ORDER NO.CHM1301002CE
B35

Service Manual

Blu-ray Disc Player

Model No. DMP-BDT230P
DMP-BDT230PC

Colour
(K).....Black Type

Panasonic®

"AVCHD", "AVCHD 3D", "AVCHD Progressive" and "AVCHD 3D/Progressive" are trademarks of Panasonic Corporation and Sony Corporation.

Java is a registered trademark of Oracle and/or its affiliates.

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

Manufactured under license under U.S. Patent Nos: 5,956,674; 5,974,380; 6,226,616; 6,487,535; 7,212,872; 7,333,929; 7,392,195; 7,272,567 & other U.S. and worldwide patents issued & pending.
DTS-HD, the Symbol, & DTS-HD and the Symbol together are registered trademarks & DTS-HD Master Audio is a trademark of DTS, Inc. Product includes software.
© DTS, Inc. All Rights Reserved.

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

This product is licensed under the AVC patent portfolio license and VC-1 patent portfolio license for the personal and non-commercial use of a consumer to (i) encode video in compliance with the AVC Standard and VC-1 Standard ("AVC/VC-1 Video") and/or (ii) decode AVC/VC-1 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide AVC/VC-1 Video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA, LLC.
See http://www.mpegla.com.

VIERA Connect is a trademark of Panasonic Corporation.

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

SDXC Logo is a trademark of SD-3C, LLC.

"DVD Logo" is a trademark of DVD Format/Logo Licensing Corporation.

The Wi-Fi CERTIFIED Logo is a certification mark of the Wi-Fi Alliance.
The Wi-Fi Protected Setup Mark is a mark of the Wi-Fi Alliance.

"Wi-Fi", "Wi-Fi Protected Setup", "Wi-Fi Direct","Miracast","WPA" and "WPA2" are marks or registered marks of the Wi-Fi Alliance.

DLNA, the DLNA Logo and DLNA CERTIFIED are trademarks, service marks, or certification marks of the Digital Living Network Alliance.

Windows is a trademark or a registered trademark of Microsoft Corporation in the United States and other countries.

This product incorporates the following software:

(1) the software developed independently by or for Panasonic Corporation,
(2) the software owned by third party and licensed to Panasonic Corporation,
(3) the software licensed under the GNU General Public License, Version 2 (GPL v2),
(4) the software licensed under the GNU LESSER General Public License, Version 2.1 (LGPL v2.1) and/or,
(5) open sourced software other than the software licensed under the GPL v2 and/or LGPL v2.1

The software categorized as (3) - (5) are distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
Please refer to the detailed terms and conditions thereof shown in the Player Settings menu.

At least three (3) years from delivery of products, Panasonic will give to any third party who contacts us at the contact information provided below, for a charge no more than our cost of physically performing source code distribution, a complete machine-readable copy of the corresponding source code covered under GPL v2/LGPL v2.1.

Contact Information
cdrequest.bdplayer@gg.jp.panasonic.com

The source code and the copyright notice are also available for free in our website below.
http://panasonic.net/avc/oss/bdplayer/AWBPM13A.html

Adobe Flash Lite for Digital Home Software licensed by Adobe Systems Incorporated or its affiliates.

For Adobe Flash Lite for Digital Home Software ("Flash Software"), please be aware of the following.

(i) You are not permitted to distribute and copy this Flash Software to any third party,

(ii) You are not permitted to modify the Flash Software and create derivative works of the Flash Software,

(iii) You are not permitted to decompile, reverse engineer, disassemble and otherwise reduce the Flash Software to a human-perceivable form,

(iv) You are not permitted to claim any damages, including direct, indirect, special, incidental, punitive, and consequential damages arising out of or in connection with the Flash Software,

(v) You fully agree that the ownership of the Flash Software is that of Panasonic Corporation and/or its suppliers or licensors,

(vi) You agree and acknowledge that it is possible that you cannot access the contents unless you do not obtain and install the latest version of the Flash Software.

(1) MS/WMA
This product is protected by certain intellectual property rights of Microsoft Corporation and third parties. Use or distribution of such technology outside of this product is prohibited without a license from Microsoft or an authorized Microsoft subsidiary and third parties.

(2) MS/PlayReady/Final Product Labeling
This product contains technology subject to certain intellectual property rights of Microsoft. Use or distribution of this technology outside of this product is prohibited without the appropriate license(s) from Microsoft.

(3) MS/PlayReady/End User Notices
Content owners use Microsoft PlayReady™ content access technology to protect their intellectual property, including copyrighted content. This device uses PlayReady technology to access PlayReady-protected content and/or WMDRM-protected content. If the device fails to properly enforce restrictions on content usage, content owners may require Microsoft to revoke the device s ability to consume PlayReady-protected content. Revocation should not affect unprotected content or content protected by other content access technologies. Content owners may require you to upgrade PlayReady to access their content. If you decline an upgrade, you will not be able to access content that requires the upgrade.

(4) Vorbis, FLAC, WPA Supplicant

(5) FLAC, WPA Supplicant
The software license is displayed when License in the Setup menu is selected.

⚠ 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.

TABLE OF CONTENTS

PAGE

1 Safety Precautions

1.1. General guidelines

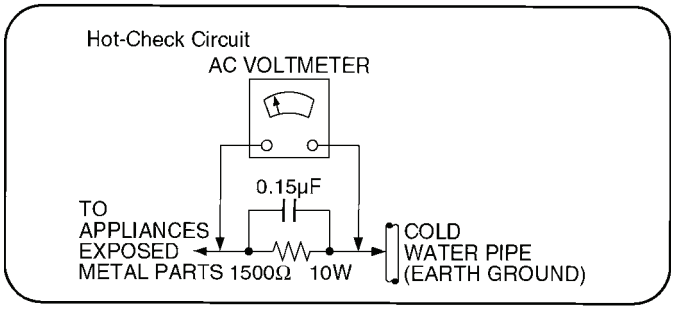
1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3.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

1.1.1. Leakage current cold check

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

1.1.2. Leakage current hot check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
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 milliampere. 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.



1.2. Caution for fuse replacement

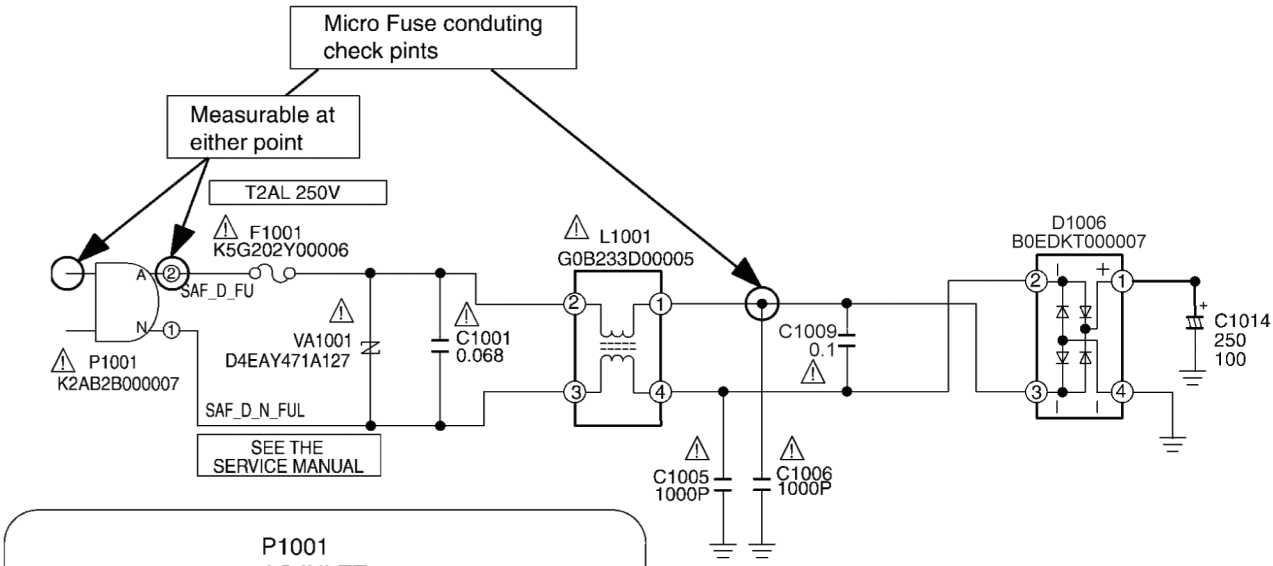
(For English)
CAUTION:
Replace with the same type fuse:
(Manufacturer: Hollyland, Type:SCT, T2A, 250V)

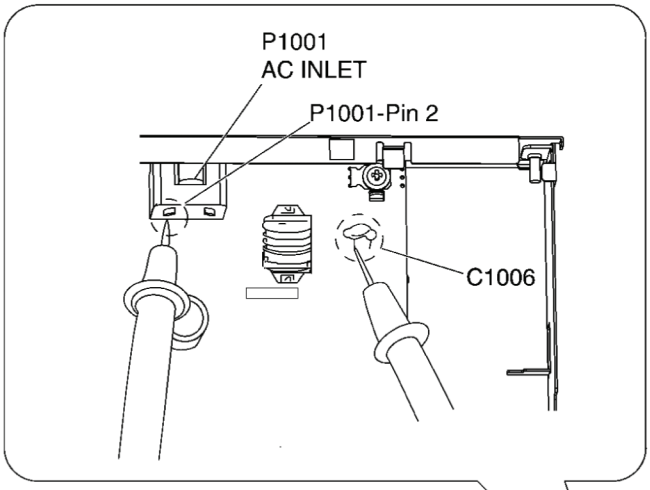
(For Canadian French)
ATTENTION:
Utiliser un fusible de rechange de même type:
(Fabricant: Hollyland, Type:SCT, T2A, 250V)

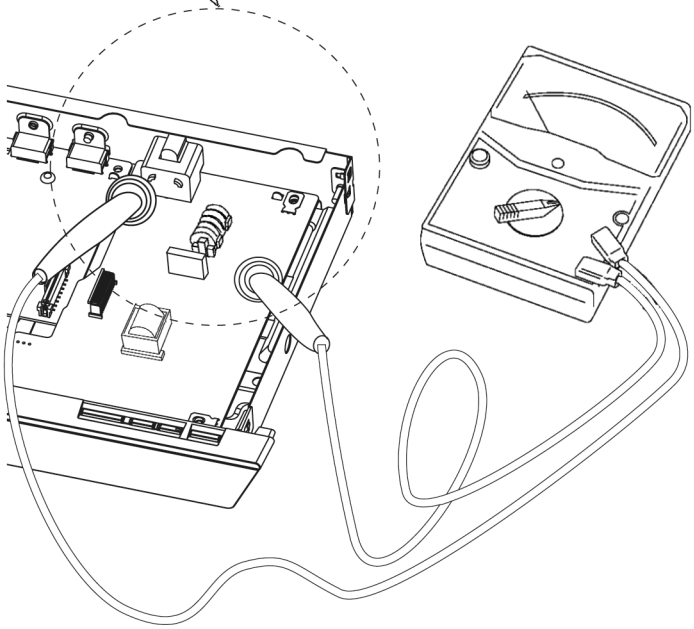
1.2.1. Micro Fuse conducting check

This unit uses the Micro Fuse.

Check the Micro Fuse conducting using the Tester at the check points below.







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 Electrostatic 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 buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

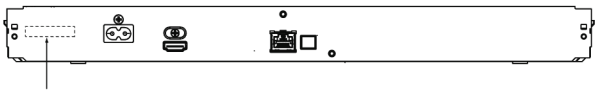
There are special components used in this equipment which are important for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire,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

2.2. Precaution of Laser Diode

CAUTION:

This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length: 785nm (CDs)/ 660 nm (DVDs)/ 405 nm (BDs)
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical 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.

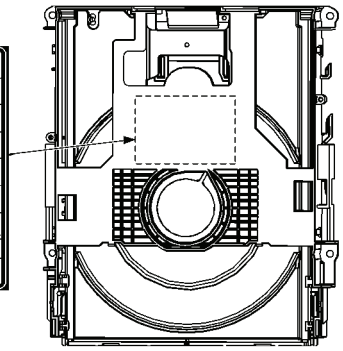


Product complies with DHHS Rules 21 CFR Subchapter J in effect at date of manufacture. Panasonic Corporation Kadoma, Osaka, Japan (Only for BDT230P)

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Laserinheit abgestrahlt.
Wellenlänge: 785nm (CDs)/ 660 nm (DVDs)/ 405 nm (BDs)
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlung der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



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.

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.
  RFKZ03D01KS----------(0.3mm 100g Reel)
  RFKZ06D01KS----------(0.6mm 100g Reel)
  RFKZ10D01KS----------(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%

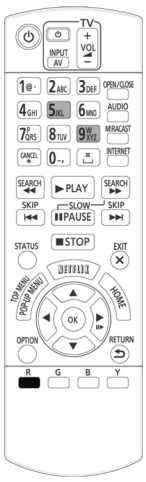
3 Service Navigation

3.1. Combination of Multiple Pressing on the Remote Control

Press multi-buttons (in combination) on the remote control simultaneously for operations, such as initialization or service mode, etc.

3.2. Entering Special Modes with Combination of Multiple Pressing on the Remote Control

Enter the following special modes by multiple pressing functions on the supplied remote control.
After entering each mode, switch to the desired menus for operation.

Disclosure mode	Nondisclosure mode 1	Nondisclosure mode 2
[OK] [Blue] [Yellow]	[6] [7] [Yellow]	[5] [9] [Red]
		

◆ **Menu switch:** ⬇ mark.
[▶] (remote control),
or
[Power] (main unit)

◆ **Operating menu:**
[OK] (remote control)
or
[O/C] (main unit)

※ Release from special modes automatically after the operation.

◆ **Release from special modes:**

- Press other buttons in no connection with the above operations.
- No operation for over 2 min.
- Press and hold [Power] on main unit (forced to turn off).
- After releasing from special modes,
  the power will turn off automatic.

3.2.1. Disclosure mode (Combination of multiple pressing: [OK] [Blue] [Yellow])

Press and hold [OK] [Blue] [Yellow] on the remote control simultaneously for 5 sec., then "00 RET" is displayed on FL display window.

Power	Disc	FL display	Key operation	Function	Remarks
ON	Yes/No	00 RET	No	No	
		↓ 03 VL	OK	Release from BD/DVD video play restriction	Release from the aging restriction on BD video and DVD video play.
		↓ 04 PRG	OK (Press and hold)	Progressive initialization	Initialize the progressive settings, and switch to the interlaced display. Press and hold [STOP] (not [OK])(on the remote control or main unit) to switch to 10 OCL(setting shop lock mode)
		↓ 06 FT0	OK	Force tray open	When O/C button is invalid, the tray of BD Drive is forced to open. If the tray still cannot be opened in this mode, please refer to "6.1.2 When the Forcible Disc Eject can not be done ".
		↓ 07 DC	OK (Press and hold)	Deep Color initialization	Initialize Deep Color.
		↓ 08 FIN	OK (Press and hold)	Reset to factory default setting	Reset all to factory default settings, including Quick Start and Network related settings.
		10 OCL	OK	Shop lock mode setting/release ([O/C] is invalid/valid, while setting/release this mode.)	When "04 PRG" is displayed, press and hold [STOP] (on the remote control or main unit) to switch to other displays. Press [OK] to only lock the tray switch. * Even turn ON/OFF the power, it is still in locking.

3.2.2. Nondisclosure mode 1 (Combination of multiple pressing: [6] [7] [Yellow])

Press and hold [6] [7] [Yellow] on the remote control simultaneously for about 5 sec., then "50 RET" is displayed on FL display window.

Power	Disc	FL display	Key operation	Function	Remarks
ON	Yes/No	50 RET	No	No	
		↓ 51 NOP	OK	No	When "51 NOP" is displayed, press and hold [STOP] (on the remote control or main unit) to switch to "52 BRE" (delete BD-ROM history settings)
		52 BRE	OK	BD-ROM history delete	When "51 NOP" is displayed, press and hold [STOP] (on the remote control or main unit) to switch to other displays. Press [OK] to delete BD video history.

3.2.3. Nondisclosure mode 2 (Combination of multiple pressing: [5] [9] [Red])

Press and hold [5] [9] [Red] on the remote control simultaneously for about 5 sec., then "70 RET" is displayed on FL display window.

Power	Disc	FL display	Key operation	Function	Remarks
ON	Yes/No	70 RET	No	No	
		↓ 80 SRV	OK	Switch to service mode	Press [OK], then "HELLO" is displayed, and wait about 30 sec.until "SERV" is displayed.
		↓ 81 AIG	OK (Press and hold)	Switch to aging mode	
		↓ 86 DST	OK	Switch to Drive aging mode	
		↓ 91 SPD	OK	Special display	Do not apply in normal service.

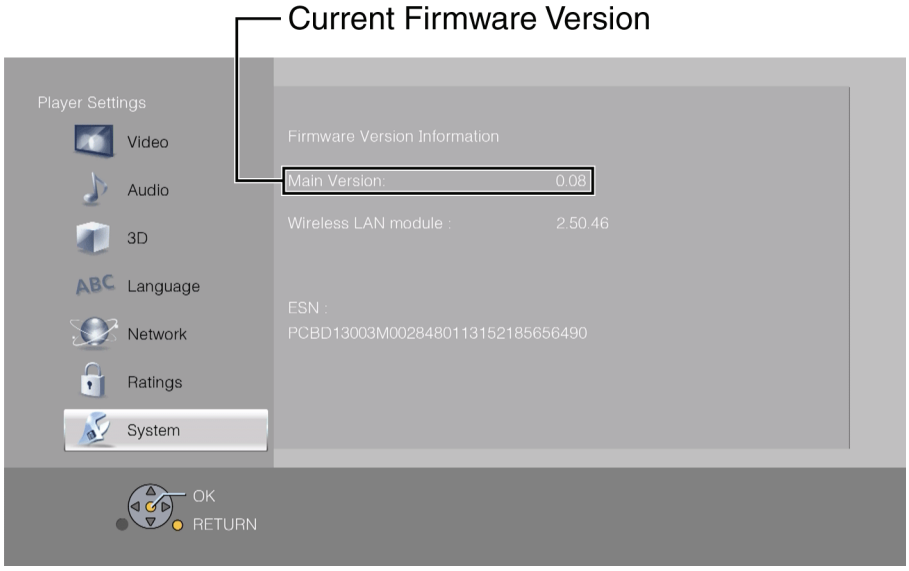
3.3. How to Update Firmware

The firmware of the unit may be renewed to improve the quality including operational performance and playability.
Make sure to refer the following procedure when performing version-up.

3.3.1. Confirmation of the Firmware Version

Perform following steps to checking the firmware version currently installed in the unit.

1. Turn the unit on and wait the Home screen is displayed.
2. Select [Setup] → [Player Settings] → [System] → [System Information] → [Firmware Version Information].
3. Firmware Version Information screen is displayed.



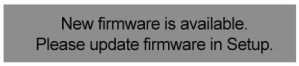
3.3.2. Updating Firmware

This unit has 2 updating method, one way to update via the internet, the other way to update using CD-R or USB device which is stored pre-downloaded firmware update file.

3.3.2.1. Updating firmware via the internet

Occasionally, Panasonic may release updated firmware for this unit that may add or improve the way a feature operates. These updates are available free of charge.

This unit is capable of checking the firmware automatically when connected to the Internet via a broadband connection.
When a new firmware version is available, the following message is displayed.



To update the firmware
Press [HOME]

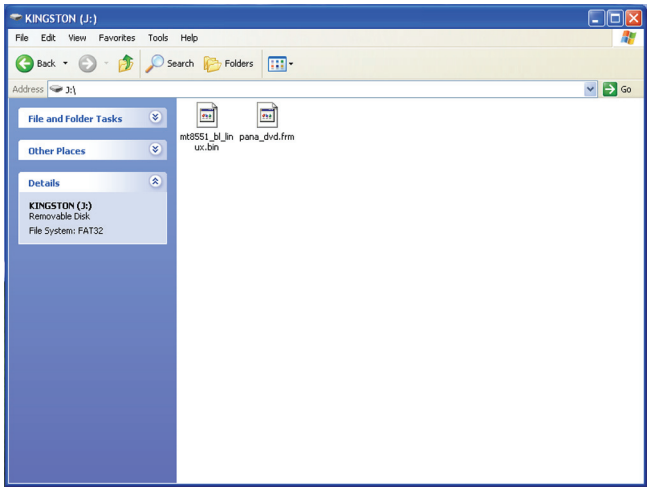
- press [OK] to select "Setup"
- select "Player Settings"
- select "System" and press [OK]
- select "Firmware Update" and press [OK]
- select "Update Now" and press [OK]

DO NOT DISCONNECT the unit from the AC power or perform any operation while the update takes place.
After the firmware is installed, “FIN’’ will be displayed on the unit's display. Unit will restart and the following screen will be displayed.

3.3.2.2. Updating firmware using the USB device

When updating firmware using USB device, perform following procedures.
(When using CD-R instead of USB device, perform same procedures)

1. Download the latest firmware file of the unit
   The latest firmware required for version-up can be downloaded from "Support Information from NWBG/VDBG-PAVC" web-site in "TSN system".
   Click file name to download.
   After download, click file to decompress. (Total: 2 file).
2. Decompress the downloaded file
   The decompressed file will be named as follows.
   File Name: PANA_DVD.FRM and mt8551_b1_linux.bin
   Copy the file to root folder of the USB device.
   (If using CD-R instead of USB device, burn the file to a blank CD-R by writing software.)



3. Update the unit.
   (1) Turn the unit power on.
   (2) After the home screen is displayed and "HOME" is displayed at LED display of front panel, insert the USB device stored downloaded latest firmware file to front USB port of the unit.(or set the CD-R into the unit and playback it.)
   (3) "UPDATE" is displayed and update process starts automatically.
   (If "NoUPd" is displayed, the unit has already been update the latest version of firmware.)
   (4) During the update, "UPBOOT" → "UPSYS" → "UPDRV" → "UPSYS" are displayed.
   (5) When "FIN" is displayed, update process is finished.
   Remove the USB device (or the CD-R) and press the [POWER] button to turn the unit off.
   (6) Turn the unit on and home screen displayed, the firmware update is completed.

4 Specifications

Power supply: AC120V, 60Hz
Power consumption: Approx. 14W
in standby mode: Approx. 0.5W
in quick start standby mode: Approx. 5.5W
Operating temperature range: +5°C to +35°C(+41 to +95°F)
Operating humidity range: 10% - 80%RH (no condensation)
Signal system: NTSC
Digital audio output: Optical digital output
Optical terminal

HDMI AV output:
Output connector: TypeA (19pin)
1 system

SD card slot:
Connector: 1 system
USB slot:
USB2.0: 1 system
Ethernet:
10BASE-T/100BASE-TX: 1 system
WLAN:
Antenna: Tx2, Rx2
Standard Compliance: IEEE802.11b/g/n/a
Transmission system: MIMO-OFDM system
Frequency Range: 2.4GHz band 5GHz band
Transfer rate (standard)*: IEEE802.11n : Max300Mbps
IEEE802.11g : Max54Mbps
IEEE802.11b : Max11Mbps
IEEE802.11a : Max54Mbps
*Transfer rates are theoretical values; however, actual communication rate will vary according to communication environment or connected equipment.
Access Mode: Infrastructure mode
Security*: WPA TM / WPA2 TM
(Encryption type : TKIP/ AES, Authentication type : PSK)
WEP(64bit/128bit)
*This unit supports WPA and WPA2 encryption.

Media:
Playable disc:
BD-Video (Blu-ray 3D, BD-LIVE, BONUSVIEW): BD-ROM Part3 Version 2.4
BD-RE: Version3 (Single Layer/ Dual Layer), JPEG, MPO
BD-R: Version2 (Single Layer/ Dual Layer),MKV(*4, *5)
DVD-R: DVD-Video format (*1), DVD Video Recording format(*1), AVCHD format(*1), JPEG(*2), MPO(*2), MP3(*2), MKV(*2, *3, *5), WAV(*2), FLAC(*2), AAC(*2),WMA(*2)
DVD-R DL: DVD-Video format (*1), DVD Video Recording format(*1), AVCHD format(*1), JPEG(*2), MPO(*2), MP3(*2), MKV(*2, *3, *5), WAV(*2), FLAC(*2), AAC(*2),WMA(*2)
DVD-RW: DVD-Video format (*1), DVD Video Recording format(*1), AVCHD format(*1)
+R: Video(*1), AVCHD format(*1)
+R DL: Video(*1), AVCHD format(*1)
+RW: Video(*1), AVCHD format(*1)
DVD-Video: DVD-Video format
CD-Audio: CD-DA
CD-R/CD-RW: CD-DA, JPEG(*2), MPO(*2), MP3(*2), MKV(*2, *5), WAV(*2), FLAC(*2),AAC(*2),WMA(*2)

*1: Finalizing is necessary.
*2: ISO9660 level1 or 2(except for extended formats), Joliet.
This unit is compatible with multi-session.
This unit is not compatible with packet writing.
*3: UDF1.02 without ISO9660, UDF1.5 with ISO9660.
*4: UDF2.5.
*5: MPEG-4 ASP Level 4.
MPEG2 Video,AAC-LC, MP3, Dolby Digital audio, DTS, PCM,FLAC and Vorbis can be decoded.
SD card: SD Memory Card(*6) formatted FAT12,FAT16,FAT32(*7),exFAT(*8) JPEG,MPO,AVCHD format MP4
*6: includes SDHC, SDXC card
includes miniSD Cards(need a miniSD Adaptor)
includes microSD/microSDHC/microSDXC Cards (need a microSD Adaptor)
*7: Not support long file name
*8: SDXC only
USB device:
USB Standard: USB2.0 High Speed
Format: FAT12, FAT16, FAT32, NTFS, MP3, JPEG, MPO,MKV, MP4, MPEG, WAV, FLAC,AAC,WMA

Contents:
JPEG:
SD card,CD-R/RW, BD-RE, DVD-R, USB device:
Pixcels: 34x34~8192x8192
Sub Sampling: 4:2:2, 4:2:0
Motion JPEG not supproted

MP3:
CD-R, CD-RW, DVD-R, USB device:
Compression rate: 32kbps~320kbps
Sampling rate: 44.1kHz, 48kHz
AVCHD (H.264):
SD card, DVD: AVCHD format V1.0
HDMI: 480p(525p)/1080i(1125i)/720p(750p)/1080p(1125p)
HDMI (V.1.4a with 3D , Content Type)
(This unit supports “HDMI-CEC” function.)

Playable disc:
BD-ROM (SL/DL): Compliant Ver. 1.3
(SL: Single Layer/DL: Dual Layer)
BD-RE (SL/DL): BD-MV
(SL: Single Layer/DL: Dual Layer)
BD-R (SL/DL): BD-MV
(SL: Single Layer/DL: Dual Layer)
DVD-ROM (SL/DL): DVD-Video
(SL: Single Layer/DL: Dual Layer)
DVD-R: DVD-Video, DVD-VR
DVD-R(DL): DVD-Video, DVD-VR
DVD-RW: DVD-Video, DVD-VR
+R: Video
+R(DL): Video
+RW: Video
CD: CD-DA, CD-R/RW

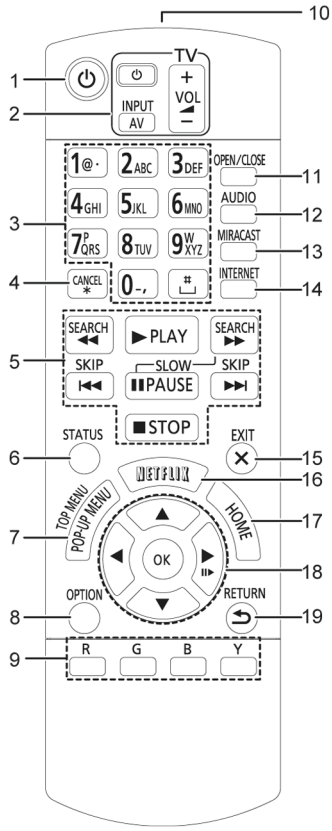
Optical pick-up:
Wave length: System with 1 lenses
785 nm (CDs)/660 nm (DVDs)/405 nm (BDs)

LASER Specification:
Class I LASER Product:
Wave length: 785 nm (CDs)/660 nm (DVDs)/405 nm (BDs)
Laser power: No hazardous radiation is emitted with the safety protection

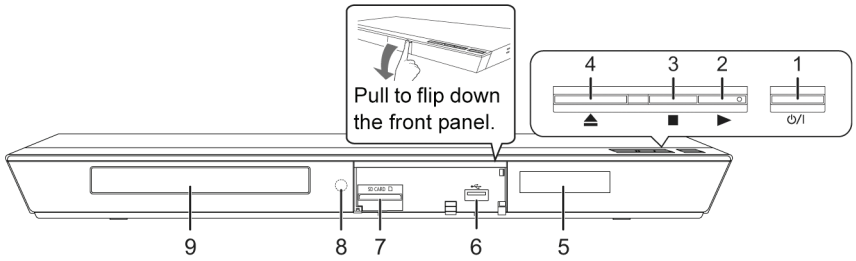
Regional Code:	DVD: #1 BD: Region A
Dimensions:	
430mm(W) [Approx. 16 15/16"(W)]	
38mm(H) [Approx. 1 1/2"(H)]	
179mm(D) [Approx. 7 1/16"(D)]	
Mass:	Approx. 1.4 kg (3.08 lbs)
Solder:	This model uses lead free solder(PbF).
Note:	Specifications are subject to change without notice.

5 Location of Controls and Components

Control reference guide



1 Turn the unit on and off
2 TV operation buttons
You can operate the Panasonic TV using the unit's remote control. Some buttons may not work depending on the TV.
[⏻ TV] : Turn the TV on and off
[AV] : Change input
[+ − VOL] : Adjust the volume
3 Select title numbers, etc./Enter numbers or characters
4 Cancel
5 Basic playback control buttons
6 Show status messages
7 Show Pop-up menu/Top menu
8 Show Option menu
9 Colored buttons (red, green, blue, yellow)
Used for various purposes depending on the display.
10 Transmit the remote control signal
11 Open or close the disc tray
12 Select audio
13 Show Miracast™ screen
14 Show the Home screen of the VIERA Connect
15 Exit the menu screen
16 Show Netflix screen
17 Show HOME menu
18 [▲, ▼, ◄, ►] : Move the highlight for selection
[OK] : Confirm the selection
(❚❚►) : Frame-by-frame
19 Return to previous screen



1 **Standby/on switch (⏻/I)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit still consumes a small amount of power.
2 Start play
3 Stop
4 Open or close the disc tray
5 Display
6 USB port
7 SD card slot
8 Remote control signal sensor
Distance: Within approx. 7 m
Angle: Approx. 20° up and down, 30° left and right
9 Disc tray

Rear panel terminals

6 Operating Instructions

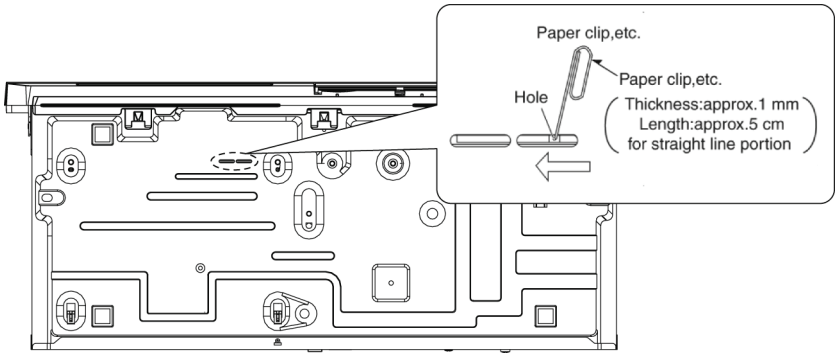
6.1. Taking out the Disc from BD-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

6.1.1. Forcible Disc Eject

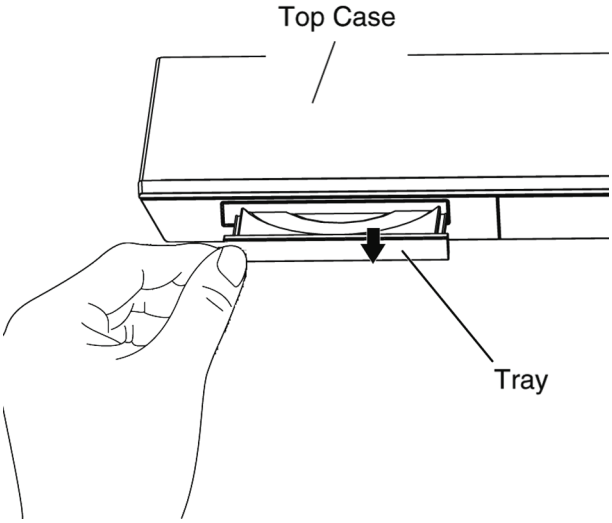
1. Turn on the power, press and hold [OK], [B] and [Y] on the remote control at the same time for more than 5 seconds. "00 RET" is displayed on the unit's display.
2. Repeatedly press [▶] on the remote control or [POWER] on the unit until "06 FTO" is displayed on the unit's display.
3. Press [OK] on the remote control or [OPEN/CLOSE] on the unit.

