

DCR-HC14E/HC15/HC15E

RMT-814

SERVICE MANUAL

LEVEL 2

Ver 1.0 2004. 02

Revision History

How to use
Acrobat Reader



Photo : DCR-HC15E

DCR-HC14E

AEP Model
UK Model
East European Model
North European Model

DCR-HC15/HC15E

E Model

DCR-HC15E

Australian Model
Chinese Model
Hong Kong Model

DCR-HC15

Brazilian Model
Argentina Model
Korea Model

Z MECHANISM

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAMS	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987671651.pdf).
- For INSTRUCTION MANUAL, refer to SERVICE MANUAL, LEVEL 1 (987671641.pdf).
- For MECHANISM ADJUSTMENTS, refer to the "DV MECHANICAL ADJUSTMENT MANUAL VII **Z MECHANISM**" (9-876-210-11).
- Reference No. search on printed wiring boards is available.
- Table for differences of function of each model.

On the VC-311 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-311 board.

Therefore, schematic diagram, printed wiring board, waveforms, mounted parts location and electrical parts list of the VC-311 board are not shown.

The following pages are not shown.

Schematic diagram	Pages 4-39 to 4-56	Mounted parts location	Page 4-85
Printed wiring board	Pages 4-79 to 4-82	Electrical parts list	Pages 5-21 to 5-24

Mini DV Digital Video Cassette

DIGITAL VIDEO CAMERA RECORDER

SONY®



SPECIFICATIONS

Video camera recorder

System

Video recording system

2 rotary heads

Helical scanning system

Audio recording system

Rotary heads, PCM system

Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits

(Fs 48 kHz, stereo)

Video signal

DCR-HC15:

NTSC color, EIA standards

DCR-HC14E/HC15E:

PAL colour, CCIR standards

Usable cassette

Mini DV cassette with the **Mini DV** mark printed

Tape speed

SP: Approx. 18.81 mm/sec.

LP: Approx. 12.56 mm/sec.

Recording/playback time (using cassette DVM60)

SP: 1 hour

LP: 1.5 hours

Fastforward/rewind time (using cassette DVM60)

Approx. 2 min. and 40 seconds

Viewfinder

Electric viewfinder

black and white

Image device

4.5 mm (1/4 type)

CCD (Charge Coupled Device)

Gross:

DCR-HC15: Approx. 680 000 pixels

DCR-HC14E/HC15E:

Approx. 800 000 pixels

Effective (moving):

DCR-HC15: Approx. 340 000 pixels

DCR-HC14E/HC15E:

Approx. 400 000 pixels

Lens

Carl Zeiss Vario-Sonnar

Combined power zoom lens

Filter diameter: 30 mm

(1 3/16 in.)

10× (Optical), 640× (Digital)

F = 1.7 – 2.2

Focal length

When converted to a 35 mm still camera:

3.3 – 33 mm (5/32 – 1 5/16 in.)

In CAMERA mode:

42 – 420 mm (1 11/16 – 16 5/8 in.)

Color temperature

AUTO, HOLD, INDOOR (3 200 K), OUTDOOR (5 800 K)

Minimum illumination

5 lx (lux) (F1.7)

0 lx (lux) (in the NightShot mode)*

* Objects unable to be seen due to the dark can be shot with infrared lighting.

Input/Output connectors

S video output

4-pin mini DIN

Luminance signal: 1 Vp-p,

75 Ω (ohms), unbalanced

DCR-HC15:

Chrominance signal: 0.286 Vp-p,

75 Ω (ohms), unbalanced

DCR-HC14E/HC15E:

Chrominance signal: 0.3 Vp-p,

75 Ω (ohms), unbalanced

Audio/Video output

AV MINI JACK, 1 Vp-p,

75 Ω (ohms), unbalanced

327 mV, (at output impedance

more than 47 kΩ (kilohms))

Output impedance with less than

2.2 kΩ (kilohms)/Stereo minijack

(ø 3.5 mm)

DV input (DCR-HC15/HC15E only)/

output

4-pin connector

LANC jack

Stereo mini-minijack (ø 2.5 mm)

USB jack

mini-B

MIC jack

Minijack, 0.388 mV low impedance

with 2.5 to 3.0 V DC, output

impedance 6.8 kΩ (kilohms)

(ø 3.5 mm)

Stereo type

LCD screen

Picture

6.2 cm (2.5 type)

Total dot number

123 200 (560 × 220)

General

Power requirements

7.2 V (battery pack)

8.4 V (AC Adaptor)

Average power consumption (during camera recording when using the battery pack)

3.3 W using LCD

2.5 W using viewfinder

Operating temperature

0°C to 40°C (32°F to 104°F)

Storage temperature

–20°C to +60°C

(–4°F to +140°F)

Dimensions (approx.)

71 × 90 × 112 mm

(2 7/8 × 3 5/8 × 4 1/2 in.) (w/h/d)

Mass (approx.)

Main unit only:

520 g (1 lb 2 oz)

Including the rechargeable battery

pack NP-FM30, cassette DVM60

and lens cap:

610 g (1 lb 5 oz)

Supplied accessories

See page 5-14.

AC Adaptor AC-L15A/L15B

Power requirements

100 – 240 V AC, 50/60 Hz

Current consumption

0.35 – 0.18 A

Power consumption

18 W

Output voltage

DC OUT: 8.4 V, 1.5 A

Operating temperature

0°C to 40°C (32°F to 104°F)

Storage temperature

–20°C to +60°C

(–4°F to +140°F)

Dimensions (approx.)

56 × 31 × 100 mm

(2 1/4 × 1 1/4 × 4 in.) (w/h/d)

excluding projecting parts

Mass (approx.)

190 g (6.7 oz) excluding power

cord

Rechargeable battery pack NP-FM30

Maximum output voltage

DC 8.4 V

Output voltage

DC 7.2 V

Capacity

5.0 Wh (700 mAh)

Dimensions (approx.)

38.2 × 20.5 × 55.6 mm

(1 9/16 × 13/16 × 2 1/4 in.)

(w/h/d)

Mass (approx.)

65 g (2.3 oz)

Operating temperature

0°C to 40°C (32°F to 104°F)

Type

Lithium ion

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
 - Keep the temperature of the soldering iron around 270°C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350°C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE $\triangle$ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

CAUTION :

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Table for difference of function

Model	DCR-HC14E	DCR-HC15	DCR-HC15E
Destination	AEP, UK, EE, NE	E, BR, AR, KR	E, AUS, CH, HK
Color System	PAL	NTSC	PAL
Remote Commander	✕		○
DV Input	✕	○	

• Abbreviation

- EE : East European model
- NE : North European model
- AUS : Australian model
- HK : Hong Kong model
- CH : Chinese model
- KR : Korea model
- BR : Brazilian model
- AR : Argentina model

TABLE OF CONTENTS

1. SERVICE NOTE

1-1. SERVICE NOTE

1. NOTE FOR REPAIR

2. POWER SUPPLY DURING REPAIRS

3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

2. DISASSEMBLY

2-1. DISASSEMBLY

2-2. SERVICE POSITION

2-3. CIRCUIT BOARDS LOCATION

2-4. FLEXIBLE BOARDS LOCATION

3. BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/4)

3-2. OVERALL BLOCK DIAGRAM (2/4)

3-3. OVERALL BLOCK DIAGRAM (3/4)

3-4. OVERALL BLOCK DIAGRAM (4/4)

3-5. POWER BLOCK DIAGRAM (1/2)

3-6. POWER BLOCK DIAGRAM (2/2)

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/3)

4-1. FRAME SCHEMATIC DIAGRAM (2/3)

4-1. FRAME SCHEMATIC DIAGRAM (3/3)

4-2. SCHEMATIC DIAGRAMS

• CD-430 (CCD IMAGER)

SCHEMATIC DIAGRAM

• VA-118 (1/5)(RGB DRIVE, TG)

SCHEMATIC DIAGRAM

• VA-118 (2/5)(HI CONTROL)

SCHEMATIC DIAGRAM

• VA-118 (3/5)(Y/P SENSOR AMP, CONNECTOR)

SCHEMATIC DIAGRAM

• VA-118 (4/5)(DC/DC CONVERTER)

SCHEMATIC DIAGRAM

• VA-118 (5/5)(POWER IN, CHARGE)

SCHEMATIC DIAGRAM

• CK-129 (FUNCTION SWITCH)

SCHEMATIC DIAGRAM

• FP-626 FLEXIBLE

SCHEMATIC DIAGRAM

• CONTROL SWITCH BLOCK (CF-CX4000)

SCHEMATIC DIAGRAM

• PD-188 (1/2)(RGB DRIVER, TG)

SCHEMATIC DIAGRAM

• PD-188 (2/2)(BACKLIGHT DRIVE)

SCHEMATIC DIAGRAM

• JK-242 (A.V/DV IN/OUT)

SCHEMATIC DIAGRAM

• LB-085 (EVF, BACK LIGHT)

SCHEMATIC DIAGRAM

• CONTROL SWITCH BLOCK (FK-CX4000)

SCHEMATIC DIAGRAM

• MA-421 (1/2)(MIC AMP)

SCHEMATIC DIAGRAM

• MA-421 (2/2)(Y/P SENSOR, V/A IN/OUT)

SCHEMATIC DIAGRAM

• FP-228/467/826 FLEXIBLE (S/T REEL SENSOR, TAPE SENSOR)

SCHEMATIC DIAGRAM

4-3. PRINTED WIRING BOARDS

• CD-430 (CCD IMAGER)

PRINTED WIRING BOARD

• LB-085 (EVF, BACK LIGHT)

PRINTED WIRING BOARD

• FP-228/467/826 FLEXIBLE BOARD (S/T REEL SENSOR, TAPE SENSOR)

PRINTED WIRING BOARD

• FP-626 FLEXIBLE BOARD

PRINTED WIRING BOARD

• VA-118 (RGB DRIVE, TG, HI CONTROL, Y/P SENSOR AMP, CONNECTOR, DC/DC CONVERTER, POWER IN, CHARGE)

PRINTED WIRING BOARD

• CK-129 (FUNCTION SWITCH)

PRINTED WIRING BOARD

• PD-188 (DRIVER, TG, BACKLIGHT DRIVE)

PRINTED WIRING BOARD

• JK-242 (A.V/DV IN/OUT)

PRINTED WIRING BOARD

• MA-421 (MIC AMP, Y/P SENSOR, V/A IN/OUT)

PRINTED WIRING BOARD

4-4. MOUNTED PARTS LOCATION

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-1. OVERALL SECTION

5-1-2. F PANEL SECTION

5-1-3. MAIN CHASSIS SECTION

5-1-4. LENS SECTION

5-1-5. CABINET L SECTION

5-1-6. BT PANEL/EVF SECTION

5-1-7. CABINET R SECTION

5-1-8. LCD SECTION

5-1-9. OVERALL (MECHANISM DECK-Z100)

5-1-10. LS CHASSIS BLOCK ASSEMBLY

5-1-11. MECHANICAL CHASSIS BLOCK ASSEMBLY

5-2. ELECTRICAL PARTS LIST

Printed wiring board of the VC-311 board are not shown.
Pages from 4-79 to 4-82 are not shown.

Mounted parts location of the VC-311 board is not shown.
Page 4-85 is not shown.

Parts list of the VC-311 board are not shown.
Pages from 5-21 to 5-24 are not shown.

Shematic diagram of the VC-311 board are not shown.
Pages from 4-39 to 4-56 are not shown.

SECTION 1

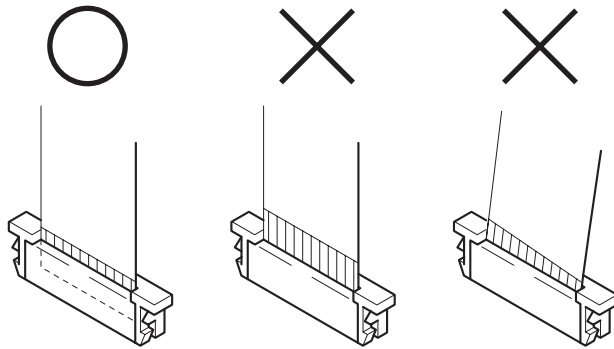
SERVICE NOTE

1-1. SERVICE NOTE

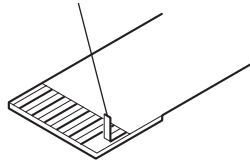
1. NOTE FOR REPAIR

Make sure that the flat cable and flexible board are not cracked or bent at the terminal.

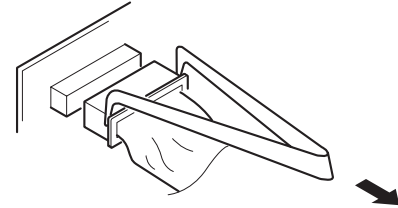
Do not insert the cable insufficiently nor crookedly.



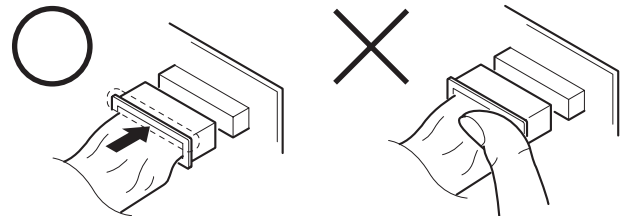
*Cut and remove the part of gilt which comes off at the point.
(Take care that there are some pieces of gilt left inside)*



*When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.*



*When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.*



2. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (8.4V), the power is shut off so that the unit cannot operate.

The following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.

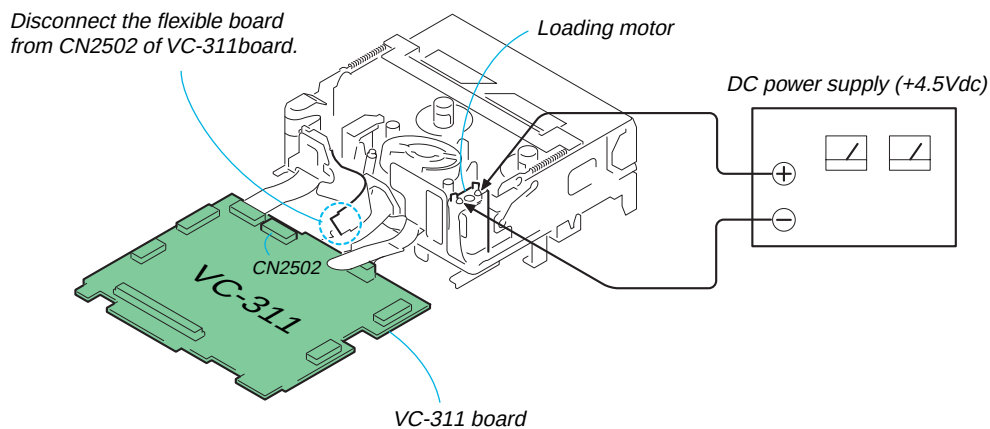
Use the AC power adaptor (AC-L10, AC-VQ800 etc.).

Method 2.

Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the commander switch to the "ADJ" side.

3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

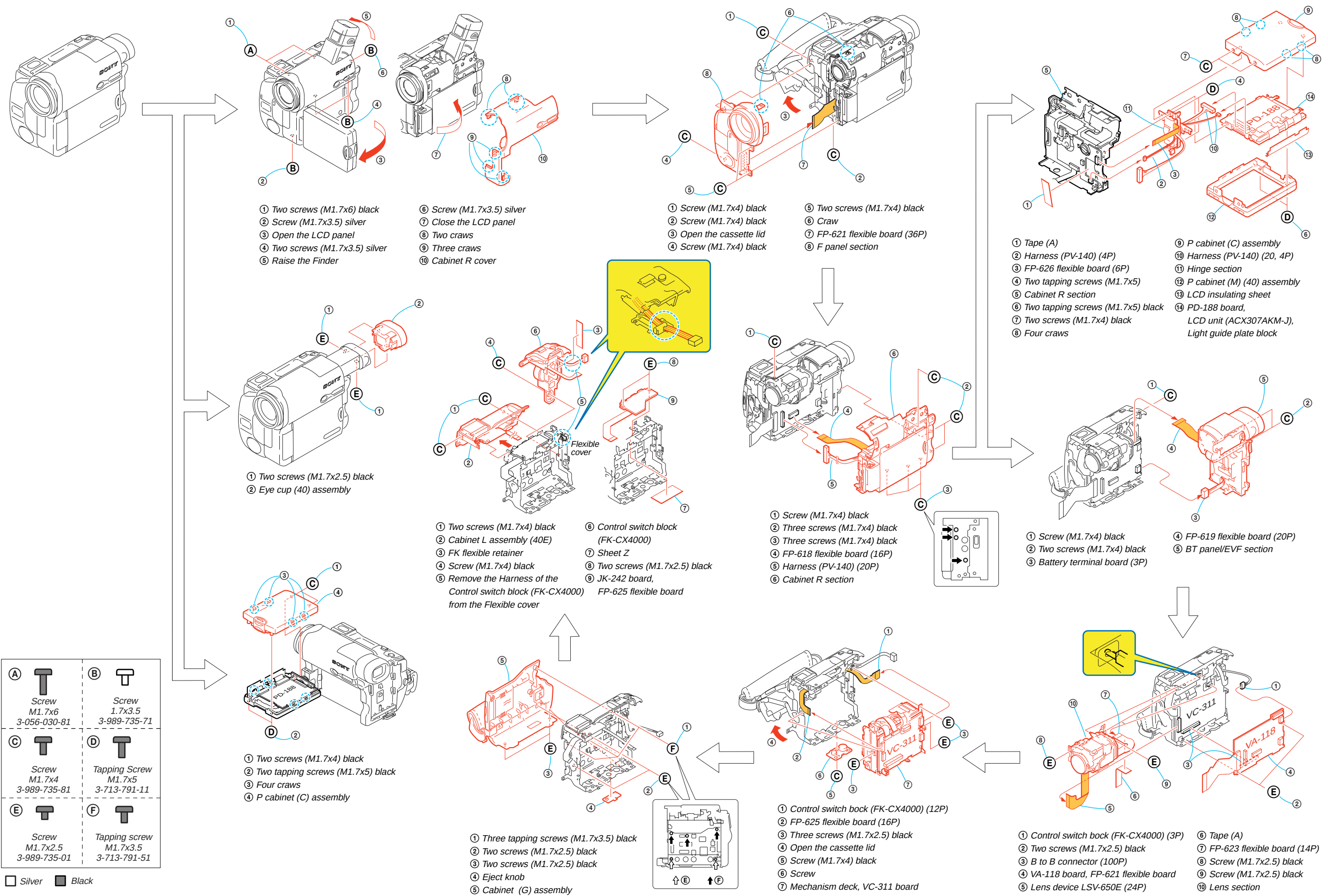
- ① Remove the cabinet R cover.
- ② Remove the F panel section.
- ③ Remove the cabinet R section.
- ④ Remove the BT panel/EVF section.
- ⑤ Remove the VA-118 board and Lens section.
- ⑥ Remove the VC-311 board and Mechanism deck.
- ⑦ Remove the MD frame assembly from the VC-311 board and Mechanism deck.
- ⑧ Disconnect the flexible board from CN2502 of VC-311 board.
- ⑨ Supply +4.5V from the DC power supply to the loading motor and unload with a pressing the cassette compartment.



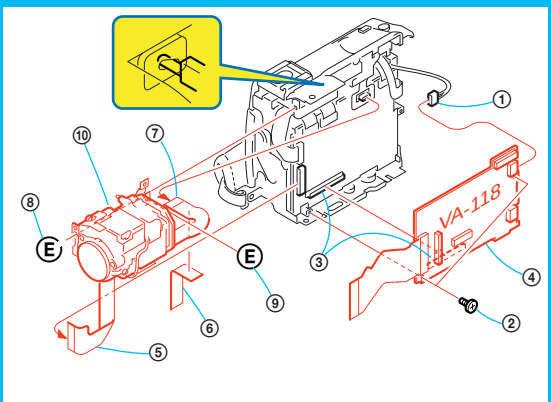
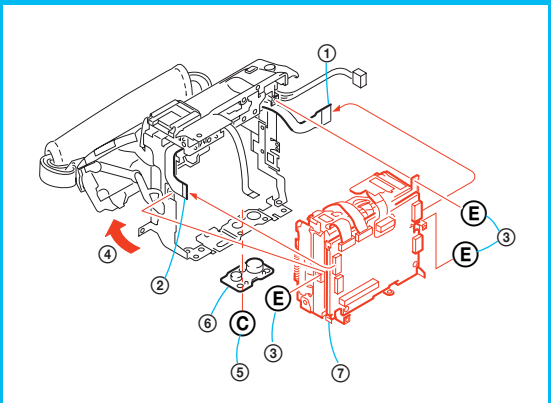
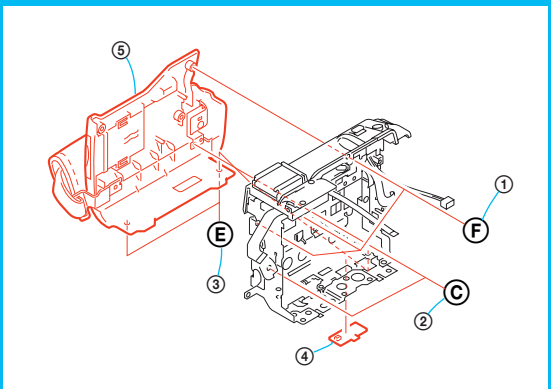
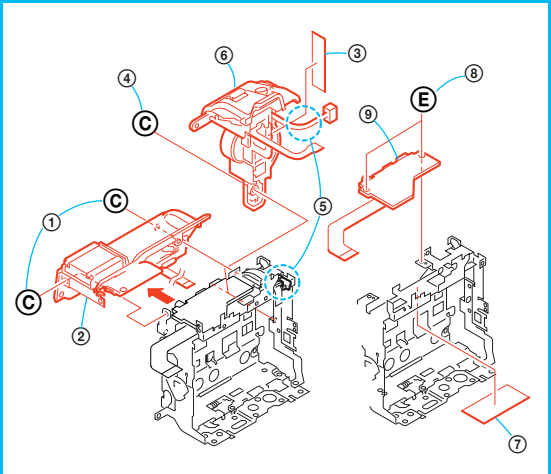
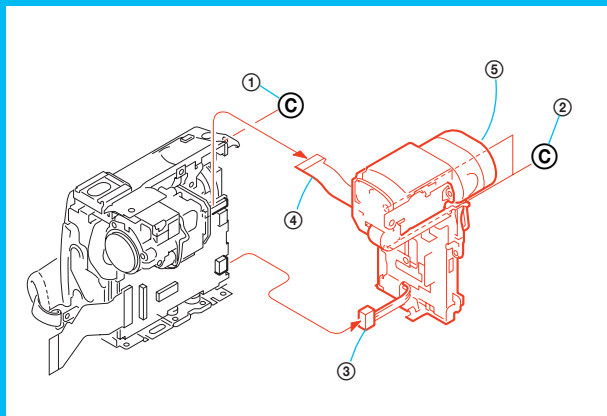
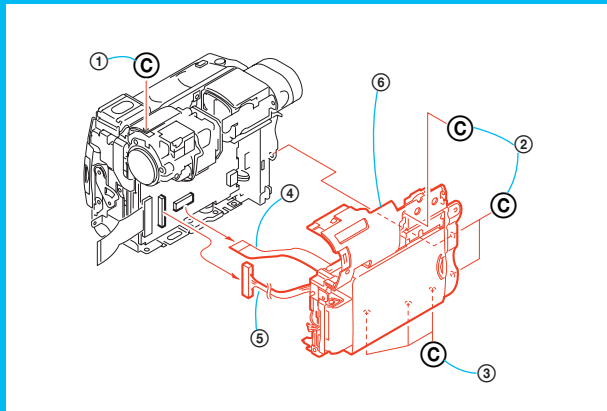
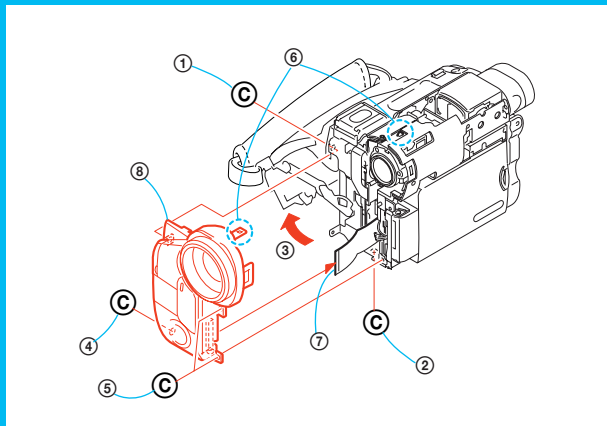
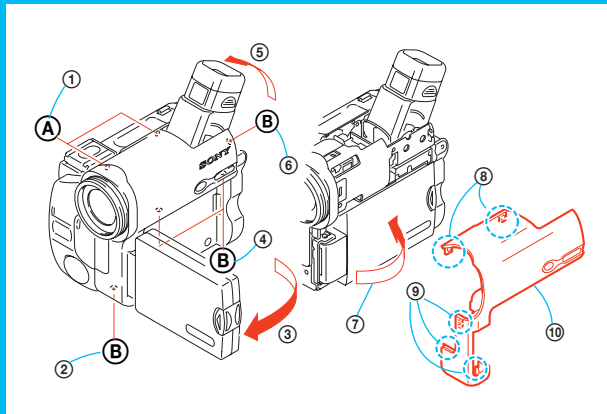
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

2-1. DISASSEMBLY



2-2. SERVICE POSITION



[SERVICE POSITION TO CHECK THE VTR SECTION]

Connection to Check the VTR Section

To check the VTR section, set the VTR to the Forced VTR power ON mode.

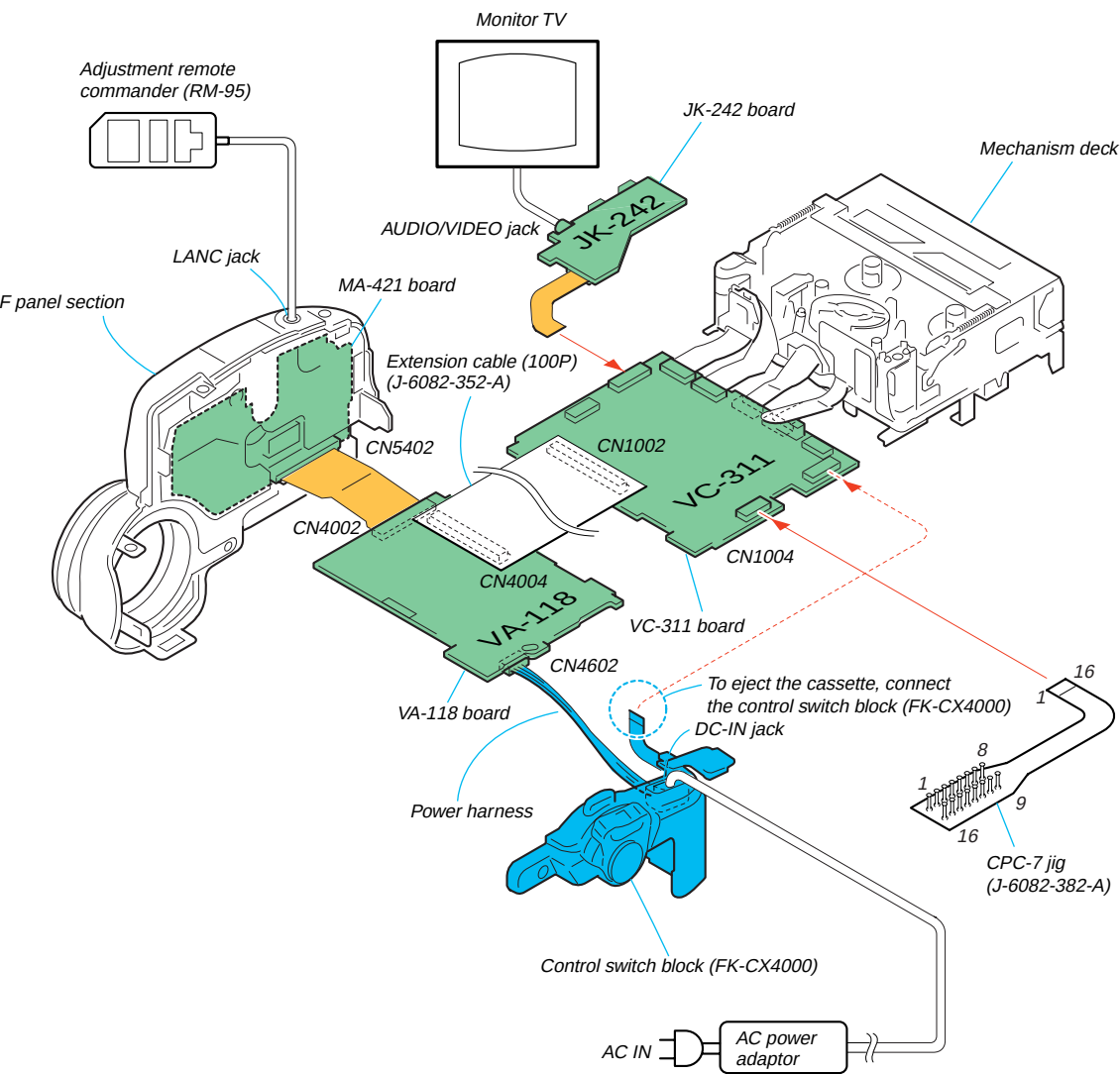
Operate the VTR functions using the adjustment remote commander (with the HOLD switch set in the OFF position).

Setting the Forced VTR Power ON mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 3) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.

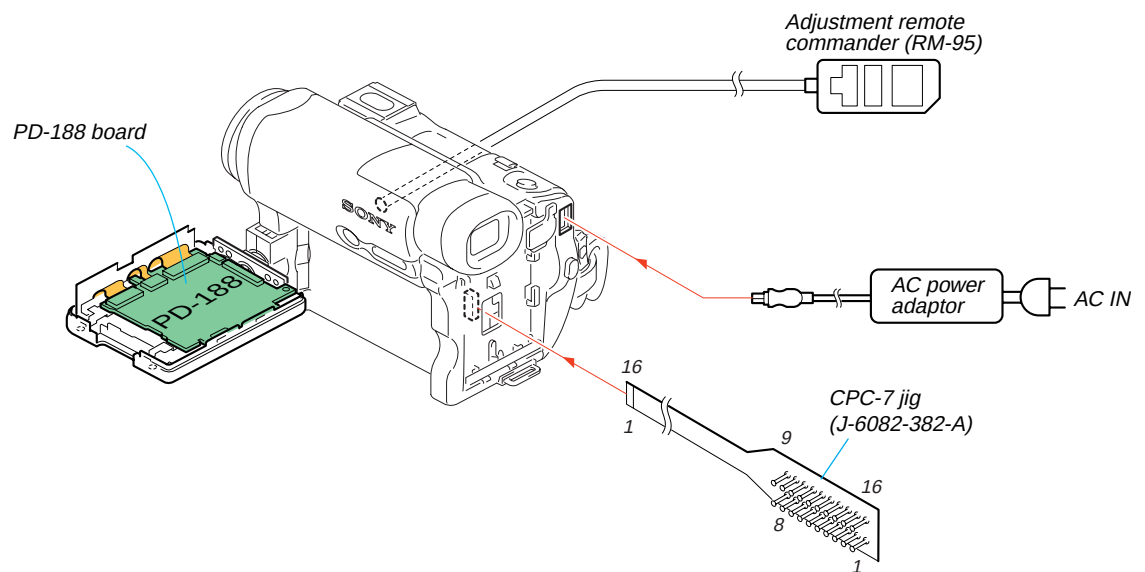
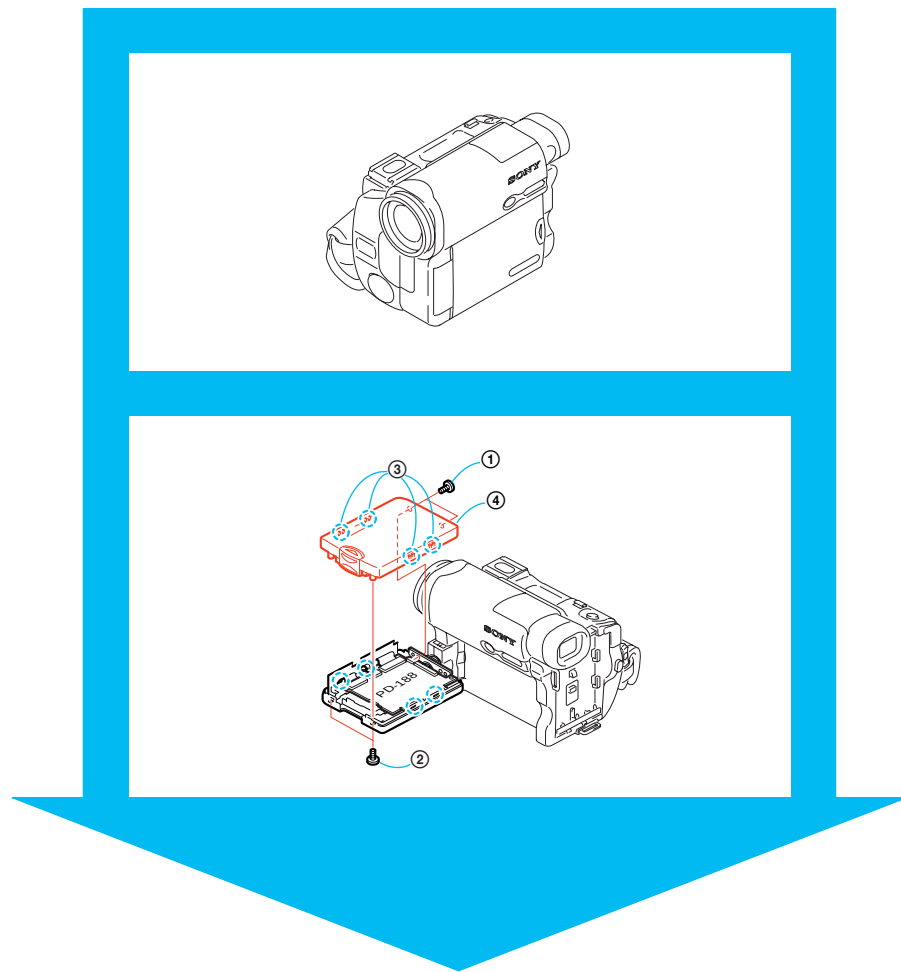
Exiting the Forced VTR Power ON mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 3) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.



