

SONY®

SOLID-STATE MEMORY CAMCORDER

PXW-X500

XDCAM Power HAD **FX** **SxS**

MPEG HD422 **HDMI** **XAVC** **DVCAM**

SERVICE MANUAL

1st Edition (Revised 1)

警告

このマニュアルは、サービス専用です。

お客様が、このマニュアルに記載された設置や保守、点検、修理などを行うと感電や火災、人身事故につながる可能性があります。

危険をさけるため、サービストレーニングを受けた技術者のみご使用ください。

WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.

Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

AVERTISSEMENT

Ce manuel est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

注意

指定以外の電池に交換すると、破裂する危険があります。
必ず指定の電池に交換してください。
使用済みの電池は、国または地域の法令に従って処理してください。

FÖRSIKTIGHET!

Fara för explosion vid felaktigt placerat batteri.
Byt endast mot samma eller likvärdig typ av batteri, enligt tillverkarens rekommendationer.
När du kasserar batteriet ska du följa rådande lagar för regionen eller landet.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
When you dispose of the battery, you must obey the law in the relative area or country.

PAS PÅ

Fare for eksplosion, hvis batteriet ikke udskiftes korrekt.
Udskift kun med et batteri af samme eller tilsvarende type, som er anbefalet af fabrikanten.
Når du bortskaffer batteriet, skal du følge lovgivningen i det pågældende område eller land.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Lorsque vous mettez la batterie au rebut, vous devez respecter la législation en vigueur dans le pays ou la région où vous vous trouvez.

HUOMIO

Räjähdysvaara, jos akku vaihdetaan virheellisesti.
Vaihda vain samanlaiseen tai vastaavantyyppiseen, valmistajan suosittelemaan akkuun.
Noudata akun hävittämisessä oman maasi tai alueesi lakeja.

VORSICHT

Explosionsgefahr bei Verwendung falscher Batterien.
Batterien nur durch den vom Hersteller empfohlenen oder einen gleichwertigen Typ ersetzen.
Wenn Sie die Batterie entsorgen, müssen Sie die Gesetze der jeweiligen Region und des jeweiligen Landes befolgen.

FORSIKTIG

Eksplosjonsfare hvis feil type batteri settes i.
Bytt ut kun med samme type eller tilsvarende anbefalt av produsenten.
Kasser batteriet i henhold til gjeldende avfallsregler.

注意

如果更换的电池不正确，就会有爆炸的危险。
只更换同一类型或制造商推荐的电池型号。
处理电池时，必须遵守相关地区或国家的法律。

Table of Contents

Manual Structure

Purpose of this manual.....	5
Related manuals	5
Trademarks.....	5

1. Service Overview

1-1. Location of Printed Circuit Boards.....	1-1
1-2. Circuit Description.....	1-2
1-2-1. CCD Block.....	1-2
1-2-2. Camera Block.....	1-2
1-2-3. Video Signal Block.....	1-2
1-2-4. Media Recording and Playback Block.....	1-4
1-2-5. System Control Block.....	1-6
1-2-6. Audio Block.....	1-7
1-2-7. Power Supply Block.....	1-12
1-2-8. Wireless Block.....	1-13
1-2-9. Camera Adapter (CA) Connection Block.....	1-14
1-3. Connectors/Cables.....	1-15
1-4. Connector Input/Output Signals.....	1-16
1-5. Functions of Onboard Switches and LEDs.....	1-25
1-5-1. RE-326 Board.....	1-25
1-6. Note for Replacement of IC or Board.....	1-26
1-7. Description of CCD Block Number.....	1-27
1-8. Replacing Lithium Battery.....	1-28
1-9. Fixtures/Measuring Equipment List.....	1-30
1-9-1. Fixtures.....	1-30
1-9-2. Measuring Equipment.....	1-30
1-10. Circuit Protection Parts.....	1-31
1-10-1. Fuse.....	1-31
1-10-2. Circuit Protection Element.....	1-31
1-11. Lead-free Solder.....	1-32
1-12. Firmware Upgrade.....	1-33
1-12-1. Firmware Upgrade.....	1-33
1-13. Electrical Adjustment.....	1-34
1-14. Flexible Card Wire and Fine-Wire Coaxial Cable.....	1-35
1-14-1. Disconnecting/Connecting Flexible Card Wire.....	1-35
1-14-2. Disconnecting/Connecting Fine-Wire Coaxial Cable.....	1-35
1-15. Periodic Maintenance and Inspection.....	1-37
1-15-1. Periodic Check/Replacement Parts List.....	1-37
1-15-2. Notes on Replacement of the Battery Terminal.....	1-37
1-15-3. Precaution on Hanging Bracket of Handle.....	1-37
1-15-4. Recommended Replacement Parts.....	1-37
1-16. Installation of the Guard.....	1-40

2. Replacement of Main Parts

2-1. General Information for Parts Replacement.....	2-1
---	-----

2-1-1.	Basic Knowledge.....	2-1
2-1-2.	Tightening Torque.....	2-2
2-2.	Outside Panel Assembly.....	2-3
2-3.	Inside Panel Section.....	2-4
2-3-1.	Inside Panel Assembly.....	2-4
2-3-2.	FP-208 Board.....	2-5
2-3-3.	LCD Assembly.....	2-10
2-3-4.	3.5 inch LCD Assembly.....	2-15
2-3-5.	DET-50 Board.....	2-19
2-4.	Front Section.....	2-22
2-4-1.	Front Assembly.....	2-22
2-4-2.	CCD Block Assembly.....	2-25
2-5.	DC Fan (30 Square).....	2-29
2-6.	Wi-Fi Module/SD-58 Board.....	2-32
2-7.	RE-326 Board.....	2-37
2-8.	AU-360 Board.....	2-38
2-9.	DCP-67 Board.....	2-39
2-10.	HPR-53 Board.....	2-41
2-11.	DPR-362 Board.....	2-46
2-12.	Partition/Cushion Rear B.....	2-50
2-13.	EC-82 Board.....	2-52
2-14.	DC Fan (40 Square).....	2-55
2-15.	IO-275 Board, DIF-232 Board.....	2-59
2-16.	Connector Box Section.....	2-62
2-16-1.	Connector Box Assembly.....	2-62
2-16-2.	SW-1632 Board, AXM-52 Board.....	2-65
2-17.	MB-1210 Board.....	2-69
2-18.	GP-1019 Board, CN-3723 Board.....	2-72
2-19.	SW-1652 Board.....	2-73
2-20.	LED-529 Board.....	2-75
2-21.	Handle Assembly.....	2-79
2-22.	HN-415 Board.....	2-81
2-23.	KY-736 Board.....	2-83
2-24.	CI-50 Board.....	2-84

3. Error Code

3-1.	Main Code 91.....	3-1
3-2.	Main Code 92.....	3-3
3-3.	Main Code 95.....	3-4
3-4.	Main Code A0.....	3-5
3-5.	Main Code 01.....	3-6

4. SERVICE Menu

4-1.	Service Menu List.....	4-1
4-1-1.	Description of SERVICE Menu.....	4-1
4-2.	Description of Menu.....	4-4
4-2-1.	Basic Menu Operation.....	4-4
4-2-2.	Service Menu.....	4-4
4-2-3.	How to Display the Service Menu.....	4-4

4-3.	Description of SERVICE Menu.....	4-5
4-3-1.	SERVICE Menu.....	4-5

5. FILE Menu

5-1.	FILE Menu Configuration.....	5-1
5-2.	Data Structure.....	5-2
5-3.	USER File.....	5-3
5-3-1.	Load SD Card.....	5-3
5-3-2.	Save SD Card.....	5-3
5-3-3.	File ID.....	5-3
5-3-4.	Recall User Preset.....	5-3
5-3-5.	Store User Preset.....	5-3
5-3-6.	Clear User Preset.....	5-4
5-3-7.	Load Customize Data.....	5-4
5-3-8.	Load White Data.....	5-4
5-4.	ALL File.....	5-5
5-4-1.	Load SD Card.....	5-5
5-4-2.	Save SD Card.....	5-5
5-4-3.	File ID.....	5-5
5-4-4.	All Preset.....	5-5
5-4-5.	Store All Preset.....	5-6
5-4-6.	Clear All Preset.....	5-6
5-4-7.	3Sec Clear Preset.....	5-6
5-5.	SCENE File.....	5-7
5-5-1.	Recall Internal Memory.....	5-7
5-5-2.	Store Internal Memory.....	5-7
5-5-3.	Load SD Card.....	5-7
5-5-4.	Save SD Card.....	5-8
5-5-5.	File ID.....	5-8
5-6.	REFERENCE File.....	5-9
5-6-1.	Store Reference.....	5-9
5-6-2.	Clear Reference.....	5-9
5-6-3.	Load Reference (SD Card).....	5-9
5-6-4.	Save Reference (SD Card).....	5-10
5-6-5.	File ID.....	5-10
5-7.	LENS File.....	5-11
5-7-1.	Display Mode.....	5-11
5-7-2.	Recall Internal Memory.....	5-11
5-7-3.	Store Internal Memory.....	5-12
5-7-4.	Load SD Card.....	5-12
5-7-5.	Save SD Card.....	5-12
5-7-6.	File ID.....	5-12
5-7-7.	File Source.....	5-13
5-7-8.	Clear Lens Offset.....	5-13
5-7-9.	Lens Auto Recall.....	5-13
5-7-10.	Lens Serial Number.....	5-13
5-7-11.	Lens Name.....	5-13
5-7-12.	Lens Manufacturer.....	5-13
5-7-13.	Master V Modulation.....	5-13
5-7-14.	Lens Center H/V.....	5-13
5-7-15.	R/G/B Flare.....	5-14

