ORDER NO. DSC1003025CE
B26

Service Manual

Digital Camera

LUMIX

Model No. DMC-F2P
DMC-F2PC
DMC-F2PR
DMC-F2PU
DMC-F2EB
DMC-F2EE
DMC-F2EF
DMC-F2EG
DMC-F2EP
DMC-F2GC
DMC-F2GF
DMC-F2GN

Vol. 2

Colour
(S).....Silver Type (except PC/EF)
(K).....Black Type
(P).....Pink Type (except PC/EF)

⚠ 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

© Panasonic Corporation 2010 Unauthorized copying and distribution is a violation of law.

TABLE OF CONTENTS

PAGE

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.
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 MΩ and 5.2 MΩ. 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 kΩ, 10 W resistor, in parallel with a 0.15 μF 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 kΩ/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.

Hot-Check Circuit

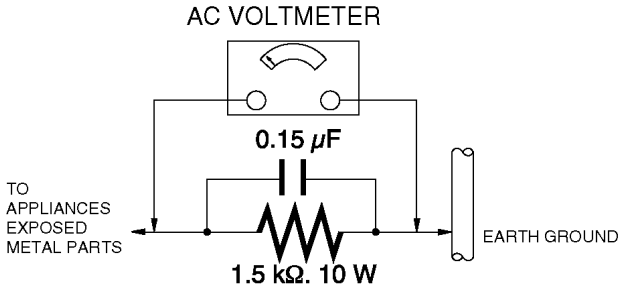


Figure. 1

1.4. How to Discharge the Capacitor on Flash Top P.C.B.

CAUTION:

1. **Be sure to discharge the capacitor on FLASH TOP P.C.B..**
2. **Be careful of the high voltage circuit on FLASH TOP P.C.B. when servicing.**

[Discharging Procedure]

1. Refer to the disassemble procedure and remove the necessary parts/unit.
2. Install the insulation tube onto the lead part of resistor (ERG5SJ102:1kΩ /5W).
   (an equivalent type of resistor may be used.)
3. Place a resistor between both terminals of capacitor on the FLASH TOP P.C.B. for approx. 5 seconds.
4. After discharging, confirm that the capacitor voltage is lower than 10V using a voltmeter.

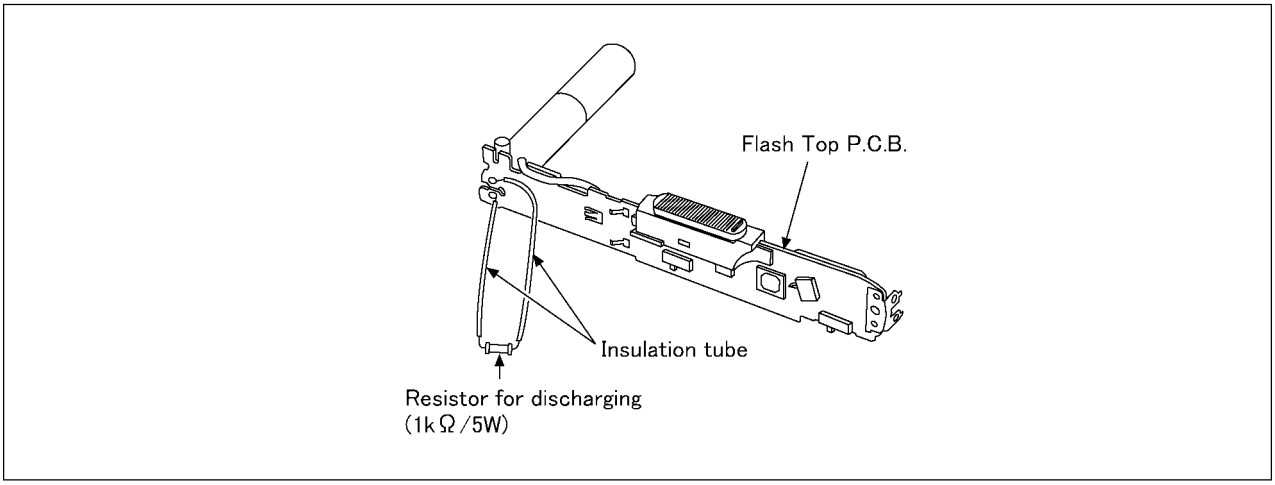


Fig. F1

2 Warning

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

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

> Examples of typical ES devices are 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 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. Caution for AC Cord (For EB/GC)

2.3.1. Information for Your Safety

IMPORTANT

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

WARNING

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

CAUTION

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

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER

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

2.3.2. Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362
Check for the ASTA mark or the BSI mark on the body of the fuse.

ASTA mark	BSI mark

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 safety.
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.

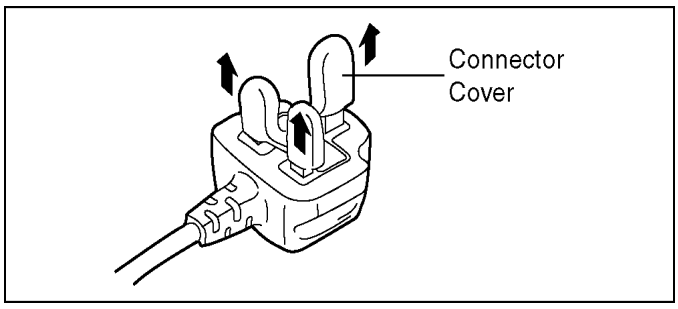
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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.

Earth Symbol	⏚

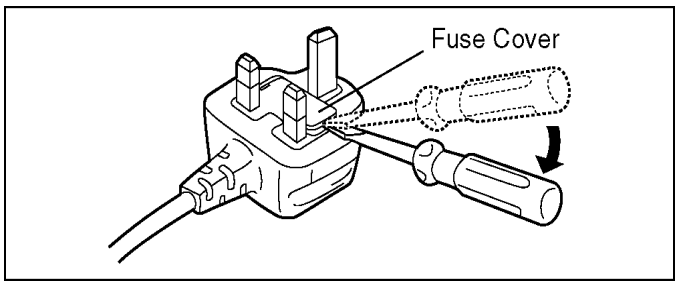
2.3.2.2. Before Use

Remove the Connector Cover as follows.

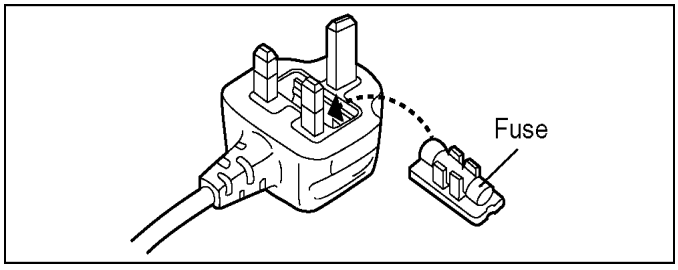


2.3.2.3. How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



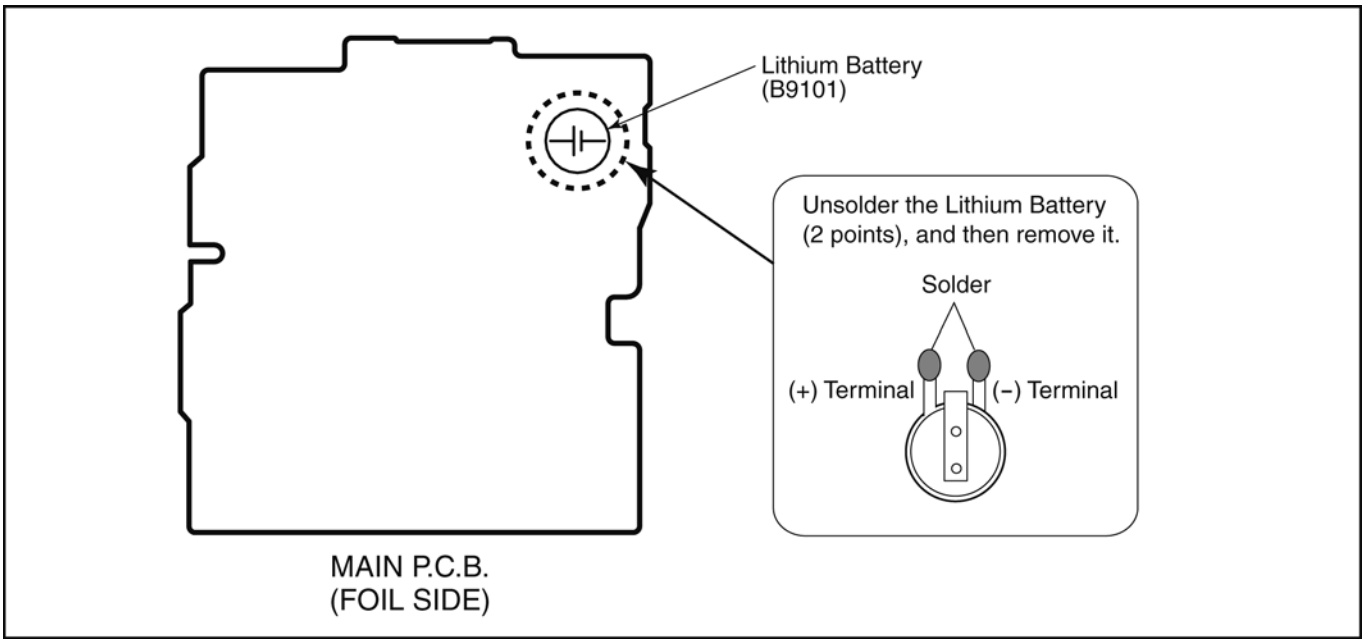
2.4. How to Replace the Lithium Battery

2.4.1. Replacement Procedure

1. Remove the MAIN P.C.B.. (Refer to Disassembly Procedures.)
2. Unsolder the each soldering point of electric lead terminal for Lithium battery (Ref. No. “B9101” at foil side of MAIN P.C.B.) and remove the Lithium battery together with electric lead terminal. Then replace it into new one.

NOTE:

The Type No. ML421 includes electric lead terminals.



NOTE:

This Lithium battery is a critical component.
(Type No.: ML421 **Manufactured by Energy Company, Panasonic Corporation.**)
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in requirement designed specifically for its use.
Replacement batteries must be of same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

(For English)

CAUTION

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

(For German)

ACHTUNG

Explosionsgefahr bei falschem Anbringen der Batterie. Ersetzen Sie nur mit einem äquivalentem vom Hersteller empfohlenem Typ.
Behandeln Sie gebrauchte Batterien nach den Anweisungen des Herstellers.

(For French)

MISE EN GARDE

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

NOTE:

Above caution is applicable for a battery pack which is for DMC-F2 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 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.
  RFKZ03D01KS----------(0.3mm 100g Reel)
  RFKZ06D01KS----------(0.6mm 100g Reel)
  RFKZ10D01KS----------(1.0mm 100g Reel)

Note

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

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

There are four kinds of DMC-F2, regardless of the colours.

- a) DMC-F2P/PC
- b) DMC-F2EB/EF/EG/EP/GN
- c) DMC-F2EE
- d) DMC-F2PR/PU/GC/GF

What is the difference is that the “INITIAL SETTINGS” data which is stored in Flash-ROM mounted on MAIN P.C.B..

3.3.1. 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) DMC-F2P/PC

The nameplate for these models show the following Safety registration mark.

b) DMC-F2EB/EF/EG/EP/GN

The nameplate for these models show the following Safety registration mark.

c) DMC-F2EE

The nameplate for this model show the following Safety registration mark.

d) DMC-F2PR/PU/GC/GF

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.

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

3.3.2. INITIAL SETTINGS:

After replacing the MAIN P.C.B., be 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, be sure to read the following CAUTIONS.

CAUTION 1:(INITIAL SETTINGS)

---AFTER REPLACING THE MAIN P.C.B. ---

*.The model suffix can be chosen **JUST ONE TIME**.
(Model suffix : "P/EG/PU/GC/EF/EB/EE/GN/PC/PR/EP and GF")

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

[NOTE:Only for "EG, EF, EB, EE and EP" models]

*.When one of the "EG, EF, EB, EE and EP" has been chosen, only "EG, EF, EB, EE and EP" are displayed from second times.

CAUTION 2:(Stored picture image data in the unit)

This unit employs "Built-in Memory" for picture image data recording.(Approx.50MB)
After proceeding "INITIAL SETTINGS", the picture image data stored in the unit is erased.

2. PROCEDURES:

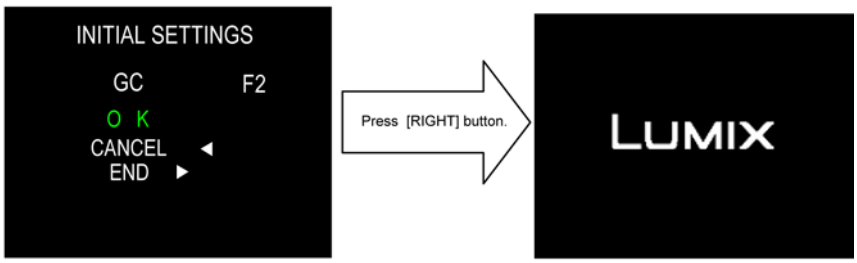
- Precautions: Read the above "CAUTION 1" and "CAUTION 2", carefully.
- Preparation:
  1. Attach the Battery or AC Adaptor with a DC coupler to the unit.
     (Since this unit has built-in memory, it can be performed without inserting SD memory card.)
  2. Set the recording mode to the [NORMAL PICTURE] mode.
     (Press the [MODE] button and select the [NORMAL PICTURE] by pressing the “[UP] and [DOWN] of Cursor buttons”, then press the [MENU/SET] button.)
     NOTE:
     If the unit is other than [NORMAL PICTURE] mode, it does not display the initial settings menu.
- **Step 1. The temporary cancellation of “INITIAL SETTINGS”:**
  Set the [REC]/[PLAYBACK] selector switch to “[REC] (Camera mark)”.
  While keep pressing “[UP] of Cursor button” and [DISPLAY] button simultaneously, turn the Power on.
- **Step 2. The cancellation of “INITIAL SETTINGS”:**
  Set the [REC]/[PLAYBACK] selector switch to “[PLAYBACK]”.
  Press “[UP] of Cursor button” and [DISPLAY] button simultaneously, then turn the Power off.
- **Step 3. Turn the Power on:**
  Set the [REC]/[PLAYBACK] selector switch to “[REC] (Camera mark)”, and then turn the Power on.
- **Step 4. Display the INITIAL SETTING:**
  While keep pressing [MENU/SET] 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 MAIN P.C.B.]
When MAIN P.C.B. has just been replaced, all of the model suffix is displayed as follows. (Five pages in total)

[CASE 2. Other than “After replacing MAIN P.C.B.”]

- **Step 5. Choose the model suffix in “INITIAL SETTINGS”: (Refer to “CAUTION 1”)**
  [Caution: After replacing MAIN P.C.B.]
  The model suffix can been 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 6. 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.)



• **Step 7. CONFIRMATION:**
Confirm the display of “PLEASE SET THE CLOCK” in concernd language when the unit is turned on again.
When the unit is connected to PC with USB cable, it is detected as removable media.

1) 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)	DMC-F2P	NTSC	English	Month/Date/Year	
b)	DMC-F2EG	PAL	English	Date/Month/Year	
c)	DMC-F2PU	NTSC	English	Month/Date/Year	
d)	DMC-F2GC	PAL	English	Date/Month/Year	
e)	DMC-F2EF	PAL	French	Date/Month/Year	
f)	DMC-F2EB	PAL	English	Date/Month/Year	
g)	DMC-F2EE	PAL	Russian	Date/Month/Year	
h)	DMC-F2GN	PAL	English	Date/Month/Year	
i)	DMC-F2PC	NTSC	English	Month/Date/Year	
j)	DMC-F2PR	PAL	English	Date/Month/Year	
k)	DMC-F2EP	PAL	English	Date/Month/Year	
l)	DMC-F2GF	PAL	English	Date/Month/Year	

4 Specifications

Digital Camera:	Information for your safety
Power Source:	DC 5.1 V
Power Consumption:	1.1 W (When recording) 0.5 W (When playing back)
Camera Effective pixels:	10,100,000 pixels
Image sensor:	1/2.5″ CCD
Total pixels:	10,300,000 pixels Primary color filter
Lens:	Optical 4 × zoom, f=5.5 to 22 mm [35 mm film camera equivalent: 33 to 132 mm] / F2.8 to F5.9
Digital zoom:	Max. 4 ×
Extended optical zoom:	Max. 7.1 ×
Focus:	Normal / Macro Face detection / 9-area-focusing / 1-area-focusing
Focus range:	Normal : 50 cm (1.64 feet) to ∞ Macro / Auto scene : 5 cm (0.17 feet) (Wide) / 50 cm (1.64 feet) (Tele) to ∞ Scene mode: settings may be different to those shown above
Shutter system:	Electronic shutter+Mechanical shutter
Motion picture recording:	[WVGA] 848 × 480 pixels (30 frames/second) (When a card is used.) [VGA] 640 × 480 pixels (30 frames/second) (When a card is used.) [QVGA] 320 × 240 pixels (30 frames/second) With audio
Burst recording	
Burst speed:	Approx. 2.3 pictures/second (NORMAL) Approx. 1.7 pictures/second (Unlimited)
Number of recordable pictures:	Max. 5 pictures (Standard), Max. 3 pictures (Fine), Depends on the remaining capacity of the built-in memory or the card (Unlimited).
Hi-speed burst	
Burst speed:	Approx. 6 pictures/second
Picture size:	3M (4:3), 2.5M (3:2) or 2M (16:9) is selected as the picture size.
Number of recordable pictures:	When using the built-in memory: Approx. 10 pictures (immediately after formatting) When using a Card: Max. 100 pictures (differs depending on the type of Card and the recording conditions)
ISO sensitivity:	i.AUTO/ 80 / 100 / 200 / 400 / 800 / 1600 [HIGH SENS.] mode: 1600 to 6400
Shutter speed:	8 seconds to 1/2,000th of a second [STARRY SKY] mode:15 seconds, 30 seconds, 60 seconds
White balance:	Auto white balance / Daylight / Cloudy / Shade / Halogen / White set
Exposure (AE):	Program AE Exposure compensation (1/3 EV Step, -2 EV to +2 EV)
Metering mode:	Multiple
LCD monitor:	TFT LCD 2.5″ (Approx. 230,000 dots) (field of view ratio about 100%)
Flash:	Flash range: Approx. 30 cm (0.99 feet) to 6.3 m (20.7 feet) (Wide [i.AUTO]) AUTO, AUTO / Red-eye reduction, Forced ON (Forced ON / Red-eye reduction), (Slow sync. / Red-eye reduction), Forced OFF

Microphone:	Monaural
Speaker:	Monaural
Recording media:	Built-in Memory (Approx. 50 MB) / SD Memory Card / SDHC Memory Card
Picture size	
Still picture:	[(4:3) 10M] 3648 × 2736 pixels, [(4:3) 5M] 2560 × 1920 pixels, [(4:3) 3M] 2048 × 1536 pixels [(3:2) 9M] 3648 × 2432 pixels, [(3:2) 2.5M] 2048 × 1360 pixels [(16:9) 7.5M] 3648 × 2056 pixels, [(16:9) 2M] 1920 × 1080 pixels
Motion pictures:	[WVGA] 848 × 480 pixels (When a card is used.), [VGA] 640 × 480 pixels (When a card is used.), [QVGA] 320 × 240 pixels
Quality:	Fine/Standard
Recording file format	
Still Picture:	JPEG (based on "Design rule for Camera File system", based on "Exif 2.21" standard)/DPOF corresponding
Motion pictures:	"QuickTime Motion JPEG" (motion pictures with audio)
Interface	
Digital:	USB 2.0 (Full Speed)
Analog video / audio:	NTSC / Audio line output (monaural)
Terminal	
AV OUT/DIGITAL:	Dedicated jack (8 pin)
Dimensions:	97.6 mm (W) × 55.4 mm (H) × 24.8 mm (D) (3.84″ (W) × 2.18″ (H) × 0.98″ (D)) (excluding the projection part)
Mass (Weight):	Approx. 112 g/0.25 lb (excluding Memory Card and battery) Approx. 134 g/0.30 lb (with Memory Card and battery)
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10% to 80%

Battery Charger:	Information for your safety
Input:	110 V to 240 V ~ 50/60 Hz, 0.2 A
Output:	CHARGE 4.2 V ⎓ 0.65 A
Equipment mobility:	Movable
Battery Pack (lithium-ion):	Information for your safety
Voltage/capacity (Minimum):	3.6 V/740 mAh

NOTE:(Only for "EB/EF/EG/EP/PR" models)

- Data from the PC can not be written to the camera using the USB connection cable.
- Motion pictures can be recorded continuously for up to 15 minutes.
  The maximum continuous recording time (up to 15 minutes) is displayed on the screen.

