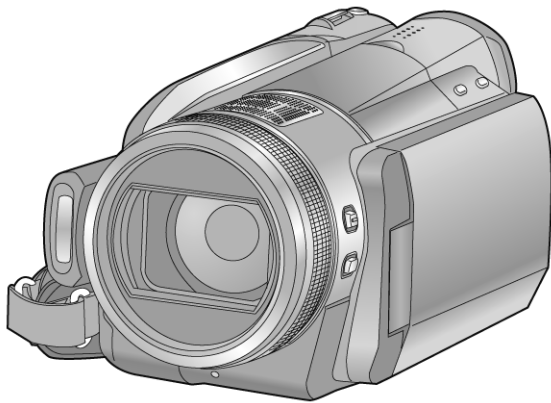


Service Manual

High Definition Video Camera



Model No. **HDC-HS300P**

HDC-HS300PC

HDC-HS300EB

HDC-HS300EC

HDC-HS300EE

HDC-HS300EF

HDC-HS300EG

HDC-HS300EP

HDC-HS300GC

HDC-HS300GK

HDC-HS300GT

HDC-HS300SG

Vol. 1

Colour

(K).....Black Type

(S).....Silver Type (only 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 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 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

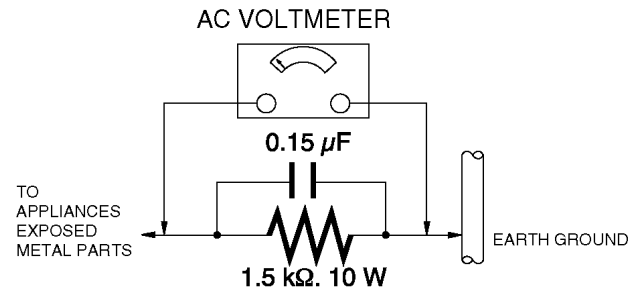


Figure. 1

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 Ω /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.

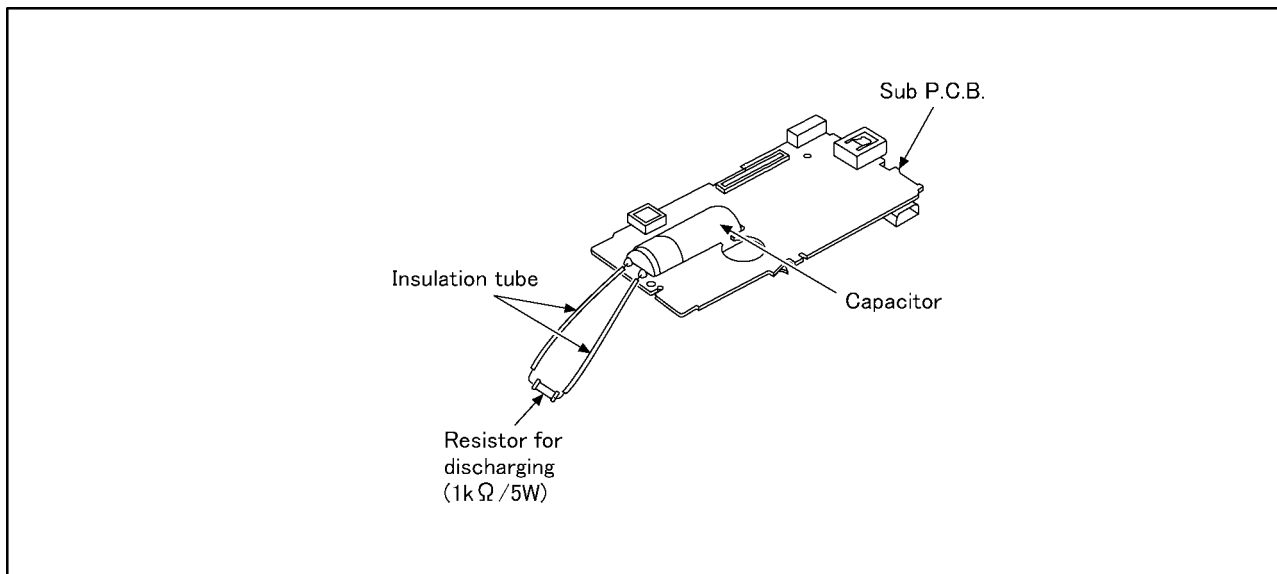


Fig. F1

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:

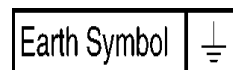
Blue	Neutral
Brown	Live

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.

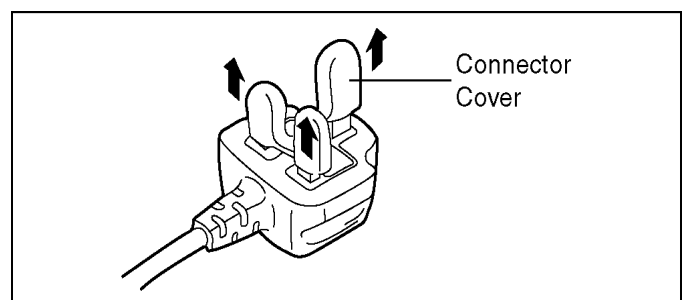
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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.



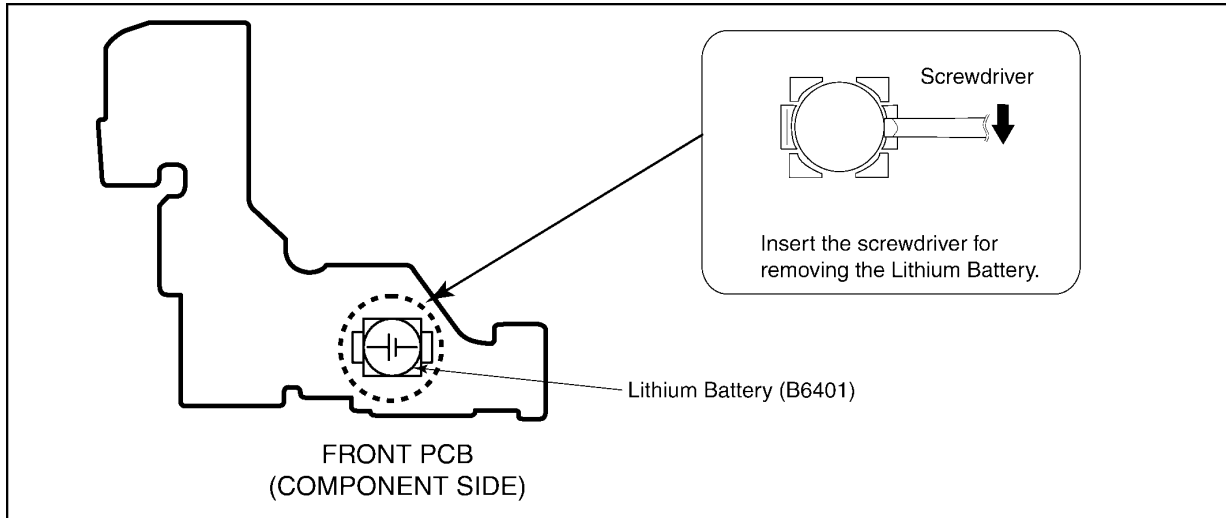
2. Replace the fuse and attach the Fuse cover.



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-HS300 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 (VEP03H66AR : HDC-HS300P/PC)
- MAIN PCB (VEP03H66AW : HDC-HS300EB)
- MAIN PCB (VEP03H66AU : HDC-HS300EC/EF/EG)
- MAIN PCB (VEP03H66BA : HDC-HS300EE)
- MAIN PCB (VEP03H66AV: HDC-HS300EP)
- MAIN PCB (VEP03H66AX: HDC-HS300GC/SG)
- MAIN PCB (VEP03H66BC: HDC-HS300GK)
- MAIN PCB (VEP03H66AT: HDC-HS300GT)

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

There are eight kinds of HDC-HS300.








- a) HDC-HS300S
- b) HDC-HS300P
- c) HDC-HS300PC
- d) HDC-HS300EB/EC/EF/EG/EP
- e) HDC-HS300EE
- f) HDC-HS300GK
- g) HDC-HS300GT
- h) HDC-HS300GC/SG

(HDC-HS300S 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>a) HDC-HS300S HDC-HS300S is exclusively Japan domestic model.</p> 
<p>b) HDC-HS300P The nameplate for this model show the following Safety registration mark.</p> 
<p>c) HDC-HS300PC The nameplate for this model show the following Safety registration mark.</p> 
<p>d) HDC-HS300EB/EC/EF/EG/EP The nameplate for these models show the following Safety registration mark.</p> 
<p>e) HDC-HS300EE The nameplate for this model show the following Safety registration mark.</p> 
<p>f) HDC-HS300GK The nameplate for this model show the following Safety registration mark.</p> 
<p>g) HDC-HS300GT The nameplate for this model show the following Safety registration mark.</p> 
<p>h) HDC-HS300GC/SG The nameplate for these models do not show any above Safety registration mark.</p>

NOTE:

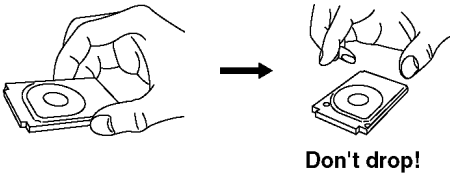

After replacing the MAIN PCB, be sure to achieve adjustment.

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

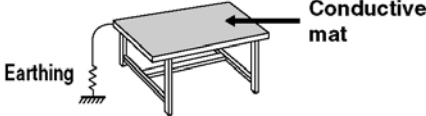

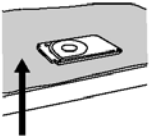
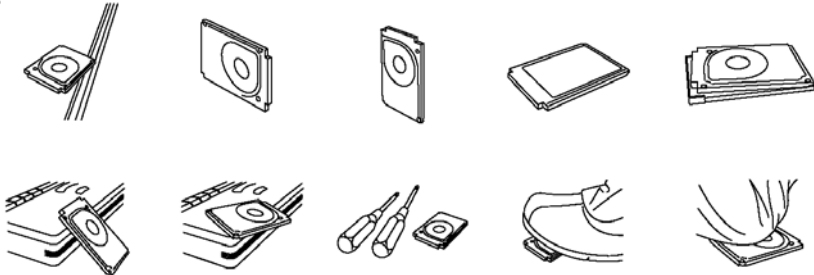
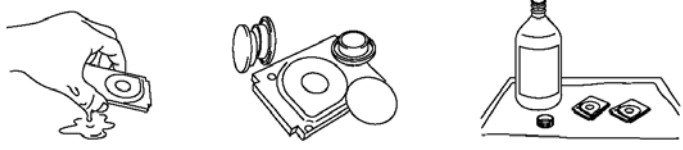
1. Handle HDD very carefully to prevent the static electricity and shock.
2. Set the HDD quickly after taking it out from the package. Make sure to put the HDD on buffer materials, etc.

3.5.1. Precautions at incoming process and for opening packages

Preventing shock	<ul style="list-style-type: none"> • 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. • 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. • 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.
Preventing condensation	<ul style="list-style-type: none"> • 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. • Avoid entrance or window areas where temperature changes easily for storage.
Holding example	<ul style="list-style-type: none"> • Take out HDD holding both sides, not to press the top cover and the center of the device label. <div style="text-align: center;"> <p><OK></p>  <p><NG></p>  </div>
Preventing static electricity	<ul style="list-style-type: none"> • 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.

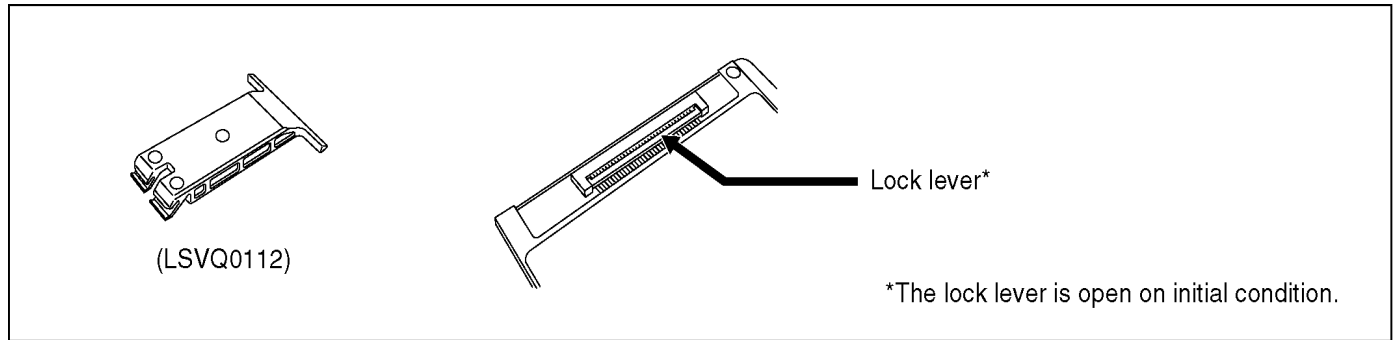
*E.S.D. = Electrostatically Sensitive Devices

3.5.2. Precautions for installing HDD

<p>Preventing static electricity</p>	<ul style="list-style-type: none"> 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. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p><OK></p>  </div> <div style="text-align: center;"> <p><OK></p>  </div> </div>
<p>Preventing shock</p>	<ul style="list-style-type: none"> Place HDD with its face upward (the device label upward) on the flat and stable surface using buffer materials, etc. Do not stand HDD. If it falls down, the excessive impacts may damage HDD. 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. 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. 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. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p><OK></p>  <p>Buffer materials</p> </div> <div style="text-align: center;"> <p><NG></p>  </div> </div>
<p>No water / solvent</p>	<ul style="list-style-type: none"> 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. <div style="text-align: center;"> <p><NG></p>  </div>
<p>Connector</p>	<ul style="list-style-type: none"> The interface connector pin is easily damaged. Push it lightly and firmly to the end along the connector guide. For further details, refer to "Precautions for inserting and removing HDD FPC".

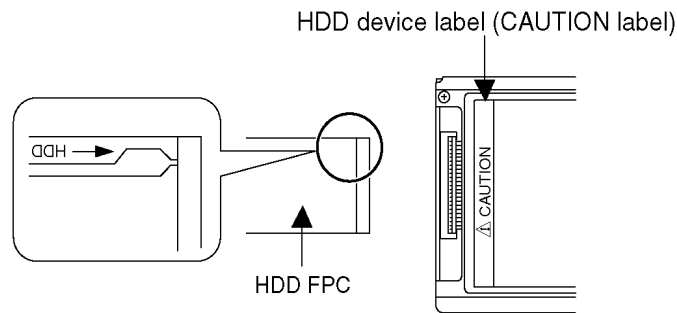
3.5.3. Precautions for inserting and removing HDD FPC

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.



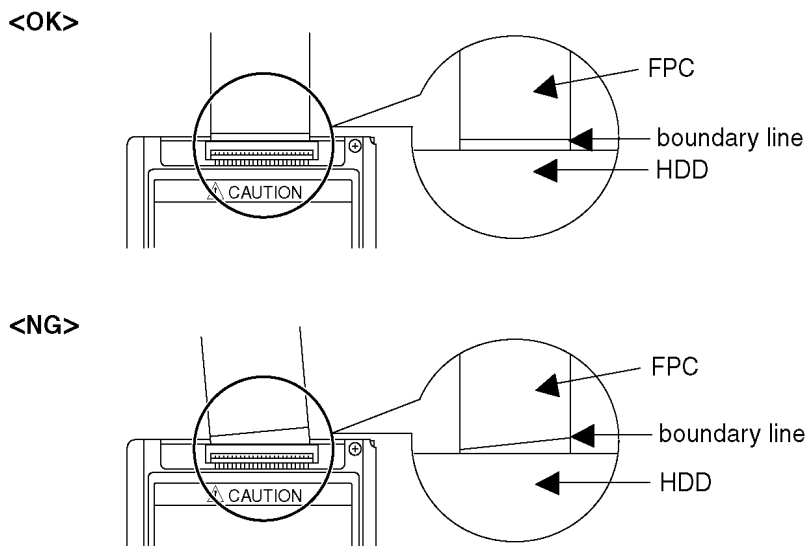
Insert HDD FPC

- 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.



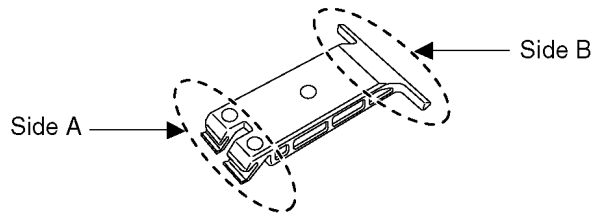
Check HDD FPC

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



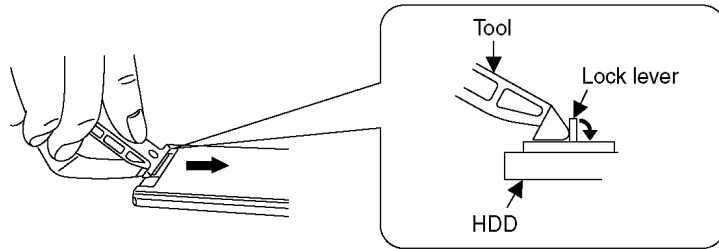
Tool operation

Lock using the tool after inserting HDD FPC.



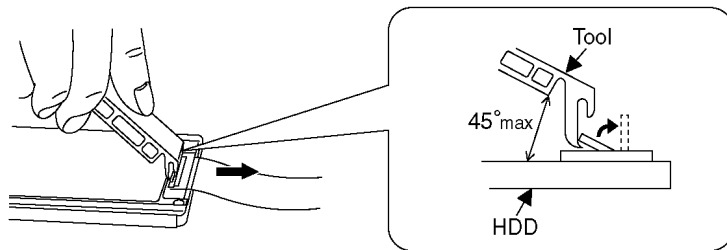
<How to lock>

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

Power source:	DC 9.3 V (When using AC adaptor) DC 7.2 V (When using battery)
Power consumption:	Recording: 7.8 W
Signal system	1080/60i (NTSC areas), 1080/50i (PAL areas)
Recording format	AVCHD format compliant
Image sensor	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)
Lens	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)
Filter diameter	43 mm
Zoom	12× optical zoom, 30×/700× digital zoom
Monitor	2.7" wide LCD monitor (approx. 230 K pixels)
Viewfinder	0.26" wide EVF (approx. 113 K pixels)
Microphone	5.1 channel surround microphone (with a zoom microphone/focus microphone function)
Speaker	1 round speaker, dynamic type

White balance adjustment	Auto tracking white balance system
Standard illumination	1,400 lx
Minimum required illumination	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)
AV terminal video output level	1.0 Vp-p, 75 Ω, NTSC system (NTSC areas) 1.0 Vp-p, 75 Ω, PAL system (PAL areas)
Component terminal video output level	Y: 1.0 Vp-p, 75 Ω Pb: 0.7 Vp-p, 75 Ω Pr: 0.7 Vp-p, 75 Ω
HDMI mini connector video output level	HDMI™ (x.v.Colour™) 1125i (1080i)/525p (480p) (NTSC areas) HDMI™ (V.1.3a with x.v.Colour™) 1125i (1080i)/625p (576p) (PAL areas)
AV terminal audio output level (Line)	316 mV, 600 Ω, 2 ch
Headphone output	Output impedance 100 Ω with 77 mV, 32 Ω load. (Stereo mini jack)
HDMI mini connector audio output level	5.1 ch (AC3)/2 ch (Linear PCM)
MIC input	-70 dBV (Mic sensitivity -50 dB equivalent, 0 dB=1 V/Pa, 1 kHz) (Stereo mini jack)
USB	SD card
	HDD
Flash	Read only (No copyright protection support) (EB/EC/EF/EG/EP areas) Read/Write (No copyright protection support) (Other areas)
Flash	Read only
Flash	Hi-Speed USB (USB 2.0), USB terminal Type Mini AB PictBridge-compliant
Flash	Available range: Approx. 1.0 m to 2.5 m (3.3 feet to 8.2 feet)
Dimensions	70 mm (W)×73 mm (H)×141 mm (D) [2.75" (W)×2.88" (H)×5.54" (D)] (excluding projecting parts)
Mass (Weight)	Approx. 460 g (Approx. 1.01 lbs.) [without battery (supplied)]
Mass (Weight) in operation	Approx. 520 g (Approx. 1.14 lbs.) [with battery (supplied)]
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating humidity	10% to 80%
Battery operation time	See "Charging and recording time"

Motion pictures

Recording media	SD card	SD Memory Card: 1 GB, 2 GB (FAT12 and FAT16 system compliant) SDHC Memory Card: 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB (FAT32 system compliant)
	HDD	120 GB
Compression	MPEG-4 AVC/H.264	
Recording mode and transfer rate	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".	
Picture size	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)	
Audio compression	Dolby Digital (Dolby AC3)/5.1 ch (built-in microphone), 2 ch (external microphone)	

Still pictures

Recording media	SD card	SD Memory Card: 8 MB, 16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB (FAT12 and FAT16 system compliant) SDHC Memory Card: 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB (FAT32 system compliant)
	HDD	120 GB
Compression	JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding	
Picture size	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

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

Dimensions	92 mm (W)×33 mm (H)×61 mm (D) [3.6" (W)×1.3" (H)×2.4" (D)]
Mass (Weight)	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%
- When using the viewfinder (times in parentheses are when using the LCD monitor)

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 (1 h 30 min)	1 h (55 min)
			SD	HA/HG/HX/ HE	1 h 40 min (1 h 35 min)
VW-VBG260 (optional) [7.2 V/2500 mAh]	4 h 40 min	HDD	HA/HG/HX	3 h 5 min (2 h 55 min)	1 h 55 min (1 h 50 min)
			HE	3 h 5 min (3 h)	1 h 55 min (1 h 50 min)
		SD	HA/HG/HX/ HE	3 h 15 min (3 h 5 min)	2 h (1 h 55 min)
			HDD	HA/HG/HX	7 h 40 min (7 h 20 min)
VW-VBG6 (optional) [7.2 V/5400 mAh]	9 h 25 min	HDD	HE	7 h 45 min (7 h 25 min)	4 h 45 min (4 h 35 min)
			SD	HA/HG/HX/ HE	8 h 5 min (7 h 45 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	1 h 35 min (1 h 35 min)	1 h (55 min)
			HE	1 h 40 min (1 h 35 min)	1 h (1 h)
VW-VBG260 (optional) [7.2 V/2500 mAh]	4 h 40 min	SD	HA/HG/HX/ HE	1 h 45 min (1 h 40 min)	1 h 5 min (1 h)
			HDD	HA/HG/HX	3 h 10 min (3 h)
		SD	HE	3 h 10 min (3 h 5 min)	2 h (1 h 55 min)
			HDD	HA/HG/HX/ HE	3 h 20 min (3 h 10 min)
VW-VBG6 (optional) [7.2 V/5400 mAh]	9 h 25 min	HDD	HA/HG/HX	7 h 50 min (7 h 30 min)	4 h 50 min (4 h 40 min)
			HE	8 h (7 h 35 min)	4 h 55 min (4 h 40 min)
		SD	HA/HG/HX/ HE	8 h 20 min (8 h)	5 h 10 min (4 h 55 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

- It is possible to set from the quick menu.

		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	120 GB	15 h 50 min	20 h 20 min	31 h	50 h

Ⓐ Favors image quality

Ⓑ 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		EASYPIC	
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	120 GB	24520	38520	28510	44810	46350	72820	743660	899100

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	120 GB	21530	33830	32070	50390	50860	79900

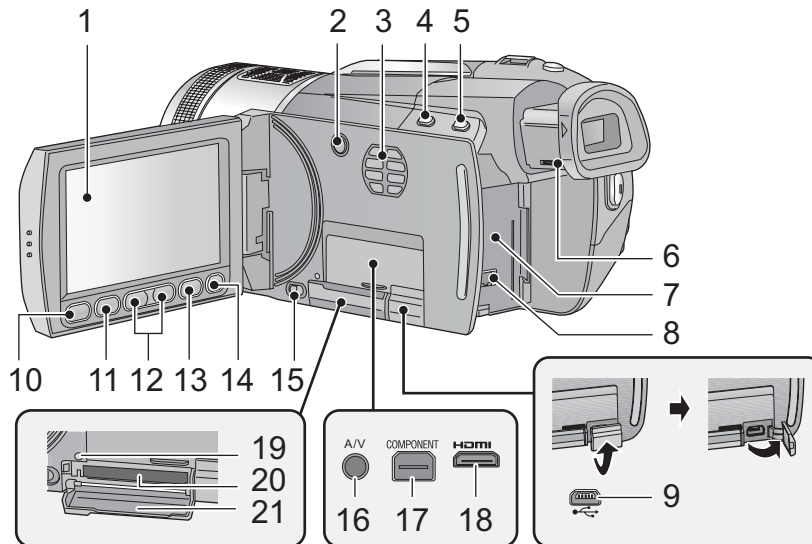
Aspect ratio		16:9					
Picture size		4224×2376		3328×1872		2560×1440	
Picture quality		FINE		NORMAL		BASIC	
SD card	8 MB	0	0	0	1	1	3
	16 MB	1	2	2	5	5	9
	32 MB	3	5	6	10	10	17
	64 MB	8	14	15	24	26	41
	128 MB	18	30	30	49	52	83
	256 MB	41	65	66	105	115	180
	512 MB	83	130	135	210	230	360
	1 GB	170	270	270	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	120 GB	22700	35670	36560	57460	61810

(In Motion Picture Recording mode)

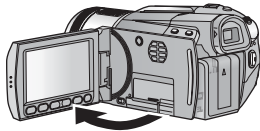
Aspect ratio		16:9			
Picture size		3840×2160		1920×1080	
Picture quality		FINE		BASIC	
SD card	8 MB	0	0	4	6
	16 MB	1	3	10	17
	32 MB	4	7	20	32
	64 MB	11	17	47	74
	128 MB	22	36	94	150
	256 MB	49	78	200	320
	512 MB	100	160	410	640
	1 GB	200	320	820	1290
	2 GB	420	660	1670	2630
	4 GB	820	1290	3290	5160
	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	120 GB	27460	43160	109860	172630

- 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.

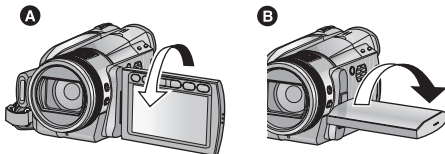
5 Location of Controls and Components



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 viewfinder.

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 Optical image stabilizer button
[], O.I.S.]

3 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.

4 Intelligent auto button [iA]

5 PRE-REC button [PRE-REC]

6 Eyepiece corrector dial

7 Battery holder

8 DC input terminal [DC IN]

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

9 USB terminal []

10 Quick menu button [Q.MENU]

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).

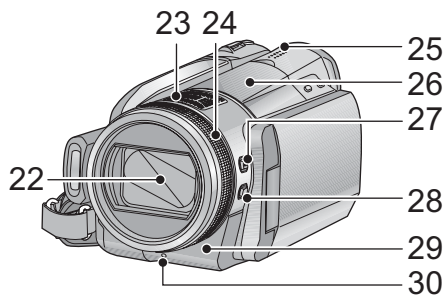
17 Component terminal [COMPONENT]

18 HDMI mini connector [HDMI]

19 Access lamp [ACCESS]

20 Card slot

21 SD card cover



22 Lens cover

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

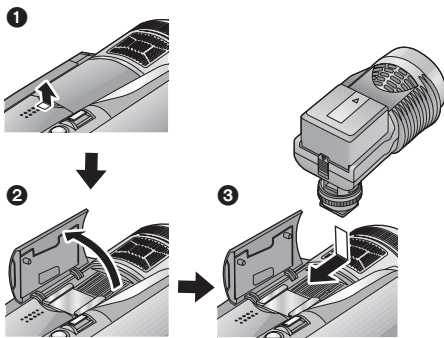
23 Internal microphones (5.1 channel support)

24 Multi manual ring

25 Speaker

26 Accessory shoe

- The video DC light/VW-LDC103PP (optional) etc. can be mounted here.

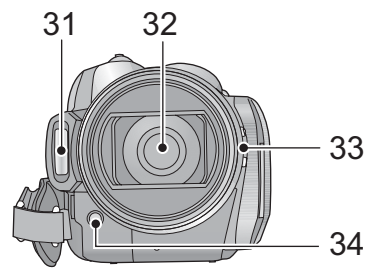


27 Manual focus button [FOCUS]

28 Manual function button [FUNCTION]

29 Remote control sensor

30 Recording lamp

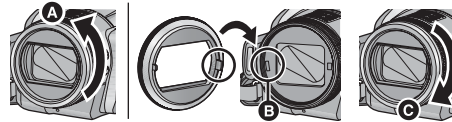


31 Built-in flash

32 Lens (LEICA DICOMAR)

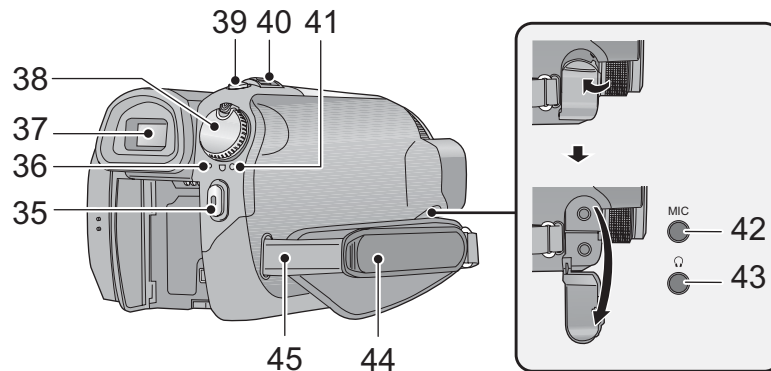
33 Lens hood

- 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.


34 AF assist lamp



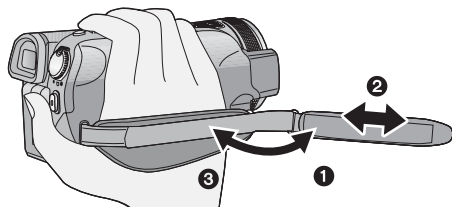
- 35 Recording start/stop button**
- 36 HDD access lamp [ACCESS HDD]**
- 37 Viewfinder**

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

- 38 Mode dial**
- 39 Photoshot button []**
- 40 Zoom lever [W/T] (In Recording Mode)**
Thumbnail display switch/Volume lever
[-  /VOL+] (In Playback Mode)

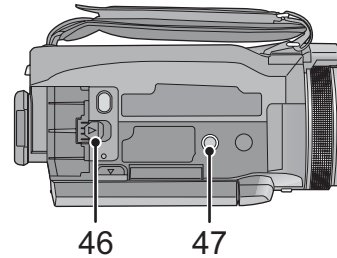
- 41 Status indicator**
- 42 Microphone terminal [MIC]**
 - A compatible plug-in powered microphone can be used as an external microphone.
 - Audio will be stereo (2 ch) with the external microphone input.
 - When the unit is connected with the AC adaptor, sometimes noise may be heard depending on the microphone type. In this case, please switch to the battery for the power supply and the noise will stop.
- 43 Headphone terminal []**

- 44 Grip belt**
Adjust the length of the grip belt so that it fits your hand.



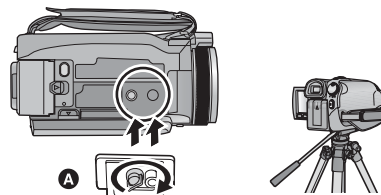
- 1** Flip the belt.
- 2** Adjust the length.
- 3** Replace the belt.

- 45 Shoulder strap fixture**



- 46 Battery release lever [BATT]**
- 47 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.)

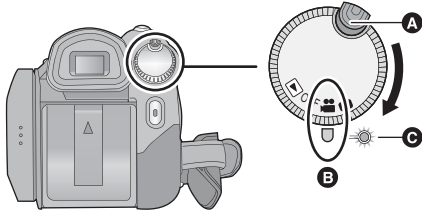


- A** Camera base

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 **B**.
- Status indicator **C**

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	

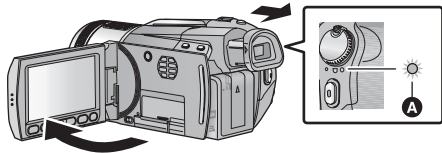
Turning the power on and off with the LCD monitor/viewfinder

When the mode is set to  or , the power can be turned on and off with the LCD monitor and the viewfinder.

Open the LCD monitor or extend the viewfinder to turn on the unit.

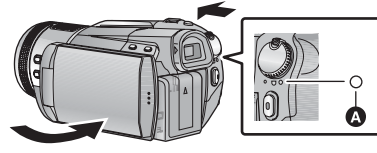
- The power will not turn off unless the LCD monitor is closed and the viewfinder is retracted.
- The power will not turn off while recording motion pictures even if the LCD monitor is closed and the viewfinder is retracted.

■ 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.

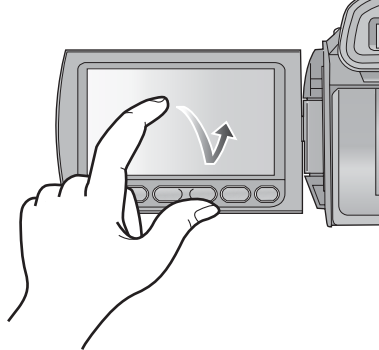
How to use the touch screen

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

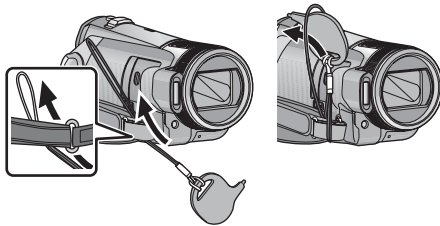
Touch and release the touch screen to select icon or picture.



- 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.

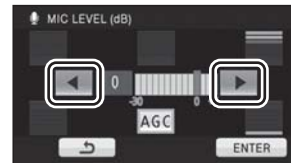
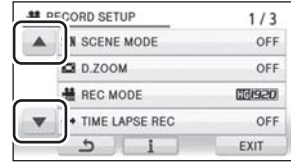


- Only use the supplied stylus pen.
- Do not tuck the stylus pen with the LCD monitor.

■ 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



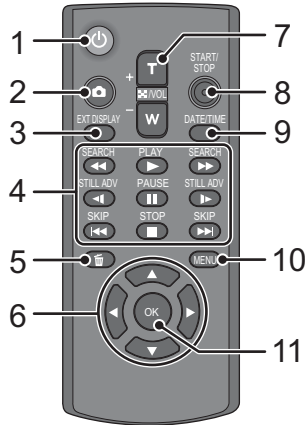
- Wipe the LCD monitor with a soft cloth, such as eye glass cleaner, when it gets dirty with finger prints etc.
- Do not touch on the LCD monitor with hard pointed tips, such as ball point pens.
- Do not touch the LCD monitor with your finger nails, or rub or press with strong force.
- It may become 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.



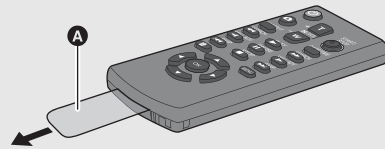
- 1 Power on/off button [⏻]**
Power can be turned on/off when the mode is set to anything but OFF.
 - Power cannot be turned on by the power on/off button when 36 hours have passed after the power is turned off.
 - Power cannot be turned off when it is connected to the PC or the DVD burner.
- 2 Photoshot 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

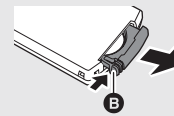
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

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

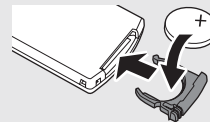


Replace a button-type battery

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



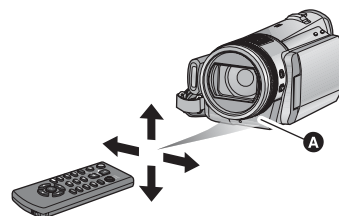
- 2 Set the button-type battery with its (+) mark facing upward and then put the battery holder back in place.**



- 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



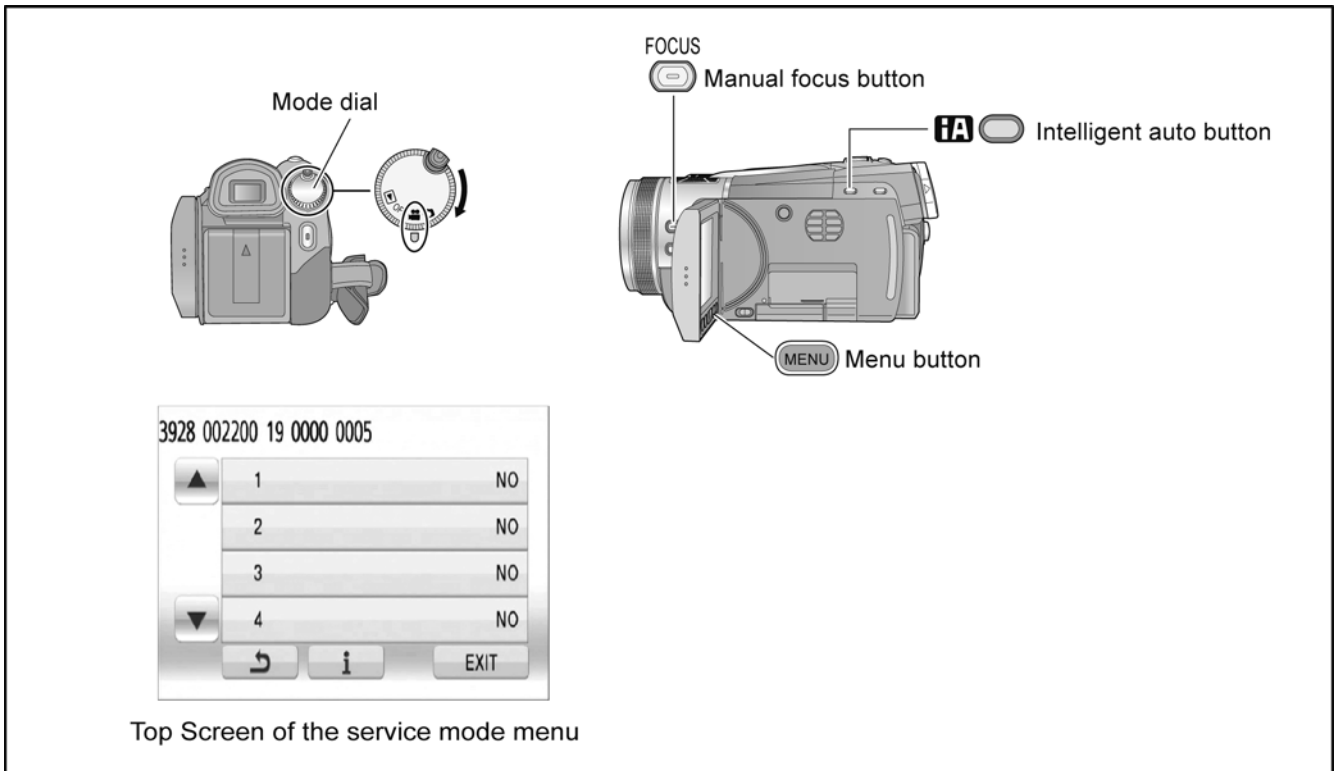
- A Remote control sensor**
Distance: Within approx. 5 m (16 feet)
Angle: Approx. 10° up and 15° down, left, and right
- The remote control is intended for indoor operation. Outdoors or under strong light, the unit may not operate properly even within the usable ranges.

6 Service Mode

1. Indication method of the service menu

Set the mode dial "Motion Picture Recording" mode.

2. While keep pressing the "Intelligent auto" button, "Manual focus" 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:

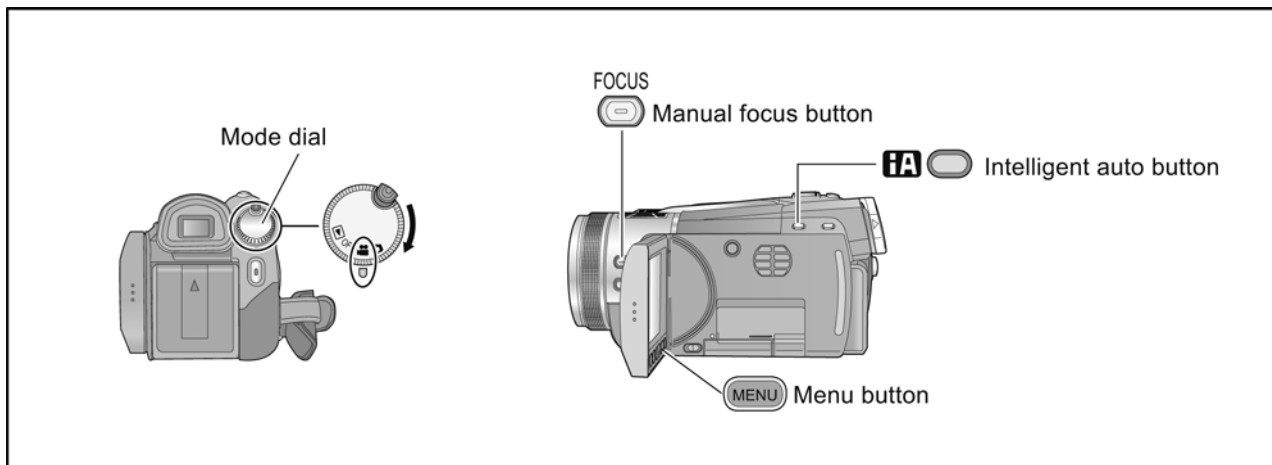
Do not using service mode except above table of Service Menu.

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

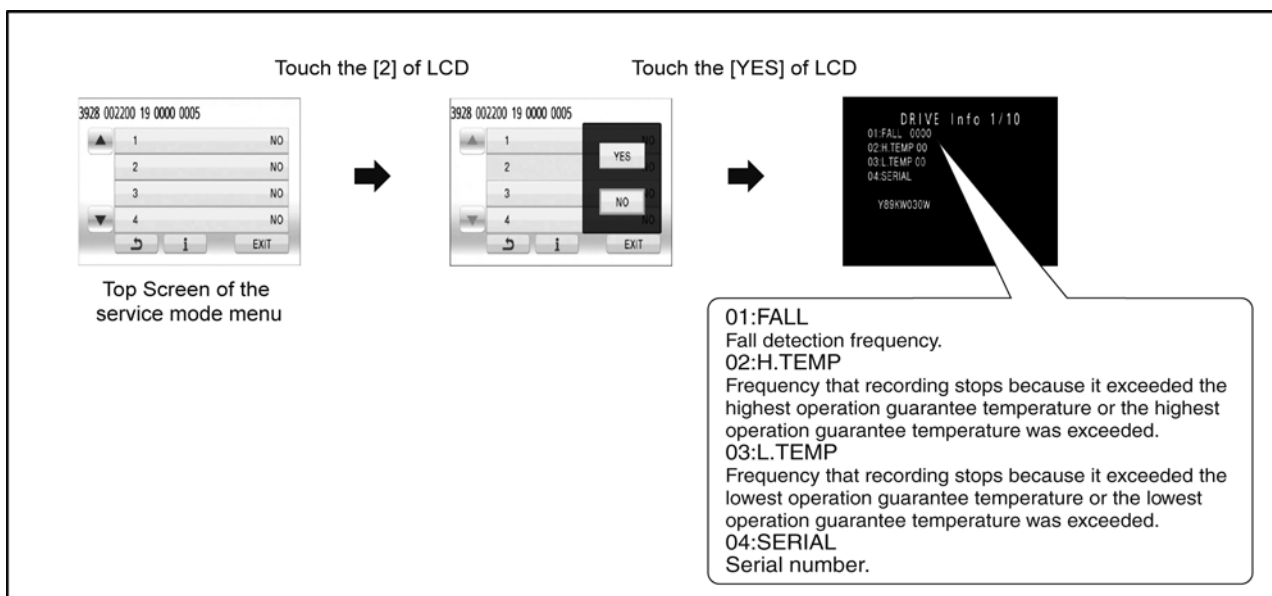
Push the menu button to end the service mode, and then POWER OFF.

