

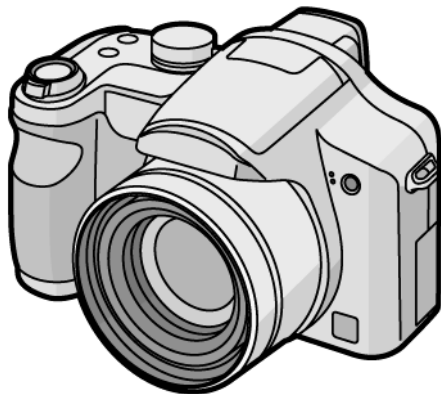
# Service Manual

Digital Camera

LUMIX



LEICA  
DC VARIO-ELMARIT



DMC-FZ7PP  
DMC-FZ7PL  
DMC-FZ7EB  
DMC-FZ7EE  
DMC-FZ7EF  
DMC-FZ7EG  
DMC-FZ7EGM  
DMC-FZ7GC  
DMC-FZ7GD  
DMC-FZ7GK  
DMC-FZ7GN  
DMC-FZ7GT  
DMC-FZ7SG

Vol. 1

Colour

(S).....Silver Type (except DMC-FZ7GD)

(K).....Black Type (except DMC-FZ7SG)

## 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**<sup>®</sup>

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# 1 Safety Precaution

## 1.1. General Guidelines

### 1. IMPORTANT SAFETY NOTICE

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

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

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

## 1.2. Leakage Current Cold Check

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

## 1.3. Leakage Current Hot Check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a  $1.5\text{ k}\Omega$ ,  $10\text{ W}$  resistor, in parallel with a  $0.15\text{ }\mu\text{F}$  capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with  $1\text{ k}\Omega/\text{V}$  or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed  $0.75\text{ V RMS}$ . A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed  $1/2\text{ mA}$ . In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Hot-Check Circuit

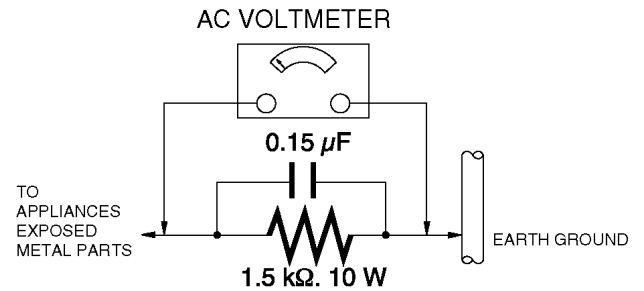


Figure. 1

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

- This unit equipped with two pieces of capacitors as flash charging capacitors.  
“Either one of the capacitor discharging operation” makes discharging for others as well.

### CAUTION:

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

### [Discharging Procedure]

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

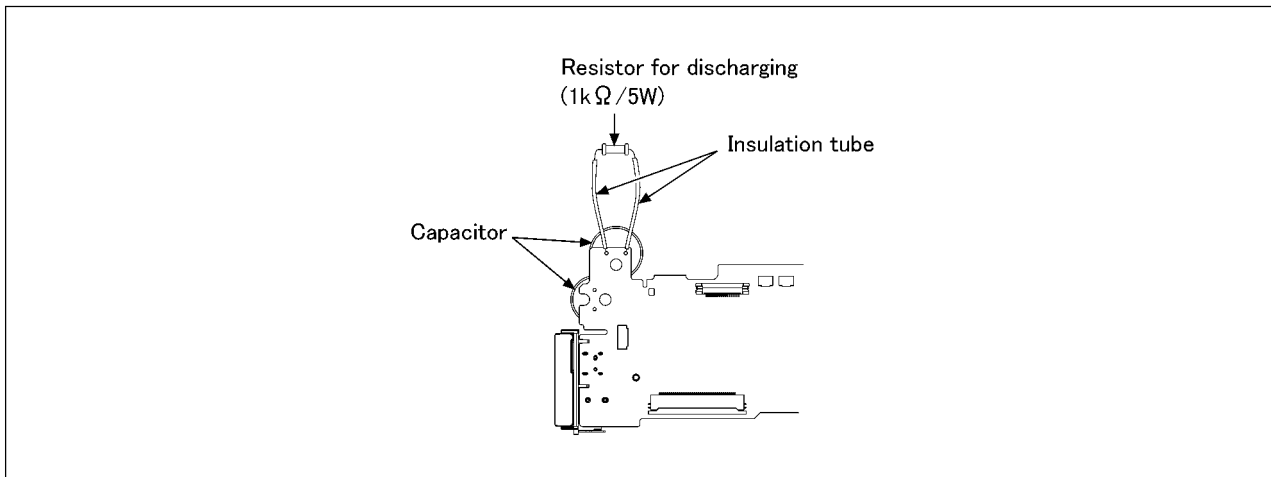


Fig. F1

## 2 Warning

### 2.1. Prevention of Electro Static 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 CCD image sensor, 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 electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

**CAUTION :**

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

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

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

**ENGLISH**



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

**FRANÇAIS**



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

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

### 2.3.1. Information for Your Safety

#### IMPORTANT

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

#### WARNING

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

#### CAUTION

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

#### FOR YOUR SAFETY

##### DO NOT REMOVE THE OUTER COVER

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

### 2.3.2. Caution for AC Mains Lead

For your safety, please read the following text carefully.

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

A 5-ampere fuse is fitted in this plug.

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

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



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

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

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

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

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

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

If in any doubt, please consult a qualified electrician.

### 2.3.2.1. Important

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

Blue	Neutral
Brown	Live

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

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

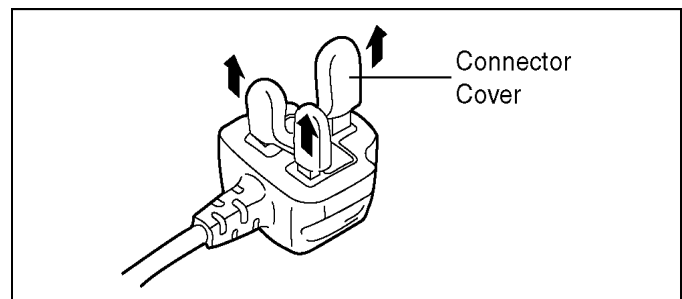
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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



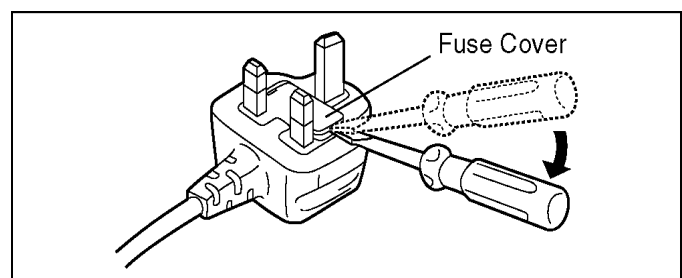
### 2.3.2.2. Before Use

Remove the Connector Cover as follows.

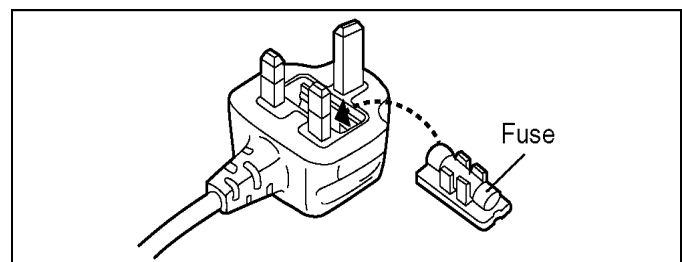


### 2.3.2.3. How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



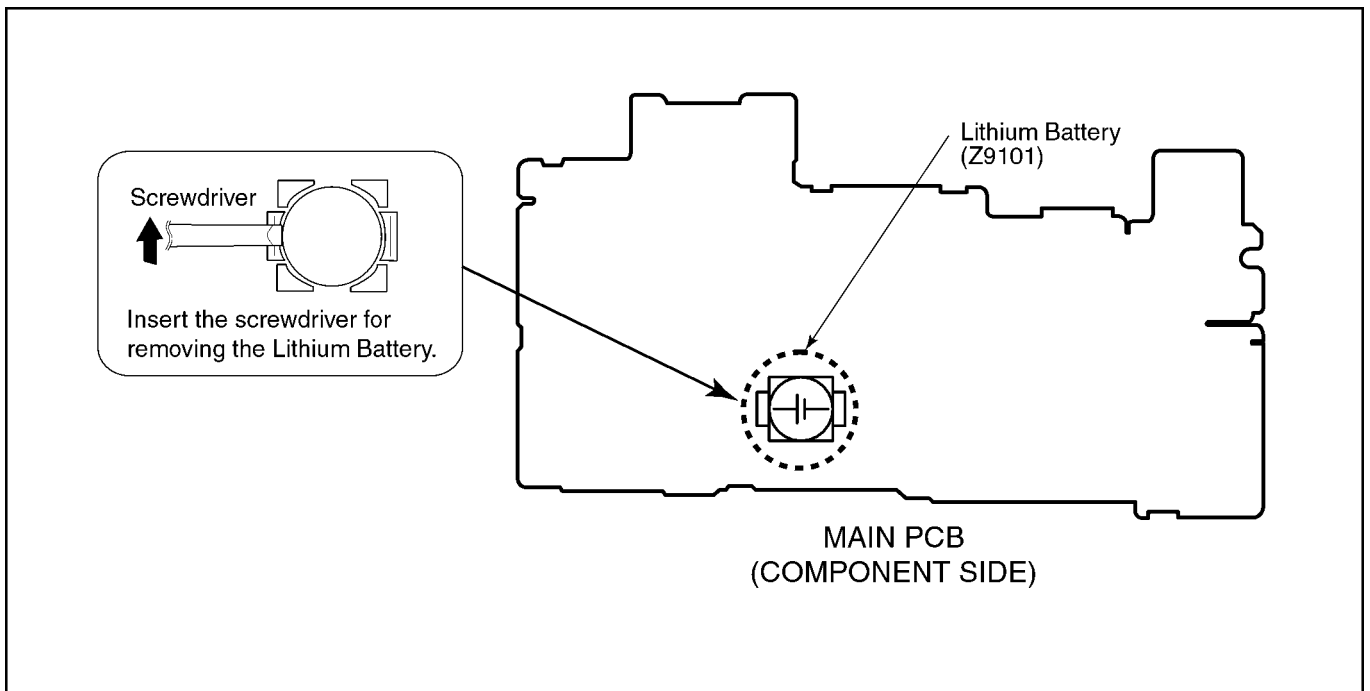
2. Replace the fuse and attach the Fuse cover.



## 2.4. How to Replace the Lithium Battery

### 2.4.1. Replacement Procedure

1. Remove the MAIN PCB. (Refer to Disassembly Procedures.)
2. Remove the Lithium battery (Ref. No. "Z9101" at component side of MAIN PCB) and then replace it into new one.



#### NOTE:

This Lithium battery is a critical component.

(Type No.: ML-421S/ZT **Manufactured by Matsushita Battery Industrial Co.,Ltd.**)

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 French)**

### **PRECAUTION**

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.  
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

**(For German)**

### **VORSICHT**

Bei einer falsch eingesetzten Batterie besteht Explosionsgefahr. Nur mit einer vom Hersteller empfohlenen Batterie vom gleichen Typ ersetzen.  
Verbrauchte Batterien beim Fachhändler oder einer Sammelstelle für Sonderstoffe abliefern.

**(For Swedish)**

### **VARNING**

Explosionsfara vid felaktigt batteribyte.  
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparatillverkaren.  
Kassera använt batteri enligt fabrikantens instruktion.

**(For Norwegian)**

### **ADVARSEL!**

Lithiumbatteri-Eksplosionsfare ved feilagtig håndtering.  
Udskiftning må kun ske med batteri af samme fabrikat og type.  
Levér det brugte batteri tilbage til leverandøren.

**(For Finnish)**

### **VAROITUS**

Paristo voi räjähtää, jos se on virheellisesti asennettu.  
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.  
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

**NOTE:**

Above caution is applicable for a battery pack which is for DMC-FZ7 series, as well.



# 3 Service Navigation

## 3.1. Introduction

This service manual contains technical information, which allow service personnel's to understand and service this model. Please place orders using the parts list and not the drawing reference numbers. If the circuit is changed or modified, the information will be followed by service manual to be controlled with original service manual.

## 3.2. General Description About Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30°C (86°F) more than that of the normal solder.

### Distinction of PCB Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the PCB using the lead free solder.(See right figure)	<b>PbF</b>
---	------------

### Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used. (Definition: The letter of "PbF" is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30°C (662±86°F).

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

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

### Note

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

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

1. The service manual does not contain the following information, because of the impossibility of servicing at component level without concerned equipment/facilities.
  - a. Schematic diagram, Block Diagram and PCB layout of Main PCB.
  - b. Parts list for individual parts of Main PCB.
 When a part replacement is required for repairing Main PCB, replace as an assembled parts. (Main PCB)
2. The following category is/are recycle module part. please send it/them to Central Repair Center.
  - MAIN PCB (VEP56031A) : Excluding replacement of Lithium Battery

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

There are seven kinds of DMC-FZ7, regardless of the colours.







- a) DMC-FZ7S
- b) DMC-FZ7PP
- c) DMC-FZ7EB/EF/EG/EGM/GN
- d) DMC-FZ7EE
- e) DMC-FZ7GD
- f) DMC-FZ7GT
- g) DMC-FZ7PL/GC/GK/SG

(DMC-FZ7S is exclusively Japan domestic model.)

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

#### 3.4.1. Defining methods:

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

<p><b>a) DMC-FZ7S</b> DMC-FZ7S is exclusively Japan domestic model.</p> <p><b>b) DMC-FZ7PP</b> The nameplate for this model show the following Safty registration mark.</p> 	 <p>Safty registration mark</p>
<p><b>c) DMC-FZ7EB/EF/EG/EGM/GN</b> The nameplate for these models show the following Safty registration mark.</p> 	
<p><b>d) DMC-FZ7EE</b> The nameplate for this model show the following Safty registration mark.</p> 	
<p><b>e) DMC-FZ7GD</b> The nameplate for this model show the following Safty registration mark.</p> 	
<p><b>f) DMC-FZ7GT</b> The nameplate for this model show the following Safty registration mark.</p> 	
<p><b>g) DMC-FZ7PL/GC/GK/SG</b> The nameplate for these models do not show any above Safty registration mark.</p>	

#### NOTE:

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

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

### 3.4.2. INITIAL SETTINGS:

**CAUTION:**

NEVER select "NONE(JAPAN)" if the unit is other than "JAPAN" model.  
Other-wise, it can not be reset to the others.

When you replace the Main PCB be sure to perform the initial settings after achieving the Adjustment, by ordering the following procedure in accordance with model suffix.

**• Step 1. The temporary cancellation of factory setting:**

Set the mode dial to "[ P ]".

While keep pressing [ Optical Image Stabilizer ] and "[ UP ] of Cross key" simultaneously, turn the Power on.

**• Step 2. The cancellation of factory setting:**

Set the mode dial to "[ Playback ]".

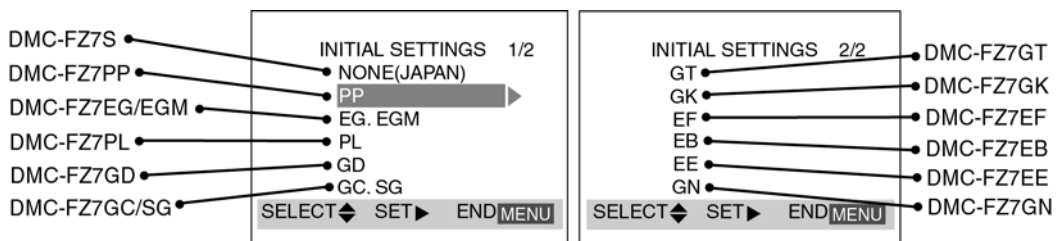
Press [ Optical Image Stabilizer ] and "[ UP ] of Cross key" simultaneously, then turn the Power off.

**• Step 3. Turn the Power on:**

Set the mode dial to "[ P ]", and then turn the Power on.

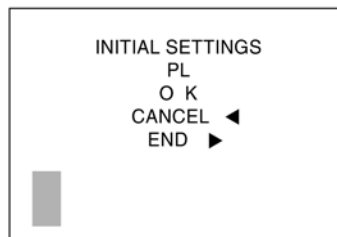
**• Step 4. Display the INITIAL SETTING:**

While keep pressing [ MENU ] and "[ RIGHT ] of Cross key" simultaneously, turn the Power off.



**• Step 5. Set the INITIAL SETTING:**

Select the area with pressing "[ UP ] / [ DOWN ] of Cross key", and then press the "[ RIGHT ] of Cross key".



The only set area is displayed, and then press the "[ RIGHT ] of Cross key" after confirmation.

(The unit is powered off automatically.)

Confirm the display of "PLEASE SET THE CLOCK" in English when the unit is turned on again.

**• Step 6. CONFIRMATION:**

The display shows "PLEASE SET THE CLOCK" when turn the Power on again.

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

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

1) As for your reference Default setting condition is given in the following table.

**• Default setting (After "INITIAL SETTINGS")**

	MODEL	VIDEO OUTPUT	LANGUAGE	DATE	REMARKS
a)	DMC-FZ7S	NTSC	Japanese	Year/Month/Date	
b)	DMC-FZ7PP/PL	NTSC	English	Month/Date/Year	
c)	DMC-FZ7EB/EE/EF/EG/EGM/GC/GN/SG	PAL	English	Date/Month/Year	
d)	DMC-FZ7GK	PAL	Chinese (simplified)	Year/Month/Date	
e)	DMC-FZ7GT	NTSC	Chinese (traditional)	Year/Month/Date	
f)	DMC-FZ7GD	NTSC	English	Year/Month/Date	

# 4 Specifications

## Digital Camera: Information for your safety

<b>Power Source:</b>	DC 8.4 V
<b>Power Consumption:</b>	2.0 W (When recording with LCD Monitor) 1.9 W (When recording with Viewfinder) 1.0 W (When playing back with LCD Monitor) 0.9 W (When playing back with Viewfinder)
<b>Camera effective pixels:</b>	6,000,000 pixels
<b>Image sensor:</b>	1/2.5" CCD, total pixel number 6,370,000 pixels Primary color filter
<b>Lens:</b>	Optical 12× zoom, f=6 mm to 72 mm (35 mm film camera equivalent: 36 mm to 432 mm)/F2.8 to F3.3
<b>Digital zoom:</b>	Max. 4×
<b>Extended optical zoom:</b>	(Except for the maximum picture size for each aspect ratio) Max. 16.5×
<b>Focus:</b>	Normal/Macro/Manual focus, 9-area-focusing/3-area-focusing (High speed)/1-area-focusing (High speed)/1-area-focusing/Spot-focusing
<b>Focus range:</b>	Program AE (P): 30 cm (0.98 feet) (Wide)/2 m (6.56 feet) (Tele) to ∞ Macro (Excluding Tele)/Simple/Motion pictures/Aperture-priority AE (A)/Shutter-priority AE (S)/Manual exposure (M): 5 cm (0.16 feet) (Wide)/2 m (6.56 feet) (Tele) to ∞ (However, in macro mode, simple mode and motion picture mode, the focus range is only in Tele.): 1 m (3.28 feet) (Tele) to ∞ Electronic shutter+Mechanical shutter
<b>Shutter system:</b>	
<b>Burst recording</b>	
<b>Burst speed:</b>	3 frames/second (High speed), 2 frames/second (Low speed), Approx. 2 frames/second (Unlimited)
<b>Number of recordable pictures:</b>	Max. 13 frames (Standard), max. 7 frames (Fine), Depends on the remaining capacity of the card (Unlimited). (Performance in burst recording is only with SD Memory Card. MultiMediaCard performance will be less.)
<b>Motion picture recording:</b>	848×480 pixels/640×480 pixels/320×240 pixels (30 or 10 frames/second with audio. The maximum recording time depends on the capacity of the card.)
<b>ISO sensitivity:</b>	AUTO/80/100/200/400/ [HIGH SENS.] mode: AUTO/800/1600
<b>Shutter speed:</b>	60 to 1/2000th [STARRY SKY] mode: 15 seconds, 30 seconds, 60 seconds Motion picture mode: 1/30th to 1/20000th
<b>White balance:</b>	AUTO/Daylight/Cloudy/Halogen/Flash/White set1/White set2
<b>Exposure (AE):</b>	Program AE (P)/Aperture-priority AE (A)/ Shutter-priority AE (S)/Manual exposure (M) Exposure compensation (1/3 EV Step, -2 EV to +2 EV) Multiple/Center weighted/Spot
<b>Metering mode:</b>	
<b>LCD monitor:</b>	2.5" low-temperature polycrystalline TFT LCD (Approx. 114,000 pixels) (field of view ratio about 100%) Color LCD Viewfinder (Approx. 114,000 pixels) (field of view ratio about 100%)
<b>Viewfinder:</b>	(with diopter adjustment -5 to +3 diopter)

