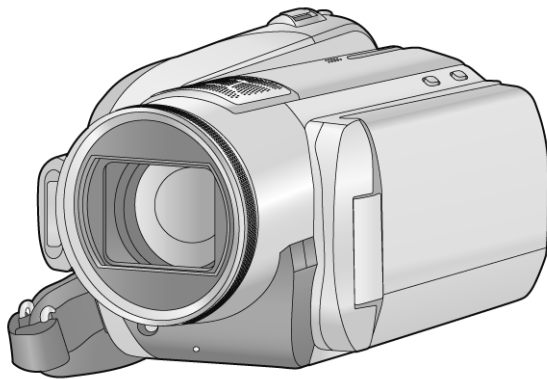


# Service Manual

High Definition Video Camera



Model No. **HDC-HS250P**

**HDC-HS250PC**

**HDC-HS250PU**

**HDC-HS200EB**

**HDC-HS200EC**

**HDC-HS200EE**

**HDC-HS200EG**

**HDC-HS200EP**

**HDC-HS200GC**

**HDC-HS200GJ**

**HDC-HS200GK**

**HDC-HS200GN**

**HDC-HS200GT**

**HDC-HS200SG**

Vol. 1

Colour

(K).....Black Type

(S).....Silver Type (only HDC-HS200EG/GC)

## **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.

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# 1 Safety Precaution

## 1.1. General Guidelines

### 1. IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by

 in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

## 1.2. 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  $1\text{ M}\Omega$  and  $5.2\text{ M}\Omega$ . When the exposed metal does not have a return path to the chassis, the reading must be infinity.

## 1.3. 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  $1.5\text{ k}\Omega$ ,  $10\text{ W}$  resistor, in parallel with a  $0.15\text{ }\mu\text{F}$  capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with  $1\text{ k}\Omega/\text{V}$  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  $0.75\text{ V RMS}$ . A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed  $1/2\text{ mA}$ . 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.

Hot-Check Circuit

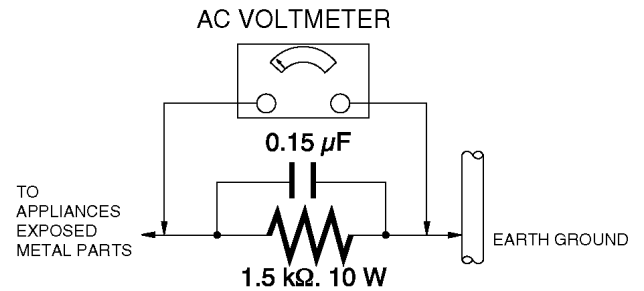


Figure. 1

## 1.4. How to Discharge the Capacitor on Sub PCB

### CAUTION:

1. Be sure to discharge the capacitor on SUB PCB.
2. Be careful of the high voltage circuit on SUB PCB when servicing.

### [Discharging Procedure]

1. Refer to the disassemble procedure and Remove the necessary parts/unit.
2. Put the insulation tube onto the lead part of Resistor (ERG5SJ102:1k $\Omega$  /5W).  
(an equivalent type of resistor may be used.)
3. Put the resistor between both terminals of capacitor on SUB PCB for approx. 5 seconds.
4. After discharging confirm that the capacitor voltage is lower than 10V using a voltmeter.

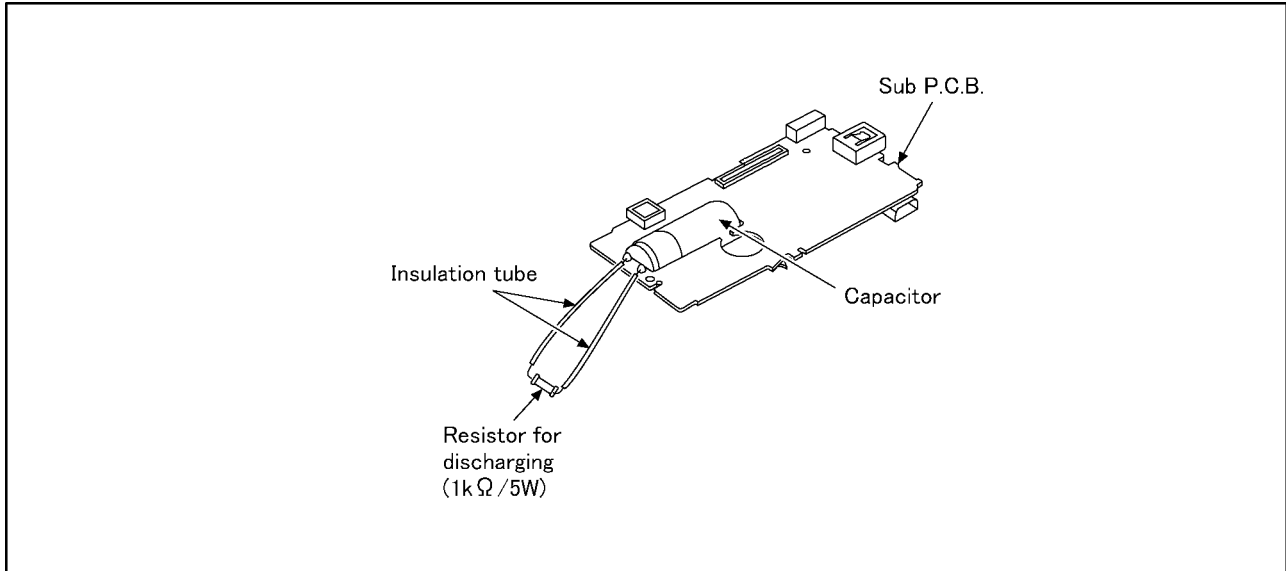


Fig. F1

## 2 Warning

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

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are 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 antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

**CAUTION :**

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

### 2.2. How to Recycle the Lithium Ion Battery (U.S. Only)

**ENGLISH**



A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

**FRANÇAIS**



L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion/polymère recyclable. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

## 2.3. Caution for AC Cord (For EB/GC/SG)

### 2.3.1. Information for Your Safety

#### IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

#### WARNING

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

#### CAUTION

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

#### FOR YOUR SAFETY

##### DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

### 2.3.2. Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362

Check for the ASTA mark or the BSI mark on the body of the fuse.



If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safely.

There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt, please consult a qualified electrician.

### 2.3.2.1. Important

The wires in this mains lead are coloured in accordance with the following code:

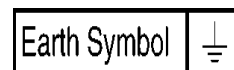
Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

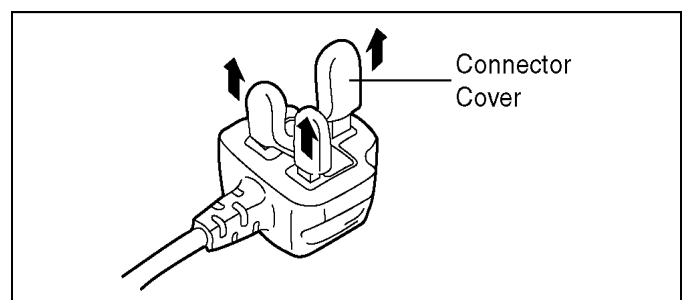
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.



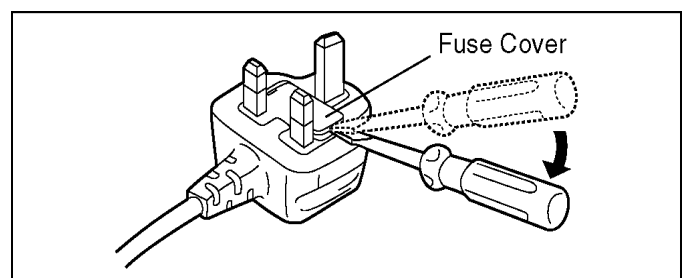
### 2.3.2.2. Before Use

Remove the Connector Cover as follows.

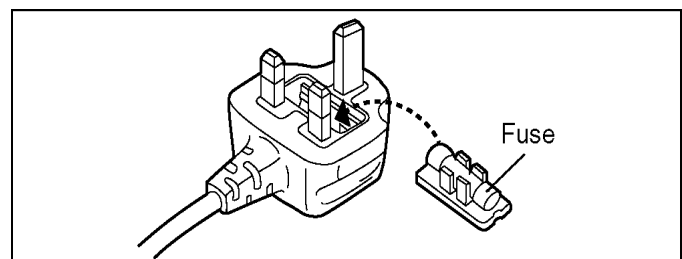


### 2.3.2.3. How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



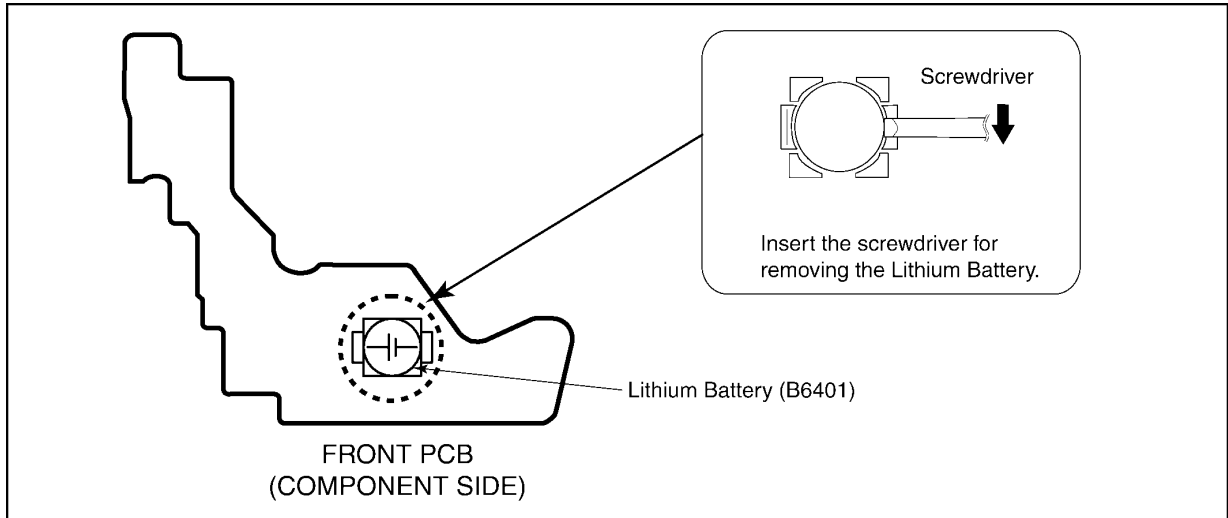
2. Replace the fuse and attach the Fuse cover.



## 2.4. How to Replace the Lithium Battery

### 2.4.1. Replacement Procedure

1. Remove the Front PCB. (Refer to Disassembly Procedures.)
2. Remove the Lithium battery (Ref. No. "B6401" at component side of Front PCB) and then replace it into new one.



#### NOTE:

This Lithium battery is a critical component.

(Type No.: ML-614S/ZTK **Manufactured by Energy Company, Panasonic Corporation**)

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in requirement designed specifically for its use.

Replacement batteries must be of same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

#### (For English)

### CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer's instructions.

#### (For German)

### ACHTUNG

Explosionsgefahr bei falschem Anbringen der Batterie. Ersetzen Sie nur mit einem äquivalentem vom Hersteller empfohlenem Typ.

Behandeln Sie gebrauchte Batterien nach den Anweisungen des Herstellers.

#### (For French)

### MISE EN GARDE

Une batterie de remplacement inappropriée peut exploser. Ne remplacez qu'avec une batterie identique ou d'un type recommandé par le fabricant. L'élimination des batteries usées doit être faite conformément aux instructions du fabricant.

#### NOTE:

Above caution is applicable for a battery pack which is for HDC-HS250/HS200 series, as well.

1. Battery Pack for this model.
2. Button-type battery for Remote controller (CR2025: Being supplied from Energy Company, Panasonic Corporation)

## 3 Service Navigation

### 3.1. Introduction

This service manual contains technical information, which allow service personnel's to understand and service this model.

Please place orders using the parts list and not the drawing reference numbers.

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

### 3.2. 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°C (86°F) more than that of the normal solder.

#### Distinction 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°C (662±86°F).

#### Recommended Lead Free Solder (Service Parts Route.)

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

#### Note

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

### 3.3. Important Notice 1:(Other than U.S.A. and Canadian Market)

1. The service manual does not contain the following information, because of the impossibility of servicing at component level without concerned equipment/facilities.

- a. Schematic diagram, Block Diagram and PCB layout of MAIN PCB.
- b. Parts list for individual parts for MAIN PCB.

When a part replacement is required for repairing MAIN PCB, replace as an assembled parts. (Main PCB)

2. The following category is /are recycle module part. Please send it/them to Central Repair Center.

- MAIN PCB (VEP03H66Q : HDC-HS250P/PC)
- MAIN PCB (VEP03H66R : HDC-HS250PU)
- MAIN PCB (VEP03H66V : HDC-HS200EB)
- MAIN PCB (VEP03H66T : HDC-HS200EC/EG)
- MAIN PCB (VEP03H66Y: HDC-HS200EE)
- MAIN PCB (VEP03H66U : HDC-HS200EP)
- MAIN PCB (VEP03H66W: HDC-HS200GC/SG)
- MAIN PCB (VEP03H66X: HDC-HS200GJ)
- MAIN PCB (VEP03H66AB: HDC-HS200GK)
- MAIN PCB (VEP03H66AA: HDC-HS200GN)
- MAIN PCB (VEP03H66S: HDC-HS200GT)



### 3.4. How to Define the Model Suffix (NTSC or PAL model)

There are eight kinds of HDC-HS250/HS200.








- a) HDC-HS200S
- b) HDC-HS250P
- c) HDC-HS250PC
- d) HDC-HS200EB/EC/EG/EP/GN
- e) HDC-HS200EE
- f) HDC-HS200GK
- g) HDC-HS200GT
- h) HDC-HS200GC/GJ/SG, HS250PU

(HDC-HS200S is exclusively Japan domestic model.)

What is the difference is that the "INITIAL SETTING" data which is stored in Flash ROM mounted on Main PCB.

#### 3.4.1. Defining methods:

To define the model suffix to be serviced, refer to the rating label which is putted on the Unit.

<p><b>a) HDC-HS200S</b> HDC-HS200S is exclusively Japan domestic model.</p> 
<p><b>b) HDC-HS250P</b> The nameplate for this model show the following Safety registration mark.</p> 
<p><b>c) HDC-HS250PC</b> The nameplate for this model show the following Safety registration mark.</p> 
<p><b>d) HDC-HS200EB/EC/EG/EP/GN</b> The nameplate for these models show the following Safety registration mark.</p> 
<p><b>e) HDC-HS200EE</b> The nameplate for this model show the following Safety registration mark.</p> 
<p><b>f) HDC-HS200GK</b> The nameplate for this model show the following Safety registration mark.</p> 
<p><b>g) HDC-HS200GT</b> The nameplate for this model show the following Safety registration mark.</p> 
<p><b>h) HDC-HS200GC/GJ/SG, HS250PU</b> The nameplate for these models do not show any above Safety registration mark.</p>

**NOTE:**

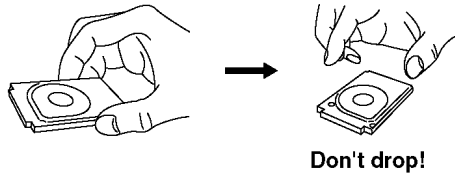

After replacing the MAIN PCB, be sure to achieve adjustment.

The adjustment instruction is available at "software download" on the "Support Information from NWBG/VDBG-AVC" web-site in "TSN system", together with Maintenance software.

### 3.5. Precautions for Handling HDD

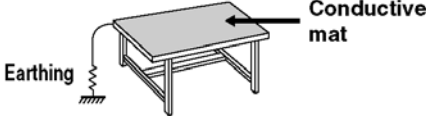

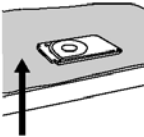
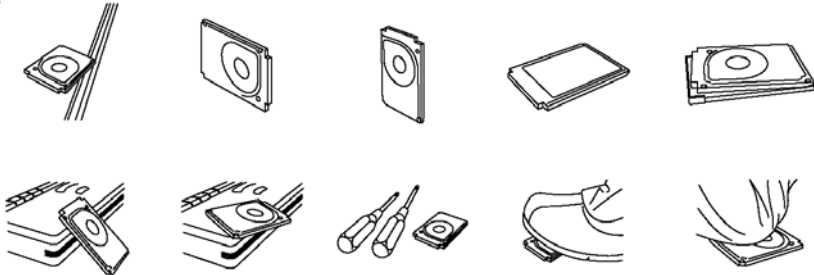
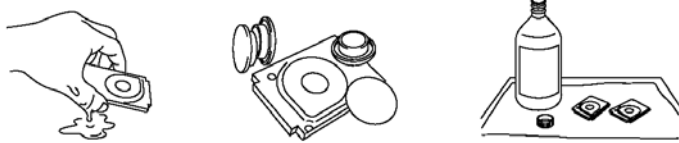
1. Handle HDD very carefully to prevent the static electricity and shock.
2. Set the HDD quickly after taking it out from the package. Make sure to put the HDD on buffer materials, etc.

#### 3.5.1. Precautions at incoming process and for opening packages

Preventing shock	<ul style="list-style-type: none"> <li>• Do not throw down HDD from luggage carrier or avoid dropping accidentally when unloading. The HDD may not be reliable when impacts of dropping, throwing or rolling occur.</li> <li>• Avoid HDD hitting other equipment or other HDD. Hold HDD firmly but do not apply excessive force when taking out from the package because it is particularly slippery.</li> <li>• When taking out HDD from the package, make sure to put buffer materials such as conductive urethane materials on a work table. Also, a stable place is recommended to avoid impacts or vibration.</li> </ul>
Preventing condensation	<ul style="list-style-type: none"> <li>• To prevent dew condensation on HDD due to sharp temperature change, keep it indoors without unpacking, and adjust the package of HDD to room temperature completely before unpacking.</li> <li>• Avoid entrance or window areas where temperature changes easily for storage.</li> </ul>
Holding example	<ul style="list-style-type: none"> <li>• Take out HDD holding both sides, not to press the top cover and the center of the device label.</li> </ul> <div style="text-align: center;"> <p>&lt;OK&gt;</p>  <p>&lt;NG&gt;</p>  </div>
Preventing static electricity	<ul style="list-style-type: none"> <li>• After opening package, HDD must be handled only by a specified worker in E.S.D.* free environment on a conductive mat. It may cause damage on HDD components due to overvoltage such as electrostatic discharge, etc.</li> </ul>

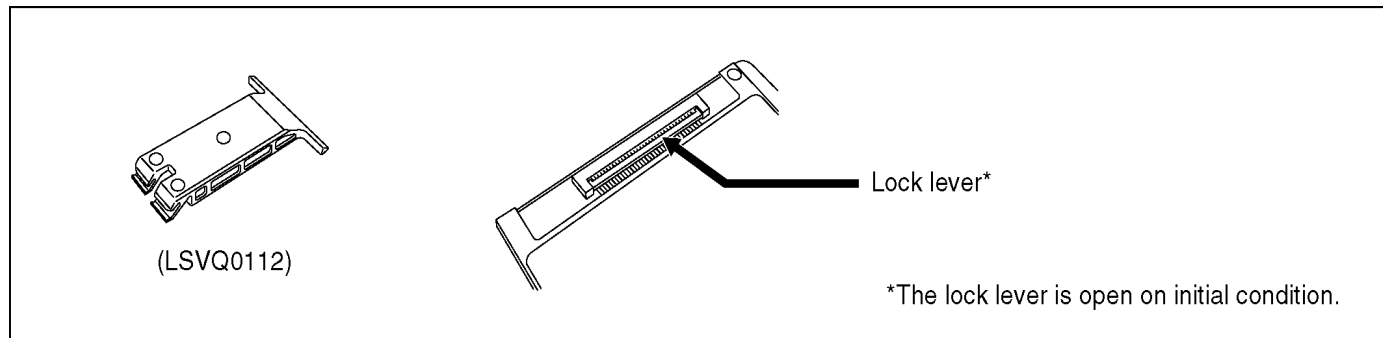
\*E.S.D. = Electrostatically Sensitive Devices

### 3.5.2. Precautions for installing HDD

<p>Preventing static electricity</p>	<ul style="list-style-type: none"> <li>HDD may be destroyed by static electricity charged to clothes or human body. Place a conductive mat with removed earthing and use the wrist strap to prevent static charge.</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>&lt;OK&gt;</p>  </div> <div style="text-align: center;"> <p>&lt;OK&gt;</p>  </div> </div>
<p>Preventing shock</p>	<ul style="list-style-type: none"> <li>Place HDD with its face upward (the device label upward) on the flat and stable surface using buffer materials, etc.</li> <li>Do not stand HDD. If it falls down, the excessive impacts may damage HDD.</li> <li>Do not store or carry HDD close to other HDD or other components. The components may be distorted due to impacts or weight, which may result in the performance deterioration of the HDD.</li> <li>Do not put HDD in the working area. Do not put HDD close to industrial tools in particular or temporarily put it on the floor.</li> <li>Be extremely careful not to drop HDD when working on it because even dropping HDD down on the work table with a mat on it may cause damage to HDD.</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>&lt;OK&gt;</p>  <p>Buffer materials</p> </div> <div style="text-align: center;"> <p>&lt;NG&gt;</p>  </div> </div>
<p>No water / solvent</p>	<ul style="list-style-type: none"> <li>Do not hold HDD with a wet hand or put magnets, solvent, tea, coffee, etc, close to HDD. This affects internal components and outside of HDD.</li> </ul> <div style="text-align: center;"> <p>&lt;NG&gt;</p>  </div>
<p>Connector</p>	<ul style="list-style-type: none"> <li>The interface connector pin is easily damaged. Push it lightly and firmly to the end along the connector guide.</li> <li>For further details, refer to "Precautions for inserting and removing HDD FPC".</li> </ul>

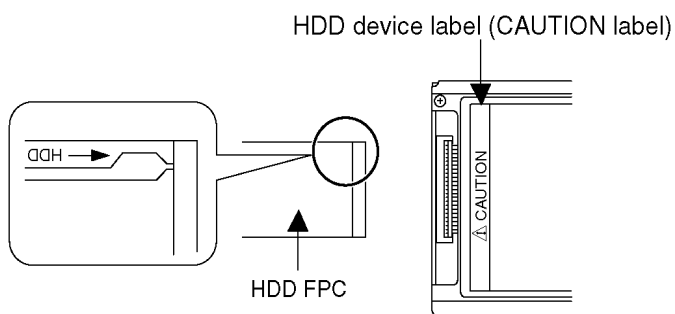
### 3.5.3. Precautions for inserting and removing HDD FPC

Make sure to use the tool (LSVQ0112) when locking and unlocking the lock lever of HDD FPC connector. Do not lock the lock lever without inserting HDD FPC. Otherwise, the connector may be damaged.



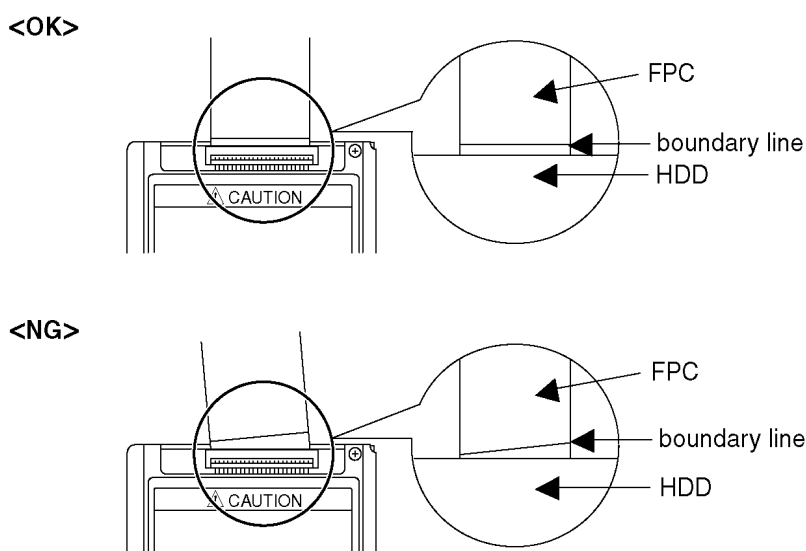
#### Insert HDD FPC

- ① Place HDD so that HDD device label (CAUTION label) faces up.  
**Caution:** Do not set the HDD cushion when installing HDD FPC.
- ② Insert HDD FPC straight to the connector, and make sure if HDD FPC has been inserted to the end.  
**Caution:** The connector surface of HDD FPC must face down and the letter "HDD" and the arrow must be seen as shown.



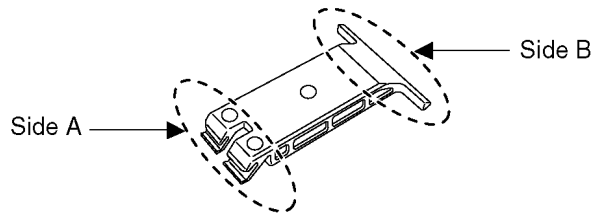
#### Check HDD FPC

Make sure if HDD FPC has been correctly inserted by confirming the FPC pattern boundary line.



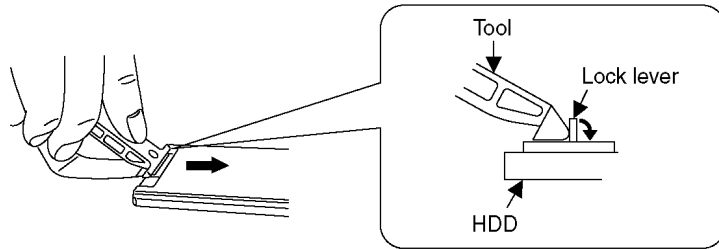
## Tool operation

Lock using the tool after inserting HDD FPC.



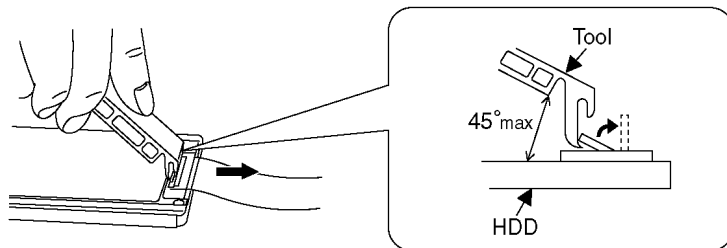
### <How to lock>

After inserting HDD FPC, put the tool (Side B) on the connector and slide it slightly to the direction as shown to lock the lock lever.



### <How to unlock>

Hook up the tip of the tool (Side A) and unlock the lock lever. The angle of the tool must be less than 45 degree.



Make sure to use the tool (LSVQ0112) when opening and closing the lock lever.




When install the HDD to main unit, necessary install the HDD FPC and HDD cushion.

## 3.6. Formatting HDD

When HDD is exchanged, format HDD as the procedure below

### Formatting

Please be aware that if a medium is formatted, then all the data recorded on the medium will be erased and cannot be restored. Back up important data on a PC, DVD disc etc.

■ Change the mode to ,  or , and select desired media to be formatted.

Select the menu.

Formatting HDD

[SETUP] → [FORMAT HDD] → [YES]

- When the confirmation message appears, touch [YES].
- When formatting is complete, touch [EXIT] to exit the message screen.
- Perform a physical formatting of the HDD when this unit is to be disposed/transferred.

# 4 Specifications

## High Definition Video Camera Information for your safety

<b>Power source:</b>	DC 9.3 V (When using AC adaptor) DC 7.2 V (When using battery)
<b>Power consumption:</b>	Recording: 7.4 W

<b>Signal system</b>	1080/60i (NTSC areas), 1080/50i (PAL areas)
<b>Recording format</b>	AVCHD format compliant
<b>Image sensor</b>	1/4.1" 3MOS image sensor Total: 3050 K×3 Effective pixels: Motion picture: 2070 K×3 (16:9) Still picture: 2320 K×3 (4:3), 2650 K×3 (3:2), 2510 K×3 (16:9)
<b>Lens</b>	Auto Iris, F1.8 to F2.8 Focal length: 4 mm to 48 mm Macro (Full range AF) 35 mm equivalent: Motion picture: 44.9 mm to 539 mm (16:9) Still picture: 45 mm to 540 mm (4:3) 41.3 mm to 496 mm (3:2) 40.8 mm to 490 mm (16:9) Minimum focus distance: Normal: approx. 4 cm (1.6") (Wide)/approx. 1.2 m (3.9 feet) (Tele) Tele macro: approx. 60 cm (24") (Tele) Intelligent auto Macro: approx. 1 cm (0.4") (Wide)/approx. 60 cm (24") (Tele)
<b>Filter diameter</b>	43 mm
<b>Zoom</b>	12× optical zoom, 30×/700× digital zoom
<b>Monitor</b>	2.7" wide LCD monitor (approx. 230 K pixels)
<b>Microphone</b>	5.1 channel surround microphone (with a zoom microphone/focus microphone function)
<b>Speaker</b>	1 round speaker, dynamic type
<b>White balance adjustment</b>	Auto tracking white balance system
<b>Standard illumination</b>	1,400 lx
<b>Minimum required illumination</b>	Approx. 1.6 lx (1/30 in low light mode) (NTSC areas) Approx. 1 lx with the MagicPix function (NTSC areas) Approx. 1.6 lx (1/25 in low light mode) (PAL areas) Approx. 1 lx with the colour night view function (PAL areas)

<b>AV terminal video output level</b>	1.0 Vp-p, 75 Ω, NTSC system (NTSC areas) 1.0 Vp-p, 75 Ω, PAL system (PAL areas)	
<b>Component terminal video output level</b>	Y: 1.0 Vp-p, 75 Ω Pb: 0.7 Vp-p, 75 Ω Pr: 0.7 Vp-p, 75 Ω	
<b>HDMI mini connector video output level</b>	HDMI™ (x.v.Colour™) 1125i (1080i)/525p (480p) (NTSC areas) HDMI™ (V.1.3a with x.v.Colour™) 1125i (1080i)/625p (576p) (PAL areas)	
<b>AV terminal audio output level (Line)</b>	316 mV, 600 Ω, 2 ch	
<b>HDMI mini connector audio output level</b>	5.1 ch (AC3)/2 ch (Linear PCM)	
<b>USB</b>	<b>SD card</b>	Read only (No copyright protection support) (EB/EC/EG/EP areas) Read/Write (No copyright protection support) (Other areas)
	<b>HDD</b>	Read only
		Hi-Speed USB (USB 2.0), USB terminal Type Mini AB PictBridge-compliant
<b>Flash</b>	Available range: Approx. 1.0 m to 2.5 m (3.3 feet to 8.2 feet)	
<b>Dimensions</b>	69 mm (W)×73 mm (H)×128 mm (D) [2.72" (W)×2.87" (H)×5.04" (D)] (excluding projecting parts)	
<b>Mass (Weight)</b>	Approx. 420 g (Approx. 0.93 lbs.) [without battery (supplied)]	
<b>Mass (Weight) in operation</b>	Approx. 480 g (Approx. 1.06 lbs.) [with battery (supplied)]	
<b>Operating temperature</b>	0 °C to 40 °C (32 °F to 104 °F)	
<b>Operating humidity</b>	10% to 80%	
<b>Battery operation time</b>	See "Charging and recording time"	

## Motion pictures

<b>Recording media</b>	<b>SD card</b>	<b>SD Memory Card:</b> 1 GB, 2 GB (FAT12 and FAT16 system compliant) <b>SDHC Memory Card:</b> 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB (FAT32 system compliant)
	<b>HDD</b>	120 GB (HS250), 80GB (HS200)
<b>Compression</b>		MPEG-4 AVC/H.264
<b>Recording mode and transfer rate</b>		HA: Approx. 17 Mbps (VBR) HG: Approx. 13 Mbps (VBR) HX: Approx. 9 Mbps (VBR) HE: Approx. 6 Mbps (VBR) Refer to "Recording modes/approximate recordable time".
<b>Picture size</b>		HA/HG: 1920×1080/60i, 1920×1080/24p (NTSC areas) 1920×1080/50i (PAL areas) HX: 1920×1080/60i (NTSC areas), 1920×1080/50i (PAL areas) HE: 1440×1080/60i (NTSC areas), 1440×1080/50i (PAL areas)
<b>Audio compression</b>		Dolby Digital (Dolby AC3)/5.1 ch

## Still pictures

<b>Recording media</b>	<b>SD card</b>	<b>SD Memory Card:</b> 8 MB, 16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB (FAT12 and FAT16 system compliant) <b>SDHC Memory Card:</b> 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB (FAT32 system compliant)
	<b>HDD</b>	120 GB (HS250), 80GB (HS200)
<b>Compression</b>		JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding
<b>Picture size</b>		Picture aspect [4:3]: 3520×2640/3264×2448/2560×1920/640×480 Picture aspect [3:2]: 3984×2656/3264×2176/2592×1728 Picture aspect [16:9]: 4224×2376/3840×2160/3328×1872/2560×1440/1920×1080 Refer to "Number of recordable pictures".

## AC adaptor

Information for your safety

<b>Power source:</b>	AC 110 V to 240 V, 50/60 Hz
<b>Power consumption:</b>	19 W
<b>DC output:</b>	DC 9.3 V, 1.2 A (Unit operation) DC 8.4 V, 0.65 A (Battery charging)

<b>Dimensions</b>	92 mm (W)×33 mm (H)×61 mm (D) [3.6" (W)×1.3" (H)×2.4" (D)]
<b>Mass (Weight)</b>	Approx. 115 g (Approx. 0.25 lbs.)

Specifications may change without prior notice.

## Charging and recording time

### ■ Charging/Recording time

- Temperature: 25 °C (77 °F)/humidity: 60%

#### NTSC areas

Battery model number [Voltage/Capacity (minimum)]	Charging time	Recording destination	Recording mode	Maximum continuously recordable time	Actual recordable time
Supplied battery/ VW-VBG130 (optional) [7.2 V/1250 mAh]	2 h 35 min	HDD	HA/HG/HX/ HE	1 h 35 min	55 min
		SD	HA/HG/HX/ HE	1 h 40 min	1 h
VW-VBG260 (optional) [7.2 V/2500 mAh]	4 h 40 min	HDD	HA/HG/HX	3 h	1 h 50 min
			HE	3 h 5 min	
		SD	HA/HG/HX/ HE	3 h 10 min	2 h
VW-VBG6 (optional)* [7.2 V/5400 mAh]	9 h 25 min	HDD	HA/HG/HX/ HE	7 h 35 min	4 h 40 min
		SD	HA/HG/HX/ HE	7 h 55 min	4 h 55 min

#### PAL areas

Battery model number [Voltage/Capacity (minimum)]	Charging time	Recording destination	Recording mode	Maximum continuously recordable time	Actual recordable time
Supplied battery/ VW-VBG130 (optional) [7.2 V/1250 mAh]	2 h 35 min	HDD	HA/HG/HX/ HE	1 h 35 min	1 h
		SD	HA/HG/HX/ HE	1 h 40 min	1 h
VW-VBG260 (optional) [7.2 V/2500 mAh]	4 h 40 min	HDD	HA/HG/HX	3 h 5 min	1 h 55 min
			HE	3 h 10 min	
		SD	HA/HG/HX/ HE	3 h 20 min	2 h
VW-VBG6 (optional)* [7.2 V/5400 mAh]	9 h 25 min	HDD	HA/HG/HX	7 h 45 min	4 h 45 min
			HE	7 h 50 min	4 h 50 min
		SD	HA/HG/HX/ HE	8 h 15 min	5 h 5 min

\* The battery pack holder kit VW-VH04 (optional) is necessary.

● These times are approximations.

- The indicated charging time is for when the battery has been discharged completely. Charging time and recordable time vary depending on the usage conditions such as high/low temperature.

## Recording modes/approximate recordable time

Switch the picture quality of the motion pictures to be recorded.

Select the menu.

[RECORD SETUP] → [REC MODE] → desired setting

		HA*1	HG*2	HX*3	HE*4
SD card	1 GB	7 min	9 min	14 min	21 min
	2 GB	15 min	20 min	30 min	45 min
	4 GB	30 min	40 min	1 h	1 h 30 min
	6 GB	45 min	1 h	1 h 30 min	2 h 15 min
	8 GB	1 h	1 h 20 min	2 h	3 h
	12 GB	1 h 30 min	2 h	3 h	4 h 30 min
	16 GB	2 h	2 h 40 min	4 h	6 h
	32 GB	4 h	5 h 20 min	8 h	12 h
HDD (HS250)	120 GB	15 h 50 min	20 h 20 min	31 h	50 h
HDD (HS200)	80 GB	10 h 30 min	13 h 30 min	20 h 30 min	33 h 30 min

A Favors image quality

B Favors recording time

\*1 1920×1080: Motion pictures can be recorded with the highest picture quality.\*

\*2 1920×1080: Motion pictures can be recorded with high picture quality.

\*3 1920×1080: Motion pictures can be recorded with normal picture quality.

\*4 1440×1080: Motion pictures can be recorded for a longer time.

\* This means the highest quality for this unit.

● The recording is in high definition picture quality in all recording modes.

● Maximum continuously recordable time for one scene: 12 hours

● The recording is paused once when the recording time for one scene exceeds 12 hours, and the recording will automatically resume after a few seconds.

● If a recording with a lot of movements is recorded, the recording time is reduced.

● The recordable time may be reduced if recording of short scene is repeated.

● Use time in the row of 4 GB in above table as a guideline for the time that can be copied onto one DVD disc (4.7 GB).

## Number of recordable pictures

(In Still Picture Recording mode)



Aspect ratio		4:3							
Picture size		3520×2640		3264×2448		2560×1920		640×480	
Picture quality		FINE		NORMAL		BASIC		OFF	
SD card	8 MB	0	0	0	1	1	2	33	52
	16 MB	1	3	2	3	3	6	77	120
	32 MB	3	6	4	7	7	13	145	220
	64 MB	9	15	11	18	19	31	330	510
	128 MB	20	32	23	38	39	62	650	1010
	256 MB	44	70	51	81	84	135	1380	2150
	512 MB	89	140	105	165	170	270	2760	4300
	1 GB	180	290	210	330	340	540	5550	8660
	2 GB	370	590	430	680	700	1110	11320	17650
	4 GB	730	1150	850	1340	1390	2180	22250	34710
	6 GB	1110	1750	1300	2040	2110	3310	33850	52800
	8 GB	1490	2350	1740	2730	2820	4440	45310	70690
	12 GB	2250	3540	2620	4120	4260	6690	68370	106650
	16 GB	3010	4720	3500	5490	5680	8930	91200	142280
	32 GB	6030	9480	7010	11020	11400	17920	182990	285460
	HDD(HS250)	120 GB	24520	38520	28510	44810	46350	72820	743660
HDD(HS200)	80 GB	16340	25680	19010	29870	30900	48550	495770	773400

Aspect ratio		3:2					
Picture size		3984×2656		3264×2176		2592×1728	
Picture quality		FINE		NORMAL		BASIC	
SD card	8 MB	0	0	0	1	1	2
	16 MB	1	2	2	4	4	7
	32 MB	3	5	5	8	8	14
	64 MB	8	13	13	21	21	34
	128 MB	17	28	26	42	43	68
	256 MB	38	61	58	92	93	145
	512 MB	78	125	115	185	185	300
	1 GB	160	250	240	380	380	600
	2 GB	330	510	490	770	770	1210
	4 GB	640	1010	960	1510	1520	2390
	6 GB	980	1540	1460	2290	2310	3640
	8 GB	1310	2060	1950	3070	3100	4870
	12 GB	1980	3110	2950	4630	4670	7340
	16 GB	2640	4150	3930	6180	6240	9800
	32 GB	5300	8320	7890	12400	12510	19660
	HDD(HS250)	120 GB	21530	33830	32070	50390	50860
HDD(HS200)	80 GB	14350	22550	21380	33600	33910	53260

Aspect ratio		16:9					
Picture size		4224×2376		3328×1872		2560×1440	
Picture quality		FINE		NORMAL		BASIC	
SD card	8 MB	0	0	0	1	1	3
	16 MB	1	2	2	5	5	9
	32 MB	3	5	6	10	10	17
	64 MB	8	14	15	24	26	41
	128 MB	18	30	30	49	52	83
	256 MB	41	65	66	105	115	180
	512 MB	83	130	135	210	230	360
	1 GB	170	270	270	430	460	720
	2 GB	340	540	560	870	940	1480
	4 GB	680	1070	1090	1720	1850	2900
	6 GB	1030	1620	1660	2610	2810	4420
	8 GB	1380	2170	2230	3500	3770	5910
	12 GB	2090	3280	3360	5280	5680	8920
	16 GB	2780	4370	4480	7050	7580	11910
	32 GB	5580	8780	9000	14140	15210	23890
	HDD(HS250)	120 GB	22700	35670	36560	57460	61810
HDD(HS200)	80 GB	15130	23780	24370	38300	41200	64720

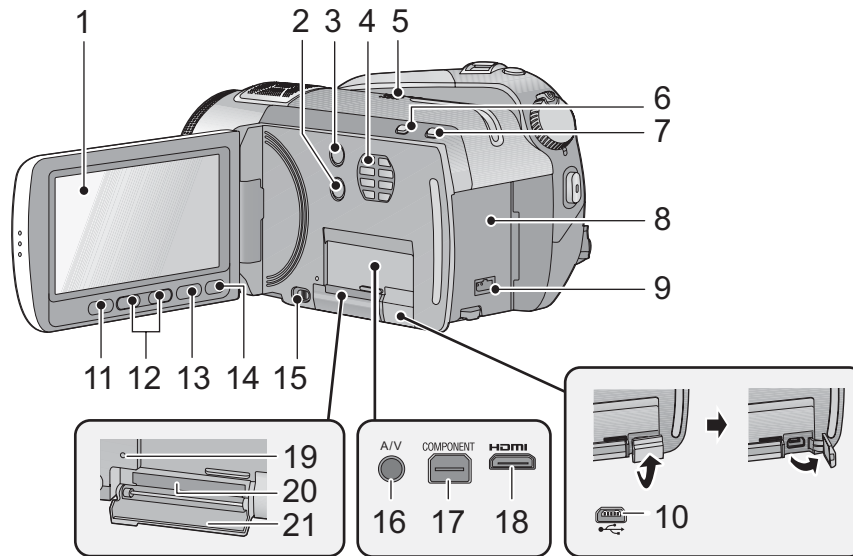
(In Motion Picture Recording mode)

Aspect ratio		16:9			
Picture size		3840×2160		1920×1080	
Picture quality		FINE		NORMAL	
SD card	8 MB	0	0	4	6
	16 MB	1	3	10	17
	32 MB	4	7	20	32
	64 MB	11	17	47	74
	128 MB	22	36	94	150
	256 MB	49	78	200	320
	512 MB	100	160	410	640
	1 GB	200	320	820	1290
	2 GB	420	660	1670	2630
	4 GB	820	1290	3290	5160
	6 GB	1250	1960	5000	7860
	8 GB	1670	2630	6690	10520
	12 GB	2520	3970	10100	15870
	16 GB	3370	5290	13470	21170
	32 GB	6760	10620	27030	42480
	HDD(HS250)	120 GB	27460	43160	109860
HDD(HS200)	80 GB	18310	28770	73240	115090

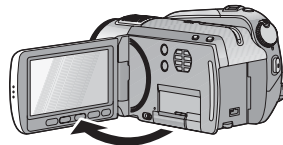
- The numbers shown in the table are approximations.
- The number of recordable pictures depends on whether  and  are used together and on the subject being recorded.
- Maximum number of recordable pictures that can be displayed is 99999.  
If the number of recordable pictures exceeds 99999, the number will not change when the picture is taken until the number of recordable pictures gets less than 99999.
- The memory capacity indicated on the label of an SD card is the total of the capacity for copyright protection and management and the capacity which can be used on the unit, a PC etc.



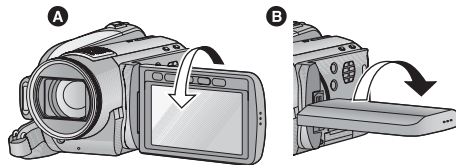
# 5 Location of Controls and Components



## 1 LCD monitor (Touch screen)



- It can open up to 90°.



- It can rotate up to 180° **A** towards the lens or 90° **B** towards the opposite direction.

Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD monitor screen. However, this is not a malfunction and does not affect the recorded picture.

## 2 Manual button [MANUAL]

## 3 Optical image stabilizer button [O.I.S.]

## 4 Inlet (cooling fan)

- The cooling fan rotates to prevent the internal temperature from rising. Take care not to cover the inlet when using this unit.

## 5 Speaker

## 6 Intelligent auto button [iA]

## 7 PRE-REC button [PRE-REC]

## 8 Battery holder

## 9 DC input terminal [DC IN]

- Always use the supplied AC adaptor or a genuine Panasonic AC adaptor (VW-AD21PP; optional).