6.1. Drive Information Display

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual focus" 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

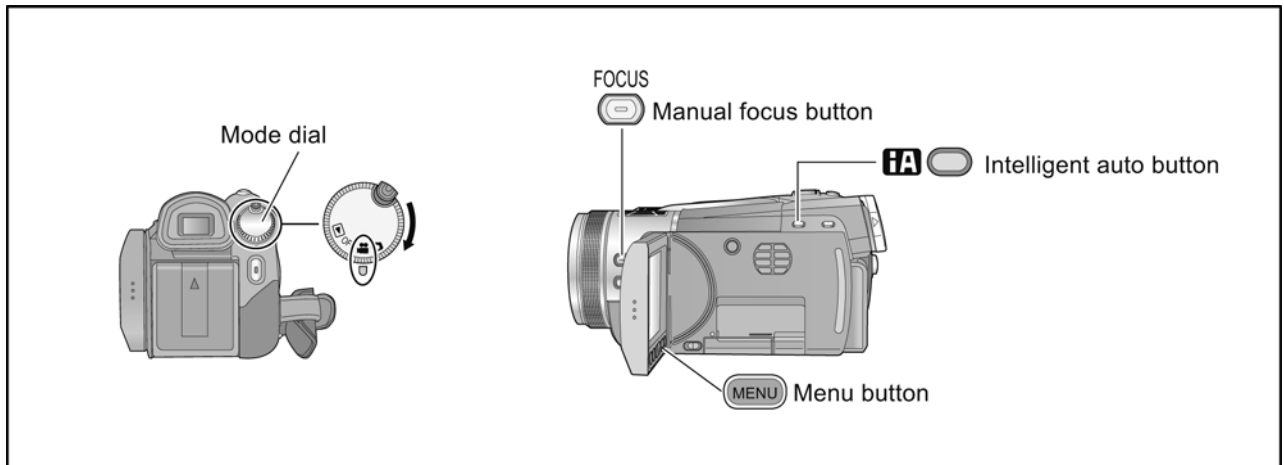
- Drive Information display

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

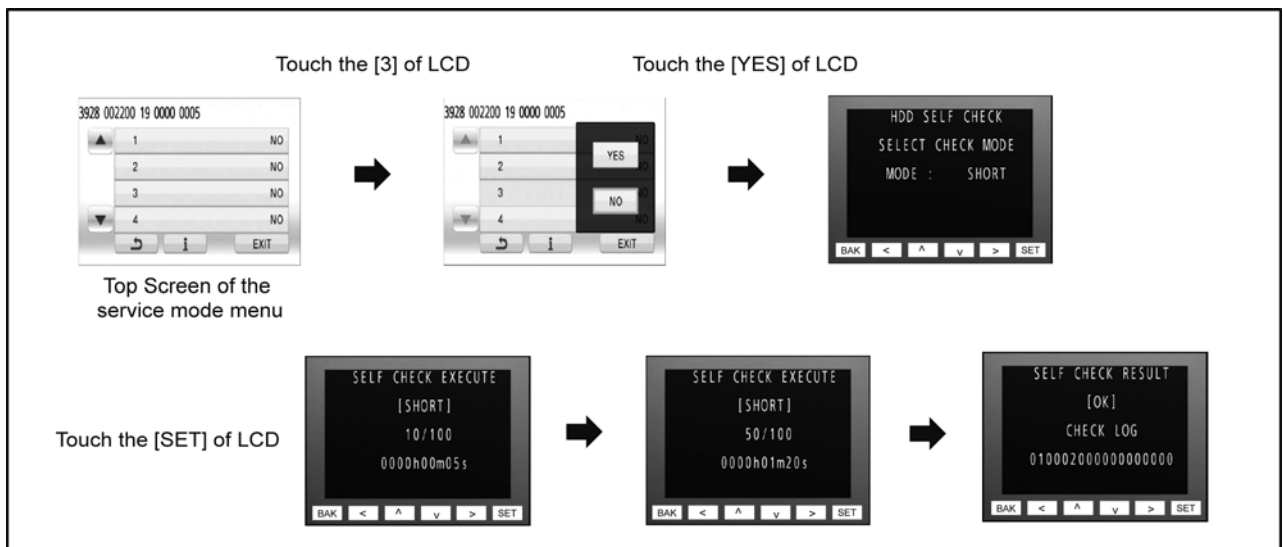
Push the menu button to end the service mode, and then POWER OFF.

6.2. HDD Self Check Execution

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual focus" 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

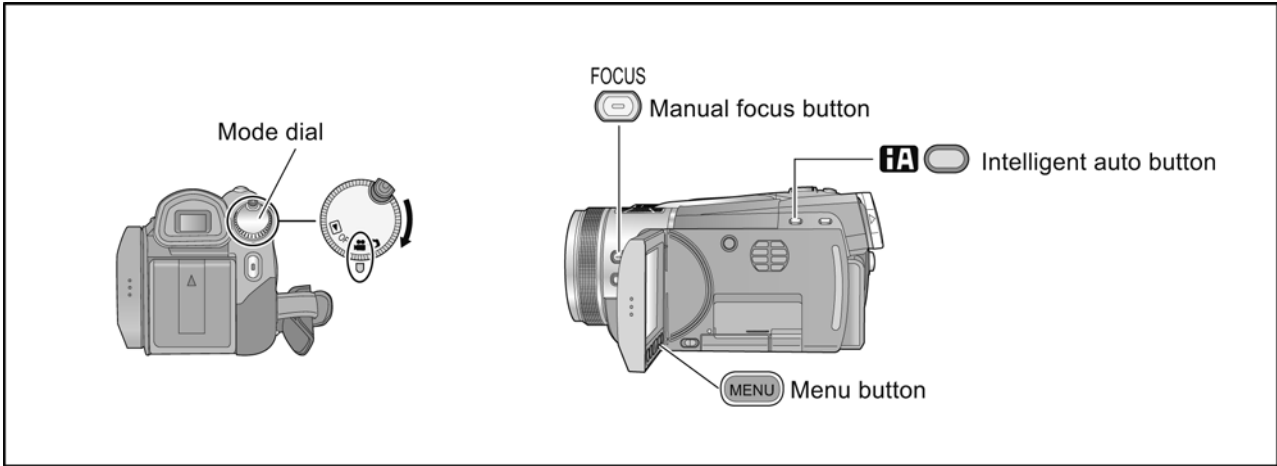


Indication contents

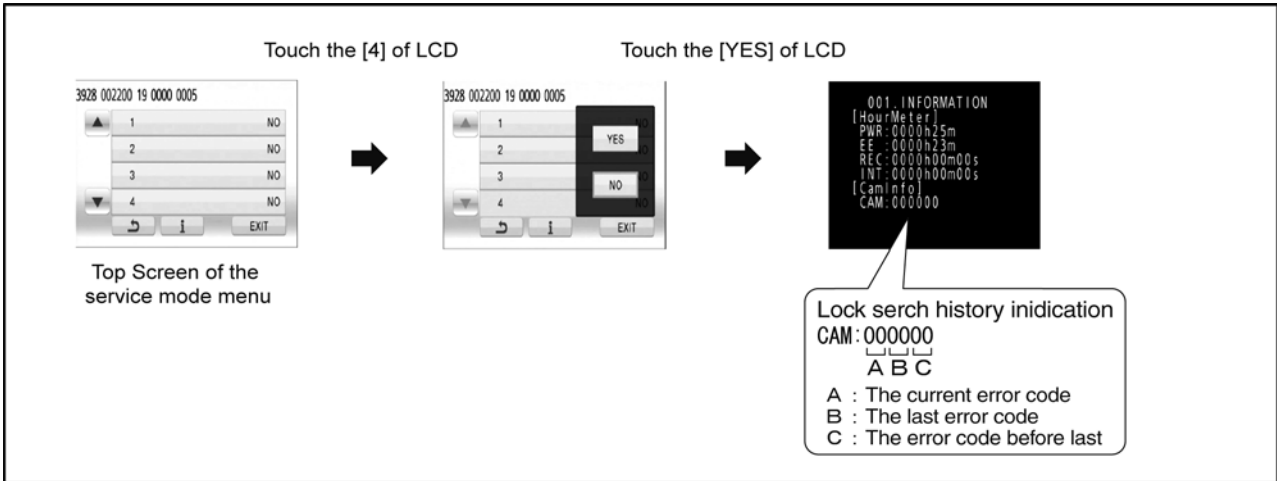
- HDD self check execution
- Display the HDD self check result information.
 Displays other than "OK" are abnormalities of HDD.
 Push the menu button to end the service mode, and then POWER OFF.

6.3. Lock Search History Indication

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual focus" 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

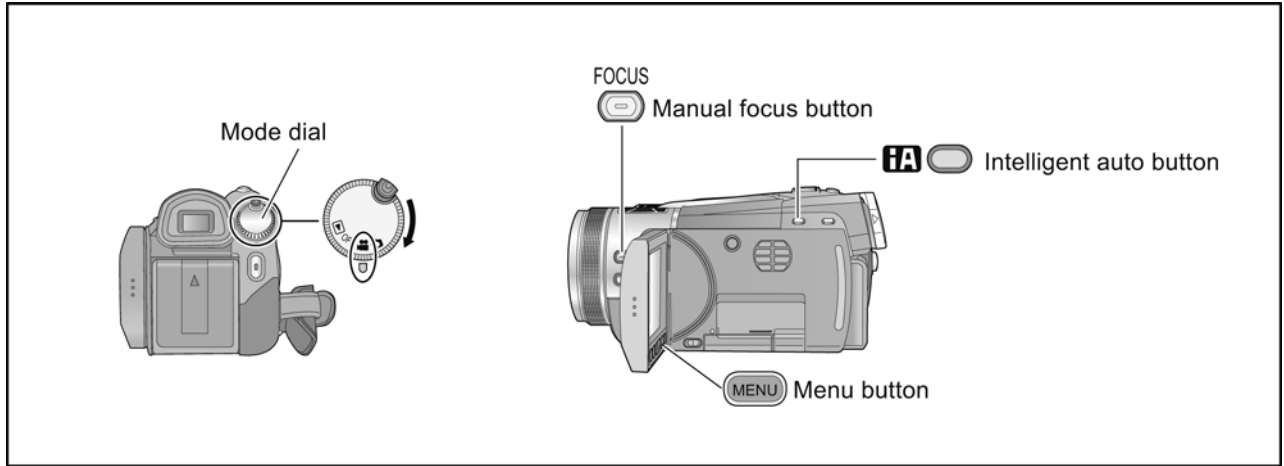
- Lock search history indication
Display the camera system error cord for three histories saved in EEPROM.
- The error cord contents which are displayed

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

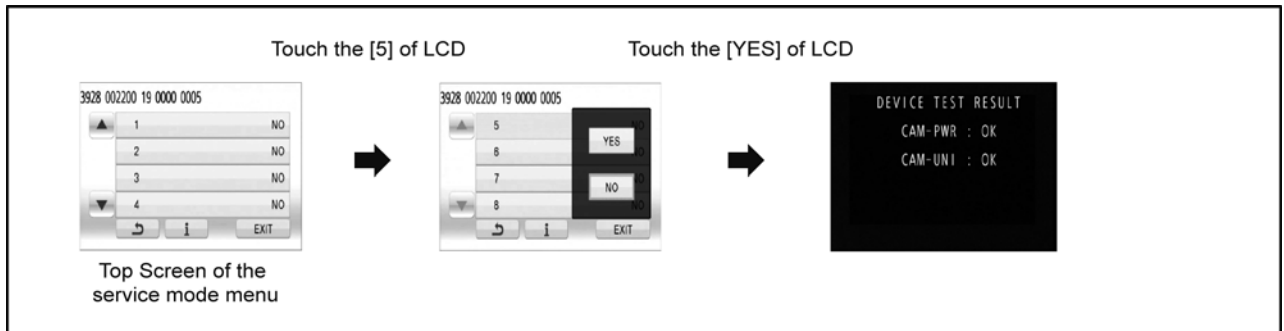
Lock search history indication is finished by POWER OFF.

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 focus" 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.

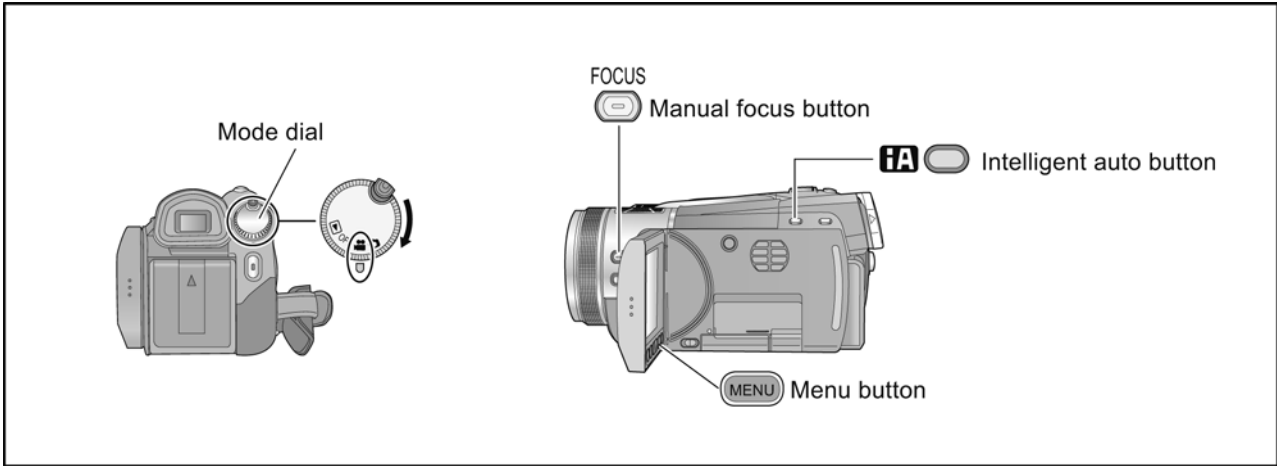
- CAM-PWR : Communication test between IC2006 to IC301
- CAM-UNI : Communication test between IC3400 to IC301

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

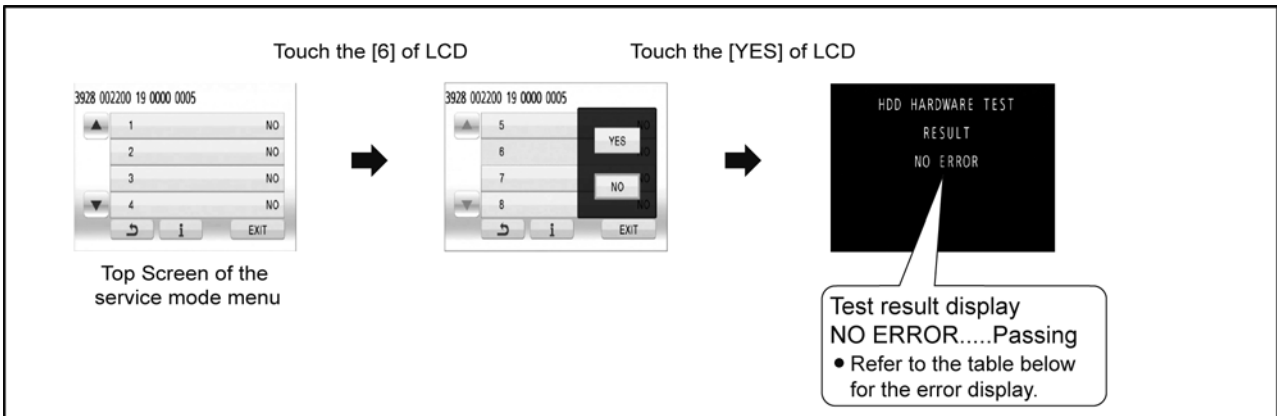
Push the menu button to end the service mode, and then POWER OFF.

6.5. HDD Hardware Test

1. Set the mode dial "Motion Picture Recording" mode.
2. While keep pressing the "Intelligent auto" button, "Manual focus" 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

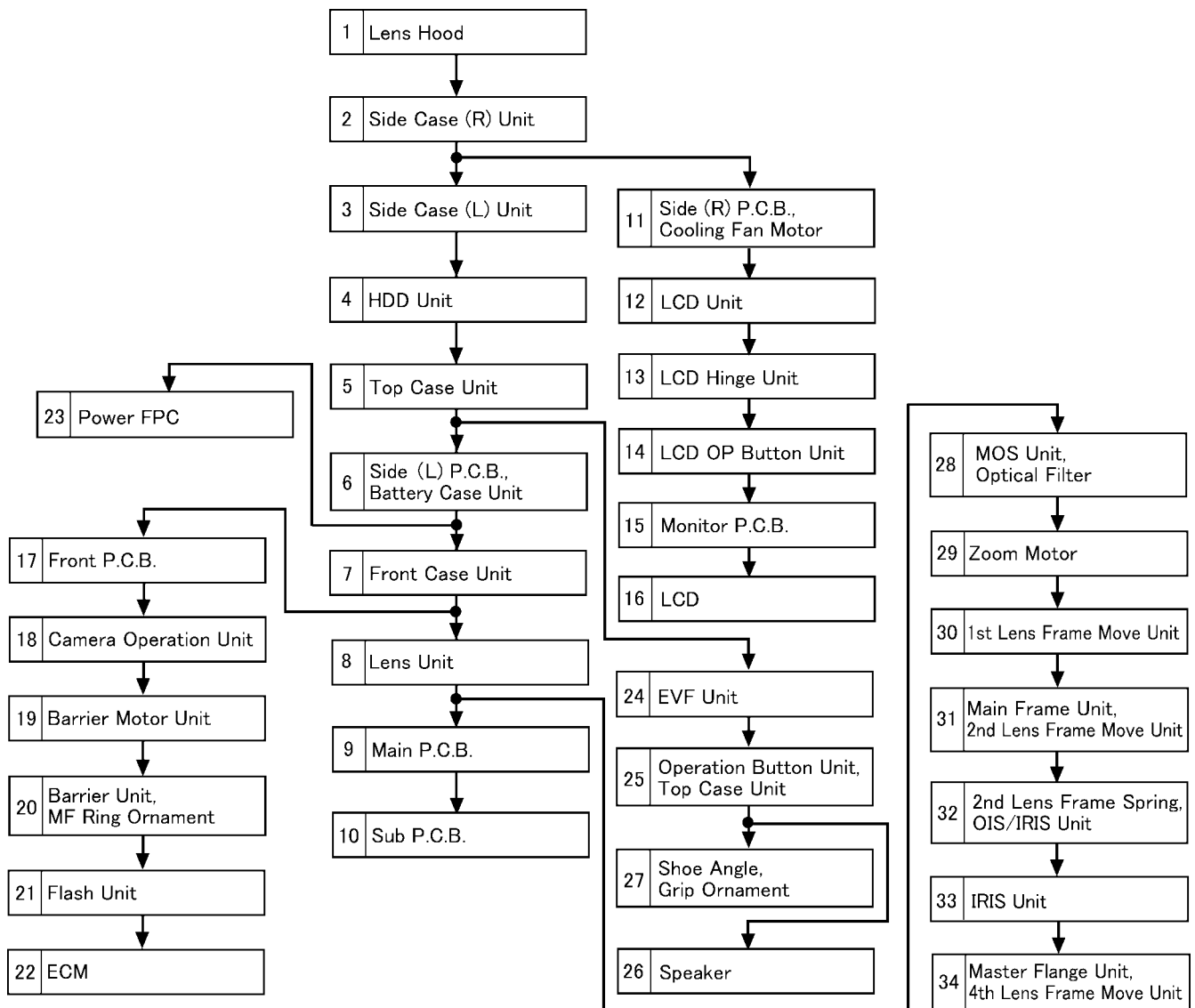
- HDD hardware test
Display the HDD hardware test result information.
- The error cord contents which are displayed

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

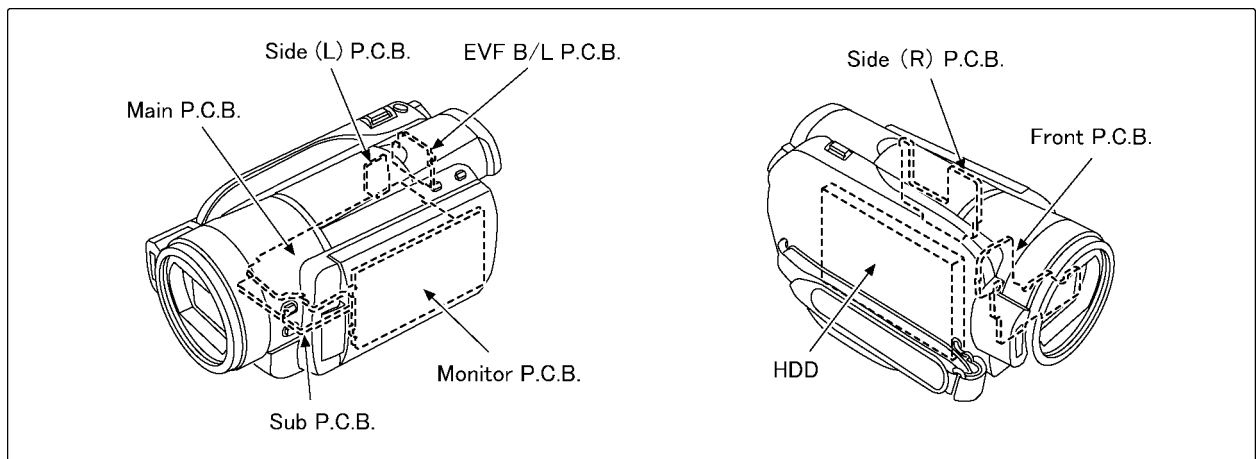
In the above table, displays other than "NO ERROR" are abnormalities of HDD.
Push the menu button to end the service mode, and then POWER OFF.

7 Disassembly and Assembly Instructions

7.1. Disassembly Flow Chart



7.2. PCB Location

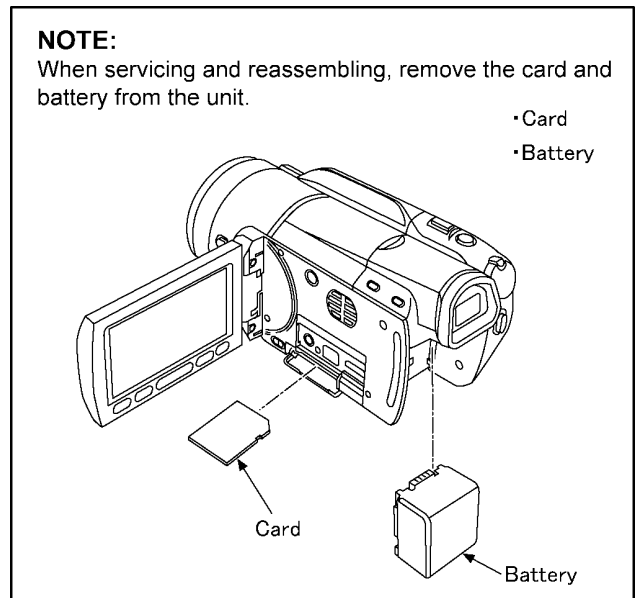


7.3. Disassembly Procedure

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)
			4 Screws (E)
			SR Cover
		Fig.D3	PS6003 (Flex) Side Case (R) Unit
3	Side Case (L) Unit	Fig.D4	6 Screws (F)
			2 Screws (G)
			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	3 Screws (H)
			1 Locking tab
			HDD Earth Frame
			1 Screw (I)
			FP851 (Flex)
			FP6006 (Flex)
			PS851 (Connector)
			1 Screw (J)
			2 Ribs
			Fig.D7
		6	Side (L) P.C.B. Battery Case Unit
PS6101 (Connector)			
Side (L) P.C.B.			
Fig.D9	1 Screw (L)		
	1 Locking tab Battery Case Unit		
7	Front Case Unit	Fig.D10	1 Screw (M)
			1 Locking tab
			P6101 (Connector)
			P6102 (Connector)
		Fig.D11	FP6403 (Flex)
			Front Case Unit
8	Lens Unit	Fig.D12	2 Screws (N)
			1 Screw (O)
		Fig.D13	PS6011 (Connector)
			FP6002 (Flex)
			Lens Unit
9	Main P.C.B.	Fig.D14	3 Screws (P)
			2 Locking tabs
			PS6002 (Flex)
			Main P.C.B.
10	Sub P.C.B.	Fig.D15	2 Screws (Q)
			Main Frame
			Main Sub FPC
			Bottom Frame
			Sub P.C.B.
11	Side (R) P.C.B. Cooling Fan Motor	Fig.D16	PS6501 (Connector)
			FP6502 (Flex)
			FP6503 (Flex)
			3 Screws (R)
			Cooling Fan Damper
			Rubber
			Side (R) P.C.B. Cooling Fan Motor

No.	Item	Fig	Removal			
12	LCD Unit	Fig.D17	2 Screws (S)			
			Hinge Support Plate			
			SR Earth Board (B)			
			LCD Detection Lever			
			2 Locking tabs			
			LCD Unit			
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)			
			2 Locking tabs			
		Fig.D20	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		
		Fig.D22	Reflection Sheet			
			Light Panel			
			Diffusion Sheet			
			Prism Sheet (B)			
16	LCD	Fig.D23	LCD Sheet Angle			
			LCD Case (B)			
			LCD			
17	Front P.C.B.	Fig.D24	1 Locking tab			
			Sensor Window			
			2 Flash Sheets			
			2 Screws (V)			
			Wire Hold Piece			
			FP4801 (Flex)			
			FP6400 (Flex)			
			FP6402 (Flex)			
			FP6404 (Flex)			
Front P.C.B.						
18	Camera Operation Unit	Fig.D25	1 Screw (W)			
			1 Screw (X)			
			1 Screw (Y)			
			Camera Operation Unit			
19	Barrier Motor unit	Fig.D26	1 Locking tab			
			Front Angle (L)			
			1 Screw (Z)			
			Barrier Switch Lever			
			Barrier Switch Lever Spring			
			Barrier Motor Unit			
			Fig.D27	Note (When Installing)		
			20	Barrier Unit MF Ring Ornament	Fig.D28	2 Screws (a)
						1 Screw (b)
		Front Earth Plate				
Lens Damper						
Barrier Unit MF Ring Ornament						
21	Flash Unit	Fig.D29	1 Locking tab			
			Flash Cover			
			Flash Unit			

No.	Item	Fig	Removal			
22	ECM	Fig.D30	1 Screw (c)			
			1 Screw (d)			
			Front Angle Top			
		Fig.D31	Front Ornament			
			Mic Cushion (A)			
			Mic Cushion (B)			
Mic Cushion (C)						
23	Power FPC	Fig.D32	Battery Terminal Barrier			
			2 Screws (e)			
			1 Screw (f)			
			Rear Frame B			
			1 Screw (g)			
			Rear Frame A			
			2 Locking tabs			
			Power FPC			
			24	EVF Unit	Fig.D33	2 Screws (h)
						1 Locking tab
EVF Cover						
1 Screw (i)						
EVF Unit						
25	Operation Button Unit Top Case Unit	Fig.D34				1 Screw (j)
			1 Rib			
			Operation Button Unit			
			Top Case Unit			
26	Speaker	Fig.D35	2 Screws (k)			
			Top Plate			
			Speaker			
27	Shoe Angle Grip Ornament	Fig.D36	1 Screw (l)			
			3 Screws (m)			
			Ring Ornament			
			Top Frame			
			Grip Frame			
		Fig.D37	3 Screws (n)			
			Shoe Angle			
			Shoe Cover			
			Top Piece			
			Grip Ornament			
28	MOS Unit Optical Filter	Fig.D38	2 Screws (o)			
			MOS Unit			
			Optical Filter			
29	Zoom Motor	Fig.D39	4 Screws (p)			
			9 Ribs			
		Fig.D40	Solder (6 points)			
			2 Screws (q)			
			Zoom Motor			
30	1st Lens Frame Move Unit	Fig.D41	3 Screws (r)			
			1st Lens Frame Move Unit			
31	Main Frame Unit 2nd Lens Frame Move Unit	Fig.D42	3 Screws (s)			
			Main Frame Unit			
			2nd Lens Frame Move Unit			
32	2nd Lens Frame Spring OIS/IRIS Unit	Fig.D43	2nd Lens Frame Spring			
			OIS/IRIS Unit			
33	IRIS Unit	Fig.D44	1 Screw (t)			
			Solder (12 points)			
			OIS Unit			
			IRIS Unit			
34	Master Flange Unit 4th Lens Frame Move Unit	Fig.D45	2 Side Yokes			
			1 F Guide Pole			
			2 Guide Poles			
			Master Flange Unit			
			4th Lens Frame Move Unit			