<b>Flash:</b>	Built-in pop up flash Flash range: (ISO AUTO) Approx. 30 cm (0.98 feet) to 6 m (19.7 feet) (Wide) AUTO, AUTO/Red-eye reduction, Forced ON (Forced ON/Red-eye reduction), Slow sync./Red-eye reduction, Forced OFF
<b>Microphone:</b>	Monaural
<b>Speaker:</b>	Monaural
<b>Recording media:</b>	SD Memory Card/MultiMediaCard (Still pictures only)
<b>Picture size</b>	
<b>Still picture:</b>	When the aspect ratio setting is [ 4:3 ] 2816×2112 pixels, 2304×1728 pixels, 2048×1536 pixels, 1600×1200 pixels, 1280×960 pixels, 640×480 pixels When the aspect ratio setting is [ 3:2 ] 2816×1880 pixels, 2048×1360 pixels When the aspect ratio setting is [ 16:9 ] 2816×1584 pixels, 1920×1080 pixels When the aspect ratio setting is [ 4:3 ] 640×480 pixels/320×240 pixels When the aspect ratio setting is [ 16:9 ] 848×480 pixels Fine/Standard/TIFF
<b>Motion pictures:</b>	
<b>Quality:</b>	
<b>Recording file format</b>	
<b>Still Picture:</b>	JPEG (based on Design rule for Camera File system, based on Exif 2.2 standard)/TIFF (RGB)/DPOF corresponding
<b>Picture with audio:</b>	JPEG (based on Design rule for Camera File system, based on Exif 2.2 standard)+640×480 pixels QuickTime (picture with audio) QuickTime Motion JPEG (motion pictures with audio)
<b>Motion pictures:</b>	
<b>Interface</b>	
<b>Digital:</b>	USB 2.0 (Full Speed)
<b>Analog video/audio:</b>	NTSC/PAL Composite (Switched by menu), Audio line output (monaural)
<b>Terminal</b>	
<b>DIGITAL/AV OUT:</b>	Dedicated jack (8 pin)
<b>DC IN:</b>	Type 3 jack
<b>Dimensions:</b>	Approx. 112.5 mm (W)×72.2 mm (H)×79.0 mm (D) [4 7/16" (W)×2 13/16" (H)×3 1/8" (D)] (excluding the projection part)
<b>Mass:</b>	Approx. 310 g/10.9 oz (excluding card and battery), Approx. 357 g/12.6 oz (with card and battery)
<b>Operating temperature:</b>	0 °C to 40 °C (32 °F to 104 °F)
<b>Operating humidity:</b>	10% to 80%

## Battery Charger (Panasonic DE-993B): Information for your safety

<b>Input:</b>	110 V to 240 V ~ 50/60 Hz, 0.15 A
<b>Output:</b>	CHARGE 8.4 V = 0.43 A

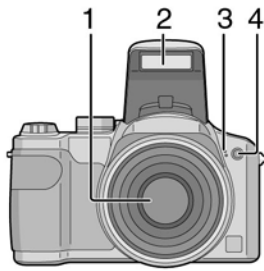
**Equipment mobility:** Movable

## Battery Pack (lithium-ion) (Panasonic CGR-S006A): Information for your safety

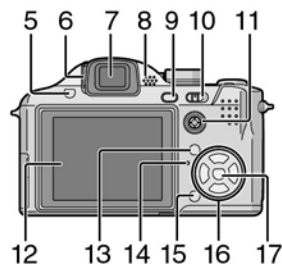
<b>Voltage/capacity:</b>	7.2 V, 710 mAh
--------------------------	----------------

# 5 Location of Controls and Components

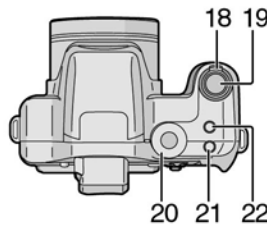
## Names of the Components



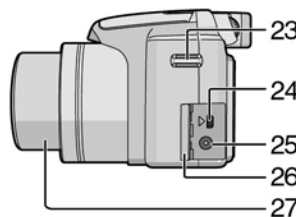
- 1 Lens
- 2 Flash
- 3 Microphone
- 4 Self-timer indicator  
AF assist lamp



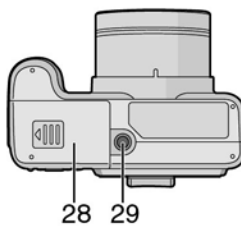
- 5 Flash open button
- 6 Diopter adjustment dial
- 7 Viewfinder
- 8 Speaker
- 9 [EVF/LCD] button
- 10 Camera ON/OFF switch
- 11 Joystick
- 12 LCD monitor
- 13 [DISPLAY/LCD MODE] button
- 14 Status indicator
- 15 Single or burst mode button/  
Delete button
- 16 Cursor buttons
  - ◀/Self-timer button
  - ▼/[REV] button
  - ▶/Flash Setting button
  - ▲/Exposure compensation /Auto  
bracket /White balance fine  
adjustment /Flash output adjustment/  
Backlight compensation in simple  
mode button
- 17 [MENU/SET] button



- 18 Zoom lever
- 19 Shutter button
- 20 Mode dial
- 21 AF/MF button
- 22 Optical image stabilizer button



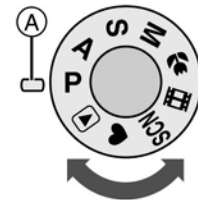
- 23 Strap eyelet
- 24 [DIGITAL/AV OUT] Socket
- 25 [DC IN] Socket
  - Always use a genuine Panasonic AC  
adaptor (DMW-AC7; optional).
  - The camera cannot charge the battery  
even if the AC adaptor (DMW-AC7;  
optional) is connected.
- 26 Terminal door
- 27 Lens Barrel



- 28 Card/Battery door
- 29 Tripod receptacle
  - When you use a tripod, make sure it is  
stable when the camera is attached to  
it.

## About The Mode Dial

Adjust part ① to the desired mode.  
The mode dial can be rotated 360°. Rotate it slowly and surely to adjust to each mode. (Do not adjust it to parts where there is no mode.)



### **P** : Program AE mode

The exposure is automatically adjusted by the camera.

### **A** : Aperture-priority AE mode

The aperture value is automatically determined by the shutter speed you set.

### **S** : Shutter-priority AE mode

The shutter speed is automatically determined by the aperture value you set.

### **M** : Manual exposure mode

The exposure is adjusted by the aperture value and the shutter speed which are manually adjusted.

### Macro mode

This mode allows you to take a close-up picture of a subject.

### Motion picture mode

This mode allows you to record motion pictures.

### **SCN** : Scene mode

This mode allows you to take pictures depending on the recording scenes.

### Simple mode

This mode is recommended for beginners.

### Playback mode

This mode allows you to play back recorded pictures.

# 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 32 error codes in sequence from the latest. When the error is occurred more than 32, the oldest error is overwritten in sequence.

The error code is not memorized when the power supply is shut down forcibly (when the unit is powered on by the battery, the battery is pulled out) because the error code is memorized to FLASH ROM when the unit is powered off.

### 2. How to display

The error code can be displayed by the following procedure:

Before perform the error code memory function, connect the AC adaptor or insert the battery, and insert the SD card.

#### • 1. The temporary cancellation of factory setting:

Set the mode dial to "[ P ]".

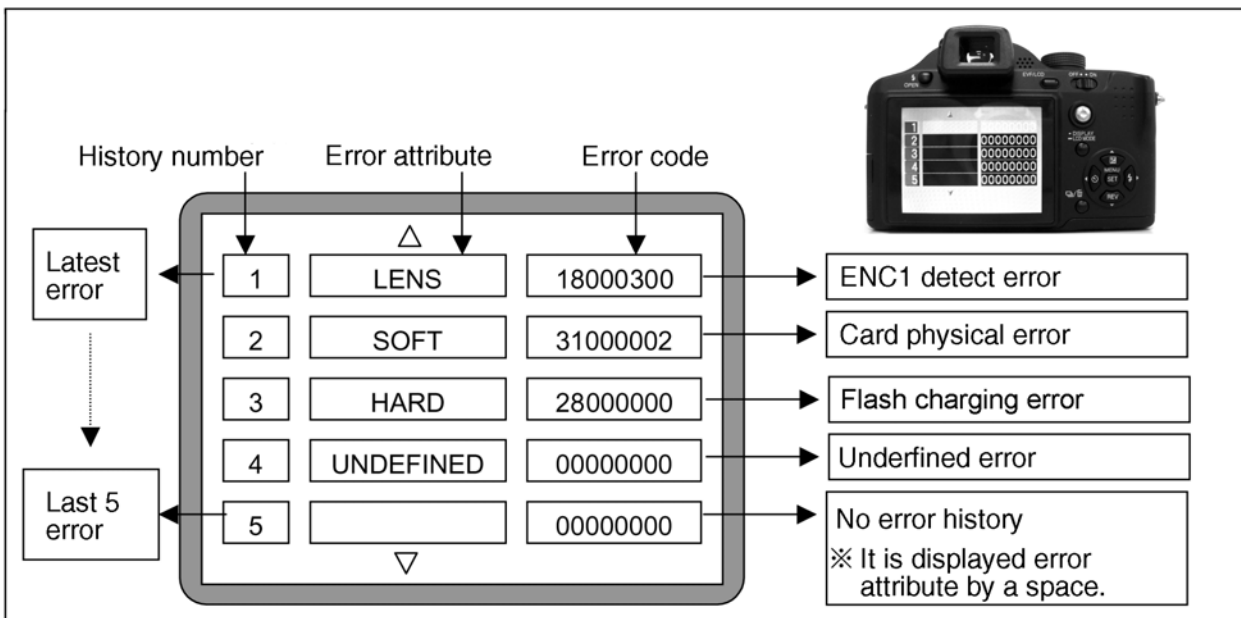
While keep pressing [ Optical Image Stabilizer Button ] and "[ UP ] of Cross key" simultaneously, turn the Power on.

#### • 2. The display of error code:

Press [ Optical Image Stabilizer Button ], [ MENU ] and "[ LEFT ] of Cross key" simultaneously with the step 1 condition.

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

Normal display → Error code display → Operation history display → Normal display → .....



Example of Error Code Display

#### • 3. The change of display:

The error code can be memorized 32 error codes in sequence, however it is displayed 5 errors on the LCD.

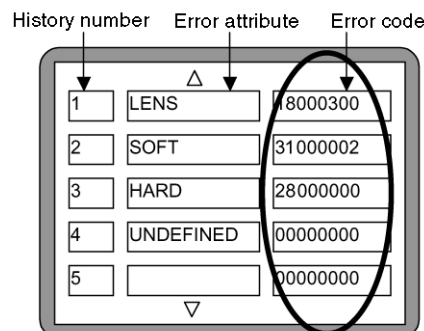
Display can be changed by the following procedure:

"[ UP ] or [ DOWN ] of Cross key" : It can be scroll up or down one.

"[ LEFT ] or [ RIGHT ] of Cross key" : It can be display last 5 error or another 5 error.

#### • 4. How to read the error code:

One error code is displayed for 8 bit, the contents of error codes is indicated the table as shown below.



Attribute	Main item	Sub item	Error code		Contents (Upper)			
			High 4 bits	Low 4 bits	Check point (Lower)			
LENS	Lens drive	OIS	1800	1000	PSD (X) error. Hall element (X axis) position detect error in OIS unit. OIS Unit			
				2000	PSD (Y) error. Hall element (Y axis) position detect error in OIS unit. OIS Unit			
				3000	GYRO (X) error. Gyro (IC7102: X axis) detect error on Main P.C.B.. IC7102 (Gyro element) or IC6001 (VENUS 2)			
				4000	GYRO (Y) error. Gyro (IC7101: Y axis) detect error on Main P.C.B.. IC7101 (Gyro element) or IC6001 (VENUS 2)			
				5000	MREF error (Reference voltage error). IC7002 (LENS drive) or IC6001 (VENUS 2)			
				6000	Drive voltage (X) error. VENUS 2 AD value error, LENS Unit, LENS flex breaks etc.			
				7000	Drive voltage (Y) error. VENUS 2 AD value error, LENS Unit, LENS flex breaks etc.			
			C.B./Zoom	0100	HP Low detect error (C.B. encoder (full retract) always Low detect). FP9005-(36, 39) signal line or IC6001 (VENUS 2)			
				0200	HP High detect error (C.B. encoder (full retract) always High detect). FP9005-(36, 39) signal line or IC6001 (VENUS 2)			
				0300	ENC1 detect error (C.B. motor encoder detect error).			
				0400	ENC2 detect error (C.B. motor encoder detect error).			
			Zoom	0010	HP Low detect error (Zoom encoder always Low detect error).			
				0020	HP High detect error (Zoom encoder always High detect error).			
				0030	ENC1 detect error (Zoom encoder detect error).			
		0040		ENC2 detect error (Zoom encoder detect error).				
		Focus	0001	HP Low detect error (Focus encoder always Low detect error). FP9005-(17) signal line or IC6001 (VENUS 2)				
			0002	HP High detect error (Focus encoder always High detect error). FP9005-(17) signal line or IC6001 (VENUS 2)				
		Lens	1003	0000	Lens cap error. Zoom motor, zoom pulse encoder2			
				0000	Lens cap error (completing initialization). Zoom motor, zoom pulse encoder2			
			1801	0000	Power ON time out error. Lens drive system			
				0000	Power OFF time out error. Lens drive system			
		Adj.History	OIS	1900	2000	OIS adj. Yaw direction amplitude error (small)		
					3000	OIS adj. Pitch direction amplitude error (small)		
					4000	OIS adj. Yaw direction amplitude error (large)		
					5000	OIS adj. Pitch direction amplitude error (large)		
					6000	OIS adj. MREF error		
					8000	OIS adj. Yaw direction off set error		
	9000				OIS adj. Pitch direction off set error			
	A000				OIS adj. Yaw direction gain error			
	B000				OIS adj. Pitch direction gain error			
	C000				OIS adj. Yaw direction position sensor error			
D000	OIS adj. Pitch direction position sensor error							
E000	OIS adj. other error							
HARD	VENUS A/D				Flash	2800	0000	Flash charging error. IC6001-(13) signal line or Flash charging circuit
							FLASH ROM (EEPROM Area)	FLASH ROM (EEPROM Area)
	0002	EEPROM write error IC6004 (FLASH ROM)						
	SYSTEM	RTC	2C00	0001	SYSTEM IC initialize error Communication between IC6001 (VENUS 2) and IC9101 (SYSTEM)			

Attribute	Main item	Sub item	Error code		Contents (Upper)
			High 4 bits	Low 4 bits	Check point (Lower)
SOFT	CPU	Reset	3000	0001	NMI reset
				0007	Non Mask-able Interrupt (30000001-30000007 are caused by factors)
	Card	Card	3100	0001	Card logic error SD card data line or IC6001 (VENUS 2)
				0002	Card physical error SD card data line or IC6001 (VENUS 2)
				0004	Write error SD card data line or IC6001 (VENUS 2)
				0005	Format error
	CPU, ASIC hard	Stop	3800	0001	Camera task finish process time out. Communication between Lens system and IC6001 (VENUS 2)
				0002	Camera task invalid code error. IC6001 (VENUS 2)
				0100	File time out error in recording motion image IC6001 (VENUS 2)
				0200	File data send error in recording motion image IC6001 (VENUS 2)
	Operation	Power on	3B00	0000	FLASHROM processing early period of camera during movement.
	Zoom	Zoom	3C00	0000	I do not complete zoom lens processing Zoom lens
					3500
			3501	0000	Though record preprocessing is necessary, it is not called.
			3502	0000	Though record preprocessing is necessary, it is not completed.

• **5. How to returned to Normal Display:**

Turn the power off and on, to exit from Error code display mode.

**NOTE:**

The error code can not be initialized.



## 6.2. Confirmation of Firmware Version

The Firmware version can be confirmed by ordering the following steps:.

- **Step 1. The temporary cancellation of factory setting:**

Set the mode dial to “[ P ]”.

Insert the SD memory card which has a few photo data.

While keep pressing [ Optical Image Stabilizer ] and “[ UP ] of Cross key” simultaneously, then turn the power on.

- **Step 2. Confirm the version:**

Set the mode dial to “[ Playback ]” and then press [ DISPLAY ] to switch to LCD with indication. (Fig. A)

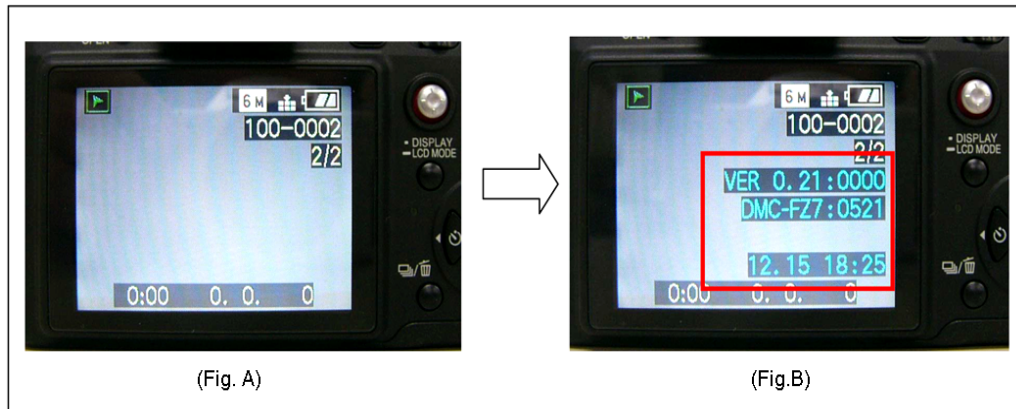
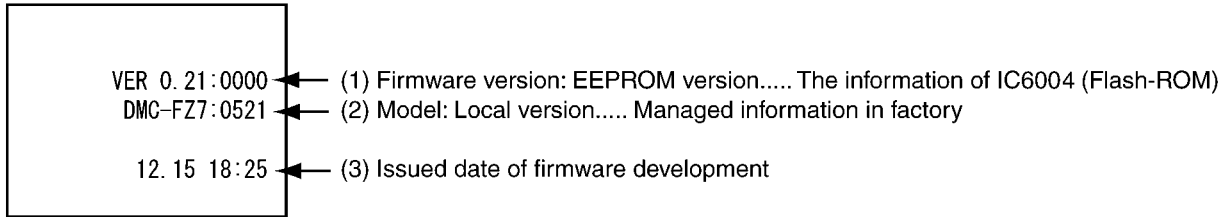
Press [ Optical Image Stabilizer ] and “[ DOWN ] of Cross key” simultaneously. (No need to keep pressing.)

(The version information is displayed on the LCD with light blue colour letters.) (Fig. B)

**CAUTION:**

The version information does not display if the LCD has switched to LCD with indication already.

In this case, press [ DISPLAY ] to switch to LCD with indication.



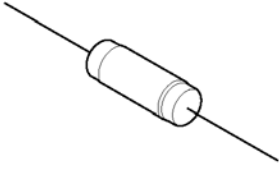
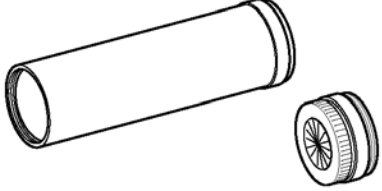
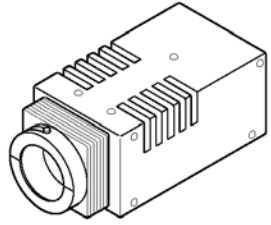
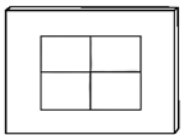

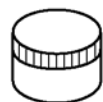
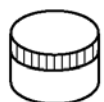
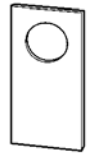
**<Point>**

- The firmware version and EEPROM version can be confirmed with the information (1).
- The information (2), (3) are just reference.

# 7 Service Fixture & Tools

## 7.1. Service Fixture and Tools

The following Service Fixture and tools are used for checking and servicing this unit.

<b>Resistor for Discharging</b> <b>ERG5SJ102</b>	<b>Infinity Lens (with Focus Chart)</b> <b>VFK1164TCM02</b>	<b>LIGHT BOX</b> <b>VFK1164TDVLB</b>
 <p>An equivalent type of Resistor may be used.</p>		 <p>※ with DC Cable</p>
<b>TR Chart</b> <b>VFK1975</b>	<b>Lens Cleaning Kit (BK)</b> <b>VFK1900BK</b>	<b>Grease (for lens)</b> <b>VFK1829</b>
	 <p>* Only supplied as 10 set/box.</p>	
<b>Furoyl grease (for focus motor)</b> <b>VFK1850</b>	<b>ND Filter</b> <b>ND0.1 Type VFK1164ND01</b>	
	 <p>An equivalent type of Filter may be used.</p>	

## 7.2. When Replacing the Main PCB

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

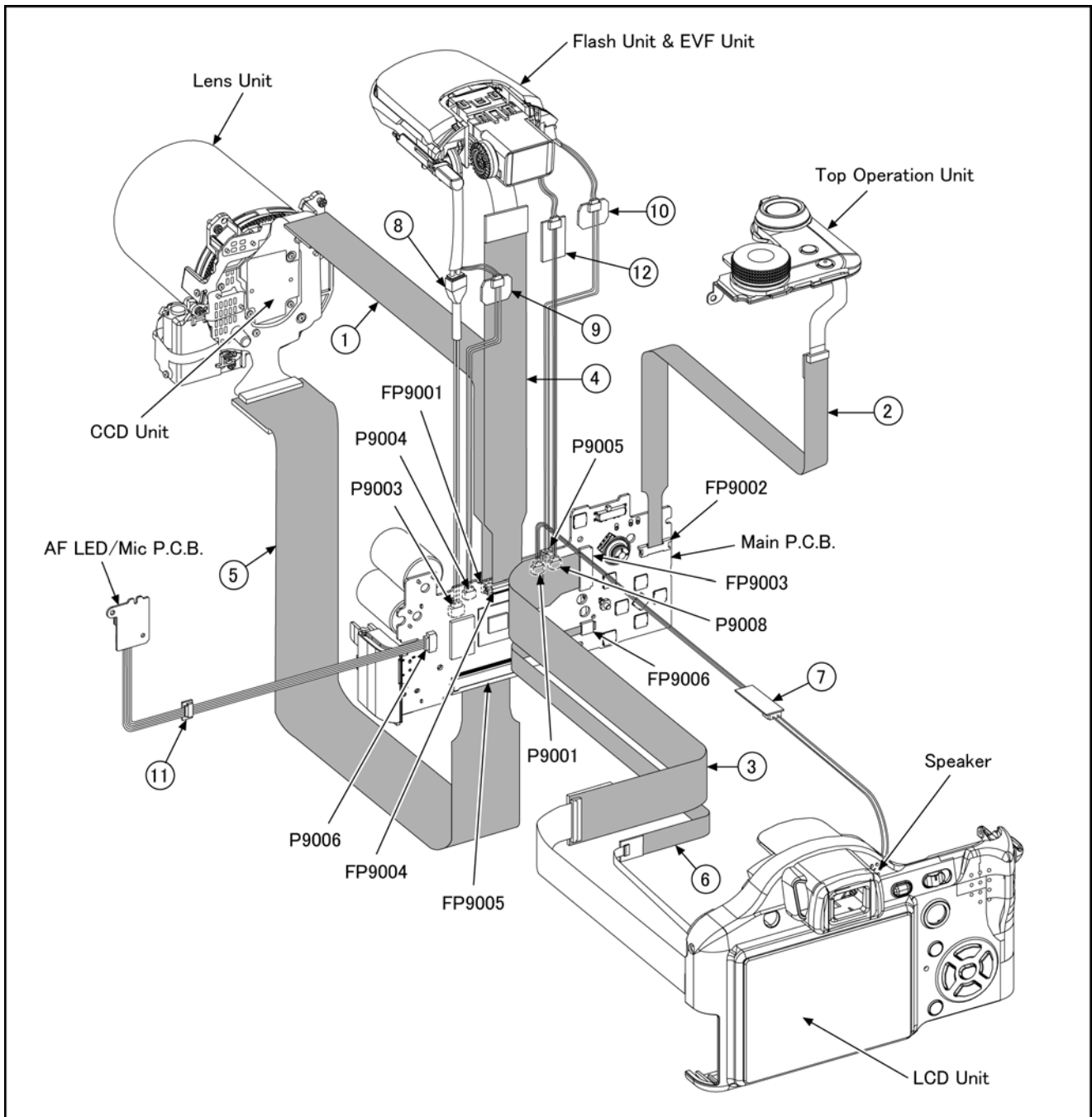
The adjustment instruction is available at "software download" on the "Support Information from NWBG/VDBG-PAVC" web-site in "TSN system", together with Maintenance software.

