INC

VMA21024-R.3750.A

作成承認印	配布許可印
ニコン 映像カンパニー 品質保証部 GM	サービス 計画課 M

Nikon

COOLPIX S550

VMA21024(SILVER)
VMA21124(BLACK)
VMA21224(BLUE)
VMA21324(PURPLE)

REPAIR MANUAL

Nikon | NIKON CORPORATION
Tokyo, Japan

Printed in Japan MAR 2008

CONTENTS

Disassembly

⚠ WARNING	
	● There are high voltege parts inside. Be careful of this electric shock, when you remove the cover. ● You must discharge the main condenser according to the instruction of this repair manual after you remove the cover.

Points to notice for Lead-free solder products
・Lead-free solder is used for this product. ・For soldering work, the special solder and soldering iron are required. ・Do not mix the lead-free solder with the conventional solder. ・Use the special soldering iron respectively for lead-free solder and lead solder. They cannot be used in common.

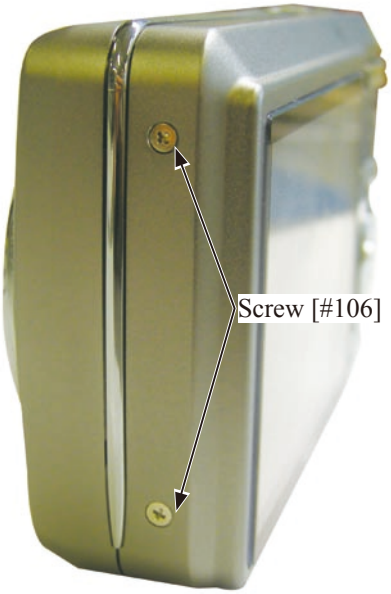
Note : ① Before disassembling, remove the SD card and battery.

② When disassembling, make sure to memorize the processing state of wires, screws to be fixed and their types, etc.

③ Because electrical parts are easily damaged by static electricity, make sure that you are well earthed/grounded.

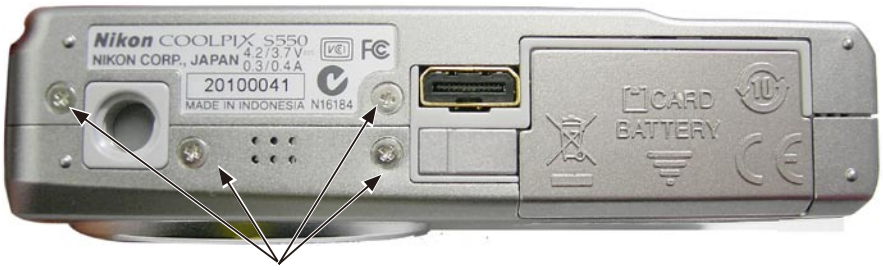
EXTERNAL SCREW

・Take out two screws [#106].



・Take out four screws [#102].

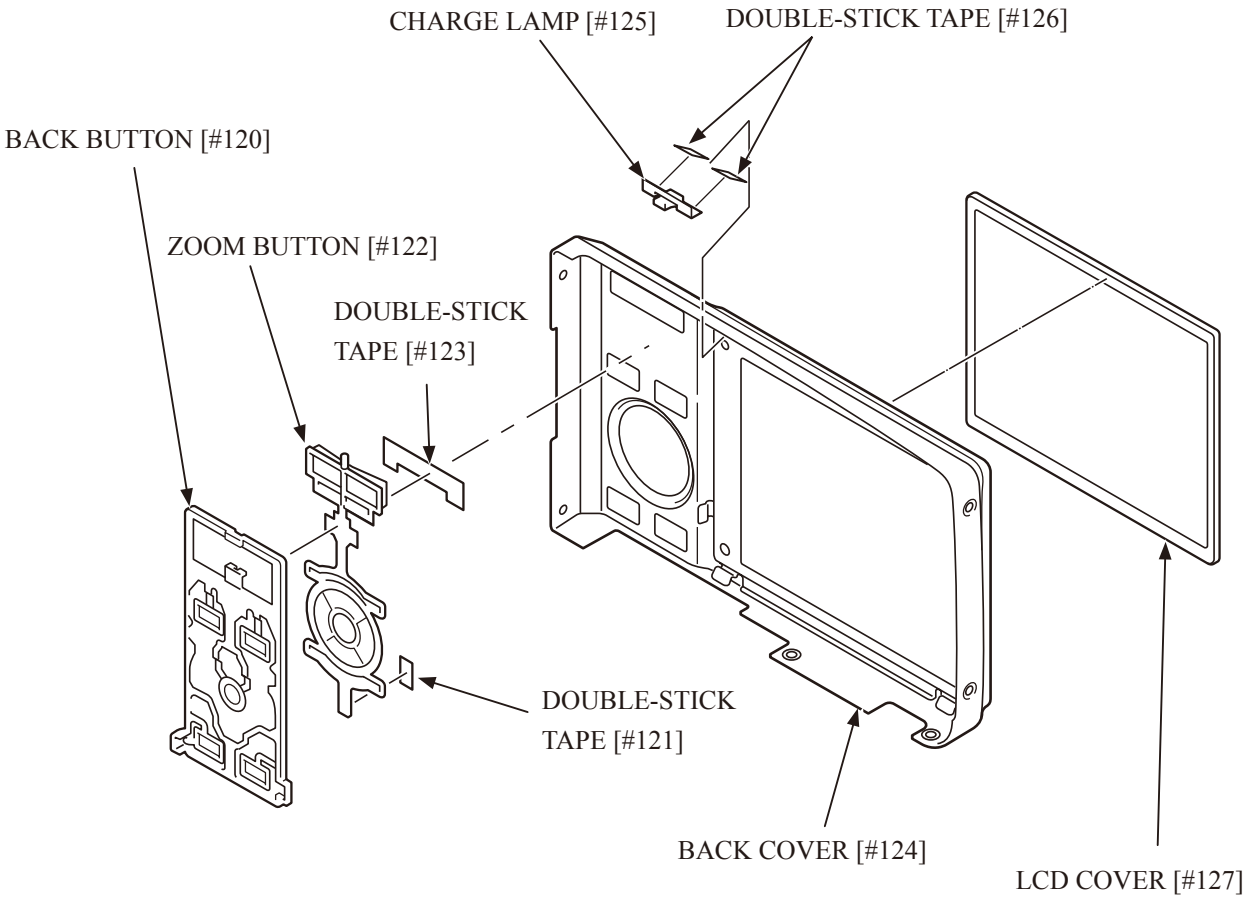
・Take out four screws [#101].



Screw [#101]

BACK COVER

・Remove the BACK COVER [#124] from the lower side.

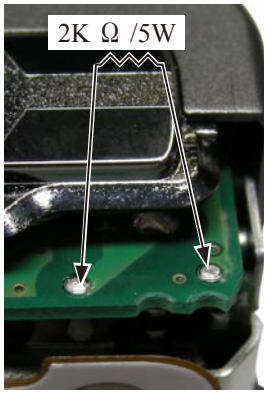

CHARGE LAMP [#125]
DOUBLE-STICK TAPE [#126]
BACK BUTTON [#120]
ZOOM BUTTON [#122]
DOUBLE-STICK TAPE [#123]
DOUBLE-STICK TAPE [#121]
BACK COVER [#124]
LCD COVER [#127]

⚠ WARNING

- There are high voltege parts inside. Be careful of this electric shock, when you remove the cover.
- You must discharge the main condenser according to the instruction of this repair manual after you remove the cover.

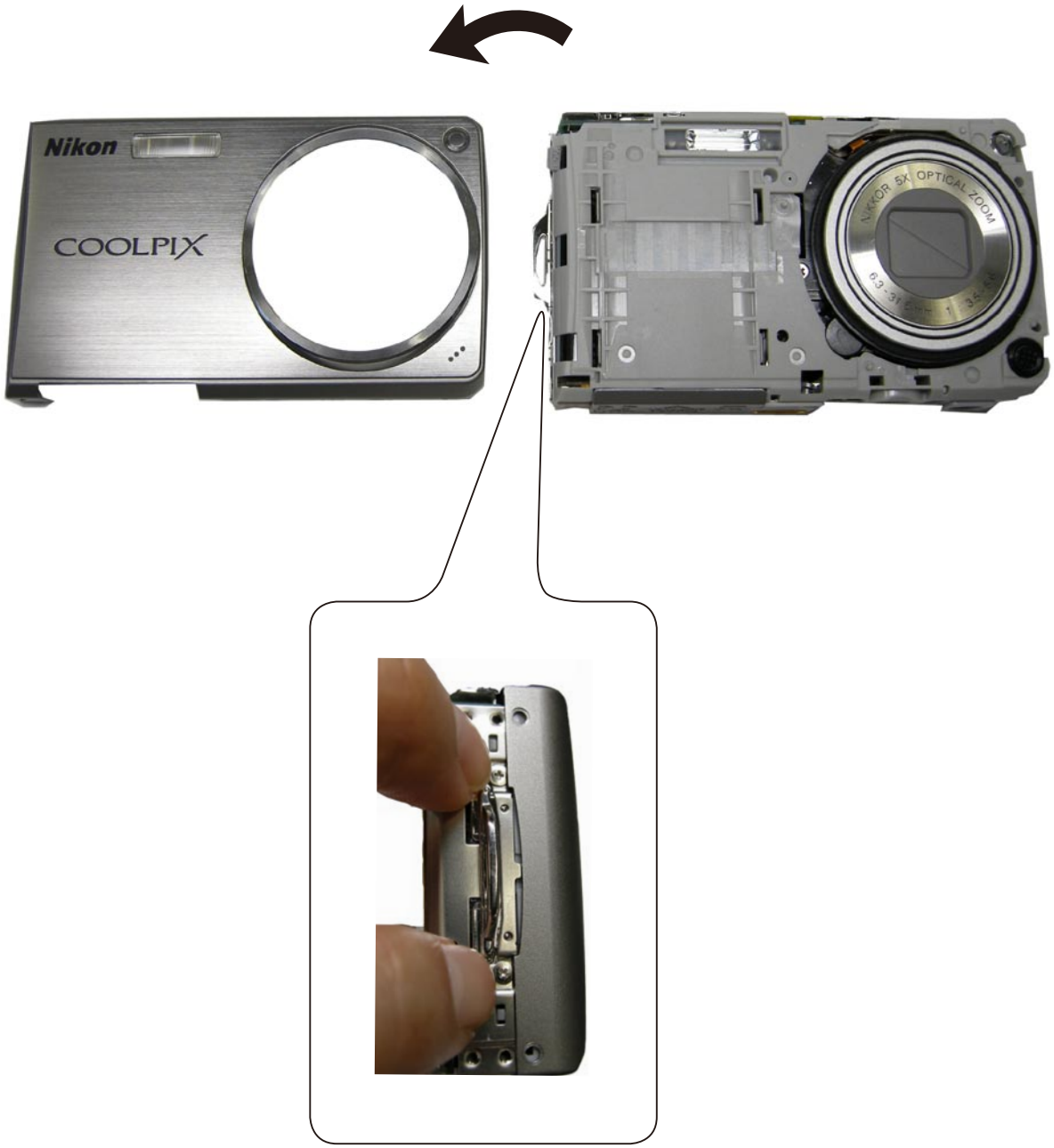
DISCHARGE OF MAIN CONDENSER

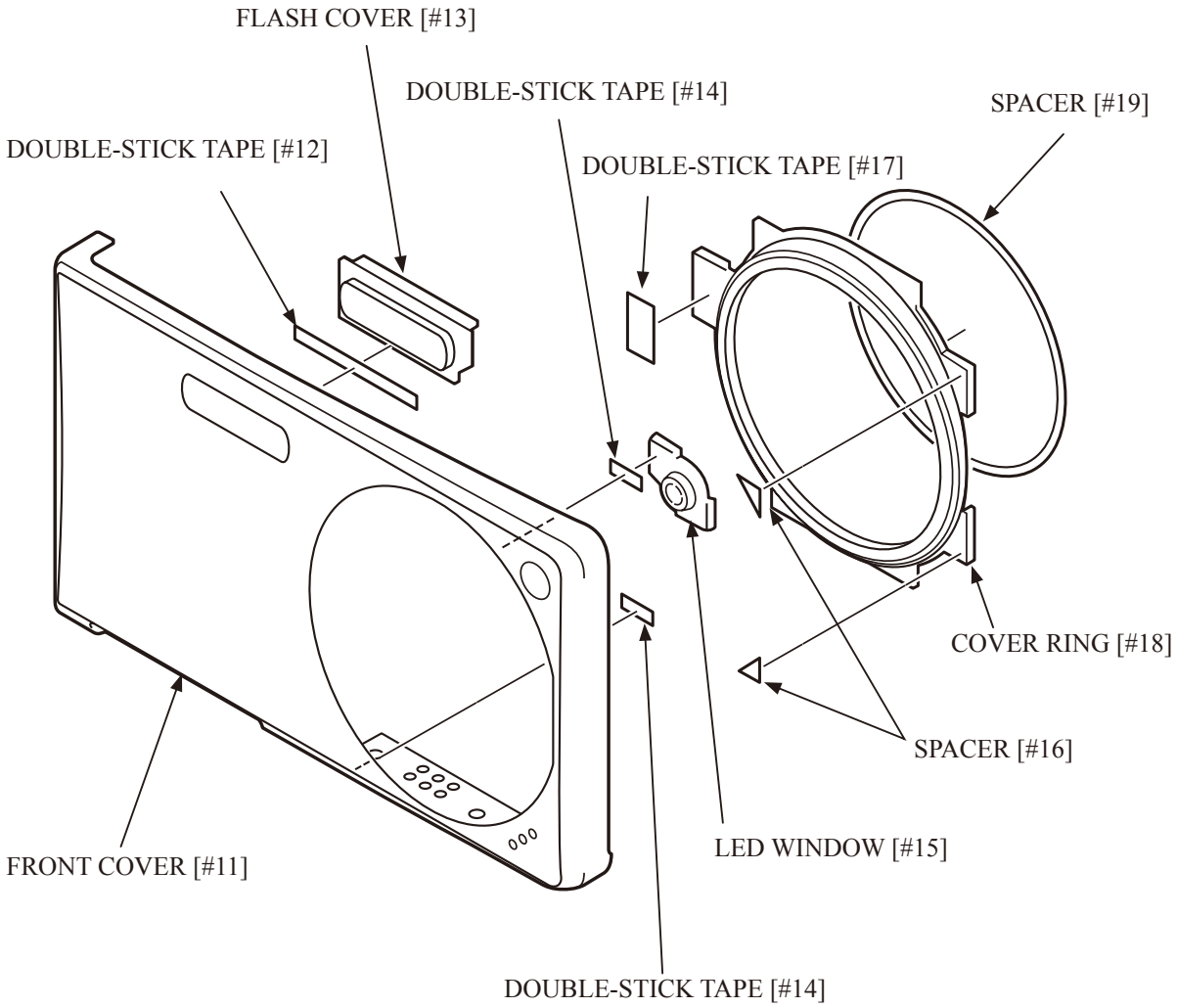
・ Do not touch the DECORATION PLATE.



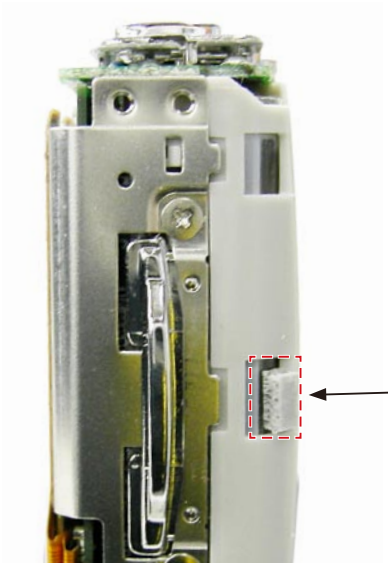
FRONT COVER

・Remove the FRONT COVER [#11]. (To remove it easily, hold around the STRAP HOLDER screw of the switch side.)




FLASH COVER [#13]
DOUBLE-STICK TAPE [#14]
SPACER [#19]
DOUBLE-STICK TAPE [#12]
DOUBLE-STICK TAPE [#17]
COVER RING [#18]
SPACER [#16]
LED WINDOW [#15]
FRONT COVER [#11]
DOUBLE-STICK TAPE [#14]

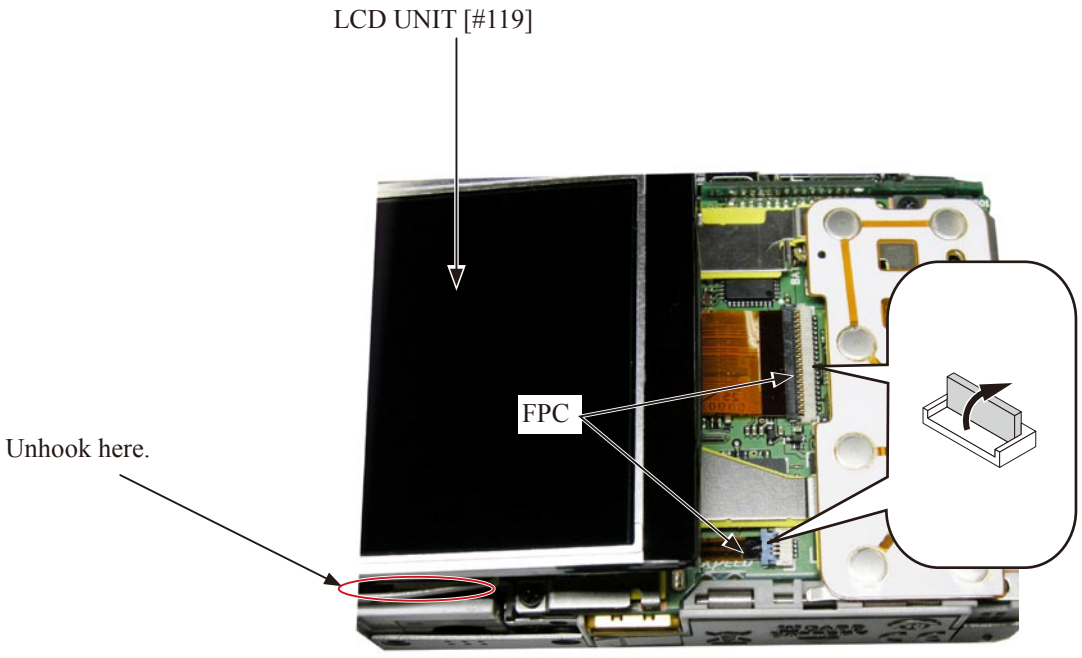
・Remove the SPACER [#251].



LCD UNIT

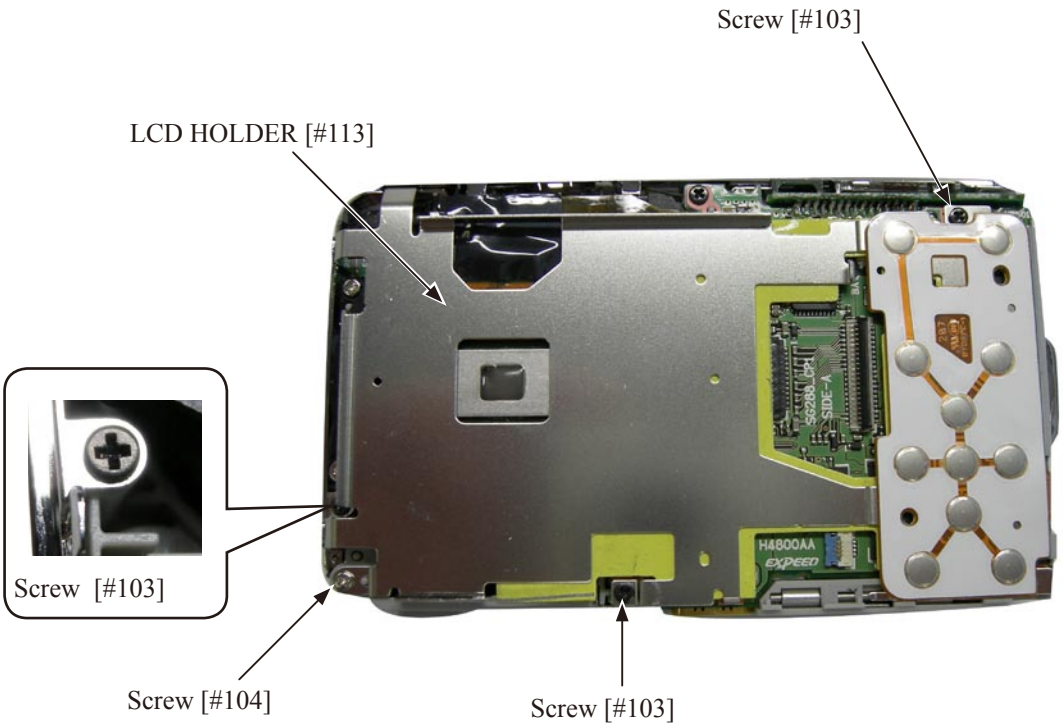
・Remove the two FPCS.

・Unhook and remove the LCD UNIT [#119].



LCD HOLDER

- Take out three screws [#103].
- Take out the screw [#104].
- Loosen the LCD HOLDER [#113].



Unhook as below.

Lens side

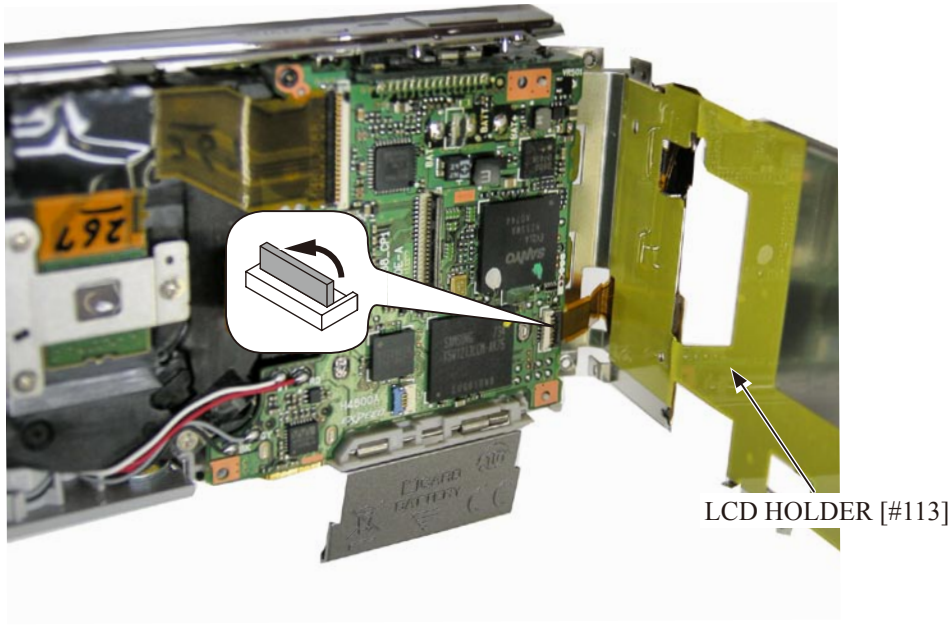
Reference:
Lower part at the lens side, which is covered with DECORATION RING.

Switch side

The lower part at the lens side can be removed easily by releasing DECORATION RING.

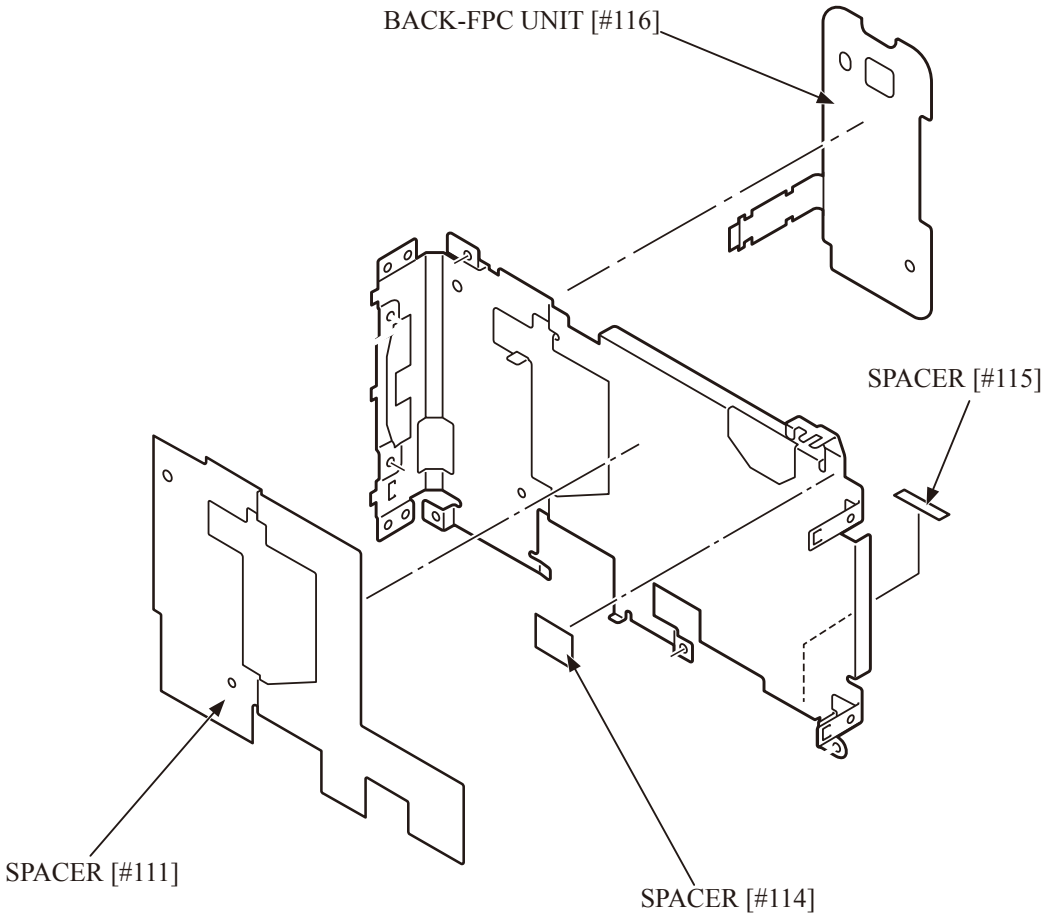
・Remove the FPC.

・The LCD HOLDER can be removed.



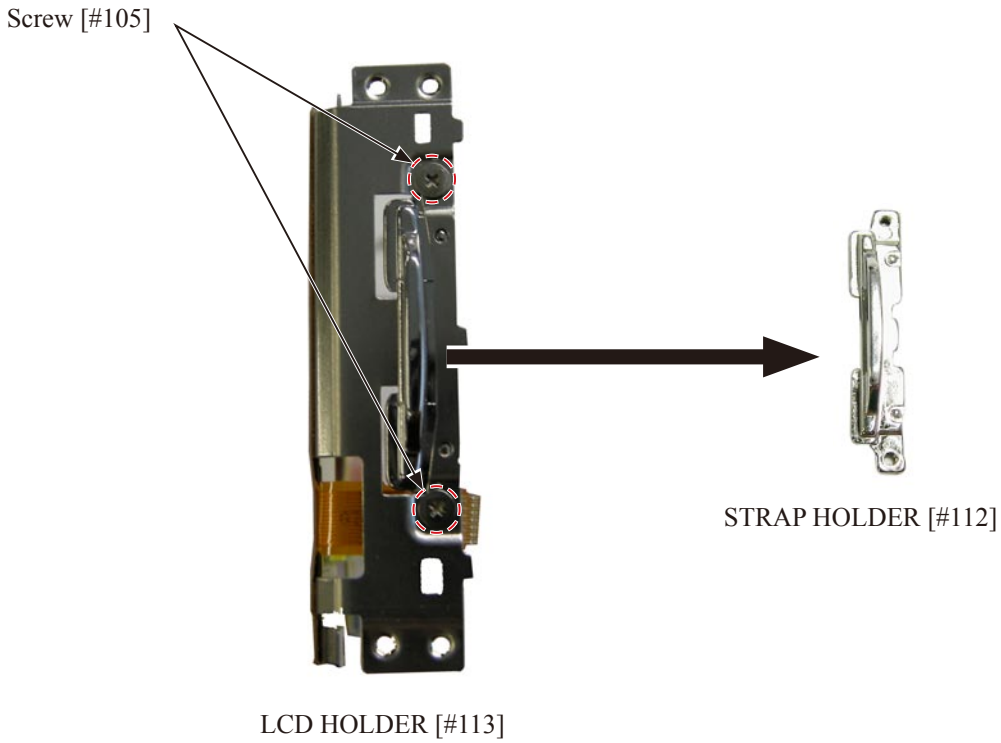
・Remove the BACK-FPC UNIT [#116].

・Remove the three SPACERs.



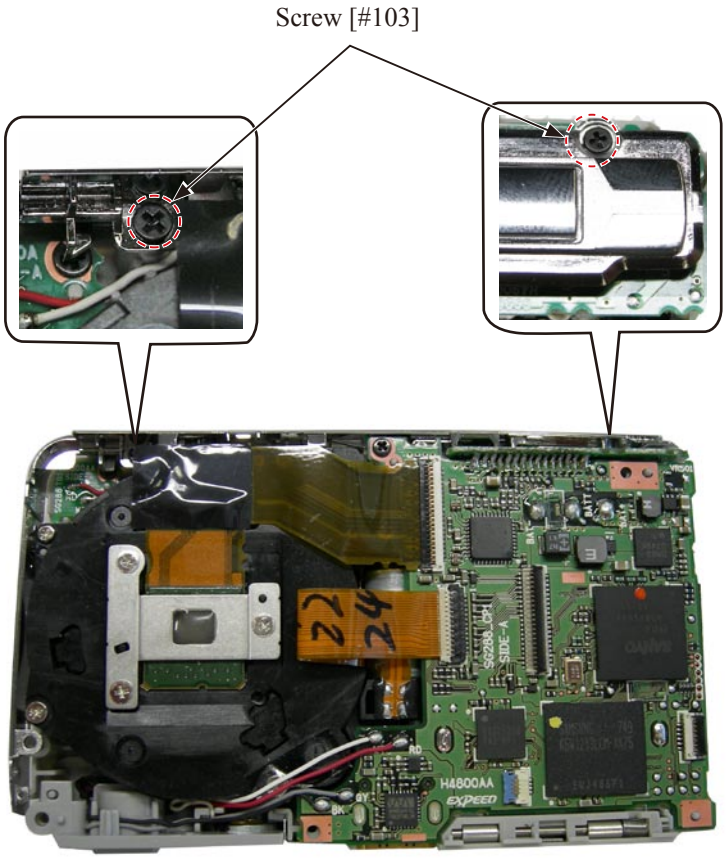
STRAP HOLDER

- Take out the two screws [#105] from the LCD HOLDER [#113].
- The STRAP HOLDER [#112] can be removed.



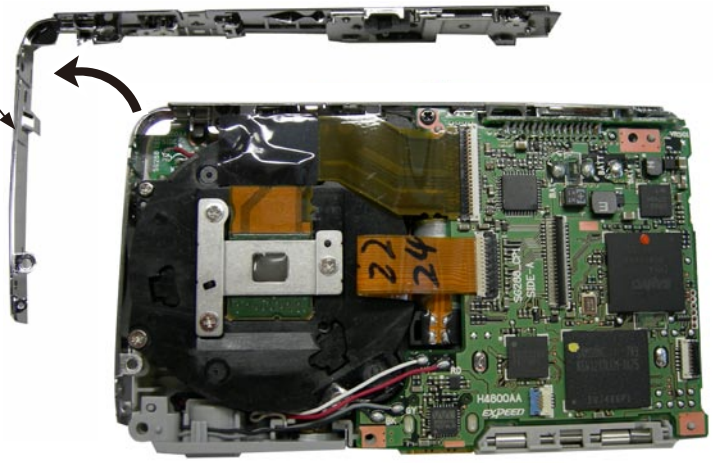
DECORATION PLATE

- Take out two screws [#103].

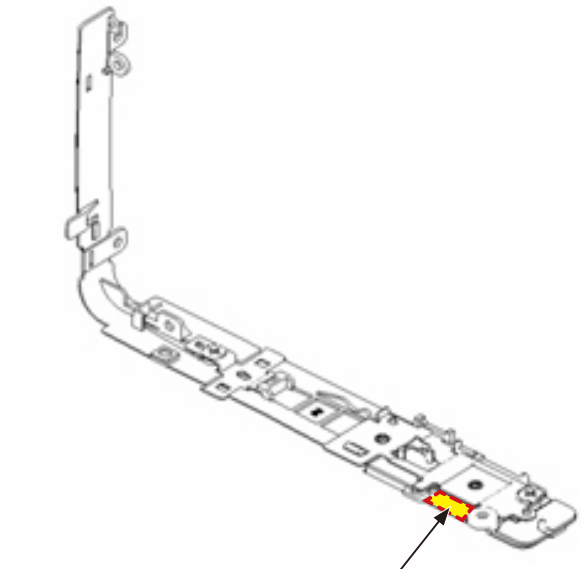


・Remove the DECORATION PLATE [#117].

DECORATION PLATE [#117]



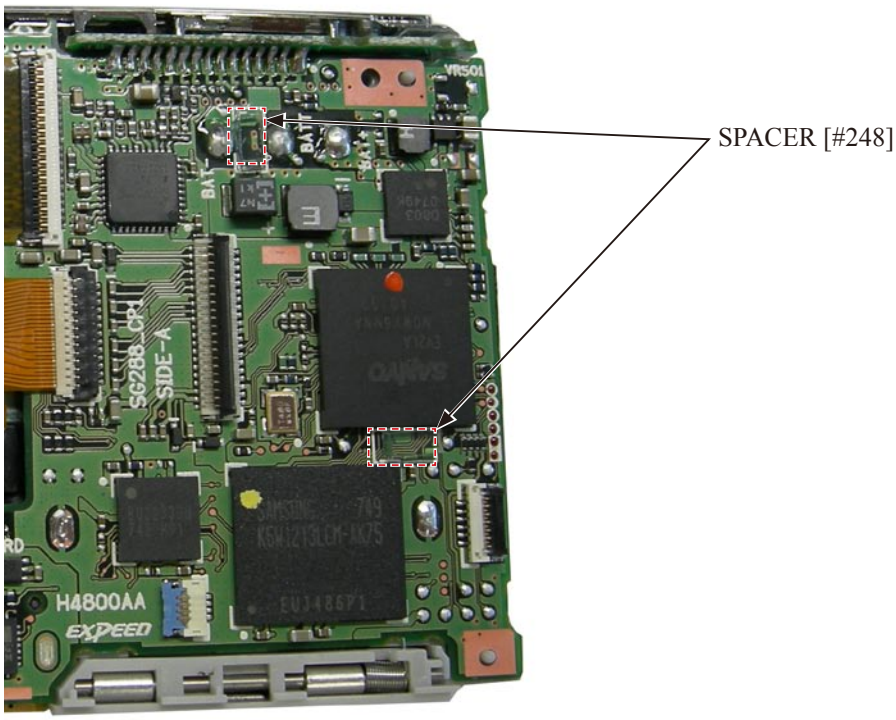
・Remove the SPACER [#118].



SPACER [#118]

CP-1 PCB

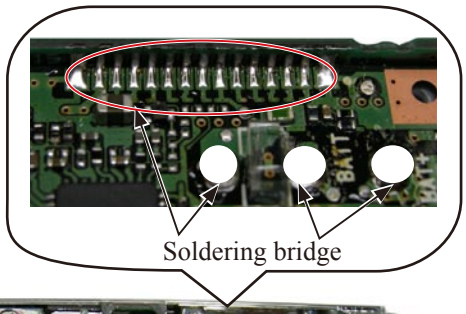
・Remove the two SPACERs.

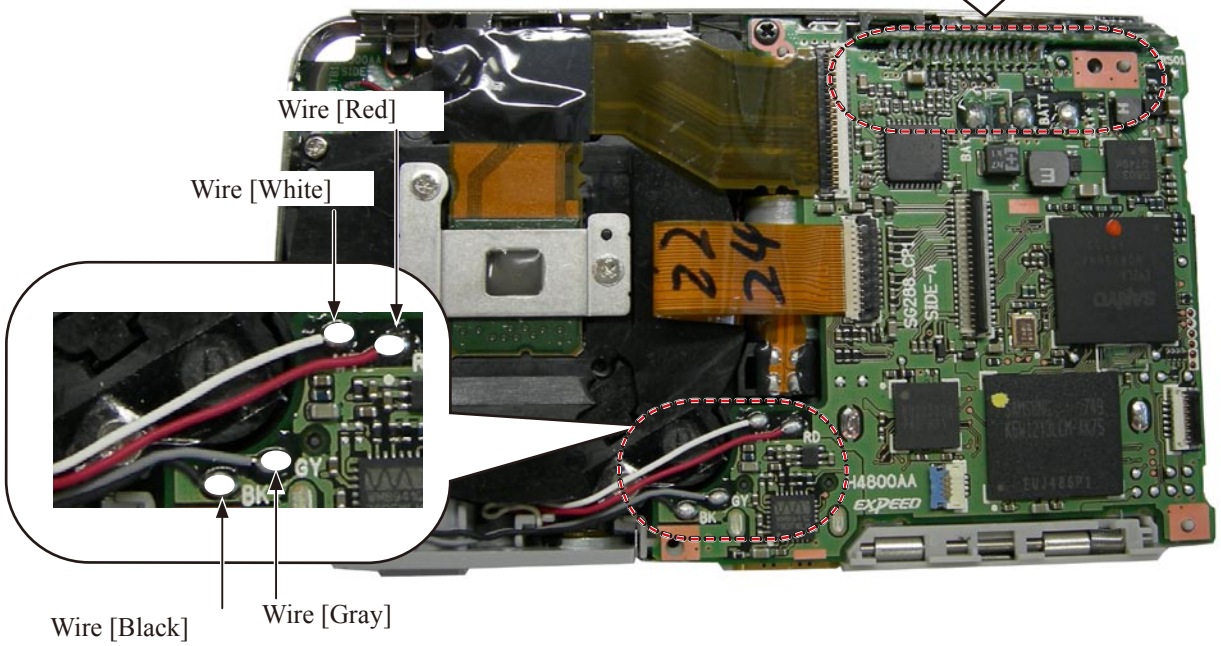


・Unsolder the wires [Gray] and [Black].

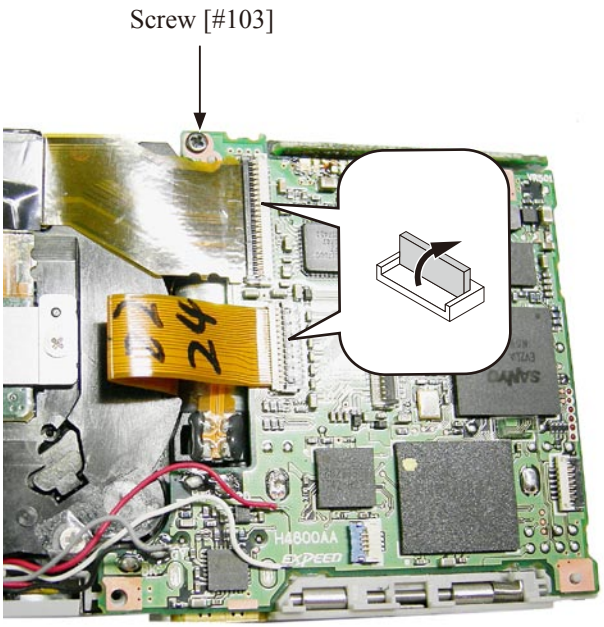
・Unsolder the wires [Red] and [White].

・Remove the soldering bridge.

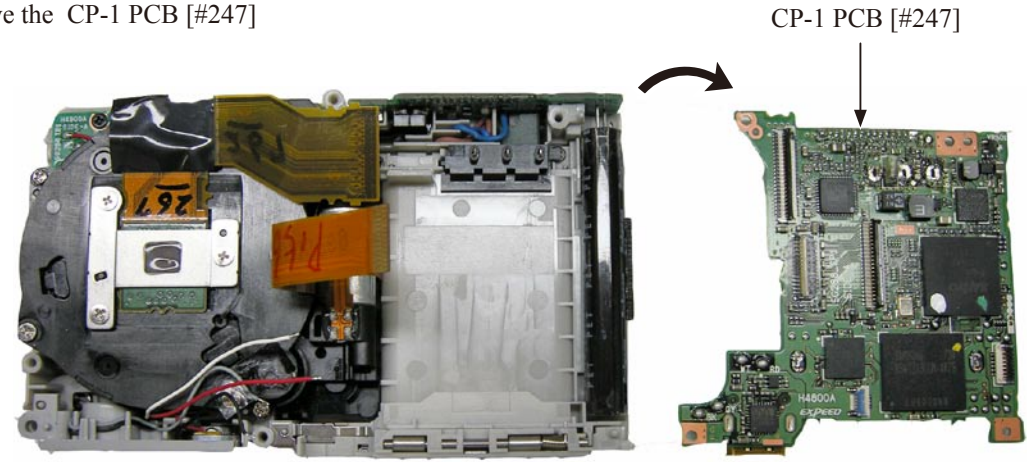




・Remove the two FPCs.
・Take out the screw [#103].