## 10 USB terminal [↔]

## 11 Sub recording start/stop button

- This button functions in the same manner as the recording start/stop button.

## 12 Zoom buttons

- These buttons function in the same manner as the zoom lever. Changing the thumbnail display and adjusting the volume can be done.

## 13 Menu button [MENU]

## 14 Delete button [ ]

## 15 SD card open lever [OPEN]

## 16 Audio-video output terminal [A/V]

- Use the AV cable (only the supplied cable).

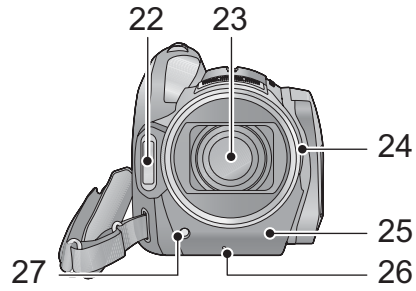
## 17 Component terminal [COMPONENT]

## 18 HDMI mini connector [HDMI]

## 19 Access lamp [ACCESS]

## 20 Card slot

## 21 SD card cover



## 22 Built-in flash

## 23 Lens (LEICA DICOMAR)

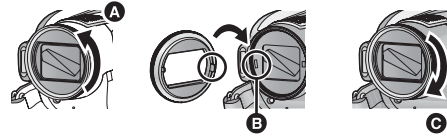
### Lens cover **A**



- The lens cover opens in  
Motion Picture Recording Mode or  
Still Picture Recording Mode.

## 24 Lens hood

Rotate the lens hood counter-clockwise **A** to remove it. In order to attach it, place into slot **B**, and then rotate it clockwise **C**.

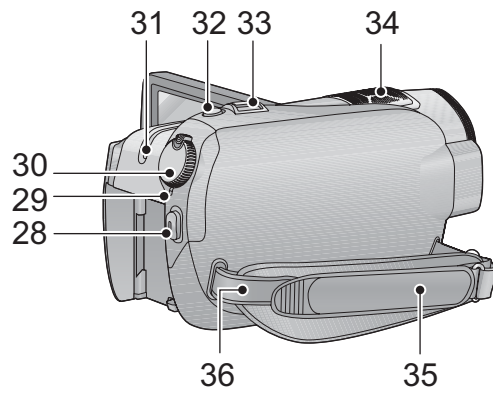




- When fitting the tele conversion lens (VW-T4314H; optional) or the wide conversion lens (VW-W4307H; optional), first remove the lens hood.

## 25 Remote control sensor

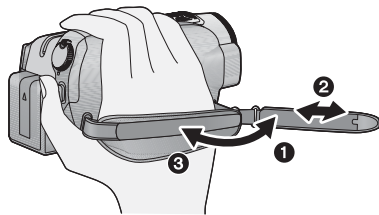
## 26 Recording lamp

## 27 AF assist lamp



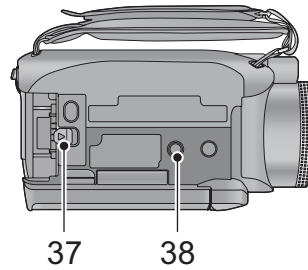
- 28 Recording start/stop button**
- 29 Status indicator**
- 30 Mode dial**
- 31 HDD access lamp [ACCESS HDD]**
- 32 Photoshot button [  ]**
- 33 Zoom lever [W/T] (In Recording Mode)  
Thumbnail display switch/Volume lever  
[ -  /VOL+ ] (In Playback Mode)**
- 34 Internal microphones (5.1 channel support)**
- 35 Grip belt**

Adjust the length of the grip belt so that it fits your hand.



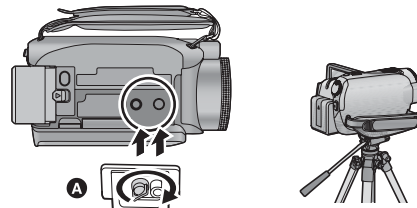
- 1** Flip the belt.
- 2** Adjust the length.
- 3** Replace the belt.

- 36 Shoulder strap fixture**



- 37 Battery release lever [BATT]**
- 38 Tripod receptacle**

This is a hole for attaching the unit to the optional tripod. (For details on mounting the tripod, refer to the operating instructions for the tripod.)

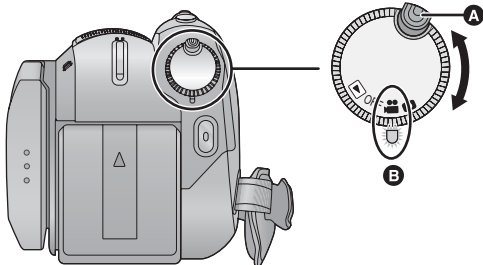


- A** Camera base

# Selecting a mode (Turning the unit on/off)

Change the mode to recording, playback or power OFF.

Turn on the power by changing the mode to ,  or  while pressing the lock release button **A**.






- Rotate the mode dial while at the same time pressing in the lock release button if changing from OFF to another mode.
- Align with the status indicator **B**.

The status indicator lights.


## To turn off the power

Change the mode to OFF.

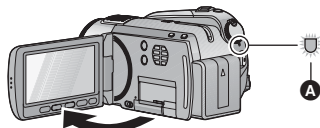
The status indicator goes off.

	Motion Picture Recording Mode
	Still Picture Recording Mode
	Playback Mode
OFF	

## Turning the power on and off with the LCD monitor

When the mode is set to  or , power is turned on when the LCD monitor is opened, and power is turned off when it is closed.

### ■ To turn on the power



**A** The status indicator lights.

### ■ To turn off the power



**A** The status indicator goes off.

Change the mode to OFF when this unit is not being used.

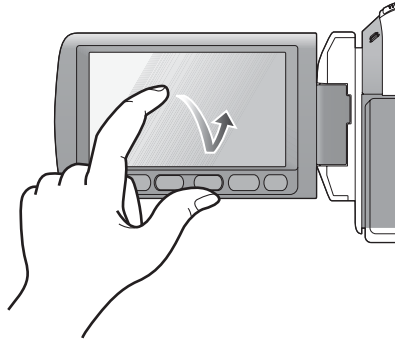
# How to use the touch screen

You can operate by directly touching the LCD monitor (touch screen) with your finger.

It is easier to use the stylus pen (supplied) for detailed operation, or if it is hard to operate with your fingers.

## ■ Touch

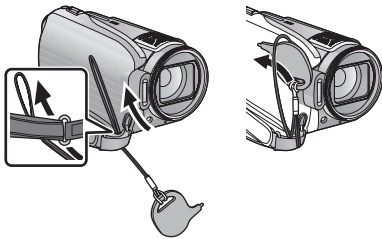
Touch and release the touch screen to select icon or picture.



- Touch the center of the icon.
- Touching the touch screen will not operate while you are touching another part of the touch screen.

## ■ About the Stylus pen

The stylus pen (supplied) can be stored on the unit as shown when it is not being used. Remove the stylus pen from the unit when it is to be used.

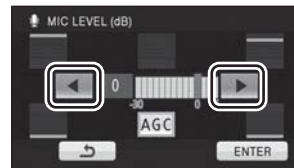
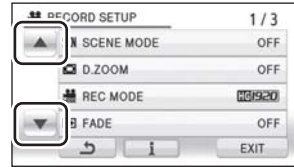


- Only use the supplied stylus pen.
- Do not tuck the stylus pen with the LCD monitor.

## ■ About the operation icons

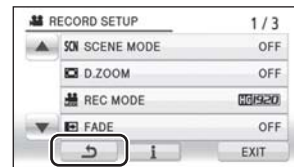
▲/▼/◀/▶:

These icons are used to switch between the menu and thumbnail display page, for item selection and setting etc.



↶:

Touch to return to the previous screen such as when setting menus



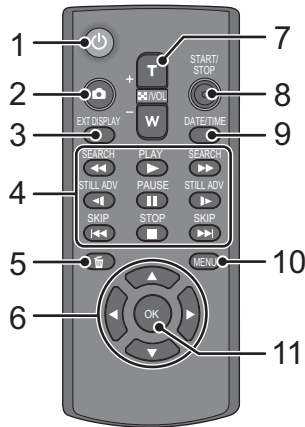
- Wipe the LCD monitor with a soft cloth, such as eye glass cleaner, when it gets dirty with finger prints etc.
- Do not touch on the LCD monitor with hard pointed tips, such as ball point pens.
- Do not touch the LCD monitor with your finger nails, or rub or press with strong force.
- It may become hard to see or hard to recognize the touch when the LCD protection sheet is affixed.
- Perform the touch screen calibration when the touch is not recognized or wrong location is recognized.

# Using with the remote control

Select the menu.

[SETUP] → [REMOTE CONTROL] → [ON]

- This function's default setting is [ON].
- [REMOTE CONTROL] can be set to [OFF] so the remote control will not be mistakenly used when not in use.



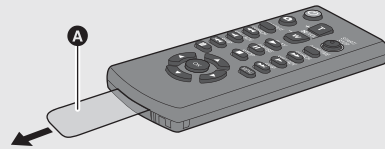
- 1 Power on/off button [ ⏻ ]**  
Power can be turned on/off when the mode is set to anything but OFF.
  - Power cannot be turned on by the power on/off button when 36 hours have passed after the power is turned off.
  - Power cannot be turned off when it is connected to the PC or the DVD burner.
- 2 Photoshot button [ 📷 ]\***
- 3 On-screen display button [EXT DISPLAY]**
- 4 Playback operation buttons**  
These buttons function in the same manner as the corresponding playback operation icon being displayed on screen.  
[Excluding skip playback].
- 5 Delete button [ 🗑️ ]\***
- 6 Direction buttons [ ⬆️, ⬇️, ⬅️, ➡️ ]**
- 7 Zoom/volume/thumbnail display switch buttons [ T, W, 📺 /VOL ]\***
- 8 Recording start/stop button [START/STOP]\***
- 9 Date/time button [DATE/TIME]**
- 10 Menu button [MENU]\***
- 11 OK button [OK]**

\* means that these buttons function in the same manner as the corresponding buttons on the unit.

## CAUTION

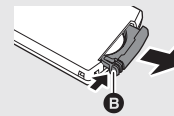
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Remove the insulation sheet **A** before using.

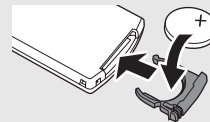


## Replace a button-type battery

- 1 While pressing the stopper **B**, pull out the battery holder.**



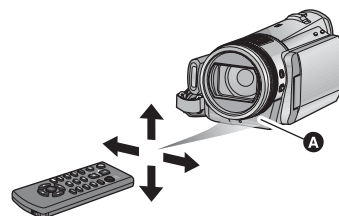
- 2 Set the button-type battery with its (+) mark facing upward and then put the battery holder back in place.**



- When the button-type battery runs down, replace it with a new battery (part number: CR2025). The battery should normally last about 1 year, however this depends on how frequently the unit is used.
- Keep the button-type battery out of reach of children to prevent swallowing.

Replace battery with Panasonic PART NO. CR2025 only. Use of another battery may present a risk of fire or explosion.  
Caution: Battery may explode if mistreated.  
Dispose of used battery promptly. Keep away from children.  
Do not recharge, disassemble or dispose of in fire.

## Remote control usable range



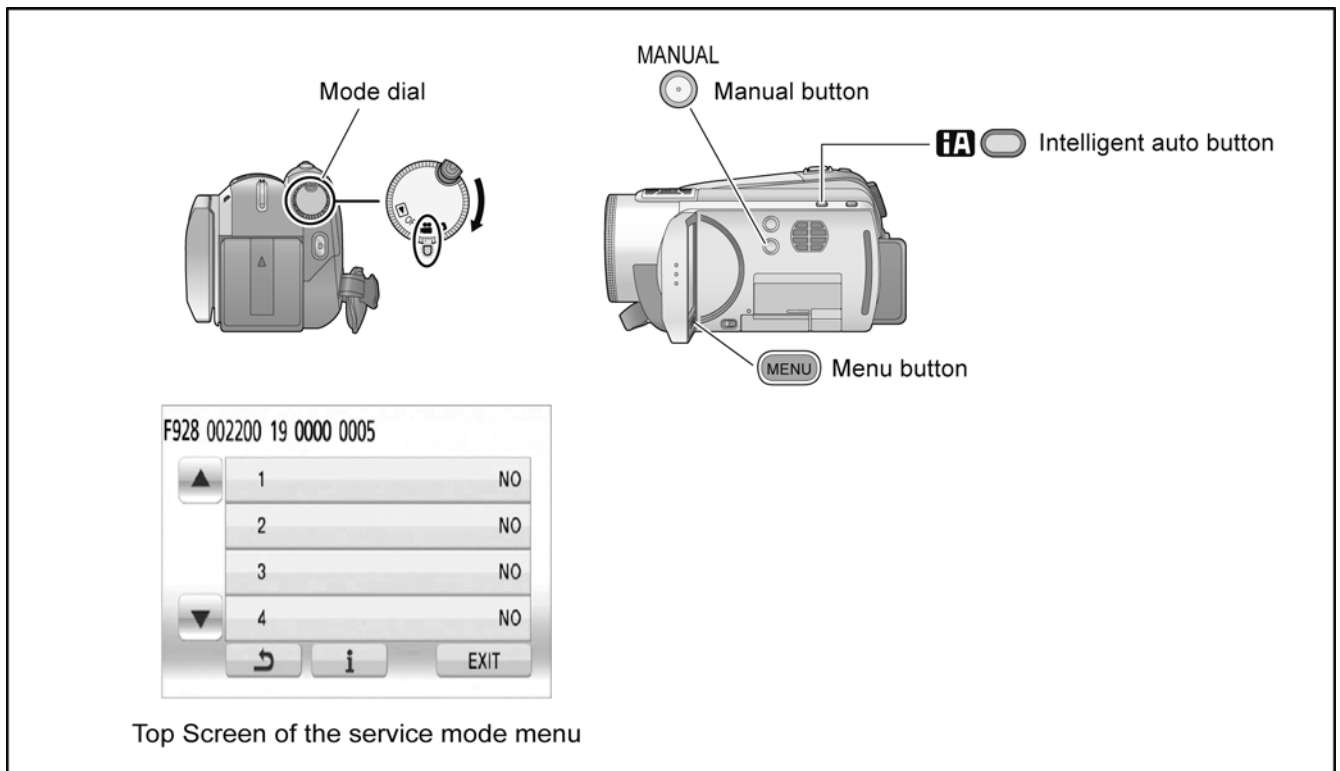
- A Remote control sensor**  
Distance: Within approx. 5 m (16 feet)  
Angle: Approx. 10° up and 15° down, left, and right
- The remote control is intended for indoor operation. Outdoors or under strong light, the unit may not operate properly even within the usable ranges.

## 6 Service Mode

### 1. Indication method of the service menu

Set the mode dial "Motion Picture Recording" mode.

- While keep pressing the "Intelligent auto" button, "Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.



### Service mode menu

Screen display	Contents	Function
1	Factory settings	Function to throw a product up in a factory shipment state (When recorded data in HDD, "error display" is done)
2	Drive information display	Fall detection frequency of HDD, Frequency that exceeds highest/lowest operation guarantee temperature and serial number display
3	HDD self check execution	Function to check self as for the state of HDD
4	Lock search history indication	Display an error cord for three histories saved in EEPROM
5	Power ON self check result display	Power ON self check (function to diagnose correct function of the device and interface between devices) result display
6	HDD hardware test	Function to confirm state of HDD hardware

#### NOTE:

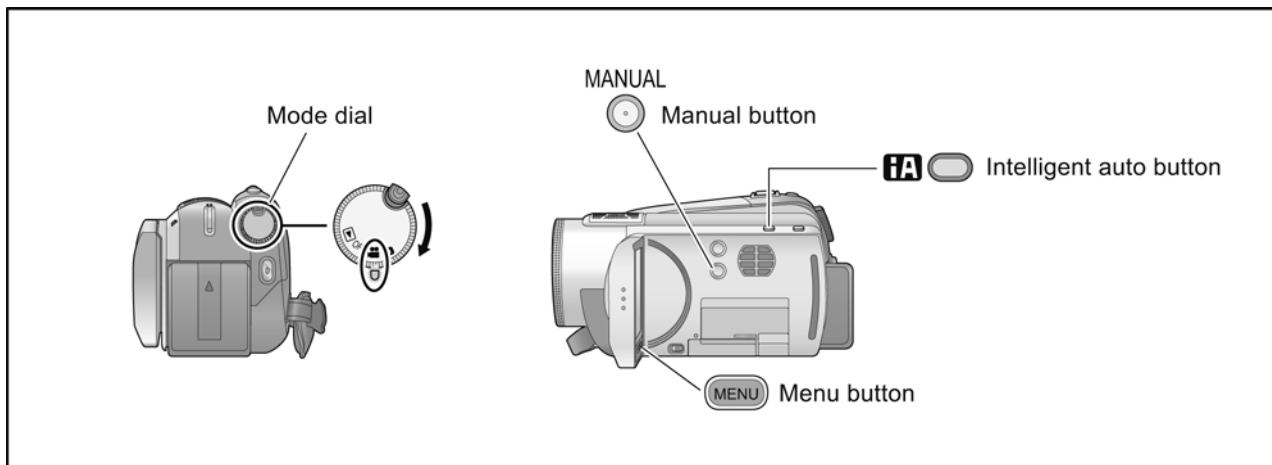
Do not using service mode except above table of Service Menu.

### 3. End method of the top screen of the service menu

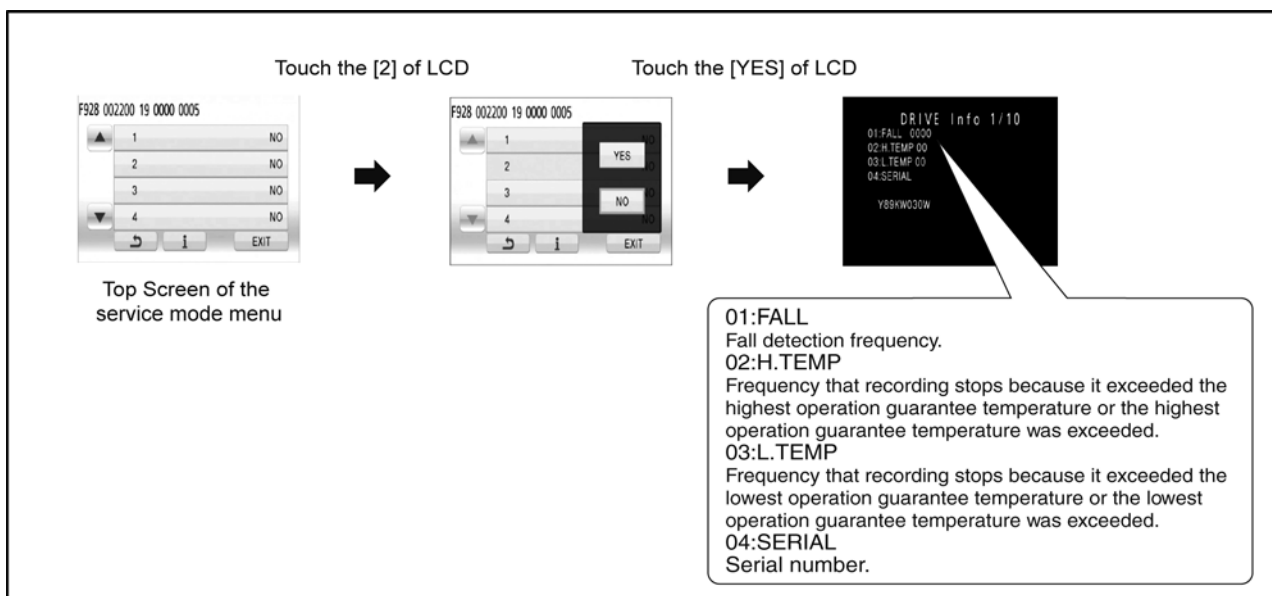
Push the menu button to end the service mode, and then POWER OFF.

## 6.1. Drive Information Display

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.
3. Touch the [2] of LCD, select Drive Information display.



### Operation specifications



### Indication contents

- Drive Information display

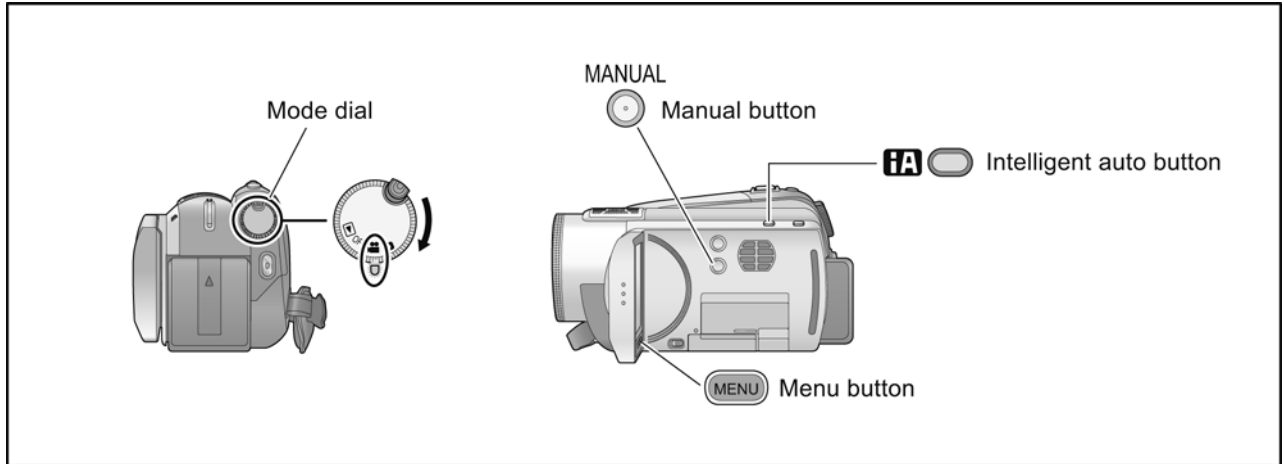
Display the fall detection frequency of HDD, Frequency that exceeds highest/lowest operation guarantee temperature and serial number.

Push the menu button to end the service mode, and then POWER OFF.

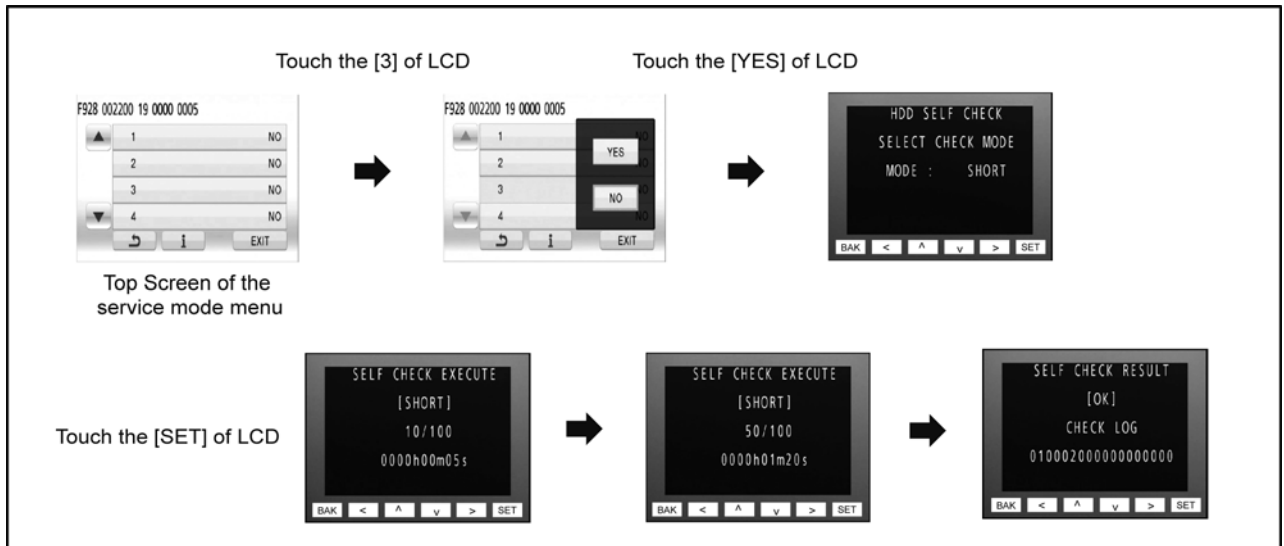


## 6.2. HDD Self Check Execution

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.
3. Touch the [3] of LCD, select HDD self check execution.



### Operation specifications

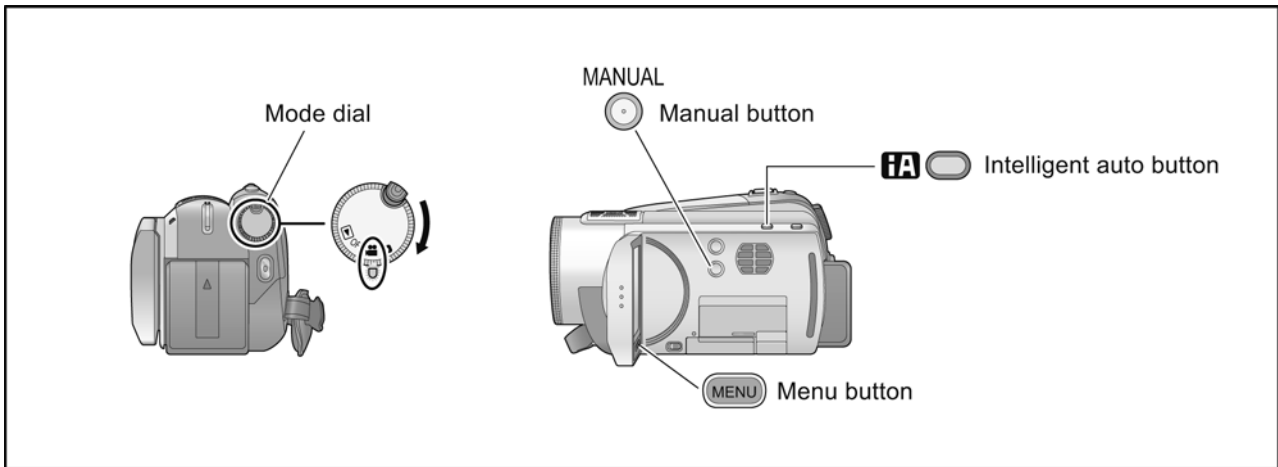


### Indication contents

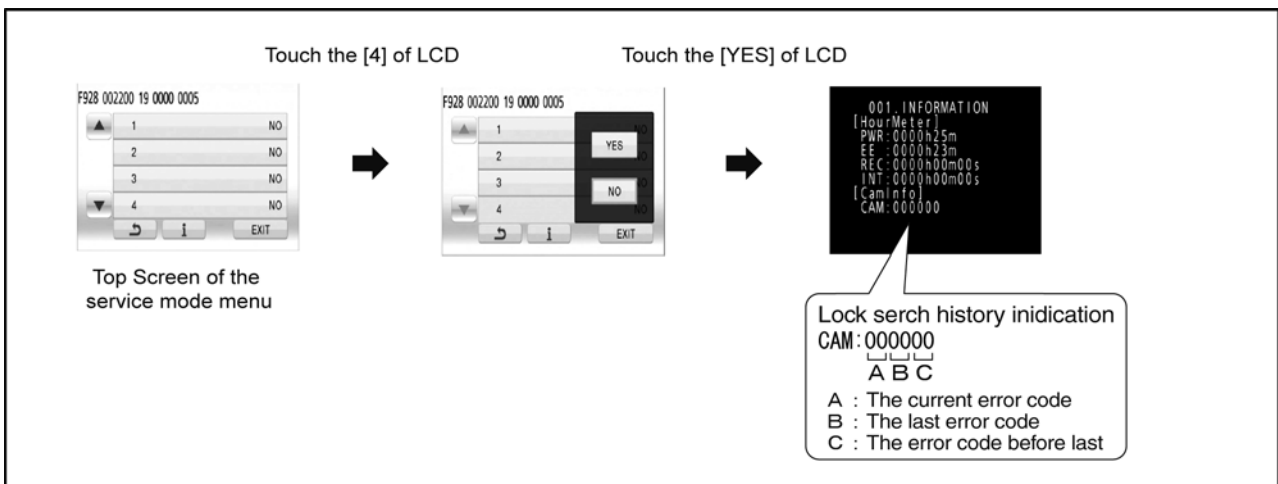
- HDD self check execution
  - Display the HDD self check result information.
  - Displays other than "OK" are abnormalities of HDD.
  - Push the menu button to end the service mode, and then POWER OFF.

### 6.3. Lock Search History Indication

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.
3. Touch the [ 4 ] of LCD, select Lock search history indication.



#### Operation specifications



#### Indication contents

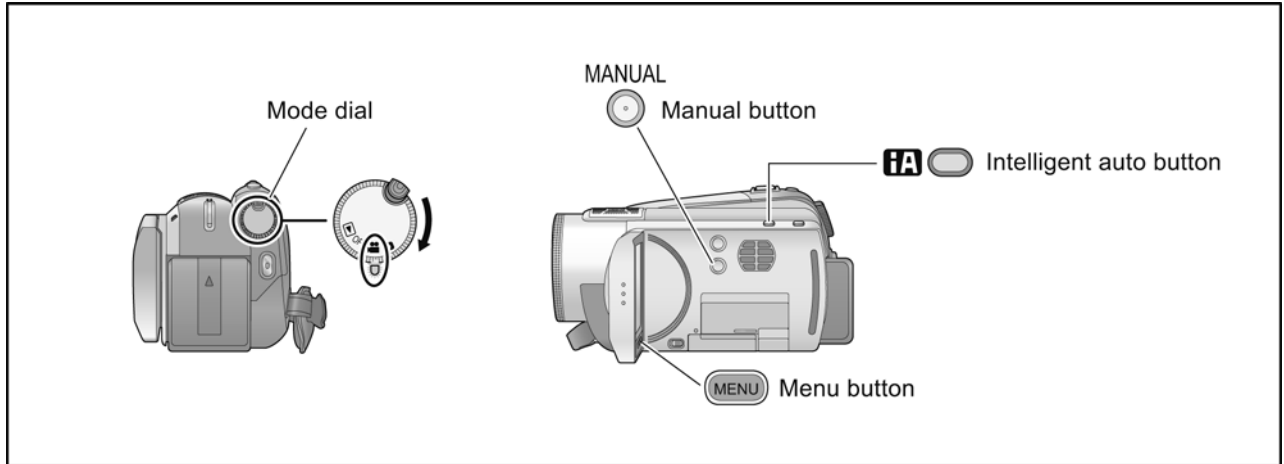
- Lock search history indication  
Display the camera system error cord for three histories saved in EEPROM.
- The error cord contents which are displayed

Error code	Function
51	Focus control is abnormal
52	Zoom control is abnormal
53	OIS lens control is abnormal
71	Lens cover open/close is abnormal
72	Cooling fan is abnormal
73	High temperature is abnormal
33	Communication between camera to ARM is abnormal

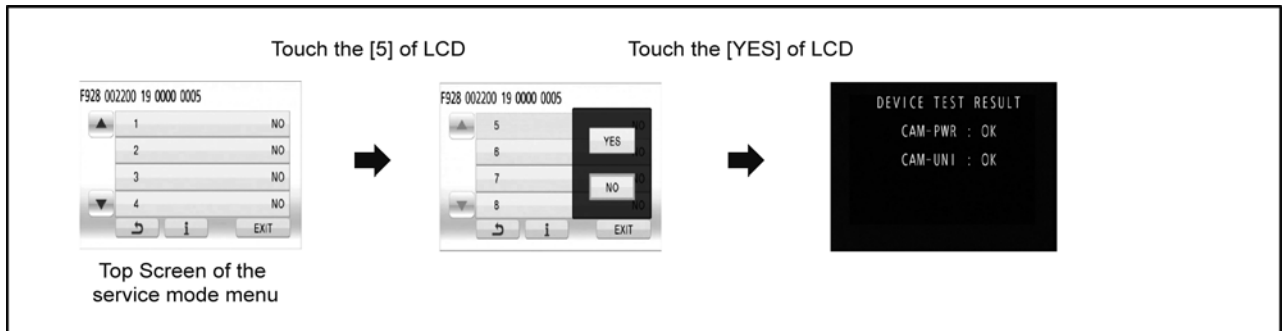
Lock search history indication is finished by POWER OFF.

## 6.4. Power ON Self Check Result Display

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.
3. Touch the [5] of LCD, select Power ON self check result display.



### Operation specifications



### Indication contents

- Power ON self check result display  
Function to diagnose correct function of the device and interface between devices result display.

Display the following communication test result.

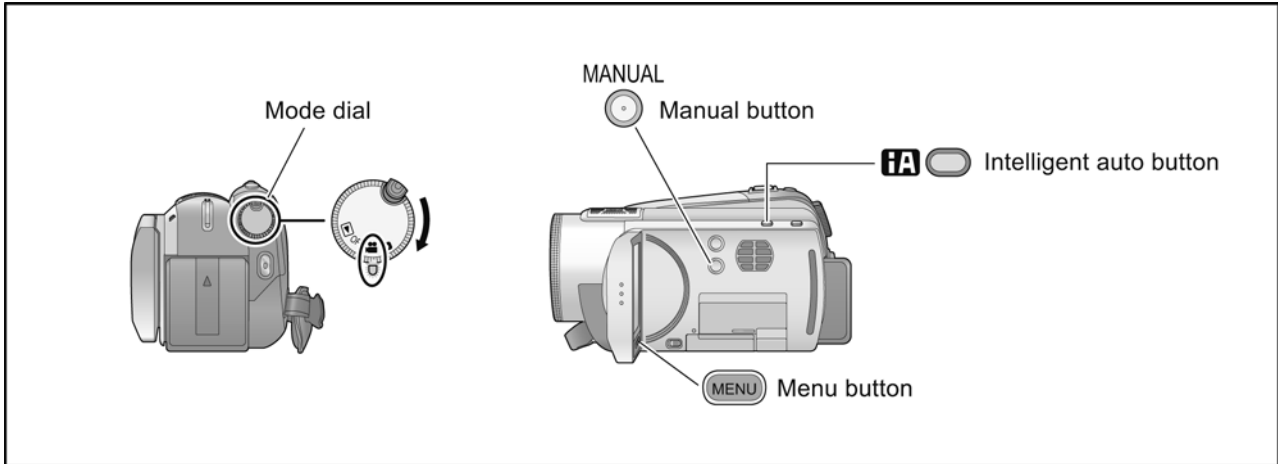
- CAM-PWR : Communication test between IC2006 to IC301
- CAM-UNI : Communication test between IC3400 to IC301

Display other than "OK" are abnormalities of each lines.

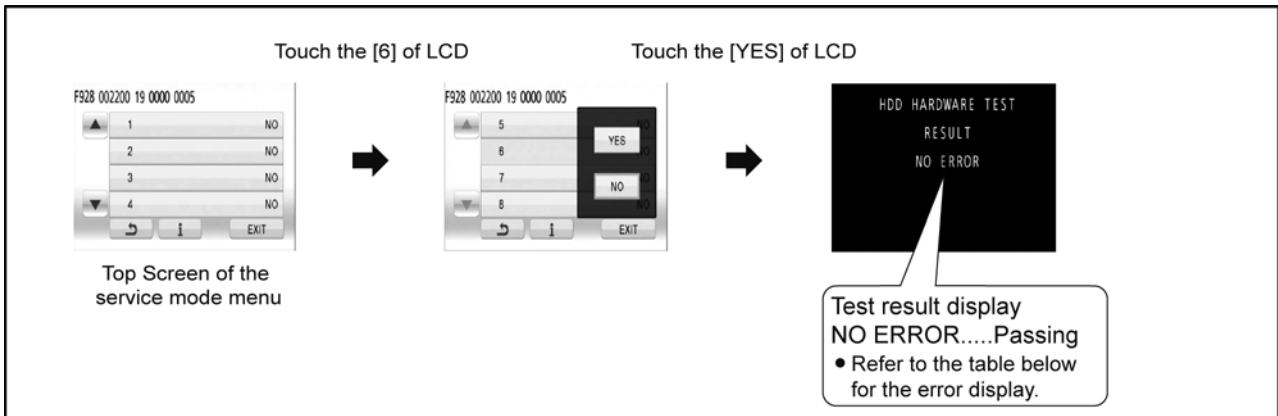
Push the menu button to end the service mode, and then POWER OFF.

## 6.5. HDD Hardware Test

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.
3. Touch the [6] of LCD, select HDD hardware test.



### Operation specifications



### Indication contents

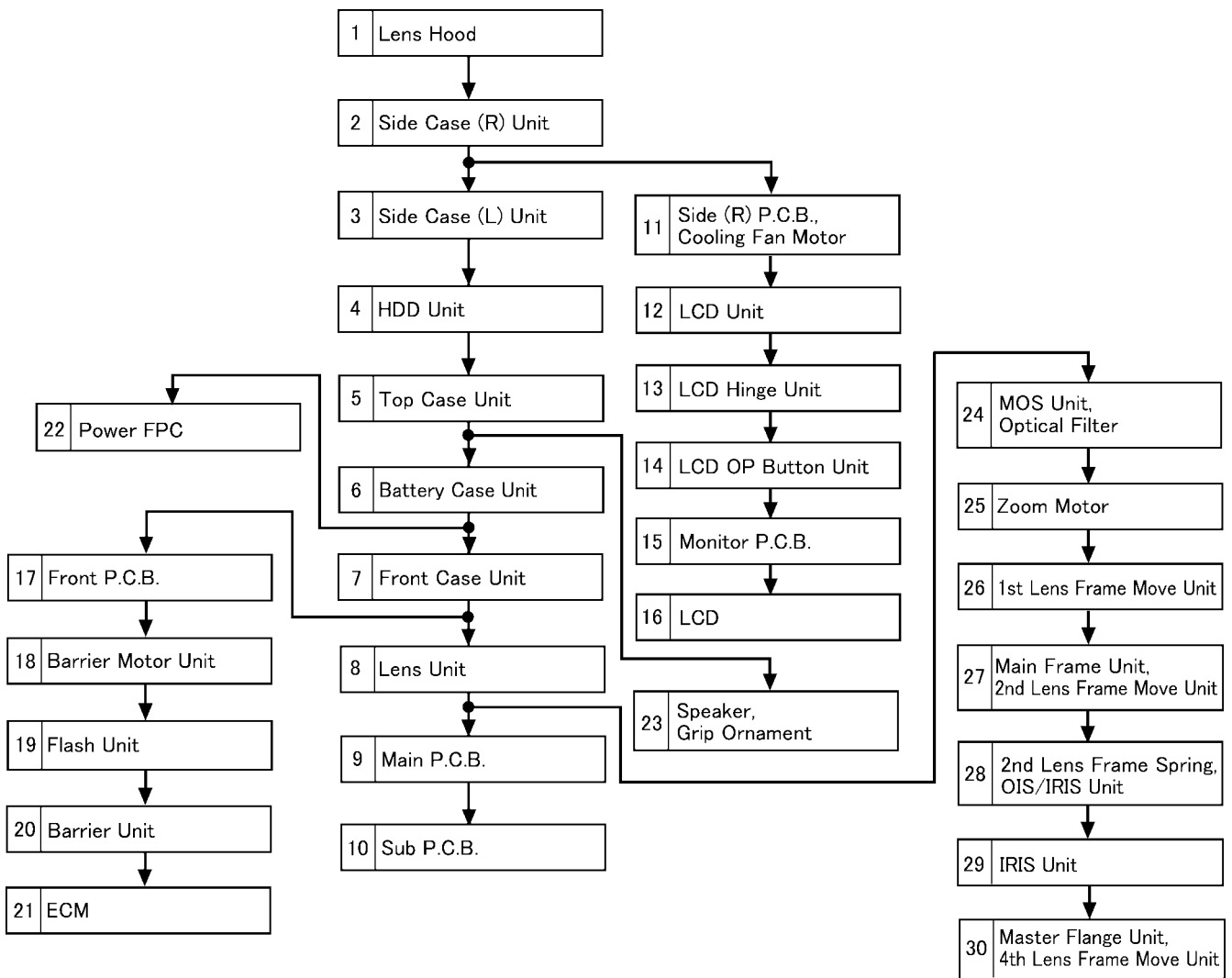
- HDD hardware test  
Display the HDD hardware test result information.
- The error cord contents which are displayed

Error code	Function
NO ERROR	It is normal without the error
CTR ERROR	Controller Resistor Error
BUFF RAM ERROR	Buffer RAM Error
ECC DEV ERROR	ECC device Error
CPU ERROR	CPU RAM/ROM Error
COMMAND ERROR	Reserved

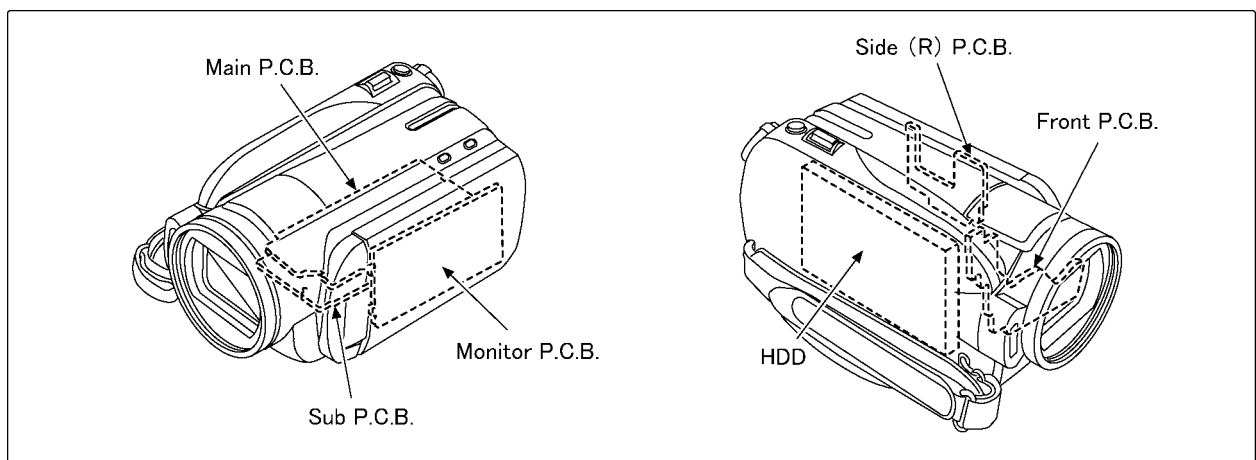
In the above table, displays other than "NO ERROR" are abnormalities of HDD.  
Push the menu button to end the service mode, and then POWER OFF.