## 7.3. Service Position

This Service Position is used for checking and replacing parts. Use the following Extension cables for servicing.

Table S1 Extension Cable List

No.	Parts No.	Connection	Form
1	RFKZ0361	FP9001 (MAIN) - CCD UNIT	28PIN 0.5 FFC
2	VFK1440	FP9002 (MAIN) - TOP OPERATION UNIT	10PIN 0.5 FFC
3	VFK1284	FP9003 (MAIN) - LCD UNIT	24PIN 0.5 FFC
4	VFK1443	FP9004 (MAIN) - EVF UNIT	18PIN 0.5 FFC
5	VFK1953	FP9005 (MAIN) - LENS FPC UNIT	40PIN 0.5 FFC
6	VFK1974	FP9006 (MAIN) - LCD UNIT	4PIN 0.5 FFC
7	VFK1576DSC04	P9001 (MAIN) - SPEAKER	2PIN CABLE
8	RFKZ0359	P9003 (MAIN) - FLASH UNIT	2PIN CABLE
9	VFK1576DC202	P9004 (MAIN) - FLASH UNIT	2PIN CABLE
10	VFK1576DC202	P9005 (MAIN) - FLASH UNIT	2PIN CABLE
11	RFKZ0360	P9006 (MAIN) - P9301 (AF LED/MIC)	5PIN CABLE
12	VFK1576DSC04	P9008 (MAIN) - FLASH UNIT	2PIN CABLE

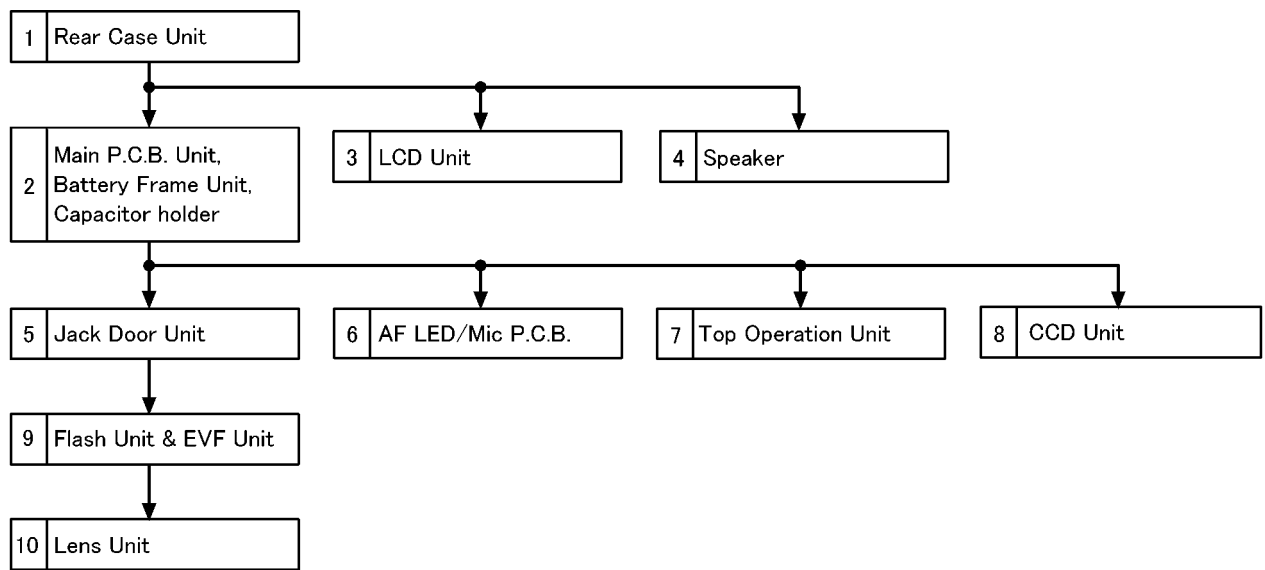


**CAUTION-1. (When servicing MAIN PCB)**

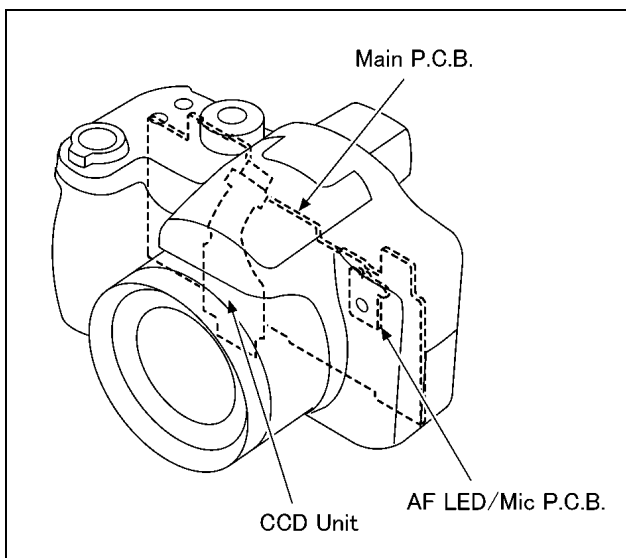
1. Be sure to discharge the capacitor on MAIN PCB.  
Refer to "HOW TO DISCHARGE THE CAPACITOR ON MAIN PCB".  
The capacitor voltage is not lowered soon even if the AC Cord is unplugged or the battery is removed.
2. Be careful of the high voltage circuit on MAIN PCB.
3. DO NOT allow other parts to touch the high voltage circuit on MAIN PCB.

# 8 Disassembly and Assembly Instructions

## 8.1. Disassembly Flow Chart



## 8.2. PCB Location



## 8.3. Disassembly Procedure

### 8.3.1. Removal of the Rear Case Unit

No.	Item	Fig	Removal
1	Rear Case Unit	Fig. D1	Card
			Battery
			4 Screws (A)
			2 Screws (B)
		Fig. D2	P9001(Connector)
			FP9003(Flex)
FP9006(Flex)			
Rear Case Unit			
2	Main P.C.B. Unit Battery Frame Unit Capacitor Holder	Fig. D3	2 Screws (C)
			1 Screw (D)
			FP9001(Flex)
			FP9002(Flex)
			FP9004(Flex)
			FP9005(Flex)
			P9003(Connector)
			P9004(Connector)
		Fig. D4	P9005(Connector)
			P9008(Connector)
			Main P.C.B. Unit
			2 Screws (E)
			3 Solders
			2 Locking tabs
			P9006(Connector)
			Battery Frame Unit Capacitor Holder
3	LCD Unit	Fig. D5	1 Screw (F)
			1 Locking tab
			LCD Holder
			LCD Unit
4	Speaker	Fig. D6	3 Screw (G)
			SP FIX Plate
			Speaker
5	Jack Door Unit	Fig. D7	1 Screw (H)
			Jack Door Unit
6	AF LED/Mic P.C.B.	Fig. D8	2 Locking tabs
			AF LED P.C.B. Holder
			AF LED/Mic P.C.B.
7	Top Operation Unit	Fig. D9	Top Operation Unit
8	CCD Unit	Fig. D10	3 Screws (I)
			CCD Unit
9	Flash Unit & EVF Unit	Fig. D11	Flash Unit & EVF Unit
10	Lens Unit	Fig. D12	1 Screw (J)
			Lens Unit

#### NOTE:

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

- Card
- Battery
- Screw (A) × 4
- Screw (B) × 2

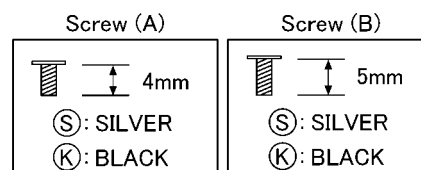
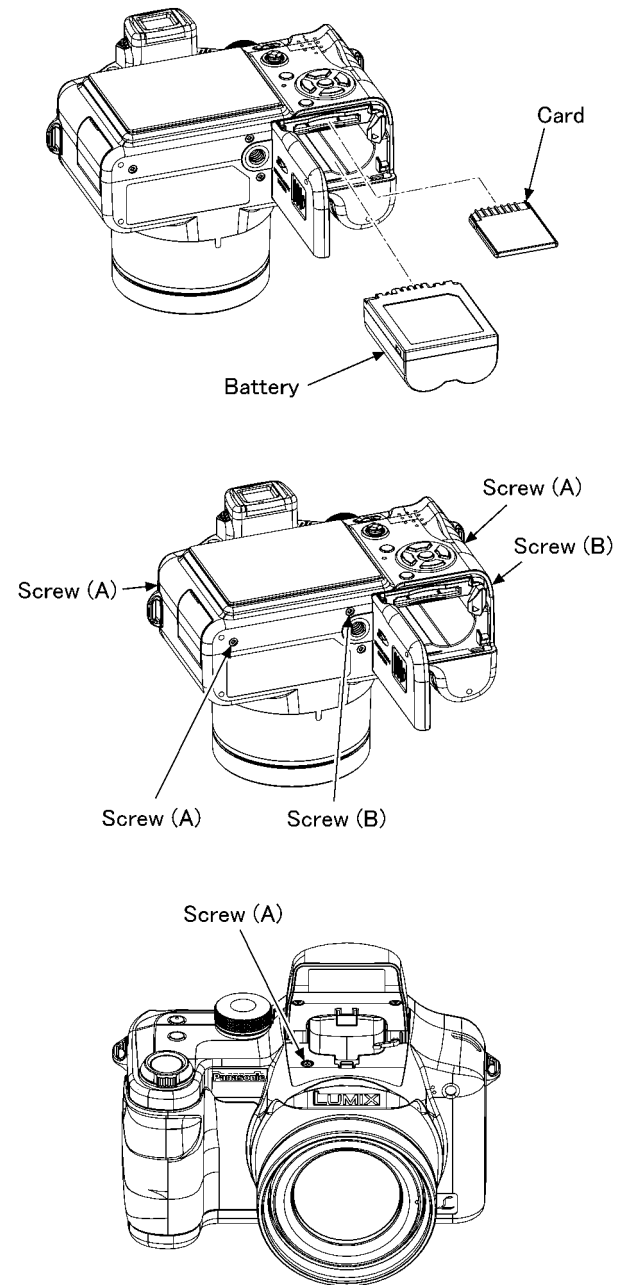


Fig. D1

### 8.3.2. Removal of the Main P.C.B. Unit, Battery Frame Unit and Capacitor Holder

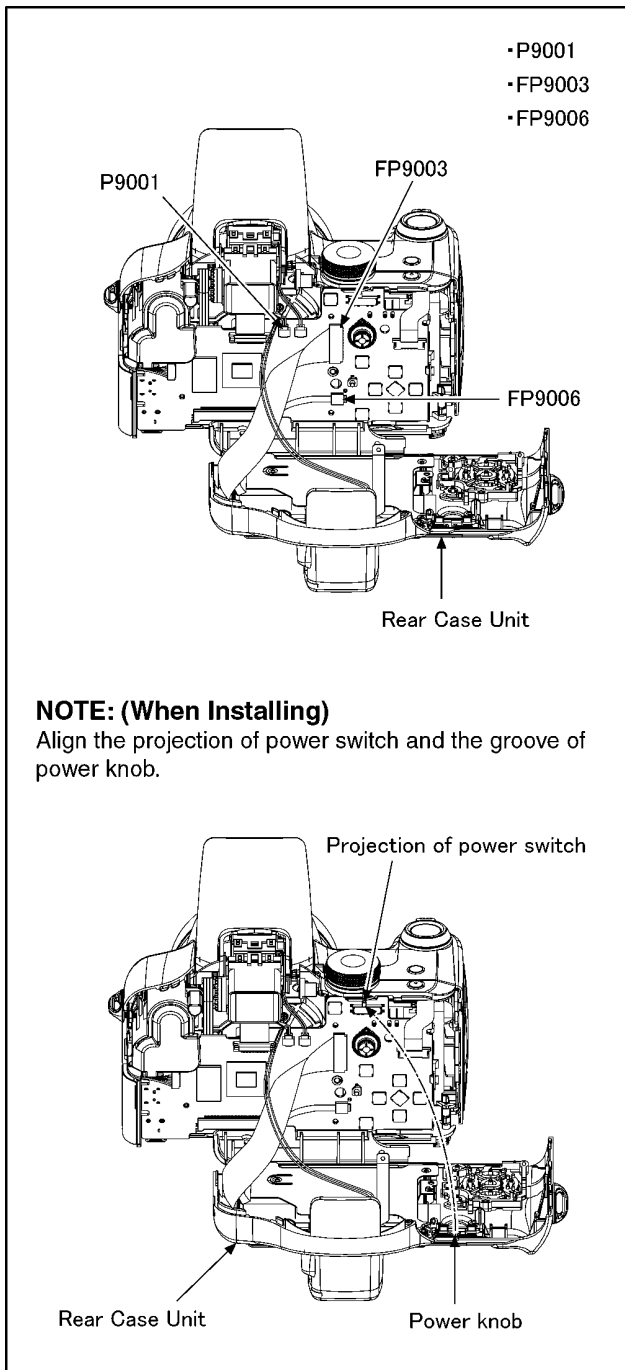


Fig. D2

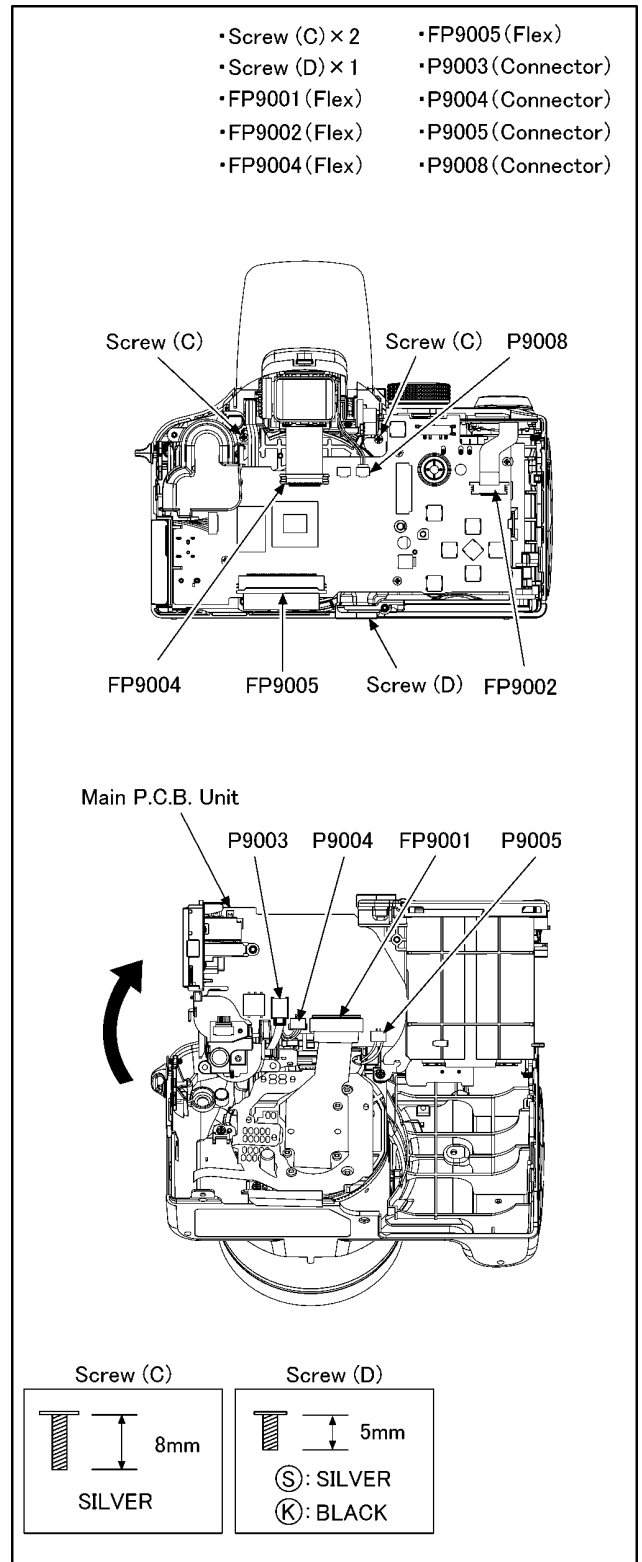


Fig. D3

- This unit equipped with two pieces of capacitors as flash charging capacitors.  
“Either one of the capacitor discharging operation” makes discharging for others as well.