6.1.2. When the Forcible Disc Eject can not be done.

1. Turn off the power and pull out AC cord.
2. Put deck so that bottom can be seen.
3. Insert the Paper clip, etc. into the hole on the bottom of BD Drive and slide the Paper clips, etc. in the direction of the arrow to eject tray slightly.



4. Put deck upward, and pick out Tray by finger.



7 Service Mode

7.1. Self-Diagnosis and Special Mode Setting

7.1.1. Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by “Self-Diagnosis Display” when any error has occurred.

U and F** are stored in memory and held.**

You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.

Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	SET * * is remote controller code of the main unit. Display for 5 seconds.
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. The event is saved in memory as well.	No display	U59 "U59" is displayed for 30 minutes.
U71	HDMI incompatible error (HDMI incompatible)	Display this error when the equipment (compatible with DVI such as TV, amplifier etc.) connected to the unit by HDMI is incompatible with HDCP (High-bandwidth Digital Content Protection).	No display	U71
U72	HDMI connection error (communication error)	Display this error when there are any communication problems with the unit and the equipments (TV, amplifier ect.) connected to the unit by HDMI. (or when there is a problem with the HDMI cable). The display disappears only when the connection is released. Neither the button operation nor the passage of the fixed time disappear the display.	No display	U72 "U72" display disappears when error has been solved by Power OFF/ON of connecting equipment or by inserting/removing of HDMI cable.
U73	HDMI connection error (authentication error)	When authentication error occurs while the equipments (TV, amplifier etc.) are connected by HDMI. (or when there is a problem with the HDMI cable) The display disappears only when the connection is released. Neither the button operation nor the passage of the fixed time disappear the display.	No display	U73 "U73" display disappears when error has been solved by Power OFF/ON of connecting equipment or by inserting/removing of HDMI cable.
U76	Connection error	This error is displayed when equipment such as TVs or amplifiers connected to the unit with the HDMI cable do not correspond to the copyright protection. (The BD/DVD video where the copyright is protected cannot be played.)	No display	U76
U77	Illegal disc error	This error is displayed when it becomes impossible to reproduce because of copyright illegal information.	No display	U77
U88	Restoration is operation. (When the disc is in the disc tray)	This error is displayed when there is a disc in the disc tray or abnormality is confirmed during playback. It is shown that the restoration to return the main unit operation normally is operating. It becomes possible to use as soon as not the breakdown but the U88 display disappears.	No display	U88 Display for 30 seconds.
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization).	No display	No display

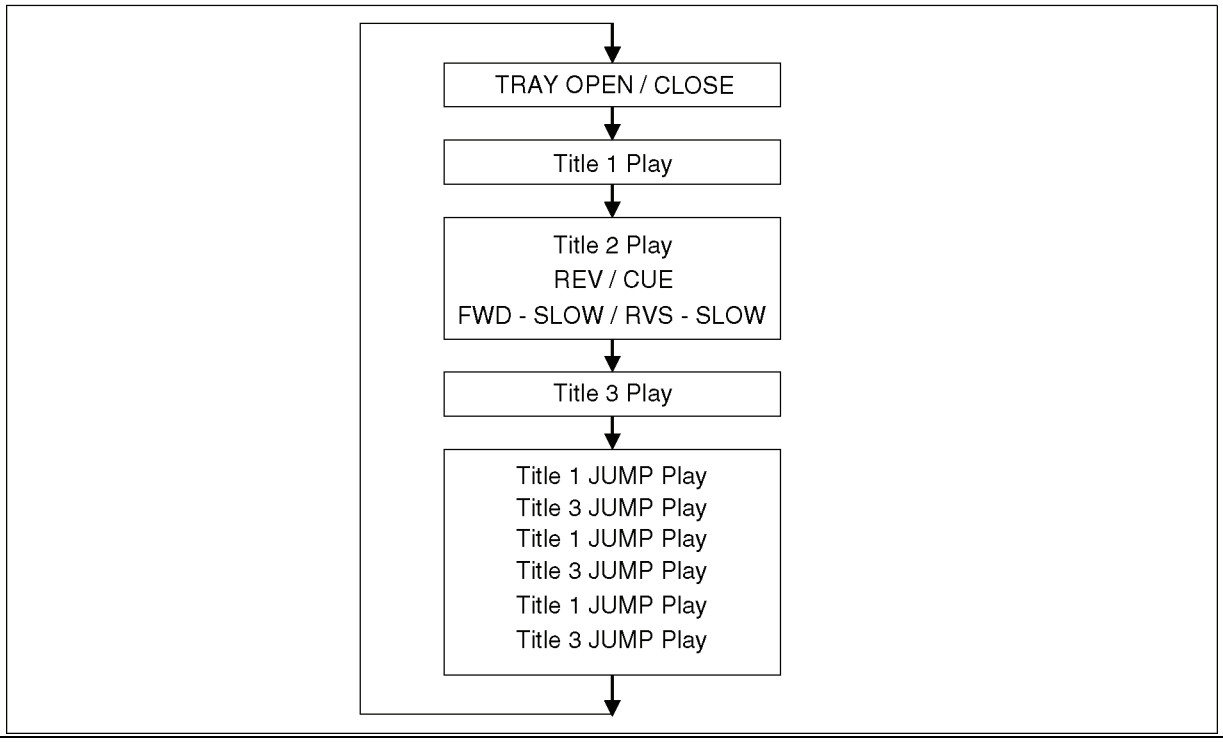
Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
F34	Initialization error	When initialization error is detected after starting up main microprocessor, the power is turned off automatically. The event is saved in memory.	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
F74	HDMI Device Key Communication error	This error is displayed when the information error is occurred at HDMI device key loading.	No display	F74
F75	HDMI Device Key Loading error	This error is displayed when the key of loaded is illegal at HDMI device key loading.	No display	F75
F99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	F99 "F99" is displayed utill the [POWER] key is pressed.
UNSUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	**"This disc is incompatible."**	UNSUPPORT It is displayed for 5 seconds. The character indication flows sideways.
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	**"Cannot read. Please check the disc."**	No READ
HARD ERR	Drive error	The drive detected a hard error.	**"BD Drive error."**	HARD ERR It is display for 5 seconds. The character indication flows sideways.
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / BD Drive.	No display	SELF CHECK The character indication flows sideways.
UNFORMAT	Unformatted disc error	This error is displayed when the unformatted DVD-RAM/DVD-RW or the DVD-RW recorded by another make of recorder is inserted.	No display	UNFORMAT This disc is not formatted properly. Format the disc in DISC MANAGEMENT?
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. [BYE] is displayed and power will be turned off.	No display	PLEASEWAIT The character indication flows sideways.
No PLAY	When there is a viewing restriction on a BD-Video or DVD-Video.	Rating password is set.	No display	No PLAY

7.1.2. Special Modes Setting

Item		FL display	Key operation
Mode name	Description		
Rating password	The audiovisual level setting password is initialized to Level 8.	① 00 RET ② 03 VL	① While the unit is on, press and hold [OK], [B] and [Y] on the remote control at the same time for more than 5 seconds. - "00 RET" is displayed on the unit's display. ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "03 VL" is displayed on the unit's display. ③ Press [OK] on the remote control or [OPEN/CLOSE] on the unit.
Service Mode	Setting every kind of modes for servicing. *Details are described in **7.1.3. Service Mode at a glance**.	① 70 RET ② 80 SRV ③ HELLO -- SERV	① While the unit is on, press and hold [5], [9] and [R] on the remote control at the same time for more than 5 seonds. -"70 RET" is displayed on the unit's display. ② Repeatedly press [▶]on the remote control or [POWER] on the unit until "80 SRV" is displayed on the unit's display. ③Press [OK] on the remote control or [OPEN/CLOSE] on the unit.
BD-ROM history cleaning	< Persistent Storage> of BD-ROM standard is cleaned.	① 50 RET ② 51 NOP ③ 52 BRE ④ FINISH	① While the unit is on, press and hold [6], [7] and [Y] on the remote control at the same time for more than 5 seconds. -"50 RET" is displayed on the unit's disply. ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "51 NOP" is displayed on the unit's display. ③ Press and hold [STOP] on the remote control until "52 BRE" is displayed on the unit's display. ④ Press [OK] on the remote control or [OPEN/CLOSE] on the unit.
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. While Demonstration Lock is being set, this Forced disc eject function is not accepted.	① 00 RET ② 06 FTO	① While the unit is on, press and hold [OK], [B] and [Y] on the remote control at the same time for more than 5 seconds. - "00 RET" is displayed on the unit's display. ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "06 FTO" is displayed on the unit's display. ③ Press [OK] on the remote control or [OPEN/CLOSE] on the unit.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly.	Display in P-off mode.	Press [POWER] key over than 10 seconds.

Item		FL display	Key operation
Mode name	Description		
Aging	Perform sequence of modes as * Aging Description shown below continually.	Display following the then mode.	①While the unit is on, press and hold [5], [9] and [R] on the remote control at the same time for more than 5 seonds. -"70 RET" is displayed on the unit's display ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "81 AIG" is displayed on the unit's display. ③ Press [OK] on the remote control or [OPEN/CLOSE] on the unit for at least 3 seconds.

Aging Contents (Example):



Item		FL display	Key operation
Mode name	Description		
Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by Main unit initialization of service mode.	*When lock the tray. ① 00 RET ② 04 PRG ③ 10 OCL ④ LOC "LOC" is displayed for 3 seconds.	① While the unit is on, press and hold [OK], [B] and [Y] on the remote control at the same time for more than 5 seonds. -"00 RET" is displayed on the unit's display. ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "04 PRG" is displayed on the unit's display. ③ Press and hold [STOP] on the remote control until "10 OCL" is displayed on the unit's display. ④ Press [OK] on the remote control or [OPEN/CLOSE] on the unit.
		*When lock the tray. ① 00 RET ② 04 PRG ③ 10 OCL ④ UNLOC "UNLOC" is displayed for 3 seconds.	① While the unit is on, press and hold [OK], [B] and [Y] on the remote control at the same time for more than 5 seonds. -"00 RET" is displayed on the unit's display. ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "04 PRG" is displayed on the unit's display. ③ Press and hold [STOP] on the remote control until "10 OCL" is displayed on the unit's display. ④ Press [OK] on the remote control or [OPEN/CLOSE] on the unit.
		*When press [OPEN/CLOSE] key while the tray being locked. LOC Display "LOC" on the screen.	Press [OPEN/CLOSE] key while the tray is being locked.
Progressive initialization	The progressive setting is initialized to Interlace.	① 00 RET ② 04 PRG	①While the unit is on, press and hold [OK], [B] and [Y] on the remote control at the same time for more than 5 seconds. -"00 RET" is displayed on the unit's disply. ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "04 PRG" is displayed on the unit's display. ③ Press and hold [OK] on the remote control or [OPEN/CLOSE] on the unit for at least 3 seconds.
Default setting	The data of Menu, Mode and EEPROM setting, etc. is set to the default condition in factory.	① 00 RET ② 08 FIN	① While the unit is on, press and hold [OK], [B] and [Y] on the remote control at the same time for more than 5 seconds. - "00 RET" is displayed on the unit's display. ② Repeatedly press [▶] on the remote control or [POWER] on the unit until "08 FIN" is displayed on the unit's display. ③ Press and hold [OK] on the remote control or [OPEN/CLOSE] on the unit for at least 3 seconds.

7.1.3. Service Modes at a glance

Information necessary for service can be displayed.

Service mode setting:

1. Turn the power on.
2. Press the [5] [9] and [R] button simultaneously for five seconds, then [70 RET] is displayed on FL.
3. Press the [▶] button to select until [80 SRV] is displayed on FL.
4. Press the [OK] button.
5. It is displayed on FL as [HELLO-->SERV]: It is shown to have entered the service mode.
6. The command is transmitted by attached remote control.

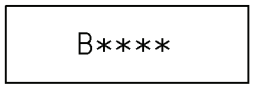
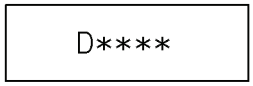
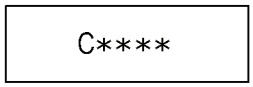
Method of making clear service mode: Press the power button (power off).

The display of information to each command is as follows.

NOTE:

Do not use it excluding the designated command.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Release Items	Item of Service Mode executing is cancelled.	SERV_	Press [0] [0] or [Return] in service mode.
Error Code Display	Last Error Code of U/F held by Timer is displayed on FL. *Details are described in **7.1.1. Self-Diagnosis Functions.**	◎○○ *◎shows U/F. ○○shows number. If any error history does not exist, [F00] is displayed.	Press [0] [1] in service mode
ROM Version Display	The display contents are switched over every 5 seconds. 1. Region code 2. Main firm version 3. Boot View version 4. Timer firm version 5. Drive firm version	1. NO_$% $: Region of DVD (Example: 1,2.....) %: Region of BD (Example: A,B.....) 2. **** 3. ***** 4. *** 5. ****	Press [0] [2] in service mode
Display Engineering Adjusted Value	Displays the Engineering Adjusted Value.	******	Press [0] [9] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Laser Used Time Indication	Check laser used time (hours) of drive.	Laser used time : BD Playback  Laser used time : DVD Playback  Laser used time : CD Playing  (****) is the used time display in hour. Laser used time of BD/DVD/ CD in Playback mode is counted.	Press [4] [1] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
BD Drive last error	BD Drive error code display.	1. Error Number is displayed for 5 seconds. NO ** 2. Time when the error has occurred is display for 5 seconds. YYMMDD YY: Year MM: Month DD: Date 3. Last drive error (1/2) is displayed for 5 seconds. ****** 00 : Bad disc 03 : Bad disc 04 : Bad disc or drive malfunction 4. Last drive error (2/2) is displayed for five seconds. ****** 5. Error occurring disc type is displayed for 5 seconds. DVD ROM DVD CD CD DVD-RAM (2.6GB) RAM26 DVD-RAM (4.7GB) RAM47 DVD-R DVDR DVD-RW DVDRW CD-R CDR	Press [4] [2] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
		CD-RW CDRW DVD+R DVDPR DVD+RW DVDPRW BD-ROM BDROM BD-RE BDRE BD-R BDR BD-ROM(Multiple Layer) BDXROM BD-RE(Multiple Layer) BDXRE BD-R(Multiple Layer) BDXR Others MEDIA* * is displayed the respoced value from RTSC. 6. Disc maker ID is displayed for 5 seconds. ******	In case that the maker cannot be identified, display is blackout.

<table>
<tr><th colspan="2">Item</th><th rowspan="2">FL display</th><th>Key operation</th></tr>
<tr><th>Mode name</th><th>Description</th><th>(Remote controller key)</th></tr>
<tr><td></td><td></td><td>7. Factor of drive error (hexadeci-mal) occurring is left displayed.

＊＊＋＋＆＆

＊＊: Error occurring operation code (This is not used)

＋＋: Error occurring disc type
<table><tr><td>00</td><td>DVD-ROM</td></tr><tr><td>01</td><td>CD</td></tr><tr><td>02</td><td>2.6GB DVD-RAM</td></tr><tr><td>03</td><td>4.7GB DVD-RAM</td></tr><tr><td>04</td><td>DVD-R</td></tr><tr><td>After 05</td><td>Others</td></tr></table>
＆＆: Error occurring disc situation
<table><tr><th rowspan="2">Display</th><th colspan="4">Detail</th></tr><tr><th>Disc distinction</th><th>With or without Cartridge</th><th>Disc cart-ridge state</th><th>Size</th></tr><tr><td>00</td><td>OK</td><td>With</td><td>Not opened</td><td>12cm</td></tr><tr><td>10</td><td>OK</td><td>With</td><td>Not opened</td><td>8cm</td></tr><tr><td>20</td><td>OK</td><td>With</td><td>Opened</td><td>12cm</td></tr><tr><td>30</td><td>OK</td><td>With</td><td>Opened</td><td>8cm</td></tr><tr><td>40</td><td>OK</td><td>Without</td><td>Not opened</td><td>12cm</td></tr><tr><td>50</td><td>OK</td><td>Without</td><td>Not opened</td><td>8cm</td></tr><tr><td>60</td><td>OK</td><td>Without</td><td>Opened</td><td>12cm</td></tr><tr><td>70</td><td>OK</td><td>Without</td><td>Opened</td><td>8cm</td></tr><tr><td>80</td><td>NG</td><td>With</td><td>Not opened</td><td>12cm</td></tr><tr><td>90</td><td>NG</td><td>With</td><td>Not opened</td><td>8cm</td></tr><tr><td>A0</td><td>NG</td><td>With</td><td>Opened</td><td>12cm</td></tr><tr><td>B0</td><td>NG</td><td>With</td><td>Opened</td><td>8cm</td></tr><tr><td>C0</td><td>NG</td><td>Without</td><td>Not opened</td><td>12cm</td></tr><tr><td>D0</td><td>NG</td><td>Without</td><td>Not opened</td><td>8cm</td></tr><tr><td>E0</td><td>NG</td><td>Without</td><td>Opened</td><td>12cm</td></tr><tr><td>F0</td><td>NG</td><td>Without</td><td>Opened</td><td>8cm</td></tr></table>
8. When the last error doesn't exist .

NODAT</td><td></td></tr>
<tr><td>PD Balance</td><td>Measuring the PD balance.</td><td>A＊＊＊＊

Formalize FE (0~99999)

b＊＊＊＊

FE symmetry (0~99999)

C＊

Number of reflection surface (0~2)

ERROR

Measurements failure</td><td>1.Insert the Panasonic BD-VIDEO SL Disc(Ver 1.0/Ver 2.0) into the tray.
(Incompatible with other media)
2.Press [4] [8].</td></tr>
<tr><td>CEC (H) Output</td><td>The CEC terminal high output of HDMI.</td><td>CEC HI</td><td>Press [5] [5] in service mode.</td></tr>
</table>

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
CEC (L) Output	The CEC terminal low output of HDMI.	CEC LO	Press [5] [6] in service mode.
Manufacturing Date	Read out the manufacturing date of the unit.	YYMMDD YY: Year MM: Month DD: Date	Press [6] [1] in service mode.
Save the error history to USB storage device	The error and user operation history of the remote control are saved to the USB storage device.	The USB storage device cannot be recognized: NOUSB During saving: USB SV Save end: FIN	Press [6] [9] in service mode.
Update Engineering Adjusted value	NANDFlash is updated with the 6-figure input value of a remote control.	DQR ****** Input the 6 digits adjust value, that is in the Drive or OPU replacement part, with the remote control's number keys in the service mode. 888888 → Number of 6 digits When register successful: DQR OK When register fail: DQR NG	Press [7] [2] in service mode.
Tray OPEN/CLOSE Test	The BD Drive tray is opened and closed repeatedly.	****** * is number of open/close cycle times.	Press [9] [1] in service mode * When releasing this mode, pull out AC cord.
Delete the Laser Used Time	Laser used time information stored in the memory of the unit is deleted.	CLR	Press [9] [5] in service mode.
Delete the Last Drive Error	Laser Drive Error information stored on the BD Drive is deleted.	CLR	Press [9] [6] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Delete the Error History	Error History information stored on the unit is deleted.	CLR	Press [9] [7] in service mode.
Initialization of Error code	Last Error Code information stored by timer is deleted. (Write in F00)	CLR	Press [9] [8] in service mode.
Initialization of the Service Mode	Last Drive Error, Error History and Error code information stored on the unit are initialized to factory setting.	CLR	Press [9] [9] in service mode.
Release Service Mode	Release Service Mode and turns the Power Off.	Display in STOP (SS) mode. ******	Press [POWER] button on the front panel or Remote controller in service mode.

8 Service Fixture & Tools

Part Number	Description	Pcs	Compatibility
RFKZ0216	Extension Cable (Digital P.C.B. - SD_USB P.C.B./ 23 Pin)	1	Same as BDT220 Series
RFKZ0327	Extension Cable (Digital P.C.B. - Power P.C.B./ 15 Pin)	1	Same as BDT220 Series
RFKZ03D01KS	Lead Free Solder (0.3mm/100g Reel)		Same as BDT220 Series
RFKZ06D01KS	Lead Free Solder (0.6mm/100g Reel)		Same as BDT220 Series
RFKZ10D01KS	Lead Free Solder (1.0mm/100g Reel))		Same as BDT220 Series
RFKZ0316	Solder Remover (Lead free low temperature Solder/50g)		Same as BDT220 Series
RFKZ0328	Flux		Same as BDT220 Series

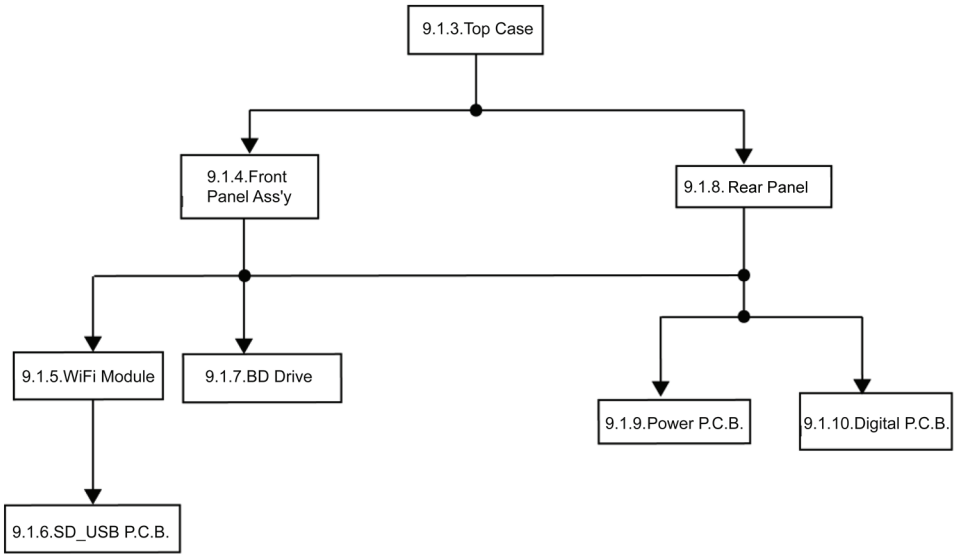
*** The above parts are supplied by AVC-CSC-SPC.**

9 Disassembly and Assembly Instructions

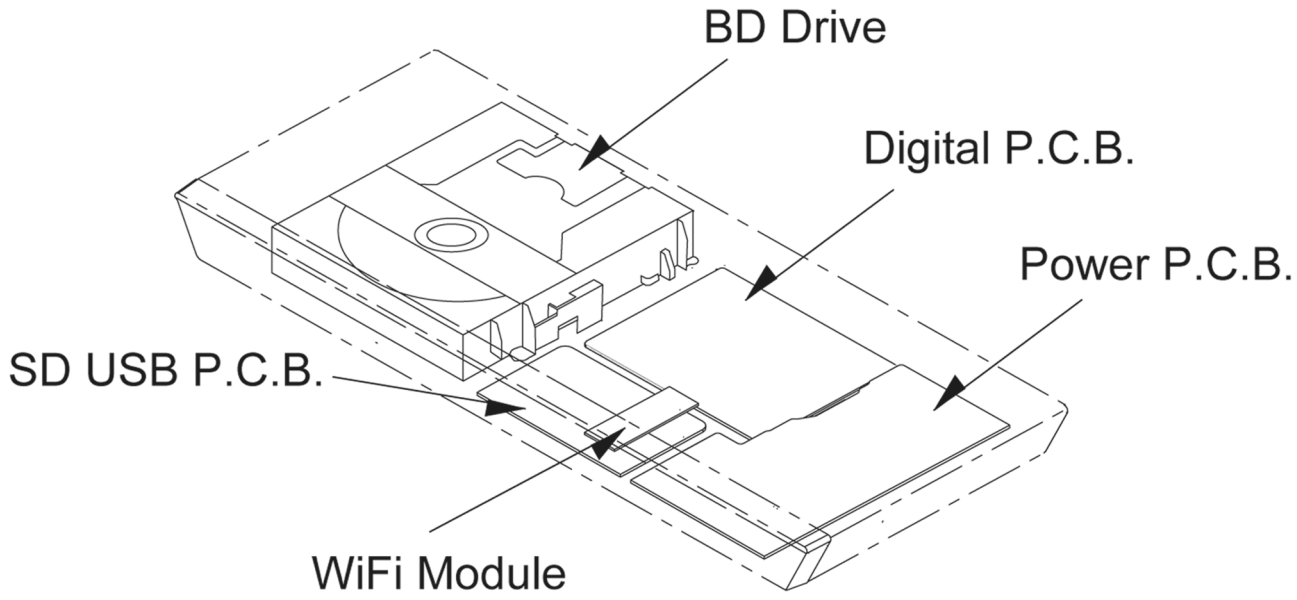
9.1. Unit

9.1.1. Disassembly Flow Chart

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

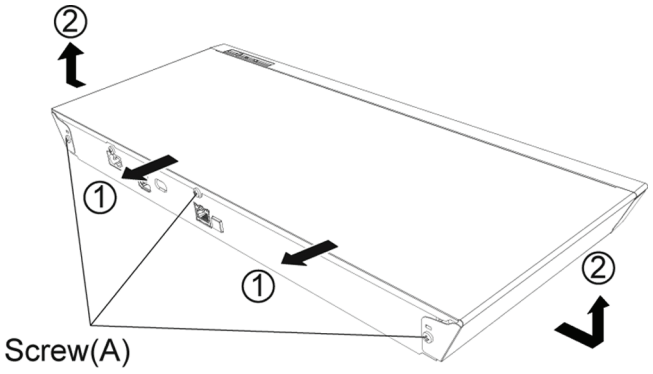


9.1.2. P.C.B. Positions



9.1.3. Top Case

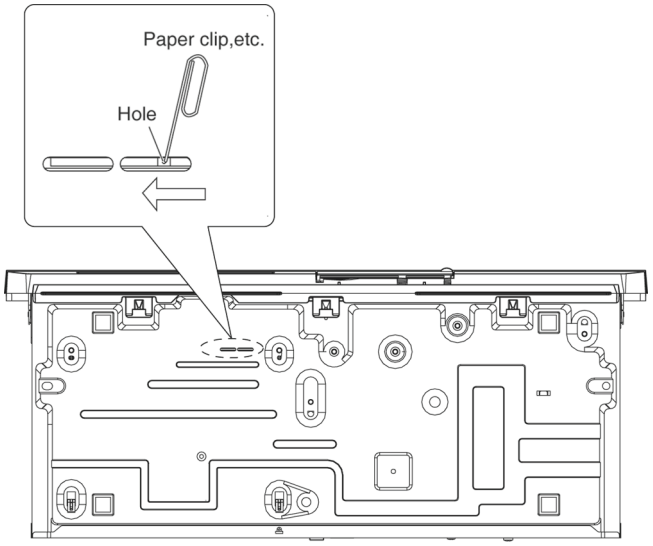
1. Remove the 3 Screws (A) .
2. Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.



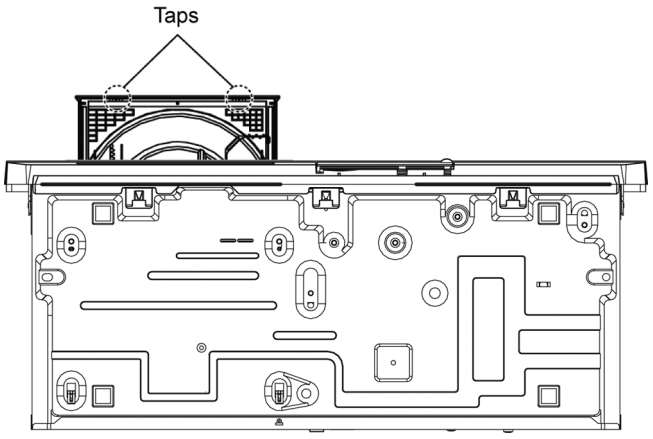
9.1.4. Front Panel Ass'y

9.1.4.1. Tray Top

1. Put deck so that bottom can be seen.
2. Insert the Paper clip, etc. into the hole on the bottom of BD Drive and slide the Paper clips, etc. in the direction of the arrow to eject tray slightly.

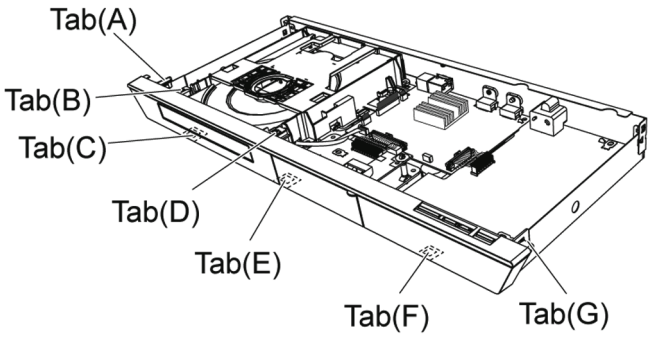


3. Remove the tray top from the tray section.



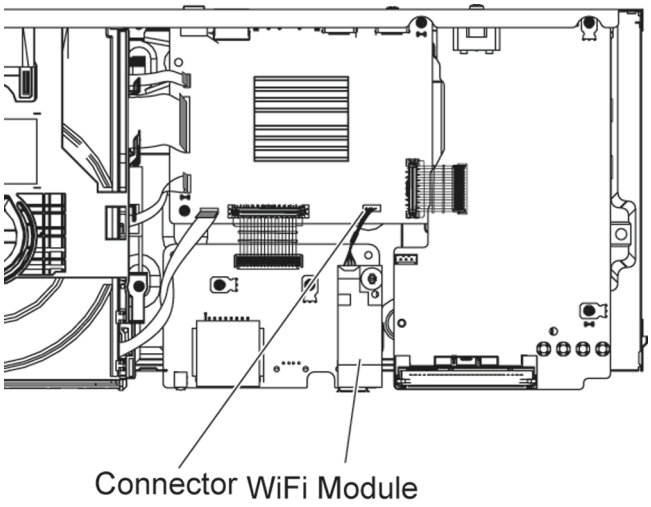
9.1.4.2. Front Panel

1. Unlock 7 tabs (A)-(G) turn. Pull with the Front Panel in the direction of your side.



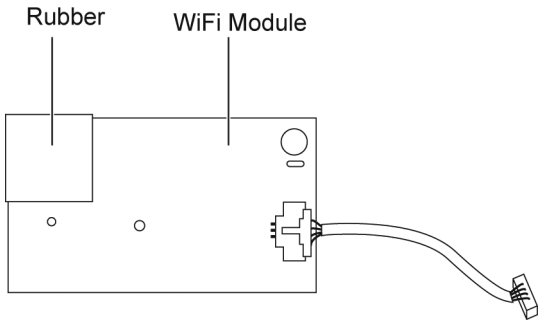
9.1.5. WiFi Module

1. Remove the connector.
2. Remove the WiFi Module from the Spacer.



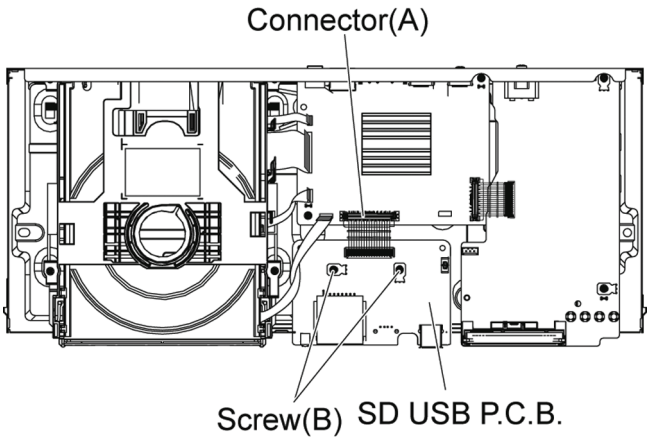
Note:

when replacing the front panel ass'y, the rubber pasted on the WIFI Module needs to be disposed.
If there is no rubber, please ignore this information.