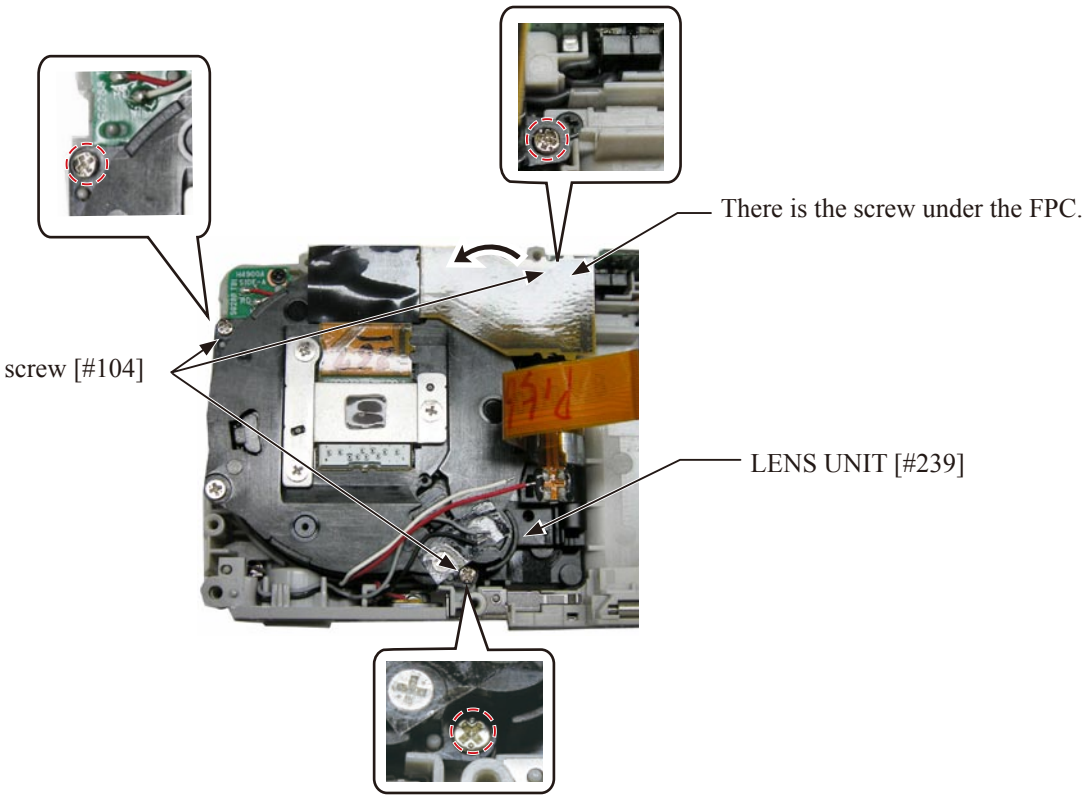


・Remove the CP-1 PCB [#247]

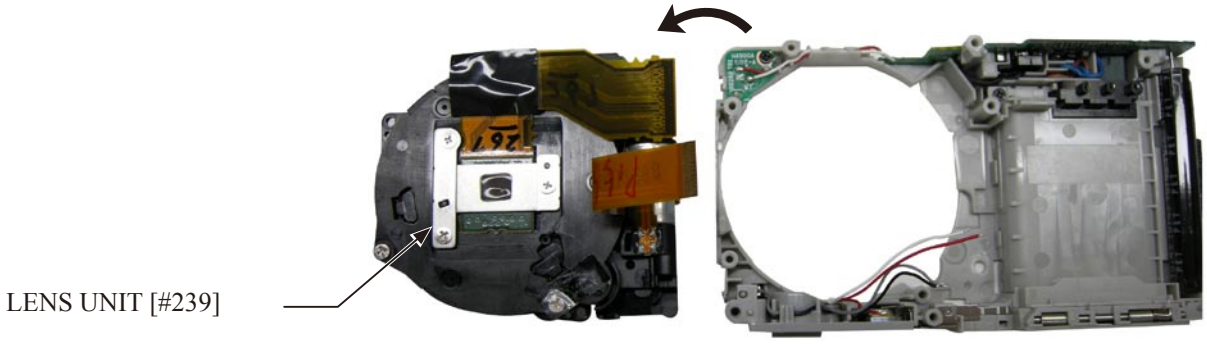


LENS UNIT

・Take out three screws [#104].

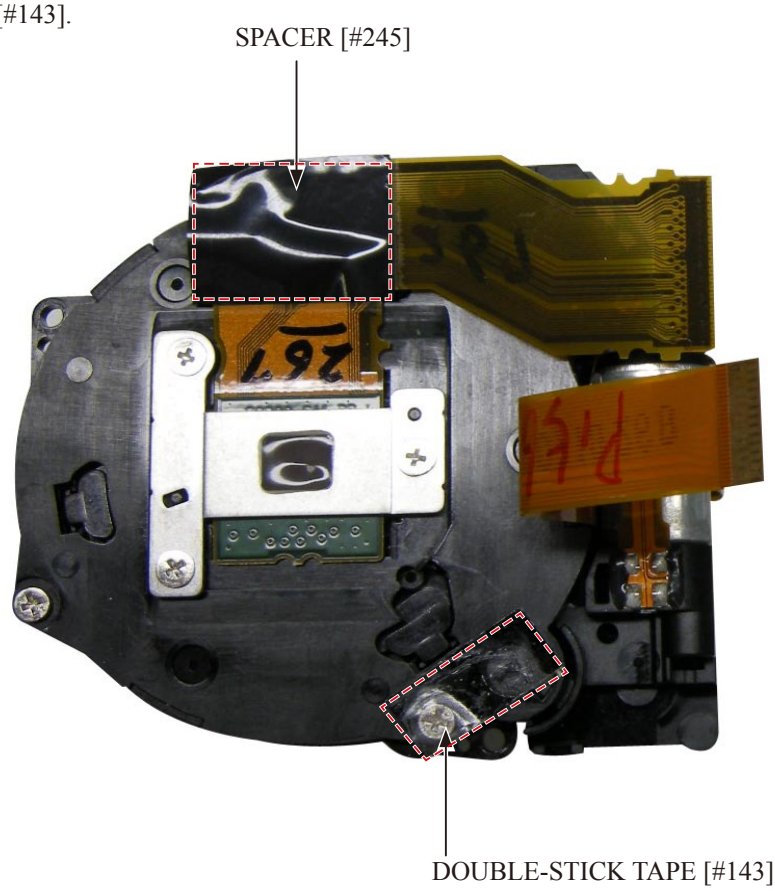


・Remove the LENS UNIT [#239].

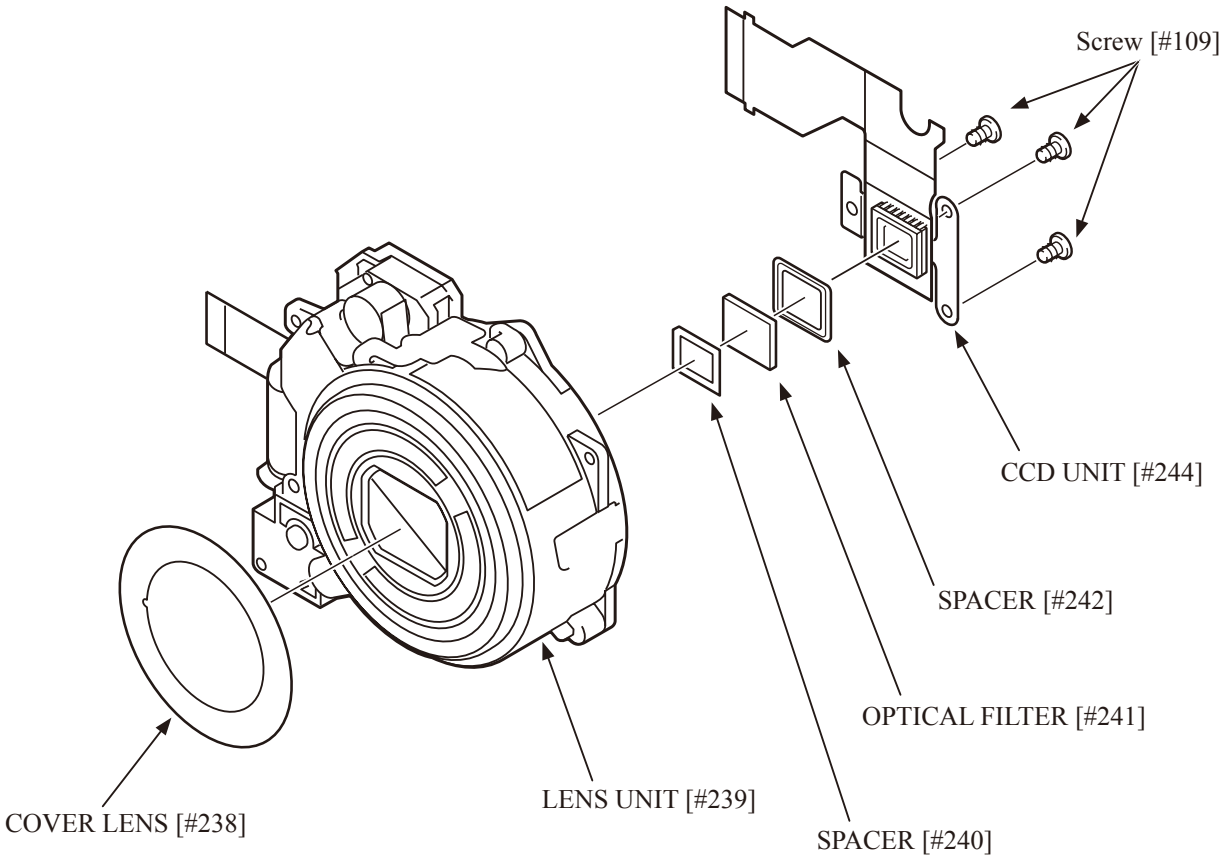


・Remove the SPACER [#245].

・Peel off the TAPE [#143].

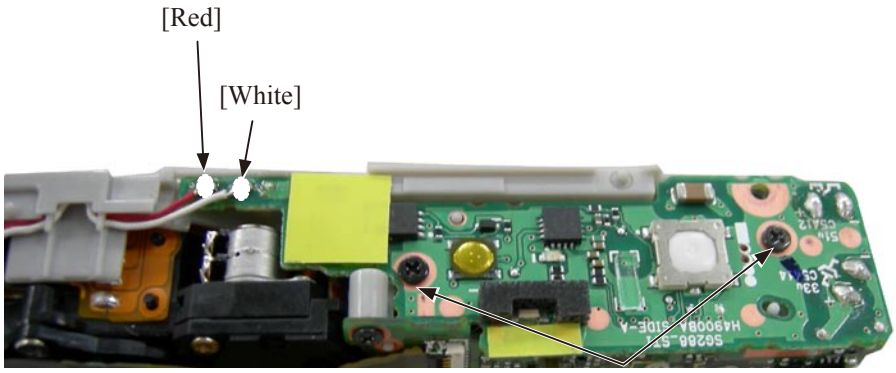


・Remove the CCD UNIT.

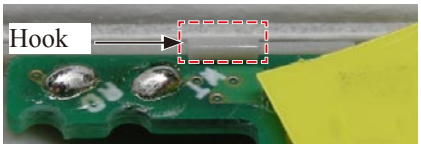


ST-1 PCB

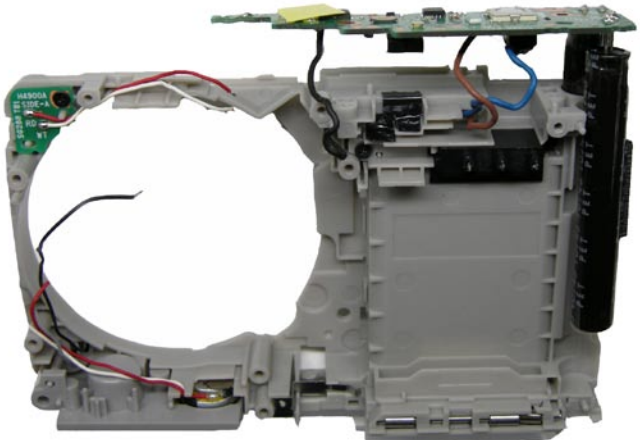
- Take out two screws [#103].
- Unsolder the wires [Red] and [White].



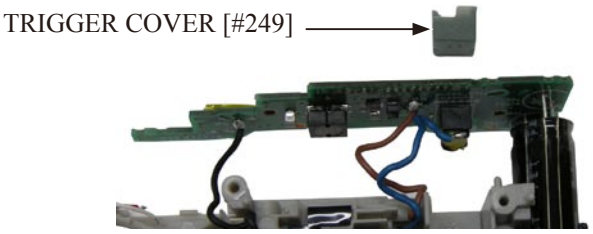
- Unhook the ST-1 PCB.



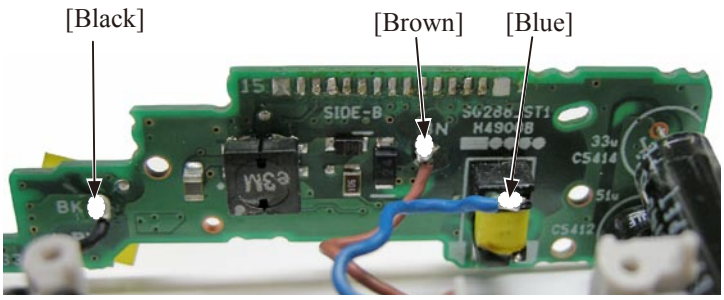
- Pull out the ST-1 PCB a little not to stretch the wires.



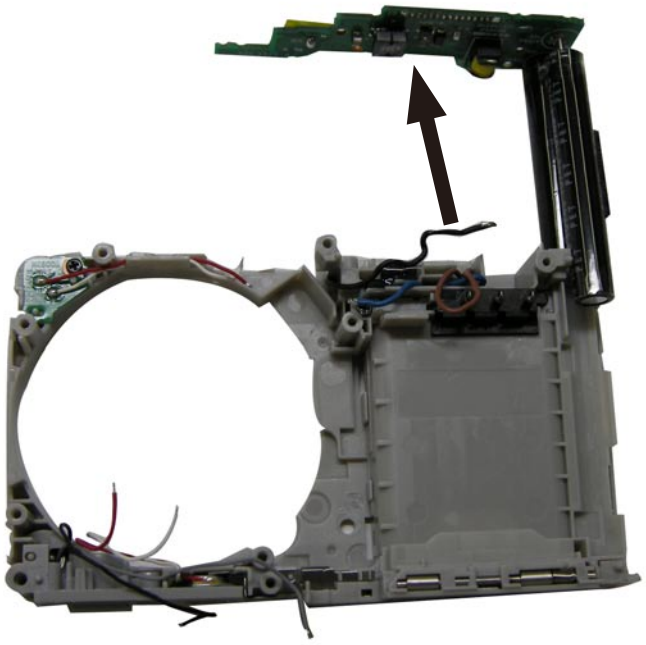
・Remove the TRIGGER COVER [#249].



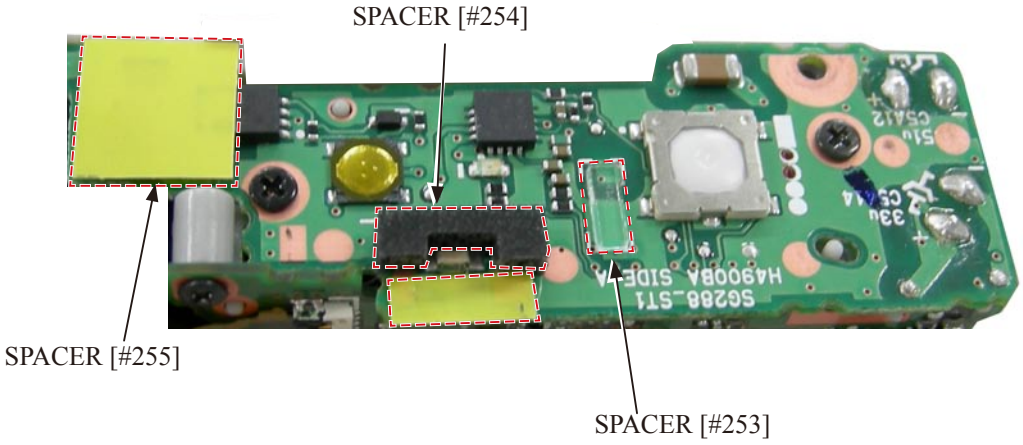
・Unsolder the wires [Blue] and [Brown] and [Black].



・Pull up the whole ST-1 PCB and remove it.

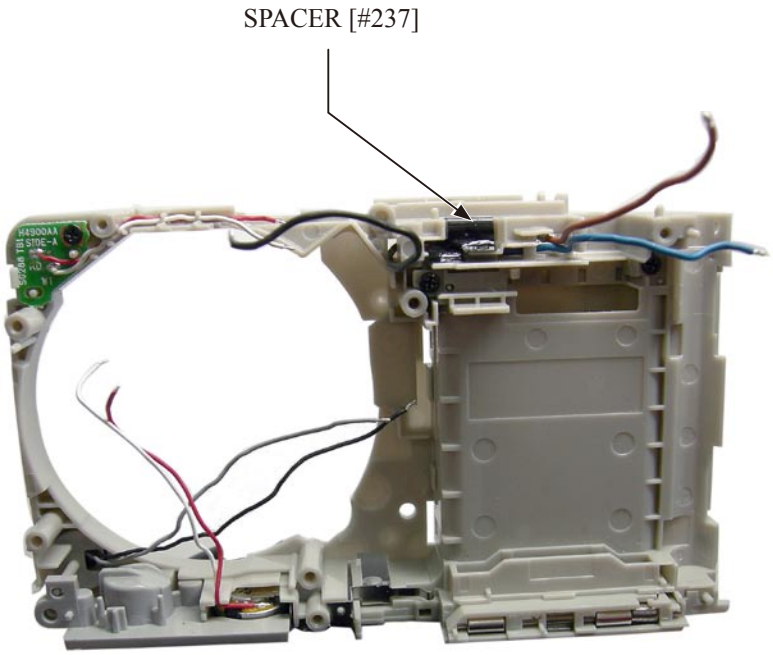


・Remove the four SPACERs.

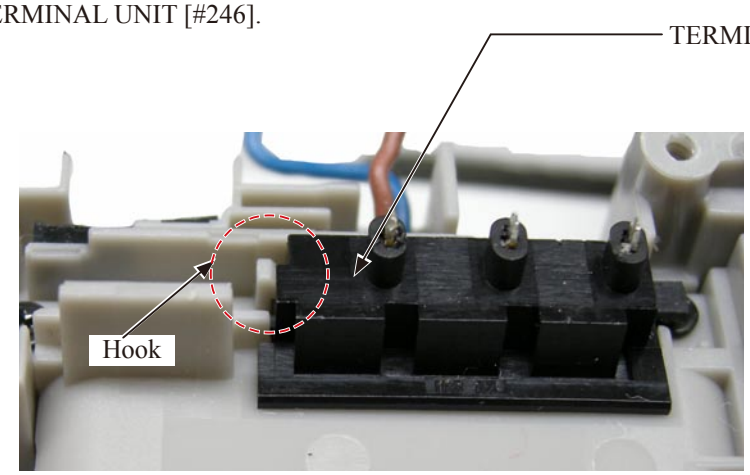


INNER HOLDER

・Remove the SPACER [#237].

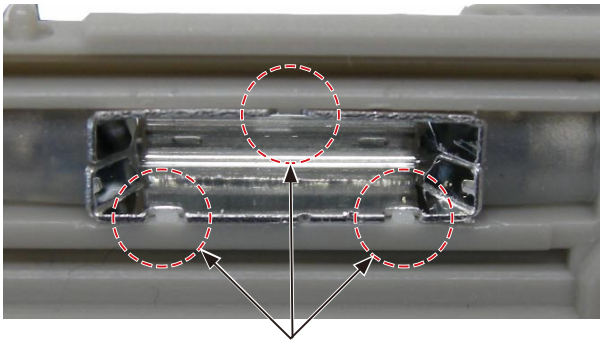


・Unhook and remove the TERMINAL UNIT [#246].

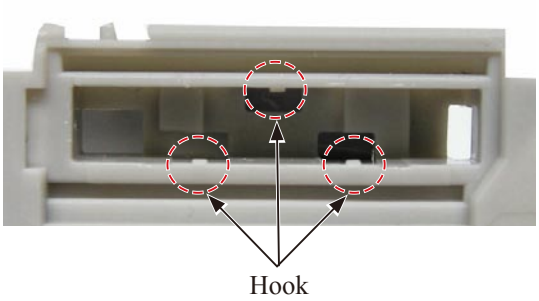


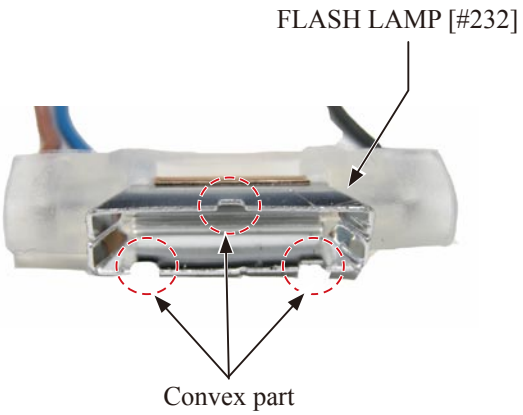
FLASH LAMP

・Unhook at three places and remove the FLASH LAMP from the front side.



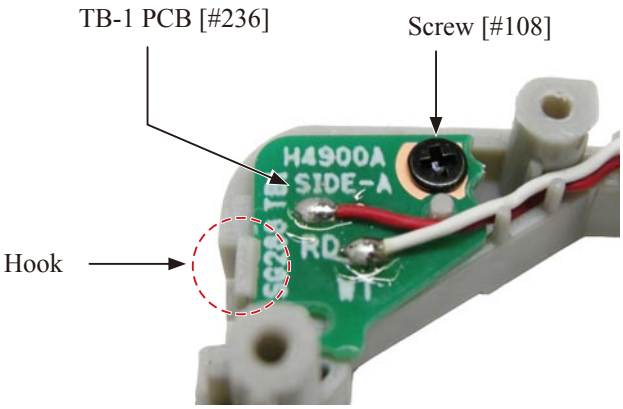
Be careful that the hook of the reflector on the FLASH LAMP can be easily bent.





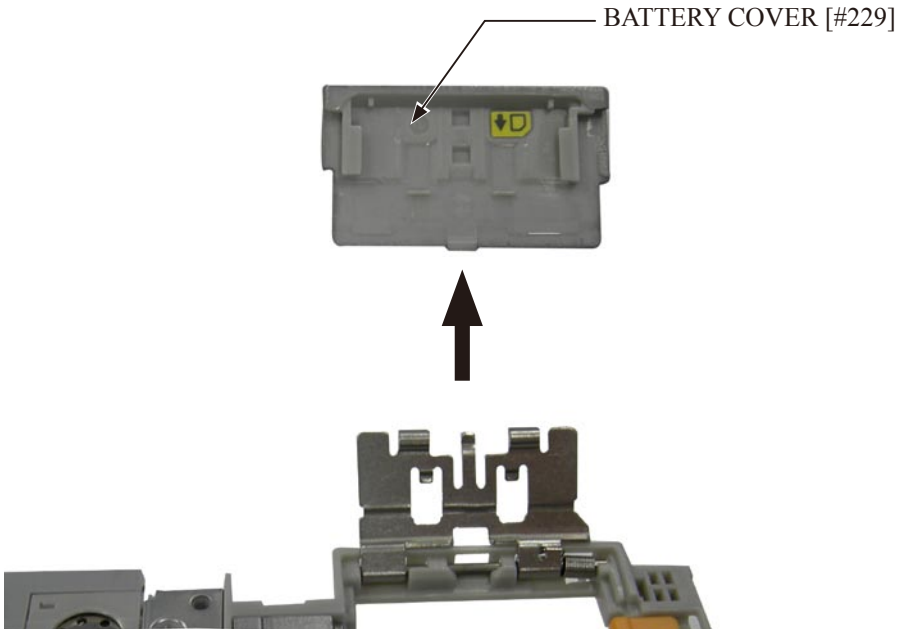
TB-1 PCB

- Take out screw [#108].
- Unhook the TB-1 PCB.
- Remove the TB-1 PCB [#236]

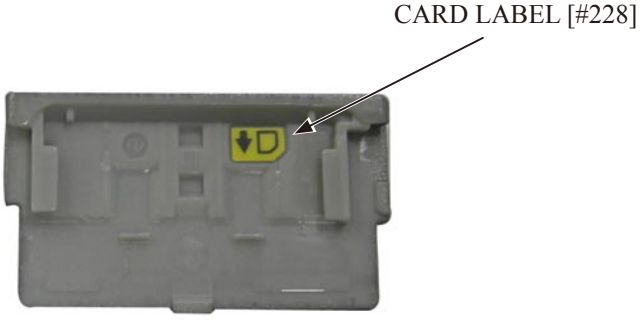


BATTERY COVER

- Remove the BATTERY COVER [#229] from the metal plate.

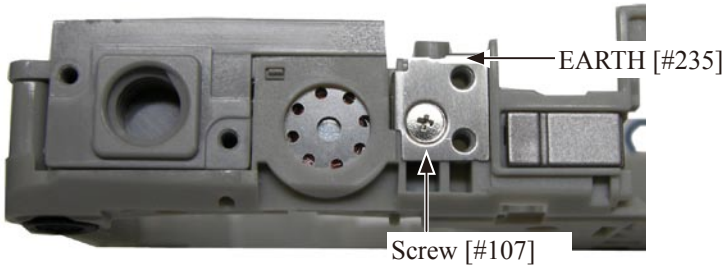


- Peel off the CARD LABEL [#228] from the BATTERY COVER.

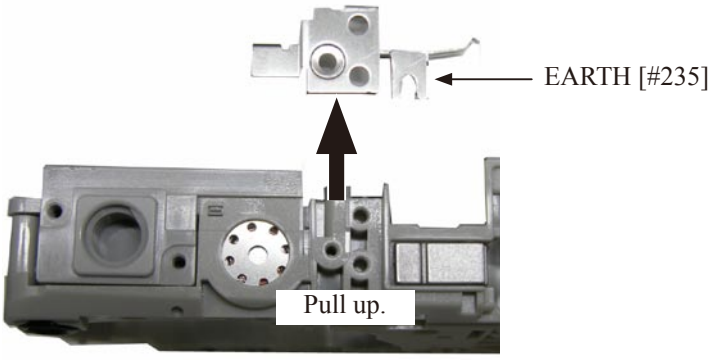


TRIPOD SOCKET

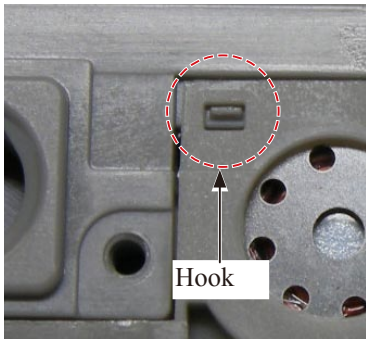
・ Take out screw [#107].

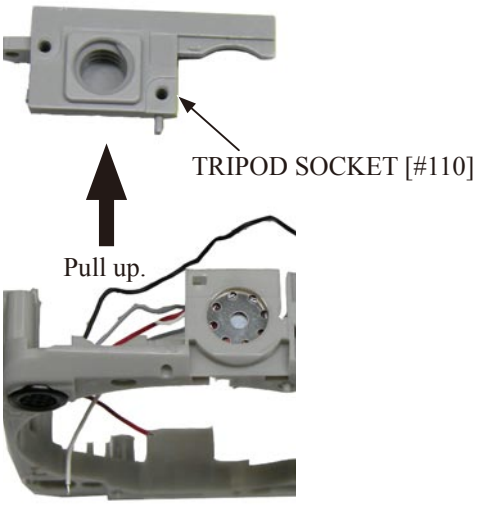


・ Remove the EARTH [#235].



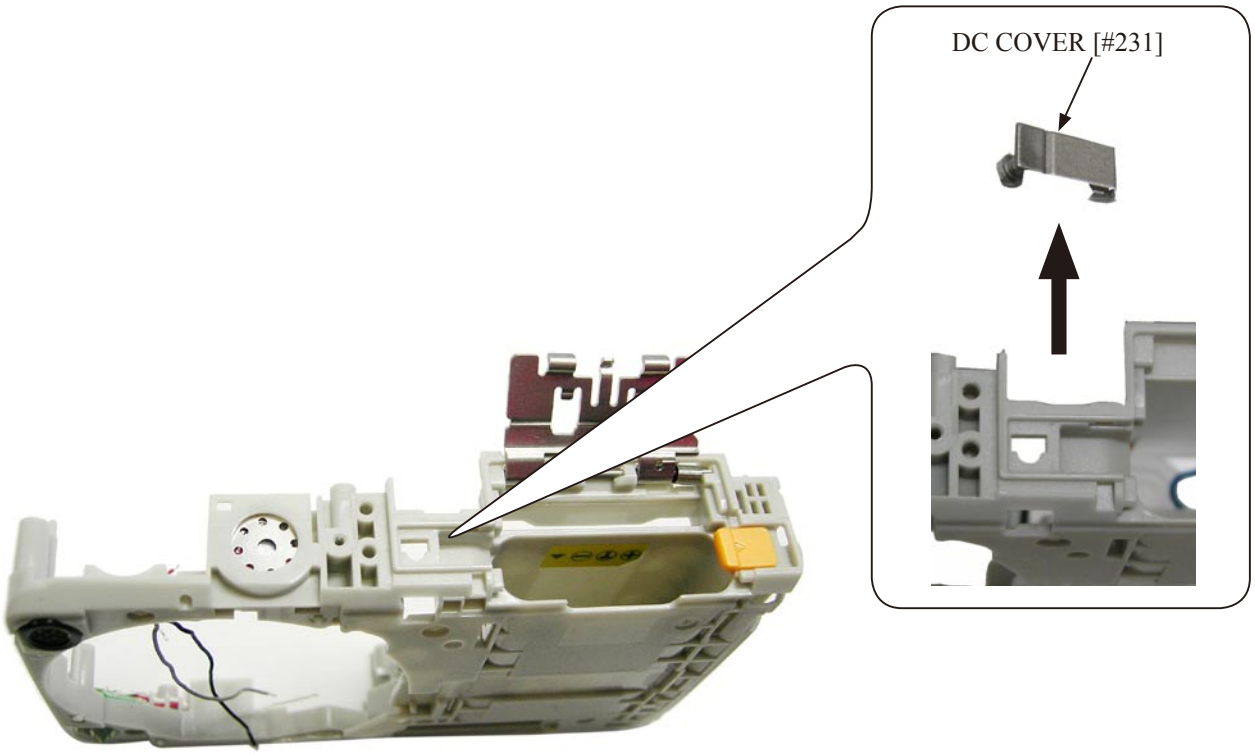
・ Unhook and remove the TRIPOD SOCKET [#110].





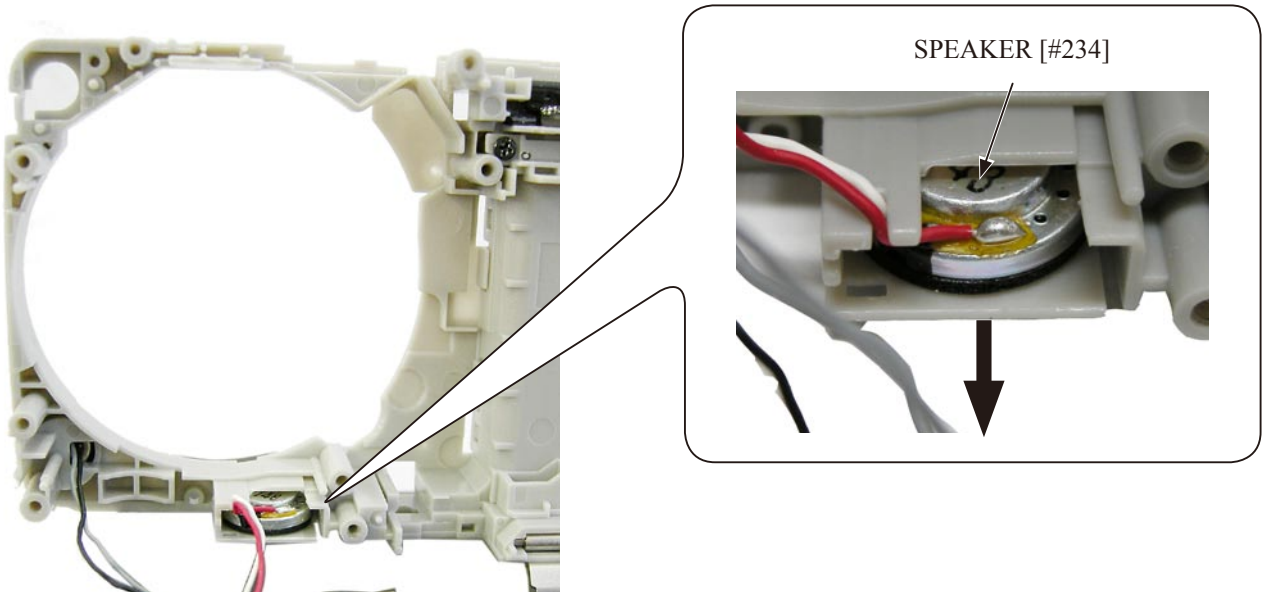
DC COVER

・Remove the DC COVER [#231].

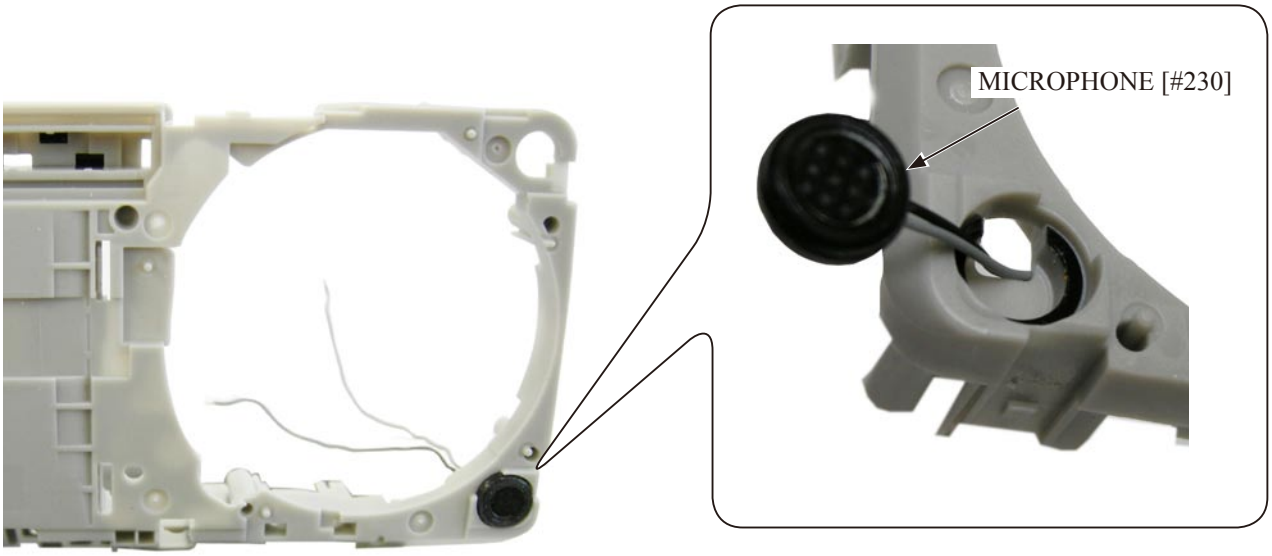


SPEAKER / MICROPHONE

・Slide and remove the SPEAKER [#234].



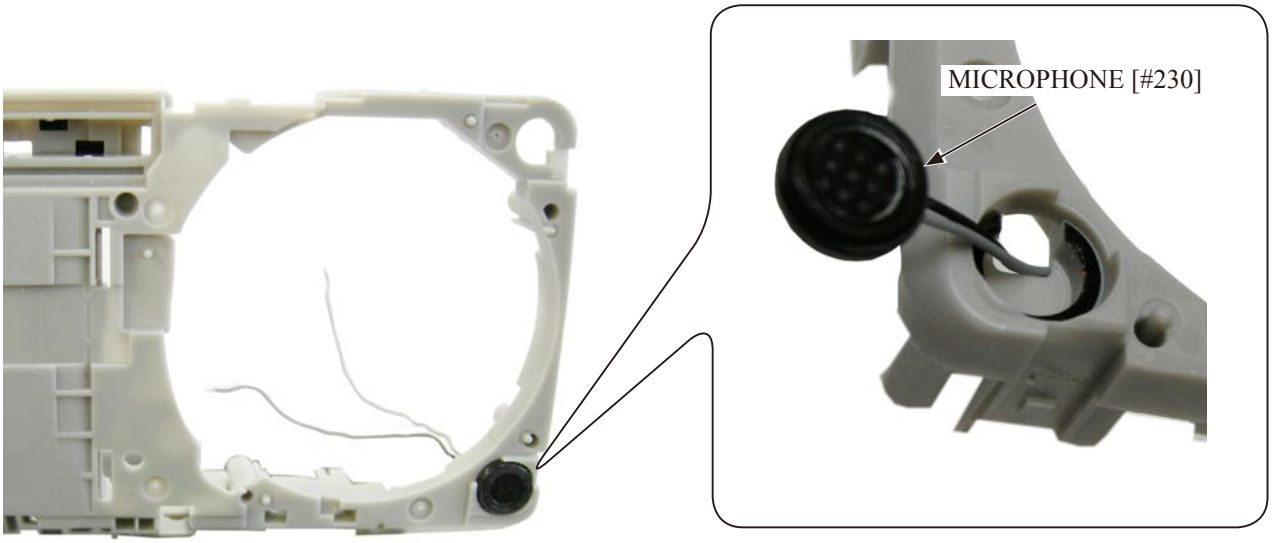
・Remove the MICROPHONE [#230].



ASSEMBLY

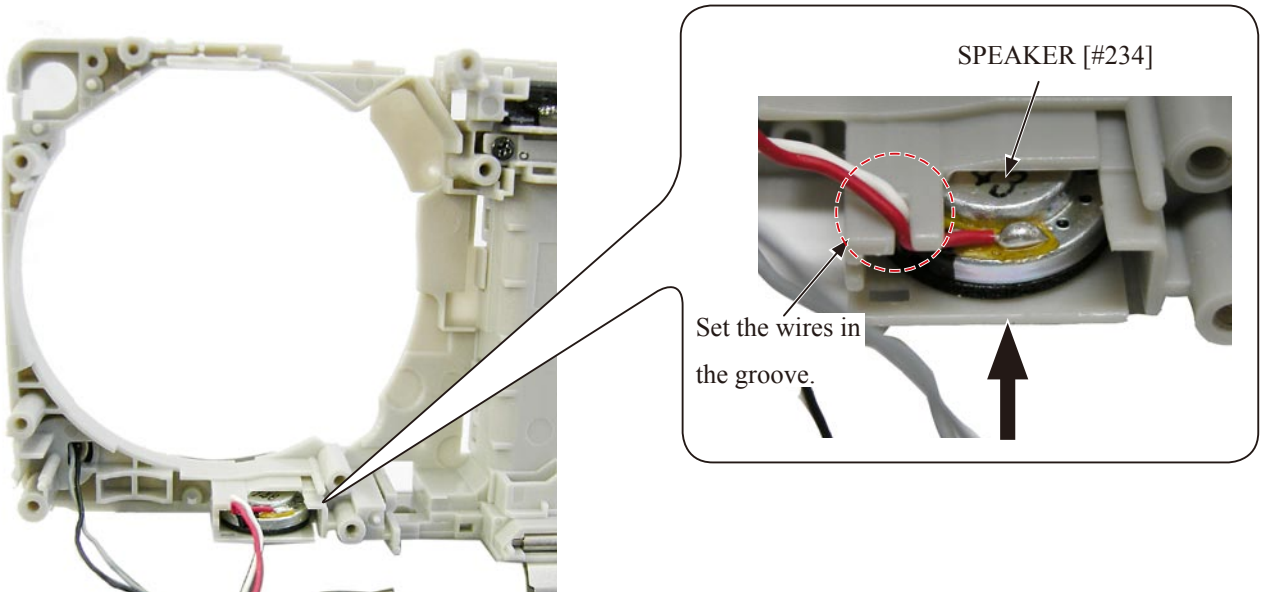
SPEAKER / MICROPHONE

・Set the MICROPHONE [#230].