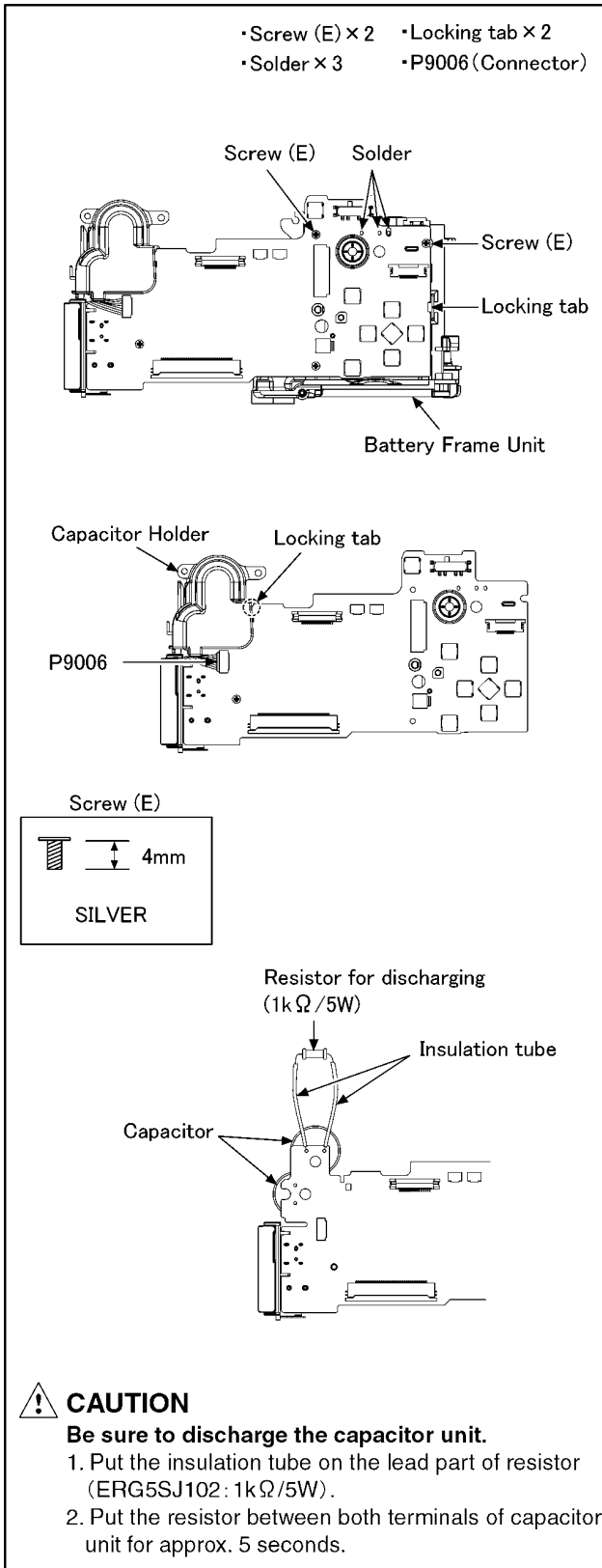


Fig. D4

### 8.3.3. Removal of the LCD Unit

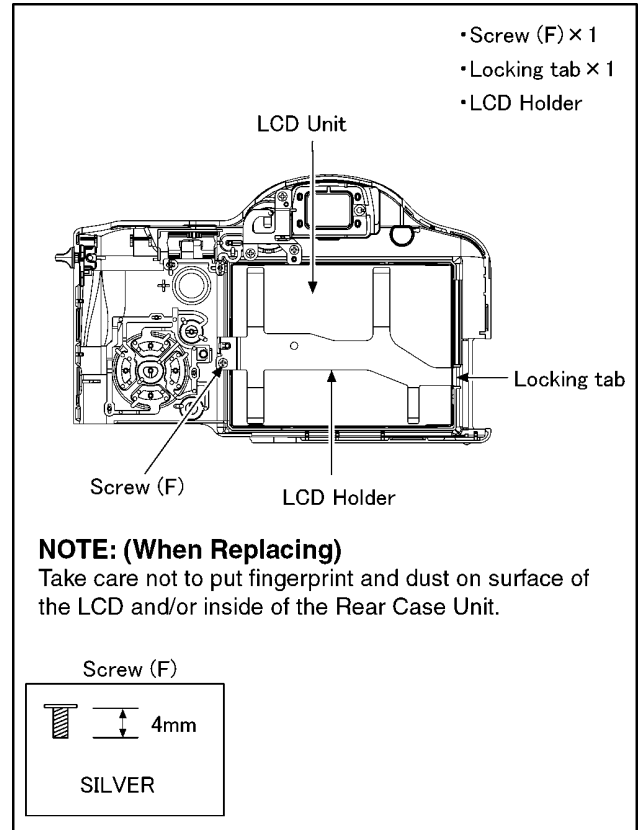


Fig. D5

### 8.3.4. Removal of the Speaker

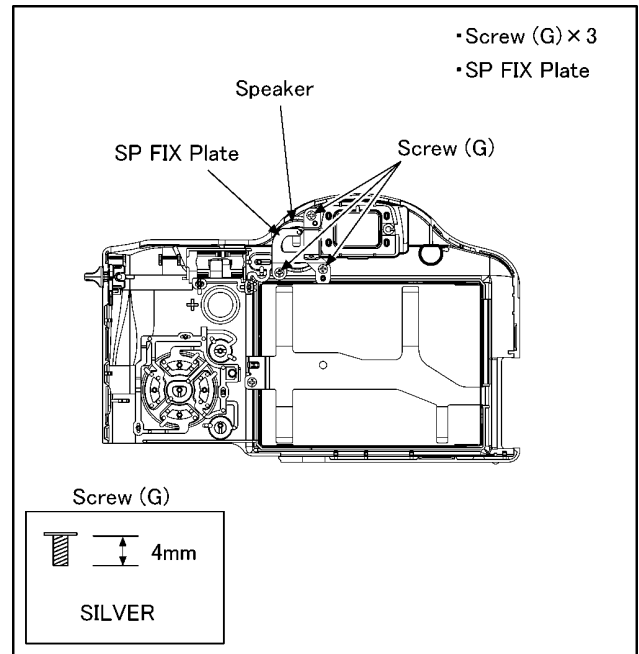


Fig. D6



### 8.3.5. Removal of the Jack Door Unit

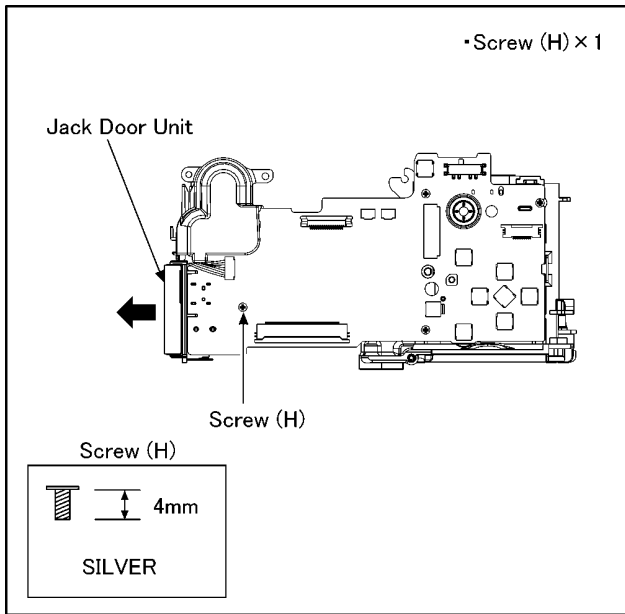


Fig. D7

### 8.3.6. Removal of the AF LED/Mic P.C.B.

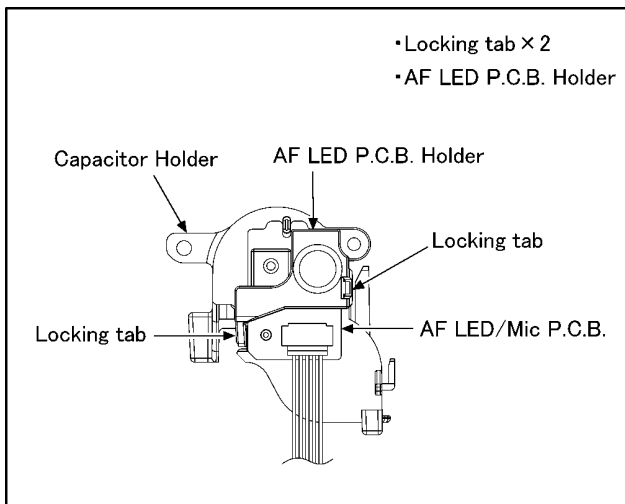


Fig. D8

### 8.3.7. Removal of the Top Operation Unit

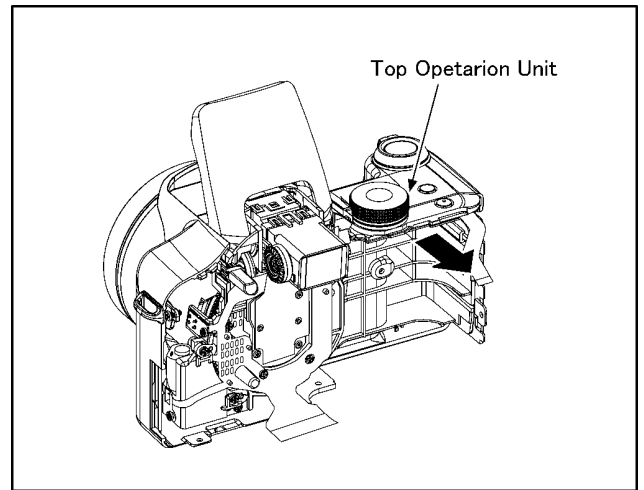
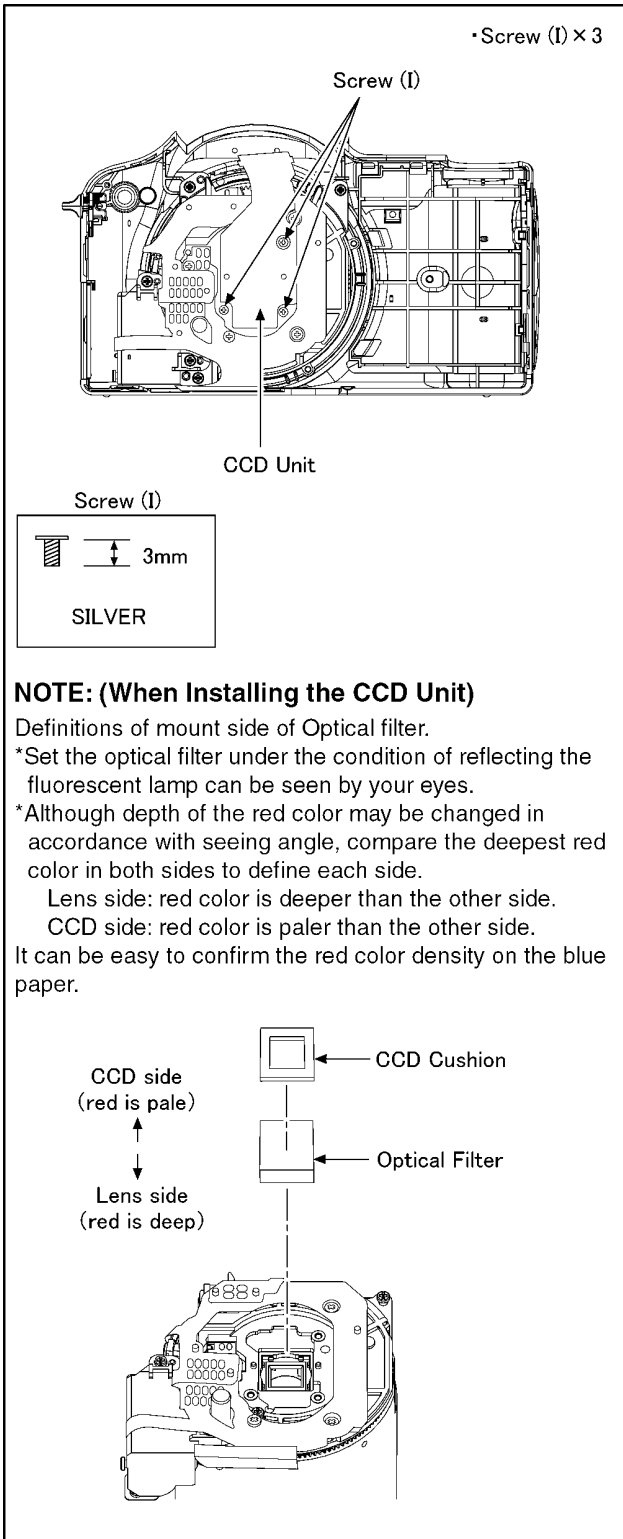


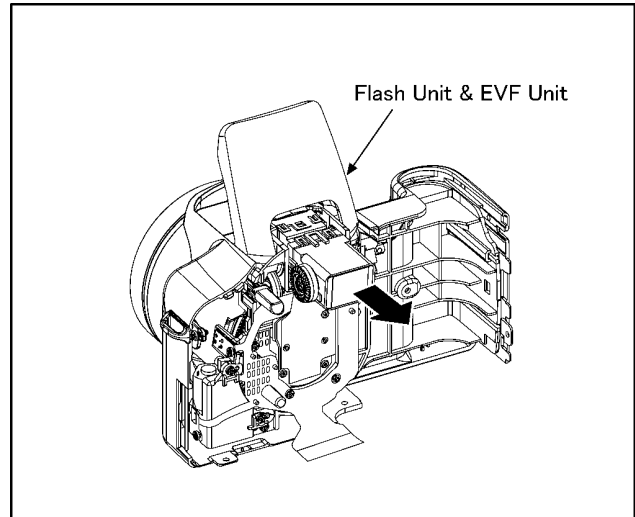
Fig. D9

### 8.3.8. Removal of the CCD Unit

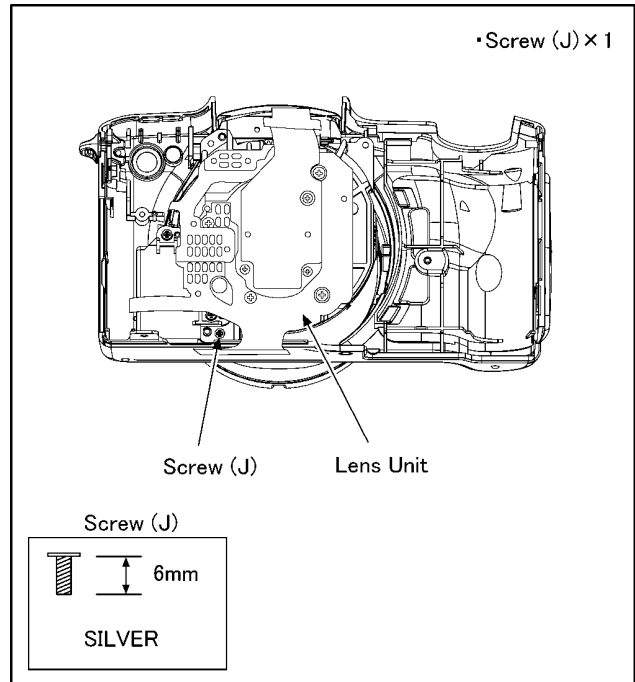
To prevent the CCD unit from catching the dust and dirt, do not remove the CCD unit except for replacing.



### 8.3.9. Removal of the Flash Unit & EVF Unit



### 8.3.10. Removal of the Lens Unit



**NOTE: (When Assembling)**

Be sure to confirm the following points when assembling.

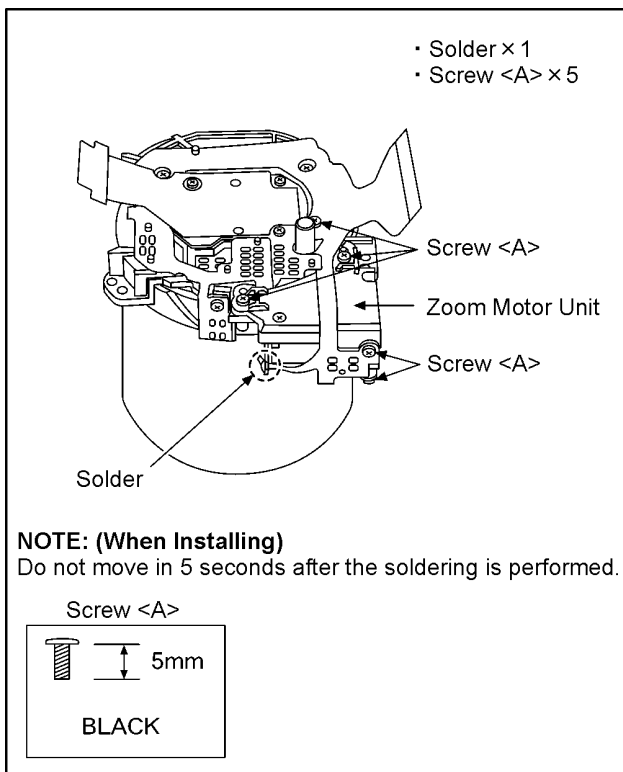
- The Screw is tightened enough.
- Assembling conditions are fine. (No distortion, no illegal-space.)
- No dust and/or dirt on every Lens surfaces.
- LCD image is fine. (No dust and dirt on it, and no gradient images.)

## 8.4. Disassembly/Assembly Procedure for the Lens

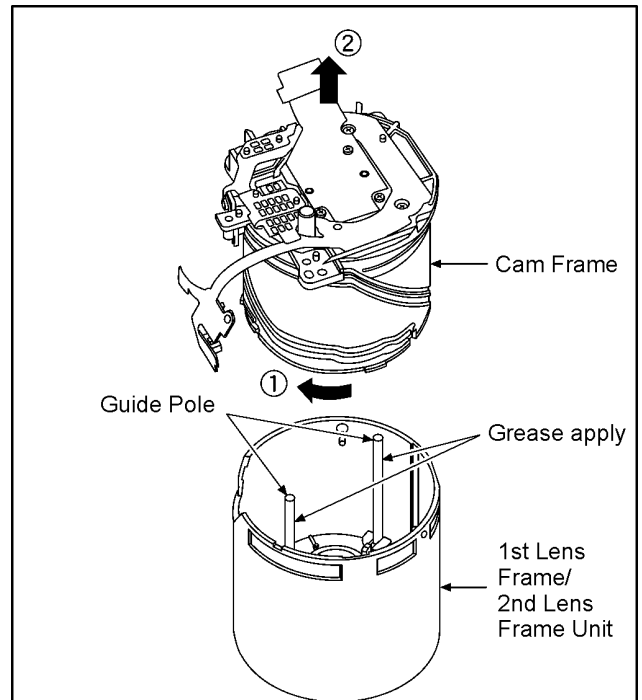
### NOTE: When Disassembling and Assembling for the Lens

- To minimize the possibility of the CCD being dirt, perform disassemble and/or assemble under the condition of the CCD is being mounted.  
Disassembling procedures for the CCD unit, refer to item 8.3.8.
- Take care that the dust and dirt are not entered into the lens.  
In case of the dust is putted on the lens, blow off them by airbrush.
- Do not touch the surface of lens.
- Use lens cleaning KIT (BK)(VFK1900BK).
- Apply the grease (VFK1829) to the point where is shown to "Grease apply" in the figure.  
When the grease is applied, use a toothpick and apply thinly.

### 8.4.1. Removal of the Zoom Motor Unit

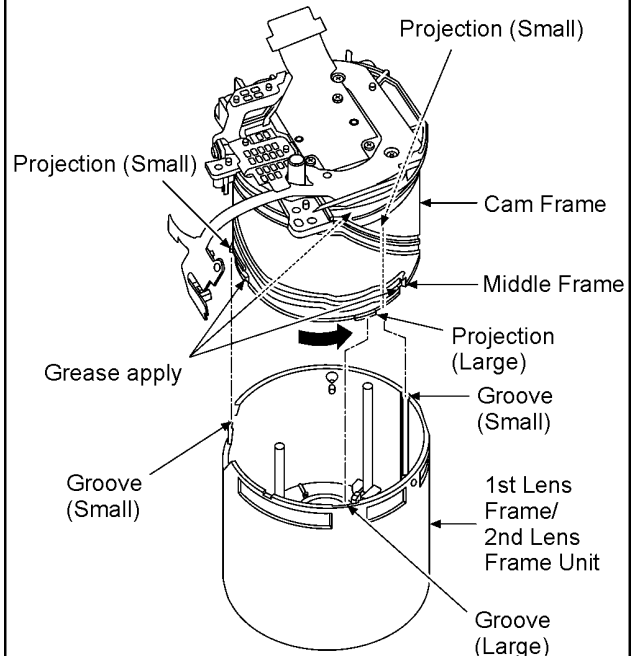


## 8.4.2. Removal of the 3rd Lens Frame/ 4th Lens Frame/Drive Frame Unit



### NOTE: (When Removing)

Remove the 1st /2nd lens frame unit by rotating the Cam Frame in arrow directions.  
Removal order: ①→②.  
When the Cam Frame is hard to rotate, use the tweezers and rotate round gear of the Cam Frame.

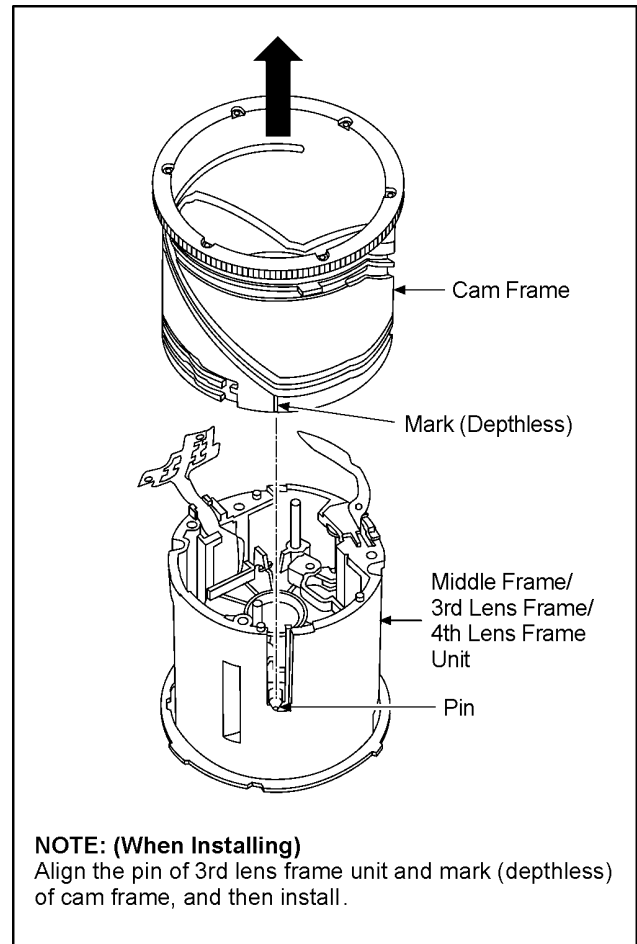
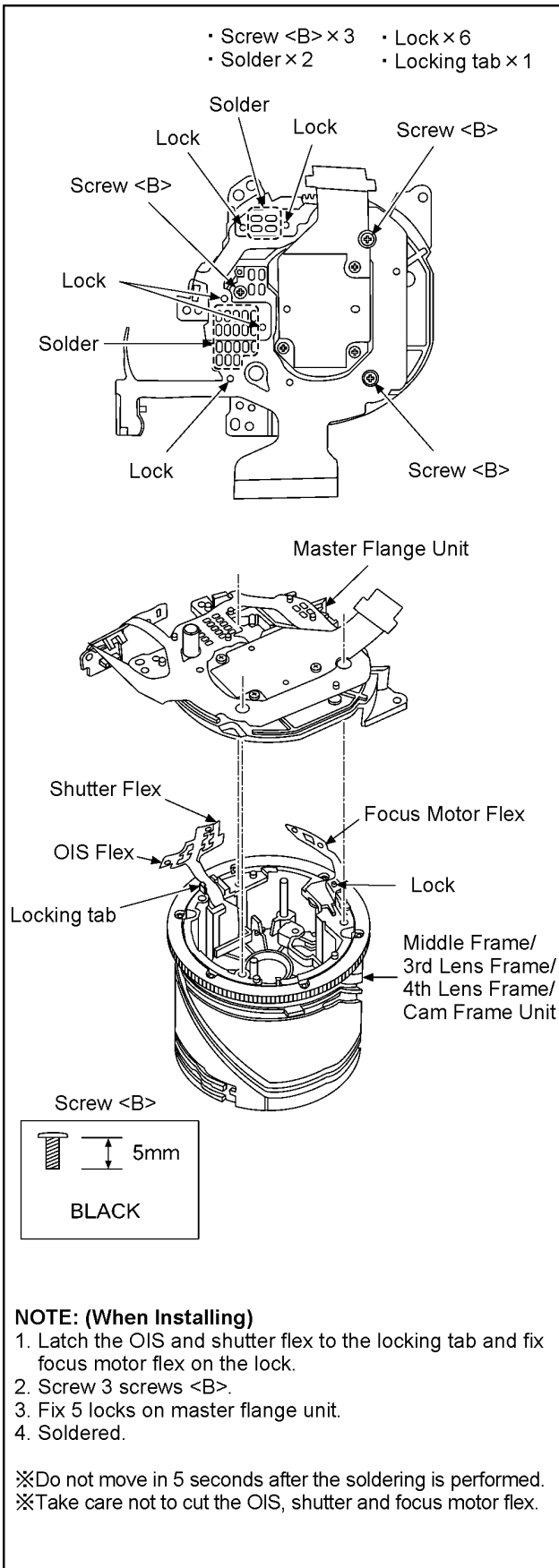


### NOTE: (When Installing)

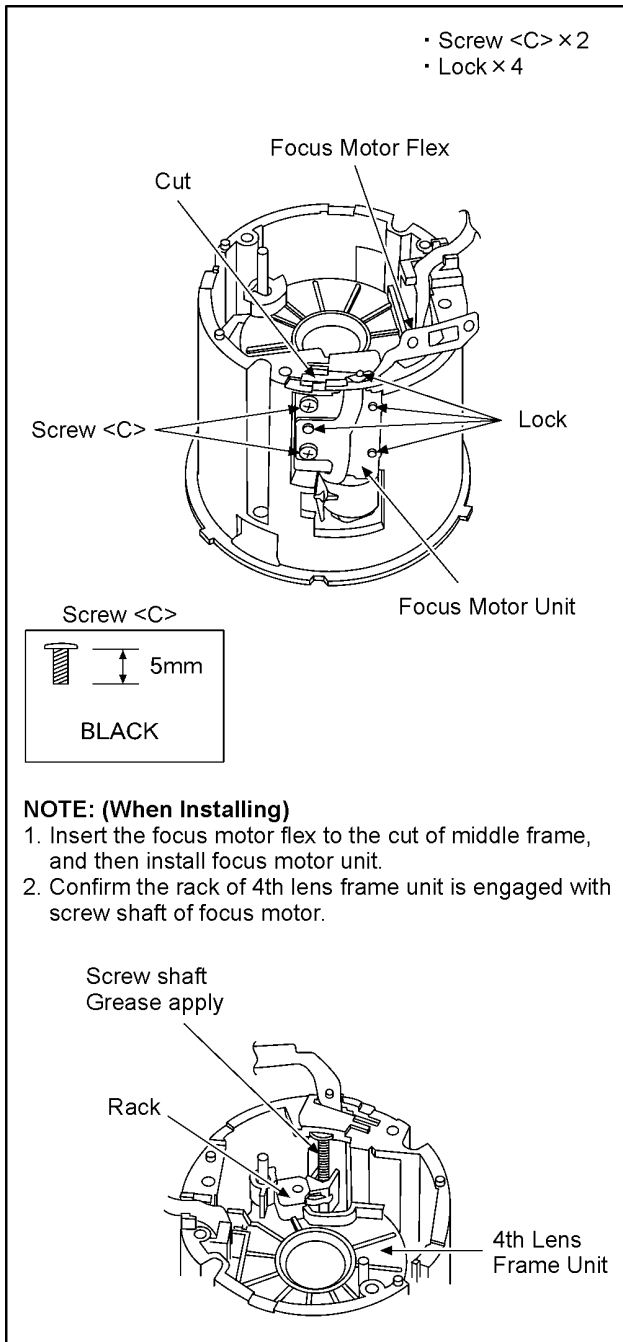
- Align the cut of middle frame and the groove of cam frame.
- Apply grease to 2 guide poles.
- Align the groove of 1st lens frame unit and the projection of middle frame, and then turn the cam frame counterclockwise fully to make retract position.