7.3.1. Removal of the Lens Hood

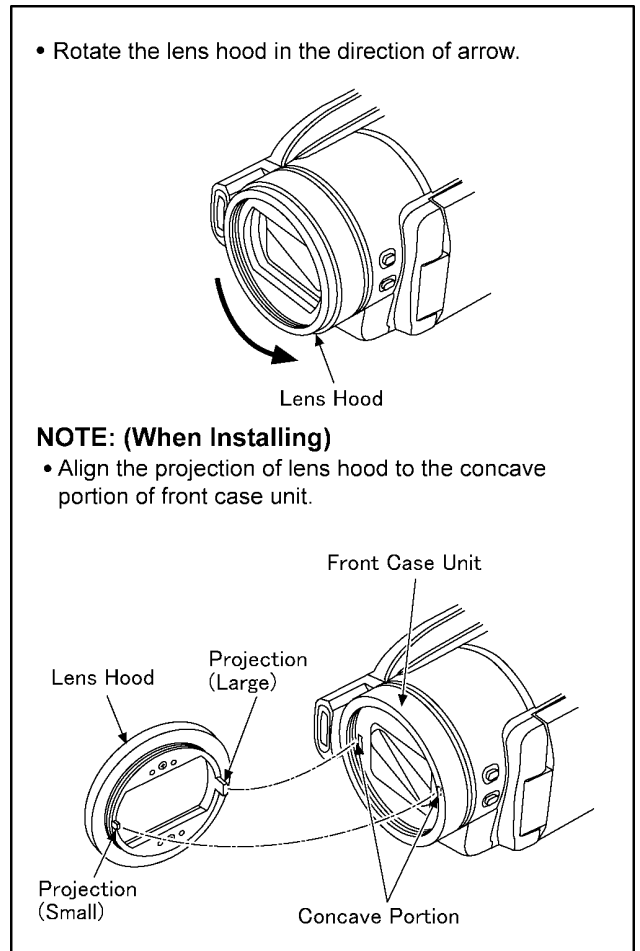


Fig.D1

7.3.2. Removal of the Side Case (R) Unit

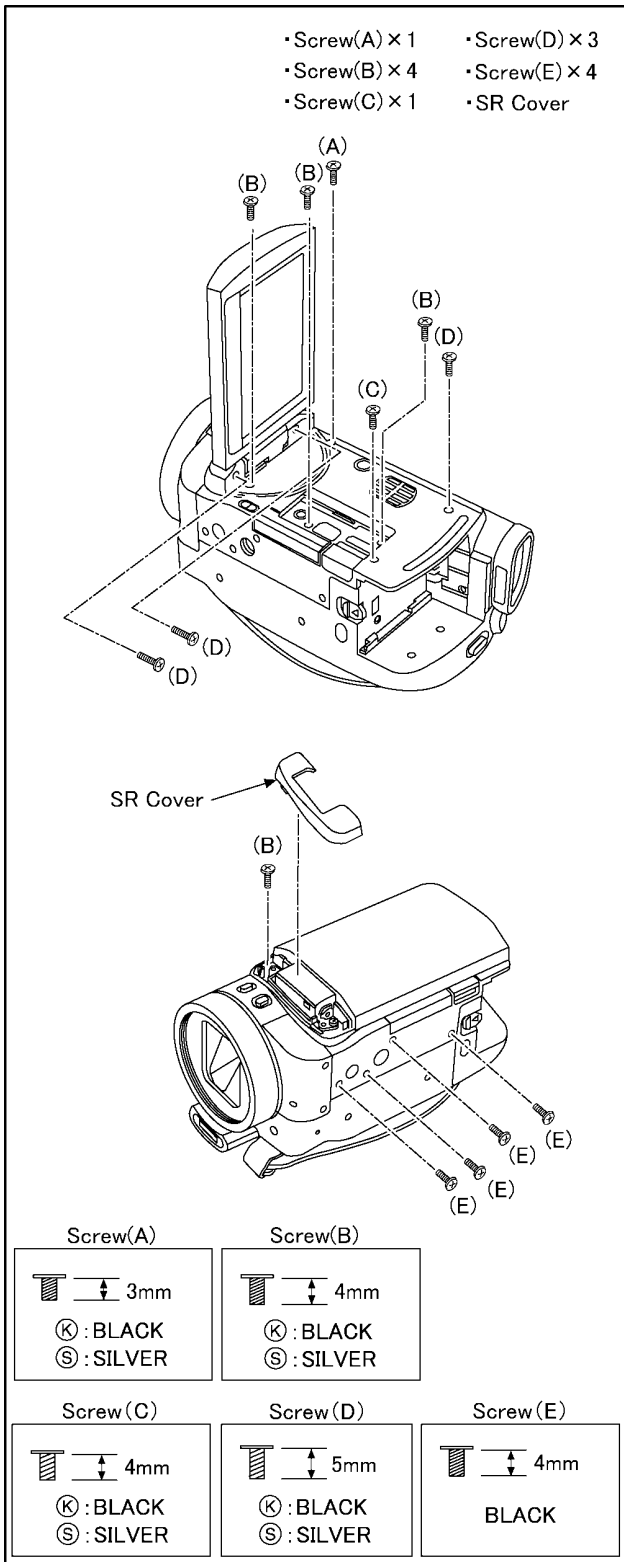


Fig.D2

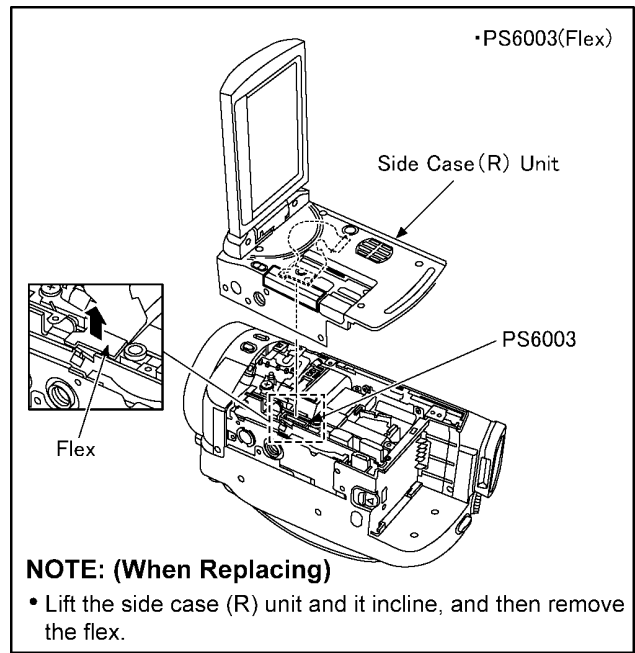


Fig.D3

7.3.3. Removal of the Side Case (L) Unit

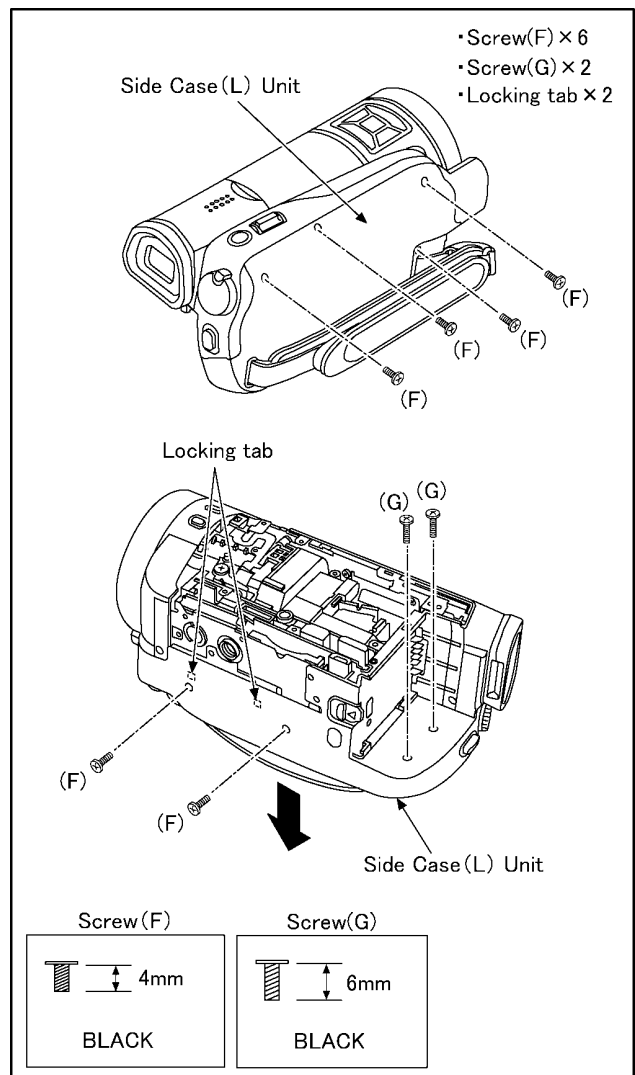


Fig.D4

7.3.4. Removal of the HDD Unit

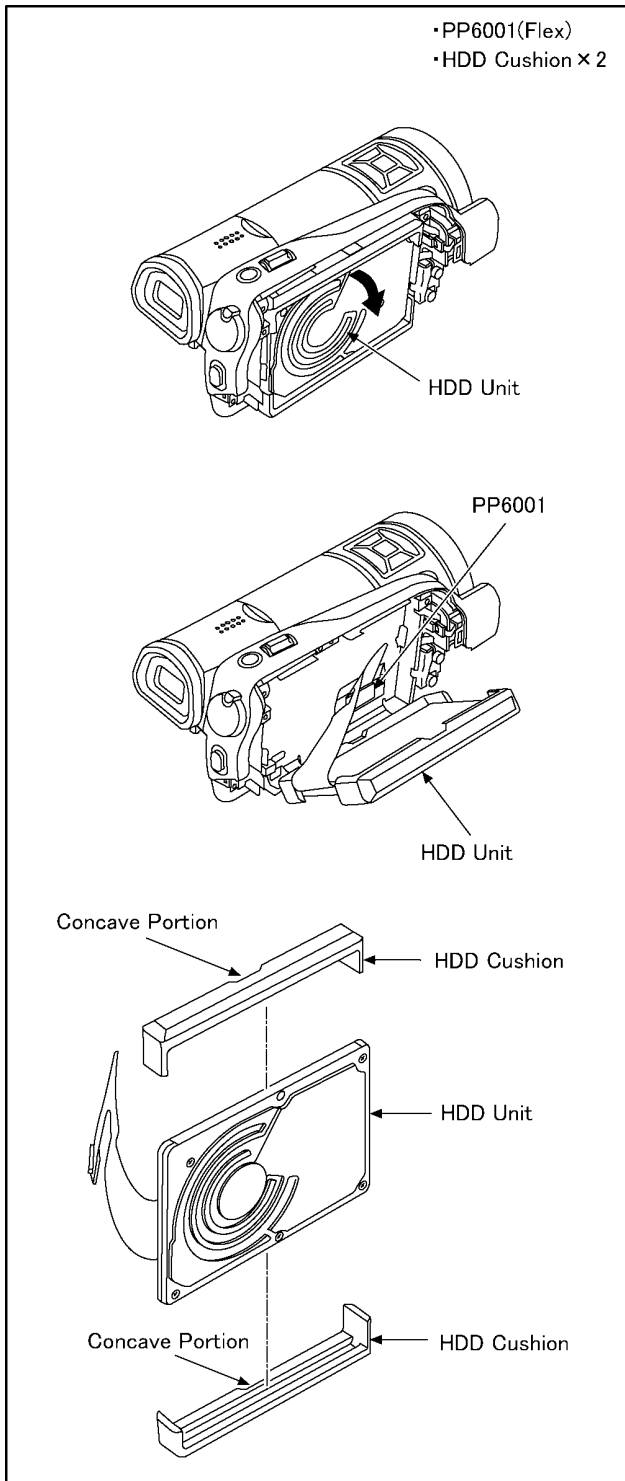


Fig.D5

7.3.5. Removal of the Top Case Unit

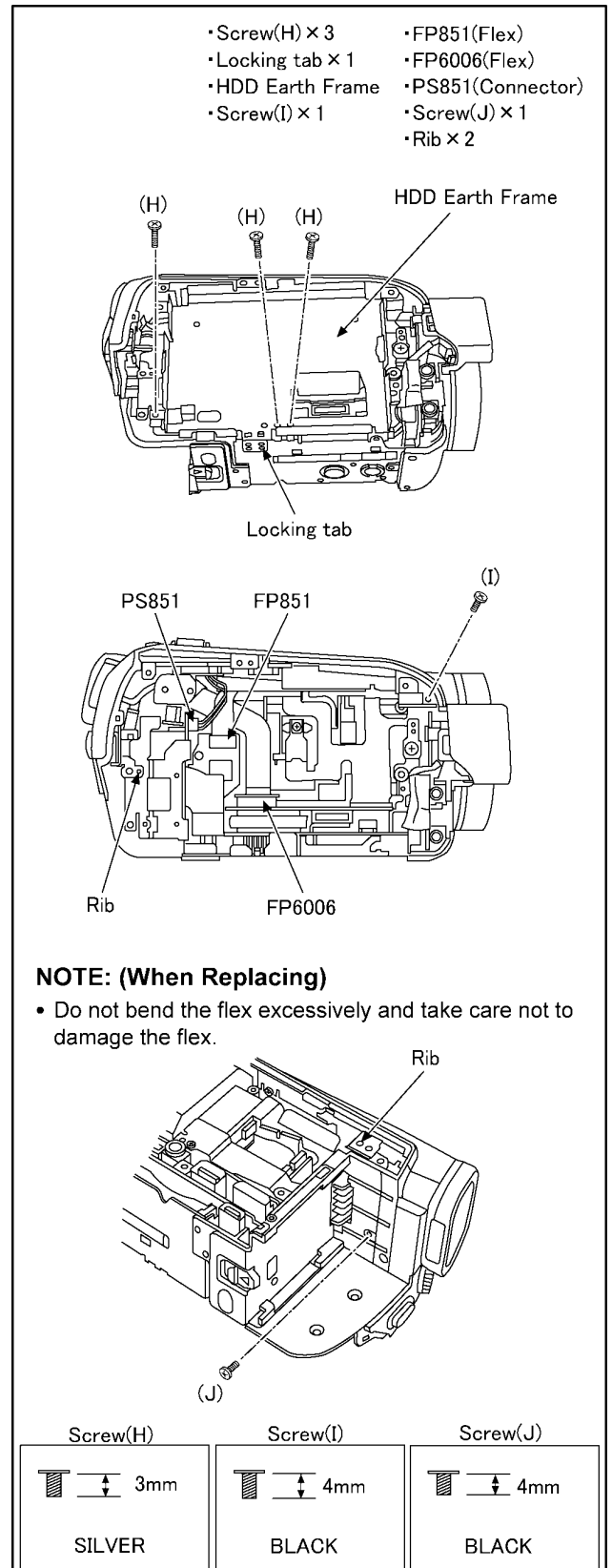


Fig.D6

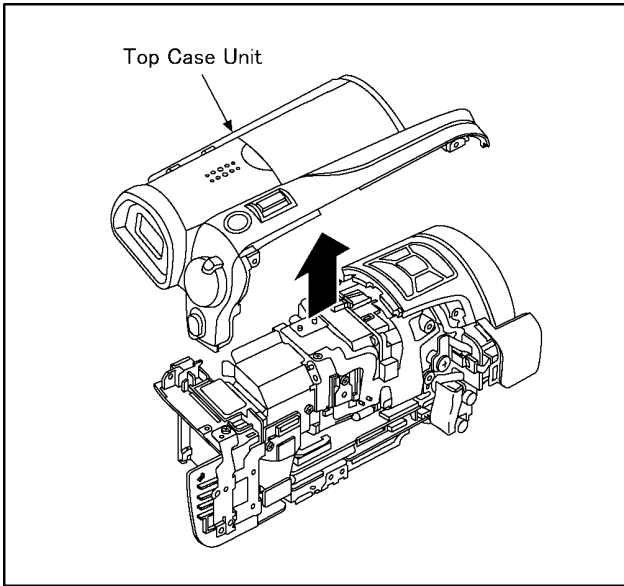


Fig.D7

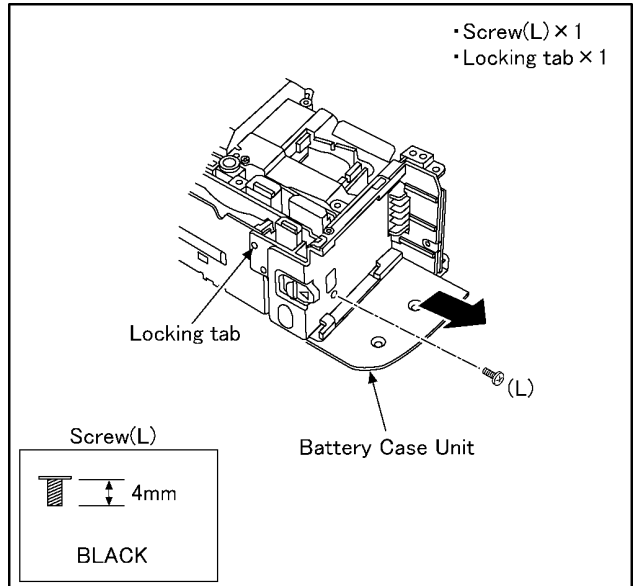


Fig.D9

7.3.6. Removal of the Side (L) P.C.B. and Battery Case Unit

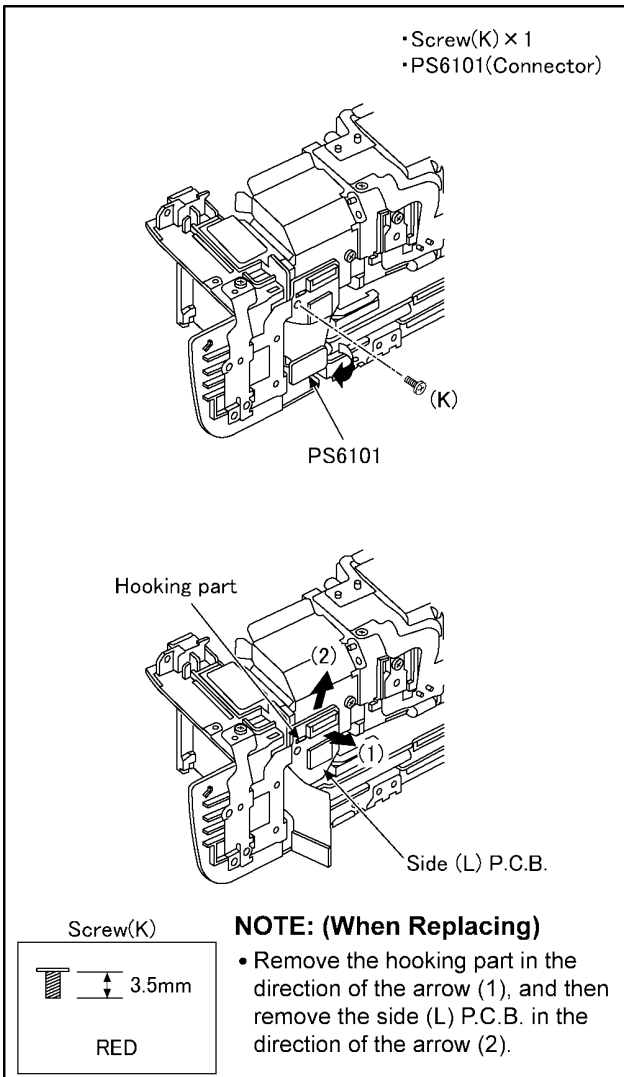


Fig.D8

7.3.7. Removal of the Front Case Unit

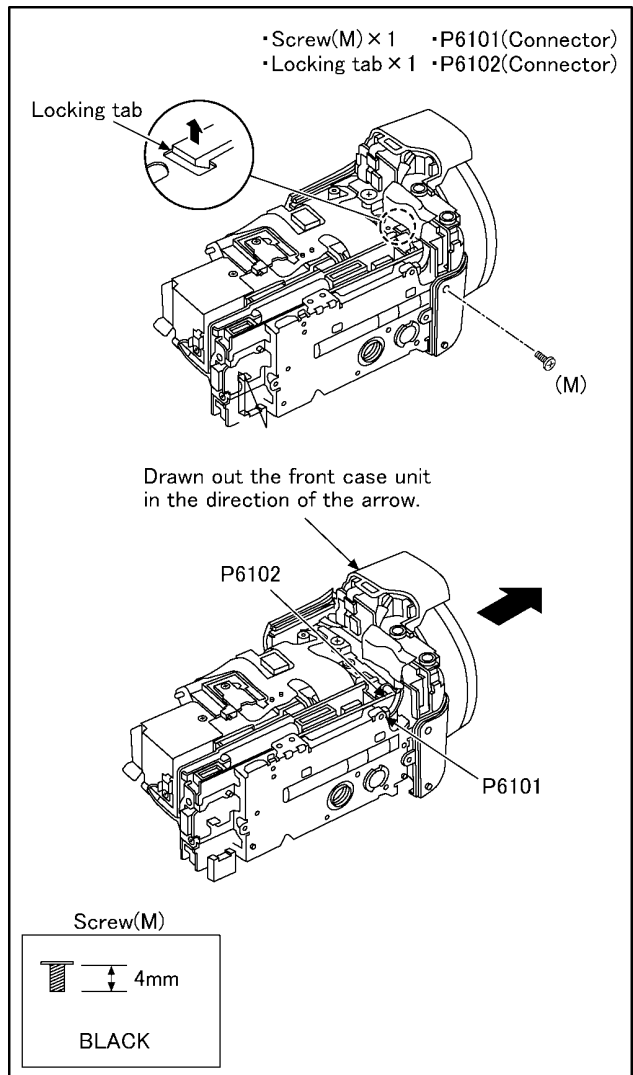


Fig.D10

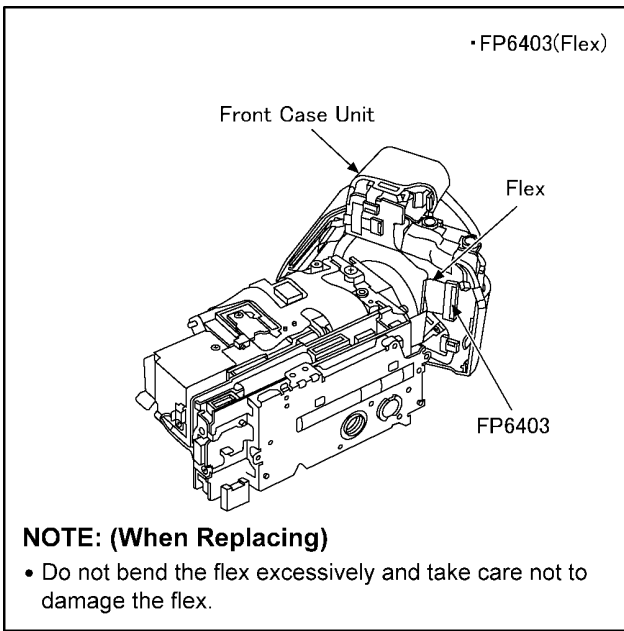


Fig.D11

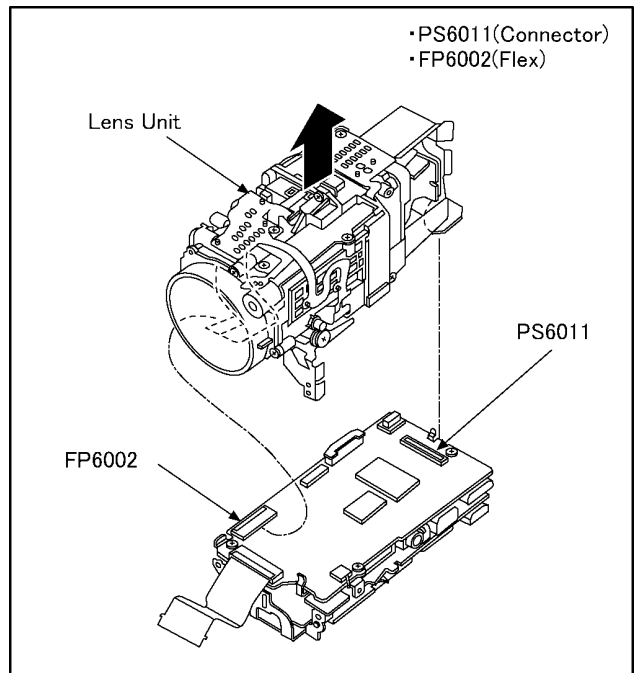


Fig.D13

7.3.8. Removal of the Lens Unit

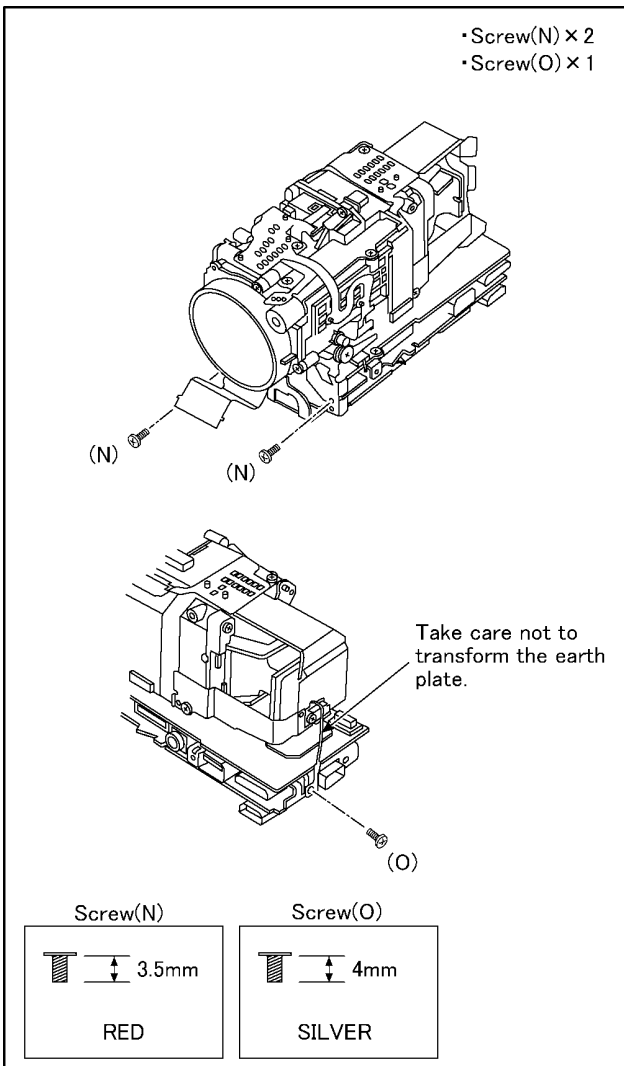


Fig.D12

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

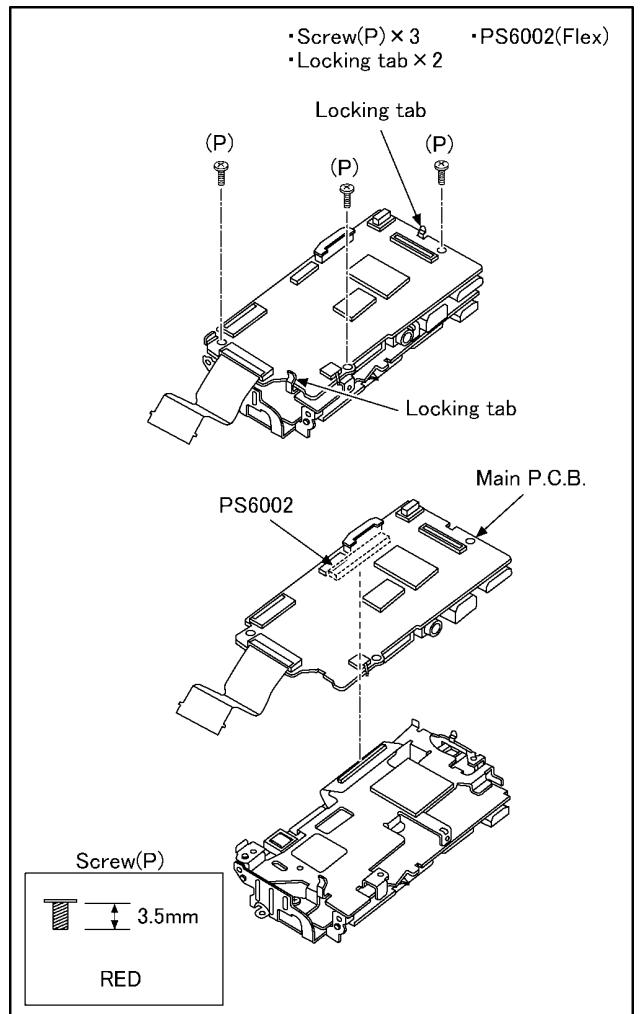


Fig.D14

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

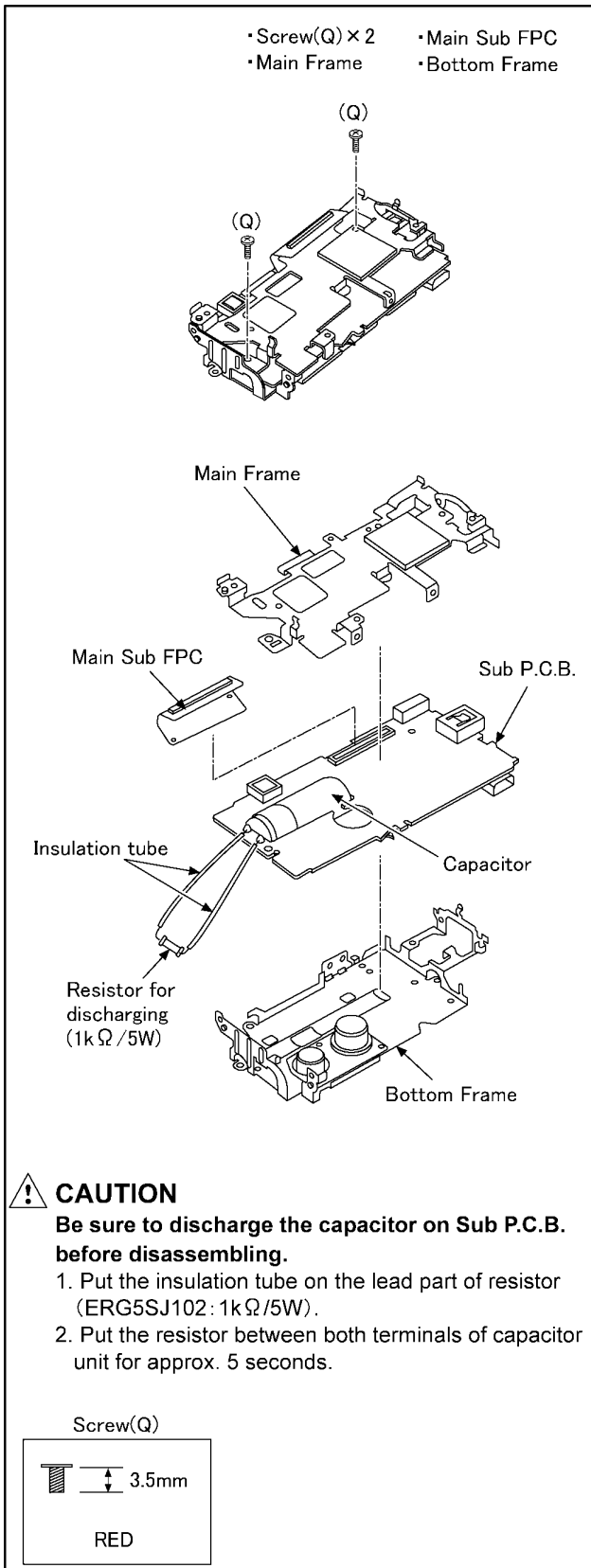


Fig.D15

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

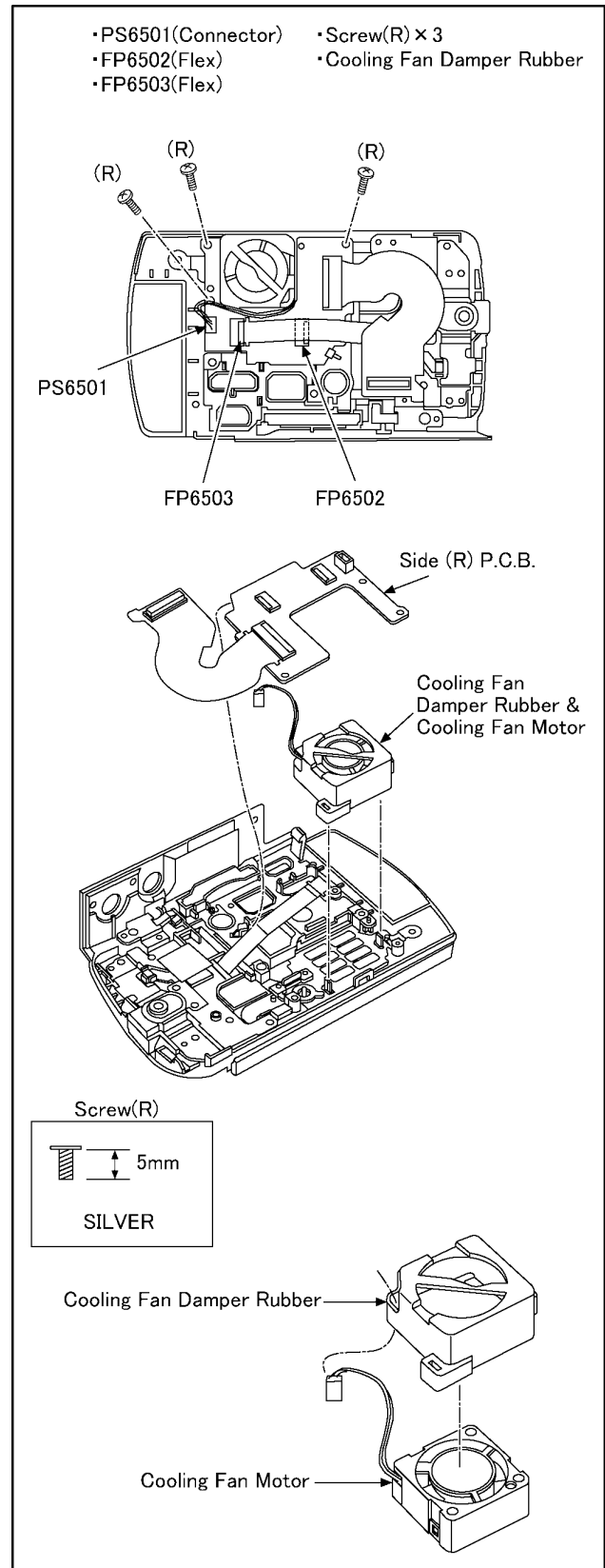


Fig.D16

7.3.12. Removal of the LCD Unit

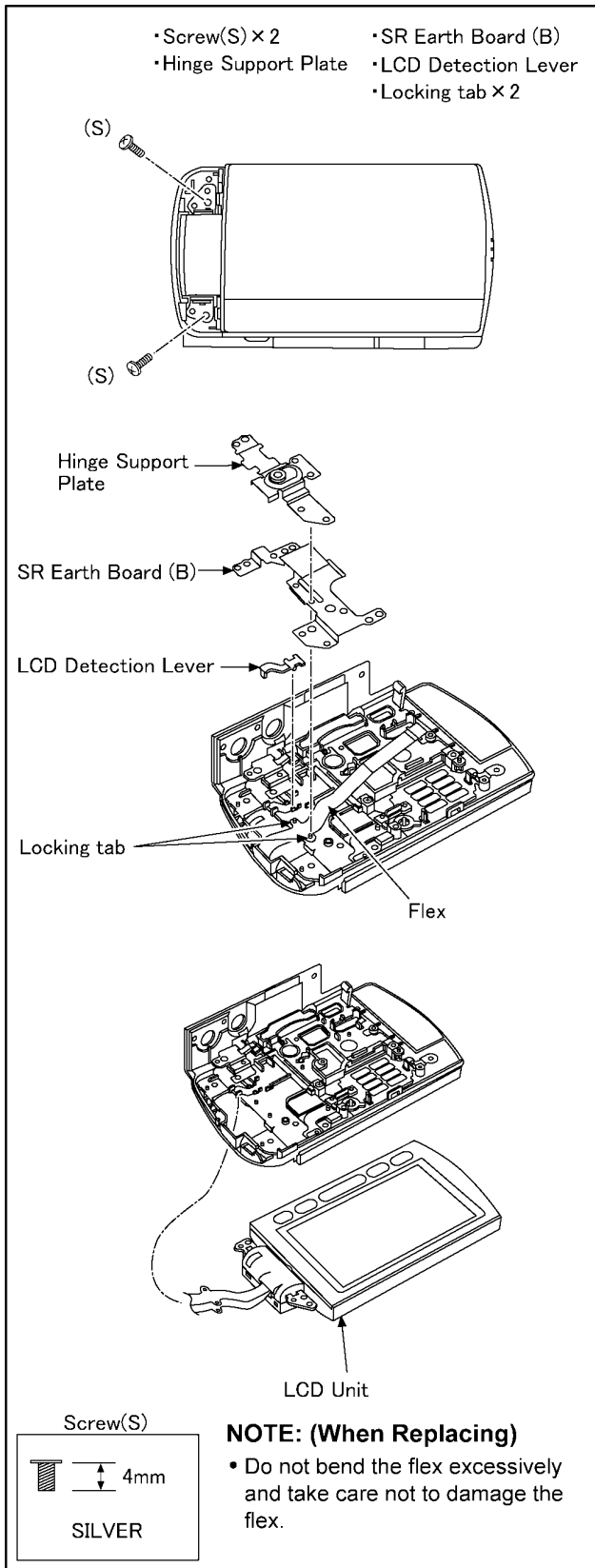


Fig.D17

7.3.13. Removal of the LCD Hinge Unit

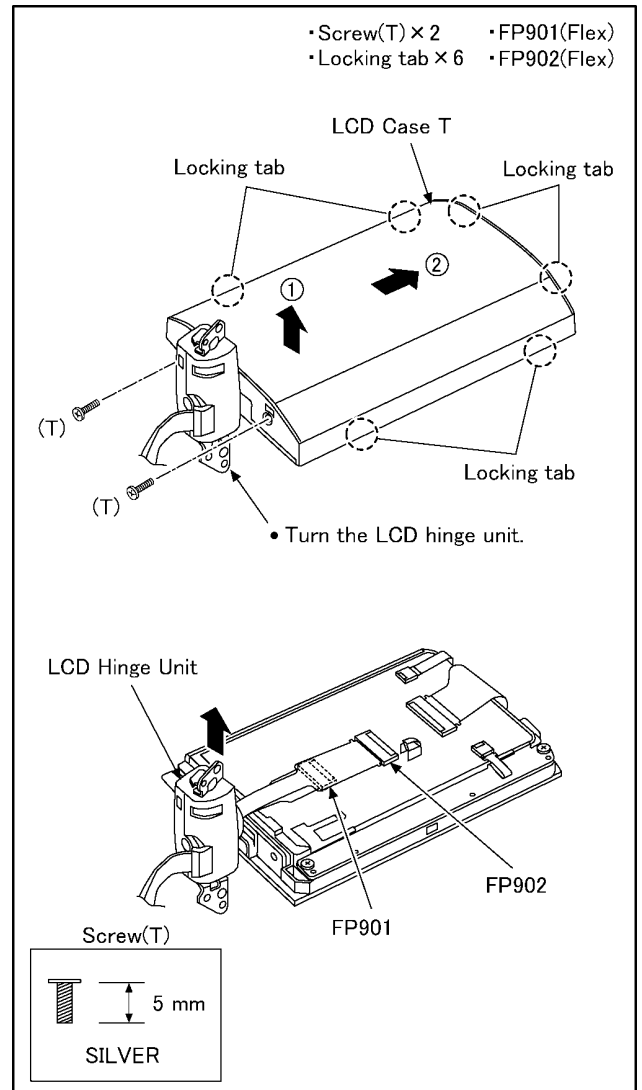


Fig.D18

7.3.14. Removal of the LCD OP Button Unit

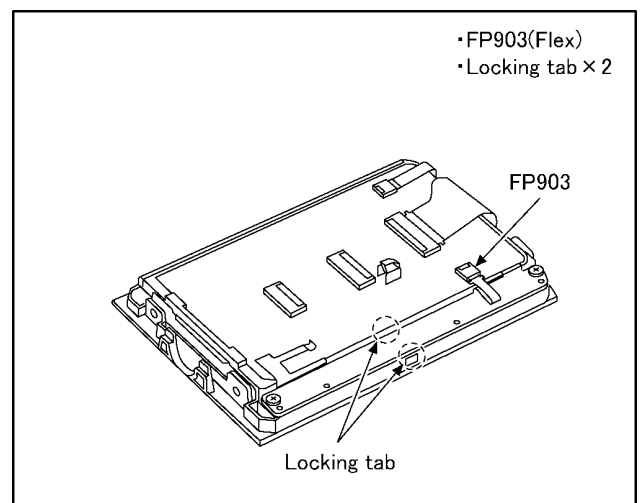


Fig.D19

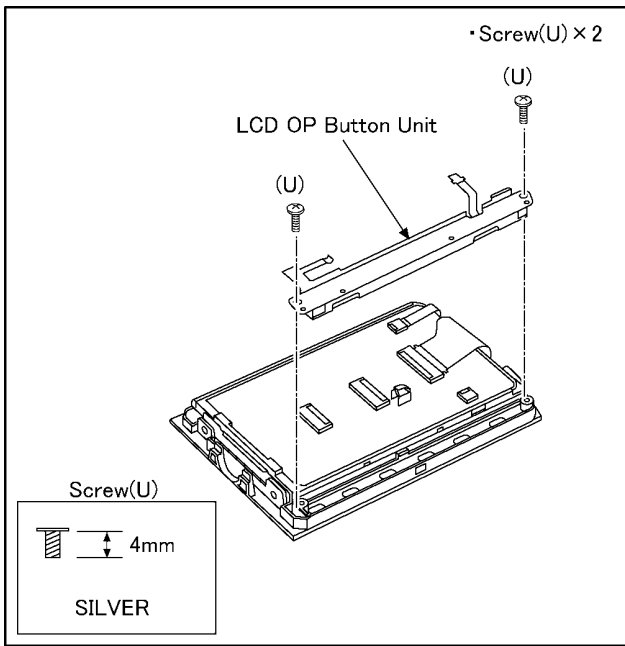


Fig.D20

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

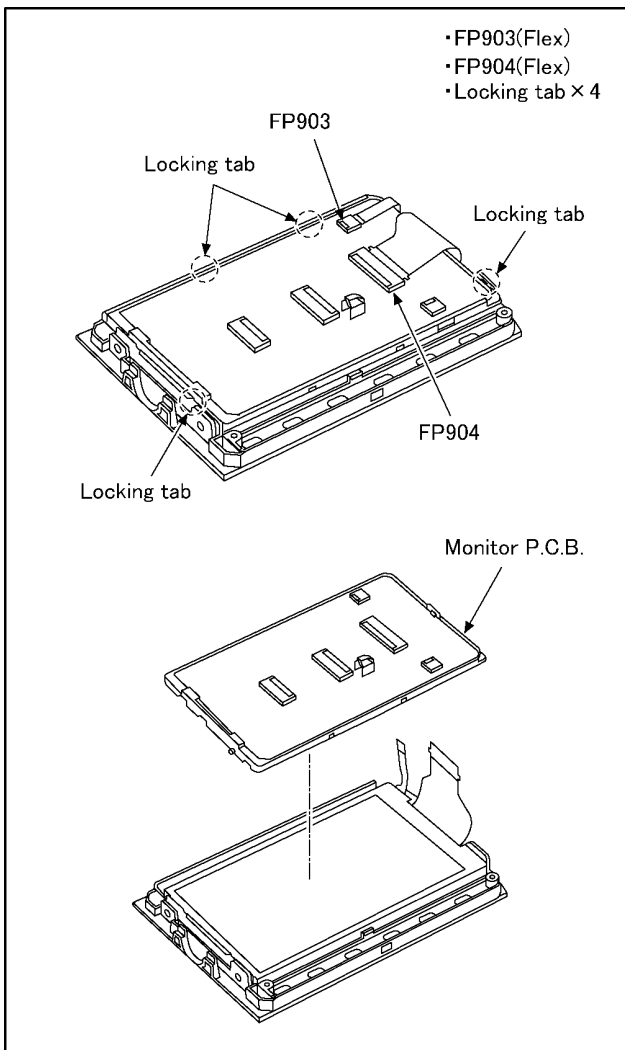


Fig.D21

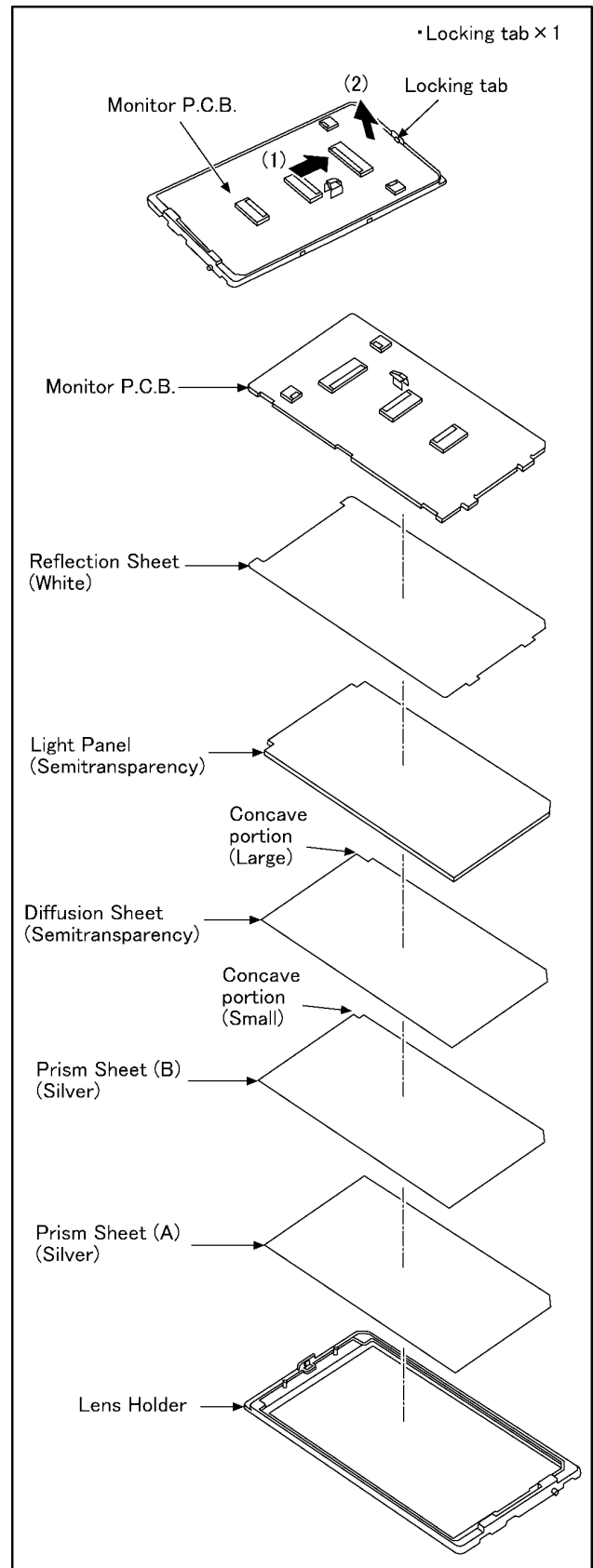


Fig.D22

7.3.16. Removal of the LCD

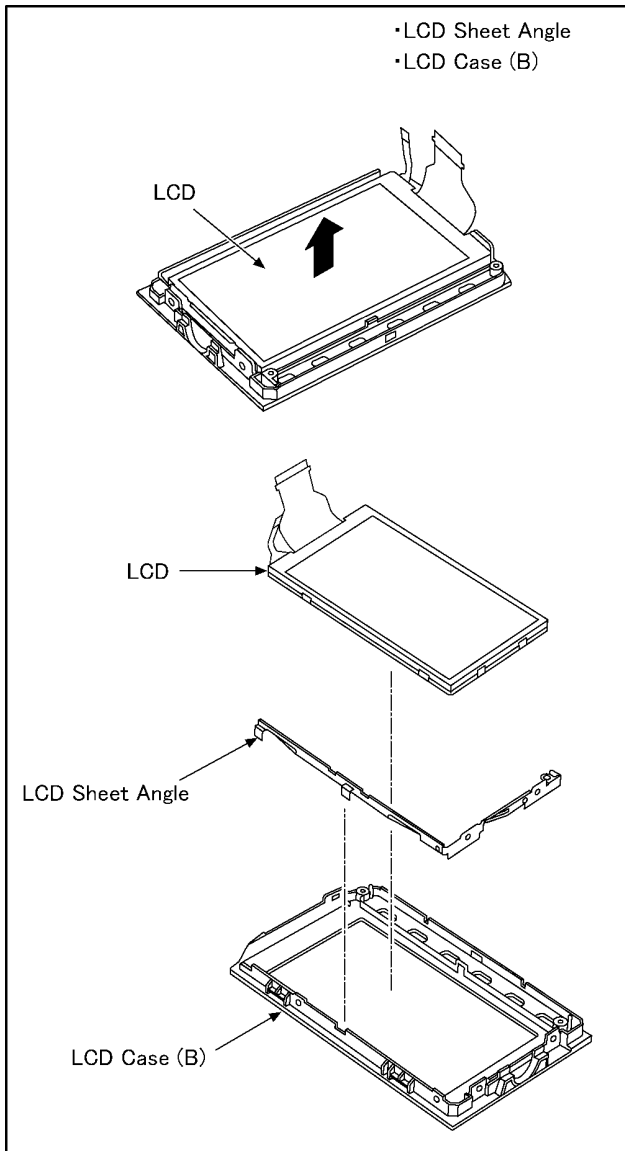


Fig.D23

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

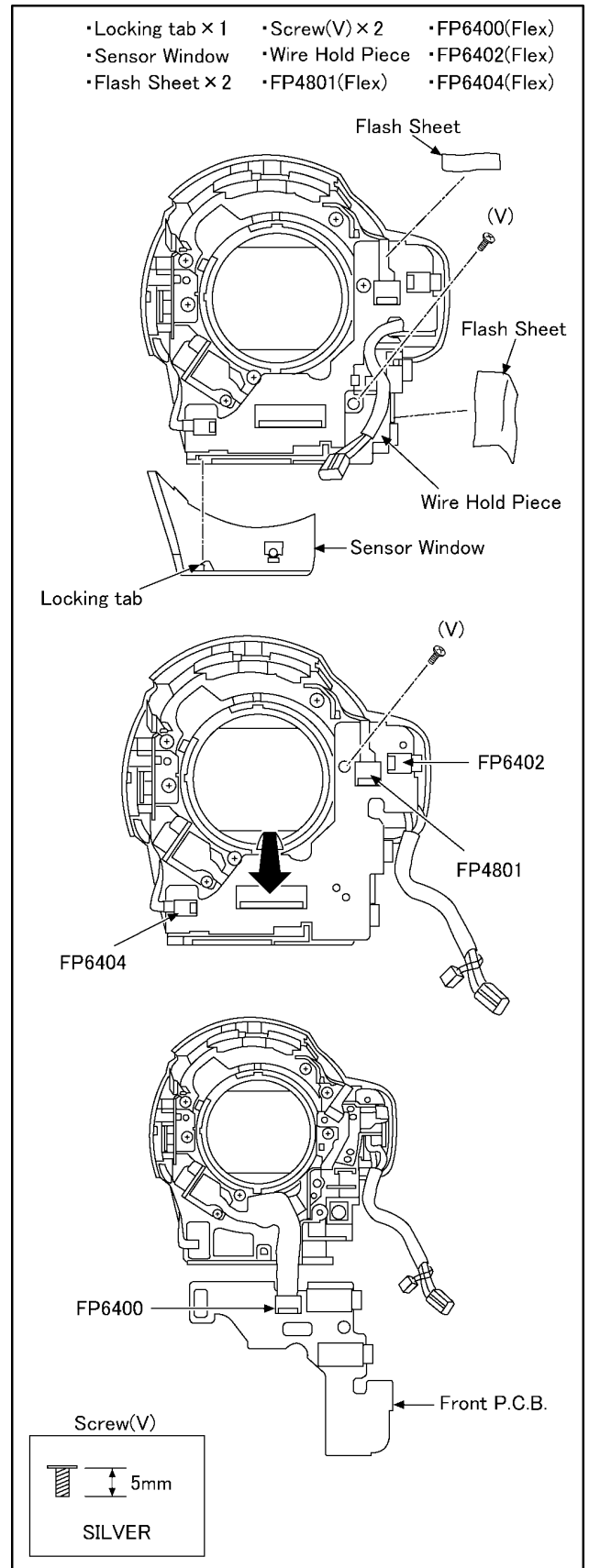


Fig.D24

7.3.18. Removal of the Camera Operation Unit

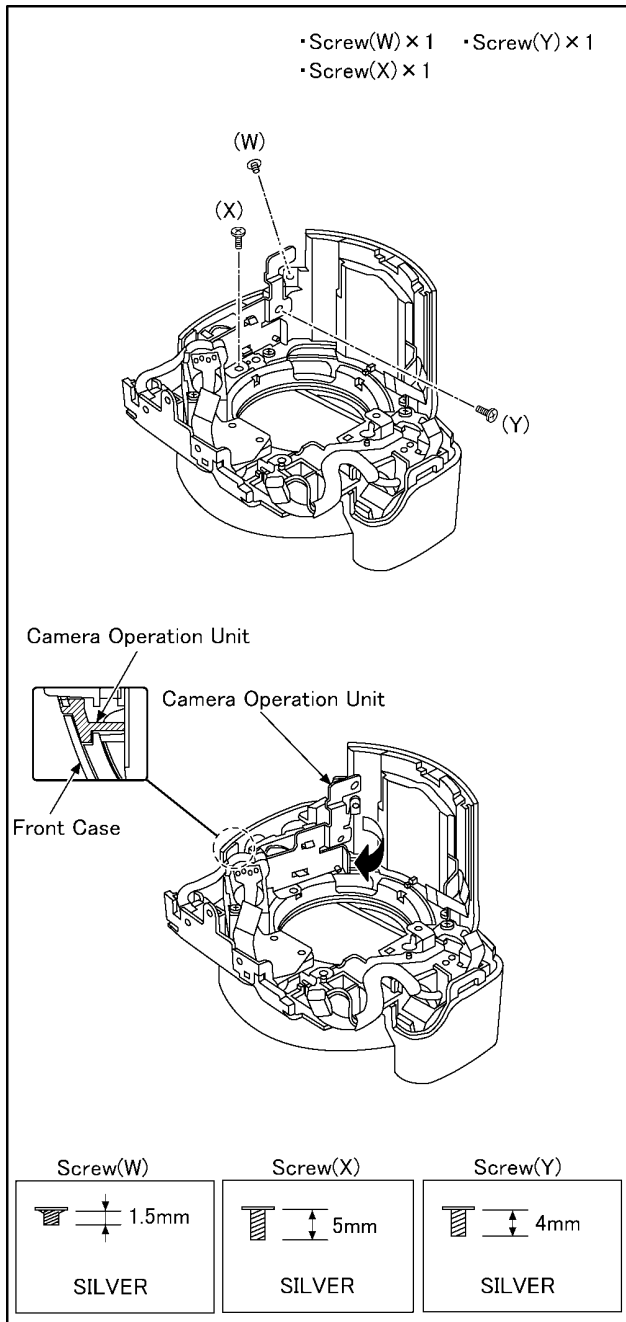


Fig.D25

7.3.19. Removal of the Barrier Motor Unit

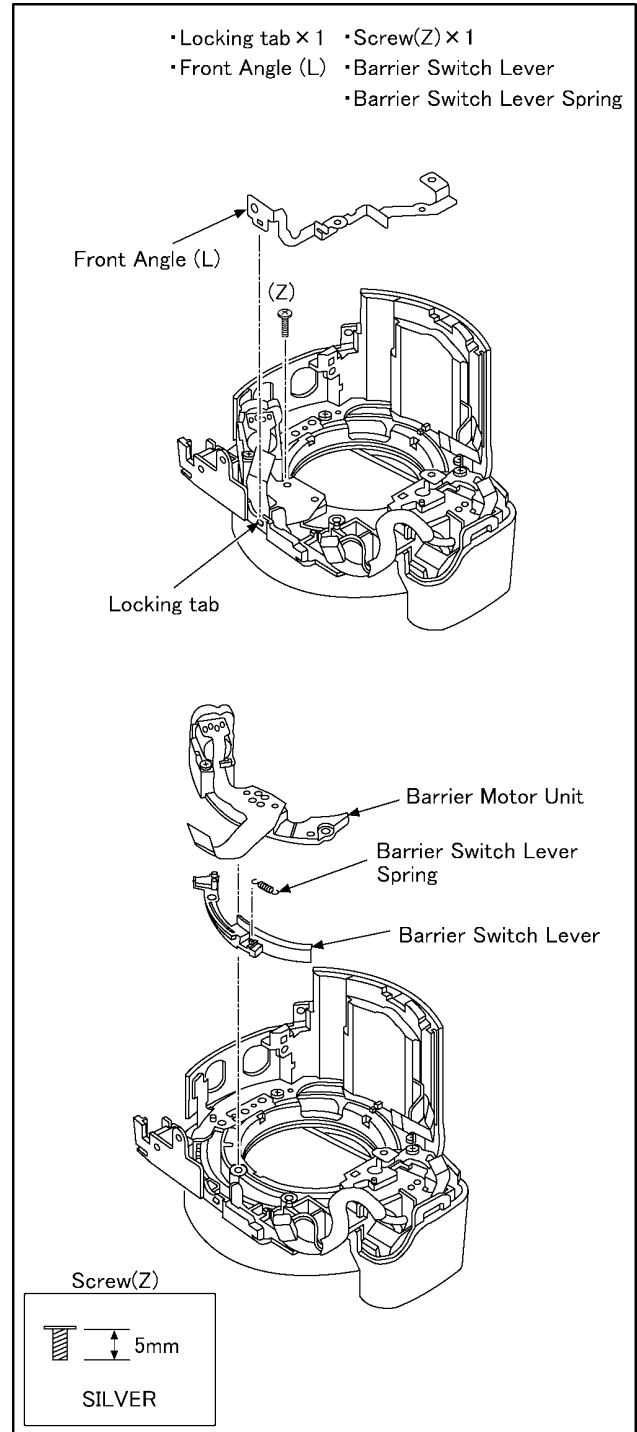
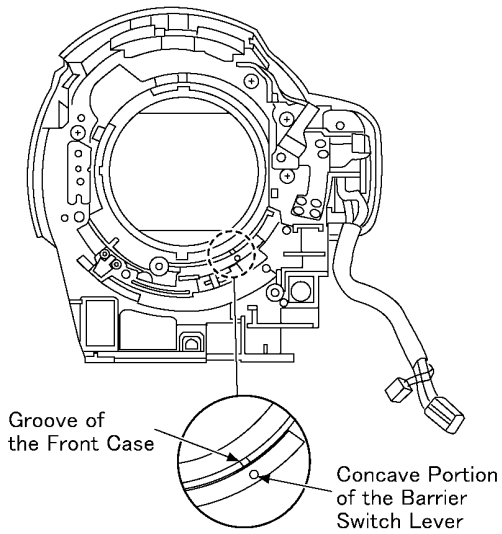


Fig.D26

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.