# 7 Disassembly and Assembly Instructions

## 7.1. Disassembly Flow Chart



## 7.2. PCB Location



### 7.3. Disassembly Procedure

No.	Item	Fig	Removal			
1	Lens Hood	Fig.D1	Lens Hood			
2	Side Case (R) Unit	Fig.D2	1 Screw (A)			
			4 Screws (B)			
			1 Screw (C)			
			3 Screws (D)			
		Fig.D3	SR Cover			
			4 Screws (E)			
			PS6003 (Flex) Side Case (R) Unit			
3	Side Case (L) Unit	Fig.D4	5 Screws (F)			
			1 Screw (G)			
			2 Screws (H)			
			2 Locking tabs			
			Side Case (L) Unit			
4	HDD Unit	Fig.D5	PP6001 (Flex)			
			2 HDD Cushions			
			HDD Unit			
5	Top Case Unit	Fig.D6	2 Screws (I)			
			1 Locking tab			
			HDD Earth Frame			
			FP6006 (Flex)			
		Fig.D7	PS851 (Connector)			
			1 Screw (J)			
			3 Ribs			
6	Battery Case Unit	Fig.D8	Top Case Unit			
			PS6101 (Connector)			
			1 Screw (K)			
			1 Locking tab Battery Case Unit			
7	Front Case Unit	Fig.D9	1 Screw (L)			
			1 Screw (M)			
			2 Ribs			
			P6101 (Connector)			
			P6102 (Connector)			
			FP6403 (Flex)			
			Front Case Unit			
			8	Lens Unit	Fig.D10	2 Screws (N)
						1 Screw (O)
PS6011 (Connector)						
FP6002 (Flex)						
Lens Unit						
9	Main P.C.B.	Fig.D11	3 Screws (P)			
			2 Locking tabs			
			PS6002 (Flex)			
			Main P.C.B.			
10	Sub P.C.B.	Fig.D12	2 Screws (Q)			
		Fig.D13	Main Frame			
			Main Sub FPC			
			Bottom Frame Sub P.C.B.			
11	Side (R) P.C.B. Cooling Fan Motor	Fig.D14	PS6501 (Connector)			
			FP6502 (Flex)			
			FP6503 (Flex)			
		Fig.D15	3 Screws (R)			
			Cooling Fan Damper Rubber			
			Side (R) P.C.B. Cooling Fan Motor			
12	LCD Unit	Fig.D16	2 Screws (S)			
		Fig.D17	Hinge Support Plate			
			SR Earth Board (B)			
			LCD Detection Lever			
			2 Locking tabs LCD Unit			

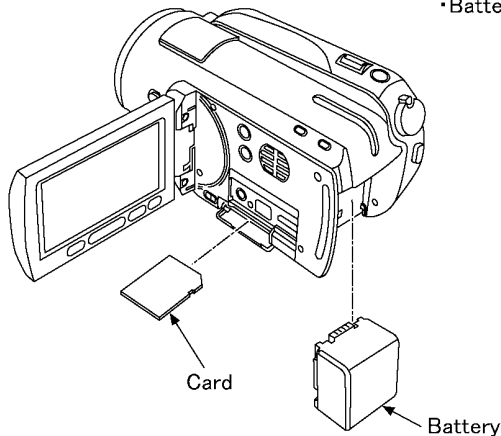
No.	Item	Fig	Removal
13	LCD Hinge Unit	Fig.D18	2 Screws (T)
			6 Locking tabs
			FP901 (Flex)
			FP902 (Flex) LCD Hinge Unit
14	LCD OP Button Unit	Fig.D19	FP903 (Flex)
		Fig.D20	2 Locking tabs
			2 Screws (U) LCD OP Button Unit
15	Monitor P.C.B.	Fig.D21	FP903 (Flex)
			FP904 (Flex)
			4 Locking tabs
		Fig.D22	1 Locking tab
			Reflection Sheet
			Light Panel
			Diffusion Sheet
			Prism Sheet (B)
16	LCD	Fig.D23	Prism Sheet (A)
			Lens Holder
			Monitor P.C.B.
			LCD Sheet Angle
17	Front P.C.B.	Fig.D24	LCD Case (B)
			LCD
			1 Locking tab
18	Barrier Motor unit	Fig.D25	Sensor Window
			FP4801 (Flex)
			2 Screws (V)
		Fig.D26	FP6400 (Flex)
			Front P.C.B.
			2 Screws (W)
19	Flash Unit	Fig.D27	1 Screw (X)
			Barrier Switch Lever
			Barrier Switch Lever Spring
			Barrier Motor Unit
			Note (When Installing)
20	Barrier Unit	Fig.D28	1 Locking tab
			Flash Cover
		Fig.D29	Flash Unit
3 Screws (Y)			
21	ECM	Fig.D30	1 Screw (Z)
			Lens Damper
			Front Earth Plate
			Front Angle (R)
			Front Angle (L)
			Mic Earth Plate
			4 Screws (a)
			Barrier Unit
22	Power FPC	Fig.D31	Mic Net
			Mic Cushion (A)
			Mic Cushion (B)
			Mic Cushion (C)
			ECM
23	Speaker Grip Ornament	Fig.D32	1 Screw (b)
			1 Screw (c)
			1 Screw (d)
			6 Locking tabs
			Rear Frame (A)
			Power FPC
			4 Screws (e)
1 Screw (f)			
Grip Frame			
Top Plate			
Speaker			
Grip Ornament			

No.	Item	Fig	Removal
24	MOS Unit Optical Filter	Fig.D33	2 Screws (g)
			MOS Unit
			Optical Filter
25	Zoom Motor	Fig.D34	Solder (6 points)
			4 Screws (h)
			9 Ribs
		Fig.D35	2 Screws (i) Zoom Motor
26	1st Lens Frame Move Unit	Fig.D36	3 Screws (j) 1st Lens Frame Move Unit
27	Main Frame Unit 2nd Lens Frame Move Unit	Fig.D37	3 Screws (k) Main Frame Unit 2nd Lens Frame Move Unit
			Fig.D38
28	2nd Lens Frame Spring OIS/IRIS Unit	Fig.D38	OIS/IRIS Unit
			IRIS Unit
			1 Screw (l)
			Solder (12 points) OIS Unit IRIS Unit
30	Master Flange Unit 4th Lens Frame Move Unit	Fig.D40	2 Side Yokes
			1 F Guide Pole
			2 Guide Poles
			Master Flange Unit
			4th Lens Frame Move Unit

**NOTE:**

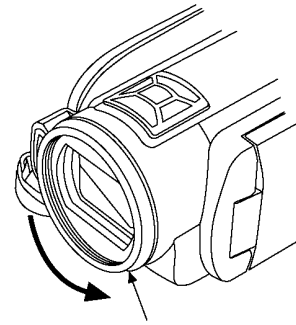
When servicing and reassembling, remove the card and battery from the unit.

- Card
- Battery



### 7.3.1. Removal of the Lens Hood

- Rotate the lens hood in the direction of arrow.



Lens Hood

**NOTE: (When Installing)**

- Align the projection of lens hood to the concave portion of front case unit.

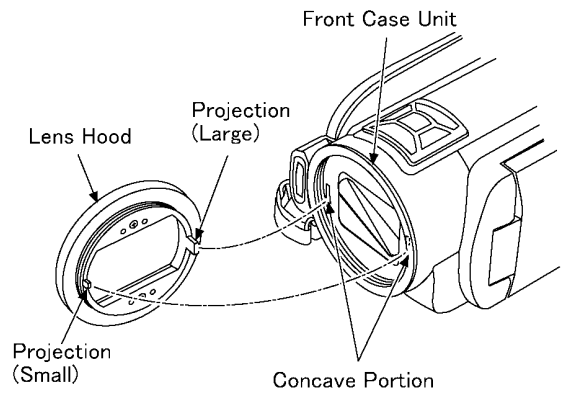


Fig.D1

### 7.3.2. Removal of the Side Case (R) Unit

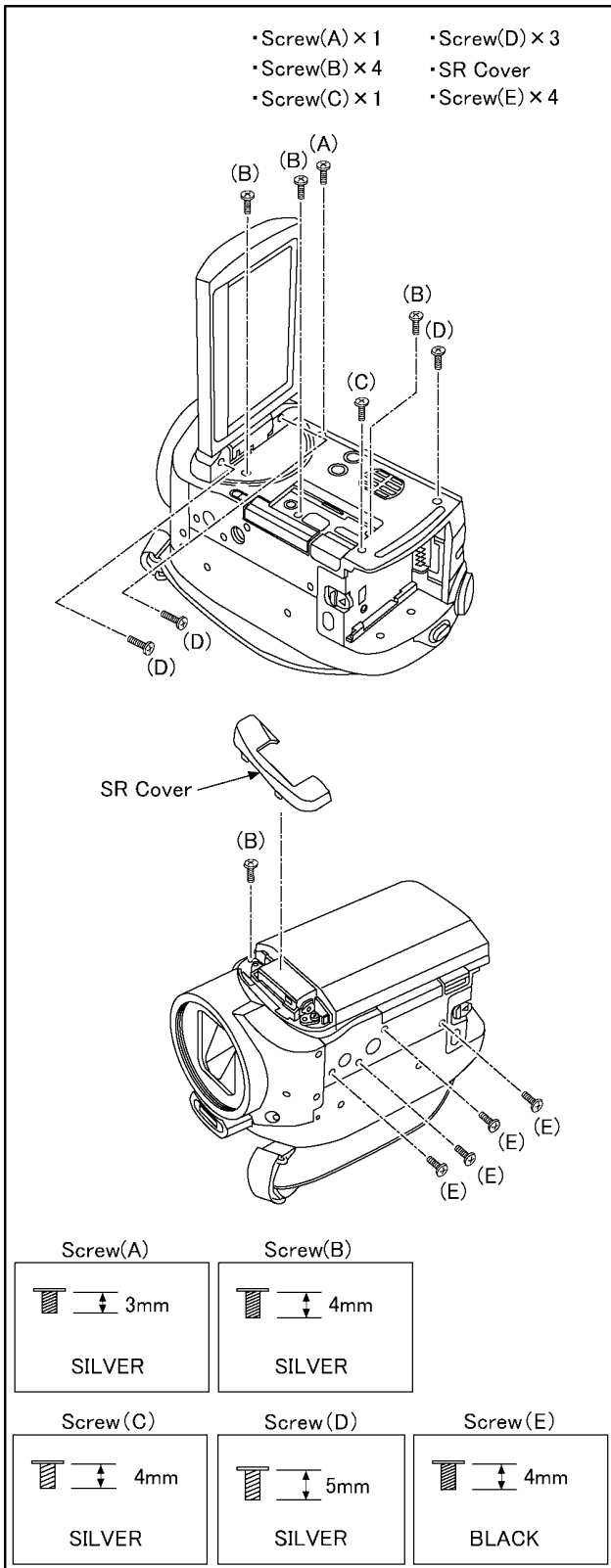


Fig.D2

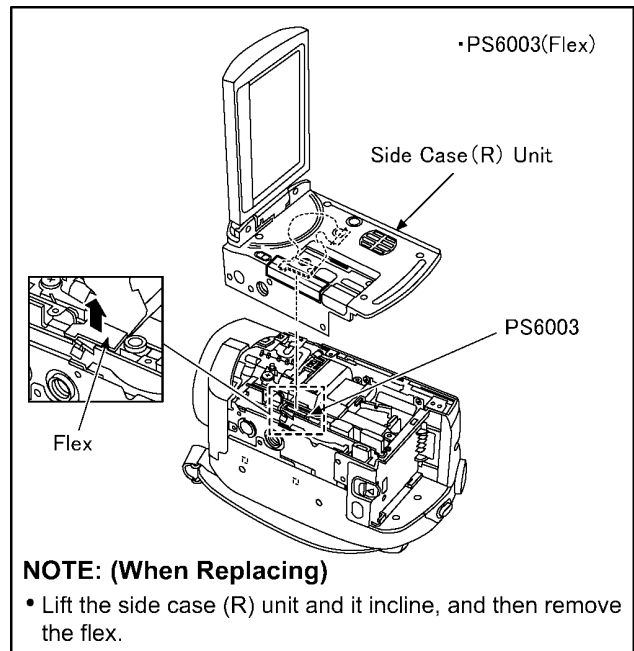


Fig.D3

### 7.3.3. Removal of the Side Case (L) Unit

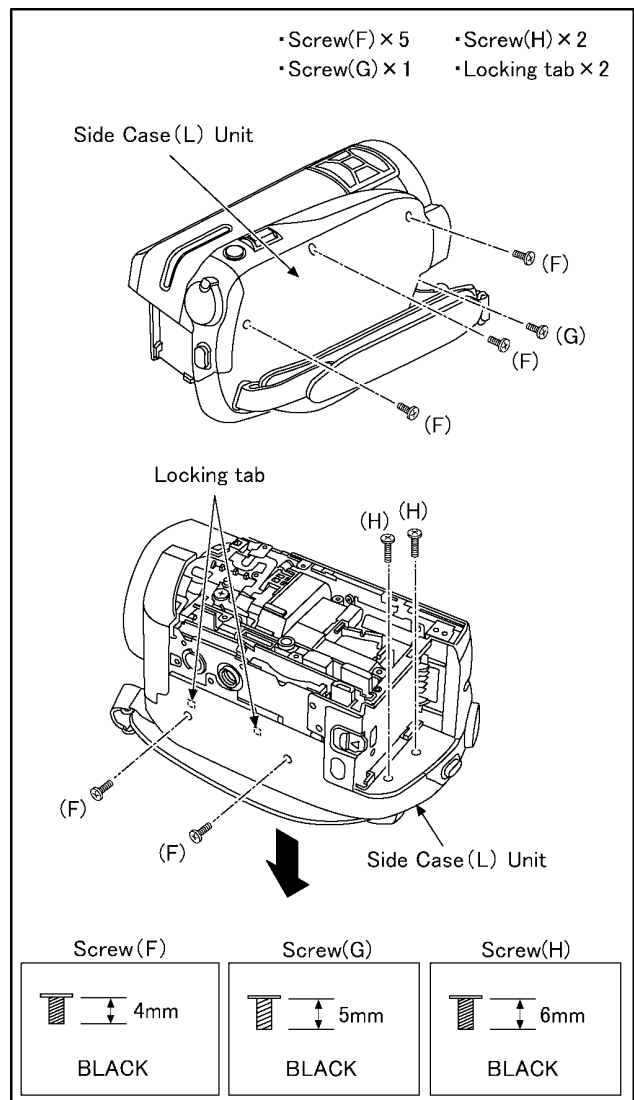


Fig.D4



### 7.3.4. Removal of the HDD Unit

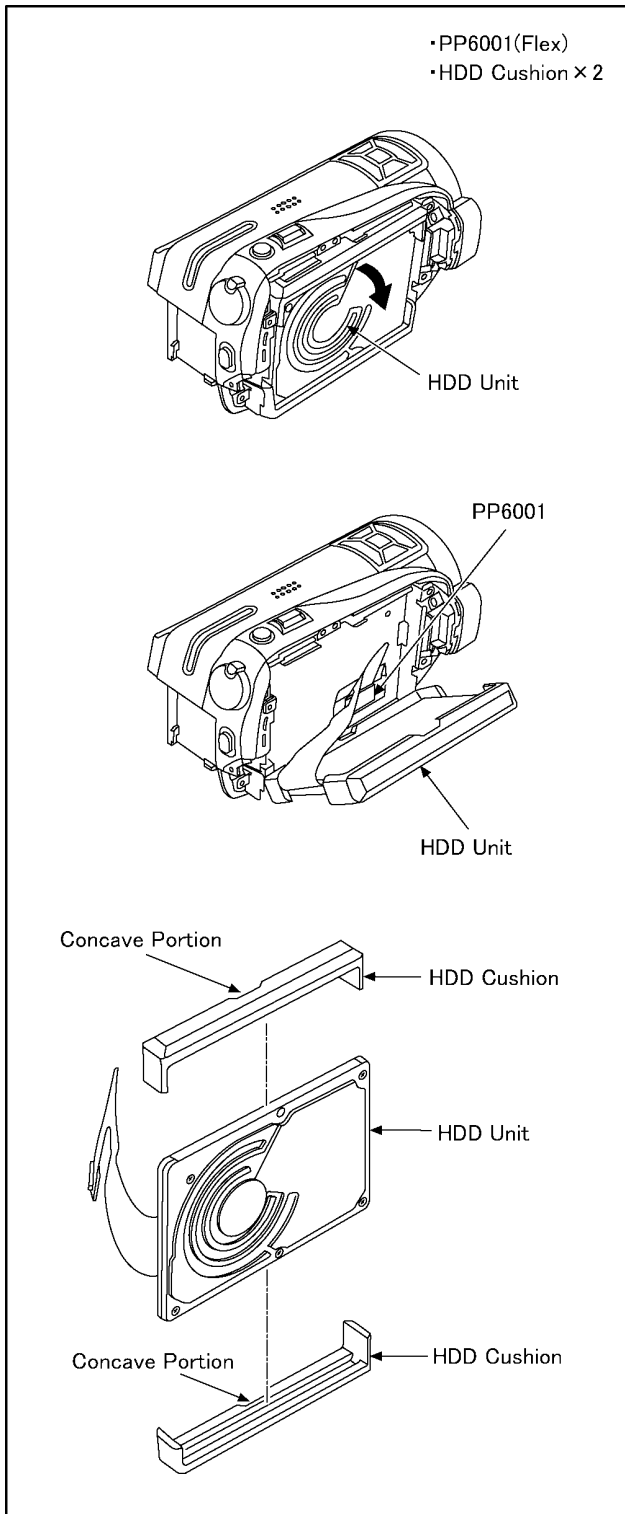
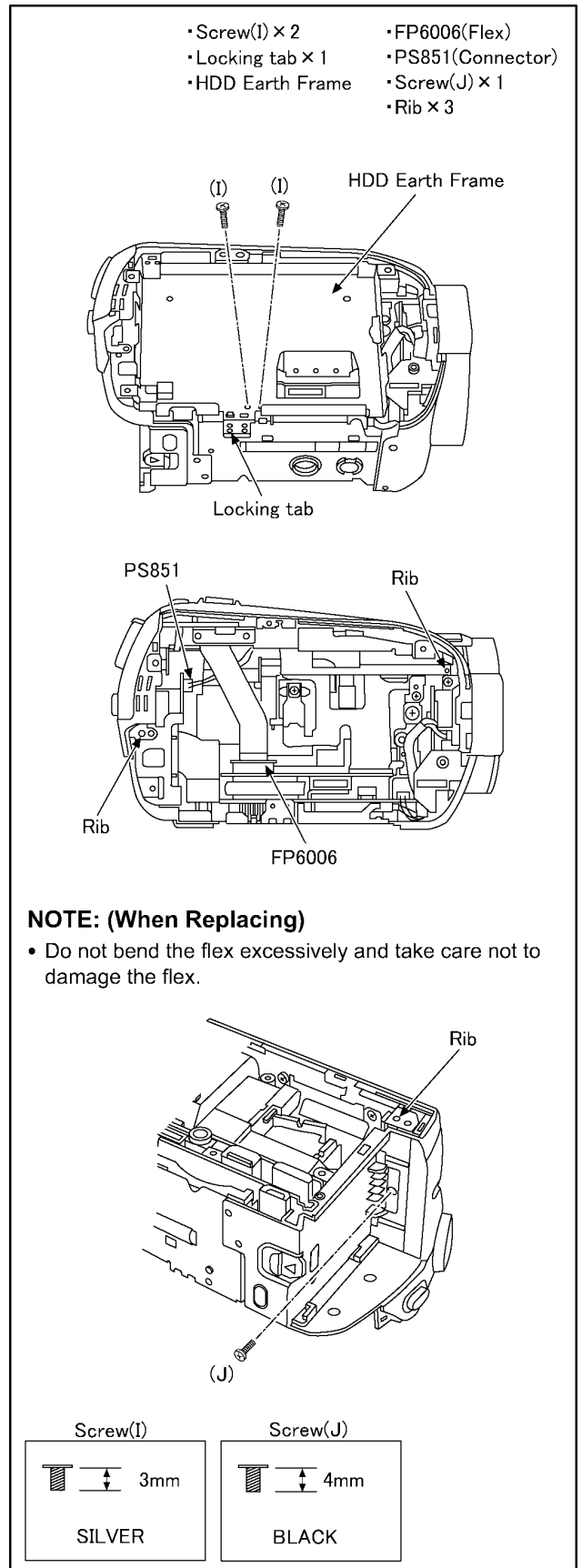


Fig.D5

### 7.3.5. Removal of the Top Case Unit



**NOTE: (When Replacing)**

- Do not bend the flex excessively and take care not to damage the flex.