### 8.4.3. Removal of the Master Flange Unit

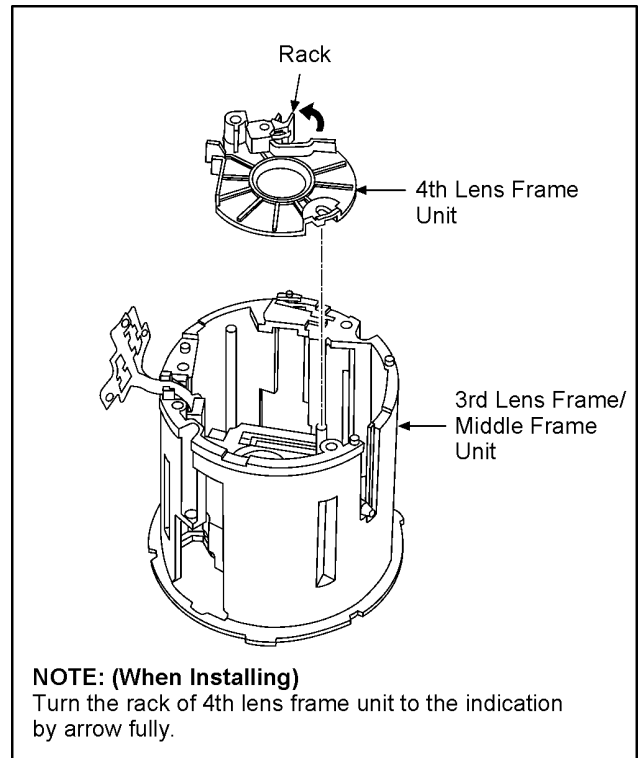
### 8.4.4. Removal of the Cam Frame



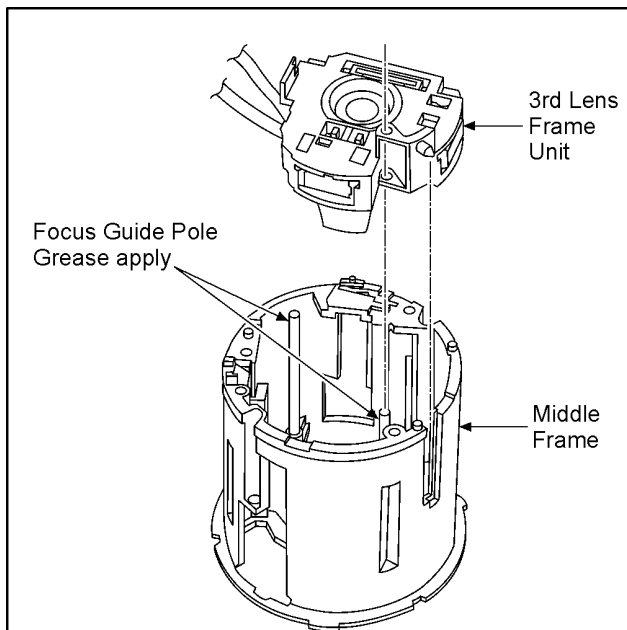
### 8.4.5. Removal of the Focus Motor Unit



### 8.4.6. Removal of the 4th Lens Frame Unit

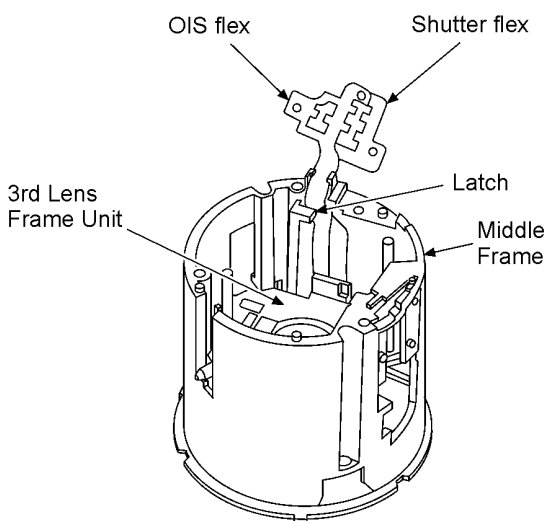


### 8.4.7. Removal of the 3rd Lens Frame Unit

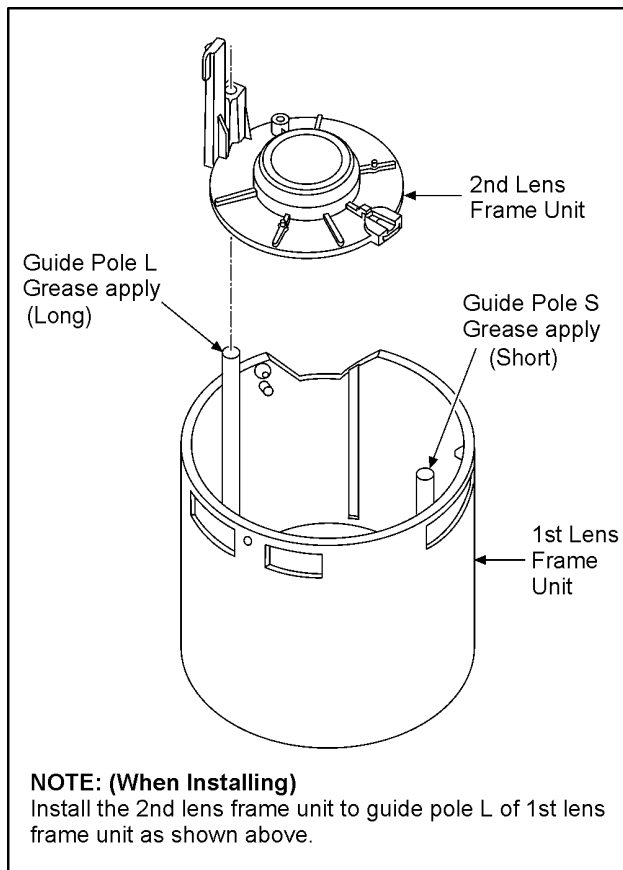


**NOTE: (When Installing)**

Install 2 focus guide poles to the middle frame.  
 Fix the OIS and shutter flex to the latch of middle frame.  
 (Installing order: OIS flex → Shutter flex)



### 8.4.8. Removal of the 2nd Lens Frame Unit



**NOTE: (When Installing)**

Install the 2nd lens frame unit to guide pole L of 1st lens frame unit as shown above.

# 9 Measurements and Adjustments

## 9.1. Adjustment Procedures

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.

The Adjustment software is available at "TSN Website", therefore, access to "TSN Website" at "Support Information from NWBG/VDBG-PAVC".

**NOTE:**

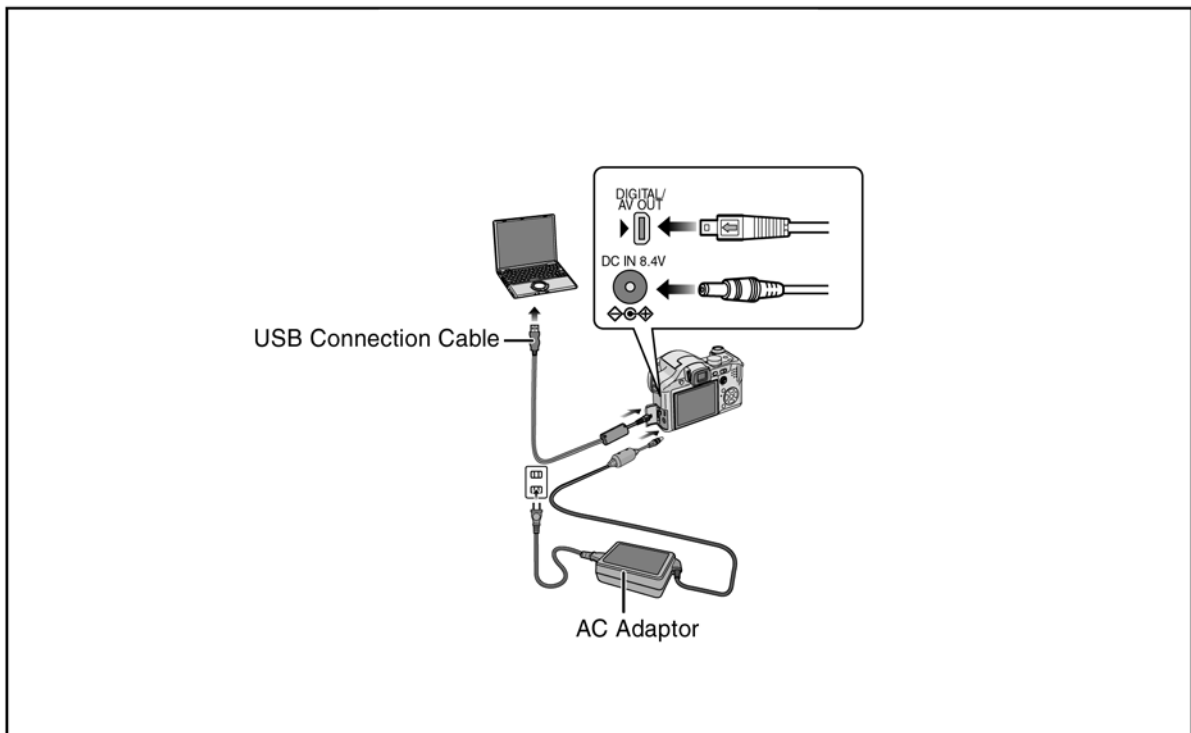
After adjustments have been terminated, make sure to achieve "INITIAL SETTINGS".

Adjustment Item		Replaced Part					
		Main P.C.B.	VENUS (IC6001)	Flash-ROM (IC6004)	Lens Part (Excluding CCD)	CCD Unit	EVF
Camera Section	OIS hall element adjustment (OIS)	○	○	○	○		
	Back focus adjustment (BF)	○	○	○	○		
	Shutter adjustment (SHT)	○	○	○	○	○	
	ISO sensitivity adjustment (ISO)	○	○	○	○	○	
	AWB adjustment High brightness coloration inspection (WBL)	○	○	○	○	○	
	CCD white scratch compensation (WKI)	○	○	○		○	
EVF Section	EVF Rank Setting (EVF)	○		○			○

**NOTE:**

\*There is no LCD adjustment in this model.

\*There is no CCD Black scratch compensation adjustment (BKI) in this model.



# 10 Maintenance

## 10.1. Cleaning Lens, Viewfinder and LCD Panel

Do not touch the surface of lens, Viewfinder and LCD Panel with your hand.

When cleaning the lens, use air-Blower to blow off the dust.

When cleaning the LCD Panel, dampen the lens cleaning paper with lens cleaner, and the gently wipe the their surface.

**Note:**

The Lens Cleaning KIT ; VFK1900BK(Only supplied as 10 set/Box) is available as Service Aid.



# Service Manual

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## Diagrams and Replacement Parts List

### Digital Camera

- |            |           |
|------------|-----------|
| DMC-FZ7PP  | DMC-FZ7GC |
| DMC-FZ7PL  | DMC-FZ7GD |
| DMC-FZ7EB  | DMC-FZ7GK |
| DMC-FZ7EE  | DMC-FZ7GN |
| DMC-FZ7EF  | DMC-FZ7GT |
| DMC-FZ7EG  | DMC-FZ7SG |
| DMC-FZ7EGM |           |

Vol. 1  
 Colour  
 (S).....Silver Type (Except DMC-FZ7GD)  
 (K).....Black Type (Except DMC-FZ7SG)

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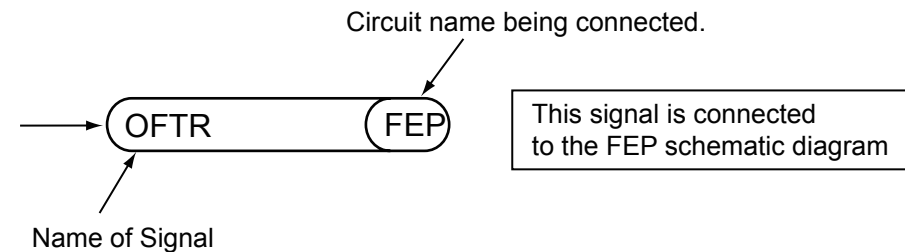
S1. About Indication of The Schematic Diagram.....	S-1	S4.2. Lens Flex P.C.B. ....	S-13
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S2.3. Video/Audio Process Block Diagram .....	S-4	S6.2. Frame and Casing Section (2).....	S-21
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## S1. About Indication of The Schematic Diagram

### S1.1. Important Safety Notice

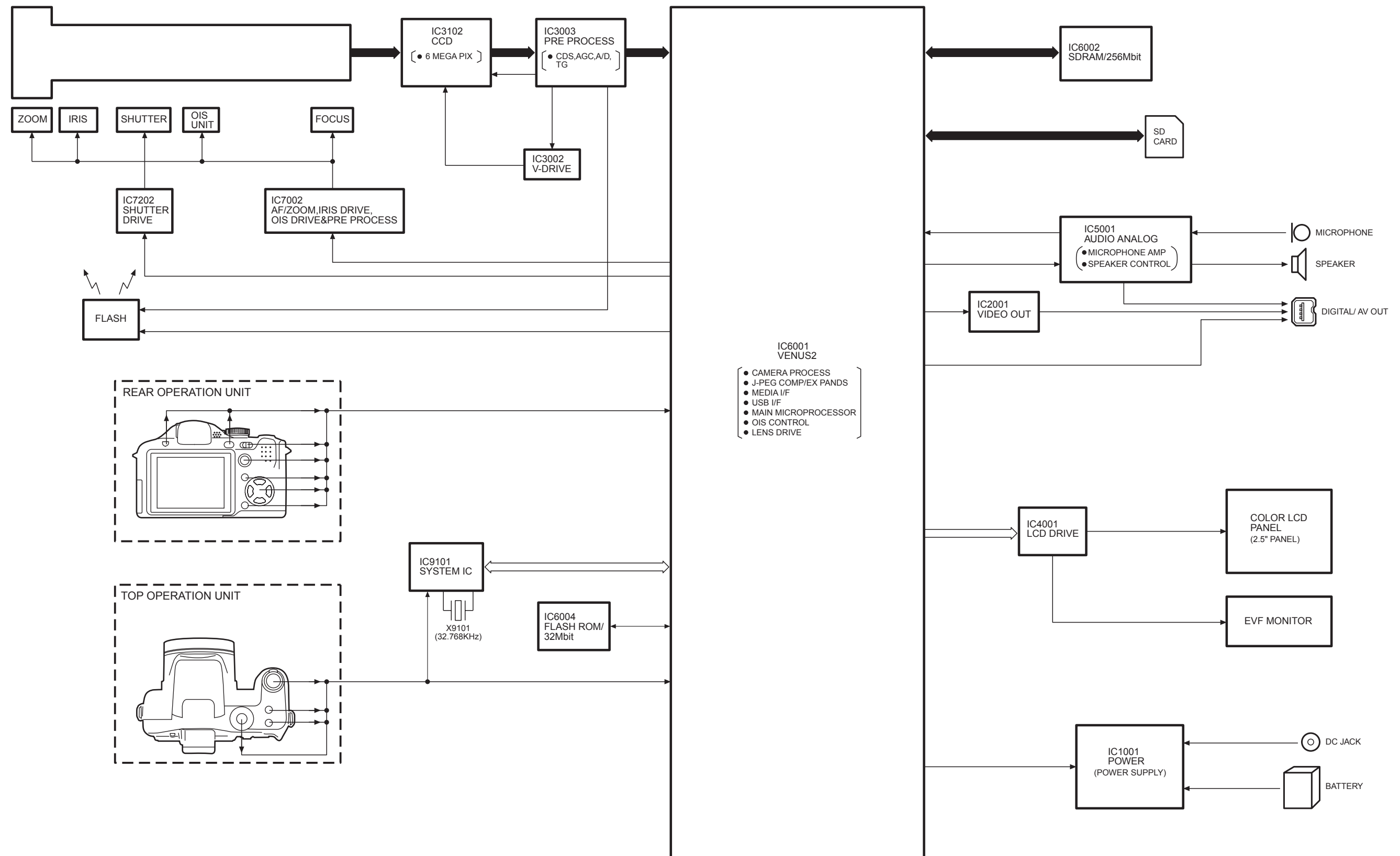
COMPONENTS IDENTIFIED WITH THE MARK  $\triangle$  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1. Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "\$" mark.
2. It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.
3. The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.
4. Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.
5. The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.
6. Use the parts number indicated on the Replacement Parts List .
7. Indication on Schematic diagrams:

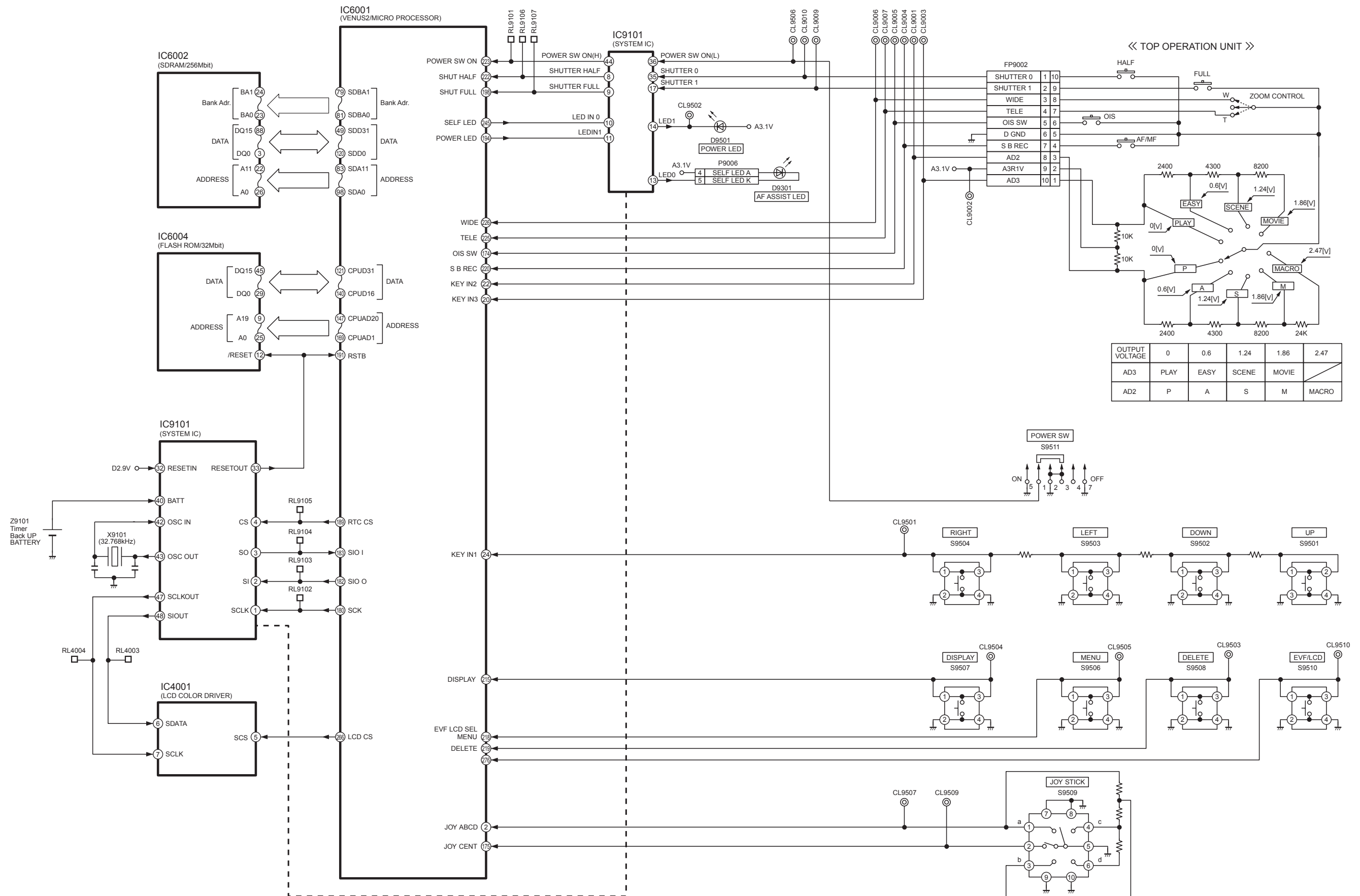


## S2. Block Diagram

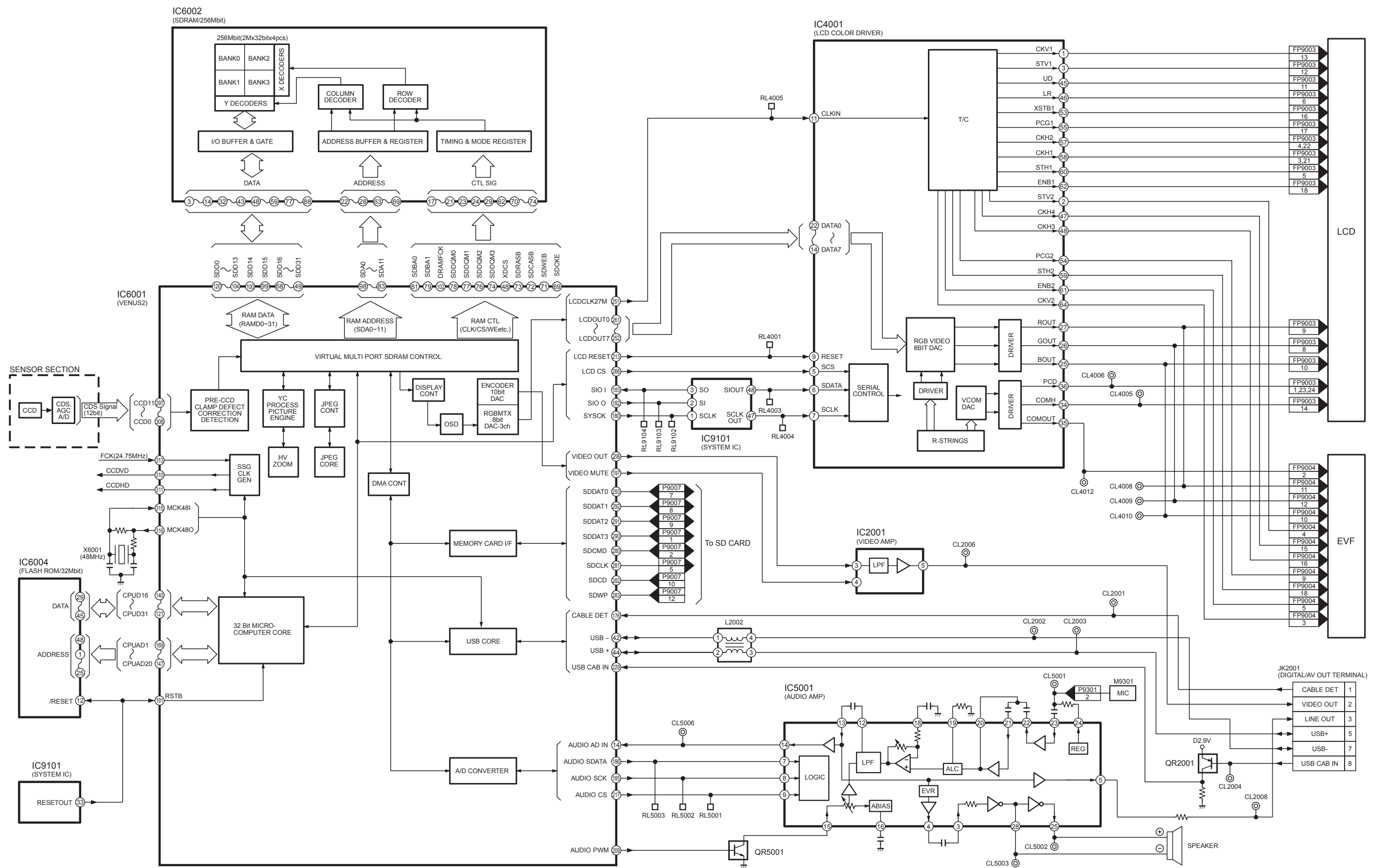
### S2.1. Overall Block Diagram



## S2.2. System Control Block Diagram

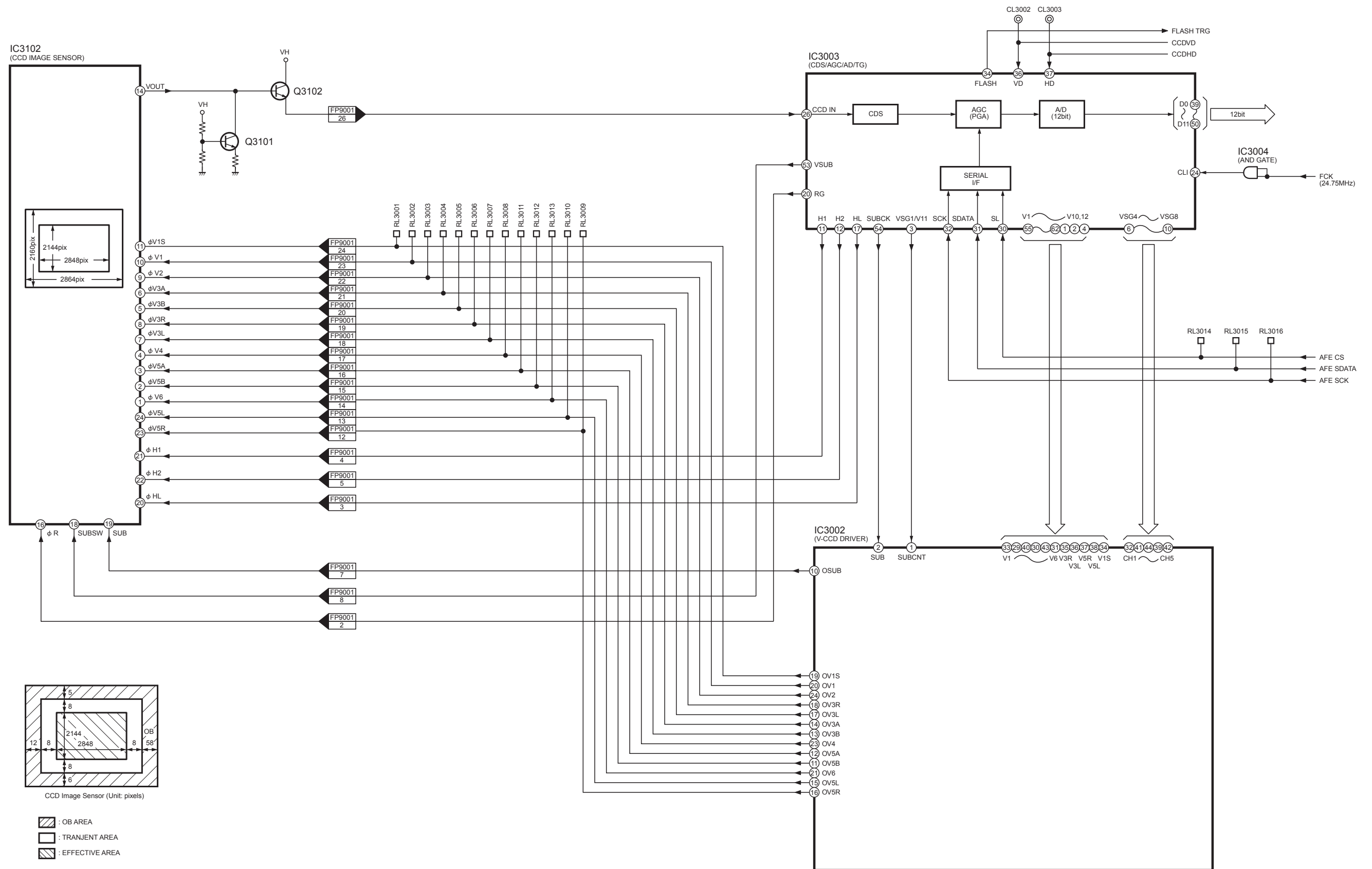


## S2.3. Video/Audio Process Block Diagram

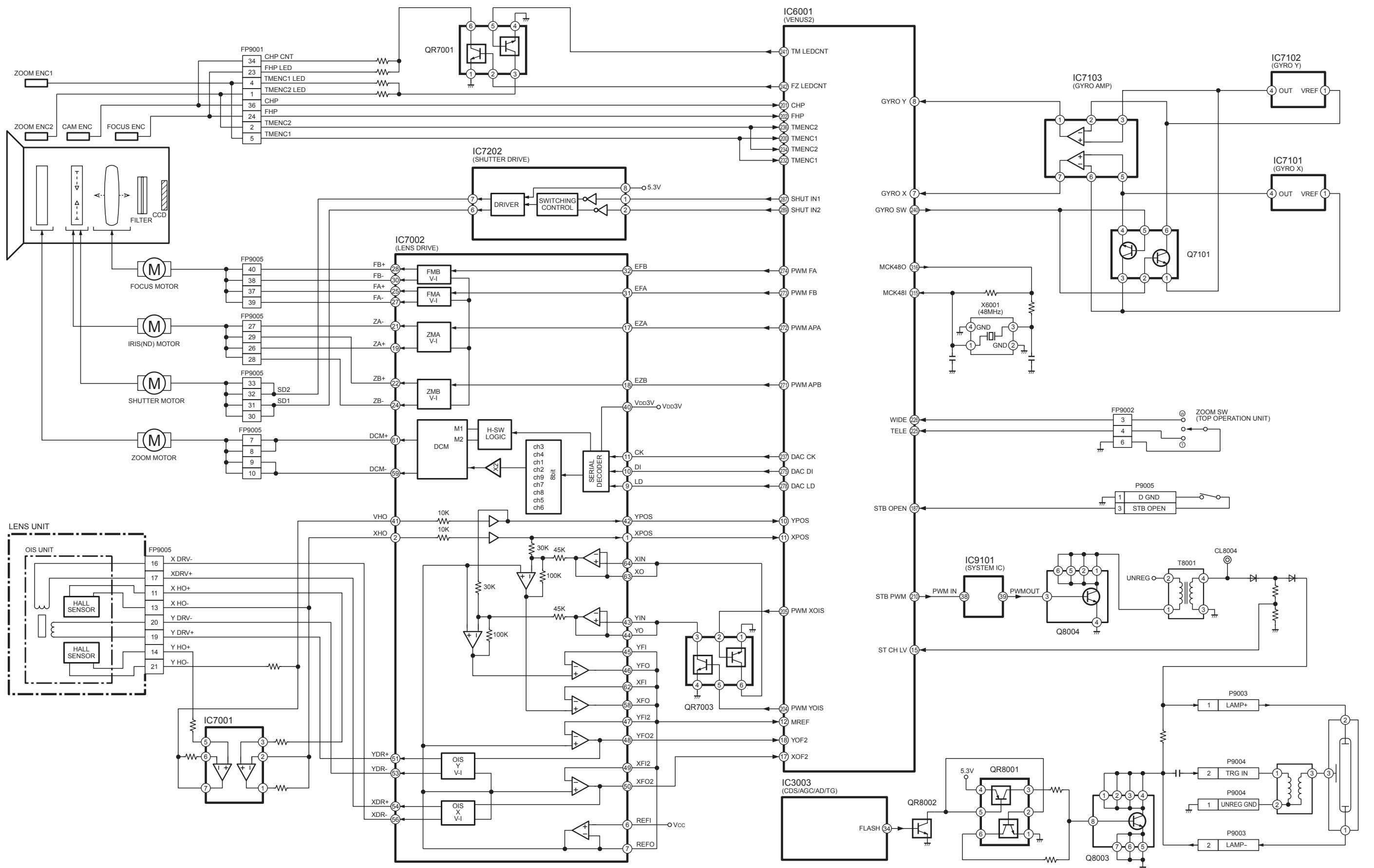


DMC-FZ7 VIDEO/AUDIO PROCESS BLOCK DIAGRAM

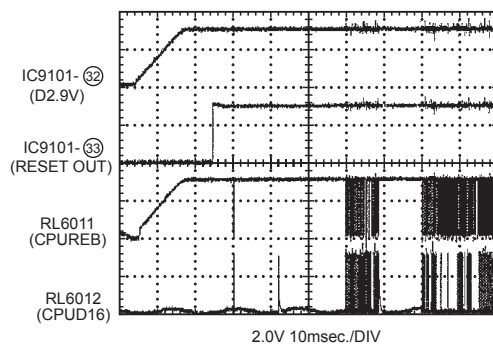
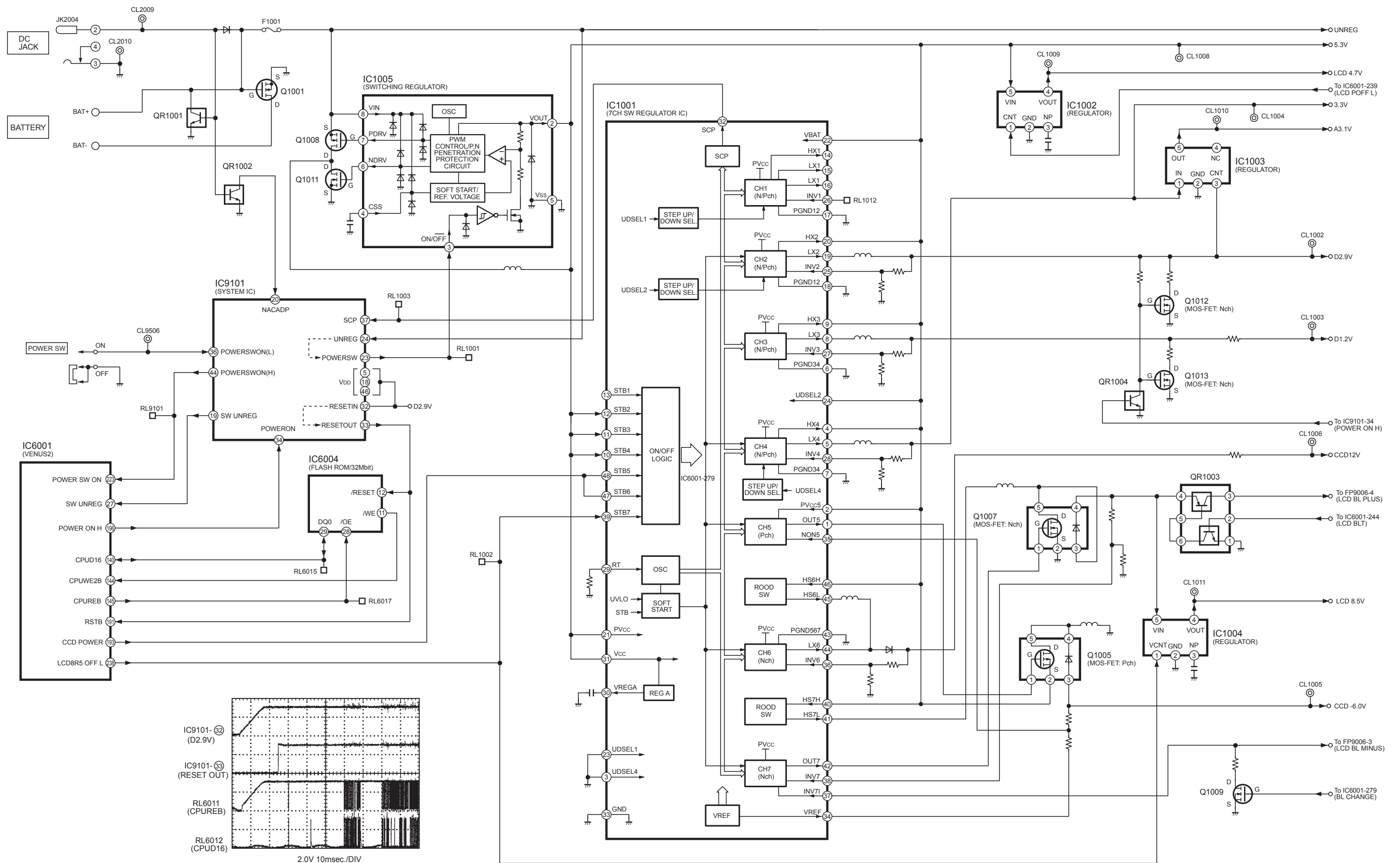
## S2.4. Sensor Block Diagram