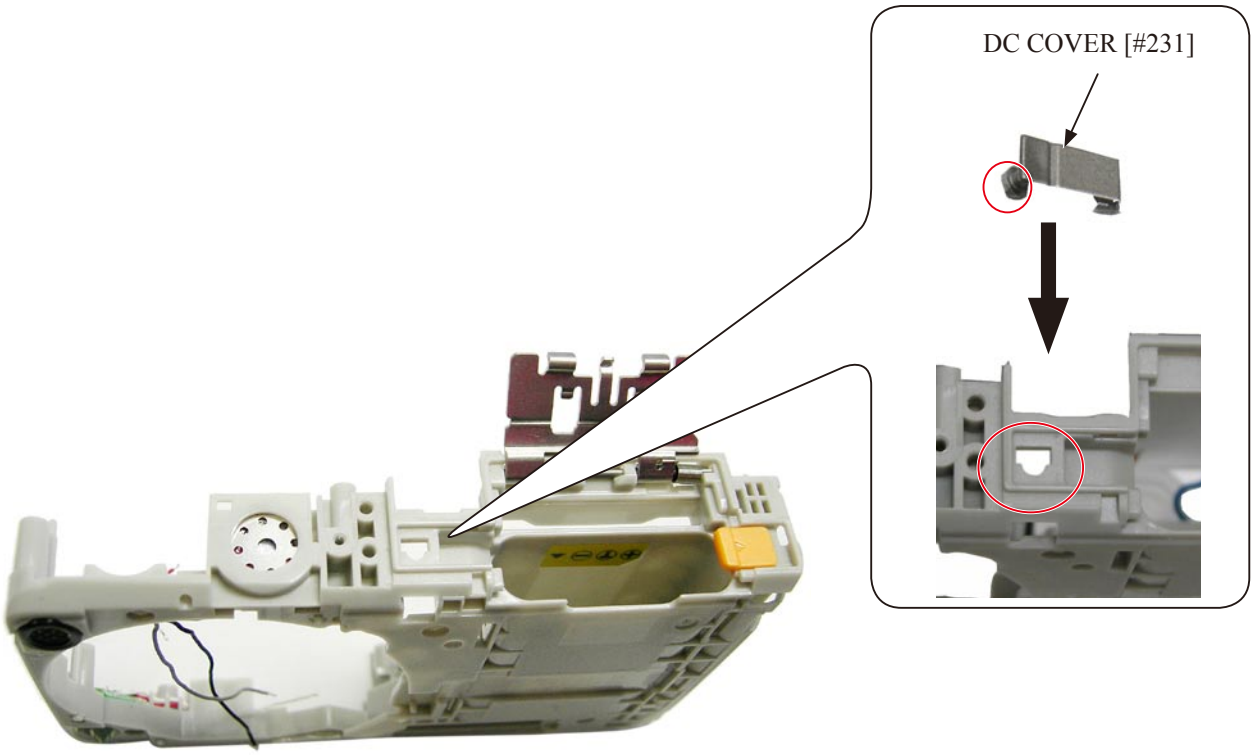
・Slide and set the SPEAKER [#234].

・Set the wires in the groove.



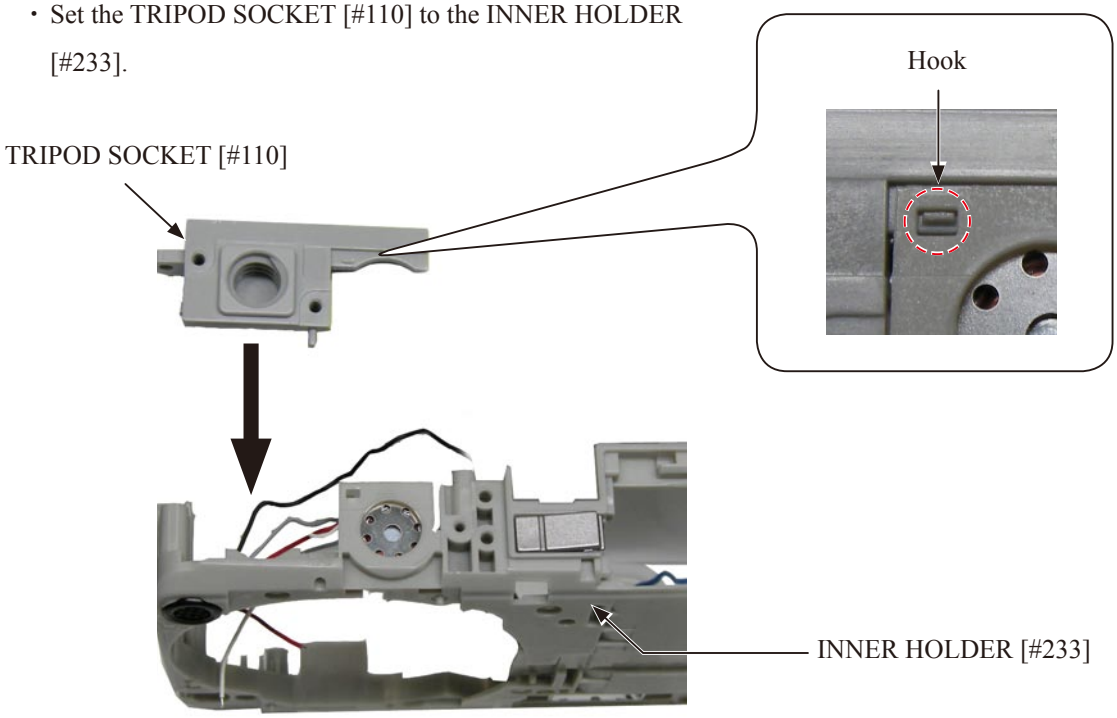
DC COVER

・Set the DC COVER [#231].

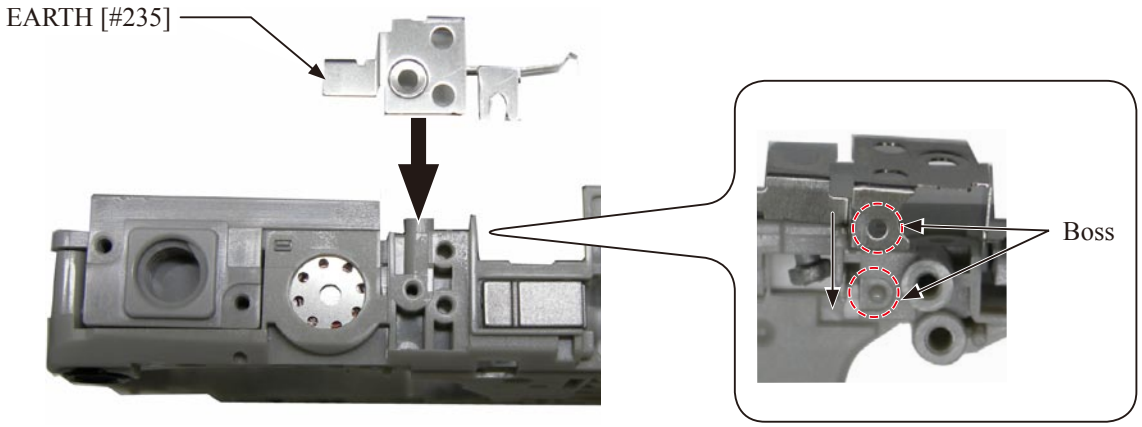


TRIPOD SOCKET

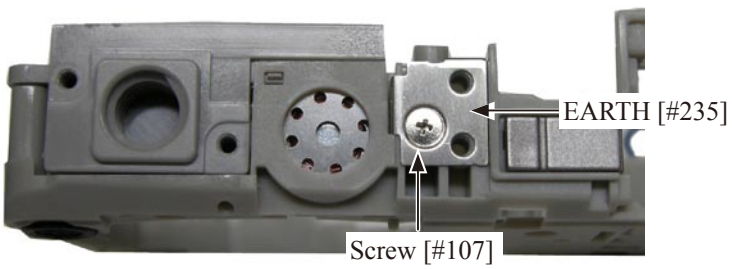
・ Set the TRIPOD SOCKET [#110] to the INNER HOLDER [#233].



・ Set the EARTH [#235] to the INNER HOLDER [#233].

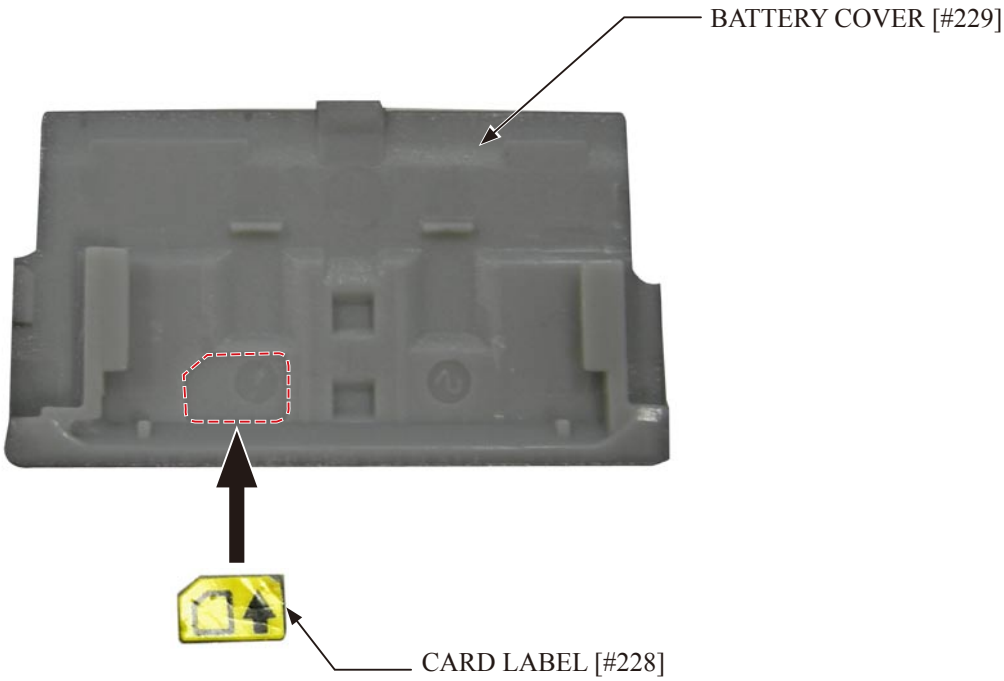


・ Tighten the screw [#107].

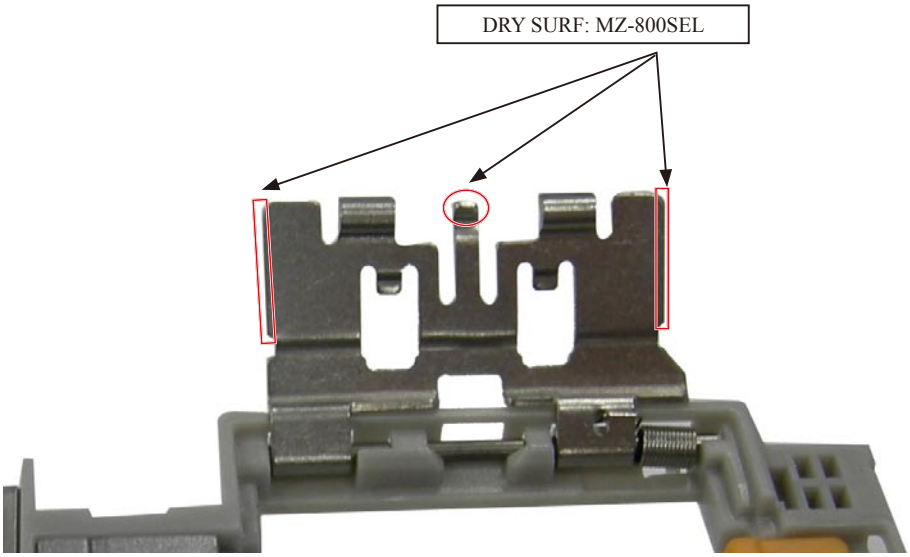


BATTERY COVER

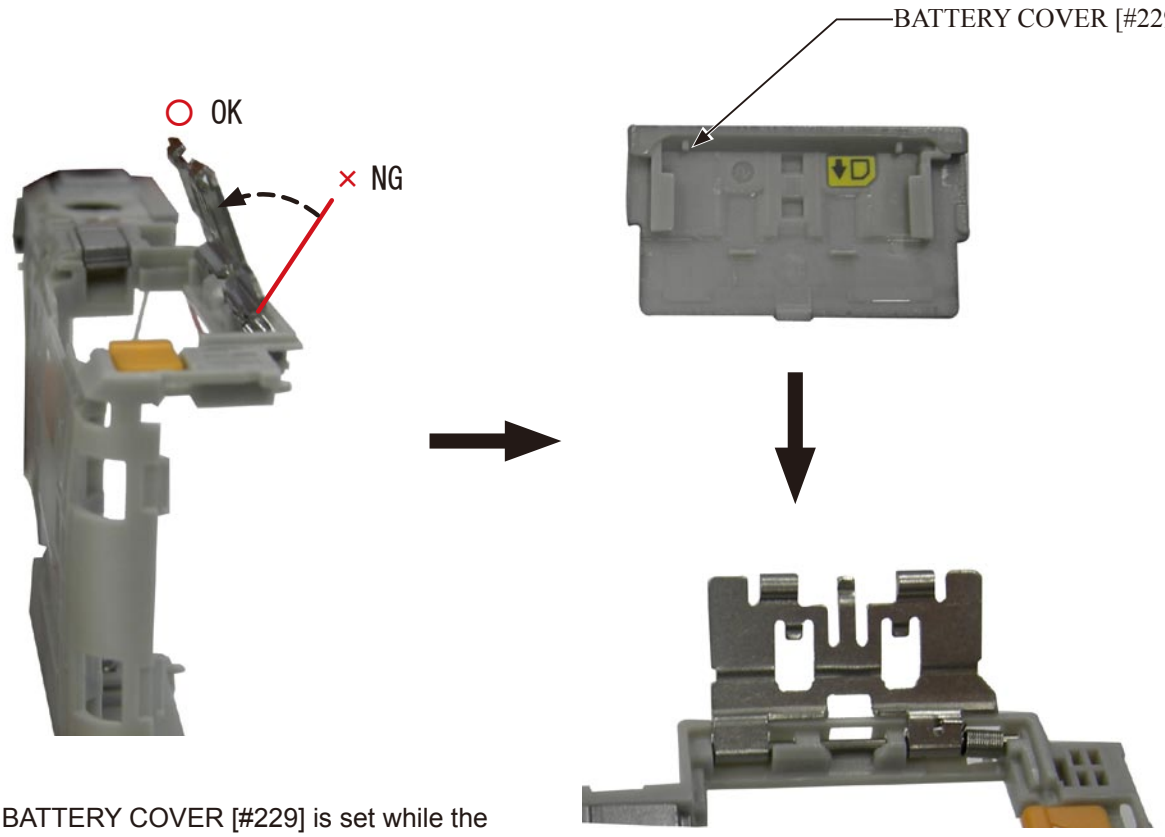
・ Adhere the CARD LABEL [#228] inside the concave surface frame.



Apply the DRY SURF (MZ-800SEL) to the three places on the metal plate.



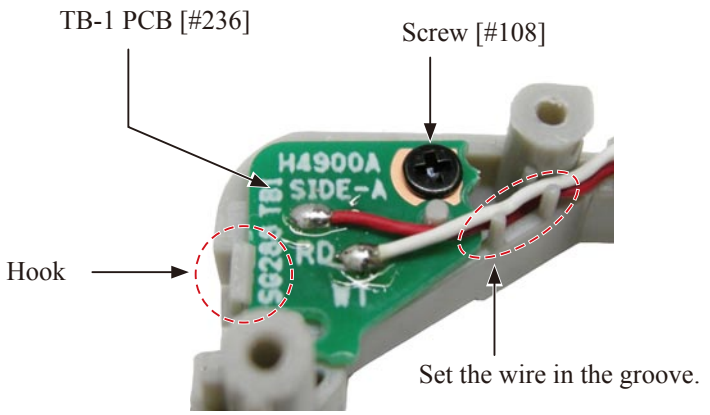
・Set the BATTERY COVER [#229] to the metal plate.

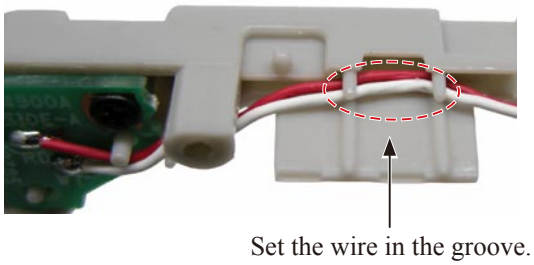


Note: If the BATTERY COVER [#229] is set while the metal plate is at the full open position, the INNER HOLDER will be damaged. Set the BATTERY COVER [#229] while the metal plate is closed a little as shown in the photo.

TB-1 PCB

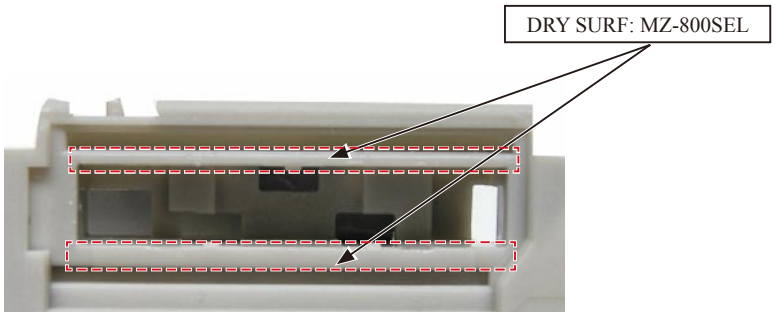
・Hook the TB-1 PCB [#236].
・Tighten the screw [#108].
・Set the wire in the groove.



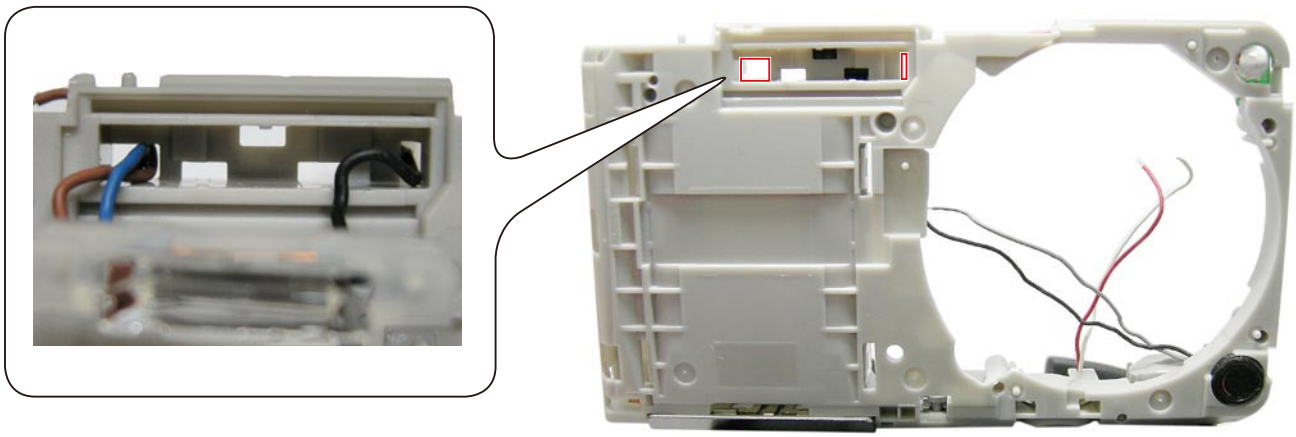


FLASH LAMP

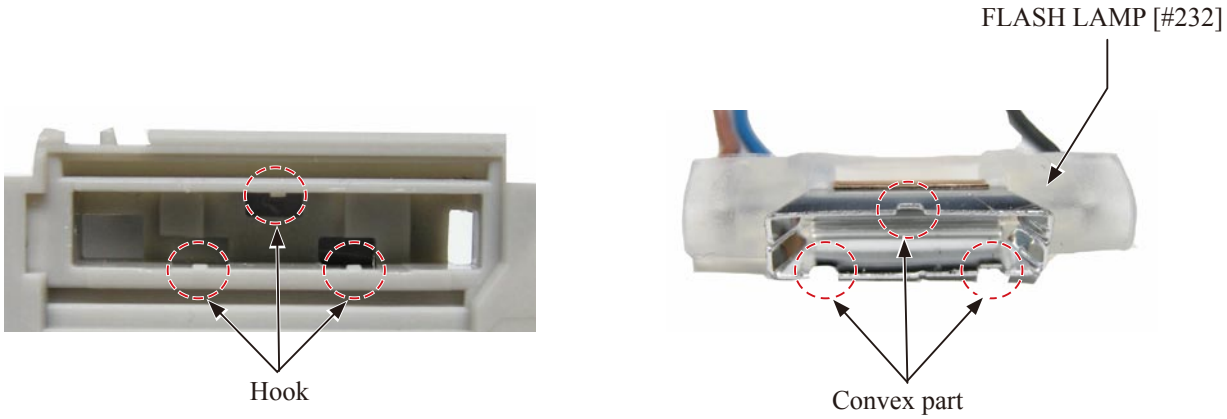
・Apply the DRY SURF (MZ-800SEL) to the contact surface with the FLASH LAMP.

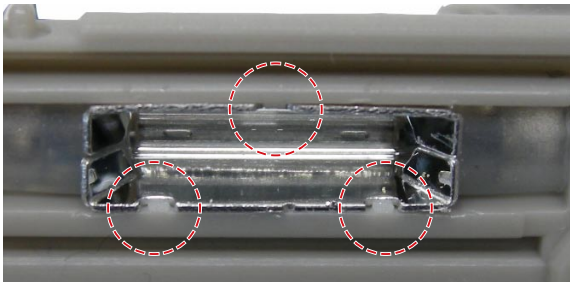


・From the front side, pass the wires [Blue] and [Brown] through the left hole and the wire [Black] through the right hole.



・Engage the convex parts of the FLASH LAMP to the hooks of the INNER HOLDER (at three places).

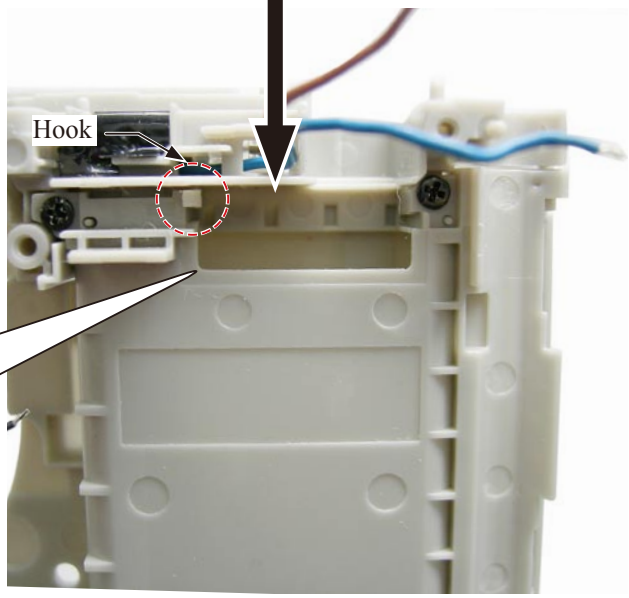


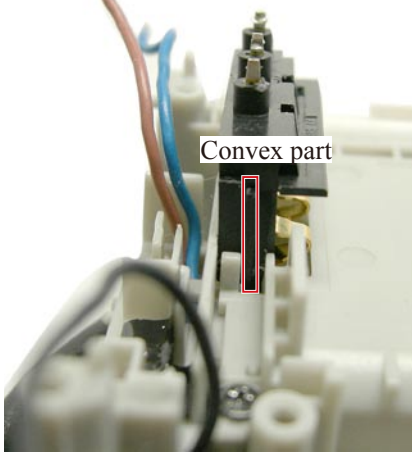


Assemble until clicked.

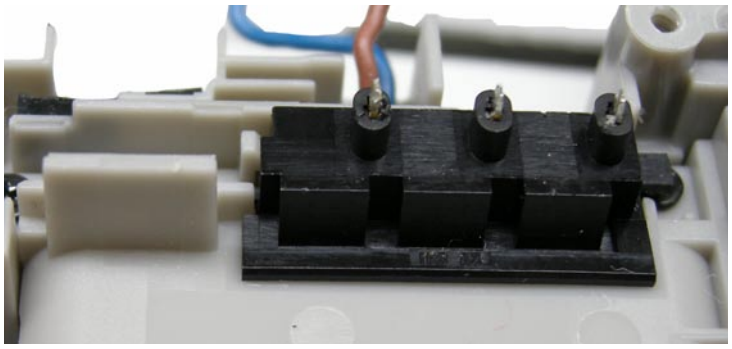
INNER HOLDER

・Hook and set the TERMINAL UNIT [#246].

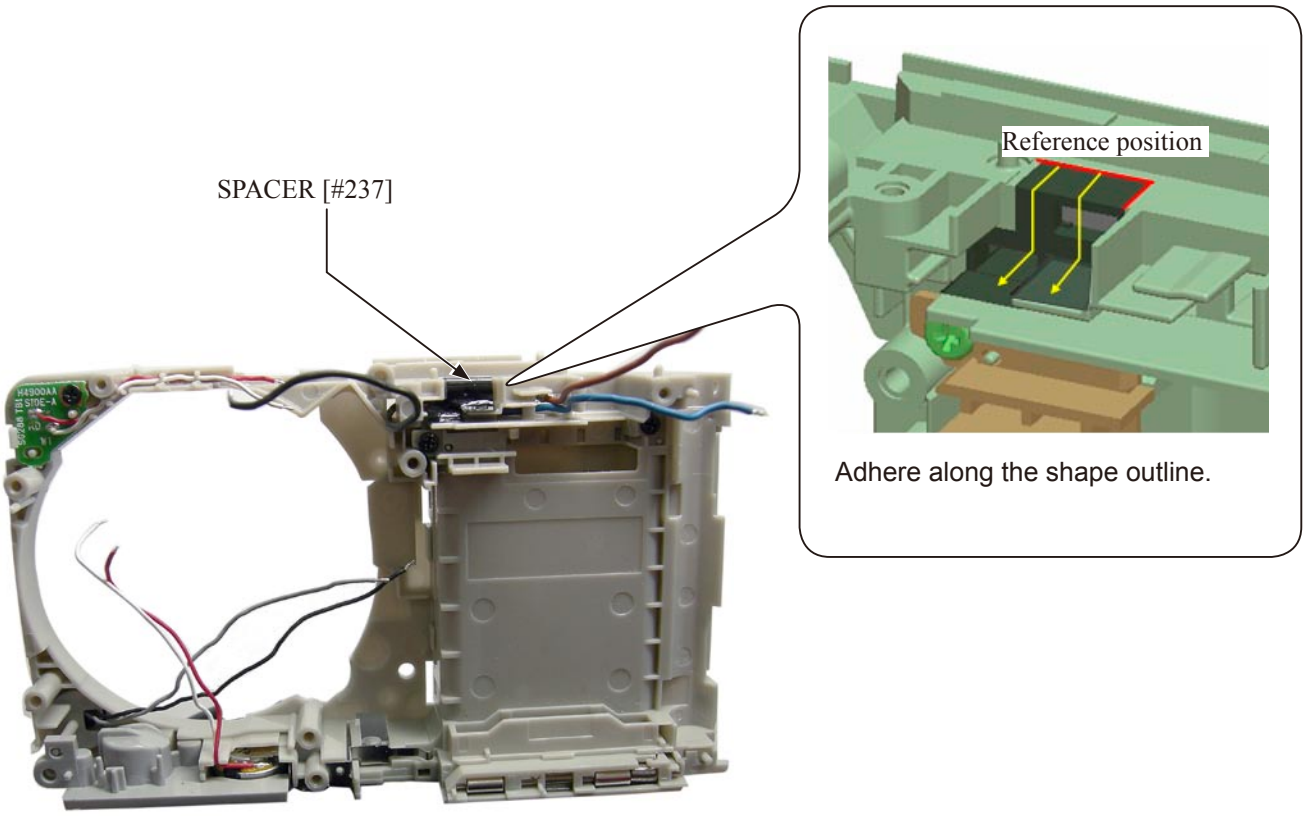




Fit with the convex part on the side surface and insert it until clicked.

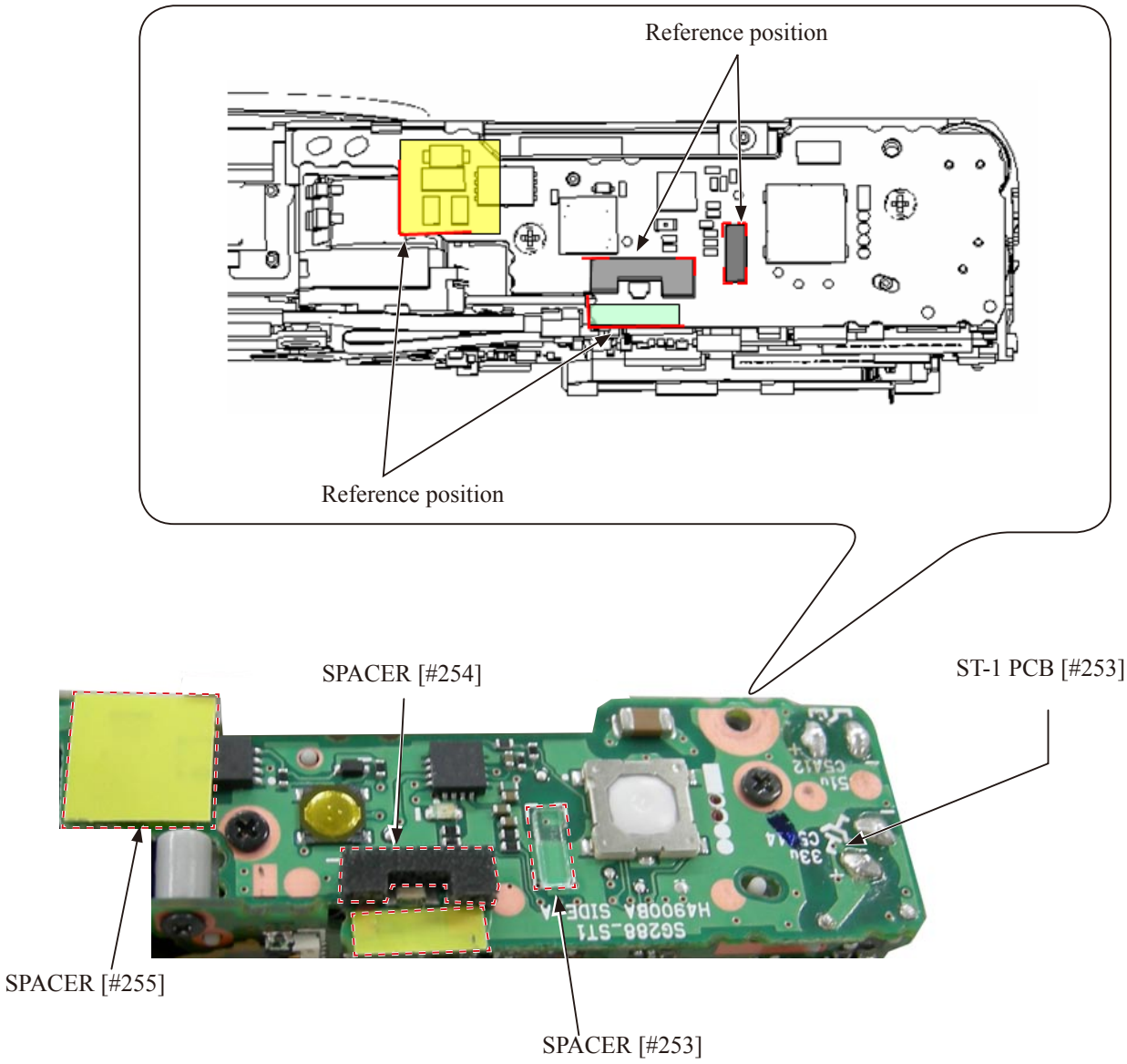


・Adhere the SPACER [#237].

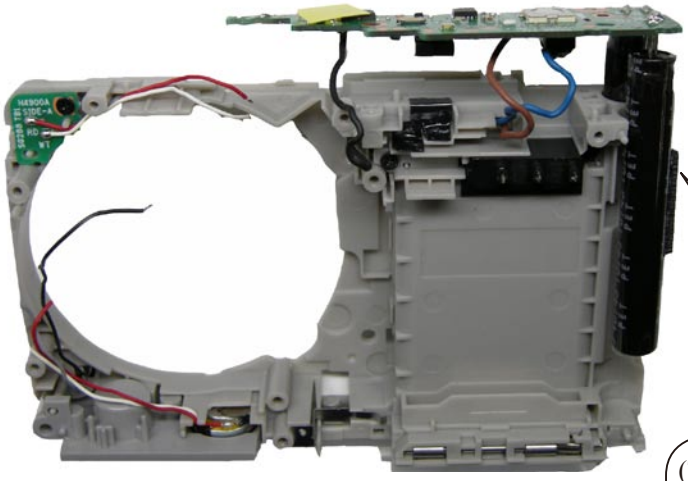


ST-1 PCB

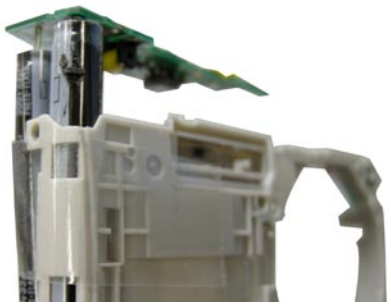
・Adhere the four SPACERs.



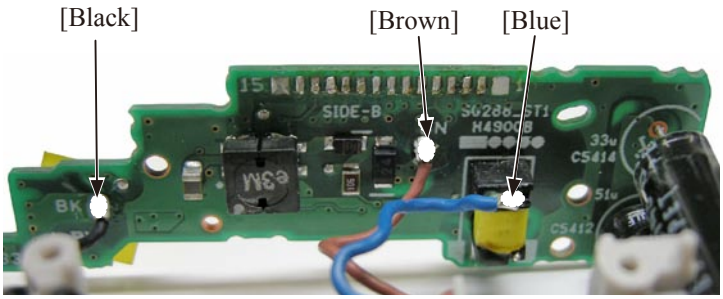
・Insert the ST-1 PCB halfway.



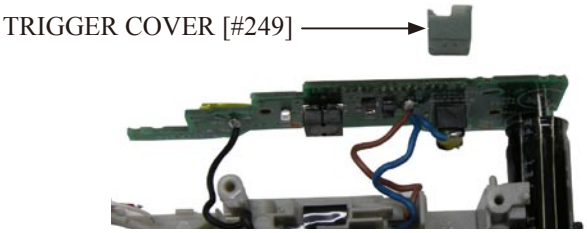
(The work will be easier by taping temporarily the CONDENSER to the INNER HOLDER .)



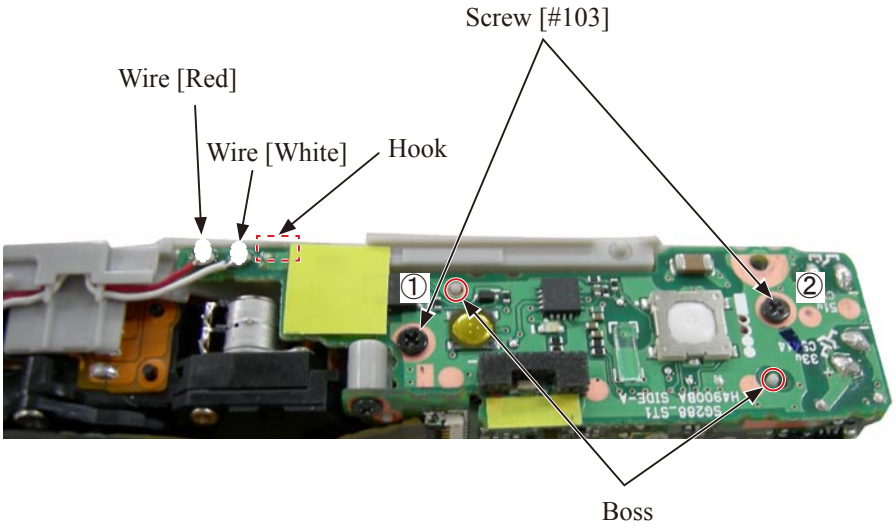
・Solder the wires [Black] and [Brown] and [Blue].



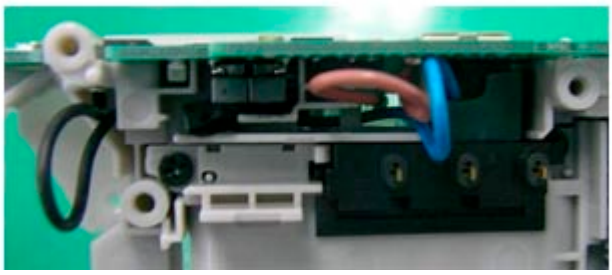
・Mount the TRIGGER COVER [#249].
(Be careful of the cover's direction.)

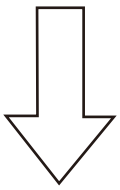


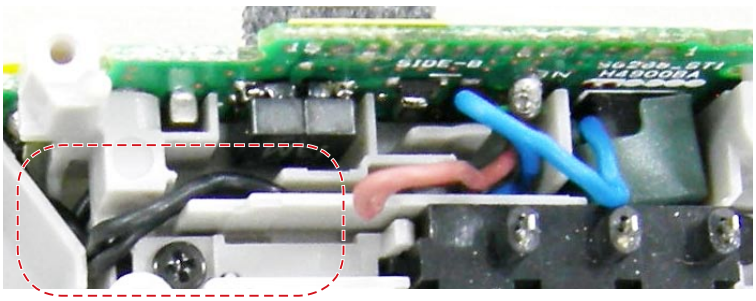
・Hook the ST-1 PCB.
・Fit with the bosses.
・Tighten the two screws [#103] in the numeric order from (1) to (2).
(Pull the wires to the BACK COVER side. Do not pinch them.)
・Solder the wires [Red] and [White].



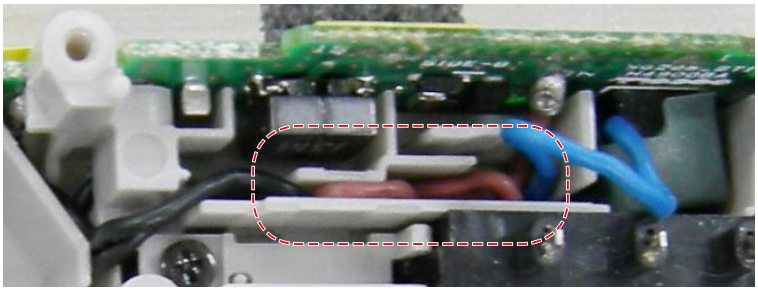
・Arrange the extra wires in the numeric order from ① to ③ .



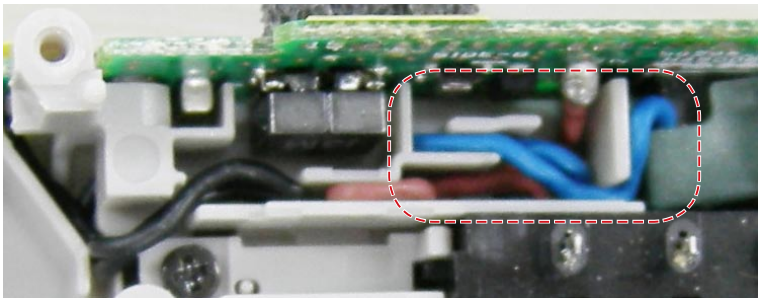




① Arrange the wire [Black].