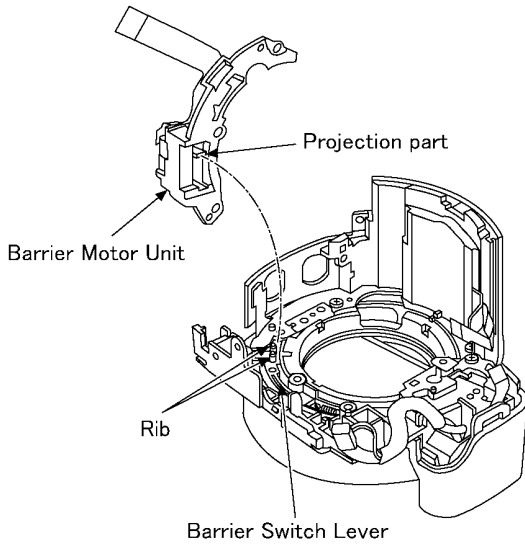


Fig.D27

7.3.20. Removal of the Barrier Unit and MF Ring Ornament

- Screw(a) × 2
- Screw(b) × 1
- Front Earth Plate
- Lens Damper

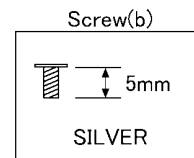
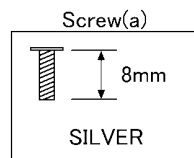
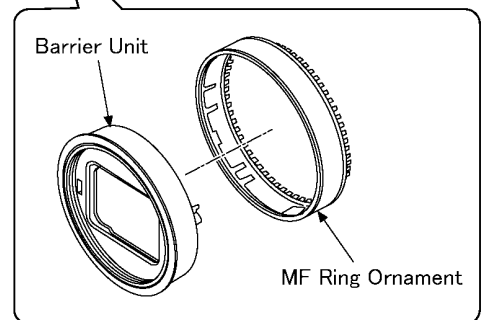
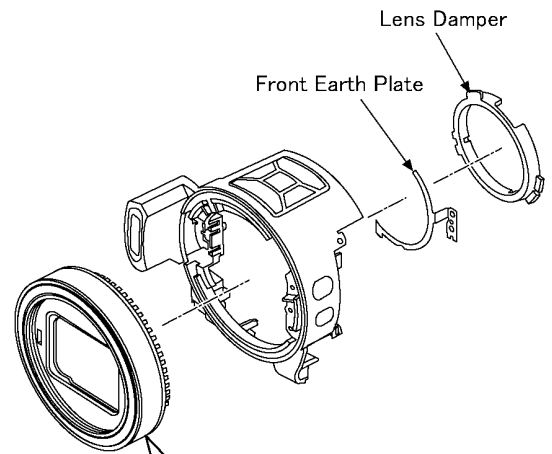
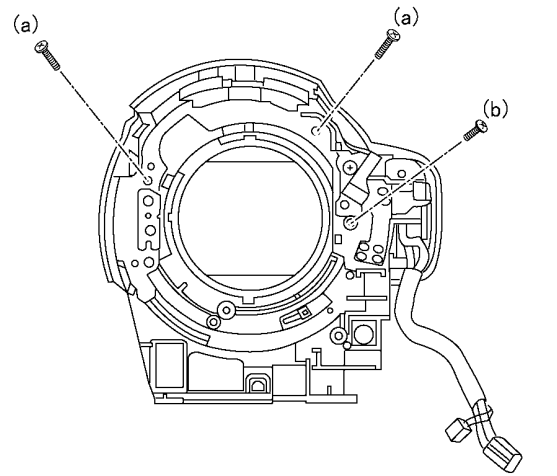


Fig.D28

7.3.21. Removal of the Flash Unit

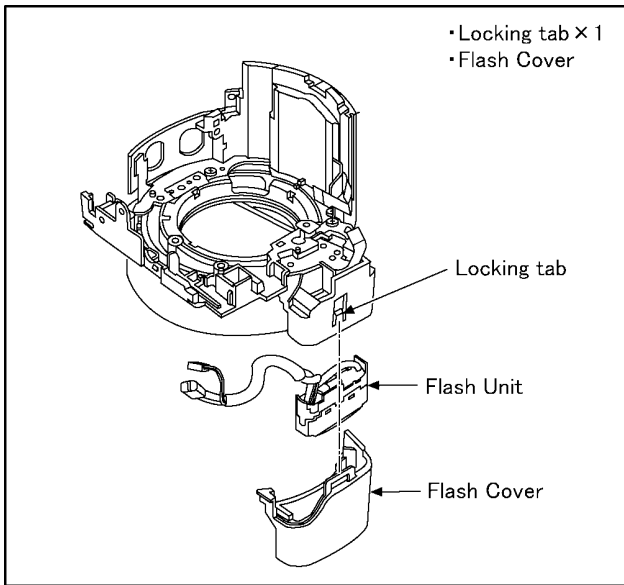


Fig.D29

7.3.22. Removal of the ECM

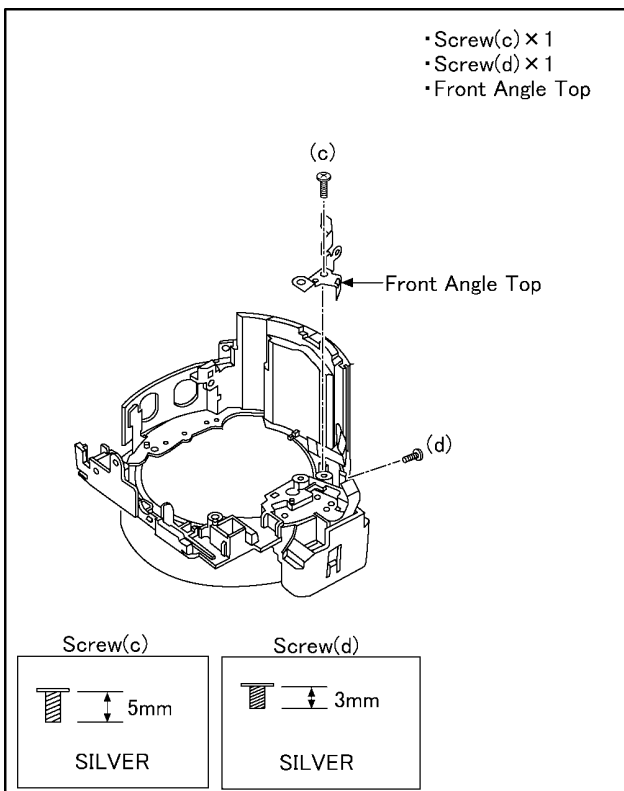
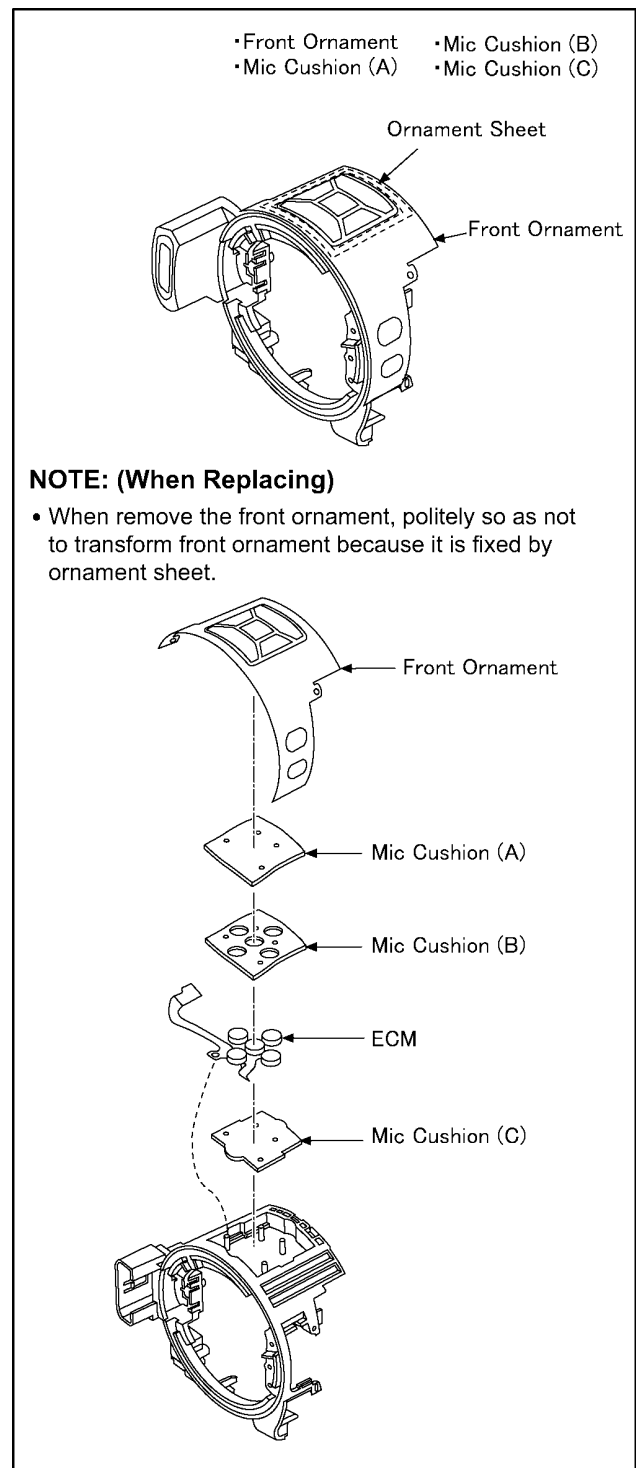


Fig.D30



NOTE: (When Replacing)

- When remove the front ornament, politely so as not to transform front ornament because it is fixed by ornament sheet.

Fig.D31

7.3.23. Removal of the Power FPC

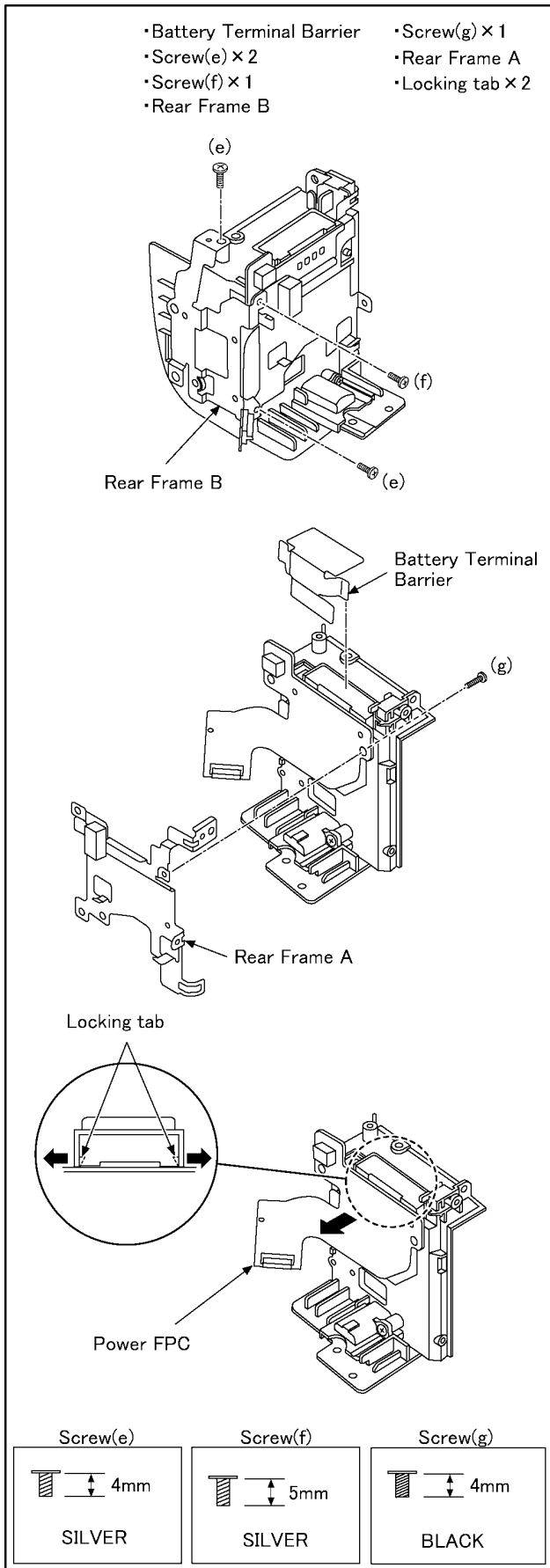


Fig.D32

7.3.24. Removal of the EVF Unit

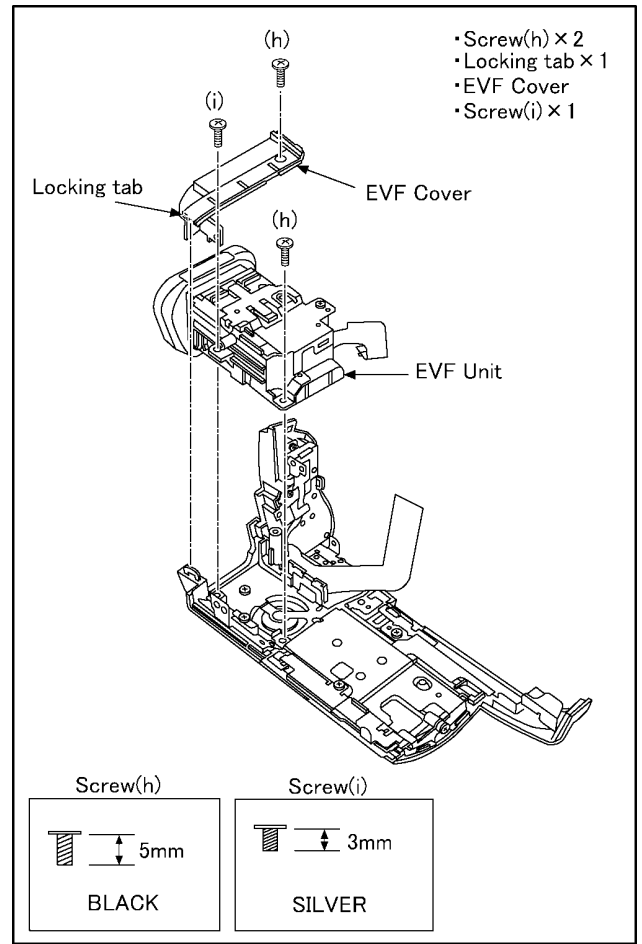


Fig.D33

7.3.25. Removal of the Operation Button Unit and Top Case Unit

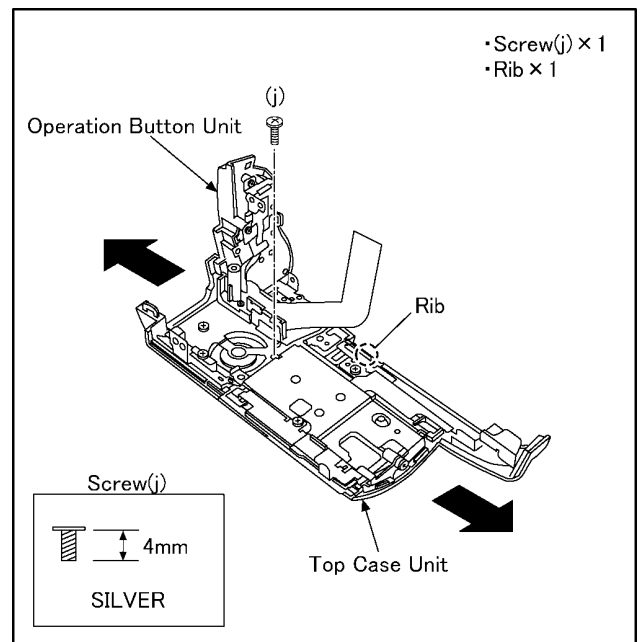


Fig.D34

7.3.26. Removal of the Speaker

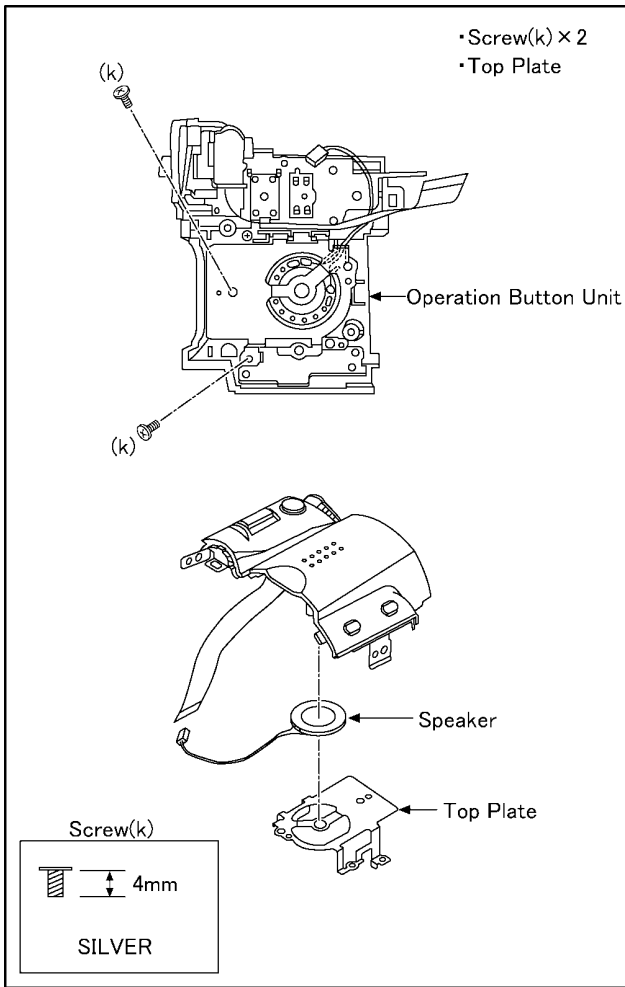


Fig.D35

7.3.27. Removal of the Shoe Angle and Grip Ornament

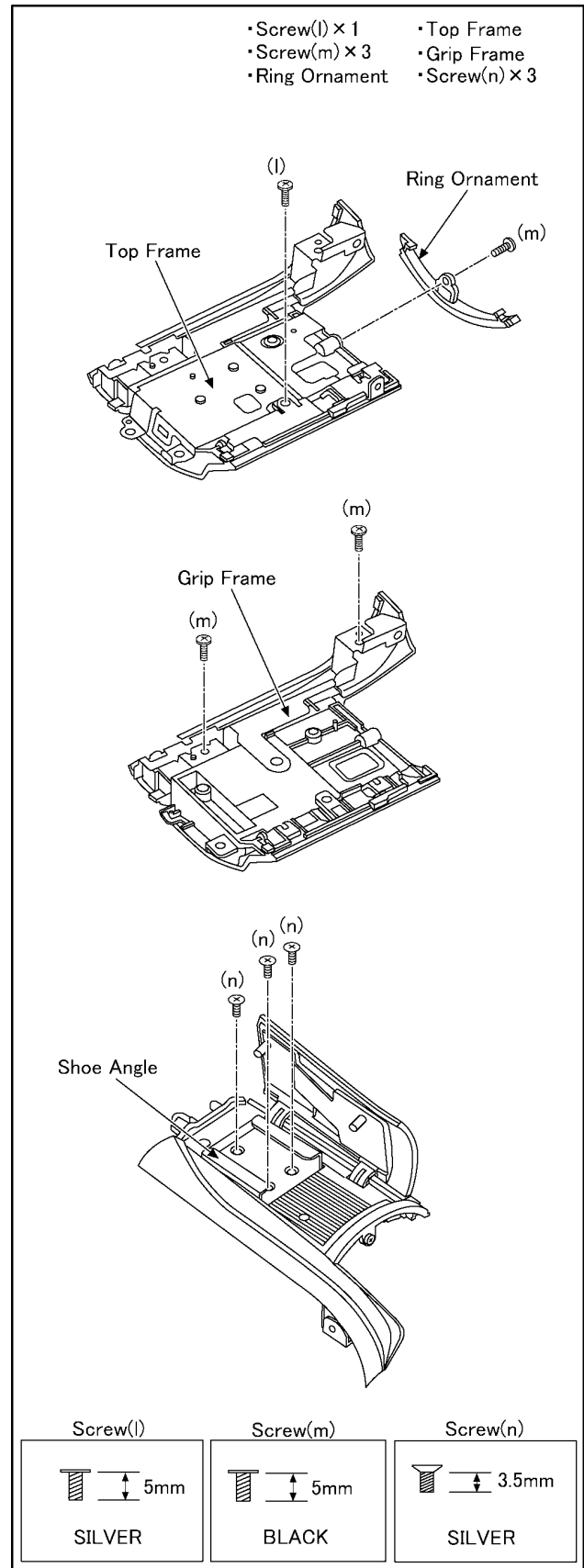


Fig.D36

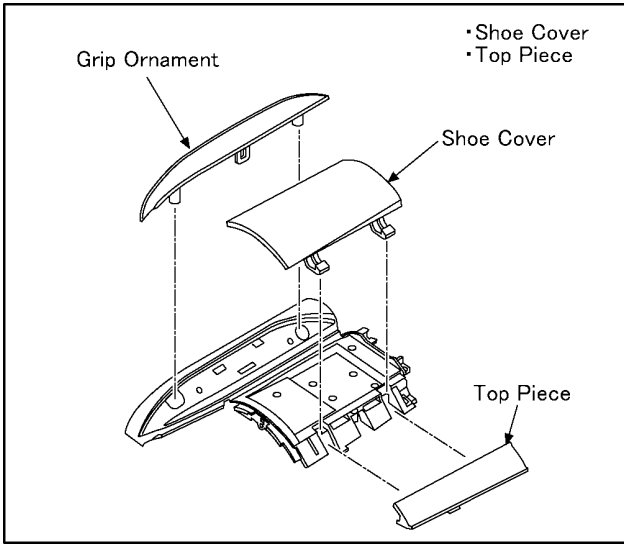


Fig.D37

7.3.28. Removal of the MOS Unit and Optical Filter

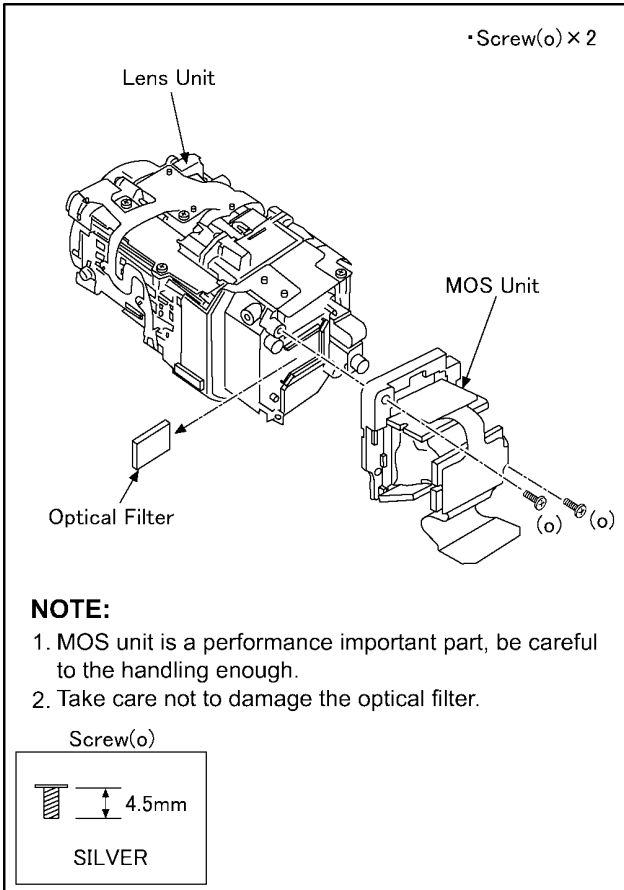


Fig.D38

7.3.29. Removal of the Zoom Motor

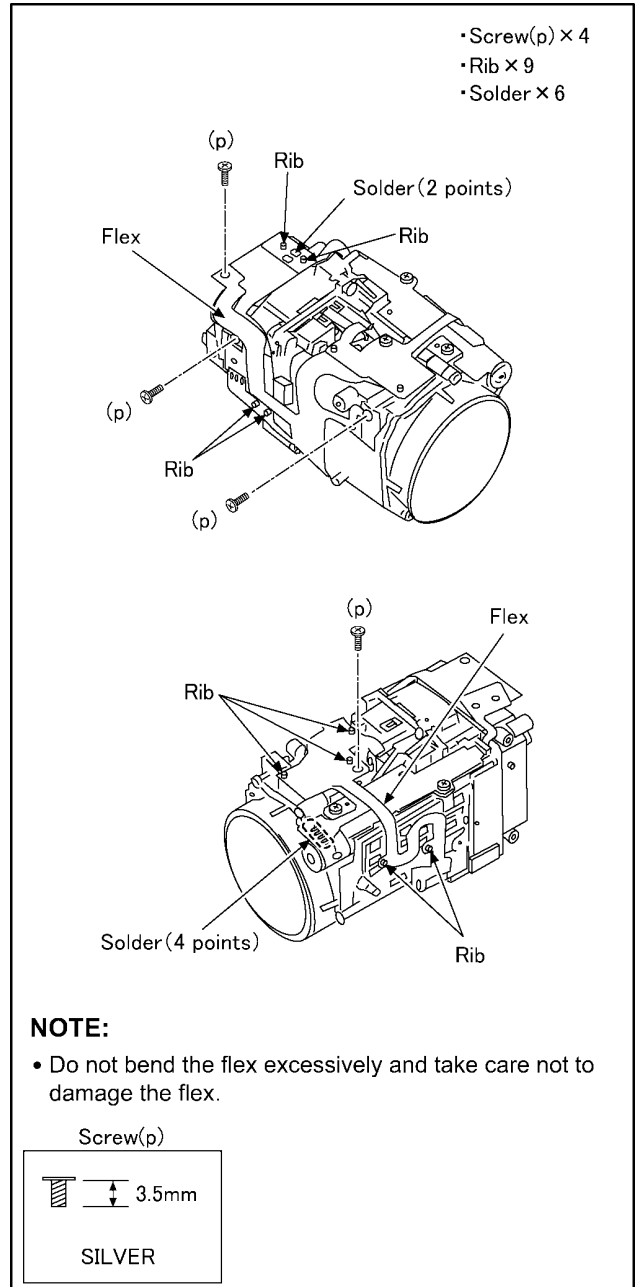


Fig.D39

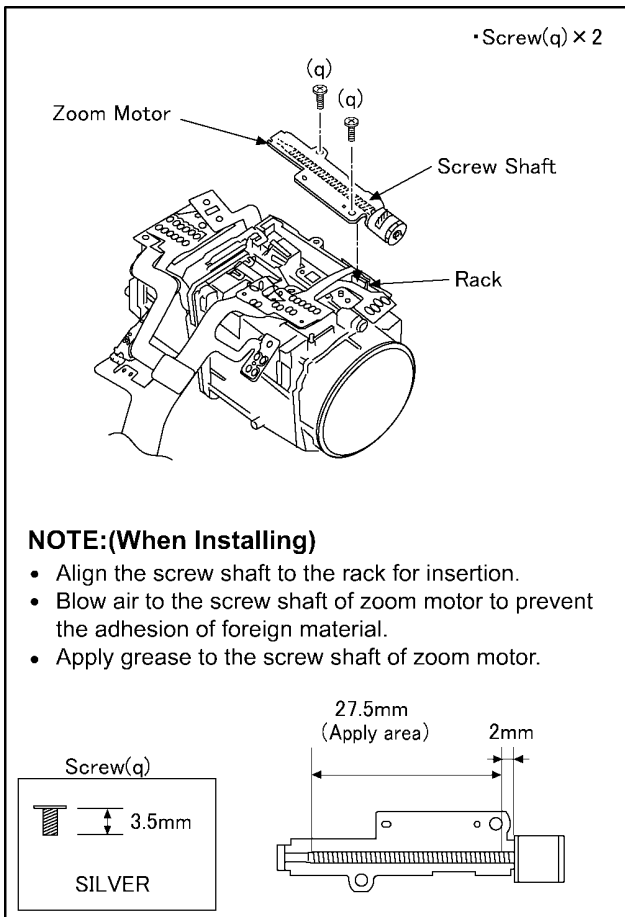


Fig.D40

7.3.30. Removal of the 1st Lens Frame Move Unit

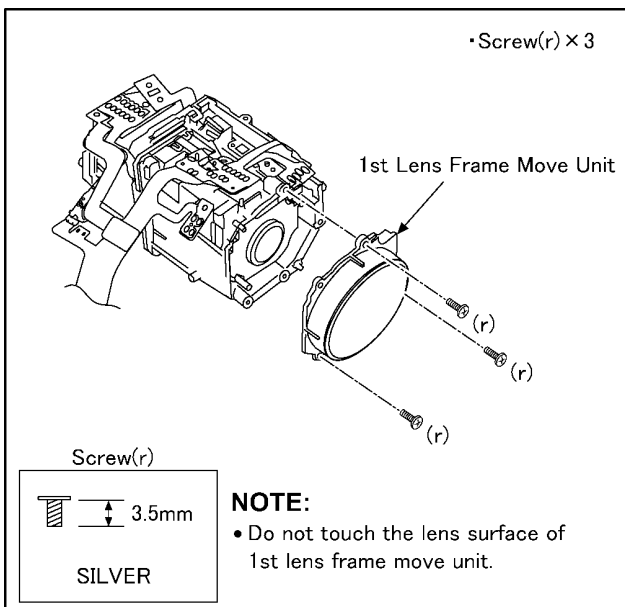


Fig.D41

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

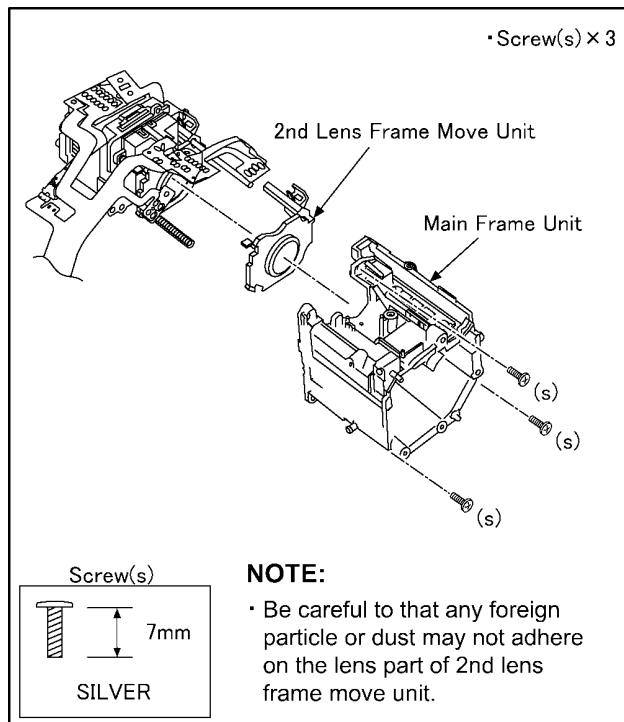


Fig.D42

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

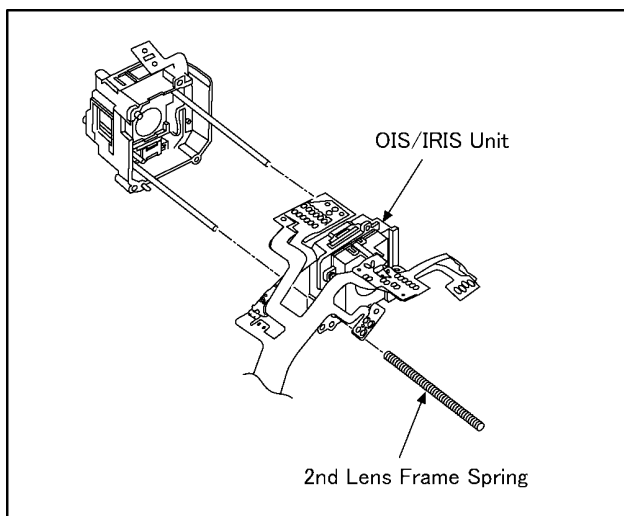


Fig.D43

7.3.33. Removal of the IRIS Unit

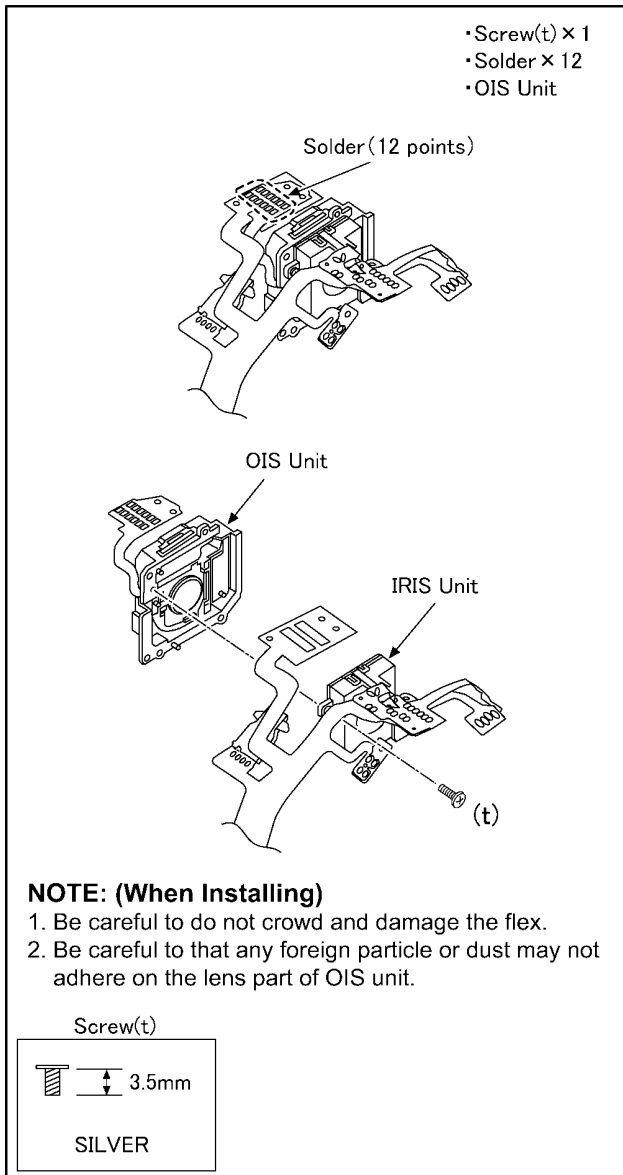


Fig.D44

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

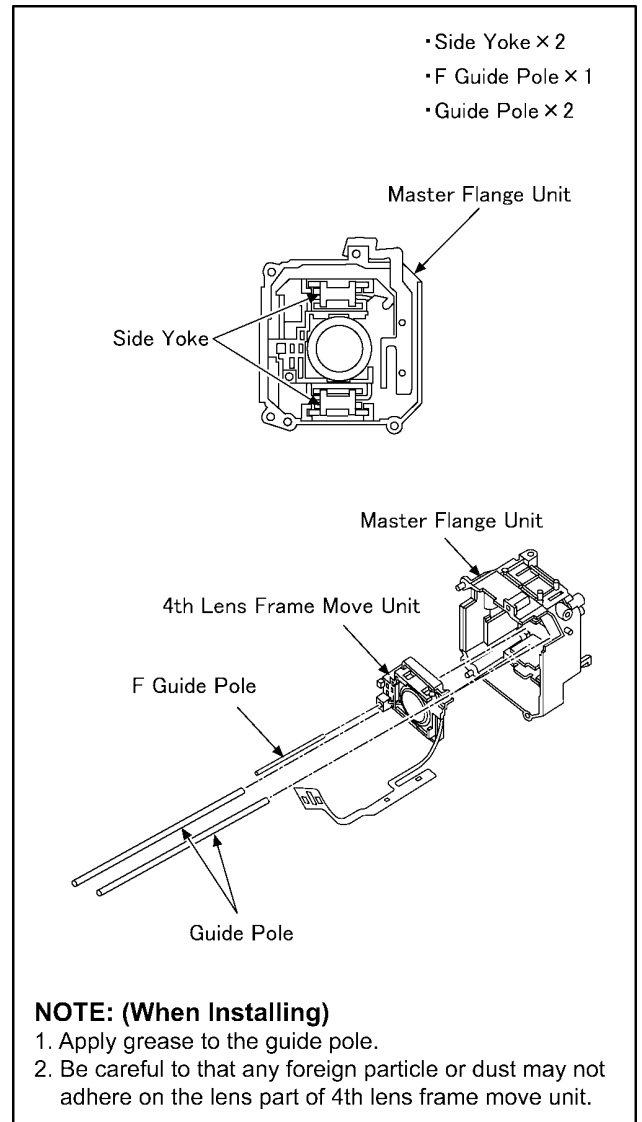


Fig.D45

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

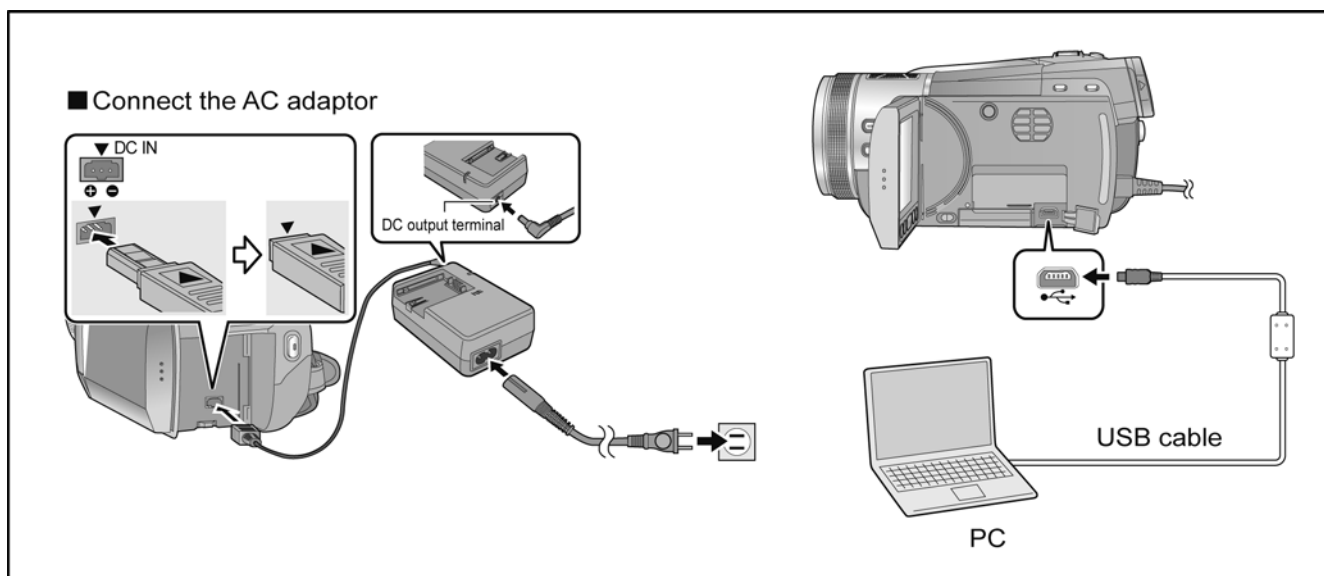
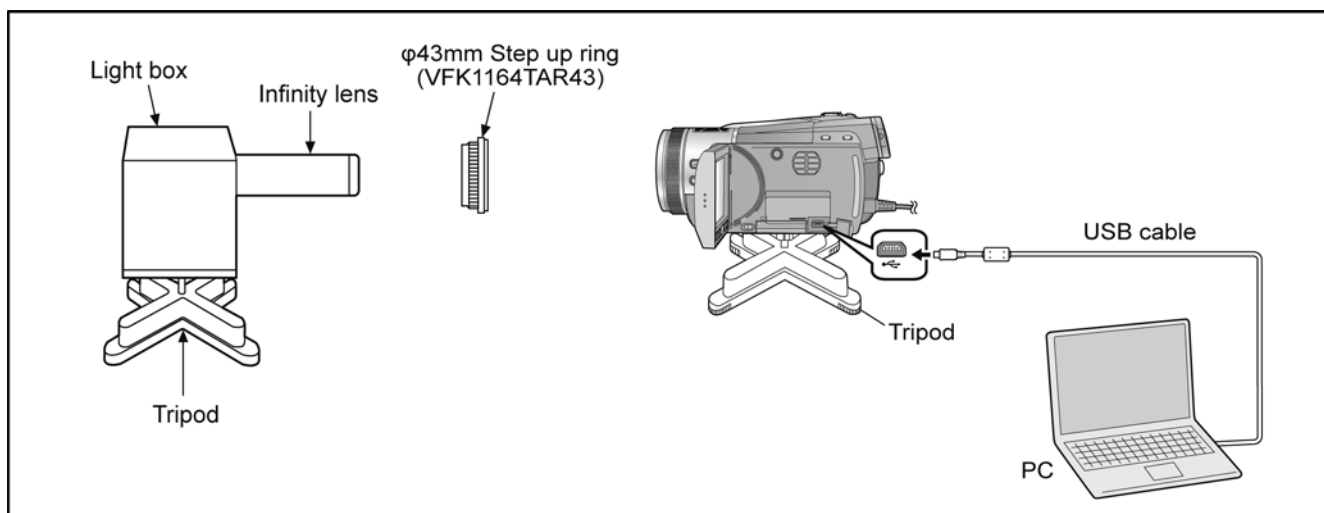


Figure of image when adjustment



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.

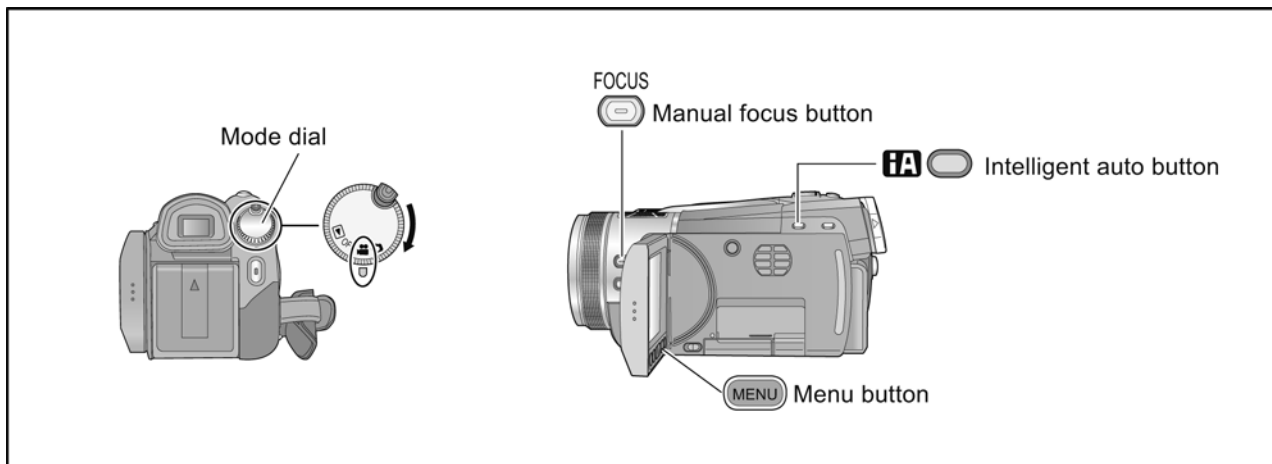
The adjustment instruction is available at "Software download" on the "Support Information from NWBG/VDBG-AVC" web-site in "TSN System".

	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"/>		

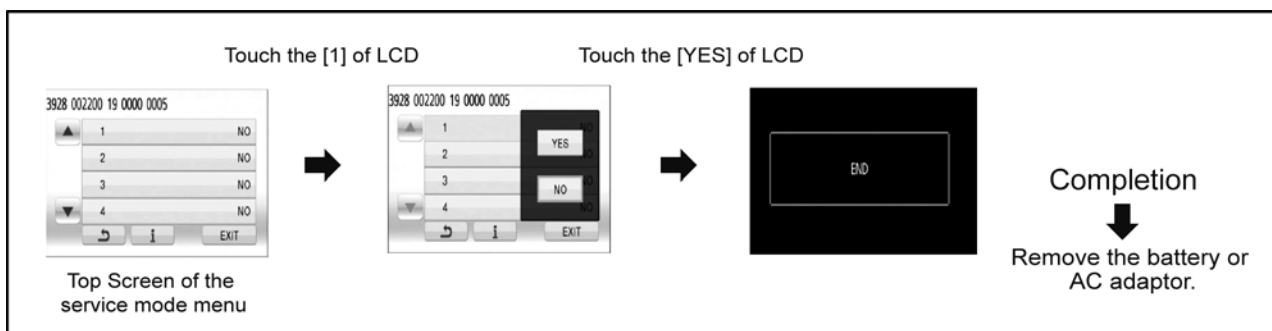
9 Factory Setting

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 focus" 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".



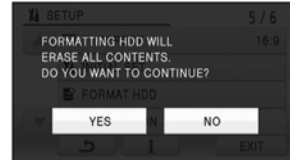
9.2. WHAT IS THE FACTORY SETTINGS?

