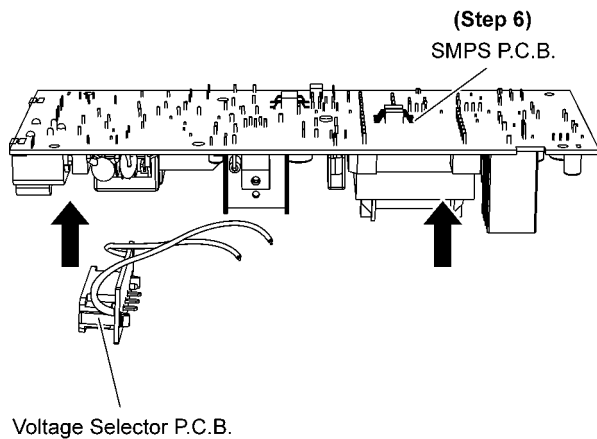


Step 5 Desolder White wire (TL1) and Blue wire (TL2) on solder side of SMPS P.C.B..



Step 6 Remove SMPS P.C.B..

Caution: During assembling, ensure the White wire (TL1) and Blue wire (TL2) of Voltage Selector P.C.B. is solder properly at solder side of SMPS P.C.B..

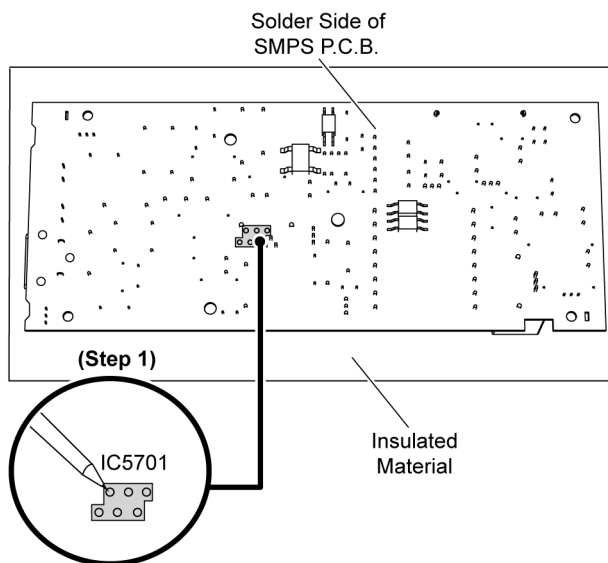


8.10. Replacement of Switching Regulator IC (IC5701)

• Refer to “Disassembly of SMPS P.C.B.”.

8.10.1. Disassembly of Switching Regulator IC (IC5701)

Step 1 Desolder pins of the Switching Regulator IC (IC5701) on the solder side of SMPS P.C.B..

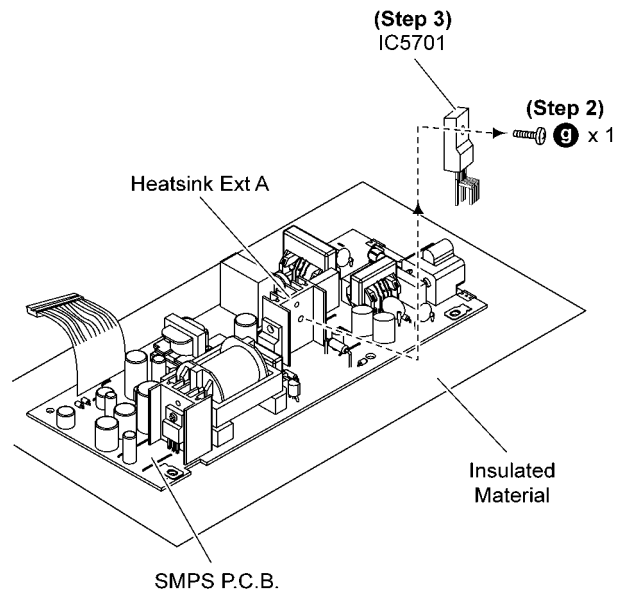


Step 2 Remove 1 screw from the Switching Regulator IC (IC5701).

Step 3 Remove the Switching Regulator IC (IC5701) from the Heatsink Ext A.

Caution: Avoid touching Heatsink Ext A due to its high temperature after prolonged use. Touching it may lead to injuries.

Note: Refer to the diagrams of SMPS P.C.B. (Item 18.4) for location of the part.



8.10.2. Assembly of Switching Regulator IC (IC5701)

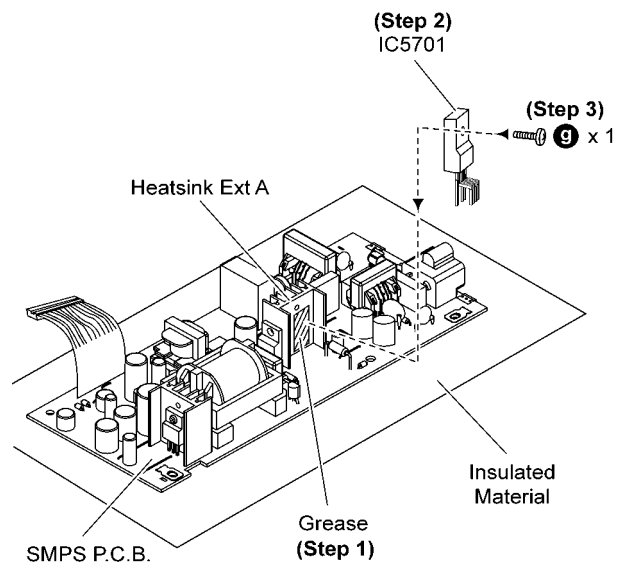
Step 1 Apply grease to the Heatsink Ext A.

Step 2 Mount the Switching Regulator IC (IC5701) to the SMPS P.C.B..

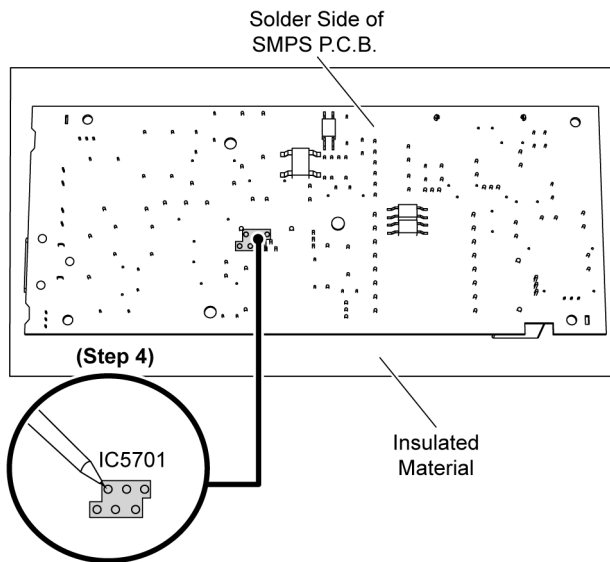
Caution: Ensure pins of the Switching Regulator IC (IC5701) are properly seated and soldered on SMPS P.C.B..

Step 3 Fix and screw the Switching Regulator IC (IC5701) to the Heatsink Ext A.

Caution: Ensure the Switching Regulator IC (IC5701) is tightly screwed to the Heatsink Ext A.



Step 4 Solder pins of the Switch Regulator IC (IC5701) on the solder side of SMPS P.C.B..

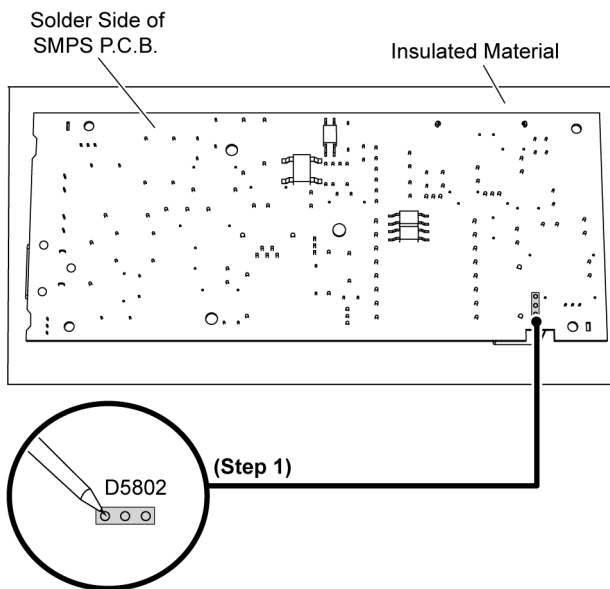


8.11. Replacement of Diode (D5802)

- Refer to Disassembly of SMPS P.C.B..

8.11.1. Disassembly of Diode (D5802)

Step 1 Desolder pins of the Diode (D5802) on the solder side of SMPS P.C.B..

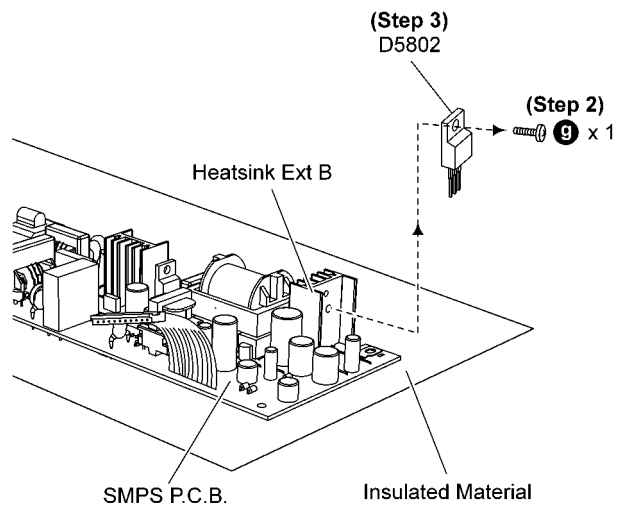


Step 2 Remove 1 screw from the Diode (D5802).

Step 3 Remove the Diode (D5802) from the Heatsink Ext B.

Caution: Avoid touching Heatsink Ext B due to its high temperature after prolonged use. Touching it may lead to injuries.

Note: Refer to the diagrams of SMPS P.C.B. (Item 18.4) for location of the part.



8.11.2. Assembly of Diode (D5802)

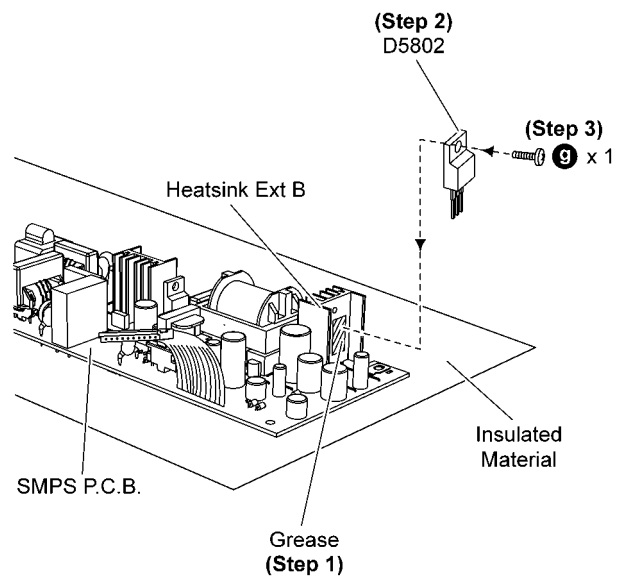
Step 1 Apply grease to the Heatsink Ext B.

Step 2 Mount the Diode (D5802) to the SMPS P.C.B..

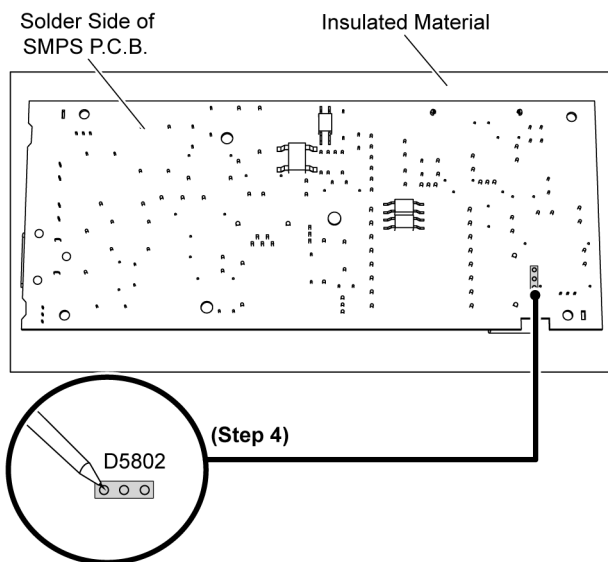
Caution: Ensure pins of the Diode (D5802) are properly seated and soldered on SMPS P.C.B..

Step 3 Fix and screw the Diode (D5802) to the Heatsink Ext B.

Caution: Ensure the Diode (D5802) is tightly screwed to the Heatsink Ext B.



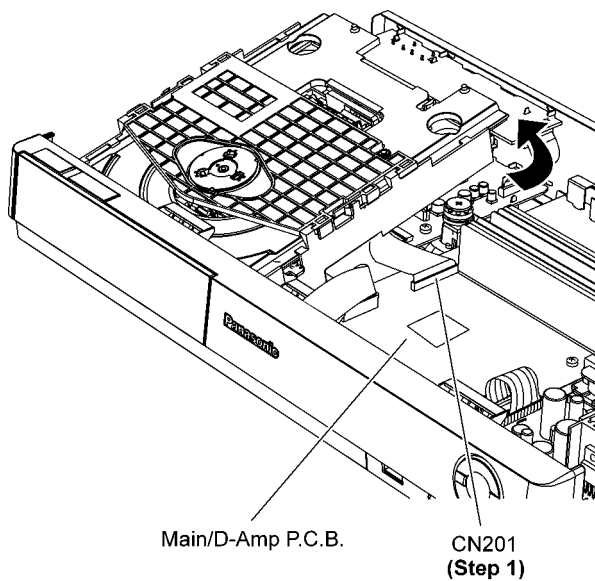
Step 4 Solder pins of the Diode (D5802) on the solder side of SMPS P.C.B..



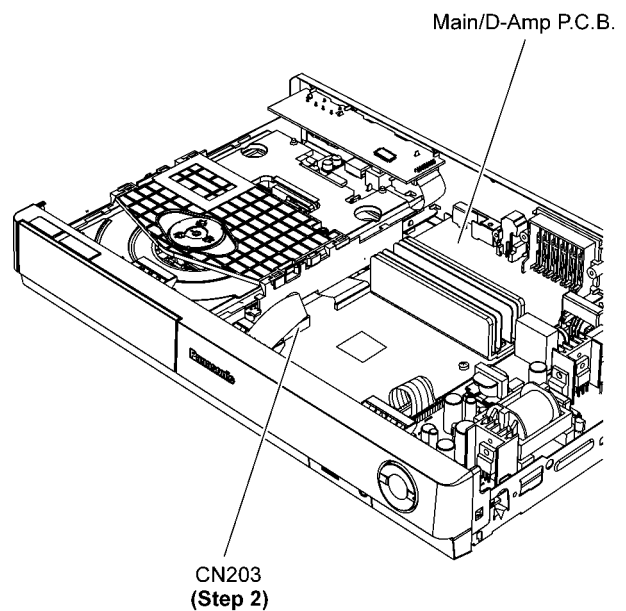
8.12. Disassembly of Main/D-Amp P.C.B.

- Refer to “Disassembly of Top Cabinet”.
- Refer to (Step 1) to (Step 2) of item 8.5.
- Refer to (Step 1) to (Step 3) of item 8.6.
- Refer to (Step 1) to (Step 3) of item 8.7.

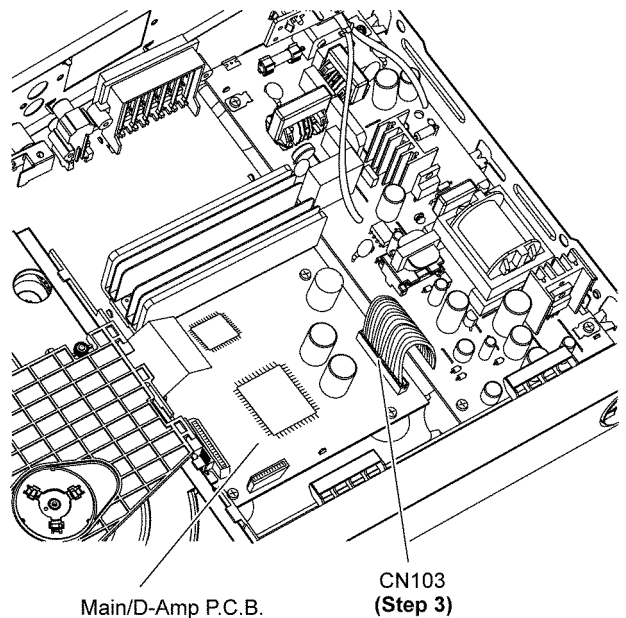
Step 1 Detach 50P FFC at the connector (CN201) on Main/D-Amp P.C.B..



Step 2 Detach 17P FFC at the connector (CN203) on Main/D-Amp P.C.B..

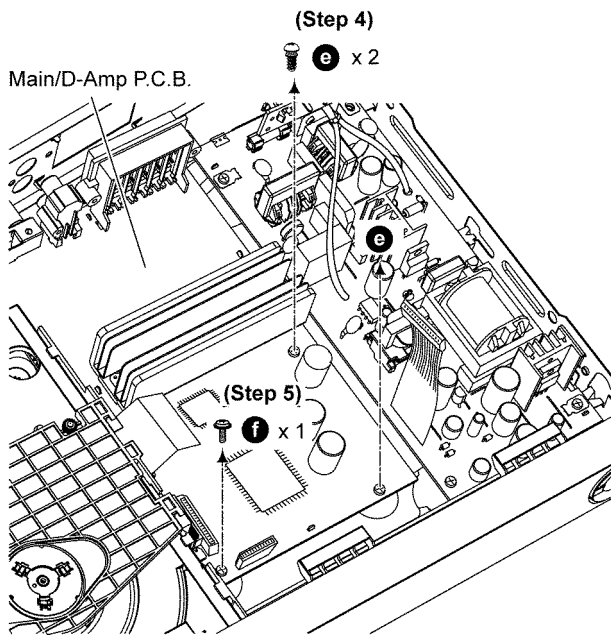


Step 3 Detach 15P Cable Wire at the connector (CN103) on Main/D-Amp P.C.B..



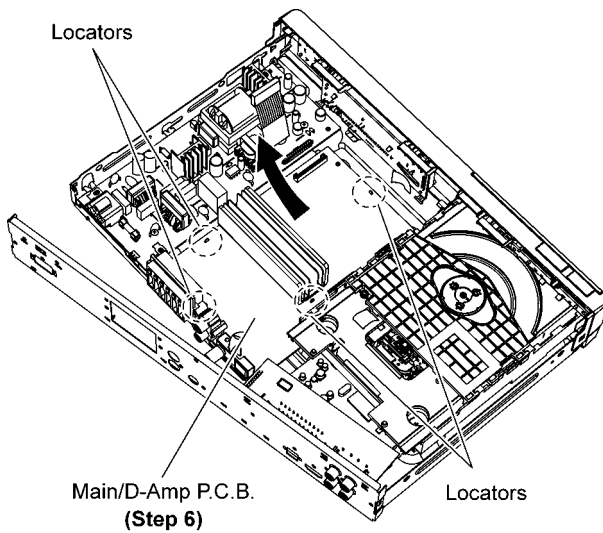
Step 4 Remove 2 screws on Main/D-Amp P.C.B..

Step 5 Remove 1 screw on Main/D-Amp P.C.B..



Step 6 Remove Main/D-Amp P.C.B..

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

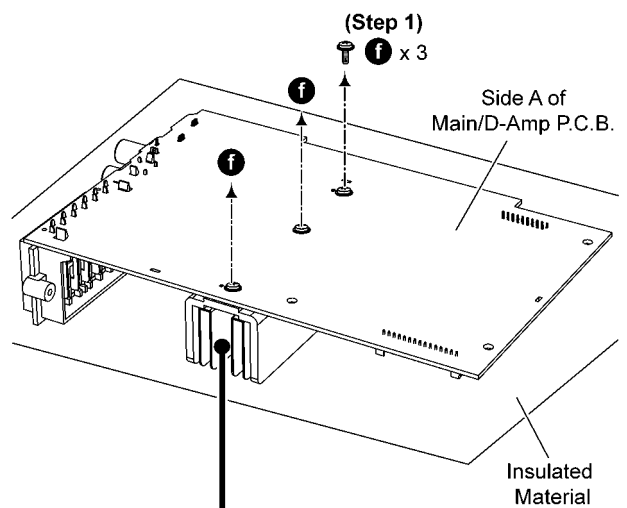


8.13. Replacement of Digital Amplifier IC (IC403/IC404/IC405)

• Refer to "Disassembly of Main/D-Amp P.C.B..".

8.13.1. Disassembly of Digital Amplifier IC (IC403/IC404/IC405)

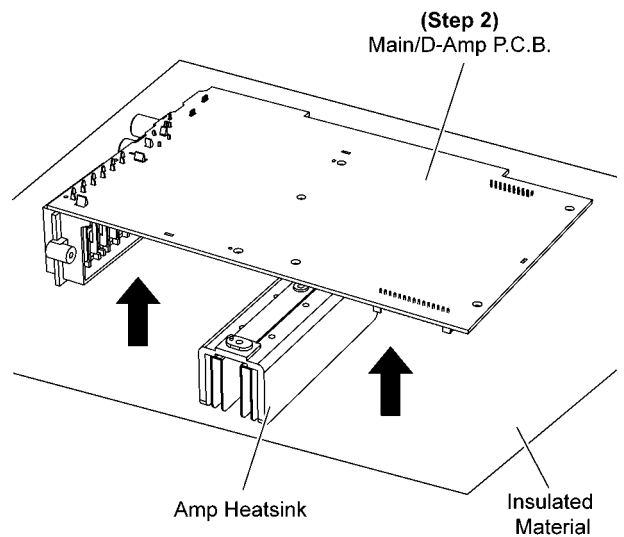
Step 1 Remove 3 screws on Side A of Main/D-Amp P.C.B..



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

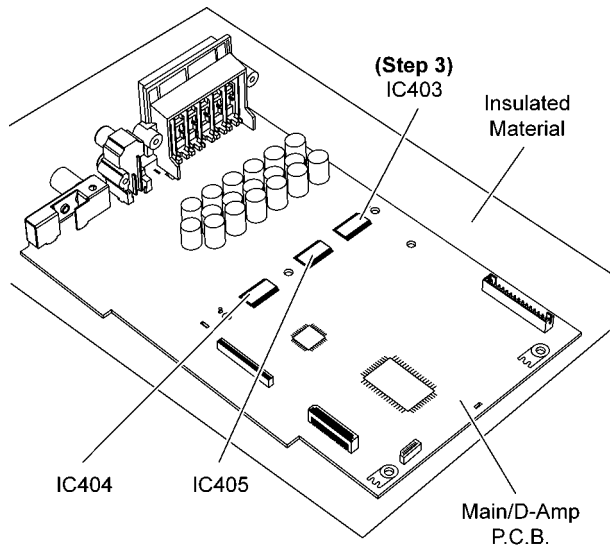
Step 2 Lift up Main/D-Amp P.C.B..

Caution: Handle the Main/D-Amp P.C.B. with caution due to its high temperature after prolonged use. Touching it may lead to injuries.

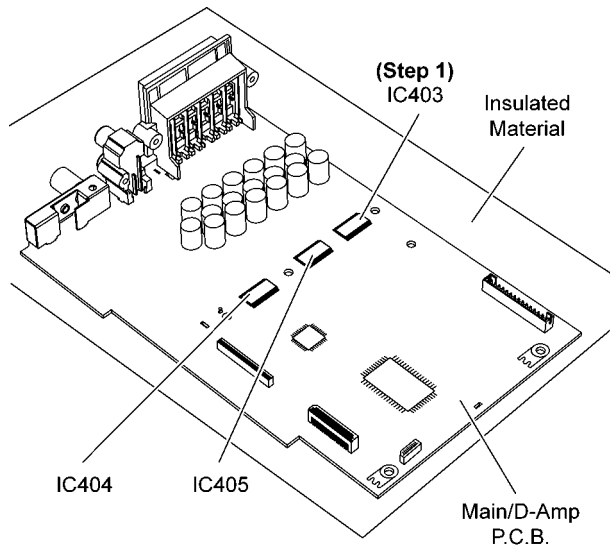


Step 3 Remove Digital Amplifier IC (IC403) by desolder its pins.

Note: For disassembling of Digital Amplifier IC (IC404/ IC405), repeat the (Step 1) to (Step 3).

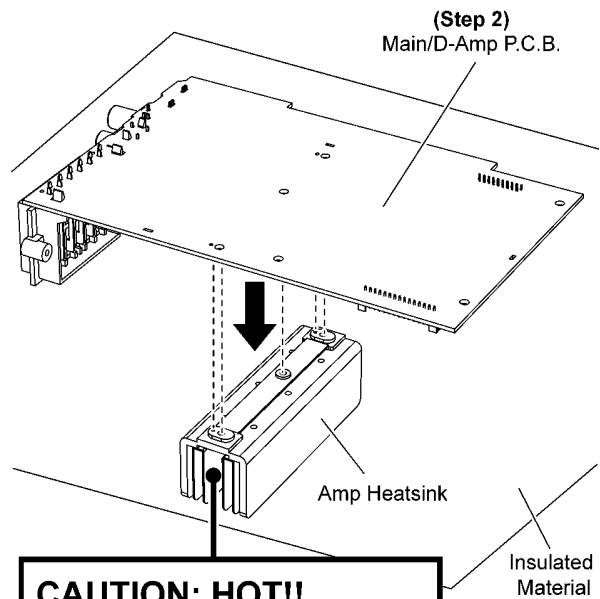


8.13.2. Assembly of Digital Amplifier IC (IC403/IC404/IC405)



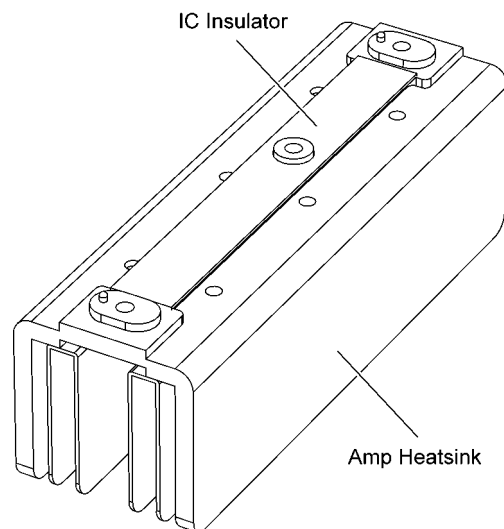
Step 1 Mount & Solder the pins of Digital Amplifier IC (IC403) on to the Main/D-Amp P.C.B..

Caution: Ensure that the pins of Digital Amplifier IC (IC403) is positioned correctly on Main/D-Amp P.C.B..

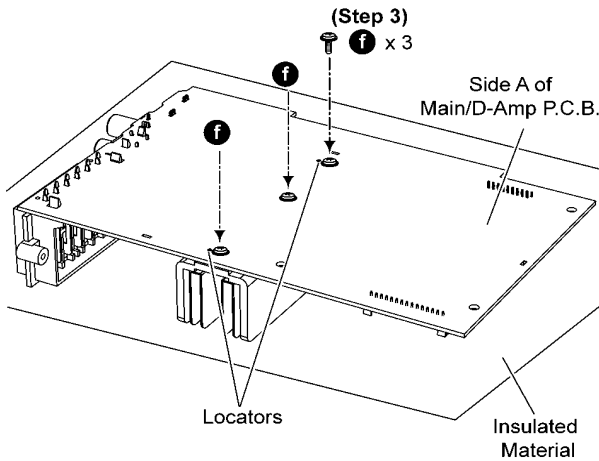


**CAUTION: HOT!!
PLEASE DO NOT
TOUCH THE HEAT SINK**

Step 2 Put Main/D-Amp P.C.B. on to Amp Heatsink.
Caution: Ensure that Main/D-Amp P.C.B. is properly located and fixed on to Amp Heatsink before screwing.



Caution: During assembling, replace the IC insulator if it is broken.



Step 3 Screw the 3 screws on the side A of Main/D-Amp P.C.B..

Note: For assembling of Digital Amplifier IC (IC404/IC405), repeat the (Step 1).

8.14. Disassembly of Front Panel Assembly

- Refer to “Disassembly of Top Cabinet”.
- Refer to (Step 1) to (Step 3) of Item 8.7.

Step 1 Position DVD Mechanism Unit (DLS6E) as diagram show.

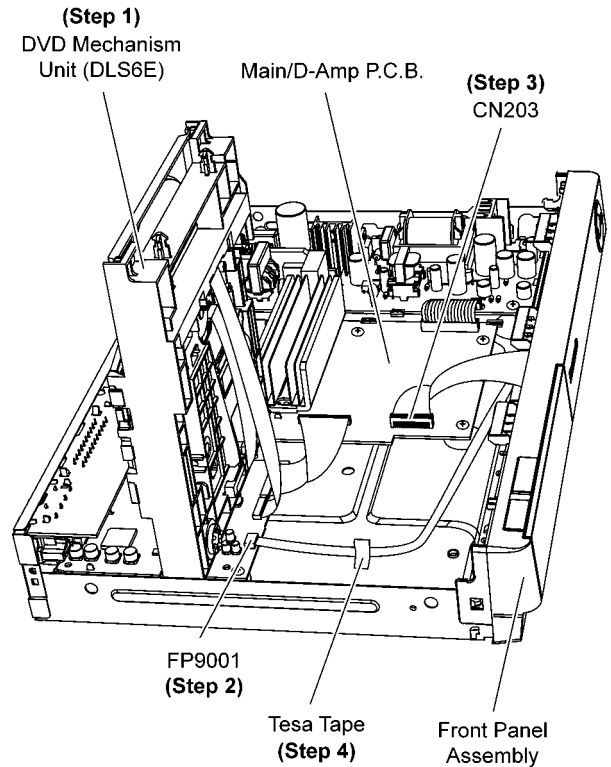
Step 2 Detach 5P wire at the connector (FP9001) on DVD Module P.C.B..

Step 3 Detach 17P FFC at the connector (CN203) on Main/D-Amp P.C.B..

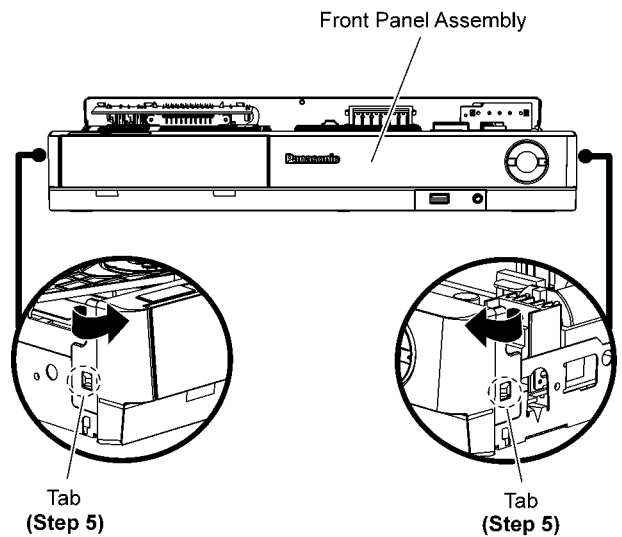
Step 4 Lift up tesa tape to release 5P wire.

Note: Place the DVD Mechanism Unit onto Bottom Chassis after removing 5P wire at the connector (FP9001) and tesa tape.

Caution: Replace the tesa tape if it is torn.

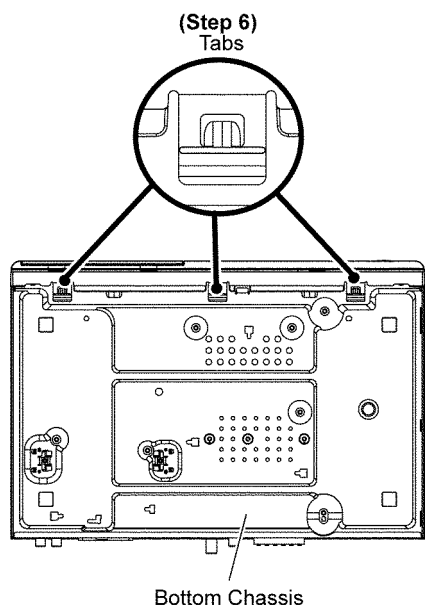


Step 5 Release the 2 tabs at each side of the Front Panel Assembly in the direction of arrow.

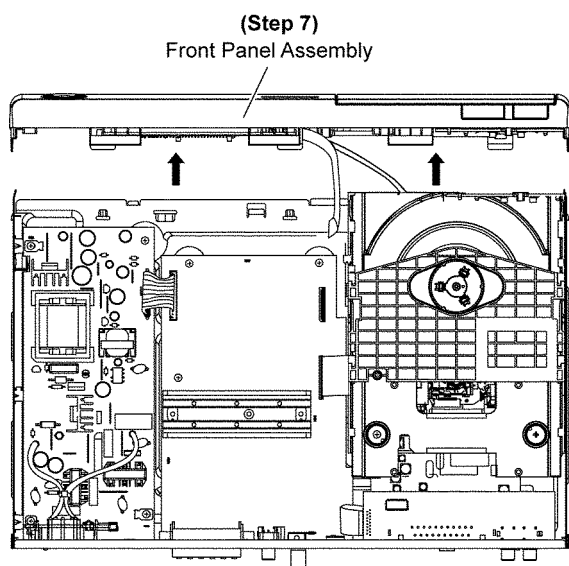


Step 6 Release the 3 tabs at the bottom chassis.

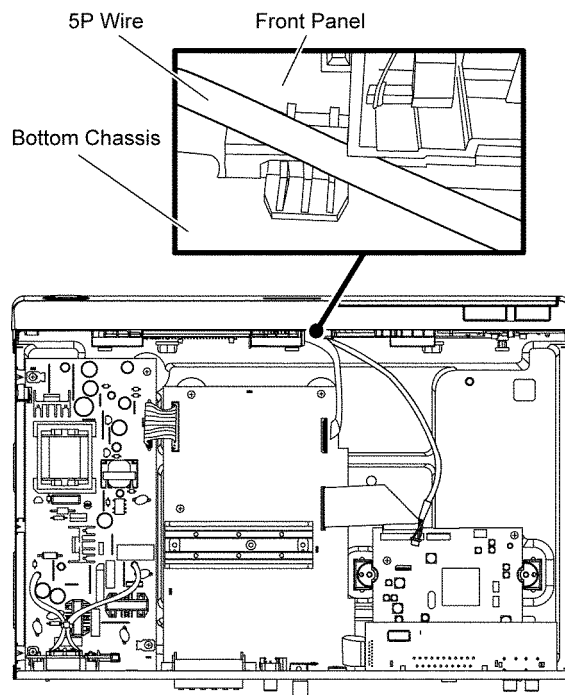
Caution: Do not exert strong force when releasing the tabs.



Step 7 Remove Front Panel Assembly.



Caution: During assembling, ensure that 5P wire is dressed between bottom chassis and front panel properly according to diagram shown.

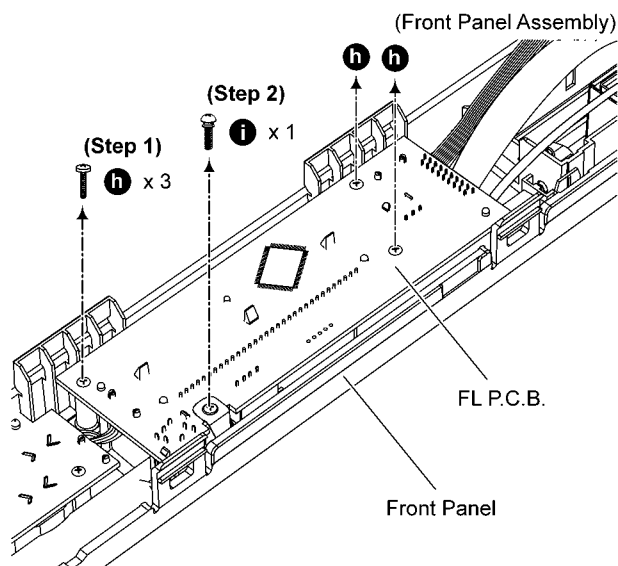


8.15. Disassembly of FL P.C.B.

• Refer to "Disassembly of Front Panel Assembly".

Step 1 Remove 3 screws.

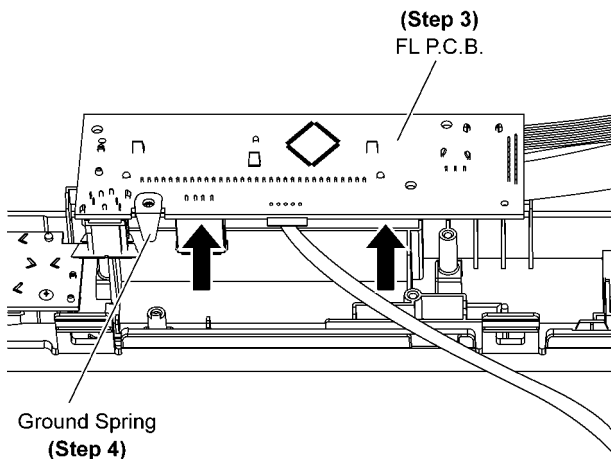
Step 2 Remove 1 screw.



Step 3 Lift up FL P.C.B..

Step 4 Remove Ground Spring.

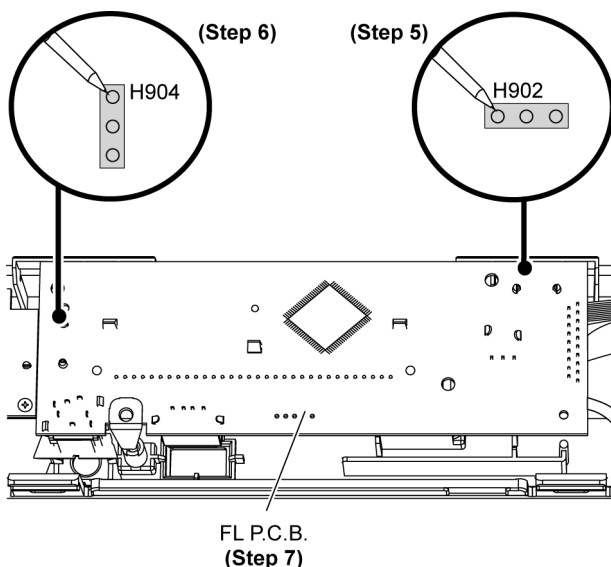
Caution: Keep the Ground Spring in safe place, place it back during assembling.