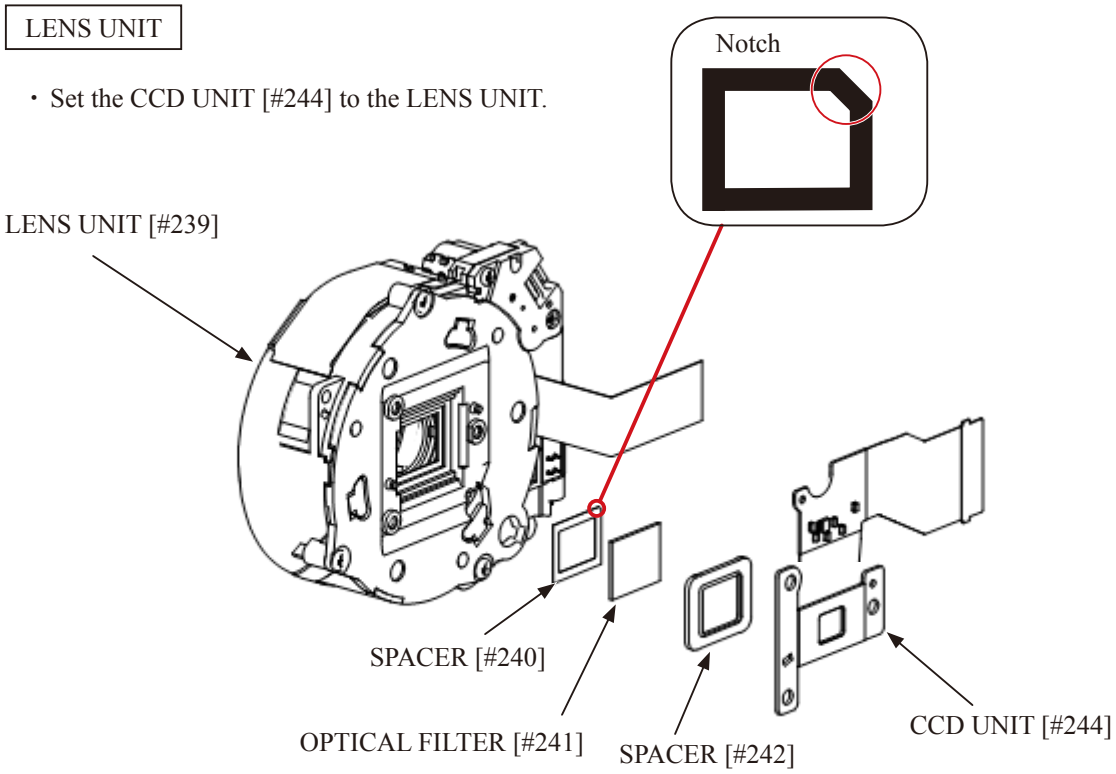
② Arrange the wire [Brown].

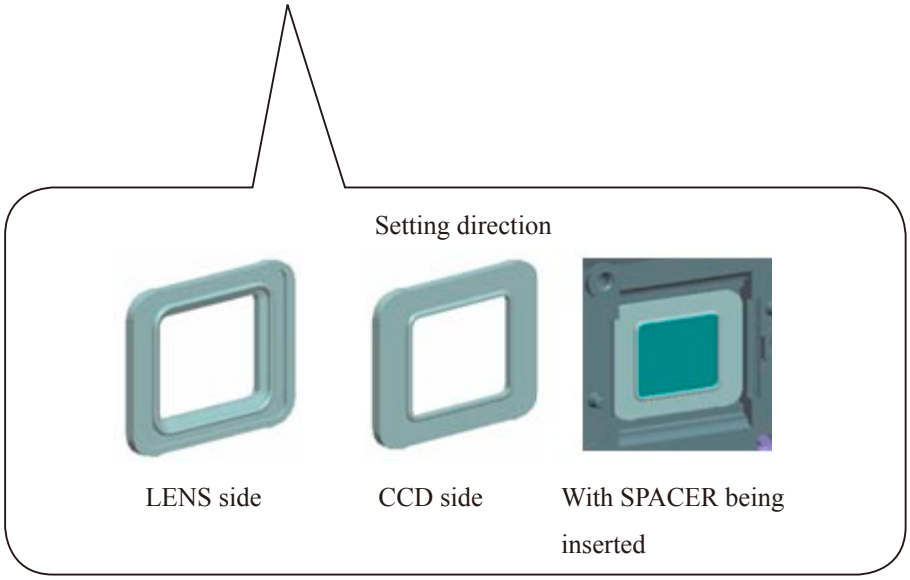


③ Arrange the wire [Blue].

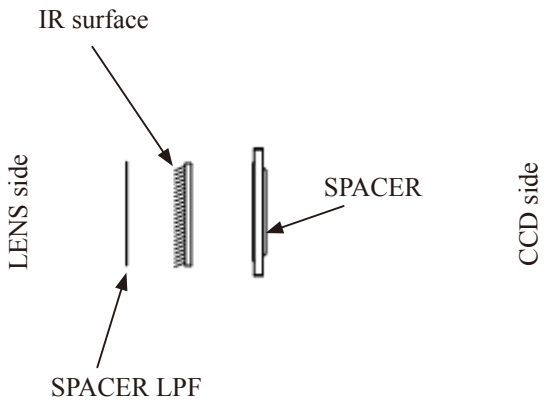
LENS UNIT

・Set the CCD UNIT [#244] to the LENS UNIT.



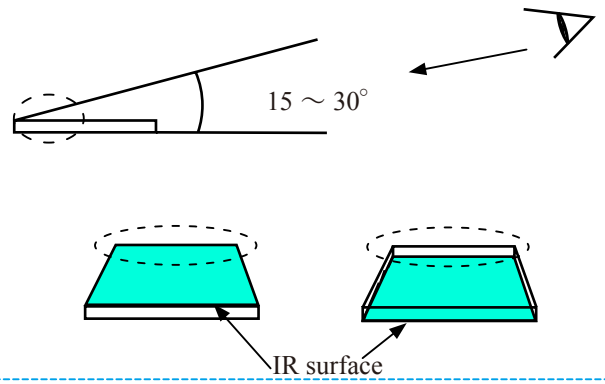


OPTICAL FILTER

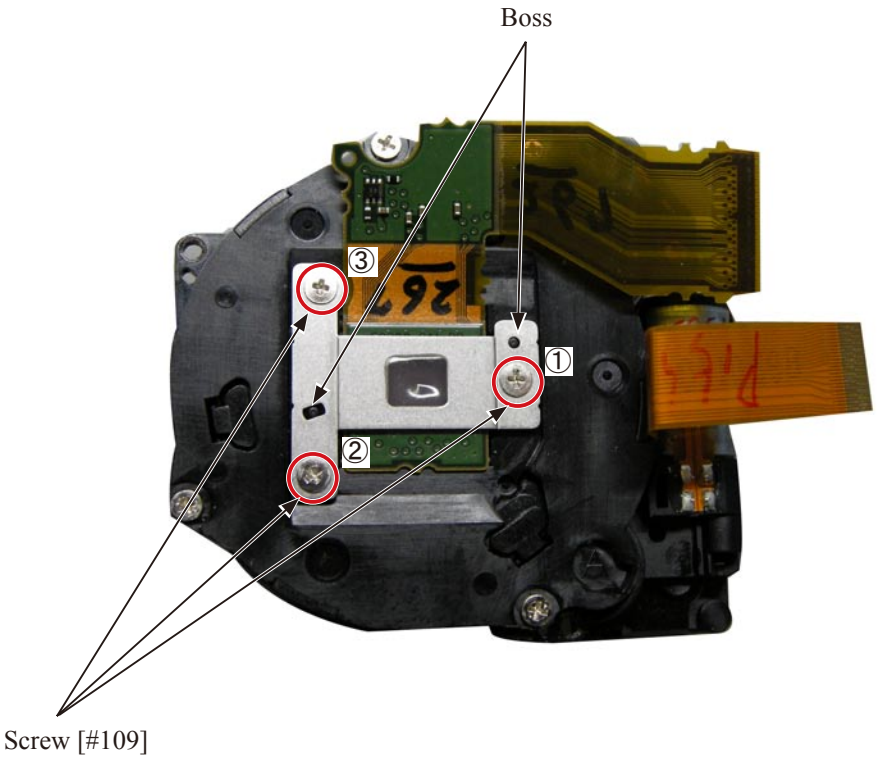


Identification of IR surface

・Look at the IR surface diagonally in 15 to 30° to identify it.

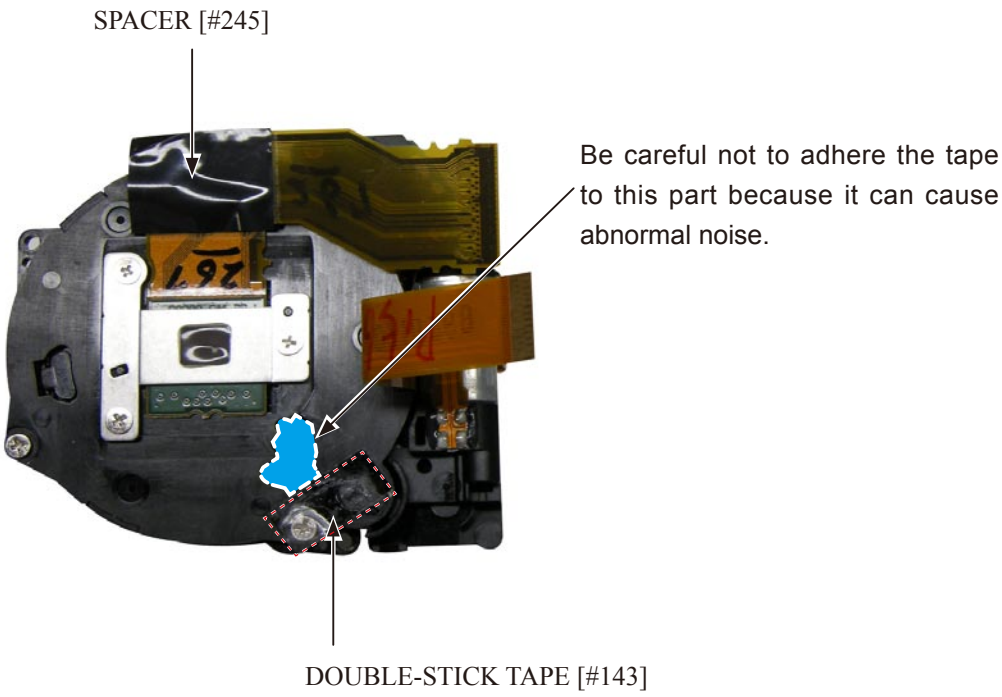


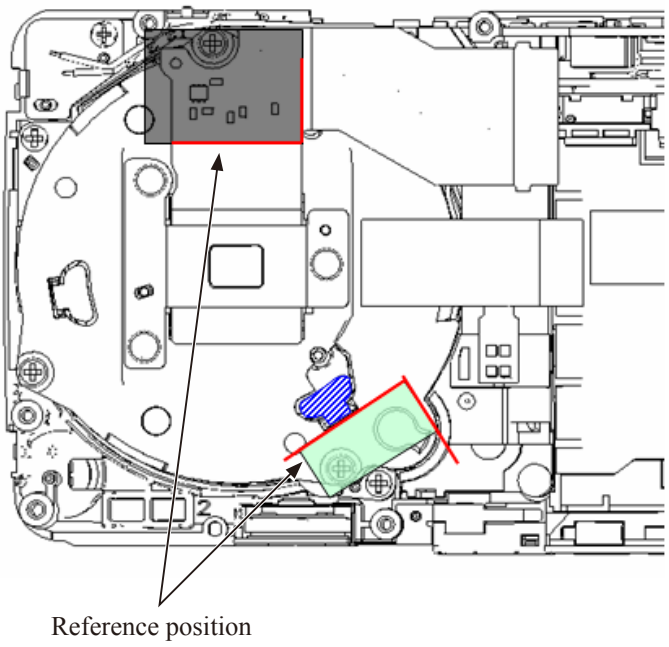
- Fit with the bosses.
- Tighten the three screws [#109] in the numeric order from ① to ③ .



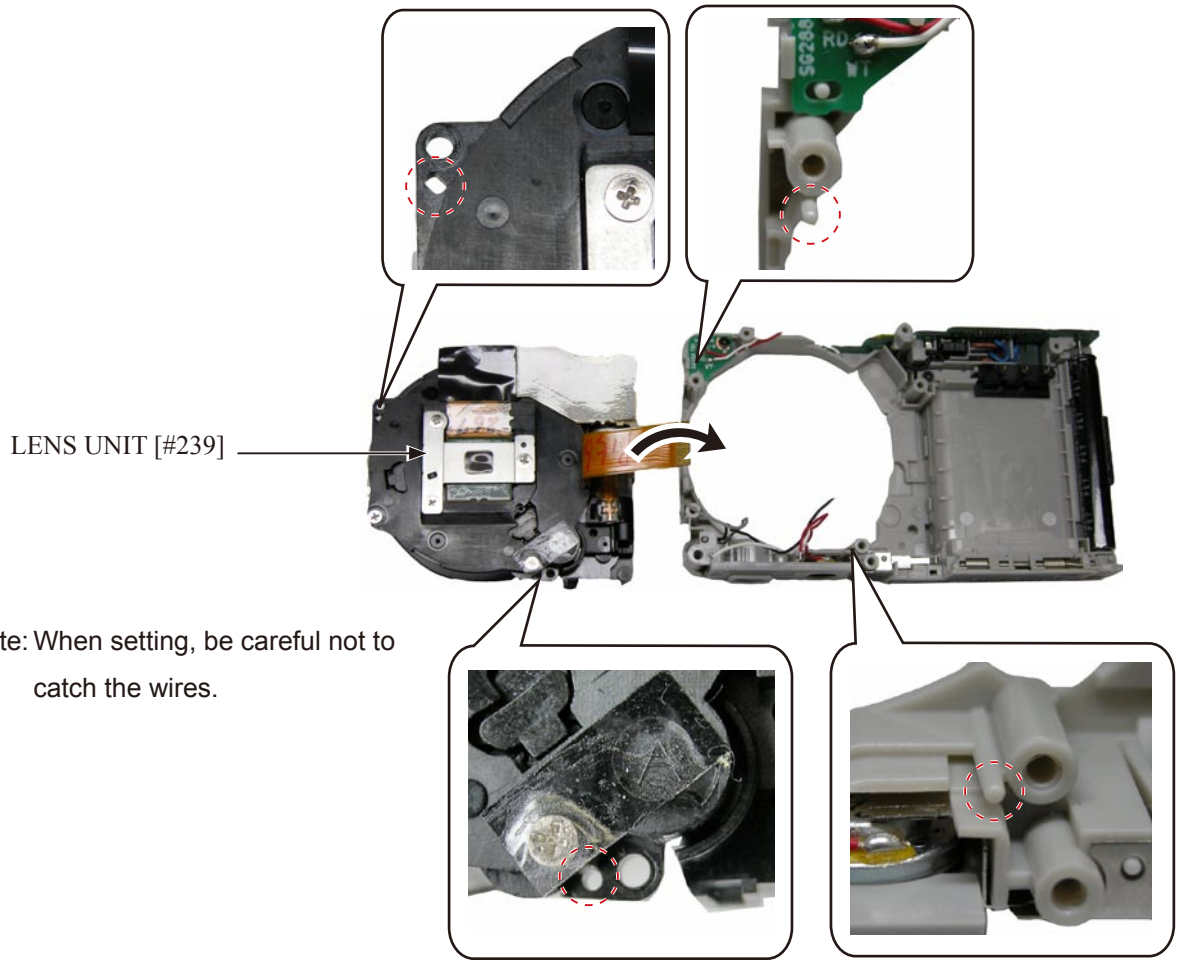
・Adhere the SPACER [#245].

・Adhere the DOUBLE-STICK TAPE [#143].



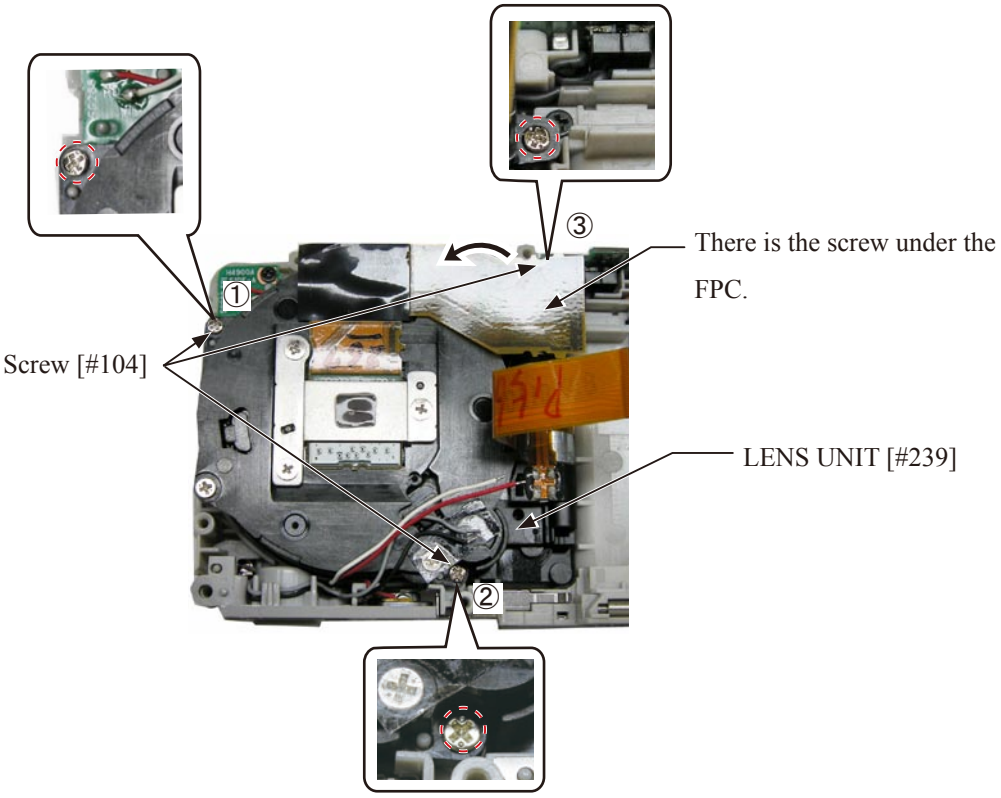


・ Fit the LENS UNIT [#239] with the bosses and set it.



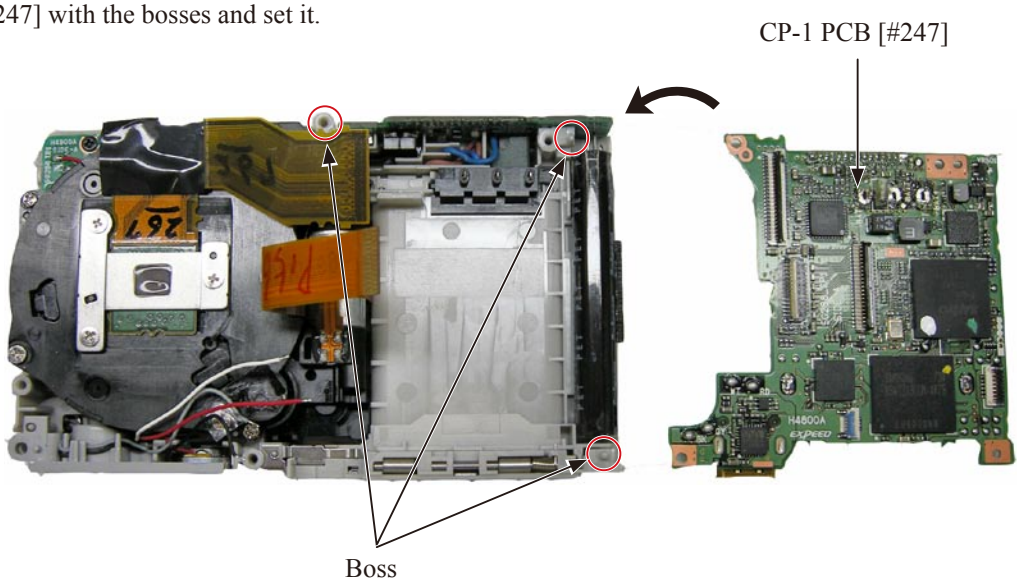
Note: When setting, be careful not to catch the wires.

・ Tighten the three screws [#104] in the numeric order (① → ② → ③).

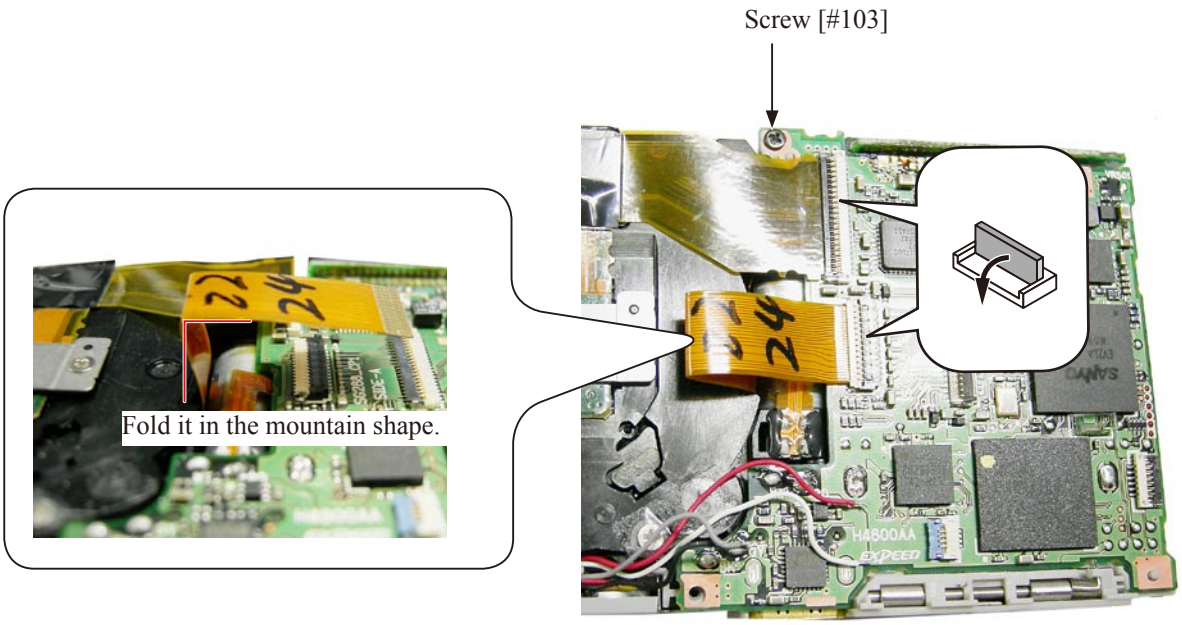


CP-1 PCB

・Fit the CP-1 PCB [#247] with the bosses and set it.

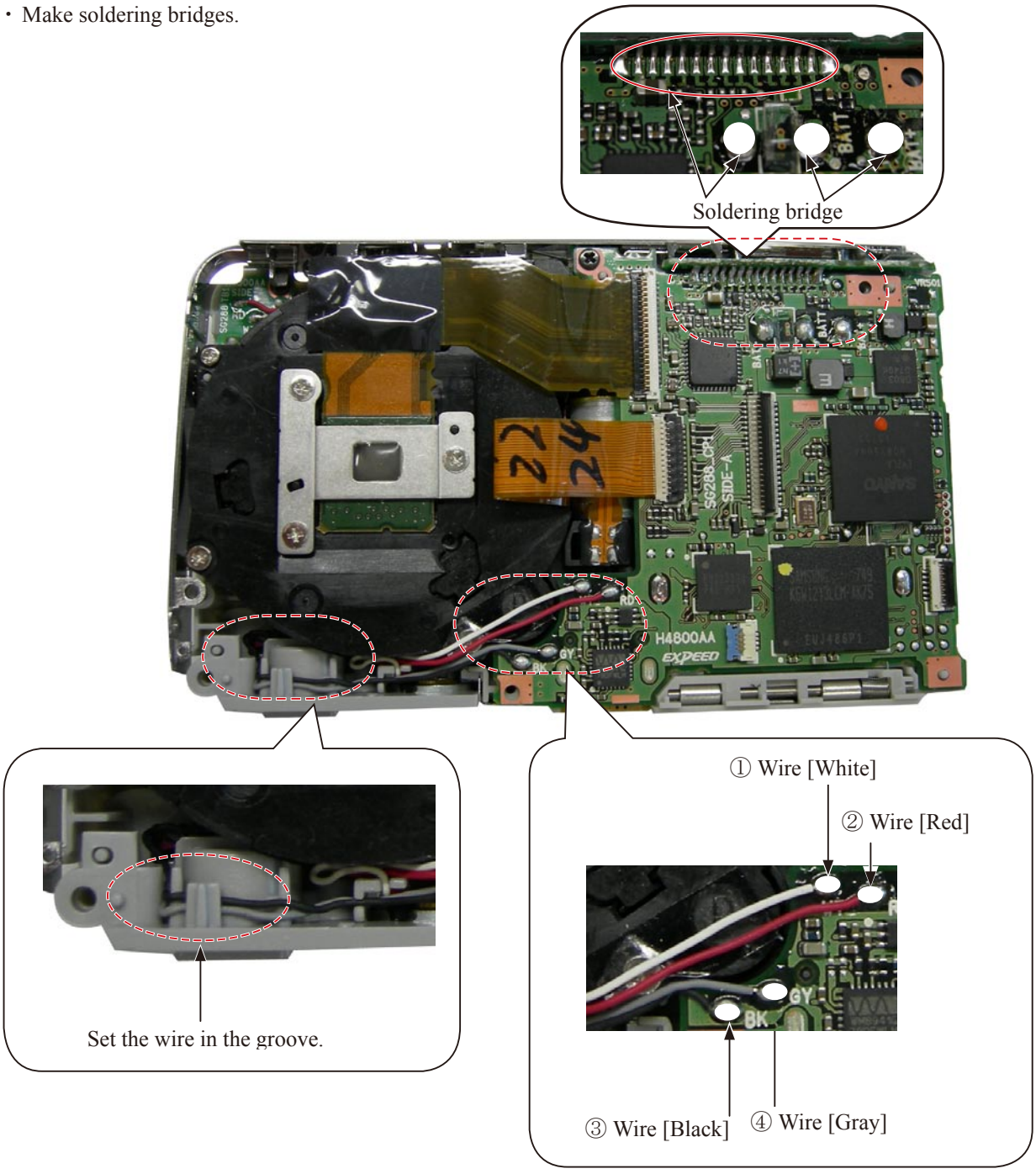


・Tighten the screw [#103].
・Set the two FPCS.



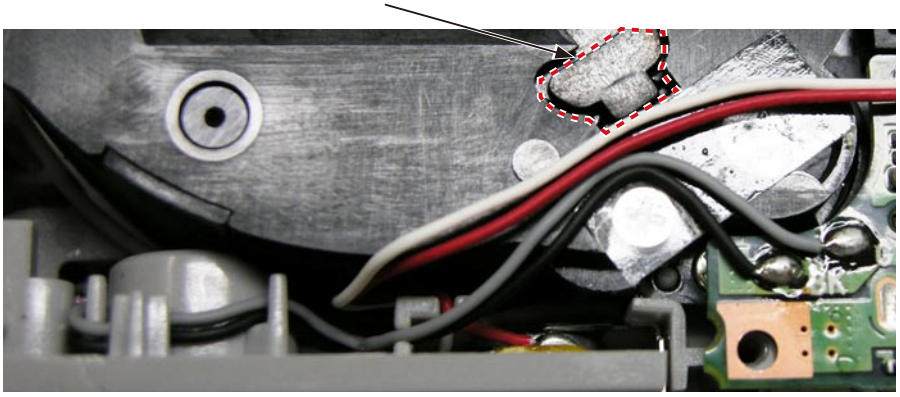
・Solder the wires in the numeric order (① [White] → ② [Red] → ③ [Black] → ④ [Gray]).

・Make soldering bridges.

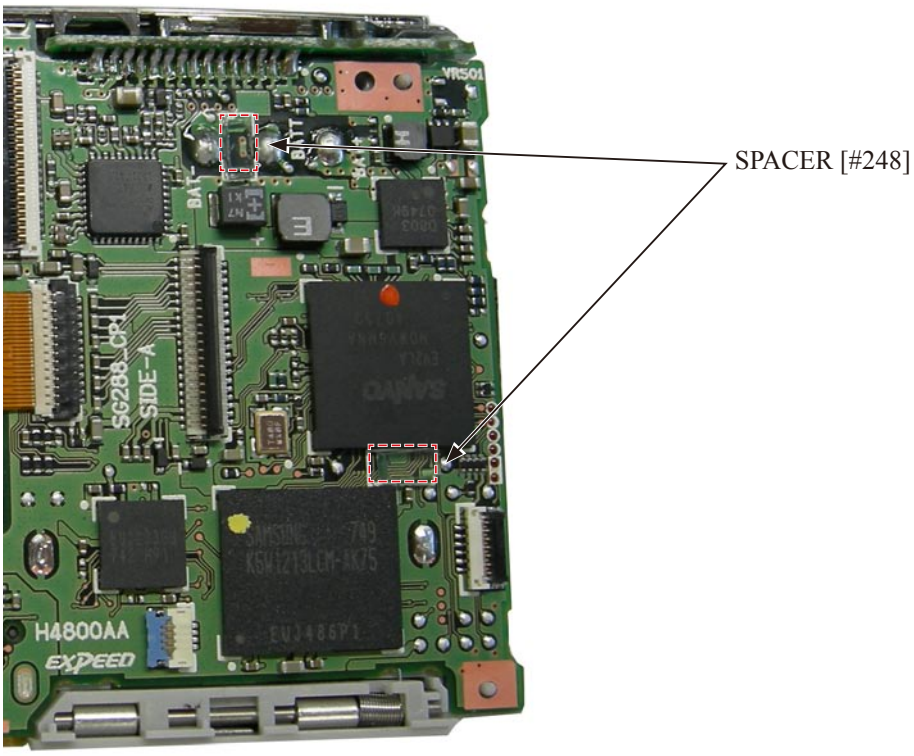


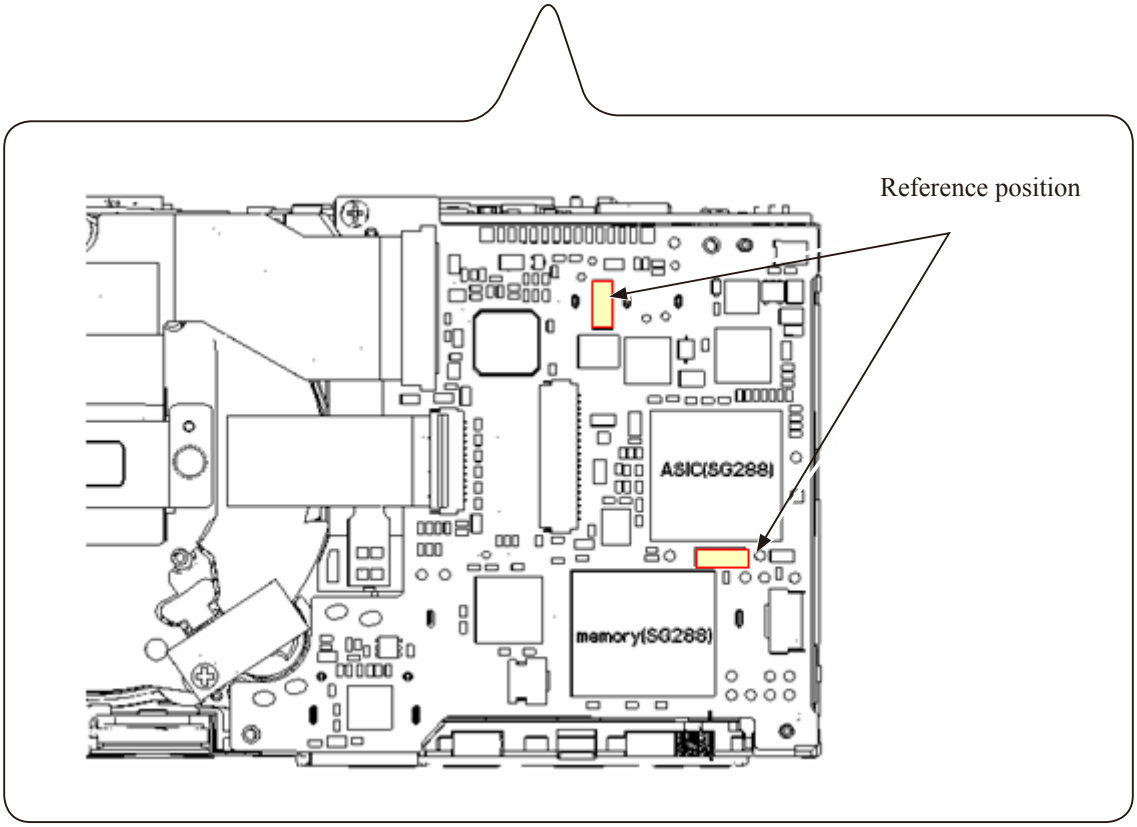
・Collect the extra wires on the DOUBLE-STICK TAPE on the lower part of LENS UNIT.

Be careful not to put the wires on this part because they can cause abnormal noise.



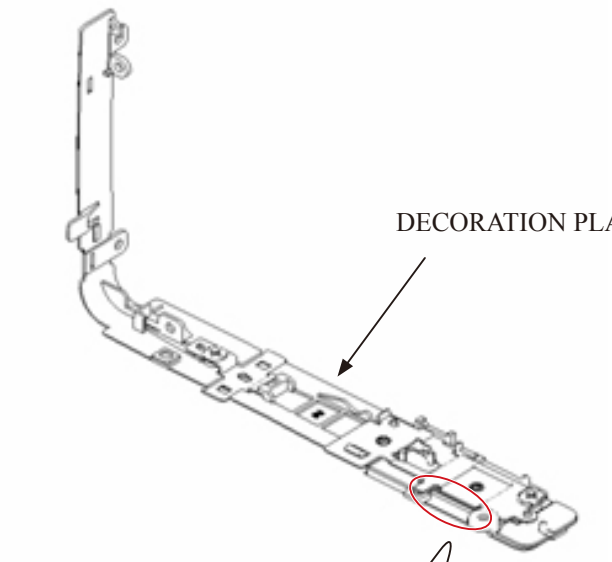
・Adhere the two SPACERs [#248].

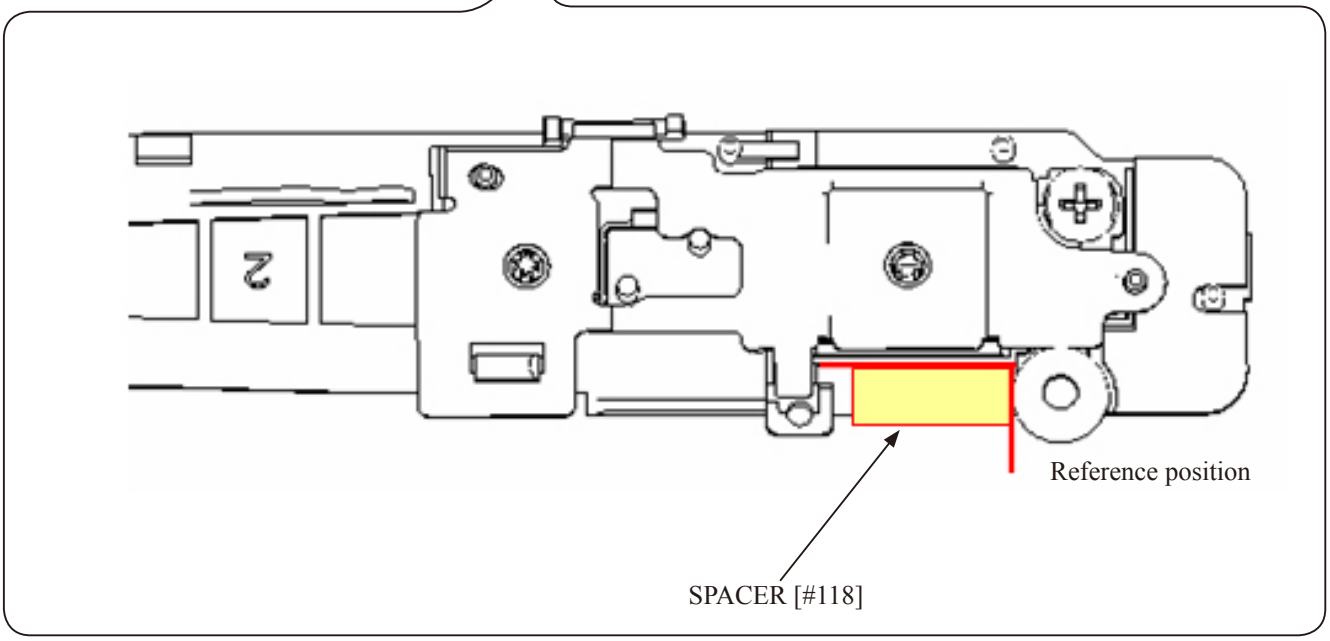




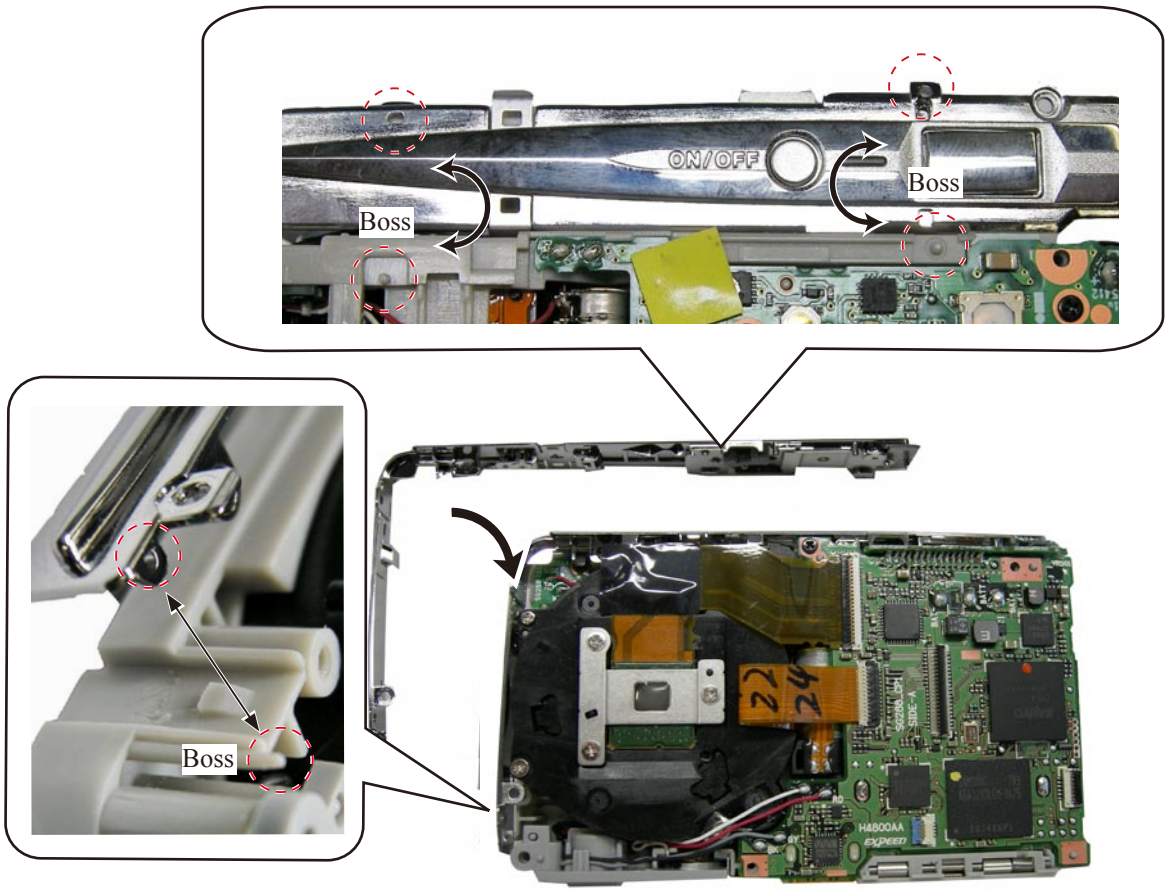
DECORATION PLATE

・Adhere the SPACER [#118].

