

Service Manual

Digital Camera/Body/Lens Kit

Model No. **DC-GH5P**

DC-GH5PP

DC-GH5EB

DC-GH5EC

DC-GH5EE

DC-GH5EF

DC-GH5EG

DC-GH5GA

DC-GH5GC

DC-GH5GD

DC-GH5GH

DC-GH5GK

DC-GH5GN

DC-GH5GT

DC-GH5MEB

DC-GH5MEC

DC-GH5MEF

DC-GH5MEG

DC-GH5LP

DC-GH5LPP

DC-GH5LEB

DC-GH5LEC

DC-GH5LEF

DC-GH5LEG

DC-GH5LGA

DC-GH5LGK

DC-GH5AGA

Colour

Black Type

DC-GH5M series: Interchangeable Lens (H-FS12060) is bundled.

DC-GH5L series: Interchangeable Lens (H-ES12060) is bundled.

DC-GH5A series: Interchangeable Lens (H-HSA12035) is bundled.

LUMIX





 **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.

© Panasonic Corporation 2017 Unauthorized copying and distribution is a violation of law.

1 Safety Precautions

1.1 General Guidelines

1. IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

1. 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.
2. 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.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
4. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

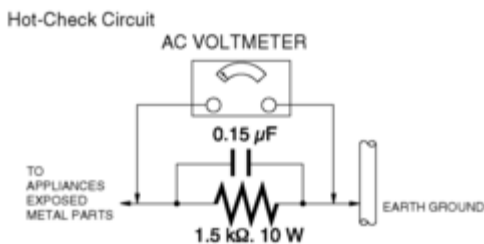
1.2 Leakage Current Cold Check

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 M Ω and 5.2 M Ω . 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 k Ω , 10 W resistor, in parallel with a 0.15 μ 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 k Ω /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 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.

Figure. 1



2 Warning

2.1 Prevention of Electrostatic Discharge (ESD) to Electrostatically

Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices.

Examples of typical ES devices are IC (integrated circuits) and some field-effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).



1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an 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 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 recyclable. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

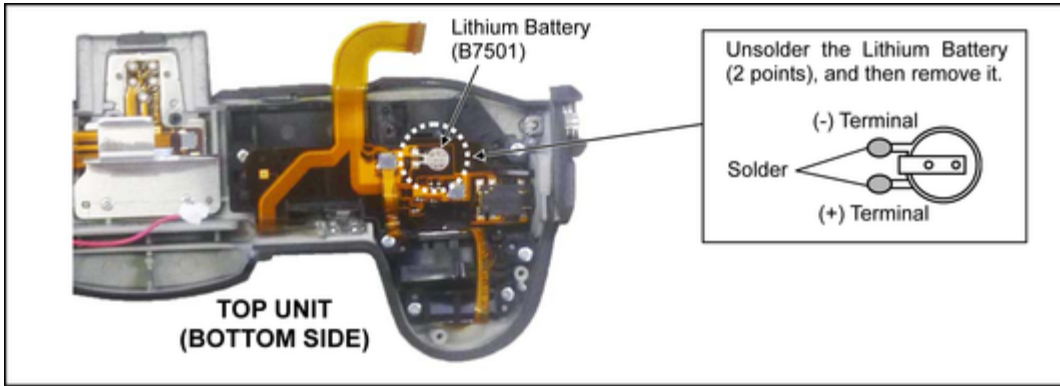
2.3 How to Replace the Lithium Battery

2.3.1 Replacement Procedure

1. Remove the TOP UNIT. (Refer to Disassembly Procedures.)
2. Unsolder the each soldering point of electric lead terminal for Lithium battery (Ref. No. "B7501" at bottom side of TOP UNIT) and remove the Lithium battery together with electric lead terminal. Then replace it into new one.

NOTE:

The Lithium battery includes electric lead terminals.



NOTE:

- This Lithium battery is a critical component.
- 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 DC-GH5/GH5M/GH5L/GH5A series, as well.

2.4 Caution for AC Cord

(For EB/GA/GC/GH)

2.4.1 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.

2.4.2 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.

2.4.2.1 Important

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

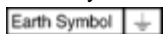
Blue	Neutral
Brown	Live

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.

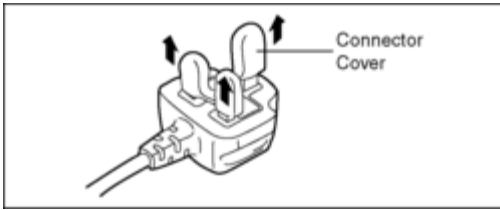
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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.



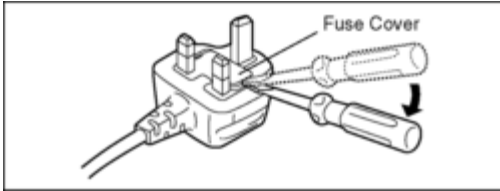
2.4.2.2 Before Use

Remove the Connector Cover as follows.

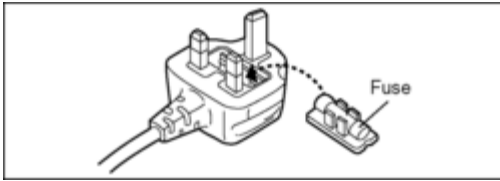


2.4.2.3 How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



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 About service of bundled lenses

Please refer to the following service manuals about Disassembly and Assembly or Maintenance of bundled lenses.

- H-FS12060E/GK/PP: Order No.[DSC1604008CE](#)
- H-ES12060PP/E/GK: Order No.[DSC1702007CE](#)
- H-HSA12035PP/E/GK: Order No.[DSC1703008CE](#)

3.3 Important Notice

*When servicing, it is recommended dealing with Clean box. (Refer to “8.2. Clean Box” section of this service manual for details.)

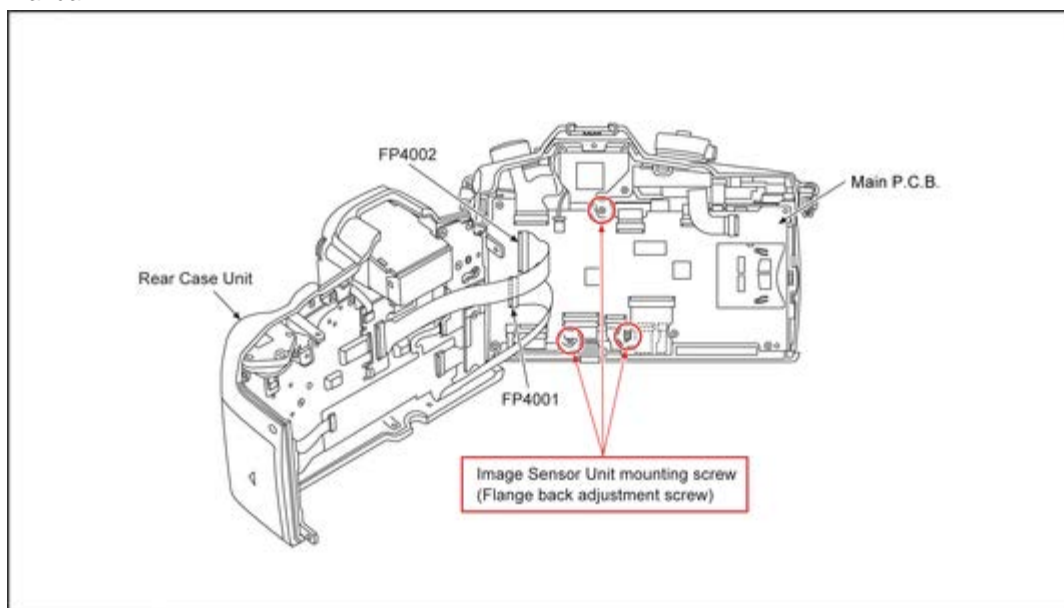
3.3.1 Camera Body Unit

3.3.1.1 About Flange back adjustment

* “Flange back” is the distance from the lens mount level to the Image Sensor level.

When turning the image sensor unit mounting screw even a little or removing, the “simplicity flange back adjustment” is need.

Perform the “simplicity flange back adjustment” according to contents described in “10 Measurements and Adjustments” section of this service manual.



3.3.1.2 About Shutter Unit (Ref. 61)

Before exchanging the “shutter unit”, confirm that the symptom and/or phenomenon is not due to the setting of functions.

Important:

After replacing the shutter unit, the shutter unit data has to be stored to the unit.

The shutter unit supplied as service parts has affix the label of own configure data.

By inputting second line to third line of these data into the adjustment software and writing these data to Flash-ROM (IC2003), the shutter adjustment becomes needless.

In addition, the adjustment software can read data encoded to QR Code by using WEB camera with a close-up function.

Refer to the adjustment instruction in the adjustment software for details.

3.3.1.3 About Main P.C.B. (Ref.1) & Flash-ROM (IC2003)

Before exchanging the “Main P.C.B.”, confirm that the symptom and/or phenomenon is not due to the setting of functions.

Important:

When cannot be repaired in the IC exchange, and in the case of performing the “Main P.C.B.” exchange, carry out any of following.

In the case of exchanging the Flash-ROM (IC2003) is same way too.

1. When the camera power can be ON, and camera body and adjustment software can be communicated:

Before replacing the “Main P.C.B. and/or Flash-ROM”, proceed the EEPROM data backup from the unit.

After replacing the Main P.C.B. and/or Flash-ROM, overwrite the EEPROM data with backup data from the unit first, then proceed the adjustment /inspection. (Almost adjustment/inspection items can be omitted.)

Refer to the adjustment instruction in the adjustment software for details.

2. When the camera power cannot be ON, or camera body and adjustment software cannot be communicated:

Almost full adjustment/inspection must be performed after replacing the “Main P.C.B. and/or Flash-ROM”.

Refer to the adjustment instruction in the adjustment software for details.

Notes after replacement:

Make sure the camera body firmware is latest version.

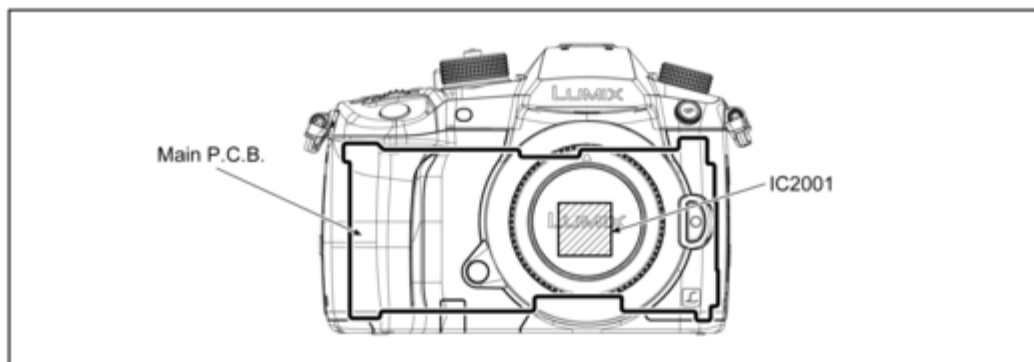
3.3.1.4 About Venus Engine (IC2001) [Located on the Main P.C.B.]:

- The Venus Engine (IC2001) consists of two IC chips, which are fixed together with solder.

(The so called, “Package On Package” type IC.)

NOTE:

- During servicing, do not press down hard on the surface of IC2001.



3.3.2 Lens Unit (Interchangeable Lens: H-FS12060)

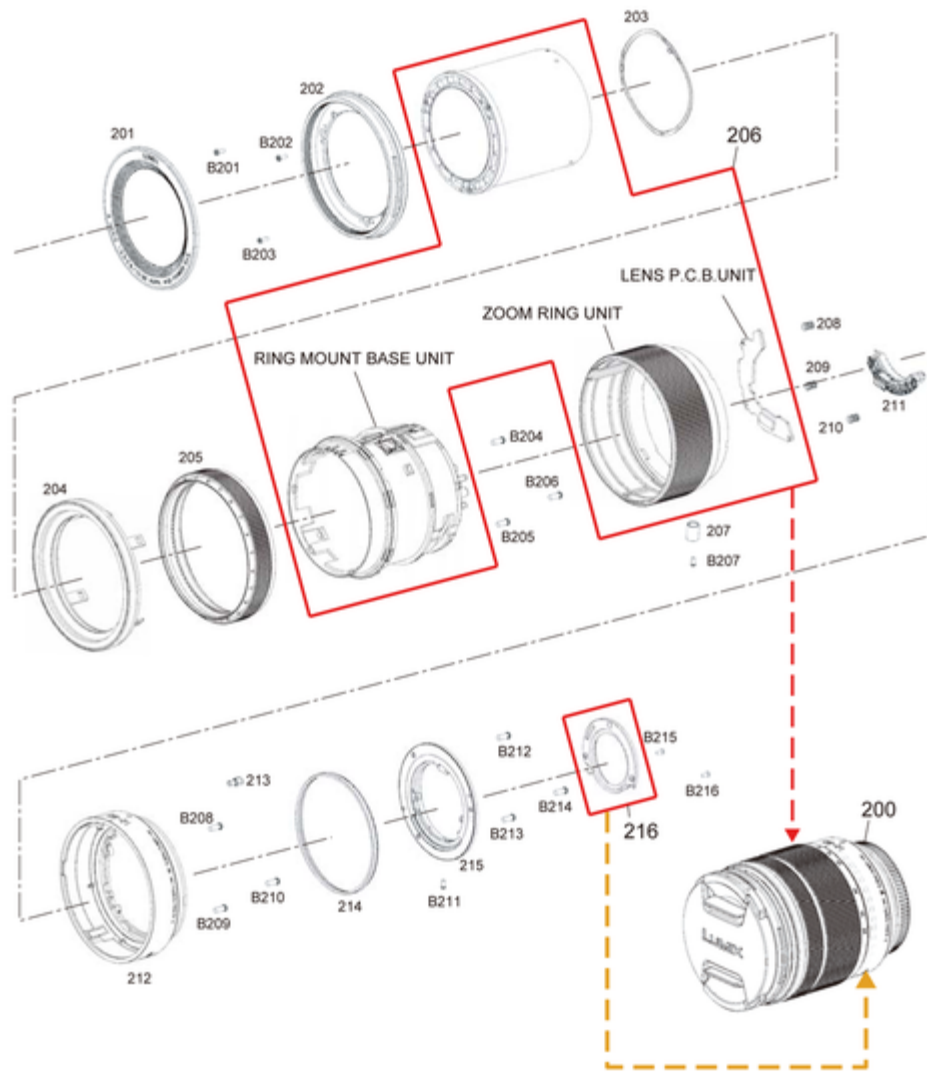
3.3.2.1 About Lens Main Unit (Ref. 206)

1. Lens Main Unit (Ref. 206) is not supplied due to difficulty of the transportation issue (Fragile, Dust-free packing), and requires critical lens adjustments.

Therefore, any needs of the “Lens Main Unit” (Ref. 206), carefully confirm its performance in advance.

2. Once “Lens Main Unit” (Ref. 206) is confirmed as defective, place order “Lens Unit” (Ref. 200) and replace Shading Frame (Ref. 216), to maintain Serial number of owner’s original lens.

- When the "Ref.206" is necessary to be replaced, replace as a "Ref.200".
- However, replace "Ref.216", to maintain Serial number of original lens.



NOTE:

Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

3.3.3 Lens Unit (Interchangeable Lens: H-ES12060)

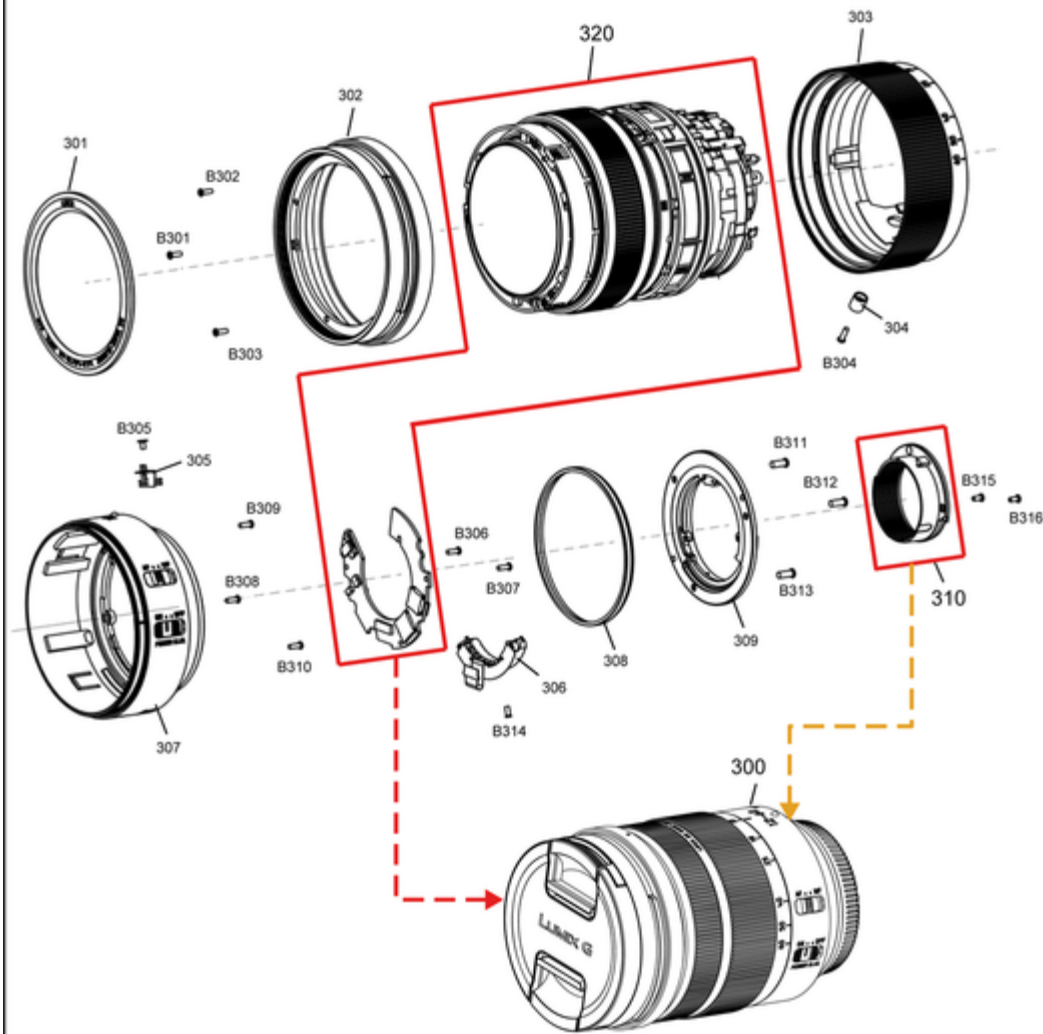
3.3.3.1 About Lens Main Unit (Ref. 320)

1. Lens Main Unit (Ref. 320) is not supplied due to difficulty of the transportation issue (Fragile, Dust-free packing), and requires critical lens adjustments.

Therefore, any needs of the "Lens Main Unit" (Ref. 320), carefully confirm its performance in advance.

2. Once "Lens Main Unit" (Ref. 320) is confirmed as defective, place order "Lens Unit" (Ref. 300) and replace Shading Frame (Ref. 310), to maintain Serial number of owner's original lens.

- When the "Ref.320" is necessary to be replaced, replace as a "Ref.300".
- However, replace "Ref.310", to maintain Serial number of original lens.



NOTE:

Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

3.3.4 Lens Unit (Interchangeable Lens: H-HSA12035)

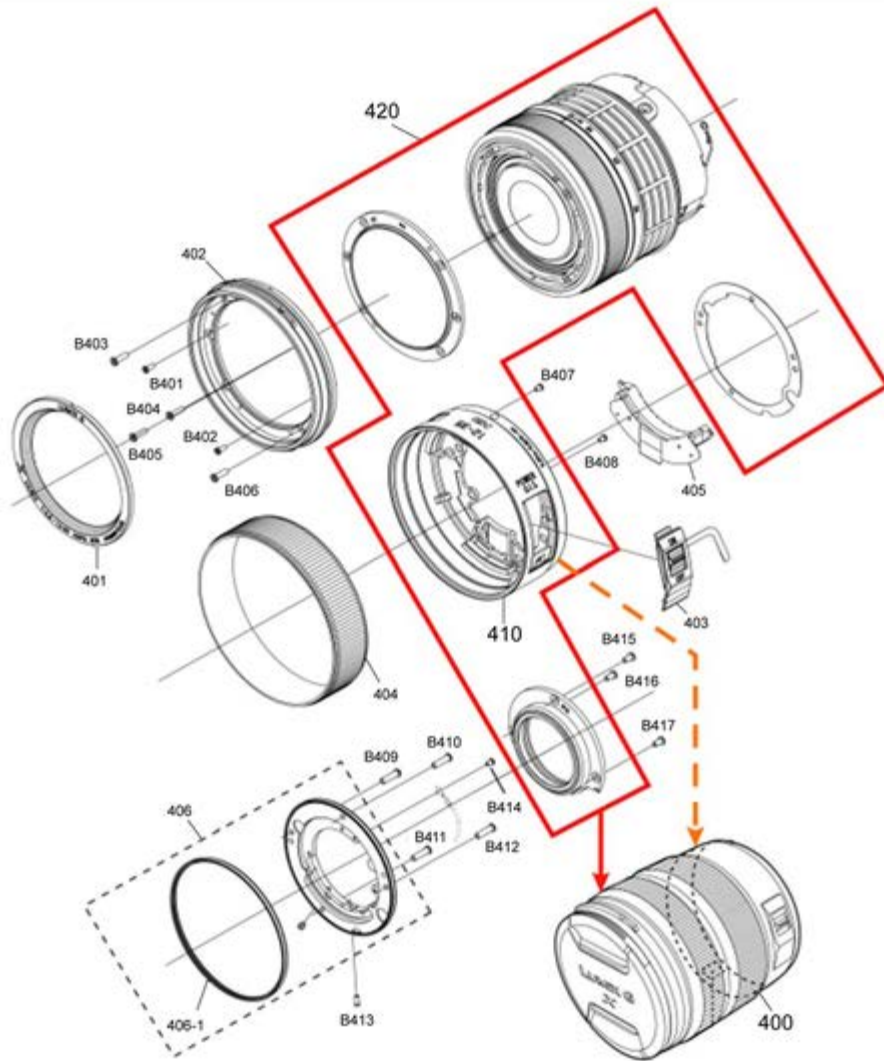
3.3.4.1 About Lens Main Unit (Ref. 420)

1. Lens Main Unit (Ref. 420) is not supplied due to difficulty of the transportation issue (Fragile, Dust-free packing), and requires critical lens adjustments.

Therefore, any needs of the "Lens Main Unit" (Ref. 420), carefully confirm its performance in advance.

2. Once "Lens Main Unit" (Ref. 420) is confirmed as defective, place order "Lens Unit" (Ref. 400) and replace Rear Frame Unit (Ref. 410), to maintain Serial number of owner's original lens.

- When the "Ref.420" is necessary to be replaced, replace as a "Ref.400".
- However, replace "Ref.410", to maintain Serial number of original lens.



NOTE:

Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

3.3.5 About Flexible Cable and Connector

Do not touch carelessly so that the foreign body should not adhere to the terminal part of flexible cable and connector.

Wipe off with a clean cloth and the cotton bud, etc. when the terminal part is dirty.

3.4 Service Notes

3.4.1 About Wi-Fi/Bluetooth Function

The page number in this chapter does not show the page number of this service manual.

What you can do with the Wi-Fi®/Bluetooth® function

• The camera cannot be used to connect to a public wireless LAN connection.

Controlling with a Smartphone/Tablet (P93)

- Recording with a smartphone (P94)
- Playing back or saving images stored on the camera, or uploading them on social media sites (P95)

Explore more enjoyment possibilities with Bluetooth®

You can connect to a smartphone that supports Bluetooth low energy any time.

Connect to a smartphone to use a full range of features.

- Connecting easily by pairing (P89)
- Turning on/off the camera by remote control (P93)
- Sending recorded images automatically (P98)
- Auto Cloud Backup (P96)
- Recording location information to the camera's images (P99)
- Synchronising the camera's clock (P100)
- Saving the camera's setup information to a smartphone (P100)

Displaying pictures on a TV

Printing Wirelessly

Sending images to AV device

Sending images to PC

Using Web services

These operating instructions refer to both smartphones and tablets as "smartphones" from this point on unless noted otherwise.

• For details, refer to the "Operating Instructions for advanced features (PDF format)".

3.4.2 Important Notice of Servicing

This camera unit has the personal information of wireless LAN connection the customer has registered.

For the protection of private information, please erase the personal information after the completion of repair by "Initial Settings".

In addition, please print out the following documents, and pass to the customer with the camera unit.

Printing Material [Leaflet for Customer]



3.5 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 P.C.B. Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the P.C.B. 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 P.C.B. 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 P.C.B. 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.

SVKZ000001------(0.3mm 100g Reel)

SVKZ000002------(0.6mm 100g Reel)

SVKZ000003------(1.0mm 100g Reel)

Note

* Ingredient: Tin (Sn) 96.5%, Silver (Ag) 3.0%, Copper (Cu) 0.5%. (Flux cored)

3.6 How to Define the Model Suffix (NTSC or PAL Model)









There are nine kinds of DC-GH5 (Camera body unit), regardless of the colours.

- a) DC-GH5 (Japan domestic model)
- b) DC-GH5P/PP
- c) DC-GH5EB/EC/EF/EG
- d) DC-GH5EE
- e) DC-GH5GN
- f) DC-GH5GD
- g) DC-GH5GT
- h) DC-GH5GK
- i) DC-GH5GA/GC/GH

What is the difference is that the “Initial Settings” data which is stored in Flash-ROM mounted on Main P.C.B..

3.6.1 Defining Methods:

To define the model suffix to be serviced, refer to the nameplate which is putted on the bottom side of the unit.

a) DC-GH5 (Japan domestic model)
The nameplate for this model shows the following Safety registration mark.

b) DC-GH5P/PP
The nameplate for these models show the following Safety registration mark.

c) DC-GH5EB/EC/EF/EG
The nameplate for these models show the following Safety registration mark.

d) DC-GH5EE
The nameplate for this model shows the following Safety registration mark.

e) DC-GH5GN
The nameplate for this model shows the following Safety registration mark.

f) DC-GH5GD
The nameplate for this model shows the following Safety registration mark.

g) DC-GH5GT
The nameplate for this model shows the following Safety registration mark.

h) DC-GH5GK
The nameplate for this model shows the following Safety registration mark.

i) DC-GH5GA/GC/GH
The nameplate for these models do not show any above Safety registration mark.

NOTE:

After replacing the Main P.C.B., be sure to achieve adjustment.

Refer to the adjustment instruction in the adjustment software for details.

3.6.2 Initial Settings:

After replacing the Main P.C.B. and/or Flash-ROM, make sure to perform the initial settings after achieving the adjustment by ordering the following procedure in accordance with model suffix of the unit.

1. Important Notice:

Before proceeding Initial settings, make sure to read the following CAUTION.

CAUTION:(Initial Settings)

---After Replacing the Main P.C.B. and/or Flash-ROM ---

[Except "EB/EC/EF and EG" models]

- *. The model suffix can be chosen JUST ONE TIME.
(Effective model suffix : "P/PP/EE/GA/GC/GD/GH/GK/GN/GT and JAPAN domestic model")
- *. Once one of the model suffix has been chosen, the model suffix lists will not be displayed, thus, it can not be changed.

2. Procedures:

- Precautions: Read the above "CAUTION" carefully.
- Preparation:
 - Attach the fully charged Battery, and insert the memory card to slot1.

Set the mode dial to [P] (Program AE Mode).

• **Step 1. The temporary cancellation of “Initial Settings”:**

Set the drive mode dial to [Single], while pressing [Playback] button and [AF/AE LOCK] button simultaneously, turn the Power on.

• **Step 2. The cancellation of “Initial Settings”:**

Press the [Playback] button in order to enter the [Playback] mode.

Press [AF/AE LOCK] button and “[UP] of Cursor buttons” simultaneously, then turn the power off.

The LCD displays the “ ! ” mark before the unit powers down.



• **Step 3. Turn the Power On:**

Set the mode dial to [P] (Program AE Mode) and drive mode dial to [Single], then turn the power on.

• **Step 4. Display the Initial Settings:**

While pressing [MENU/SET] button and “[RIGHT] of Cursor buttons” simultaneously, turn the power off.

The “Initial Settings” menu is displayed.

There are two kinds of “Initial Settings” menu form as follows:

[CASE 1. After replacing the Main P.C.B. and/or Flash-ROM]

When Main P.C.B. has just been replaced, 16 model suffixes are displayed as follows. (three pages in total)

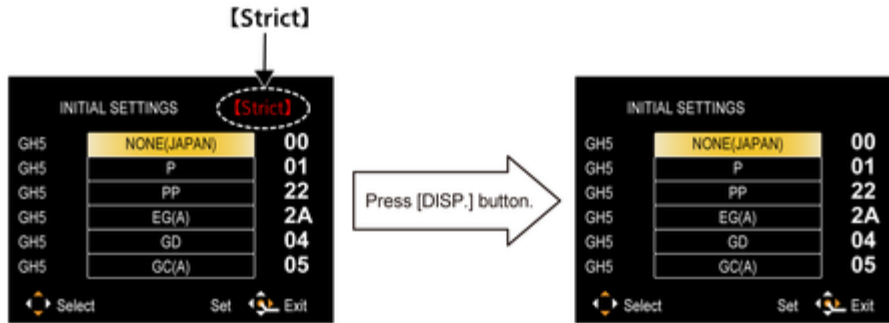


[CASE 2. Other than “After replacing the Main P.C.B. and/or Flash-ROM”]



- **Step 5. Cancel “Strict” mode:**

Press the [DISP.] button to cancel “Strict” mode. (Confirm the “Strict” is disappeared.)



- **Step 6. Choose the Model Suffix in “Initial Settings”:** (Refer to “CAUTION”)

[Caution: After replacing the Main P.C.B. and/or Flash-ROM]

The model suffix can be chosen, **JUST ONE TIME** .

Once one of the model suffix have been chosen, the model suffix lists will not be displayed, thus, it can not be changed.

Therefore, select the area carefully.

Select the area with pressing “[UP] / [DOWN] of Cursor buttons”.

- **Step 7. Set the Model Suffix in “Initial Settings”:**

Press the “[RIGHT] of Cursor buttons”.

The only set area is displayed, and then press the “[RIGHT] of Cursor buttons” after confirmation.

(The unit is powered off automatically.)



NOTE:

When the error message such as the following is displayed, cancel “Strict” mode.

Press [DISP.] button to clear the “Strict” display at the upper right corner of screen.



- **Step 8. Confirmation:**

Confirm the display of “PLEASE SET THE CLOCK” in concerned language when the unit is turned on again.

When the unit is connected to PC with USB cable, it is detected as removable media.

(When the “GK” or “GT” model suffix is selected, the display shows “PLEASE SET THE CLOCK” in Chinese.)

As for your reference, major default setting condition is as shown in the following table.

- **Default setting (After “Initial Settings”)**

	MODEL	VIDEO OUTPUT	LANGUAGE	DATE	REMARKS
a)	DC-GH5P	NTSC	English	Month/Date/Year	
b)	DC-GH5PP	NTSC	English	Month/Date/Year	
c)	DC-GH5EB	PAL	English	Date/Month/Year	
d)	DC-GH5EC	PAL	English	Date/Month/Year	
e)	DC-GH5EE	PAL	Russian	Date/Month/Year	
f)	DC-GH5EF	PAL	English	Date/Month/Year	
g)	DC-GH5EG	PAL	English	Date/Month/Year	
h)	DC-GH5GA	PAL	English	Date/Month/Year	
i)	DC-GH5GC	PAL	English	Date/Month/Year	
j)	DC-GH5GD	NTSC	Korean	Year/Month/Date	
k)	DC-GH5GH	PAL	English	Date/Month/Year	
l)	DC-GH5GK	PAL	Chinese (simplified)	Year/Month/Date	
m)	DC-GH5GN	PAL	English	Date/Month/Year	
n)	DC-GH5GT	NTSC	Chinese (traditional)	Year/Month/Date	
o)	DC-GH5JPC (Japan domestic model)	NTSC/PAL	Japanese/Chinese (simplified)	Year/Month/Date	

4 Specifications

4.1 Camera Body

The following specification is for DC-GH5LEB/GH5MEB/GH5EB.

Some specifications may differ depending on model suffix.

Specifications are subject to change without notice.

Digital Camera Body (DC-GH5):

Information for your safety

Power Source:	DC 8.4 V (8.4 V _{nom})
Power Consumption:	4.1 W (When recording with Monitor) [When the Interchangeable lens (H-ES12060) is used] 4.0 W (When recording with Monitor) [When the Interchangeable lens (H-FS12060) is used] 3.2 W (When playing back with Monitor) [When the Interchangeable lens (H-ES12060) is used] 3.1 W (When playing back with Monitor) [When the Interchangeable lens (H-FS12060) is used]

Camera effective pixels	20,330,000 pixels
Image sensor	4/3" Live MOS sensor, total pixel number 21,770,000 pixels, Primary colour filter
Digital Zoom	Max. 4×
Extra Tele Conversion	When taking still pictures: Max. 2× (When a picture size of [S] (5 M), aspect ratio of [4:3] is selected.) When recording motion pictures: 1.4×/2.7×
Focus	Auto Focus/Manual Focus, Face/Eye Detection/Tracking/225-area-focusing/Custom Multi/ 1-area-focusing/Pinpoint (Focus area selection is possible by touching or with the joystick)
Shutter type	Focal-plane shutter
Burst recording	
Burst speed	12 pictures/second (High speed, AFS/MF), 9 pictures/second (High speed, AFF/AFC), 7 pictures/second (Middle speed), 2 pictures/second (Low speed)
Number of recordable pictures	When there are RAW files: 60 or higher pictures When there are no RAW files: 600 or higher pictures * When recording is performed under the test conditions specified by Panasonic

ISO sensitivity (Standard Output Sensitivity)	Still picture: AUTO/[ISO]/100*/200/400/800/1600/3200/6400/12800/25600 Creative Video Mode: AUTO/100*/200/400/800/1600/3200/6400/12800 * Only available when [Extended ISO] is set. (1/3 EV step change possible)
Minimum Illumination	Approx. 3 lx [when i-Low light is used, the shutter speed is 1/30th of a second (When [System Frequency] is set to [59.94Hz (NTSC)]) or 1/25th (When [System Frequency] is set to [50.00Hz (PAL)])] [When the Interchangeable lens (H-ES12060) is used] Approx. 5 lx [when i-Low light is used, the shutter speed is 1/30th of a second (When [System Frequency] is set to [59.94Hz (NTSC)]) or 1/25th (When [System Frequency] is set to [50.00Hz (PAL)])] [When the Interchangeable lens (H-FS12060) is used]
Shutter speed	Still picture: B (Bulb) (Max. approx. 30 minutes), 60 seconds to 1/8000th of a second (Mechanical shutter), B (Bulb) (Max. approx. 30 minutes), 60 seconds to 1/2000th of a second (Electronic Front Curtain), 1 second to 1/16000th of a second (Electronic shutter) Motion picture: 1/25th of a second to 1/16000th of a second
Metering range	EV 0 to EV 18
White Balance	AWB/AWBc/Daylight/Cloudy/Shade/Incandescent lights/Flash/ White set1, 2, 3, 4/White Balance K set1, 2, 3, 4
Exposure (AE)	Programme AE (P)/Aperture-priority AE (A)/Shutter-priority AE (S)/Manual exposure (M)/AUTO Exposure Compensation (1/3 EV Step, -5 EV to +5 EV)
Light metering system, Light metering mode	1728-zone multi-pattern sensing system, Multiple/Centre weighted/Spot

Monitor	3.2" TFT LCD (3.2) (Approx. 1,620,000 dots) (field of view ratio about 100%) Touch screen
Viewfinder	OLED Live Viewfinder (4:3) (Approx. 3,680,000 dots) (field of view ratio about 100%) [Magnification approx. 1.52×, 0.76× (35 mm film camera equivalent), with 50 mm lens at infinity; -1.0 m ⁻¹] (with diopter adjustment -4 to +3 diopter)
Flash Mode	AUTO, AUTO/Red-Eye Reduction, Forced ON, Forced ON/ Red-Eye Reduction, Slow Sync., Slow Sync./Red-Eye Reduction, Forced OFF
Flash synchronisation speed	Equal to or smaller than 1/250th of a second
Microphone	Stereo
Speaker	Monaural
Recording media	SD Memory Card/SDHC Memory Card [®] /SDXC Memory Card [®] (* Card slot 1/Card slot 2: UHS-I/UHS-II UHS Speed Class 3) Double slot recording function is available
Picture size	
Still picture	When the aspect ratio setting is [4:3] 4992×3744 pixels (6K photo), 3328×2496 pixels (4K photo), 5184×3888 pixels ([L]), 3712×2784 pixels ([M]), 2624×1968 pixels ([S]) When the aspect ratio setting is [3:2] 5184×3456 pixels (6K photo), 3504×2336 pixels (4K photo), 5184×3456 pixels ([L]), 3712×2480 pixels ([M]), 2624×1752 pixels ([S]) When the aspect ratio setting is [16:9] 3840×2160 pixels (4K photo), 5184×2920 pixels ([L]), 3840×2160 pixels ([M]), 1920×1080 pixels ([S]) When the aspect ratio setting is [1:1] 2880×2880 pixels (4K photo), 3888×3888 pixels ([L]), 2784×2784 pixels ([M]), 1968×1968 pixels ([S])
Recording quality	
Motion pictures	[Rec Format]: [AVCHD]/[MP4]/[MP4 (LPCM)]/[MOV] Refer to P56 of this document for details.
Quality	RAW/RAW+Fine/RAW+Standard/Fine/Standard
Operating humidity	10%RH to 80%RH
Dust-proof and splash-proof	Yes

Wireless transmitter

Wireless LAN	
Compliance standard	IEEE 802.11a/b/g/n/ac (standard wireless LAN protocol)
Frequency range used (central frequency)	2412 MHz to 2472 MHz (1 to 13 ch) 5180 MHz to 5320 MHz (36/40/44/48/52/56/60/64 ch) [*] 5500 MHz to 5700 MHz (100/104/108/112/116/120/124/128/132/ 136/140 ch) [*] Requirements for Europe: 5150 to 5350 MHz, indoor use only
Encryption method	Wi-Fi compliant WPA [™] /WPA2 [™]
Access method	Infrastructure mode
Bluetooth function	
Compliance standard	Bluetooth Ver. 4.2 (Bluetooth low energy (BLE))
Frequency range used (central frequency)	2402 MHz to 2480 MHz

Battery Charger (Panasonic DMW-BTC10E):

Information for your safety

Input:	AC ~ 110 V ~ 240 V 50/60 Hz 0.2 A
Output:	DC --- 8.4 V 0.65 A
Operating temperature:	0 °C to 40 °C (32 °F to 104 °F)

Battery Pack (lithium-ion) (Panasonic DMW-BLF19E):

Information for your safety

Voltage/capacity:	7.2 V/1860 mAh
--------------------------	----------------

The symbols on this product (including the accessories) represent the following:

~	AC
---	DC
⊞	Class II equipment (The construction of the product is double-insulated.)

Recording file format	
Still Picture	RAW/JPEG (based on "Design rule for Camera File system", based on "Exif 2.31" standard, DPOF corresponding)
6K/4K photo (burst file)	6K photo: MP4 (H.265/HEVC, AAC (2 ch)) 4K photo: MP4 (H.264/MPEG-4 AVC, AAC (2 ch))
Motion pictures	AVCHD Progressive/AVCHD/MP4/MOV
Audio compression	AVCHD Dolby Audio [™] (2 ch) MP4 AAC (2 ch) MP4 (LPCM) LPCM (2 ch, 48 kHz/16 bit) MOV LPCM (2 ch, 48 kHz/16 bit) When an XLR microphone adaptor (DMW-XLR1: optional) is attached, LPCM (2 ch, 48 kHz/24 bit or 96 kHz/24 bit) is possible to select
Interface	
[REMOTE]	∅ 2.5 mm jack
[MIC]	∅ 3.5 mm jack
Headphone	∅ 3.5 mm jack
HDMI	HDMI Type A
USB	Super Speed USB 3.1 GEN1/USB 3.1 Type-C [*] Data from the PC can not be written to the camera using the USB connection cable.
Flash synchro	Available
Dimensions	Approx. 138.5 mm (W)×98.1 mm (H)×87.4 mm (D) [5.45" (W)×3.86" (H)×3.44" (D)] (excluding the projecting parts)
Mass	Approx. 725 g/1.60 lb [with one card and the battery] Approx. 645 g/1.42 lb (camera body) Approx. 1045 g/2.30 lb [with the interchangeable lens (H-ES12060), one card and the battery] Approx. 935 g/2.06 lb [with the interchangeable lens (H-FS12060), one card and the battery]
Operating temperature	-10 °C [*] to 40 °C (14 °F [*] to 104 °F) [*] The performance of the battery (number of recordable pictures/operating time) may decrease temporarily when using in a temperature between -10 °C and 0 °C (14 °F and 32 °F) (cold places such as ski resorts or places at high altitude).

4.2 Lens

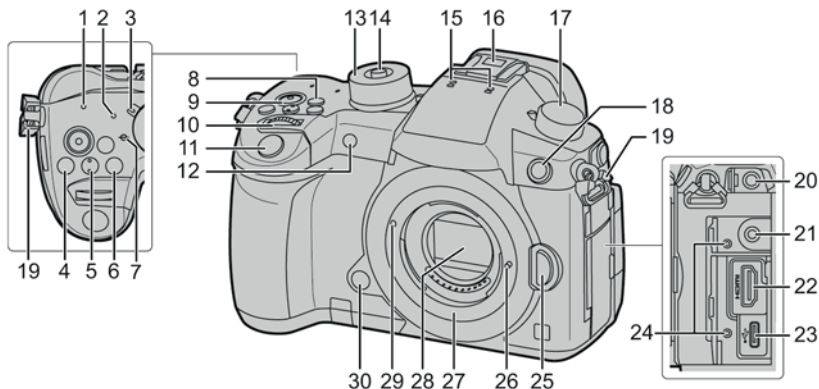
Interchangeable Lens	H-ES12060 "LEICA DG VARIO-ELMARIT 12-60 mm/F2.8-4.0 ASPH./ POWER O.I.S."	H-FS12060 "LUMIX G VARIO 12-60 mm/ F3.5-5.6 ASPH./POWER O.I.S."
Focal length	f=12 mm to 60 mm (35 mm film camera equivalent: 24 mm to 120 mm)	f=12 mm to 60 mm (35 mm film camera equivalent: 24 mm to 120 mm)
Aperture type	9 diaphragm blades/circular aperture diaphragm	7 diaphragm blades/circular aperture diaphragm
Maximum aperture	F2.8 (Wide) to F4.0 (Tele)	F3.5 (Wide) to F5.6 (Tele)
Minimum aperture value	F22	F22
Lens construction	14 elements in 12 groups (4 aspherical lenses, 2 ED lenses)	11 elements in 9 groups (3 aspherical lenses, 1 ED lens)
Nano surface coating	Yes	None
In focus distance	Wide: 0.2 m (0.66 feet) to ∞ / Tele: 0.24 m (0.79 feet) to ∞ (from the focus distance reference line)	Wide: 0.2 m (0.66 feet) to ∞ / Tele: 0.25 m (0.82 feet) to ∞ (from the focus distance reference line)
Maximum image magnification	0.3× (35 mm film camera equivalent: 0.6×)	0.27× (35 mm film camera equivalent: 0.54×)
Optical Image Stabiliser	Available	Available
O.I.S. switch	Available (Switching ON/OFF)	None (Setting of the [Stabilizer] is done in [Rec] menu.)
[AF/MF] switch	Available (Switching AF/MF)	None
Mount	"Micro Four Thirds Mount"	"Micro Four Thirds Mount"
Angle of view	84° (Wide) to 20° (Tele)	84° (Wide) to 20° (Tele)
Filter diameter	62 mm	58 mm
Max. diameter	Approx. 68.4 mm (2.7 inch)	Approx. 66 mm (2.6 inch)
Overall length	Approx. 86 mm (3.4 inch) (from the tip of the lens to the base side of the lens mount)	Approx. 71 mm (2.8 inch) (from the tip of the lens to the base side of the lens mount)
Mass	Approx. 320 g/0.70 lb	Approx. 210 g/0.46 lb
Operating temperature	-10 °C to 40 °C (14 °F to 104 °F)	0 °C to 40 °C (32 °F to 104 °F)
Dust-proof and splash-proof	Yes	Yes


H-HSA12035

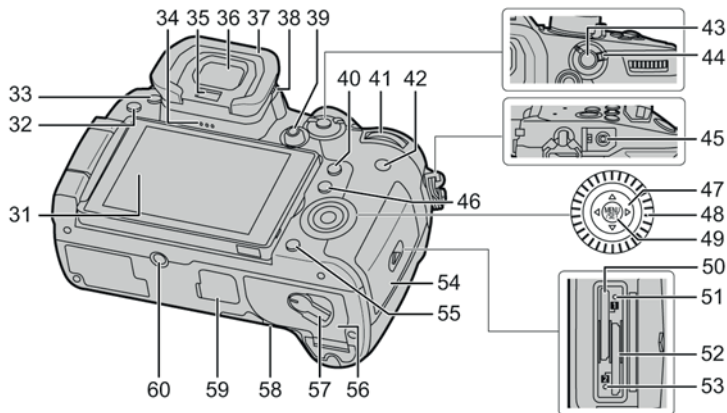
Specifications are subject to change without notice.
INTERCHANGEABLE LENS FOR DIGITAL CAMERA
 "LUMIX G X VARIO 12-35 mm/F2.8 II ASPH./
 POWER O.I.S."

Focal length	f=12 mm to 35 mm (35 mm film camera equivalent: 24 mm to 70 mm)
Aperture type	7 diaphragm blades/circular aperture diaphragm
Maximum aperture	F2.8
Minimum aperture value	F22
Lens construction	14 elements in 9 groups (4 aspherical lenses, 1 UED lens, 1 UHR lens)
Nano surface coating	Yes
In focus distance	0.25 m (0.82 feet) to ∞ (from the focus distance reference line)
Maximum image magnification	0.17× (35 mm film camera equivalent: 0.34×)
Optical image stabiliser	Available
[O.I.S.] switch	Available (Switching ON/OFF)
Mount	"Micro Four Thirds Mount"
Angle of view	84° (Wide) to 34° (Tele)
Filter diameter	58 mm
Max. diameter	Approx. 67.6 mm (2.7 inch)
Overall length	Approx. 73.8 mm (2.9 inch) (from the tip of the lens to the base side of the lens mount)
Mass	Approx. 305 g (0.67 lb)
Operating temperature	-10 °C to 40 °C (14 °F to 104 °F)
Dust-proof and splash-proof	Available

■ Camera body



1	WIRELESS connection lamp (P87)	16	Hot shoe (Hot shoe cover) (P54) • Keep the hot shoe cover out of reach of children to prevent swallowing.
2	Status indicator (P14)	17	Drive mode dial (P40)
3	Camera ON/OFF switch (P14)	18	Flash synchro socket (Flash synchro socket cap)
4	[] (Exposure Compensation) button (P37)	19	Shoulder strap eyelet (P11)
5	[ISO] (ISO sensitivity) button (P38)	20	[MIC] socket (P69)
6	[WB] (White Balance) button (P39)		Headphone socket (P70)
7	Focus distance reference mark	21	• Excessive sound pressure from earphones and headphones can cause hearing loss.
8	[Fn1] button (P28)	22	[HDMI] socket (P66, 103)
9	Motion picture button (P55)	23	USB socket (P104)
10	Front dial (P20)	24	Cable holder mount (P66)
11	Shutter button (P16)	25	Lens release button (P13)
12	Self-timer indicator/ AF Assist Lamp	26	Lens lock pin
13	Mode dial (P21)	27	Mount
14	Mode dial lock button (P21)	28	Sensor
15	Stereo microphone • Be careful not to cover the microphone with your finger. Doing so may make sound difficult to record.	29	Lens fitting mark (P13)
		30	Preview button/Function button (Fn6) (P28)

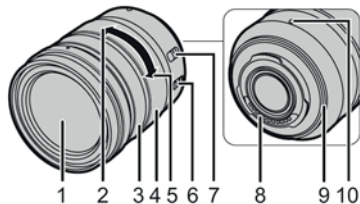


31	Touch screen (P25)/monitor (P106)
32	[▶] (Playback) button (P71)
33	[LVF] button (P23)/[Fn5] button (P28)
34	Speaker
35	Eye sensor (P23)
36	Viewfinder (P23)
37	Eye cup • Keep the eye cup out of reach of children to prevent swallowing.
38	Diopter adjustment dial (P15)
39	Joystick (P21, 35)/Function button (P28) Centre (Fn12)/▲ (Fn13)/▶ (Fn14)/▼ (Fn15)/◀ (Fn16)
40	[Q.MENU] button (P27)/[Fn2] button (P28)
41	Rear dial (P20)
42	[DISP.] button (P23)
43	[AF/AE LOCK] button (P37)
44	Focus mode lever (P32, 36)
45	[REMOTE] socket
46	[] (Auto Focus Mode) button (P32)/[Fn3] button (P28)
47	Cursor buttons (P20)/Function button (P28) ▲ (Fn17)/▶ (Fn18)/▼ (Fn19)/◀ (Fn20)
48	Control dial (P20)
49	[MENU/SET] button (P20, 26)
50	Card slot 1 (P12)

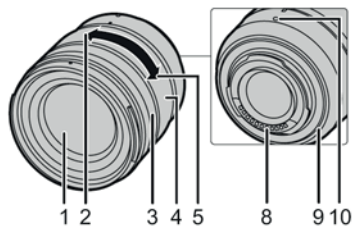
51	Access lamp (card 1) (P13)
52	Card slot 2 (P12)
53	Access lamp (card 2) (P13)
54	Card door (P12)
55	[]/[] (Delete/Cancel) button (P74)/[Fn4] button (P28)
56	Battery door (P12)
57	Release lever (P12)
	DC coupler cover (P121) • When using an AC adaptor, ensure that the Panasonic DC coupler (DMW-DCC12: optional) and AC adaptor (DMW-AC10E: optional) are used.
58	• Always use a genuine Panasonic AC adaptor (DMW-AC10E: optional). • When using an AC adaptor, use the AC mains Lead supplied with the AC adaptor.
	Cover for the battery grip connector 59 • Keep the cover for the battery grip connector out of reach of children to prevent swallowing.
60	Tripod mount • It may not be possible to attach and securely fasten a tripod with a screw length of 5.5 mm (0.22 inch) or more to the camera. Doing so may also damage the camera.
	• Function buttons ([Fn7] to [Fn11]) (P28) are touch icons. Touch the [] tab on the recording screen to display them.

