

REPAIR MANUAL

C-7070 Wide Zoom



CAMEDIA

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A. PRODUCT OUTLINE

C-7070Wide Zoom

Model	Model Name	Destination	Language:Video-out(default)
	C-7070 Wide Zoom (J)	Japan	J(default)/E:NTSC
	C-7070 Wide Zoom (U)	US	E(default)/F/G/S/P:NTSC
	C-7070 Wide Zoom (E)	Europe	E(default)/F/G/S:PAL
	C-7070 Wide Zoom (G)	General	E(default)/K/SC/TC:PAL
	C-7070 Wide Zoom (K)	Korea	E(default)/K/SC/TC:PAL
	C-7070 Wide Zoom (H)	HongKong	E(default)/K/SC/TC:PAL
	C-7070 Wide Zoom (A)	Oceania	E(default)/K/SC/TC:PAL
	C-7070 Wide Zoom (T)	Taiwan	E(default)/K/SC/TC:PAL
	C-7070 Wide Zoom (C)C	China	SC(default)/E/K/TC:PAL

J:Japanese,E:English,F:French,G:German,S:Spanish,K:Korean,P:Portugal
 TC:Traditional Chinese,SC:Simplified Chinese

Effective Pixel	7.1 mega pixel																										
Imager	1/1.8 inch CCD(Primary color filter)																										
Lens	Olympus aspherical glass 4x zoom lens 5.7 - 22.9[mm] (27 - 110[mm] equivalent in 35mm photography) 8lenses in 7groups 1 ED lenses, 2 aspherical lenses																										
Seamless Digital Zoom	20x (4x optical and 5x digital combined)																										
Aperture Range	f2.8(W) - f4.8(T)																										
Shutter Speeds	1/4000 sec. - 15 sec. (Bulb)																										
ISO	Auto, 80/100/200/400																										
Recording Mode(s)	Still image: EXIF 2.2 TIFF (non-compressed), EXIF 2.2 JPEG, DCF (Design rule for Camera File system), PIM2 (Print Image Matching), DPOF(Digital Print Order Format), RAW Movie mode: QuickTime Motion JPEG																										
Adjustable Resolutions and Number of storable photos (Using 32MB card)	<p>Still image:</p> <table> <tr> <td>3072 x 2304</td><td>RAW:3 frames, TIFF:1 frame, SHQ:6 frames, HQ:18 frames</td></tr> <tr> <td>3072 x 2048(3:2)</td><td>SHQ:6 frames, HQ:20 frames</td></tr> <tr> <td>2592 x 1944</td><td>TIFF:2 frames, SQ1:8 frames, SQ1:25 frames</td></tr> <tr> <td>2288 x 1712</td><td>TIFF:2 frames, SQ1: 11 frames, SQ1:32 frames</td></tr> <tr> <td>2048 x 1536</td><td>TIFF:3 frames, SQ1:13 frames, SQ1:40 frames</td></tr> <tr> <td>1600 x 1200</td><td>TIFF:5 frames, SQ2:22 frames, SQ2:64 frames</td></tr> <tr> <td>1280 x 960</td><td>TIFF:8 frames, SQ2:34 frames, SQ2:99 frames</td></tr> <tr> <td>1024 x 768</td><td>TIFF:13 frames, SQ2:53 frames, SQ2:153 frames</td></tr> <tr> <td>640 x 480</td><td>TIFF:33 frames, SQ2:132 frames, SQ2:331 frames</td></tr> </table> <p>Movie mode:</p> <table> <tr> <td>640 x 480(30fps)</td><td>SHQ</td></tr> <tr> <td>640 x 480(15fps)</td><td>HQ</td></tr> <tr> <td>320 x 240(30fps)</td><td>SQ1</td></tr> <tr> <td>320 x 240(15fps)</td><td>SQ2</td></tr> </table> <p>Voice recording</p>	3072 x 2304	RAW:3 frames, TIFF:1 frame, SHQ:6 frames, HQ:18 frames	3072 x 2048(3:2)	SHQ:6 frames, HQ:20 frames	2592 x 1944	TIFF:2 frames, SQ1:8 frames, SQ1:25 frames	2288 x 1712	TIFF:2 frames, SQ1: 11 frames, SQ1:32 frames	2048 x 1536	TIFF:3 frames, SQ1:13 frames, SQ1:40 frames	1600 x 1200	TIFF:5 frames, SQ2:22 frames, SQ2:64 frames	1280 x 960	TIFF:8 frames, SQ2:34 frames, SQ2:99 frames	1024 x 768	TIFF:13 frames, SQ2:53 frames, SQ2:153 frames	640 x 480	TIFF:33 frames, SQ2:132 frames, SQ2:331 frames	640 x 480(30fps)	SHQ	640 x 480(15fps)	HQ	320 x 240(30fps)	SQ1	320 x 240(15fps)	SQ2
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320 x 240(30fps)	SQ1																										
320 x 240(15fps)	SQ2																										

Image Adjust- ment Modes	Sharpness: +/- 5 steps Contrast: +/- 5 steps Saturation: +/- 5 steps Hue: +/- 5 steps
Function Shooting	Panorama / 2-in-1 picture mode / Voice memo / Black & White / Sepia
Sequence	1.4 fps HQ (max 10 images) Hi-speed 2.5 fps (max 2 images)
ViewFinder	Electronic viewfinder
LCD	1.8 inch Semi-Transmissive swivel LCD 130,000 pixel
Focusing System	Autofocus(contrast detection): IESP autofocus, spot autofocus, AF area is selectable. Manual MF via arrow buttons.
Focusing Ranges	Normal mode: 0.8m - infinity Macro mode: 0.2m - 0.8m Super Macro mode: 0.05m - 0.2m

Exposure Control	Program auto Aperture Priority Shutter Priority Manual My Mode Movie Scene
Metering System	Digital ESP metering, Spot metering, multi-spot metering, AE lock
White Balance System	Auto: iESP2 Pre-set: shade, overcast, sunlight, evening sun, fluorescent light(1,2,3,4), tungsten light One-touch White balance adjustment: +/- 7 steps
Flash	Built-in flash, Hot Shoe
Flash Modes	Auto for low and backlight Red-Eye Reduction Fill-In (forced on) Slow Shutter Synchronized Red-Eye Reduction and Slow Shutter Synchronized Off (no flash)
Flash Working Range	Wide: 0.8m - 3.7m Tele: 0.8m - 2.2m
Removable Media Card	3v (3.3v) xD-Picture Card (16 / 32 / 64 / 128 / 256 / 512MB) Compact Flash Type I or Type II (4MB - 8GB) Microdrive (1GB)
Remote Control	Yes
Outer Connectors	Mini "B" USB connector Video Out DC Input for optional AC adapter

Auto-connect USB	Compatible with Windows 98SE / ME / 2000 Pro / XP and Mac OS 9.0 - 9.2 / 10.1 - 10.2 PictBridge
Image Playback	Still image: Close-up(Magnification:1.0 / 2.0 / 3.0 / 4.0 / 5.0 / 6.0 / 7.0) Index display(Divided into 4 / 9 / 16 parts) Image rotation(90 degrees / -90 degrees) Slideshows Motion image: Normal, Reverse, Frame-by frame, Fast-Forward, Rewind
Power Supply	AC Power: C-8AC (optional) Li-Ion rechargeable battery (BLM-1)
Size	W:116[mm] x H:87[mm] x D:65.5[mm]
Weight	433[g] without battery and media card
Current	<Reference value> Dark current: 121[μA] Camera mode (through image: ON):0.8[A] Camera mode (through image: OFF):12[mA] Maximum value after working flash (LCD ON):1.4[A] Play mode (LCD ON):0.6[A]

B. DISASSEMBLY AND ASSEMBLY PROCEDURE

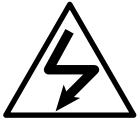
[1]	REMOVAL OF CABINET BACK AND CABINET FRONT	B-2
[2]	REMOVAL OF CABI TOP AND CP1 BOARD	B-3
[3]	REMOVAL OF PW2 BOARD, LENS ASSEMBLY, CA1 BOARD, PW1 BOARD AND ST1 BOARD	B-4
[4]	REMOVAL OF TB3 BOARD, LCD, VF1 BOARD, TB1 BOARD AND TB2 BOARD	B-5
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[1] REMOVAL OF CABINET BACK AND CABINET FRONT

Disassembly perform as follows and assembly perform by reversing the disassembly steps.

Be sure to discharge the main capacitor, then continue to disassembling.

! Beware of electric shock

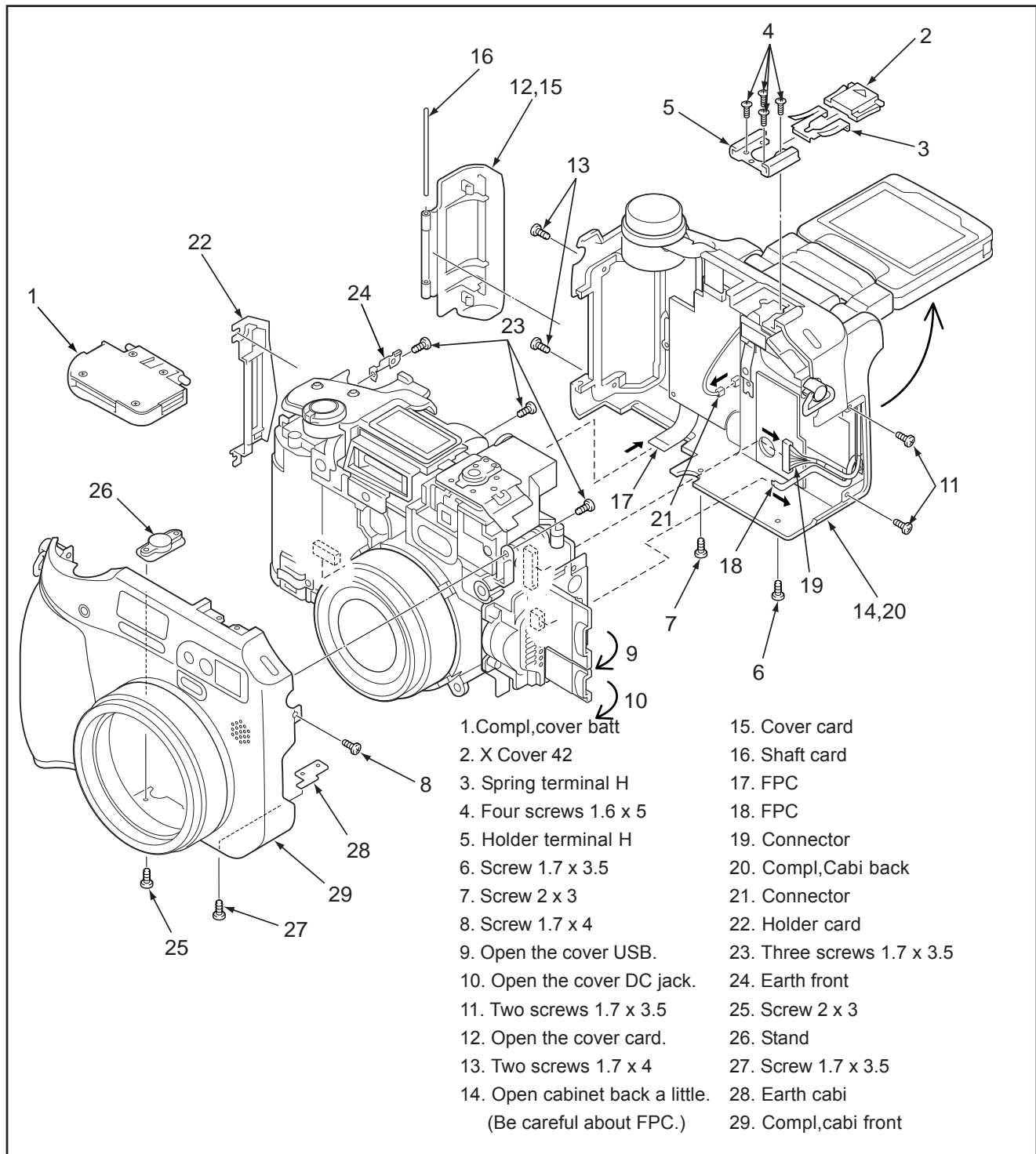


Danger of electric shock.
Use a discharging tool to remove
the electrical charge before working.

Notice

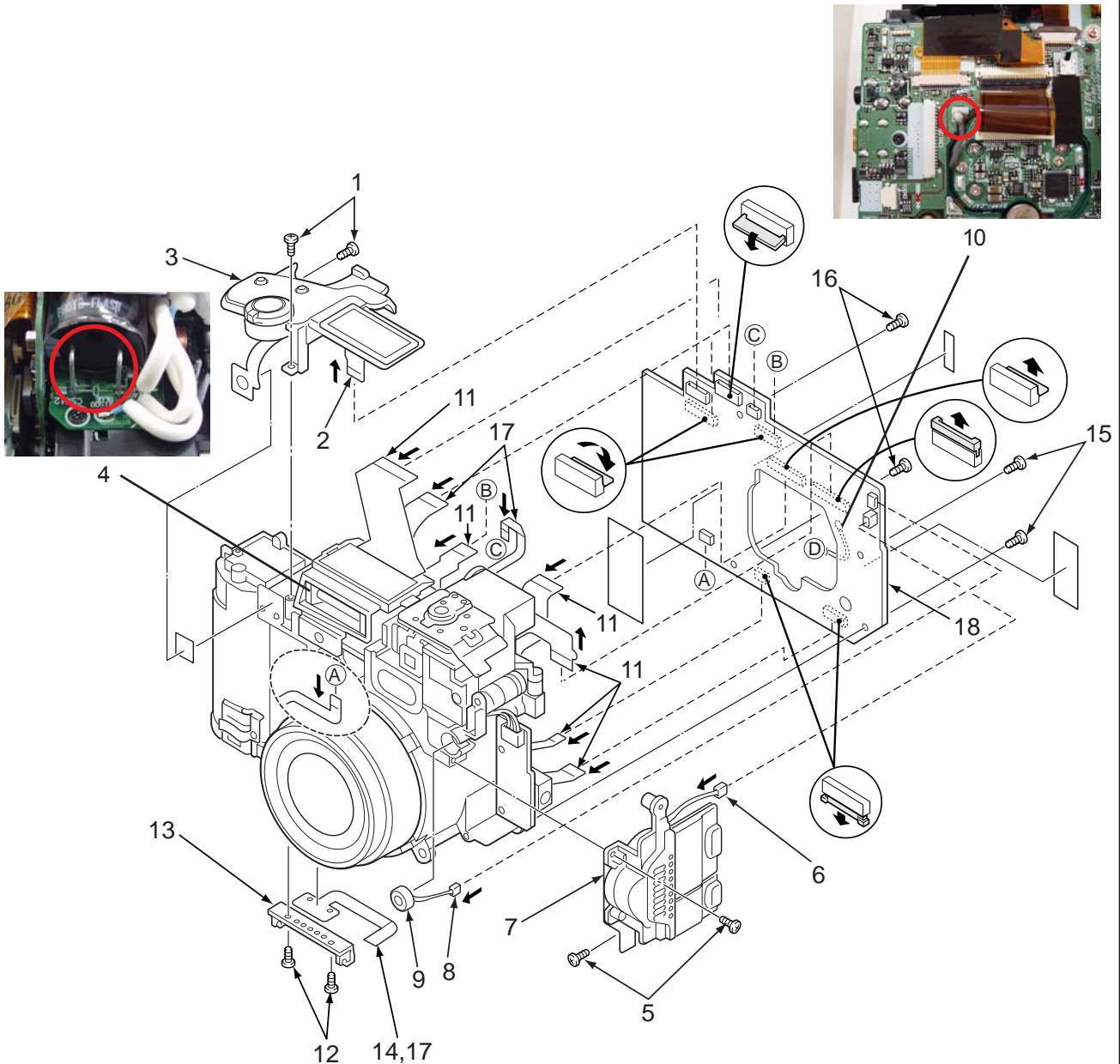


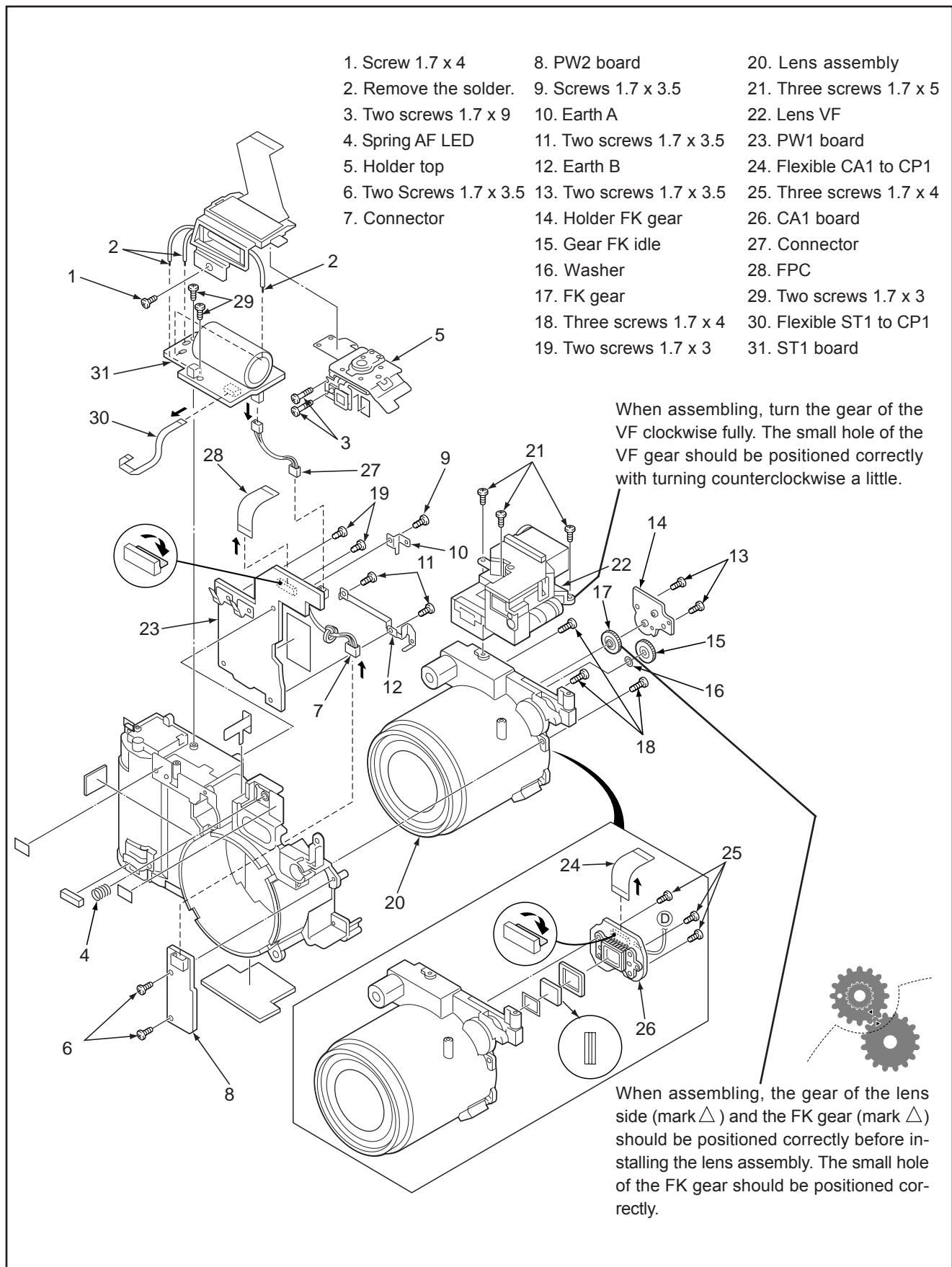
The lead free solder is applied to this product.
Use the lead free solder in working.

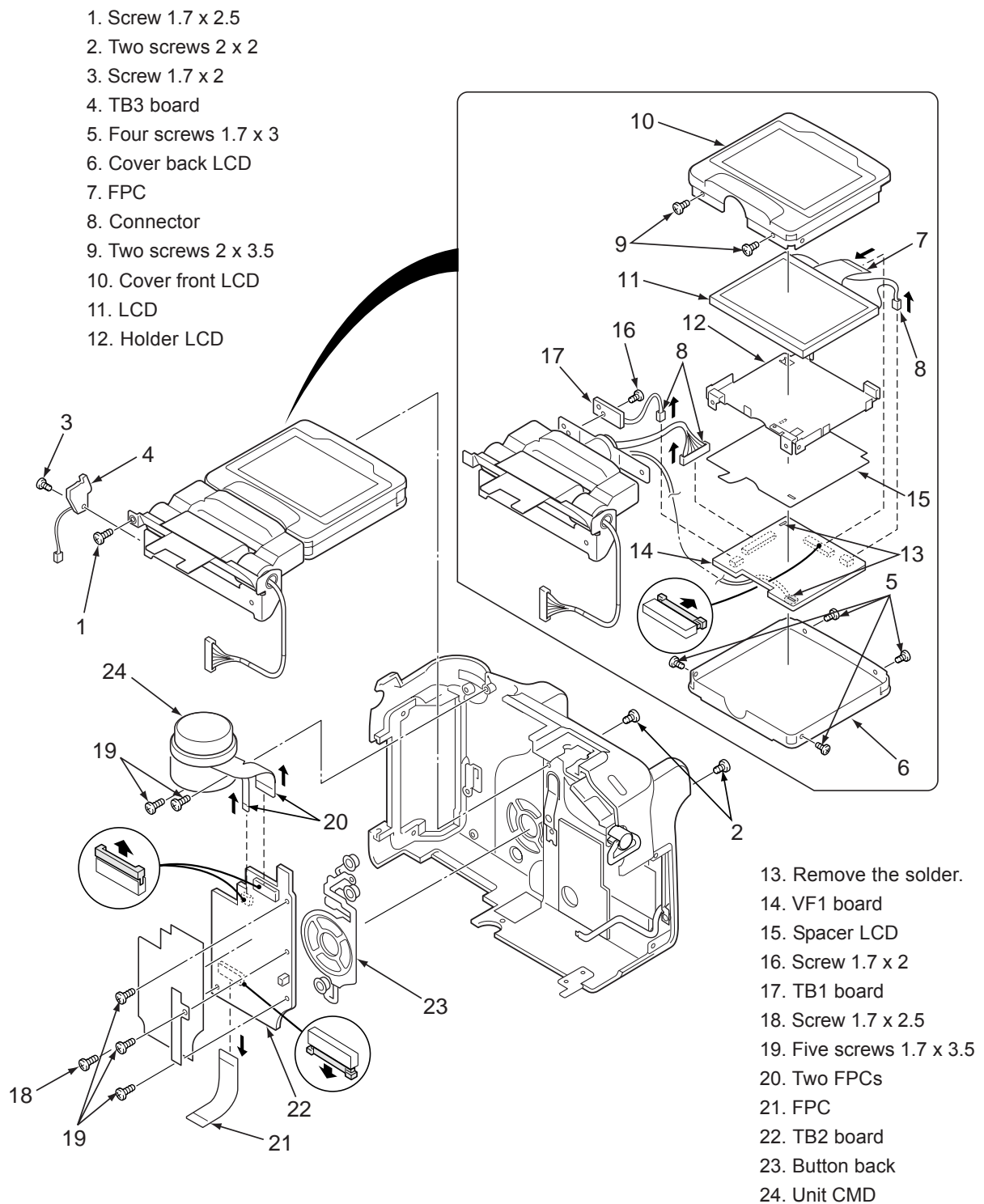


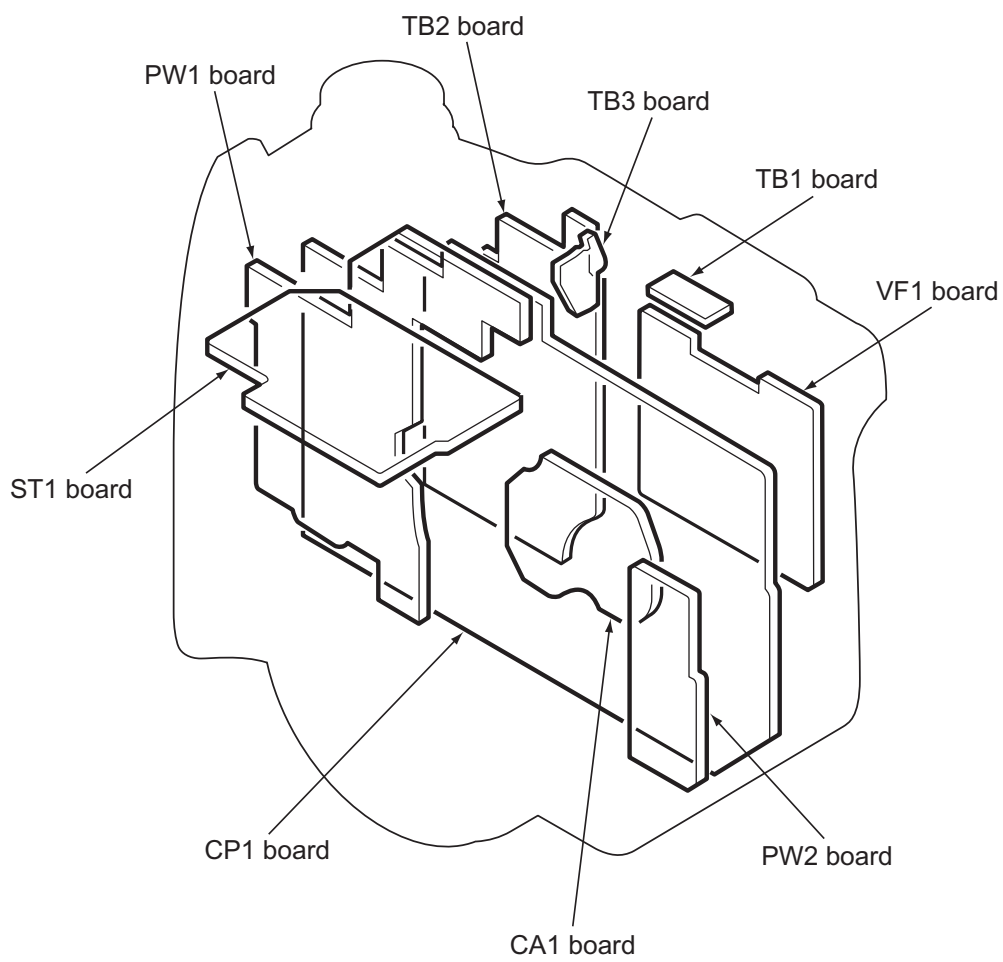
[2] REMOVAL OF CABI TOP AND CP1 BOARD

- | | |
|-----------------------|--------------------------|
| 1. Two screws 1.7 x 4 | 11. Six FPCs |
| 2. FPC | 12. Two screws 1.7 x 3.5 |
| 3. Cabi top | 13. Cover terminal |
| 4. Discharge | 14. Remove FPC from boss |
| 5. Two screws 1.7 x 4 | 15. Two screws 1.7 x 3.5 |
| 6. Connector | 16. Two screws 1.7 x 3 |
| 7. Compl,cover jack | 17. Three FPCs |
| 8. Connector | 18. CP1 board |
| 9. Microphone | |
| 10.Remove the solder. | |