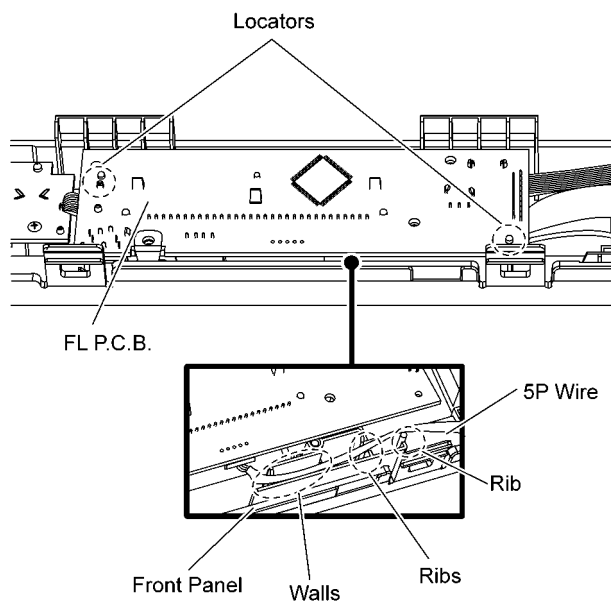
Step 5 Desolder 3P Cable at the cable holder (H902) on FL P.C.B..

Step 6 Desolder 3P Cable at the cable holder (H904) on FL P.C.B..

Step 7 Remove FL P.C.B..



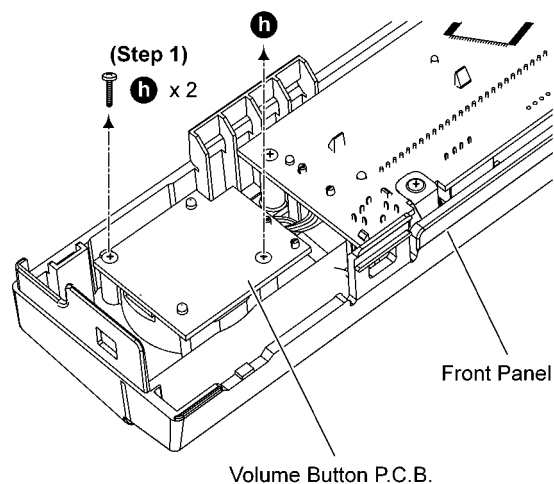
Caution: During assembling, ensure that FL P.C.B. is properly located and fully fixed onto front panel.
Caution: During assembling, ensure that 5P wire is dressed properly according to diagram shown.



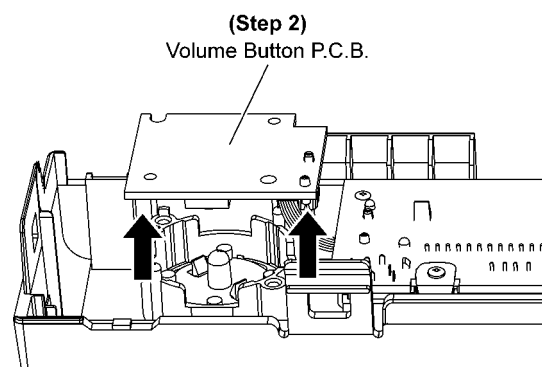
8.16. Disassembly of Volume Button P.C.B.

• Refer to “Disassembly of Front Panel Assembly”.

Step 1 Remove 2 screws.

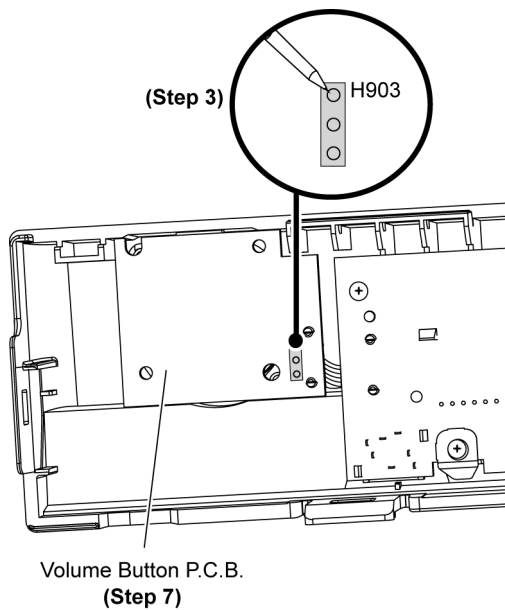


Step 2 Lift up Volume Button P.C.B..

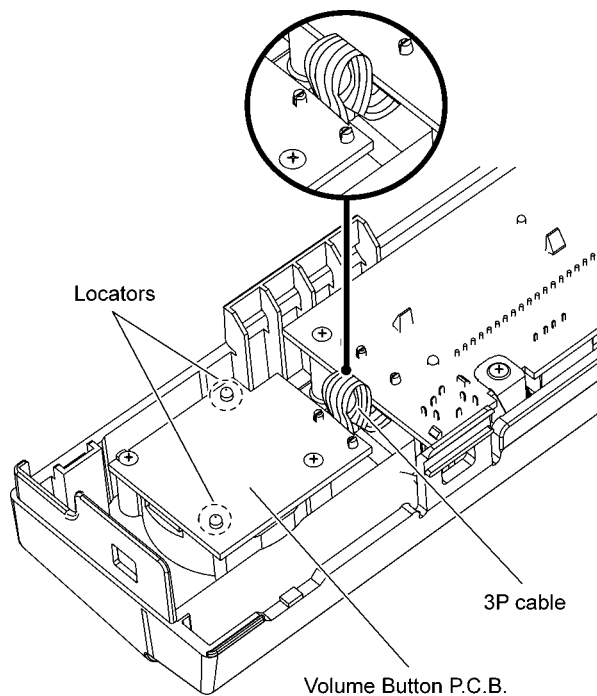


Step 3 Desolder 3P cable at the cable holder (H903) on Volume Button P.C.B..

Step 4 Remove Volume Button P.C.B..



Caution: During assembling, ensure that Volume Button P.C.B. is properly located & fully seated onto Front Panel.
Caution: During assembling, ensure that 3P cable is dress properly.



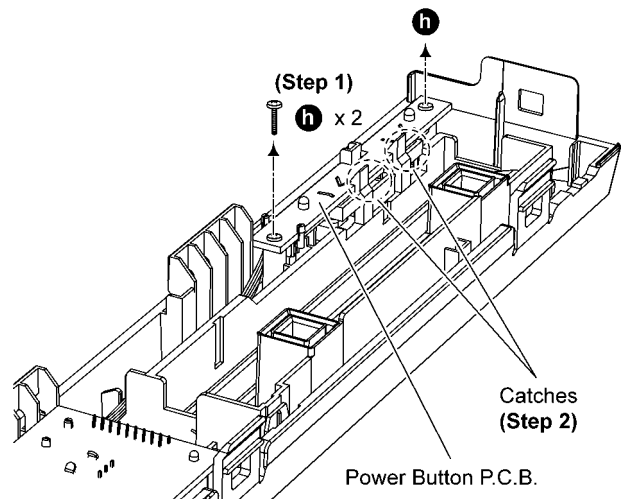
8.17. Disassembly of Power Button P.C.B.

- Refer to “Disassembly of Front Panel Assembly”.

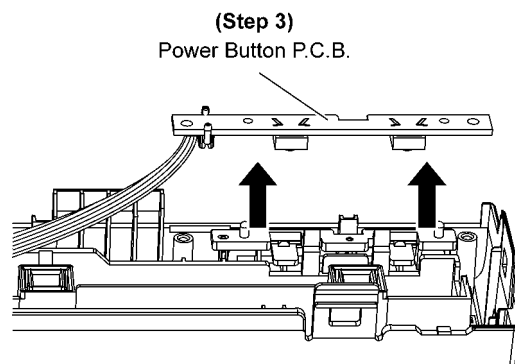
Step 1 Remove 2 screws.

Step 2 Release 2 catches on Power Button P.C.B..

Caution: During assembling, ensure that Power Button P.C.B. is fully caught.

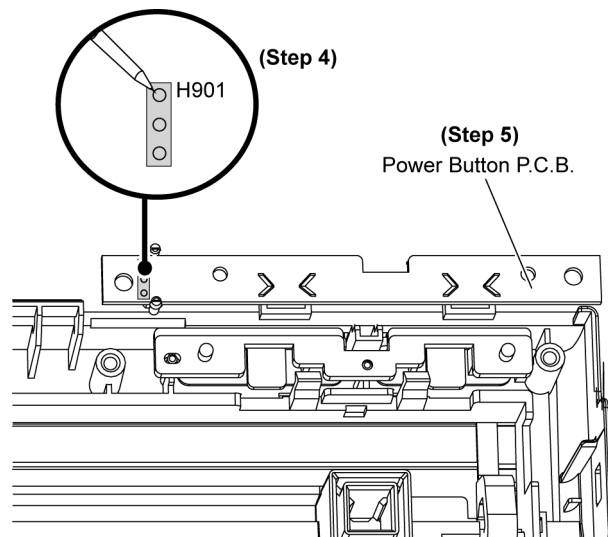


Step 3 Lift up Power Button P.C.B..

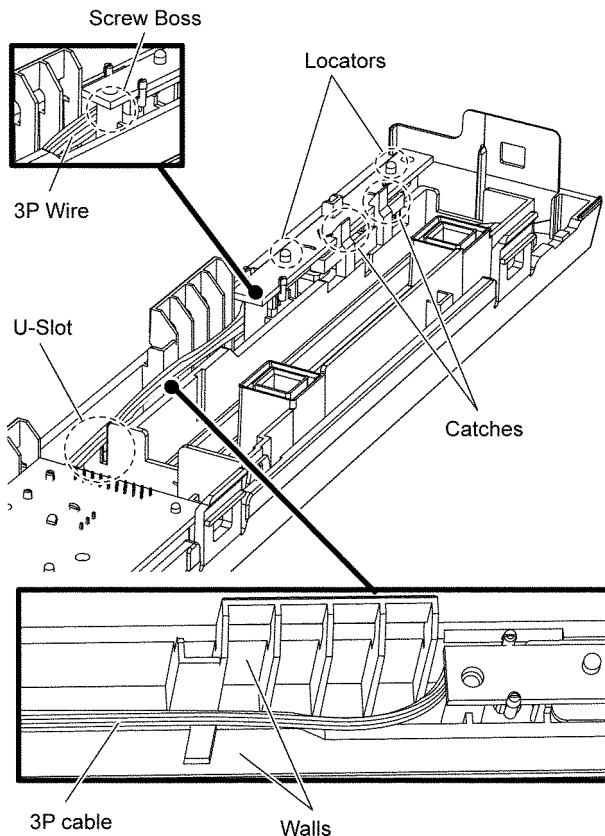


Step 4 Desolder 3P cable at the cable holder (H901) on Power Button P.C.B..

Step 5 Remove Power Button P.C.B..



Caution: During assembling, ensure that Power Button P.C.B. is properly located & fully caught onto Front Panel with 3P cable dressed according to diagram shown.

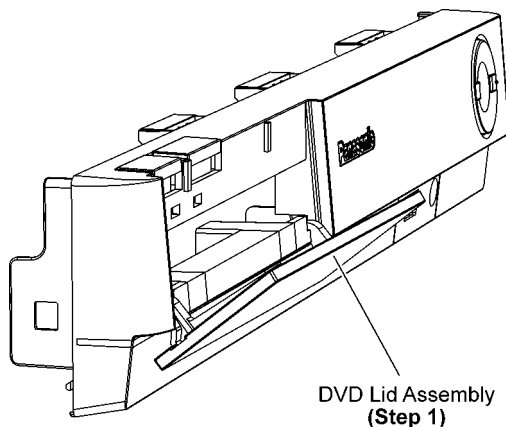


8.18. Replacement of DVD Lid Assembly

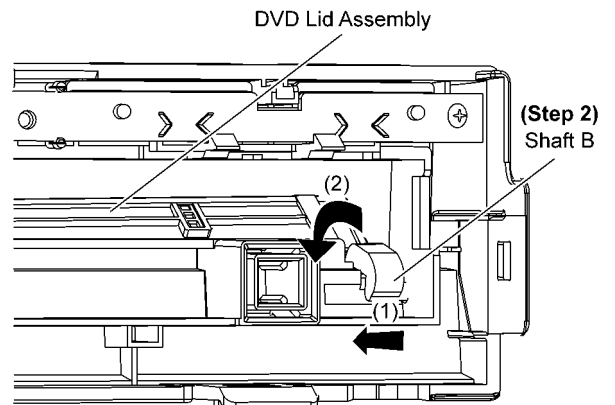
• Refer to “Disassembly of Front Panel Assembly”.

8.18.1. Disassembly of DVD Lid Assembly

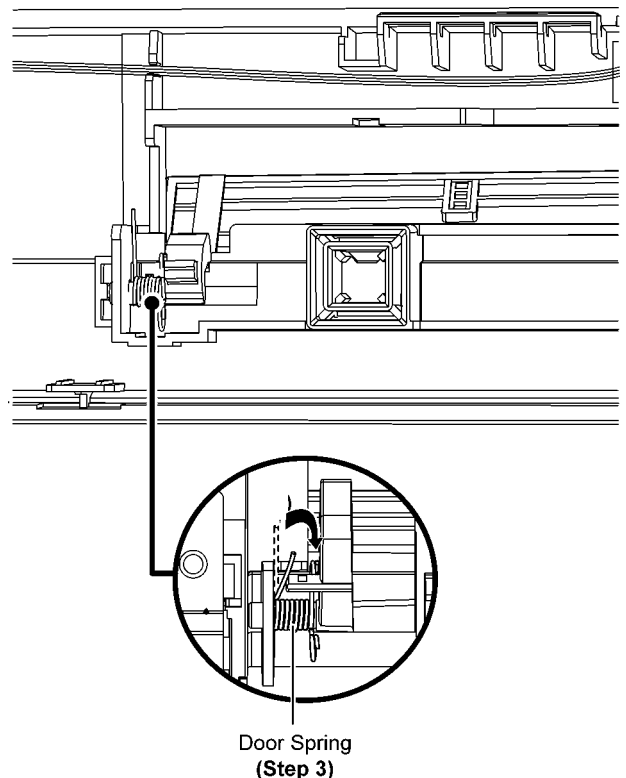
Step 1 Open fully the DVD Lid Assembly.



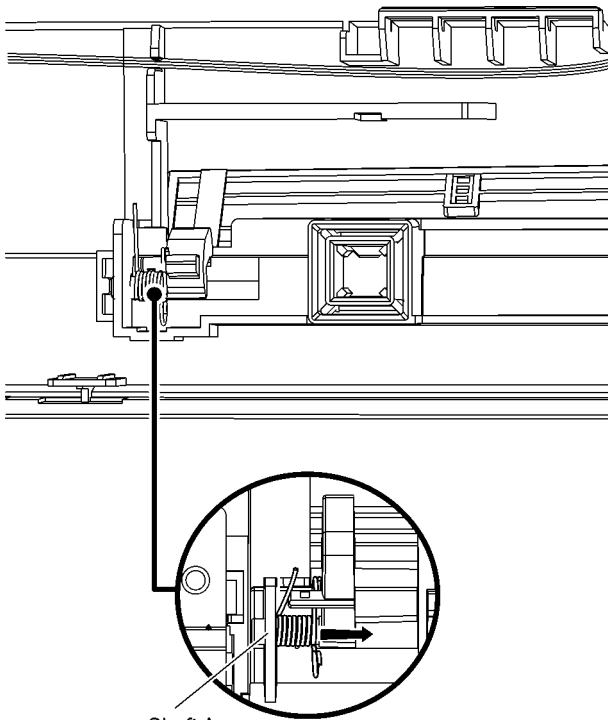
Step 2 Move the Shaft B of the DVD Lid Assembly in the direction of arrows (1) & (2).



Step 3 Lift the door spring at Shaft A in the direction of arrow.

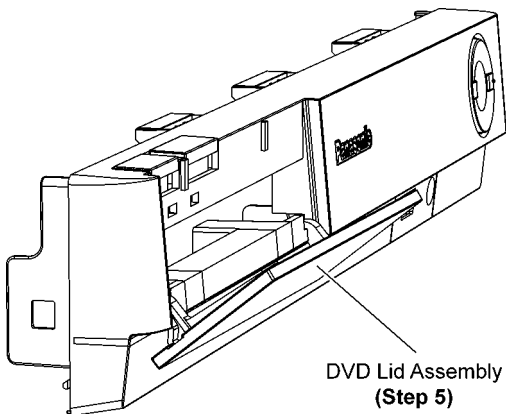


Step 4 Move the Shaft A of the DVD Lid Assembly in the direction of arrow.



Shaft A
(Step 4)

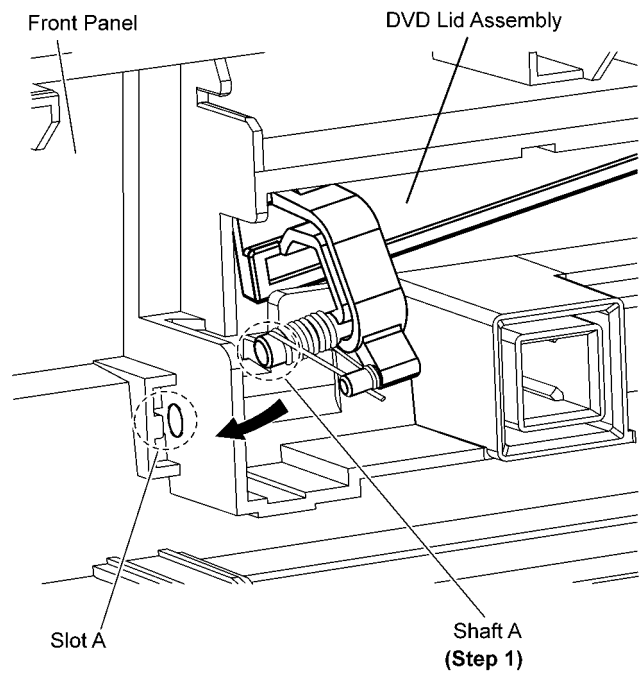
Step 5 Remove DVD Lid Assembly.



DVD Lid Assembly
(Step 5)

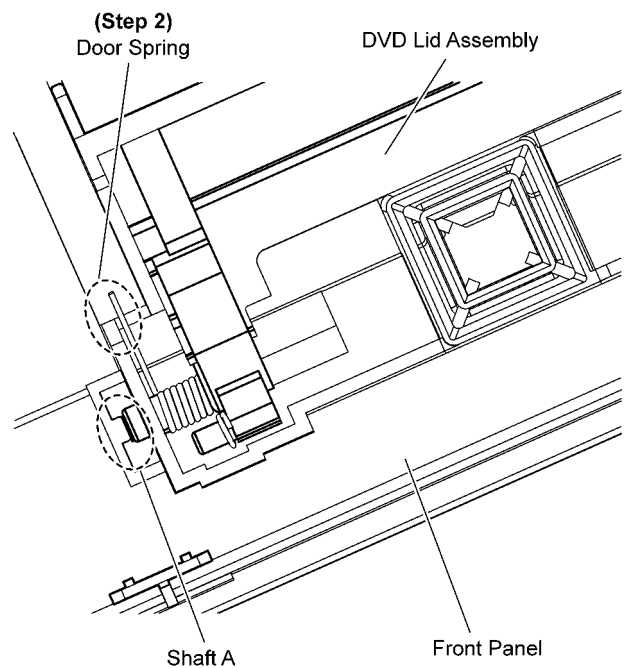
8.18.2. Assembly of DVD Lid Assembly

Step 1 Insert Shaft A of DVD Lid Assembly into Slot A of Front Panel as arrow shown.

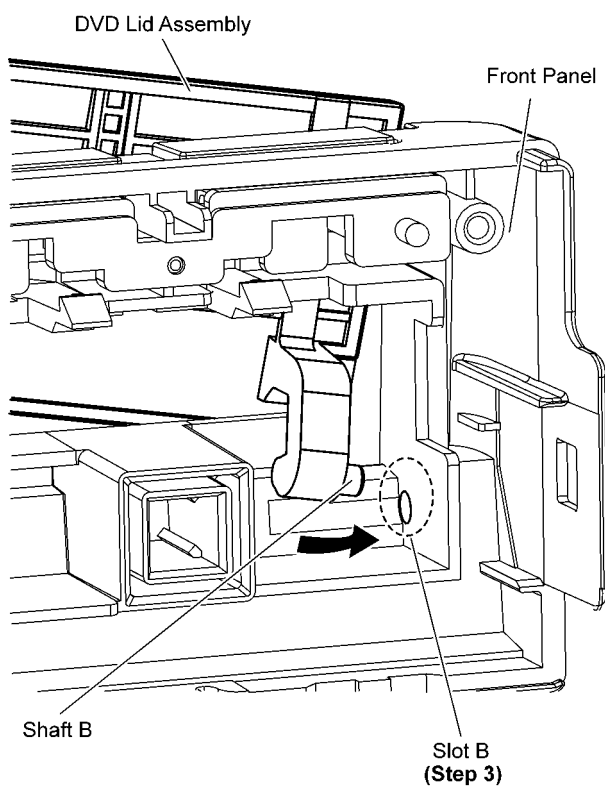


Step 2 Fully release Door Spring from DVD Lid Assembly and to be rested onto Front Panel.

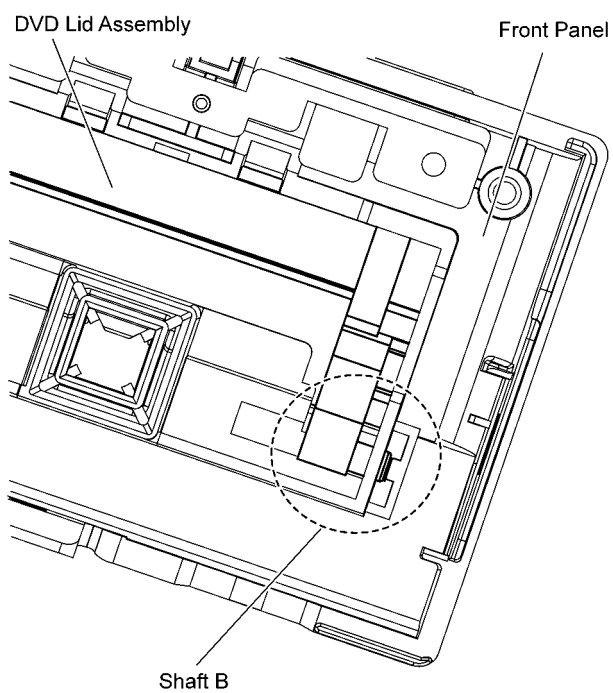
Caution: Ensure that Shaft A of DVD Lid Assembly is fully inserted into Slot A of Front Panel.



Step 3 Insert Shaft B of DVD Lid Assembly into Slot B of Front Panel as arrow shown.



Caution: Ensure that Shaft B of DVD Lid Assembly is fully inserted into Slot B of Front Panel.

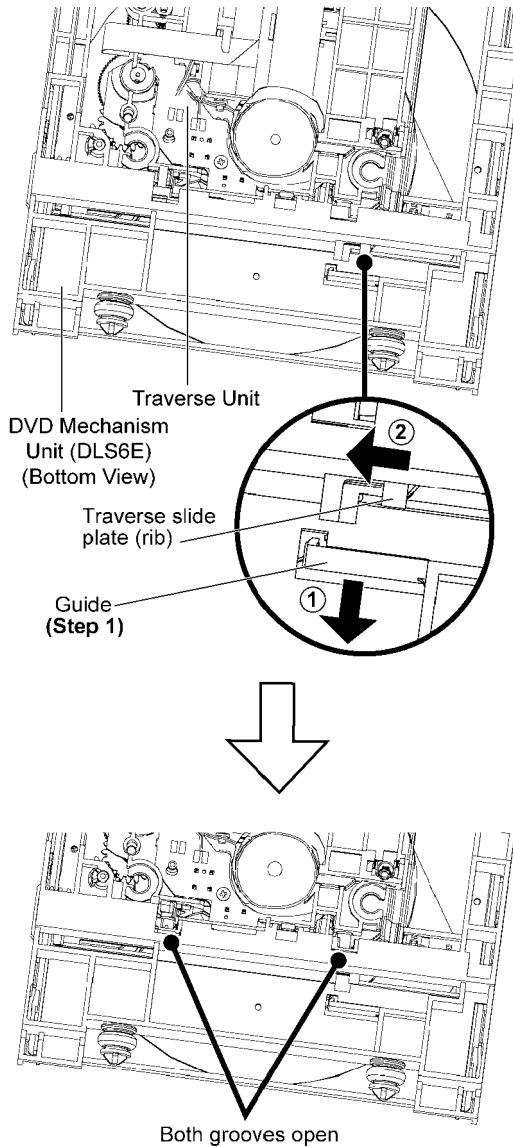


9 Assembling and Disassembling of Traverse Unit

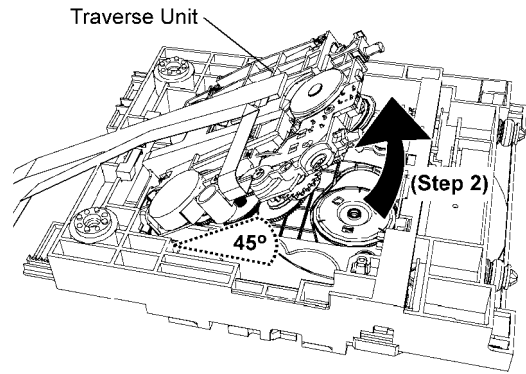
9.1. Disassembly of Traverse Unit

- Refer to “Disassembly of DVD Mechanism Unit (DLS6E)”

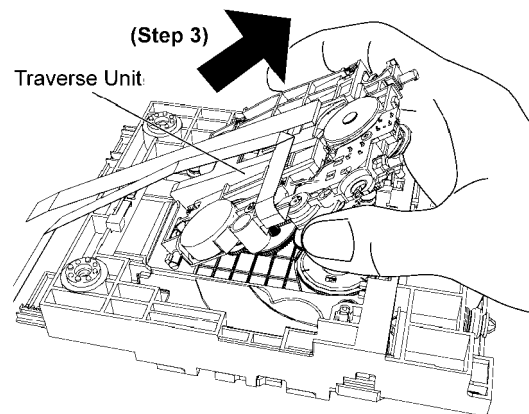
Step 1 Release the guide and slide the traverse slide plate (rib) as arrows shown.



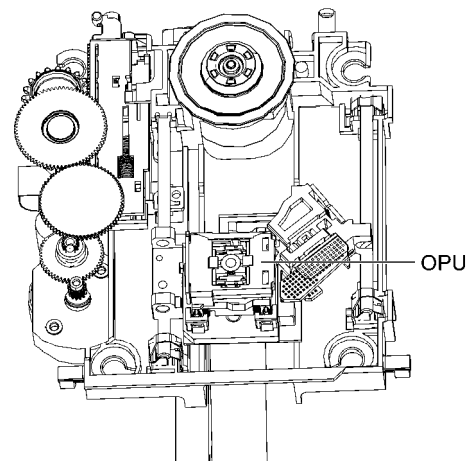
Step 2 Lift up the Traverse unit approximately 45° as shown.



Step 3 Slide out the Traverse unit as arrow shown.

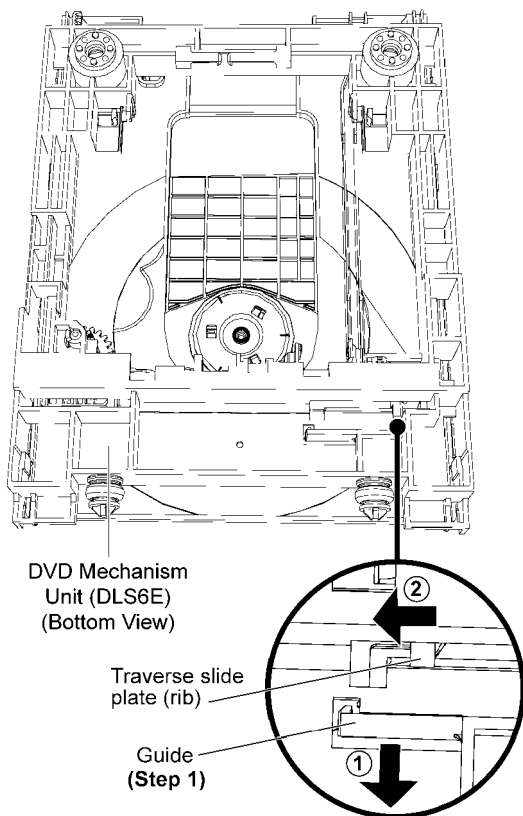


Caution: Do not touch the surface of the Traverse unit and place it so that the OPU is on top.



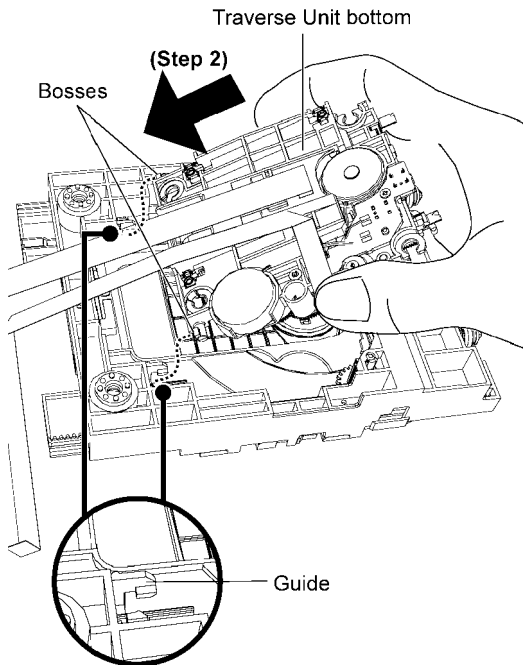
9.2. Assembly of Traverse Unit

Step 1 Release the guide and slide the traverse slide plate (rib) as arrows shown.

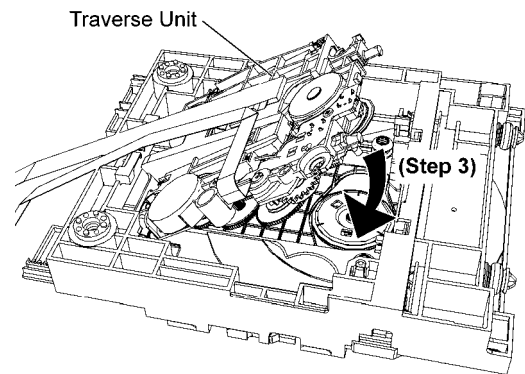


Step 2 Slot the traverse unit approximately 45° into the mecha chassis as arrow shown.

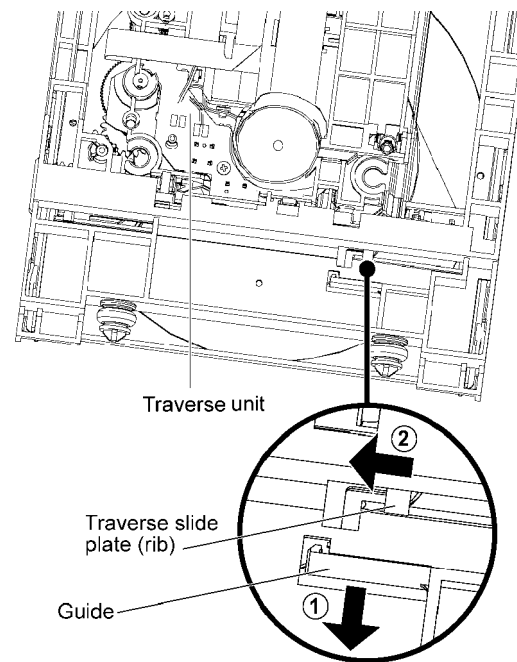
Note: Ensure the bosses fix exactly onto the guides.



Step 3 Place down the traverse unit as arrow shown.



Step 4 Release the guide and slide the traverse slide plate (rib) in the direction of arrows shown to lock in the traverse unit.



10 Service Position

Note: For description of the disassembly procedures, see the Section 8.

10.1. Checking & Repairing Main/D-Amp P.C.B. & Component Video P.C.B.

Step 1 Remove Top Cabinet.

Step 2 Remove Main/D-Amp P.C.B..

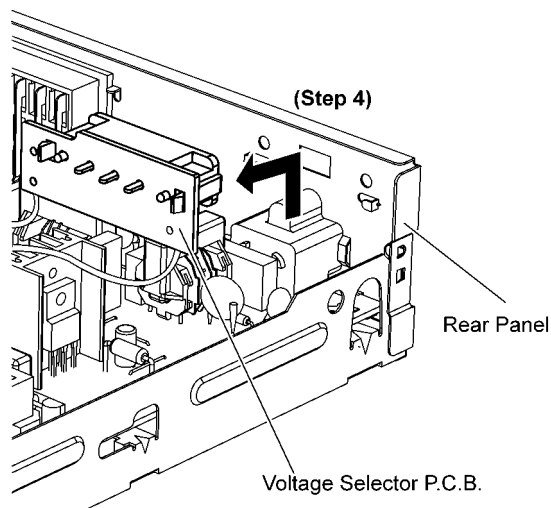
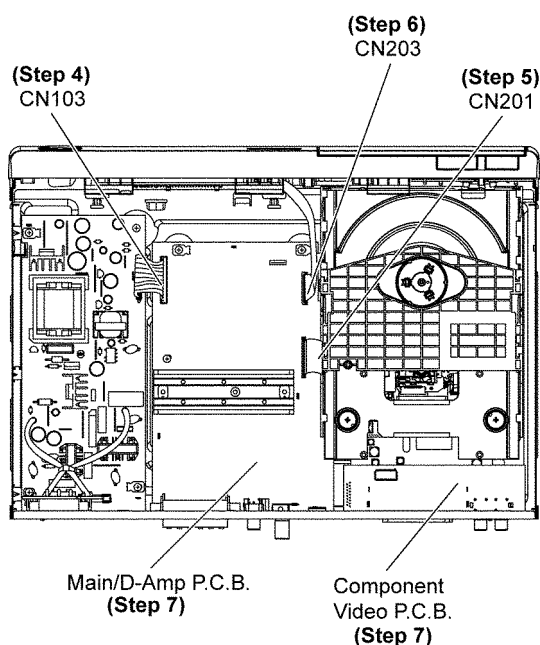
Step 3 Remove Amp Heatsink.

Step 4 Attach 15P Cable wire at the Connector (CN103) on Main P.C.B..

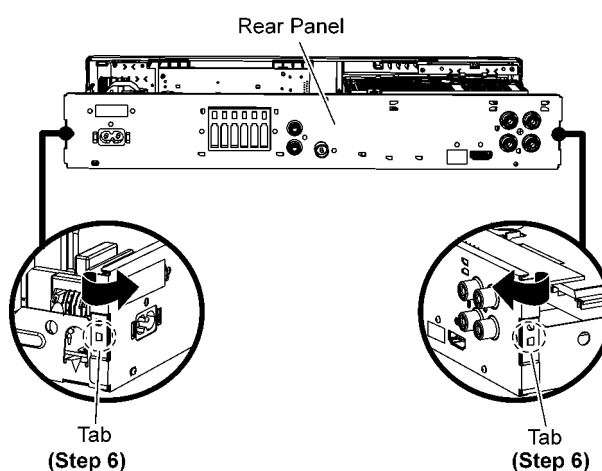
Step 5 Attach 50P FFC at the connector (CN201) on Main P.C.B..

Step 6 Attach 17P FFC at the connector (CN203) on Main P.C.B..

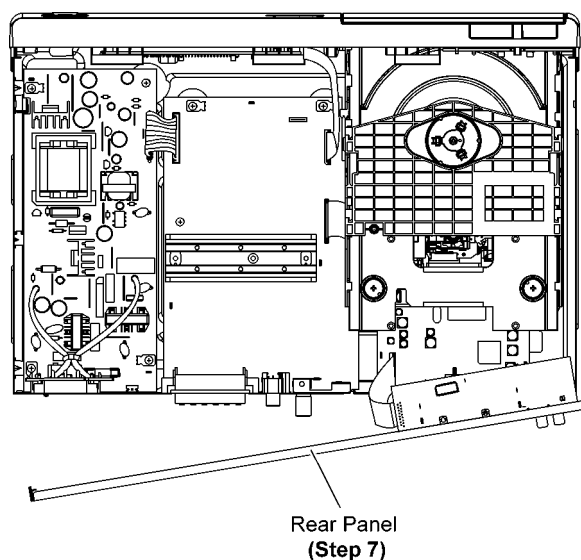
Step 7 Main/D-Amp P.C.B. & Component Video P.C.B. can be checked at its original position.



Step 6 Release the 2 tabs of each side of the unit in the direction of arrow.



Step 7 Position Rear Panel according to diagram shown.



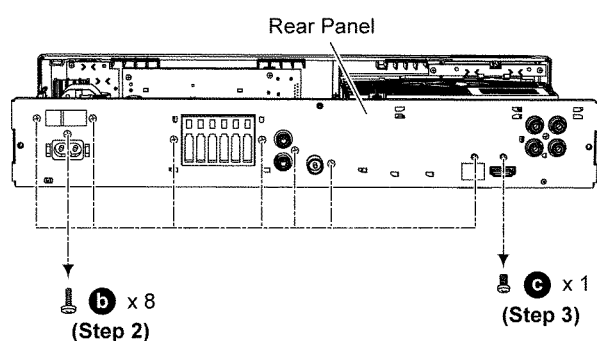
Step 8 Remove 4 screws.