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-HS300EB	HDC-HS300GC
HDC-HS300EC	HDC-HS300GK
HDC-HS300EE	HDC-HS300GT
HDC-HS300EF	HDC-HS300P
HDC-HS300EG	HDC-HS300PC
HDC-HS300EP	HDC-HS300SG

Vol. 1
 Colour
 (S).....Silver Type (only GC)
 (K).....Black Type

Table of contents

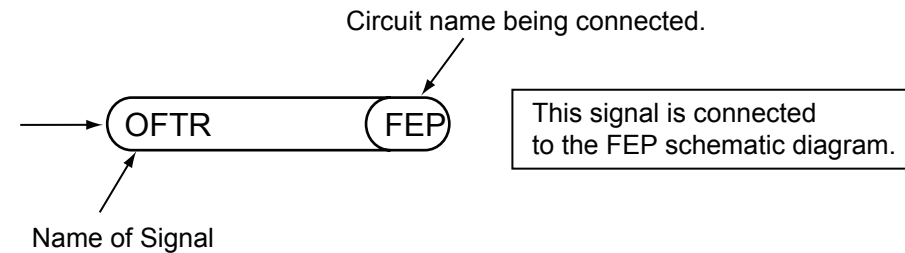
S1. About Indication of The Schematic Diagram S-1 S1.1. Important Safety Notice..... S-1 S2. Block Diagram..... S-2 S2.1. Overall Block Diagram S-2 S3. Schematic Diagram..... S-3 S3.1. Interconnection Diagram S-3 S3.2. Side R Schematic Diagram..... S-4 S3.3. LCD Schematic Diagram..... S-5 S3.4. Monitor Schematic Diagram..... S-6 S3.5. TPANEL Schematic Diagram S-7 S3.6. Side L Schematic Diagram..... S-8 S3.7. EVF B/L Schematic Diagram S-9 S3.8. Front Schematic Diagram S-10 S3.9. MOS FPC Schematic Diagram S-14 S3.10. CAM FUNC OP FPC Schematic Diagram S-15 S3.11. Power FPC Schematic Diagram..... S-15 S3.12. Main Sub Schematic Diagram..... S-16 S3.13. Side R FPC Schematic Diagram..... S-17	S3.14. LCD OP FPC Schematic Diagram S-18 S3.15. EVF FPC Schematic Diagram..... S-18 S3.16. MF Sensor FPC Schematic Diagram S-19 S3.17. HDD FPC Schematic Diagram..... S-19 S3.18. Front FPC Schematic Diagram S-20 S4. Print Circuit Board..... S-21 S4.1. Side R P.C.B. S-21 S4.2. Monitor P.C.B. S-22 S4.2.1. Monitor P.C.B. (Component Side)..... S-22 S4.2.2. Monitor P.C.B. (Foil Side)..... S-23 S4.3. Side L P.C.B. S-24 S4.4. EVF B/L P.C.B. S-25 S4.5. Front P.C.B. S-26 S4.6. MOS FPC P.C.B. S-27 S4.7. CAM FUNC OP FPC P.C.B. S-28 S4.8. Power FPC P.C.B. S-29 S4.9. Main Sub P.C.B. S-30 S4.10. Side R FPC P.C.B. S-31 S4.11. LCD OP FPC P.C.B. S-32	S4.12. EVF FPC P.C.B. S-33 S4.13. MF Sensor FPC P.C.B. S-34 S4.14. HDD FPC P.C.B. S-35 S4.14.1. HDD FPC P.C.B. (Component Side)..... S-35 S4.14.2. HDD FPC P.C.B. (Foil Side)..... S-36 S4.15. Front FPC P.C.B..... S-37 S5. Replacement Parts List S-39 S6. Exploded View S-49 S6.1. Frame and Casing Section (1). S-49 S6.2. Frame and Casing Section (2) S-50 S6.3. EVF Section. S-51 S6.4. LCD Section..... S-52 S6.5. Camera Lens Section..... S-53 S6.6. Packing Parts and Accessories Section..... S-54
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S1. About Indication of The Schematic Diagram

S1.1. Important Safety Notice

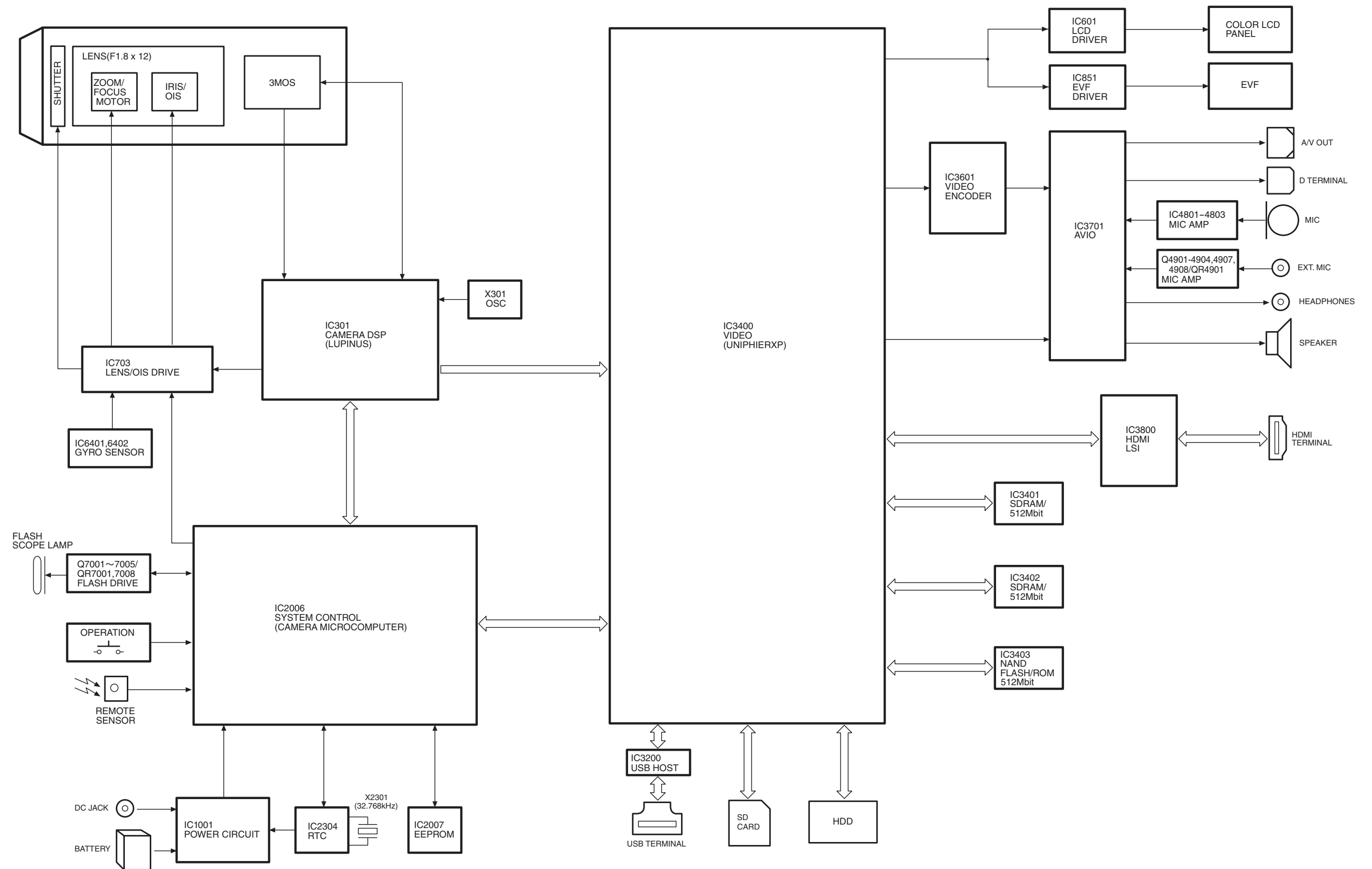
COMPONENTS IDENTIFIED WITH THE MARK \triangle HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

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:



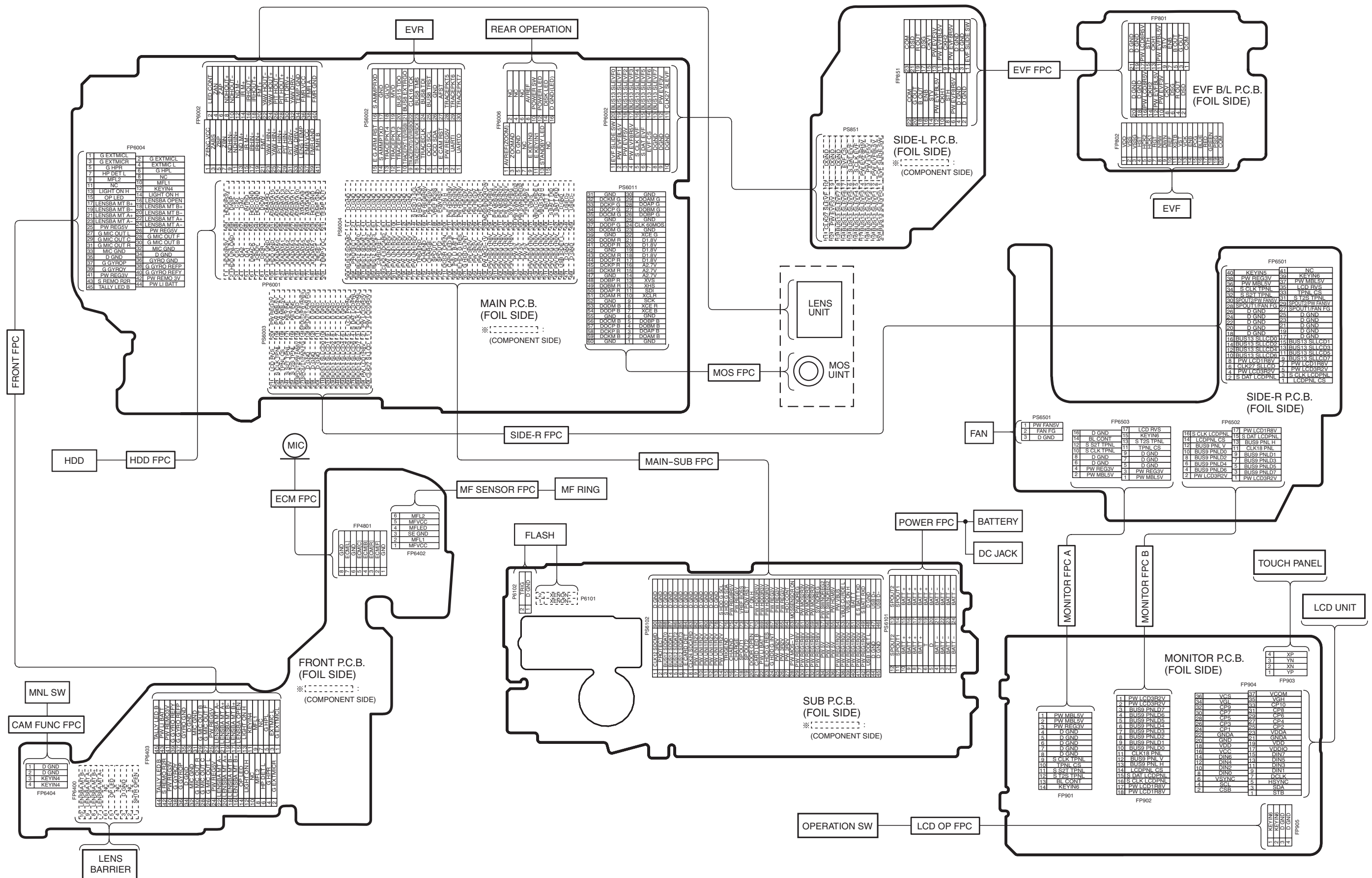
S2. Block Diagram

S2.1. Overall Block Diagram

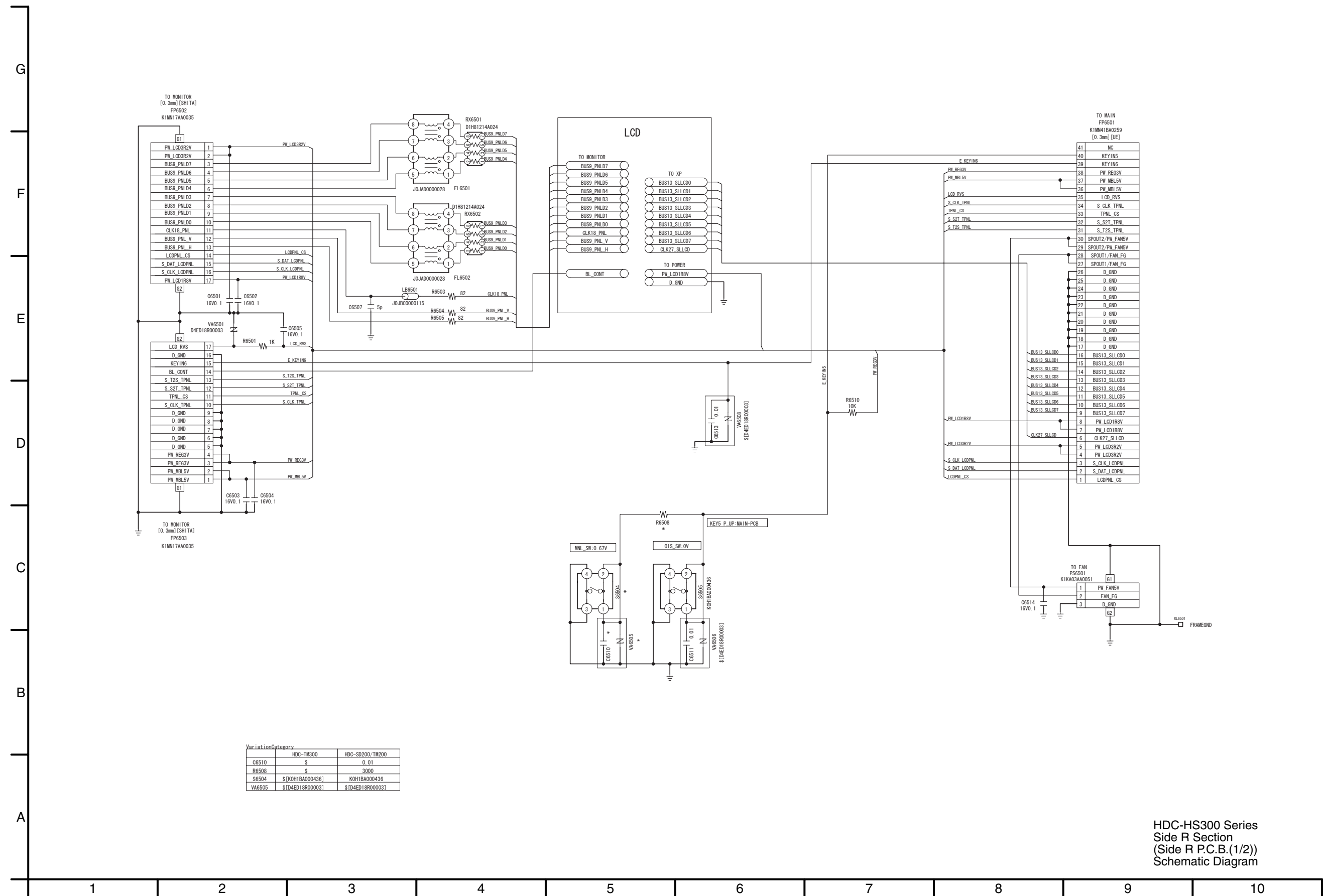


S3. Schematic Diagram

S3.1. Interconnection Diagram

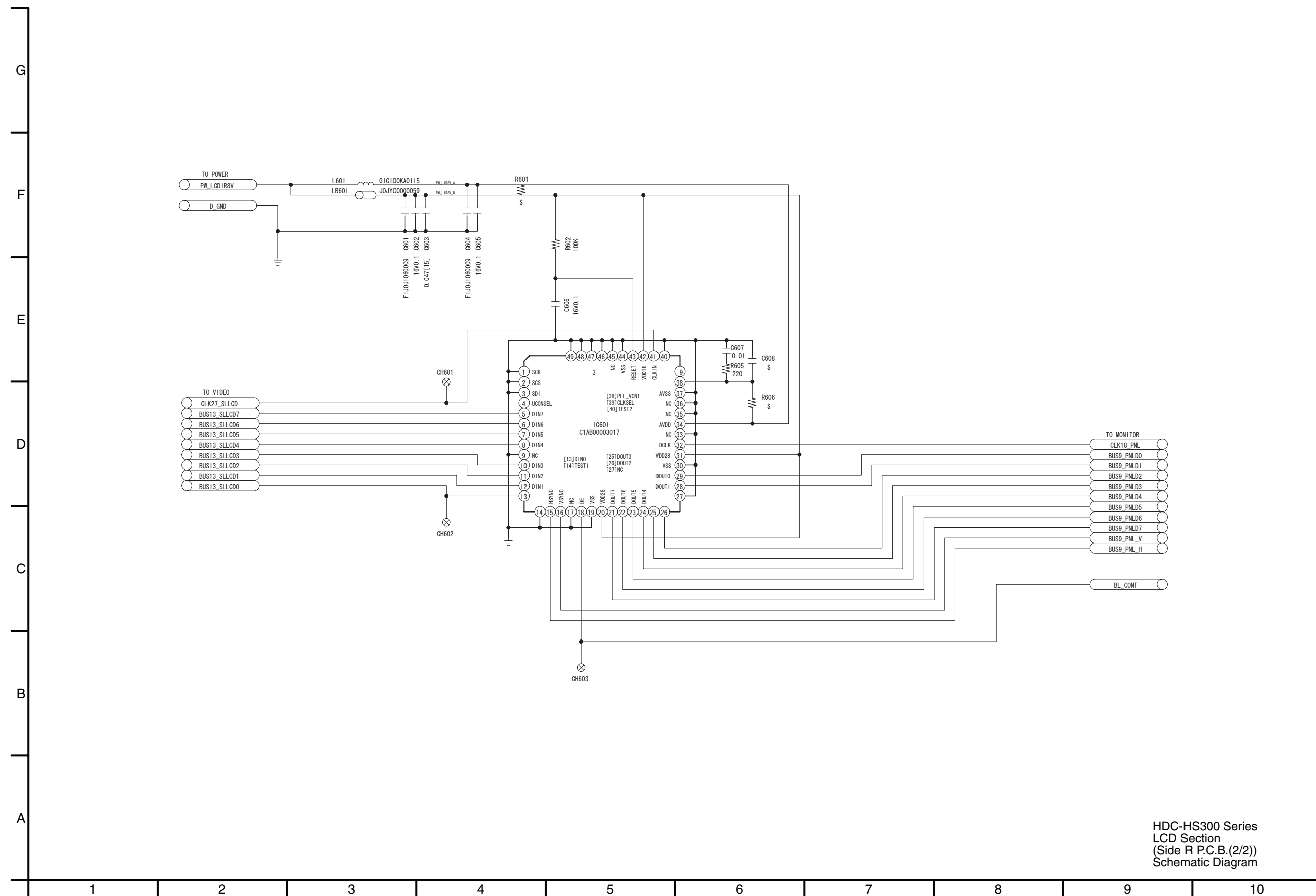


S3.2. Side R Schematic Diagram



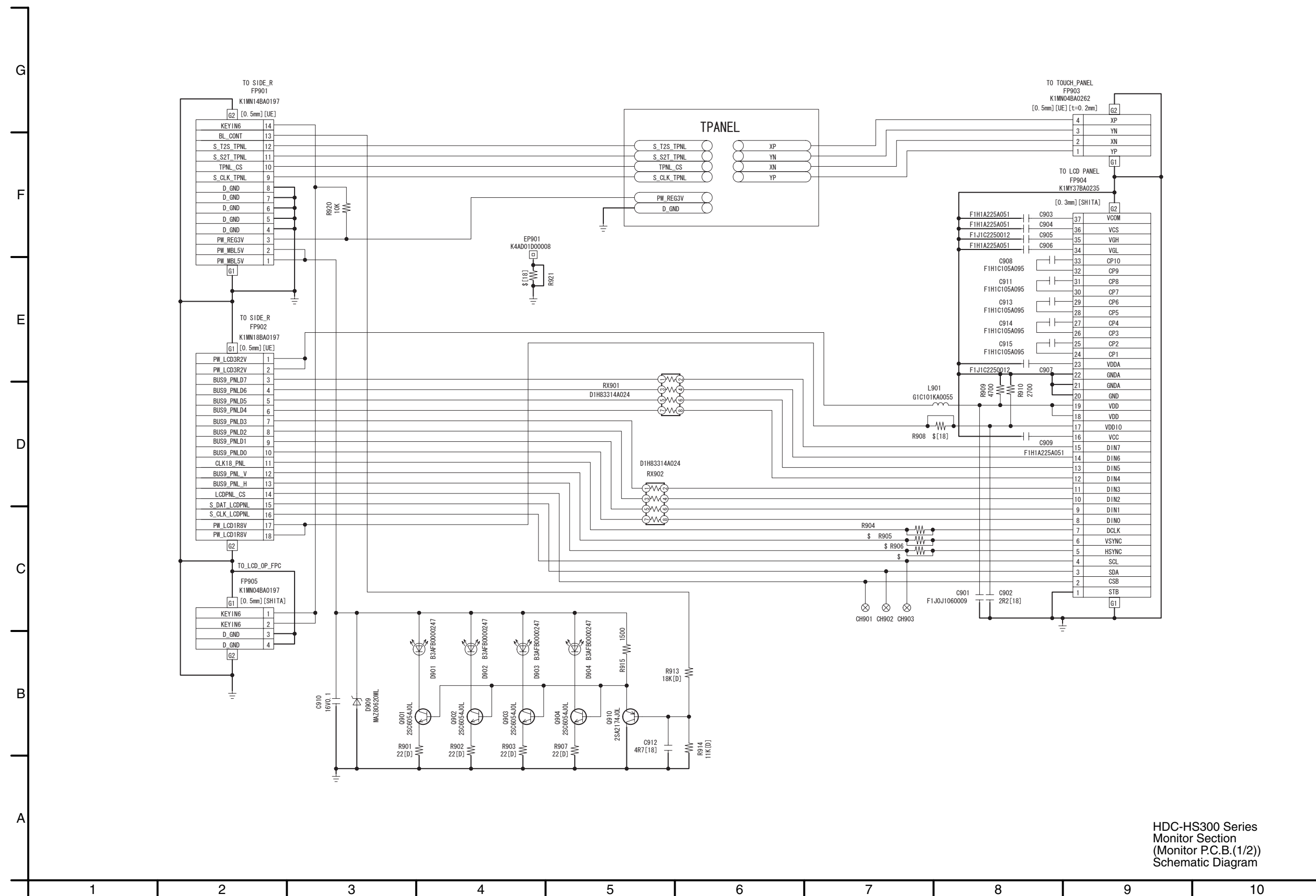
HDC-HS300 Series
Side R Section
(Side R P.C.B.(1/2))
Schematic Diagram

S3.3. LCD Schematic Diagram



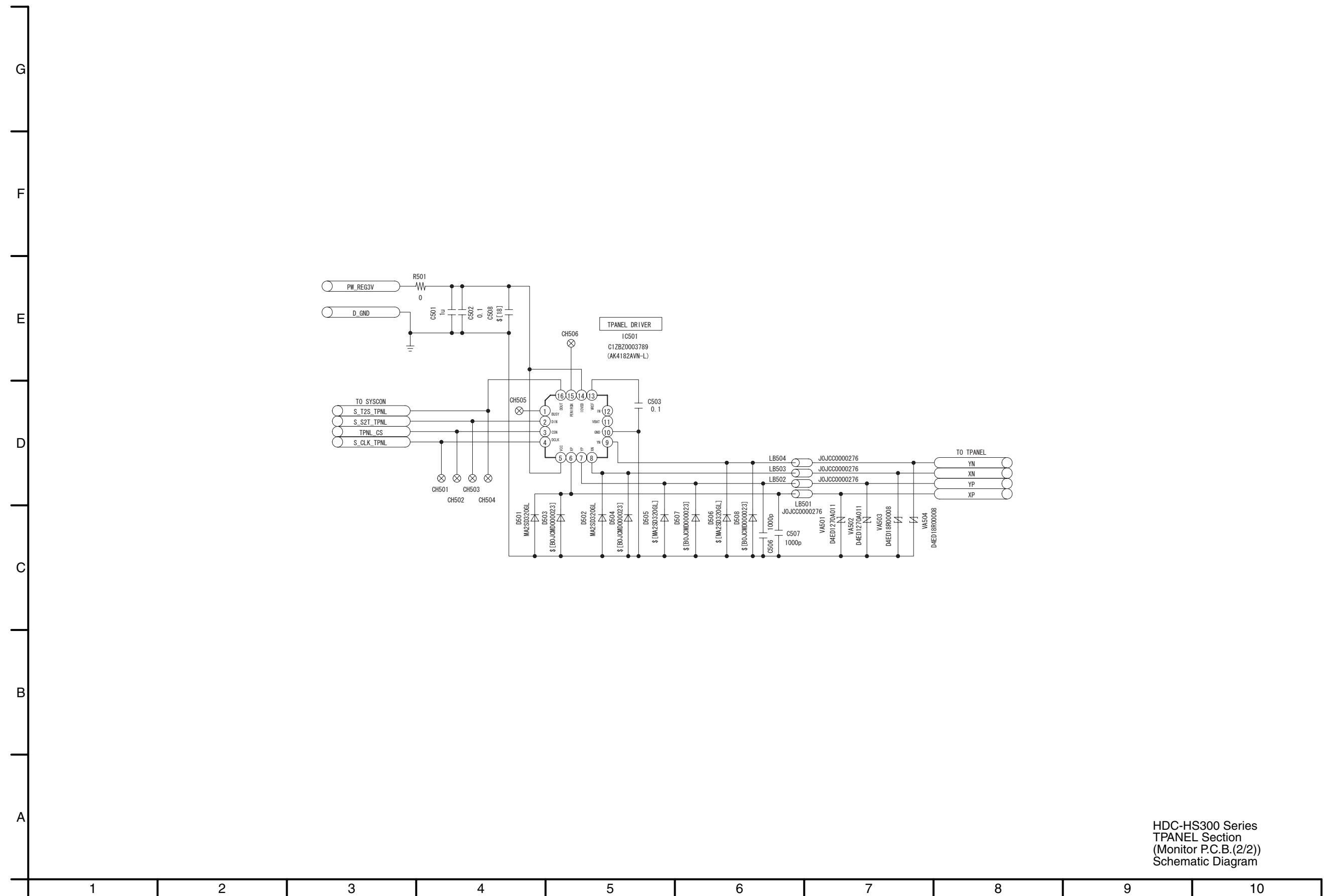
HDC-HS300 Series
LCD Section
(Side R P.C.B.(2/2))
Schematic Diagram

S3.4. Monitor Schematic Diagram



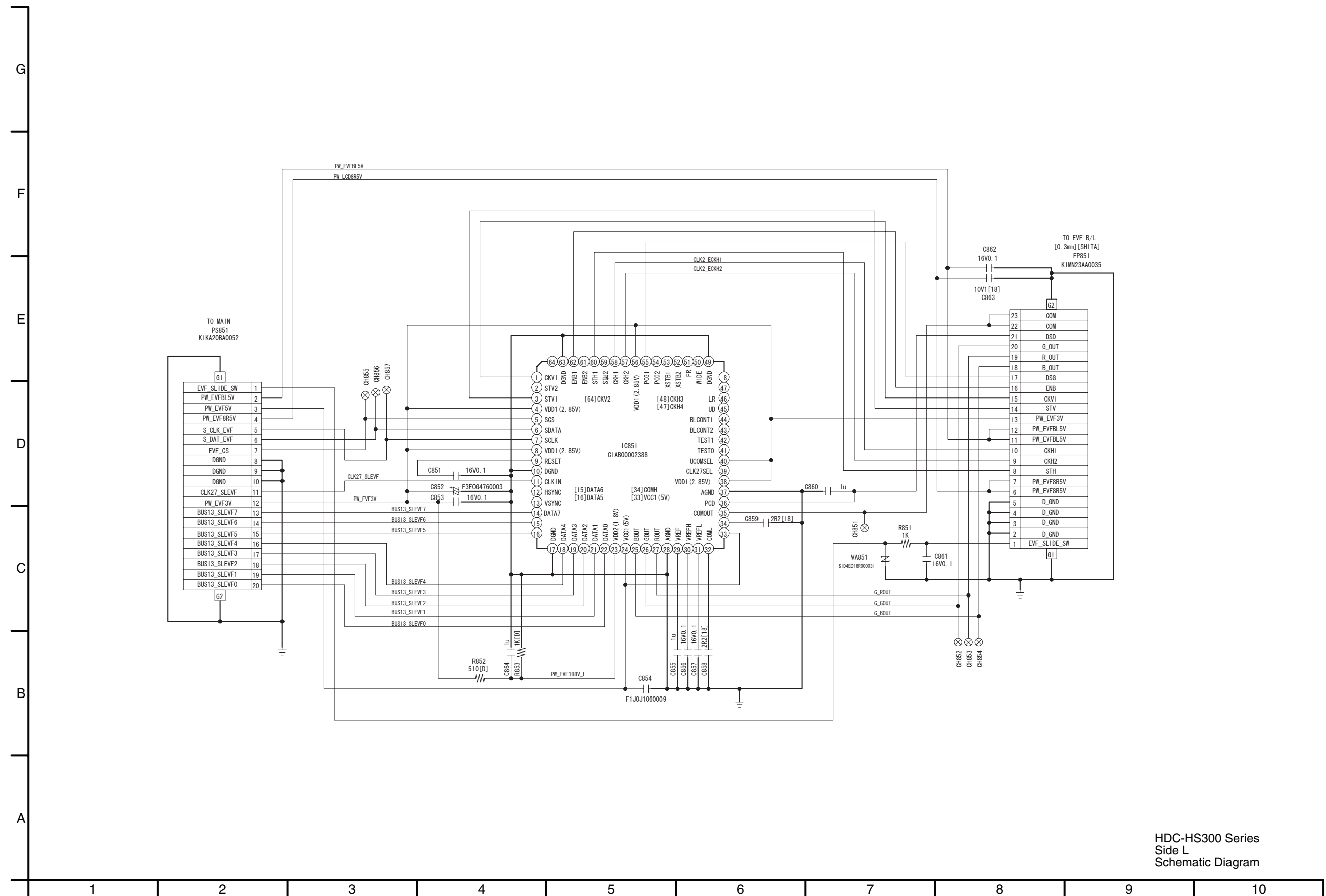
HDC-HS300 Series
Monitor Section
(Monitor P.C.B.(1/2))
Schematic Diagram

S3.5. TPANEL Schematic Diagram



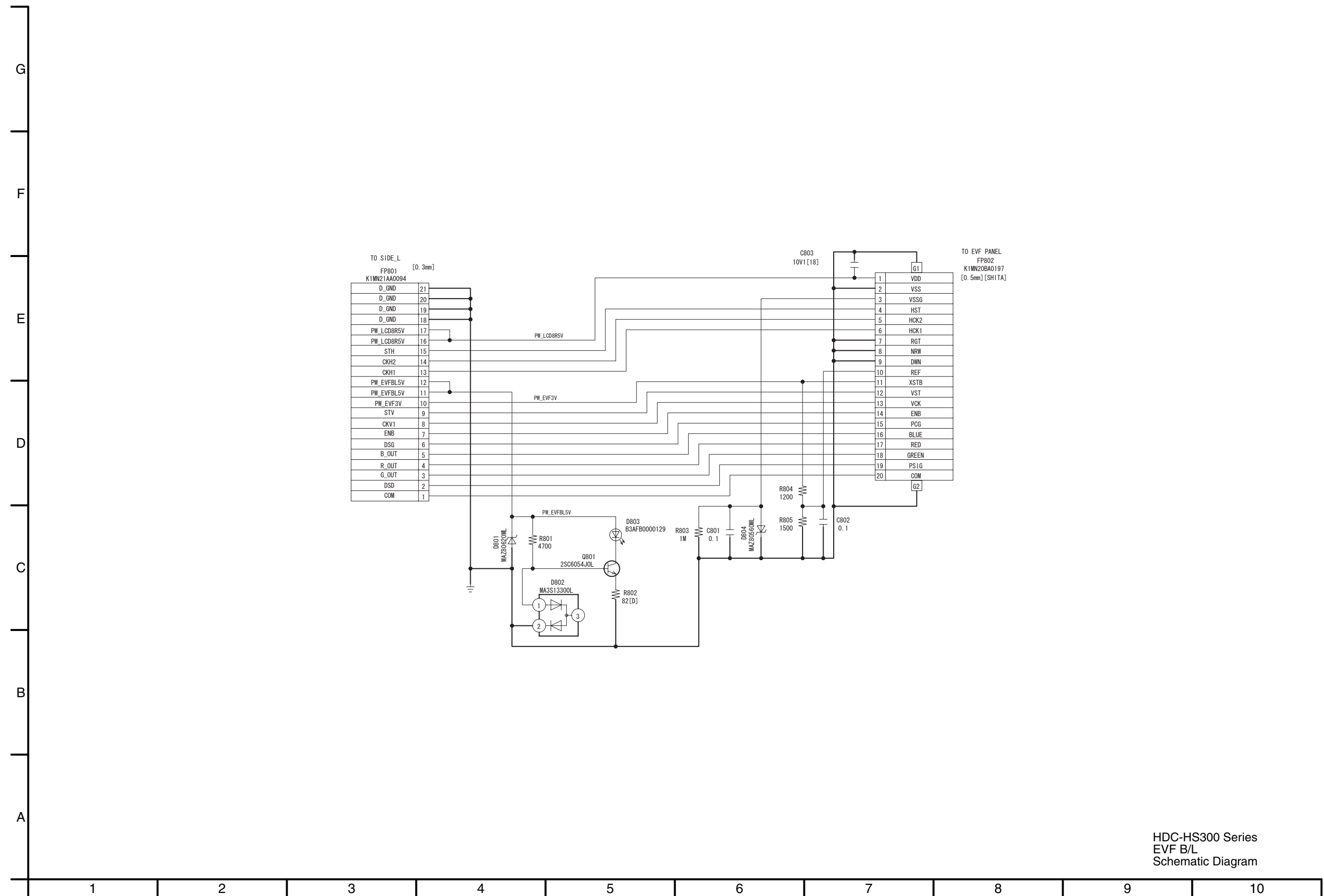
HDC-HS300 Series
 TPANEL Section
 (Monitor P.C.B.(2/2))
 Schematic Diagram

S3.6. Side L Schematic Diagram



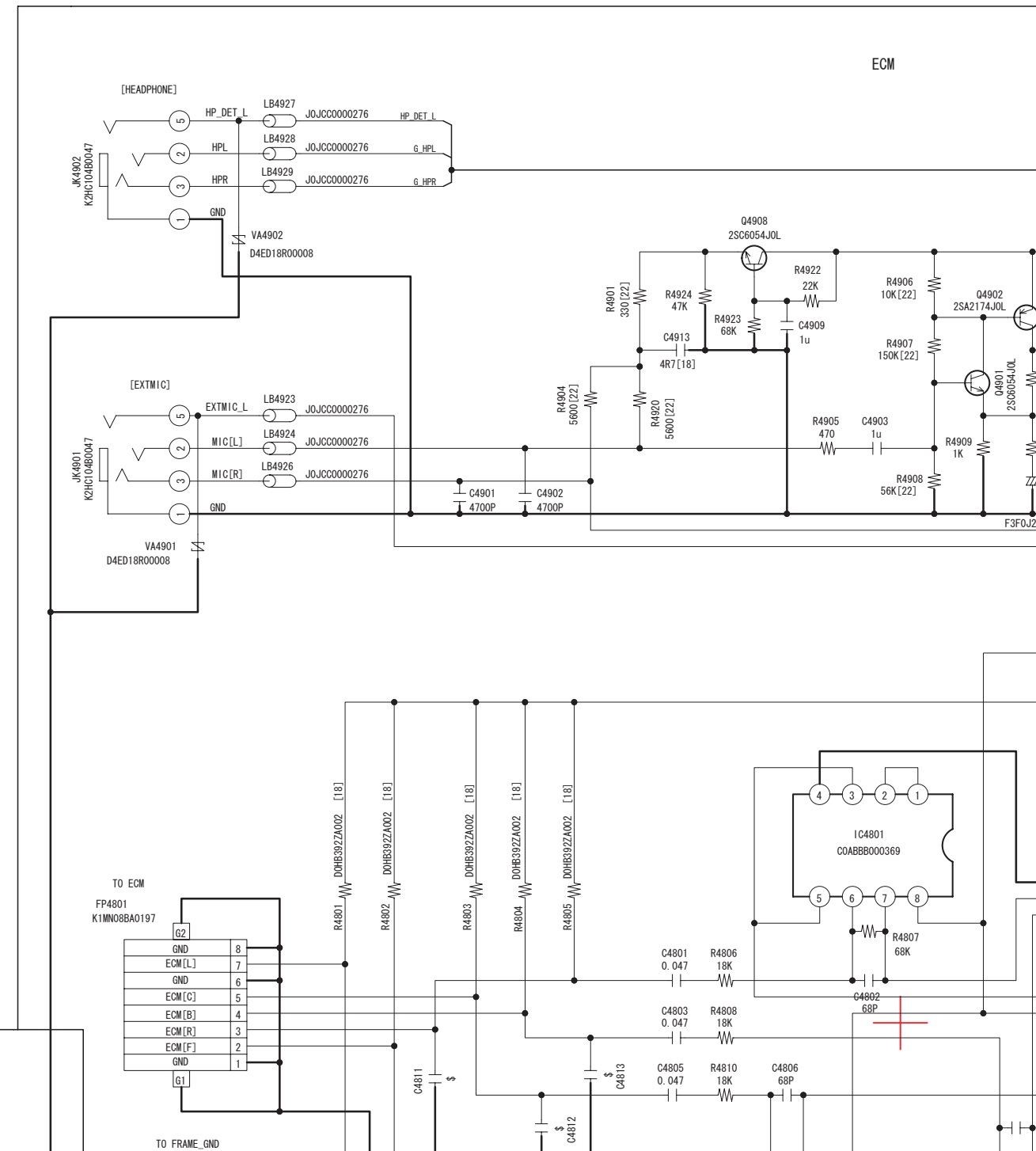
HDC-HS300 Series
Side L
Schematic Diagram

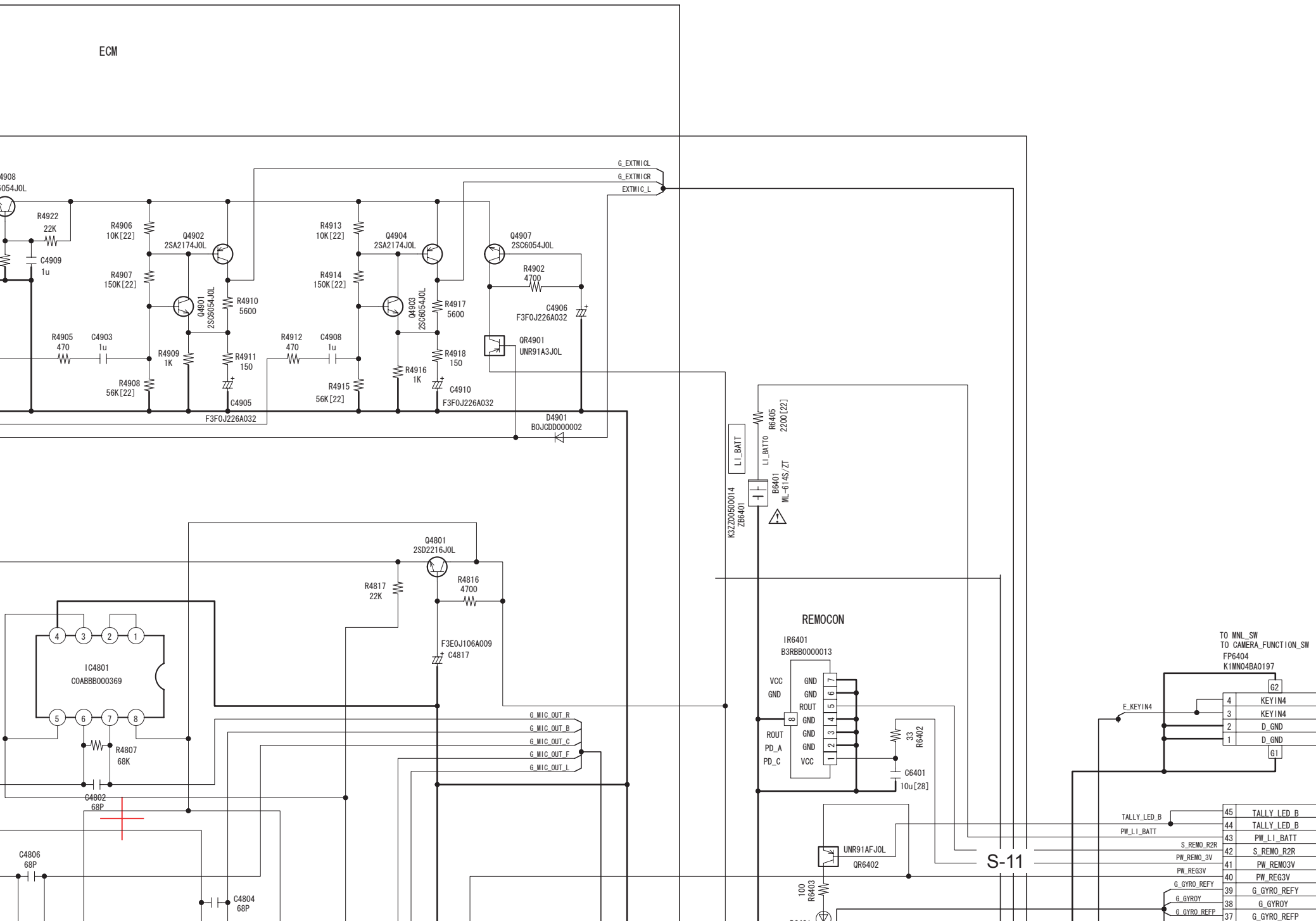
S3.7. EVF B/L Schematic Diagram



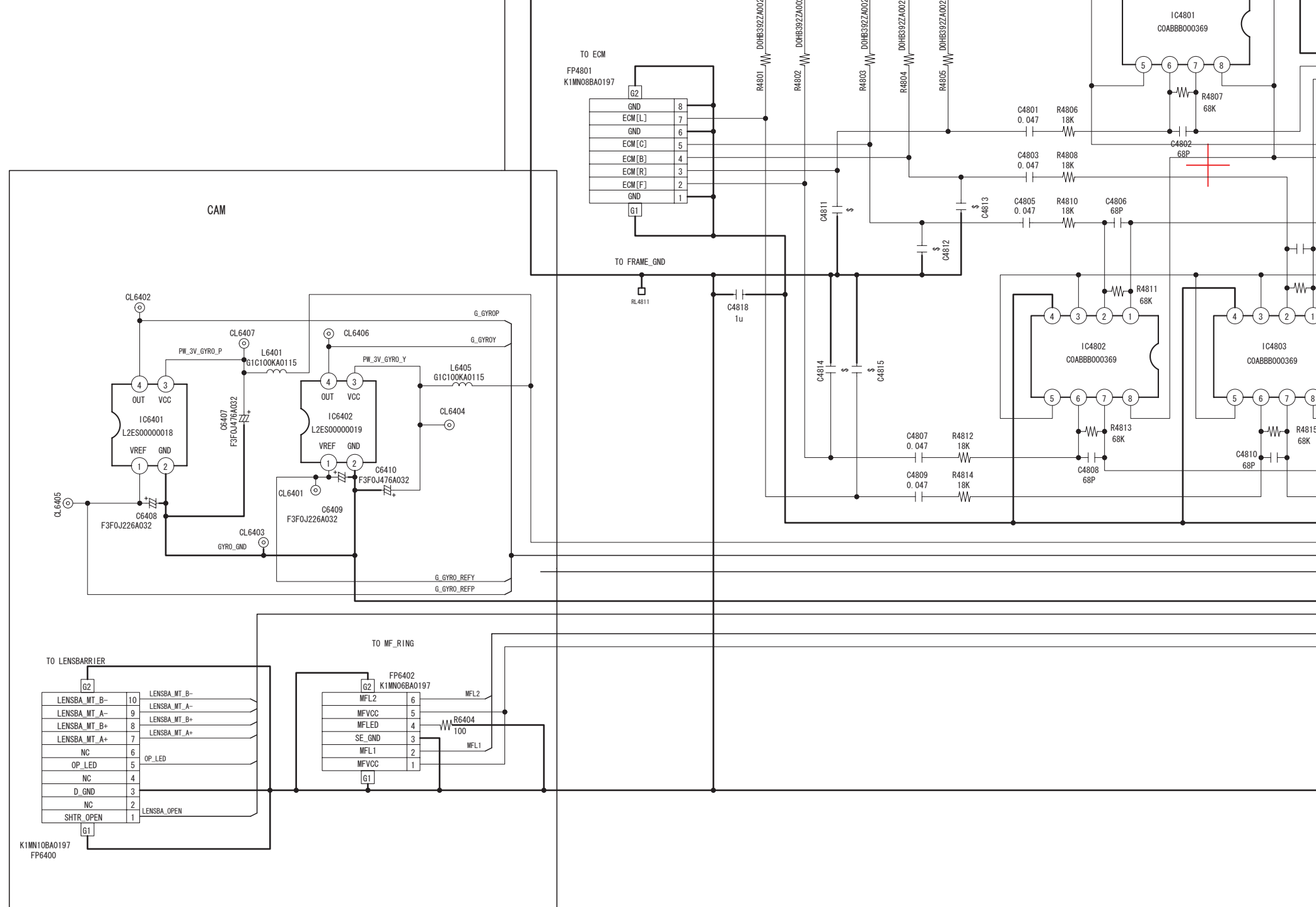
S3.8. Front Schematic Diagram

N
M
L
K
J
I
H
G

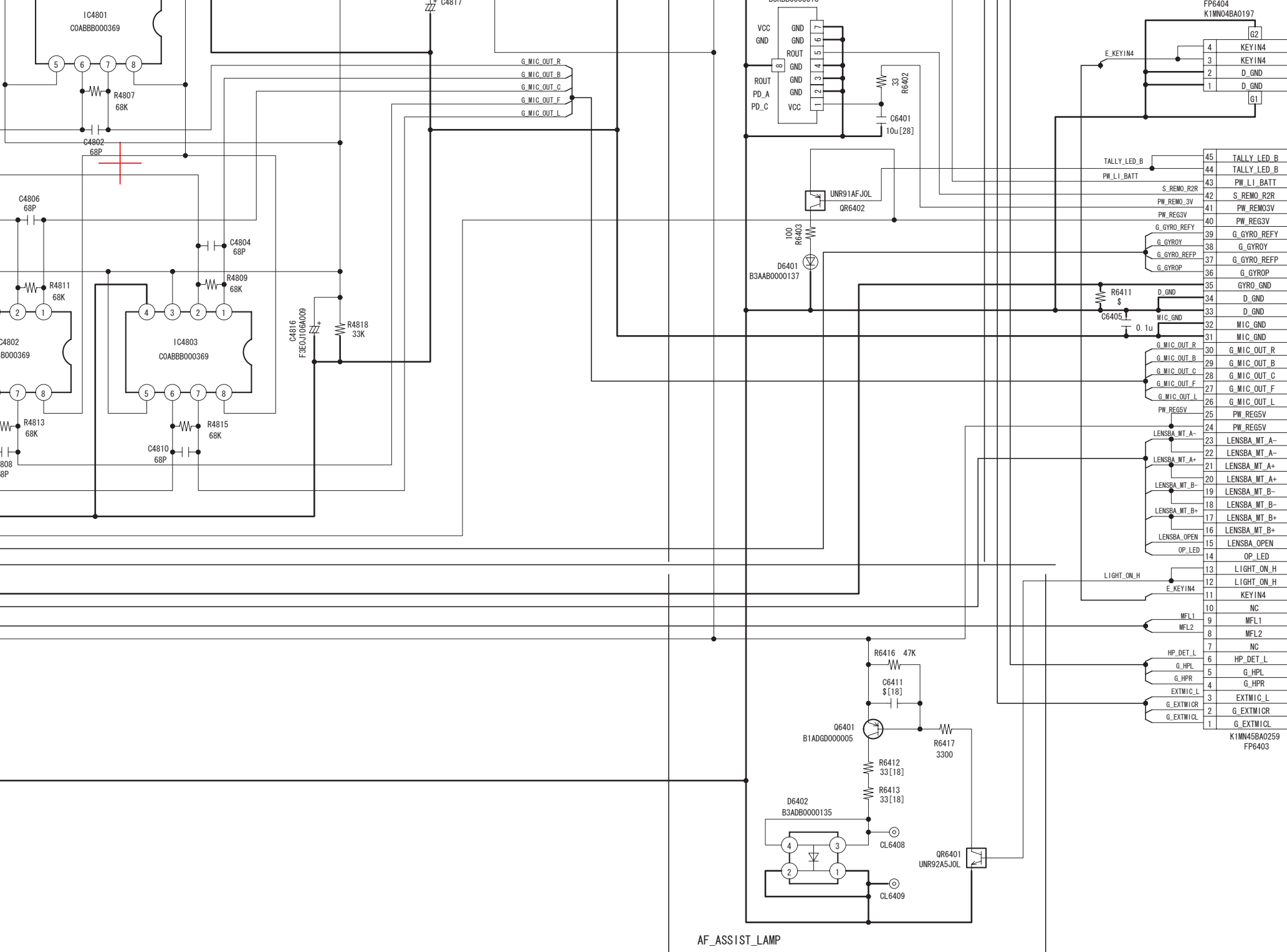




H
G
F
E
D
C
B
A



3/4 HDC-HS300 Series Front Schematic Diagram

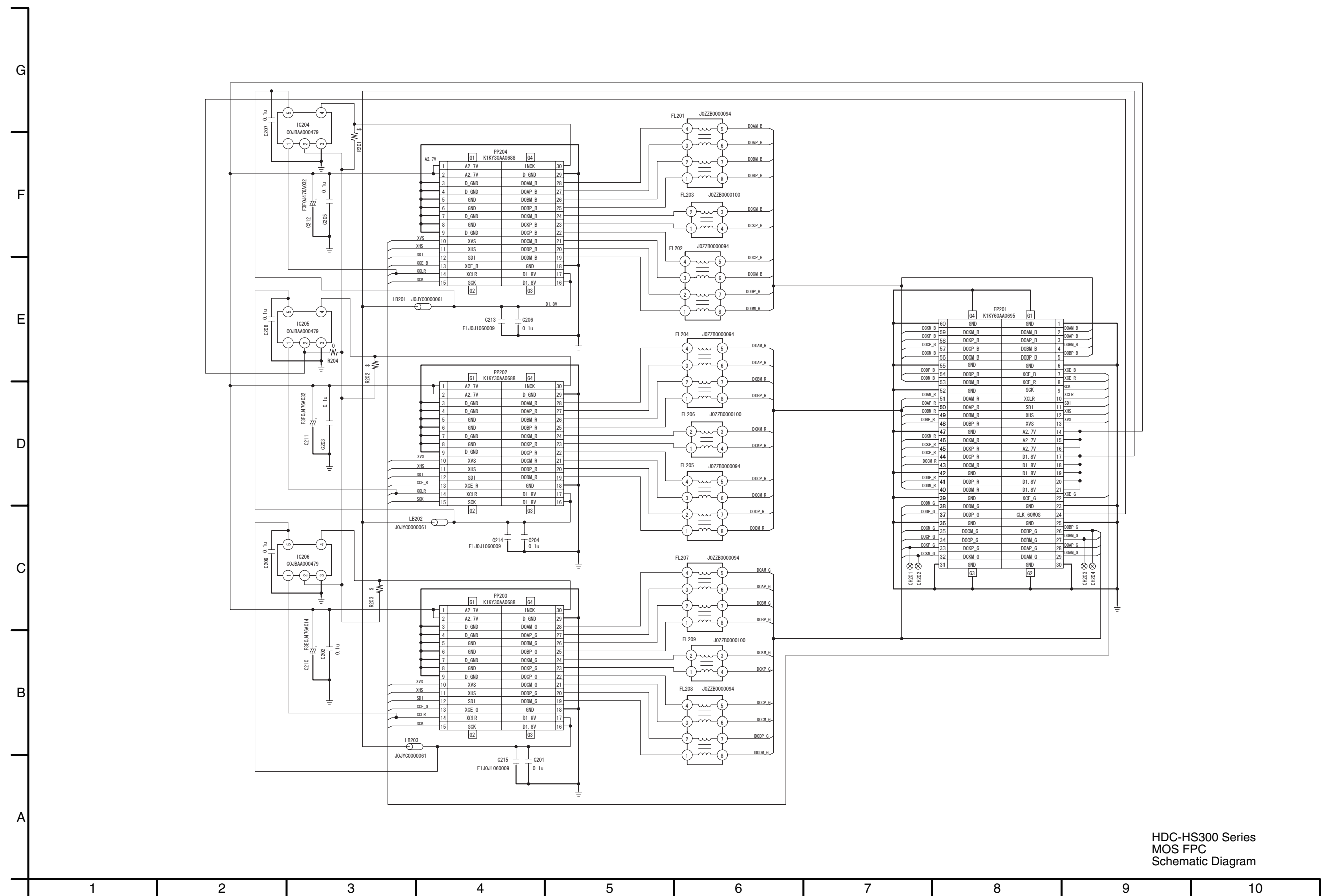


AF_ASSIST_LAMP

45	TALLY_LED_B
44	TALLY_LED_B
43	PW_L1_BATT
42	S_REMO_R2R
41	PW_REMO3V
40	PW_REG3V
39	G_GYRO_REFY
38	G_GYROY
37	G_GYRO_REFP
36	G_GYROP
35	GYRO_GND
34	D_GND
33	D_GND
32	MIC_GND
31	MIC_GND
30	G_MIC_OUT_R
29	G_MIC_OUT_B
28	G_MIC_OUT_C
27	G_MIC_OUT_F
26	G_MIC_OUT_L
25	PW_REG5V
24	PW_REG5V
23	LENSA_MT_A-
22	LENSA_MT_A-
21	LENSA_MT_A+
20	LENSA_MT_A+
19	LENSA_MT_B-
18	LENSA_MT_B-
17	LENSA_MT_B+
16	LENSA_MT_B+
15	LENSA_OPEN
14	OP_LED
13	LIGHT_ON_H
12	LIGHT_ON_H
11	KEYIN4
10	NC
9	MFL1
8	MFL2
7	NC
6	HP_DET_L
5	G_HPL
4	G_HPR
3	EXTMIC_L
2	G_EXTMICR
1	G_EXTMICL