5-7-16.	White Offset R/B.....	5-14
5-7-17.	Shading Ch Select, Shading H SAW/PARA, Shading V SAW/PARA.....	5-14
5-8.	Specific Save Items.....	5-15
5-8-1.	White Gain.....	5-15
5-8-2.	Master Gain.....	5-15
5-8-3.	Shutter.....	5-16
5-9.	Setup Menu List.....	5-17
5-9-1.	USER Menu.....	5-17
5-9-2.	OPERATION Menu.....	5-17
5-9-3.	PAINT Menu.....	5-21
5-9-4.	THUMBNAIL Menu.....	5-23
5-9-5.	MAINTENANCE Menu.....	5-24
5-9-6.	FILE Menu.....	5-27
5-9-7.	SERVICE Menu.....	5-29

6. Spare Parts

6-1.	Note on Repair Parts.....	6-1
6-2.	Exploded Views.....	6-2
	Overall.....	6-2
	Outside-1.....	6-3
	Outside-2.....	6-4
	Inside Panel-1.....	6-5
	Inside Panel-2.....	6-6
	Inside Panel-3.....	6-7
	Inside Panel-4.....	6-8
	LCD Block.....	6-9
	Front Block.....	6-10
	OHB Block.....	6-11
	Handle Block-1.....	6-12
	Handle Block-2.....	6-13
	Main Frame-1.....	6-14
	Main Frame-2.....	6-15
	Main Frame-3.....	6-16
	Rear Block.....	6-17
	IO Block.....	6-18
	Connector Box.....	6-19
	Main Frame-4.....	6-20
	Main Frame-5.....	6-21
6-3.	Supplied Accessories.....	6-22

7. Diagrams

Overall.....	7-1
Frame Wiring.....	7-2

Revision History

Manual Structure

Purpose of this manual

This manual describes the information items that premise the service based on the block parts assuming use of system and service engineers.

Related manuals

The following manuals are available in this model.

If this manual is required, please contact your local Sony Sales Office/Service Center.

- Operation Guide (Supplied with the unit)
This manual is necessary for application and operation of the unit.
- Factory Service Manual
This manual describes the information items that premise the service based on the components parts.

Trademarks

Trademarks and registered trademarks used in this manual are as follows.

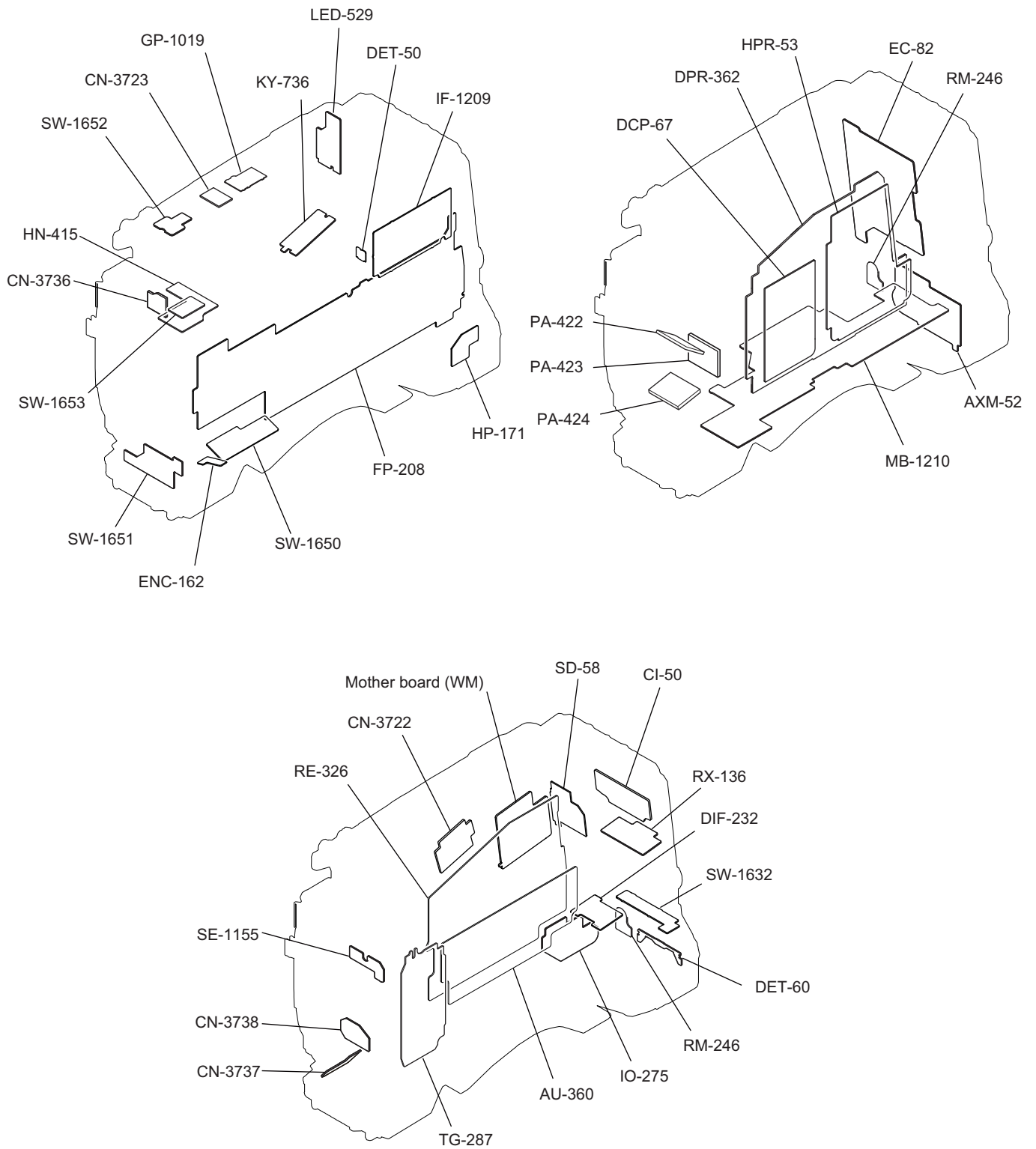
- SxS is the registered trademarks or trademarks of the Sony Corporation.

Other system names and product names written in this manual are usually registered trademarks or trademarks of respective development manufacturers.

Section 1

Service Overview

1-1. Location of Printed Circuit Boards



1-2. Circuit Description

1-2-1. CCD Block

PA-422, PA-423, PA-424 Boards

Each of these boards is provided with a power driver (IC001: H driver) that drives the CCD, IC004 and IC005 that extract and amplify video signals, and a temperature sensor (IC006).

CCD drive pulses from the TG-287 board are input to the power driver IC (IC001: H driver) to drive the CCD. CCD (IC003) output signals are input to IC004 and IC005 in which video signals are extracted by the correlative double-sampling and the internal GAIN AMP increases the gain by 0 to 12 dB.

A temperature sensor IC (IC006) is mounted only on the PA-422 board.

TG-287 Board

The TG-287 board outputs CCD drive pulses and CCD output signal sample hold pulses from IC103.

These pulses are synchronized with the HD VD signal input from the DCP-67 board based on the reference 74 MHz clock, are shaped by IC22 and IC23, and are then output to the PA-422, PA-423, and PA-424 boards.

This board is provided with a V driver circuit (Q216 to Q223) for CCD vertical transfer.

The EEPROM (IC008) stores CCD V sub voltage data and CCD sensitivity adjustment data, and other data.

1-2-2. Camera Block

DCP-67 Board

Analog video signals from the CCD block are output through the connector (CN201) to the DCP-67 board.

The analog video signals are converted to 14-bit digital video (RGB) signals by the A/D converter (IC106, IC107, IC108, IC115, IC116, and IC117). Then the converted digital RGB signals are output to the camera signal preprocessor IC (IC300).

This board also mounts an optical filter interface circuit.