10.2. Checking & Repairing of SMPS P.C.B.

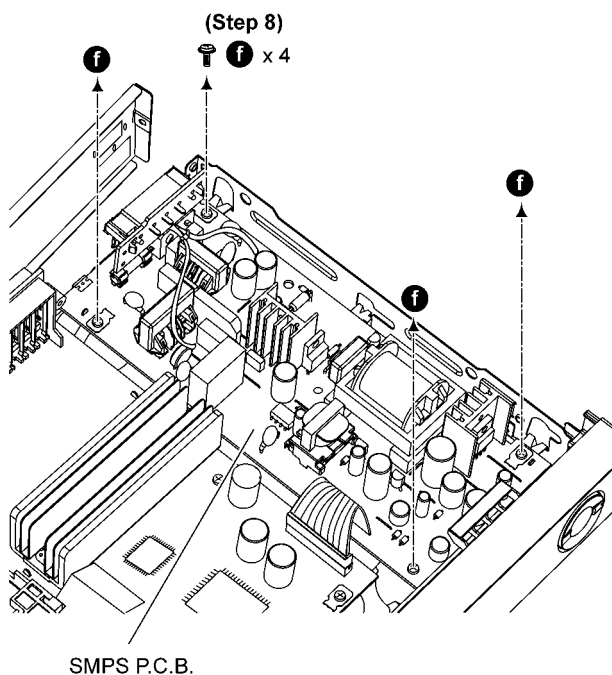
Step 1 Remove Top Cabinet.

Step 2 Remove 8 screws.

Step 3 Remove 1 screw.

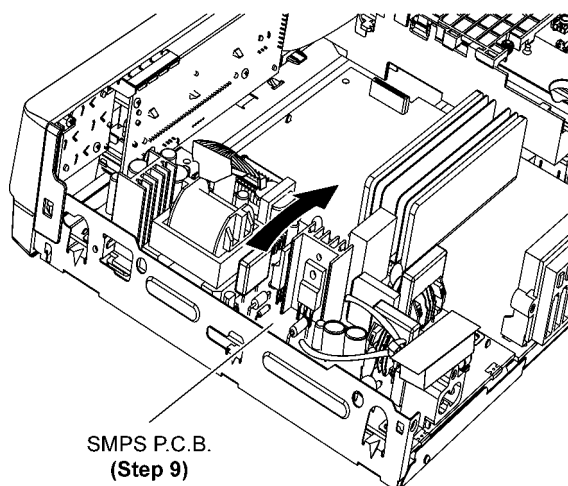


Step 4 Lift up Voltage Selector according to arrow shown.



Step 9 Lift up & flip SMPS P.C.B..

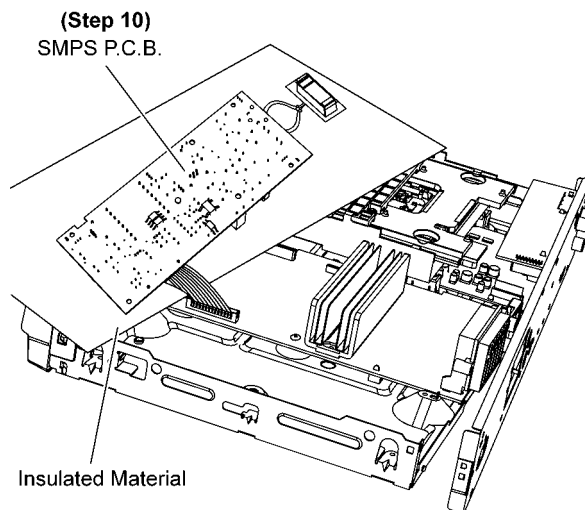
Caution: Handle the SMPS P.C.B. with care. Avoid touching the heatsink due to its prolong use.



Step 10 Position SMPS P.C.B. as diagram shown.

Step 11 Proceed to check and repair SMPS P.C.B..

Caution: Insulated material is required to insulate SMPS P.C.B. from other parts.



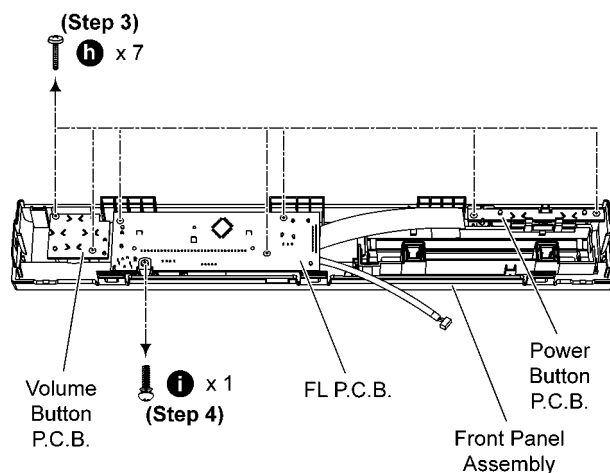
10.3. Checking & Repairing of FL P.C.B.

Step 1 Remove Top Cabinet.

Step 2 Remove Front Panel Assembly.

Step 3 Remove 7 screws.

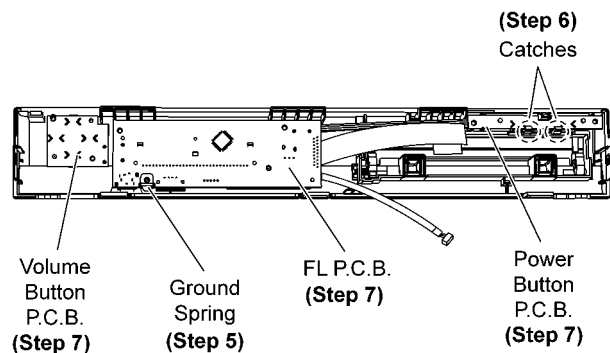
Step 4 Remove 1 screw.



Step 5 Remove Ground Spring.

Step 6 Release 2 catches on Power Button P.C.B..

Step 7 Remove FL P.C.B., Volume Button P.C.B. and Power Button P.C.B..



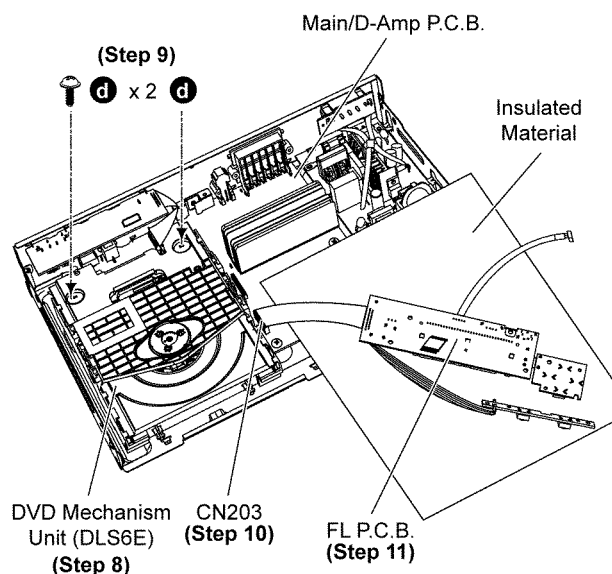
Step 8 Place DVD Mechanism Unit (DLS6E) onto bottom chassis according to diagram shown.

Step 9 Screw 2 screws.

Step 10 Connect 17P FFC at the connector (CN203) on Main/D-Amp P.C.B..

Step 11 Proceed to check and repair FL P.C.B..

Caution: Insulated material is required to insulate FL P.C.B. from other parts.



10.4. Checking & Repairing of DVD Module P.C.B.

10.4.1. Checking & Repairing of Side B of DVD Module P.C.B.

Step 1 Remove Component Video P.C.B..

Step 2 Remove Front Panel Assembly.

Step 3 Slightly move DVD Mechanism Unit (DLS6E) forward according to diagram shown.

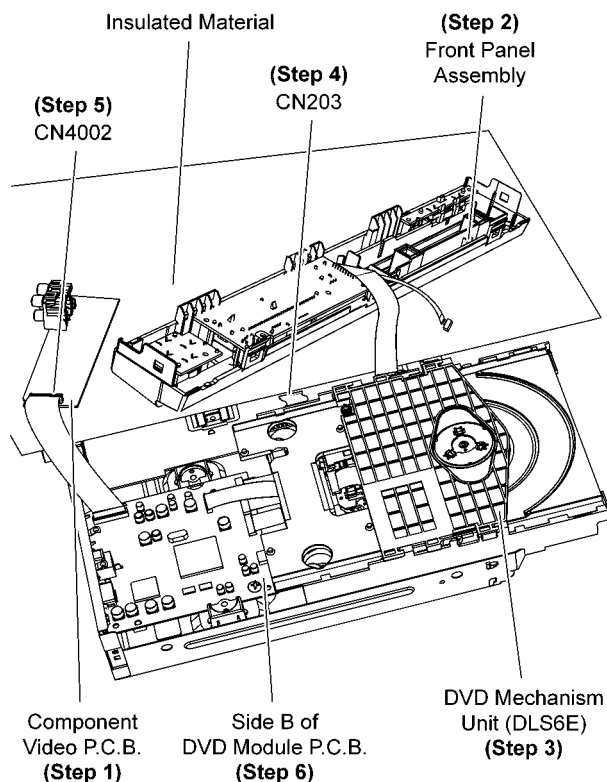
Step 4 Connect 17P FFC at the connector (CN203) on Main/ D-Amp P.C.B.

Caution: Insulated material is required to insulate DVD Mechanism Unit (DLS6E) from other parts.

Step 5 Connect 11P FFC at the connector (CN4002) on Component P.C.B..

Caution: Insulated material is required to insulate Component Video P.C.B. from other parts.

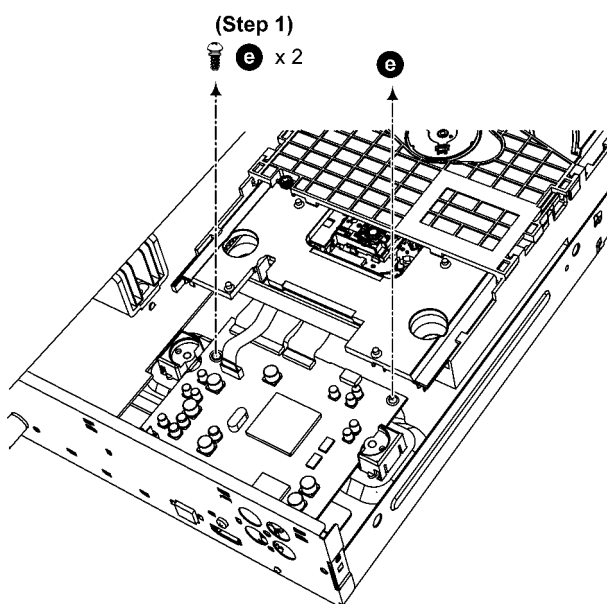
Step 6 Proceed to check and repair Side B of DVD Module P.C.B..



10.4.2. Checking & Repairing of Side A of DVD Module P.C.B.

- Refer (Step 1) to (Step 5) of Item 10.4.1.

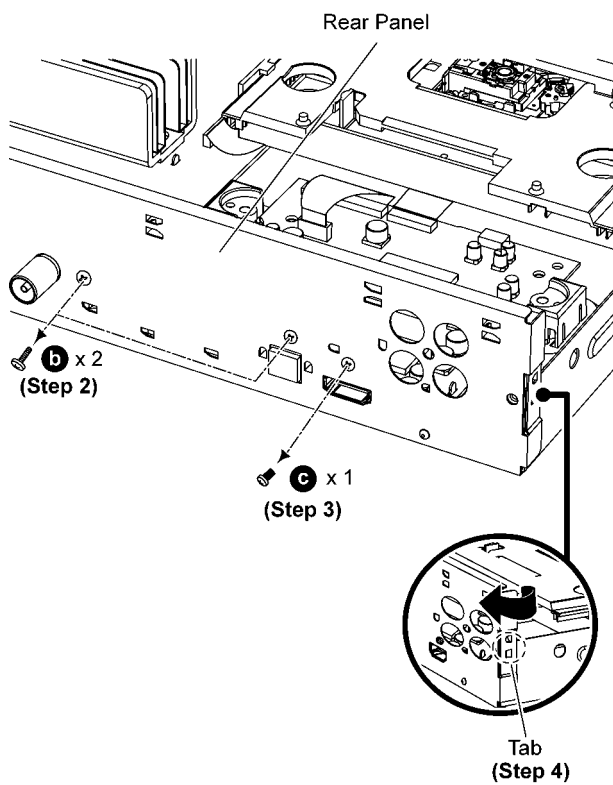
Step 1 Remove 2 screws.



Step 2 Remove 2 screws.

Step 3 Remove 1 screw.

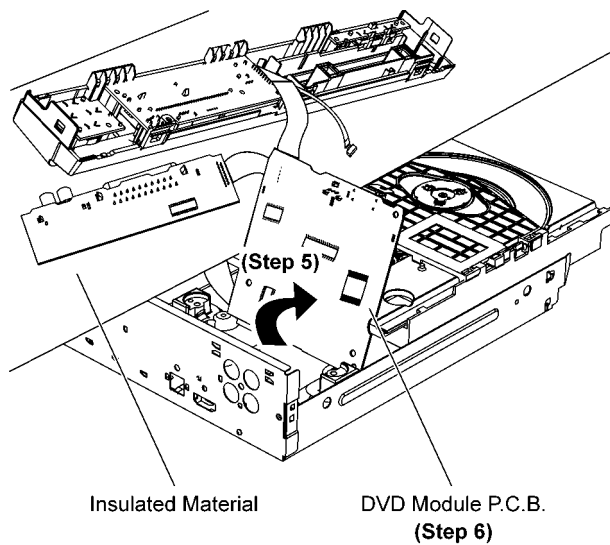
Step 4 Release the tab of the side of the Rear Panel in the direction of arrow.



Step 5 Lift up DVD Module P.C.B. as arrow shown.

Step 6 Position DVD Module P.C.B. according to diagram shown.

Step 7 Proceed to check and repair Side A of DVD Module P.C.B..



11 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.

11.1. DVD Module P.C.B. (1/4)

REF NO.	IC3901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	0	0	0	1.2	1.4	0.1	2.8	3.3	0.1	0.1	0.1	3.3	0.1	0.1	0.1	3.4	0.1	0.1	0.1
REF NO.	IC3901																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	3.4	0.1	0.1	0.1	3.4	1.3	0.1	3.4	0	0	0	0	1.7	3.4	0.9	0.1	0.1	0.9	0.1	3.4
REF NO.	IC3901																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	1.7	1.3	1.7	0.1	1.7	0.1	1.3	0.1	0.1	0.1	0.1	3.3	0.1	0.1	1.3	0.1	0.1	0.1	0.1	0.1
REF NO.	IC3901																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	3.4	0.1	0.1	0.1	0.1	1.3	0.1	0.1	0.1	0.1	0.1
REF NO.	IC3901																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0.1	0.1	0.1	3.4	1.3	0.1	1.7	0.1	0.2	0.7	0.1	0.7	0.6	0.3	0.8	0.1	0.1	0.1	0.1	3.4
REF NO.	IC3901																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
CD PLAY	0.1	1.3	0.1	0.1	0.1	3.4	3.4	3.4	1.3	0.1	1.8	0.1	3.3	3.3	3.3	1.3	1.7	0.1	0.1	3.4
REF NO.	IC3901																			
MODE	121	122	123	124	125	126	127	128												
CD PLAY	3.4	0.1	1.3	3.4	0.1	1.4	0	0												
REF NO.	IC3952																			
MODE	1	2	3	4	5															
CD PLAY	9.0	0	1.3	5.0	9.4															
REF NO.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0.1	0.1	0.1	3.4	0.1	3.4	0.1	0.1	1.7	0.1	0.2	0.7	0.7	0.6	0.1	3.4	0.4	0.8	0.1	1.3
REF NO.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	1.5	1.3	2.0	1.7	2.5	2.6	2.6	1.8	0.9	1.1	3.4	0.1	3.4	2.4	1.3	1.3	1.8	2.6	2.6	1.4
REF NO.	IC8001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	1.9	2.7	0.1	1.3	0.1	3.3	3.3	3.4	3.4	1.7	0.1	3.4	1.9	2.8	3.0	3.4	3.4	3.4	0.6	3.4
REF NO.	IC8001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	1.6	0.1	0.1	0.9	3.4	2.0	1.7	0.1	3.4	3.1	0.1	3.4	3.4	0.1	0.3	0.1	3.4	3.4	3.4	3.4

SA-PT85GS DVD MODULE P.C.B.

11.2. DVD Module P.C.B. (2/4)

REF NO.	IC8001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0.1	0.1	1.3	3.4	0.9	2.4	0.1	1.9	0.1	0.5	1.8	3.4	1.4	1.4	1.9	1.9	1.7	1.7	1.7	1.7
REF NO.	IC8001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
CD PLAY	0	0	0.3	0.1	0.3	2.1	3.3	0.1	2.3	1.7	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4
REF NO.	IC8001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
CD PLAY	1.9	2.0	1.7	1.7	0.1	1.7	1.8	3.4	0.9	0.9	0.4	3.4	2.4	1.0	1.0	2.4	0	0.4	0.9	0
REF NO.	IC8001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
CD PLAY	3.4	3.4	0	0.1	0.1	0.1	3.4	1.6	1.7	1.7	0.9	1.7	0.1	3.4	1.5	1.6	1.5	1.3	2.9	3.1
REF NO.	IC8001																			
MODE	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
CD PLAY	2.9	2.8	3.1	2.8	0.1	3.4	2.8	3.1	3.1	2.9	2.9	3.2	0.1	3.4	2.8	3.1	3.1	2.8	2.7	2.7
REF NO.	IC8001																			
MODE	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
CD PLAY	3.3	0.1	1.5	3.4	1.6	0.1	1.3	3.3	3.3	3.2	3.6	0.1	1.9	0.1	0.1	3.4	1.6	0.1	0.1	1.6
REF NO.	IC8001																			
MODE	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216				
CD PLAY	0.1	1.7	0.3	0.1	3.4	1.7	0.3	1.5	1.9	0.1	1.3	2.5	2.9	2.8	3.4	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
CD PLAY	3.4	3.2	3.4	3.2	3.2	3.2	3.1	3.4	3.2	3.2	0.1	3.2	0.1	3.0	3.4	3.3	3.3	3.3	3.3	1.9
REF NO.	IC8051																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	1.6	0.1	0.2	0.5	0.6	1.5	3.4	0.1	0	1.9	1.7	1.6	0.1	0.1	0.1	0.1	3.4	1.6	2.9	0
REF NO.	IC8051																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
CD PLAY	0.1	3.2	3.4	3.2	3.2	0.1	3.2	3.2	3.4	3.2	3.1	0.1	3.1	0.1						
REF NO.	IC8111																			
MODE	1	2	3	4	5	6	7													
CD PLAY	5.1	3.3	5.1	0	0	3.4	1.2													
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	1.7	1.7	1.7	2.3	2.3	2.2	0.1	5.1	3.4	0.1	2.4	2.8	2.5	2.7	4.2	4.3	5.4	3.1	0.1	3.4

SA-PT85GS DVD MODULE P.C.B.

11.3. DVD Module P.C.B. (3/4)

REF NO.	IC8251																			
MODE	21	22	23	24	25	26	27	28												
CD PLAY	8.9	8.8	1.8	1.7	1.7	1.7	3.4	3.4												
REF NO.	IC8422																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
CD PLAY	2.7	2.6	0	2.6	0	5.2	5.2	0	1.8	1.7	1.6	1.7	3.3	0	5.2	0				
REF NO.	IC8611																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	0	0	0	0	3.2	3.3	0	3.4												
REF NO.	IC8651																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.0	1.2	1.7	1.7	1.2	0	1.5	1.6	0	3.3	3.4	3.3	3.3	3.4	1.0	0	0	0	3.4	3.4
REF NO.	IC8651																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	3.4	0	3.4	0	3.4	3.4	0	3.4	3.4	0	0	0	3.4	0	3.4	3.4	3.4	0	0	3.4
REF NO.	IC8651																			
MODE	41	42	43	44	45	46	47	48												
CD PLAY	3.4	3.4	0	3.4	0	0	3.4	0												
REF NO.	IC8701																			
MODE	1	2	3	4	5															
CD PLAY	0	1.5	0	1.8	3.4															
REF NO.	IC8901																			
MODE	1	2	3	4	5															
CD PLAY	3.3	3.3	0	3.4	3.4															
REF NO.	IC9001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	1.5	1.7	1.7	1.4	1.8	1.3	1.3	2.1	0	2.6	2.1	1.4	1.9	1.9	1.5	1.6	1.7	1.6	3.4
REF NO.	IC9002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	1.5	1.5	1.2	1.2	1.7	1.6	1.1	1.0	0	3.0	1.0	1.2	1.7	1.7	1.2	1.2	1.5	1.6	3.4
REF NO.	IC9003																			
MODE	1	2	3	4	5	6														
CD PLAY	1.6	0.1	1.7	1.7	3.4	1.7														
REF NO.	IC9006																			
MODE	1	2	3	4	5															
CD PLAY	5.2	0.1	0.1	3.4	1.7															

SA-PT85GS DVD MODULE P.C.B.

11.4. DVD Module P.C.B. (4/4)

REF NO.	Q3901				Q3902				Q3903				Q3941				Q3942			
MODE	E	C	B		S	D	G		S	D	G		E	C	B		E	C	B	
CD PLAY	0	4.0	-1.2		3.4	5.0	3.4		3.4	5.0	3.4		3.8	4.1	3.8		0	4.1	0	
REF NO.	Q3943				Q8551				Q8552				Q8561				Q8562			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	4.1	5.9	4.6		0	5.0	0		5.0	0	5.0		1.8	3.2	2.6		3.8	1.9	3.2	
REF NO.	Q8563				Q8564				Q8565				QR9030							
MODE	S	D	G		S	D	G		E	C	B		E	C	B					
CD PLAY	0	0	4.3		0	0.2	0		0	4.3	0		3.4	0.1	3.4					
SA-PT85GS DVD MODULE P.C.B.																				

11.5. Main/D-Amp P.C.B. (1/3)

REF NO.	IC52																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0.5	0	0	0	3.3	0	3.2	3.2	1.6	3.2	3.2	3.2	0	0.8	0.8	0	0.3	3.2	0.5	0.5
STANDBY	0.5	0	0	0	3.3	0	3.2	3.2	1.6	3.2	3.2	3.2	0	0.8	0.8	0	0.3	3.2	0.5	0.5
REF NO.	IC106																			
MODE	1	2	3	4	5															
CD PLAY	20.1	4.7	0	1.2	2.1															
STANDBY	20.1	4.7	0	1.2	2.1															
REF NO.	IC107																			
MODE	1	2	3																	
CD PLAY	3.3	0	3.9																	
STANDBY	3.3	0	3.9																	
REF NO.	IC200																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	0	0	3.3	1.7	2.7	1.3	0	0	0	0	3.3	1.7	0	0	3.3	3.3	3.3	2.0	0
STANDBY	0	0	0	0	1.7	2.7	1.3	0	0	0	0	3.3	1.7	0	0	3.3	3.3	3.3	2.1	0
REF NO.	IC200																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	3.3	3.3	0	3.3	3.3	3.3	0	3.0	2.7	1.7	0	0	0	3.3	3.3	3.3	3.3	3.2	3.2	0
STANDBY	3.3	3.3	0	3.3	3.3	3.3	0	3.0	2.7	1.7	0	0	0	3.3	3.3	3.3	3.3	3.2	3.2	0
REF NO.	IC200																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0	3.2	0	0	0	0	0	3.3	3.3	0	0	0	0	0	0	3.3	3.3	3.3	0	0
STANDBY	0	3.2	0	0	0	0	0	3.3	3.3	0	0	0	0	0	0	3.3	3.3	3.3	0	3.3
REF NO.	IC200																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	0	3.3	0	0	0	0	0	3.3	0	0	3.3	3.3	0	3.3	3.3	0	0	0	0	0
STANDBY	0	3.3	0	0	0	0	0	0	0	0	3.3	3.3	0	3.3	0	0	0	0	0	0
REF NO.	IC200																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0	0	0	0	0	0	0	0	0.4	1.2	0	0.8	0	0.2	3.3	0	0.7	3.3	3.3	0
STANDBY	0	0	0	0	0	0	0	0	0.4	1.2	0	0.8	0	0	3.3	0	0.7	3.3	3.3	0
REF NO.	IC201																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	0	0	0	0	0	1.3	0	3.3												
STANDBY	0	0	0	0	0	1.3	0	3.3												
REF NO.	IC202																			
MODE	1	2	3																	
CD PLAY	3.3	0	5.9																	
STANDBY	3.3	0	5.9																	

SA-PT85GS MAIN/D-AMP P.C.B.

11.6. Main/D-Amp P.C.B. (2/3)

REF NO.	IC401																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.8	0.1	0.8	0.9	0.1	0.1	2.0	0.1	3.3	1.3	3.3	3.3	3.3	3.3	3.3	0	1.9	0	0.5	0.8
STANDBY	1.8	0.1	0.8	0.9	0.1	0.1	1.9	0.1	3.3	1.3	3.3	3.3	3.3	3.3	3.3	0	1.9	0	0	0.9

REF NO.	IC401																			
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	3.3	3.3	1.7	0	0	0	0	0	0	1.8	0	0	3.3	3.2	0	0	0
STANDBY	0	0	0	3.3	3.3	1.7	0	0	0	0	0	0	1.8	0	0	3.3	3.2	0	0	0

REF NO.	IC401																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0	0	0	0	0	0	0	1.8	0	0	0	0	0	3.3	0	0	0	0	1.3	1.3
STANDBY	0	0	0	0	0	0	0	1.8	0	0	0	0	0	3.3	0	0	0	0	1.3	1.4

REF NO.	IC401																			
MODE	61	62	63	64																
CD PLAY	1.3	1.3	1.6	0.1																
STANDBY	1.3	1.3	1.6	0.1																

REF NO.	IC403																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	3.3	3.3	0	0	3.3	0	3.3	0	0	0	0	0	0	0	0	0	3.3	0	0	0
STANDBY	3.3	3.3	0	0	3.3	0	3.3	0	0	0	0	0	0	0	0	0	3.3	0	0	0

REF NO.	IC403																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	3.3	3.3	3.3	10.1	0	20.3	20.3	10.1	0	0	10.2	20.3	10.2	10.2	20.3	10.2	0	0	10.2	20.3
STANDBY	3.3	3.3	3.3	10.1	0	20.3	20.3	10.1	0	0	10.2	20.3	10.2	10.2	20.3	10.2	0	0	10.2	20.3

REF NO.	IC403																			
MODE	41	42	43	44																
CD PLAY	20.3	0	10.2	3.3																
STANDBY	20.3	0	10.2	3.3																

REF NO.	IC404																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	3.3	3.3	0	0	3.3	0	3.3	0	0	0	0	0	0	0	0	0	3.3	0	0	0
STANDBY	3.3	3.3	0	0	3.3	0	3.3	0	0	0	0	0	0	0	0	0	3.3	0	0	0

REF NO.	IC404																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	3.3	3.3	3.3	10.1	0	20.3	20.3	10.1	0	0	10.2	20.3	10.2	10.2	20.3	10.2	0	0	10.2	20.3
STANDBY	3.3	3.3	3.3	10.1	0	20.3	20.3	10.1	0	0	10.2	20.3	10.2	10.2	20.3	10.2	0	0	10.2	20.3

REF NO.	IC404																			
MODE	41	42	43	44																
CD PLAY	20.3	0	10.2	3.3																
STANDBY	20.3	0	10.2	3.3																

SA-PT85GS MAIN/D-AMP P.C.B.

11.7. Main/D-Amp P.C.B. (3/3)

REF NO. MODE	IC405																				
CD PLAY	3.3	3.3	0	0	3.3	0	3.3	0	0	0	0	0	0	0	0	0	3.3	0	0	0	
STANDBY	3.3	3.3	0	0	3.3	0	3.3	0	0	0	0	0	0	0	0	0	3.3	0	0	0	
REF NO. MODE	IC405																				
CD PLAY	3.3	3.3	3.3	10.1	0	20.3	20.3	10.1	0	0	10.2	20.3	10.2	10.2	20.3	10.2	0	0	10.2	20.3	
STANDBY	3.3	3.3	3.3	10.1	0	20.3	20.3	10.1	0	0	10.2	20.3	10.2	10.2	20.3	10.2	0	0	10.2	20.3	
REF NO. MODE	IC405																				
CD PLAY	20.3	0	10.2	3.3																	
STANDBY	20.3	0	10.2	3.3																	
REF NO. MODE	IC2105																				
CD PLAY	0	0	0	0	0	0	5.0	0	0	0	0	0	0	0	0	5.1					
STANDBY	0	0	0	0	0	0	5.0	0	0	0	0	0	0	0	0	5.1					
REF NO. MODE	IC3002																				
CD PLAY	0	0	0	-0.5	0	0	0	5.0													
STANDBY	0	0	0	-0.5	0	0	0	5.0													
REF NO. MODE	Q102				Q103				Q105				Q106				Q107				
CD PLAY	3.3	1.7	3.3		0	1.7	0		0	3.3	3.2		0	3.3	0		9.4	12.0	10.0		
STANDBY	3.3	0	3.3		0	1.7	0		0	0	3.2		0	3.3	0		9.5	12.2	10.1		
REF NO. MODE	Q108				Q109				Q114				Q116								
CD PLAY	0	0	3.2		0	0	3.2		0	3.3	0		20.1	0	0						
STANDBY	0	0	3.2		0	0	3.2		0	3.3	0		20.1	0	0						
REF NO. MODE	Q121							Q203				Q500				Q501					
CD PLAY	0	0	0	0	0.6	3.3		0	3.3	0		10.0	0	10.0		10.0	0	10.0			
STANDBY	0	0	0	0	0.6	3.3		0	3.3	0		0.3	0	0.3		0.3	0	0.3			
REF NO. MODE	Q2011																				
CD PLAY	-5.0	-24.7	-5.6																		
STANDBY	-5.0	-24.7	-5.6																		
SA-PT85GS MAIN/D-AMP P.C.B																					

SA-PT85GS MAIN/D-AMP P.C.B.

11.8. FL P.C.B.

REF NO.	IC901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	0	0	0	1.9	1.4	1.3	2.7	1.7	1.4	1.2	0	3.3	-24.7	-24.7	-24.7	-24.7	-13.4	-18.0	-15.7
STANDBY	0	0	0	0	1.9	1.3	1.3	2.7	1.7	1.3	1.4	0	3.3	-24.7	-24.7	-24.7	-24.7	-13.3	-15.6	-17.8

REF NO.	IC901																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	-22.4	-20.2	-24.7	-20.2	-22.3	-24.7	-20.2	-15.7	-15.7	-25.2	-20.3	-20.3	-22.6	-22.6	-22.6	-22.6	-22.6	-22.6	-22.6	-22.6
STANDBY	-22.4	-24.7	-24.7	-17.8	-17.8	-24.7	-24.7	-15.7	-17.9	-25.2	-19.0	-24.8	-22.7	-22.7	-22.7	-22.7	-22.7	-22.7	-22.7	-22.7

REF NO.	IC901																			
MODE	41	42	43	44																
CD PLAY	-22.6	-22.6	3.3	0																
STANDBY	-22.7	-22.7	3.3	0																

SA-PT85GS FL P.C.B.

11.9. SMPS P.C.B.

REF NO.	IC2900																			
MODE	1	2	3	4	5															
CD PLAY	20.3	11.9	0	1.2	2.1															
STANDBY	20.3	11.9	0	1.2	2.1															

REF NO.	IC5701																			
MODE	1	2	3	4	5	6	7													
CD PLAY	159.3	0	0	17.5	0.1	1.3	0.6													
STANDBY	159.3	0	0	17.5	0.1	1.3	0.6													

REF NO.	IC5799																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	-9.7	-15.0	-13.7	-3.4	138.5	0	-15.2	-15.2												
STANDBY	-9.7	-15.0	-13.7	-3.4	138.5	0	-15.2	-15.2												

REF NO.	IC5801																			
MODE	1	2	3																	
CD PLAY	18.3	2.5	0																	
STANDBY	18.3	2.5	0																	

REF NO.	IC5899																			
MODE	1	2	3																	
CD PLAY	4.8	2.5	0																	
STANDBY	4.8	2.5	0																	

REF NO.	Q2900				Q5720				Q5841				Q5863				Q5898			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	0	11.7	-0.2		6.9	7.8	6.9		0	3.3	0		0	0.4	0		0	2.2	0.4	
STANDBY	0	11.7	-0.2		6.9	7.8	6.9		0	3.3	0		0	0.4	0		0	2.2	0.4	

REF NO.	Q5899																			
MODE	E	C	B																	
CD PLAY	0	0.2	0.8																	
STANDBY	0	0.2	0.8																	

SA-PT85GS SMPS P.C.B.

11.10. Component Video P.C.B.

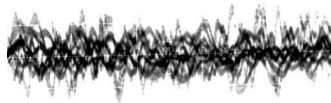
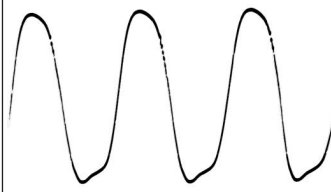
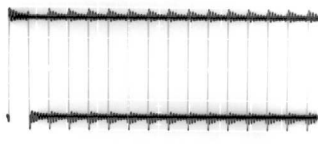
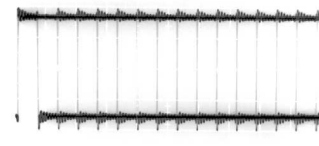
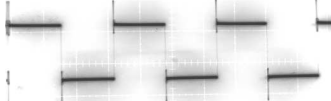
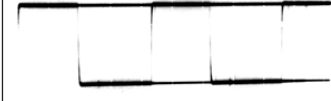
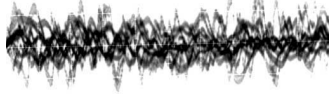
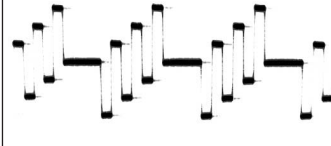
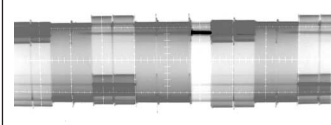
REF NO.	IC4101																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	4.6	0	0	2.0	4.5	1.2	0	1.5	1.9	4.9	0.2	0	0.2	0	0.5	4.9	2.5	2.5	0	2.6
STANDBY	5.1	0	0	2.0	4.6	1.4	0	1.8	2.1	5.1	0	0	0.2	0	0	5.1	2.9	2.9	0	2.9

REF NO.	IC4101																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
CD PLAY	2.7	0	2.7	2.7	0	1.8	1.3	0	1.7	1.8	0	1.9								
STANDBY	2.9	0	2.9	2.9	0	1.4	1.4	0	1.4	1.4	0	2.0								

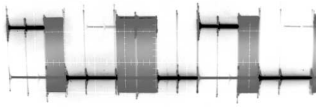
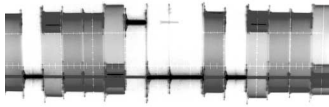
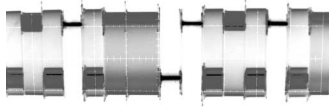
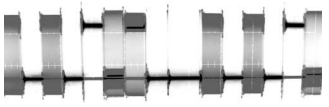
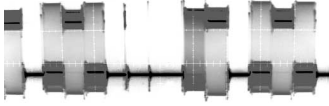
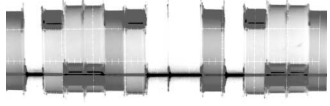
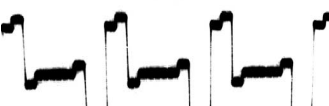
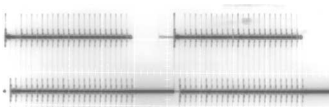
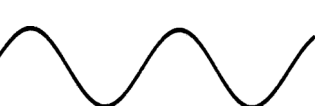
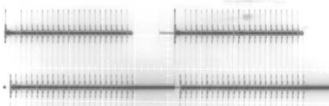
REF NO.	Q4001																			
MODE	E	C	B																	
CD PLAY	0	4.7	0																	
STANDBY	0	4.5	0																	

SA-PT85GS COMPONENT VIDEO P.C.B.