Fig.D6

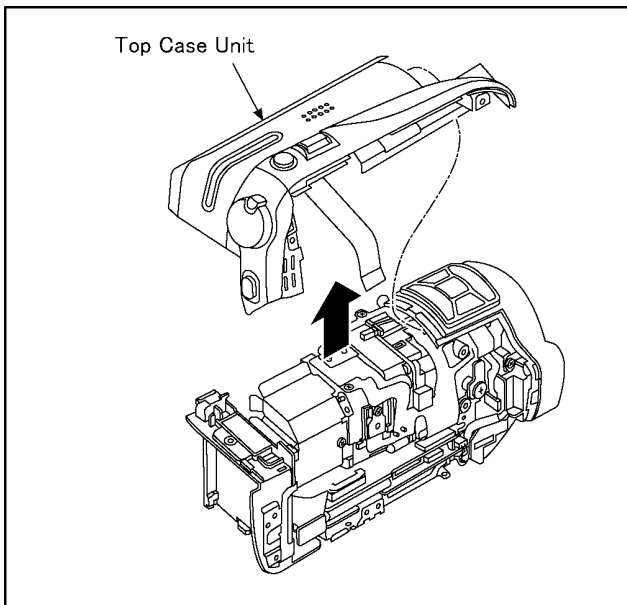


Fig.D7

### 7.3.6. Removal of the Battery Case Unit

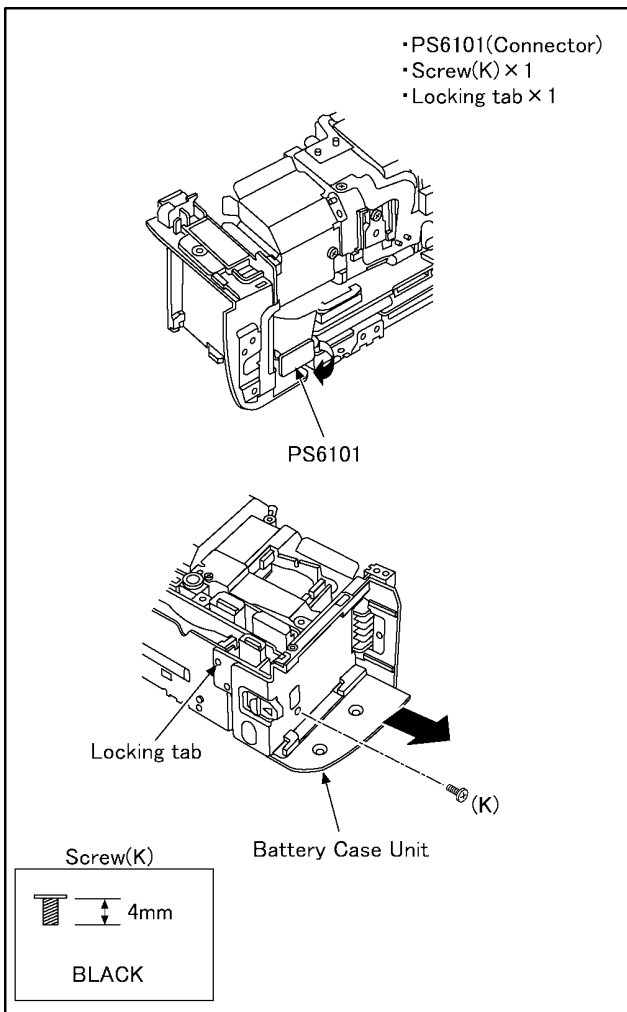


Fig.D8

### 7.3.7. Removal of the Front Case Unit

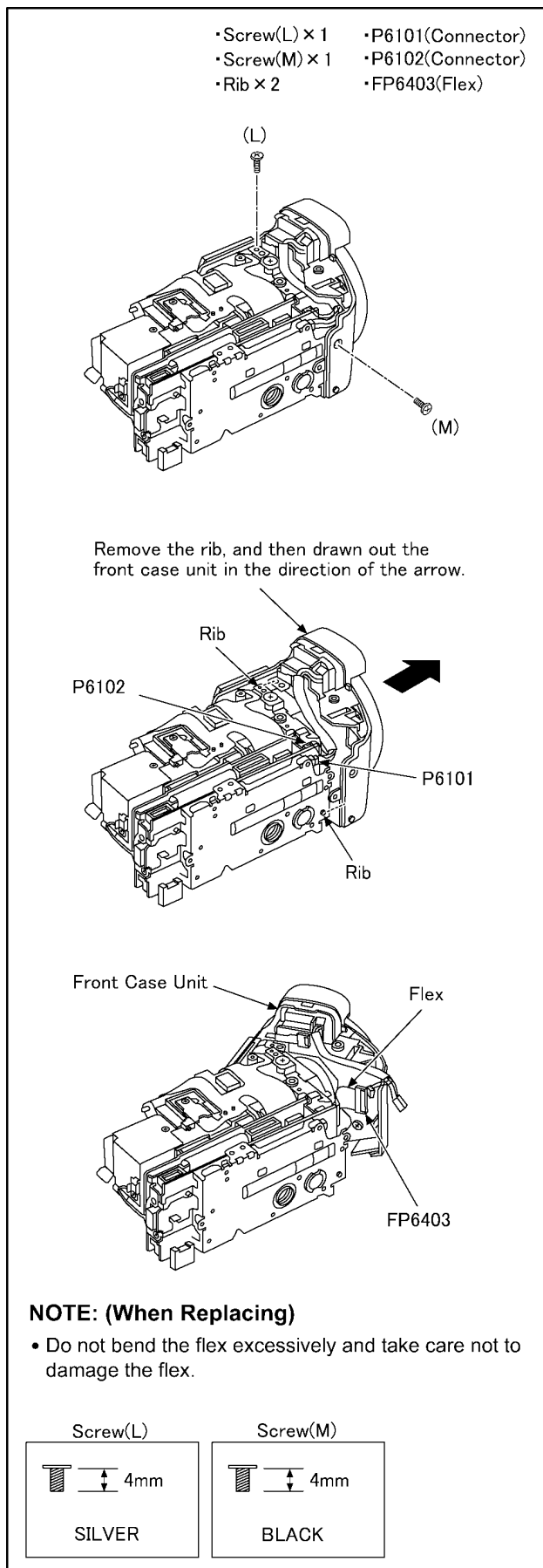


Fig.D9

### 7.3.8. Removal of the Lens Unit

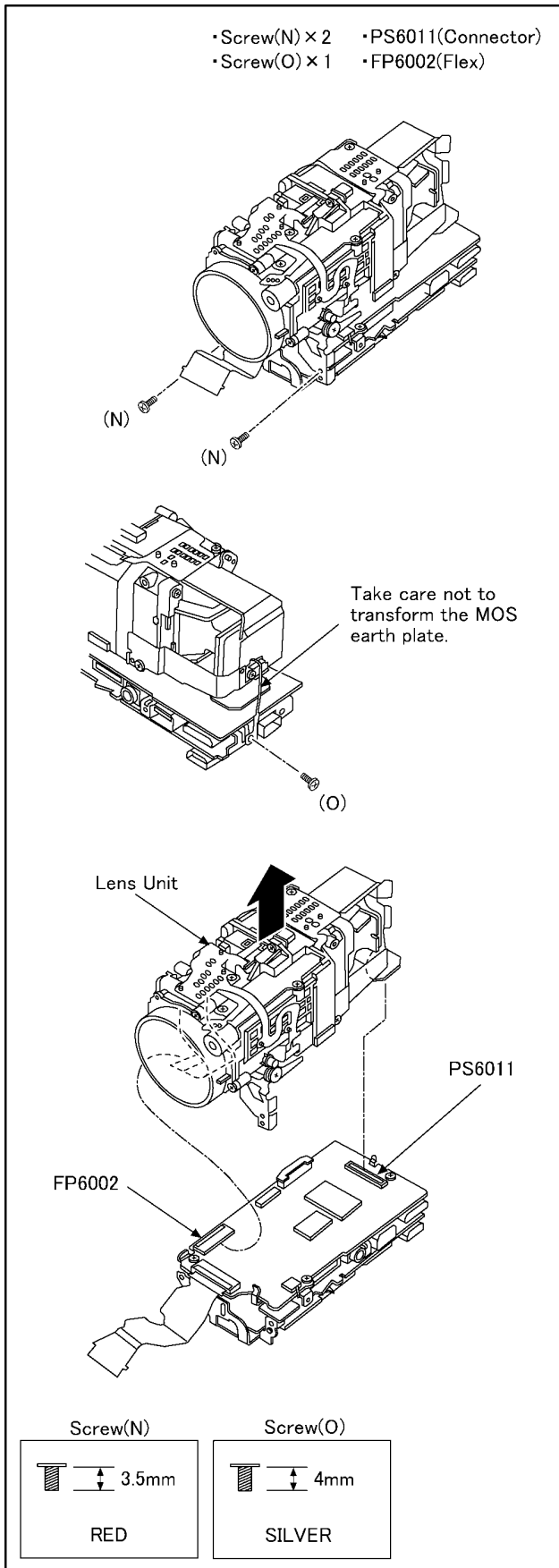


Fig.D10

### 7.3.9. Removal of the Main P.C.B.

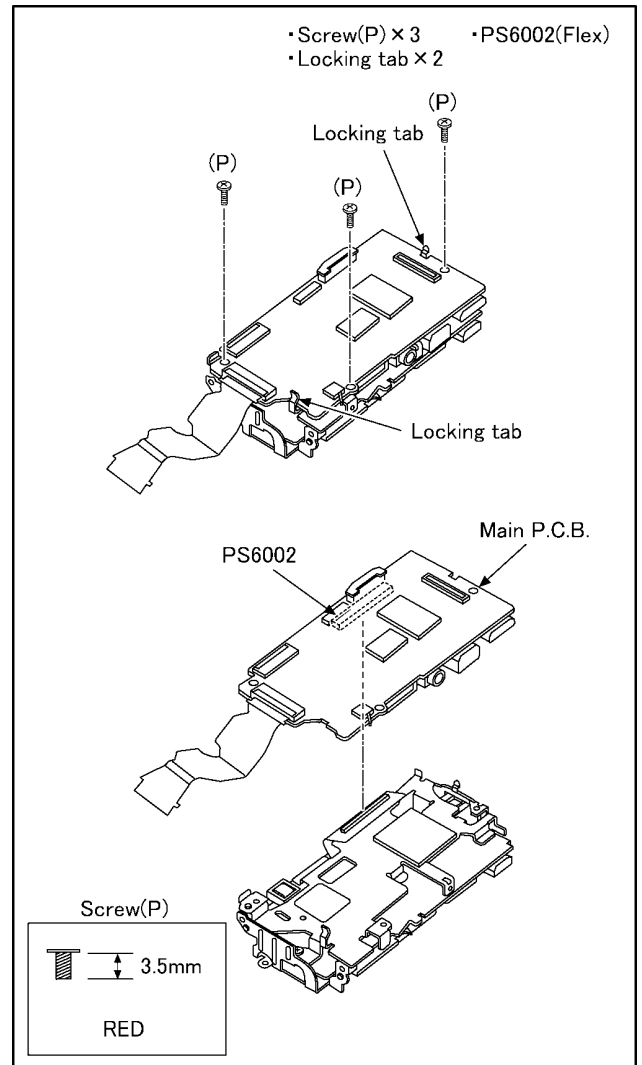


Fig.D11

### 7.3.10. Removal of the Sub P.C.B.

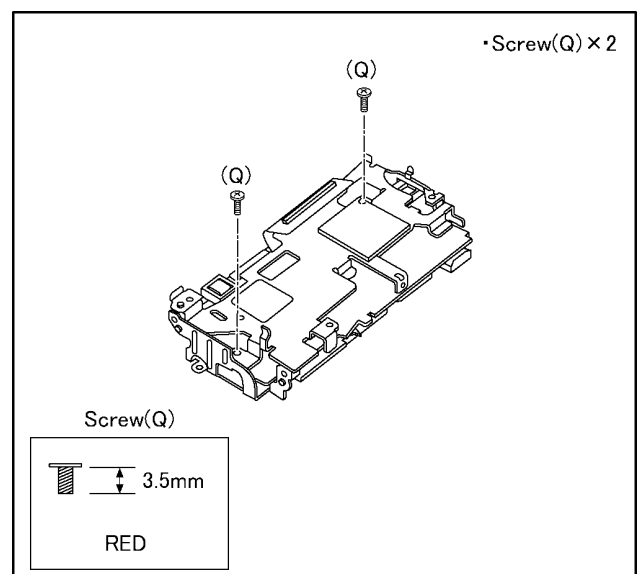


Fig.D12

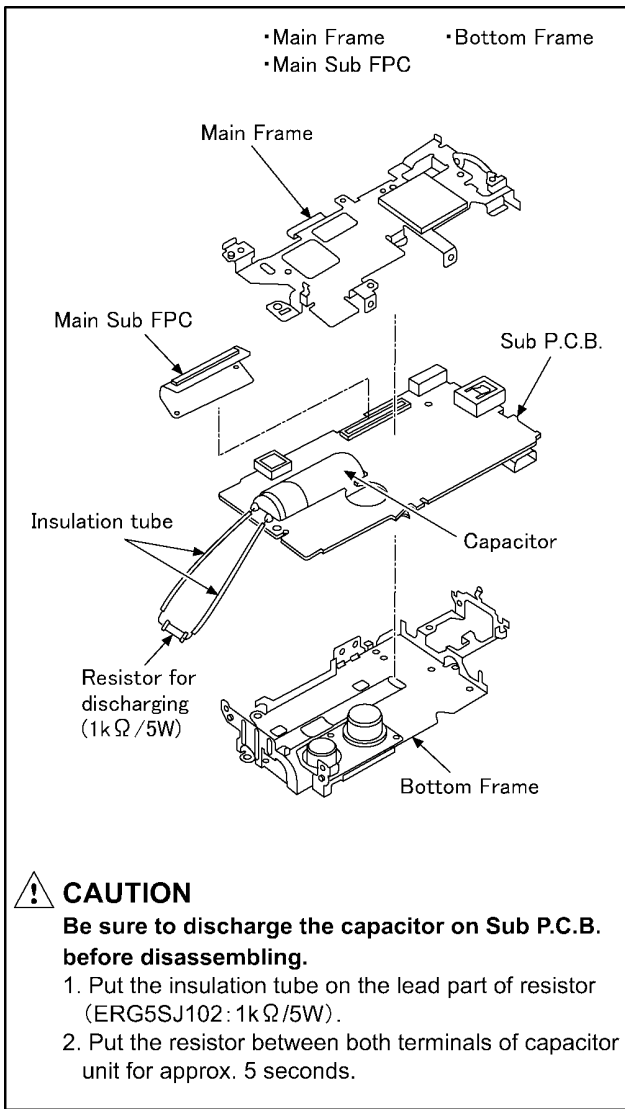


Fig.D13

### 7.3.11. Removal of the Side (R) P.C.B. and Cooling Fan Motor

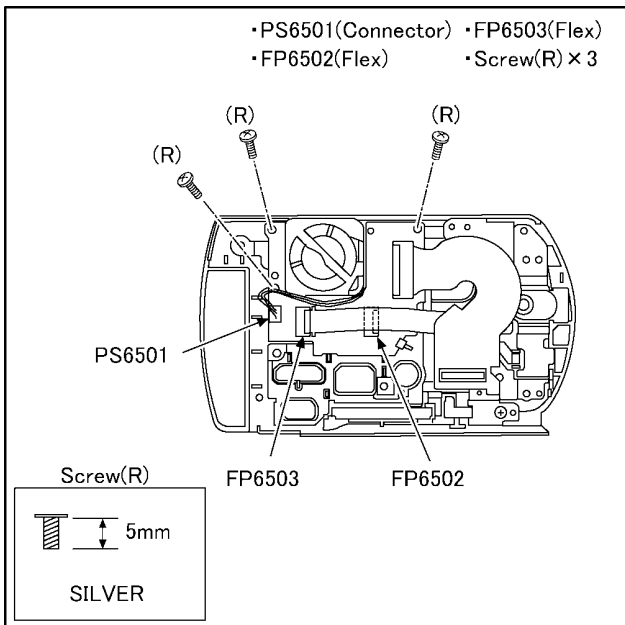


Fig.D14

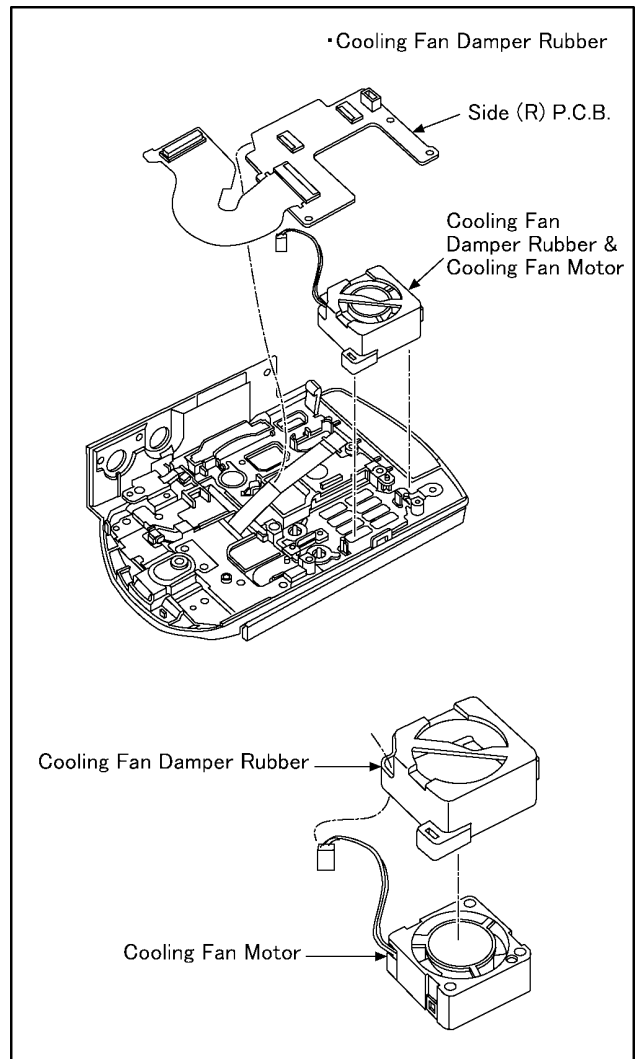


Fig.D15

### 7.3.12. Removal of the LCD Unit

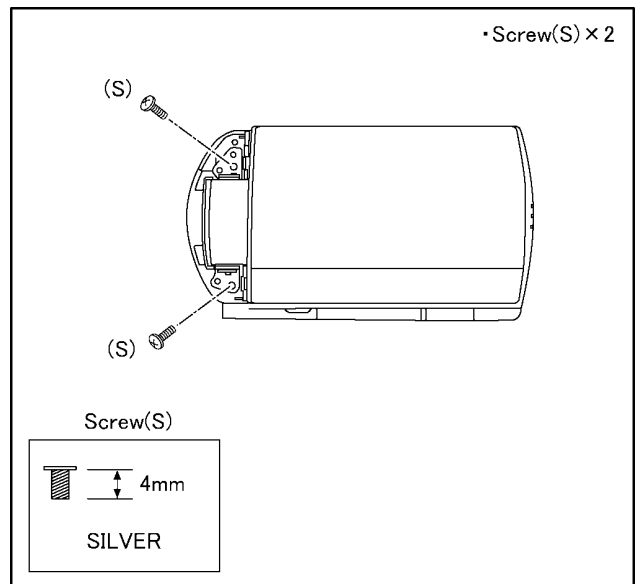


Fig.D16

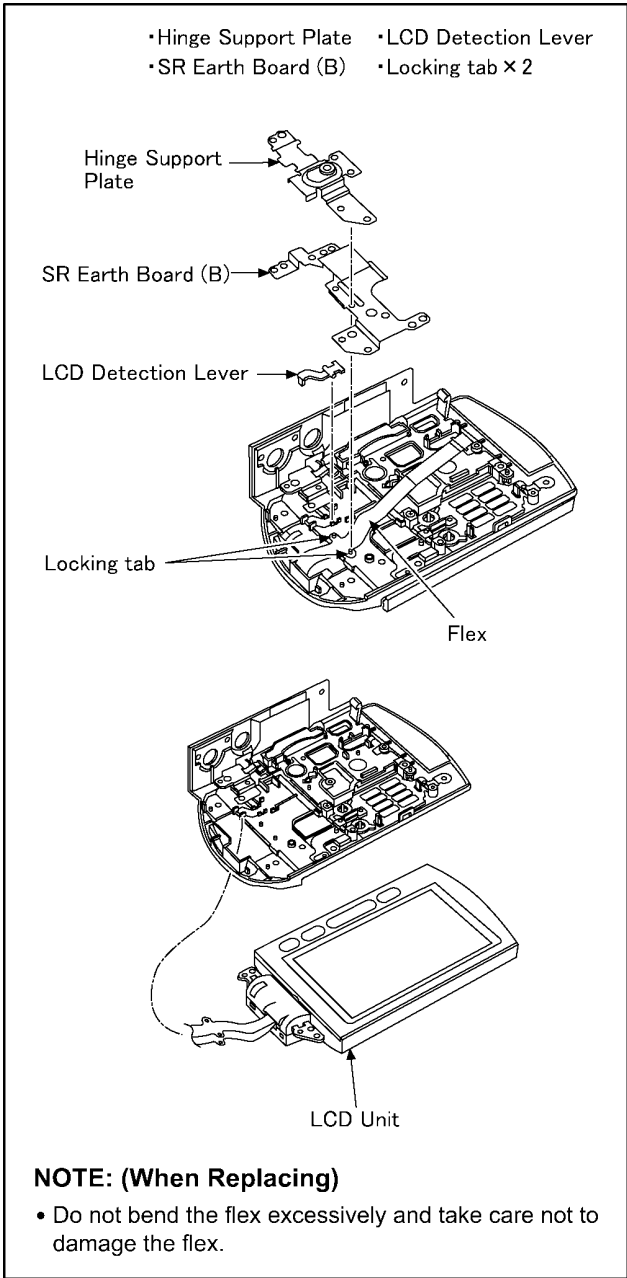


Fig.D17

### 7.3.13. Removal of the LCD Hinge Unit

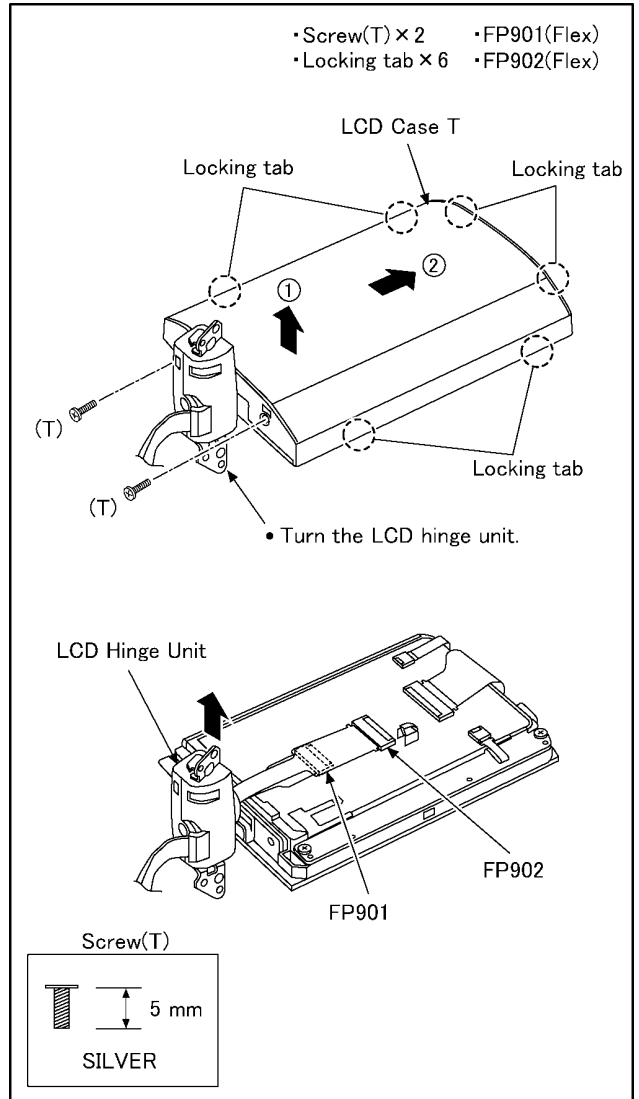


Fig.D18

### 7.3.14. Removal of the LCD OP Button Unit

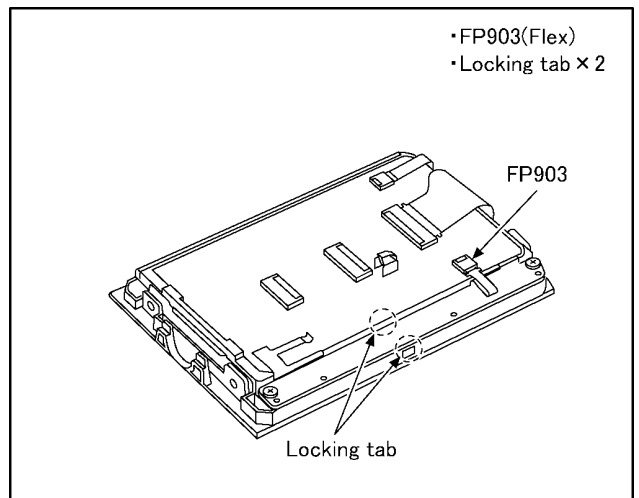


Fig.D19

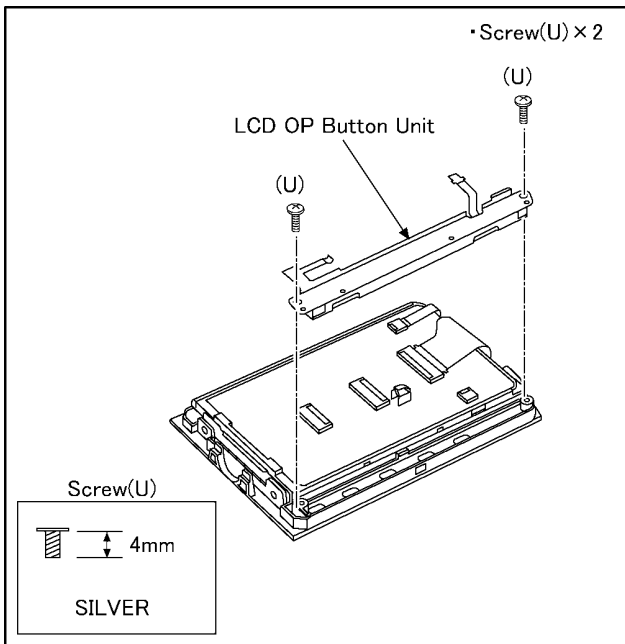


Fig.D20

### 7.3.15. Removal of the Monitor P.C.B.

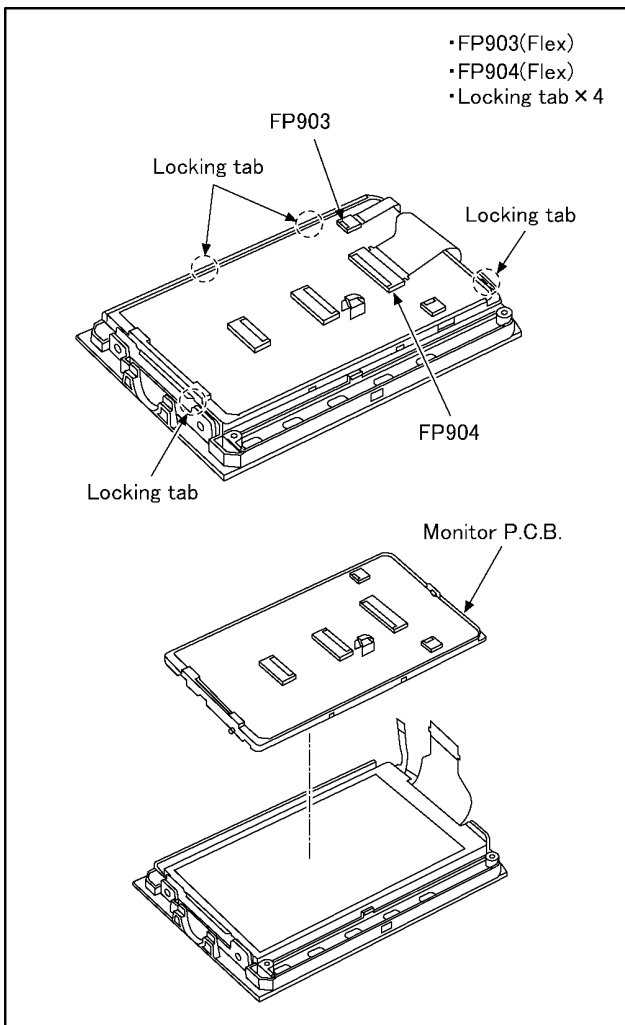


Fig.D21

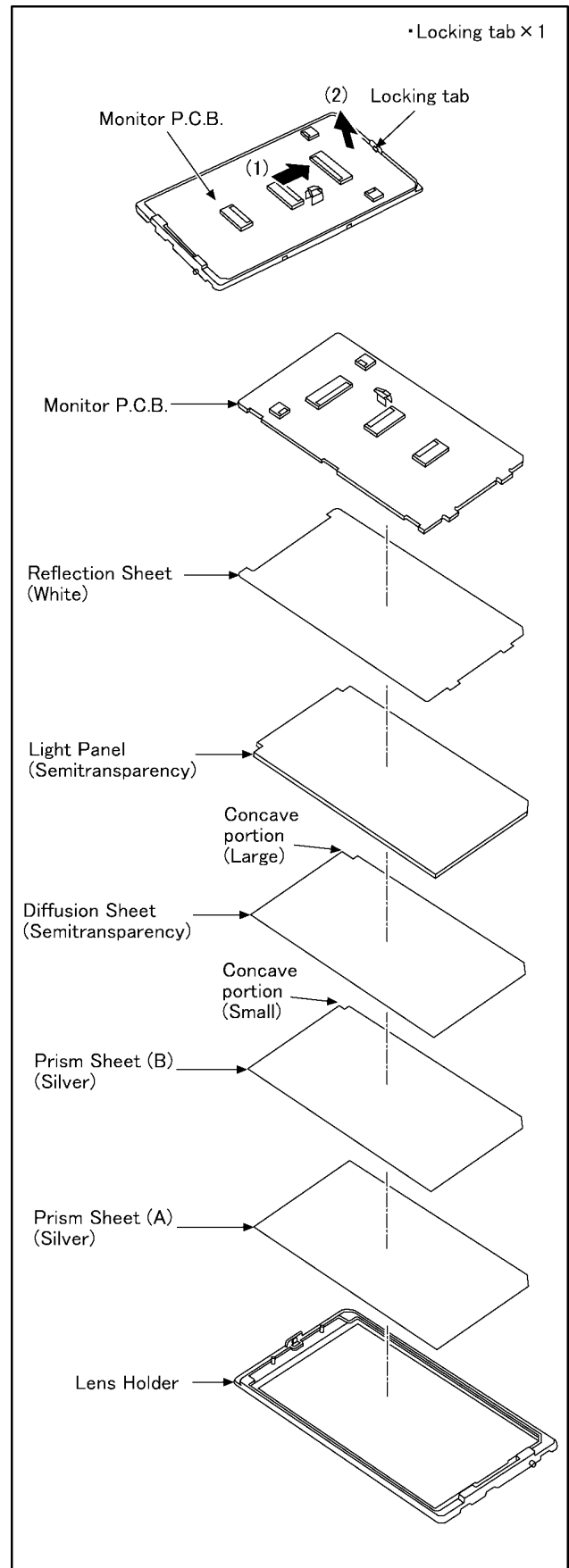


Fig.D22

### 7.3.16. Removal of the LCD

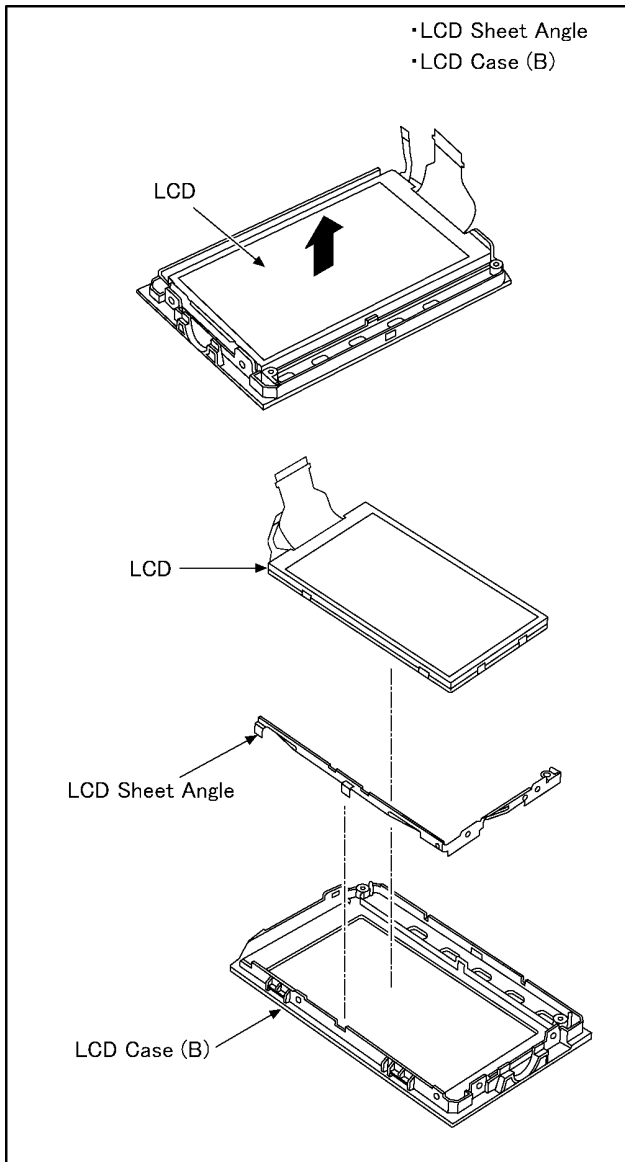


Fig.D23

### 7.3.17. Removal of the Front P.C.B.

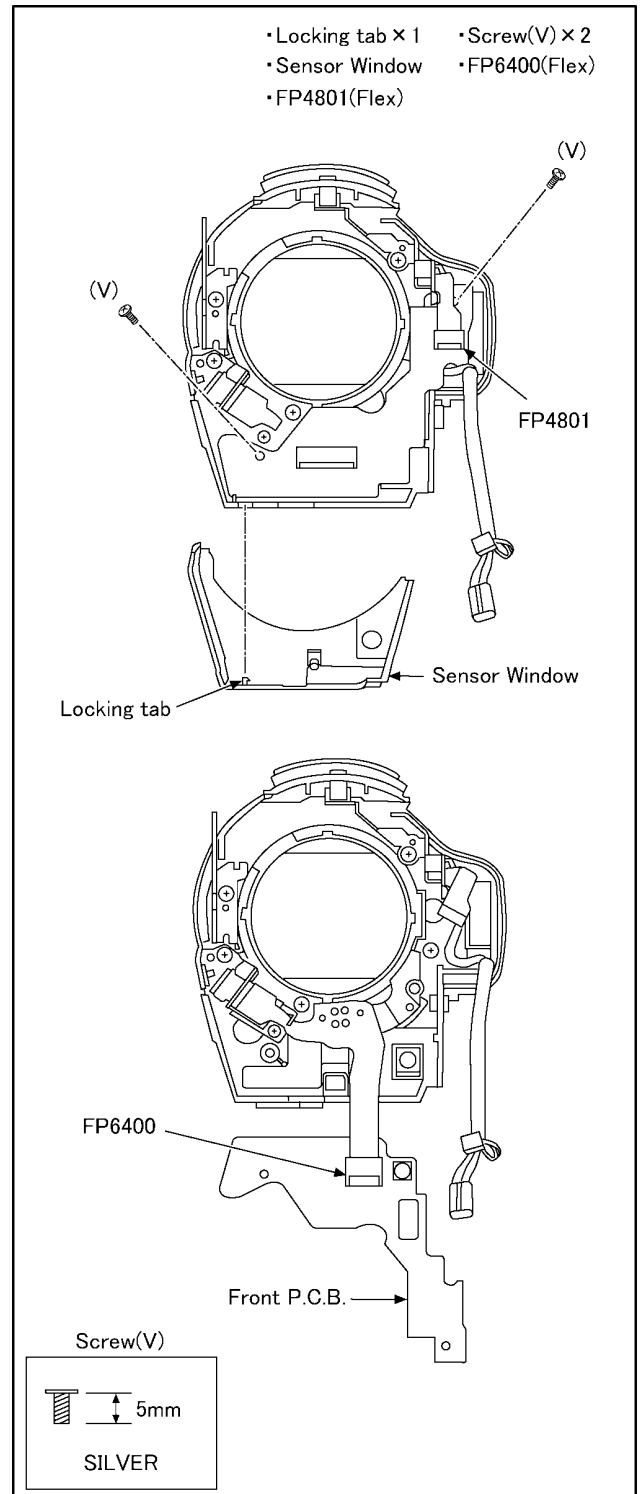


Fig.D24

### 7.3.18. Removal of the Barrier Motor Unit

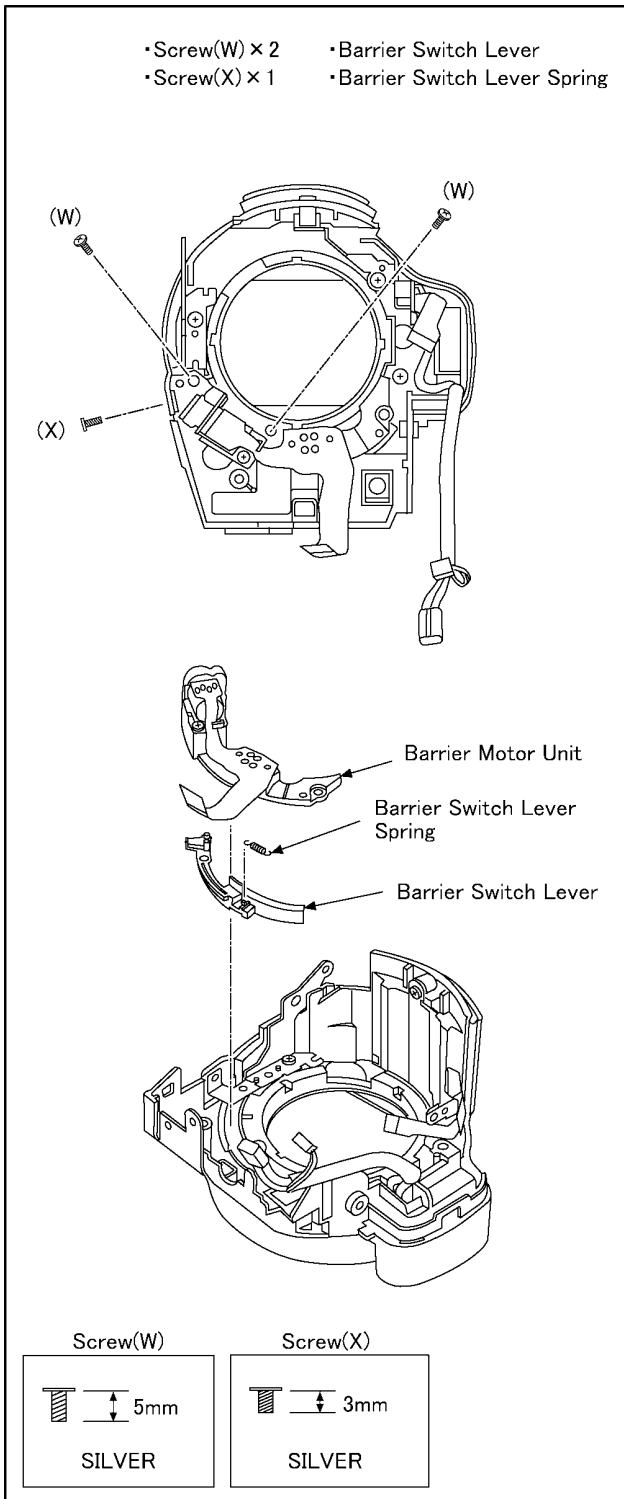
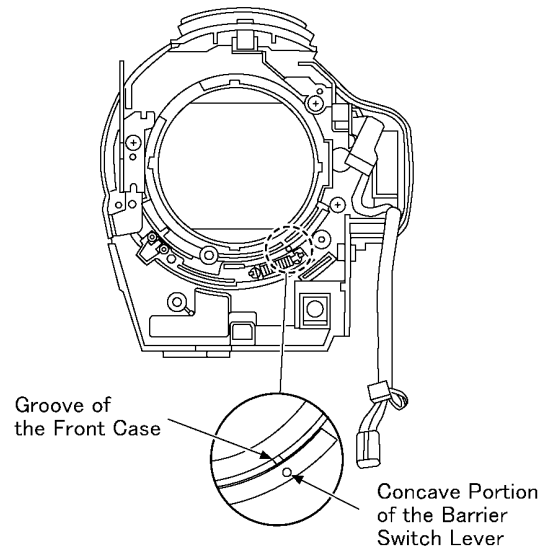


Fig.D25

#### NOTE:(When Installing)

- When install the barrier switch lever, align the groove of the front case between concave portion of the barrier switch lever.



- When install the barrier motor unit, align the projection part of the barrier motor unit between ribs of the barrier switch lever.

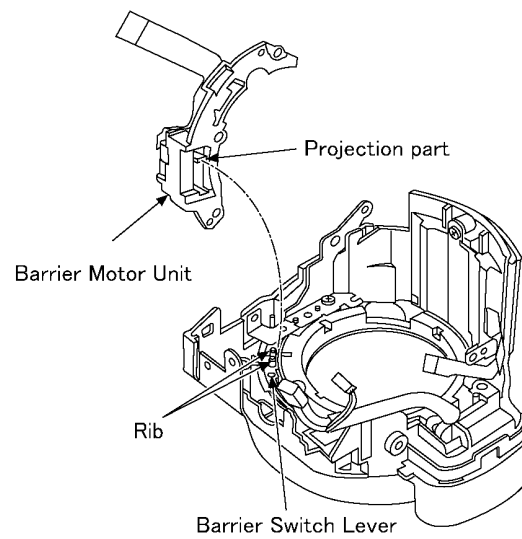


Fig.D26



### 7.3.19. Removal of the Flash Unit

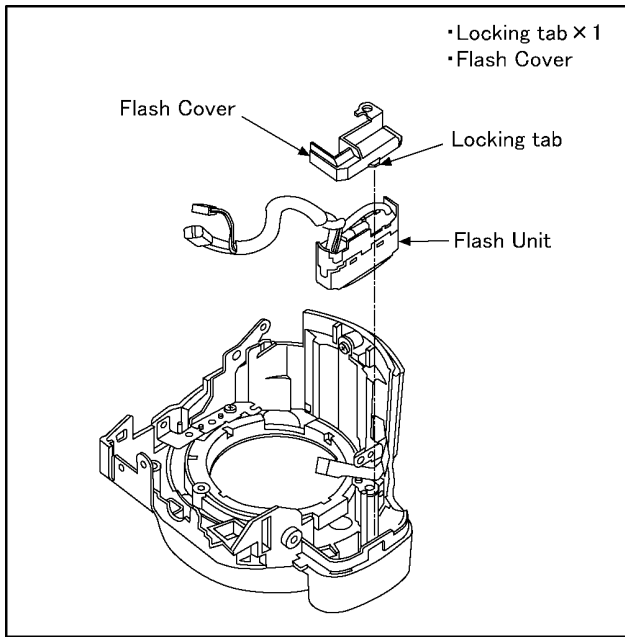


Fig.D27

### 7.3.20. Removal of the Barrier Unit

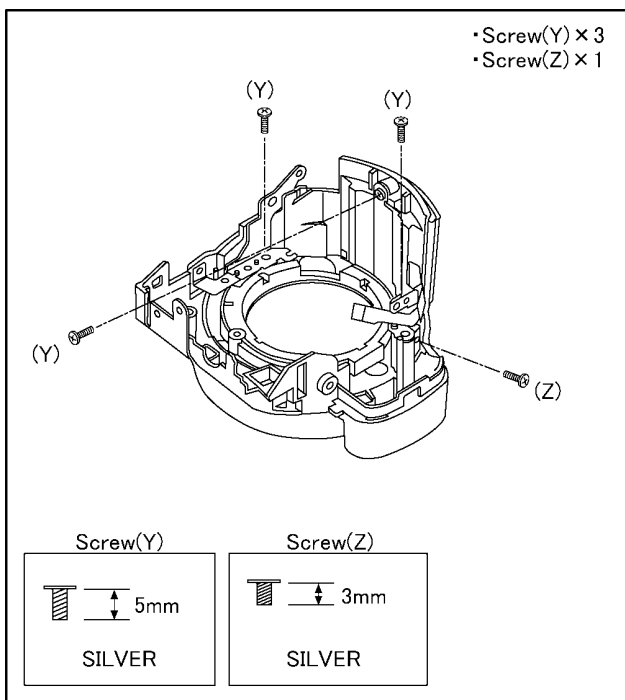


Fig.D28

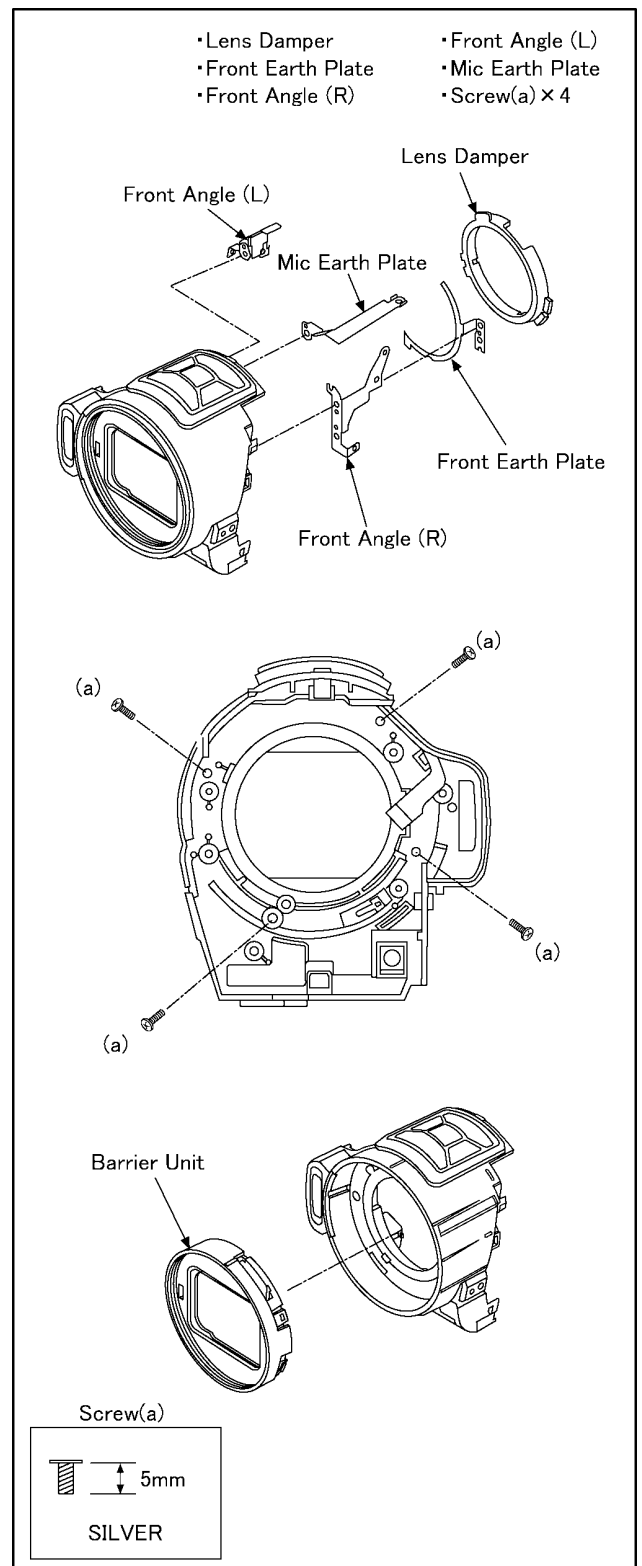


Fig.D29

### 7.3.21. Removal of the ECM

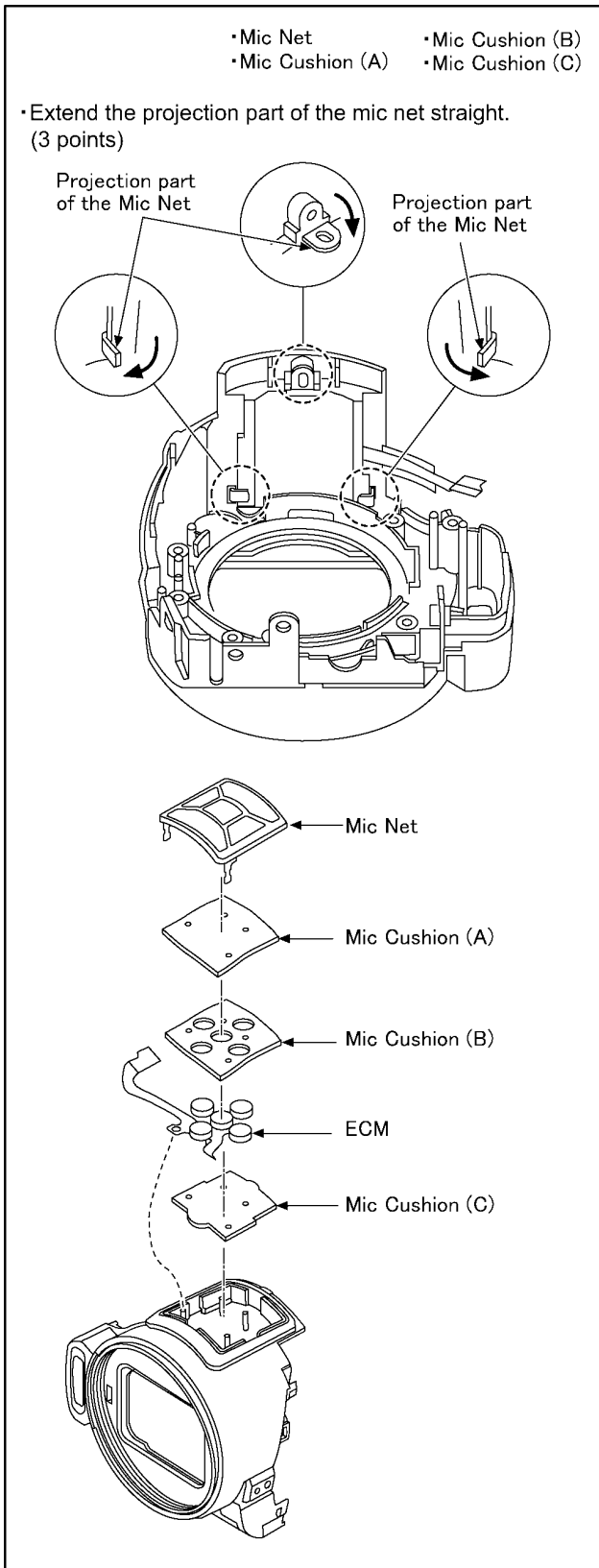


Fig.D30

### 7.3.22. Removal of the Power FPC

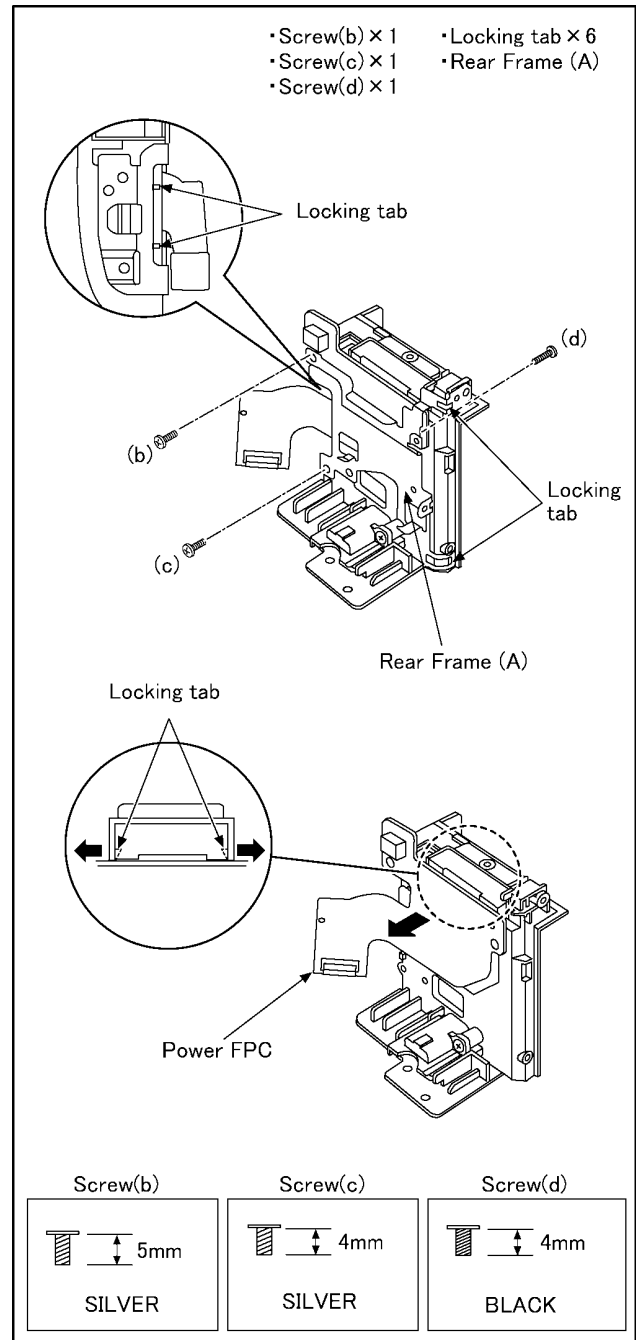


Fig.D31

### 7.3.23. Removal of the Speaker and Grip Ornament

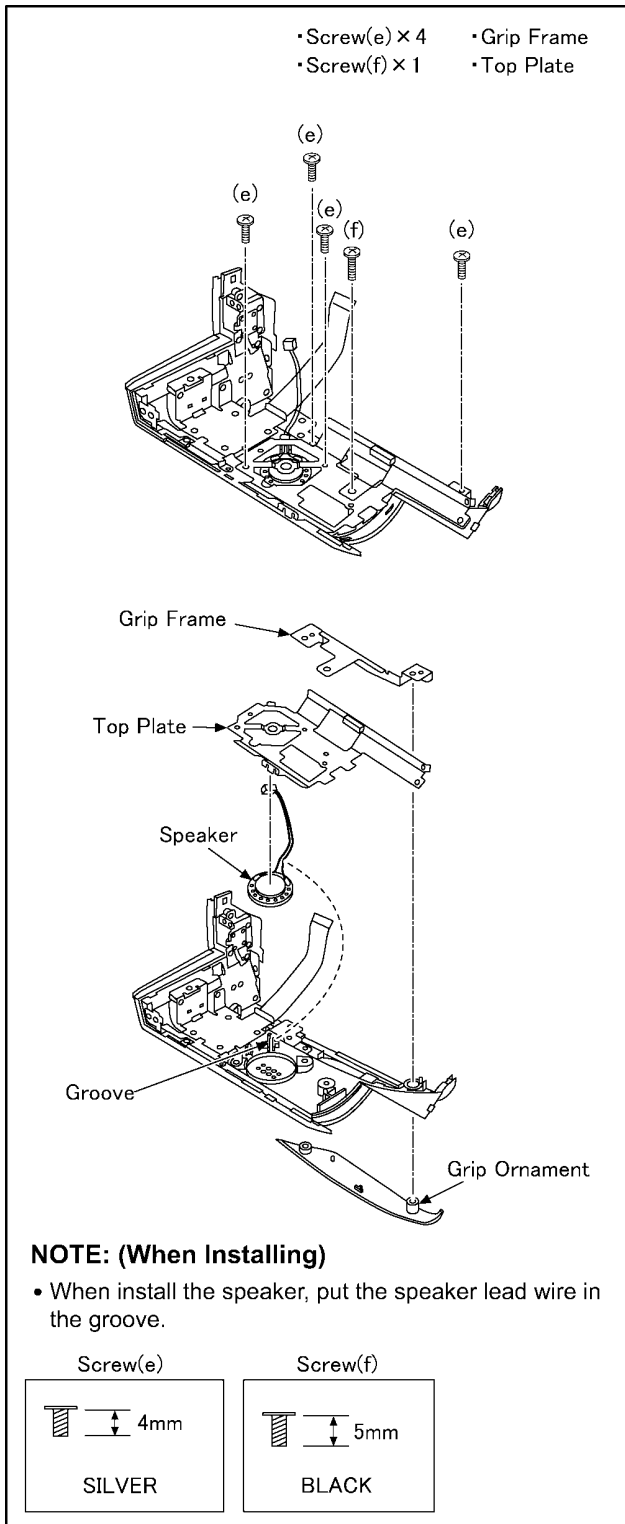


Fig.D32

### 7.3.24. Removal of the MOS Unit and Optical Filter

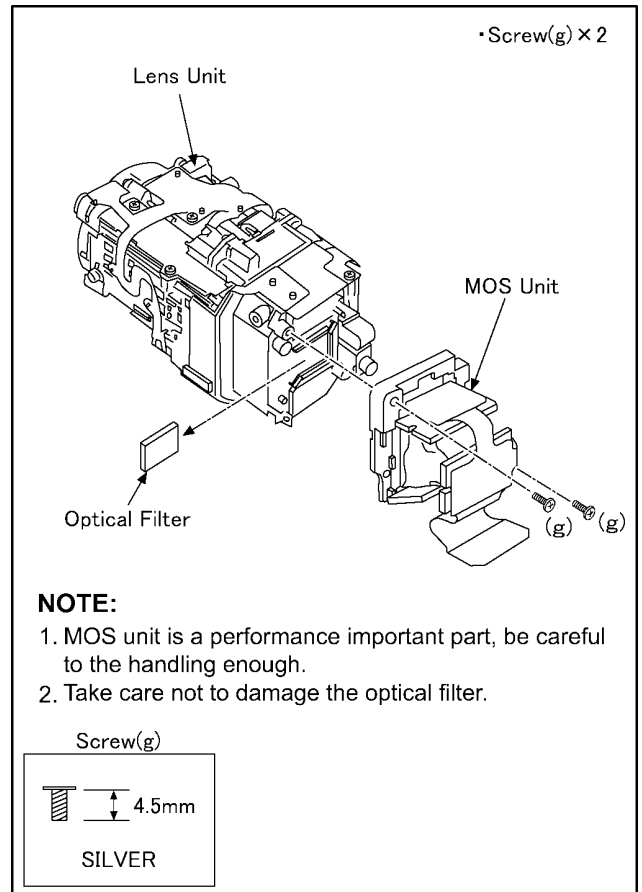


Fig.D33

### 7.3.25. Removal of the Zoom Motor

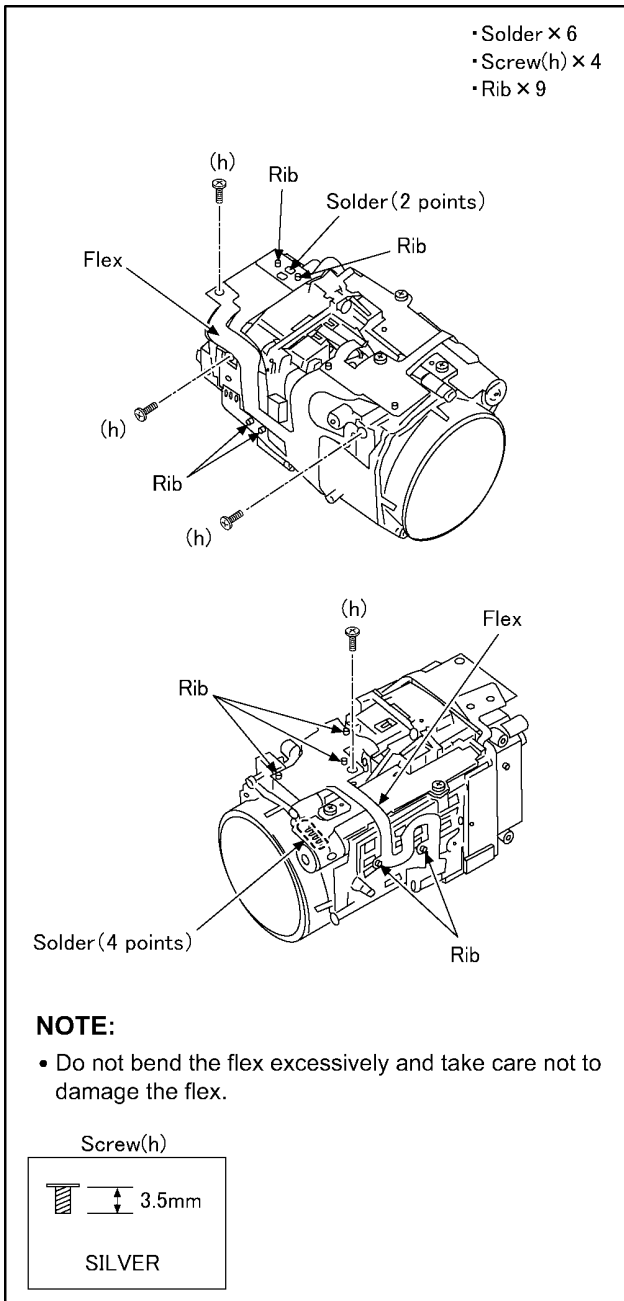


Fig.D34

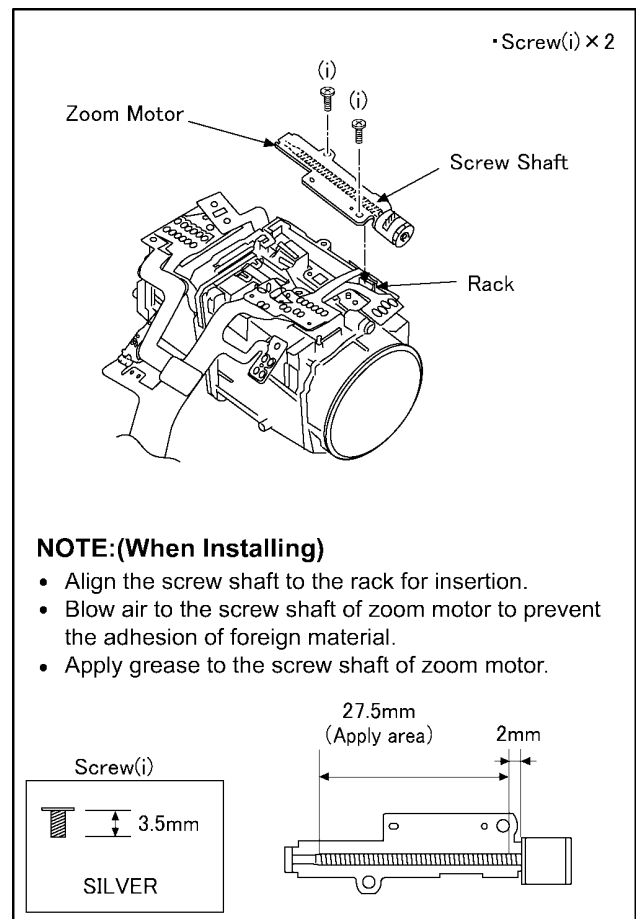


Fig.D35

### 7.3.26. Removal of the 1st Lens Frame Move Unit

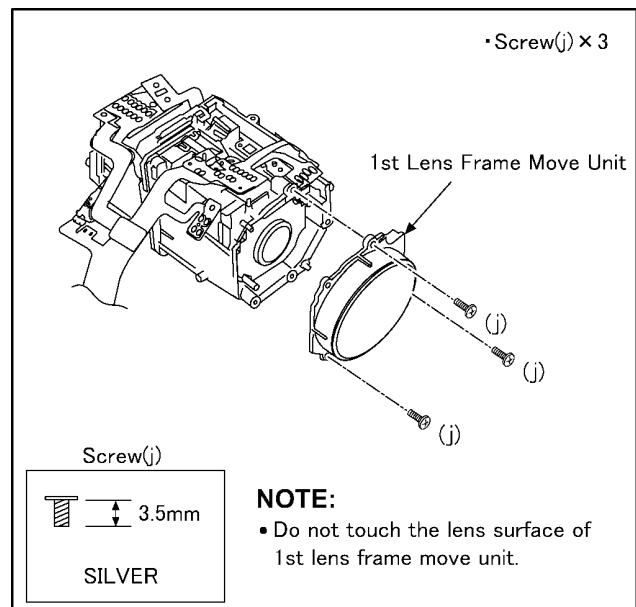


Fig.D36

### 7.3.27. Removal of the Main Frame Unit and 2nd Lens Frame Move Unit

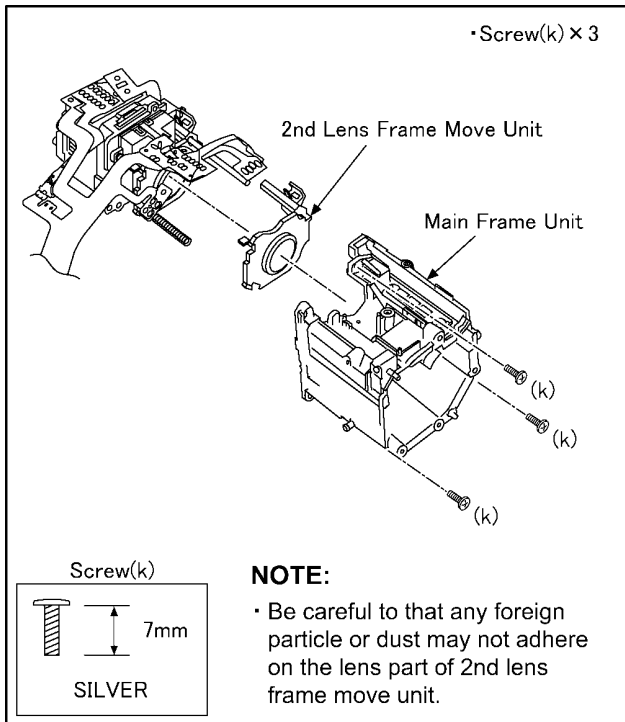


Fig.D37

### 7.3.28. Removal of the 2nd Lens Frame Spring and OIS/IRIS Unit

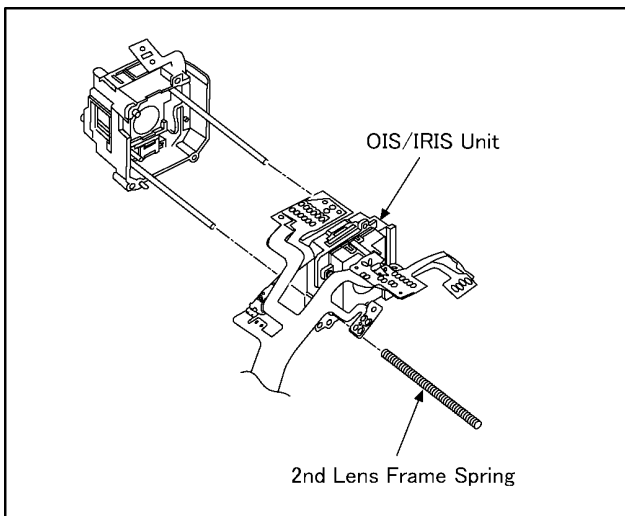


Fig.D38

### 7.3.29. Removal of the IRIS Unit

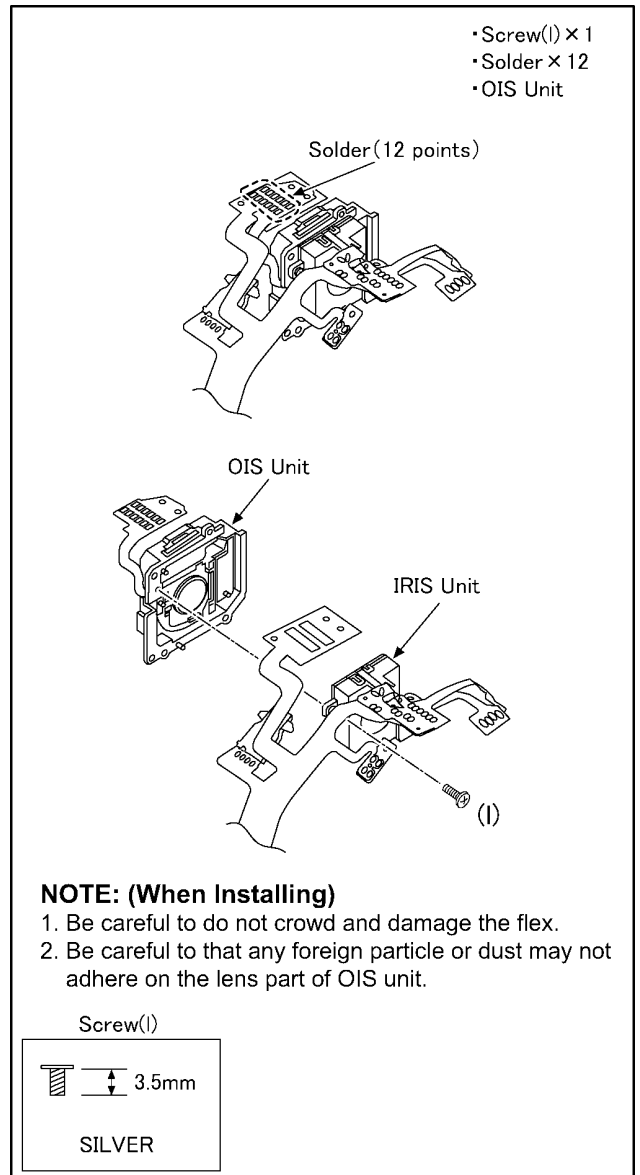


Fig.D39

### 7.3.30. Removal of the Master Flange Unit and 4th Lens Frame Move Unit

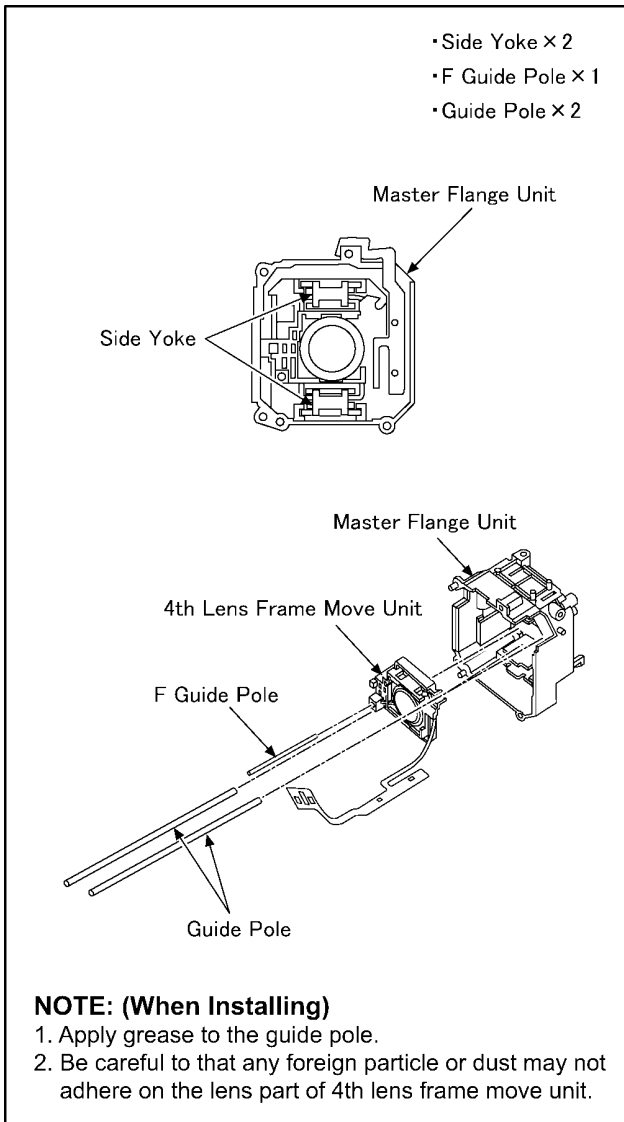


Fig.D40

# 8 Measurements and Adjustments

## 8.1. Electric Adjustment

- Adjustment method is different from a conventional SD video camera.
- An exclusive jig and PC (including software for adjustment "Tatsujin") are necessary for electric adjustment.
- A USB driver for service is necessary to communication with PC.
- Connection method of the main unit and an exclusive adjustment jig as follows

### 8.1.1. Adjustment Procedure

- Connect the main unit to PC with USB.  
The adjustment instruction is available at "Software download" on the "Support Information from NWBG/VDBG-AVC" web-site in "TSN System".