5 Service Fixture & Tools

5.1. When Replacing the Main P.C.B.

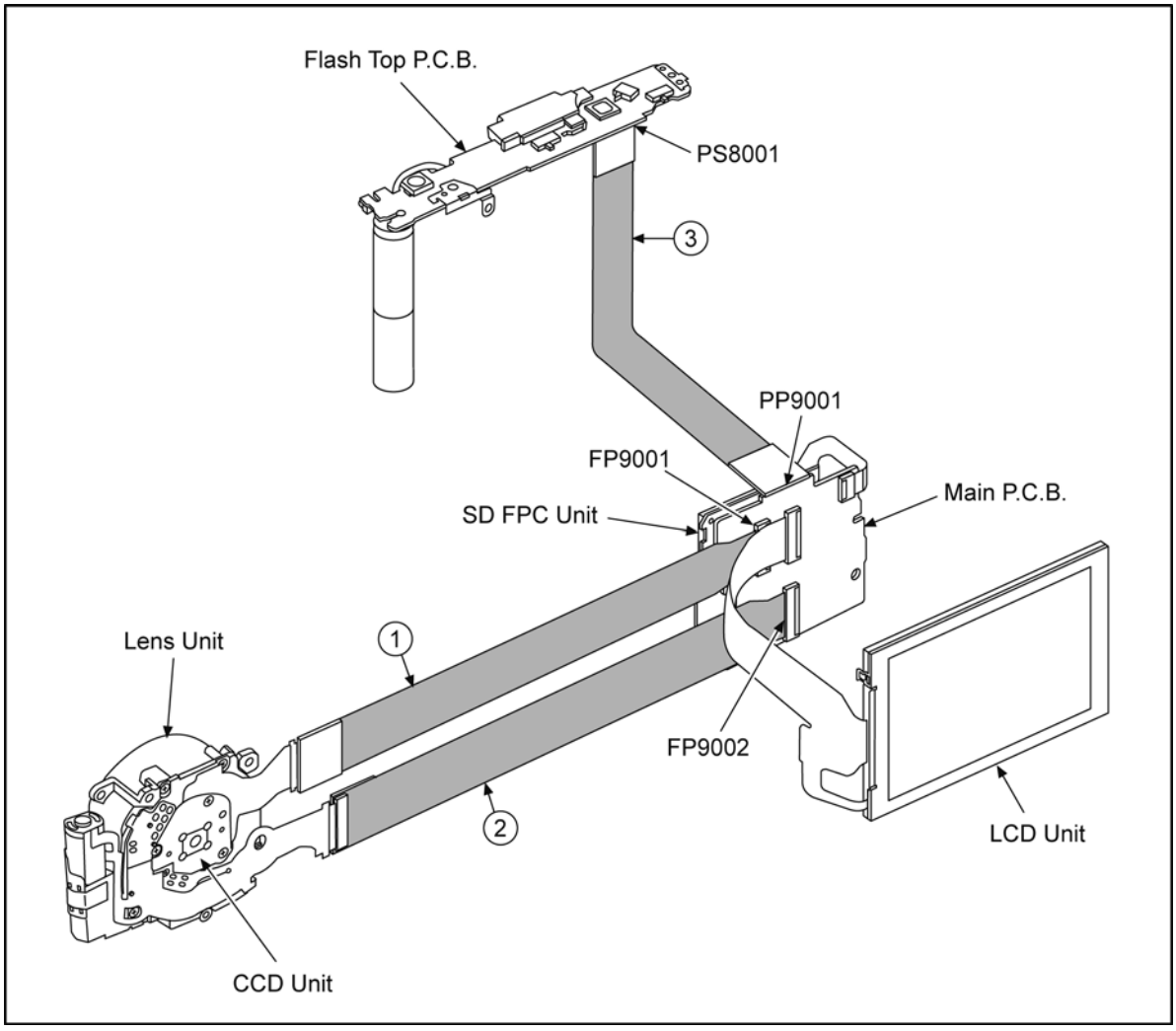
After replacing the MAIN P.C.B., be sure to achieve adjustment.
The adjustment instruction is available at “software download” on the “Support Information from NWBG/VDBG-AVC” web-site in “TSN system”, together with Maintenance software.

5.2. 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	RFKZ0416	FP9001 (MAIN) - CCD UNIT	41PIN 0.3 FFC
2	RFKZ0477	FP9002 (MAIN) - LENS UNIT	45PIN 0.3 FFC
3	RFKZ0418	PP9001 (MAIN) - PS8001 (FLASH TOP)	30PIN B to B



CAUTION-1. (When servicing FLASH TOP P.C.B.)

1. Be sure to discharge the capacitor on FLASH TOP P.C.B..
   Refer to “HOW TO DISCHARGE THE CAPACITOR ON FLASH TOP P.C.B.”.
   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 FLASH TOP P.C.B..
3. DO NOT allow other parts to touch the high voltage circuit on FLASH TOP P.C.B..

6 Measurements and Adjustments

The adjustment details are described in "Service Manual Vol.1" for this model.
When the following part(s) located on the MAIN P.C.B. is replaced, perform the same necessary adjustment items of MAIN P.C.B..
* IC6001 : VENUS
* IC6002 : Flash-Rom

7 Maintenance

7.1. Cleaning Lens and LCD Panel

Do not touch the surface of lens 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.

DSC1003025CE

Service Manual

Diagrams and Replacement Parts List

Digital Camera

Model No.

DMC-F2P	DMC-F2EF
DMC-F2PC	DMC-F2EG
DMC-F2PR	DMC-F2EP
DMC-F2PU	DMC-F2GC
DMC-F2EB	DMC-F2GF
DMC-F2EE	DMC-F2GN

Vol. 2
Colour
(S).....Silver Type (except PC/EF)
(K).....Black Type
(P).....Pink Type (except PC/EF)

Table of contents

S1. About Indication of The Schematic Diagram

S1.1. 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.

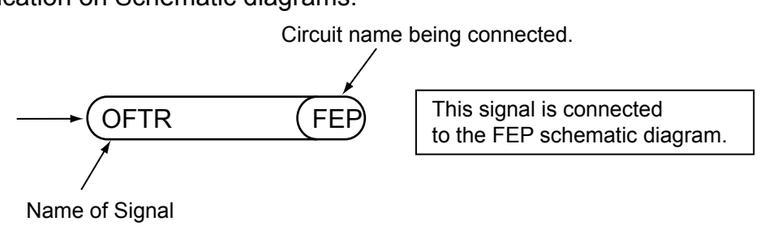
3.The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.

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. Voltage Chart

Note) Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

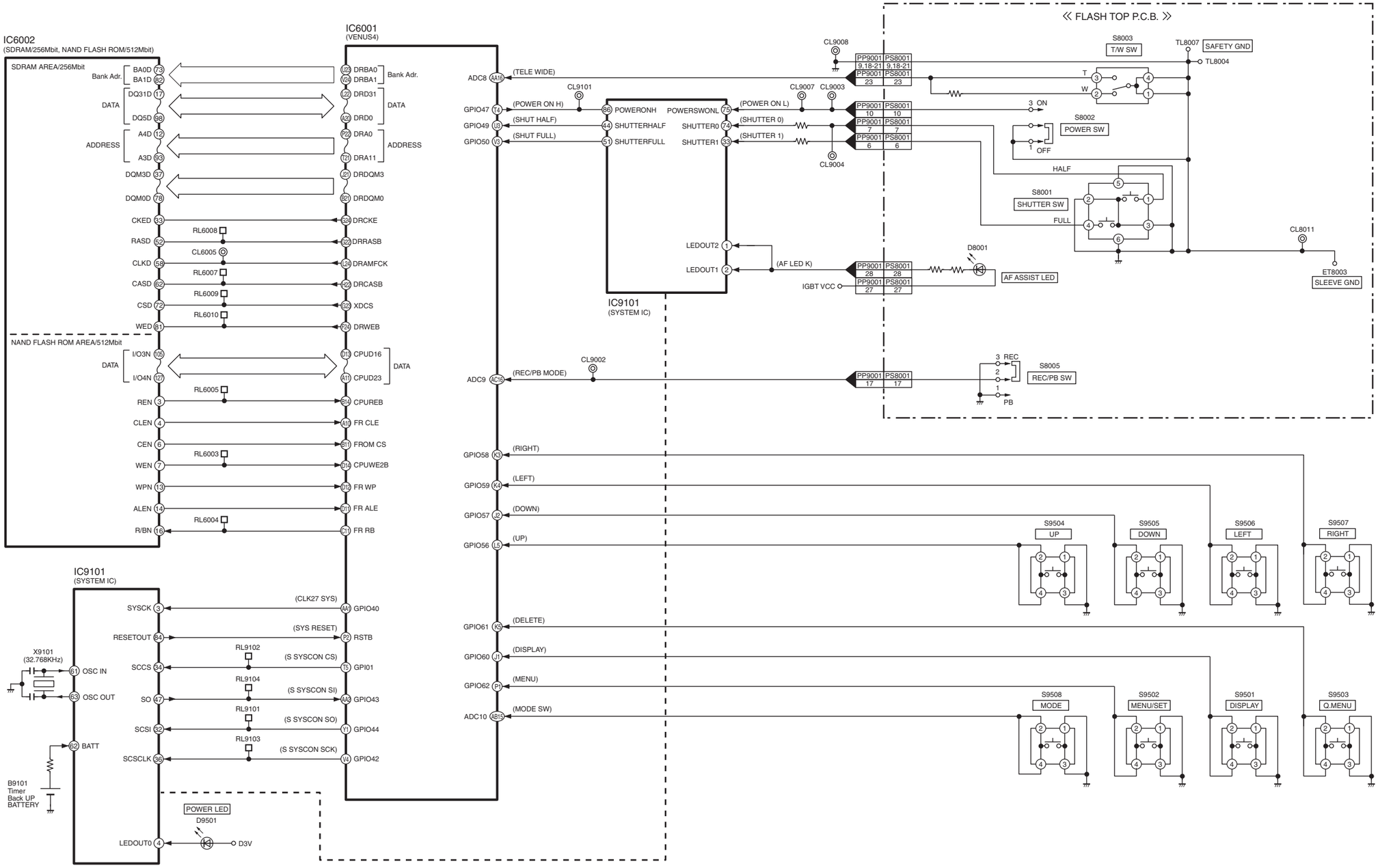
S2.1. Main P.C.B.

REF No.	PIN No.	POWER ON
IC1001	1	4.9
IC1001	2	6.4
IC1001	3	5.2
IC1001	4	6.4
IC1001	5	2.2
IC1001	6	0
IC1001	7	1.7
IC1001	8	6.4
IC1001	9	6.9
IC1001	10	6.9
IC1001	11	9.7
IC1001	12	5.2
IC1001	13	4.3
IC1001	14	0
IC1001	15	4.4
IC1001	16	6.4
IC1001	17	0
IC1001	18	4.1
IC1001	19	5.2
IC1001	20	1.2
IC1001	21	1.4
IC1001	22	1.4
IC1001	23	1.4
IC1001	24	0
IC1001	25	0
IC1001	26	0
IC1001	27	1.2
IC1001	28	0
IC1001	29	6.4
IC1001	30	5
IC1001	31	9.7
IC1001	32	4.1
IC1001	33	1.4
IC1001	34	0
IC1001	35	1.7
IC1001	36	1.3
IC1001	37	0.8
IC1001	38	4.9
IC1001	39	6.9
IC1001	40	6.4
IC1001	41	6.9
IC1001	42	3.9
IC1001	43	0
IC1001	44	5.5
IC1210	1	4.9
IC1210	2	0
IC1210	3	4.5
IC1210	4	5.2
IC3002	1	4.8
IC3002	2	0
IC3002	3	4.3
IC3002	4	4.9
Q1040	1	0
Q1040	2	0
Q1040	3	2.6
Q1040	4	0
Q1040	5	0
Q1040	6	4.5
Q1050	1	5.2
Q1050	2	6.4
Q1050	3	-9.2
Q1050	4	0
Q1050	5	0
Q1050	6	0
QR1101	E	0
QR1101	C	0

REF No.	PIN No.	POWER ON
QR1101	B	6.9

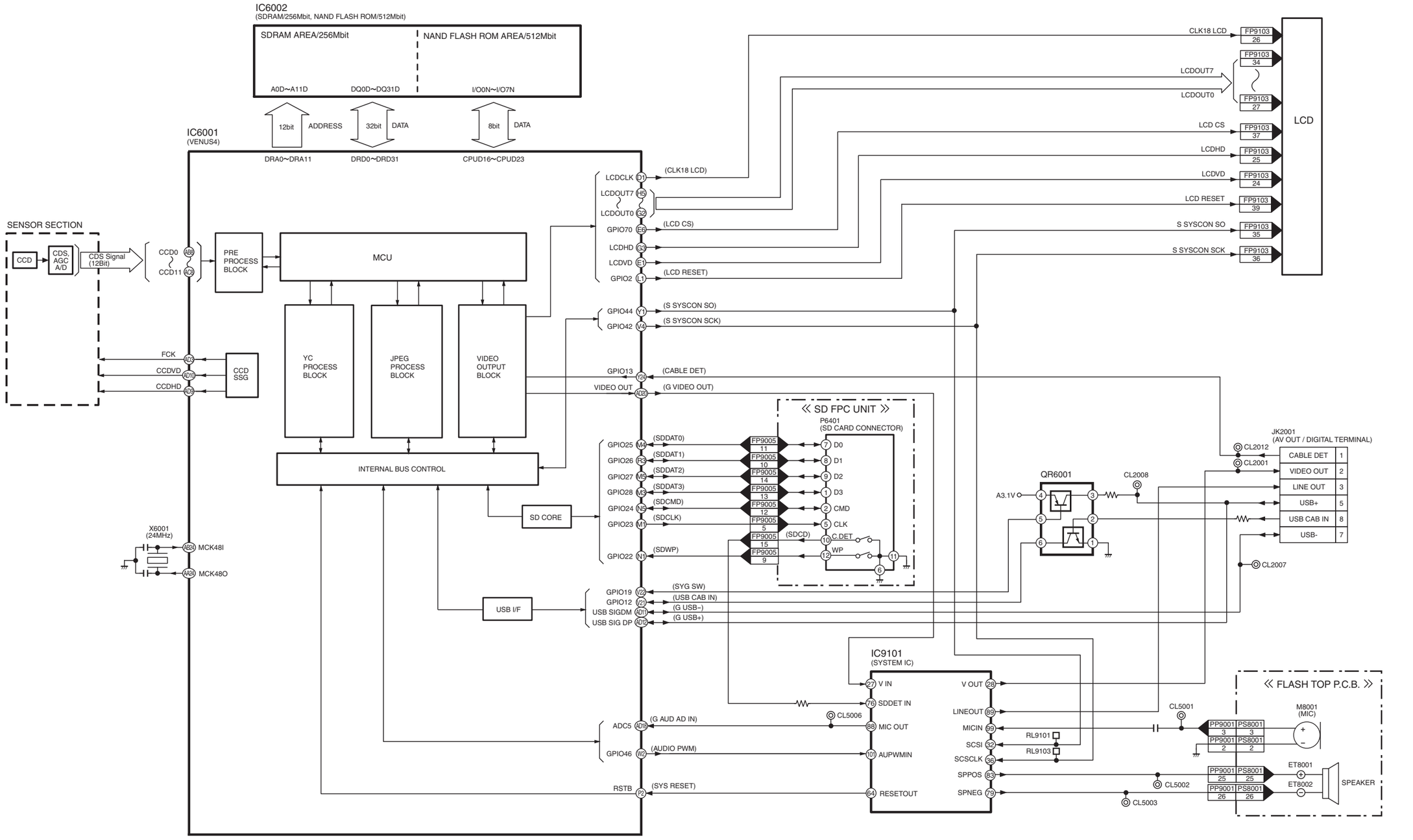
S3. Block Diagram

S3.1. System Control Block Diagram



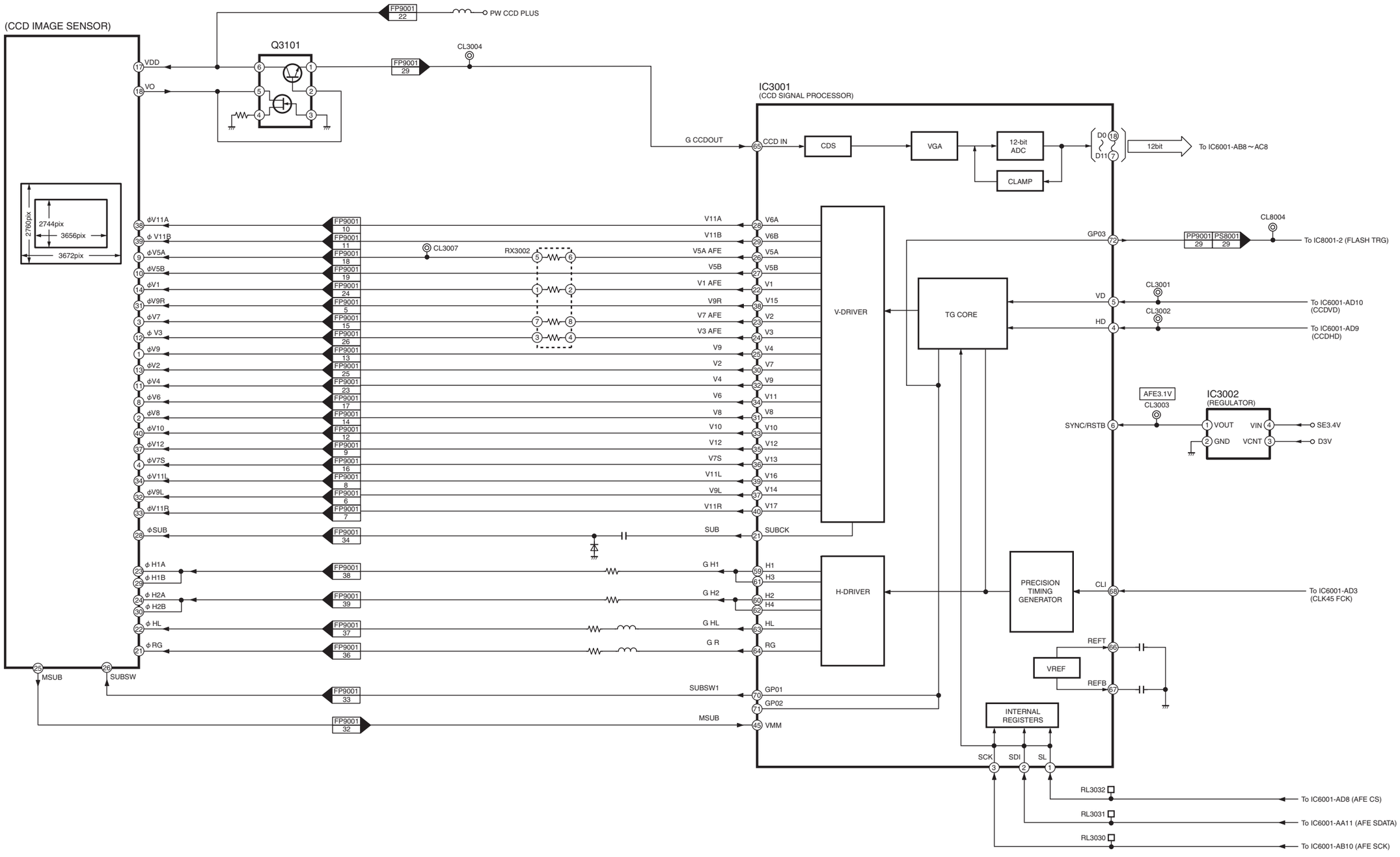
DMC-F2 SYSTEM CONTROL BLOCK DIAGRAM

S3.2. Video/Audio Process Block Diagram



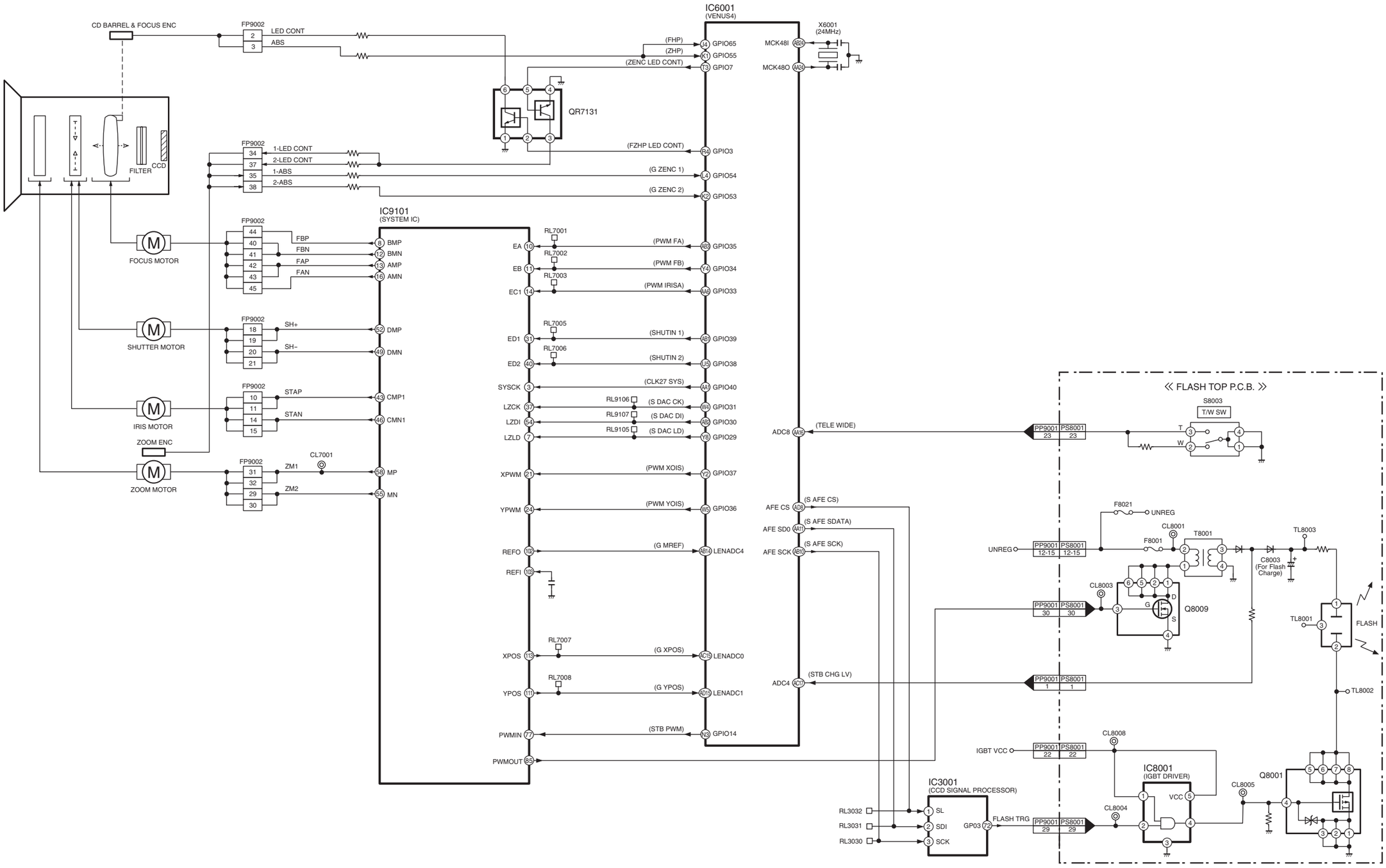
DMC-F2 VIDEO/AUDIO PROCESS BLOCK DIAGRAM