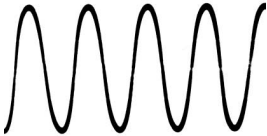
11.11. Waveform Table (1/3)

WF No. IC52-2,13,14 (PLAY)  0.4Vp-p(500usec/div)	WF No. IC200-13 (PLAY)  3.2Vp-p(20nsec/div)	WF No. IC200-15 (PLAY)  2Vp-p(20nsec/div)	WF No. IC401-19 (PLAY)  2Vp-p(20nsec/div)
WF No. IC401-20 (PLAY)  1Vp-p(20nsec/div)	WF No. IC401-28,29 (PLAY)  3.2Vp-p(500nsec/div)	WF No. IC401-30,31 (PLAY)  3.6Vp-p(500nsec/div)	WF No. IC401-40,41 (PLAY)  6Vp-p(1usec/div)
WF No. IC401-42,43,44,45,46,47 (PLAY)  6Vp-p(1usec/div)	WF No. IC401-49,50,51,52 (PLAY)  6Vp-p(500nsec/div)	WF No. IC901-5 (PLAY)  1.6Vp-p(1usec/div)	WF No. IC901-8 (PLAY)  3.4Vp-p(2usec/div)
WF No. IC2105-1,12 (PLAY)  0.4Vp-p(500usec/div)	WF No. IC4101-4 (PLAY)  0.68Vp-p(10usec/div)	WF No. IC4101-8,11 (PLAY)  1Vp-p(20usec/div)	WF No. IC4101-13 (PLAY)  0.6Vp-p(20usec/div)
WF No. IC4101-15 (PLAY)  0.48Vp-p(20usec/div)	WF No. IC4101-18,21,24 (PLAY)  3.8Vp-p(5msec/div)	WF No. IC4101-30 (PLAY)  2Vp-p(20usec/div)	WF No. IC8001-9 (PLAY)  6.4Vp-p(5usec/div)

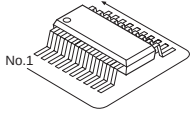
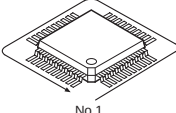
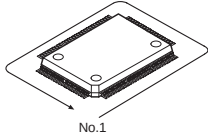
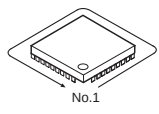
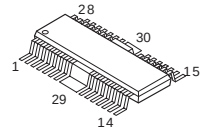
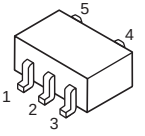
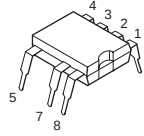
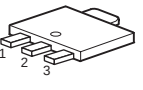
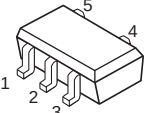
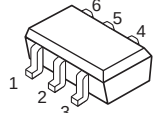
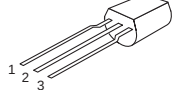
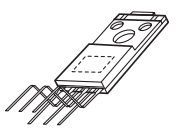
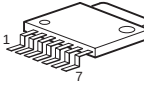
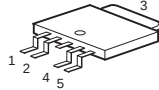
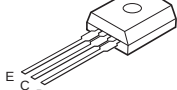
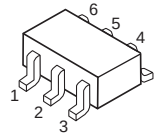
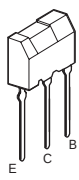
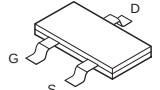
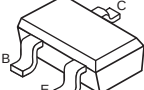
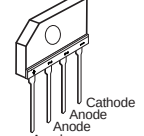
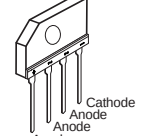
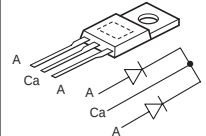
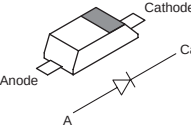
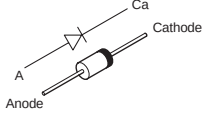
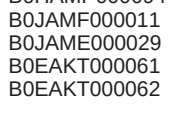
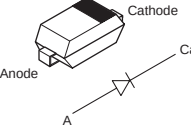
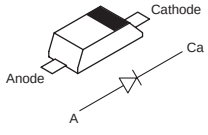
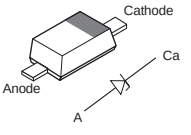
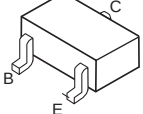
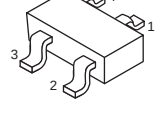
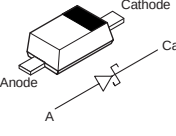
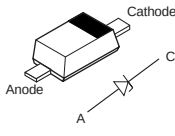
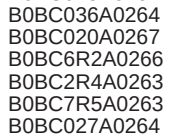
11.12. Waveform Table (2/3)

WF No. IC8001-10 (PLAY)  6.4Vp-p(5usec/div)	WF No. IC8001-11 (PLAY)  6Vp-p(5usec/div)	WF No. IC8001-12 (PLAY)  6.8Vp-p(5usec/div)	WF No. IC8001-13 (PLAY)  6.4Vp-p(5usec/div)
WF No. IC8001-14 (PLAY)  6.8Vp-p(5usec/div)	WF No. IC8001-17 (PLAY)  6.4Vp-p(5usec/div)	WF No. IC8001-18 (PLAY)  6.4Vp-p(5usec/div)	WF No. IC8001-59 (PLAY)  0.4Vp-p(500nsec/div)
WF No. IC8001-62,63,64 (PLAY)  5.2Vp-p(500nsec/div)	WF No. IC8001-129 (PLAY)  0.76Vp-p(10usec/div)	WF No. IC8001-130 (PLAY)  0.8Vp-p(10usec/div)	WF No. IC8001-131,138 (PLAY)  1.1Vp-p(20usec/div)
WF No. IC8001-139 (PLAY)  1Vp-p(20usec/div)	WF No. IC8001-151 (PLAY)  5.6Vp-p(2usec/div)	WF No. IC8001-152 (PLAY)  6Vp-p(1usec/div)	WF No. IC8422-1 (PLAY)  1.5Vp-p(500usec/div)
WF No. IC8422-2 (PLAY)  0.15Vp-p(500usec/div)	WF No. IC8422-9 (PLAY)  9.2Vp-p(500nsec/div)	WF No. IC8701-2 (PLAY)  1.5Vp-p(20nsec/div)	WF No. L411-2 (PLAY)  0.64Vp-p(500nsec/div)

11.13. Waveform Table (3/3)

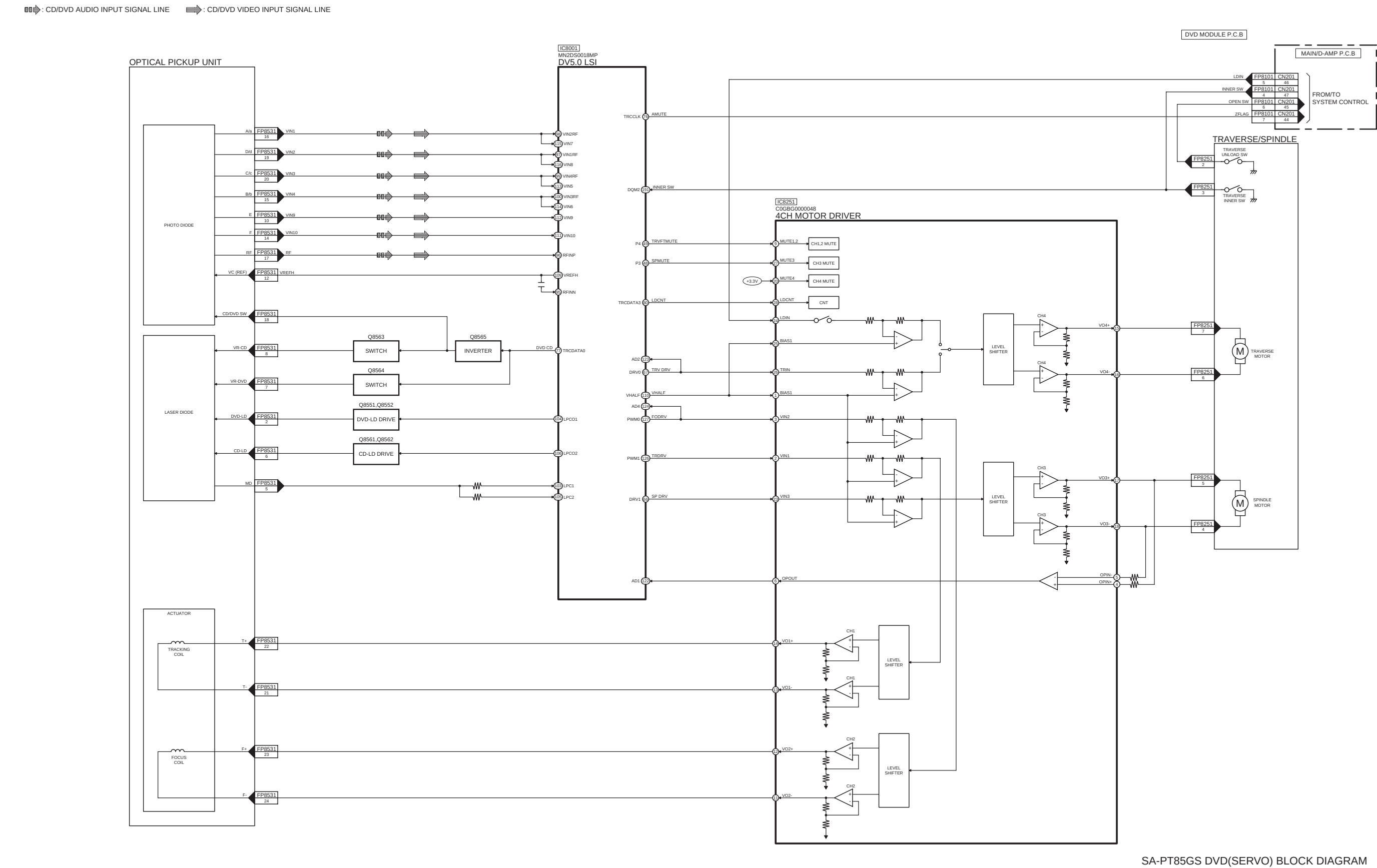
WF No. L411-4 (PLAY)  0.84Vp-p(500nsec/div)	WF No. L412-2,4 (PLAY)  8Vp-p(50nsec/div)	WF No. L413-2,4 (PLAY)  0.8Vp-p(500nsec/div)	WF No. L414-2 (PLAY)  0.8Vp-p(500nsec/div)
WF No. L414-4 (PLAY)  1.2Vp-p(500nsec/div)	WF No. L415-2 (PLAY)  0.6Vp-p(500nsec/div)	WF No. L415-4 (PLAY)  0.8Vp-p(500nsec/div)	WF No. L416-2 (PLAY)  1Vp-p(500nsec/div)
WF No. L416-4 (PLAY)  0.8Vp-p(500nsec/div)			

12 Illustration of ICs, Transistor and Diode

C0ABBB000244 (8P) REPX0762E (8P) 	RFKWMH42B3D2(48P) C3EBFY000006 (8P) C0FBAK000026 (16P) C0JBAR000540 (16P) C0JBAZ002999 (20P) C9ZB00000584 (32P) C1AB00003217 (44P) C3ABPG000160 (54P)	 No.1 C1AB00003216 (64P) C0HBB0000057 (44P) MN864702A (128P) MN2DS0018MP (216P)	RFKWMPT85EP (100p)  No.1	VUEALLPT040 (20P)  No.1	
C0GBG0000048 (30P) 	C0CBCDC00063 	MIP2F20MSSCF 	C0CBABC00117 	C0DBZYY00311 C0JBAA000501 C0JBAB000907 	C0JBAB000908 
C0DAEMZ00001 	C0DAAMH00015 	C0DBFZG00001 	C0DBAYH00005 	B1BACD000018 B1BABG000007 	B1HBECA00004 
B1BABK000001 	B1CFHA000002 	2SD0601AHL 	B1ADBL000010 B1ABCF000176 B1ADCE000012 B1ADGB000008 B1GBCFJJ0051 B1GBCFGG0030 B1GBCFLL0037 B1GDCFJJ0002 	B0EBNR000015 	B0HBSM000054 
MA2J1110GL MA2J7280GL MA2YF8000L 		B0EAMM000057 B0HAMP000094 B0JAMF000011 B0JAME000029 B0EAKT000061 B0EAKT000062 	B0JCPG000005 	B0ACCK000005 	MAZ8300GML MAZ8240GHL 
B1ABCF000011 B1ABDF000026 	B0EDKT000009 	B0JCAE000001 	B0BC018A0267 	B0BC5R6A0266 B0BC010A0267 B0BC015A0264 B0BC036A0264 B0BC020A0267 B0BC6R2A0266 B0BC2R4A0263 B0BC7R5A0263 B0BC027A0264 	

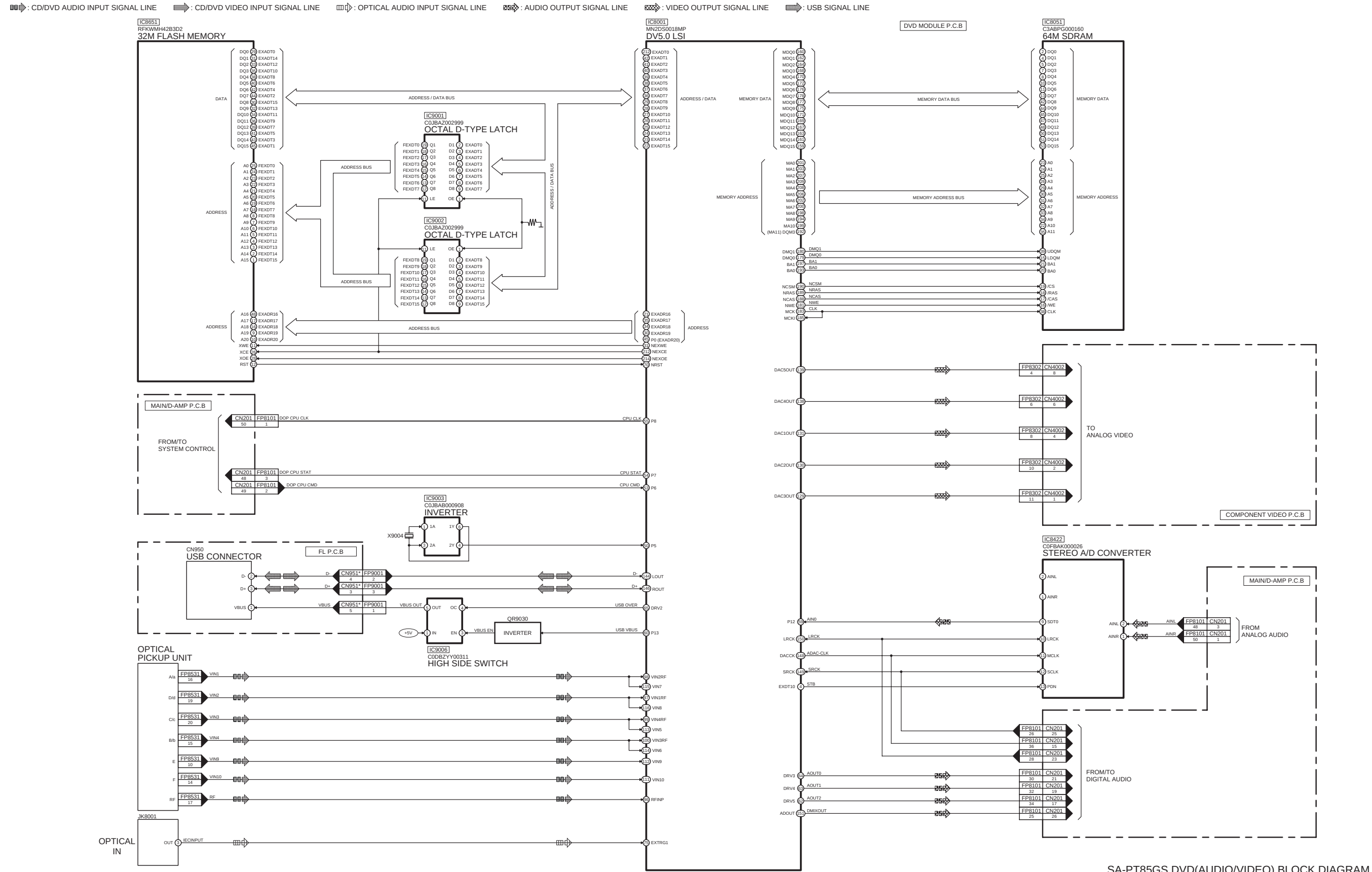
14 Block Diagram

14.1. DVD(Servo)



SA-PT85GS DVD(SERVO) BLOCK DIAGRAM

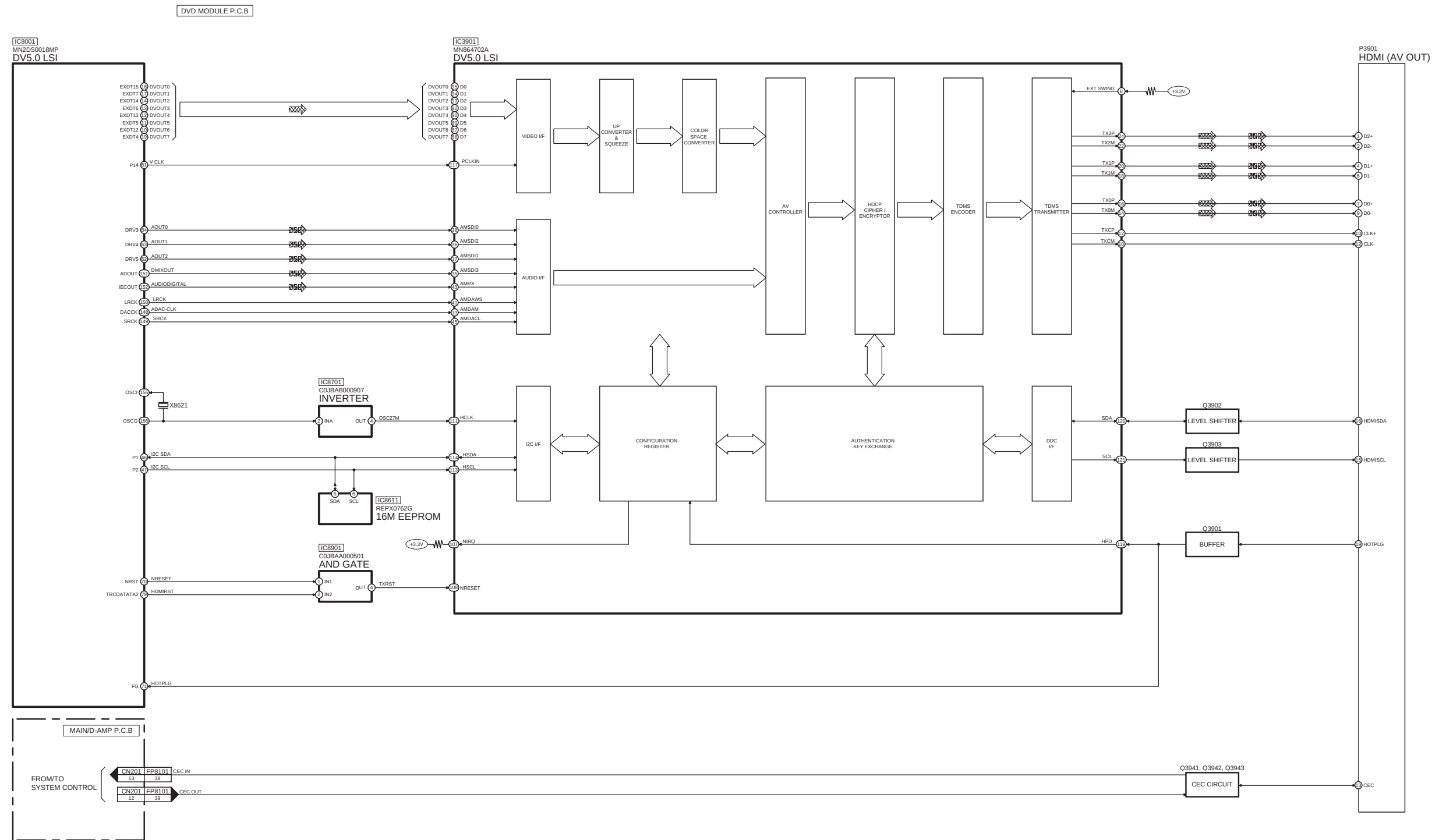
14.2. DVD(Audio/Video)



SA-PT85GS DVD(AUDIO/VIDEO) BLOCK DIAGRAM

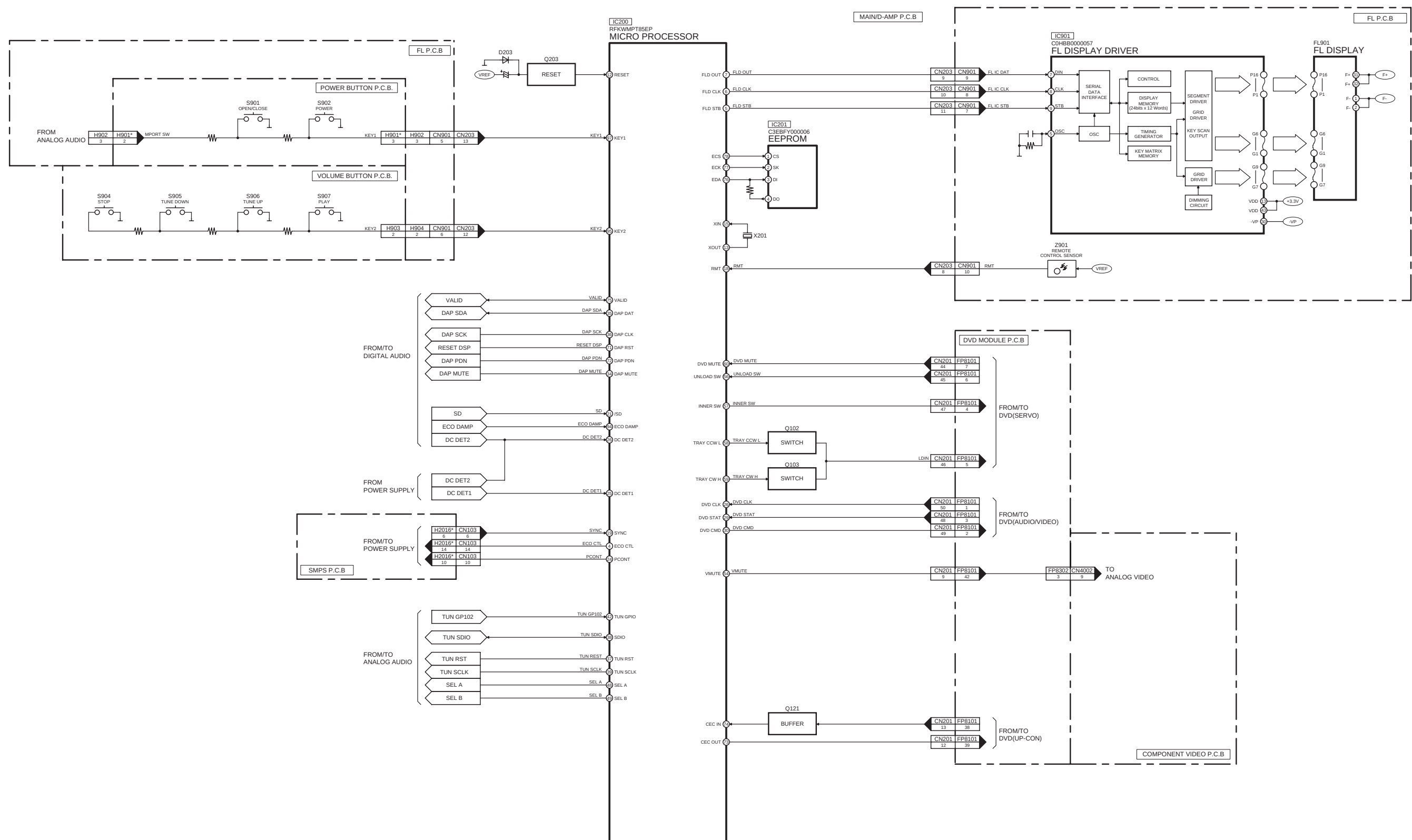
14.3. DVD(UP-CON)

🔊 : AUDIO OUTPUT SIGNAL LINE 📺 : VIDEO OUTPUT SIGNAL LINE



SA-PT85GS DVD(UP-CON) BLOCK DIAGRAM

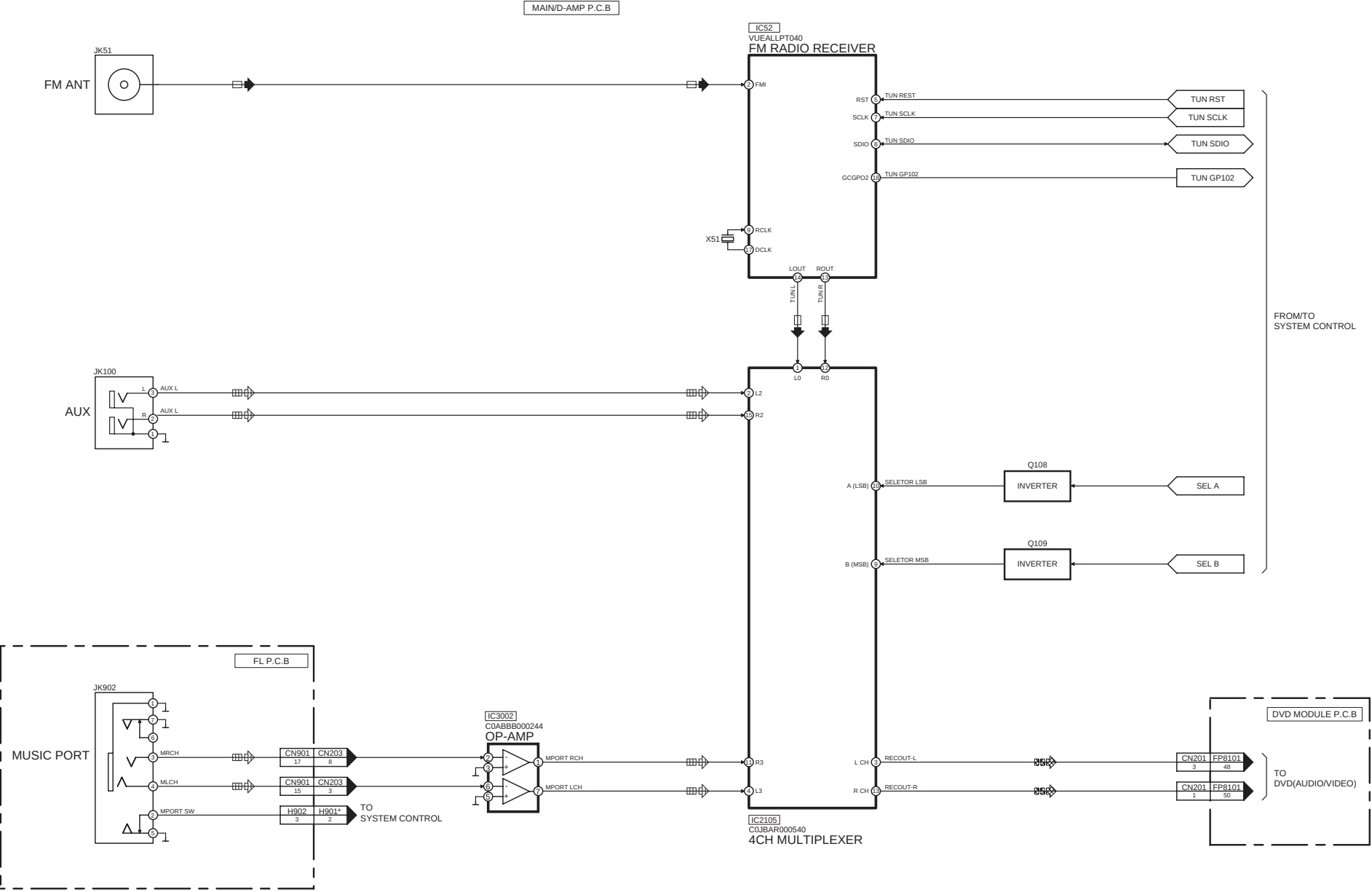
14.4. System Control



SA-PT85GS SYSTEM CONTROL BLOCK DIAGRAM

14.5. Analog Audio

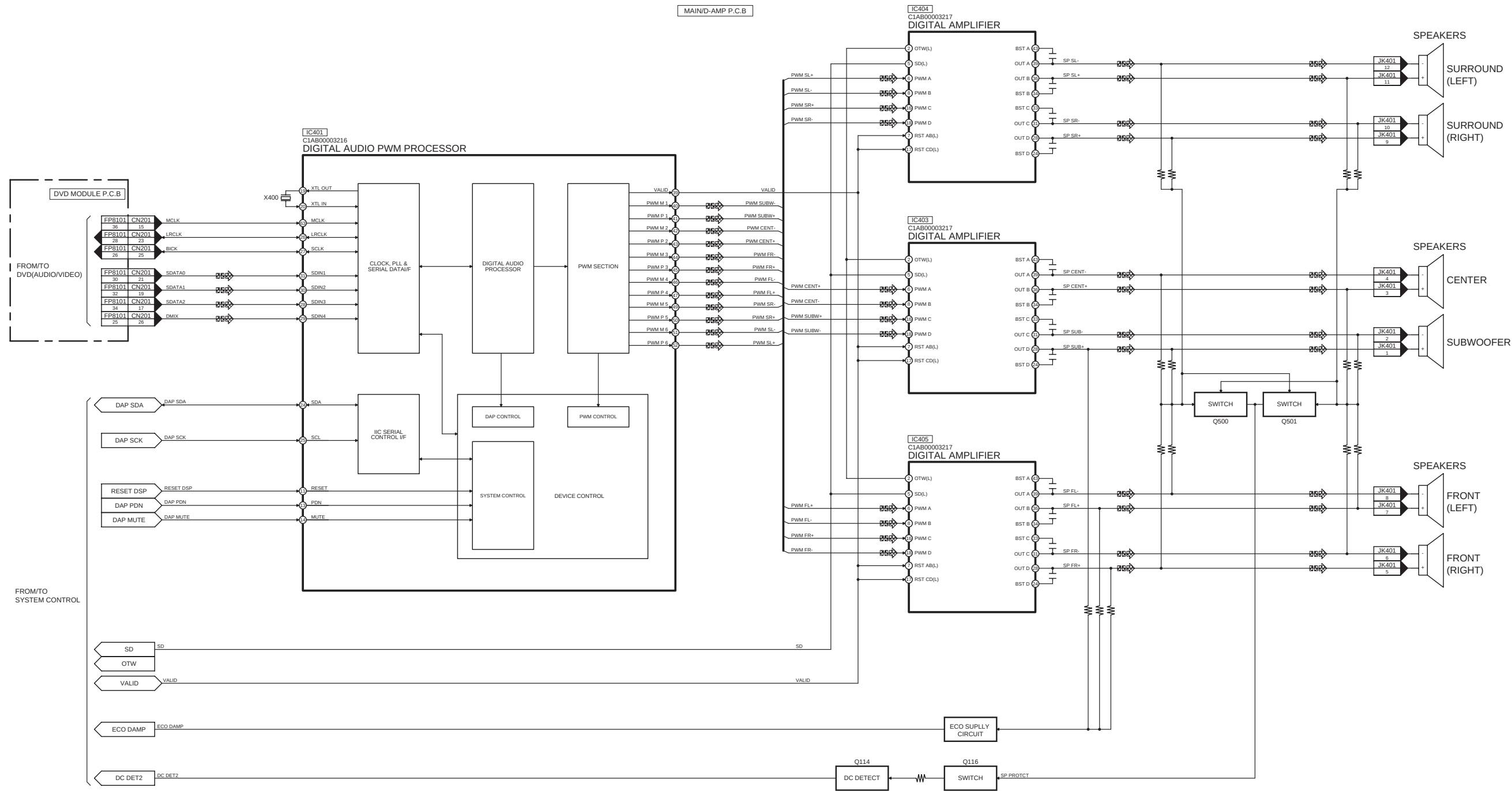
 : AUX/MUSIC PORT AUDIO INPUT SIGNAL LINE
  : AUDIO OUTPUT SIGNAL LINE
  : FM SIGNAL LINE



SA-PT85GS ANALOG AUDIO BLOCK DIAGRAM

14.6. Digital Audio

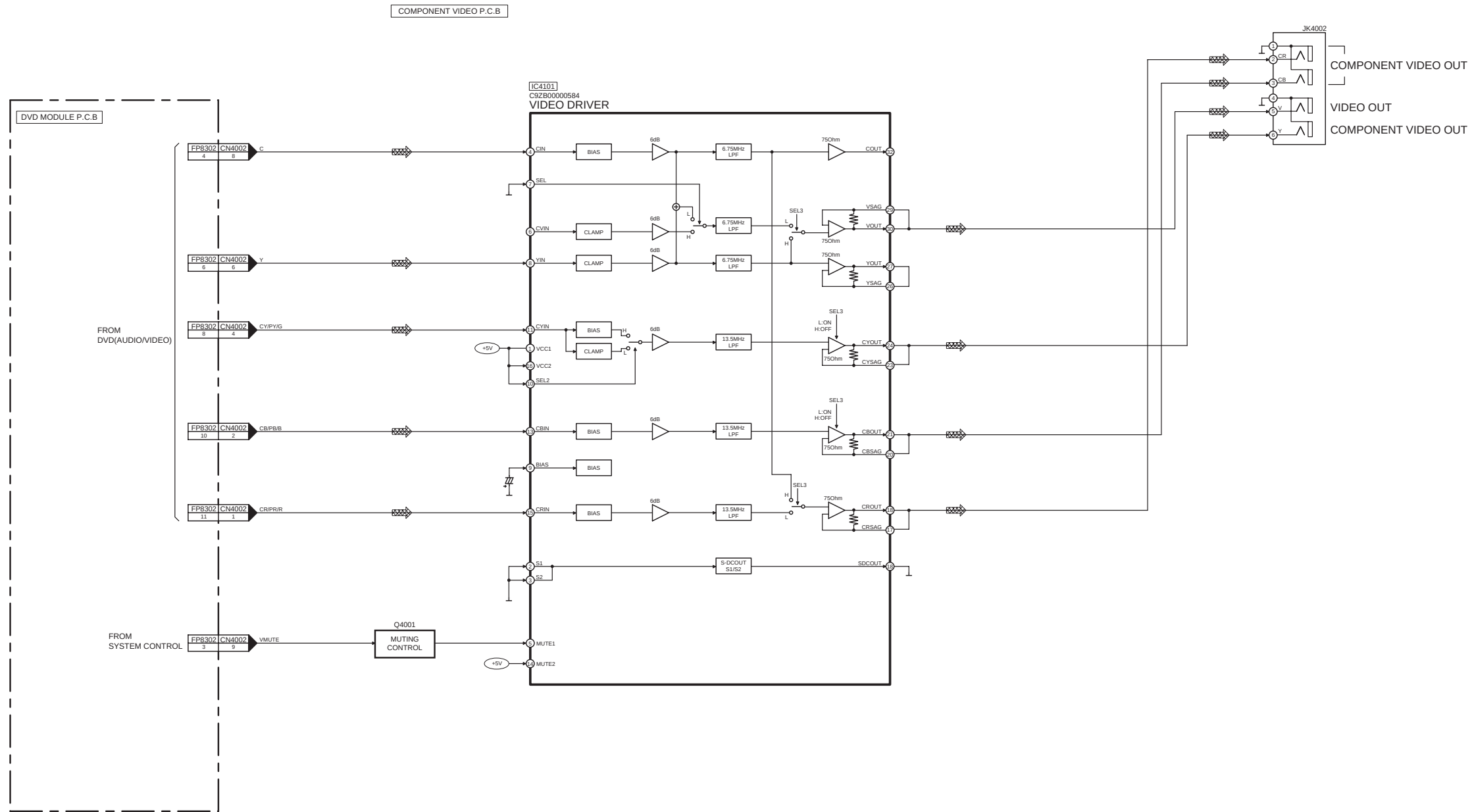
🔊 : AUDIO OUTPUT SIGNAL LINE



SA-PT85GS DIGITAL AUDIO BLOCK DIAGRAM

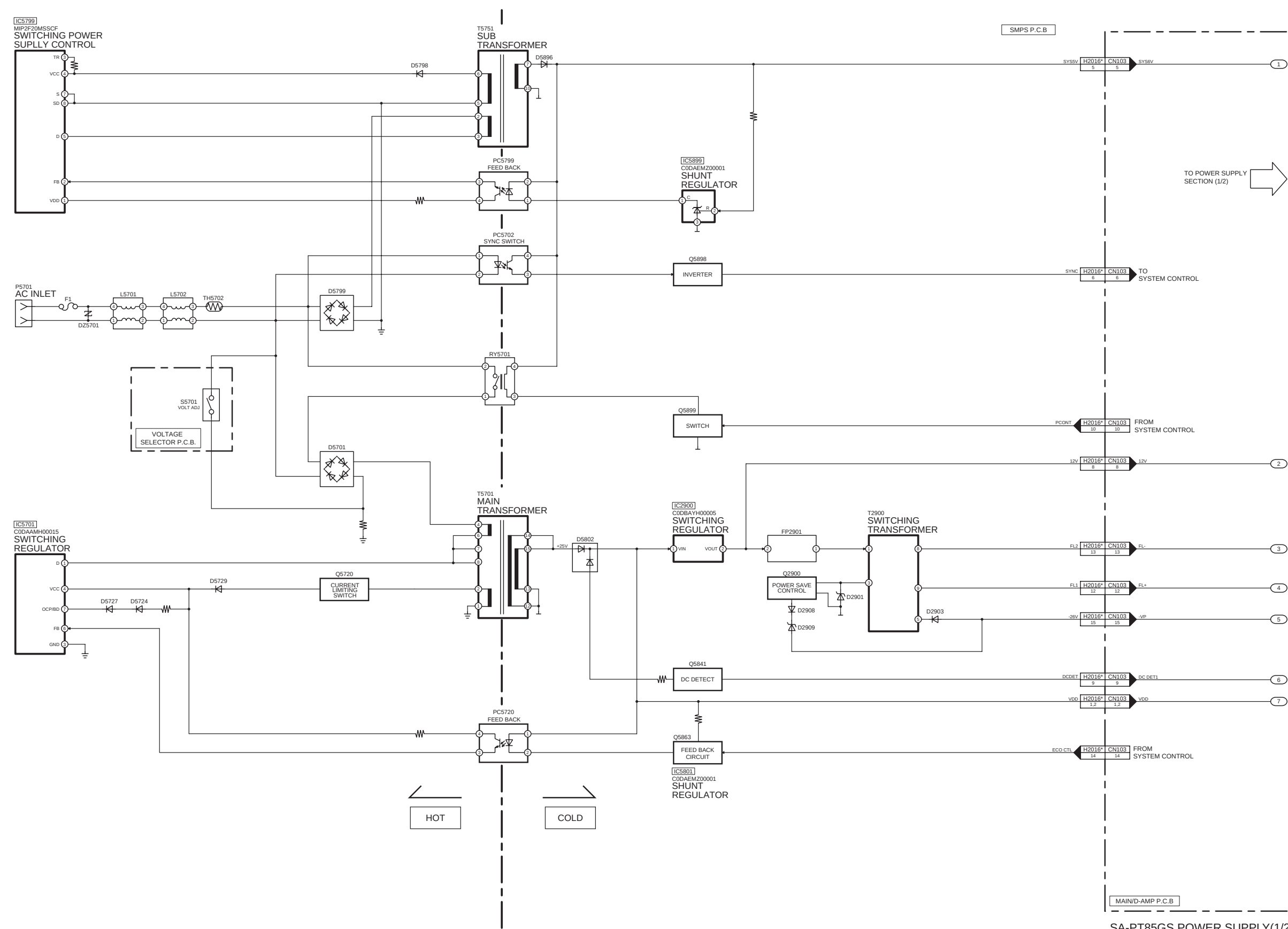
14.7. Analog Video

VIDEO OUTPUT SIGNAL LINE



SA-PT85GS ANALOG VIDEO BLOCK DIAGRAM

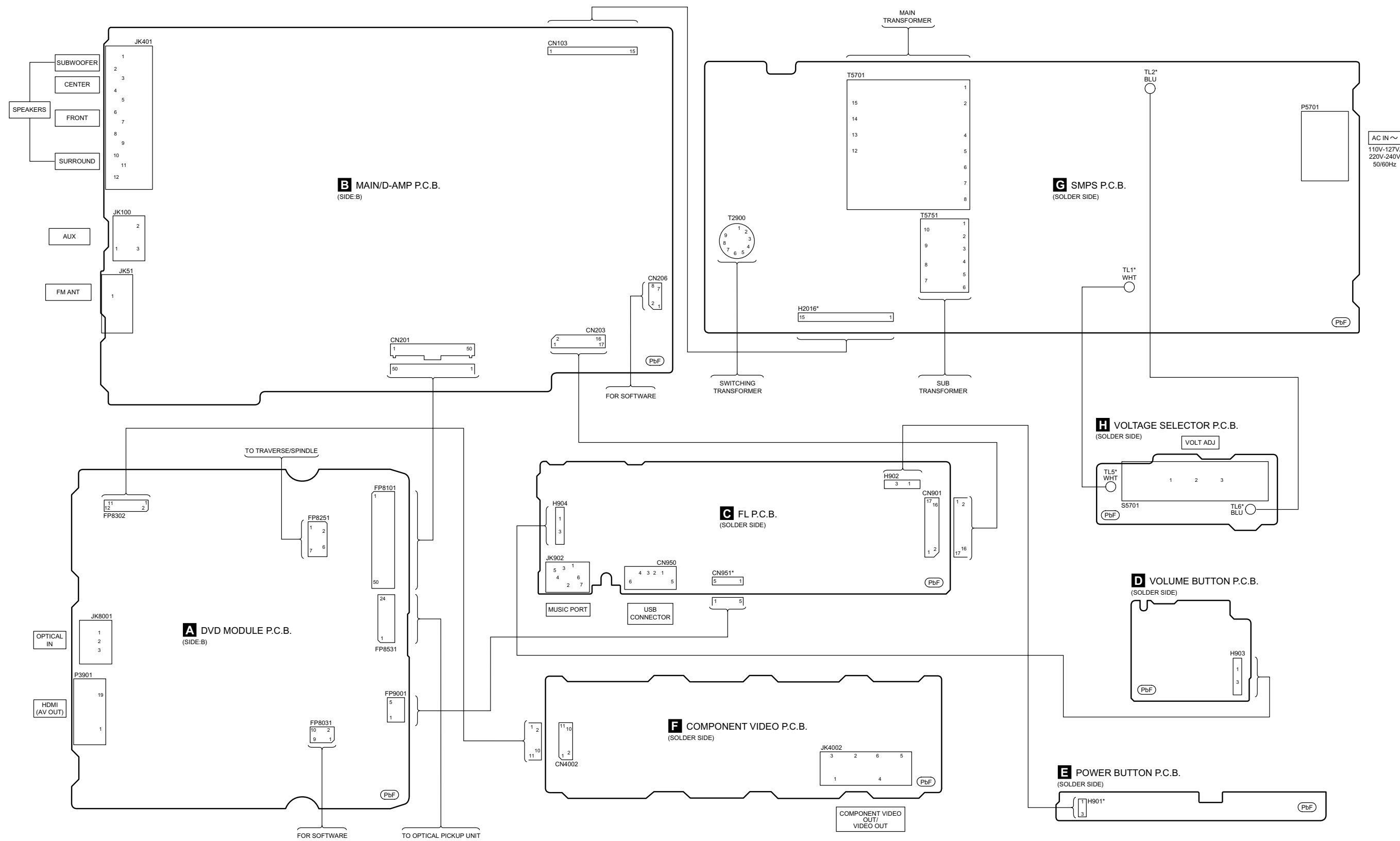
14.8. Power Supply



SA-PT85GS POWER SUPPLY(1/2) BLOCK DIAGRAM



15 Wiring Diagram



NOTE: " * " REF IS FOR INDICATION ONLY.