Figure of connection

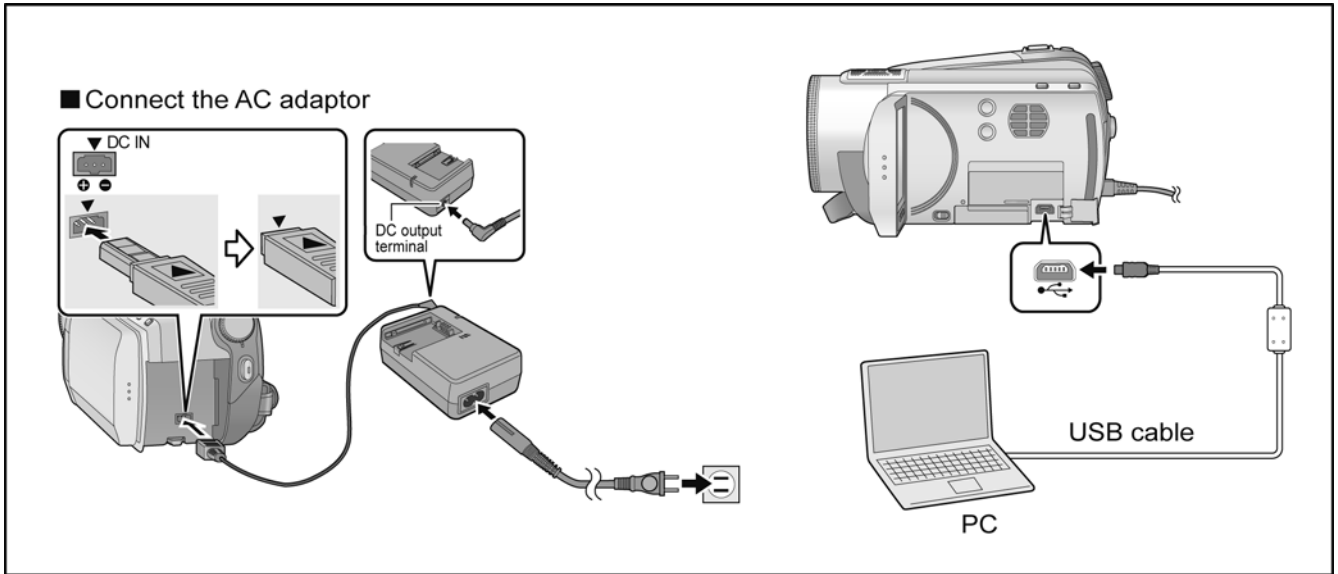
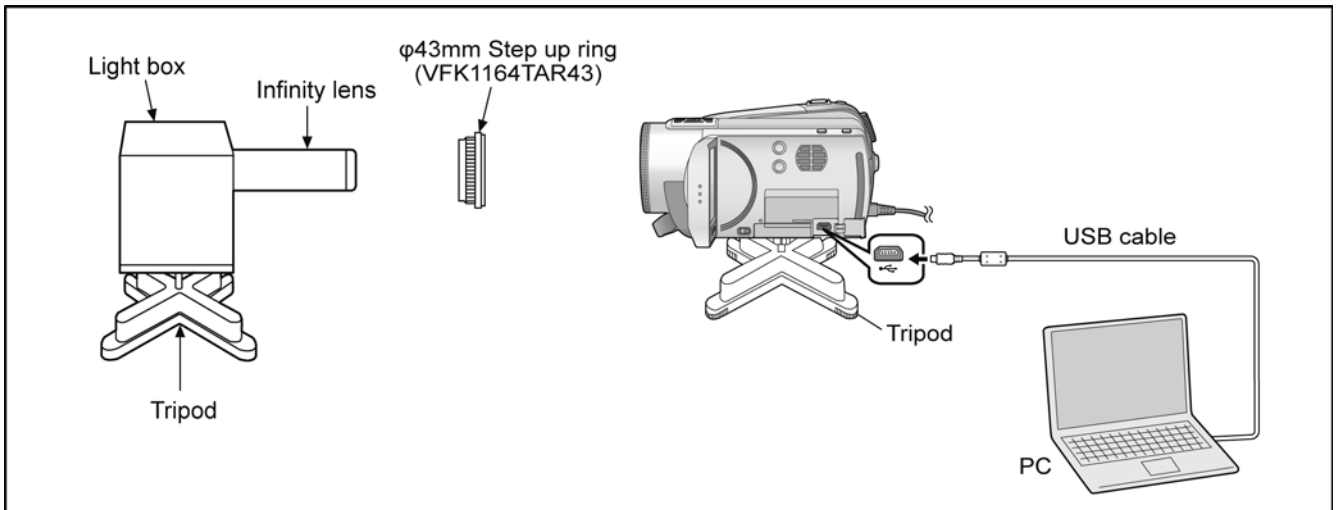


Figure of image when adjustment



#### Part Number of jig

- Only a necessary jig mentions it in setup of electric adjustment.

No.	Part Name	Part Number	Remarks
1	PC	-----	
2	AC Adaptor	-----	
3	DC Cable	-----	
4	USB Cable	-----	
5	43mm Step Up Ring	VFK1164TAR43	
6	Adjustment Software (Tatsujin)	-----	

### Adjustment Items

- Adjustment item as follows.

The adjustment instruction is available at "Software download" on the "Support Information from NWBG/VDBG-AVC" web-site in "TSN System".

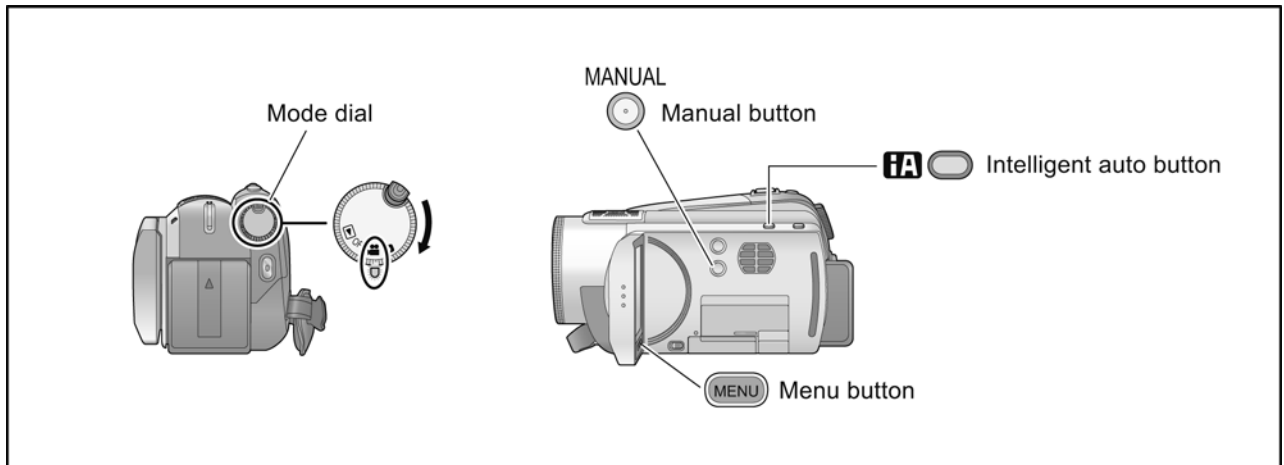
	Replacement part		Main P.C.B.	IC2007(EEPROM)	Lens P.C.B.	Prism Unit	IRIS	4th lens frame move unit	IC3400	IC301
	Adjustment item									
Camera Part	● Hall amplifire/PWM bias (automatic)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
	● OIS Hall amplifire adjustment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	● Zoom tracking adjustment (automatic)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
	● Address wound revision	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>					
	● White balance adjustment	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>					
	● Gain adjustment between channels	<input type="radio"/>			<input type="radio"/>					<input type="radio"/>
Video Part	● Brightness level adjustment	<input type="radio"/>	<input type="radio"/>							
	● DDR revision							<input type="radio"/>		



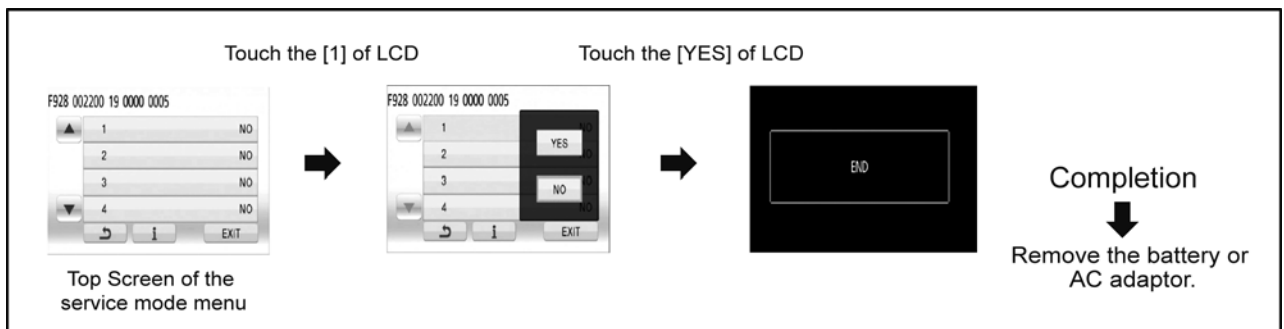
# 9 Factory Setting

## 9.1. HOW TO TURN ON THE FACTORY SETTINGS?

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.



3. Touch the [ 1 ] of LCD.
4. Touch the [ YES ] of LCD.
5. After few seconds "END" is displayed on LCD monitor. Cutting of battery connection or AC power supply connection as a completion of the "FACTORY SETTINGS".



## 9.2. WHAT IS THE FACTORY SETTINGS?

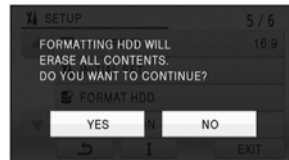
The factory settings clean up and/or refresh the following settings.

1. MENU, MODE, ADJUSTMENT VALUE.
2. SD card format.
3. Reset the folder number and file number of still pictures.  
(Setting the folder number is 100, and file number is 0.)
4. Clear the mechanism lock information.
5. Clear the service mode information contents.
6. Close the lens cover
7. Initialize the VIERA Link Physical Address.
8. Confirm the data area of HDD is cleared.

(When recorded data in HDD, "error display" is done)

If "error display" is done, execute physical format according to the following procedure.

To physically format the HDD, connect the unit via the AC adaptor, select [FORMAT HDD] → [YES] from the menu, and then press and hold the delete button on the screen below for about 3 seconds. When the HDD data deletion screen appears, select [YES], and then follow the on-screen instructions.



**The setting position of factory settings:**

Name	Setting position
Mode dial	OFF

# Service Manual

---

## Diagrams and Replacement Parts List

### High Definition Video Camera

Model No.

HDC-HS200EB	HDC-HS200GK
HDC-HS200EC	HDC-HS200GN
HDC-HS200EE	HDC-HS200GT
HDC-HS200EG	HDC-HS200SG
HDC-HS200EP	HDC-HS250P
HDC-HS200GC	HDC-HS250PC
HDC-HS200GJ	HDC-HS250PU

Vol. 1

Colour

(S).....Silver Type (only HDC-HS200EG/GC)

(K).....Black Type

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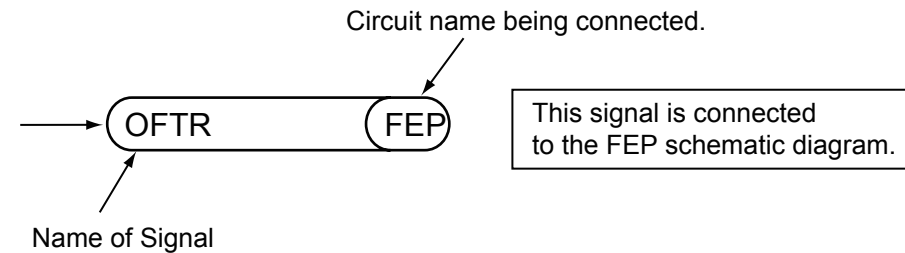
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## S1. About Indication of The Schematic Diagram

### S1.1. Important Safety Notice

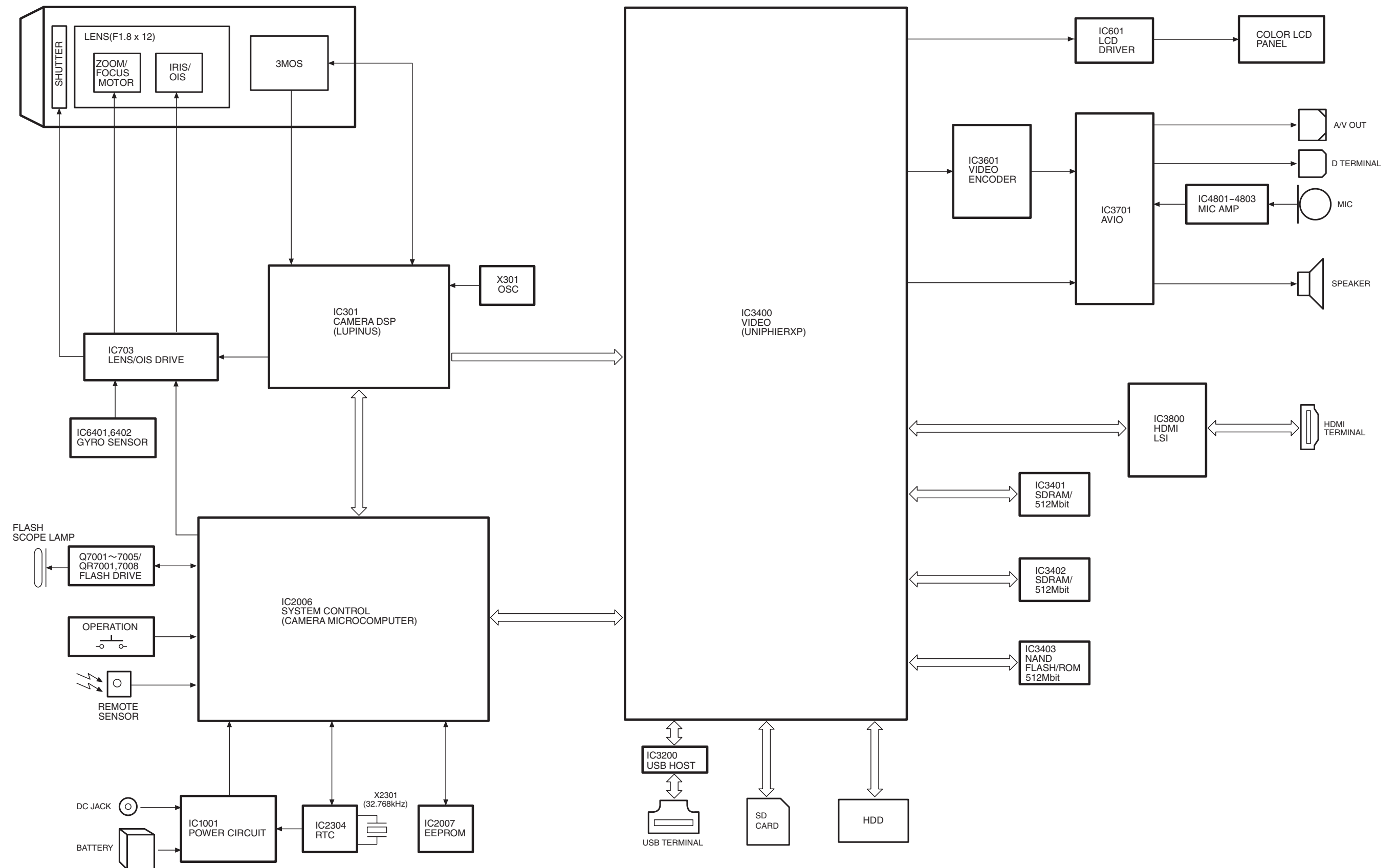
COMPONENTS IDENTIFIED WITH THE MARK  $\triangle$  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

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. The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.
4. Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.
5. The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.
6. Use the parts number indicated on the Replacement Parts List .
7. Indication on Schematic diagrams:



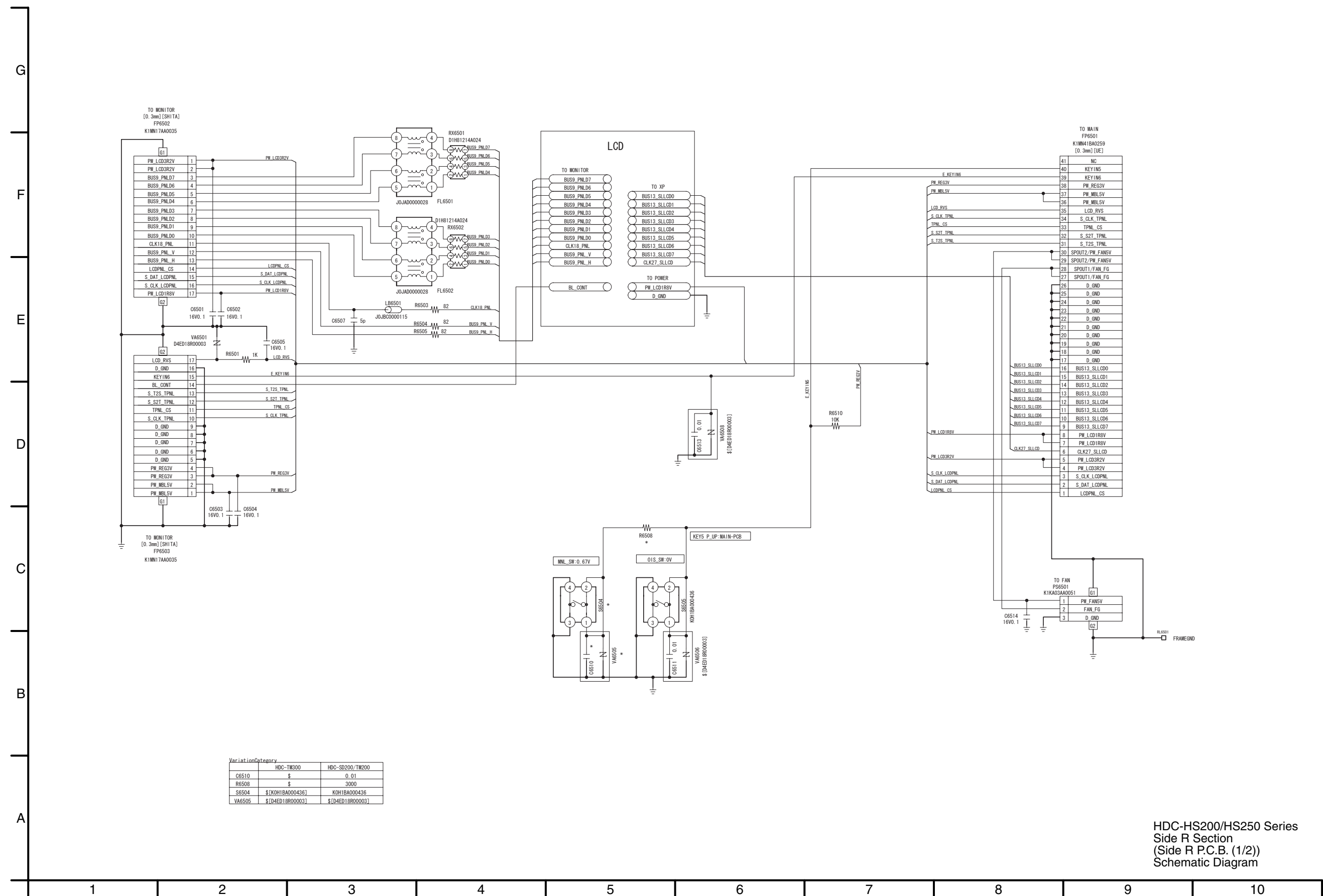
## S2. Block Diagram

### S2.1. Overall Block Diagram





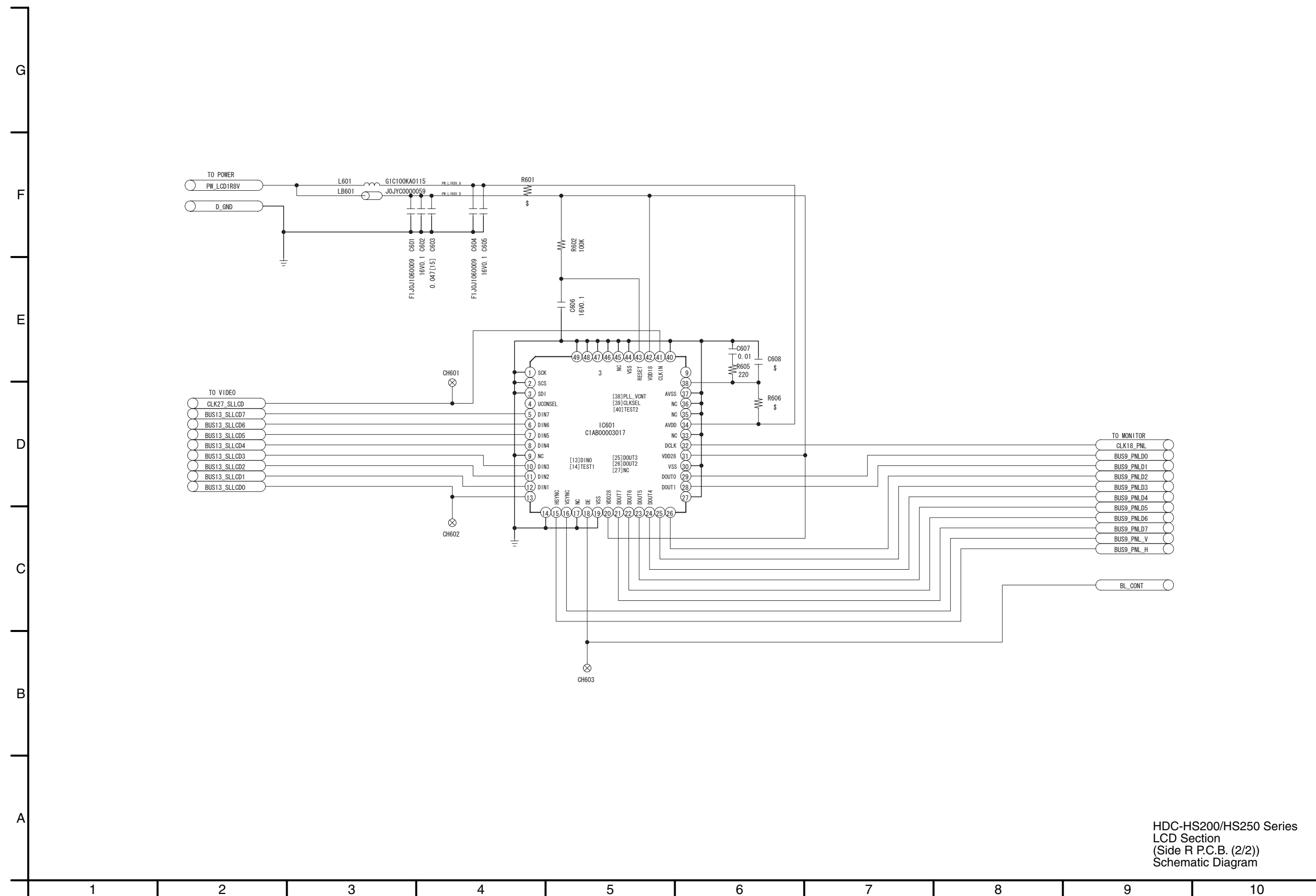
### S3.2. Side R Schematic Diagram



VariationCategory	HDC-TM300	HDC-SD200/TM200
C6510	0.01	0.01
R6508	3000	3000
S6504	\$(KOH1BA000436)	KOH1BA000436
VA6505	\$(D4ED18R00003)	\$(D4ED18R00003)

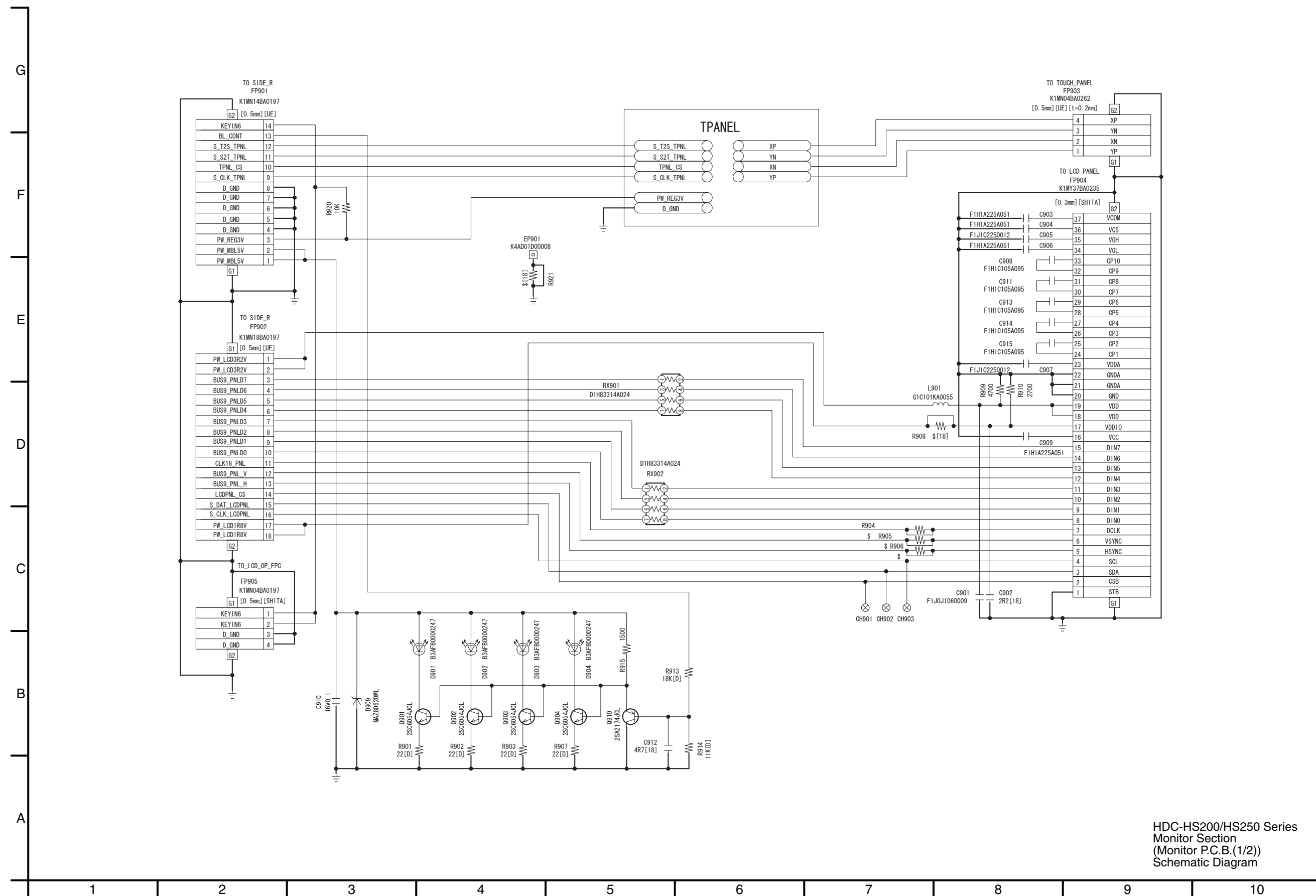
HDC-HS200/HS250 Series  
Side R Section  
(Side R P.C.B. (1/2))  
Schematic Diagram

### S3.3. LCD Schematic Diagram



HDC-HS200/HS250 Series  
LCD Section  
(Side R P.C.B. (2/2))  
Schematic Diagram

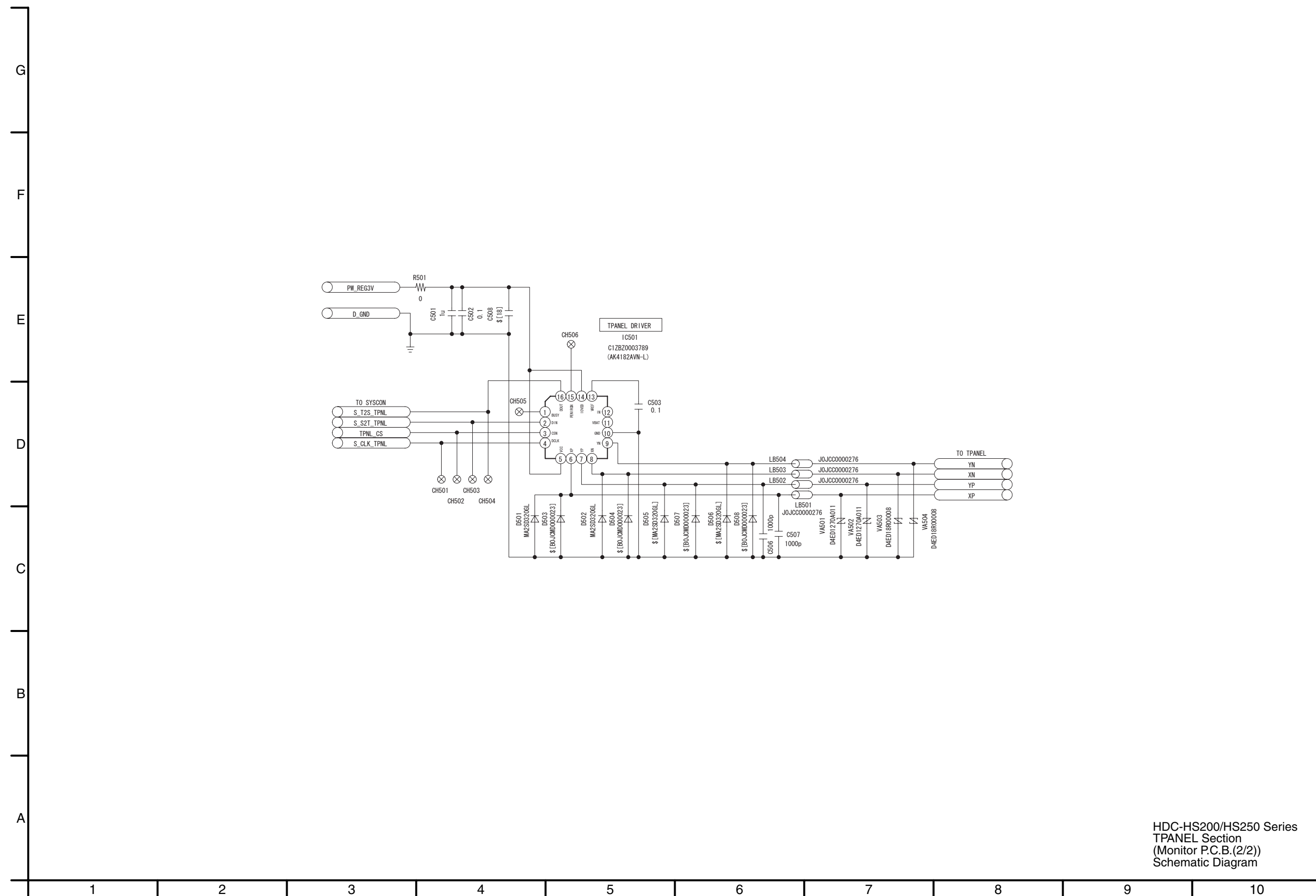
### S3.4. Monitor Schematic Diagram



HDC-HS200/HS250 Series  
Monitor Section  
(Monitor P.C.B.(1/2))  
Schematic Diagram



### S3.5. TPANEL Schematic Diagram

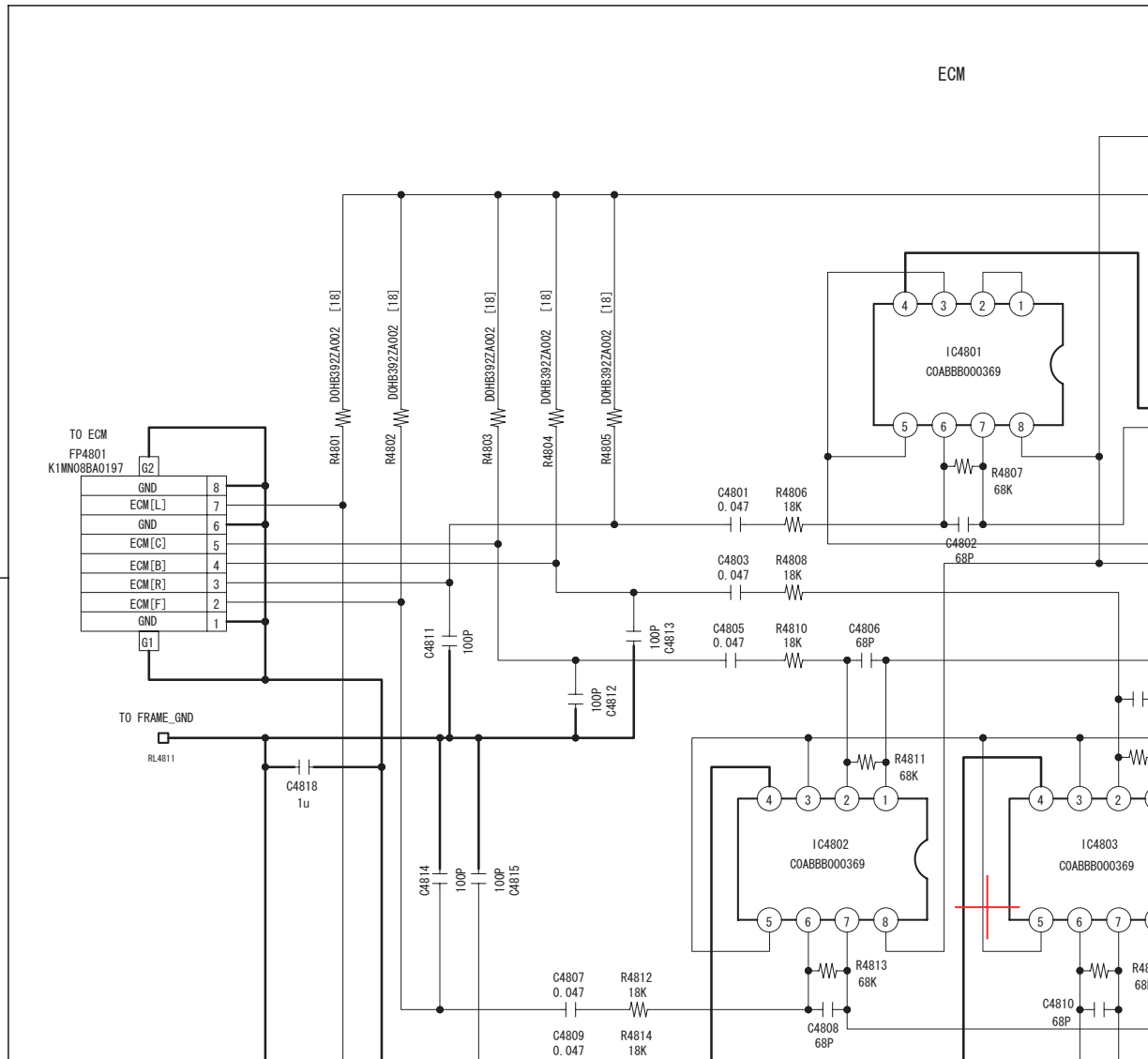
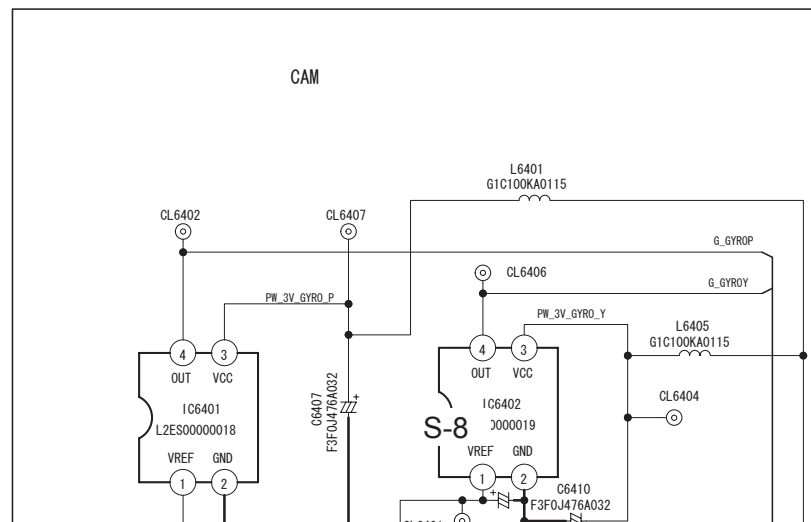


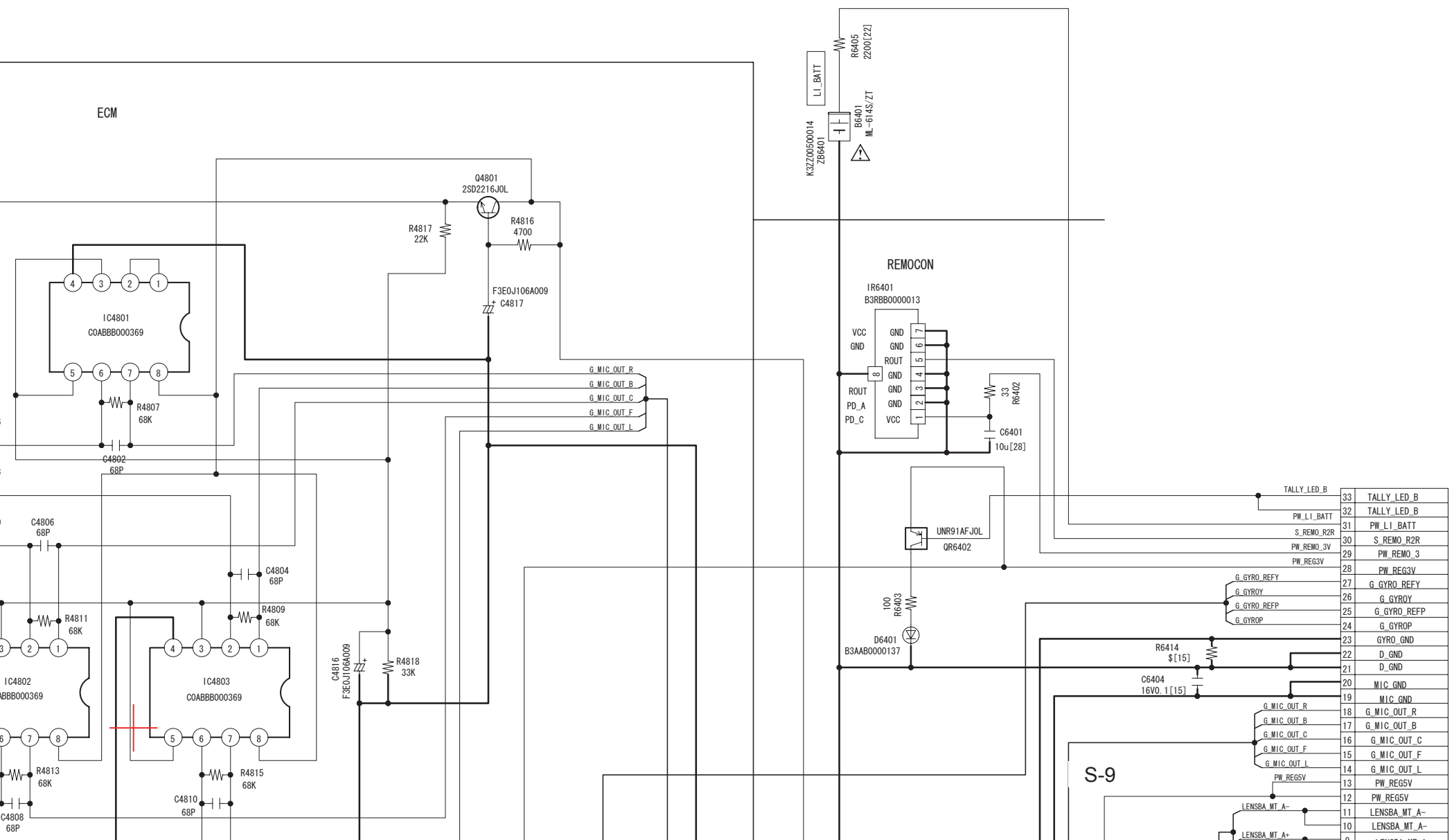
HDC-HS200/HS250 Series  
 TPANEL Section  
 (Monitor P.C.B.(2/2))  
 Schematic Diagram