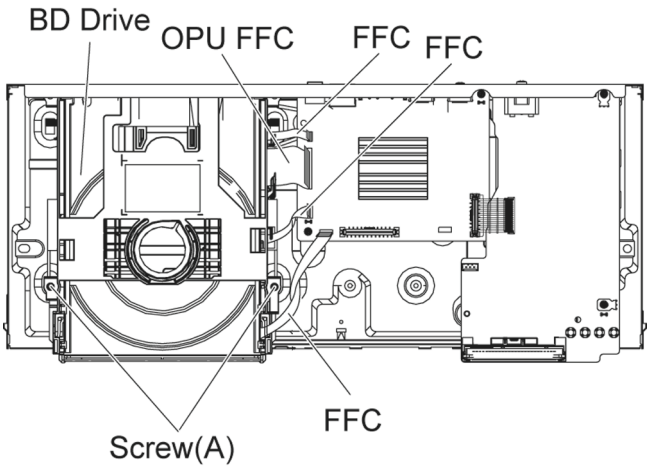
9.1.6. SD_USB P.C.B.

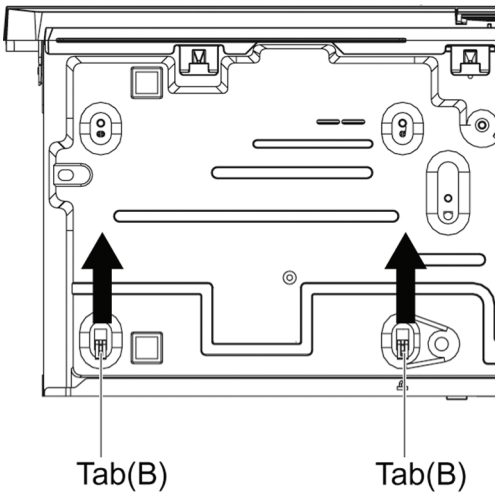
1. Remove the connector (A).
2. Remove the 2 Screws (B).



9.1.7. BD Drive

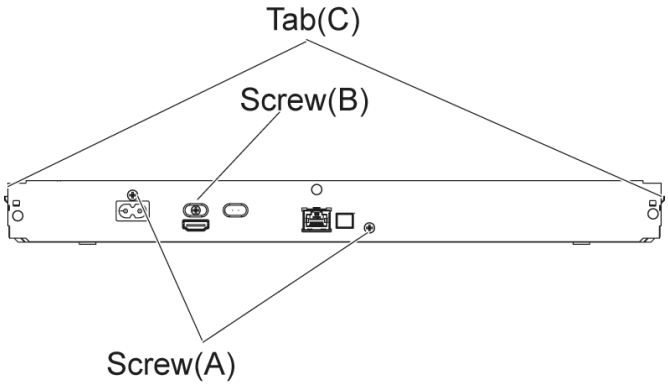
1. Remove the OPU FFC, and isolate it with an ESD prevention bag (RPFC0114) to prevent the laser diode from the ESD damage.
2. Remove the 3 FFCs.
3. Remove the 2 Screws (A), remove 2 tabs (B) of BD Drive in the direction of the arrow, to remove BD Drive.





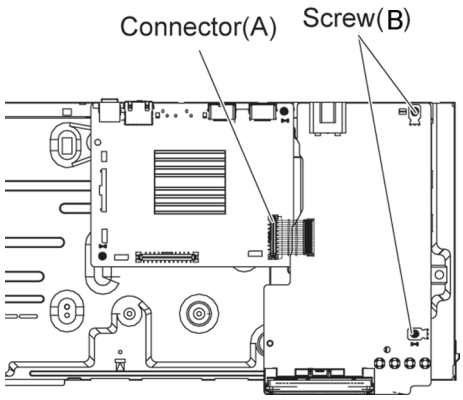
9.1.8. Rear Panel

1. Remove the 2 Screws (A) and Screw (B).
2. Unlock 2 locking Tabs (C) to remove the Rear Panel.



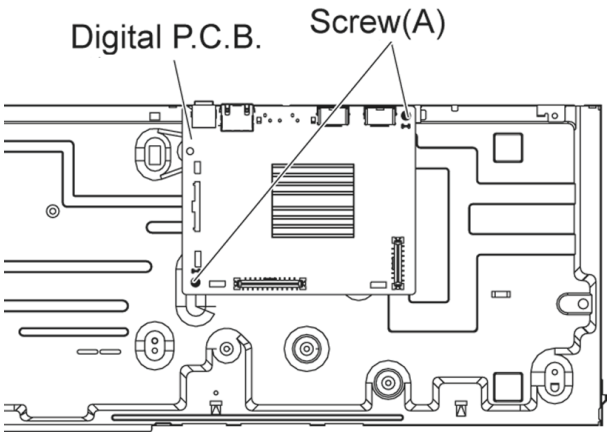
9.1.9. Power P.C.B.

1. Remove the connector (A).
2. Remove the 2 Screws (B).



9.1.10. Digital P.C.B.

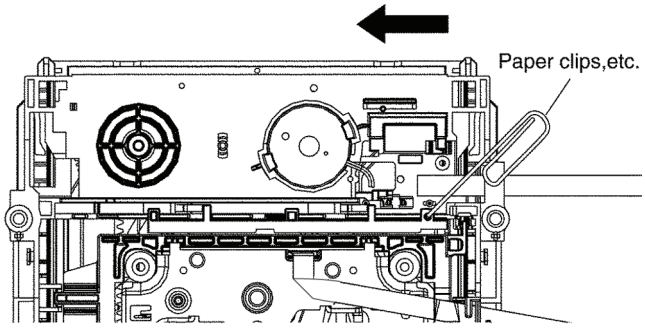
1. Remove the 2 Screws (A) to remove Digital P.C.B..



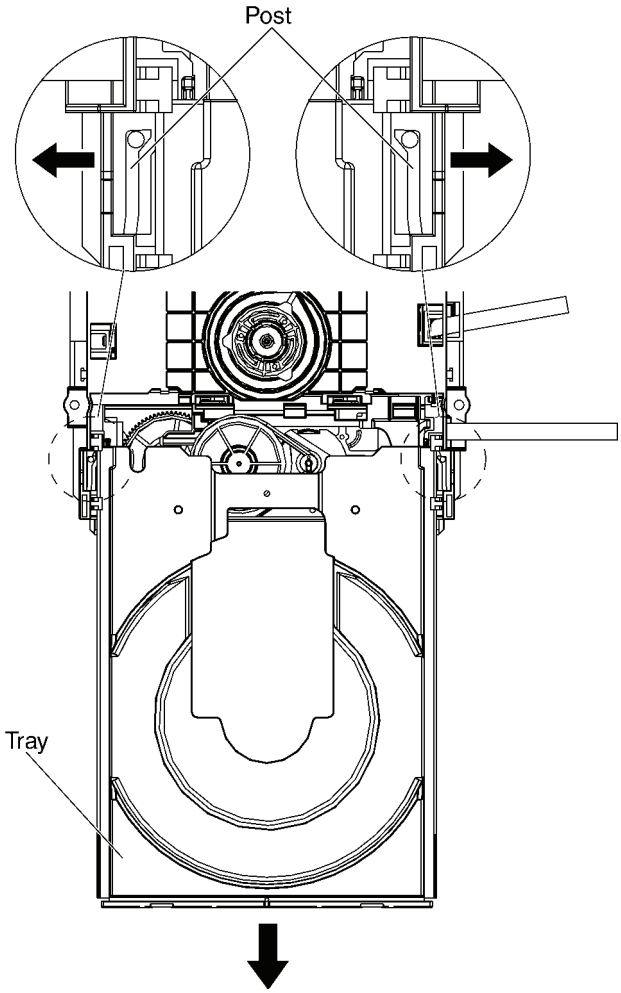
9.2. BD Drive

9.2.1. Tray

1. Insert the Paper clips, etc. into the hole of the bottom side, and slide it to the direction of arrow until it can be.

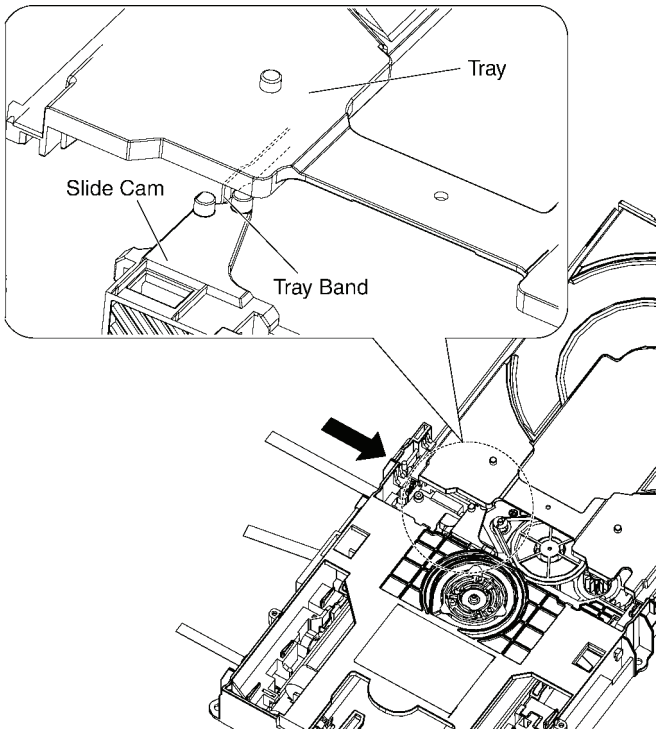


2. Pull the Tray to the direction of arrow until it can be.
3. Push the two posts in front of the mecha chassis to both sides of the drive to unlock the tray, and push it outward simultaneously.



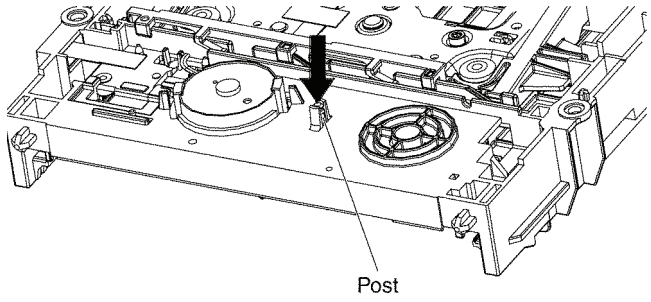
Notes when attaching the tray:

1. Push Slide cam to the left side slightly, and make sure the tray band is between the two posts of Slide cam when attaching the tray.

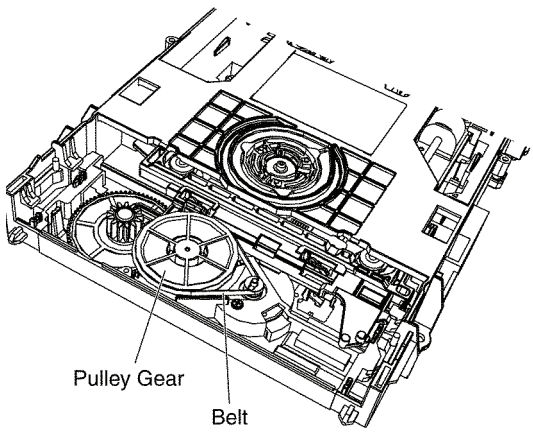


9.2.2. Pulley Gear, Belt

1. Perform the step " Tray ".
2. Push the Post to the direction of arrow by using the slotted screwdriver.

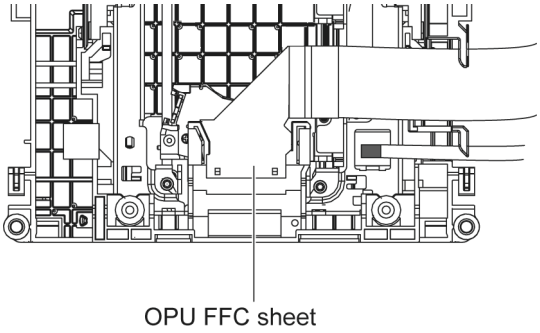


3. Remove the Pulley Gear and Belt.

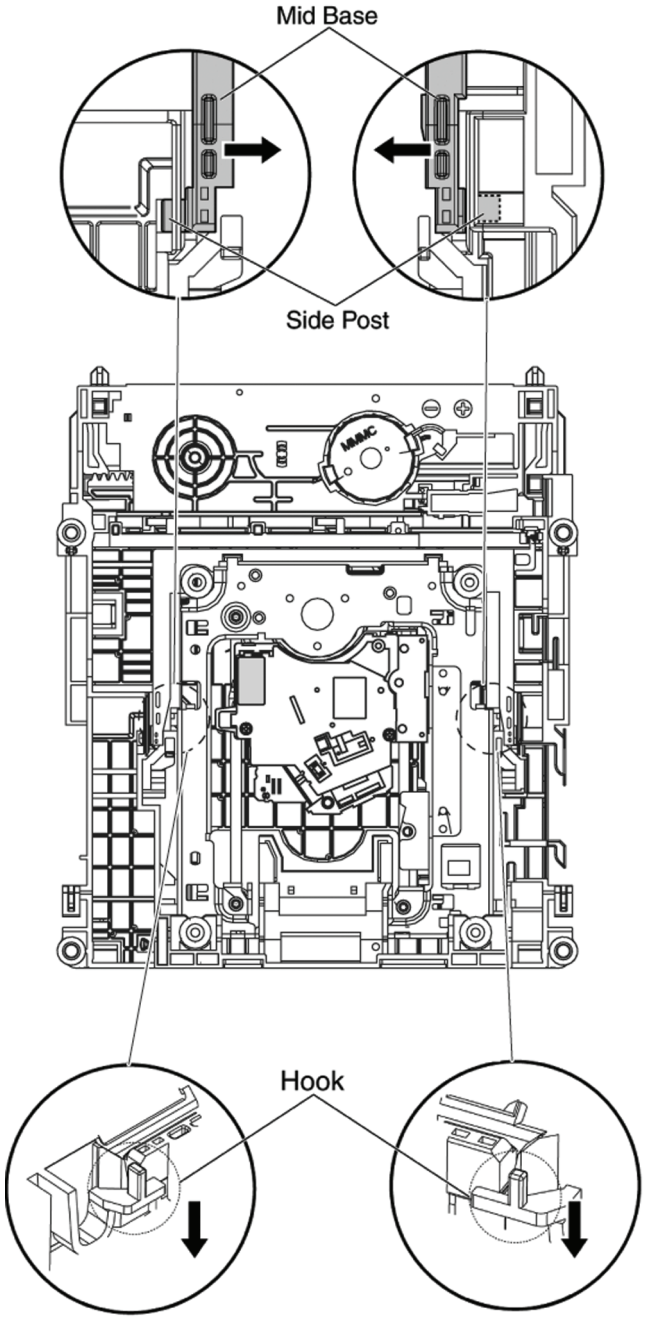


9.2.3. Slide Cam

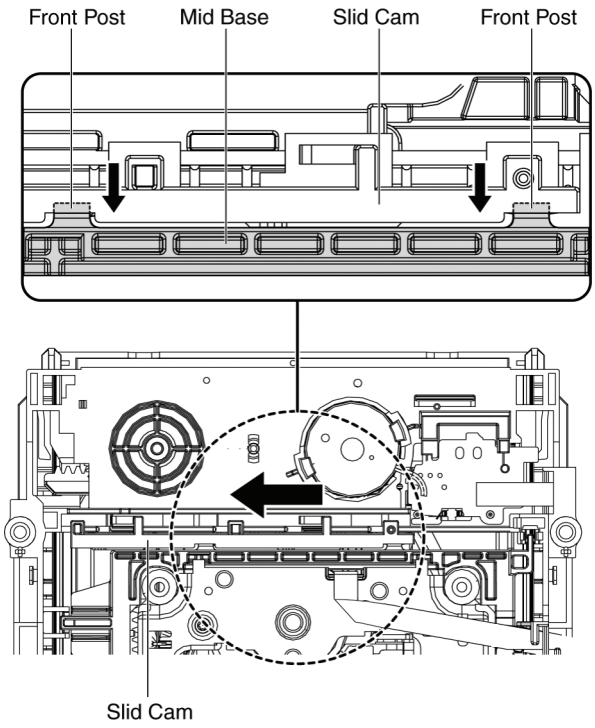
1. Perform the step “ Pulley Gear, Belt ”.
2. Remove the OPU FFC sheet from the mecha chassis.



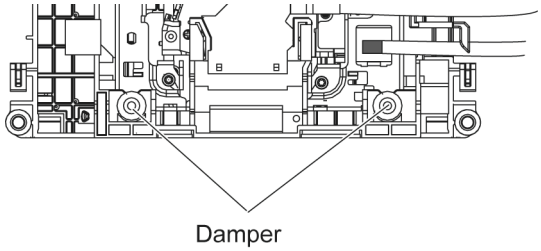
3. Pull the hooks at both sides to remove the side post on the mid base.



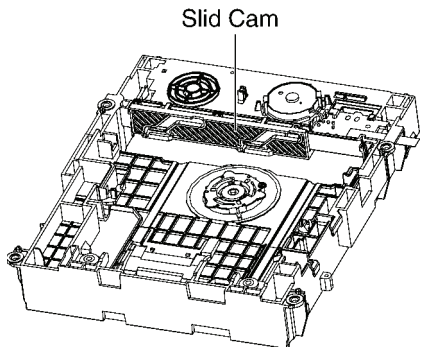
4. Slide the Slid cam in the direction as shown, and then take the front post out of the slide cam track.



5. Take the damper out of the mecha chassis and remove the Drive ass’ y.

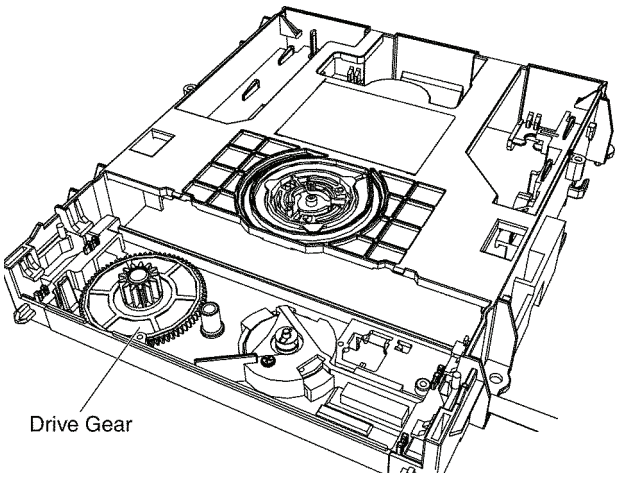


6. Remove the Slide Cam.

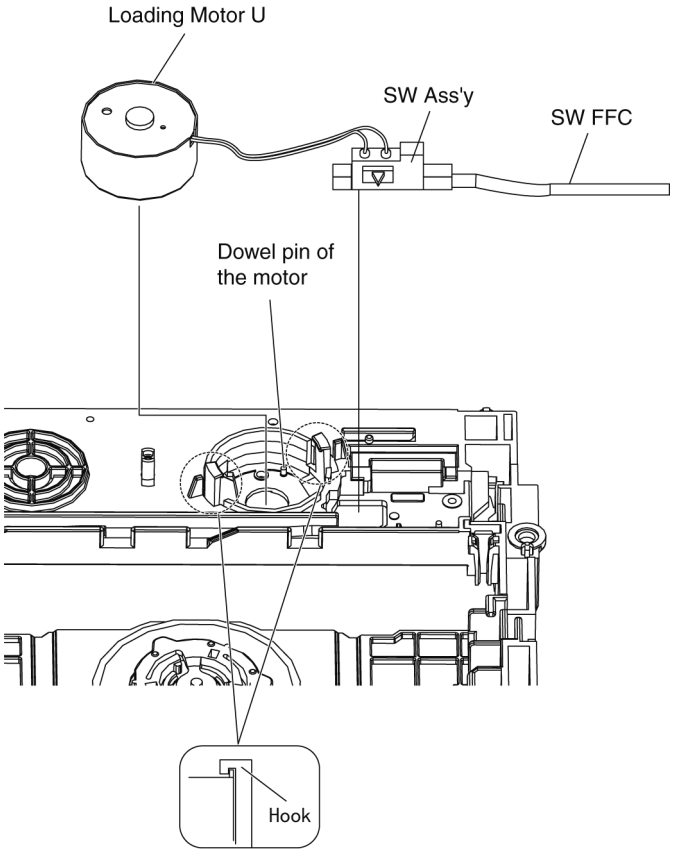


9.2.4. Drive Gear and Loading Motor

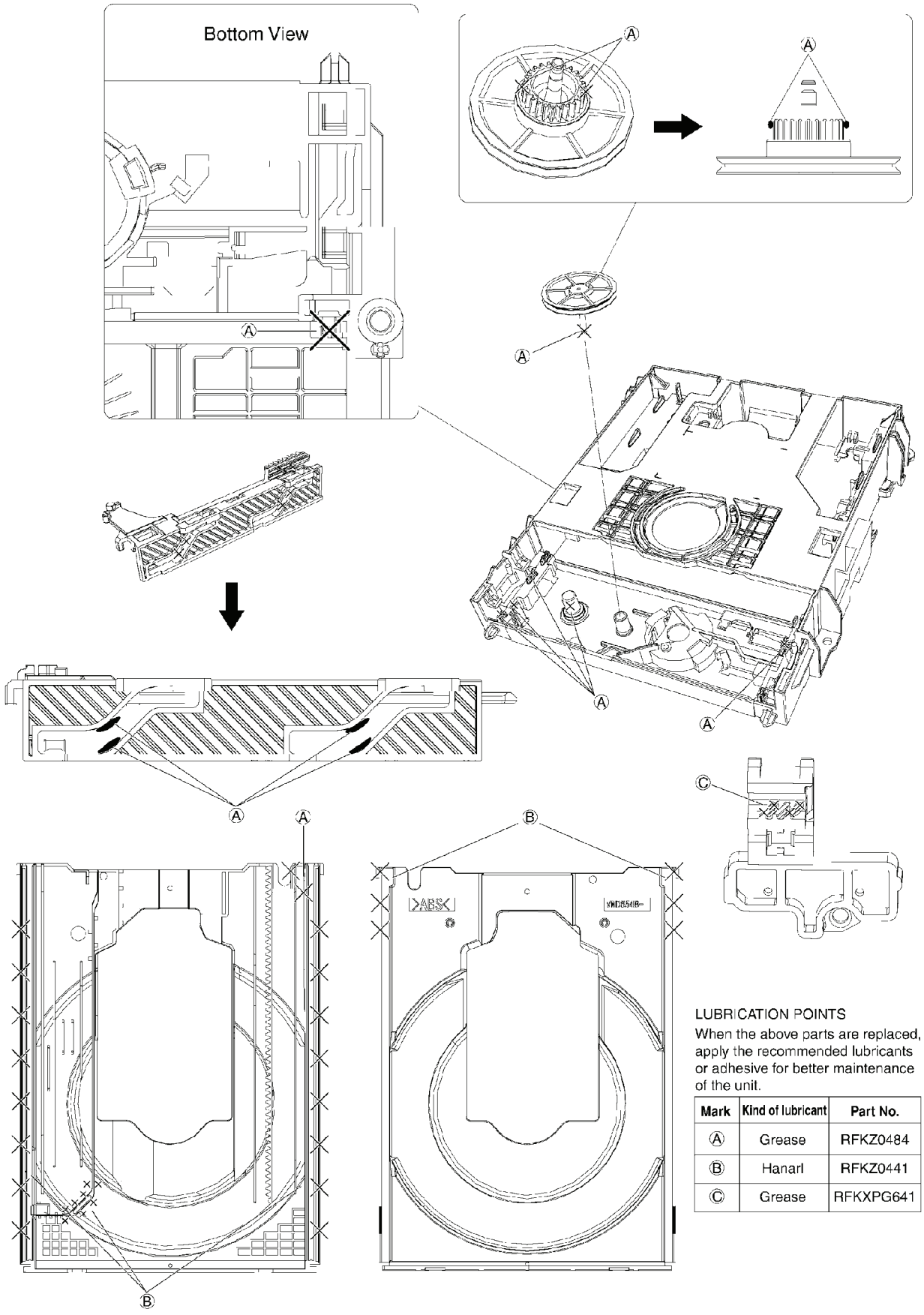
1. Perform the step “ Slide Cam ”.
2. Remove the Drive Gear.



3. Loosen the hooks, and remove the Loading Motor Unit and the SW Ass'y.



9.2.5. Grease



LUBRICATION POINTS

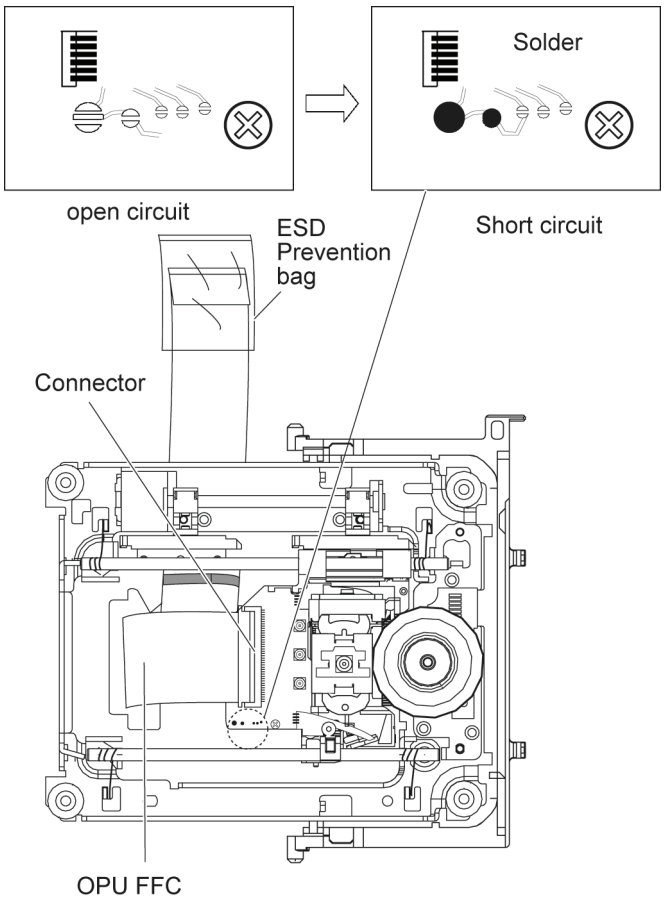
When the above parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of lubricant	Part No.
Ⓐ	Grease	RFKZ0484
Ⓑ	Hanarl	RFKZ0441
Ⓒ	Grease	RFKXPG641

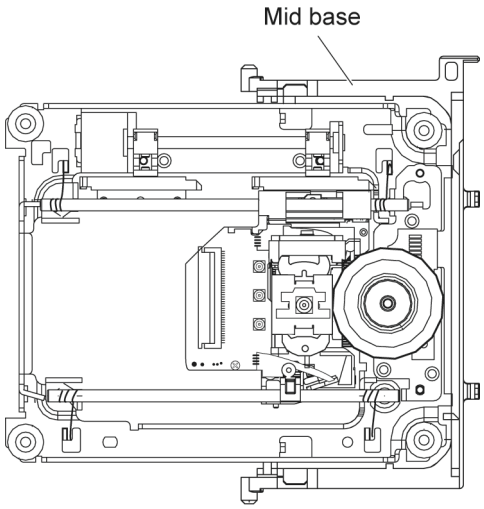
9.3. Disassembly from the traverse unit, assembly of the optical pick-up unit, and precautions on ESD-preventive

9.3.1. Disassemly

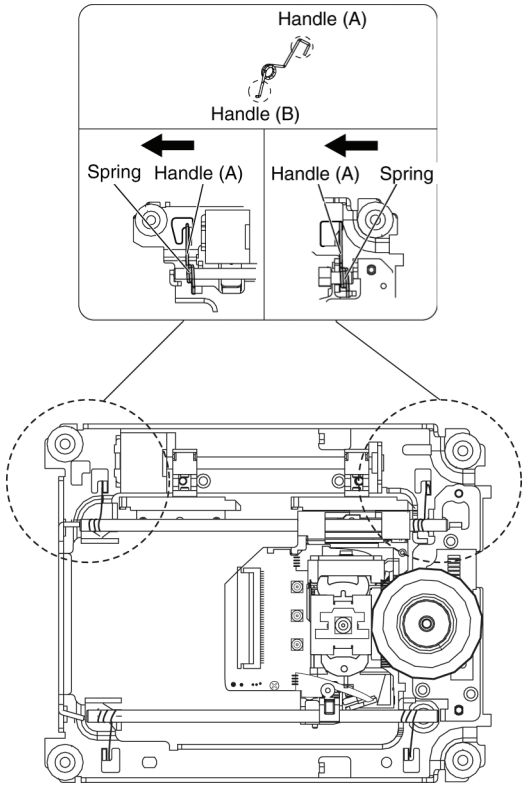
1. Before removing the optical pick-up unit, please apply an ESD prevention bag(RPFC0114) to the OPU FFC, and weld the short-circuit solder.
   a. Set the temperature of iron is 350°C.
   b. When using the iron head,do not apply a force more than 1N to the pad. Do not touch any other components around the welding spot.
   c. Welding should be applied less than 3 seconds.
2. Remove the connector, and take out the OPU FFC.



3. Remove the Mid base.

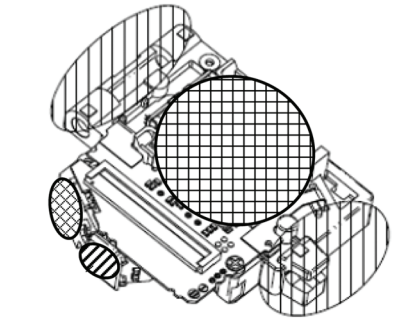


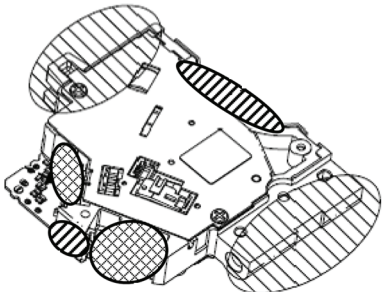
4. Press down the handle A of the two springs, and remove the shaft with OPU.



Note:

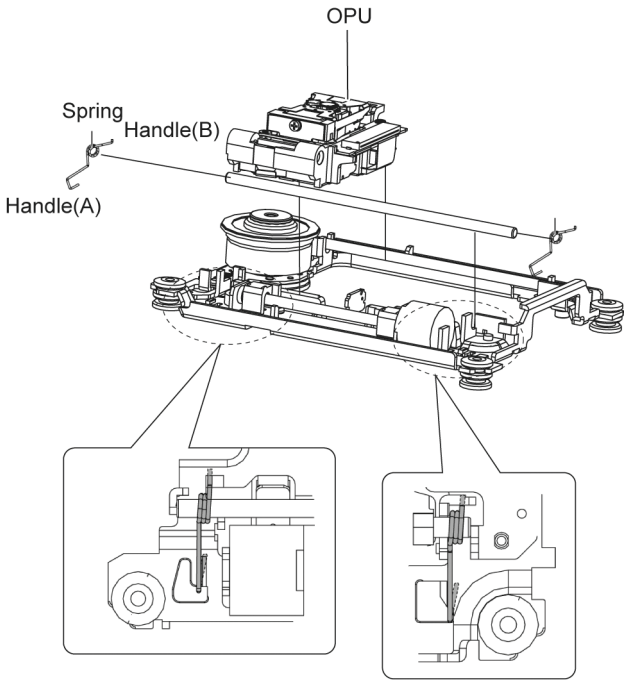
In this action, finger stab needs to be put on. Do not touch any parts other than the positions marked in the Figure .