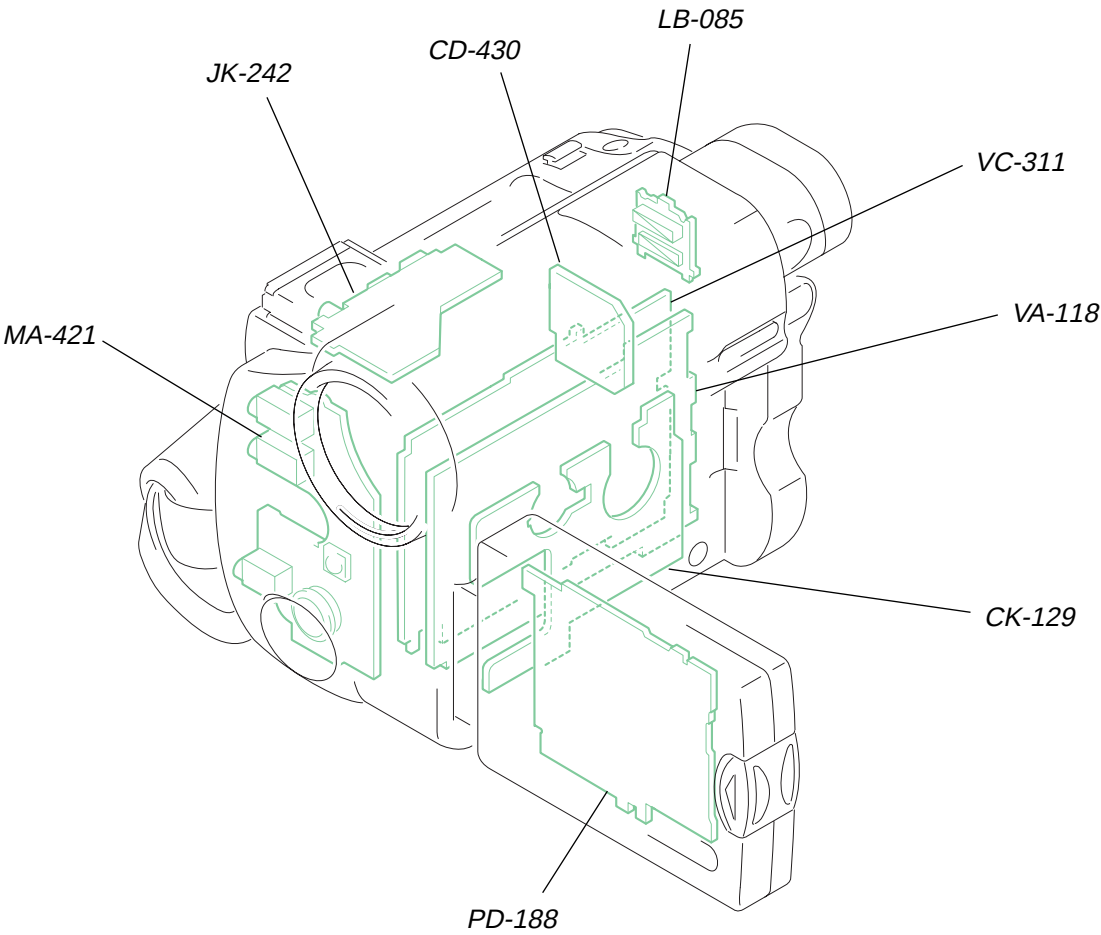
2. DISASSEMBLY

[PD-188 BOARD SERVICE POSITION]



2. DISASSEMBLY

2-3. CIRCUIT BOARDS LOCATION

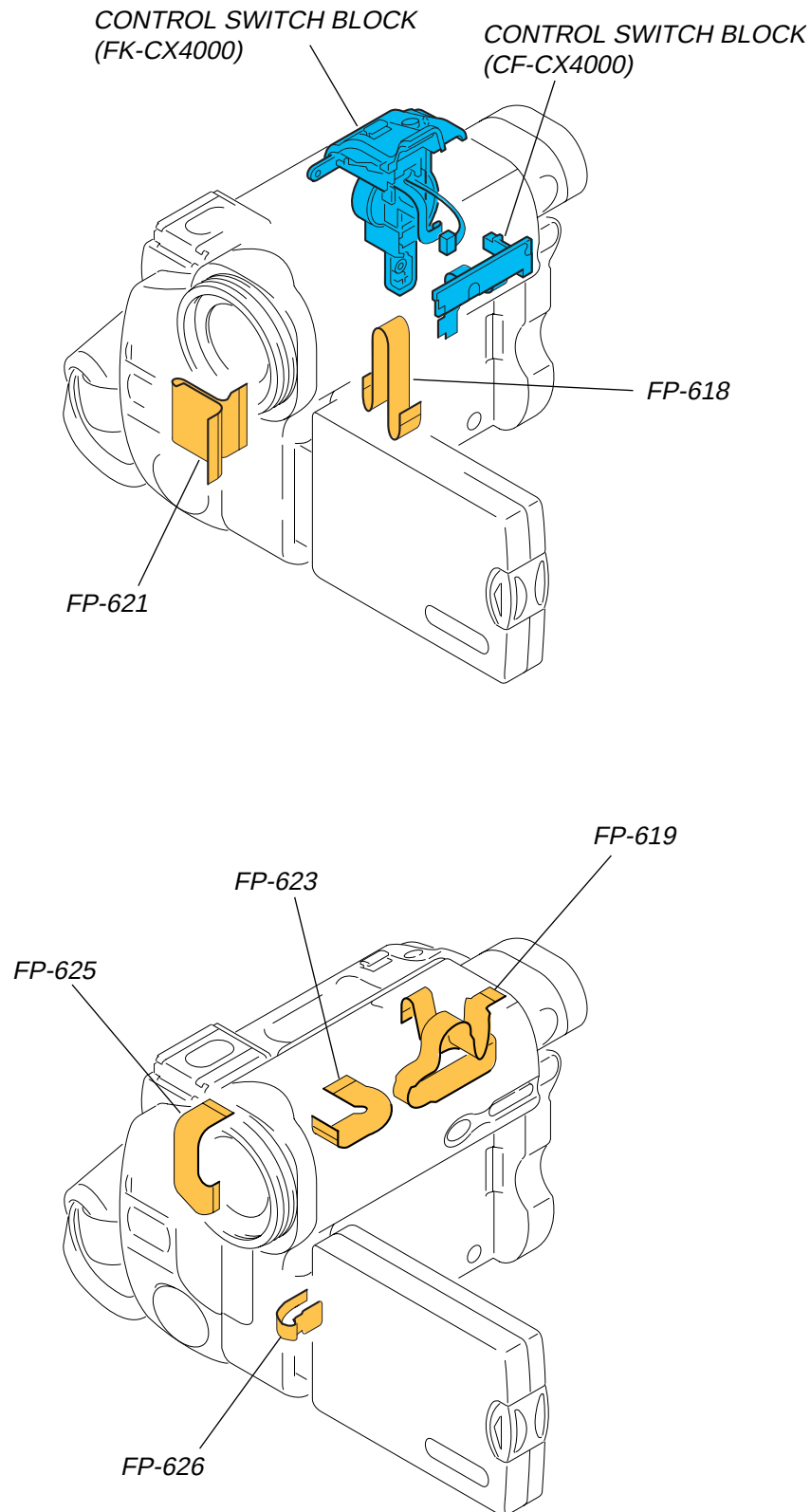


NAME	FUNCTION
CD-430	CCD IMAGER
CK-129	FUNCTION SWITCH
JK-242	A.V/DV IN/OUT
LB-085	EVF, BACKLIGHT
MA-421	MIC AMP, Y/P SENSOR, V/A IN/OUT
PD-188	RGB DRIVE, TG, BACKLIGHT DRIVE
VA-118	RGB DRIVE, TG, HI CONTROL, Y/P SENSOR AMP, CONNECTOR, DC/DC CONVERTER, POWER IN, CHARGE
VC-311	A/D CONV., TIMING GENERATOR, LENS DRIVE, EVR, DV SIGNAL PROCESS, DV INTERFACE, VIDEO OUT, REC/PB AMP, DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, AUDIO OUT, A/D-D/A CONV., CONNECTOR

2. DISASSEMBLY

2-4. FLEXIBLE BOARDS LOCATION

The flexible boards contained in the lens block is not shown.



3. BLOCK DIAGRAMS

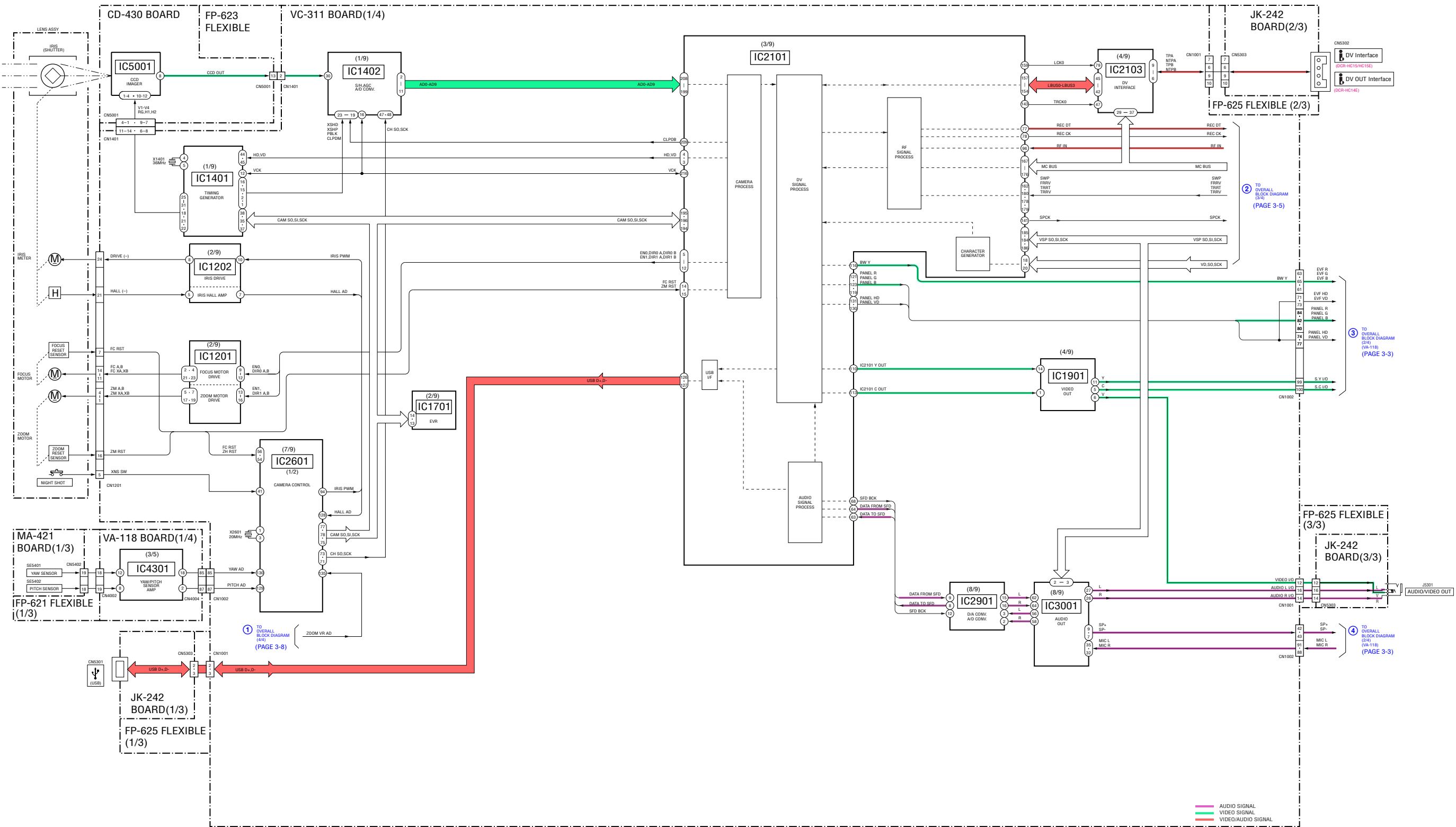
Link

OVERALL BLOCK DIAGRAM (1/4)	POWER BLOCK DIAGRAM (1/2)
OVERALL BLOCK DIAGRAM (2/4)	POWER BLOCK DIAGRAM (2/2)
OVERALL BLOCK DIAGRAM (3/4)	
OVERALL BLOCK DIAGRAM (4/4)	

SECTION 3
BLOCK DIAGRAMS

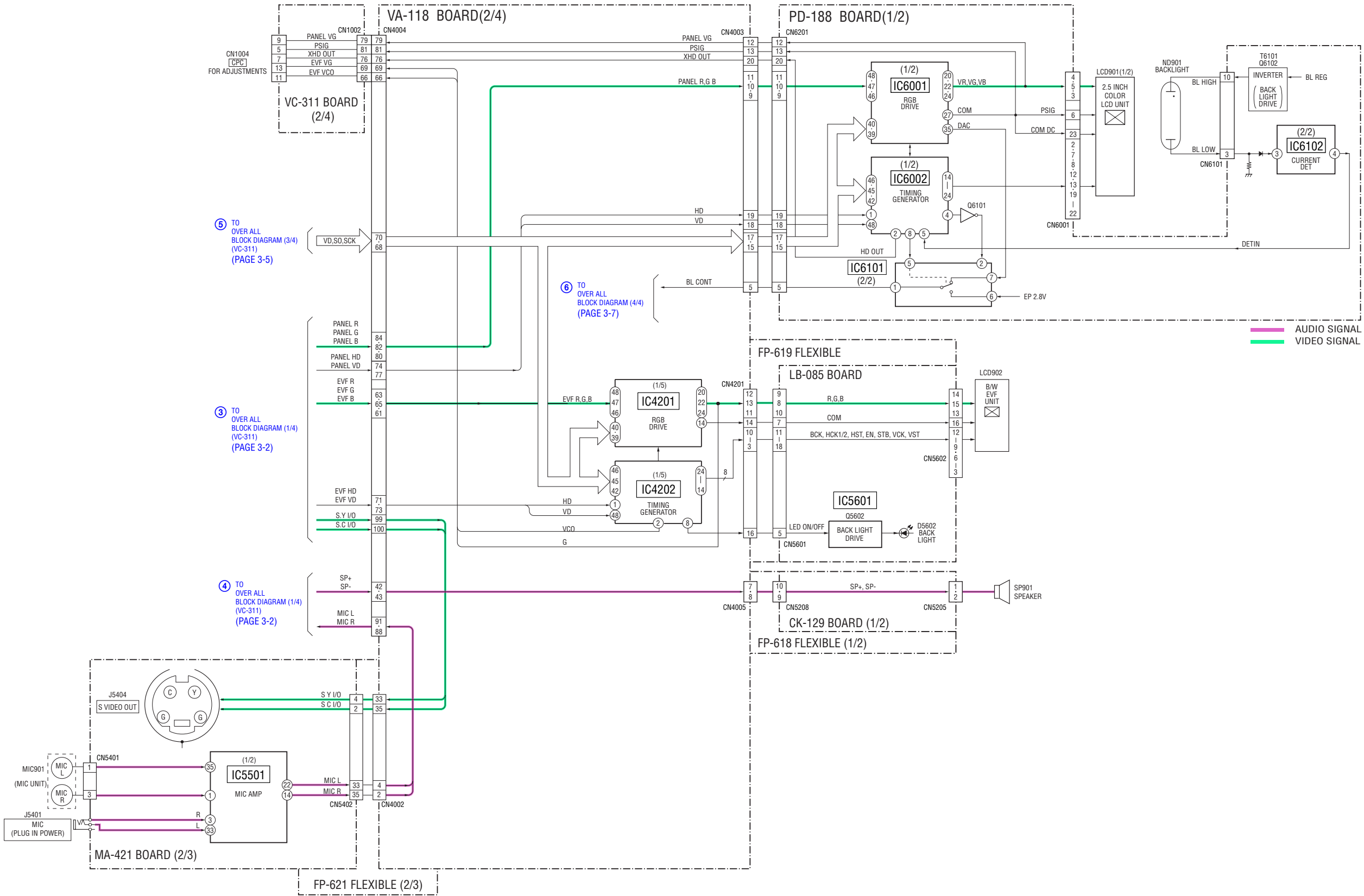
3. BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/4) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



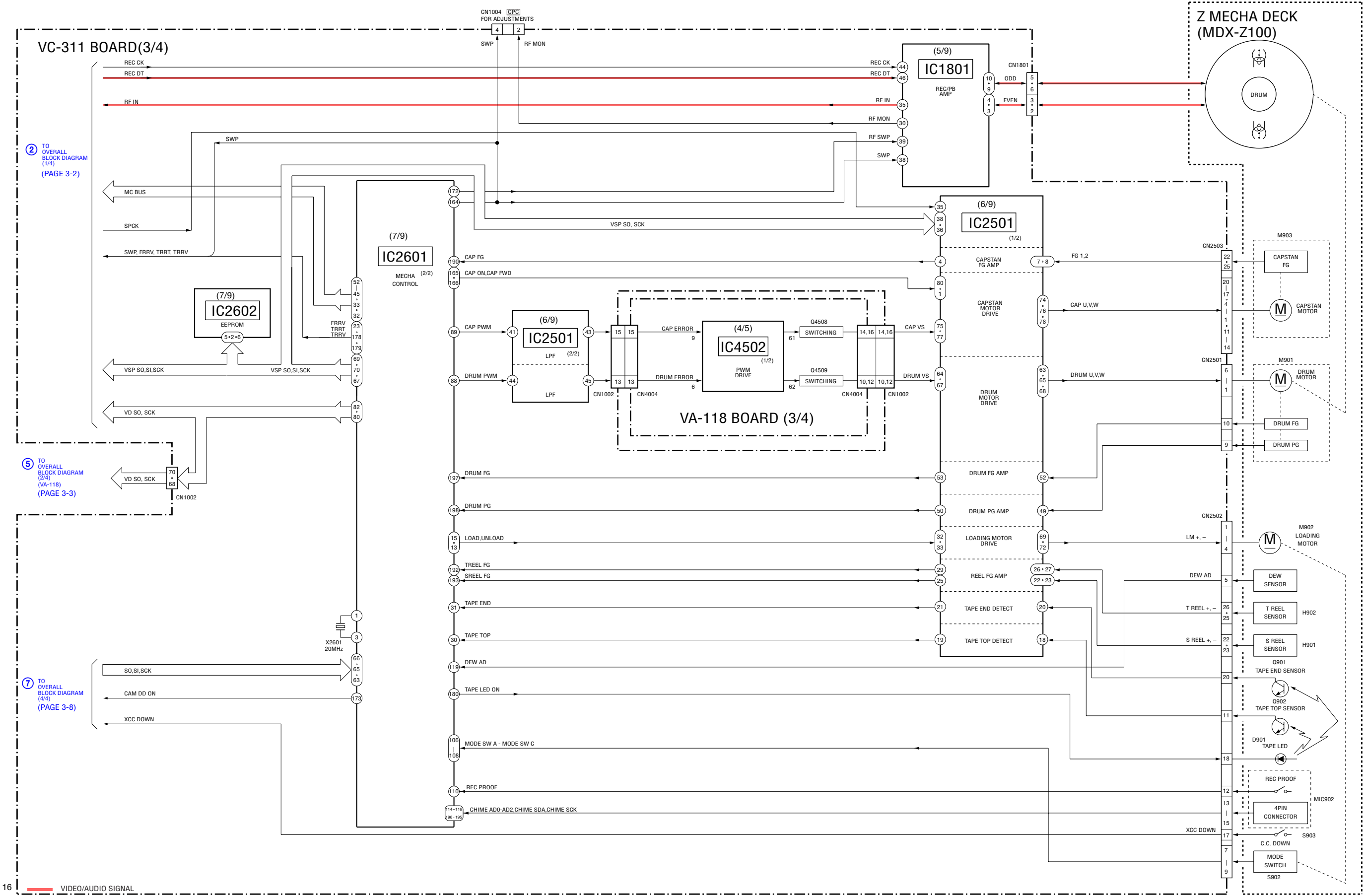
3. BLOCK DIAGRAMS

3-2. OVERALL BLOCK DIAGRAM (2/4) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



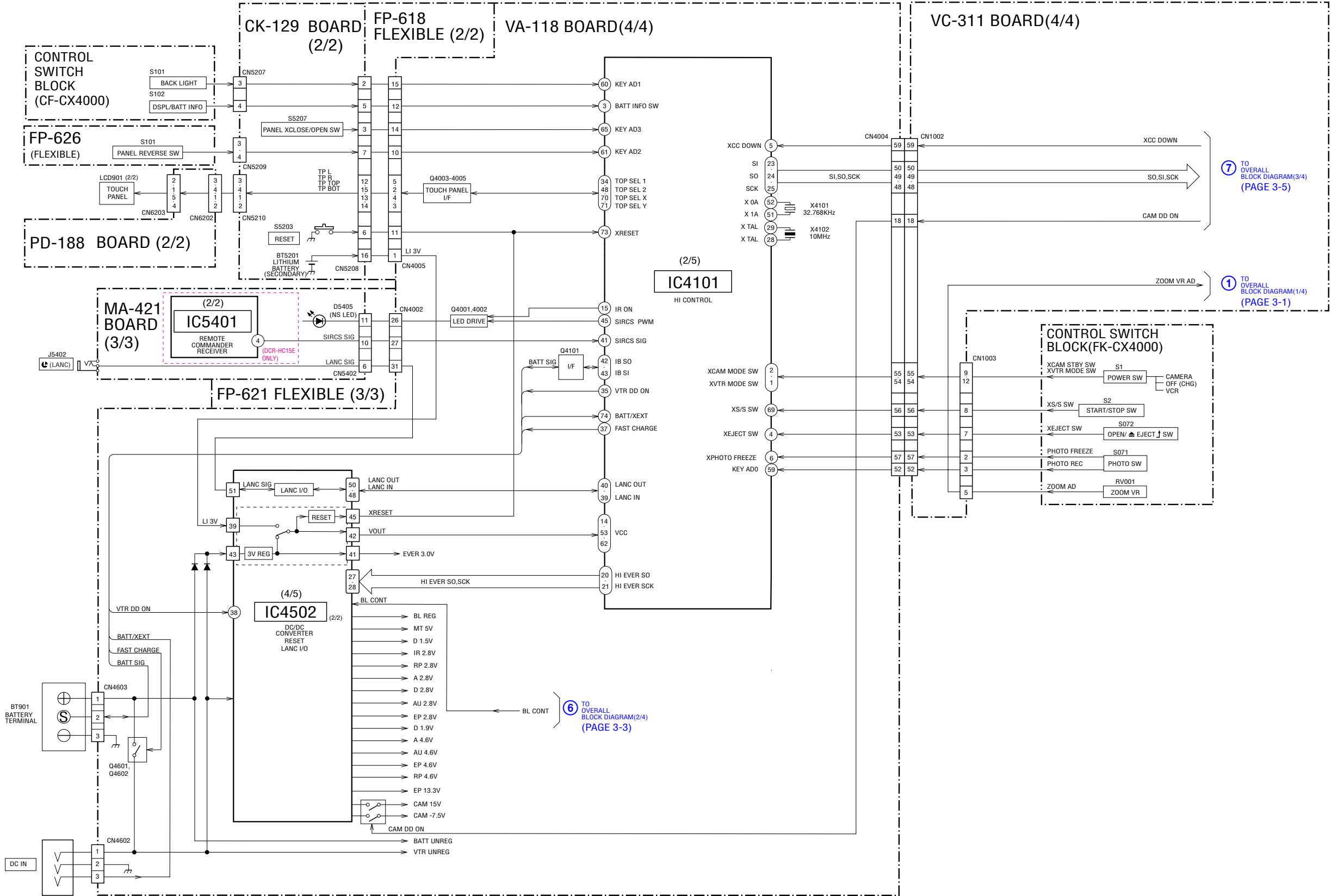
3. BLOCK DIAGRAMS

3-3. OVERALL BLOCK DIAGRAM (3/4) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



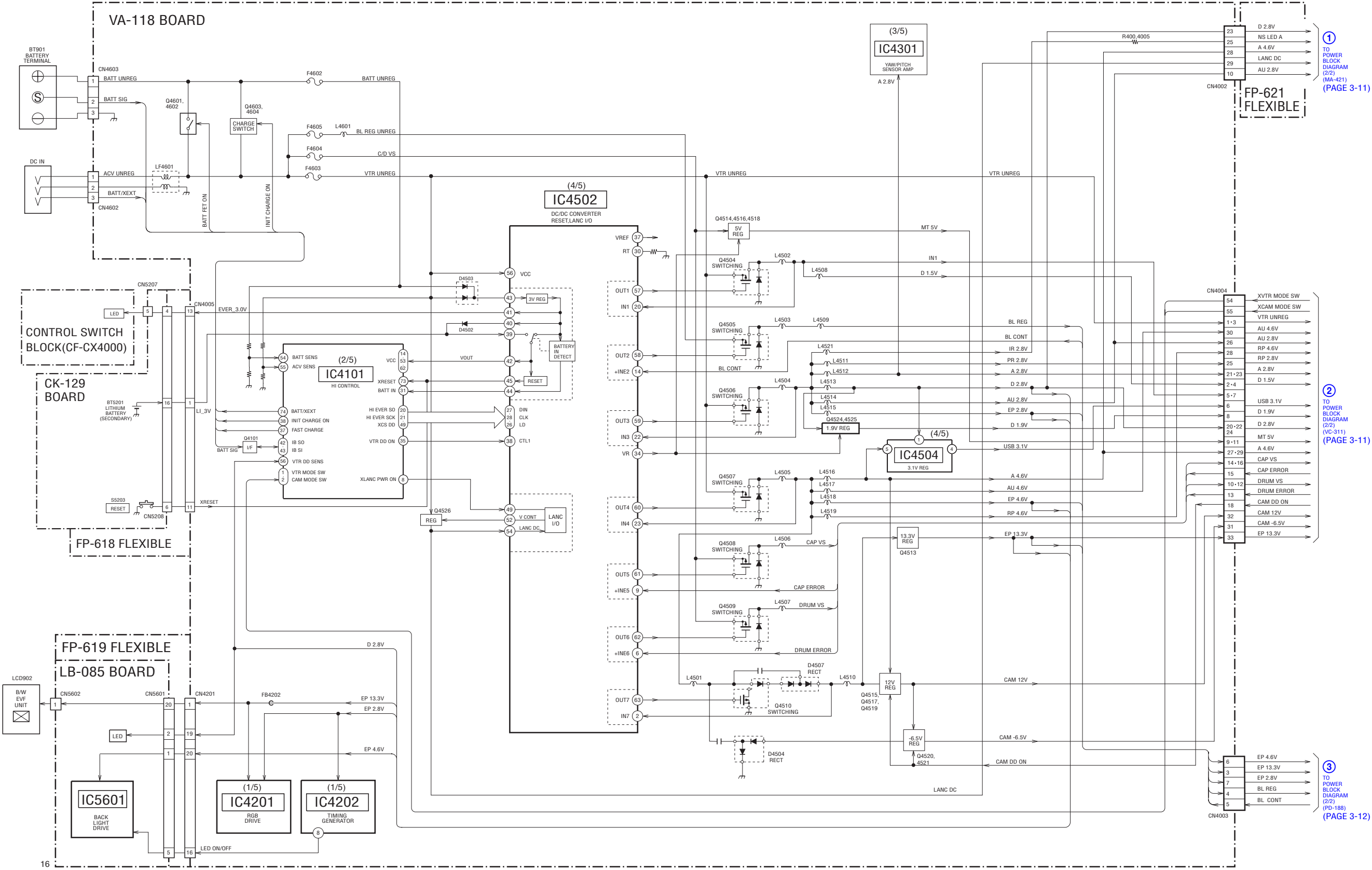
3. BLOCK DIAGRAMS

3-4. OVERALL BLOCK DIAGRAM (4/4) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



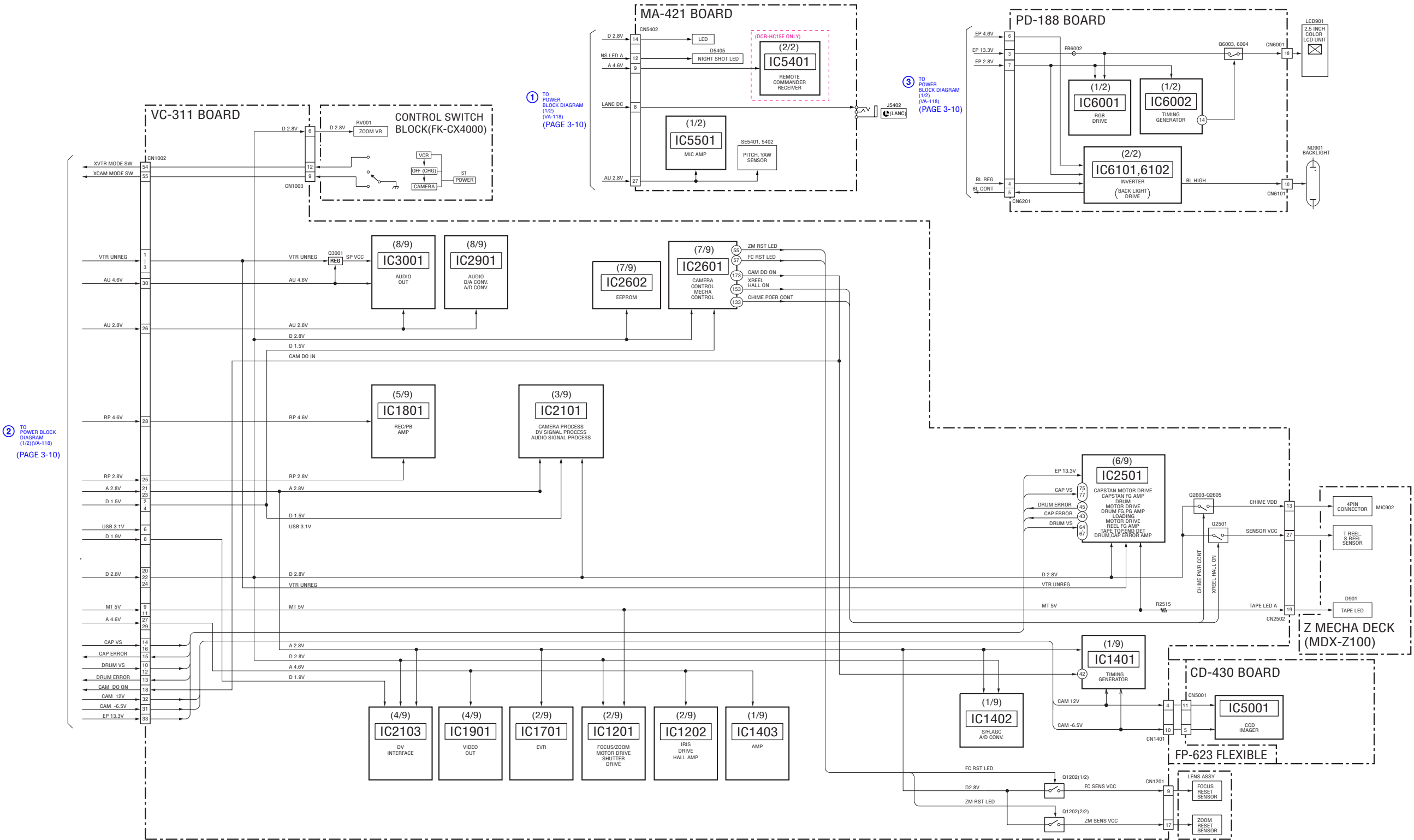
3. BLOCK DIAGRAMS

3-5. POWER BLOCK DIAGRAM (1/2) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



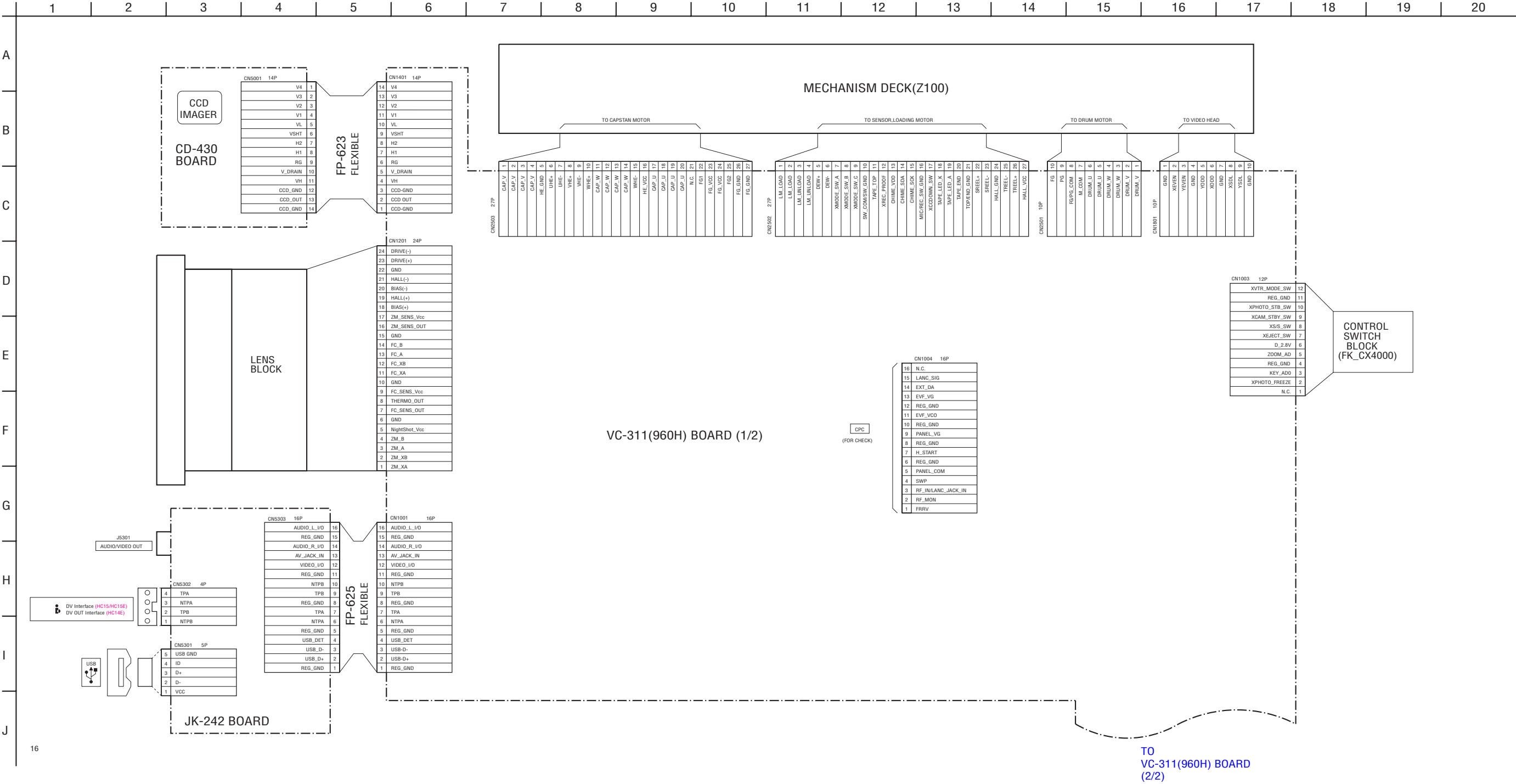
3. BLOCK DIAGRAMS

3-6. POWER BLOCK DIAGRAM (2/2) () : Number in parenthesis () indicates the division number of schematic diagram where the component is located.