SA-PT85GS WIRING CONNECTION

16 Schematic Diagram Notes

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

Notes:

- S901:** Open/Close switch (▲).
S902: Power switch (⏻/⏻).
S904: Stop switch (■).
S905: Tune Down switch (-).
S906: Tune Up switch (+).
S907: Play switch (▶).

- Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high quality sound (capacitors), low-noise (resistors), etc are used.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- 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, C5703, C5704, C5706, C5708

- **Resistor**

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

- **Capacitor**

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

- **Coil**

Unit of inductance is H, unless otherwise noted.

- *

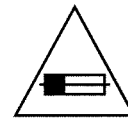
REF is for indication only.

- 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
	: Music Port/AUX/Optical Audio input signal line
	: FM signal line
	: USB signal line

CAUTION:

FOR CONTINUED PROTECTION
AGAINST FIRE HAZARD,
REPLACE ONLY WITH SAME
TYPE F1 T2.5AH 250V FUSE



RISK OF FIRE-REPLACE FUSE AS MARKED.

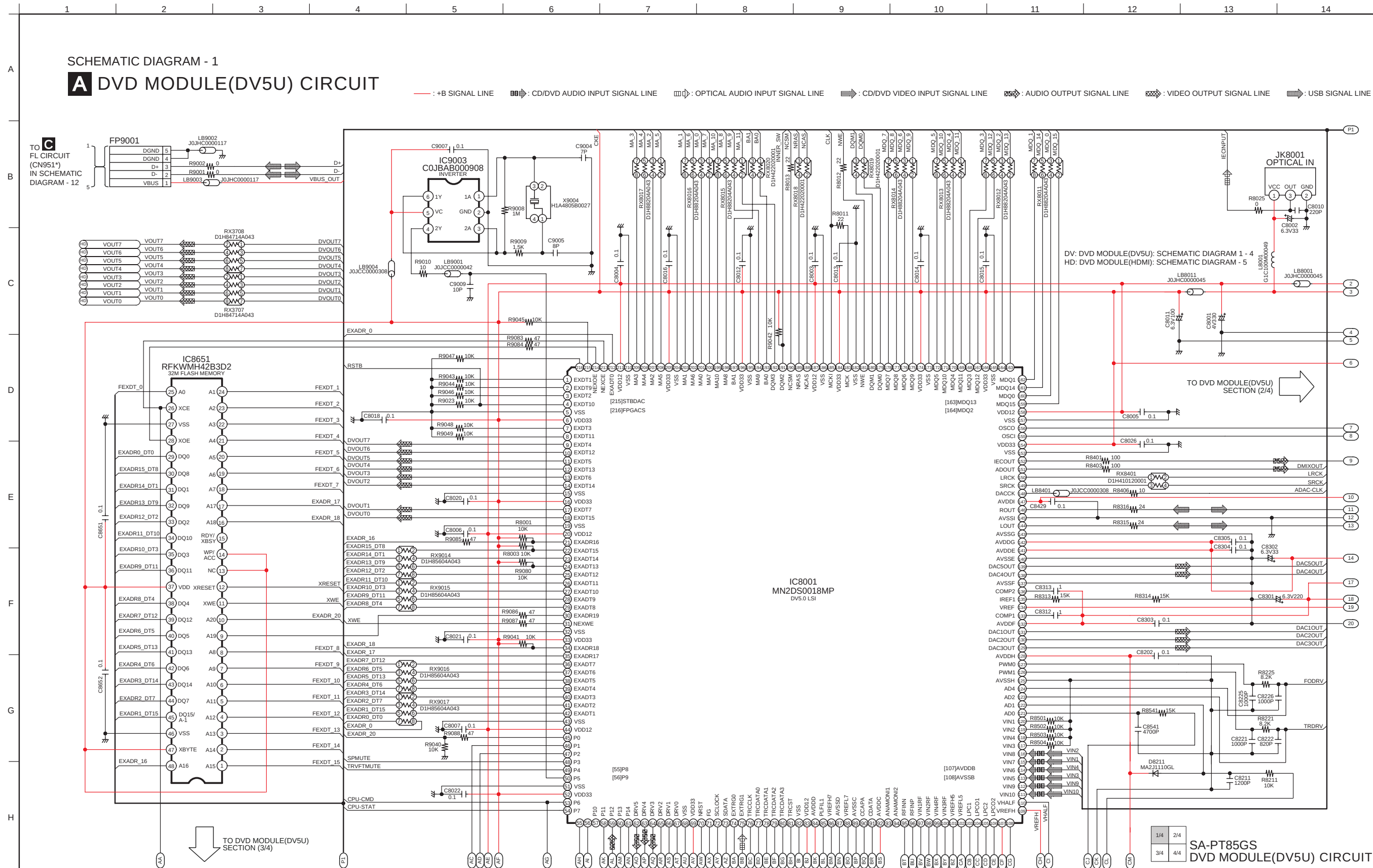
FUSE CAUTION



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

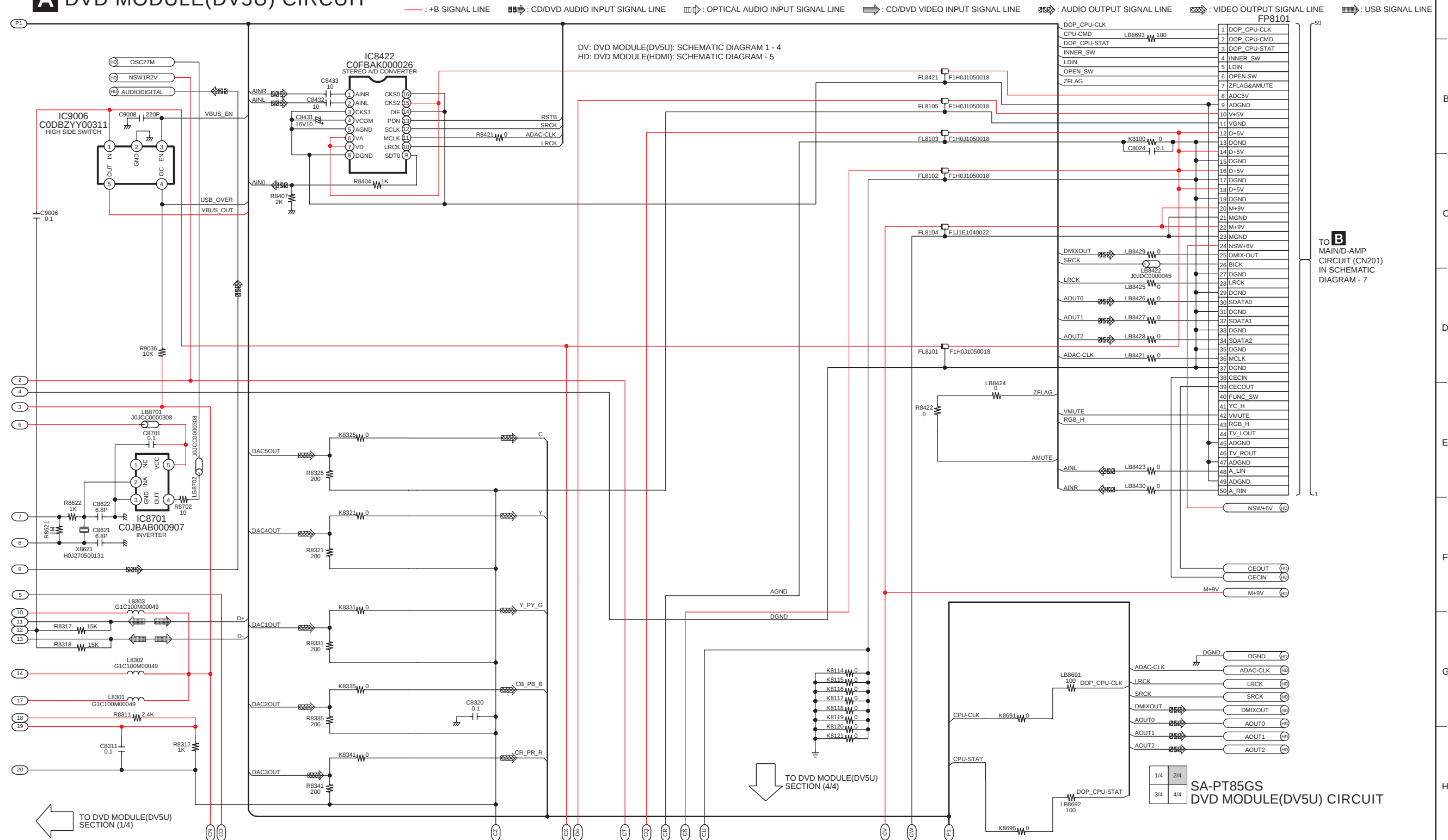
17 Schematic Diagram

17.1. DVD Module Circuit



SCHEMATIC DIAGRAM - 2

A DVD MODULE(DV5U) CIRCUIT



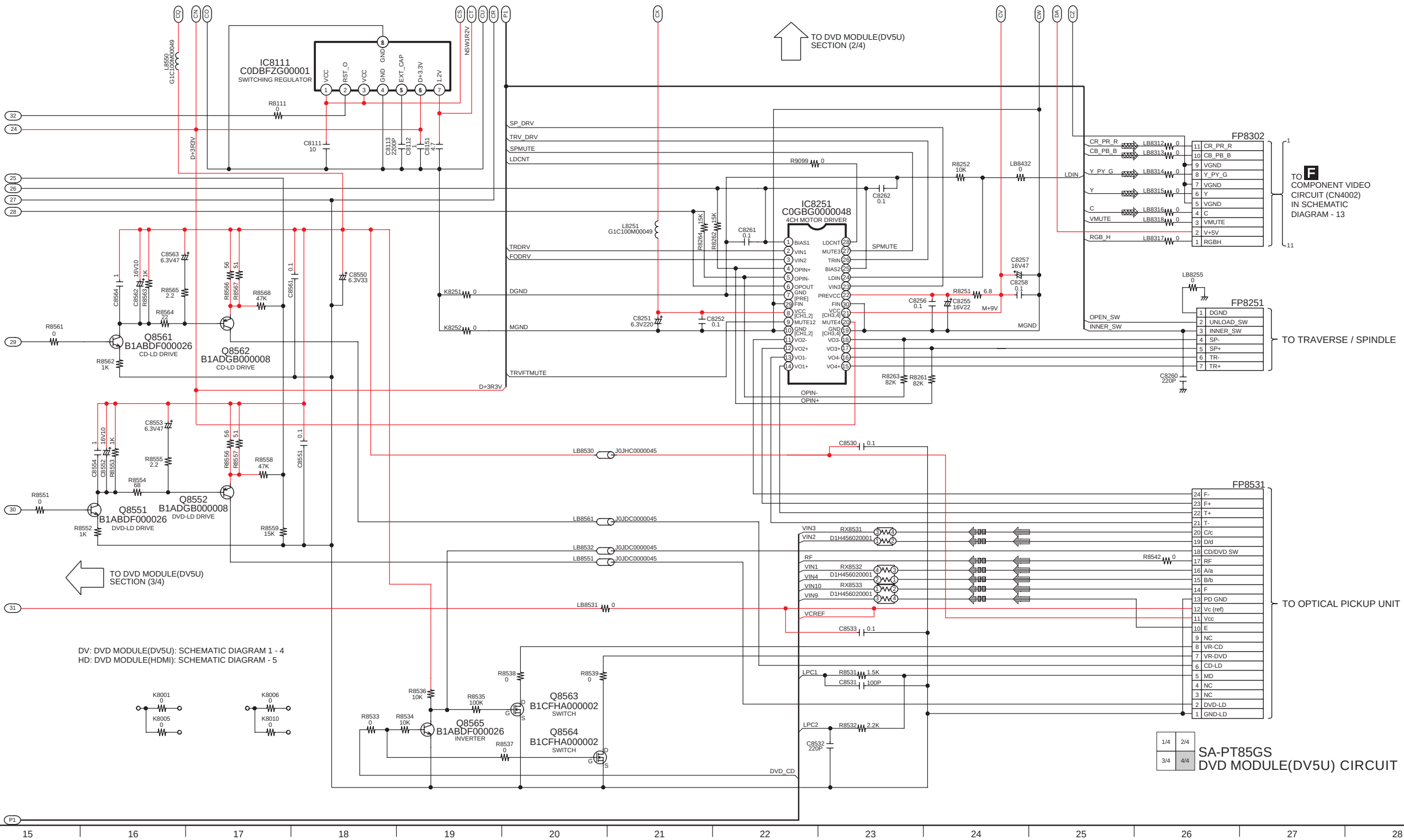
A DVD MODULE(DV5U) CIRCUIT



SCHEMATIC DIAGRAM - 4

A DVD MODULE(DV5U) CIRCUIT

— : +B SIGNAL LINE : CD/DVD AUDIO INPUT SIGNAL LINE : OPTICAL AUDIO INPUT SIGNAL LINE : CD/DVD VIDEO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : VIDEO OUTPUT SIGNAL LINE : USB SIGNAL LINE

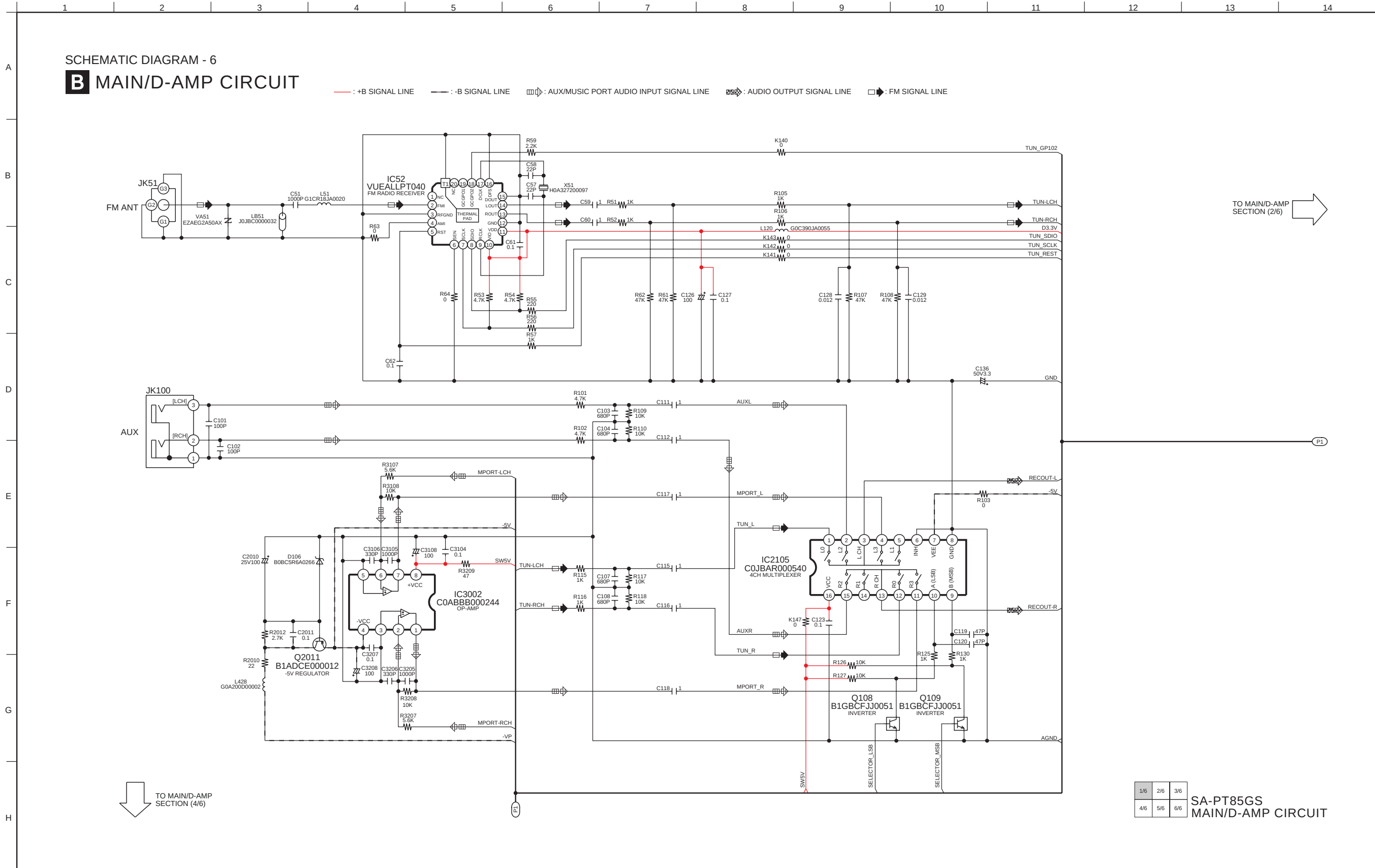


A DVD MODULE(HDMI) CIRCUIT

SA-PT85GS DVD MODULE(HDMI) CIRCUIT



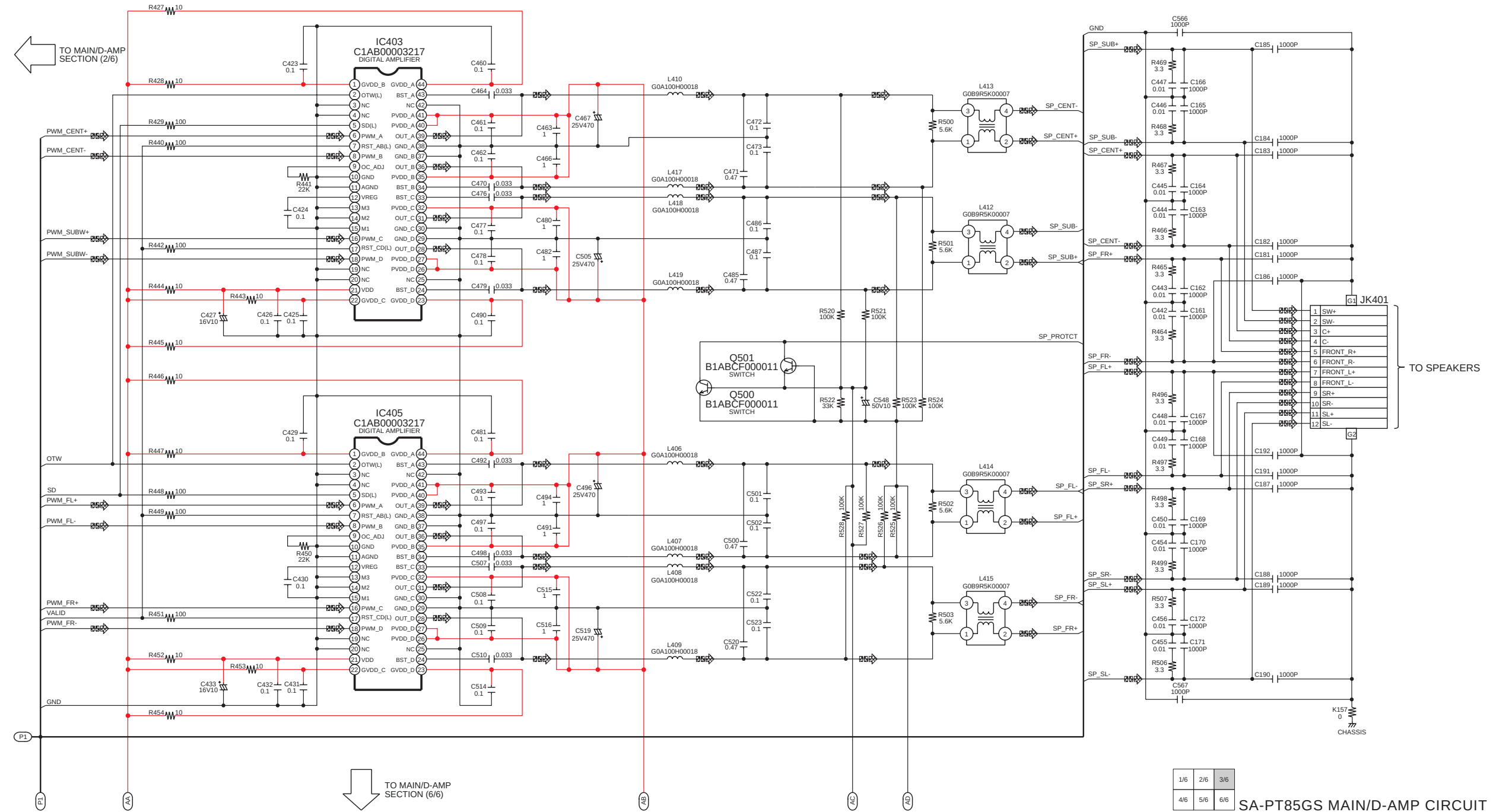
17.2. Main/D-Amp Circuit



SCHEMATIC DIAGRAM - 8

B MAIN/D-AMP CIRCUIT

— : +B SIGNAL LINE — : -B SIGNAL LINE  : AUX/MUSIC PORT AUDIO INPUT SIGNAL LINE  : AUDIO OUTPUT SIGNAL LINE  : FM SIGNAL LINE



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

SA-PT85GS MAIN/D-AMP CIRCUIT

B MAIN/D-AMP CIRCUIT

↑ TO MAIN/D-AMP
SECTION (2/6)



