

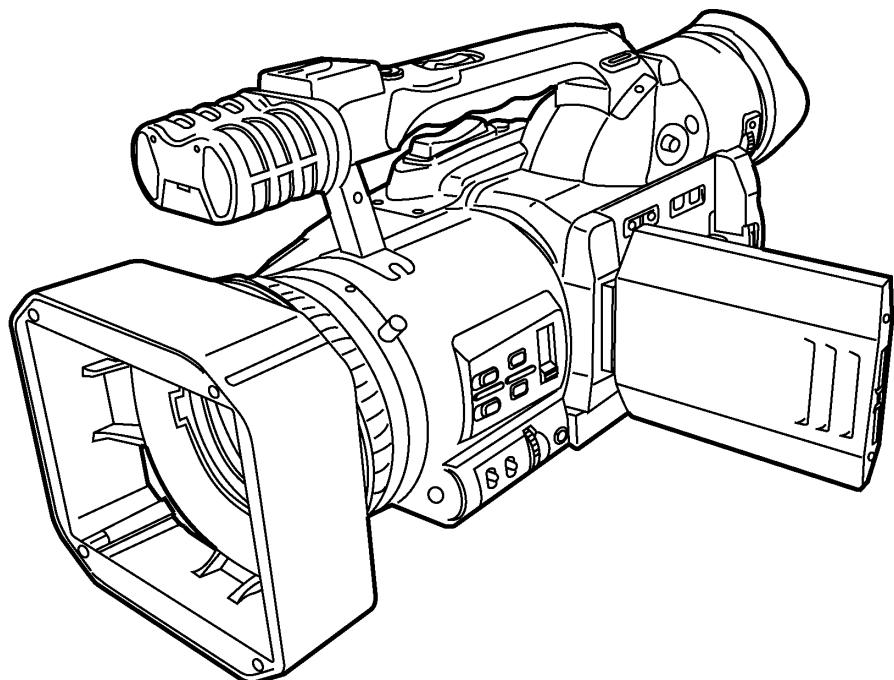
Service Manual

- Sec. 1** Service Information
- Sec. 2** Disassembly Procedures
- Sec. 3** Mechanical Adjustment
- Sec. 4** Electrical Adjustment
- Sec. 5** Block Diagrams
- Sec. 6** Schematic Diagrams
- Sec. 7** Circuit Board Diagrams
- Sec. 8** Exploded Views &
Replacement Parts List

Mini DV

Camera-Recorder

AG-DVX100BP/E/AN
AG-DVX102BEN
AG-DVC180BMC



Panasonic®

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WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

AG-DVX100BP

Specifications

[GENERAL]

Supply voltage: DC7.2 V/7.9 V
Power consumption
6.8 W (when the viewfinder is used)
7.2 W (when the LCD monitor is used)
9.8 W (max.)

 indicates safety information.

Ambient operating temperature

0 °C to 40 °C (32 °F to 104 °F)

Ambient operating humidity

10% to 85% (no condensation)

Weight

1.7 kg (3.7 lb)

(excluding battery and accessories)

Dimensions (WxHxD)

139 mm x 160 mm x 364 mm

(5-15/32 inches x 6-5/16 inches x 14-11/32 inches)

Recording format

DV (Digital video SD format)

Tape format

Mini DV system

Video signals recorded

525i (NTSC)

In progressive mode, convert to 525i and record

Shooting mode

60i (525i)

Progressive mode (30P/ 24P/ 24P advanced)

Audio signals recorded

PCM digital recording

16bit: 48kHz/2ch

12bit: 32kHz/4ch

Recording tracks

Digital video/audio:

 Helical tracks

Time code:

 Helical tracks (sub code area)

Tape speeds

SP mode: 18.812 mm/sec.

LP mode: 12.555 mm/sec.

Recording time (when AY-DVM63 is used)

SP mode: 60 minutes

LP mode: 90 minutes

Tapes used

6.35 mm wide metal tapes

FF/REW time

Approx. 140 sec. (when AY-DVM63 is used)

Pickup devices

CCD image sensor (x3)

(1/3-inch, interline transfer, progressive-capable)

Number of pixels

Total number of pixels: 410,000, Number of effective pixels: 380,000 (pixel offset system)

Lens

LEICA DICOMAR Optical image stabilizer lens,
Motorized/Manual selectable 10x zoom,
F1.6 (f=4.5 to 45 mm)
(35 mm equivalent: 32.5 to 325 mm)

Color separation optical system

Prism system

ND filter

1/8, 1/64

Gain settings

0/+3/+6/+9/+12/+18 dB (60i mode)

0/+3/+6/+9/+12 dB (progressive mode)

(however, set to 0dB when the slow shutter mode is used)

Shutter speed settings

Regular shutter speed

60i mode:

1/60 (OFF), 1/100, 1/120,

1/250, 1/500, 1/1000, 1/2000 sec.

30P mode:

1/30, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000 sec.

24P/24P (ADV) mode:

1/24, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000 sec.

Synchronous scan settings

60i mode: 1/60.3 to 1/250.0 sec.

30P mode: 1/30.1 to 1/250.0 sec.

24P/24P (ADV) mode:

1/24.1 to 1/250.0 sec.

Slow shutter settings

60i mode: 1/4, 1/8, 1/15, 1/30

30P mode: 1/4, 1/8, 1/15

24P/24P (ADV) mode: 1/6, 1/12

Minimum subject luminance

3 lx (F1.6, gain 18 dB, video output 50 IRE)

Lens hood

Large-sized lens hood with wide angle of view

Filter diameter

72 mm

LCD monitor

3.5-inch LCD color monitor, 210,000 pixels

Viewfinder

0.44-inch LCD color viewfinder, 235,000 pixels

Internal microphone

Stereo microphone

Internal speaker

28 mm diameter

Specifications (continued)

[VIDEO]

Sampling frequency

Y: 13.5 MHz, Pb/Pr: 3.375 MHz

Quantizing

8 bit

Video compression system

DCT + variable-length code

Error correction

Reed-Solomon product code

[AUDIO]

Sampling frequency

48 kHz/32 kHz

Quantizing

16 bit/12 bit

Frequency response

20 Hz to 20 kHz

Wow & flutter

Below measurable limits

[CONNECTORS]

VIDEO IN/OUT (automatic input/output switching)

Pin jack, Analog composite input/output,
1.0 V [p-p], 75 Ω

S-VIDEO IN/OUT (automatic input/output switching)

S-connector, Y/C separate signal
Y: 1.0 V [p-p], C: 0.286 V [p-p],
75 Ω

AUDIO IN/OUT (automatic input/output switching)

Pin jack x2 (CH1, CH2)
Input: 316 mV, high impedance
Output: 316 mV, 600 Ω

DV

4 pins, digital input/output, compliant with IEEE 1394 standard

INPUT 1, INPUT 2

XLR (3 pins) x2 (CH1, CH2),
LINE/MIC selectable, high impedance
LINE: 0 dBu
MIC:
-50 dBu/-60 dBu (selectable in menu)

DC INPUT

7.9 V

PHONES

3.5-mm stereo mini jack, 100 Ω

CAM REMOTE

Mini jack (3.5 mm diameter)
(FOCUS IRIS)
Super mini jack (2.5 mm diameter)
(ZOOM S/S)

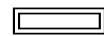
[AC ADAPTER]

Power Source:

110/120/220/240 V AC, 50/60 Hz

Power consumption

18 W

 indicates safety information.

Weight

160 g (0.35 lb)

Dimensions (W x H x D)

70 mm x 44.5 mm x 116 mm

(2-13/16 inches x 1-13/16 inches x 4-5/8 inches)

[OPTIONAL UNITS]

Wide conversion lens

AG-LW7208G

16: 9 conversion lens

AG-LA7200G

XLR microphone

AG-MC100G

Hard carrying case

AG-HT100G

Soft carrying case

AG-SC100G

Battery

CGR-D16 (1600 mAh)

CGP-D28 (2800 mAh)

CGA-D54 (5400 mAh: equivalent to accessory battery)

AC adapter kit

AG-B15 (equivalent to accessory AC cord, DC cord, AC adapter)

Cleaning tape

AY-DVMCL

AG-DVX100BE

Specifications

[GENERAL]

Supply voltage: DC7.2 V/7.9 V
Power consumption
 6.8 W (when the viewfinder is used)
 7.2 W (when the LCD monitor is used)
 9.8 W (max.)

 indicates safety information.

Ambient operating temperature

0 °C to 40 °C

Ambient operating humidity

10% to 85% (no condensation)

Weight

1.7 kg (excluding battery and accessories)

Dimensions (WxHxD)

139 mm x 160 mm x 364 mm

Recording format

DV (Digital video SD format)

Tape format

Mini DV system

Video signals recorded

625i (PAL)

In progressive mode, convert to 625i and record

Shooting mode

50i (625i)

Progressive mode (25P)

Audio signals recorded

PCM digital recording

16bit: 48kHz/2ch

12bit: 32kHz/4ch

Recording tracks

Digital video/audio:

 Helical tracks

Time code:

 Helical tracks (sub code area)

Tape speeds

SP mode: 18.831 mm/sec.

LP mode: 12.568 mm/sec.

Recording time (when AY-DVM63 is used)

SP mode: 60 minutes

LP mode: 90 minutes

Tapes used

6.35 mm wide metal tapes

FF/REW time

Approx. 140 sec. (when AY-DVM63 is used)

Pickup devices

CCD image sensor (x3)

(1/3-inch, interline transfer, progressive-capable)

Number of pixels

Total number of pixels: 470,000, Number of effective pixels: 440,000 (pixel offset system)

Lens

LEICA DICOMAR Optical image stabilizer lens,
Motorized/Manual selectable 10x zoom,
F1.6 (f=4.5 to 45 mm)
(35 mm equivalent: 32.5 to 325 mm)

Color separation optical system

Prism system

ND filter

1/8, 1/64

Gain settings

0/+3/+6/+9/+12/+18 dB (50i mode)

0/+3/+6/+9/+12 dB (progressive 25P mode)

(however, set to 0dB when the slow shutter mode is used)

Shutter speed settings

Regular shutter speed

50i mode:

 1/50 (OFF), 1/60, 1/120,
 1/250, 1/500, 1/1000, 1/2000 sec.

25P mode:

 1/25, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000 sec.

Synchronous scan settings

50i mode: 1/50.2 to 1/248.0 sec.

25P mode: 1/25.1 to 1/248.0 sec.

Slow shutter settings

50i mode: 1/3, 1/6, 1/12, 1/25

25P mode: 1/3, 1/6, 1/12

Minimum subject luminance

3 lx (F1.6, gain 18 dB, video output 50 IRE)

Lens hood

Large-sized lens hood with wide angle of view

Filter diameter

72 mm

LCD monitor

3.5-inch LCD color monitor, 210,000 pixels

Viewfinder

0.44-inch LCD color viewfinder, 235,000 pixels

Internal microphone

Stereo microphone

Internal speaker

28 mm diameter

Specifications (continued)

[VIDEO]

Sampling frequency

Y: 13.5 MHz, Pb/PbR: 6.75 MHz

Quantizing

8 bit

Video compression system

DCT + variable-length code

Error correction

Reed-Solomon product code

[AUDIO]

Sampling frequency

48 kHz/32 kHz

Quantizing

16 bit/12 bit

Frequency response

20 Hz to 20 kHz

Wow & flutter

Below measurable limits

[CONNECTORS]

VIDEO IN/OUT (automatic input/output switching)

Pin jack, Analog composite input/output,
1.0 V [p-p], 75 Ω

S-VIDEO IN/OUT (automatic input/output switching)

S-connector, Y/C separate signal
Y: 1.0 V [p-p], C: 0.3 V [p-p],
75 Ω

AUDIO IN/OUT (automatic input/output switching)

Pin jack x2 (CH1, CH2)
Input: 316 mV, high impedance
Output: 316 mV, 600 Ω

DV

4 pins, digital input/output, compliant with IEEE
1394 standard

INPUT 1, INPUT 2

XLR (3 pins) x2 (CH1, CH2),
LINE/MIC selectable, high impedance
LINE: 0 dBu
MIC:
-50 dBu/-60 dBu (selectable in menu)

DC INPUT

7.9 V

PHONES

3.5-mm stereo mini jack, 100 Ω

CAM REMOTE

Mini jack (3.5 mm diameter)
(FOCUS IRIS)
Super-mini jack (2.5 mm diameter)
(ZOOM S/S)

[AC ADAPTER]

Power Source:

100-240 V AC, 50/60 Hz

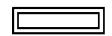
Power Output:

8.4V 1.2A (Charging)

7.8V 1.4A (Supplying)

Power consumption

20 W

 indicates safety information.

Weight

160 g

Dimensions (W x H x D)

70 mm x 44.5 mm x 116 mm

[OPTIONAL UNITS]

Wide conversion lens

AG-LW7208G

16: 9 conversion lens

AG-LA7200G

XLR microphone

AG-MC100G

Hard carrying case

AG-HT100G

Soft carrying case

AG-SC100G

Battery

CGR-D16 (1600 mAh)

CGP-D28 (2800 mAh)

CGA-D54 (5400 mAh: equivalent to accessory
battery)

AC adapter kit

AG-B15 (equivalent to accessory AC cord, DC
cord, AC adapter)

Cleaning tape

AY-DVMCL

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts, which have been over-heated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. The resistance value must be more than 5Ω .

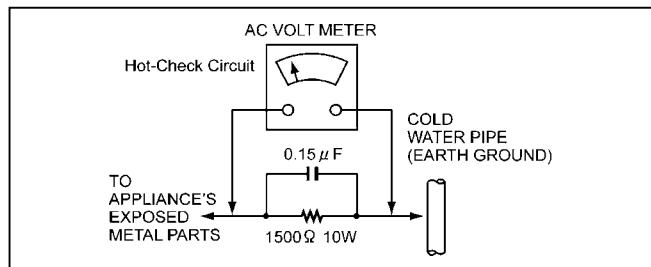


Figure1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a $1.5K\Omega$, 10W resistor, in parallel with a $0.15\mu F$ capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.15 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 0.1 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:

1. Pb free solder has a higher melting point than standard solder; Typically the melting point is $50-70^{\circ}\text{F}$ ($30-40^{\circ}\text{C}$) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to $700\pm20^{\circ}\text{F}$ ($370\pm10^{\circ}\text{C}$).
2. Pb free solder will tend to splash when heated too high (about $1100^{\circ}\text{F}/600^{\circ}\text{C}$).

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ED) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.

Alternatively, obtain and wear a commercially available discharging wrist trap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it.

(most replacement ES devices are package with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

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

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

X-RADIATION

WARNING

1. The potential source of X-radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.

Note: It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV , $\pm 0.15\text{kV}$. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

**CAUTION**

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS. USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

CAUTION:

THE AC RECEPTACLE (MAINS SOCKET OUTLET) SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER CORD PLUG FROM THE AC RECEPTACLE.

FCC Note:

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:

To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

CAUTION:

Danger of explosion or fire if battery is mis-treated.

- Replace only with same or specified type.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 140°F (60°C).
- Use specified charger for rechargeable batteries.
- Do not recharge the battery if it is not a rechargeable type.

For Remote Controller

- Replace battery with part No. CR2025 only.
- Do not recharge the battery.

Camera-Recorder

The rating plate is on the underside of the Camera-Recorder

AC Adapter

The rating plate is on the underside of the AC Adapter.

Disconnect the AC mains plug from the AC mains socket when not in use.

 indicates safety information.

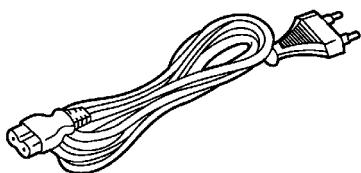
Caution for AC Mains Lead

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

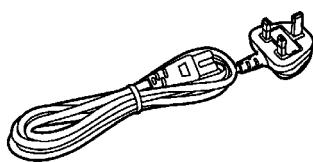
This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.

Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

**FOR CONTINENTAL EUROPE, ETC.
Not to be used in the U.K.**



FOR U.K. ONLY



FOR U.K. ONLY

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

A 5 amp fuse is fitted in this plug.

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

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

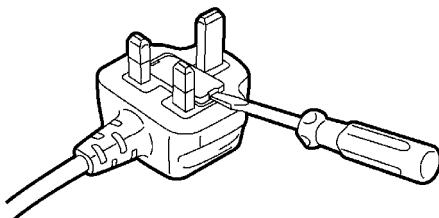
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

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

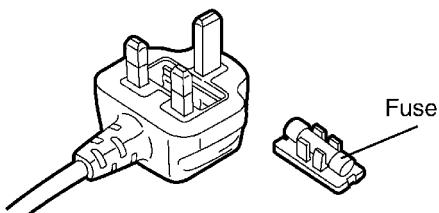
A replacement fuse cover can be purchased from your local Panasonic Dealer.

How to replace the fuse

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse



 indicates safety information.

■ DO NOT REMOVE PANEL COVERS BY UNSCREWING THEM.

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

WARNING:

- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS. USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a book-case, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

Operating precaution

Operation near any appliance which generates strong magnetic fields may give rise to noise in the video and audio signals. If this should be the case, deal with the situation by, for instance, moving the source of the magnetic fields away from the unit before operation.

CAUTION:

Danger of explosion or fire if battery is mis-treated.

- Replace only with same or specified type.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 60°C.
- Use specified charger for rechargeable batteries.
- Do not recharge the battery if it is not a rechargeable type.

For Remote Controller

- Replace battery with part No. CR2025 only.
- Do not recharge the battery.

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The rating plate is on the underside of the Camera-Recorder

AC Adapter

The rating plate is on the underside of the AC Adapter.

Disconnect the AC mains plug from the AC mains socket when not in use.

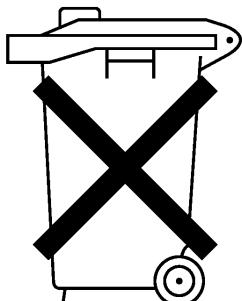
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TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS,
DISCONNECT THE POWER CORD PLUG FROM THE AC RECEPTACLE.**

 indicates safety information.

Attention/Attentie

- Batteries are used for the main power source, memory back-up in the product and remote controller.
At the end of their useful life, you should not throw them away.
Instead, hand them in as small chemical waste.
- Voor de primaire voeding en het reservegeheugen van het apparaat, alsmede voor de afstandsbediening, wordt gebruik gemaakt van een batterij.
Wanneer de batterij uitgeput is, mag u deze niet gewoon weggooien, maar dient u ze als klein chemisch afval weg te doen.

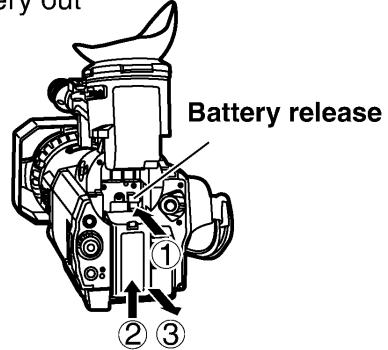


To remove the battery/ Verwijderen van de batterij

Main Power Battery

Batterij Voor Primaire Voeding

While pressing the battery release,
lift the battery out



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SECTION 1

SERVICE INFORMATION

MODEL: AG-DVX100BP/E/AN,102BEN,DVC180BMC

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1. SERVICING FIXTURES AND TOOLS

The following servicing tools are required for mechanical and electrical servicing and alignment.

The items marked “**NEW**” in the following list are necessary for the AG-DVX100B/102B/DVC180B.

Please refer to “**Y**” and “**N**” in column of table below, which tools required for servicing the NTSC and PAL model.

Please refer to “**Y**” in column of table below, these tools were also use for servicing the AG-DVX100A/DVC180A.

1-1. Summary Table of Servicing Fixtures and Tools

No	Parts No.	NAME	NTSC Model	PAL Model	AG-DVX100A/ DVC180A	REMARK
1	VFM3010EDS	DV Alignment Tape (Color bar)	Y	N	Y	
2	VFM3110EDS	DV Alignment Tape (Color bar)	N	Y	Y	
3	VFM3000LS	DV Alignment Tape (Linearity)	Y	Y	Y	
4	*VVS0026	EVR Adjustment Software	Y	N	N	NEW Download from the WEB site.
5	*VVS0027	EVR Adjustment Software	N	Y	N	NEW Download from the WEB site.
6	*VFK1481N	LISTA Software	Y	Y	Y	Download from the WEB site.
7	VFK1308P	Measuring Board	Y	Y	Y	
8	VFK1309A	EVR Connector Board	Y	Y	Y	Enable to use with VFK1309
9	VFK1763	Connector Adapter	Y	Y	N	60-30pin. It uses with AG-DVC30/32/33 and AG-DVC60/62/63.
10	VFK1982	Extension Cable	Y	Y	N	NEW
11	VJA0941	DC Cable	Y	Y	Y	2 pieces Required
12	VFK1317	30pin Flat Cable	Y	Y	Y	2 pieces Required
13	VFK1809	72mm Attachment Ring	Y	Y	Y	
14	VFK1164TAR43	43mm Attachment Ring	Y	Y	Y	
15	VFK1164TCM01	Collimator Set (Infinity Lens)	Y	Y	Y	
16	VFK1345	CC Filter Holder	Y	Y	Y	
17	VFK1346	Step Down Ring	Y	Y	Y	
18	VFK1659	Step-Up Ring (43mm-49mm)	Y	Y	Y	
19	VFK1660	Step-Up Ring (49mm-62mm)	Y	Y	Y	
20	VFK1341	CC Filter (LB40)	Y	N	Y	
21	VFK1342	CC Filter (LB80)	N	Y	Y	
22	VFK1347	CC Filter (LB120)	Y	Y	Y	
23	VFK1884	CC Filter (LBA2)	Y	Y	Y	
24	VFK1888	CC Filter (LBB6)	Y	Y	Y	
25	VFK1885	CC Filter (LBB2)	Y	N	Y	
26	VFK1886	CC Filter (CC C10)	N	Y	Y	
27	VFK1887	CC Filter (CC C20)	N	Y	Y	
28	VFK1409A	Measuring Board	Y	Y	Y	NOTE 1
29	VFK1899	Post Driver	Y	Y	N	NOTE 2 It uses with AG-DVC30/32/33 and AG-DVC60/62/63.
30	VFK1810	LISTA Measuring Board	Y	Y	Y	NOTE 1
31	VFK1186	LISTA Cable	Y	Y	Y	
32	VFK1300	A/D Converter Board	Y	Y	Y	ISA PC Board.

NOTE:

- If you already have VFK1409S, it can be used for LISTA adjustment with VFK1810 instead of VFK1409A.
(Refer to item “1-5. Connection of LISTA Adjustment system” on page MECH-4 in section 3.)
- This Post Driver use for servicing the “A” mechanism of consumer model.

1 VFM3010EDS	3 VFM3000EDS DV Alignment Tape (Linearity)	4 VVS0026	7 VFK1308P Measuring Board
2 VFM3110EDS DV Alignment Tape (Color bar)		5 VVS0027 EVR Adjustment Software	
		6 VFK1481N LISTA Software	
8 VFK1309A EVR Connector Board	9 VFK1763 Connector Adapter	10 VFK1982 Extension Cable	11 VJA0941 DC Cable
12 VFK1317 30pin Flat Cable (In case of using VFK1308P, required 2pcs. of this cable)	13 VFK1809 72 mm Attachment Ring	14 VFK1164TAR43 43 mm Attachment Ring	15 VFK1164TCM01 Collimator Set (Infinity Lens)
16 VFK1345 CC Filter Holder 17 VFK1346 Step Down Ring 	18 VFK1659 Step-up Ring (43mm - 49mm) 19 VFK1660 Step-up Ring (49mm - 62mm) 	20 VFK1341 (LB40) 21 VFK1342 (LB80) 22 VFK1347 (LB120) 	23 VFK1884 (LBA2) 24 VFK1888 (LBB6) 25 VFK1885 (LBB2) 26 VFK1886 (CC C10) 27 VFK1887 (CC C20)
28 VFK1409A Measuring Board 	29 VFK1899 Post Driver 	30 VFK1810 LISTA Measuring Board 	31 VFK1186 LISTA Cable
32 VFK1300 A/D Converter Board 			

To determine which servicing fixtures and tools are required for each adjustment, refer to the following table.

No.	Parts No.	NAME	ADJUSTMENT ITEM
1 2	VFM3010EDS VFM3110EDS	DV Alignment Tape (Color bar) DV Alignment Tape (Color bar)	5-2. PG shifter adjustment (SEC.4)
3	VFM3000LS	DV Alignment Tape (Linearity)	1-8. LISTA Sensitivity Detection (SEC.3) 1-9. LISTA Linearity Adjustment (SEC.3)
4 5	VVS0026 VVS0027	EVR Adjustment Software	4. ADJUSTMENT PROCEDURE (CAMERA SECTION) (SEC.4) 5. ADJUSTMENT PROCEDURE (VTR SECTION) (SEC.4)
6	VFK1481N	LISTA Software	1-8. LISTA Sensitivity Detection (SEC.3) 1-9. LISTA Linearity Adjustment (SEC.3)
7 8 9 10 11 12	VFK1308P VFK1309A VFK1763 VFK1982 VJA0941 VFK1317	Measuring Board EVR Connector Board Connection Adapter Extension Cable DC Cable 30pin Flat Cable	1-8. LISTA Sensitivity Detection (SEC.3) 1-9. LISTA Linearity Adjustment (SEC.3) 1-11. Self-REC/PLAY Envelope Waveform Confirmation (SEC.3) 4. ADJUSTMENT PROCEDURE (CAMERA SECTION) (SEC.4) 5. ADJUSTMENT PROCEDURE (VTR SECTION) (SEC.4)
13	VFK1809	72mm Attachment Ring	4-5. Zoom tracking adjustment (SEC.4) 4-6-2. White balance adjustment (5100K) (SEC.4) 4-6-3. White balance adjustment (4500K) (SEC.4) 4-6-4. White balance adjustment (3600K) (SEC.4)
14 15	VFK1164TAR43 VFK1164TCM01	43mm Attachment Ring Collimator Set (Infinity Lens)	4-5. Zoom tracking adjustment (SEC.4)
16 17 18 19	VFK1345 VFK1346 VFK1659 VFK1660	CC Filter Holder Step Down Ring Step-Up Ring (43mm-49mm) Step-Up Ring (49mm-62mm)	4-6-2. White balance adjustment (5100K) (SEC.4) 4-6-3. White balance adjustment (4500K) (SEC.4) 4-6-4. White balance adjustment (3600K) (SEC.4)
20	VFK1341	CC Filter (LB40)	4-6-4. White balance adjustment (3600K) (SEC.4)
21	VFK1342	CC Filter (LB80)	4-6-3. White balance adjustment (4500K) (SEC.4)
22	VFK1347	CC Filter (LB120)	4-6-2. White balance adjustment (5100K) (SEC.4) 4-6-3. White balance adjustment (4500K) (SEC.4)
23 24	VFK1884 VFK1888	CC Filter (LBA2) CC Filter (LBB6)	4-6-2. White balance adjustment (5100K) (SEC.4)
25 26	VFK1885 VFK1886	CC Filter (LBB2) CC Filter (CC C10)	4-6-4. White balance adjustment (3600K) (SEC.4)
27	VFK1887	CC Filter (CC C20)	4-6-3. White balance adjustment (4500K) (SEC.4)
28	VFK1409A	Measuring Board	1-8. LISTA Sensitivity Detection (SEC.3) 1-9. LISTA Linearity Adjustment (SEC.3)
29	VFK1899	Post Driver	1-9. LISTA Linearity Adjustment (SEC.3) 1-10. Tape Path Confirmation (SEC.3) 1-11. Self-REC/PLAY Envelope Waveform Confirmation (SEC.3)
30 31 32	VFK1810 VFK1186 VFK1300	LISTA Measuring Board LISTA Cable A/D Converter Board	1-8. LISTA Sensitivity Detection (SEC.3) 1-9. LISTA Linearity Adjustment (SEC.3)

2. MAINTENANCE

Maintenance is done by periodically performing suitable maintenance servicing in order to maintain the best condition, so that the user can use the equipment safely. Video equipment with mounted mechanisms have parts which will wear, and their wear and deterioration cause troubles. Dust and dirt also can impair stable operation. For this reason it is important not to just perform repair at the time of trouble, but also to perform suitable maintenance at regular intervals.

The maintenance schedule requires replacement of mechanism unit, which contains a cylinder unit and so on.

2-1. Maintenance Schedule

No.	Part Name	Part No.	Cleaning	Replacement	Remark
---	Tape Transport Part	-----	100 hours	-----	*1
1	Mechanism Chassis Unit	VXY1903Z1	-----	Every 2000 hours	*2
2	Zoom Motor Unit	L6DABBHC0001	-----	Every 4000 hours	*2

Note:

Hours of use are based on the head rotation hours. (Head rotation hours can be confirm on item HOUR METER in OTHER FUNCTION menu.)

Hours of use are recommendation. It may depend on temperature, humidity, quality of tape or dust condition.

Hours of use are listed as the reference of maintenance. They do not mean guarantee hours.

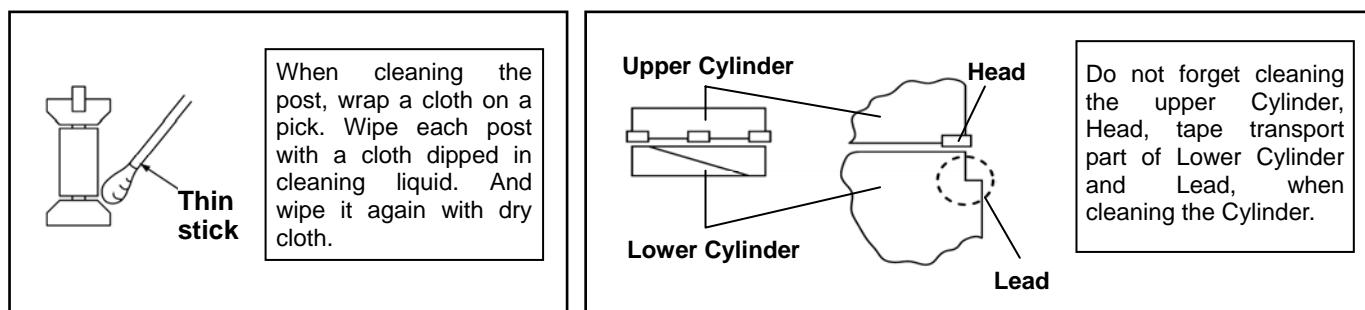
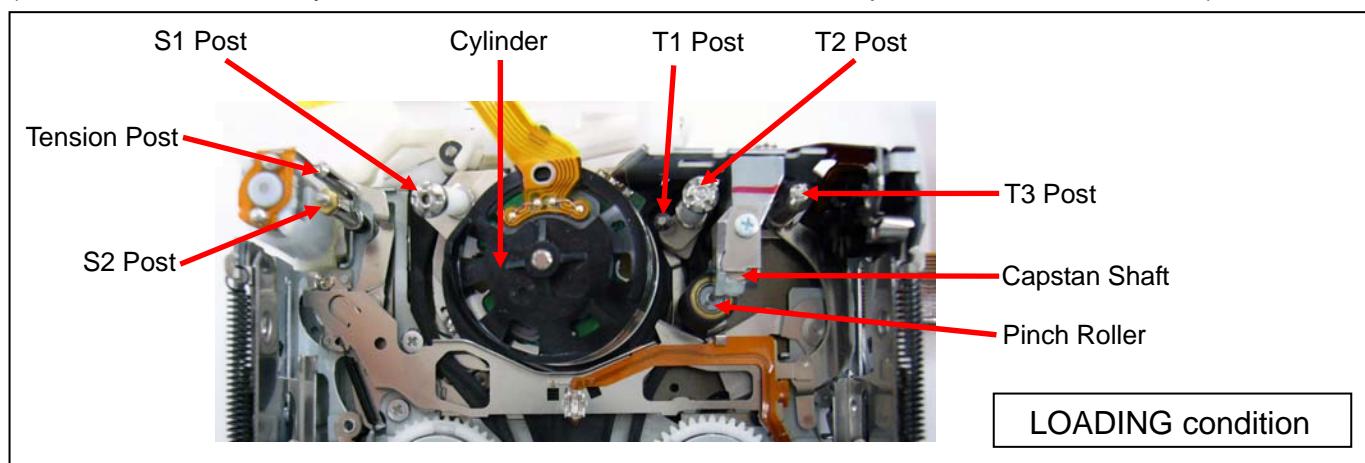
*1. Tape Transport part is cleaned by cleaning liquid.

*2. Please refer to the most recent execution outline, as the maintenance specifications and the part numbers may change.

2-2. Cleaning of Tape Transport Part

Please clean the below indicated tape transport parts with cleaning liquid when needed.

(Tension Post, S1 Post, Cylinder & Heads, T1 Post, T2 Post, T3 Post, Capstan Shaft and Pinch Roller)

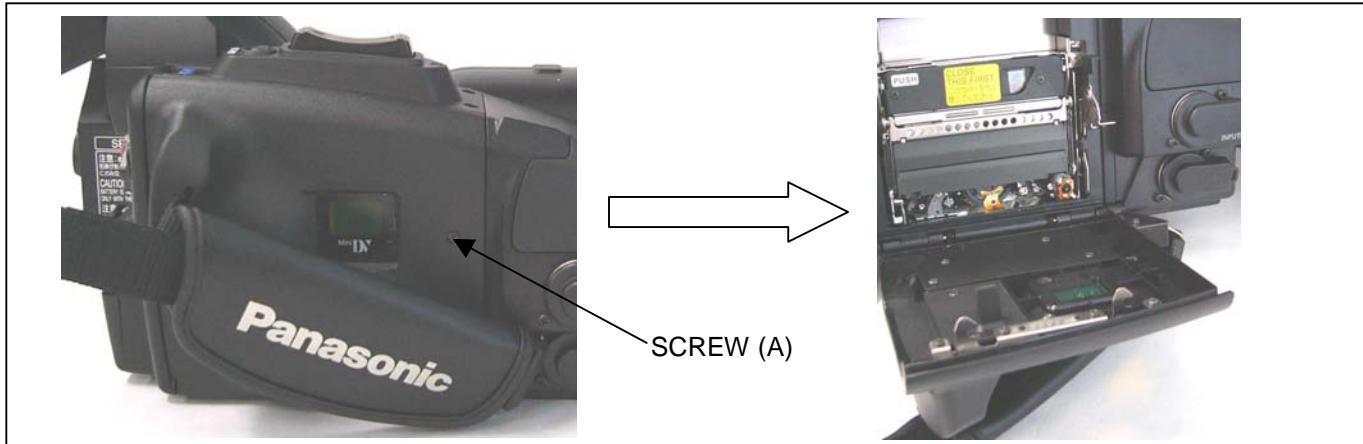


3. MANUAL TAPE EJECT (EMERGENCY EJECT)

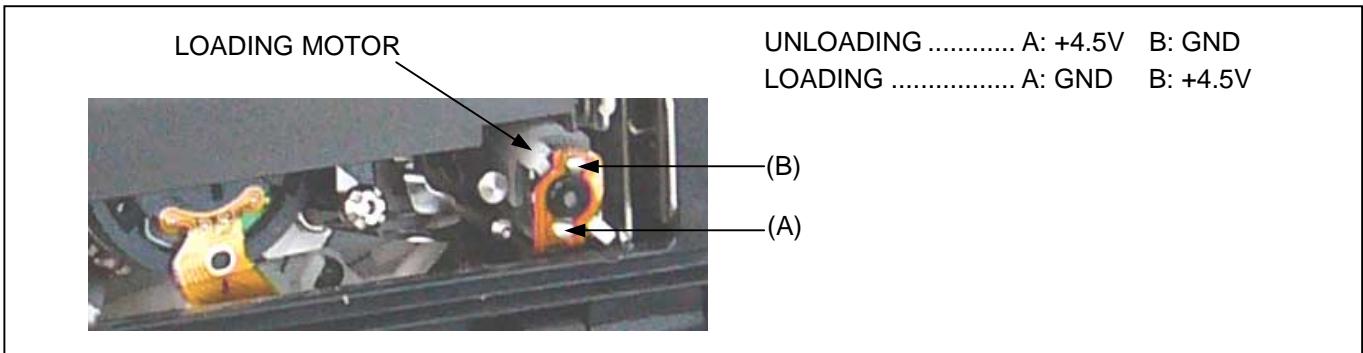
When the tape cannot be ejected by normal operation because of trouble in the electrical system or mechanical system, the tape can be removed from the unit manually by using the following method.

NOTE: By below indicated method, the unit will not take up tape slack. Be careful when removing the tape from Cassette Holder.

1. Unscrew the screw (A) and open the cassette cover as shown in figure.



2. Supply 4.5 Volts using 3 AA batteries in series to unload the posts using the motor.



3. Stop supplying the power when the tape is ejected and remove the tape from Cassette Holder.

<How to rolls up tape>

Be sure to take up the tape slack so that tape does not become damaged.

1. Remove the Mechanism Unit.

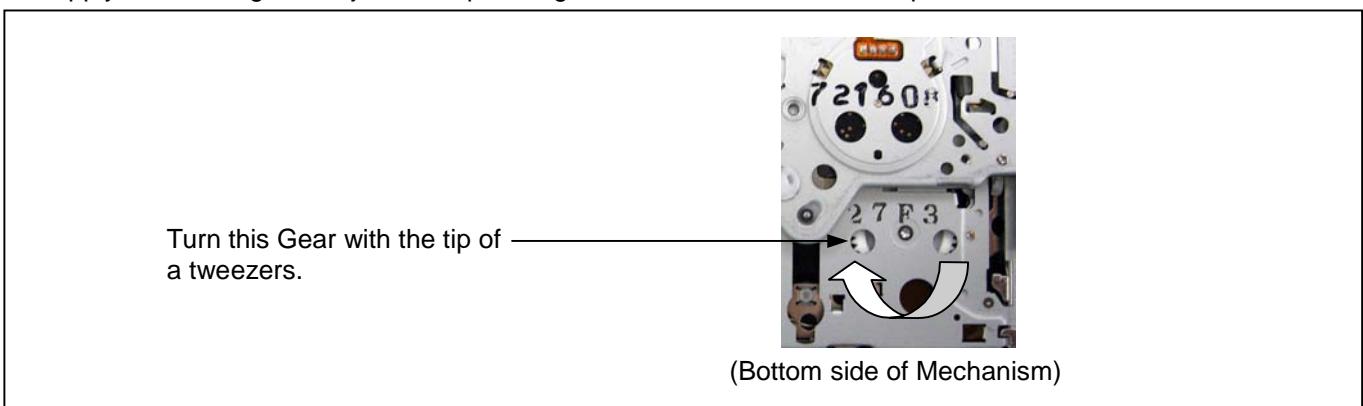
2. Supply 4.5 Volts to unload the posts using the motor.

3. Stop supplying the power at unloading complete position.

NOTE: If power is supplied too long, then the Cassette tape will be ejected prematurely.

4. Turn the Gear of Supply Reel as shown in figure, and this will take up the slack in the tape.

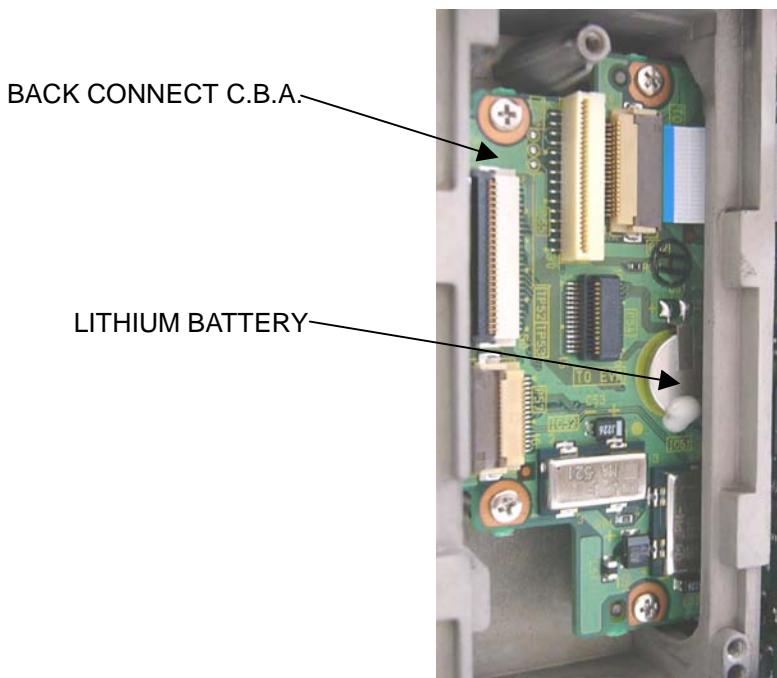
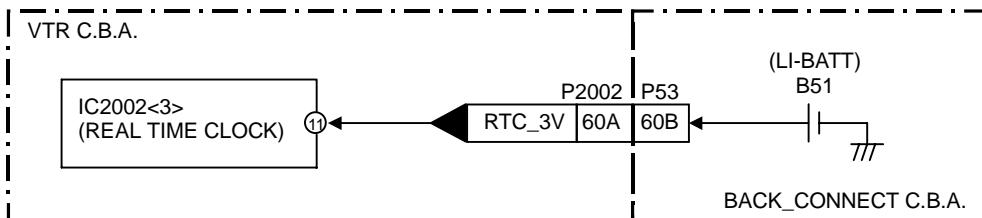
5. Supply 4.5 Volts again to eject the tape using the motor and remove the tape from Cassette Holder.



4. LITHIUM BATTERY

4-1. Replacement Procedure

1. There is a Lithium battery on the BACK CONNECT C.B.A.
2. Unsolder the Lithium battery and then replace with the new one. Please refer to item “**16. Removal of BACK CONNECT C.B.A.**” in section 2(Disassembly Procedure) about how removal of BACK CONNECT C.B.A..



NOTE:

The lithium battery is a critical component.
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

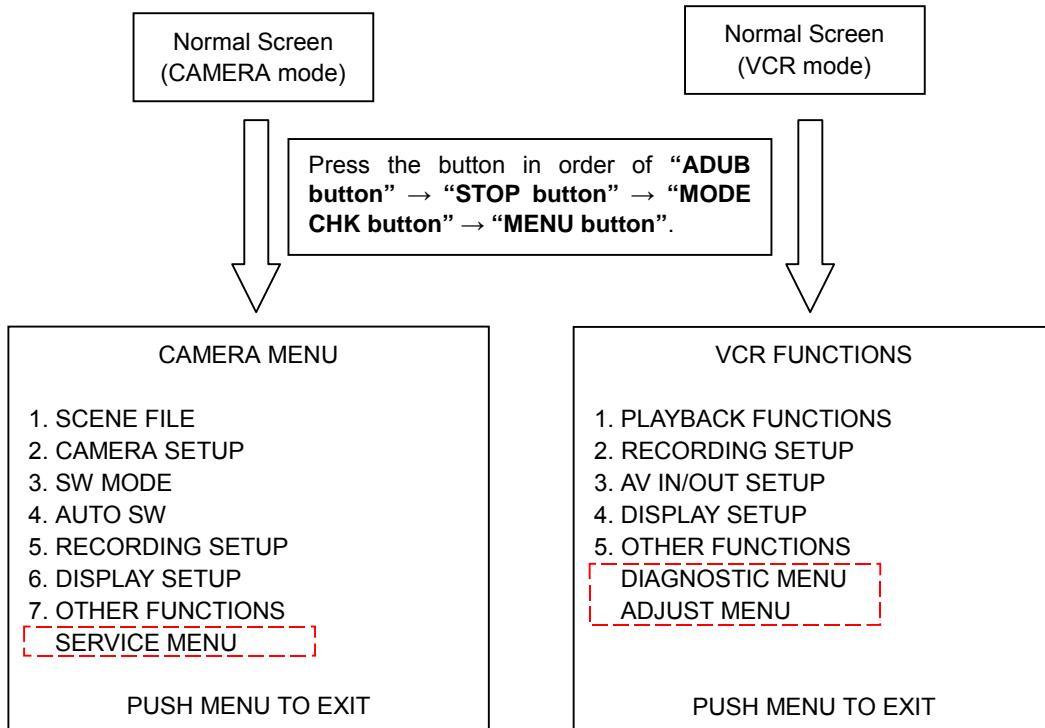
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

5. SERVICE MENU

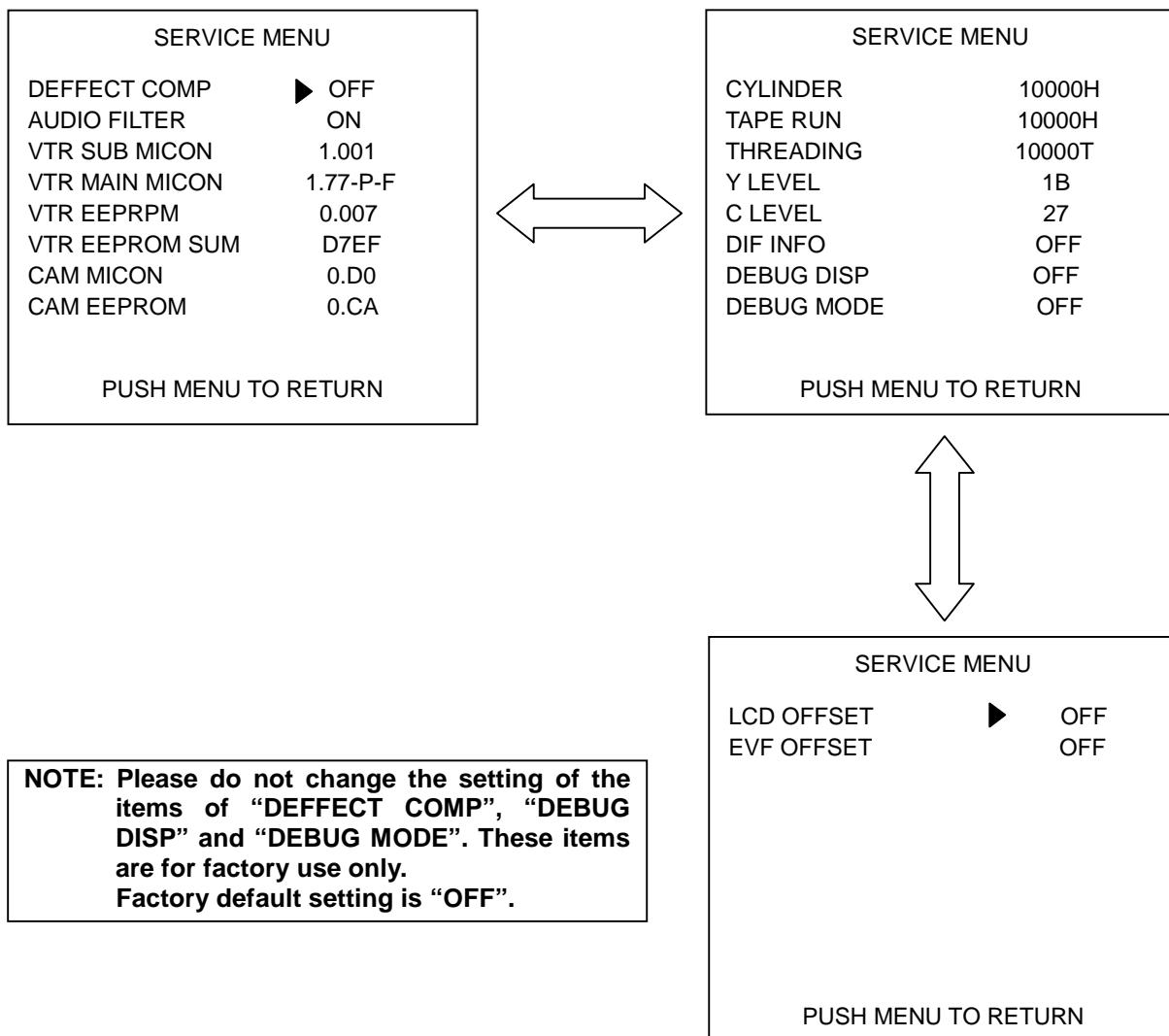
The SERVICE(CAMERA mode), DIAGNOSTIC(VCR mode) and ADJUST(VCR mode) menu can be displayed as follows.

Press the button in order of “**ADUB button**” → “**STOP button**” → “**MODE CHK button**” → “**MENU button**”, SERVICE menu in CAMERA mode, DIAGNOSTIC and the ADJUST menu in VCR mode can be displayed in addition to a setup menus.

Next, Tilt the OPERATION lever in the UP(▶ :PLAY) or DOWN (■ :STOP) direction, select the DIAGNOSTIC or ADJUST menu, press SET(STILL) of the OPERATION lever to open the DIAGNOSTIC or ADJUST menu.



5-1. SERVICE MENU (CAMERA mode)



5-1-1. Audio Filter

AUDIO FILTER

ON: The mechanism noise cancellation function operates by IC3001(DUO).

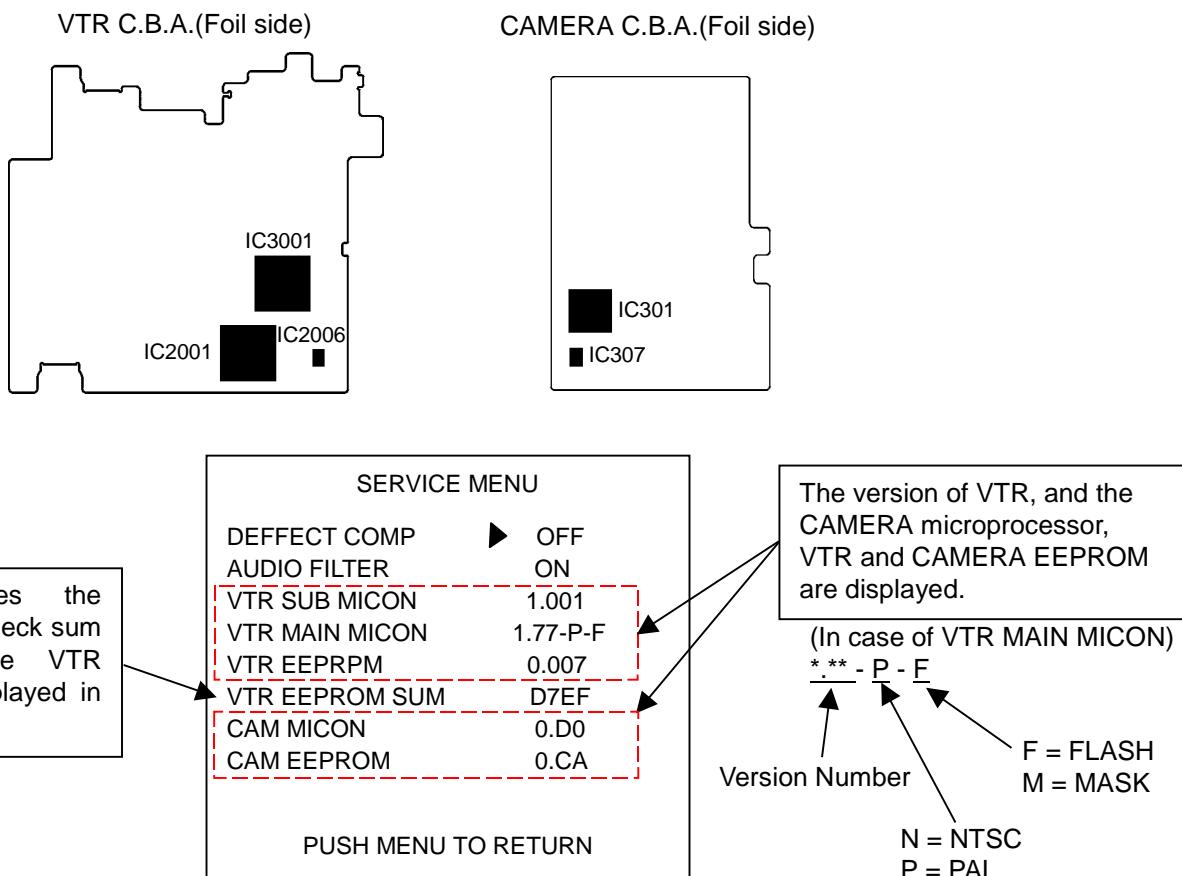
OFF: The mechanism noise cancellation function does not operate by IC3001(DUO).

Factory default setting is "ON".

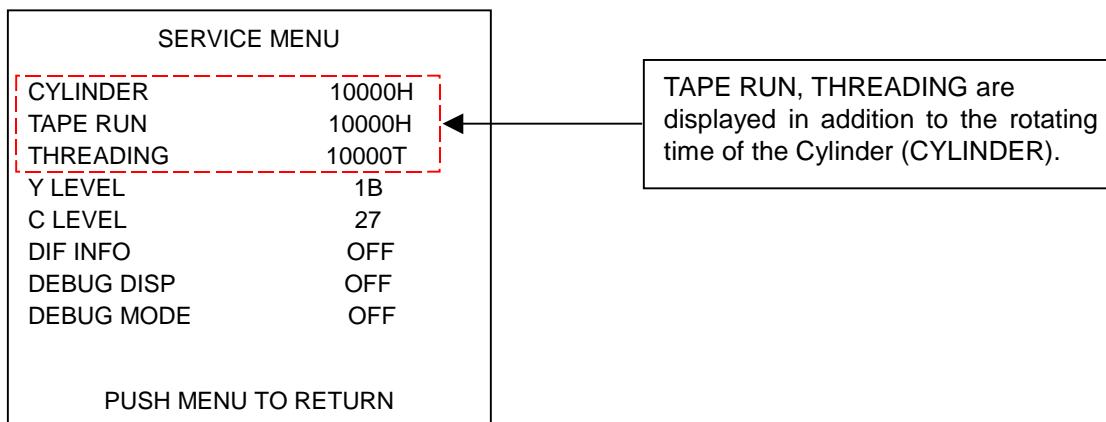
5-1-2. Software Version Display.

This unit have three pieces of microprocessor and two pieces of EEPROM.

---	CAMERA board	VTR board	
Microprocessor	IC301	IC2001(VTR MAIN MICON)	IC3001(VTR SUB MICON)
EEPROM	IC307	IC2006	---



5-1-3. Hour Meter Display.



ITEM	Display Data	Description
TAPE RUN	00000H – 99999H	It displays the time that the tape is running in units of hours.
THREADING	00000T – 99999T	It displays the number of times the tape is inserted.
CYLINDER	00000H – 99999H	It displays the time that the cylinder is rotating in units of hours. It displays same time as in the item HOUR METER of OTHER FUNCTION menu.

5-1-4. Adjustment item for Video Level

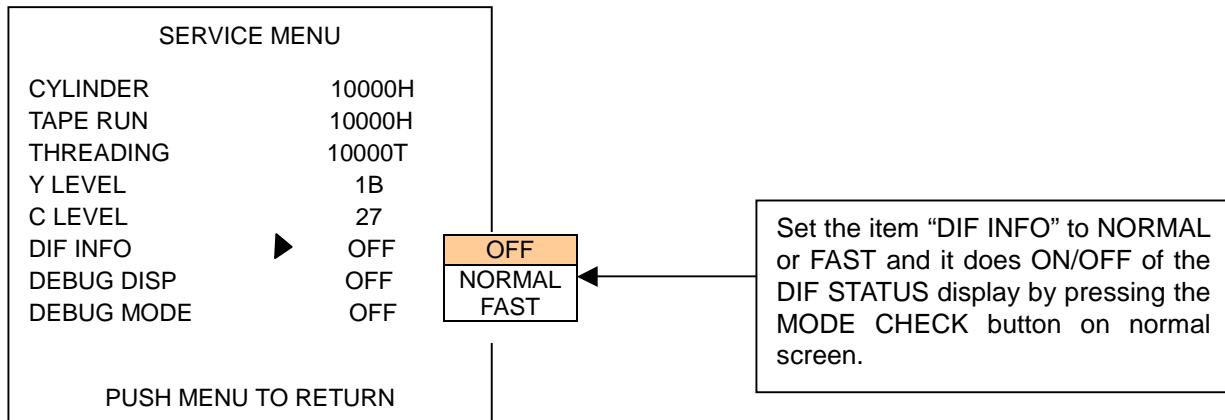
Y LEVEL

Y level of VIDEO OUT and S-VIDEO OUTPUT signal can be adjusted on this item.
The displayed value is the same as value for Luminance level adjustment in EVR adjustment.

C LEVEL

C level of VIDEO OUT and S-VIDEO OUTPUT signal can be adjusted on this item.
The displayed value is the same as value for Chroma level adjustment in EVR adjustment.

5-1-5. DIF Status Display.



NORMAL: The DIF STATUS display is updated every five frames.

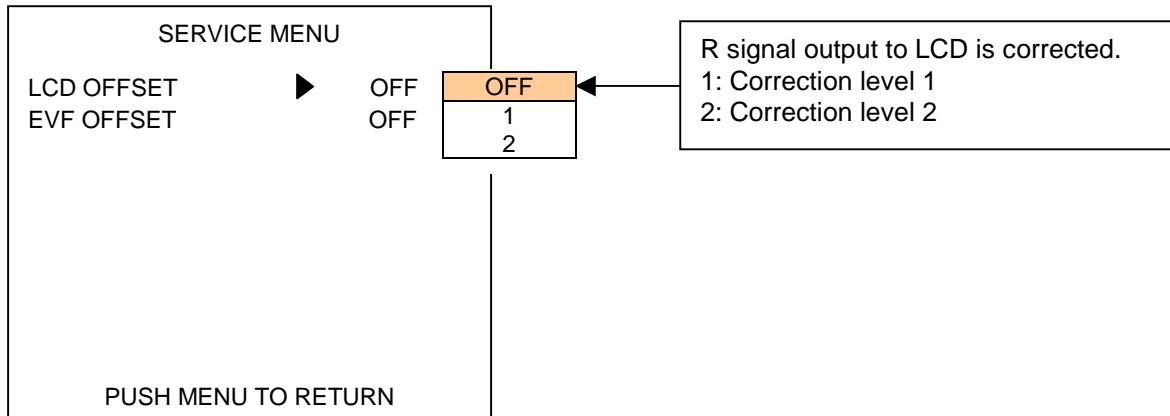
FAST: The DIF STATUS display is updated every frame.

Factory default setting is “OFF”.

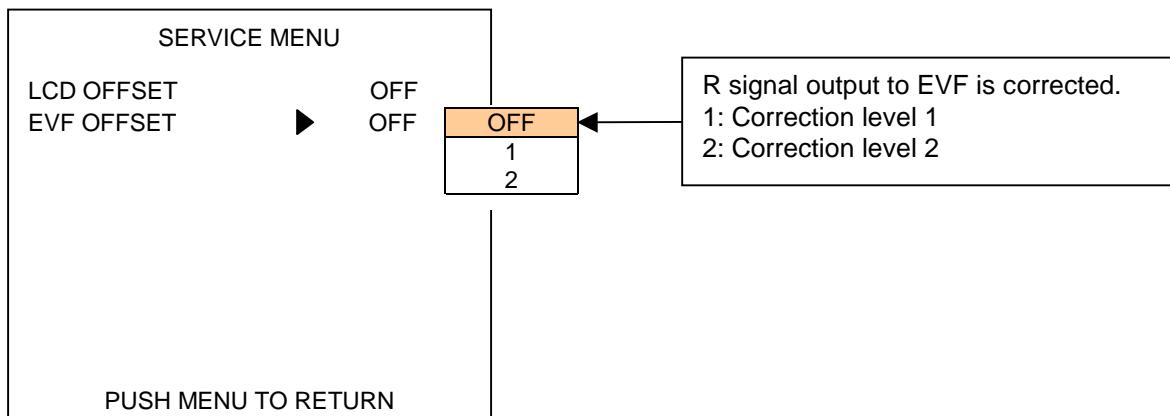
Items	Description	Remark
NODECNT	Number of NODE connections.	
MY_ID	NODE ID of this unit.	
ROOT_ID	ROOT ID	
IRM_ID	PHY ID of IRM	IRM(Isochronous Resonance Manager)
IN_CH	Input channel number of Isochronous data.	
OUT_CH	Output channel number of Isochronous data.	
DIFMODE	DIF mode	
RX_IN	Received condition of Isochronous data.	
O_BCC	Transmitted condition of Isochronous data.	
STYPE	Type of VIDEO signal	
FIELD	NTSC/PAL	
SPEED	Speed of Isochronous data.	IN_SPD in VCR MODE
UID	USER ID of 1394 equipment	
AS	Source pack of AUDIO	
ASC	Source control pack of AUDIO	
VS	Source pack of VIDEO	
VSC	Source control pack of VIDEO	
HEADER	HEADER pack	

5-1-6. LCD/EVF Correction

LCD OFFSET



EVF OFFSET

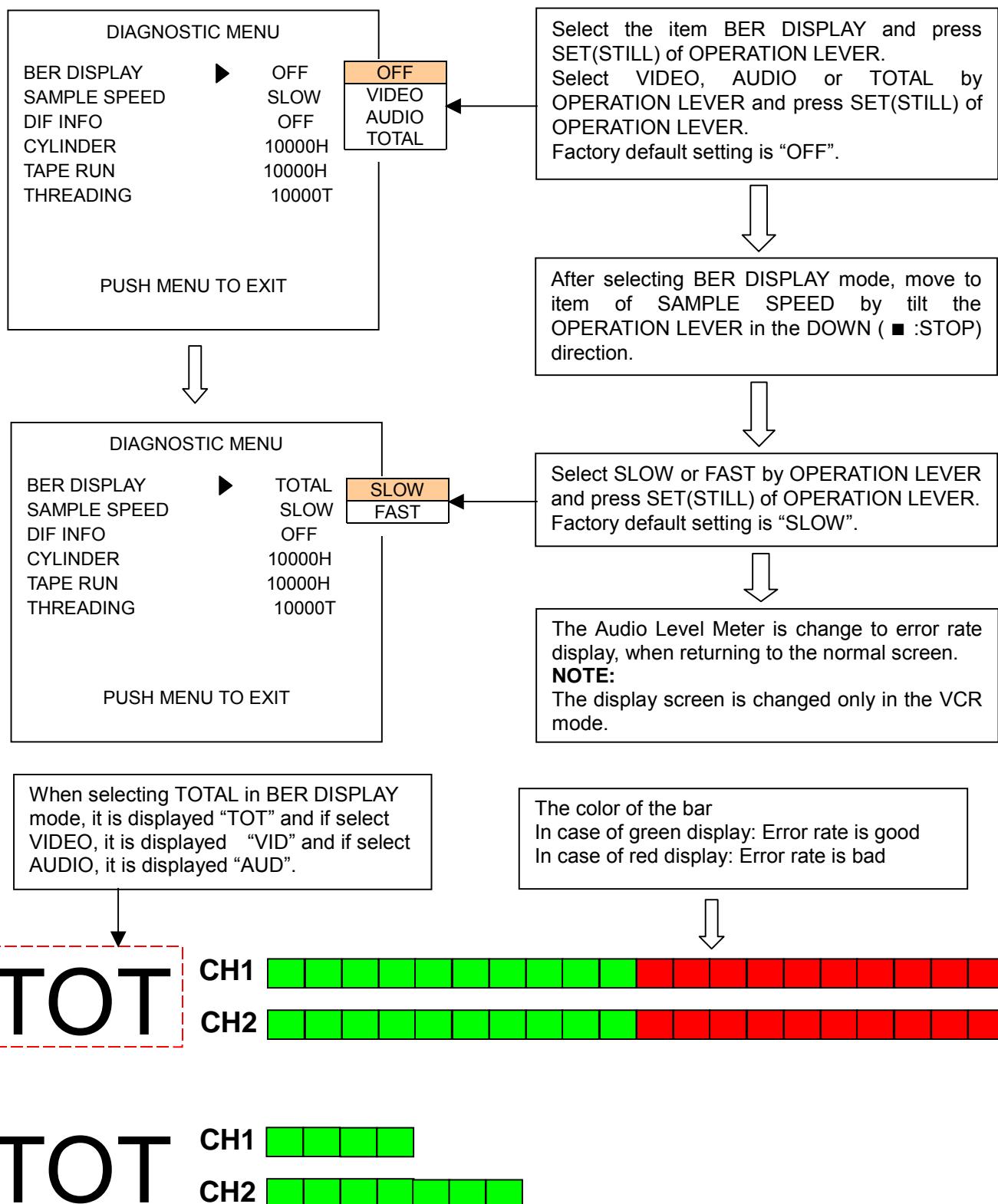


5-2. DIAGNOSTIC MENU (VCR mode)

5-2-1. How to display the Error Rate.

This unit can be displayed Error Rate and it shows the playing condition of the VCR.

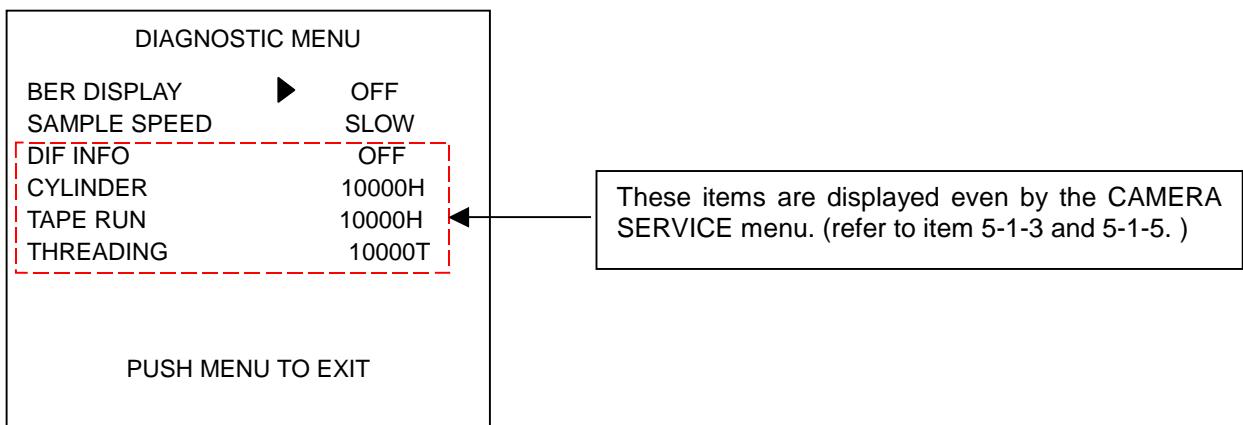
In case of the error rate is displayed, BER DISPLAY and SAMPLE SPEED mode is select on DIAGNOSTIC menu.