[3] REMOVAL OF PW2 BOARD, LENS ASSEMBLY, CA1 BOARD, PW1 BOARD AND ST1 BOARD

[4] REMOVAL OF TB3 BOARD, LCD, VF1 BOARD, TB1 BOARD AND TB2 BOARD

[5] BOARD LOCATION

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[1] Table for Servicing Tools

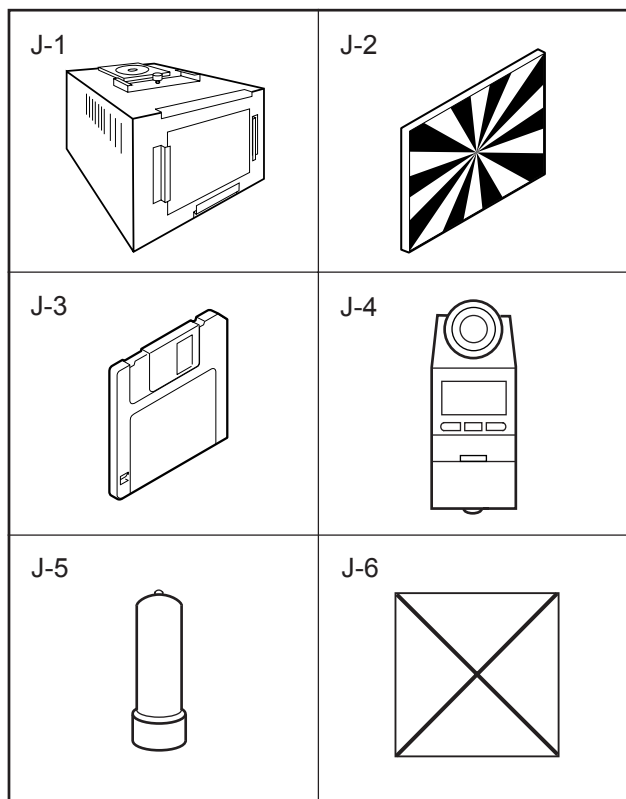
Ref. No.	Name	Number	Part code
J-1	Pattern box (color viewer)	1	KC0336
J-2	Siemens star chart	1	
J-3	Calibration software	1	
J-4	Chroma meter	1	KC0337
J-5	Spare lamp	1	KC0339
J-6	Target board	1	
J-7	Chart for parallax adjustment	1	
J-8	Chart for 0.5 m distance adjustment	1	
J-9	Chart for 2.4 m distance adjustment	1	
J-10	Collimator	1	

Note: J-1 color viewer is 100 ± 10 VAC only.

J-7 chart for parallax adjustment

Chart creation: Draw a 6 mm thick black line through the center of an A3 sized paper.

Use J-10 collimator made by Kyoritsu Electric Co. Ltd. or equivalent of it.

**[2] Equipment**

1. Oscilloscope
2. Digital voltmeter
3. AC adaptor
4. PC (IBM® -compatible PC, Pentium processor, Windows 98SE or ME or 2000 or XP)

[3] Adjustment Items and Order

1. AF LED Angle Adjustment
2. Lens Adjustment
3. AWB Adjustment
4. CCD White Point Defect Detect Adjustment
5. CCD Black Point And White Point Defect Detect Adjustment in Lighted
6. PAF Adjustment
 - 6-1. Uniform Adjustment
 - 6-2. Parallax Adjustment
 - 6-3. Distance Adjustment
7. LCD Panel Adjustment
 - 7-1. LCD H AFC Adjustment
 - 7-2. LCD RGB Offset Adjustment
 - 7-3. LCD Gain Adjustment
 - 7-4. LCD Red Brightness Adjustment
 - 7-5. LCD Blue Brightness Adjustment
 - 7-6. LCD VcomPP Adjustment

Note:

1. If the lens, CCD, board and changing the part in item 2-5 replace, it is necessary to adjust again.

[4] Setup**1. System requirements**

Windows 98SE or ME or 2000 or XP

IBM® -compatible PC with pentium processor

CD-ROM drive

3.5-inch high-density diskette drive

USB port

40 MB RAM

Hard disk drive with at least 15 MB available

VGA or SVGA monitor with at least 256-color display

2. Installing calibration software

1. Insert the calibration software installation diskette into your diskette drive.
2. Open Explorer.
3. Copy the DscCalDI_141 folder on the floppy disk in the FD drive to a folder on the hard disk.

3. Installing USB driver

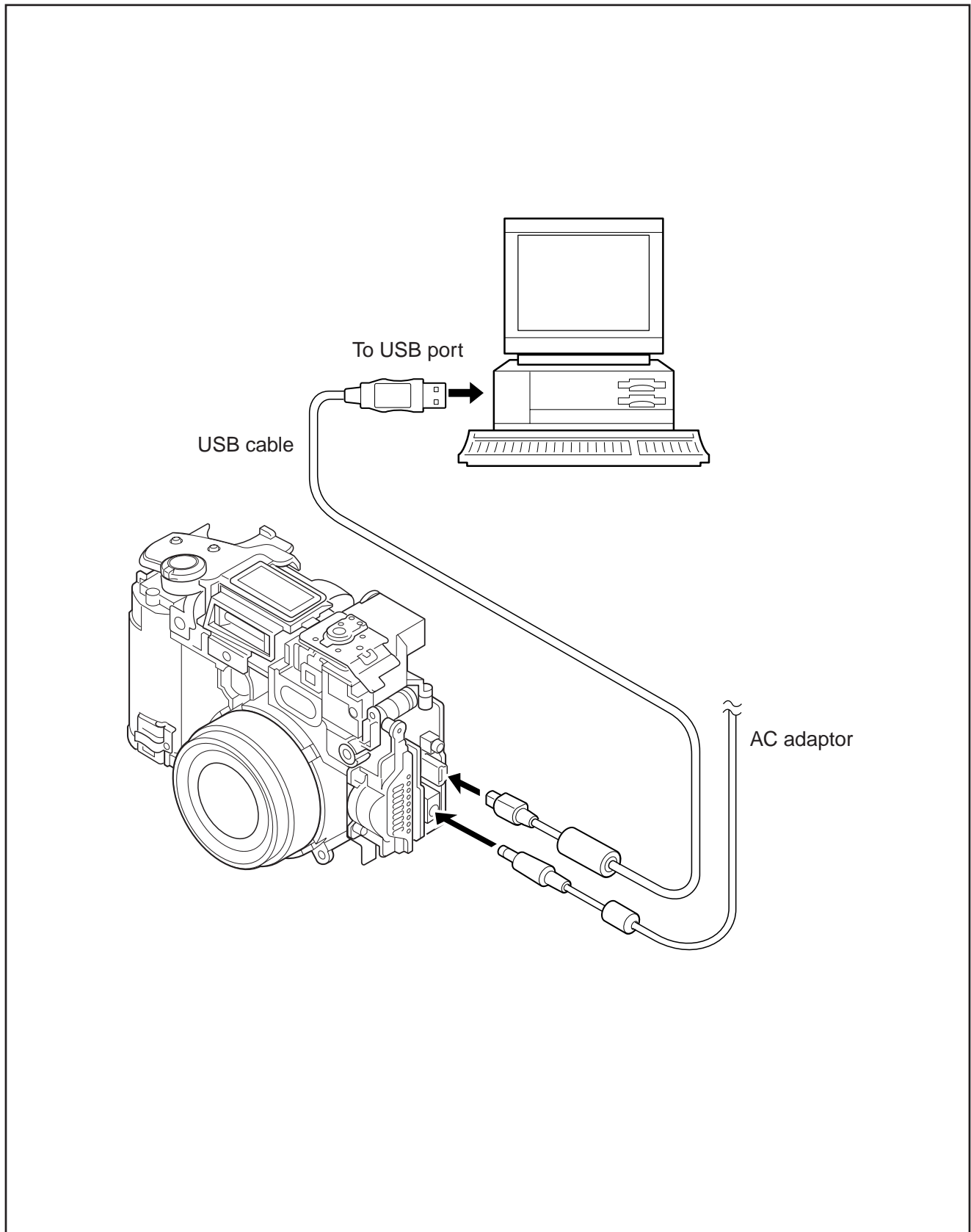
Install the USB driver with camera or connection kit for PC.

4. Pattern box (color viewer)

Turn on the switch and wait for 30 minutes for aging to take place before using Color Pure. It is used after adjusting the chroma meter (KC0337) adjust color temperature to 3100 ± 20 K and luminosity to 900 ± 20 cd/m². Be careful of handling the lamp and its circumference are high temperature during use and after power off for a while.

[5] Connecting the camera to the computer

1. Line up the arrow on the cable connector with the notch on the camera's USB port. Insert the connector.
2. Locate a USB port on your computer.



[6] USB Storage Information Registration

USB storage data is important for 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 saved, the USB specification conditions will not be satisfied, so always check and save the USB storage data.

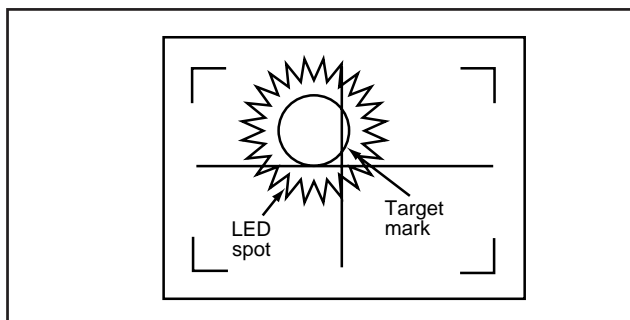
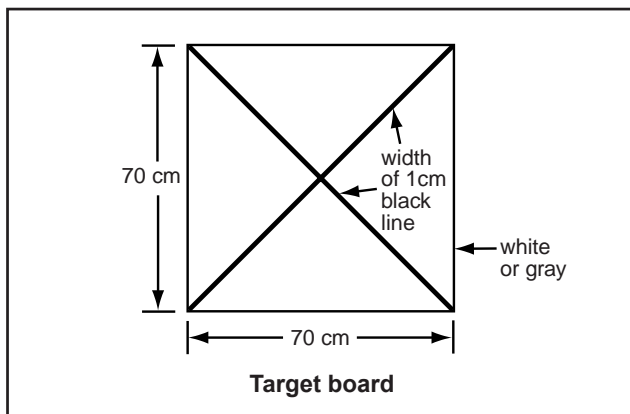
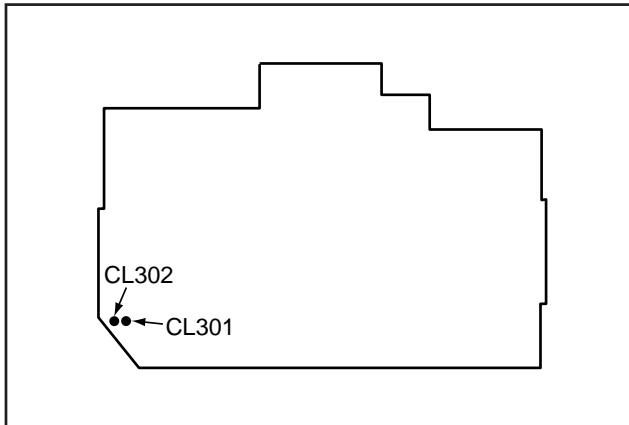
Preparation:

POWER switch: ON

Adjustment method:

1. Connect the camera to a computer. (Refer to [5] Connecting the camera to the computer on the page C-3.)
2. Double-click on the DscCalDi.exe in the DscCalDi141.
3. Click on the Get button in the USB storage window and check the USB storage data.
VID: OLYMPUS
PID: C7070WZ
Serial:
Rev. : 1.00
4. Check the "Serial" in the above USB storage data. If the displayed value is different from the serial number printed on the base of the camera, enter the number on the base of the camera. Then click the Set button.
5. Next, check VID, PID and Rev. entries in the USB storage data. If any of them are different from the values in 3. above, make the changes and then click the corresponding Set button.

Calibration AWB Focus UV Matrix Cal Mode <input type="button" value="OK"/> Cal Data <input type="button" value="OK"/>	Upload Firmware Image PAF Cal. <input type="checkbox"/> EVF <input type="checkbox"/> VCO LCD Type <input type="button" value="v"/>	LCD R Bright <input type="button" value="v"/> B Bright <input type="button" value="v"/> VCOMDC <input type="button" value="v"/> RGB Offset <input type="button" value="v"/> Gain <input type="button" value="v"/> VCOMPP <input type="button" value="v"/> Tint <input type="button" value="v"/> Phase <input type="button" value="v"/> H AFC <input type="button" value="v"/> Test <input type="button" value="v"/>
USB storage <input type="button" value="Get"/> VID <input type="text"/> <input type="button" value="Set"/> Serial <input type="text"/> <input type="button" value="Set"/> <input type="button" value="Set"/> PID <input type="text"/> <input type="button" value="Set"/> Rev. <input type="text"/> <input type="button" value="Set"/>		
Setting Language <input type="button" value="v"/> Video Mode <input type="button" value="v"/> Factory Code <input type="button" value="v"/>		

[7] Adjust Specifications**1. AF LED Angle Adjustment****[CP1 board (Side A)]****Setting the adjustment mode**

1. Open the card cover of the camera.
2. Turn on the power switch. "CARD-COVER OPEN" will be displayed in the LCD.
3. Push the LCD button and OK button more than 3 seconds simultaneously.
4. Push the right arrow button, and select "STORAGE".
5. "STORAGE/CONTROL" will be displayed.
6. Push the below arrow button, and select "CONTROL".
7. Push the OK button.
8. Close the card cover of the camera.

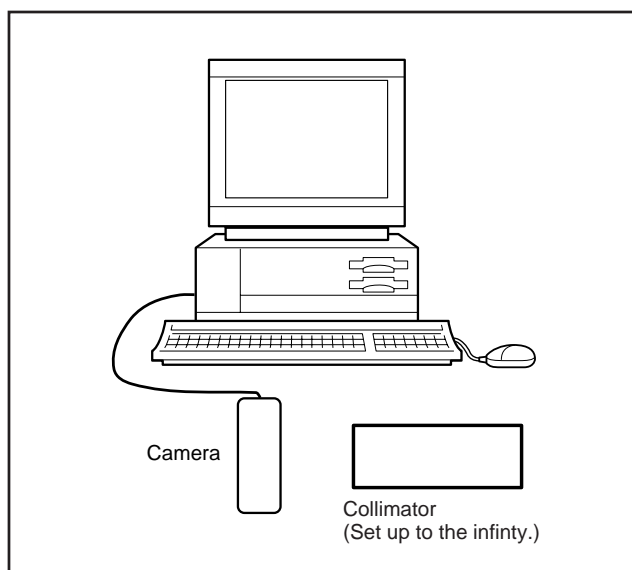
Adjustment condition:

1. This adjustment should be carried out in a fairly dark place so that the shape of the LED spot can be checked.
2. After adjustment, the readjustment is necessary to replace the lens, CP1 board, CA1 board and the FPC at the cabinet top.
3. Do not see the light of AF LED directly.
4. Do not adjust long time.

Adjustment method:

1. Set the camera so that the target board is at a distance of 1 meters from LED. (Light up the target board.)
2. Connect CL301 and CL302. Connect the camera and computer by USB cable. Connect the camera and the TV monitor by AV cable.
3. Turn on the power, double-click on the DscCalDi.exe.
4. Click the LCD "Test", and select the "Monitor". Select the "AF LED".
5. Carry out the pre-focus adjustment. After adjusting, the target mark will appear on the monitor.
6. Turn off the light of target board.
7. Turn the screws on FPC unit to adjust so that the center of the LED spot appears inside the circle above the target mark on the target board surface.
8. After adjusting, click the LCD "Test", and select the "LCD OFF". (The lens will be stowed.)

2. Lens Adjustment



Preparation:

POWER switch: ON

Setup the collimator to the infinity.

Note:

Do not vibrate during the adjustment.

Adjustment method:

1. Set the camera so that it becomes center of the screen in the collimator.
2. Double-click on the DscCalDi.exe.
3. Click the "Focus", and Click the "Yes".
4. Lens adjustment value will appear on the screen.
5. Click the OK.

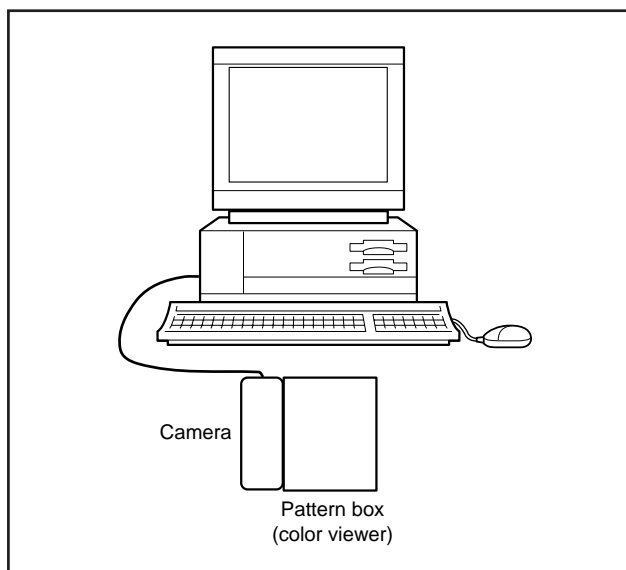
Adjustment value determination is effectuated using "FOCUS" value.

FOCUS=f1, f2, f3, f4, f5 and the adjustment values fulfill the conditions below, they are determined as within specifications.

Adjustment value determination

$\text{D}156 < f1 < 156$, $\text{D}168 < f2 < 168$, $\text{D}180 < f3 < 180$, $\text{D}190 < f4 < 302$, $\text{D}200 < f5 < 426$

3. AWB Adjustment



Preparation:

POWER switch: ON

Setting of pattern box:

Color temperature: 3100 ± 20 (K)

Luminance: 900 ± 20 (cd/m²)

Adjusting method:

1. Set the camera 0 cm from the pattern box. (Do not enter any light.)
2. Double-click on the DscCalDi.exe.
3. Click the "AWB", and click the "Yes".
4. AWB adjustment value will appear on the screen.
5. Click the OK.

Adjustment value determination is effectuated using "AGC" and "CHECK" values.

If $\text{AGC}=a1, a2, a3, a4, a5$, $\text{CHECK}=wc0, wc1, wc2$ and the adjustment values fulfill the conditions below, they are determined as within specifications.

Adjustment value determination

$a1 < 1023$, $a2 < 1023$, $a3 < 1023$, $a4 < 1023$, $a5 < 1023$

$wc0 = 128 \pm 2$, $wc1 = 128 \pm 2$, $wc2 = 130 \pm 40$

4. CCD White Point Defect Detect Adjustment

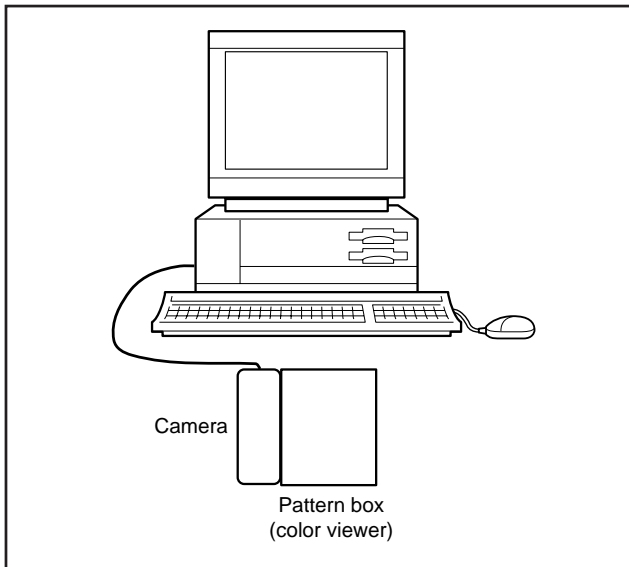
Preparation:

POWER switch: ON

Adjustment method:

1. Double-click on the DscCalDi.exe.
2. Select "CCD Defect" on the LCD "Test", and click the "Yes".
3. After the adjustment is completed, the number of defect will appear.
(When adjustment is failed, "detect_ng" will display.)
4. Click the OK.

5. CCD Black Point And White Point Defect Detect Adjustment In Lighted



Preparation:

POWER switch: ON

Setting of pattern box:

Color temperature: 3100 ± 20 (K)

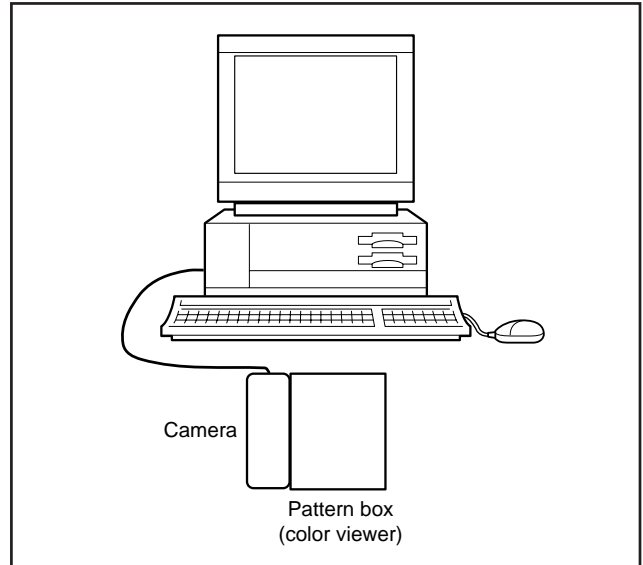
Luminance: 900 ± 20 (cd/m²)

Adjusting method:

1. Set the camera 0 cm from the pattern box. (Do not enter any light.)
2. Double-click on the DscCalDi.exe.
3. Select "CCD Black" on the LCD "Test", and click the "Yes".
4. After the adjustment is completed, the number of defect will appear.
(When adjustment is failed, "detect_ng BLACK x, y" will display.)
5. Click the OK.