■ Lens

H-ES12060



H-FS12060



1 Lens surface

2 Tele

3 Focus ring (P36)

4 Zoom ring

5 Wide

6 O.I.S. switch

[AF/MF] switch

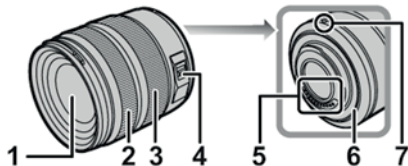
- 7
- When either the [AF/MF] switch of the lens or the setting of the camera is set to [MF], Manual Focus (MF) is enabled.

8 Contact point

9 Lens mount rubber

10 Lens fitting mark (P13)

H-HSA12035



1 Lens surface

2 Focus ring

Rotate to focus when taking pictures with manual focus (MF).

3 Zoom ring

Rotate the zoom ring when you wish to take large (tele) or wide (wide angle) pictures.

4 [O.I.S.] switch

When the lens is attached to the camera the stabilizer function is set to activate if the O.I.S. switch is set to [ON].

- We recommend setting the O.I.S. switch to [OFF] when using a tripod.

5 Contact points

6 Lens mount rubber

7 Lens fitting mark

6 Service Mode

6.1 Error Code Memory Function

1. General Description

This unit is equipped with history of error code memory function, and can be memorized 16 error codes in sequence from the latest. When the error is occurred more than 16, the oldest error is overwritten in sequence.

The error code is not memorized when the power supply is shut down forcibly.

(i.e., when the unit is powered on by the battery, the battery is pulled out)

The error code is memorized to Flash-ROM when the unit has just before powered off.

2. How to Display

The error code can be displayed by ordering the following procedure:

- Preparation

Attach the fully charged Battery, and insert the memory card to slot1.

Set the mode dial to [P] (Program AE Mode).

- Step 1. The temporary cancellation of "Initial Settings":**

Set the drive mode dial to [Single], while pressing [Playback] button and [AF/AE LOCK] button simultaneously, turn the Power on.

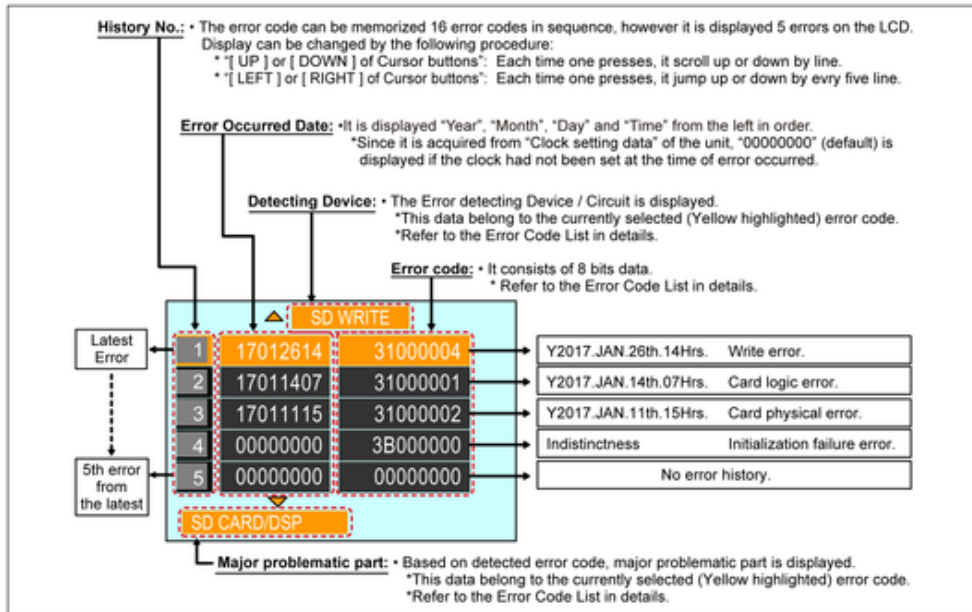
- Step 2. Execute the error code display mode:**

Press [Playback] button, [MENU/SET] button and "[LEFT] of Cursor buttons" simultaneously with the step 1 condition.

The display is changed as shown below when the above buttons are pressed simultaneously.

Normal display → Error code display → Camera information display → Normal display →

Example of Error Code Display



- Error Code List**

The error code consists of 8 bit data and it shows the following information.

Attribute	Main item	Sub item	Error code		Contents	Error Indication	
			High 4 bits	Low 4 bits		Detecting device	Problematic Part/Circuit
HARD	Flash	Flash	28*0	0000	Flash charge timeout error (system error indicated)	STRB CHG	STRB PCB/FPC

				0001	EEPROM of External Flash is damaged.	EST EEP	E.STRB	
				0002	ZOOM function of External Flash is damaged.	EST		
				0003	Other function of External Flash is damaged.			
BIS	In Body Image Stabilization	28*0		0010	BIS HP encorder (X) Low detect error	BIS HPL X	BIS	
				0020	BIS HP encorder (X) High detect error	BIS HPH X		
				0030	BIS HP encorder (Y) Low detect error	BIS HPL Y		
				0040	BIS HP encorder (Y) High detect error	BIS HPH Y		
				0050	BIS GYRO (X) error	BIS GYRO X		
				0060	BIS GYRO (Y) error	BIS GYRO Y		
				0070	BIS GYRO communication error	BIS GY DIF		
				0080	BIS GYRO (R) error	BIS GYRO R		
				0090	BIS APU timeout error	BIS APU		
				0100	BIS Position sensor (X1) error	BIS POS X1		
				0200	BIS Position sensor (X2) error	BIS POS X2		
				0300	BIS Position sensor (Y) error	BIS POS Y		
				0400	BIS Drive Voltage (X1) error	BIS DRIVE X1		
				0500	BIS Drive Voltage (X2) error	BIS DRIVE X2		
				0600	BIS Drive Voltage (Y) error	BIS DRIVE Y		
				0700	BIS DIFF Signal (X1) error	BIS DIFF X1		
				0800	BIS DIFF Signal (X2) error	BIS DIFF X2		
	0900	BIS DIFF Signal (Y) error	BIS DIFF Y					
Flash-ROM	Data Area	2B*0		0001	EEPROM data error (During read out)	FROM RE	FROM	
				0002	EEPROM data error (During write in)	FROM WR		
	Program Area			0005	Firmware update error	FIRMUP FAIL		
				0006	Firmware update error (USB Micon)	USBFWUP FAIL		USB
SOFT	CPU	Reset	30*0	0000	NMI reset	NMI RST	MAIN PCB	
	Recording Media	Memory card	31*0		0002	Memory card physical error	SD CARD	SD CARD/DSP
					0004	Memory card writing error	SD WRITE	
	CPU, ASIC Hardware	Halt	38*0	0001	Zoom processing not completed.	ZOOM	ZOOMm/LENSu	
	Lens	Communication	3C11 3CFA	****	Lens communication error	LENS COMM	SOFT	
	Camera	System	3B*0	0000	EEPROM writing during camera initialization	FROM	SOFT	
			3D*0	0000	Assert occurrence	ASSERT		
			3E*0	0001	Exposure charging operation failure	MSHUT		MSHUT
			0002	Failure of the returning operation to the home position				
			0003	Failure of the mecha shutter sensor				
		0004	Exposure charging operation failure 1					
		0005	Exposure charging operation failure 2					
		0006	Exposure charging recovery operation failure					
		0011	Single curtain mechanical shutter PR1 operation failure					
		0012	Single curtain mechanical shutter PR2 operation failure					
		0013	Single curtain mechanical shutter reset operation failure					
	0014	Abnormal current of shutter drive motor						
	0101	Electronic shutter front curtain operation failure						
	0102	Electronic shutter front curtain operation failure						
	0111	Electronic shutter rear curtain operation failure						
	0112	Electronic shutter rear curtain operation failure						
	1102	Mechanical shutter front curtain set P11 detection failure						
	1103	Mechanical shutter front curtain set P11 detection failure						
	1104	Mechanical shutter front curtain set P12 detection failure						
	1105	Mechanical shutter front curtain set P12 detection failure						
	1106	Mechanical shutter front curtain set P13 detection failure						
	1107	Mechanical shutter front curtain set P13 detection failure						
	1108	Mechanical shutter front curtain set P14 detection failure						
	1109	Mechanical shutter front curtain set P14 detection failure						

Attribute	Main item	Sub item	Error code		Contents	Error Indication	
			High 4 bits	Low 4 bits		Detecting device	Problematic Part/Circuit
SOFT	Camera	System	3E*0	1202	Mechanical shutter exposure control PI1 detection failure	MSHUT	MSHUT
				1203	Mechanical shutter exposure control PI1 detection failure		
				1204	Mechanical shutter exposure control PI2 detection failure		
				1205	Mechanical shutter exposure control PI2 detection failure		
				1206	Mechanical shutter exposure control PI3 detection failure		
				1207	Mechanical shutter exposure control PI3 detection failure		
				1208	Mechanical shutter exposure control PI4 detection failure		
				1209	Mechanical shutter exposure control PI4 detection failure		
				1302	Mechanical shutter release control 1 PI1 detection failure		
				1303	Mechanical shutter release control 1 PI1 detection failure		
				1304	Mechanical shutter release control 1 PI2 detection failure		
				1305	Mechanical shutter release control 1 PI2 detection failure		
				1306	Mechanical shutter release control 1 PI3 detection failure		
				1307	Mechanical shutter release control 1 PI3 detection failure		
				1308	Mechanical shutter release control 1 PI4 detection failure		
				1309	Mechanical shutter release control 1 PI4 detection failure		
				1402	Mechanical shutter release control 2 PI1 detection failure		
				1403	Mechanical shutter release control 2 PI1 detection failure		
				1404	Mechanical shutter release control 2 PI2 detection failure		
				1405	Mechanical shutter release control 2 PI2 detection failure		
				1406	Mechanical shutter release control 2 PI3 detection failure		
1407	Mechanical shutter release control 2 PI3 detection failure						
1408	Mechanical shutter release control 2 PI4 detection failure						
1409	Mechanical shutter release control 2 PI4 detection failure						
140A	Mechanical shutter release control 2 home position failure						
	Recording	Motion Image Recording	3F*0	0001	File time out error in recording motion image	MOVR T.O.	SOFT
				0002	File data cue send error in recording motion image	MOVR FILE	
Wi-Fi			3211	**02 **0C	Wi-Fi related errors: *Generally, above are unable to specified the, which cannot be used for malfunction diagnosis.	WiFi	WiFi

Important Notice about “Error Code List”

About “*” indication:

The third digit from the left is different as follows.

- o In case of 0 (example: 2B001000)

When the third digit from the left shows “0”, this error occurred under the condition of Initial Settings has been completed.

It means that this error is occurred basically at user side.

- o In case of 8 (example: 2B801000)

When the third digit from the left shows “8”, this error occurred under the condition of Initial Settings has been released.

(Example; Factory assembling-line before unit shipment, Service mode etc.)

It means that this error is occurred at service side.

- **Step 3. How to Exit from Error Code Display Mode:**

Simply, turn the power off. (Since Error Code display mode is executed under the condition of temporary cancellation of "Initial Settings", it wake up with normal condition when turn off the power.)

NOTE:

The error code can not be initialized.

7 Troubleshooting Guide

7.1 Checking Method of Body and Interchangeable Lens

1. Initial (Default) Status Of The Lens Unit

The Lens unit which is supplied as a standard accessory for this camera unit (H-FS12060, H-ES12060, H-HSA12035) shows the following status when the Lens is detached from the Camera unit.

NOTE: Although the lens unit is attached it shows the same condition when the Camera turns off.

H-FS12060 (Included in DC-GH5M):

a. ZOOM RING

When the Zoom ring is rotated, Zoom condition is changing accordingly. (The 1st lens frame moves.)

[Focal length : 12mm to 60mm [35mm film camera equivalent: 24mm to 120mm]]

b. FOCUS RING

The Focus condition does not changed although Focus ring is rotated. (Free rotation.)

H-ES12060 (Included in DC-GH5L):

a. ZOOM RING

When the Zoom ring is rotated, Zoom condition is changing accordingly. (The 1st lens frame moves.)

[Focal length : 12mm to 60mm [35mm film camera equivalent: 24mm to 120mm]]

b. FOCUS RING

The Focus condition does not changed although Focus ring is rotated. (Free rotation.)

H-HSA12035 (Included in DC-GH5A):

a. ZOOM RING

When the Zoom ring is rotated, Zoom condition is changing accordingly. (The 1st lens frame moves.)

[Focal length : 12mm to 35mm [35mm film camera equivalent: 24mm to 70mm]]

b. FOCUS RING

The Focus condition does not changed although Focus ring is rotated. (Free rotation.)

2. Initial Inspection Tips (Before Determine The Unit Being Faulty/Defective):

Since this unit is equipped with various functions/settings, some phenomenon/effect might be caused by miss usage of function and/or settings.

It might be made a miss-judgement caused by miss usage of function & settings although the unit is working properly without fault.

Therefore, check/confirm the followings before concluding/determine the unit being faulty/defective.

NOTE: Refer to the Operating Instructions about content of various settings.




If it is hard to determine whether the resolution is out of specification or not, proceed the "RESOLUTION INSPECTION",

before replacing the Lens Main Unit. (The unit might be mishandling, dropping or others.)

3. Reference information


MENU LIST(Quick Reference)

■ Mode Dial










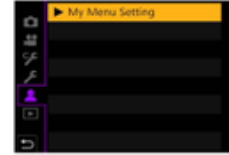





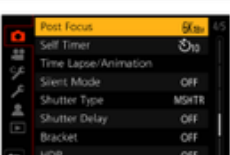


※ 	Intelligent Auto Mode / Intelligent Auto Plus Mode		Creative Video Mode
P	Programme AE Mode	C1	Custom Mode
A	Aperture-Priority AE Mode	C2	Custom Mode
S	Shutter-Priority AE Mode	C3	Custom Mode
M	Manual Exposure Mode		Creative Control Mode





Pressing the [MENU/SET button] displays the basic menu. All basic menu is not displayed in the **red letters** mode.

Some menus are displayed in service mode only.

In , displayed menus are different in accordance with selected modes.

Basic Menu

	 [REC]	 [MOTION PICTURE]	 [CUSTOM]	 [SETUP]	 [MY MENU]
1st Page					
2nd Page			/		
3rd Page					/
4th Page			/		
5th Page		/			/

	 [PLAYBACK]
1st Page	
2nd Page	
3rd Page	

The menu item which can not be chosen is displayed in gray. When the menu page has no items can be chosen, the page is skipped display.

REMARKS:

[ Creative Control Mode]

* Setting the mode dial to [Creative Control Mode], then displaying the lower figure.
 (Pressing the [MENU/SET button] twice, displays the basic menu.)



■ Other than Basic Menu


[ Intelligent Auto Mode]

[Intelligent Auto Mode] and [Intelligent Auto Mode Plus] can be selected from [iA] menu.

In [Intelligent Auto] mode [REC] and [MOTION PICTURE] menu are limited and displayed following items only.

(In [Intelligent Auto Plus] mode, [Basic Menu] is displayed.)

	[iA]	[REC]	[MOTION PICTURE]	[CUSTOM][SETUP][MY MEMU][PLAYBACK]
1st Page				Same as [MENU LIST (Quick Reference)].
2nd Page				

[ Creative Video Mode]

[REC] is not displayed.

[MOTION PICTURE], [CUSTOM], [SETUP], [MY MEMU] and [PLAYBACK] are the same as above-mentioned Menu LIST (Quick Referce.)

7.2 Wi-Fi Circuit (Wi-Fi BT P.C.B.)

7.2.1 How to Remove Wi-Fi Password Protection

To prevent incorrect operation or use of the Wi-Fi function by a third party and to protect saved personal information, this unit protects the Wi-Fi function with a password.

It is unable to service with password locked condition. When accepting for repair, the unit has been set the Wi-Fi password by customer, run the [Reset Network Settings] for removing Wi-Fi password, then check the operation.

[Reset Procedure of Network Settings]

1) Press the [MENU/SET] button, and select the [SETUP] mode by Cursor buttons.

Select [Reset Network Settings] by Cursor buttons, then press the [MENU/SET] button.

2) Select [YES] and press the [MENU/SET] button.

(The [Reset Network Settings] performs not only resetting Wi-Fi Password but also resetting other all Wi-Fi Settings (Excluding

[LUNIX CLUB]) and registered device information in [Bluetooth].)

7.2.2 Checking of trouble caused by Wi-Fi Circuit or not

The Wi-Fi Circuit works properly if the wireless access point (broadband router) name (SSID) in use is displayed on a screen of [Manual Connection].

(Primary Confirmation)

Confirm that the wireless access point (broadband router) works properly.

(Procedure)







- 1) Select [Wi-Fi] in [Setup] menu.
- 2) Select [Wi-Fi Function] in [Wi-Fi] menu.
- 3) Select [New Connection] in [Wi-Fi] menu.
- 4) Select optional function in [Select a function] menu, then select [Via Network] in [Select connection method] menu.
- 5) Select [From List] in [Select connection method] menu.
- 6) The Wi-Fi Circuit works properly if the wireless access point (broadband router) name (SSID) in use is displayed.

8 Service Fixture & Tools

8.1 Service Fixture and Tools

The following service fixture and tools are used for checking and servicing this unit.

Light Box (with DC Cable) RFKZ0523 <p>* VFK1164TDVLB can be used.</p>	ND Filter (ND 0.9) VFK1164ND09 	ND Filter (ND 0.3) RFKZ0513
ND Filter (ND 0.6) VFK1164ND06 	CC Filter (CC-C7.5) RFKZ0511 	CC Filter (CC-Y10) RFKZ0512
LB Filter (LBB2) RFKZ0520 	LB Filter (LBB8) RFKZ0521 	Gray Card RFKZ0506
Resolution Chart RFKZ0510 <p>* Supplied as divided chart parts. (Assemble it before use.)</p>	Optical Axis Adjustment Chart RFKZ0570 	Shutter Adjustment Collimator RFKZ0630
Diffuser RFKZ0591 	Silicon Chips RFKZ0478 <p>* For exchange the packing.</p>	Camera Stand RFKZ0333J

Driver VFK1390	Torque Driver RFKZ0456	Lens Cleaning Kit (BK) VFK1900BK
	 * Spec. : 2-30N·cm (Equiv.0.2-3kgf/cm)	 * Only supplied 10 set/box.
Camera body : DMC-G80/G81/G85 or DMC-GX80/GX85	Lens : H-X015 and H-FS014045 (conventional)	Lens : H-HS030 (conventional)
 Correspond by the marketed commodity. (It does not supply as service fixture and tools.)	 Correspond by the marketed commodity. (It does not supply as service fixture and tools.)	 Correspond by the marketed commodity. (It does not supply as service fixture and tools.)

8.2 Clean Box

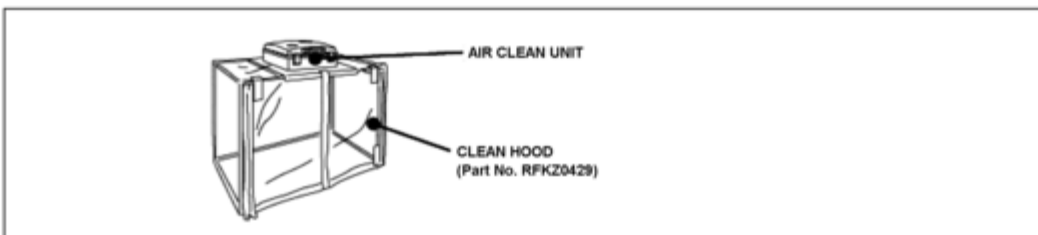
- The repair quality is considered, and it is recommended working in the environment of specified clean level less than class 10,000 (Federal Standard 209D).

[NOTE]

- Work in the environment of specified clean level less than class 10,000 (Federal Standard 209D) when inside cleaning of a lens.

Please refer to the following service manuals.

- H-FS12060E/GK/PP: Order No.[DSC1604008CE](#)
- H-ES12060PP/E/GK: Order No.[DSC1702007CE](#)
- H-HSA12035PP/E/GK: Order No.[DSC1703008CE](#)



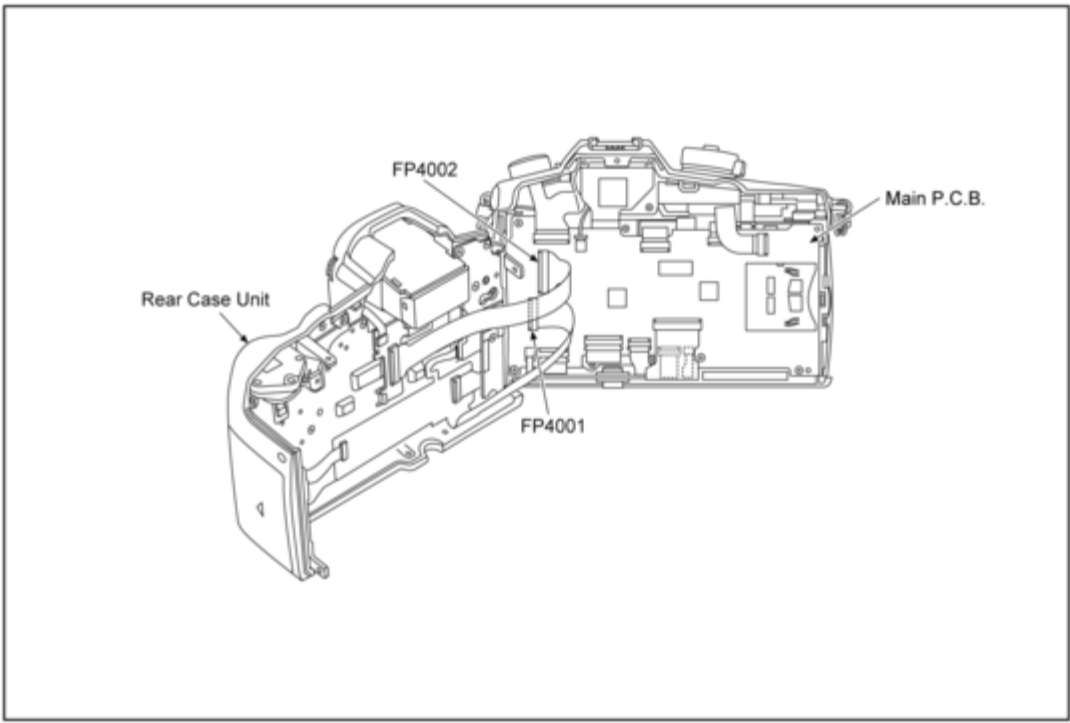
8.3 When Replacing the Main P.C.B.

After replacing the Main P.C.B., be sure to achieve adjustment.

Refer to the adjustment instruction in the adjustment software for details.

8.4 Service Position (When checking the each P.C.B.)

This service position is used for checking and replacing parts. Use the following extension cables for servicing.



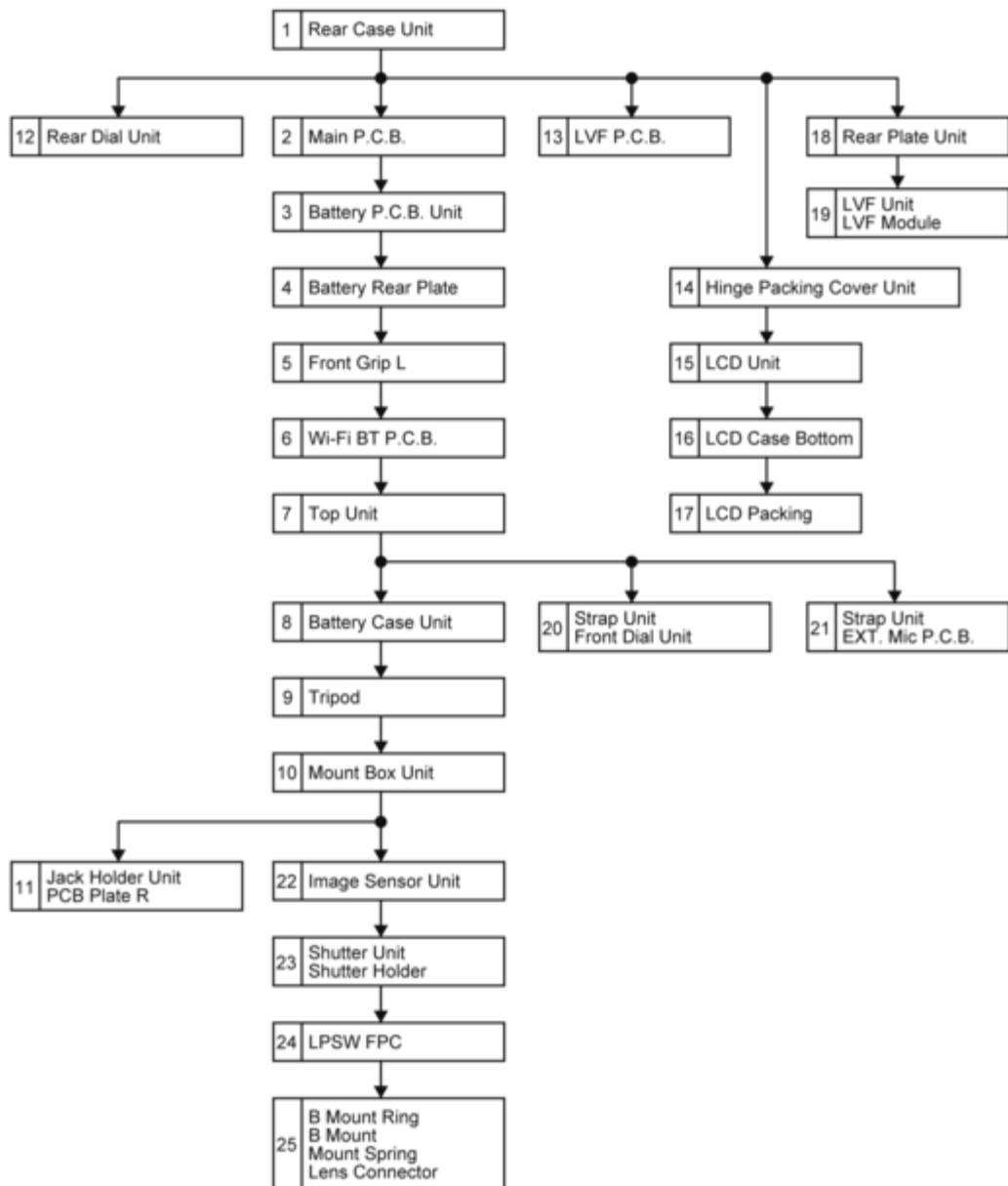
9 Disassembly and Assembly Instructions

9.1 Camera Body Part

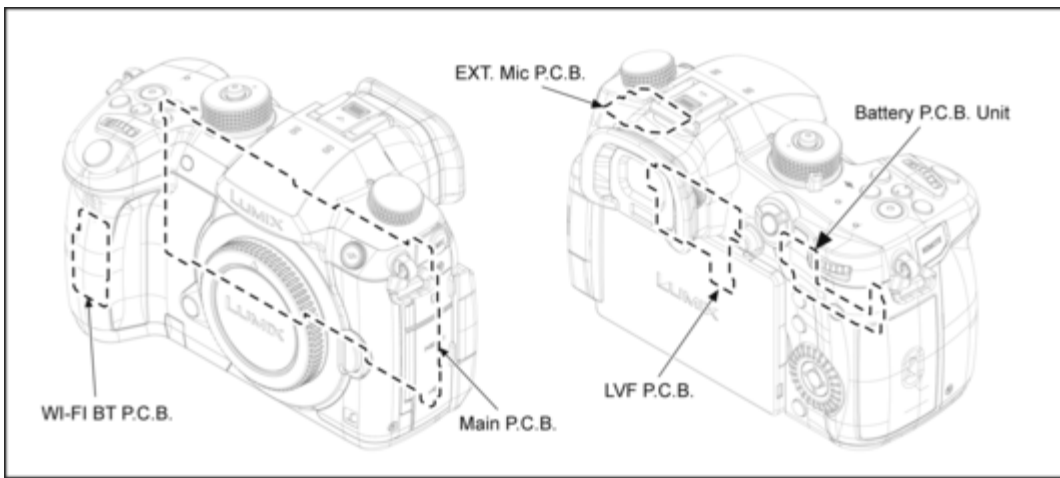
9.1.1 Disassembly Flow Chart

This is a disassembling chart.

When assembling, perform this chart conversely.



9.1.2 P.C.B. Location



9.1.3 Disassembly Procedure

No.	Item	Fig.	Removal
1	Rear Case Unit	(Fig. D1)	Screw (A) x 3 Screw (B) x 2 Screw (C) x 2
		(Fig. D2)	Eyecup Screw (D) x 2
		(Fig. D3)	FP4001 (Flex) FP4002 (Flex) Rear Case Unit
		(Fig. D4)	FP3501 (Flex) FP3502 (Flex) FP3561 (Flex) FP3562 (Flex) FP3563 (Flex) FP6001 (Flex) FP6002 (Flex) FP6003 (Flex) FP6004 (Flex) FP6006 (Connector) FP6007 (Flex) FP6008 (Flex) Screw (E) x 3 Screw (F) x 1 Convex x 2
2	Main P.C.B.	(Fig. D5)	Heat Radi Pad Rear 1 Heat Radi Pad Rear 2 Heat Radi Pad Main 1 Heat Radi Pad Main 2 Jack Shading Piece

			Jack Piece Tape A
			Jack Piece Tape B
			Gasket Main
			Main P.C.B.
3	Battery P.C.B. Unit	(Fig. D6)	Screw (G) x 1
			Convex x 2
			Battery Contact Cover
			Screw (H) x 1
			Locking tab x 1
			Convex x 2
			Battery P.C.B. Unit
4	Battery Rear Plate	(Fig. D7)	Screw (I) x 1
			Screw (J) x 1
			Locking tab x 2
			Convex x 2
			Battery Rear Plate
5	Front Grip L	(Fig. D8)	Screw (K) x 2
			Screw (L) x 2
			Hooking part x 3
			Front Grip L
6	Wi-Fi BT P.C.B.	(Fig. D9)	FP8501 (Flex)
			Screw (M) x 1
			Hooking part x 1
			Convex x 2
			Wi-Fi BT P.C.B.
7	Top Unit	(Fig. D10)	Screw (N) x 1
			Screw (O) x 1
		(Fig. D11)	Hooking part x 4
			Front Grip R Unit
			Screw (P) x 1
			Screw (Q) x 1
			Screw (R) x 3
		(Fig. D12)	Top Unit
8	Battery Case Unit	(Fig. D13)	Screw (S) x 3
			Screw (T) x 1
		(Fig. D14)	Battery Case Unit
9	Tripod	(Fig. D15)	Screw (U) x 2
			Convex x 1
		(Fig. D16)	Tripod
10	Mount Box Unit	(Fig. D17)	Screw (V) x 3

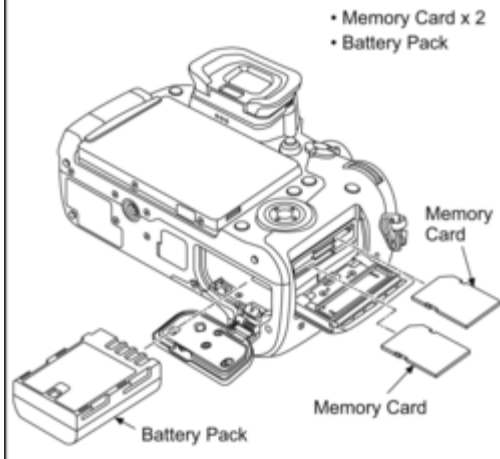
			Screw (W) x 2
		(Fig. D18)	Mount Box Unit
11	Jack Holder Unit, PCB Plate R	(Fig. D19)	Screw (X) x 2
			Convex x 2
			Jack Cover Shaft
			Jack Cover A
			Jack Cover B
			Screw (Y) x 2
			Jack Holder Unit
			PCB Plate R
12	Rear Dial Unit	(Fig. D20)	Screw (Z) x 2
			Flex
			Convex x 2
			Rear Dial Unit
13	LVF P.C.B.	(Fig. D21)	Screw (a) x 1
			FP4401 (Flex)
			FP4403 (Flex)
			Hooking part x 1
			Convex x 2
			LVF P.C.B.
14	Hinge Packing Cover Unit	(Fig. D22)	Screw (b) x 2
			Hinge Arm Cover Top
			Hinge Arm Cover Bottom
			Screw (c) x 2
			Convex x 4
			Hinge Packing Cover Unit
15	LCD Unit	(Fig. D23)	Flex
			Hinge Cushion
			Hinge Fix Cover
			Screw (d) x 2
			LCD Unit
16	LCD Case Bottom	(Fig. D24)	Screw (e) x 6
			Locking tab x 6
			FP4202 (Flex)
			LCD Case Bottom
17	LCD Packing	(Fig. D25)	LCD Packing
18	Rear Plate Unit	(Fig. D26)	Flex x 3
			Screw (f) x 8
			Screw (g) x 1
			Screw (h) x 1

			Convex x 5
		(Fig. D27)	Joystick Rubber
			Joystick Lever
			Rear Plate Unit
			Rear Button Packing B
			Display Button
			Rear Button Packing A
			Fn2 Button
			Fn3 Button
			Rear Button Packing B
			Fn4 Button
19	LVF Unit, LVF Module	(Fig. D28)	Screw (i) x 3
			Convex x 2
			LVF Unit
			Locking tab x 3
			Tape
			LVF Heat Sink
			Heat Radiation Pad
			LVF Module
20	Strap Unit, Front Dial Unit	(Fig. D29)	Screw (j) x 1
			Screw (k) x 1
			Convex x 2
			Top Plate L
			Strap Unit
			Strap Holder Cushion
			Screw (l) x 1
			Convex x 2
			Remote Jack Holder
			Remote Cover
		(Fig. D30)	Screw (m) x 2
			Tape
			Flex x 2
			Convex x 3
			Front Dial Unit
21	Strap Unit, EXT. Mic P.C.B.	(Fig. D31)	Screw (n) x 2
			Top Plate R
			Screw (o) x 1
			Screw (p) x 1
			Strap Unit
			Strap Holder Cushion

			Mic Jack Cover
		(Fig. D32)	Screw (q) x 2
			EXT. Mic P.C.B.
			Mic Jack Holder
22	Image Sensor Unit	(Fig. D33)	Screw (s) x 3
			Image Sensor Unit
			Adjust Spring x 3
23	Shutter Unit, Shutter Holder	(Fig. D34)	Screw (s) x 3
			Screw (t) x 2
			Shutter Unit
			Shutter Holder
24	LPSW FPC	(Fig. D35)	Screw (u) x 2
			Lens Release FPC Plate
			LPSW FPC
25	B Mount Ring, B Mount, Mount Spring, Lens Connector	(Fig. D36)	Screw (v) x 1
			Screw (w) x 1
		(Fig. D37)	Screw (x) x 2
			Screw (y) x 2
			B Mount Ring
			B Mount
			Lens Lock Pin
			Lens Lock Pin Spring
			Mount Spring
			Lens Connector
			Mount Base

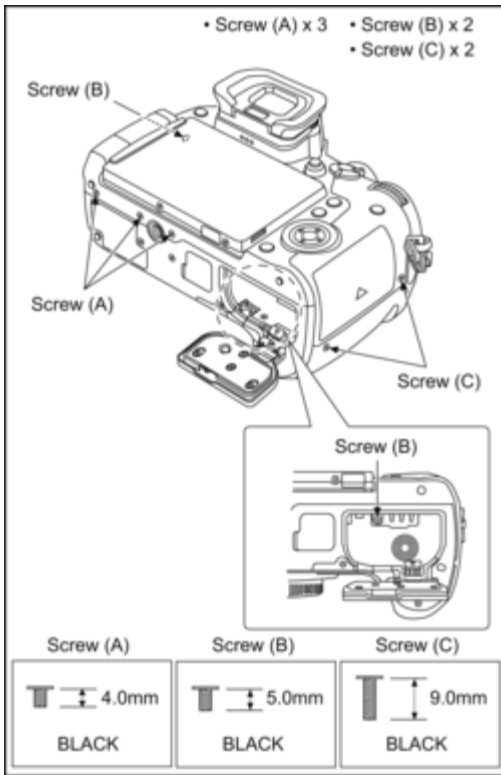
NOTE:

- When servicing and reassembling, remove the memory card and battery pack from the unit.
- Install the body cap to prevent garbage and dust except when it is necessary.
- Do not reuse the screws tightened to metal materials. Use new screws.

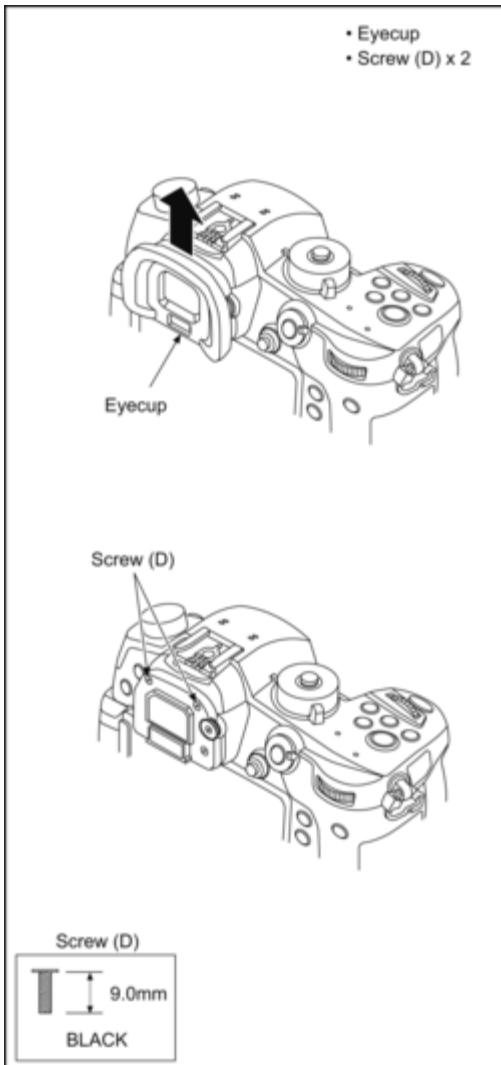


9.1.3.1 Removal of the Rear Case Unit

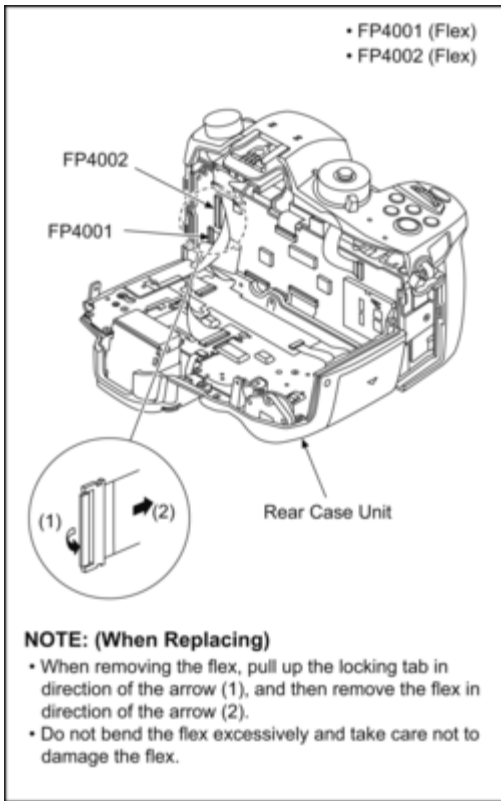
(Fig. D1)



(Fig. D2)



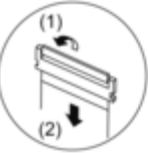
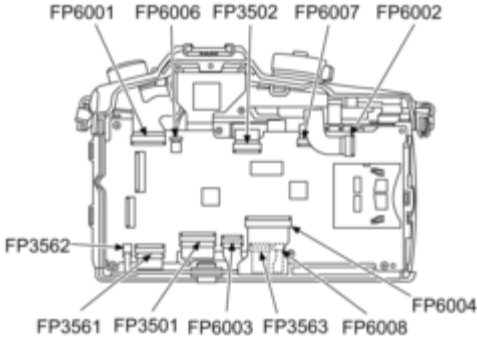
(Fig. D3)



9.1.3.2 Removal of the Main P.C.B.

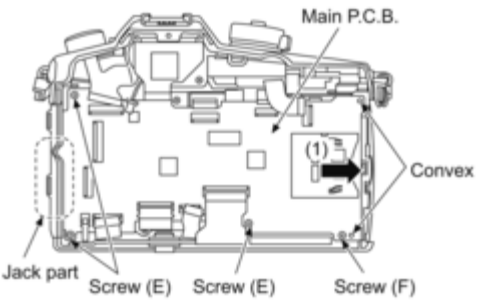
(Fig. D4)

- FP3501 (Flex)
- FP3502 (Flex)
- FP3561 (Flex)
- FP3562 (Flex)
- FP3563 (Flex)
- FP6001 (Flex)
- FP6002 (Flex)
- FP6003 (Flex)
- FP6004 (Flex)
- FP6006 (Flex)
- FP6007 (Flex)
- FP6008 (Flex)
- Screw (E) x 3
- Screw (F) x 1
- Convex x 2
- FP6006 (Connector)



NOTE: (When Replacing)

- When removing the flex, pull up the locking tab in direction of the arrow (1), and then remove the flex in direction of the arrow (2).
- Do not bend the flex excessively and take care not to damage the flex.



NOTE: (When Replacing)

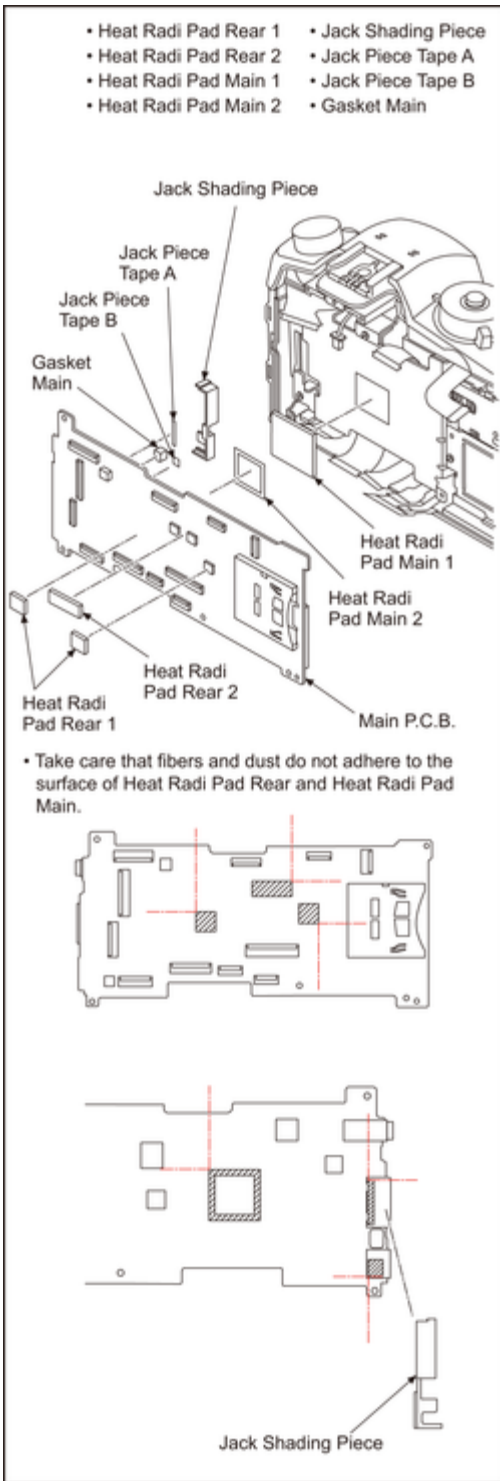
- After detaching the Main P.C.B. from convexes, slide the P.C.B. in direction of the arrow (1) to remove the Main P.C.B..