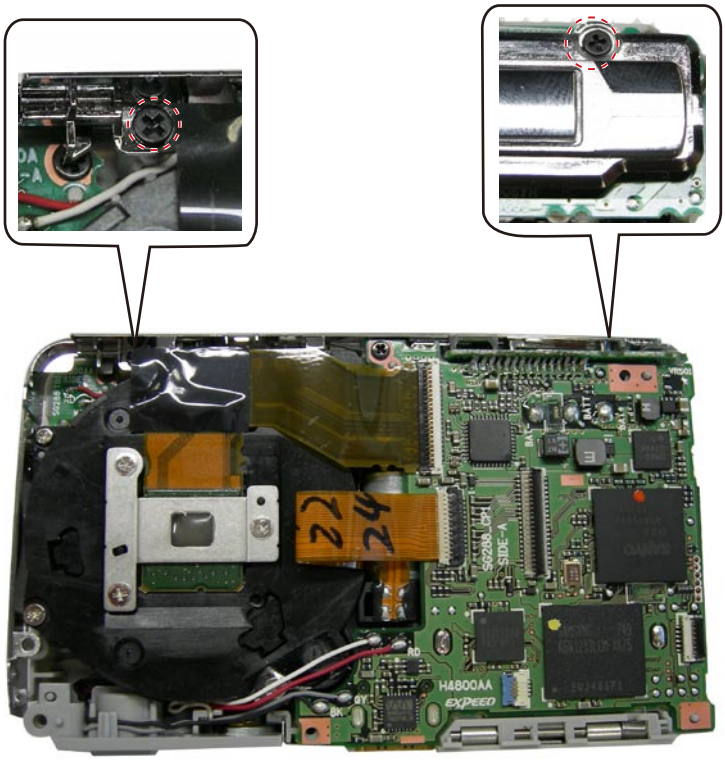




・Fit the DECORATION PLATE [#117] with the bosses and set it.



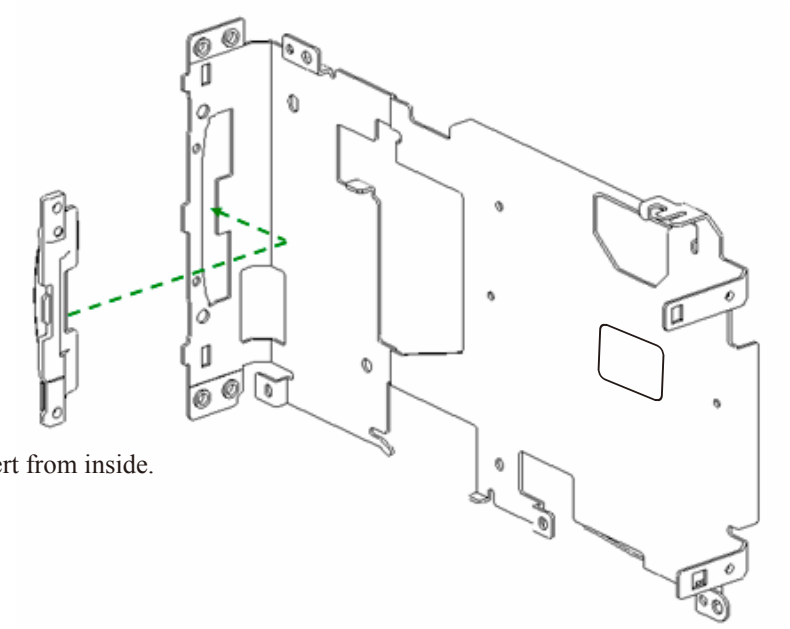
・Tighten the two screws [#103].



STRAP HOLDER

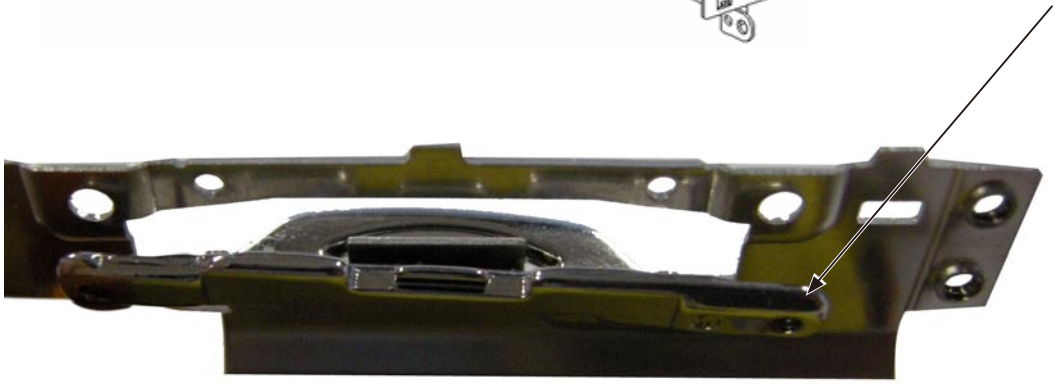
・Set the STRAP HOLDER [#112].

(Set the convex part of MONITOR HOLDER to the hole of STRAP HOLDER.)



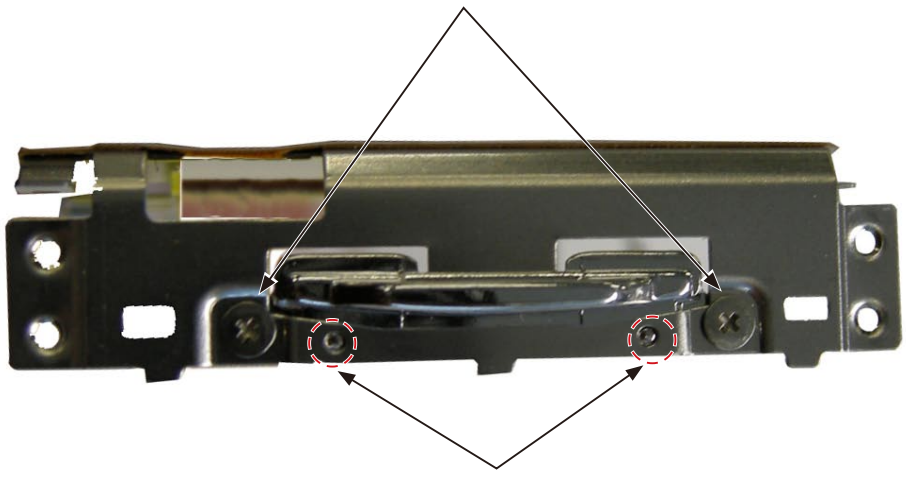
Insert from inside.

STRAP HOLDER [#112]



・Fit with the bosses and tighten the screws [#105] at two places.

Screw [#105]

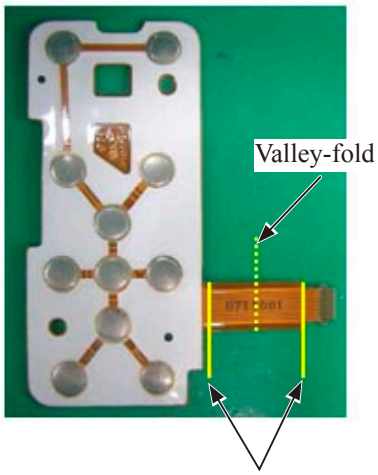


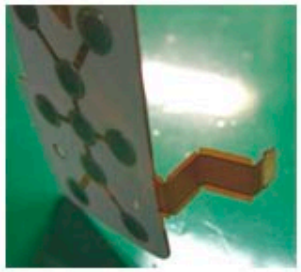
Boss

LCD HOLDER

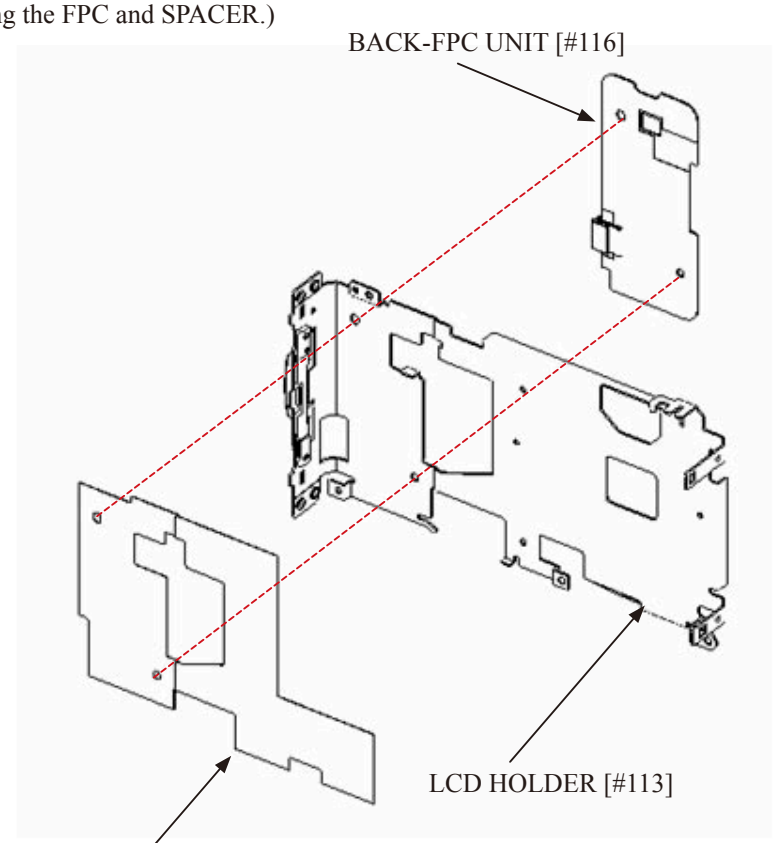
- Fold the FPC of the BACK-FPC UNIT [#116] first and then adhere it to the LCD HOLDER [#113].
- Adhere the SPACER [#111].

  (Use the two holes as a guide of adhering the FPC and SPACER.)

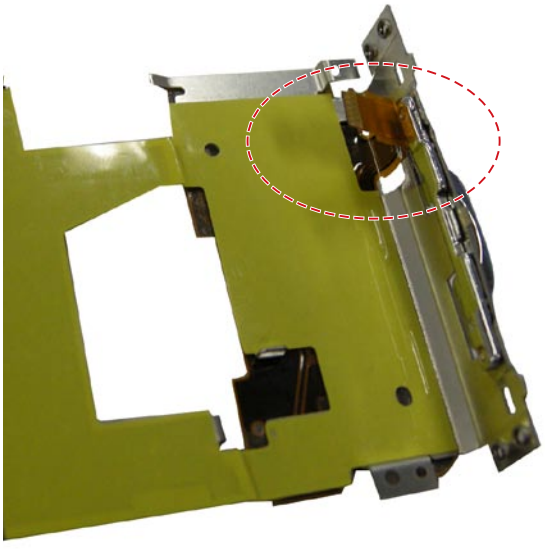




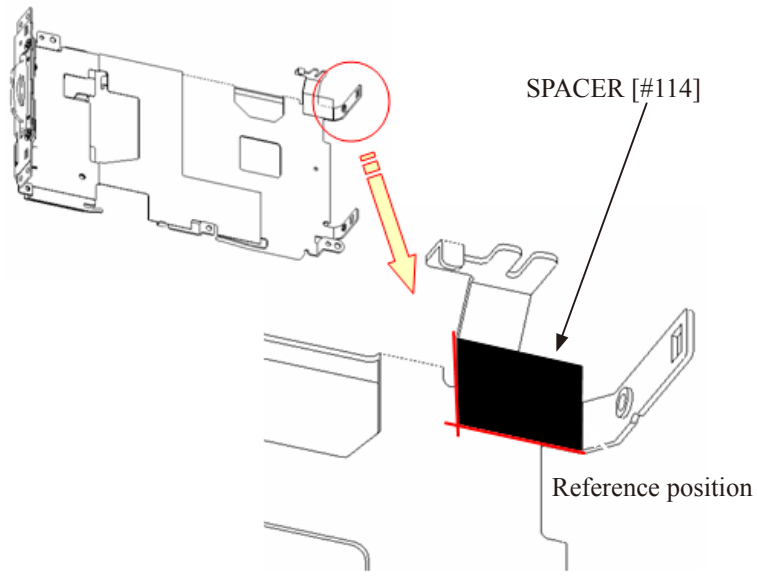
Folded status

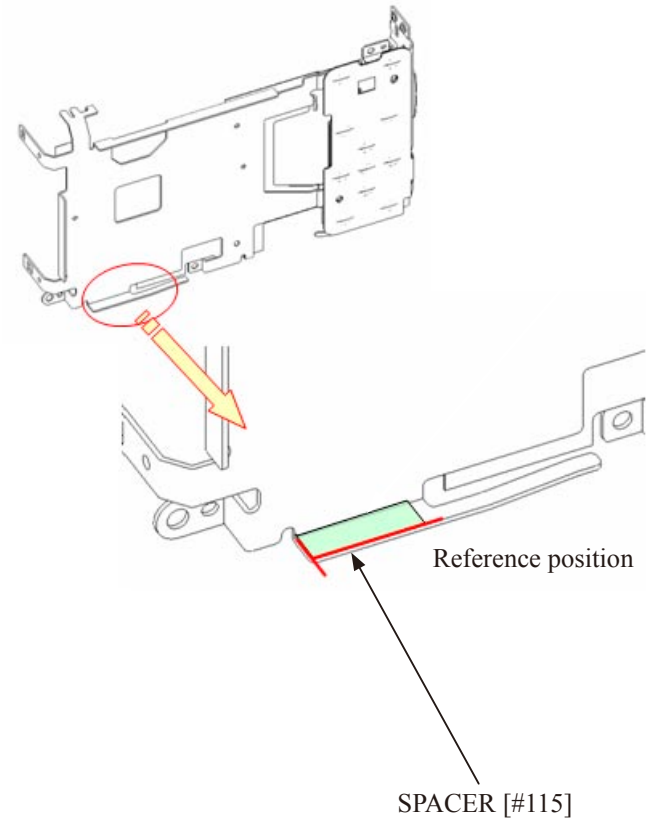


- Pass the FPC through to the inside.

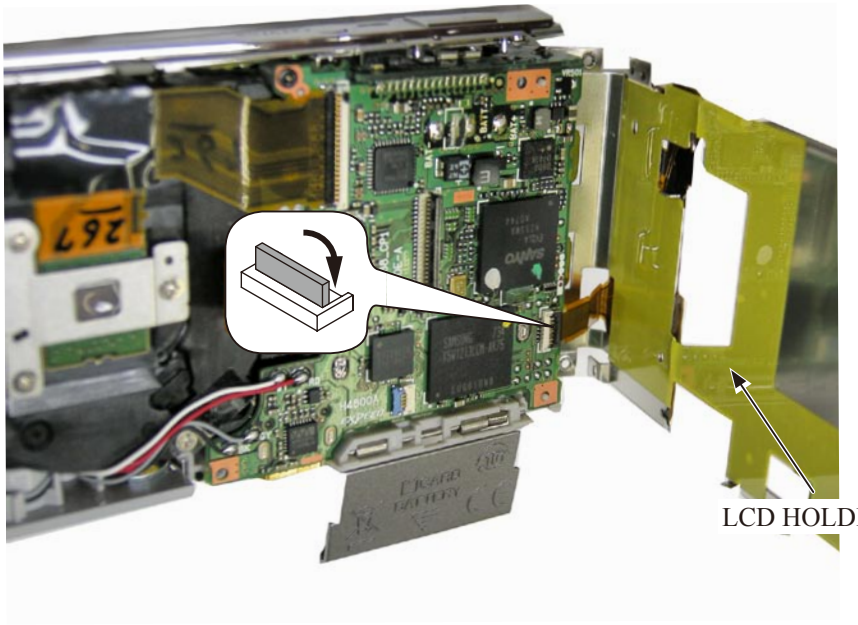


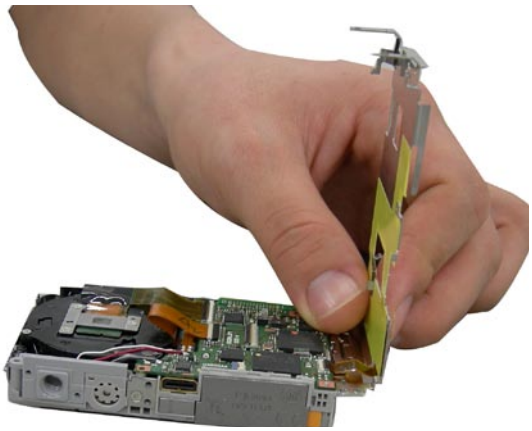
・Adhere the two SPACERs.





・Set the FPC.





Note: Because the FPC is short in length, set it while holding the LCD HOLDER.

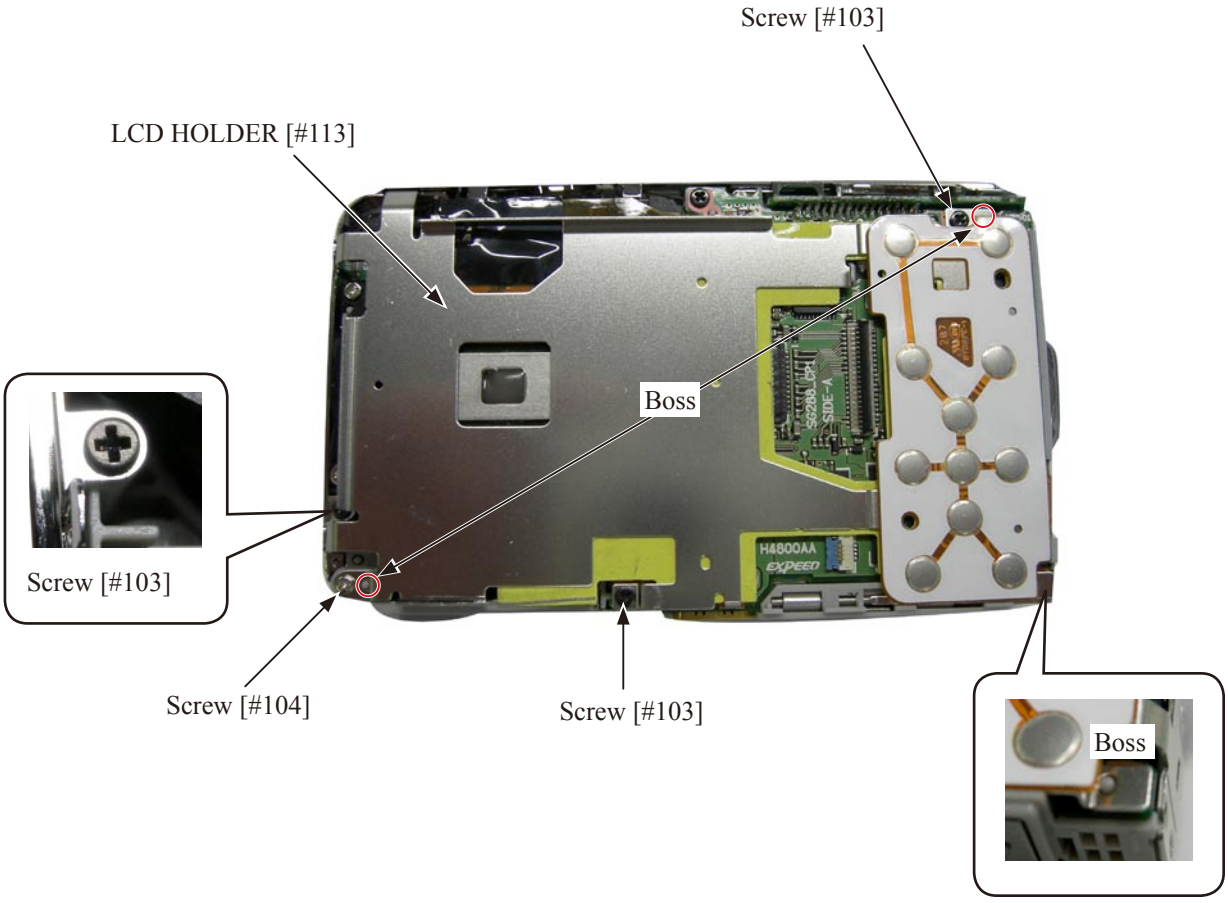
・Hook the LCD HOLDER.

Lens side

Switch side

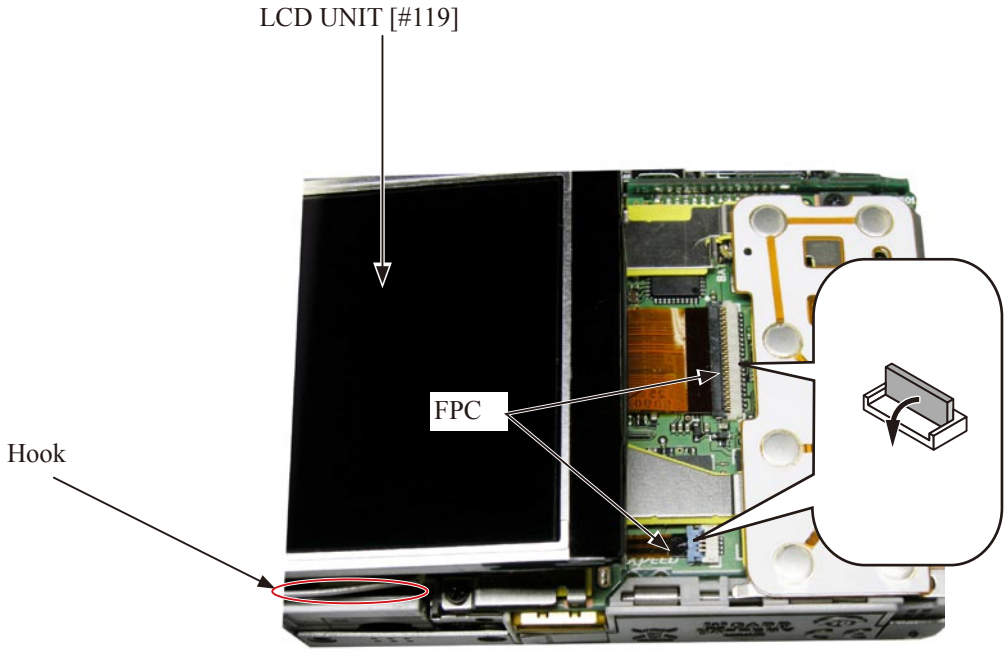
Reference: Lower part at the lens side is as shown in the left picture, which is covered with COVER RING.

・Set the LCD HOLDER [#113].
・Fit the bosses at three places.
・Tighten the two screws [#103].
・Tighten the screw [#104].

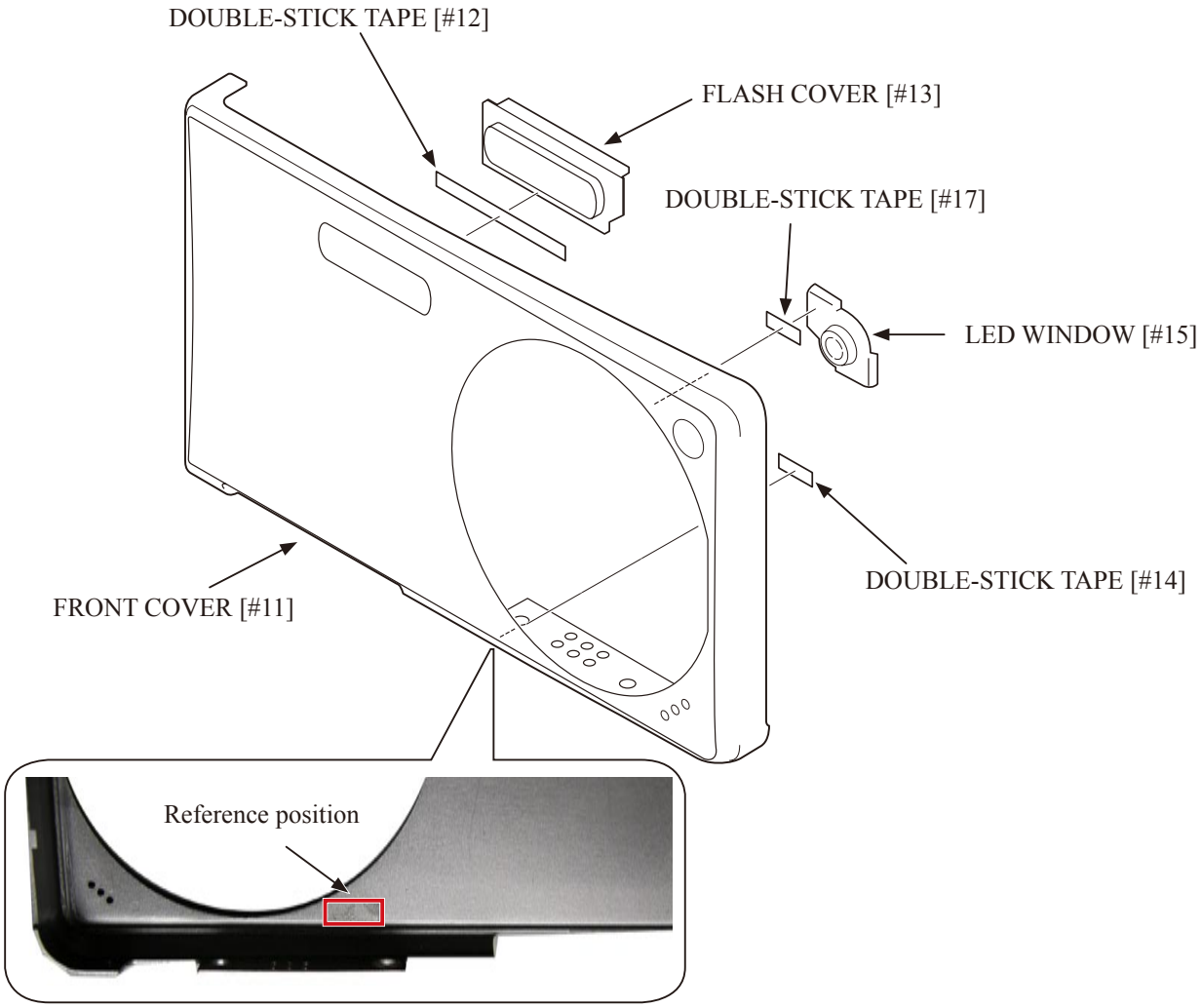


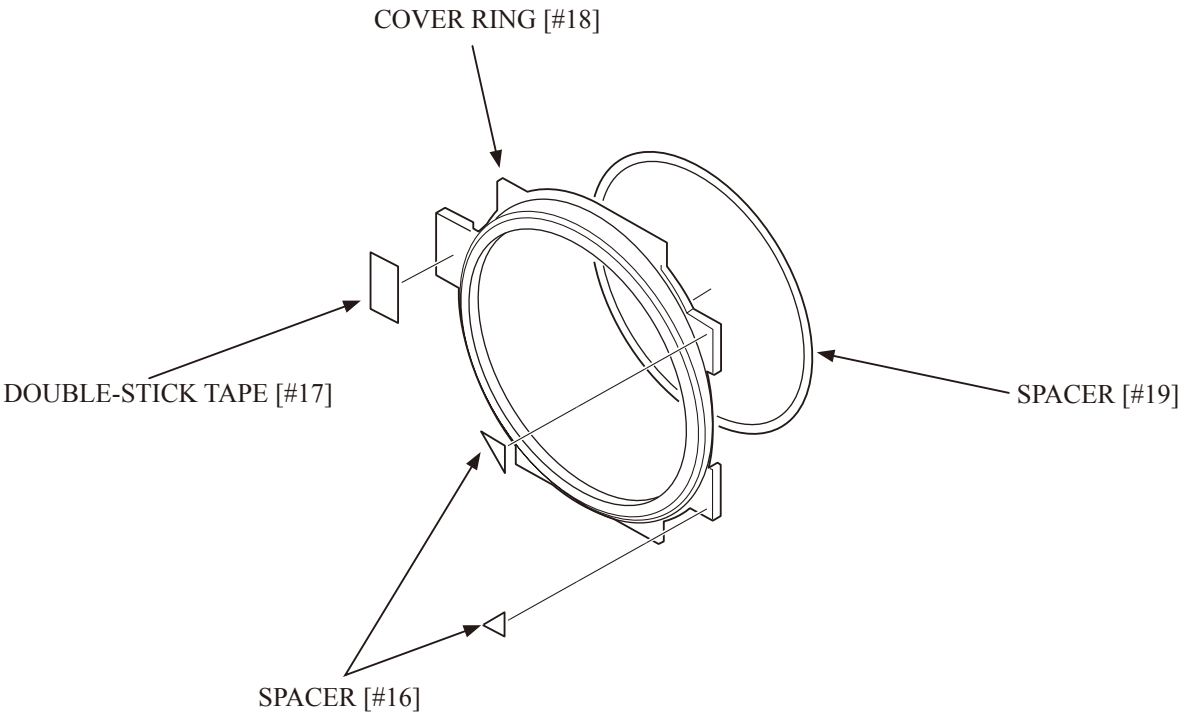
LCD UNIT

- Set the two FPCS.
- Set the LCD UNIT [#119].

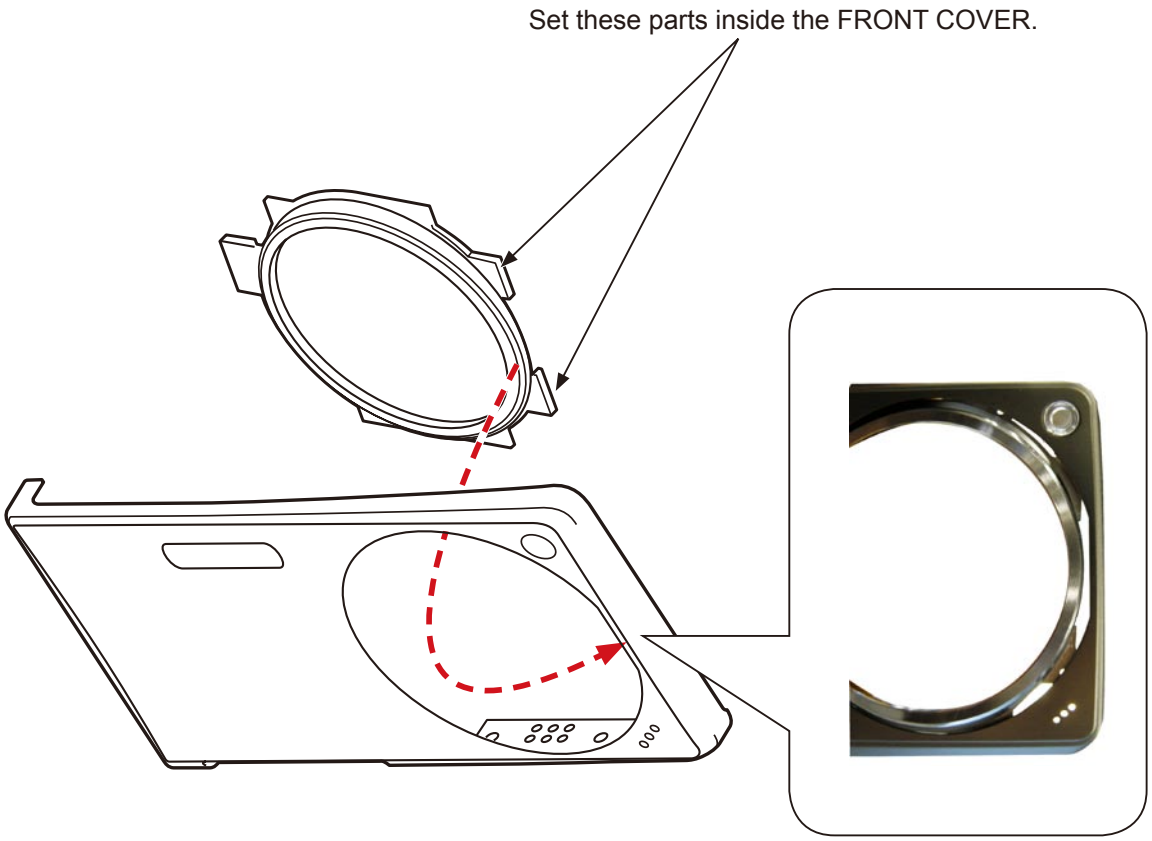


FRONT COVER

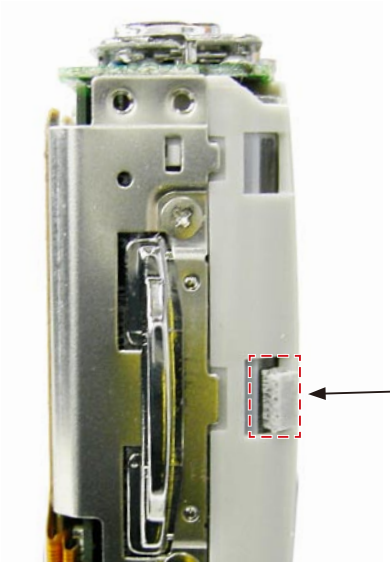

DOUBLE-STICK TAPE [#12]
FLASH COVER [#13]
DOUBLE-STICK TAPE [#17]
LED WINDOW [#15]
DOUBLE-STICK TAPE [#14]
FRONT COVER [#11]
Reference position



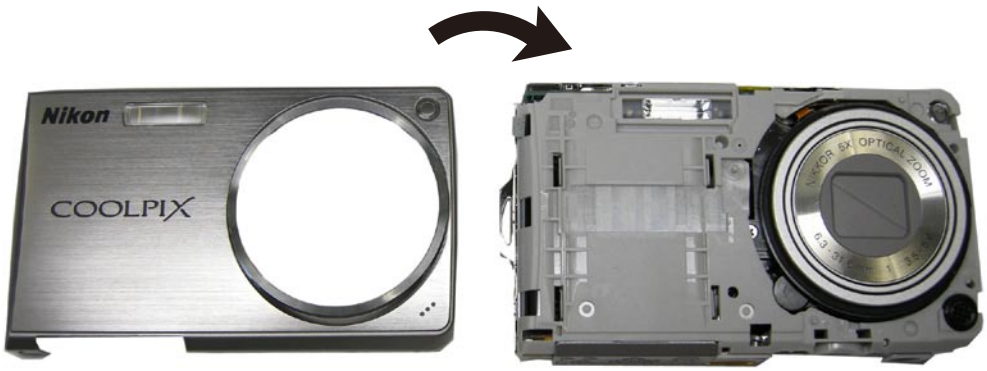
・ Set the COVER RING [#18] to the FRONT COVER [#11].



・Adhere the SPACER [#251].

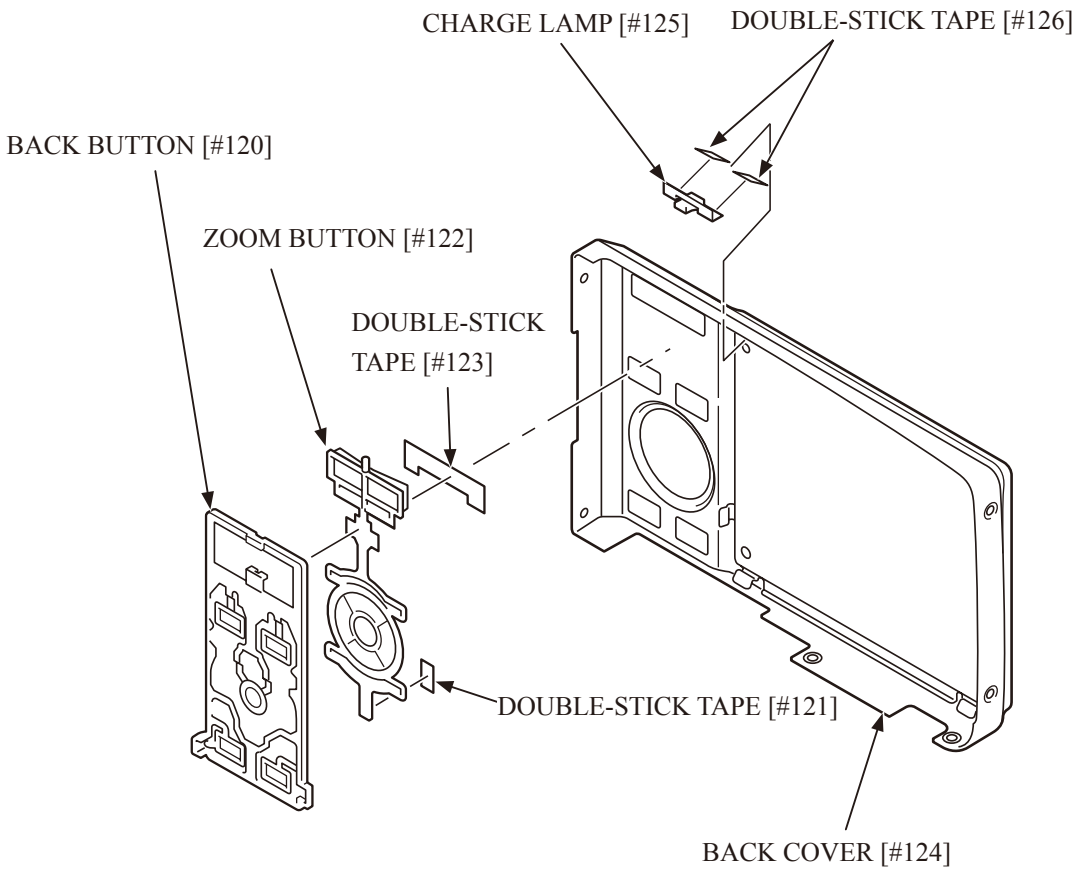


・Set the FRONT COVER [#11].

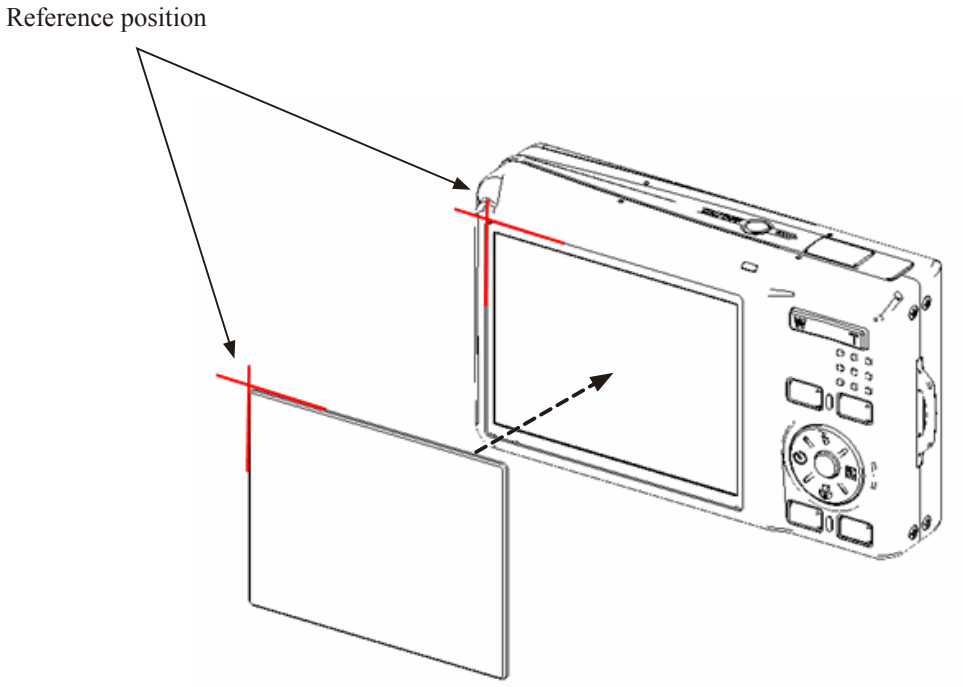


・Hook the FRONT COVER [#11].

BACK COVER



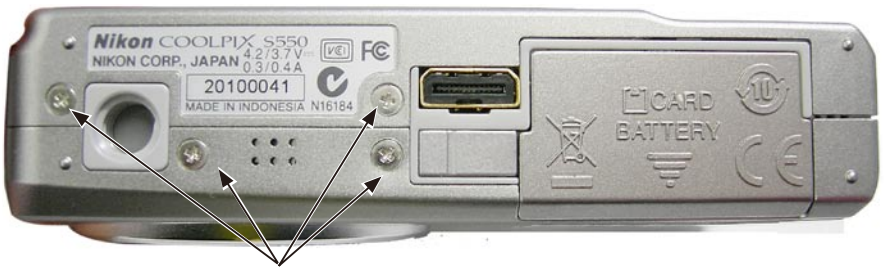
・Set the LCD COVER [#127].



・Set the BACK COVER [#124] from above.

EXTERNAL SCREW

・Tighten the four screws [#101].