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/3)



TO
VC-311(960H) BOARD
(2/2)

4-3

4-4

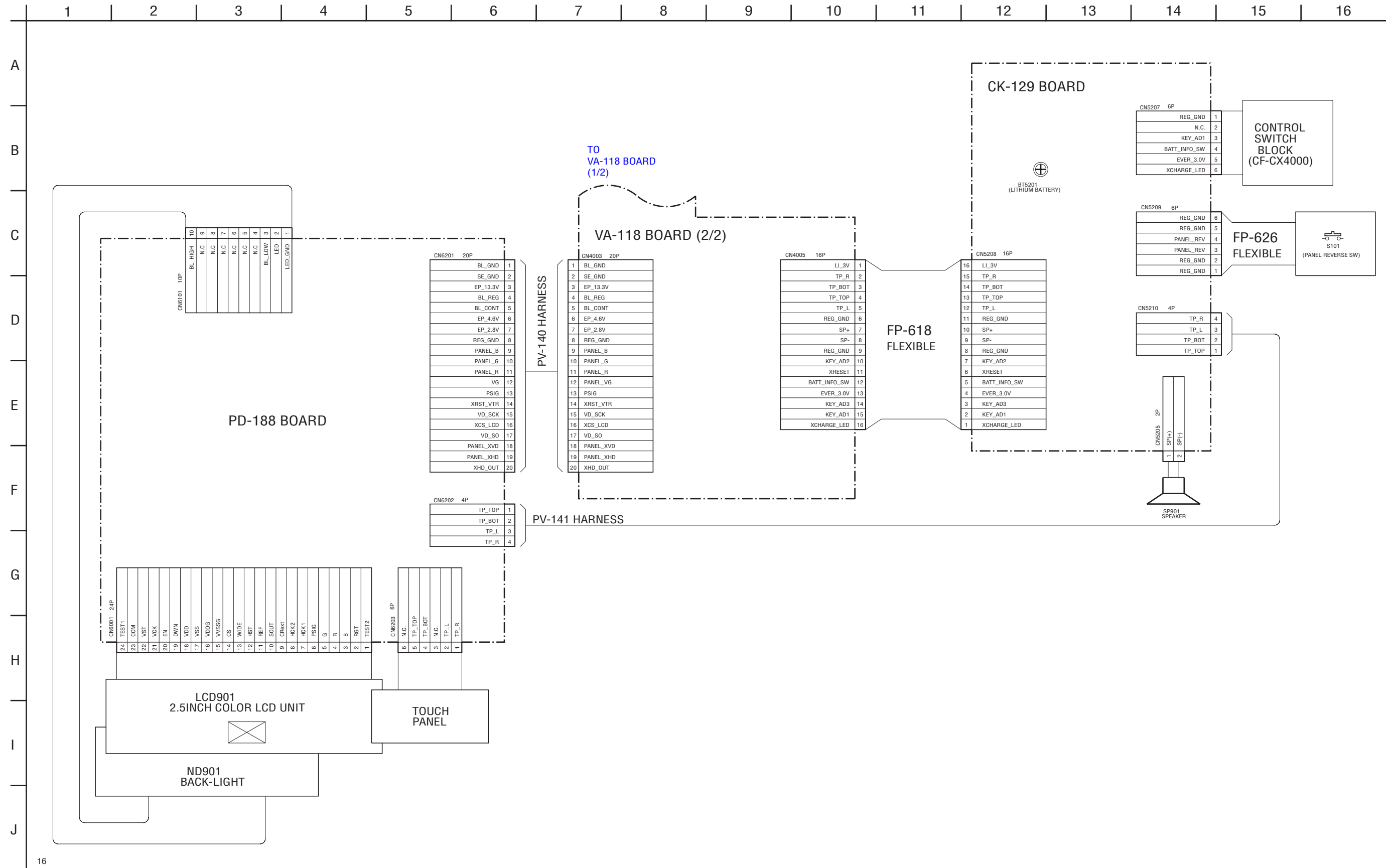
A



4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

FRAME SCHEMATIC DIAGRAM (3/3)



4-2. SCHEMATIC DIAGRAMS

Link

• CD-430 BOARD (CCD IMAGER)	• PD-188 BOARD (1/2) (DRIVE, TG)
• VA-118 BOARD (1/5) (RGB DRIVE, TG)	• PD-188 BOARD (2/2) (BACKLIGHT DRIVE)
• VA-118 BOARD (2/5) (HI CONTROL)	• JK-242 BOARD (A.V/DV IN/OUT)
• VA-118 BOARD (3/5) (Y/P SENSOR AMP, CONNECTOR)	• CONTROL SWITCH BLOCK (FK-CX4000)
• VA-118 BOARD (4/5) (DC/DC CONVERTER)	• LB-085 BOARD (EVF, BACKLIGHT)
• VA-118 BOARD (5/5) (POWER IN, CHARGE)	• MA-421 BOARD (1/2) (MIC AMP)
• CK-129 BOARD (FUNCTION SWITCH)	• MA-421 BOARD (2/2) (Y/P SENSOR, V/A IN/OUT)
• FP-626 FLEXIBLE BOARD	• FP-228/467/826 BOARD (MD BLOCK)
• CONTROL SWITCH BLOCK (CF-CX4000)	

• COMMON NOTE FOR SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS

(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μF . 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. $\text{k}\Omega=1000\ \Omega$, $\text{M}\Omega=1000\ \text{k}\Omega$.
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520
Kinds of capacitor		
Temperature characteristics		
External dimensions (mm)		

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
In such cases, the unused circuits may be indicated.
- Parts with * differ according to the model/destination.
Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
XEDIT $\rightarrow$ EDIT PB/XREC $\rightarrow$ PB/REC
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B- Line
- : IN/OUT direction of (+,-) B LINE.
- : adjustment for repair.
- : VIDEO SIGNAL (ANALOG)
- : AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO/SERVO SIGNAL
- : SERVO SIGNAL
- Circled numbers refer to waveforms.

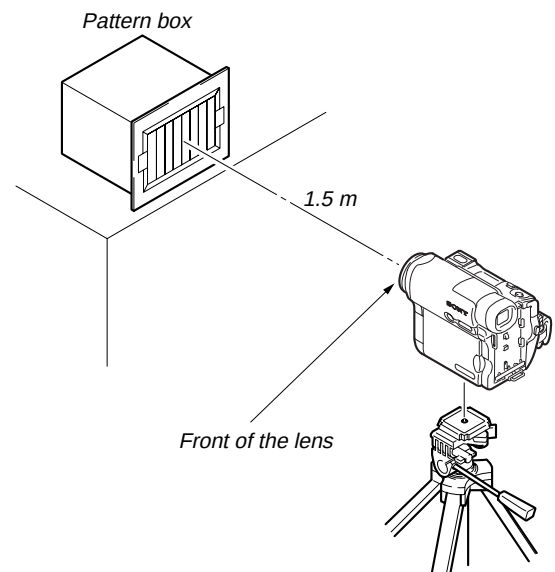
(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
(VOM of DC 10 $\text{M}\Omega$ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

Precautions Upon Replacing CCD imager

- The CD-430 board mounted as a repair part is not equipped with a CCD imager.
When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

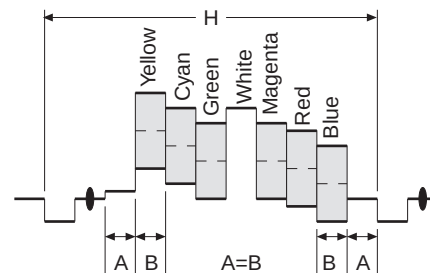


Fig. a (Video output terminal output waveform)

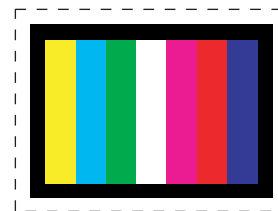


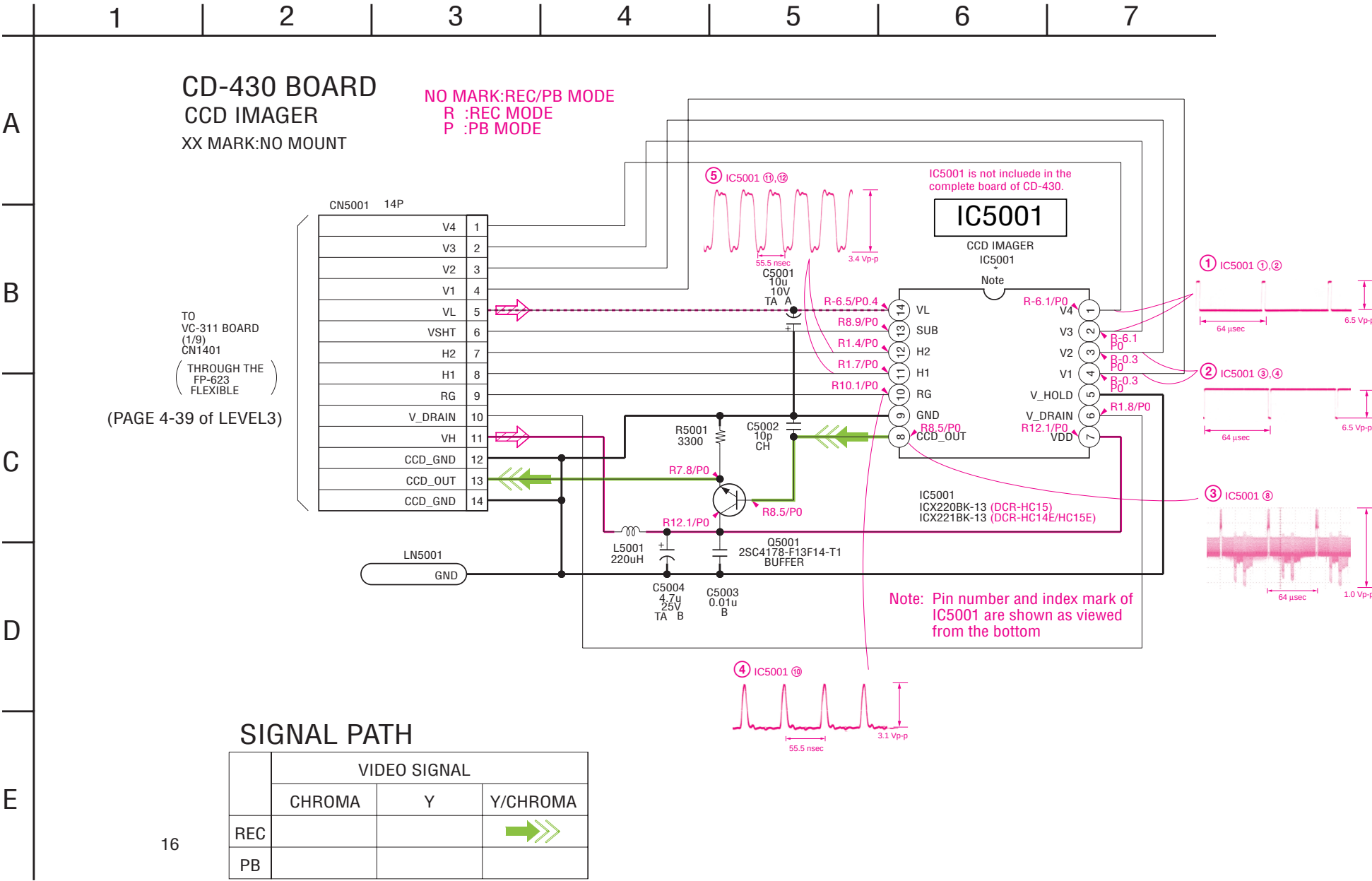
Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

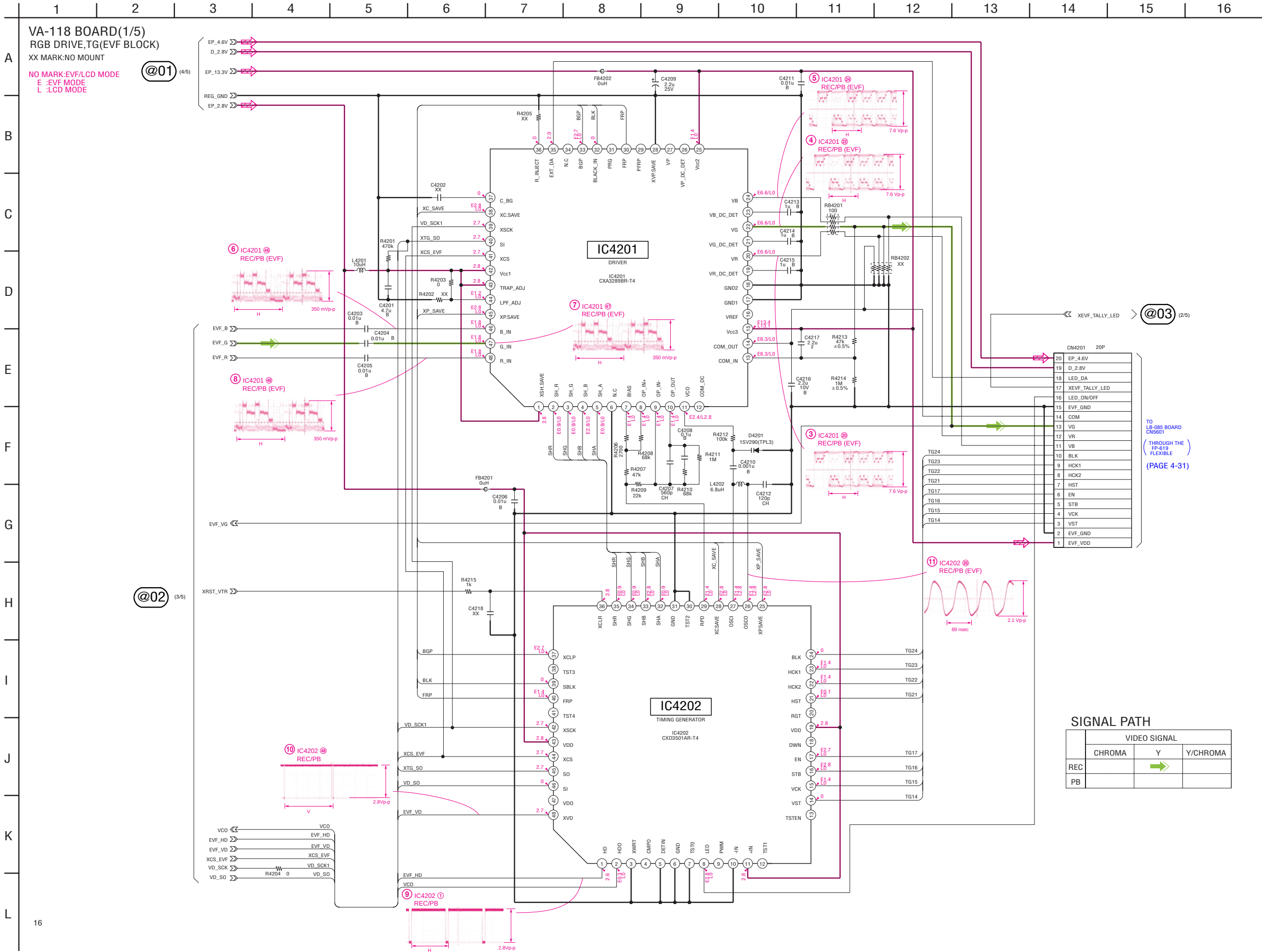
Note : The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety.
Replace only with part number specified.

4-2. SCHEMATIC DIAGRAMS

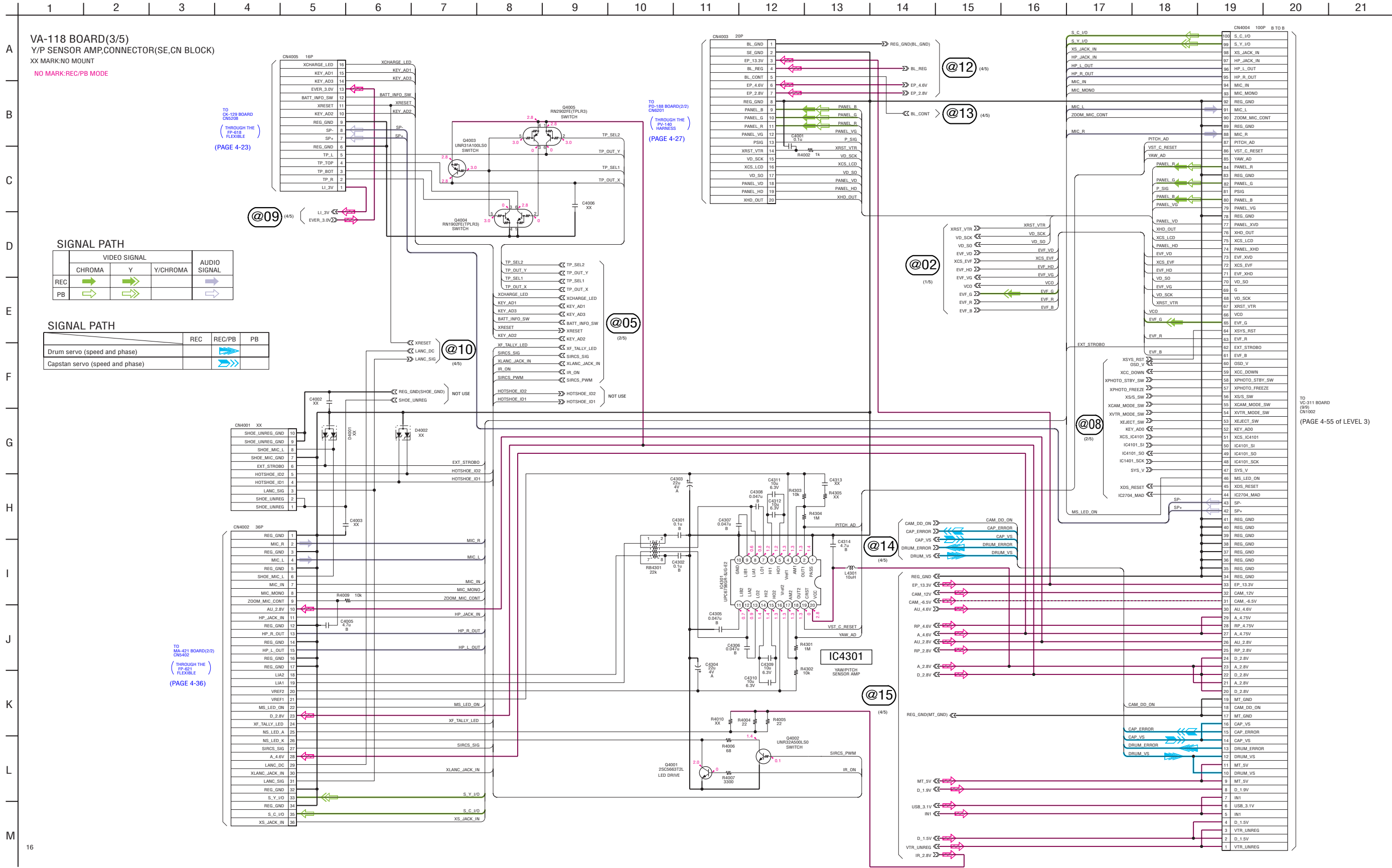
For Schematic Diagram
• Refer to page 4-61 for printed wiring board.



For Schematic Diagram
• Refer to page 4-67 for printed wiring board.



For Schematic Diagram
• Refer to page 4-67 for printed wiring board.

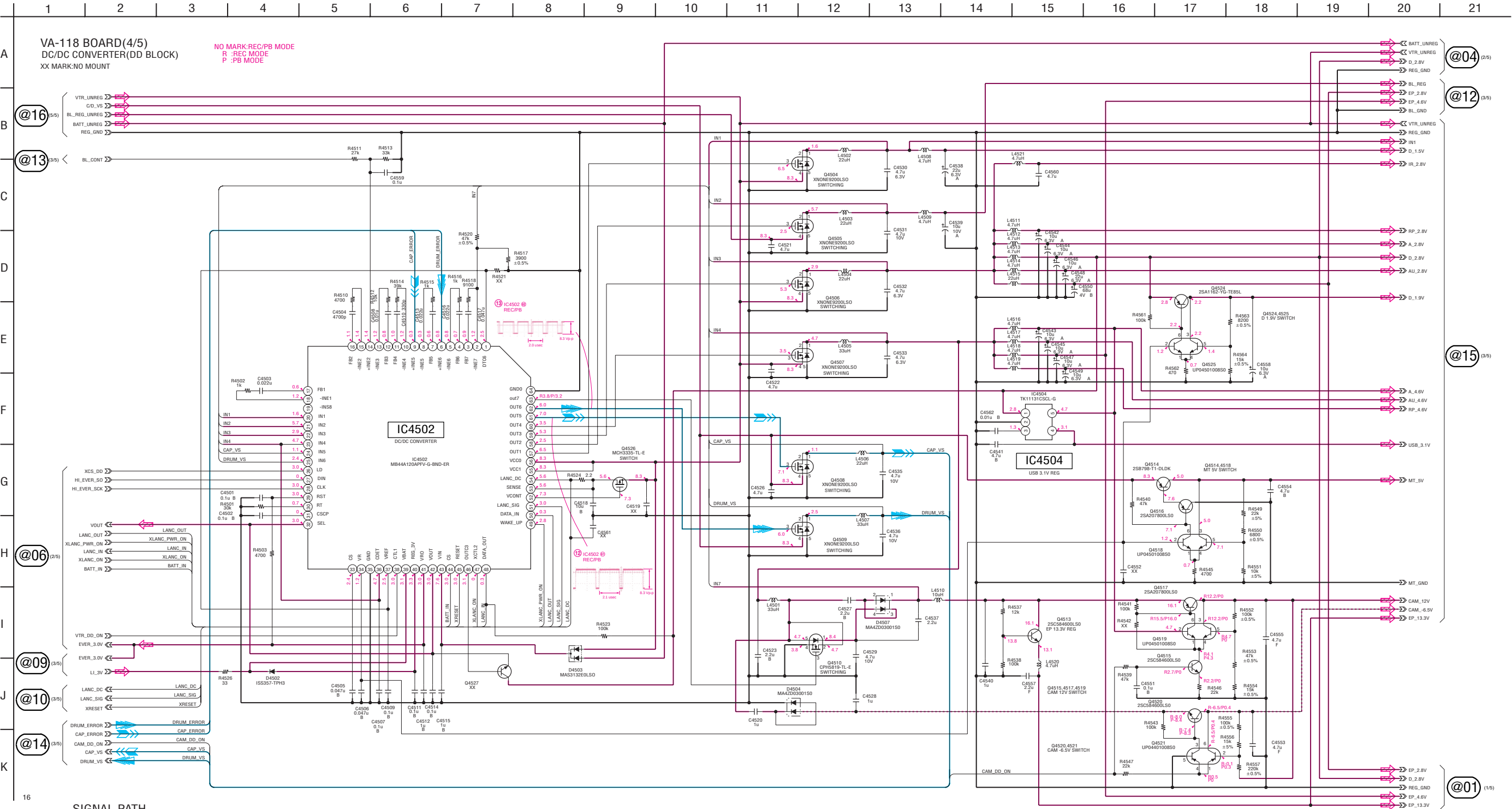


4-2. SCHEMATIC DIAGRAMS

VA-118 BOARD SIDE A

VA-118 BOARD SIDE B

For Schematic Diagram
• Refer to page 4-67 for printed wiring board.



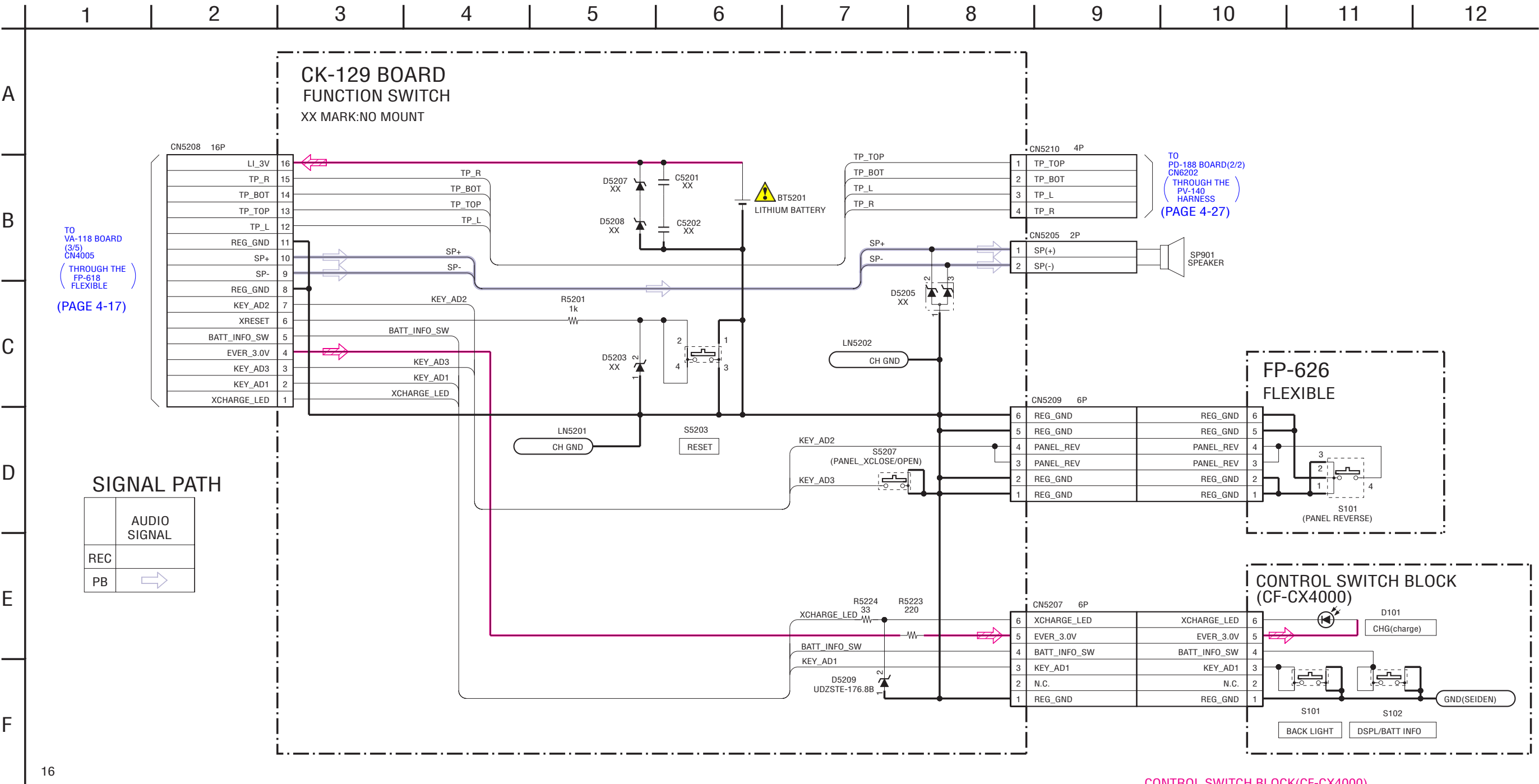
Note : The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

4-2. SCHEMATIC DIAGRAMS

CK-129 PRINTED WIRING BOARD

For Schematic Diagram

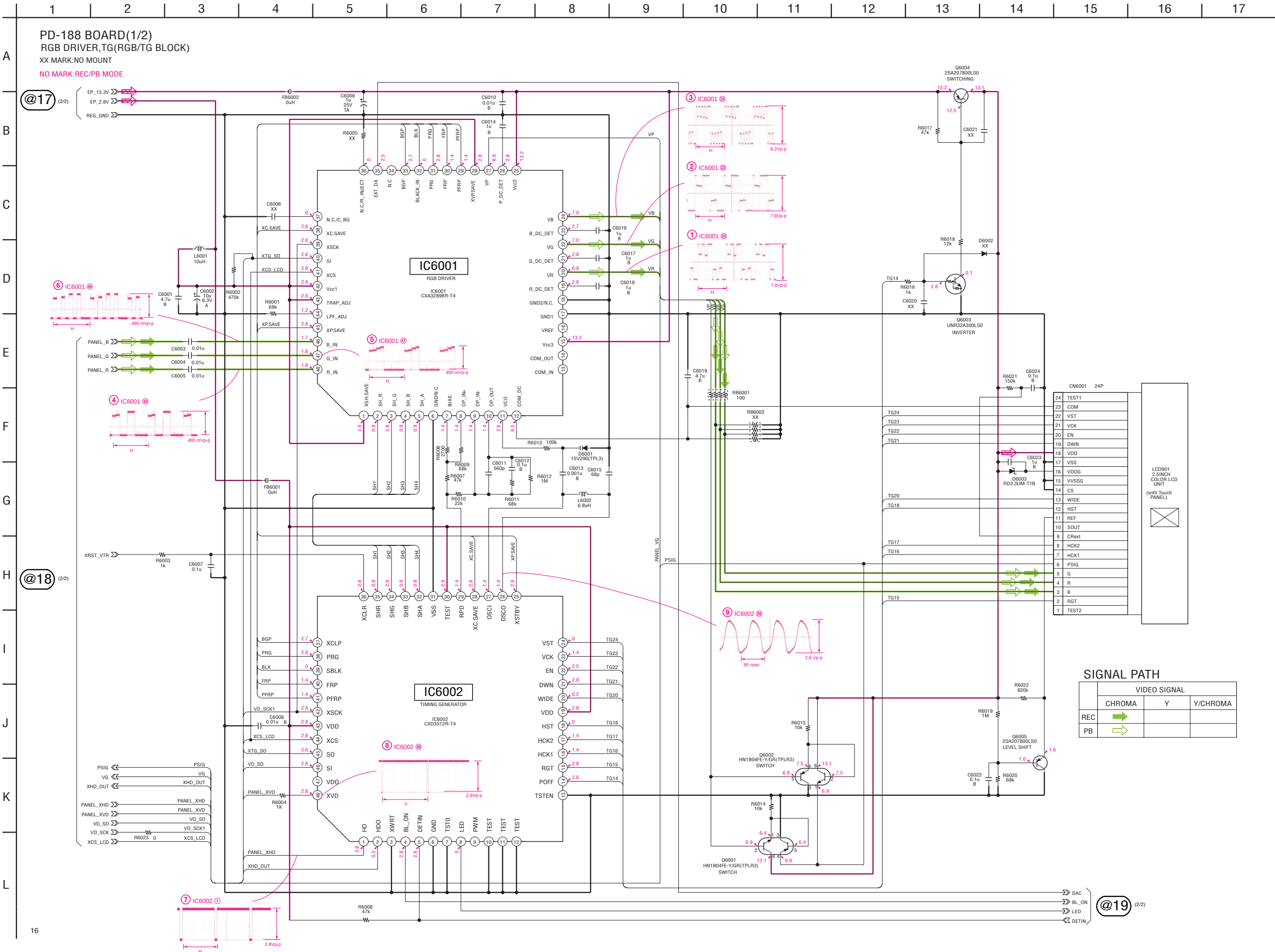
• Refer to page 4-71 for printed wiring board of CK-129 board.



CONTROL SWITCH BLOCK(CF-CX4000)
is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.

Note : The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety.
Replace only with part number specified.

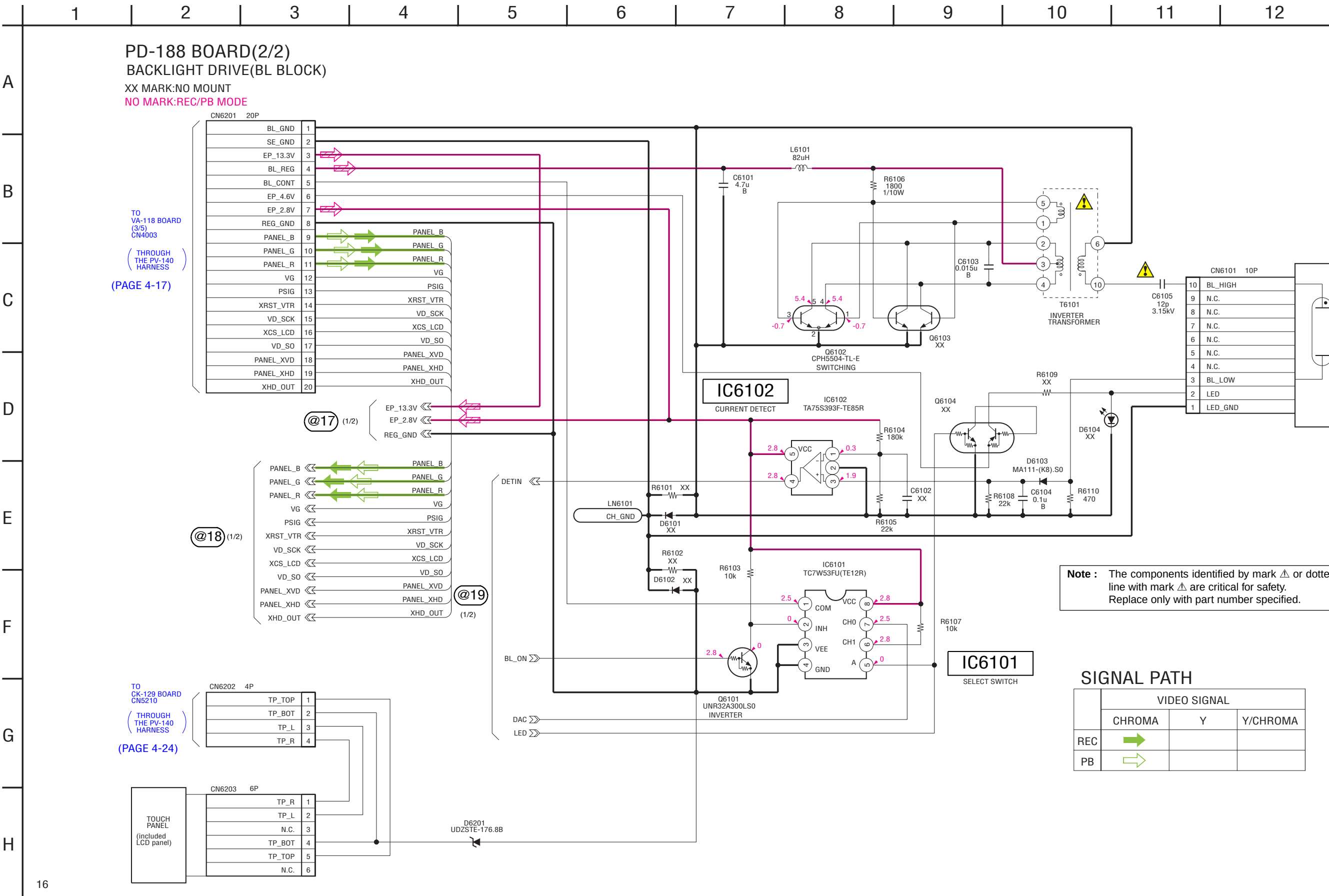
For Schematic Diagram
• Refer to page 4-73 for printed wiring board.