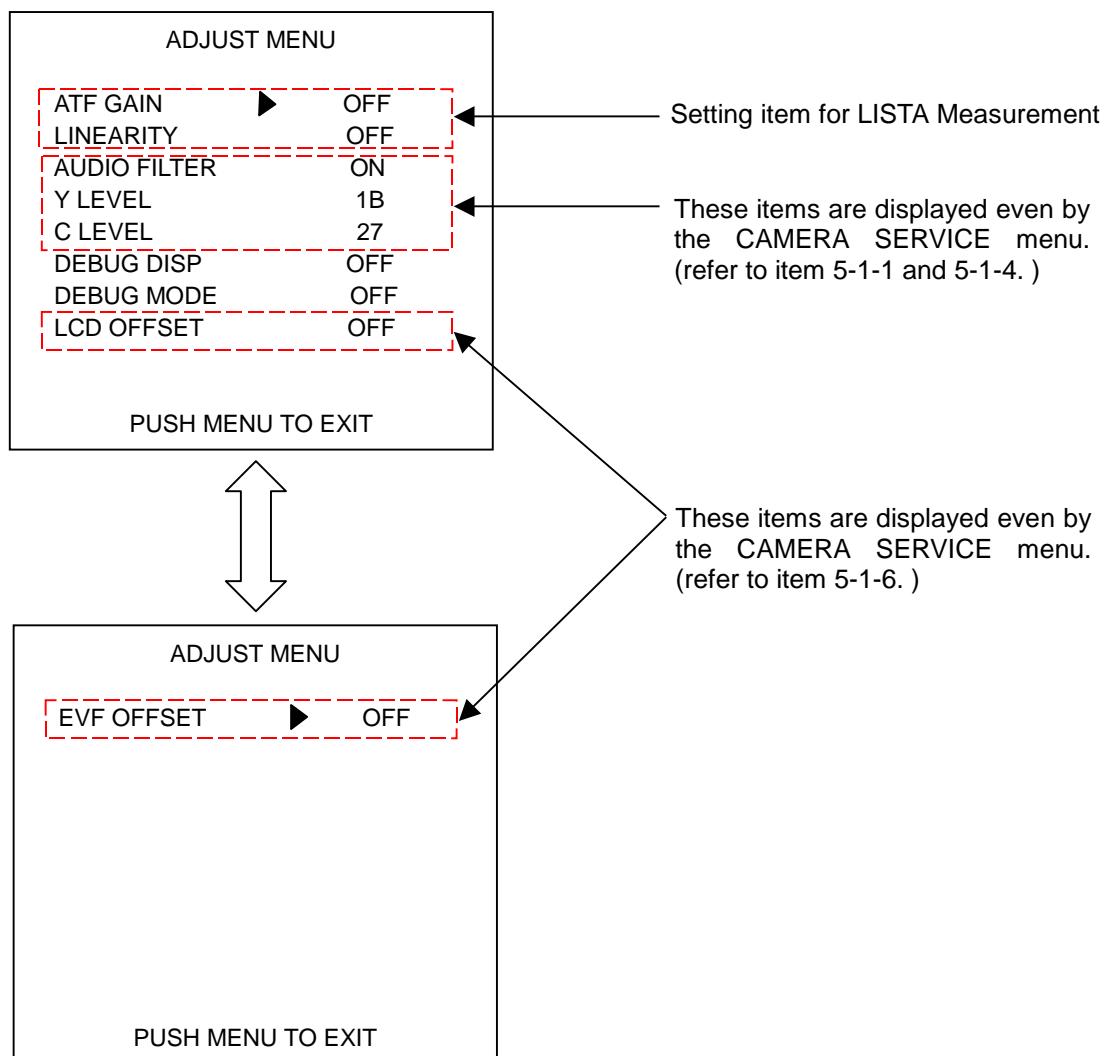
How to confirm the Error rate.

1. Select the TOTAL in item of BER DISPLAY.
2. Record the color bar signal on LP mode and playback the recorded portion. Confirm that the number of bar on display within 10 bars or less. The less bars displayed the better the error rate.

5-2-2. Other item.



5-3. ADJUST MENU (VCR mode)



NOTE: Please do not change the setting of the items of "DEBUG DISP" and "DEBUG MODE". These items are for factory use only.

5-3-1. Setting item for LISTA Measurement

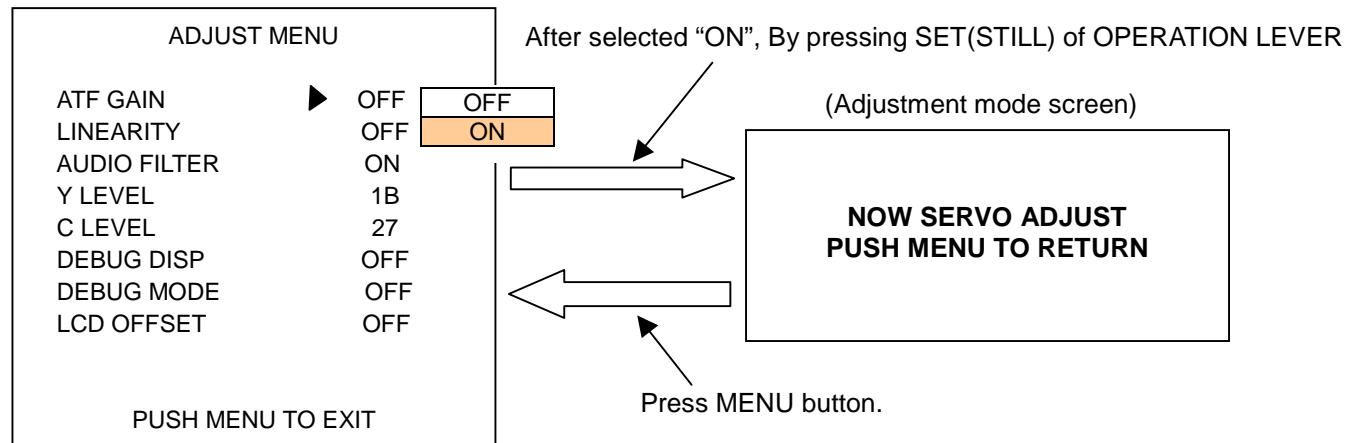
ATF GAIN

The speed of the tape changes if this item set to "ON" for the ATF sensitivity confirmation.

After selected "ON", By pressing SET(STILL) of OPERATION LEVER, enter the adjustment mode and then exit the menu once. The VTR mode is operated when the menu mode is exited temporarily. The screen below is displayed.

**NOW SERVO ADJUST
PUSH MENU TO RETURN**

It will be returned to ADJUST MENU when the MENU button is pressed in this condition.



LINEARITY

The ATF sensitivity changes if this item set to "ON" for the LINEARITY confirmation.

After selected "ON", By pressing SET(STILL) of OPERATION LEVER, enter the adjustment mode and then exit the menu once. The VTR mode is operated when the menu mode is exited temporarily. The screen below is displayed.

**NOW SERVO ADJUST
PUSH MENU TO RETURN**

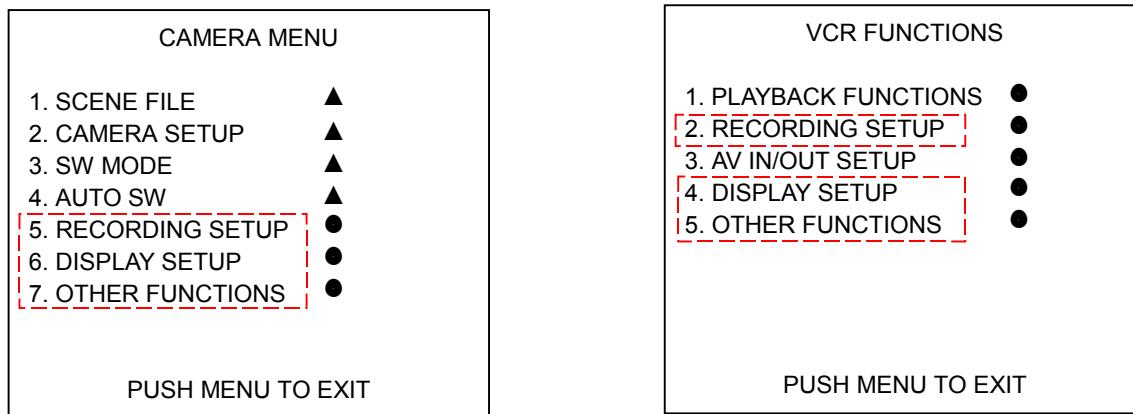
It will be returned to ADJUST MENU when the MENU button is pressed in this condition.

6. EEPROM

Several information are stored in EEPROM. Please refer to below explanation, which data stored in EEPROM.

6-1. Each Menu Data

6-1-1. Setting menu data



Common display items

● : Each setting value are stored in VTR EEPROM.

▲ : Each setting value are stored in CAMERA EEPROM.

NOTE1: The item "PROGRESSIVE" and "NAME EDIT" in SCENE FILE screen, which is stored in VTR EEPROM.

NOTE2: The item "Aspect CONV" in CAMERA SETUP screen, which is stored in VTR EEPROM.

6-1-2. SERVICE menu data

Please refer to as follows.

ITEM	STORED IN
DEFECT COMP	X
AUDIO FILTER	VTR EEPROM
VTR SUB MICON	VTR SUB MICON (IC3001)
VTR MAIN MICON	VTR MAIN MICON (IC2001)
VTR EEPROM	VTR EEPROM
VTR EEPROM SUM	VTR EEPROM
CAM MICON	CAM MICON (IC301)
CAM EEPROM	CAM EEPROM
CYLINDER	VTR EEPROM
TAPE RUN	VTR EEPROM
THREADING	VTR EEPROM
Y LEVEL	VTR EEPROM
C LEVEL	VTR EEPROM
DIF INFO	X
DEBUG DISP	X
DEBUG MODE	X
LCD OFFSET	VTR EEPROM
EVF OFFSET	VTR EEPROM

6-1-3. DIAGNOSTIC menu data

Please refer to as follows.

ITEM	STORED IN
BER DISPLAY	X
SAMPLE SPEED	X
DIF INFO	X
CYLINDER	VTR EEPROM
TAPE RUN	VTR EEPROM
THREADING	VTR EEPROM

6-1-4. ADJUST menu data

Please refer to as follows.

ITEM	STORED IN
ATF GAIN	X
LINEARITY	X
AUDIO FILTER	X
Y LEVEL	VTR EEPROM
C LEVEL	VTR EEPROM
DEBUG DISP	X
DEBUG MODE	X
LCD OFFSET	VTR EEPROM
EVF OFFSET	VTR EEPROM

6-1-5. The other data

Except setting menu data, below indicated information are stored in EEPROM.

EEPROM	INFORMATION	REMARK
CAMERA EEPROM	CAMERA adjustment value	Adjustment values are set by EVR software.
	Control data	-----
VTR EEPROM	VTR adjustment Value	Adjustment values are set by EVR software or SERVCE/ADJUST menu.
	HOUR METER	-----
	Time code data	-----
	Control data	-----

7. CAMERA REMOTE

The operation of zoom operation and record start/stop can be remotely controlled by connecting a remote controller with **ZOOM S/S** remote jack.

The operation of focus and iris operation can be remotely controlled by connecting a remote controller with **FOCUS/IRIS** remote jack.

NOTE: CAMERA remote control is only effective in the CAMERA mode.

7-1. ZOOM S/S REMOTE

Please refer to below indicated specification, When external remote is checked.

Terminal (refer to figure A)	Contents
A	Record start/stop input
B	Zooming control input
C	GND

Equivalent circuit of ZOOM S/S REMOTE jack

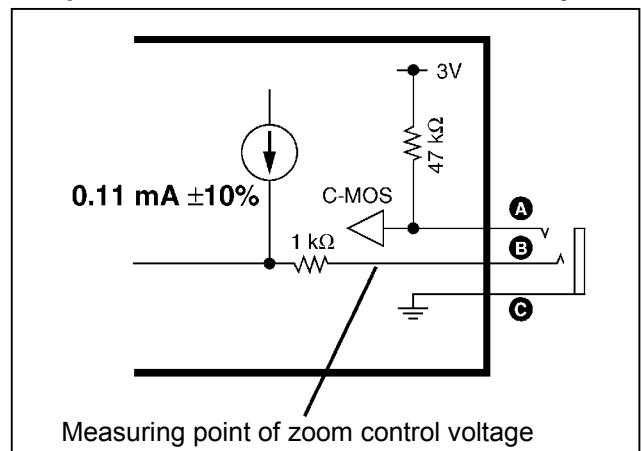


Figure A

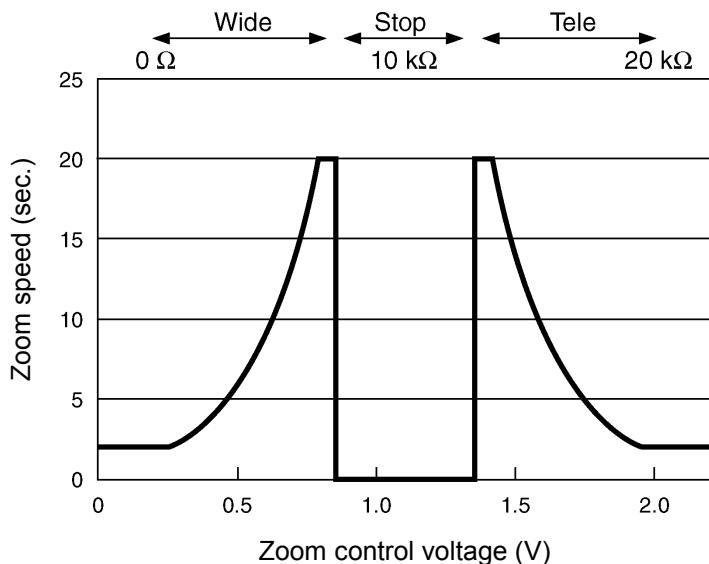
7-1-1. Record start / stop input

Every time A terminal connects with the GND, it repeats recording and a recording stop.

7-1-2. Zooming control input

With the voltage to input to the B terminal, the zoom speed changes. As for the relation between the zoom control voltage and the zoom speed, it is as shown in the following.

Relation between the zoom control voltage and zoom speed



NOTE:
The control voltage and the zoom speed, which are shown below are a reference value. Because there is a little difference, see as the reference data.

Figure B

7-2. FOCUS/IRIS REMOTE

Please refer to below indicated specification, When external remote is checked.

Terminal (refer to figure A)	Contents
A	GND
B	FOCUS control input
C	IRIS control input
D	IRIS(AUTO/MANU) switch input

Equivalent circuit of FOCUS/IRIS REMOTE jack

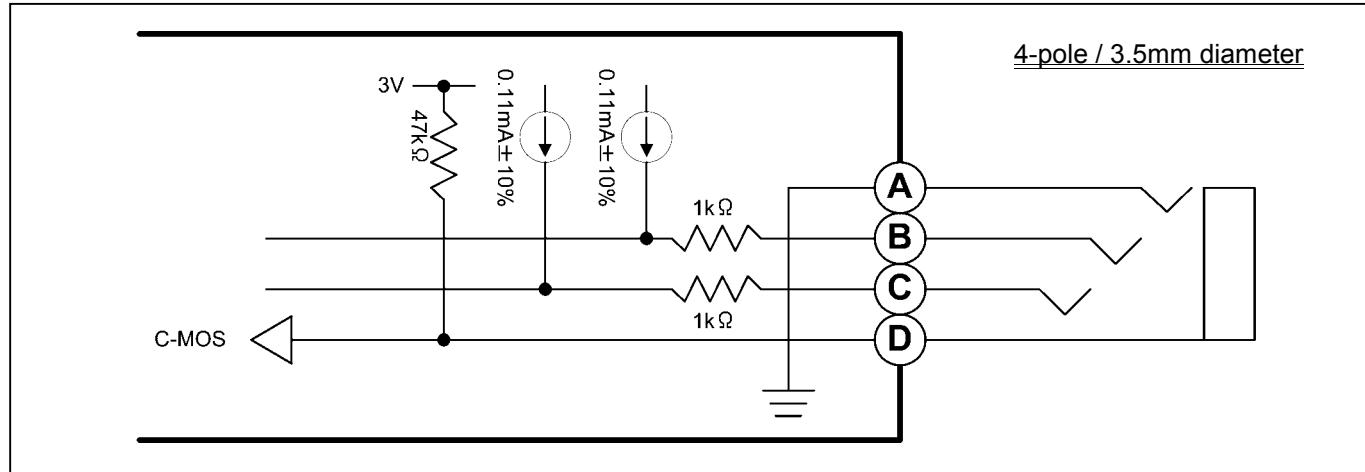


Figure C

7-2-1. Focus control input

With the voltage to input to the B terminal, the focus is changes. As for the relation between the focus control voltage and the focus, it is as shown in the following.

Relation between the focus control voltage and focus

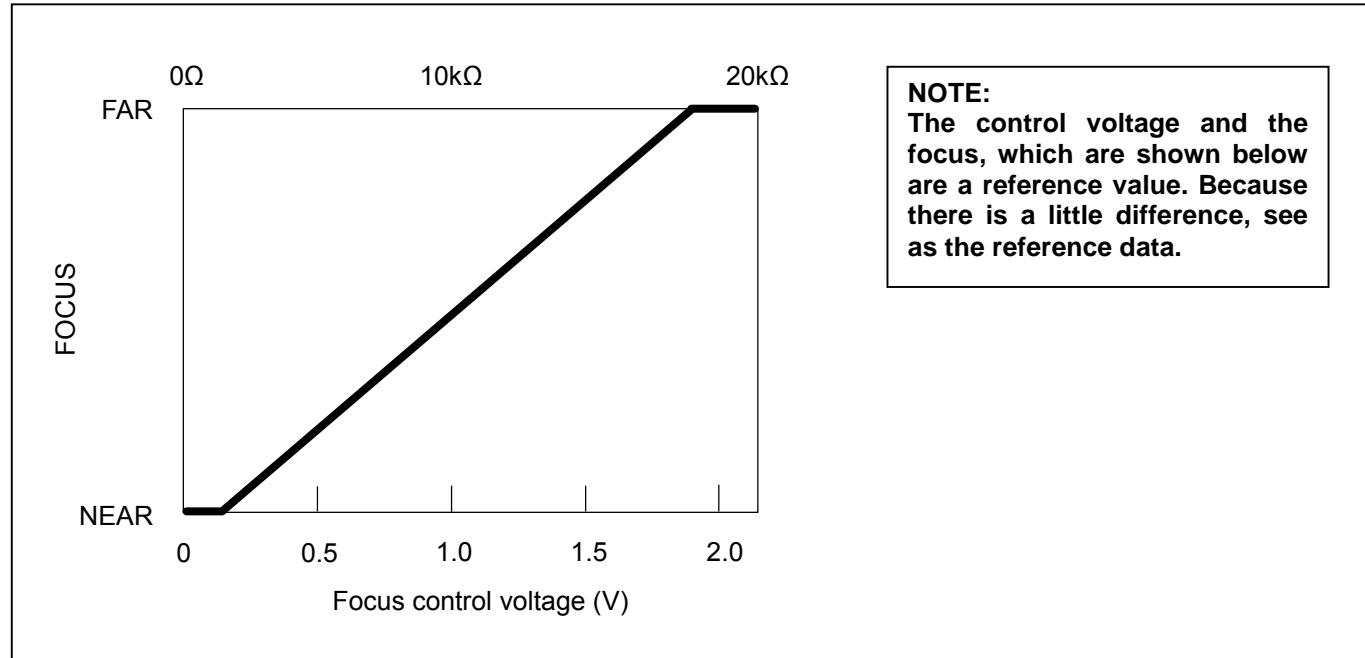


Figure D

When terminal B is open, the focus remote control becomes invalid.

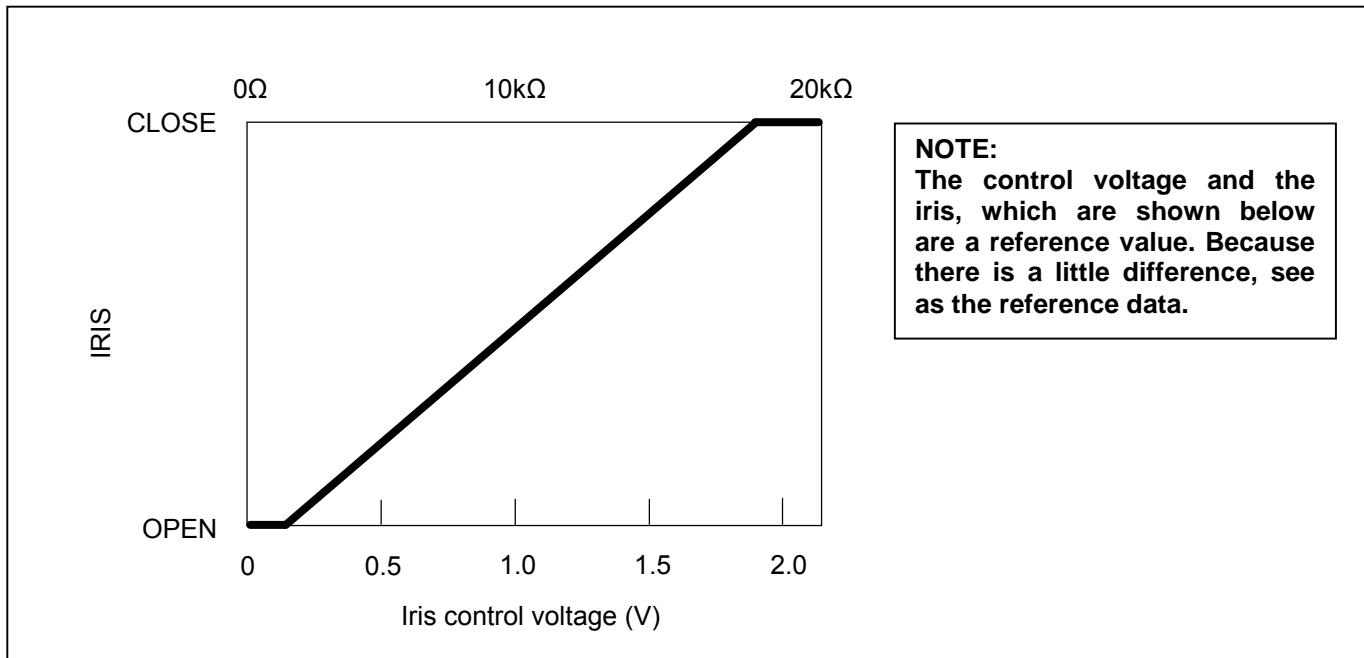
7-2-2. IRIS control input

When terminal D is open, the VCR becomes AUTO-IRIS mode. When terminal D connects with the GND, the VCR becomes MANUAL-IRIS mode.

With the voltage to input to the C terminal, the iris is changes. As for the relation between the iris control voltage and the iris, it is as shown in the following.

Even if AUTO-IRIS is used, the iris can be corrected according to the input voltage.

Relation between the iris control voltage and iris



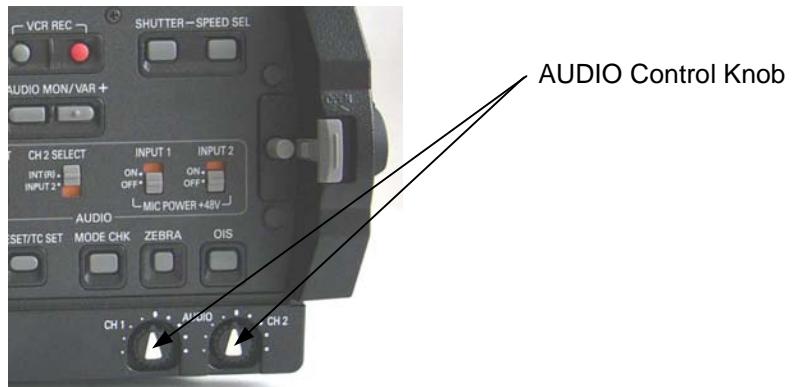
NOTE:

The control voltage and the iris, which are shown below are a reference value. Because there is a little difference, see as the reference data.

Figure E

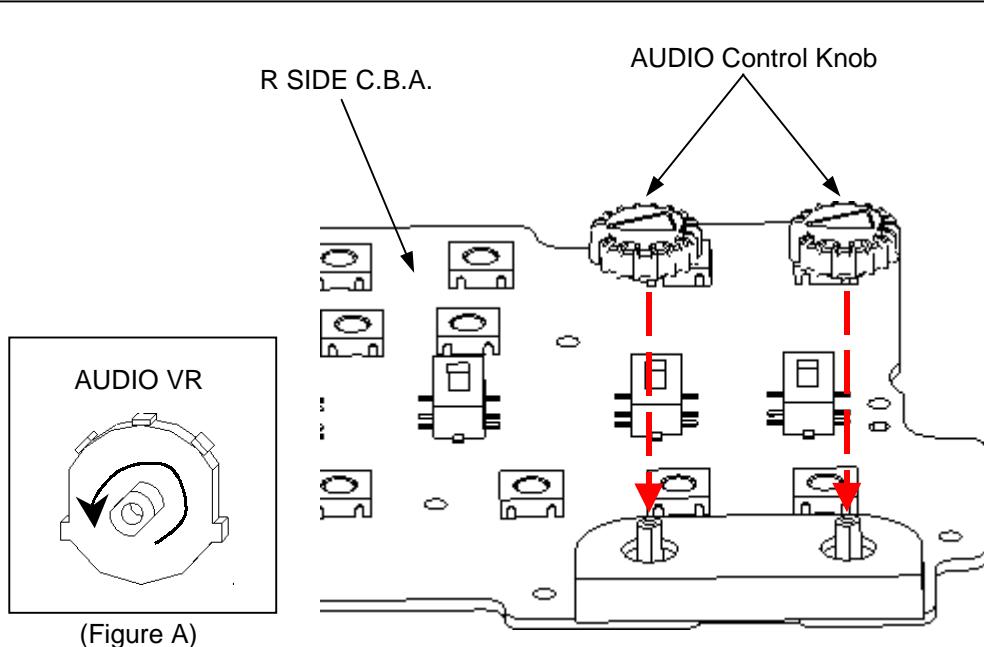
8. CAUTION WHEN INSTALLING AUDIO CONTROL KNOB

The AUDIO VR is weak against stress. So when the AUDIO Control Knob is removed from the AUDIO VR, it is very possible that AUDIO VR is broken. Please replace the AUDIO VR by a new one, when you have removed the AUDIO Control Knob from the AUDIO VR. When installing the AUDIO Control Knob, set its direction as follows.



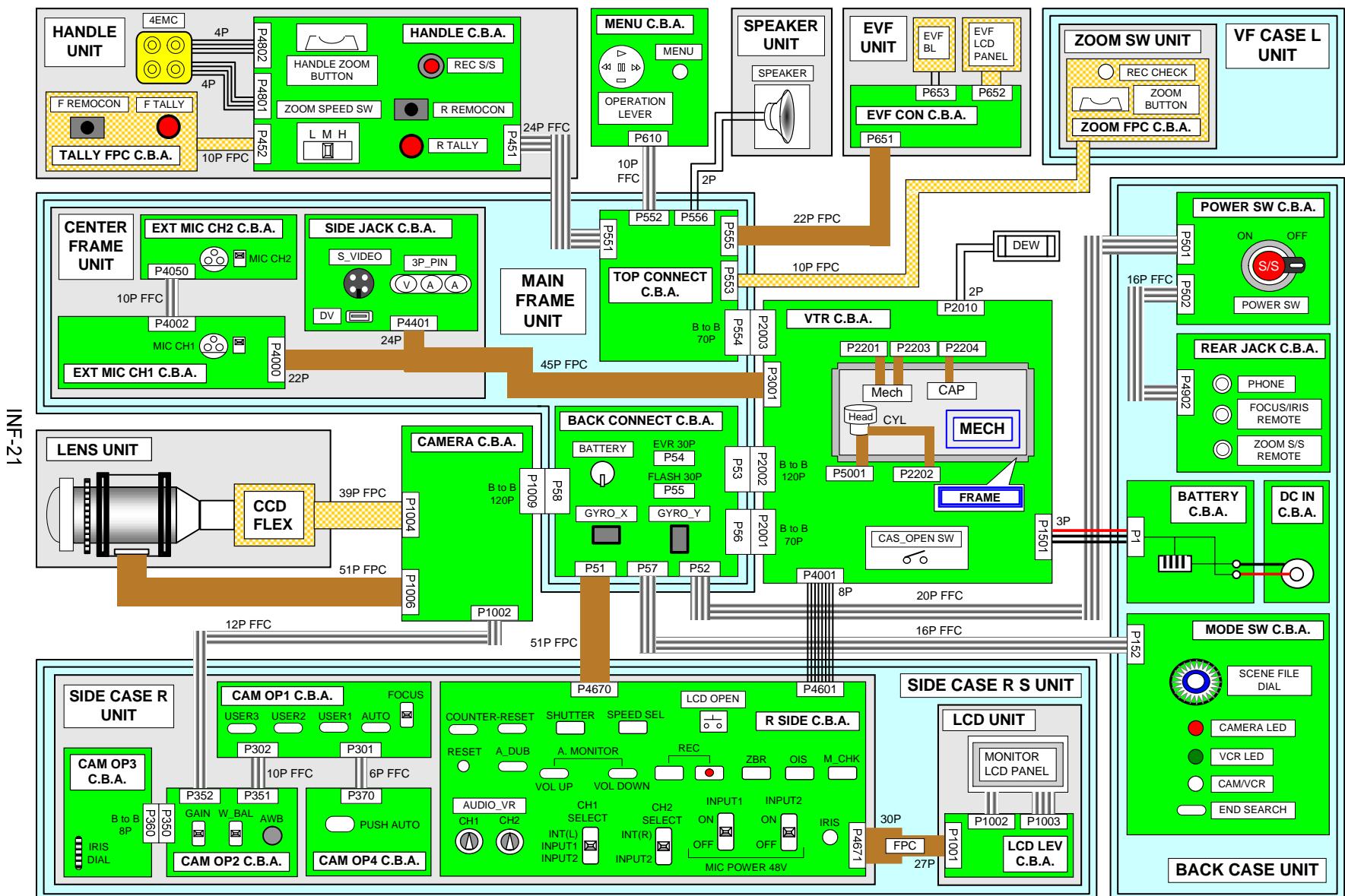
(Installation of AUDIO Control Knob)

1. Set the AUDIO VR to fully counter-clockwise as shown in figure A.
2. Install the AUDIO Control Knob to AUDIO VR as follows.

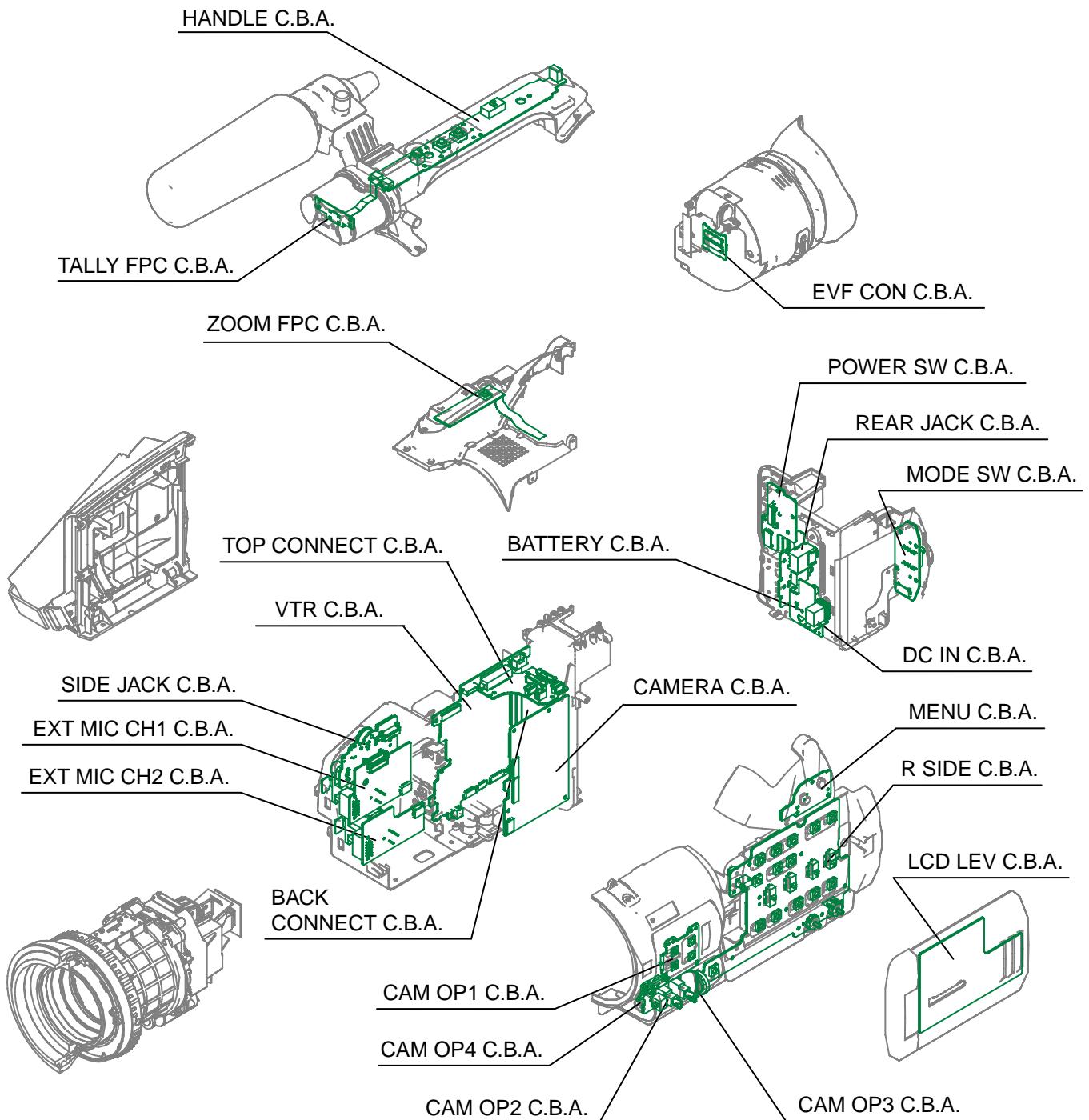


9. INTERCONNECTION

INTER CONNECTION DIAGRAM



10. CIRCUIT BOARD LAYOUT



SECTION 2

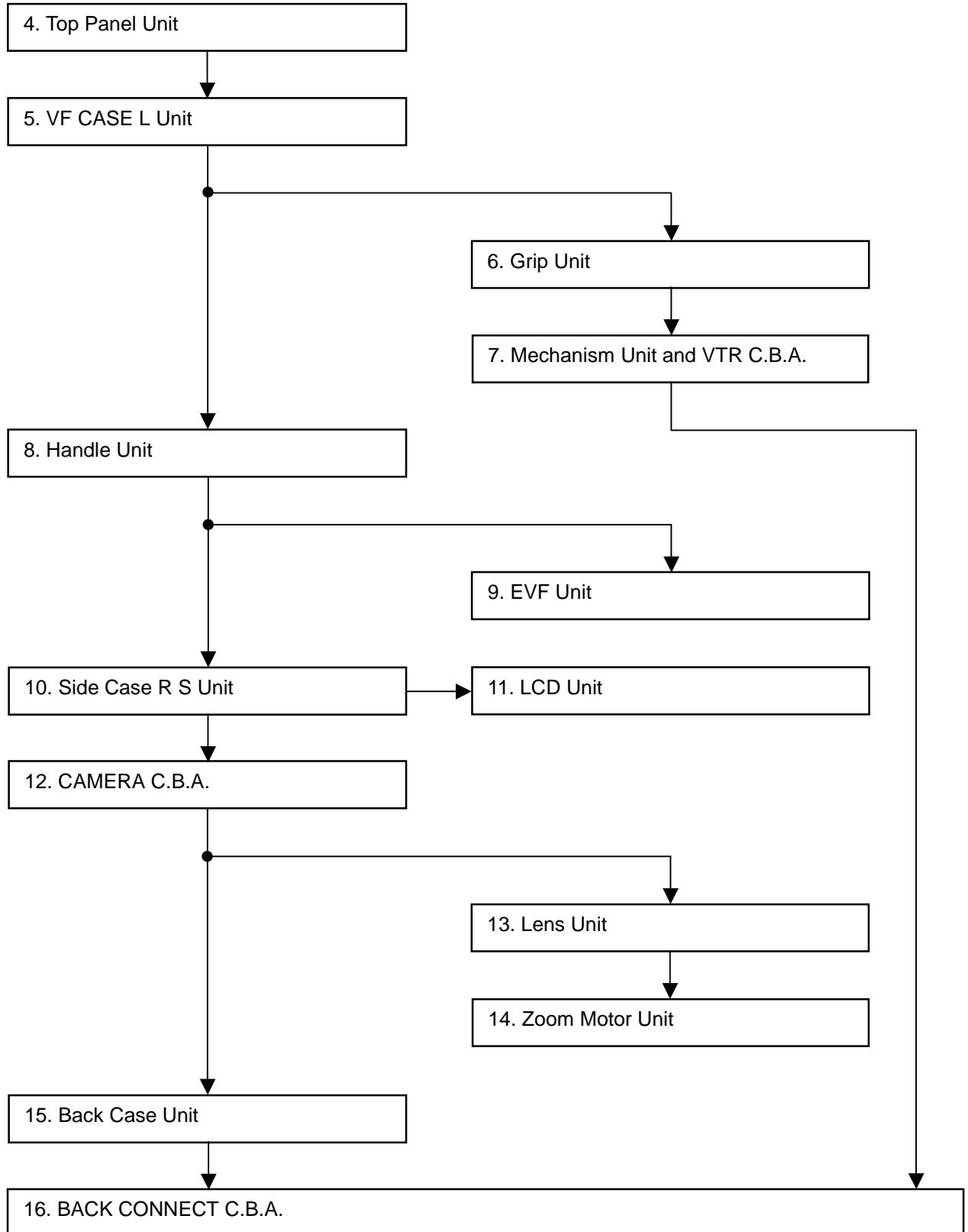
DISASSEMBLY PROCEDURES

MODEL: AJ-DVX100BP/E/AN,102BEN,DVC180BMC

CONTENTS

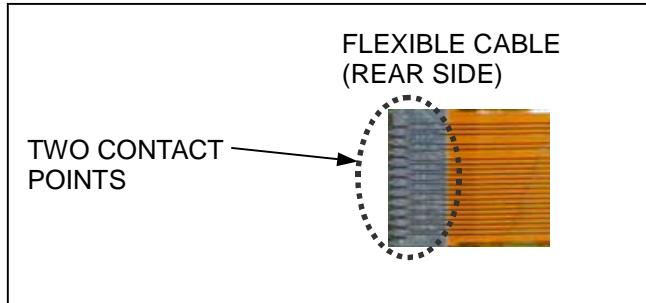
1.	Disassembly Flowchart	DIS-1
2.	Note when inserting Flexible Cable.....	DIS-2
3.	Type of Screws.....	DIS-2
4.	Removal of Top Panel Unit	DIS-3
5.	Removal of VF CASE L Unit	DIS-3
6.	Removal of Grip Unit.....	DIS-4
7.	Removal of Mechanism Unit and VTR C.B.A.....	DIS-6
8.	Removal of Handle Unit	DIS-8
9.	Removal of EVF Unit.....	DIS-8
10.	Removal of Side Case R S Unit	DIS-9
11.	Removal of LCD Unit.....	DIS-11
12.	Removal of CAMERA C.B.A.	DIS-12
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1. Disassembly Flowchart



2. Note when inserting Flexible Cable

The flexible cables, have two sets of contacts on each cable, see the figure below. When inserting these cables into the connector, make sure that the cables are fully inserted, if not they may damage the connector.



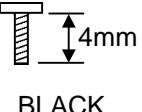
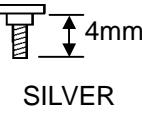
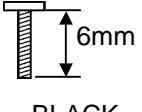
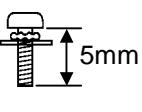
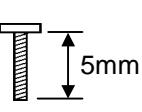
P51 on BACK CONNECT C.B.A.
P4670 on R_SIDE C.B.A.
P1004 and P1006 on CAMERA C.B.A.
P3001 on VTR C.B.A.
P1001 on LED LEV C.B.A.(LCD UNIT)

CCD ↔ P1004
LENS ↔ P1006
P52 (BACK CONNECT C.B.A.) ↔ P4604 (R_SIDE C.B.A.)
P3001 (VTR C.B.A.) ↔ P4401 (SIDE_JACK C.B.A.) & P4000(EXT MIC CH1 C.B.A.) : one contact point
LCD Panel ↔ P1001

When P1004 flexible cable is not making correct contact, the camera's picture will not be seen.
When P1006 flexible cable is not making correct contact, the LENS will not operate.
When P51 or P4670 flexible cable is not making correct contact, the VTR will not operate.
If any of the above symptoms occur after you assemble the camera recorder, please check the indicated connector.

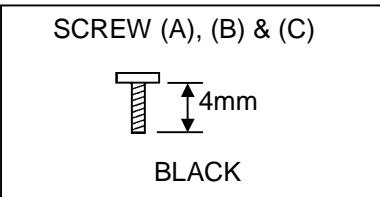
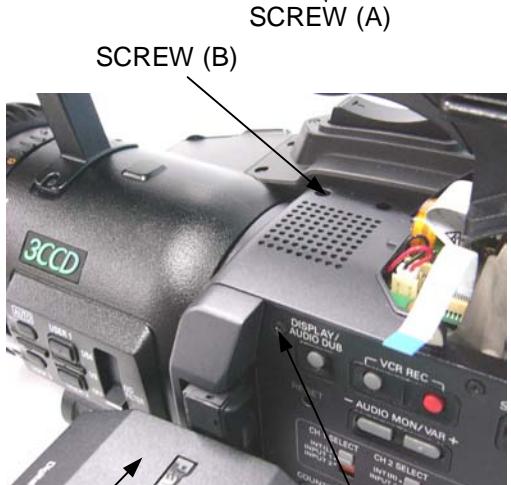
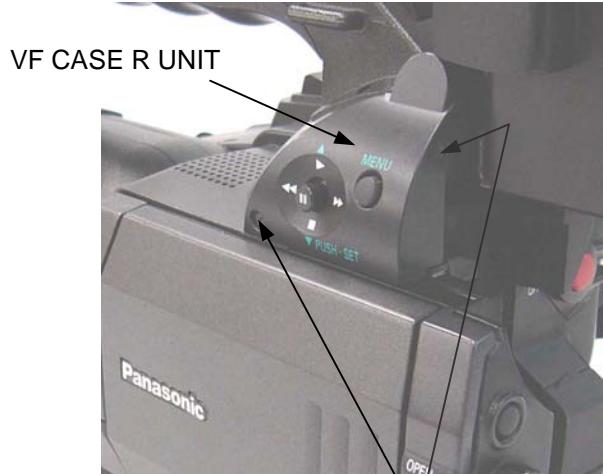
3. Type of Screws

As for this procedure, a screw is described by the alphabet. The specified screw, refer to the table below about any type. When constructive, be careful not to mistake to put a screw.

TYPE	Figure	Apply to screw
A	 BLACK	A, B, C, D, E, F, G, K, N, O, P, W, X, Y
B	 SILVER	H, I, L, M, Q, T, U, Z
C	 SILVER	J
D	 BLACK	R
E	 SILVER	S
F	 SILVER	V

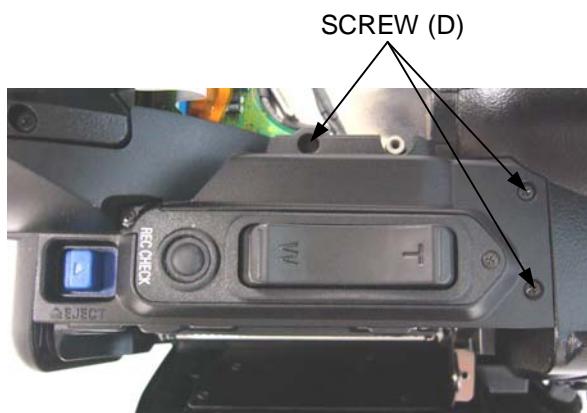
4. Removal of Top Panel Unit

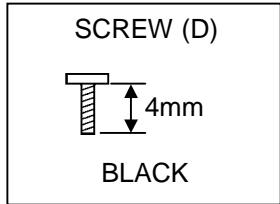
1. Unscrew the 2 screws (A) and disconnect a connector P610 on MENU C.B.A., then remove the VF CASE R UNIT.
2. Unscrew the 2 screws (B) and (C).
- NOTE: When unscrew the screw (C), set the LCD Panel to downward to protect damage on face of LCD.**
3. Disconnect a connector P556 on TOP CONNECT C.B.A. and remove the Top Panel Unit.



5. Removal of VF CASE L Unit

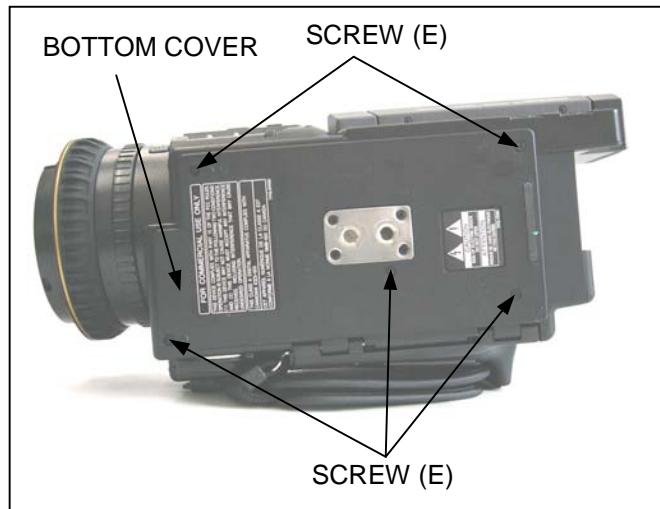
1. Remove the Top Panel Unit.
2. Open the Cassette Cover.
3. Unscrew the 5 screws (D).
4. Disconnect a connector P553 on TOP CONNECT C.B.A. and remove the VF CASE L UNIT.



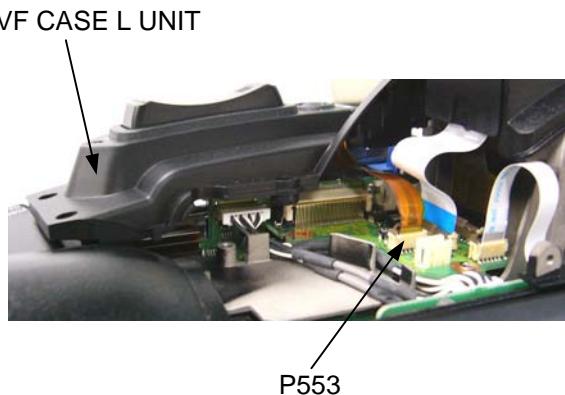


6. Removal of Grip Unit

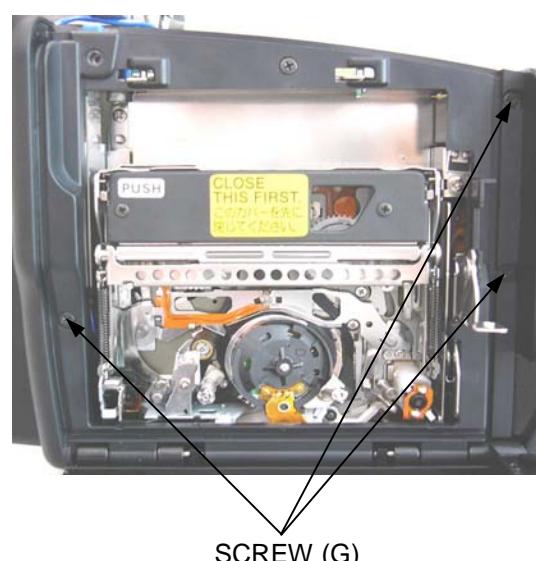
1. Remove the VF CASE L Unit.
2. Unscrew the 5 screws (E) and remove the Bottom Cover.



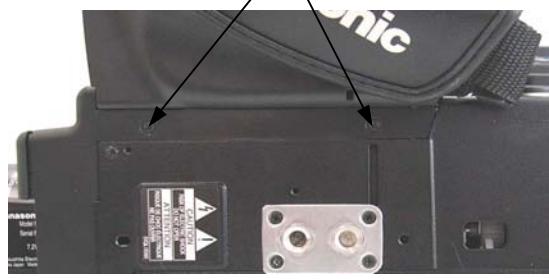
3. Unscrew the screw (F) and open the cassette cover.



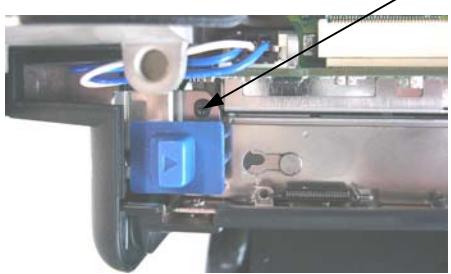
4. Unscrew the 7 screws (G) and remove the Grip Unit.



SCREW (G)



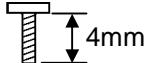
SCREW (G)



SCREW (G)



SCREW (E), (F) & (G)

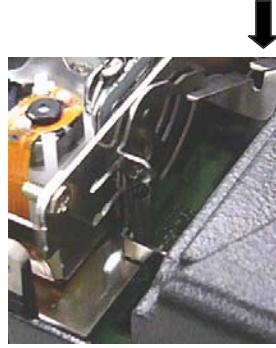


BLACK

< Note in installation >

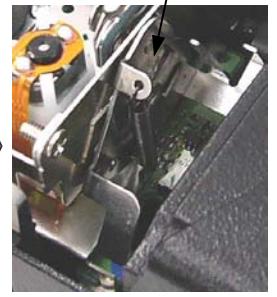
1. Arm should be pressed in the direction of an arrows as shown in figure A, and so that the position of the SW ARM is put into the state of figure B.

Arm is pressed in this direction



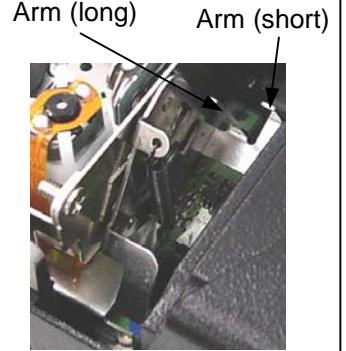
(Figure A)

SW ARM



(Figure B)

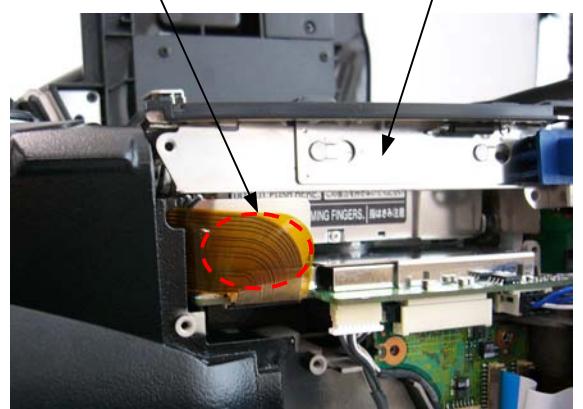
2. The Grip Unit is installed so that the roller of the Grip Unit puts between a long arm and short arm.



Roller

3. Be careful not to damage the flexible cable as shown in figure in installation of Grip Unit.

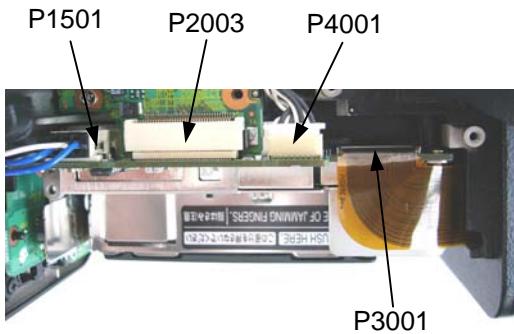
Do not damage



GRIP UNIT

7. Removal of Mechanism Unit and VTR C.B.A.

1. Remove the Grip Unit.
2. Disconnect 3 connectors P1501, P4001 and P3001 on VTR C.B.A.



3. Unscrew the 4 screws (H) and remove the Mechanism Unit (with VTR C.B.A.).

NOTE: When lift up the Mechanism Unit (with VTR C.B.A.) to remove Mechanism Unit (with VTR C.B.A.), be careful because the 3 connectors on VTR C.B.A (P2001, P2002 and P2003) are combined.

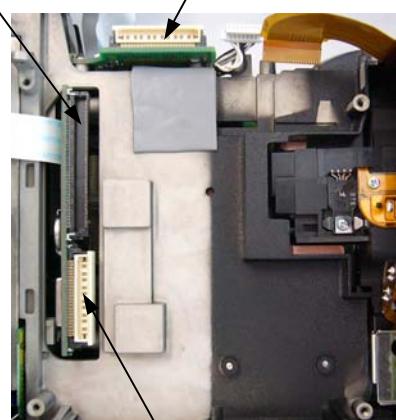
Please lift up the VTR C.B.A. with mechanism chassis (There is a possibility of giving the warp to the mechanism chassis because the connector is hard when only the mechanism chassis is lifted up by hand).

Also do not damage the Cleaning roller. Check the connector has been connected securely when the Mechanism Unit (with VTR C.B.A.) is installed.



SCREW (H) & (I)
4mm
SILVER

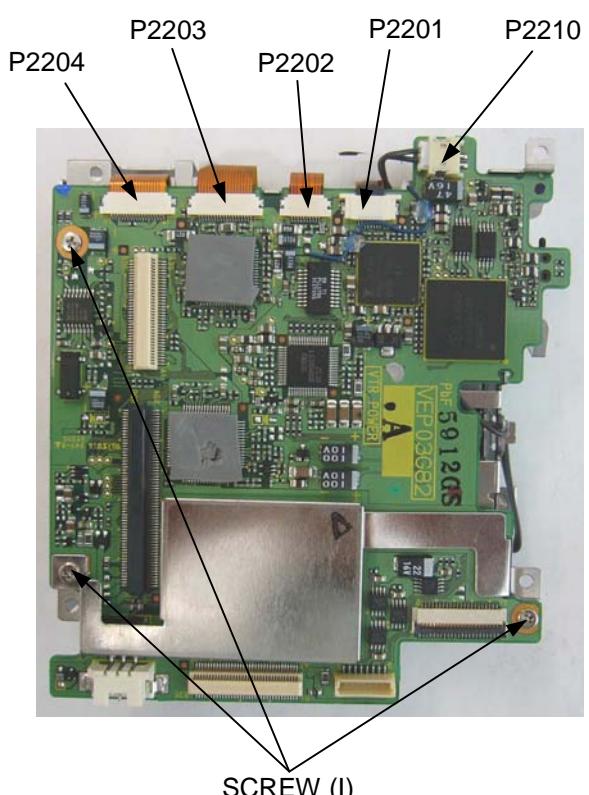
P2002 connection P2003 connection



4. Disconnect the connector P5001 on VTR C.B.A.



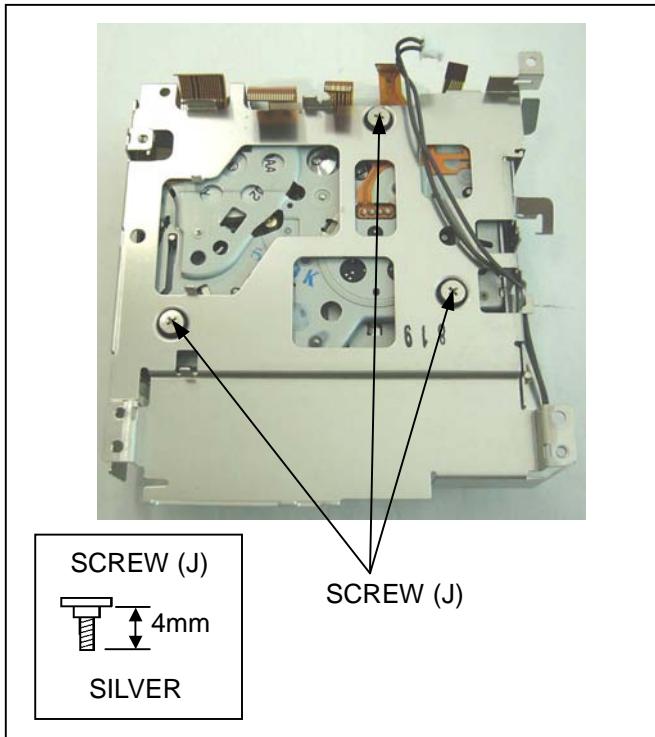
5. Disconnect the connectors P2201, P2202, P2203, P2204 and on VTR C.B.A..
6. Unscrew the 3 screws (I) and remove the VTR C.B.A..



NOTE: The connector P2201, 2202, 2203 and 2204 are not lock types. Please pull out flexible cable with a pick etc..

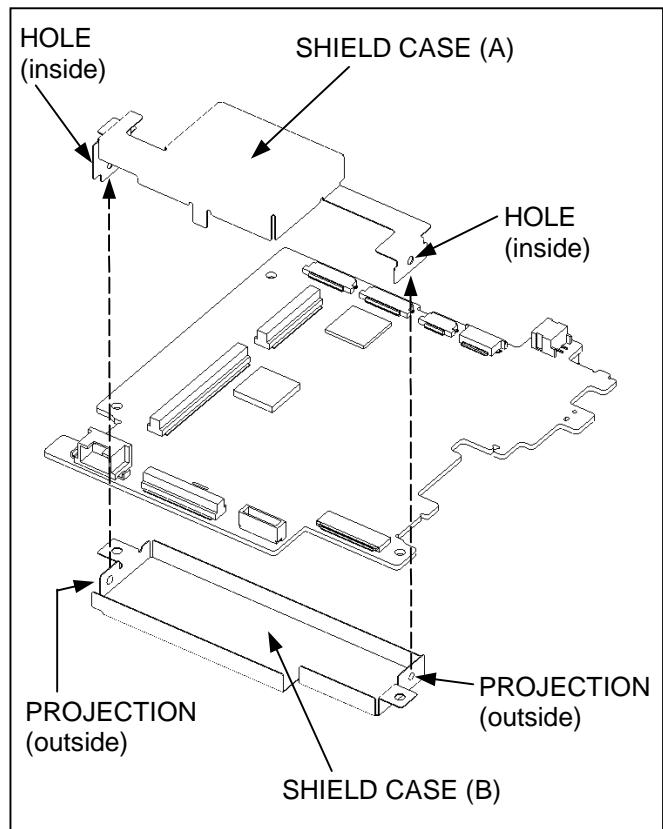
NOTE: Even if VTR C.B.A. is not exchanged to new one, the calendar setting is reset only by removing it. Please set it again by a setting menu.

7. Unscrew the 3 screws (J) and remove the Mechanism Unit from Mech. Attachment Frame Unit.



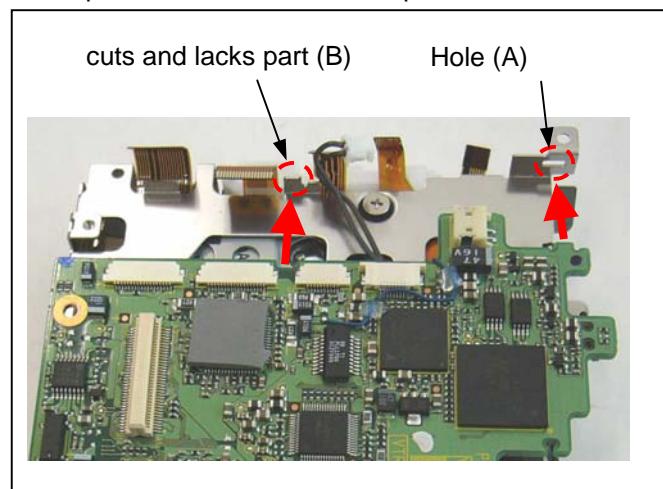
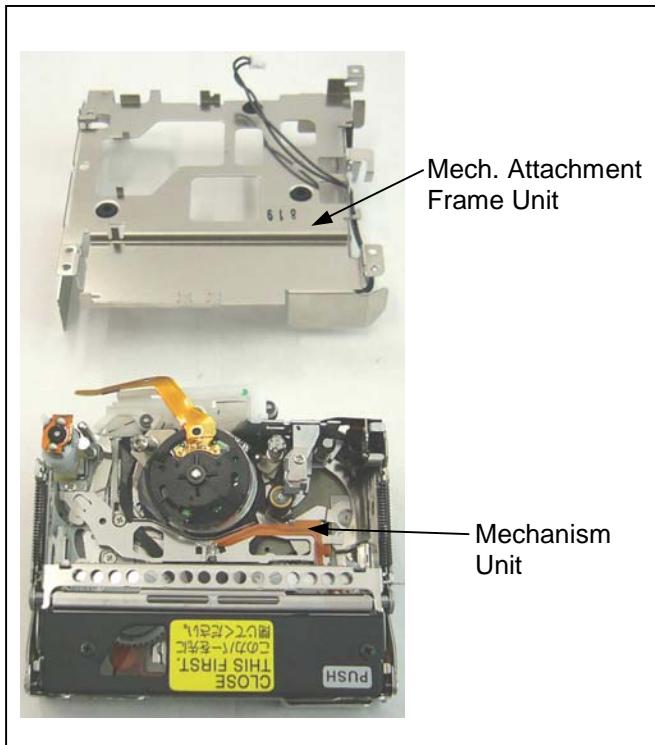
< Note in installation of VTR C.B.A. >

After install SHILED CASE (A) to VTR C.B.A., install the SHILED CASE (B) to be puts projection part of SHIELD CASE (A) in the hole part of SHILED CASE (B).



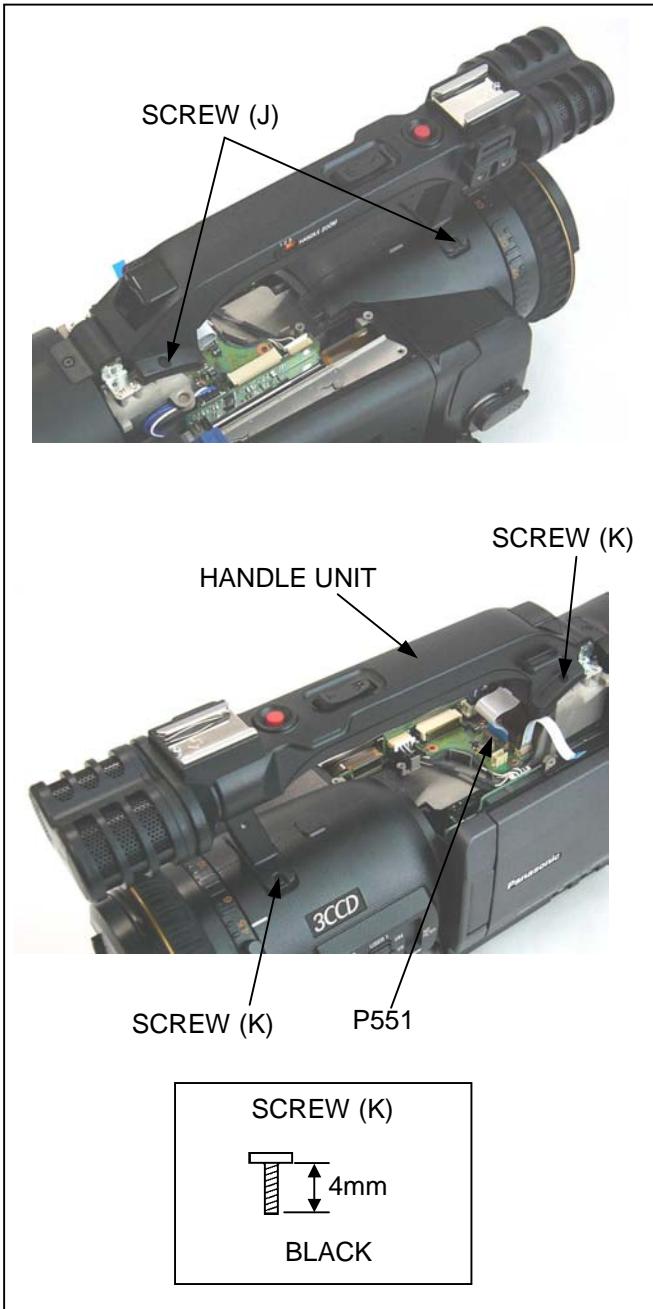
Please insert the cuts and lacks part of VTR C.B.A. as shown in figure to hole (A) of Mech. Attachment Frame Unit.

Please install VTR C.B.A. so that the cuts and lacks part (B) of the Mech. Attachment Frame Unit may correspond to the cuts and lacks part of VTR C.B.A..



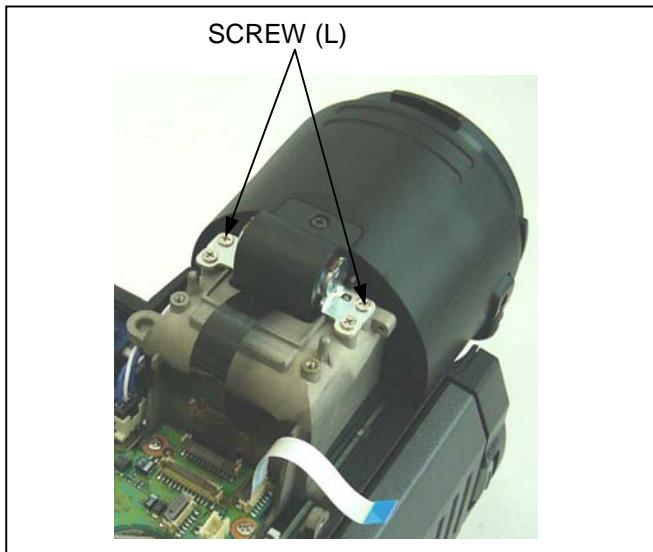
8. Removal of Handle Unit

1. Remove the VF CASE L Unit.
2. Unscrew the 4 screws (K) and disconnect the connector P551 on TOP CONNECT C.B.A., then remove the HANDLE UNIT.

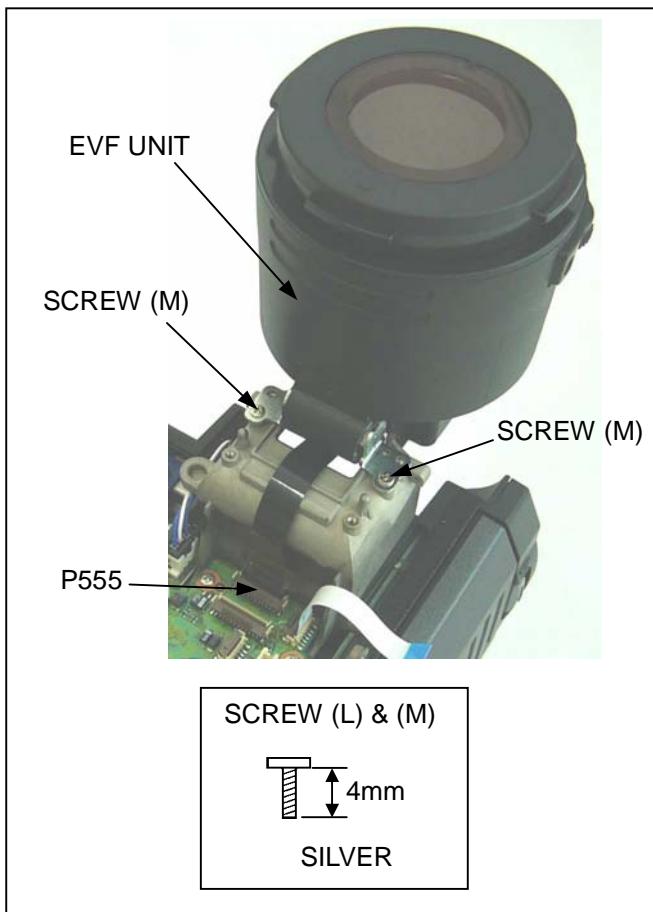


9. Removal of EVF Unit

1. Remove the Handle Unit.
2. Unscrew the 2 screws (L).

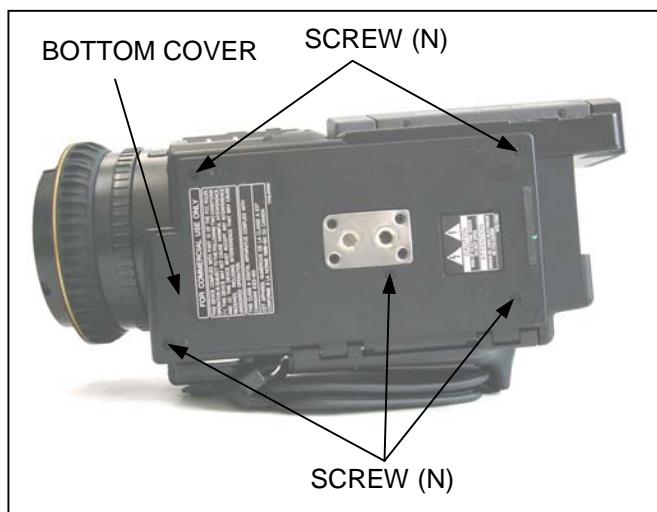


3. Make the condition which lift up the EVF Unit as shown figure and unscrew the 2 screws (M).
4. Disconnect the connector P555 on TOP CONNECT C.B.A. and remove the EVF Unit.