In the camera signal preprocessor (IC300), the main-line video signals are transferred through the test signal switching circuit and the correction circuit for CCD imager, and then white balance and black set processing are added to the video signals. Odd pixels and even pixels are sorted. The processed video signals are output to the next-stage camera signal postprocessor and the baseband processor (IC0100: DPR-362 board). This board mounts PROM (IC503) as a peripheral device of IC300.

1-2-3. Video Signal Block

DPR-362 Board

The video signal processor ROSETTA (IC0100) incorporates the following functions for baseband processing of video and audio signals.

- Scaler function (supporting multi-format output)
- OSD
- PLL (74 MHz to 148 MHz, etc.)
- CPU

The baseband signals processed by the video signal processor ROSETTA (IC0100) are sent to the video signal distributor IC and the CN-3558 board, and are then distributed to input/output circuits.

The video signal processor ROSETTA (IC0100) has the following input/output signals.

- HD/SD video signals are output to the video signal distributor IC (IC2301) to be used for SDI/HDMI/TEST OUT outputs.
- Video signals for the MPEG CODEC are output to the MPEG codec NATH (IC1500).
- Video signals for the XAVC CODEC are output to the XAVC codec BEAUNE (IC1100).
- Audio interface signals are input to and output from the AU-360 board.

The video signal distributor IC GMON (IC2301) has the following input/output signals.

- HD/SD video signals are input from the video signal processor ROSETTA (IC0100).
- Input from the GENLOCK signal input sync separator (IC2001).
- Output to the GENLOCK signal output PLL IC (IC2002).
- Video synchronization signals are output to the video signal processor ROSETTA (IC0100).
- Input to and output from the TC input/output signal amplifier (IC2803, IC2804).
- Output to the SDI output signal cable driver (IC2602 to IC2604) for SDI1/SDI2 output and SDI output for CA.
- Output to WM board for WiFi SDI signal.
- Output to the HDMI output signal HDMI IC (IC001/DIF-232 board).

Program data of the video signal distributor IC GMON (IC2301) is stored in the SPI flash memory (IC2500).

The baseband signals that are output from the video signal processor ROSETTA (IC0100) during recording are input to the input signal processor IC ETC (IC100/HPR-53 board) that has XAVC codec BEAUNE (IC1100), the MPEG2 video codec NATH (IC1500) and SStP codec Curie (IC1000/HPR-53 board).

The playback video signals that are output from the XAVC codec BEAUNE (IC1100), the MPEG2 video codec NATH (IC1500) or SStP codec Curie (IC1000/HPR-53 board) during playback are selected in the video signal processor ROSETTA (IC0100) and the selected signals are output to the SDI/HDMI connector and the VF connector.

The XAVC codec BEAUNE (IC1100) performs real-time AVC encoding and decoding for high-resolution video signals by one chip. This IC is connected to the video signal processor ROSETTA (IC0100) with the ultrahigh-speed (5 Gbps x 8) serial interface. A large volume of video data is transmitted through this interface.

The XAVC codec BEAUNE (IC1100) is connected to the media processor DIABLO (IC2900) with the PCI Express interface. Compressed video data and control signals are transmitted bi-directionally through this PCI Express interface. The MPEG2 video codec NATH (IC1500) performs real-time MPEG2 video encoding and decoding for HD video signals by one chip. This IC is connected to the video signal processor ROSETTA (IC0100) with the parallel bus (Y/C 10 bits x 2).

The MPEG2 video codec NATH (IC1500) is connected to the media processor DIABLO (IC2900) with the parallel bus. Compressed video data and control signals are transmitted bi-directionally through this parallel bus.

SStP codec Curie (IC1000/HPR-53 board) performs real-time SStP video encoding and decoding for HD video signals by one chip via input signal processor IC ETC (IC100/HPR-53 board). This IC is connected to the video signal processor ROSETTA (IC0100) with the ultrahigh-speed (5 Gbps x 6) serial interface. The SStP codec Curie (IC1000/HPR-53 board) is connected to the media processor DIABLO (IC2900) and PCI Express interface via input signal processor IC ETC (IC100/HPR-53 board).

Compressed video data and control signals are transmitted bi-directionally through this PCI Express interface.

DIF-232 Board

HDMI output video signal from the video signal distributor IC GMON (IC2301/DPR-362 board) and audio and control signals from video signal processor ROSETTA (IC0100/DPR-362 board) are input to the DIF-232 board. This signal is output to HDMI CN (CN002) as HDMI signal via HDMI signal generate IC (IC001).

HN-415 Board

The viewfinder (VF) output video signals and control signals from the DPR-362 board are input to the connector (CN4). Two types of video signals: digital video signal (LVDS) and analog video signal are input to the HN-415 board. The digital video signal (LVDS) is output to the connector (CN1) which is a dedicated connector for the separately available viewfinder.

The analog video signal is output to the connector (CN2) that relays the signal to the CN-3736 board.

Different control signals are provided respectively for digital and analog video signals.

Power voltages for the viewfinder are supplied from the MB-1210 board to the connector (CN7) on the HN-415 board with a harness.

Signal lines of the connector (CN6) on the SW-1652 board (ASSIGN switch) and of the connector (CN5) on the SW-1653 board (LIGHT switch) are connected to the MB-1120 board through the connector (CN7) on the HN-415 board.

Power voltages for the GPS are supplied from the DPR-362 board to the connector (CN51) on the HN-415 board through the relay board (CN-3723 board), and then to the GPS module (GP-1016 board) with a harness.

The GPS signals (UART, ON/OFF, and RESET) are supplied from the DPR-362 board to the connector (CN51) on the HN-415 board through the relay board (CN-3723 board), and then to the GPS module (GP-1016 board) with a harness.

CN-3736 Board

The VF output analog video signals relayed on the HN-415 board are input to the connector (CN2) on the CN-3736 board, and are then output from the HDVF-type VF connector (CN1) to the external circuit.

An EMI filter is attached to each video signal line.

1-2-4. Media Recording and Playback Block

DPR-362 Board

Description on Media Processor

Stream data compressed by each codec during recording is input to the media processor DIABLO (IC2900) through the following buses.

- XAVC-I/L codec BEAUNE (IC1100): PCI Express bus
- MPEG-2/IMX codec NATH (IC1500): Parallel bus
- SSStP codec ETCx (IC100: HPR-53 board): PCI Express bus (via CN0800)

The LPCM audio data from the video signal processor ROSETTA (IC0100) is input to the media processor DIABLO (IC2900) through the GMON (IC2301).

The auxiliary data from the video signal processor ROSETTA (IC0100) is also input to the media processor DIABLO (IC2900).

The media processor DIABLO (IC2900) processes these input signals, stores them in a file, and then writes the file data to the SxS memory card on the EC-82 board through the fine-wire coaxial cable connected to the connector (CN5201). This media processor operates reversely in the playback process.

In addition, the media processor DIABLO (IC2900) performs communication between processors of the application processor EMMA (IC4200) and the video signal processor ROSETTA (IC0100) through the serial bus, controls video/audio streams, accesses the SxS memory card, and performs mass storage operation with USB connection, according to commands from the application processor EMMA (IC4200).

The media processor DIABLO (IC2900) incorporates a CPU and a USB device controller. The SPI flash ROM (IC3101, IC3102) and the DDR2 memory (IC3001, IC3003) are connected to IC2900 as peripheral devices.

The internal CPU uses the 2GBit × 2 DDR2 memory (IC3001, IC3003) as work memory and executes the initial program of the SPI flash ROM (IC3101, IC3102).

Furthermore, this media processor performs data communication with peripheral devices and controls them through the following buses.

- PCI bus: USB2.0 host controller (IC3300)
- Host interface bus (parallel bus): MPEG-2/IMX codec NATH (IC1500)
- PCI Express bus: SATA host controller (IC3703) and USB3.0 host controller (IC3602)

Description on Peripheral Devices of the Media Processor

USB2.0 host controller (IC3300)

The USB2.0 host controller provided with a 5-channel USB2.0 port is controlled by the media processor DIABLO (IC2900) through the PCI bus. Two channels out of five channels are connected to the SxS memory card slot on the

EC-82 board. One channel is connected to the application processor EMMA (IC4200) through the USB switch IC (IC4500), and the other two channels are reserved for the system.

SATA host controller (IC3703)

The SATA host controller is connected to the SSD (IC3704) with the SATA signal. The SSD (IC3704) stores memory image data for high-speed startup. The initial operation program of the media processor DIABLO (IC2900) develops memory image data through the SATA host controller (IC3703) to the DDR2 memory (IC3001, IC3003).

USB3.0 host controller (IC3602)

The USB3.0 host controller provided with a 2-channel USB3.0 port is controlled by the media processor DIABLO (IC2900) through the PCI Express bus. One channel out of two channels is connected to the USB3.0 connector on the LED-529 board, and the other channel is not used.