4-2. SCHEMATIC DIAGRAMS

PD-188 PRINTED WIRING BOARD

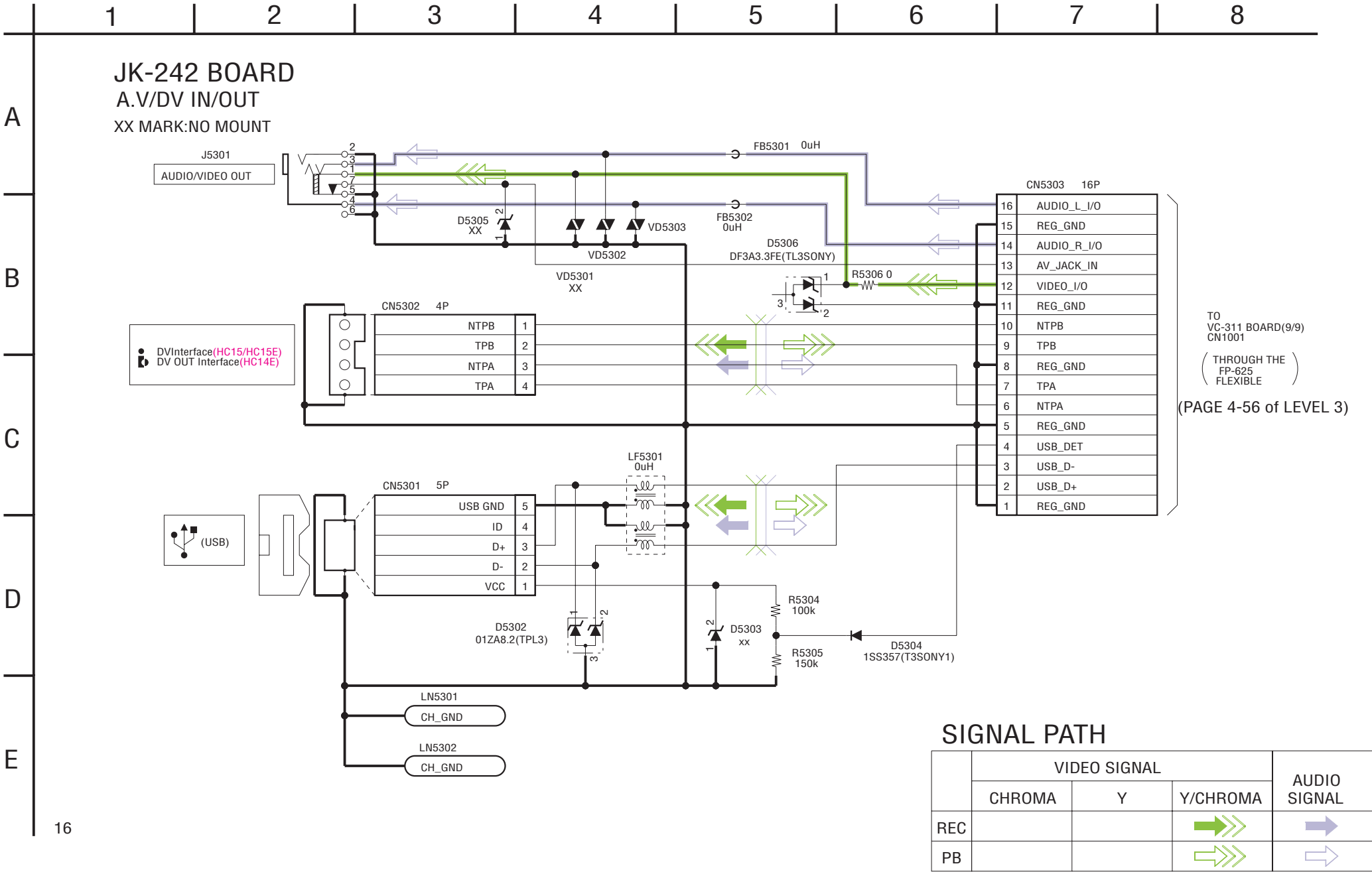
For Schematic Diagram
• Refer to page 4-73 for printed wiring board.



4-2. SCHEMATIC DIAGRAMS

JK-242 PRINTED WIRING BOARD

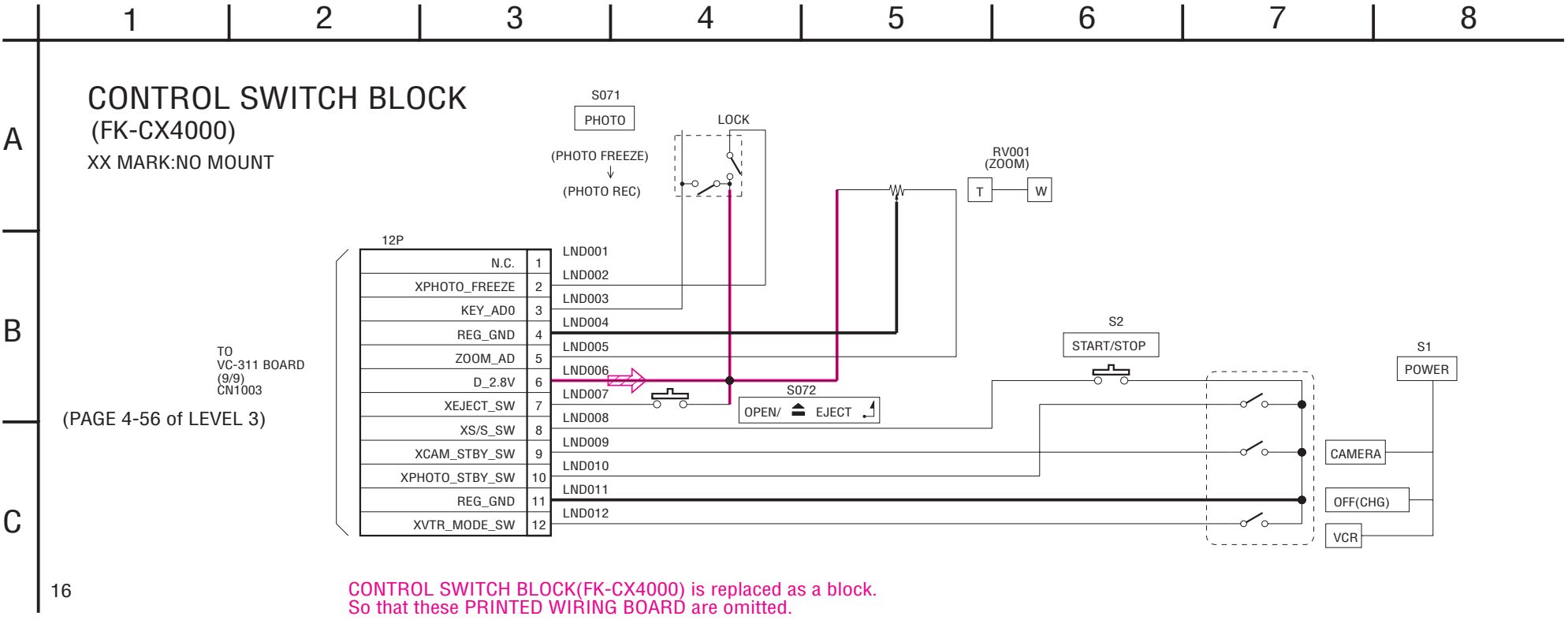
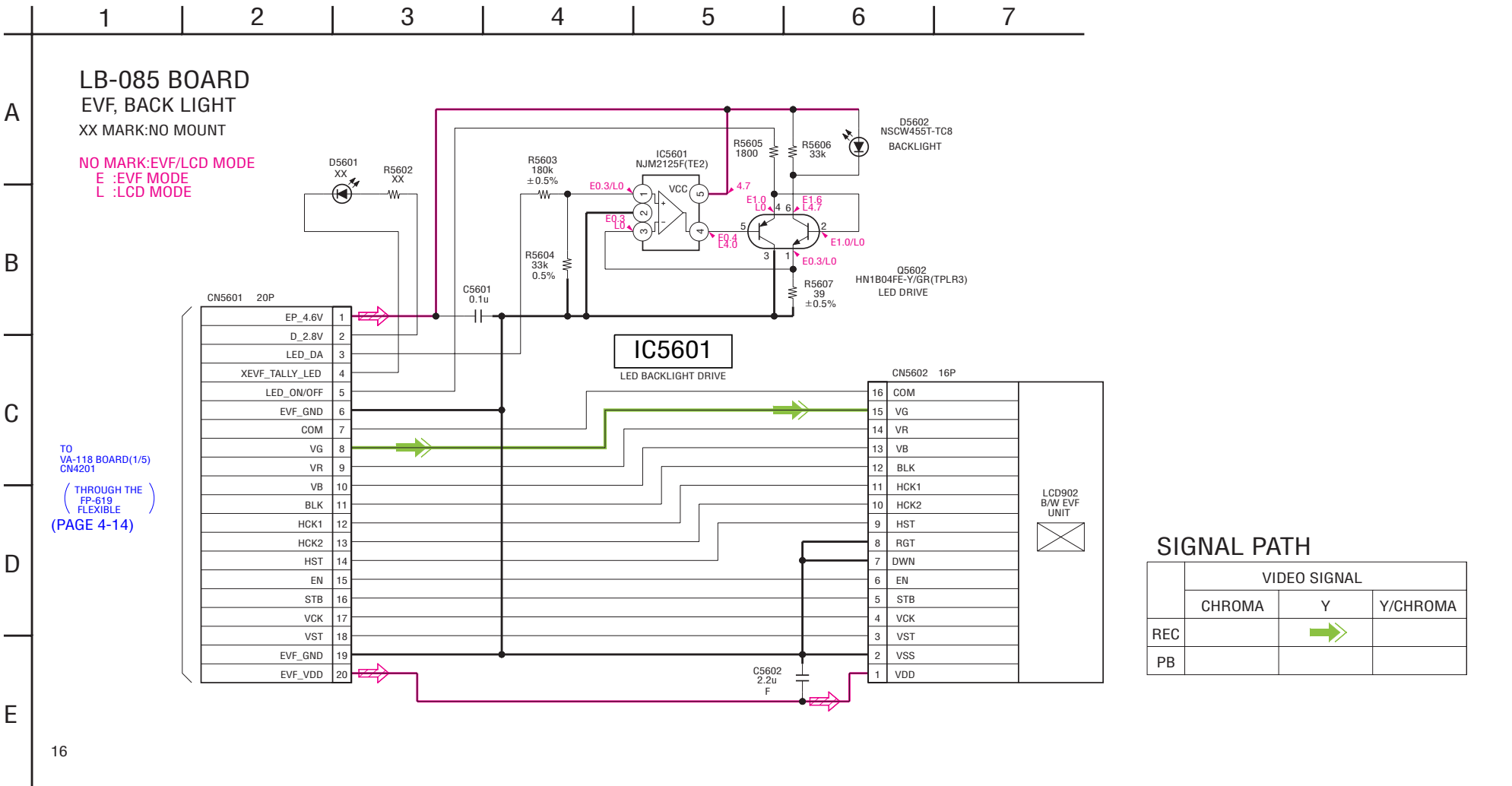
For Schematic Diagram
• Refer to page 4-75 for printed wiring board.



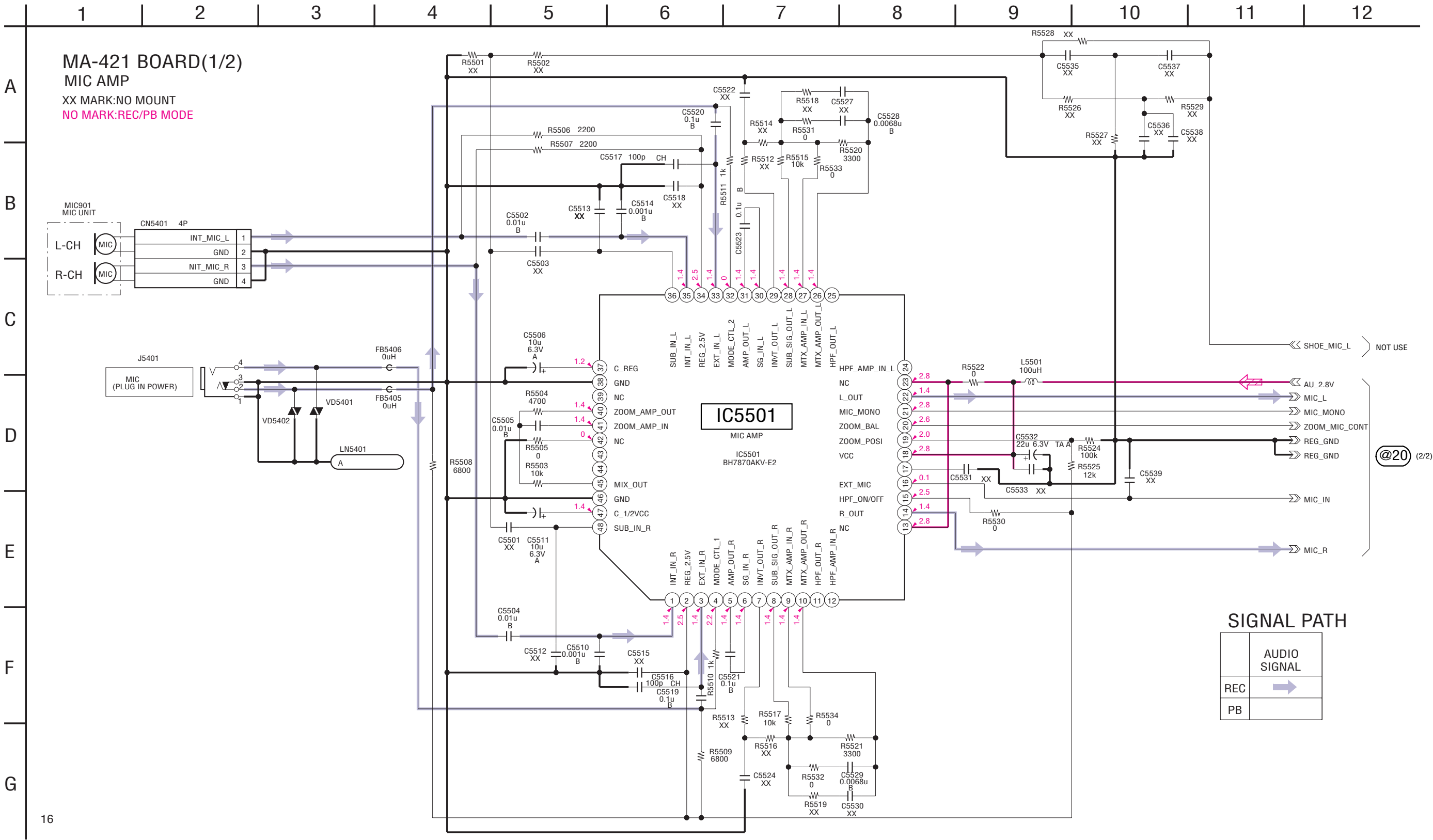
4-2. SCHEMATIC DIAGRAMS

LB-085 PRINTED WIRING BOARD

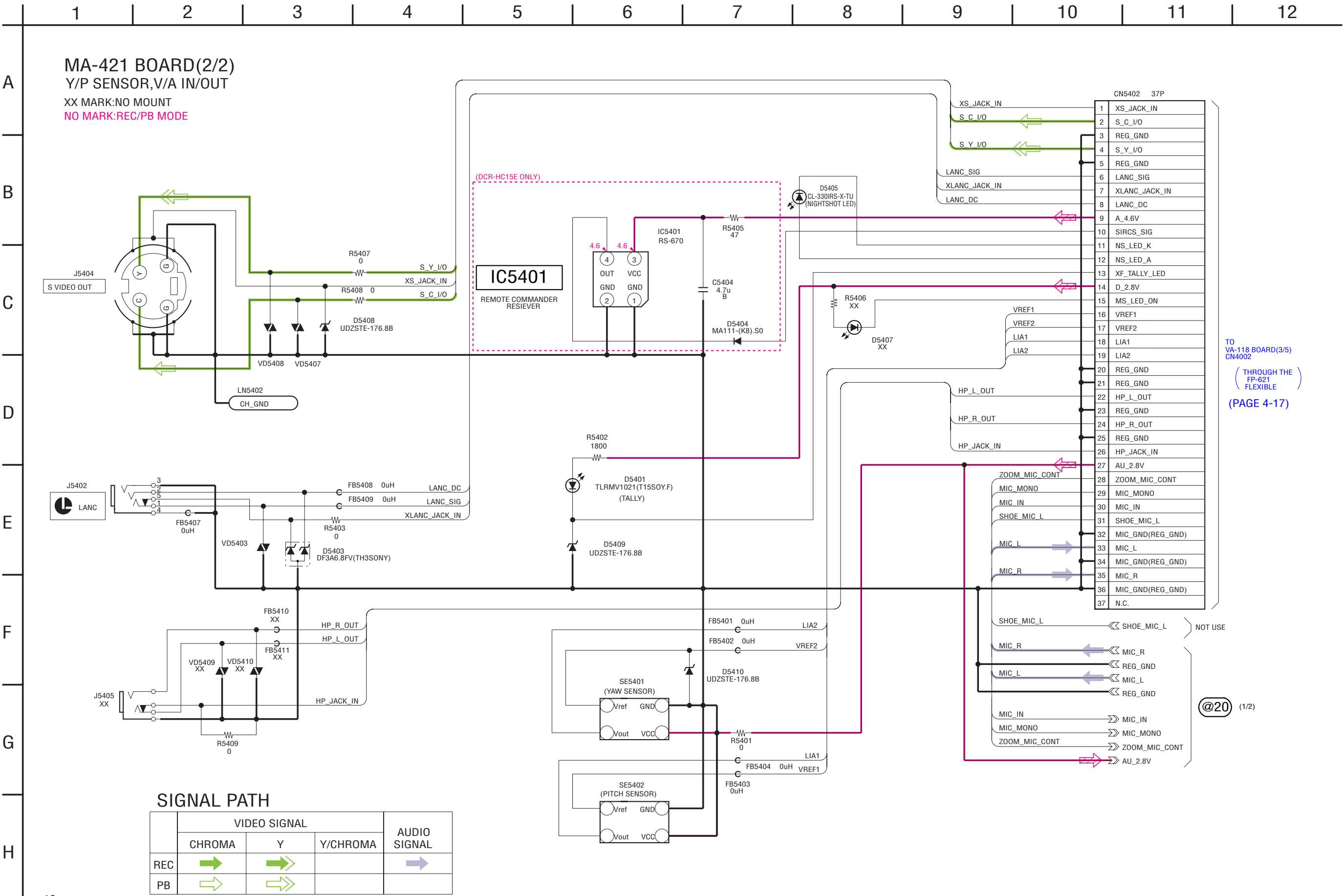
• Refer to page 4-63 for printed wiring board of LB-085 board.



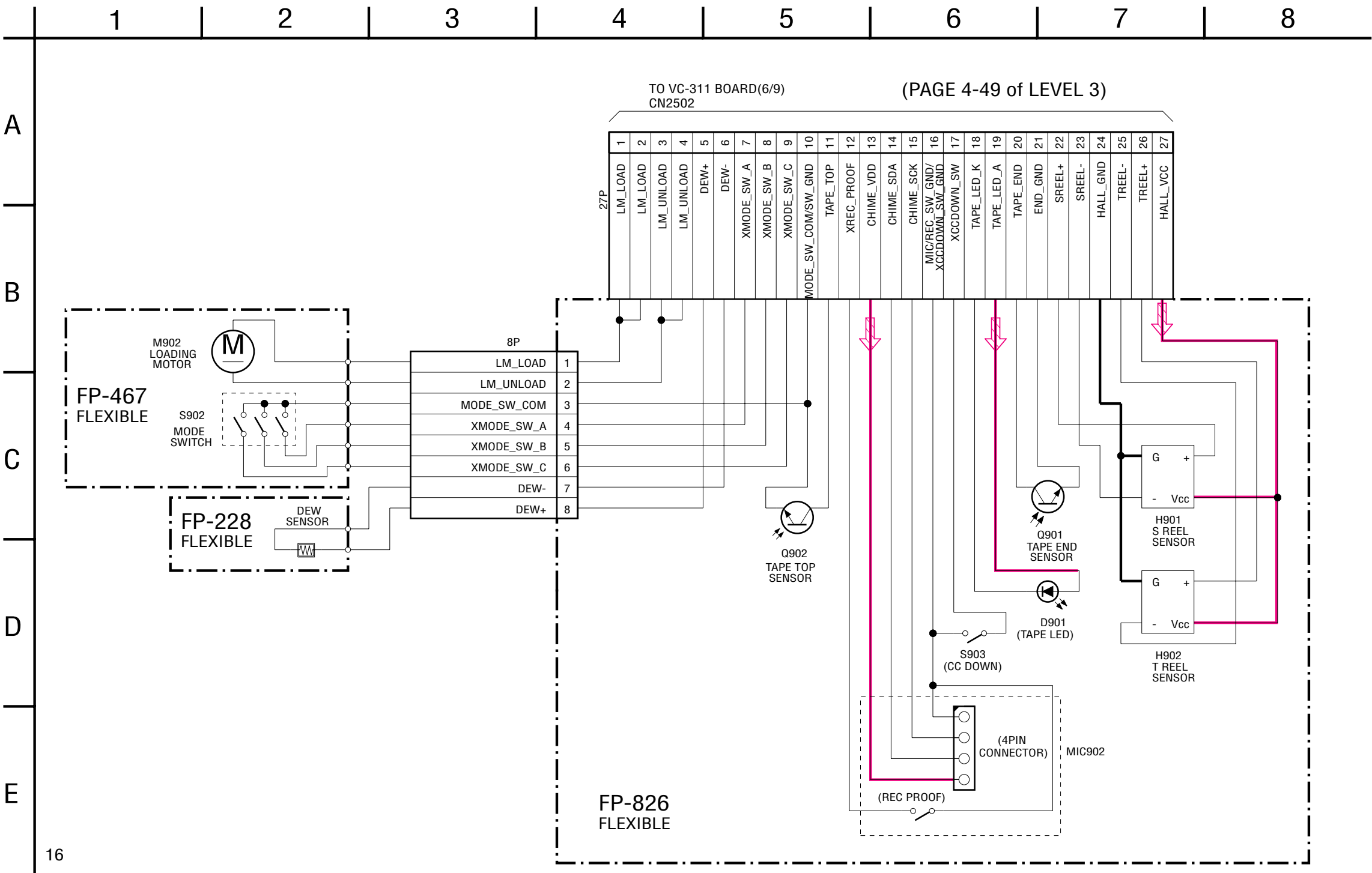
For Schematic Diagram
• Refer to page 4-77 for printed wiring board.



For Schematic Diagram
• Refer to page 4-77 for printed wiring board.



For Schematic Diagram
• Refer to page 4-65 for flexible wiring board.



Schematic diagram of the VC-311 board are not shown.
Pages from 4-39 to 4-56 are not shown.

4-3. PRINTED WIRING BOARDS

Link

• CD-430 BOARD	• VA-118 BOARD (SIDE B)
• LB-085 BOARD	• CK-129 BOARD
• FP-626 FLEXIBLE BOARD	• PD-188 BOARD
• FP-228/467/826 FLEXIBLE BOARD (MD BLOCK)	• JK-242 BOARD
• VA-118 BOARD (SIDE A)	• MA-421 BOARD

• COMMON NOTE FOR PRINTED WIRING BOARDS	• MOUNTED PARTS LOCATION
• CIRCUIT BOARDS LOCATION	• FLEXIBLE BOARDS LOCATION

NAME	FUNCTION
CD-430	CCD IMAGER
CK-129	FUNCTION SWITCH
JK-242	A.V/DV IN/OUT
LB-085	EVF, BACKLIGHT
MA-421	MIC AMP, Y/P SENSOR, V/A IN/OUT
PD-188	RGB DRIVE, TG, BACKLIGHT DRIVE
VA-118	RGB DRIVE, TG, HI CONTROL, Y/P SENSOR AMP, CONNECTOR, DC/DC CONVERTER, POWER IN, CHARGE
VC-311	A/D CONV., TIMING GENERATOR, LENS DRIVE, EVR, DV SIGNAL PROCESS, DV INTERFACE, VIDEO OUT, REC/PB AMP, DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, AUDIO OUT, A/D-D/A CONV., CONNECTOR

4-3. PRINTED WIRING BOARDS

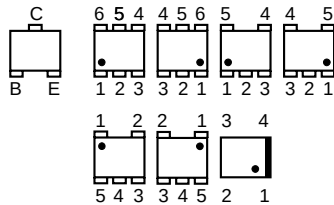
THIS NOTE IS COMMON FOR WIRING BOARDS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

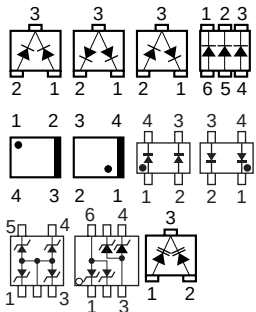
-  : Uses unleaded solder.
-  : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
-  : panel designation

• Chip parts.

Transistor



Diode



BOARD INFORMATION

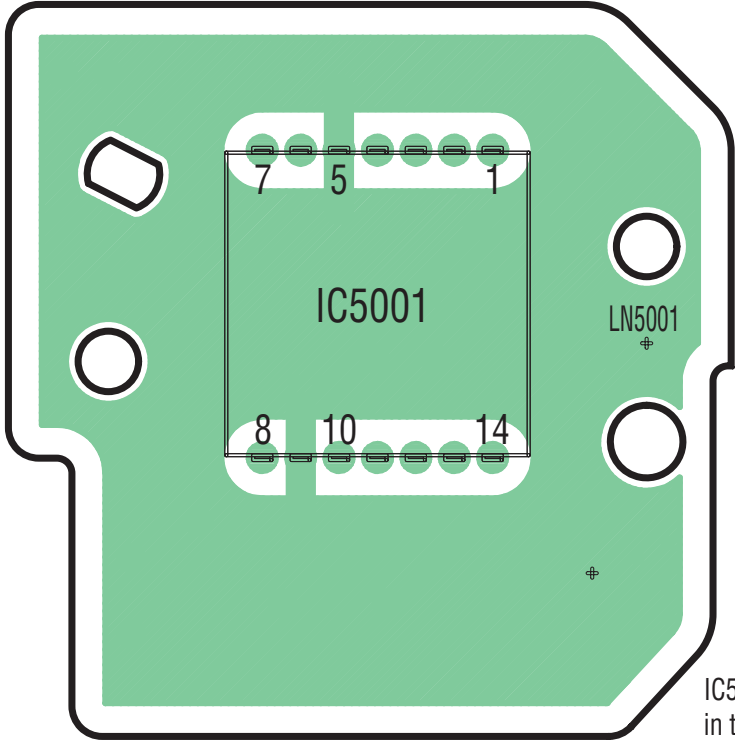
board name	parts location (shown on page)	pattern	
		number of layers	layers not shown
CD-430	—	6	2 to 5
LB-085	—	6	2 to 5
FP-626 FLEXIBLE	—	1	—
VA-118	4-83	6	2 to 5
CK-129	4-83	6	2 to 5
PD-188	4-83	6	2 to 5
JK-242	4-84	6	2 to 5
MA-421	4-84	6	2 to 5
VC-311	4-85	8	2 to 7

4-3. PRINTED WIRING BOARDS

• Refer to page 4-59 for common note for printed wiring board.

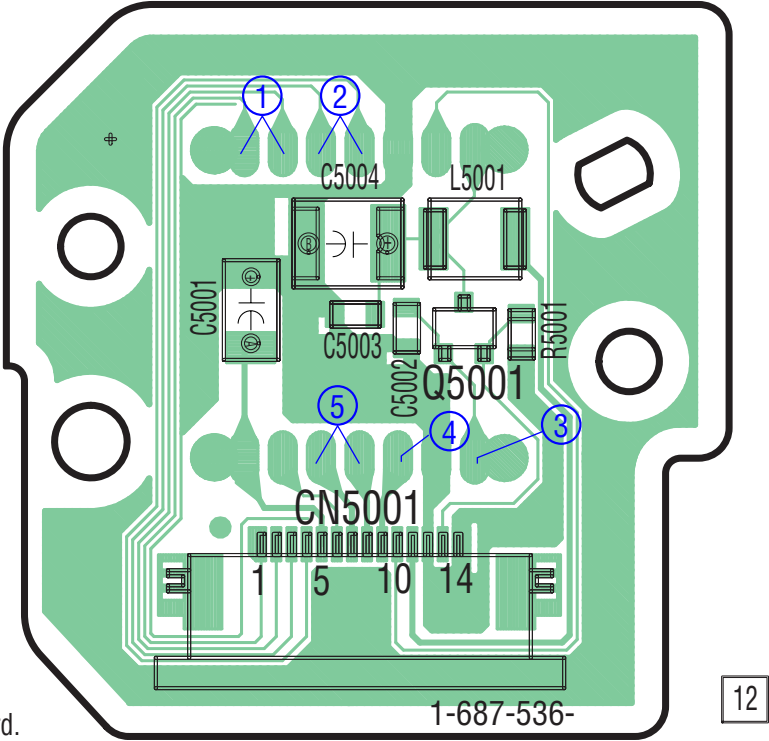
•  : Uses unleaded solder.

CD-430 BOARD(SIDE A)



IC5001 is not included
in this COMPLETE board.

CD-430 BOARD(SIDE B)

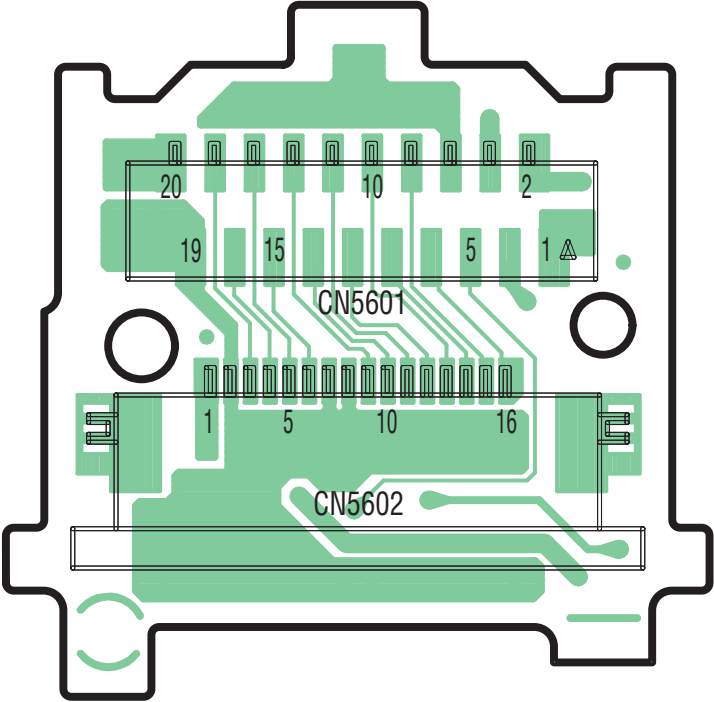


12

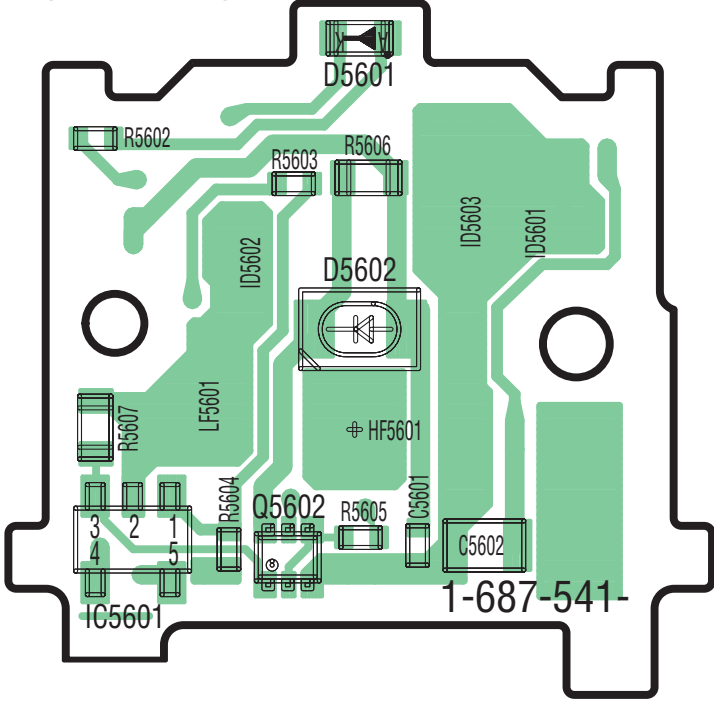
• Refer to page 4-59 for common note for printed wiring board.

•  : Uses unleaded solder.