S3.3. Sensor Block Diagram



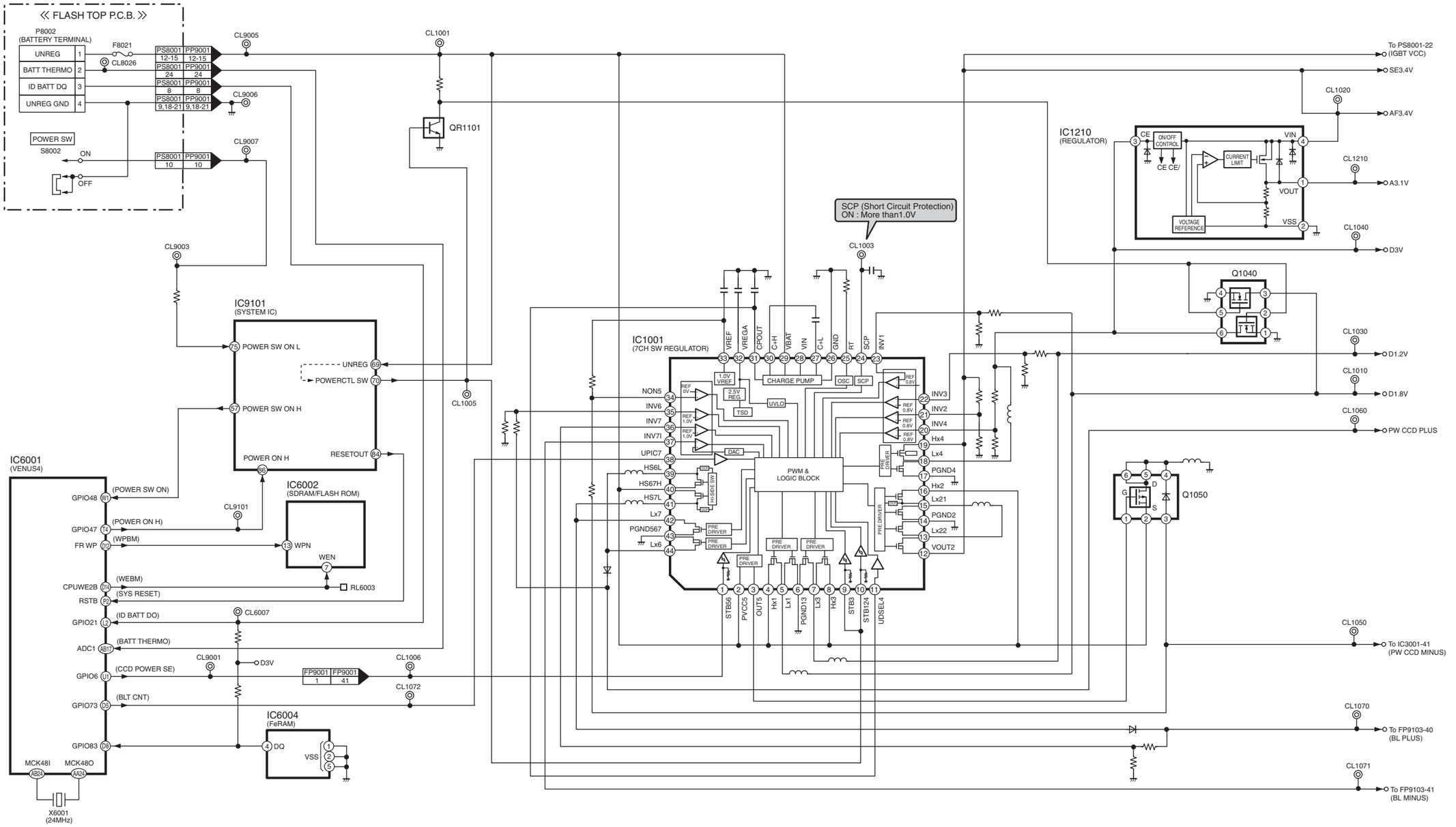
DMC-F2 SENSOR BLOCK DIAGRAM

S3.4. Lens Drive Block Diagram



DMC-F2 LENS DRIVE BLOCK DIAGRAM

S3.5. Power Block Diagram



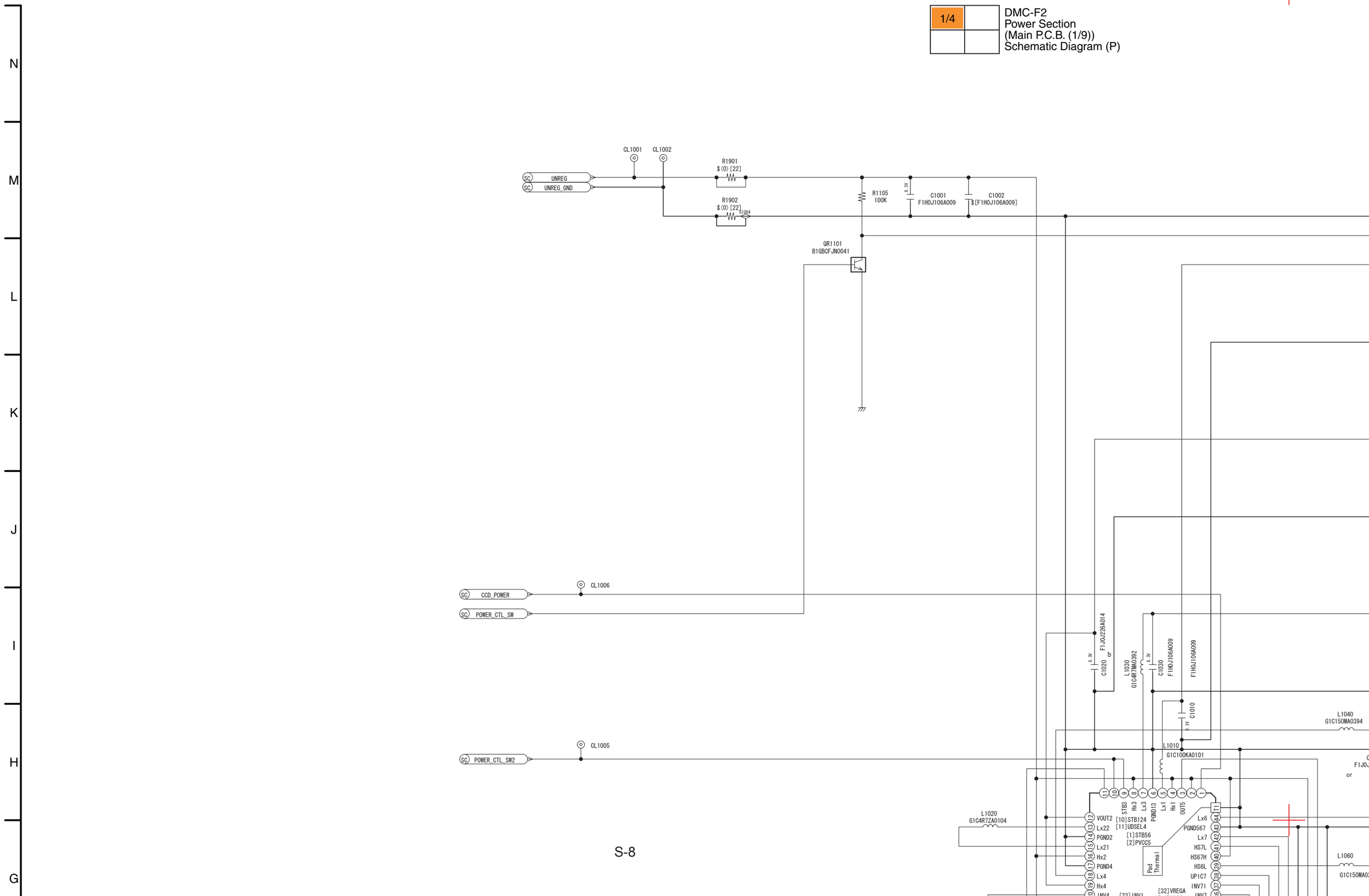
DMC-F2 POWER BLOCK DIAGRAM

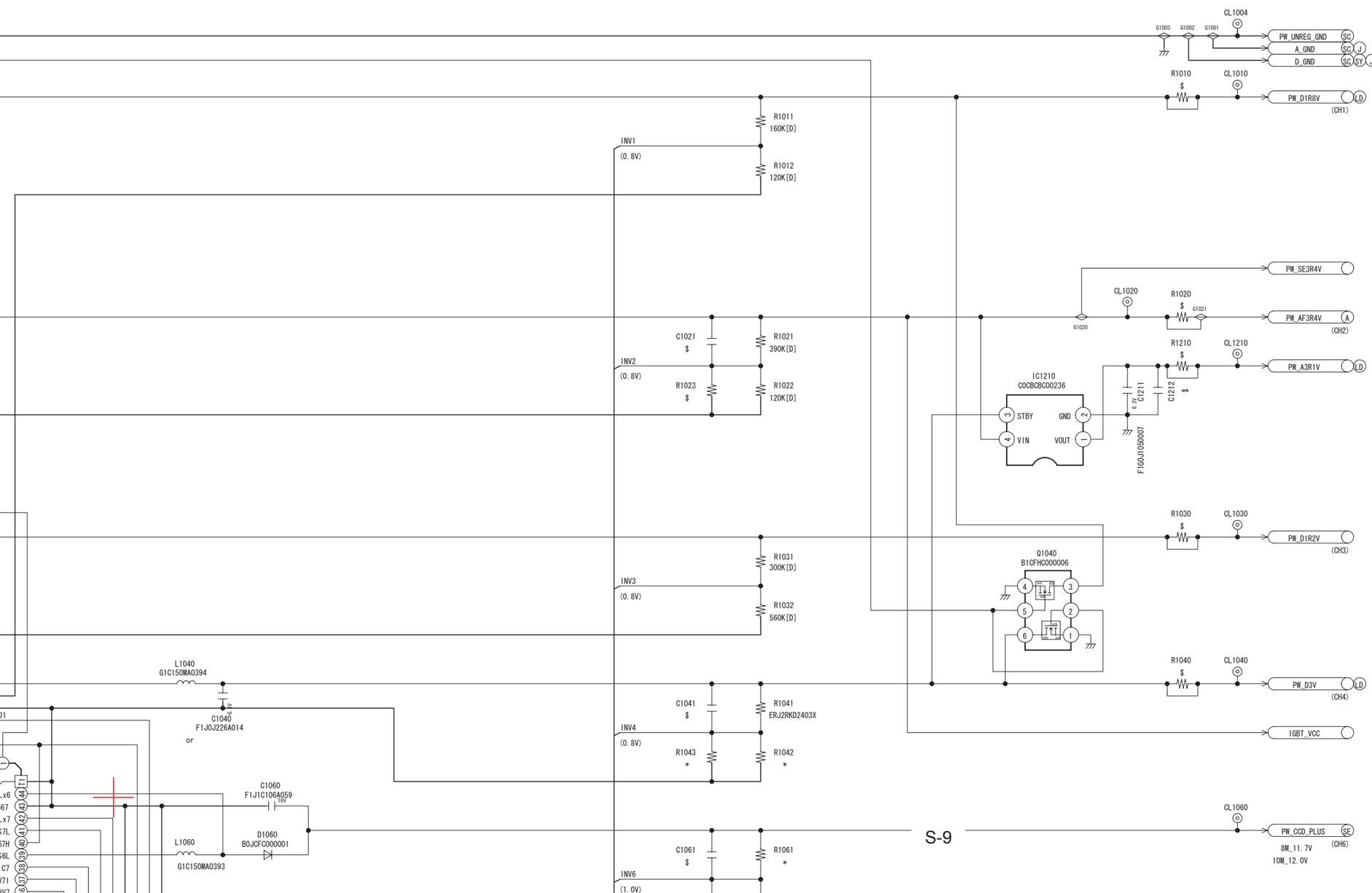
S4. Schematic Diagram

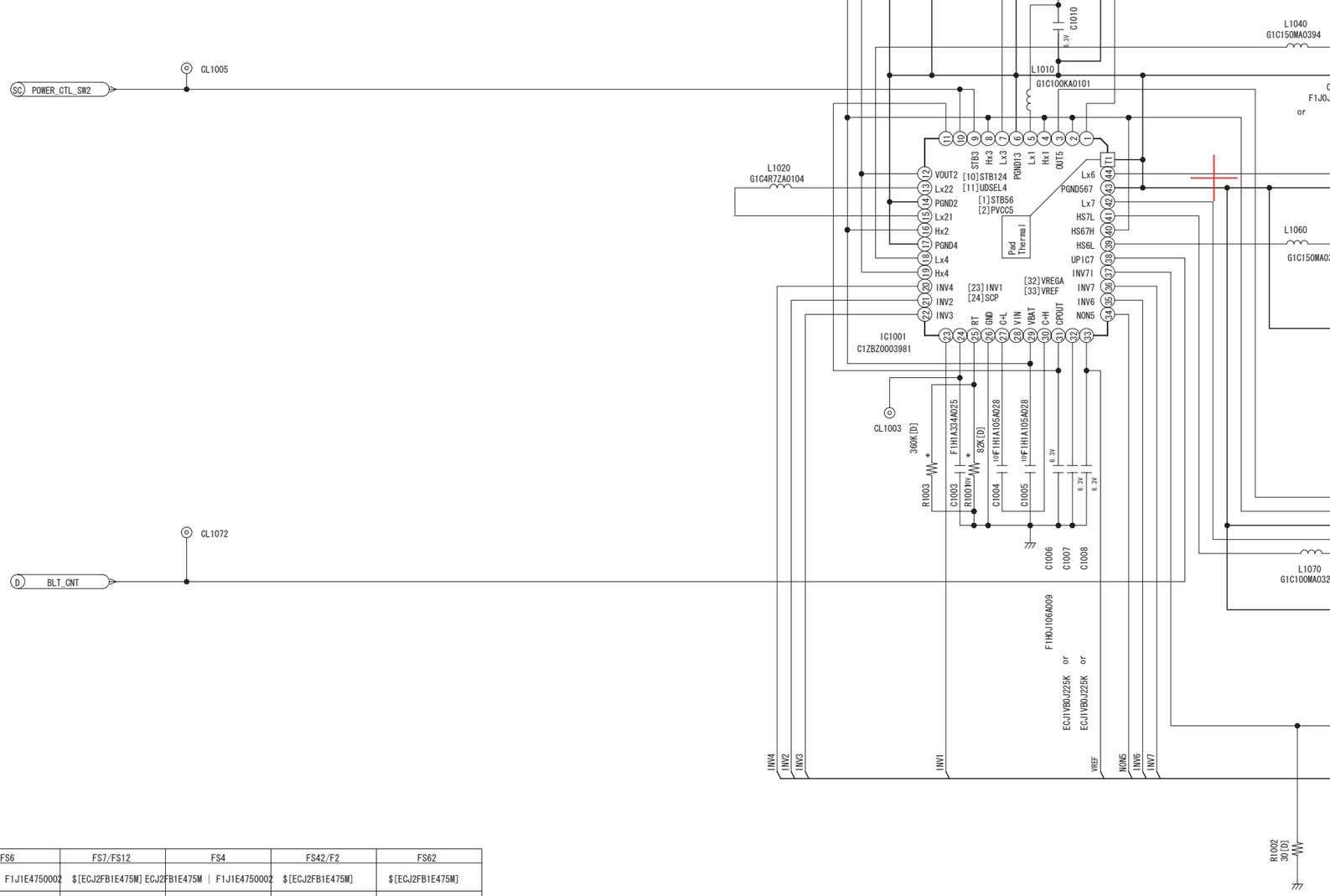
S4.1. Power (P) Schematic Diagram

1/4	

DMC-F2
Power Section
(Main P.C.B. (1/9))
Schematic Diagram (P)




CL1004
G1003
G1002
G1001
PW_UNREG_GND
A_GND
D_GND
R1010
$
CL1010
PW_D1R8V
(CH1)
R1011
160K[D]
INV1
(0.8V)
R1012
120K[D]
PW_SE3R4V
CL1020
R1020
$
G1021
G1020
PW_AF3R4V
(CH2)
C1021
$
R1021
390K[D]
INV2
(0.8V)
R1023
$
R1022
120K[D]
IC1210
C0CBCBC00236
STBY
GND
VIN
VOUT
C1211
0.47μ
C1212
$
F16GJ1050007
R1210
$
CL1210
PW_A3R1V
R1030
$
CL1030
PW_D1R2V
(CH3)
R1031
300K[D]
INV3
(0.8V)
R1032
560K[D]
Q1040
B1CFHC000006
L1040
G1C150MA0394
C1040
F1J0J226A014
or
R1040
$
CL1040
PW_D3V
(CH4)
IGBT_VCC
C1041
$
R1041
ERJ2RKD2403X
INV4
(0.8V)
R1043
*
R1042
*
C1060
F1J1C106A059
L1060
G1C150MA0393
D1060
B0JCFC0000001
CL1060
PW_CCD_PLUS
(CH6)
8M_11.7V
10M_12.0V
C1061
$
R1061
*
INV6
(1.0V)