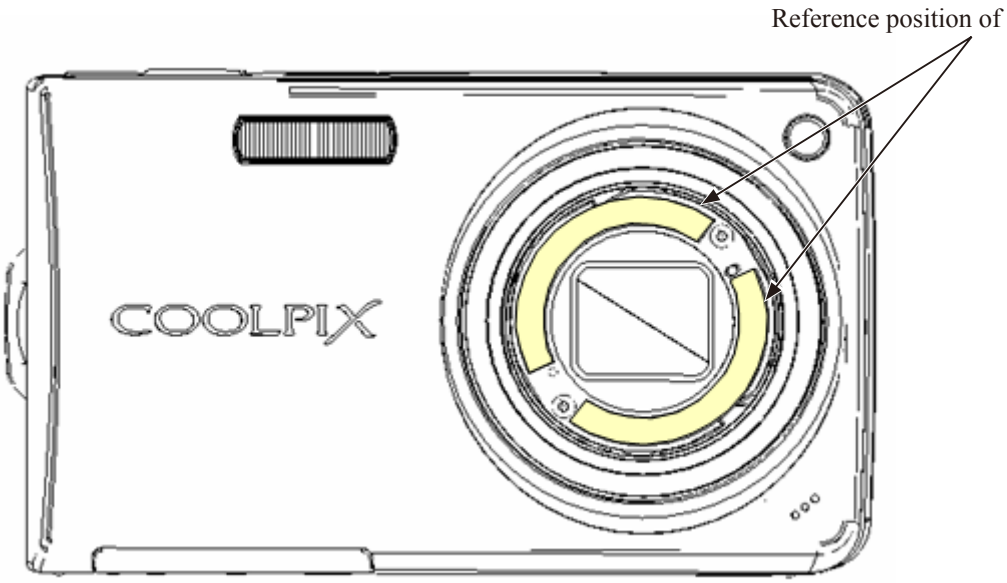
Screw [#101]

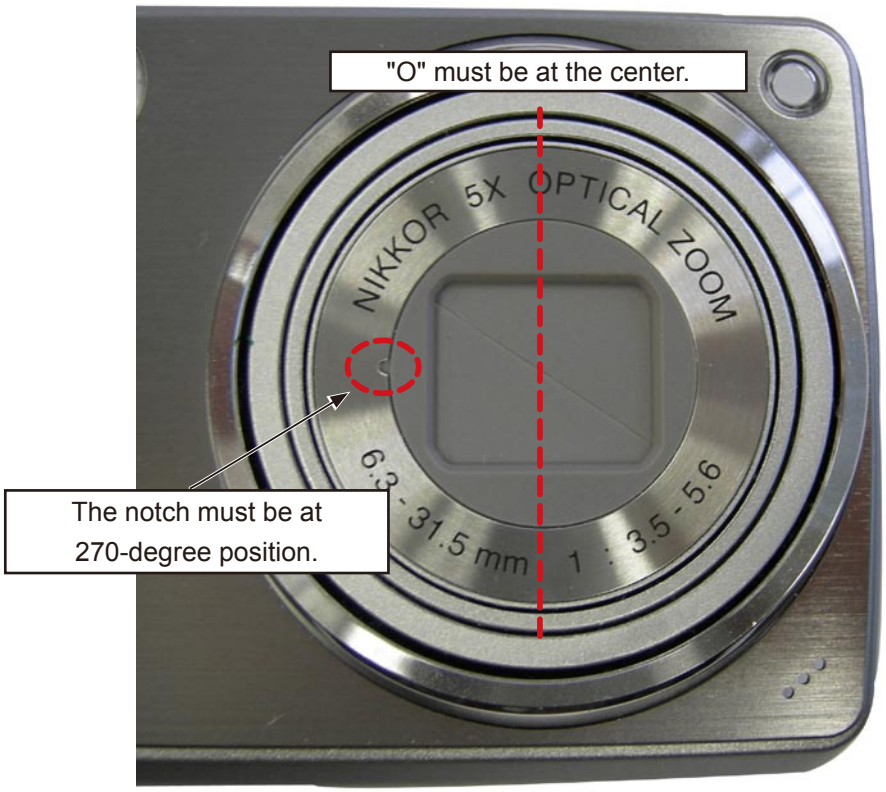
・Tighten the four screws [#102].

・Tighten the two screws [#106].

NAME PLATE

・Adhere the NAME PLATE [#238].





ADJUSTMENT

1. Equipment

IBM compatible PC/AT, Fresh battery (EN-EL11) △ (Addition), AC adapter ~~EH-62D~~ (EH-62E) △ (Revision), USB cable (UC-E10) △ (Addition), COOL-STATION（MV-15）Use converted product

2. Servicing tools

Pattern box, color meter, luminance meter, calibration software Ver1.59 (J65098), adjustment collimator (J63090)

3. Adjustments / order

1. Firmware up
2. Lens adjustment
3. AWB adjustment
4. CCD white dot defect compensation
5. CCD black dot/white dot defect adjustment
6. USB storage information registration

※ For the USB connection of S550, ONLY "PTP" is available.
Using "Win2000" needs installation of the driver and restart of the PC. For the driver, use INF folder in "DSCCAL Ver.1.59" folder.

サービス計画課 M

4. Firmware update

Procedure

- Turn camera OFF, and insert the updating SD-card.
- Connect the camera to the AC adapter.
- Turn camera ON.
- Press MODE button to highlight SETUP on the shooting menu.
- Select "Firmware version".

- The screen for updating comes up. Select "Yes".

  Note: Do NOT turn power OFF during updating.

- The message that indicates the completion appears.
- Turn camera OFF and remove the SD card.

- Turn camera ON to check the version.
- Turn camera OFF to end the procedure.

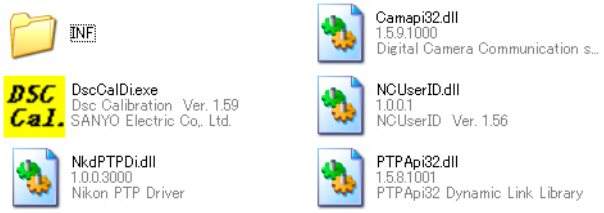
5. Setup

1) System requirements

- Windows® 2000, XP
- CD-ROM drive
- USB port
- Hard disk drive with 15 MB or more memory space
- IBM-compatible PC/AT with Pentium or higher processor
- 3.5-inch 2HD diskette drive
- Free memory of 256MB or more
- VGA or SVGA monitor with 256 or more color display

2) Installation of the calibration software Ver.1.59 (J65098)

- Insert the calibration software installation disc into the disc drive.
- Open Explorer.
- Copy the folder in the floppy disk drive to an optional folder.



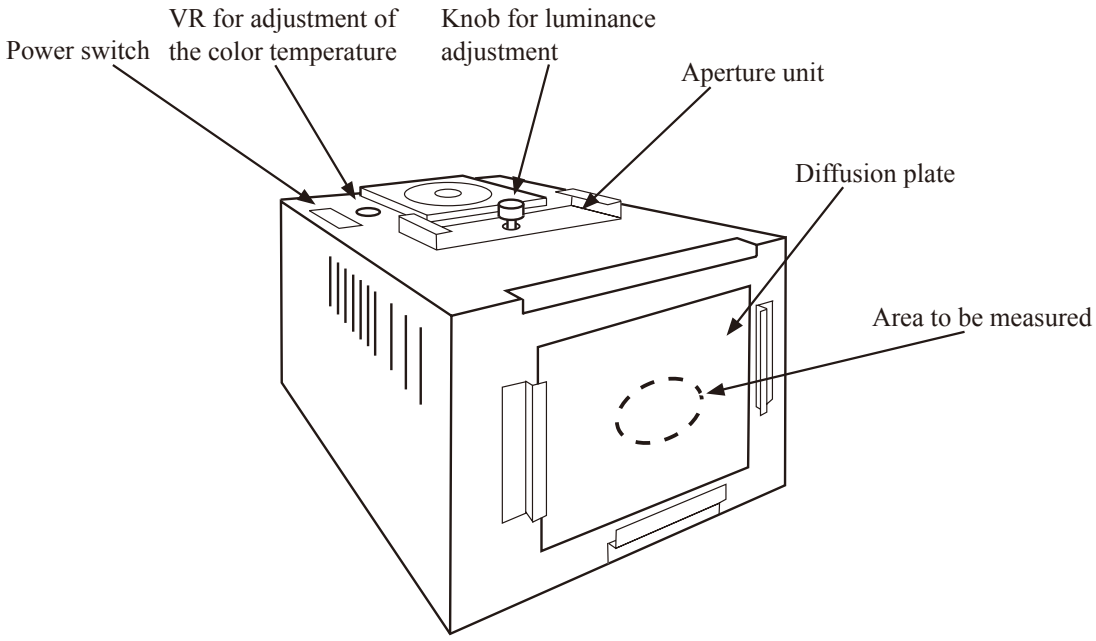
6. Pattern box

Before using the pattern box, turn its power on to carry out "Aging" approx. 30 minutes: the color temperature must be adjusted to 3100 ± 20K by the color meter, and the luminance must be adjusted to 900 ± 20cd/m^2 by the luminance meter. When the pattern box is used and for a while even after the power turns off, the lamp and its surroundings are subject to high temperatures, so handle them with care.

・ Procedure for correcting Pattern Box

Note: Be sure to perform "aging".

1) Measure the measuring point (center of diffusion plate) with the Color Meter (J63081).
2) Adjust the pattern box so that the color temperature must be 3100 ± 20K by using "VR for adjustment of the color temperature".
3) Measure the center of the diffusion plate with the Luminance Meter BM-3000 (J63068 BM3000).
4) Adjust the pattern box so that the luminance must be 900 ± 20cd/m^2 by using "Knob for luminance adjustment".
5) Repeat from 1) to 4) so that the color temperature must be 3100 ± 20k and luminance must be 900 ± 20cd/m^2



Caution:

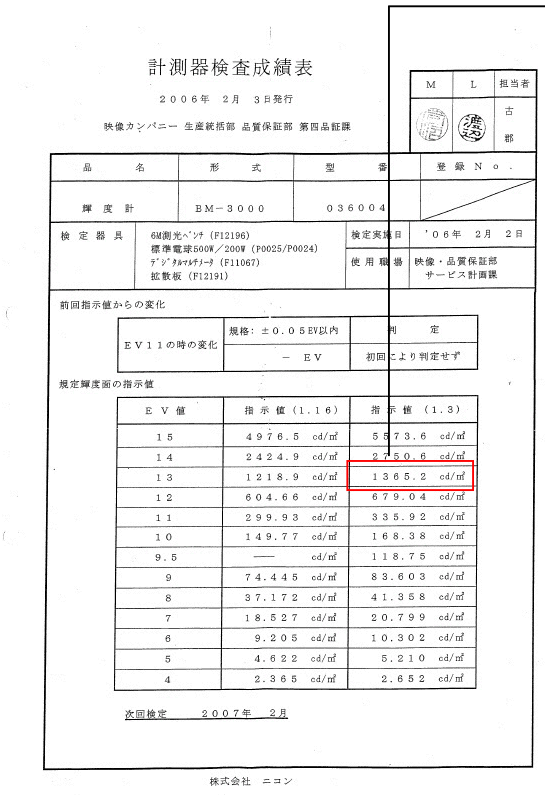
The luminance of pattern box is measured by [BM-3000], but sometimes the measurement result of each [BM-3000] varies.

Therefore, to keep the same luminance without such variation, the method by using the inspection report which is supplied with BM-300 is as follows.

The inspection report is in Japanese only. Refer to data only at overseas service facilities.

Procedure

① Find the corresponding value by crossing K=1.3 and EV13 in the accessory inspection report, and calculate by putting the corresponding value into the below formula.



計測器検査成績表

２００６年　２月　３日発行

映像カンパニー　生産統括部　品質保証部　第四品証課

M	L	担当者
		古郡

品名	形式	型番	登録No.
輝度計	BM－３０００	０３６００４	

検定器具		検定実施日	'０６年　２月　２日
	6M測光ﾍﾝﾁ（F12196） 標準電球500W／200W（P0025/P0024） ﾃﾞｼﾞﾀﾙﾏﾙﾁﾒｰﾀ（F11067） 拡散板（F12191）	使用職場	映像・品質保証部 サービス計画課

前回指示値からの変化

ＥＶ１１の時の変化	規格：±０．０５ＥＶ以内	判定
	－ＥＶ	初回により判定せず

規定輝度面の指示値

ＥＶ値	指示値（1.16）	指示値（1.3）
１５	４９７６．５ cd/㎡	５５７３．６ cd/㎡
１４	２４２４．９ cd/㎡	２７５０．６ cd/㎡
１３	１２１８．９ cd/㎡	１３６５．２ cd/㎡
１２	６０４．６６ cd/㎡	６７９．０４ cd/㎡
１１	２９９．９３ cd/㎡	３３５．９２ cd/㎡
１０	１４９．７７ cd/㎡	１６８．３８ cd/㎡
９．５	—— cd/㎡	１１８．７５ cd/㎡
９	７４．４４５ cd/㎡	８３．６０３ cd/㎡
８	３７．１７２ cd/㎡	４１．３５８ cd/㎡
７	１８．５２７ cd/㎡	２０．７９９ cd/㎡
６	９．２０５ cd/㎡	１０．３０２ cd/㎡
５	４．６２２ cd/㎡	５．２１０ cd/㎡
４	２．３６５ cd/㎡	２．６５２ cd/㎡

次回検定　　２００７年　２月

株式会社　ニコン

e.g.

$$\frac{168.89 \times \boxed{1365.2\text{cd/ m}^2}}{256\ \text{Coefficient}} = \boxed{900\text{cd/ m}^2}$$

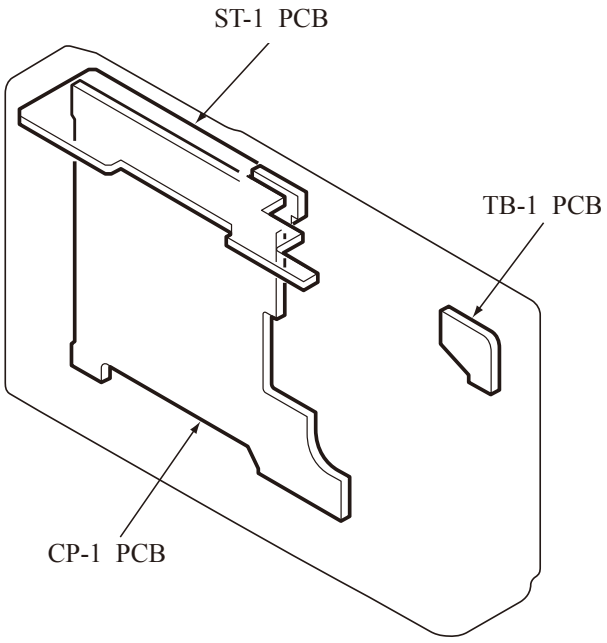
Coefficient

The calculated result corresponds to "EV12.4" of the inspection report.

7. Adjustments required when parts are replaced

	Lens	AWB	CCD black / white dot defect adjustment	Firmware up
Lens unit	○	○	○	×
OPLF	○	○	○	×
LCD unit	×	×	×	×
CA-1 PCB (CCD)	○	○	○	×
CA-1 PCB	○	○	○	○
ST1 PCB	×	×	×	×
TB1 PCB	×	×	×	×

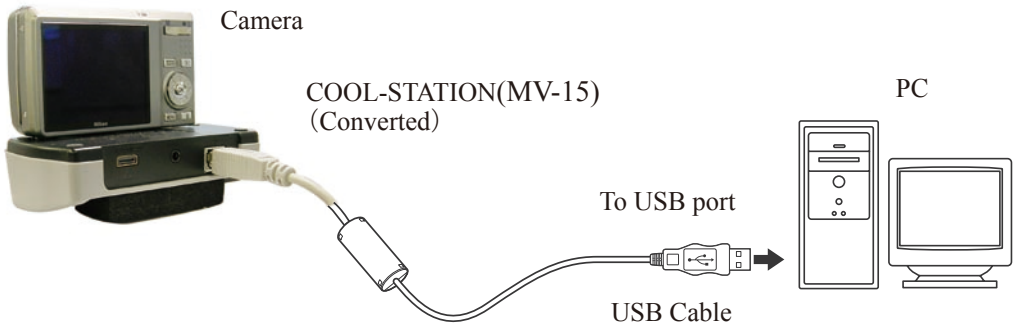
○ Adjustment is necessary. × Adjustment is not necessary.



8. Connecting the camera to the computer

1) Connect the USB cable to COOL-STATION (MV-15)（Converted）.
2) Connect to the USB port of the personal computer.

Caution) Use a fresh battery (EN-EL11) △ (Addition).



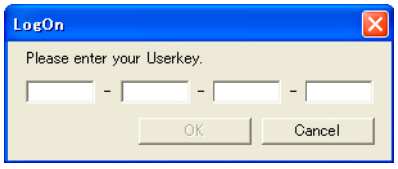
サービス計画課 M

9. Calibration software

- Connect the camera to the personal computer with USB.
- Turn the camera on.
- When the calibration software starts, the following is displayed on the PC monitor.

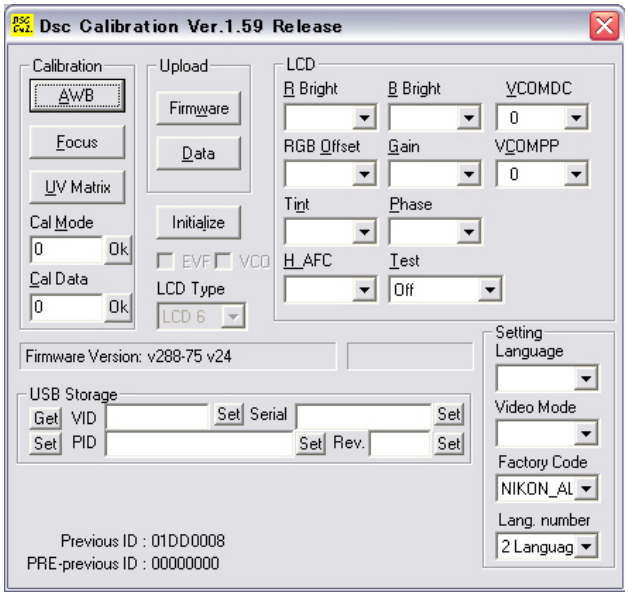
Calibration software

- Input “Userkey”. (Refer to TIE07023.)



- When "Userkey" is correct, the adjustment display appears.

Note: After inputting "Userkey", the adjustment display appears from the first.



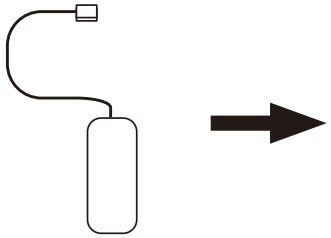
10. Lens adjustment

[Preparations]

- Turn on the power switch of the adjustment collimator (C-DSC) J63090.
- Turn the camera on.

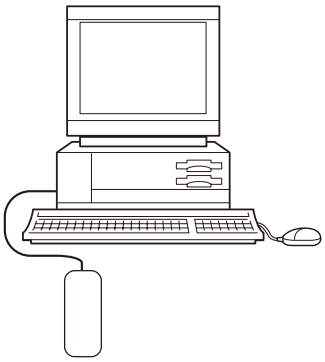
[Conditions]

- Extend the lens all the way out (at TELE position).
- Set "nearest distance" for the distance between the adjustment collimator and camera (front surface of lens).



Connect the one side of the USB cable (UC-E10) △ (Addition) to the camera (without connecting the other side to the PC).

To set the center of the Siemens star chart on the center of the camera screen, check it on the LCD monitor beforehand.

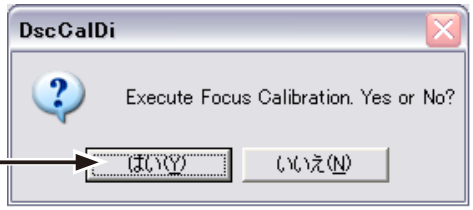


With the power of the camera being ON, connect the USB cable (UC-E10) △ (Addition) to the PC.

[How to adjust]

- Double-click "DscCalDi.exe".
- Click "Focus", then "Yes".
- Lens adjustment value will appear on the screen.

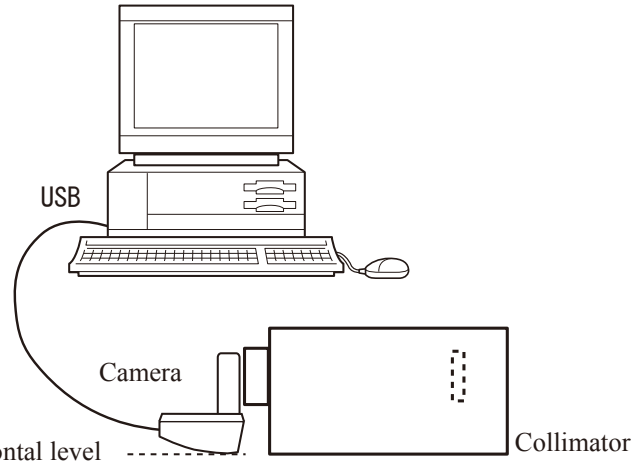
"Yes"

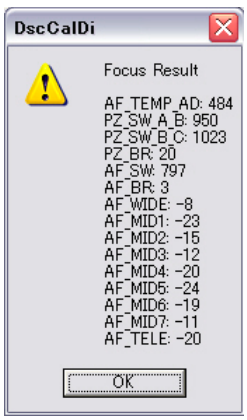


Standard for judgment

AF_TEMP_AD : ATAD	= 326 ≦ ATAD ≦ 897	AF_MID1 : ZM1	= − 111 ≦ ZM1 ≦ 56
PZ_SW_A_B : PZ1	= 892 ≦ (PZ1+PBR) ≦ 992	AF_MID2 : ZM2	= − 137 ≦ ZM2 ≦ 65
PZ_SW_B_C : PZ2	= 962 ≦ (PZ2+PBR) ≦ 1072	AF_MID3 : ZM3	= − 159 ≦ ZM3 ≦ 61
PZ_BR : PBR	= 10 ≦ PBR ≦ 45	AF_MID4 : ZM4	= − 167 ≦ ZM4 ≦ 77
AF_SW : ASW	= 733 ≦ ASW ≦ 823	AF_MID5 : ZM5	= − 176 ≦ ZM5 ≦ 92
AF_BR : ABR	= 0 ≦ ABR ≦ 5	AF_MID6 : ZM6	= − 192 ≦ ZM6 ≦ 101
AF_WIDE : ZW	= − 89 ≦ ZW ≦ 43	AF_MID7 : ZM7	= − 197 ≦ ZM7 ≦ 112
		AF_TELE : ZT	= − 196 ≦ ZT ≦ 89

- Click "OK".





Result of adjustment

11. AWB adjustment

[Preparations]

- Pattern Box (Color temperature: 3100 ± 20K, Luminance: 900 ± 20cd/m^2)

[Conditions]

- Fix the pattern box so that the distance becomes "0cm" between the pattern box and camera (front surface of lens).

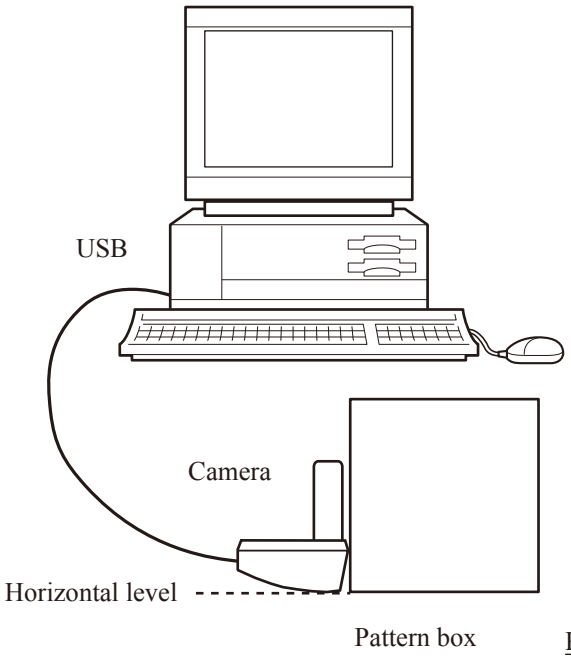
  Note) Do not allow outside light to enter in.

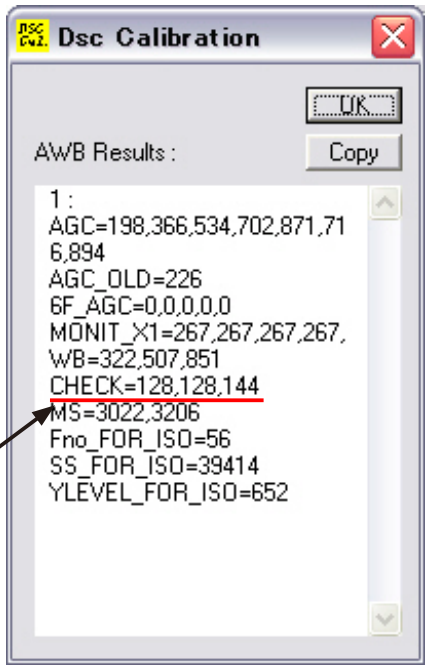
[How to adjust]

- Double-click on "DscCa1Di.exe".
- Click "AWB", then "Yes".
- AWB adjustment values will appear on the screen.

  Judgment standard: CHECK=128 ± 2, 128 ± 2, 130 ± 40
- Click "OK".

"Yes"





Result of adjustment

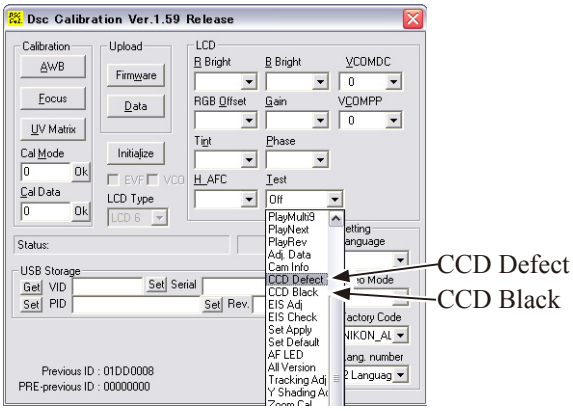
12. CCD white dot defect compensation

[Conditions]

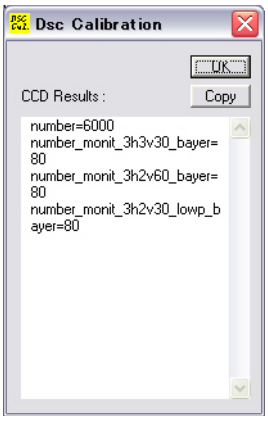
- With the lens shutter being closed, read the defect of CCD pixels. Then, make the correction data and rewrite the data by the following procedure.
  Correct the upper level of defective 6000 pixels from the brightest number of CCD pixels..

[How to adjust]

- Double-click on "DscCa1Di.exe".
- Select "CCD Defect" from Test menu of Calibration Software and click the "OK". Refer to <FIG-1>.
- After adjustment, the adjustment value will appear on the screen. Refer to <FIG-2>.



<FIG-1>



<FIG-2>

Judgmental standard
In case of "NG",
"detect_ng" will appear.

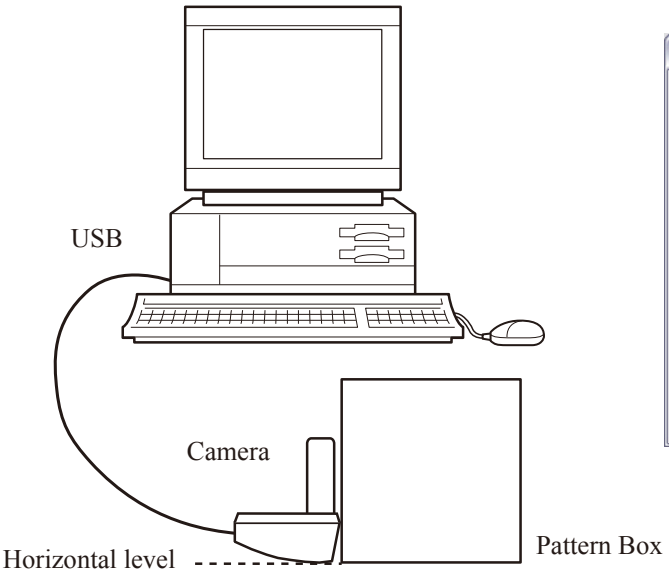
13. CCD black dot/white dot defect adjustment

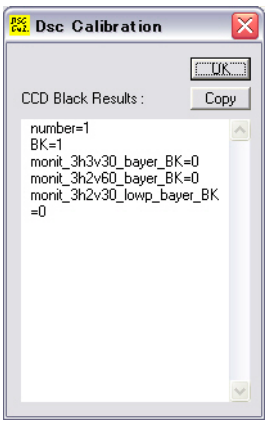
[Conditions]

- Fix the camera so that only the white part of the pattern box must be displayed on the screen. (Prevent the outside light from entering as far as circumstances allow.)
- With the lens shutter being opened, read the defect (black dots) of CCD pixels. Then, make the correction data and rewrite the data by the following procedure.
  Correct the upper level of defective 256 pixels (black dots in bright place) of CCD pixels.

[How to adjust]

- Double-click on "DscCa1Di.exe".
- Select "CCD Black" from "Test" and then click "Yes". Refer to <FIG-1>.
- After adjustment, the adjustment value will appear on the screen. Refer to <FIG-3>.





<FIG-3>

Judgmental standard
In case of "NG", "detect_ng BLACK".

14. USB storage information registration

USB storage data is important when the camera is connected to a computer via a USB connection.

If there are any errors in the USB storage data, or if it has not been registered, the USB specifications will not be satisfied, so always check and register the USB storage data.

[How to adjust]

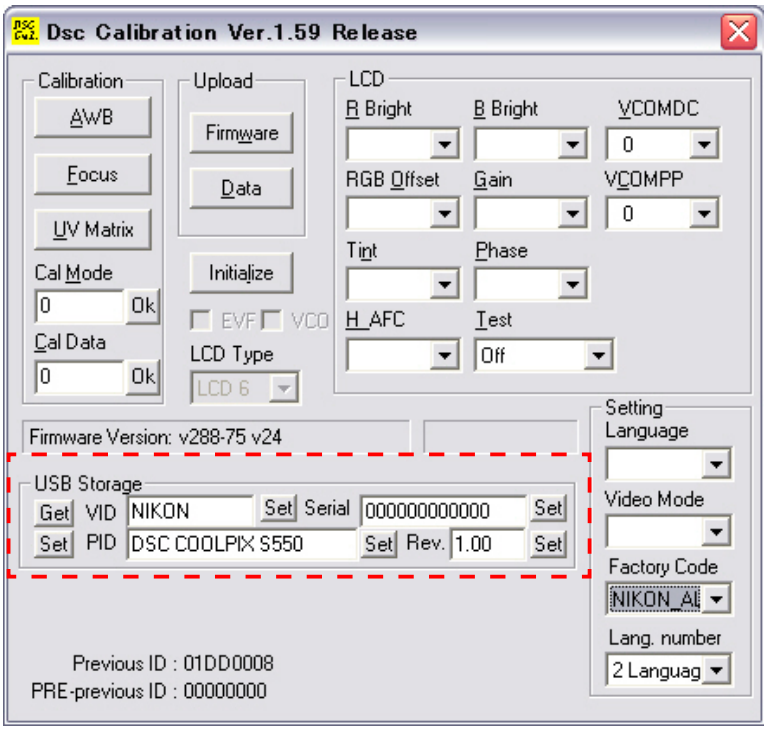
1. Connect the camera to a computer.
2. Double-click on the "DscCa1Di.exe".
3. Click on the "Get" button in the USB storage window and check the USB storage data.

   VID: NIKON

   PID: DSC COOLPIX S550

   Serial:

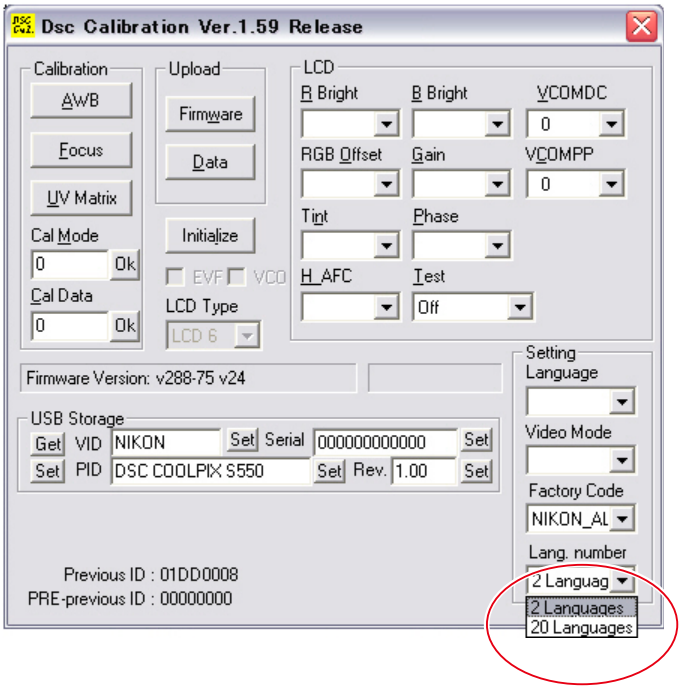
   Rev. : 1.00
4. Check the "Serial" in the above USB storage data. If the displayed value is different from the serial number of the camera bottom, enter the number of the camera bottom, and click the "Set" button.
5. Check VID and Rev. entries in the USB storage data. If any of them are different from the values in the above 3., enter the details of 3. and click the "Set" button.

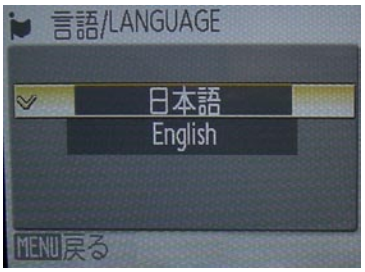


15. Language setting

"Lang, number" enables to select either "2 Languages" or "20 Languages".

Caution) Select "2 Languages" for Japanese models.





2 languages

20 languages

16. Factory default

How to set:

1. Provide power via battery or AC adapter. （Card is not necessary.）
2. Turn camera ON.
3. Press "MODE" button. Set to "AUTO" by rotary multi-selector.
4. Turn camera OFF.
5. While pressing "MENU" button, set the zoom lever to "W" or "T". In this state, turn power ON.
6. After the start-up, turn camera OFF.

Setting the factory default is completed. If the power is turned to ON for the next time, the screen for setting language will appears.

1. OUTLINE OF CIRCUIT DESCRIPTION

1-1. CCD CIRCUIT DESCRIPTION

1. IC Configuration

The CCD peripheral circuit block basically consists of the following ICs.
IC913 (ICX665SQC) CCD imager
IC905 (ADDI7000BCPZRL) CDS, AGC, A/D converter,
H driver
IC901 (LR366877) V driver

2. IC913 (CCD)

Interline type CCD image sensor
Optical size 1/2.3 type
Effective pixels 3264 (H) x 2448 (V)
Pixels in total 3336 (H) x 2484 (V)
Optical black
Horizontal (H) direction: Front 6 pixels, Rear 39 pixels
Vertical (V) direction: Front 12 pixels, Rear 2 pixels
Dummy bit number Horizontal : 14

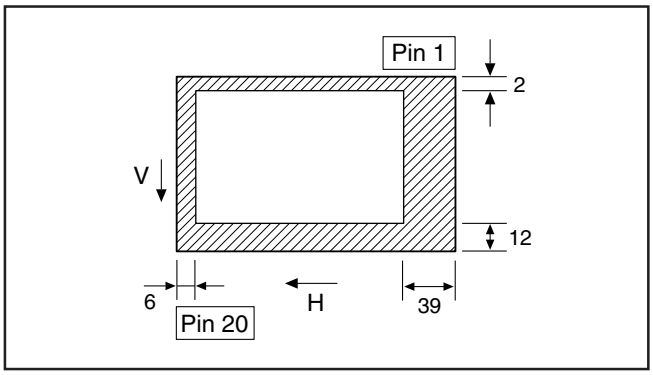


Fig. 1-1.Optical Black Location (Top View)

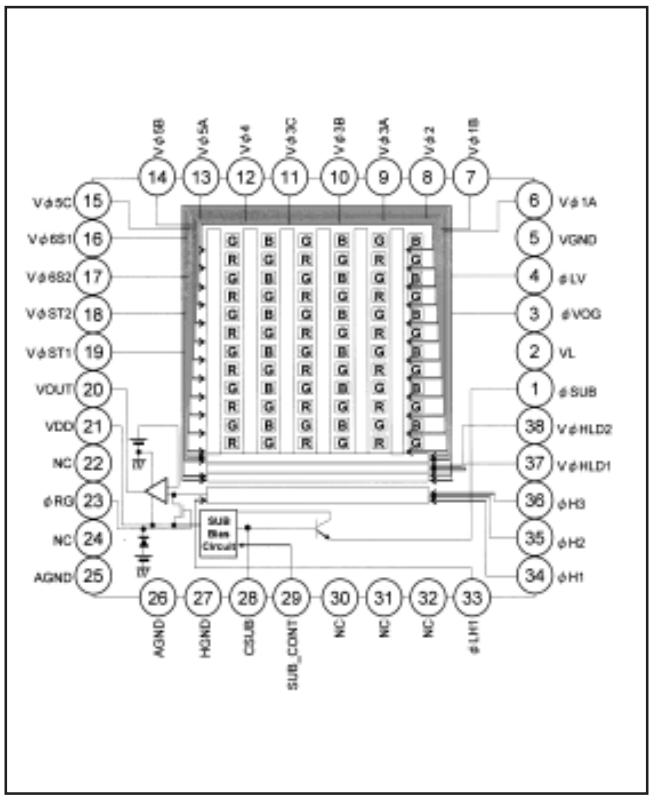


Fig. 1-2. CCD Block Diagram

Pin No.	Symbol	Pin Description	Pin No.	Symbol	Pin Description
1	øSUB	Substrate clock	20	V_{OUT}	Signal output
2	V_L	Protection transistor bias	21	V_{DD}	Circuit power
3	øVOG	Vertical register end stage control clock	22	NC	NC
4	øLV	Vertical - holizontal shift clock	23	øRG	Reset gate clock
5	VGND	Pixel area GND	24	NC	NC
6	$V_{Ø1A}$	Vertical register transfer clock	25	AGND	Circuit GND
7	$V_{Ø1B}$	Vertical register transfer clock	26	AGND	Circuit GND
8	$V_{Ø2}$	Vertical register transfer clock	27	HGND	Horizontal transfer register GND
9	$V_{Ø3A}$	Vertical register transfer clock	28	CSUB	Substrate bias
10	$V_{Ø3B}$	Vertical register transfer clock	29	SUB_CONT	Substrate bias control
11	$V_{Ø3C}$	Vertical register transfer clock	30	NC	NC
12	$V_{Ø4}$	Vertical register transfer clock	31	NC	NC
13	$V_{Ø5A}$	Vertical register transfer clock	32	NC	NC
14	$V_{Ø5B}$	Vertical register transfer clock	33	øLH1	Horizontal register end stage transfer clock
15	$V_{Ø5C}$	Vertical register transfer clock	34	øH1	Horizontal register transfer clock
16	$V_{Ø6S1}$	Vertical register transfer clock	35	øH2	Horizontal register transfer clock
17	$V_{Ø6S2}$	Vertical storage control clock 2	36	øH3	Horizontal register transfer clock
18	$V_{ØST2}$	Vertical storage control clock 2	37	$V_{ØHLD1}$	Vertical signal hold clock 1
19	$V_{ØST1}$	Vertical storage control clock 1	38	$V_{ØHLD2}$	Vertical signal hold clock 2

Table 1-1. CCD Pin Description

3. IC905 (H Driver) and IC901 (V Driver)

An H driver and V driver are necessary in order to generate the clocks (vertical transfer clock, horizontal transfer clock and electronic shutter clock) which driver the CCD. IC901 is a V driver, and the XV1-XV15 signals which are output from IC101 are the vertical transfer clocks, and the XSG signal which are output is superimposed at IC901 in order to generate a ternary pulse. In addition, the XSUB signal which is output from IC101 is used as the sweep pulse for the electronic shutter. H driver has inside IC905 and generate H1, H2, H3 and RG clock at IC905.