LB-085 BOARD
(SIDE A)



LB-085 BOARD
(SIDE B)



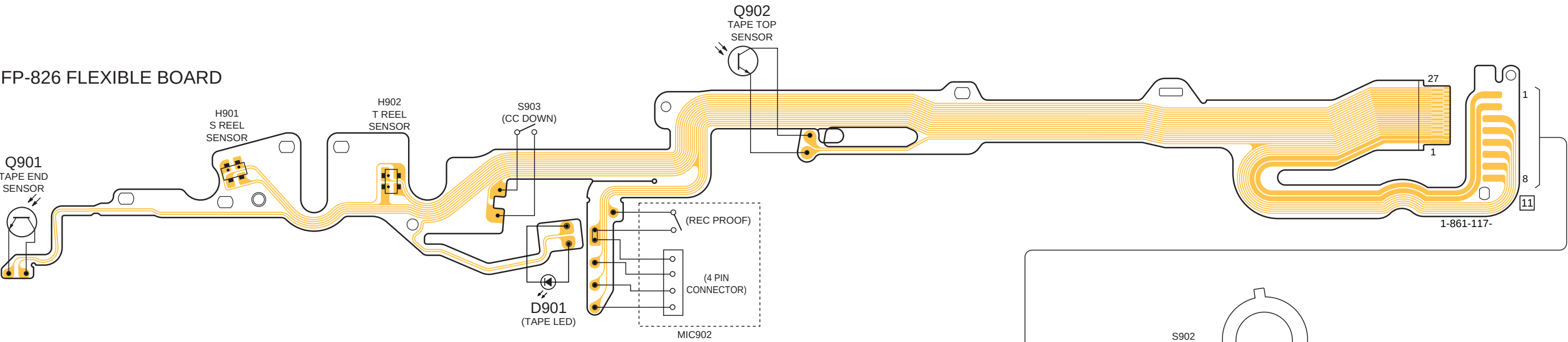
4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

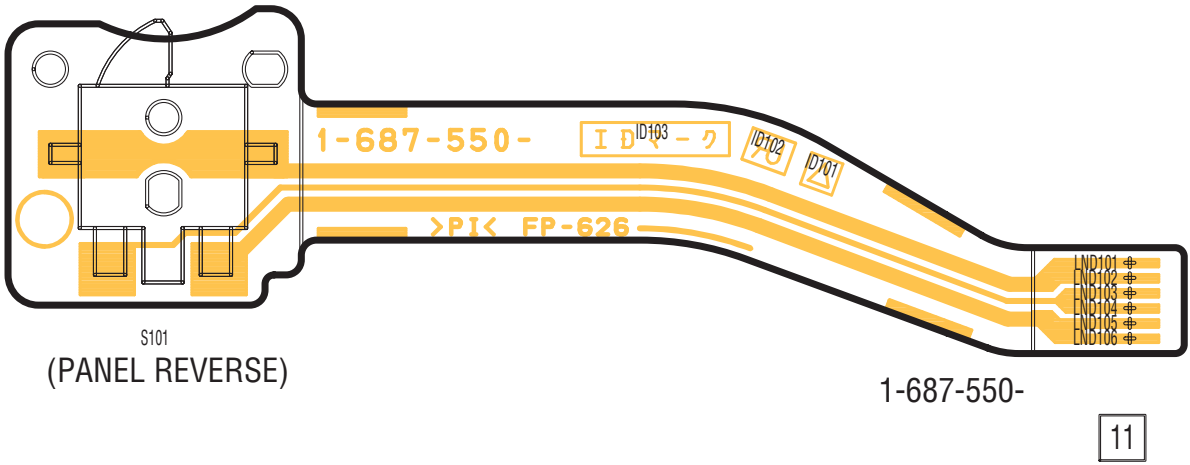
• Refer to page 4-59 for common note for printed wiring board.

•  : Uses unleaded solder.

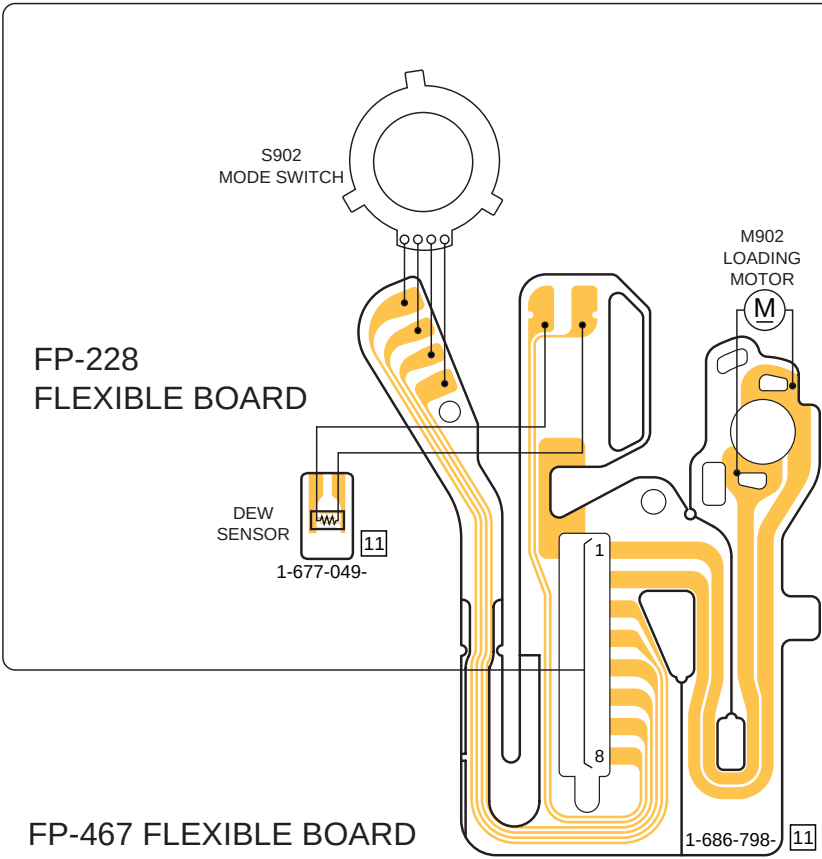
FP-826 FLEXIBLE BOARD



FP-626 FLEXIBLE BOARD



FP-228 FLEXIBLE BOARD

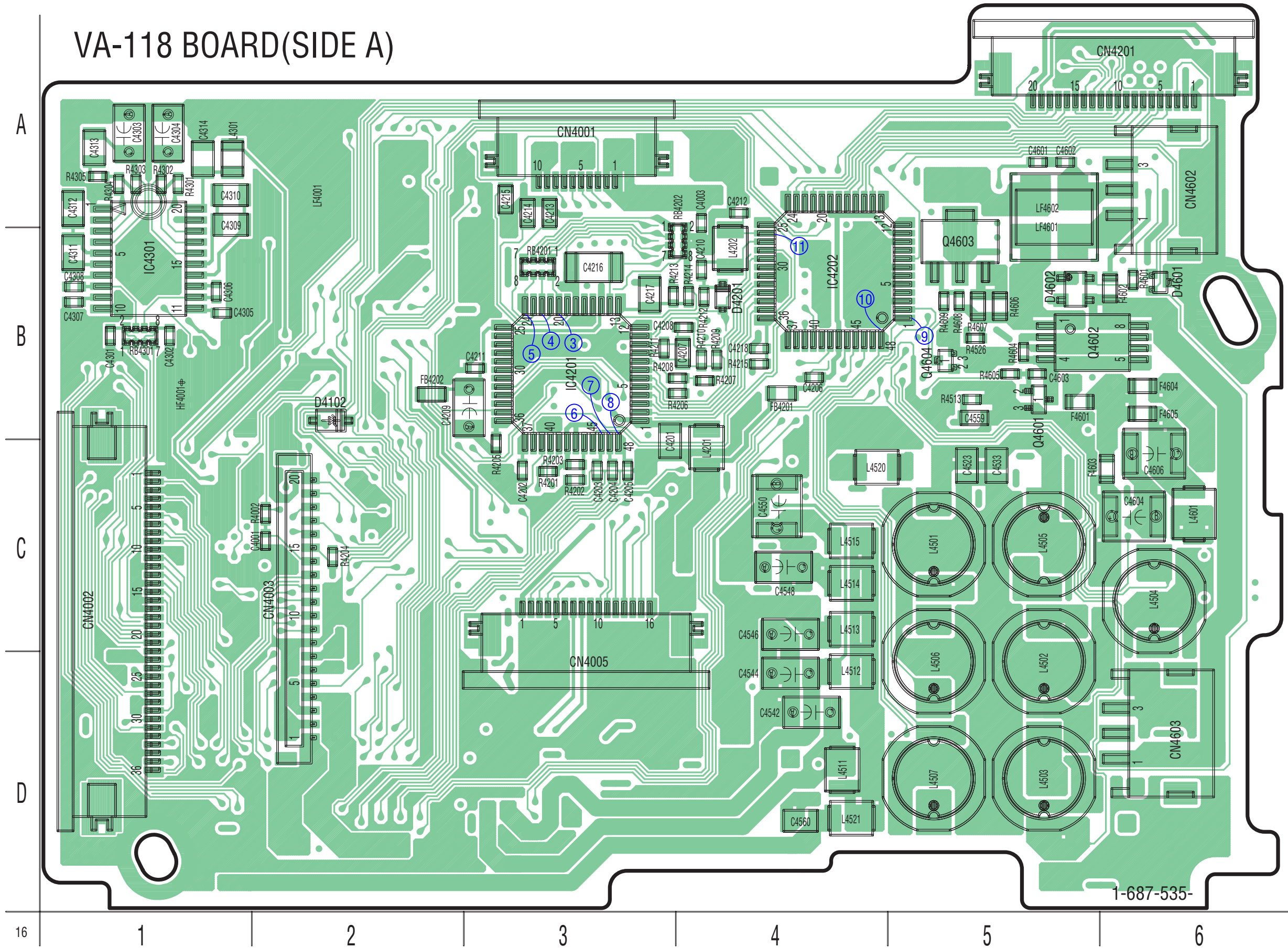


FP-467 FLEXIBLE BOARD

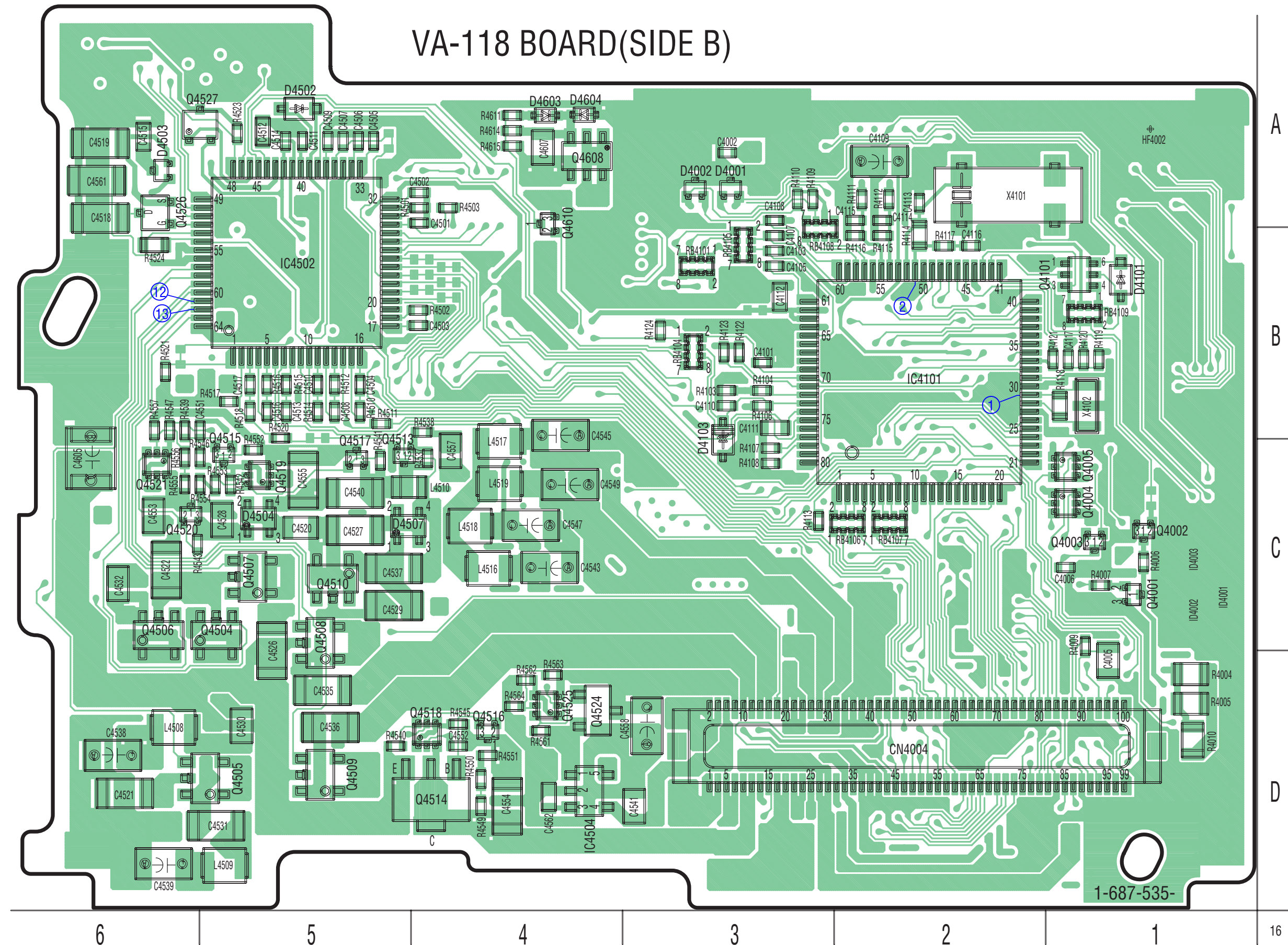
• Refer to page 4-59 for common note for printed wiring board.

•  : Uses unleaded solder.

VA-118 BOARD(SIDE A)



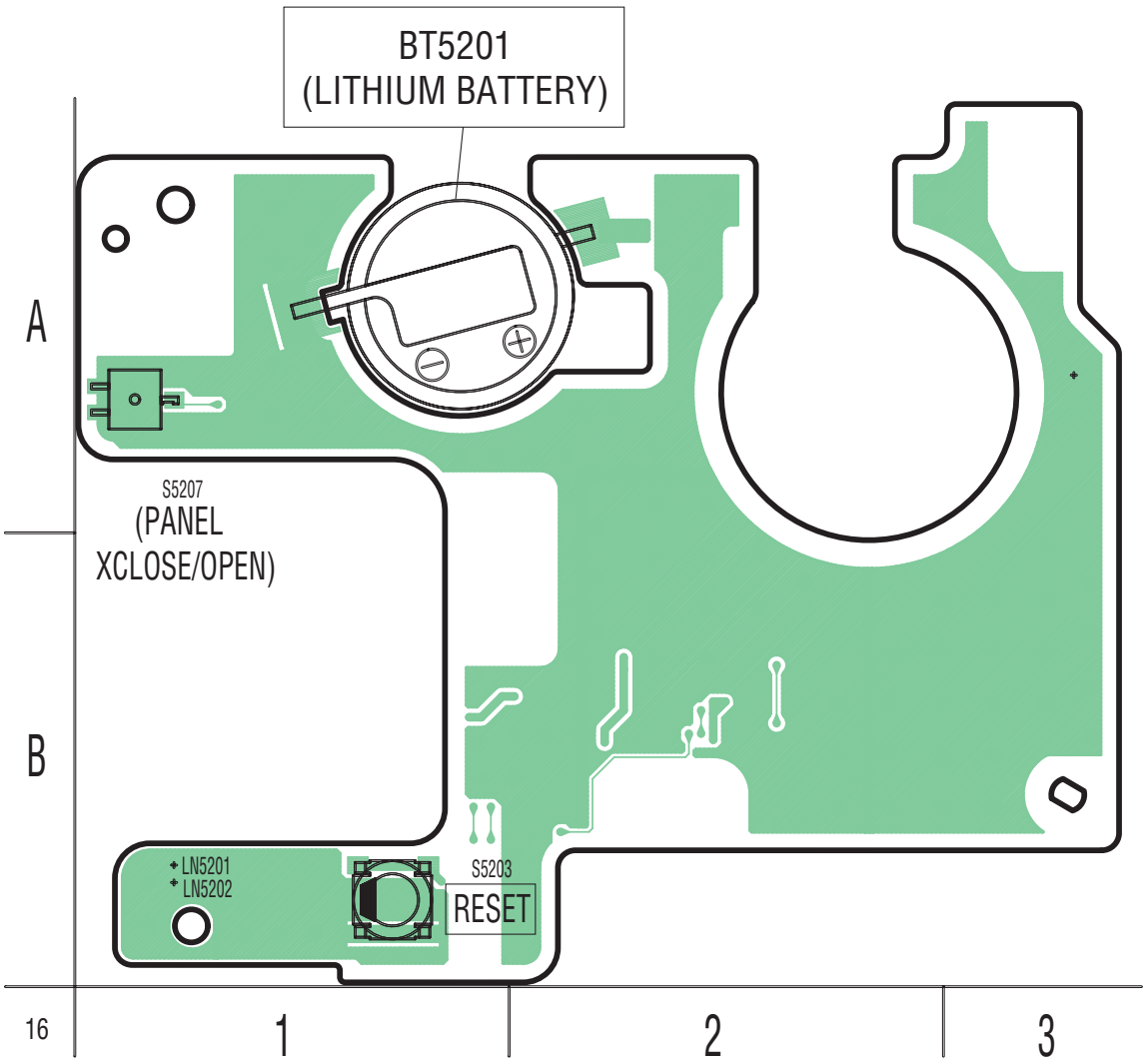
- Refer to page 4-59 for common note for printed wiring board.
-  : Uses unleaded solder.



• Refer to page 4-59 for common note for printed wiring board.

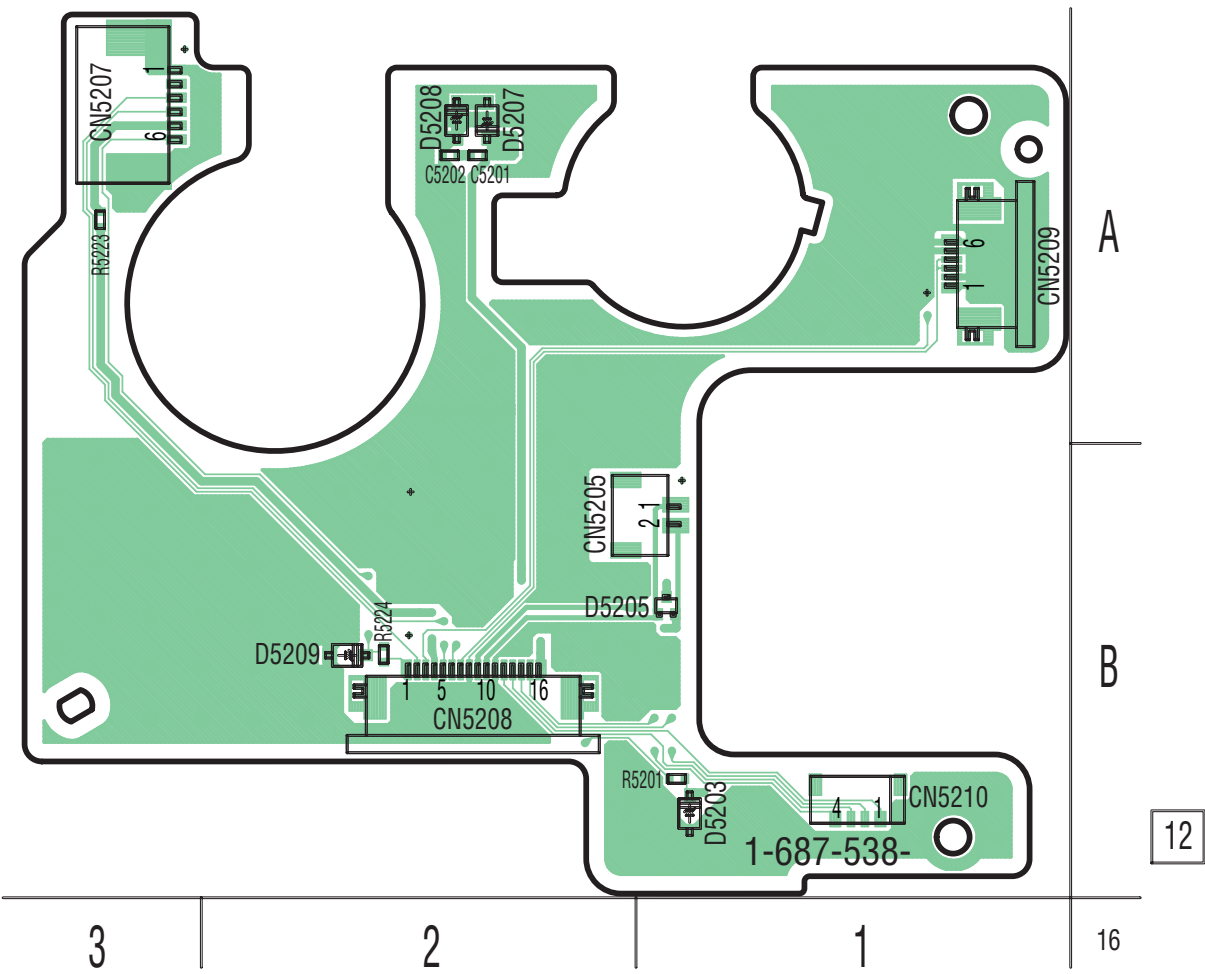
•  : Uses unleaded solder.

CK-129 BOARD(SIDE A)



CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

CK-129 BOARD(SIDE B)

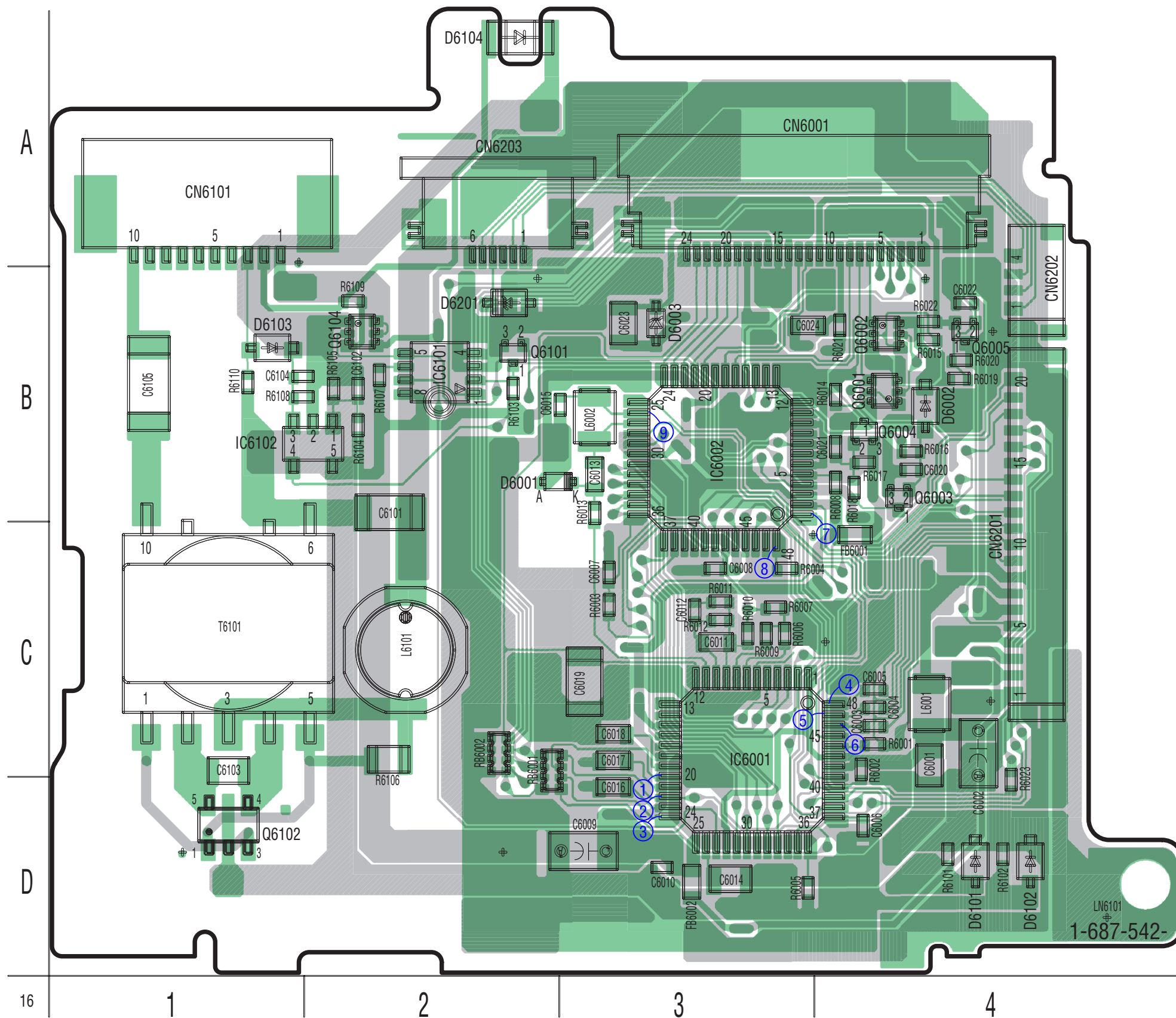


12

- Refer to page 4-59 for common note for printed wiring board.

-  : Uses unleaded solder.

PD-188 BOARD

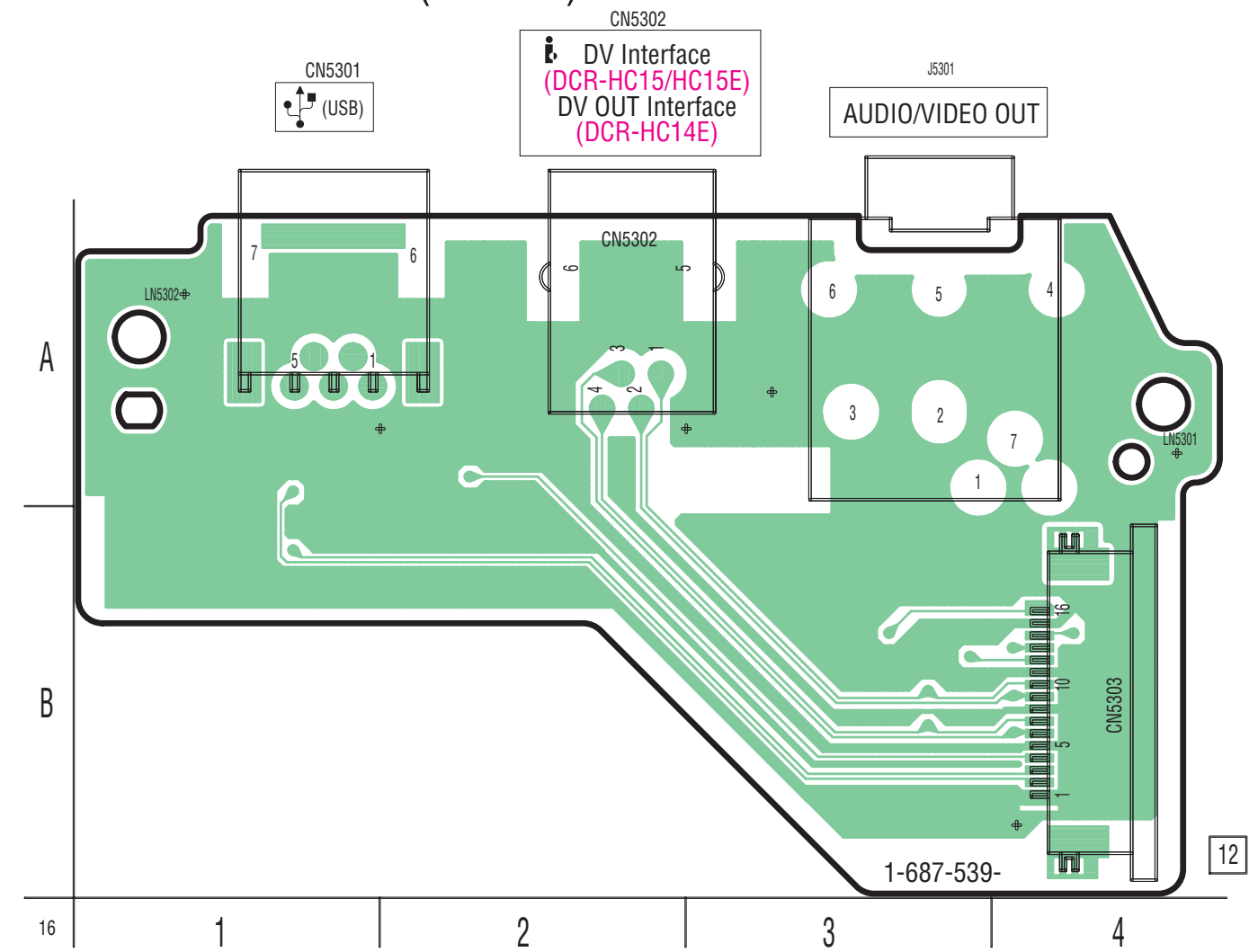


11

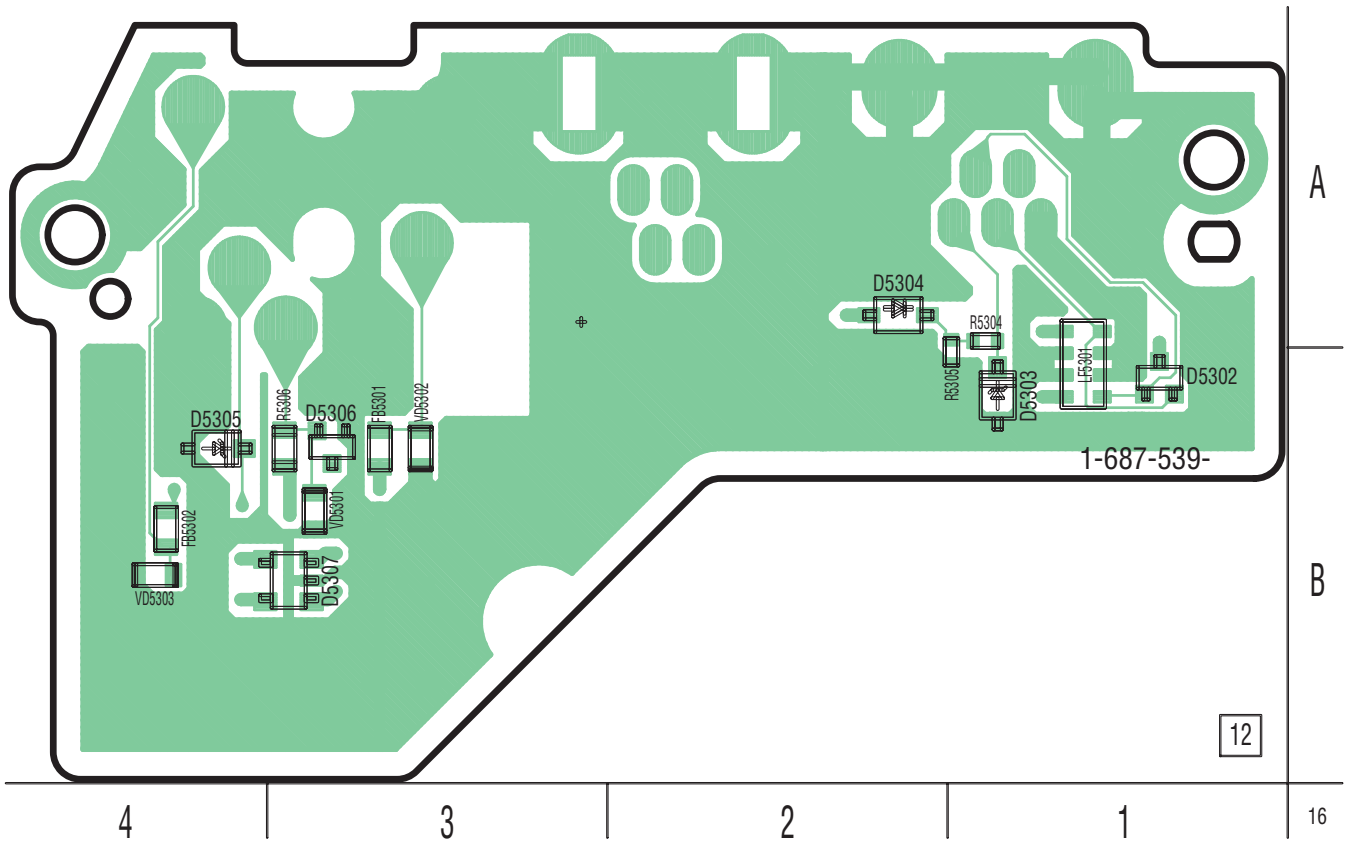
• Refer to page 4-59 for common note for printed wiring board.

•  : Uses unleaded solder.