Screw (E)

Screw (F)

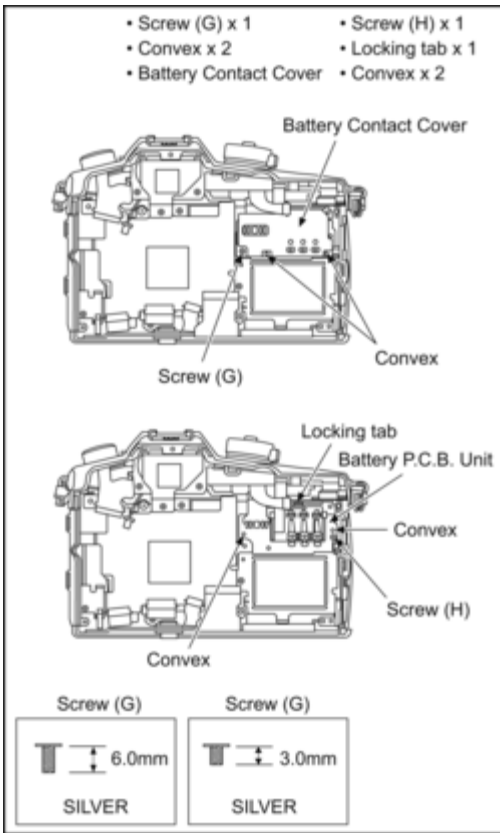


(Fig. D5)



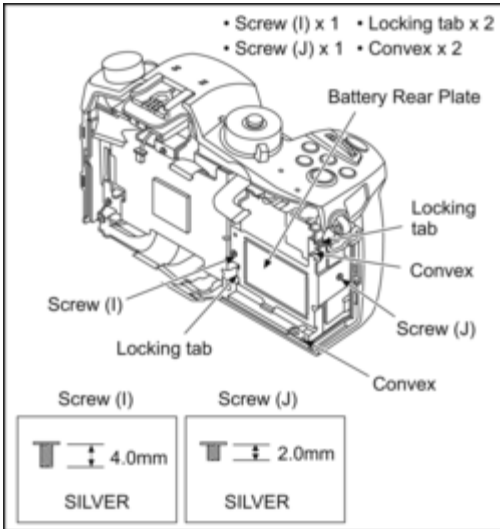
9.1.3.3 Removal of the Battery P.C.B. Unit

(Fig. D6)



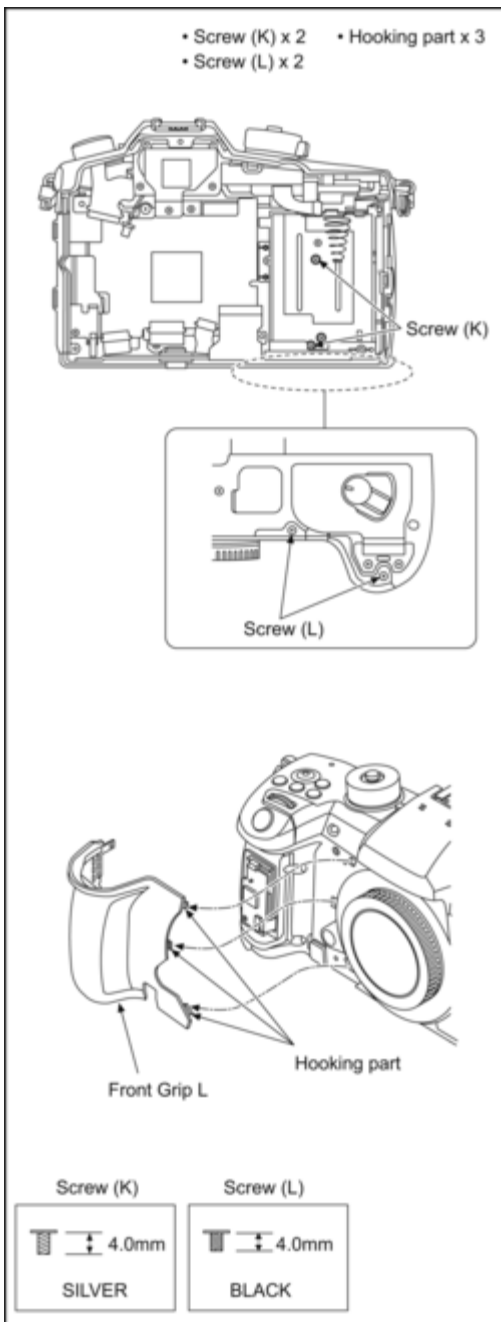
9.1.3.4 Removal of the Battery Rear Plate

(Fig. D7)



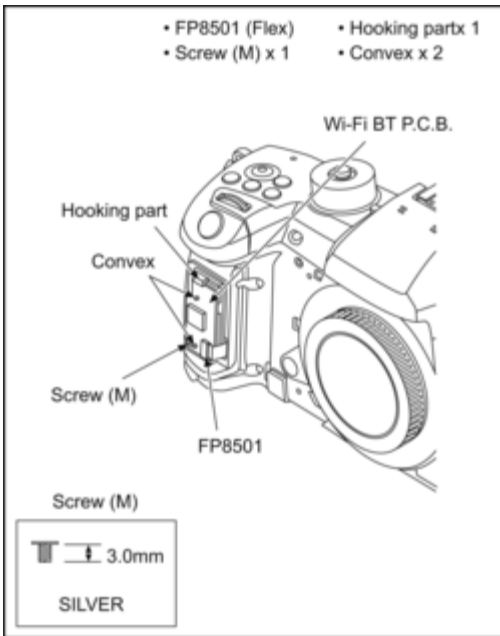
9.1.3.5 Removal of the Front Grip L

(Fig. D8)



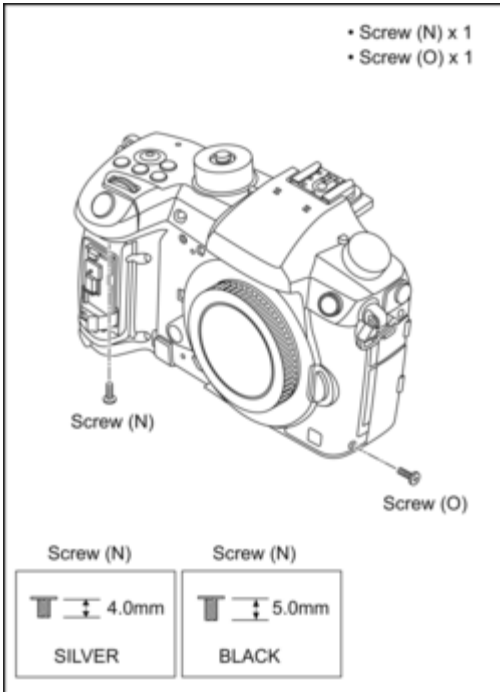
9.1.3.6 Removal of the Wi-Fi BT P.C.B.

(Fig. D9)

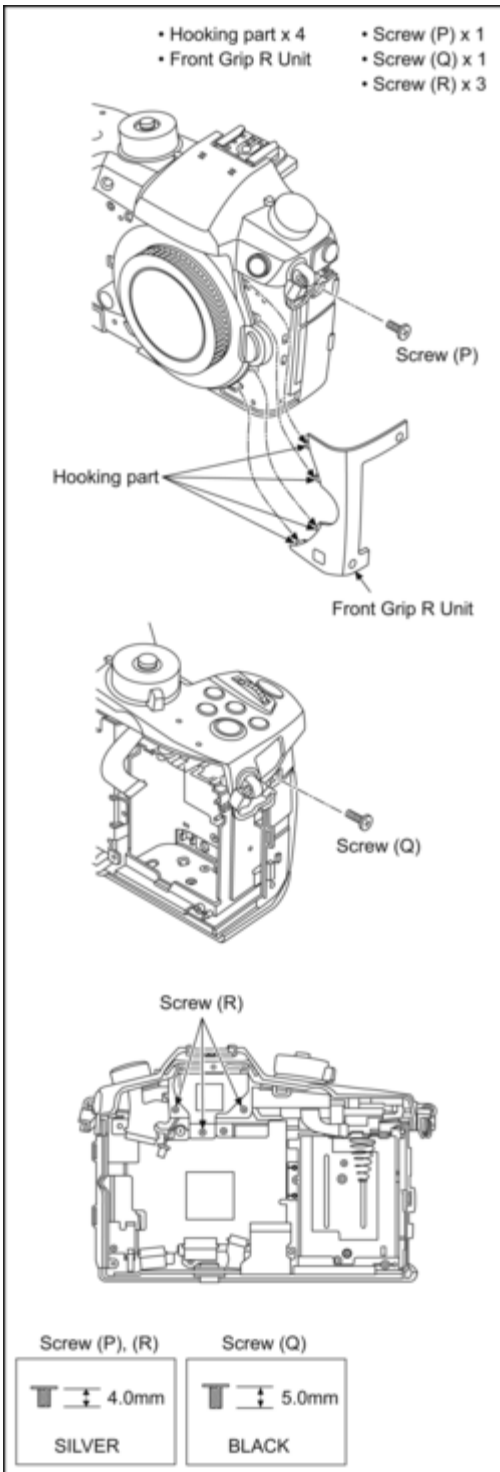


9.1.3.7 Removal of the Top Unit

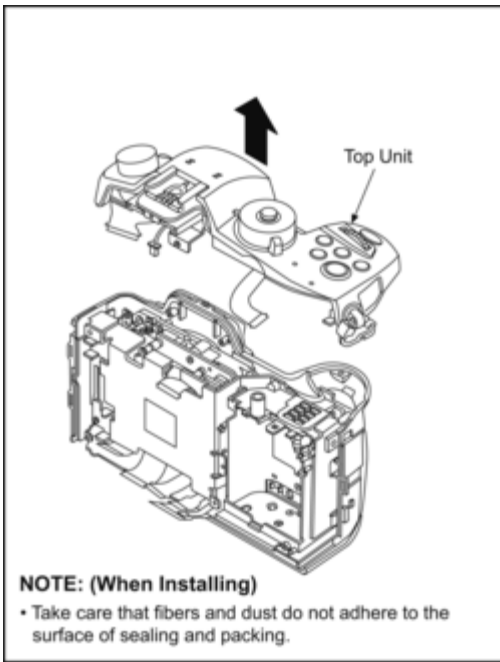
(Fig. D10)



(Fig. D11)

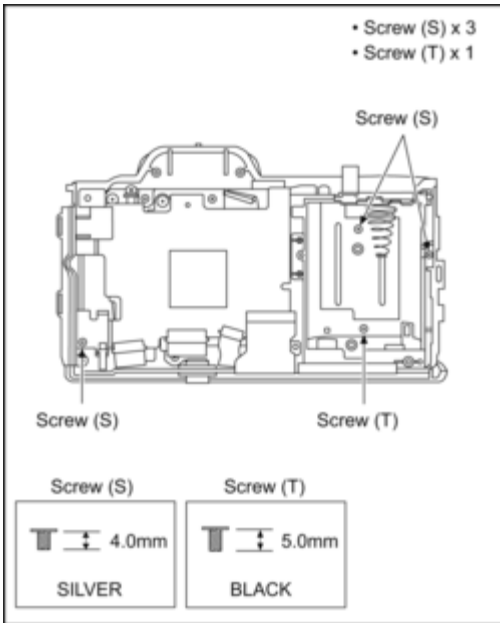


(Fig. D12)

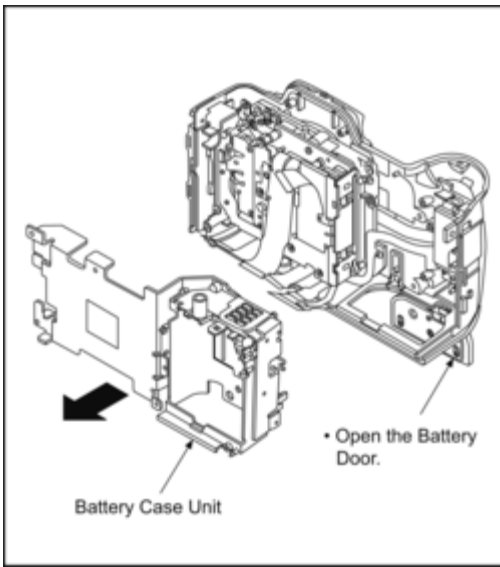


9.1.3.8 Removal of the Battery Case Unit

(Fig. D13)

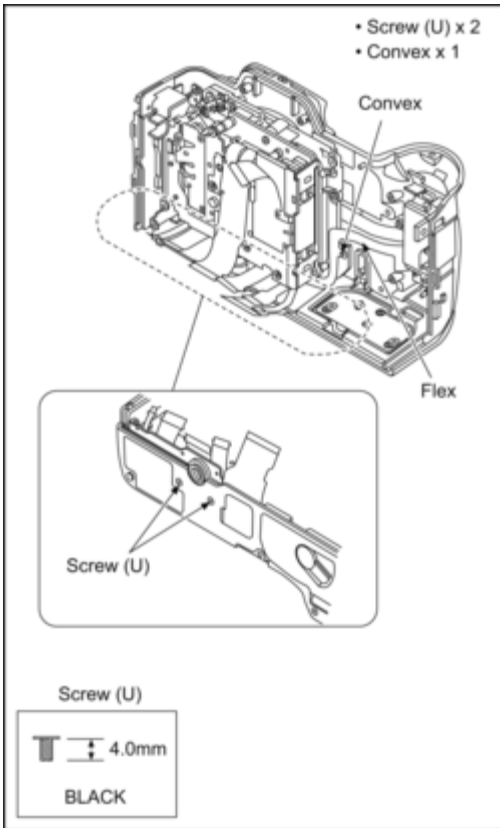


(Fig. D14)

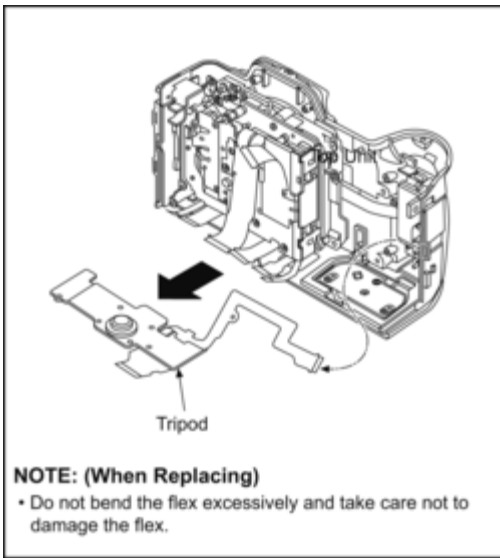


9.1.3.9 Removal of the Tripod

(Fig. D15)

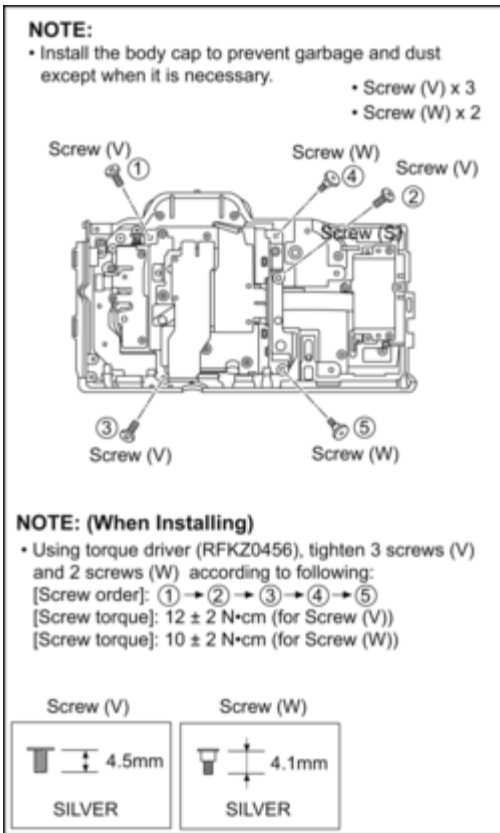


(Fig. D16)

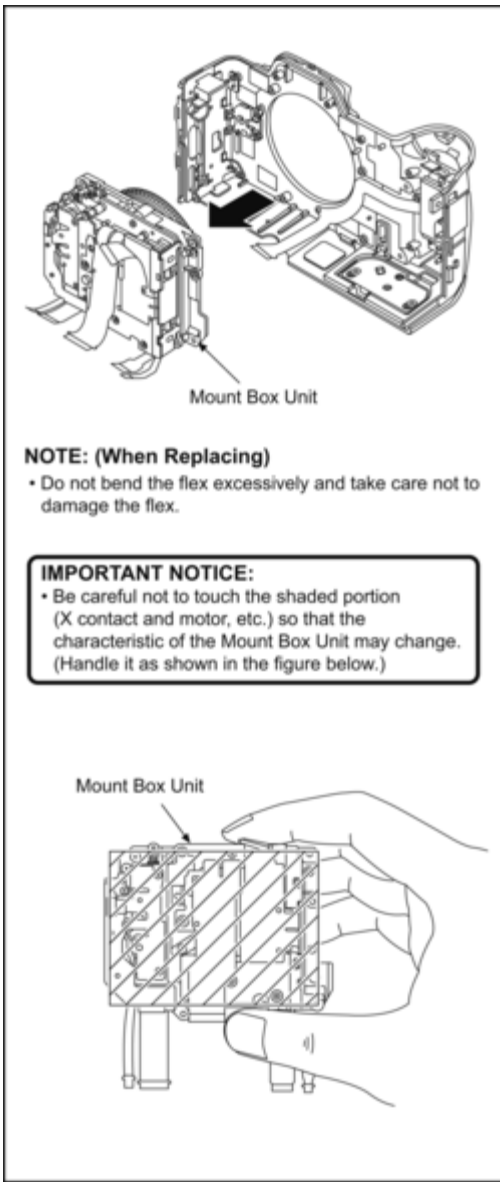


9.1.3.10 Removal of the Mount Box Unit

(Fig. D17)

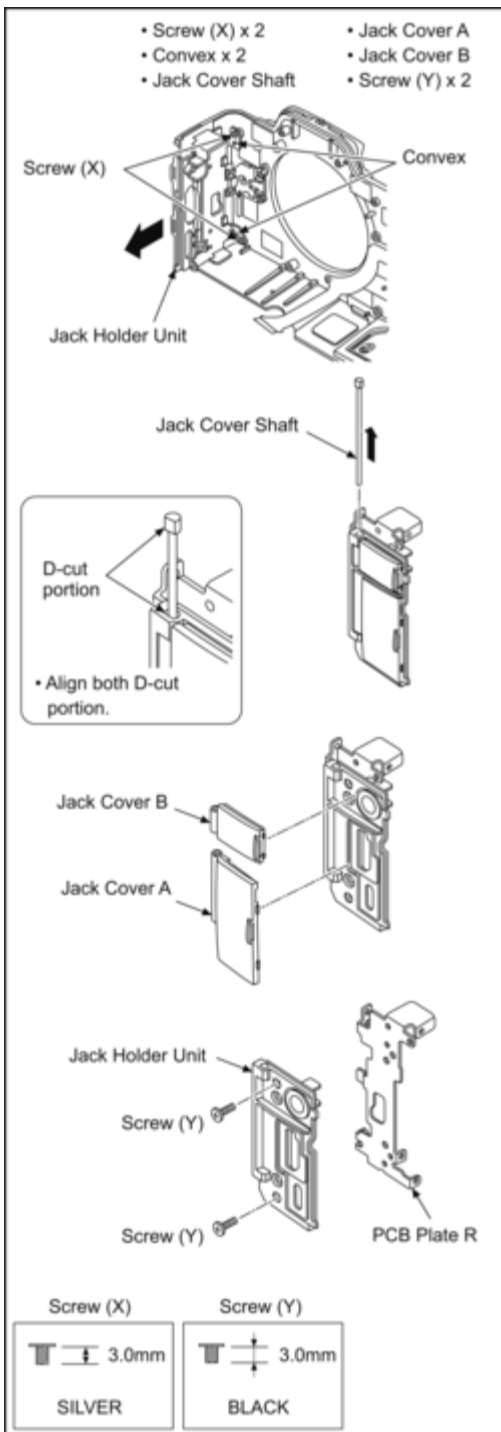


(Fig. D18)



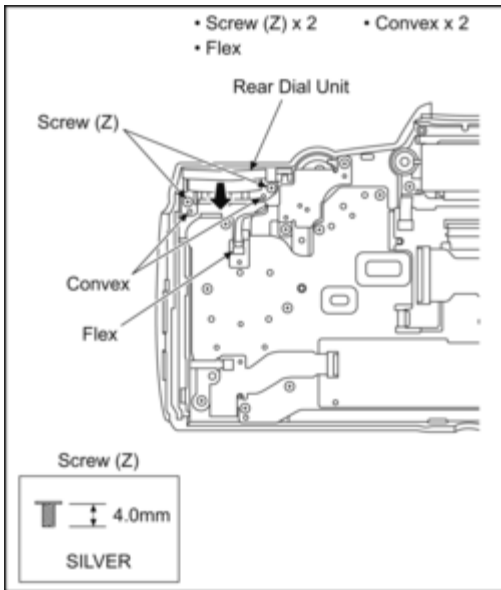
9.1.3.11 Removal of the Jack Holder Unit and PCB Plate R

(Fig. D19)



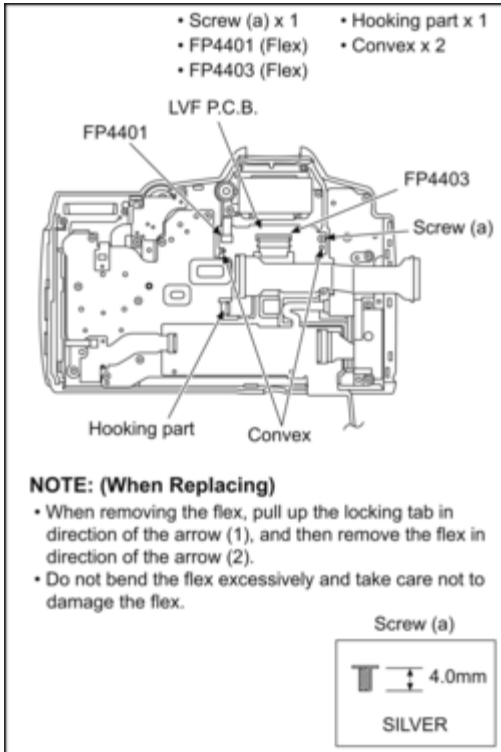
9.1.3.12 Removal of the Rear Dial Unit

(Fig. D20)



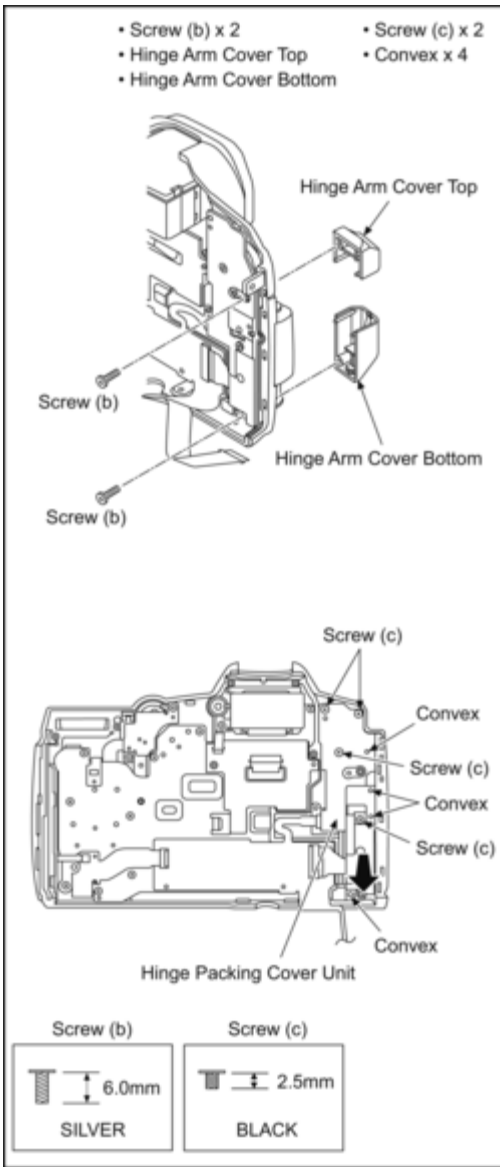
9.1.3.13 Removal of the LVF P.C.B.

(Fig. D21)



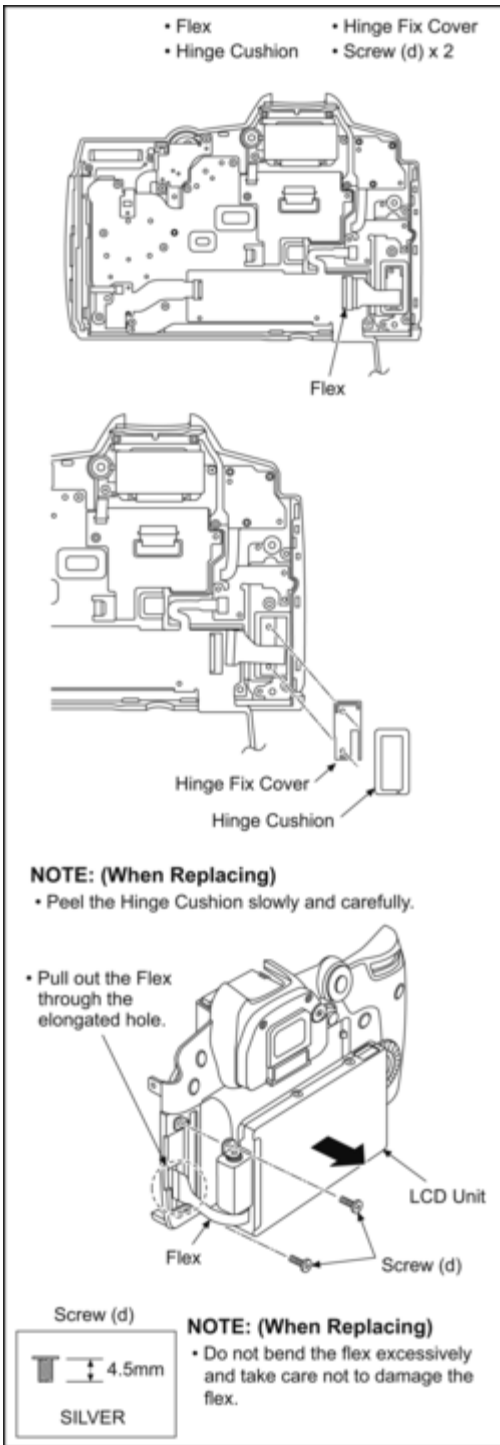
9.1.3.14 Removal of the Hinge Packing Cover Unit

(Fig. D22)



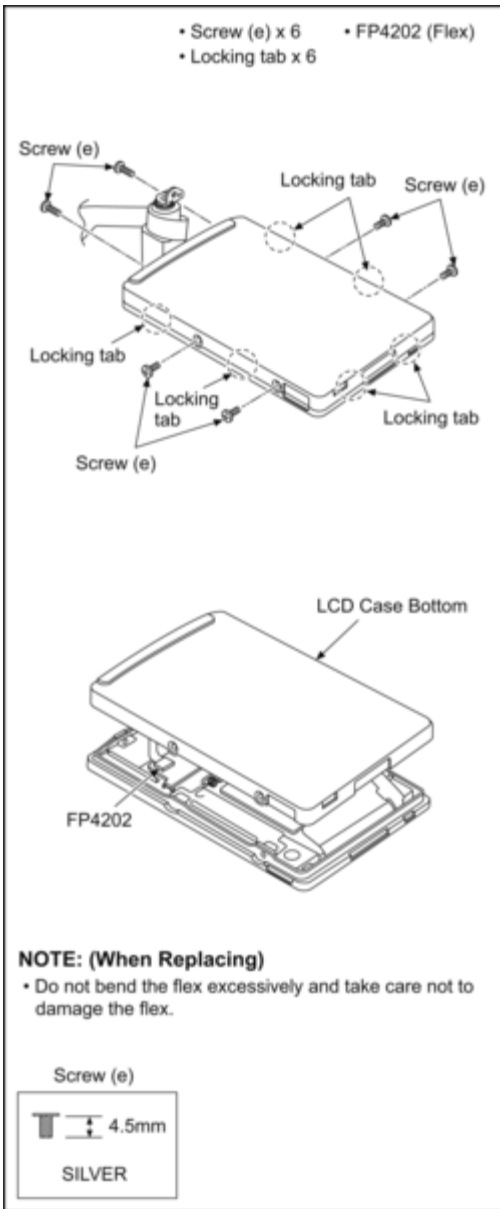
9.1.3.15 Removal of the LCD Unit

(Fig. D23)



9.1.3.16 Removal of the LCD Case Bottom

(Fig. D24)

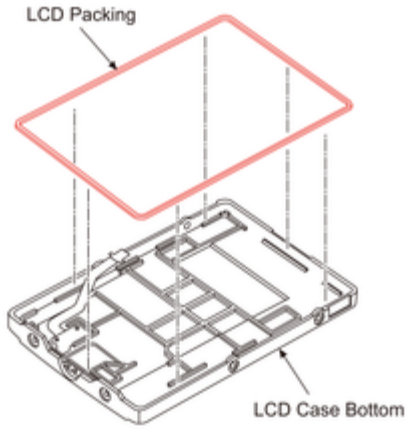


9.1.3.17 Removal of the LCD Packing

(Fig. D25)

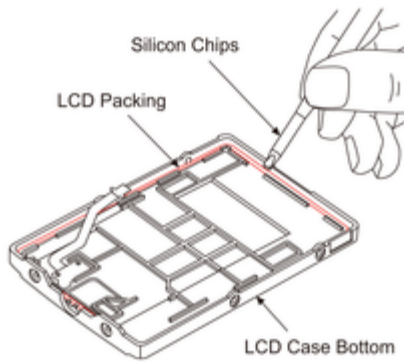
NOTE: (When Replacing)

- Remove the LCD Packing from the groove of LCD Case Bottom slowly and carefully.



NOTE: (When Installing)

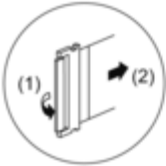
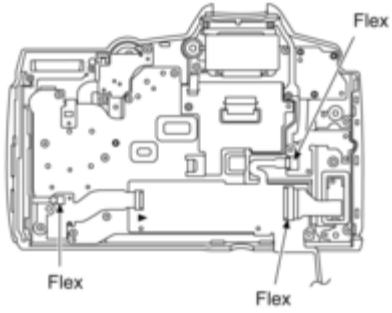
- Using silicon chips, insert the LCD Packing slowly and carefully.
- Take care not to that fibers and dust do not adhere to the surface of sealing and packing.



9.1.3.18 Removal of the Rear Plate Unit

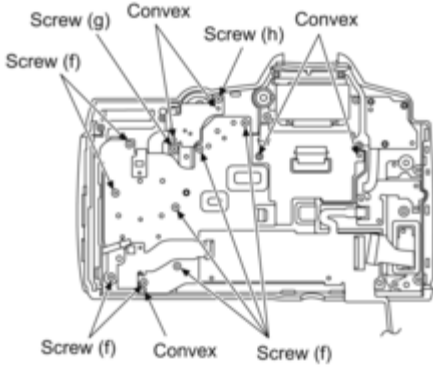
(Fig. D26)

- Flex x 3
- Screw (f) x 8
- Screw (g) x 1
- Screw (h) x 1
- Convex x 5



NOTE: (When Replacing)

- When removing the flex, pull up the locking tab in direction of the arrow (1), and then remove the flex in direction of the arrow (2).
- Do not bend the flex excessively and take care not to damage the flex.



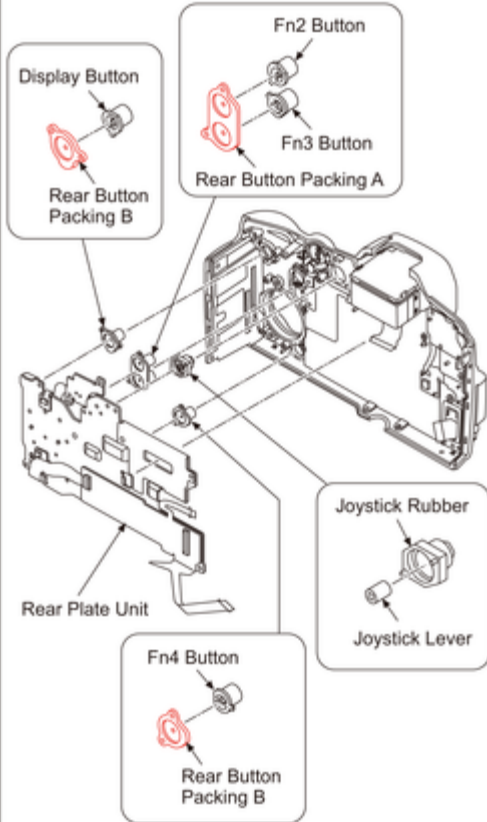
Screw (f)	Screw (g)	Screw (h)
 4.0mm	 6.0mm	 3.0mm
SILVER	SILVER	SILVER

(Fig. D27)

- Joystick Rubber
- Joystick Lever
- Rear Button Packing B
- Display Button
- Rear Button Packing A
- Fn2 Button
- Fn3 Button
- Rear Button Packing B
- Fn4 Button

NOTE: (When Replacing)

- When removing the Rear Plate Unit, take care not to lose buttons and packings as shown in the figure below.

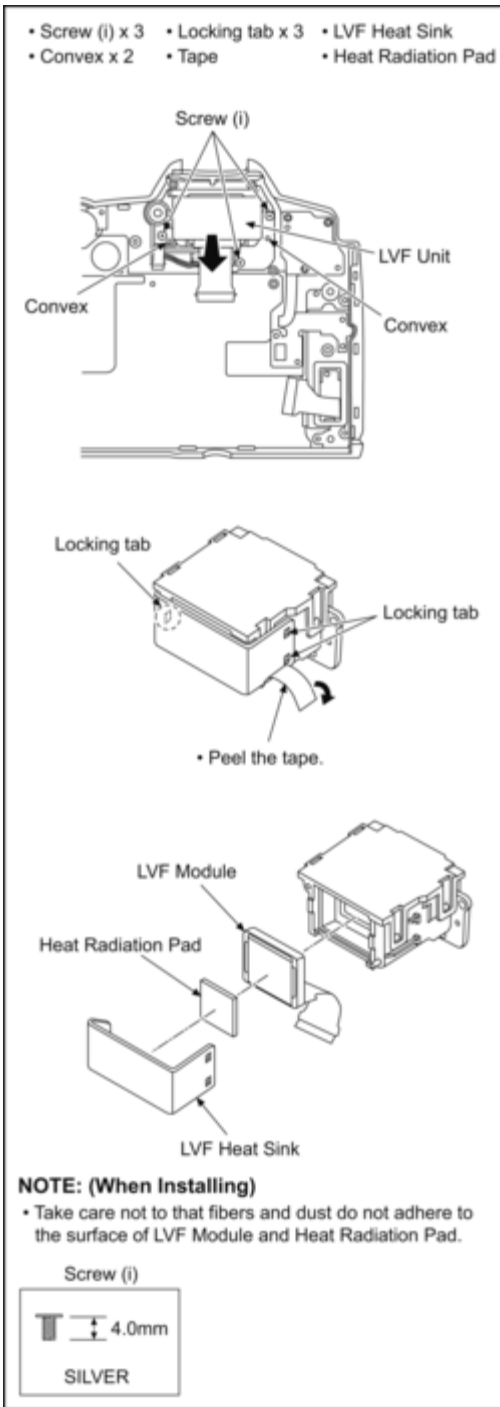


NOTE: (When Installing)

- Take care not to that fibers and dust do not adhere to the surface of packings.

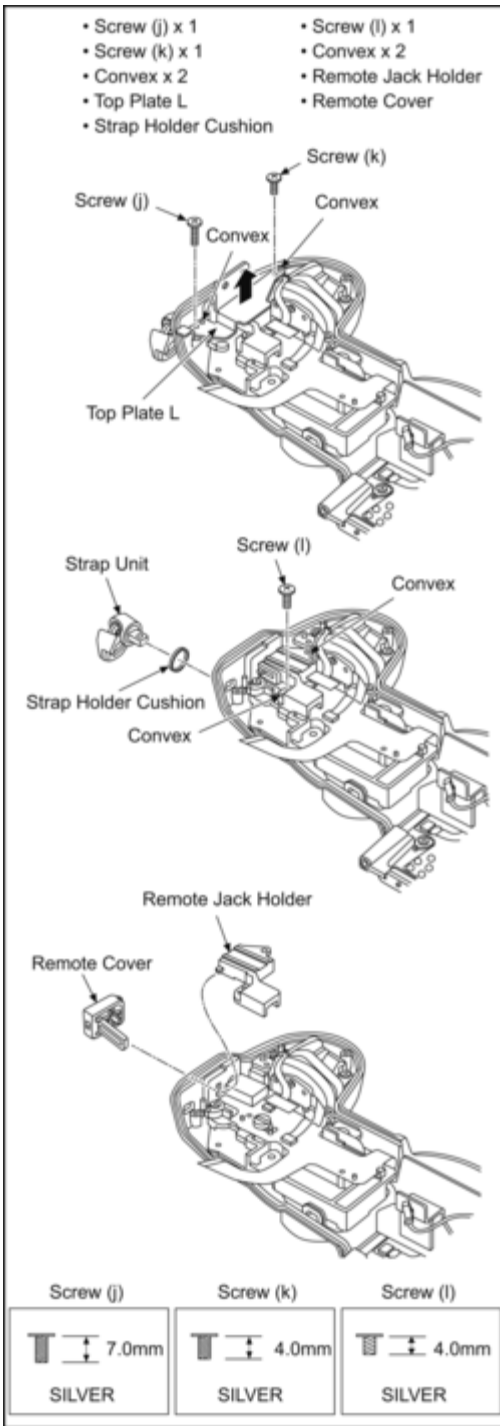
9.1.3.19 Removal of the LVF Unit and LVF Module

(Fig. D28)

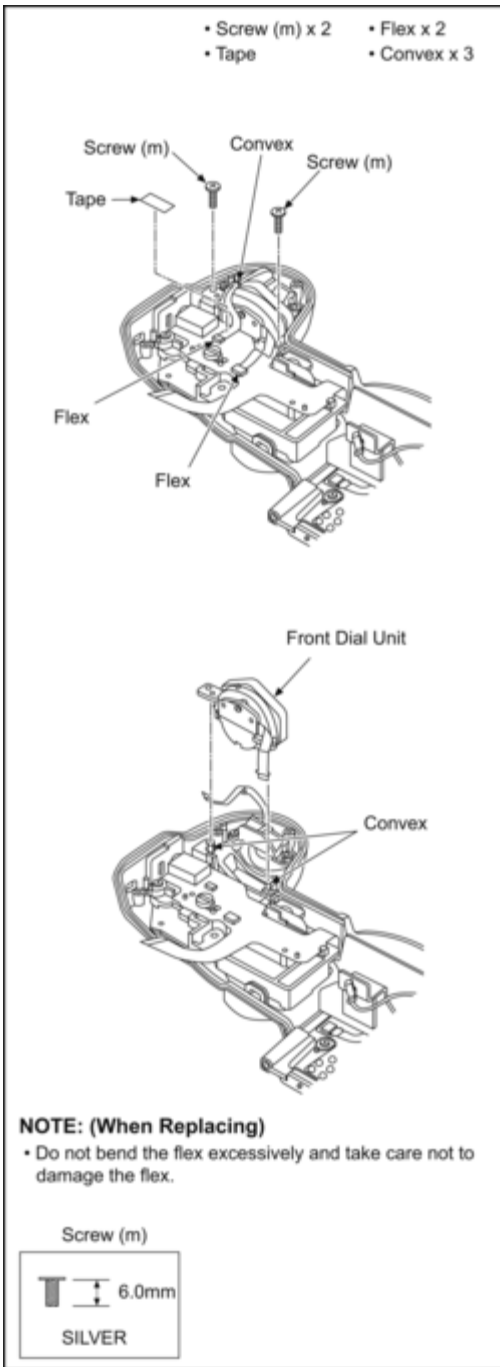


9.1.3.20 Removal of the Strap Unit and Front Dial Unit

(Fig. D29)

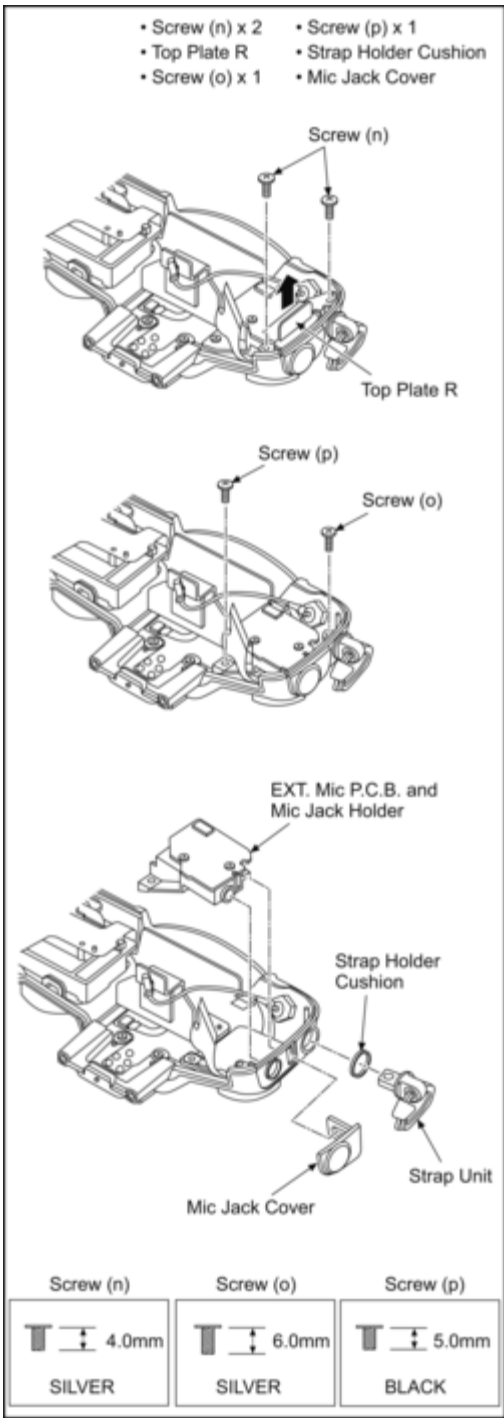


(Fig. D30)

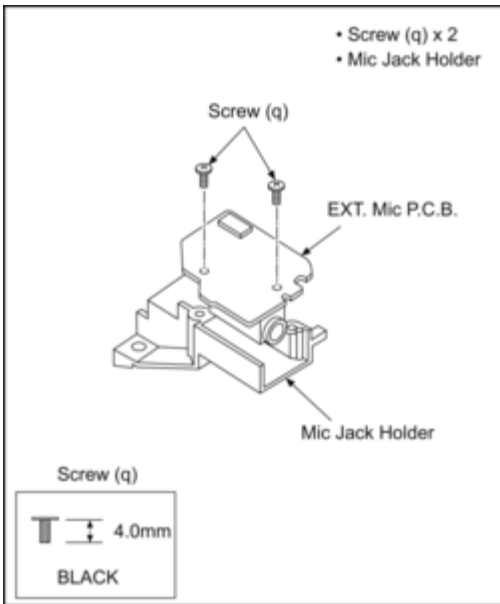


9.1.3.21 Removal of the Strap Unit and EXT. Mic P.C.B.

(Fig. D31)



(Fig. D32)



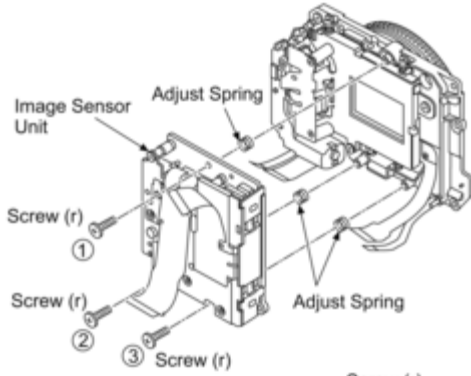
9.1.3.22 Removal of the Image Sensor Unit

(Fig. D33)

- Screw (s) x 3
- Adjust Spring x 3

IMPORTANT NOTICE:

• When remove or turn the Screw (r), "simplicity flange back adjustment" is necessary. Perform the "Simplicity flange back adjustment" according to contents described in "10 Measurement and Adjustment" section of this service manual.



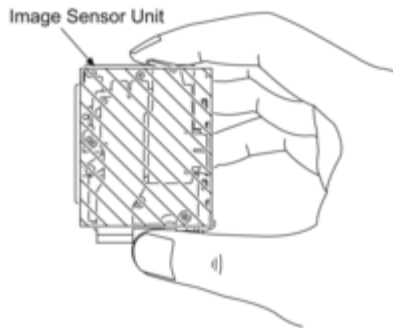
NOTE: (When Replacing)

• When removing the Image Sensor Unit, take care not to lose the Adjust Springs.



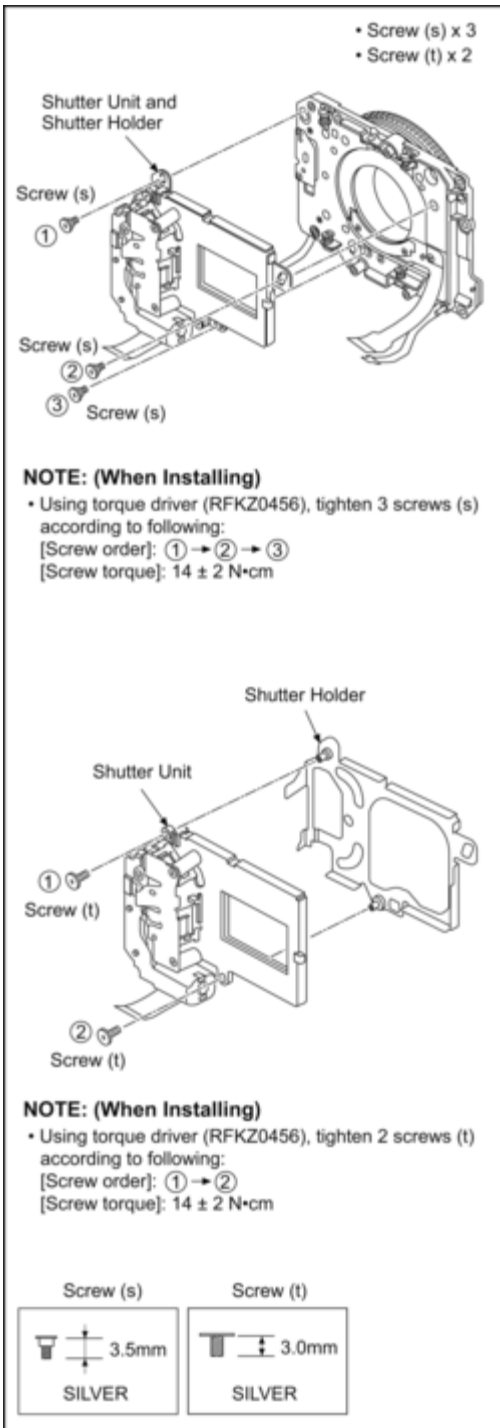
IMPORTANT NOTICE:

• Be careful not to touch the shaded portion (X contact and motor, etc.) so that the characteristic of the Image Sensor Unit may change. (Handle it as shown in the figure below.)



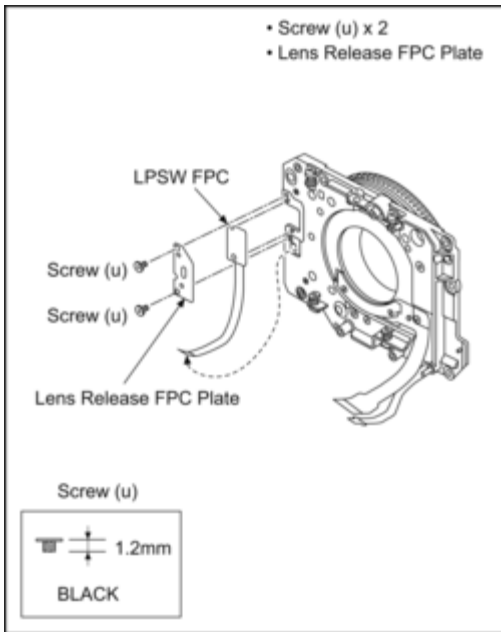
9.1.3.23 Removal of the Shutter Unit and Shutter Holder

(Fig. D34)



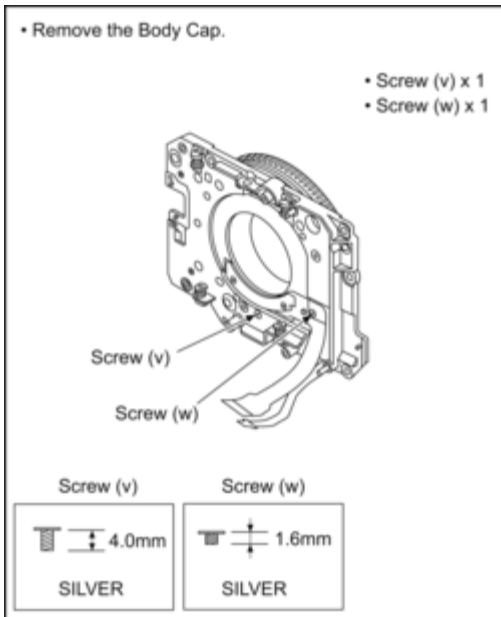
9.1.3.24 Removal of the LPSW FPC

(Fig. D35)

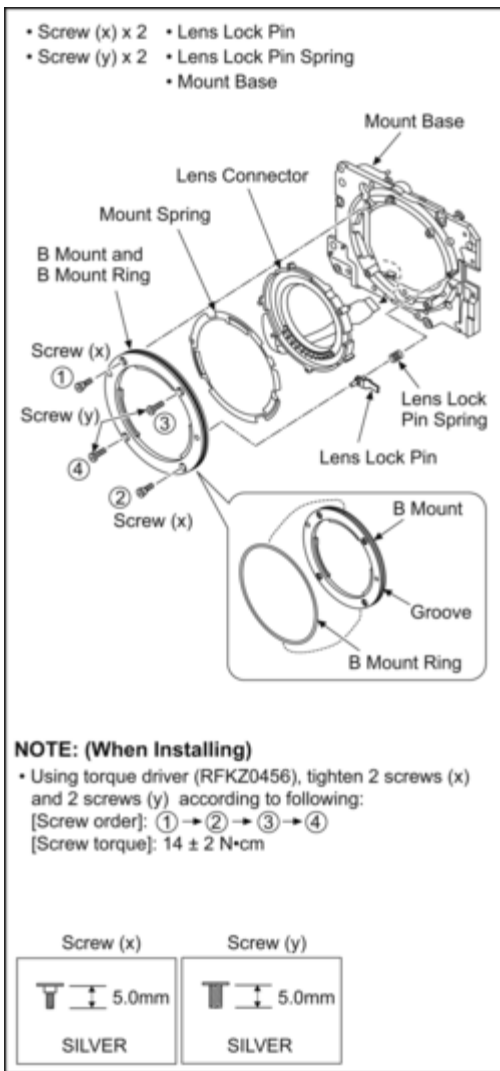


9.1.3.25 Removal of the B Mount Ring, B Mount, Mount Spring and Lens Connector

(Fig. D36)



(Fig. D37)



NOTE: (When Installing)

Make sure to confirm the following points when installing:

- The screw is tightened enough.
- Installing conditions are fine. (No distortion, no abnormal-space.)
- No dust and/or dirt on image sensor surface. (live mos)
- LCD image is fine. (No dust and/or dirt on it, and no gradient images.)