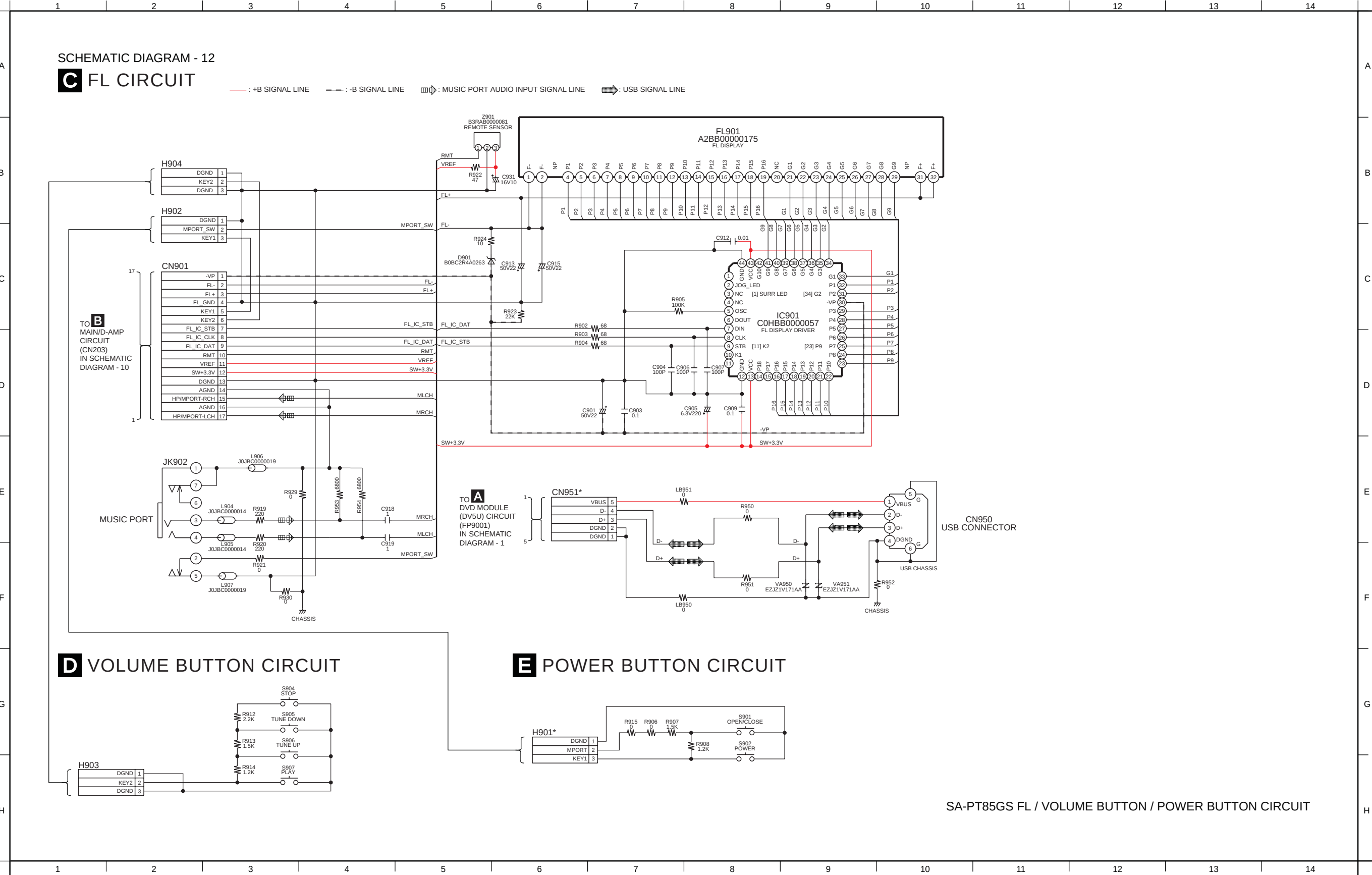
1/6	2/6	3/6
4/6	5/6	6/6

SA-PT85GS MAIN/D-AMP CIRCUIT

B MAIN/D-AMP CIRCUIT



17.3. FL, Volume Button & Power Button Circuit

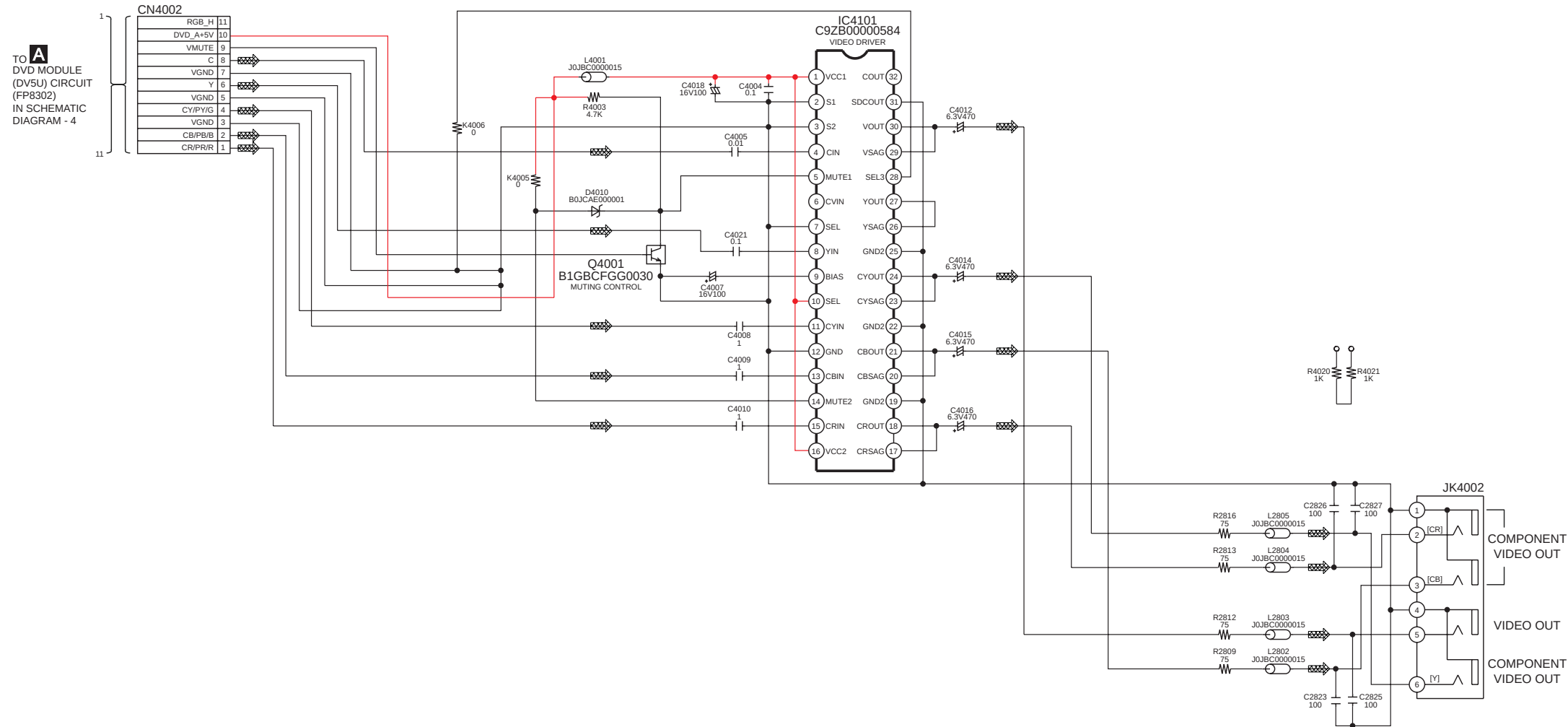


17.4. Component Video Circuit

SCHEMATIC DIAGRAM - 13

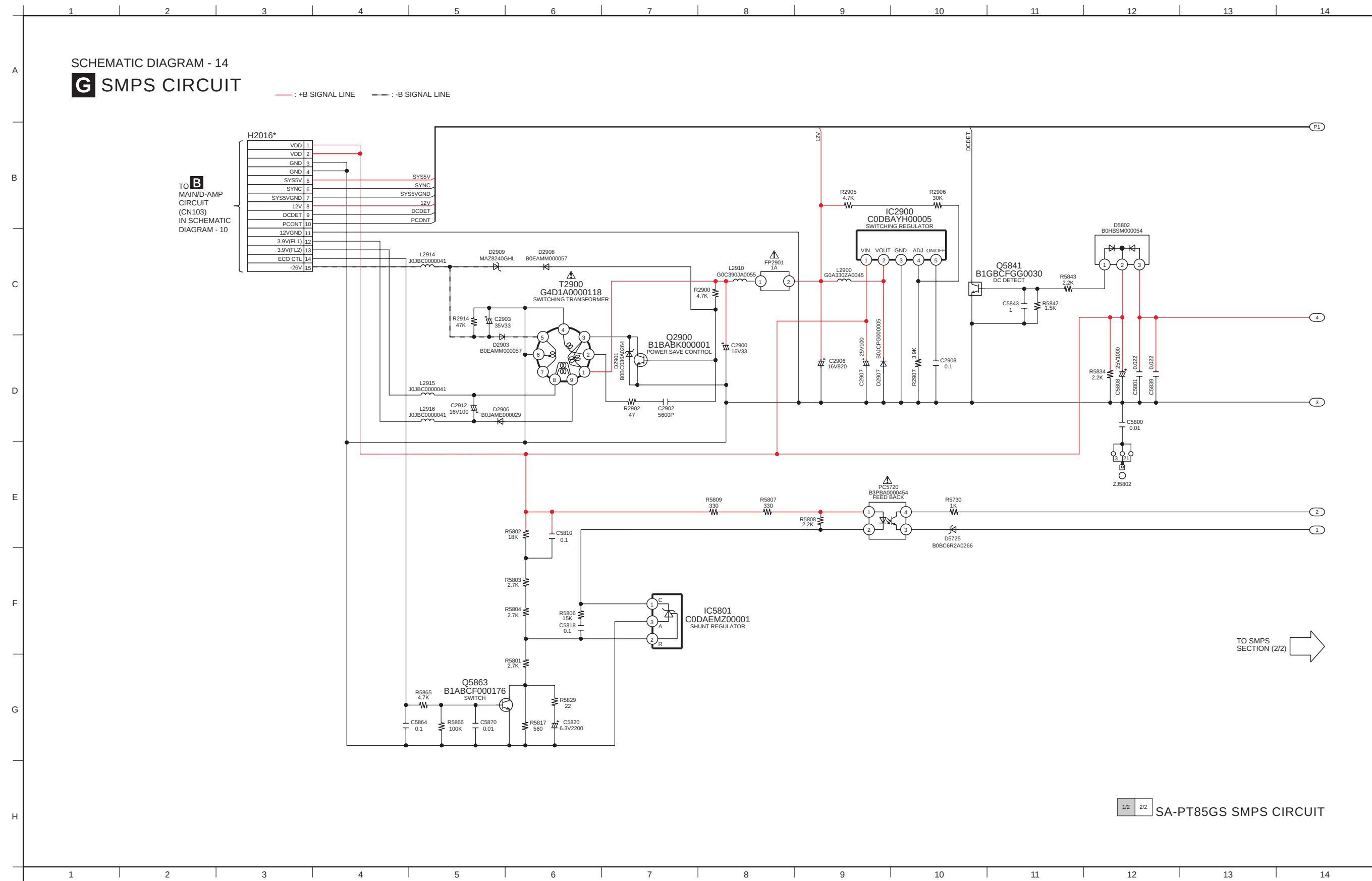
F COMPONENT VIDEO CIRCUIT

— : +B SIGNAL LINE ⊠ : VIDEO OUTPUT SIGNAL LINE



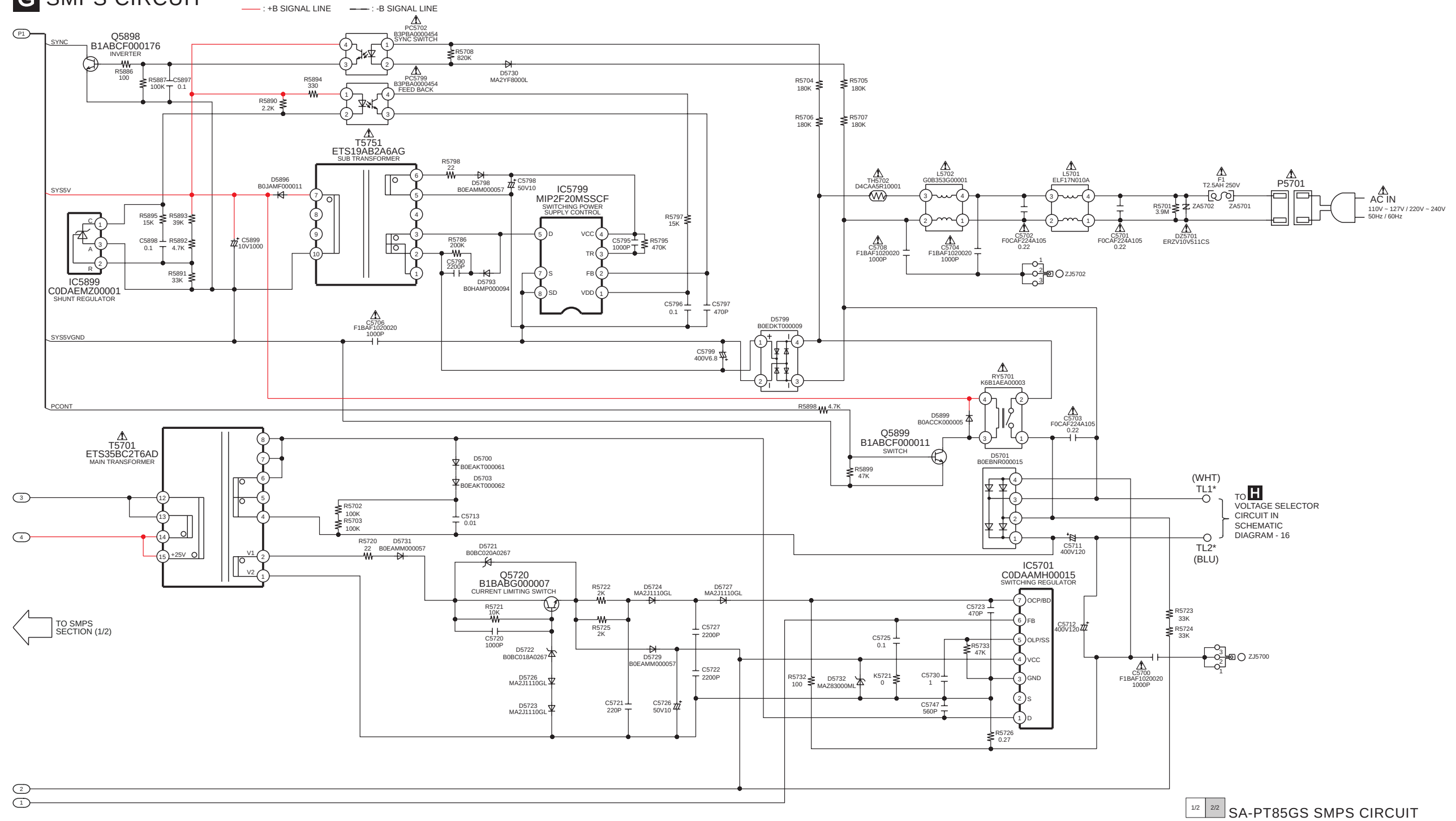
SA-PT85GS COMPONENT VIDEO CIRCUIT

17.5. SMPS Circuit

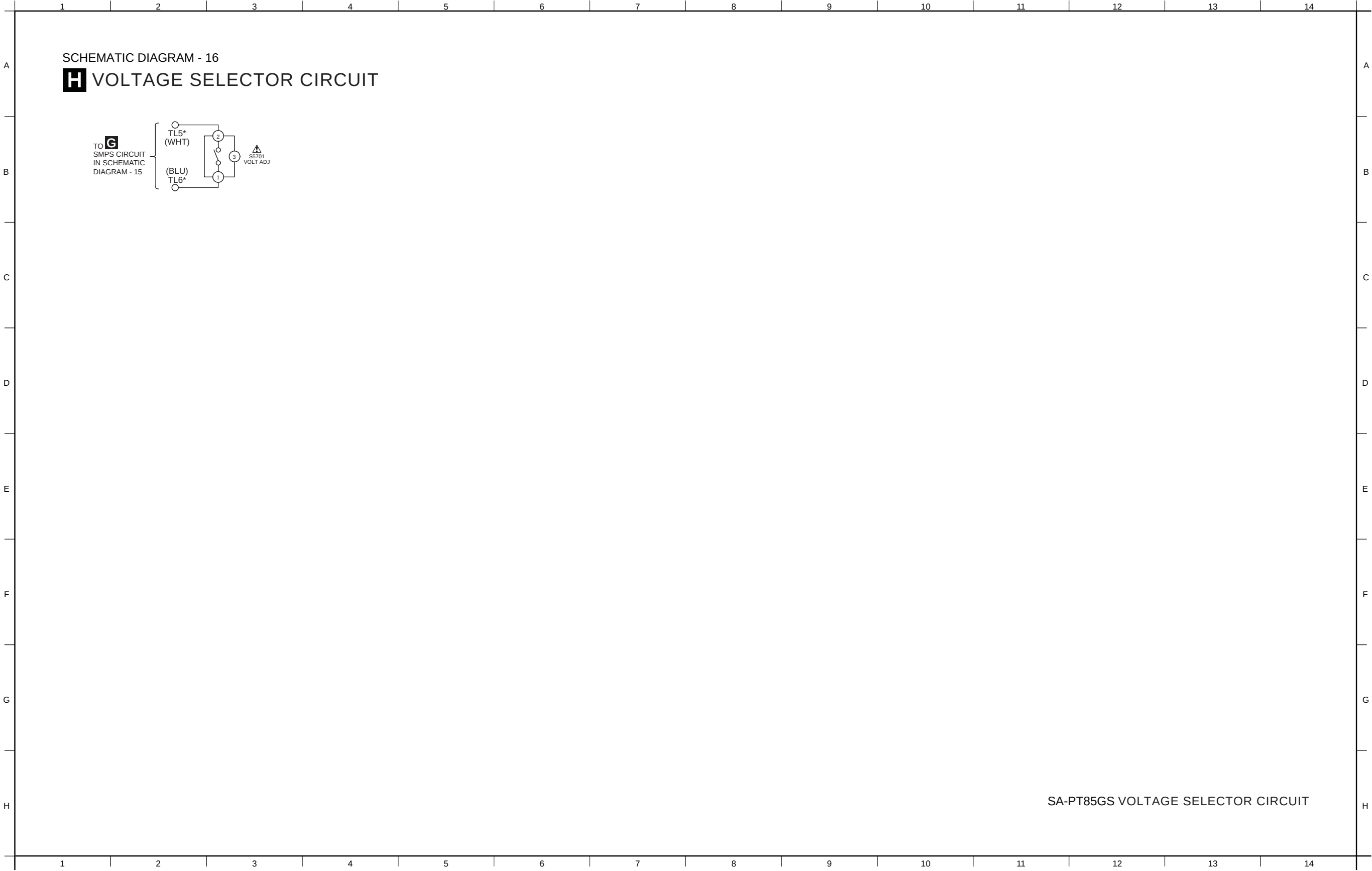


SCHEMATIC DIAGRAM - 15

G SMPS CIRCUIT

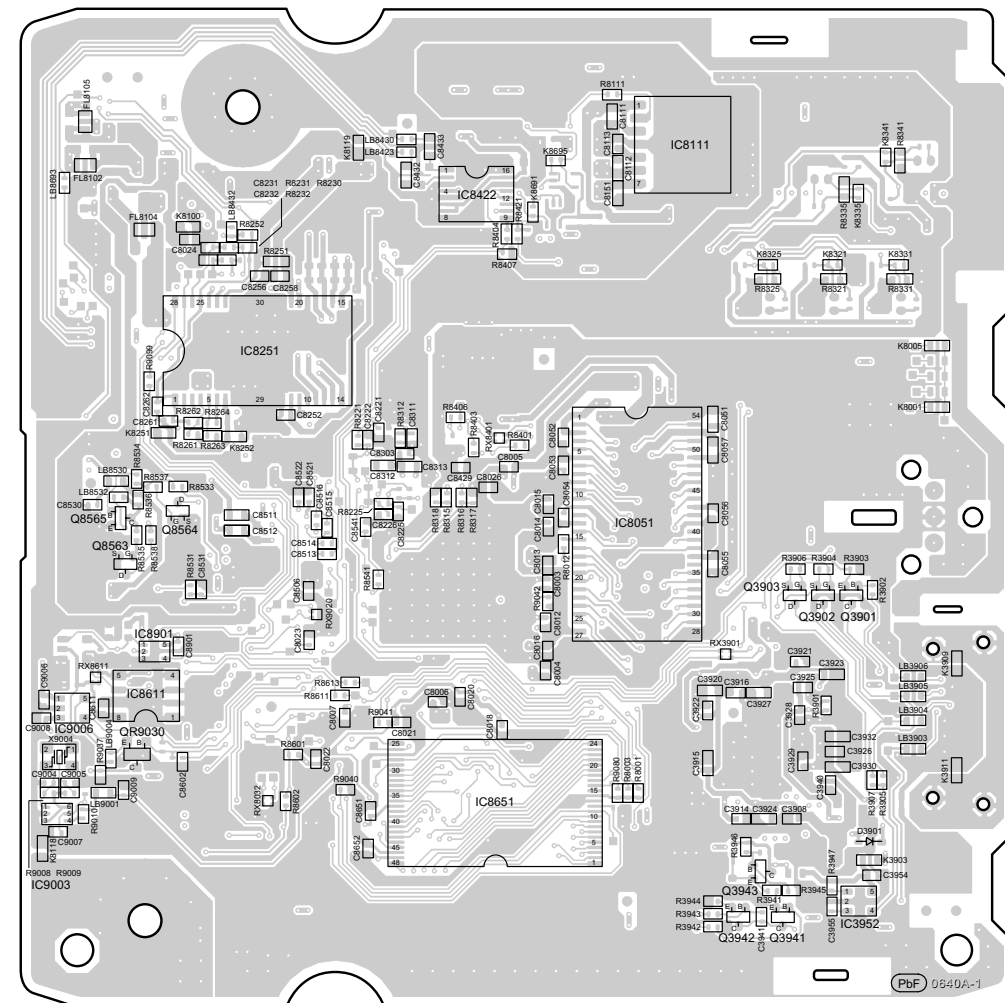


17.6. Voltage Selector Circuit

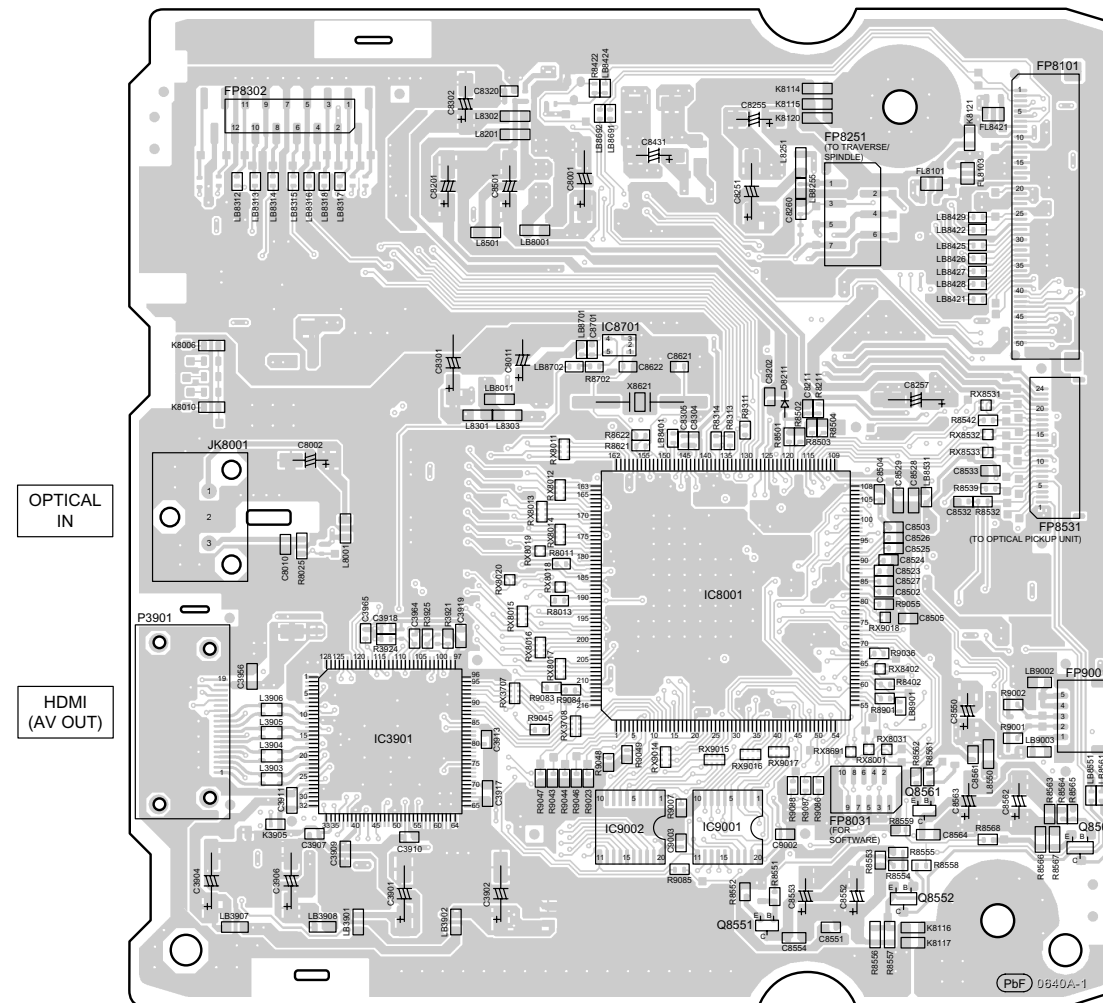


18.1. DVD Module P.C.B.

A DVD MODULE P.C.B. (REPX0762G)



(SIDE A)

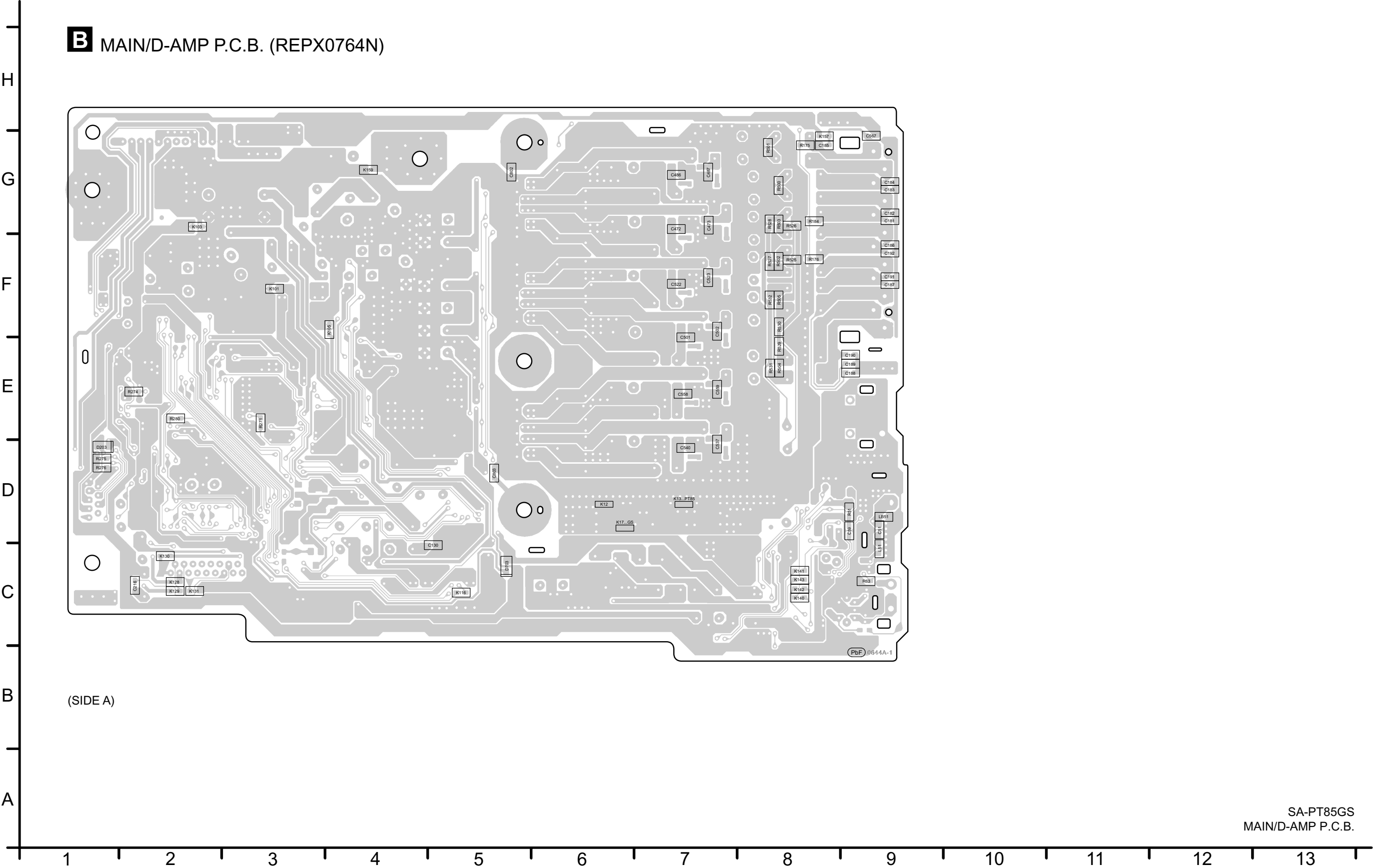


(SIDE B)

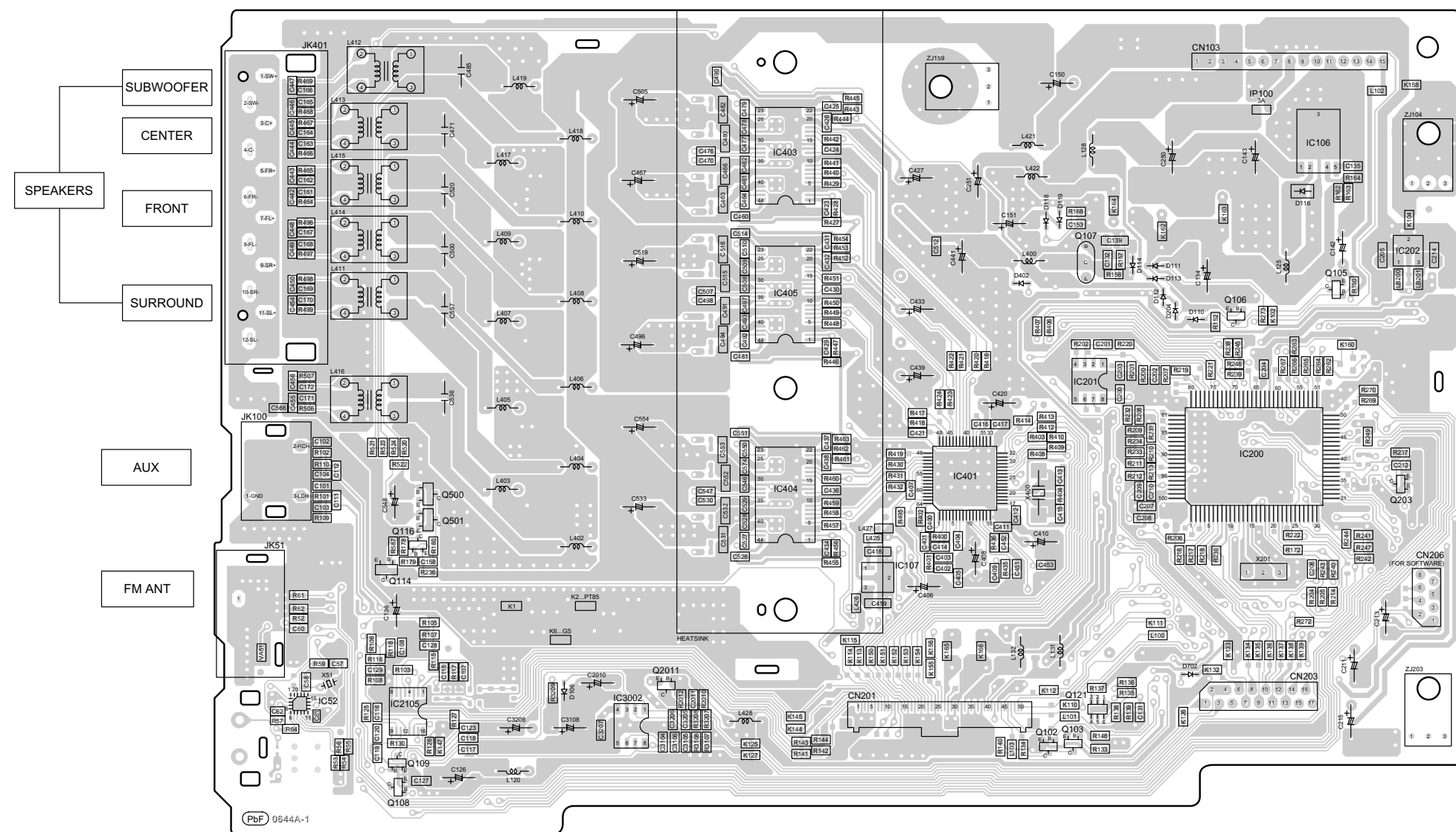
SA-PT85GS
DVD MODULE P.C.B.

18.2. Main/D-Amp P.C.B.

B MAIN/D-AMP P.C.B. (REPX0764N)



B MAIN/D-AMP P.C.B. (REPX0764N)



(SIDE B)

SA-PT85GS
MAIN/D-AMP P.C.B.

A B C D E F G H

Diagram of the back of the PDf 0645AB module showing component locations. The diagram includes labels for S907 (PLAY), S906 (TUNE UP), S904 (STOP), S905 (TUNE DOWN), and H903. It also shows the location of R914, R913, and R912. A small circle indicates the location of the PDf 0645AB module.

Diagram of the bottom view of the PCB showing component locations. Labels include H901* (a 3-pin connector), R906, R907, R908, R915, S901 (OPEN / CLOSE), S902 (POWER), and Pdb 0645AC.

SA-PT85GS
FL / VOLUME BUTTON / POWER BUTTON / COMPONENT VIDEO P.C.B.

H

G



C



A

A horizontal number line with tick marks at every integer from 1 to 13. The numbers are labeled below the line.

19 Terminal Function of ICs

19.1. IC200 (RFKWMPT85EP): IC MICROPROCESSOR

Pin No.	Terminal Name	I/O	Function
1	NC	-	No Connection
2	NC	-	No Connection
3	NC	-	No Connection
4	ECO_CTRL	O	ECO supply Out Control
5	FLD_STB	O	FL Display Strobe Signal
6	FLD_CLK	O	FL Display Clock Signal
7	FLD_OUT	O	FL Display Data Out Signal
8	BYTE	I	External data bus width select input
9	CNVSS	-	Micon Programming-Processor / Single Chip Mode
10	NC	-	No Connection
11	NC	-	No Connection
12	RESET	I	Microp Reset Signal
13	XOUT	-	Clock out
14	VSS	-	GND
15	XIN	-	Clock In
16	VCC	-	GND +3.3V
17	NMI	I	Non Maskable Interrupt
18	RMT	I	Remote Control Signal
19	SYNC	I	AC Sync Signal
20	NC	-	No Connection
21	/SD	I	D-Amp shut down
22	/OTW	I	Over Temperature Warning
23	NC	-	No Connection
24	PCONT	O	System Power Control
25	DC_DET1	I	Power Supply Failure Detection (F76)
26	DC_DET2	I	D-Amp and Fan Failure Detection (F61)
27	NC	-	No Connection
28	DVD_CLK	I	DVD Clock
29	DVD_STAT	I	DVD Status
30	DVD_CMD	O	DVD Command
31	TXD	I	For Flash TxD
32	RXD	O	For Flash RxD
33	CLK	I	For Flash CLK
34	DAP_MUTE	O	Mute Signal for DAP
35	DAP_DAT	O	DSP IC Data Line
36	DAP_CLK	O	DSP IC Clock
37	TUN_RST	O	Tuner Reset
38	TUN_SDIO	O	Tuner Data
39	TUN_SCLK	O	Tuner Clock data
40	NC	-	No Connection
41	EPM	I	For Downloading Purpose
42	TUN_GPIO	I	Tuner General Purpose Pin
43	NC	-	No Connection
44	NC	-	No Connection
45	NC	-	No Connection
46	CE	I	Flash Chip Enable
47	NC	-	No Connection
48	SEL_A	O	Analog SW IC Select A
49	SEL_B	O	Analog SW IC Select B
50	NC	-	No Connection
51	RGB_H	O	Blanking signal for SCART
52	VMUTE2	-	Not in use
53	VMUTE	O	Video Mute Control
54	YC_H	O	To Select Luminance or Composite Out

Pin No.	Terminal Name	I/O	Function
55	NC	-	No Connection
56	UNLOAD_SW	I	DLS6E Unload Switch Signal
57	INNER_SW	I	Inner Switch for DLS6E and OPU
58	TRAY_CCW_L	O	DLS6E Tray Close Signal
59	TRAY_CW_H	O	DLS6E Tray Open Signal
60	DVD_MUTE	I	Mute from DVD Module (Reverse logic of ZFLAG)
61	NC	-	No Connection
62	VCC	-	3.3V System Supply
63	NC	-	No Connection
64	VSS	-	System Ground
65	NC	-	No Connection
66	NC	-	No Connection
67	NC	-	No Connection
68	WIDE1	-	No Connection
69	NC	-	No Connection
70	NC	-	No Connection
71	DAP_RST	O	DSP IC Reset
72	DAP_PDN	O	DSP IC Standby
73	CEC_OUT	O	CEC Out Data
74	CEC_IN	I	CEC In Data
75	VALID	I	VALID input port from DAP
76	EDA	O	EEPROM IC Data Signal
77	ECK	O	EEPROM IC Clock Signal
78	ECS	O	EEPROM IC Chip Select
79	NC	-	No Connection
80	NC	-	No Connection
81	NC	-	No Connection
82	NC	-	No Connection
83	NC	-	No Connection
84	NC	-	No Connection
85	NC	-	No Connection
86	NC	-	No Connection
87	NC	-	No Connection
88	NC	-	No Connection
89	MD3	I	DVD Panel Code Digit 3
90	MD2	I	DVD Panel Code Digit 2
91	DES2	I	Model Selector
92	DES1	I	Series Selector
93	NC	-	No Connection
94	ECO_DAMP	I	detect speaker out voltage for Eco supply
95	KEY2	I	Keyline 2
96	AVSS	-	Analog GND
97	KEY1	I	Keyline 1
98	VREF	-	Voltage Reference
99	AVCC	-	Analog +5V Supply
100	NC	-	No Connection

19.2. IC901(C0HBB0000057): IC FL Driver

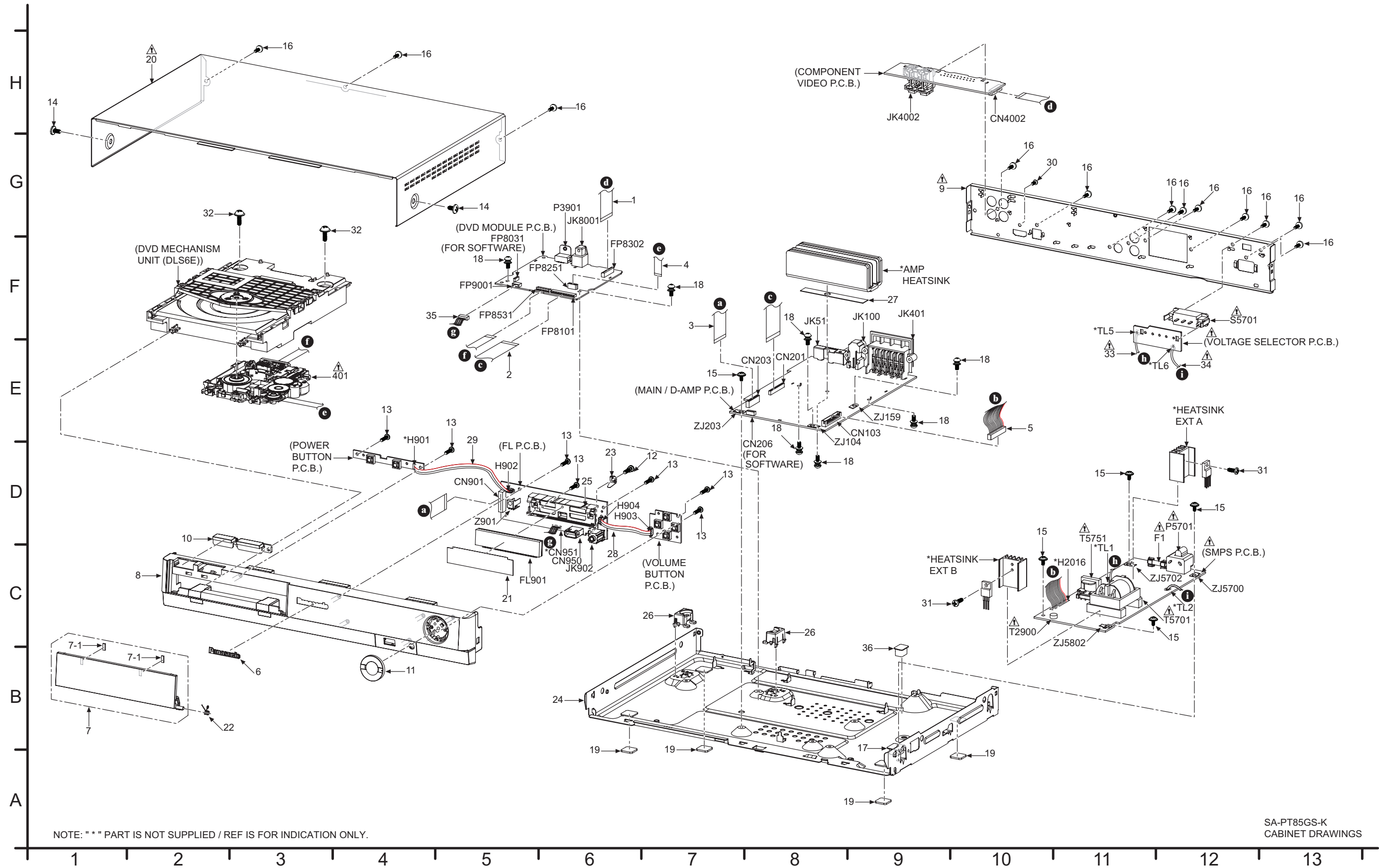
Pin No.	Terminal Name	I/O	Function
1	SURR_LED	-	NC
2	JOG_LED	-	NC
3	NC	-	NC
4	NC	-	NC
5	OSC	I	Oscillator Input
6	DOUT	-	Data Output
7	DIN	I	Data Input
8	CLK	I	Clock Input
9	STB	I	Serial Interface Strobe

Pin No.	Terminal Name	I/O	Function
10	K1	-	Key Data Input 1 (No Connection)
11	K2	-	Key Data Input 2 (No Connection)
12	GND	-	GND
13	VCC	-	Power Supply (+5V)
14	P18	O	Segment Output 18
15	P17	O	Segment Output 17
16	P16	O	Segment Output 16
17	P15	O	Segment Output 15
18	P14	O	Segment Output 14
19	P13	O	Segment Output 13
20	P12	O	Segment Output 12
21	P11	O	Segment Output 11
22	P10	O	Segment Output 10
23	P9	O	Segment Output 9
24	P8	O	Segment Output 8
25	P7	O	Segment Output 7
26	P6	O	Segment Output 6
27	P5	O	Segment Output 5
28	P4	O	Segment Output 4
29	P3	O	Segment Output 3
30	-VP	-	Voltage Supply
31	P2	O	Segment Output 2
32	P1	O	Segment Output 1
33	G1	O	Grid Segment Output 1
34	G2	O	Grid Segment Output 2
35	G3	O	Grid Segment Output 3
36	G4	O	Grid Segment Output 4
37	G5	O	Grid Segment Output 5
38	G6	O	Grid Segment Output 6
39	G7	O	Grid Segment Output 7
40	G8	O	Grid Segment Output 8
41	G9	O	Grid Segment Output 9
42	G10	O	Grid Segment Output 10
43	VCC	-	Voltage Supply (+5V)
44	GND	-	GND

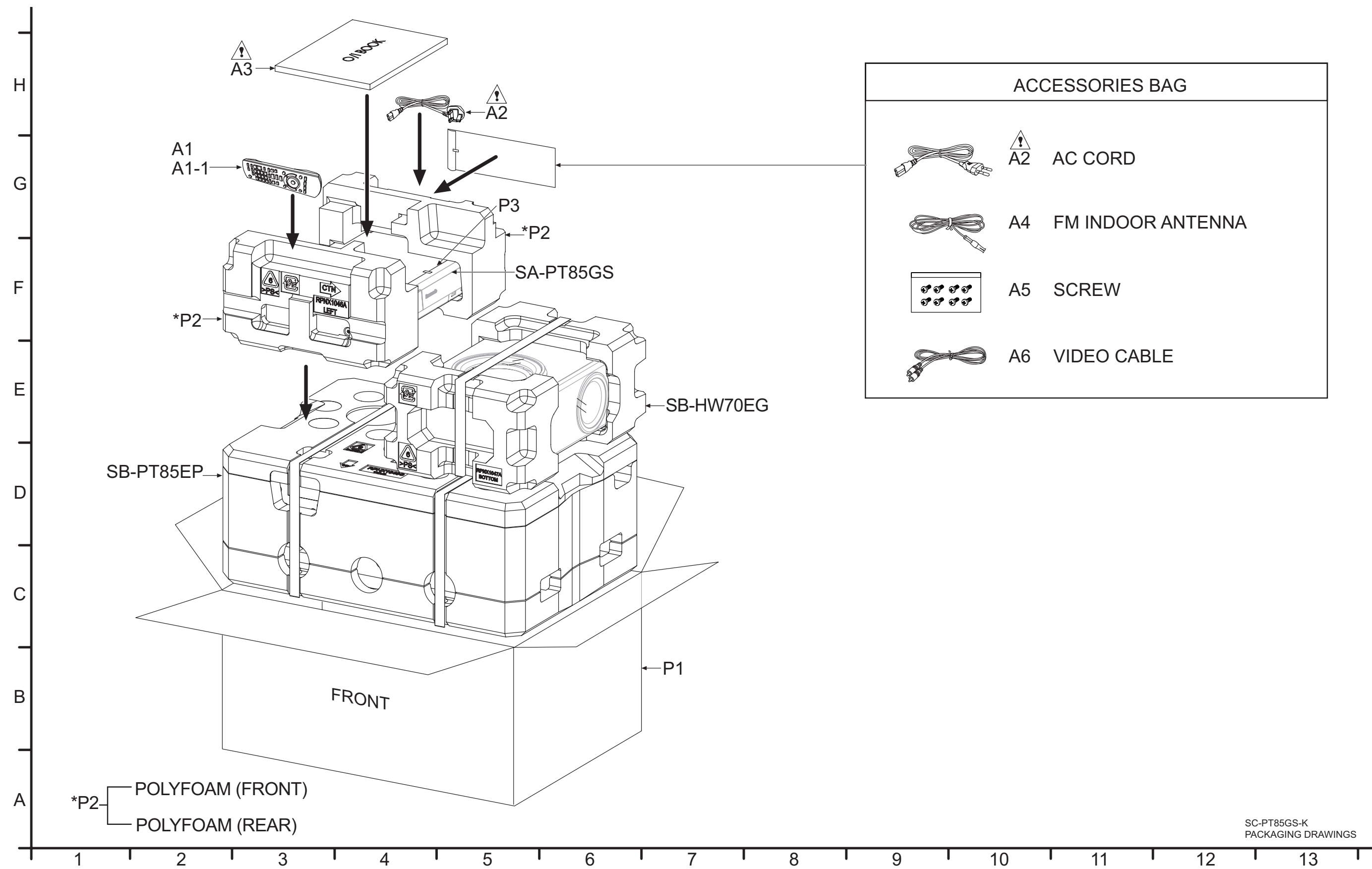
20 Exploded View and Replacement Parts List

20.1. Exploded View and Mechanical Replacement Part List

20.1.1. Cabinet Parts Location



20.1.2. Packaging



20.1.3. 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 PAVCSG unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by PAVC-CSG.
- Reference for O/I book languages are as follows:

Ar:	Arabic	Du:	Dutch	It:	Italian	Sp:	Spanish
Cf:	Canadian French	En:	English	Ko:	Korean	S:	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		

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			CABINET AND CHASSIS		
	1	REEX1125	11P FFC (DVD-COMPONENT)	1	
	2	REEX1033	50P FFC (MAIN-DVD)	1	
	3	REEX1034	17P FFC (FL-MAIN)	1	
	4	REEX1036	7P FFC WIRE (MECHA-B/E)	1	
	5	REXX1039	15P CABLE WIRE (SMPS-MAIN)	1	
	6	RGB0164-S	PANASONIC BADGE	1	
	7	RFKLAPT75PHK	DVD LID ASS'Y	1	
	7-1	RMX0302	DAMPER RUBBER	2	
	8	RGFX0391A-K	FRONT PANEL	1	
	9	RGRX0073C-F	REAR PANEL	1	
	10	RGUX0817-K	POWER BUTTON	1	
	11	RGUX0819-K	VOLUME BUTTON	1	
	12	RHD26043-1	SCREW	1	
	13	RHD26046	SCREW	7	
	14	RHD30007-K2J	SCREW	2	
	15	RHD30111-31	SCREW	5	
	16	RHD30119-S	SCREW	12	
	17	RXQX0041	CUSHION ASS'Y	1	
	18	RHD30005-1	SCREW	7	
	19	RKAX0028-K	LEG CUSHION	4	
	20	RKMX0151-K	TOP CABINET	1	
	21	RKWX1002	FL FILTER	1	
	22	RMBX0075-1	DOOR SPRING		
	23	RMXX0066	GROUND SPRING	1	
	24	RMXX0167-2	BOTTOM CHASSIS	1	
	25	RMNX0329	FL HOLDER	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	26	RMQX0382-2	MECHA HOLDER	2	
	27	RMZX1002	IC INSULATOR	1	
	28	RWJ1103060XX	3P CABLE WIRE (VOL BTN-FL)	1	
	29	RWJ1103150SX	3P CABLE WIRE (PWR-BTN-FL)	1	
	30	XSN3+4FJ	SCREW	1	
	31	XTB3+10JFJ	SCREW	2	
	32	RHDV30006	SCREW	2	
	33	REXX1034	1P WHITE WIRE (VOLTAGE-SMPS)	1	
	34	REXX1035	1P BLUE WIRE (VOLTAGE SMPS)	1	
	35	REXX1005	5P WIRE (FL-DVD)	1	
	36	RXQX1023	SMALL CUSHION ASSY	1	
			TRAVERSE DECK		
	401	RAEX0017Z-V	TRAVERSE UNIT	1	
			PACKING MATERIALS		
	P1	RPGX3208	PACKING CASE	1	
	P2	RPNX1046	POLYFOAM	1	
	P3	RPFX1010	MIRAMAT SHEET	1	
			ACCESSORIES		
	A1	N2QAYB000456	REMOTE CONTROL	1	
	A1-1	RKK-PT470EBK	R/C BATTERY COVER	1	
	A2	K2CQ2CA00007	AC CORD	1	
	A2	K2CZ3YY00005	AC CORD	1	
	A3	RQTX1144-G	O/I BOOK (Pe/Ar)	1	
	A3	RQTX1143-B	O/I BOOK (En)	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	A4	RSAX0002	FM INDOOR ANTENNA	1	
	A5	XTN5+10FFJK	SCREW	8	
	A6	K2KA2BA00001	VIDEO CABLE	1	

20.2. Electrical Replacement Part List

Important Safety Notice

Components identified by Δ 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 PAVCSG unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by PAVC-CSG.