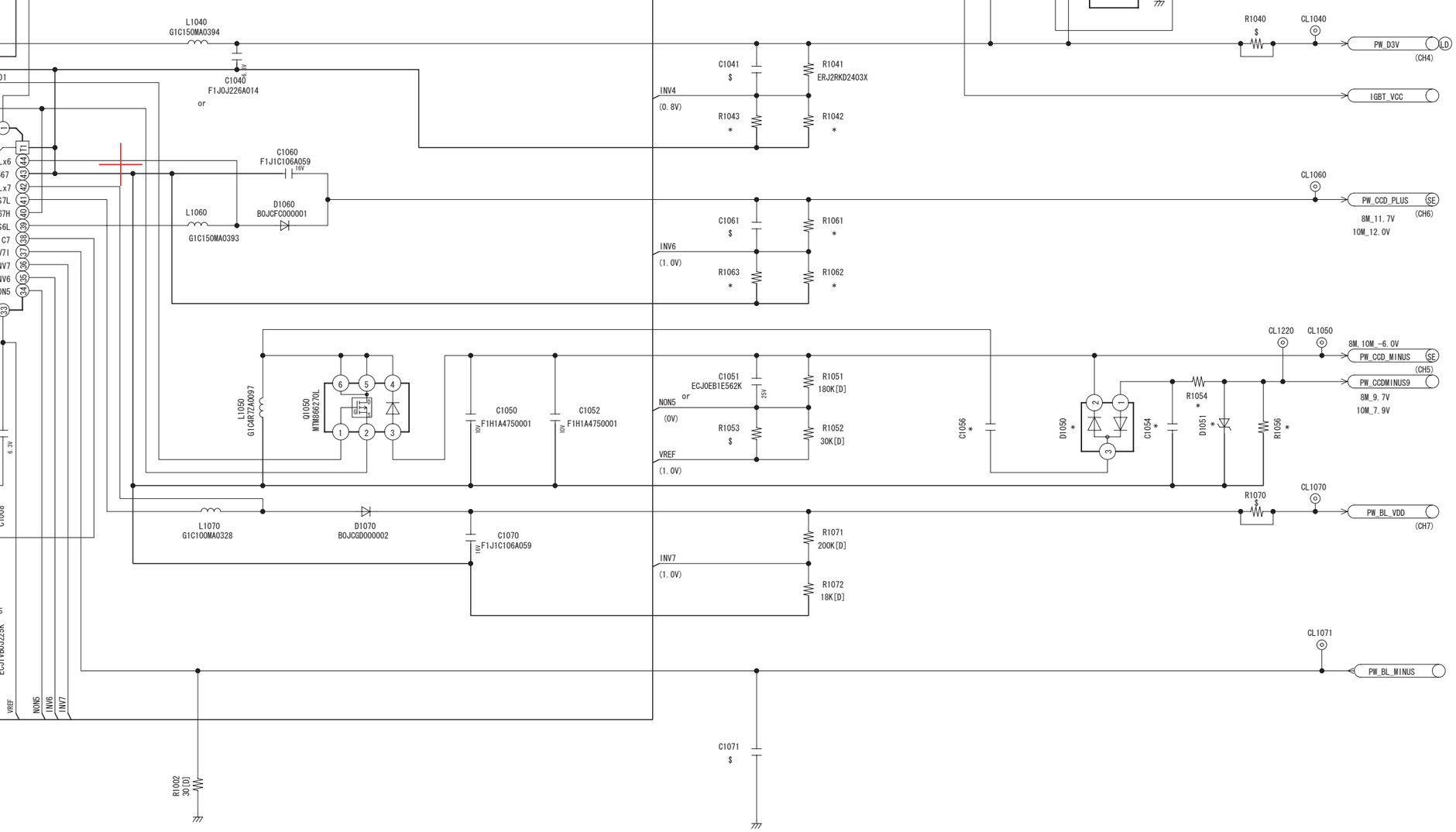


VariationCategory

	FS6	FS7/FS12	FS4	FS42/F2	FS62
C1054	ECJ2FB1E475M | F1J1E4750002	$[ECJ2FB1E475M]	ECJ2FB1E475M | F1J1E4750002	$[ECJ2FB1E475M]	$[ECJ2FB1E475M]
C1056	ECJ0EB1C103K | F1G1C1030008	$[ECJ0EB1C103K]	ECJ0EB1C103K | F1G1C1030008	$[ECJ0EB1C103K]	$[ECJ0EB1C103K]
D1050	B0JDCE000013	$[B0JDCE000013]	B0JDCE000013	$[B0JDCE000013]	$[B0JDCE000013]
D1051	MAZ8100GLL	$[MAZ8082GLL]	MAZ8100GLL	$[MAZ8082GLL]	$[MAZ8082GLL]
R1001	82K[D]	82K[D]	68K[D]	68K[D]	82K[D]
R1003	360K[D]	360K[D]	$	$	360K[D]
R1042	120K[D]	91K[D]	120K[D]	120K[D]	120K[D]
R1043	270K[D]	$	270K[D]	270K[D]	270K[D]
R1054	10K	$	10K	$	$
R1056	100K	$	100K	$	$
R1061	330K[D]	220K[D]	330K[D]	220K[D]	220K[D]
R1062	470K[D]	20K[D]	470K[D]	20K[D]	20K[D]
R1063	33K[D]	$	33K[D]	$	$

DMC-F2
Power Section
(Main P.C.B. (1/9))
Schematic Diagram (P)

3/4

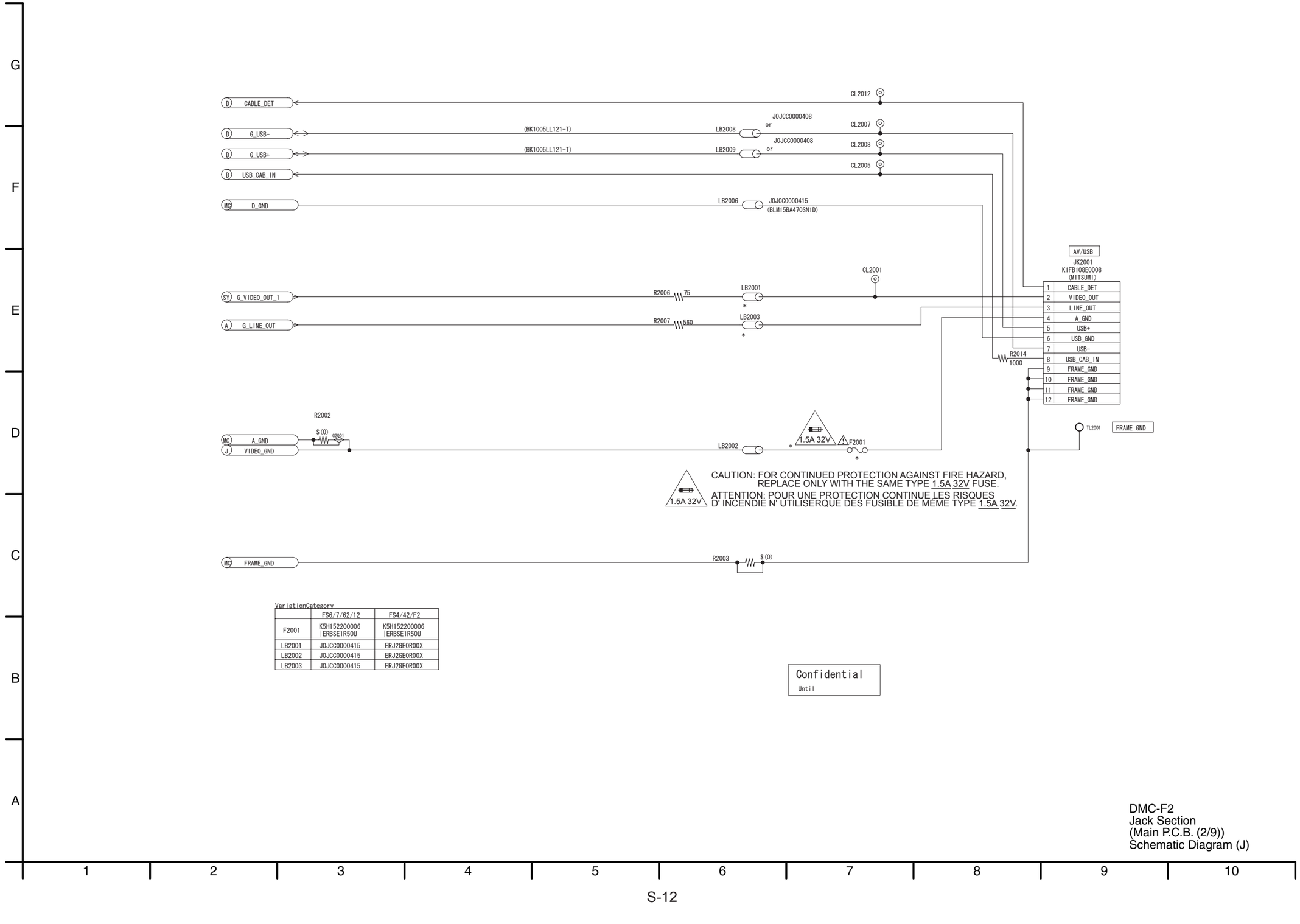


Confidential
Until

DMC-F2
Power Section
(Main P.C.B. (1/9))
Schematic Diagram (P)
4/4

11 12 13 14 15 16 17 18 19 20 21

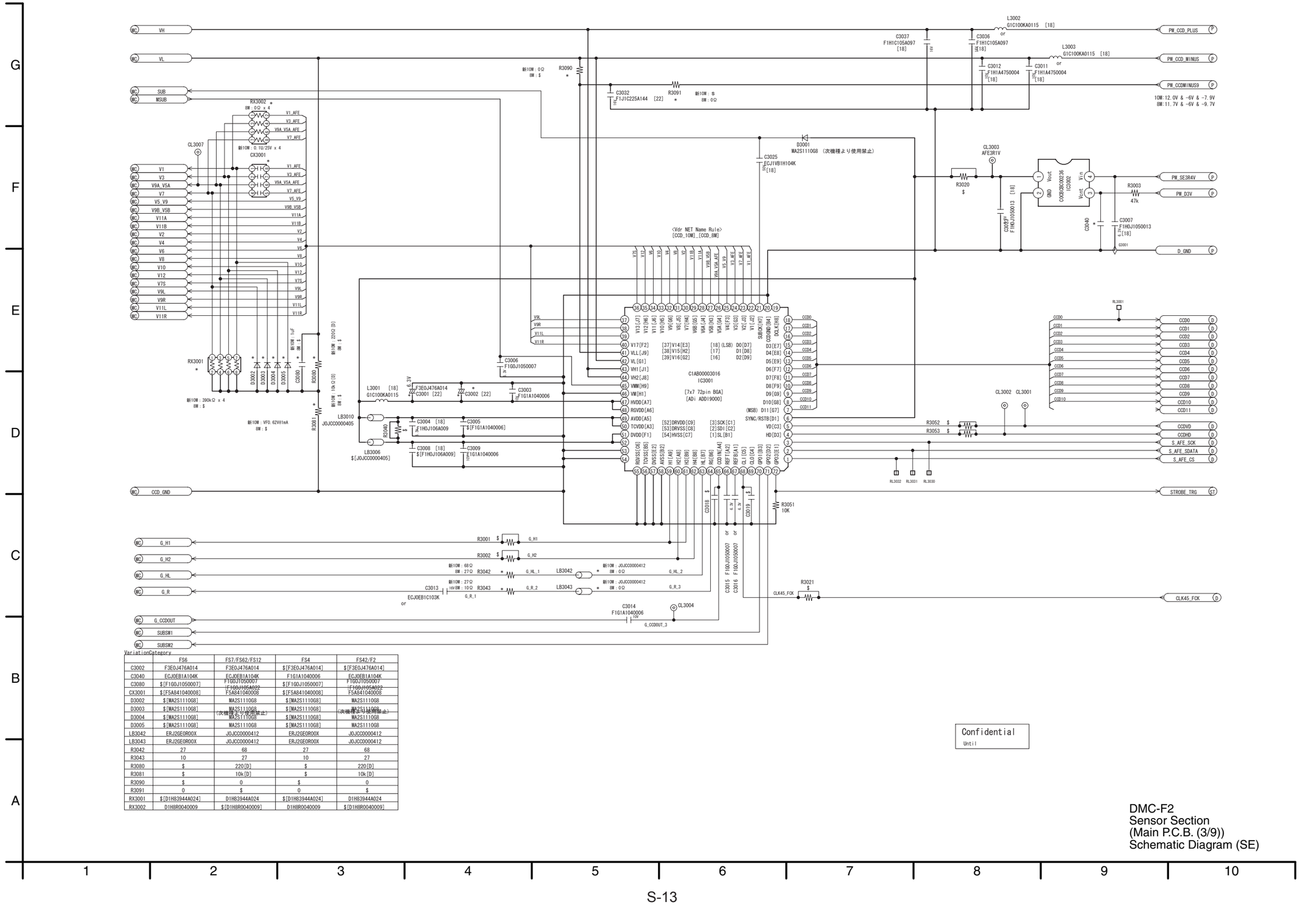
S4.2. Jack (J) Schematic Diagram



VariationCategory

	FS6/7/62/12	FS4/42/F2
F2001	K5H152200006 |ERBSE1R50U	K5H152200006 |ERBSE1R50U
LB2001	J0JCC0000415	ERJ2GE0R00X
LB2002	J0JCC0000415	ERJ2GE0R00X
LB2003	J0JCC0000415	ERJ2GE0R00X

S4.3. Sensor (SE) Schematic Diagram



	FS6	FS7/FS62/FS12	FS4	FS42/F2
C3002	F3E0J476A014	F3E0J476A014	$[F3E0J476A014]	$[F3E0J476A014]
C3040	ECJ0EB1A104K	ECJ0EB1A104K	F1G1A1040006	ECJ0EB1A104K
C3080	$[F10GJ1050007]	F10GJ1050007 (F10GJ105A022)	$[F10GJ1050007]	F10GJ1050007 (F10GJ105A022)
CX3001	$[F5A841040008]	F5A841040008	$[F5A841040008]	F5A841040008
D3002	$[MA2S111G8]	MA2S111G8	$[MA2S111G8]	MA2S111G8
D3003	$[MA2S111G8]	MA2S111G8 (次機種より使用禁止)	$[MA2S111G8]	MA2S111G8 (次機種より使用禁止)
D3004	$[MA2S111G8]	MA2S111G8	$[MA2S111G8]	MA2S111G8
D3005	$[MA2S111G8]	MA2S111G8	$[MA2S111G8]	MA2S111G8
LB3042	ERJ2GE0R00X	JOJCC0000412	ERJ2GE0R00X	JOJCC0000412
LB3043	ERJ2GE0R00X	JOJCC0000412	ERJ2GE0R00X	JOJCC0000412
R3042	27	68	27	68
R3043	10	27	10	27
R3080	$	220[D]	$	220[D]
R3081	$	10k[D]	$	10k[D]
R3090	$	0	$	0
R3091	0	$	0	$
RX3001	$[D1H83944A024]	D1H83944A024	$[D1H83944A024]	D1H83944A024
RX3002	D1H8R0040009	$[D1H8R0040009]	D1H8R0040009	$[D1H8R0040009]

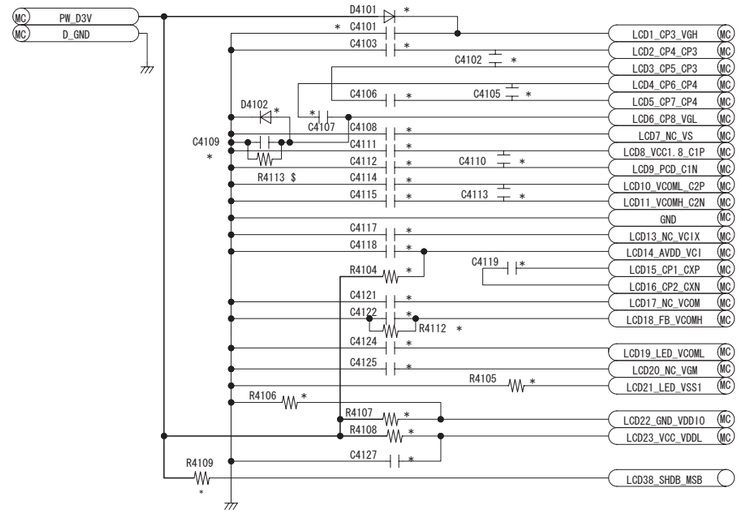
Confidential
Until

DMC-F2
Sensor Section
(Main P.C.B. (3/9))
Schematic Diagram (SE)

S4.4. LCD (L) Schematic Diagram

VariationCategory

	FS6/4/42/62/F2	FS7/12
C4101	F1H1A105A028	F1H1E105A116
C4102	$[F1G0J1050007]	F1G0J1050007
C4103	F1H1A105A028	$[F1H1A105A028]
C4105	$[F1G0J1050007]	F1G0J1050007
C4106	F1G0J1050007	$[F1G0J1050007]
C4107	F1G0J1050007	$[F1G0J1050007]
C4108	$[F1H0J2250003]	F1H0J2250003 |F1H0J2250008
C4109	$[F1H1C224A074]	F1H1C105A097
C4110	$[F1G0J1050007]	F1G0J1050007
C4111	F1G0J1050007	$[F1G0J1050007]
C4112	F1H0J2250003	$[F1H0J2250003]
C4113	$[F1G0J1050007]	F1G0J1050007
C4114	F1H0J2250003	$[F1H0J2250003]
C4115	F1H0J2250003	$[F1H0J2250003]
C4117	$[F1H0J2250003]	F1H0J2250003 |F1H0J2250008
C4118	F1H0J2250003	$[F1H0J2250003]
C4119	F1H0J2250003	F1H1A105A028
C4121	$[F1H0J2250003]	F1H0J2250003 |F1H0J2250008
C4122	$[F1H0J2250003]	F1H0J2250003 |F1H0J2250008
C4124	$[F1H0J2250003]	F1H0J2250003 |F1H0J2250008
C4125	$[F1G0J1050007]	F1G0J1050007
C4127	F1H0J2250003	F1H0J2250003 |F1H0J2250008
D4101	$[MA27D3000GL]	MA27D3000GL
D4102	$[MA27D3000GL]	MA27D3000GL
R4104	$[ERJ2GE0R00X]	ERJ2GE0R00X
R4105	$[ERJ2GE0R00X]	ERJ2GE0R00X
R4106	ERJ2GE0R00X	$[ERJ2GE0R00X]
R4107	$[ERJ2GE0R00X]	ERJ2GE0R00X
R4108	ERJ2GE0R00X	$[ERJ2GE0R00X]
R4109	ERJ2GE0R00X	$[ERJ2GE0R00X]
R4112	ERJ3GEY0R00V	$[ERJ3GEY0R00V]



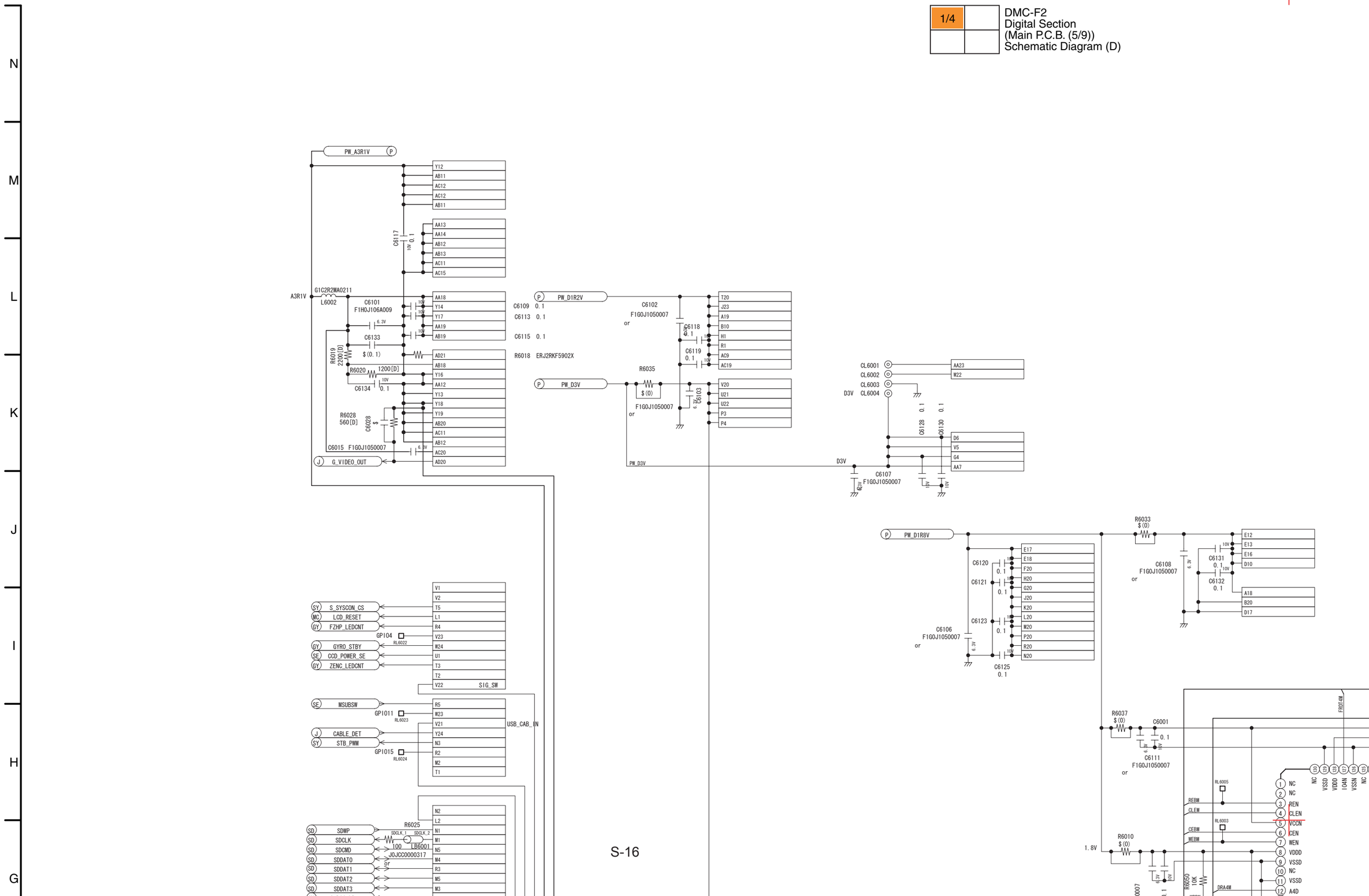
Confidential
Until

DMC-F2
LCD Section
(Main P.C.B. (4/9))
Schematic Diagram (L)