10. Removal of Side Case R S Unit

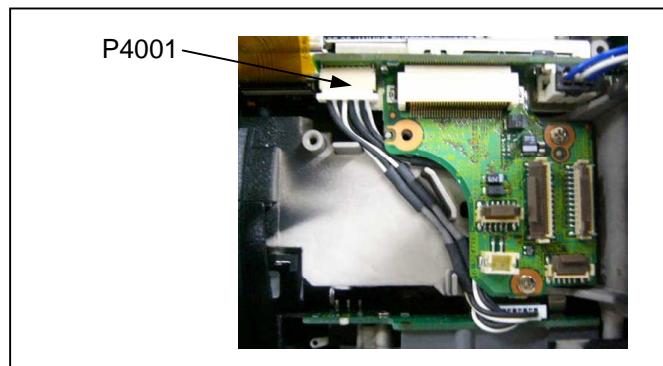
1. Remove the Handle Unit.
2. Unscrew the 5 screws (N) and remove the Bottom Cover.



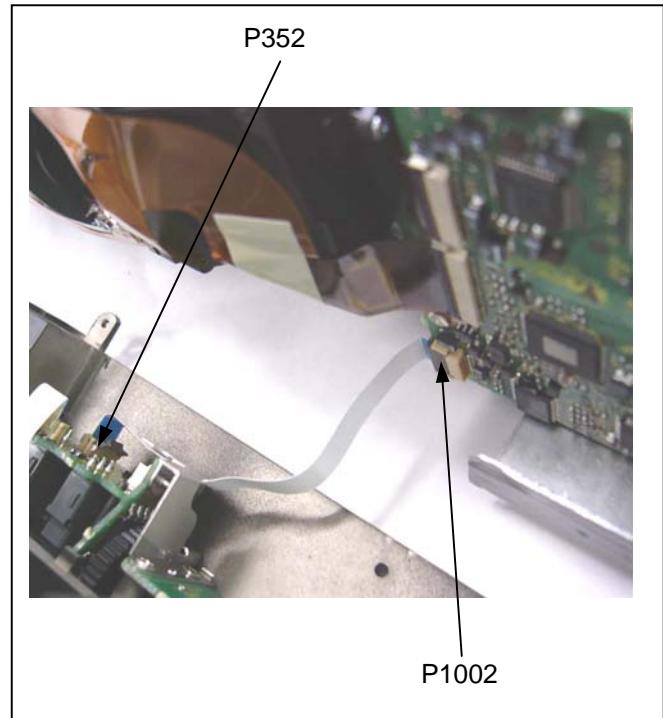
3. Unscrew the 5 screws (O).
4. Unscrew the 3 screws (P).



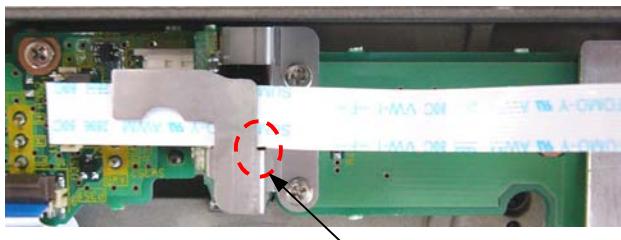
5. Disconnect a connector P4001 on VTR C.B.A..



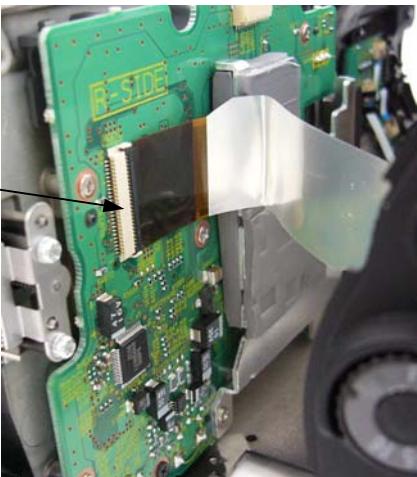
6. Disconnect a connector P1002 on CAMERA C.B.A.
(You may disconnect either connector P352 on CAM OP2 C.B.A. or P1002 is disconnected).



NOTE: Do not damage the flexible cable in part shown in figure. And please confirm the wire is processed as shown in figure when install it.

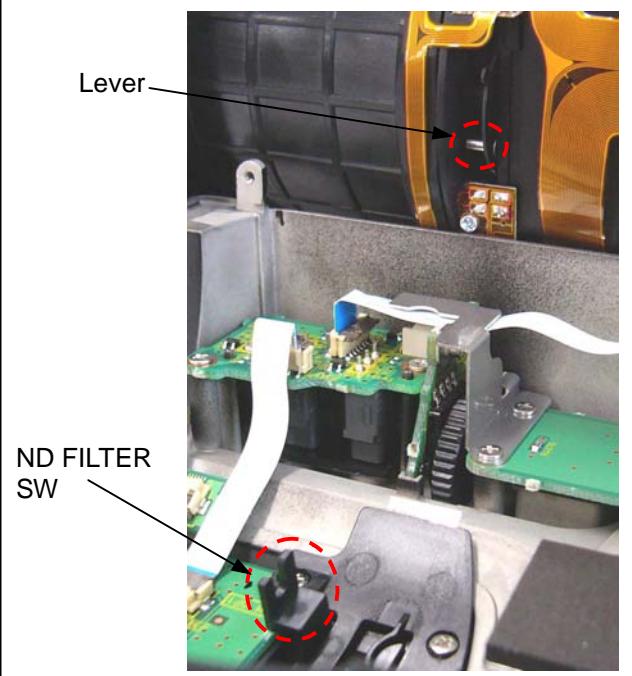


7. Disconnect a connector P4670 on R-SIDE C.B.A. and remove the Side Case R S Unit.

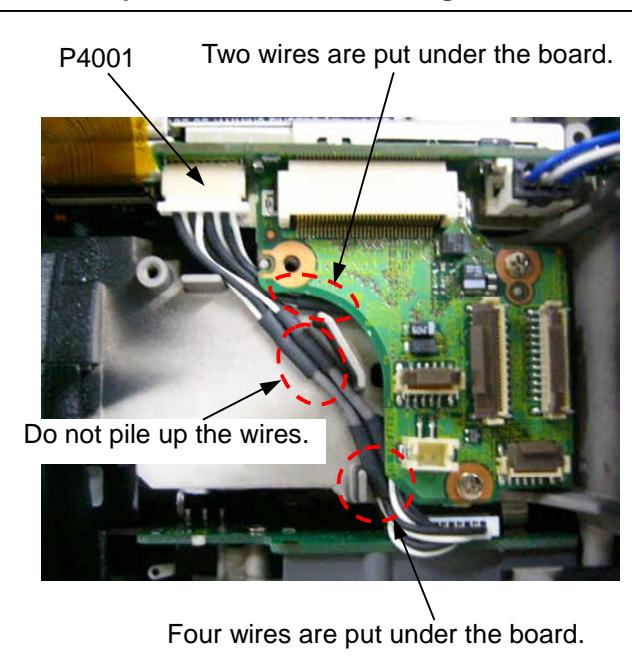


NOTE: Be careful when connect or disconnect the flexible cable from or to connector P4670, because it have possibility damaging to connector.

NOTE: When installing a Side Case R S unit, make the condition that the lever of ND filter on the lens unit is inserted in the ND FILTER SW (As for the figure, ND FILTER SW shows the condition of OFF).

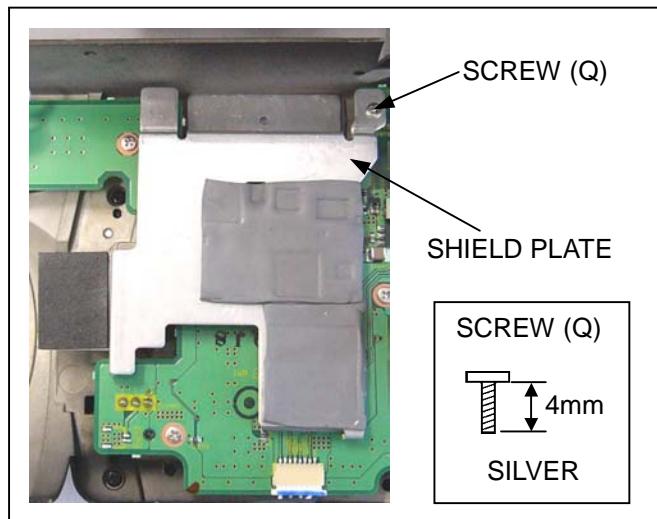


NOTE: When the connector P4001 is connected on VTR C.B.A., make the condition about wire is processed as shown in figure.

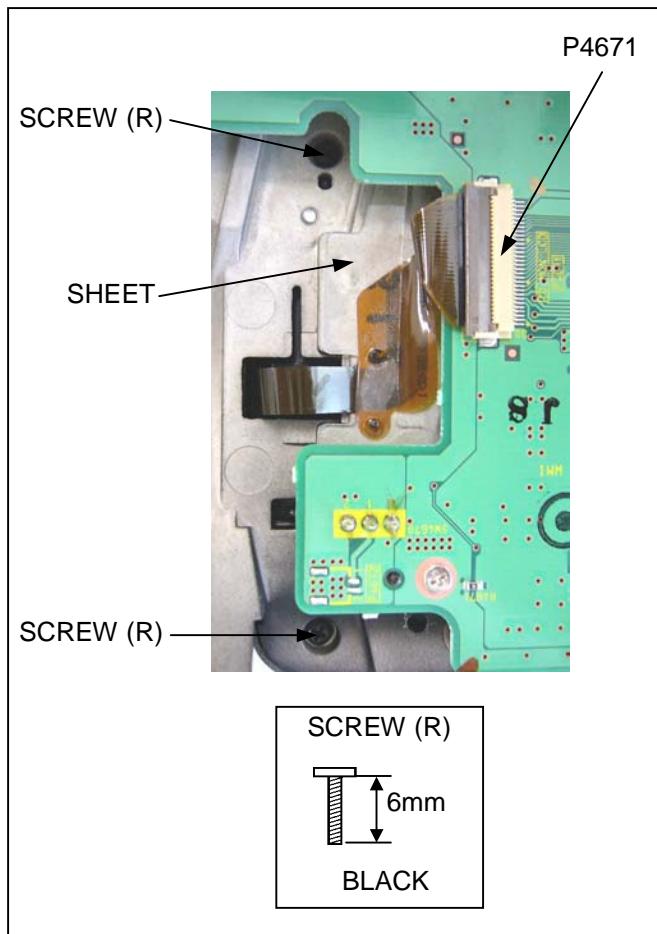


11. Removal of LCD Unit

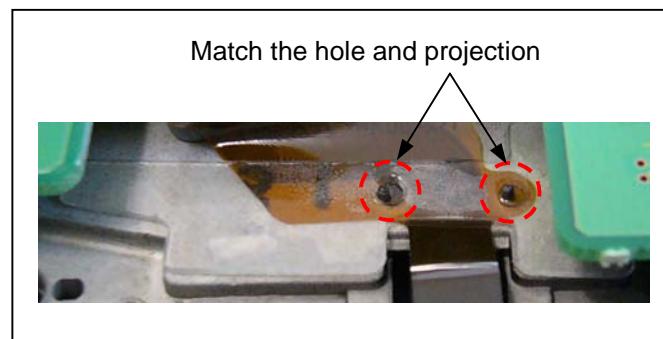
1. Remove the Side Case R S Unit.
2. Unscrew the screw (Q) and remove the SHIELD PLATE.



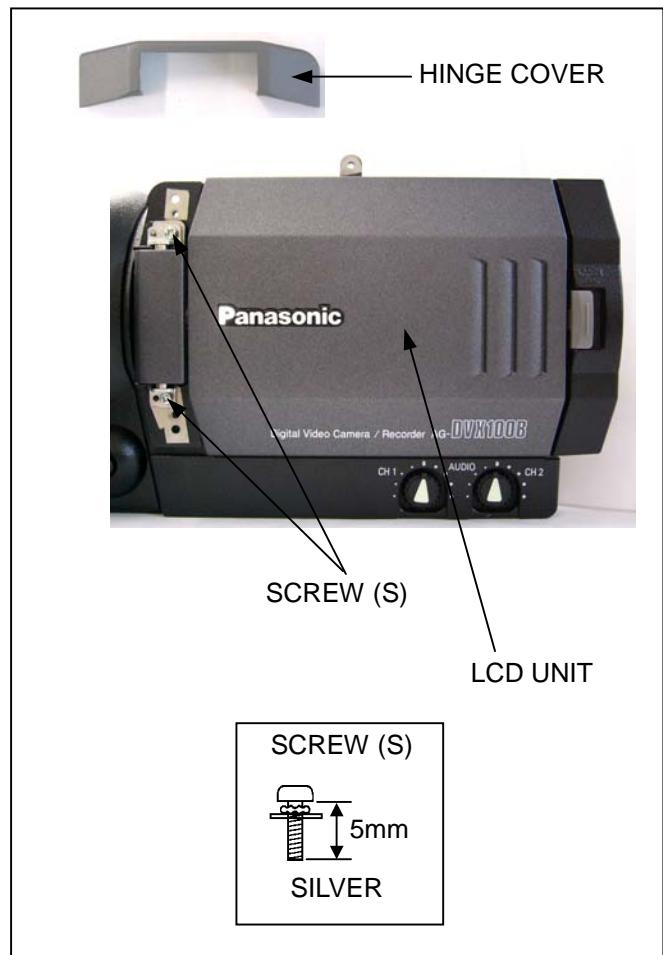
3. Remove the SHEET as shown in figure.
4. Unscrew the 2 screws (R) and remove the HINGE COVER.
5. Disconnect a connector P4671 on R-SIDE C.B.A..



NOTE: Please match the hole of flexible cable and projection of Side Case when you put the SHEET.



6. Unscrew the 2 screws (S) and remove the LCD Unit.



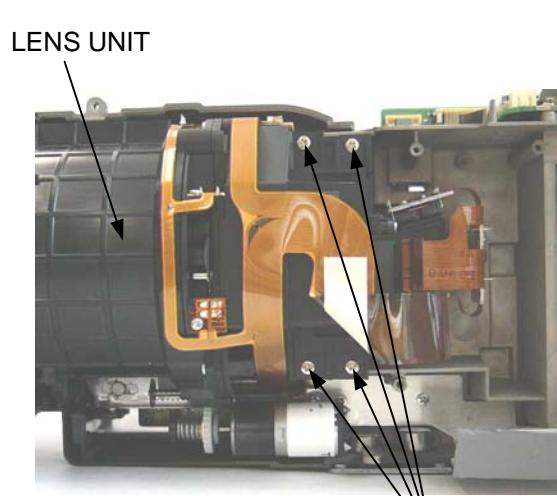
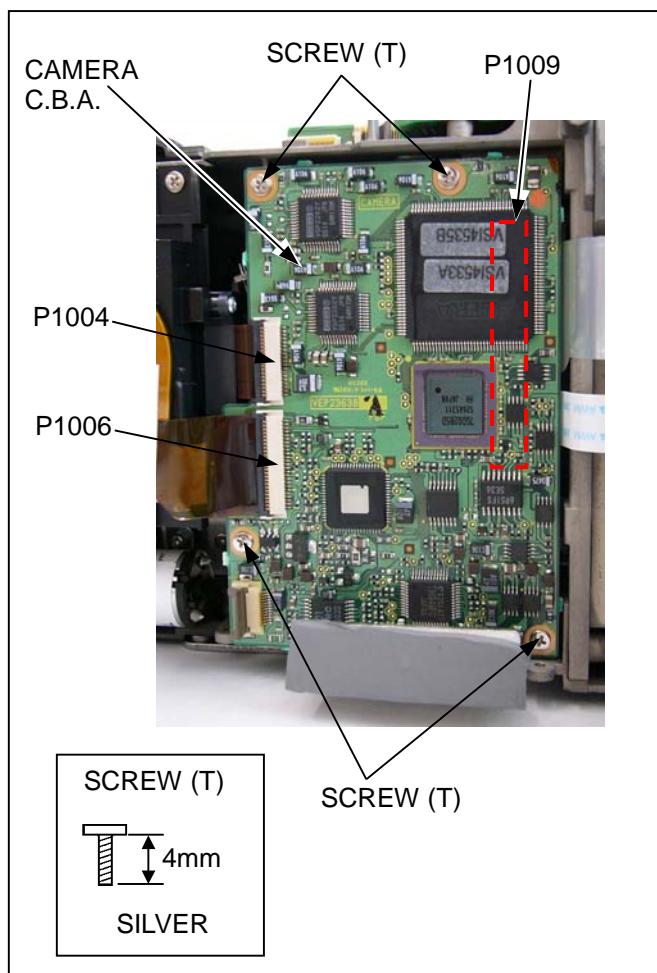
12. Removal of CAMERA C.B.A.

1. Remove the Side Case R S Unit.
2. Disconnect connector P1004 and P1006 on CAMERA C.B.A..
3. Unscrew the 4 screws (T) and remove the CAMERA C.B.A..

NOTE: When removal of the CAMERA C.B.A., the connector P1009 is disconnected (P1009 is connected between CAMERA and BACK CONNECT C.B.A.). Be careful not to damage the connector P1009.

Check the connector has been connected securely when the CAMERA C.B.A. is installed.

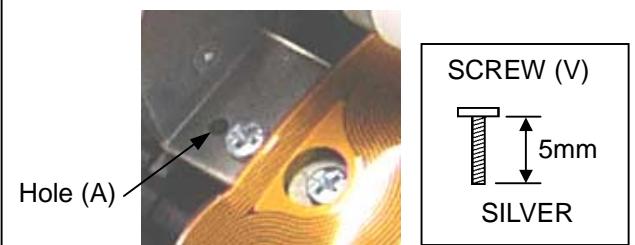
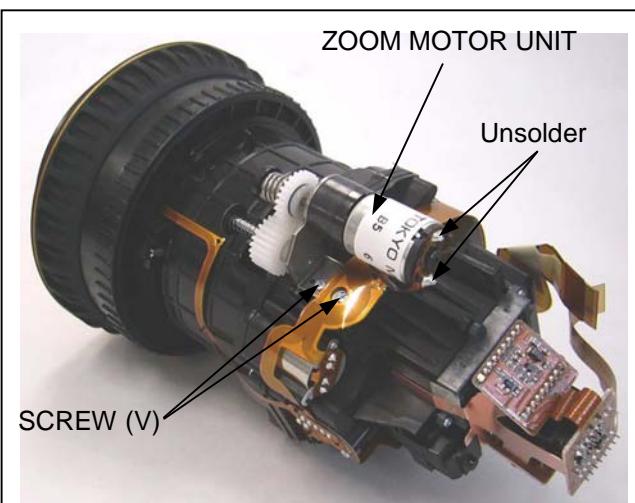
Moreover, please do not hit the CAMERA C.B.A. to the plate in this side when you remove or install the CAMERA C.B.A..



14. Removal of Zoom Motor Unit

1. Remove the Lens Unit.
2. Soldering is removed on the zoom motor.
3. Unscrew the 2 screws (V) and remove the Zoom Motor Unit.

NOTE: Match the hole (A) and projection of Lens Unit as shown in figure and tighten the 2 screws (V) in installation of Zoom Motor Unit.



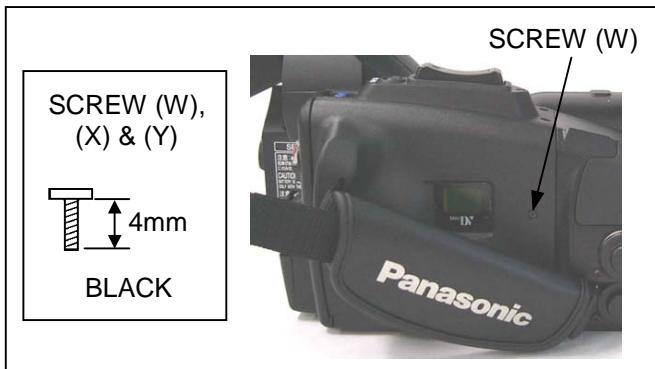
13. Removal of Lens Unit

1. Remove the CAMERA C.B.A..
2. Unscrew the 4 screws (U) and remove the Lens Unit.

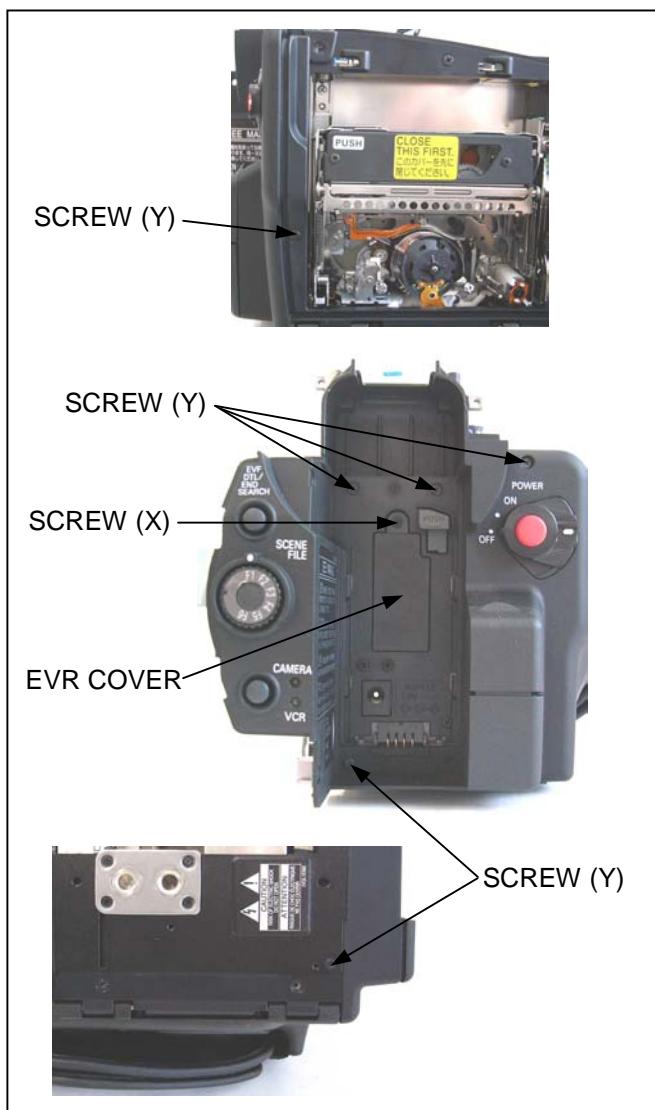
NOTE: When installing a Lens Unit, set the ZOOM SW to SERVO position.

15. Removal of Back Case Unit

1. Remove the Side Case R S Unit.
2. Remove the CAMERA C.B.A..
3. Unscrew the screw (W) and open the cassette cover.

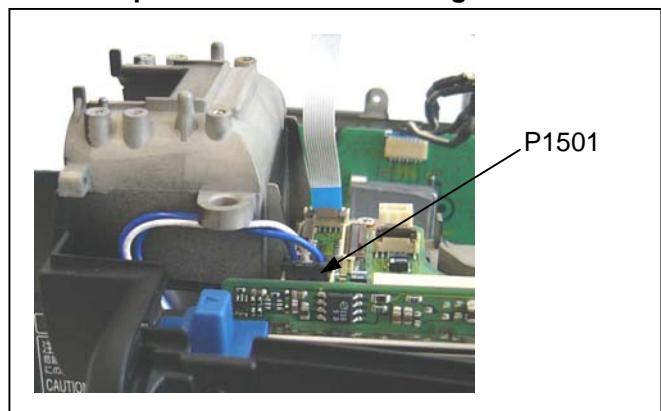


4. Unscrew the screw (X) and remove the EVR Cover.
5. Unscrew the 6 screws (Y).

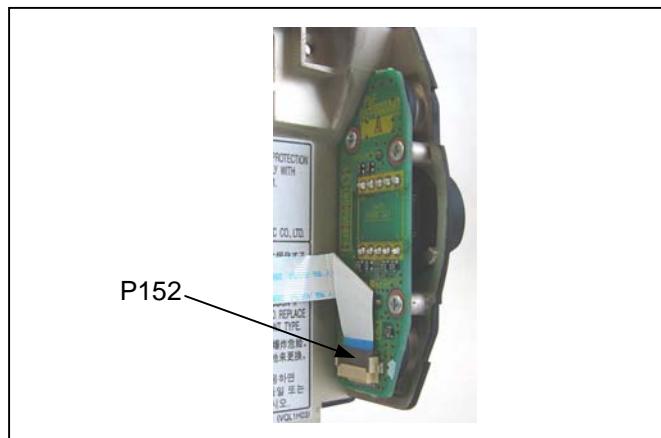


6. Disconnect a connector P1501 on VTR C.B.A..

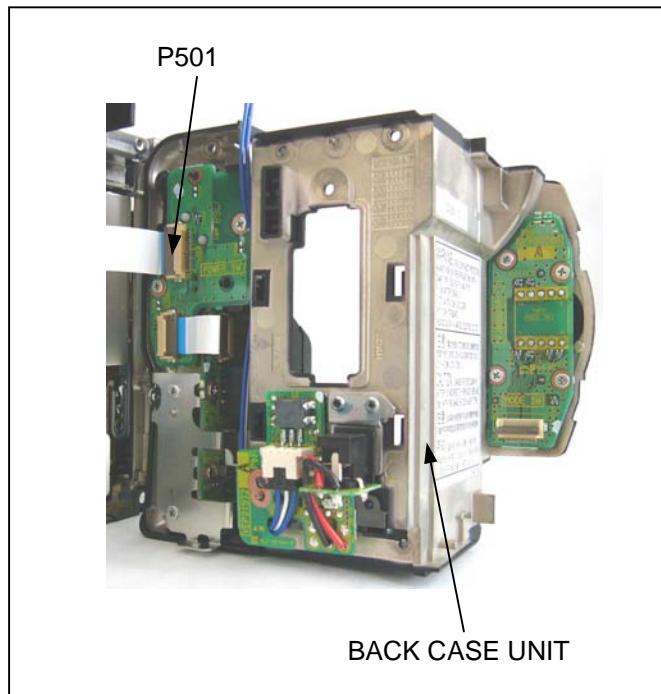
NOTE: When the connector P1501 is connected on VTR C.B.A., make the condition about wire is processed as shown in figure.



7. Disconnect a connector P152 on MODE SW C.B.A..

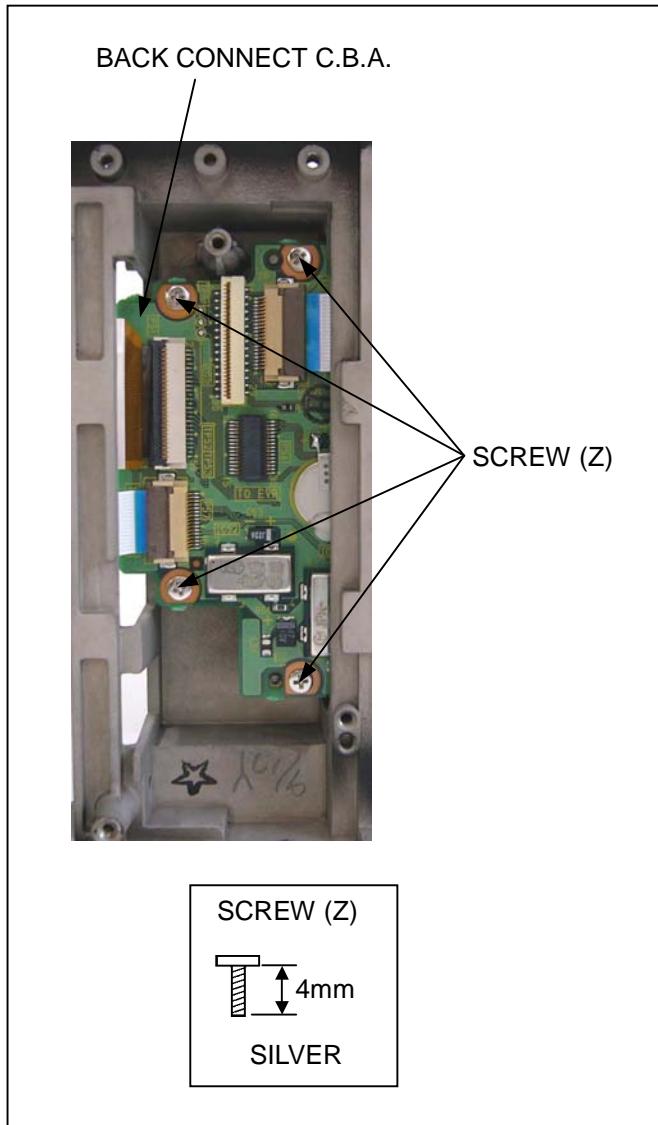


8. Disconnect a connector P1501 on POWER SW C.B.A. and remove the Back Case Unit.



16. Removal of BACK CONNECT C.B.A.

1. Remove the Mechanism Unit (with VTR C.B.A.).
2. Remove the Side Case R S Unit.
3. Remove the CAMERA C.B.A..
4. Remove the Back Case Unit.
5. Unscrew the 4 screws (Z) and remove the BACK CONNECT C.B.A..



SECTION 3

MECHANICAL ADJUSTMENT

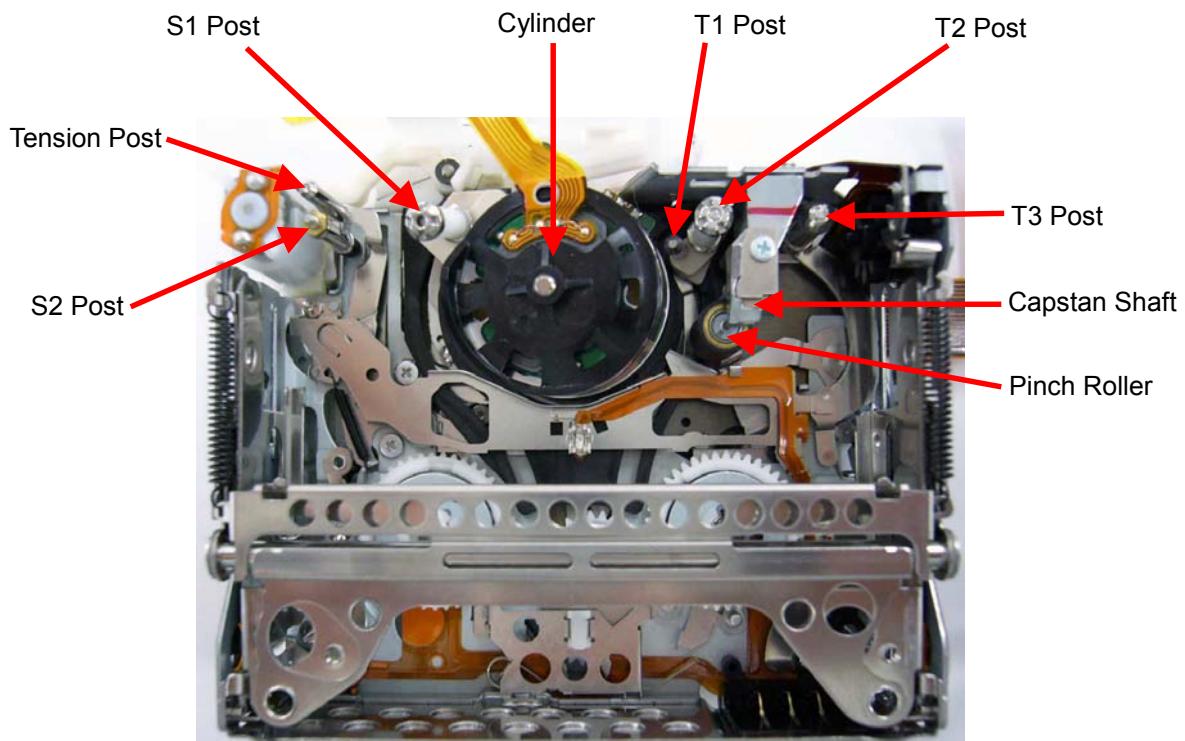
MODEL: AG-DVX100BP/E/AN,102BEN,DVC180BMC

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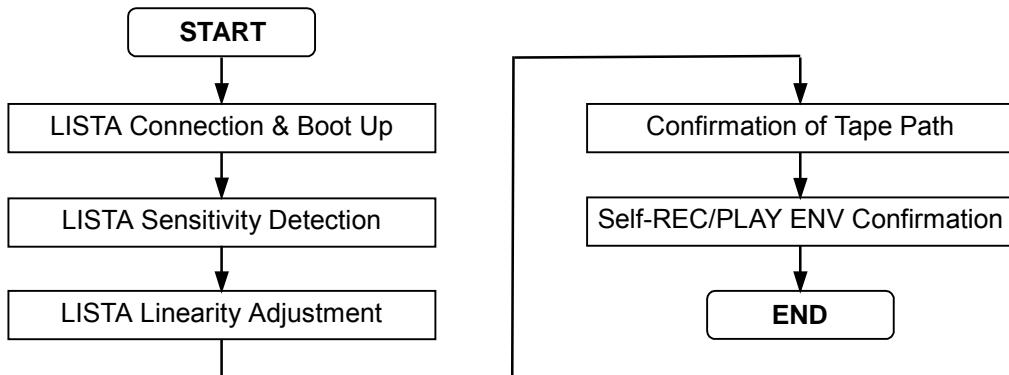
1. MECHANICAL ADJUSTMENT AND CONFIRMATION

1-1. Name of Tape Transportation



LOADING condition

1-2. Tape Path Adjustment Procedure

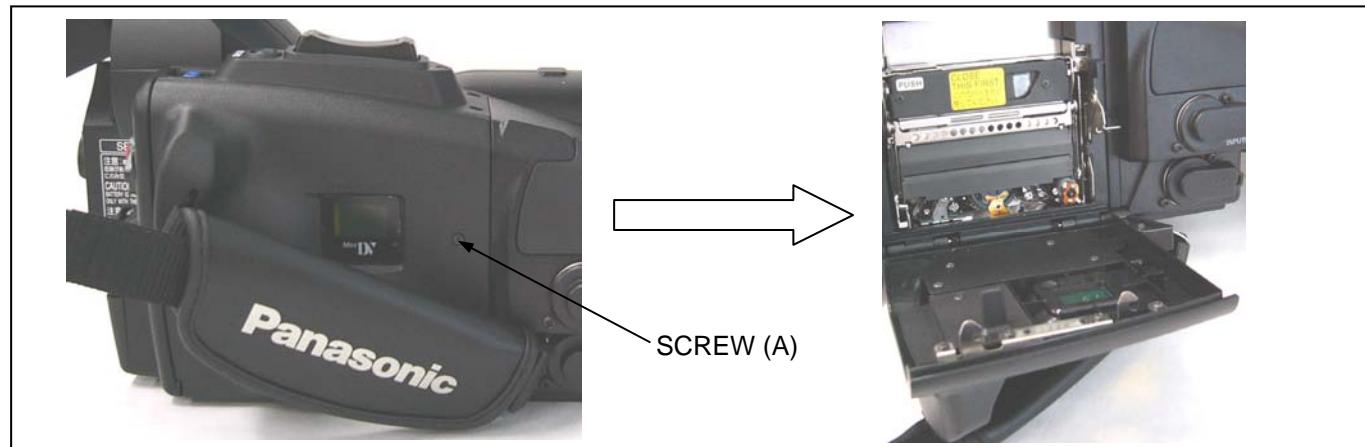


1-3. Adjustment of S1 and T2 Post

LISTA linearity and Envelope waveform are adjusted by S1 and T2 post.

To adjust height of S1 and T2 post, below indicated operation is required.

1. Set to VCR mode in camera recorder and open the cassette cover.
2. Insert DV tape and confirm that the camera recorder is in the loading completion condition.
3. Close the cassette cover.
4. Unscrew the screw (A) and open the cassette cover.



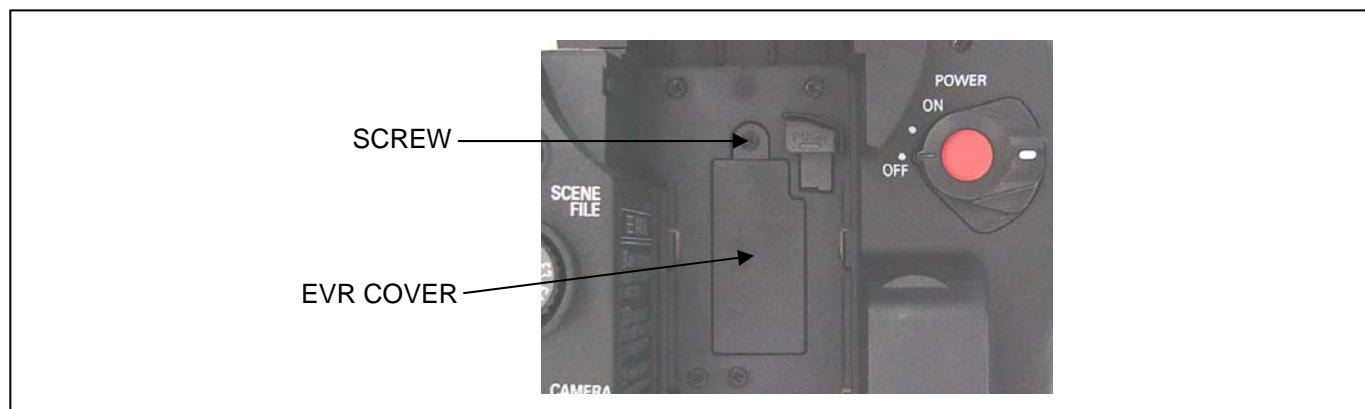
1-4. Connection of EVR Tools

To performing the confirmation of envelope (item "1-11. Self-REC/PLAY Envelope Confirmation"), the following tools are required.

NAME	Part Number	Pcs.	Remark
Measuring Board	VFK1308P	1	
30pin Flat Cable	VFK1317	2	
EVR Connector Board	VFK1309A	1	NOTE: Enable to use with VFK1309
Connection Adapter	VFK1763	1	60 to 30pin
Extension Cable	VFK1982	1	
DC Cable	VJA1128 or LSJA0310	1	For DVX100B/DVX102B/DVC180MC
AC Adapter	-----	1	For DVX100B/DVX102B/DVC180MC

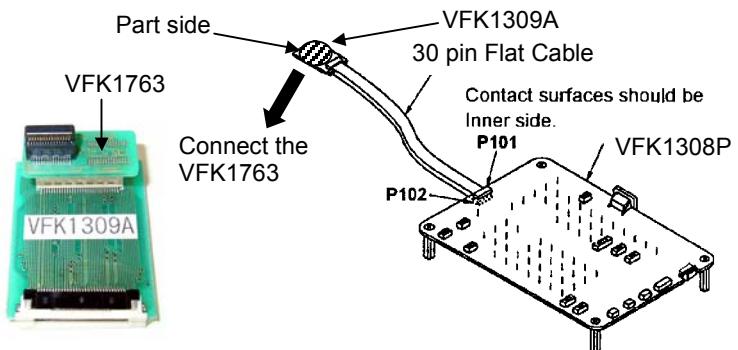
To confirm the envelope output, connect the Connection and Measuring Boards as described below.

1. Loosen the screw and remove the EVR COVER.



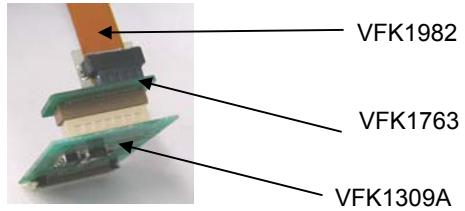
2. Connect the 2 pcs. of 30 pin flat cables (VFK1317) between P101/P102 on the Measuring Board (VFK1308P), and 2 connectors on the EVR Connector Board (VFK1309A). Make sure that the contact surface of 2 pcs. of 30 pin Flat Cables are inner side and direction of the EVR Connector Board is as shown in Figure. Then connect the Connection Adapter (VFK1763).

Connect VFK1763 with VFK1309A as shown in picture.
The unit will not work if the connector is attached backwards.



3. Connect the Extension Cable (VFK1982) to Connection Adapter (VFK1763).

Connect VFK1982 with VFK1763 as shown in picture.
The unit will not work if the connector is attached backwards.

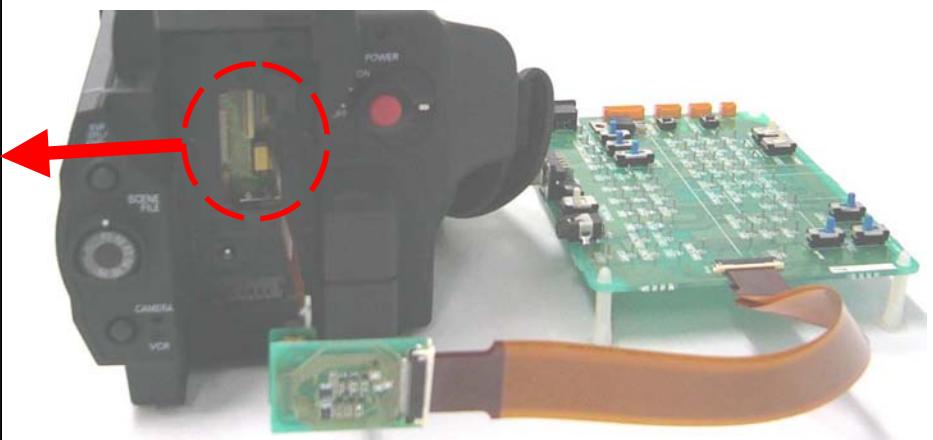


4. Connect the Extension Cable (VFK1982) to EVR connector in Unit. Then make sure that the direction of the VFK1982 is correct as shown in Figure.

When the VFK1982 is connected to EVR connector, be careful of the direction of connector on VFK1982. Please follow as shown in the figure.



EVR CONNECTOR



1-5. Connection of LISTA Adjustment System

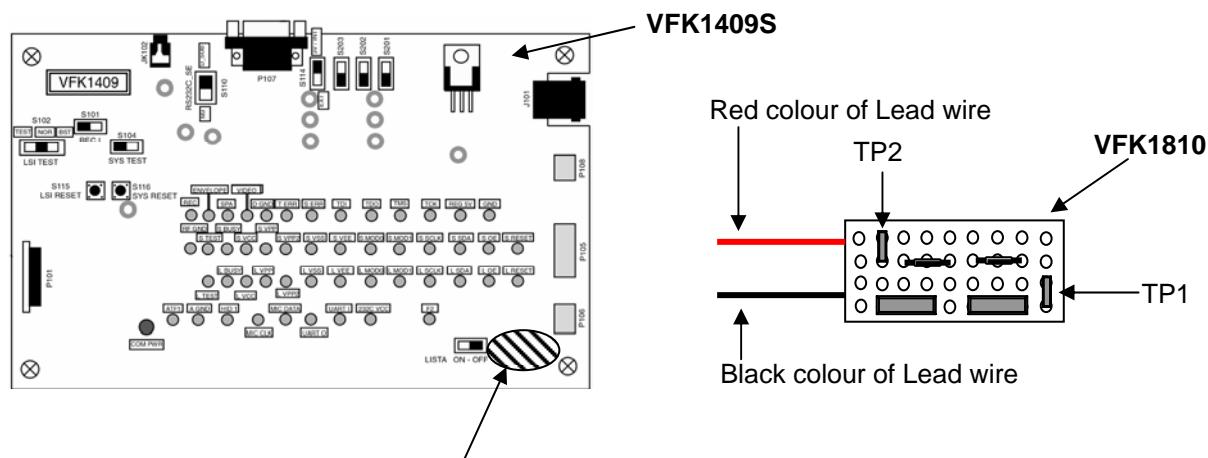
TAPE	VFM3000LS (DV LISTA)
M. EQ	Personal Computer (A/D Board should be installed.)
TOOL	VFK1481N (LISTA Software), VFK1186 (LISTA Cable), VFK1300 (A/D Converter Board), VFK1308P (Measuring Board), VFK1409A (Measuring Board) ← NOTE 2 VFK1317 (30P flat cable): 2pcs, VFK1309A (EVR connector board) ← NOTE 1 VFK1763 (Connection Adapter), VFK1982 (Extension Cable), VJA0941 (DC cable): 2pcs.
TP	In case of use VFK1409A F2 : ATF-ERR (VFK1409A), TP2 : TRG/HSW (VFK1409A), GND : GND (VFK1409A) In case of use VFK1409S F2 : ATF-ERR (VFK1409S), TP2 : TRG/HSW (VFK1810), GND : GND (VFK1409S)

NOTE 1:

Enable to use with VFK1309.

NOTE 2:

If you already have VFK1409S (Measuring board), it can be used to perform LISTA adjustment with VFK1810. Please refer to next explanation for installation of VFK1409S.



1. Install the two test points of VFK1810 to through hole in this area and solder it at test point at foil side of VFK1409S to fixed VFK1810.

2. Insert the two lead wires of VFK1810 to through hole.

3. Solder the red color of lead wire to pin1 of P108 on foil side on VFK1409S.

4. Solder the black color of lead wire to pin3 of P106 on foil side on VFK1409S.

1. Set the switches on the Measuring Board as shown below.

<VFK1308P>

SW NAME& No.	Setting Position
RS232C SEL (SW101)	D-SUB
VTR TEST (SW103)	L
BST TEST (SW104)	NORMAL
SW105	H
SW106	OFF
SW107	CENTER position
SW108	H
FLUSH1 (SW102)	NORMAL
FLUSH2 (SW109)	NORMAL

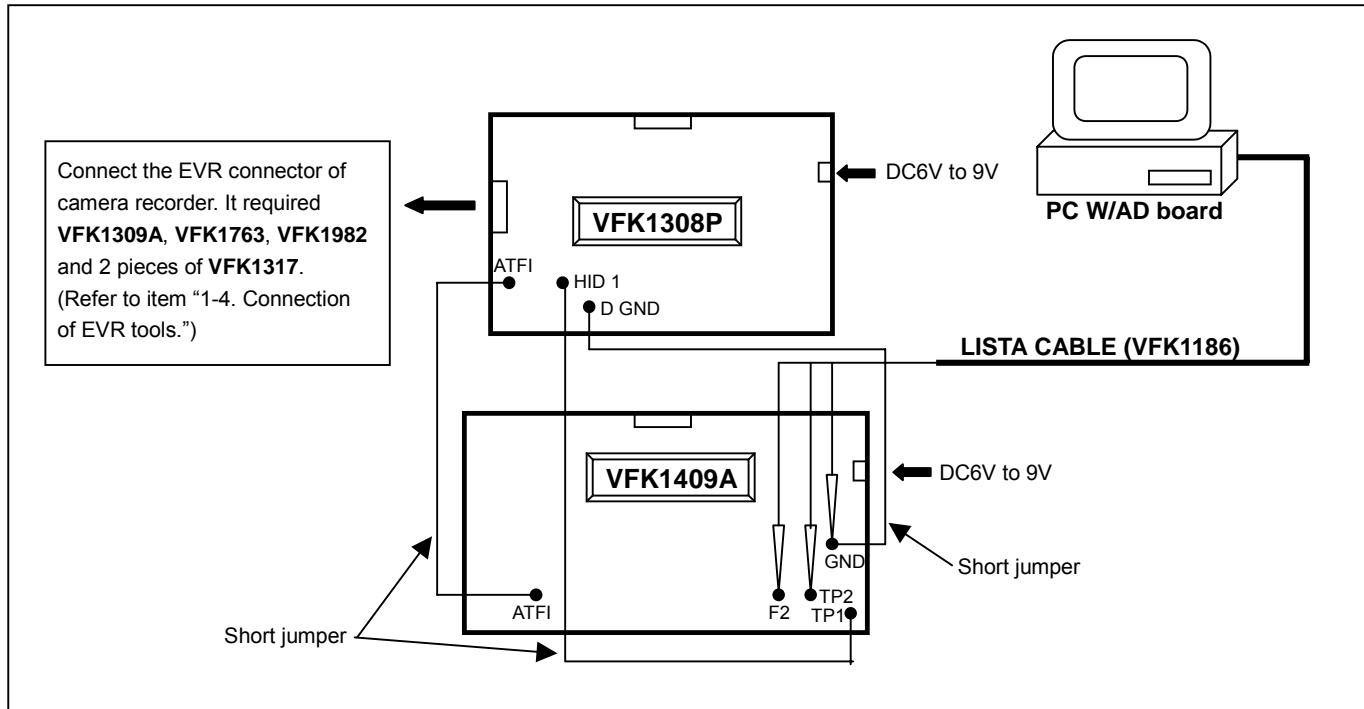
<VFK1409S or VFK1409A>

SW NAME& No.	Setting Position
RS232C SEL (S110)	D-SUB
REC I (S101)	NOR
LSI TEST (S102)	NOR
S104	NOR
S114	EXT
S201	Right side
S202	Right side
S203	Right side
LISTA ON-OFF	ON

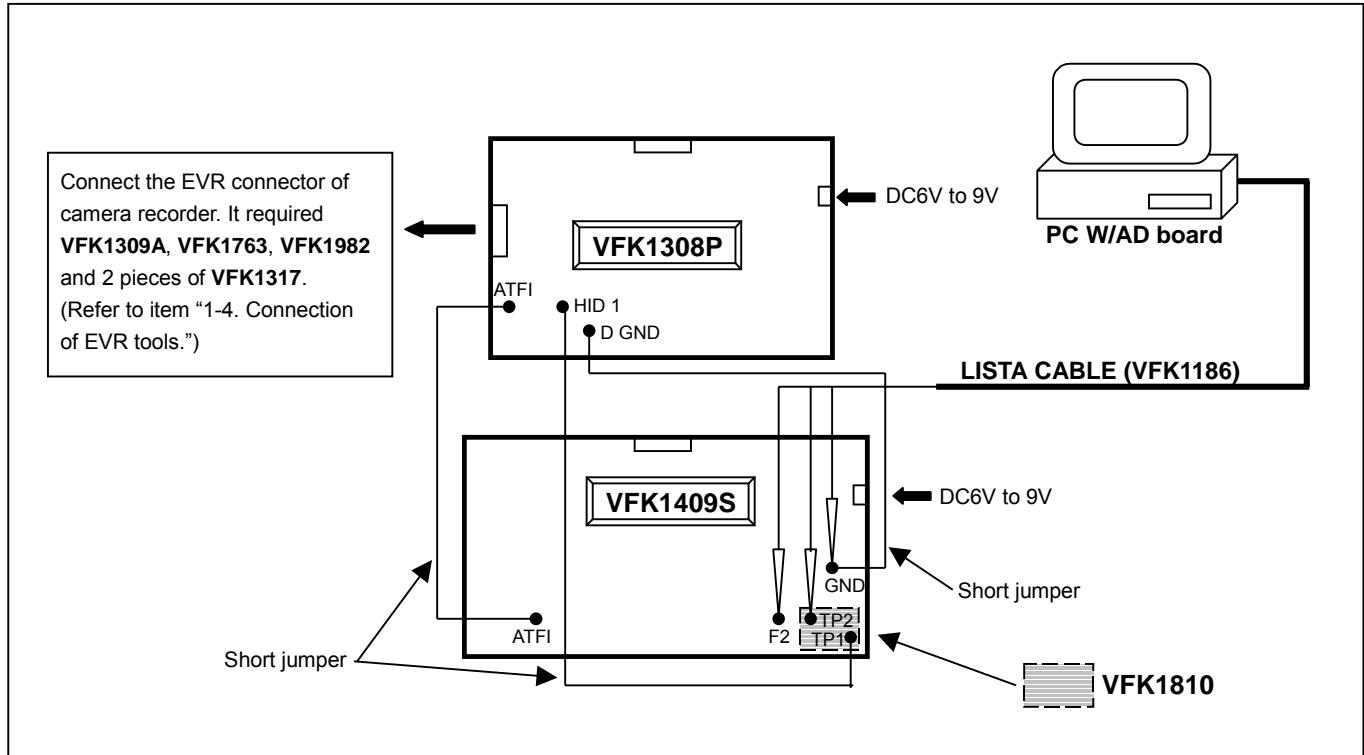
2. Connect a PC, the Measuring Board and the camera recorder as shown below.

<CONNECTION>

1) In case of use VFK1409A



2) In case of use VFK1409S



3. Connect the clips of the LISTA cable to test point on the Measuring Board. (Refer to Items "Sensitivity Detection" and "Linearity Adjustment".)

1-6. Boot up the LISTA Software

1. Boot up the LISTA software on DOS mode.

< How to Install and Boot Up >

Make a directory like C: LISTA and copy all files in the VFK1481N(LISTA Software) to it on PC. Type "LISTA" and press **ENTER** key, then boot up the LISTA software VFK1481N.

2. After boot up the LISTA software, <<< FORMAT SELECT >>> display appears. Select the item "DV". After select the format, <<< VTR SELECT >>> display appears, and select the model "AG-DVC200".



3. Next, select the Serial number of the Alignment tape on the screen. In case of LISTA software is not entered with data of alignment tape, press the ESC key, then main menu is displayed on the screen. And select the item "<4> Alignment Tape" for entry the data on the attachment sheet, which is enclosed with alignment tape.
4. In case of LISTA software has entered data of alignment tape, select the serial number of Alignment tape, then message appears "ok? (y/n)" on the screen. And press " Y " or " ENTER " key, then LISTA main menu is displayed on screen.

< In case of Alignment Tape entered already >

<< Alignment Tape Select >>					Last Select [4]
No.	Serial No.	PAL/NTSC	Check Sum	Type	Entry Date
[1]	0000	NTSC	0.0	18 um	10-05-1995
[2]	0000	PAL	0.0	18 um	02-20-1998
[3]	LRC-13	NTSC	0.0	10 um	06-01-1998
[4]	9804420	PAL	0.2	18 um	09-08-1998
[5]	Lrc-20	PAL	0.0	10 um	09-09-1998
[6]	9806488	NTSC	0.1	18 um	12-14-1998

<= ok? (y/n)

Move:Cursor key Select:[ENTER] key Cancel:[ESC] key

< In case of Alignment Tape does not entered >

<< Alignment Tape Select >>					Last Select [3]
No.	Serial No.	PAL/NTSC	Check Sum	Type	Entry Date
[1]	000	NTSC	0.0	18 um	-- -- --
[2]	000	PAL	0.0	18 um	-- -- --
[3]	000	NTSC	0.0	18 um	-- -- --
[4]	000	NTSC	0.0	9 um	-- -- --

Move:Cursor key Select:[ENTER] key Cancel:[ESC] key

1-7. How to Enter the Alignment Tape Data

1. Select the item “<4> Alignment Tape” on the LISTA main menu.
2. Select the item “<2> ENTRY” on the alignment menu.
3. After the screen displays the screen of <<Alignment Tape Data Entry>>, first input the Serial Number follow the printed number on the tape label. And input the number “0” or “1” for selected the PAL/NTSC. And after that enter the tape type, input “0” for DVC PRO, input “1” for DV or input “2” for HDLP.
4. After selecting the tape type, the frame for inputting the DATA and CHECK SUM appears on the screen. Input the numerical value in numerical order on the data sheet, which is enclosed with alignment tape. If the wrong number is inputted, the error message on the screen, then confirm that data on the sheet.
5. After the data entry, the screen returns to “LISTA MAIN” menu. Confirm the serial number of the alignment tape.

<< Alignment Tape Data Entry >>

Serial No. Lrc-20 (NTSC) 10μm

[1]	- 0.1
[2]	0.1
[3]	0.0
[4]	0.2
[5]	0.6
[6]	0.5
[7]	0.7
[8]	0.9
[9]	1.0
[10]	0.8

[11]	0.7
[12]	1.0
[13]	0.7
[14]	0.5
[15]	0.2
[16]	- 0.5
[17]	- 0.3
[18]	- 0.3
[19]	- 0.1
[20]	- 0.6

[21]	- 0.4
[22]	- 0.2
[23]	- 0.7
[24]	- 0.6
[25]	- 0.7
[26]	- 0.3
[27]	- 0.4
[28]	- 0.4
[29]	- 0.6
[30]	- 0.3

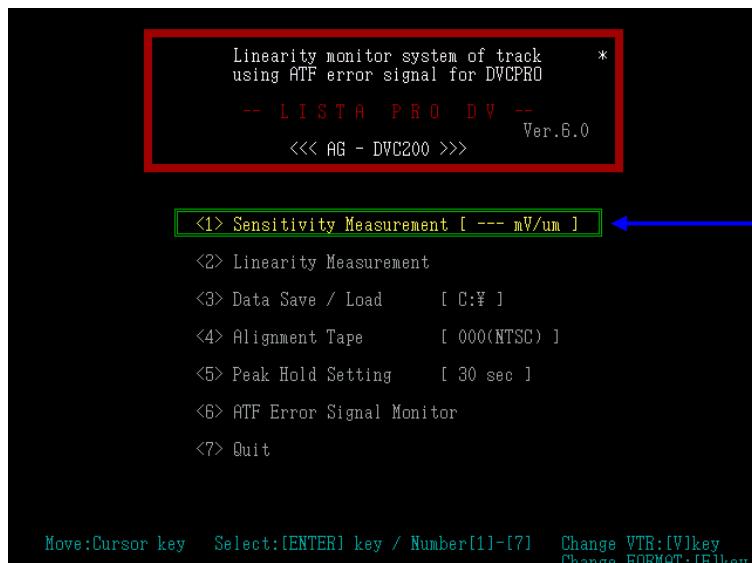
[31]	- 0.4
[32]	- 0.6
[33]	- 0.3
[34]	- 0.2
[35]	- 0.1
[36]	- 0.3
[37]	- 0.1

[CS]	- 0.6
------	-------

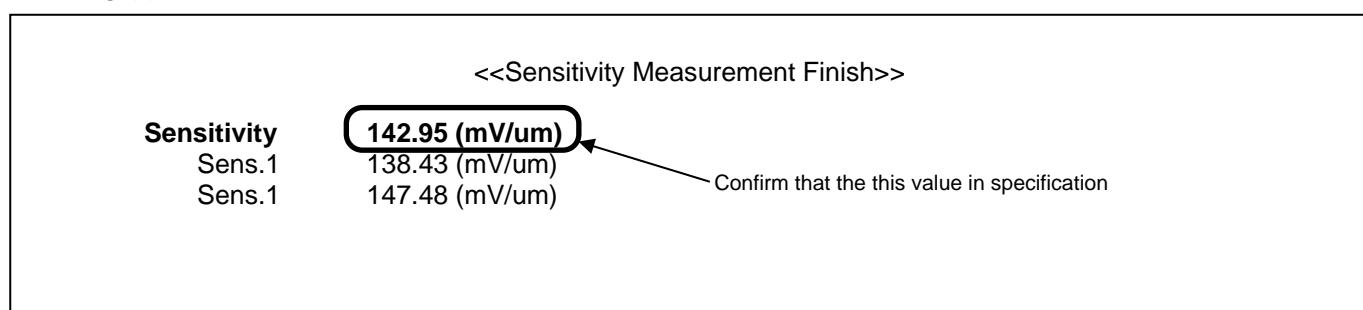
NOTE: This is sample only, you must enter information from your alignment tape. Each tape is different.

1-8. LISTA Sensitivity Detection

TP	In case of use VFK1409A F2 : ATF-ERR (VFK1409A), TP2 : TRG/HSW (VFK1409A), GND : GND (VFK1409A) In case of use VFK1409S F2 : ATF-ERR (VFK1409S), TP2 : TRG/HSW (VFK1810), GND : GND (VFK1409S)
VTR MODE	PLAY
ADJ. MODE	Refer to below explanation
TAPE	VFM3000LS (DV LISTA)
SPEC.	70 mV / μ m to 170 mV / μ m

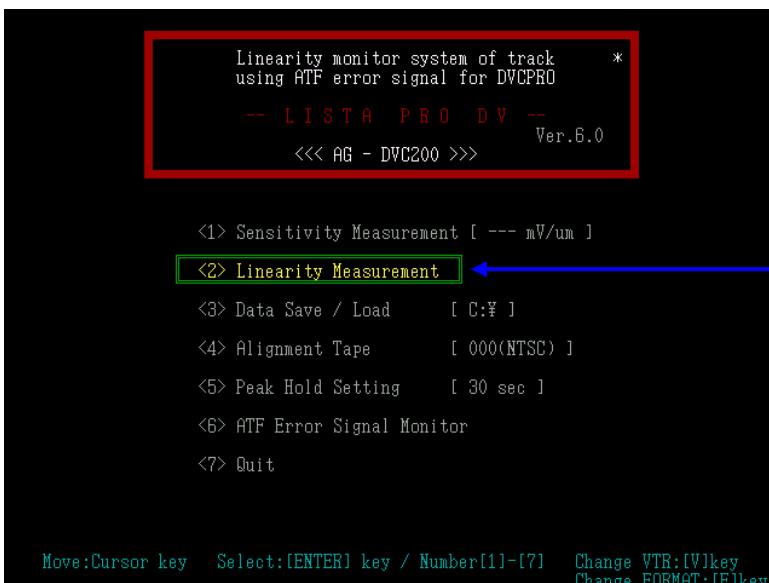


1. Set the camera recorder to VCR mode.
2. Insert the DV Alignment Tape (VFM3000LS) to the camera recorder.
3. Press the button in order of “**ADUB button**” → “**STOP button**” → “**MODE CHK button**” → “**MENU button**”, to open the “**VCR FUNCTION MENU**”.
4. Select the item “**ADJUST MENU**” and press the SET(STILL) button to open the “**ADJUST MENU**”.
5. Select the item “**ATF GAIN**” and press the SET(STILL) button.
6. Select the item “**ON**” and press the SET(STILL) button, then message “**NOW SERVO ADJUST PUSH MENU TO RETURN**” appears on screen and press the PLAY button to playback the tape.
7. Select item “**<1> Sensitivity Measurement**” on the LISTA main menu, and press “**ENTER**”.
8. Then the tape is played back (tape speed : 101.2%) automatically, and message “**1.2% Speed...**” appears on the screen.
9. Press the ENTER key, and then start measurement of the sensitivity value.
10. Confirm that the sensitivity value is with in specification, after the message “**<<Sensitivity Measurement Finish>>**”.

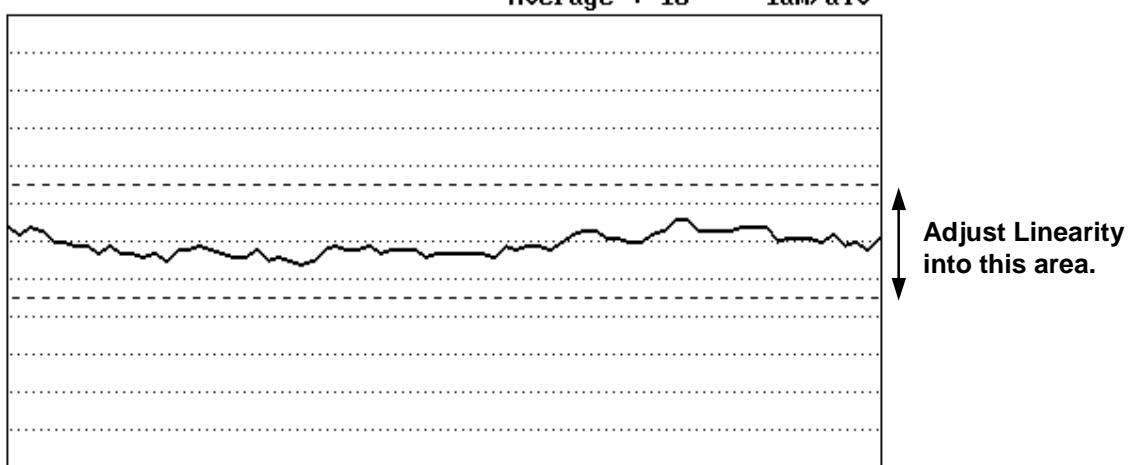


1-9. LISTA Linearity Adjustment

TP	In case of use VFK1409A F2 : ATF-ERR (VFK1409A), TP2 : TRG/HSW (VFK1409A), GND : GND (VFK1409A) In case of use VFK1409S F2 : ATF-ERR (VFK1409S), TP2 : TRG/HSW (VFK1810), GND : GND (VFK1409S)
ADJ.	S1 and T1 Post Height
VTR MODE	PLAY
ADJ. MODE	Refer to below explanation
TAPE	VFM3000LS (DV LISTA)
TOOL	VFK1899 : Post Driver
SPEC.	Linearity : less than 3μm



1. Set the camera recorder to VCR mode.
2. Insert the DV Alignment Tape (VFM3000LS) to the camera recorder.
3. Open the cassette cover follow the item “1-3. Adjustment of S1 and T2 Post” in this section.
4. Press the button in order of “ADUB button” → “STOP button” → “MODE CHK button” → “MENU button”, to open the “VCR FUNCTION MENU”.
5. Select the item “ADJUST MENU” and press the SET(STILL) button to open the “ADJUST MENU”.
6. Select the item “LINEARITY” and press the SET(STILL) button.
7. Select the item “ON” and press the SET(STILL) button, then message “NOW SERVO ADJUST PUSH MENU TO RETURN” appears on screen and press the PLAY button to playback the tape.
8. Select item “<2> Linearity Measurement” on the LISTA main menu, and press “ENTER”, then the Linearity Waveform appears.
9. When the waveform as shown in figure below is displayed on the screen, press the “BS (Back Space)” key for display the waveform positioned at the center of the scale on screen. Adjust S1 and T1 post height by using the post driver so that the linearity waveform is becomes flat as possible, and it should be within specification. (Adjust linearity waveform in the red dot line on the screen.)

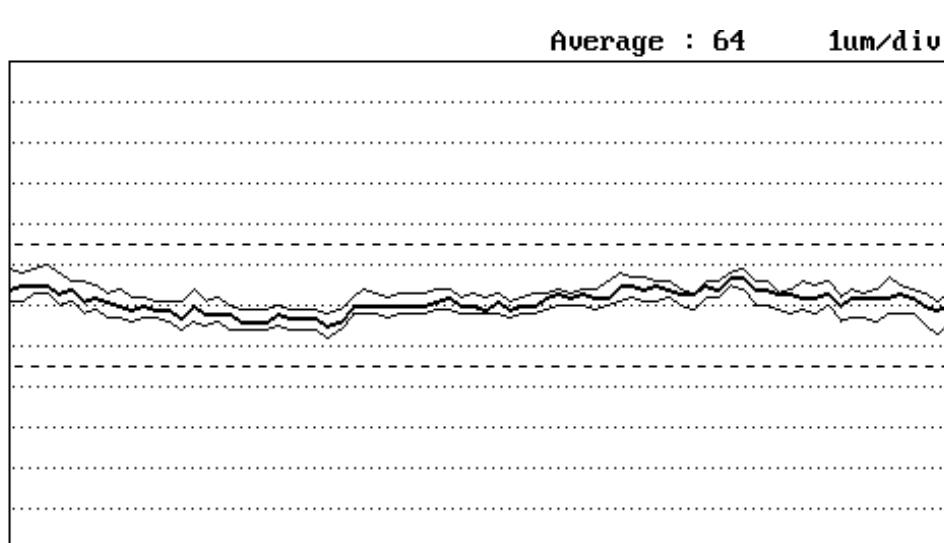


Centering	--> [BackSpace]
Peak Hold on/off	--> [SPACE]
Average(64)	--> [ENTER]
Exit	--> [ESC]

POINT :

The left side of the waveform (entrance side) is adjusted by the height of S1 post and the right side of the waveform (exit side) is adjusted by the height of T2 post.
 When the post driver is removed from upper part of post, linearity waveform is changed.
 After finishing this adjustment, eject the tape and insert the tape again to confirm that the shape of the linearity waveform has not changed.

10. Press “**SPACE**” key to perform the Peak Hold in 30 seconds when linearity is displayed.
11. After finishing the Peak Hold, press “**SHIFT**” and “**{ }** ” key simultaneously on the Key Board, then the numerical values of “**Linearity**” and “**Waving**” is displayed on left lower portion of screen. And confirm the numerical value of “**Linearity**” is in the specification. If the “**Linearity**” is out of specification, adjust height of S1 and T1 post.
12. After this measurement is finished, press the ESC key to return to the main menu.