JK-242 BOARD(SIDE A)



JK-242 BOARD(SIDE B)



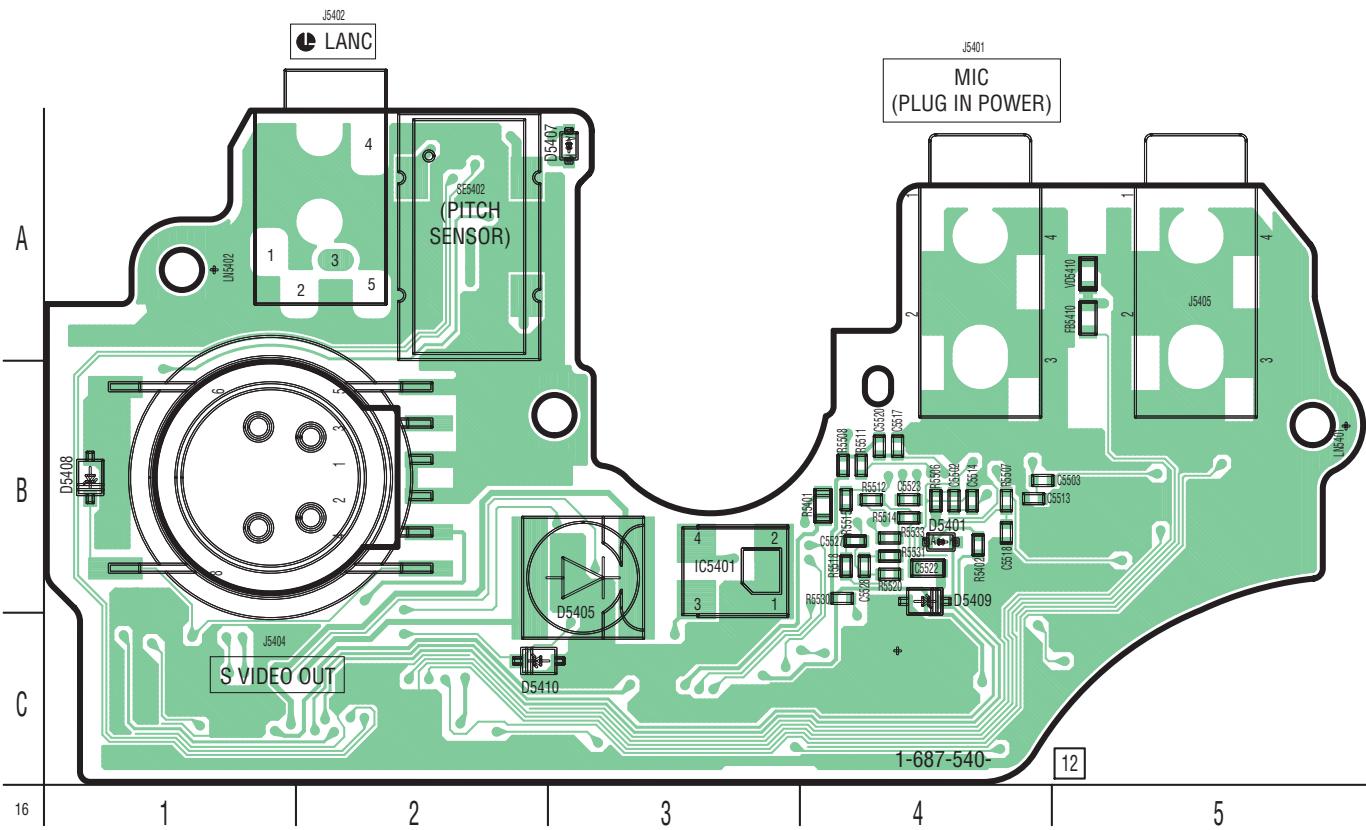
4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

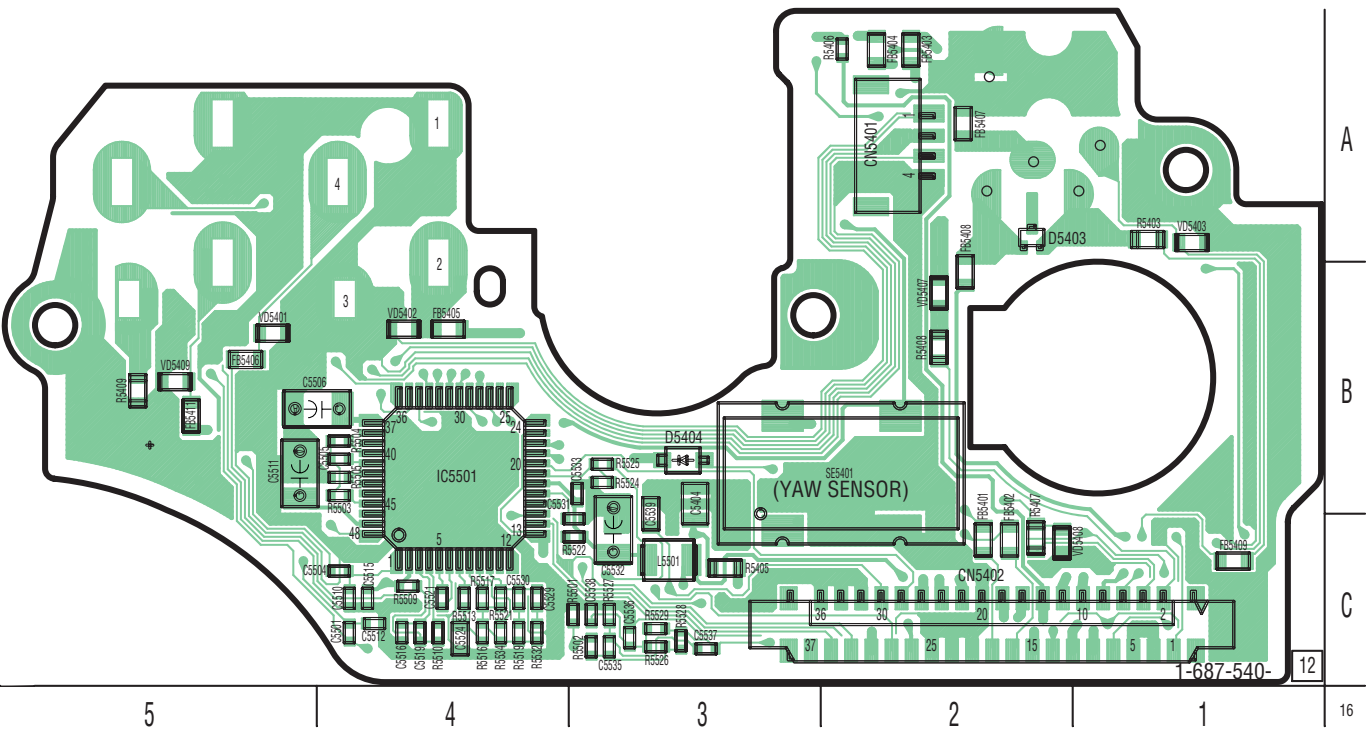
MOUNTED PARTS LOCATION

- Refer to page 4-59 for common note for printed wiring board.
-  : Uses unleaded solder.

MA-421 BOARD(SIDE A)



MA-421 BOARD(SIDE B)



Printed wiring board of the VC-311 board are not shown.
Pages from 4-79 to 4-82 are not shown.

4-3. PRINTED WIRING BOARDS

4-4. MOUNTED PARTS LOCATION

no mark : side A

* mark : side B

VA-118 BOARD

C4001	C-2	* C4540	C-5	L4506	D-5
* C4002	A-3	* C4541	D-3	L4507	D-5
C4003	A-4	* C4542	D-4	* L4508	D-6
* C4005	D-1	* C4543	C-4	* L4509	D-5
* C4006	C-1	* C4544	D-4	* L4510	C-4
* C4101	B-3	* C4545	B-4	L4511	D-4
* C4103	B-3	* C4546	C-3	L4512	D-4
* C4105	B-3	* C4547	C-4	L4513	C-3
* C4107	B-3	* C4548	C-3	L4514	C-3
* C4108	A-3	* C4549	C-4	L4515	C-3
* C4109	A-2	* C4550	C-3	* L4516	C-4
* C4110	B-3	* C4551	B-5	* L4517	C-4
* C4111	B-3	* C4552	D-4	* L4518	C-4
* C4112	B-3	* C4553	C-6	* L4519	C-4
* C4113	A-2	* C4554	D-4	L4520	C-3
* C4114	A-2	* C4555	C-5	L4521	D-4
* C4115	A-2	* C4557	C-4	L4601	C-6
* C4116	B-2	* C4558	D-3		
* C4117	B-1	* C4559	B-5	LF4001	A-2
C4201	C-3	* C4560	D-4	* LF4002	A-3
C4202	C-3	* C4561	A-6	LF4601	A-5
C4203	C-3	* C4562	D-4	LF4602	A-5
C4204	C-3	C4601	A-5		
C4205	C-3	C4602	A-5	* Q4001	C-1
C4206	B-4	C4603	B-5	* Q4002	C-1
C4207	B-4	C4604	C-6	* Q4003	C-1
C4208	B-3	* C4605	C-6	* Q4004	C-1
C4209	B-2	C4606	C-6	* Q4005	C-1
C4210	B-4	* C4607	A-4	* Q4101	B-1
C4211	B-3			* Q4504	C-5
C4212	A-4	CN4001	A-3	* Q4505	D-5
C4213	A-3	CN4002	C-1	* Q4506	C-6
C4214	A-3	CN4003	C-2	* Q4507	C-5
C4215	A-3	* CN4004	D-2	* Q4508	C-5
C4216	B-3	CN4005	D-3	* Q4509	D-5
C4217	B-3	CN4201	A-6	* Q4510	C-5
C4218	B-4	CN4602	A-6	* Q4513	C-5
C4301	B-1	CN4603	D-6	* Q4514	D-4
C4302	B-1			* Q4515	C-5
C4303	A-1	* D4001	A-3	* Q4516	D-4
C4305	B-1	* D4002	A-3	* Q4517	C-5
C4306	B-1	* D4101	B-1	* Q4518	D-4
C4307	B-1	D4102	B-2	* Q4519	C-5
C4308	B-1	* D4103	C-3	* Q4520	C-6
C4309	A-1	D4201	B-4	* Q4521	C-6
C4310	A-1	* D4502	A-5	* Q4524	D-4
C4311	B-1	* D4503	A-6	* Q4525	D-4
C4312	A-1	* D4504	C-5	* Q4526	A-6
C4313	A-1	* D4507	C-5	* Q4527	A-5
C4314	A-1	D4601	B-6	Q4601	B-5
* C4501	A-4	D4602	B-5	Q4602	B-5
* C4502	A-4	* D4603	A-4	Q4603	B-5
* C4504	B-5	* D4604	A-4	Q4604	B-5
* C4505	A-5			* Q4608	A-4
* C4506	A-5	F4601	B-5	* Q4610	A-4
* C4507	A-5	F4602	B-6		
* C4508	B-5	F4603	C-5	R4002	C-2
* C4509	A-5	F4604	B-6	* R4004	D-1
* C4510	B-5	F4605	B-6	* R4005	D-1
* C4511	A-5			* R4006	C-1
* C4512	A-5	FB4201	B-4	* R4007	C-1
* C4513	B-5	FB4202	B-2	* R4009	C-1
* C4514	A-5			* R4010	D-1
* C4515	A-6	HF4001	B-1	* R4103	B-3
* C4516	B-5	* HF4002	A-1	* R4104	B-3
* C4517	B-5			* R4106	B-3
* C4518	A-6	* IC4101	B-2	* R4107	C-3
* C4519	A-6	IC4201	B-3	* R4108	C-3
* C4520	C-5	IC4202	B-4	* R4109	A-3
* C4521	D-6	IC4301	B-1	* R4110	A-3
* C4522	C-6	* IC4502	B-5	* R4111	A-2
C4523	C-5	* IC4504	D-4	* R4112	A-2
* C4526	C-5			* R4113	C-3
* C4527	C-5	* ID4001	C-1	* R4114	B-2
* C4528	C-5	* ID4002	C-1	* R4115	B-2
* C4529	C-5	* ID4003	C-1	* R4116	B-2
* C4530	D-5			* R4117	B-2
* C4531	D-5	L4201	C-3	* R4118	B-1
* C4532	C-6	L4202	B-4	* R4119	B-1
C4533	C-5	L4301	A-1	* R4120	B-1
* C4535	D-5	L4501	C-5	* R4121	B-1
* C4536	D-5	L4502	D-5	* R4122	B-3
* C4537	C-5	L4503	D-5	* R4123	B-3
* C4538	D-6	L4504	C-6	* R4124	B-3
* C4539	D-6	L4505	C-5	R4201	C-3

CK-129 BOARD

R4202	C-3	* BT5201	A-1
R4203	C-3		
R4204	C-2	* C5201	A-2
R4205	C-3	* C5202	A-2
R4206	B-4		
R4207	B-4	* CN5205	B-2
R4208	B-3	* CN5207	A-3
R4209	B-4	* CN5208	B-2
R4210	B-4	* CN5209	A-1
R4211	B-3	* CN5210	B-1
R4212	B-4		
R4213	B-4	* D5201	B-1
R4214	B-4	* D5203	B-1
R4215	B-4	* D5205	B-1
R4301	A-1	* D5207	A-2
R4302	A-1	* D5208	A-2
R4303	A-1	* D5209	B-2
R4304	A-1	* D5223	A-3
R4305	A-1	* D5224	B-2
* R4501	A-5		
* R4502	B-4	LN5201	B-1
* R4503	A-4	LN5202	B-1
* R4510	B-5		
* R4511	B-5	S5203	B-1
* R4512	B-5	S5207	A-1
* R4513	C-6		
R4513	B-5		
* R4514	B-5		
* R4515	B-5		
* R4516	B-5		
* R4517	B-5		
* R4518	B-5		
* R4520	B-5		
* R4521	B-6		
* R4523	A-5		
* R4524	B-6		
R4526	B-5		
* R4537	C-4		
* R4538	B-4		
* R4539	B-6		
* R4540	D-5		
* R4541	C-5		
* R4542	C-5		
* R4545	D-4		
* R4546	C-6		
* R4547	B-6		
* R4549	D-4		
* R4550	D-4		
* R4551	D-4		
* R4552	C-5		
* R4553	C-5		
* R4554	C-6		
* R4555	C-6		
* R4556	C-6		
* R4557	B-6		
* R4561	D-4		
* R4562	D-4		
* R4563	D-4		
* R4564	D-4		
R4601	B-6		
R4604	B-5		
R4605	B-5		
R4606	B-5		
R4607	B-5		
R4608	B-5		
R4609	B-5		
* R4611	A-4		
* R4614	A-4		
* R4615	A-4		

PD-188 BOARD

C6001	C-4	R6001	C-4
C6002	D-4	R6002	C-4
C6003	C-4	R6003	C-3
C6004	C-4	R6004	C-3
C6005	C-4	R6005	D-3
C6006	D-4	R6006	C-3
C6007	C-3	R6007	C-3
C6008	C-3	R6008	B-4
C6009	D-3	R6009	C-3
C6010	D-3	R6010	C-3
C6011	C-3	R6011	C-3
C6012	C-3	R6012	C-3
C6013	B-3	R6013	B-3
C6014	D-3	R6014	B-4
C6015	B-2	R6015	B-4
C6016	D-3	R6016	B-4
C6017	C-3	R6017	B-4
C6018	C-3	R6018	B-4
C6019	C-3	R6019	B-4
C6020	B-4	R6020	B-4
C6021	B-4	R6021	B-4
C6022	B-4	R6022	B-4
C6023	B-3	R6023	D-4
C6024	B-3	R6101	D-4
C6101	B-2	R6102	D-4
C6102	B-2	R6103	B-2
C6103	C-1	R6104	B-2
C6104	B-1	R6105	B-2
C6105	B-1	R6106	C-2
		R6107	B-2
		R6108	B-1
		R6109	B-2
		R6110	B-1
		RB6001	C-2
		RB6002	C-2
		T6101	C-1
CN6001	A-3		
CN6101	A-1		
CN6201	C-4		
CN6202	B-4		
CN6203	A-2		
D6001	B-2		
D6002	B-4		
D6003	B-3		
D6101	D-4		
D6102	D-4		
D6103	B-1		
D6104	A-2		
D6201	B-2		
FB6001	C-4		
FB6002	D-3		
IC6001	C-3		
IC6002	B-3		
IC6101	B-2		
IC6102	B-1		
L6001	C-4		
L6002	B-3		
L6101	C-2		
LN6101	D-4		
Q6001	B-4		
Q6002	B-4		
Q6003	B-4		
Q6004	B-4		
Q6005	B-4		
Q6101	B-2		
Q6102	D-1		
Q6103	D-1		
Q6104	B-2		

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

JK-242 BOARD

CN5301 A-1
CN5302 A-2
CN5303 B-4

* D5301 B-3
* D5302 B-1
* D5302 B-3
* D5303 B-1
* D5303 B-4
* D5304 A-2
* D5305 B-4
* D5306 B-3
* D5307 B-3

* FB5301 B-3
* FB5302 B-4

J5301 A-3

* LF5301 B-1

LN5301 A-4
LN5302 A-1

* R5304 A-1
* R5305 B-1
* R5306 B-3

MA-421 BOARD

* C5404 B-3
* C5501 C-4
C5502 B-4
C5503 B-4
* C5504 C-4
* C5505 B-4
* C5506 B-5
* C5510 C-4
* C5511 B-5
* C5512 C-4
C5513 B-4
C5514 B-4
* C5515 C-4
* C5516 C-4
C5517 B-4
C5518 B-4
* C5519 C-4
C5520 B-4
* C5521 C-4
C5522 B-4
C5523 B-4
* C5524 C-4
C5527 B-4
C5528 B-4
* C5529 C-4
* C5530 C-4
* C5531 B-4
* C5532 C-3
* C5533 B-3
* C5535 C-3
* C5536 C-3
* C5537 C-3
* C5538 C-3
* C5539 C-3

* CN5401 A-2
* CN5402 C-2

D5401 B-4
* D5403 A-2
* D5404 B-3
D5405 B-3
D5407 A-3
D5408 B-1
D5409 B-4
D5410 C-2

* FB5401 C-2
* FB5402 C-2
* FB5403 A-2
* FB5404 A-2
* FB5405 B-4
* FB5406 B-5
* FB5407 A-2
* FB5408 A-2
* FB5409 C-1
FB5410 A-5
* FB5411 B-5

IC5401 B-3
* IC5501 B-4

J5401 A-4
J5402 A-2
J5404 B-1
J5405 A-5

* L5501 C-3

LN5401 B-5
LN5402 A-1

R5401 B-4
R5402 B-4
* R5403 A-1
* R5405 C-3
* R5406 A-2
* R5407 C-2
* R5408 B-2
* R5409 B-5
* R5501 C-3
* R5502 C-3
* R5503 B-4
* R5504 B-4
* R5505 B-4
R5506 B-4
R5507 B-4
R5508 B-4
* R5509 C-4
* R5510 C-4
R5511 B-4
R5512 B-4
* R5513 C-4
R5514 B-4
R5515 B-4
* R5516 C-4
* R5517 C-4
R5518 B-4
* R5519 C-4
R5520 B-4
* R5521 C-4
* R5522 C-3
* R5524 B-3
* R5525 B-3
* R5526 C-3
* R5527 C-3
* R5528 C-3
* R5529 C-3
R5530 B-4
R5531 B-4
* R5532 C-4
R5533 B-4
* R5534 C-4

* SE5401 B-2
SE5402 A-2

* VD5401 B-5
* VD5402 B-4
* VD5403 A-1
* VD5407 B-2
* VD5408 C-1
* VD5409 B-5
VD5410 A-5

Mounted parts location of the VC-311 board is not shown.
Page 4-85 is not shown.

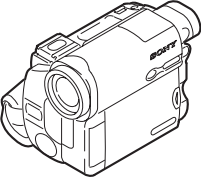
NOTE

5. REPAIR PARTS LIST

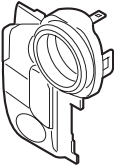
NOTE: Characters **A** to **Z** of the electrical parts list indicate location of exploded views in which the desired part is shown.

Link

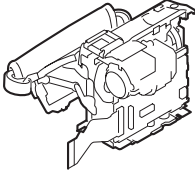
EXPLODED VIEWS



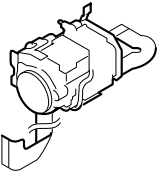
OVERALL SECTION



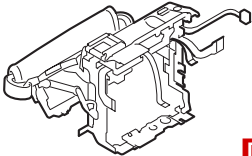
F PANEL SECTION



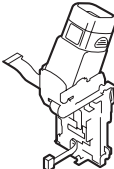
MAIN CHASSIS SECTION



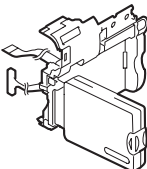
LENS SECTION



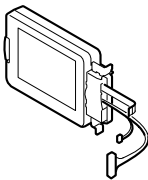
CABINET L SECTION



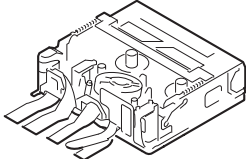
BT PANEL/EVF SECTION



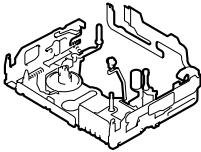
CABINET R SECTION



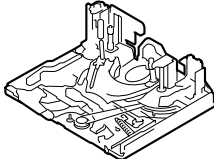
LCD SECTION



OVERALL
(MECHANISM DECK-Z100)



LS CHASSIS BLOCK
ASSEMBLY



MECHANICAL CHASSIS
BLOCK ASSEMBLY

Link

ELECTRICAL PARTS LIST

ACCESSORIES

• CD-430 BOARD C	• JK-242 BOARD D	• PD-188 BOARD G
• CK-129 BOARD F	• LB-085 BOARD E	• VA-118 BOARD B
• FP-626 FLEXIBLE BOARD G	• MA-421 BOARD A	• VC-311 BOARD B

5. REPAIR PARTS LIST

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:
uF: μ F
- COILS
uH: μ H
- RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A... , μ PA... , μ PA... ,
uPB... , μ PB... , μ PC... , μ PC... ,
uPD... , μ PD...

When indicating parts by reference number, please include the board name.

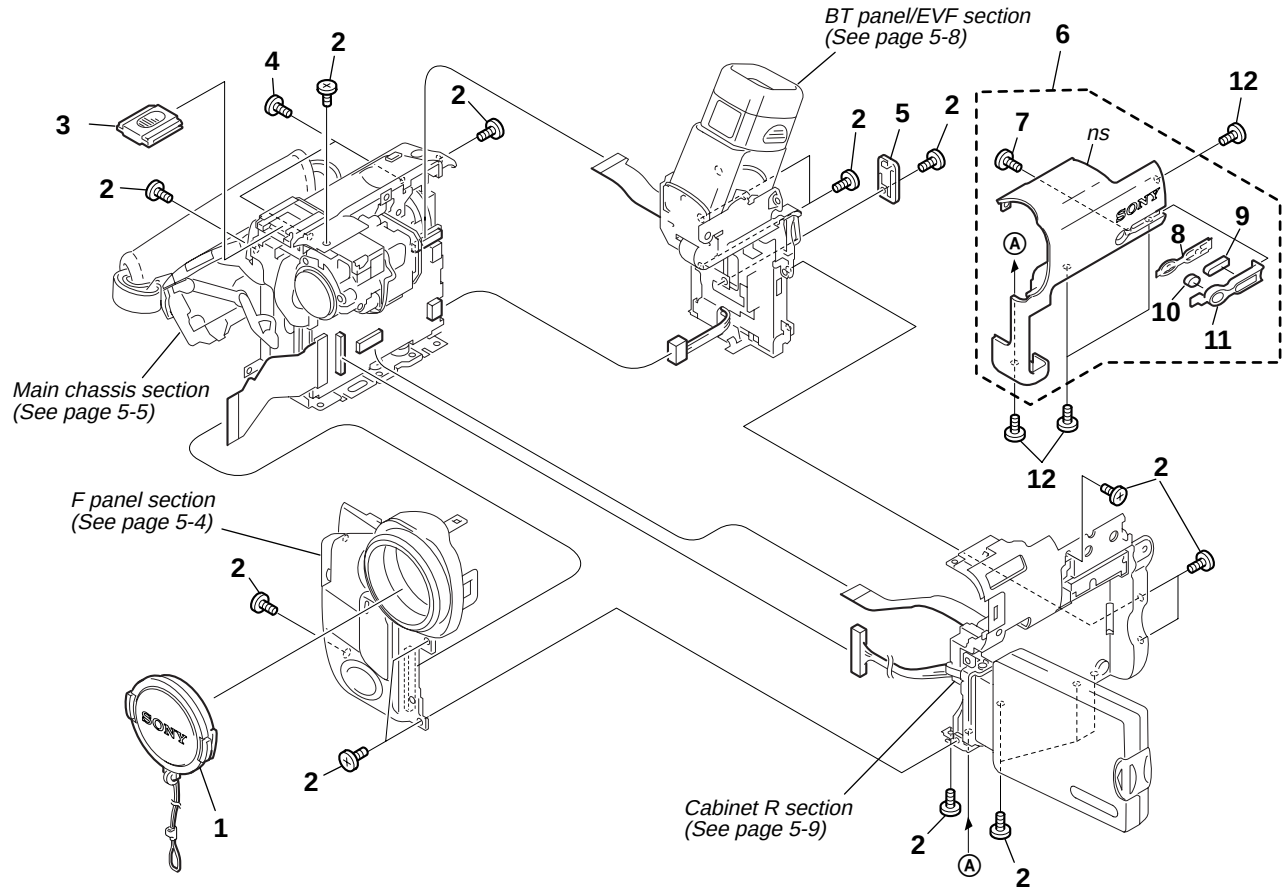
Note : The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety.
Replace only with part number specified.

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-1. OVERALL SECTION

ns : not supplied



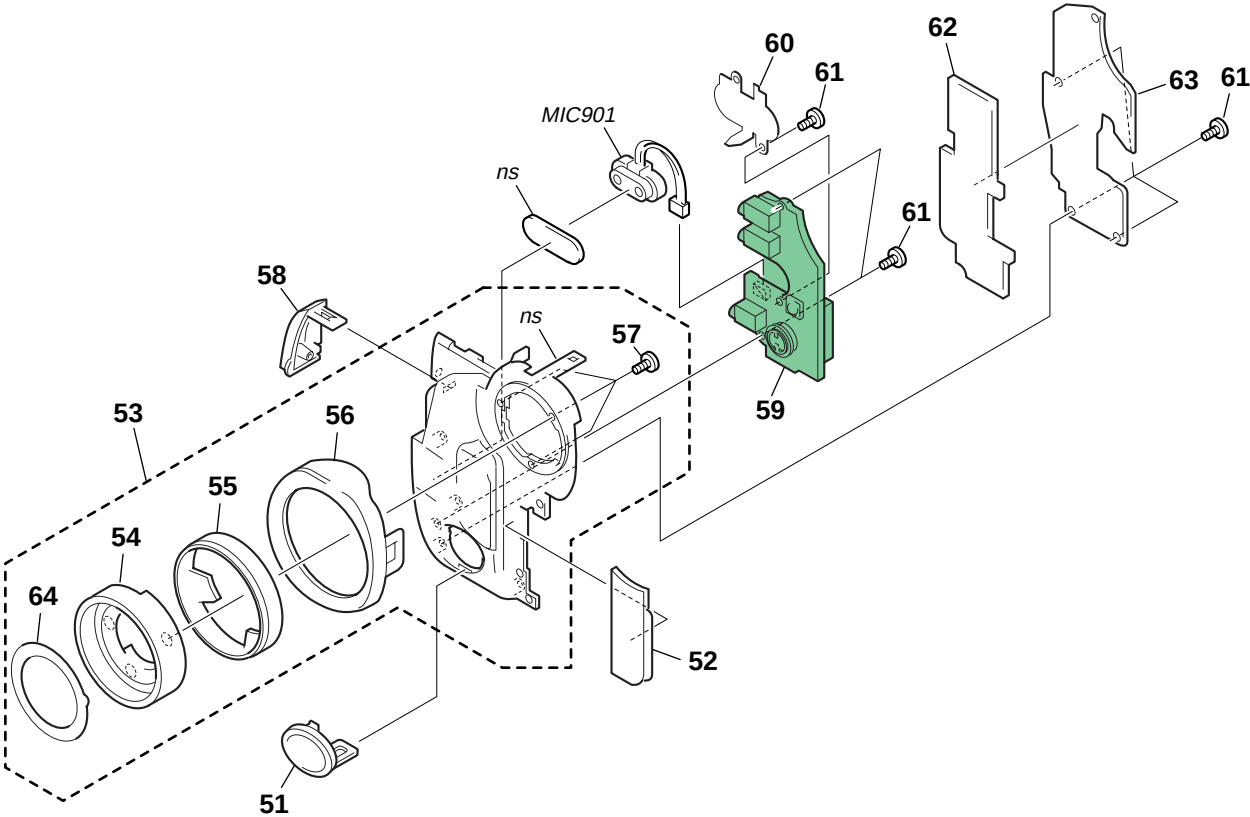
Ref. No.	Part No.	Description
1	X-3952-449-1	CAP ASSY, LENS
2	3-989-735-81	SCREW (M1.7), LOCK ACE, P2
3	3-080-571-01	COVER, SHOE
4	3-056-030-81	SCREW (M1.7), LOCK ACE, P2
5	3-080-570-01	LID, CPC
6	X-3954-385-1	COVER ASSY, CABINET (R)

Ref. No.	Part No.	Description
7	3-080-204-01	SCREW (M1.7), TAPPING, +P2
8	3-090-898-01	SHEET, CF
9	3-090-897-01	CF BUTTON (R)
10	3-090-896-01	CF BUTTON (L)
11	3-090-894-01	COVER, CF
12	3-989-735-71	SCREW (M1.7), LOCK ACE, P2

5. REPAIR PARTS LIST

5-1-2. F PANEL SECTION

ns : not supplied

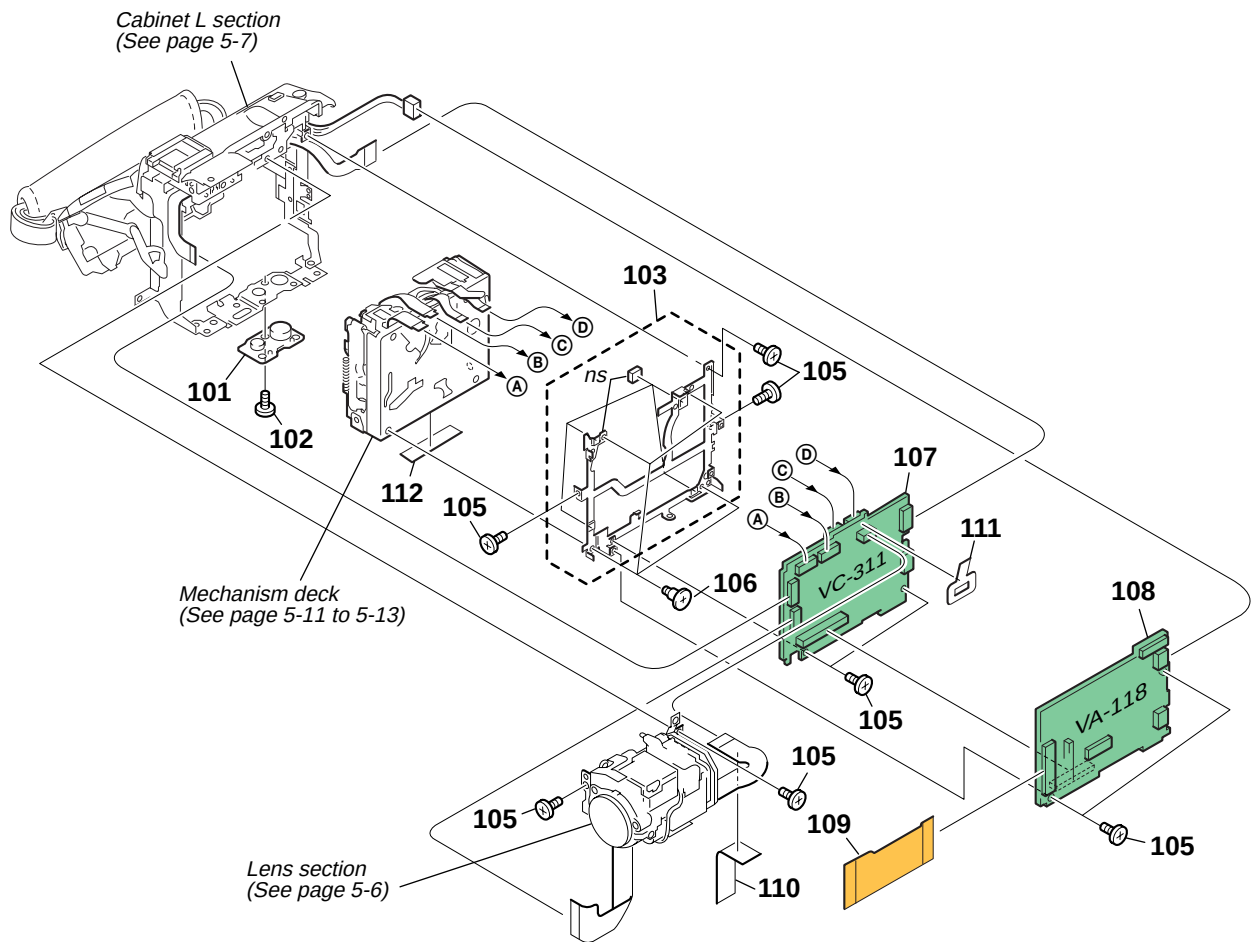


Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
51	3-080-516-01	COVER, S TERMINAL	58	3-080-573-01	COVER (F), JACK
52	3-089-195-01	PLATE, NAME (619) (HC15)	59	A-7112-882-A	MA-421 BOARD, COMPLETE (HC15E)
52	3-089-195-11	PLATE, NAME (619) (HC15E)	59	A-7112-883-A	MA-421 BOARD, COMPLETE (HC14E/HC15)
52	3-089-195-21	PLATE, NAME (619) (HC14E)	60	3-080-517-01	RETAINER, MICROPHONE
53	X-3954-386-1	PANEL ASSY, FRONT	61	3-713-791-11	SCREW (M1.7X5), TAPPING, P2
54	3-090-892-01	SCREW	62	3-080-519-01	CUSHION, MA COVER
55	3-090-891-01	RING (N), ORNAMENTAL	63	3-080-514-01	COVER, MA
56	3-090-900-01	PLATE (619), ORNAMENTAL	64	3-090-899-01	RING (619), NAME
57	3-080-222-31	SCREW(M1.7), TAPPING, P2	MIC901	1-542-513-11	MICROPHONE

5. REPAIR PARTS LIST

5-1-3. MAIN CHASSIS SECTION

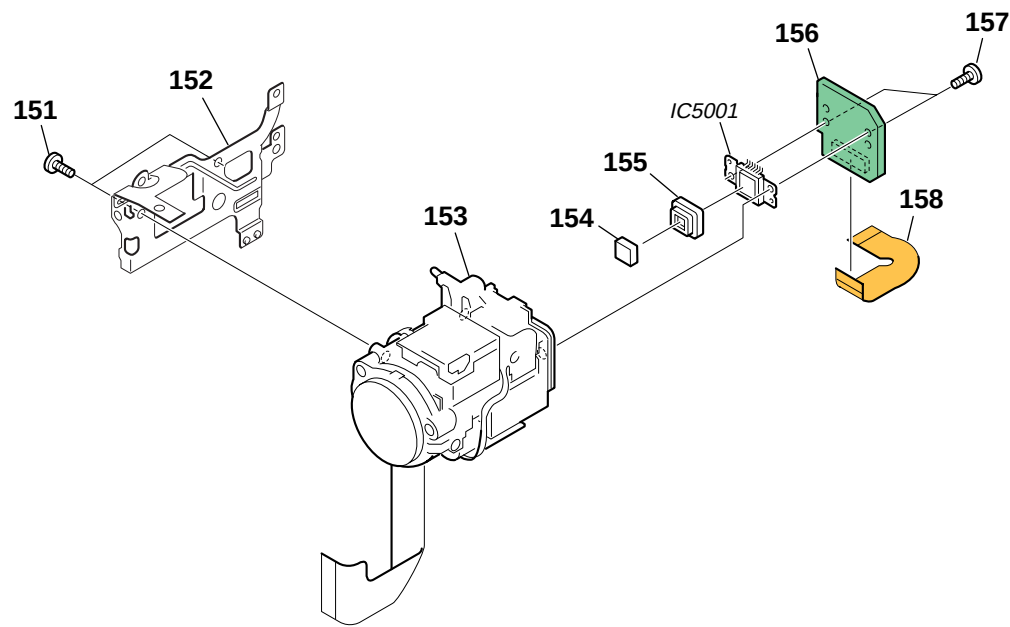
ns : not supplied



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
101	3-080-569-01	SCREW	107	A-7079-025-A	VC-311 BOARD, COMPLETE (SERVICE)(HC14E)
102	3-989-735-81	SCREW (M1.7), LOCK ACE, P2	108	A-7112-878-A	VA-118 BOARD, COMPLETE
103	X-3953-112-1	FRAME ASSY, MD	109	1-687-546-11	FP-621 FLEXIBLE BOARD
105	3-989-735-01	SCREW (M1.7), LOCK ACE, P2	110	3-941-343-01	TAPE (A)
106	3-062-214-01	SCREW (M1.4X1.5)	111	3-081-787-01	SHEET, RF
107	A-7079-024-A	VC-311 BOARD, COMPLETE (SERVICE) (HC15/HC15E)	112	3-081-221-01	LABEL (Z), LS

5. REPAIR PARTS LIST

5-1-4. LENS SECTION



Be sure to read “Precautions upon replacing CCD imager” on page 4-9 when changing the CCD imager.