9.2 Disassembly and Assembly Procedure for the Lens

Please refer to the following service manuals about Disassembly and Assembly of bundled lenses.

- H-FS12060E/GK/PP: Order No. [DSC1604008CE](#)
- H-ES12060PP/E/GK: Order No. [DSC1702007CE](#)
- H-HSA12035PP/E/GK: Order No. [DSC1703008CE](#)

10 Measurements and Adjustments

10.1 Matrix Chart for Replaced Part and Necessary Adjustment

The relation between Replaced part and Necessary Adjustment is shown in the following table.

When concerned part is replaced, be sure to achieve the necessary adjustment(s).

As for Adjustment condition/procedure, consult the “Adjustment Manual” which is available in Adjustment software.

NOTE:

After adjustments have been terminated, make sure to achieve “Initial Settings”.

After updates it to the latest firmware, the adjustment is executed.

FLAG	Adjustment Item	Replacing Parts								
		Main P.C.B/ Flash-ROM (IC2003) (*4)	Main P.C.B/ (When written the Backup data)	VENUS ENGINE (IC2001)	Image sensor unit (*1)	Shutter unit (*3)	G Sensor (IC6301)	Eye sensor (Rear Case Unit)	BIS gyro (Front Case Unit)	Lens connector/ Mount base
AF SS1 SS3 BIS	Sensor Area / BIS frame adjustment	○	---	---	○	○	---	---	○	○
---	Simplicity flange back adjustment (*2)	---	---	---	○	○	---	---	○	○
PZM	VENUS-ZOOM inspection	○	○	○	---	---	---	---	---	---
ISO/ SEN	ISO sensitivity adjustment	○	---	---	○	---	---	---	---	---
SAT	Offset gain adjustment	○	---	---	○	---	---	---	---	---
WBL	WB (Low color temperature) adjustment (*5)	○	---	---	○	---	---	---	---	---
WBM	WB (standard color temperature) adjustment (*5)	○	---	---	○	---	---	---	---	---
SHT	Shutter adjustment	○	---	---	---	○	---	---	---	---
WKI	IMAGE SENSOR white scratch compensation	○	---	---	○	---	---	---	---	---
BKI	IMAGE SENSOR black scratch compensation	○	---	---	○	---	---	---	---	---
EYE	Eye Sensor sensitivity	○	---	---	---	---	○	---	---	---
AA1 AA2 AA3	G sensor adjustment (*6)	○	○	---	---	---	○	---	---	---
GYR	Gyro sensitive / DC offset adjustment (*7)	○	○	---	---	---	---	---	○	---
SH2	Electronic first shutter adjustment	○	---	---	---	○	---	---	---	---

***1 NOTE: (About Image Sensor Unit)**

When remove or turn the flange back adjustment screw, “Simplicity flange back adjustment” *2 is necessary.

***2 NOTE: (About Simplicity flange back adjustment)**

When remove or turn the flange back adjustment screw, “Simplicity flange back adjustment” is necessary.

When remove the flange back adjustment screw, please don't reuse it. Use new one.

[Abstract of "Simplicity flange back adjustment"]

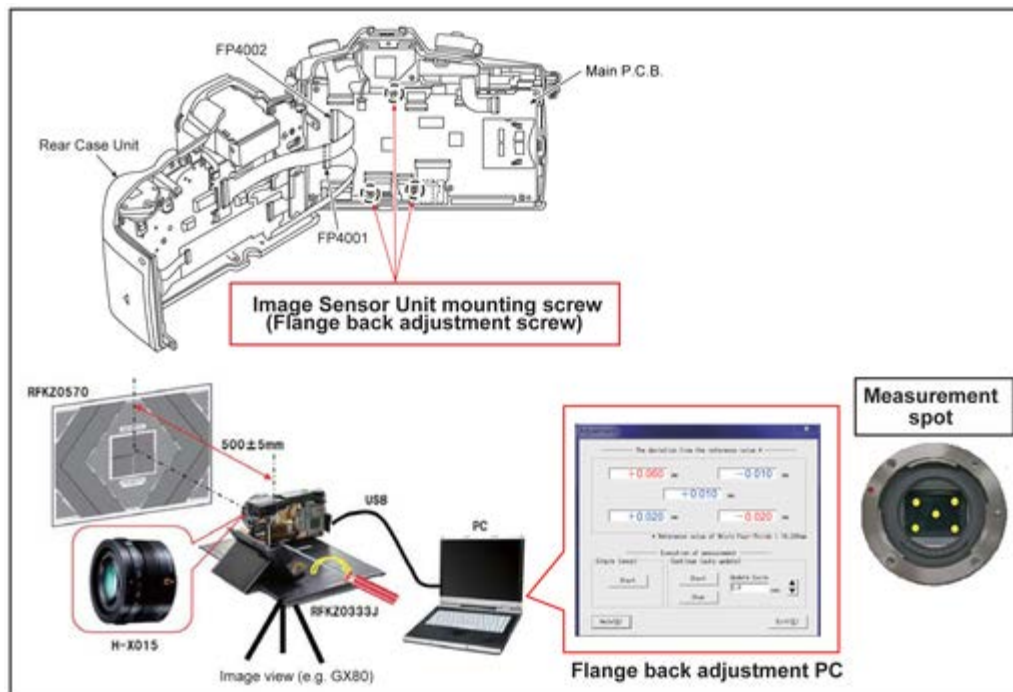
Set the camera in front of the chart and set center of the chart picture on LCD.

When execute software, camera works AF on 5 spots automatically.

Calculate flange back value at 5 spots and display on PC screen.

Adjust flange back value within the specification by the 3 screws.

The details are refer to adjustment manual in adjustment software.



The image sensor of this camera cannot be fixed when power is OFF.

That is why, image sensor adjustment have to do power ON after assembly (state of above).

Stand-alone mount part cannot adjust.

*3 NOTE: (When exchange the Shutter Unit)

After replacing the shutter unit, the shutter unit data has to be stored to the Flash-ROM (IC2003) on the Main P.C.B..

The shutter unit supplied as service parts has affix the label of own configure data.

By inputting second line to third line of these data into the adjustment software and writing these data to Flash-ROM (IC2003), the shutter adjustment becomes needless.

In addition, the adjustment software can read data encoded to QR Code by using WEB camera with a close-up function.

After that, proceed the main body adjustment.

The details are refer to adjustment manual in adjustment software.

*4 NOTE: (When exchange the Main P.C.B. and/or Flash-ROM (IC2003))

After exchanging the "Main P.C.B. and/or Flash-ROM", first, execute "Initial Settings" to determine the model suffix, and then, cancel the "Initial Settings" and proceed the adjustments.

When the adjustment data is rewrite without "Initial Settings" execution, may not be able to choose desire model suffix.

During the "Initial Settings" (When the model suffix select screen is displayed), do not power off or do not remove the battery.

* Power down during "Initial Settings" may cause not be able to choose desire model suffix.

When cannot be repaired in the IC exchange, and in the case of performing the “Main P.C.B.” exchange, carry out any of following.

1. When it can turn on power, and the adjustment software can communicate with the camera body:

Before replacing, proceed the Flash-ROM (IC2003) data backup from the unit.

After replacing, overwrite the Flash-ROM (IC2003) data with backup data from the unit.

After that, proceed the main body adjustment. (Almost adjustment/inspection items can be omitted.)

Refer to the adjustment instruction in the adjustment software for details.

2. When it cannot turn on power, or the adjustment software cannot communicate with the camera body:

Almost readjustment fully are necessary.

The details are refer to adjustment manual in adjustment software.

***5 NOTE: (When White Balance (WBL/WBM) adjustment)**

After change to WB adjustment mode for service with software, the adjustment is executed.

After adjusting the AWB adjustment, to cancel the WB adjustment mode for service.

The details are refer to adjustment manual in adjustment software.

***6 NOTE: (About the G sensor adjustment)**

Offset adjustment for built in electronic level.

The details are refer to adjustment manual in adjustment software.

***7 NOTE: (About Gyro sensitive/DC offset adjustment)**

Gyro adjustment for BIS. Put to a normal state and execute automatic adjustment.

The details are refer to adjustment manual in adjustment software.

About the 3D interchangeable lens (H-FT012) correspondence

This unit has no special structure (circuit or part) for the 3D interchangeable lens correspondence, only by software is processed the 3D interchangeable lens correspondence.

Therefore, if taken with other lenses as usual, the 3D interchangeable lens is no problem for operation.

11 Maintenance

11.1 Notice in External Cleaning

11.1.1 About the Body

NOTE:

Before cleaning the camera, remove the battery and/or disconnect power plug from the outlet.

Also, remove the memory card and lens unit.

11.1.1.1 Dust/Dirt on the Outer Casing Part (S)

1. Blow off the dust first, then sweep out the dust from narrower spaces with soft cleaning brush.
2. Wipe up fingerprint and/or dirt on the Outer casing part with the dry fuzz-free cloth.

11.1.1.2 Dust/Dirt on the Image Sensor

1. Blow off the dust on the surface of the Image sensor with the Blower.
 - Keep the Mount Facing down condition towards to floor when cleaning.
 - Do not put the Blower further inside than the lens mount.
 - Be careful not to blow too strongly.
2. Wipe off the dirt on the image sensor surface with Lens Cleaning Kit (BK)(VFK1900BK).

11.1.1.3 About the LVF Unit

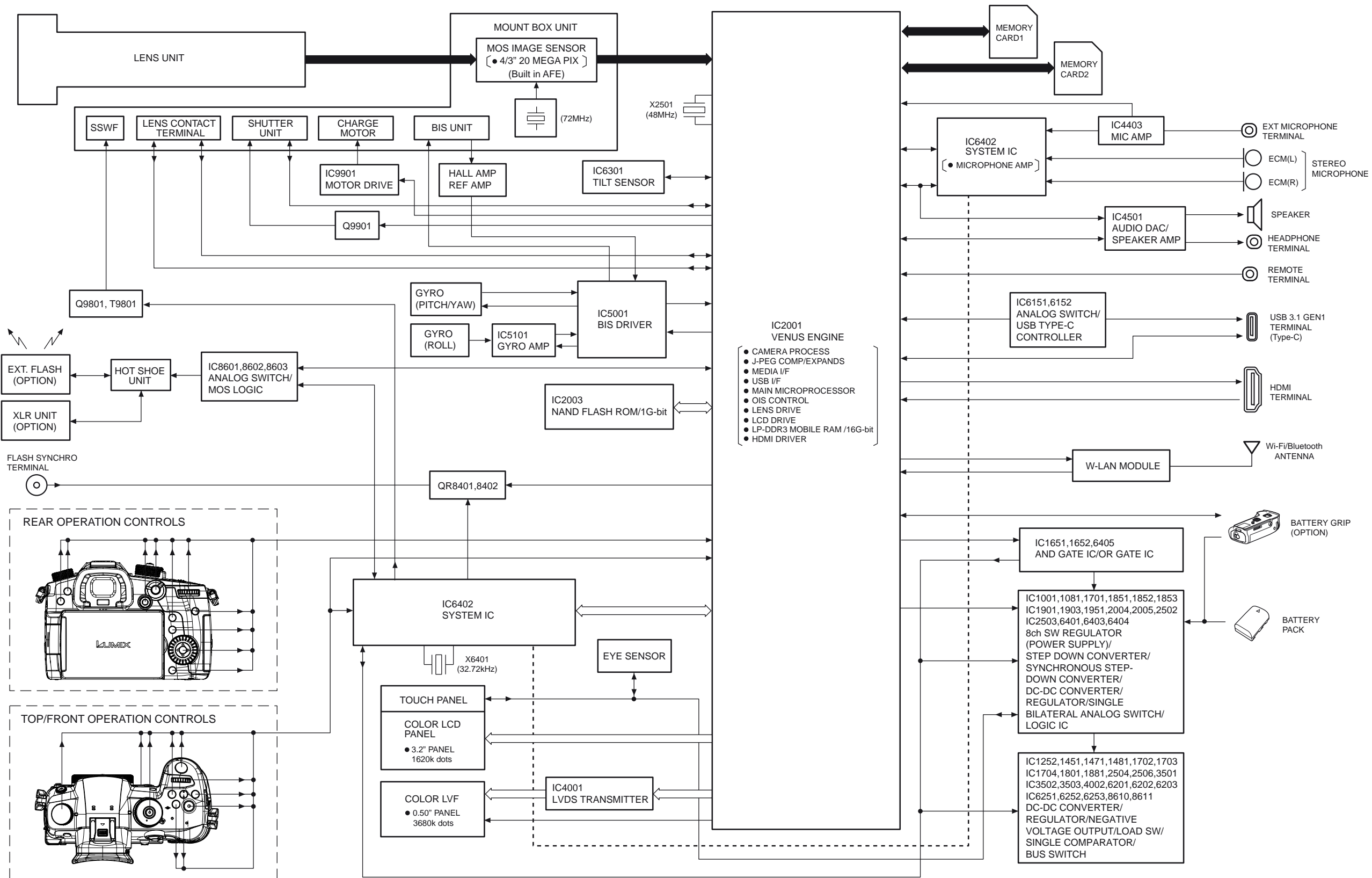
[Procedures]

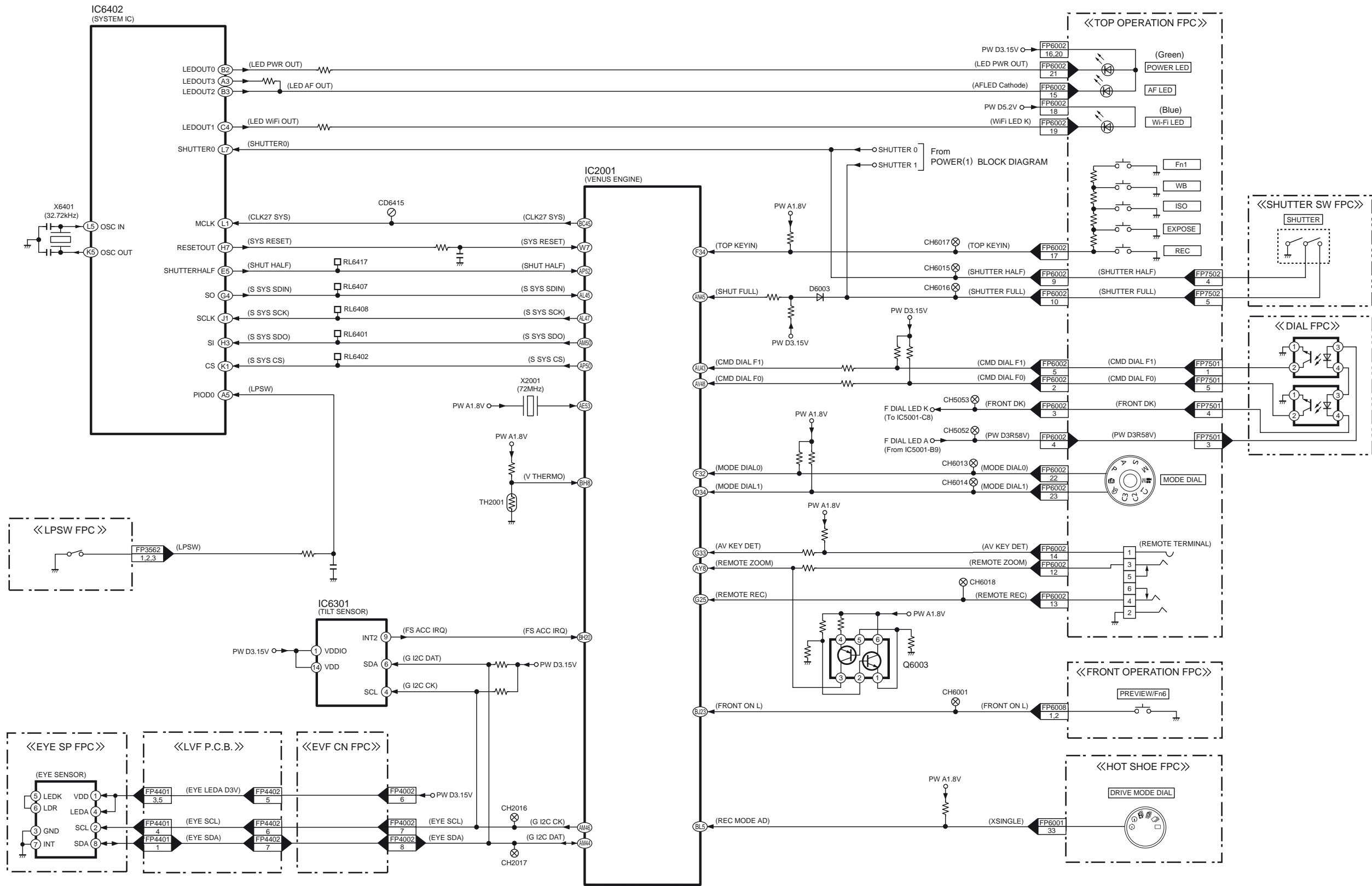
1. Refer to the "Disassembly & Assembly Instructions" and disassemble the LVF Unit.
2. Blow off the dust of LVF Lens Unit with a blower.
3. Wipe off the dirt on the surface of glasses with Lens Cleaning Kit (VFK1900BK), if necessary.

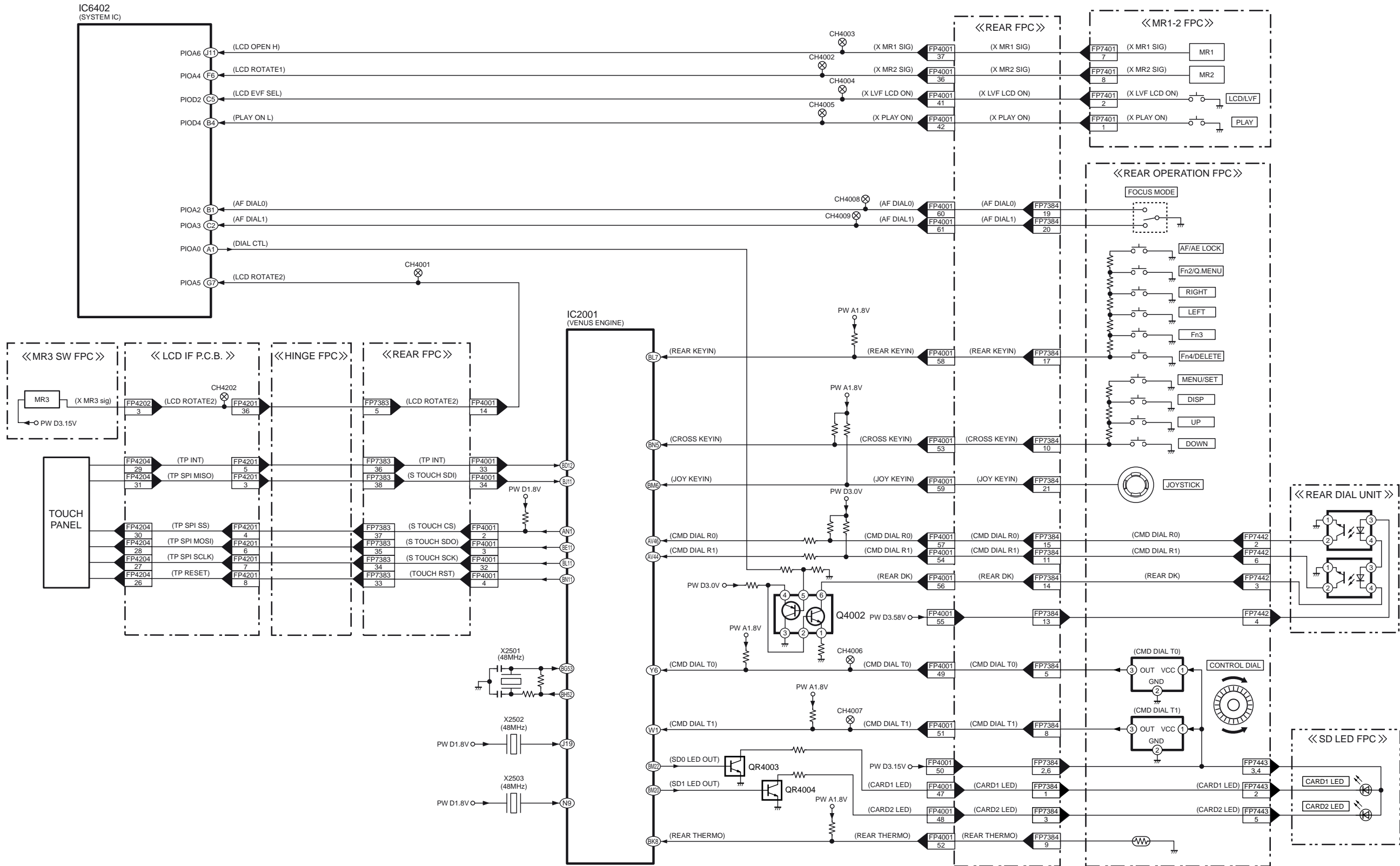
11.1.2 About the Lens

Please refer to the following service manuals about Maintenance of bundled lenses.

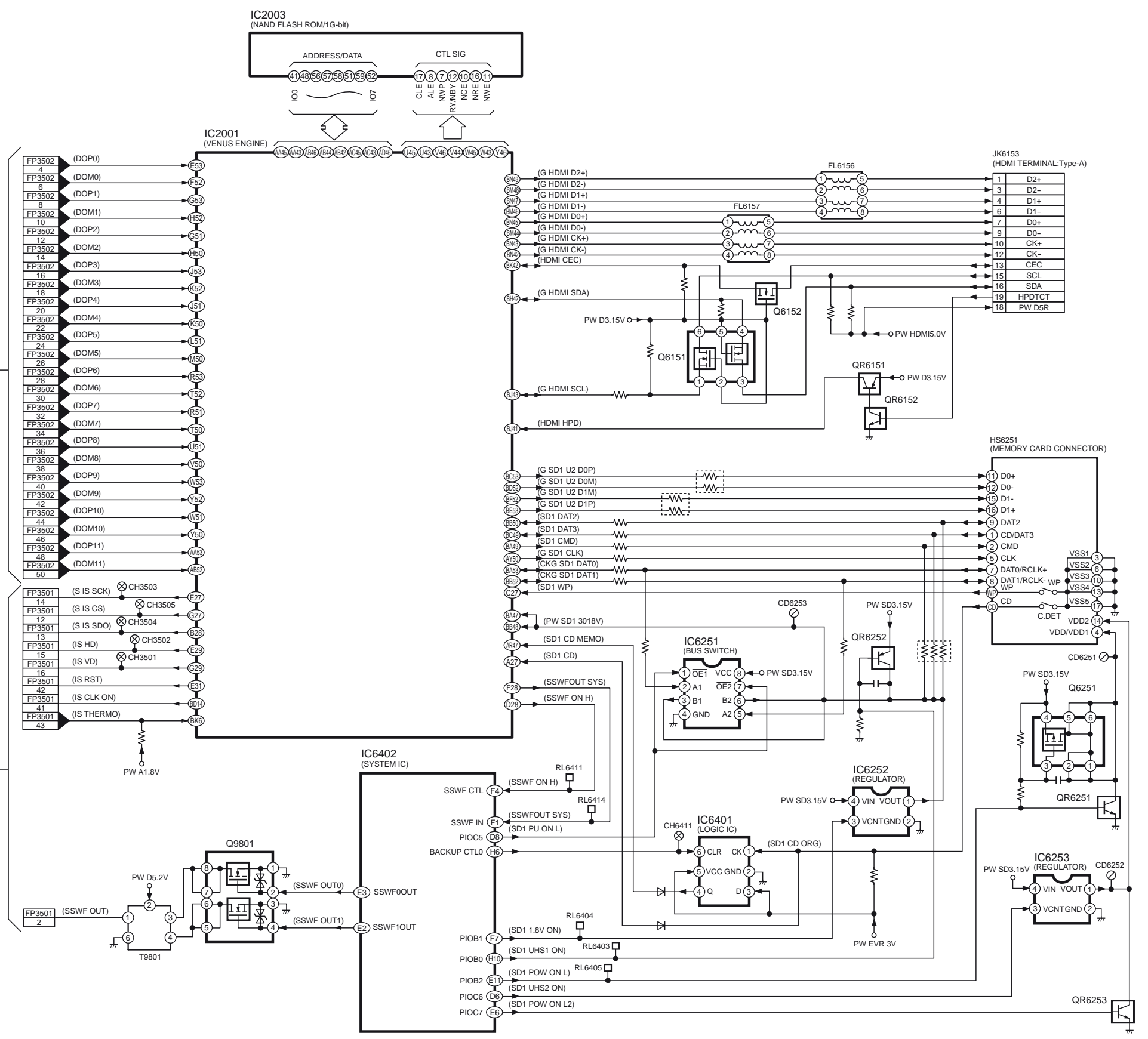
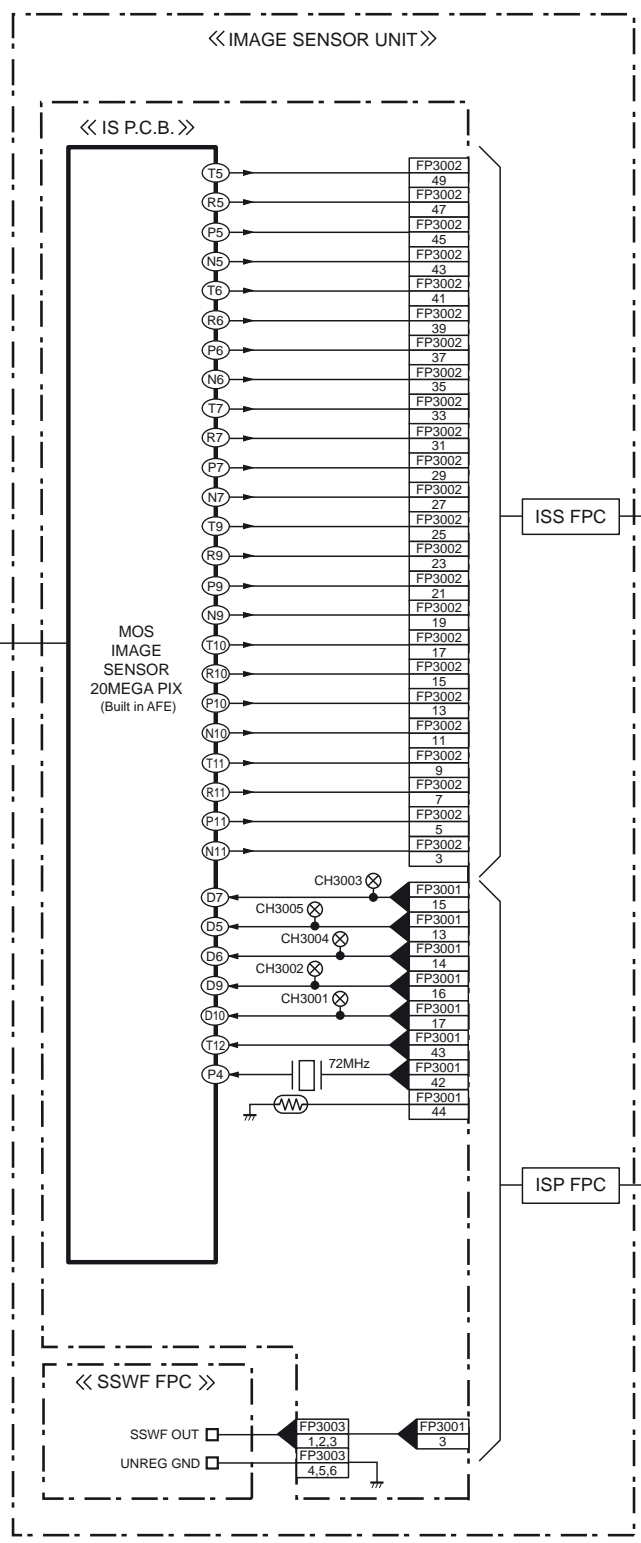
- H-FS12060E/GK/PP: Order No.[DSC1604008CE](#)
- H-ES12060PP/E/GK: Order No.[DSC1702007CE](#)
- H-HSA12035PP/E/GK: Order No.[DSC1703008CE](#)



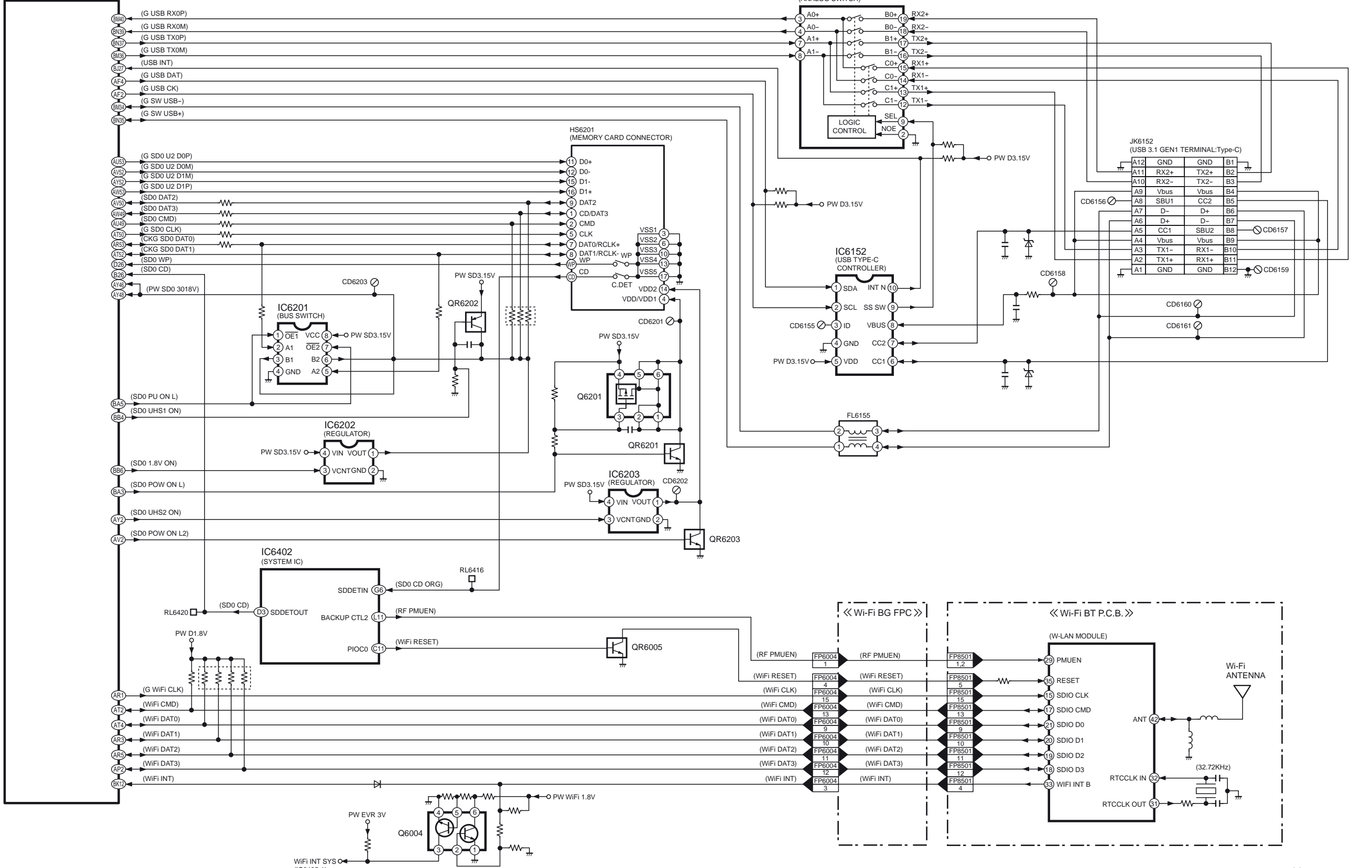




MOUNT
BASE
UNIT



IC2001
(VENUS ENGINE)



DC-GH5 VIDEO/AUDIO PROCESS(2) BLOCK DIAGRAM

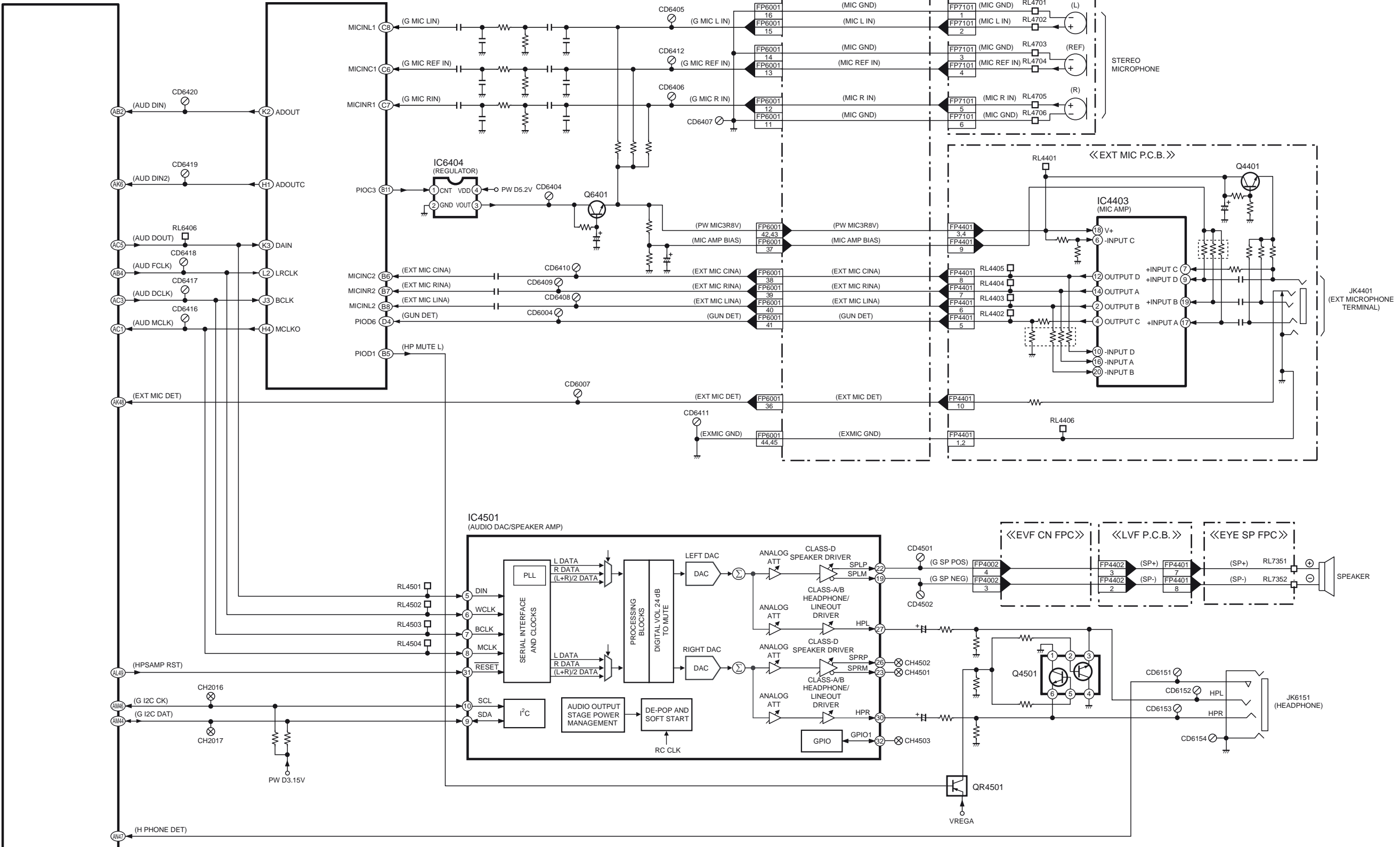
IC2001
(VENUS ENGINE)

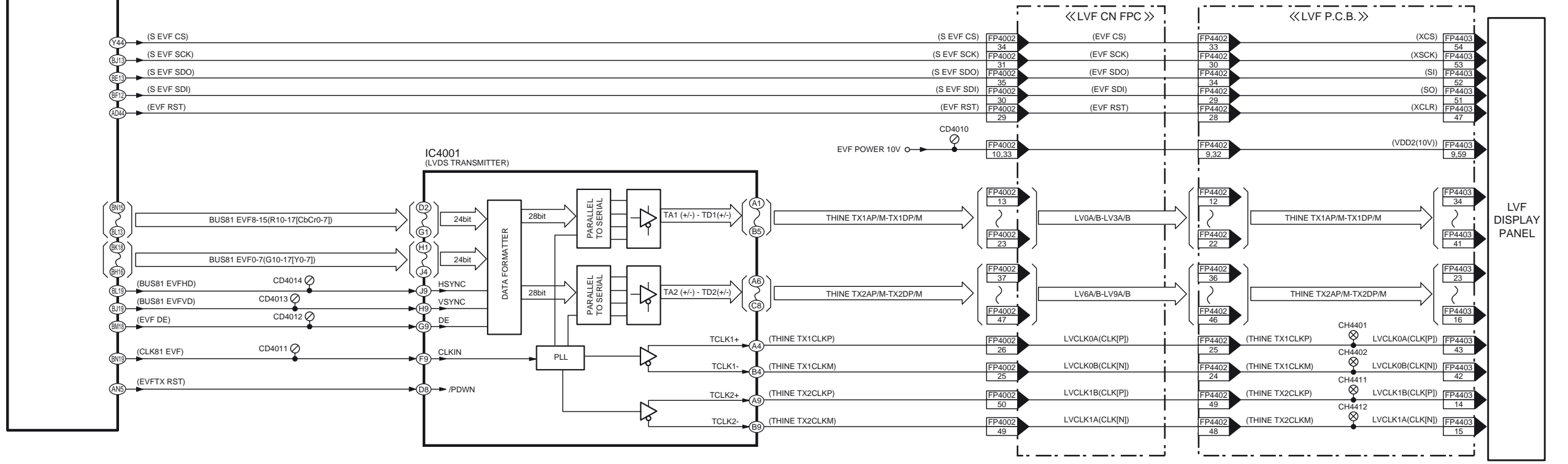
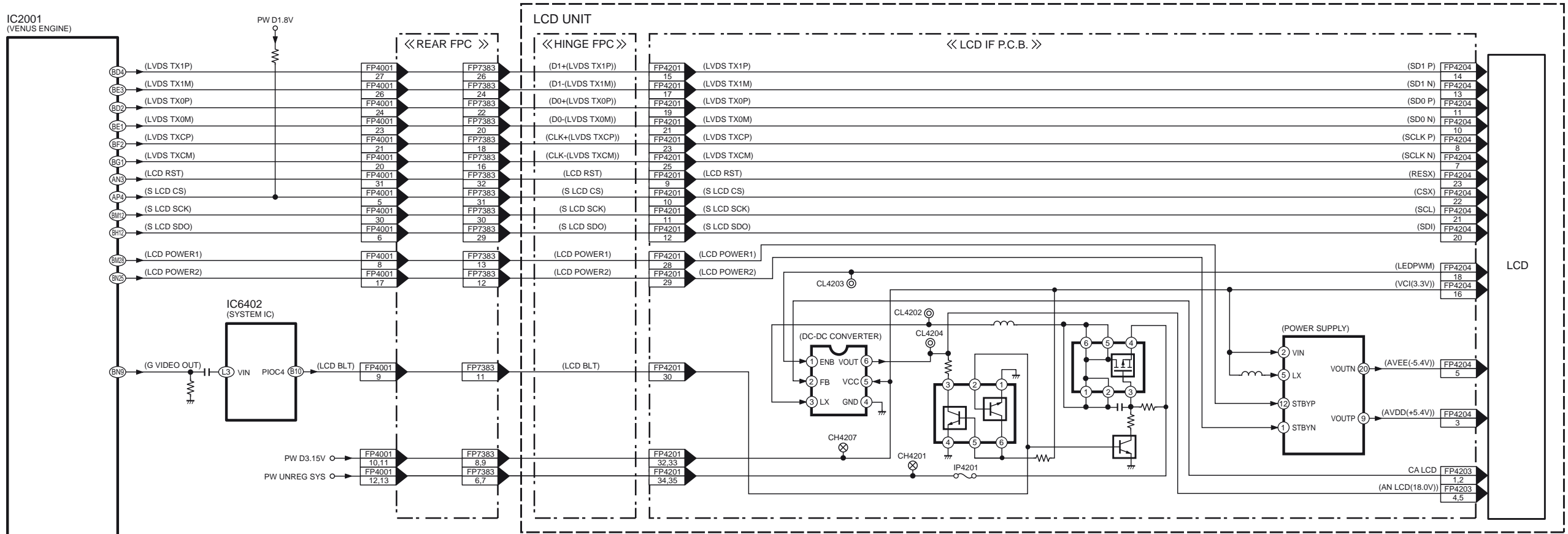
IC6402
(SYSTEM IC)

IC4501
(AUDIO DAC/SPEAKER AMP)

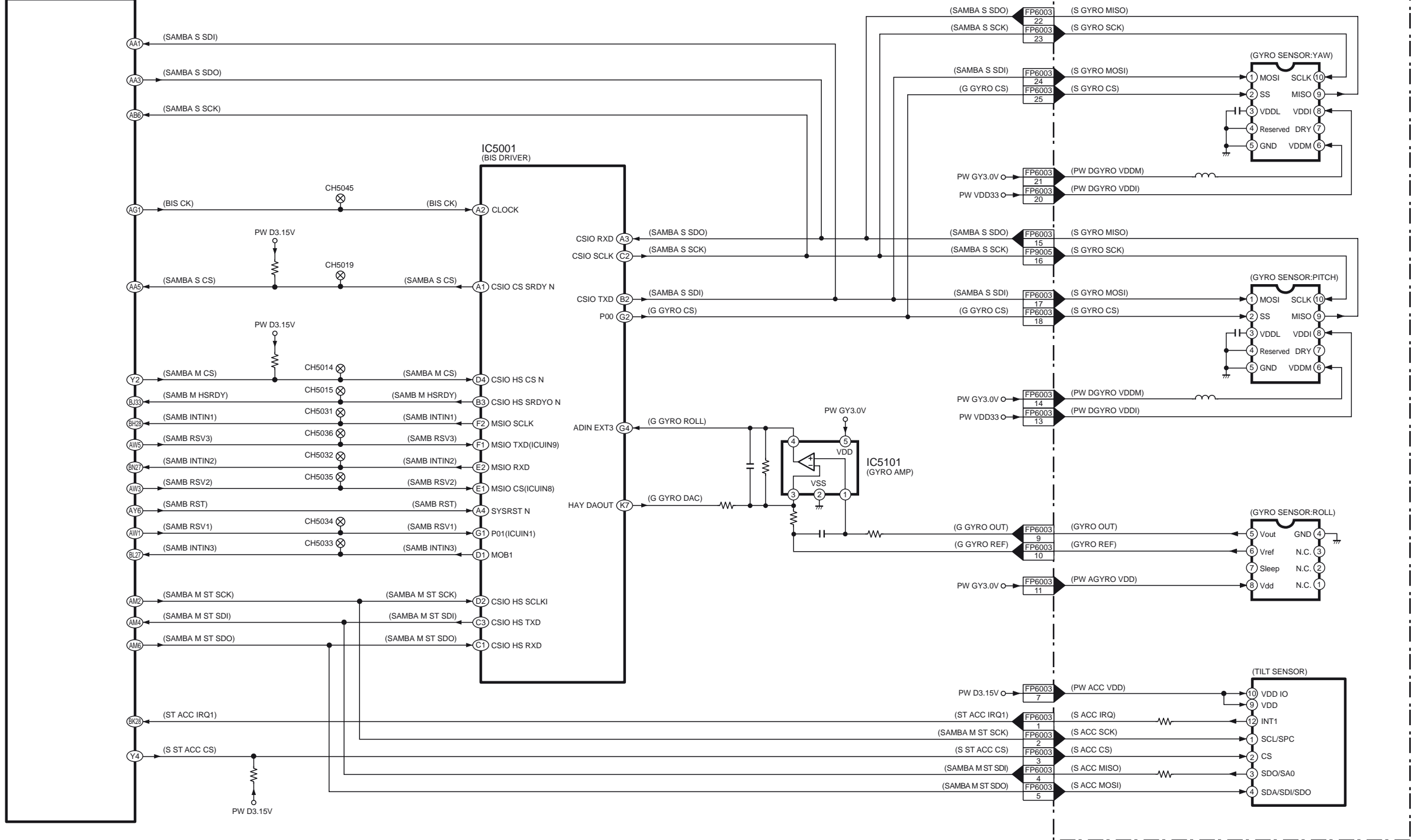
IC6404
(REGULATOR)

IC4403
(MIC AMP)