6. PAF Adjustment

6-1. Uniform Adjustment



Preparation:

POWER switch: ON

Setting of pattern box:

Color temperature: 3100 ± 20 (K)

Luminance: 900 ± 20 (cd/m²)

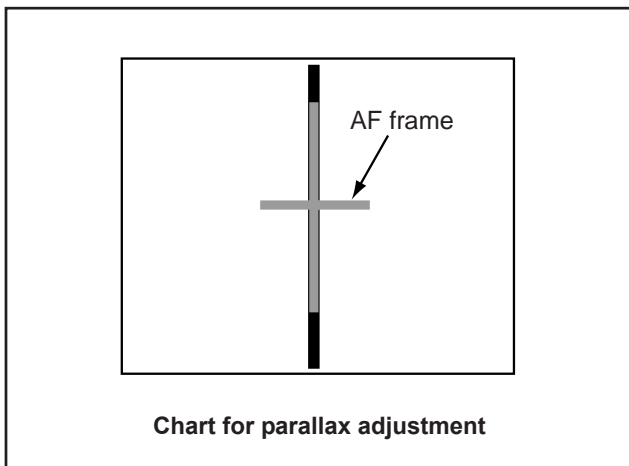
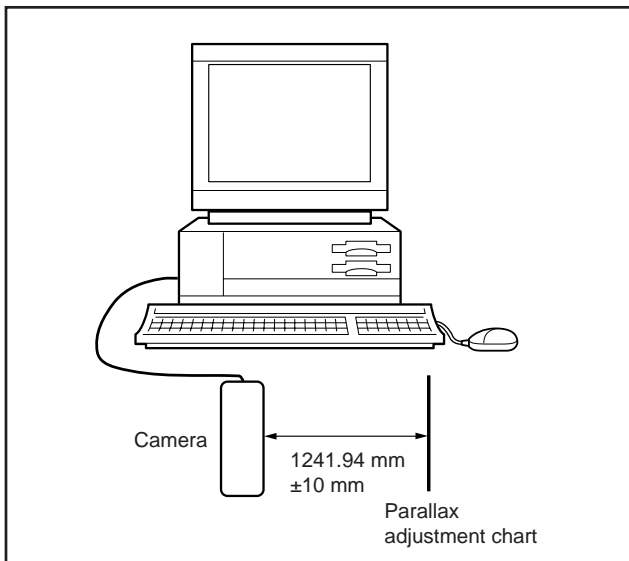
Note:

Orient the PAF sensor towards the viewer.

Adjusting method:

1. Set the camera 0 cm from the pattern box.
2. Double-click on the DscCalDi.exe.
3. Click the "PAF Cal". "PAF Calibration Dialog" is opened.
4. Click the "Uniformity".
5. Uniformity adjustment value will appear on the screen.
6. Click the OK.
7. This adjustment is to check whether there is a pixel deficiency in the sensor by viewing the graph that appears on the camera's LCD. A pixel deficiency or other trouble will result in fluctuations appearing on the graph.

6-2. Parallax Adjustment



Preparation:

POWER switch: ON

Subject: Rotation within ± 10 degrees

Luminance: BV2-6

Temperature: 25 degrees ± 5

Adjusting method:

1. Set the parallax adjustment chart at 1241.94 mm ± 10 mm from CCD.
2. Double-click on the DscCalDi.exe.
3. Click the "PAF Cal". "PAF Calibration Dialog" is opened.
4. Click the "ON" in the PAF Disp. Sensor data graph will be displayed.
5. Align the AF frame, shown near the center of the LCD display, with the lateral adjustment chart and set the camera. (See above figure.)
6. Click the "Parallax".
7. Parallax adjustment value will appear on the screen.
8. Click the OK.

Adjustment value determination is effectuated using "PAF_RIGHT_LEFT" value.

LEFT=L1, L2, L3, RIGHT=R1, R2, R3 and the ideal values and acceptable values fulfill the conditions below, they are determined as within specifications.

Adjustment value determination

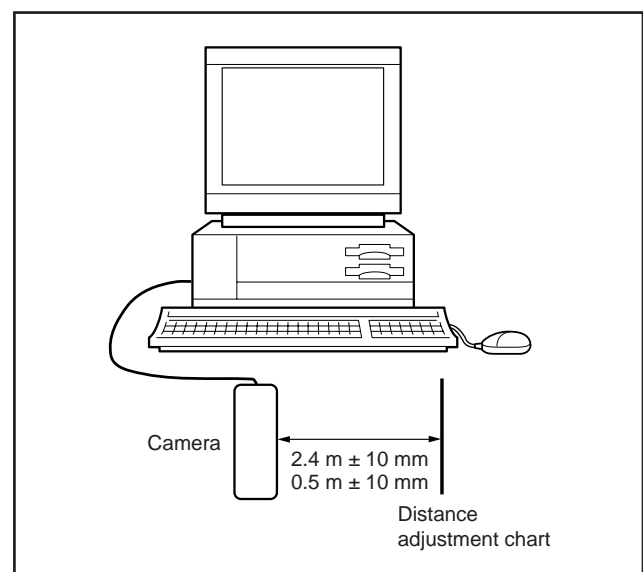
Ideal value of LEFT optic axis difference (L3) = $\text{D}8$

Acceptable value of LEFT optic axis difference (L3)
= ideal value ± 10 = $\text{D}18\sim 2$

Ideal value of RIGHT optic axis difference (R3) = 14

Acceptable value of RIGHT optic axis difference (R3)
= ideal value ± 10 = $4\sim 24$

6-3. Distance Adjustment



Preparation:

POWER switch: ON

Subject: Rotation within ± 10 degrees

Luminance: BV2-6

Temperature: 25 degrees ± 5

Note:

Should adjustment be interrupted before completion, the unit will start over from the first temperature reading obtained.

Adjusting method:

1. Set the camera turn to the chart.
2. Double-click on the DscCalDi.exe.
3. Click the "PAF Cal". "PAF Calibration Dialog" is opened.
4. Click the "Temp 1". The temperature reading obtained prior to the distance adjustment is indicated.
5. Enter "0" on the left of "Calibration".
6. Click "Calibration" to initialize.
7. After initializing, adjustment value will be cleared and displayed.
8. Set the chart for 0.5 m distance adjustment at 0.5 m from PAF.
9. Enter "50" on the left of "Calibration".
10. Click "Calibration".
11. Distance adjustment value will appear on the screen.

12. Set the chart for 2.4 m distance adjustment at 2.4 m from PAF.
13. Enter "240" on the left of "Calibration".
14. Click "Calibration".
15. Distance adjustment value (0.5 m and 2.4 m) will appear on the screen.

Adjustment value determination

Determining the adjustment value is done using "TEMP" and the following 7 lines of values.

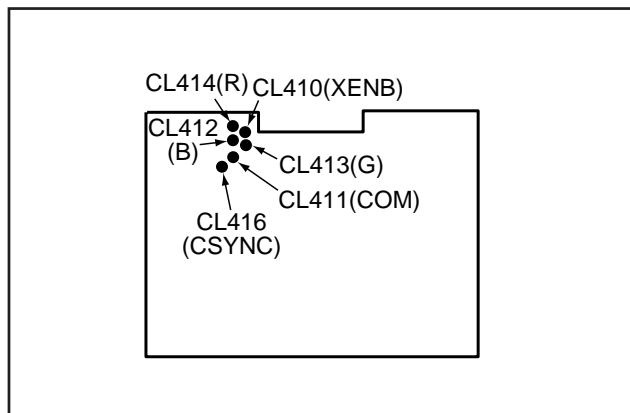
Temperature when TEMP = 2-point adjustment (ex. 25.0 → 250)

16-8 = AF adjustment values for each of the 7 blocks for adjustment between 2 points

1. The temperature difference when adjusting between 2 points should be within ± 1 degrees.
2. The adjustment is not OK if the adjustment value for any one of the 7 blocks is substantially outside the range.
3. The adjustment is not OK if the difference between the minimum and maximum values is ± 1.0 or more.
4. The adjustment is OK if the camera is moved and then the difference between the minimum and maximum values is within ± 1.0 .

7. LCD Panel Adjustment

[VF1 board (Side B)]



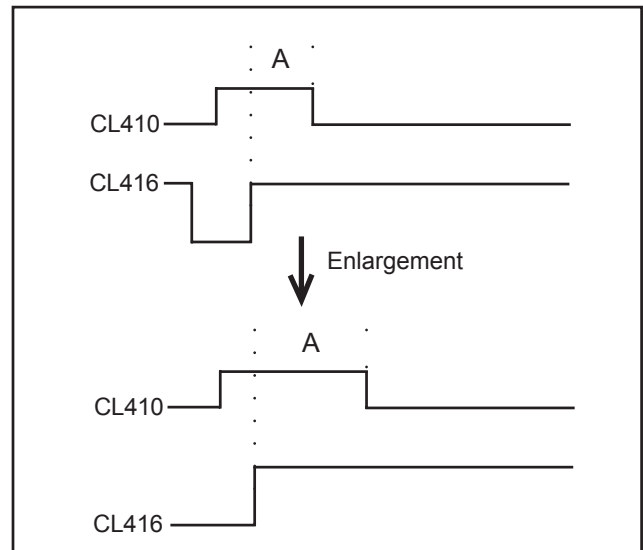
7-1. LCD H AFC Adjustment

Preparation:

POWER switch: ON

Adjusting method:

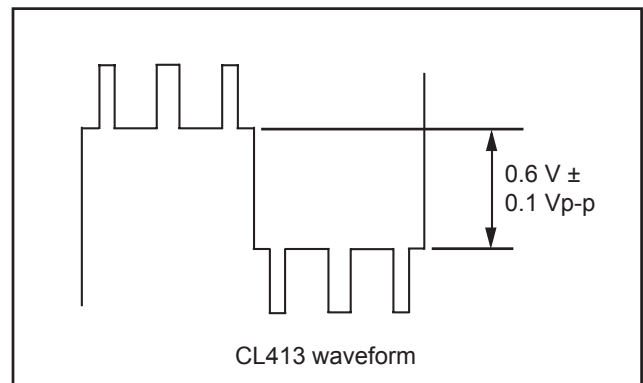
1. Double-click on the DscCalDi.exe.
2. Select 0 on the LCD "H AFC".
3. Apply a trigger using CL416, and adjust LCD "H AFC" so that the time A from the rising signal at CL416 to the falling signal at CL410 is $3.25 \pm 0.1 \mu\text{sec}$.



7-2. LCD RGB Offset Adjustment

Adjusting method:

1. Adjust LCD "RGB Offset" so that the amplitude of the CL413 waveform is $0.6 \text{ V} \pm 0.1 \text{ Vp-p}$.



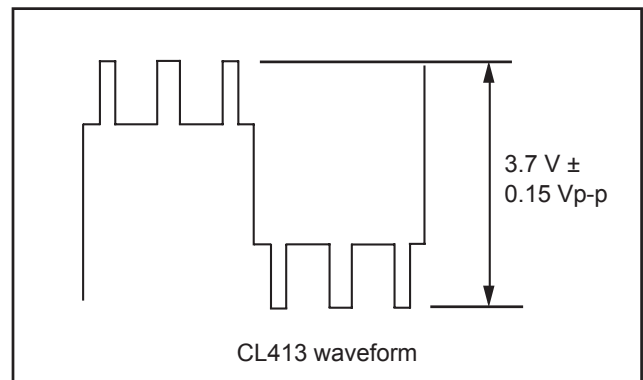
7-3. LCD Gain Adjustment

Adjusting method:

1. Adjust LCD "Gain" so that the amplitude of the CL413 waveform is $3.7 \text{ V} \pm 0.15 \text{ Vp-p}$.

Note:

- 7-2. LCD RGB Offset adjustment should always be carried out first.



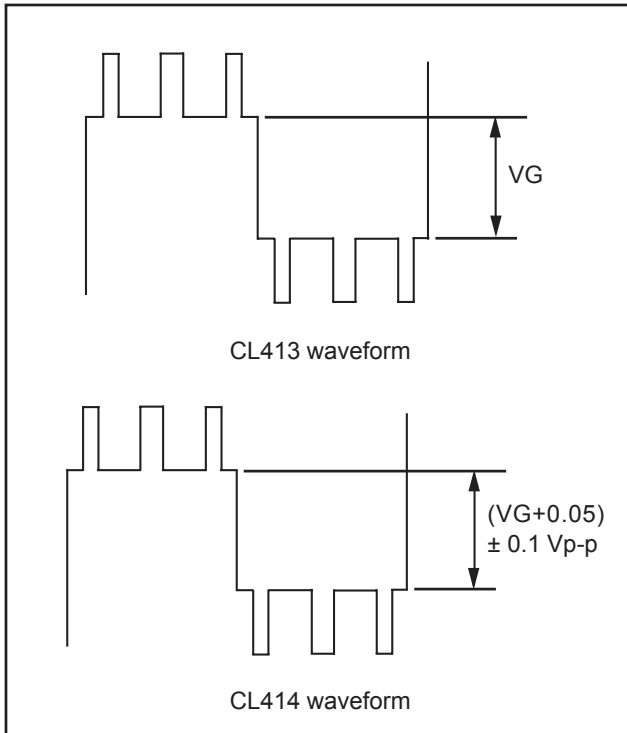
7-4. LCD Red Brightness Adjustment

Adjusting method:

1. Adjust LCD "R Bright" so that the amplitude of the CL414 waveform is $(VG+0.05) \pm 0.1$ Vp-p with respect to the CL413 (VG) waveform.

Note:

7-2. LCD RGB Offset adjustment and 7-3. LCD Gain adjustment should always be carried out first.



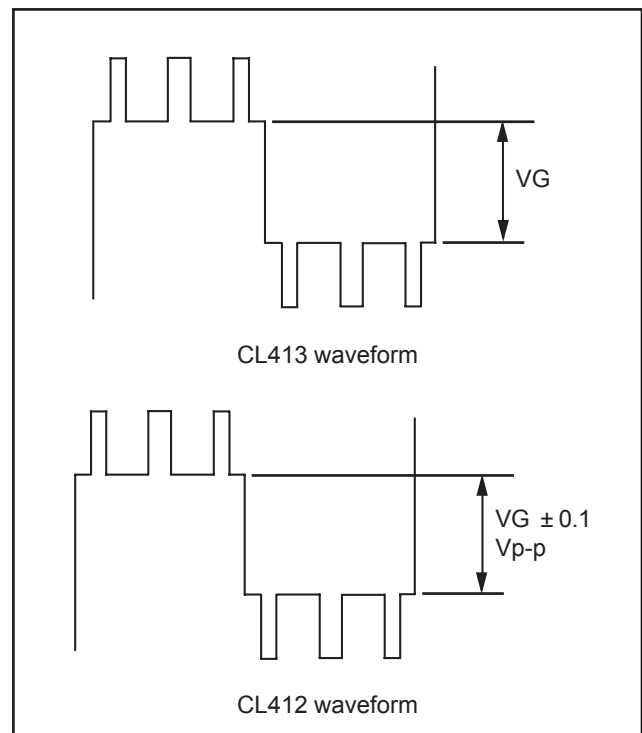
7-5. LCD Blue Brightness Adjustment

Adjusting method:

1. Adjust LCD "B Bright" so that the amplitude of the CL412 waveform is $VG \pm 0.1$ Vp-p with respect to the CL413 (VG) waveform.

Note:

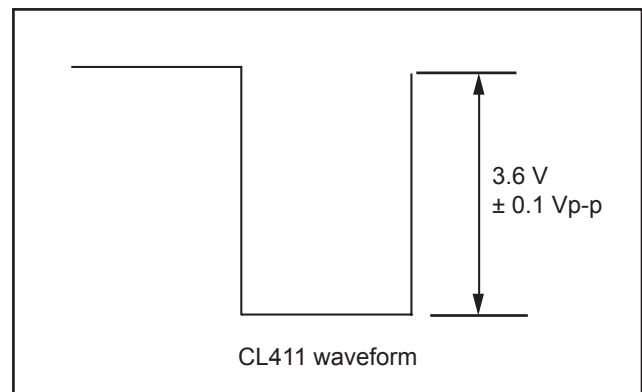
7-2. LCD RGB Offset adjustment and 7-3. LCD Gain adjustment have done.



7-6. LCD VcomPP Adjustment

Adjusting method:

1. Adjust LCD "VCOMPP" so that the amplitude of the CL411 waveform is $3.6 \text{ V} \pm 0.1$ Vp-p.



Completing the adjustment mode

1. Open the card cover of the camera.
2. Turn on the power switch. "CARD-COVER OPEN" will be displayed in the LCD.
3. Push the LCD button and OK button more than 3 seconds simultaneously.
4. Push the right arrow button, and select "CONTROL".
5. "STORAGE/CONTROL" will be displayed.
6. Push the below arrow button, and select "STORAGE".
7. Push the OK button.
8. Close the card cover of the camera.

[8] Adjustment Items

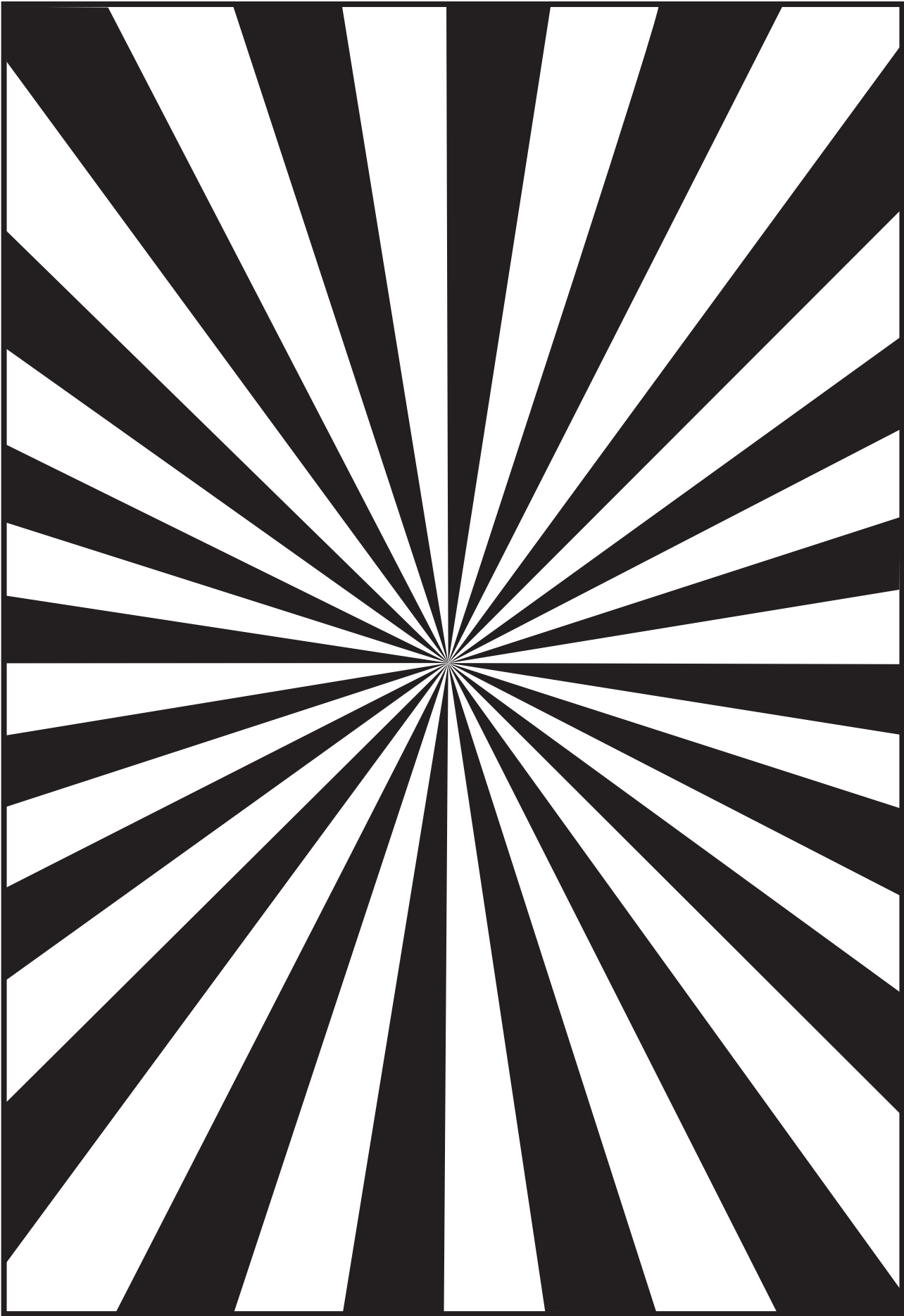
Adjustment items	Changed repair parts				
	CA1(CCD)	LENS	FINDER	FPC	CP1
1. AF LED Angle Adjustment	◆	◆		◆	◆
2. Lens Adjustment	◆	◆			◆
3. AWB Adjustment	◆	◆			◆
4. CCD White Point Defect Detect Adjustment	◆	◆			◆
5. CCD Black Point Defect Detect Adjustment in Lighted	◆	◆			◆
6-1. PAF Uniform Adjustment	◆	◆	◆		◆
6-2. PAF Parallax Adjustment	◆	◆	◆		◆
6-3. PAF Distance Adjustment	◆	◆	◆		◆
7-1. LCD H AFC Adjustment					◆
7-2. LCD RGB Offset Adjustment					◆
7-3. LCD Gain Adjustment					◆
7-4. LCD Red Brightness Adjustment					◆
7-5. LCD Blue Brightness Adjustment					◆
7-6. LCD VcomPP Adjustment					◆

[9] Notice after adjustment

Make sure to reset the camera after adjustment.

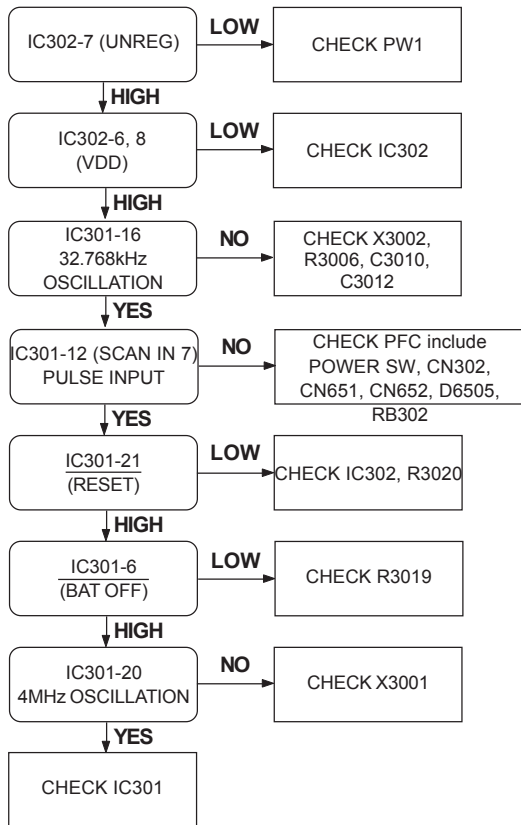
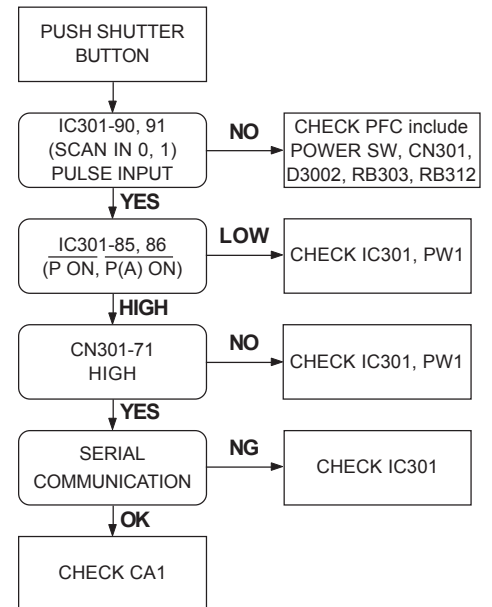
Method to reset the camera;

1. Set the camera to the shooting mode and turn power on.
2. Open the card cover (a warning "CARD-COVER OPEN" appears).
3. Press OK button and LCD button simultaneously for about three seconds.
(CAMERA/SDK setup wizard appears.)
4. Choose "RESET" from "CAMERA" and press OK button.
5. Turn the power of the camera off.