HPR-53 Board

The HPR-53 board mainly consists of an FPGA ETCx (IC100) that has high-speed differential IF and PCIe IF and an SStP video codec. This board also supports external input video signals and mainly handles the following signals.

- Video data input/output (5 Gbps high-speed differential signals)
- PCI Express
- SDI input

The Video data sent from the video signal processor ROSETTA (IC0100/DPR-362 board) during recording is input to the FPGA ETCx (IC100) by the 4-lane 5 Gbps high-speed differential signal. The stream data compressed in the SStP codec Curie (IC1000) in connection with the ETCx is output to the media processor DIABLO (IC2900/DPR-362 board) through the PCI Express bus.

This board operates reversely in the playback process.

External serial SDI input signal is transferred to the connector (J500) and the equalizer (IC501), and is then converted to parallel signals in the ETCx (IC100). Then the parallel signals are divided into audio data and synchronization signal. The audio data is output to the FPGA AUDX (IC801/AU-360 board) and the synchronization signal is output to the FPGA GMON (IC2301/DPR-362 board). The video data is converted to 5 Gbps high-speed differential signal-format data, and the converted data is output to the video signal processor ROSETTA (IC0100/DPR-362 board).

EC-82 Board (SxS Memory Card Slot)

The 2-channel PCIeExpress signal from the media processor DIABLO (IC2900/DPR-362 board) and the 2-channel USB host signal from the USB2.0 host controller (IC3300/DPR-362 board) are connected to the EC-82 board (provided with two memory card slots) through the fine-wire coaxial connector (CN100). The ExpressCard power controller (IC100, IC201) on the EC-82 board is controlled by the GPIO in the media processor DIABLO (IC2900/DPR-362 board). The DC/DC converter (IC101) generates a voltage of 1.5 V for the SxS memory card from 3.3 V.

LED-529 Board (USB Connector for PC)

The USB device signals that are input to and output from the USB function controller in the media processor DIABLO (IC2900/DPR-362 board) are connected to the connector (CN001) on the LED-529 board from the connector (CN5202) on the DPR-362 board with the fine-wire coaxial harness, and are then connected to the USB2.0 connector (B) (CN003). The USB host signals that are input to and output from the USB3.0 host controller (IC3602/DPR-362 board) are connected to the connector (CN001) on the LED-529 board from the connector (CN5202) on the DPR-362 board with the fine-wire coaxial harness, and are then connected to the USB3.0 connector (A) (CN002).

1-2-5. System Control Block

DPR-362 Board

The DPR-362 board mounts a application processor EMMA (IC4200) that incorporates ARM core.

The 4GB eMMC (IC4400) that contains execution programs, the DDR2 SDRAM (IC4300, IC4301) for work memory, and the EEPROM (IC4602) for storing parameters are connected to the application processor EMMA (IC4200) as its peripheral ICs.

The application processor EMMA (IC4200) performs system control through communication between the following processors.

- Parallel communication connection to the video signal processor ROSETTA (IC0100)
- Serial communication connection to the media processor DIABLO (IC2900)
- Serial communication connection to the power controller Darwin (IC5002)
- Serial communication connection to the VF controller VF VINE (IC4903)
- Serial communication connection to the key controller KEY VINE (IC302/FP208 board), EX VINE (IC404/FP-208 board), and JKLX (IC503/FP-208 board)

Main Functions of the System Controller and Peripheral Devices

Reading key information

Information of the keys on the inside panel is sent to the KEY VINE (IC302), EX VINE (IC404), and JKLX (IC503) on the FP-208 board.

Information of the keys on the rear panel is sent through the MB-1210 board to the AUDX (IC801) on the AU-360 board.

Information of the keys on the front panel and on the handle is sent through the MB-1210 board to the VF VINE (IC4903) on the DPR-362 board.

The information of the REC S/S key on the front panel is also sent to the ROSETTA (IC0100) on the DPR-362 board to be used for Power On Rec.

Information of the keys on the top panel is sent through the MB-1210 board to the JKLX (IC503) on the FP-208 board.

SD card control (for SETUP)

The EMMA (IC4200) reads and writes SD card data through the SD card slot (CN7) on the MB-1210 board.

This SD card slot is also used for upgrading the main unit.

Power control

When power is connected, the boot signal is transferred from the RE-326 board to the power controller Darwin (IC5002) on the DPR-362 board through the MB-1210 board.

After that, the Power Save reset signal is transferred from the Darwin (IC5002) to the RE-326 board through the MB-1210 board. At the same time, information of the power switch connected through the MB-1210 board is monitored.

When the power switch is turned on, the Darwin (IC5002) controls system reset in accordance with the boot sequence.

The Darwin (IC5002) also monitors voltages in the boot process.

This Darwin (IC5002) is backed up by the lithium button battery on the FP-208 board.

700P IF

The EMMA (IC4200) is connected to the GMON (IC2301) through the serial bus to perform data communication with the 700p IF and control it.

The 700p IF has two channels: one is connected to the connector (CN2) on the RM-246 board through the MB-1210 board, and the other is connected to the 50-pin interface connector (CN4) on the CI-50 board through the HPR-53 board.

WM (WIFI MODULE) control

The EMMA (IC4200) is connected to the WM through the fine-wire coaxial connector (CN2303) to control communication.

When media data is transferred, IC4500 is controlled to disconnect the maintenance USB and connect it to the media processor DIABLO (IC2900) through the USB host controller (IC3300) for Diablo.

GPS

The EMMA (IC4200) performs serial communication with the GPS module (GP-1019 board) through the HN-415 and CN-3723 boards. Furthermore, the EMMA (IC4200) acquires position information and time information to be used for recording from the GPS module (GP-1019 board).

Real time clock (RTC)

The EMMA (IC4200) makes settings for the RTC (IC4600) connected through the serial bus and reads RTC data. This RTC (IC4600) is backed up by the lithium button battery on the FP-208 board.

Temperature sensor

The EMMA (IC4200) reads temperature information from the temperature sensor (IC4601) connected through the serial bus.

InfoLithium battery communication

The EMMA (IC4200) supports the InfoLithium battery of SMBus specifications.

The battery connector (serial connector) is connected to the EX VINE (IC404) on the FP-208 board through the RE-326 and MB-1210 boards. Battery authentication, type, remaining time, and other information are read and are sent to the EMMA (IC4200) through serial bus communication.

Fan control

The EMMA (IC4200) monitors imager temperature (PA-422 board) and main board (DPR-362 board) temperature to perform PWM control for the EX VINE (IC404) on the FP-208 board. The PWM signal is sent to the fan power supply circuit on the RE-326 board through the MB-1210 board to control fan speed.

The EMMA (IC4200) also detects the fan rotation speed and sends the detection result to the EX VINE (IC404) on the FP-208 board.

Two fans are installed and are connected through the connectors (CN8 and CN13) on the MB-1210 board.

TALLY control

The REAR TALLY (LED-529 board) is connected to the BOTTOM TALLY (AXM-52 board) in series through the MB-1210 and DPR-362 boards.

These TALLY LEDs and the VF TALLY LED are controlled by one signal and can be lit from the EMMA (IC4200) and the ROSETTA (IC0100).

1-2-6. Audio Block

AXM-52 Board

- The AXM-52 board mounts two input 2-channel analog/digital audio input connectors (3-pin XLR type) (CN101, CN102). This board mounts [LINE, AES/EBU, MIC] selection switches (S101, S102) corresponding to each connector channel.
- This board mounts an output 2-channel analog audio input connector (5-pin XLR type) (CN103).
- This board relays signals from the +48V setting switch (S101, S102) on the SW-1632 board.
- This board relays the input 2-channel XLR-type 3-pin connector detection board (DET-60 board).

RX-136 Board

The RX-136 board mounts an analog/digital wireless D-sub 15-pin connector (CN1), a circuit to support two communication formats: WRR-855 communication and asynchronous communication, and an analog audio signal amplifier. This board also controls digital audio signals. The FPGA (IC801) on the AU-360 board performs wireless control.