S4.5. Digital (D) Schematic Diagram

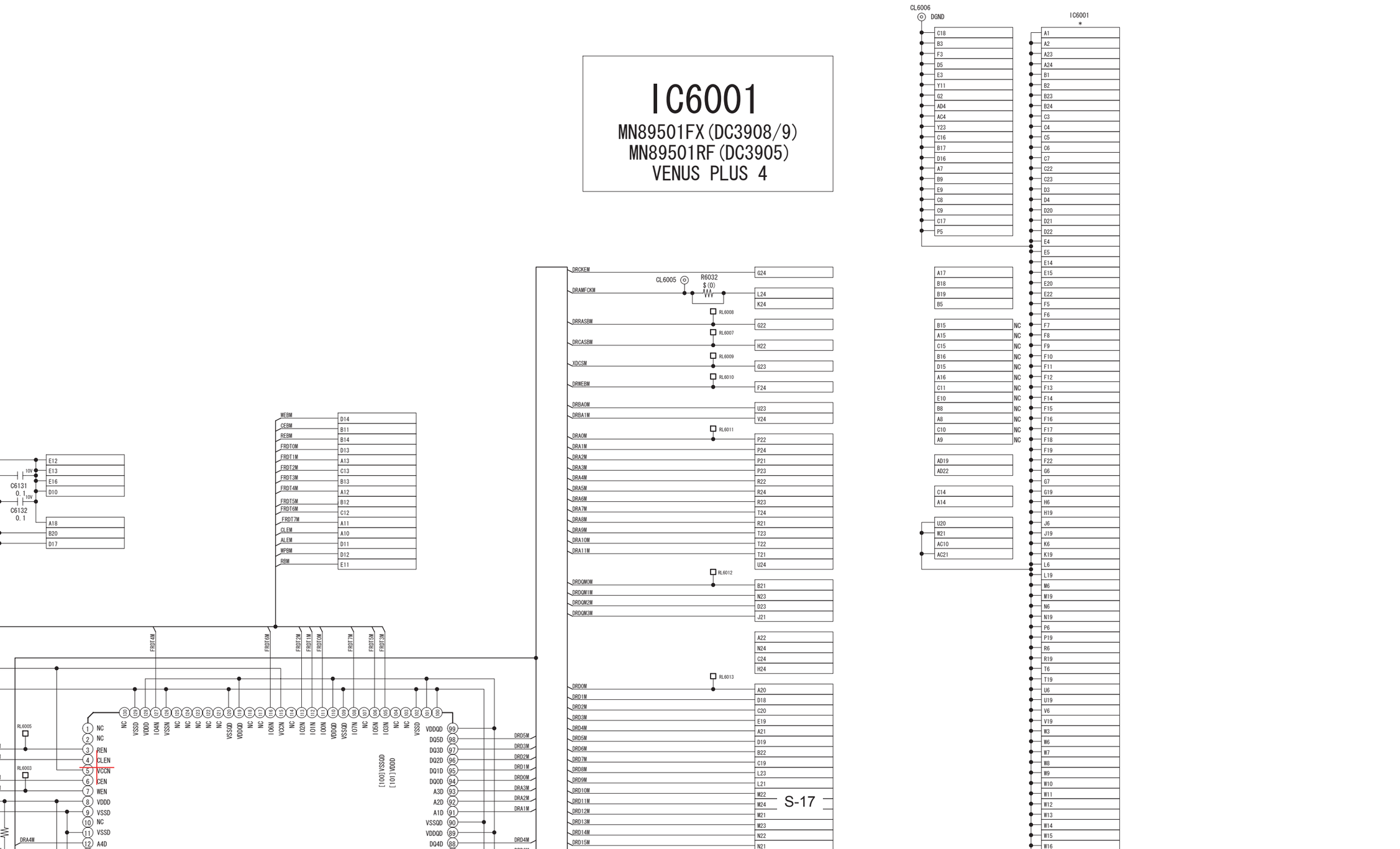
1/4	

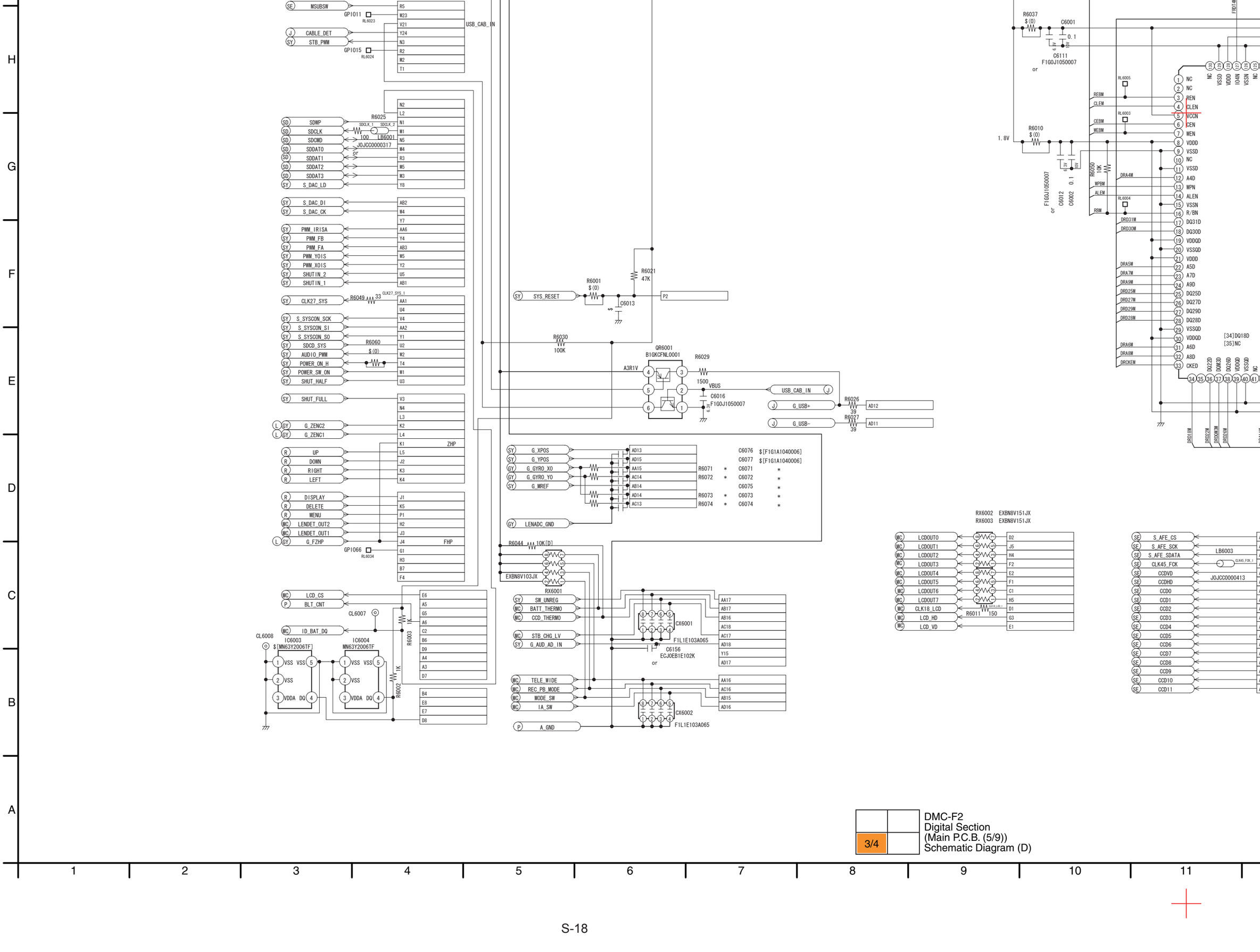
DMC-F2
Digital Section
(Main P.C.B. (5/9))
Schematic Diagram (D)



IC6001

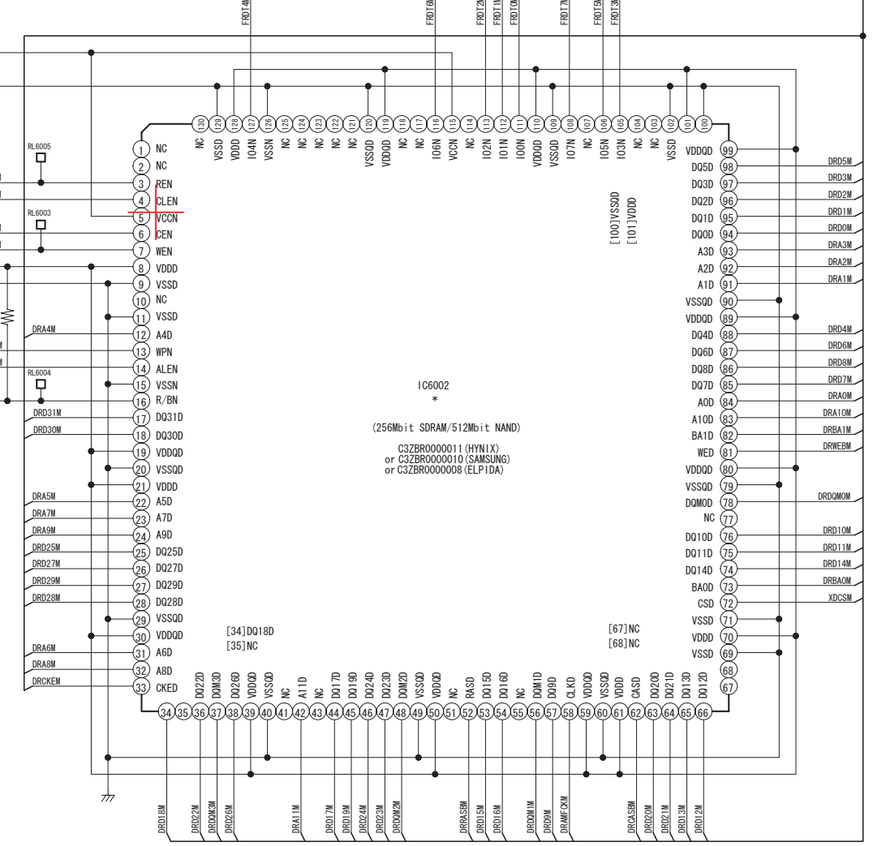
MN89501FX (DC3908/9)
MN89501RF (DC3905)
VENUS PLUS 4

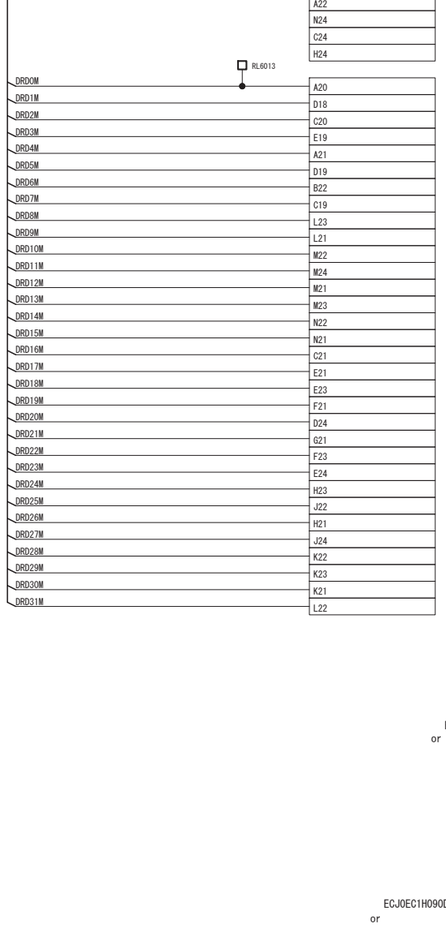


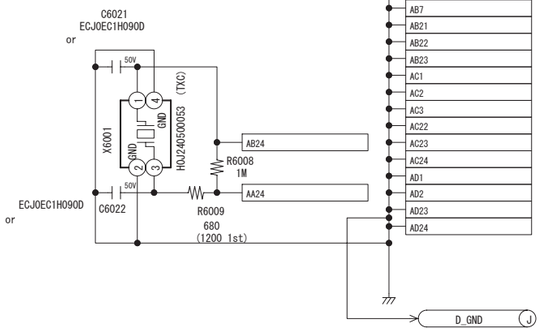


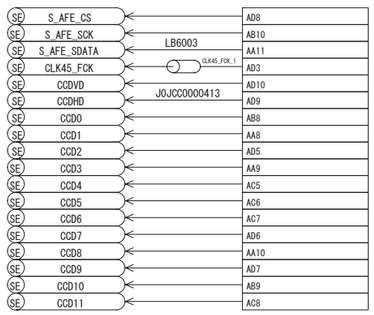
DMC-F2
Digital Section
(Main P.C.B. (5/9))
Schematic Diagram (D)

3/4









VariationCategory

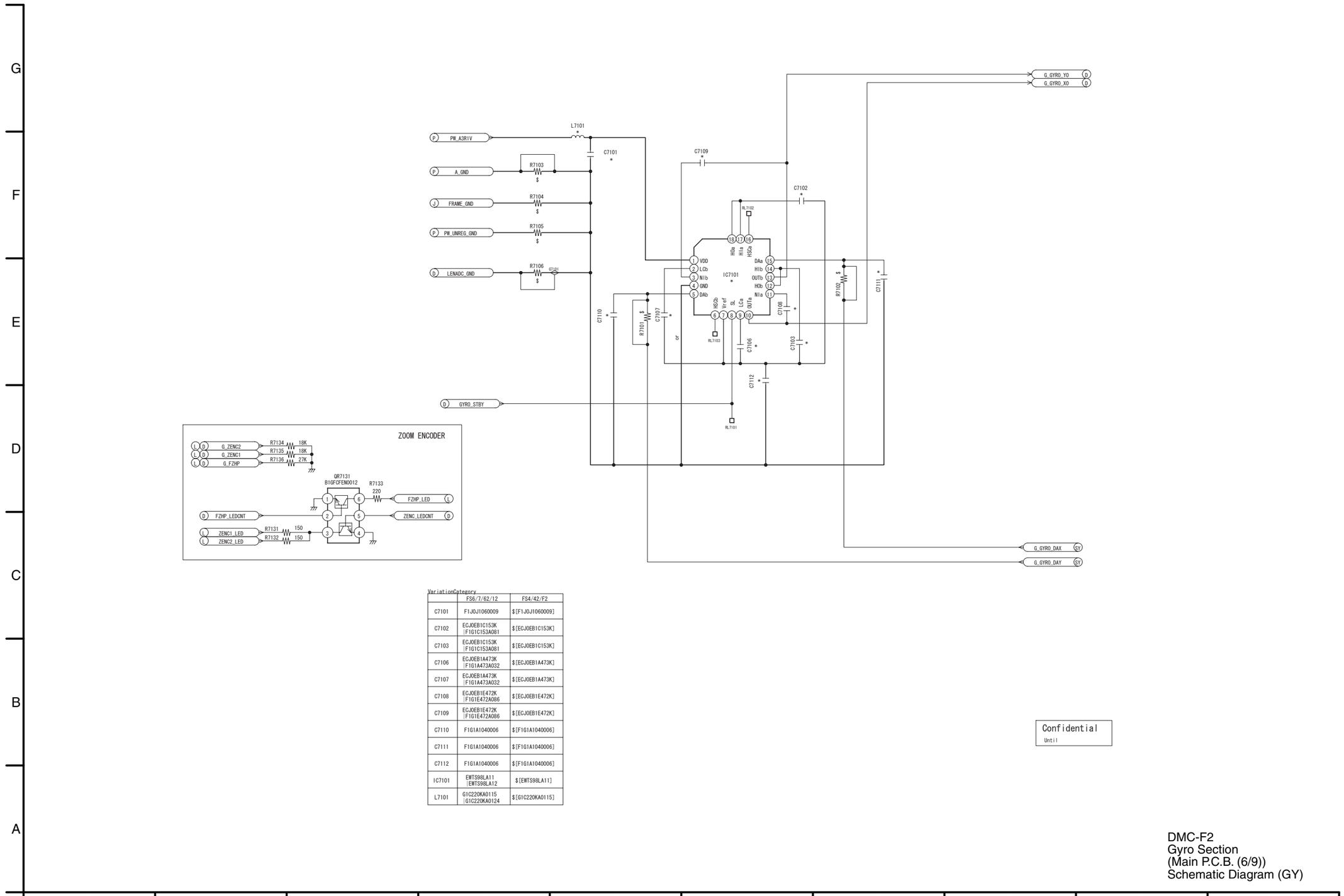
	FS6/FS62	FS7	FS4	FS42/F2	FS12
C6071	F1G1A1040006	F1G1A1040006	$[F1G1A1040006]	$[F1G1A1040006]	F1G1A1040006
C6072	F1G1A1040006	F1G1A1040006	$[F1G1A1040006]	$[F1G1A1040006]	F1G1A1040006
C6073	F1H0J475A010 |F1H0J4750004	F1H0J475A010 |F1H0J4750004	$[F1H0J475A010]	$[F1H0J475A010]	F1H0J475A010 |F1H0J4750004
C6074	F1H0J475A010 |F1H0J4750004	F1H0J475A010 |F1H0J4750004	$[F1H0J475A010]	$[F1H0J475A010]	F1H0J475A010 |F1H0J4750004
C6075	F1G1A1040006	F1G1A1040006	$[F1G1A1040006]	$[F1G1A1040006]	F1G1A1040006
IC6001	MN89501FX |MN89501RF	MN89501RF |MN89501FX	MN89501FX |MN89501RF	MN89501FX |MN89501RF	MN89501RF |MN89501FX
IC6002	C3ZBR0000008 |C3ZBR0000010	C3ZBR0000008 |C3ZBR0000010	C3ZBR0000008 |C3ZBR0000010	C3ZBR0000008 |C3ZBR0000010	C3ZBR0000008 |C3ZBR0000010
R6071	ERJ2GEJ102X	ERJ2GEJ102X	$[ERJ2GEJ102X]	$[ERJ2GEJ102X]	ERJ2GEJ102X
R6072	ERJ2GEJ102X	ERJ2GEJ102X	$[ERJ2GEJ102X]	$[ERJ2GEJ102X]	ERJ2GEJ102X
R6073	ERJ2GEJ333X	ERJ2GEJ333X	$[ERJ2GEJ333X]	$[ERJ2GEJ333X]	ERJ2GEJ333X
R6074	ERJ2GEJ333X	ERJ2GEJ333X	$[ERJ2GEJ333X]	$[ERJ2GEJ333X]	ERJ2GEJ333X

Confidential
Until

DMC-F2
Digital Section
(Main P.C.B. (5/9))
Schematic Diagram (D)
4/4

11 12 13 14 15 16 17 18 19 20 21

S4.6. Gyro (GY) Schematic Diagram



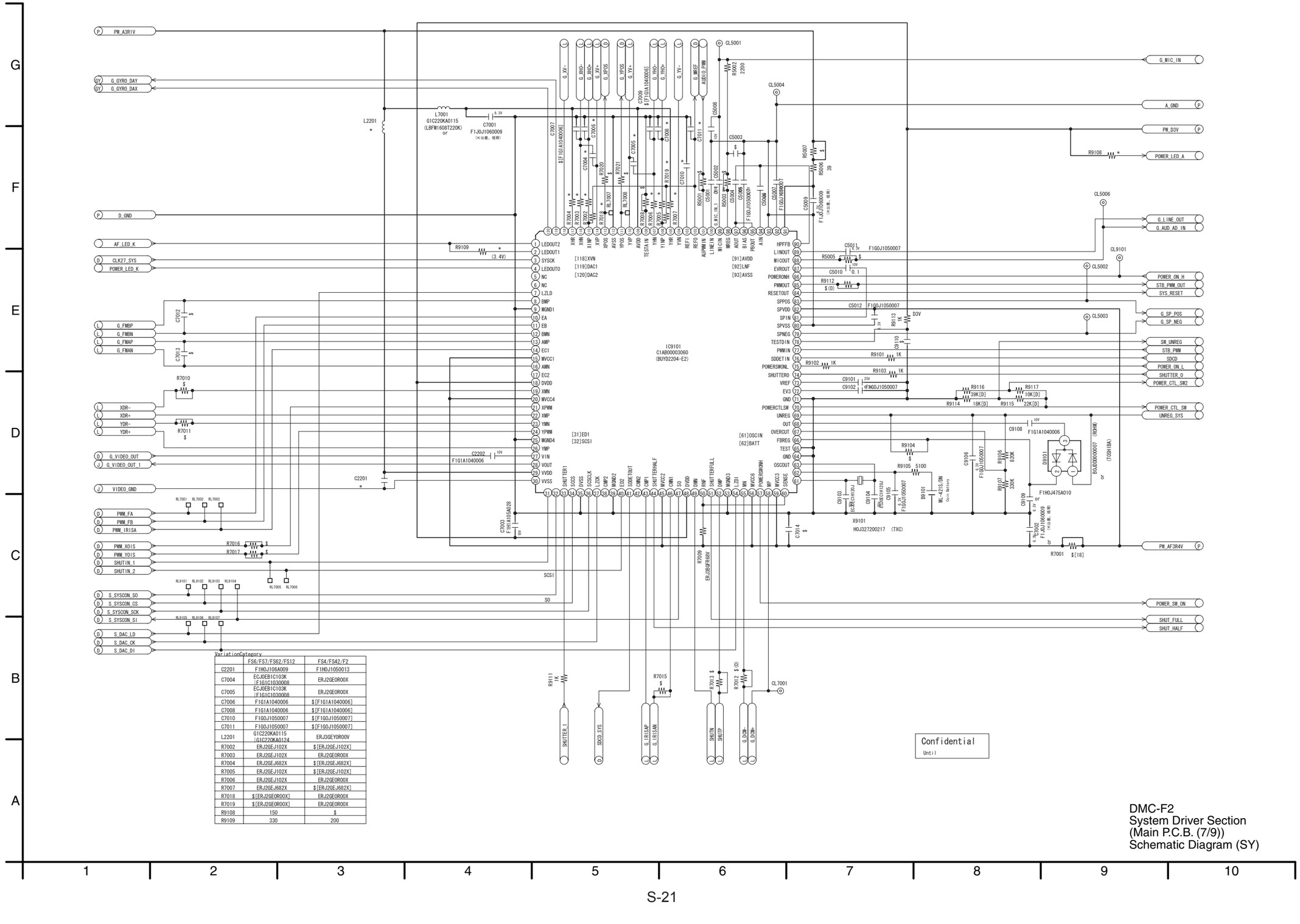
VariationCategory

	FS6/7/62/12	FS4/42/F2
C7101	F1JOJ1060009	$[F1JOJ1060009]
C7102	ECJOEB1C153K |F1G1C153A081	$[ECJOEB1C153K]
C7103	ECJOEB1C153K |F1G1C153A081	$[ECJOEB1C153K]
C7106	ECJOEB1A473K |F1G1A473A032	$[ECJOEB1A473K]
C7107	ECJOEB1A473K |F1G1A473A032	$[ECJOEB1A473K]
C7108	ECJOEB1E472K |F1G1E472A086	$[ECJOEB1E472K]
C7109	ECJOEB1E472K |F1G1E472A086	$[ECJOEB1E472K]
C7110	F1G1A1040006	$[F1G1A1040006]
C7111	F1G1A1040006	$[F1G1A1040006]
C7112	F1G1A1040006	$[F1G1A1040006]
IC7101	EWTS98LA11 |EWTS98LA12	$[EWTS98LA11]
L7101	G1C220KA0115 |G1C220KA0124	$[G1C220KA0115]