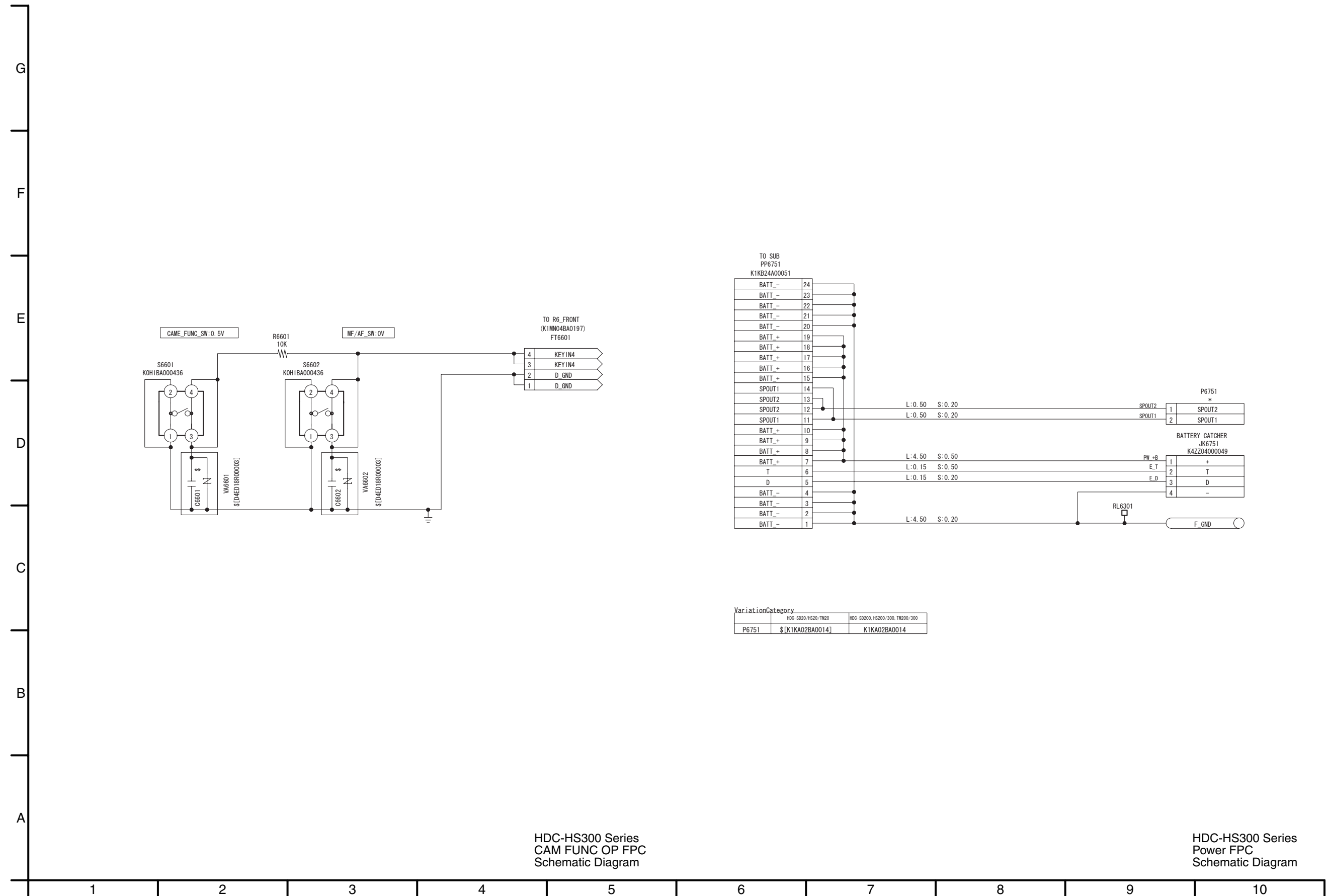
K1M458A0259
FP6403

S3.9. MOS FPC Schematic Diagram



HDC-HS300 Series
MOS FPC
Schematic Diagram

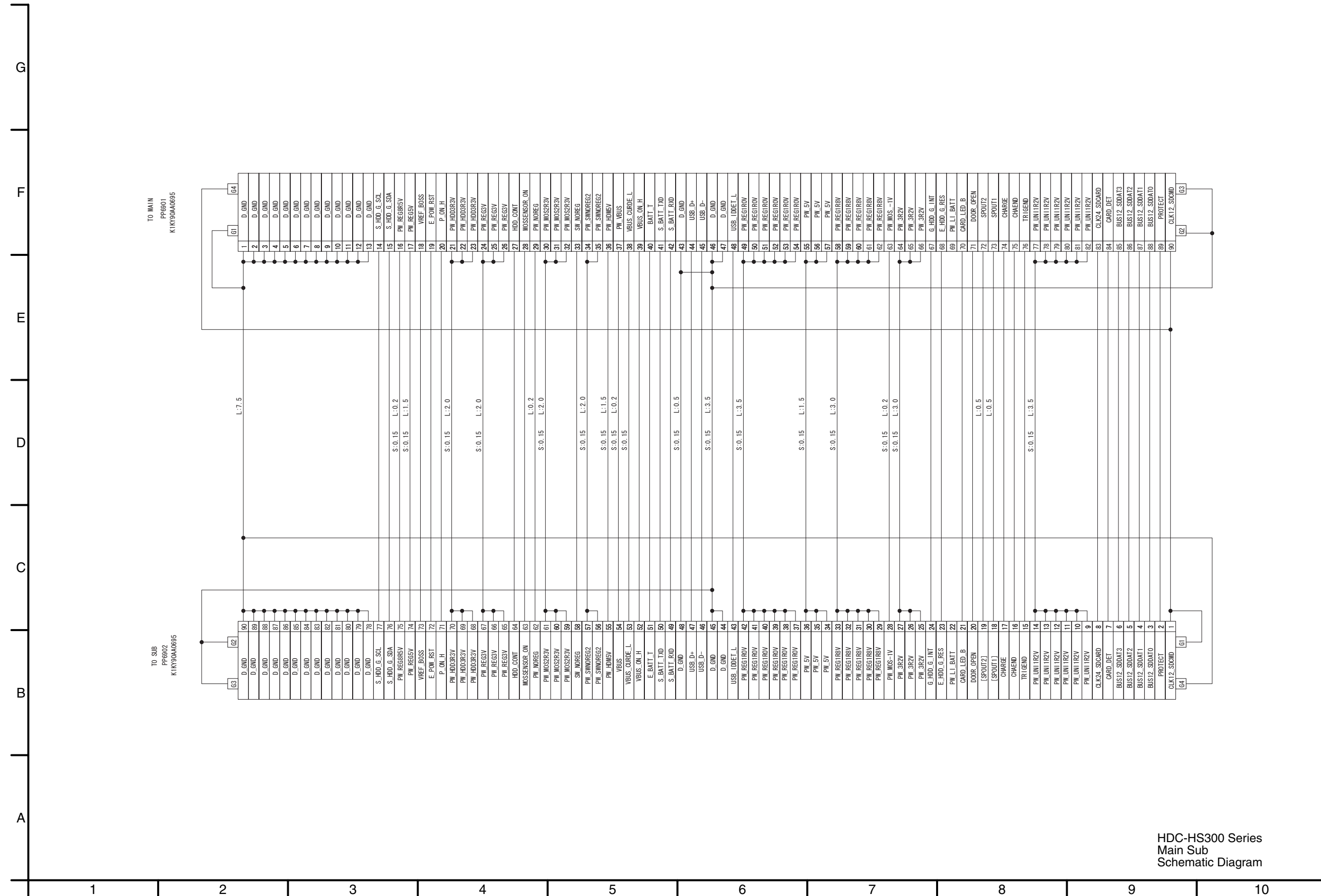
S3.10. CAM FUNC OP FPC Schematic Diagram / S3.11. Power FPC Schematic Diagram



HDC-HS300 Series
CAM FUNC OP FPC
Schematic Diagram

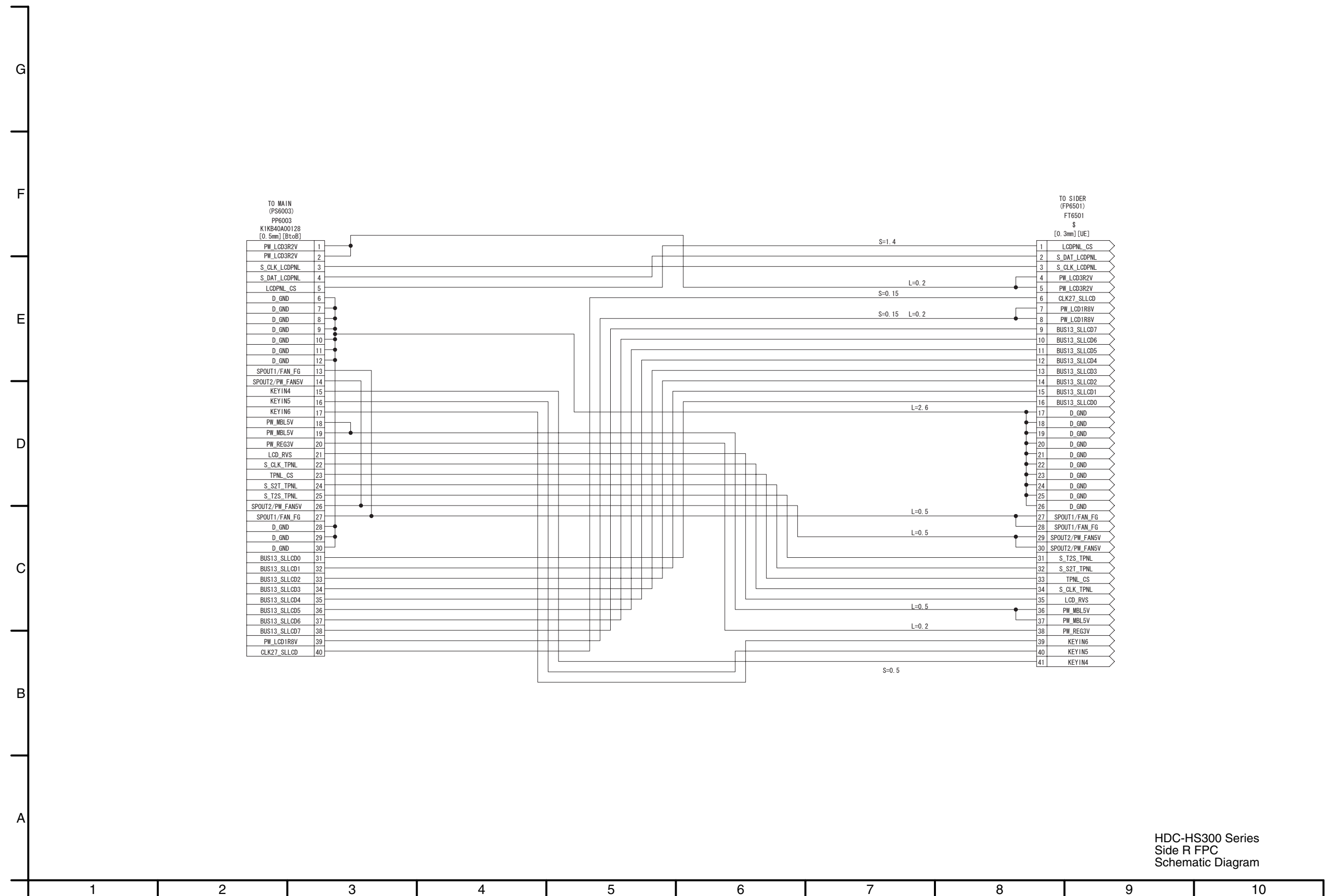
HDC-HS300 Series
Power FPC
Schematic Diagram

S3.12. Main Sub Schematic Diagram



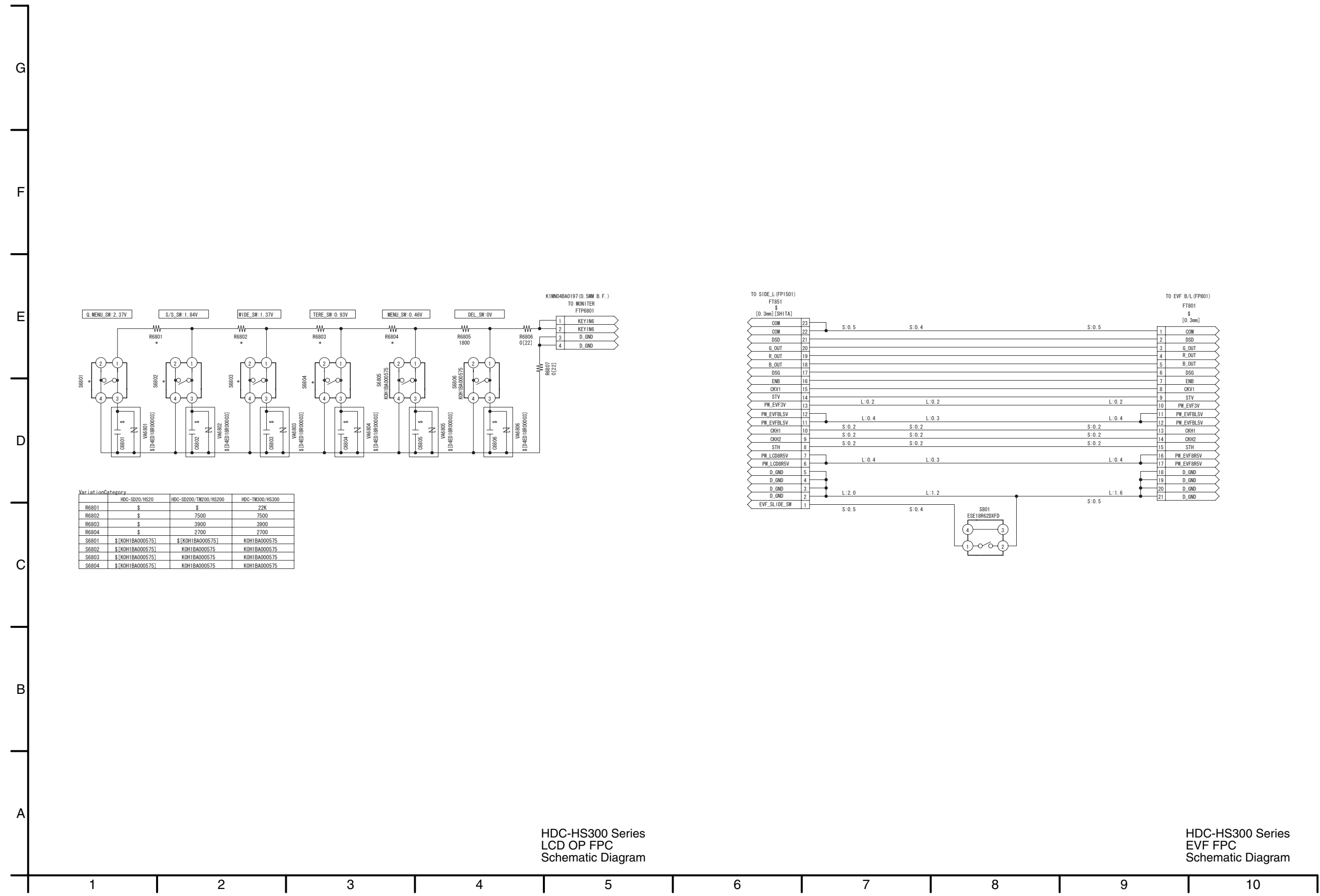
HDC-HS300 Series
Main Sub
Schematic Diagram

S3.13. Side R FPC Schematic Diagram



HDC-HS300 Series
Side R FPC
Schematic Diagram

S3.14. LCD OP FPC Schematic Diagram / S3.15. EVF FPC Schematic Diagram

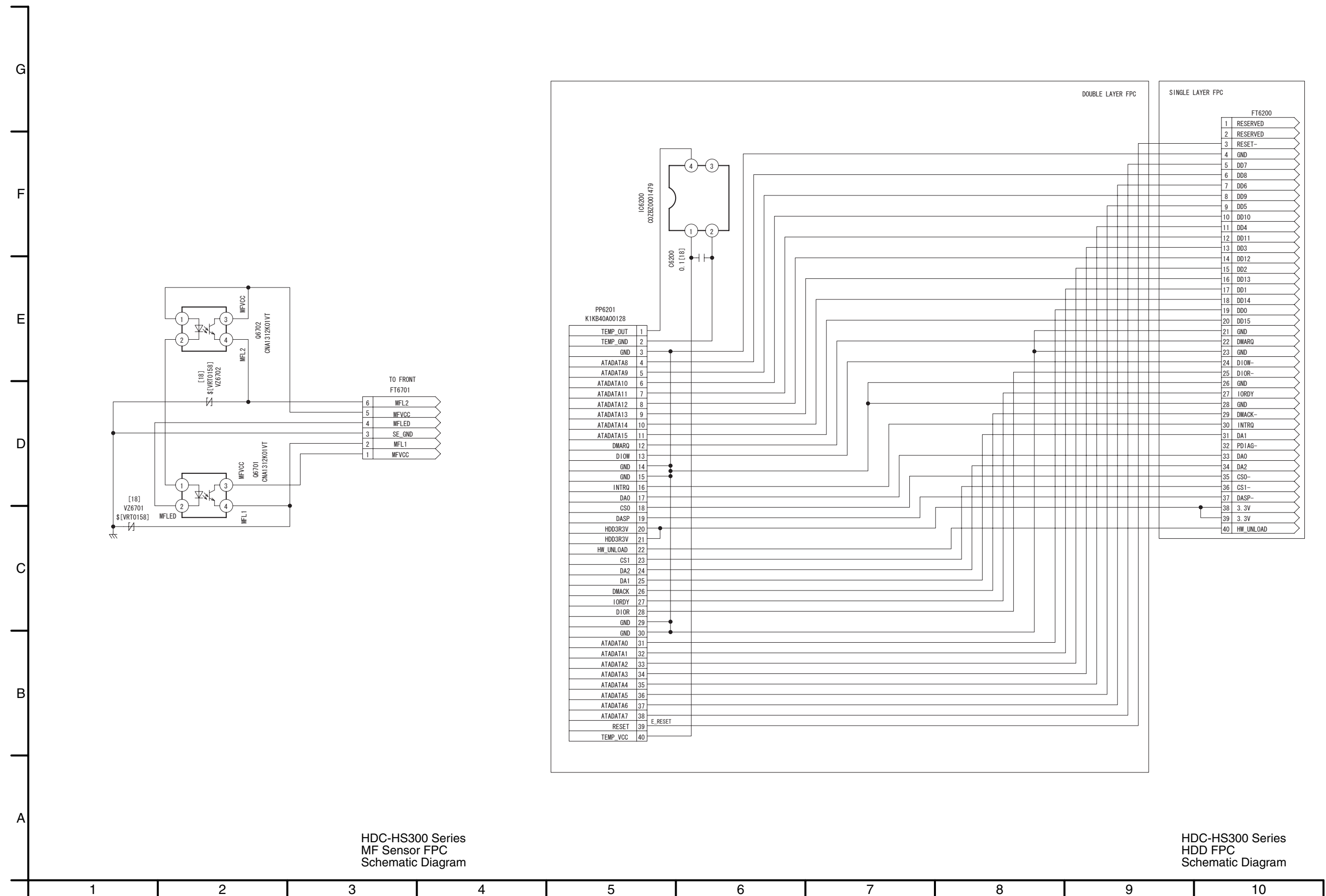


VariationCategory	HDC-S020/HS20	HDC-S0200/TW200/HS200	HDC-TW300/HS300
R6601	\$	\$	Z2K
R6602	\$	7500	7500
R6603	\$	3900	3900
R6604	\$	2700	2700
S6601	\$(KXH1BA000575)	\$(KXH1BA000575)	KXH1BA000575
S6602	\$(KXH1BA000575)	KXH1BA000575	KXH1BA000575
S6603	\$(KXH1BA000575)	KXH1BA000575	KXH1BA000575
S6604	\$(KXH1BA000575)	KXH1BA000575	KXH1BA000575

HDC-HS300 Series
LCD OP FPC
Schematic Diagram

HDC-HS300 Series
EVF FPC
Schematic Diagram

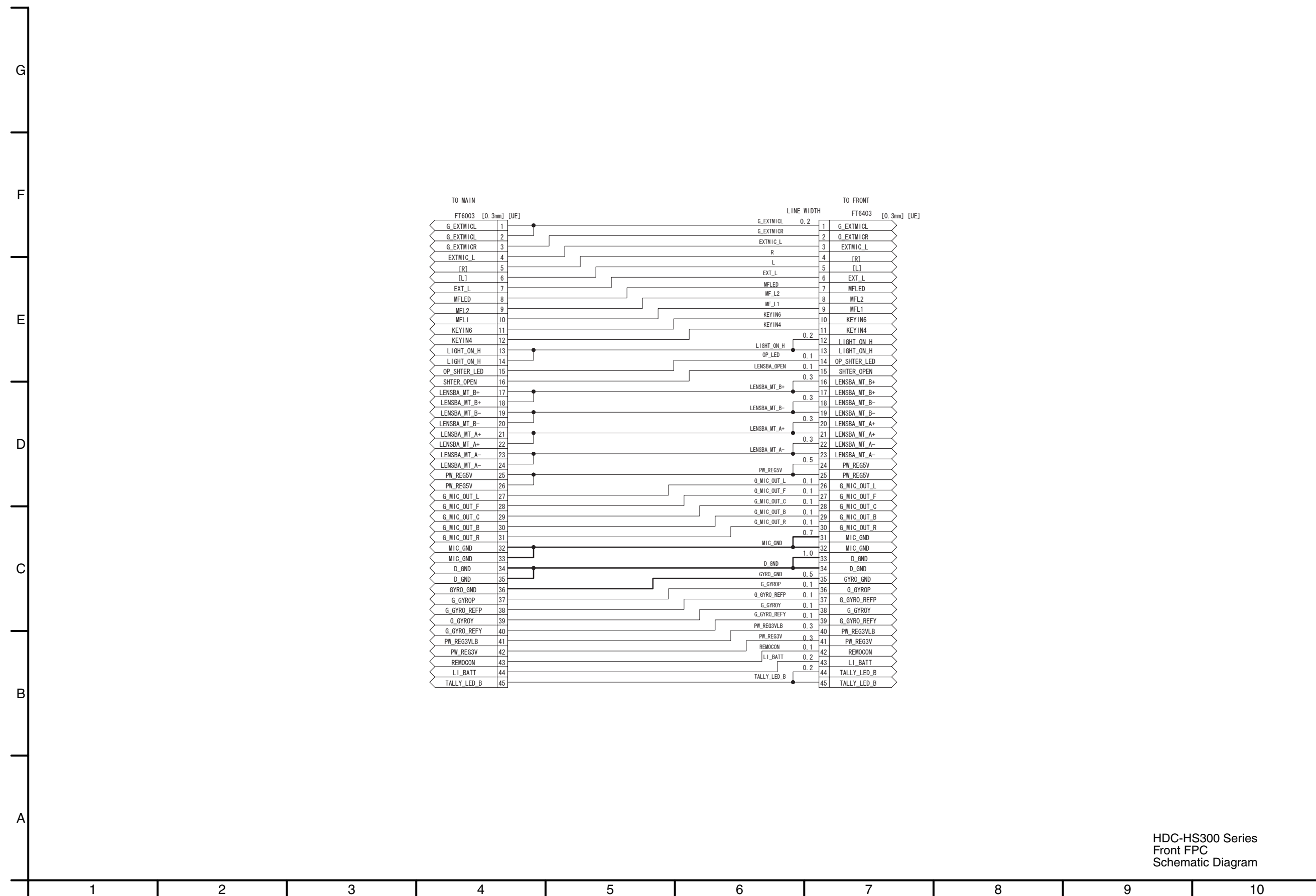
S3.16. MF Sensor FPC Schematic Diagram / S3.17. HDD FPC Schematic Diagram



HDC-HS300 Series
MF Sensor FPC
Schematic Diagram

HDC-HS300 Series
HDD FPC
Schematic Diagram

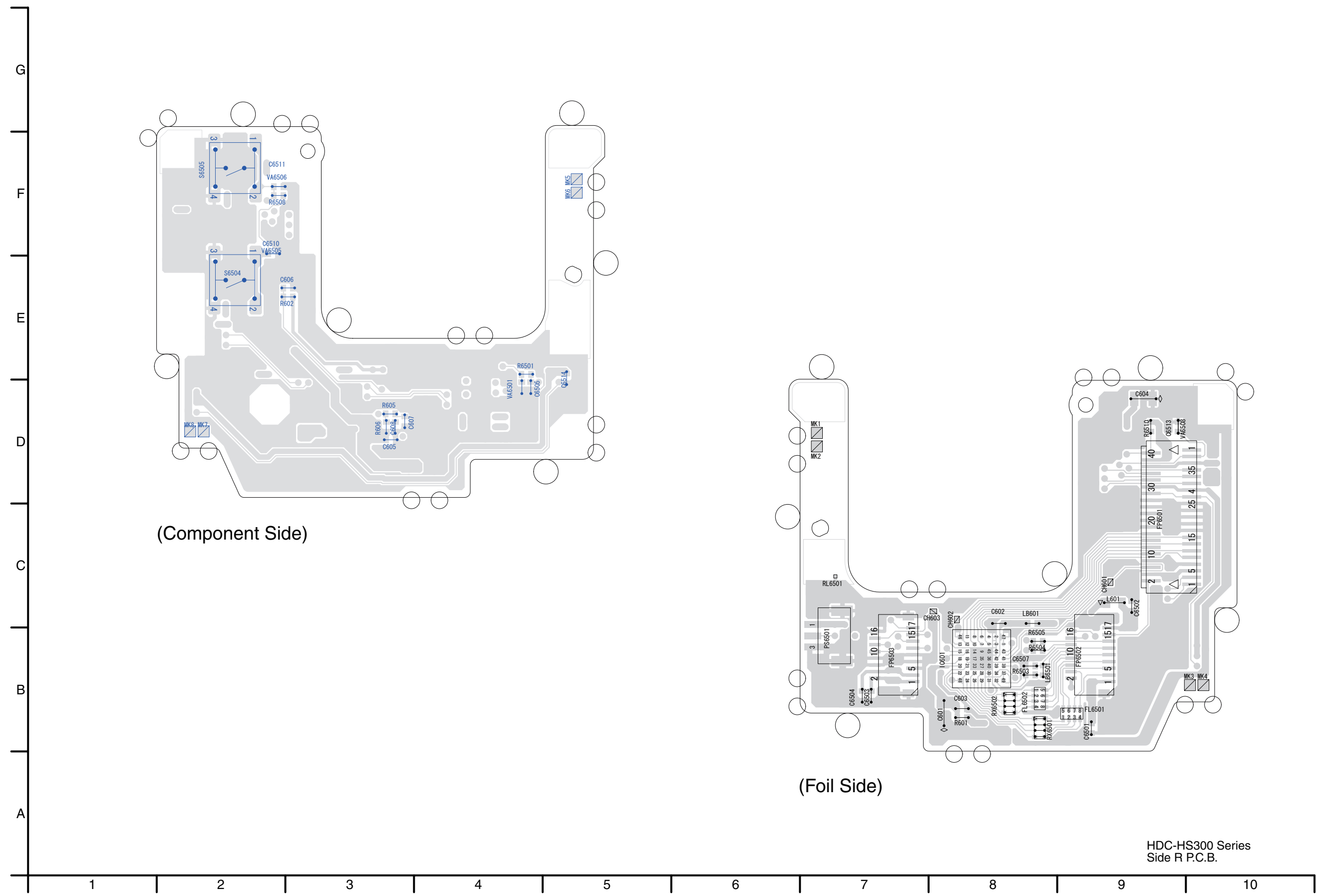
S3.18. Front FPC Schematic Diagram



HDC-HS300 Series
Front FPC
Schematic Diagram

S4. Print Circuit Board

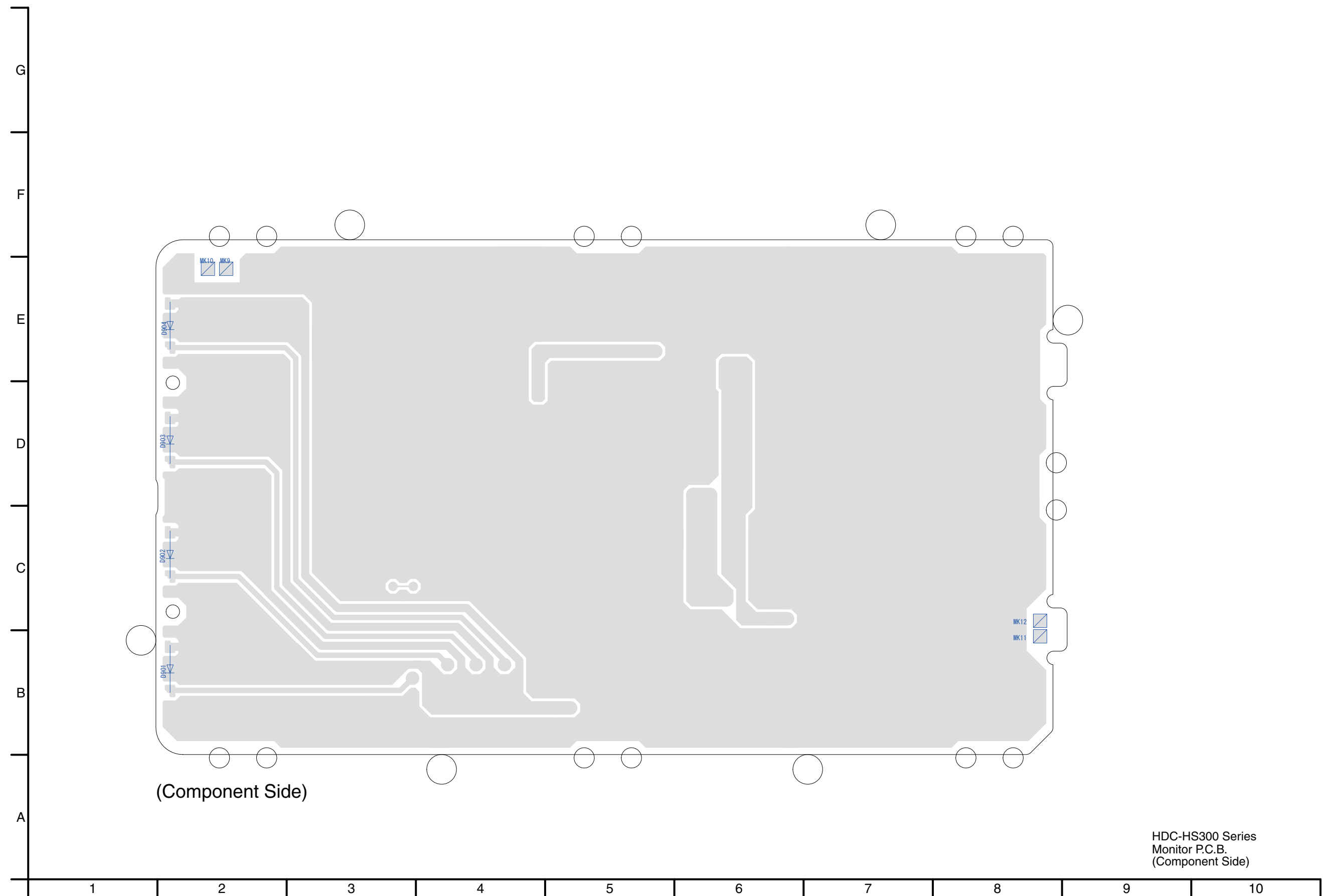
S4.1. Side R P.C.B.



HDC-HS300 Series
Side R P.C.B.

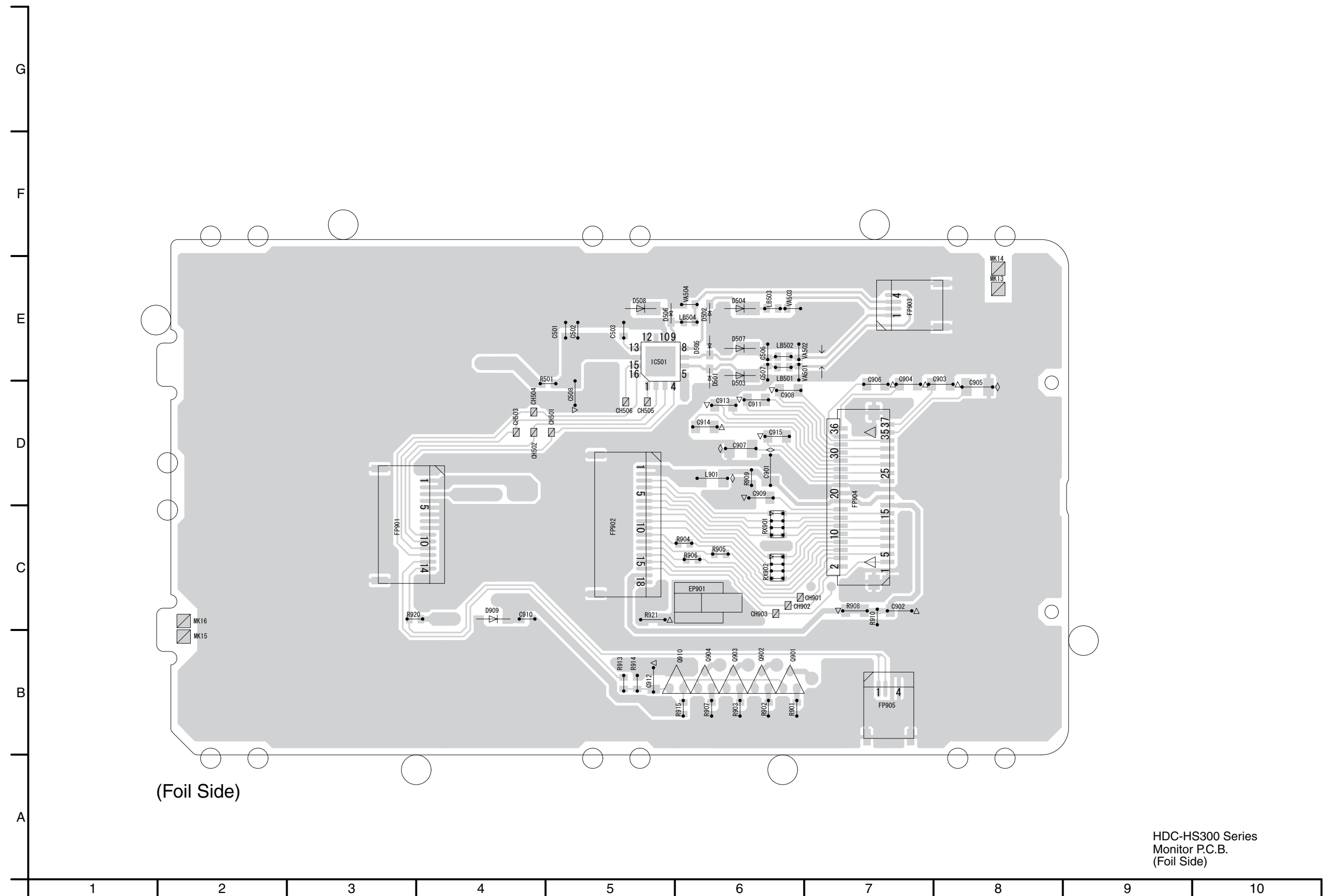
S4.2. Monitor P.C.B.

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



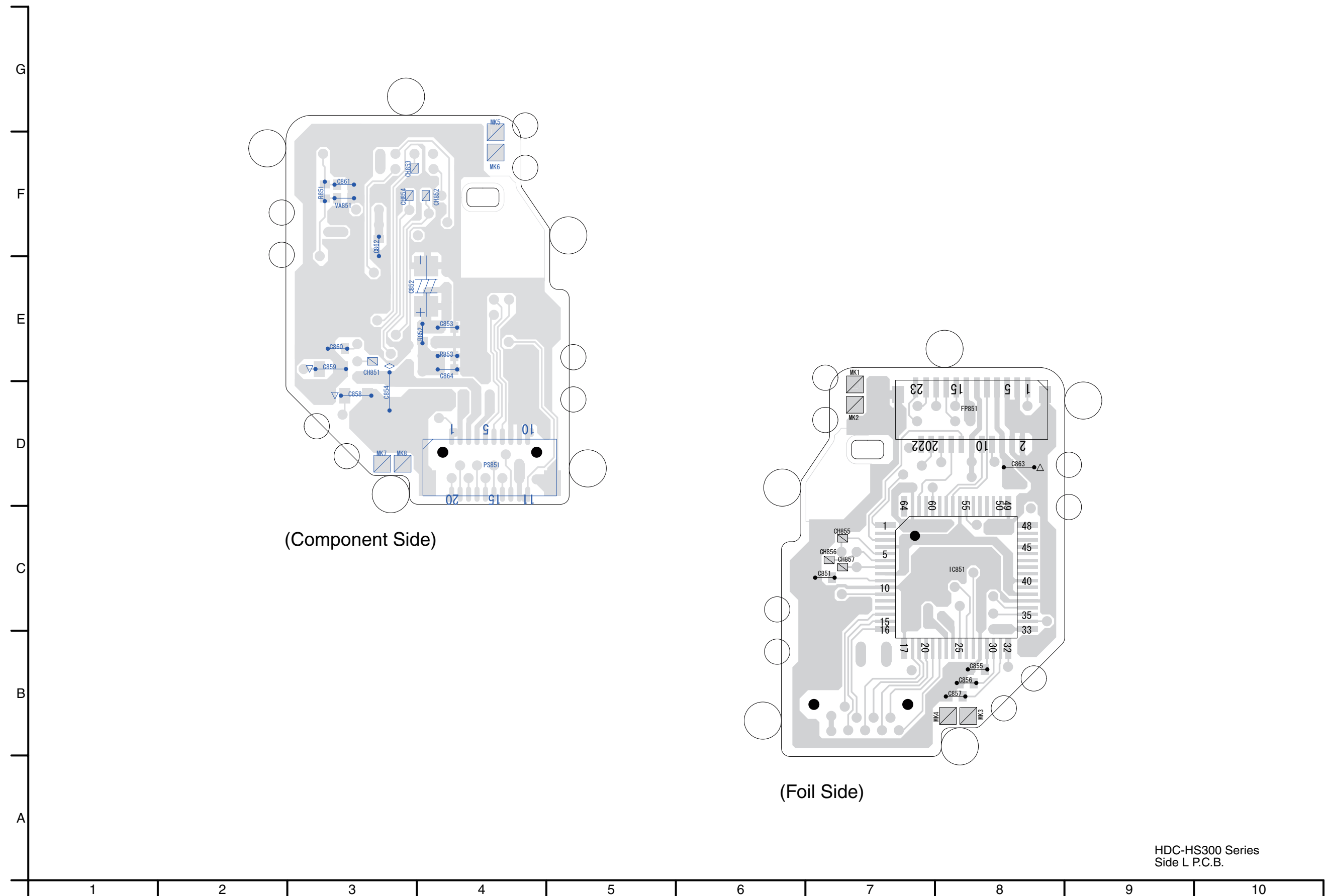
HDC-HS300 Series
Monitor P.C.B.
(Component Side)

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

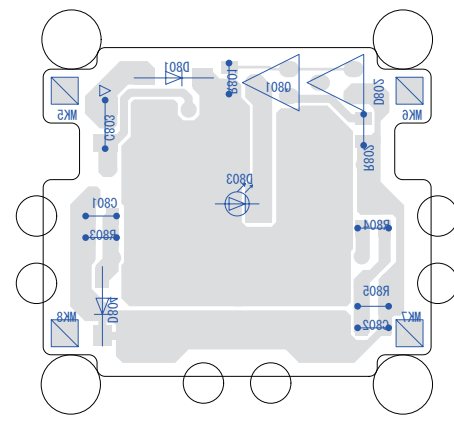
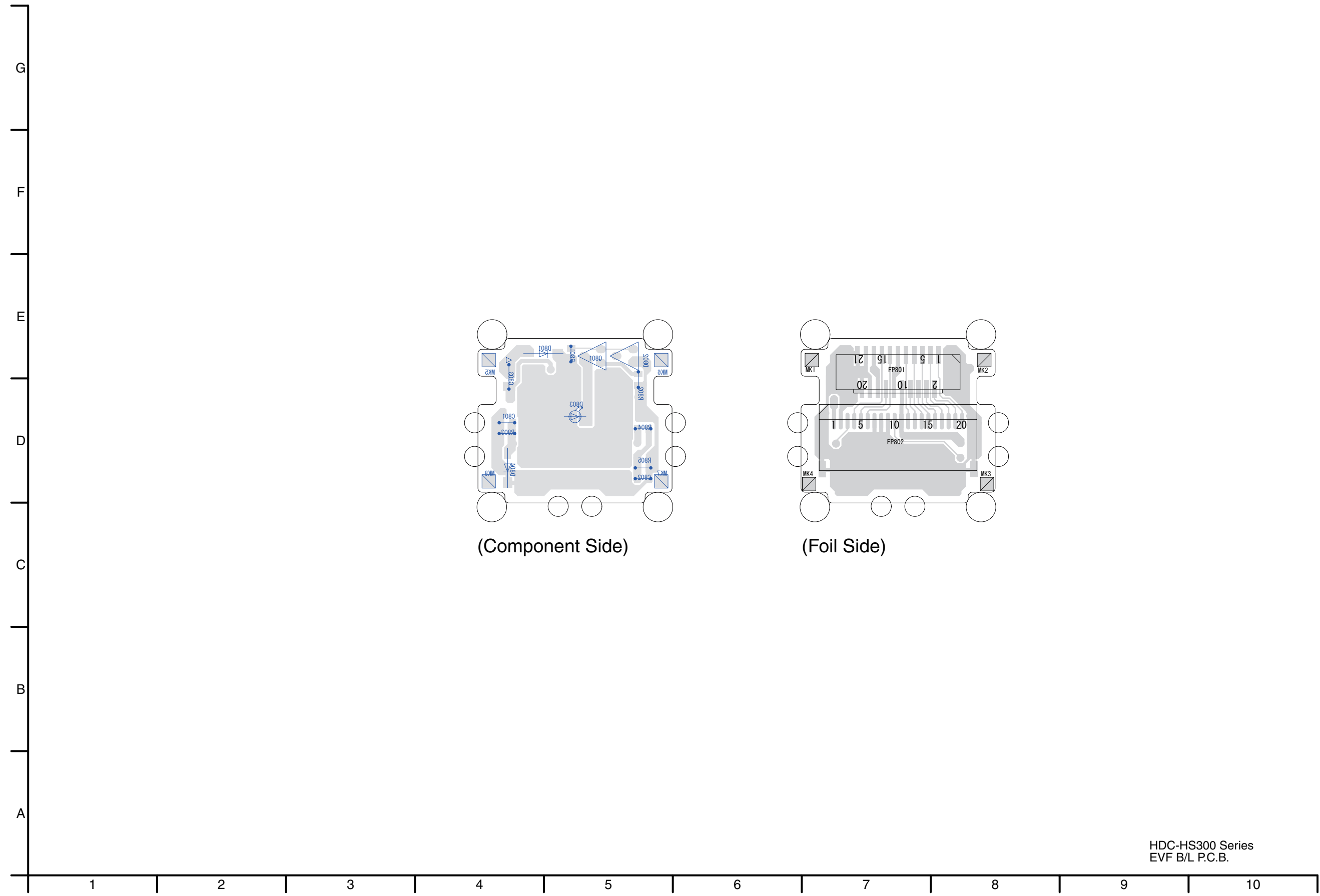


HDC-HS300 Series
Monitor P.C.B.
(Foil Side)

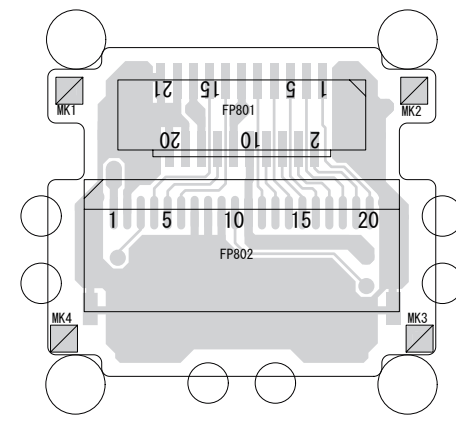
S4.3. Side L P.C.B.