- The WRR_DET signal (Pin 7 of connector CN1) is used to determine which wireless receiver has been connected. D1, C6, Q3, and R13 configure a circuit to receive the signal.
When the WRR-855 communication-format receiver is connected, a voltage of about 0.7 V is generated on Pin 7. Diode D1 is used to prevent Q3 from being turned on by this voltage.
- The WRR_CS signal (Pin 10 of connector CN1) is used as a signal line for the WRR-855 communication format from the result of determination by using Pin 7 above. In other cases, high level is output.
R8, IC8, and R14 configure a circuit for the WRR-855 communication format.
- The WRR_CLK signal (Pin 9 of connector CN1), the WRR_DI signal (Pin 11), and the WRR_DO signal (Pin 12) are used as WRR-855 communication-format signal lines from the result of determination by using Pin 7. In other cases, these signals are used for asynchronous communication.
R4 to R7, Q1, Q2, IC7, R10, and R11 configure a circuit that supports both communication formats (asynchronous communication and WRR-855 communication).
- When an analog wireless receiver is connected, the WL_A_CH1 signal (Pin 2 of connector CN1) is amplified in IC9 and is then sent from the connector (CN2) through the connector (CN12) on the MB-1210 board to the AU-360 board.
- The BCK signal (Pin 6 of connector CN1), the XLRCK signal (Pin 13), the WL_DT12 signal (Pin 14), and the WL_DT34 signal (Pin 15) are transmitted from digital wireless signal to digital audio signal by I²S.
When these signals are determined to be analog wireless signals, these are closed by IC1 to IC4.

AU-360 Board

The AU-360 board has the following functions:

Switching rear MIC/LINE input level and rear MIC +48 V voltage, switching front MIC input level and front MIC +48 V voltage, input signal selection and head room level adjustment, AD/DA conversion using AUDIO CODEC, SP/HP amplification, DC-DC converter for MIC +48 V voltage.

In addition, this board mounts an FPGA (IC801) and a DSP (IC1000). The DSP provides many functions including AGC, Wind Filter, monitor potentiometer, and monitor switching control.

The FPGA (IC801) has serial audio S/P and P/S conversion, mute control, wireless control, DSP control, and other functions.

Main Blocks and Functions

Rear MIC/LINE input block

Audio input signals are sent from the AXM-52 board rear LINE/MIC input 3-pin XLR connectors (CN101, CN102) through the connector (CN23) on the MB-1210 board to the AU-360 board.

The MIC input level (-30 to -60 dBu/10 dB step, -70 dBu and -60 dBu are same setting) is common to the LINE input level (+4, 0, and -3 dBu). Input attenuator and amplifier are inserted by switches (Q104 to Q111, Q118 to Q121, Q200 to Q211).

Furthermore, 0 dBu or +4 dBu is selected by Q112 to Q117, Q122, and Q123 according to the [Line Input Ref] setting level of the menu, and is input to the balanced input amplifier (IC200, IC201).

Supply of the microphone power +48 V is also switched by switches (Q100 to Q103).

Front MIC input block

Audio signals are sent from the front MIC input 5-pin XLR connector (CN1) on the CN-3738 board through the connector (CN10) on the MB-1210 board to the AU-360 board.

The MIC input level is switched by switches (Q304 to Q315), and an input level is selected by [Front MICCH1 Ref] and [Front MIC CH2 Ref] of the menu.

Furthermore, the MIC input level (-30 to -60 dBu/10 dB step, 70 dBu and -60 dBu are same setting) and supply of the microphone power +48 V are switched by switches (Q300 to Q303).

Input signal selector

Audio signals are selected by the analog switch (IC400 to IC404) based on the side panel switch information, etc.

Head room adjuster

The head room adjustment level is switched by switches (Q400 to Q414), and an input level is selected by [Reference Level] of the menu (-12dB, -16dB, -18dB, or -20dB).

A/D, D/A converter circuit

A 24-bit AK-4621 (IC600, IC601) that has an A/D converter and a D/A converter is used.

The sampling frequency is set to 48 KHz. A differential amplifier is mounted before analog input and after analog output. IC600 performs A/D conversion for two channels, and IC601 performs D/A conversion for two channels.

Final-stage amplifier

Audio signals are sent from the final-stage amplifier (IC421, IC422) through the MB-1210 board to the 5-pin XLR connector (CN103) on the AXM-52 board.

Monitor amplifier

The monitor amplifier consists of a monaural SP /stereo HP amplifier (IC604), a headphone jack (CN2) on the HP-171 board, and a monaural speaker connected to the FP-208 board.

Selection of HP or SP is made by the monaural SP/stereo HP amplifier (IC604), which is controlled by IC0100 on the DPR-362 board with the I²C interface.

FPGA installation function

- Audio process
 - AES/EBU input decode
 - ASRC control
 - Input audio selector
- GPIO
- Wireless control
 - Fetching status data of switches on the AXM-52 board
 - Analog circuit control
 - Analog/digital wireless SIO/UART control
 - Wireless interface DIAG support function
- DSP control
 - DSP Parallel Interface

DSP functions

- Delay
- Digital potentiometer
- High Pass Filter
- AGC/Limiter
- Output Select & Mixer
- Beep

Operation

Initial operation

When the FPGA (IC801) is activated and the FPGA configuration is completed, IC0100 on the DPR-362 board boots the DSP (IC1000) and writes necessary coefficients. Then the DSP (IC1000) starts processing.

Audio signal flow

The front MIC input signal is sent through the MB-1210 board to the analog switch (IC401 to IC404) of the input signal selector.

The rear external LINE/MIC input signal is sent from the AXM-52 board through the MB-1210 board to the analog switch (IC401 to IC404) of the input signal selector.

Analog wireless signals are sent from the RX-136 board through the MB-1210 board to the analog switch (IC400 to IC404) of the input signal selector.

The analog switch of the input signal selector is controlled by the HIF interface from IC0100 on the DPR-362 board through the FPGA. Selected signals (CH1 to CH4) are sent from the head room switching circuit to the A/D converter (IC600, IC601) in units of two channels. Converted serial digital audio signals (2 channels x 2) are input to the FPGA (IC801).

Digital wireless signals are sent from the RX-136 board through the MB-1210 board to the FPGA (IC801).

AES/EBU input signals are sent from the AXM-52 board through the MB-1210 board to the FPGA (IC801).

SDI input signals are sent from IC100 on the HPR-53 board through the MB-1210 board to the FPGA (IC801).

The FPGA (IC801) selects input signals and sends the selected signals to the DSP.

The DSP (IC1000) rapidly processes AGC, Wind Filter, and level adjustment. Signals processed by the DSP (IC1000) are sent to IC0100 on the DPR-362 board.

Serial playback/EE signals receives processing (including level adjustment) by the circuit (IC0100 to DSP (IC1000)) on the DPR-362 board, and the processed signals are input to the D/A converter (IC600, IC601) in units of two channels.

The D/A output signal from IC600 is input to the final-stage amplifier (IC421, IC422), is transferred to the MB-1210 board, and is then output from the 5-pin output XLR connector (CN103) on the AXM-52 board.

The D/A output signal from IC601 is input to the monaural SP/stereo HP amplifier (IC604) to drive the headphone jack (CN2) on the HP-171 board and the monaural speaker connected to the FP-208 board.

Control

Switch/potentiometer/menu control information is sent from IC0100 on the DPR-362 board to the AU-360 board with the HIF interface and I²C interface.

On the AU-360 board:

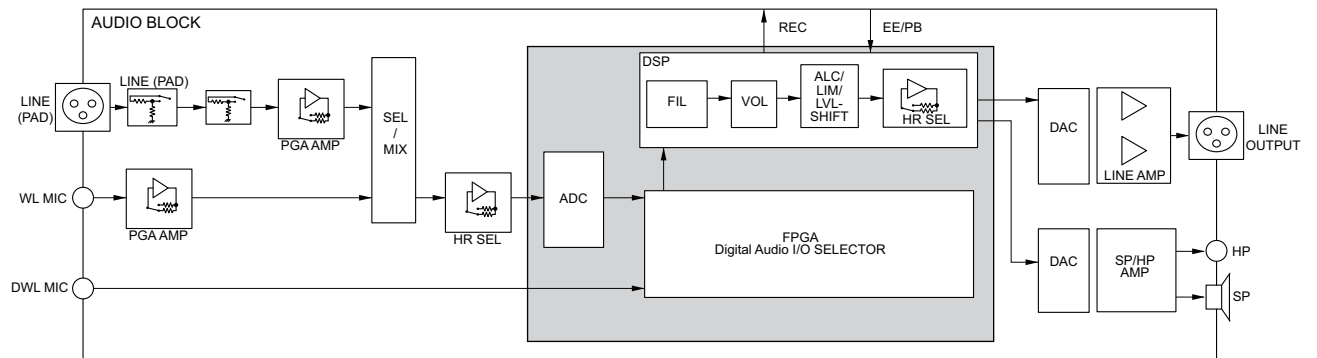
- The I²C interface is connected to the monaural SP/stereo HP amplifier (IC604).
- The HIF interface is connected to the FPGA.

HIF interface control signals are converted to GPI signals to control analog circuits.