# S3.6. Front Schematic Diagram

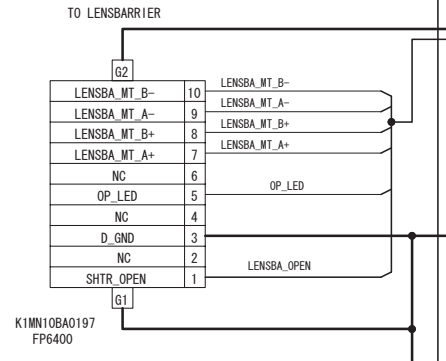
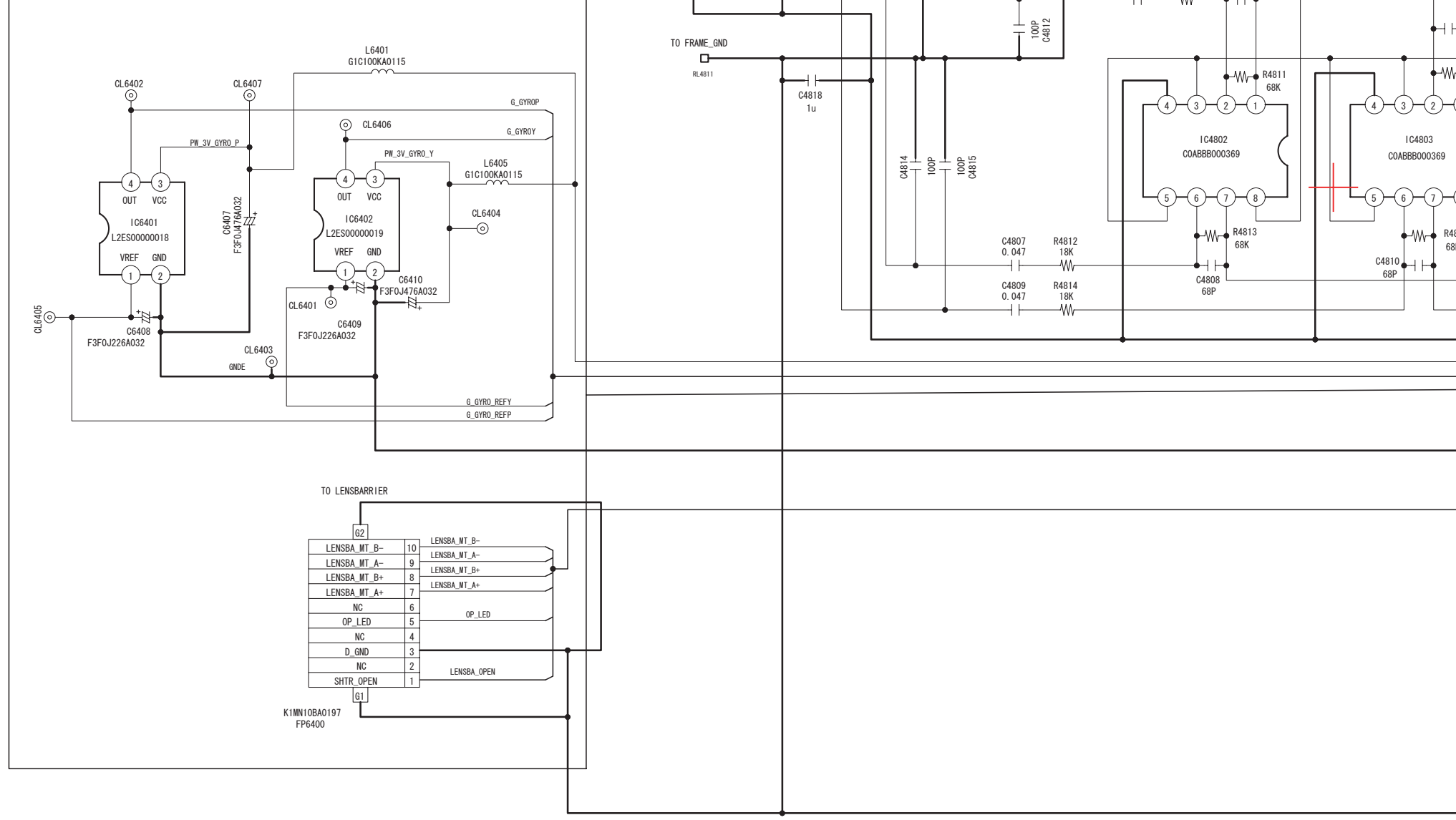
1/4		HDC-HS200/HS250 Series Front Schematic Diagram

N  
M  
L  
K  
J  
I  
H  
G





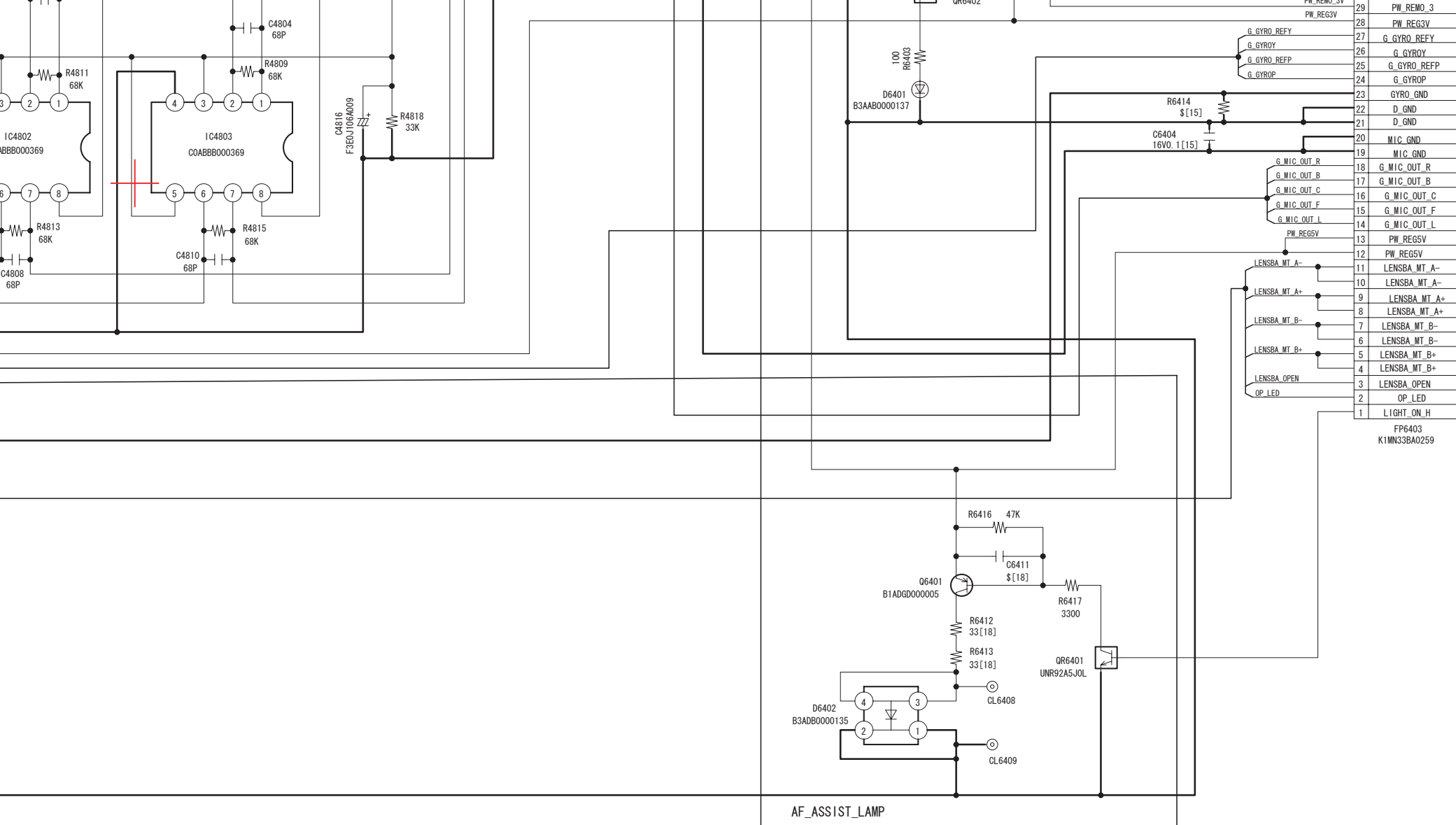
H  
G  
F  
E  
D  
C  
B  
A



HDC-HS200/HS250 Series  
Front  
Schematic Diagram

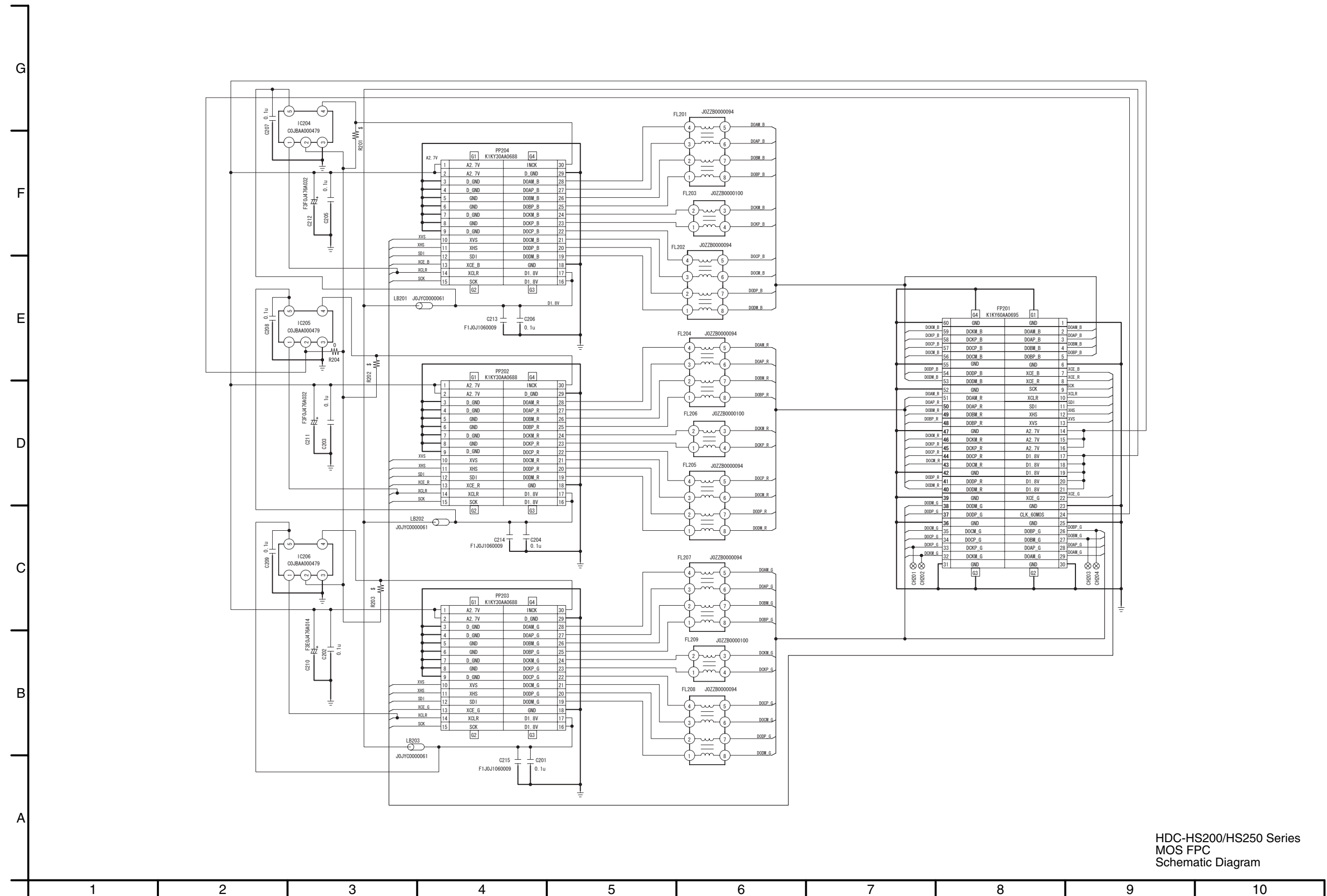
3/4

1 2 3 4 5 6 7 8 9 10 11



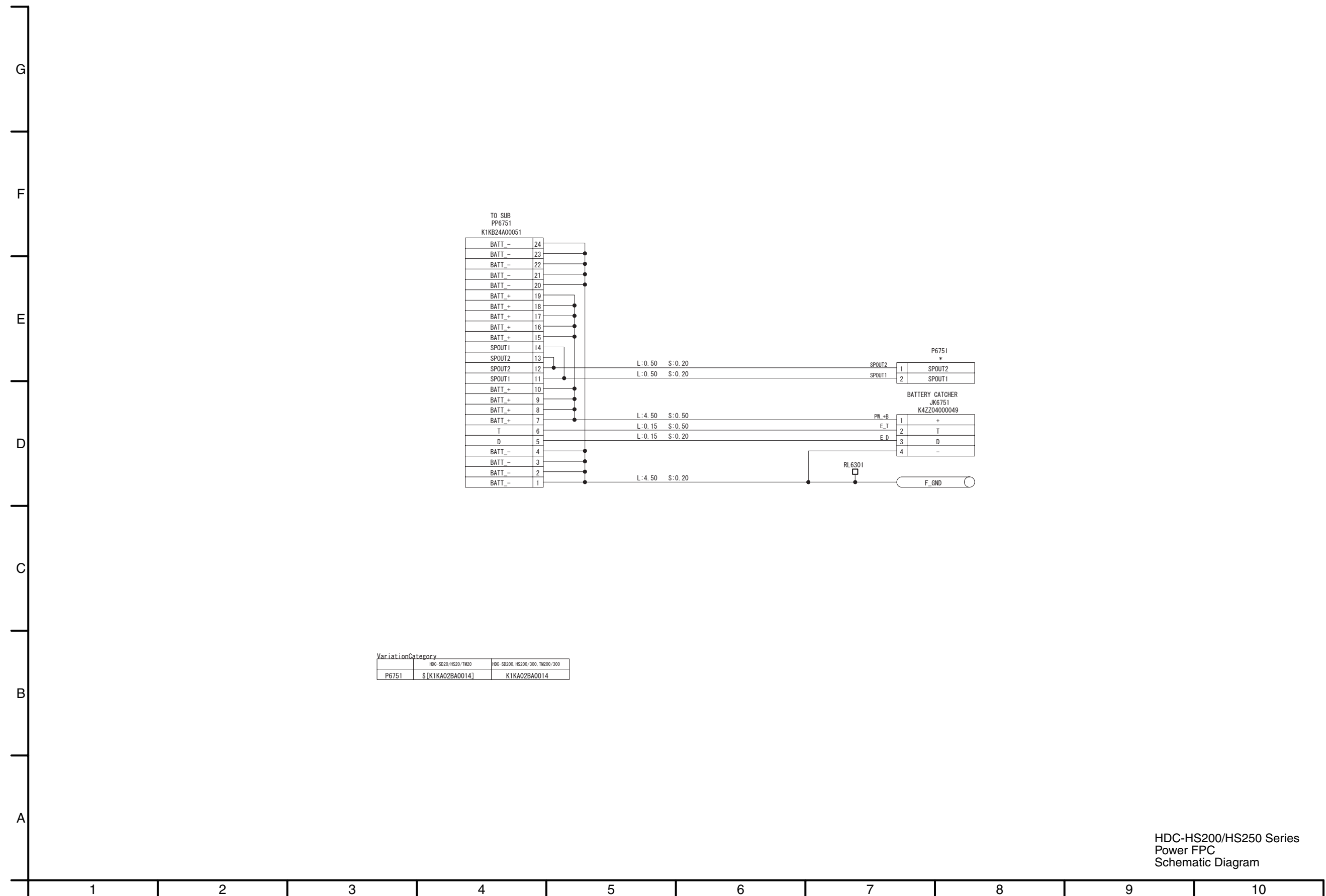
29	PW_REMV_3V
28	PW_REMV_3
27	G_GYRO_REFY
26	G_GYROY
25	G_GYRO_REFP
24	G_GYRO_P
23	GYRO_GND
22	D_GND
21	D_GND
20	MIC_GND
19	MIC_GND
18	G_MIC_OUT_R
17	G_MIC_OUT_B
16	G_MIC_OUT_C
15	G_MIC_OUT_F
14	G_MIC_OUT_L
13	PW_REG5V
12	PW_REG5V
11	LENSBA_MT_A-
10	LENSBA_MT_A-
9	LENSBA_MT_A+
8	LENSBA_MT_A+
7	LENSBA_MT_B-
6	LENSBA_MT_B-
5	LENSBA_MT_B+
4	LENSBA_MT_B+
3	LENSBA_OPEN
2	OP_LED
1	LIGHT_ON_H

### S3.7. MOS FPC Schematic Diagram

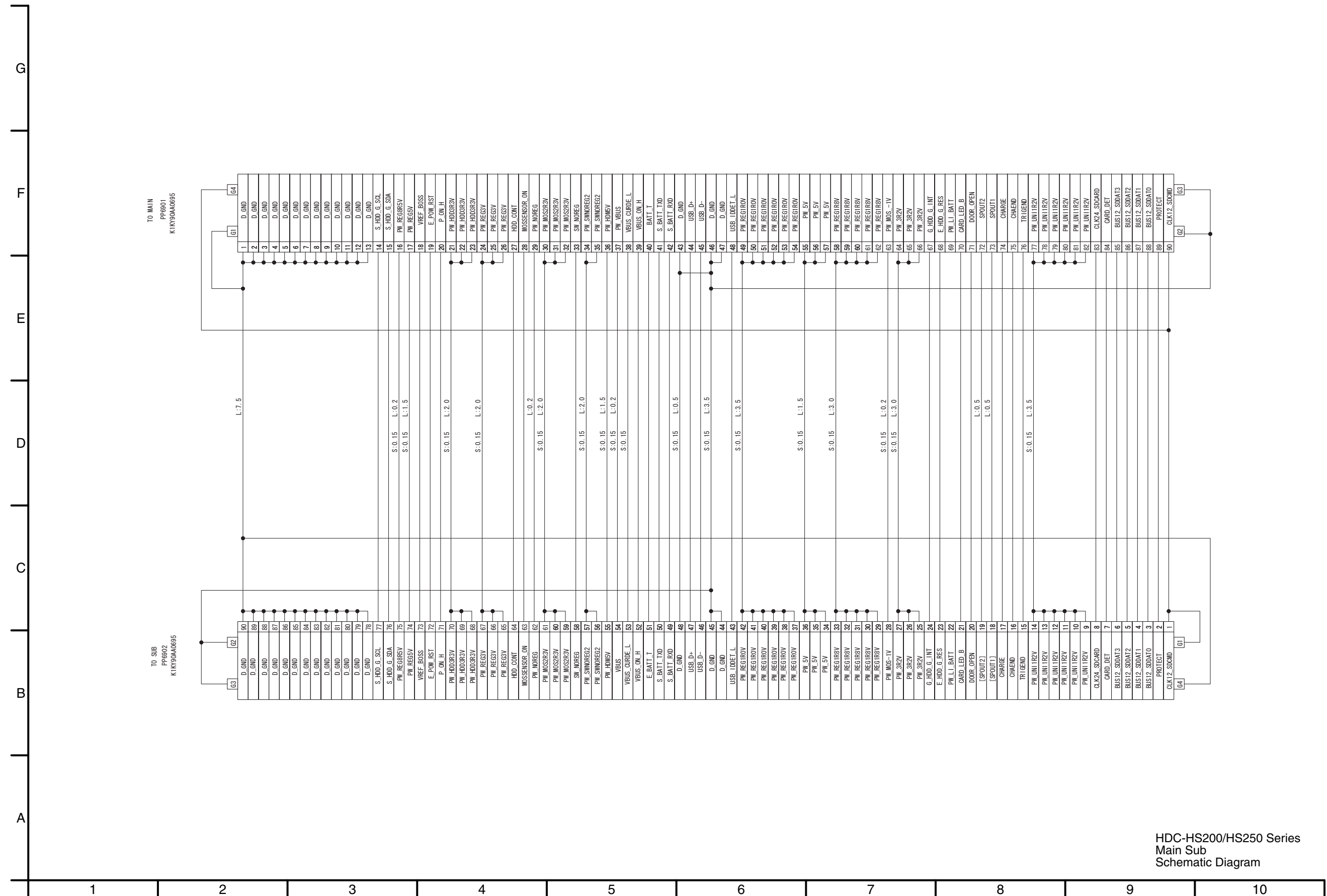


HDC-HS200/HS250 Series  
MOS FPC  
Schematic Diagram

### S3.8. Power FPC Schematic Diagram



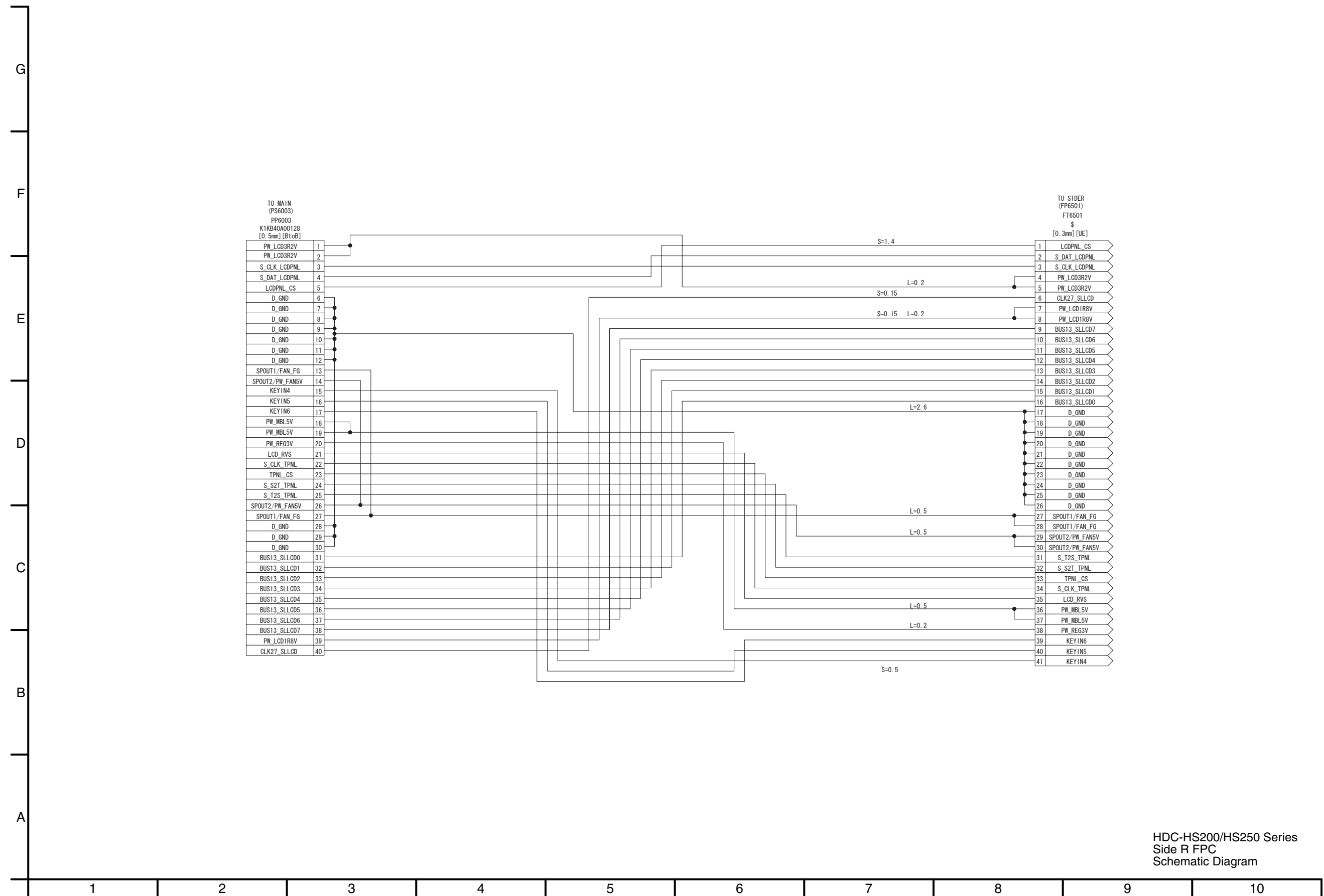
# S3.9. Main Sub Schematic Diagram



HDC-HS200/HS250 Series  
Main Sub  
Schematic Diagram

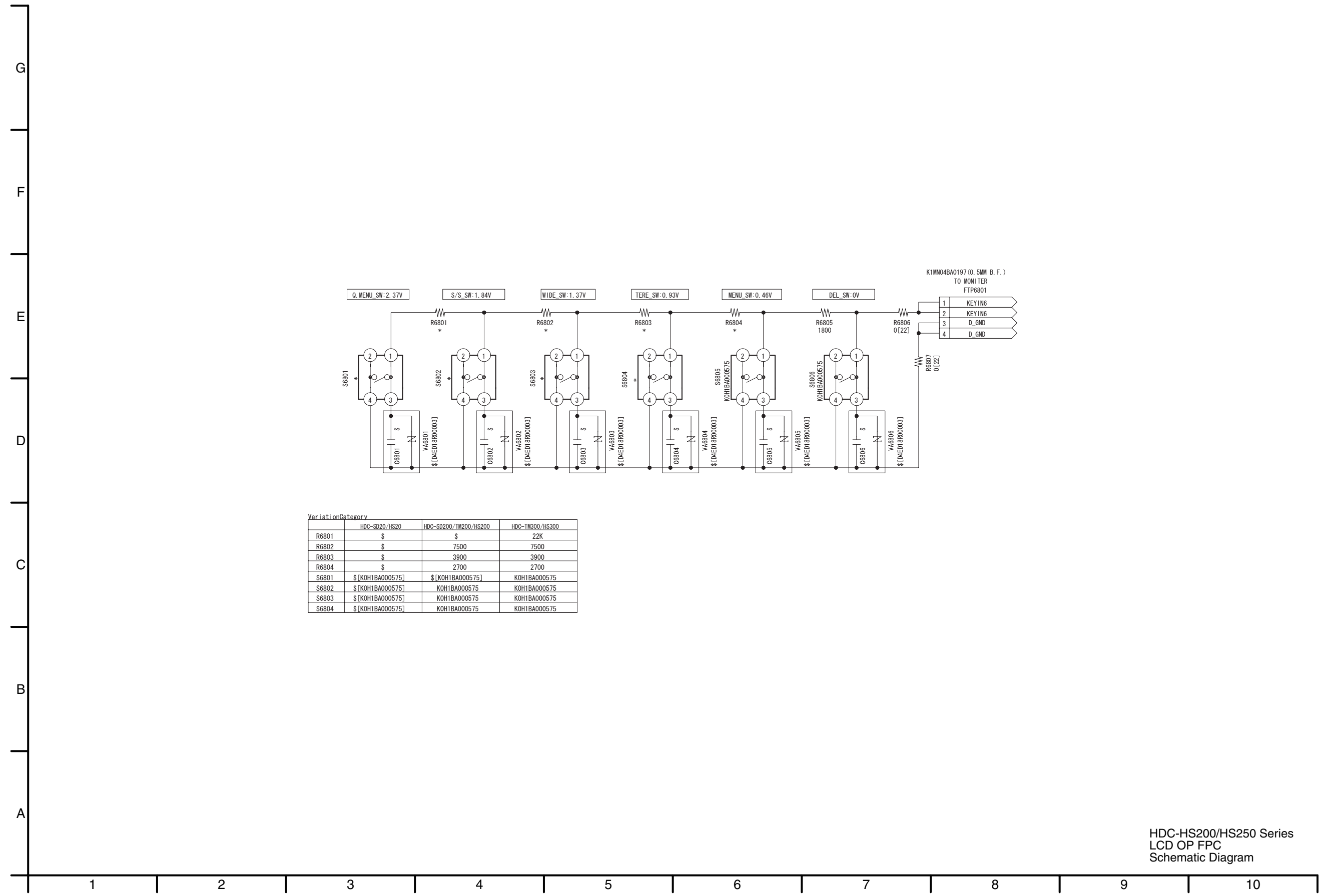


### S3.10. Side R FPC Schematic Diagram



HDC-HS200/HS250 Series  
Side R FPC  
Schematic Diagram

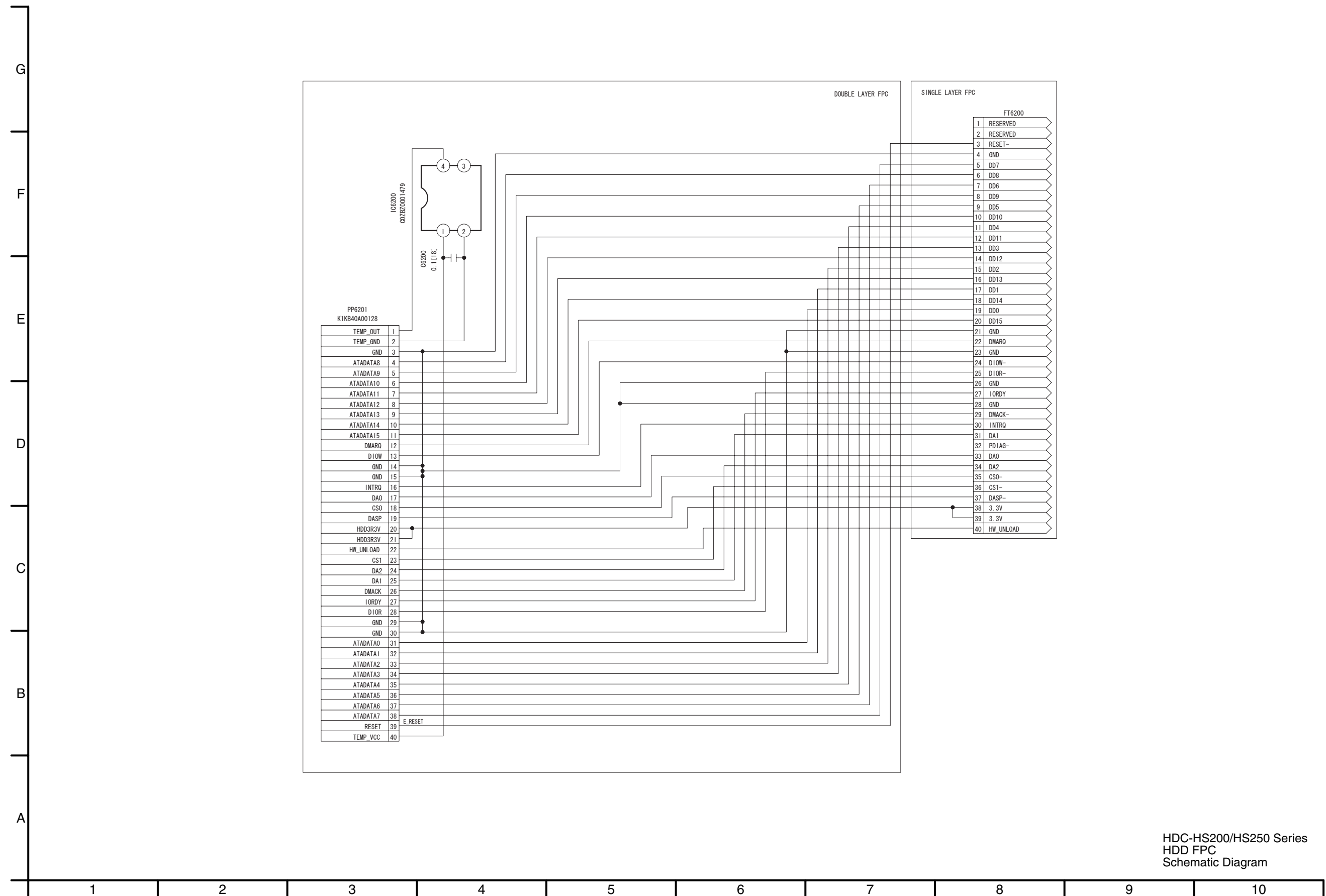
### S3.11. LCD OP FPC Schematic Diagram



VariationCategory

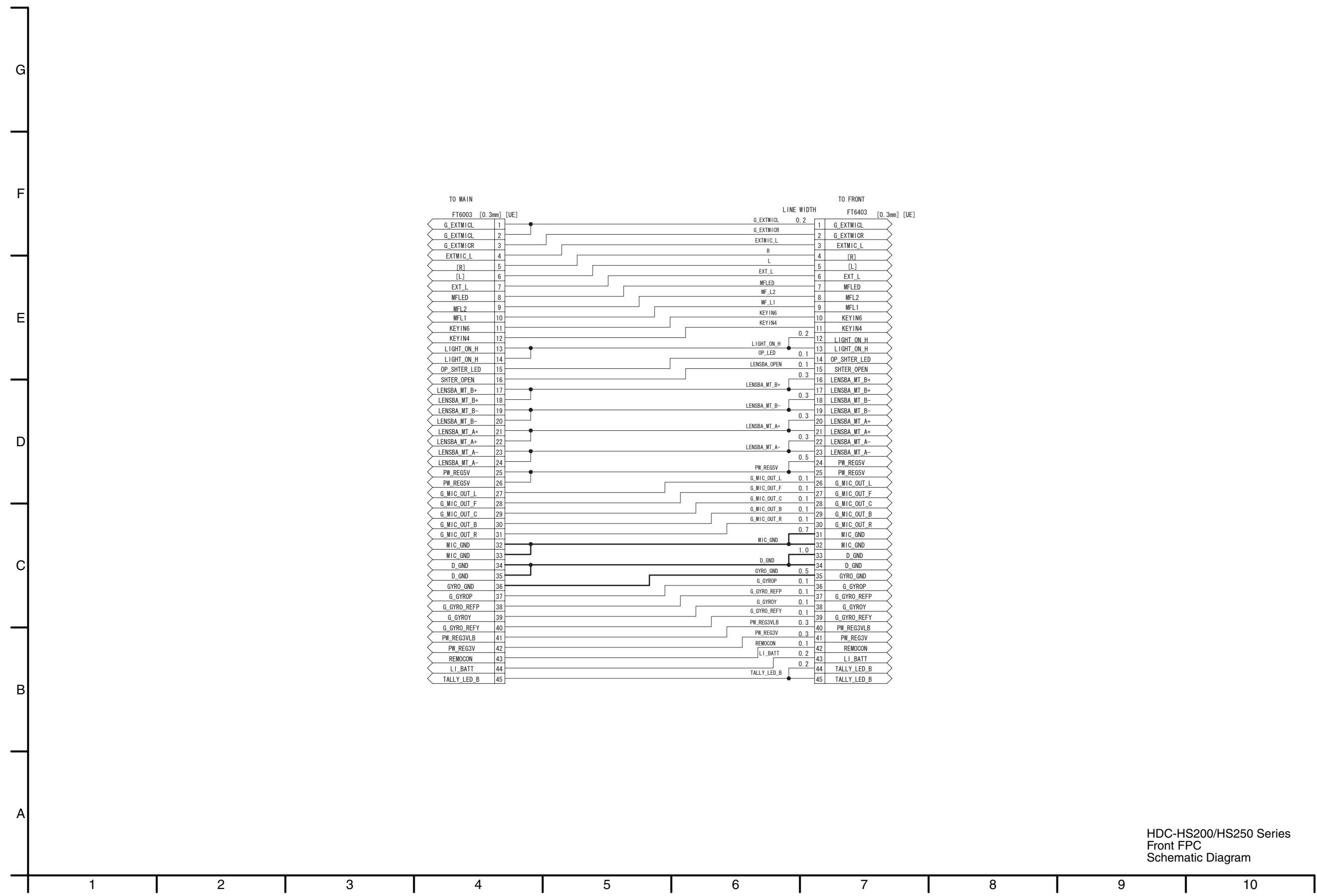
	HDC-SD20/HS20	HDC-SD200/TM200/HS200	HDC-TM300/HS300
R6801	\$	\$	22K
R6802	\$	7500	7500
R6803	\$	3900	3900
R6804	\$	2700	2700
S6801	\$(KOH1BA000575)	\$(KOH1BA000575)	KOH1BA000575
S6802	\$(KOH1BA000575)	KOH1BA000575	KOH1BA000575
S6803	\$(KOH1BA000575)	KOH1BA000575	KOH1BA000575
S6804	\$(KOH1BA000575)	KOH1BA000575	KOH1BA000575

### S3.12. HDD FPC Schematic Diagram



HDC-HS200/HS250 Series  
HDD FPC  
Schematic Diagram

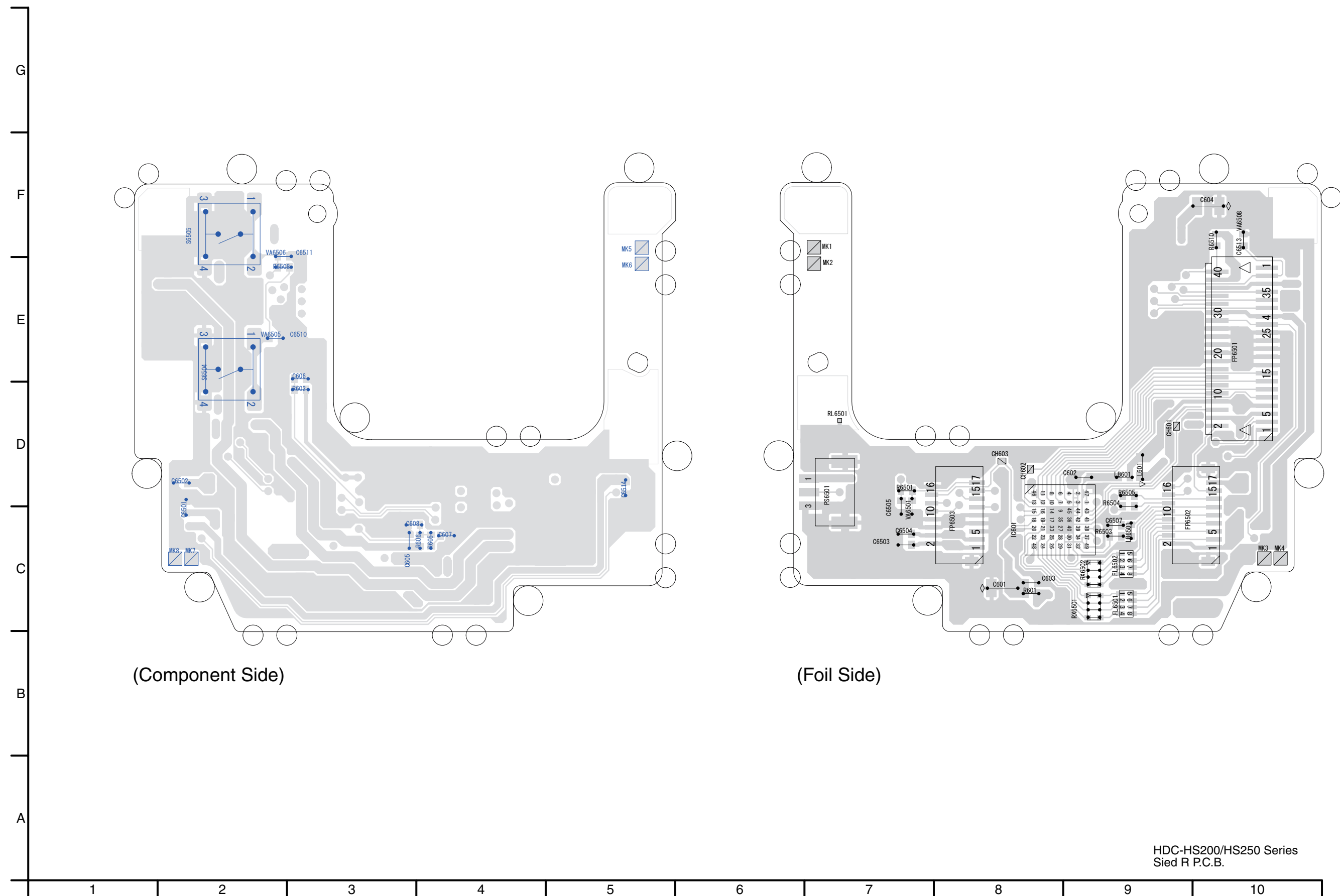
### S3.13. Front FPC Schematic Diagram



HDC-HS200/HS250 Series  
Front FPC  
Schematic Diagram

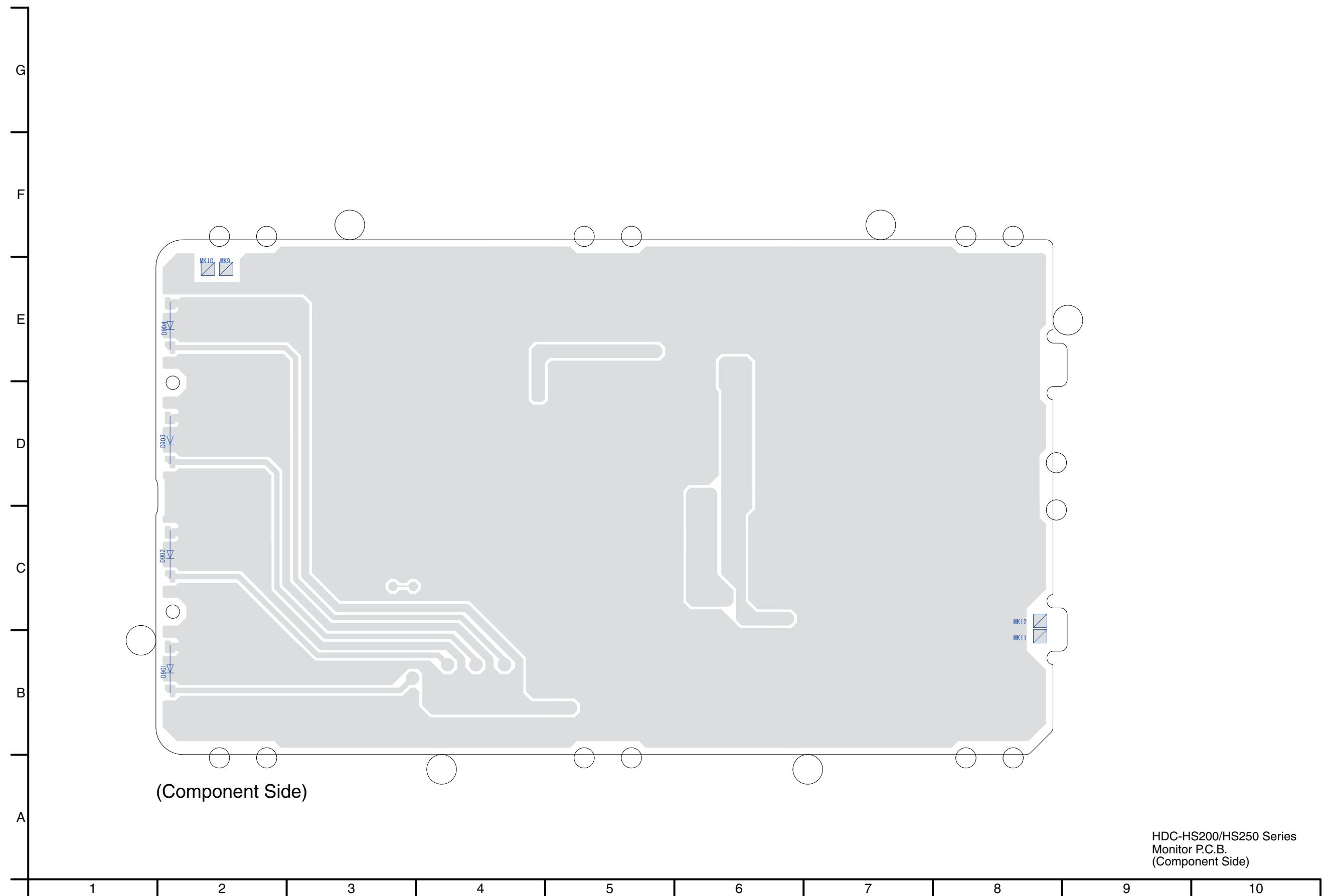
# S4. Print Circuit Board

## S4.1. Side R P.C.B.



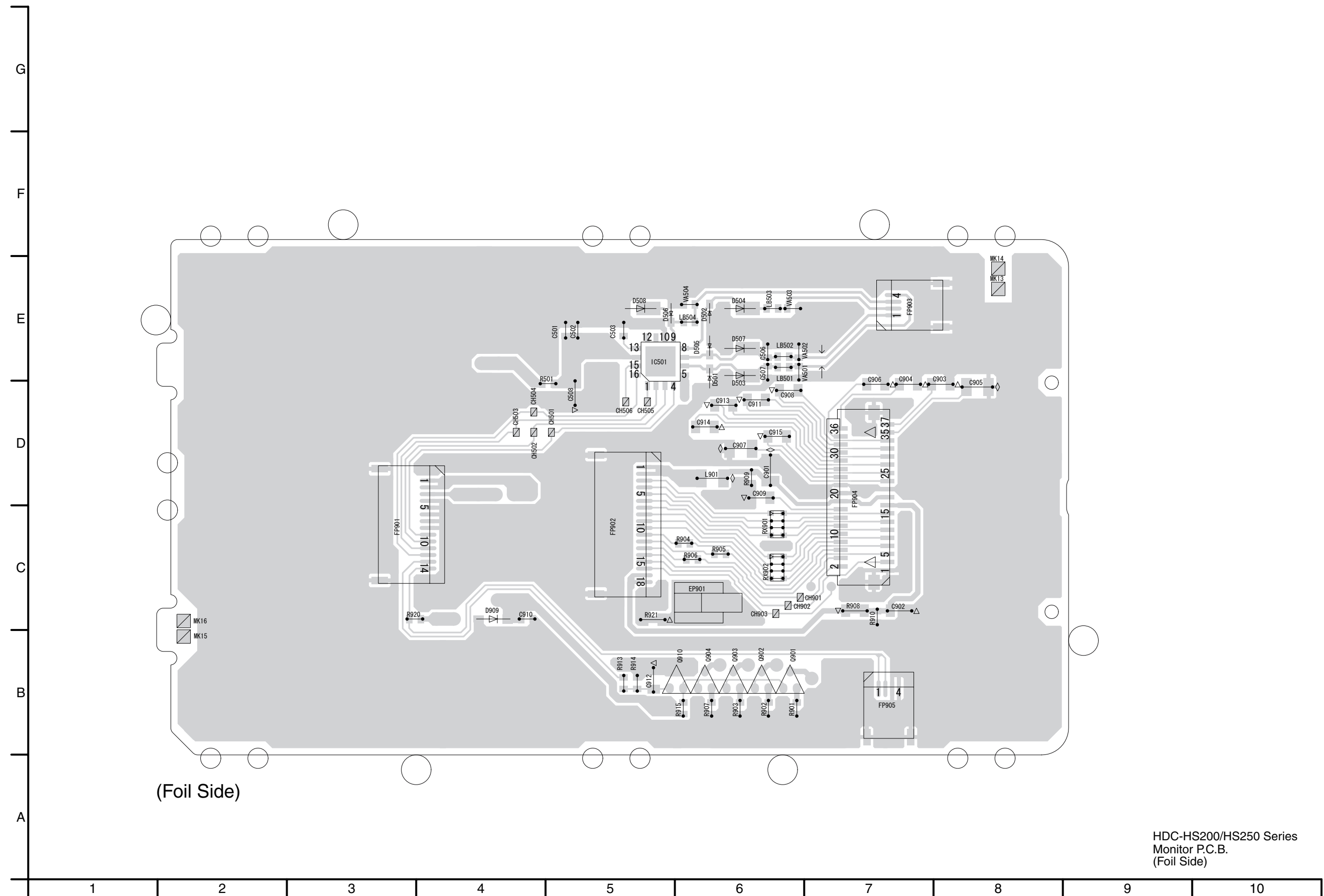
## S4.2. Monitor P.C.B.