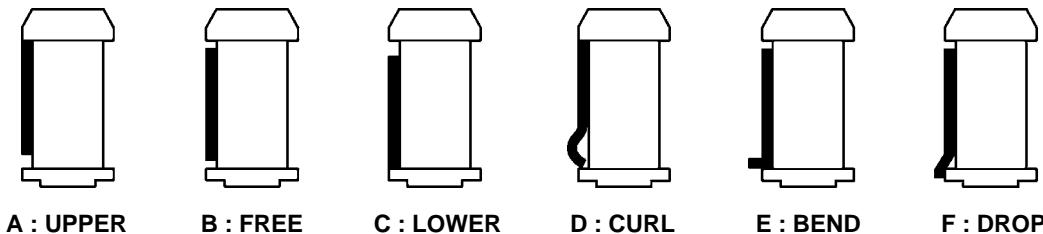
Linearity: 1.2 um
Waving : 0.9 um

MENU --> [ESC]

1-10. Tape Pass Confirmation

1. Insert the Blank tape to the camera recorder.
2. Open the cassette cover follow the item “1-3. Adjustment of S1 and T2 Post” in this section.
3. Play back the Blank tape and confirm that the tape passes without curling at the upper and lower guides of the following posts in the Play modes as shown in below table.

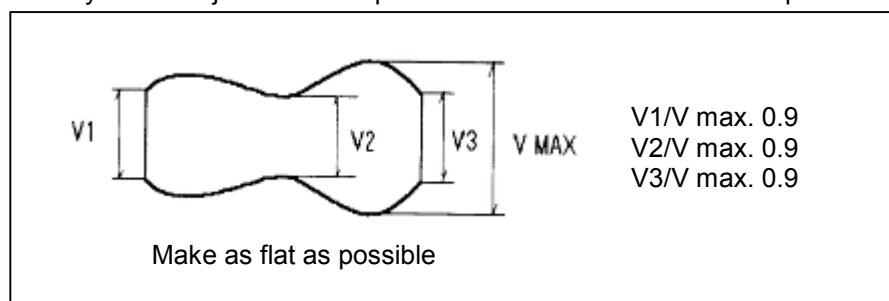
Post Name	Tape limit (refer to figure)					
	A	B	C	D	E	F
S1 post	NG	NG	OK	NG	NG	NG
S2 post	OK	OK	NG	NG	NG	NG
T2 post	OK	NG	NG	NG	NG	NG
T3 post	NG	OK	OK	NG	NG	NG



4. Confirm that the tape damage does not occur on tape at S1, T1 and T2 post by loading and unloading.
5. If curl and tape damage occurred at S1 and T2 post, adjust height of post by post driver.

1-11. Self-REC/PLAY Envelope Waveform Confirmation

1. Connect the EVR tools (refer to item "1-4. Connection of EVR Tools").
2. Connect the oscilloscope to the Measuring Points [ENVELOPE] and [HID] as a trigger on the Measuring Board (VFK1308P).
- NOTE: Please use [D GND] as GND of probe, when you connect [ENVELOPE].**
3. Record a color bar signal.
4. Play back the just recorded portion and confirm that the envelope is within the following specifications.



5. Confirm that the envelope is within the following specification, when the mode is changed as follows.
STOP→PLAY: Envelope appears completely within 2 seconds and stable.
REV→PLAY : Envelope appears completely within 2 seconds.
6. Confirm that the shape of envelope is diamond style.
7. If it is out of the specification, adjust height of the S1 and T2 Post. Then open the cassette cover follow the item “1-3. Adjustment of S1 and T2 Post” in this section.

2. MECHANICAL PARTS REPLACEMENT PROCEDURE

2-1. Cleaning Roller Unit

(Removal)

1. Remove the Mechanism Unit.
2. Unscrew the 2 screws (A) and (B), then remove the Cleaning Roller Unit.

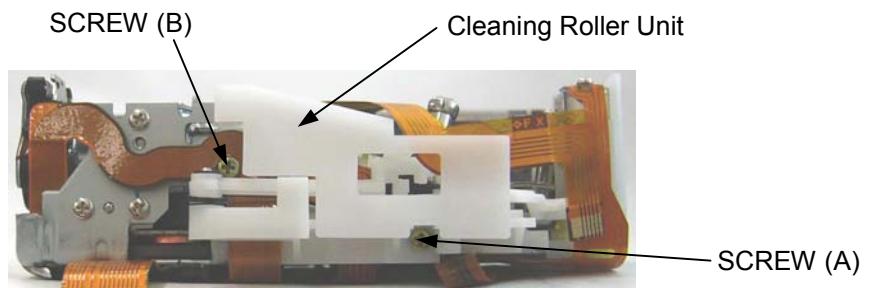


Figure A

(Installation)

1. Hook the portion (B) of Cleaning Roller Unit to portion (A) of Mechanism Chassis and install the Cleaning Roller Unit. Then be careful the Release Arm does not run onto the part at end of sub chassis (C) as shown in figure B.

NOTE: Supply the voltage to loading motor and the Cleaning Roller Unit is installed in the mechanical position as shown in figure (B) to simple installation (No problem it installation in loading complete position).

2. Tighten the Screw (A) and (B) as shown in figure A. When tighten the screw (B), flexible cable also tighten up together as shown in figure A.

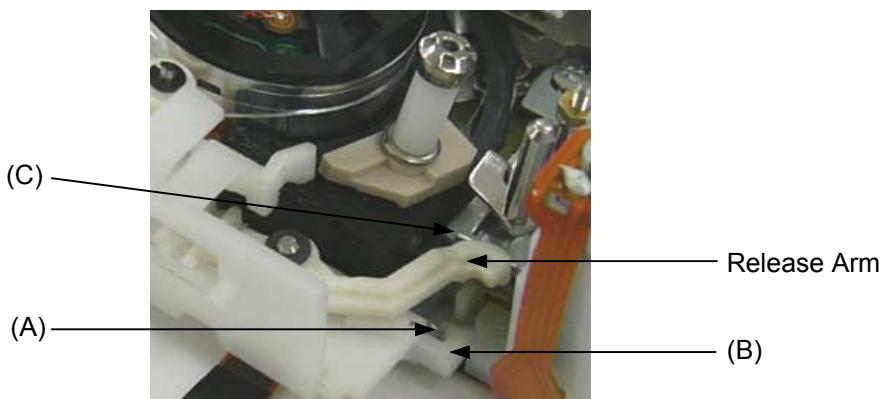


Figure B

(Confirmation of Operation)

1. To confirm that the Cleaning Roller operates normally on the Mechanism Unit, supply the voltage to loading motor and confirm that the Cleaning Roller touches the Cylinder in loading operation.

UNLOADING A: +4.5V B: GND
LOADING A: GND B: +4.5V



Figure C

SECTION 4

ELECTRICAL ADJUSTMENT

MODEL: AG-DVX100BP/E/AN,102BEN,DVC180BMC

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1. REQUIRED TOOLS AND EQUIPMENT

1-1. Required tools and equipment for each adjustment items.

Below indicated tools are required to perform each adjustment in addition to tools introduced in item1-2.

Adjustment	Item	Required Tool	Remark
CAMERA	Zoom SW center value	Unnecessary	
	Hall Amp (Auto)	Unnecessary	
	Iris PWM (Auto)	Unnecessary	
	OISu (Auto)	Unnecessary	
	Zoom Tracking (Auto)	72mm Attachment Ring (VFK1809)	
		43mm Attachment Ring (VFK1164TAR43)	
		Collimator Set (VFK1164TCM01)	
		Halogen lamp	
	White Balance (3100K) (Auto)	Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	White Balance (5100K) (Auto)	CC filter (LB120) (VFK1347)	
		CC filter (LBA2) (VFK1884)	
		CC filter (LBB6) (VFK1888)	
		72mm Attachment Ring (VFK1809)	
		CC Filter Holder (VFK1345)	
		Step-down Ring (62mm-52mm) (VFK1346)	
		Step-up Ring (43mm-49mm) (VFK1659)	
		Step-up Ring (49mm-62mm) (VFK1660)	
		Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	White Balance (4500K) (Auto)	CC filter (LB120) (VFK1347)	NTSC model only
		CC filter (LB80) (VFK1342)	PAL model only
		CC filter (CC C20) (VFK1887)	PAL model only
		72mm Attachment Ring (VFK1809)	
		CC Filter Holder (VFK1345)	
		Step-down Ring (62mm-52mm) (VFK1346)	
		Step-up Ring (43mm-49mm) (VFK1659)	
		Step-up Ring (49mm-62mm) (VFK1660)	
		Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	White Balance (3600K) (Auto)	CC filter (LB40) (VFK1341)	NTSC model only
		CC filter (LBB2) (VFK1885)	NTSC model only
		CC filter (CC C10) (VFK1886)	PAL model only
		72mm Attachment Ring (VFK1809)	
		CC Filter Holder (VFK1345)	
		Step-down Ring (62mm-52mm) (VFK1346)	
		Step-up Ring (43mm-49mm) (VFK1659)	
		Step-up Ring (49mm-62mm) (VFK1660)	
		Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	CCD White scratch damage revision (Auto)	Unnecessary	
	White Shading (Auto)	Halogen lamp	
VTR	Sensitivity adj. of tape sensors (Auto)	Unnecessary	
	PG Shifter (Auto)	Oscilloscope	
		DV Color bar Alignment Tape (VFM3010EDS)	NTSC model only
		DV Color bar Alignment Tape (VFM3110EDS)	PAL model only
	Luminance Level	Waveform Monitor	NTSC model only
		Oscilloscope	PAL model only
	Chroma Level	Waveform Monitor	NTSC model only
		Oscilloscope	PAL model only

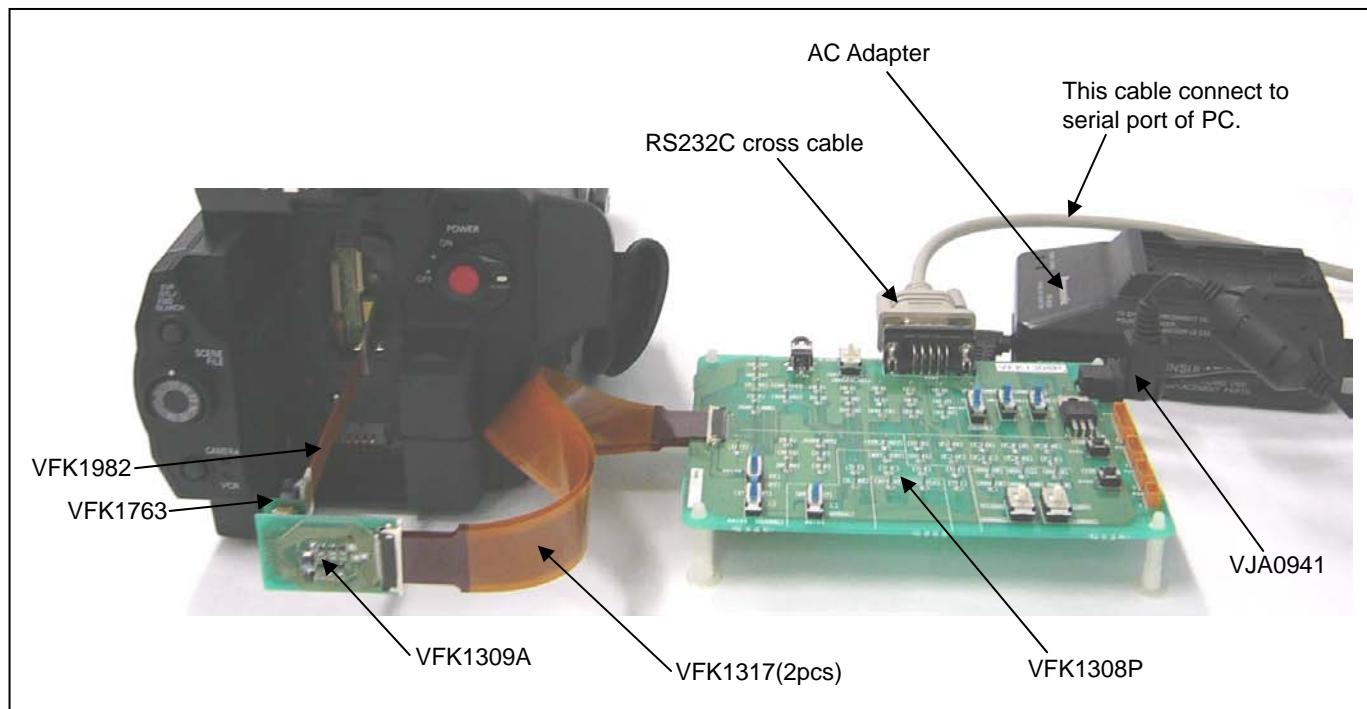
1-2. Required tools and equipment for PC EVR software

When performing the PC EVR electrical adjustment, the following tools are required.

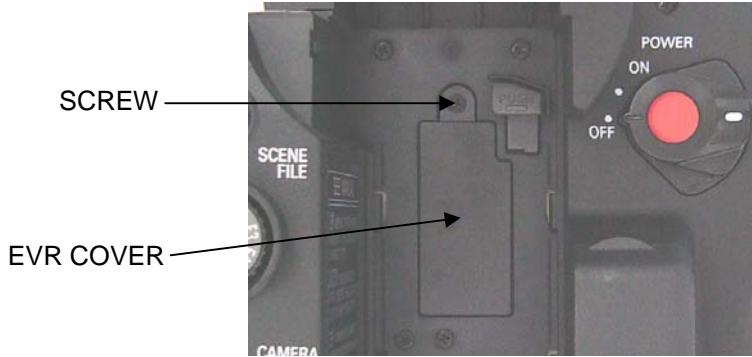
NAME	Part Number	Pcs.	Remark
PC EVR Software	VVS0025	1	Download from the Global Service WEB site.
Measuring Board	VFK1308P	1	
EVR Connector Board	VFK1309A	1	Enable to use with VFK1309
30pin Flat Cable	VFK1317	2	
Connector Adapter	VFK1763	1	60 to 30pin
Extension Cable	VFK1982	1	
DC Cable	VJA1128 or LSJA0310	1	For Measuring Board
DC Cable	VJA0941	1	For DVX100B/DVX102B/DVC180MC
9pin RS232C cross cable	---	1	
AC Adapter	---	2	
Personal Computer	---	1	*NOTE:

*OS: WINDOWS XP SP2

2. CONNECTION

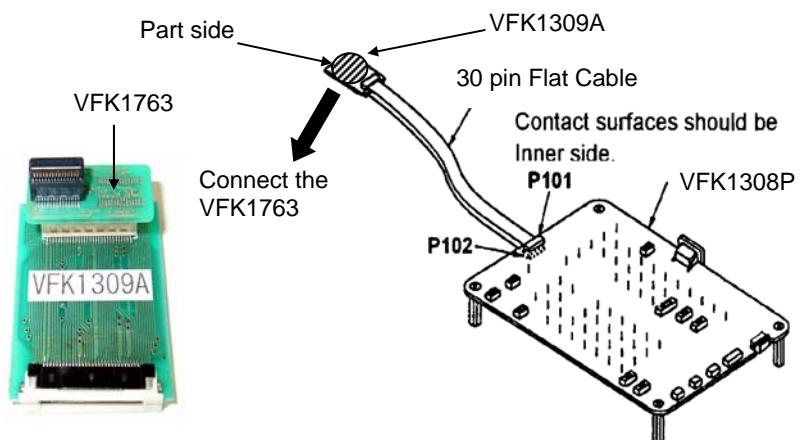


1. Loosen the screw and remove the EVR cover.



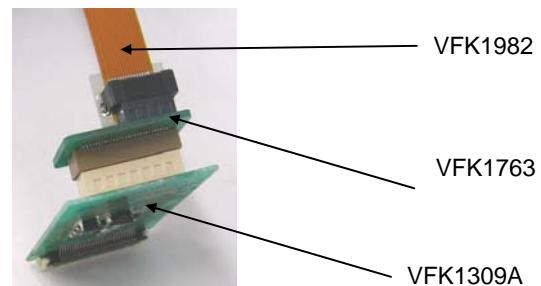
2. Connect the 2 pcs. of 30 pin flat cables (VFK1317) between P101/P102 on the Measuring Board (VFK1308P), and 2 connectors on the EVR Connector Board (VFK1309A). Make sure that the contact surface of 2 pcs. of 30 pin Flat Cables are inner side and direction of the EVR Connector Board is as shown in Figures. Then connect the Connection Adapter (VFK1763).

Connect VFK1763 with VFK1309A as shown in picture.
If the connector is installed backwards,
it will not work.



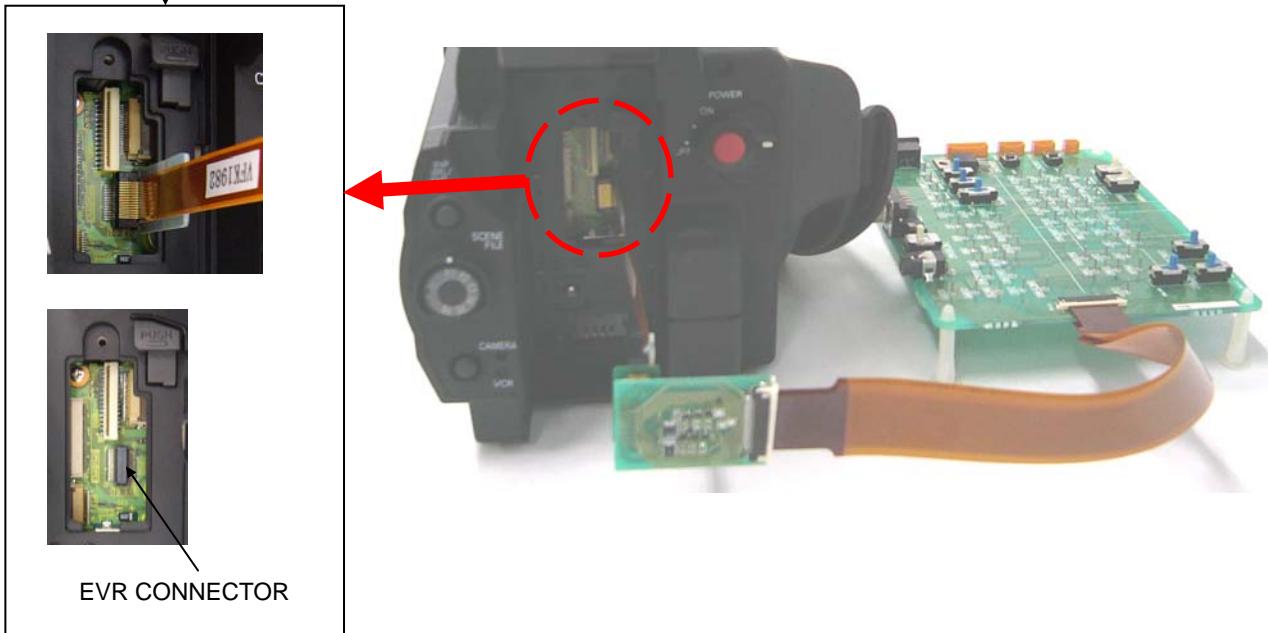
3. Connect the Extension Cable (VFK1982) to Connection Adapter (VFK1763).

Connect VFK1982 with VFK1763 as shown in picture.
The unit will not work if the connector
is attached backwards.



4. Connect the Extension Cable (VFK1982) to EVR connector in Unit. Then make sure that the direction of the VFK1982 is correct as shown in Figure.

When the VFK1982 is connected to EVR connector, be careful of the direction of connector on VFK1982. Please follow as shown in the figure.



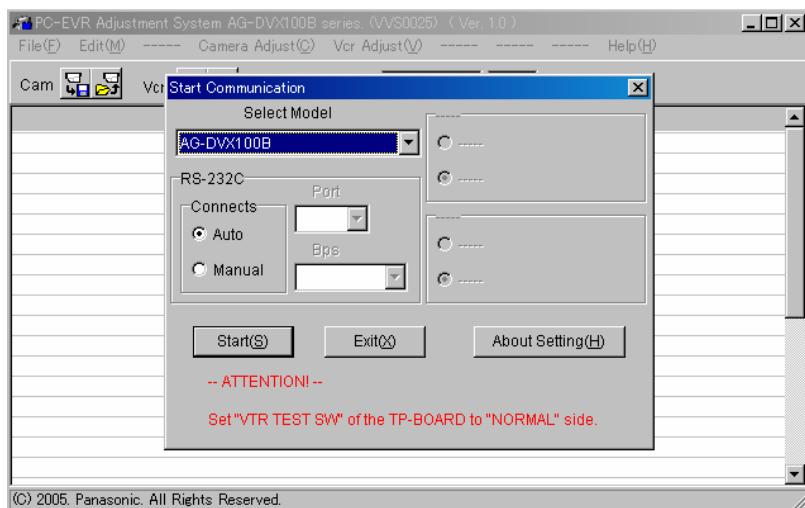
- Supply DC6V-9V to the Measuring Board (VFK1308P). Please use the DC cable (VJA0941) and AC Adapter to supply DC voltage to Measuring Board.
- Connect a 9 pin RS-232C cross cable between the Measuring Board and RS-232C connector on Personal Computer.
- Unless otherwise specified on the message of the EVR software or this adjustment procedure, set the switches on the Measuring Board as shown in the table below.

NAME	SETTING POSITION
RS232C SEL (SW101)	D-SUB
VTR TEST (SW103)	NORMAL
BST TEST (SW104)	NORMAL
SW107	CENTER position
SW108	H
SW105	H
SW106	OFF
FLUSH1 (SW102)	NORMAL
FLUSH2 (SW109)	NORMAL

3. PC EVR SOFTWARE

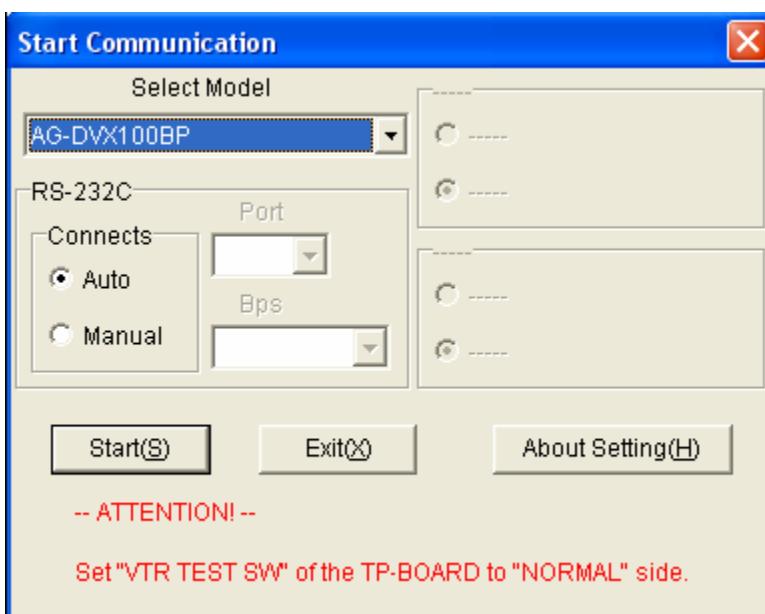
3-1. Setup

1. Copy all files of the PC EVR software for AG-DVX100B series to the PC.
2. Supply power to the measuring board.
3. Supply power to the Camera-Recorder and turn power ON.
4. Start up the PC EVR software by double-clicking “**dvx100b.exe**”. The following screen will appear.



3-2. Setting of communication

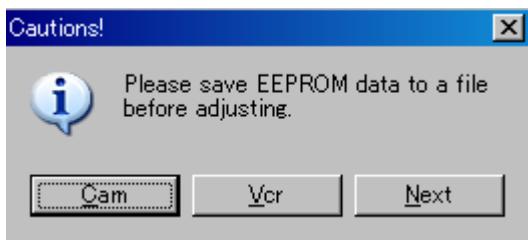
1. Select the model in “**Select Model**” box.



2. Click “**Start(S)**” button.

3-3. Save EEPROM data of Camera-Recorder to PC

- When communication between the PC and the Camera-Recorder has been succeeded, the following message appears.



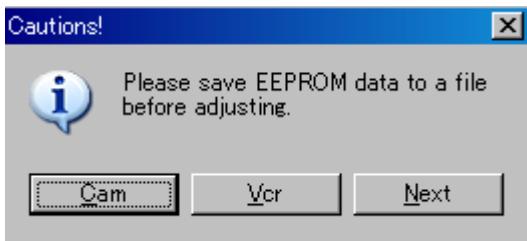
- Click “Cam” button to save Camera adjustment data and “Vcr” button to save VTR adjustment data.
The screen to save data will appear.
Save the data with the file name currently displayed.
The file name is generated according to the following rule to prevent the data from being written in the Camera-Recorder whose μCOM-version is different.

DVX100BNTSC_06_091205_1408_C.TXT

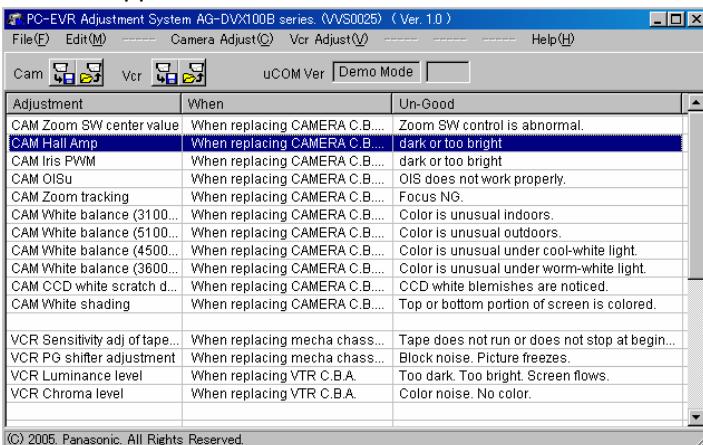
C: For Camera, V: For VTR
Time when data was saved
14: o'clock, 08: minutes
Date when data was saved
09: day, 12: month, 05(2005): year
μCOM-version
Model number

3-4. Main menu

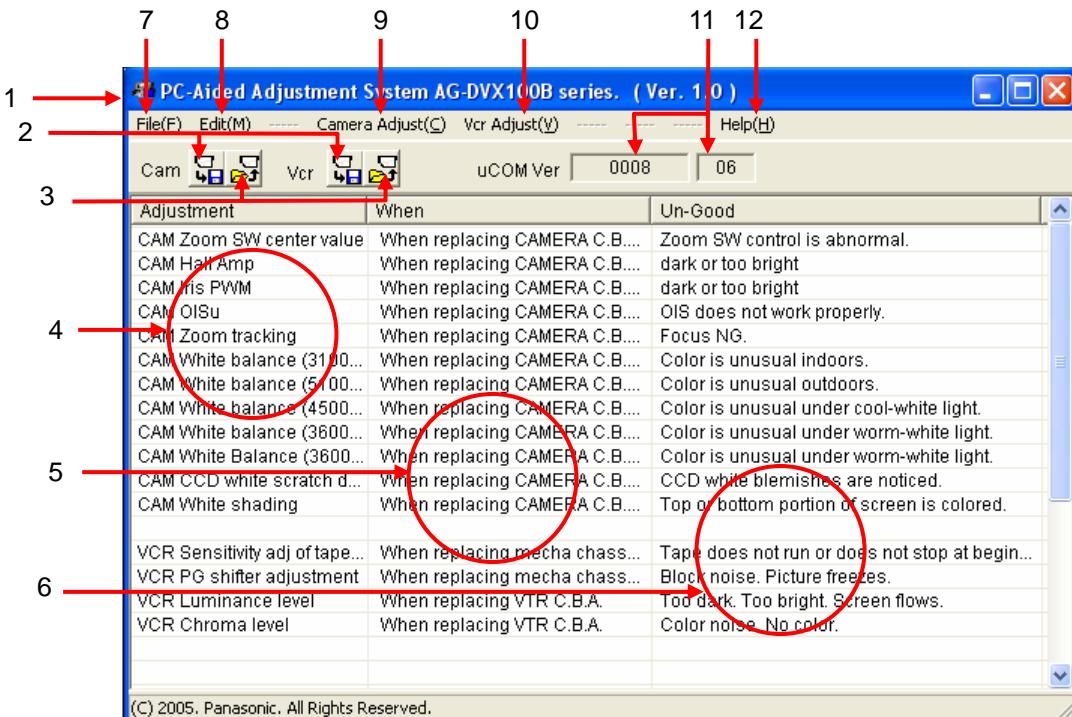
- Click “Next” button after saving EEPROM data.



- Main menu will appear as follows.



3-4-1. Explanation of main menu



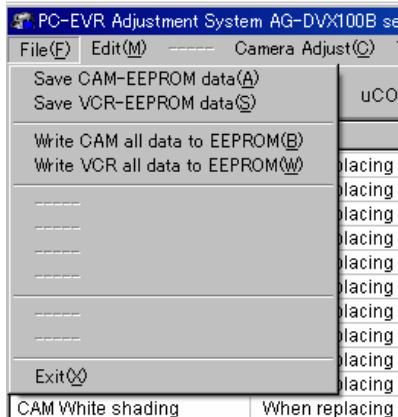
- Software name and version
- Save EEPROM data to PC
- Write EEPROM data from PC
- List of adjustment items
- When required
- Phenomenon when adjustment is not good

- Save and write EEPROM data
- Memory editor (Usually not used)
- CAMERA adjustment
- VTR adjustment
- μCOM version
- Open help

3-5. Write EEPROM data from PC to Camera-Recorder

You can return the Camera-Recorder to the condition before adjustment by writing EEPROM data, which has been saved before adjustment, to the Camera-Recorder.

1. Click the button for writing EEPROM data, which is indicated by “3” in the main menu on the previous page, or select “**Write CAM all data to EEPROM(B)**” or “**Write VCR all data to EEPROM(W)**” in “**File(F)**” menu.



NOTE: When “**Exit(X)**” is clicked, PC EVR software ends.

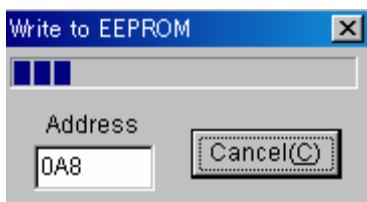
2. The following warning message will appear when no back-up file (data) exists.



When “**Cancel(C)**” button is clicked, writing EEPROM data is canceled.

When “**Ignore(I)**” button is clicked, the screen for selecting the file to be written will appear.

3. Select the file to be written in the Camera-Recorder and click “**Open(O)**” button in the screen.
Writing starts and the following message appears.



When writing has been completed, “**Cancel(C)**” button changes to “**OK(O)**” button as follows.



4. ADJUSTMENT PROCEDURE (CAMERA SECTION)

Set the Camera-Recorder to CAMERA mode.

Perform adjustments according to the order of main menu.

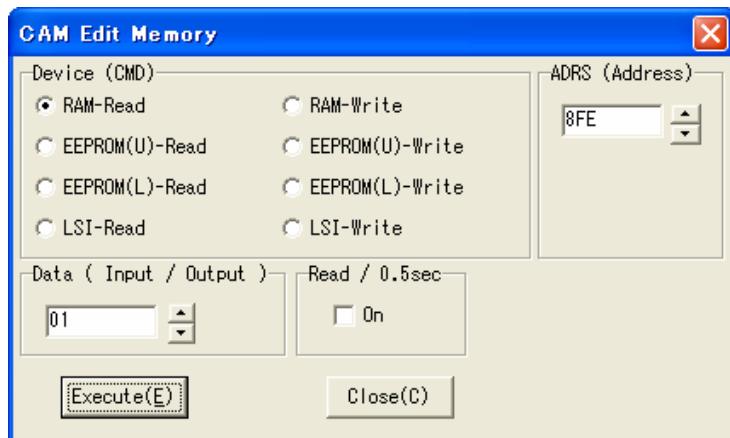
4-1. Zoom SW center value adjustment

Double-click the adjustment item “Zoom SW center value” in the main menu.

The instructions of adjustment will appear.

Perform adjustment according to the instructions.

1. Set the unit to CAMERA mode.
2. Select “Edit” → “Editing the CAM memory”.



Readout the data of zoom position at T side

3. Click “RAM-Read” in “Device”.
4. Press T side button of zoom SW on the Grip cover to T position fully and release the finger from the button slowly.
5. Input “8FE” in “ADRS” box and click “Execute(E)” button.
6. Take notes of numeral value in “Data” box.
7. Input “8FF” in “ADRS” box and click “Execute(E)” button.
8. Take notes of numeral value in “Data” box.
9. Repeat three times from the above steps 4 to 8.
10. Select the minimum value among three measurement value.

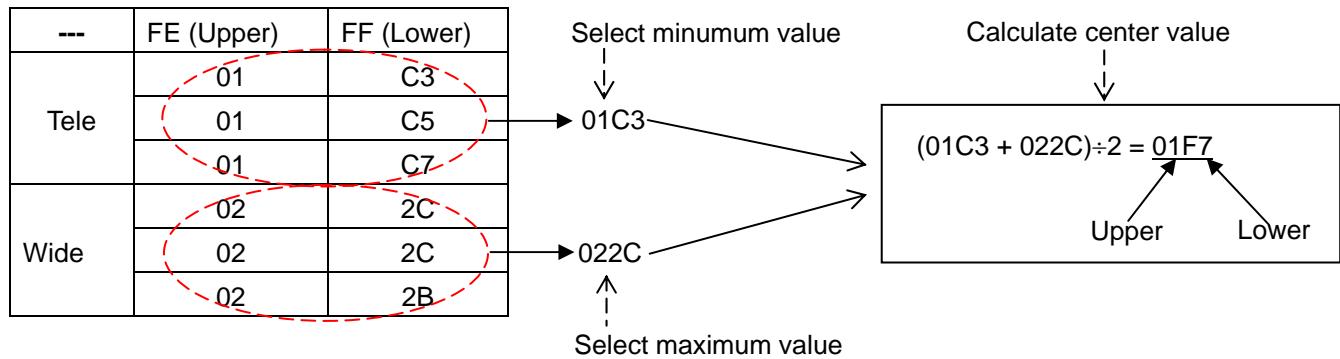
Readout the data of zoom position at W side

11. Press S side button of zoom SW on the Grip cover to W position fully and release the finger from the button slowly.
12. Input “8FE” in “ADRS” box and click “Execute(E)” button.
13. Take notes of numeral value in “Data” box.
14. Input “8FF” in “ADRS” box and click “Execute(E)” button.
15. Take notes of numeral value in “Data” box.
16. Repeat three times from the above steps 11 to 15.
17. Select the maximum value among three measurement value.

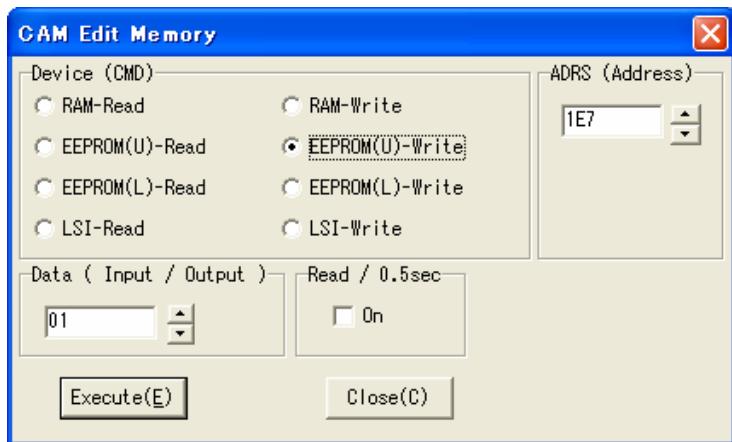
Calculation of zoom SW center value

18. Calculate the center value with the minimum value of T side and the maximum value of W side as follows.

<For example>



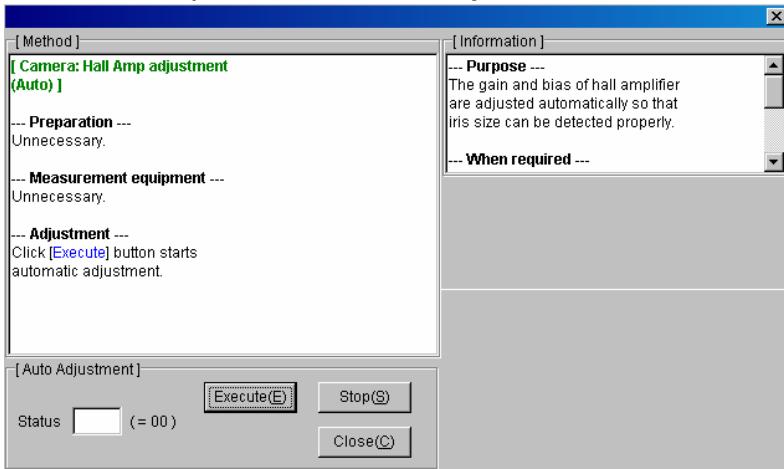
Writing the data of zoom SW center value



19. Click “EEPROM(U)-Write” in “Device”.
20. Input “1E7” in “ADRS” box.
21. Input the upper portion of zoom SW center value, which is calculated at step 18, in “Data” box and click “Execute” button.
Example: Input “01” when the zoom SW center value is “01F7”.
22. Click “EEPROM(L)-Write” in “Device”.
23. Confirm that “1E7” is in “ADRS” box.
24. Input the lower portion of zoom SW center value, which is calculated at step 18, in “Data” box and click “Execute(E)” button.
Example: Input “F7” when the zoom SW center value is “01F7”.
25. Operate the zoom SW on the Grip cover and confirm that zoom operation works smoothly.

4-2. Hall Amp adjustment (Auto)

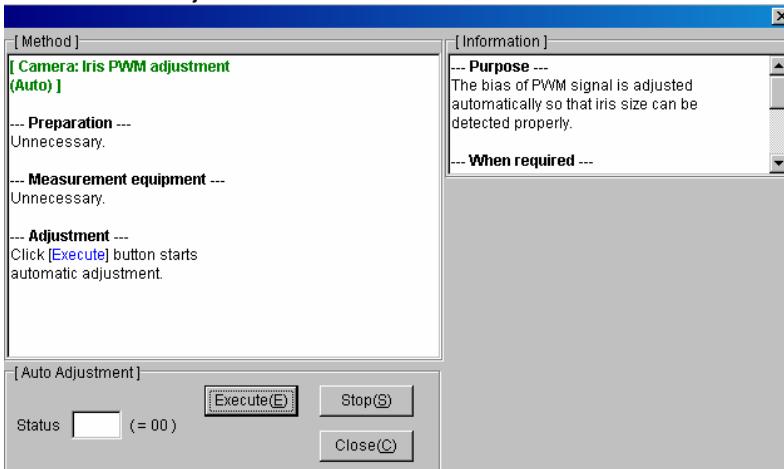
1. Double-click the adjustment item “Hall Amp” in the main menu. The following screen will appear.



2. Click “Execute(E)” button. Automatic adjustment starts.
3. After adjustment has been completed, click “Close(C)” button to escape this menu.

4-3. Iris PWM adjustment (Auto)

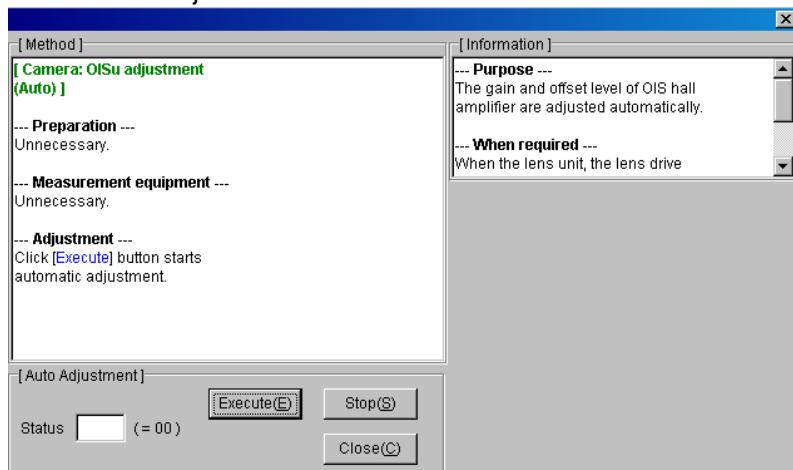
1. Double-click the adjustment item “Iris PWM” in the main menu. The following screen will appear.



2. Click “Execute(E)” button. Automatic adjustment starts.
3. After adjustment has been completed, click “Close(C)” button to escape this menu.

4-4. OISu adjustment (Auto)

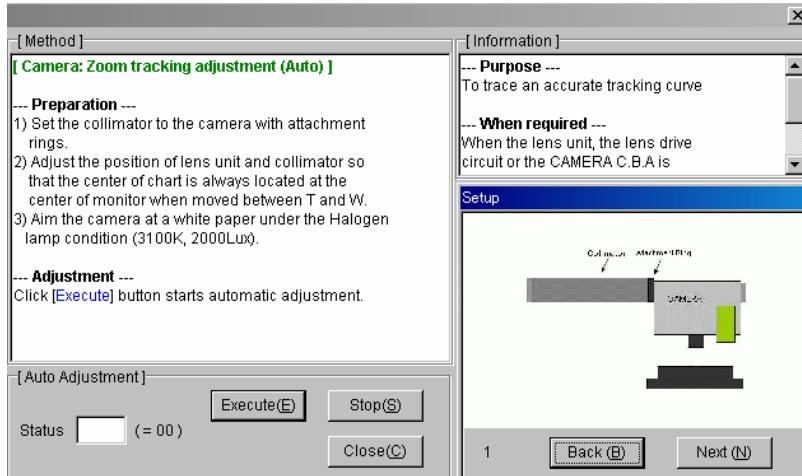
1. Double-click the adjustment item “OISu” in the main menu. The following screen will appear.



2. Click “Execute(E)” button. Automatic adjustment starts.
3. After adjustment has been completed, click “Close(C)” button to escape this menu.

4-5. Zoom tracking adjustment (Auto)

1. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
2. Set the 43mm attachment ring (VFK1164TAR43) to the Collimator (VFK1164TCM01).
3. Set the Collimator (VFK1164TCM01) with the 43mm attachment ring (VFK1164TAR43) to 72mm Attachment Ring (VFK1809).
4. Adjust the position of lens unit and collimator so that the center of chart is always located at the center of monitor when moved between T and W.
5. Set the Iris to Auto.
6. Aim the Camera-Recorder at white paper under the Halogen lamp condition (3100K, 2000Lux).
7. Double-click the adjustment item “Zoom tracking” in the main menu. The following screen will appear.



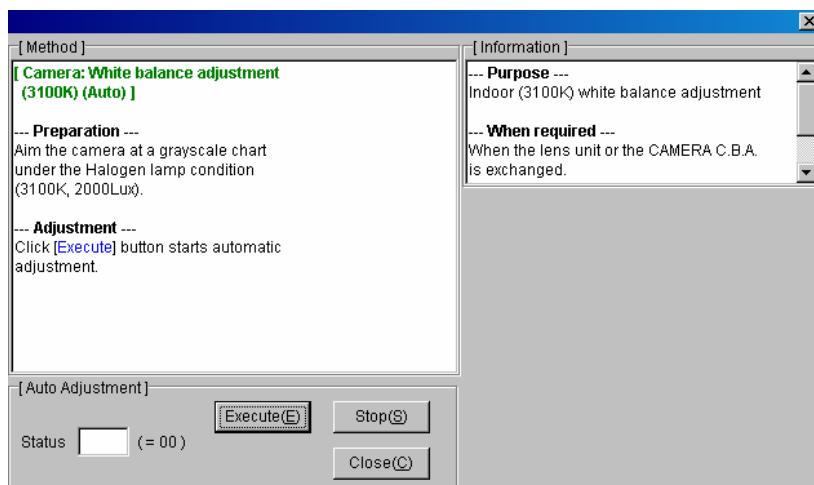
8. Click “Execute(E)” button. Automatic adjustment starts.
9. After adjustment has been completed, click “Close(C)” button to escape this menu.

4-6. White balance adjustment

1. Set the ND filter SW to 1/8 position.
2. Set the Camera-Recorder to ATW mode.
3. Set the Iris to Auto.
4. Execute ABB.

4-6-1. White balance adjustment (3100K) (Auto)

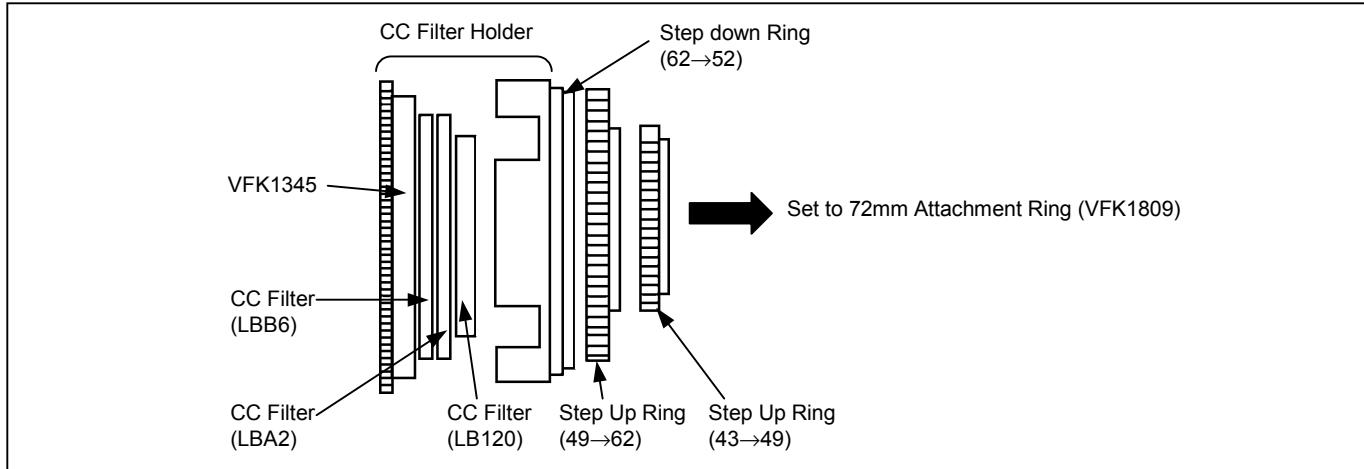
1. Aim the Camera-Recorder at grayscale chart under the Halogen lamp condition (3100K, 2000Lux).
2. Double-click the adjustment item “White balance (3100K)” in the main menu. The following screen will appear.



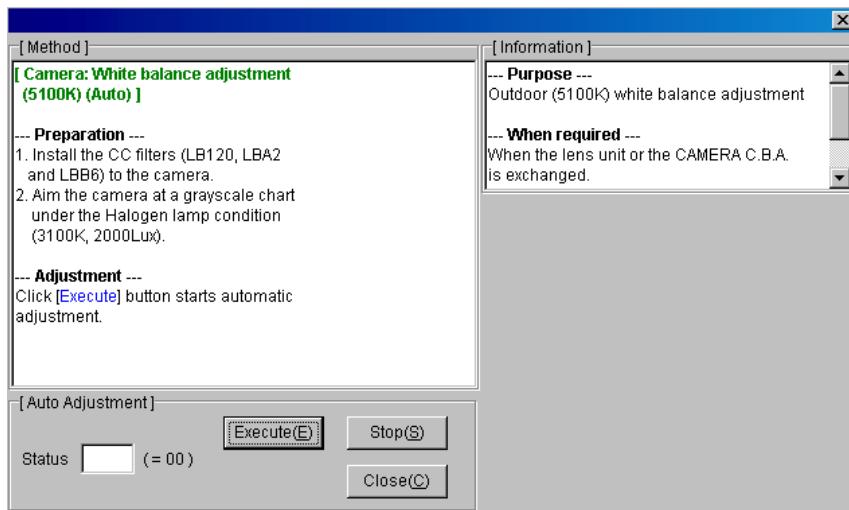
3. Click “Execute(E)” button. Automatic adjustment starts.
4. After adjustment has been completed, click “Close(C)” button to escape this menu.

4-6-2. White balance adjustment (5100K) (Auto)

1. Set the Color Conversion filters (LB120: VFK1347), (LBA2: VFK1884) and (LBB6: VFK1888) to the CC Filter Holder (VFK1345).
2. Set the one Step-down Ring (VFK1346) and two Step-up Rings (VFK1659, VFK1660) to the CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



5. Aim the Camera-Recorder at grayscale chart under the Halogen lamp condition (3100K, 2000Lux).
6. Double-click the adjustment item “White balance (5100K)” in the main menu. The following screen will appear.



7. Click “Execute(E)” button. Automatic adjustment starts.
8. After adjustment has been completed, click “Close(C)” button to escape this menu.

4-6-3. White balance adjustment (4500K) (Auto)

< In case of NTSC model >

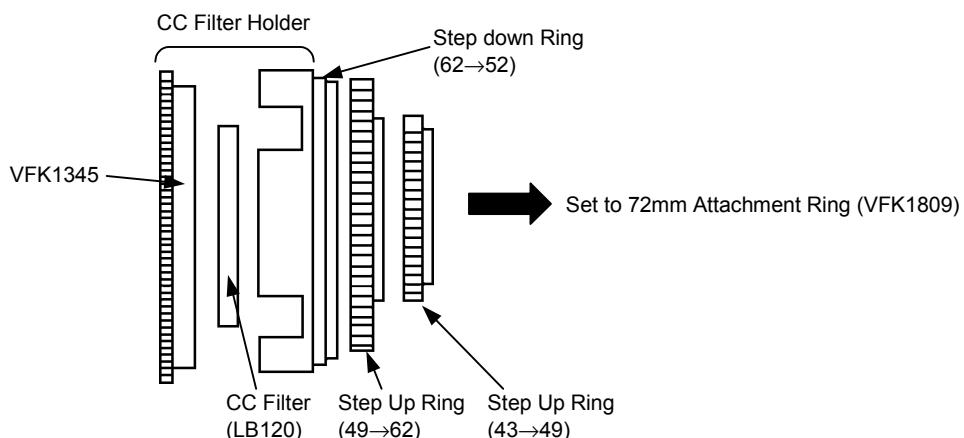
1. Set the Color Conversion filter (LB120: VFK1347) to the CC Filter Holder (VFK1345).

< In case of PAL model >

1. Set the Color Conversion filters (LB80: VFK1342) and (CC C20: VFK1887) to the CC Filter Holder (VFK1345).

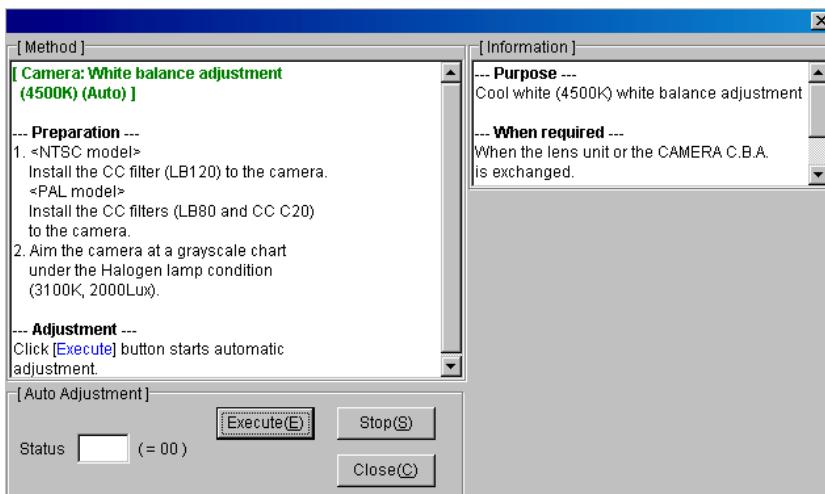
< Common procedures >

2. Set the one Step-down Ring (VFK1346) and two Step-up Rings (VFK1659, VFK1660) to the CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



NOTE: Above figure shows in case of NTSC.

5. Aim the Camera-Recorder at grayscale chart under the Halogen lamp condition (3100K, 2000Lux).
6. Double-click the adjustment item “White balance (4500K)” in the main menu. The following screen will appear.



7. Click “Execute(E)” button. Automatic adjustment starts.
8. After adjustment has been completed, click “Close(C)” button to escape this menu.

4-6-4. White balance adjustment (3600K) (Auto)

< In case of NTSC model >

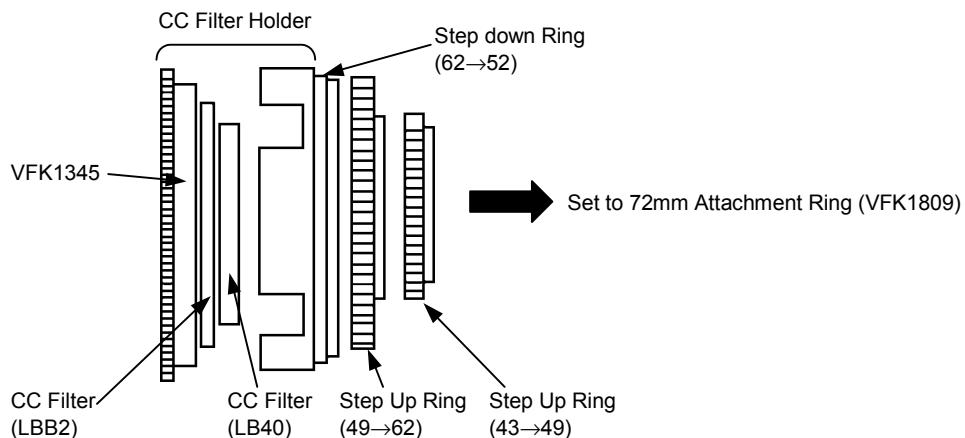
1. Set the Color Conversion filters (LB40: VFK1341) and (LBB2: VFK1885) to the CC Filter Holder (VFK1345).

< In case of PAL model >

1. Set the Color Conversion filter (CC C10: VFK1886) to the CC Filter Holder (VFK1345).

< Common procedures >

2. Set the one Step-down Ring (VFK1346) and two Step-up Rings (VFK1659, VFK1660) to the CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).

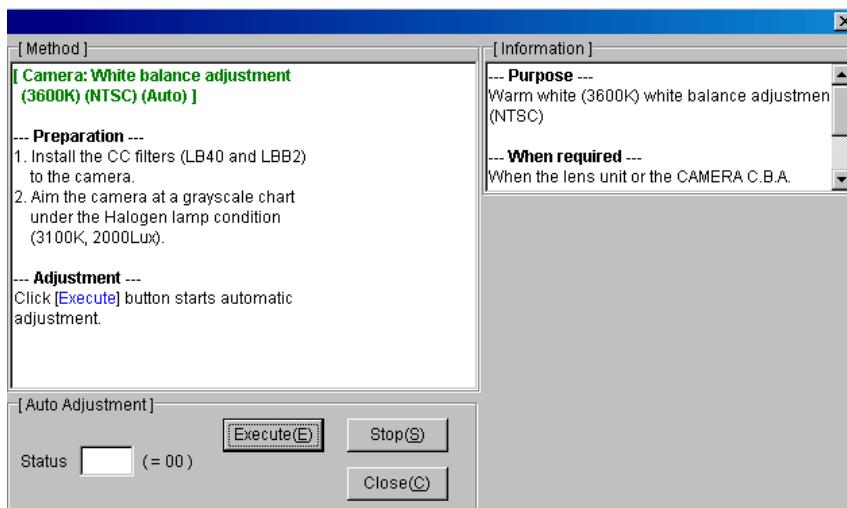


NOTE: Above figure shows in case of NTSC.

5. Aim the Camera-Recorder at grayscale chart under the Halogen lamp condition (3100K, 2000Lux).

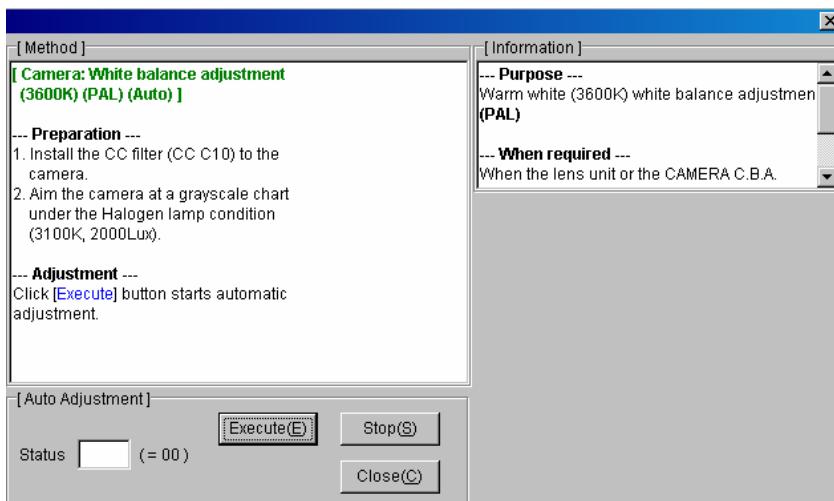
< In case of NTSC model >

6. Double-click the adjustment item “White balance (3600K) (NTSC)” in the main menu. The following screen will appear.



< In case of PAL model >

6. Double-click the adjustment item “White balance (3600K) (PAL)” in the main menu. The following screen will appear.

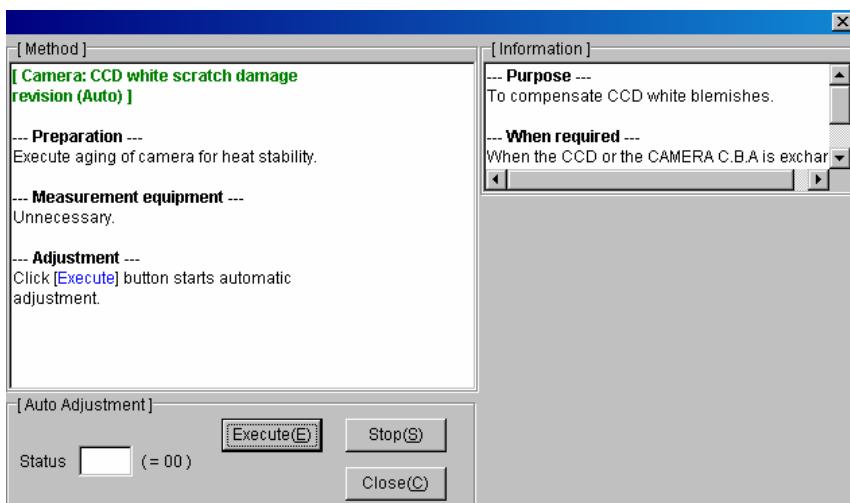


< Common procedures >

7. Click “**Execute(E)**” button. Automatic adjustment starts.
8. After adjustment has been completed, click “**Close(C)**” button to escape this menu.

4-7 CCD white scratch damage revision adjustment (Auto)

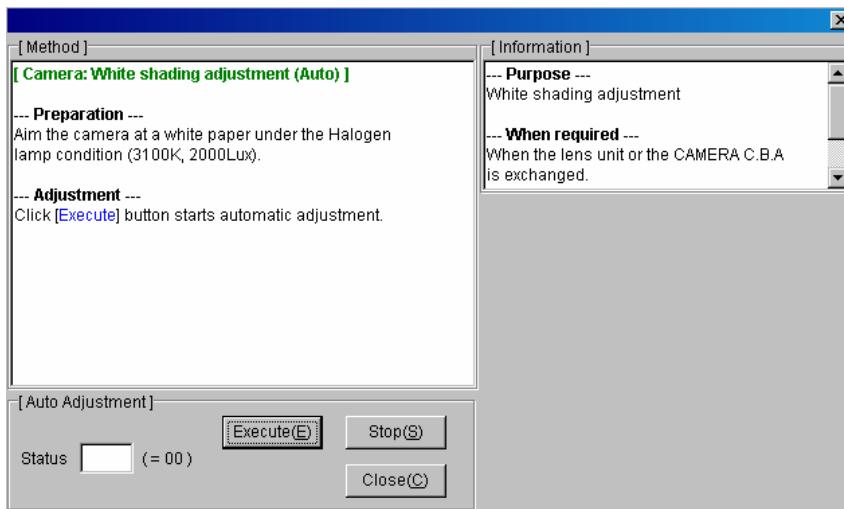
1. Execute aging of Camera-Recorder for heat stability.
2. Double-click the adjustment item “CCD white scratch damage revision” in the main menu. The following screen will appear.



3. Click “**Execute(E)**” button. Automatic adjustment starts.
4. After adjustment has been completed, click “**Close(C)**” button to escape this menu.

4-8 White shading adjustment (Auto)

1. Set the GAIN SW of Camera-Recorder to L (0dB).
2. Set the ATW to OFF.
3. Set the Iris to Auto.
4. Aim the Camera-Recorder at white paper under the Halogen lamp condition (3100K, 2000Lux).
5. Shoot the white paper so that the full screen is white.
6. Set White Balance by pressing the AWB SW and confirm that the message “AWB OK” appears on the center of screen.
7. Set the “Marker” to ON.
8. Press the ZEBRA SW and confirm that the marker appears on the screen.
9. Adjust the Iris dial so that luminance level is 70 to 80%. (Luminance level can be confirmed by numerical value displayed at lower left corner of screen.)
10. Double-click the adjustment item “White shading” in the main menu. The following screen will appear.



11. Click “**Execute(E)**” button. Automatic adjustment starts.
12. After adjustment has been completed, click “**Close(C)**” button to escape this menu.

5. ADJUSTMENT PROCEDURE (VTR SECTION)

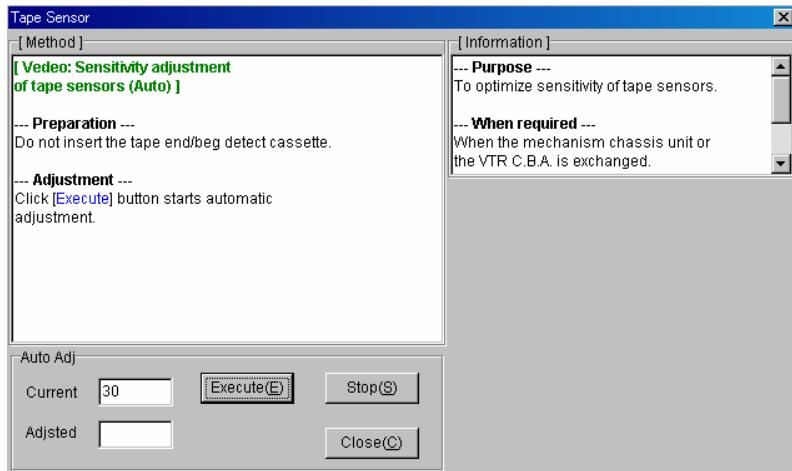
Set the Camera-Recorder to VCR mode.

Perform adjustments according to the order of main menu.

5-1. Sensitivity adjustment of tape sensors (Auto)

NOTE: Do not insert the tape end/beg detect cassette to the Camera-Recorder.

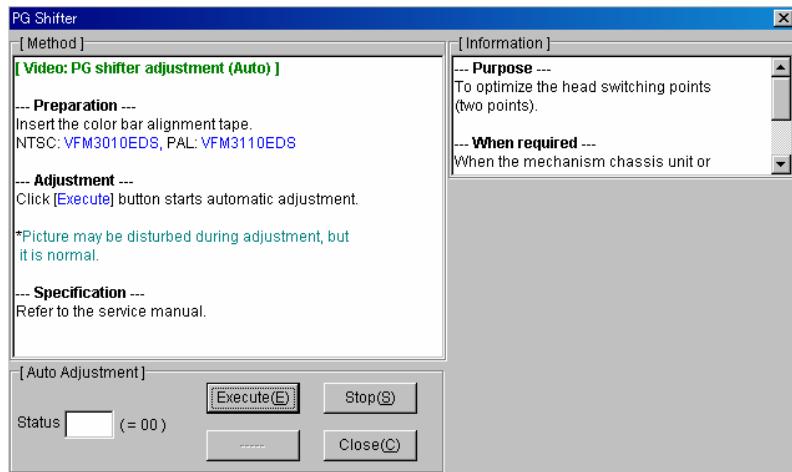
1. Double-click the adjustment item “**Sensitivity adj. of tape sensors**” in the main menu. The following screen will appear.



2. Click “**Execute(E)**” button. Automatic adjustment starts.
3. After adjustment has been completed, click “**Close(C)**” button to escape this menu.

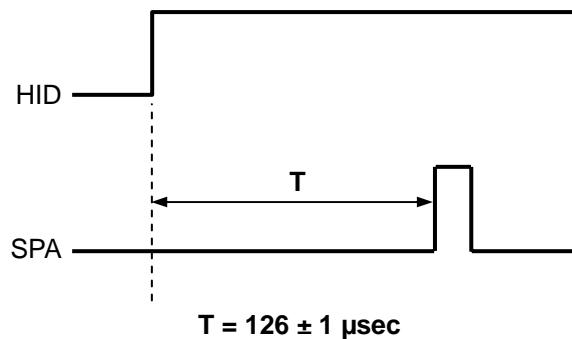
5-2. PG shifter adjustment (Auto)

1. Connect the oscilloscope to “**HID**” and “**SPA**” on the measuring board VFK1308P.
2. Insert the DV color bar alignment tape (VFM3010EDS: NTSC or VFM3110EDS: PAL) to the Camera-Recorder.
3. Double-click the adjustment item “**PG shifter**” in the main menu. The following screen will appear.



4. Click “**Execute(E)**” button. Automatic adjustment starts.

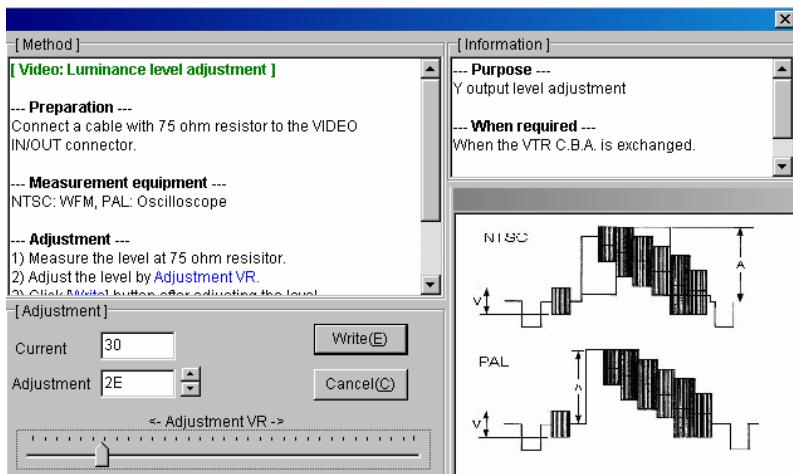
5. After adjustment has been completed, confirm that the portion “T” is within specification as shown below.



6. Click “**Close(C)**” button to escape this menu.

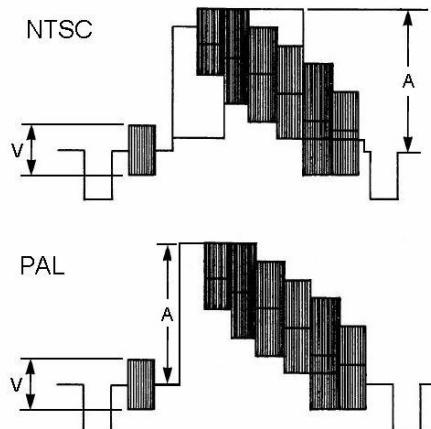
5-3. Luminance level adjustment

1. Connect the WFM (for NTSC) or the oscilloscope (for PAL) to the VIDEO OUT with 75ohm termination.
2. Double-click the adjustment item “**Luminance level**” in the main menu. The following screen will appear.