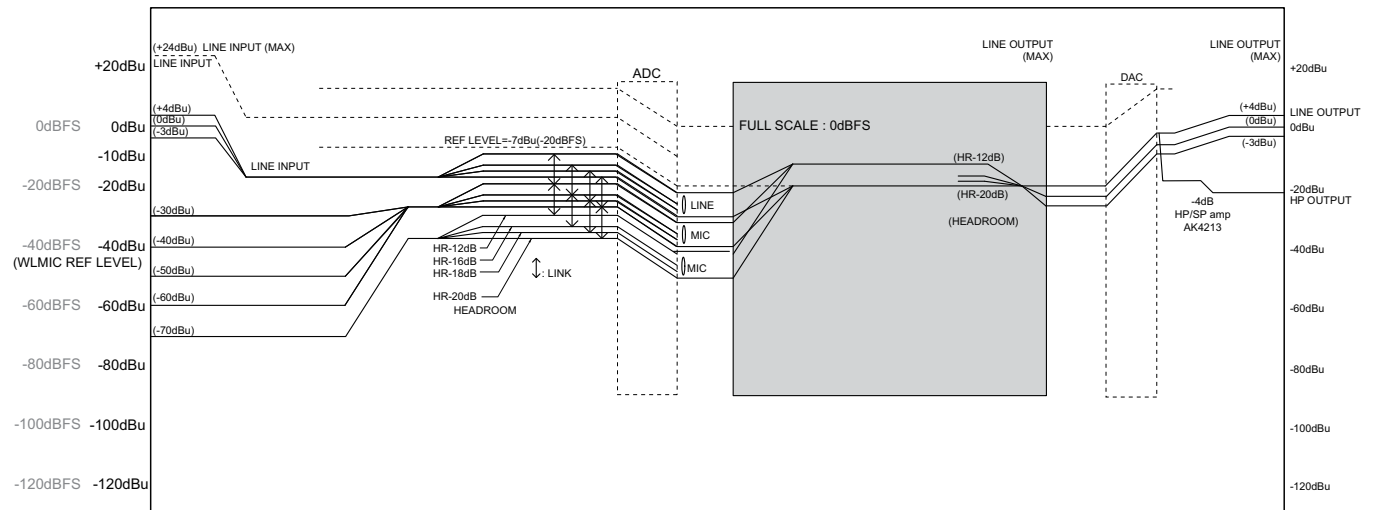
The DSP (IC1000) functions control set by the menu is processed by writing necessary coefficients to the DSP (IC1000) through the FPGA (IC801).

Audio Block/Level Diagram

• Audio Block Diagram

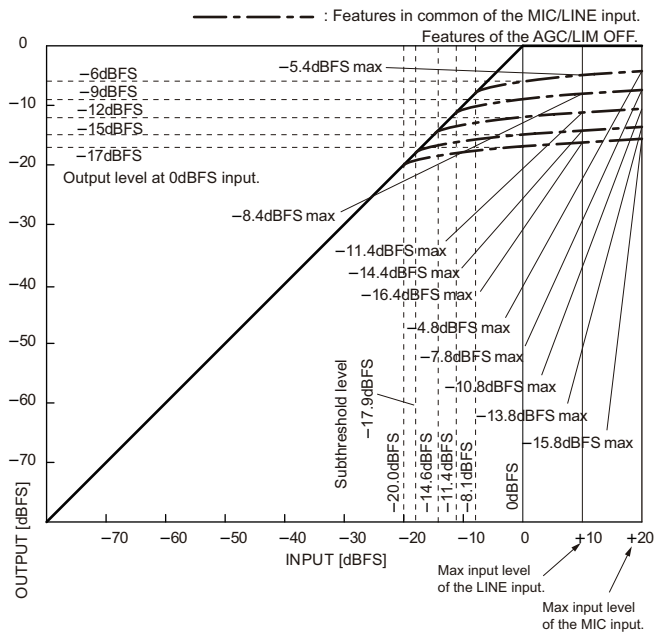


• Level Diagram



AGC/LIM Specification

• AGC/LIM Specification



1-2-7. Power Supply Block

RE-326 Board

This board switches input power, monitors and protects input voltages, and supplies power voltages. The power control microcomputer (IC5002/DPR-362 board) controls boot, shutdown, and output sequences.

Input power (UNREG) block operation

When the input power (UNREG) is input, the camera unit enters the boot standby state. Power switch ON or OFF status can be recognized in this state. When the power control microcomputer recognizes power switch ON, the UNREG power is supplied to the power circuits and each output is activated by the signal from the power control microcomputer.

The normal value of the input power (UNREG) is within a range of approx. +10.5 to +17 V.

- Switching battery and EXT-DC
There are two types of input power: battery power and EXT-DC power. These input voltages are monitored and are automatically switched placing a high priority on EXT-DC.
- Input overvoltage protection
When an UNREG voltage exceeding approx. +18.6 V is input, the overvoltage protection circuit is activated to shut down the camera unit.
- Input constant-voltage protection
When the input UNREG voltage lowers below approx. +10.5 V, the power control microcomputer shuts down the camera unit.
- Overcurrent detection
IC107 detects the input current. When the input current exceeds approx. 12 A, the overcurrent protection circuit is activated to shut down the camera unit.
- Incorrect-power connection protection
When a reverse voltage is input, Q104 on the RE-326 board is not turned on and the protection function is activated to block the current path.

Power voltages supply circuit (DC/DC converter, UNREG)

There are 27 voltages that are classified into to following groups.

- Step-down voltages (+5V, +3.3V, +2.5V, +1.8V, +7V, +6V, +1.5V, +1.2V, +12V, etc.)
- Step-up voltages (+16V, +24V)
- Negative voltages (-5V, -8.5V)
- UNREG voltages (LENS, VF, DC-OUT, REMORT, OTHER)

Each voltage is activated and deactivated according to the power sequence control by the power control microcomputer.

Voltage short-circuit protection

The output voltage and output current of each voltage are monitored. When an abnormal output voltage or current is detected, the camera unit is shut down. The protection circuit is not automatically reset even after short-circuit is cleared. Therefore, power must be turned off and on again.

1-2-8. Wireless Block

GPS

Position and time information is acquired from the satellite through the antenna on the GPS module (GP-1019 board). This information is transmitted to the CN-3723 and the HN-415 boards, then to the DPR-362 board through the fine-wire coaxial cable, and then to the application processor EMMA (IC4200).

- GPS module (GP-1019 board)
The GPS module (GP-1019 board) acquires position and time information and transmits it to the DPR-362 board through the CN-3723 and HN-415 boards.
- CN-3723 board
GPS signals from the GPS module (GP-1019 board) are sent through the relay CN-3723 board to the connector (CN51).
- HN-415 board
Signals from the CN-3723 board are sent from the connector (CN4) to the connector (CN0400) on the DPR-362 board through the fine-wire coaxial harness.
- DPR-362 board
The following signals are sent from the application processor EMMA (IC4200) to the connector (CN0400).
- Serial communication (with GPS) signals
- GPS ON/OFF signal
- GPS RESET signal

Wi-Fi

- DPR-362 board
The USB Host signal and the reset signal of the application processor EMMA (IC4200) are sent through the connector (CN2303) to the WIFI MODULE (WM board) to communicate between EMMA and WM.
SDI output signals from the GMON (IC2301) are sent through the connector (CN2303) to the WIFI MODULE (WM board) to be used for proxy recording. The WIFI MODULE (WM board) power is controlled with the power ON signal connected to the power microcomputer Darwin (IC5002) through the connector (CN2303).
- CN-3722 board (Wi-Fi USB connector)
The Wi-Fi dongle of the Wi-Fi USB connector (CN003) is controlled by the WM board through CN001 and transmits the proxy data in the SD memory (CN002/SD-58 board) managed by the WIFI MODULE (WM board).
- SD-58 board (Proxy SD card slot)
The SD memory in the SD card slot (CN002) is controlled by the WIFI MODULE (WM board) through the connector (CN001). Proxy data filed by the WIFI MODULE (WM board) is recorded.

1-2-9. Camera Adapter (CA) Connection Block

HPR-53 Board

The return video signal sent from the camera adapter (CA) with the 50-pin interface is transferred through the connector (J501) and the equalizer (IC502) to the FPGA ETCx (IC100) in which the serial signal is converted to parallel signal and audio data is separated.

The separated audio data is output to the FPGA AUDX (IC801/AU-360 board). The video signal is converted to the 5 Gbps high-speed differential signal format, and the converted signal is output to the video signal processor ROSETTA (IC0100/DPR-362 board). Furthermore, 50-pin interface (synchronization signals from CA, asynchronous communication data, and 700 protocol communication data) other than the return video signal is performed through the connector (CN400).

The synchronization signals are output through the ETCx (IC100) to the FPGA GMON (IC2301/DPR-362 board), and asynchronous communication data is sent to and received from the video signal processor ROSETTA (IC0100/DPR-362 board) through the ETCx (IC100).