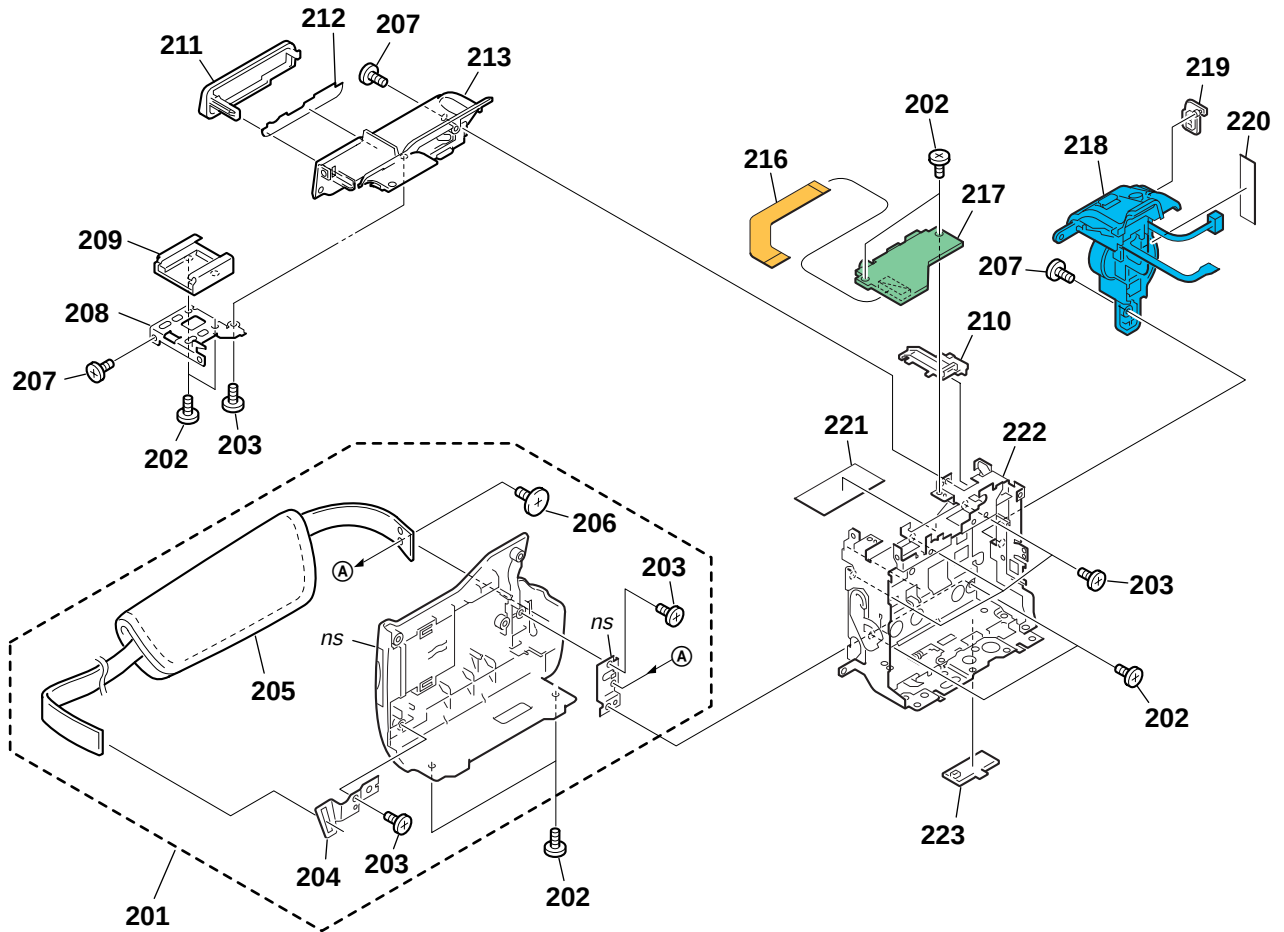
Ref. No.	Part No.	Description
151	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2
152	3-080-606-01	FRAME (39) LENS
153	8-848-767-01	DEVICE, LENS LSV-650E
154	1-758-155-21	FILTER BLOCK, OPTICAL
155	3-053-973-01	RUBBER (W), SEAL
156	A-7013-526-A	CD-430 BOARD, COMPLETE (IC5001 is not included in this COMPLETE board.)

Ref. No.	Part No.	Description
157	3-713-791-11	SCREW (M1.7X5), TAPPING, P2
158	1-687-547-11	FP-623 FLEXIBLE BOARD
IC5001	A-7031-244-A	CCD BLOCK ASSY (CCD IMAGER)(HC15)
IC5001	A-7031-276-A	CCD BLOCK ASSY (CCD IMAGER)(HC14E/HC15E) (IC5001 is not included in the COMPLETE board of CD-430.)

5. REPAIR PARTS LIST

5-1-5. CABINET L SECTION

ns : not supplied



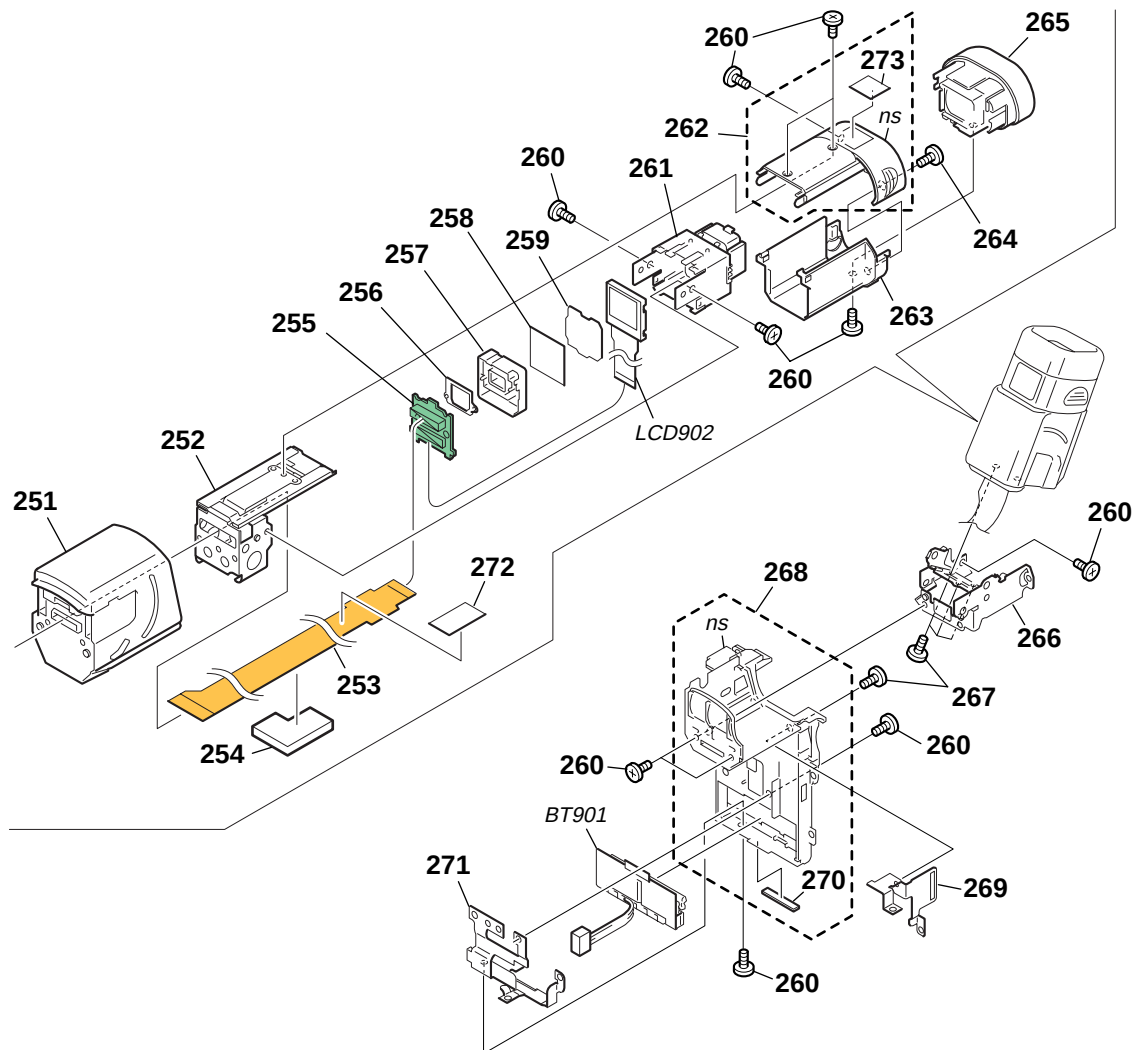
Ref. No.	Part No.	Description
201	X-3954-387-1	CABINET (G) ASSY (HC15/HC15E)
201	X-3954-389-1	CABINET (G) (618) ASSY (HC14E)
202	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
203	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2
204	3-080-468-01	SHEET METAL (FRONT), GRIP BELT
205	3-080-467-01	BELT, GRIP
206	3-073-686-11	SCREW (M2X2.5)
207	3-989-735-81	SCREW (M1.7), LOCK ACE, P2
208	3-080-473-01	FRAME, SHOE
209	X-3950-126-1	SHOE (97) ASSY
210	3-080-472-01	COVER, FLEXIBLE
211	3-080-572-01	COVER (L), JACK

Ref. No.	Part No.	Description
212	3-080-576-21	SHEET (L), JACK (HC15/HC15E)
212	3-080-576-31	SHEET (L), JACK (HC14E)
213	X-3953-217-1	CABINET (L) ASSY (39E)
216	1-687-549-11	FP-625 FLEXIBLE BOARD
217	A-7112-881-A	JK-242 BOARD, COMPLETE
218	1-477-740-41	SWITCH BLOCK, CONTROL (FK-CX4000)
219	3-082-335-01	COVER, DC-IN JACK
220	3-076-631-01	RETAINER, FK FLEXIBLE
221	3-081-434-01	SHEET Z
222	X-3953-096-1	FRAME ASSY, CS
223	3-080-471-01	KNOB, EJECT

5. REPAIR PARTS LIST

5-1-6. BT PANEL/EVF SECTION

ns : not supplied



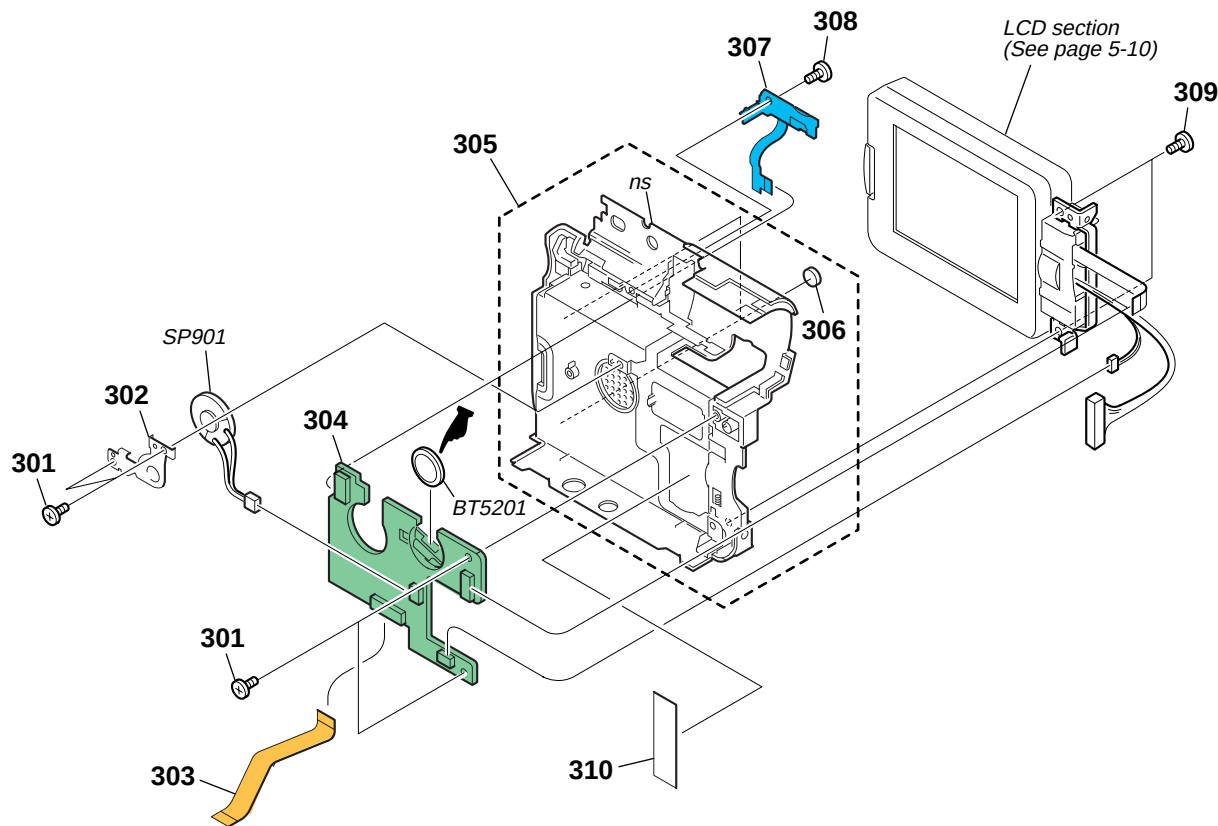
Ref. No.	Part No.	Description
251	3-080-420-51	CABINET, VF TILT
252	X-3953-118-1	SLIDE ASSY, VF
253	1-687-544-21	FP-619 FLEXIBLE BOARD
254	3-081-694-02	RETAINER, EVF FLEXIBLE
255	A-7112-880-A	LB-085 BOARD, COMPLETE
256	3-080-615-01	CUSHION (LB) (40)
257	3-080-618-01	GUIDE (40), LAMP
258	3-080-613-01	ILLUMINATOR (40)
259	3-080-614-01	SHEET (40), PRISM
260	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
261	X-3953-119-1	CABINET ASSY, LCD
262	X-3954-541-1	CABINET ASSY (619), VF SLIDE
263	3-080-617-01	CABINET (LOWER), VF SLIDE

Ref. No.	Part No.	Description
264	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2
265	X-3953-115-1	EYE CUP (40) ASSY
266	X-3953-116-1	HINGE ASSY, VF
267	3-989-735-81	SCREW (M1.7), LOCK ACE, P2
268	X-3953-113-1	PANEL ASSY, BATTERY
269	X-3953-349-1	SHEET METAL (UPPER) ASSY STRAP
270	3-080-543-01	SHEET, FOOT
271	X-3953-114-1	SHEET METAL (LOWER) ASSY, STRAP
272	3-083-290-01	SHEET (VF)
273	3-081-619-01	LABEL, B/W (VF)
BT901	1-694-796-11	TERMINAL BOARD, BATTERY
LCD902	8-753-036-71	LCX032APA-J

5. REPAIR PARTS LIST

5-1-7. CABINET R SECTION

ns : not supplied



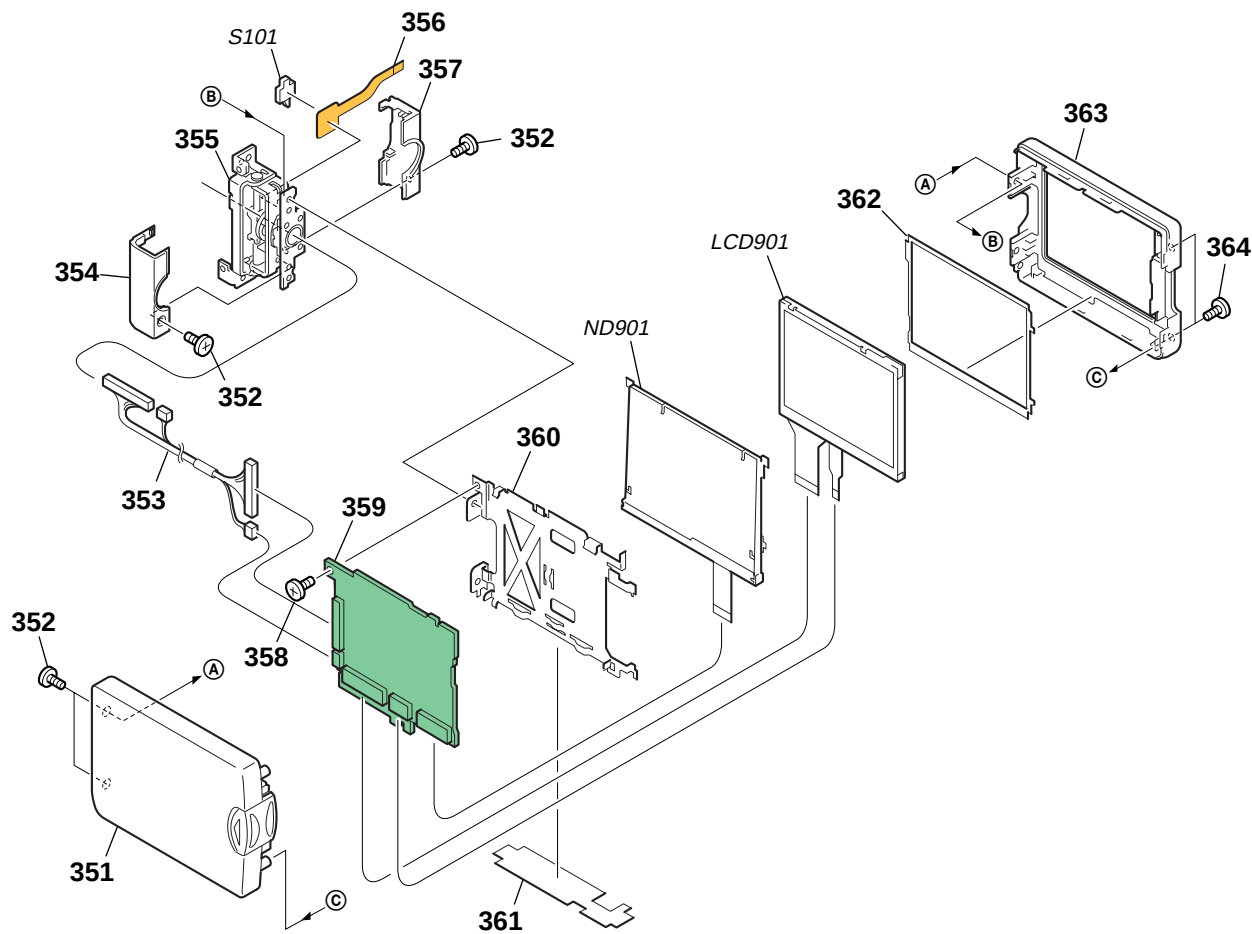
 : BT5201 (Lithium battery) CK-129 board on the mount position. (See page 4-71)

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
301	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2	307	1-477-741-11	SWITCH BLOCK, CONTROL (CF-CX4000)
302	X-3953-097-1	RETAINER ASSY, SPEAKER	308	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
303	1-687-543-11	FP-618 FLEXIBLE BOARD	309	3-713-791-11	SCREW (M1.7X5), TAPPING, P2
304	A-7112-879-A	CK-129 BOARD, COMPLETE	310	3-941-343-01	TAPE (A)
305	X-3954-459-1	CABINET (R) ASSY	SP901	1-825-260-21	LOUD SPEAKER (1.6CM)
306	3-959-978-02	CUSHION, PANEL			

5. REPAIR PARTS LIST

5-1-8. LCD SECTION



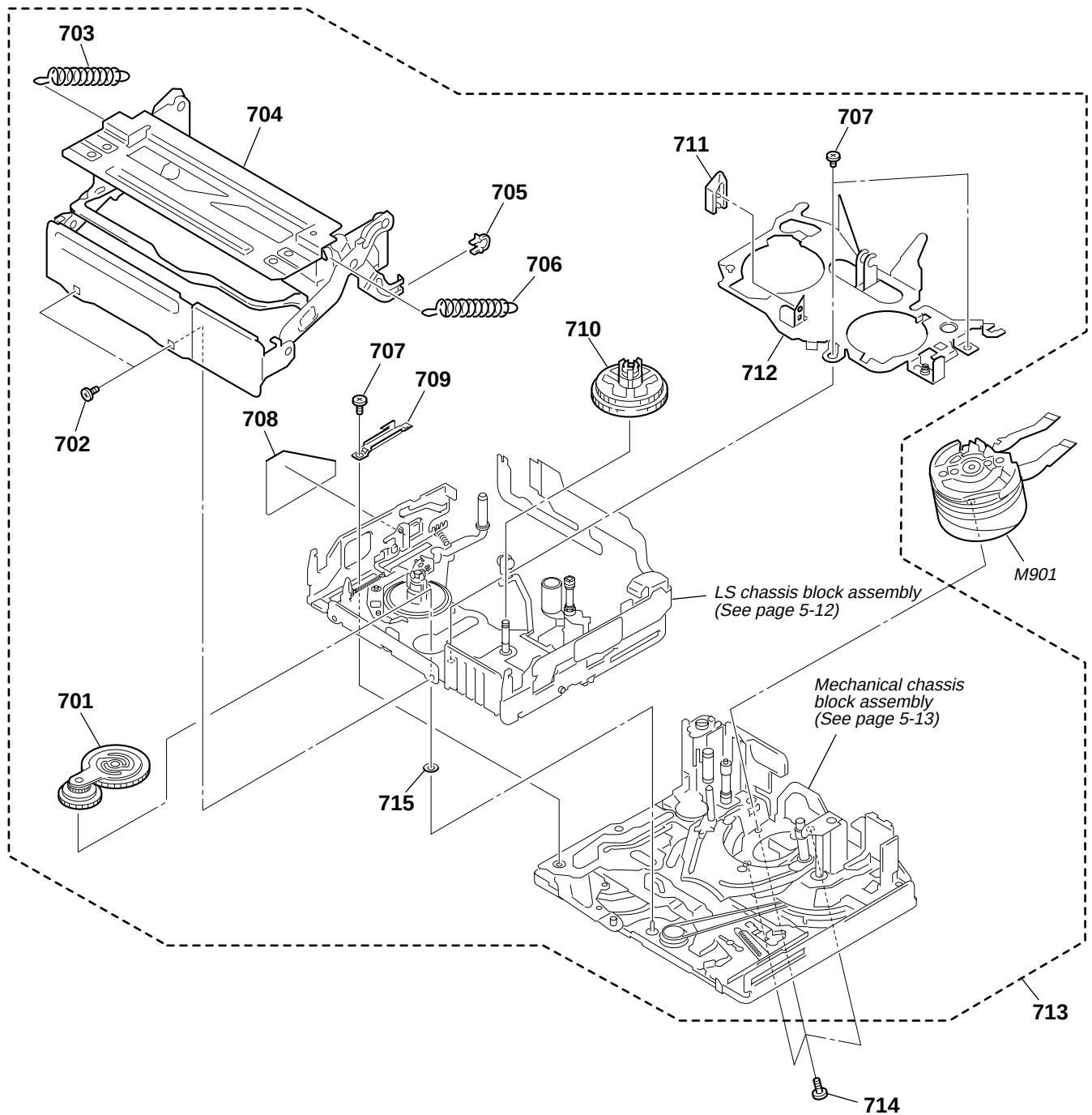
Ref. No.	Part No.	Description
351	X-3954-388-1	CABINET (C) ASSY, P
352	3-989-735-81	SCREW (M1.7), LOCK ACE, P2
353	1-962-081-11	HARNESS (PV-140)
354	3-080-387-51	COVER (C) (40), HINGE
355	X-3953-107-1	HINGE (40) ASSY
356	1-687-550-11	FP-626 FLEXIBLE BOARD
357	3-080-496-01	COVER (M) (40), HINGE
358	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
359	A-7013-528-A	PD-188 BOARD, COMPLETE

Ref. No.	Part No.	Description
360	3-080-498-01	FRAME (40), PANEL
361	3-080-499-01	SHEET (40), INSULATING, LCD
362	3-080-497-01	CUSHION (T), LCD
363	X-3953-106-1	CABINET (M) (40) ASSY, P
364	3-713-791-11	SCREW (M1.7X5), TAPPING, P2
LCD901	8-753-052-10	ACX307AKM-J
△ ND901	1-477-755-11	BLOCK LIGHT GUIDE PLATE (2.5)
S101	1-771-039-31	SWITCH, PUSH (PANEL REVERSE)

Note : The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

5. REPAIR PARTS LIST

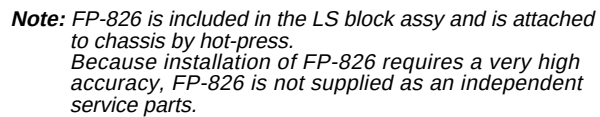
5-1-9. OVERALL (MECHANISM DECK-Z100)



Ref. No.	Part No.	Description
701	X-3952-938-3	GEAR ASSY, GOOSENECK
702	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
703	3-079-206-02	SPRING (POP UP S), TXTENSION
704	X-3952-939-3	COMPARTMENT ASSY, CASSETTE
705	3-079-367-01	DAMPER, CASSETTE COMPARTMENT
706	3-079-215-02	SPRING (POP UP T), EXTENSION
707	3-085-330-01	SCREW, SPECIAL
708	3-080-545-01	COVER, SENSOR S

Ref. No.	Part No.	Description
709	3-079-364-01	RETAINER, LS GUIDE
710	X-3952-937-1	TABLE ASSY, T REEL
711	3-079-366-01	RELEASE, REEL LOCK
712	X-3953-257-1	PLATE ASSY, RETAINER
713	A-7095-393-A	MD (Z100) SUB ASSY
714	3-079-741-02	SCREW, DRUM FIXING
715	3-748-682-01	WASHER, T
M901	A-7048-981-A	DRUM (DEH-30A-R)

ns : not supplied

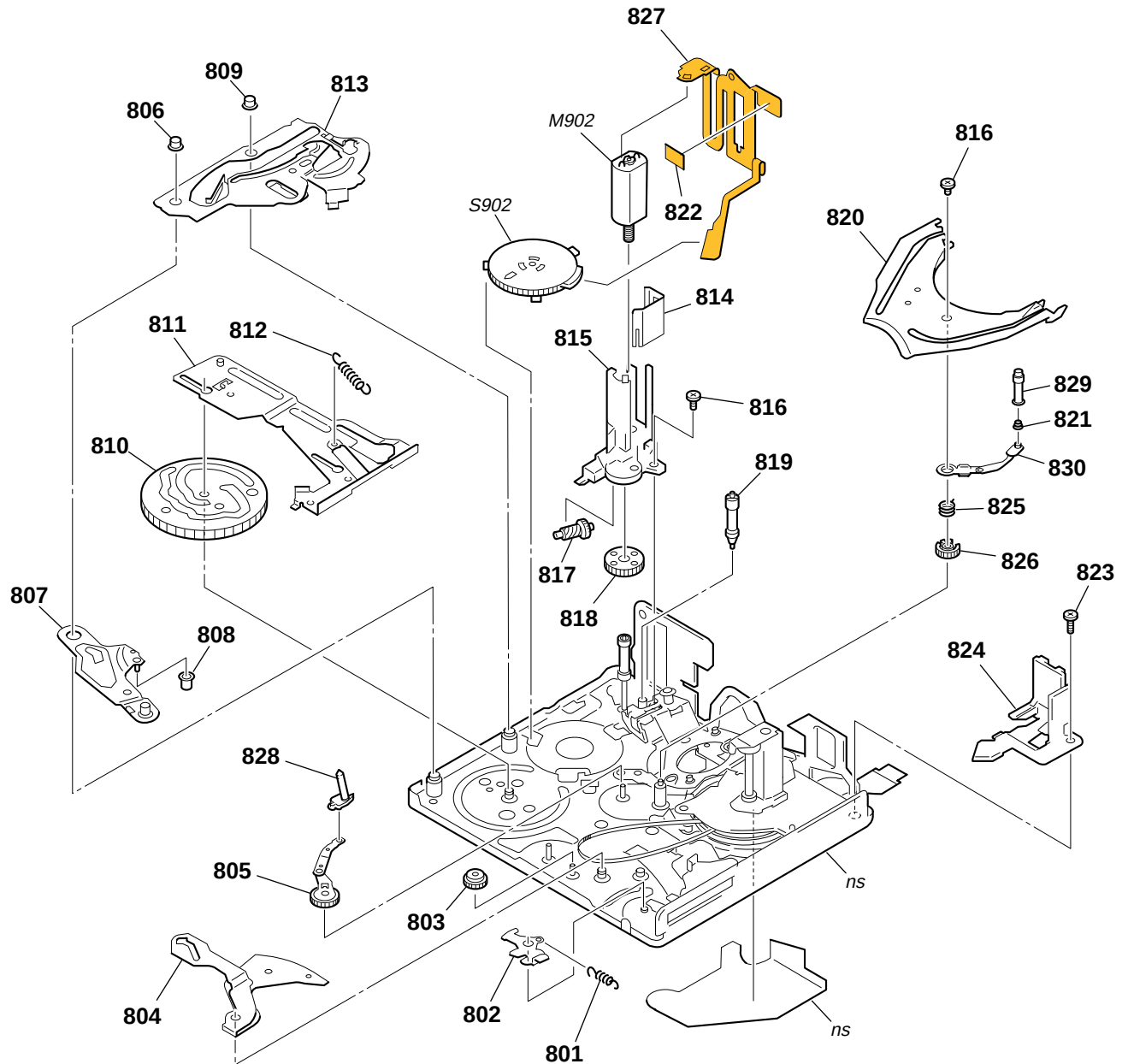


<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
767	3-079-243-02	SPRING (PINCH RETURN), TORSION
768	X-3952-934-1	ARM ASSY, PINCH
769	3-052-062-02	NUT, TG7
770	3-079-219-02	TG7
771	3-081-591-01	SPRING, COMPRESSION (TG7)
772	X-3952-935-3	ARM ASSY, TG7
773	3-079-237-01	ADJUSTOR, BAND
774	A-7095-403-B	TG2 ARM BLOCK ASSY
D901	6-500-652-01	DIODE GL453SE0000F (TAPE LED)
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)
MIC902	1-817-175-12	PIN, CONNECTOR (WITH DETECTION SWITCH)
Q901	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE END)
Q902	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE TOP)
S903	1-529-566-51	SWITCH, PUSH (1 KEY) (C.C.DOWN)

5. REPAIR PARTS LIST

5-1-11. MECHANICAL CHASSIS BLOCK ASSEMBLY

ns : not supplied



Ref. No.	Part No.	Description
801	3-079-314-01	SPRING (EJ), EXTENSION
802	3-079-327-01	ARM, EJ
803	3-079-323-01	GEAR, CONVERSION
804	3-079-324-01	ARM, GL DRIVING
805	X-3952-928-1	GL (S) ASSY
806	3-079-315-01	ROLLER (S1), LS GUIDE
807	X-3952-925-1	ARM ASSY, LS
808	3-079-320-01	ROLLER, LS
809	3-079-316-01	ROLLER (S2), LS GUIDE
810	3-079-319-01	GEAR, CAM
811	X-3952-941-1	SLIDER ASSY, M
812	3-079-321-02	SPRING (PINCH), EXTENSION
813	X-3952-940-2	PLATE ASSY, TG2 CAM
814	3-079-312-01	SHIELD, MOTOR
815	3-079-307-02	HOLDER, MOTOR
816	3-085-330-01	SCREW, SPECIAL

Ref. No.	Part No.	Description
817	3-079-308-01	SHAFT, WORM
818	3-079-309-01	GEAR, DECELERATION
819	X-3952-942-2	ROLLER ASSY, TG3
820	3-079-325-01	RAIL, GUIDE
821	3-079-295-02	SPRING, TG5
822	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)
823	3-079-328-01	SCREW (M1.4), SPECIAL HEAD
824	3-079-326-02	SUPPORT, TG7
825	3-079-301-01	SPRING (GLT), TORSION
826	3-079-298-01	GEAR (T), GL
827	1-686-798-11	FP-467 FLEXIBLE BOARD
828	X-3952-927-2	COASTER (S) ASSY
829	X-3952-930-3	ROLLER ASSY, TG5
830	X-3952-929-1	COASTER (T) ASSY
M902	A-7095-396-A	MOTOR BLOCK ASSY, L (LOADING)
S902	1-477-679-11	ROTARY, ENCODER (MODE SWITCH)

5. REPAIR PARTS LIST

Checking supplied accessories.

Make sure that the following accessories are supplied with your camcorder.