3. Adjust luminance level by pressing the arrow keys of keyboard so that it is within specification.

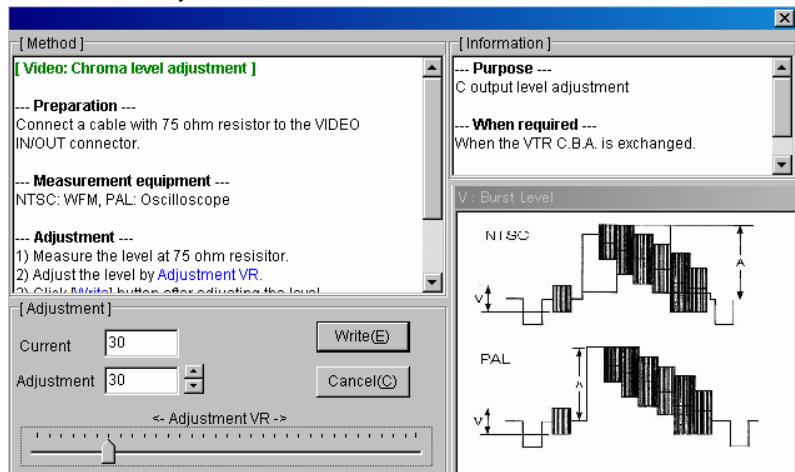
$$\begin{aligned} \text{NTSC: } A &= 100 \text{ IRE} \pm 2\text{IRE} \\ \text{PAL : } A &= 700 \text{ mVp-p} \pm 10\text{mV} \end{aligned}$$



4. Click “**Write(E)**” button after adjustment has been completed.

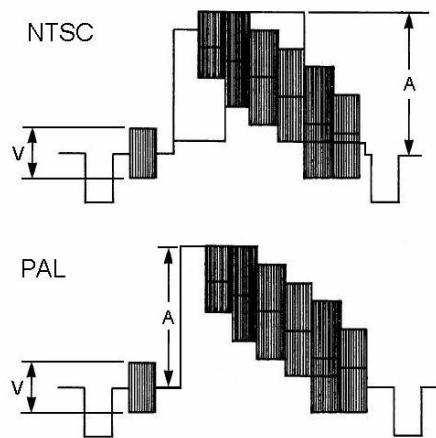
5-4. Chroma level adjustment

1. Connect the WFM (for NTSC) or the oscilloscope (for PAL) to the VIDEO OUT with 75ohm termination.
2. Double-click the adjustment item “**Chroma level**” in the main menu. The following screen will appear.



3. Adjust chroma level by pressing the arrow keys of keyboard so that it is within specification.

NTSC: $V(\text{Burst}) = 40 \text{ IRE} \pm 3 \text{ IRE}$
PAL : $V(\text{Burst}) = 300 \text{ mVp-p} \pm 20 \text{ mV}$



4. Click “**Write(E)**” button after adjustment has been completed.

SECTION 5

BLOCK DIAGRAMS

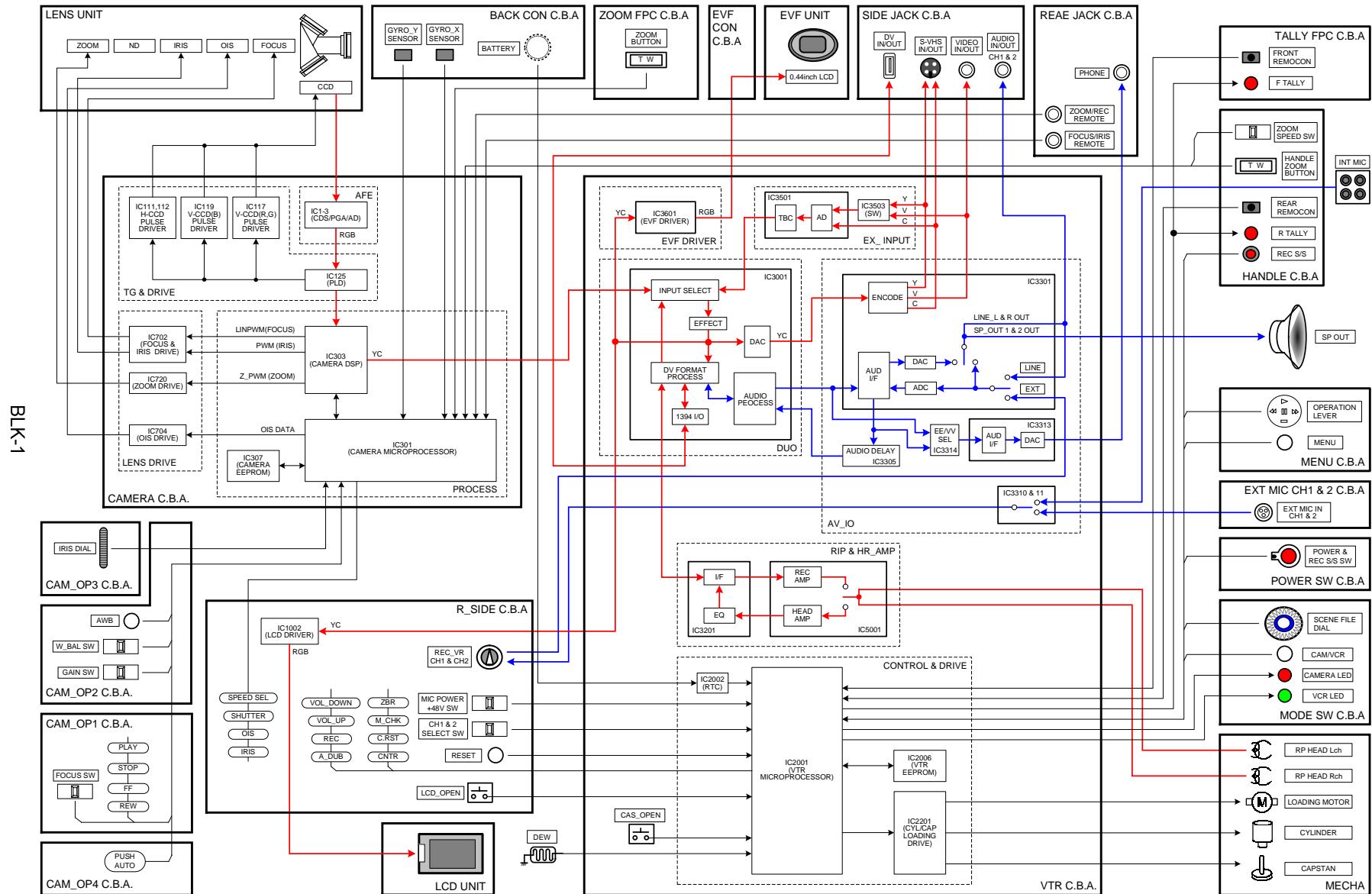
ブロック図

MODEL: AG-DVX100B/P/E/AN,102BEN,DVC180BMC

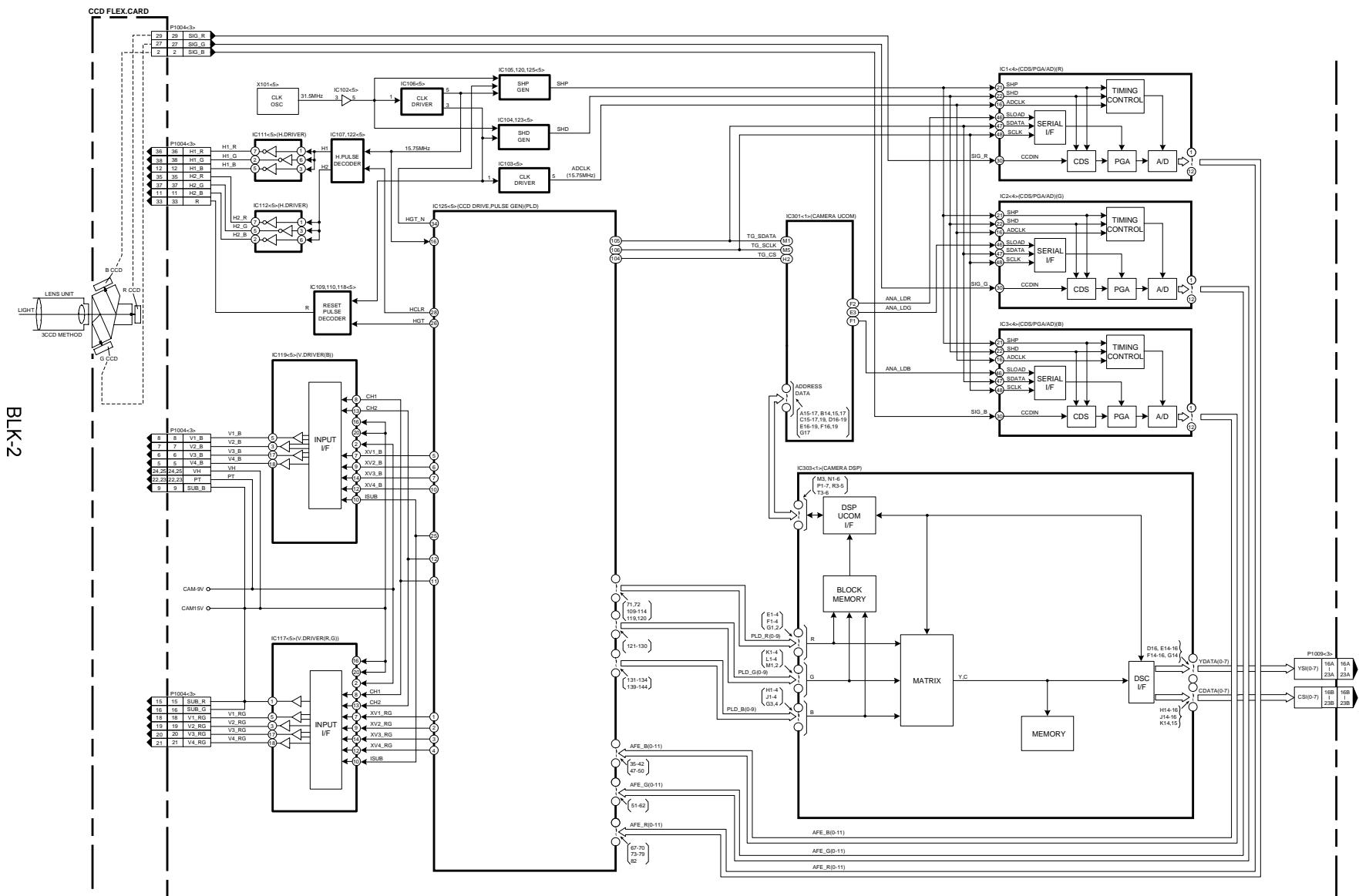
CONTENTS

OVERALL BLOCK DIAGRAM.....	BLK-1
SENSOR/PROCESS (AFE / TG & DRIVE/PROCESS: CAMERA) BLOCK DIAGRAM	BLK-2
LENS DRIVE (LENZ DRIVE / PROCESS: CAMERA) BLOCK DIAGRAM.....	BLK-3
VIDEO (VTR) BLOCK DIAGRAM	BLK-4
MONITOR (EVF: VTR / LCD: R SIDE) BLOCK DIAGRAM	BLK-5
CONTROL (CONTROL / DRIVE: VTR) BLOCK DIAGRAM	BLK-6

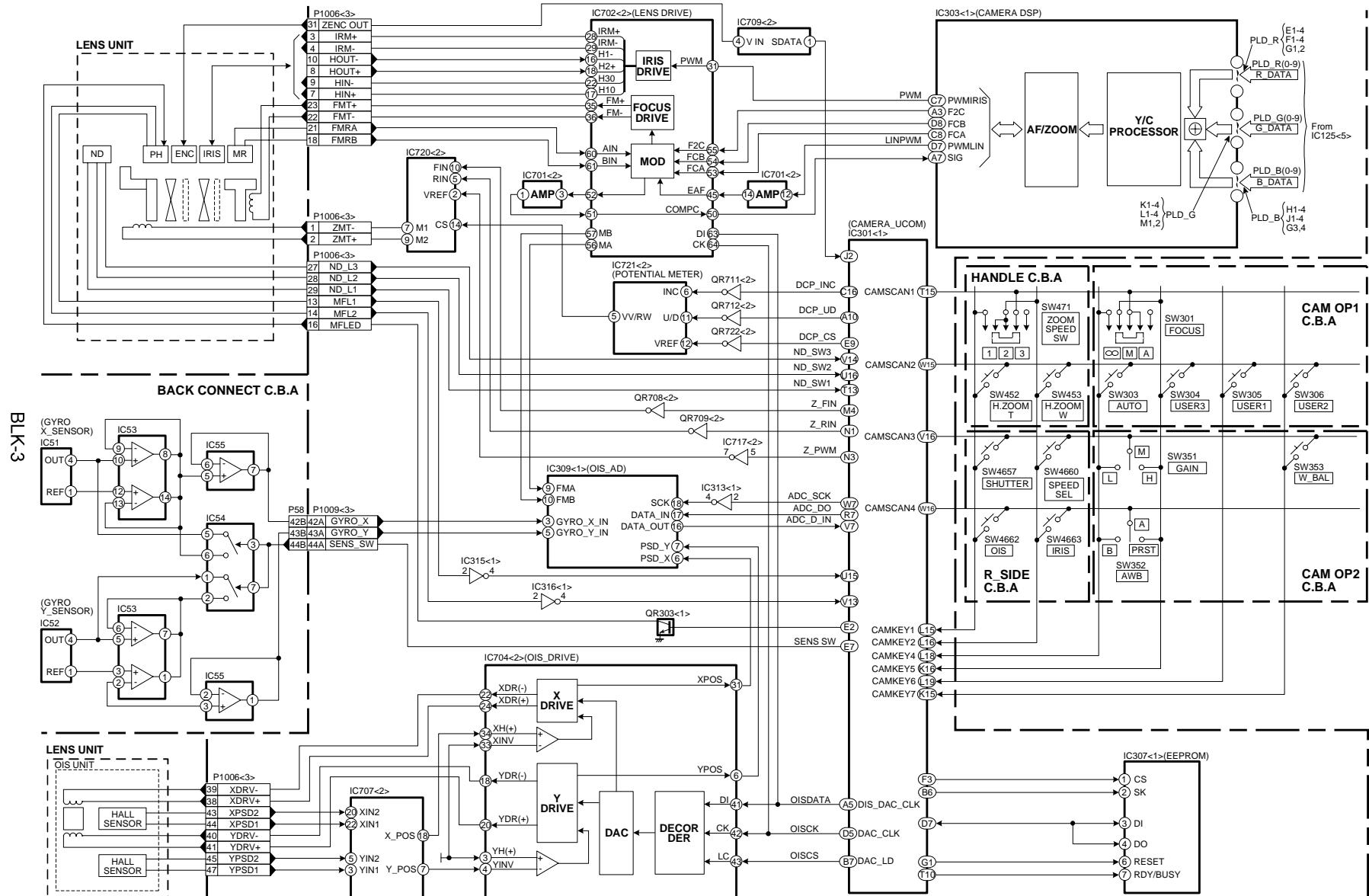
OVERALL BLOCK DIAGRAM



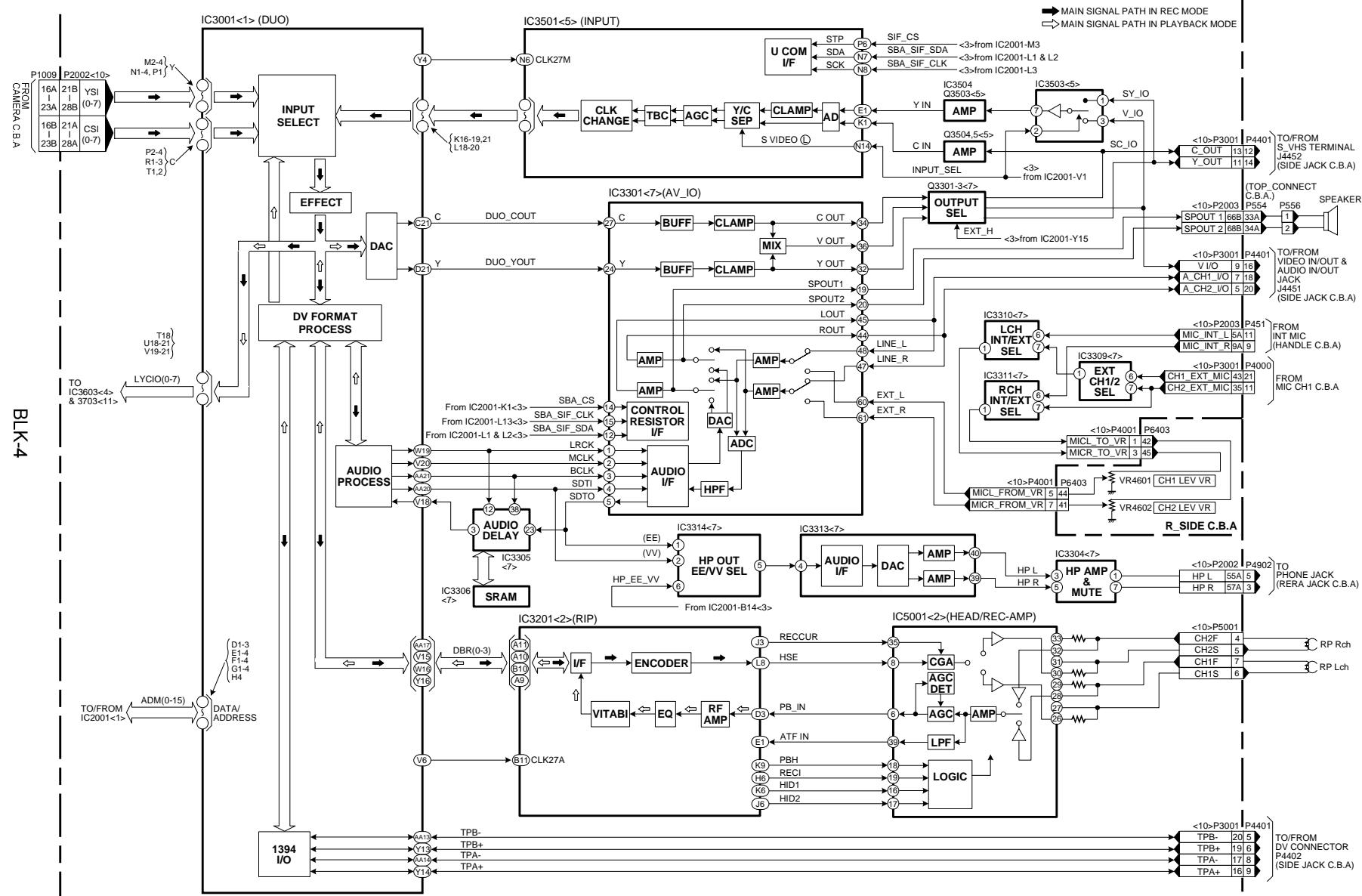
SENSOR/PROCESS(AFE/TG & DRIVE/PROCESS: CAMERA) BLOCK DIAGRAM



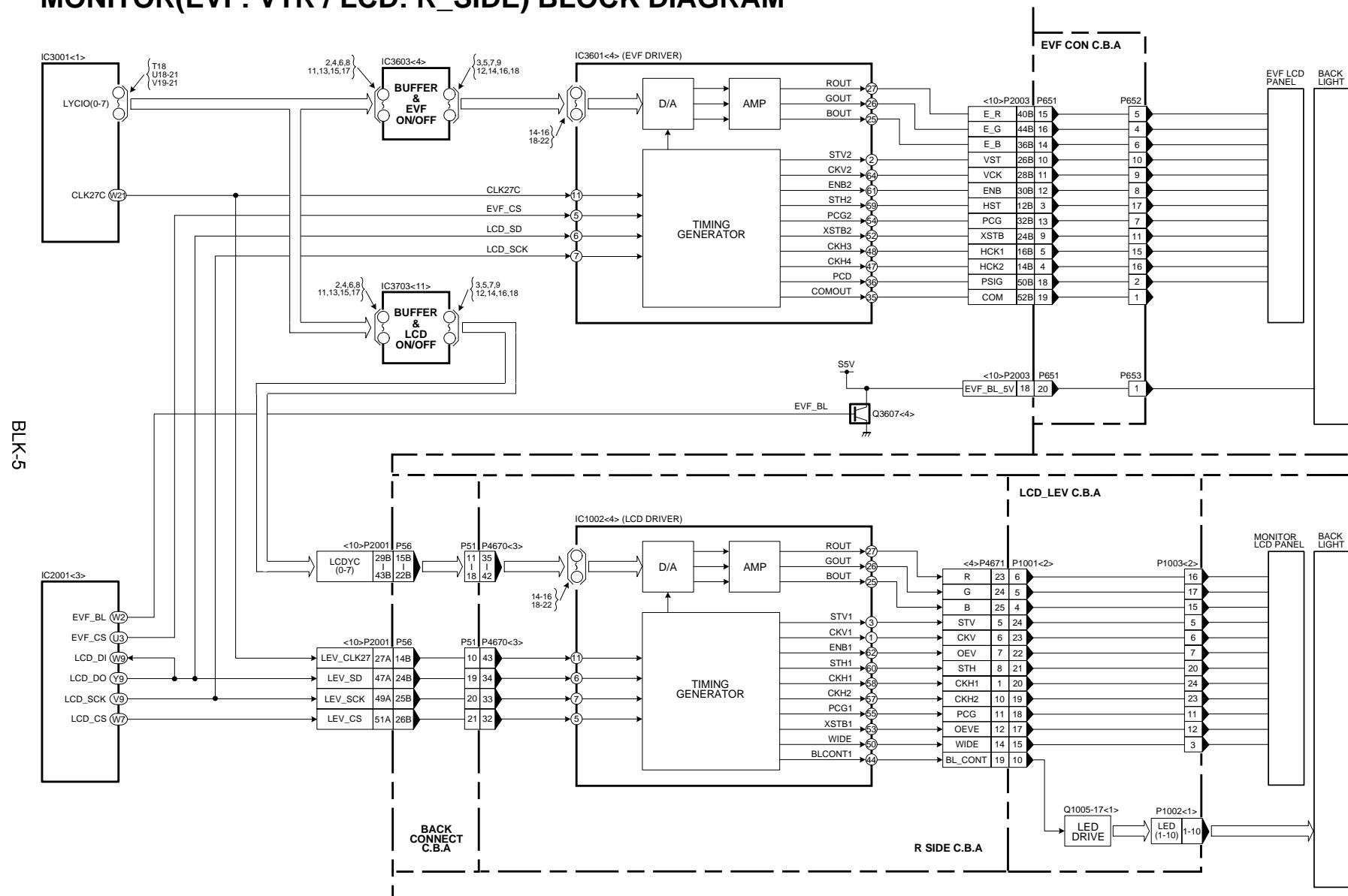
LENZ DRIVE (LENZ DRIVE / PROCESS: CAMERA) BLOCK DIAGRAM



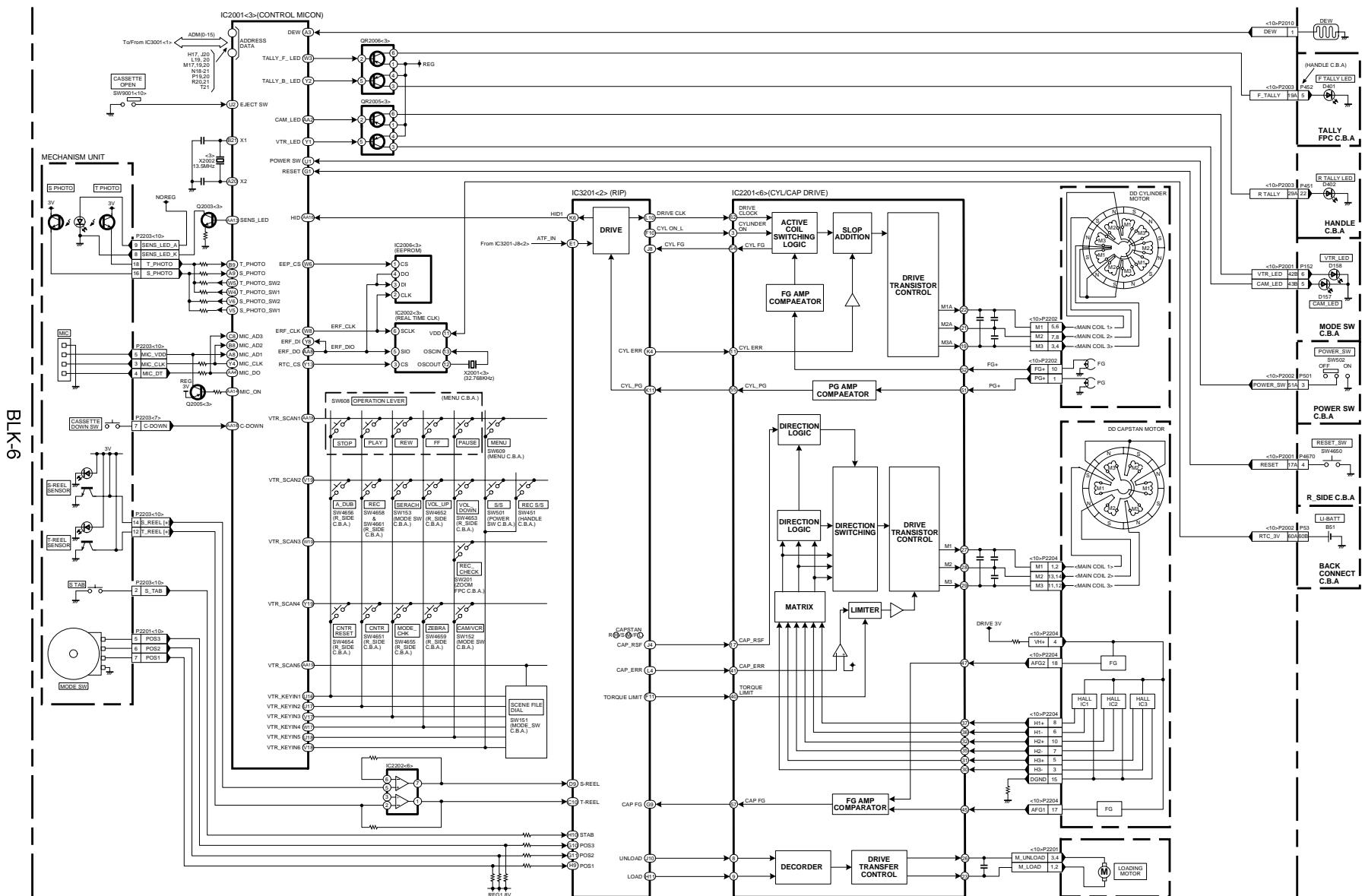
VIDEO (VTR) BLOCK DIAGRAM



MONITOR(EVF: VTR / LCD: R_SIDE) BLOCK DIAGRAM



CONTROL (CONTROL / DRIVE: VIDEO) BLOCK DIAGRAM

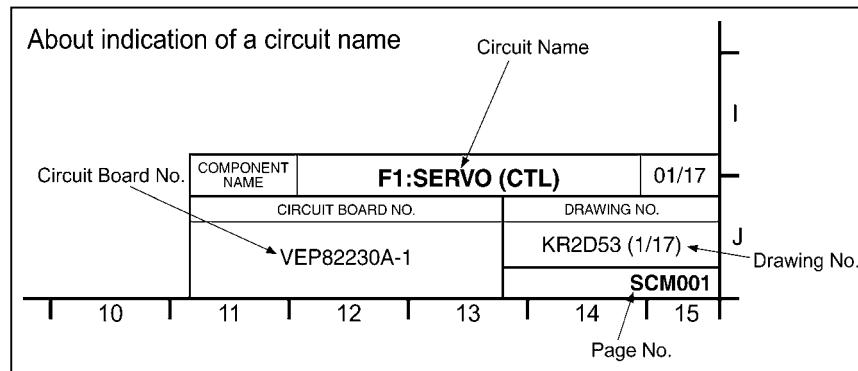


SECTION 6

SCHEMATIC DIAGRAMS

回路図

MODEL: AG-DVX100B/P/E/AN,102BEN,DVC180BMC

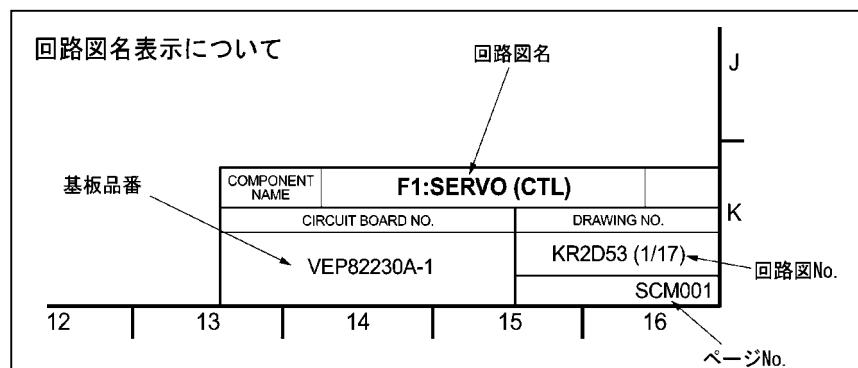


NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST SECTION.

[CAUTION]

THE  MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

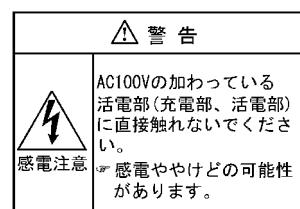
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.



⚠ 警告

 の部品は、安全上重要な部品です。
交換するときは、安全及び性能維持のため、必ず指定の部品をご使用ください。
部品は難燃性や耐電圧など、安全上の特性を持ったものとなっていますので、部品交換
は、使用されているものと同じ特性の部品をご使用ください。

部品ご注文の際には必ず部品リストに記載の品番をご注文ください。



- ①  印の部品は安全上重要な部品です。
交換するときは、安全上および性能維持のため
必ず指定の部品をご使用ください。
- ②  内は充電部です。AC 100Vが加わっておりますので点検、修理
のときは感電しないよう充分ご注意ください。
- ③ 部品交換時には、電源プラグをぬいてから行ってください。
- ④ 一次側(充電部)の電圧・波形は、一次側アースを基準に測定して
ください。
- ⑤ 部品品番は、部品価格表で確認の上交換ください。

CONTENTS

INTERCONNECTION

INTERCONNECTION (1/1) SCM001

VTR

DUO (1/11)	SCM002
RIP&HRAMP (2/11)	SCM003
CONTROL (3/11)	SCM004
EVF DRIVER (4/11)	SCM005
EXT INPUT (5/11)	SCM006
DRIVER (6/11)	SCM007
AV IO (7/11)	SCM008
POWER 1 (8/11)	SCM009
POWER 2 (9/11)	SCM010
CN (10/11)	SCM011
LCD BUFFER (11/11)	SCM012

CAMERA

PROCESS (1/5)	SCM013
LENS DRIVE (2/5)	SCM014
SUB CN (3/5)	SCM015
AFE (4/5)	SCM016
TG&DRIVE (5/5)	SCM017

BACK CONNECT

CN	SCM018
GYRO	SCM019

TOP CONNECT

TOP CONNECT	SCM020
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CAM OP1

CAM OP1	SCM021
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CAM OP2

CAM OP2	SCM022
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CAM OP3

CAM OP3	SCM023
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CAM OP4

CAM OP4	SCM024
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R SIDE

AUDIO (1/5)	SCM025
KEY (2/5)	SCM026
R SIDE (3/5)	SCM027
LEV (4/5)	SCM028
LCD PWR (5/5)	SCM029

LCD LEV

LCD LEV (1/2)	SCM030
LCD LEV (2/2)	SCM031

MENU

MENU	SCM032
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EVF CONNECT

EVF CONNECT	SCM033
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SIDE JACK

SIDE JACK (1/3)	SCM034
SIDE JACK (2/3)	SCM035
SIDE JACK (3/3)	SCM036

MIC CH1

MIC CH1 (1/2)	SCM037
CNT (2/2)	SCM038

MIC CH2

MIC CH2	SCM039
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MODE SW

MODE SW	SCM040
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POWER SW

POWER SW	SCM041
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REAR JACK

REAR JACK	SCM042
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HANDLE

HANDLE (1/3)	SCM043
HANDLE (2/3)	SCM044
HANDLE (3/3)	SCM045

BATTERY

BATTERY	SCM046
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DC IN

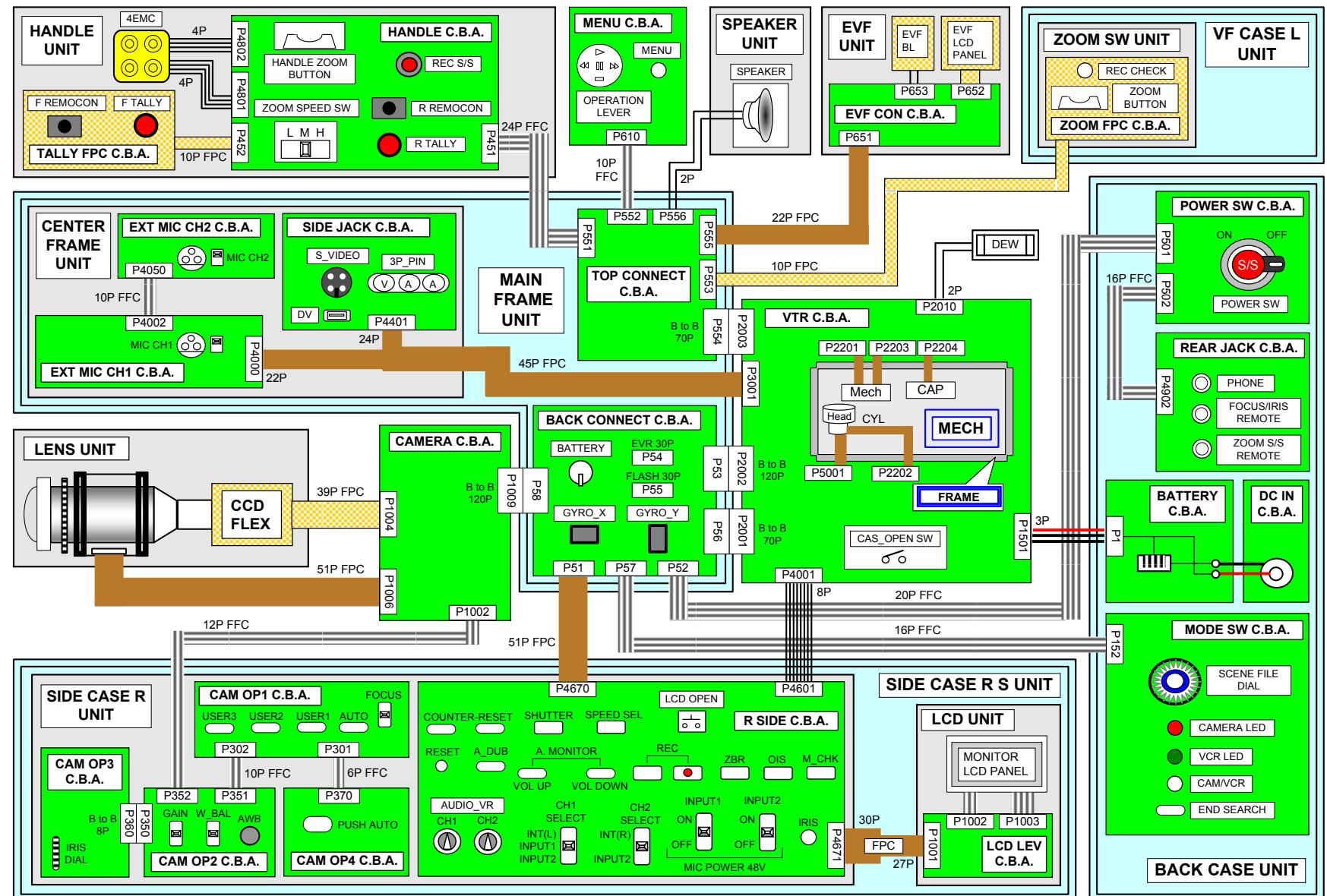
DC IN	SCM047
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ZOOM FPC

ZOOM FPC	SCM048
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TALLY FPC

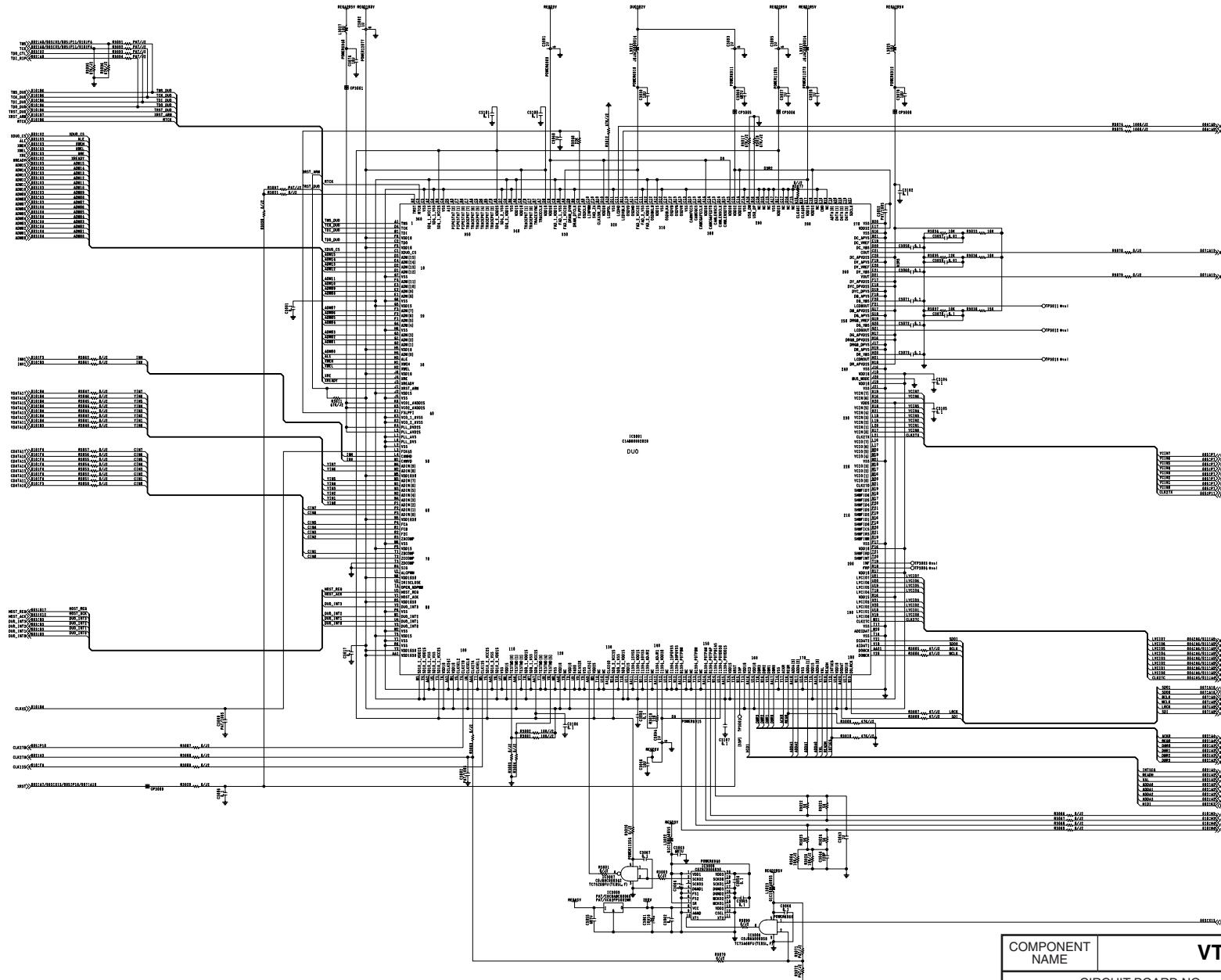
TALLY FPC	SCM049
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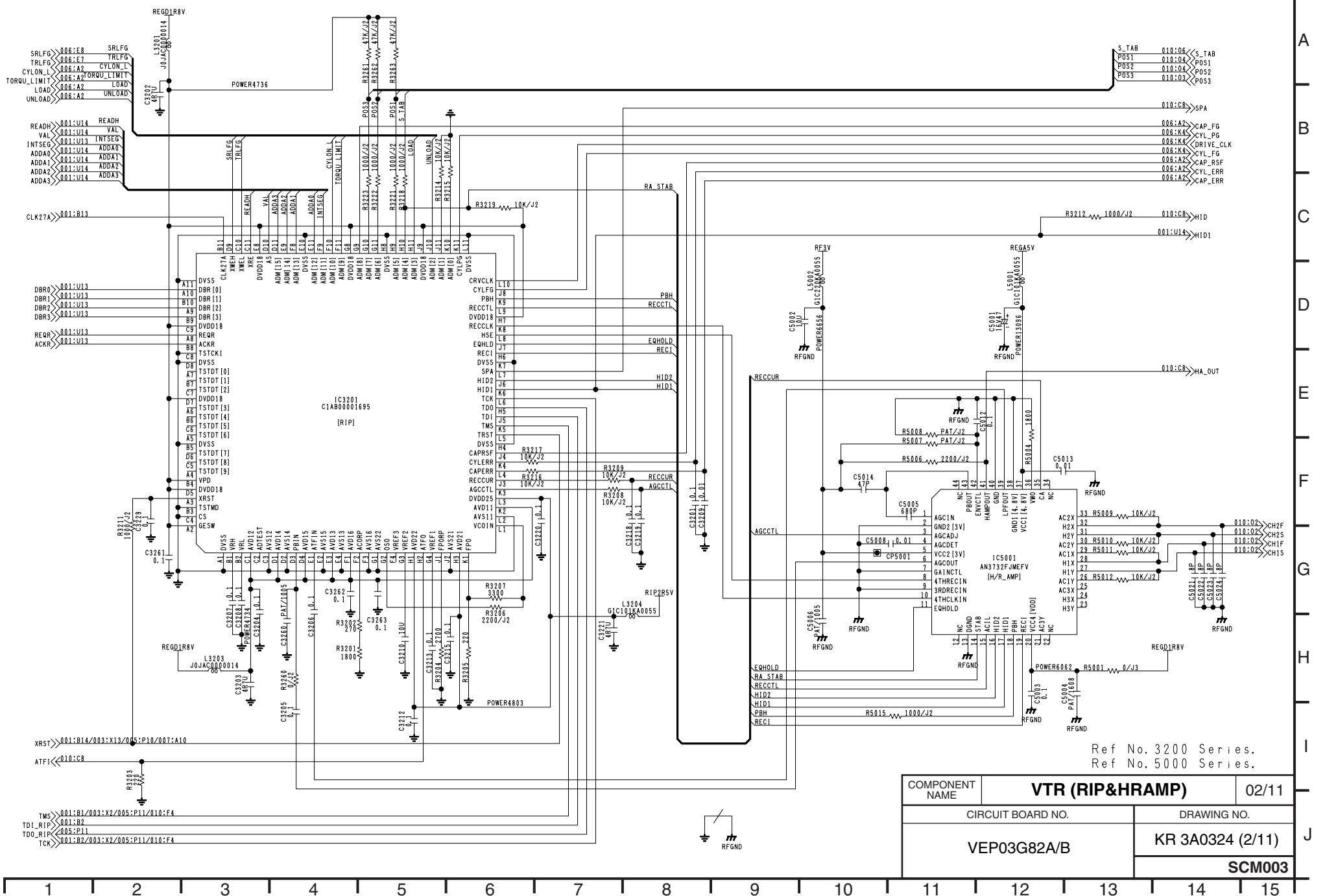
COMPONENT NAME	INTERCONNECTION	01/01
CIRCUIT BOARD NO.	DRAWING NO.	
(1/1)		SCM001

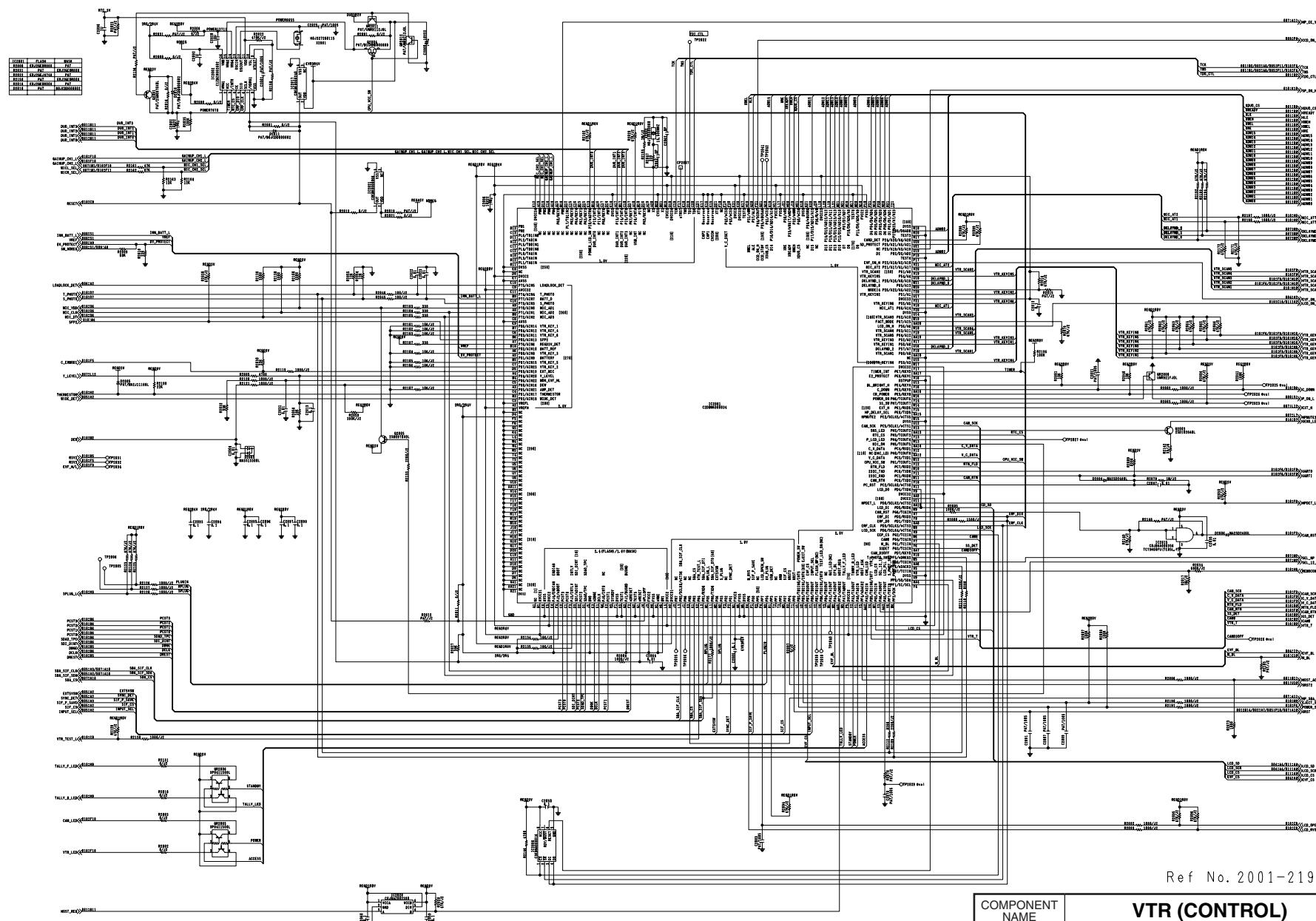
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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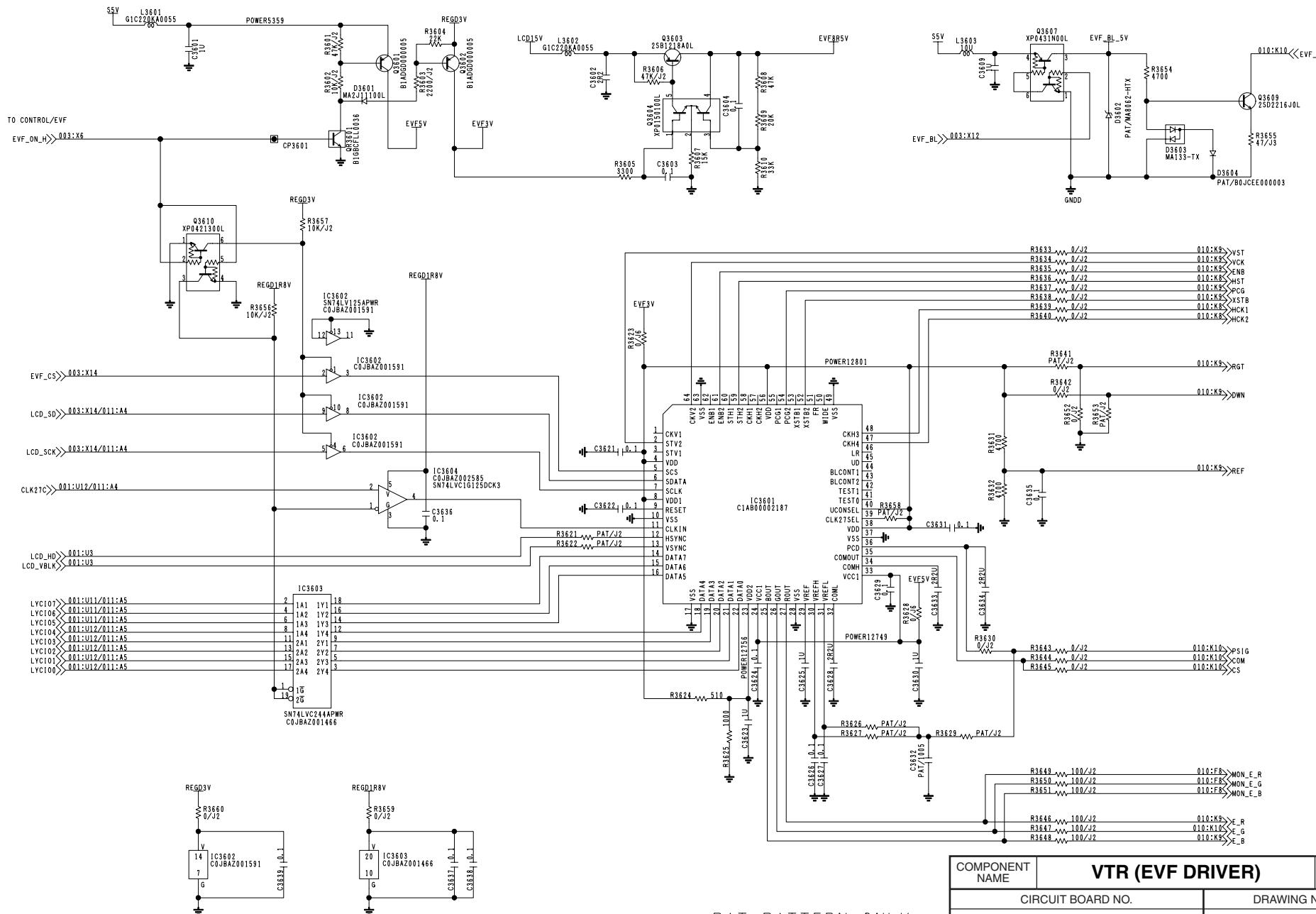
COMPONENT NAME	VTR (DUO)	01/11
CIRCUIT BOARD NO.		DRAWING NO.
VEP03G82A/B	KR 3A0324 (1/11)	
	SCM002	





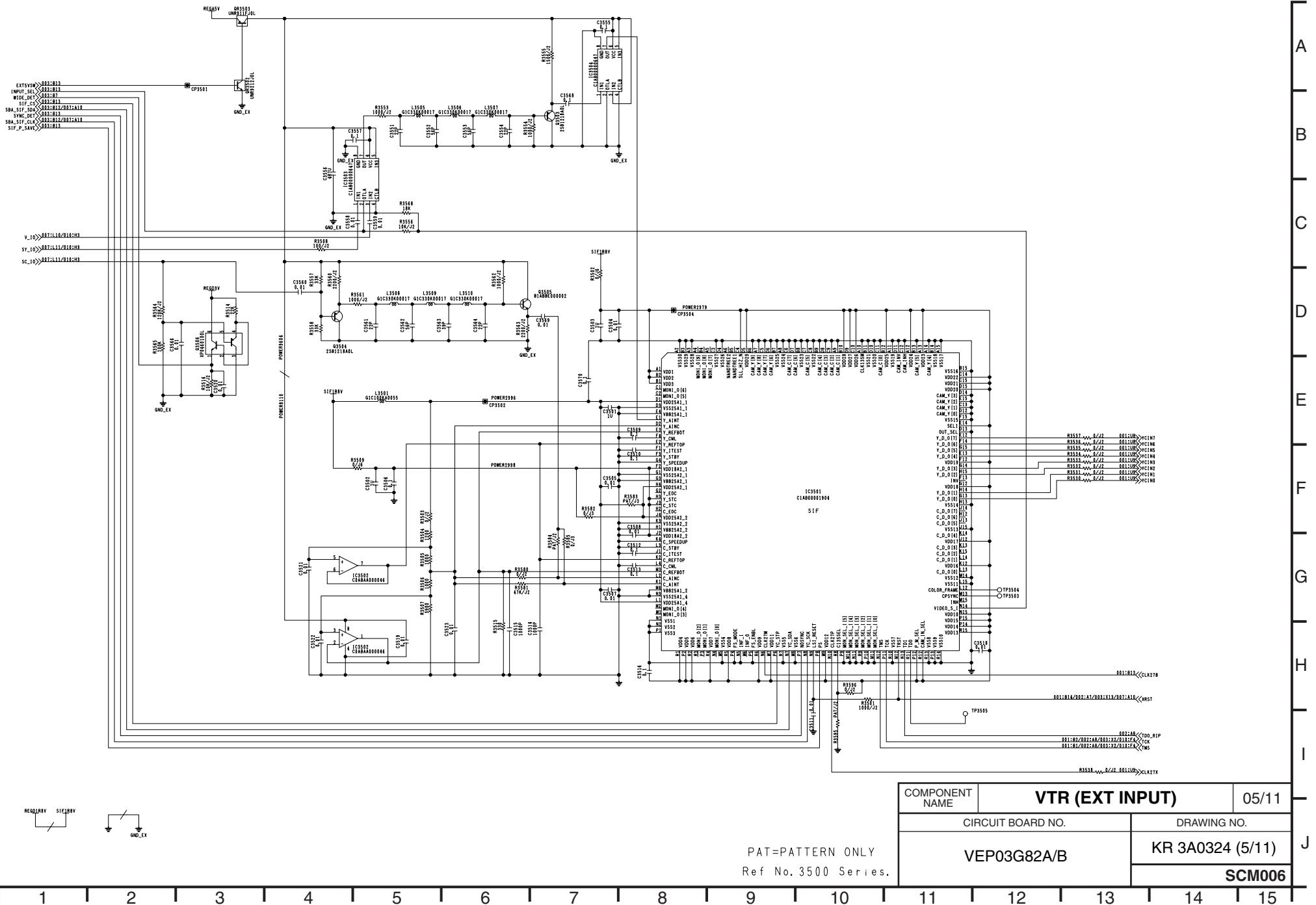
Ref No. 2001-2199 Series.

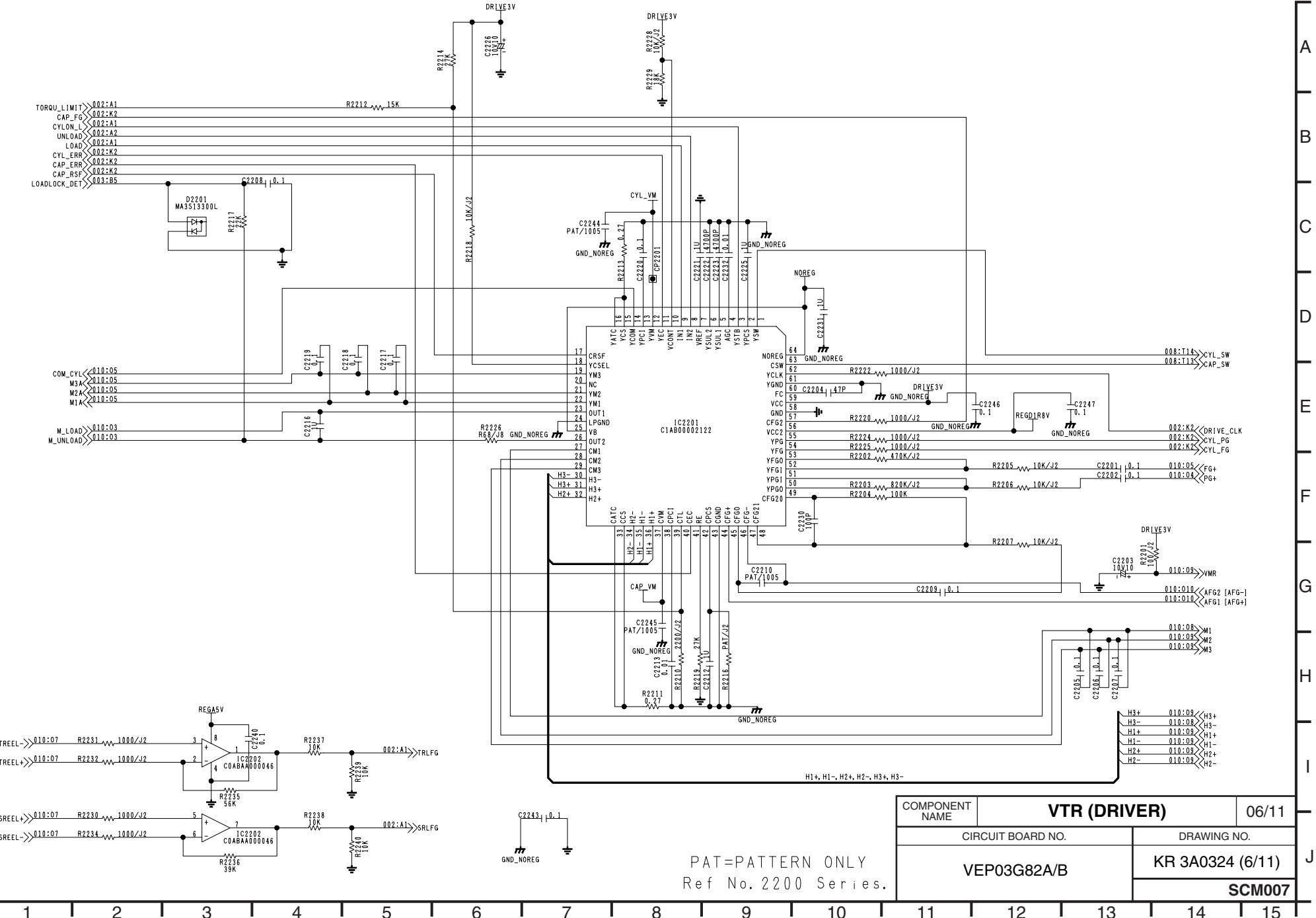
COMPONENT NAME	VTR (CONTROL)	03/11
CIRCUIT BOARD NO.	DRAWING NO.	
VEP03G82A/B	KR 3A0324 (3/11)	J
SCM004		

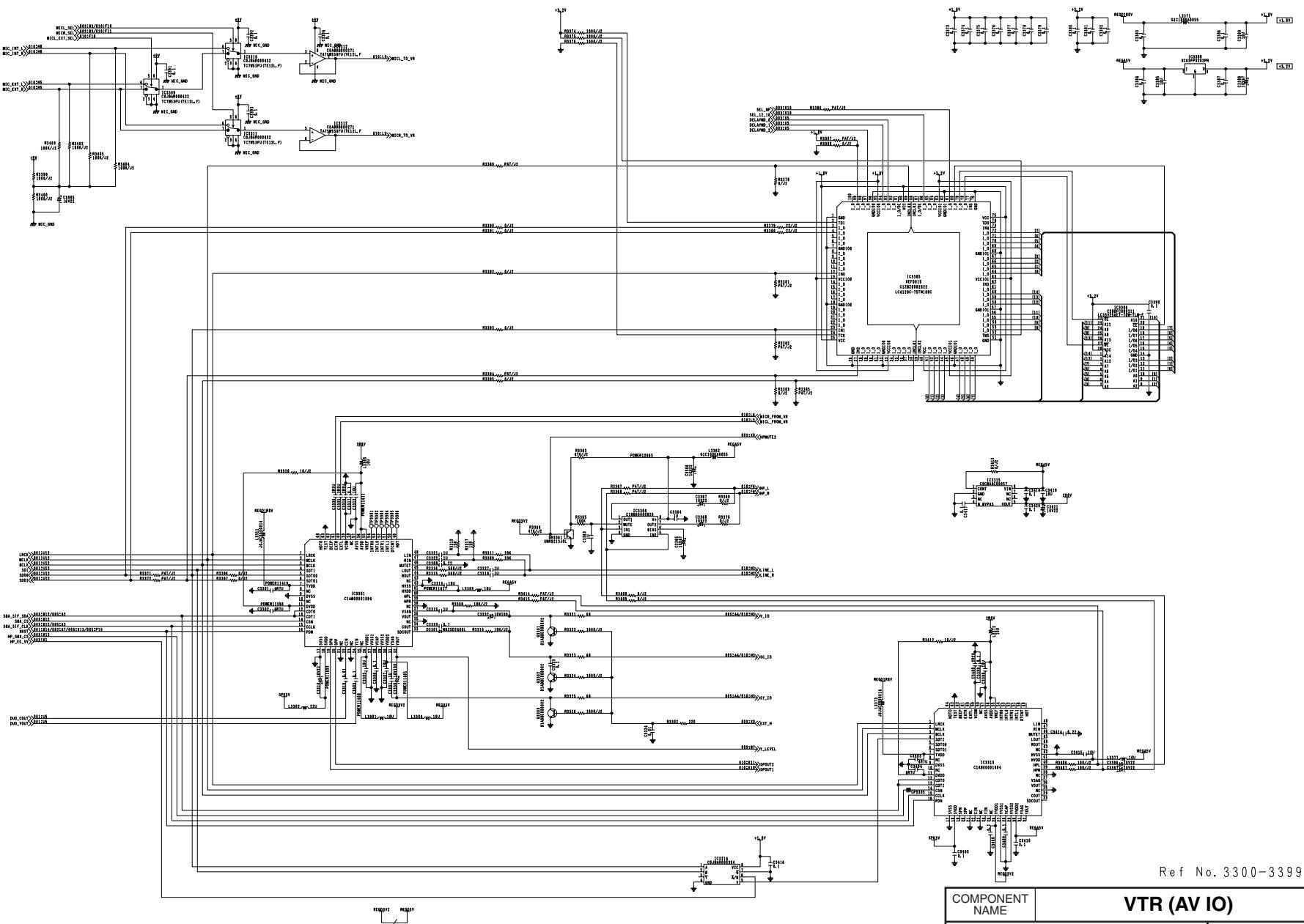


PAT = PATTERN ONLY
Ref No. 3600 Series.

COMPONENT NAME	VTR (EVF DRIVER)		04/11
CIRCUIT BOARD NO.			DRAWING NO.
		VEP03G82A/B	
		KR 3A0324 (4/11)	SCM005

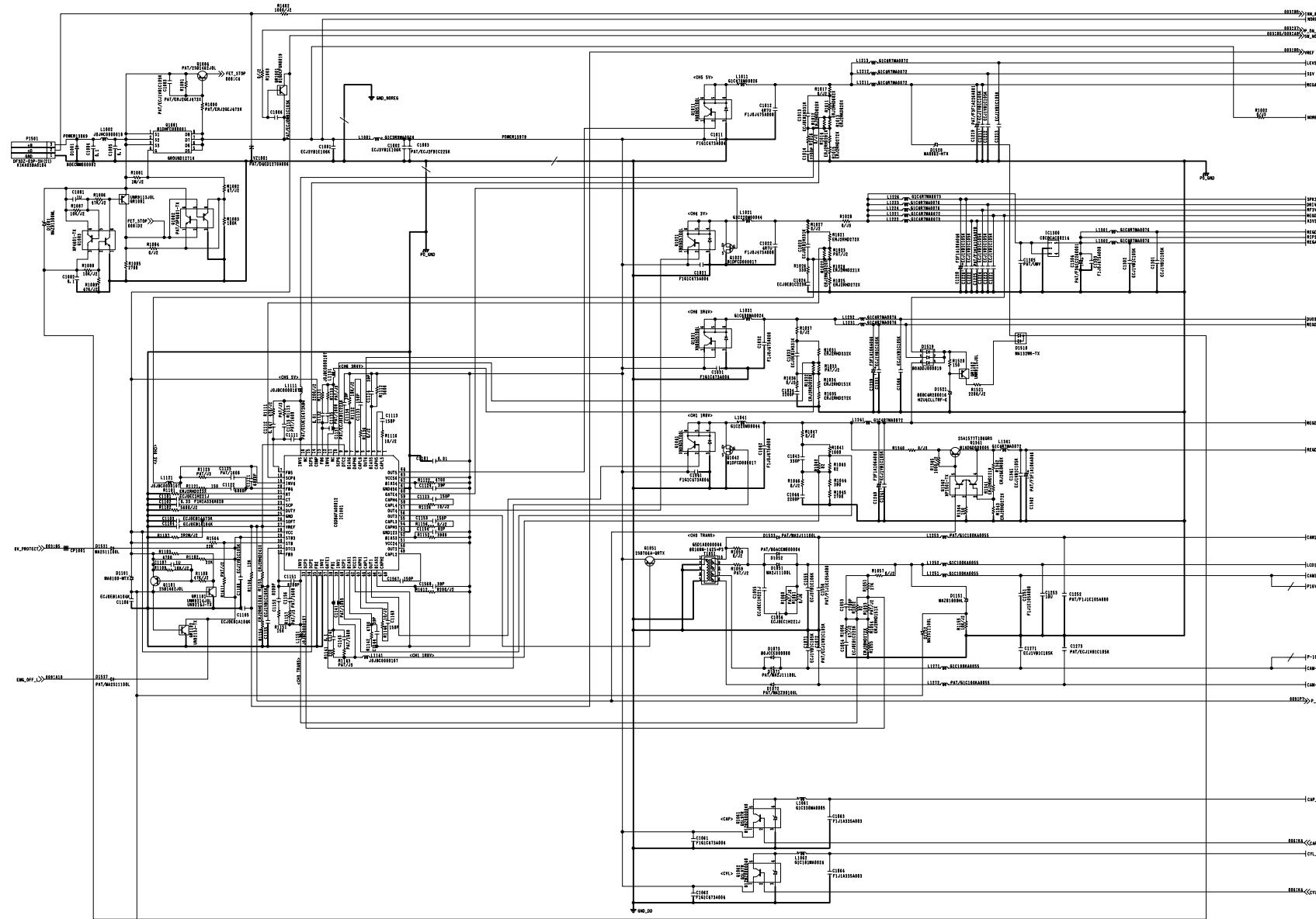






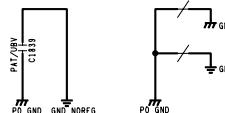
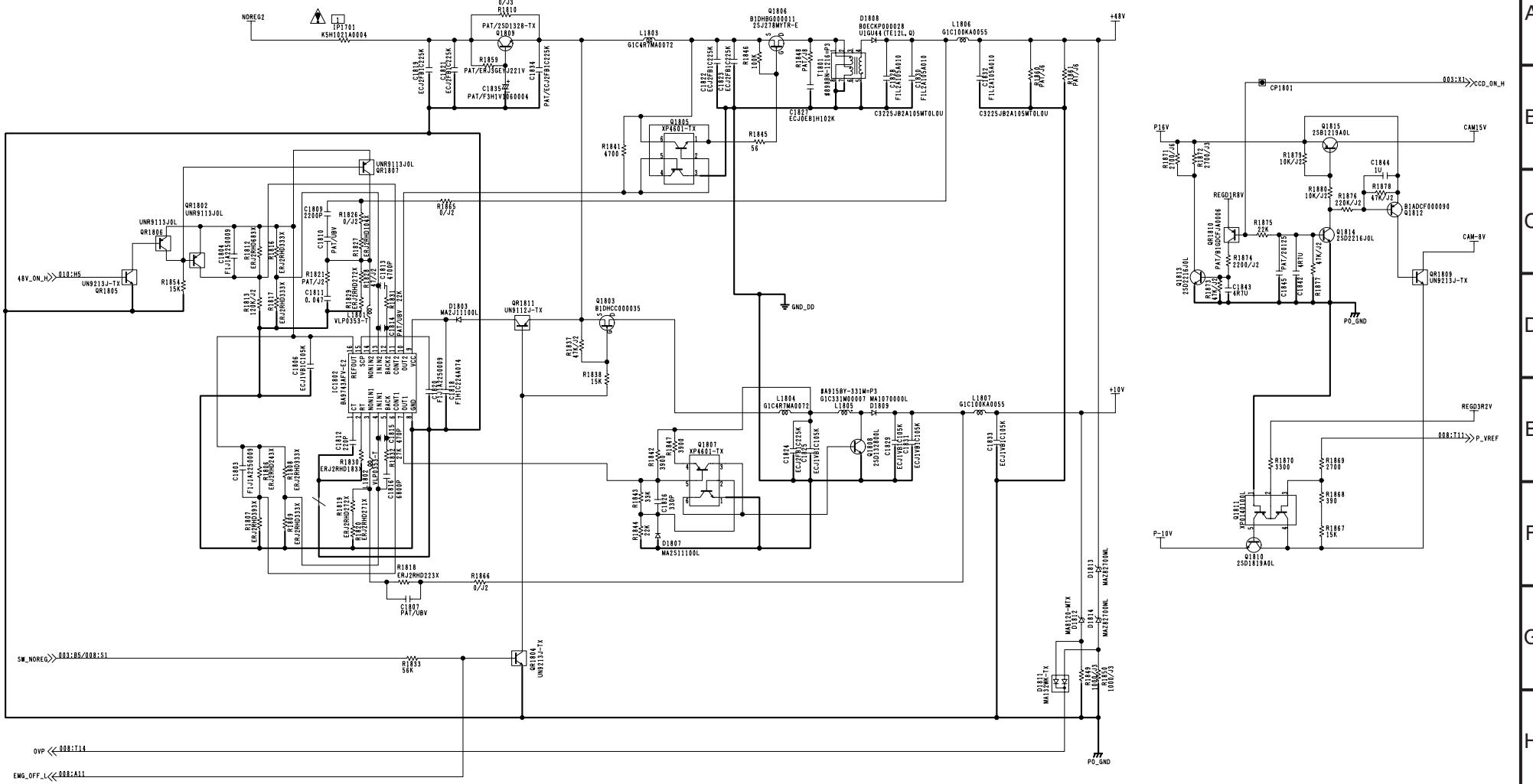
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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Ref No. 1000 Series.