D. REPAIR PROCEDURE

[1] TROUBLESHOOTING GUIDE	D-2
[2] CONFIRMATION AND UPDATE OF THE FIRMWARE	D-3

[1] TROUBLESHOOTING GUIDE**POWER LOSS INOPERATIVE****TAKING INOPERATIVE**

[2] CONFIRMATION AND UPDATE OF THE FIRMWARE

How To Confirm firmware

1. Rename the binary data of the latest firmware with "firmware.bin".
Create a folder "Firmware" in the xD-Picture Card which was formatted in C-7070 Wide Zoom, and save the binary data "firmware.bin" into the folder "Firmware".
2. Camera is operated by AC adapter.(Do not operate by the battery.)
Insert the F/W card for C-7070 Wide Zoom and turn the camera on at play mode.
3. Monitor shows F/W version and inquiry of F/W rewriting.
Please confirm at this time.

How To Update Firmware

1. Rename the binary data of the latest firmware with "firmware.bin".
Create a folder "Firmware" in the xD-Picture Card which was formatted in C-7070 Wide Zoom, and save the binary data "firmware.bin" into the folder "Firmware".
2. Camera is operated by AC adapter. (Do not operate with battery.)
Insert the F/W card for C-7070 Wide Zoom and turn the camera on at play mode.
3. Monitor shows F/W version and inquiry of F/W rewriting.
Then select "YES" (Character is changed green) and press "OK", rewriting of F/W starts automatically.
4. During the rewriting it is showed "EXCHANING" on monitor.
It will take about 2 minutes but please do not operate any key and turn off power.
It might have damaged camera body and F/W.
5. When the rewriting is done, monitor is showed as same as procedure 3.
Then confirm new version of F/W (example: V851-XX) and turn off power after selecting "NO".
(The discrimination of countermeasure is not showed due to confirm easily.)

E. NOTICE OF MODIFICATION

No publication

F. APPLICATION LIST OF GREASE AND CHEMICALS

No publication

G. SPECIAL JIGS AND TOOLS

No publication

H. DESCRIPTION OF MECHANISM

[1] CA1 CIRCUIT DESCRIPTION H-2

[2] CP1 AND VF1 CIRCUIT DESCRIPTION H-5

[3] PW1 POWER CIRCUIT DESCRIPTION H-6

[4] ST1 STROBE CIRCUIT DESCRIPTION H-7

[5] SYA CIRCUIT DESCRIPTION H-8

[1] CA1 CIRCUIT DESCRIPTION**1. IC Configuration**

IC902 (ICX489AQF) CCD imager

IC991, IC992 (CXD3440EN) V driver (CP1 board)

IC906 (AD9949KCP) CDS, AGC, A/D converter, H driver

2. IC902 (CCD)

Interline type CCD image sensor

Optical size 1/1.8 type

Effective pixels 3112 (H) x 2328 (V)

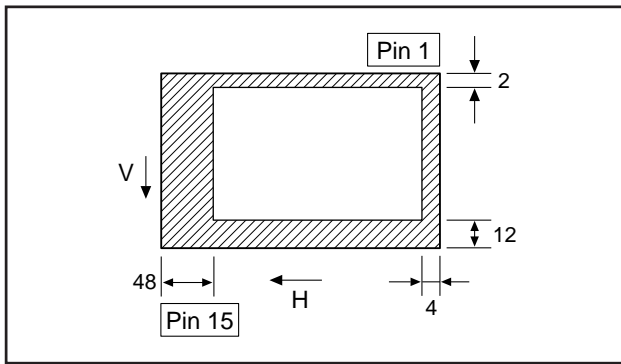
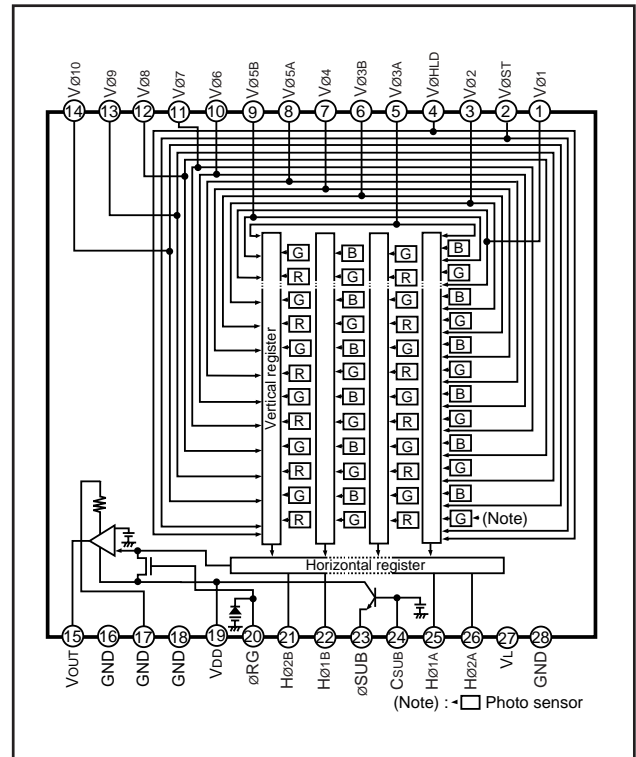
Pixels in total 3164 (H) x 2342 (V)

Optical black

Horizontal (H) direction: Front 48 pixels, Rear 4 pixels

Vertical (V) direction: Front 12 pixels, Rear 2 pixels

Dummy bit number Horizontal : 28

**Fig. 1-1. Optical Black Location (Top View)****Fig. 1-2. CCD Block Diagram**

Pin No.	Symbol	Pin Description	Waveform	Voltage
1	$V_{\phi 1}$	Vertical register transfer clock		-7.5 V, 0 V, 15 V
3, 14	$V_{\phi 2}, V_{\phi 10}$	Vertical register transfer clock		-7.5 V, 0 V
5, 6, 8, 9, 11, 13	$V_{\phi 3A}, V_{\phi 3B}, V_{\phi 5A}, V_{\phi 5B}, V_{\phi 7}, V_{\phi 9}$	Vertical register transfer clock		-7.5 V, 0 V, 15 V
7, 10, 12	$V_{\phi 4}, V_{\phi 6}, V_{\phi 8}$	Vertical register transfer clock		-7.5 V, 0 V
15	V_{OUT}	Signal output		Aprox. 10 V
16, 17, 18, 28	GND	GND	GND	0 V
19	V_{DD}	Circuit power	DC	15 V
20	ϕ_{RG}	Reset gate clock		12.5 V, 16 V
26, 21	$H_{\phi 2A}, H_{\phi 2B}$	Horizontal register transfer clock		0 V, 3.3 V
25, 22	$H_{\phi 1A}, H_{\phi 1B}$	Horizontal register transfer clock		0 V, 3.3 V
23	ϕ_{SUB}	Substrate clock	DC	Aprox. 8 V
24	C_{SUB}	Substrate voltage bias	DC	Aprox. 8V (Different from every CCD)
27	V_L	Protection transistor bias	DC	-7.5 V

Table 1-1. CCD Pin Description

---- When sensor read-out

3. IC906 (H Driver) and IC991, IC992 (V Driver)

An H driver (a part of IC906) and V driver (IC991 and IC992) are necessary in order to generate the clocks (vertical transfer clock, horizontal transfer clock and electronic shutter clock) which driver the CCD.

IC906 has clock generating which drives horizontal CCD and its drives function. These clocks are output from pin (14), (15), (18) and (19) of IC906. In addition the XV1-XV8 signals which are output from IC101 are the vertical transfer clocks, and the XSG1A, XSG1B, XSG3A, XSG3B, XSG5A, XSG5B, XSG7A and XSG7B signals which are output from IC102 is superimposed onto XV1, XV3, XV5 and XV7 at IC991 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, and the RG signal which is output from pin (21) of IC906 is the reset gate clock.

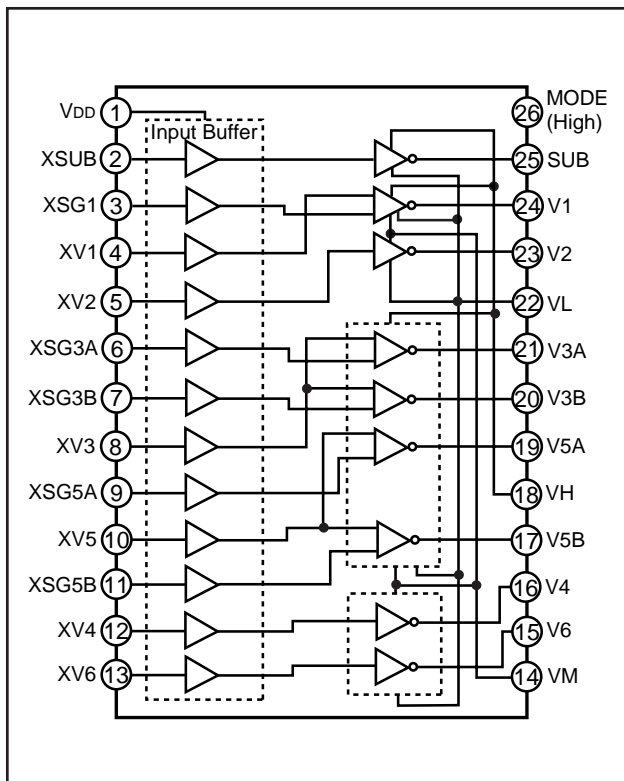


Fig. 1-3. IC991 and IC992 Block Diagram

4. IC906 (CDS, AGC Circuit and A/D Converter)

The video signal which is output from the CCD is input to pins (27) of IC906. There are S/H blocks inside IC905 generated from the XSHP and XSHD pulses, and it is here that CDS (correlated double sampling) is carried out.

After passing through the CDS circuit, the signal passes through the AGC amplifier. It is A/C converted internally into a 12-bit signal, and is then input to IC102 of the CP1 circuit board. The gain of the AGC amplifier is controlled by pin (31)-(33) serial signal which is output from IC101 of the CP1 board.

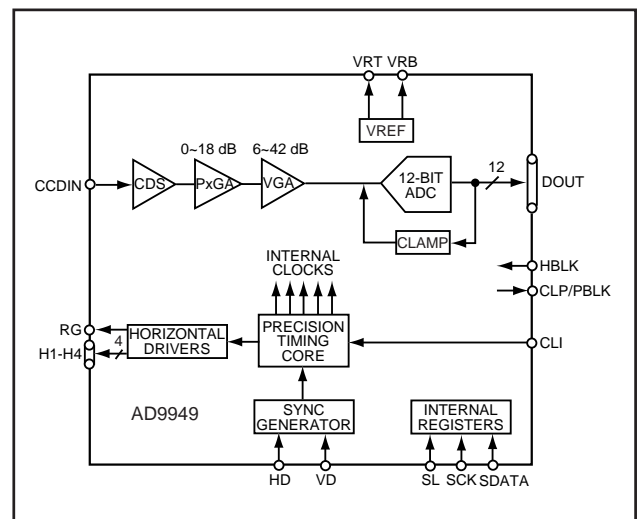


Fig. 1-4. IC906 Block Diagram

5. Transfer of Electric Charge by the Horizontal CCD

The transfer system for the horizontal CCD employs a 2-phase drive method.

The electric charges sent to the final stage of the horizontal CCD are transferred to the floating diffusion, as shown in Fig. 1-5. RG is turned on by the timing in (1), and the floating diffusion is charged to the potential of PD. The RG is turned off by the timing in (2). In this condition, the floating diffusion is floated at high impedance. The H1 potential becomes shallow by the timing in (3), and the electric charge now moves to the floating diffusion.

Here, the electric charges are converted into voltages at the rate of $V = Q/C$ by the equivalent capacitance C of the floating diffusion. RG is then turned on again by the timing in (1) when the H1 potential becomes deep.

Thus, the potential of the floating diffusion changes in proportion to the quantity of transferred electric charge, and becomes CCD output after being received by the source follower. The equivalent circuit for the output circuit is shown in Fig. 1-6.

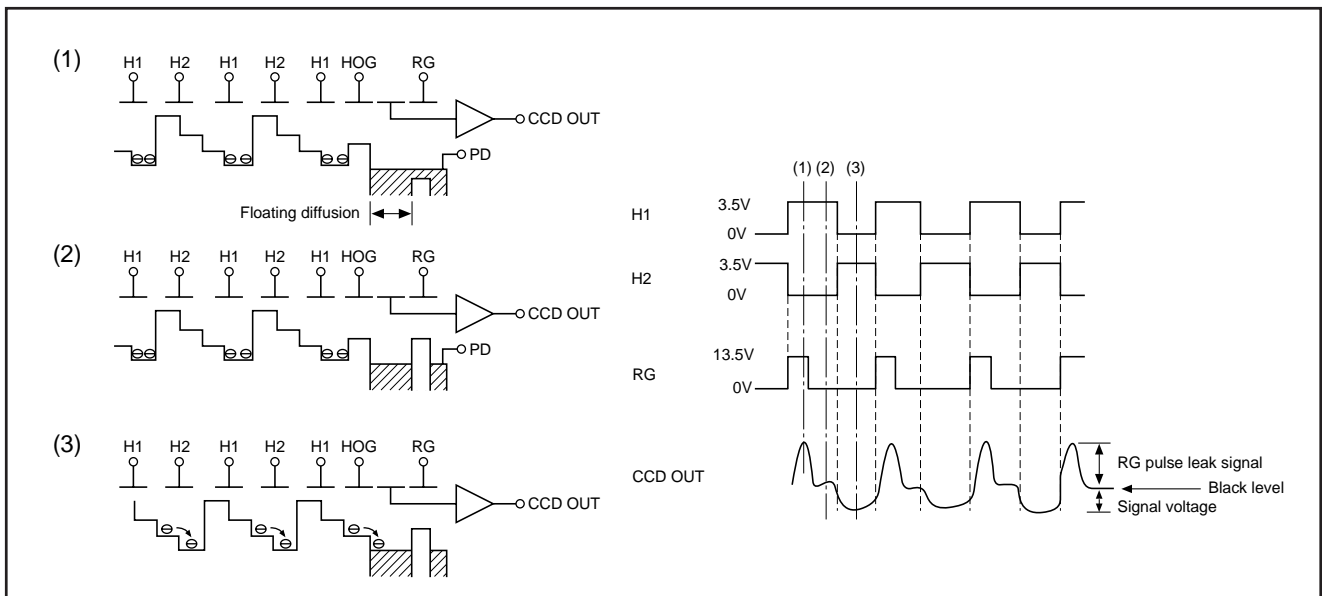


Fig. 1-5. Horizontal Transfer of CCD Imager and Extraction of Signal Voltage

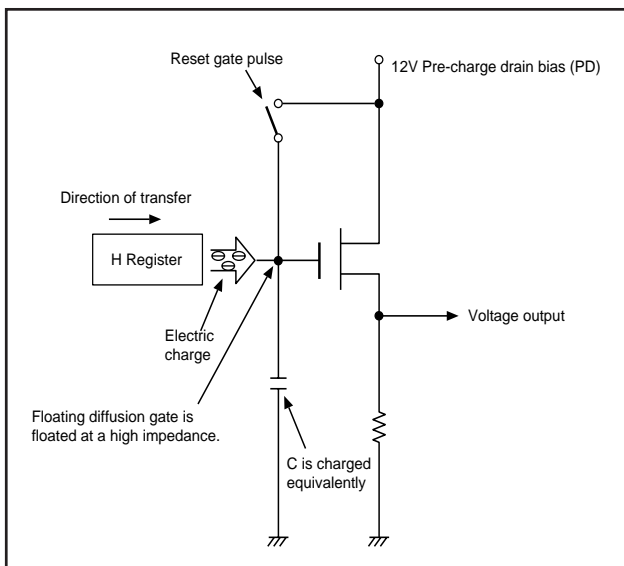


Fig. 1-6. Theory of Signal Extraction Operation

[2] CP1 and VF1 CIRCUIT DESCRIPTION

1. Circuit description

1-1. Signal processor

1. γ correction circuit

This circuit performs (gamma) correction in order to maintain a linear relationship between the light input to the camera and the light output from the picture screen.

2. Color generation circuit

This circuit converts the CCD data into RGB signals.

3. Matrix circuit

This circuit generates the Y signals, R-Y signals and B-Y signals from the RGB signals.

4. Horizontal and vertical aperture circuit

This circuit is used generate the aperture signal.

1-2. AE/AWB and AF computing circuit

The AE/AWB carries out computation based on a 64-segment screen, and the AF carries out computations based on a 6-segment screen.

1-3. SDRAM controller

This circuit outputs address, RAS, CAS and AS data for controlling the SDRAM. It also refreshes the SDRAM.

1-4. SIO

This is the interface for the 8-bit microprocessor.

1-5. PIO/PWM/SIO for LCD

8-bit parallel input and output makes it possible to switch between individual input/output and PWM input/output.

1-6. TG/SG

Timing generated for 7 million pixel CCD control.

1-7. Digital encorder

It generates chroma signal from color difference signal.

2. Outline of Operation

When the shutter opens, the reset signals (ASIC and CPU) and the serial signals (‘Take a picture’ commands) from the 8-bit microprocessor are input 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 data.

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. 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 signal, and the data is then compressed by JPEG and is then written to card memories (xD card and

CF card).

When the data is to be output to an external device, it is taken data from the memory. When played back on the LCD and monitor, data is transferred from memory to the SDRAM, and the image is then elongated so that it is displayed over the SDRAM display area.

3. LCD Block

LCD Block is in the VF1 board, and it is constructed by LCD driver (IC171) and around circuits.

The video signal from the ASIC are converted into RGB signals by the LCD driver, and these RGB signals and the control signal which is output by the LCD driver are used to drive the LCD panel. The RGB signals are 1H transposed so that no DC component is present in the LCD element, and the two horizontal shift register clocks drive the horizontal shift registers inside the LCD panel so that the 1H transposed RGB signals are applied to the LCD panel. Because the LCD closes more as the difference in potential between the COM (common polar voltage: AC) and the R, G and B signals becomes greater, the display becomes darker; if the difference in potential is smaller, the element opens and the LCD become brighter.

4. Lens drive block

4-1. Shutter drive

The shutter drive signal (SIN1, SIN2) which is output from the ASIC (IC101) is driven the shutter constant level driver, and then shutter is opened and closed.

The shutter hold signal(VCTRL) which is output from the ASIC (IC101) is restricted the shutter electric current. (maintenance electric current)

4-2. Iris drive

The iris stepping motor drive signals (IIN1, IIN2, IIN3 and IIN4) which are output from the ASIC (IC101) are used to drive by the motor driver (IC956), and carry out iris operation.

4-3. Focus drive

The focus stepping motor drive signals (FIN1, FIN2, FIN3 and FIN4) which are output from the ASIC (IC101) are used to drive by the motor driver (IC956), and carry out focusing operation. Detection of the standard focusing positions is carried out by means of the photointerruptor (RPI) inside the lens block.

4-4. Zoom drive

The zoom stepping motor drive signals (ZIN1 and ZIN2) which are output from the ASIC (IC101) are used to drive by the motor driver (IC956), and carry out zooming operation. Detection of the zoom standard positions is carried out by means of mecha switch (WSW) inside the lens block. Acquisition of the zoom positions is carried out by means of counting the photointerruptor (ZPI) inside the lens block.

[3] PW1 POWER CIRCUIT DESCRIPTION**1. Outline**

This is the main power circuit, and is comprised of the following blocks.

Switching controller (IC501)

Analog system power output (T5001, Q5041)

Digital 1.25 V power supply output (Q5071, L5071)

Digital 3.25 V power supply output (Q5091, L5091)

LCD system power supply output (L5111, Q5111)

LED backlight power supply output (L5131, Q5131)

Motor system power supply output (IC961, L9601, Q9601)

2. Switching 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 six built-in channels, only CH1 (analog system), CH2 (digital 1.25 V), CH3 (digital 3.25 V), CH4 (LCD system) and CH5 (LED backlight) are used. Feedback from analog system (CH1), 1.25 V (D) (CH2), 3.25 V (D) (CH3), LCD system (CH4) and LED backlight (CH5) power supply outputs are received, and the PWM duty is varied so that each one is maintained at the correct voltage setting level.

Feedback for the backlight power (CH5) is provided to the both ends voltage of resistance so that regular current can be controlled to be current that was setting.

2-1. Short-circuit protection circuit

If output is short-circuited for the length of time determined by the condenser which is connected to Pin (37) of IC501, all output is turned off. The control signal (P ON) are re-controlled to restore output.

3. Analog System Power Output

+15.0 V (A), -7.6 V (A) and 3.45 V (A) are output. Feedback for the +15.0 V (A) is provided to the switching controller (Pin (40) of IC501) so that PWM control can be carried out.

4. Digital 1.25 V System Power Output

+1.25 V (D) is output. Feedback for the +1.25 V (D) is provided to the switching controller (Pin (43) of IC501) so that PWM control can be carried out.

5. Digital 3.25 V System Power Output

+3.25 V (D) is output. Feedback for the +3.25 V (D) is provided to the switching controller (Pin (45) of IC501) so that PWM control can be carried out.

6. LCD System Power Output

+8.5 V (L) and AF LED (8.5 V) are output. Feedback for the +8.5 V (L) is provided to the switching power controller (Pin (47) of IC501) so that PWM control can be carried out.

7. LED Backlight Power Output

Regular current (17.9 mA) is being transmitted to LED for LCD backlight. Feedback for the both ends voltage of resistance that is being positioned to in series LED are provided to the switching controller (Pin (2) of IC501) so that PWM control to be carried out.

8. Motor System Power Output

5.6 V are output. Feedback for the 5.6 V is provided to the switching power controller (Pin (3) of IC961) so that PWM control can be carried out.

[4] ST1 STROBE CIRCUIT DESCRIPTION**1. Charging Circuit**

When UNREG power is supplied to the charge circuit and the CHG signal from microprocessor becomes High (3.3 V), the charging circuit starts operating and the main electrolytic capacitor is charged with high-voltage direct current.

However, when the CHG signal is Low (0 V), the charging circuit does not operate.

1-1. Charging switch

The CHG signal becomes High, Q5407 becomes ON and the charging circuit starts operating.

1-2. Power supply filter

C5401 constitutes the power supply filter. They smooth out ripples in the current which accompany the switching of the oscillation transformer.

1-3. Oscillation circuit

This circuit generates an AC voltage (pulse) in order to increase the UNREG power supply voltage when drops in current occur. This circuit generates a drive pulse with a frequency of approximately 50-100 kHz. Because self-excited light omission is used, the oscillation frequency changes according to the drive conditions.

1-4. Oscillation transformer

The low-voltage alternating current which is generated by the oscillation control circuit is converted to a high-voltage alternating current by the oscillation transformer.

1-5. Rectifier circuit

The high-voltage alternating current which is generated at the secondary side of T5401 is rectified to produce a high-voltage direct current and is accumulated at electrolytic capacitor C5412.

1-6. Voltage monitoring circuit

This circuit is used to maintain the voltage accumulated at C5412 at a constance level.

After the charging voltage is divided and converted to a lower voltage by R5417 and R5419, it is output as the monitoring voltage VMONIT. When VMONIT voltage reaches a specified level, the CHG signal is switched to Low and charging is interrupted.

2. Light Emission Circuit

When FLCLT signals are input from the ASIC expansion port, the stroboscope emits light.

2-1. Emission control circuit

When the FLCLT signal is input to Hi at the emission control circuit, Q5409 switches on and preparation is made to the light emitting. Moreover, when a FLCLT signal becomes Lo, the stroboscope stops emitting light.