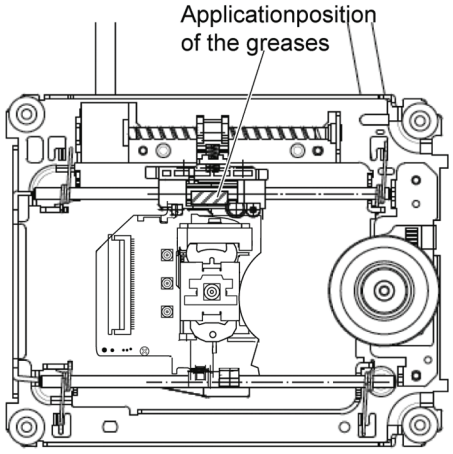


9.3.2. Assembly

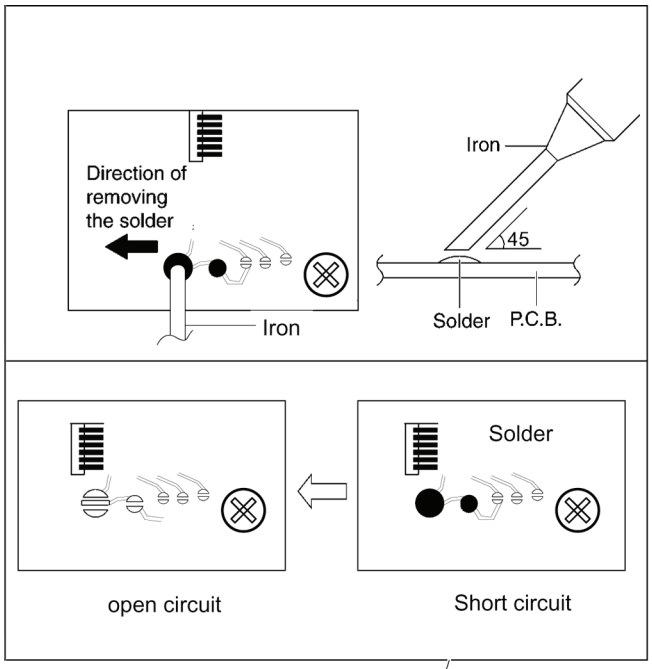
1. Insert the shaft into the shaft hole of the base, install the OPU to the auxiliary shaft, and then attach the nut piece unit onto the screw stem.
2. Assembly of spring.
   a. Insert the two springs to the ends of the shaft.
   b. Then insert the handle (B) of the spring into the spring holder(as shown in Figure).
   c. Press down the handle (A) of the spring (as shown in Figure) into the hole.

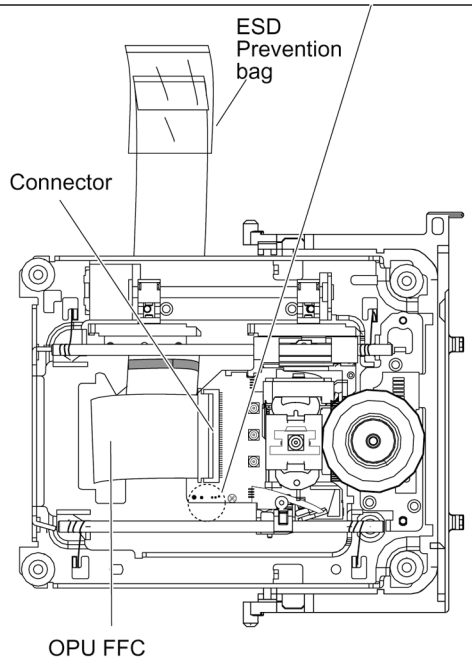


3. Apply the lubricants to the 1 point as shown in Figure.

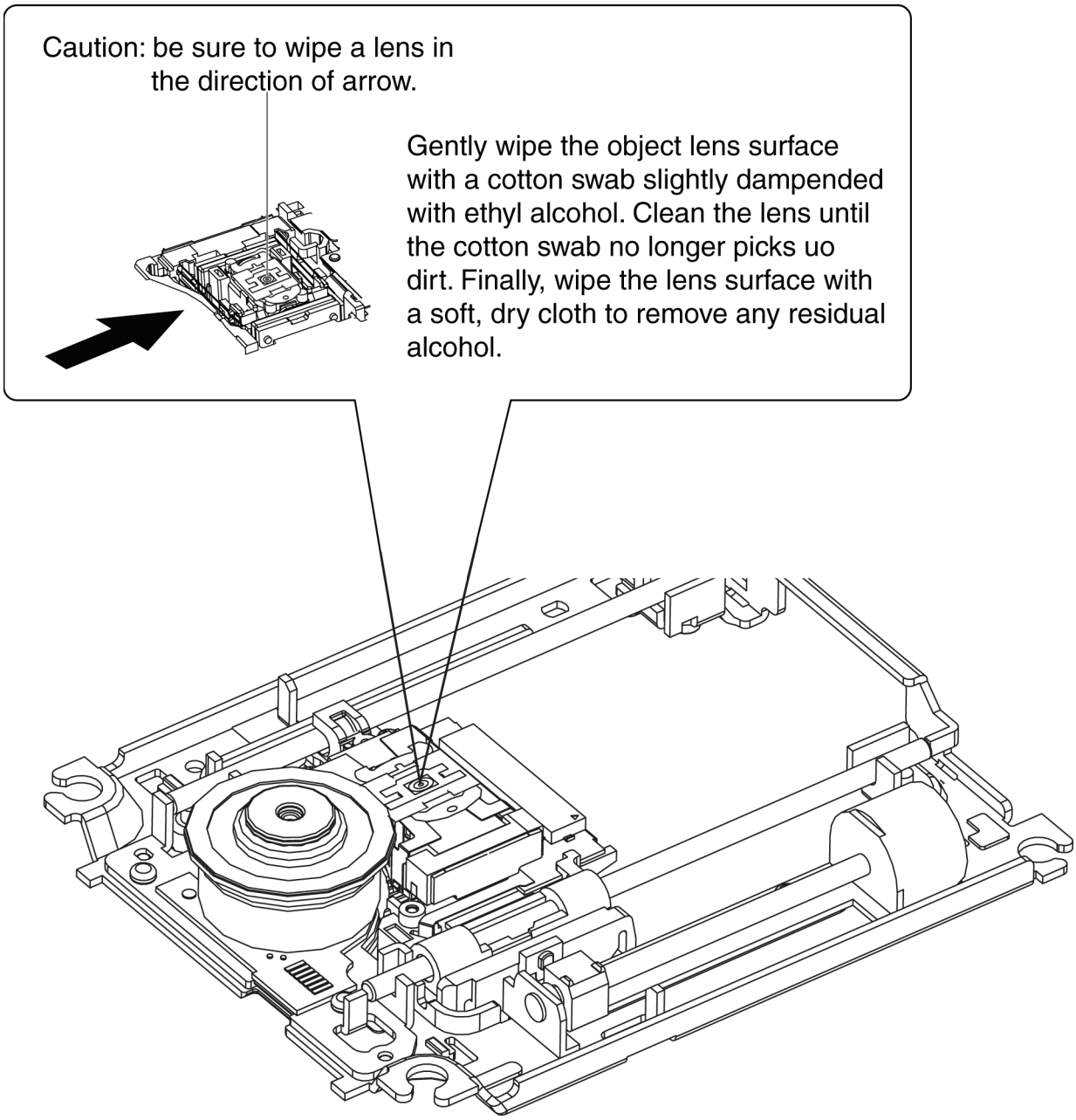


4. Insert FFC, and desolder the solder spot.
   a. Use the iron head with an angle as shown in Fig,remove the solder in the direction as shown.
   b. Set the temperature of iron below 350°C.
   c. When using the iron head,do not apply a force more than 1N to the pad. Do not touch any other components around the welding spot.
   d. Welding should be applied less than 3 seconds.



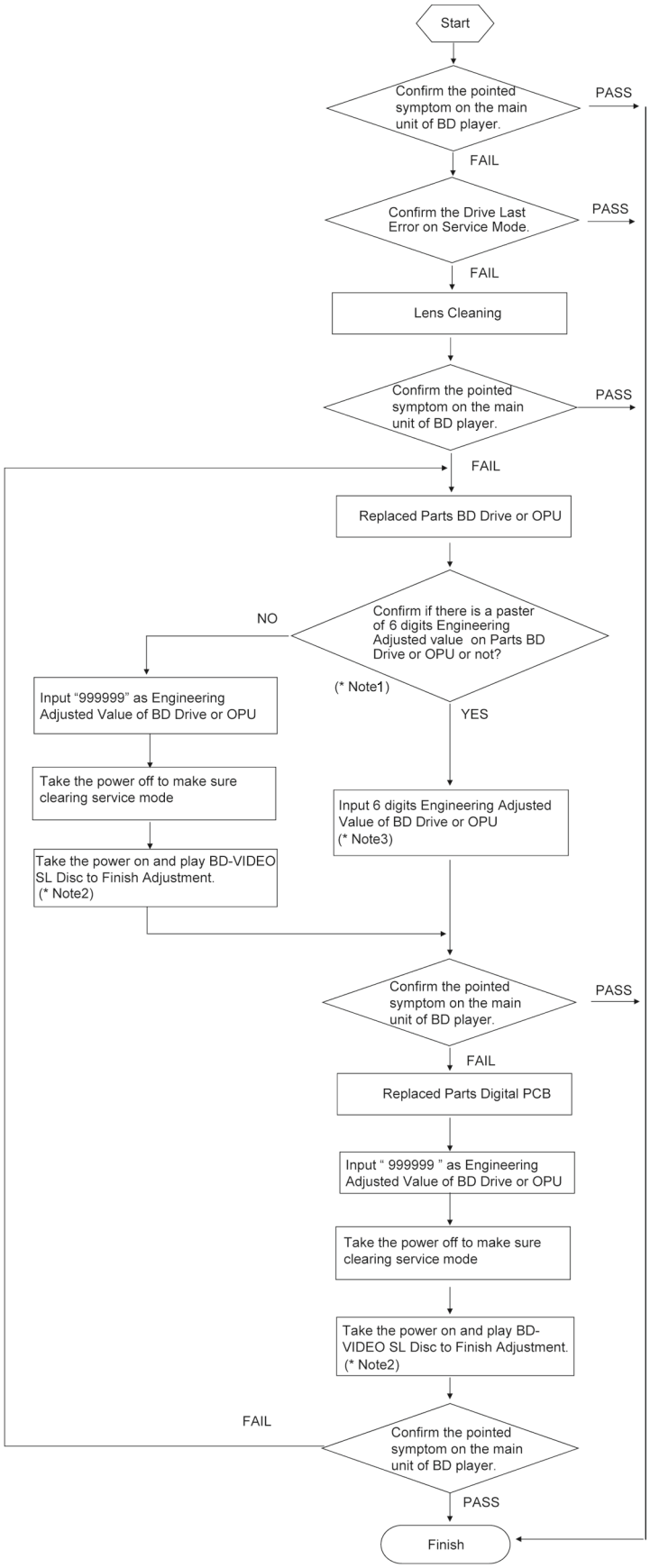


9.3.3. How to Clean the Lens of Optical Pick-UP



9.4. Adjustment of BD Drive

9.4.1. Repair Flowchart



Note 1:The position of paster are described in Chapter 9.4.2.2 item 2.
Note 2:The method of confirming BD-VIDEO SL Disc are described in Chapter 9.4.2.3.
Note 3:The detail of 6 digits Engineering Adjusted Value are described with service mode 72 in Chapter 7.1.3..

9.4.2. Adjustment

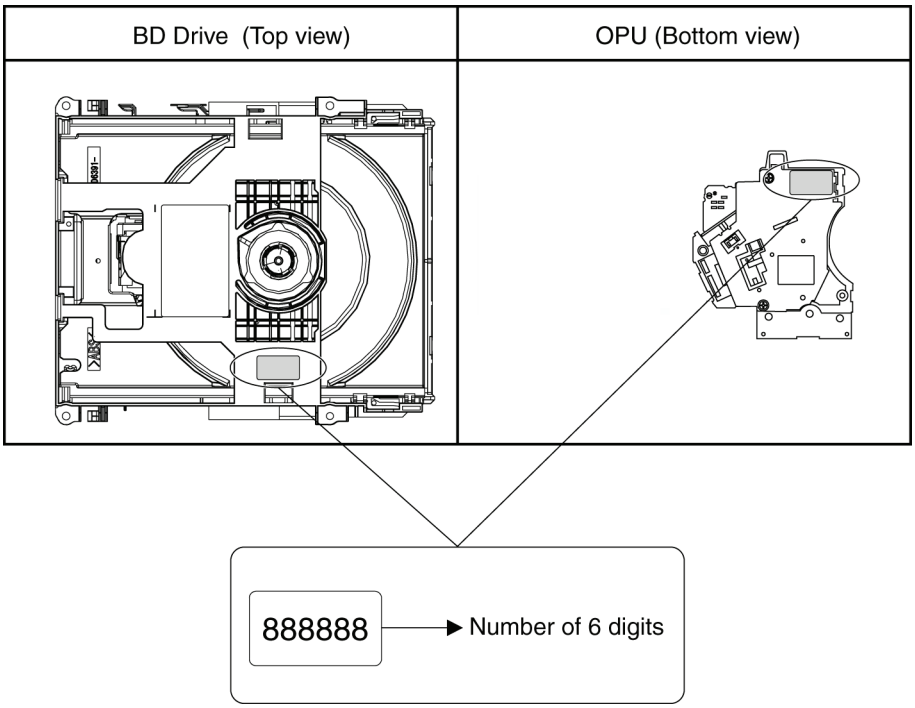
9.4.2.1. [Drive] Input Engineering Adjusted Value([7] [2])

1. Input [7] [2] with the remote control's numeral keys in the service mode.
   The TV display "DQR__"(__is blank)at this time.Engineering Adjusted Value display is in the input state.
2. Input Engineering Adjusted Value with remote control:
   The TV is displaying the input numeric from the left.(Use "*" to display the digits needed to enter)
   “******”The digit has not been entered.
   “1*****” The 1st digit has been entered.
   "12****" The 2nd digit has been entered.
   "123456" The 6th digit has been entered.
   (* The QRcode input operation cannot be cancelled, when the 6 digits are not input totally.)
   (* The input operation will be cancelled by entering "000000".)
3. Input the 6 digits totally, then the 6 digits are registration QRcode.
   The registration status will display on the TV.
   When register successful: "DQR_OK".
   When register fail: "DQR_NG".
4. Release command: Press the numeral keys [0] [0] to end the input mode.

9.4.2.2. The reading method of Engineering Adjusted Value

1. Input [0] [9] with the remote control's numeral keys in the service mode.
   The TV display 6 digits of Engineering Adjusted Value at this time. Please noted it on paper.
2. Reading Engineering Adjusted Value from the paster on the service part BD drive or OPU.

For Example of Engineering Adjusted Value:



9.4.2.3. The method of confirming BD-VIDEO SL Disc

BD-VIDEO SL Disc is the normal pressed disc product saled in market.The BD-R or BD-RE cannot be used as adjust disc.
By confirming "C1" displayed while in service mode [4] [8] then consider it can be used as adjust disc of Engineering Adjusted Value.

9.4.2.4. In the Case of Necessity the Adjustment

1. When the OPU is replaced.
2. When the Drive unit is replaced.
3. When the Digital PCB is replaced.

10 Measurements and Adjustments

10.1. Service Positions

NOTE:

For description of the disassembling procedure, see the section 9.

10.1.1. Checking and Repairing of Power P.C.B.

1.Top Case

- Remove the 3 Screws (A).
- Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.

2. Front Panel Ass'y

- Remove the Tray top.
- Unlock 7 tabs turn and Remove Front Panel.

3. Rear Panel

- Remove 3 Screws (one of the HDMI) to remove the Rear Panel.

4. Power P.C.B.

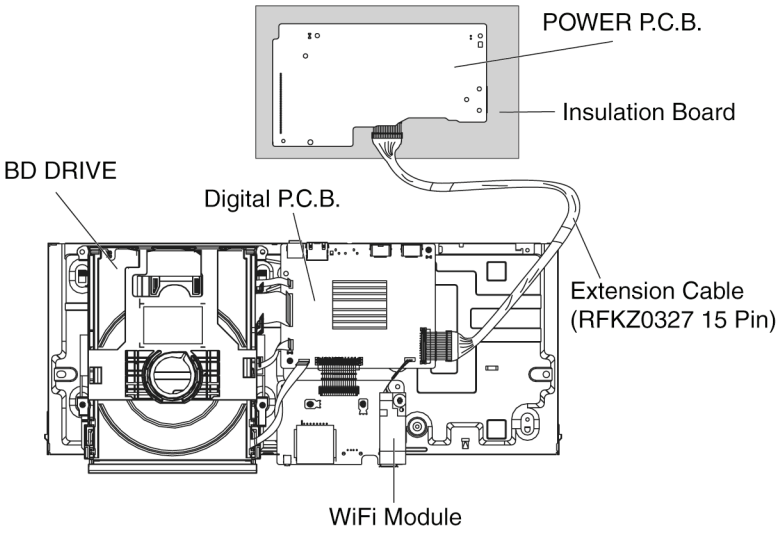
- Disconnect the connector (15Pin) between Power P.C.B. and Digital P.C.B..
- Remove 2 Screws to remove Power P.C.B..
- Put Power P.C.B. on the Insulation Board.

Connect Extension Cable shown below.

Between Power P.C.B. and Digital P.C.B.:(RFKZ0327) 15 Pin.

Caution :

1.Red wire should be connected to pin 1.



10.1.2. Checking and Repairing of BD Drive and Digital P.C.B.

1.Top Case

Remove the 3 Screws (A).

Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.

2. Front Panel Ass'y

Remove the Tray top.

Unlock 7 tabs turn and Remove Front Panel.

3. WiFi Module

Remove the connector.

Remove the WiFi Module from the Spacer.

4. Rear Panel

Remove 3 Screws (one of the HDMI) to remove the Rear Panel.

5. BD DRIVE and Digital P.C.B.

Disconnect the connector (23Pin) between SD_USB P.C.B. and Digital P.C.B..

Disconnect the connector (15Pin) between Power P.C.B. and Digital P.C.B..

Remove 4 Screws to remove BD DRIVE and Digital P.C.B. .

Put Digital P.C.B. on the Insulation Board.

Connecting the WiFi Module to the Digital P.C.B. with original cable.

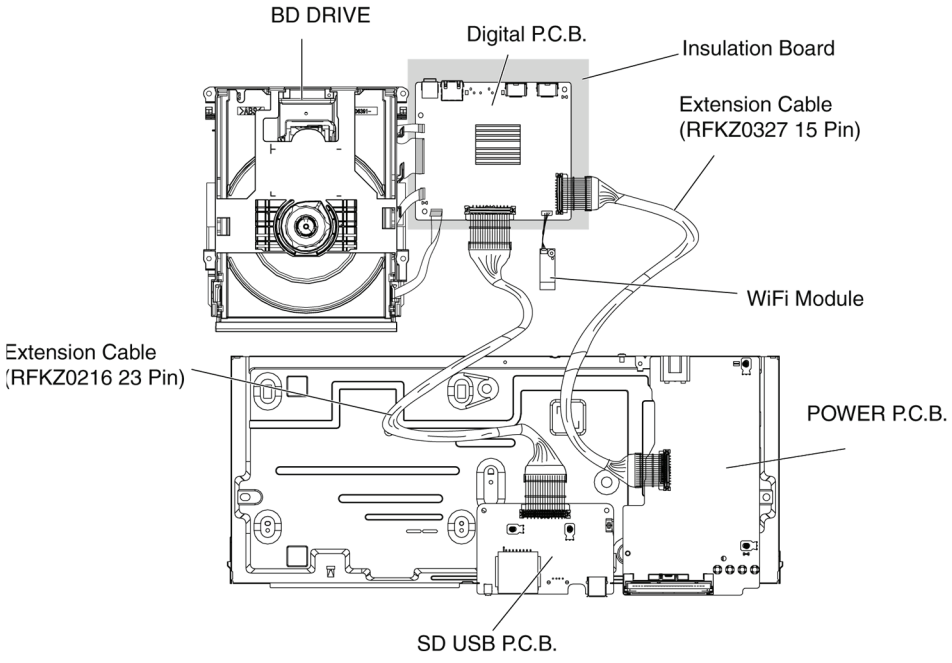
Connect Extension Cable shown below.

Between SD_USB P.C.B.and Digital P.C.B.:(RFKZ0216) 23 Pin.

Between Power P.C.B. and Digital P.C.B.:(RFKZ0327) 15 Pin.

Caution :

1.Red wire should be connected to pin 1.



10.2. Caution for Replacing Parts

10.2.1. Items that should be done after replacing parts

√: Necessary —: Unnecessary

Items that Should be done / Replacing Parts	Updating Firmware (Note 1)
Digital P.C.B.	√

Note 1:
About the details of updating firmware,please see the chapter 3.3. How to Update Firmware.

10.2.2. Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

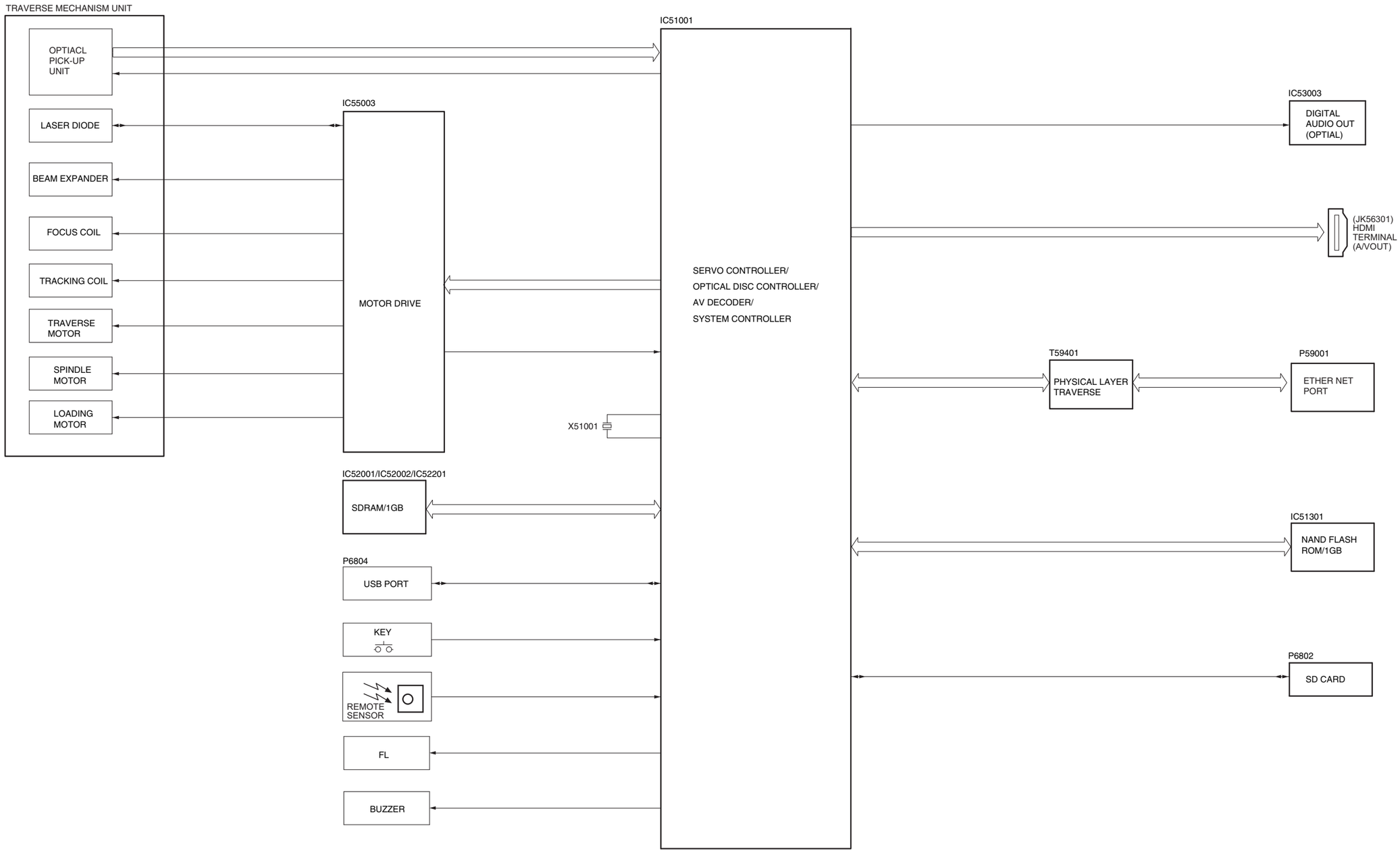
No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be recognized.
3	Perform playback for one minute using the RAM disc.	No abnormality should be seen in the picture, sound or operation. *Panasonic DVD-RAM disc should be used when recording and playback.
4	Perform playback for one minute using the BD-Video disc.	No abnormality should be seen in the picture, sound or operation.
5	If a problem is caused by a BD-Video disc, VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the picture, sound or operation.
6	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIN] appears in the FL displays. *[NoUPd] display means the unit is already updated to newest same version. Then version up is not necessary.
7	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR] appears in the FL display. After checking it, turn the power off.

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents	Check
Picture	Block noise		Sound	Distorted sound	
	Crosscut noise			Noise (static, background noise, etc.)	
	Dot noise			The sound level is too low.	
	Picture disruption			The sound level is too high.	
	Not bright enough			The sound level changes.	
	Too bright				
	Flickering colour				
	Colour fading				