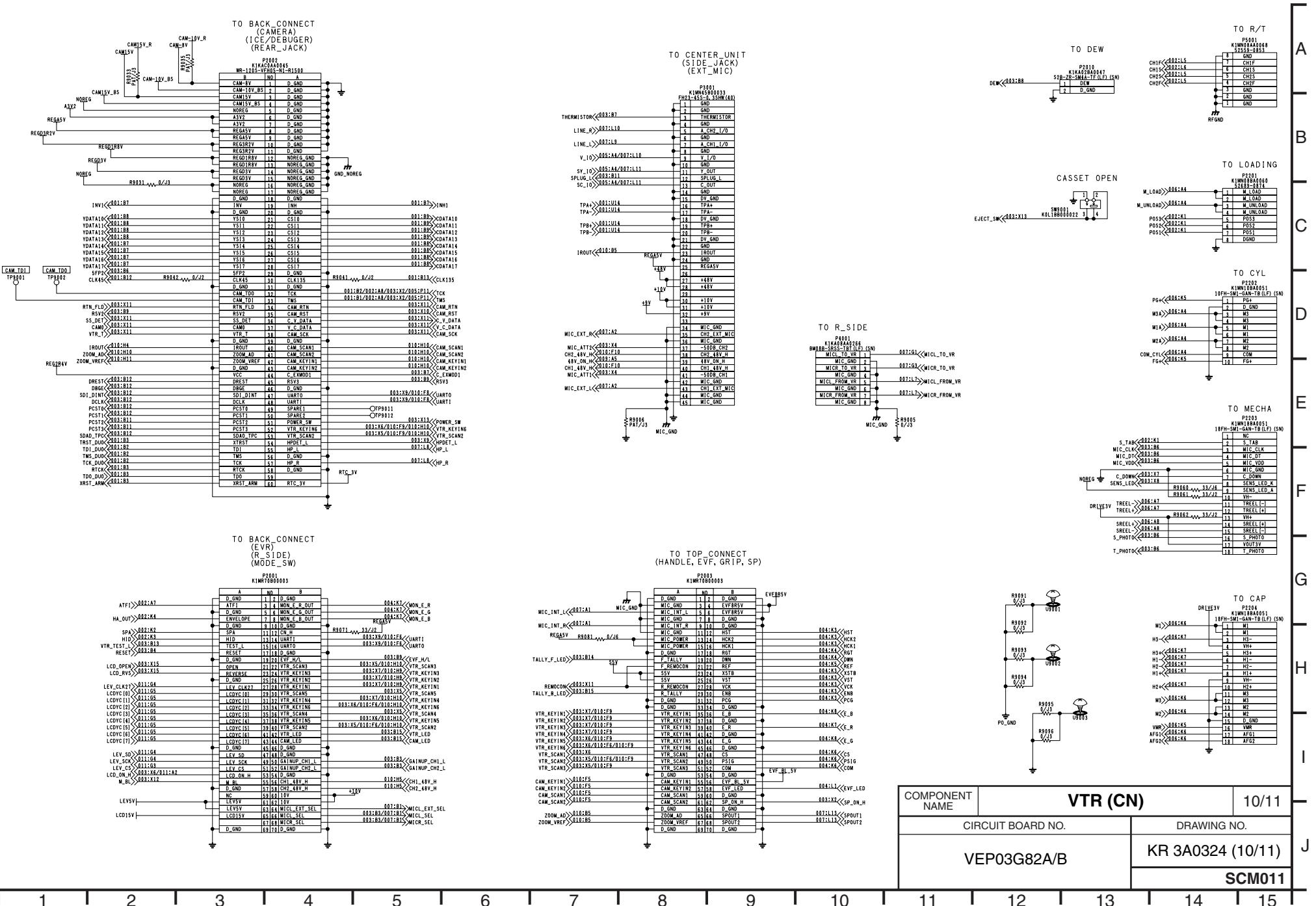
COMPONENT NAME	VTR (POWER 1)	08/11
CIRCUIT BOARD NO.	DRAWING NO.	
VEP03G82A/B		KR 3A0324 (8/11)
SCM009		

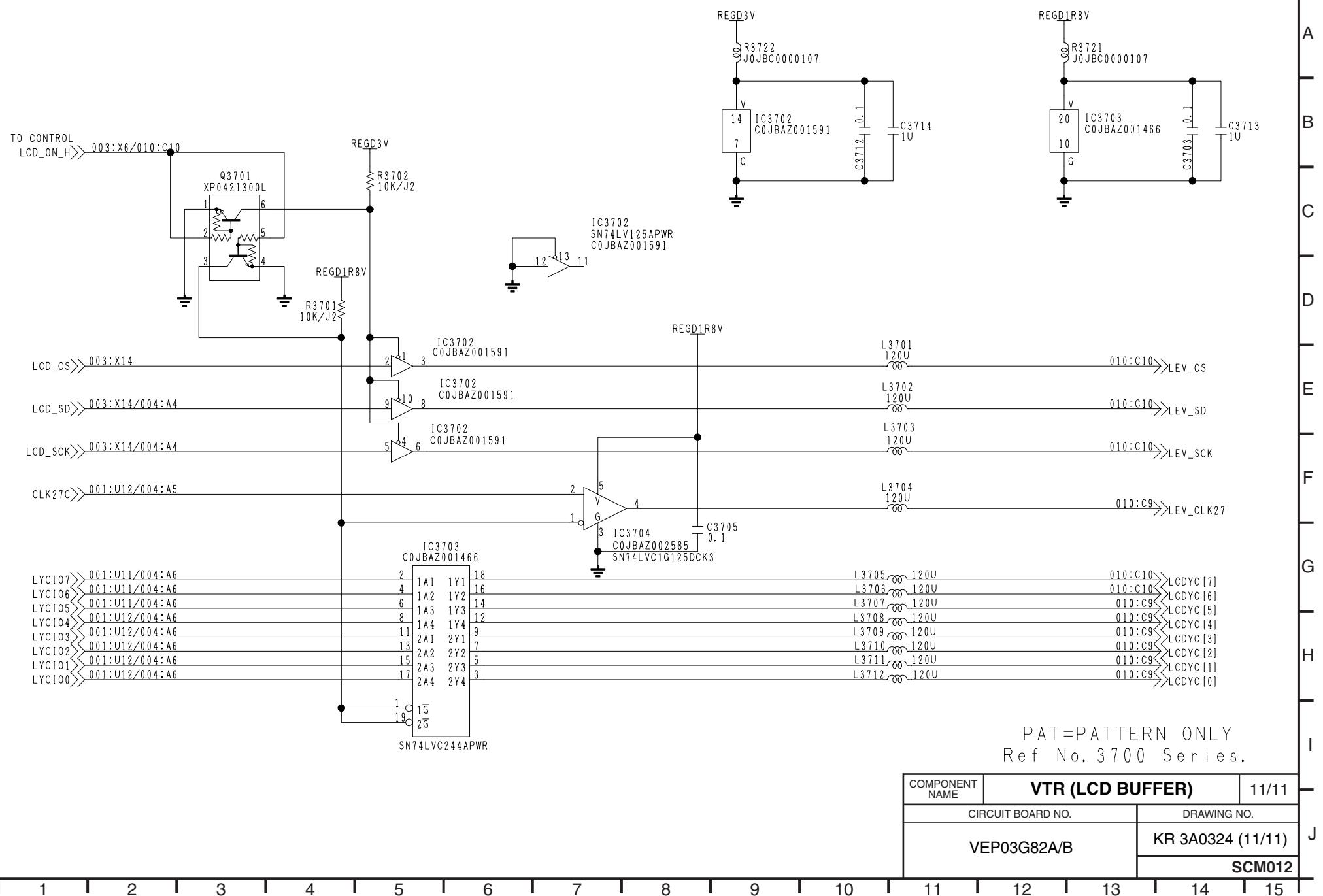


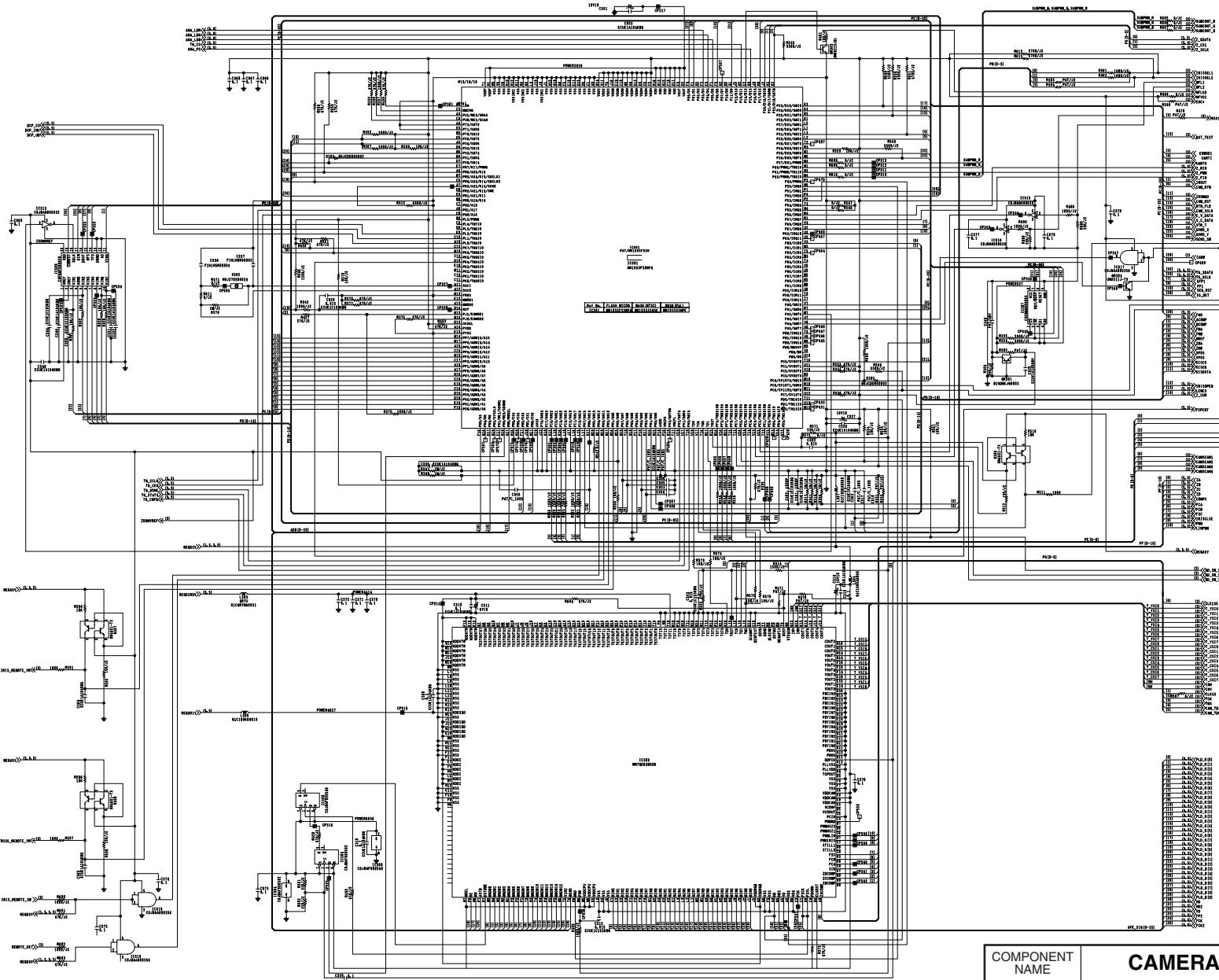
△印の部品は安全上重要な部品です。交換するときは、
安全および性能維持のため必ず指定の部品をご使用ください。

Components identified with the mark △ have the special characteristics for safety.
When replacing any of these components, use only the same type.

COMPONENT NAME	VTR (POWER 2)	09/11
CIRCUIT BOARD NO.	DRAWING NO.	
VEP03G82A/B		SCM010





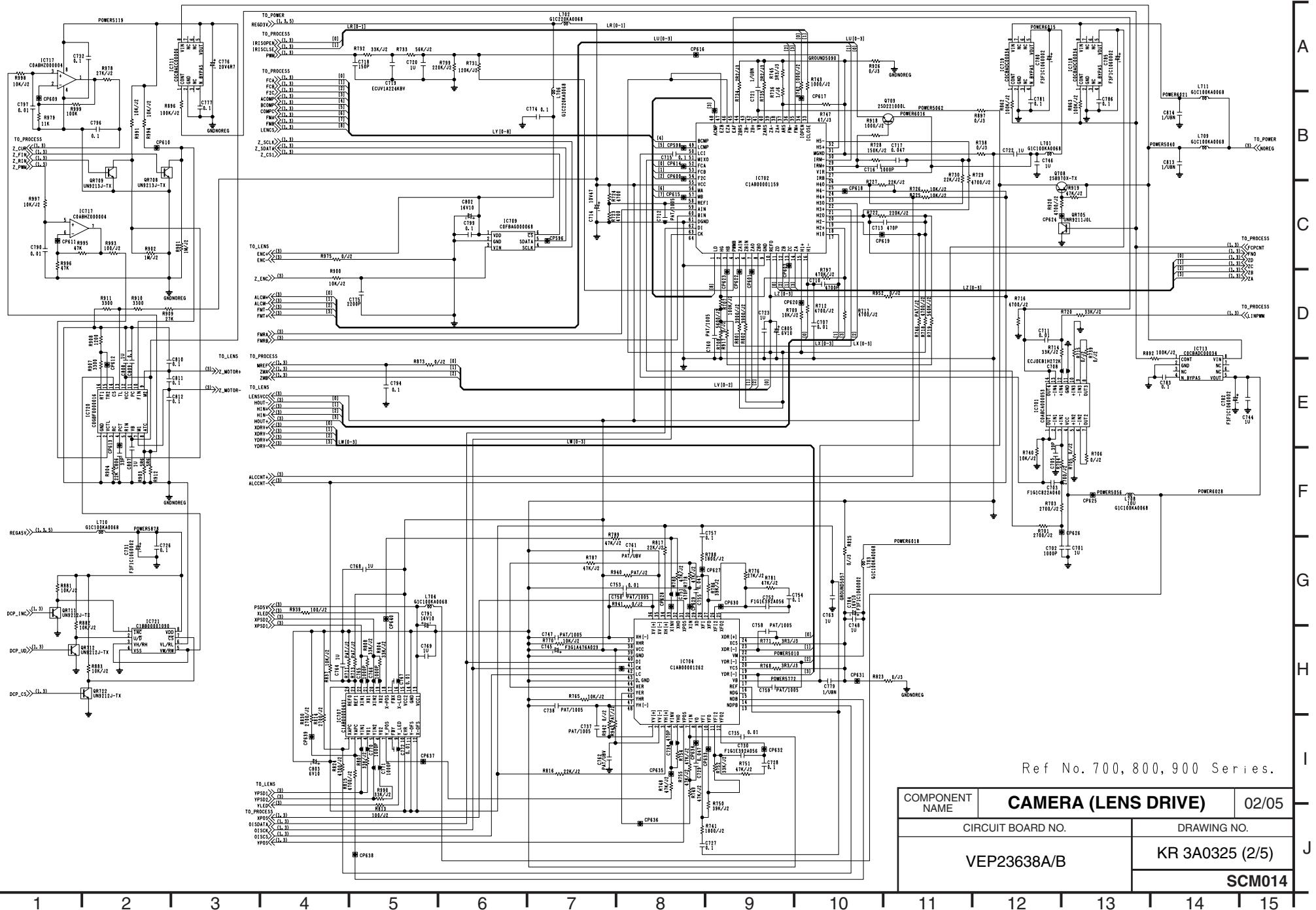


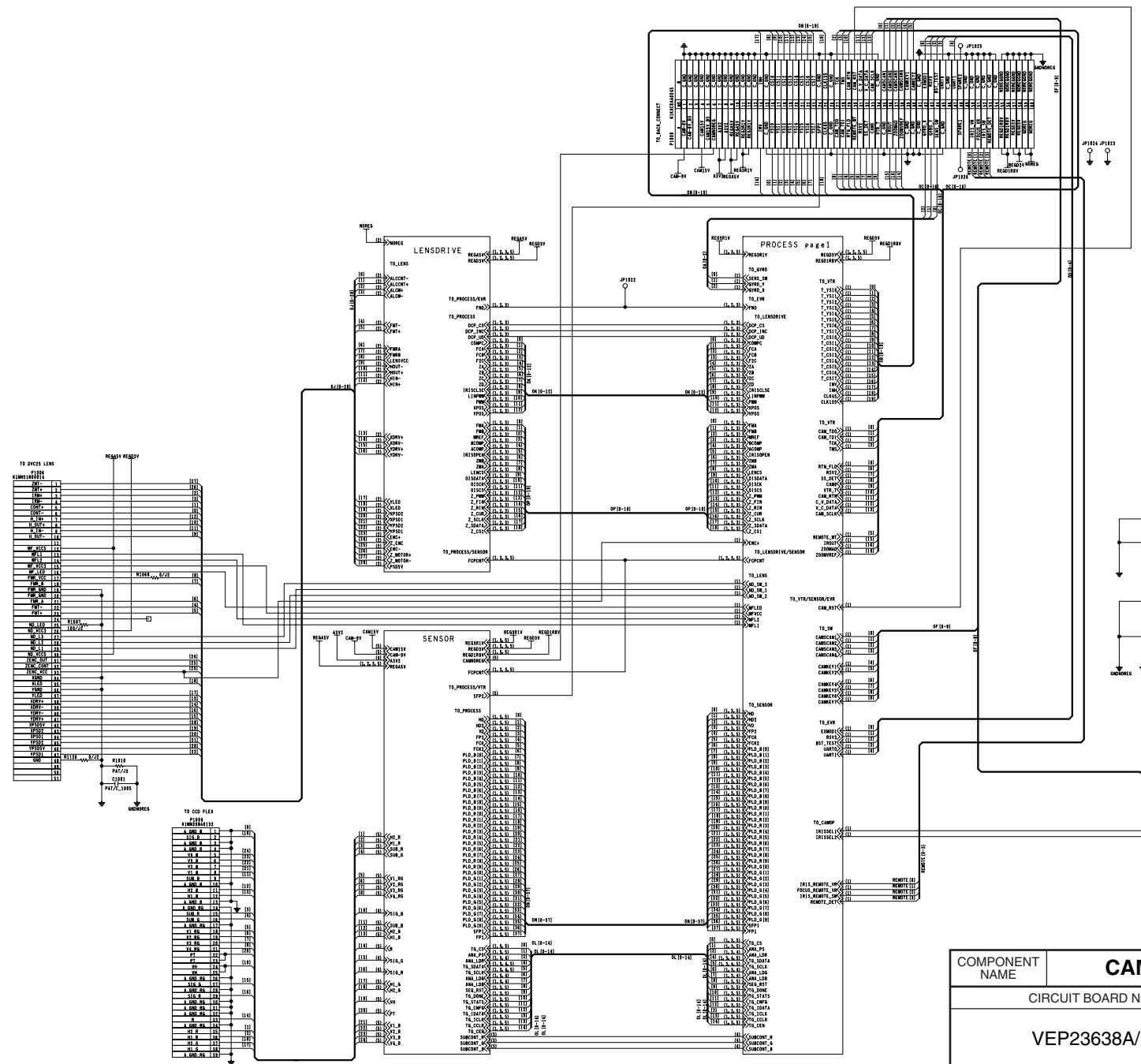
Ref No. 300-699 Series.

COMPONENT NAME	CAMERA (PROCESS)	01/05
CIRCUIT BOARD NO.	DRAWING NO.	
VEP23638A/B	KR 3A0325 (1/5)	
SCM013		

A
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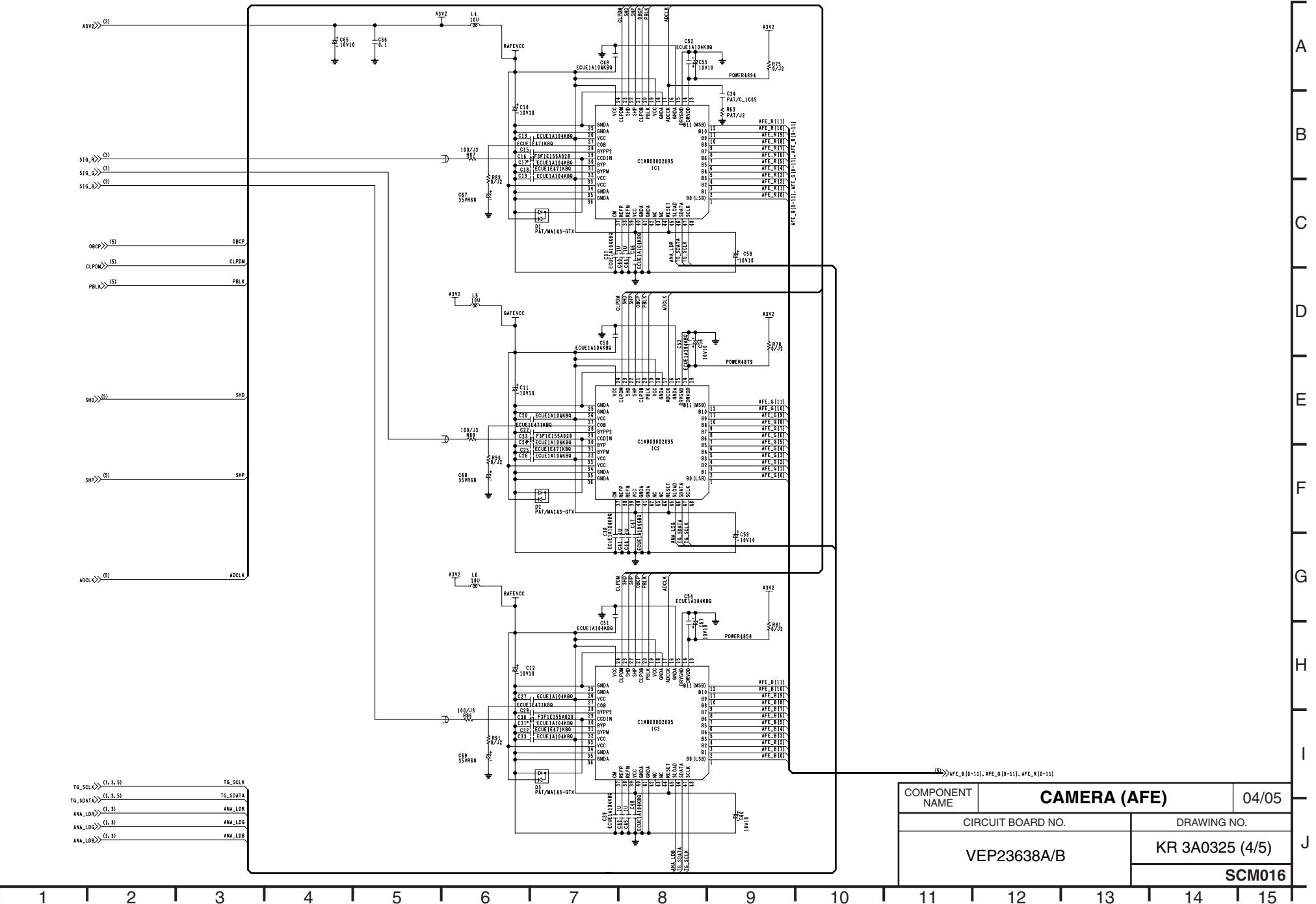
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

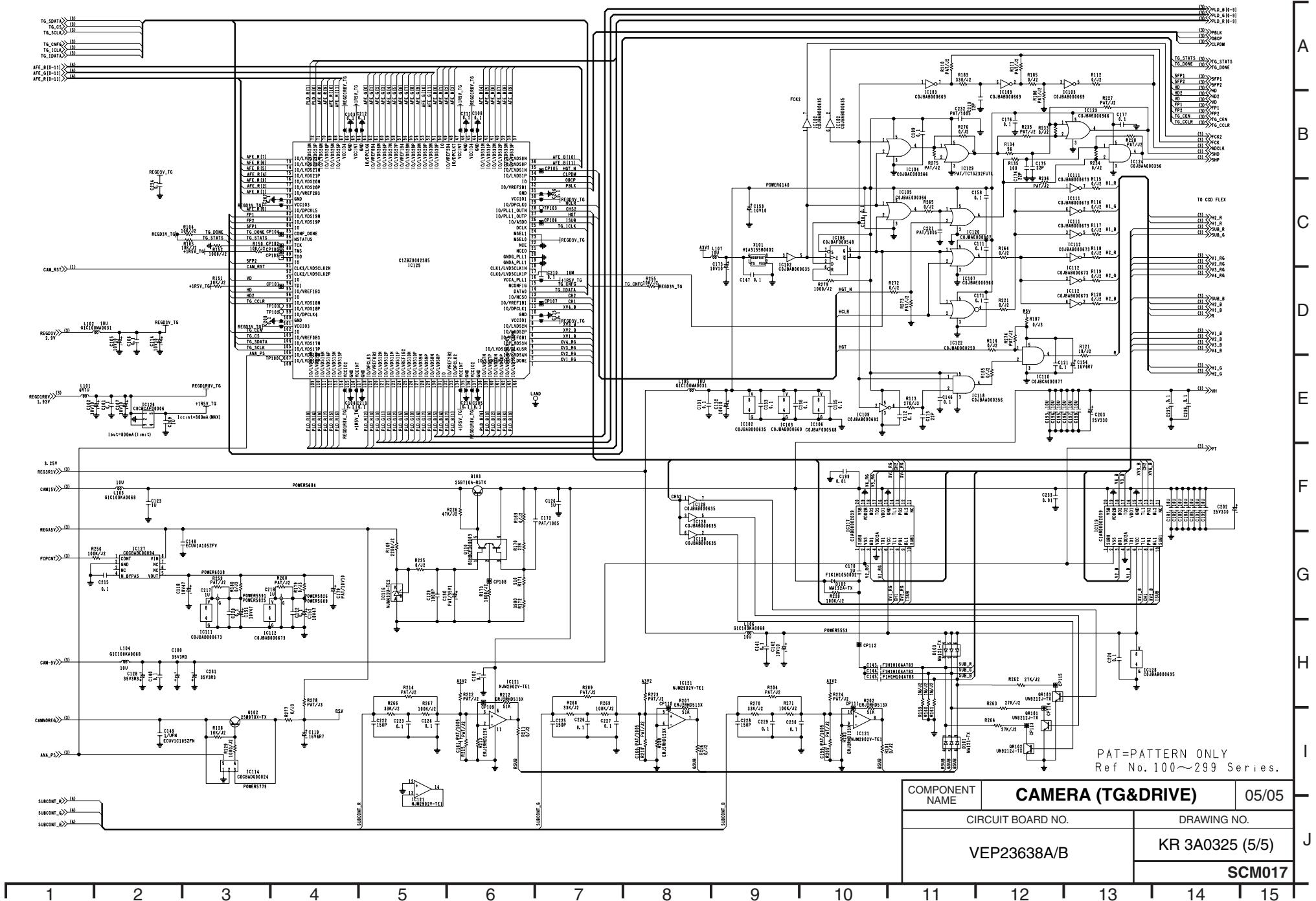


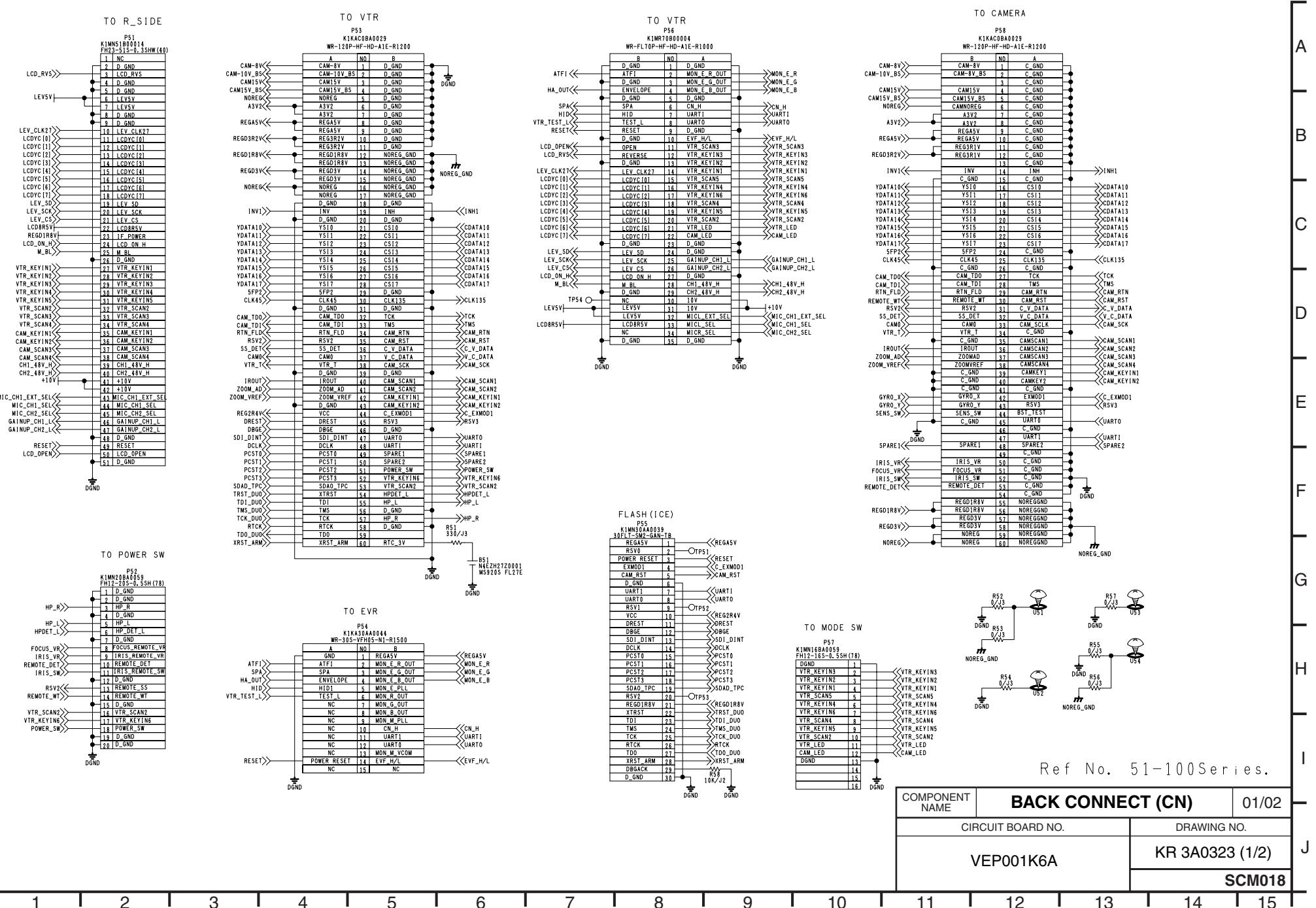


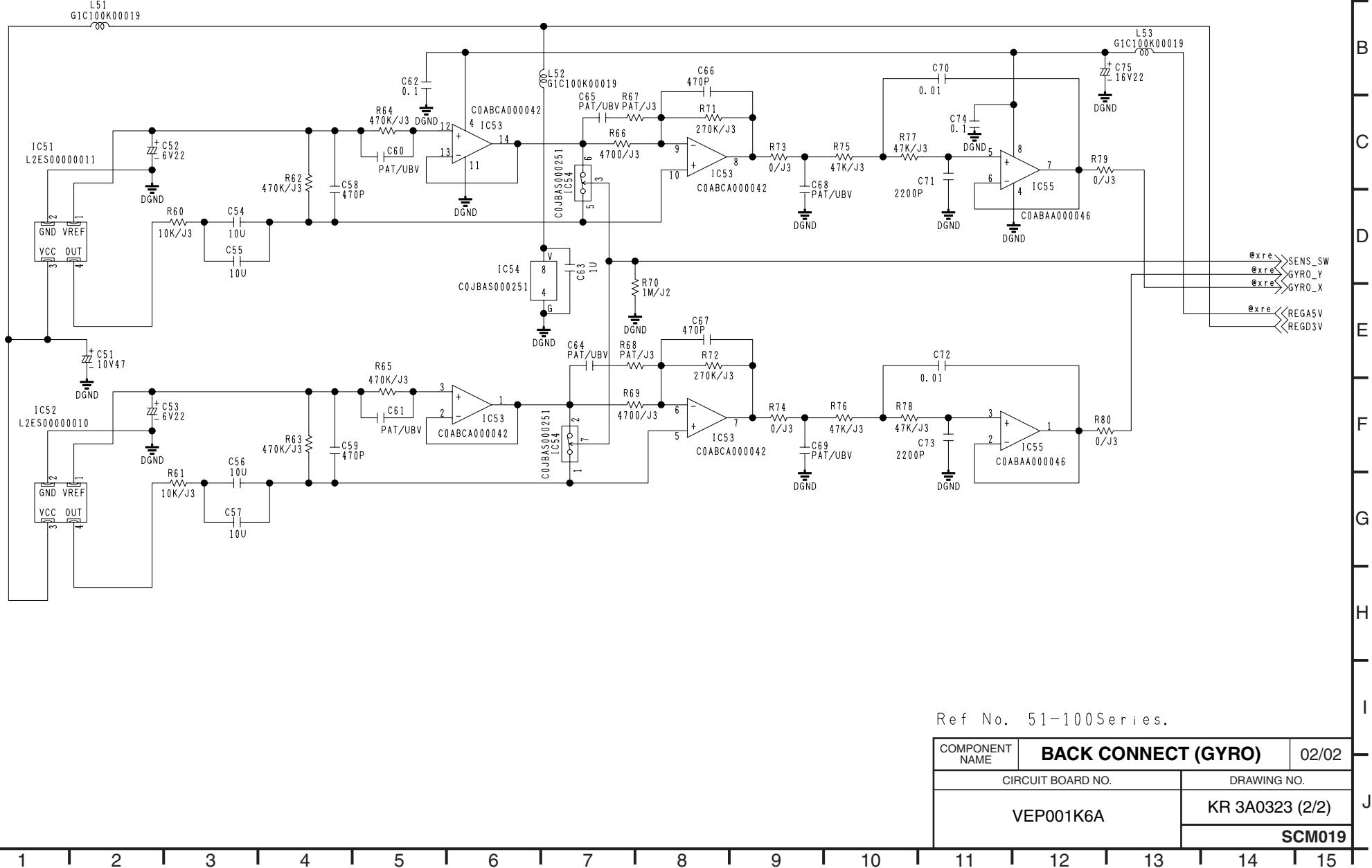
Ref No. 1000 Series.

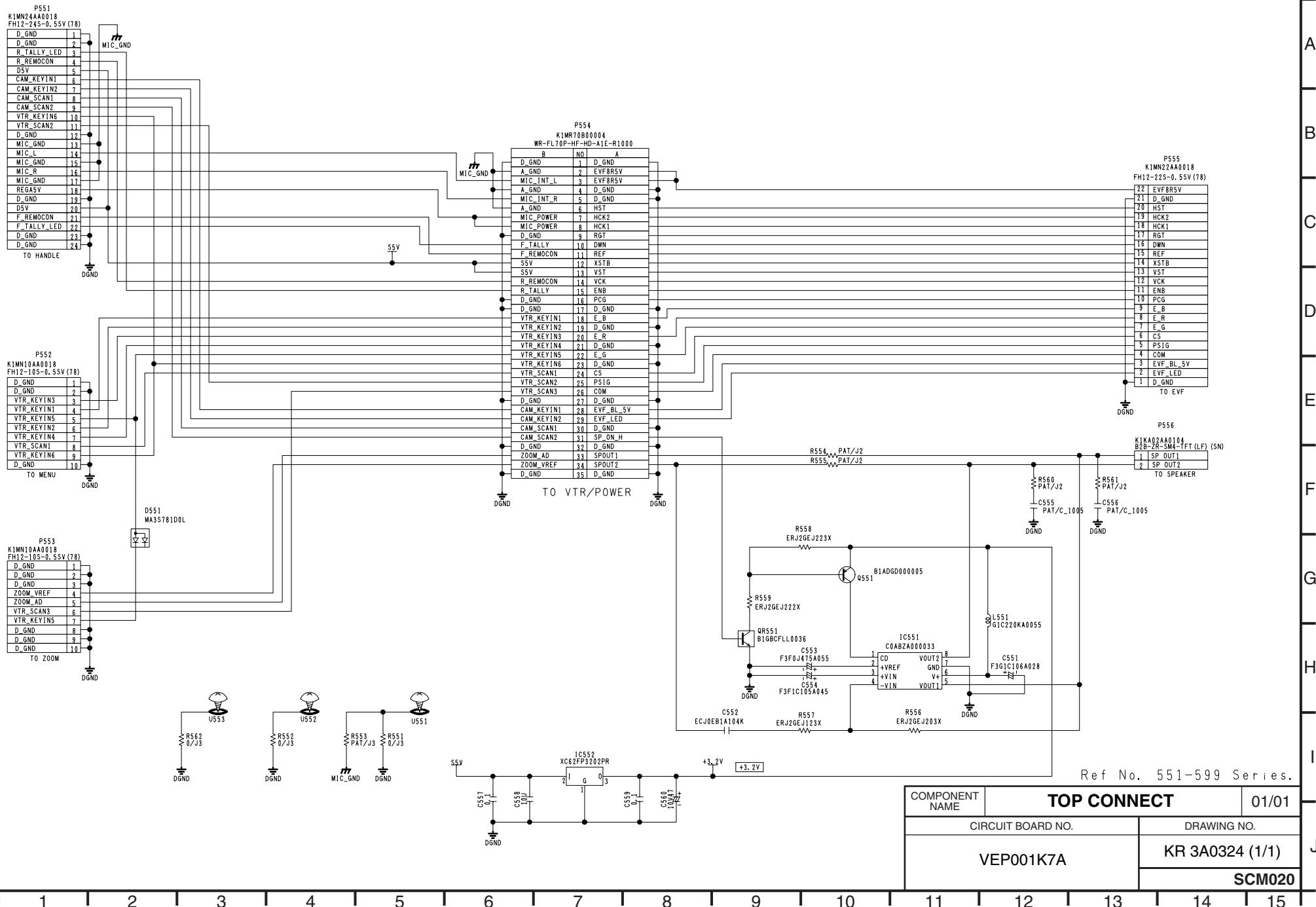
COMPONENT NAME	CIRCUIT BOARD NO.	DRAWING NO.
VEP23638A/B	KR 3A0325 (3/5)	
		SCM015











P302
K1MN06BA0059
FH12-6S-0.5SH (78)

D_GND	1
D_GND	2
CAM_SCAN1	3
CAM_KEYIN6	4
D_GND	5
D_GND	6

FROM CAM_OP4

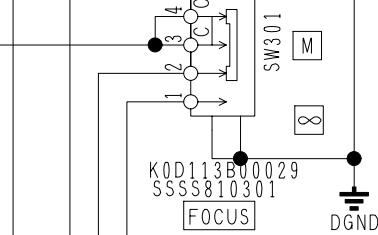
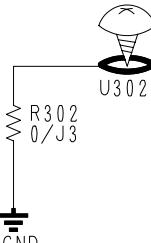
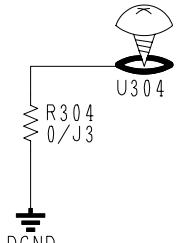
P301
K1MN10BA0059
FH12-10S-0.5SH (78)

D_GND	10
D_GND	9
CAM_SCAN1	8
CAM_SCAN2	7
CAM_KEYIN6	6
CAM_KEYIN7	5
CAM_KEYIN4	4
CAM_KEYIN5	3
D_GND	2
D_GND	1

FROM CAM_OP2

DGND

U304



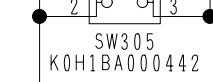
K0D113B00029
SSSS810301

FOCUS



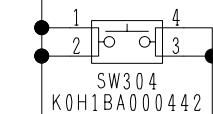
K0H1BA000442

AUTO



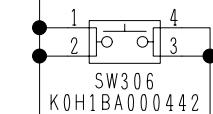
K0H1BA000442

USER1



K0H1BA000442

USER3



K0H1BA000442

USER2

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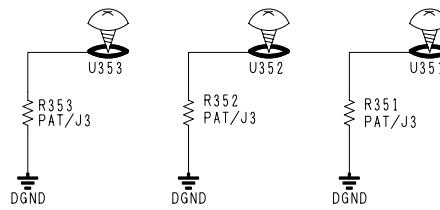
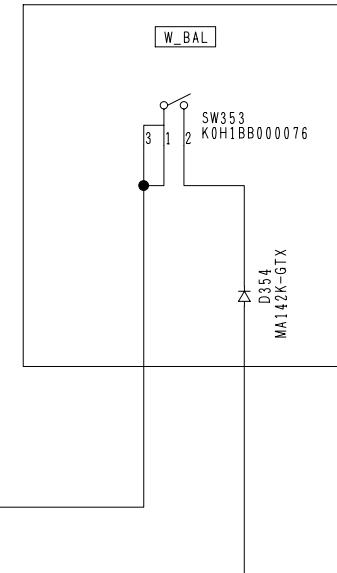
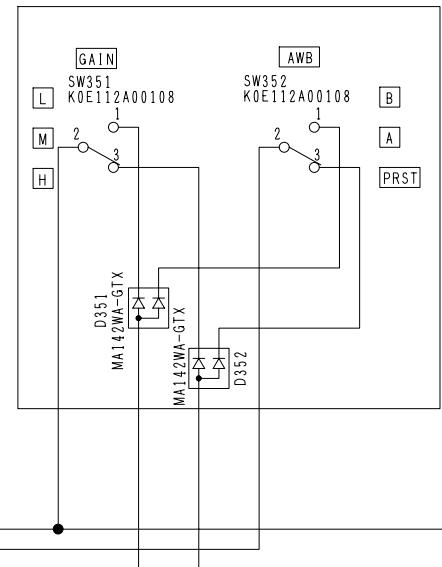
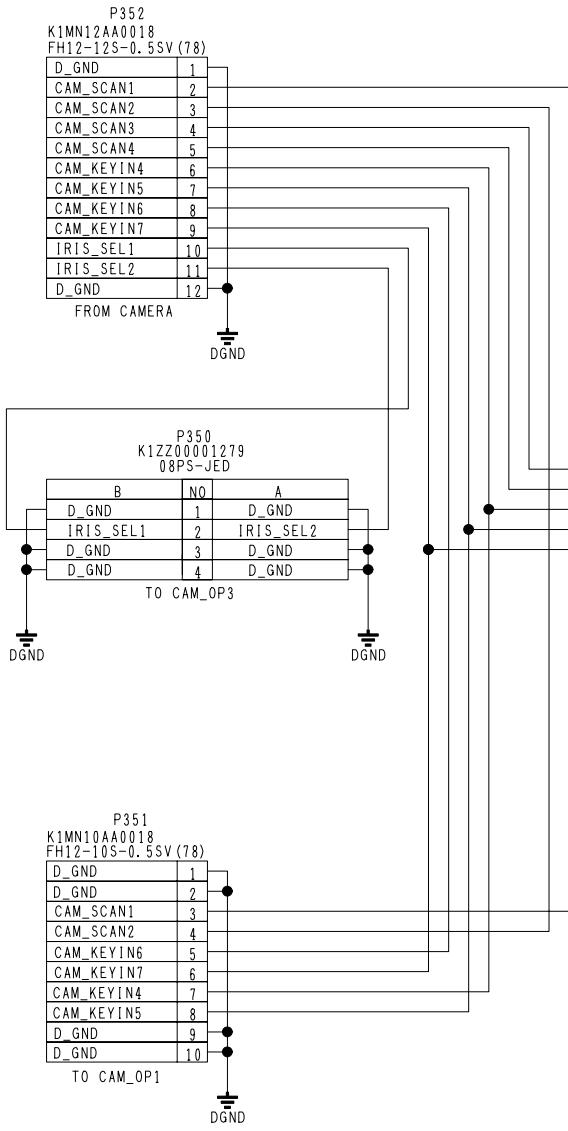
H

I

Ref No. 300 Series.

COMPONENT NAME	CAM OP1		01/01
CIRCUIT BOARD NO.	DRAWING NO.		
VEP06G11A		KR 6A0201 (1/1)	
SCM021			

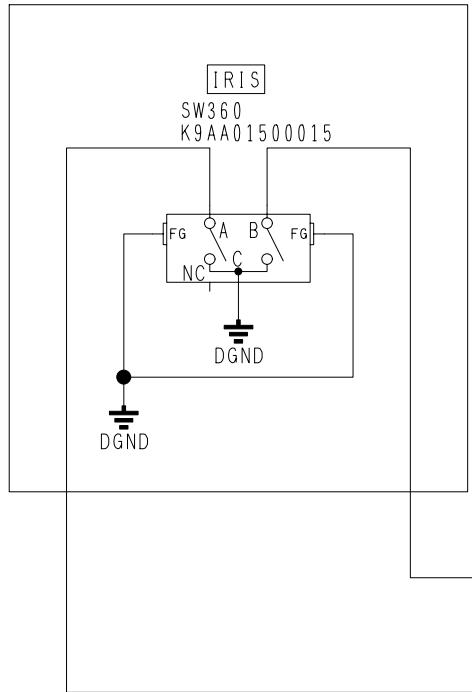
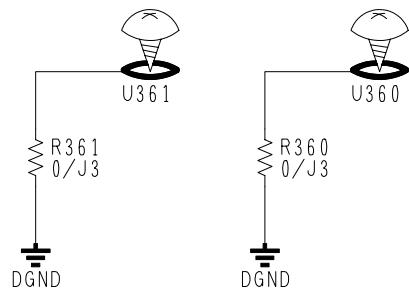
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



Ref No. 350 Series.

COMPONENT NAME	CAM OP2		01/01
CIRCUIT BOARD NO.	DRAWING NO.		
VEP06G12A	KR 6A0202 (1/1)		J
SCM022			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



A	NO	B
D_GND	1	D_GND
IRIS_SEL1	2	IRIS_SEL2
D_GND	3	D_GND
D_GND	4	D_GND

TO CAM_OP2

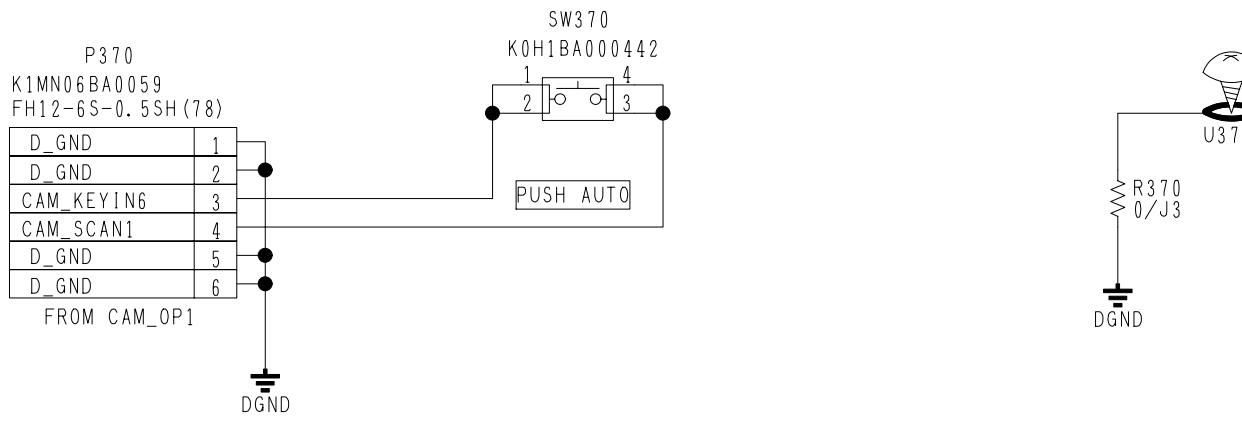
DGND

DGND

COMPONENT NAME	CAM OP3	
CIRCUIT BOARD NO.	DRAWING NO.	
VEP06G13A		KR 6A0203 (1/1)
SCM023		

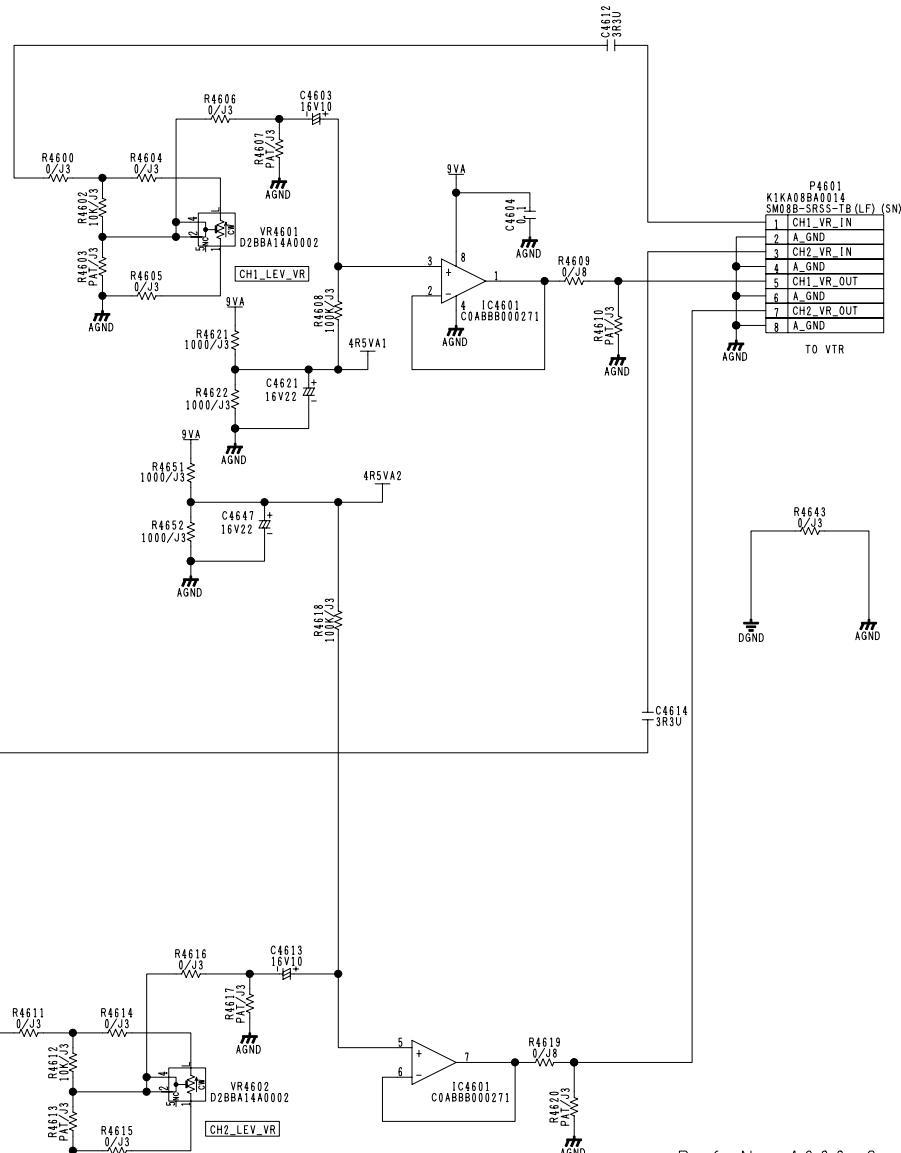
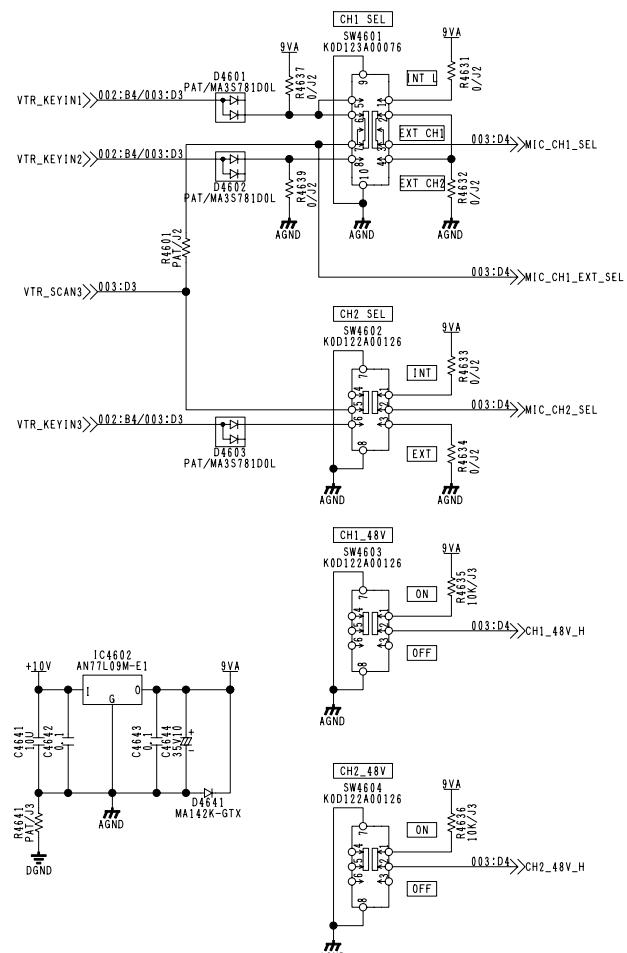
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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Ref No. 370 Series.

COMPONENT NAME	CAM OP4		01/01
CIRCUIT BOARD NO.	DRAWING NO.		
VEP06G14A	KR 6A0204 (1/1)		J
	SCM024		

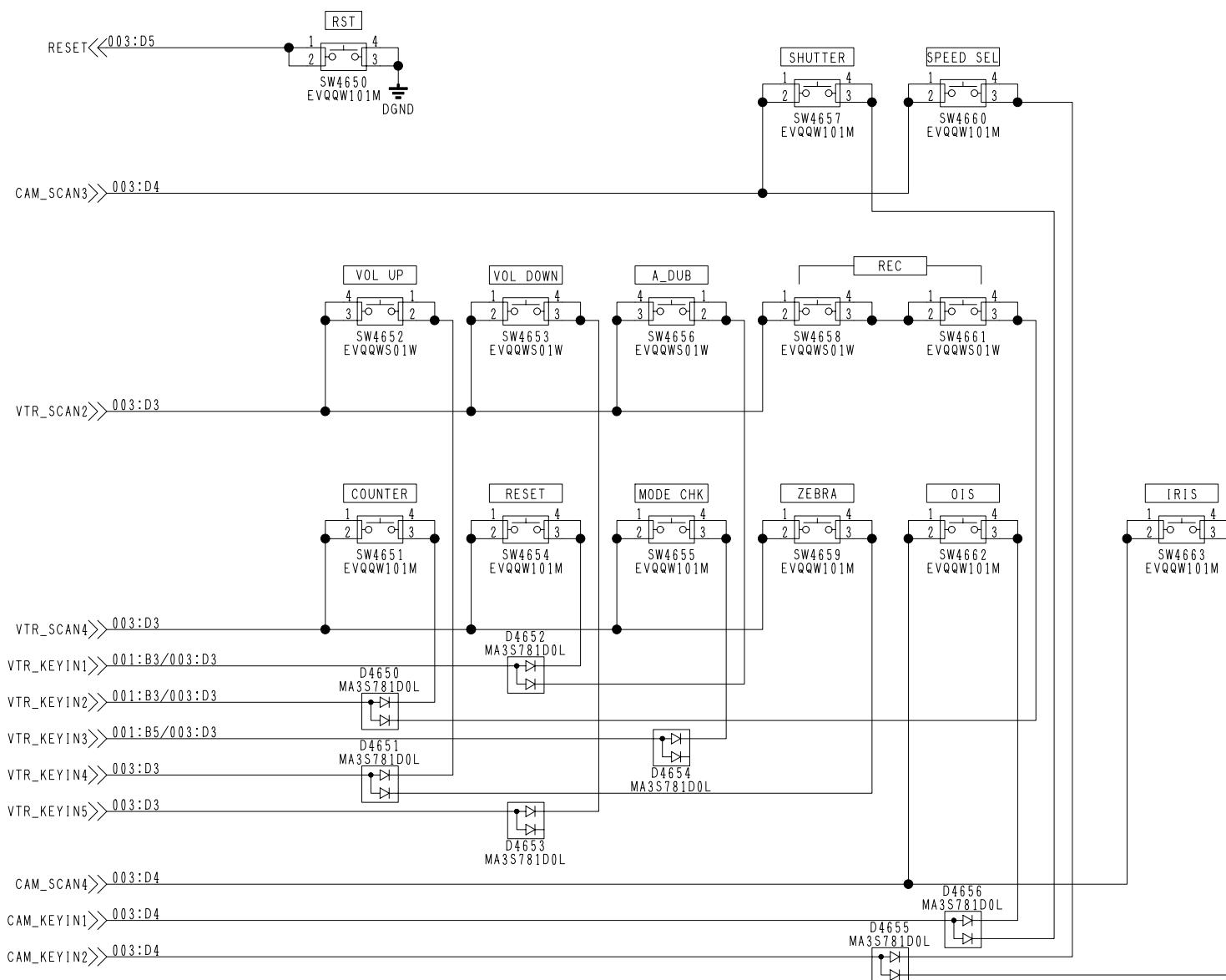


Ref No. 4600 Series.

COMPONENT NAME	R SIDE (AUDIO)	01/05
CIRCUIT BOARD NO.	DRAWING NO.	
VEP06G09A	KR 6A0199 (1/5)	
SCM025		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

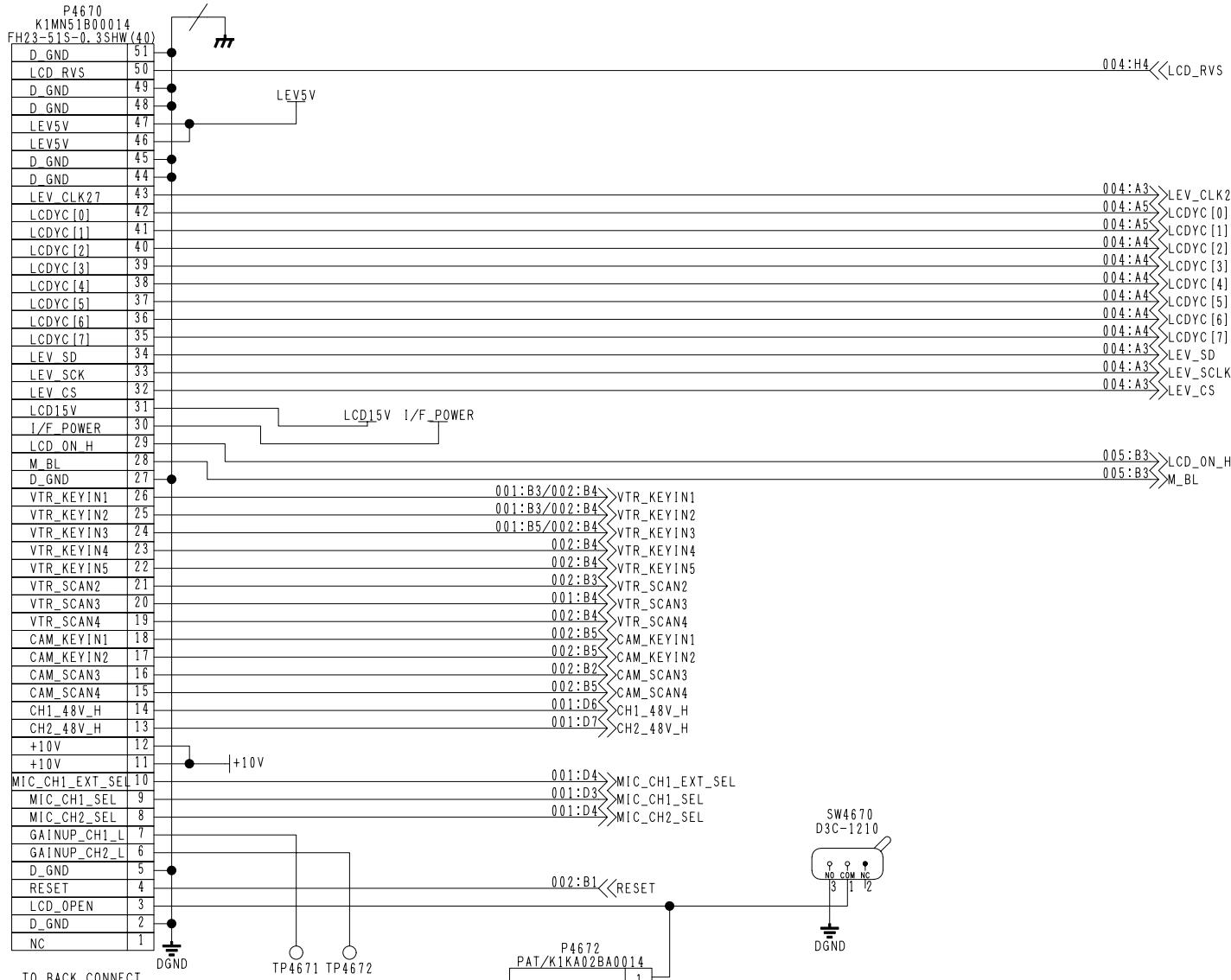
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COMPONENT NAME	R SIDE (KEY)	02/05
CIRCUIT BOARD NO.	DRAWING NO.	
VEP06G09A	KR 6A0199 (2/5)	
SCM026		

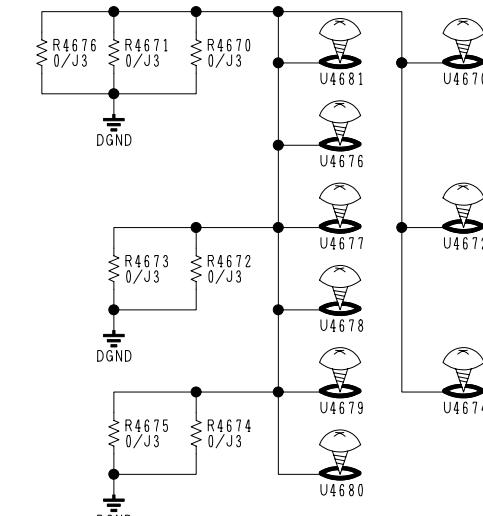
Ref No. 4650 Series.