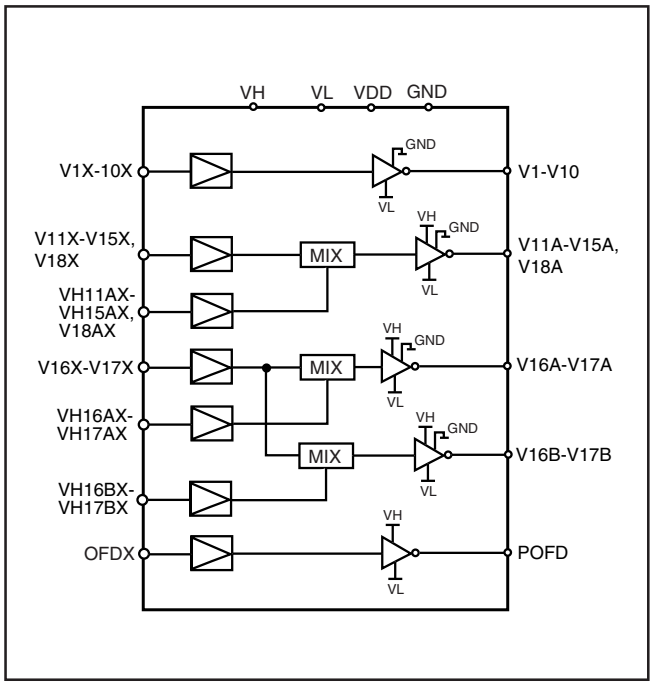


Fig. 1-3. IC901 Block Diagram

4. IC905 (CDS, AGC Circuit and A/D Converter)

The video signal which is output from the CCD is input to pins (25) of IC905. There are inside the sampling hold block, AGC block and A/D converter block. Settings of sampling phase and AGC amplifier is carried out by serial data of pins (32), (33) and (34). The video signal is converted A/D converter, and output to LVDS.

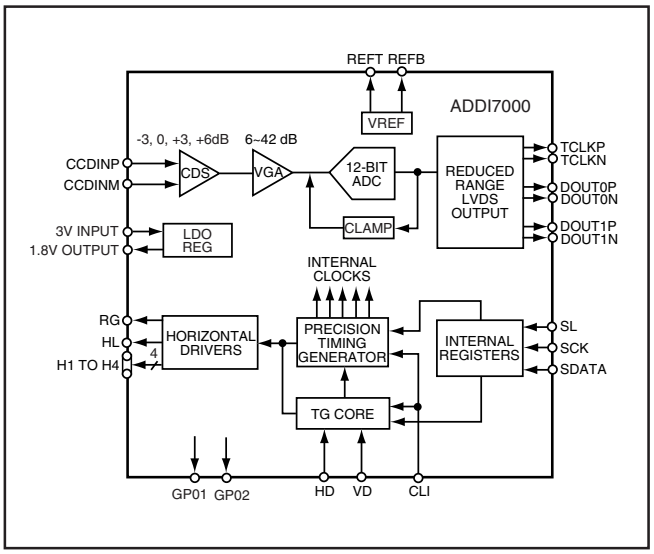


Fig. 1-4. IC905 Block Diagram

1-2. CP1 CIRCUIT DESCRIPTION

1. Circuit Description

1-1. Signal processor (SIG)

1. Signal preprocessing block

This block processes the raw data for the CCD.

2. Color synchronization block

This block color synchronizes the raw data and converts it to YUV.

3. YUV processing block

This block carries out luminance correction and generates the Y, Cu and Cv signals.

4. Zoom processing block

This block carries out processes such as zoom processing for the Y, Cu and Cv signals.

1-2. BUF-A

After the data is received from signal processing (SIG), it is converted into data arrays for each mode, and then a write request to the SDRAM is output to the SDRAM control. The BUF-A is further divided into the BUF-A1 block, BUF-A2 block and BUF-A3 block.

1-3. BUF-D

The data is read from the SDRAM and converted to data arrays for each mode and is then output to signal processing.

1-4. AE/AWB and AF calculation circuit (AEAF)

When the data is received from signal processing (SIG), evaluation values are calculated for AF and for AE/AWB, and then it is written to each of the 16 horizontal areas in the SDRAM via the SDRAM control.

1-5. BUF-BC

The image data and the character data for the OSD (On Screen Displays) are read from the SDRAM and displayed on the monitor and the LCD.

1-6. SDRAM Ctrl

This controls the SDRAM access requests.

1-7. BUF-E/BUF-F and JPEG controller

This carries out compression and expansion of JPEG data and outputs write and read requests to the SDRAM.

1-8. TGSG

The TG is the signal generator which drives the CCD (10 million pixels) and carries out drive mode control.
The SG is the signal generator which creates the reference for the video sync signals.

1-9. SIES

This block carries out image stabilizer compensation, image rotation and pixel mixing.

2. Outline of Operation

When the shutter opens, the serial signals (“take a picture” commands) from the 8-bit microprocessor is input to ASIC (IC101) and operation starts. When the TG/SG drives the CCD, picture data passes through the A/D and CDS, and is then input to the ASIC as 12-bit digital signal. The AF, AE, AWB, shutter, and AGC value are computed from this data, and three exposures are made to obtain the optimum picture. The data which has already been stored in the SDRAM is read by the CPU and color generation is carried out. Each pixel is interpolated from the surrounding data as being either R, G and B primary color data to produce R, G and B data. At this time, correction of the lens distortion which is a characteristic of wide-angle lenses is carried out. After AWB and γ processing are carried out, a matrix is generated and aperture correction is carried out for the Y, V and U signals, and the data is then compressed by the JPEG method by (JPEG) and is then written to card memory (SD card).
When the data is to be output to an external device, it is taken data from the memory and output via the USB. When played back on the LCD and monitor, data is transferred from memery to the SDRAM, and the data elongated by JPEG decorder is displayed over the SDRAM display area.

3. LCD Block

The LCD display circuit is located on the CP1 board, and consists of components such as a power circuit and VCOM control circuit.
The signals from the ASIC are 8-bit digital signals, that is input to the LCD directly. The 8-bit digital signals are converted to RGB signals inside the LCD driver circuit. The LCD is input signals from ASIC directly to the LCD, and function such as image quality are controlled.
In addition, the timing pulses for signals other than the video signals are also input from the ASIC directory to the LCD.

4. Lens drive block

4-1. Zoom drive

The zoom drive signals (ZOUT1 and ZOUT2) are output from the motor driver IC (IC951) by parallel signals (ZIN1 and ZIN2) which is output from the ASIC (IC101). The DC motor is used to drive by these drive signals, and then zooming lens is operating. Detection of the standard zooming positions is carried out by the ASIC (IC101) detecting the signal (ZPROUT) from the photointerruptor inside the lens block. Also, getting of the zooming positions is carried out by the ASIC (IC101) counting the photointerruptor (ZPIOUT).

4-2. Focus drive

The focus drive signals (FOUT_A+, FOUT_A-, FOUT_B+ and FOUT_B-) are output from the motor driver IC (IC951) by serial data signals (LENS_SD, LENS_CK and LENS_EN) which is output from the ASIC (IC101). The stepping motor is used to drive by these drive signals, and then focusing lens is operating. Detection of the standard focusing lens positions is carried out by the ASIC (IC101) detecting the signal (FPIOUT) from the photointerruptor inside the lens block.

4-3. Iris drive

The drive signals (IOUT1 and IOUT2) are output from the motor driver IC (IC951) by iris drive signals (IIN1 and IIN2) which is output from the ASIC (IC101). The moving coil motor is used to drive by these drive signals, and then used to drive the iris steps.

4-4. Shutter drive

The drive signals (SOUT1 and SOUT2) are output from the motor driver IC (IC951) by shutter drive signals (SIN1 and SIN2) which is output from the ASIC (IC101). The moving magnet motor is used to drive the shutter constant by these drive signals, and then mecha shutter is opened and closed.

1-3. PWA POWER CIRCUIT DESCRIPTION

1. Outline

This is the main power circuit, and is comprised of the following blocks.
Switching power control IC (IC501)
Boost 5.0 V output system (L5301)
Digital VDD3 output system (L5002)
Digital VDD1.2 output system (L5003)
Analog -7.5 V (A) output system (L5004, Q5004)
Analog +12 V (A) output system (L5005, Q5001, Q5003)
Backlight output system (L5007, Q5007, Q5008)
Analog +3.5 V (A) output system (IC502)
Digital VDD1.8 output system (IC501 built-in LD0)

2. Switching Power Controller (IC501)

This is the basic circuit which is necessary for controlling the power supply for a PWM-type switching regulator, and is provided with eight built-in channels.
PWM/PFM switching step-up circuit …… 1 (ch_1)
PWM drive step-up/step-down circuit …… 1 (ch_2)
PWM drive step-down circuit …… 1 (ch_3)
PWM drive inverter circuit …… 1 (ch_4)
PWM drive step-up circuit ..... 2 (ch_5 and ch_7)
PWM drive step-up/step-down switching circuit …… 1 (ch_6)
Variable regulator …… 1 (ch_8 and ch_9)
Only ch_1 (BOOST 5.0 V), ch_2 (VDD3), ch_3 (VDD1.2), ch_4 (-7.5 V (A)), ch_5 (+13 V (A)), ch_6 (not used), ch_7 (backlight), ch_8 (not used) and ch_9 (VDD1.8) are used.

2-1. Damage Prevention Circuit

When the input detection voltage for the short-circuit protection circuit block drops to the setting value or below as a result of an output short-circuit, the capacitor that is connected to pin (A6) of IC501 starts charging. When the appropriated capacitor has charged, all output is turned off.
It is also equipped with an overheating protection circuit, so that when the element temperature becomes higher than a certain temperature, all output is turned off in the same way as for a short protection circuit. To reset output, remove the cause of the problem and then resend a control signal.

3. BOOST 5.0 V Output System (L5301)

BOOST 5.0 V (5.0 V) is output. Feedback for the output voltage is provided to the switching controller (Pin (B7) of IC501) so that control can be carried out.
While DSC is operating, power is also supplied to IC502 (+3.5 V (A) output).
While DSC is operating, carry out PWM control. While DSC is stopping, switch to PFM control, and the output voltage also drops (3.7 V), provides greater efficiency at times of low loads (only the 8-bit microprocessor is driven).

4. Digital VDD3 Output System (L5002)

VDD3 (3.25 V) is output. Feedback for the output voltage is provided to the switching controller (Pin (F3) of IC501) so that PWM control can be carried out.
While DSC is operating, power is also supplied to IC501 built-in LD0 (VDD1.8).

5. Digital VDD1.2 Output System (L5003)

VDD1.2 V (1.26 V) is output. Feedback for the output voltage is provided to the swiching controller (Pin (C3) of IC501) so that PWM control can be carried out.

6. Analog -7.5 V (A) Output System (L5004, Q5004)

-7.5 V (A) (-7.5 V) is output. Feedback for the output voltage is provided to the switching power controller (Pin (C5) of IC501) so that PWM control can be carried out.

7. Analog +12 V (A) Output System (L5005, Q5001, Q5003)

+13.0 V (A) (13 V) is output. Feedback for the output voltage is provided to the switching power controller (Pin (D5) of IC501) so that PWM control can be carried out.

8. Backlight System Output System (L5007, Q5007, Q5008)

Regular current is being transmitted to LED for backlight. Step-down in the voltage from the LED are feedback to the switching power controller (Pin (C4) of IC501) so that PWM control can be carried out.
The control signal (LCD PWM) from the 8-bit system can be used to adjust the backlight illumination.

9. Analog +3.5 V (A) Output System (IC502)

+3.5 V (A) (3.5 V) is output. It is generated by using the simplicial LD0 (IC502) from the BOOST.

10. Digital VDD 1.8 Output System (IC501 built-in LD0)

VDD 1.8 (1.8 V) is output. It is generated by IC501 built-in LD0 from VDD3. Feedback for the output voltage is provided to the switching power controller (Pin (G2) of IC501) so that the output value can be controlled.

1-4. SYA CIRCUIT DESCRIPTION

1. Configuration and Functions

For the overall configuration of the SYA block diagram, refer to the block diagram. The SYA block centers around a 8-bit microprocessor (IC301), and controls camera system condition (mode). The 8-bit microprocessor handles the following functions.
1. Operation key input, 2. backup and clock control in case of no battery, 3. Power ON/OFF control, 4. Storobe condensor charge control, 5. Card, USB and AV jack detection, 6. LED lighting control.

Pin	Signal	I/O	Outline
1	SCK	O	Serial clock
2	AV JACK	I	AV JACK detection
3	NOT USED	-	-
4	NOT USED	-	-
5	HSCON	O	Gyro sensor high speed charge signal
6	BEEP	O	Buzzer
7	LCD PWM	O	LCD backlight brightness current control
8	NOT USED	-	-
9	VDD2	-	VDD2
10	VSS2	-	VSS2
11	PW_LED (G)	O	Power LED ON/OFF control
12	BACK_LED (R)	O	Back LED (red) ON/OFF control
13	MAIN RESET	O	System reset
14	NAND RESET	O	OneNAND reset
15	SCAN IN0	I	Keymatrix input
16	SCAN IN1	I	Keymatrix input
17	PW_ON	I	POWER key detection
18	PLAY	I	PLAY key detection
19	UTX	O	Debugger
20	NOT USED	-	-
21	WIDE	I	ZOOM WIDE key detection
22	TELE	I	ZOOM TELE key detection
23	NOT USED	-	-
24	NOT USED	-	-
25	OK	I	OK key detection
26	SHUTTER 1st	I	Shutter 1st detection
27	P ON	O	D/D converter (digital system) ON/OFF signal
28	PLLEN	O	PLL oscillation ON/OFF control
29	USB_CNT	I	USB insertion detection
30	SCAN IN3	I	Keymatrix input
31	SCAN IN2	I	Keymatrix input
32	SCAN OUT2	O	Keymatrix output
33	SCAN OUT1	O	Keymatrix output
34	SCAN OUT0	O	Keymatrix output
35	VSS3	-	VSS3
36	VDD3	-	VDD3
37	(DBGP2)	-	Terminal for on-tip debugger
38	(DBGP1/CLK)	-	Terminal for on-tip debugger
39	(DBGP0/DATA0)	-	Terminal for on-tip debugger
40	NOT USED	-	-
41	NOT USED	-	-
42	CARD	I	SD card detection
43	CARD ON	O	Card part pull-up power

44	CHG_ON	O	Strobo charge control
45	COMREQ/ZBOOT	I	Command request
46	BACKUP_CTL	O	Backup battery charge control
47	NOT USED	-	-
48	BAT_TEMP	I	Battery temperature detection
49	BAT_OFF	I	Battery OFF detection signal input
50	SREQ	I	Serial communication request signal
51	SHUTTER 2nd	I	Shutter 2nd detection
52	NOT USED	-	-
53	RESET	I	Backup reset detection
54	XCIN	I	Clock oscillation terminal for clock (32.768 kHz)
55	XCOUT	O	Clock oscillation terminal for clock (32.768 kHz)
56	VSS1	-	VSS1
57	NOT USED	-	-
58	NOT USED	-	-
59	VDD1	-	VDD1
60	BATTERY	I	Battery voltage detection
61	VMONIT	I	Main condensor charging voltage detection
62	TEMP	-	Camera (SD) temperature detection
63	SO	O	Serial data output
64	SI	I	Serial data input

Table 4-1. 8-bit Microprocessor Port Specification

2. Setting of external port and communication

The SYA block carries out overall control of camera operation by detecting the input from the keyboard and the condition of the camera circuits. The 8-bit microprocessor reads the signals from each sensor element as input data and outputs this data to the camera circuits (ASIC) as operation mode setting data. Fig. 4-1 shows the internal communication between the 8-bit microprocessor and ASIC.

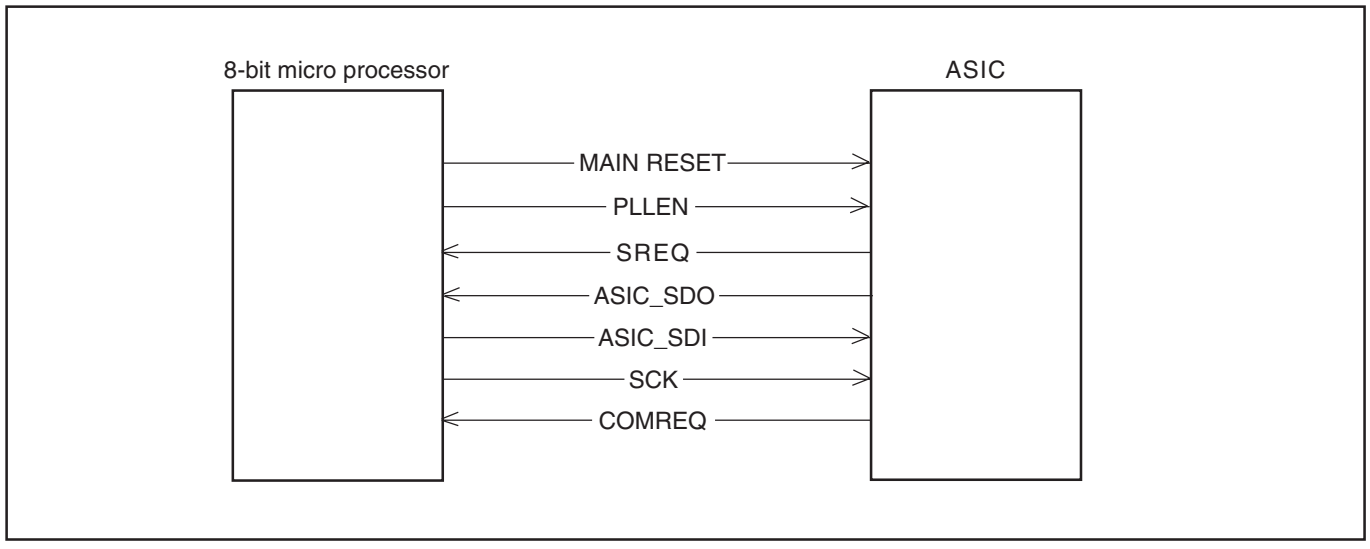


Fig. 4-1 Internal Bus Communication System

3. Key Operaiton

For details of the key operation, refer to the instruction manual.

SCAN OUT \ SCAN IN	0	1	2	3
0	RIGHT	UP	MODE	TEST
1	DOWN	LEFT	-	PW_TEST
2	-	DEL	MENU	-

Table 4-2. Key Operation

4. Power Supply Control

The 8-bit microprocessor controls the power supply for the overall system.

The following is a description of how the power supply is turned on and off. When the battery is attached, IC501 is operating and creating 3.9 V (POWER ON: 3.9 V → 5.0 V), a regulated 3.2 V voltage is normally input to the 8-bit microprocessor (IC301) by IC302, clock counting and key scanning is carried out even when the power switch is turned off, so that the camera can start up again.

When the power switch is off, the 8-bit microprocessor halts 4 MHz of the built-in main clock, and operates 32.768 kHz of subclock.

When the battery is removed, the 8-bit microprocessor halts 4 MHz of the built-in main clock, and operates clock counting by 32.768 kHz of sub clock.

Also, the battery for backup is charged 10 hours from it to be attached.

When the power switch is on, the 8-bit microprocessor starts processing. The 8-bit microprocessor first sets the PON signal at pin (27) to High, and then turn on the power circuit. After PON signal is to High, sets external port of ASIC after approximately 40 ms. According to setting of this external port, carry out setting of the operating frequency and oscillation control in the ASIC. Also, it starts communication with ASIC, and confirms the system is operative.

When the through image is operating, set the PAON signal (ASIC) and PAON4 signal (ASIC) to High and then turn on the CCD.

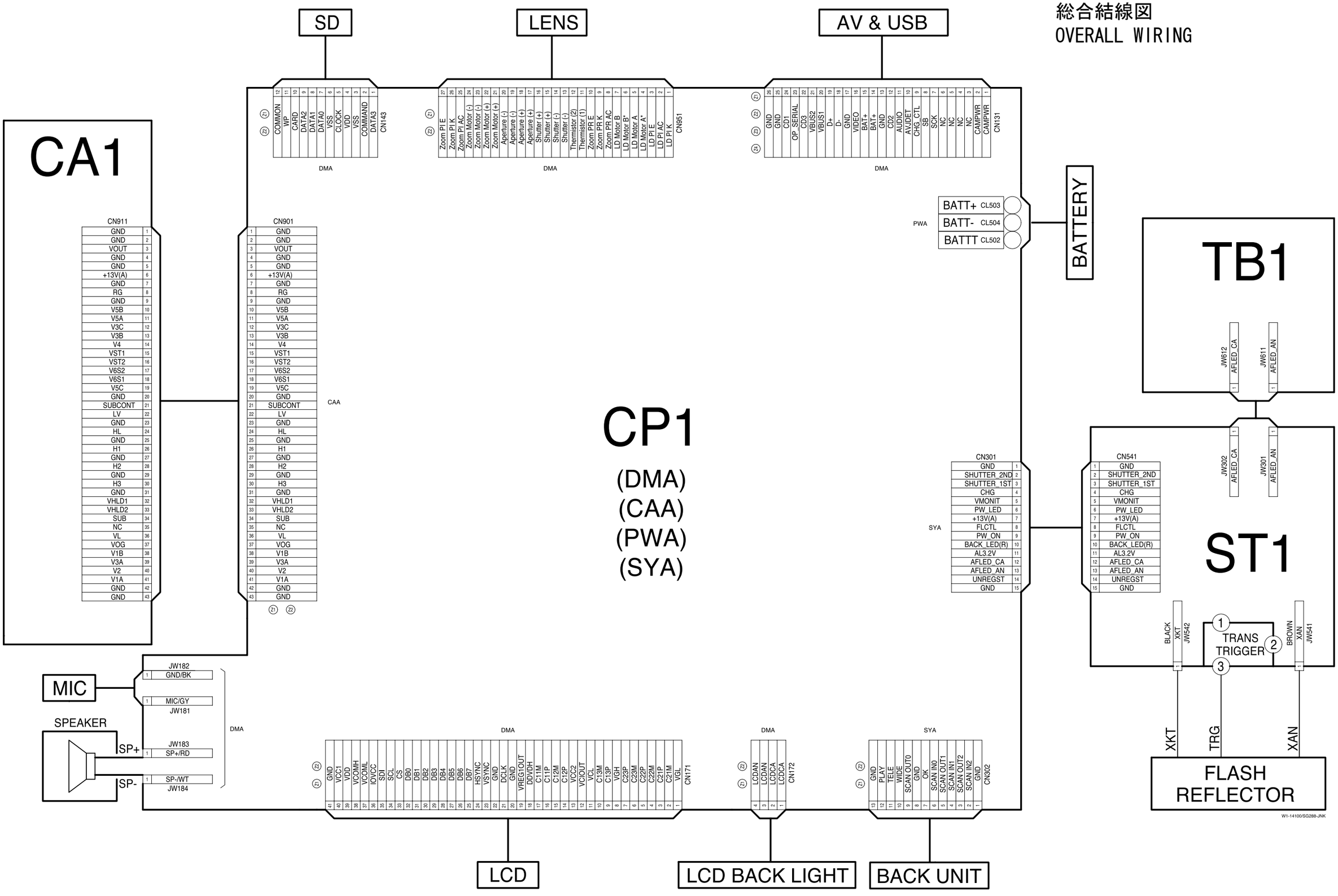
When the through image is playing, set the PAON signal and PAON4 signal to Low and then turn off the CCD. When LCD panel turns on, set BL ON signal (ASIC) to High, and turn on the backlight power.

When the power switch is off, PON, PAON, PAON4 and BLON signals to Low and the power supply to the whole system is halted. The 8-bit microprocessor halts oscillation of the built-in main clock, and set operation mode of clock ocillation.

	ASIC, memory	CCD	8bit CPU	LCD MONITOR
Power supply voltage	1.2 V, 1.8 V 3.2 V	13.0 V, -7.5 V 3.5 V	3.2 V	3.25 V
Power OFF	OFF	OFF	32.768 KHz	OFF
Through image	ON	ON	4MHz	ON
Playback mode	ON	OFF	4MHz	ON

Table 4-3. Power supply control

総合結線図
OVERALL WIRING



CP1(DMA) 回路図
CP1(DMA) CIRCUIT DIAGRAM

DMA (MAIN)

IC101
EV2LA
QEV2LA------N

SYSTEM ASIC

DMA (LCD)

DMA (LENS)

IC951
BU2233GU
QBU2233GU---P
LENS DRIVER

IC121
K5W1213LCM-AK75
QXXAGB020---N
H=1.0
13.0X11.5

PROGRAM FLASH
SDRAM

DMA (GYRO)

GYRO SENSOR

REG

IC181
WM8941GEFL-RV
QWM8941GEFL-J
AUDIO CODEC
VIDEO AMP

REG

TO LENS
TO LCD
TO LCD BACK LIGHT
TO MAIN
TO SD
TO SYA
TO PWA
TO CAA
TO GYRO
TO MIC
TO SPEAKER
TO AV & USB

CP1(CAA) 回路図
CP1(CAA) CIRCUIT DIAGRAM

CAA

C1-14100/SG288-JNK

VOLTAGE: VIEW MODE, LCD ON

IC901
LR366877
QLR366877---J
V. DRIVER

IC904
NJM2877F3-03
QNJM2877303P
REG

IC910
QXC6221S09XGP
XC6221S09XG
REG

QAD07000BCPJ
AD07000BCP2RL
IC905
CDS, AGC, A/D C
H. DRIVER

Q9002
EMH4

Q9005
DTC114EM

TO CA1 CN911

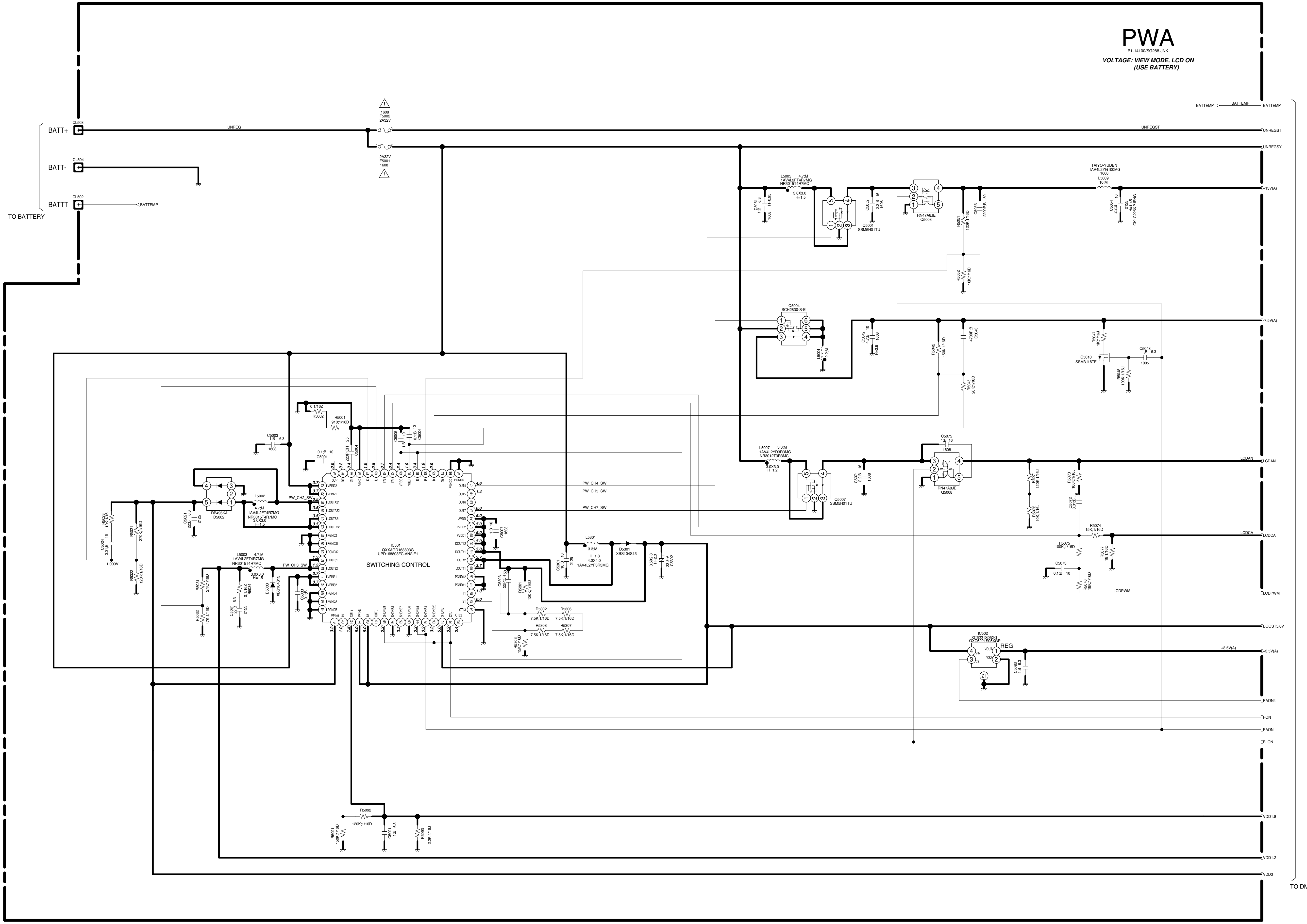
CN901
4/3
1AV4J11VW431G

1	GND
2	GND
3	VOUT
4	GND
5	GND
6	+13V(A)
7	GND
8	RG
9	GND
10	V5B
11	V5A
12	V3C
13	V3B
14	V4
15	VST1
16	VST2
17	V6S2
18	V6S1
19	V5C
20	GND
21	SUBCONT
22	LV
23	GND
24	HL
25	GND
26	H1
27	GND
28	H2
29	GND
30	H3
31	GND
32	VHLD1
33	VHLD2
34	SUB
35	NC
36	VL
37	VOG
38	V1B
39	V3A
40	V2
41	V1A
42	GND
43	GND

TO DMA

TO DMA

CP2(PWA) 回路図
CP2(PWA) CIRCUIT DIAGRAM



CP1(SYA) 回路図
CP1(SYA) CIRCUIT DIAGRAM

SYA
Y1-14100/SG288-JINK

IC301
LC87F2832AUFL64TBM-E
QXXGA0500029P
8bit MICRO PROCESSOR

TO ST1 CN541

CN301
15
LAND_BTOB_03_15_M

GND	1
SHUTTER_2ND	2
SHUTTER_1ST	3
CHG	4
VMONIT	5
PW_LED	6
+13V(A)	7
FLCTL	8
PW_ON	9
BACK_LED(R)	10
AL3.2V	11
AFLED_CA	12
AFLED_AN	13
UNREGST	14
GND	15