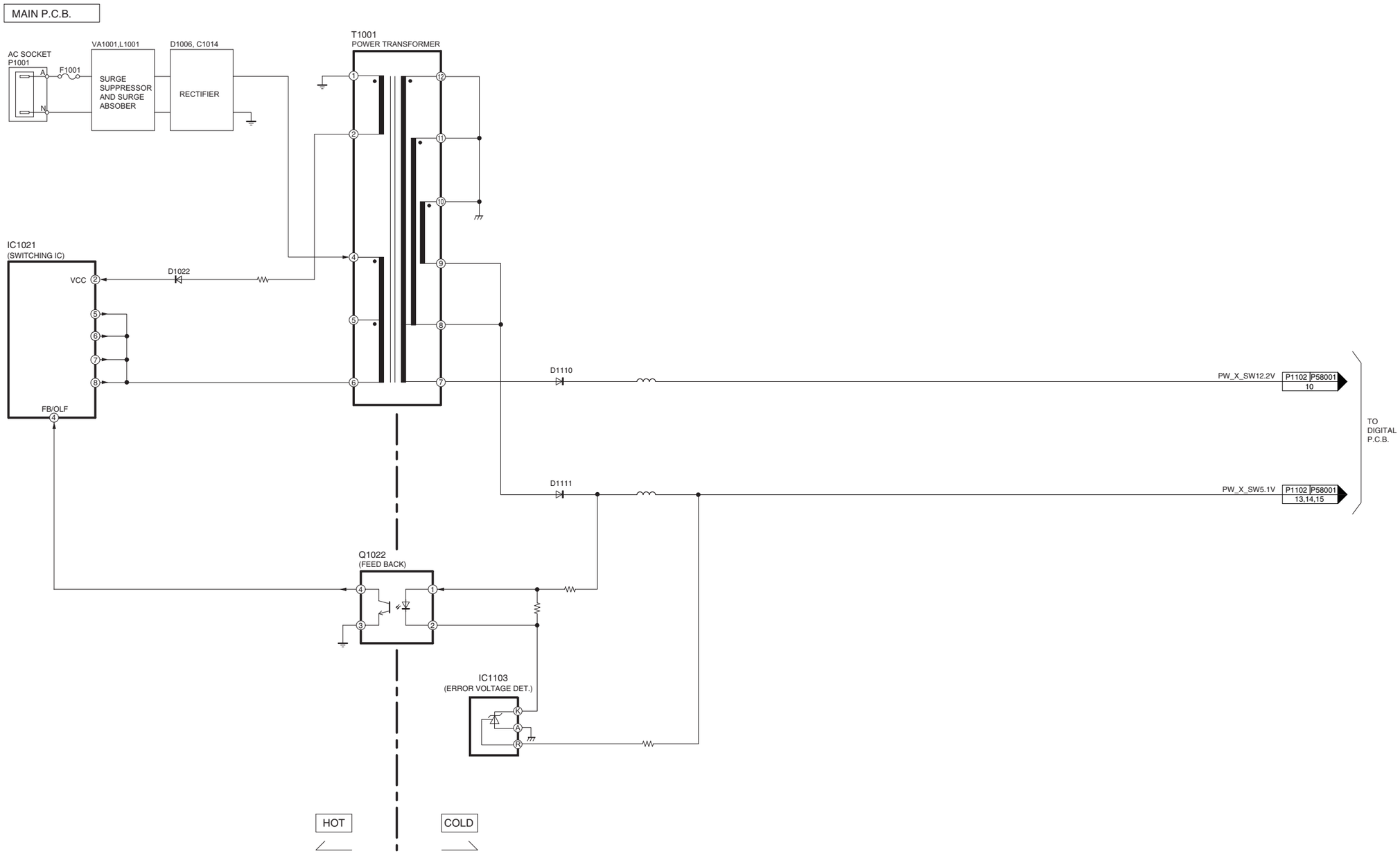
11 Block Diagram

11.1. Overall Block Diagram



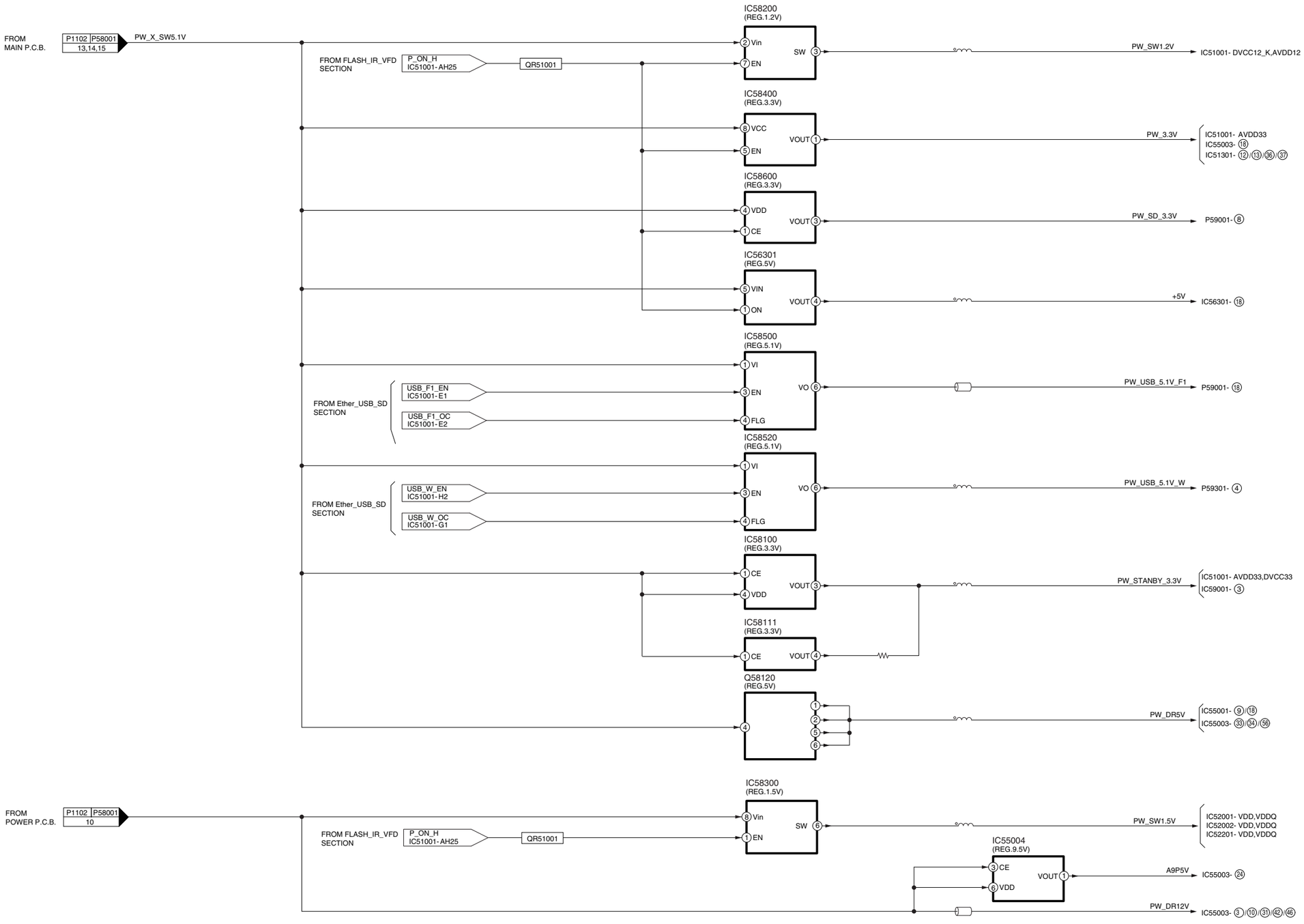
DMP-BDT230P/PC
OVERALL BLOCK DIAGRAM

11.2. Power Supply Block Diagram



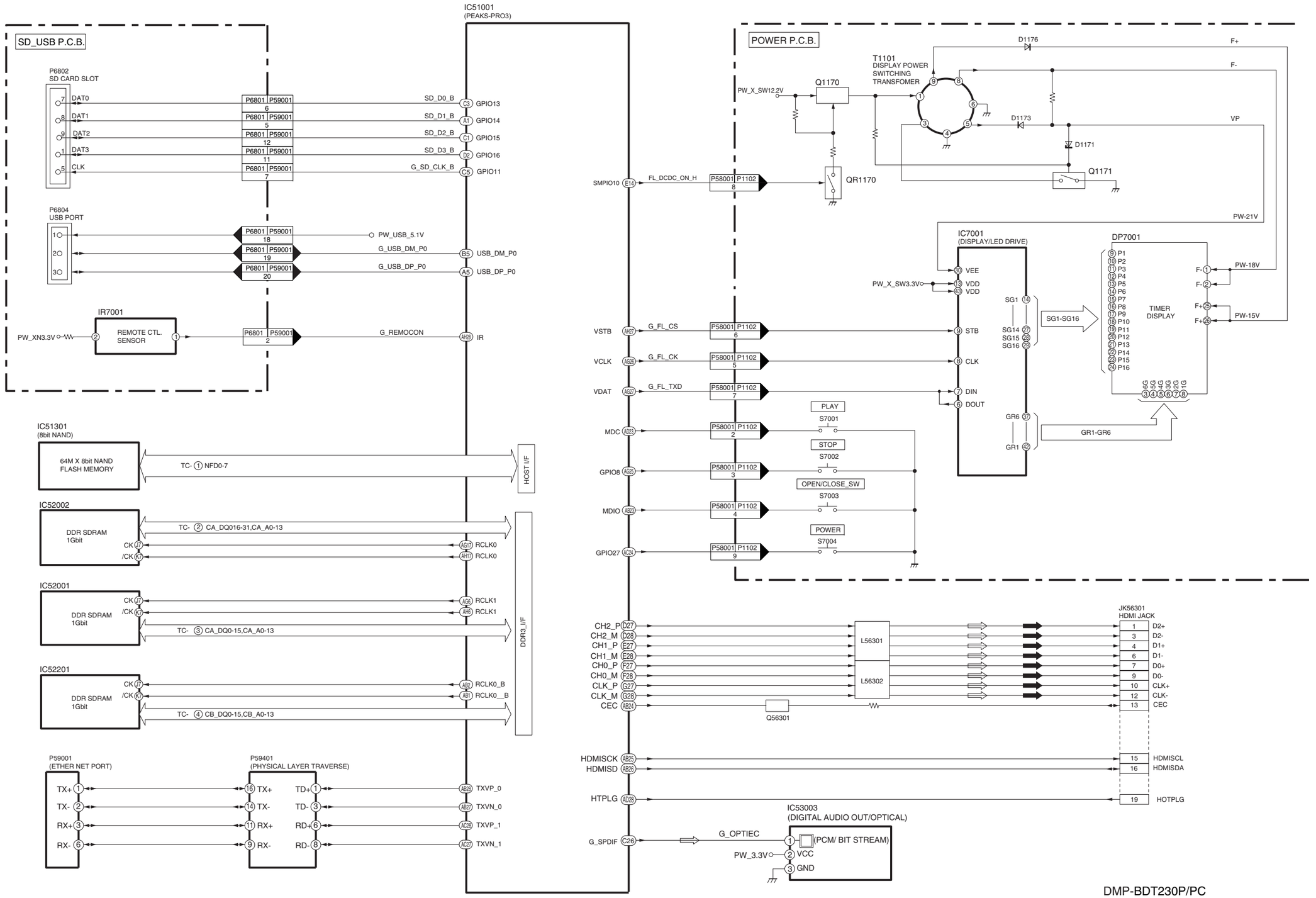
DMP-BDT230P/PC
POWER BLOCK DIAGRAM

11.3. Digital P.C.B. Regulator Block Diagram



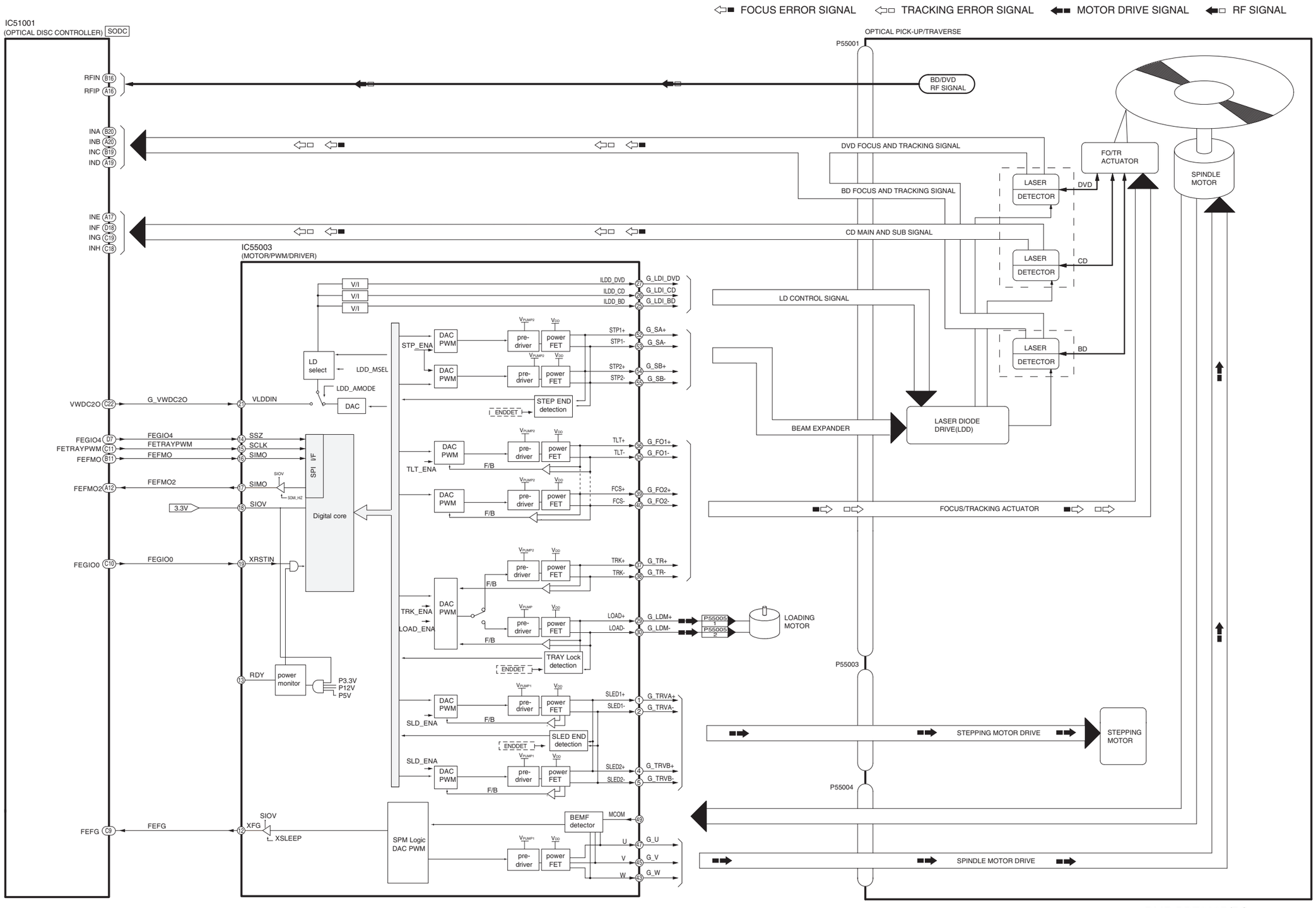
DMP-BDT230P/PC
DIGITAL P.C.B. REGULATOR BLOCK DIAGRAM

11.4. Digital (Back End Section) Block Diagram



DMP-BDT230P/PC
DIGITAL BLOCK DIAGRAM
(BACK END SECTION)

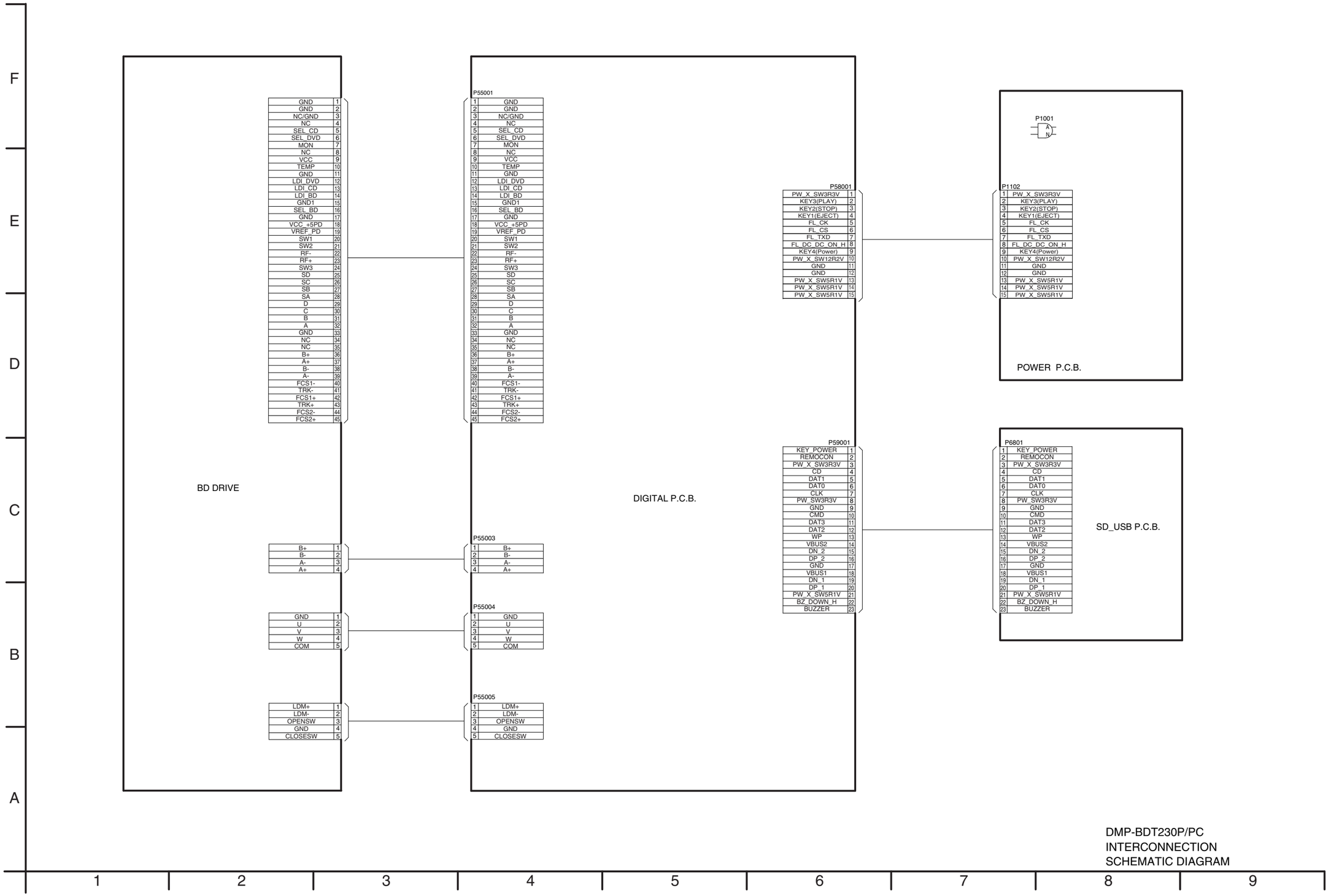
11.5. Digital (Front End Section) Block Diagram



DMP-BDT230P/PC
SERVO BLOCK DIAGRAM

12 Wiring Connection Diagram

12.1. Interconnection Schematic Diagram



13 Appendix Information of Schematic Diagram

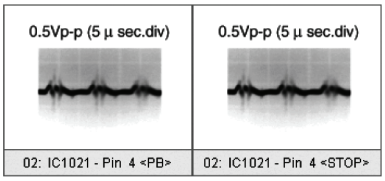
13.1. Waveform Chart

NOTE:

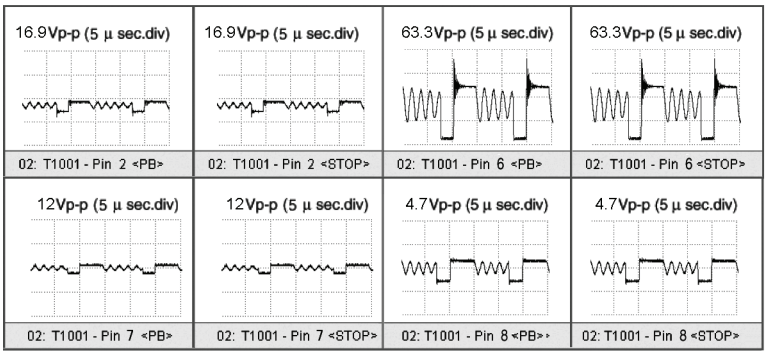
Circuit waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

13.1.1. Waveform Chart

<IC1021>



<T1001>



IMPORTANT SAFETY NOTICE:

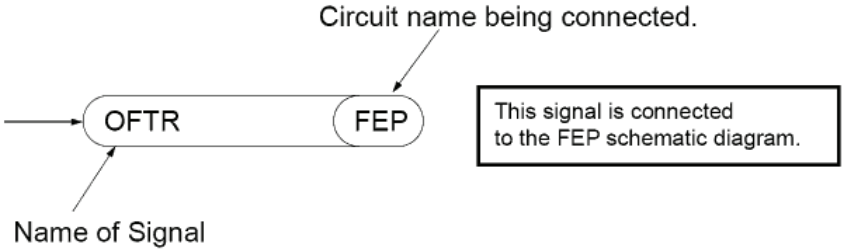
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1. Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "$" mark.

2. It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.

3. Use the parts number indicated on the Replacement Parts List.

4. Indication on the Schematic diagrams:



5. It might be taking time for display and/or access of the Schematic Diagrams & P.C.B. having the heavy data volume.

6. The circuit is defined by HOT and COLD indications in the schematic diagram. Please take note to prevent from electric shock.

Model No. : DMP-BDT230P/DMP-BDT230PC PART LIST NOTICE

Notes:

*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 manufacture's specified parts shown in the parts list.

*Warning: This product uses a laser diode. Refer to caution statements.

*Capacity values are in microfarads (μF) unless specified otherwise, P=Pico-farads (pF), F=Farads (F).

*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

*The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

*"(IA), (IB)" marks in Remarks indicate languages of instruction manuals. [(IA): English; (IB): Canadian French]

*All parts are supplied by CHPAVC.

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

Notes:

*Parts indicated with "ADJ" in the Remarks column are necessary to Input Engineering Adjusted Value.

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMP OUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE

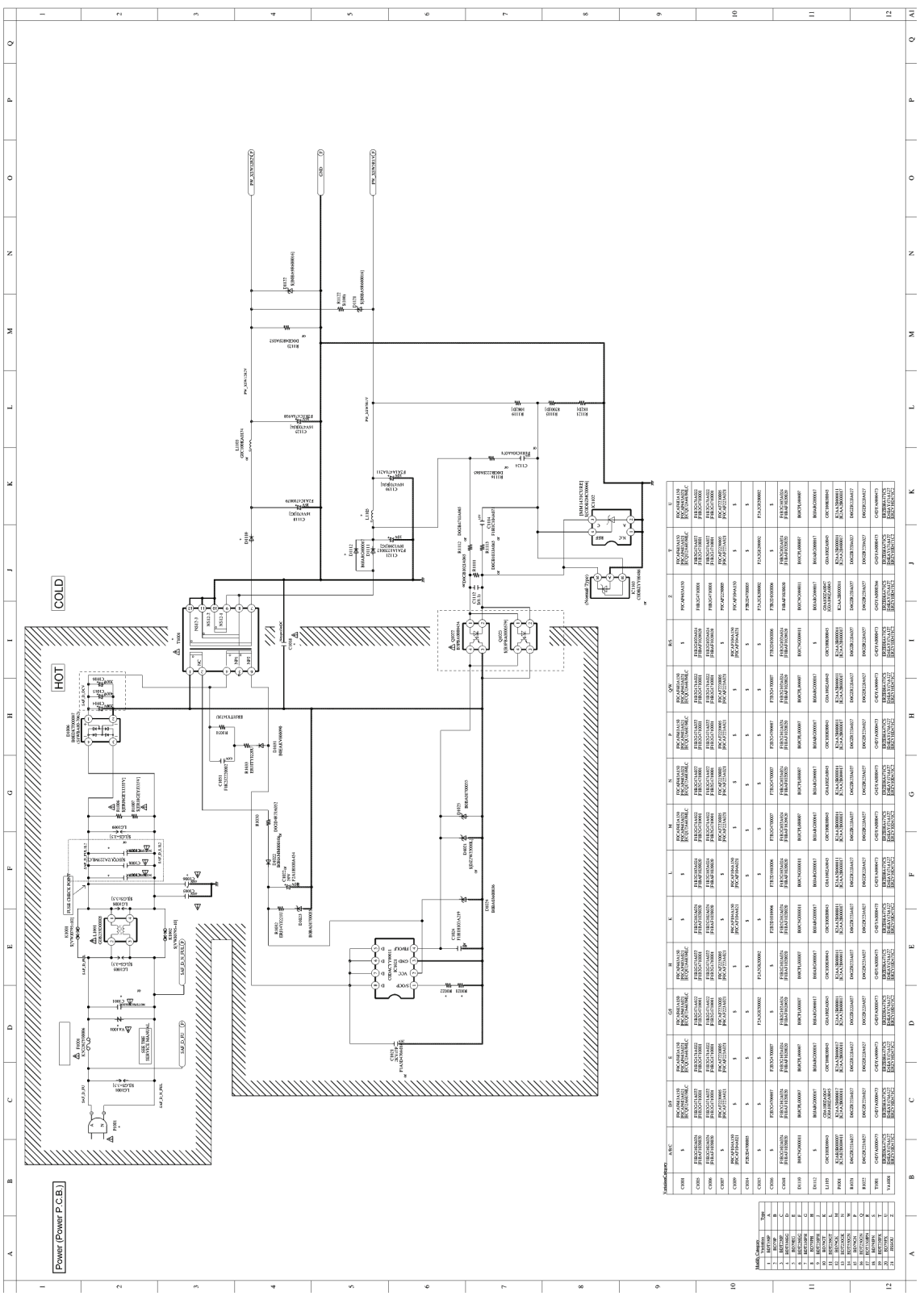
INITIAL/LOGO		ABBREVIATIONS
I	IECOUT	IEC958FORMATDATAOUTPUT
	IPFRAG	INTERPOLATIONFLAG
	IREF	I(CURRENT)REFERENCE
	ISEL	INTERFACEMODESELECT
L	LDON	LASERDIODECONTROL
	LPC	LASERPOWERCONTROL
	LRCK	LCH/RCHDISTINCTIONCLOCK
M	MA0~UP	MEMORYADDRESS
	MCK	MEMORYCLOCK
	MCKI	MEMORYCLOCKINPUT
	MCLK	MEMORYSERIALCOMMANDCLOCK
	MDATA	MEMORYSERIALCOMMANDDATA
	MDO0~UP	MEMORYDATAINPUT/OUTPUT
	MDQM	MEMORYDATAI/OMASK
	MLD	MEMORYSERIALCOMMANDLOAD
	MPEG	MOVINGPICTUREEXPERTSGROUP
O	ODC	OPTICALDISCCONTROLLER
	OFTR	OFFTRACKING
	OSCI	OSCILLATORINPUT
	OSCO	OSCILLATOROUTPUT
	OSD	ONSCREENDISPLAY
P	P1~UP	PORT
	PCD	CDTRACKINGPHASEDIFFERENCE
	PCK	PLLCLOCK
	PDVD	DVDTRACKINGPHASEDIFFERENCE
	PEAK	CAP.FORPEAKHOLD
	PLLCLK	CHANNELPLLCLOCK
	PLLOK	PLLLOCK
	PWMCTL	PWMOUTPUTCONTROL
	PWMDA	PULSEWAVEMOTORDRIVEA
	PWMOA,B	PULSEWAVEMOTOROUTA,B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READENABLE
	RFENV	RFENVELOPE
	RFO	RFPHASEDIFFERENCEOUTPUT
	RS	(CD-ROM)REGISTERSELECT
	RSEL	RFPOLARITYSELECT
	RST	RESET
	RSV	RESERVE
S	SBI0,1	SERIALDATAINPUT
	SBO0	SERIALDATAOUTPUT
	SBT0,1	SERIALCLOCK
	SCK	SERIALDATACLOCK
	SCKR	AUDIOSERIALCLOCKRECEIVER
	SCL	SERIALCLOCK
	SCLK	SERIALCLOCK
	SDA	SERIALDATA
	SEG0~UP	FLSEGMENTOUTPUT
	SELCLK	SELECTCLOCK
	SEN	SERIALPORTENABLE
	SIN1,2	SERIALDATAIN
	SOUT1,2	SERIALDATAOUT
	SPDI	SERIALPORTDATAINPUT
	SPDO	SERIALPORTDATAOUTPUT
	SPEN	SERIALPORTR/WENABLE
	SPRCLK	SERIALPORTREADCLOCK
	SPWCLK	SERIALPORTWRITECLOCK
	SQCK	SUBCODEQCLOCK
	SQCX	SUBCODEQDATAREADCLOCK
	SRDATA	SERIALDATA
	SRMADR	SRAMADDRESSBUS
	SRMDT0~7	SRAMDATABUS0~7
	SS	START/STOP
	STAT	STATUS
	STCLK	STREAMDATACLOCK
	STD0~UP	STREAMDATA
	STENABLE	STREAMDATAINPUTENABLE
	STSEL	STREAMDATAPOLARITYSELECT
	STVALID	STREAMDATAVALIDITY
	SUBC	SUBCODESERIAL
	SBCK	SUBCODECLOCK
	SUBQ	SUBCODEQDATA
	SYSCLK	SYSTEMCLOCK

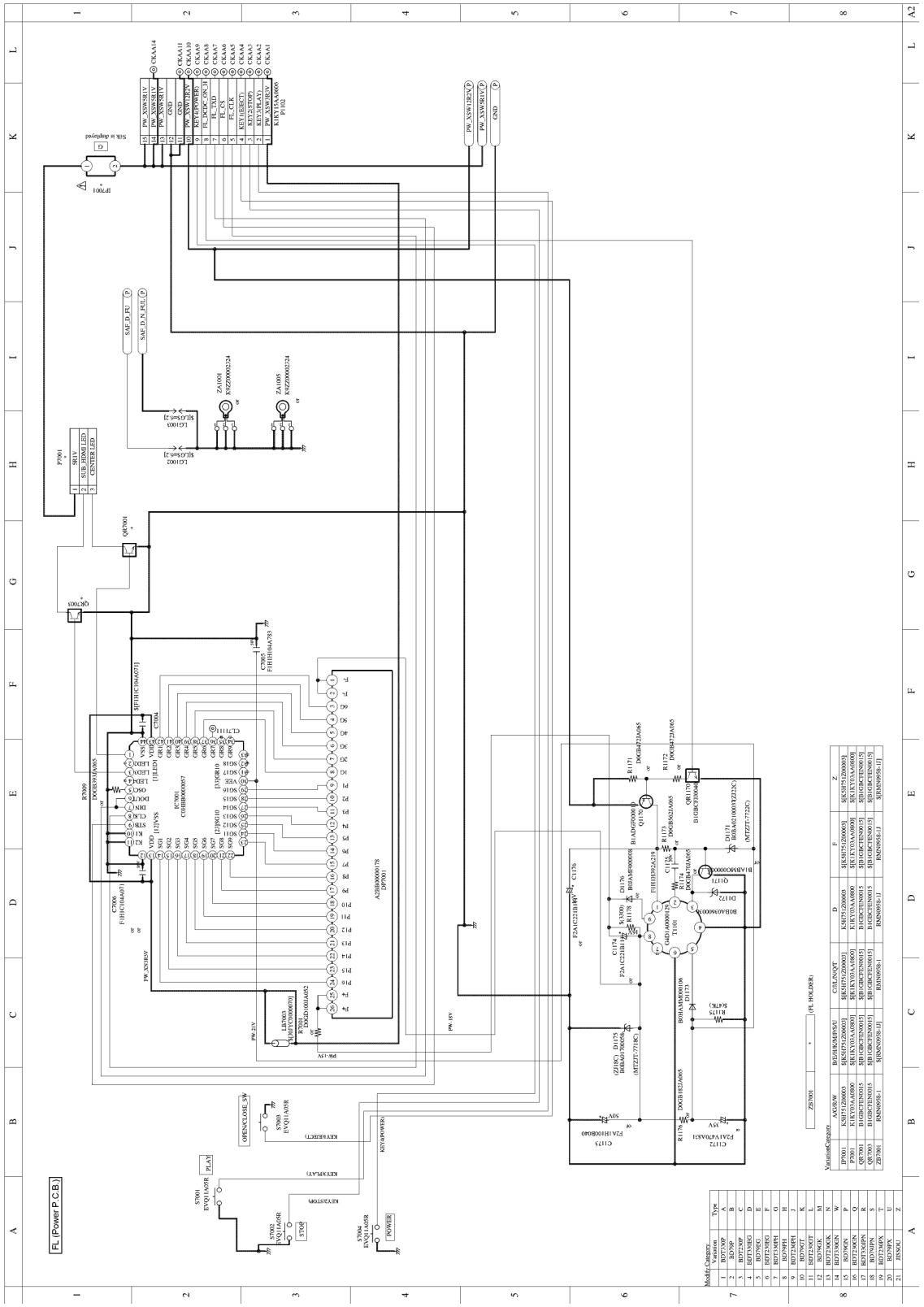
INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

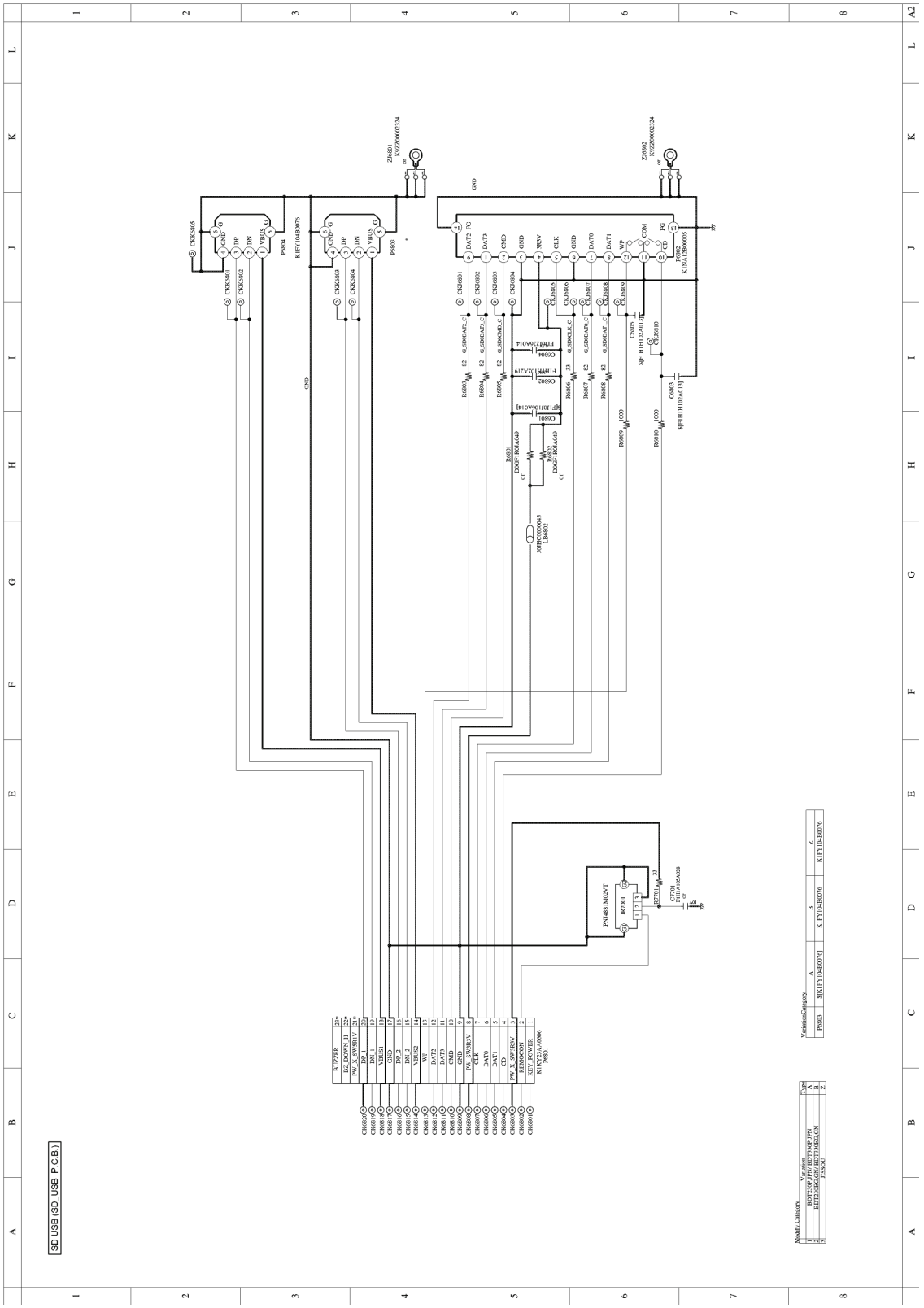
INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER
X	X	X´ TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X´ TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X´ TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS STROBE
	XVSYNCO	X VERTICAL SYNC OUTPUT

Model No. : DMP-BDT230P/DMP-BDT230PC POWER SECTION(POWER P.C.B.)