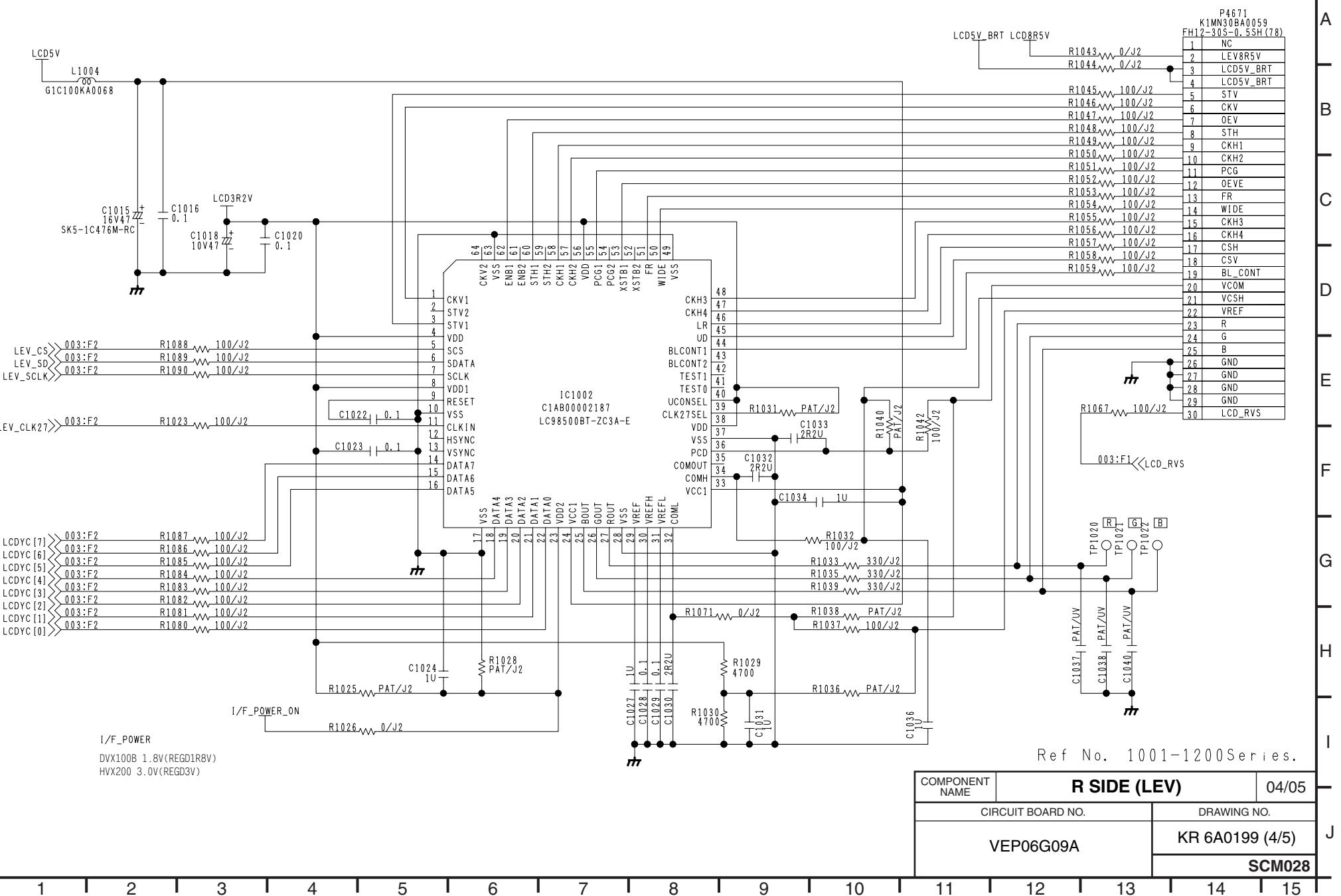
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

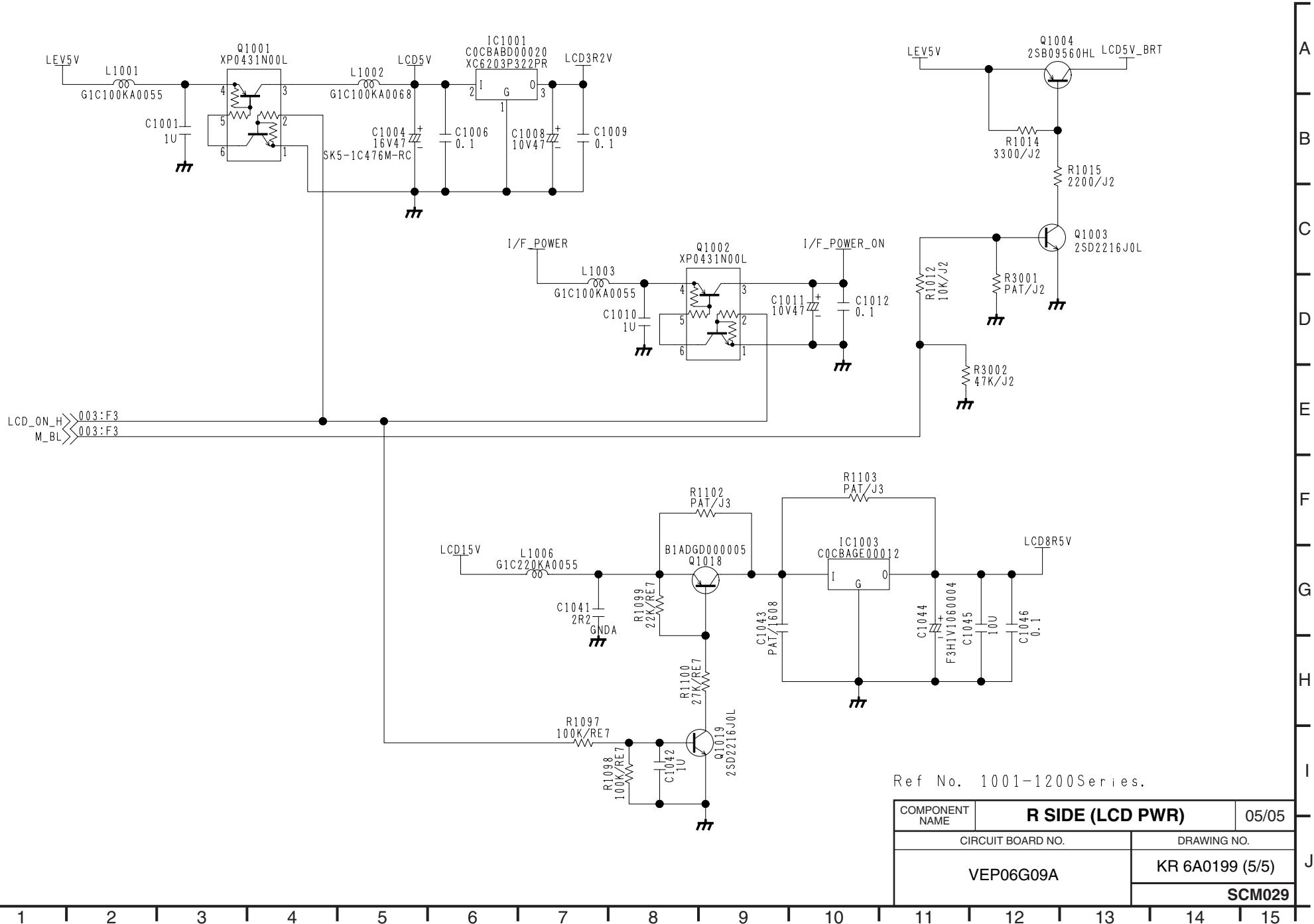


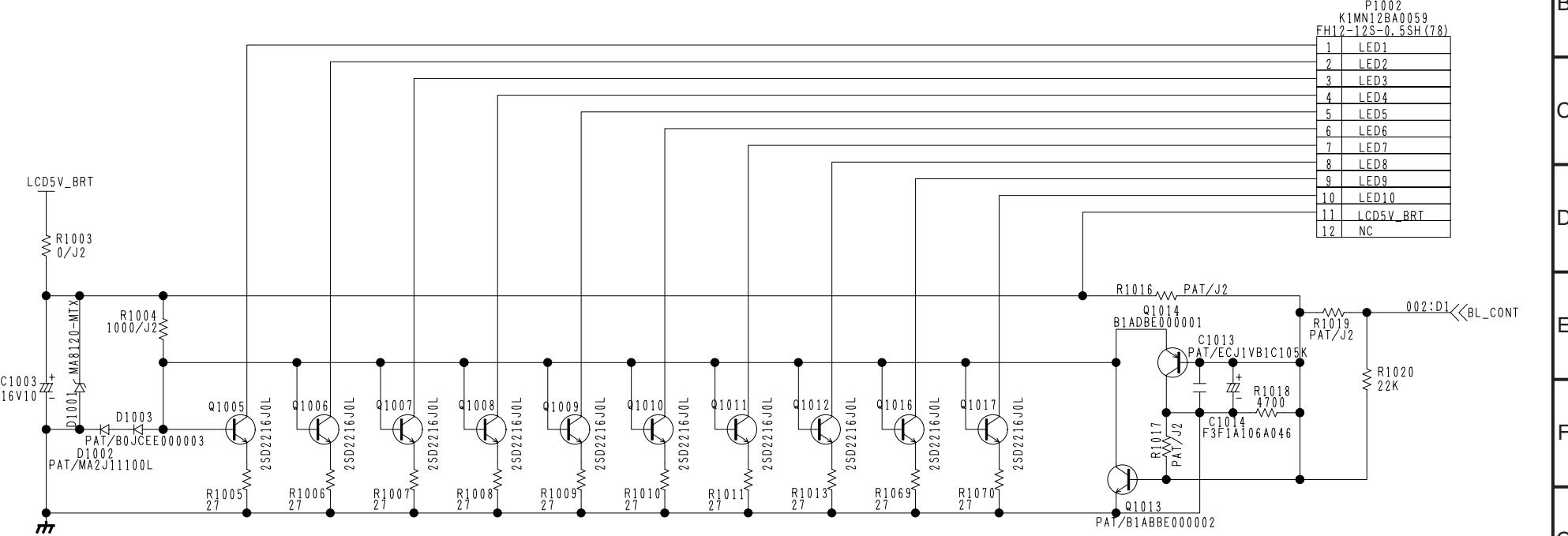
Ref No. 4670 Series.

COMPONENT NAME	R SIDE	03/05
CIRCUIT BOARD NO.	DRAWING NO.	
VEP06G09A	KR 6A0199 (3/5)	
SCM027		









Ref No. 1001-1200 Series.

COMPONENT NAME	LCD LEV		01/02
CIRCUIT BOARD NO.	DRAWING NO.		
VEP08346A		KR 8A0057 (1/2)	
SCM030			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

P1001
K1MN27B00036
FH23-27S-0.3SHW(40)

GND	1
GND	2
GND	3
B	4
G	5
R	6
VREF	7
VCSH	8
VCOM	9
BL_CONT	10
CSV	11
CSH	12
CKH4	13
CKH3	14
WIDE	15
FR	16
OEVE	17
PCG	18
CKH2	19
CKH1	20
STH	21
OEV	22
CKV	23
STV	24
LCD5V_BRT	25
LCD5V_BRT	26
LEV8R5V	27

001:H3>>BL_CONT

P1003
K1MN26BA0059
FH12-26S-0.5SH(78)

1	VCOM
2	VCSH
3	WIDE
4	CSV
5	STV
6	CKV
7	OEV
8	FR
9	CKD2
10	CKD1
11	PCG
12	OEVE
13	VSS
14	VREF
15	B
16	R
17	G
18	VSS
19	CSH
20	STH
21	CKH4
22	CKH3
23	CKH2
24	CKH1
25	VDD
26	VCOM

L1005
G1C100KA0068

C1017
10U

C1019
0.1

C1025
2R2U

R1024
100K/J2

Q1015
B1ADBE000001

C1026
1U

R1027
PAT/J2

GND
TG1023
EYF6CU

Ref No. 1001-1200 Series.

COMPONENT NAME	LCD LEV	02/02
CIRCUIT BOARD NO.	DRAWING NO.	
VEP08346A	KR 8A0057 (2/2)	
SCM031		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

P610
K1MN10BA0059
FH12-10S-0.5SH(78)

D_GND	10
D_GND	9
VTR_KEYIN3	8
VTR_KEYIN1	7
VTR_KEYIN5	6
VTR_KEYIN2	5
VTR_KEYIN4	4
VTR_SCAN1	3
VTR_KEYIN6	2
D_GND	1

TO TOP_CONNECT

DGND

D610 MA3S781DOL

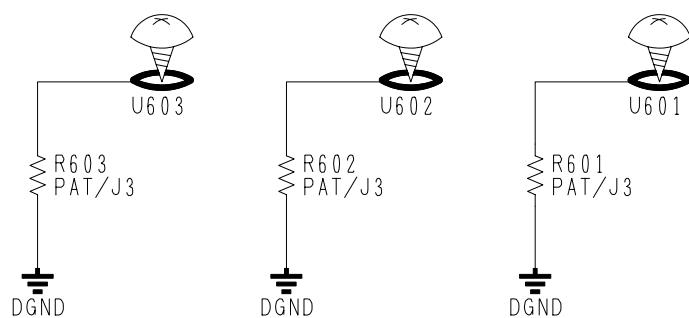
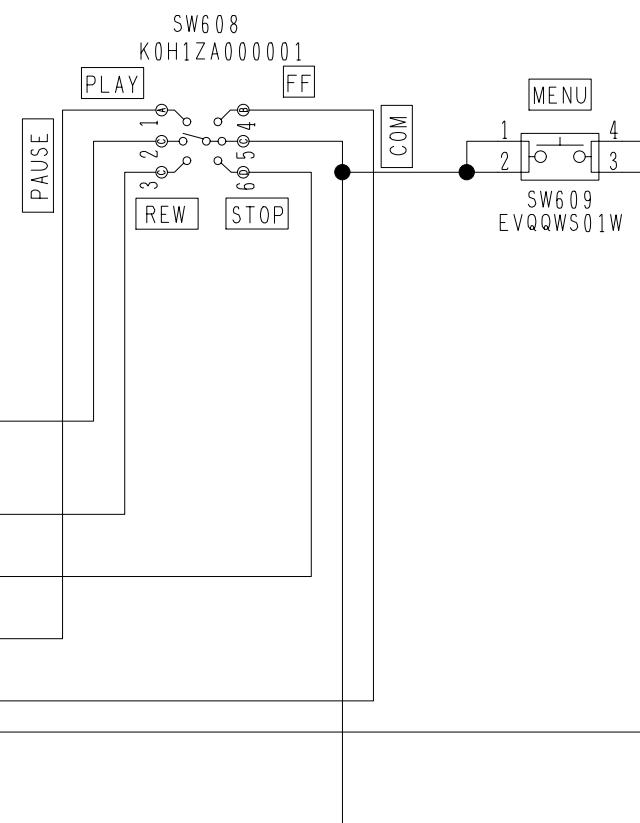
D611 MA3S781DOL

D612 MA3S781DOL

D615 MA3S781DOL

D614 MA3S781DOL

D616 MA3S781DOL



Ref No. 601-650 Series.

COMPONENT NAME	MENU	01/01
CIRCUIT BOARD NO.	DRAWING NO.	
VEP06G10A	KR 6A0200 (1/1)	
SCM032		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

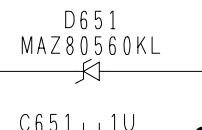
P651
K1MN22BA0080
FA1S022HA1R3000

EVF8R5V	1
D_GND	2
HST	3
HCK2	4
HCK1	5
RGT	6
DWN	7
REF	8
XSTB	9
VST	10
VCK	11
ENB	12
PCG	13
E_B	14
E_R	15
E_G	16
CS	17
PSIG	18
COM	19
EVF_BL_5V	20
EVF_LED	21
D_GND	22

TO TOP_CONNECT

DGND

R651 0/J2
R652 0/J2
R653 0/J2
R654 0/J2
R655 0/J2
R656 0/J2
R657 0/J2
R658 0/J2
R659 0/J2
R660 0/J2
R661 0/J2
R662 0/J2
R663 0/J2
R664 0/J2
R665 0/J2
R666 0/J2
R667 0/J2
R668 0/J2
R669 0/J2
R670 0/J2
R671 0/J2



P652
K1MN20BA0081
FA2S020HA1R3000

20	VDD
19	VSS
18	VSSG
17	HST
16	HCK2
15	HCK1
14	RGT
13	DWN
12	REF
11	XSTB
10	VST
9	VCK
8	ENB
7	PCG
6	BLUE
5	RED
4	GREEN
3	CS
2	PSIG
1	COM

TO EVF_LCD_PANEL

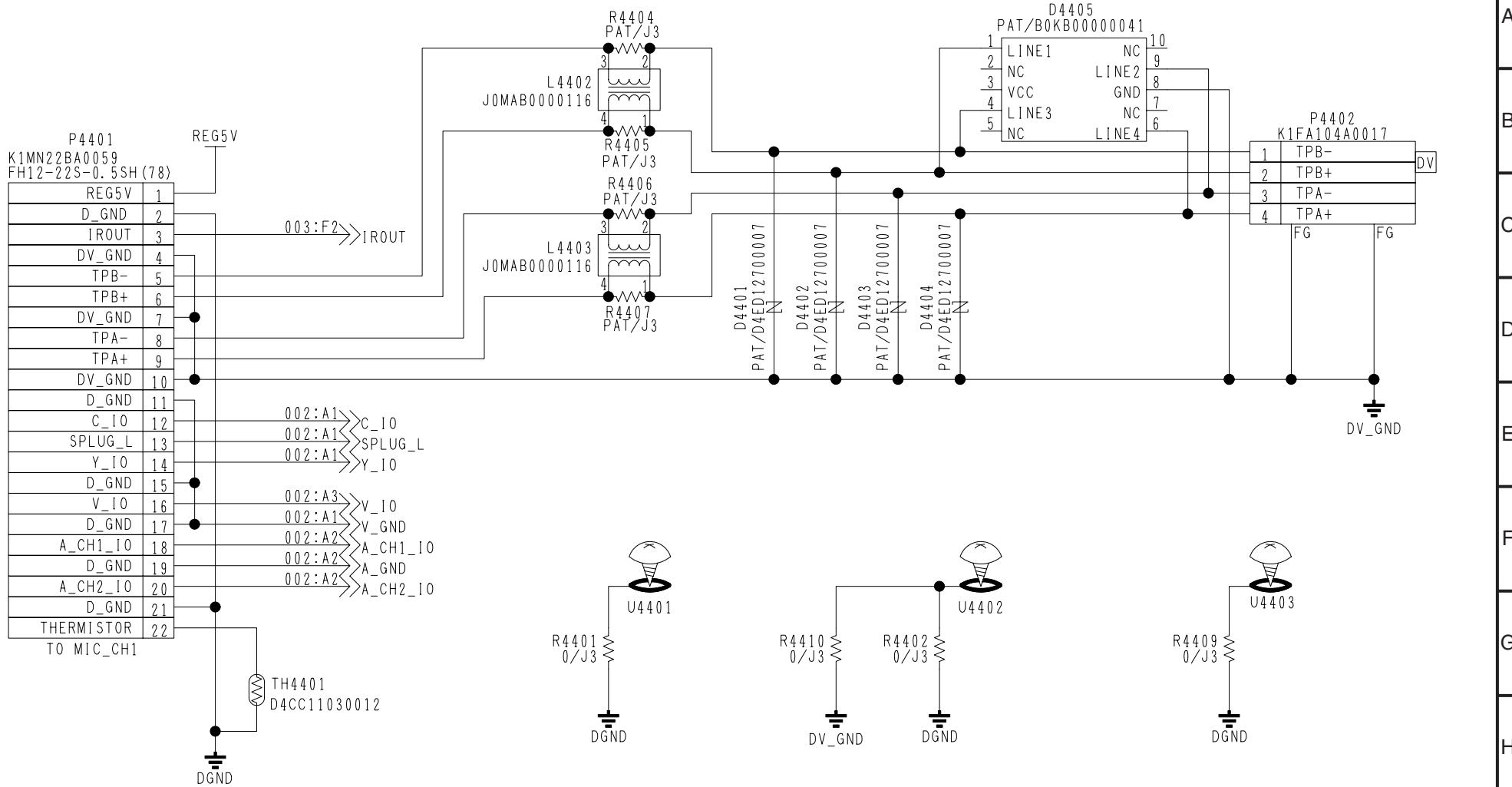
P653
K1KA02BA0014
SM02B-SRSS-TB(LF) (SN)

1	EVF_BL_5V
2	EVF_BL_GND

TO EVF_BL

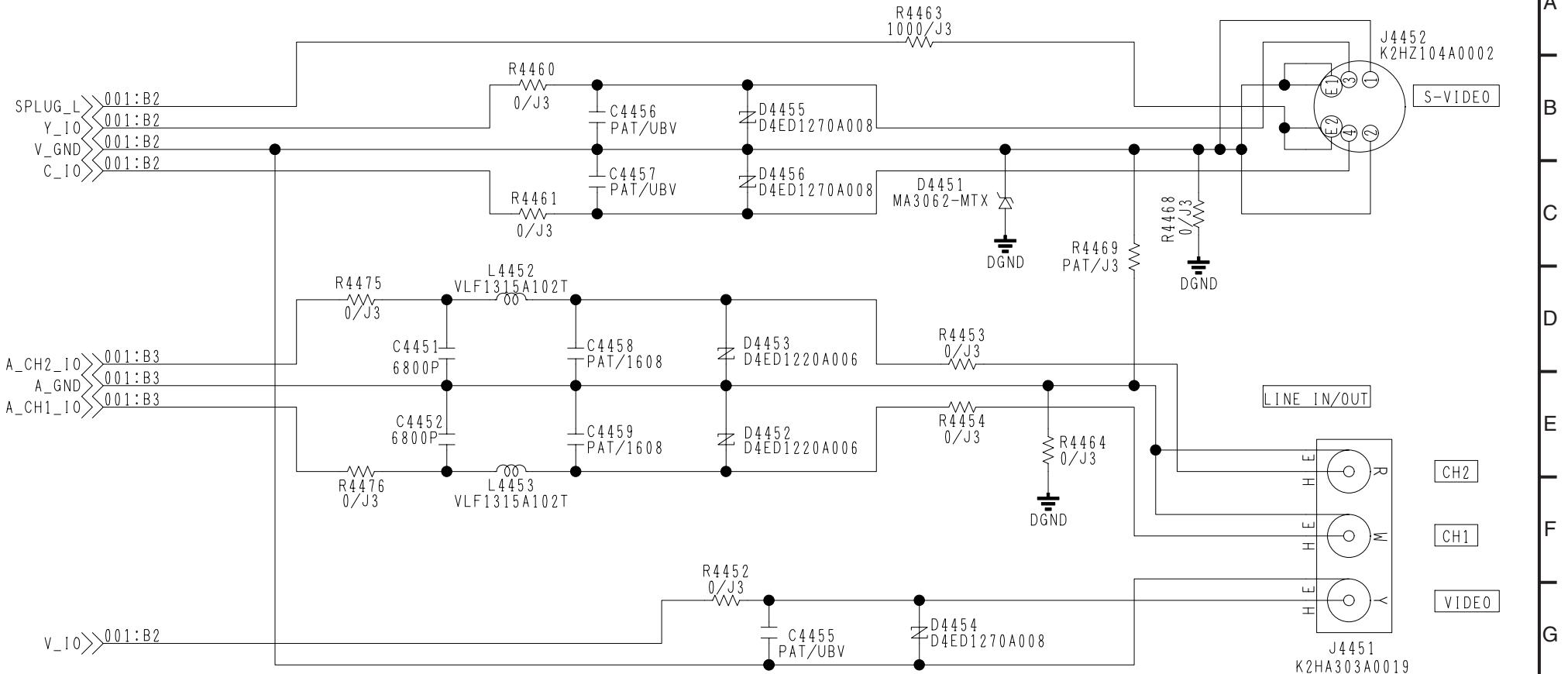
Ref No. 651-700 Series.

COMPONENT NAME	EVF CONNECT	01/01
CIRCUIT BOARD NO.	DRAWING NO.	
VEP29166A	KR 3A0339 (1/1)	
	SCM033	



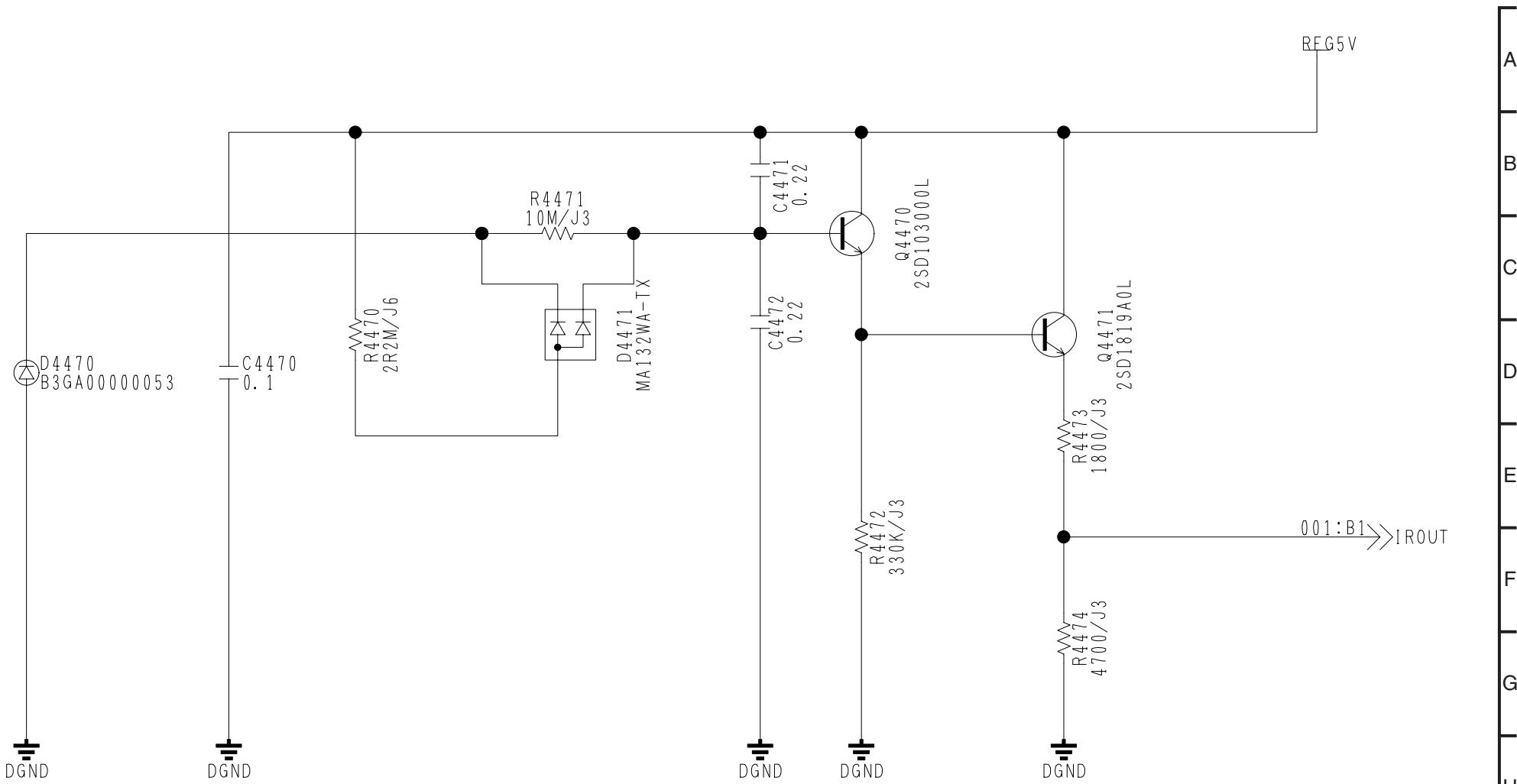
Ref. No. 4400-4450 Series.

COMPONENT NAME	SIDE JACK		01/03
CIRCUIT BOARD NO.	DRAWING NO.		
VEP04893A		KR 4A0151 (1/3)	
SCM034			



Ref No. 4451-4469 Series.

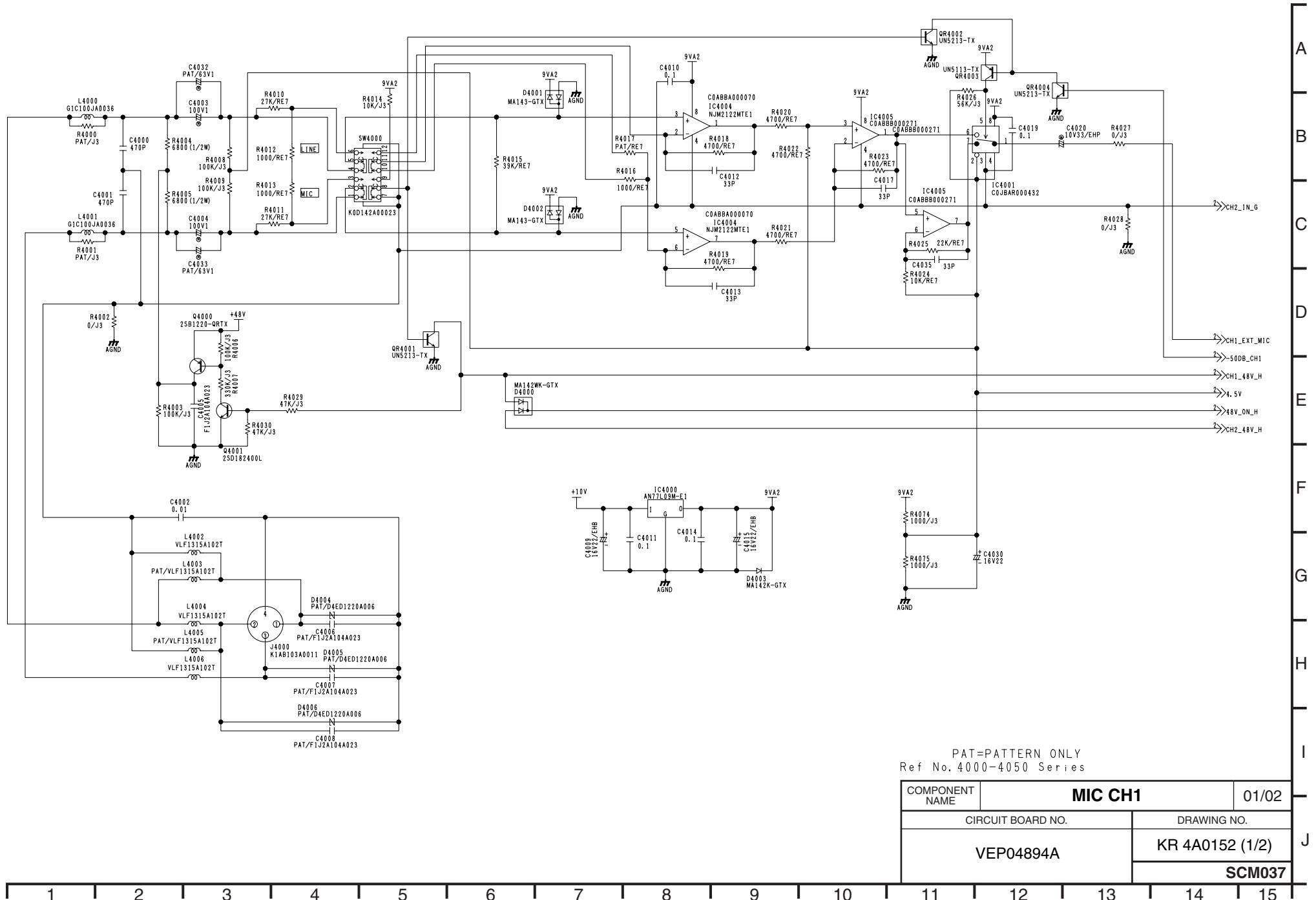
COMPONENT NAME	SIDE JACK		02/03
CIRCUIT BOARD NO.	DRAWING NO.		
VEP04893A	KR 4A0151 (2/3)		
	SCM035		

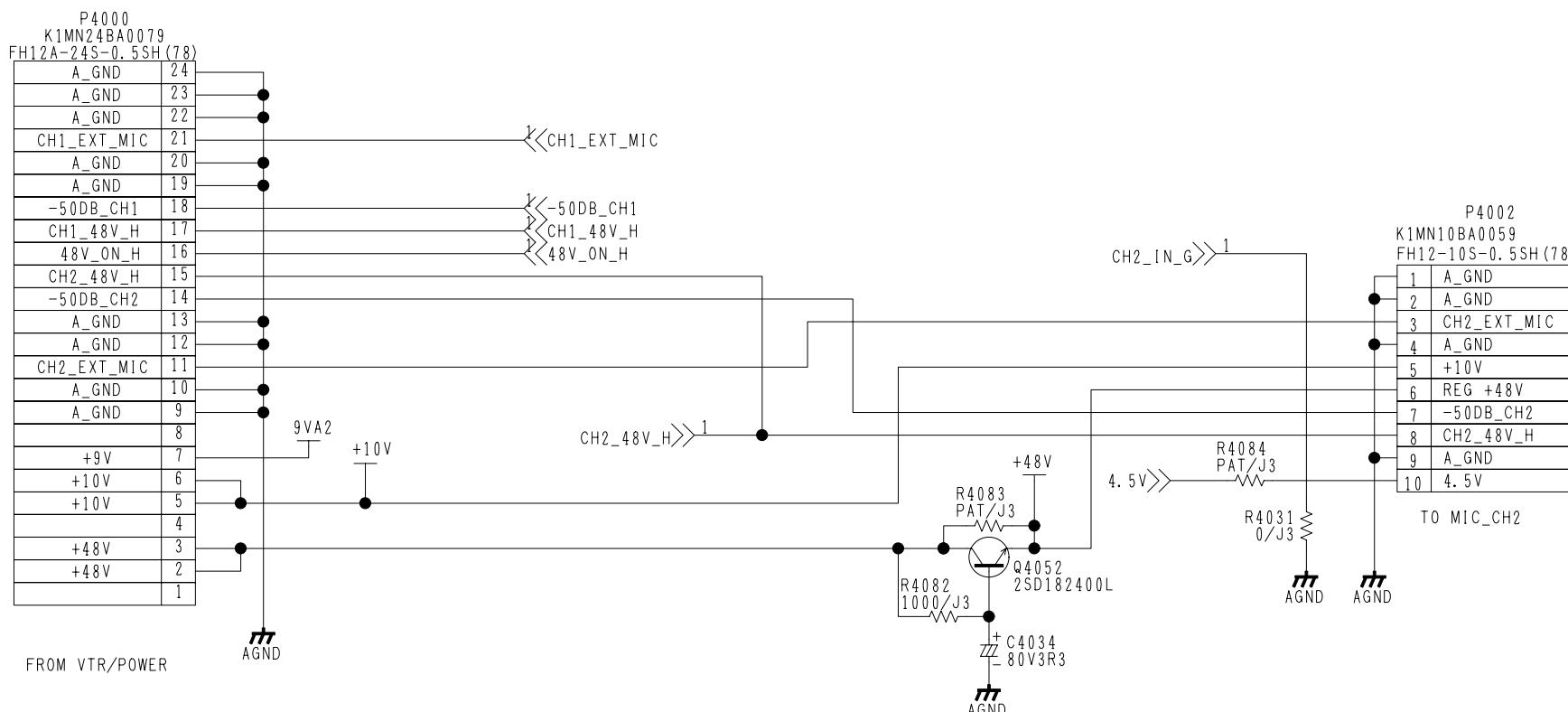


Ref No. 4470-4500 Series

COMPONENT NAME	SIDE JACK	03/03
CIRCUIT BOARD NO.	DRAWING NO.	
VEP04893A	KR 4A0151 (3/3)	
SCM036		

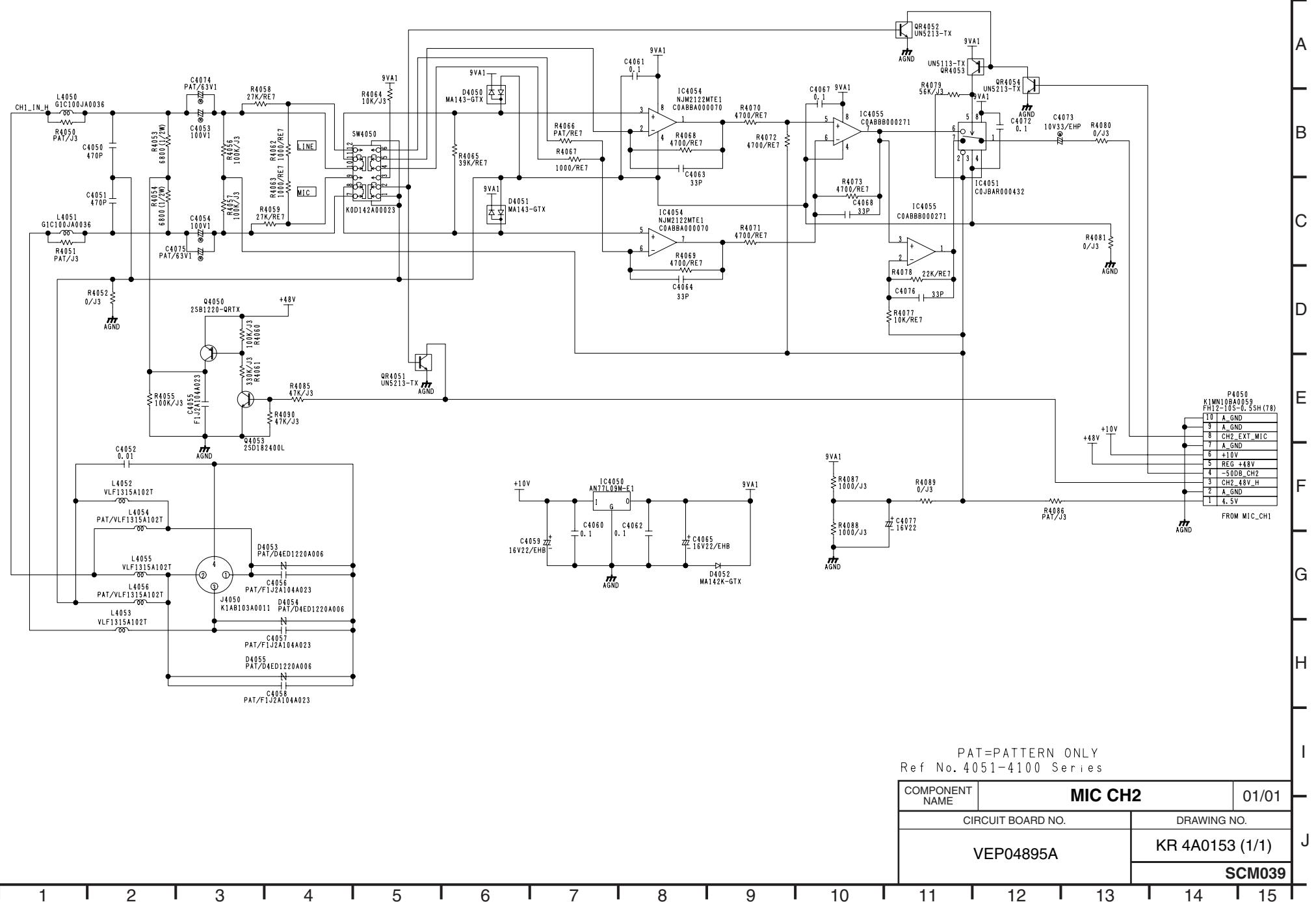
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

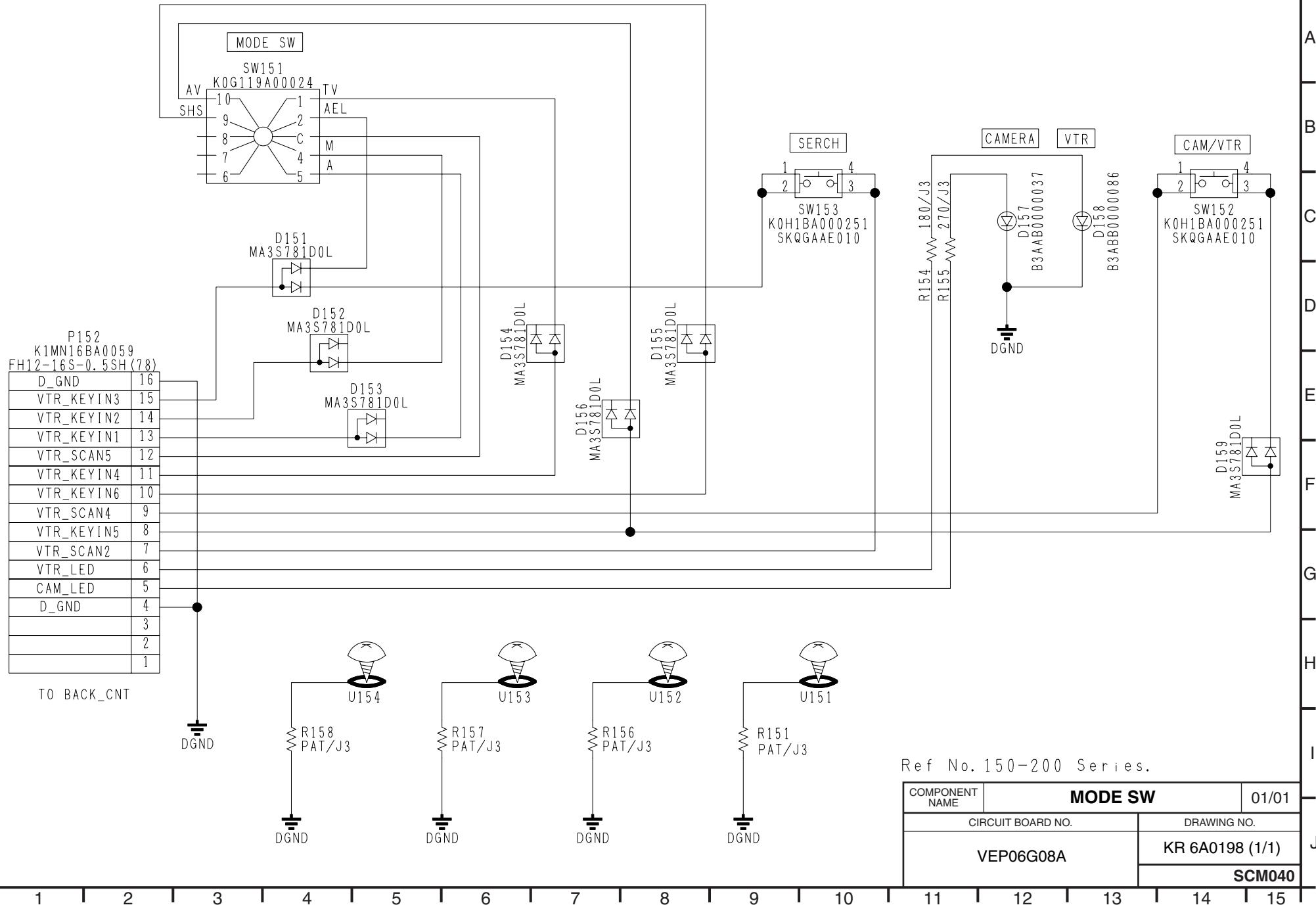


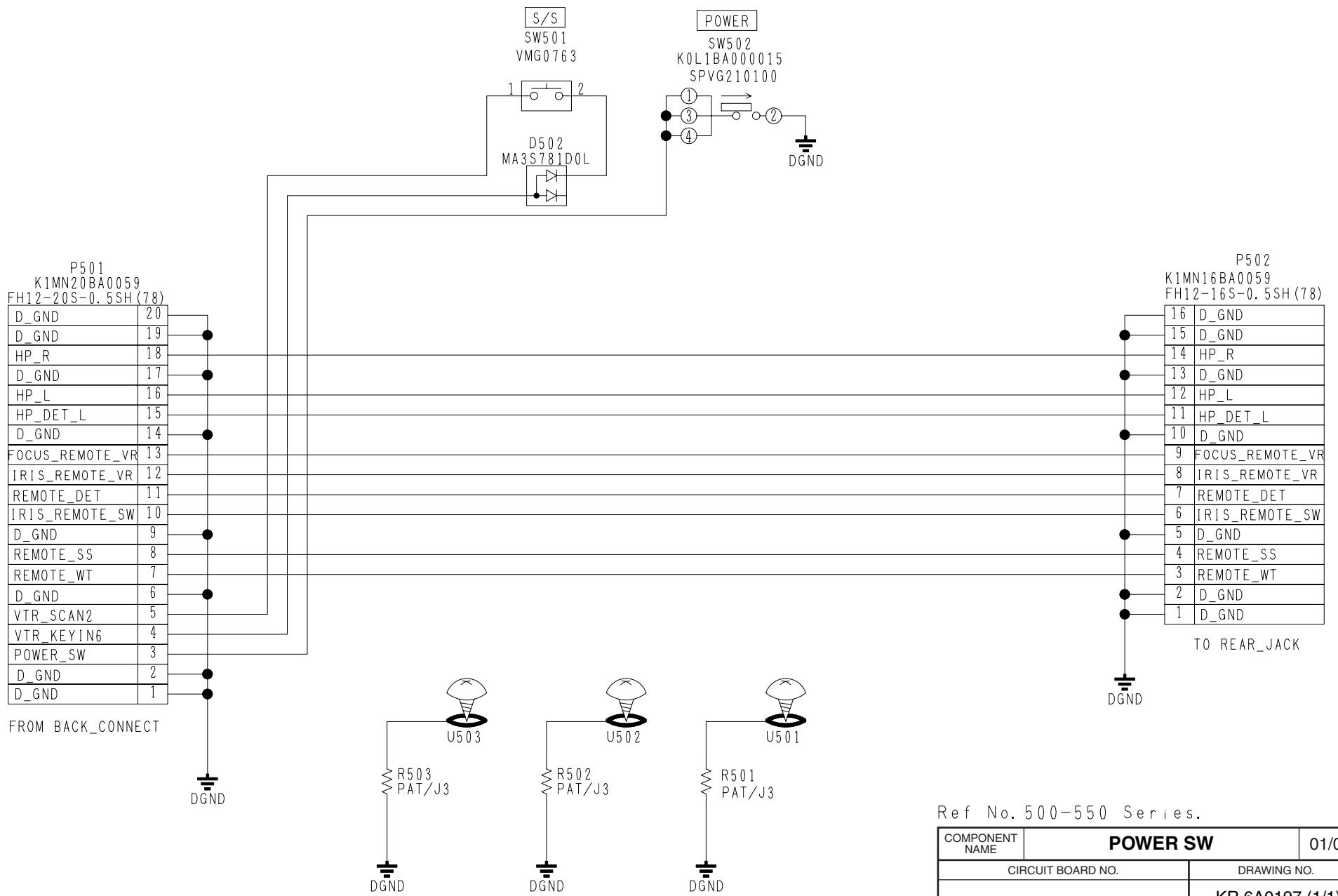


Ref No. 4000-4050 Series

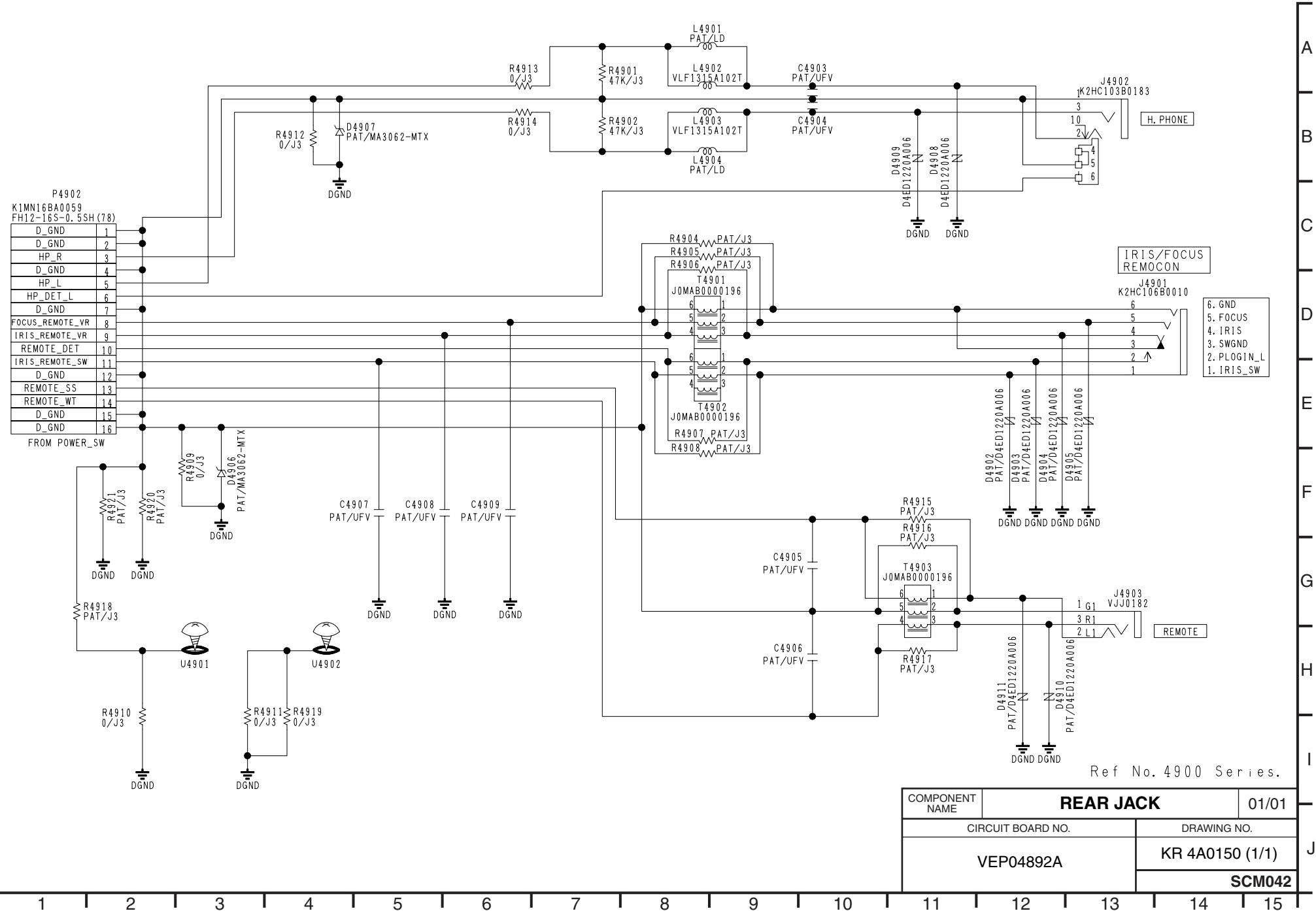
COMPONENT NAME	MIC CH1 (CNT)	02/02
CIRCUIT BOARD NO.	DRAWING NO.	
VEP04894A	KR 4A0152 (2/2)	
SCM038		

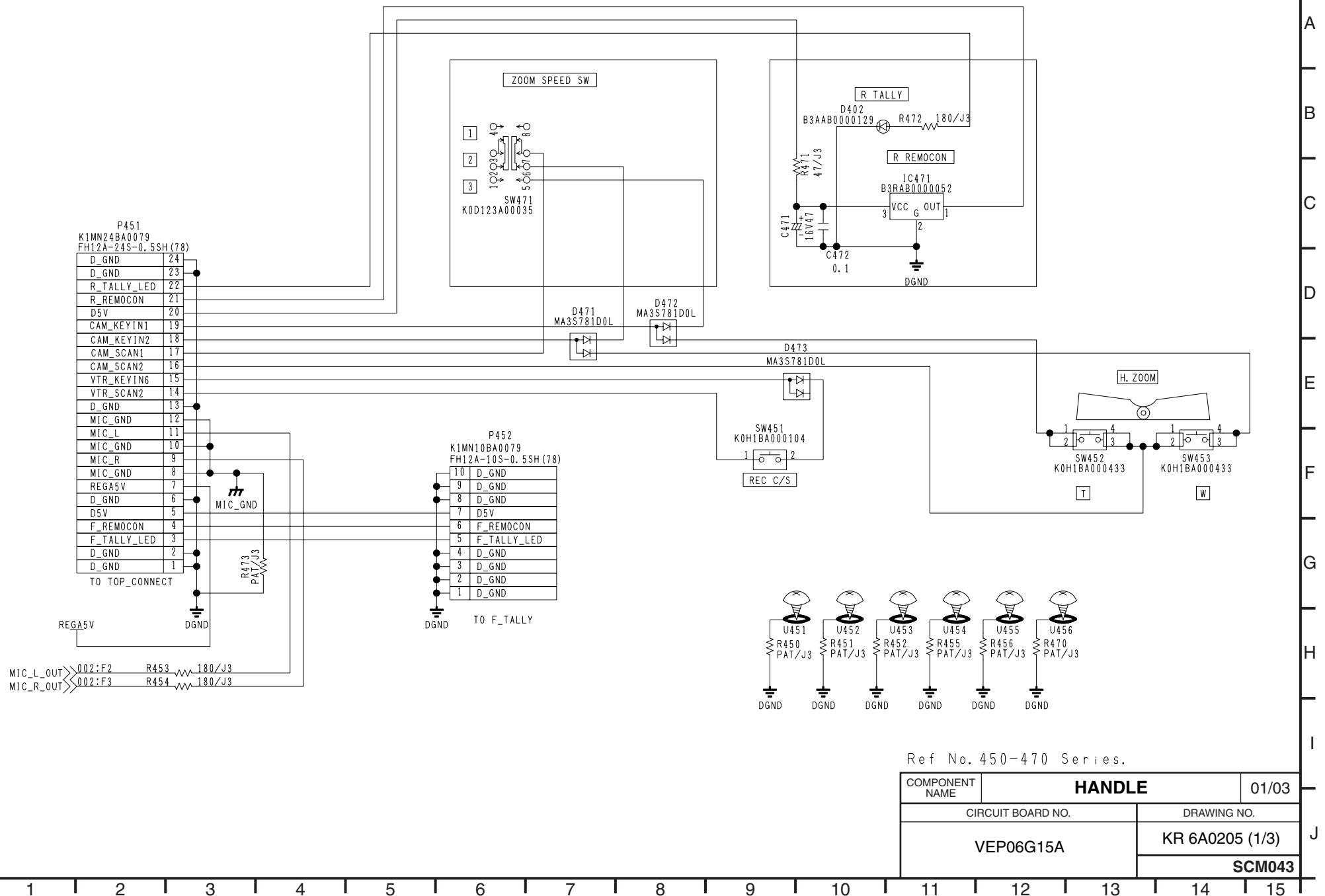


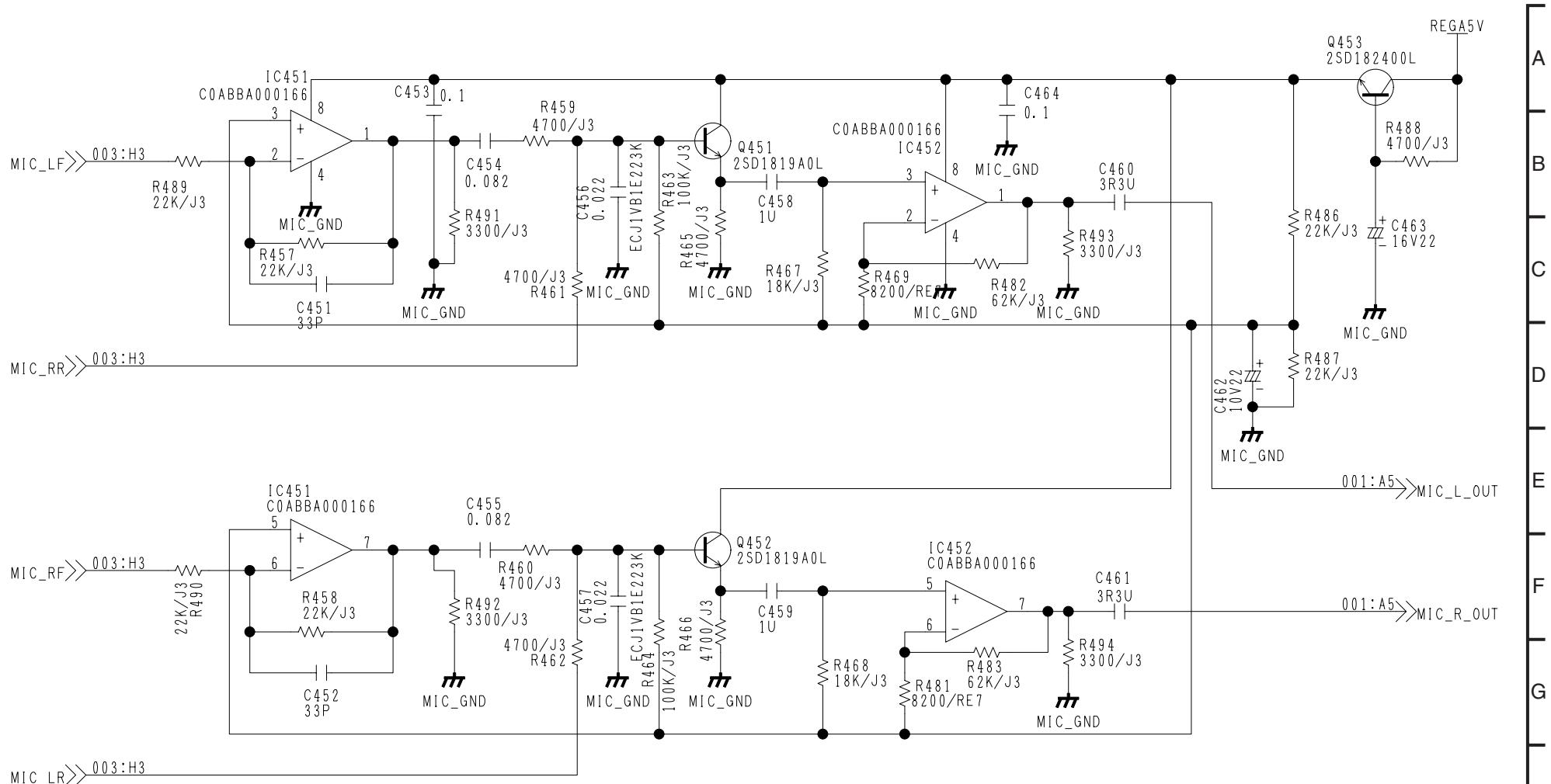




1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

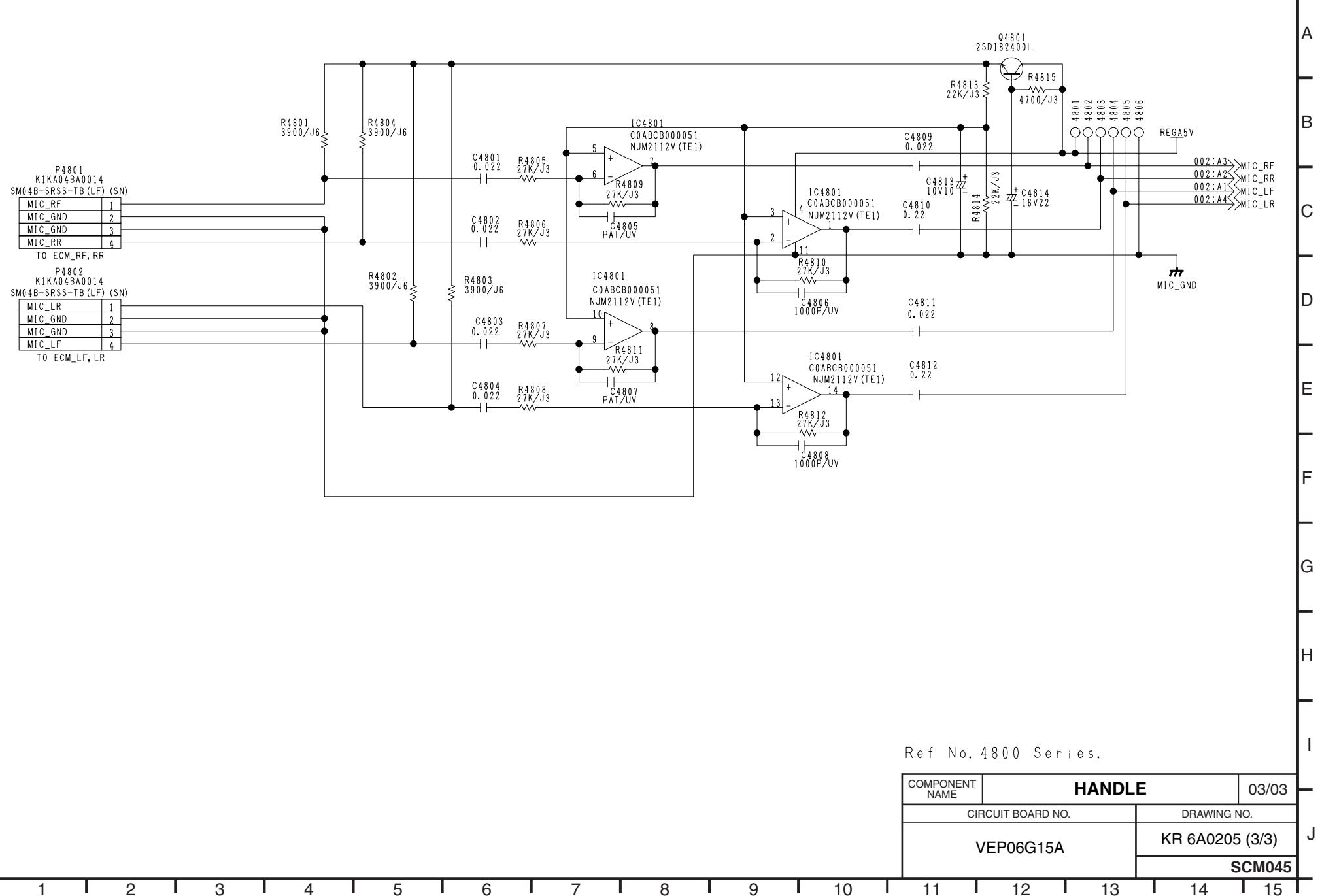


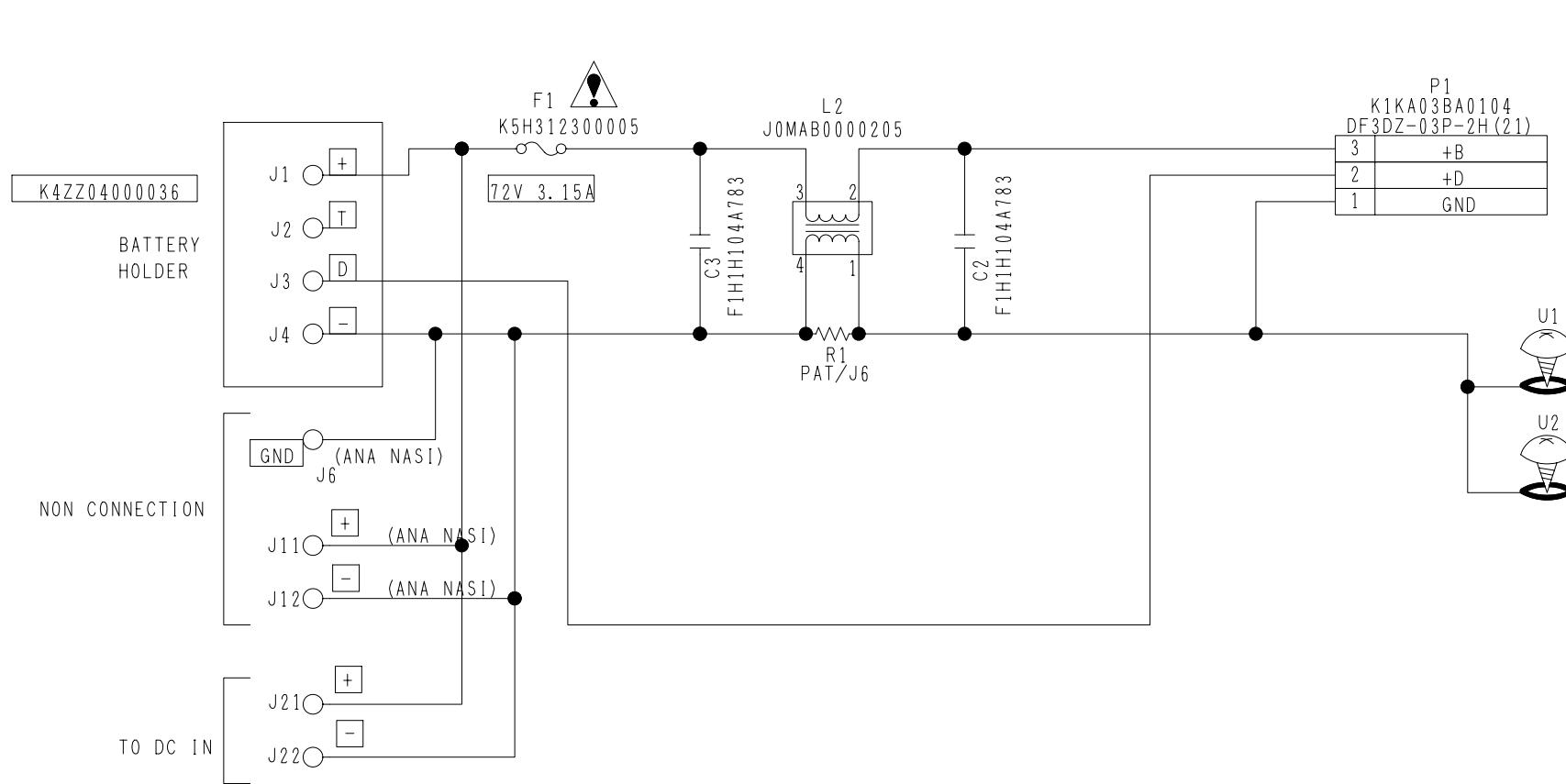




Ref No. 450-500 Series.
470-480 NOT USE

COMPONENT NAME	HANDLE	02/03
VEP06G15A	KR 6A0205 (2/3)	
SCM044		



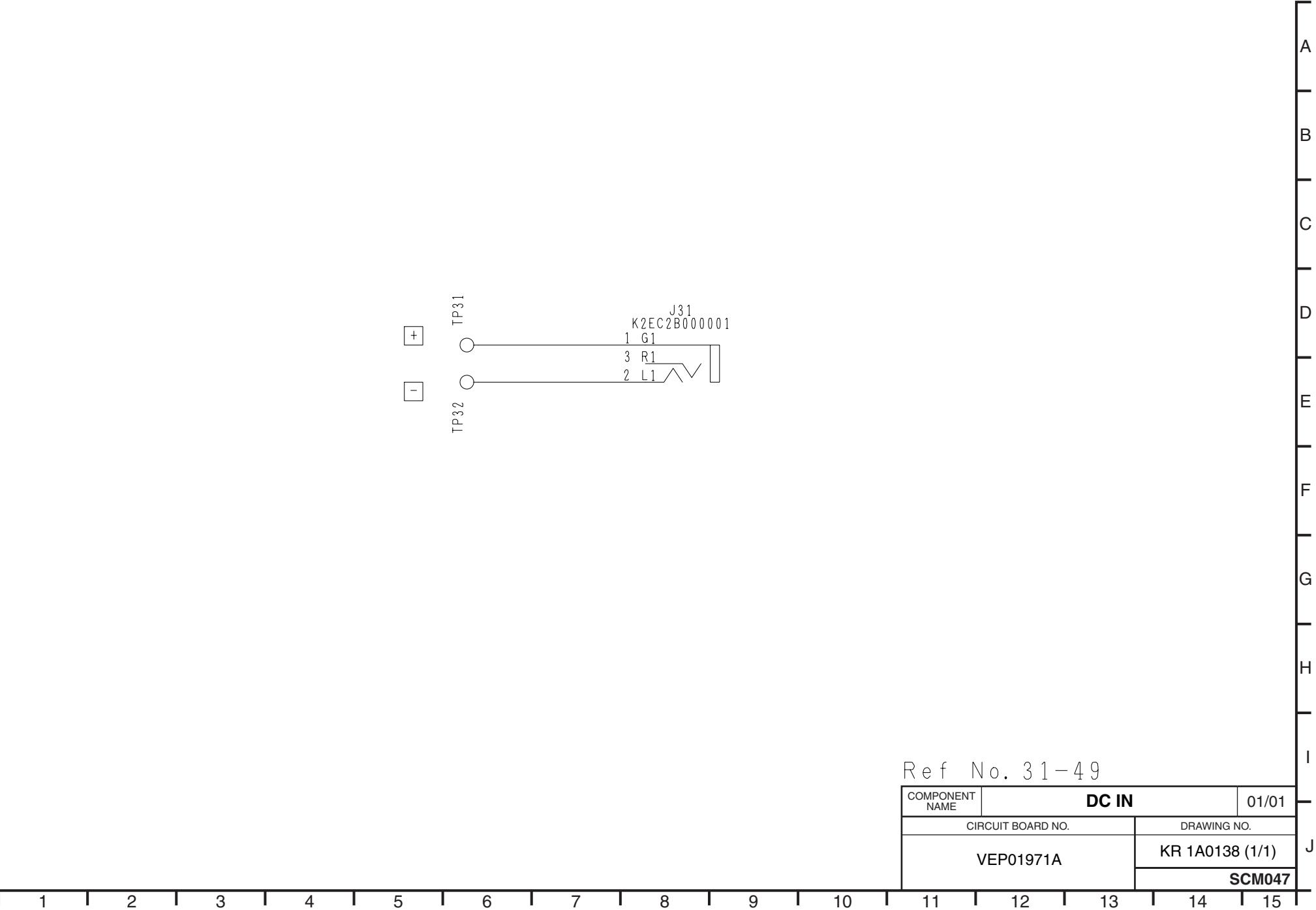


PAT=PATTERN ONLY
 Ref No. 1-30 Series.

COMPONENT NAME	BATTERY		01/01
CIRCUIT BOARD NO.	DRAWING NO.		
VEP01972A	KR 1A0139 (1/1)		J
	SCM046		

警告 △印の部品は安全上重要な部品です。交換するときは、
 安全および性能維持のため必ず指定の部品をご使用ください。

Components identified with the mark △ have the special characteristics for safety.
 When replacing any of these components, use only the same type.