Furthermore, 700 protocol communication data is directly input to and output from the FPGA GMON (IC2301/DPR-362 board) through the connector (CN100).

CI-50 Board

The 50-pin interface connector (CN4) on the CI-50 board is connected to the connector on the CA to send and receive main-line video data, return video signal, audio data, synchronization signals, asynchronous communication data, and 700 protocol communication data.

Main-line video SDI signals (with audio data superimposed) are output from the FPGA GMON (IC2301/DPR-362 board) through the connector (CN1) and the 50-pin interface connector (CN4) to the CA. Return video SDI signals (with audio data superimposed) are output from the CA through the 50-pin interface connector (CN4) and the connector (CN2) to the FPGA ETCx (IC100/HPR-53 board).

Synchronization signals, asynchronous communication data, and 700 protocol communication data other than video signals are individually output to the HPR-53 board through the connector (CN3).

1-3. Connectors/Cables

Use the following connectors/cables or equivalent when connecting cables to the connectors of this unit.

Connector Name	Connection Connectors/Cables	Part No.
GENLOCK IN	BNC 75 Ω, Male	1-569-370-12
TC IN		
TC OUT		
VIDEO OUT		
HD/SD SDI OUT 1		
HD/SD SDI OUT 2		
HD/SD SDI IN		
AUDIO IN CH-1, CH-2	XLR 3P, Male	1-508-084-00
AUDIO OUT	Audio cable (XLR 5P-XLR 3P, 2 m)	
DC IN	XLR 4P, Female	1-508-362-00
DC OUT 12 V	Round Type 4P, Male	1-566-425-11
EARPHONE	Mini jack (commercially available on market)	
LIGHT	Power tap (OE) Made by ANTONBAUER Inc., 33710 or equivalent	
MIC IN	XLR 5P, Male	1-508-370-11
REMOTE	Round Type 8P, Male	1-766-848-11
USB2.0 Host (Wireless)	USB cable (commercially available on market)	
USB 3.0 Host (Storage)		
USB 2.0 Device (PC)		
USB 2.0 Device (Maintenance)		
VF (LCD) (rectangular, 26-pin)	Connection cable of the optional viewfinder (CBK-VF02)	
VF (HDVF) (round, 20-pin)	Connect the cable of the optional viewfinder (HDVF-20A/200)	
WIRELESS RECEIVER IN	WRR-855S/860C/861/862, DWR-S02D (by SO-NY) only connectable Note Do not connect with a connector/cable other than above.	
HDMI	HDMI cable (commercially available on market)	
LENS (12P FEMALE)	Connector 12P, Male or HIROSE HR10-10PA-12P equivalent	1-564-360-11
EXT (50P FEMALE)	Rectangular, 50P, Male (commercially available on market)	

1-4. Connector Input/Output Signals

Input Signals

1. GENLOCK IN

BNC type 1.0 V p-p, 75 Ω , unbalanced

2. TC IN

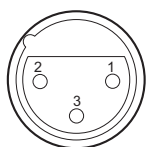
BNC type 0.5 V to 18 Vp-p, 10 k Ω

3. HD/SD SDI IN

SDI 0.8 Vp-p, 75 Ω , 270 Mbps & 1.5 Gbps

4. AUDIO IN CH-1, CH-2

XLR 3-pin, Female



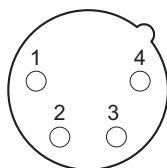
- External View -

(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	MIC/LINE (G)	—	-70 dBu/-60 dBu/-50 dBu/ -40 dBu/-30 dBu/ -3 dBu/0 dBu/+4 dBu, High impedance, Balanced
2	MIC/LINE (X)	IN	
3	MIC/LINE (Y)	IN	

5. DC IN

XLR 4-pin, Male

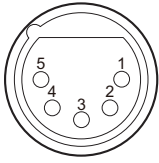


- External View -

No.	Signal	I/O	Specifications
1	GND	—	GND for DC (+)
2	—	—	No connection
3	—	—	No connection
4	DC IN (+)	IN	+11 to 17 V dc input

6. Front MIC IN

XLR 5-pin, Female



- External View -

(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	MIC IN (G)	—	- 50 dBu, High impedance, Balanced
2	MIC1 IN (X)	IN	
3	MIC1 IN (Y)	IN	
4	MIC2 IN (X)	IN	
5	MIC2 IN (Y)	IN	

Output Signals

7. VIDEO OUT

BNC type 1.0 V p-p, 75 Ω , unbalanced

8. HD/SD SDI OUT1/OUT2

BNC type SDI 0.8 V p-p, 75 Ω , 270 Mbps, 1.5 Gbps & 3 Gbps

9. TC OUT

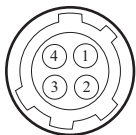
BNC type, 1.0 V p-p, 75 Ω

10. EARPHONE

-22 dBu (Volume: Center, reference level output 32 ohms loaded)

11. DC OUT 12 V

4-pin, Female

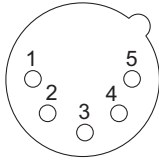


- External View -

No.	Signal	I/O	Specification
1	UNREG GND	—	GND for power
2	—	—	No connection
3	—	—	No connection
4	UNREG +12 V	OUT	+11 to 17 V dc output (Max 1.8 A)

12. AUDIO OUT

XLR, 5-pin, Male



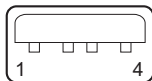
- External View -
(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	ANALOG GND	—	—
2	AUDIO CH-1 (X)	OUT	0 dBu
3	AUDIO CH-1 (Y)	OUT	
4	AUDIO CH-2 (X)	OUT	
5	AUDIO CH-2 (Y)	OUT	

Input/Output Signals

13. USB2.0 Host (Wireless)

USB (Series A), 4-pin
Signal standard: USB standard Ver. 2.0

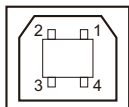


- External View -

No.	Signal	I/O
1	USB VBUS	OUT
2	DATA (-)	I/O
3	DATA (+)	I/O
4	GND	—

14. USB2.0 Device (PC)

USB (Series B), 4-pin
Signal standard : USB standard Ver. 2.0



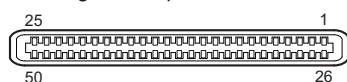
- External View -

No.	Signal	I/O
1	USB DEV VBUS	IN
2	DATA (-)	I/O
3	DATA (+)	I/O
4	GND	—

15. EXT

50-pin (Female)

Rectangular, 50-pin



- External View -

No.	Signal	I/O	Specifications
1	GND(TX_OUT_C2)	--	GND
2	GND(TX_OUT_C1)	--	GND
3	CA_EN	IN	Camera Adaptor Detect Hi : None, Low : Enable
4	GND	--	GND
5	SENSE_UNREG_OUT	OUT	+11 V to 17 V
6	SENSE_UNREG_OUT	OUT	+11 V to 17 V
7	BSY	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND
8	CMD0	OUT	start/stop synchronization bit rate; 843.75[kbps] $\pm 2.0\%$ 8bitLSB First
9	CMD2(RESERVE0)	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND
10	CMD4	OUT	Reserve Hi : 2.5 V, Low : GND
11	GND	--	GND
12	GND	--	GND
13	GND	--	GND
14	GND	--	GND
15	GND	--	GND
16	CA_VD	IN	Genlock V
17	CDA0	IN	start/stop synchronization bit rate; 843.75 [kbps] $\pm 2.0\%$ 8bitLSB First
18	CA_HD	IN	Genlock H
19	CDA2	IN	Reserve (Pull Down) Hi : 2.5 V, Low : GND
20	+3.3V_OUT	OUT	For Power Save
21	+3.3V_OUT	OUT	For Power Save
22	GND	--	GND
23	GND	--	GND
24	GND(RX_IN_C1)	--	GND
25	GND(RX_IN_C2)	--	GND
26	TX_OUT_H	OUT	HD-SDI OUT SDI 0.8 V p-p, 75 ohms, 270 Mbps & 1.5 Gbps
27	GND(TX_OUT_C3)	--	GND
28	GND	GND	GND
29	SENSE_UNREG_OUT	OUT	+11 V to 17 V
30	SENSE_UNREG_OUT	OUT	+11 V to 17 V
31	CK	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND
32	RX	OUT	700 Protocol (RX)
33	CMD1	OUT	Skin Gate Level3
34	CMD3	OUT	Reserve (disuse is low) Hi : 2.5 V, Low : GND