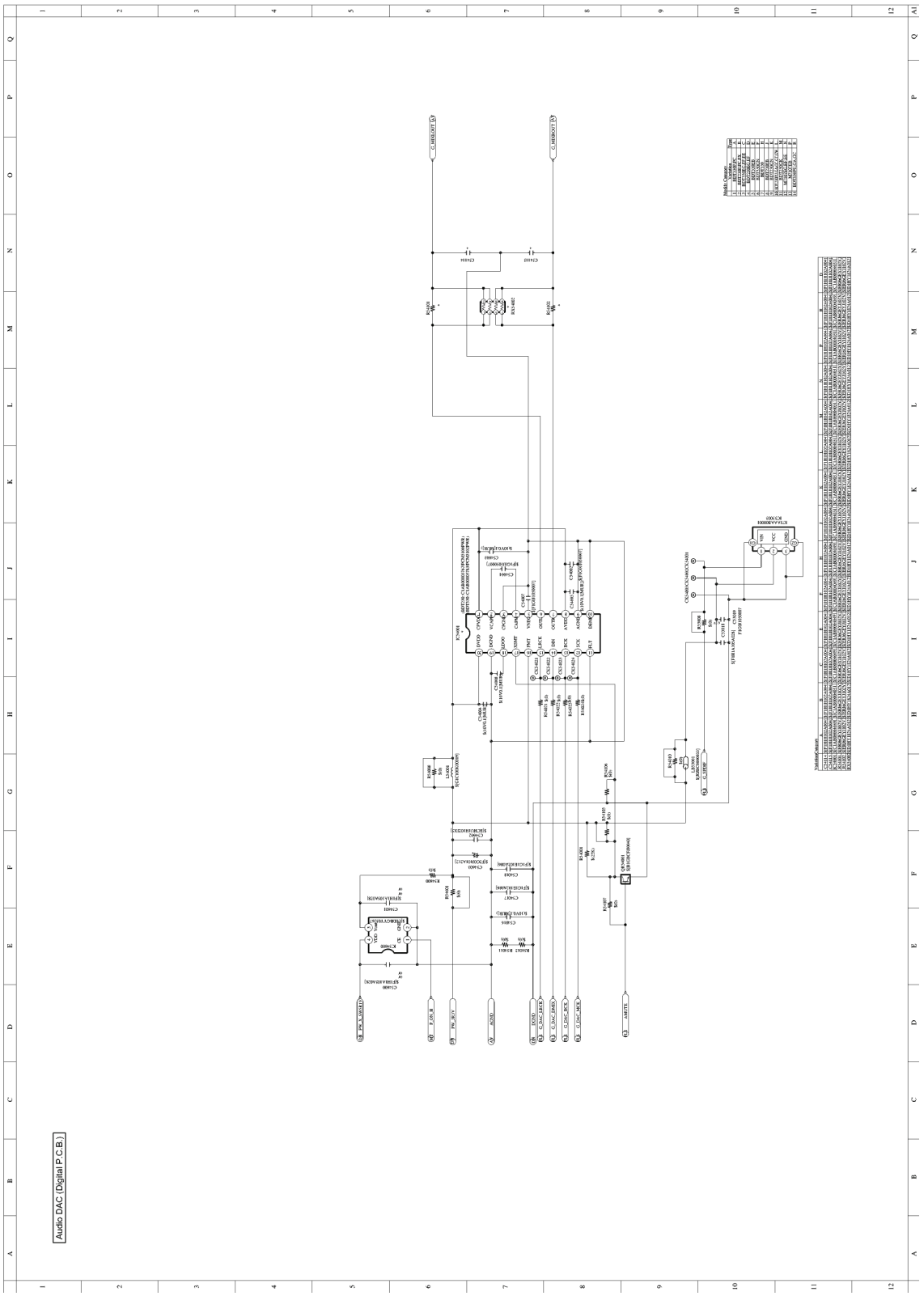


Model No. : DMP-BDT230P/DMP-BDT230PC FL SECTION(POWER P.C.B.)

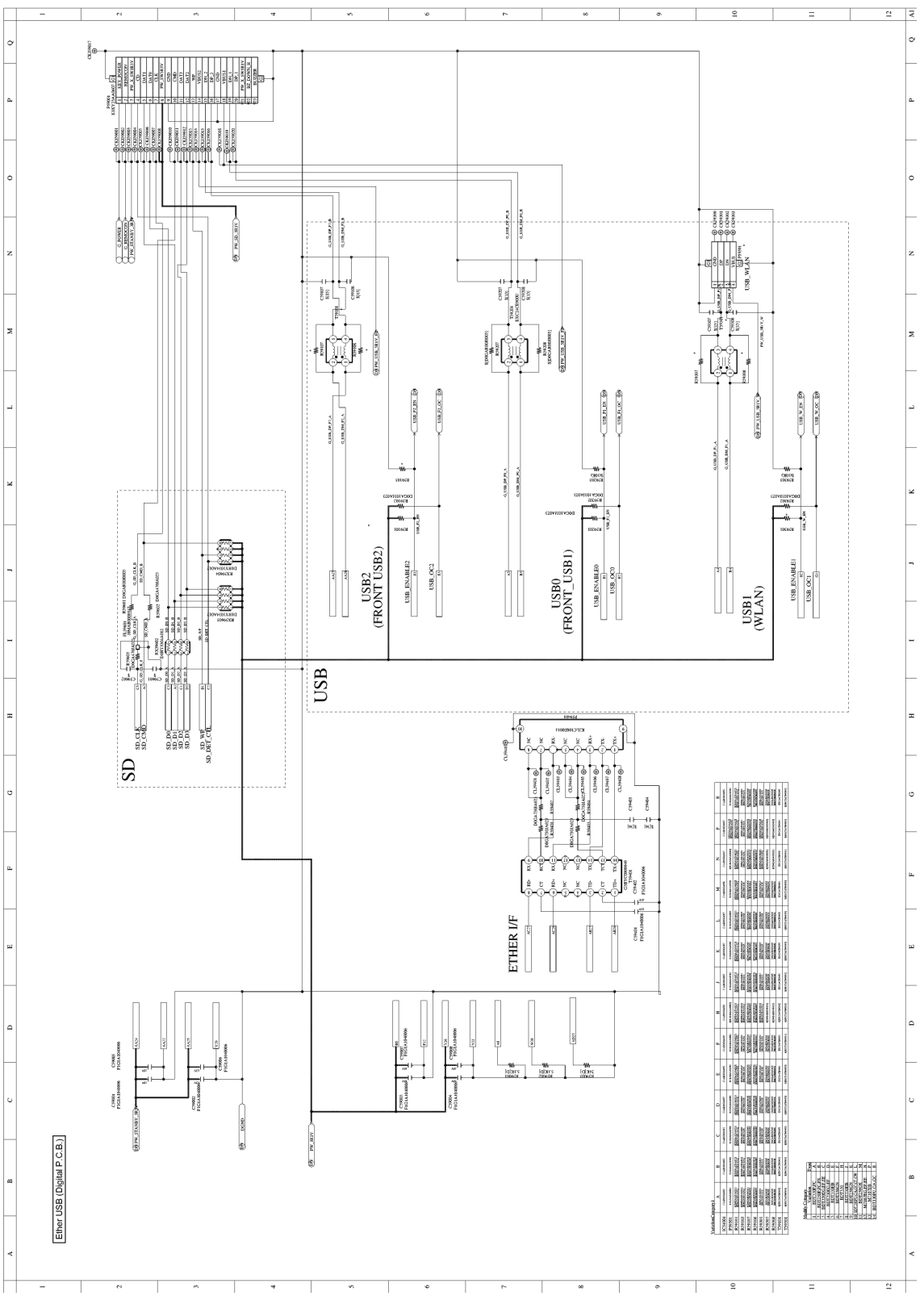


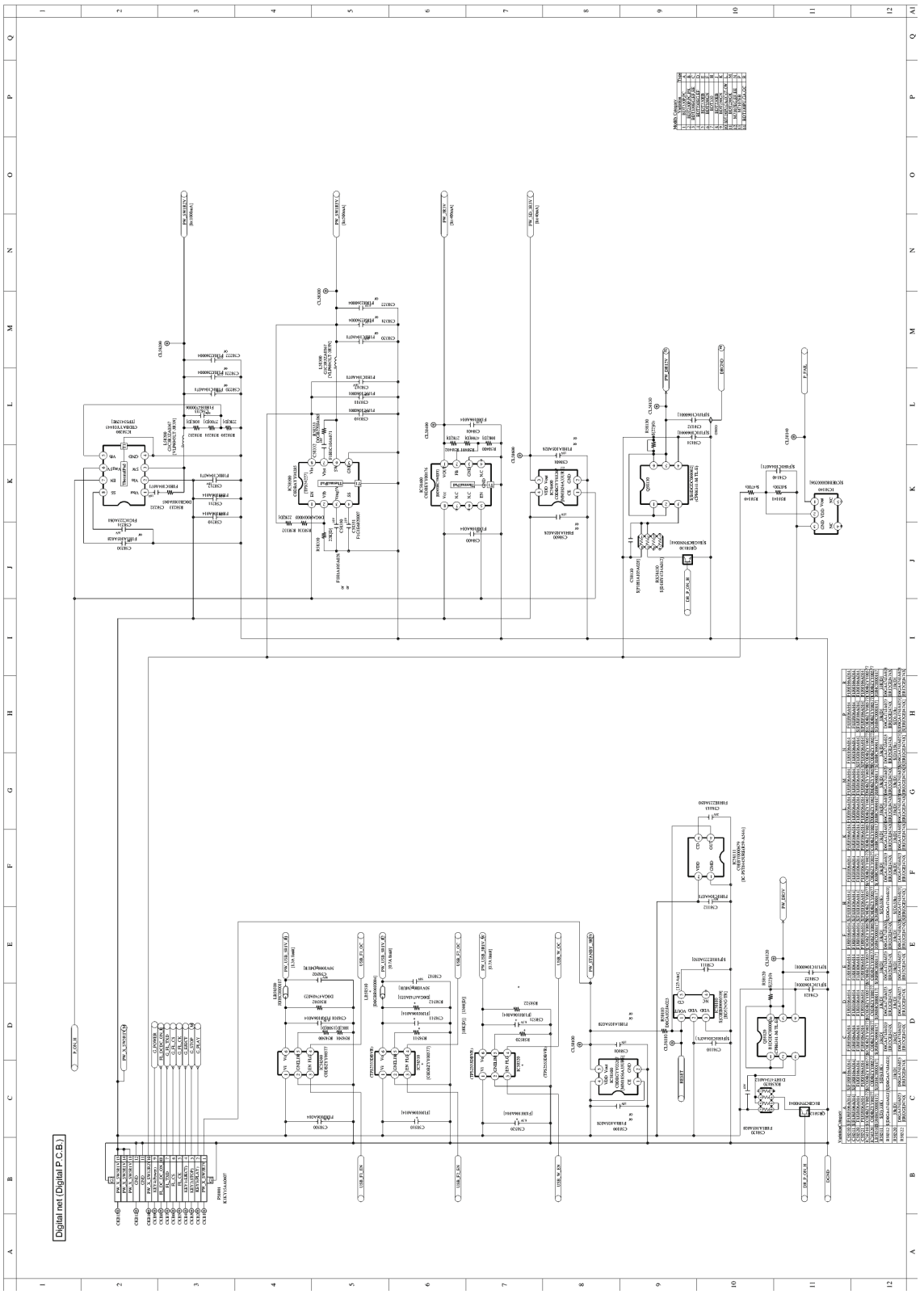

SD USB (SD_USB P.C.B.)

Model No. : DMP-BDT230P/DMP-BDT230PC AUDIO DAC SECTION(DIGITAL P.C.B.)

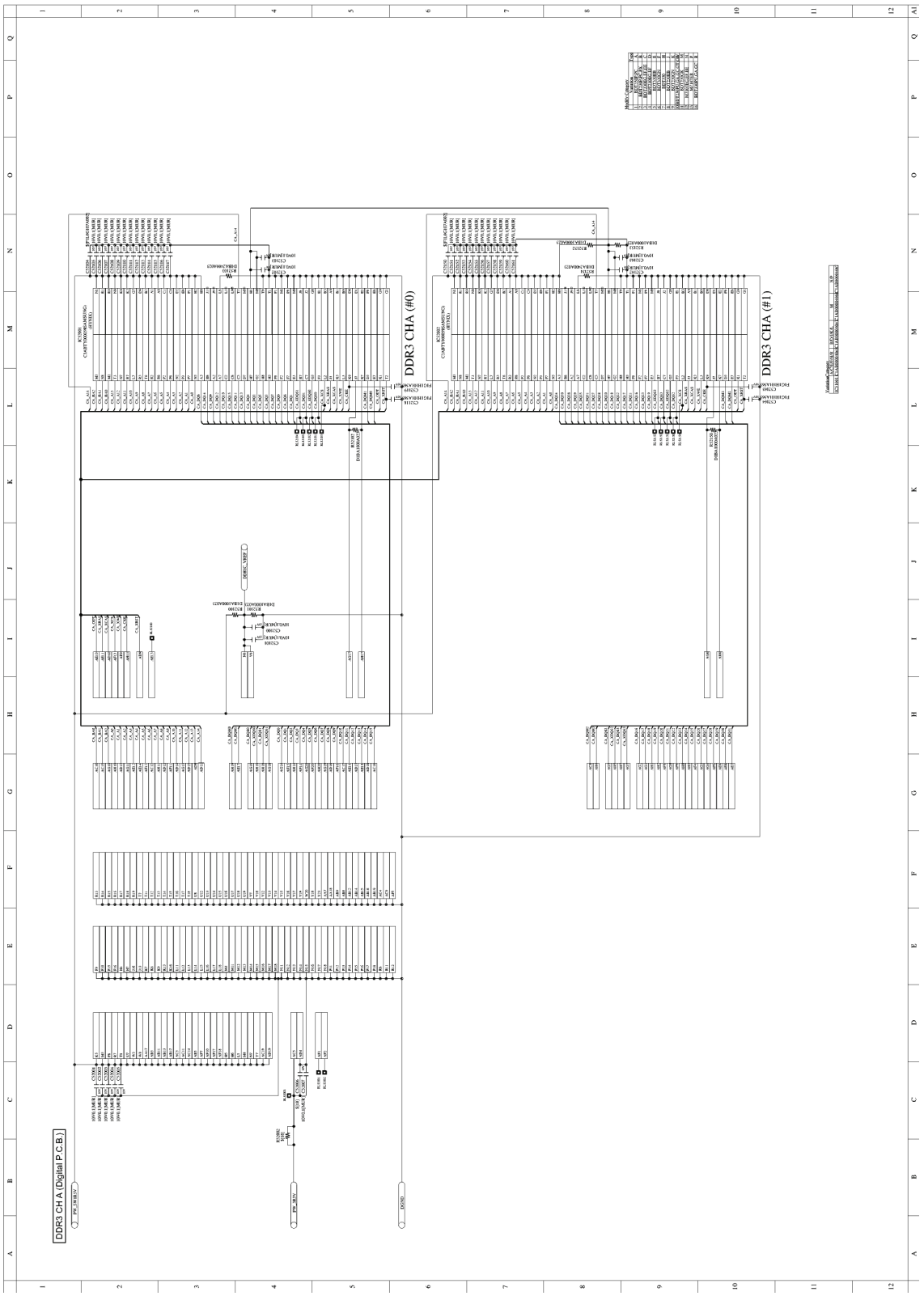


Model No. : DMP-BDT230P/DMP-BDT230PC ETHER USB SD SECTION(DIGITAL P.C.B.)

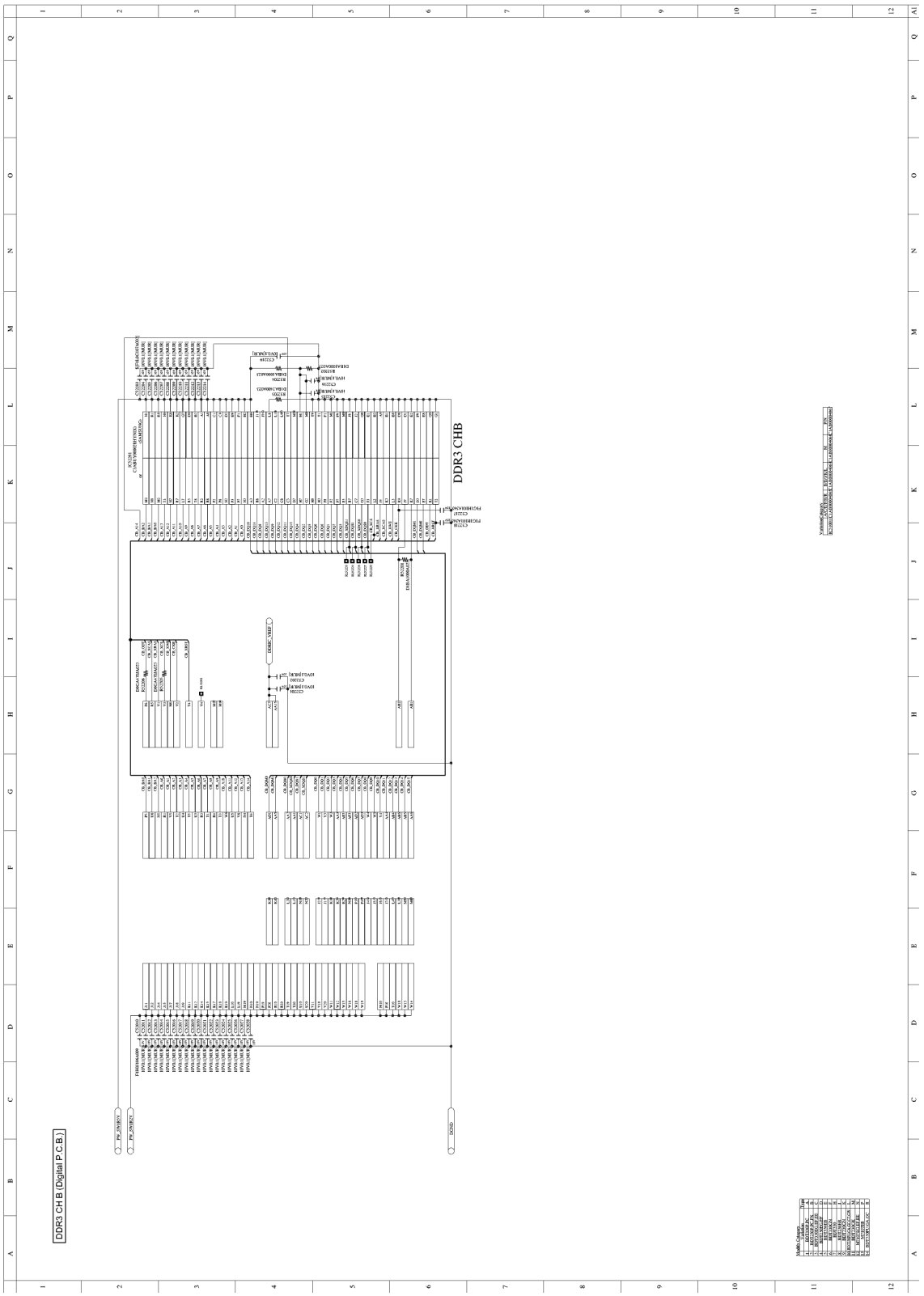



Digital net (Digital P.C.B.)

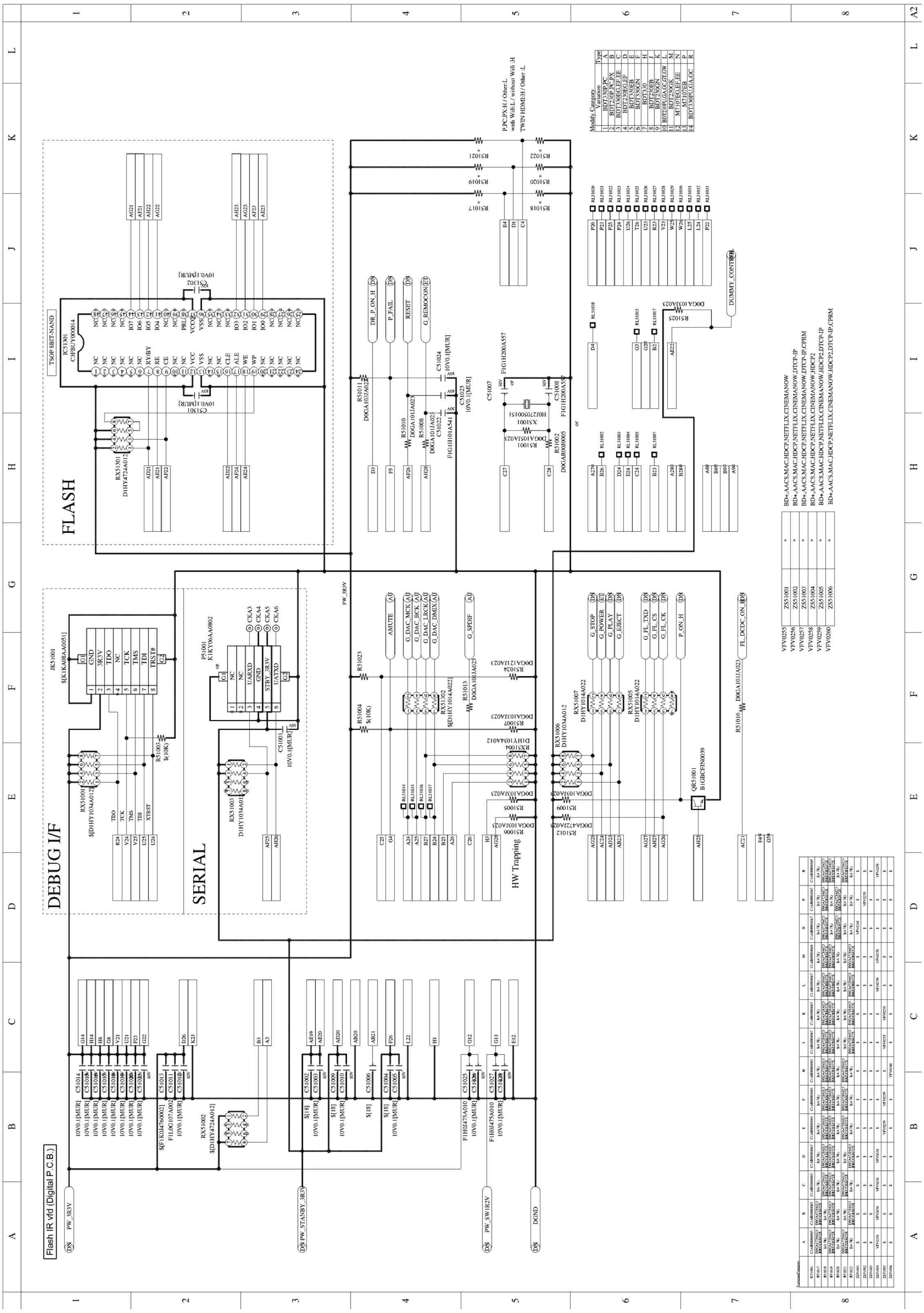
Model No. : DMP-BDT230P/DMP-BDT230PC DDR3 CH A SECTION(DIGITAL P.C.B.)



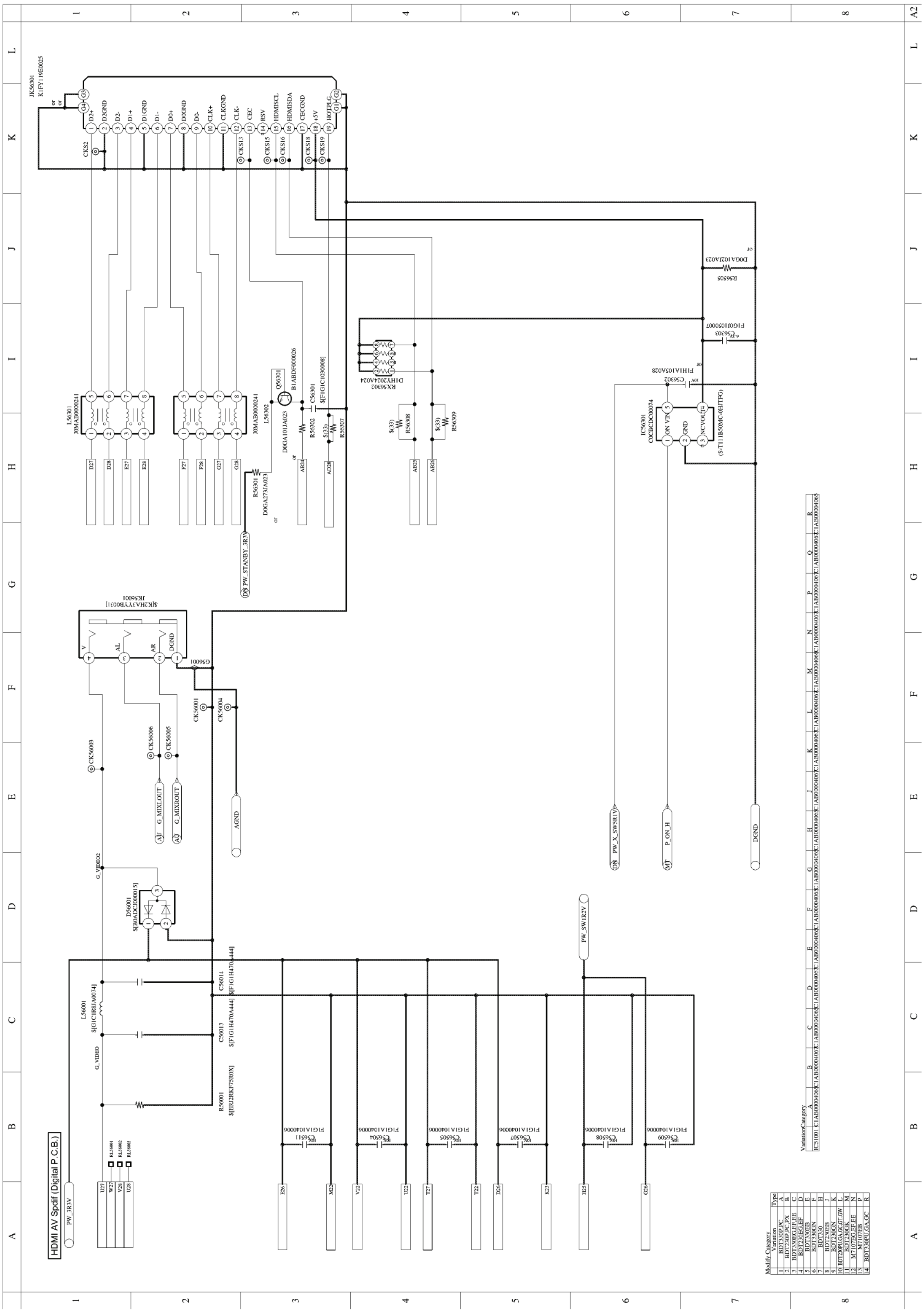
Model No. : DMP-BDT230P/DMP-BDT230PC DDR3 CH B SECTION(DIGITAL P.C.B.)



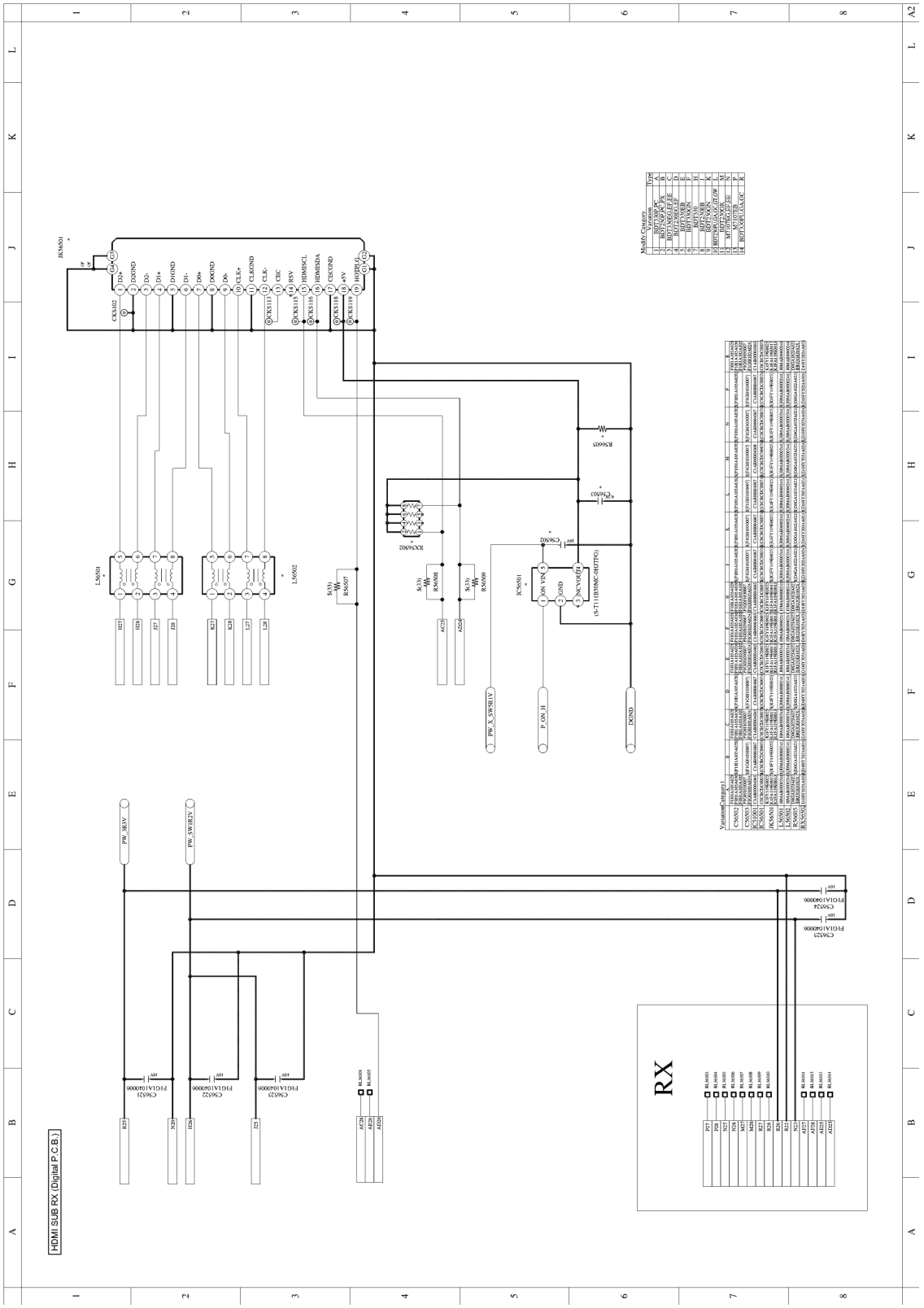
Model No. : DMP-BDT230P/DMP-BDT230PC FLASH IR VFD SECTION(DIGITAL P.C.B.)



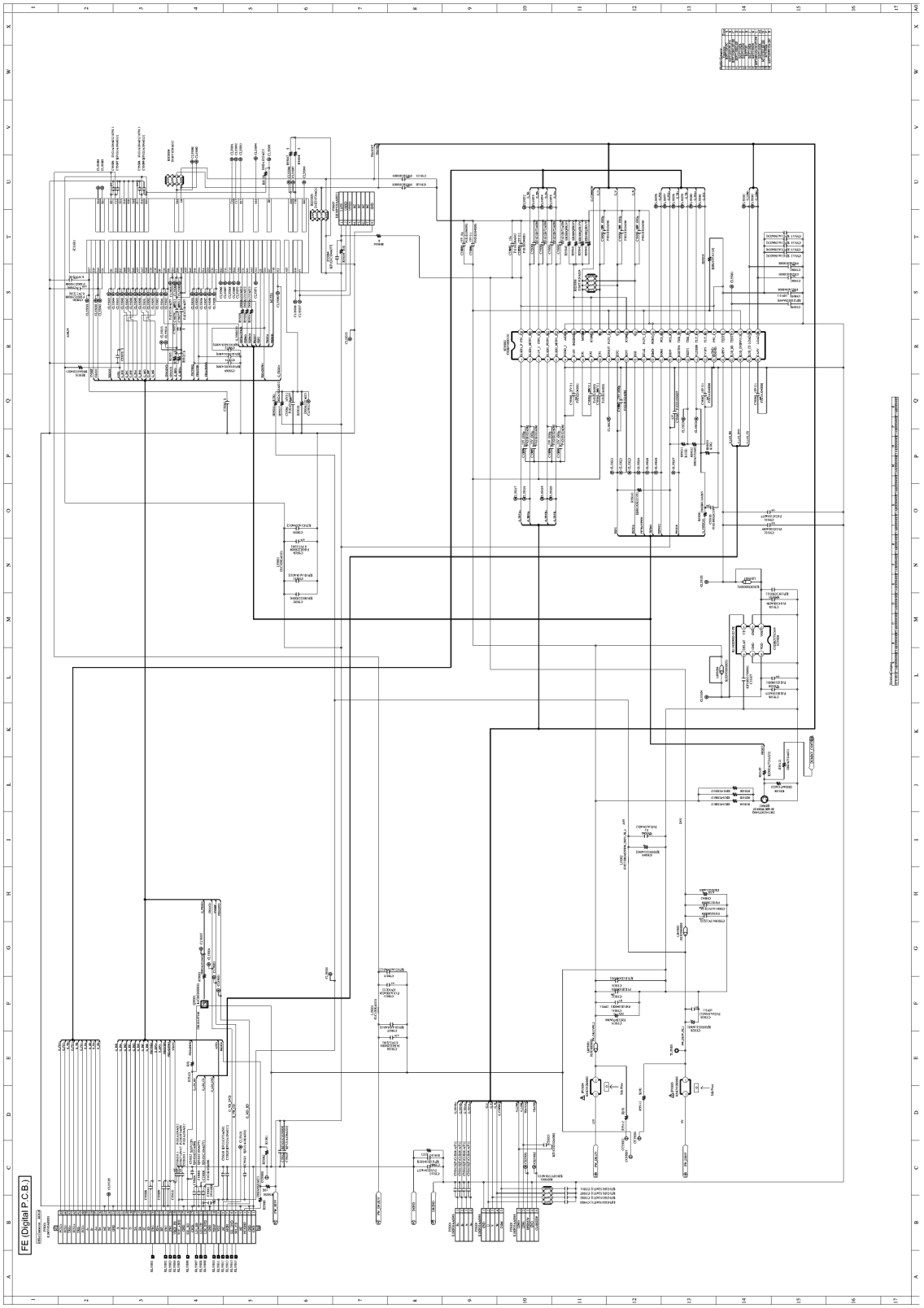
Model No. : DMP-BDT230P/DMP-BDT230PC HDMI AV SECTION(DIGITAL P.C.B.)