2-2. Trigger circuit

The Q5409 is turned ON by the FLCLT signal and light emission preparation is preformed. Simultaneously, high voltage pulses of several kV are emitted from the trigger coil and applied to the light emitter.

2-3. Light emitting element

When the high-voltage pulse form the trigger circuit is applied to the light emitting part, currnet flows to the light emitting element and light is emitted.

Beware of electric shocks.

[5] SYA CIRCUIT DESCRIPTION**1. Configuration and Functions**

For the overall configuration of the SYA block diagram, refer to the block diagram. The configuration of the SYA block centers around a 8-bit microprocessor (IC301). The 8-bit microprocessor handles the following functions.

1. Operation key input, 2. Mode LCD display, 3. Clock control, 4. Power ON/OFF, 5. Strobe charge control

Pin	Signal	I/O	Outline
1	DC IN	I	DC power detection terminal L : Connection
2	PAF THERM	I	Passive sensor temperature detection (analog input)
3	CHG VOL	I	Strobe charge voltage input (analog input)
4	BATTERY	I	Battery voltage input (analog input)
5	AVREF	I	A/D converter standard voltage input terminal
6	BAT OFF	I	Battery off detection signal L : Battery OFF
7	JOG A	I	JOG dial A detection signal
8	SREQ	I	Serial communication requirement signal L : Requirement
9	IR IN	I	Remote control detection signal
10	ZPULSE	I	Zoom motor drive pulse count
11	EXSTB	I	External strobe communication detection signal
12	SCAN IN 7	I	Keymatrix input
13	NOT USED	-	-
14	IC	-	8-bit micro processor rewrite impressed voltage
15	XCOUT	O	Sub clock oscillation terminal (32.768 kHz)
16	XCIN	I	Sub clock oscillation terminal
17	VSS1	-	GND
18	VDD	-	Power supply terminal
19	XOUT	O	Main clock oscillation terminal (4 MHz)
20	XIN	I	Main clock oscillation terminal
21	RESET	I	Reset input
22	USB CONNECT	I	USB cable connection detection signal
23	LCD ON	O	DC/DC converter (LCD system) ON/OFF signal
24	CHG ON	O	Strobe charge control
25	BL ON	O	LCD backlight ON/OFF signal
26, 27	CAPH, L	-	LCD drive voltage step-up capacitor connection terminal
28~30	VLC 0~2	-	LCD drive voltage terminal (external capacitor connection)
31~34	COM 0~3	O	LCD common output 1~4
35	SCOM0	-	-
36~54	S0~S18	O	LCD segment output 0~18
55	S19/FLMD0	O	LCD segment output (combined with power for program writing)
56~65	S20~S29	O	LCD segment output 20~29
66	CARD SW	I	CARD lid switch detection
67	AV JACK	-	AV JACK insertion detection
68	JOG B	I	Jog dial B detection signal
69	FLMD0_SY	O	Microprocessor card rewriting port
70	COMREQ	I	ASIC serial communication requirement
71	MAIN RESET	I	System reset (MRST)
72~75	SCAN OUT 0~3	O	Key matrix output
76	VSS0	-	GND
77	VDD0	-	VDD
78	SELF_LED	O	SELF LED L : Lighting

79	CARD_LED	O	CARD LED	L : Lighting
80	LED (GREEN)	O	VF. LED (green)	L : Lighting
81	LED (ORANGE)	O	VF. LED (orange)	L : Lighting
82	AVREF ON	O	A/D standard voltage ON/OFF signal	L : ON
83	BKUPCTL	O	Backup battery charge control	L : Charge
84	CF CARD	I	Expansion memory card (CF) attachment detection signal	L : Attachment
85	P ON	O	DC/DC converter ON/OFF signal	H : ON
86	PA ON	O	DC/DC converter (analog) ON/OFF signal	H : ON
87	XDCARD	I	xD card insertion detection	L : Attachment
88	SCAN OUT 4	O	Key matrix output	
89	SCAN OUT 5	I	Key matrix output	
90	SCAN IN 0/PRG SCK	I	Key matrix input/Flash rewrite serial communication data input	
91	SCAN IN 1/PRG SO	I	Key matrix input/Flash rewrite serial communication data output	
92	SCAN IN 2/PRG SI	I	Key matrix input/Flash rewrite serial communication clock output	
93	SCK	O	Serial communication clock output	
94	SO	O	Serial communication data output (→ASIC)	
95	SI	I	Serial communication data input (←ASIC)	
96	AVSS	-	GND	
97~100	SCAN IN 6~3	I	Key matrix input	

Table 5-1. 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) or to the LCD display device as operation mode setting data. Fig. 5-1 shows the internal communication between the 8-bit microprocessor and ASIC.

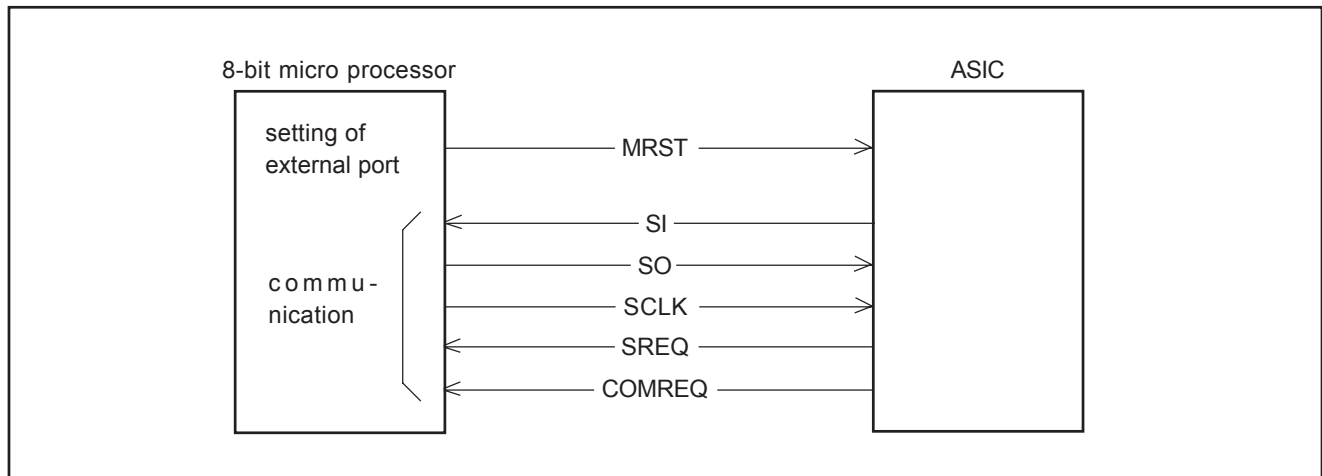


Fig. 5-1 Internal Bus Communication System

3. Key Operaiton

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

SCAN OUT \ SCAN IN	0	1	2	3	4	5	6	7
0	P	A	S	M	-	-	-	-
1	PLAY	MOVIE	SCENE	My	-	-	-	-
2	1st	2nd	TELE	WIDE	SPOT	MF/SW	EXPOSURE CONTROL	FLASH
3	SELF/REMOTE CONTROL	CUSTOM	CF/xD	EXTRA	LCD OPEN	AEL	LCD REV V	LCD REV H
4	-	UP	OK/MENU	RIGHT	DOWN	LEFT	QUICK VIEW	LCD
5	-	-	-	TEST	-	-	-	PW ON

Table 5-2. 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, power voltage is supplied to IC302, 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 main clock, and operates 32.768 kHz of subclock.

When the battery is removed, the 8-bit microprocessor power switches the battery for memory backup by IC302, and operates at low consumption. At this condition, the 8-bit microprocessor halts the main clock, and operates clock counting by sub clock.

Also, the secondary 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 both the PON signal at pin (85) and the PAON signal at pin (86) to High, and then turn on the power circuit. After PON signal is to High, sets external port of ASIC after approximately 100 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 to High and then turn on the CCD. When playing, set the PAON signal to Low and then turn off the CCD. When LCD panel turns on, set LCD ON signal at pin (23) to High, and then turn on the power. Set BLON signal at pin (25) to High, and turn on the backlight power.

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

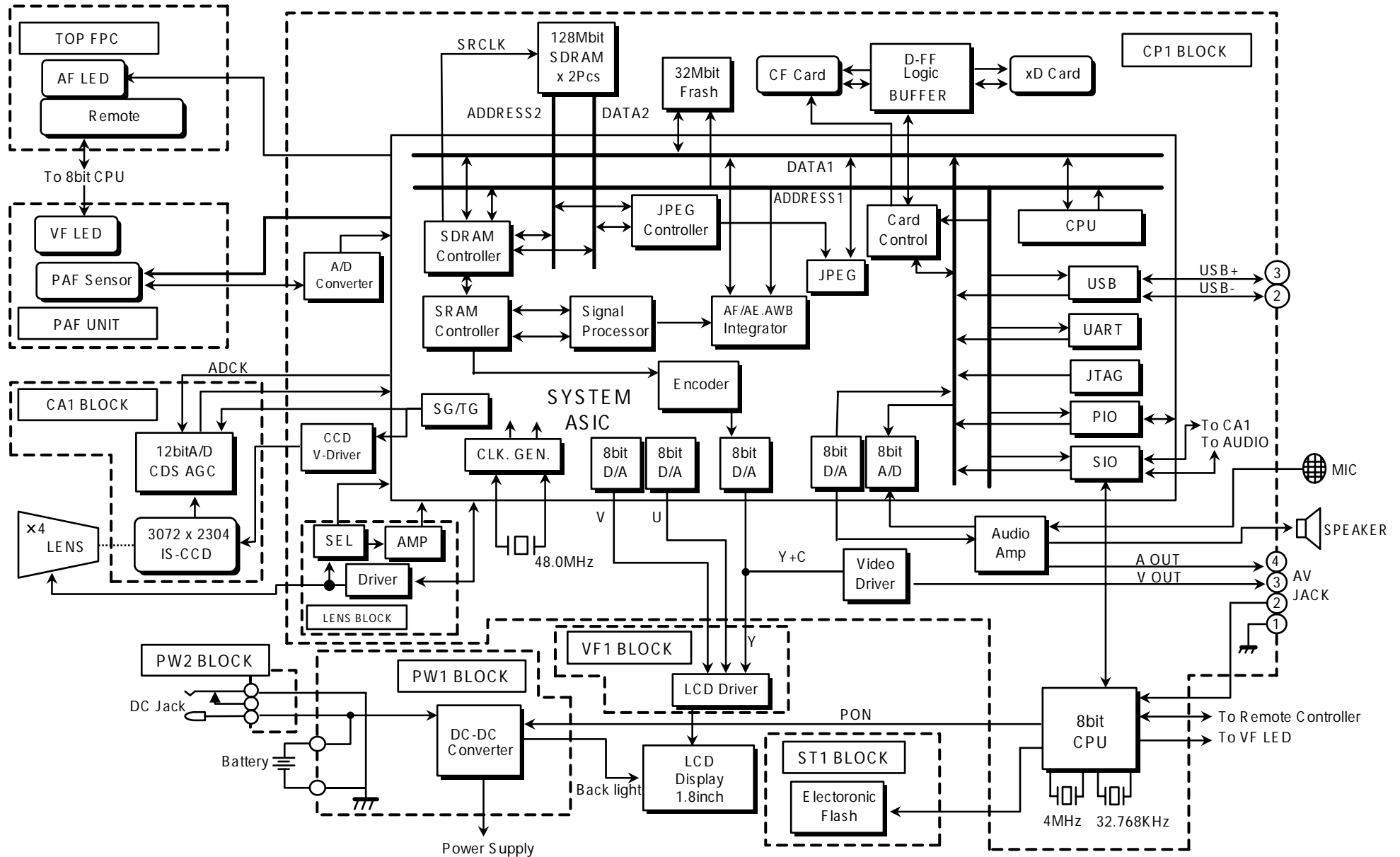
	ASIC, memory	CCD	8bit CPU	LCD MONITOR
Power supply voltage	1.25 V, 3.25 V	15 V, -7.6 V 3.45 V	3.2 V	8.5 V, 3.25 V
Power OFF	OFF	OFF	32KHz	OFF
Playback mode	ON	OFF	4MHz	ON
Shooting mode (LCD)	ON	OFF	4MHz	ON
Shooting mode (OVF)	OFF	OFF	4MHz	OFF
Shooting	ON	ON	4MHz	ON
USB connection	ON	OFF	4MHz	OFF

Table 5-3. Power supply control

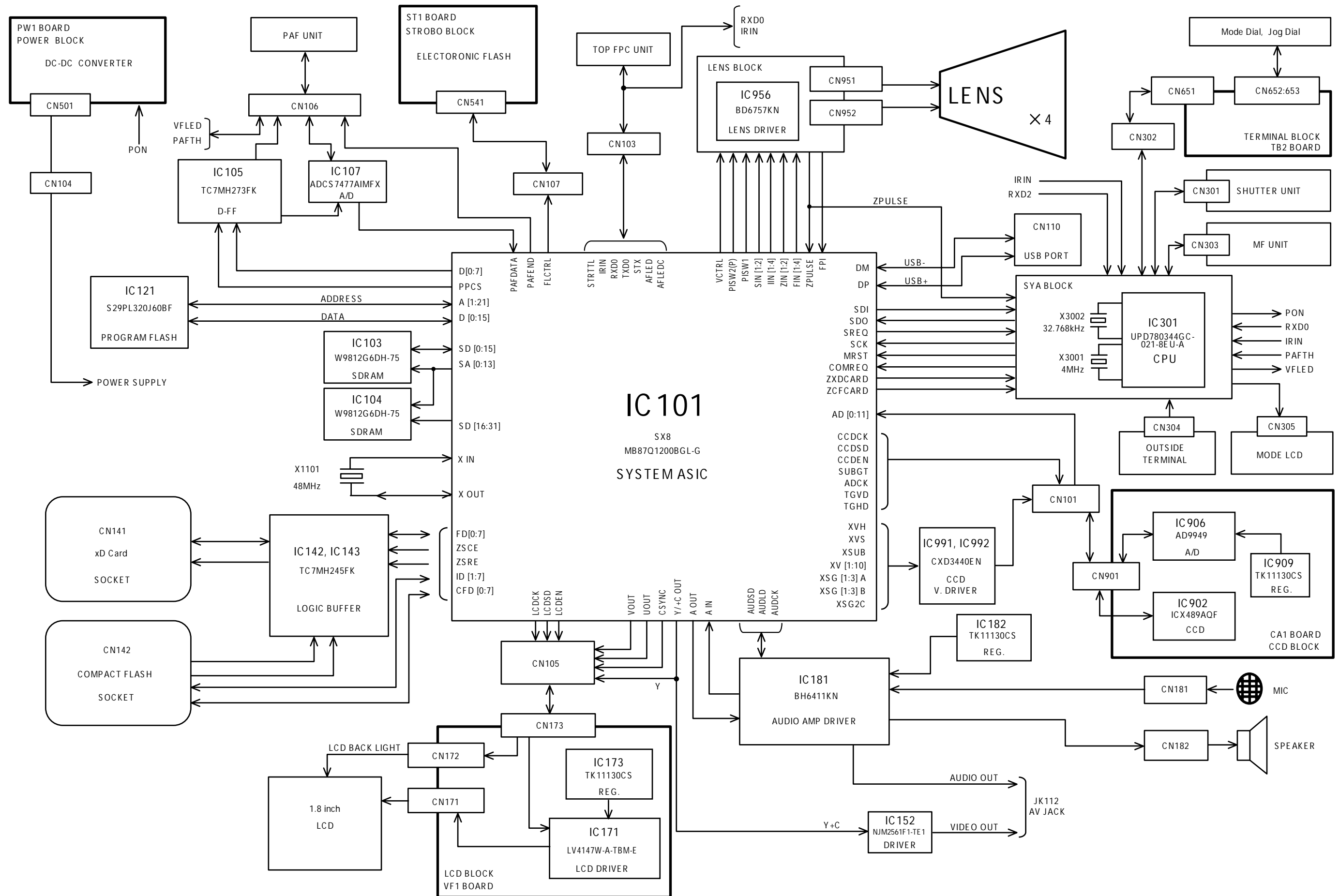
I. OTHERS

BLOCK DIAGRAMS	I-2
OVERALL	I-2
MAIN	I-3
SYSTEM CONTROL	I-4
CCD	I-5
LENS	I-6
POWER	I-7
STROBO	I-8
 CUIT DIAGRAMS	 I-9
OVERALL	I-9
CP1(DMA)	I-10
CA1	I-11
CP1(SYA)	I-12
CP1(TCA)	I-13
PW1, PW2	I-14
VF1, TB1	I-15
TB2, TB3	I-16
ST1	I-17
 MOUNTING DIAGRAMS	 I-18
CP1, CA1	I-18
PW1, PW2, ST1, VF1, TB1:3	I-19

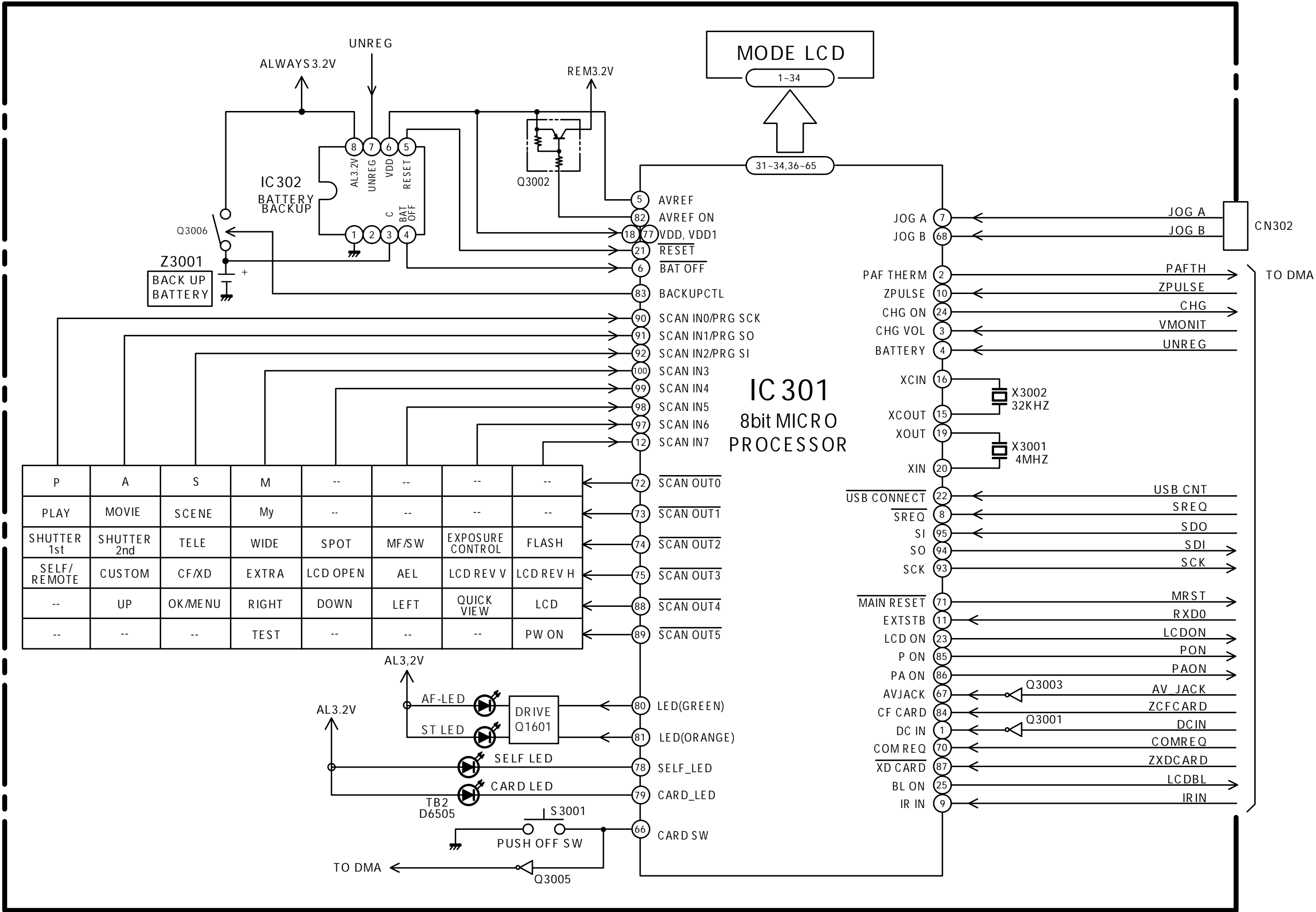
C-7070 Wide Zoom BLOCK DIAGRAM : OVERALL