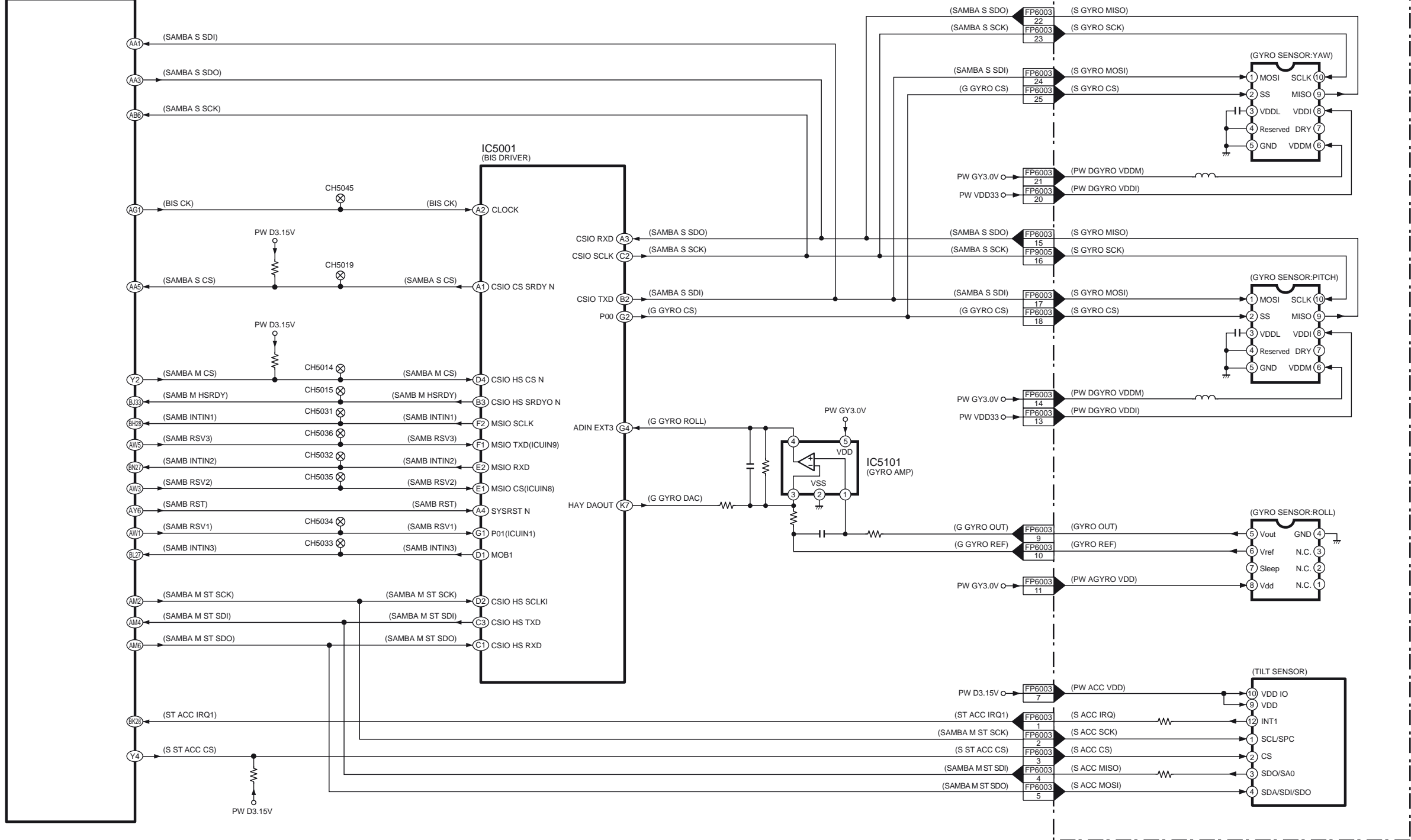


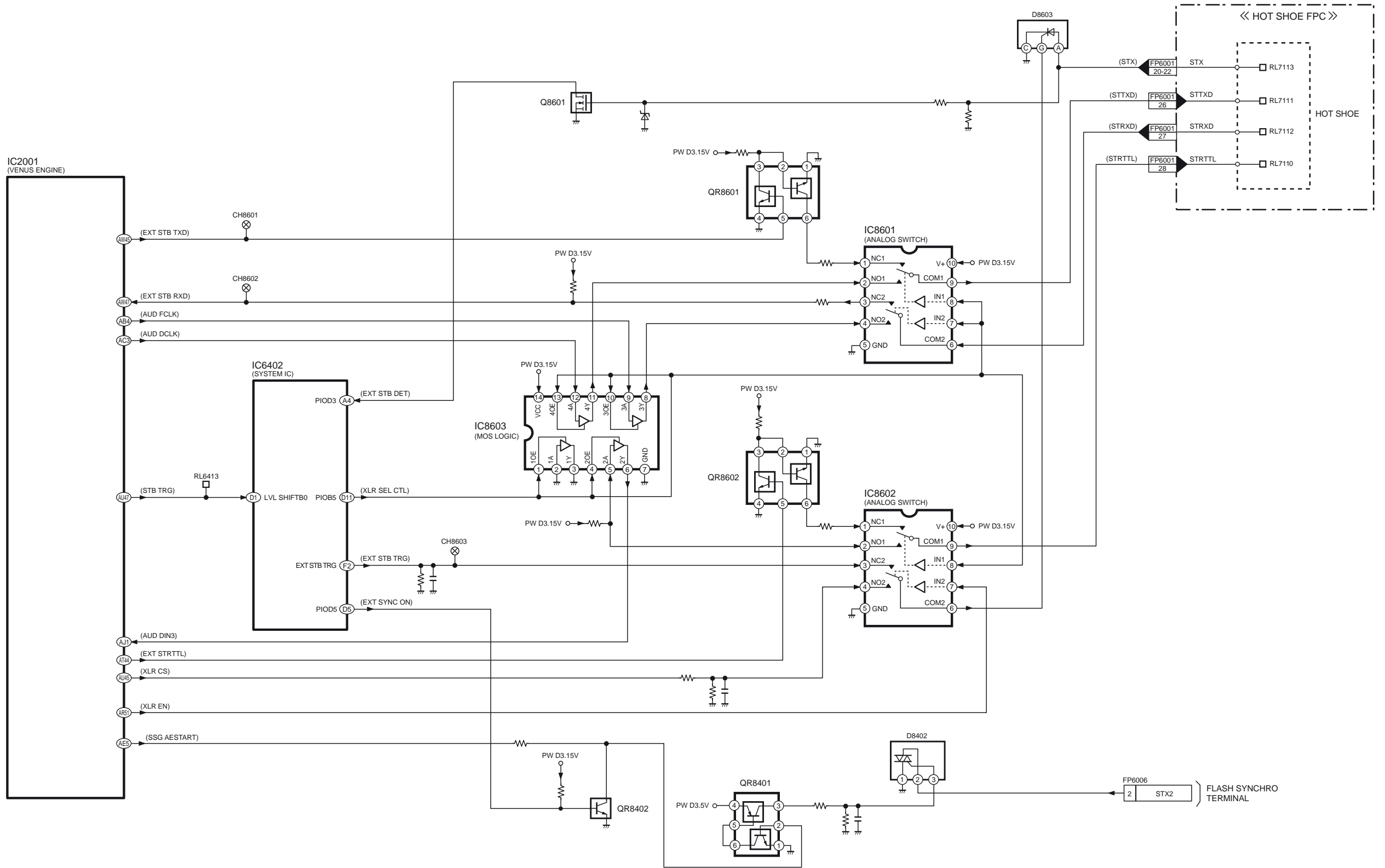


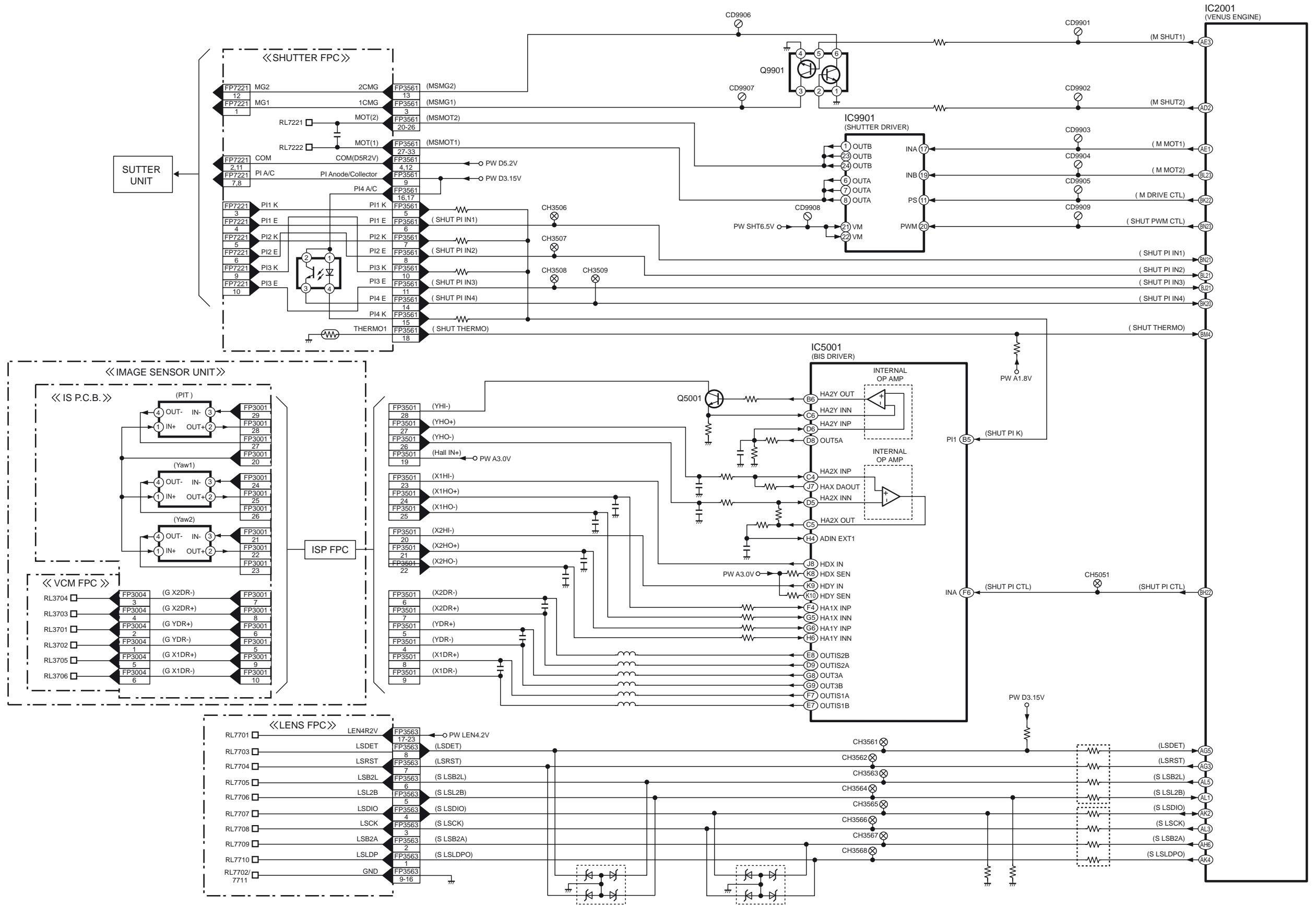
IC2001
(VENUS ENGINE)



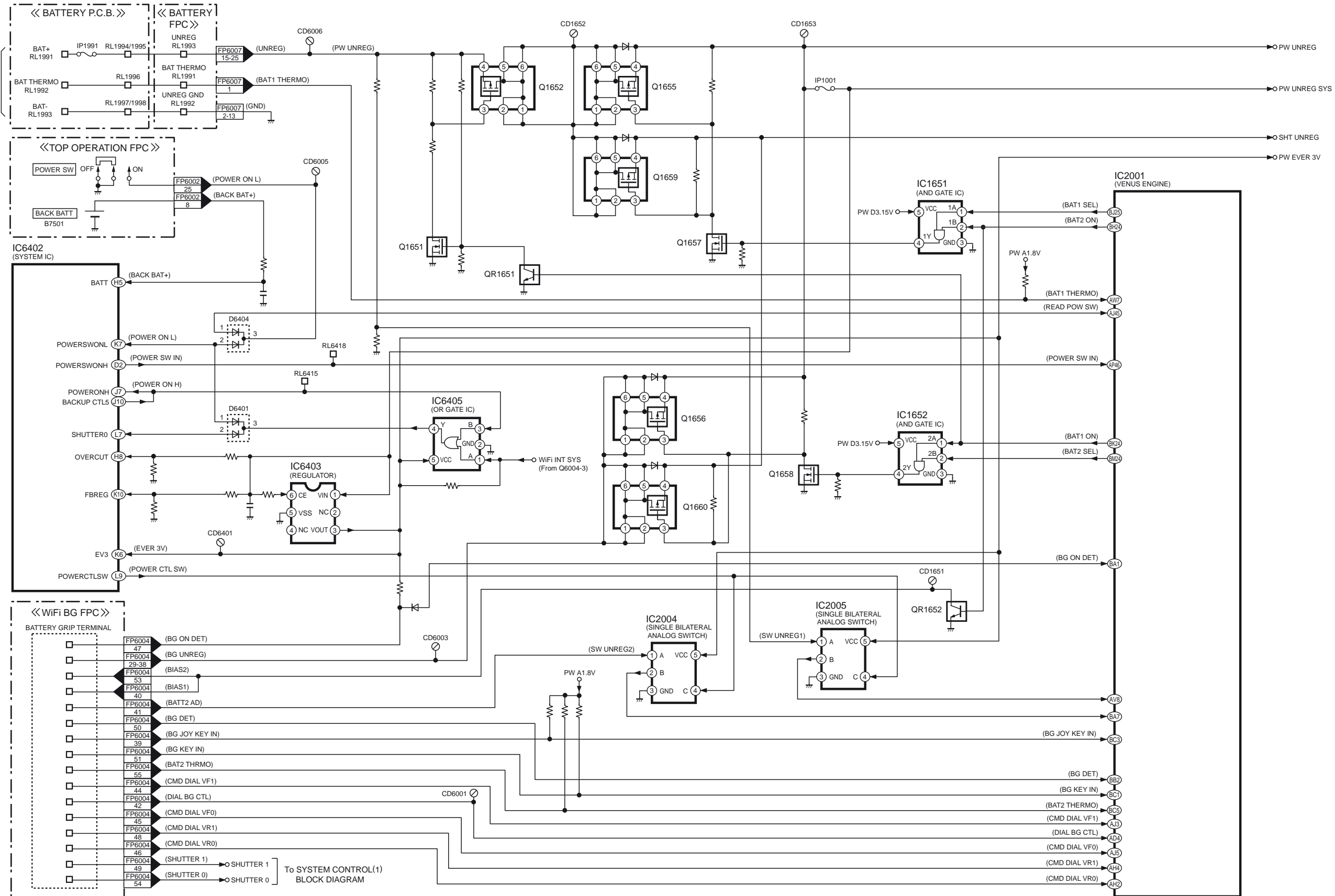
IC2001
(VENUS ENGINE)



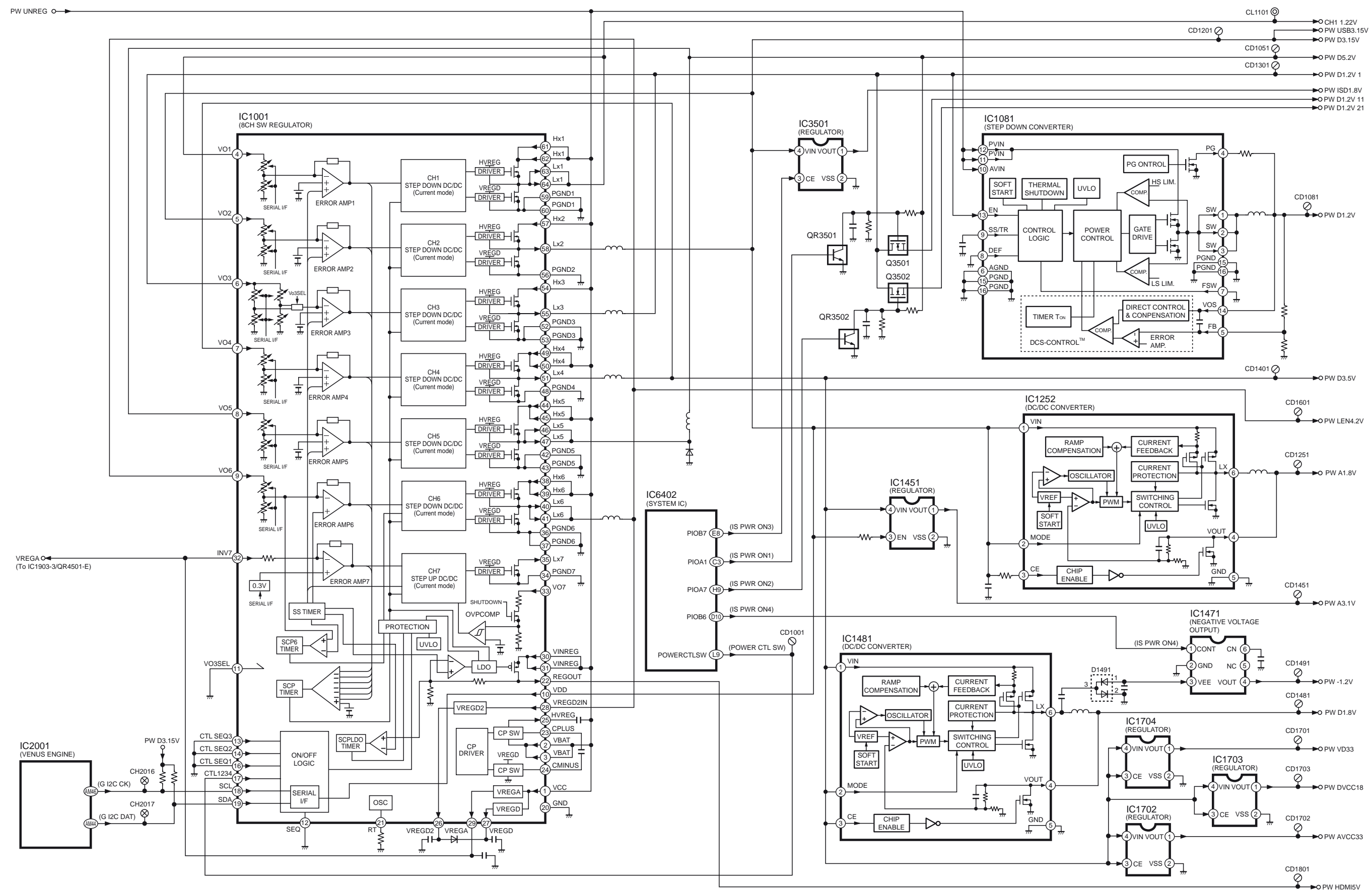




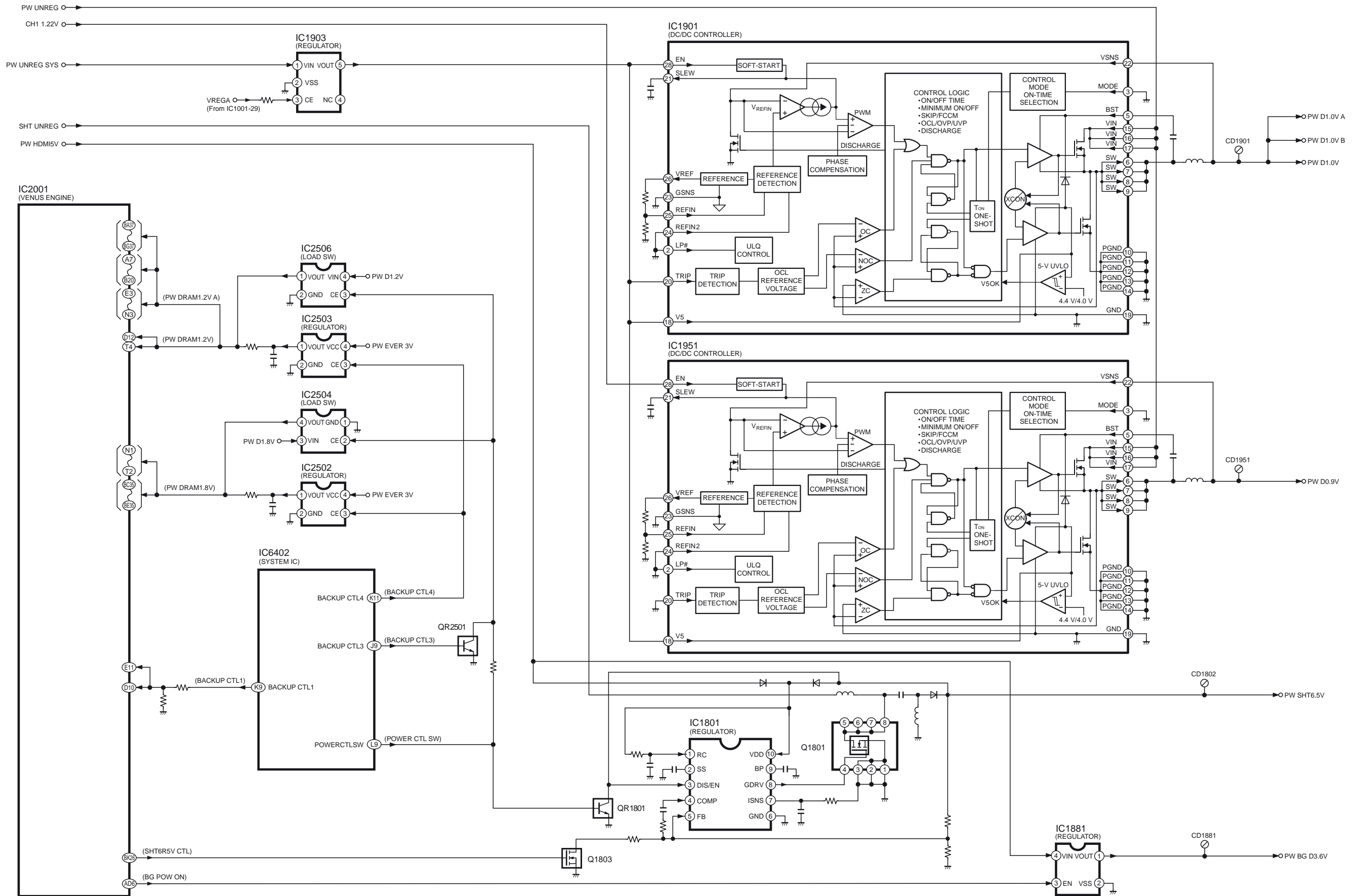
To BATTERY CATCHER



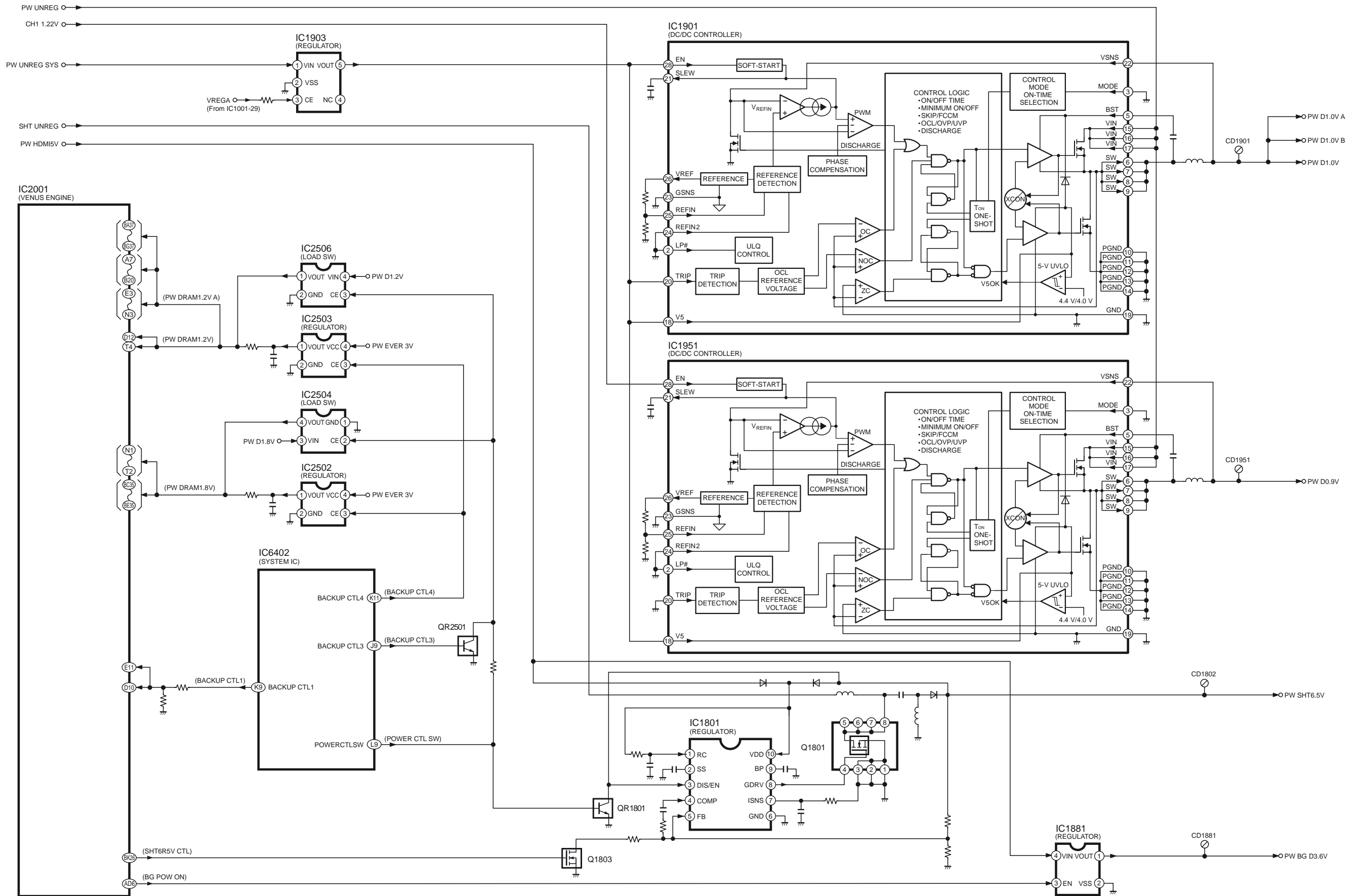
To SYSTEM CONTROL(1) BLOCK DIAGRAM



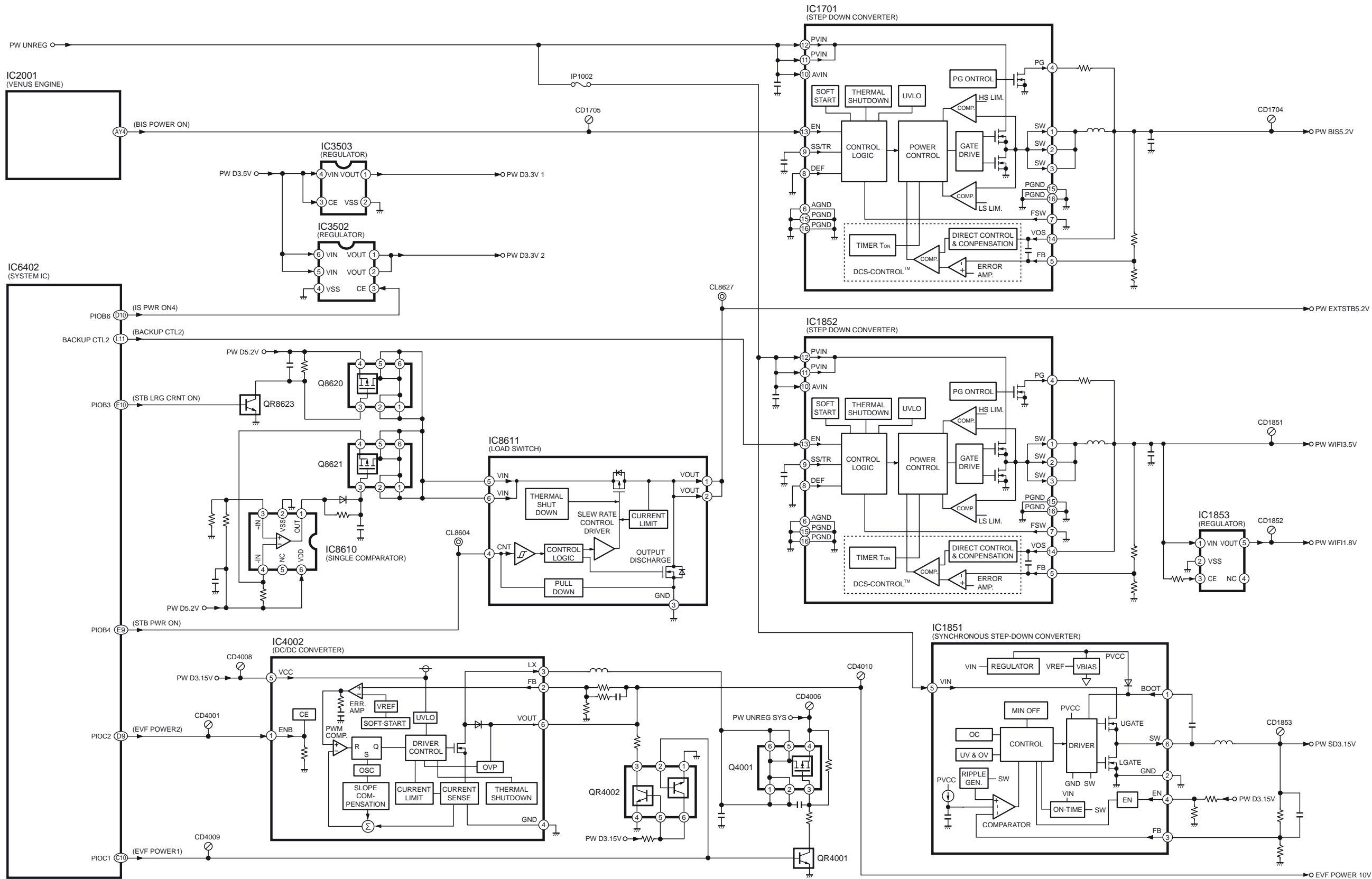
DC-GH5 POWER(2) BLOCK DIAGRAM

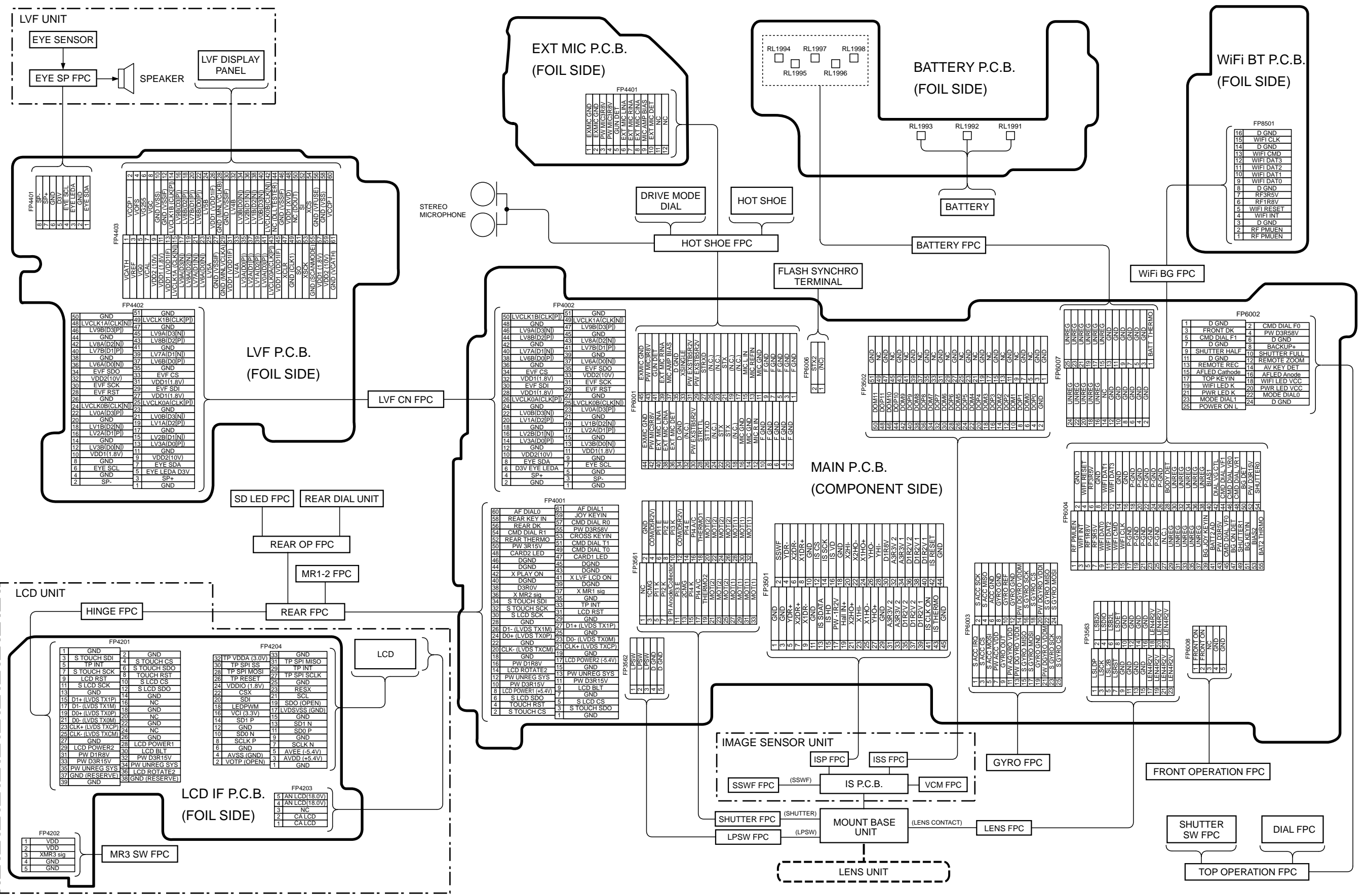


DC-GH5 POWER(3) BLOCK DIAGRAM



DC-GH5 POWER(3) BLOCK DIAGRAM





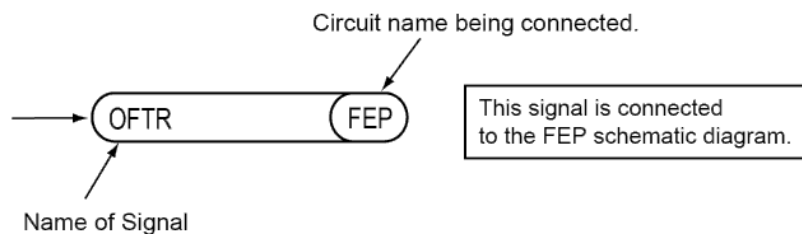
DC-GH5 INTERCONNECTION DIAGRAM

Model No. : DC-GH5/GH5M/GH5L/GH5A Schematic Diagram Note

IMPORTANT SAFETY NOTICE:

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

- 1.Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "\$" mark.
- 2.It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.
- 3.Use the parts number indicated on the Replacement Parts List .
- 4.Indication on Schematic diagrams:



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

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List Note

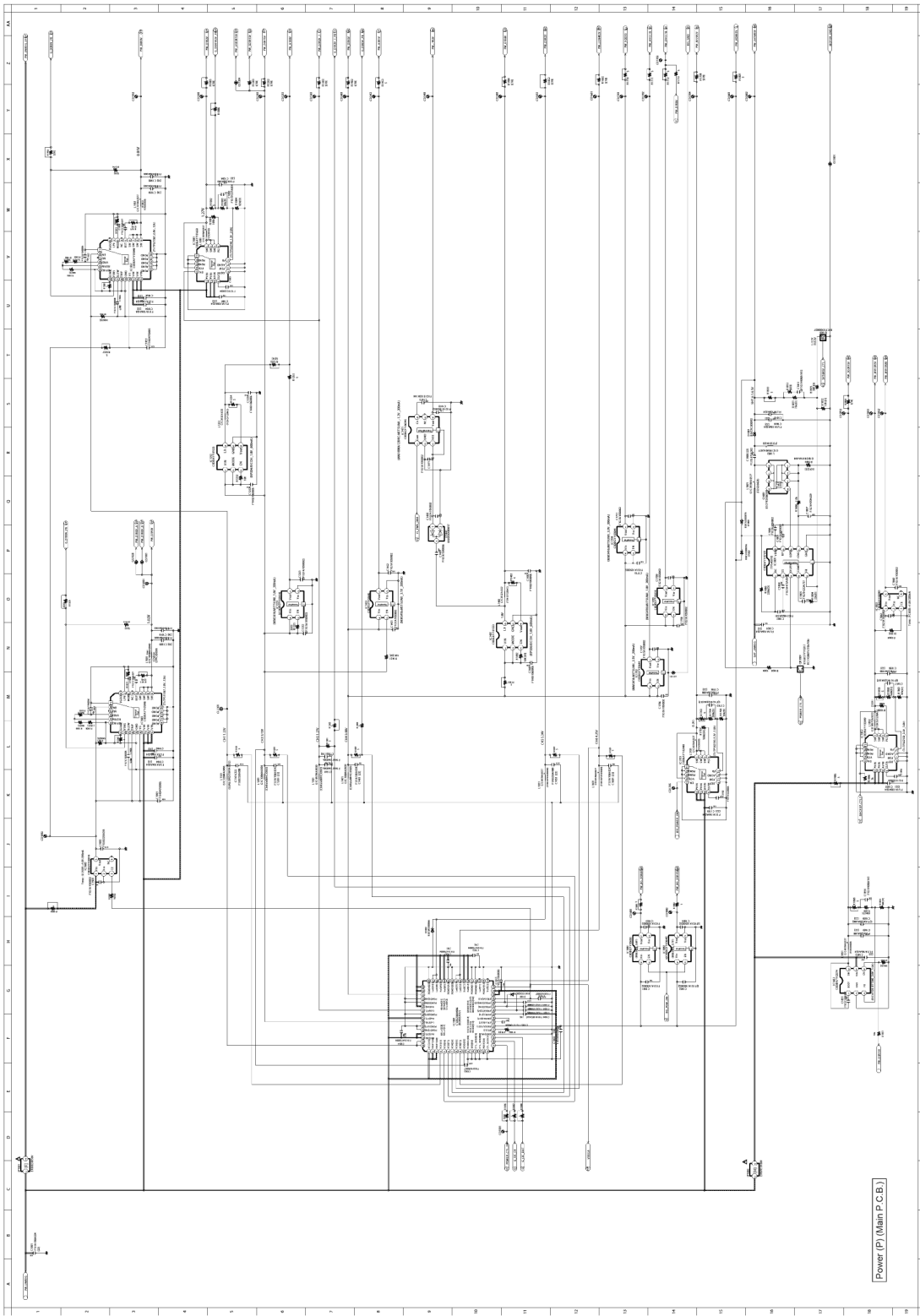
- Note:
- * Be sure to make your orders of replacement parts according to this list.
 - IMPORTANT SAFETY NOTICE**
Components identified with the mark Δ have the special characteristics for safety.
When replacing any of these components, use only the same type.
 - Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
 - 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.
 - Supply of CD-ROM or DVD, in accordance with license protection, is allowable as replacement parts only for customers who accidentally damaged or lost their own.

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

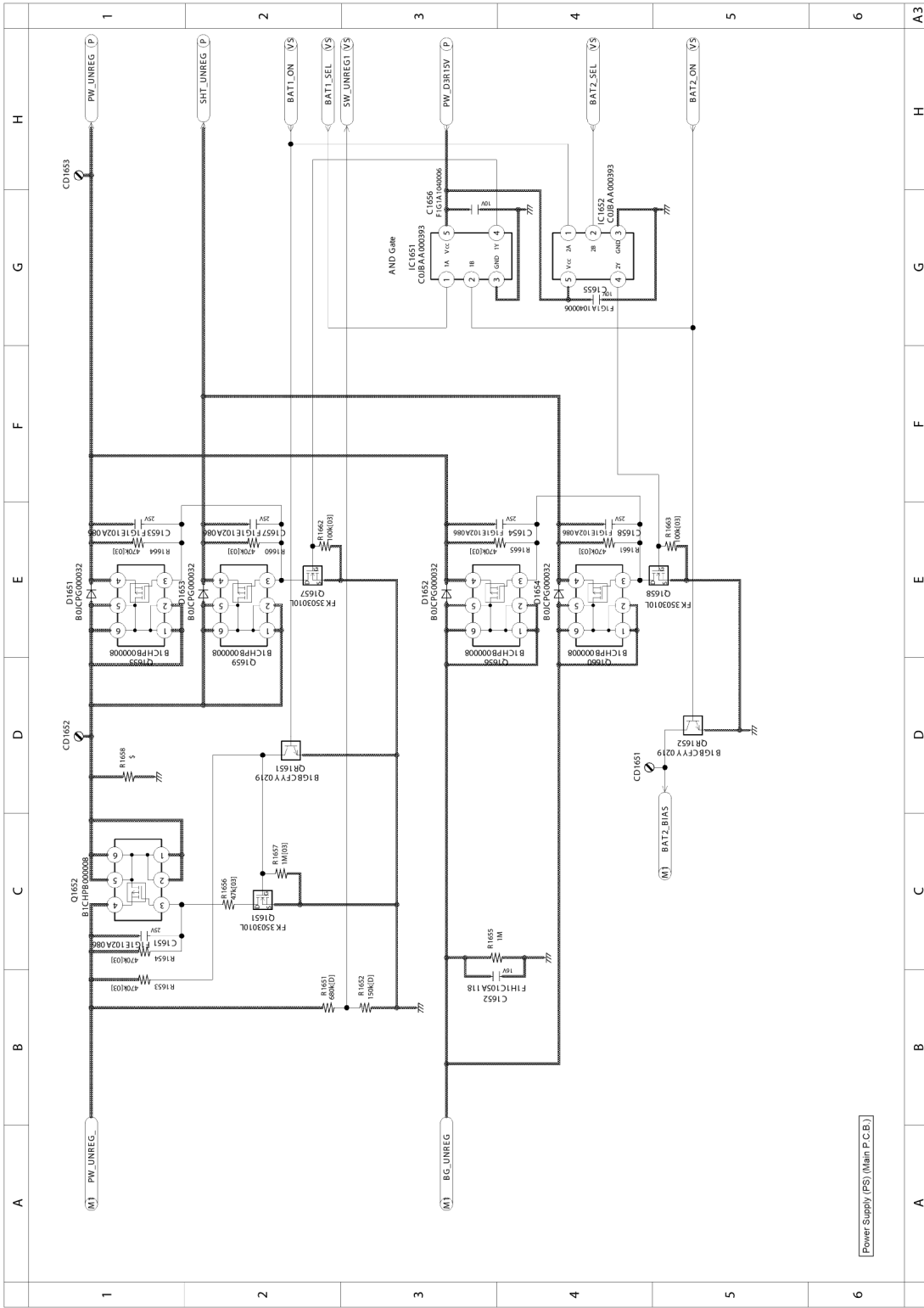
Definition of Parts supplier:

- Parts marked with [INBD] in the remarks column are supplied from AVC-IMAGING. Others are supplied from PAVCX.**

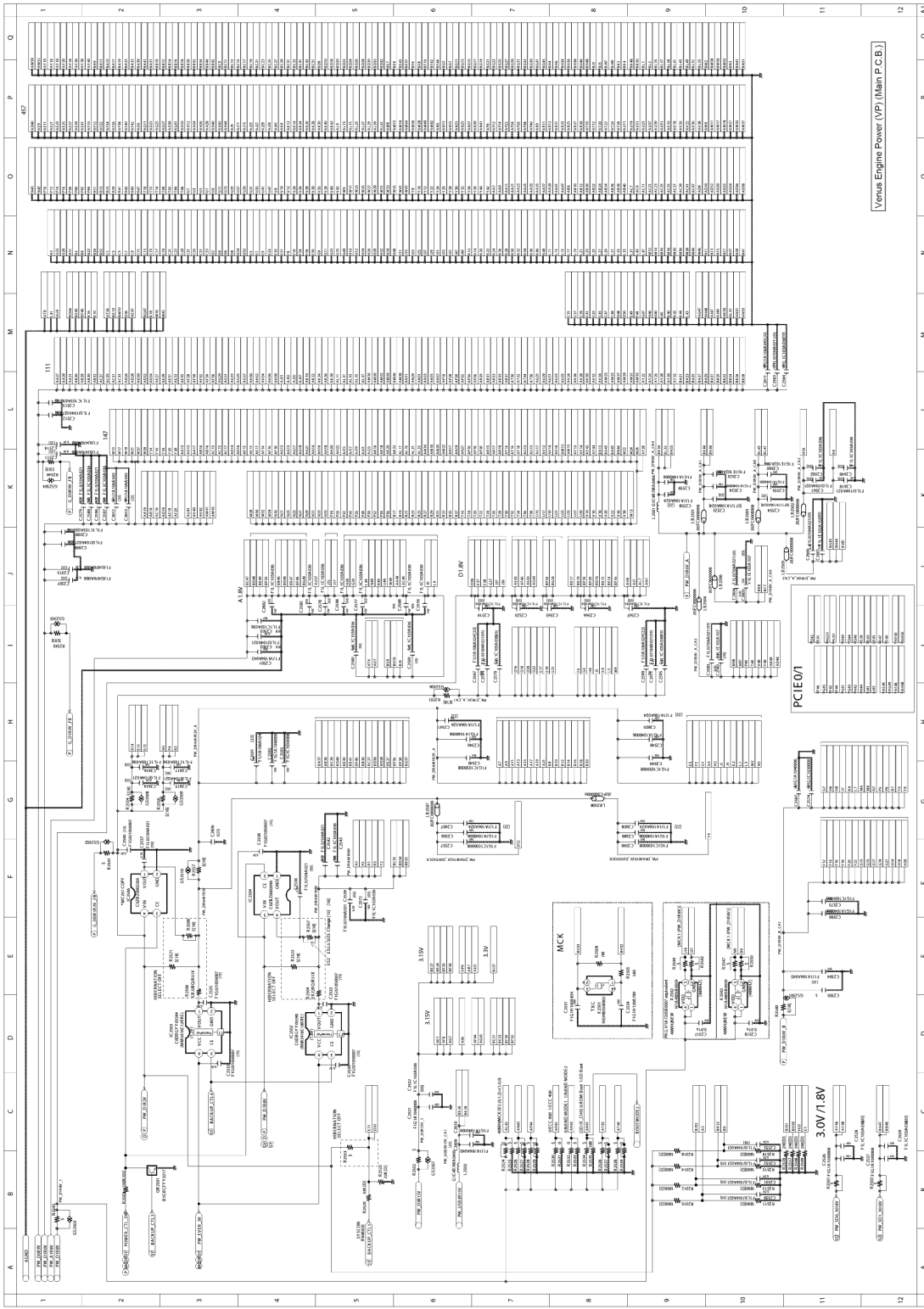
Model No. : DC-GH5/GH5M/GH5L/GH5A Power (P) (Main P.C.B.)



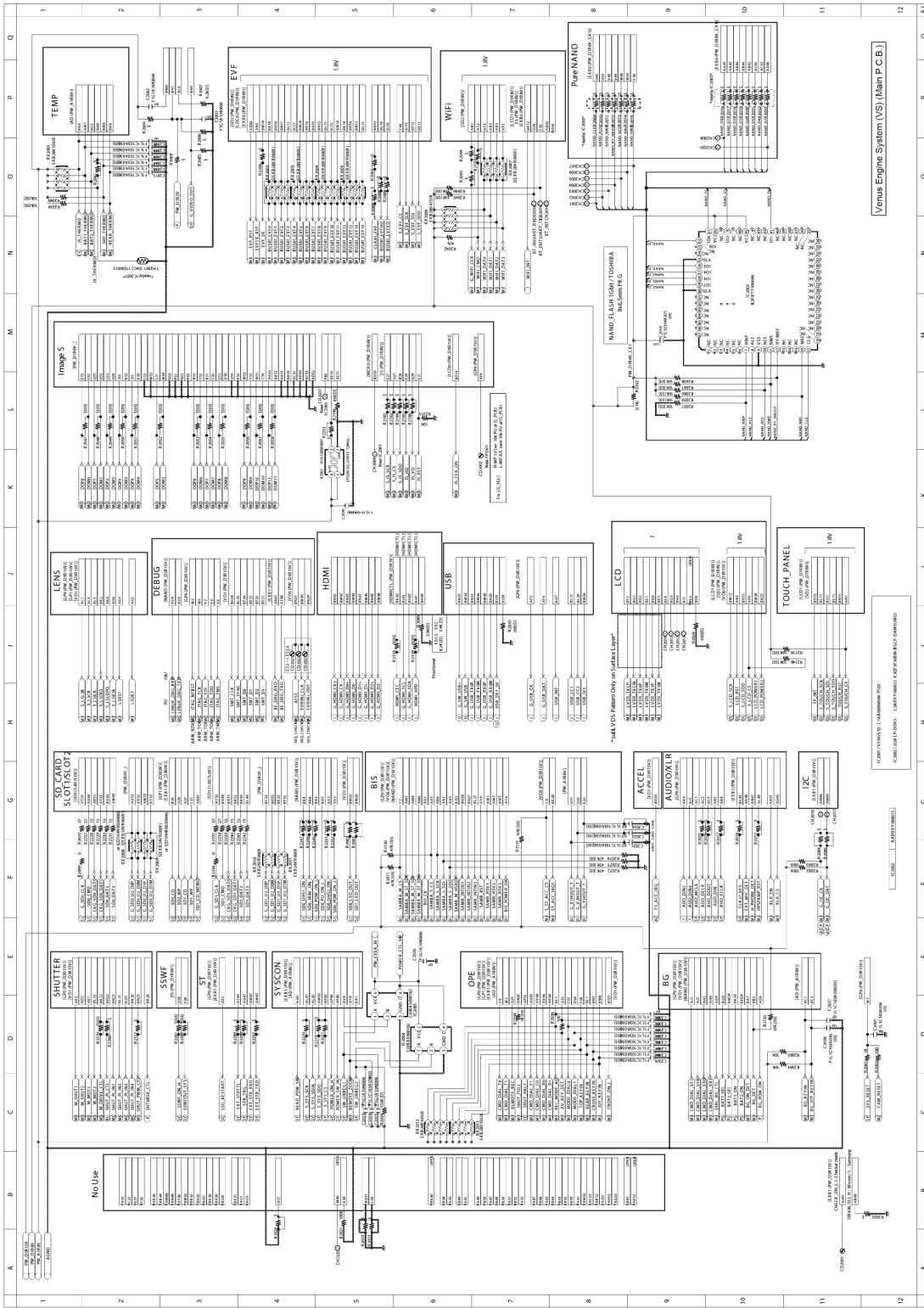
Model No. : DC-GH5/GH5M/GH5L/GH5A Power Supply (PS) (Main P.C.B.)