### S4.2.1. Monitor P.C.B. (Component Side)



HDC-HS200/HS250 Series  
Monitor P.C.B.  
(Component Side)

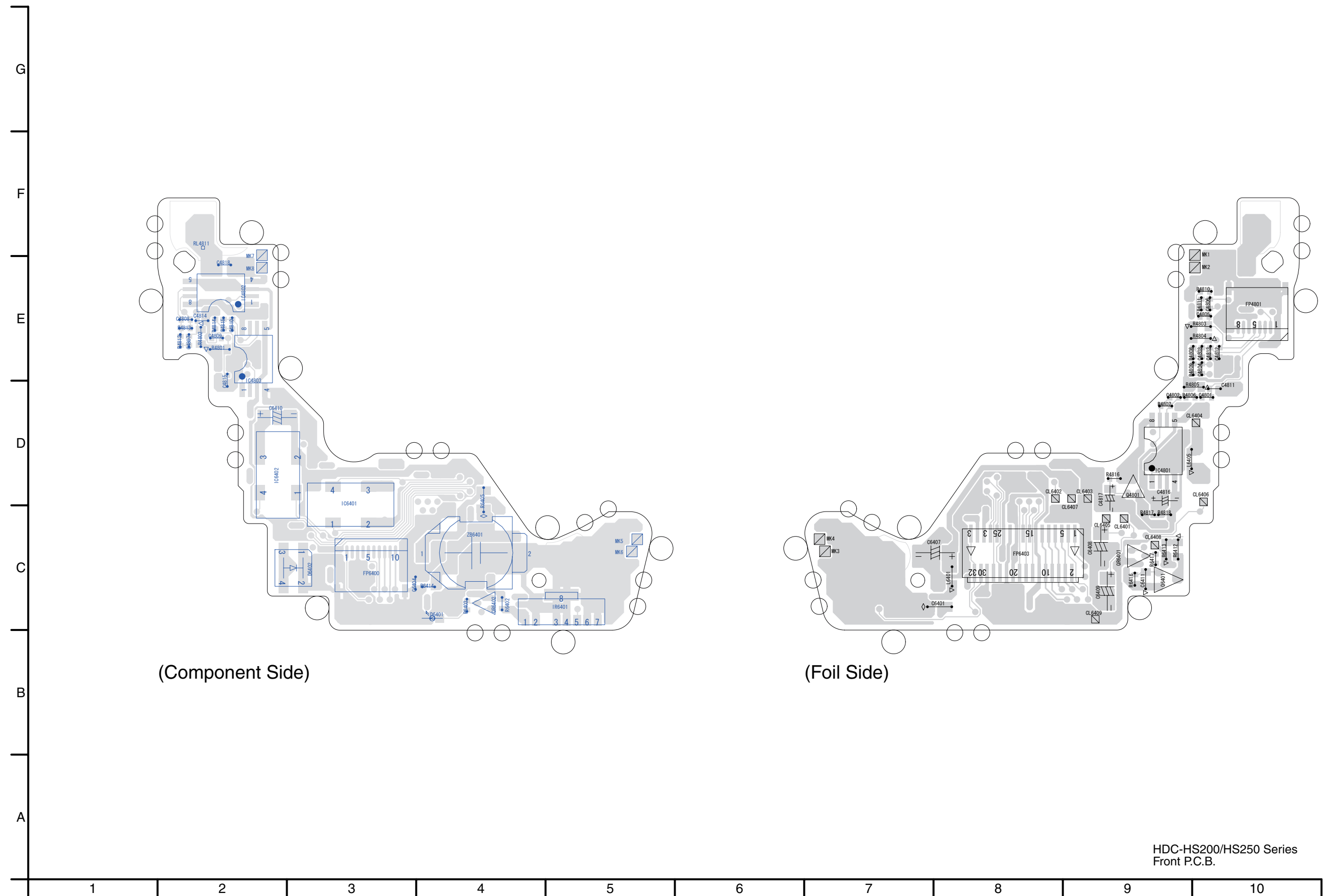
S4.2.2. Monitor P.C.B. (Foil Side)



(Foil Side)

HDC-HS200/HS250 Series  
Monitor P.C.B.  
(Foil Side)

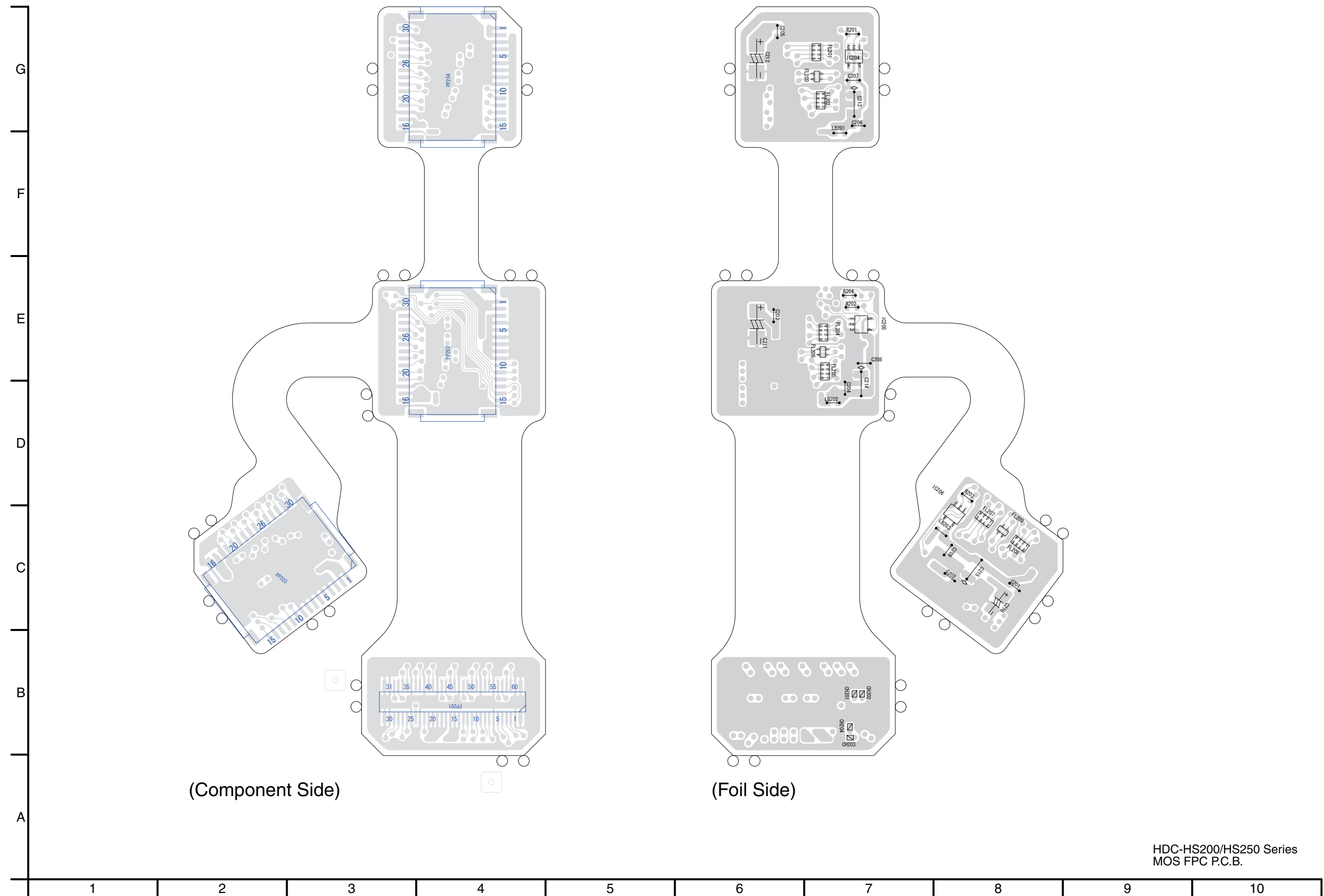
### S4.3. Front P.C.B.



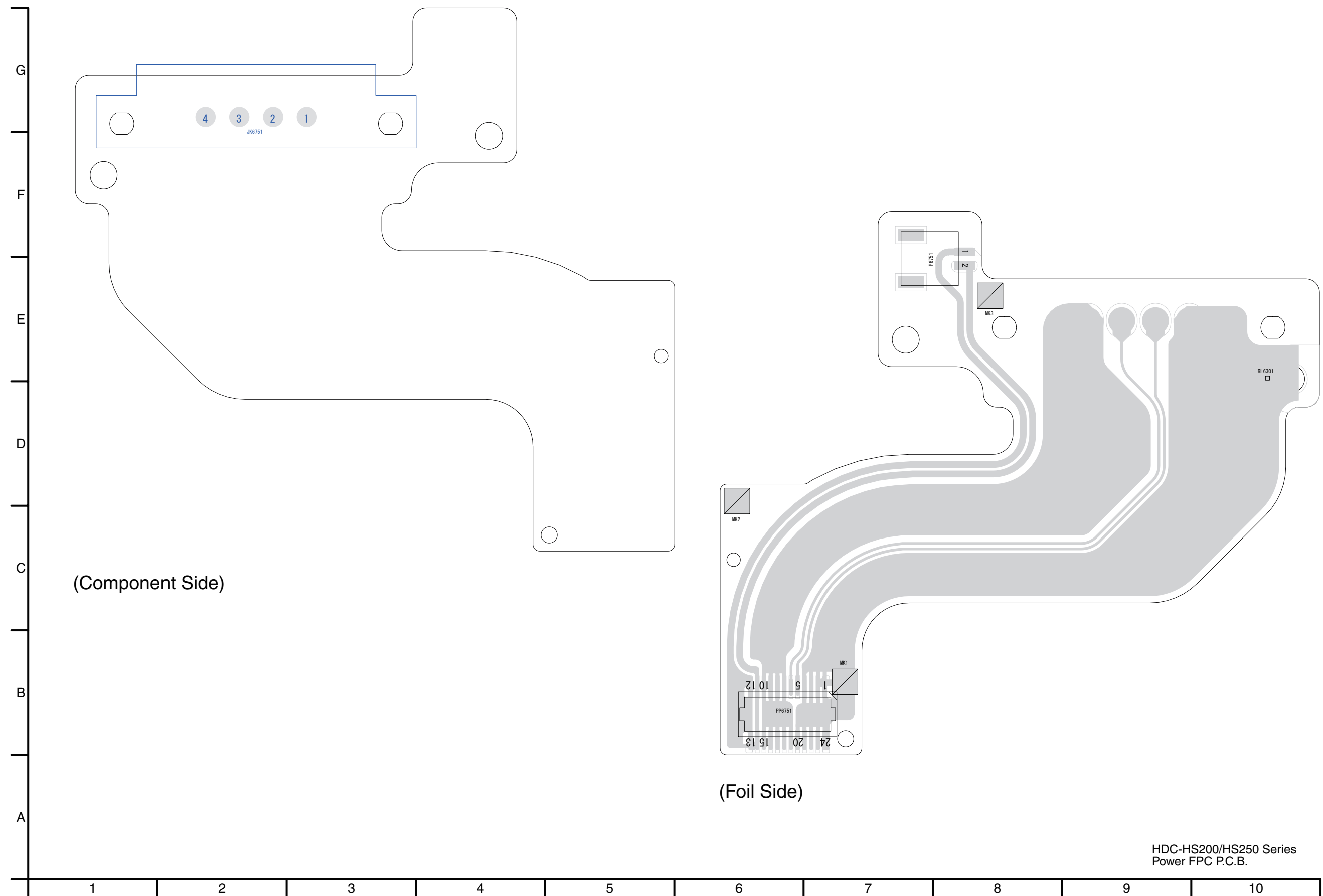
HDC-HS200/HS250 Series  
Front P.C.B.



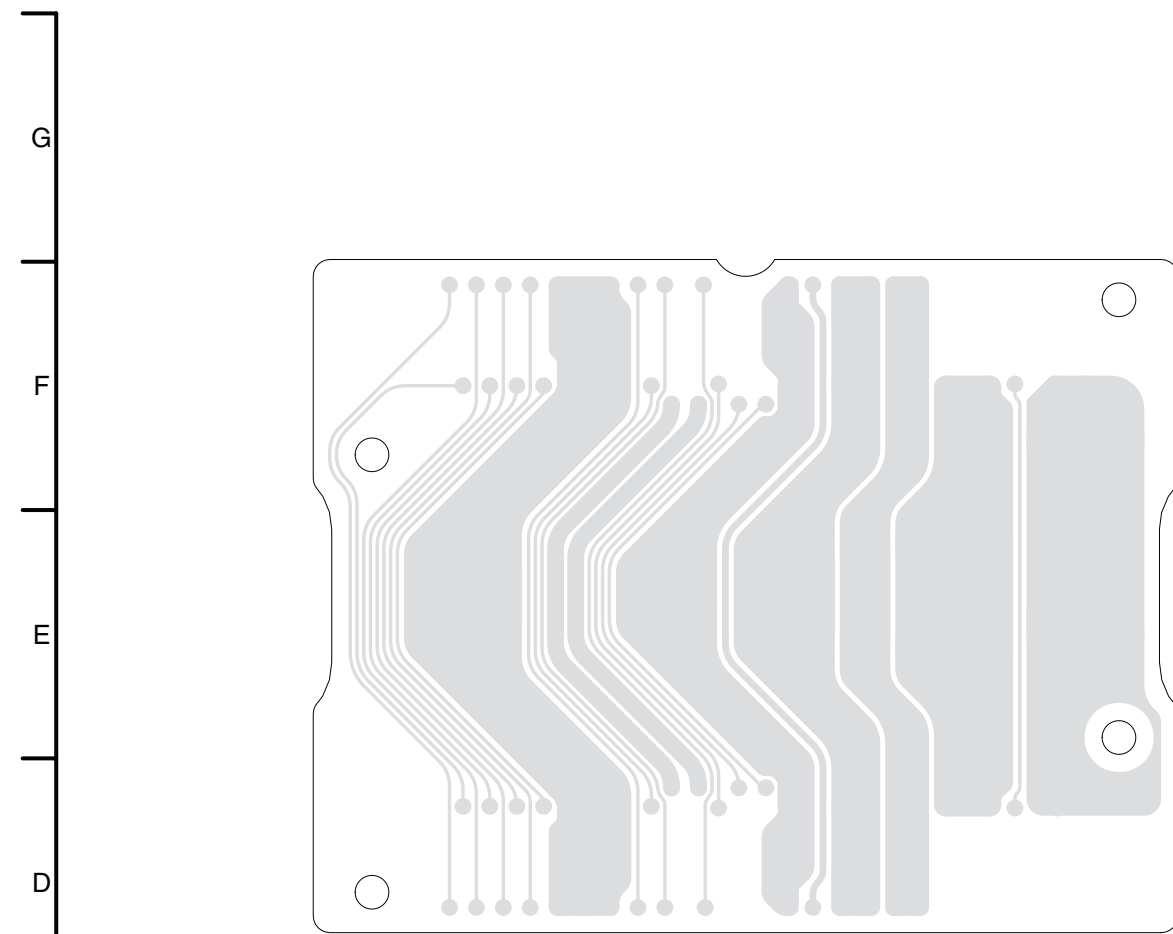
S4.4. MOS FPC P.C.B.



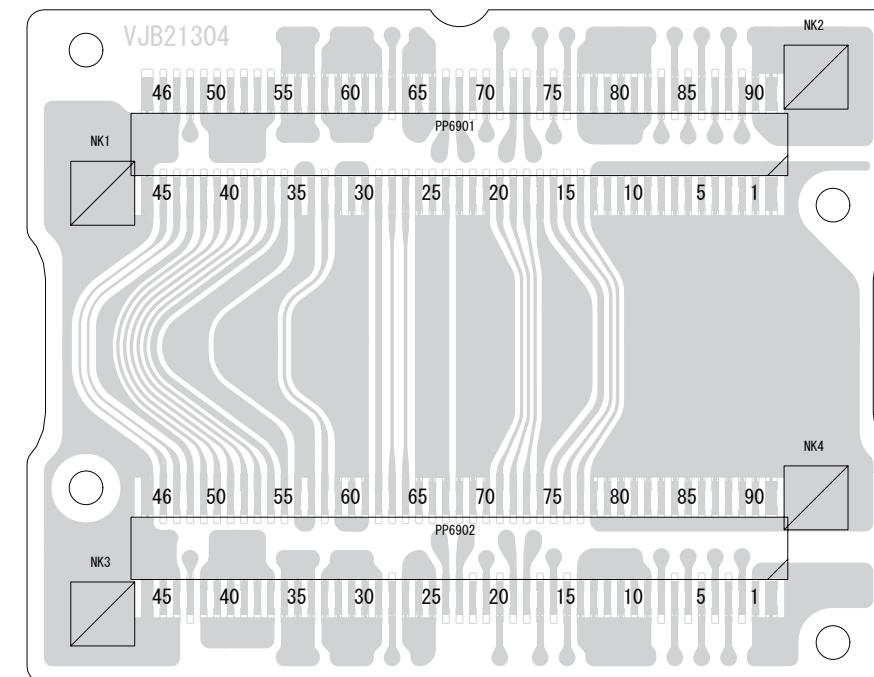
# S4.5. Power FPC P.C.B.



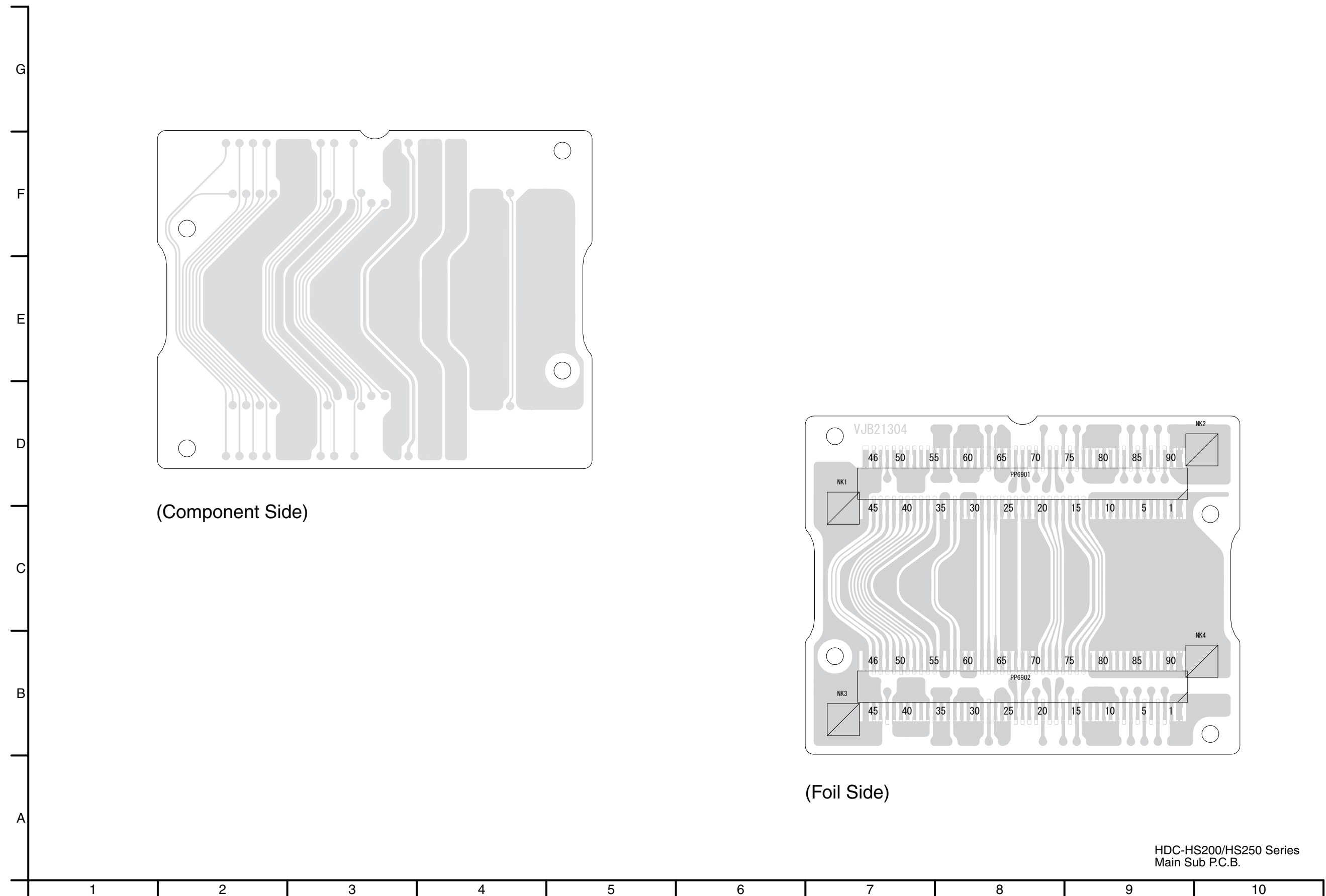
S4.6. Main Sub P.C.B.



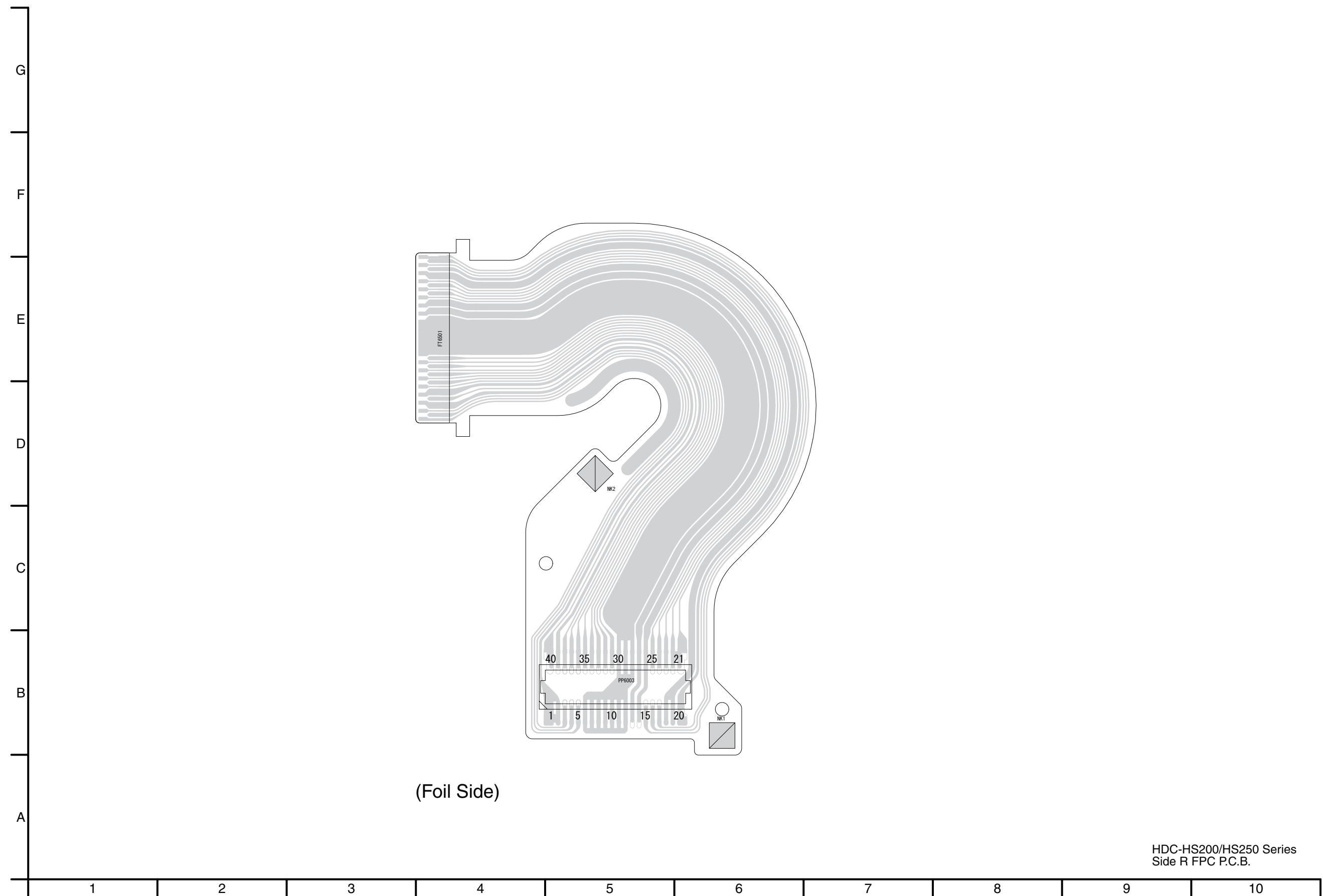
(Component Side)



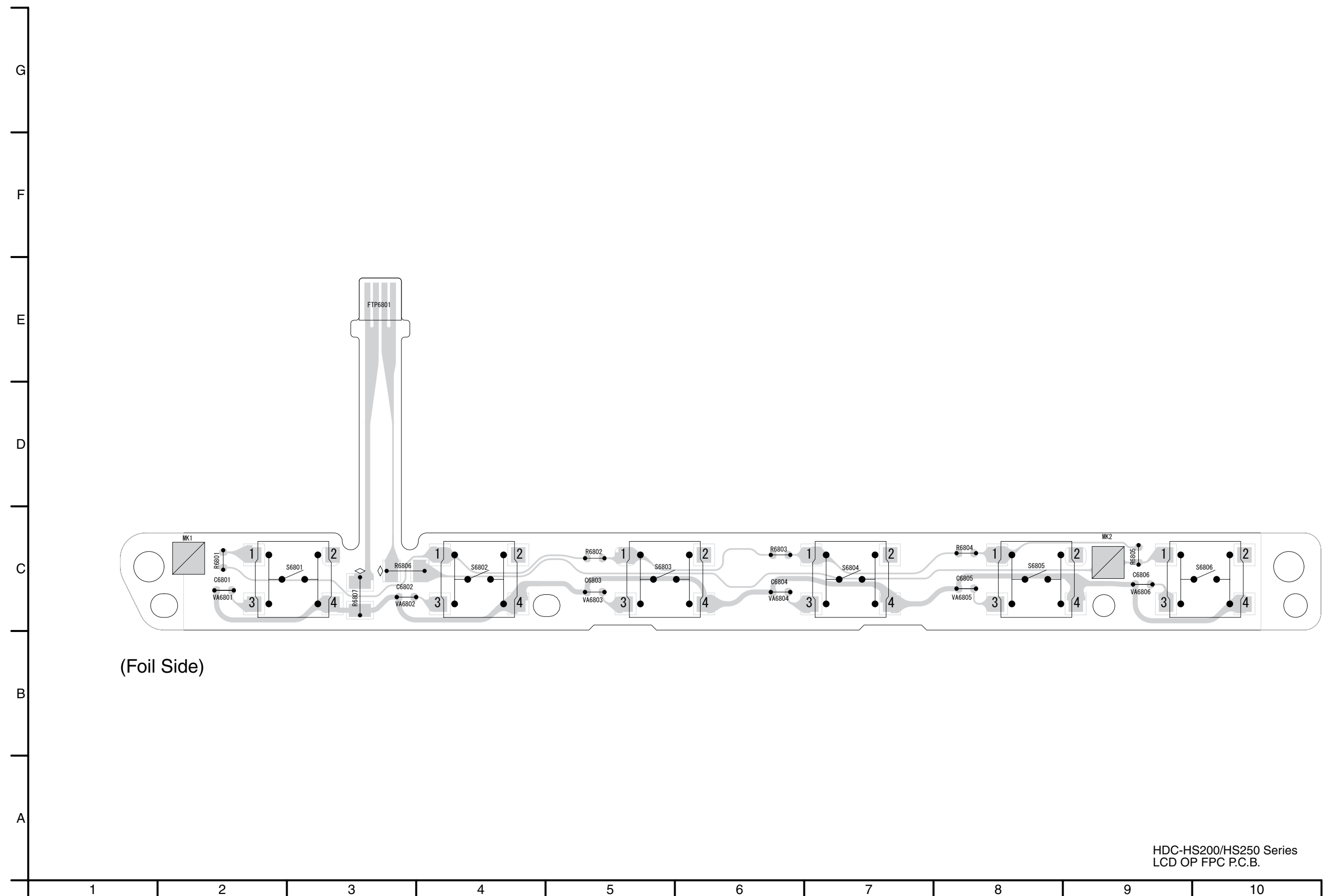
(Foil Side)



S4.7. Side R FPC P.C.B.



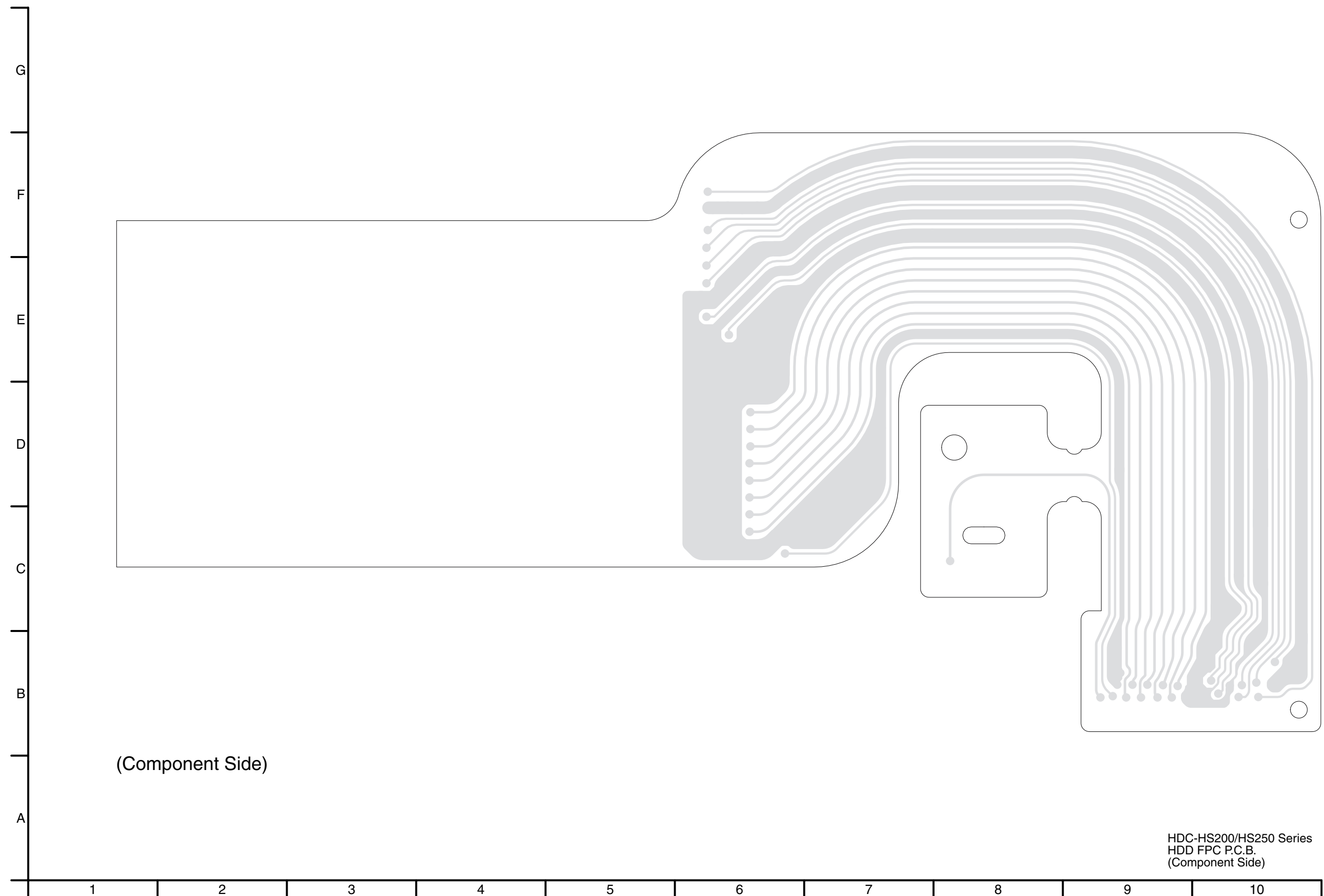
S4.8. LCD OP FPC P.C.B.



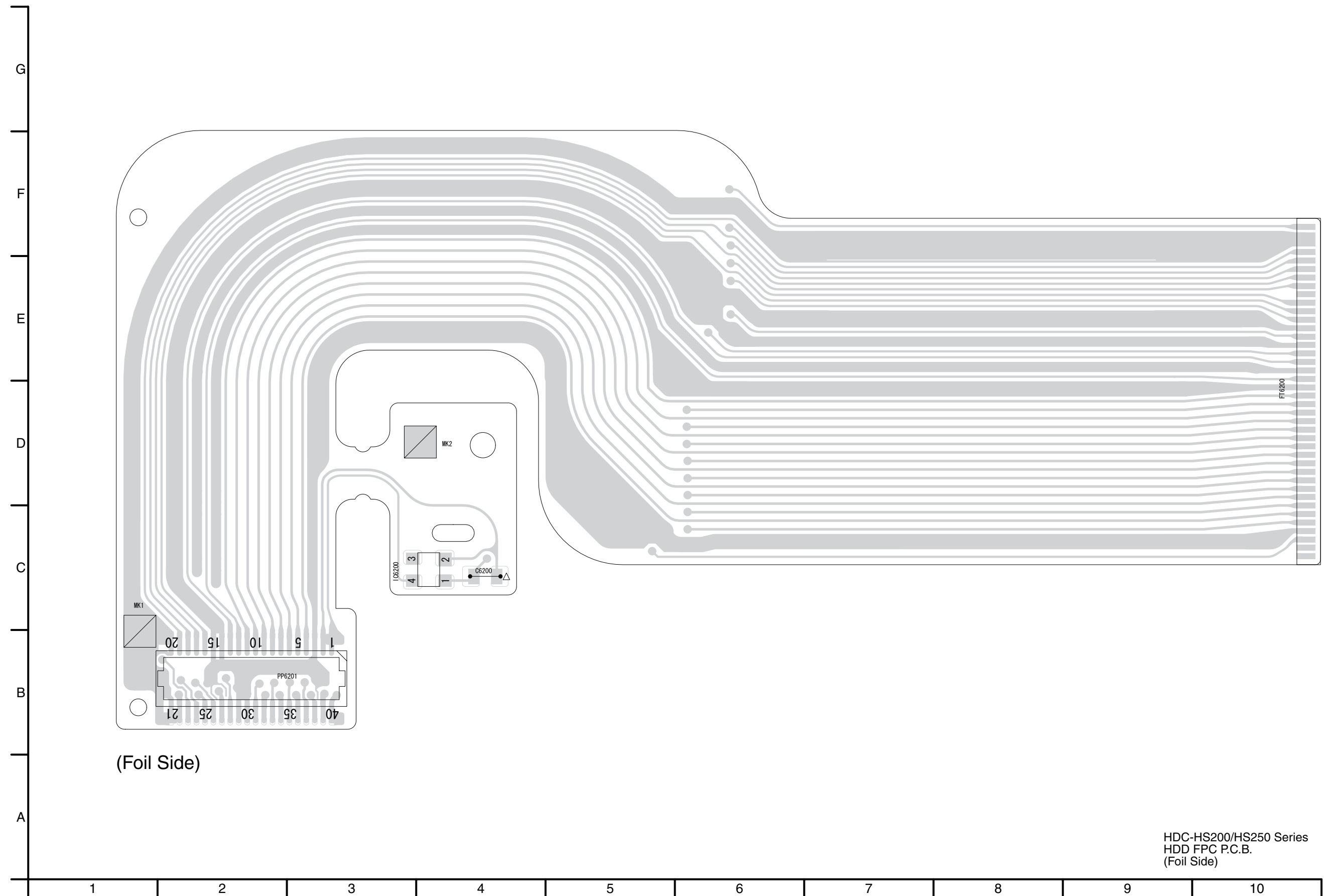
HDC-HS200/HS250 Series  
LCD OP FPC P.C.B.

**S4.9. HDD FPC P.C.B.**

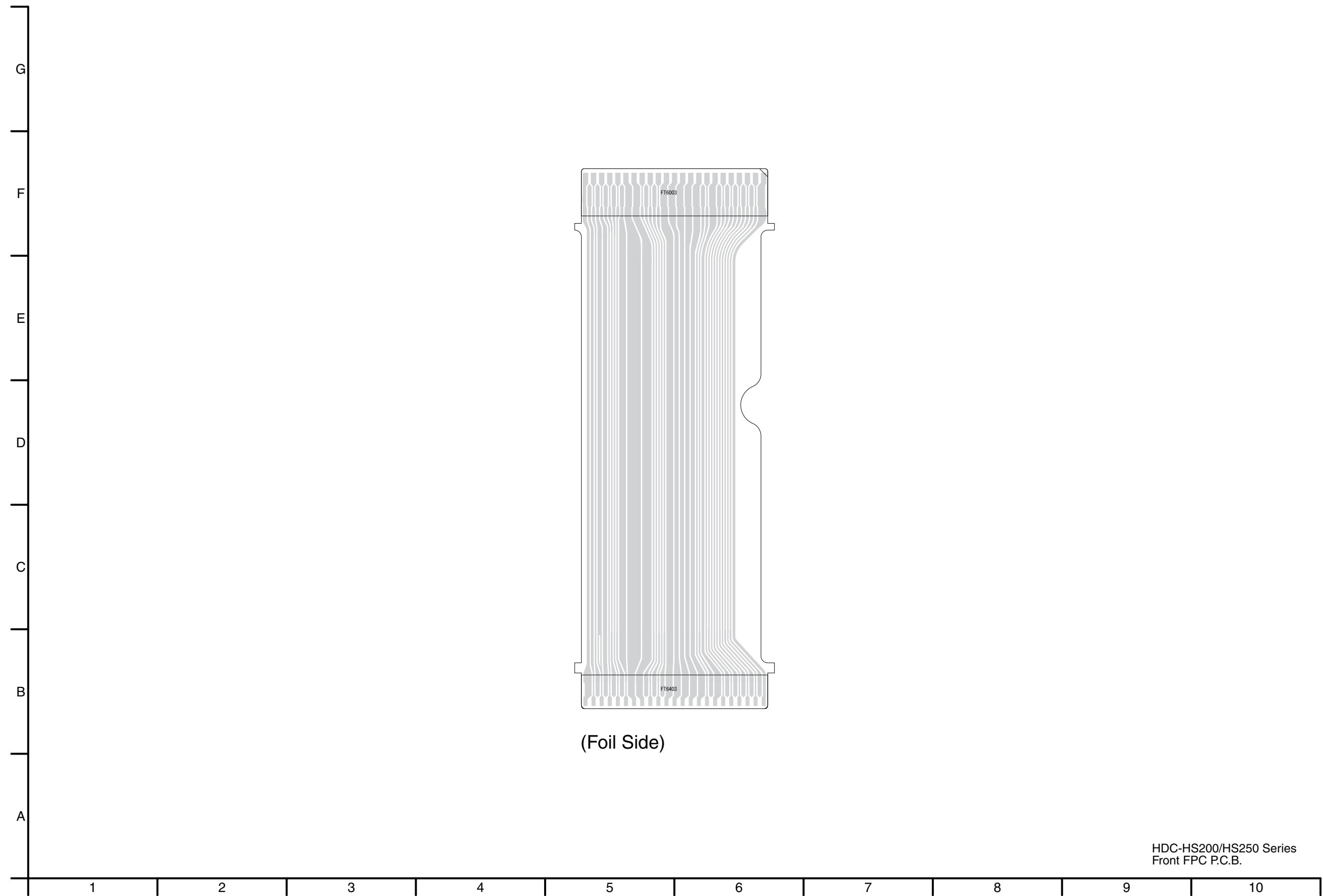
**S4.9.1. HDD FPC P.C.B. (Component Side)**



S4.9.2. HDD FPC P.C.B. (Foil Side)



S4.10. Front FPC P.C.B.



(Foil Side)



## S5. Replacement Parts List

Note:  1.\* Be sure to make your orders of replacement parts according to this list.

2. IMPORTANT SAFETY NOTICE

- Components identified with the mark  $\triangle$  have the special characteristics for safety.
- When replacing any of these components, use only the same type.

3. Unless otherwise specified,

- All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.

- 4. 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.