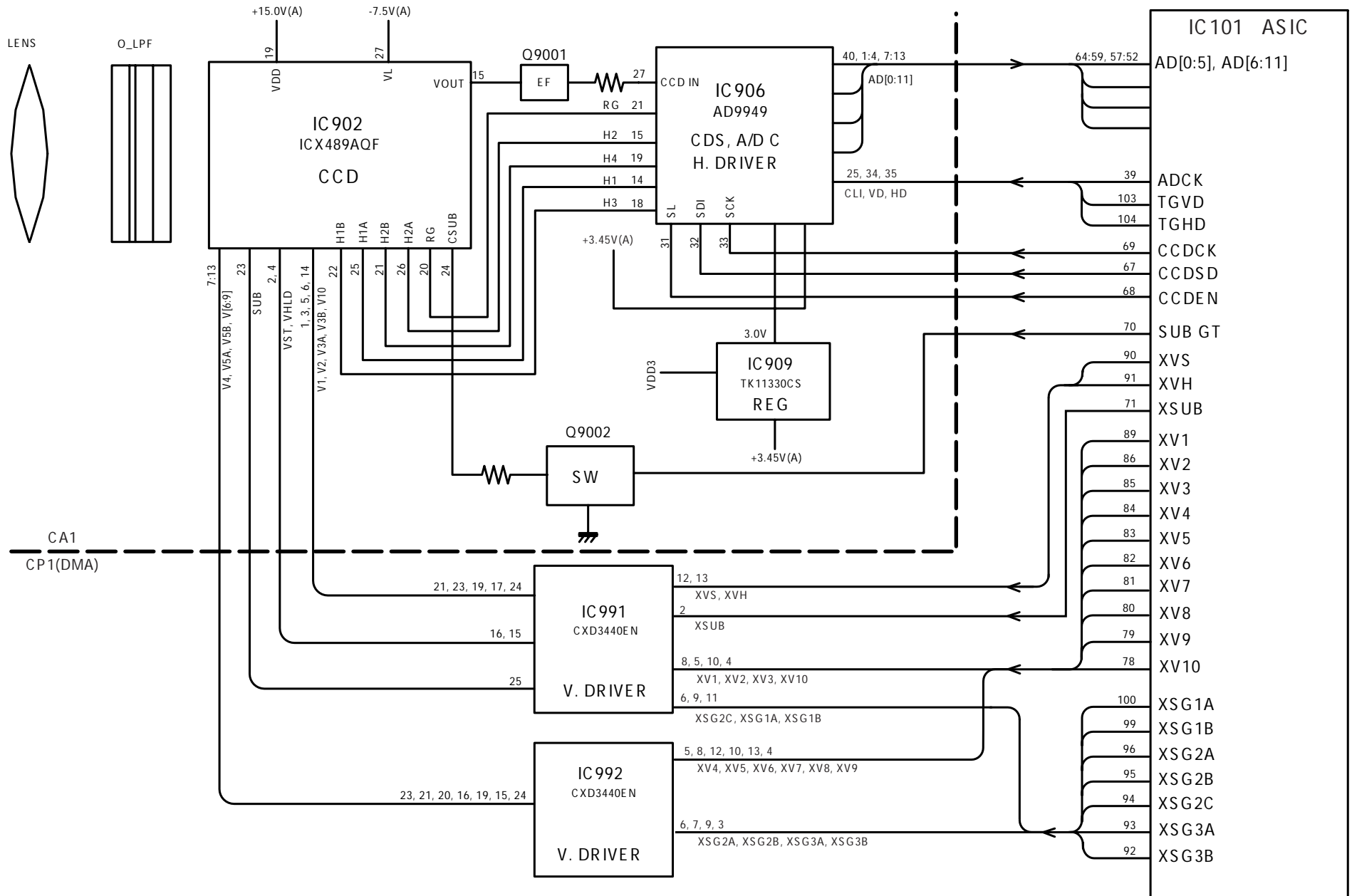
C-7070 Wide Zoom BLOCK DIAGRAM : MAIN



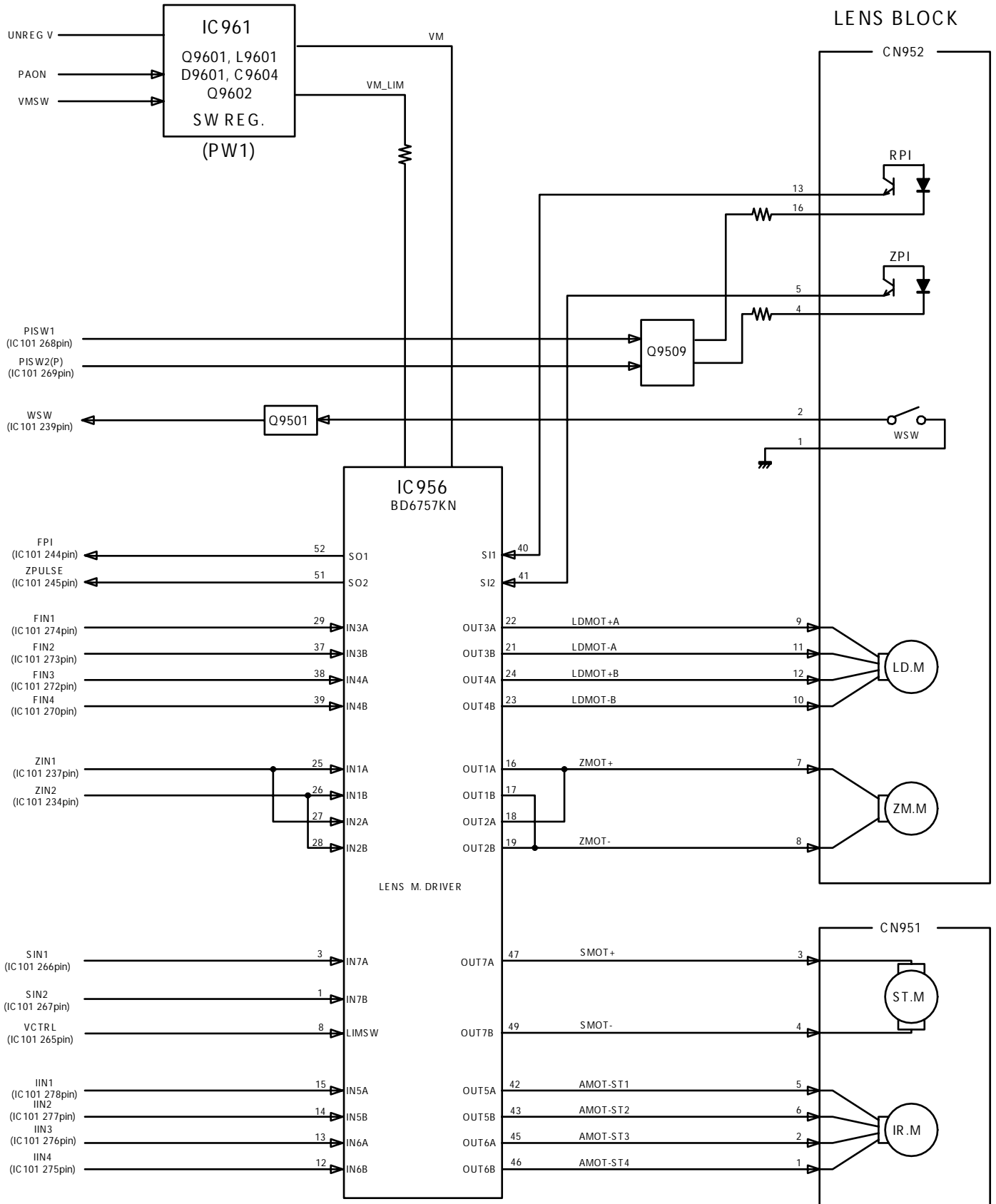
C-7070 Wide Zoom BLOCK DIAGRAM : SYSTEM CONTROL



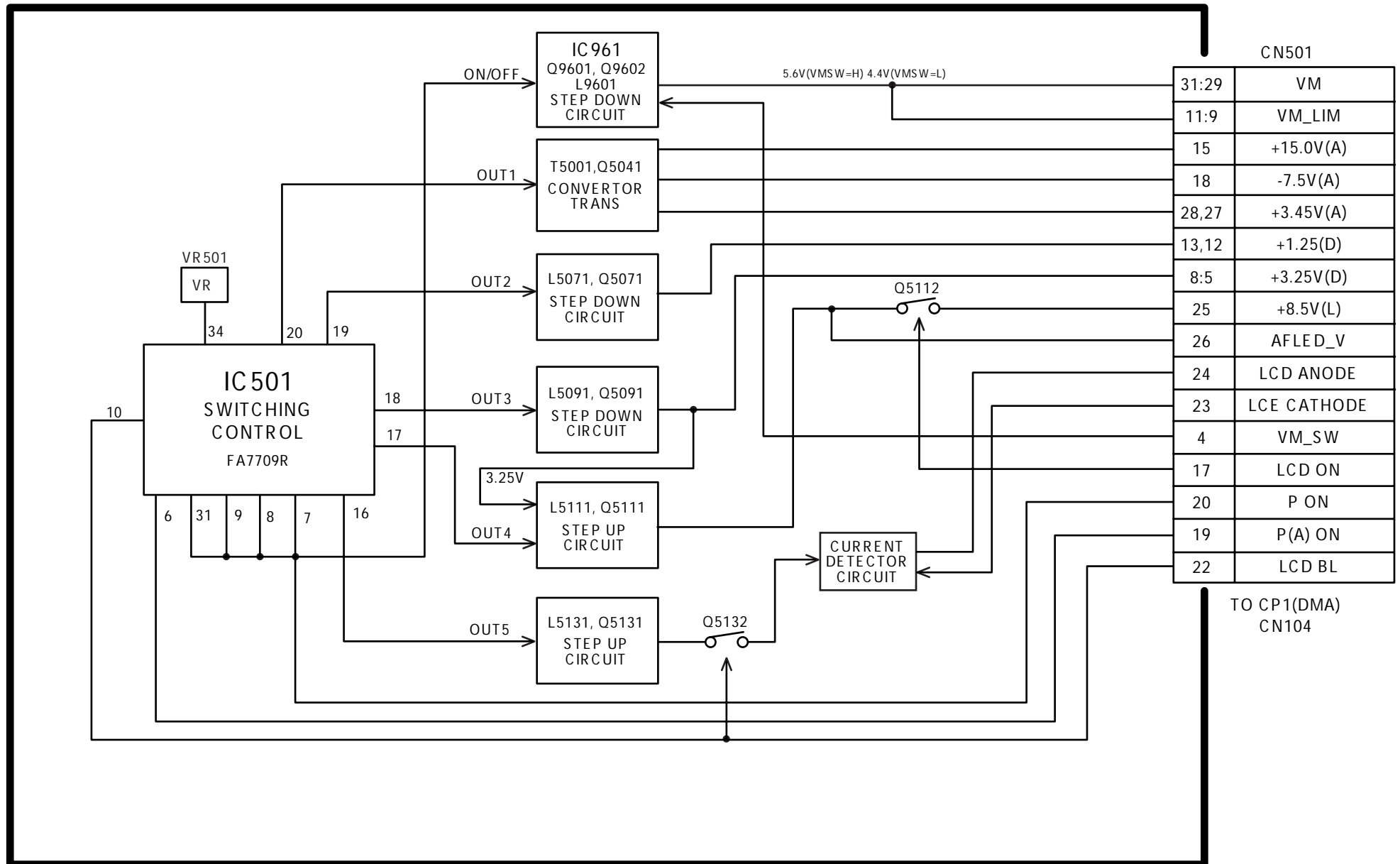
C-7070 Wide Zoom BLOCK DIAGRAM : CCD



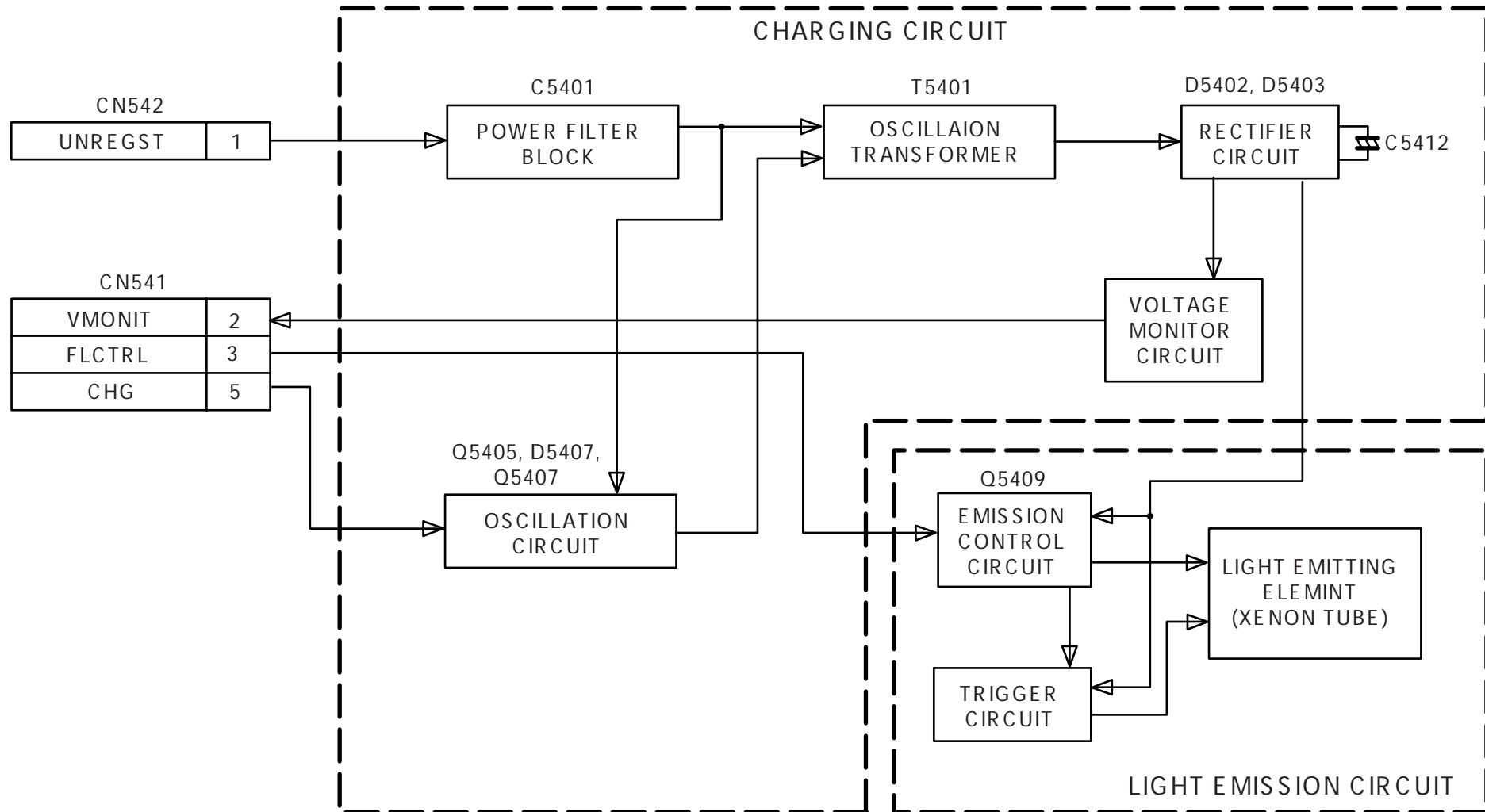
C-7070 Wide Zoom BLOCK DIAGRAM : LENS



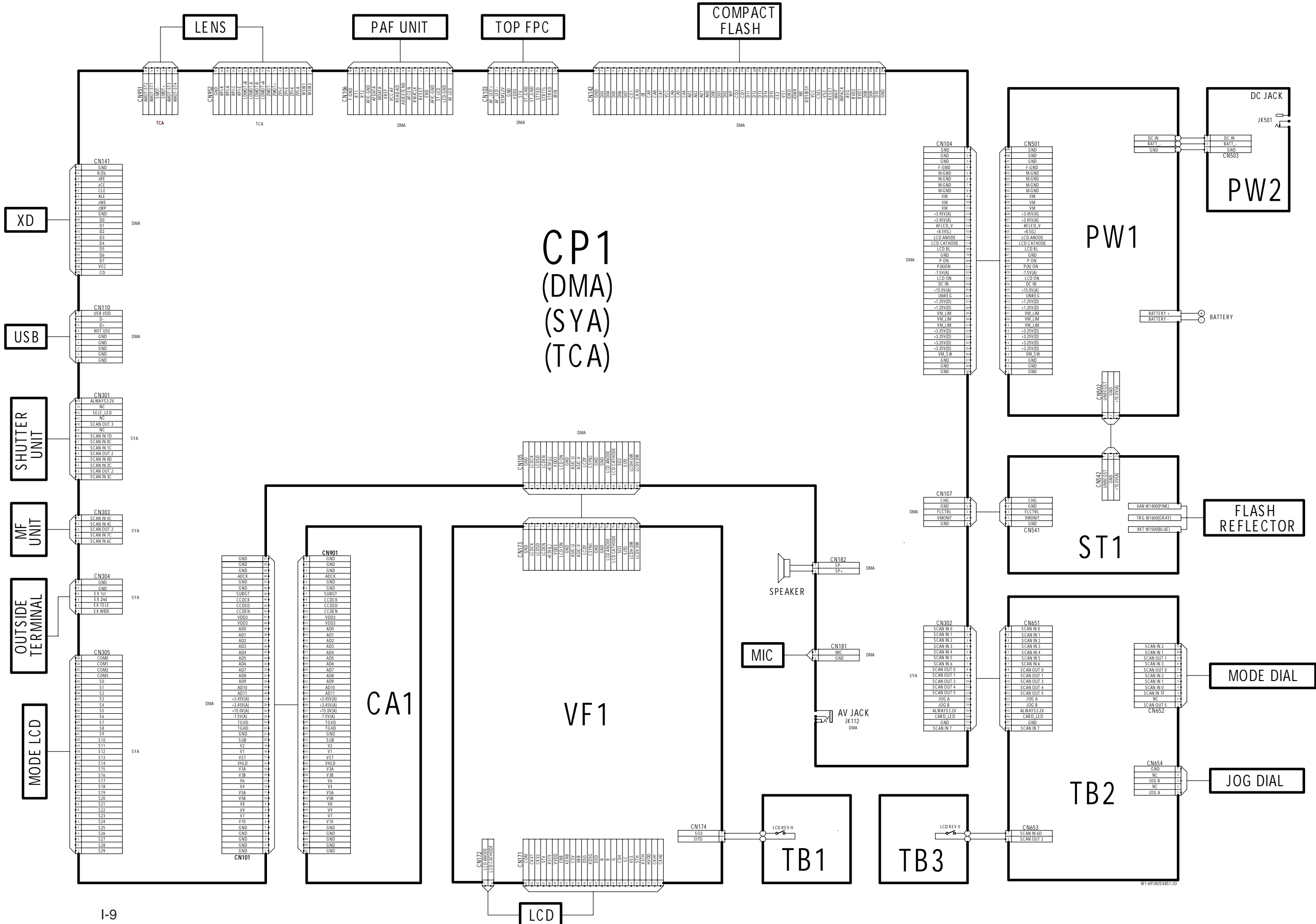
C-7070 Wide Zoom BLOCK DIAGRAM : POWER



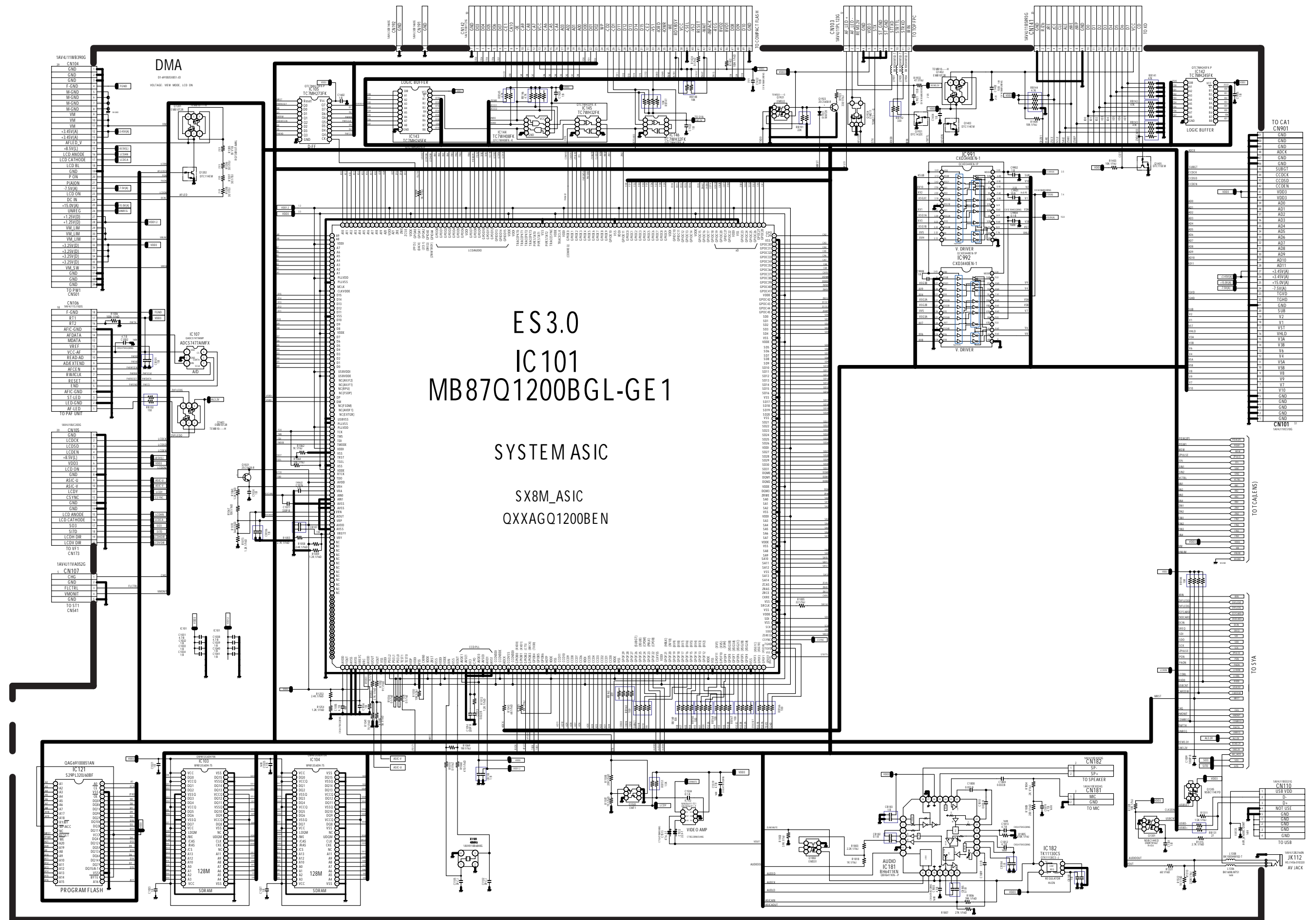
C-7070 Wide Zoom BLOCK DIAGRAM : STROBO



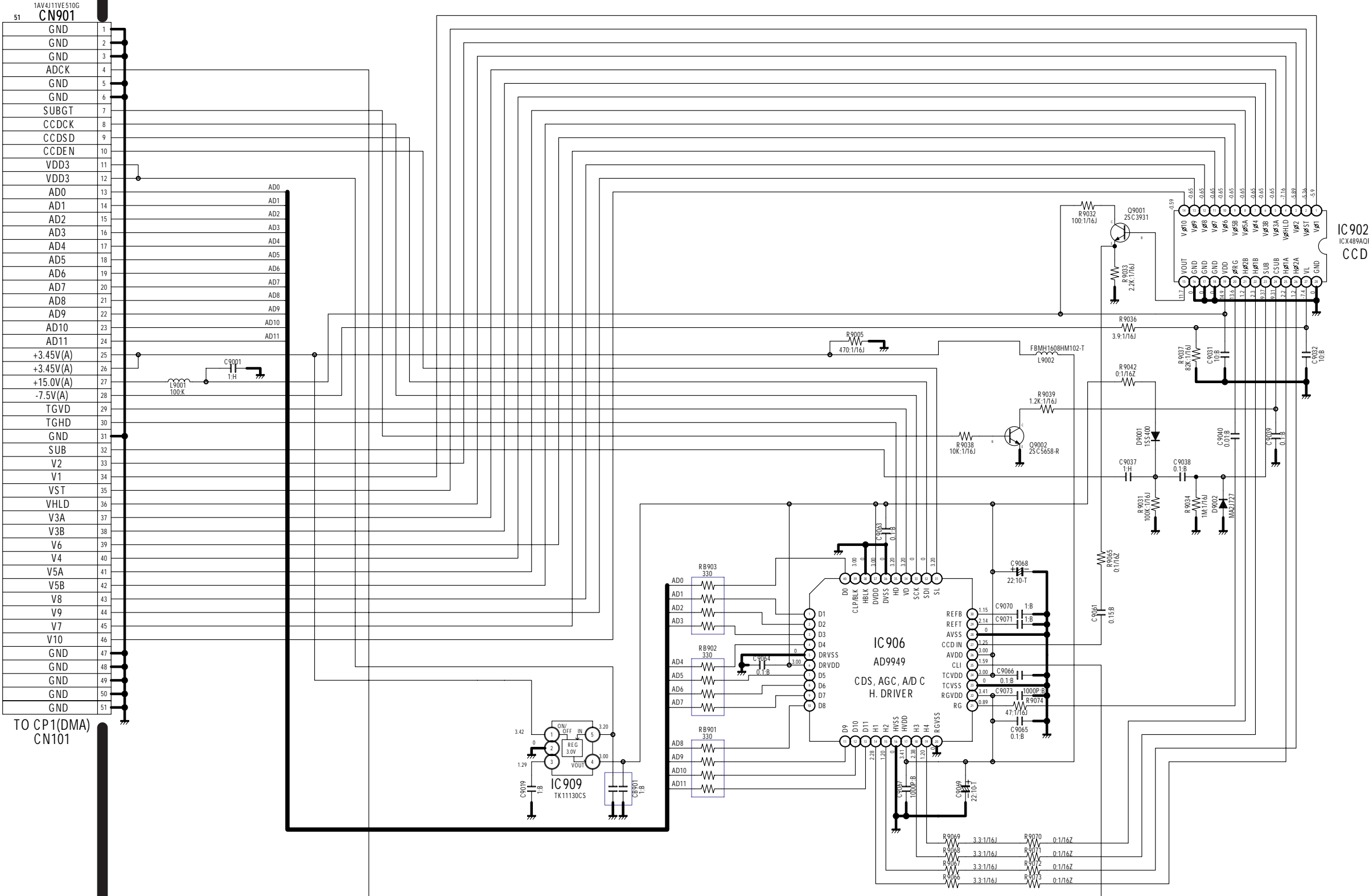
C-7070 Wide Zoom CIRCUIT DIAGRAM : OVERALL



C-7070 Wide Zoom CIRCUIT DIAGRAM : CP1(DMA)