## S2.5. Lens Drive Block Diagram

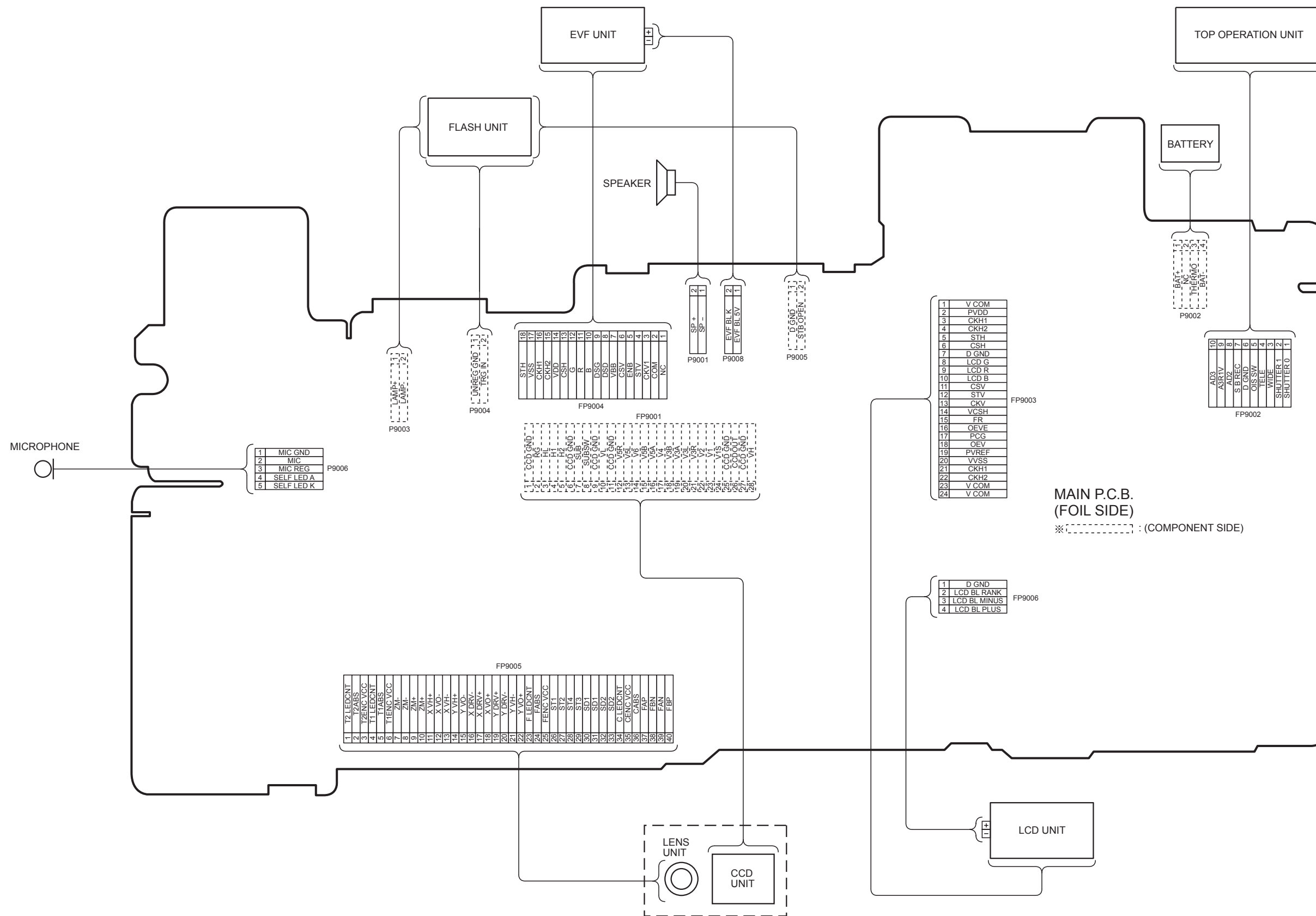


# S2.6. Power Block Diagram



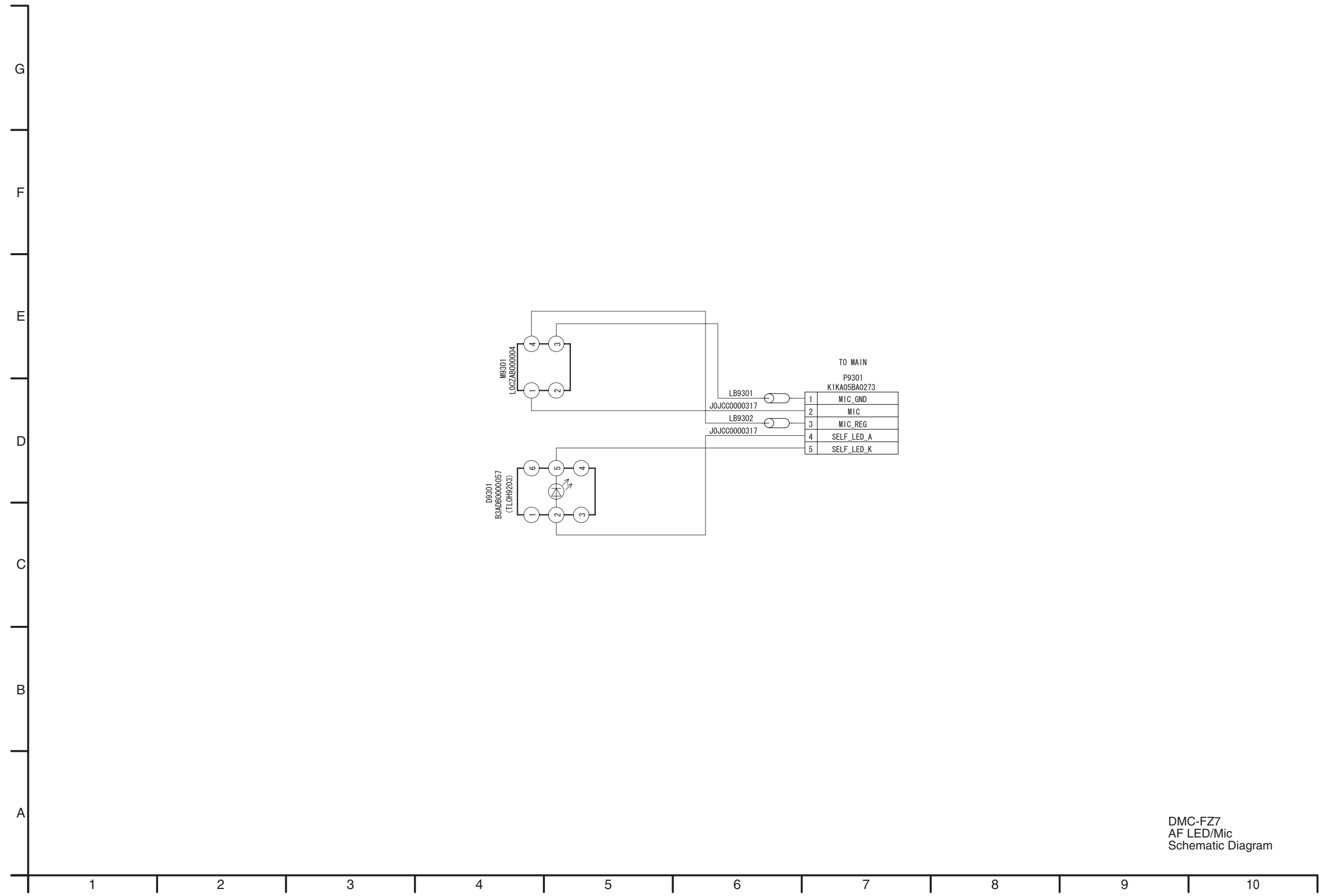
# S3. Schematic Diagram

## S3.1. Interconnection Diagram

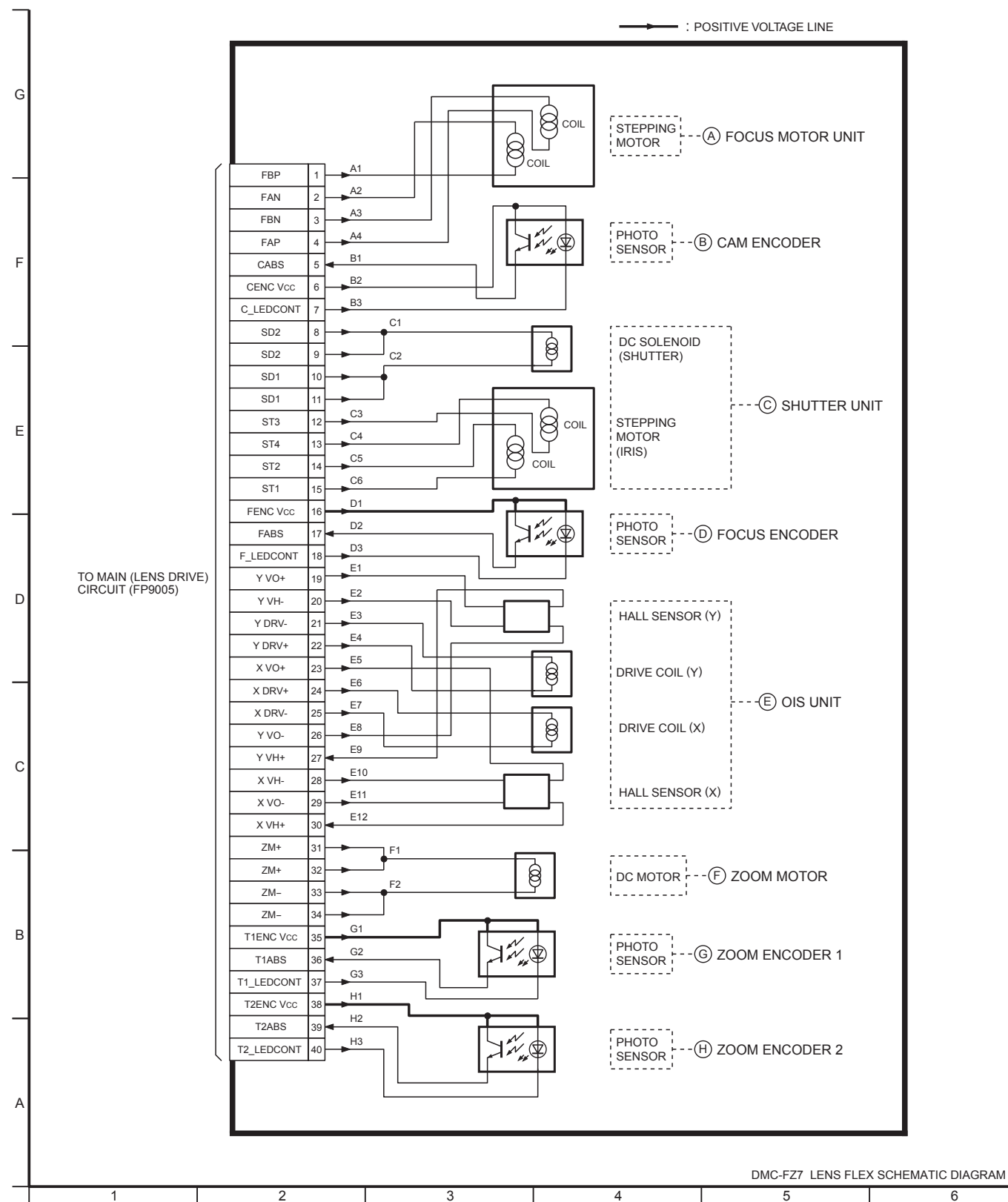




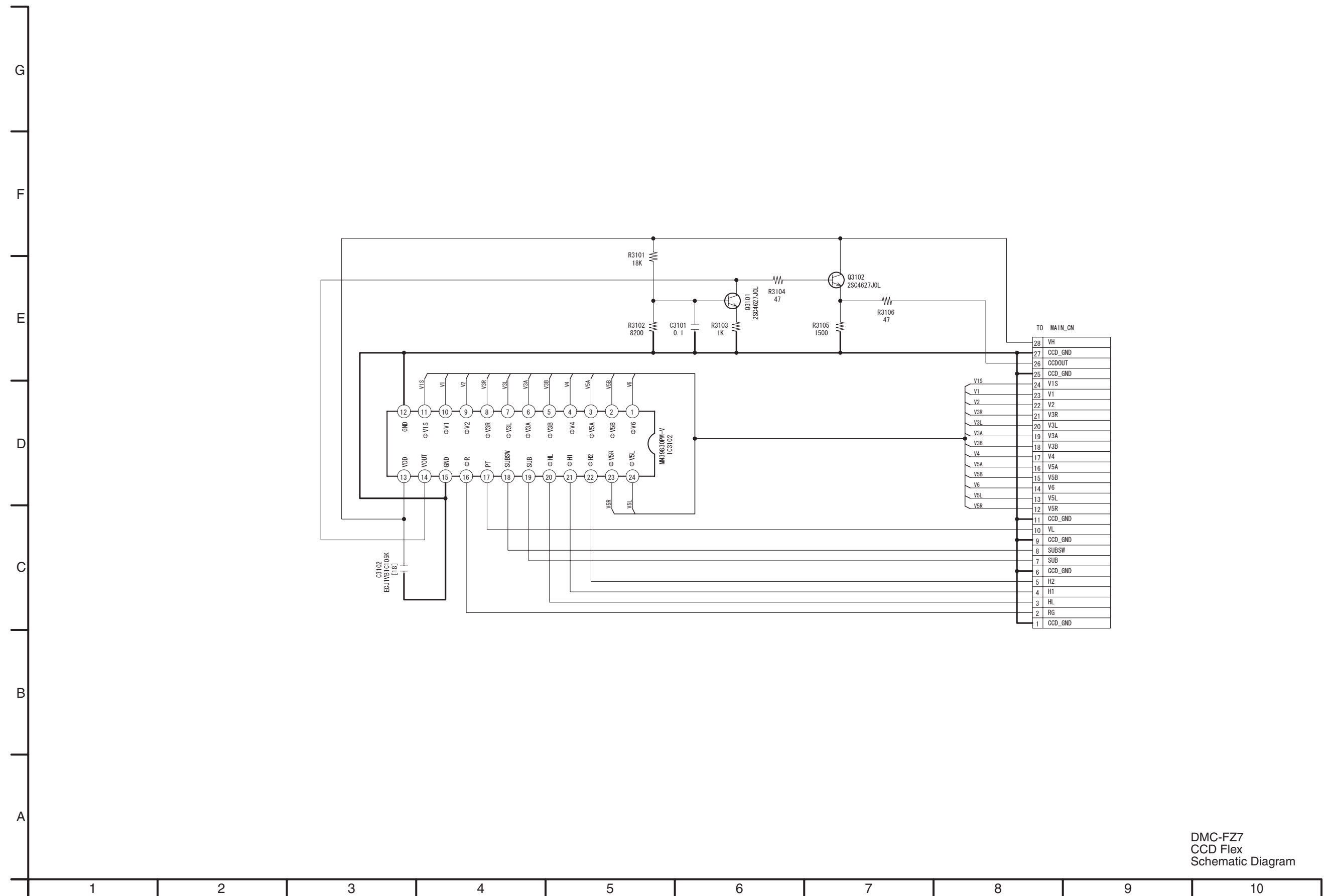
### S3.2. AF LED/Mic Schematic Diagram



### S3.3. Lens Flex Schematic Diagram



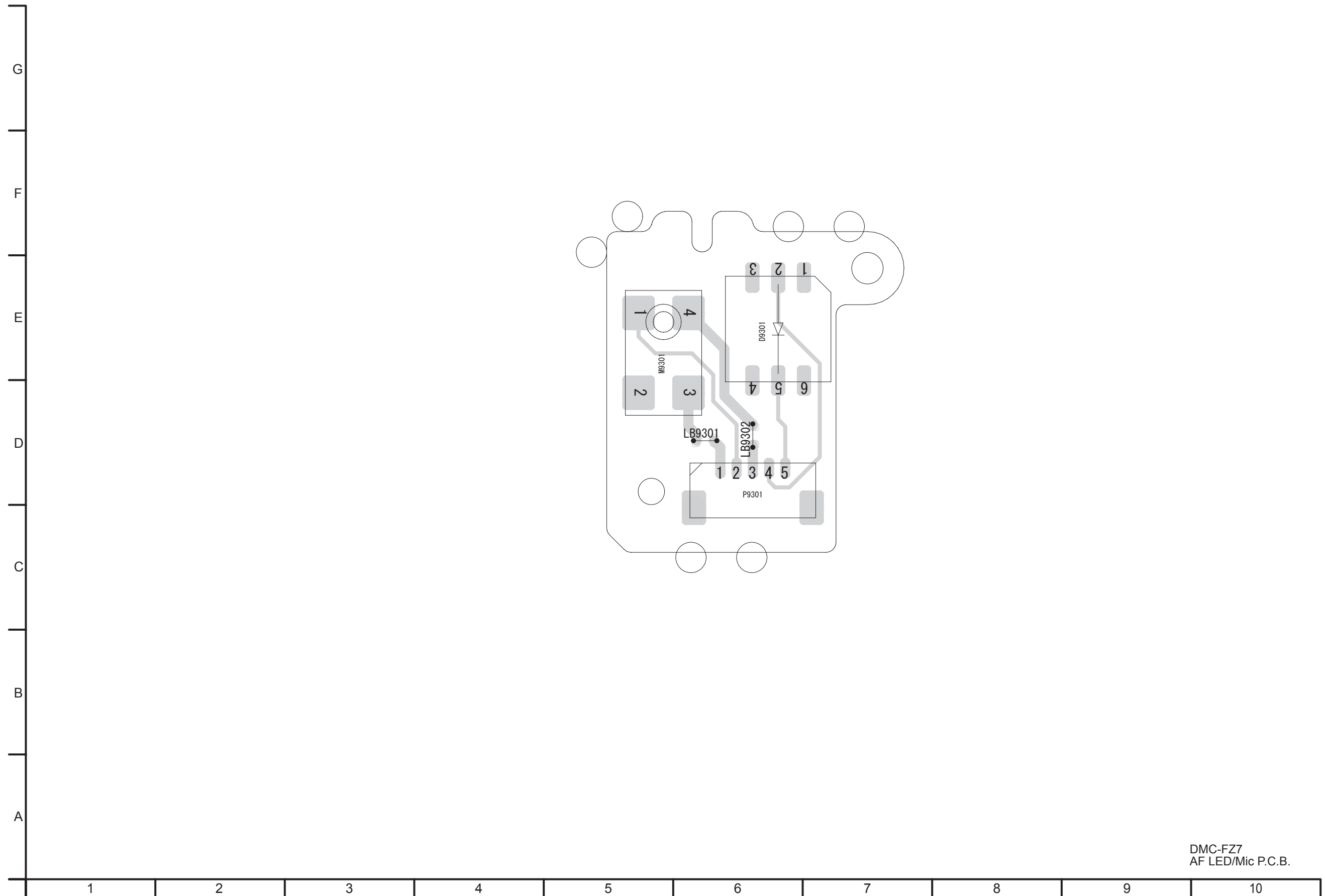
### S3.4. CCD Flex Schematic Diagram



DMC-FZ7  
CCD Flex  
Schematic Diagram

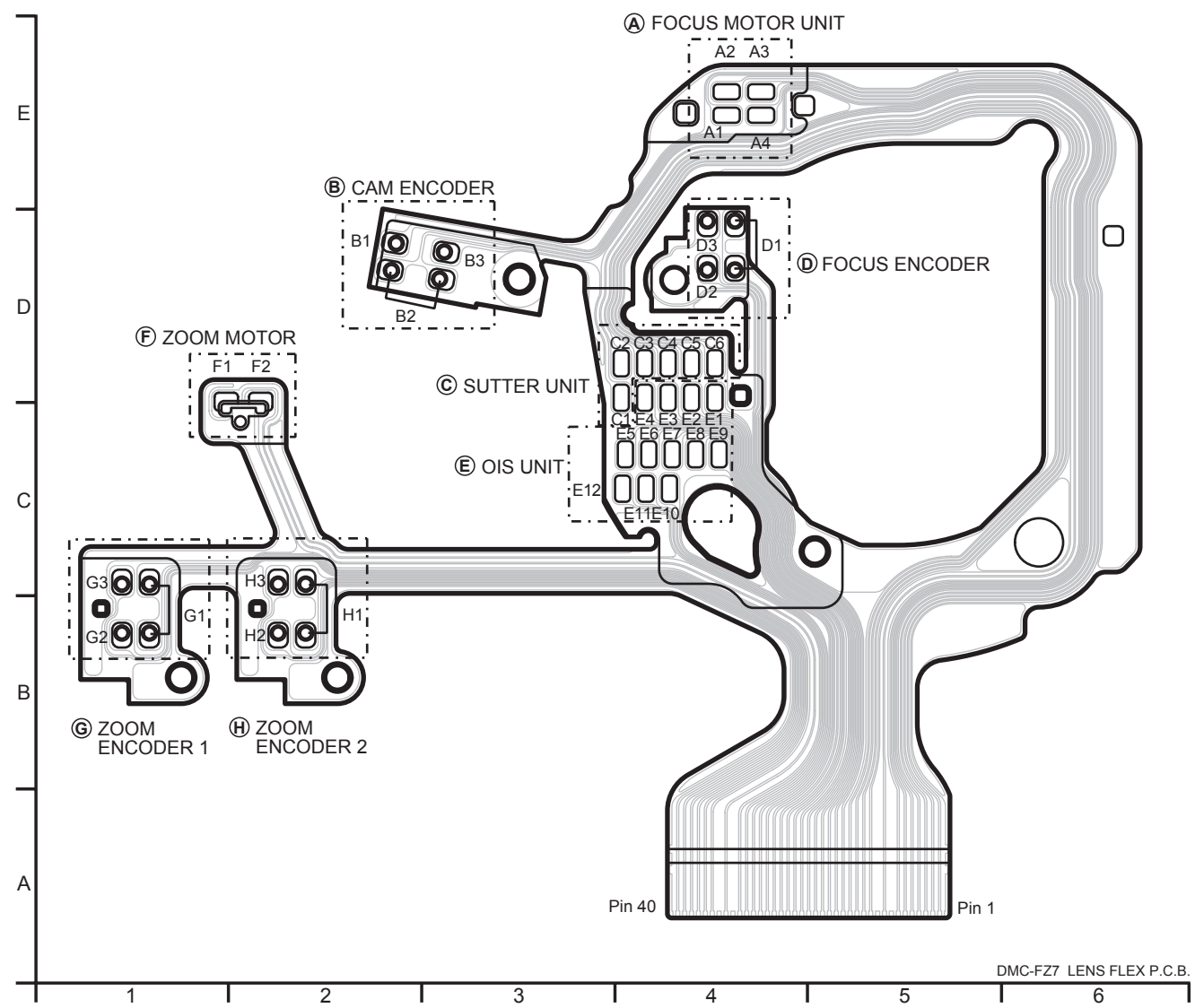
# S4. Print Circuit Board

## S4.1. AF LED/Mic P.C.B.

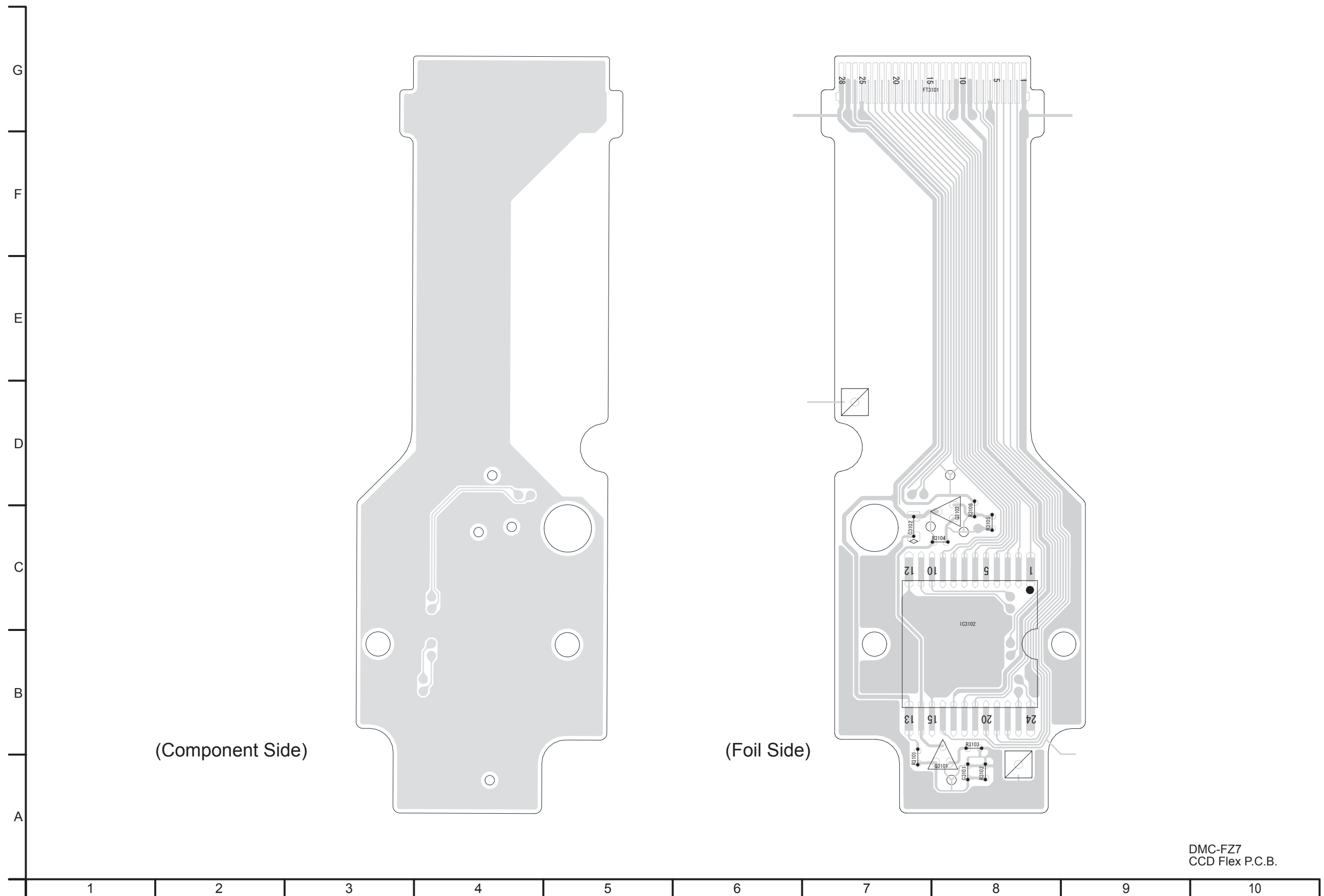


DMC-FZ7  
AF LED/Mic P.C.B.