Confidential
Until

DMC-F2
Gyro Section
(Main P.C.B. (6/9))
Schematic Diagram (GY)

S4.7. System Driver (SY) Schematic Diagram

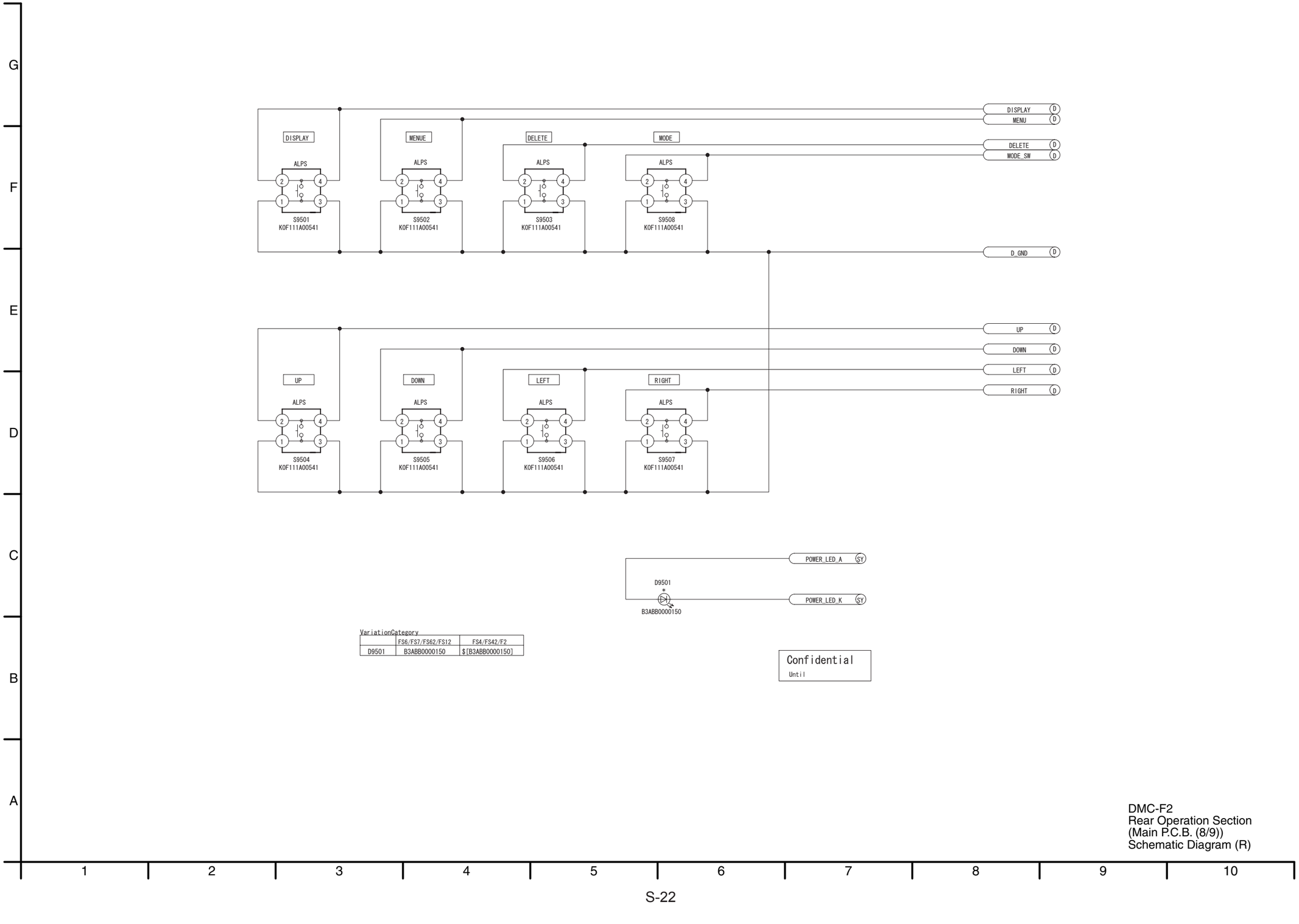


VariationCategory

	FS6/FS7/FS82/FS12	FS4/FS42/F2
C2201	F1H0J106A009	F1H0J1050013
C7004	ECJ0EB1C103K [F1G1C1030008	ERJ2GE0R00X
C7005	ECJ0EB1C103K [F1G1C1030008	ERJ2GE0R00X
C7006	F1G1A1040006	$[F1G1A1040006]
C7008	F1G1A1040006	$[F1G1A1040006]
C7010	F1G0J1050007	$[F1G0J1050007]
C7011	F1G0J1050007	$[F1G0J1050007]
L2201	G1C220KA0115 [G1C220KA0124	ERJ3GEYOR00V
R7002	ERJ2GEJ102X	$[ERJ2GEJ102X]
R7003	ERJ2GEJ102X	ERJ2GE0R00X
R7004	ERJ2GEJ682X	$[ERJ2GEJ682X]
R7005	ERJ2GEJ102X	$[ERJ2GEJ102X]
R7006	ERJ2GEJ102X	ERJ2GE0R00X
R7007	ERJ2GEJ682X	$[ERJ2GEJ682X]
R7018	$[ERJ2GE0R00X]	ERJ2GE0R00X
R7019	$[ERJ2GE0R00X]	ERJ2GE0R00X
R9108	150	$
R9109	330	200

DMC-F2
System Driver Section
(Main P.C.B. (7/9))
Schematic Diagram (SY)

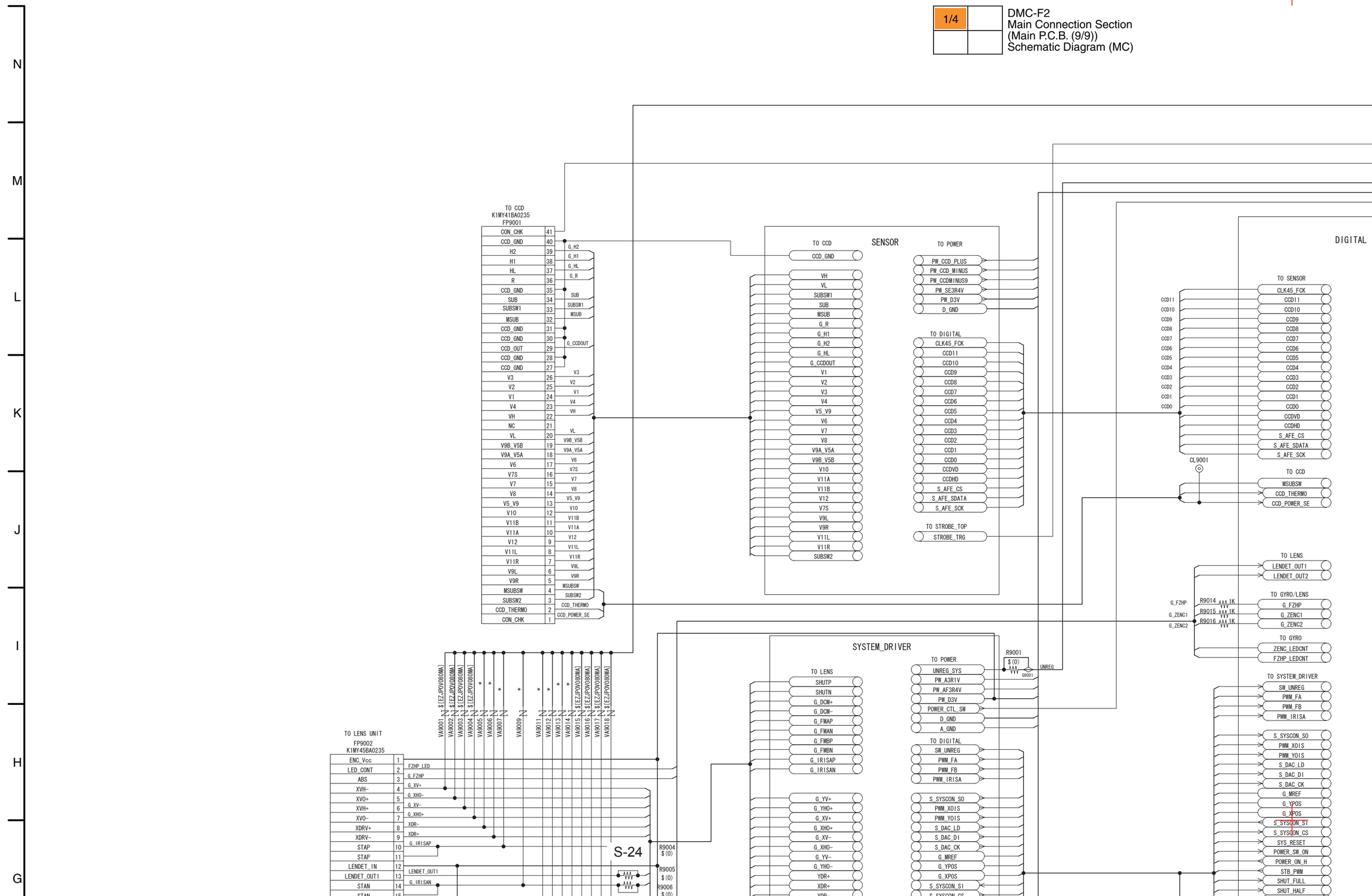
S4.8. Rear Operation (R) Schematic Diagram



S4.9. Main Connection (MC) Schematic Diagram

1/4	

DMC-F2
Main Connection Section
(Main P.C.B. (9/9))
Schematic Diagram (MC)



DIGITAL

TO SENSOR
CLK45_FCK
CCD11
CCD10
CCD9
CCD8
CCD7
CCD6
CCD5
CCD4
CCD3
CCD2
CCD1
CCD0
CCDVD
CCDHD
S_AFE_CS
S_AFE_SDATA
S_AFE_SCK

TO CCD
MSUBSW
CCD_THERMO
CCD_POWER_SE

TO LENS
LENDET_OUT1
LENDET_OUT2

TO GYRO/LENS
G_FZHP
G_ZENC1
G_ZENC2

TO GYRO
ZENC_LEDCNT
FZHP_LEDCNT

TO SYSTEM_DRIVER
SW_UNREG
PWM_FA
PWM_FB
PWM_IRISA

S_SYSCON_SO
PWM_XOIS
PWM_YOIS
S_DAC_LD
S_DAC_DI
S_DAC_CK
G_MREF
G_YPOS
G_XPOS
S_SYSCON_ST
S_SYSCON_CS
SYS_RESET
POWER_SW_ON
POWER_ON_H
STB_PWM
SHUT_FULL
SHUT_HALF

R9014 1K
R9015 1K
R9016 1K

TO POWER
PW_D3V
PW_A3R1V
PW_D1R8V
PW_D1R2V
A_GND
D_GND

TO POWER
BLT_CNT

(EZJO0V080MA)
VA9019
*
R9017
$(1K)

TO STROBE_TOP
TELE_WIDE
REC_PB_MODE
STB_CHG_LV
BATT_THERMO
IA_SW
ID_BAT_DQ

TELE_WIDE
IA_SW

TO SD_CARD
SDDAT0
SDDAT1
SDDAT2
SDDAT3
SDCMD
SDCLK
SDWP

TO REAR_OPE
DISPLAY
DELETE
MODE_SW
UP
DOWN
LEFT
RIGHT
MENU

TO JACK
CABLE_DET
G_USB+
G_USB-
USB_CAB_IN

VIDEO_GND

POWER

TO GYRO
PW_UNREG_GND

TO SENSOR
PW_CCD_PLUS
PW_CCD_MINUS
PW_CCDMINUS9
PW_SE3R4V

TO SYSTEM_DRIVER
PW_AF3R4V

TO DIGITAL
PW_A3R1V
PW_D1R8V
PW_D1R2V
BLT_CNT

TO DIGTAL
CCD_POWER

TO SYSTEM_DRIVER
POWER_CTL_SW

PW_D3V
A_GND
D_GND

TO STROBE_TOP
UNREG_GND
UNREG
IGBT_VCC

(PW_AF3R4V)

TO LCD
PW_BL_VDD
PW_BL_MINUS

LCD

D_GND
PW_D3V

LCD1_CP3_VGH
LCD2_CP4_CP3
LCD3_CP5_CP3
LCD4_CP6_CP4
LCD5_CP7_CP4
LCD6_CP8_VGL
LCD7_NC_VS
LCD8_VCC1.8_C1P
LCD9_PCD_C1N
LCD10_VCOML_C2P
LCD11_VCOMH_C2N
GND
LCD13_NC_VCIX
LCD14_AVDD_VCI
LCD15_CP1_CXP
LCD16_CP2_CXN
LCD17_NC_VCOM
LCD18_FB_VCOMH
LCD19_LED_VCOML
LCD20_NC_VGM
LCD21_LED_VSS1
LCD22_GND_VDDIO
LCD23_VCC_VDDL

LCD38_SHDB_MSB

S-25

JACK

TO STB&TOP
PP9001
K1KA30BA0342

30	STB_PWM_OUT	STB_CHG_LV	1
29	STROBE_TRG	MIC_GND	2
28	CATHODE	MIC_IN	3
27	ANODE	A_GND	4
26	SP_NEG	MIC_REG	5
25	SP_POS	SHUTTER_1	6
24	BATT_THERMO	SHUTTER_O	7
23	TELE_WIDE	ID_BAT_DQ	8
22	IGBT_VCC	UNREG_GND	9
21	UNREG_GND	POWER_ON_L	10
20	UNREG_GND	IA_SW	11
19	UNREG_GND	UNREG	12
18	UNREG_GND	UNREG	13
17	REC_PB_MODE	UNREG	14
16	FRAME_GND	UNREG	15

R9018 100[1/8]
R9008 *
R9009 $(0)

STB_PWM_OUT
STROBE_TRG
AF_LED_K
G_SP_NEG
G_SP_POS
BATT_THERMO
TELE_WIDE
IGBT_VCC
UNREG_GND
REC_PB_MODE
FRAME_GND

STB_CHG_LV
G_MIC_IN
SHUTTER_1
SHUTTER_O
LB9001
ID_BAT_DQ
(JDJCC0000408)
POWER_ON_L
IA_SW

CL9002
CL9004
CL9003
CL9007
CL9006
CL9005

RX9001
EXBN8V473JX
R9026 22K

FP9005
K1MY15BA0235

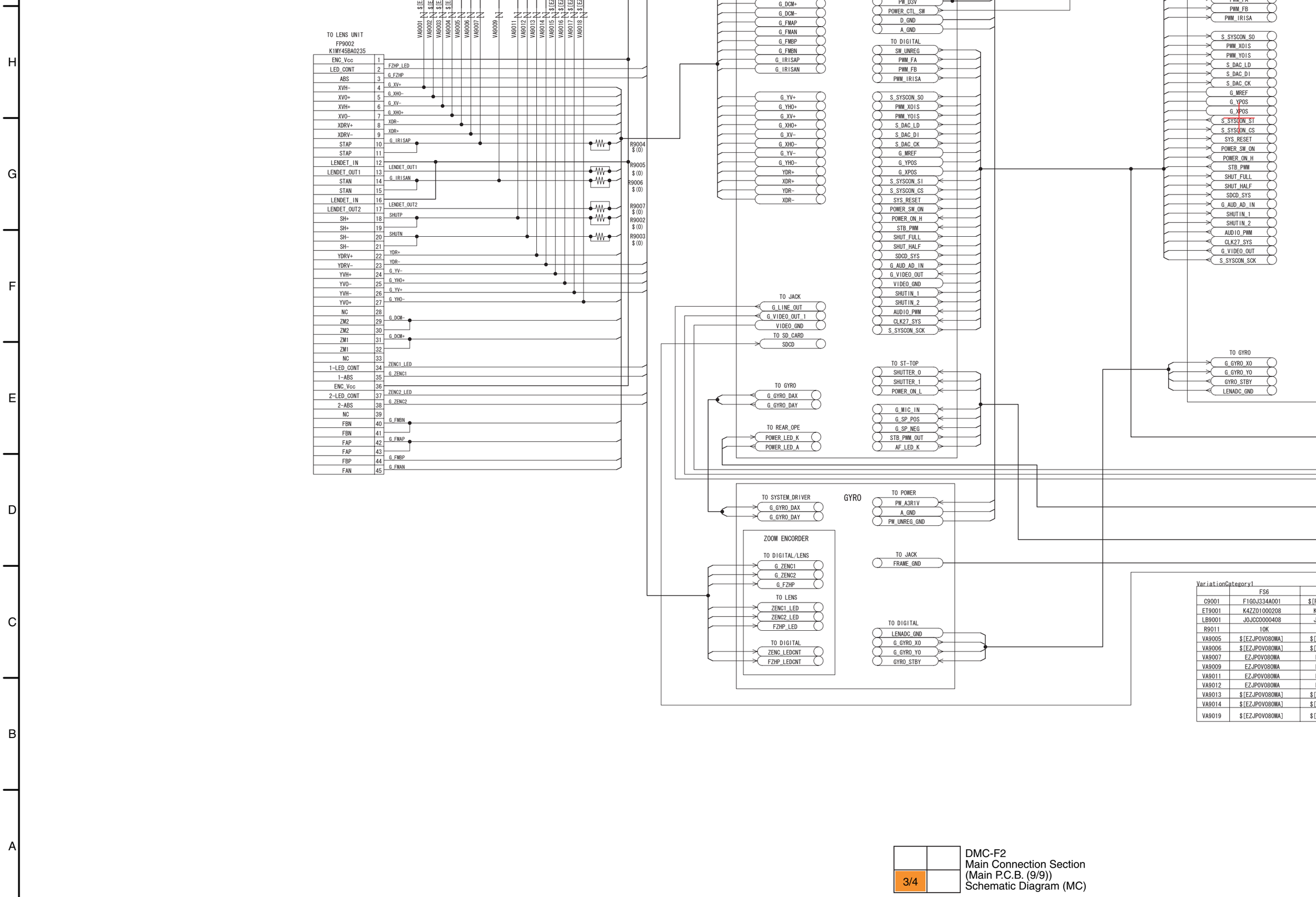
15	SDCD
14	SDDAT2
13	SDDAT3
12	SDCMD
11	SDDAT0
10	SDDAT1
9	SDWP
8	D_GND
7	D_GND
6	D_GND
5	SDCLK
4	D3V
3	FRAME_GND
2	FRAME_GND
1	FRAME_GND