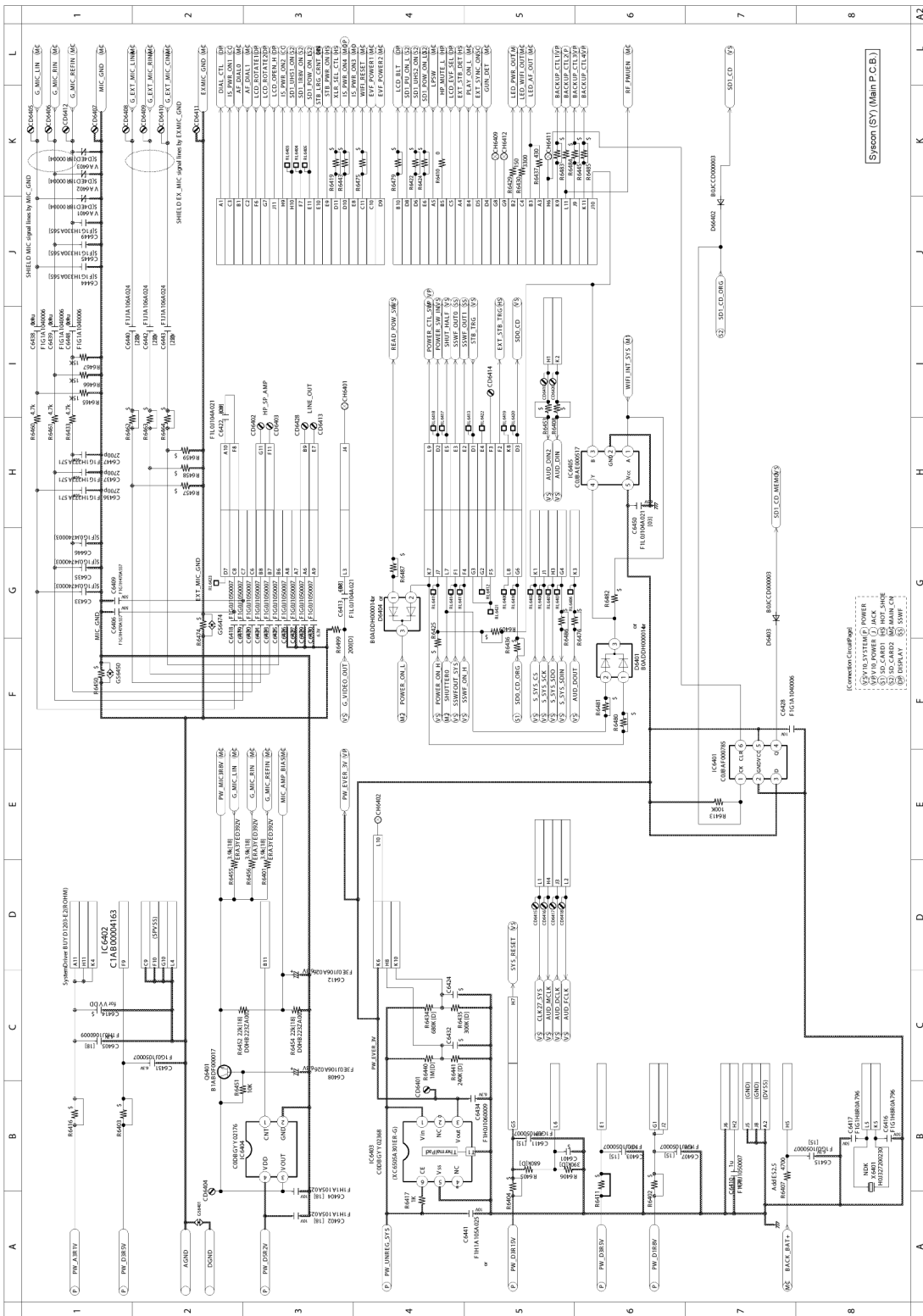
Model No. : DC-GH5/GH5M/GH5L/GH5A Venus Engine Power (VP) (Main P.C.B.)



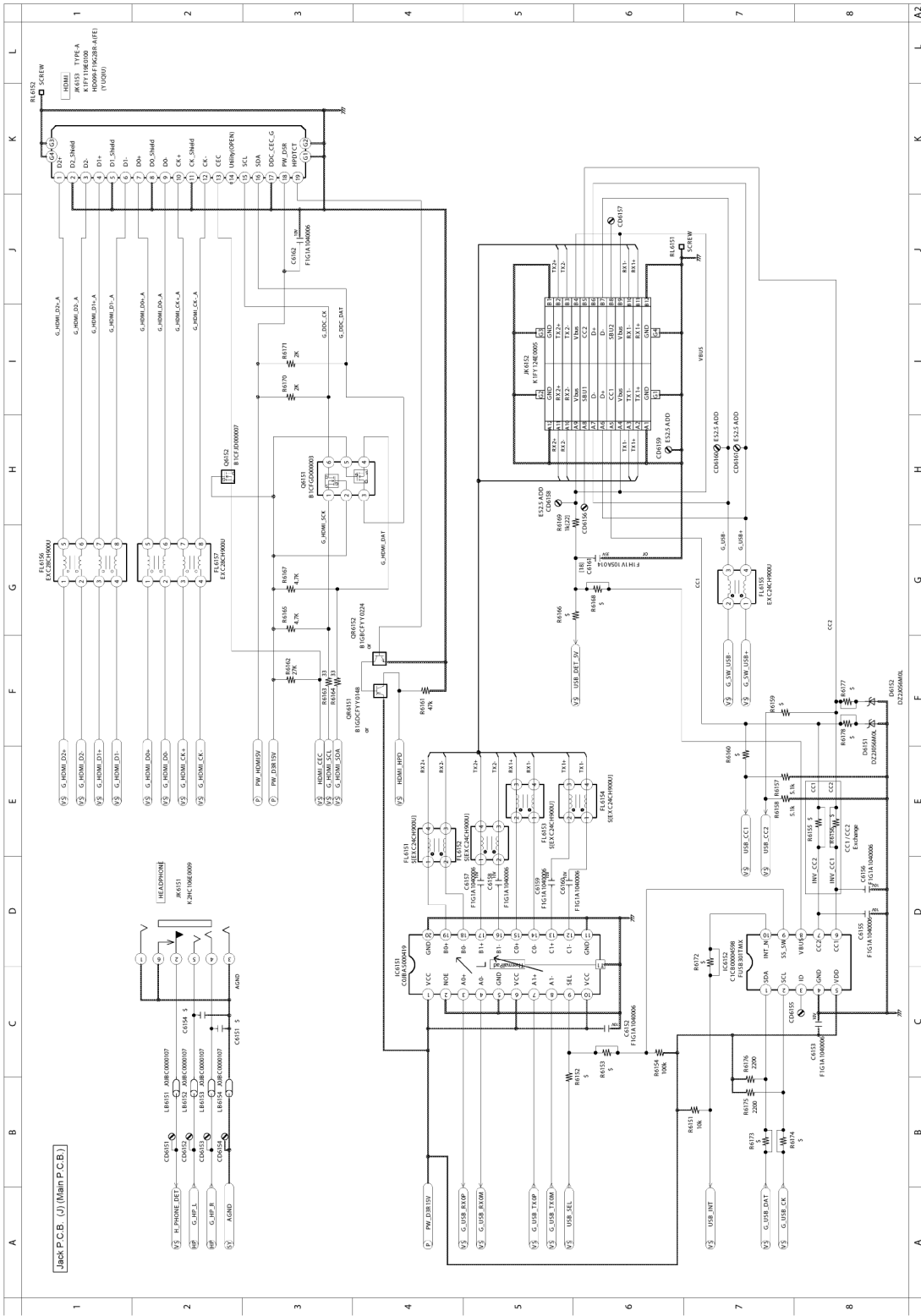
Model No. : DC-GH5/GH5M/GH5L/GH5A Venus Engine System (VS) (Main P.C.B.)



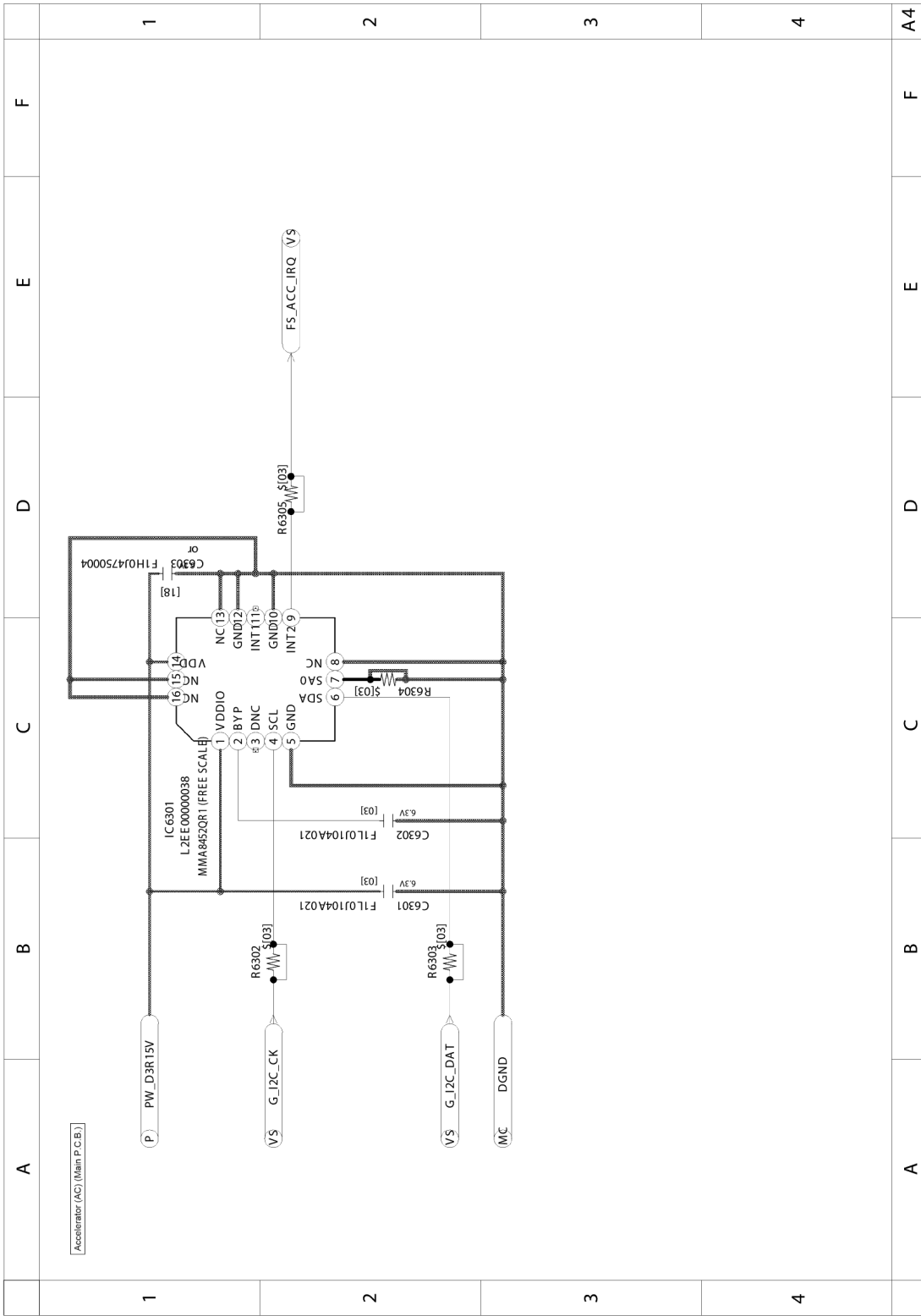
Model No. : DC-GH5/GH5M/GH5L/GH5A Syscon (SY) (Main P.C.B.)



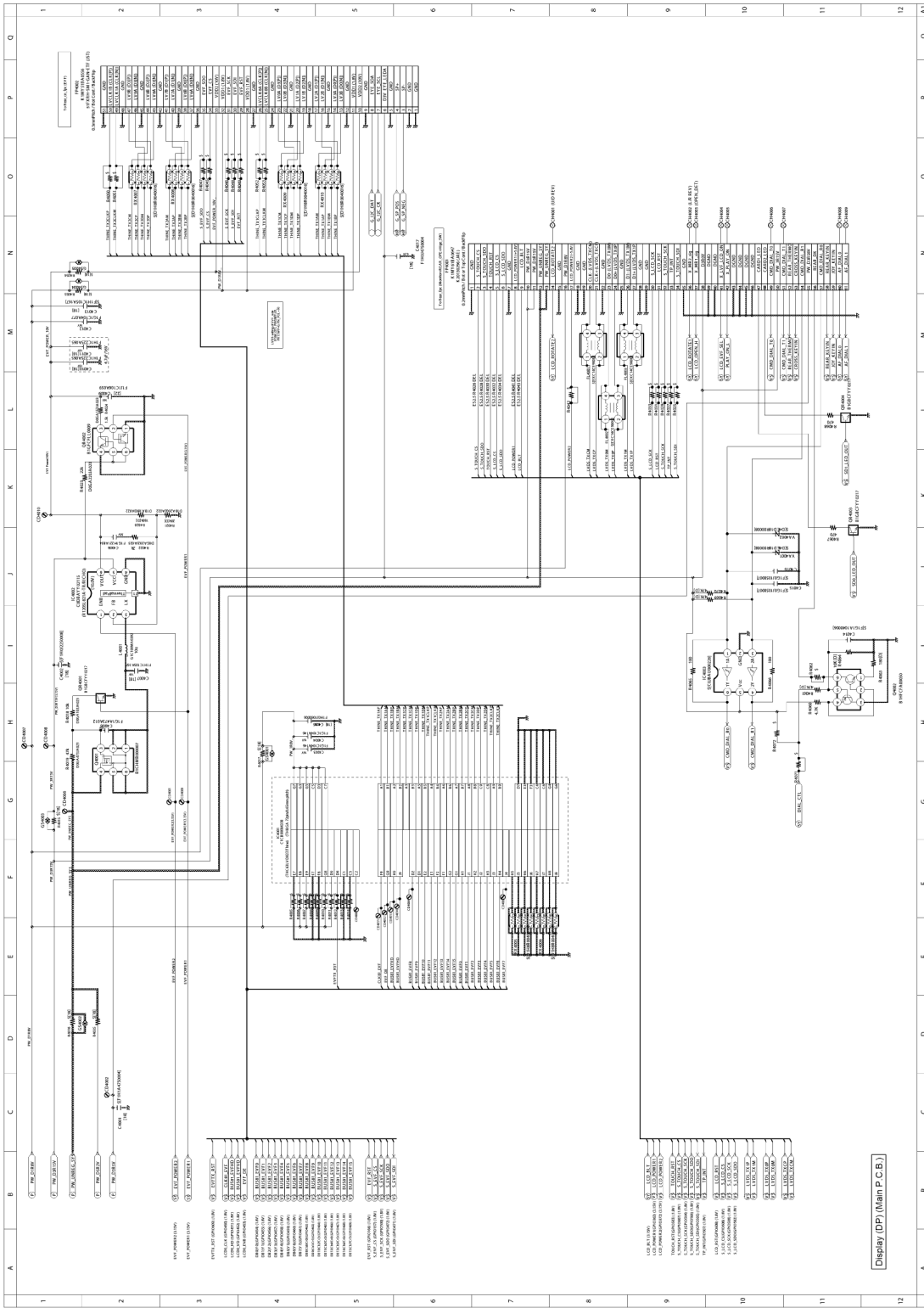
Model No. : DC-GH5/GH5M/GH5L/GH5A Jack P.C.B. (J) (Main P.C.B.)



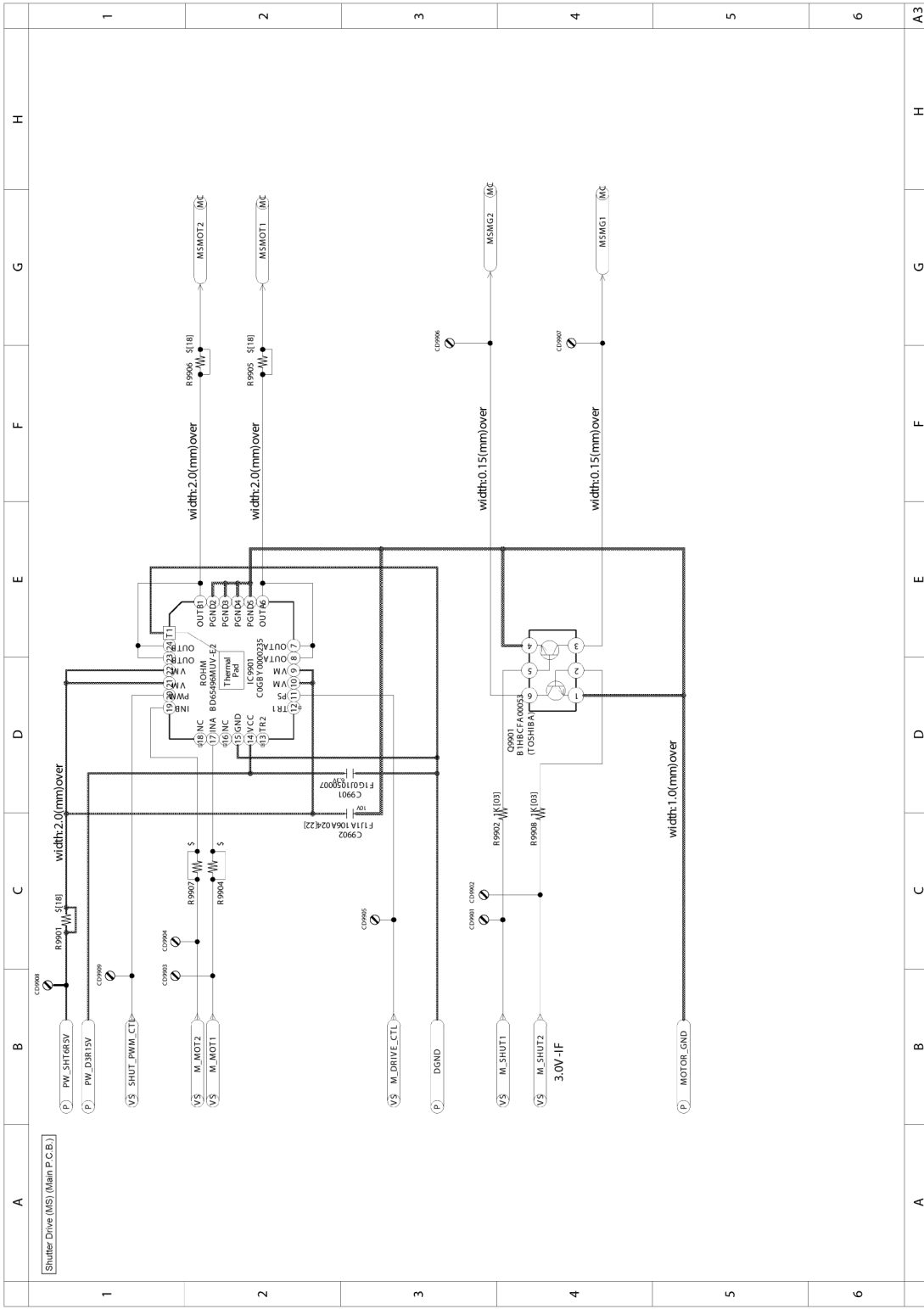
Model No. : DC-GH5/GH5M/GH5L/GH5A Accelerator (AC) (Main P.C.B.)



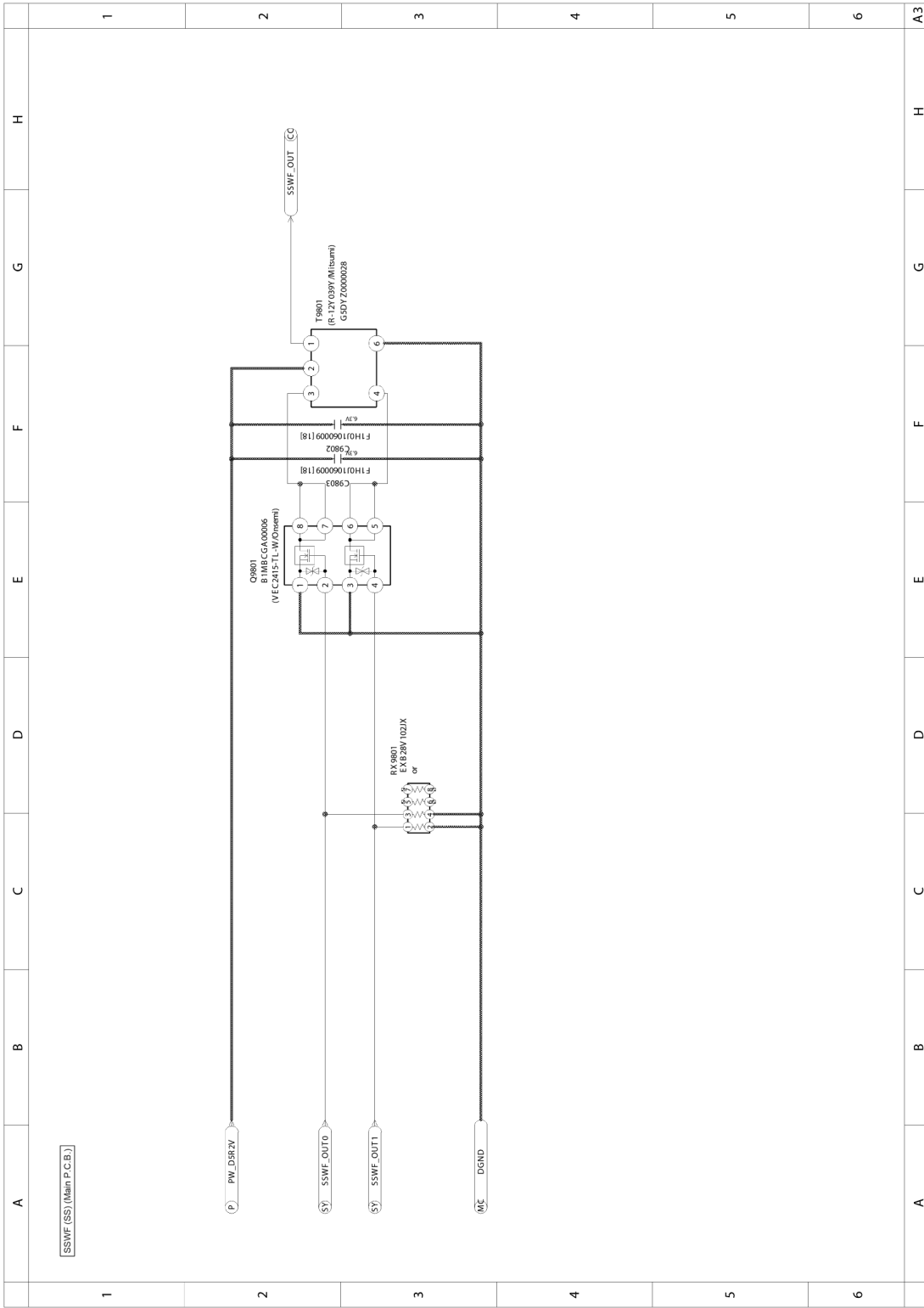
Model No. : DC-GH5/GH5M/GH5L/GH5A Display (DP) (Main P.C.B.)



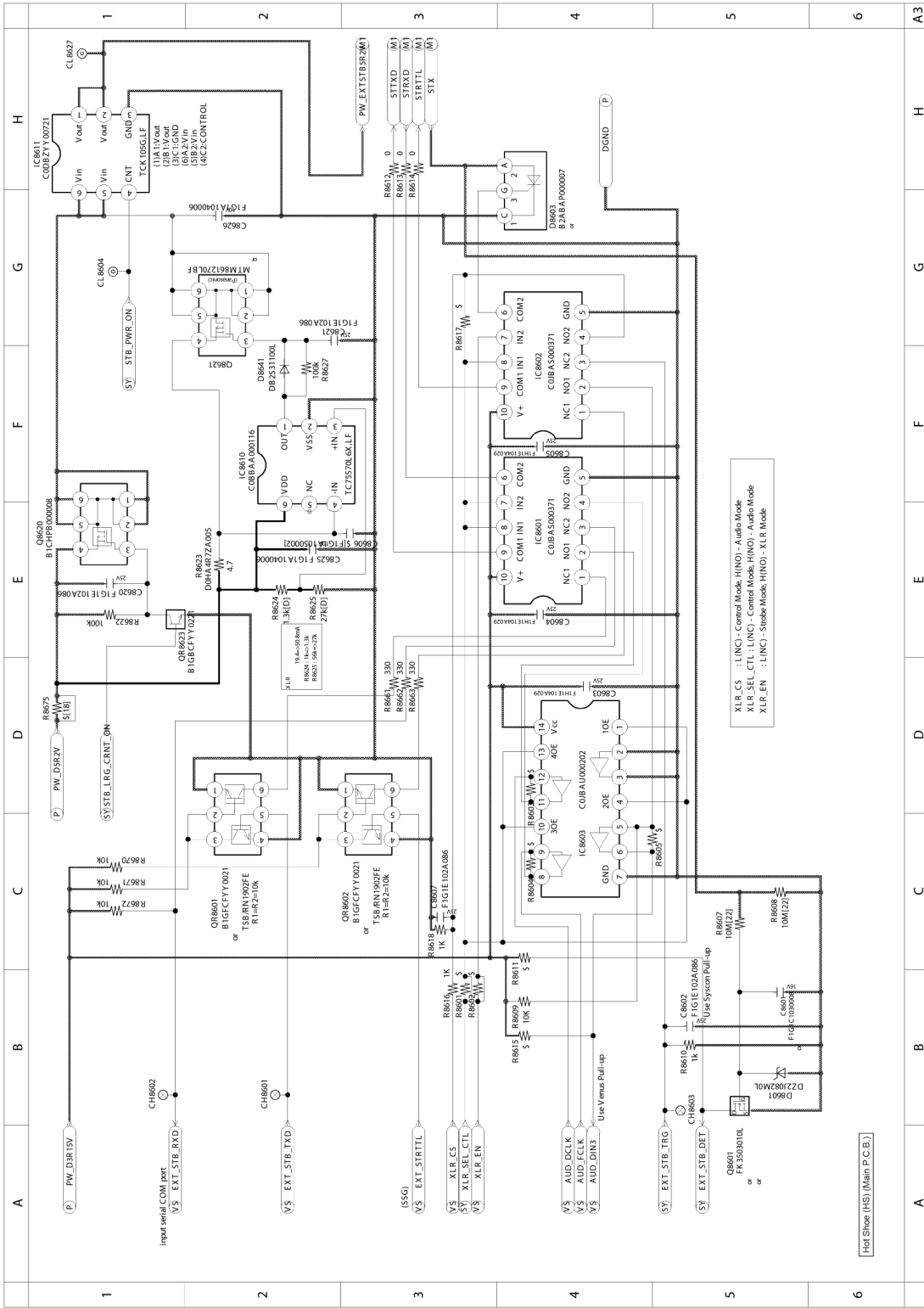
Model No. : DC-GH5/GH5M/GH5L/GH5A Shutter Drive (MS) (Main P.C.B.)



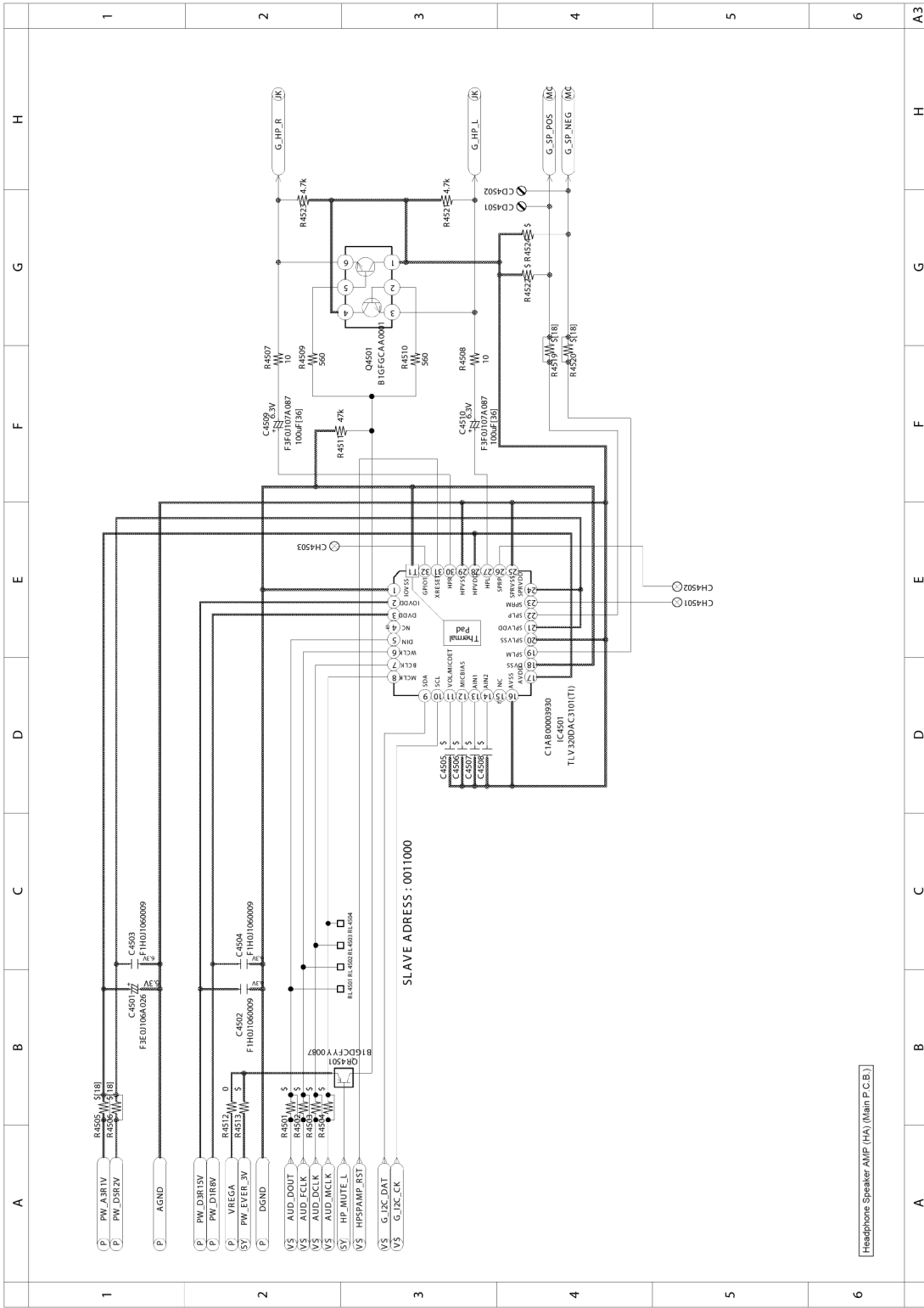
Model No. : DC-GH5/GH5M/GH5L/GH5A SSWF (SS) (Main P.C.B.)



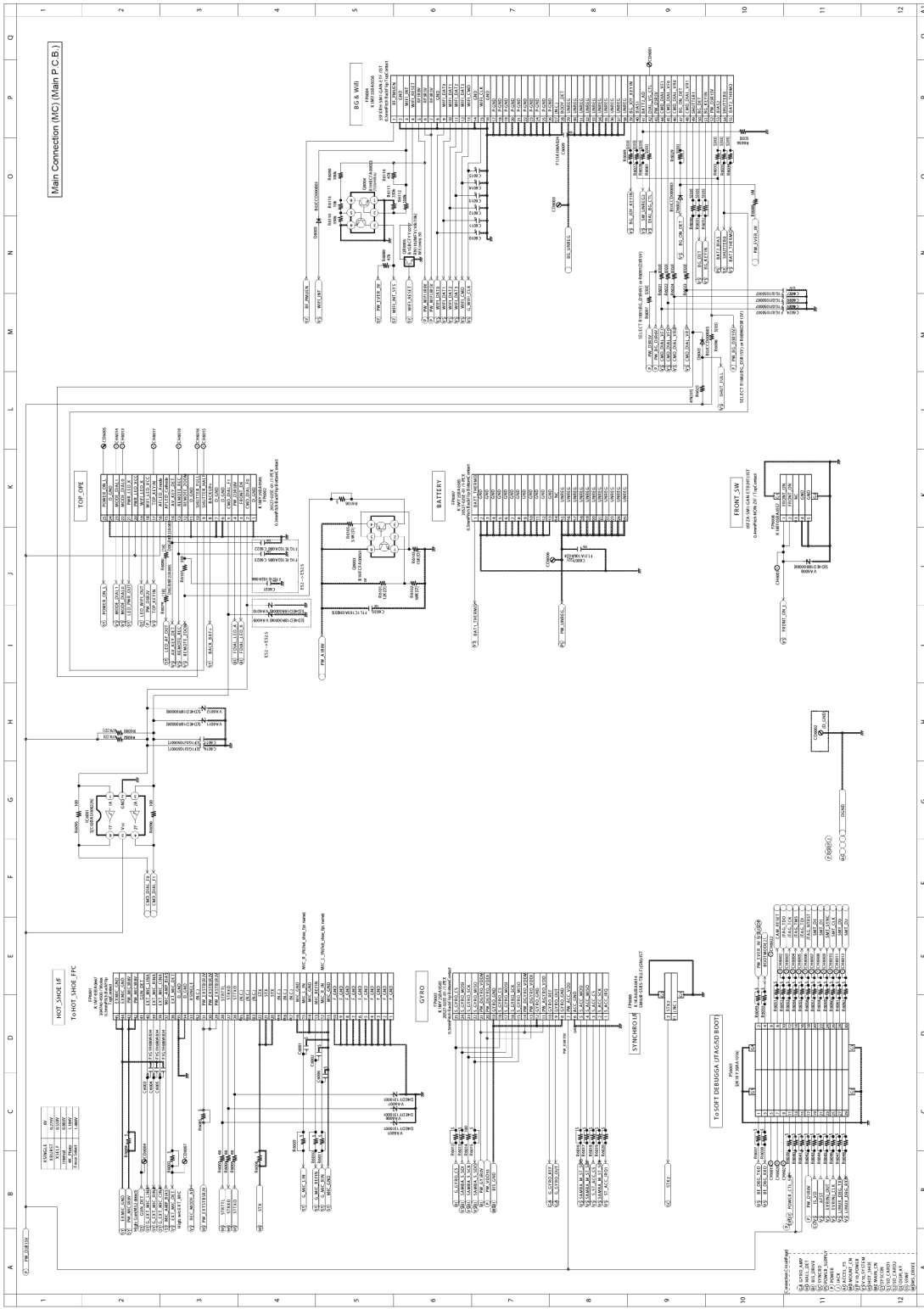
Model No. : DC-GH5/GH5M/GH5L/GH5A Hot Shoe (HS) (Main P.C.B.)



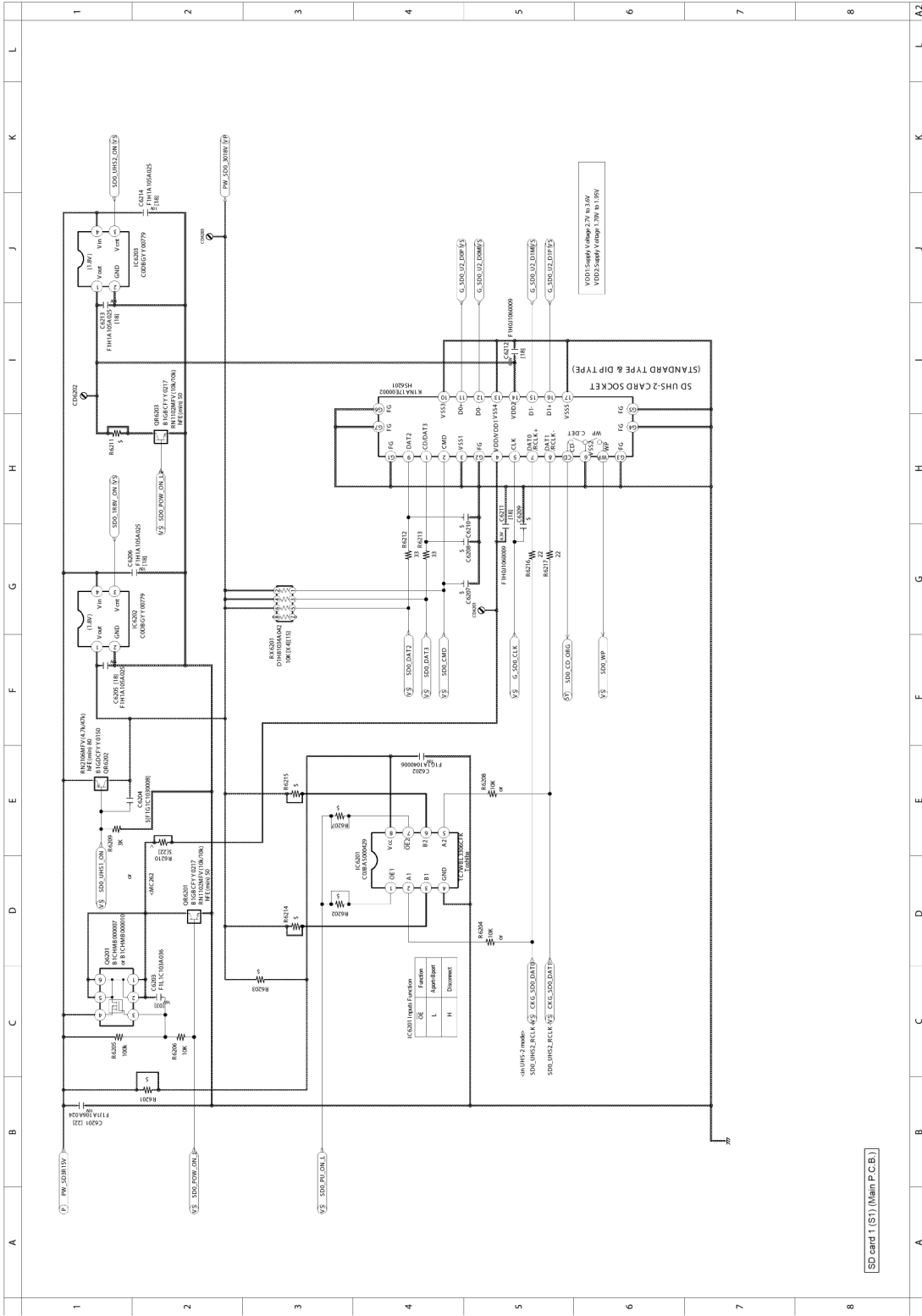
Model No. : DC-GH5/GH5M/GH5L/GH5A Headphone Speaker AMP (HA) (Main P.C.B.)



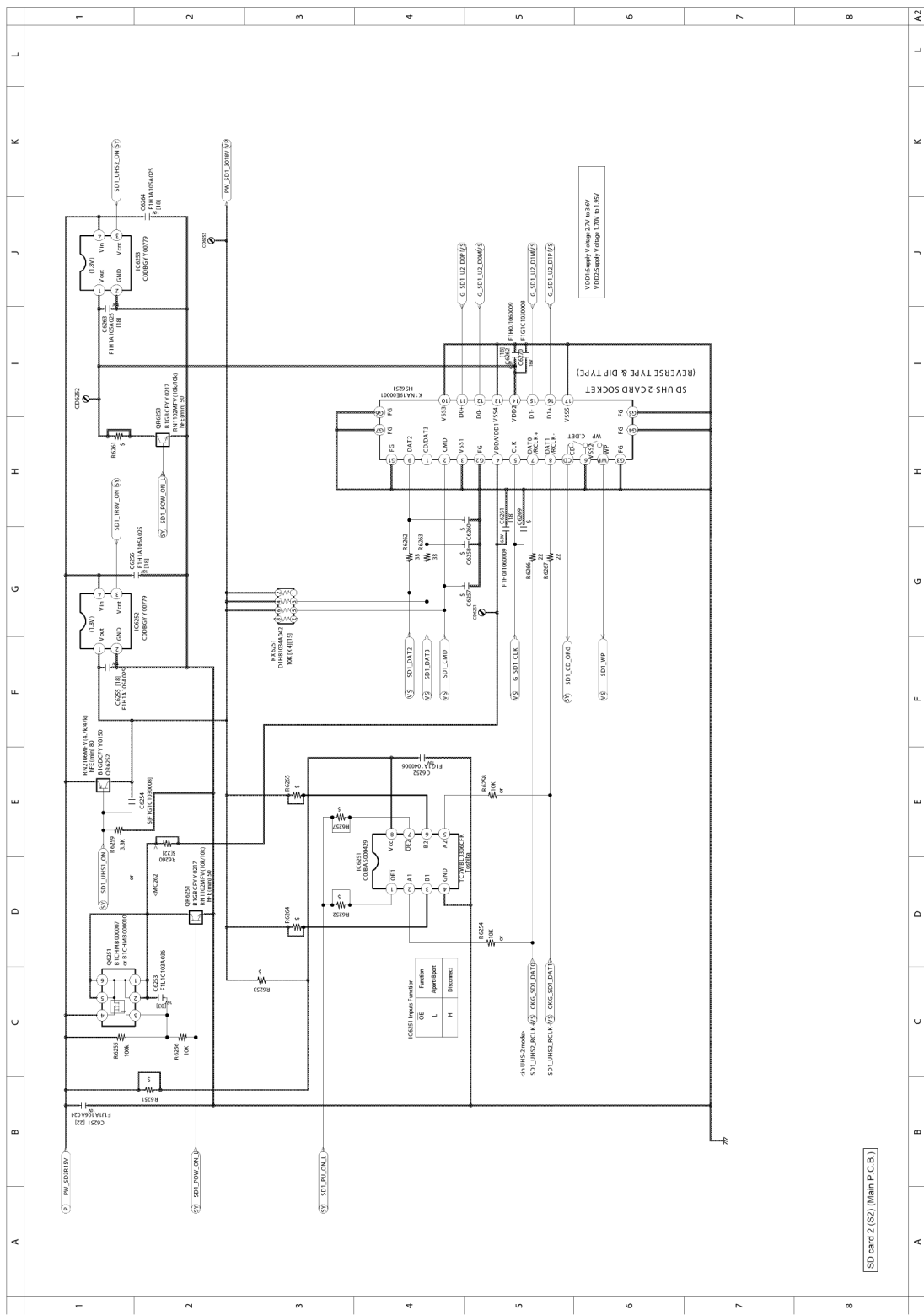
Model No. : DC-GH5/GH5M/GH5L/GH5A Main Connection (MC) (Main P.C.B.)



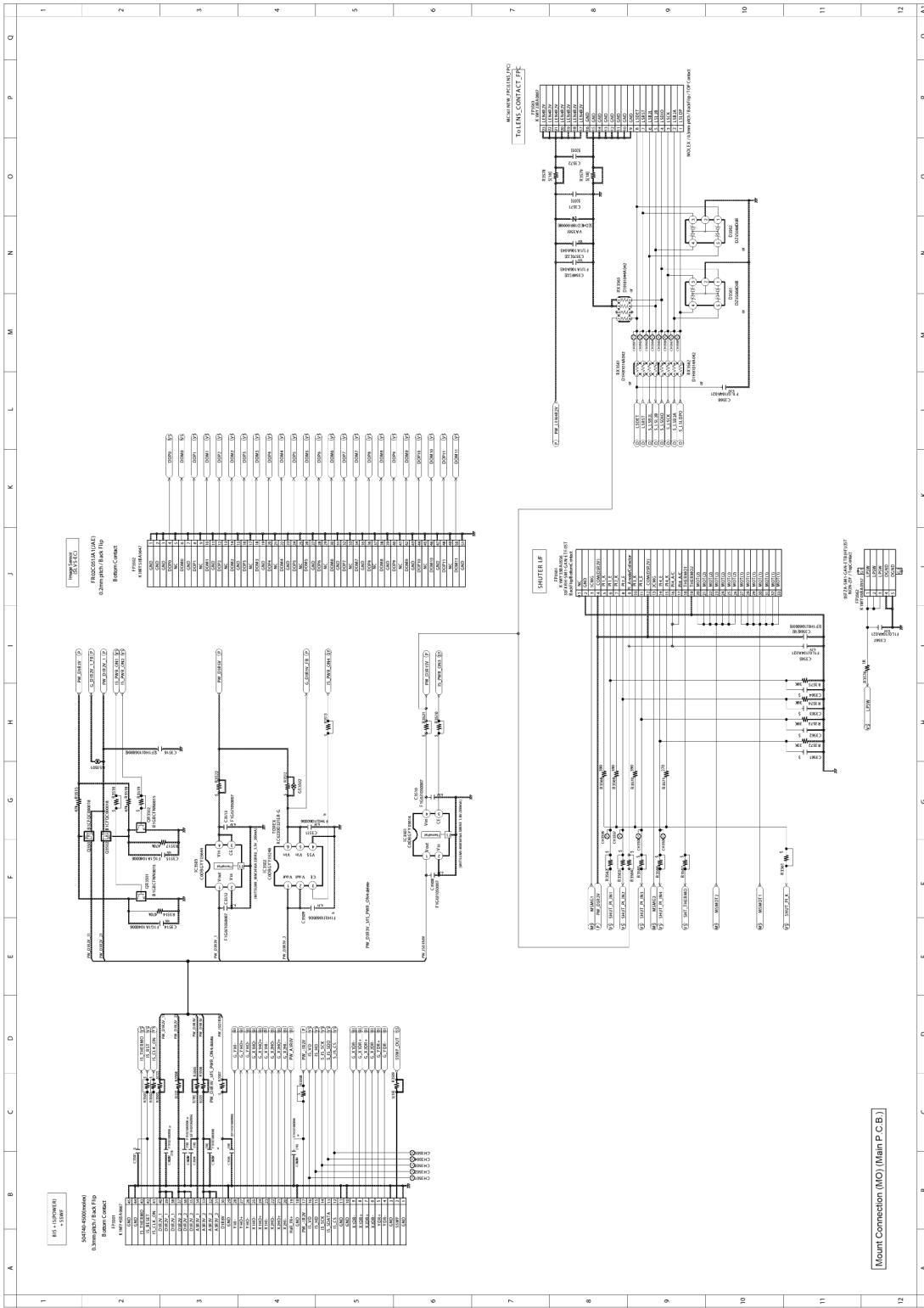
Model No. : DC-GH5/GH5M/GH5L/GH5A SD card 1 (S1) (Main P.C.B.)



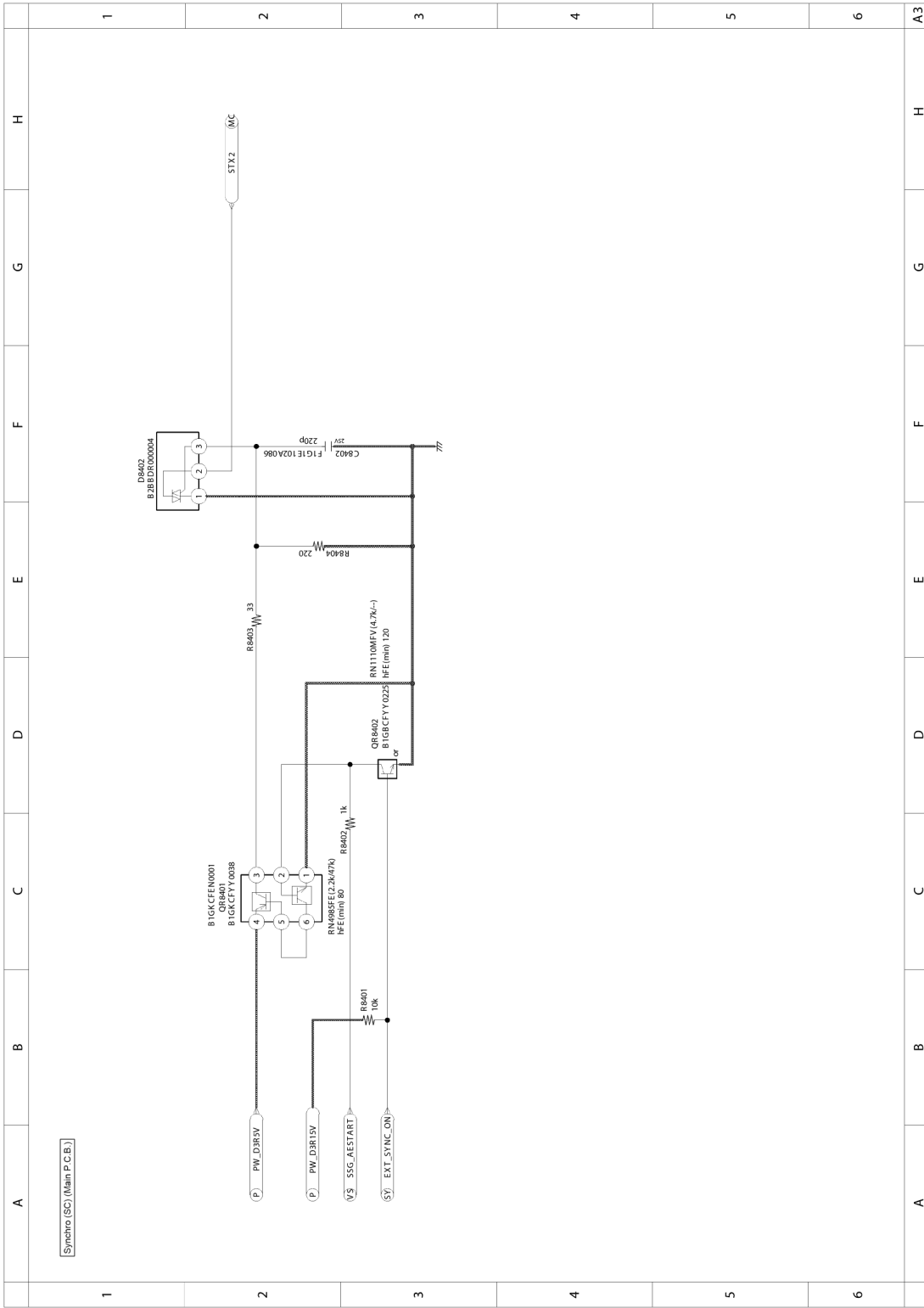
Model No. : DC-GH5/GH5M/GH5L/GH5A SD card 2 (S2) (Main P.C.B.)