Power cord (Main lead)(1)
(AUS model)

△ 1-696-819-21

Power cord (Main lead)(1)
(AEP, EE, NE,
E:EXCEPT Saudi Arabia
model)

△ 1-769-608-11

Power cord (Main lead)(1)
(CH model)

△ 1-782-476-13

Power cord (Main lead)(1)
(UK, HK,E:Saudi Arabia
model)

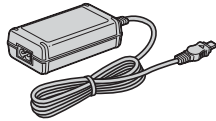
△ 1-783-374-11

Power cord (Main lead)(1)
(AR model)

△ 1-783-952-21

Power cord (Main lead)(1)
(KR model)

△ 1-776-985-11



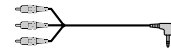
AC power adaptor (1)
(AC-L15A/L15B)

△ 1-477-533-51



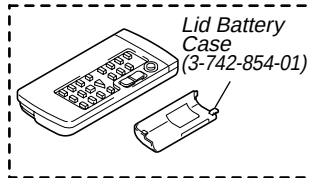
NP-FM30 battery pack (1)

△ A-7096-388-B



A/V connecting cable
(1.5m) (1)

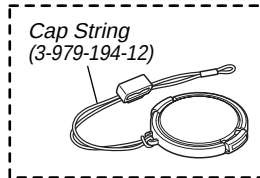
1-824-097-11



Wireless Remote Commander (1)
(RMT-814)

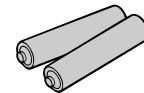
1-475-141-61

(HC15E model)



Lens cap (1)

X-3952-449-1

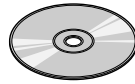


R6 (size AA) batteries
for the Remote
Commander (2)
(not supplied)



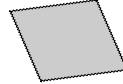
21-pin adaptor (1)
(AEP, UK, EE, NE model)

1-770-783-21



CD-ROM
(Pilote USB SPVD-012) (1)

3-087-821-01



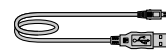
Cleaning cloth (1)

3-073-861-01



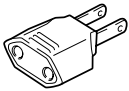
Shoe cover (1)

3-080-571-01



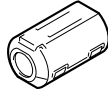
USB cable (1)

1-824-382-21



2-pin conversion adaptor (1)
(E, HK model)

1-569-008-12



Clamp filter (Ferrite core)
(for AC-L15A/L15B)

1-469-241-11

(KR model)

• Abbreviation

EE : East European model
NE : North European model
HK : Hong Kong model
AUS : Australian model

CH : Chinese model
KR : Korea model
AR : Argentina model

Other accessories

3-087-936-11 MANUAL (PC), INSTRUCTION (ENGLISH)
(HC14E:AEP,UK/HC15E:E,HK,AUS)

3-087-936-21 MANUAL (PC), INSTRUCTION (FRENCH)
(HC14E:AEP/HC15E:E)

3-087-936-31 MANUAL (PC), INSTRUCTION (FRENCH)(HC14E:AEP)

3-087-936-41 MANUAL (PC), INSTRUCTION (SPANISH/PORTUGUESE)
(HC14E:AEP/HC15E:E,AR)

3-087-936-51 MANUAL (PC), INSTRUCTION (ITALIAN/GREEK)
(HC14E:AEP)

3-087-936-61 MANUAL (PC), INSTRUCTION (SWEDISH/RUSSIAN)
(HC14E:NE/HC15E:E)

3-087-936-71 MANUAL (PC), INSTRUCTION (DANISH/FINNISH)
(HC14E:NE)

3-087-936-81 MANUAL (PC), INSTRUCTION (POLISH/CZECH)
(HC14E:EE)

3-087-936-91 MANUAL (PC), INSTRUCTION (HUNGARIAN/SLOVAK)
(HC14E:EE)

3-087-937-11 MANUAL (PC), INSTRUCTION (ARABIC/PERSIAN)
(HC15E:E)

3-087-937-21 MANUAL (PC), INSTRUCTION (TRADITIONAL CHINESE)
(HC15E/HC15E:HK)

3-087-937-31 MANUAL (PC), INSTRUCTION (SIMPLIFIED CHINESE)
(HC15E:E,CH)

3-087-937-41 MANUAL (PC), INSTRUCTION (KOREAN)(HC15E:KR)

3-089-848-11 MANUAL, INSTRUCTION (ENGLISH)(HC15E:E)

3-089-848-21 MANUAL, INSTRUCTION (SPANISH/PORTUGUESE)
(HC15E:E,AR)

3-089-848-31 MANUAL, INSTRUCTION (TRADITIONAL CHINESE)
(HC15E:E)

3-089-848-41 MANUAL, INSTRUCTION (KOREAN)(HC15E:KR)

3-089-850-11 MANUAL, INSTRUCTION (ENGLISH/FRENCH)
(HC14E:AEP,UK/HC15E:E,HK,AUS)

3-089-850-21 MANUAL, INSTRUCTION (SPANISH/PORTUGUESE)
(HC14E:AEP/HC15E:E)

3-089-850-31 MANUAL, INSTRUCTION (ITALIAN/GREEK)(HC14E:AEP)

3-089-850-41 MANUAL, INSTRUCTION (GERMAN/DUTCH)(HC14E:AEP)

3-089-850-51 MANUAL, INSTRUCTION (SWEDISH/RUSSIAN)
(HC14E:NE/HC15E:E)

3-089-850-61 MANUAL, INSTRUCTION (DANISH/FINNISH)(HC14E:NE)

3-089-850-71 MANUAL, INSTRUCTION (ARABIC/PERSIAN)(HC15E:E)

3-089-850-81 MANUAL, INSTRUCTION (TRADITIONAL CHINESE)
(HC15E:HK)

3-089-850-91 MANUAL, INSTRUCTION (SIMPLIFIED CHINESE)
(HC15E:E,CH)

3-089-851-11 MANUAL, INSTRUCTION (POLISH/CZECH)(HC14E:EE)

3-089-851-21 MANUAL, INSTRUCTION (SLOVAK/HUNGARIAN)
(HC14E:EE)

Note : The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

CD-430

CK-129

FP-626

JK-242

LB-085

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
	A-7013-526-A	CD-430 BOARD, COMPLETE ***** (IC5001 is not included in this COMPLETE board.)
		< CAPACITOR >
C5001	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
C5002	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V
C5003	1-107-726-91	CERAMIC CHIP 0.01uF 10% 16V
C5004	1-113-987-11	TANTAL. CHIP 4.7uF 20% 25V
		< CONNECTOR >
CN5001	1-691-352-21	CONNECTOR, FFC/FPC (ZIF) 14P
		< IC >
IC5001	A-7031-244-A	CCD BLOCK ASSY (CCD IMAGER)(HC15)
IC5001	A-7031-276-A	CCD BLOCK ASSY (CCD IMAGER)(HC14E/HC15E) (IC5001 is not included in the COMPLETE board of CD-430.)
		< COIL >
L5001	1-414-406-11	INDUCTOR 220uH
		< TRANSISTOR >
Q5001	8-729-117-73	TRANSISTOR 2SC4178-F14
		< RESISTOR >
R5001	1-216-827-11	METAL CHIP 3.3K 5% 1/10W
	A-7112-879-A	CK-129 BOARD, COMPLETE *****
		< BATTERY >
△ BT5201	1-756-128-11	BATTERY, LITHIUM (SECONDARY)
		< CONNECTOR >
CN5205	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P
CN5207	1-766-866-21	CONNECTOR, FFC/FPC 6P
CN5208	1-691-354-21	CONNECTOR, FFC/FPC (ZIF) 16P
CN5209	1-766-336-21	CONNECTOR, FFC/FPC 6P
CN5210	1-794-376-21	PIN, CONNECTOR 4P
		< DIODE >
D5209	8-719-978-33	DIODE DTZ-TT11-6.8B
		< RESISTOR >
R5201	1-218-953-11	RES-CHIP 1K 5% 1/16W
R5223	1-220-174-11	RES-CHIP 200 5% 1/16W
R5224	1-218-935-11	RES-CHIP 33 5% 1/16W
		< SWITCH >
S5203	1-771-138-82	SWITCH, KEY BOARD (RESET)
S5207	1-762-805-21	SWITCH, PUSH (1 KEY) (PANEL_XCLOSE/OPEN)

Ref. No.	Part No.	Description
	1-687-550-11	FP-626 FLEXIBLE BOARD ***** (S101 is not included in this FLEXIBLE BOARD.)
		< SWITCH >
S101	1-771-039-31	SWITCH, PUSH (PANEL REVERSE) (S101 is not included in this FLEXIBLE BOARD.)
	A-7112-881-A	JK-242 BOARD, COMPLETE *****
		< CONNECTOR >
CN5301	1-794-962-11	CONNECTOR, SQUARE TYPE (USB 5P)(USB)
CN5302	1-794-276-11	CONNECTOR, SQUARE TYPE 4P (DV)
CN5303	1-691-380-21	CONNECTOR, FFC/FPC 16P
		< DIODE >
D5302	8-719-062-16	DIODE 01ZA8.2 (TPL3)
D5304	8-719-078-02	DIODE 1SS357 (T3SONY1)
D5306	6-500-898-01	DIODE DF3A3.3FE (TL3SONYF)
		< FERRITE BEAD >
FB5301	1-500-444-11	FERRITE, EMI (SMD) (1608)
FB5302	1-500-444-11	FERRITE, EMI (SMD) (1608)
		< JACK >
J5301	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO OUT)
		< LINE FILTER >
LF5301	1-419-983-31	COIL, CHOKE, COMMON MODE
		< RESISTOR >
R5304	1-218-977-11	RES-CHIP 100K 5% 1/16W
R5305	1-218-979-11	RES-CHIP 150K 5% 1/16W
R5306	1-216-864-11	SHORT CHIP 0
		< VARISTOR >
VD5302	1-803-974-21	VARISTOR, CHIP (1608)
VD5303	1-803-974-21	VARISTOR, CHIP (1608)
	A-7112-880-A	LB-085 BOARD, COMPLETE *****
		< CAPACITOR >
C5601	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C5602	1-164-505-11	CERAMIC CHIP 2.2uF 16V
		< CONNECTOR >
CN5601	1-779-334-11	CONNECTOR, FFC/FPC 20P
CN5602	1-691-354-21	CONNECTOR, FFC/FPC (ZIF) 16P
		< DIODE >
D5602	6-500-374-01	DIODE NSCW455T-TC8

CAUTION :

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Note : The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

DCR-HC14E/HC15/HC15E

LB-085

MA-421

Ref. No.	Part No.	Description
< IC >		
IC5601	8-759-581-11	IC NJM2125F (TE2)
< TRANSISTOR >		
Q5602	8-729-054-48	TRANSISTOR UP04601008S0
< RESISTOR >		
R5603	1-208-941-11	METAL CHIP 180K 0.5% 1/16W
R5604	1-208-719-11	METAL CHIP 33K 0.5% 1/16W
R5605	1-218-956-11	RES-CHIP 1.8K 5% 1/16W
R5606	1-216-839-11	METAL CHIP 33K 5% 1/10W
R5607	1-211-983-11	METAL CHIP 39 0.5% 1/10W
A-7112-882-A MA-421 BOARD, COMPLETE (HC15E)		
A-7112-883-A MA-421 BOARD, COMPLETE (HC14E/HC15)		
< CAPACITOR >		
C5404	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V (HC15E)
C5502	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C5504	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C5505	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C5506	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C5510	1-164-937-11	CERAMIC CHIP 0.001uF 10% 50V
C5511	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C5514	1-164-937-11	CERAMIC CHIP 0.001uF 10% 50V
C5516	1-164-874-11	CERAMIC CHIP 100PF 5% 50V
C5517	1-164-874-11	CERAMIC CHIP 100PF 5% 50V
C5519	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C5520	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C5521	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C5523	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C5528	1-164-942-11	CERAMIC CHIP 0.0068uF 10% 16V
C5529	1-164-942-11	CERAMIC CHIP 0.0068uF 10% 16V
C5532	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V
< CONNECTOR >		
CN5401	1-778-507-21	PIN, CONNECTOR (PC BOARD) 4P
CN5402	1-815-235-11	CONNECTOR, FFC/FPC (ZIF) 37P
< DIODE >		
D5401	6-500-506-01	DIODE TLRMV1021 (T15SOY, F)
D5403	6-500-776-01	DIODE MAZW068H0LS0
D5404	8-719-073-01	DIODE MA111-(K8).S0 (HC15E)
D5405	6-500-512-01	DIODE CL-330IRS-X-TU
D5408	8-719-978-33	DIODE DTZ-TT11-6.8B
D5409	8-719-978-33	DIODE DTZ-TT11-6.8B
D5410	8-719-978-33	DIODE DTZ-TT11-6.8B
< FERRITE BEAD >		
FB5401	1-469-179-21	INDUCTOR, FERRITE BEAD
FB5402	1-469-179-21	INDUCTOR, FERRITE BEAD
FB5403	1-469-179-21	INDUCTOR, FERRITE BEAD
FB5404	1-469-179-21	INDUCTOR, FERRITE BEAD
FB5405	1-500-444-11	FERRITE, EMI (SMD) (1608)

Ref. No.	Part No.	Description
FB5406	1-500-444-11	FERRITE, EMI (SMD) (1608)
FB5407	1-500-444-11	FERRITE, EMI (SMD) (1608)
FB5408	1-500-444-11	FERRITE, EMI (SMD) (1608)
FB5409	1-500-444-11	FERRITE, EMI (SMD) (1608)
< IC >		
IC5401	6-600-047-01	IC RS-670 (HC15E)
IC5501	8-759-679-11	IC BH7870AKV-E2
< JACK >		
J5401	1-691-737-41	JACK (SMALL TYPE) (MIC)
J5402	1-793-995-11	JACK, SUPER SMALL TYPE (LANC)
J5404	1-694-688-11	TERMINAL, S (S VIDEO OUT)
< COIL >		
L5501	1-469-528-91	INDUCTOR 100uH
< RESISTOR >		
R5401	1-216-864-11	SHORT CHIP 0
R5402	1-218-956-11	RES-CHIP 1.8K 5% 1/16W
R5403	1-216-864-11	SHORT CHIP 0
R5405	1-216-805-11	METAL CHIP 47 5% 1/10W (HC15E)
R5407	1-216-864-11	SHORT CHIP 0
R5408	1-216-864-11	SHORT CHIP 0
R5409	1-216-864-11	SHORT CHIP 0
R5503	1-218-965-11	RES-CHIP 10K 5% 1/16W
R5504	1-218-961-11	RES-CHIP 4.7K 5% 1/16W
R5505	1-218-990-11	SHORT CHIP 0
R5506	1-218-957-11	RES-CHIP 2.2K 5% 1/16W
R5507	1-218-957-11	RES-CHIP 2.2K 5% 1/16W
R5508	1-218-963-11	RES-CHIP 6.8K 5% 1/16W
R5509	1-218-963-11	RES-CHIP 6.8K 5% 1/16W
R5510	1-218-953-11	RES-CHIP 1K 5% 1/16W
R5511	1-218-953-11	RES-CHIP 1K 5% 1/16W
R5515	1-218-965-11	RES-CHIP 10K 5% 1/16W
R5517	1-218-965-11	RES-CHIP 10K 5% 1/16W
R5520	1-218-959-11	RES-CHIP 3.3K 5% 1/16W
R5521	1-218-959-11	RES-CHIP 3.3K 5% 1/16W
R5522	1-218-990-11	SHORT CHIP 0
R5524	1-218-977-11	RES-CHIP 100K 5% 1/16W
R5525	1-218-966-11	RES-CHIP 12K 5% 1/16W
R5530	1-218-990-11	SHORT CHIP 0
R5531	1-218-990-11	SHORT CHIP 0
R5532	1-218-990-11	SHORT CHIP 0
R5533	1-218-990-11	SHORT CHIP 0
R5534	1-218-990-11	SHORT CHIP 0
< SENSOR >		
SE5401	1-476-807-31	SENSOR, ANGULAR VELOCITY (YAW)
SE5402	1-476-807-41	SENSOR, ANGULAR VELOCITY (PITCH)
< VARISTOR >		
VD5401	1-801-862-11	VARISTOR, CHIP (1608)
VD5402	1-801-862-11	VARISTOR, CHIP (1608)
VD5403	1-801-923-11	VARISTOR, CHIP (1608)
VD5407	1-803-974-21	VARISTOR, CHIP (1608)
VD5408	1-803-974-21	VARISTOR, CHIP (1608)

Ref. No.	Part No.	Description
	A-7013-528-A	PD-188 BOARD, COMPLETE *****
< CAPACITOR >		
C6001	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V
C6002	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C6003	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C6004	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C6005	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C6007	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C6008	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C6009	1-135-177-21	TANTAL. CHIP 1uF 20% 25V
C6010	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C6011	1-164-739-11	CERAMIC CHIP 560PF 5% 50V
C6012	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C6013	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C6014	1-109-982-11	CERAMIC CHIP 1uF 10% 10V
C6015	1-164-870-11	CERAMIC CHIP 68PF 5% 50V
C6016	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C6017	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C6018	1-165-908-11	CERAMIC CHIP 1uF 10% 10V
C6019	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V
C6022	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C6023	1-109-982-11	CERAMIC CHIP 1uF 10% 10V
C6024	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C6101	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V
C6103	1-164-657-11	CERAMIC CHIP 0.015uF 10% 50V
C6104	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
△C6105	1-100-371-11	CERAMIC CHIP 12PF 5% 3.15KV
< CONNECTOR >		
CN6001	1-815-031-11	CONNECTOR, FFC/FPC (ZIF) 24P
CN6101	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P
CN6201	1-794-997-11	PIN, CONNECTOR 20P
CN6202	1-794-376-21	PIN, CONNECTOR 4P
CN6203	1-691-344-11	CONNECTOR, FFC/FPC (ZIF) 6P
< DIODE >		
D6001	8-719-084-47	DIODE 1SV290 (TPL3)
D6003	8-719-050-42	DIODE RD3.3UM-T1B
D6103	8-719-073-01	DIODE MA111-(K8).S0
D6201	8-719-056-85	DIODE UDZ-TE-17-8.2B
< FERRITE BEAD >		
FB6001	1-414-760-21	BEAD, FERRITE (CHIP) (1608)
FB6002	1-414-760-21	BEAD, FERRITE (CHIP) (1608)
< IC >		
IC6001	8-752-109-08	IC CXA3289BR
IC6002	8-752-407-33	IC CXD3512R-T4
IC6101	8-759-564-49	IC TC7W53FU (TE12R)
IC6102	8-759-075-70	IC TA75S393F
< COIL >		
L6001	1-469-525-91	INDUCTOR 10uH
L6002	1-412-949-21	INDUCTOR 6.8uH
L6101	1-428-878-11	INDUCTOR 82uH

Ref. No.	Part No.	Description
< TRANSISTOR >		
Q6001	8-729-054-48	TRANSISTOR UP04601008S0
Q6002	8-729-054-48	TRANSISTOR UP04601008S0
Q6003	6-550-234-01	TRANSISTOR UNR32A300LS0
Q6004	6-550-232-01	TRANSISTOR 2SA2029T2LQ/R
Q6005	6-550-232-01	TRANSISTOR 2SA2029T2LQ/R
Q6101	6-550-234-01	TRANSISTOR UNR32A300LS0
Q6102	6-550-065-01	TRANSISTOR CPH5504-TL-E
< RESISTOR >		
R6001	1-208-931-11	METAL CHIP 68K 0.5% 1/16W
R6002	1-218-985-11	RES-CHIP 470K 5% 1/16W
R6003	1-218-953-11	RES-CHIP 1K 5% 1/16W
R6004	1-218-953-11	RES-CHIP 1K 5% 1/16W
R6006	1-218-958-11	RES-CHIP 2.7K 5% 1/16W
R6007	1-218-973-11	RES-CHIP 47K 5% 1/16W
R6008	1-218-973-11	RES-CHIP 47K 5% 1/16W
R6009	1-218-975-11	RES-CHIP 68K 5% 1/16W
R6010	1-218-969-11	RES-CHIP 22K 5% 1/16W
R6011	1-218-975-11	RES-CHIP 68K 5% 1/16W
R6012	1-218-989-11	RES-CHIP 1M 5% 1/16W
R6013	1-218-977-11	RES-CHIP 100K 5% 1/16W
R6014	1-218-965-11	RES-CHIP 10K 5% 1/16W
R6015	1-218-965-11	RES-CHIP 10K 5% 1/16W
R6016	1-218-953-11	RES-CHIP 1K 5% 1/16W
R6017	1-218-973-11	RES-CHIP 47K 5% 1/16W
R6018	1-218-966-11	RES-CHIP 12K 5% 1/16W
R6019	1-218-989-11	RES-CHIP 1M 5% 1/16W
R6020	1-218-975-11	RES-CHIP 68K 5% 1/16W
R6021	1-218-979-11	RES-CHIP 150K 5% 1/16W
R6022	1-208-957-11	METAL CHIP 820K 0.5% 1/16W
R6023	1-218-990-11	SHORT CHIP 0
R6103	1-218-965-11	RES-CHIP 10K 5% 1/16W
R6104	1-218-980-11	RES-CHIP 180K 5% 1/16W
R6105	1-218-969-11	RES-CHIP 22K 5% 1/16W
R6106	1-216-055-00	RES-CHIP 1.8K 5% 1/10W
R6107	1-218-965-11	RES-CHIP 10K 5% 1/16W
R6108	1-218-969-11	RES-CHIP 22K 5% 1/16W
R6110	1-218-949-11	RES-CHIP 470 5% 1/16W
< COMPOSITION CIRCUIT BLOCK >		
RB6001	1-234-372-21	RES, NETWORK 100X4 (1005)
< TRANSFORMER >		
△T6101	1-435-786-31	TRANSFORMER, INVERTER
A-7112-878-A VA-118 BOARD, COMPLETE *****		
< CAPACITOR >		
C4001	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C4005	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V
C4109	1-119-749-11	TANTAL. CHIP 33uF 20% 4V
C4110	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C4111	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V

Note : The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

DCR-HC14E/HC15/HC15E

VA-118

Ref. No.	Part No.	Description			
C4112	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4113	1-164-854-11	CERAMIC CHIP	15PF	5%	50V
C4114	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4115	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4116	1-164-854-11	CERAMIC CHIP	15PF	5%	50V
C4117	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4201	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4203	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4204	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4205	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4206	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4207	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C4208	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4209	1-113-986-11	TANTAL. CHIP	2.2uF	20%	25V
C4210	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C4211	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4212	1-164-876-11	CERAMIC CHIP	120PF	5%	50V
C4213	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C4214	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C4215	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C4216	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C4217	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C4301	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4302	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4303	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C4304	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C4305	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C4306	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C4307	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C4308	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C4309	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C4310	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C4311	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C4312	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C4314	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4501	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4502	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4503	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4504	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C4505	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C4506	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C4507	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4508	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4509	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4510	1-164-934-11	CERAMIC CHIP	330PF	10%	50V
C4511	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4512	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C4513	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4514	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4515	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C4516	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4517	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C4518	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
C4520	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C4521	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4522	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4523	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C4526	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4527	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C4528	1-109-982-11	CERAMIC CHIP	1uF	10%	10V

Ref. No.	Part No.	Description			
C4529	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4530	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4531	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4532	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4533	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4535	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4536	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4537	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C4538	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C4539	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C4540	1-125-827-91	CERAMIC CHIP	1uF	10%	25V
C4541	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4542	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4543	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4544	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4545	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4546	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4547	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4548	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C4549	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4550	1-113-988-11	TANTAL. CHIP	68uF	20%	4V
C4551	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4553	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C4554	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4555	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C4557	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C4558	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4559	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4560	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4562	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
C4601	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4602	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4603	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4604	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C4605	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C4606	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
< CONNECTOR >					
CN4002	1-766-613-21	CONNECTOR, FFC/FPC 36P			
CN4003	1-794-998-31	PIN, CONNECTOR 20P			
CN4004	1-774-603-41	CONNECTOR, BOARD TO BOARD 100P			
CN4005	1-691-354-21	CONNECTOR, FFC/FPC (ZIF) 16P			
CN4201	1-766-350-21	CONNECTOR, FFC/FPC 20P			
CN4602	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
CN4603	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
< DIODE >					
D4101	8-719-073-01	DIODE MA111-(K8).S0			
D4102	8-719-978-33	DIODE DTZ-TT11-6.8B			
D4103	8-719-978-33	DIODE DTZ-TT11-6.8B			
D4201	8-719-084-47	DIODE 1SV290 (TPL3)			
D4502	8-719-027-76	DIODE 1SS357-TPH3			
D4503	6-500-314-01	DIODE DAN222MT2L			
D4504	8-719-074-08	DIODE MA4ZD03001S0			
D4507	8-719-074-08	DIODE MA4ZD03001S0			
D4601	6-500-289-01	DIODE MAZW082H0LS0			
D4602	8-719-081-19	DIODE 1SS383 (T5RSONY1)			

Ref. No.	Part No.	Description
< FUSE >		
△ F4602	1-576-406-21	FUSE 1.4A/32V
△ F4603	1-576-406-21	FUSE 1.4A/32V
△ F4604	1-576-406-21	FUSE 1.4A/32V
△ F4605	1-576-406-21	FUSE 1.4A/32V
< FERRITE BEAD >		
FB4201	1-469-676-22	BEAD, FERRITE (CHIP) (1608)
FB4202	1-500-329-21	INDUCTOR, FERRITE BEAD
< IC >		
IC4101	6-803-026-01	IC MB89097PFV-G-155-BND-ER-E1
IC4201	8-752-109-08	IC CXA3289BR
IC4202	8-752-405-57	IC CXD3501AR-T4
IC4301	8-759-489-19	IC uPC6756GR-8JG-E2
IC4502	6-703-429-01	IC MB44A120APFV-G-BND-ERE1
IC4504	6-703-227-01	IC TK11131CSCL-G
< COIL >		
L4201	1-469-525-91	INDUCTOR 10uH
L4202	1-469-891-21	INDUCTOR 6.8uH
L4301	1-469-570-11	INDUCTOR 10uH
L4501	1-416-670-11	INDUCTOR 33uH
L4502	1-419-354-21	INDUCTOR 22uH
L4503	1-419-354-21	INDUCTOR 22uH
L4504	1-419-354-21	INDUCTOR 22uH
L4505	1-416-670-11	INDUCTOR 33uH
L4506	1-419-354-21	INDUCTOR 22uH
L4507	1-416-670-11	INDUCTOR 33uH
L4508	1-469-524-91	INDUCTOR 4.7uH
L4509	1-469-524-91	INDUCTOR 4.7uH
L4510	1-469-757-21	INDUCTOR 10uH
L4511	1-469-524-91	INDUCTOR 4.7uH
L4512	1-469-524-91	INDUCTOR 4.7uH
L4513	1-469-524-91	INDUCTOR 4.7uH
L4514	1-469-524-91	INDUCTOR 4.7uH
L4515	1-469-526-91	INDUCTOR 22uH
L4516	1-469-524-91	INDUCTOR 4.7uH
L4517	1-469-524-91	INDUCTOR 4.7uH
L4518	1-469-524-91	INDUCTOR 4.7uH
L4519	1-469-524-91	INDUCTOR 4.7uH
L4520	1-469-524-91	INDUCTOR 4.7uH
L4521	1-469-524-91	INDUCTOR 4.7uH
L4601	1-412-056-11	INDUCTOR 4.7uH
< LINE FILTER >		
LF4602	1-456-681-21	COIL, CHOKE
< TRANSISTOR >		
Q4001	6-550-102-01	TRANSISTOR 2SC5663T2L
Q4002	6-550-235-01	TRANSISTOR UNR32A500LS0
Q4003	6-550-238-01	TRANSISTOR DTA114EMT2L
Q4004	8-729-053-57	TRANSISTOR RN1902FE (TPLR3)
Q4005	8-729-054-44	TRANSISTOR UP04111008S0
Q4101	8-729-041-43	TRANSISTOR HN1L02FU (TE85R)
Q4504	6-550-559-01	TRANSISTOR XNONE9200LS0
Q4505	6-550-559-01	TRANSISTOR XNONE9200LS0
Q4506	6-550-559-01	TRANSISTOR XNONE9200LS0
Q4507	6-550-559-01	TRANSISTOR XNONE9200LS0

Ref. No.	Part No.	Description
Q4508	6-550-559-01	TRANSISTOR XNONE9200LS0
Q4509	6-550-559-01	TRANSISTOR XNONE9200LS0
Q4510	6-550-560-01	TRANSISTOR CPH5819-TL-E
Q4513	6-550-237-01	TRANSISTOR 2SC5658T2LQ/R
Q4514	8-729-101-07	TRANSISTOR 2SB798-DL
Q4515	6-550-237-01	TRANSISTOR 2SC5658T2LQ/R
Q4516	6-550-232-01	TRANSISTOR 2SA2029T2LQ/R
Q4517	6-550-232-01	TRANSISTOR 2SA2029T2LQ/R
Q4518	8-729-054-50	TRANSISTOR UP04501008S0
Q4519	8-729-054-50	TRANSISTOR UP04501008S0
Q4520	6-550-237-01	TRANSISTOR 2SC5658T2LQ/R
Q4521	8-729-054-49	TRANSISTOR UP04401008S0
Q4524	8-729-216-22	TRANSISTOR 2SA1162-G
Q4525	8-729-054-50	TRANSISTOR UP04501008S0
Q4526	6-550-406-01	TRANSISTOR MCH3335-S-TL-E
Q4601	8-729-047-68	TRANSISTOR SSM3K03FE (TPL3)
Q4602	6-550-404-01	TRANSISTOR UPA1858GR-9JG-E2-A
Q4603	8-729-101-07	TRANSISTOR 2SB798-DL
Q4604	6-550-234-01	TRANSISTOR UNR32A300LS0
< RESISTOR >		
R4002	1-218-953-11	RES-CHIP 1K 5% 1/16W
R4004	1-216-009-91	RES-CHIP 22 5% 1/10W
R4005	1-216-009-91	RES-CHIP 22 5% 1/10W
R4006	1-218-939-11	RES-CHIP 68 5% 1/16W
R4007	1-218-959-11	RES-CHIP 3.3K 5% 1/16W
R4009	1-218-965-11	RES-CHIP 10K 5% 1/16W
R4103	1-218-989-11	RES-CHIP 1M 5% 1/16W
R4104	1-218-977-11	RES-CHIP 100K 5% 1/16W
R4106	1-218-973-11	RES-CHIP 47K 5% 1/16W
R4109	1-218-977-11	RES-CHIP 100K 5% 1/16W
R4110	1-218-977-11	RES-CHIP 100K 5% 1/16W
R4111	1-208-935-11	METAL CHIP 100K 0.5% 1/16W
R4112	1-218-989-11	RES-CHIP 1M 5% 1/16W
R4113	1-218-961-11	RES-CHIP 4.7K 5% 1/16W
R4114	1-219-570-11	METAL CHIP 10M 5% 1/10W
R4115	1-218-985-11	RES-CHIP 470K 5% 1/16W
R4116	1-208-927-11	METAL CHIP 47K 0.5% 1/16W
R4117	1-218-990-11	SHORT CHIP 0
R4118	1-216-857-11	METAL CHIP 1M 5% 1/10W
R4119	1-218-949-11	RES-CHIP 470 5% 1/16W
R4120	1-218-977-11	RES-CHIP 100K 5% 1/16W
R4121	1-218-977-11	RES-CHIP 100K 5% 1/16W
R4122	1-218-977-11	RES-CHIP 100K 5% 1/16W
R4123	1-218-989-11	RES-CHIP 1M 5% 1/16W
R4124	1-218-965-11	RES-CHIP 10K 5% 1/16W
R4201	1-218-985-11	RES-CHIP 470K 5% 1/16W
R4203	1-218-990-11	SHORT CHIP 0
R4204	1-218-990-11	SHORT CHIP 0
R4206	1-218-958-11	RES-CHIP 2.7K 5% 1/16W
R4207	1-218-973-11	RES-CHIP 47K 5% 1/16W
R4208	1-218-975-11	RES-CHIP 68K 5% 1/16W
R4209	1-218-969-11	RES-CHIP 22K 5% 1/16W
R4210	1-218-975-11	RES-CHIP 68K 5% 1/16W
R4211	1-218-989-11	RES-CHIP 1M 5% 1/16W
R4212	1-218-977-11	RES-CHIP 100K 5% 1/16W

Note : The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

DCR-HC14E/HC15/HC15E

VA-118

VC-311

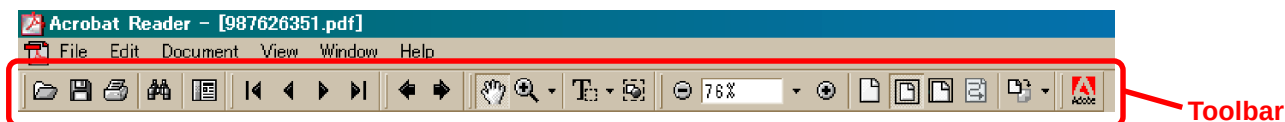
Ref. No.	Part No.	Description			
R4213	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R4214	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4215	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4301	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4302	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4303	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4304	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4501	1-220-200-81	RES-CHIP	30K	5%	1/16W
R4502	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4503	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4510	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4511	1-218-970-11	RES-CHIP	27K	5%	1/16W
R4512	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4513	1-218-971-11	RES-CHIP	33K	5%	1/16W
R4514	1-218-972-11	RES-CHIP	39K	5%	1/16W
R4515	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4516	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4517	1-208-697-11	METAL CHIP	3.9K	0.5%	1/16W
R4518	1-208-910-11	METAL CHIP	9.1K	0.5%	1/16W
R4520	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R4523	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4524	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R4526	1-218-935-11	RES-CHIP	33	5%	1/16W
R4537	1-218-966-11	RES-CHIP	12K	5%	1/16W
R4538	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4539	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4540	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4541	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4543	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4545	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4546	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4547	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4549	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4550	1-208-703-11	METAL CHIP	6.8K	0.5%	1/16W
R4551	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4552	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R4553	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R4554	1-208-711-11	METAL CHIP	15K	0.5%	1/16W
R4555	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R4556	1-218-967-11	RES-CHIP	15K	5%	1/16W
R4557	1-208-943-11	METAL CHIP	220K	0.5%	1/16W
R4561	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4562	1-218-949-11	RES-CHIP	470	5%	1/16W
R4563	1-208-909-11	METAL CHIP	8.2K	0.5%	1/16W
R4564	1-208-711-11	METAL CHIP	15K	0.5%	1/16W
R4601	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4604	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4605	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4607	1-216-797-11	METAL CHIP	10	5%	1/10W
R4608	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R4609	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
< COMPOSITION CIRCUIT BLOCK >					
RB4101	1-234-378-21	RES, NETWORK 10KX4 (1005)			
RB4104	1-234-375-21	RES, NETWORK 1KX4 (1005)			
RB4105	1-234-375-21	RES, NETWORK 1KX4 (1005)			
RB4106	1-234-375-21	RES, NETWORK 1KX4 (1005)			
RB4107	1-234-375-21	RES, NETWORK 1KX4 (1005)			

Ref. No.	Part No.	Description
RB4108	1-234-375-21	RES, NETWORK 1KX4 (1005)
RB4109	1-234-381-21	RES, NETWORK 100KX4 (1005)
RB4201	1-234-372-21	RES, NETWORK 100X4 (1005)
RB4301	1-234-379-21	RES, NETWORK 22KX4 (1005)
< VIBRATOR >		
X4101	1-760-458-21	VIBRATOR, CRYSTAL (32.768KHz)
X4102	1-795-244-11	VIBRATOR, CERAMIC (10MHz)
VC-311 BOARD, COMPLETE (SERVICE) (HC15/HC15E)		

VC-311 BOARD, COMPLETE (SERVICE)(HC14E)		

Electrical parts list of the VC-311 board
are not shown.
Pages from 5-21 to 5-24 are not shown.

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:

To set a range to be printed within a page, select the graphic selection tool  and drag on the page to enclose a range to be printed, and then click the Print button.

Reversing the screens displayed once

- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:

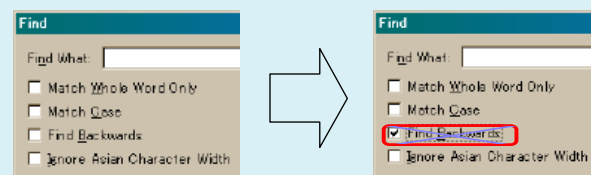
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:

To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:

The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.

Note: The find function may not be applied to the Service Manual depending on the date of issue.

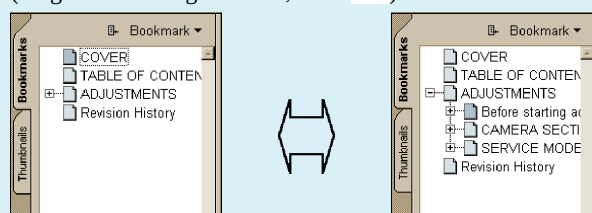
Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

Moving with bookmark:

Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking  can display the hidden items.

(To go back to original state, click )



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click  or  for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:

The printed circuit board diagram you see now can be changed to the same direction as the set.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2004.02	Official Release	—	—