S4.2. Lens Flex P.C.B.



S4.3. CCD Flex P.C.B.



DMC-FZ7  
CCD Flex P.C.B.

## S5. Replacement Parts List

- Note: 1.\* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE  
Components identified with the mark  $\triangle$  have the special characteristics for safety.  
When replacing any of these components, use only the same type.
3. Unless otherwise specified,  
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

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

**Definition of Parts supplier:**

1. Parts marked with [MBI] in the remarks column are supplied from  
“Matsushita Battery Industrial Co., Ltd.”
  
2. Parts marked with [PAVC-CSG] in the remarks column are supplied from  
PAVC COMPANY CS Group (PAVC-CSG).  
Others are supplied from “Panasonic Shikoku Electronics Co., Ltd.” (PSEC-SAIJO).







DMC-FZ7PP-S/K,PL-S/K,EG-S/K,EGM-S/K,EF-S/K,EB-S/K,EE-S/K,GC-S/K,GT-S/K,GK-S/K,GN-S/K,GD-K,SG-S  
M1 / M2

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
2	VDW1272	LENS RING FRONT	1	(BLACK)
2	VDW1271	LENS RING FRONT	1	(SILVER)
3	VGU9907	FLASH LOCK LEVER KNOB	1	(BLACK)
3	VGU9906	FLASH LOCK LEVER KNOB	1	(SILVER)
4	VYK1S84	FRONT CASE UNIT	1	(BLACK)
4	VYK1S83	FRONT CASE UNIT	1	(SILVER)
5	VGQ8737	GRIP PIECE FRONT	1	(BLACK) [PAVC-CSG]
5	VGQ8736	GRIP PIECE FRONT	1	(SILVER)[PAVC-CSG]
6	VMS7523	STRAP HOLDER	1	[PAVC-CSG]
8	VYK1S88	FLASH UNIT	1	(BLACK)
8	VYK1S87	FLASH UNIT	1	(SILVER)
9	VKM6873	FLASH CASE TOP	1	(BLACK)
9	VKM6872	FLASH CASE TOP	1	(SILVER)
10	VYQ3614	EVF UNIT	1	(BLACK)
10	VYQ3613	EVF UNIT	1	(SILVER)
20	VYQ3616	JACK DOOR UNIT	1	(BLACK)
20	VYQ3615	JACK DOOR UNIT	1	(SILVER)
34	VYQ3749	FLASH SW UNIT	1	
53	VXP2452	2ND LENS FRAME UNIT	1	[PAVC-CSG]
54	VDW1147	MIDDLE FRAME	1	[PAVC-CSG]
55	L6HA88NC0005	FOCUS MOTOR UNIT	1	[PAVC-CSG]
56	VXP2455	3RD LENS FRAME UNIT	1	[PAVC-CSG]
57	VXP2459	4TH LENS FRAME UNIT	1	[PAVC-CSG]
58	VDW1167	CAM FRAME	1	[PAVC-CSG]
59	VDW1292	MASTER FLANGE	1	[PAVC-CSG]
60	L6DAAAHB0001	ZOOM MOTOR UNIT	1	[PAVC-CSG]
61	VEK0H56	LENS FLEX. UNIT	1	[PAVC-CSG]
62	VDL1826	OPTICAL FILTER	1	[PAVC-CSG]
63	VMX3437	CCD CUSHION RUBBER	1	[PAVC-CSG]
64	VEK0J72	CCD UNIT	1	E.S.D.[PAVC-CSG]
65	VXP2450	1ST LENS FRAME UNIT	1	[PAVC-CSG]
66	VXW0792	LENS UNIT (W/O CCD)	1	(BLACK) [PAVC-CSG]
66	VXW0791	LENS UNIT (W/O CCD)	1	(SILVER)[PAVC-CSG]
67	B3NAA0000074	PHOTO SENSOR	1	[PAVC-CSG]
68	B3NAA0000074	PHOTO SENSOR	1	[PAVC-CSG]
69	B3NAA0000074	PHOTO SENSOR	1	[PAVC-CSG]
70	B3NAA0000074	PHOTO SENSOR	1	[PAVC-CSG]
71	VMS7580	FOCUS GUIDE POLE	1	[PAVC-CSG]
72	VMS7580	FOCUS GUIDE POLE	1	[PAVC-CSG]
B1	VHD1870	SCREW	1	(BLACK)
B1	VHD1680	SCREW	1	(SILVER)
B5	XQN16+B.J4FN	SCREW	1	
B6	XQN16+B.J4FN	SCREW	1	
B7	VHD1869	SCREW	1	
B8	VHD1869	SCREW	1	
B9	VHD1869	SCREW	1	
B10	VHD1839	SCREW	1	
B14	XQN16+B.J6FN	SCREW	1	
B15	XQN16+B.J8FN	SCREW	1	
B16	XQN16+B.J8FN	SCREW	1	
B21	VHD1870	SCREW	1	(BLACK)
B21	XQN16+B.J5FN	SCREW	1	(SILVER)
B24	VHD1870	SCREW	1	
B25	VHD1765	SCREW	1	
B26	VHD1765	SCREW	1	
B27	VHD1765	SCREW	1	
B50	XQN14+C.J3FN	SCREW	1	[PAVC-CSG]
B51	XQN14+C.J3FN	SCREW	1	[PAVC-CSG]
B52	XQN14+C.J3FN	SCREW	1	[PAVC-CSG]
B53	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B54	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B55	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B56	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B57	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B58	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B59	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B60	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B61	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B62	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]
B63	XQN16+C.J5FJK	SCREW	1	[PAVC-CSG]

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	K0RB01000007	TOP OPERATION UNIT	1	(BLACK)
1	K0RB01000006	TOP OPERATION UNIT	1	(SILVER)
11	K1ZZ00001294	BATTERY CATCHER	1	
12	VEE1C18	AF LED & MIC WIRE	1	
13	VEP56031A	MAIN P.C.B.	1	E.S.D.(RTL)
14	VGQ8573	JOY COVER	1	
15	VGQ8742	CONDENSER HOLDER	1	
16	VGQ8747	AF LED PCB HOLDER	1	
17	VGU9911-1	JOY STICK KNOB	1	
18	VYK1S90-1	BATTERY FLAME UNIT	1	(BLACK)
18	VYK1S89-1	BATTERY FLAME UNIT	1	(SILVER)
19	VMB4039	BATTERY SPRING	1	[PAVC-CSG]
21	VEP59023A	AF LED/MIC P.C.B.	1	E.S.D.(RTL)
22	VYQ3220	MIC DAMPER UNIT	1	
24	L0AA01A00022	SPEAKER	1	
25	VMP8546-1	LCD HOLDER	1	
26	VMP8572	SP FIX PLATE	1	
27	VGQ8748	POWER LED	1	[PAVC-CSG]
28	VGU9910-1	POWER KNOB	1	(BLACK) [PAVC-CSG]
28	VGU9909-1	POWER KNOB	1	(SILVER)[PAVC-CSG]
29	VGU9913-1	MENU BUTTON	1	(BLACK) [PAVC-CSG]
29	VGU9912-1	MENU BUTTON	1	(SILVER)[PAVC-CSG]
30	VGU9915-1	EVF BUTTON	1	(BLACK) [PAVC-CSG]
30	VGU9914-1	EVF BUTTON	1	(SILVER)[PAVC-CSG]
31	VMS7523	STRAP HOLDER	1	[PAVC-CSG]
32	VYQ3729	LCD UNIT	1	
35	VYK1V98	REAR CASE UNIT	1	(BLACK) [PAVC-CSG]
35	VYK1V97	REAR CASE UNIT	1	(SILVER)[PAVC-CSG]
36	VSQ1238	BUSTERAID	1	
37	VGQ8438	SHEET	1	
B2	VHD1870	SCREW	1	(BLACK)
B2	VHD1680	SCREW	1	(SILVER)
B3	VHD1870	SCREW	1	(BLACK)
B3	VHD1680	SCREW	1	(SILVER)
B11	VHD1680	SCREW	1	
B12	XQN16+B.J4FN	SCREW	1	
B13	XQN16+B.J4FN	SCREW	1	
B17	XQN16+B.J4FN	SCREW	1	[PAVC-CSG]
B18	XQN16+B.J4FN	SCREW	1	
B19	XQN16+B.J4FN	SCREW	1	
B20	XQN16+B.J4FN	SCREW	1	
B22	VHD1870	SCREW	1	(BLACK)
B22	XQN16+B.J5FN	SCREW	1	(SILVER)
B23	VHD1870	SCREW	1	(BLACK)
B23	XQN16+B.J5FN	SCREW	1	(SILVER)

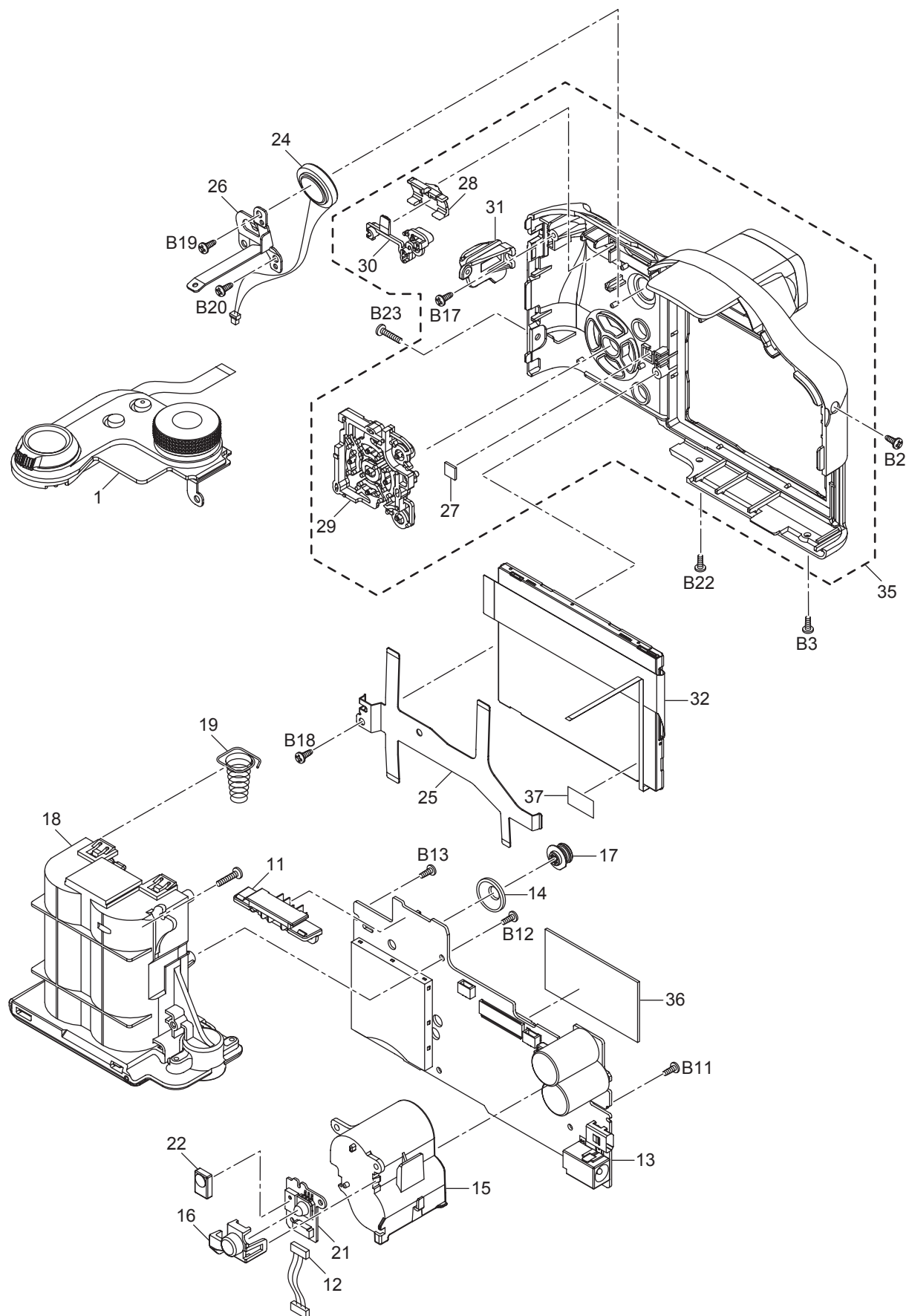
DMC-FZ7PP-S/K,PL-S/K,EG-S/K,EGM-S/K,EF-S/K,EB-S/K,EE-S/K,GC-S/K,GT-S/K,GK-S/K,GN-S/K,GD-K,SG-S  
M3

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
100	-----	BATTERY	1	
101	DE-993B	BATTERY CHARGER	1	PP-K/S,PL-K/S
101	DE-994A	BATTERY CHARGER	1	EG-K/S,EGM-K/S,EF-K/S, EB-K/S,GN-K/S
101	DE-994B	BATTERY CHARGER	1	EE-K/S,GC-K/S,GK-K/S, GD-K,SG-S
101	DE-994C	BATTERY CHARGER	1	GT-K/S
102	K1HA08CD0007	USB CABLE W/PLUG	1	[PAVC-CSG]
103	K1HA08CD0008	AUDIO VIDEO CABLE W/PLUG	1	[PAVC-CSG]
105	VFC4160	STRAP	1	
106	VFF0314-S	CD-ROM	1	See "Notes"[PAVC-CSG] PP-K/S
106	VFF0315-S	CD-ROM	1	See "Notes"[PAVC-CSG] (EXCEPT PP-K/S)
108	VPF1100	POLY BAG	1	[PAVC-CSG] PP-K/S,EF-K/S,EB-K/S, EE-K/S,GT-K/S,GK-K/S, GN-K/S,GD-K
110	VQT0V63	INSTRUCTION BOOK (ENGLISH/SPANISH)	1	[PAVC-CSG] PP-K/S
110	VQT0V64	INSTRUCTION BOOK (CANADIAN FRENCH)	1	[PAVC-CSG] PP-K/S
110	VQT0V65	INSTRUCTION BOOK (ENGLISH)	1	[PAVC-CSG] PL-K/S
110	VQT0V66	INSTRUCTION BOOK (SPANISH)	1	[PAVC-CSG] PL-K/S
110	VQT0V67	INSTRUCTION BOOK (PORTUGUESE)	1	[PAVC-CSG] PL-K/S
110	VQT0V68	INSTRUCTION BOOK (GERMAN)	1	[PAVC-CSG] EG-K/S
110	VQT0V69	INSTRUCTION BOOK (FRENCH)	1	[PAVC-CSG] EG-K/S,EF-K/S
110	VQT0V70	INSTRUCTION BOOK (ITALIAN)	1	[PAVC-CSG] EG-K/S
110	VQT0V71	INSTRUCTION BOOK (DUTCH)	1	[PAVC-CSG] EG-K/S
110	VQT0V72	INSTRUCTION BOOK (SPANISH)	1	[PAVC-CSG] EGM-K/S
110	VQT0V73	INSTRUCTION BOOK (PORTUGUESE)	1	[PAVC-CSG] EGM-K/S
110	VQT0V74	INSTRUCTION BOOK (SWEDISH)	1	[PAVC-CSG] EGM-K/S
110	VQT0V75	INSTRUCTION BOOK (DANISH)	1	[PAVC-CSG] EGM-K/S
110	VQT0V76	INSTRUCTION BOOK (ENGLISH)	1	[PAVC-CSG] EB-K/S
110	VQT0V79	INSTRUCTION BOOK (RUSSIAN)	1	[PAVC-CSG] EE-K/S
110	VQT0W19	INSTRUCTION BOOK (UR)	1	[PAVC-CSG] EE-K/S
110	VQT0V77	INSTRUCTION BOOK (ENGLISH)	1	[PAVC-CSG] GC-K/S,SG-S
110	VQT0V78	INSTRUCTION BOOK (CHINESE/TRADITIONAL)	1	[PAVC-CSG] GC-K/S,SG-S
110	VQT0V80	INSTRUCTION BOOK (ARABIC)	1	[PAVC-CSG] GC-K/S,SG-S
110	VQT0V81	INSTRUCTION BOOK (CHINESE/TRADITIONAL)	1	[PAVC-CSG] GT-K/S
110	VQT0V82	INSTRUCTION BOOK (CN)	1	[PAVC-CSG] GK-K/S
110	VQT0V83	INSTRUCTION BOOK (ENGLISH)	1	[PAVC-CSG] GN-K/S
110	VQT0V84	INSTRUCTION BOOK (KO)	1	[PAVC-CSG] GD-K
111	VQT0W41	O/I PC CONN. (ENGLISH/SPANISH/ CANADIAN FRENCH)	1	[PAVC-CSG] PP-K/S
111	VQT0W42	O/I PC CONN. (ENGLISH/SPANISH/ PORTUGUESE)	1	[PAVC-CSG] PL-K/S
111	VQT0W43	O/I PC CONN. (GERMAN/FRENCH/ITALIAN/ DUTCH)	1	[PAVC-CSG] EG-K/S

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
111	VQT0W44	O/I PC CONN. (SPANISH/PORTUGUESE/ SWEDISH/DANISH)	1	[PAVC-CSG] EGM-K/S
111	VQT0W45	O/I PC CONN. (FRENCH)	1	[PAVC-CSG] EF-K/S
111	VQT0W46	O/I PC CONN. (ENGLISH)	1	[PAVC-CSG] EB-K/S
111	VQT0W14	O/I PC CONN. (UR)	1	[PAVC-CSG] EE-K/S
111	VQT0W47	O/I PC CONN. (ENGLISH)	1	[PAVC-CSG] GC-K/S,SG-S
111	VQT0W48	O/I PC CONN. (CHINESE)	1	[PAVC-CSG] GT-K/S
111	VQT0W49	O/I PC CONN. (CN)	1	[PAVC-CSG] GK-K/S
111	VQT0W50	O/I PC CONN. (ENGLISH)	1	[PAVC-CSG] GN-K/S
111	VQT0W51	O/I PC CONN. (KO)	1	[PAVC-CSG] GD-K
112	VQT0X22	O/I SOFTWARE (ENGLISH/CANADIAN FRENCH)	1	[PAVC-CSG] PP-K/S
112	VQT0X23	O/I SOFTWARE (ENGLISH/SPANISH/ PORTUGUESE)	1	[PAVC-CSG] PL-K/S
112	VQT0X24	O/I SOFTWARE (GERMAN/FRENCH/ITALIAN/ DUTCH)	1	[PAVC-CSG] EG-K/S
112	VQT0X25	O/I SOFTWARE (SPANISH/PORTUGUESE/ SWEDISH/DANISH)	1	[PAVC-CSG] EGM-K/S
112	VQT0W13	O/I SOFTWARE (FRENCH)	1	[PAVC-CSG] EF-K/S
112	VQT0X26	O/I SOFTWARE (ENGLISH)	1	[PAVC-CSG] EB-K/S
112	VQT0W15	O/I SOFTWARE (UR)	1	[PAVC-CSG] EE-K/S
112	VQT0W53	O/I SOFTWARE (ENGLISH)	1	[PAVC-CSG] GC-K/S,SG-S
112	VQT0X27	O/I SOFTWARE (CHINESE/TRADITIONAL)	1	[PAVC-CSG] GT-K/S
112	VQT0X28	O/I SOFTWARE (CN)	1	[PAVC-CSG] GK-K/S
112	VQT0X29	O/I SOFTWARE (ENGLISH)	1	[PAVC-CSG] GN-K/S
112	VQT0X30	O/I SOFTWARE (KO)	1	[PAVC-CSG] GD-K
113	VYK1T69	LENS CAP UNIT	1	
116	VYQ3809	LENS HOOD UNIT	1	(BLACK) [PAVC-CSG]
116	VYQ3808	LENS HOOD UNIT	1	(SILVER)[PAVC-CSG]
117	VYQ3797	LENS ADAPTOR UNIT	1	(BLACK) [PAVC-CSG]
117	VYQ3796	LENS ADAPTOR UNIT	1	(SILVER)[PAVC-CSG]
118	VPF1166	CAMERA BAG	1	
120	VPK3102	PACKING CASE	1	PP-K
120	VPK3098	PACKING CASE	1	PP-S
120	VPK3103	PACKING CASE	1	PL-K,EG-K,EGM-K,EF-K,EB-K, EE-K,GC-K,GT-K,GN-K,GD-K
120	VPK3099	PACKING CASE	1	PL-S,EG-S,EGM-S,EF-S,EB-S, EE-S,GC-S,GT-S,GN-S,SG-S
120	VPK3104	PACKING CASE	1	GK-K
120	VPK3100	PACKING CASE	1	GK-S
123	VPN6403	CUSHION	1	
124	K2C02CA00006	AC CORD W/PLUG	1	EG-K/S,EGM-K/S,EF-K/S, EE-K/S,GC-K/S,SG-S
125	K2CT3CA00004	AC CORD W/PLUG	1	EB-K/S,GC-K/S,SG-S
126	K2CA2CA00027	AC CORD W/PLUG	1	GT-K/S
126	K2CA2CA00020	AC CORD W/PLUG	1	GK-K/S
128	K2CJ2DA00008	AC CORD W/PLUG	1	GN-K/S
129	RJA0078-1X	AC CORD W/PLUG	1	GD-K
130	RP-SD016BVE0	SD CARD	1	
131	VPF1214	SD CARD BAG,POLYETHYLENE	1	



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



### S6.3. Packing Parts and Accessories Section