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			PRINTED CIRCUIT BOARDS		
	PCB1	REPX0762G	DVD MODULE P.C.B	1	(RTL)
	PCB2	REPX0764N	MAIN/DAMP P.C.B	1	(RTL)
	PCB3	REPX0765B	FL P.C.B	1	(RTL)
	PCB4	REPX0765B	VOLUME BUTTON P.C.B	1	(RTL)
	PCB5	REPX0765B	POWER BUTTON P.C.B	1	(RTL)
	Δ PCB6	REPX0767C	SMPS P.C.B	1	(RTL)
	Δ PCB7	REPX0767C	VOLTAGE SELECTOR P.C.B	1	(RTL)
	PCB8	REPX0768B	COMPONENT VIDEO P.C.B	1	(RTL)
			INTEGRATED CIRCUITS		
	IC52	VUEALLPT040	IC	1	[SPG]
	IC106	C0DBAYH00005	IC	1	
	IC107	C0CBABC00117	IC	1	
	IC200	RFKWMPT85EP	IC	1	
	IC201	C3EBFY000006	IC	1	
	IC202	C0CBABC00117	IC	1	
	IC401	C1AB00003216	IC	1	
	IC403	C1AB00003217	IC	1	
	IC404	C1AB00003217	IC	1	
	IC405	C1AB00003217	IC	1	
	IC901	C0HBB0000057	IC	1	
	IC2105	C0JBAR0000540	IC	1	
	IC2900	C0DBAYH00005	IC	1	
	IC3002	C0ABBB000244	IC	1	
	IC3901	MN864702A	IC	1	
	IC3952	C0CBCDC000063	IC	1	
	IC4101	C9ZB00000584	IC	1	
	IC5701	C0DAAMH00015	IC	1	
	IC5799	MIP2F20MSSCF	IC	1	
	IC5801	C0DAEMZ00001	IC	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	IC5899	C0DAEMZ00001	IC	1	
	IC8001	MN2DS0018MP	IC	1	
	IC8051	C3ABPG000160	IC	1	
	IC8111	C0DBFZG000001	IC	1	
	IC8251	C0GBG0000048	IC	1	
	IC8422	C0FBAK000026	IC	1	
	IC8611	REPX0762G	IC	1	
	IC8651	RFKWMH42B3D2	IC	1	[SPG]
	IC8701	C0JBAB000907	IC	1	
	IC8901	C0JBAA000501	IC	1	
	IC9001	C0JBAZ002999	IC	1	
	IC9002	C0JBAZ002999	IC	1	
	IC9003	C0JBAB000908	IC	1	
	IC9006	C0DBZYY00311	IC	1	
			TRANSISTORS		
	Q102	B1ADCE000012	TRANSISTOR	1	
	Q103	2SD0601AHL	TRANSISTOR	1	
	Q105	B1ABCF000176	TRANSISTOR	1	
	Q106	B1GBCFJJ0051	TRANSISTOR	1	
	Q107	B1BACD000018	TRANSISTOR	1	
	Q108	B1GBCFJJ0051	TRANSISTOR	1	
	Q109	B1GBCFJJ0051	TRANSISTOR	1	
	Q114	B1ABCF000011	TRANSISTOR	1	
	Q116	B1ADBL000010	TRANSISTOR	1	
	Q121	B1HBECA00004	TRANSISTOR	1	
	Q203	B1GBCFLL0037	TRANSISTOR	1	
	Q500	B1ABCF000011	TRANSISTOR	1	
	Q501	B1ABCF000011	TRANSISTOR	1	
	Q2011	B1ADCE000012	TRANSISTOR	1	
	Q2900	B1BARK000001	TRANSISTOR	1	
	Q3901	B1ABDF000026	TRANSISTOR	1	
	Q3902	B1CFHA000002	TRANSISTOR	1	
	Q3903	B1CFHA000002	TRANSISTOR	1	
	Q3941	B1ABDF000026	TRANSISTOR	1	
	Q3942	B1ABDF000026	TRANSISTOR	1	
	Q3943	B1ABDF000026	TRANSISTOR	1	
	Q4001	B1GBCFGG0030	TRANSISTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	Q5720	B1BABG000007	TRANSISTOR	1	
	Q5841	B1GBCFGG0030	TRANSISTOR	1	
	Q5863	B1ABCF000176	TRANSISTOR	1	
	Q5898	B1ABCF000176	TRANSISTOR	1	
	Q5899	B1ABCF000011	TRANSISTOR	1	
	Q8551	B1ABDF000026	TRANSISTOR	1	
	Q8552	B1ADGB000008	TRANSISTOR	1	
	Q8561	B1ABDF000026	TRANSISTOR	1	
	Q8562	B1ADGB000008	TRANSISTOR	1	
	Q8563	B1CFHA000002	TRANSISTOR	1	
	Q8564	B1CFHA000002	TRANSISTOR	1	
	Q8565	B1ABDF000026	TRANSISTOR	1	
	QR9030	B1GDCFJJ0002	TRANSISTOR	1	
			DIODES		
	D106	B0BC5R6A0266	DIODE	1	
	D110	MA2J1110GL	DIODE	1	
	D111	MA2J1110GL	DIODE	1	
	D112	B0BC7R5A0263	DIODE	1	
	D113	B0BC027A0264	DIODE	1	
	D114	B0BC010A0267	DIODE	1	
	D116	B0JCPG000005	DIODE	1	
	D118	B0ACCK000005	DIODE	1	
	D119	B0ACCK000005	DIODE	1	
	D203	MA2J1110GL	DIODE	1	
	D204	B0BC015A0264	DIODE	1	
	D402	B0ACCK000005	DIODE	1	
	D702	B0ACCK000005	DIODE	1	
	D703	B0ACCK000005	DIODE	1	
	D901	B0BC2R4A0263	DIODE	1	
	D2901	B0BC036A0264	DIODE	1	
	D2903	B0EAMM000057	DIODE	1	
	D2906	B0JAME000029	DIODE	1	
	D2907	B0JCPG000005	DIODE	1	
	D2908	B0EAMM000057	DIODE	1	
	D2909	MAZ8240GHL	DIODE	1	
	D3901	MA2J7280GL	DIODE	1	
	D4010	B0JCAE000001	DIODE	1	
	D5700	B0EAKT000061	DIODE	1	
	D5701	B0EBNR000015	DIODE	1	
	D5703	B0EAKT000062	DIODE	1	
	D5721	B0BC020A0267	DIODE	1	
	D5722	B0BC018A0267	DIODE	1	
	D5723	MA2J1110GL	DIODE	1	
	D5724	MA2J1110GL	DIODE	1	
	D5725	B0BC6R2A0266	DIODE	1	
	D5726	MA2J1110GL	DIODE	1	
	D5727	MA2J1110GL	DIODE	1	
	D5729	B0EAMM000057	DIODE	1	
	D5730	MA2YF8000L	DIODE	1	
	D5731	B0EAMM000057	DIODE	1	
	D5732	MAZ8300GML	DIODE	1	
	D5793	B0HAMP000094	DIODE	1	
	D5798	B0EAMM000057	DIODE	1	
	D5799	B0EDKT000009	DIODE	1	
	D5802	B0HBSM000054	DIODE	1	
	D5896	B0JAMF000011	DIODE	1	
	D5899	B0ACCK000005	DIODE	1	
	D8211	MA2J1110GL	DIODE	1	
⚠	DZ5701	ERZV10V511CS	ZNR	1	
			VARISTORS		
	VA51	EZAEG2A50AX	ESD SUPPRESSOR	1	
	VA950	EZJZ1V171AA	VARISTOR	1	
	VA951	EZJZ1V171AA	VARISTOR	1	
			SWITCHES		
	S901	EVQ21405R	SW OPEN/CLOSE	1	
	S902	EVQ21405R	SW POWER	1	
	S904	EVQ21405R	SW STOP	1	
	S905	EVQ21405R	SW TUNE DOWN	1	
	S906	EVQ21405R	SW TUNE UP	1	
	S907	EVQ21405R	SW PLAY	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
⚠	S5701	K0ABCA000007	SW VOLTAGE SELECTOR	1	
			CONNECTORS		
	CN103	K1KA15AA0194	15P CONNECTOR	1	
	CN201	K1MN50AA0082	50P CONNECTOR	1	
	CN203	K1MN17AA0004	17P CONNECTOR	1	
	CN206	K1MN08AA0003	8P CONNECTOR	1	
	CN901	K1MN17AA0004	17P CONNECTOR	1	
	CN950	K1FY104A0007	USB CONNECTOR	1	
	CN4002	K1MN11BA0004	11P CONNECTOR	1	
	FP8031	K1MY10AA0021	10P CONNECTOR	1	
	FP8101	K1MN50BA0173	50P CONNECTOR	1	
	FP8251	K1MN07AA0076	7P CONNECTOR	1	
	FP8302	K1MN11AA0076	11P CONNECTOR	1	
	FP8531	K1MN24BA0197	24P CONNECTOR	1	
	FP9001	K1KA05BA0014	5P CONNECTOR	1	
	P3901	K1FY119E0002	HDMI CONNECTOR	1	
			CABLE HOLDERS		
	H902	K1YZ03000010	3P CABLE HOLDER	1	
	H903	K1YZ03000010	3P CABLE HOLDER	1	
	H904	K1YZ03000010	3P CABLE HOLDER	1	
			COILS AND INDUCTORS		
	L51	G1CR18JA0020	INDUCTOR	1	
	L100	J0JBC0000015	INDUCTOR	1	
	L101	J0JBC0000015	INDUCTOR	1	
	L102	J0JBC0000041	INDUCTOR	1	
	L103	J0JBC0000015	INDUCTOR	1	
	L120	G0C390JA0055	INDUCTOR	1	
	L125	G0A330ZA0045	CHOKE COIL	1	
	L128	G0A220GA0002	CHOKE COIL	1	
	L131	G0A200D00002	CHOKE COIL	1	
	L132	G0A200D00002	CHOKE COIL	1	
	L400	G0A200D00002	CHOKE COIL	1	
	L402	G0A100H00018	CHOKE COIL	1	
	L403	G0A100H00018	CHOKE COIL	1	
	L404	G0A100H00018	CHOKE COIL	1	
	L405	G0A100H00018	CHOKE COIL	1	
	L406	G0A100H00018	CHOKE COIL	1	
	L407	G0A100H00018	CHOKE COIL	1	
	L408	G0A100H00018	CHOKE COIL	1	
	L409	G0A100H00018	CHOKE COIL	1	
	L410	G0A100H00018	CHOKE COIL	1	
	L411	G0B9R5K00007	LINE FILTER	1	
	L412	G0B9R5K00007	LINE FILTER	1	
	L413	G0B9R5K00007	LINE FILTER	1	
	L414	G0B9R5K00007	LINE FILTER	1	
	L415	G0B9R5K00007	LINE FILTER	1	
	L416	G0B9R5K00007	LINE FILTER	1	
	L417	G0A100H00018	CHOKE COIL	1	
	L418	G0A100H00018	CHOKE COIL	1	
	L419	G0A100H00018	CHOKE COIL	1	
	L421	J0JKB0000020	INDUCTOR	1	
	L422	J0JKB0000020	INDUCTOR	1	
	L427	J0JBC0000015	INDUCTOR	1	
	L428	G0A200D00002	CHOKE COIL	1	
	L904	J0JBC0000014	INDUCTOR	1	
	L905	J0JBC0000014	INDUCTOR	1	
	L906	J0JBC0000019	INDUCTOR	1	
	L907	J0JBC0000019	INDUCTOR	1	
	L2802	J0JBC0000015	INDUCTOR	1	
	L2803	J0JBC0000015	INDUCTOR	1	
	L2804	J0JBC0000015	INDUCTOR	1	
	L2805	J0JBC0000015	INDUCTOR	1	
	L2900	G0A330ZA0045	CHOKE COIL	1	
	L2910	G0C390JA0055	INDUCTOR	1	
	L2914	J0JBC0000041	INDUCTOR	1	
	L2915	J0JBC0000041	INDUCTOR	1	
	L2916	J0JBC0000041	INDUCTOR	1	
	L3903	G1BYYYC00026	COMMON MODE EMI FILTER	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	L3904	G1BYYC00026	COMMON MODE EMI FILTER	1	
	L3905	G1BYYC00026	COMMON MODE EMI FILTER	1	
	L3906	G1BYYC00026	COMMON MODE EMI FILTER	1	
	L4001	J0JBC0000015	INDUCTOR	1	
△	L5701	ELF17N010A	LINE FILTER	1	
△	L5702	G0B353G00001	LINE FILTER	1	
	L8001	G1C100M00049	INDUCTOR	1	
	L8201	G1C100M00049	INDUCTOR	1	
	L8251	G1C100M00049	INDUCTOR	1	
	L8301	G1C100M00049	INDUCTOR	1	
	L8302	G1C100M00049	INDUCTOR	1	
	L8303	G1C100M00049	INDUCTOR	1	
	L8501	G1C100M00049	INDUCTOR	1	
	L8550	G1C100M00049	INDUCTOR	1	
	LB51	J0JBC0000032	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	J0JHC0000045	INDUCTOR	1	
	LB3908	J0JHC0000045	INDUCTOR	1	
	LB8001	J0JHC0000045	INDUCTOR	1	
	LB8011	J0JHC0000045	INDUCTOR	1	
	LB8401	J0JCC00000308	INDUCTOR	1	
	LB8422	J0JDC0000045	INDUCTOR	1	
	LB8530	J0JHC0000045	INDUCTOR	1	
	LB8532	J0JDC0000045	INDUCTOR	1	
	LB8551	J0JDC0000045	INDUCTOR	1	
	LB8561	J0JDC0000045	INDUCTOR	1	
	LB8701	J0JCC00000308	INDUCTOR	1	
	LB8702	J0JCC00000308	INDUCTOR	1	
	LB8901	J0JCC00000308	INDUCTOR	1	
	LB9001	J0JCC0000042	INDUCTOR	1	
	LB9002	J0JHC00000117	INDUCTOR	1	
	LB9003	J0JHC00000117	INDUCTOR	1	
	LB9004	J0JCC00000308	INDUCTOR	1	
			TRANSFORMERS		
△	T2900	G4D1A0000118	SWITCHING TRANSFORMERS	1	
△	T5701	ETS35BC2T6AD	MAIN TRANSFORMER	1	
△	T5751	ETS19AB2A6AG	SUB TRANSFORMER	1	
			COMPONENT COMBINATION		
	Z901	B3RAB0000081	REMOTE SENSOR	1	
			PHOTO COUPLERS		
	PC5702	B3PBA0000402	PHOTO COUPLER	1	
	PC5720	B3PBA0000402	PHOTO COUPLER	1	
	PC5799	B3PBA0000402	PHOTO COUPLER	1	
			EARTH TERMINALS		
	ZJ104	K4CZ01000027	TERMINAL	1	
	ZJ159	K4CZ01000027	TERMINAL	1	
	ZJ203	K4CZ01000027	TERMINAL	1	
	ZJ5700	K4CZ01000027	TERMINAL	1	
	ZJ5702	K4CZ01000027	TERMINAL	1	
	ZJ5802	K4CZ01000027	TERMINAL	1	
			OSCILLATORS		
	X51	H0A327200097	CRYSTAL OSCILLATOR	1	
	X201	H2B100500007	CRYSTAL OSCILLATOR	1	
	X400	H0J135000003	CRYSTAL OSCILLATOR	1	
	X8621	H0J270500131	CRYSTAL OSCILLATOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	X9004	H1A4805B0027	CRYSTAL OSCILLATOR	1	
			RELAY		
△	RY5701	K6B1AEA00003	RELAY	1	
			FL DISPLAY		
	FL901	A2BB00000175	LCD DISPLAY	1	
			FUSE HOLDERS		
	ZA5701	K3GE1ZZ00001	FUSE HOLDER	1	
	ZA5702	K3GE1ZZ00001	FUSE HOLDER	1	
			FUSE		
△	F1	K5D252BNA005	FUSE	1	
			FUSE PROTECTORS		
△	FP2901	K5H1022A0011	PROTECTOR	1	
△	IP100	K5H302100004	PROTECTOR	1	
			THERMISTORS		
△	TH5702	D4CAA5R10001	THERMISTOR	1	
			JACKS		
	JK51	K4ZZ02000103	JK FM ANT	1	
	JK100	K2HA2YYA0005	JK AUX IN	1	
	JK401	K4AL12B00002	JK SPEAKER	1	
	JK902	K2HC103A0031	JK MUSIC PORT	1	
	JK4002	K2HA4YYA0004	JK VIDEO CONNECTOR	1	
	JK8001	B3RAB0000056	JK OPTICAL IN	1	
△	P5701	K2AA2B000011	AC INLET	1	
			CHIP JUMPERS		
	K1	D0GBR00JA008	0 1/16W	1	
	K2	D0GBR00JA008	0 1/16W	1	
	K6	D0GBR00JA008	0 1/16W	1	
	K12	D0GBR00JA008	0 1/16W	1	
	K13	D0GBR00JA008	0 1/16W	1	
	K17	D0GBR00JA008	0 1/16W	1	
	K101	D0GBR00JA008	0 1/16W	1	
	K102	D0GBR00JA008	0 1/16W	1	
	K103	D0GBR00JA008	0 1/16W	1	
	K104	D0GBR00JA008	0 1/16W	1	
	K105	D0GBR00JA008	0 1/16W	1	
	K110	D0GBR00JA008	0 1/16W	1	
	K111	D0GBR00JA008	0 1/16W	1	
	K112	D0GBR00JA008	0 1/16W	1	
	K113	D0GBR00JA008	0 1/16W	1	
	K114	D0GBR00JA008	0 1/16W	1	
	K115	D0GBR00JA008	0 1/16W	1	
	K116	D0GBR00JA008	0 1/16W	1	
	K125	D0GBR00JA008	0 1/16W	1	
	K126	D0GBR00JA008	0 1/16W	1	
	K127	D0GBR00JA008	0 1/16W	1	
	K128	D0GBR00JA008	0 1/16W	1	
	K129	D0GBR00JA008	0 1/16W	1	
	K130	D0GBR00JA008	0 1/16W	1	
	K131	D0GBR00JA008	0 1/16W	1	
	K132	D0GBR00JA008	0 1/16W	1	
	K133	D0GBR00JA008	0 1/16W	1	
	K134	D0GBR00JA008	0 1/16W	1	
	K135	D0GBR00JA008	0 1/16W	1	
	K136	D0GBR00JA008	0 1/16W	1	
	K137	D0GBR00JA008	0 1/16W	1	
	K138	D0GBR00JA008	0 1/16W	1	
	K139	D0GBR00JA008	0 1/16W	1	
	K140	D0GBR00JA008	0 1/16W	1	
	K141	D0GBR00JA008	0 1/16W	1	
	K142	D0GBR00JA008	0 1/16W	1	
	K143	D0GBR00JA008	0 1/16W	1	
	K144	D0GBR00JA008	0 1/16W	1	
	K145	D0GBR00JA008	0 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	K147	D0GBR00JA008	0 1/16W	1	
	K150	D0GBR00JA008	0 1/16W	1	
	K151	D0GBR00JA008	0 1/16W	1	
	K152	D0GBR00JA008	0 1/16W	1	
	K153	D0GBR00JA008	0 1/16W	1	
	K154	D0GBR00JA008	0 1/16W	1	
	K155	D0GBR00JA008	0 1/16W	1	
	K156	D0GBR00JA008	0 1/16W	1	
	K157	D0GBR00JA008	0 1/16W	1	
	K158	D0GBR00JA008	0 1/16W	1	
	K159	D0GBR00JA008	0 1/16W	1	
	K160	D0GBR00JA008	0 1/16W	1	
	K162	D0GDR00JA017	0 1/10W	1	
	K163	D0GDR00JA017	0 1/10W	1	
	K164	D0GDR00JA017	0 1/10W	1	
	K165	D0GDR00JA017	0 1/10W	1	
	K166	D0GDR00JA017	0 1/10W	1	
	K3903	D0GBR00JA008	0 1/16W	1	
	K3905	ERJ2GE0R00X	0 1/16W	1	
	K4005	D0GBR00JA008	0 1/16W	1	
	K4006	D0GBR00JA008	0 1/16W	1	
	K5721	D0GBR00JA008	0 1/16W	1	
	K8001	D0GBR00JA008	0 1/16W	1	
	K8005	D0GBR00JA008	0 1/16W	1	
	K8006	D0GBR00JA008	0 1/16W	1	
	K8010	D0GBR00JA008	0 1/16W	1	
	K8100	D0GBR00JA008	0 1/16W	1	
	K8114	D0GBR00JA008	0 1/16W	1	
	K8115	D0GBR00JA008	0 1/16W	1	
	K8116	D0GBR00JA008	0 1/16W	1	
	K8117	D0GBR00JA008	0 1/16W	1	
	K8118	D0GBR00JA008	0 1/16W	1	
	K8119	D0GBR00JA008	0 1/16W	1	
	K8120	D0GBR00JA008	0 1/16W	1	
	K8121	D0GBR00JA008	0 1/16W	1	
	K8251	D0GBR00JA008	0 1/16W	1	
	K8252	D0GBR00JA008	0 1/16W	1	
	K8321	ERJ2GE0R00X	0 1/16W	1	
	K8325	ERJ2GE0R00X	0 1/16W	1	
	K8331	ERJ2GE0R00X	0 1/16W	1	
	K8335	ERJ2GE0R00X	0 1/16W	1	
	K8341	ERJ2GE0R00X	0 1/16W	1	
	K8691	ERJ2GE0R00X	0 1/16W	1	
	K8695	ERJ2GE0R00X	0 1/16W	1	
	L425	D0GBR00JA008	0 1/16W	1	
	L426	D0GBR00JA008	0 1/16W	1	
	LB200	D0GBR00JA008	0 1/16W	1	
	LB201	D0GBR00JA008	0 1/16W	1	
	LB950	D0GDR00JA017	0 1/10W	1	
	LB951	D0GDR00JA017	0 1/10W	1	
	LB8255	ERJ2GE0R00X	0 1/16W	1	
	LB8312	ERJ2GE0R00X	0 1/16W	1	
	LB8313	ERJ2GE0R00X	0 1/16W	1	
	LB8314	ERJ2GE0R00X	0 1/16W	1	
	LB8315	ERJ2GE0R00X	0 1/16W	1	
	LB8316	ERJ2GE0R00X	0 1/16W	1	
	LB8317	ERJ2GE0R00X	0 1/16W	1	
	LB8318	ERJ2GE0R00X	0 1/16W	1	
	LB8421	ERJ2GE0R00X	0 1/16W	1	
	LB8423	ERJ2GE0R00X	0 1/16W	1	
	LB8424	ERJ2GE0R00X	0 1/16W	1	
	LB8425	ERJ2GE0R00X	0 1/16W	1	
	LB8426	ERJ2GE0R00X	0 1/16W	1	
	LB8427	ERJ2GE0R00X	0 1/16W	1	
	LB8428	ERJ2GE0R00X	0 1/16W	1	
	LB8429	ERJ2GE0R00X	0 1/16W	1	
	LB8430	ERJ2GE0R00X	0 1/16W	1	
	LB8432	ERJ2GE0R00X	0 1/16W	1	
	LB8531	ERJ2GE0R00X	0 1/16W	1	
	W101	D0GBR00JA008	0 1/16W	1	
	W780	D0GBR00JA008	0 1/16W	1	
	W781	D0GBR00JA008	0 1/16W	1	
	W782	D0GDR00JA017	0 1/10W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	W783	D0GBR00JA008	0 1/16W	1	
	W784	D0GBR00JA008	0 1/16W	1	
	W921	D0GDR00JA017	0 1/10W	1	
	W923	D0GDR00JA017	0 1/10W	1	
	W924	D0GDR00JA017	0 1/10W	1	
			RESISTORS		
	LB8691	D0GA101JA023	100 1/16W	1	
	LB8692	D0GA101JA023	100 1/16W	1	
	LB8693	D0GA101JA023	100 1/16W	1	
	R51	D0GB102JA008	1K 1/16W	1	
	R52	D0GB102JA008	1K 1/16W	1	
	R53	D0GA472JA023	4.7K 1/16W	1	
	R54	D0GA472JA023	4.7K 1/16W	1	
	R55	D0GA221JA023	220 1/16W	1	
	R56	D0GB221JA008	220 1/16W	1	
	R57	D0GA102JA023	1K 1/16W	1	
	R59	D0GB222JA008	2.2K 1/16W	1	
	R61	D0GB473JA008	47K 1/16W	1	
	R62	D0GB473JA008	47K 1/16W	1	
	R63	D0GBR00JA008	0 1/16W	1	
	R64	D0GBR00JA008	0 1/16W	1	
	R101	D0GB472JA008	4.7K 1/16W	1	
	R102	D0GB472JA008	4.7K 1/16W	1	
	R103	D0GBR00JA008	0 1/16W	1	
	R105	D0GB102JA008	1K 1/16W	1	
	R106	D0GB102JA008	1K 1/16W	1	
	R107	D0GB473JA008	47K 1/16W	1	
	R108	D0GB473JA008	47K 1/16W	1	
	R109	D0GB103JA008	10K 1/16W	1	
	R110	D0GB103JA008	10K 1/16W	1	
	R115	D0GB102JA008	1K 1/16W	1	
	R116	D0GB102JA008	1K 1/16W	1	
	R117	D0GB103JA008	10K 1/16W	1	
	R118	D0GB103JA008	10K 1/16W	1	
	R125	D0GB102JA008	1K 1/16W	1	
	R126	D0GB103JA008	10K 1/16W	1	
	R127	D0GB103JA008	10K 1/16W	1	
	R130	D0GB102JA008	1K 1/16W	1	
	R133	D0GB222JA008	2.2K 1/16W	1	
	R134	D0GB203JA008	20K 1/16W	1	
	R135	D0GB223JA008	22K 1/16W	1	
	R136	D0GB472JA008	4.7K 1/16W	1	
	R137	D0GB473JA008	47K 1/16W	1	
	R138	D0GB225JA008	2.2M 1/16W	1	
	R139	D0GB104JA008	100K 1/16W	1	
	R140	D0GB472JA008	4.7K 1/16W	1	
	R141	D0GB152JA008	1.5K 1/16W	1	
	R142	D0GB103JA008	10K 1/16W	1	
	R143	D0GB152JA008	1.5K 1/16W	1	
	R144	D0GB103JA008	10K 1/16W	1	
	R146	D0GB222JA008	2.2K 1/16W	1	
	R150	D0GB473JA008	47K 1/16W	1	
	R152	D0GB273JA008	27K 1/16W	1	
	R156	D0GB122JA008	1.2K 1/16W	1	
	R157	D0GB101JA008	100 1/16W	1	
	R162	D0GB472JA008	4.7K 1/16W	1	
	R163	D0GB273JA008	27K 1/16W	1	
	R164	D0GB103JA008	10K 1/16W	1	
	R168	D0GB104JA008	100K 1/16W	1	
	R172	D0GB221JA008	220 1/16W	1	
	R175	D0GB562JA008	5.6K 1/16W	1	
	R176	D0GB562JA008	5.6K 1/16W	1	
	R178	D0GB473JA008	47K 1/16W	1	
	R179	D0GB224JA008	220K 1/16W	1	
	R180	D0GB224JA008	220K 1/16W	1	
	R184	D0GB562JA008	5.6K 1/16W	1	
	R200	D0GB223JA008	22K 1/16W	1	
	R201	D0GB223JA008	22K 1/16W	1	
	R202	D0GB472JA008	4.7K 1/16W	1	
	R204	D0GB103JA008	10K 1/16W	1	
	R205	D0GB103JA008	10K 1/16W	1	
	R206	D0GB103JA008	10K 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R207	D0GB101JA008	100 1/16W	1	
	R208	D0GB103JA008	10K 1/16W	1	
	R209	D0GB103JA008	10K 1/16W	1	
	R210	D0GB103JA008	10K 1/16W	1	
	R211	D0GB103JA008	10K 1/16W	1	
	R212	D0GB103JA008	10K 1/16W	1	
	R213	D0GB103JA008	10K 1/16W	1	
	R214	D0GB102JA008	1K 1/16W	1	
	R216	D0GB101JA008	100 1/16W	1	
	R217	D0GB101JA008	100 1/16W	1	
	R218	D0GB101JA008	100 1/16W	1	
	R219	D0GB101JA008	100 1/16W	1	
	R220	D0GB101JA008	100 1/16W	1	
	R221	D0GB101JA008	100 1/16W	1	
	R222	D0GB102JA008	1K 1/16W	1	
	R230	D0GB103JA008	10K 1/16W	1	
	R231	D0GB153JA008	15K 1/16W	1	
	R232	D0GB223JA008	22K 1/16W	1	
	R233	D0GB223JA008	22K 1/16W	1	
	R234	D0GB332JA008	3.3K 1/16W	1	
	R236	D0GB472JA008	4.7K 1/16W	1	
	R237	D0GB473JA008	47K 1/16W	1	
	R238	D0GB100JA008	10 1/16W	1	
	R239	D0GB100JA008	10 1/16W	1	
	R240	D0GB273JA008	27K 1/16W	1	
	R241	D0GB473JA008	47K 1/16W	1	
	R242	D0GB563JA008	56K 1/16W	1	
	R243	D0GB221JA008	220 1/16W	1	
	R244	D0GB221JA008	220 1/16W	1	
	R245	D0GB472JA008	4.7K 1/16W	1	
	R246	D0GB472JA008	4.7K 1/16W	1	
	R247	D0GB563JA008	56K 1/16W	1	
	R249	D0GB221JA008	220 1/16W	1	
	R262	D0GB473JA008	47K 1/16W	1	
	R263	D0GB473JA008	47K 1/16W	1	
	R264	D0GB102JA008	1K 1/16W	1	
	R265	D0GB221JA008	220 1/16W	1	
	R266	D0GB221JA008	220 1/16W	1	
	R267	D0GB221JA008	220 1/16W	1	
	R269	D0GB221JA008	220 1/16W	1	
	R270	D0GB221JA008	220 1/16W	1	
	R271	D0GB222JA008	2.2K 1/16W	1	
	R272	D0GBR00JA008	0 1/16W	1	
	R273	D0GB221JA008	220 1/16W	1	
	R274	D0GB473JA008	47K 1/16W	1	
	R275	D0GB473JA008	47K 1/16W	1	
	R276	D0GB473JA008	47K 1/16W	1	
	R280	D0GB221JA008	220 1/16W	1	
	R400	D0GB221JA008	220 1/16W	1	
	R401	D0GB221JA008	220 1/16W	1	
	R402	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R403	D0GB470JA008	47 1/16W	1	
	R404	D0GB105JA008	1M 1/16W	1	
	R406	D0GB470JA008	47 1/16W	1	
	R407	D0GB470JA008	47 1/16W	1	
	R408	D0GB470JA008	47 1/16W	1	
	R409	D0GB470JA008	47 1/16W	1	
	R410	D0GB470JA008	47 1/16W	1	
	R412	D0GB470JA008	47 1/16W	1	
	R413	D0GB470JA008	47 1/16W	1	
	R414	D0GB103JA008	10K 1/16W	1	
	R416	D0GB470JA008	47 1/16W	1	
	R417	D0GB470JA008	47 1/16W	1	
	R418	D0GB470JA008	47 1/16W	1	
	R419	D0GB470JA008	47 1/16W	1	
	R420	D0GB470JA008	47 1/16W	1	
	R421	D0GB470JA008	47 1/16W	1	
	R422	D0GB470JA008	47 1/16W	1	
	R423	D0GB470JA008	47 1/16W	1	
	R424	D0GB470JA008	47 1/16W	1	
	R427	D0GB100JA008	10 1/16W	1	
	R428	D0GB100JA008	10 1/16W	1	
	R429	D0GB101JA008	100 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R430	D0GB470JA008	47 1/16W	1	
	R431	D0GB470JA008	47 1/16W	1	
	R432	D0GB470JA008	47 1/16W	1	
	R435	D0GB101JA008	100 1/16W	1	
	R436	D0GB102JA008	1K 1/16W	1	
	R440	D0GB101JA008	100 1/16W	1	
	R441	D0GB223JA008	22K 1/16W	1	
	R442	D0GB101JA008	100 1/16W	1	
	R443	D0GB100JA008	10 1/16W	1	
	R444	D0GB100JA008	10 1/16W	1	
	R445	D0GB100JA008	10 1/16W	1	
	R446	D0GB100JA008	10 1/16W	1	
	R447	D0GB100JA008	10 1/16W	1	
	R448	D0GB101JA008	100 1/16W	1	
	R449	D0GB101JA008	100 1/16W	1	
	R450	D0GB223JA008	22K 1/16W	1	
	R451	D0GB101JA008	100 1/16W	1	
	R452	D0GB100JA008	10 1/16W	1	
	R453	D0GB100JA008	10 1/16W	1	
	R454	D0GB100JA008	10 1/16W	1	
	R455	D0GB100JA008	10 1/16W	1	
	R456	D0GB100JA008	10 1/16W	1	
	R457	D0GB101JA008	100 1/16W	1	
	R458	D0GB101JA008	100 1/16W	1	
	R459	D0GB223JA008	22K 1/16W	1	
	R460	D0GB101JA008	100 1/16W	1	
	R461	D0GB100JA008	10 1/16W	1	
	R462	D0GB100JA008	10 1/16W	1	
	R463	D0GB100JA008	10 1/16W	1	
	R464	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R465	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R466	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R467	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R468	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R469	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R495	D0GB101JA008	100 1/16W	1	
	R496	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R497	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R498	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R499	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R500	D0GB562JA008	5.6K 1/16W	1	
	R501	D0GB562JA008	5.6K 1/16W	1	
	R502	D0GB562JA008	5.6K 1/16W	1	
	R503	D0GB562JA008	5.6K 1/16W	1	
	R504	D0GB562JA008	5.6K 1/16W	1	
	R505	D0GB562JA008	5.6K 1/16W	1	
	R506	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R507	ERJ3GEYJ3R3V	3.3 1/10W	1	
	R520	D0GB104JA008	100K 1/16W	1	
	R521	D0GB104JA008	100K 1/16W	1	
	R522	D0GB333JA008	33K 1/16W	1	
	R523	D0GB104JA008	100K 1/16W	1	
	R524	D0GB104JA008	100K 1/16W	1	
	R525	D0GB104JA008	100K 1/16W	1	
	R526	D0GB104JA008	100K 1/16W	1	
	R527	D0GB104JA008	100K 1/16W	1	
	R528	D0GB104JA008	100K 1/16W	1	
	R529	D0GB104JA008	100K 1/16W	1	
	R530	D0GB104JA008	100K 1/16W	1	
	R531	D0GB104JA008	100K 1/16W	1	
	R532	D0GB104JA008	100K 1/16W	1	
	R587	D0GB563JA008	56K 1/16W	1	
	R902	D0GB680JA008	68 1/16W	1	
	R903	D0GB680JA008	68 1/16W	1	
	R904	D0GB680JA008	68 1/16W	1	
	R905	D0GB104JA008	100K 1/16W	1	
	R906	D0GBR00JA008	0 1/16W	1	
	R907	D0GB152JA008	1.5K 1/16W	1	
	R908	D0GB122JA008	1.2K 1/16W	1	
	R912	D0GB222JA008	2.2K 1/16W	1	
	R913	D0GB152JA008	1.5K 1/16W	1	
	R914	D0GB122JA008	1.2K 1/16W	1	
	R915	D0GBR00JA008	0 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R919	D0GB221JA008	220 1/16W	1	
	R920	D0GB221JA008	220 1/16W	1	
	R921	D0GBR00JA008	0 1/16W	1	
	R922	D0GB470JA008	47 1/16W	1	
	R923	D0GB223JA008	22K 1/16W	1	
	R924	D0GB100JA008	10 1/16W	1	
	R929	D0GBR00JA008	0 1/16W	1	
	R930	D0GBR00JA008	0 1/16W	1	
	R950	D0GBR00JA008	0 1/16W	1	
	R951	D0GBR00JA008	0 1/16W	1	
	R952	D0GBR00JA008	0 1/16W	1	
	R953	D0GB682JA008	6.8K 1/16W	1	
	R954	D0GB682JA008	6.8K 1/16W	1	
	R2010	D0GB220JA008	22 1/16W	1	
	R2012	D0GB272JA008	2.7K 1/16W	1	
	R2809	D1BB75R0A012	75 1/16W	1	
	R2812	D1BB75R0A012	75 1/16W	1	
	R2813	D1BB75R0A012	75 1/16W	1	
	R2816	D1BB75R0A012	75 1/16W	1	
	R2900	D0GB472JA008	4.7K 1/16W	1	
	R2902	D0GB470JA008	47 1/16W	1	
	R2905	ERJ3RBD472V	4.7K 1/16W	1	
	R2906	ERJ3GEYJ303V	30K 1/10W	1	
	R2907	D0HB392ZA002	3.9K 1/16W	1	
	R2914	D0GB473JA008	47K 1/16W	1	
	R3107	D0GB562JA008	5.6K 1/16W	1	
	R3108	D0GB103JA008	10K 1/16W	1	
	R3207	D0GB562JA008	5.6K 1/16W	1	
	R3208	D0GB103JA008	10K 1/16W	1	
	R3209	D0GB470JA008	47 1/16W	1	
	R3901	ERJ2GEJ511X	510 1/16W	1	
	R3902	D0GA103JA023	10K 1/16W	1	
	R3903	D0GA103JA023	10K 1/16W	1	
	R3904	D0GA472JA023	4.7K 1/16W	1	
	R3905	ERJ2GEJ202X	2.0K 1/16W	1	
	R3906	D0GA472JA023	4.7K 1/16W	1	
	R3907	ERJ2GEJ202X	2.0K 1/16W	1	
	R3921	ERJ2GE0R00X	0 1/16W	1	
	R3924	ERJ2GE0R00X	0 1/16W	1	