S4.4. EVF B/L P.C.B.

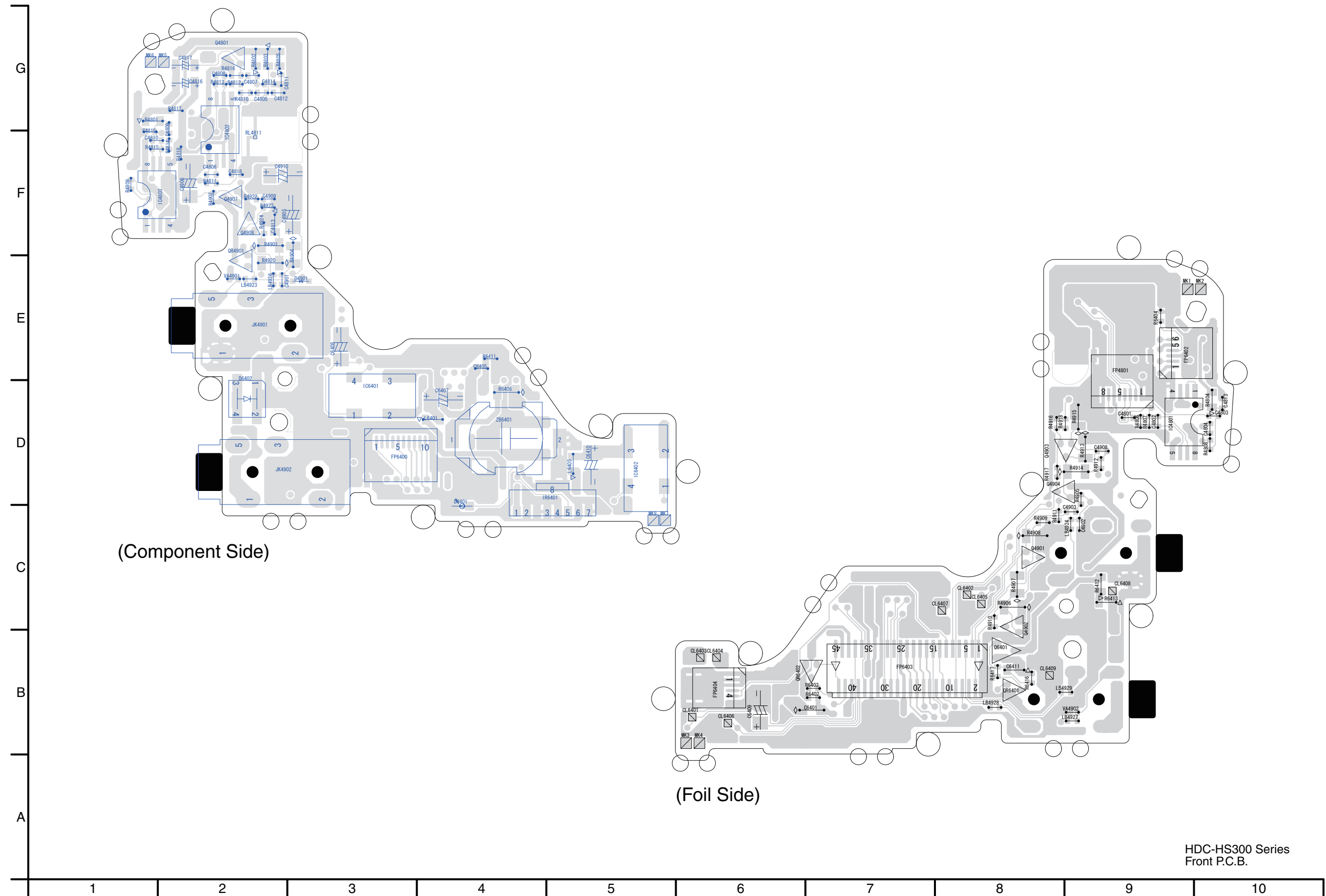


(Component Side)



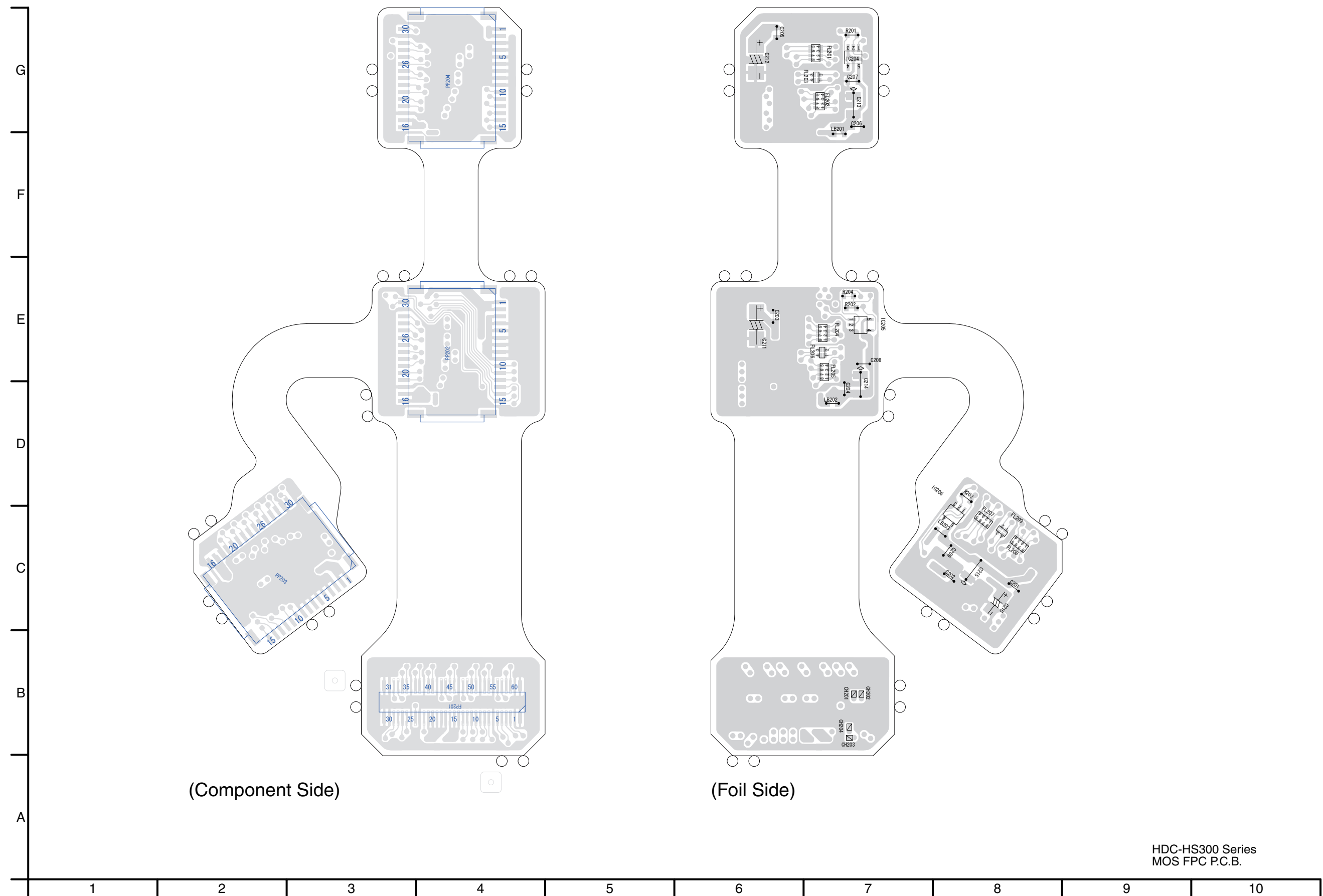
(Foil Side)

S4.5. Front P.C.B.



HDC-HS300 Series
Front P.C.B.

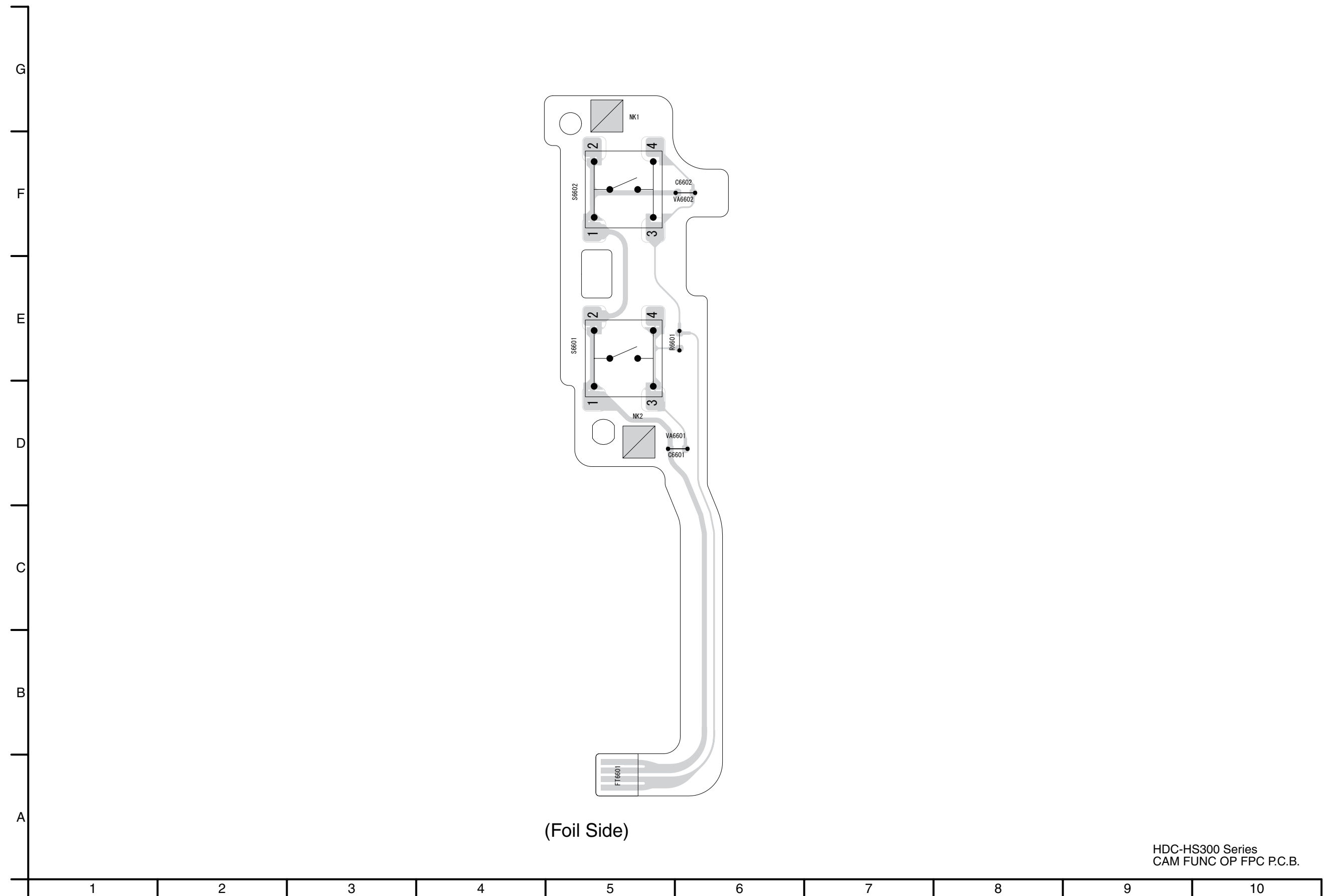
S4.6. MOS FPC P.C.B.



(Component Side)

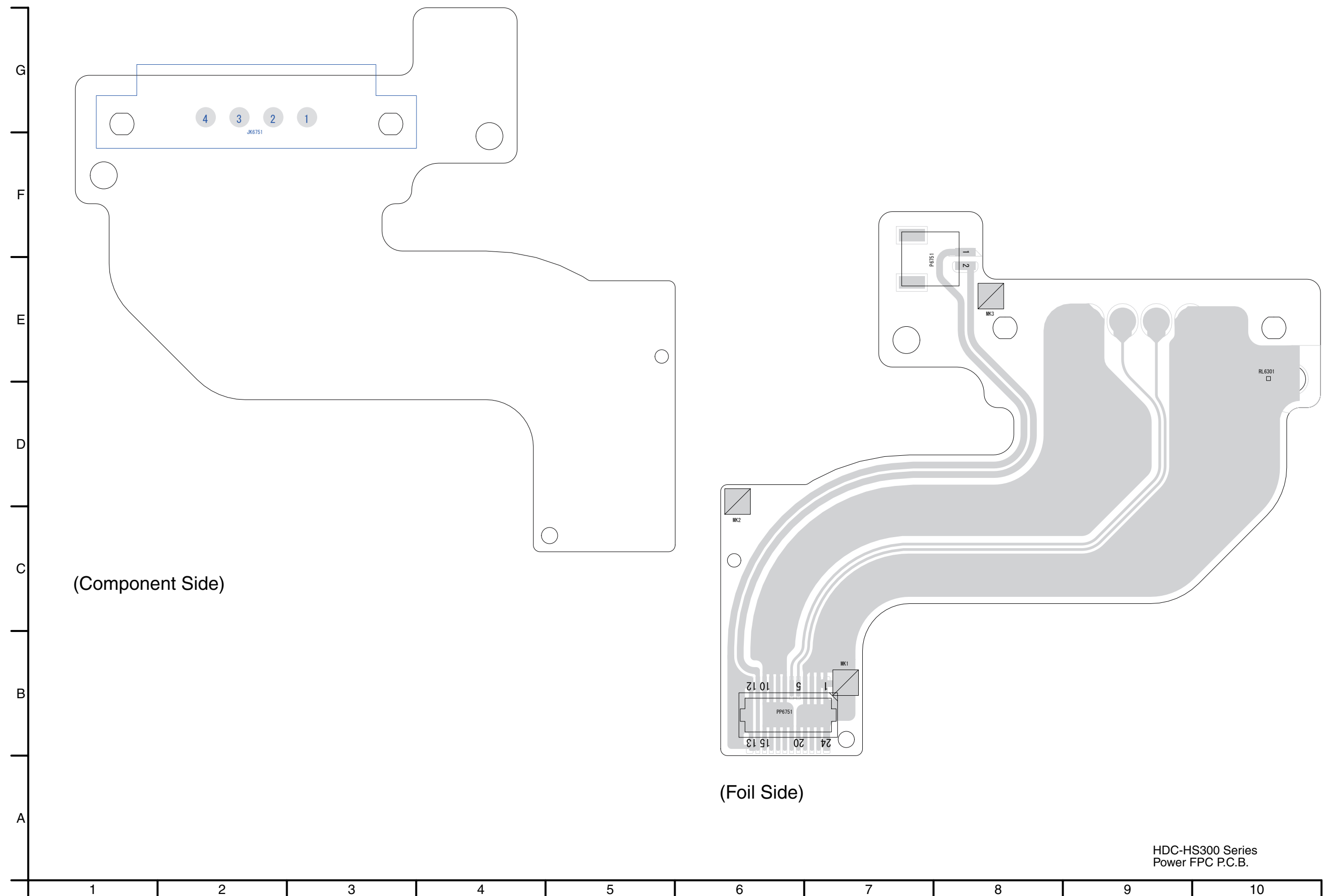
(Foil Side)

S4.7. CAM FUNC OP FPC P.C.B.

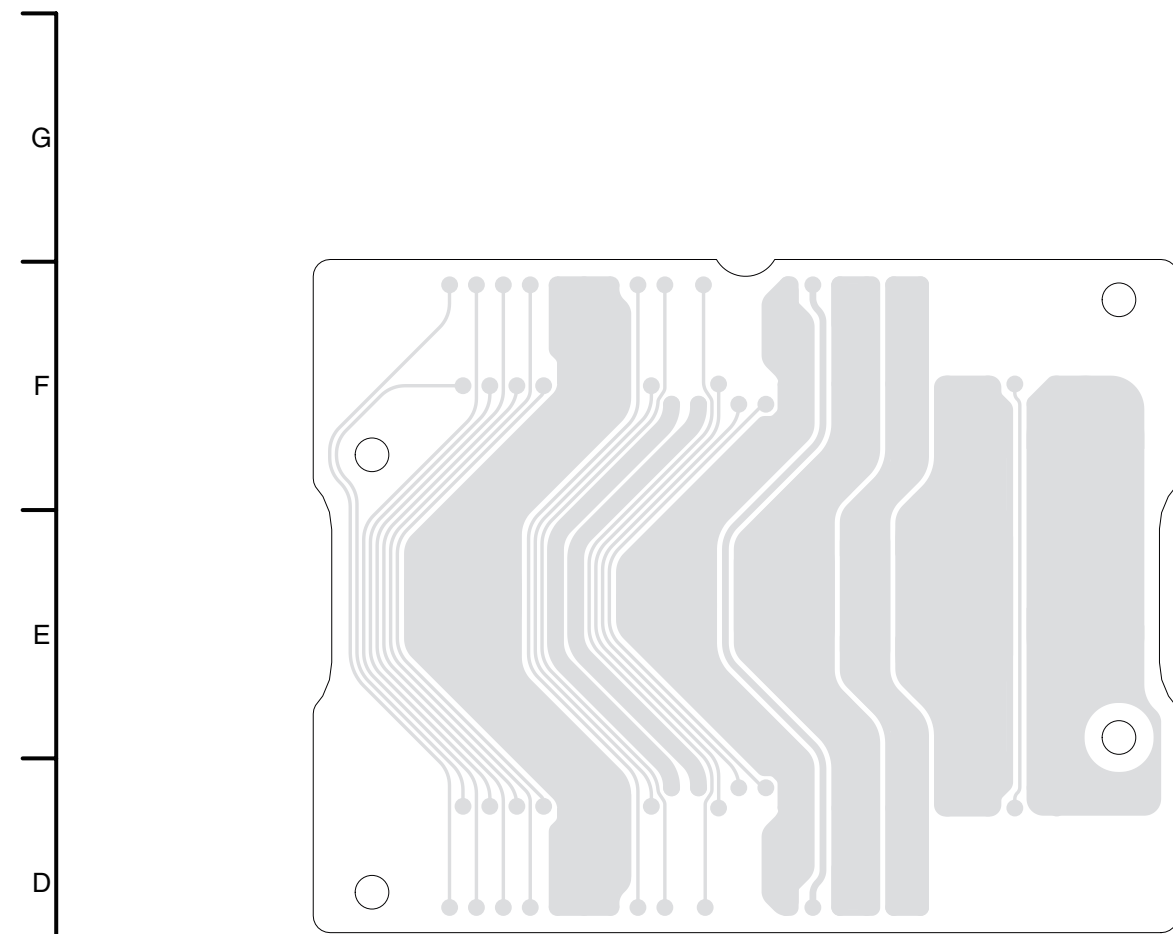


HDC-HS300 Series
CAM FUNC OP FPC P.C.B.

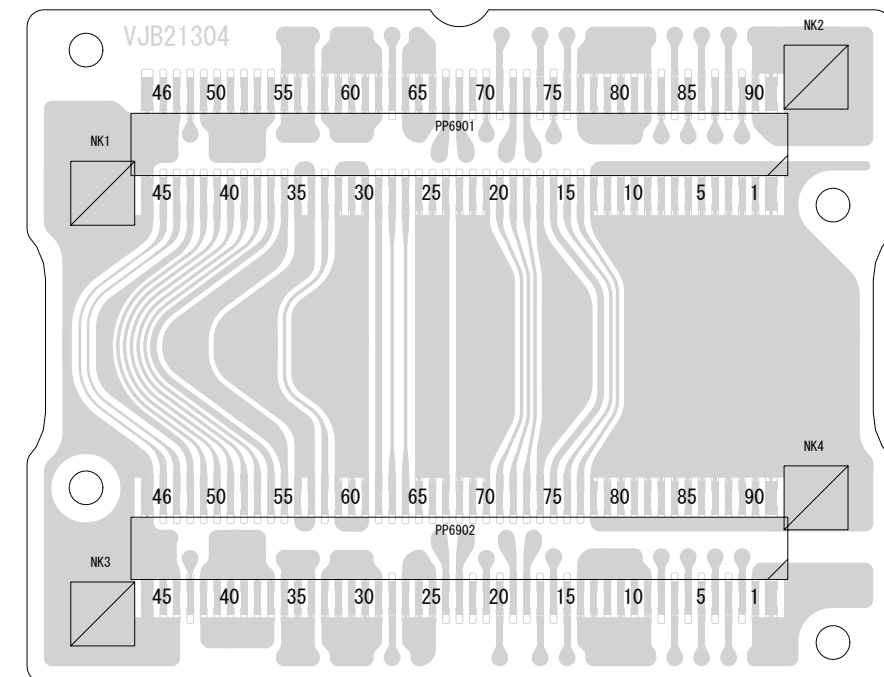
S4.8. Power FPC P.C.B.



S4.9. Main Sub P.C.B.



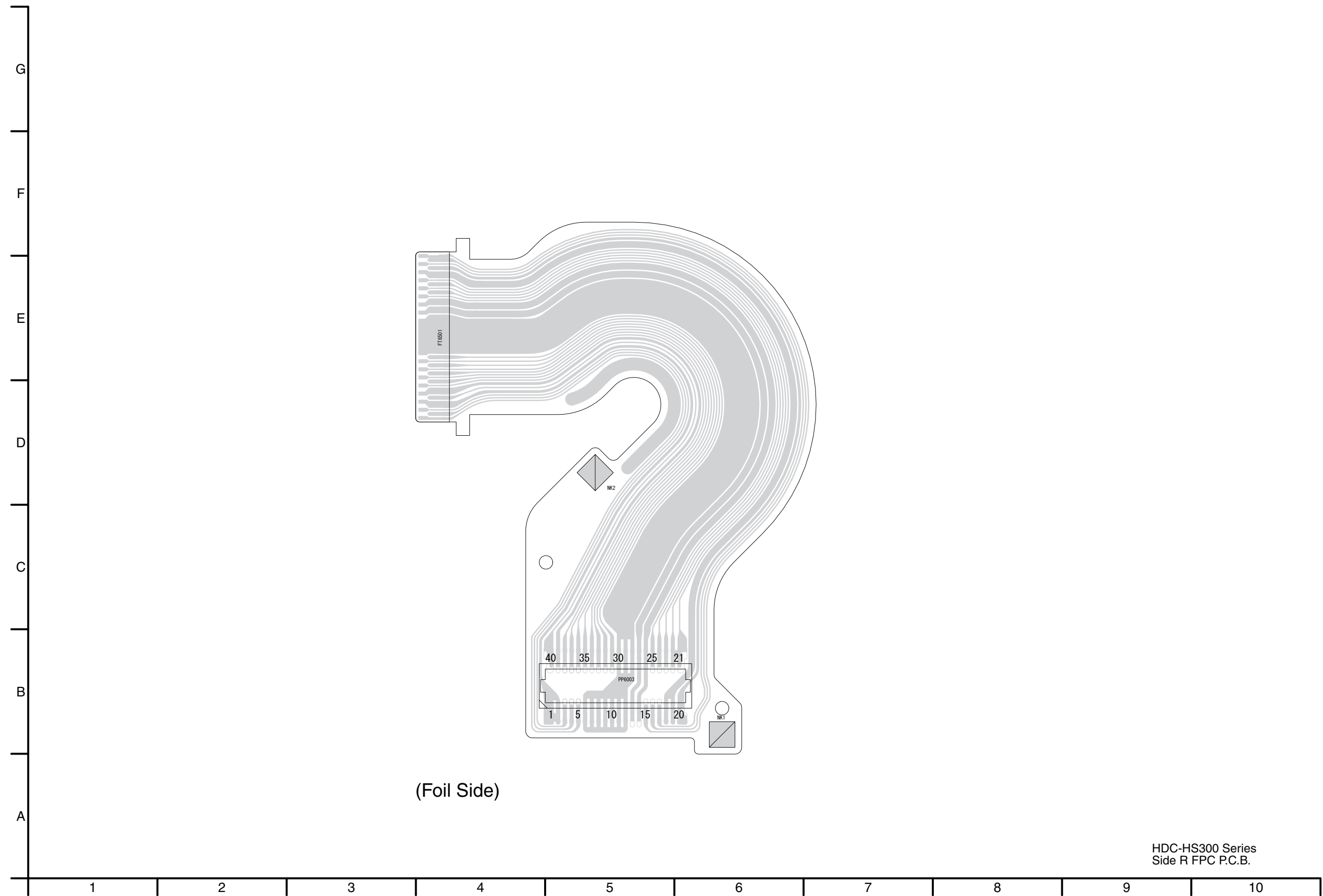
(Component Side)



(Foil Side)

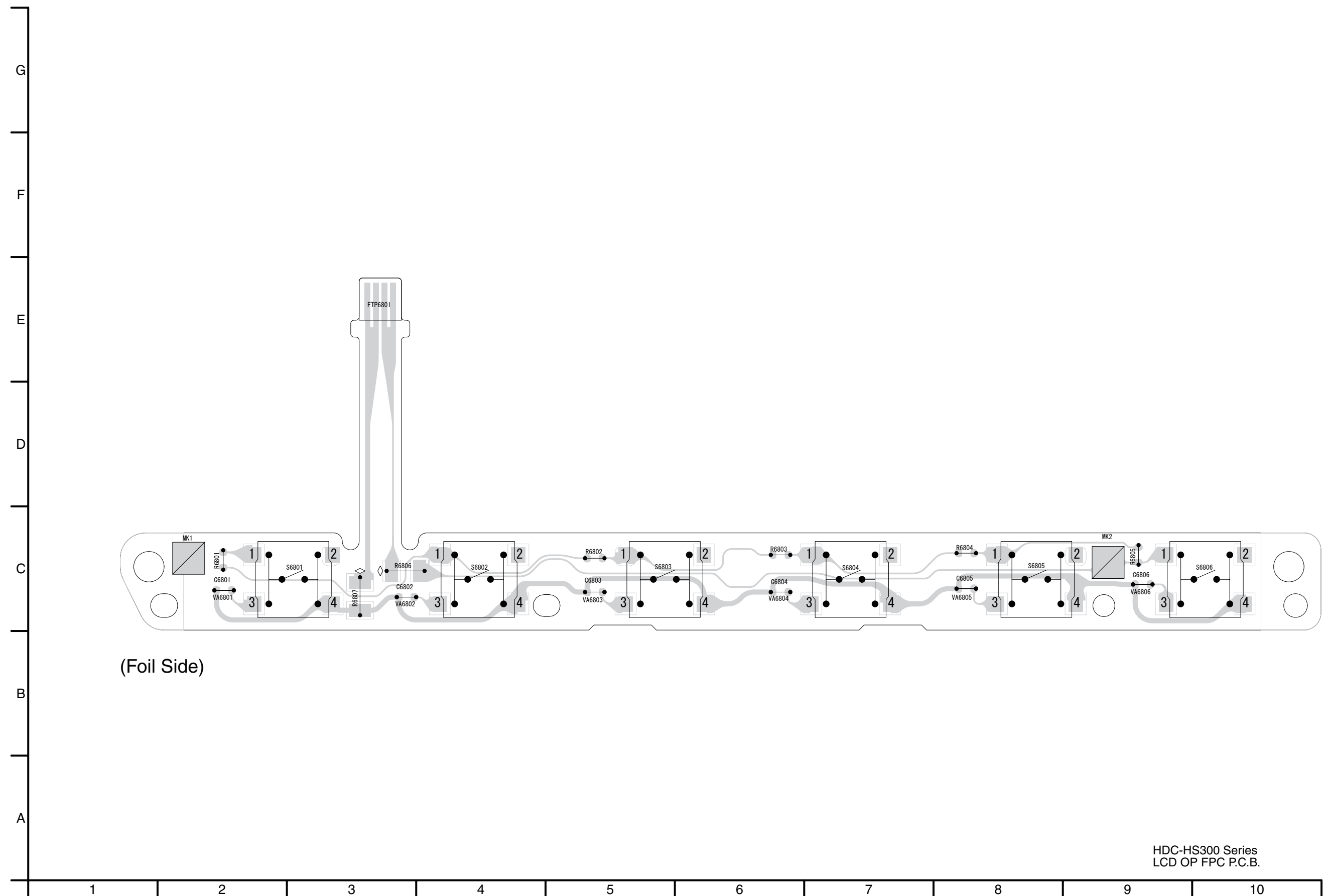
HDC-HS300 Series
Main Sub P.C.B.

S4.10. Side R FPC P.C.B.



HDC-HS300 Series
Side R FPC P.C.B.

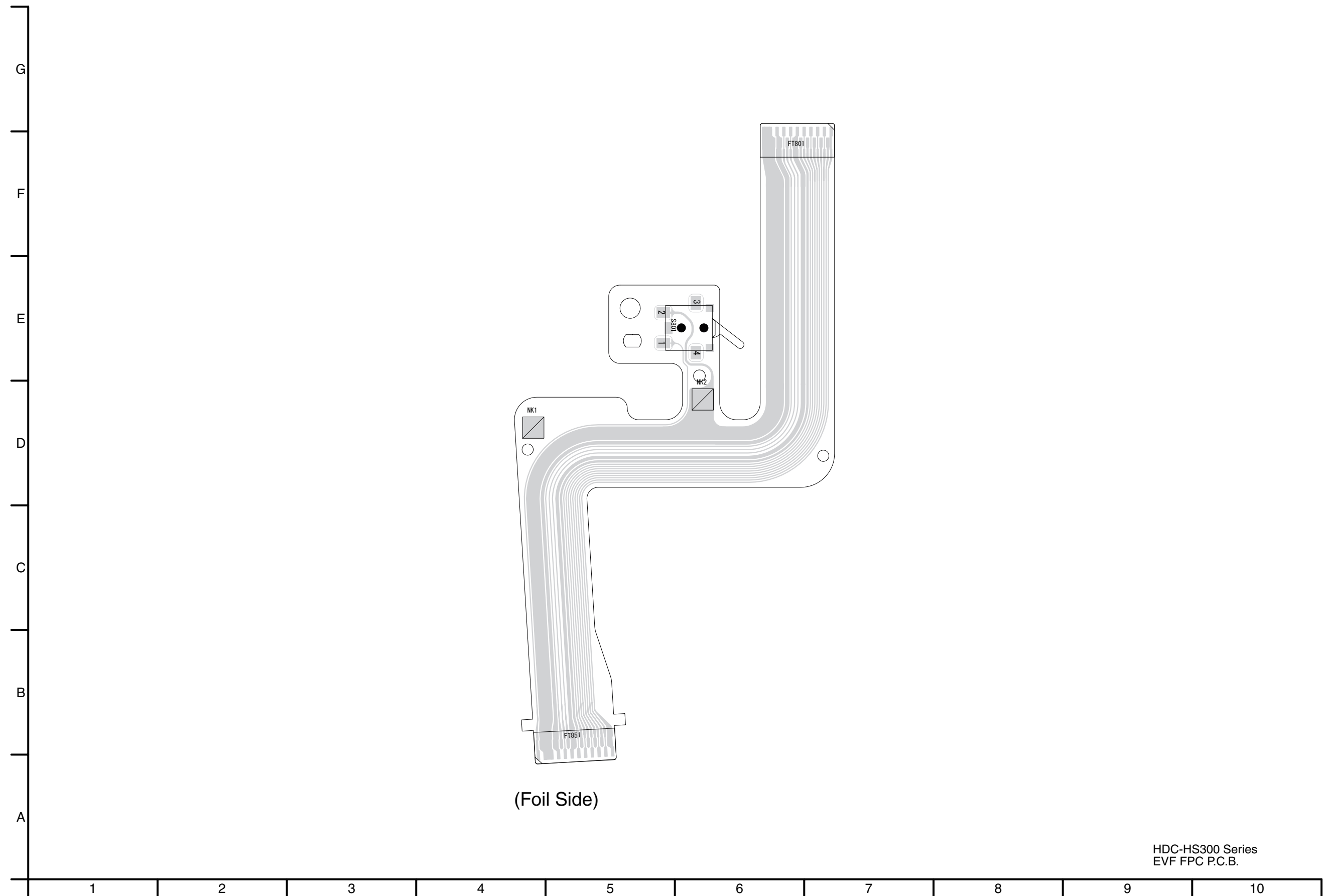
S4.11. LCD OP FPC P.C.B.



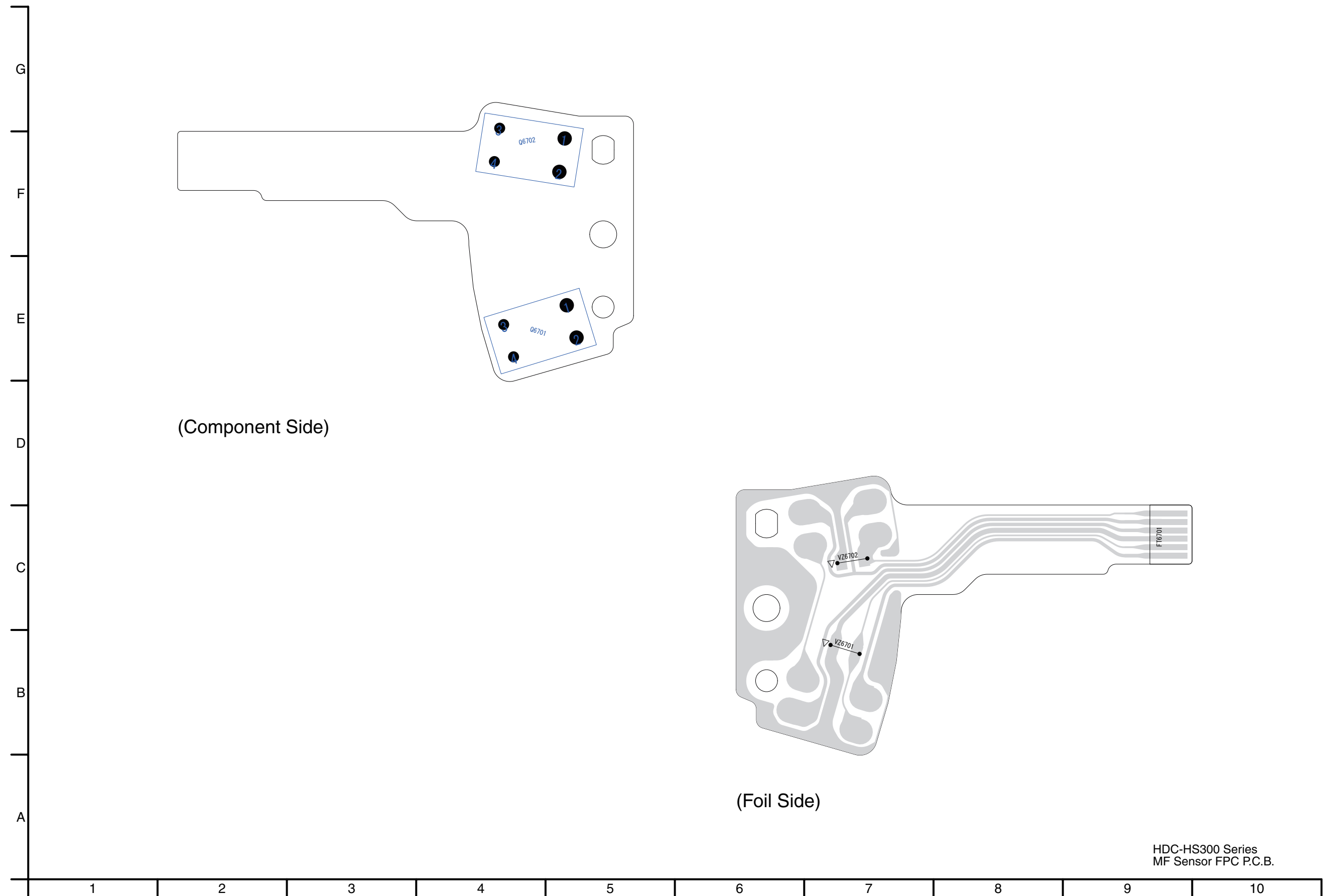
(Foil Side)

HDC-HS300 Series
LCD OP FPC P.C.B.

S4.12. EVF FPC P.C.B.

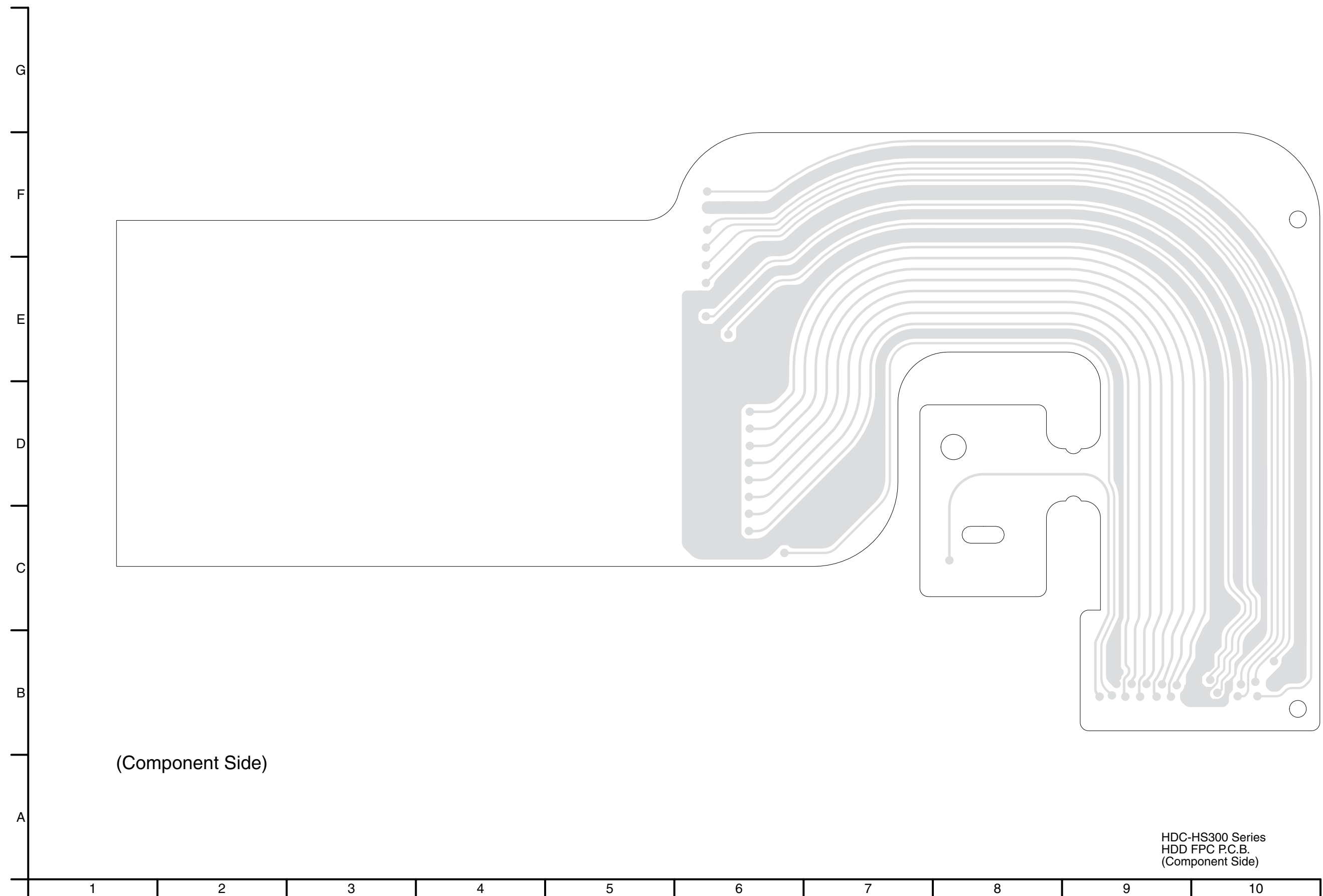


S4.13. MF Sensor FPC P.C.B.

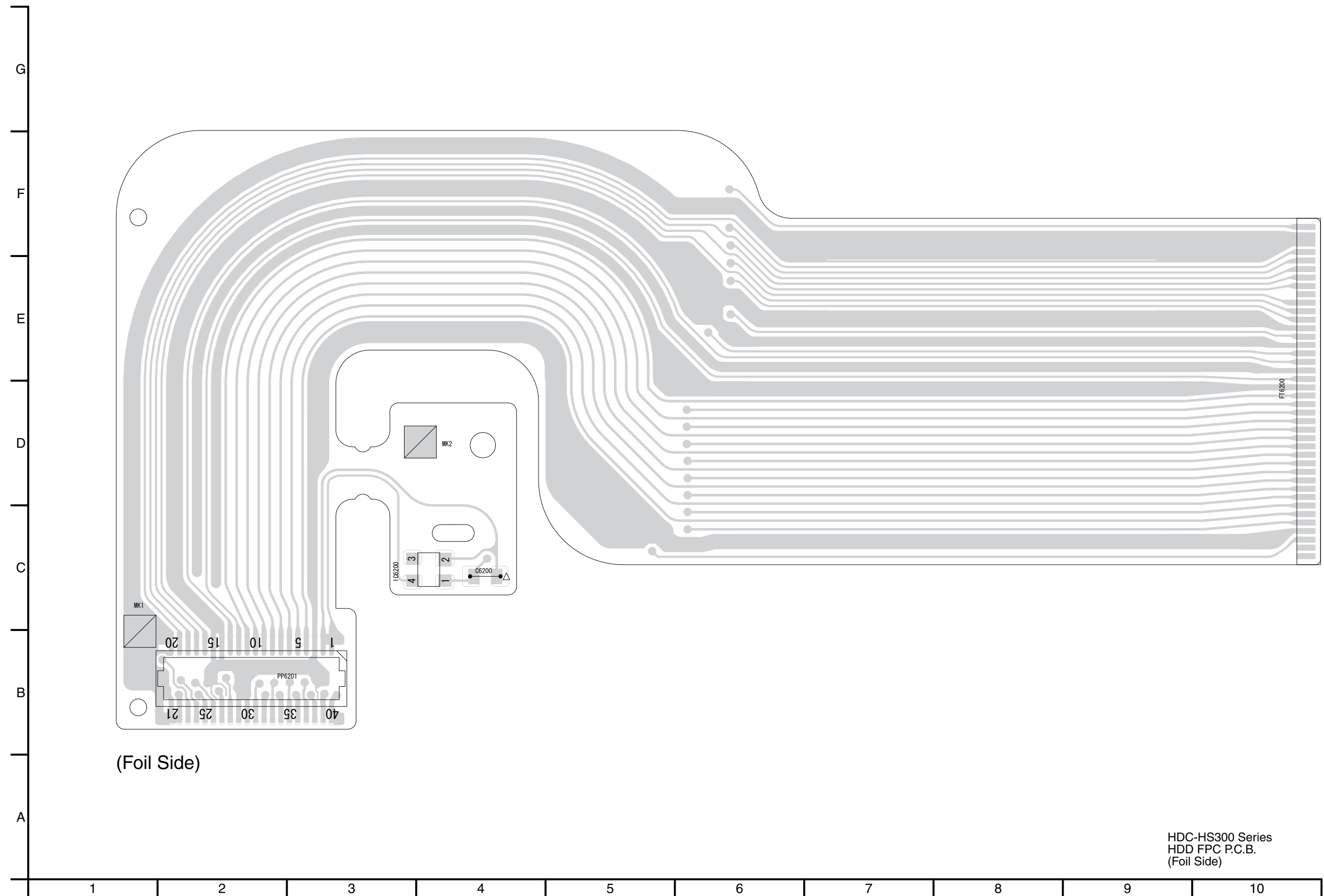


S4.14. HDD FPC P.C.B.