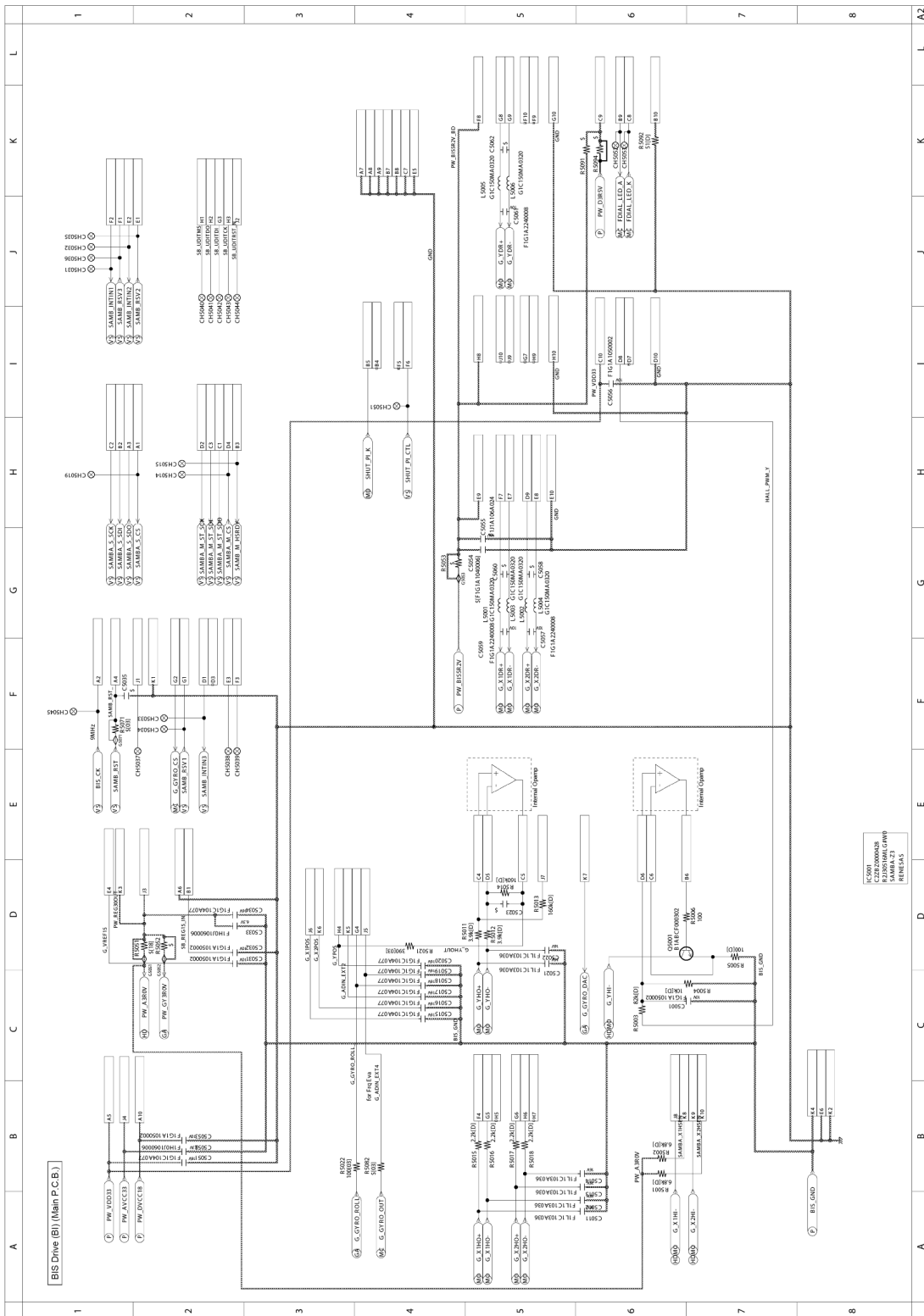
Model No. : DC-GH5/GH5M/GH5L/GH5A Mount Connection (MO) (Main P.C.B.)



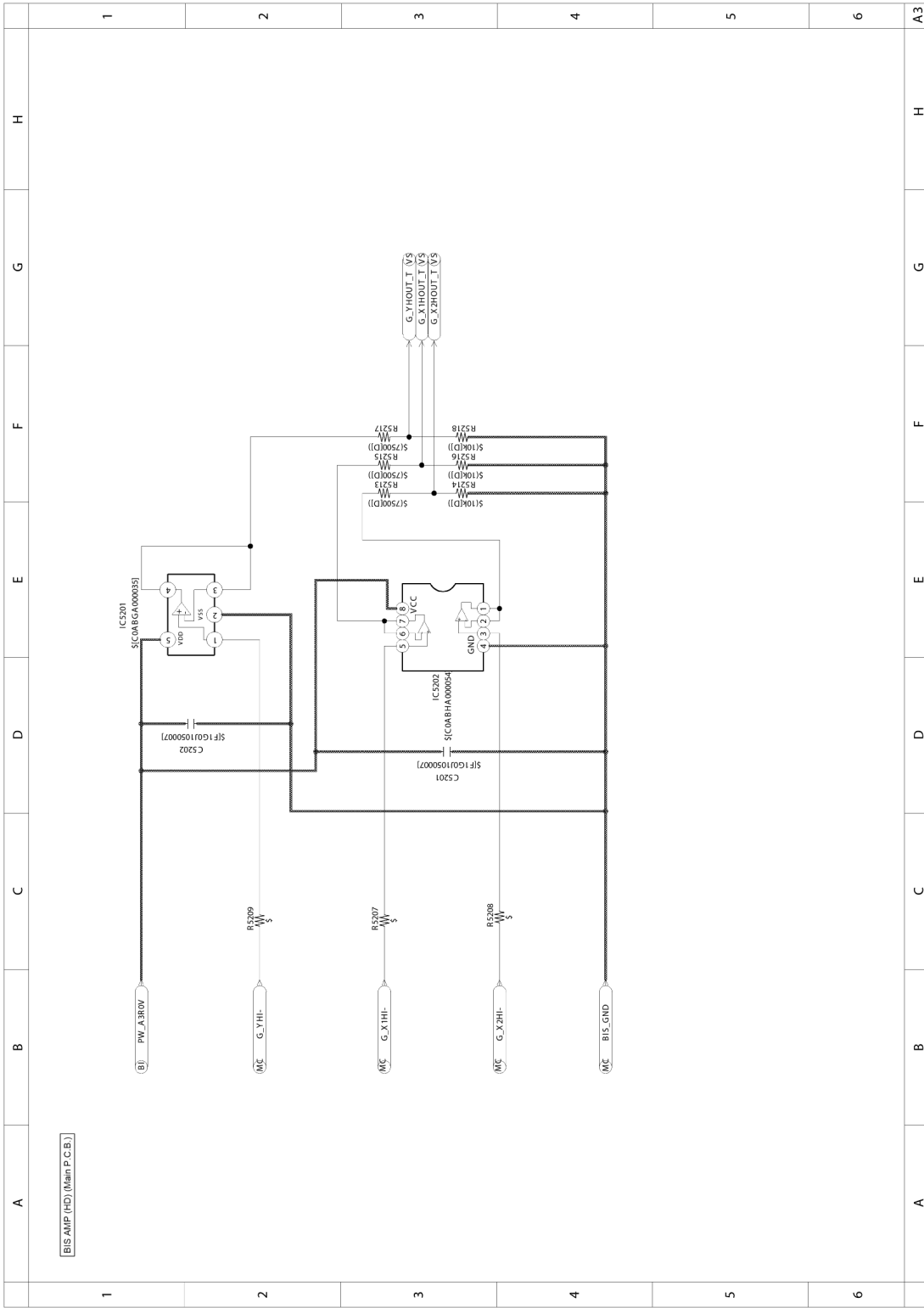
Model No. : DC-GH5/GH5M/GH5L/GH5A Synchro (SC) (Main P.C.B.)



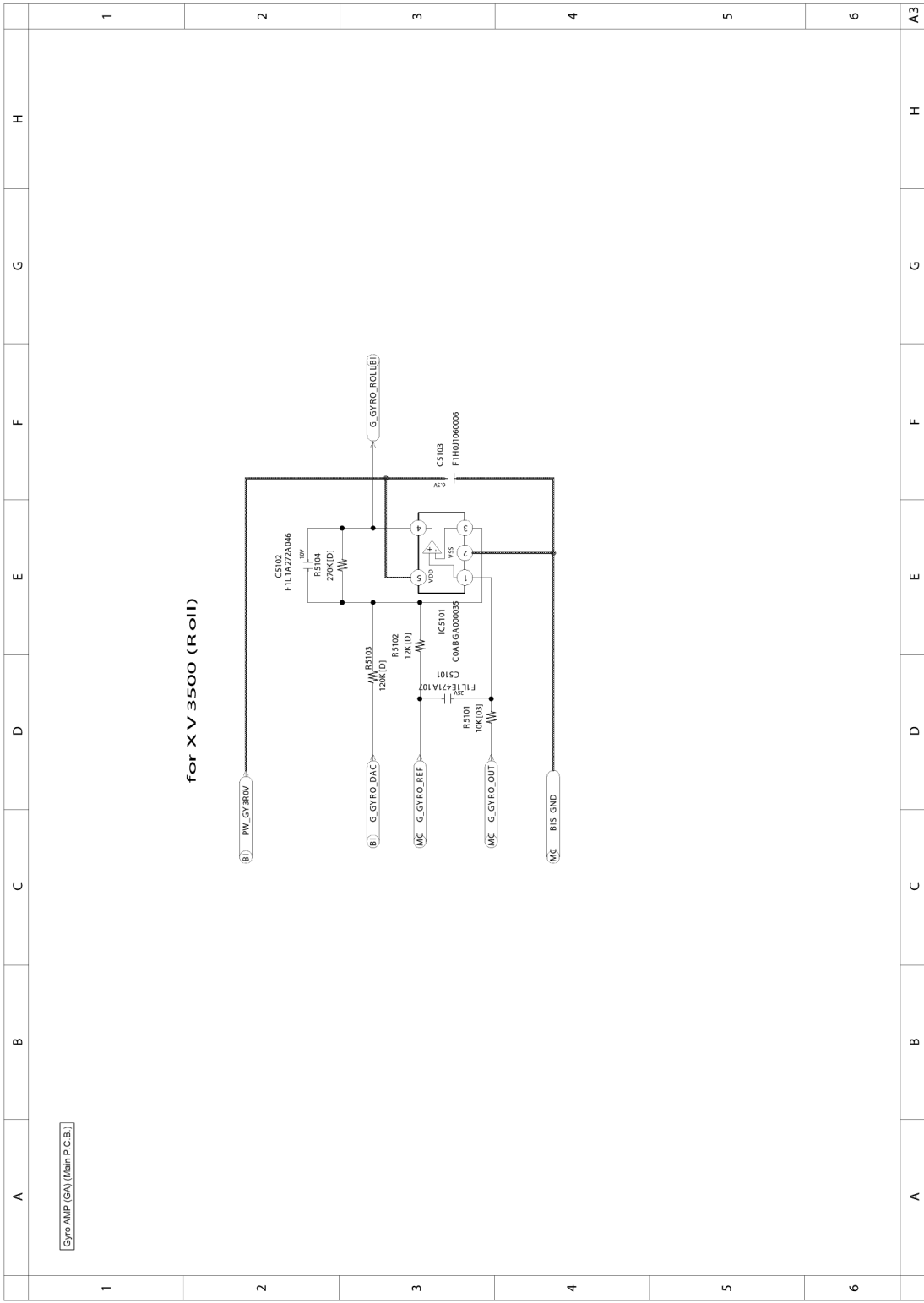
Model No. : DC-GH5/GH5M/GH5L/GH5A BIS Drive (BI) (Main P.C.B.)



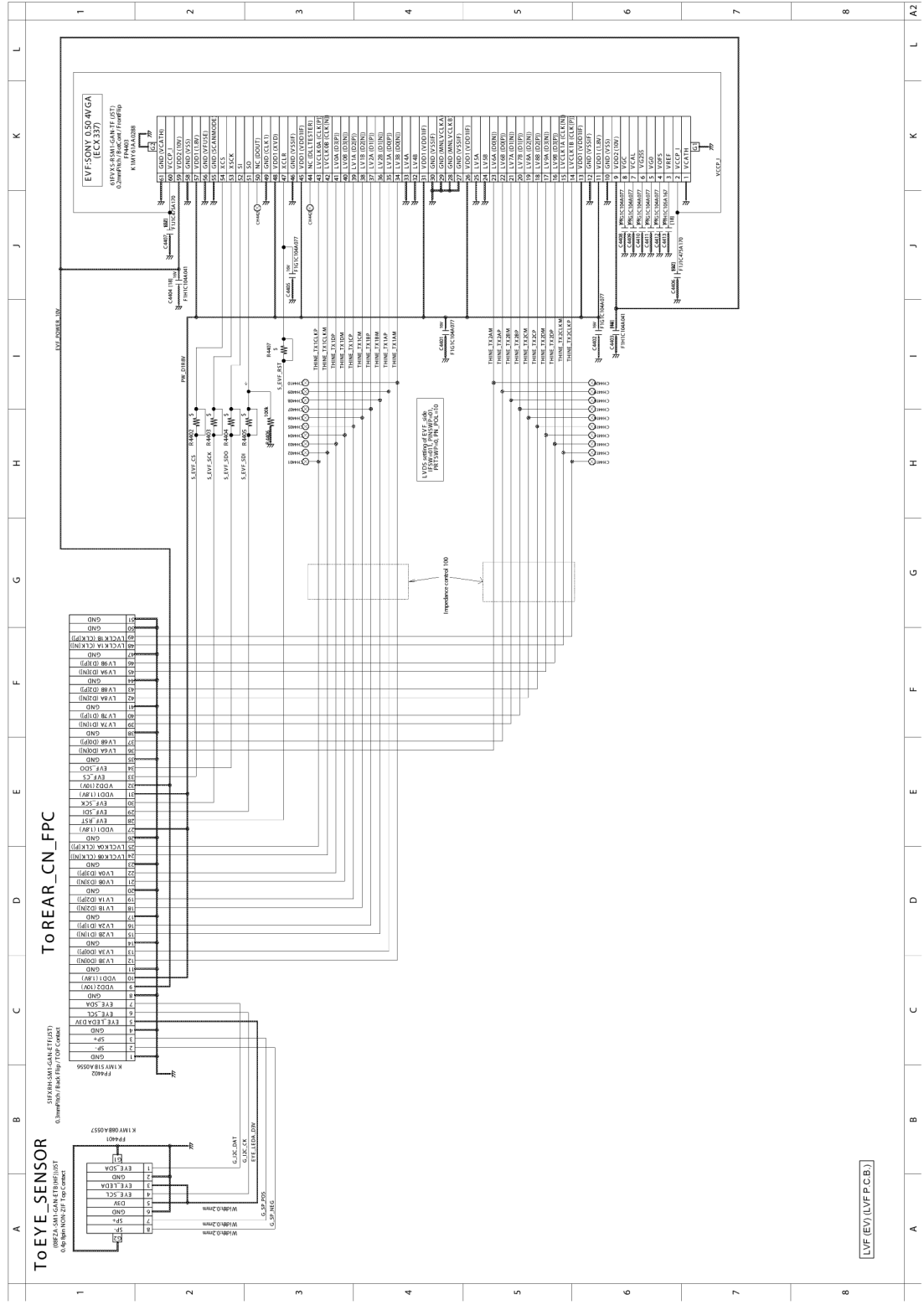
Model No. : DC-GH5/GH5M/GH5L/GH5A BIS AMP (HD) (Main P.C.B.)



Model No. : DC-GH5/GH5M/GH5L/GH5A Gyro AMP (GA) (Main P.C.B.)

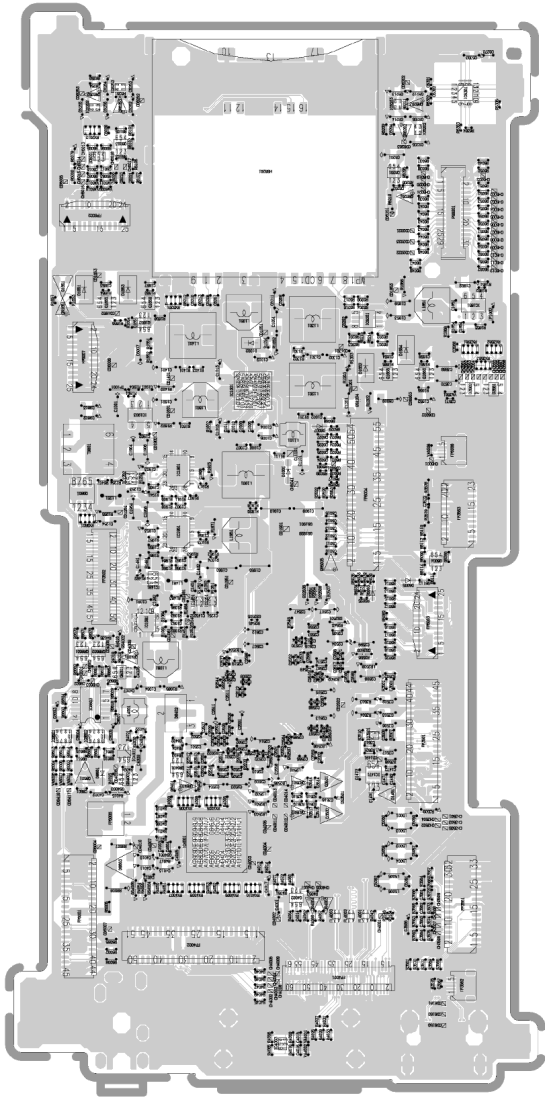


Model No. : DC-GH5/GH5M/GH5L/GH5A LVF (EV) (LVF P.C.B.)

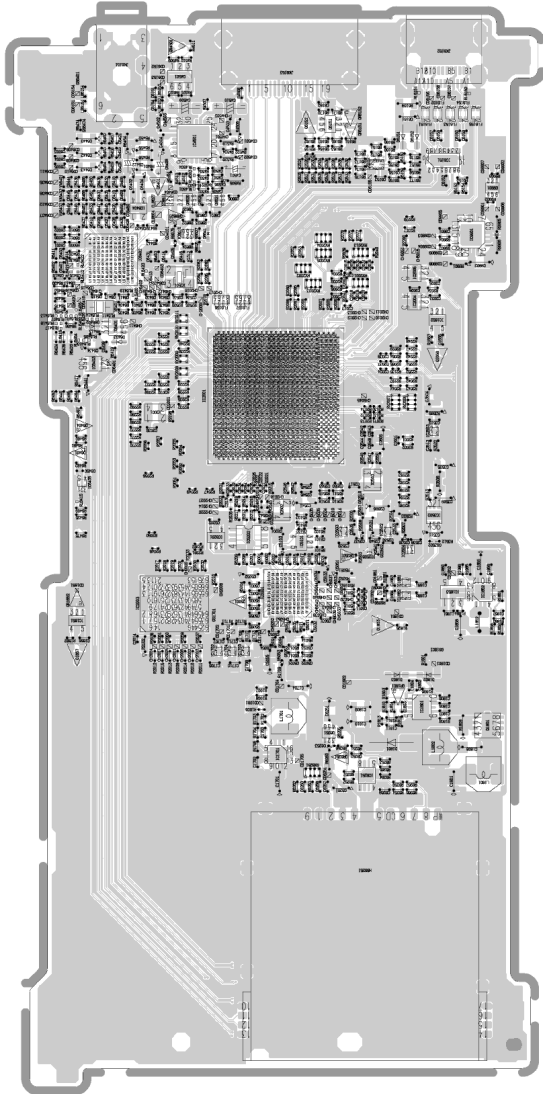


[LVF(EV)(LVFPCB)]

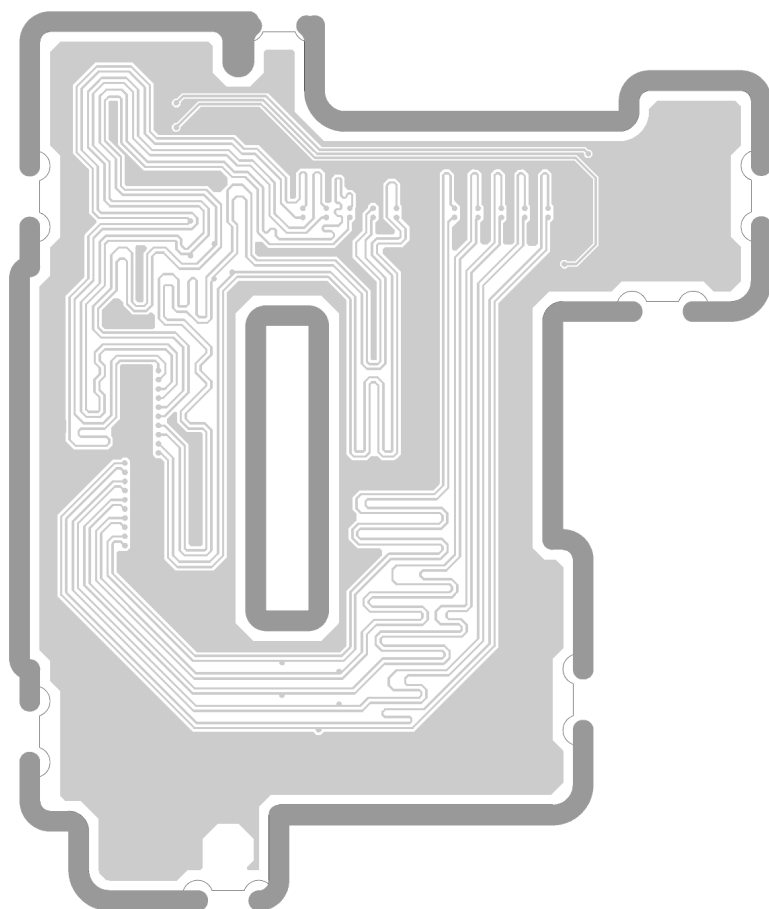
Model No. : DC-GH5/GH5M/GH5L/GH5A Main P.C.B. (Component Side)



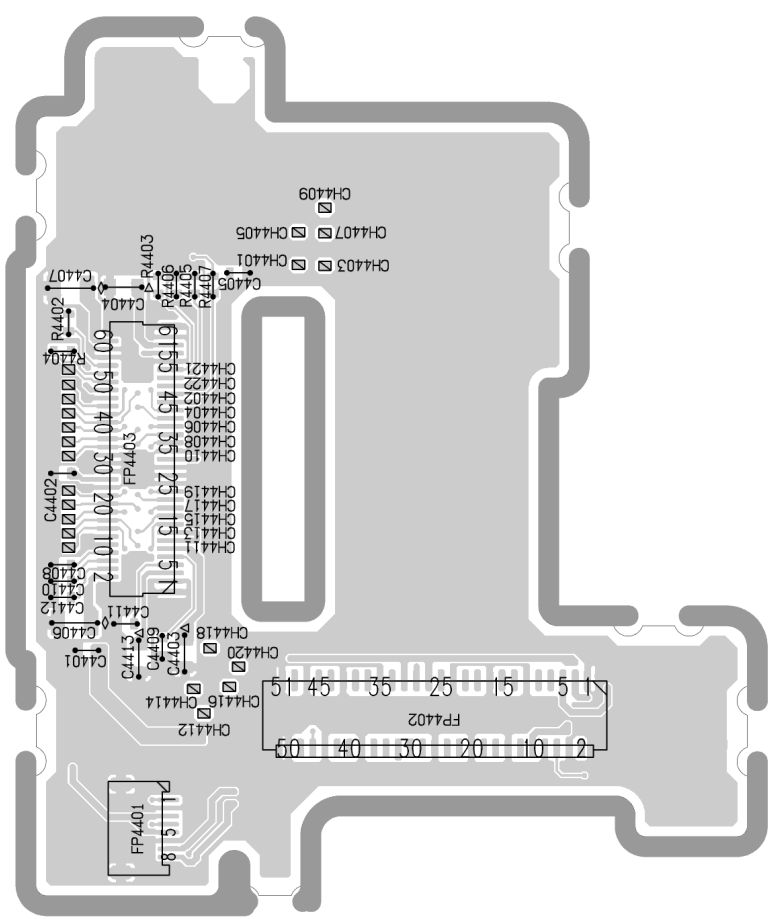
Model No. : DC-GH5/GH5M/GH5L/GH5A Main P.C.B. (Foil Side)



Model No. : DC-GH5/GH5M/GH5L/GH5A LVF P.C.B. (Component Side)



Model No. : DC-GH5/GH5M/GH5L/GH5A LVF P.C.B. (Foil Side)





Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C4401	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C4402	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C4403	F1H1C104A041	C.CAPACITOR CH 16V 0.1U	1	
		C4404	F1H1C104A041	C.CAPACITOR CH 16V 0.1U	1	
		C4405	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	

	C4406	F1J1C475A170	C.CAPACITOR CH 16V 4.7U	1	
	C4407	F1J1C475A170	C.CAPACITOR CH 16V 4.7U	1	
	C4408	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
	C4409	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
	C4410	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
	C4411	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
	C4412	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
	C4413	F1H1C105A167	C.CAPACITOR CH 16V 1U	1	
	D1001	B0JCGD000016	DIODE	1	E.S.D.
	D1002	B0JCMD000066	DIODE	1	E.S.D.
	D1491	B0JDD000017	DIODE	1	E.S.D.
	D1651	B0JCPG000032	DIODE	1	E.S.D.
	D1652	B0JCPG000032	DIODE	1	E.S.D.
	D1653	B0JCPG000032	DIODE	1	E.S.D.
	D1654	B0JCPG000032	DIODE	1	E.S.D.
	D1801	B0JCRC000002	DIODE	1	E.S.D.
	D1802	B0JCGD000016	DIODE	1	E.S.D.
	D1803	B0JCGD000016	DIODE	1	E.S.D.
	D3561	DZ5S068D0R	DIODE	1	E.S.D.
	D3562	DZ5S068D0R	DIODE	1	E.S.D.
	D6003	B0JCCD000003	DIODE	1	E.S.D.
	D6005	B0JCCD000003	DIODE	1	E.S.D.
	D6007	B0JCCD000003	DIODE	1	E.S.D.
	D6151	DZ2J056M0L	DIODE	1	E.S.D.
	D6152	DZ2J056M0L	DIODE	1	E.S.D.
	D6401	B0ADEJ000054	DIODE	1	E.S.D.
	D6403	B0JCCD000003	DIODE	1	E.S.D.
	D6404	B0ADEJ000054	DIODE	1	E.S.D.
	D8402	B2BDR000004	DIODE	1	E.S.D.
	D8601	DZ2J082M0L	DIODE	1	E.S.D.
	D8603	B2ABAP000007	DIODE	1	E.S.D.
	D8641	DB2S31100L	DIODE	1	E.S.D.
	D66402	B0JCCD000003	DIODE	1	E.S.D.
	FL6155	EXC24CH900U	FILTER	1	
	FL6156	EXC28CH900U	FILTER	1	
	FL6157	EXC28CH900U	FILTER	1	
	FP3501	K1MY45BA0667	CONNECTOR 45P	1	
	FP3502	K1MY51BA0647	CONNECTOR 51P	1	
	FP3561	K1MY33BA0556	CONNECTOR 33P	1	
	FP3562	K1MY05BA0557	CONNECTOR 5P	1	
	FP3563	K1MY23BA0667	CONNECTOR 23P	1	
	FP4001	K1MY61BA0647	CONNECTOR 61P	1	
	FP4002	K1MY51BA0556	CONNECTOR 51P	1	
	FP4401	K1MY08BA0557	CONNECTOR 8P	1	
	FP4402	K1MY51BA0556	CONNECTOR 51P	1	
	FP4403	K1MY61AA0288	CONNECTOR 61P	1	
	FP6001	K1MY45BA0667	CONNECTOR 45P	1	
	FP6002	K1MY25BA0585	CONNECTOR 25P	1	
	FP6003	K1MY25BA0585	CONNECTOR 25P	1	
	FP6004	K1MY55BA0556	CONNECTOR 55P	1	
	FP6006	K1KA02BA0014	CONNECTOR 2P	1	
	FP6007	K1MY25BA0585	CONNECTOR 25P	1	
	FP6008	K1MY05BA0557	CONNECTOR 5P	1	
	HS6201	K1NA17E00002	CONNECTOR 17P	1	
	HS6251	K1NA19E00001	CONNECTOR 19P	1	
	IC1001	C1ZBZ0004906	IC	1	E.S.D.
	IC1081	SUBF000016	IC	1	E.S.D. [INBD]

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		IC1252	C0DBAYY01533	IC	1	E.S.D.
		IC1451	C0DBGYY03640	IC	1	E.S.D.
		IC1471	C0DBGYY06345	IC	1	E.S.D.
		IC1481	C0DBAYY01533	IC	1	E.S.D.
		IC1651	C0JBAA000393	IC	1	E.S.D.

		IC1652	C0JBAA000393	IC	1	E.S.D.
		IC1701	SUBF000017	IC	1	E.S.D. [INBD]
		IC1702	C0DBGYY03644	IC	1	E.S.D.
		IC1703	C0DBGYY03614	IC	1	E.S.D.
		IC1704	C0DBGYY03644	IC	1	E.S.D.
		IC1801	C0DBAYY02125	IC	1	E.S.D.
		IC1851	C0DBAYY02374	IC	1	E.S.D.
		IC1852	SUBF000017	IC	1	E.S.D. [INBD]
		IC1853	C0DBGYY02983	IC	1	E.S.D.
		IC1881	C0DBGYY03650	IC	1	E.S.D.
		IC1901	SUBF000025	IC	1	E.S.D. [INBD]
		IC1903	C0DBGYY03014	IC	1	E.S.D.
		IC1951	SUBF000025	IC	1	E.S.D. [INBD]
		IC2001	1SM1V10S15Z	IC	1	E.S.D.
		IC2003	1VK1DCGH5KZ	IC	1	E.S.D.
		IC2004	C0JBAS000182	IC	1	E.S.D.
		IC2005	C0JBAS000182	IC	1	E.S.D.
		IC2502	C0DBGYY05590	IC	1	E.S.D.
		IC2503	C0DBGYY05584	IC	1	E.S.D.
		IC2504	C0ZBZ0002095	IC	1	E.S.D.
		IC2506	C0ZBZ0002264	IC	1	E.S.D.
		IC3501	C0DBGYY03614	IC	1	E.S.D.
		IC3502	C0DBGYY03248	IC	1	E.S.D.
		IC3503	C0DBGYY03644	IC	1	E.S.D.
		IC4001	C1CB00004338	IC	1	E.S.D.
		IC4002	C0DBAYY02115	IC	1	E.S.D.
		IC4501	SUBF000024	IC	1	E.S.D. [INBD]
		IC5001	SUBF000023	IC	1	E.S.D. [INBD]
		IC5101	C0ABGA000035	IC	1	E.S.D.
		IC6151	C0JBAS000419	IC	1	E.S.D.
		IC6152	C1CB00004598	IC	1	E.S.D.
		IC6201	C0JBAS000429	IC	1	E.S.D.
		IC6202	C0DBGYY00779	IC	1	E.S.D.
		IC6203	C0DBGYY00779	IC	1	E.S.D.
		IC6251	C0JBAS000429	IC	1	E.S.D.
		IC6252	C0DBGYY00779	IC	1	E.S.D.
		IC6253	C0DBGYY00779	IC	1	E.S.D.
		IC6301	L2EE00000038	IC	1	E.S.D.
		IC6401	C0JBAF000785	IC	1	E.S.D.
		IC6402	C1AB00004163	IC	1	E.S.D.
		IC6403	C0DBGYY02368	IC	1	E.S.D.
		IC6404	C0DBGYY02176	IC	1	E.S.D.
		IC6405	C0JBAE000517	IC	1	E.S.D.
		IC8601	C0JBAS000371	IC	1	E.S.D.
		IC8602	C0JBAS000371	IC	1	E.S.D.
		IC8603	C0JBAU000202	IC	1	E.S.D.
		IC8610	C0BBAA000116	IC	1	E.S.D.
		IC8611	C0DBZYY00721	IC	1	E.S.D.
		IC9901	SUBF000005	IC	1	E.S.D. [INBD]
		IP1001	ERBRE0R50V	FUSE 32V 0.5A	1	
		IP1002	ERBRE1R00V	FUSE	1	
		JK6151	K2HC106E0009	JK, EXT MIC	1	
		JK6152	K1FY124E0005	CONNECTOR	1	
		JK6153	K1FY119E0100	CONNECTOR	1	
		L1051	G1C4R7MA0577	CHIP INDUCTOR 4.7UH	1	
		L1081	G1C3R3MA0577	CHIP INDUCTOR	1	
		L1101	G1C220MA0496	CHIP INDUCTOR 22UH	1	

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		L1201	G1C100MA0939	CHIP INDUCTOR	1	
		L1251	G1C3R3ZA0322	CHIP INDUCTOR	1	
		L1301	G1C4R7MA0939	CHIP INDUCTOR	1	
		L1401	G1C100MA0939	CHIP INDUCTOR	1	
		L1481	G1C3R3ZA0322	CHIP INDUCTOR	1	

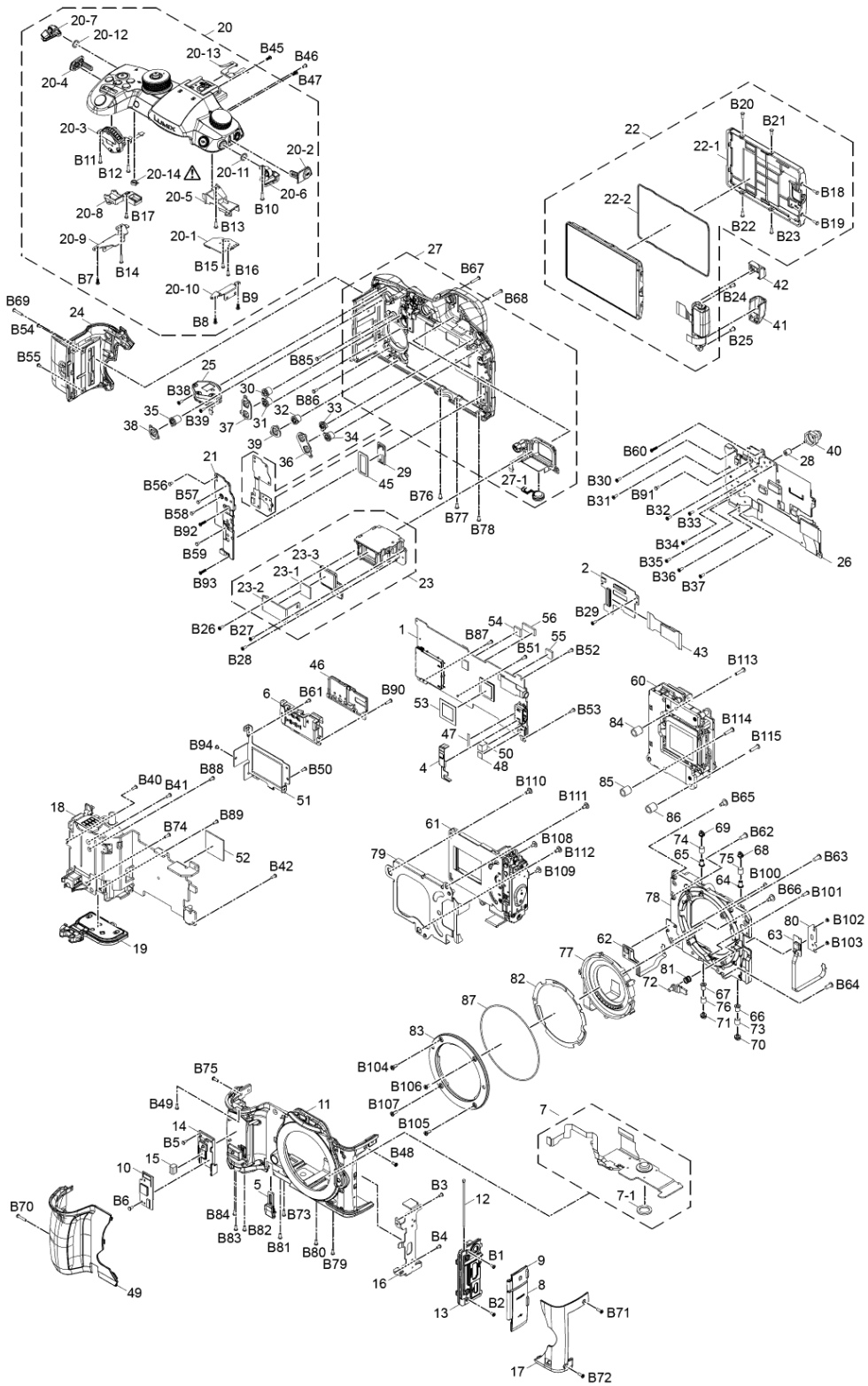
	L1601	G1C4R7MA0577	CHIP INDUCTOR 4.7UH	1	
	L1701	G1C4R7MA0577	CHIP INDUCTOR 4.7UH	1	
	L1801	G1C1R5MA0577	CHIP INDUCTOR 1.5UH	1	
	L1802	G1C1R5MA0577	CHIP INDUCTOR 1.5UH	1	
	L1851	G1C4R7MA0577	CHIP INDUCTOR 4.7UH	1	
	L1852	G1C4R7ZA0322	CHIP INDUCTOR	1	
	L1901	G1C1R0MA0940	CHIP INDUCTOR	1	
	L1951	G1C1R5MA0577	CHIP INDUCTOR 1.5UH	1	
	L2501	G1C4R7MA0495	CHIP INDUCTOR 4.7UH	1	
	L2502	G1C4R7MA0495	CHIP INDUCTOR 4.7UH	1	
	L4001	G1C100MA0392	CHIP INDUCTOR 10UH	1	
	L5001	G1C150MA0320	CHIP INDUCTOR	1	
	L5002	G1C150MA0320	CHIP INDUCTOR	1	
	L5003	G1C150MA0320	CHIP INDUCTOR	1	
	L5004	G1C150MA0320	CHIP INDUCTOR	1	
	L5005	G1C150MA0320	CHIP INDUCTOR	1	
	L5006	G1C150MA0320	CHIP INDUCTOR	1	
	LB2501	J0JFC0000006	FILTER	1	
	LB2502	J0JFC0000006	FILTER	1	
	LB2503	J0JFC0000006	FILTER	1	
	LB2504	J0JFC0000006	FILTER	1	
	LB2505	J0JFC0000006	FILTER	1	
	LB2506	J0JFC0000006	FILTER	1	
	LB2507	J0JFC0000006	FILTER	1	
	LB2508	J0JFC0000006	FILTER	1	
	LB6001	J0JBC0000118	FILTER	1	
	LB6151	J0JBC0000107	FILTER	1	
	LB6152	J0JBC0000107	FILTER	1	
	LB6153	J0JBC0000107	FILTER	1	
	LB6154	J0JBC0000107	FILTER	1	
	Q1651	FK3503010L	TRANSISTOR	1	E.S.D.
	Q1652	B1CHPB000008	TRANSISTOR	1	E.S.D.
	Q1655	B1CHPB000008	TRANSISTOR	1	E.S.D.
	Q1656	B1CHPB000008	TRANSISTOR	1	E.S.D.
	Q1657	FK3503010L	TRANSISTOR	1	E.S.D.
	Q1658	FK3503010L	TRANSISTOR	1	E.S.D.
	Q1659	B1CHPB000008	TRANSISTOR	1	E.S.D.
	Q1660	B1CHPB000008	TRANSISTOR	1	E.S.D.
	Q1801	B1CFRD000100	TRANSISTOR	1	E.S.D.
	Q1803	B1CFJD000007	TRANSISTOR	1	E.S.D.
	Q3501	B1CFQC000018	TRANSISTOR	1	E.S.D.
	Q3502	B1CFQC000018	TRANSISTOR	1	E.S.D.
	Q4001	B1CHMB000007	TRANSISTOR	1	E.S.D.
	Q4002	B1HFCFA00050	TRANSISTOR	1	E.S.D.
	Q4501	B1GFGCAA0001	TRANSISTOR	1	E.S.D.
	Q5001	B1ABCF000302	TRANSISTOR	1	E.S.D.
	Q6003	B1HFCFA00050	TRANSISTOR	1	E.S.D.
	Q6004	B1HBCFA00053	TRANSISTOR	1	E.S.D.
	Q6151	B1CFGD000003	TRANSISTOR	1	E.S.D.
	Q6152	B1CFJD000007	TRANSISTOR	1	E.S.D.
	Q6201	B1CHMB000007	TRANSISTOR	1	E.S.D.
	Q6251	B1CHMB000007	TRANSISTOR	1	E.S.D.
	Q6401	B1ABDF000017	TRANSISTOR	1	E.S.D.
	Q8601	FK3503010L	TRANSISTOR	1	E.S.D.
	Q8620	B1CHPB000008	TRANSISTOR	1	E.S.D.
	Q8621	B1CHMB000007	TRANSISTOR	1	E.S.D.
	Q9801	B1MBCGA00006	TRANSISTOR	1	E.S.D.

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		Q9901	B1HBCFA00053	TRANSISTOR	1	E.S.D.
		QR1651	B1GBCFYY0219	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1652	B1GBCFYY0219	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1801	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
		QR2501	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.