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

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP03H66V	MAIN PCB UNIT	1	(RTL) E.S.D. EB
##	VEP03H66T	MAIN PCB UNIT	1	(RTL) E.S.D. EC,EG,EG
##	VEP03H66Y	MAIN PCB UNIT	1	(RTL) E.S.D. EE
##	VEP03H66U	MAIN PCB UNIT	1	(RTL) E.S.D. EP
##	VEP03H66W	MAIN PCB UNIT	1	(RTL) E.S.D. GC,GC,SG
##	VEP03H66X	MAIN PCB UNIT	1	(RTL) E.S.D. GJ
##	VEP03H66AB	MAIN PCB UNIT	1	(RTL) E.S.D. GK
##	VEP03H66AA	MAIN PCB UNIT	1	(RTL) E.S.D. GN
##	VEP03H66S	MAIN PCB UNIT	1	(RTL) E.S.D. GT
##	VEP03H66Q	MAIN PCB UNIT	1	(RTL) E.S.D. P.PC
##	VEP03H66R	MAIN PCB UNIT	1	(RTL) E.S.D. PU
##	VEP01A16E	SUB PCB UNIT	1	(RTL) E.S.D.
##	VEP29213A	SIDE R PCB UNIT	1	(RTL) E.S.D.
##	VEP26321A	MONITOR PCB	1	(RTL) E.S.D.
##	VEP20C51A	FRONT PCB	1	(RTL) E.S.D.
##	VEP22400A	MOS FPC UNIT	1	
##	VEP21303B	POWER FPC UNIT	1	
##	VEP21304A	MAIN SUB FPC	1	(RTL)
##	VEP20C44A	SIDE (R) FPC UNIT	1	(RTL)
##	VEP20C53B	LCD OP FPC UNIT	1	
##	VEP79227A	HDD FPC	1	(RTL) E.S.D.
##	VEP29213A	SIDE R PCB UNIT	1	(RTL) E.S.D.
C601	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C602	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C603	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C604	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C605	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C606	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C607	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6501	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C6502	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C6503	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C6504	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C6505	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C6507	ECJ0EC1H050C	C.CAPACITOR CH 50V 5P	1	
C6510	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6511	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6513	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C6514	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
FL6501	J0JAD0000028	FILTER	1	
FL6502	J0JAD0000028	FILTER	1	
FP6501	K1MN41BA0259	CONNECTOR 41P	1	
FP6502	K1MN17AA0035	CONNECTOR 17P	1	
FP6503	K1MN17AA0035	CONNECTOR 17P	1	
IC601	C1AB00003017	IC	1	E.S.D.
L601	G1C100KA0115	CHIP INDUCTOR 10UH	1	
LB601	J0JYC0000059	FILTER	1	
LB6501	J0JBC0000115	FILTER	1	
PS6501	K1KA03AA0051	CONNECTOR 3P	1	
R602	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R605	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R6501	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R6503	ERJ2GEJ820	M.RESISTOR CH 1/16W 82	1	
R6504	ERJ2GEJ820	M.RESISTOR CH 1/16W 82	1	
R6505	ERJ2GEJ820	M.RESISTOR CH 1/16W 82	1	
R6508	ERJ2GEJ302	M.RESISTOR CH 1/16W 3K	1	
R6510	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
RX6501	D1H81214A024	CHIP RESISTOR ARRAY	1	
RX6502	D1H81214A024	CHIP RESISTOR ARRAY	1	
S6504	K0H1BA000436	SWITCH	1	
S6505	K0H1BA000436	SWITCH	1	
VA6501	D4ED18R00003	VARISTORS	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP26321A	MONITOR PCB	1	(RTL) E.S.D.
C501	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C502	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C503	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C506	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C507	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C901	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C902	F1H0J225A002	C.CAPACITOR CH 6.3V 2.2U	1	
C903	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
C904	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
C905	F1J1C2250012	C.CAPACITOR CH 16V 2.2U	1	
C906	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
C907	F1J1C2250012	C.CAPACITOR CH 16V 2.2U	1	
C908	ECJ1VB1C105K	C.CAPACITOR CH 16V 1U	1	
C909	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
C910	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C911	ECJ1VB1C105K	C.CAPACITOR CH 16V 1U	1	
C912	F1H0J475A010	C.CAPACITOR CH 6.3V 4.7U	1	
C913	ECJ1VB1C105K	C.CAPACITOR CH 16V 1U	1	
C914	ECJ1VB1C105K	C.CAPACITOR CH 16V 1U	1	
C915	ECJ1VB1C105K	C.CAPACITOR CH 16V 1U	1	
D501	MA2SD320GL	DIODE	1	E.S.D.
D502	MA2SD320GL	DIODE	1	E.S.D.
D901	B3AFB0000247	LED	1	E.S.D.
D902	B3AFB0000247	LED	1	E.S.D.
D903	B3AFB0000247	LED	1	E.S.D.
D904	B3AFB0000247	LED	1	E.S.D.
D909	MAZ8062GML	DIODE	1	E.S.D.
EP901	K4AD01D00008	EARTH TERMINAL	1	
FP901	K1MN14BA0197	CONNECTOR 14P	1	
FP902	K1MN18BA0197	CONNECTOR 18P	1	
FP903	K1MN04BA0262	CONNECTOR 4P	1	
FP904	K1MY37BA0235	CONNECTOR 37P	1	
FP905	K1MN04BA0197	CONNECTOR 4P	1	
IC501	C1ZBZ0003885	IC	1	E.S.D.
L901	G1C101KA0055	CHIP INDUCTOR 100UH	1	
LB501	J0JCC0000276	FILTER	1	
LB502	J0JCC0000276	FILTER	1	
LB503	J0JCC0000276	FILTER	1	
LB504	J0JCC0000276	FILTER	1	
Q901	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q902	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q903	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q904	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q910	2SA2174J0L	TRANSISTOR	1	E.S.D.
R501	D0YAR0000007	M.RESISTOR CH 1/16W 0	1	
R901	ERJ2RKD220	M.RESISTOR CH 1/16W 22	1	
R902	ERJ2RKD220	M.RESISTOR CH 1/16W 22	1	
R903	ERJ2RKD220	M.RESISTOR CH 1/16W 22	1	
R907	ERJ2RKD220	M.RESISTOR CH 1/16W 22	1	
R909	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R910	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	1	
R913	ERJ2RHD183	M.RESISTOR CH 1/16W 18K	1	
R914	ERJ2GED113X	M.RESISTOR CH 1/16W 11K	1	
R915	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	1	
R920	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
RX901	D1H83314A024	RESISTOR	1	
RX902	D1H83314A024	RESISTOR	1	
VA501	D4ED1270A011	VARISTORS	1	
VA502	D4ED1270A011	VARISTORS	1	
VA503	D4ED18R00008	VARISTORS	1	
VA504	D4ED18R00008	VARISTORS	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP20C51A	FRONT PCB		(RTL) E.S.D	R6413	ERJ3GEYJ430	M.RESISTOR CH 1/10W 43	1	
					R6416	ERJ2GEJ473Y	M.RESISTOR CH 1/16W 47K	1	
					R6417	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
△ B6401	ML-614S/ZTK	BATTERY	1	[ENERGY]	ZB6401	K3ZZ00500014	BATTERY HOLDER	1	
C4801	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1						
C4802	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1						
C4803	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1		##	VEP22400A	MOS FPC UNIT		
C4804	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1		C201	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4805	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1		C202	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4806	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1		C203	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4807	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1		C204	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4808	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1		C205	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4809	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1		C206	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4810	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1		C207	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4811	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1		C208	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4812	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1		C209	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C4813	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1		C210	F3E0J476A014	E.CAPACITOR CH 6.3V 47U	1	
C4814	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1		C211	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1	
C4815	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1		C212	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1	
C4816	F3E0J106A009	E.CAPACITOR CH 6.3V 22U	1		C213	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C4817	F3E0J106A009	E.CAPACITOR CH 6.3V 22U	1		C214	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C4818	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1		C215	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C6401	F1J0J106A049	C.CAPACITOR CH 6.3V 10U	1		FL201	J0ZZB0000094	FILTER	1	
C6404	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1		FL202	J0ZZB0000094	FILTER	1	
C6407	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1		FL203	J0ZZB0000100	FILTER	1	
C6408	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1		FL204	J0ZZB0000094	FILTER	1	
C6409	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1		FL205	J0ZZB0000094	FILTER	1	
C6410	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1		FL206	J0ZZB0000100	FILTER	1	
					FL207	J0ZZB0000094	FILTER	1	
D6401	B3AAB0000137	DIODE	1	E.S.D.	FL208	J0ZZB0000094	FILTER	1	
D6402	B3ADB0000135	DIODE	1	E.S.D.	FL209	J0ZZB0000100	FILTER	1	
					FP201	K1KY60AA0695	CONNECTOR 60P	1	
FP4801	K1MN08BA0197	CONNECTOR 8P	1		IC204	C0JBAA000479	IC	1	E.S.D.
FP6400	K1MN10BA0197	CONNECTOR 10P	1		IC205	C0JBAA000479	IC	1	E.S.D.
FP6403	K1MN33BA0259	CONNECTOR 33P	1		IC206	C0JBAA000479	IC	1	E.S.D.
					LB201	J0JYC0000061	FILTER	1	
IC4801	C0ABBB000369	IC	1	E.S.D.	LB202	J0JYC0000061	FILTER	1	
IC4802	C0ABBB000369	IC	1	E.S.D.	LB203	J0JYC0000061	FILTER	1	
IC4803	C0ABBB000369	IC	1	E.S.D.	PP202	K1KY30AA0688	CONNECTOR 30P	1	
IC6401	L2ES00000018	IC	1	E.S.D.	PP203	K1KY30AA0688	CONNECTOR 30P	1	
IC6402	L2ES00000019	IC	1	E.S.D.	PP204	K1KY30AA0688	CONNECTOR 30P	1	
					R204	D0YAR0000007	M.RESISTOR CH 1/16W 0	1	
IR6401	B3RBB0000013	REMOTE SENSOR	1						
					##	VEP21303B	POWER FPC UNIT		
L6401	G1C100KA0115	CHIP INDUCTOR 10UH	1		JK6751	K4ZZ04000049	JACK, BATTERY	1	
L6405	G1C100KA0115	CHIP INDUCTOR 10UH	1		P6751	K1KA02BA0014	CONNECTOR 2P	1	
					PP6751	K1KB24A00051	CONNECTOR 24P	1	
Q4801	2SD2216J0L	TRANSISTOR	1	E.S.D.					
Q6401	B1ADGD0000005	TRANSISTOR	1	E.S.D.	##	VEP21304A	MAIN SUB FPC		(RTL)
					PP6901	K1KY90AA0695	CONNECTOR 90P	1	
QR6401	UNR92A5J0L	TRANSISTOR	1	E.S.D.	PP6902	K1KY90AA0695	CONNECTOR 90P	1	
QR6402	UNR91AFJ0L	TRANSISTOR	1	E.S.D.					
					##	VEP20C44A	SIDE (R) FPC UNIT		(RTL)
R4801	VRE0071E392	M.RESISTOR CH 1/10W 3.9K	1		PP6003	K1KB40A00128	CONNECTOR 40P	1	
R4802	VRE0071E392	M.RESISTOR CH 1/10W 3.9K	1						
R4803	VRE0071E392	M.RESISTOR CH 1/10W 3.9K	1						
R4804	VRE0071E392	M.RESISTOR CH 1/10W 3.9K	1						
R4805	VRE0071E392	M.RESISTOR CH 1/10W 3.9K	1						
R4806	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1						
R4807	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1						
R4808	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1						
R4809	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1						
R4810	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1						
R4811	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1						
R4812	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1						
R4813	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1						
R4814	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1						
R4815	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1						
R4816	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1						
R4817	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1						
R4818	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1						
R6402	ERJ2RKD330	M.RESISTOR CH 1/16W 33	1						
R6403	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1						
R6405	ERJ6GEYJ222V	M.RESISTOR CH 1/10W 2.2K	1						
R6412	ERJ3GEYJ430	M.RESISTOR CH 1/10W 43	1						



Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
2	VYQ4547	LENS HOOD UNIT	1	(-S)					
2	VYQ4810	LENS HOOD UNIT	1	(-K)					
3	VMG1838	HDD CUSHION	2						
4	VMG1838	HDD CUSHION	2						
5	N3CZBTH00001	HDD	1	EB,EC,EE,EG,EP,GC,GJ,GK, GN,GT,SG					
5	N3CZBUH00001	HDD	1	P,PC,PU					
6	VEP79227A	HDD FPC	1	(RTL) E.S.D.					
7	VSC6135	HDD EARTH FRAME	1						
8	VGQ9672	GASKET	1						
17	VYK2X36	BARRIER UNIT	1						
22	L0AA01A00038	SPEAKER	1						
23	VMP9298	TOP FRAME	1						
24	VMP9293	GRIP FRAME	1						
25	VGK3513	GRIP ORNAMENT	1						
26	K0RE01000009	OPERATION BUTTON UNIT	1	(-S)					
26	K0RE01000008	OPERATION BUTTON UNIT	1	(-K)					
27	VGQ0C88	FRONT ORNAMENT	1	(-S)					
27	VGQ0E01	FRONT ORNAMENT	1	(-K)					
28	VGQ0D63	SHEET	1	(-S)					
28	VGQ0E03	SHEET	1	(-K)					
29	VGQ0C84	MIC NET	1	(-S)					
29	VGQ0E02	MIC NET	1	(-K)					
30	VGQ0C85	MIC CUSHION (A)	1						
31	VGQ0C86	MIC CUSHION (B)	1						
32	VEP24195A	ECM FPC UNIT	1						
33	VGQ0C87	MIC CUSHION (C)	1						
34	VKM7808	FRONT CASE	1	(-S)					
34	VKM7899	FRONT CASE	1	(-K)					
35	VGL1301	AF PANEL LIGHT	1						
36	VGL1300	TARRY PANEL LIGHT	1						
37	VKW3417	SENSOR WINDOW	1						
38	VGQ0D64	ECM SHEET	1						
39	VEP20C51A	FRONT PCB	1						
40	N9ZZ00000380	BARRIER MOTOR UNIT	1						
41	VMB4233	BARRIER SWITCH LEVER SPRING	1						
42	VGQ9135	BARRIER SWITCH LEVER	1						
43	VGQ9348	SHEET	1						
44	VMP9308	FRONT EARTH PLATE	1						
45	VMP9296	FRONT ANGLE(R)	1						
46	VMG1753	LENS DAMPER	1						
47	VSC6139	MIC EARTH PLATE	1						
48	VMP9297	FRONT ANGLE(L)	1						
49	VGQ0C82	FLASH COVER	1						
50	EFN-MVAJ9ZC	FLASH	1						
51	VYK2X60	SIDE CASE(L) UNIT	1	(-S)					
51	VYK3C58	SIDE CASE(L) UNIT	1	(-K)					
B1	XQN16+B4FJK	SCREW	1						
B2	XQN16+B4FJK	SCREW	1						
B3	XQN16+B4FJK	SCREW	1						
B19	XQN16+B4FJK	SCREW	1						
B20	XQN16+B4FJK	SCREW	1						
B21	XQN16+B4FJK	SCREW	1						
B23	XQN16+B3FN	SCREW	1						
B24	XQN16+B3FN	SCREW	1						
B34	XQN16+BJ5FN	SCREW	1						
B35	XQN16+BJ5FN	SCREW	1						
B36	XQN16+BJ5FN	SCREW	1						
B37	XQN16+BJ4FN	SCREW	1						
B38	XQN16+BJ5FJK	SCREW	1						
B39	XQN16+B3FN	SCREW	1						
B40	XQN16+BJ5FN	SCREW	1						
B41	XQN16+BJ5FN	SCREW	1						
B42	XQN16+BJ5FN	SCREW	1						
B43	XQN16+BJ5FN	SCREW	1						
B44	XQN16+BJ5FN	SCREW	1						
B45	XQN16+BJ5FN	SCREW	1						
B46	XQN16+B3FN	SCREW	1						
B47	XQN16+BJ5FN	SCREW	1						
B48	XQN16+BJ5FN	SCREW	1						
B49	XQN16+BJ5FN	SCREW	1						
B50	XQN16+BJ5FN	SCREW	1						
B51	XQN16+BJ5FN	SCREW	1						
B62	VHD1919	SCREW	1						

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	VKM7806	SR COVER	1	(-S)
1	VKM7896	SR COVER	1	(-K)
10	VGQ0D62	LENS CUSHION	1	
11	VMP9295	LENS FRAME	1	
12	VMG1107	MECHANISM DAMPER RUBBER	1	
13	VMG1107	MECHANISM DAMPER RUBBER	1	
14	VMG1107	MECHANISM DAMPER RUBBER	1	
15	VMG1107	MECHANISM DAMPER RUBBER	1	
16	VSC6142	MOS SHIELD CASE A	1	
18	VEP20C44A	SIDE (R) FPC UNIT	1	(RTL)
19	VEP29213A	SIDE R PCB UNIT	1	(RTL) E.S.D.
20	VMG1867	COOLING FAN DAMPER RUBBER	1	
21	L6FAG99D0019	COOLING FAN MOTOR	1	
52	VEP03H66V	MAIN PCB UNIT	1	(RTL) E.S.D. EB
52	VEP03H66T	MAIN PCB UNIT	1	(RTL) E.S.D. EC,EG,EG
52	VEP03H66Y	MAIN PCB UNIT	1	(RTL) E.S.D. EE
52	VEP03H66U	MAIN PCB UNIT	1	(RTL) E.S.D. EP
52	VEP03H66W	MAIN PCB UNIT	1	(RTL) E.S.D. GC,GC,SG
52	VEP03H66X	MAIN PCB UNIT	1	(RTL) E.S.D. GJ
52	VEP03H66AB	MAIN PCB UNIT	1	(RTL) E.S.D. GK
52	VEP03H66AA	MAIN PCB UNIT	1	(RTL) E.S.D. GN
52	VEP03H66S	MAIN PCB UNIT	1	(RTL) E.S.D. GT
52	VEP03H66Q	MAIN PCB UNIT	1	(RTL) E.S.D. P,PC
52	VEP03H66R	MAIN PCB UNIT	1	(RTL) E.S.D. PU
53	VEP01A16E	SUB PCB UNIT	1	(RTL) E.S.D.
54	VEP21304A	MAIN SUB FPC	1	(RTL)
55	VWJ2068	FRONT FPC	1	
56	VYK2X33	BOTTOM FRAME UNIT	1	
57	VYK2X25	MAIN FRAME UNIT	1	
58	VYK3A03	BATTERY CASE	1	(-S)
58	VYK2X26	BATTERY CASE	1	(-K)
63	VEP21303B	POWER FPC UNIT	1	
64	VMP9283	REAR FRAME (A)	1	
65	VKM7811	SIDE CASE(R)	1	(-S)
65	VKM7895	SIDE CASE(R)	1	(-K)
66	VMG1872	LCD CUSHION	1	
67	VKF4515	JACK BOARD	1	(-S)
67	VKF4460	JACK BOARD	1	(-K)
68	VKF4516	JACK COVER	1	(-S)
68	VKF4461	JACK COVER	1	(-K)
69	VMB4235	JACK COVER SPRING	1	
70	VSC6131	SR EARTH BOARD(A)	1	
71	VSC6132	SR EARTH BOARD(B)	1	
72	VSC6133	SR EARTH BOARD(C)	1	
73	VSC6141	SR EARTH BOARD(D)	1	
74	VMP9336	HINGE SUPPORT PLATE	1	
75	VGL1299	ACCESS PANEL LIGHT	1	
76	VGU0E07	SD LOCK KNOB	1	
77	VMB3742	SD LID LOCK SPRING	1	
78	VGQ0C74	SD LOCK KNOB HOLDER	1	
79	VGQ0C75	SD LOCK LEVER	1	
80	VKF4464	USB JACK COVER	1	(-S)
80	VKF4462	USB JACK COVER	1	(-K)
81	VKF4465	SD DOOR	1	(-S)
81	VKF4475	SD DOOR	1	(-K)
82	VMS7968	SD DOOR SHAFT	1	
83	VMB4236	SD DOOR SPRING	1	
84	VGU0E09	SR OP BUTTON	1	(-S)
84	VGU0E40	SR OP BUTTON	1	(-K)
85	VGQ0C96	LCD DETECTION LEVER	1	
89	VGQ0D67	MIC NET	1	(-S)
89	VGQ0D68	MIC NET	1	(-K)
90	VMG1107	MECHANISM DAMPER RUBBER	1	
92	VGQ0C49	MAIN HEAT RADIATION SHEET	1	
93	VSC6143	MOS SHIELD CASE B	1	
94	VSC6145	MOS EARTH PLATE	1	
95	VGQ0F52	MAIN CUSHION	1	
96	VGQ0F51	LENS CUSHION(R)	1	
97	VGQ0F53	SHEET	1	
B4	XQN16+B4FJK	SCREW	1	
B5	XQN16+B4FJK	SCREW	1	
B6	XQN16+B4FJK	SCREW	1	
B7	XQN16+B4FJK	SCREW	1	
B8	XQN16+B4FN	SCREW	1	(-S)
B8	XQN16+B4FJK	SCREW	1	(-K)

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
B9	XQN16+B4FN	SCREW	1	(-S)
B9	XQN16+B4FJK	SCREW	1	(-K)
B10	XQN16+B4FN	SCREW	1	(-S)
B10	XQN16+BJ4FJK	SCREW	2	(-K)
B11	XQN16+BJ5FN	SCREW	1	(-S)
B11	XQN16+BJ5FJK	SCREW	1	(-K)
B12	XQN16+BJ5FN	SCREW	1	(-S)
B12	XQN16+BJ5FJK	SCREW	1	(-K)
B13	XQN16+BJ5FN	SCREW	1	(-S)
B13	XQN16+BJ5FJK	SCREW	1	(-K)
B14	XQN16+B4FN	SCREW	1	(-S)
B14	XQN16+B4FJK	SCREW	1	(-K)
B15	XQN16+B4FN	SCREW	1	(-S)
B15	XQN16+B4FJK	SCREW	1	(-K)
B16	XQN16+B3FN	SCREW	1	(-S)
B16	XQN16+B3FJK	SCREW	1	(-K)
B17	XQN16+BJ6FJK	SCREW	1	
B18	XQN16+BJ6FJK	SCREW	1	
B22	XQN16+B4FJK	SCREW	1	
B25	XQN16+B4FN	SCREW	1	
B26	VHD1907	SCREW	1	
B27	VHD1907	SCREW	1	
B28	XQN16+B4FN	SCREW	1	
B29	XQN16+B4FN	SCREW	1	
B30	VHD1353	SCREW	1	
B31	VHD1353	SCREW	1	
B32	XQN16+B4FN	SCREW	1	
B33	XQN16+B4FJK	SCREW	1	
B53	XQN16+BJ5FN	SCREW	1	
B54	XQN16+BJ4FN	SCREW	1	
B56	XQN16+B4FJK	SCREW	1	
B58	VHD1411	SCREW	1	
B59	VHD1411	SCREW	1	
B60	VHD1384	SCREW	1	
B61	VHD1384	SCREW	1	
B63	XQN16+BJ5FN	SCREW	1	
B64	XQN16+BJ5FN	SCREW	1	
B65	XQN16+BJ5FN	SCREW	1	
B66	VHD1919	SCREW	1	
B67	VHD1907	SCREW	1	
B68	VHD1907	SCREW	1	
B69	VHD1907	SCREW	1	
B70	VHD1907	SCREW	1	
B71	VHD1907	SCREW	1	



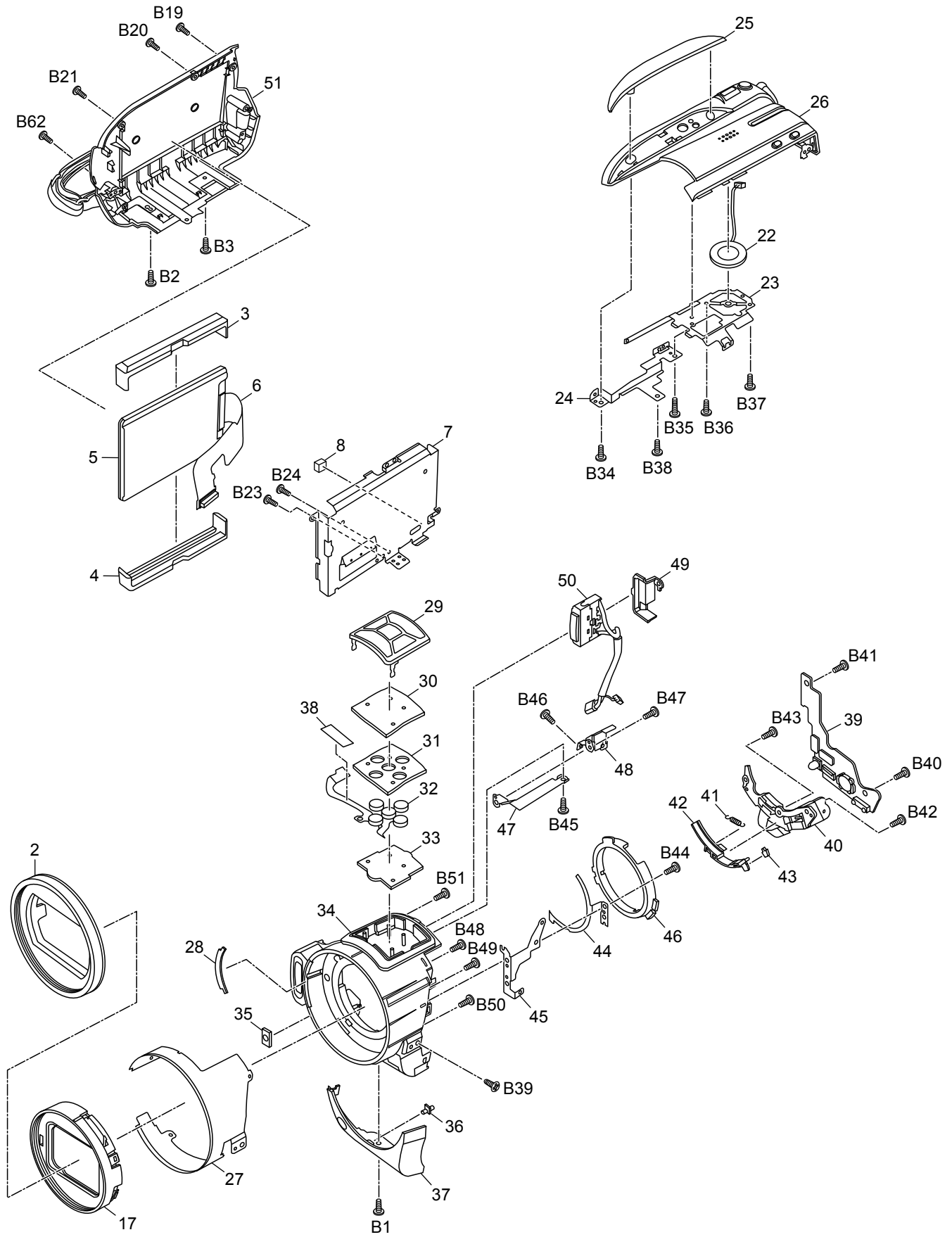




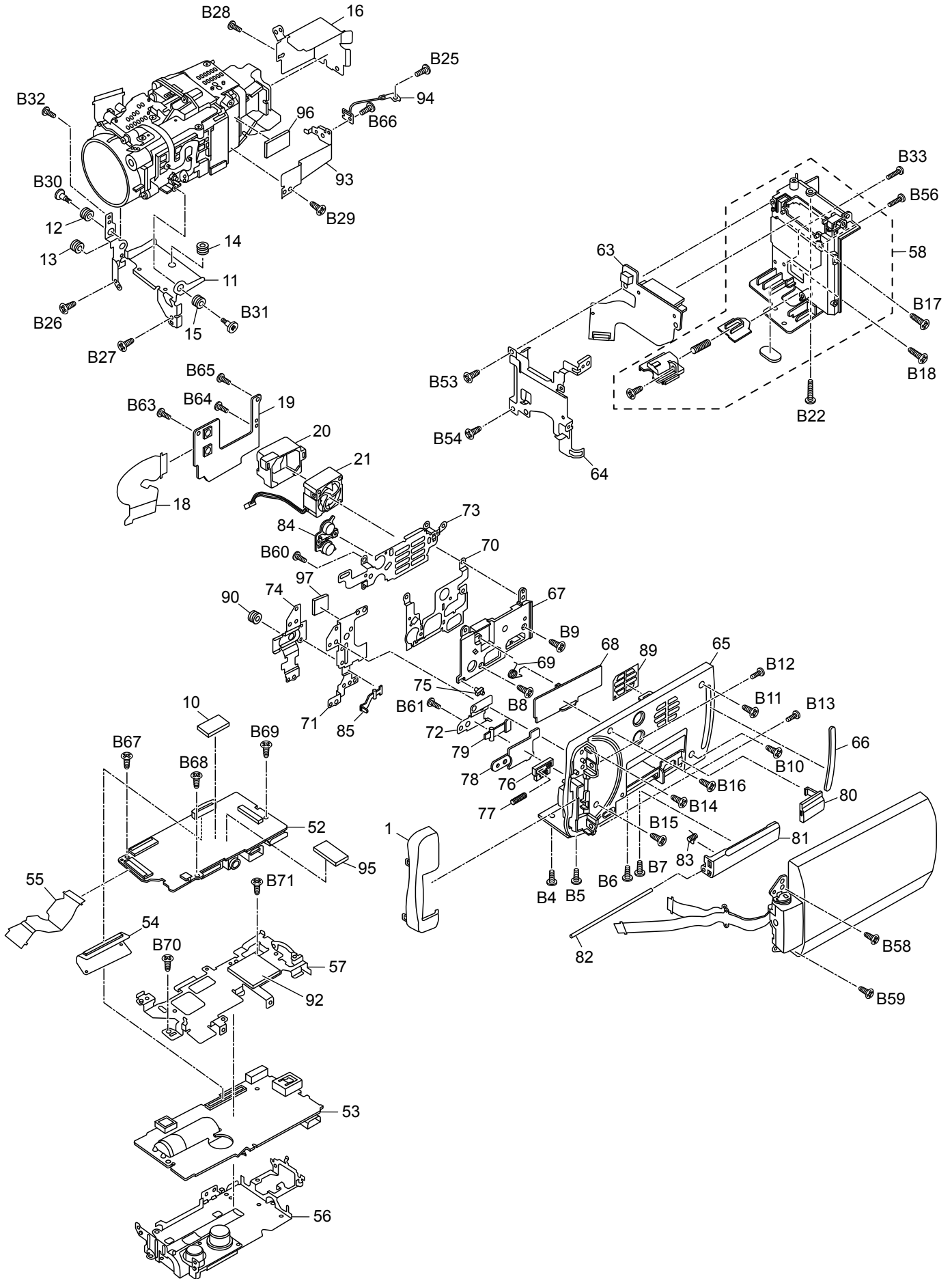
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
301	K2GJYDC00004	DC CABLE	1		△ 313	VQT1Y34	OPERATING INSTRUCTIONS (SPANISH)	1	PU
302	K1HY04YY0032	USB CABLE	1		314	VPG1V90	PACKING CASE	1	EB,EC,EE,EG,EP,GC,GJ,GK, GN,GT,SG
303	K2KY0000054	AV CABLE	1		314	VPG1V89	PACKING CASE	1	P,PC
304	K1HY10YY0005	COMPONENT CABLE	1	(BATTERY BUILT-IN)	314	VPG1Z57	PACKING CASE	1	PU
△ 305	K2CA2CA00020	AC CABLE	1	GK	315	VPN6783	PAD	1	
△ 305	K2CA2CA00027	AC CABLE	1	GT	316	VPF1166	CAMERA BAG	1	
△ 305	K2CA2CA00025	AC CABLE	1	P,PC,PU	△ 320	-----	BATTERY PACK	1	
△ 306	N2QAEC000024	REMOTE CONTROL	1		△ 325	K2CT3CA00004	AC CABLE	1	EB,GC,SG
△ 307	DE-A51CB	AC ADAPTOR	1	EB,EC,EE,EG,EP,GC,GJ,GN, SG,PU	△ 326	K2CQ2CA00006	AC CABLE	1	EC,EE,EG,EP,GC,SG
△ 307	DE-A51DA	AC ADAPTOR	1	GK	△ 326	K2CP2YY00001	AC CABLE	1	GJ
△ 307	DE-A51EA	AC ADAPTOR	1	GT	△ 328	K2CJ2DA00008	AC CABLE	1	GN
△ 307	DE-A51BB	AC ADAPTOR	1	P,PC	330	VQL1S99	COLOUR LABEL	1	(-S)
308	VFC4394	STYLUS PEN	1		331	VQL1S99	COLOUR LABEL	1	(-S)
311	VFF0442-S	CD-ROM	1						
312	VPF1112	POLYETHYLENE BAG	1	EB,EE,GJ,GK,GN,GT,P,PC,PU					
312	VPF1228	POLLY BAG	1	EC,EG,EP,GC,SG					
△ 313	VQT1Y50	OPERATING INSTRUCTIONS (ENGLISH)	1	EB					
△ 313	VQT1Y42	OPERATING INSTRUCTIONS (PORTGUESE)	1	EC					
△ 313	VQT1Y43	OPERATING INSTRUCTIONS (SPANISH)	1	EC					
△ 313	VQT1Y44	OPERATING INSTRUCTIONS (SWEDISH)	1	EC					
△ 313	VQT1Y45	OPERATING INSTRUCTIONS (DANISH)	1	EC					
△ 313	VQT2B70	OPERATING INSTRUCTIONS (FINLAND)	1	ECK					
△ 313	VQT1Y57	OPERATING INSTRUCTIONS (RUSSIAN)	1	EE					
△ 313	VQT1Y58	OPERATING INSTRUCTIONS (UKRAINIAN)	1	EE					
△ 313	VQT1Y37	OPERATING INSTRUCTIONS (GERMAN)	1	EG					
△ 313	VQT1Y38	OPERATING INSTRUCTIONS (FRENCH)	1	EG					
△ 313	VQT1Y39	OPERATING INSTRUCTIONS (ITALIAN)	1	EG					
△ 313	VQT1Y40	OPERATING INSTRUCTIONS (DUTCH)	1	EG					
△ 313	VQT1Y41	OPERATING INSTRUCTIONS (TURKISH)	1	EG					
△ 313	VQT1Y46	OPERATING INSTRUCTIONS (ENGLISH)	1	EP					
△ 313	VQT1Y47	OPERATING INSTRUCTIONS (POLISH)	1	EP					
△ 313	VQT1Y48	OPERATING INSTRUCTIONS (CZECH)	1	EP					
△ 313	VQT1Y49	OPERATING INSTRUCTIONS (HUNGARIAN)	1	EP					
△ 313	VQT1Y51	OPERATING INSTRUCTIONS (CHINESE(TRADITIONAL))	1	GC,SG					
△ 313	VQT1Y52	OPERATING INSTRUCTIONS (ENGLISH)	1	GC,GJ,SG					
△ 313	VQT1Y53	OPERATING INSTRUCTIONS (ARABIC)	1	GC,SG					
△ 313	VQT1Y54	OPERATING INSTRUCTIONS (PERSIAN)	1	GC,SG					
△ 313	VQT1Y55	OPERATING INSTRUCTIONS (THAI)	1	GC,GJ,SG					
△ 313	VQT1Y56	OPERATING INSTRUCTIONS (HINDI)	1	GC,SG					
△ 313	VQT1Y60	OPERATING INSTRUCTIONS (CHINESE(SIMPLIFIED))	1	GK					
△ 313	VQT1Y59	OPERATING INSTRUCTIONS (ENGLISH)	1	GN					
△ 313	VQT1Y35	OPERATING INSTRUCTIONS (CHINESE(TRADITIONAL))	1	GT					
△ 313	VQT1Y31	OPERATING INSTRUCTIONS (ENGLISH)	1	P,PC					
△ 313	VQT1Y32	OPERATING INSTRUCTIONS (CANADIAN FRENCH)	1	PC					
△ 313	VQT1Y33	OPERATING INSTRUCTIONS (ENGLISH)	1	PU					

# S6. Exploded View

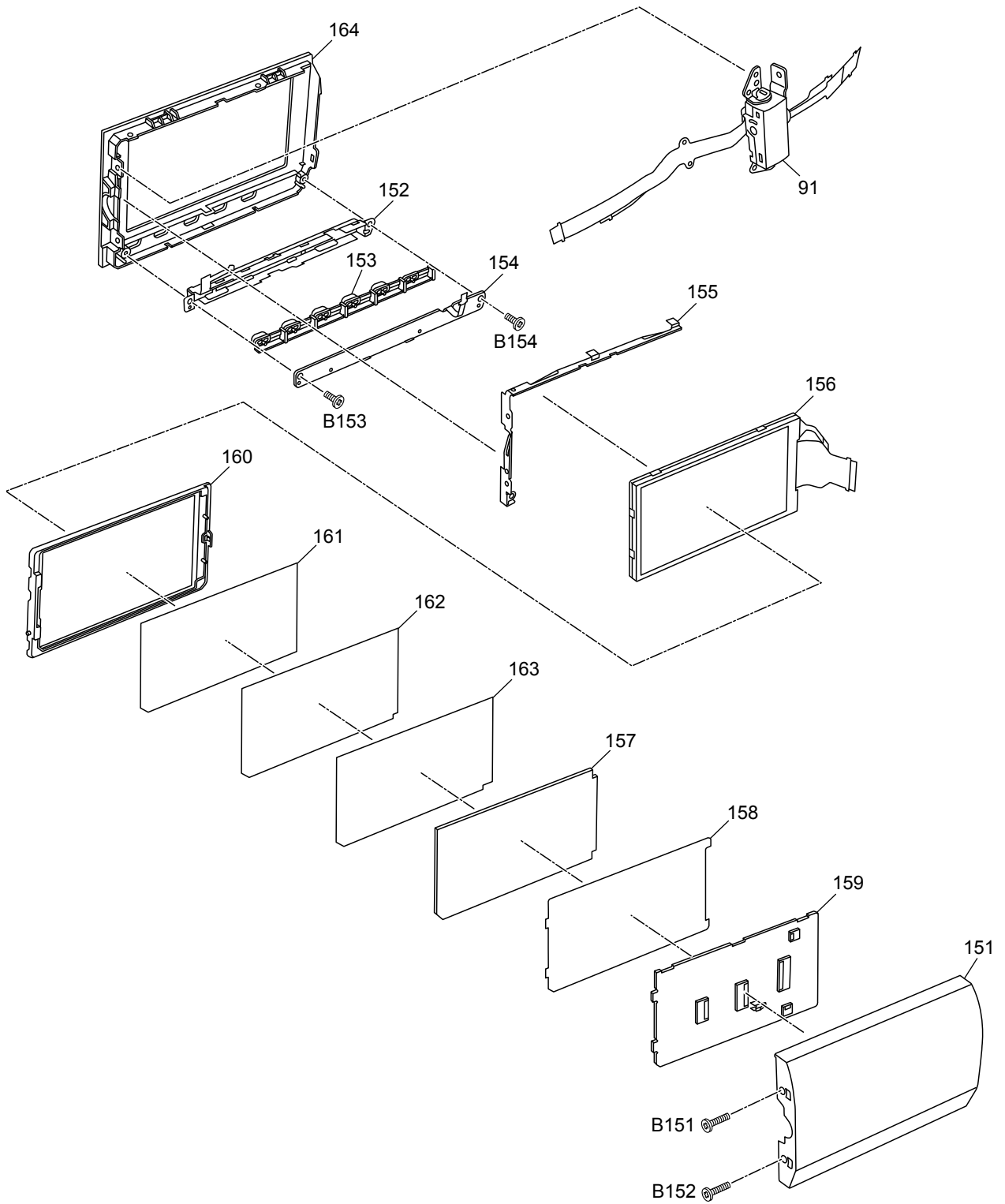
## S6.1. Frame and Casing Section (1)



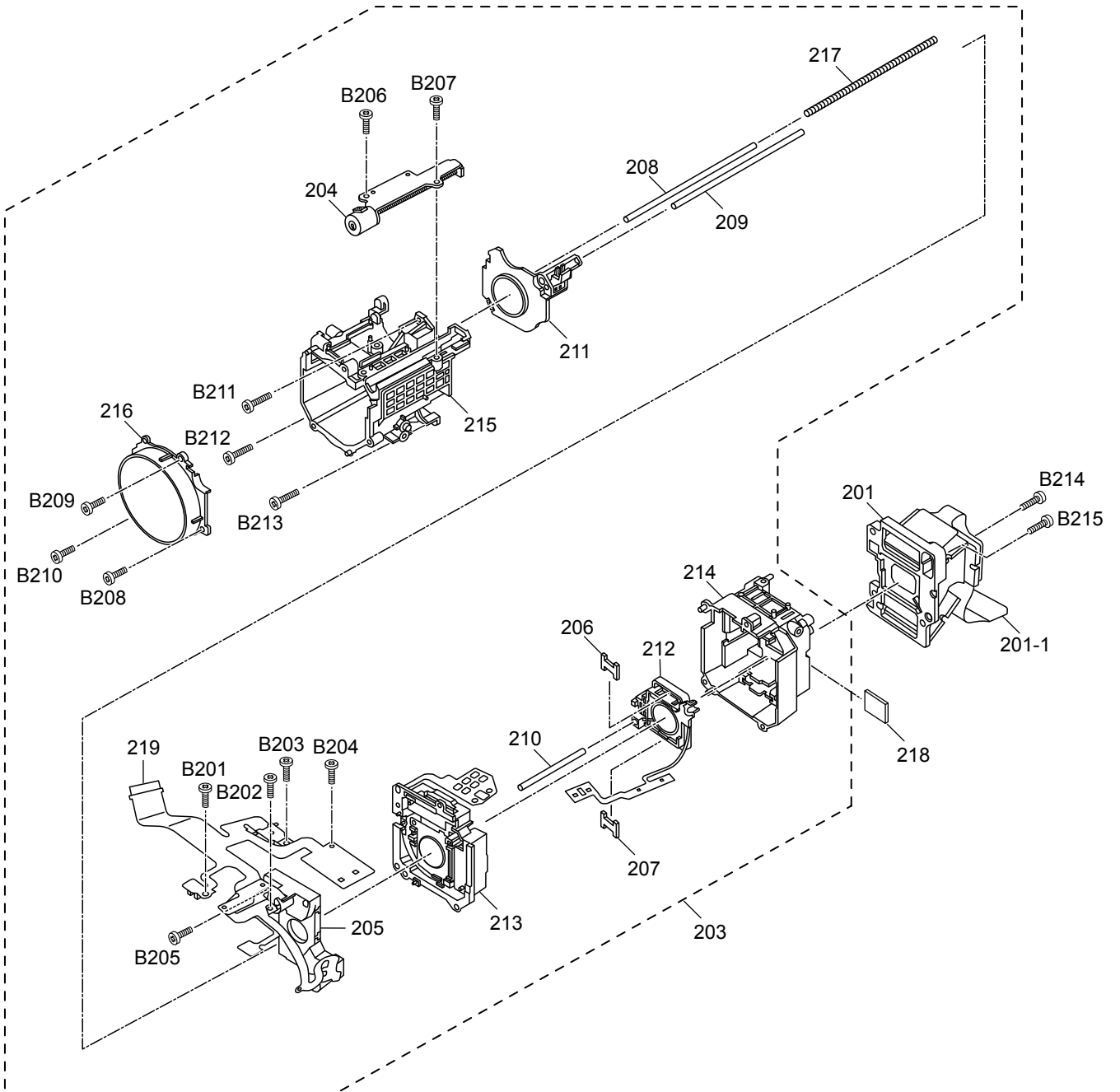
## S6.2. Frame and Casing Section (2)



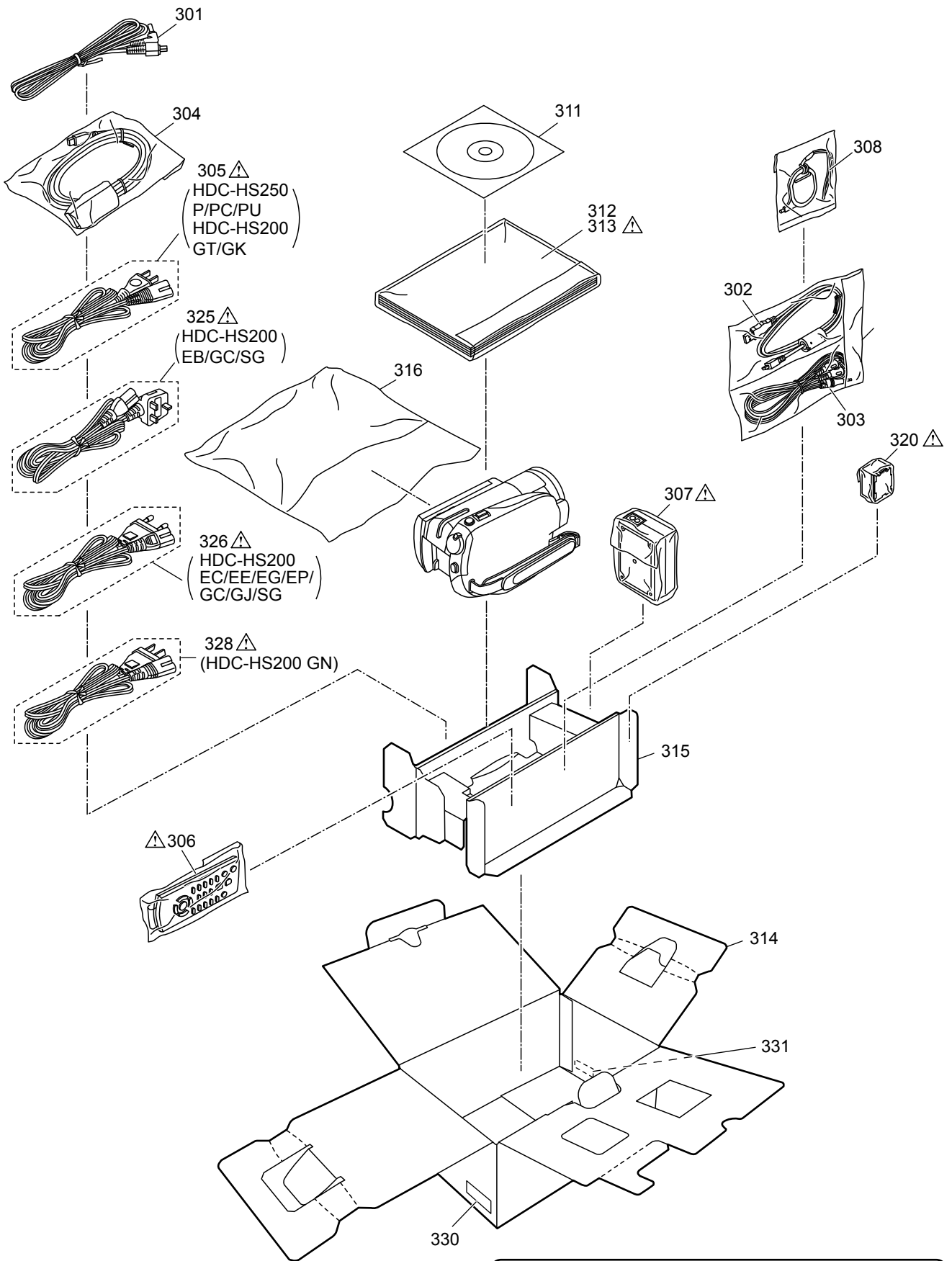
### S6.3. LCD Section



## S6.4. Camera Lens Section



## S6.5. Packing Parts and Accessories Section



This PACKING CASE is for the cabinet colour black.  
Please put the colour label matched to the cabinet colour  
at the position of REF No.330 and REF No.331 when you  
use this PACKING CASE for other cabinet colours.