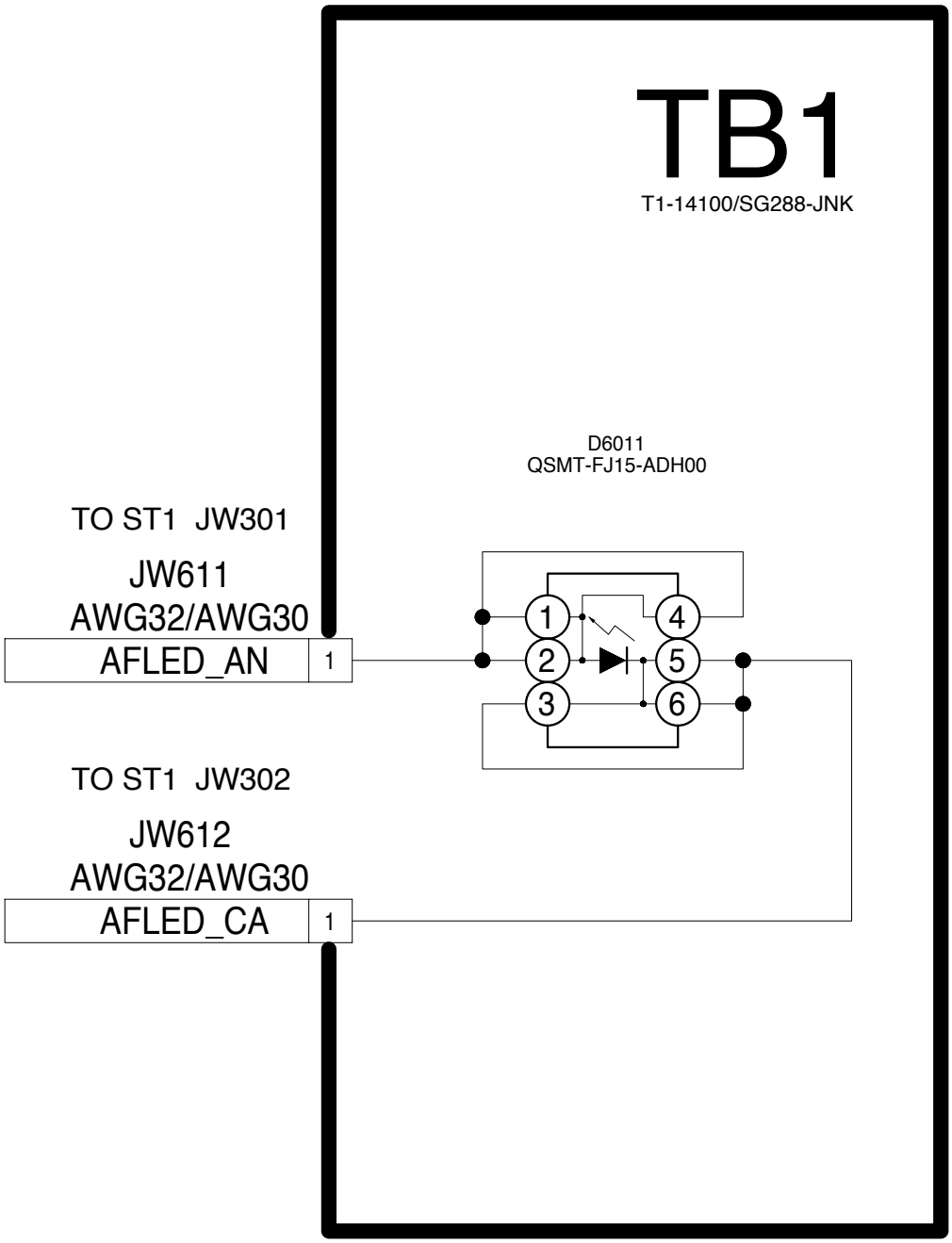
1AV4J11VW131G
13
CN302
TO BACK UNIT

GND	13
PLAY	12
TELE	11
WIDE	10
SCAN OUT0	9
GND	8
OK	7
SCAN IN0	6
SCAN OUT1	5
SCAN IN1	4
SCAN OUT2	3
SCAN IN2	2
GND	1

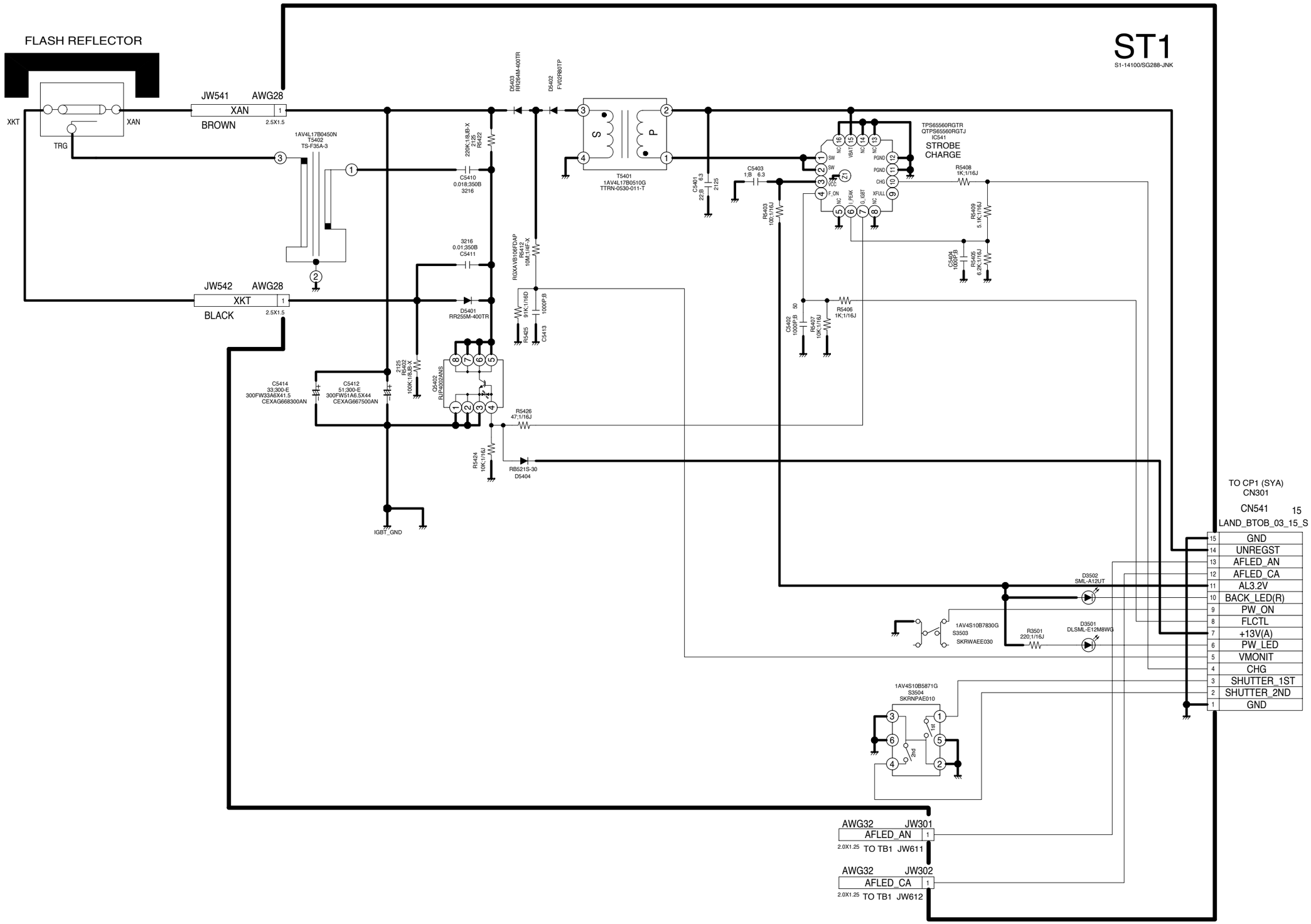
TO DMA

SCAN OUT \ SCAN IN	0	1	2	3
0	RIGHT	UP	MODE	TEST
1	DOWN	LEFT	—	PW_TEST
2	—	DEL	MENU	—

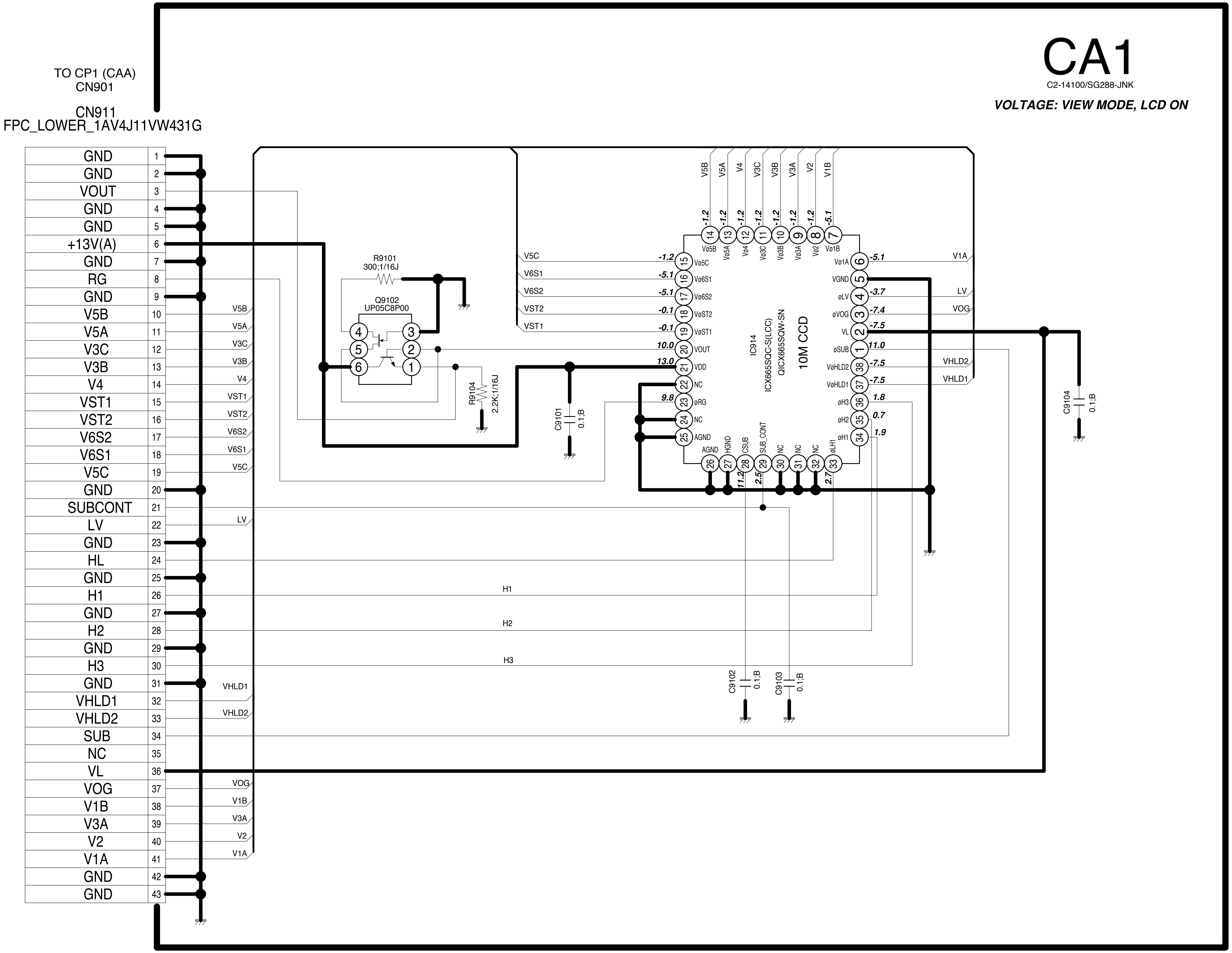
TB1 回路図
TB1 CIRCUIT DIAGRAM



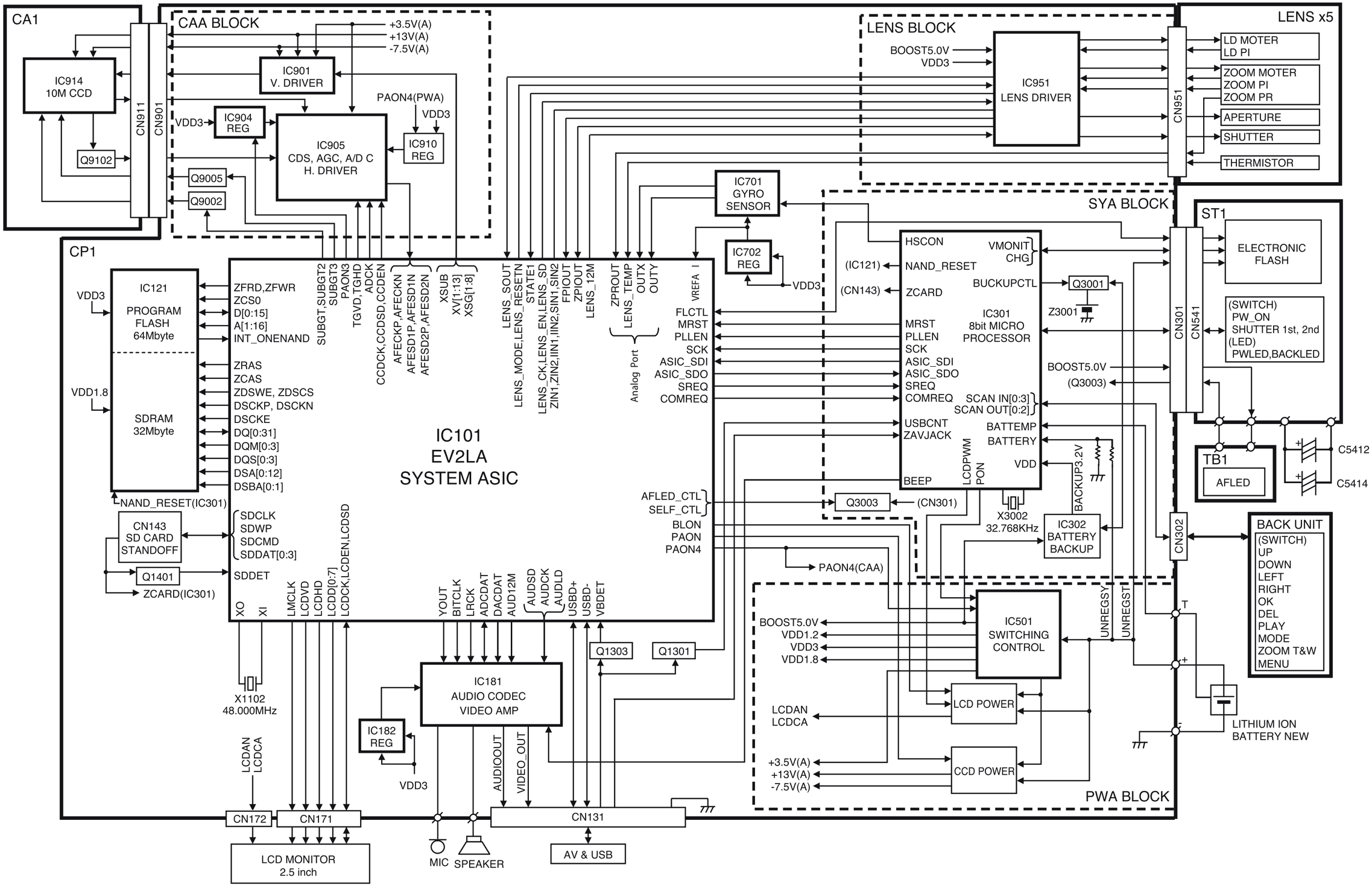
ST1 回路図
ST1 CIRCUIT DIAGRAM



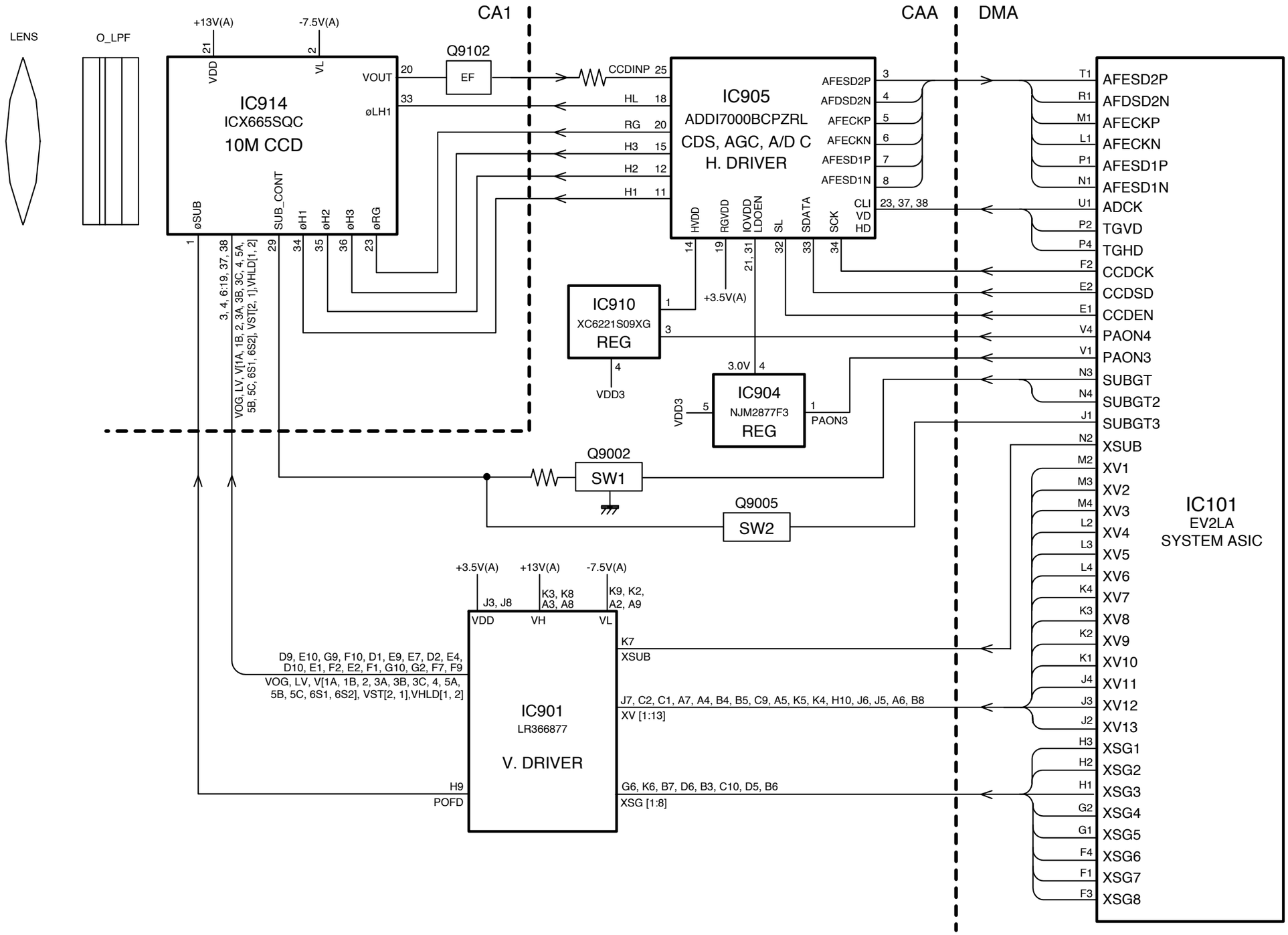
CA1 回路図
CA1 CIRCUIT DIAGRAM



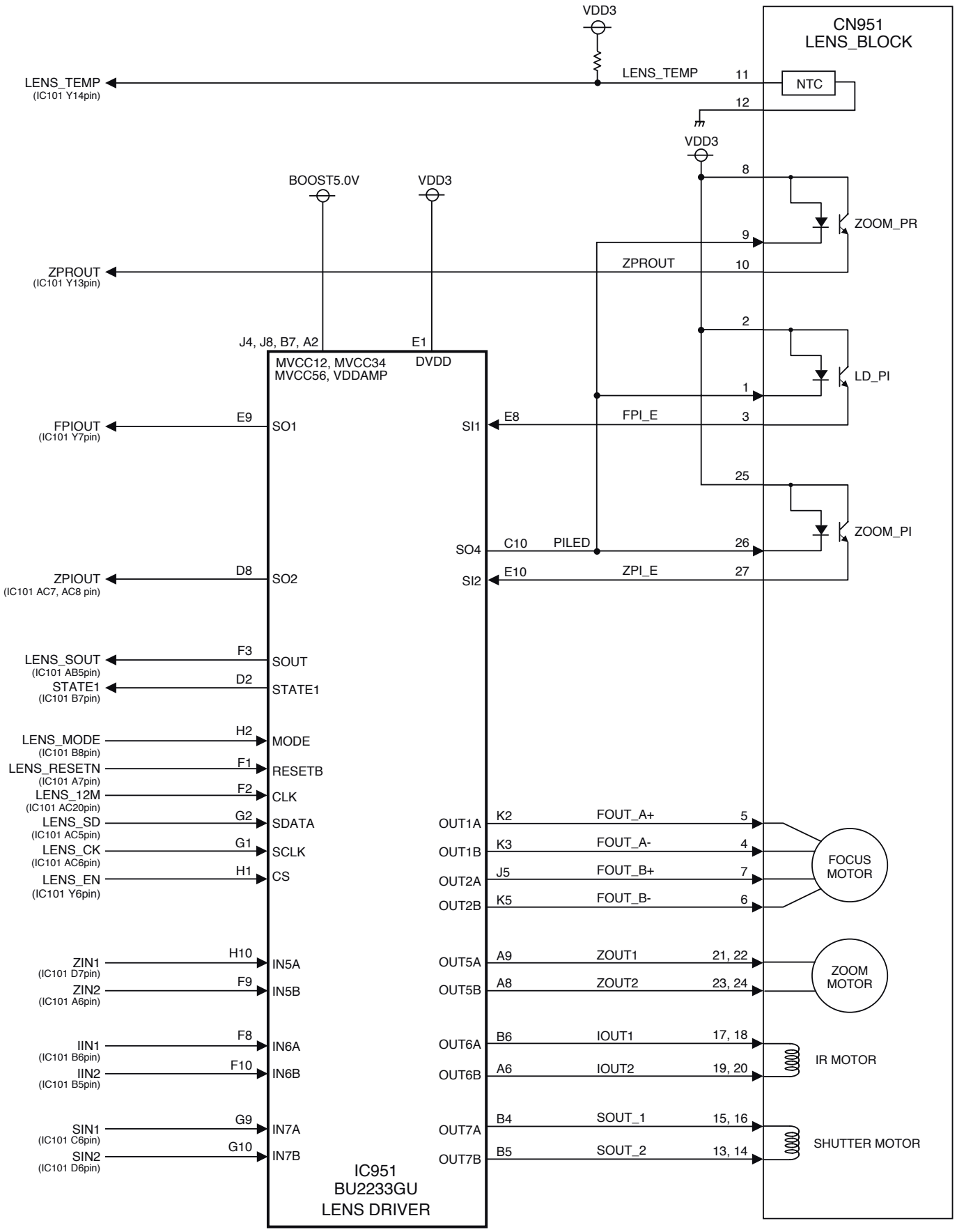
総合ブロック図
OVERALL BLOCK DIAGRAM



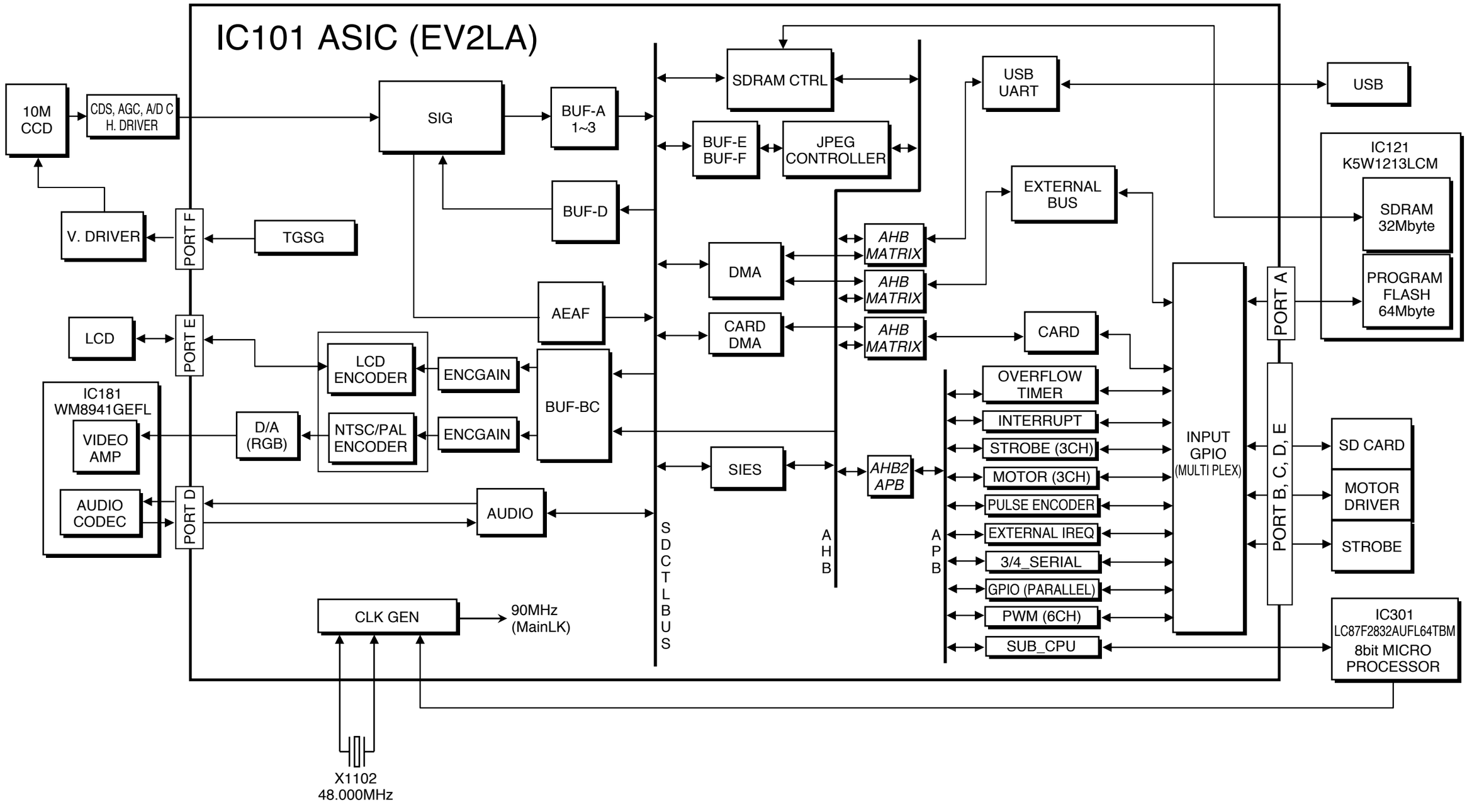
CCD ブロック図
CCD BLOCK DIAGRAM



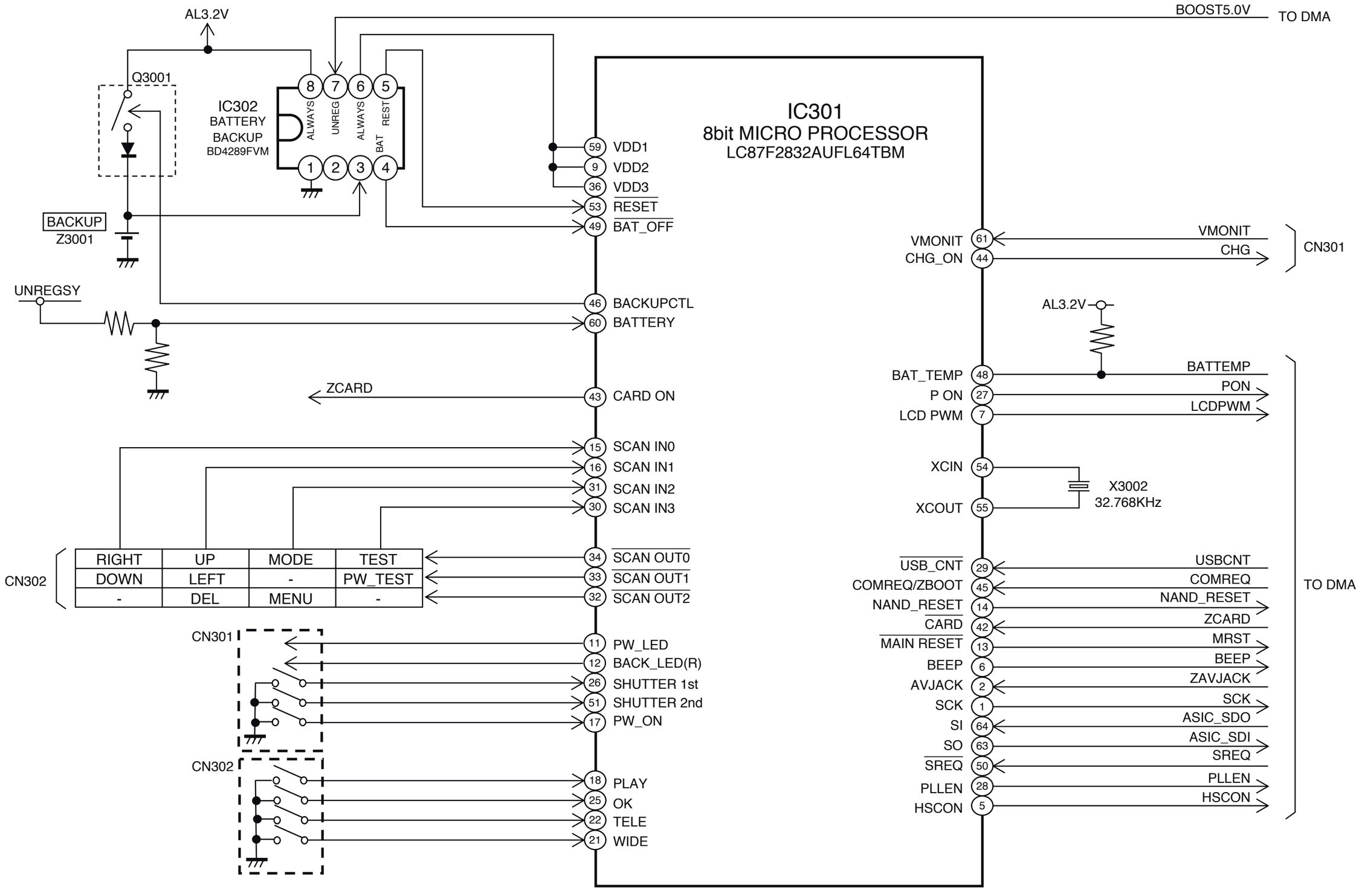
LENS ブロック図
LENS BLOCK DIAGRAM



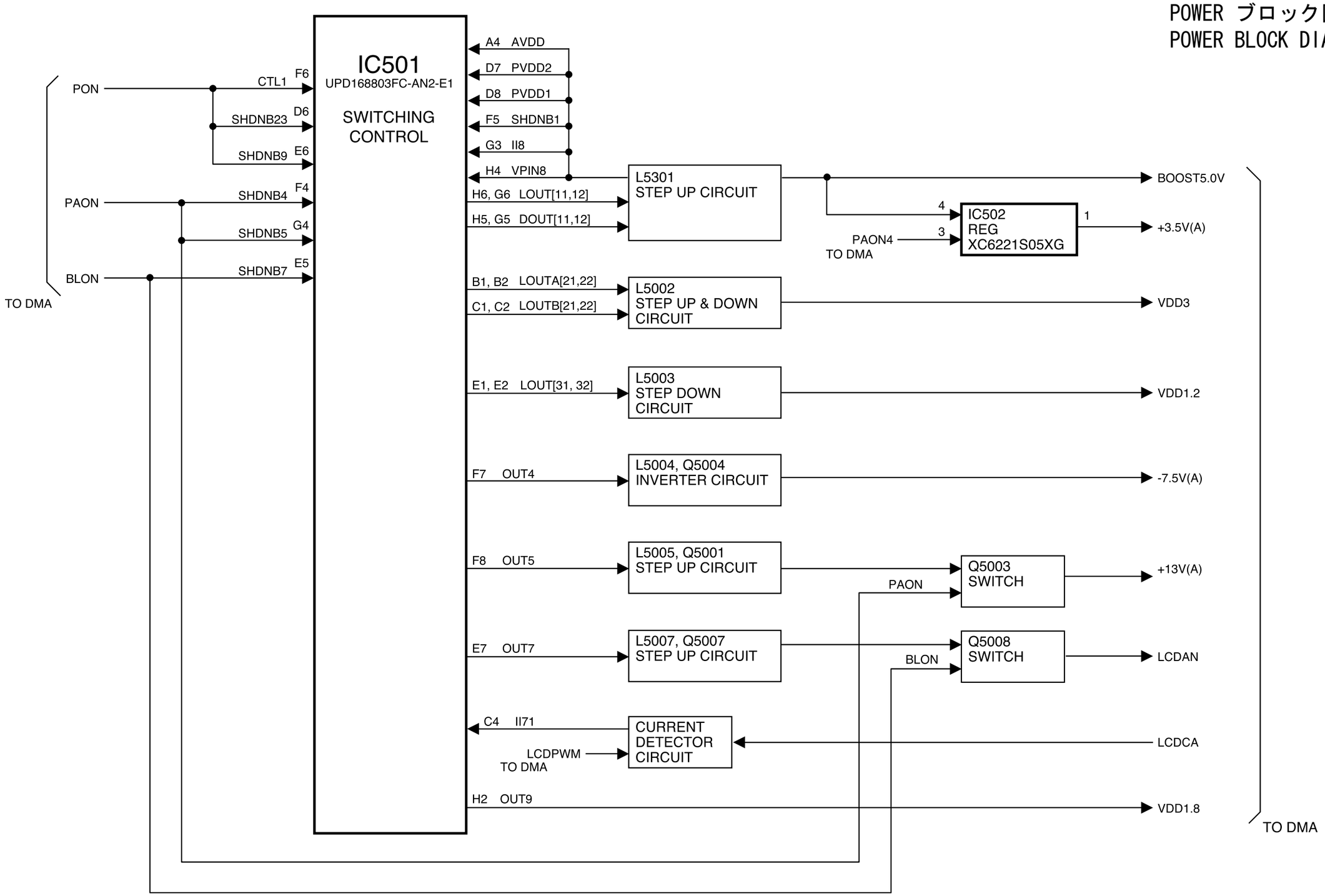
ASIC ブロック図
ASIC BLOCK DIAGRAM



SYSTEM CONTROL ブロック図
SYSTEM CONTROL BLOCK DIAGRAM

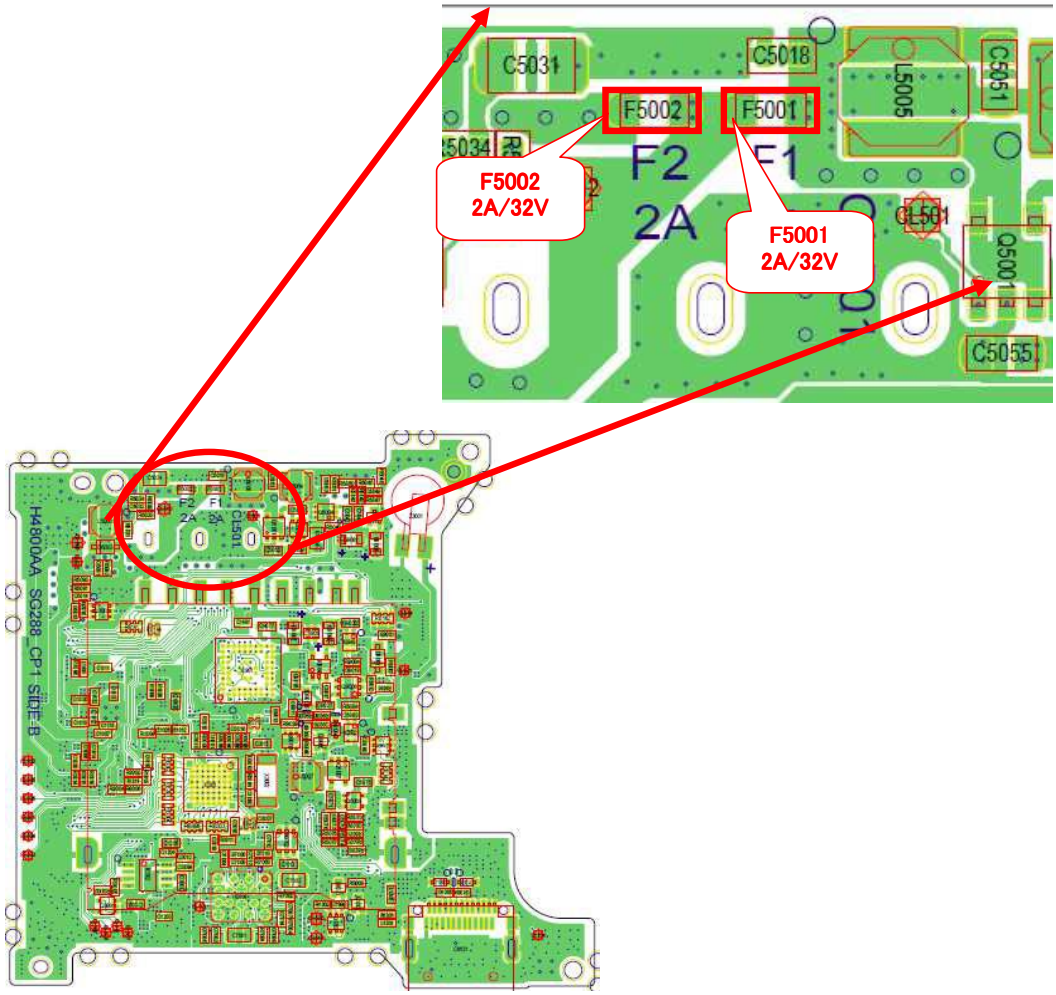


POWER ブロック図
POWER BLOCK DIAGRAM



FUSE ARRANGEMENT

(CP1 PCB / 2 pcs. are used. / All of them are positioned on SIDE-B.)



FUSE	Function of FUSE	Phenomenon when FUSE has blown out	Rating
F5001	Protects when the DC/DC converter circuit malfunctions.	The power is not turned on.	32V/2A
F5002	Protects when the speed light charging circuit malfunctions.	The speed light is not charged.	32V/2A

INSPECTION STANDARDS

Items	Judgment standard	Remarks
External view		
Gap/Difference in height	・General components Gap: 0.2mm or less Difference in height: 0.15mm or less (When the lens-barrel is retracted, gap between the lens-barrel and zoom frame on flattened surface: 0.25mm or less; When the lens-barrel is extended, gap between zoom frame and name plate: 0.2mm or less) ・Top plastic parts & front/rear covers Gap: 0.2mm or less ・Fronc cover & lens-barrel ring Gap: 0.2mm or less ・Front cover and rear cover Difference in height: 0.15mm or less Gap: 0.2mm or less ・When the battery cover is opened/closed: Gap between side cover and the front/rear covers: 0.2mm or less; Gap between front and rear covers at the bottom: 0.3mm or less Difference in height: 0.3mm or less ・When the button is pushed down: No interruption with the surrounding. ・No noticiable gap around the multi-selector button.	Visual check
Lens performance		
Peripheral light reduction	・Against the center of the screen, the luminance of the nearest periphery must be as shown below. WIDE: Infinity 25% or more Close 20% or more TELE: 35% or more Difference between right and left: 35% or less ・Against the picture center, the luminance at 70% of the image height must be 55% or more.	
Ghost/Flare		
Point light source Surface light source	・No outstanding ghost/flare. ・No outstanding flare at the center.	Visual check

Items	Judgment standard	Remarks
Lens performance		
Distortion	・No outstanding deformation [Set value TV distortion (∞) WIDE: −1.6%, TELE: ＋ 0.2%]	Visual check
AF		
Focusing accuracy when AF assist illuminator lights up.	The "min." value in darkness when shooting an object 10 times ・ WIDE Center horizontal: 800 TV lines or more ・ TELE Center horizontal: 800 TV lines or more [Resolution must be measure at WIDE (1.5m) and TELE (1.1m).] ・Focus must be obtained at the distance WIDE (1.9m)/TELE (1.1m).	Siemens chart Photoshop
Metering-capable limit of luminance (max.)	・Metering must be possible under the sunshine (80000 lux. or more)	A chart Luminance meter
Metering-capable limit of luminance (min.)	・Metering must be possible with "BV-1" or more.	Low contrast chart (Difference btwn black and gray: 2.0 − 2.3Ev) Spot meter
Distance metering (ranging)/Focusing time	・Wide end: 400ms or less ・Tele end: 500ms or less	A chart Oscilloscope Stopwatch Spot meter
Shooting with speed light		
Light adjustment accuracy	・Tele-end: 0.3 - 2.2m ・Wide-end: 0.3 - 3.5m In the above range, 0.2 ± 0.5 EV or less (Shooting mode: AUTO, Speed light: Anytime flash)	Standard reflector
Guide No. FULL (ISO100 & 1m)	・5.2 ± 0.4 EV (Charge for 10 seconds with a full charge battery and measure within 1 second.)	Flash meter Battery

Items	Judgment standard	Remarks
Shooting with speed light Recycle time	・Within 6 seconds [Charge a new rechargeable battery for 10 seconds and carry out full-flashing within 1 second. Then, measure the time taken until the speed light LED finishes blinking while pressing lightly the shutter release button.(including the ON/OFF time of the monitor LCD)]	Stop watch Battery
Image quality Resolution in AF (Shoot for the EIAJ chart)	< High quality of image > Center : 1200 TV lines or more. Periphery : 750 TV lines or more. (Shoot on condition that aperture is "open" in the AUTO mode and the image quality priority mode.)	EIAJ chart Photoshop Siemens chart
Resolution in "Macro" (Shoot at "close" distance WIDE and TELE and in the high image quality mode.)	Center : 950 TV lines or more. (Check the resolution at "CLOSE" distance at [WIDE (Z00)10cm, Z01: 15cm, Z02: 20cm, Z03/Z04: 30cm, Z05/Z06: 40cm, Z07 : 50cm, TELE (Z08): 60cm]) (Shoot at in the high image quality mode.)	EIAJ chart Photoshop Siemens chart
Infinity set by manual (Shoot for the whole zoom area in the high image quality mode.)	Center: 950 TV lines (Shoot the infinity collimator-image on condition that aperture is open in the "Distance view"/"Night landscape" scene mode and the image quality priority mode.) (Then, open the recorded image data file through Photoshop and check the resolution visually.)	Infinity chart
AF (10 - 0.3 m) (Shoot for the whole zoom area in the high image quality mode.)	・The resolution must correspond to the following value in the whole zoom area. Standard of image quality at AF (10 -0.3 m): 1150 TV lines	Photoshop Siemens chart
AF (0.3 - 0.04 m) (Shoot for the whole zoom area in the high image quality mode.)	・The resolution must correspond to the following value in the whole zoom area. ・Center horizontal/vertical: 1000 TV lines (Measure the TV resolution lines at center.) (Check each posture and the difference of zoom reciprocation.)	

Items	Judgment standard	Remarks
Image quality		
"Out of focus"	・The resolution must correspond to the following value in the whole zoom area. Center horizontal/vertical: 1000 TV lines (Measure the TV resolution lines at center.) (Check each posture and the difference of zoom reciprocation.) [Put a chart at the distance of 2m, set it in the out of focus condition and shoot it. (Use a white paper to set it in the out of focus condition.)]	EIAJ chart Photoshop Siemens chart
Gradation/luminance level	[Histogram's gray average value] ・Black: 10 ± 5 Gray: 145 ± 10 White: 220 ± 15	5100K viewer ITE γ 0.45 Gray scale (standard) Photoshop
Noise	[Histogram's standard deviation] ・ISO64 Noise (Max. value of standard deviates of each R, G, B, and Y): 3.5 or less ・ISO400 Noise (Max. value of standard deviates of each R, G, B, and Y): 6.0 or less ・In AUTO mode and the image quality priority mode, set the scale to 5100K viewer with a full range of angle of view, then set AF lock and shoot an object by defocusing. ・Open the recorded image data file through Photoshop and pick up a measurement section with the each color (its central area 64 × 64 pixels) with the rectangle selector tool. ・Read the average of luminance of histogram. ・Measurement section Luminance level: Upper left 1 step (black), upper left 6 steps (gray), Center (white), lower left 6 steps (gray), lower left 11 steps (black) Noise: Max. value of standard deviates of each R, G, B, and Y of all the patches of the chart.	

Items	Judgment standard	Remarks
Image quality		
Reproduction of color	(1) Put the image mode back on the initial setting. (2) Set "Macbeth" chart in the standard light-source equipment Setting position: Approx. 25cm-distance from the bottom of the equipment to the center of the chart (3) Set ISO sensitivity to "64". (4) Under D65 light source, set the WB to "Preset" on the Neutral 5 of "Macbeth" chart (3rd from the right of the bottom) at TELE-end position. (Estimated distance: 3cm) (5) At WIDE zoom position, set the distance from a object of shooting so that "Macbeth" chart occupies approx. 1/4 area of the monitor frame. (6) "Macbeth" chart must be in the center of the screen. (7) Be careful so that others than "Macbeth" chart do NOT appear in the image. (8) Shoot by cancelling flashlight. (9) Read the value of RGB in the center of each color, and convert to "L*", "a*", and "b*". (10) In measuring, set the rectangle selector tool (64 × 64 pixels). ・Through general-purpose software such as Photoshop, read the average of RGB on the information palette. Camera settings: AF area: Center VR : OFF Distortion control: OFF Read each RGB value of "13 blue", "14 green", "15 red", "16 yellow", "17 magenta", and "18 cyan" in the above "64×64" size. Then, confirm whether the data converted to "L*", "a*", and "b*" is " $\Delta C \leqq 6$", compared with the reference value.	Color bar chart Photoshop

<table>
<tr><th>Items</th><th>Judgment standard</th><th>Remarks</th></tr>
<tr><td>Image quality</td><td></td><td>Photoshop</td></tr>
<tr><td>Dust in a picture</td><td>・No outstanding dust in a picture.
・When the picture center (within the circle whose diameter is 80% of the short side) is Zone I and its outside is Zone II, the light reduction against the periphery must be as follows :

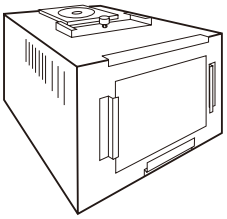
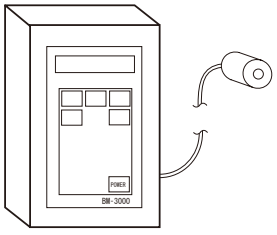
<table><tr><td></td><td>a</td><td>b</td></tr><tr><td>Zone Ⅰ</td><td>4 or less</td><td>0</td></tr><tr><td>Zone Ⅱ</td><td>10 or less</td><td>2 or less</td></tr></table>
a : 1.5% or less
b : More than 1.5% and less than 3.0%</td><td>CRT monitor
PC</td></tr>
<tr><td>LCD and others</td><td></td><td>Visual observation</td></tr>
<tr><td>Visual field ratio</td><td>・The inclination of the image and the monitor frame must be 0.5° or less.
・The vertical difference and horizontal difference of the black belt width in the image periphery must be within 0.3mm.
・Video image on the monitor: 96 - 100%
・Playback image: 96 - 100%</td><td></td></tr>
<tr><td>Electric characteristics</td><td></td><td></td></tr>
<tr><td>Consumption current
Stand-by (idle) current</td><td>・When card is not used: 0.27mA or less (when the power SW is OFF)
・When card is used: 0.39mA or less (when the power SW is OFF)
・12mA or less (at "Sleep")</td><td>Constant voltage power supply
Ammeter</td></tr>
<tr><td>Start (Shooting)</td><td>・0.75mW or less (when the power SW is OFF)
・1.1A or less (AUTO start monitor is ON.)</td><td></td></tr>
<tr><td>B. C voltage</td><td></td><td></td></tr>
<tr><td>Level 1</td><td>・3.58 ± 0.1V</td><td>Constant voltage power supply
Ammeter</td></tr>
<tr><td>Level 2</td><td>・3.23 ± 0.1V (Battery indicator blinks.)</td><td></td></tr>
<tr><td>Level 3</td><td>・2.78 ± 0.1V (Power OFF)
"Corrected value by compensating the loss (0.03V) which is caused by interconnection resistance when measuring tool is used."</td><td></td></tr>
<tr><td>When voltage increases</td><td></td><td></td></tr>
<tr><td>Level 1</td><td>・3.8 ± 0.1V</td><td></td></tr>
<tr><td>Level 2</td><td>・3.4 ± 0.1V</td><td></td></tr>
</table>

Items	Judgment standard	Remarks
Electric characteristics		
Regulation for the battery "half" mark	Rate of battery "half" indicator appearing relative to the maximum number of shots. ・85 ± 5 % (23℃) ・65 ± 10 % (10℃)	Constant voltage power supply Ammeter

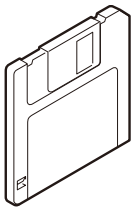
工具一覧表　Tool List

※：新規工具

※：New tool

工具番号 Tool No.	名　称 Name	備　考 Remarks
J63080	パターンボックス　LV-1450DC Pattern Box　LV-1450DC 	共通 Common E2100, E2200, E3100, E3200, E3500, E3700, E4100, E4200, E4300, E4600, E4800, E5100, E5200, E5400, E5600, E5700, E5900, E7600, E7900, E8400, E8700, E8800, S1, S2, S3, S4, S5, S6, S7, S7c, S8, S9 S10,P1, P2, P3, P4, L1, L2, L3, L5, L6 ,L12,P5000, S500, P5100
J63080A	交換用ハロゲンランプ（LV-1450DC 用） Spare Harogen Lamp　(For LV-1450DC) 	LV-1450DC Exclusive
J63081	カラーメータ（ミノルタカラーメータⅢF） Color Meter(Minolta Color meter Ⅲ F) 	共通 Common
J63068	輝度計 BM-3000 Luminance Meter BM-3000 	共通 Common

※：新規工具
※：New tool

工具番号 Tool No.	名　　称 Name	備　考 Remarks
※J65098	キャリブレーションソフト（Ver.1.59） Calibration Software（Ver.1.59） 	共通 Common E775, E885, E995, E2100, E2200, E2500, E3100, E3200, E3500, E3700, E4100, E4300, E4500, E4600, E4800, E5000, E5100, E5400, E5600, E5700, E5900, E7600, E7900, E8400, E8700, E8800, S1, S2, S3, S4, S5, S6, S7, S7c, S8, S10, P1, P2, P50 L2, L3, L6, L12, S210, S500, S510, S700, P5000, P5100
J63090	コリメータ（C-DSC） Collimator （C-DSC） 	共通 Common
MZ-800SEL	ドライサーフ　MZ-800SEL DRYSURF ： MZ-800SEL	共通　Common
RJ設定なし No.RJ available	USB ケーブル（UC-E10）　△（追加） USB CABLE（UC-E10）　△（Addition）  △（追加） △（Addition）	商品転用 Use Product
RJ設定なし No.RJ available	COOL-STATION（MV-15）  	商品転用（改造品） Use converted product （S50c, S50, S700 △（追加） △（Addition）

訂正ページ△×３
Additional page △×３

サービス計画課 M
March.12.2008