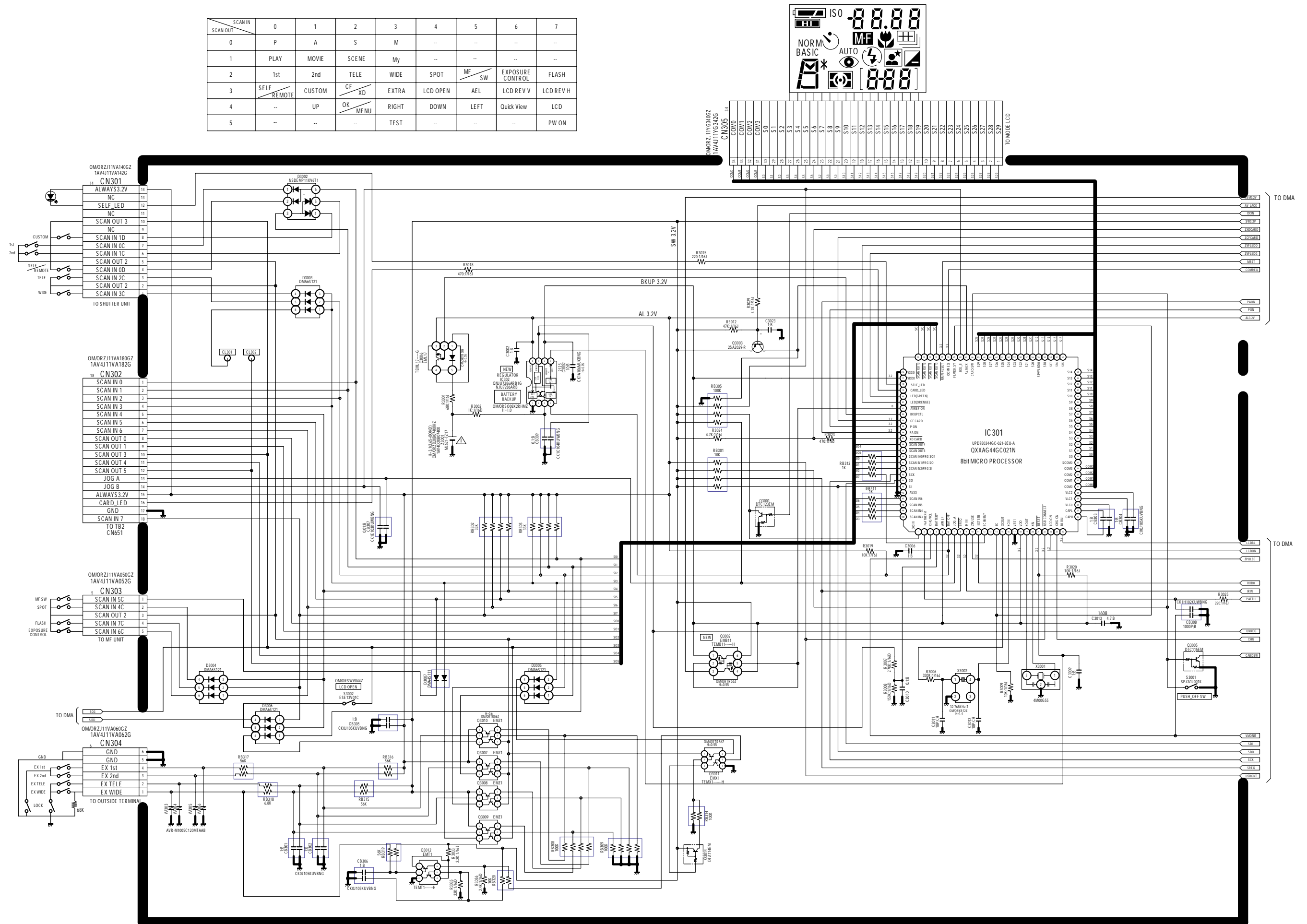


C-7070 Wide Zoom CIRCUIT DIAGRAM : CA1

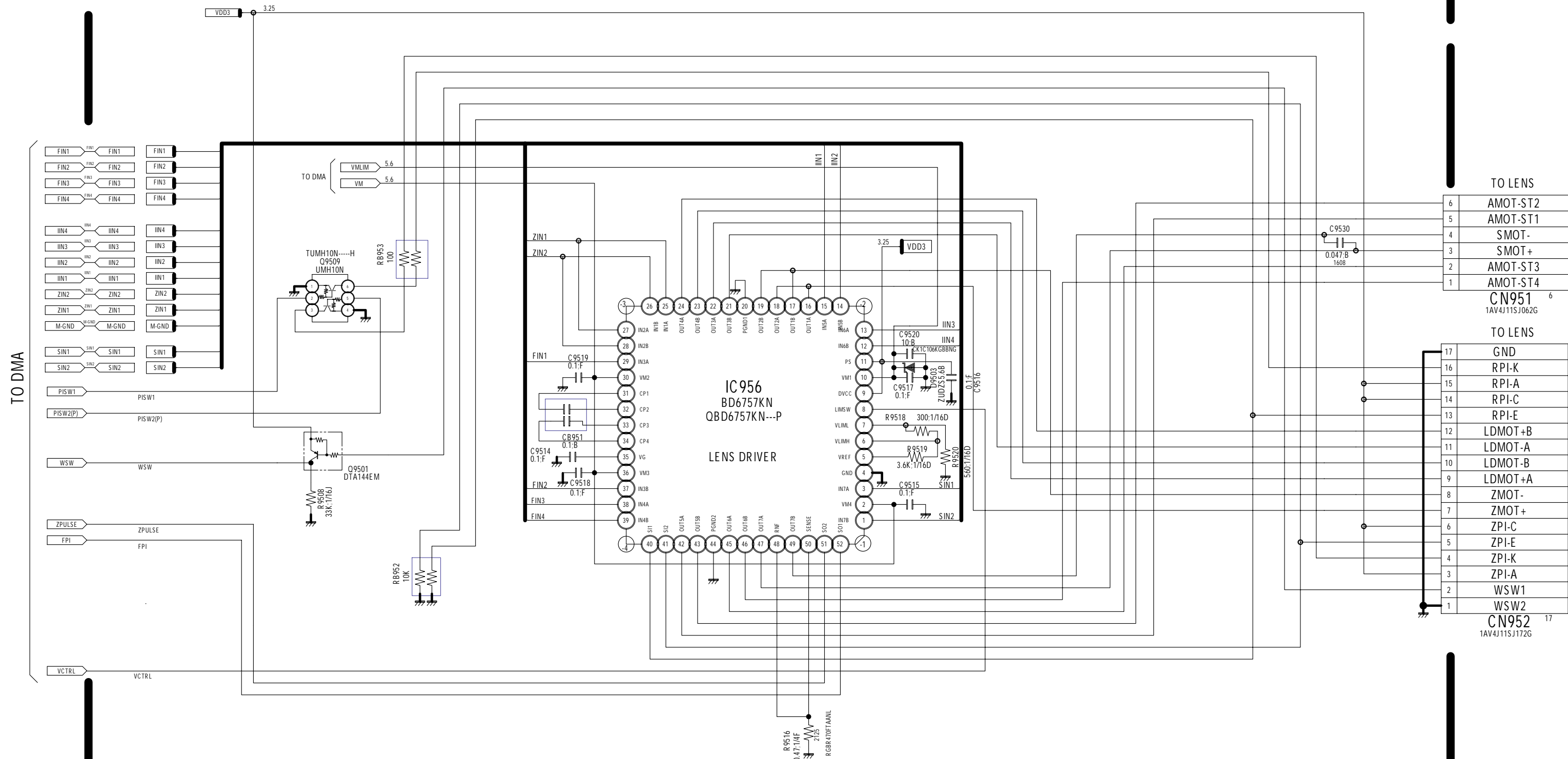


C-7070 Wide Zoom CIRCUIT DIAGRAM : CP1(SYA)

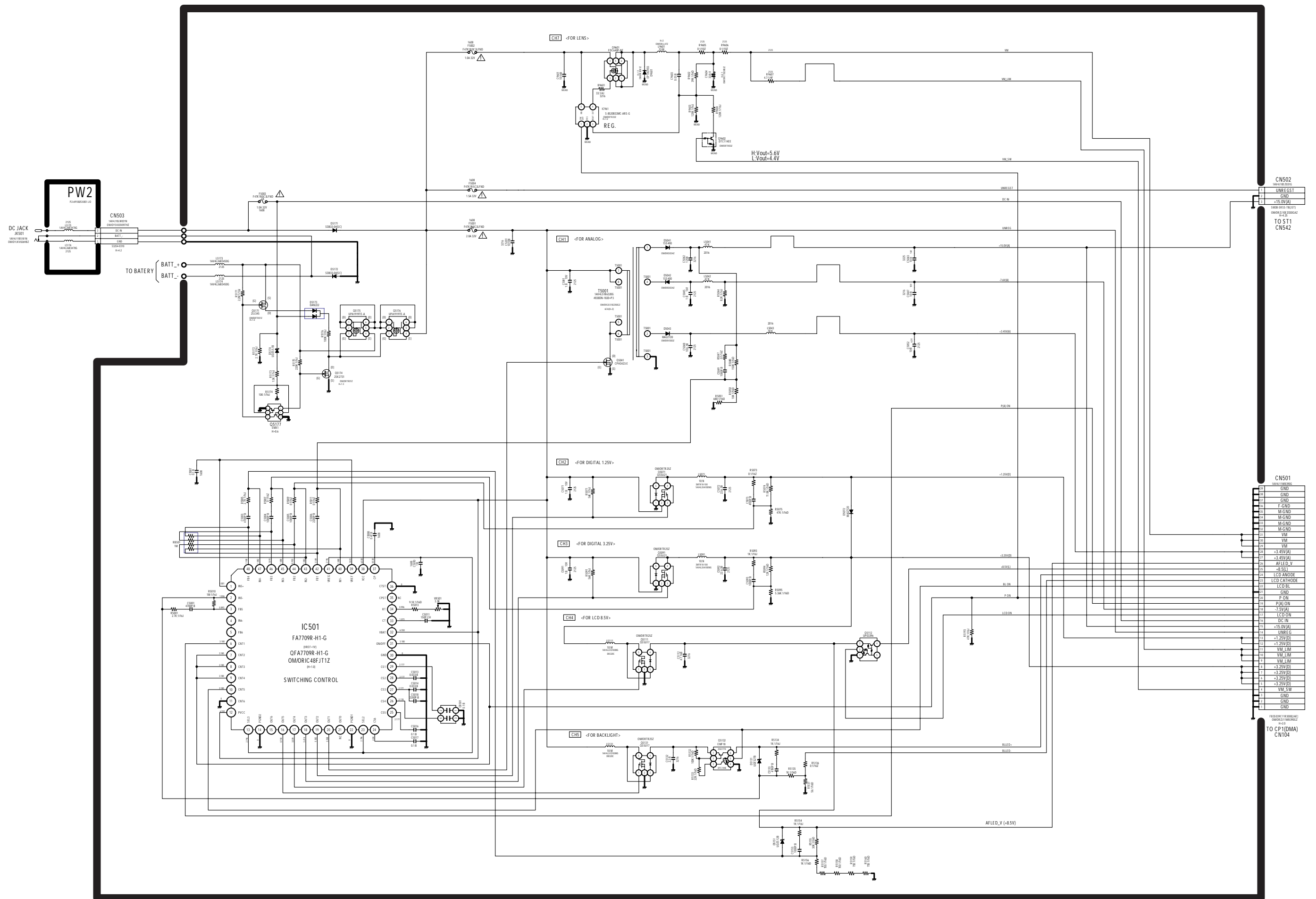
SCAN IN SCAN OUT	0	1	2	3	4	5	6	7
0	P	A	S	M	--	--	--	--
1	PLAY	MOVIE	SCENE	My	--	--	--	--
2	1st	2nd	TELE	WIDE	SPOT	MF SW	EXPOSURE CONTROL	FLASH
3	SELF REMOTE	CUSTOM	CF XD	EXTRA	LCD OPEN	AEL	LCD REV V	LCD REV H
4	--	UP	OK MENU	RIGHT	DOWN	LEFT	Quick View	LCD
5	--	--	--	TEST	--	--	--	PW ON



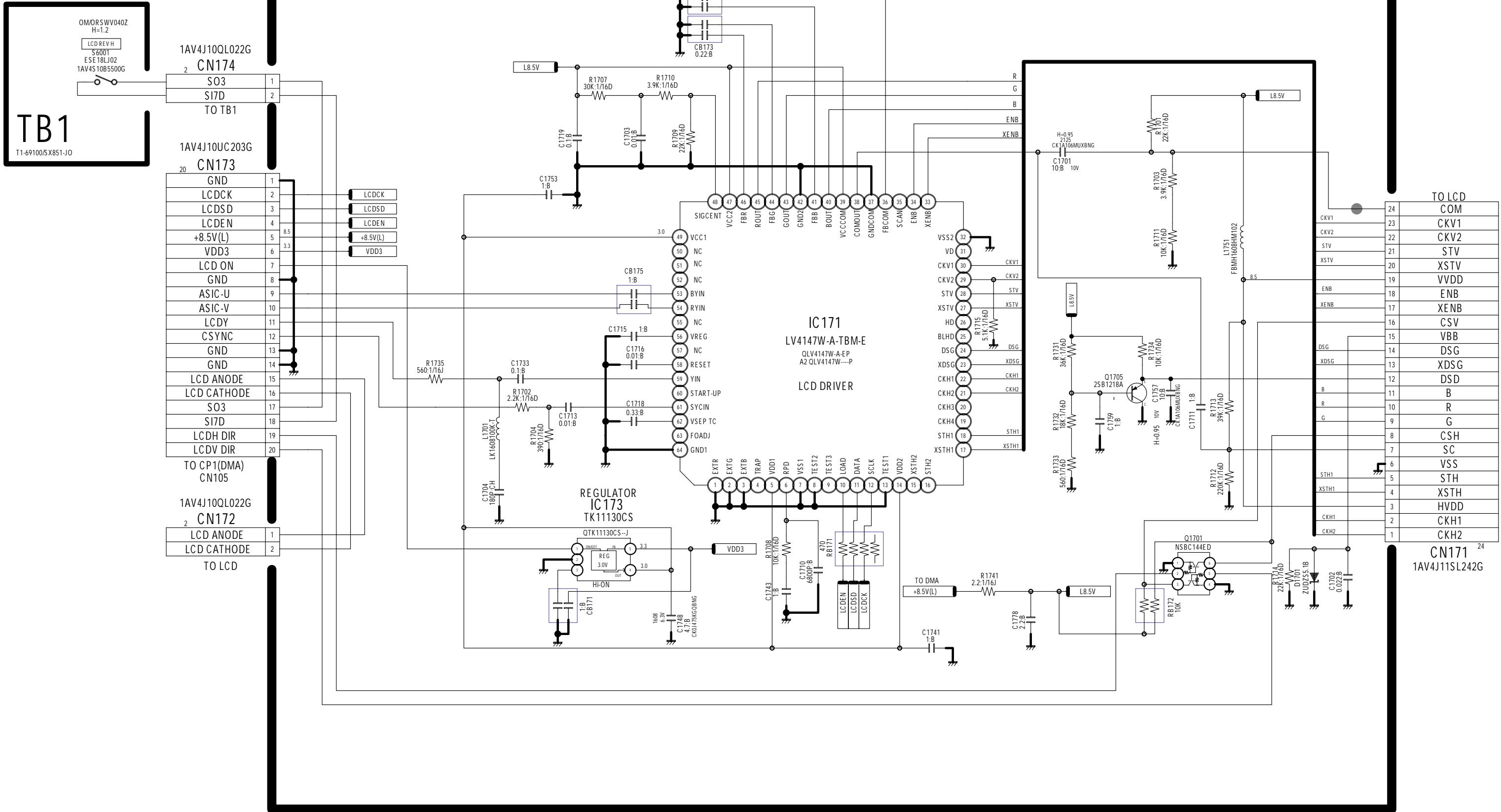
C-7070 Wide Zoom CIRCUIT DIAGRAM : CP1(TCA)



C-7070 Wide Zoom CIRCUIT DIAGRAM : PW1, PW2

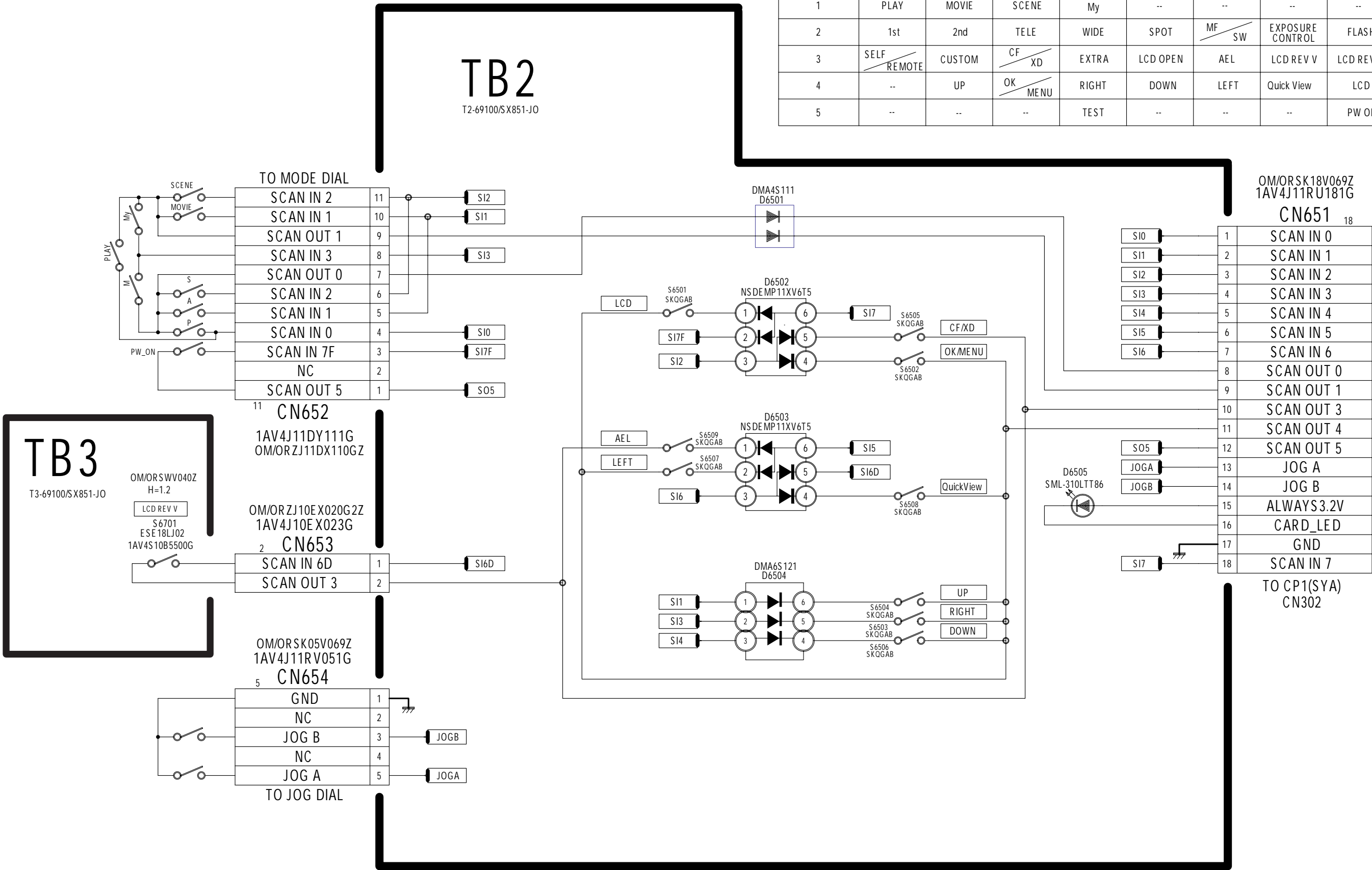


C-7070 Wide Zoom CIRCUIT DIAGRAM : VF1, TB1

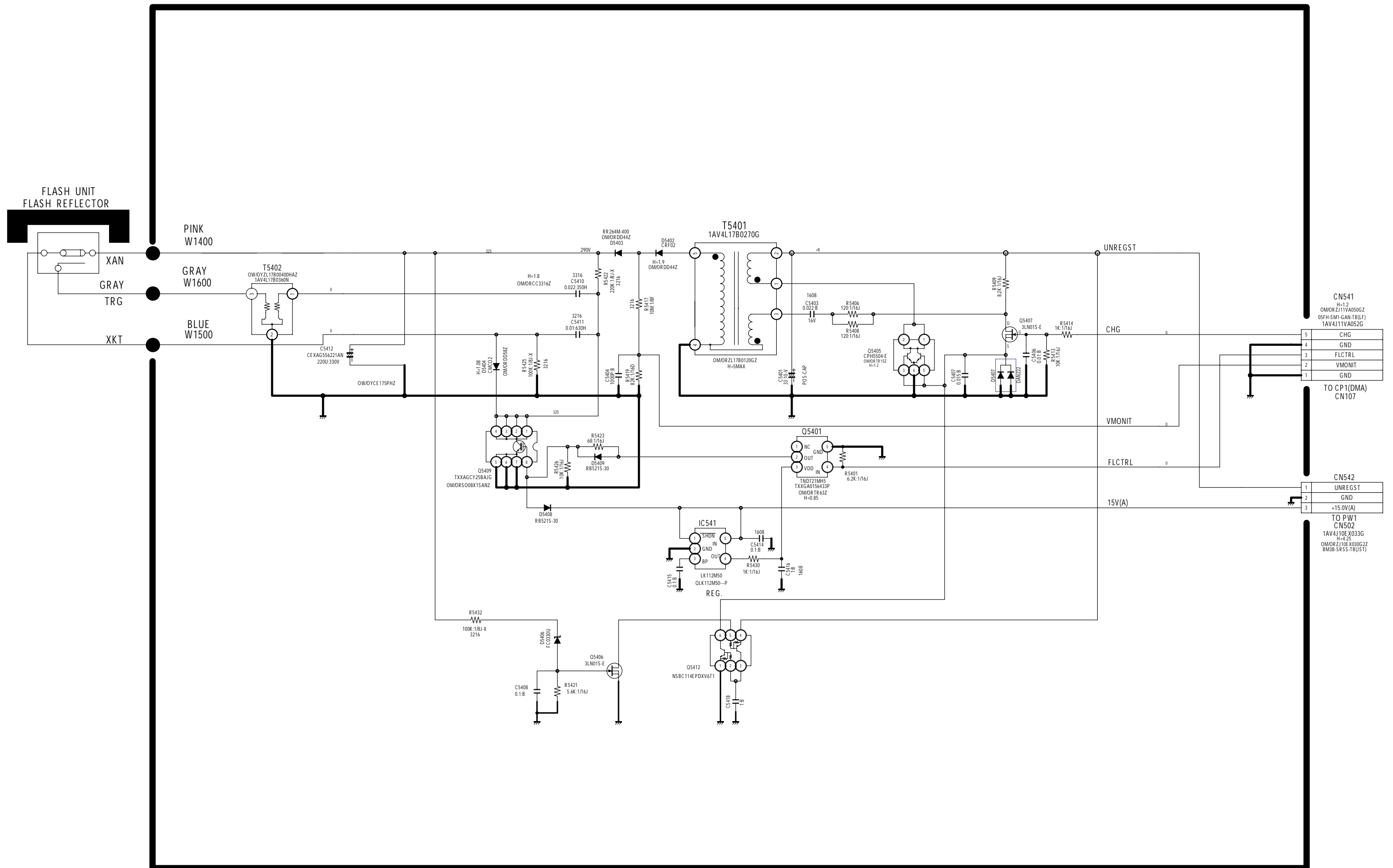


C-7070 Wide Zoom CIRCUIT DIAGRAM : TB2, TB3

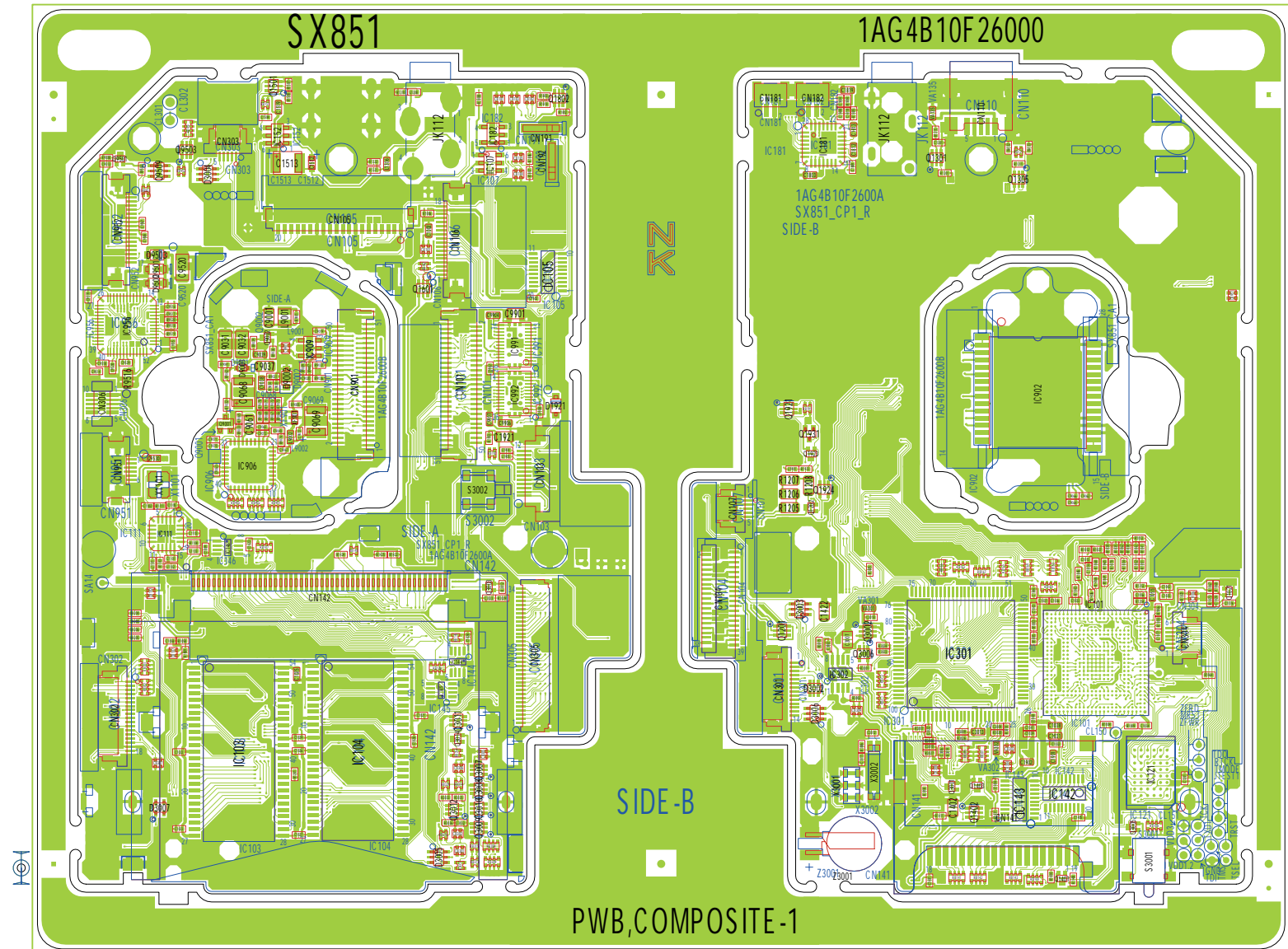
SCAN IN SCAN OUT	0	1	2	3	4	5	6	7
0	P	A	S	M	--	--	--	--
1	PLAY	MOVIE	SCENE	My	--	--	--	--
2	1st	2nd	TELE	WIDE	SPOT	MF SW	EXPOSURE CONTROL	FLASH
3	SELF REMOTE	CUSTOM	CF XD	EXTRA	LCD OPEN	AEL	LCD REV V	LCD REV H
4	--	UP	OK MENU	RIGHT	DOWN	LEFT	Quick View	LCD
5	--	--	--	TEST	--	--	--	PW ON