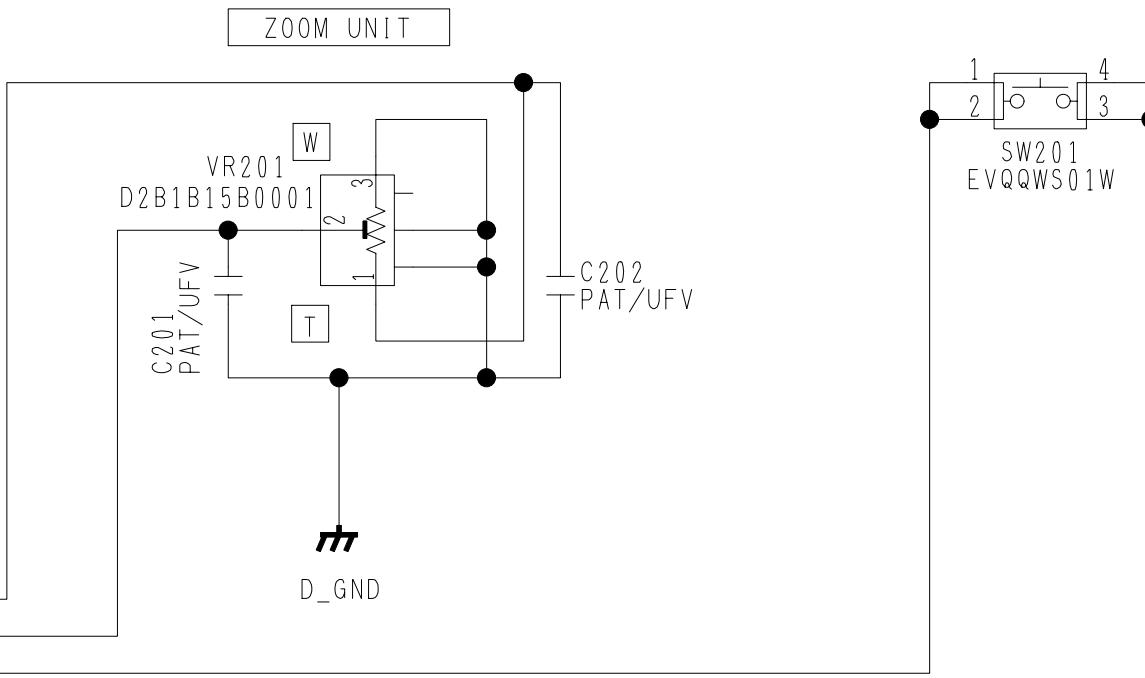
CN_FX
CN_VJS3791D006

D_GND	1
ZOOM_VREF	2
ZOOM_AD	3
VTR_SCAN3	4
VTR_KEYIN5	5
D_GND	6

TO TOP_CONNECT



D_GND



REC CHECK

A

B

C

D

E

F

G

H

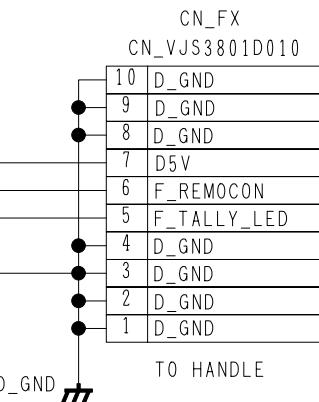
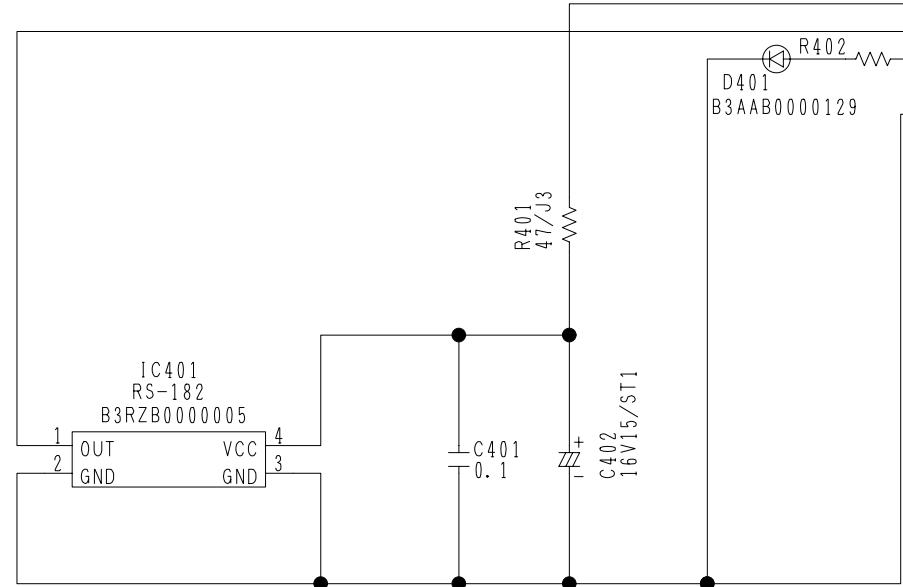
I

J

Ref No. 201-250 Series.

COMPONENT NAME	ZOOM FPC		01/01
CIRCUIT BOARD NO.	DRAWING NO.		
VEP06G16A	KR 6A0206 (1/1)		
SCM048			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



Ref No. 400-450 Series.

COMPONENT NAME	TALLY FPC		01/01
CIRCUIT BOARD NO.	DRAWING NO.		
VEP66499A	KR 6A0207 (1/1)		
	SCM049		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A

B

C

D

E

F

G

H

I

J

SECTION 7

CIRCUIT BOARD DIAGRAMS

プリント基板図

MODEL: AG-DVX100B/P/E/AN,102BEN,DVC180BMC

NOTE:

BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST SECTION.

CAUTION

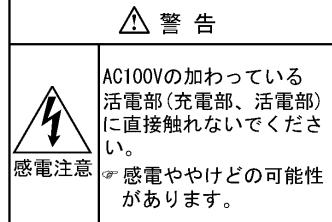
THE  MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

IMPORTANT SAFETY NOTICE:

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

 **警告**

 の部品は、安全上重要な部品です。
交換するときは、安全及び性能維持のため、必ず指定の部品をご使用ください。
部品は難燃性や耐電圧など、安全上の特性を持ったものとなっていますので、部品交換
は、使用されているものと同じ特性の部品をご使用ください。
部品ご注文の際には必ず部品リストに記載の品番でご注文ください。



- ①  **警告**  印の部品は安全上重要な部品です。
交換するときは、安全上および性能維持のため
必ず指定の部品をご使用ください。
- ②  内は充電部です。AC 100Vが加わっておりますので点検、修理
のときは感電しないよう充分ご注意ください。
- ③ 部品交換時には、電源プラグをぬいてから行ってください。
- ④ 一次側(充電部)の電圧・波形は、一次側アースを基準に測定して
ください。
- ⑤ 部品品番は、部品価格表で確認の上交換ください。

CONTENTS

VTR C.B.A. (FOIL SIDE)	CBA-1
VTR C.B.A. (COMPONENT SIDE)	CBA-2
CAMERA C.B.A. (FOIL SIDE)	CBA-3
CAMERA C.B.A. (COMPONENT SIDE)	CBA-4

VIDEO C.B.A. (FOIL SIDE)

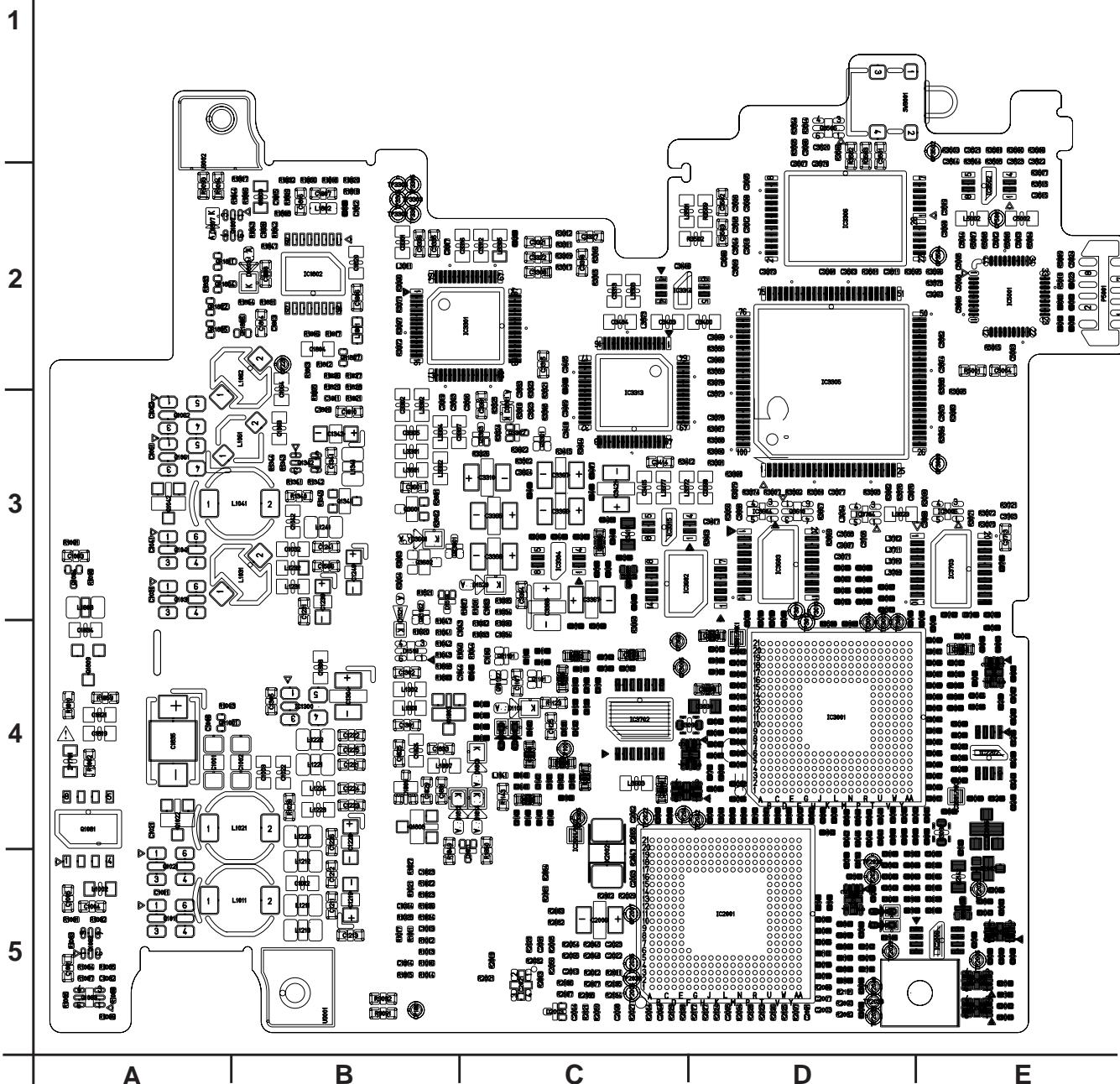
FOIL SIDE

REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC1300	B4	IC3305	D2	IC5001	E2	Q1083	A5	Q3506	D1	QR1805	A2	TP2023	E5	TP3003	D4		
IC1802	B2	IC3306	D2	IP1701	A4	Q1101	C4	Q3601	B3	QR1806	B2	TP2025	D5	TP3004	D4		
IC2001	D5	IC3313	C3	P5001	E2	Q1341	B3	Q3602	B3	QR1807	B2	TP2026	D5	TP3011	D3		
IC2006	E5	IC3314	C2	Q1011	A5	Q1342	B3	Q3607	C4	QR1811	A2	TP2029	D5	TP3012	D3		
IC2015	D5	IC3315	C3	Q1021	A5	Q1803	B4	Q3610	D3	QR2005	E5	TP2035	C5	TP3013	D4		
IC2020	E5	IC3502	E2	Q1022	A4	Q1807	B2	Q3701	D4	QR2006	E5	TP2036	C5	TP3301	B2		
IC2021	C5	IC3602	C3	Q1031	A3	Q1808	B4	QR1001	A4	QR2008	E5	TP2038	D5	TP3302	B2		
IC2202	E4	IC3603	D3	Q1041	A3	Q2003	E5	QR1101	C4	QR3601	B3	TP2039	D5	TP3303	B2		
IC3001	D4	IC3604	D3	Q1042	A3	Q2005	E4	QR1102	C4	SW9001	D1	TP2040	D5	TP3304	B2		
IC3006	E3	IC3702	C4	Q1061	A3	Q3301	C3	QR1162	B3	TP2005	E5	TP2041	C4	TP3305	B2		
IC3007	E4	IC3703	E3	Q1062	A3	Q3302	C3	QR1802	A2	TP2006	C5	TP2042	D4	TP3306	B2		
IC3301	C2	IC3704	D3	Q1081	A4	Q3303	C3	QR1804	A2	TP2022	C4	TP3001	D4	X2002	C5		

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



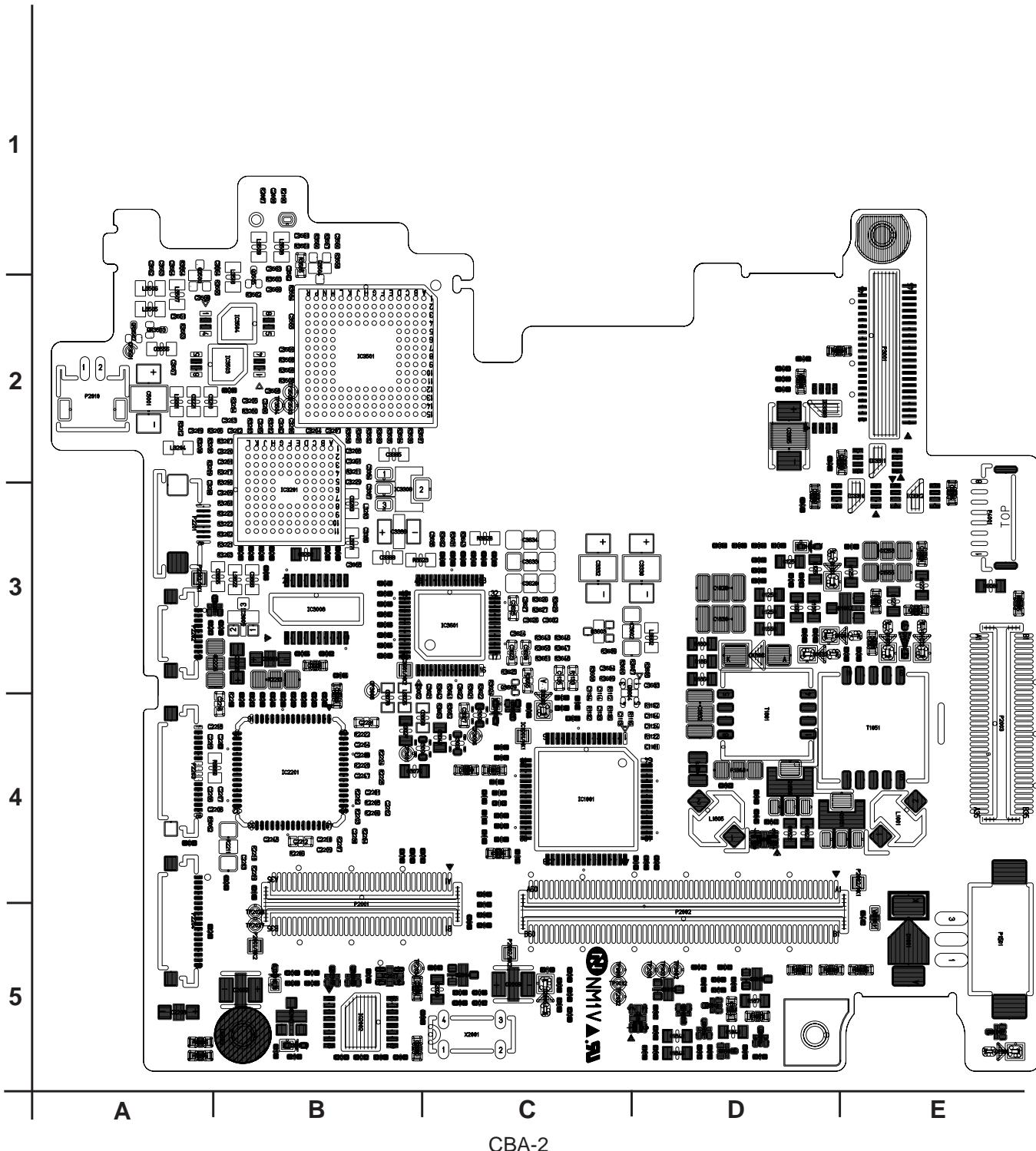
印の部品は安全上重要な部品です。
交換するときは、安全上および性能維持のため
必ず指定の部品をご使用ください。



VIDEO C.B.A. (COMPONENT SIDE)

COMPONENT SIDE

REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC1001	C4	IC3310	E3	P2001	B5	P3001	E2	Q1813	D5	Q3609	C3	TP2032	C5	TP9012	C5		
IC2002	B5	IC3311	E2	P2002	D5	P4001	E3	Q1814	D5	QR1081	E5	TP2034	B5	X2001	C5		
IC2017	B5	IC3312	E3	P2003	E4	Q1051	E4	Q1815	D5	QR1809	D5	TP3503	B2				
IC2201	B4	IC3501	B2	P2010	A2	Q1805	D4	Q3503	A2	QR3502	A2	TP3504	B2				
IC3008	B3	IC3503	B2	P2201	A3	Q1806	D4	Q3504	B1	QR3503	A2	TP3505	B2				
IC3201	B3	IC3504	B2	P2202	A3	Q1810	D5	Q3505	B2	TP2027	B5	TP9001	D5				
IC3308	B3	IC3601	C3	P2203	A4	Q1811	D5	Q3603	C3	TP2028	B5	TP9002	D5				
IC3309	D2	P1501	E5	P2204	A5	Q1812	D5	Q3604	C3	TP2031	D5	TP9011	C5				

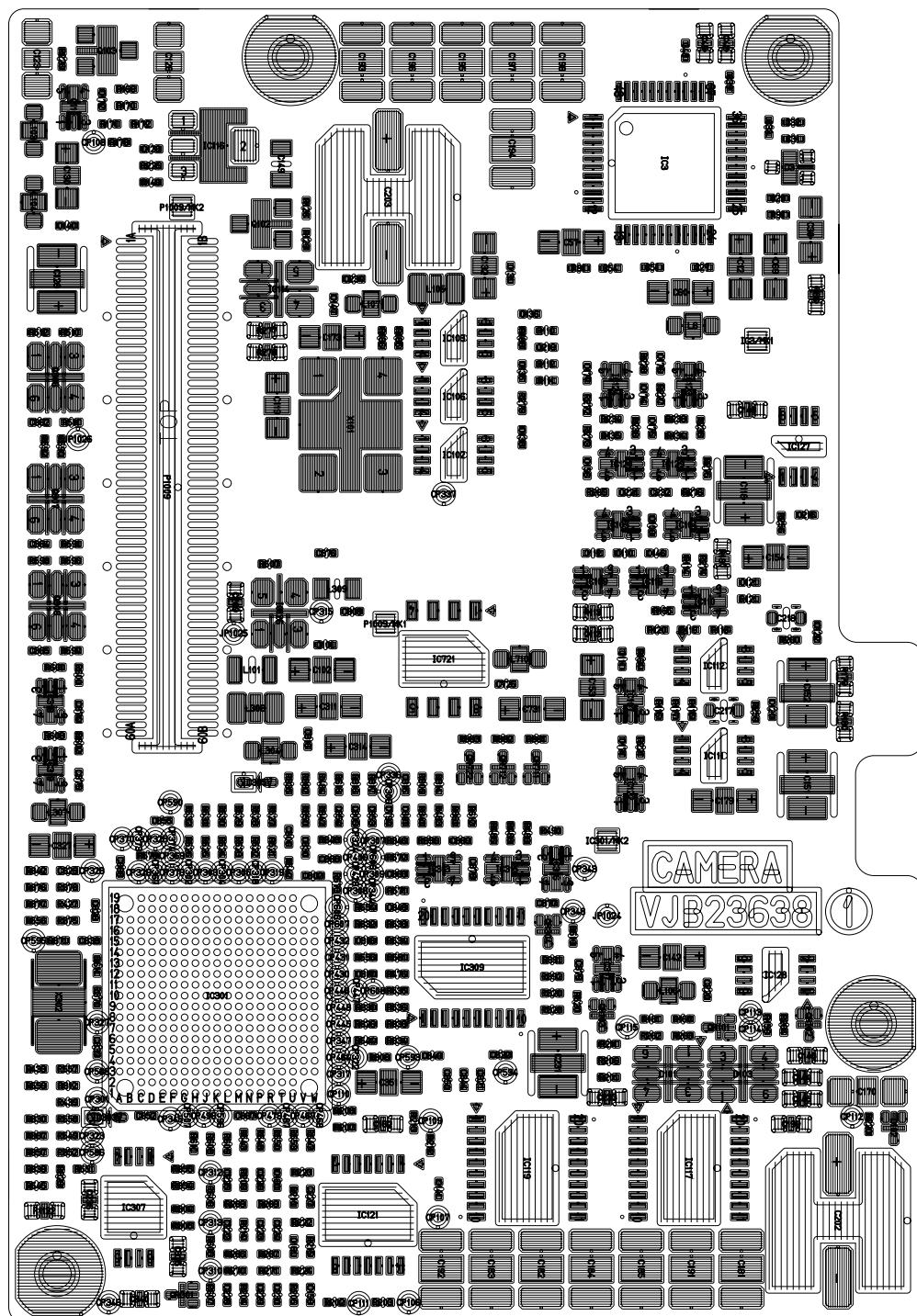


CBA-2

CAMERA C.B.A. (FOIL SIDE)

FOIL SIDE

REF	LOC	REF	LOC														
IC3	C1	IC109	C2	IC118	C2	IC126	B2	IC313	B3	P1009	A2	QR101	D4	QR722	C3		
IC102	C2	IC110	D2	IC119	C5	IC127	D2	IC315	C3	Q102	B1	QR102	D4	X101	B2		
IC103	C1	IC111	D3	IC120	C2	IC128	D4	IC316	C3	Q103	A1	QR103	C4	X302	A4		
IC104	C2	IC112	D3	IC121	B5	IC129	C2	IC317	C4	Q110	A1	QR301	A5				
IC105	C2	IC114	B1	IC122	C3	IC301	B4	IC318	A3	Q306	A2	QR304	C4				
IC106	C2	IC116	B1	IC123	C2	IC307	A5	IC319	A3	Q307	A2	QR711	C3				
IC107	C3	IC117	C5	IC124	C2	IC309	C4	IC721	B3	Q308	A2	QR712	C3				

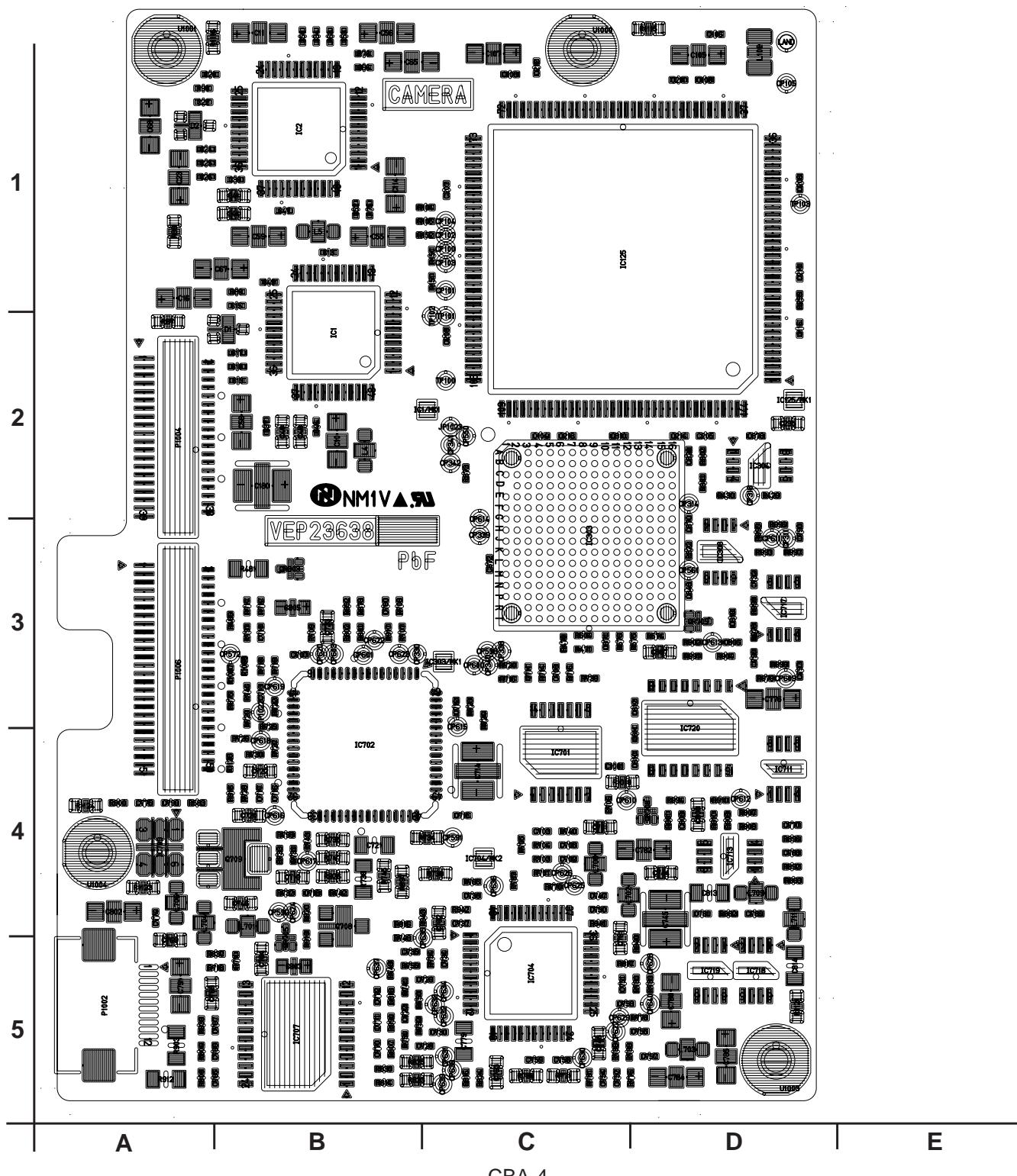


CBA-3

CAMERA C.B.A. (COMPONENT SIDE)

COMPONENT SIDE

REF	LOC	REF	LOC														
IC1	B2	IC304	D2	IC704	C5	IC713	D4	IC720	D3	Q708	B4	QR708	D4	TP102	C2		
IC2	B1	IC308	D3	IC707	B5	IC717	D3	P1002	A5	Q709	B4	QR709	D3	TP103	D1		
IC125	C1	IC701	C4	IC709	A4	IC718	D5	P1004	A2	QR303	B3	TP100	C2				
IC303	C3	IC702	B4	IC711	D4	IC719	D5	P1006	A3	QR705	B5	TP101	C2				



CBA-4

SECTION 8

EXPLODED VIEWS & REPLACEMENT PARTS LIST

MODEL: AG-DVX100BP/BE/BAN, AG-DVX102BEN, AG-DVC180BMC

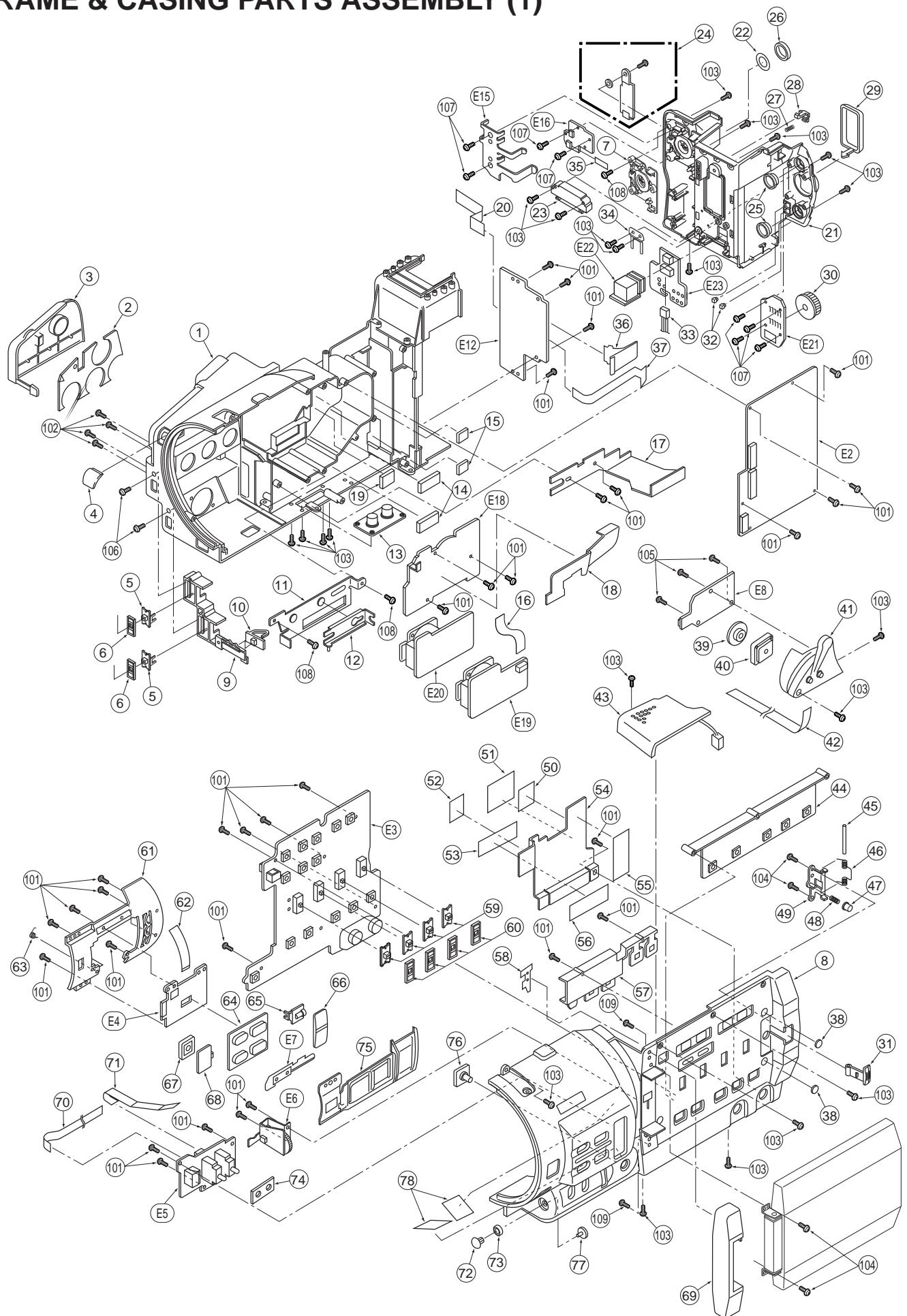
Note:

1. *Be sure to make your orders of replacement parts according to this list.
2. Unless otherwise specified, all resistors are in OHMS, K=1,000 OHMS,
all capacitors are in MICROFARADS (μ F), P= $\mu\mu$ F.
3. The P.C. Board unit marked with "■" shown below the main assembled parts.
4. The parts marked with \odot on the exploded view show the electric parts.
5. **IMPORTANT SAFETY NOTICE**
Components identified with the mark Δ have the special characteristics for safety. When replacing any
of these components, use only the same type.
6. The marking (RTL) indicates the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.
7. "M" in Remark column indicates needed in the periodical maintenance.

CONTENTS

FRAME & CASING PARTS ASSEMBLY (1)	MPL-1
FRAME & CASING PARTS ASSEMBLY (2)	MPL-3
HANDLE EVF PARTS ASSEMBLY	MPL-5
LCD PARTS ASSEMBLY.....	MPL-7
PACKING PARTS ASSEMBLY.....	MPL-9
ELECTRICAL REPLACEMENT PARTS LIST	EPL-1

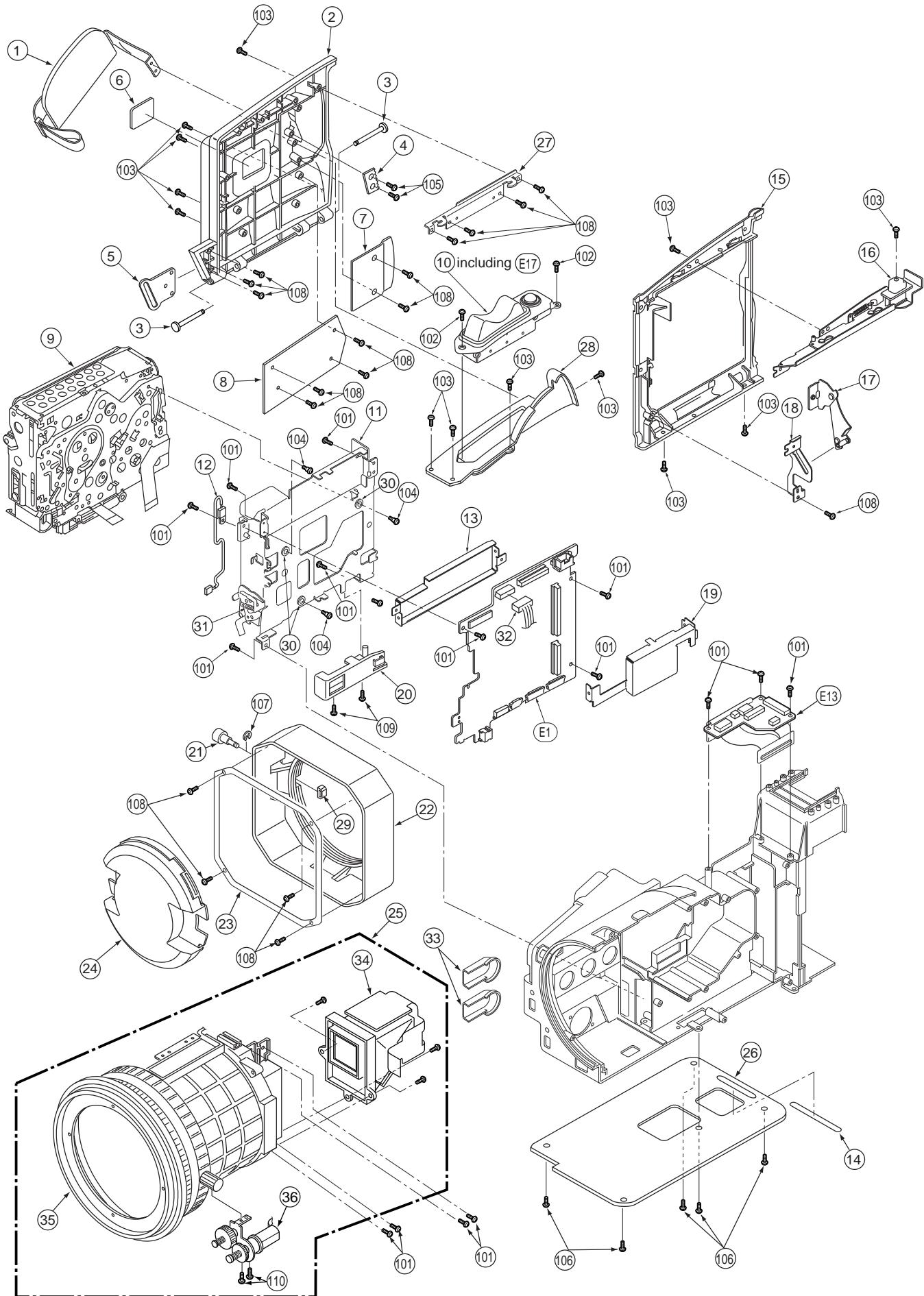
FRAME & CASING PARTS ASSEMBLY (1)



FRAME & CASING PARTS ASSEMBLY(1)

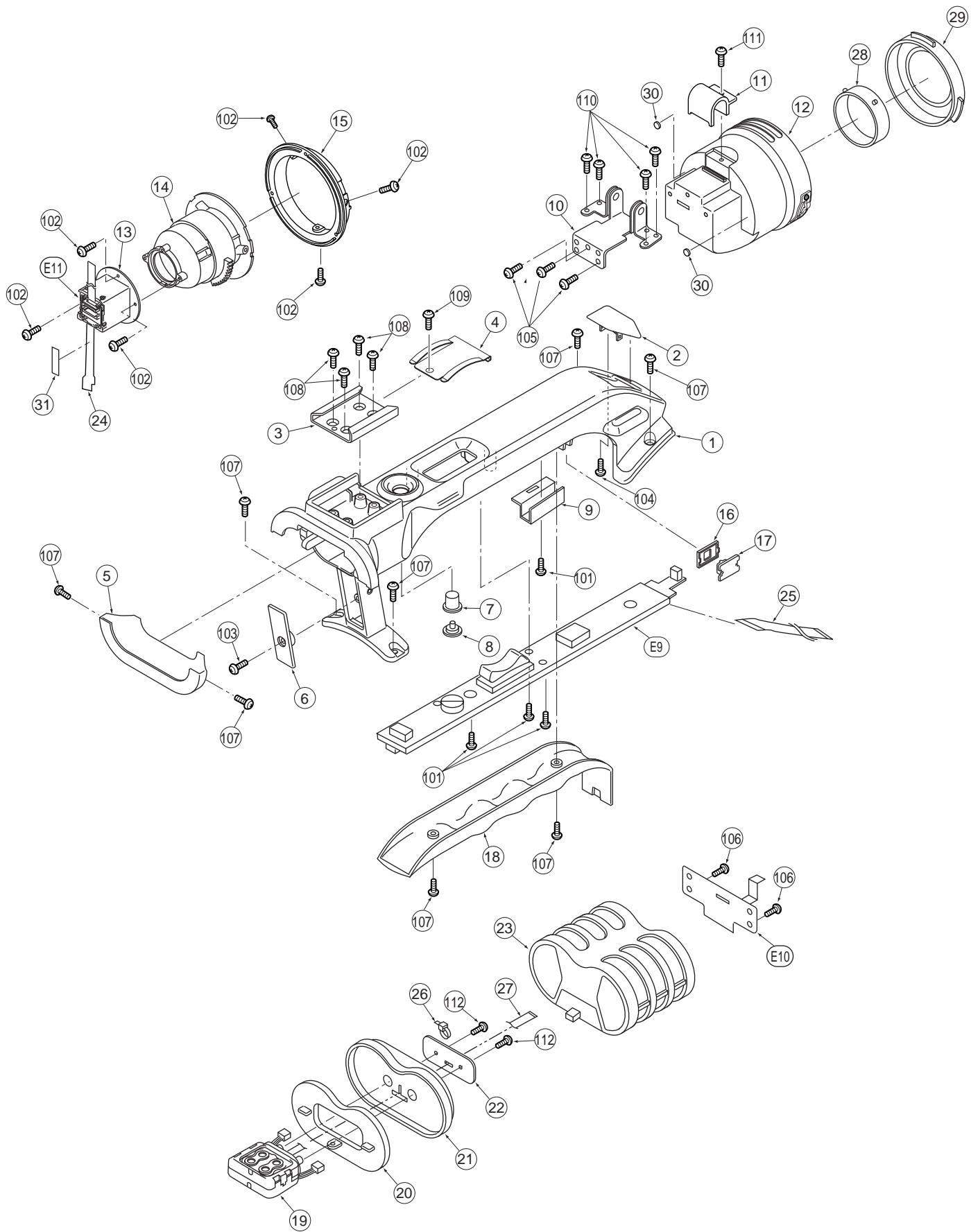
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks	Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	VKM6819	CENTER FRAME U	1		75	VQG8614	CAM RIB CASE	1	
2	VGH4856	SIDE JACK NAME PLATE	1		76	VGU9885	IRIS BUTTON	1	
3	VJF1470	SIDE JACK CAP	1		77	VGU9223	W. BAL KNOB (LOWER)	1	
4	VKW3295	AWB WINDOW	1		78	VQG7175	ND KNOB SHEET	2	
5	VGU9194	MIC SWITCHING KNOB	2						
6	VMG1460	SLIDE SW RUBBER COVER	2						
7	VYQ3546	START/STOP U	1		101	XQN2+B4FN	SCREW	32	
8	VYK1R55	SIDE CASE R 1U	1		102	XYN26+A6FJK	SCREW	4	
9	VGQ6902	MIC SWITCHING KNOB HOLDER	1		103	XQN2+B4FJK	SCREW	22	
10	VGU9246	ZOOM CLUCH KNOB	1		104	XYN2+C5FJ	SCREW	4	
11	VML3710	CLUTCH SLIDE PLATE	1		105	XQN2+BJ4FJK	SCREW	3	
12	VMP8588	CLUTCH LEVER	1		106	XQN16+BJ4FJK	SCREW	2	
13	VMP8198	TRIPOD FRAME	1		107	XQN2+B4J6F	SCREW	8	
14	VGQ8097	COOLING SHEET C3	2		108	XYN2+C3FJ	SCREW	3	
15	VMG1517	LENS HEAT SINK SHEET (2)	2		109	XQN2+CJ6FJK	SCREW	2	
16	VWJ10GG6033L0	FLEXIBLE CABLE	1						
17	VSC5793	CF HEAT SINK	1						
18	VWJ1806	FLEXIBLE CABLE	1						
19	VQG8096	COOLING SHEET C2	1		E2	VEP23638A	CAMERA C. B. A.	1	FOR AG-DVX100BP/AN
20	VWJ20G6055L0	FLEXIBLE CABLE	1		E2	VEP23638B	CAMERA C. B. A.	1	FOR AG-DVX100BE/EN/MC
21	VGP6147	BACK CASE	1		E3	VEP06G09A	R SIDE C. B. A.	1	
22	VMX0531	CLUTCH SPACER	1		E4	VEP06G11A	CAM OP1 C. B. A.	1	
23	K4ZZ04000036	BATTERY TERMINAL	1		E5	VEP06G12A	CAM OP2 C. B. A.	1	
24	VYF2920	EVR COVER U	1		E6	VEP06G13A	CAM OP3 C. B. A.	1	
25	VGU9219	CAMERA/VCR BUTTON	2		E7	VEP06G14A	CAM OP4 C. B. A.	1	
26	VHN0194	SPACER	1		E8	VEP06G10A	MENU C. B. A.	1	
27	VMB3210	BATTERY LOCK SPRING	1		E12	VEP001K6A	BACK CONNECT C. B. A.	1	
28	VGU8582	BATTERY LOCK BUTTON	1		E15	VEP04892A	REAR JACK C. B. A.	1	
29	VJF1469	H. P CAP	1		E16	VEP06G07A	POWER SW C. B. A.	1	
30	VYQ3547	MODE DIAL U P. C. BOARD	1		E18	VEP04893A	SIDE JACK C. B. A.	1	
31	VGU9197	MONITOR LOCK KNOB	1		E19	VEP04895A	MIC CH2 C. B. A.	1	
32	VGL1012	MODE PANEL LIGHT	2		E20	VEP04894A	MIC CH1 C. B. A.	1	
33	VEE1A51	DC CABLE	1		E21	VEP06G08A	MODE SW C. B. A.	1	
34	VMP7340	DC IN ANGLE	1		E22	VEP01971A	DC IN C. B. A.	1	
35	VWJ16GG6033L0	FLEXIBLE CABLE	1		E23	VEP01972A	BATTERY C. B. A.	1	
36	VWJ1804	FLEXIBLE CABLE	1						
37	VWJ16GG6090L0	FLEXIBLE CABLE	1						
38	VMG1715	LCD CUSHION	2						
39	VGU9209	JOY STICK BUTTON	1						
40	VGU9199	MENU BUTTON	1						
41	VQG8692	VF CASE (R)	1						
42	VWJ10GG6050L0	FLEXIBLE CABLE	1						
43	VYK1R48	TOP PANEL U	1						
44	VGU9887	VTR BUTTON2	1						
45	VMS7187	LCD LOCK SHAFT	1						
46	VMB3659	MONITOR OPENER SPRING	1						
47	VGQ6901	MONITOR KNOB	1						
48	VMB3996	POP UP SPRING	1						
49	VMP7331	OPENER HOLDER ANGLE	1						
50	VGQ8750	COOLING SHEET C5	1						
51	VGQ8751	COOLING SHEET C6	1						
52	VMT1633	FPC CUSHION	1						
53	VQG8817	COOLING SHEET R4	1						
54	VSC5792	CAMERA HEAT SINK	1						
55	VQG8753	COOLING SHEET R3	1						
56	VGQ8752	COOLING SHEET R2	1						
57	VGU9886	VTR BUTTON1	1						
58	VMZ3612	HINGE FPC HOLD SHEET	1						
59	VGU9894	SLIDE KNOB	4						
60	VGH4857	SLIDE KNOB SHEET	4						
61	VQG8613	ND FILTER HOLDER	1						
62	VWJ06GG6033L0	FLEXIBLE CABLE	1						
63	VMB4000	FOCUS KNOB SPRING	1						
64	VGU9893	CAMERA OP BUTTON	1						
65	VGU9222	ND SWITCHING KNOB	1						
66	VGQ6906	HOLDER BLIND SHEET	1						
67	VGU9211	FOCUS BUTTON	1						
68	VGU9213	FOCUS SLIDE KNOB	1						
69	VQG8612	LCD HINGE COVER	1						
70	VWJ12GG6080L0	FLEXIBLE CABLE	1						
71	VWJ10GG6050L0	FLEXIBLE CABLE	1						
72	VGU9217	W. BAL KNOB (UPPER)	1						
73	VMG1418	RAIN COVER RUBBER (B)	1						
74	VMG1520	TOGGLE SW CUSHION	1						

FRAME & CASING PARTS ASSEMBLY (2)



MPL-3

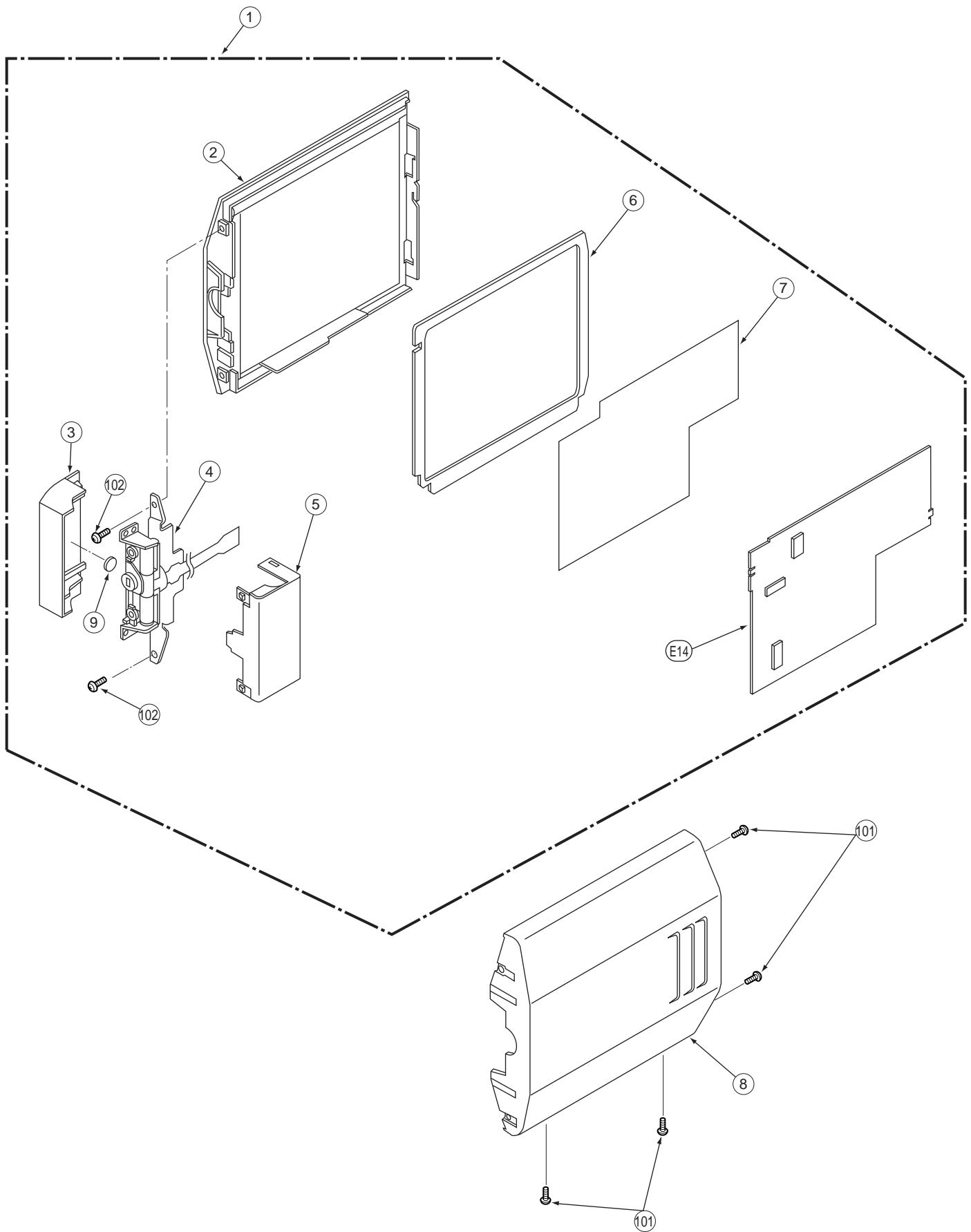
HANDLE EVF PARTS ASSEMBLY



HANDLE EVF PARTS ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	VKH0425	HANDLE	1	
2	VYF3062	REAR TALLY COVER U	1	
3	VJF1421	SHOE	1	
4	VMC1697	SPRING	1	
5	VGQ6887	MIC CASE (LOWER)	1	
6	VGQ6888	HANDLE FRONT COVER	1	
7	VGU9207	HANDLE S/S BUTTON	1	
8	VMG1479	HANDLE S/S BUTTON RUBBER	1	
9	VMP8479	HANDLE SW HOLD ANGLE	1	
10	VKC0594	VF HINGE	1	
11	VGQ6892	EVF HINGE COVER	1	
12	VYK1R58	EVF CASE U	1	
13	VYQ3545	EVF LCD HOLDER U	1	
14	VYQ2773	HELICOID ASS'Y	1	
15	VGQ6890	EVF FILTER HOLDER	1	
16	VMG1460	SLIDE SW RUBBER COVER	1	
17	VGU9888	HANDLE SLIDE KNOB	1	
18	VYF3072	HANDLE COVER U	1	
19	VYK1R40	MIC U	1	
20	VGQ6878	MIC RUBBER FIX PIECE	1	
21	VMG1711	MIC RUBBER HOLDER	1	
22	VMP8483	MIC HOLDER ANGLE	1	
23	VYKOK76	MIC CASE ASS'Y	1	
24	VWJ1805	EVF FPC	1	
25	VWJ24GG6070L0	FLEX. CABLE	1	
26	VJF1158	CLAMPER	1	
27	VWJ1590	INT MIC FLEX.	1	
28	VXW0567	EVF LENS ASS'Y	1	
29	VYK1R66	EYE CAP U	1	
30	VMG1286	CUSHION RUBBER	2	
31	VMZ3361	SUPPORT SHEET	1	
101	XQN2+B4FN	SCREW	4	
102	XQN2+BJ4FJK	SCREW	6	
103	XQN2+B4FJK	SCREW	1	
104	XQN2+BJ3FJK	SCREW	1	
105	XQN2+CJ6FJK	SCREW	3	
106	XQN2+B4FJ	SCREW	2	
107	XQN2+B4FJK	SCREW	8	
108	XSS2+4FJK	SCREW	4	
109	XSN2+4FC	SCREW	1	
110	XQN2+B4FN	SCREW	4	
111	XQN2+BJ4FJK	SCREW	1	
112	XQN2+BJ5FJK	SCREW	2	
E9	VEP06G15A	HANDLE C. B. A.	1	
E10	VEP66499A	F TALLY FLEX C. B. A.	1	
E11	VEP29166A	EVF CONNECT C. B. A.	1	

LCD PARTS ASSEMBLY



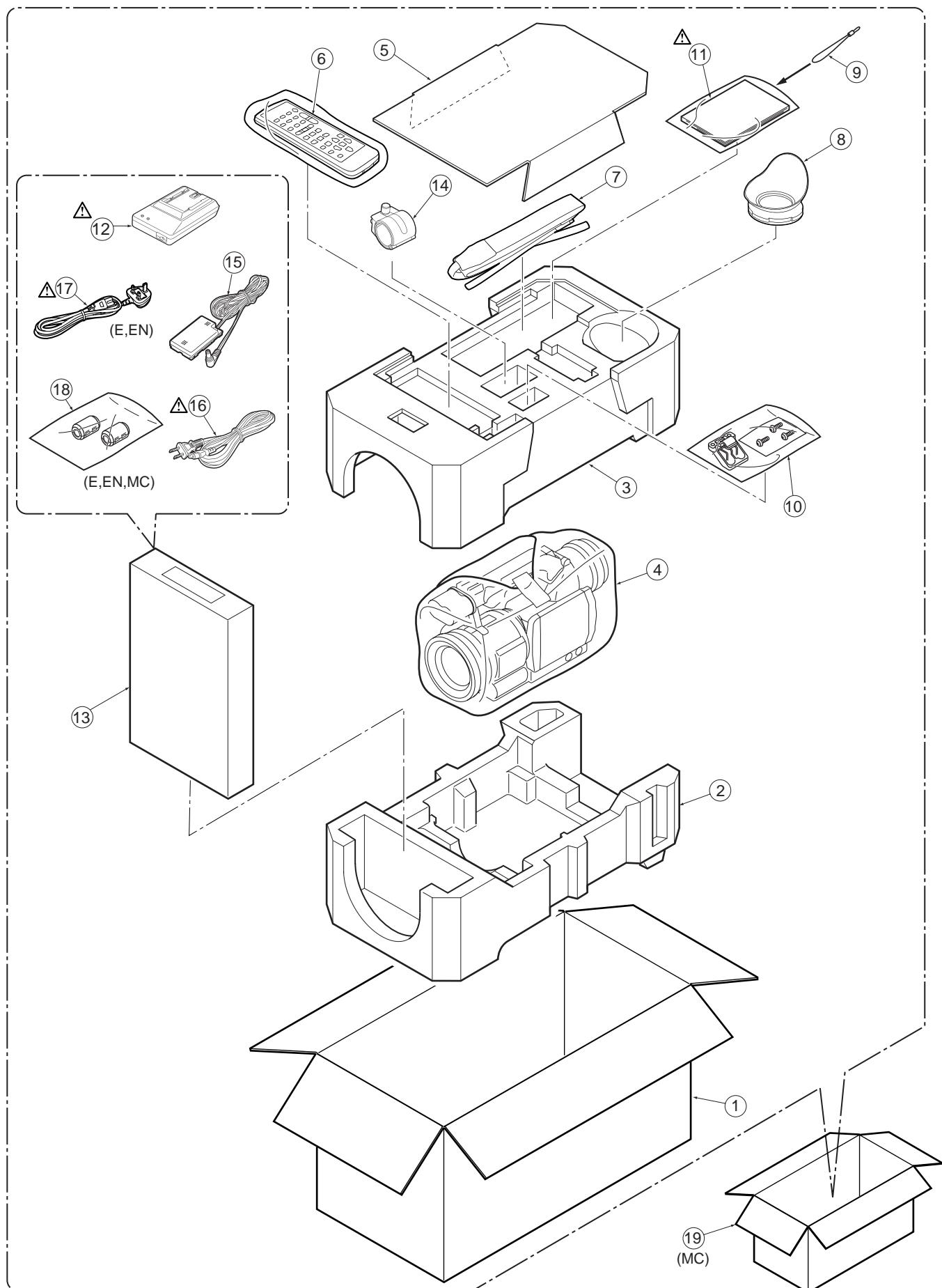
LCD PARTS ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	VYK1R42	LCD U	1	FOR AG-DVX100BP/AN/E
1	VYK1R60	LCD U	1	FOR AG-DVX102BEN
1	VYK1R62	LCD U	1	FOR AG-DVC180BMC
2	VGP6152	LCD CASE (BOTTOM)	1	
3	VQ8816	HINGE COVER (LOWER)	1	
4	VXD0465	HINGE	1	
5	VQ8817	HINGE COVER (TOP)	1	
6	VMT1717	WATERPROOF PAD	1	
7	VMZ3610	LCD PCB INSULATION SHEET	1	
8	VYK1R54	LCD CASE U	1	FOR AG-DVX100BP/AN/E
8	VYK1R63	LCD CASE U	1	FOR AG-DVX102BEN
8	VYK1R64	LCD CASE U	1	FOR AG-DVC180BMC
9	VMG1286	CUSHION RUBBER	1	
101	XQN16+B3FJK	SCREW	4	
102	XQN16+B4FN	SCREW	2	
E14	VEP08346A	LCD LEV C.B.A.	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
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PACKING PARTS ASSEMBLY

Components identified with the mark have the special characteristics for safety. When replacing any of these components, use only the same type.



Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
SW4656	EVQQWS01W	SWITCH	1	
SW4657	EVQQW101M	SWITCH	1	
SW4658	EVQQWS01W	SWITCH	1	
SW4659, 60	EVQQW101M	SWITCH	2	
SW4661	EVQQWS01W	SWITCH	1	
SW4662, 63	EVQQW101M	SWITCH	2	
SW4670	KOC112B00009	SWITCH	1	
VR4601, 02	D2BBA14A0002	V. RESISTOR	10K	2
		MISCELLANEOUS		
	VGQ8615	AUDIO VR COVER	1	
	VGU9212	AUDIO ROTATING KNOG	2	
	VGH4611	KNOB SEAL	1	
	XQN2+BJ4FJK	SCREW	1	
■ E4	VEP06G11A	CAM OP1 C. B. A.	1	(RTL)
D301-04	MA142WA	DIODE	4	
P301	K1MN10BA0059	CONNECTOR	1	
P302	K1MN06BA0059	CONNECTOR	1	
R302	ERJ3GEYOROO	M. RESISTOR CH 1/16W	0	1
R304	ERJ3GEYOROO	M. RESISTOR CH 1/16W	0	1
SW301	KOD113B00029	SWITCH	1	
SW303-06	KOH1BA000442	SWITCH	4	
■ E5	VEP06G12A	CAM OP2 C. B. A.	1	(RTL)
D351, 52	MA142WA	DIODE	2	
D354	MA142K	DIODE	1	
P350	K1ZZ00001279	CONNECTOR	1	
P351	K1MN10AA0018	CONNECTOR	1	
P352	K1MN12AA0018	CONNECTOR	1	
SW351, 52	KOE112A00108	SWITCH	2	
SW353	KOH1BB000076	SWITCH	1	
		MISCELLANEOUS		
VMX3507	TACT SW SPACER		1	
■ E6	VEP06G13A	CAM OP3 C. B. A.	1	(RTL)
P360	K1ZZ00001307	CONNECTOR	1	
R360, 61	ERJ3GEYOROO	M. RESISTOR CH 1/16W	0	2
SW360	K9AA01500015	SWITCH	1	
		MISCELLANEOUS		
VMP8476	IRIS JOG ANGLE		1	
XQN2+B4FN	SCREW		2	
VQG6917	MENU ROTATION KNOB SHEET		1	
VGU9198	ROTATION KNOB		1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■ E7	VEP06G14A	CAM OP4 C. B. A.	1	(RTL)
P370	K1MN06BA0059	CONNECTOR	1	
R370	ERJ3GEYOROO	M. RESISTOR CH 1/16W	0	1
SW370	KOH1BA000442	SWITCH	1	
		MISCELLANEOUS		
VMP7335	C. B. A. HOLDER ANGLE		1	
XQN2+B4FN	SCREW		2	
■ E8	VEP06G10A	MENU C. B. A.	1	(RTL)
D610-12	MA3S781DOL	DIODE	3	
D614-16	MA3S781DOL	DIODE	3	
P610	K1MN10BA0059	CONNECTOR	1	
SW608	KOH1ZA000001	SWITCH	1	
SW609	EVQQWS01W	SWITCH	1	
■ E9	VEP06G15A	HANDLE C. B. A.	1	(RTL)
C451, 52	ECJ1VC1H330J	C. CAPACITOR CH 50V 33P	2	
C453	F1H1H104A783	C. CAPACITOR CH 50V 0.1U	1	
C454, 55	ECUX1C823KBV	C. CAPACITOR CH 16V 0.082U	2	ECJ1XB1C823K
C456, 57	ECJ1VB1E223K	C. CAPACITOR CH 25V 0.022U	2	
C458, 59	ECJ1VB1C105K	C. CAPACITOR CH 16V 1U	2	
C460, 61	F1J1A335A003	C. CAPACITOR CH 10V 3.3U	2	
C462	F3G1A226A035	T. CAPACITOR CH6.3V 22U	1	
C463	F3H1C226A063	T. CAPACITOR CH 25V 22U	1	
C464	F1H1H104A783	C. CAPACITOR CH 50V 0.1U	1	
C471	F3H1C476A064	T. CAPACITOR CH 16V 47U	1	
C472	F1H1H104A783	C. CAPACITOR CH 50V 0.1U	1	
C4801-04	ECJ1VB1E223K	C. CAPACITOR CH 25V 0.022U	4	
C4806	ECUX1H102JCVC	C. CAPACITOR CH 50V 1000P	1	ECJ1XC1H102J
C4808	ECUX1H102JCVC	C. CAPACITOR CH 50V 1000P	1	ECJ1XC1H102J
C4809	ECJ1VB1E223K	C. CAPACITOR CH 25V 0.022U	1	
C4810	ECUX1A224KBV	C. CAPACITOR CH 10V 0.22U	1	
C4811	ECJ1VB1E223K	C. CAPACITOR CH 25V 0.022U	1	
C4812	ECUX1A224KBV	C. CAPACITOR CH 10V 0.22U	1	
C4813	F3F1A106A046	T. CAPACITOR CH 10V 10U	1	
C4814	F3H1C226A063	T. CAPACITOR CH 25V 22U	1	
D402	B3AAB0000129	LED	1	
D471-73	MA3S781DOL	DIODE	3	
IC451, 52	COABA000166	IC	2	
IC471	B3RAB0000052	IC	1	
IC4801	COABC000051	IC	1	
P451	K1MN24BA0059	CONNECTOR	1	
P452	K1MN10BA0079	CONNECTOR	1	
P4801, 02	K1KA04BA0014	CONNECTOR (MALE)	2	
Q451, 52	2SD1819A-R	TRANSISTOR	2	
Q453	2SD182400L	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
P551	K1MN24AA0018	CONNECTOR	1	
P552, 53	K1MN10AA0018	CONNECTOR	2	
P554	K1MR70B00004	CONNECTOR	1	
P555	K1MN22AA0018	CONNECTOR	1	
P556	K1KA02AA0104	CONNECTOR (MALE)	1	
Q551	B1ADGD000005	TRANSISTOR	1	
QR551	B1GBCFLL0036	TRANSISTOR-RESISTOR	1	
R551, 52	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	2	
R556	ERJ2GEJ203	M. RESISTOR CH 1/16W 20K	1	
R557	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	
R558	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R559	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R562	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	1	
■ E14	VEP08346A	LCD LEV C. B. A.	1 (RTL)	
C1003	F3G1C106A028	T. CAPACITOR CH 16V 10U	1	
C1014	F3F1A106A046	T. CAPACITOR CH 10V 10U	1	
C1017	ECUX1C106KBP	C. CAPACITOR CH 16V 10U	1	
C1019	ECJOEFC1C104Z	C. CAPACITOR CH 16V 0. 1U	1	
C1025	ECJ2FB1C225K	C. CAPACITOR CH 16V 2. 2U	1	
C1026	ECJ1VB1C105K	C. CAPACITOR CH 16V 1U	1	
D1001	MA8120-M	DIODE	1 MAZ81200ML	
L1005	G1C100KA0068	COIL	10UH	1
P1001	K1MN27B00036	CONNECTOR	1	
P1002	K1MN12BA0059	CONNECTOR	1	
P1003	K1MN26BA0059	CONNECTOR	1	
Q1005-12	2SD2216J0L	TRANSISTOR	8	
Q1014, 15	B1ADBE000001	TRANSISTOR	2	
Q1016, 17	2SD2216J0L	TRANSISTOR	2	
R1003	ERJ2GEYOR00	M. RESISTOR CH 1/16W 0	1	
R1004	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R1005-11	ERJ2RKD270	M. RESISTOR CH 1/16W 27	7	
R1013	ERJ2RKD270	M. RESISTOR CH 1/16W 27	1	
R1018	ERJ2RH0472	M. RESISTOR CH 1/16W 4. 7K	1	
R1020	ERJ2RH0223	M. RESISTOR CH 1/16W 22K	1	
R1024	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R1069, 70	ERJ2RKD270	M. RESISTOR CH 1/16W 27	2	
TG1023	EYF60U	TEST POINT	1	
■ E15	VEP04892A	REAR JACK C. B. A.	1 (RTL)	
D4908, 09	D4ED1220A006	VARISTOR	2	
J4901	K2HC106B0010	AC POWER PLUG	1	
J4902	K2HC103B0183	JACK	1	
J4903	K2HD103B0015	JACK	1	
L4902, 03	JOJBC0000014	FILTER	2	
P4902	K1MN16BA0059	CONNECTOR	1	
R4901, 02	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	2	
R4909-14	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	6	
R4919	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
T4901-03	JOMAB0000196	FILTER	3	
		MISCELLANEOUS		
	VMP8472	BACK JACK ANGLE	1	
	XQN2+B4FN	SCREW	2	
■ E16	VEP06G07A	POWER SW C. B. A.	1 (RTL)	
D502	MA3S781DOL	DIODE	1	
P501	K1MN20BA0059	CONNECTOR	1	
P502	K1MN16BA0059	CONNECTOR	1	
SW501	VMG0763	SWITCH	1	
SW502	K0L1BA000015	SWITCH	1	
■ E17	VEP06G16A	ZOOM SW FLEX C. B. A.	1 (RTL)	
SW201	EVQQWS01W	SWITCH	1	
VR201	D2B1B15B0001	V. RESISTOR	100K	1
■ E18	VEP04893A	SIDE JACK C. B. A.	1 (RTL)	
C4451, 52	ECJ1VB1H682K	C. CAPACITOR CH 50V 6800P	2	
C4470	F1H1H104A783	C. CAPACITOR CH 50V 0. 1U	1	
C4471, 72	ECUX1A224KBV	C. CAPACITOR CH 10V 0. 22U	2	
D4405	B0KB00000041	DIODE	1	
D4451	MA3062M	DIODE	1	
D4452, 53	D4ED1220A006	VARISTOR	2	
D4454-56	D4ED1270A008	VARISTOR	3	
D4470	B3GA00000053	DIODE	1	
D4471	MA3S132DOL	DIODE	1	
J4451	K2HA303A0019	JACK	1	
J4452	K2HZ104A0002	S TERMINAL JACK	1	
L4402, 03	JOMAB0000116	FILTER	2	
L4452, 53	JOJBC0000014	FILTER	2	
P4401	K1MN22BA0059	CONNECTOR	1	
P4402	K1FA104A0017	CONNECTOR	1	
Q4470	2SD103000L	TRANSISTOR	1	
Q4471	2SD1819A-R	TRANSISTOR	1	
R4401, 02	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	2	
R4409, 10	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	2	
R4452-54	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	3	
R4460, 61	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	2	
R4463	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R4464	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	1	
R4468	ERJ3GEYOR00	M. RESISTOR CH 1/16W 0	1	
R4470	ERJ6GEYJ225	M. RESISTOR CH 1/10W 2. 2M	1 D0GD225JA003	
R4471	ERJ3GEYJ106	M. RESISTOR CH 1/16W 10M	1	
R4472	ERJ3GEYJ334	M. RESISTOR CH 1/16W 330K	1	
R4473	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1. 8K	1	

Components identified with the mark Δ have the special characteristics for safety.
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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■ E21	VEP06G08A	MODE SW C. B. A.	1	(RTL)
D151-56	MA3S781DOL	DIODE	6	
D157	B3AB0000037	DIODE	1	
D158	B3ABB0000086	LED	1	
D159	MA3S781DOL	DIODE	1	
P152	K1MN16BA0059	CONNECTOR	1	
R154	ERJ3GEYJ181	M. RESISTOR CH 1/16W	180	1
R155	ERJ3GEYJ271	M. RESISTOR CH 1/16W	270	1
SW151	K0G119A00024	SWITCH	1	
SW152, 53	KOH1BA000251	SWITCH	2	
■ E22	VEP01971A	DC IN C. B. A.	1	(RTL)
J31	VJS3381	CONNECTOR (FEMALE)	1	K2EC2B000001
■ E23	VEP01972A	BATTERY C. B. A.	1	(RTL)
C2, C3	F1H1H104A783	C. CAPACITOR CH 50V	0.1U	2
▲ F1	K5H312300005	FUSE	1	
L2	JOMAB0000205	FILTER	1	
P1	K1KA03BA0104	CONNECTOR (MALE)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
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