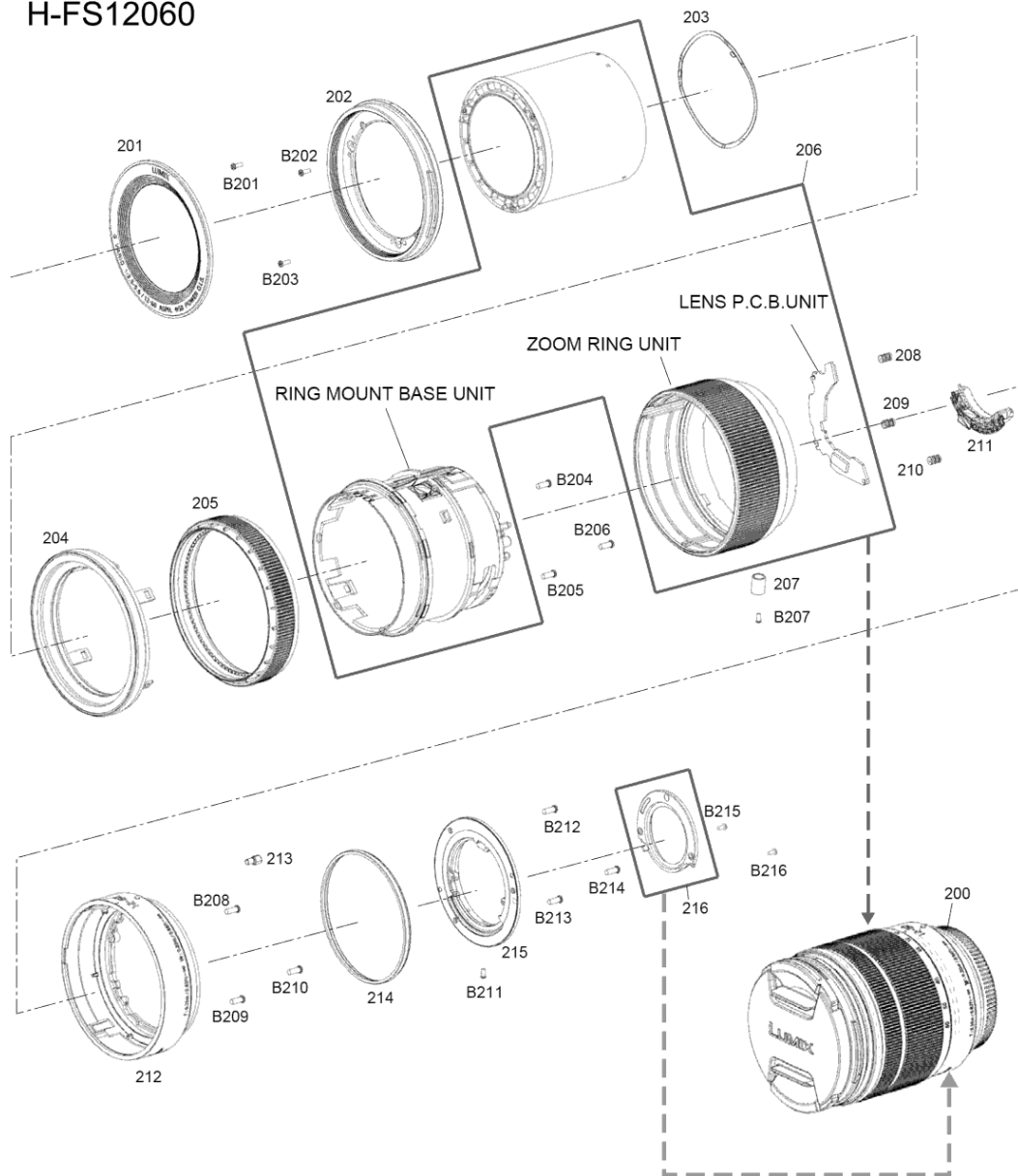
	QR3501	B1GBCFNN0015	TRANSISTOR-RESISTOR	1	E.S.D.
	QR3502	B1GBCFNN0015	TRANSISTOR-RESISTOR	1	E.S.D.
	QR4001	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR4002	B1GFCFL0009	TRANSISTOR-RESISTOR	1	E.S.D.
	QR4003	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR4004	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR4501	B1GDCFYY0087	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6005	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6151	B1GDCFYY0148	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6152	B1GBCFYY0224	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6201	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6202	B1GDCFYY0150	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6203	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6251	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6252	B1GDCFYY0150	TRANSISTOR-RESISTOR	1	E.S.D.
	QR6253	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
	QR8401	B1GKCFYY0038	TRANSISTOR-RESISTOR	1	E.S.D.
	QR8402	B1GBCFGA0030	TRANSISTOR-RESISTOR	1	E.S.D.
	QR8601	B1GFCFJJ0016	TRANSISTOR-RESISTOR	1	E.S.D.
	QR8602	B1GFCFJJ0016	TRANSISTOR-RESISTOR	1	E.S.D.
	QR8623	B1GBCFYY0221	TRANSISTOR-RESISTOR	1	E.S.D.
	R4406	D0GA104JA023	M.RESISTOR CH 1/10W 100K	1	
	RX2001	D1H81034A042	RESISTOR NETWORKS	1	
	RX2006	D1H84734A042	RESISTOR NETWORKS	1	
	RX2010	D1H4R0020006	RESISTOR NETWORKS	1	
	RX2011	D1H4R0020006	RESISTOR NETWORKS	1	
	RX2012	D1H81034A042	RESISTOR NETWORKS	1	
	RX2013	D1H81034A042	RESISTOR NETWORKS	1	
	RX3561	D1H81014A042	RESISTOR NETWORKS	1	
	RX3562	D1H81014A042	RESISTOR NETWORKS	1	
	RX3563	D1H81044A042	RESISTOR NETWORKS	1	
	RX6201	D1H81034A042	RESISTOR NETWORKS	1	
	RX6251	D1H81034A042	RESISTOR NETWORKS	1	
	RX9801	D1H81024A042	RESISTOR NETWORKS	1	
	T9801	G5DYZ0000028	TRANSFORMER	1	
	TH2001	D4CC11030013	THERMISTORS	1	
	VA6001	D4EDY1310001	VARISTOR	1	
	VA6006	D4EDY1310001	VARISTOR	1	
	VA6007	D4EDY1310001	VARISTOR	1	
	X2001	H1A7205B0007	CRYSTAL OSCILLATOR	1	
	X2501	H0J480500063	CRYSTAL OSCILLATOR	1	
	X2502	H1A4805B0059	CRYSTAL OSCILLATOR	1	
	X2503	H1A4805B0059	CRYSTAL OSCILLATOR	1	
	X6401	H0J327200230	CRYSTAL OSCILLATOR	1	

Model No. : DC-GH5/GH5M/GH5L/GH5A Frame and Casing Section



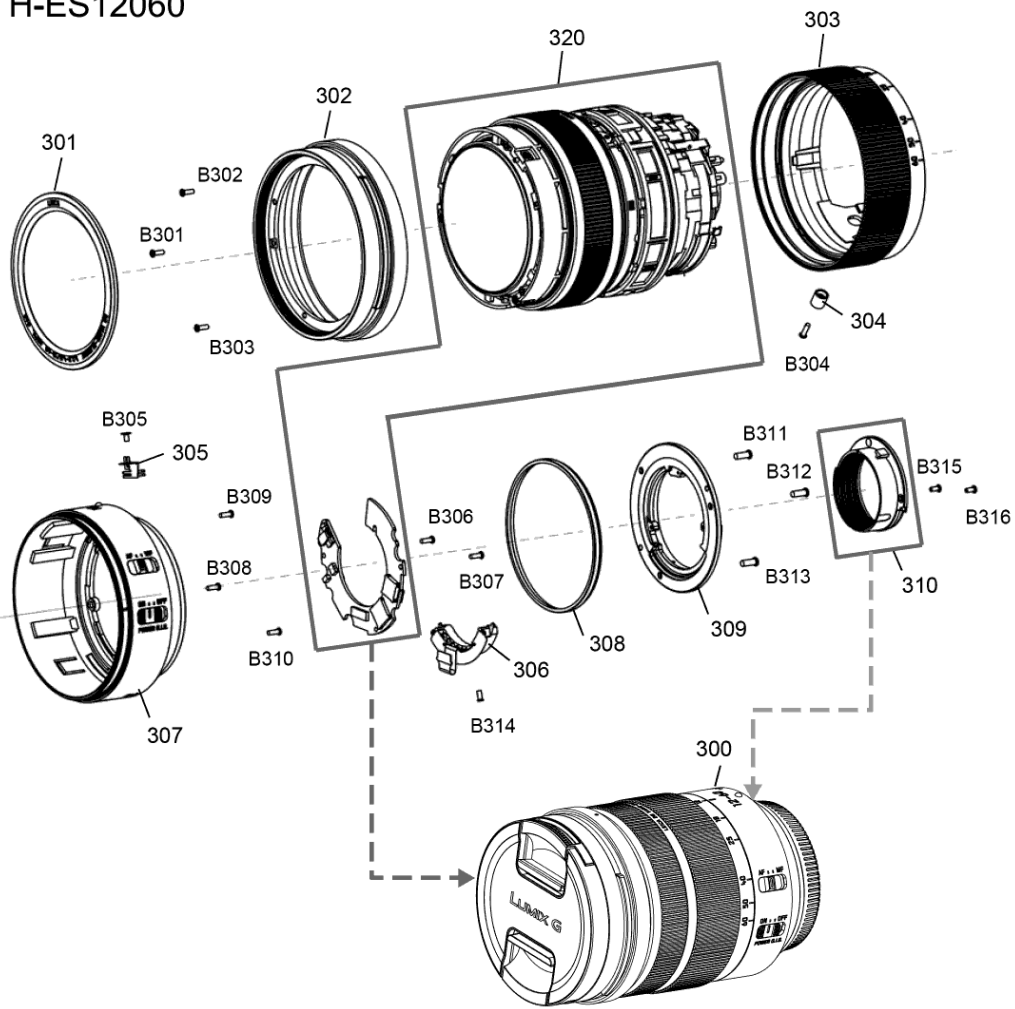
Model No. : DC-GH5/GH5M/GH5L/GH5A Camera Lens Section (1) (H-FS12060)

H-FS12060



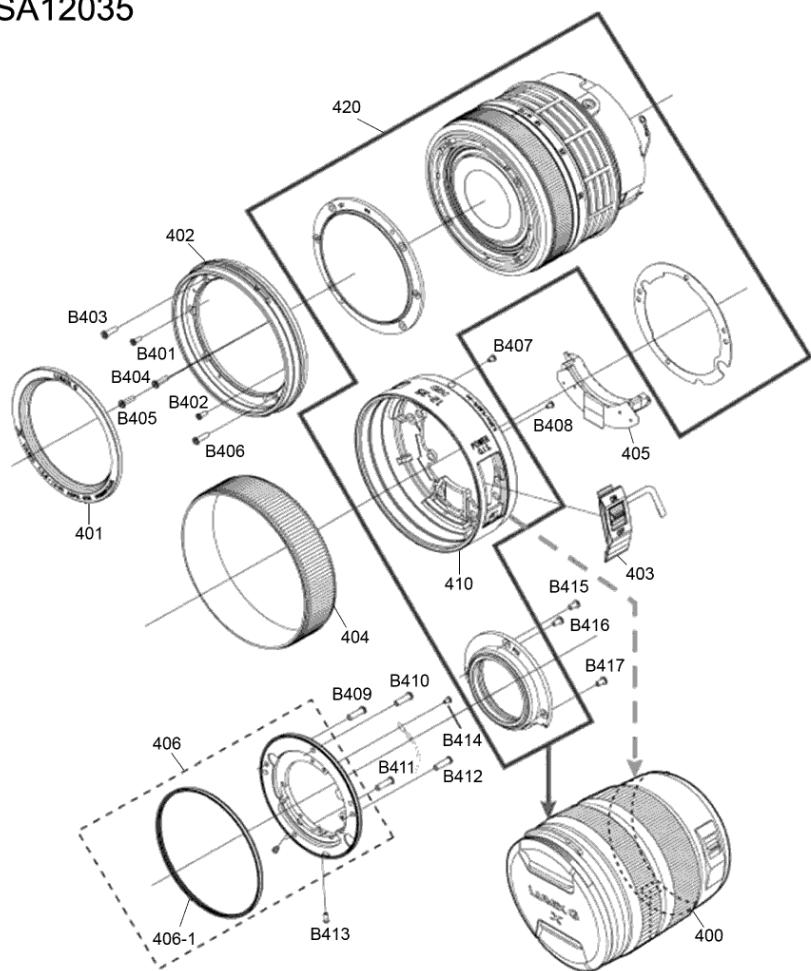
Model No. : DC-GH5/GH5M/GH5L/GH5A Camera Lens Section (2) (H-ES12060)

H-ES12060

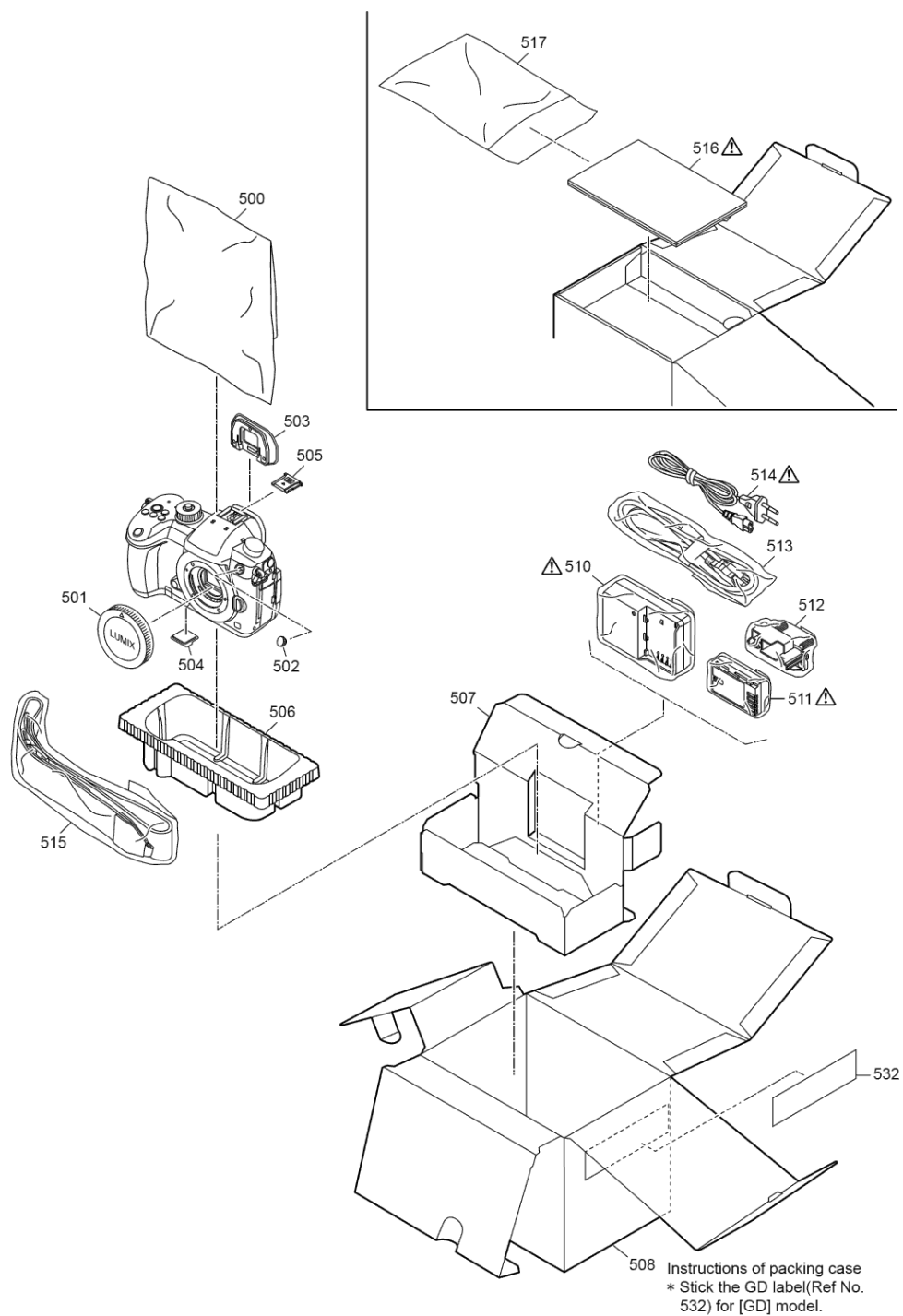


Model No. : DC-GH5/GH5M/GH5L/GH5A Camera Lens Section (3) (H-HSA12035)

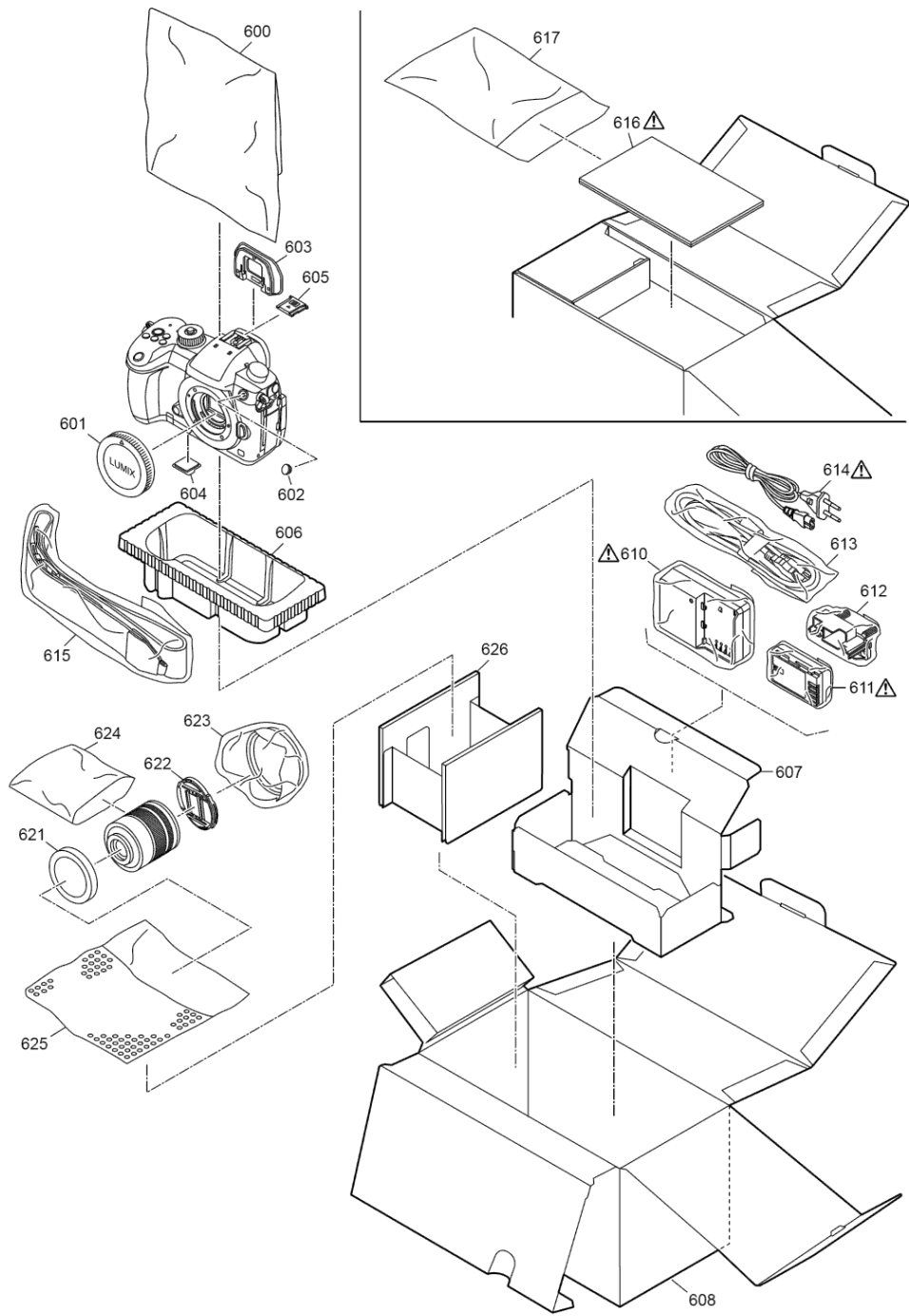
H-HSA12035



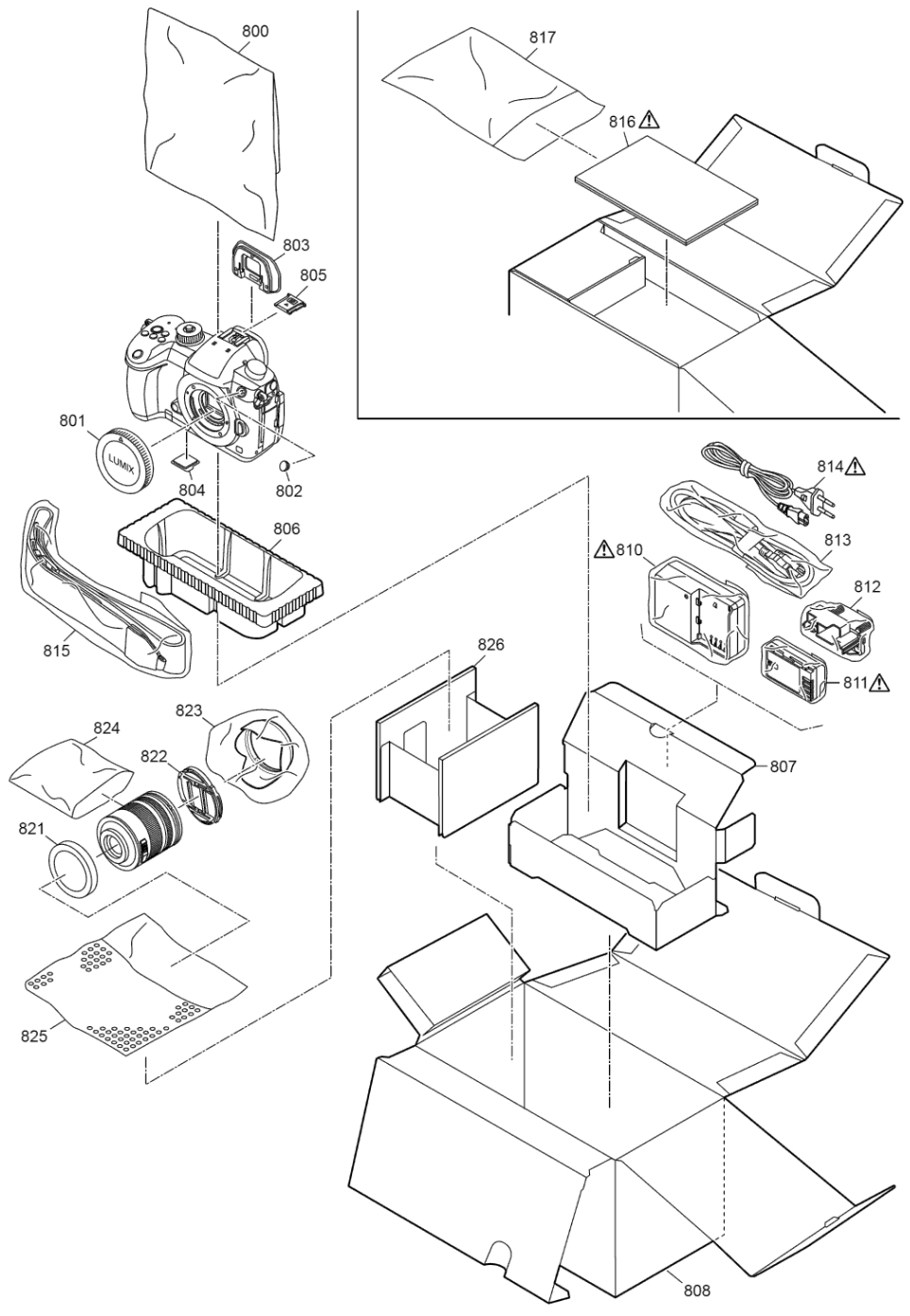
Model No. : DC-GH5/GH5M/GH5L/GH5A Packing Parts and Accessories Section (1) (GH5)



Model No. : DC-GH5/GH5M/GH5L/GH5A Packing Parts and Accessories Section (2) (GH5M)



Model No. : DC-GH5/GH5M/GH5L/GH5A Packing Parts and Accessories Section (3) (GH5L)



Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		1	SEP1002AA	MAIN P.C.B.	1	E.S.D.
		2	SEP1033AA	LVF P.C.B.	1	(RTL)E.S.D.
		4	1GE6A561Z	JACK SHADING PIECE	1	
		5	1KK1A561Z	DC COVER	1	
		6	1SE1A561Z	BATTERY P.C.B. UNIT	1	

		7	1YE1A561Z	TRIPOD	1	
		7-1	DVHX1019Z	TRIPOD PORON	1	
		8	1KK2A561Z	JACK COVER A	1	
		9	1KK3A561Z	JACK COVER B	1	
		10	SEP1006AA	WI-FI BT P.C.B.	1	
		11	5YMLA561Z	FRONT CASE UNIT	1	
		12	DVDF1016Z	JACK COVER SHAFT	1	
		13	7YE1A561Z	JACK HOLDER UNIT	1	
		14	DVGE1045Z	WI-FI HOLDER	1	
		15	DVMC1020Z	WI-FI GASKET	1	
		16	DVME1020Z	PCB PLATE R	1	
		17	2YE1A561Z	FRONT GRIP R UNIT	1	
		18	2YMLA561Z	BATTERY CASE UNIT	1	
		19	3YE1A561Z	BATTERY DOOR UNIT	1	
		20	3YMLA561Z	TOP UNIT	1	
		20-1	SEP1004AA	EXT. MIC P.C.B.	1	E.S.D.
		20-2	1KK5A561Z	MIC JACK COVER	1	
		20-3	5YE3A561Z	FRONT DIAL UNIT	1	
		20-4	1KK4A561Z	REMOTE COVER	1	
		20-5	DVGE1050Z	MIC JACK HOLDER	1	
		20-6	VYQ8076	STRAP UNIT	1	
		20-7	VYQ8076	STRAP UNIT	1	
		20-8	DVGE1051Z	REMOTE JACK HOLDER	1	
		20-9	DVME1026Z	TOP PLATE L	1	
		20-10	DVME1027Z	TOP PLATE R	1	
		20-11	VGQ1G18	STRAP HOLDER CUSHION	1	
		20-12	VGQ1G18	STRAP HOLDER CUSHION	1	
		20-13	VMC2111	SHOE SPRING	1	
	▲	20-14	ML-421S/DB	BUTTON BATTERY	1	
		21	7YE2A561Z	HINGE PAKING COVER UNIT	1	
		22	4YM2A561Z	LCD UNIT	1	
		22-1	DVKM1014Z	LCD CASE BOTTOM	1	
		22-2	DVHG1007Z	LCD PACKING	1	
		23	4YM3A561Z	LVF UNIT	1	
		23-1	VMT2329	HEAT RADIATION PAD	1	
		23-2	DVMY1002Z	LVF HEAT SINK	1	
		23-3	L5ZZ00000247	LVF MODULE	1	
		24	6YE1A561Z	SD DOOR UNIT	1	
		25	6YE2A561Z	REAR DIAL UNIT	1	
		26	6YE3A561Z	REAR PLATE UNIT	1	
		27	6YMLA561Z	REAR CASE UNIT	1	
		27-1	L0AA01A00185	SPEAKER	1	
		28	SMQ0496	JOY STICK LEVER	1	
		29	VGQ1F77-A	HINGE FIX COVER	1	
		30	DVBC1006Z	FN2 BUTTON	1	
		31	DVBC1007Z	FN3 BUTTON	1	
		32	DVBC1008Z	FN4 BUTTON	1	
		33	DVBC1009Z	FN5 BUTTON	1	
		34	DVBC1010Z	PREVIEW BUTTON	1	
		35	DVBC1011Z	DISPLAY BUTTON	1	
		36	DVHG1004Z	REAR BUTTON PACKING A	1	
		37	DVHG1004Z	REAR BUTTON PACKING A	1	
		38	DVHG1005Z	REAR BUTTON PACKING B	1	
		39	DVHG1005Z	REAR BUTTON PACKING B	1	
		40	DVHG1011Z	JOY STICK RUBBER	1	
		41	DVKM1011Z	HINGE ARM COVER BOTTOM	1	
		42	DVKM1012Z	HINGE ARM COVER TOP	1	

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		43	DVLD1038Z	LVF CN FPC	1	
		45	VGQ1F95	HINGE CUSHION	1	
		46	DVGE1046Z	BATTERY CONTACT COVER	1	
		47	DVHX1096Z	JACK PIECE TAPE A	1	
		48	DVHX1097Z	JACK PIECE TAPE B	1	

		49	DVKV1003Z	FRONT GRIP L	1	
		50	DVMC1018Z	GASKET MAIN	1	
		51	DVME1021Z	BATTERY REAR PLATE	1	
		52	DVMY1005Z	HEAT RADI PAD MAIN 1	1	
		53	DVMY1006Z	HEAT RADI PAD MAIN 2	1	
		54	DVMY1007Z	HEAT RADI PAD REAR 1	1	
		55	DVMY1007Z	HEAT RADI PAD REAR 1	1	
		56	DVMY1008Z	HEAT RADI PAD REAR 2	1	
		60	2DX1MC561Z	IMAGE SENSOR UNIT	1	
		61	3DX2MC561Z-S	SHUTTER UNIT	1	
		62	SEP1019AA	FRONT OPERATION FPC	1	
		63	SEP1021AA	LPSW FPC	1	
		64	DVDE1003Z	ABSORBER BASE	1	
		65	DVDE1003Z	ABSORBER BASE	1	
		66	DVDE1003Z	ABSORBER BASE	1	
		67	DVDE1003Z	ABSORBER BASE	1	
		68	DVDF1009Z	ABSORBER LOCK PIN	1	
		69	DVDF1009Z	ABSORBER LOCK PIN	1	
		70	DVDF1009Z	ABSORBER LOCK PIN	1	
		71	DVDF1009Z	ABSORBER LOCK PIN	1	
		72	DVME1011Z	LENS LOCK PIN	1	
		73	DVUR1009Z	ABSORBER SPRING-A	1	
		74	DVUR1009Z	ABSORBER SPRING-A	1	
		75	DVUR1035Z	ABSORBER SPRING-B	1	
		76	DVUR1035Z	ABSORBER SPRING-B	1	
		77	DVVE1003Z	LENS CONNECTOR	1	
		78	DVZM1001Z	MOUNT BASE	1	
		79	DVZM1004Z	SHUTTER HOLDER	1	
		80	SMA0345	LENS RELEASE FPC PLATE	1	
		81	VMB4497	LENS LOCK PIN SPRING	1	
		82	VMC2063	MOUNT SPRING	1	
		83	VMD6702	B MOUNT	1	
		84	SMB0206	ADJUST SPRING	1	
		85	SMB0206	ADJUST SPRING	1	
		86	SMB0206	ADJUST SPRING	1	
		87	VMG2060	B MOUNT RING	1	
		B1	SHD0061	SCREW	1	
		B2	SHD0061	SCREW	1	
		B3	VHD1919	SCREW	1	
		B4	VHD1919	SCREW	1	
		B5	VHD1919	SCREW	1	
		B6	VHD1919	SCREW	1	
		B7	VHD2200-B	SCREW	1	
		B8	VHD2200-B	SCREW	1	
		B9	VHD2200-B	SCREW	1	
		B10	VHD2251-B	SCREW	1	
		B11	VHD2251-B	SCREW	1	
		B12	VHD2251-B	SCREW	1	
		B13	VHD2438	SCREW	1	
		B14	VHD2532	SCREW	1	
		B15	XQN14+BJ4FJK	SCREW	1	
		B16	XQN14+BJ4FJK	SCREW	1	
		B17	XQN16+BJ4FN	SCREW	1	
		B18	VHD2337	SCREW	1	
		B19	VHD2337	SCREW	1	
		B20	VHD2337	SCREW	1	
		B21	VHD2337	SCREW	1	

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		B22	VHD2337	SCREW	1	
		B23	VHD2337	SCREW	1	
		B24	VHD1658	SCREW	1	
		B25	VHD1658	SCREW	1	
		B26	VHD2200-B	SCREW	1	

		B27	VHD2200-B	SCREW	1	
		B28	VHD2200-B	SCREW	1	
		B29	VHD2200-B	SCREW	1	
		B30	VHD2200-B	SCREW	1	
		B31	VHD2200-B	SCREW	1	
		B32	VHD2200-B	SCREW	1	
		B33	VHD2200-B	SCREW	1	
		B34	VHD2200-B	SCREW	1	
		B35	VHD2200-B	SCREW	1	
		B36	VHD2200-B	SCREW	1	
		B37	VHD2200-B	SCREW	1	
		B38	VHD2200-B	SCREW	1	
		B39	VHD2200-B	SCREW	1	
		B40	VHD2200-B	SCREW	1	
		B41	VHD2200-B	SCREW	1	
		B42	VHD2200-B	SCREW	1	
		B45	VHD2200-B	SCREW	1	
		B46	VHD2200-B	SCREW	1	
		B47	VHD2200-B	SCREW	1	
		B48	VHD2200-B	SCREW	1	
		B49	VHD2200-B	SCREW	1	
		B50	VHD2200-B	SCREW	1	
		B51	VHD2200-B	SCREW	1	
		B52	VHD2200-B	SCREW	1	
		B53	VHD2200-B	SCREW	1	
		B54	VHD2333	SCREW	1	
		B55	VHD2333	SCREW	1	
		B56	VHD2333	SCREW	1	
		B57	VHD2333	SCREW	1	
		B58	VHD2333	SCREW	1	
		B59	VHD2333	SCREW	1	
		B60	XQN16+B3FJ	SCREW	1	
		B61	XQN16+B3FJ	SCREW	1	
		B62	VHD1658	SCREW	1	
		B63	VHD1658	SCREW	1	
		B64	VHD1658	SCREW	1	
		B65	SHD0118	SCREW	1	
		B66	SHD0118	SCREW	1	
		B67	DVHD1003Z	SCREW	1	
		B68	DVHD1003Z	SCREW	1	
		B69	DVHD1003Z	SCREW	1	
		B70	DVHD1003Z	SCREW	1	
		B71	VHD2438	SCREW	1	
		B72	VHD2438	SCREW	1	
		B73	VHD2438	SCREW	1	
		B74	VHD2438	SCREW	1	
		B75	VHD2438	SCREW	1	
		B76	VHD2179	SCREW	1	
		B77	VHD2179	SCREW	1	
		B78	VHD2179	SCREW	1	
		B79	VHD2179	SCREW	1	
		B80	VHD2179	SCREW	1	
		B81	VHD2179	SCREW	1	
		B82	VHD2179	SCREW	1	
		B83	VHD2179	SCREW	1	
		B84	VHD2179	SCREW	1	
		B85	XQN16+BJ4FN	SCREW	1	

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		B86	XQN16+BJ4FN	SCREW	1	
		B87	XQN16+BJ4FN	SCREW	1	
		B88	XQN16+BJ4FN	SCREW	1	
		B89	XQN16+BJ4FN	SCREW	1	
		B90	XQN16+BJ6FN	SCREW	1	

		B91	XQN16+BJ6FN	SCREW	1	
		B92	XQN16+BJ6FN	SCREW	1	
		B93	XQN16+BJ6FN	SCREW	1	
		B94	XQN16+B2FN	SCREW	1	
		B100	VHD2384	SCREW	1	
		B101	XQN16+BJ4FN	SCREW	1	
		B102	VHD2508	SCREW	1	
		B103	VHD2508	SCREW	1	
		B104	VHD2124	SCREW	1	
		B105	VHD2124	SCREW	1	
		B106	VHD2190	SCREW	1	
		B107	VHD2190	SCREW	1	
		B108	DVHD1020Z	SCREW	1	
		B109	DVHD1020Z	SCREW	1	
		B110	DVHD1021Z	SCREW	1	
		B111	DVHD1021Z	SCREW	1	
		B112	DVHD1021Z	SCREW	1	
		B113	SHD0108	SCREW	1	
		B114	SHD0108	SCREW	1	
		B115	SHD0108	SCREW	1	
		200	SXW0282	LENS UNIT	1	GH5M
		201	SDW0373K	DECORATION RING	1	GH5M
		202	SDW0372K	FILTER RING	1	GH5M
		203	VMC2220	WAVE WASHER	1	GH5M
		204	SXQ0655	FRONT FRAME UNIT	1	GH5M
		205	SXQ0653	FOCUS RING UNIT	1	GH5M
		206	-----	LENS MAIN UNIT	1	GH5M (NOT SUPPLIED)
		207	VMS8326	ZOOM PIN	1	GH5M
		208	VMG1855	FLOATING RUBBER	1	GH5M
		209	VMG1855	FLOATING RUBBER	1	GH5M
		210	VMG1855	FLOATING RUBBER	1	GH5M
		211	SEJ0005	MOUNT CONTACT UNIT	1	GH5M
		212	SXQ0648	REAR FRAME UNIT	1	GH5M
		213	VMS8278	ADJUST PIN	1	GH5M
		214	SMG0095	SEALING RUBBER	1	GH5M
		215	SXQ0649	L MOUNT UNIT	1	GH5M
		216	-----	SHADING FRAME	1	GH5M (NOT SUPPLIED)
		B201	VHD2296	SCREW	1	GH5M
		B202	VHD2296	SCREW	1	GH5M
		B203	VHD2296	SCREW	1	GH5M
		B204	XQN16+BJ4FNK	SCREW	1	GH5M
		B205	XQN16+BJ4FNK	SCREW	1	GH5M
		B206	XQN16+BJ4FNK	SCREW	1	GH5M
		B207	VHD2296	SCREW	1	GH5M
		B208	VHD2296	SCREW	1	GH5M
		B209	VHD2296	SCREW	1	GH5M
		B210	VHD2296	SCREW	1	GH5M
		B211	VHD2298	SCREW	1	GH5M
		B212	VHD2299	SCREW	1	GH5M
		B213	VHD2299	SCREW	1	GH5M
		B214	VHD2299	SCREW	1	GH5M
		B215	VHD2246	SCREW	1	GH5M
		B216	VHD2246	SCREW	1	GH5M
		300	LOU3Z260Z	LENS UNIT	1	GH5L
		301	1HR1Z260CZ	DECORING UNIT	1	GH5L
		302	DVGX1028Z	FILTER RING	1	GH5L
		303	ADE3Z260Z	ZOOM RING UNIT	1	GH5L

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		304	DVMH1028Z	ZOOM DRIVE PIN	1	GH5L
		305	DVUS1002Z	REAR FRAME EARTH SPRING	1	GH5L
		306	6SE2Z260Z	L MOUNT CONTACT UNIT	1	GH5L
		307	RDE4Z260Z	REAR FRAME UNIT	1	GH5L
		308	SMG0095	SEALING RUBBER	1	GH5L

		309	SXQ0649	L MOUNT UNIT	1	GH5L
		310	-----	SHADING FRAME	1	GH5L (NOT SUPPLIED)
		320	-----	LENS MAIN UNIT	1	GH5L (NOT SUPPLIED)
		B301	VHD2296	SCREW	1	GH5L
		B302	VHD2296	SCREW	1	GH5L
		B303	VHD2296	SCREW	1	GH5L
		B304	SHD0021	SCREW	1	GH5L
		B305	VHD2011	SCREW	1	GH5L
		B306	VHD2073	SCREW	1	GH5L
		B307	VHD2073	SCREW	1	GH5L
		B308	VHD2296	SCREW	1	GH5L
		B309	VHD2296	SCREW	1	GH5L
		B310	VHD2296	SCREW	1	GH5L
		B311	VHD2299	SCREW	1	GH5L
		B312	VHD2299	SCREW	1	GH5L
		B313	VHD2299	SCREW	1	GH5L
		B314	VHD2298	SCREW	1	GH5L
		B315	VHD2246	SCREW	1	GH5L
		B316	VHD2246	SCREW	1	GH5L
		400	DVXE1022Z	LENS UNIT	1	GH5A [INBD]
		401	PB27HJ0	DECORATION RING	1	GH5A [INBD]
		402	PB2F030	HOOD ADAPTER	1	GH5A [INBD]
		403	PB2F111	OIS SW UNIT	1	GH5A [INBD]
		404	P12F320	ZOOM RUBBER	1	GH5A [INBD]
		405	P1279H0	MOUNT CONTACT UNIT	1	GH5A [INBD]
		406	P128H50	L MOUNT UNIT	1	GH5A [INBD]
		406-1	9630230	LENS MOUNT RUBBER	1	GH5A [INBD]
		410	-----	REAR FRAME UNIT	1	GH5A (NOT SUPPLIED)
		420	-----	LENS MAIN UNIT	1	GH5A (NOT SUPPLIED)
		B401	0254035	SCREW	1	GH5A [INBD]
		B402	0254035	SCREW	1	GH5A [INBD]
		B403	0257060	SCREW	1	GH5A [INBD]
		B404	0257060	SCREW	1	GH5A [INBD]
		B405	0257060	SCREW	1	GH5A [INBD]
		B406	0257060	SCREW	1	GH5A [INBD]
		B407	0242050	SCREW	1	GH5A [INBD]
		B408	0242050	SCREW	1	GH5A [INBD]
		B409	0242070	SCREW	1	GH5A [INBD]
		B410	0242070	SCREW	1	GH5A [INBD]
		B411	0242070	SCREW	1	GH5A [INBD]
		B412	0242070	SCREW	1	GH5A [INBD]
		B413	0B44035	SCREW	1	GH5A [INBD]
		B414	0554020	SCREW	1	GH5A [INBD]
		B415	0HF4025	SCREW	1	GH5A [INBD]
		B416	0HF4025	SCREW	1	GH5A [INBD]
		B417	0HF4025	SCREW	1	GH5A [INBD]
		500	VPF1565	CAMERA BAG	1	
		501	VKF4971	BODY CAP	1	
		502	VKF5108-A	FLASH SYNCHRO SOCKET CAP	1	
		503	4YE1A561Z	EYECUP	1	
		504	SKF0145K	BG CONTACT COVER	1	
		505	VYF3522	HOT SHOE COVER	1	
		506	DVPN1085Z	CUSHION	1	
		507	DVPN1086Z	PAD B	1	
		508	DVPK1073Z	PACKING CASE	1	GH5P, GH5PP, GH5EG, GH5EC, GH5EF, GH5EB, GH5EE, GH5GA, GH5GC, GH5GH, GH5GT, GH5GN, GH5GD

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		508	DVPK1074Z	PACKING CASE	1	GH5GK
	⚠	510	VSK0793	BATTERY CHARGER	1	GH5P, GH5PP
	⚠	510	VSK0794	BATTERY CHARGER	1	GH5EG, GH5EC, GH5EF, GH5EB, GH5EE
	⚠	510	VSK0795	BATTERY CHARGER	1	GH5GA, GH5GC, GH5GH, GH5GK, GH5GN, GH5GD
	⚠	510	VSK0796	BATTERY CHARGER	1	GH5GT

	⚠	511	-----	BATTERY PACK	1	
		512	1PP1A561Z	CABLE HOLDER	1	
		513	K1HY24YY0021	USB CABLE W/PLUG	1	
	⚠	514	K2CA2CA00025	AC CORD W/PLUG	1	GH5P, GH5PP
	⚠	514	K2CQ2YY00082	AC CORD W/PLUG	1	GH5EG, GH5EC, GH5EF, GH5EE, GH5GA, GH5GC
	⚠	514	K2CT3YY00034	AC CORD W/PLUG	1	GH5EB, GH5GA, GH5GC, GH5GH
	⚠	514	K2CP2YY00083	AC CORD W/PLUG	1	GH5GA
	⚠	514	K2CA2YY00129	AC CORD W/PLUG	1	GH5GT
	⚠	514	K2CA2YY00130	AC CORD W/PLUG	1	GH5GK
	⚠	514	K2CJ2YY00052	AC CORD W/PLUG	1	GH5GN
	⚠	514	K2CR2YY00026	AC CORD W/PLUG	1	GH5GD
		515	DVPW1003Z	SHOUDER STRAP	1	
	⚠	516	DVQX1052Z	BASIC O/I (ENGLISH)	1	GH5P
	⚠	516	DVQX1053Z	BASIC O/I (SPANISH)	1	GH5P
	⚠	516	DVQX1054Z	BASIC O/I (FRENCH)	1	GH5PP
	⚠	516	DVQX1254Z	BASIC O/I (ENGLISH)	1	GH5PP
	⚠	516	DVQX1255Z	BASIC O/I (SPANISH)	1	GH5PP
	⚠	516	DVQX1055Z	BASIC O/I (GERMAN)	1	GH5EG
	⚠	516	DVQX1056Z	BASIC O/I (FRENCH)	1	GH5EG, GH5EF
	⚠	516	DVQX1057Z	BASIC O/I (ITALIAN)	1	GH5EG
	⚠	516	DVQX1058Z	BASIC O/I (DUTCH)	1	GH5EG, GH5EF
	⚠	516	DVQX1059Z	BASIC O/I (SPANISH)	1	GH5EC
	⚠	516	DVQX1060Z	BASIC O/I (PORTUGUESE)	1	GH5EC
	⚠	516	DVQX1061Z	BASIC O/I (SWEDISH)	1	GH5EC
	⚠	516	DVQX1062Z	BASIC O/I (DANISH)	1	GH5EC
	⚠	516	DVQX1063Z	BASIC O/I (FINNISH)	1	GH5EC
	⚠	516	DVQX1064Z	BASIC O/I (ENGLISH)	1	GH5EB
	⚠	516	DVQX1065Z	BASIC O/I (RUSSIAN)	1	GH5EE
	⚠	516	DVQX1066Z	BASIC O/I (UKRAINIAN)	1	GH5EE
	⚠	516	DVQX1067Z	BASIC O/I (ENGLISH)	1	GH5GA
	⚠	516	DVQX1068Z	BASIC O/I (CHINESE (TRADITIONAL))	1	GH5GA
	⚠	516	DVQX1069Z	BASIC O/I (ARABIC)	1	GH5GA
	⚠	516	DVQX1256Z	BASIC O/I (ENGLISH)	1	GH5GC
	⚠	516	DVQX1257Z	BASIC O/I (CHINESE (TRADITIONAL))	1	GH5GC
	⚠	516	DVQX1258Z	BASIC O/I (ARABIC)	1	GH5GC
	⚠	516	DVQX1259Z	BASIC O/I (ENGLISH)	1	GH5GH
	⚠	516	DVQX1260Z	BASIC O/I (CHINESE (TRADITIONAL))	1	GH5GH
	⚠	516	DVQX1070Z	BASIC O/I (CHINESE (TRADITIONAL))	1	GH5GT
	⚠	516	DVQX1071Z	BASIC O/I (CHINESE (SIMPLIFIED))	1	GH5GK
	⚠	516	DVQX1072Z	BASIC O/I (ENGLISH)	1	GH5GN
	⚠	516	DVQX1073Z	BASIC O/I (KOREAN)	1	GH5GD
		517	VPF1542	BAG, POLYETHYLENE	1	
		532	VQL2J61	GD LABEL	1	GH5GD
		600	VPF1565	CAMERA BAG	1	
		601	VKF4971	BODY CAP	1	
		602	VKF5108-A	FLASH SYNCHRO SOCKET CAP	1	
		603	4YE1A561Z	EYECUP	1	
		604	SKF0145K	BG CONTACT COVER	1	
		605	VYF3522	HOT SHOE COVER	1	
		606	DVPN1085Z	CUSHION	1	
		607	DVPN1086Z	PAD B	1	
		608	DVPK1075Z	PACKING CASE	1	GH5M
	⚠	610	VSK0794	BATTERY CHARGER	1	GH5M
	⚠	611	-----	BATTERY PACK	1	
		612	1PP1A561Z	CABLE HOLDER	1	

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		613	K1HY24YY0021	USB CABLE W/PLUG	1	
	⚠	614	K2CQ2YY00082	AC CORD W/PLUG	1	GH5MEG, GH5MEC, GH5MEF
	⚠	614	K2CT3YY00034	AC CORD W/PLUG	1	GH5MEB
		615	DVPW1003Z	SHOUDER STRAP	1	
	⚠	616	DVQX1055Z	BASIC O/I (GERMAN)	1	GH5MEG
	⚠	616	DVQX1056Z	BASIC O/I (FRENCH)	1	GH5MEG, GH5MEF

	⚠	616	DVQX1057Z	BASIC O/I (ITALIAN)	1	GH5MEG
	⚠	616	DVQX1058Z	BASIC O/I (DUTCH)	1	GH5MEG, GH5MEF
	⚠	616	DVQX1059Z	BASIC O/I (SPANISH)	1	GH5MEC
	⚠	616	DVQX1060Z	BASIC O/I (PORTUGUESE)	1	GH5MEC
	⚠	616	DVQX1061Z	BASIC O/I (SWEDISH)	1	GH5MEC
	⚠	616	DVQX1062Z	BASIC O/I (DANISH)	1	GH5MEC
	⚠	616	DVQX1063Z	BASIC O/I (FINNISH)	1	GH5MEC
	⚠	616	DVQX1064Z	BASIC O/I (ENGLISH)	1	GH5MEB
		617	VPF1542	BAG, POLYETHYLENE	1	
		621	VFC4605-B	LENS REAR CAP	1	GH5M
		622	VYF3514	LENS CAP	1	GH5M
		623	SYA0066	LENS HOOD	1	GH5M
		624	VPF1475	LENS BAG	1	GH5M
		625	VPF1483	AIR CAP BAG	1	GH5M
		626	VEN7786	PAD E	1	GH5M
		700	VPF1565	CAMERA BAG	1	
		701	VKF4971	BODY CAP	1	
		702	VKF5108-A	FLASH SYNCHRO SOCKET CAP	1	
		703	4YE1A561Z	EYECUP	1	
		704	SKF0145K	BG CONTACT COVER	1	
		705	VYF3522	HOT SHOE COVER	1	
		706	DVPN1085Z	CUSHION	1	
		707	DVPN1086Z	PAD B	1	
		708	DVPK1076Z	PACKING CASE	1	GH5LP, GH5LPP, GH5LEG, GH5LEC, GH5LEF, GH5LEB, GH5LGA
		708	DVPK1077Z	PACKING CASE	1	GH5LGK
	⚠	710	VSK0793	BATTERY CHARGER	1	GH5LP, GH5LPP
	⚠	710	VSK0794	BATTERY CHARGER	1	GH5LEG, GH5LEC, GH5LEF, GH5LEB
	⚠	710	VSK0795	BATTERY CHARGER	1	GH5LGA, GH5LGK
	⚠	711	-----	BATTERY PACK	1	
		712	1PP1A561Z	CABLE HOLDER	1	
		713	K1HY24YY0021	USB CABLE W/PLUG	1	
	⚠	714	K2CA2CA00025	AC CORD W/PLUG	1	GH5LP, GH5LPP
	⚠	714	K2CQ2YY00082	AC CORD W/PLUG	1	GH5LEG, GH5LEC, GH5LEF, GH5LGA
	⚠	714	K2CT3YY00034	AC CORD W/PLUG	1	GH5LEB, GH5LGA
	⚠	714	K2CP2YY00083	AC CORD W/PLUG	1	GH5LGA
	⚠	714	K2CA2YY00130	AC CORD W/PLUG	1	GH5LGK
		715	DVPW1003Z	SHOUDER STRAP	1	
	⚠	716	DVQX1052Z	BASIC O/I (ENGLISH)	1	GH5LP
	⚠	716	DVQX1053Z	BASIC O/I (SPANISH)	1	GH5LP
	⚠	716	DVQX1054Z	BASIC O/I (FRENCH)	1	GH5LPP
	⚠	716	DVQX1254Z	BASIC O/I (ENGLISH)	1	GH5LPP
	⚠	716	DVQX1255Z	BASIC O/I (SPANISH)	1	GH5LPP
	⚠	716	DVQX1055Z	BASIC O/I (GERMAN)	1	GH5LEG
	⚠	716	DVQX1056Z	BASIC O/I (FRENCH)	1	GH5LEG, GH5LEF
	⚠	716	DVQX1057Z	BASIC O/I (ITALIAN)	1	GH5LEG
	⚠	716	DVQX1058Z	BASIC O/I (DUTCH)	1	GH5LEG, GH5LEF
	⚠	716	DVQX1059Z	BASIC O/I (SPANISH)	1	GH5LEC
	⚠	716	DVQX1060Z	BASIC O/I (PORTUGUESE)	1	GH5LEC
	⚠	716	DVQX1061Z	BASIC O/I (SWEDISH)	1	GH5LEC
	⚠	716	DVQX1062Z	BASIC O/I (DANISH)	1	GH5LEC
	⚠	716	DVQX1063Z	BASIC O/I (FINNISH)	1	GH5LEC
	⚠	716	DVQX1064Z	BASIC O/I (ENGLISH)	1	GH5LEB
	⚠	716	DVQX1067Z	BASIC O/I (ENGLISH)	1	GH5LGA
	⚠	716	DVQX1068Z	BASIC O/I (CHINESE(TRADITIONAL))	1	GH5LGA
	⚠	716	DVQX1069Z	BASIC O/I (ARABIC)	1	GH5LGA

Model No. : DC-GH5/GH5M/GH5L/GH5A Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	⚠	716	DVQX1071Z	BASIC O/I (CHINESE(SIMPLIFIED))	1	GH5LGK
		717	VPF1542	BAG, POLYETHYLENE	1	
		721	VFC4605-B	LENS REAR CAP	1	GH5L
		722	SYF0083	LENS CAP	1	GH5L
		723	1ZE4Z260Z	LENS HOOD	1	GH5L
		724	VPF1475	LENS BAG	1	GH5L

		725	VPF1483	AIR CAP BAG	1	GH5L
		726	DVPN1088Z	PAD E	1	GH5L
		800	VPF1565	CAMERA BAG	1	
		801	VKF4971	BODY CAP	1	
		802	VKF5108-A	FLASH SYNCHRO SOCKET CAP	1	
		803	4YE1A561Z	EYECUP	1	
		804	SKF0145K	BG CONTACT COVER	1	
		805	VYF3522	HOT SHOE COVER	1	
		806	DVPN1085Z	CUSHION	1	
		807	DVPN1086Z	PAD B	1	
		808	DVPK1078Z	PACKING CASE	1	GH5AGA
	⚠	810	VSK0795	BATTERY CHARGER	1	GH5AGA
	⚠	811	-----	BATTERY PACK	1	
		812	1PPIA561Z	CABLE HOLDER	1	
		813	K1HY24YY0021	USB CABLE W/PLUG	1	
	⚠	814	K2CQ2YY00082	AC CORD W/PLUG	1	GH5AGA
	⚠	814	K2CT3YY00034	AC CORD W/PLUG	1	GH5AGA
	⚠	814	K2CP2YY00083	AC CORD W/PLUG	1	GH5AGA
		815	DVPW1003Z	SHOULDER STRAP	1	
	⚠	816	DVQX1067Z	BASIC O/I (ENGLISH)	1	GH5AGA
	⚠	816	DVQX1068Z	BASIC O/I (CHINESE(TRADITIONAL))	1	GH5AGA
	⚠	816	DVQX1069Z	BASIC O/I (ARABIC)	1	GH5AGA
		817	VPF1542	BAG, POLYETHYLENE	1	
		821	VFC4605-B	LENS REAR CAP	1	GH5AGA
		822	DVZE1008Z	LENS CAP	1	GH5AGA [INBD]
		823	VYC1084	LENS HOOD	1	GH5AGA [INBD]
		824	VPF1513	LENS BAG	1	GH5AGA [INBD]
		825	VPF1483	AIR CAP BAG	1	GH5AGA
		826	VPN7786	PAD E	1	GH5AGA