SDDAT2
SDDAT3
SDCMD
SDDAT0
SDDAT1
SDWP
D_GND
SDCLK
PW_D3V

FP9103
K1MY41BA0235

1	CP3
2	CP4
3	CP5
4	CP6
5	CP7
6	CP8
7	NC
8	VCC_1.8
9	PCD
10	VCOML
11	VCOMH
12	AGND
13	NC
14	AVDD
15	CP1
16	CP2
17	NC
18	FB
19	LED
20	NC

LCD1_CP3_VGH
LCD2_CP4_CP3
LCD3_CP5_CP3
LCD4_CP6_CP4
LCD5_CP7_CP4
LCD6_CP8_VGL
LCD7_NC_VS
LCD8_VCC1.8_C1P
LCD9_PCD_C1N
LCD10_VCOML_C2P
LCD11_VCOMH_C2N
GND
LCD13_NC_VCIX
LCD14_AVDD_VCI
LCD15_CP1_CXP
LCD16_CP2_CXN
LCD17_NC_VCOM
LCD18_FB_VCOMH
LCD19_LED_VCOML
LCD20_NC_VGM

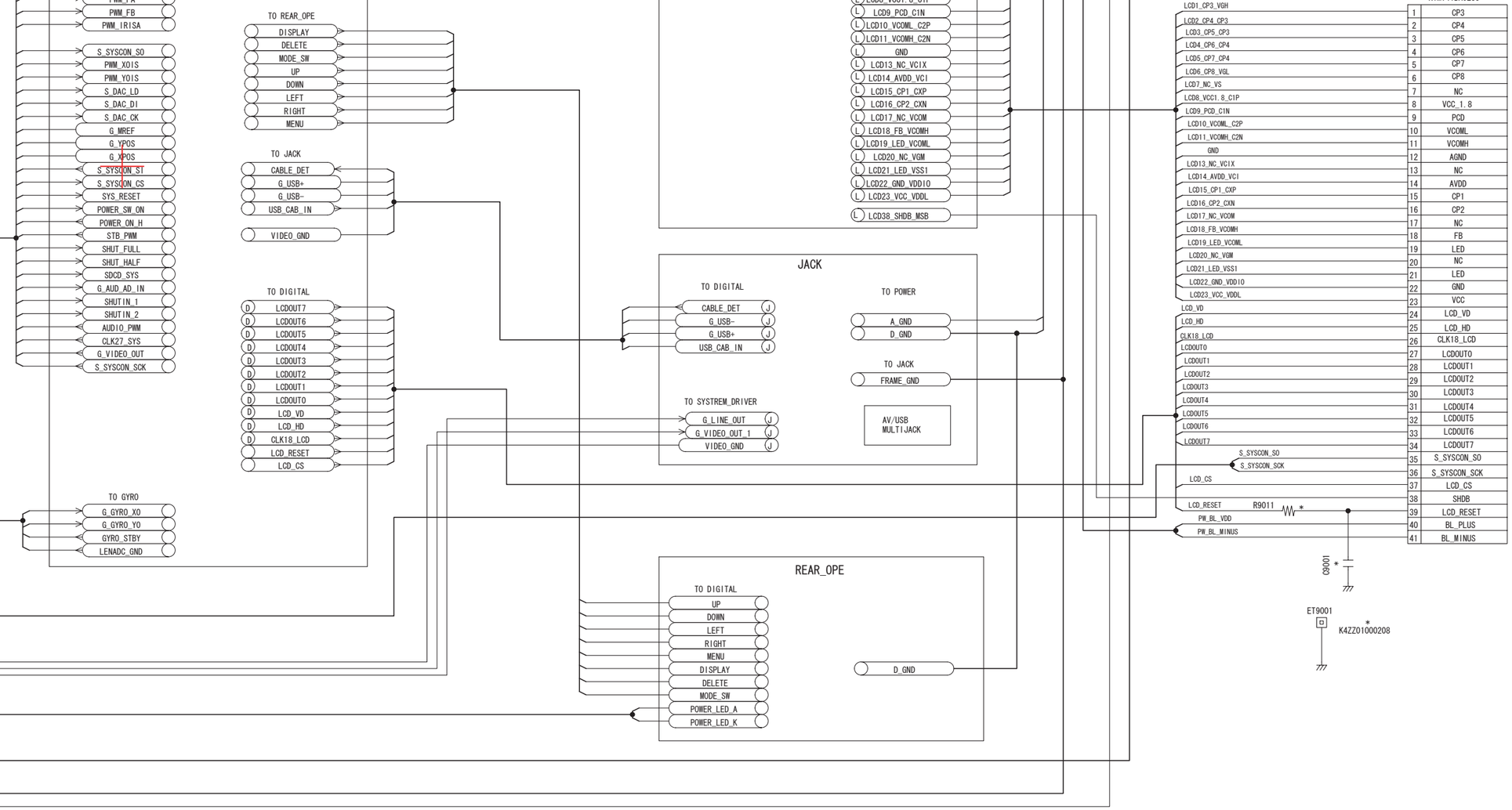


VariationCategory1

	FS6	
C9001	F1GOJ334A001	$[E
ET9001	K4ZZ01000208	K
LB9001	J0JCC0000408	J
R9011	10K	
VA9005	$[EZJP0V080MA]	$[
VA9006	$[EZJP0V080MA]	$[
VA9007	EZJP0V080MA	
VA9009	EZJP0V080MA	
VA9011	EZJP0V080MA	
VA9012	EZJP0V080MA	
VA9013	$[EZJP0V080MA]	$[
VA9014	$[EZJP0V080MA]	$[
VA9019	$[EZJP0V080MA]	$[

3/4

DMC-F2
Main Connection Section
(Main P.C.B. (9/9))
Schematic Diagram (MC)



VariationCategory1

	FS6	FS7/FS12	FS4/FS42/F2	FS62
C9001	F1G0J334A001	$[F1G0J334A001]	F1G0J334A001	F1G0J334A001
ET9001	K4ZZ01000208	K4ZZ01000208	K4ZZ01000208	K4ZZ01000208
LB9001	J0JCC0000408	J0JCC0000408	J0JCC0000408	J0JCC0000408
R9011	10K	0	10K	10K
VA9005	$[EZJP0V080MA]	$[EZJP0V080MA]	EZJP0V080MA	$[EZJP0V080MA]
VA9006	$[EZJP0V080MA]	$[EZJP0V080MA]	EZJP0V080MA	$[EZJP0V080MA]
VA9007	EZJP0V080MA	EZJP0V080MA	$[EZJP0V080MA]	EZJP0V080MA
VA9009	EZJP0V080MA	EZJP0V080MA	$[EZJP0V080MA]	EZJP0V080MA
VA9011	EZJP0V080MA	EZJP0V080MA	$[EZJP0V080MA]	EZJP0V080MA
VA9012	EZJP0V080MA	EZJP0V080MA	$[EZJP0V080MA]	EZJP0V080MA
VA9013	$[EZJP0V080MA]	$[EZJP0V080MA]	EZJP0V080MA	$[EZJP0V080MA]
VA9014	$[EZJP0V080MA]	$[EZJP0V080MA]	EZJP0V080MA	$[EZJP0V080MA]
VA9019	$[EZJP0V080MA]	$[EZJP0V080MA]	F1G0J1050007 |F1G0J105A022	$[EZJP0V080MA]

Confidential
Until

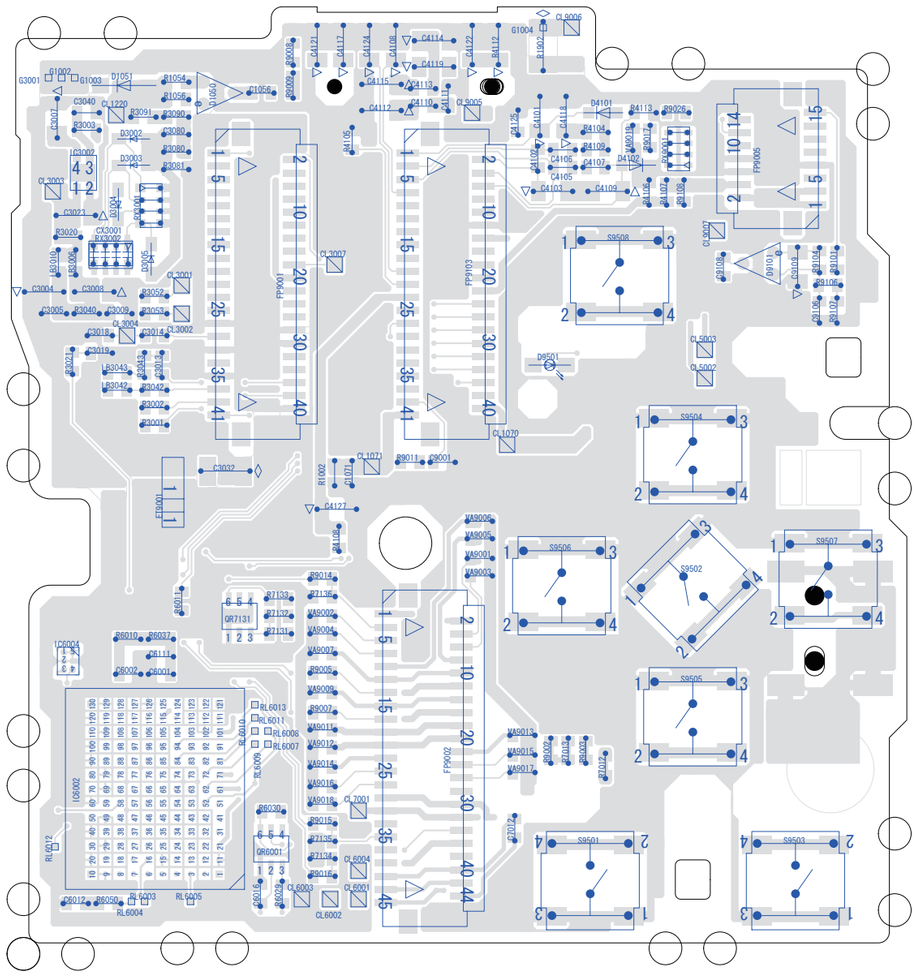
DMC-F2
Main Connection Section
(Main P.C.B. (9/9))
Schematic Diagram (MC)
4/4

11 12 13 14 15 16 17 18 19 20 21

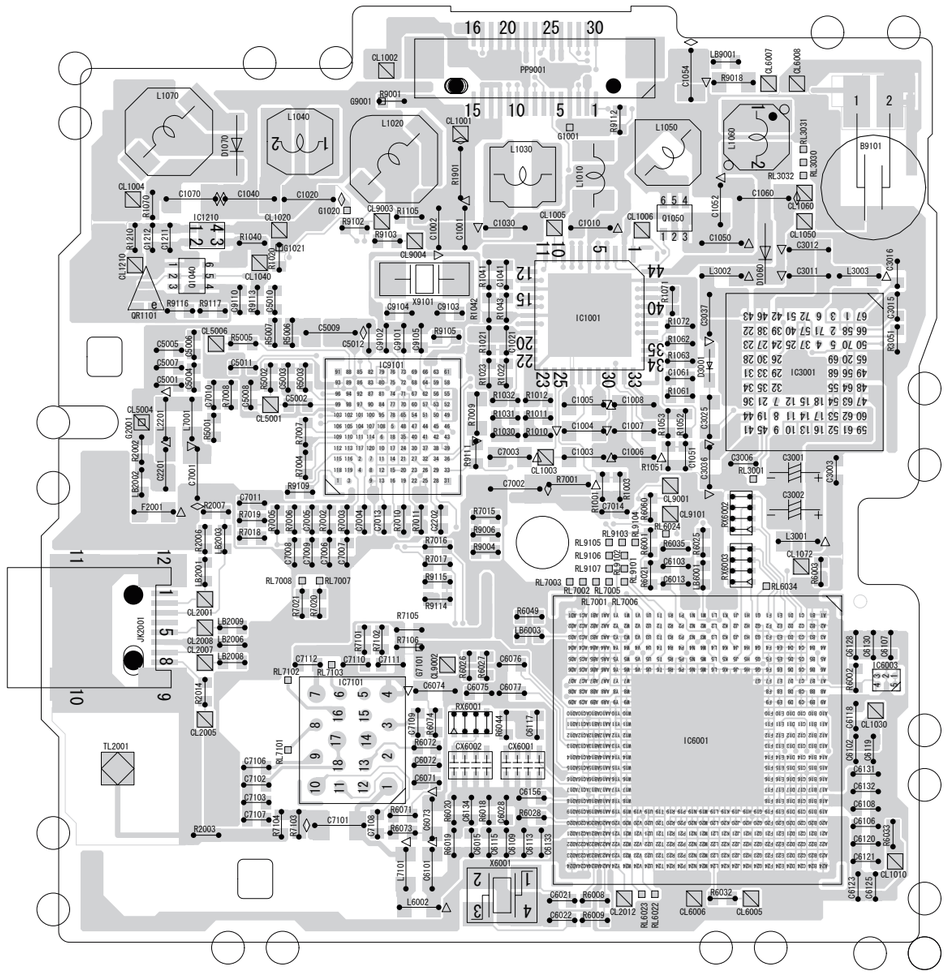
S5. Print Circuit Board

S5.1. Main P.C.B.

S5.1.1. Main P.C.B.



(Component Side)



(Foil Side)

DMC-F2
Main P.C.B.

S5.1.2. Main P.C.B. Address Information

Main P.C.B.

Integrated Circuit		
IC1001	E-9	F
IC1210	E-7	F
IC3001	E-10	F
IC3002	F-2	C
IC6001	C-9	F
IC6002	C-2	C
IC6003	C-10	F
IC6004	C-1	C
IC7101	C-8	F
IC9101	E-8	F

Transistor		
Q1040	E-7	F
Q1050	E-9	F

Transistor-resistor		
QR1101	E-7	F
QR6001	B-2	C
QR7131	C-2	C

Test Point		
CL1001	F-8	F
CL1002	F-8	F
CL1003	D-9	F
CL1004	E-7	F
CL1005	E-9	F
CL1006	E-9	F
CL1010	B-10	F
CL1020	E-7	F
CL1030	C-10	F
CL1040	E-7	F
CL1050	E-10	F
CL1060	F-10	F
CL1070	D-4	C
CL1071	D-3	C
CL1072	D-10	F
CL1210	E-7	F
CL1220	F-2	C
CL2001	D-7	F
CL2005	C-7	F
CL2007	C-7	F
CL2008	C-7	F
CL2012	B-9	F
CL3001	E-2	C
CL3002	E-2	C
CL3003	E-1	C
CL3004	E-2	C
CL3007	E-3	C
CL5001	D-7	F
CL5002	E-5	C
CL5003	E-5	C
CL5004	D-7	F
CL5006	E-7	F
CL6001	B-3	C
CL6002	B-3	C
CL6003	B-3	C
CL6004	B-3	C
CL6005	B-10	F
CL6006	B-9	F
CL6007	F-10	F
CL6008	F-10	F
CL7001	B-3	C
CL9001	D-9	F
CL9002	C-8	F
CL9003	E-8	F
CL9004	E-8	F
CL9005	F-3	C
CL9006	F-4	C
CL9007	E-5	C
CL9101	D-9	F
RL3001	D-10	F
RL3030	F-10	F
RL3031	F-10	F
RL3032	F-10	F
RL6003	B-2	C
RL6004	B-2	C
RL6005	B-2	C
RL6007	C-2	C
RL6008	C-2	C
RL6009	C-2	C
RL6010	C-2	C
RL6011	C-2	C
RL6012	B-1	C
RL6013	C-2	C
RL6022	B-9	F
RL6023	B-9	F
RL6024	D-9	F
RL6034	D-10	F
RL7001	D-9	F
RL7002	D-9	F
RL7003	D-9	F
RL7005	D-9	F
RL7006	D-9	F
RL7007	D-8	F
RL7008	D-8	F
RL7101	C-7	F
RL7102	C-7	F
RL7103	C-8	F
RL9101	D-9	F
RL9102	D-9	F
RL9103	D-9	F
RL9104	D-9	F
RL9105	D-9	F
RL9106	D-9	F
RL9107	D-9	F
TL2001	C-7	F

Connector		
FP9001	E-2	C
FP9002	C-3	C
FP9005	F-5	C
FP9103	E-3	C
JK2001	C-7	F
PP9001	F-9	F

Fuse		
F2001	D-7	F

Diode		
D1050	F-2	C
D1051	F-2	C
D1060	E-10	F
D1070	F-7	F
D3001	E-10	F
D3002	F-2	C
D3003	F-2	C
D3004	E-2	C
D3005	E-2	C
D4101	F-4	C
D4102	F-4	C
D9101	E-5	C
D9501	E-4	C

Crystal Oscillator		
X6001	B-9	F

X9101	E-8	F

Coil		
L1010	F-9	F
L1020	F-8	F
L1030	F-9	F
L1040	F-8	F
L1050	F-9	F
L1060	F-10	F
L1070	F-7	F
L2201	D-7	F
L3001	D-10	F
L3002	E-10	F
L3003	E-10	F
L6002	B-8	F
L7001	D-7	F
L7101	B-8	F
LB2001	D-7	F
LB2002	D-7	F
LB2003	D-7	F
LB2006	C-7	F
LB2008	C-7	F
LB2009	C-7	F
LB3006	E-2	C
LB3010	E-1	C
LB3042	E-2	C
LB3043	E-2	C
LB6001	D-9	F
LB6003	C-9	F
LB9001	F-10	F

Capacitor		
C1001	E-8	F
C1002	E-8	F
C1003	D-9	F
C1004	D-9	F
C1005	D-9	F
C1006	D-9	F
C1007	D-9	F
C1008	D-9	F
C1010	E-9	F
C1020	E-8	F
C1021	E-9	F
C1030	E-9	F
C1040	E-7	F
C1041	E-9	F
C1050	E-10	F
C1051	D-9	F
C1052	E-10	F
C1054	F-9	F
C1056	F-2	C
C1060	E-10	F
C1061	E-9	F
C1070	E-7	F
C1071	D-3	C
C1211	E-7	F
C1212	E-7	F
C2201	D-7	F
C2202	D-8	F
C3001	D-10	F
C3002	D-10	F
C3003	D-10	F
C3004	E-1	C
C3005	E-1	C
C3006	D-10	F
C3007	F-1	C
C3008	E-2	C
C3009	E-2	C
C3011	E-10	F
C3012	E-10	F
C3013	E-2	C
C3014	E-2	C
C3015	E-10	F
C3016	E-10	F
C3018	E-2	C
C3019	E-2	C
C3023	E-2	C
C3025	D-10	F
C3032	D-2	C
C3036	D-10	F
C3037	E-10	F
C3040	F-2	C
C3080	F-2	C
C4101	F-4	C
C4102	F-4	C
C4103	E-4	C
C4105	F-4	C
C4106	F-4	C
C4107	F-4	C
C4108	F-3	C
C4109	E-4	C
C4110	F-3	C
C4111	F-3	C
C4112	F-3	C
C4113	F-3	C
C4114	F-3	C
C4115	F-3	C
C4117	F-3	C
C4118	F-4	C
C4119	F-3	C
C4121	F-3	C
C4122	F-3	C
C4124	F-3	C
C4125	F-4	C
C4127	D-3	C
C5001	E-7	F
C5002	D-8	F
C5003	E-7	F
C5004	E-7	F
C5005	E-7	F
C5006	E-7	F
C5007	E-7	F
C5008	E-7	F
C5009	E-8	F
C5010	E-7	F
C5011	E-7	F
C5012	E-8	F
C6001	C-2	C
C6002	C-2	C
C6012	B-2	C
C6013	D-9	F
C6015	B-8	F
C6016	B-2	C
C6021	B-9	F
C6022	B-9	F
C6028	B-9	F
C6071	C-8	F
C6072	C-8	F
C6073	B-8	F
C6074	C-8	F
C6075	C-8	F
C6076	C-9	F
C6077	C-9	F
C6101	B-8	F
C6102	C-10	F
C6103	D-9	F
C6106	B-10	F
C6107	C-10	F
C6108	B-10	F
C6109	B-9	F
C6111	C-2	C
C6113	B-9	F
C6115	B-8	F
C6117	C-9	F
C6118	C-10	F
C6119	C-10	F
C6120	B-10	F
C6121	B-10	F
C6123	B-10	F
C6125	B-10	F
C6128	C-10	F
C6130	C-10	F
C6131	C-10	F
C6132	C-10	F
C6133	B-9	F
C6134	B-8	F
C6156	C-9	F
C7001	D-7	F
C7002	D-9	F
C7003	D-9	F
C7004	D-8	F
C7005	D-8	F
C7006	D-8	F
C7007	D-8	F
C7008	D-8	F
C7009	D-8	F
C7010	E-7	F
C7011	D-7	F
C7012	B-4	C
C7013	D-8	F
C7014	D-9	F
C7101	B-8	F
C7102	C-7	F
C7103	C-7	F
C7106	C-7	F
C7107	B-7	F
C7108	B-8	F
C7109	C-8	F
C7110	C-8	F
C7111	C-8	F
C7112	C-8	F
C9001	D-3	C
C9101	E-8	F
C9102	E-8	F
C9103	E-8	F
C9104	E-8	F
C9105	E-8	F
C9106	E-5	C
C9108	E-5	C
C9109	E-5	C
C9110	E-7	F
CX3001	E-2	C
CX6001	C-9	F
CX6002	C-8	F