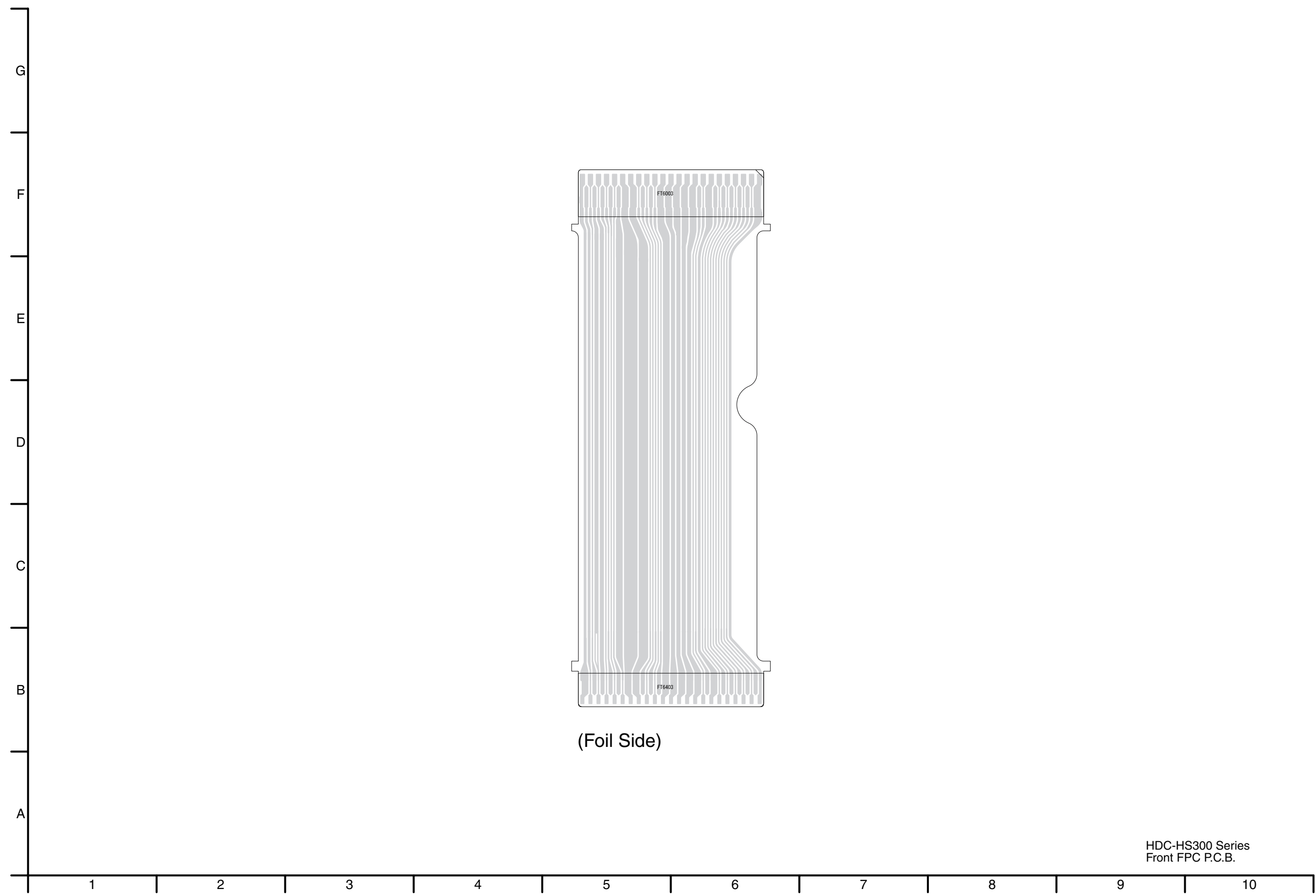
S4.14.1. HDD FPC P.C.B. (Component Side)



S4.14.2. HDD FPC P.C.B. (Foil Side)



S4.15. Front FPC P.C.B.



HDC-HS300 Series
Front FPC P.C.B.

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
##	VEP03H66AR	MAIN PCB UNIT	1	(RTL) E.S.D. P,PC
##	VEP03H66AW	MAIN PCB UNIT	1	(RTL) E.S.D. EB
##	VEP03H66AU	MAIN PCB UNIT	1	(RTL) E.S.D. EC,EF,EG
##	VEP03H66BA	MAIN PCB UNIT	1	(RTL) E.S.D. EE
##	VEP03H66AV	MAIN PCB UNIT	1	(RTL) E.S.D. EP
##	VEP03H66AX	MAIN PCB UNIT	1	(RTL) E.S.D. GC,SG
##	VEP03H66BC	MAIN PCB UNIT	1	(RTL) E.S.D. GK
##	VEP03H66AT	MAIN PCB UNIT	1	(RTL) E.S.D. GT
##	VEP01A16G	SUB PCB UNIT	1	(RTL) E.S.D.
##	VEP29212A	SIDE R PCB UNIT	1	(RTL) E.S.D.
##	VEP26321A	MONITOR PCB	1	(RTL) E.S.D.
##	VEP20C42A	SIDE L PCB UNIT	1	(RTL) E.S.D.
##	VEP29210A	EVF B/L PCB UNIT	1	(RTL) E.S.D.
##	VEP20C50A	FRONT PCB UNIT	1	(RTL) E.S.D.
##	VEP22400A	MOS FPC UNIT	1	
##	VEP20C52A	CAM FUNC FPC UNIT	1	(RTL)
##	VEP21303B	POWER FPC UNIT	1	
##	VEP21304A	MAIN SUB FPC	1	(RTL)
##	VEP20C44A	SIDE (R) FPC UNIT	1	(RTL)
##	VEP20C53C	LCD OP FPC UNIT	1	
##	VEP29214A	EVF FPC UNIT	1	
##	VEP27223A	MF_SENSOR OP PCB	1	(RTL) E.S.D.
##	VEP79227A	HDD FPC	1	(RTL) E.S.D.
##	VEP29212A	SIDE R PCB UNIT		(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	
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	JOJAD0000028	FILTER	1	
FL6502	JOJAD0000028	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	JOJYC0000059	FILTER	1	
LB6501	JOJBC0000115	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	
R6510	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
RX6501	D1H81214A024	CHIP RESISTOR ARRAY	1	
RX6502	D1H81214A024	CHIP RESISTOR ARRAY	1	
S6505	K0H1BA000436	SWITCH	1	
VA6501	D4ED18R00003	VARISTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP26321A	MONITOR PCB		(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	TERMINAL BLOCK	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	JOJCC0000276	FILTER	1	
LB502	JOJCC0000276	FILTER	1	
LB503	JOJCC0000276	FILTER	1	
LB504	JOJCC0000276	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	VARISTOR	1	
VA502	D4ED1270A011	VARISTOR	1	
VA503	D4ED18R00008	VARISTOR	1	
VA504	D4ED18R00008	VARISTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP20C42A	SIDE L PCB UNIT		(RTL) E.S.D.
C851	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C852	F3F0G4760003	E.CAPACITOR CH 4V 47U	1	
C853	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C854	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C855	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C856	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C857	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C858	F1H0J225A002	C.CAPACITOR CH 6.3V 2.2U	1	
C859	F1H0J225A002	C.CAPACITOR CH 6.3V 2.2U	1	
C860	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C861	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C862	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C863	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C864	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
FP851	K1MN23AA0035	CONNECTOR 23P	1	
IC851	C1AB00002388	IC	1	E.S.D.
PS851	K1KA20BA0052	CONNECTOR 20P	1	
R851	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R852	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
R853	ERJ2RHD102X	M.RESISTOR CH 1/16W 1K	1	
##	VEP29210A	EVF B/L PCB UNIT		(RTL) E.S.D.
C801	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C802	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C803	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
D801	MAZ8062GML	DIODE	1	E.S.D.
D802	MA3S13300L	DIODE	1	E.S.D.
D803	B3AFB0000129	DIODE	1	E.S.D.
D804	MAZ8056GML	DIODE	1	E.S.D.
FP801	K1MN21AA0094	CONNECTOR 21P	1	
FP802	K1MN20BA0197	CONNECTOR 20P	1	
Q801	2SC6054J0L	TRANSISTOR	1	E.S.D.
R801	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R802	ERJ2RKD820	M.RESISTOR CH 1/16W 82	1	
R803	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R804	ERJ2GEJ122	M.RESISTOR CH 1/16W 1.2K	1	
R805	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	1	
##	VEP20C50A	FRONT PCB UNIT		(RTL) E.S.D.
⚠ B6401	ML-614SiZTK	BATTERY	1	[ENERGY]
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	
C4804	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4805	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4806	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4807	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4808	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4809	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4810	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4816	F3E0J106A009	E.CAPACITOR CH 6.3V 22U	1	
C4817	F3E0J106A009	E.CAPACITOR CH 6.3V 22U	1	
C4818	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4901	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C4902	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C4903	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4905	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4906	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4908	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C4909	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4910	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4913	F1H0J475A010	C.CAPACITOR CH 6.3V 4.7U	1	
C6401	F1J0J106A049	C.CAPACITOR CH 6.3V 10U	1	
C6405	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C6407	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1	
C6408	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C6409	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C6410	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1	
D4901	B0JCD000002	DIODE	1	E.S.D.
D6401	B3AAB0000137	DIODE	1	E.S.D.
D6402	B3ADB0000135	DIODE	1	E.S.D.
FP4801	K1MN08BA0197	CONNECTOR 8P	1	
FP6400	K1MN10BA0197	CONNECTOR 10P	1	
FP6402	K1MN06BA0197	CONNECTOR 6P	1	
FP6403	K1MN45BA0259	CONNECTOR 45P	1	
FP6404	K1MN04BA0197	CONNECTOR 4P	1	
IC4801	C0ABBB000369	IC	1	E.S.D.
IC4802	C0ABBB000369	IC	1	E.S.D.
IC4803	C0ABBB000369	IC	1	E.S.D.
IC6401	L2ES00000018	IC	1	E.S.D.
IC6402	L2ES00000019	IC	1	E.S.D.
IR6401	B3RBB0000013	REMOTE SENSOR	1	
JK4901	K2HC104B0047	JACK, EXT MIC	1	
JK4902	K2HC104B0047	JACK, EXT MIC	1	
L6401	G1C100KA0115	CHIP INDUCTOR 10UH	1	
L6405	G1C100KA0115	CHIP INDUCTOR 10UH	1	
LB4923	J0JCC0000276	FILTER	1	
LB4924	J0JCC0000276	FILTER	1	
LB4926	J0JCC0000276	FILTER	1	
LB4927	J0JCC0000276	FILTER	1	
LB4928	J0JCC0000276	FILTER	1	
LB4929	J0JCC0000276	FILTER	1	
Q4801	2SD2216J0L	TRANSISTOR	1	E.S.D.
Q4901	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q4902	2SA2174J0L	TRANSISTOR	1	E.S.D.
Q4903	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q4904	2SA2174J0L	TRANSISTOR	1	E.S.D.
Q4907	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q4908	2SC6054J0L	TRANSISTOR	1	E.S.D.
Q6401	B1ADGD000005	TRANSISTOR	1	E.S.D.
QR4901	UNR91A3J0L	TRANSISTOR	1	E.S.D.
QR6401	UNR92A5J0L	TRANSISTOR	1	E.S.D.
QR6402	UNR91AFJ0L	TRANSISTOR	1	E.S.D.
R4801	VRE0071E392	M.RESISTOR CH 1/10W 3.9K	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	
R4901	ERJ6GEYJ331V	M.RESISTOR CH 1/8W 330	1	
R4902	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4904	ERJ6GEYJ562V	M.RESISTOR CH 1/8W 5.6K	1	
R4905	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	1	
R4906	ERJ6GEYJ103V	M.RESISTOR CH 1/8W 10K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4907	ERJ6GEYJ154V	M.RESISTOR CH 1/8W 150K	1	
R4908	ERJ6GEYJ563	M.RESISTOR CH 1/8W 56K	1	
R4909	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R4910	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4911	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R4912	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	1	
R4913	ERJ6GEYJ103V	M.RESISTOR CH 1/8W 10K	1	
R4914	ERJ6GEYJ154V	M.RESISTOR CH 1/8W 150K	1	
R4915	ERJ6GEYJ563	M.RESISTOR CH 1/8W 56K	1	
R4916	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R4917	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4918	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R4920	ERJ6GEYJ562V	M.RESISTOR CH 1/8W 5.6K	1	
R4922	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R4923	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R4924	ERJ2GEJ473Y	M.RESISTOR CH 1/16W 47K	1	
R6402	ERJ2RFD330	M.RESISTOR CH 1/10W 33	1	
R6403	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1	
R6404	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1	
R6405	ERJ6GEYJ222V	M.RESISTOR CH 1/8W 2.2K	1	
R6412	ERJ3GEYJ430	M.RESISTOR CH 1/10W 43	1	
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	
VA4901	D4ED18R00008	VARISTOR	1	
VA4902	D4ED18R00008	VARISTOR	1	
ZB6401	K3ZZ00500014	BATTERY HOLDER	1	
##	VEP22400A	MOS FPC UNIT		
C201	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C202	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C203	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C204	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C205	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C206	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C207	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C208	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C209	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C210	F3E0J476A014	E.CAPACITOR CH 6.3V 47U	1	
C211	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1	
C212	F3F0J476A032	E.CAPACITOR CH 6.3V 47U	1	
C213	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C214	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C215	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
FL201	J0ZZB0000094	FILTER	1	
FL202	J0ZZB0000094	FILTER	1	
FL203	J0ZZB0000100	FILTER	1	
FL204	J0ZZB0000094	FILTER	1	
FL205	J0ZZB0000094	FILTER	1	
FL206	J0ZZB0000100	FILTER	1	
FL207	J0ZZB0000094	FILTER	1	
FL208	J0ZZB0000094	FILTER	1	
FL209	J0ZZB0000100	FILTER	1	
FP201	K1KY60AA0695	CONNECTOR 60P	1	
IC204	C0JBAA000479	IC	1	E.S.D.
IC205	C0JBAA000479	IC	1	E.S.D.
IC206	C0JBAA000479	IC	1	E.S.D.
LB201	J0JYC0000061	FILTER	1	
LB202	J0JYC0000061	FILTER	1	
LB203	J0JYC0000061	FILTER	1	
PP202	K1KY30AA0688	CONNECTOR 30P	1	
PP203	K1KY30AA0688	CONNECTOR 30P	1	
PP204	K1KY30AA0688	CONNECTOR 30P	1	
R204	D0YAR0000007	M.RESISTOR CH 1/16W 0	1	

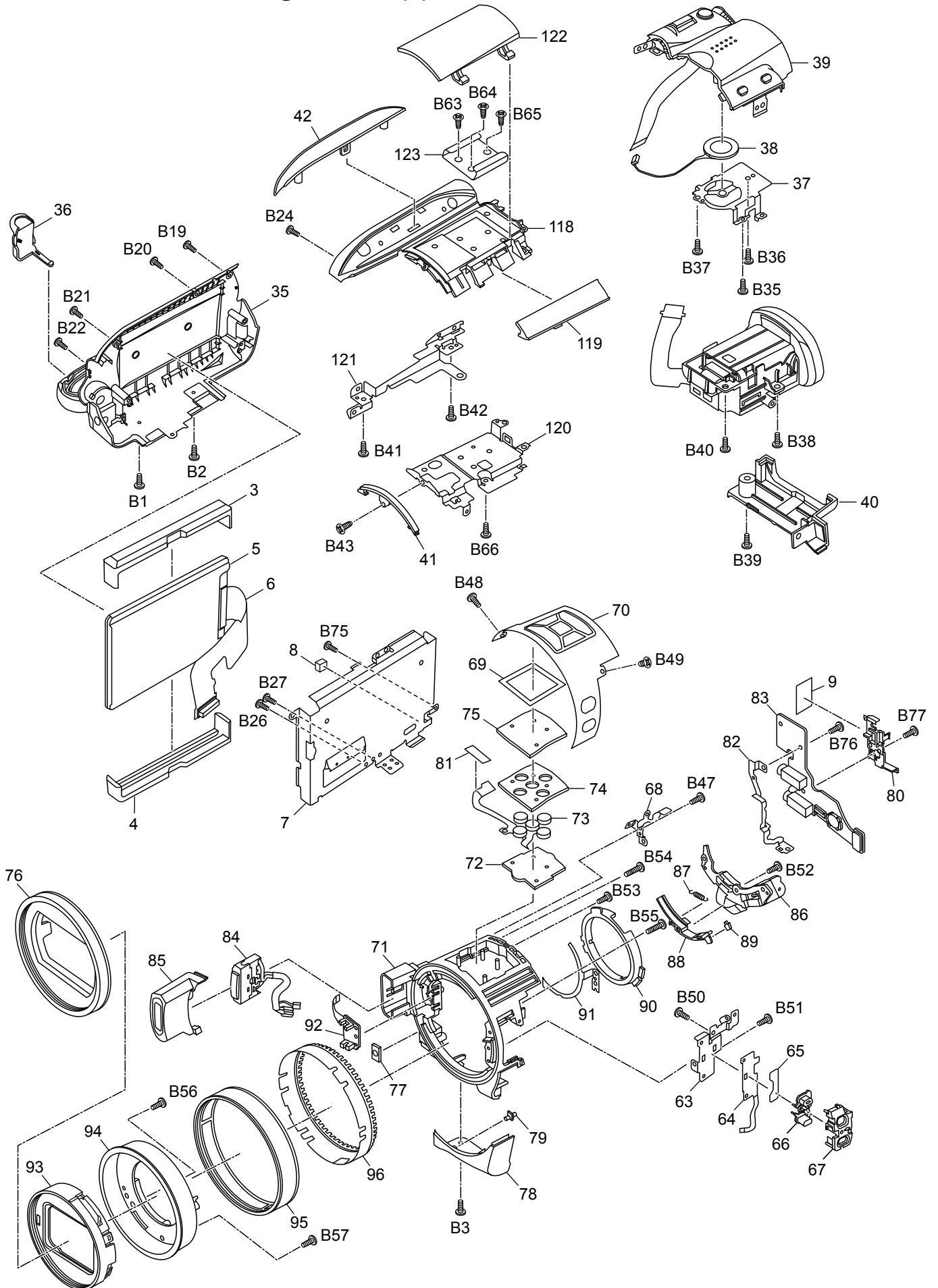
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP20C52A	CAM FUNC FPC UNIT		(RTL)
R6601	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
S6601	K0H1BA000436	SWITCH	1	
S6602	K0H1BA000436	SWITCH	1	
##	VEP21303B	POWER FPC UNIT		
JK6751	K4ZZ04000049	JACK, BATTERY	1	
P6751	K1KA02BA0014	CONNECTOR 2P	1	
PP6751	K1KB24A00051	CONNECTOR 24P	1	
##	VEP21304A	MAIN SUB FPC		(RTL)
PP6901	K1KY90AA0695	CONNECTOR 90P	1	
PP6902	K1KY90AA0695	CONNECTOR 90P	1	
##	VEP20C44A	SIDE (R) FPC UNIT		(RTL)
PP6003	K1KB40A00128	CONNECTOR 40P	1	
##	VEP20C53C	LCD OP FPC UNIT		
R6801	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R6802	ERJ2GEJ752X	M.RESISTOR CH 1/16W 7.5K	1	
R6803	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6804	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	1	
R6805	ERJ2GEJ182	M.RESISTOR CH 1/16W 1.8K	1	
R6806	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	1	
R6807	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	1	
S6801	K0H1BA000575	SWITCH	1	
S6802	K0H1BA000575	SWITCH	1	
S6803	K0H1BA000575	SWITCH	1	
S6804	K0H1BA000575	SWITCH	1	
S6805	K0H1BA000575	SWITCH	1	
S6806	K0H1BA000575	SWITCH	1	
##	VEP29214A	EVF FPC UNIT		
S801	ESE18R62DXFD	SWITCH	1	
##	VEP27223A	MF_SENSOR OP PCB		(RTL) E.S.D.
Q6701	CNA1312K01VT	PHOTO SENSOR	1	E.S.D.
Q6702	CNA1312K01VT	PHOTO SENSOR	1	E.S.D.
##	VEP79227A	HDD FPC		(RTL) E.S.D.
C6200	ECJ1XB1C104K	C.CAPACITOR CH 16V 0.1U	1	
IC6200	C0ZBZ0001479	IC	1	E.S.D.
PP6201	K1KB40A00128	CONNECTOR 40P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
301	K2GJYDC00004	DC CABLE	1	
302	K1HY04YY0032	USB CABLE	1	
303	K2KYYYY00054	AV CABLE	1	
304	K1HY10YY0005	COMPONENT CABLE	1	
△ 305	K2CQ2CA00006	AC CABLE	1	EC,EE,EF,EG,EP,GC,SG
△ 306	N2QAEC000024	REMOTE CONTROL	1	(BATTERY BUILT-IN)
△ 307	DE-A51BB	AC ADAPTOR	1	P,PC
△ 307	DE-A51CB	AC ADAPTOR	1	EB,EC,EE,EF,EG,EP,GC,SG
△ 307	DE-A51DA	AC ADAPTOR	1	GK
△ 307	DE-A51EA	AC ADAPTOR	1	GT
308	VFC4394	STYLUS PEN	1	
311	VFF0442-S	CD-ROM	1	GK
312	VPF1112	POLYETHYLENE BAG	1	EB,EE,EF,GK,GT,P,PC
312	VPF1228	POLLY BAG	1	EC,EG,EP,GC,SG
△ 313	VQT1Z09	OPERATING INSTRUCTIONS	1	P,PC (ENGLISH)
△ 313	VQT1Z10	OPERATING INSTRUCTIONS	1	PC (CANADIAN FRENCH)
△ 313	VQT1Z27	OPERATING INSTRUCTIONS	1	EB (ENGLISH)
△ 313	VQT1Z19	OPERATING INSTRUCTIONS	1	EC (PORTGUESE)
△ 313	VQT1Z20	OPERATING INSTRUCTIONS	1	EC (SPANISH)
△ 313	VQT1Z21	OPERATING INSTRUCTIONS	1	EC (SWEDISH)
△ 313	VQT1Z22	OPERATING INSTRUCTIONS	1	EC (DANISH)
△ 313	VQT1Z34	OPERATING INSTRUCTIONS	1	EE (RUSSIAN)
△ 313	VQT1Z35	OPERATING INSTRUCTIONS	1	EE (UKRAINIAN)
△ 313	VQT1Z15	OPERATING INSTRUCTIONS	1	EF,EG (FRENCH)
△ 313	VQT1Z14	OPERATING INSTRUCTIONS	1	EG (GERMAN)
△ 313	VQT1Z16	OPERATING INSTRUCTIONS	1	EG (ITALIAN)
△ 313	VQT1Z17	OPERATING INSTRUCTIONS	1	EG (DUTCH)
△ 313	VQT1Z18	OPERATING INSTRUCTIONS	1	EG (TURKISH)
△ 313	VQT1Z23	OPERATING INSTRUCTIONS	1	EP (ENGLISH)
△ 313	VQT1Z24	OPERATING INSTRUCTIONS	1	EP (POLISH)
△ 313	VQT1Z25	OPERATING INSTRUCTIONS	1	EP (CZECH)
△ 313	VQT1Z26	OPERATING INSTRUCTIONS	1	EP (HUNGARIAN)
△ 313	VQT1Z28	OPERATING INSTRUCTIONS	1	GC,SG (CHINESE(TRADITIONAL))
△ 313	VQT1Z29	OPERATING INSTRUCTIONS	1	GC,SG (ENGLISH)
△ 313	VQT1Z30	OPERATING INSTRUCTIONS	1	GC,SG (ARABIC)
△ 313	VQT1Z31	OPERATING INSTRUCTIONS	1	GC,SG (PERSIAN)
△ 313	VQT1Z32	OPERATING INSTRUCTIONS	1	GC,SG (THAI)
△ 313	VQT1Z33	OPERATING INSTRUCTIONS	1	GC,SG (HINDI)
△ 313	VQT1Z37	OPERATING INSTRUCTIONS	1	GK (CHINESE(SIMPLIFIED))
△ 313	VQT1Z13	OPERATING INSTRUCTIONS	1	GT (CHINESE(TRADITIONAL))
314	VPG1W05	PACKING CASE	1	P,PC
314	VPG1W06	PACKING CASE	1	EB,EC,EE,EF,EG,EP, GC,GK,GT,SG
315	VPN6785	PAD	1	
316	VPF1166	CAMERA BAG	1	
△ 317	----	BATTERY PACK	1	
△ 325	K2CT3CA00004	AC CABLE	1	EB,GC,SG
△ 326	K2CA2CA00025	AC CABLE	1	P,PC
△ 326	K2CA2CA00020	AC CABLE	1	GK

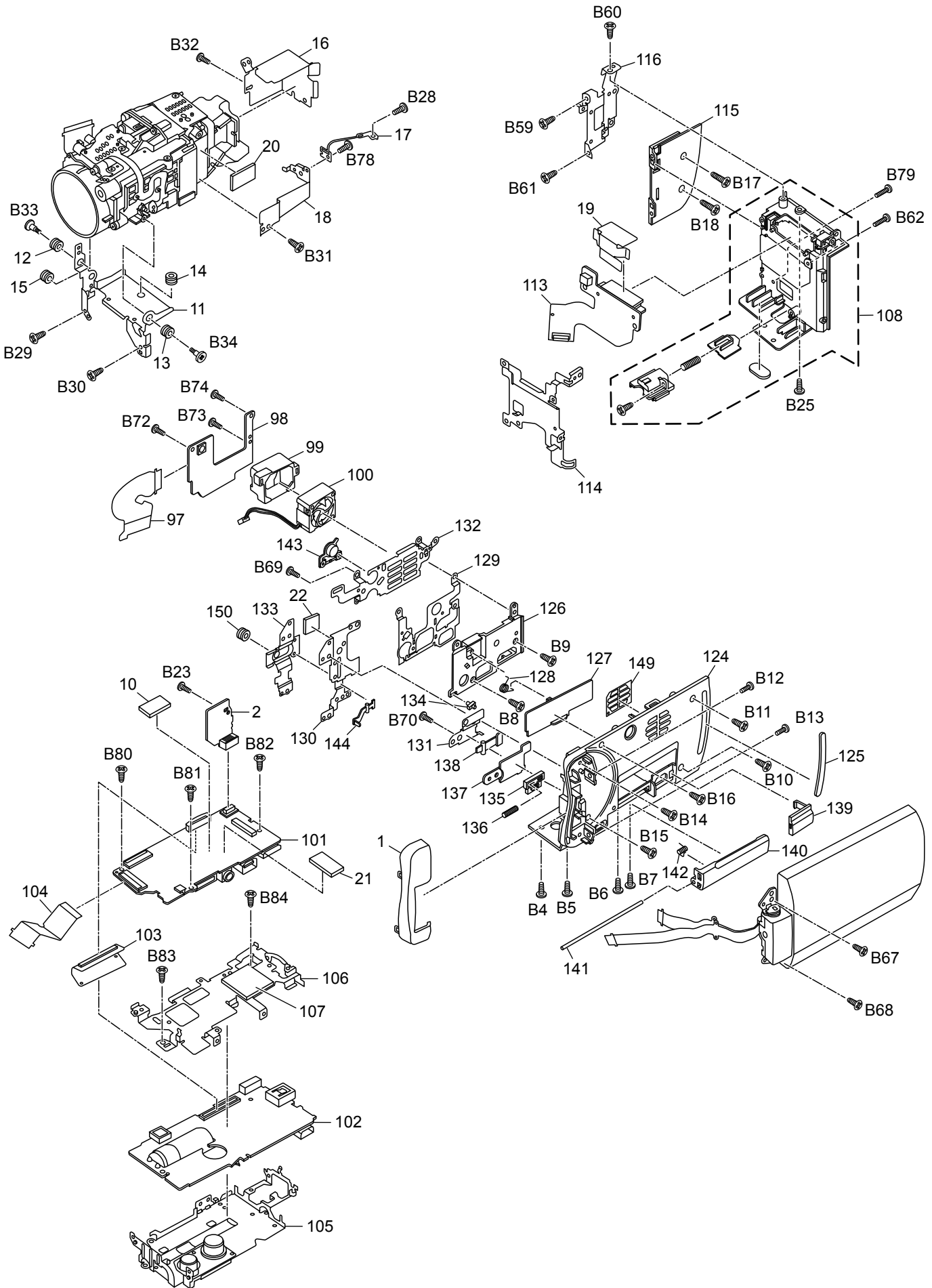
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
△ 326	K2CA2CA00027	AC CABLE	1	GT
329	VQL1S99	COLOR LABEL	1	GCS
330	VQL1S99	COLOR LABEL	1	GCS

S6. Exploded View

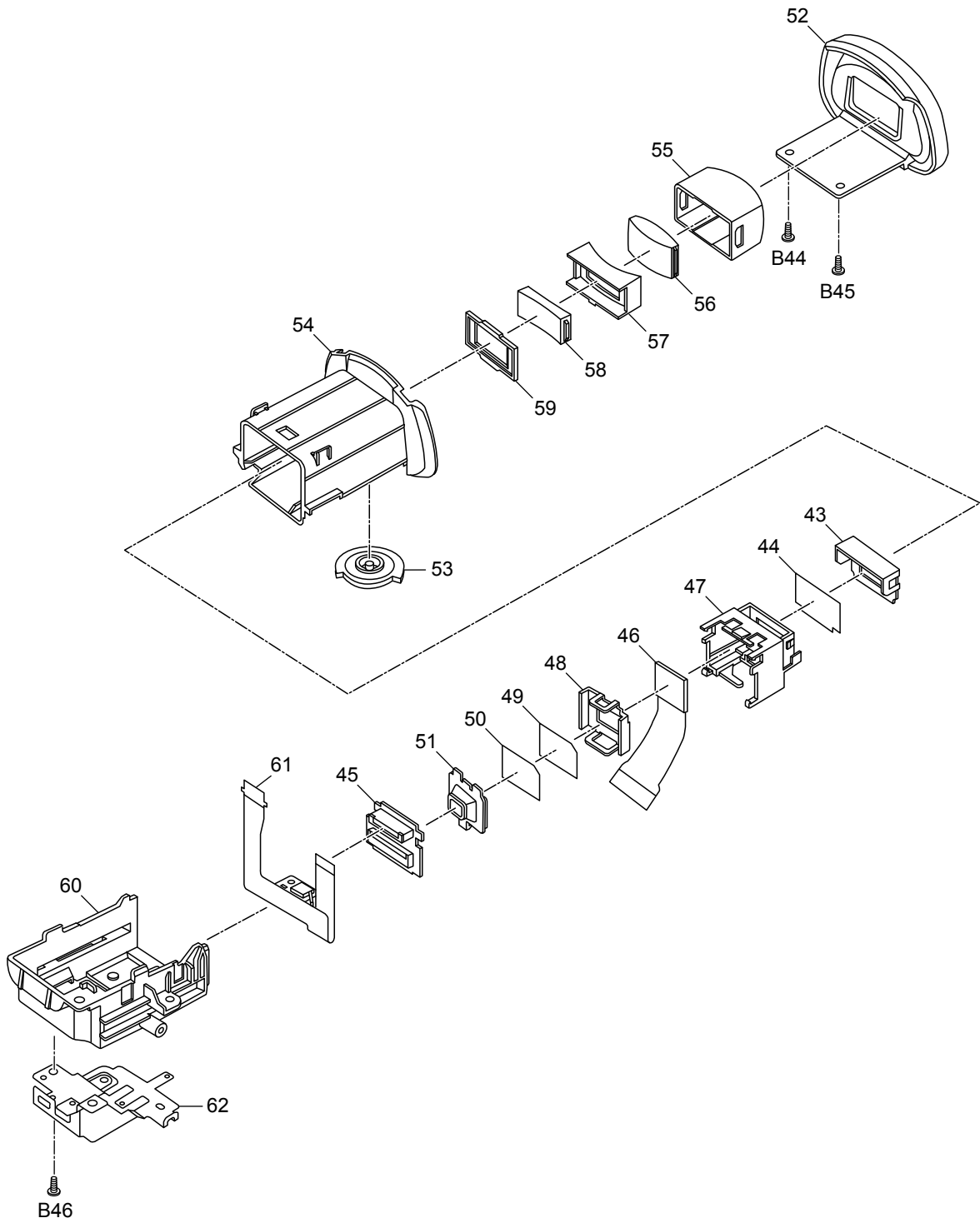
S6.1. Frame and Casing Section (1)



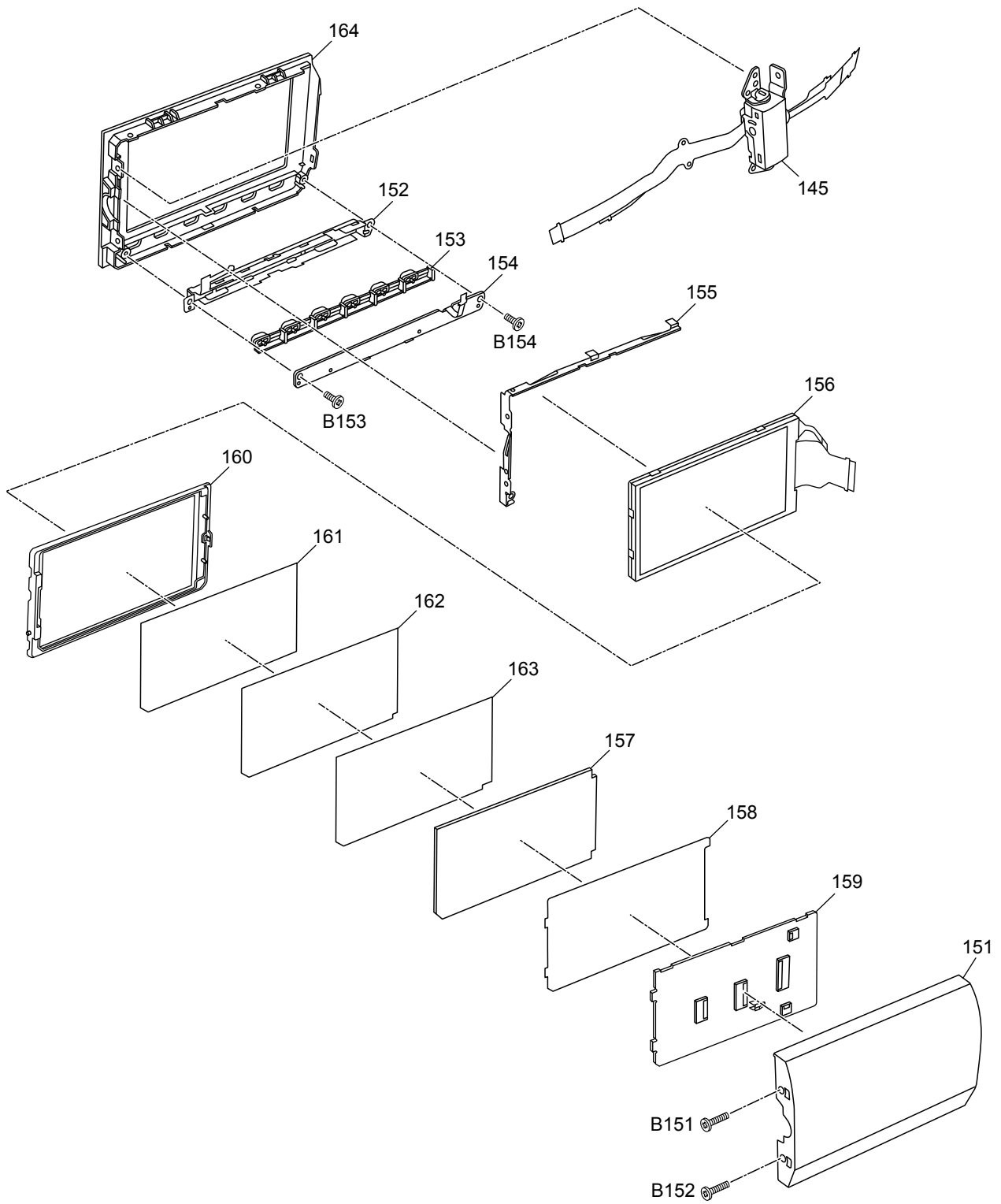
S6.2. Frame and Casing Section (2)



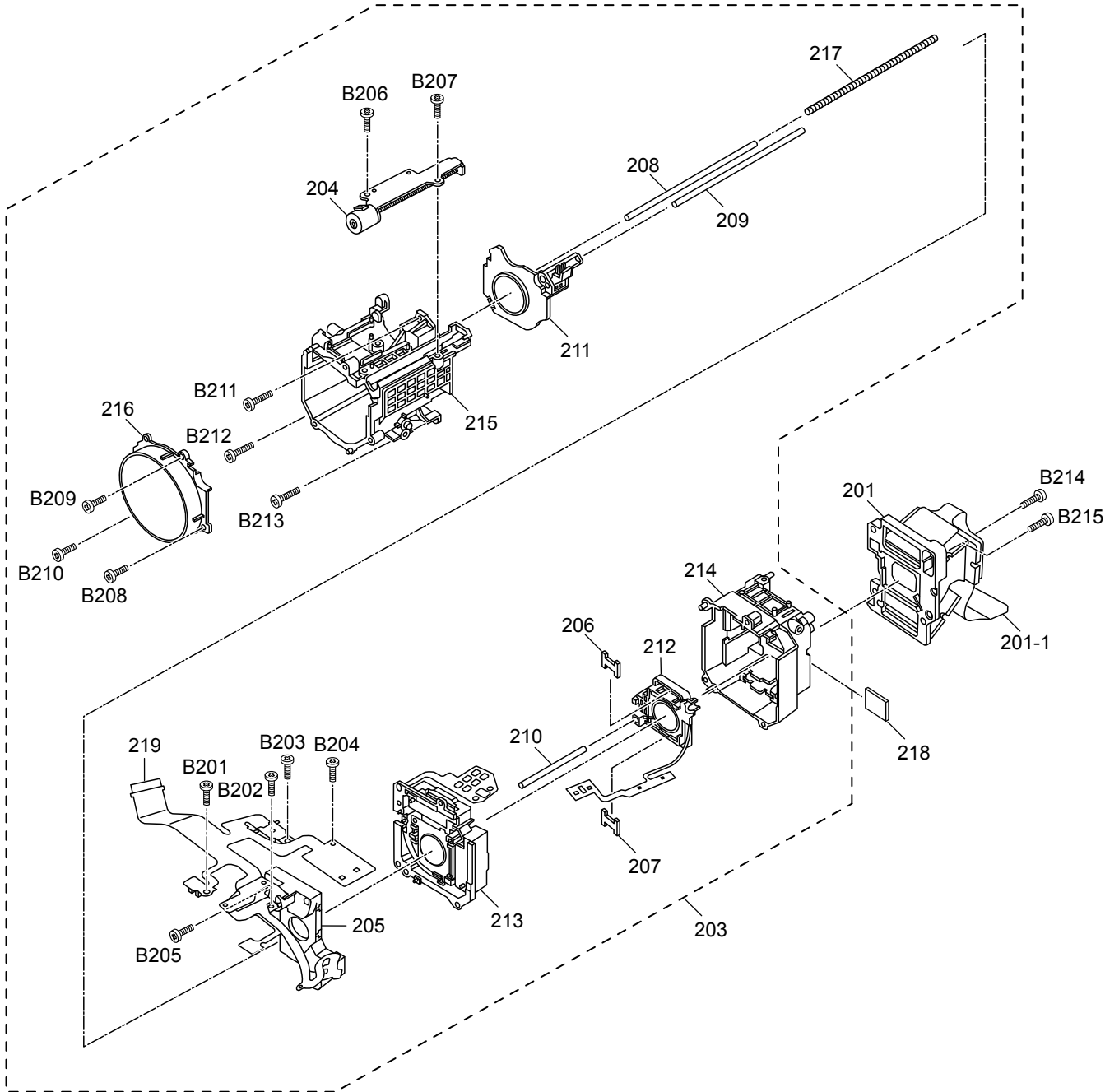
S6.3. EVF Section



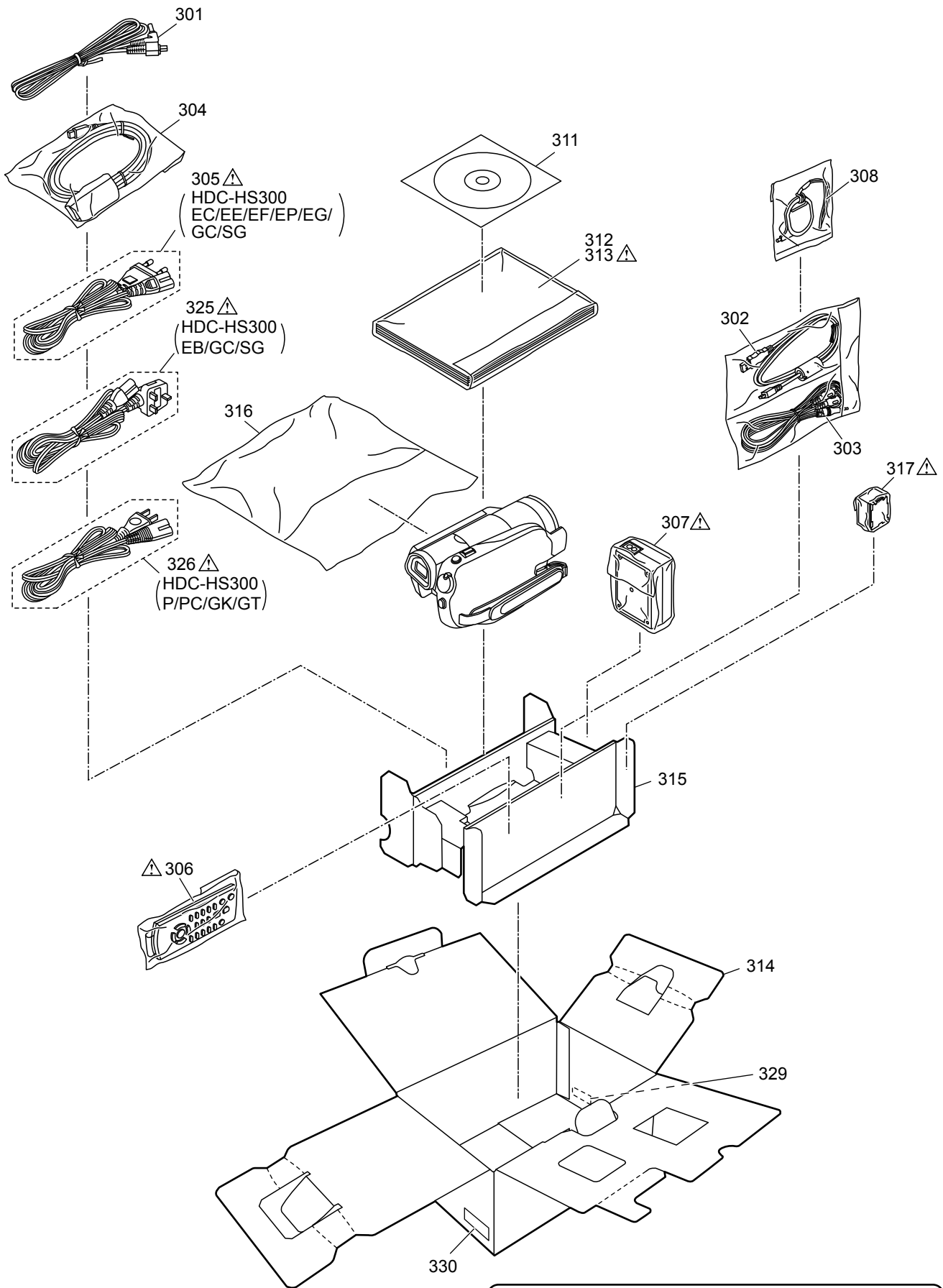
S6.4. LCD Section



S6.5. Camera Lens Section



S6.6. 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.329 and REF No.330 when you
use this PACKING CASE for other cabinet colours.