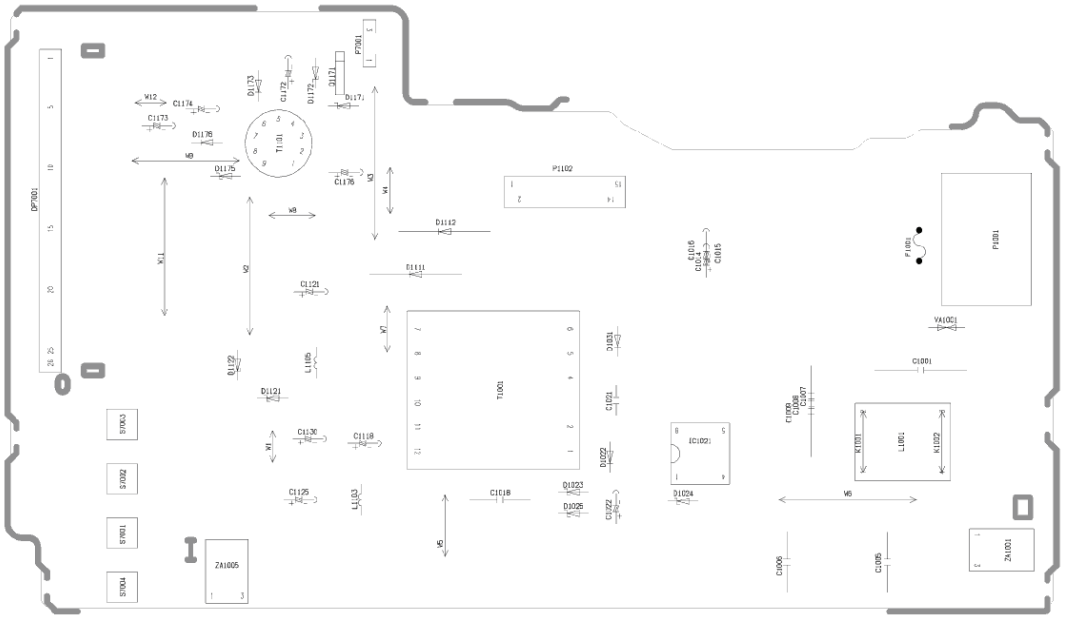
Model No. : DMP-BDT230P/DMP-BDT230PC HDMI SUB SECTION(DIGITAL P.C.B.)



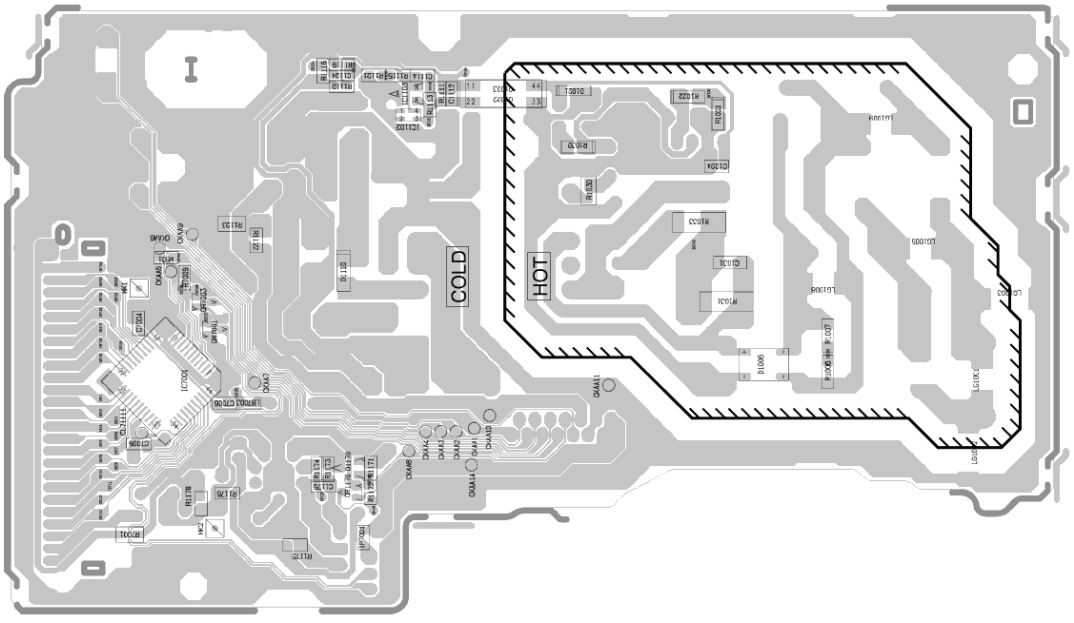
Model No. : DMP-BDT230P/DMP-BDT230PC FE SECTION(DIGITAL P.C.B.)



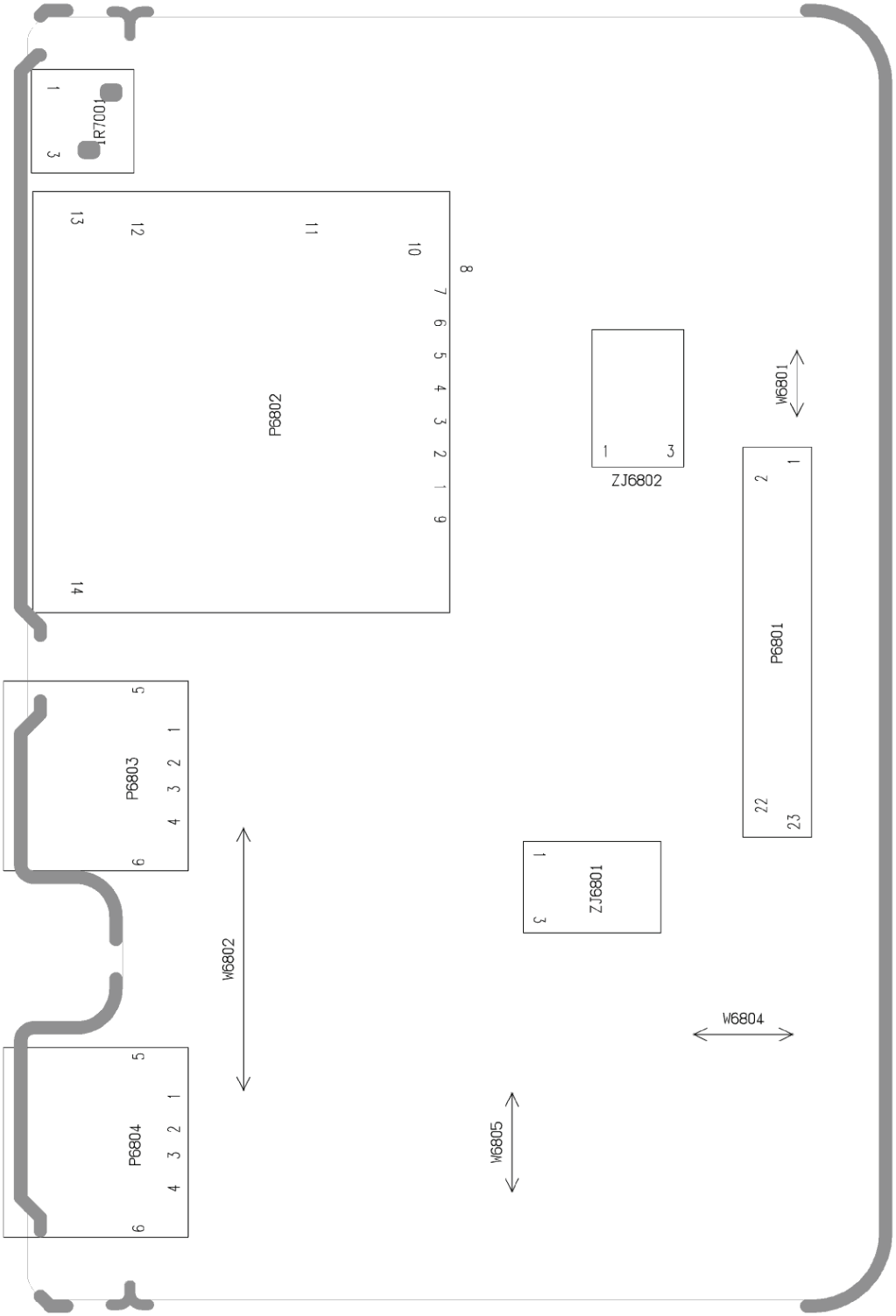
Model No. : DMP-BDT230P/DMP-BDT230PC POWER P.C.B.(COMPONENT SIDE)



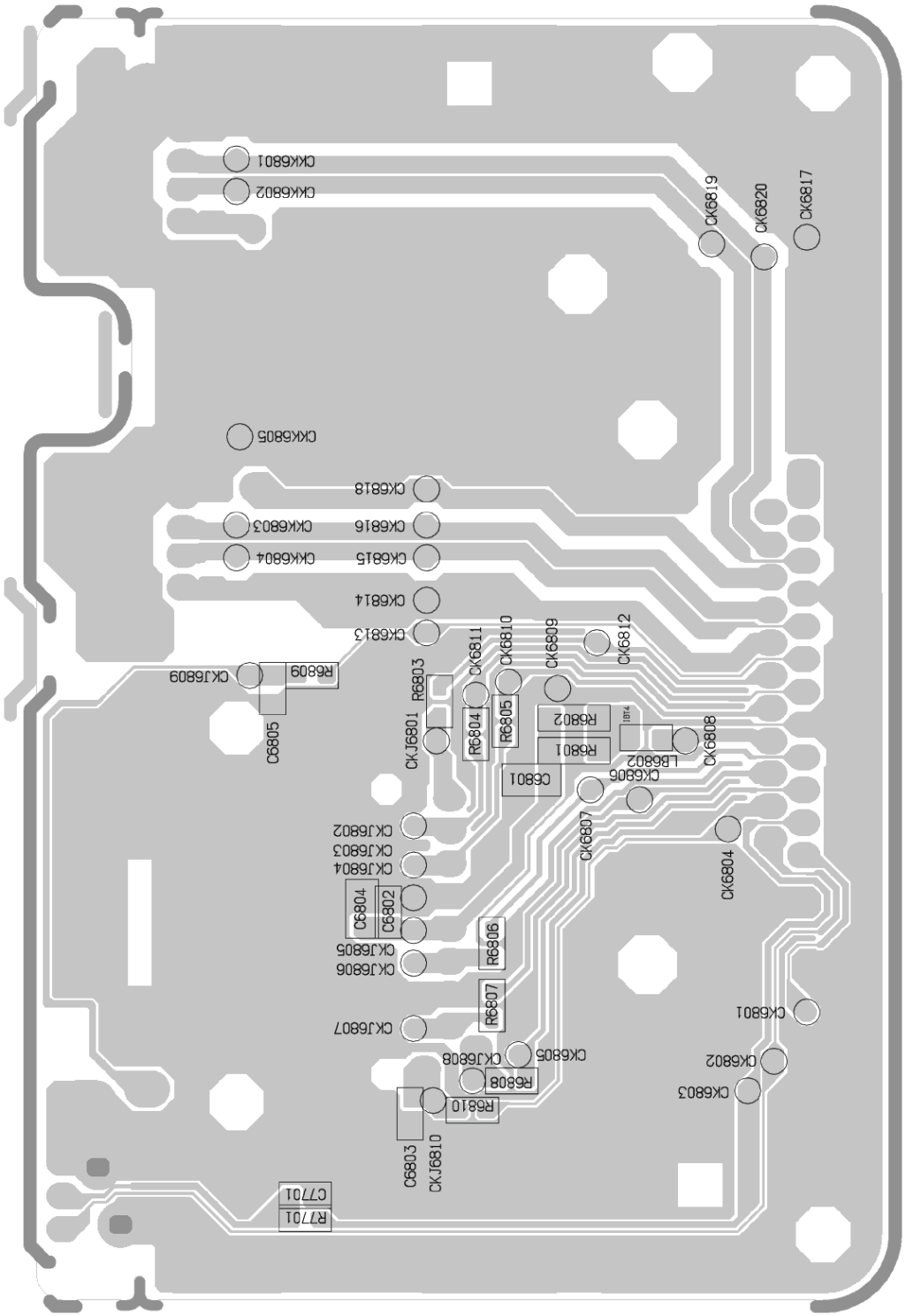
Model No. : DMP-BDT230P/DMP-BDT230PC POWER P.C.B.(FOIL SIDE)



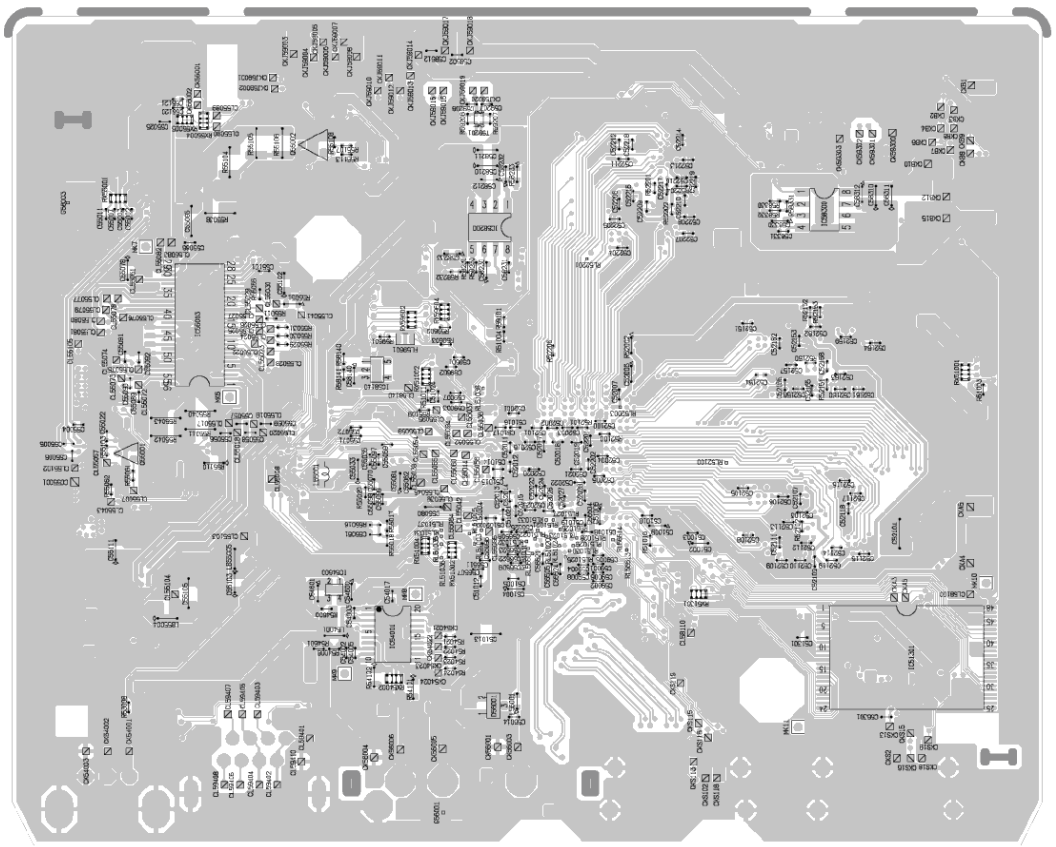
Model No. : DMP-BDT230P/DMP-BDT230PC SD_USB P.C.B.(COMPONENT SIDE)



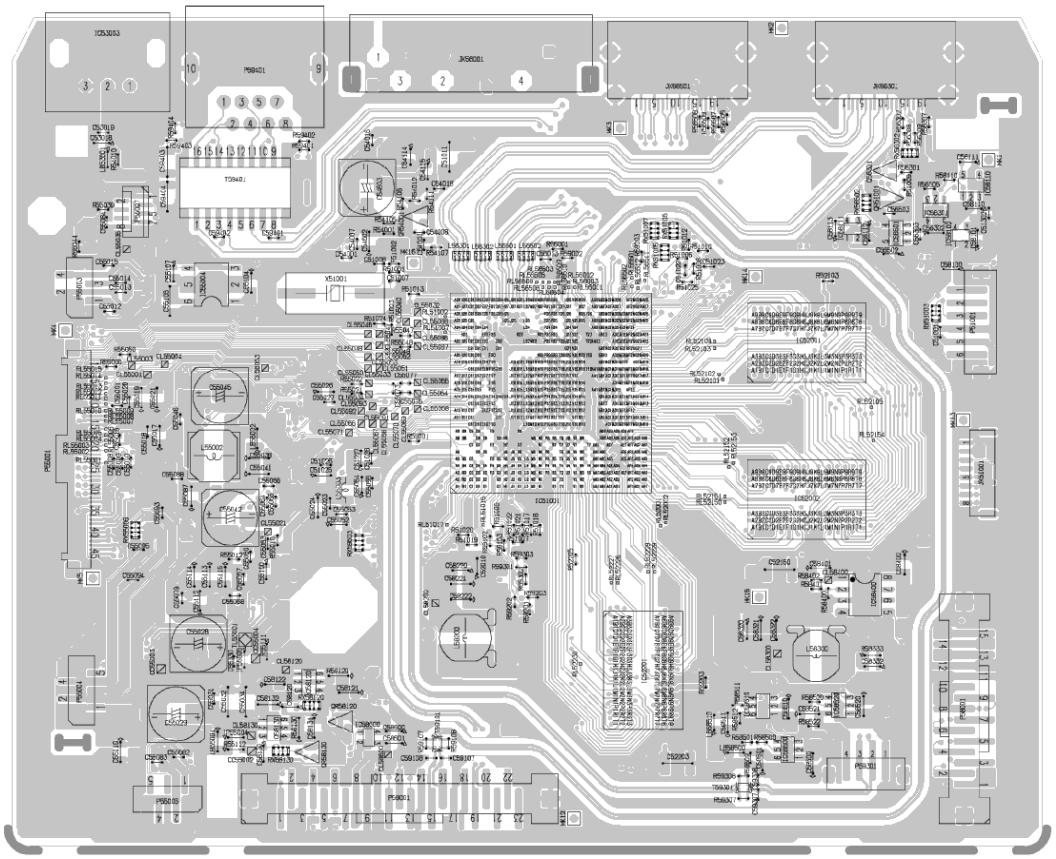
Model No. : DMP-BDT230P/DMP-BDT230PC SD_USB P.C.B.(FOIL SIDE)



Model No. : DMP-BDT230P/DMP-BDT230PC DIGITAL P.C.B.(COMPONENT SIDE)



Model No. : DMP-BDT230P/DMP-BDT230PC DIGITAL P.C.B.(FOIL SIDE)



Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		■	VEP71300C	POWER P.C.B.		(RTL) E.S.D.
	⚠	C1005	F1B2G102A024	100V 1000P	1	
	⚠	C1006	F1B2G102A024	100V 1000P	1	
	⚠	C1009	F0CAF104A150	250V 0.1U	1	
		C1014	F2B2D4700003	200V 47U	1	
	⚠	C1018	F1B2G102A024	100V 1000P	1	
		C1021	F1A3D470A016	2000V 47U	1	
		C1022	F2A1H100A454	50V 10U	1	
		C1024	F1H1H103A219	50V 0.01U	1	
		C1031	F1K2J2220002	630V 2200P	1	
		C1114	F1H1C104A071	16V 0.1U	1	
		C1118	F2A1C4710079	16V 470U	1	
		C1121	F2A1A1220012	10V 1200U	1	
		C1124	F1H1C104A071	16V 0.1U	1	
		C1125	F2A1C471A938	16V 470U	1	
		C1130	F2A1A471A211	10V 470U	1	
		C1172	F2A1V470A831	35V 47U	1	
		C1173	F2A1H100B040	50V 10U	1	
		C1174	F2A1C221B111	16V 220U	1	
		C1175	F1H1H392A219	50V 3900P	1	
		C1176	F2A1C221B111	16V 220U	1	
		C7005	F1H1H104A783	50V 0.1U	1	
		C7006	F1H1C104A071	16V 0.1U	1	
		D1006	B0EDKT000007	DIODE	1	E.S.D.
		D1022	B0HAMM000106	DIODE	1	E.S.D.
		D1023	B0BA01700055	DIODE	1	E.S.D.
		D1024	B0BA03600036	DIODE	1	E.S.D.
		D1025	B0BA01700055	DIODE	1	E.S.D.
		D1031	B0EAKV000090	DIODE	1	E.S.D.
		D1110	B0JCNG000011	DIODE	1	E.S.D.
		D1111	B0JARG000017	DIODE	1	E.S.D.
		D1171	B0BA02100037	DIODE	1	E.S.D.
		D1172	B0BA03600036	DIODE	1	E.S.D.
		D1173	B0HAMM000106	DIODE	1	E.S.D.
		D1175	B0BA01700058	DIODE	1	E.S.D.
		D1176	B0JAMF000008	DIODE	1	E.S.D.
	⚠	F1001	K5G202Y00006	FUSE	1	
		IC1021	C0DACYY00011	IC	1	E.S.D.
		IC1103	C0DBZYY00486	IC	1	E.S.D.
		IC7001	C0HBB0000057	IC	1	E.S.D.
		DP7001	A2BB00000178	DISPLAY TUBE	1	
	⚠	L1001	G0B233D00005	COIL	1	
		L1103	G0C100KA0174	COIL	1	
		L1105	G0C100K00043	COIL	1	
	⚠	Q1022	B3PBA0000454	TRANSISTOR	1	E.S.D.
		Q1170	B1ADGF000010	TRANSISTOR	1	E.S.D.
		Q1171	B1ABMG000008	TRANSISTOR	1	E.S.D.
		QR1170	B1GBCFJJ0040	TRANSISTOR	1	E.S.D.
	⚠	VA1001	ERZE08A471CS	VARISTOR	1	
		R1021	D0GZR22JA027	1/2W 0.22	1	
		R1022	D0GZR22JA027	1/2W 0.22	1	
		R1030	D0GD4R7JA052	1/8W 4.7	1	
		R1031	ERJ1TYJ473U	1W 47K	1	
		R1032	ERJ14YJ221U	1/4W 220	1	
		R1033	ERJ1TYJ220U	1W 22	1	
		R1111	D0GB102JA065	1/10W 1K	1	
		R1112	D0GB471JA065	1/10W 470	1	
		R1113	D0GB103JA065	1/10W 1K	1	
		R1115	ERJ3RBD822V	1/16W 8.2K	1	
		R1116	D0GB222JA065	1/10W 2.2K	1	
		R1119	ERJ3RBD103V	1/16W 10K	1	
		R1121	ERJ3RBD102V	1/16W 1K	1	

Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R1123	D0GD682JA052	1/8W 6.8K	1	
		R1171	D0GB472JA065	1/10W 4.7K	1	
		R1172	D0GB472JA065	1/10W 4.7K	1	
		R1173	D0GB562JA065	1/10W 5.6K	1	
		R1174	D0GB470JA065	1/10W 47	1	
		R1176	D0GB182JA065	1/10W 1.8K	1	
		R7001	D0GD100JA052	1/8W 10	1	
		R7009	D0GB393JA065	1/10W 39K	1	
		S7001	EVQ11A05R	SWITCH(PLAY)	1	
		S7002	EVQ11A05R	SWITCH(STOP)	1	
		S7003	EVQ11A05R	SWITCH(OPEN/CLOSE)	1	
		S7004	EVQ11A05R	SWITCH(POWER)	1	
	⚠	T1001	G4DYA0000473	TRANSFORMER	1	
		T1101	G4D1A0000129	TRANSFORMER	1	
	⚠	P1001	K2AB2B000007	AC INLET	1	
		P1102	K1KY15AA0606	CONNECTOR(15P)	1	
		ZA1001	K9ZZ00002324	EARTH PLATE	1	
		ZA1005	K9ZZ00002324	EARTH PLATE	1	
		ZB7001	RMN0958-1	FL HOLDER	1	
		■	RFKB76327BT	DIGITAL P.C.B.		E.S.D. ADJ BDT230P
		■	RFKB76327BCT	DIGITAL P.C.B.		E.S.D. ADJ BDT230PC
		C51001	F1G1A1040006	10V 0.1U	1	
		C51003	F1G1A1040006	10V 0.1U	1	
		C51005	F1G1A1040006	10V 0.1U	1	
		C51007	F1G1H200A557	50V 20P	1	
		C51008	F1G1H200A557	50V 20P	1	
		C51010	F1G1A1040006	10V 0.1U	1	
		C51011	F1L0G107A002	6.3V 100U	1	
		C51012	F1G1A1040006	10V 0.1U	1	
		C51014	F1G1A1040006	10V 0.1U	1	
		C51015	F1G1A1040006	10V 0.1U	1	
		C51016	F1G1A1040006	10V 0.1U	1	
		C51017	F1G1A1040006	10V 0.1U	1	
		C51018	F1G1A1040006	10V 0.1U	1	
		C51019	F1G1A1040006	10V 0.1U	1	
		C51020	F1G1A1040006	10V 0.1U	1	
		C51021	F1G1A1040006	10V 0.1U	1	
		C51022	F1G1H101A541	50V 100P	1	
		C51023	F1G1A1040006	10V 0.1U	1	
		C51024	F1G1A1040006	10V 0.1U	1	
		C51025	F1H0J475A010	6.3V 4.7U	1	
		C51026	F1G1A1040006	10V 0.1U	1	
		C51027	F1H0J475A010	6.3V 4.7U	1	
		C51028	F1G1A1040006	10V 0.1U	1	
		C51301	F1G1A1040006	10V 0.1U	1	
		C51302	F1G1A1040006	10V 0.1U	1	
		C52001	F1G1A1040006	10V 0.1U	1	
		C52002	F1G1A1040006	10V 0.1U	1	
		C52003	F1G1A1040006	10V 0.1U	1	
		C52004	F1G1A1040006	10V 0.1U	1	
		C52005	F1G1A1040006	10V 0.1U	1	
		C52007	F1G1A1040006	10V 0.1U	1	
		C52010	F1H0J106A009	6.3V 10U	1	
		C52011	F1G1A1040006	10V 0.1U	1	
		C52012	F1G1A1040006	10V 0.1U	1	
		C52013	F1G1A1040006	10V 0.1U	1	
		C52014	F1G1A1040006	10V 0.1U	1	
		C52015	F1G1A1040006	10V 0.1U	1	
		C52016	F1G1A1040006	10V 0.1U	1	
		C52017	F1G1A1040006	10V 0.1U	1	
		C52018	F1G1A1040006	10V 0.1U	1	
		C52019	F1G1A1040006	10V 0.1U	1	

Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C52020	F1G1A1040006	10V 0.1U	1	
		C52021	F1G1A1040006	10V 0.1U	1	
		C52022	F1G1A1040006	10V 0.1U	1	
		C52023	F1G1A1040006	10V 0.1U	1	
		C52024	F1G1A1040006	10V 0.1U	1	
		C52025	F1G1A1040006	10V 0.1U	1	
		C52026	F1G1A1040006	10V 0.1U	1	
		C52027	F1G1A1040006	10V 0.1U	1	
		C52028	F1G1A1040006	10V 0.1U	1	
		C52100	F1G1A1040006	10V 0.1U	1	
		C52101	F1G1A1040006	10V 0.1U	1	
		C52102	F1G1A1040006	10V 0.1U	1	
		C52103	F1G1A1040006	10V 0.1U	1	
		C52105	F1G1A1040006	10V 0.1U	1	
		C52106	F1G1A1040006	10V 0.1U	1	
		C52107	F1G1A1040006	10V 0.1U	1	
		C52108	F1G1A1040006	10V 0.1U	1	
		C52109	F1G1A1040006	10V 0.1U	1	
		C52110	F1G1A1040006	10V 0.1U	1	
		C52111	F1G1A1040006	10V 0.1U	1	
		C52112	F1G1A1040006	10V 0.1U	1	
		C52113	F1G1A1040006	10V 0.1U	1	
		C52114	F1G1A1040006	10V 0.1U	1	
		C52115	F1G1A1040006	10V 0.1U	1	
		C52116	F1G1A1040006	10V 0.1U	1	
		C52117	F1G1A1040006	10V 0.1U	1	
		C52118	F1G1H101A565	50V 100P	1	
		C52119	F1G1H101A565	50V 100P	1	
		C52151	F1G1A1040006	10V 0.1U	1	
		C52152	F1G1A1040006	10V 0.1U	1	
		C52153	F1G1A1040006	10V 0.1U	1	
		C52154	F1G1A1040006	10V 0.1U	1	
		C52155	F1G1A1040006	10V 0.1U	1	
		C52156	F1G1A1040006	10V 0.1U	1	
		C52157	F1G1A1040006	10V 0.1U	1	
		C52158	F1G1A1040006	10V 0.1U	1	
		C52159	F1G1A1040006	10V 0.1U	1	
		C52160	F1G1A1040006	10V 0.1U	1	
		C52161	F1G1A1040006	10V 0.1U	1	
		C52162	F1G1A1040006	10V 0.1U	1	
		C52163	F1G1A1040006	10V 0.1U	1	
		C52164	F1G1H101A565	50V 100P	1	
		C52165	F1G1H101A565	50V 100P	1	
		C52201	F1G1A1040006	10V 0.1U	1	
		C52202	F1G1A1040006	10V 0.1U	1	
		C52204	F1G1A1040006	10V 0.1U	1	
		C52205	F1G1A1040006	10V 0.1U	1	
		C52206	F1G1A1040006	10V 0.1U	1	
		C52207	F1G1A1040006	10V 0.1U	1	
		C52208	F1G1A1040006	10V 0.1U	1	
		C52209	F1G1A1040006	10V 0.1U	1	
		C52210	F1G1A1040006	10V 0.1U	1	
		C52211	F1G1A1040006	10V 0.1U	1	
		C52212	F1G1A1040006	10V 0.1U	1	
		C52213	F1G1A1040006	10V 0.1U	1	
		C52214	F1G1A1040006	10V 0.1U	1	
		C52215	F1G1A1040006	10V 0.1U	1	
		C52216	F1G1A1040006	10V 0.1U	1	
		C52217	F1G1H101A565	50V 100P	1	
		C52218	F1G1H101A565	50V 100P	1	
		C52219	F1G1A1040006	10V 0.1U	1	
		C53019	F1G0J1050007	6.3V 10U	1	

Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C55001	F1G1E102A086	25V 1000P	1	
		C55016	F1G1A104A012	10V 0.1U	1	
		C55017	F1J1C475A059	16V 4.7U	1	
		C55018	F1G1A104A012	10V 0.1U	1	
		C55026	F1H0J2250008	6.3V 2.2U	1	
		C55029	F2G1E470A066	25V 47P	1	
		C55030	F1G1A104A012	10V 0.1U	1	
		C55031	F1G1E1040001	25V 0.1U	1	
		C55032	F1K1E1060001	25V 10U	1	
		C55033	F1J1A106A024	10V 10U	1	
		C55038	F1J0J2260004	6.3V 22U	1	
		C55041	F1J0J2260004	6.3V 22U	1	
		C55042	F2G0J221A065	6.3V 220U	1	
		C55046	F1G1A104A012	10V 0.1U	1	
		C55054	F1H0J2250008	6.3V 2.2U	1	
		C55056	F1G1E102A086	25V 1000P	1	
		C55057	F1G1E102A086	25V 1000P	1	
		C55058	F1G1E102A086	25V 1000P	1	
		C55059	F1G1E102A086	25V 1000P	1	
		C55060	F1G0J1050007	6.3V 10U	1	
		C55061	F1G1C104A077	16V 0.1U	1	
		C55063	F1G1E102A086	25V 1000P	1	
		C55064	F1G1E1040001	25V 0.1U	1	
		C55065	F1G1E1040001	25V 0.1U	1	
		C55066	F1G1E1040001	25V 0.1U	1	
		C55067	F1G1A1040006	10V 0.1U	1	
		C55068	F1G1A1040006	10V 0.1U	1	
		C55076	F1G1C104A077	16V 0.1U	1	
		C55077	F1G1C104A077	16V 0.1U	1	
		C55079	F1G1A1040006	10V 0.1U	1	
		C55080	F1H0J2250008	6.3V 2.2U	1	
		C55081	F1H0J2250008	6.3V 2.2U	1	
		C55082	F1G1E1030005	25V 0.01U	1	
		C55083	F1G1E1030005	25V 0.01U	1	
		C55085	F1K1E1060001	25V 10U	1	
		C55086	F1G1E1040001	25V 0.1U	1	
		C55087	F1J1A106A043	10V 10U	1	
		C55088	F1G1E1040001	25V 0.1U	1	
		C55093	F1G1E102A086	25V 1000P	1	
		C55094	F1G1E102A086	25V 1000P	1	
		C55095	F1G1E102A086	25V 1000P	1	
		C55096	F1G1A104A012	10V 0.1U	1	
		C55098	F1G1A104A012	10V 0.1U	1	
		C55100	F1H1H682A219	50V 6800P	1	
		C55101	F1G1C104A077	16V 0.1U	1	
		C55102	F1J1C106A059	16V 10U	1	
		C55104	F1J1C106A059	16V 10U	1	
		C55105	F1K1E1060001	25V 10U	1	
		C55106	F1K1E105A029	25V 1U	1	
		C55110	F1J1E104A137	25V 0.1U	1	
		C55120	F1G1E1030005	25V 0.01U	1	
		C55121	F1G1E1030005	25V 0.01U	1	
		C56302	F1H1A105A028	10V 1U	1	
		C56303	F1G0J1050007	6.3V 10U	1	
		C56504	F1G1A1040006	10V 0.1U	1	
		C56505	F1G1A1040006	10V 0.1U	1	
		C56507	F1G1A1040006	10V 0.1U	1	
		C56508	F1G1A1040006	10V 0.1U	1	
		C56509	F1G1A1040006	10V 0.1U	1	
		C56511	F1G1A1040006	10V 0.1U	1	
		C56521	F1G1A1040006	10V 0.1U	1	
		C56522	F1G1A1040006	10V 0.1U	1	

Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C56523	F1G1A1040006	10V 0.1U	1	
		C56524	F1G1A1040006	10V 0.1U	1	
		C56525	F1G1A1040006	10V 0.1U	1	
		C58100	F1H1A105A028	10V 1U	1	
		C58101	F1H1A105A028	10V 1U	1	
		C58112	F1H1C104A071	16V 0.1U	1	
		C58113	F1H1E223A050	25V 0.022U	1	
		C58120	F1H1A105A028	10V 1U	1	
		C58210	F1J0J106A014	6.3V 10U	1	
		C58221	F1J0J2260004	6.3V 22U	1	
		C58222	F1J0J2260004	6.3V 22U	1	
		C58230	F1H1A105A028	10V 1U	1	
		C58231	F1G1C223A081	16V 0.022U	1	
		C58232	F1H1C104A071	16V 0.1U	1	
		C58233	F1H1H4700006	50V 47P	1	
		C58310	F1J1C1060001	16V 10U	1	
		C58321	F1J0J2260004	6.3V 22U	1	
		C58322	F1J0J2260004	6.3V 22U	1	
		C58330	F1H1A105A028	10V 1U	1	
		C58331	F1G1E6820007	25V 6800P	1	
		C58332	F1H1C104A071	16V 0.1U	1	
		C58400	F1J0J106A014	6.3V 10U	1	
		C58401	F1J0J106A014	6.3V 10U	1	
		C58500	F1J0J106A014	6.3V 10U	1	
		C58501	F1J0J106A014	6.3V 10U	1	
		C58502	F1G1H102A541	50V 1000P	1	
		C58512	F1G1H102A541	50V 1000P	1	
		C58521	F1J0J106A014	6.3V 10U	1	
		C58600	F1H1A105A028	10V 1U	1	
		C58601	F1H1A105A028	10V 1U	1	
		C59001	F1G1A1040006	10V 0.1U	1	
		C59002	F1G1A1040006	10V 0.1U	1	
		C59003	F1G1A1040006	10V 0.1U	1	
		C59004	F1G1A1040006	10V 0.1U	1	
		C59005	F1G1A1040006	10V 0.1U	1	
		C59006	F1G1A1040006	10V 0.1U	1	
		C59007	F1G1A1040006	10V 0.1U	1	
		C59008	F1G1A1040006	10V 0.1U	1	
		C59401	F1G1A1040006	10V 0.1U	1	
		C59402	F1G1A1040006	10V 0.1U	1	
		FL59601	J0MAB0000147	FILTER	1	
		IC51001	RFKB76327BT	IC	1	E.S.D. ADJ BDT230P
		IC51001	RFKB76327BCT	IC	1	E.S.D. ADJ BDT230PC
		IC51301	RFKB76327BT	IC	1	E.S.D. ADJ BDT230P
		IC51301	RFKB76327BCT	IC	1	E.S.D. ADJ BDT230PC
		IC52001	C3ABTY000059	IC	1	E.S.D.
		IC52002	C3ABTY000059	IC	1	E.S.D.
		IC52201	C3ABUY000028	IC	1	E.S.D.
		IC53003	K7JAAAB00001	IC	1	E.S.D.
		IC55003	C0GBY0000130	IC	1	E.S.D.
		IC55004	C0DBGYY02449	IC	1	E.S.D.
		IC56301	C0CBCDC00074	IC	1	E.S.D.
		IC58100	C0DBGYY03267	IC	1	E.S.D.
		IC58111	C0EBY0000679	IC	1	E.S.D.
		IC58200	C0DBAYY01445	IC	1	E.S.D.
		IC58300	C0DBAYY01285	IC	1	E.S.D.
		IC58400	C0DBEYY00176	IC	1	E.S.D.
		IC58500	C0DBZYY00577	IC	1	E.S.D.
		IC58520	C0DBZYY00577	IC	1	E.S.D.
		IC58600	C0DBGYY03267	IC	1	E.S.D.
		IP55004	K5H252Z00003	SURFACE MOUNTING FUSE	1	
		IP55005	K5H252Z00003	SURFACE MOUNTING FUSE	1	

Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

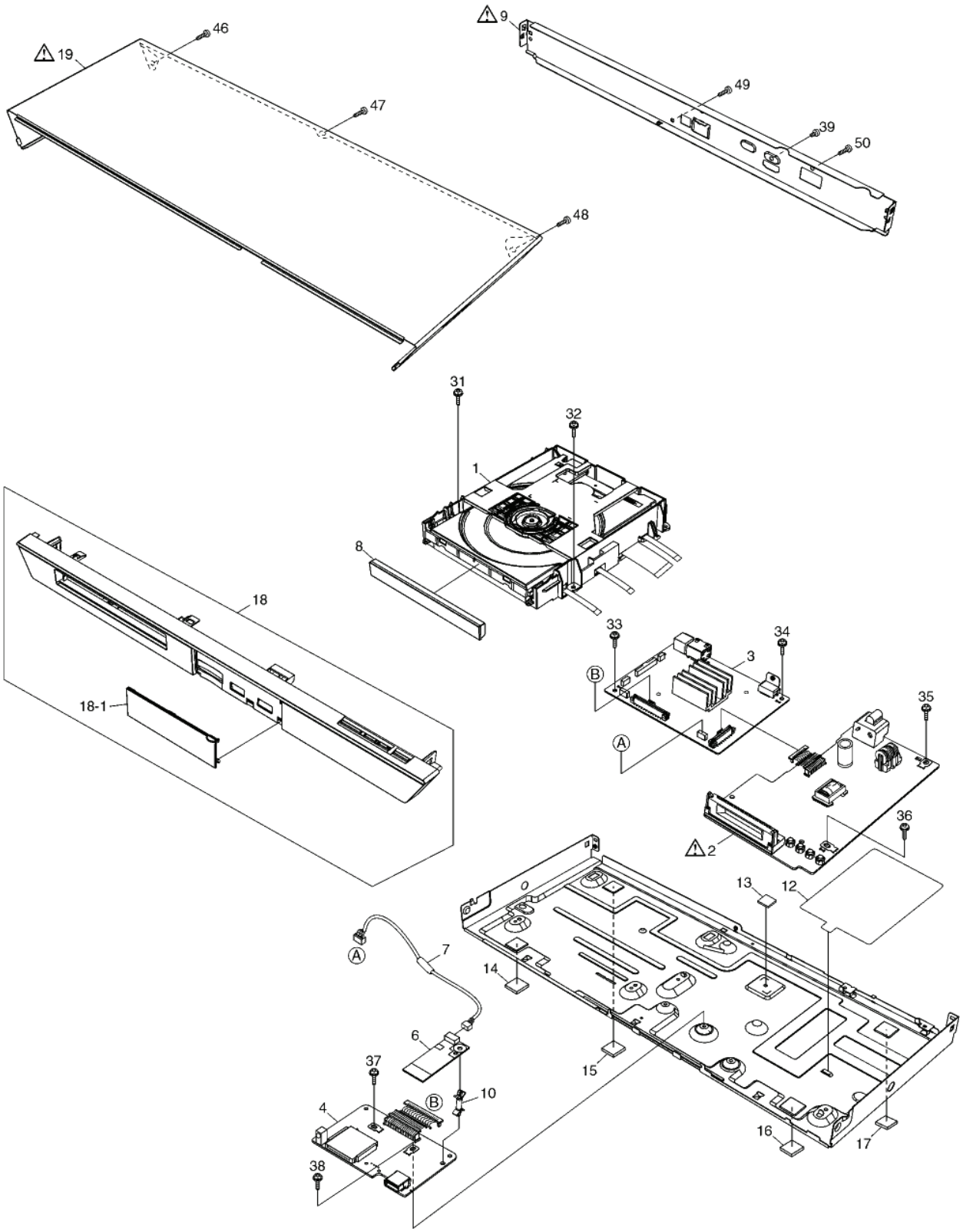
Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		JK56301	K1FY119E0025	JACK HDMI	1	
		L55001	G1C100KA0101	COIL	1	
		L55002	G1C220MA0291	COIL	1	
		L55003	G1C100KA0101	COIL	1	
		L56301	J0MAB0000241	FILTERS FOR EMI/ EMC	1	
		L56302	J0MAB0000241	FILTERS FOR EMI/ EMC	1	
		L58200	G1C3R3ZA0367	COIL	1	
		L58300	G1C3R3ZA0367	COIL	1	
		LB55001	J0JJC0000005	COIL	1	
		LB55002	J0JJC0000005	COIL	1	
		LB58500	J0JHC0000117	COIL	1	
		P51001	K1KY06AA0802	CONNECTOR(6P)	1	
		P55001	K1MY45A00001	CONNECTOR(45P)	1	
		P55003	K1MN04AA0046	CONNECTOR(4P)	1	
		P55004	K1MN05AA0046	CONNECTOR(5P)	1	
		P55005	K1MN05AA0046	CONNECTOR(5P)	1	
		P58001	K1KY15AA0607	CONNECTOR(15P)	1	
		P59001	K1KY23AA0607	CONNECTOR(23P)	1	
		P59301	K1KA04AA0083	CONNECTOR(4P)	1	
		P59401	K2LC108E0014	JACK USB	1	
		Q55001	B1CBGD000001	TRANSISTOR	1	E.S.D.
		Q55002	B1ABCF000010	TRANSISTOR	1	E.S.D.
		Q56301	B1ABDF000026	TRANSISTOR	1	E.S.D.
		Q58120	B1DGDC000002	TRANSISTOR	1	E.S.D.
		QR51001	B1GBCFJN0039	TRANSISTOR	1	E.S.D.
		QR58120	B1GBCFNN0041	TRANSISTOR	1	E.S.D.
		R51001	D0GA105JA023	1/16W 1000K	1	
		R51002	D0GAR00J0005	1/16W 0	1	
		R51005	D0GA103JA023	1/16W 10K	1	
		R51006	D0GA103JA023	1/16W 10K	1	
		R51007	D0GA103JA023	1/16W 10K	1	
		R51008	D0GA101JA023	1/16W 100	1	
		R51009	D0GA103JA023	1/16W 10K	1	
		R51010	D0GA101JA023	1/16W 100	1	
		R51011	D0GA103JA023	1/16W 10K	1	
		R51012	D0GA472JA023	1/16W 4.7K	1	
		R51013	D0GA101JA023	1/16W 100	1	
		R51016	D0GA101JA023	1/16W 100	1	
		R51017	D0GA472JA023	1/16W 4.7K	1	
		R51019	D0GA472JA023	1/16W 4.7K	1	
		R51022	D0GA472JA023	1/16W 4.7K	1	
		R51023	D0GA121JA023	1/16W 120	1	
		R51024	D0GA121JA023	1/16W 120	1	
		R51025	D0GA103JA023	1/16W 10K	1	
		R52100	D1BA1000A023	1/16W 100	1	
		R52101	D1BA1000A023	1/16W 100	1	
		R52102	D1BA1000A023	1/16W 100	1	
		R52103	D1BA2400A023	1/16W 240	1	
		R52150	D1BA1000A023	1/16W 100	1	
		R52151	D1BA2400A023	1/16W 240	1	
		R52152	D1BA1000A023	1/16W 100	1	
		R52153	D1BA1000A023	1/16W 100	1	
		R52201	D1BA1000A023	1/16W 100	1	
		R52202	D1BA1000A023	1/16W 100	1	
		R52203	D1BA2400A023	1/16W 240	1	
		R52204	D1BA1000A023	1/16W 100	1	
		R52205	D0GA470JA023	1/16W 47	1	
		R52206	D0GA470JA023	1/16W 47	1	
		R55012	D0GA333JA023	1/16W 33K	1	
		R55017	D0GA202JA023	1/16W 2K	1	
		R55018	D0GA222JA023	1/16W 2.2K	1	
		R55020	D0GA103JA023	1/16W 10K	1	

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R55029	D0GA121JA023	1/16W 120	1	
		R55030	D0GA121JA023	1/16W 120	1	
		R55031	D0GA121JA023	1/16W 120	1	
		R55040	ERJ8RQFR39V	1/8W 39	1	
		R55041	ERJ8RQFR39V	1/8W 39	1	
		R55050	D0GA103JA023	1/16W 10K	1	
		R55051	D0GB913JA065	1/10W 91K	1	
		R55060	D0GA562JA023	1/16W 5.6K	1	
		R55061	D0GA103JA023	1/16W 10K	1	
		R55104	ERJ14YJ681U	1/4W 680	1	
		R55105	ERJ14YJ681U	1/4W 680	1	
		R55106	ERJ14YJ681U	1/4W 680	1	
		R55108	D0GA473JA023	1/16W 47K	1	
		R55109	D0GA103JA023	1/16W 10K	1	
		R55113	D0GA272JA023	1/16W 2.7K	1	
		R56301	D0GA273JA023	1/16W 27K	1	
		R56302	D0GA101JA023	1/16W 100	1	
		R56505	D0GA102JA023	1/16W 1K	1	
		R58110	D0GA103JA023	1/16W 10K	1	
		R58230	ERJ2RHD223X	1/16W 22K	1	
		R58231	ERJ2RHD272X	1/16W 2.7K	1	
		R58232	ERJ2RHD103X	1/16W 10K	1	
		R58233	D0GB330JA065	1/10W 33	1	
		R58330	ERJ2RHD223X	1/16W 22K	1	
		R58331	D0GAR00J0005	1/16W 0	1	
		R58332	ERJ2RHD223X	1/16W 22K	1	
		R58333	D0GB220JA065	1/10W 22	1	
		R58400	ERJ2RHD103X	1/16W 10K	1	
		R58401	ERJ2RHD472X	1/16W 4.7K	1	
		R58402	ERJ2RHD273X	1/16W 27K	1	
		R58500	ERJ2RHD152X	1/16W 1.5K	1	
		R58501	ERJ2RHD183X	1/16W 18K	1	
		R58502	D0GA474JA023	1/16W 470K	1	
		R58520	ERJ2RHD333X	1/16W 33K	1	
		R58522	D0GA474JA023	1/16W 470K	1	
		R59001	ERJ2RHD512X	1/16W 5.1K	1	
		R59002	ERJ2RHD512X	1/16W 5.1K	1	
		R59003	ERJ2RHD243X	1/16W 24K	1	
		R59102	D0GA103JA023	1/16W 10K	1	
		R59201	D0GA103JA023	1/16W 10K	1	
		R59202	D0GA103JA023	1/16W 10K	1	
		R59301	D0GA103JA023	1/16W 10K	1	
		R59302	D0GA103JA023	1/16W 10K	1	
		R59307	D0GAR00J0005	1/16W 0	1	
		R59308	D0GAR00J0005	1/16W 0	1	
		R59401	D0GA750JA023	1/16W 75	1	
		R59402	D0GA750JA023	1/16W 75	1	
		R59403	D0GA750JA023	1/16W 75	1	
		R59404	D0GA750JA023	1/16W 75	1	
		R59601	D0GAR00J0005	1/16W 0	1	
		R59602	D0GA470JA023	1/16W 47	1	
		R59603	D0GA470JA023	1/16W 47	1	
		RX51003	D1HY1034A012	RESISTOR-RESISTOR	1	
		RX51004	D1HY1034A012	RESISTOR-RESISTOR	1	
		RX51005	D1HY1014A022	RESISTOR-RESISTOR	1	
		RX51006	D1HY1034A012	RESISTOR-RESISTOR	1	
		RX51007	D1HY1014A022	RESISTOR-RESISTOR	1	
		RX51301	D1HY4724A012	RESISTOR-RESISTOR	1	
		RX55004	D1HY1034A012	RESISTOR-RESISTOR	1	
		RX55005	D1HY4734A012	RESISTOR-RESISTOR	1	
		RX55006	D1HY1024A024	RESISTOR-RESISTOR	1	
		RX56302	D1HY2024A024	RESISTOR-RESISTOR	1	

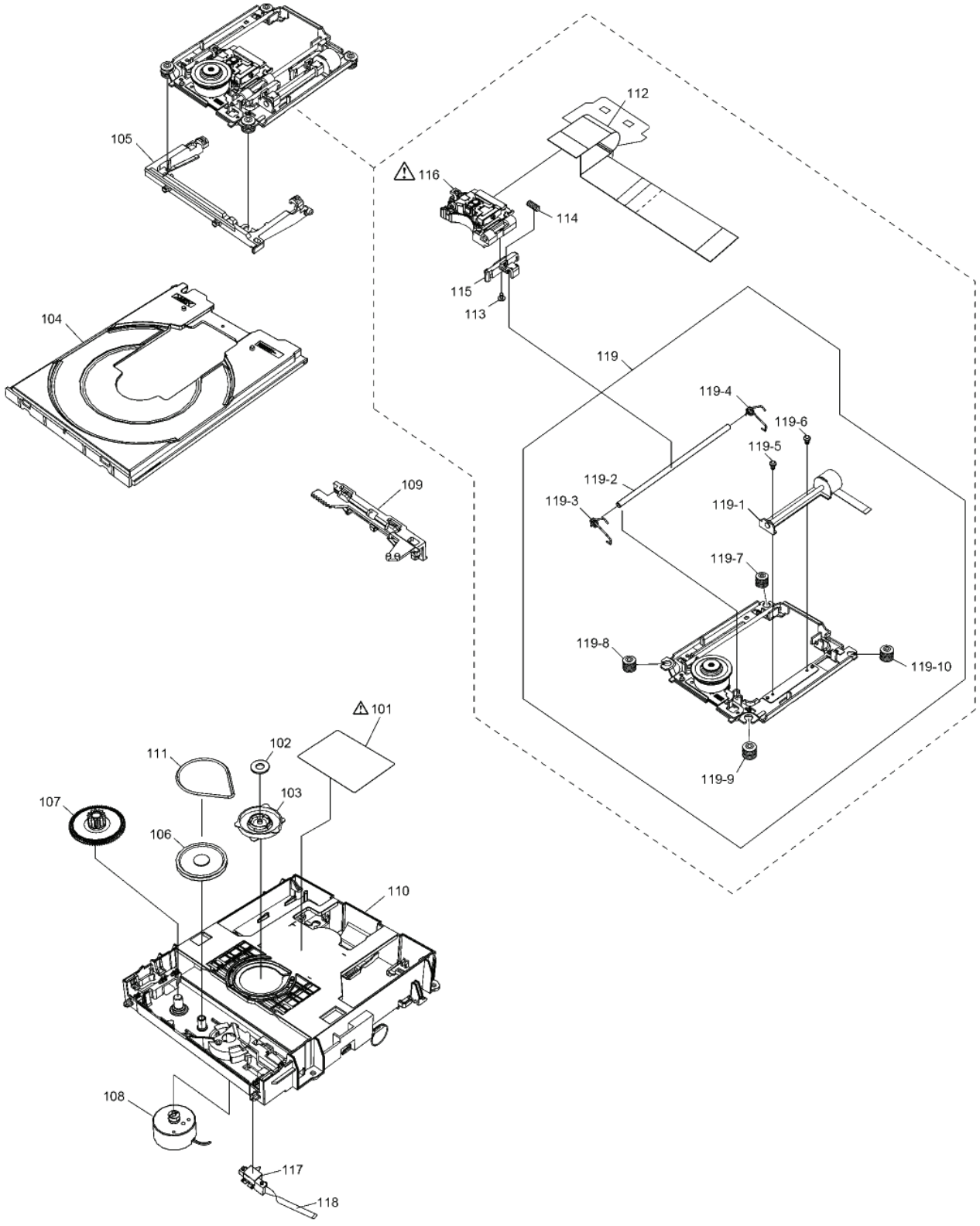
Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		RX58120	D1HY4734A012	RESISTOR-RESISTOR	1	
		RX59602	D1HY3304A012	RESISTOR-RESISTOR	1	
		RX59603	D1HY1034A012	RESISTOR-RESISTOR	1	
		RX59604	D1HY1034A012	RESISTOR-RESISTOR	1	
		T59201	EXC24CE900U	TRANSFORMER	1	
		T59401	G5BYC0000040	TRANSFORMER	1	
		X51001	H0J270500151	OSCILLATOR	1	
		ZA51000	RMY0409	RADIATOR SHEET	1	
		■	VEP70639A	SD_USB P.C.B.		(RTL) E.S.D.
		C6802	F1H1H102A219	50V 1000P	1	
		C6804	F1J0J226A014	6.3V 22U	1	
		C7701	F1H1A105A028	10V 1U	1	
		IR7001	PNJ4881M02VT	REMOTE SENSOR	1	
		R7701	ERJ3GEYJ330V	1/10W 33	1	
		R6801	D0GF1R0JA049	1/2W 1	1	
		R6802	D0GF1R0JA049	1/2W 1	1	
		R6803	ERJ3GEYJ820V	1/10W 82	1	
		R6804	ERJ3GEYJ820V	1/10W 82	1	
		R6805	ERJ3GEYJ820V	1/10W 82	1	
		R6806	ERJ3GEYJ330V	1/10W 33	1	
		R6807	ERJ3GEYJ820V	1/10W 82	1	
		R6808	ERJ3GEYJ820V	1/10W 82	1	
		R6809	ERJ3GEYJ102V	1/10W 1K	1	
		R6810	ERJ3GEYJ102V	1/10W 1K	1	
		LB6802	J0JHC0000045	COIL	1	
		P6801	K1KY23AA0606	CONNECTOR(23P)	1	
		P6802	K1NA12B00005	SD CARD CONNECTOR	1	
		P6804	K1FY104B0076	JACK USB	1	
		ZJ6801	K9ZZ00002324	EARTH PLATE	1	
		ZJ6802	K9ZZ00002324	EARTH PLATE	1	

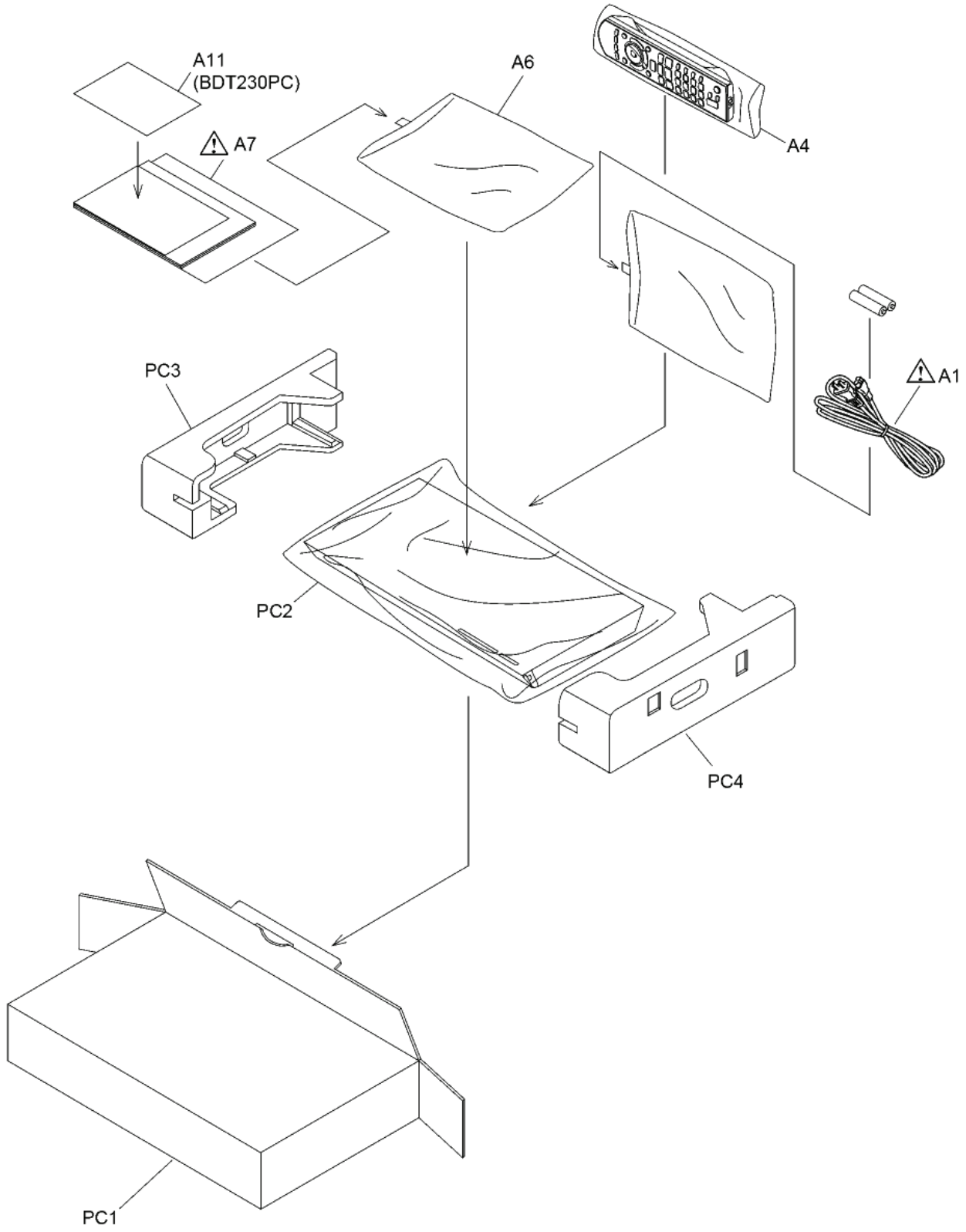
Model No. : DMP-BDT230P/DMP-BDT230PC Exploded View



Model No. : DMP-BDT230P/DMP-BDT230PC Mechanism View



Model No. : DMP-BDT230P/DMP-BDT230PC Packing View



Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
			■	CASING		
		1	VXY2171T	BD DRIVE	1	ADJ
	⚠	2	VEP71300C	POWER P.C.B.	1	(RTL) E.S.D.
		3	RFKB76327BT	DIGITAL P.C.B.	1	E.S.D. ADJ BDT230P
		3	RFKB76327BCT	DIGITAL P.C.B.	1	E.S.D. ADJ BDT230PC
		4	VEP70639A	SD_USB P.C.B.	1	(RTL) E.S.D.
		6	C5ZZZ0000085	WIFI MODULE	1	
		7	VEE1P26	WIRE	1	
		8	RGK2481B-K	TRAY DOOR PANEL	1	
	⚠	9	RGR0445A-A2	REAR PANEL	1	BDT230P
	⚠	9	RGR0445A-B2	REAR PANEL	1	BDT230PC
		10	RMX0504	SPACER	1	
		12	RMZ1266	BOTTOM CASE INSULATION SHEET	1	
		13	RSC0905	HEAT RADIATION PLATE	1	
		14	RKA0239-KJ	FOOT RUBBER	1	
		15	RKA0239-KJ	FOOT RUBBER	1	
		16	RKA0239-KJ	FOOT RUBBER	1	
		17	RKA0239-KJ	FOOT RUBBER	1	
		18	RYP1896-K	FRONT PANEL ASS'Y	1	
		18-1	RKF0963A-K	DOOR	1	
	⚠	19	RKM0715-K	TOP CASE	1	
		31	RHD30168-J	SCREW	1	
		32	RHD30168-J	SCREW	1	
		33	RHD30168-J	SCREW	1	
		34	RHD30168-J	SCREW	1	
		35	RHD30168-J	SCREW	1	
		36	RHD30168-J	SCREW	1	
		37	RHD30168-J	SCREW	1	
		38	RHD30168-J	SCREW	1	
		39	XSN3+4FJ	SCREW	1	
		46	RHD30119-U	SCREW	1	
		47	RHD30119-U	SCREW	1	
		48	RHD30119-U	SCREW	1	
		49	RHD30119-U	SCREW	1	
		50	RHD30119-U	SCREW	1	
	⚠	101	VQL2P54	LASER CAUTION LABEL	1	
		102	VMA0V86	YOKE	1	
		103	VMD6392-J	CLAMPER	1	
		104	VMD6881	TRAY	1	
		105	VMD6580	MID BASE	1	
		106	VDG1756-1J	PULLEY GEAR	1	
		107	VDG1757-J	MID GEAR	1	
		108	VEM0896-J	LOADING MOTOR U	1	
		109	VMD6390-J	SLIDE CAM	1	
		110	VMD6882	MECHA CHASSIS	1	
		111	VMG1720	BELT	1	
		112	VWJ2400	PICKFFC	1	
		113	VHD2268	NUT PIECE SCREW	1	
		114	VMB4004-J	NUT PIECE SPRING	1	
		115	VMD6754	NUT PIECE	1	
	⚠	116	VXA9068-SER	OPU	1	ADJ
		117	K0L1CE000001	SWITCH	1	
		118	VWJ2304	SW FFC	1	
		119	VXA9067-SER	TRAVERSE UNIT	1	
		119-1	L6KAYYYH0010	STEPPING MOTOR	1	
		119-2	VMS8126	SHAFT	1	
		119-3	VMB4682	SHAFT SPRING	1	
		119-4	VMB4682	SHAFT SPRING	1	
		119-5	XTN2+4FFJ	STEPPING MOTOR SCREW	1	
		119-6	XTN2+4FFJ	STEPPING MOTOR SCREW	1	
		119-7	VMG1966	DAMPER	1	
		119-8	VMG1966	DAMPER	1	

Model No. : DMP-BDT230P/DMP-BDT230PC Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		119-9	VMG1966	DAMPER	1	
		119-10	VMG1966	DAMPER	1	
			■	ACCESSORY		
	⚠	A1	K2CB2CB00022	AC CORD	1	
		A4	N2QAYB000874	REMOTE CONTROL UNIT	1	
		A6	RPFC0119-1	POLYETHYLENE BAG	1	
	⚠	A7	VQT4V26	OPERATING INSTRUCTIONS	1	(IA)
	⚠	A7	VQT4V27	OPERATING INSTRUCTIONS	1	(IB) BDT230PC
		A11	RQCS0634	CANADIAN FRENCH SHEET	1	BDT230PC
			■	PACKING		
		PC1	RYQ1206-Z	PACKING CASE	1	BDT230P
		PC1	RYQ1207-Z	PACKING CASE	1	BDT230PC
		PC2	RPF0662	POLYETHYLENE BAG	1	
		PC3	RPN2571A	CUSHION (A)	1	
		PC4	RPN2571B	CUSHION (B)	1	