Resistor		
R1001	D-9	F
R1002	D-3	C
R1003	D-9	F
R1010	D-9	F
R1011	D-9	F
R1012	E-9	F
R1020	E-7	F
R1021	E-8	F
R1022	E-9	F
R1023	E-8	F
R1030	D-9	F
R1031	D-9	F
R1032	E-9	F
R1040	E-7	F
R1041	E-8	F
R1042	E-8	F
R1043	E-9	F
R1051	D-9	F
R1052	D-9	F
R1053	D-9	F
R1054	F-2	C
R1056	F-2	C
R1061	E-9	F
R1062	E-9	F
R1063	E-9	F
R1070	E-7	F
R1071	E-9	F
R1072	E-9	F
R1105	E-8	F
R1210	E-7	F
R1901	F-8	F
R1902	F-4	C
R2002	D-7	F
R2003	B-7	F
R2006	D-7	F
R2007	D-7	F
R2014	C-7	F
R3001	D-2	C
R3002	D-2	C
R3003	F-2	C
R3020	E-1	C
R3021	E-2	C
R3040	E-2	C
R3042	E-2	C
R3043	E-2	C
R3051	E-10	F
R3052	E-2	C
R3053	E-2	C
R3080	F-2	C
R3081	F-2	C
R3090	F-2	C
R3091	F-2	C
R4104	F-4	C
R4105	F-3	C
R4106	E-4	C
R4107	E-4	C
R4108	D-3	C
R4109	F-4	C
R4112	F-4	C
R4113	F-4	C
R5001	D-7	F
R5002	E-7	F
R5003	E-8	F
R5005	E-7	F
R5006	E-8	F
R5007	E-7	F
R6001	D-9	F
R6002	C-10	F
R6003	D-10	F
R6008	B-9	F
R6009	B-9	F
R6010	C-2	C
R6011	C-2	C
R6018	B-8	F
R6019	B-8	F
R6020	B-8	F
R6021	D-9	F
R6025	D-9	F
R6026	C-8	F
R6027	C-8	F
R6028	B-9	F
R6029	B-3	C
R6030	B-2	C
R6032	B-10	F
R6033	B-10	F
R6035	D-9	F
R6037	C-2	C
R6044	C-9	F
R6049	C-9	F
R6050	B-2	C
R6060	D-9	F
R6071	B-8	F
R6072	C-8	F
R6073	B-8	F
R6074	C-8	F
R7001	D-9	F
R7002	D-8	F
R7003	D-8	F
R7004	D-8	F
R7005	D-7	F
R7006	D-8	F
R7007	D-8	F
R7008	E-7	F
R7009	D-8	F
R7010	D-8	F
R7011	D-8	F
R7012	C-4	C
R7013	C-4	C
R7015	D-8	F
R7016	D-8	F
R7017	D-8	F
R7018	D-7	F
R7019	D-7	F
R7020	D-8	F
R7021	D-8	F
R7101	C-8	F
R7102	C-8	F
R7103	B-8	F
R7104	B-7	F
R7105	C-8	F
R7106	C-8	F
R7131	C-2	C
R7132	C-2	C
R7133	D-2	C
R7134	B-3	C
R7135	B-3	C
R7136	D-3	C
R9001	F-8	F
R9002	C-4	C
R9003	C-4	C
R9004	D-8	F
R9005	C-3	C
R9006	D-8	F
R9007	C-3	C
R9008	F-3	C
R9009	F-3	C
R9011	D-3	C
R9014	D-3	C
R9015	B-3	C
R9016	B-3	C
R9017	F-4	C
R9018	F-10	F
R9026	F-4	C
R9101	E-5	C
R9102	E-8	F
R9103	E-8	F
R9104	E-5	C
R9105	E-8	F
R9106	E-5	C
R9107	E-5	C
R9108	E-4	C
R9109	D-8	F
R9111	D-8	F
R9112	F-9	F
R9113	E-7	F
R9114	D-8	F
R9115	D-8	F
R9116	E-7	F
R9117	E-7	F
RX3001	E-2	C
RX3002	E-2	C
RX6001	C-8	F
RX6002	D-10	F
RX6003	D-10	F
RX9001	F-4	C

Varistor		
VA9001	D-3	C
VA9002	C-3	C
VA9003	D-3	C
VA9004	C-3	C
VA9005	D-3	C
VA9006	D-3	C
VA9007	C-3	C
VA9009	C-3	C
VA9011	C-3	C
VA9012	C-3	C
VA9013	C-4	C
VA9014	C-3	C
VA9015	C-4	C
VA9016	C-3	C
VA9017	C-4	C
VA9018	B-3	C
VA9019	F-4	C

Backup Battery		
B9101	F-10	F

Ground Terminal		
G1001	F-9	F
G1002	F-1	C
G1003	F-2	C
G1004	F-4	C
G1020	E-8	F
G1021	E-7	F
G2001	D-7	F
G3001	F-1	C
G7101	C-8	F
G9001	F-8	F

Switch		
S9501	B-4	C
S9502	D-5	C
S9503	B-5	C
S9504	D-5	C
S9505	C-5	C
S9506	D-4	C
S9507	D-5	C
S9508	E-4	C

Earth Terminal		
ET9001	D-2	C

Address Information
C.....Component Side
F.....Foil Side

S6. 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 ⚠ 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.
5. Supply of CD-ROM, 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:

1. **Parts marked with [ENERGY] in the remarks column are supplied from Panasonic Corporation Energy Company.**
2. **Parts marked with [SPC] in the remarks column are supplied from AVC-CSC-SPC. Others are supplied from PAVCSG.**

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP56074G	MAIN P.C.B.		(RTL) E.S.D.
C1001	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
C1003	F1H1A334A025	C.CAPACITOR CH 10V 0.33U	1	
C1004	F1H1A105A028	C.CAPACITOR CH 10V 1U	1	
C1005	F1H1A105A028	C.CAPACITOR CH 10V 1U	1	
C1006	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
C1007	ECJ1VB0J225K	C.CAPACITOR CH 6.3V 2.2U	1	
C1008	ECJ1VB0J225K	C.CAPACITOR CH 6.3V 2.2U	1	
C1010	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
C1020	F1J0J226A014	C.CAPACITOR CH 6.3V 22U	1	
C1030	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
C1040	F1J0J226A014	C.CAPACITOR CH 6.3V 22U	1	
C1050	F1H1A4750001	C.CAPACITOR CH 10V 4.7U	1	
C1051	ECJ0EB1E562K	C.CAPACITOR CH 25V 5600P	1	
C1052	F1H1A4750001	C.CAPACITOR CH 10V 4.7U	1	
C1060	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
C1070	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
C1211	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C2201	F1H0J1050013	C.CAPACITOR CH 6.3V 1U	1	
C2202	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C3001	F3E0J476A014	E.CAPACITOR CH 6.3V 47U	1	
C3003	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C3004	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
C3006	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C3007	F1H0J1050013	C.CAPACITOR CH 6.3V 1U	1	
C3009	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C3011	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
C3012	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
C3013	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3014	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C3015	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C3016	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C3023	F1H0J1050013	C.CAPACITOR CH 6.3V 1U	1	
C3025	ECJ1VB1H104K	C.CAPACITOR CH 50V 0.1U	1	
C3032	F1J1C225A144	C.CAPACITOR CH 16V 2.2U	1	
C3036	F1H1C105A097	C.CAPACITOR CH 16V 1U	1	
C3037	F1H1C105A097	C.CAPACITOR CH 16V 1U	1	
C3040	ECJ0EB1A104K	C.CAPACITOR CH 10V 0.1U	1	
C3080	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4101	F1H1A105A028	C.CAPACITOR CH 10V 1U	1	
C4103	F1H1A105A028	C.CAPACITOR CH 10V 1U	1	
C4106	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4107	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4111	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4112	F1H0J2250003	C.CAPACITOR CH 6.3V 2.2U	1	
C4114	F1H0J2250003	C.CAPACITOR CH 6.3V 2.2U	1	
C4115	F1H0J2250003	C.CAPACITOR CH 6.3V 2.2U	1	
C4118	F1H0J2250003	C.CAPACITOR CH 6.3V 2.2U	1	
C4119	F1H0J2250003	C.CAPACITOR CH 6.3V 2.2U	1	
C4127	F1H0J2250003	C.CAPACITOR CH 6.3V 2.2U	1	
C5001	ECJ0EB1E102K	C.CAPACITOR CH 25V 1000P	1	
C5002	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C5004	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C5005	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C5006	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C5007	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C5008	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C5009	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C5010	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C5011	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C5012	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6001	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6002	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6012	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6015	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6016	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6021	ECJ0EC1H090D	C.CAPACITOR CH 50V 9P	1	
C6022	ECJ0EC1H090D	C.CAPACITOR CH 50V 9P	1	
C6101	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
C6102	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6103	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6106	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6107	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6108	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6109	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C6111	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6113	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6115	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6117	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6118	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6119	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6120	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6121	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6123	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6125	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6128	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6130	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6131	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6132	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6134	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C6156	ECJ0EB1E102K	C.CAPACITOR CH 25V 1000P	1	
C7001	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C7002	F1J0J1060009	C.CAPACITOR CH 6.3V 10U	1	
C7003	F1H1A105A028	C.CAPACITOR CH 10V 1U	1	
C7004	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
C7005	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
C9001	F1G0J334A001	C.CAPACITOR CH 6.3V 0.33U	1	
C9101	ECJ0EB1E102K	C.CAPACITOR CH 25V 1000P	1	
C9102	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C9103	ECJ0EC1H120J	C.CAPACITOR CH 50V 12P	1	
C9104	ECJ0EC1H120J	C.CAPACITOR CH 50V 12P	1	
C9105	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C9106	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C9108	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
C9109	F1H0J475A010	C.CAPACITOR CH 6.3V 4.7U	1	
CX3001	F5A841040008	CHIP CAPACITOR	1	
CX6001	F1L1E103A065	C.CAPACITOR CH 25V 0.01U	1	
CX6002	F1L1E103A065	C.CAPACITOR CH 25V 0.01U	1	
D1060	B0JCFC000001	DIODE	1	E.S.D.
D1070	B0JCGD000002	DIODE	1	E.S.D.
D3001	MA2S1110G8	DIODE	1	E.S.D.
D3002	MA2S1110G8	DIODE	1	E.S.D.
D3003	MA2S1110G8	DIODE	1	E.S.D.
D3004	MA2S1110G8	DIODE	1	E.S.D.
D3005	MA2S1110G8	DIODE	1	E.S.D.
D9101	B0JDDD000007	DIODE	1	E.S.D.
ET9001	K4ZZ01000208	EARTH SPRING	1	
⚠ F2001	K5H152200006	FUSE 32V 1.5A	1	
FP9001	K1MY41BA0235	CONNECTOR 41P	1	
FP9002	K1MY45BA0235	CONNECTOR 45P	1	
FP9005	K1MY15BA0235	CONNECTOR 15P	1	
FP9103	K1MY41BA0235	CONNECTOR 41P	1	
IC1001	VUEALLPT025	IC	1	[SPC] E.S.D.
IC1210	C0CBCBC00236	IC	1	E.S.D.
IC3001	C1AB00003016	IC	1	E.S.D.
IC3002	C0CBCBC00236	IC	1	E.S.D.
IC6001	MN89501RF	IC	1	E.S.D.
IC6002	RS10176	IC	1	E.S.D.
IC6004	MN63Y2006TF	IC	1	E.S.D.
IC9101	C1AB00003060	IC	1	E.S.D.
JK2001	K1FB108E0008	CONNECTOR 12P	1	
L1010	G1C100KA0101	CHIP INDUCTOR 10UH	1	
L1020	G1C4R7ZA0104	CHIP INDUCTOR 4.7UH	1	
L1030	G1C4R7MA0392	CHIP INDUCTOR 4.7UH	1	
L1040	G1C150MA0394	CHIP INDUCTOR 15UH	1	
L1050	G1C4R7ZA0097	CHIP INDUCTOR 4.7UH	1	
L1060	G1C150MA0393	CHIP INDUCTOR 15UH	1	
L1070	G1C100MA0328	CHIP INDUCTOR 10UH	1	
L2201	ERJ3GEY0R00V	M.RESISTOR CH 1/10W 0	1	
L3001	G1C100KA0115	CHIP INDUCTOR 10UH	1	
L3002	G1C100KA0115	CHIP INDUCTOR 10UH	1	
L3003	G1C100KA0115	CHIP INDUCTOR 10UH	1	
L6002	G1C2R2MA0211	CHIP INDUCTOR 2.2UH	1	
L7001	G1C220KA0115	CHIP INDUCTOR 22UH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
LB2001	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
LB2002	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
LB2003	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
LB2006	J0JCC0000415	FILTER	1	
LB2008	J0JCC0000408	FILTER	1	
LB2009	J0JCC0000408	FILTER	1	
LB3010	J0JCC0000405	FILTER	1	
LB3042	J0JCC0000412	FILTER	1	
LB3043	J0JCC0000412	FILTER	1	
LB6001	J0JCC0000317	FILTER	1	
LB6003	J0JCC0000413	FILTER	1	
LB9001	J0JCC0000408	FILTER	1	
PP9001	K1KA30BA0342	CONNECTOR 30P	1	
Q1040	B1CFHC000006	TRANSISTOR	1	E.S.D.
Q1050	MTM866270L	TRANSISTOR	1	E.S.D.
QR1101	B1GBCFJN0041	TRANSISTOR-RESISTOR	1	E.S.D.
QR6001	B1GKCFNL0001	TRANSISTOR-RESISTOR	1	E.S.D.
QR7131	B1GFCFEN0012	TRANSISTOR-RESISTOR	1	E.S.D.
R1001	ERJ2RHD683X	M.RESISTOR CH 1/16W 68K	1	
R1002	ERJ2RKD300X	M.RESISTOR CH 1/16W 30	1	
R1011	ERJ2RKD164X	M.RESISTOR CH 1/16W 160K	1	
R1012	ERJ2RKD124X	M.RESISTOR CH 1/16W 120K	1	
R1021	ERJ2RKD394X	M.RESISTOR CH 1/16W 390K	1	
R1022	ERJ2RKD124X	M.RESISTOR CH 1/16W 120K	1	
R1031	ERJ2RKD304X	M.RESISTOR CH 1/16W 300K	1	
R1032	ERJ2RKD564X	M.RESISTOR CH 1/16W 560K	1	
R1041	ERJ2RKD2403X	M.RESISTOR CH 1/16W 240K	1	
R1042	ERJ2RKD124X	M.RESISTOR CH 1/16W 120K	1	
R1043	ERJ2RKD274X	M.RESISTOR CH 1/16W 270K	1	
R1051	ERJ2RKD184X	M.RESISTOR CH 1/16W 180K	1	
R1052	ERJ2RHD303X	M.RESISTOR CH 1/16W 30K	1	
R1061	ERJ2RKD224X	M.RESISTOR CH 1/16W 220K	1	
R1062	ERJ2RHD203X	M.RESISTOR CH 1/16W 20K	1	
R1071	ERJ2RKD204X	M.RESISTOR CH 1/16W 200K	1	
R1072	ERJ2RHD183X	M.RESISTOR CH 1/16W 18K	1	
R1105	ERJ2GEJ104X	M.RESISTOR CH 1/16W 100K	1	
R2006	ERJ2GEJ750X	M.RESISTOR CH 1/10W 75	1	
R2007	ERJ2GEJ561X	M.RESISTOR CH 1/16W 560	1	
R2014	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R3003	ERJ2GEJ473X	M.RESISTOR CH 1/16W 47K	1	
R3042	ERJ2GEJ680X	M.RESISTOR CH 1/10W 68	1	
R3043	ERJ2GEJ270X	M.RESISTOR CH 1/10W 27	1	
R3051	ERJ2GEJ103X	M.RESISTOR CH 1/10W 10K	1	
R3080	ERJ2RHD221X	M.RESISTOR CH 1/16W 220	1	
R3081	ERJ2RHD103X	M.RESISTOR CH 1/16W 10K	1	
R3090	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R4106	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R4108	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R4109	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R4112	ERJ3GEY0R00V	M.RESISTOR CH 1/10W 0	1	
R5002	ERJ2GEJ222X	M.RESISTOR CH 1/16W 2.2K	1	
R5006	ERJ2GEJ390X	M.RESISTOR CH 1/16W 39	1	
R6002	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R6003	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R6008	ERJ2GEJ105X	M.RESISTOR CH 1/16W 1M	1	
R6009	ERJ2GEJ681X	M.RESISTOR CH 1/16W 680	1	
R6011	ERJ2GEJ151X	M.RESISTOR CH 1/10W 150	1	
R6018	ERJ2RKF5902X	M.RESISTOR CH 1/16W 59K	1	
R6019	ERJ2RHD222X	M.RESISTOR CH 1/16W 2.2K	1	
R6020	ERJ2RHD122X	M.RESISTOR CH 1/16W 1.2K	1	
R6021	ERJ2GEJ473X	M.RESISTOR CH 1/16W 47K	1	
R6025	ERJ2GEJ101X	M.RESISTOR CH 1/16W 100	1	
R6026	ERJ2GEJ390X	M.RESISTOR CH 1/16W 39	1	
R6027	ERJ2GEJ390X	M.RESISTOR CH 1/16W 39	1	
R6028	ERJ2RHD561X	M.RESISTOR CH 1/16W 560	1	
R6029	ERJ2GEJ152X	M.RESISTOR CH 1/16W 1.5K	1	
R6030	ERJ2GEJ104X	M.RESISTOR CH 1/16W 100K	1	
R6044	ERJ2RHD103X	M.RESISTOR CH 1/16W 10K	1	
R6049	ERJ2GEJ330X	M.RESISTOR CH 1/16W 33	1	
R6050	ERJ2GEJ103X	M.RESISTOR CH 1/10W 10K	1	
R7003	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R7006	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R7009	ERJ3BQFR68V	M.RESISTOR CH 1/5W 0.68	1	
R7018	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R7019	ERJ2GE0R00X	M.RESISTOR CH 1/16W 0	1	
R7131	ERJ2GEJ151X	M.RESISTOR CH 1/10W 150	1	
R7132	ERJ2GEJ151X	M.RESISTOR CH 1/10W 150	1	
R7133	ERJ2GEJ221X	M.RESISTOR CH 1/16W 220	1	
R7134	ERJ2GEJ183X	M.RESISTOR CH 1/10W 18K	1	
R7135	ERJ2GEJ183X	M.RESISTOR CH 1/10W 18K	1	
R7136	ERJ2GEJ273X	M.RESISTOR CH 1/16W 27K	1	
R9011	ERJ2GEJ103X	M.RESISTOR CH 1/10W 10K	1	
R9014	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9015	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9016	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9018	ERJ3GEYJ101V	M.RESISTOR CH 1/10W 100	1	
R9026	ERJ2GEJ223X	M.RESISTOR CH 1/16W 22K	1	
R9101	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9102	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9103	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9105	ERJ2GEJ512X	M.RESISTOR CH 1/16W 5.1K	1	
R9106	ERJ2GEJ824X	M.RESISTOR CH 1/16W 820K	1	
R9107	ERJ2GEJ334X	M.RESISTOR CH 1/16W 330K	1	
R9109	ERJ2GEJ201X	M.RESISTOR CH 1/16W 200	1	
R9111	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9113	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R9114	ERJ2RHD183X	M.RESISTOR CH 1/16W 18K	1	
R9115	ERJ2RHD223X	M.RESISTOR CH 1/16W 22K	1	
R9116	ERJ2RHD393X	M.RESISTOR CH 1/16W 39K	1	
R9117	ERJ2RHD103X	M.RESISTOR CH 1/16W 10K	1	
RX3001	D1H83944A024	RESISTOR	1	
RX6001	EXBN8V103JX	RESISTOR ARRAY 1/32W 10K	1	
RX6002	EXBN8V151JX	CHIP RESISTOR NETWORKS	1	
RX6003	EXBN8V151JX	CHIP RESISTOR NETWORKS	1	
RX9001	EXBN8V473JX	RESISTOR ARRAY 1/32W 47K	1	
S9501	K0F111A00541	SWITCH	1	
S9502	K0F111A00541	SWITCH	1	
S9503	K0F111A00541	SWITCH	1	
S9504	K0F111A00541	SWITCH	1	
S9505	K0F111A00541	SWITCH	1	
S9506	K0F111A00541	SWITCH	1	
S9507	K0F111A00541	SWITCH	1	
S9508	K0F111A00541	SWITCH	1	
VA9005	EZJP0V080MA	VARISTOR	1	
VA9006	EZJP0V080MA	VARISTOR	1	
VA9013	EZJP0V080MA	VARISTOR	1	
VA9014	EZJP0V080MA	VARISTOR	1	
VA9019	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
X6001	H0J240500053	CRYSTAL OSCILLATOR	1	
X9101	H0J327200217	CRYSTAL OSCILLATOR	1	