	R3925	D0GA103JA023	10K 1/16W	1	
	R3941	D0GA273JA023	27K 1/16W	1	
	R3942	ERJ2GEJ224X	220K 1/16W	1	
	R3943	D0GA104JA023	100K 1/16W	1	
	R3944	D0GA221JA023	220 1/16W	1	
	R3945	D0GA103JA023	10K 1/16W	1	
	R3946	ERJ2GEJ272X	2.7K 1/16W	1	
	R3947	D0GA103JA023	10K 1/16W	1	
	R4003	D0GB472JA008	4.7K 1/16W	1	
	R4020	D0GB102JA008	1K 1/16W	1	
	R4021	D0GB102JA008	1K 1/16W	1	
	R5701	ERDS1TJ395B	3.9M 1/2W	1	
	R5702	ERJ1TYJ104U	100K 1W	1	
	R5703	ERJ1TYJ104U	100K 1W	1	
	R5704	D0GF184JA017	180K 1/8W	1	
	R5705	D0GF184JA017	180K 1/8W	1	
	R5706	D0GF184JA017	180K 1/8W	1	
	R5707	D0GF184JA017	180K 1/8W	1	
	R5708	D0GD824JA017	820K 1/10W	1	
	R5720	D0GD220JA017	22 1/10W	1	
	R5721	D0GD103JA017	10K 1/10W	1	
	R5722	D0GB202JA008	2.0K 1/16W	1	
	R5723	ERJ1TYJ333U	33K 1W	1	
	R5724	ERJ1TYJ333U	33K 1W	1	
	R5725	D0GB202JA008	2.0K 1/16W	1	
	R5726	ERX2SJR27P	27 2W	1	
	R5730	D0GB102JA008	1K 1/16W	1	
	R5732	D0GB101JA008	100 1/16W	1	
	R5733	D0GB473JA008	47K 1/16W	1	
	R5786	ERJ1TYJ204U	200K 1W	1	
	R5795	D0GD474JA017	470K 1/10W	1	
	R5797	D0GB153JA008	15K 1/16W	1	
	R5798	D0GB220JA008	22 1/16W	1	
	R5801	ERJ3RBD272V	2.7K 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R5802	D0HB183ZA002	18K 1/16W	1	
	R5803	ERJ3RBD272V	2.7K 1/16W	1	
	R5804	ERJ3RBD272V	2.7K 1/16W	1	
	R5806	D0GB153JA008	15K 1/16W	1	
	R5807	D0GD331JA017	330 1/10W	1	
	R5808	D0GD222JA017	2.2K 1/10W	1	
	R5809	D0GD331JA017	330 1/10W	1	
	R5817	ERJ3RBD561V	560 1/16W	1	
	R5829	D0GB220JA008	22 1/16W	1	
	R5834	ERJ1TYJ222U	2.2K 1W	1	
	R5842	D0GB152JA008	1.5K 1/16W	1	
	R5843	D0GD222JA017	2.2K 1/10W	1	
	R5865	D0GB472JA008	4.7K 1/16W	1	
	R5866	D0GB104JA008	100K 1/16W	1	
	R5886	D0GB101JA008	100 1/16W	1	
	R5887	D0GB104JA008	100K 1/16W	1	
	R5890	D0GB222JA008	2.2K 1/16W	1	
	R5891	ERJ3RBD333V	33K 1/16W	1	
	R5892	ERJ3RBD472V	4.7K 1/16W	1	
	R5893	ERJ3RBD393V	39K 1/16W	1	
	R5894	D0GB331JA008	330 1/16W	1	
	R5895	D0GB153JA008	15K 1/16W	1	
	R5898	D0GD472JA017	4.7K 1/10W	1	
	R5899	D0GD473JA017	47K 1/10W	1	
	R8001	D0GA103JA023	10K 1/16W	1	
	R8003	D0GA103JA023	10K 1/16W	1	
	R8011	D0GA220JA023	22 1/16W	1	
	R8012	D0GA220JA023	22 1/16W	1	
	R8013	D0GA220JA023	22 1/16W	1	
	R8025	D0GBR00JA008	0 1/16W	1	
	R8111	ERJ2GE0R00X	0 1/16W	1	
	R8211	D0GA103JA023	10K 1/16W	1	
	R8221	D0GA822JA023	8.2K 1/16W	1	
	R8225	D0GA822JA023	8.2K 1/16W	1	
	R8230	D0GA222JA023	2.2K 1/16W	1	
	R8231	D0GA752JA023	7.5K 1/16W	1	
	R8232	D0GA752JA023	7.5K 1/16W	1	
	R8251	D0GD6R8JA017	6.8 1/10W	1	
	R8252	D0GA103JA023	10K 1/16W	1	
	R8261	D0GA823JA023	82K 1/16W	1	
	R8262	D0GA153JA023	15K 1/16W	1	
	R8263	D0GA823JA023	82K 1/16W	1	
	R8264	D0GA153JA023	15K 1/16W	1	
	R8311	ERJ2RHD242X	2.4K 1/16W	1	
	R8312	ERJ2RHD102X	1K 1/16W	1	
	R8313	ERJ2RHD153X	15K 1/16W	1	
	R8314	ERJ2RHD153X	15K 1/16W	1	
	R8315	ERJ2RKD240X	24 1/16W	1	
	R8316	ERJ2RKD240X	24 1/16W	1	
	R8317	D0GA153JA023	15K 1/16W	1	
	R8318	D0GA153JA023	15K 1/16W	1	
	R8321	ERJ3RBD201V	200 1/16W	1	
	R8325	ERJ3RBD201V	200 1/16W	1	
	R8331	ERJ3RBD201V	200 1/16W	1	
	R8335	ERJ3RBD201V	200 1/16W	1	
	R8341	ERJ3RBD201V	200 1/16W	1	
	R8401	D0GA101JA023	100 1/16W	1	
	R8402	D0GA101JA023	100 1/16W	1	
	R8403	D0GA101JA023	100 1/16W	1	
	R8404	D0GA102JA023	1K 1/16W	1	
	R8406	ERJ2GE0R00X	0 1/16W	1	
	R8407	ERJ2GEJ202X	2.0K 1/16W	1	
	R8421	ERJ2GE0R00X	0 1/16W	1	
	R8422	ERJ2GE0R00X	0 1/16W	1	
	R8501	D0GA103JA023	10K 1/16W	1	
	R8502	D0GA103JA023	10K 1/16W	1	
	R8503	D0GA103JA023	10K 1/16W	1	
	R8504	D0GA103JA023	10K 1/16W	1	
	R8531	D0GA152JA023	1.5K 1/16W	1	
	R8532	D0GA222JA023	2.2K 1/16W	1	
	R8533	ERJ2GE0R00X	0 1/16W	1	
	R8534	D0GA103JA023	10K 1/16W	1	
	R8535	D0GA104JA023	100K 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R8536	D0GA103JA023	10K 1/16W	1	
	R8537	ERJ2GE0R00X	0 1/16W	1	
	R8538	ERJ2GE0R00X	0 1/16W	1	
	R8539	ERJ2GE0R00X	0 1/16W	1	
	R8541	D0GA153JA023	15K 1/16W	1	
	R8542	ERJ2GE0R00X	0 1/16W	1	
	R8551	ERJ2GE0R00X	0 1/16W	1	
	R8552	D0GA102JA023	1K 1/16W	1	
	R8553	D0GA102JA023	1K 1/16W	1	
	R8554	D0GA680JA023	68 1/16W	1	
	R8555	D0GA2R2JA023	2.2 1/16W	1	
	R8556	D0GB560JA008	56 1/16W	1	
	R8557	D0GB510JA008	51 1/16W	1	
	R8558	D0GA473JA023	47K 1/16W	1	
	R8559	D0GA153JA023	15K 1/16W	1	
	R8561	ERJ2GE0R00X	0 1/16W	1	
	R8562	D0GA102JA023	1K 1/16W	1	
	R8563	D0GA102JA023	1K 1/16W	1	
	R8564	D0GA220JA023	22 1/16W	1	
	R8565	D0GA2R2JA023	2.2 1/16W	1	
	R8566	D0GB560JA008	56 1/16W	1	
	R8567	D0GB510JA008	51 1/16W	1	
	R8568	D0GA473JA023	47K 1/16W	1	
	R8601	D0GA104JA023	100K 1/16W	1	
	R8602	ERJ2GE0R00X	0 1/16W	1	
	R8611	D0GA101JA023	100 1/16W	1	
	R8613	D0GA101JA023	100 1/16W	1	
	R8621	D0GA105JA023	1M 1/16W	1	
	R8622	ERJ2RHD102X	1K 1/16W	1	
	R8702	D0GA100JA023	10 1/16W	1	
	R8901	D0GA100JA023	10 1/16W	1	
	R9001	ERJ2GE0R00X	0 1/16W	1	
	R9002	ERJ2GE0R00X	0 1/16W	1	
	R9007	D0GA103JA023	10K 1/16W	1	
	R9008	D0GA105JA023	1M 1/16W	1	
	R9009	D0GA152JA023	1.5K 1/16W	1	
	R9010	D0GA100JA023	10 1/16W	1	
	R9023	D0GA103JA023	10K 1/16W	1	
	R9036	D0GA103JA023	10K 1/16W	1	
	R9037	D0GA103JA023	10K 1/16W	1	
	R9040	D0GA103JA023	10K 1/16W	1	
	R9041	D0GA103JA023	10K 1/16W	1	
	R9042	D0GA103JA023	10K 1/16W	1	
	R9043	D0GA103JA023	10K 1/16W	1	
	R9044	D0GA103JA023	10K 1/16W	1	
	R9045	D0GA103JA023	10K 1/16W	1	
	R9046	D0GA103JA023	10K 1/16W	1	
	R9047	D0GA103JA023	10K 1/16W	1	
	R9048	D0GA103JA023	10K 1/16W	1	
	R9049	D0GA103JA023	10K 1/16W	1	
	R9055	D0GA472JA023	4.7K 1/16W	1	
	R9080	D0GA103JA023	10K 1/16W	1	
	R9083	D0GA470JA023	47 1/16W	1	
	R9084	D0GA470JA023	47 1/16W	1	
	R9085	D0GA470JA023	47 1/16W	1	
	R9086	D0GA470JA023	47 1/16W	1	
	R9087	D0GA470JA023	47 1/16W	1	
	R9088	D0GA470JA023	47 1/16W	1	
	R9099	ERJ2GE0R00X	0 1/16W	1	
			RESISTOR NET- WORKS		
	RX3707	D1H84714A043	RESISTOR NETWORK	1	
	RX3708	D1H84714A043	RESISTOR NETWORK	1	
	RX3901	D1H410120001	RESISTOR NETWORK	1	
	RX8001	D1H410320002	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	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	RX8018	D1H422020001	RESISTOR NETWORK	1	
	RX8019	D1H422020001	RESISTOR NETWORK	1	
	RX8020	D1H422020001	RESISTOR NETWORK	1	
	RX8031	D1H447220001	RESISTOR NETWORK	1	
	RX8032	D1H447220001	RESISTOR NETWORK	1	
	RX8401	D1H410120001	RESISTOR NETWORK	1	
	RX8402	D1H410120001	RESISTOR NETWORK	1	
	RX8531	D1H456020001	RESISTOR NETWORK	1	
	RX8532	D1H456020001	RESISTOR NETWORK	1	
	RX8533	D1H456020001	RESISTOR NETWORK	1	
	RX8611	D1H447220001	RESISTOR NETWORK	1	
	RX8691	D1H410320002	RESISTOR NETWORK	1	
	RX9014	D1H85604A043	RESISTOR NETWORK	1	
	RX9015	D1H85604A043	RESISTOR NETWORK	1	
	RX9016	D1H85604A043	RESISTOR NETWORK	1	
	RX9017	D1H85604A043	RESISTOR NETWORK	1	
	RX9018	D1H447220001	RESISTOR NETWORK	1	
	RX9020	D1H447220001	RESISTOR NETWORK	1	
			CAPACITORS		
	C51	F1H1H102A219	1000pF 50V	1	
	C57	F1H1H220A230	22pF 50V	1	
	C58	F1H1H220A230	22pF 50V	1	
	C59	F1H1A105A025	1uF 10V	1	
	C60	F1H1A105A025	1uF 10V	1	
	C61	F1G1C104A077	0.1uF 16V	1	
	C62	F1G1C104A077	0.1uF 16V	1	
	C101	F1H1H101A230	100pF 50V	1	
	C102	F1H1H101A230	100pF 50V	1	
	C103	F1H1H681A935	680pF 50V	1	
	C104	F1H1H681A935	680pF 50V	1	
	C107	F1H1H681A935	680pF 50V	1	
	C108	F1H1H681A935	680pF 50V	1	
	C111	F1H1C105A097	1uF 16V	1	
	C112	F1H1C105A097	1uF 16V	1	
	C115	F1H1C105A097	1uF 16V	1	
	C116	F1H1C105A097	1uF 16V	1	
	C117	F1H1C105A097	1uF 16V	1	
	C118	F1H1C105A097	1uF 16V	1	
	C119	F1H1H470A004	47pF 50V	1	
	C120	F1H1H470A004	47pF 50V	1	
	C123	F1H1H104A013	0.1uF 50V	1	
	C126	F2A1C101A208	100uF 16V	1	
	C127	F1H1H104A013	0.1uF 50V	1	
	C128	F1H1H123A219	0.012uF 50V	1	
	C129	F1H1H123A219	0.012uF 50V	1	
	C130	F1H1H104A013	0.1uF 50V	1	
	C131	F1H1H2210001	220pF 50V	1	
	C132	F1H1H102A219	1000pF 50V	1	
	C134	F2A0J821B044	820uF 6.3V	1	
	C135	F1H1H104A013	0.1uF 50V	1	
	C136	F2A1H3R3A234	3.3uF 50V	1	
	C139	F1K1C1050005	1uF 16V	1	
	C142	F2A1E4R7B384	4.7uF 25V	1	
	C143	F2A1E471B424	470uF 25V	1	
	C150	F2A1E102B427	1000uF 25V	1	
	C151	ECA1HAK010XB	1uF 50V	1	
	C153	F1H1H104A013	0.1uF 50V	1	
	C158	F1H1H104A013	0.1uF 50V	1	
	C161	F1H1H102A219	1000pF 50V	1	
	C162	F1H1H102A219	1000pF 50V	1	
	C163	F1H1H102A219	1000pF 50V	1	
	C164	F1H1H102A219	1000pF 50V	1	
	C165	F1H1H102A219	1000pF 50V	1	
	C166	F1H1H102A219	1000pF 50V	1	
	C167	F1H1H102A219	1000pF 50V	1	
	C168	F1H1H102A219	1000pF 50V	1	
	C169	F1H1H102A219	1000pF 50V	1	
	C170	F1H1H102A219	1000pF 50V	1	
	C171	F1H1H102A219	1000pF 50V	1	
	C172	F1H1H102A219	1000pF 50V	1	
	C181	F1H1H102A219	1000pF 50V	1	
	C182	F1H1H102A219	1000pF 50V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C183	F1H1H102A219	1000pF 50V	1	
	C184	F1H1H102A219	1000pF 50V	1	
	C185	F1H1H102A219	1000pF 50V	1	
	C186	F1H1H102A219	1000pF 50V	1	
	C187	F1H1H102A219	1000pF 50V	1	
	C188	F1H1H102A219	1000pF 50V	1	
	C189	F1H1H102A219	1000pF 50V	1	
	C190	F1H1H102A219	1000pF 50V	1	
	C191	F1H1H102A219	1000pF 50V	1	
	C192	F1H1H102A219	1000pF 50V	1	
	C200	F1H1H223A219	0.022uF 50V	1	
	C201	F1H1H331A013	330pF 50V	1	
	C202	F1H1H331A013	330pF 50V	1	
	C203	F1H1H331A013	330pF 50V	1	
	C204	F1H1H104A013	0.1uF 50V	1	
	C205	F1K1H105A149	1uF 50V	1	
	C206	F1H1H104A013	0.1uF 50V	1	
	C207	F1H1H104A013	0.1uF 50V	1	
	C208	F1J1H104A459	0.1uF 50V	1	
	C209	F1H1H561A013	560pF 50V	1	
	C210	F1H1H561A013	560pF 50V	1	
	C211	ECA1HM2R2B	2.2uF 50V	1	
	C212	F1H1H104A013	0.1uF 50V	1	
	C213	F2A0J331A247	330uF 6.3V	1	
	C214	F1K1H105A149	1uF 50V	1	
	C215	F2A1H3R3A234	3.3uF 50V	1	
	C216	F1H1H103A219	0.01uF 50V	1	
	C250	F2A1C102B037	1000uF 16V	1	
	C251	F2A1C1010033	100uF 16V	1	
	C400	F1H1H104A013	0.1uF 50V	1	
	C401	F1H1H104A013	0.1uF 50V	1	
	C402	F1H1H104A013	0.1uF 50V	1	
	C403	F1H1H104A013	0.1uF 50V	1	
	C404	F1H1H104A013	0.1uF 50V	1	
	C405	F1H1H104A013	0.1uF 50V	1	
	C406	F2A1C100A207	10uF 16V	1	
	C407	F1H1H104A013	0.1uF 50V	1	
	C408	F2A1C100A207	10uF 16V	1	
	C409	F1H1H102A219	1000pF 50V	1	
	C410	F2A1C100A207	10uF 16V	1	
	C411	F1H1H104A013	0.1uF 50V	1	
	C412	F1H1H104A013	0.1uF 50V	1	
	C413	F1H1H100A017	10pF 50V	1	
	C414	F1H1H103A219	0.01uF 50V	1	
	C415	F1H1H100A017	10pF 50V	1	
	C416	F1H1H104A013	0.1uF 50V	1	
	C417	F1H1H104A013	0.1uF 50V	1	
	C418	F1K1H105A149	1uF 50V	1	
	C419	F1K1H105A149	1uF 50V	1	
	C420	F2A1C100A207	10uF 16V	1	
	C421	F1H1H104A013	0.1uF 50V	1	
	C423	F1H1H104A013	0.1uF 50V	1	
	C424	F1H1H104A013	0.1uF 50V	1	
	C425	F1H1H104A013	0.1uF 50V	1	
	C426	F1H1H104A013	0.1uF 50V	1	
	C427	F2A1C100A234	10uF 16V	1	
	C429	F1H1H104A013	0.1uF 50V	1	
	C430	F1H1H104A013	0.1uF 50V	1	
	C431	F1H1H104A013	0.1uF 50V	1	
	C432	F1H1H104A013	0.1uF 50V	1	
	C433	F2A1C100A234	10uF 16V	1	
	C434	F1H1H104A013	0.1uF 50V	1	
	C436	F1H1H104A013	0.1uF 50V	1	
	C437	F1H1H104A013	0.1uF 50V	1	
	C438	F1H1H104A013	0.1uF 50V	1	
	C439	F2A1C100A234	10uF 16V	1	
	C441	ECA1CM330B	33uF 16V	1	
	C442	F1H1H103A219	0.01uF 50V	1	
	C443	F1H1H103A219	0.01uF 50V	1	
	C444	F1H1H103A219	0.01uF 50V	1	
	C445	F1H1H103A219	0.01uF 50V	1	
	C446	F1H1H103A219	0.01uF 50V	1	
	C447	F1H1H103A219	0.01uF 50V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C448	F1H1H103A219	0.01uF 50V	1	
	C449	F1H1H103A219	0.01uF 50V	1	
	C450	F1H1H103A219	0.01uF 50V	1	
	C451	F1H1H1500009	15pF 50V	1	
	C452	F1H1H1500009	15pF 50V	1	
	C453	F1H1H103A219	0.01uF 50V	1	
	C454	F1H1H103A219	0.01uF 50V	1	
	C455	F1H1H103A219	0.01uF 50V	1	
	C456	F1H1H103A219	0.01uF 50V	1	
	C460	F1H1H104A013	0.1uF 50V	1	
	C461	F1H1H104A013	0.1uF 50V	1	
	C462	F1H1H104A013	0.1uF 50V	1	
	C463	F1K1H105A149	1uF 50V	1	
	C464	F1H1H333A220	0.033uF 50V	1	
	C466	F1K1H105A149	1uF 50V	1	
	C467	F2A1E471B424	470uF 25V	1	
	C470	F1H1H333A220	0.033uF 50V	1	
	C471	ECQV1H474JL3	0.47uF 50V	1	
	C472	F1H1H104A013	0.1uF 50V	1	
	C473	F1H1H104A013	0.1uF 50V	1	
	C476	F1H1H333A220	0.033uF 50V	1	
	C477	F1H1H104A013	0.1uF 50V	1	
	C478	F1H1H104A013	0.1uF 50V	1	
	C479	F1H1H333A220	0.033uF 50V	1	
	C480	F1K1H105A149	1uF 50V	1	
	C481	F1H1H104A013	0.1uF 50V	1	
	C482	F1K1H105A149	1uF 50V	1	
	C485	ECQV1H474JL3	0.47uF 50V	1	
	C486	F1H1H104A013	0.1uF 50V	1	
	C487	F1H1H104A013	0.1uF 50V	1	
	C490	F1H1H104A013	0.1uF 50V	1	
	C491	F1K1H105A149	1uF 50V	1	
	C492	F1H1H333A220	0.033uF 50V	1	
	C493	F1H1H104A013	0.1uF 50V	1	
	C494	F1K1H105A149	1uF 50V	1	
	C496	F2A1E471B424	470uF 25V	1	
	C497	F1H1H104A013	0.1uF 50V	1	
	C498	F1H1H333A220	0.033uF 50V	1	
	C500	ECQV1H474JL3	0.47uF 50V	1	
	C501	F1H1H104A013	0.1uF 50V	1	
	C502	F1H1H104A013	0.1uF 50V	1	
	C505	F2A1E471B424	470uF 25V	1	
	C507	F1H1H333A220	0.033uF 50V	1	
	C508	F1H1H104A013	0.1uF 50V	1	
	C509	F1H1H104A013	0.1uF 50V	1	
	C510	F1H1H333A220	0.033uF 50V	1	
	C512	F1H1H104A013	0.1uF 50V	1	
	C514	F1H1H104A013	0.1uF 50V	1	
	C515	F1K1H105A149	1uF 50V	1	
	C516	F1K1H105A149	1uF 50V	1	
	C519	F2A1E471B424	470uF 25V	1	
	C520	ECQV1H474JL3	0.47uF 50V	1	
	C522	F1H1H104A013	0.1uF 50V	1	
	C523	F1H1H104A013	0.1uF 50V	1	
	C526	F1H1H104A013	0.1uF 50V	1	
	C527	F1H1H333A220	0.033uF 50V	1	
	C528	F1H1H104A013	0.1uF 50V	1	
	C529	F1H1H104A013	0.1uF 50V	1	
	C530	F1H1H333A220	0.033uF 50V	1	
	C531	F1K1H105A149	1uF 50V	1	
	C532	F1K1H105A149	1uF 50V	1	
	C533	F2A1E471B424	470uF 25V	1	
	C536	ECQV1H474JL3	0.47uF 50V	1	
	C537	F1H1H104A013	0.1uF 50V	1	
	C540	F1H1H104A013	0.1uF 50V	1	
	C546	F1H1H104A013	0.1uF 50V	1	
	C547	F1H1H333A220	0.033uF 50V	1	
	C548	ECA1HAK100XB	10uF 50V	1	
	C550	F1H1H333A220	0.033uF 50V	1	
	C551	F1H1H104A013	0.1uF 50V	1	
	C552	F1K1H105A149	1uF 50V	1	
	C553	F1K1H105A149	1uF 50V	1	
	C554	F2A1E471B424	470uF 25V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C557	ECQV1H474JL3	0.47uF 50V	1	
	C558	F1H1H104A013	0.1uF 50V	1	
	C559	F1H1H104A013	0.1uF 50V	1	
	C566	F1H1H102A219	1000pF 50V	1	
	C567	F1H1H102A219	1000pF 50V	1	
	C574	F1H1H104A013	0.1uF 50V	1	
	C802	F1H1H104A013	0.1uF 50V	1	
	C803	F1H1H104A013	0.1uF 50V	1	
	C901	F2A1H220A234	22uF 50V	1	
	C903	F1H1H104A013	0.1uF 50V	1	
	C904	F1H1H101A230	100pF 50V	1	
	C905	F2A0J221A245	220uF 6.3V	1	
	C906	F1H1H101A230	100pF 50V	1	
	C907	F1H1H101A230	100pF 50V	1	
	C909	F1H1H104A013	0.1uF 50V	1	
	C912	F1H1H103A219	0.01uF 50V	1	
	C913	F2A1H220A234	22uF 50V	1	
	C915	F2A1H220A234	22uF 50V	1	
	C918	F1H1C105A097	1uF 16V	1	
	C919	F1H1C105A097	1uF 16V	1	
	C931	F1K1C106A062	10uF 16V	1	
	C2010	ECAL1EAM101XB	100uF 25V	1	
	C2011	F1H1H104A013	0.1uF 50V	1	
	C2823	F1H1H101A230	100pF 50V	1	
	C2825	F1H1H101A230	100pF 50V	1	
	C2826	F1H1H101A230	100pF 50V	1	
	C2827	F1H1H101A230	100pF 50V	1	
	C2900	ECALCM330B	33uF 16V	1	
	C2902	F1H1H562A219	5600pF 50V	1	
	C2903	F2A1V330A379	33uF 35V	1	
	C2906	F2A1C8210008	820uF 16V	1	
	C2907	F2A1E1010067	100uF 25V	1	
	C2908	F1H1H104A013	0.1uF 50V	1	
	C2912	F2A1C101B454	100uF 16V	1	
	C3104	F1H1H104A013	0.1uF 50V	1	
	C3105	F1H1H102A219	1000pF 50V	1	
	C3106	F1H1H331A013	330pF 50V	1	
	C3108	F2A1C101A208	100uF 16V	1	
	C3205	F1H1H102A219	1000pF 50V	1	
	C3206	F1H1H331A013	330pF 50V	1	
	C3207	F1H1H104A013	0.1uF 50V	1	
	C3208	F2A1C101A208	100uF 16V	1	
	C3901	EEE0GA331WP	330uF 4V	1	
	C3902	EEE0GA331WP	330uF 4V	1	
	C3904	EEE0GA331WP	330uF 4V	1	
	C3906	EEE0GA331WP	330uF 4V	1	
	C3907	F1G1A1040006	0.1uF 10V	1	
	C3908	F1G1A1040006	0.1uF 10V	1	
	C3909	F1H0J1050013	1uF 6.3V	1	
	C3910	F1G1A1040006	0.1uF 10V	1	
	C3911	F1H0J1050013	1uF 6.3V	1	
	C3913	F1G1A1040006	0.1uF 10V	1	
	C3914	F1G1A1040006	0.1uF 10V	1	
	C3915	F1H0J1050013	1uF 6.3V	1	
	C3916	F1G1A1040006	0.1uF 10V	1	
	C3917	F1H0J1050013	1uF 6.3V	1	
	C3918	F1G1A1040006	0.1uF 10V	1	
	C3919	F1H0J1050013	1uF 6.3V	1	
	C3920	F1H0J1050013	1uF 6.3V	1	
	C3921	F1G1A1040006	0.1uF 10V	1	
	C3922	F1G1A1040006	0.1uF 10V	1	
	C3923	F1H0J1050013	1uF 6.3V	1	
	C3924	F1H0J1050013	1uF 6.3V	1	
	C3925	F1G1A1040006	0.1uF 10V	1	
	C3926	F1G1A1040006	0.1uF 10V	1	
	C3927	F1H0J1050013	1uF 6.3V	1	
	C3928	F1G1A1040006	0.1uF 10V	1	
	C3929	F1G1A1040006	0.1uF 10V	1	
	C3930	F1H0J1050013	1uF 6.3V	1	
	C3932	F1H0J1050013	1uF 6.3V	1	
	C3940	F1G1A1040006	0.1uF 10V	1	
	C3941	F1G1H221A444	220pF 50V	1	
	C3954	F1G1C104A083	0.1uF 16V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C3955	F1G1C1030007	0.01uF 16V	1	
	C3956	F1H0J1050013	1uF 6.3V	1	
	C3964	F1G1A1040006	0.1uF 10V	1	
	C3965	F1G1H100A565	10pF 50V	1	
	C4004	F1H1H104A013	0.1uF 50V	1	
	C4005	F1H1H103A219	0.01uF 50V	1	
	C4007	F2A1C1010033	100uF 16V	1	
	C4008	F1H1C105A097	1uF 16V	1	
	C4009	F1H1C105A097	1uF 16V	1	
	C4010	F1H1C105A097	1uF 16V	1	
	C4012	F2A0J471A016	470uF 6.3V	1	
	C4014	F2A0J471A016	470uF 6.3V	1	
	C4015	F2A0J471A016	470uF 6.3V	1	
	C4016	F2A0J471A016	470uF 6.3V	1	
	C4018	F2A1C1010033	100uF 16V	1	
	C4021	F1H1H104A013	0.1uF 50V	1	
△	C5700	F1BAF1020020	1000pF	1	
△	C5701	F0CAF224A105	0.22uF	1	
△	C5702	F0CAF224A105	0.22uF	1	
△	C5703	F0CAF224A105	0.22uF	1	
△	C5704	F1BAF1020020	1000pF	1	
△	C5706	F1BAF1020020	1000pF	1	
△	C5708	F1BAF1020020	1000pF	1	
	C5711	F2A2G1210003	120uF 400V	1	
	C5712	F2A2G1210003	120uF 400V	1	
	C5713	F0C2J1030007	0.01uF 630V	1	
	C5720	F1H1H102A219	1000pF 50V	1	
	C5721	F1H1H221A219	220pF 50V	1	
	C5722	F1H1H222A219	2200pF 50V	1	
	C5723	F1H1H471A219	470pF 50V	1	
	C5725	F1H1H104A013	0.1uF 50V	1	
	C5726	F2A1H1000077	10uF 50V	1	
	C5727	F1H1H222A219	2200pF 50V	1	
	C5730	F1H1E105A116	1uF 25V	1	
	C5747	F1B3D561A011	560pF 2000V	1	
	C5790	F1K2J2220002	2200pF 630V	1	
	C5795	F1J1H102A002	1000pF 50V	1	
	C5796	F1J1H104A717	0.1uF 50V	1	
	C5797	F1H1H471A219	470pF 50V	1	
	C5798	F2A1H100A182	10uF 50V	1	
	C5799	F2B2G6R80001	6.8uF 400V	1	
	C5800	F1J2E1030004	0.01uF 250V	1	
	C5801	F1K2E223A005	0.022uF 250V	1	
	C5808	F2A1E102B427	1000uF 25V	1	
	C5810	F1H1H104A013	0.1uF 50V	1	
	C5818	F1H1H104A013	0.1uF 50V	1	
	C5820	F2A0J222A247	2200uF 6.3V	1	
	C5839	F1K2E223A005	0.022uF 250V	1	
	C5843	F1H1E105A116	1uF 25V	1	
	C5864	F1H1H104A013	0.1uF 50V	1	
	C5870	F1H1H103A219	0.01uF 50V	1	
	C5897	F1H1H104A013	0.1uF 50V	1	
	C5898	F1H1H104A013	0.1uF 50V	1	
	C5899	EEUFC1A102B	1000uF 10V	1	
	C8001	EEE0GA331WP	330uF 4V	1	
	C8002	F2G0J330A031	33uF 6.3V	1	
	C8003	F1G1C104A083	0.1uF 16V	1	
	C8004	F1G1C104A083	0.1uF 16V	1	
	C8005	F1G1C104A083	0.1uF 16V	1	
	C8006	F1G1C104A083	0.1uF 16V	1	
	C8007	F1G1C104A083	0.1uF 16V	1	
	C8010	F1G1H221A444	220pF 50V	1	
	C8011	F2G0J101A031	100uF 6.3V	1	
	C8012	F1G1C104A083	0.1uF 16V	1	
	C8013	F1G1C104A083	0.1uF 16V	1	
	C8014	F1G1C104A083	0.1uF 16V	1	
	C8015	F1G1C104A083	0.1uF 16V	1	
	C8016	F1G1C104A083	0.1uF 16V	1	
	C8018	F1G1C104A083	0.1uF 16V	1	
	C8020	F1G1C104A083	0.1uF 16V	1	
	C8021	F1G1C104A083	0.1uF 16V	1	
	C8022	F1G1C104A083	0.1uF 16V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C8023	F1G1C104A083	0.1uF 16V	1	
	C8024	F1G1C104A083	0.1uF 16V	1	
	C8026	F1G1C104A083	0.1uF 16V	1	
	C8051	F1H0J1050013	1uF 6.3V	1	
	C8052	F1G1A1040006	0.1uF 10V	1	
	C8053	F1G1C104A083	0.1uF 16V	1	
	C8054	F1G1H221A444	220pF 50V	1	
	C8055	F1H0J1050013	1uF 6.3V	1	
	C8056	F1G1E2220001	2200pF 25V	1	
	C8057	F1H0J1050013	1uF 6.3V	1	
	C8111	F1J1A106A043	10uF 10V	1	
	C8112	F1H0J1050013	1uF 6.3V	1	
	C8113	F1G1E2220001	2200pF 25V	1	
	C8151	F1H0J4750005	4.7uF 6.3V	1	
	C8201	F2G0J101A031	100uF 6.3V	1	
	C8202	F1G1A1040006	0.1uF 10V	1	
	C8211	F1G1E1220001	1200pF 25V	1	
	C8221	F1G1E1020001	1000pF 25V	1	
	C8222	F1G1E8210002	820pF 25V	1	
	C8225	F1G1E1020001	1000pF 25V	1	
	C8226	F1G1E1020001	1000pF 25V	1	
	C8231	F1G1A1040006	0.1uF 10V	1	
	C8232	F1G1A1040006	0.1uF 10V	1	
	C8251	F2G0J221A031	220uF 6.3V	1	
	C8252	F1G1C104A083	0.1uF 16V	1	
	C8255	F2G1C220A037	22uF 16V	1	
	C8256	F1G1C104A083	0.1uF 16V	1	
	C8257	F2G1C470A076	47uF 16V	1	
	C8258	F1G1C104A083	0.1uF 16V	1	
	C8260	F1G1H221A459	220pF 50V	1	
	C8261	F1G1C104A083	0.1uF 16V	1	
	C8262	F1G1C104A083	0.1uF 16V	1	
	C8301	F2G0J221A031	220uF 6.3V	1	
	C8302	F2G0J330A031	33uF 6.3V	1	
	C8303	F1G1A1040006	0.1uF 10V	1	
	C8304	F1G1A1040006	0.1uF 10V	1	
	C8305	F1G1A1040006	0.1uF 10V	1	
	C8311	F1G1A1040006	0.1uF 10V	1	
	C8312	F1H0J1050013	1uF 6.3V	1	
	C8313	F1H0J1050013	1uF 6.3V	1	
	C8320	F1G1C104A083	0.1uF 16V	1	
	C8429	F1G1C104A083	0.1uF 16V	1	
	C8431	F2G1C100A072	10uF 16V	1	
	C8432	F1J1A106A043	10uF 10V	1	
	C8433	F1J1A106A043	10uF 10V	1	
	C8501	F2G0J101A031	100uF 6.3V	1	
	C8502	F1G1C104A083	0.1uF 16V	1	
	C8503	F1G1C104A083	0.1uF 16V	1	
	C8504	F1G1C104A083	0.1uF 16V	1	
	C8505	F1G1C104A083	0.1uF 16V	1	
	C8506	F1G1C104A083	0.1uF 16V	1	
	C8511	F1H0J1050013	1uF 6.3V	1	
	C8512	F1H0J1050013	1uF 6.3V	1	
	C8513	F1G1A1040006	0.1uF 10V	1	
	C8514	F1G1A1040006	0.1uF 10V	1	
	C8515	F1G1A1040006	0.1uF 10V	1	
	C8516	F1G1A1040006	0.1uF 10V	1	
	C8521	F1G1A1040006	0.1uF 10V	1	
	C8522	F1G1A1040006	0.1uF 10V	1	
	C8523	F1G1C104A083	0.1uF 16V	1	
	C8524	F1G1C104A083	0.1uF 16V	1	
	C8525	F1G1C562A039	5600pF 16V	1	
	C8526	F1G1C183A039	0.018uF 16V	1	
	C8527	F1G1A333A013	0.033uF 10V	1	
	C8528	F1H0J1050013	1uF 6.3V	1	
	C8529	F1H0J1050013	1uF 6.3V	1	
	C8530	F1G1C104A083	0.1uF 16V	1	
	C8531	F1G1H101A566	100pF 50V	1	
	C8532	F1G1H221A444	220pF 50V	1	
	C8533	F1G1C104A083	0.1uF 16V	1	
	C8541	F1G1E4720002	4700pF 25V	1	
	C8550	F2G0J330A031	33uF 6.3V	1	
	C8551	F1G1C104A083	0.1uF 16V	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	C8552	F2G1C100A072	10uF 16V	1	
	C8553	F2G0J470A031	47uF 6.3V	1	
	C8554	F1H0J1050013	1uF 6.3V	1	
	C8561	F1G1C104A083	0.1uF 16V	1	
	C8562	F2G1C100A072	10uF 16V	1	
	C8563	F2G0J470A031	47uF 6.3V	1	
	C8564	F1H0J1050013	1uF 6.3V	1	
	C8602	F1G1C153A039	0.015uF 16V	1	
	C8611	F1G1C104A083	0.1uF 16V	1	
	C8621	F1G1H6R8A608	6.8pF 50V	1	
	C8622	F1G1H6R8A608	6.8pF 50V	1	
	C8651	F1G1C104A083	0.1uF 16V	1	
	C8652	F1G1C104A083	0.1uF 16V	1	
	C8701	F1G1A1040006	0.1uF 10V	1	
	C8901	F1G1C104A083	0.1uF 16V	1	
	C9002	F1G1C104A083	0.1uF 16V	1	
	C9003	F1G1C104A083	0.1uF 16V	1	
	C9004	F1G1H7R0A445	7.0pF 50V	1	
	C9005	F1G1H8R0A456	8.0pF 50V	1	
	C9006	F1G1A1040006	0.1uF 10V	1	
	C9007	F1G1C104A083	0.1uF 16V	1	
	C9008	F1G1H221A444	220pF 50V	1	
	C9009	F1G1H100A565	10pF 50V	1	
	FL8101	F1H0J1050018	1uF 6.3V	1	
	FL8102	F1H0J1050018	1uF 6.3V	1	
	FL8103	F1H0J1050018	1uF 6.3V	1	
	FL8104	F1J1E1040022	0.1uF 25V	1	
	FL8105	F1H0J1050018	1uF 6.3V	1	
	FL8421	F1H0J1050018	1uF 6.3V	1	
	K3909	F1H1H104A013	0.1uF 50V	1	
	K3911	F1H1H104A013	0.1uF 50V	1	