C-7070 Wide Zoom CIRCUIT DIAGRAM : ST1

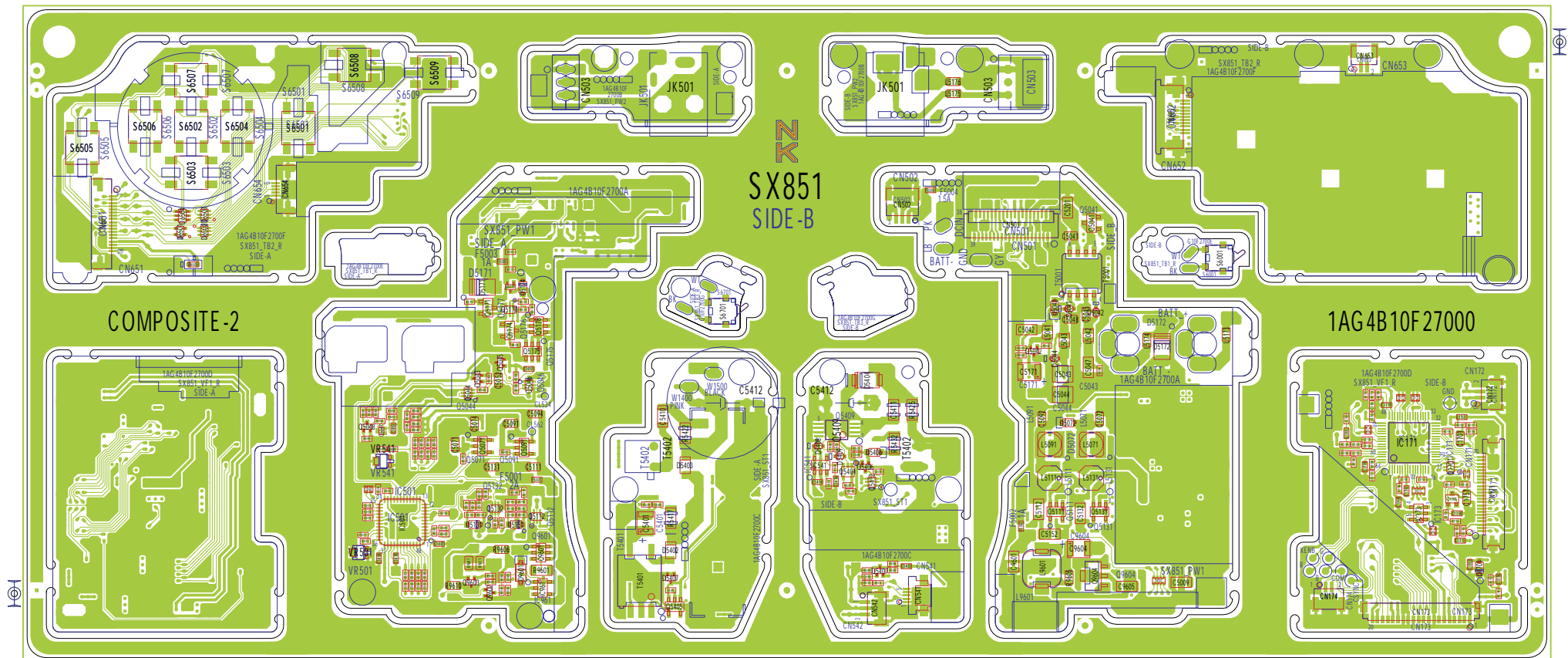


1AG4B10F26000



C-7070 Wide Zoom MOUNTING DIAGRAM : PW1, PW2, ST1, VF1, TB1:3

1AG4B10F27000



Maintenance History

MODEL: C-7070 Wide Zoom

1/1

[illegible]

2

3

4



MODEL	FIG.
C-7070 Wide Zoom	1/3
OLYMPUS IMAGING CORP.	

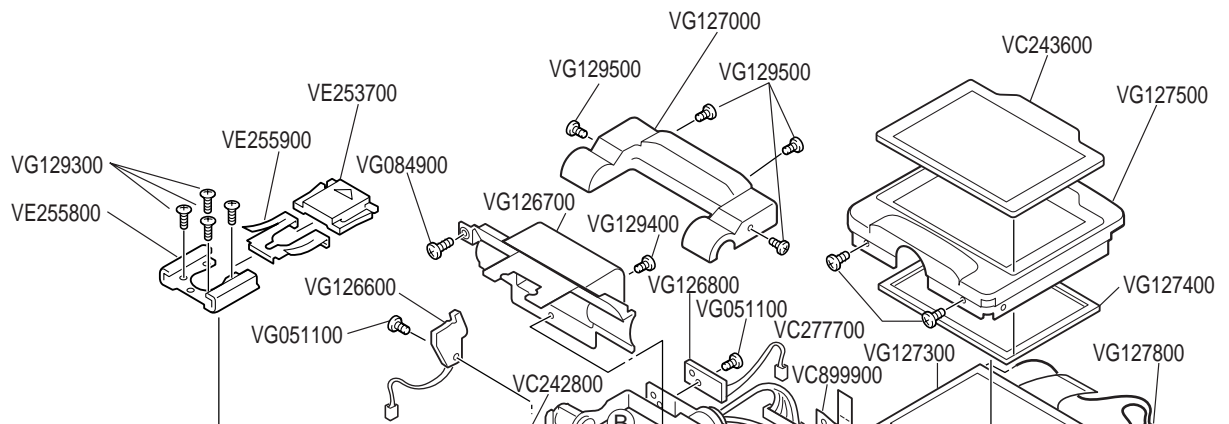
A

B

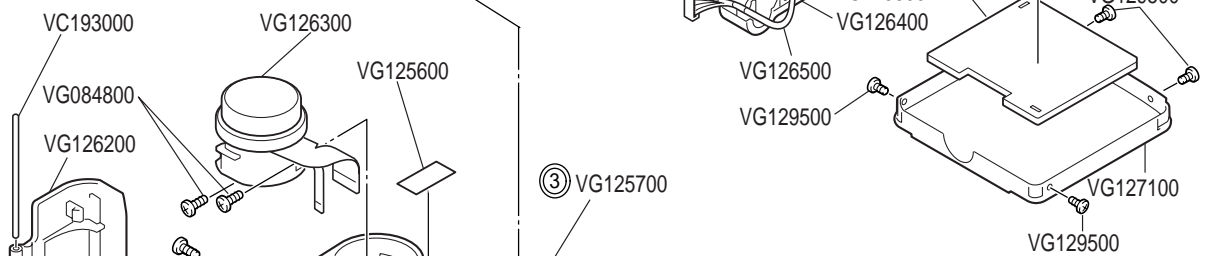
C

D

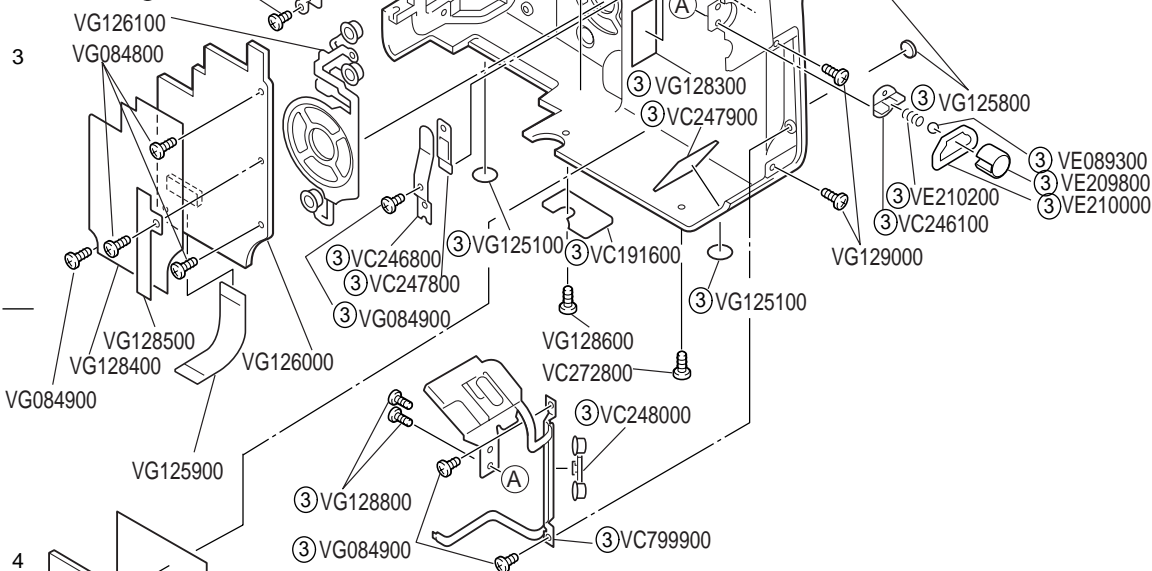
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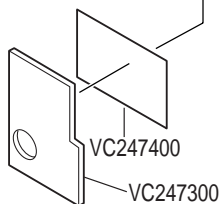
2



3



4



EXPLODED PARTS DIAGRAM

MODEL	FIG.
C-7070 Wide Zoom	2/3
OLYMPUS IMAGING CORP.	

Ver.1
2005.02

PARTS LIST

C-7070WZ

REF NO	PARTS NO	DESCRIPTION	REMARKS	NOTE
	VC190500	STAND COVER A	1-B3	
	VC191600	STAND COVER B	2-B3	
	VC192600	AF LED SPRING	3-A4	
	VC193000	CARD SHAFT	2-A2	
	VC195000	EARTH CABI	1-C3	
	VC240400	SPRING PLATE CARD	3-C2	
	VC241200	COVER TERMINAL	3-B3	
	VC241300	LABEL BATTERY	3-B3	
	VC241400	SPACER IR	3-B2	
	VC241500	SPACER C SPRING	3-A2	
	VC241600	WASHER Z 2.1X4X0.3	3-D4	
	VC241700	HOLDER BATTERY	3-C2	
	VC241800	SPACER VF	3-D3	
	VC242000	TUBE,SI,D1.5	3-A1	
	VC242100	SPACER MODE	3-A1	
	VC242300	UNIT,SLD	3-B1	
	VC242500	DEC MODE LCD	3-C1	
	VC242600	SPRING C BATT	3-B3	
	VC242700	HOLDER SPEAKER	1-D3	
	VC242800	SPACER CA1	2-C1,3-D1	
	VC243200	SPACER LCD	2-D2	
	VC243300	HOLDER LCD	2-C2	
	VC243600	DEC MONITOR LCD	2-D1	
	VC243700	SPACER	3-D3	
	VC243800	SPACER SPEAKER	1-D3	
	VC243900	SPACER LPF	3-D3	
	VC244000	SPACER LENS-R	3-C4	
	VC244100	HOLDER CHASSIS	3-B4	
	VC244200	SPACER LENS-U	3-B4	
	VC244300	ADHESIVE FPC	3-A3,3-A4	
	VC244400	SPRING BATT LOCK	3-A4	
	VC244500	LEVER BATT LOCK	3-A4	
	VC244600	SHAFT BATT LOCK	3-A4	
	VC244700	SPACER LENS-L	3-B3	
	VC244800	SPACER CHASSIS	3-B3	
	VC244900	TUBE,SI,D1.5	3-B2	
	VC245100	DEC SELF	1-B2	
	VC245300	DEC VF FRONT	1-A3	
	VC245400	DEC PAF	1-A3	
	VC245500	BUTTON TOP	1-D2	
	VC245600	SPACER DEC VF	1-C2	
	VC245700	SPACER DEC FLASH	1-C2	
	VC245800	ASSY,JOINT	2-C2	
	VC245900	ADHESIVE FLASH	1-C2	
	VC246100	HOLDER STRAP	1-B2,2-C3	
	VC246700	DEC FLASH	1-C2	
	VC246800	ASSY,SPRING MONITOR	2-B3	
	VC247100	DEC LED	2-A3	
	VC247300	SPACER BACK	2-A4	
	VC247400	ADHESIVE LCD WIRE	2-A4	
	VC247500	HOLDER JACK	1-D4	
	VC247800	SPACER SPRING MONITOR	2-B3	
	VC247900	SPACER B-UNDER	2-C3	

PARTS LIST

C-7070WZ

REF NO	PARTS NO	DESCRIPTION	REMARKS	NOTE
	VC248000	BUTTON FL	2-B4	
	VC248300	HOLDER CARD	1-C1	
	VC248600	SPACER BATT LOCK	1-C1	
	VC266600	SCR S-TP PAN PCS 1.7X5.0	3-C2	
	VC269700	SCR S-TPG PAN PCS 1.7X4.0	3-D3	
	VC272800	SPECIAL SCREW 1.7X3.5	1-C3,2-B4	
	VC277700	SCR PAN PCS 2X3.5	2-C1	
	VC443900	PUK SCREW 1.7X3	3-D1	
F5002	VC796600	FUSE 32V 6A	PW-1	
F5003	VC796600	FUSE 32V 6A	PW-1	
F5001	VC796700	FUSE 32V 2A	PW-1	
	VC798800	EARTH B	3-D2	
	VC798900	EARTH A	3-D2	
	VC799300	STROBE#	3-A1	
	VC799400	CONTROL PANEL	3-A1	
	VC799900	UNIT,CONTROL	2-B4	
S6501	VC861500	"SWITCH,PUSH"	TB-2	
S6502	VC861500	"SWITCH,PUSH"	TB-2	
S6503	VC861500	"SWITCH,PUSH"	TB-2	
S6504	VC861500	"SWITCH,PUSH"	TB-2	
S6505	VC861500	"SWITCH,PUSH"	TB-2	
S6506	VC861500	"SWITCH,PUSH"	TB-2	
S6507	VC861500	"SWITCH,PUSH"	TB-2	
S6508	VC861500	"SWITCH,PUSH"	TB-2	
S6509	VC861500	"SWITCH,PUSH"	TB-2	
JK112	VC866000	JACK,PHONE D3.6 AV JACK	CP-1	
Z3001	VC880300	BATTERY,RECHARGE	CP-1	
S6701	VC881500	SWITCH,PUSH 1P-1TX1	TB-3	
S3001	VC892600	SWITCH,DETECTOR 1P-1T	CP-1	
	VC899100	FLEXIBLE OUTSIDE TERMINAL	3-B3	
	VC899900	SHIELD TAPE LCD	2-C1	
S3002	VC900000	SWITCH,DETECTOR 1P-1T	CP-1	
	VE089300	CLICK BALL	1-B2,2-D3	
	VE147700	STAND	1-B3	
	VE209800	MOUNTING STRAP,L	1-A2,2-D3	
	VE210000	STRAP HOOK	1-A2,2-D3	
	VE210200	CLICK SPRING	1-B2,2-C3	
	VE253700	X COVER 42	2-B1	
	VE255800	HOLDER TERMINAL H-558/JO	2-A1	
	VE255900	SPRING TERMINAL H-558/JO	2-B1	
	VE579600	GEAR,FK	3-D4	
	VE580300	HOLDER FK GEAR	3-D4	
	VE580400	GEAR,FK IDLE	3-D4	
	VG051100	PUK SCREW 1.7X2	2-B1,2-C1	
	VG074400	LPF	3-D3	
	VG084800	SCR S-TPG PAN PCS 1.7X3.5	1-B2,etc	
	VG084900	SCR S-TPG PAN PCS 1.7X2.5	2-A3,etc	
	VG124900	COMPL,CABI FRONT	1-D3	NEW
	VG125000	RING FRONT	1-B3	NEW
	VG125100	COVER STAND	1-B3,etc	NEW
	VG125200	COVER GRIP	1-A3	NEW
	VG125300	COVER JACK	1-D4	NEW
	VG125400	COVER DC JACK	1-D4	NEW

PARTS LIST

C-7070WZ

REF NO	PARTS NO	DESCRIPTION	REMARKS	NOTE
	VG125500	COVER USB	1-D4	NEW
	VG125600	SPACER BACK	2-B2	NEW
	VG125700	COMPL,CABI BACK	2-C2	NEW
	VG125800	COVER STAND LCD	2-C3	NEW
	VG125900	FLEXIBLE TB2 TO CP1	2-A4	NEW
	VG126000	COMPL PWB,TB-2	2-A4	NEW
	VG126100	BUTTON BACK	2-A3	NEW
	VG126200	CARD COVER	2-A2	NEW
	VG126300	UNIT,CMD	2-B2	NEW
	VG126400	COVER JOINT B	2-D2	NEW
	VG126500	WIRE VF1&CP1	2-C2	NEW
	VG126600	COMPL PWB,TB-3	2-B1	NEW
	VG126700	ASSY,COVER VF	2-C1	NEW
	VG126800	COMPL PWB,TB-1	2-C1	NEW
	VG126900	WIRE	2-C2	NEW
	VG127000	COVER JOINT A	2-C1	NEW
	VG127100	COVER BACK LCD	2-D2	NEW
	VG127200	COMPL PWB,VF-1	2-C2	NEW
	VG127300	LCD	2-D1	NEW
	VG127400	SPACER LCD DEC	2-D1	NEW
	VG127500	COVER FRONT LCD	2-D1	NEW
	VG127600	SPACER SPEAKER	1-D3	NEW
	VG127700	SPEAKER	1-D3	NEW
	VG127800	LCD-BL WIRE	2-D1	NEW
	VG127900	ADHESIVE GRIP R	1-B2	NEW
	VG128000	ADHESIVE GRIP L	1-A2	NEW
	VG128100	ADHESIVE HOLDER GRIP	1-A2	NEW
	VG128200	EARTH FRONT	1-D1	NEW
	VG128300	SPACER FPC CABI B	2-C3	NEW
	VG128400	SPACER TB2	2-A4	NEW
	VG128500	SHIELD TAPE TB2	2-A4	NEW
	VG128600	SCR PAN PCS 2.0X3.0	1-B3,2-B4	NEW
	VG128700	SCR PAN PCS 1.4X4	1-D2,1-D3	NEW
	VG128800	SPECIAL SCREW-1.4X5	1-B2,2-B4	NEW
	VG128900	SCR S-TPG PAN PCS 1.7X4	1-D3,etc	NEW
	VG129000	SCR S-TPG PAN PCS 1.7X3.5	1-D4,2-C3	NEW
	VG129100	SCR S-TPG PAN PCS 1.7X4.0	2-A3	NEW
	VG129200	SPECIAL SCREW-2X2	2-C3	NEW
	VG129300	SCR FLT PCS 1.6X5	2-A1	NEW
	VG129400	SCR PAN PCS 1.7X2.0	2-C1	NEW
	VG129500	SCR PAN PCS 1.7X3.0	2-C1,etc	NEW
	VG129600	SCR S-TPG PAN PCS 1.7X3.5	1-C3,3-A4	NEW
	VG129800	SCR S-TPG PAN PCS 1.7X4.0	1-D3	NEW
	VG129900	COMPL PWB,PW-2	3-B4	NEW
	VG130000	MICROPHONE	3-A4	NEW
	VG130100	CA-1PWB	3-D3	NEW
	VG130200	FLEXIBLE CA1 TO CP1	3-D2	NEW
	VG130300	COMPL,COVER BATT	3-A3	NEW
	VG130400	COMPL PWB,PW-1	3-D2	NEW
	VG130500	WIRE PW1&PW2	3-D2	NEW
	VG130600	FLEXIBLE PW1 TO CP1	3-C2	NEW
	VG130700	WIRE PW1&ST1	3-C2	NEW
	VG130800	COMPL PWB,CP-1	3-D1	NEW

PARTS LIST

C-7070WZ

REF NO	PARTS NO	DESCRIPTION	REMARKS	NOTE
CN110 F5004 JK501	VG130900	FLEXIBLE ST1 TO CP1	3-A2	NEW
	VG131000	COMPL PWB,ST-1	3-B2	NEW
	VG131100	ASSY,HOLDER TOP	3-C2	NEW
	VG131200	CABINET TOP	3-C1	NEW
	VG131300	SHIELD TAPE	3-D2	NEW
	VG131400	SPACER CP1 DC	3-D1	NEW
	VG131500	SCR S-TPG PAN PCS 1.7X3	3-A1,etc	NEW
	VG131600	SPECIAL SCREW-1.7X9	3-B2	NEW
	VG131700	SCR S-TPG PAN PCS 1.7X3.5	3-B3	NEW
	VG131800	SOCKET,USB	CP-1	NEW
	VG131900	FUSE 32V 1.5A	PW-1	NEW
	VG132000	SOCKET,DC	PW-2	NEW
	VH046700	RATED LABEL A		NEW
	VH046800	RATED LABEL B (Asia)		NEW
	VH046900	RATED LABEL T		NEW
	VJ520900	ASSY,VF	3-C3	
	VJ572601	ASSY,LENS	3-C4	
	VM049000	RATED LABEL J		NEW
	VM049100	RATED LABEL U		NEW
	VM049200	RATED LABEL E		NEW
	VM049300	RATED LABEL CC		NEW