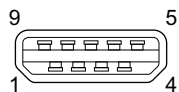
Continued

No.	Signal	I/O	Specifications
35	GND	--	GND
36	GND	--	GND
37	GND	--	GND
38	GND	--	GND
39	GND	--	GND
40	GND	--	GND
41	GND	--	GND
42	TX	IN	700 Protocol (TX)
43	CDA1(RESERVE1)	IN	Reserve (Pull Down) Hi : 2.5 V, Low : GND
44	CDA3	IN	Reserve (Pull Down) Hi : 2.5 V, Low : GND
45	CA_F	IN	Genlock F
46	CA_3.3V	IN	For Power Save
47	CA_3.3V	IN	For Power Save
48	GND	--	GND
49	GND(RX_IN_C3)	--	GND
50	RX_IN_H	IN	HD-SDI IN SDI 0.8 V p-p, 75 ohms, 270 Mbps & 1.5 Gbps

16. USB3.0 Host (Storage)

USB (Series A), 9-pin

Signal standard: USB standard Ver. 3.0

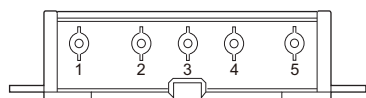


- External View -

No.	Signal	I/O
1	VBUS	+5V OUT
2	D-	I/O
3	D+	I/O
4	GND	GND
5	STDA_SSRX-	IN
6	STDA_SSRX+	IN
7	GND_DRAIN	GND
8	STDA_SSTX-	OUT
9	STDA_SSTX+	OUT

17. BATT IN

5-pin, Male



- External View -

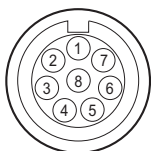
No.	Signal	I/O	Specifications
1	BATT IN (-)	IN	GND for BATT IN

Continued

No.	Signal	I/O	Specifications
2	BATT ID	IN	Battery ID signal input
3	BATT SDA	IN/OUT	Battery serial data signal input/output
4	BATT SCL	OUT	Battery serial data clock signal output
5	BATT IN (+)	IN	+11 to 17 V dc input

18. REMOTE

8-pin, Female



- External View -

No.	Signal	I/O	Specifications
1	TX RCP DATA (X)	OUT	SERIAL DATA OUT
2	TX RCP DATA (Y)	OUT	SERIAL DATA OUT
3	RX RCP DATA (X)	IN	SERIAL DATA IN
4	RX RCP DATA (Y)	IN	SERIAL DATA IN
5	VIDEO (G)	—	GND for VIDEO
6	UNREG +12 V	OUT	+11 V to 17 V
7	UNREG (GND)	—	GND for UNREG
8	VIDEO (X)	OUT	1.0 V _{p-p} , Z ₀ = 75 Ω

19. LENS

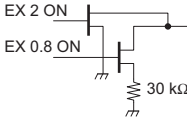
12-pin, Female



- External View -

No.	Signal	I/O	Specifications
1	RET (SW)	IN	ON : 0 V, OFF : OPEN
2	VTR TRIG	IN	ON : 0 V, OFF : OPEN
3	LENS GND	—	GND for LENS
4	AUTO + 5 V	OUT	AUTO : + 5 V MANU : 0 V or OPEN
5	IRIS CONT	OUT	+ 3.4 V (F16) to + 6.2 V (F2.8)
6	UNREG + 12 V	OUT	+ 11 V to + 17 V
7	IRIS PSTN	IN	+ 3.4 V (F16) to + 6.2 V (F2.8)
8	REMOTE/LOCAL	OUT	REMOTE (MANUAL) IRIS: +5 V LOCAL (AUTO) IRIS: 0 V

Continued

No.	Signal	I/O	Specifications
9	EXTENDER	IN	EX 2 ON : 0 V EX 0.8 ON : + 1.8 V OFF : + 4.8 V 
10	ZOOM PSTN	IN	WIDE : 2 V, TELE : 7V
11	FOCUS PSTN (LENS RX)	IN	∞ : 7 V min. : 2 V
12	LENS TX	OUT	

20. LIGHT

2-pin, Female

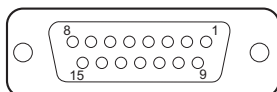


- External View -

No.	Signal	I/O	Specification
1	LIGHT +12 V	OUT	50 W MAX
2	GND	—	

21. WIRELESS RECEIVER

D-sub, 15-pin, Female

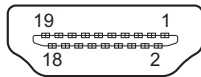


- External View -

No.	Signal	I/O	Specifications
1	GND	IN	GND for AUDIO IN
2	AUDIO CH1 IN	IN	WIRELESS RECEIVER AUDIO CH1 IN
3	AUDIO CH2 IN	IN	WIRELESS RECEIVER AUDIO CH2 IN
4	DC + 7 V OUT	OUT	+7 V
5	GND	—	GND
6	SCLK	OUT	64 FS
7	WRR855 DET	I/O	
8	GND	—	GND
9	WRR CLK	IN	WRR SERIAL CLOCK
10	CS	OUT	WRR SELECT
11	WRR DI	OUT	WRR SERIAL IN
12	WRR DO	IN	WRR SERIAL OUT
13	LRCK	OUT	FS
14	DATA 1/2	IN	AUDIO DATA 1/2 IN
15	DATA 3/4	IN	AUDIO DATA 3/4 IN

22. HDMI

19-pin, Type A

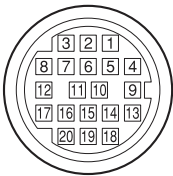


- External View -

No.	Signal	I/O	Specifications
1	TMDS DATA2+	OUT	TMDS data 2 (+) output
2	TMDS DATA2 SHIELD	--	GND for TMDS data 2
3	TMDS DATA2	OUT	TMDS data 2 (-) output
4	TMDS DATA1+	OUT	TMDS data 1 (+) output
5	TMDS DATA1SHIELD	--	GND for TMDS data 1
6	TMDS DATA1-	OUT	TMDS data 1 (-) output
7	TMDS DATA0+	OUT	TMDS data 0 (+) output
8	TMDS DATA0SHIELD	--	GND for TMDS data 0
9	TMDS DATA0-	OUT	TMDS data 0 (-) output
10	TMDS CLOCK+	OUT	TMDS clock signal (+) output
11	TMDS CLOCKSHIELD	--	GND for TMDS clock
12	TMDS CLOCK-	OUT	TMDS clock signal (-) output
13	CEC (N.C.)	--	--
14	RESERVED(N.C.)	--	No connection
15	SCL	OUT	Serial data clock signal output
16	SDA	OUT	Serial data signal input output
17	DDC/CECGND	--	GND
18	+5 V POWER	OUT	+5 V dc output
19	HPD	IN	Hot plug detect signal input

23. VF (HDVF)

Round, 20-pin



(External View)

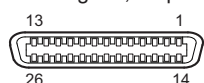
No.	Signal	I/O	Specifications
1	SDA VF	I/O	TTL level
2	--	--	No connection
3	--	--	No connection
4	SCL	OUT	TTL level
5	--	--	No connection
6	--	--	No connection
7	--	--	No connection
8	G TALLY	OUT	ON : 5 V, OFF : GND
9	--	--	No connection
10	--	--	No connection
11	--	--	No connection

Continued

No.	Signal	I/O	Specifications
12	Y VIDEO	OUT	1.0 V p-p, $Z_o = 75 \Omega$
13	Y VIDEO GND	--	GND for VIDEO
14	Pb VIDEO (Pb)	OUT	± 0.35 V p-p, $Z_o = 75 \Omega$
15	Pr VIDEO (Pr)	OUT	± 0.35 V p-p, $Z_o = 75 \Omega$
16	--	--	No connection
17	R TALLY (UP)	OUT	ON : 5 V, OFF : GND
18	--	--	No connection
19	UNREG GND	--	GND for UNREG
20	UNREG	OUT	+11 V to 17 V

24. VF (LCD)

Rectangular, 26-pin

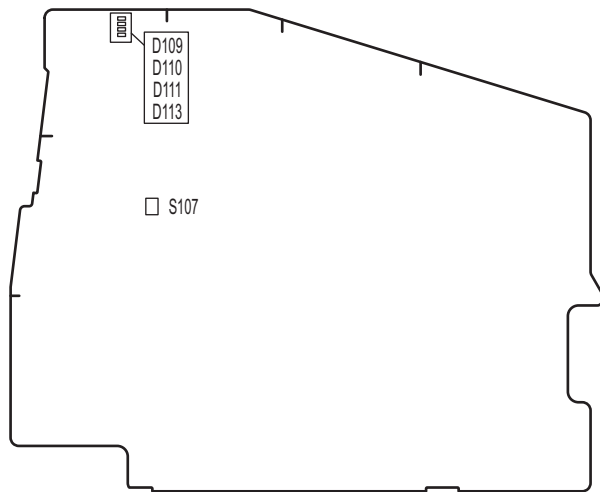


- External View -

No.	Signal	I/O
1	SHIELD GND	—
2	LVDS 1-	OUT
3	LVDS 2-	OUT
4	LVDS 3-	OUT
5	LVDS CLK-	OUT
6	LVDS 4-	OUT
7	LVDS 5-	OUT
8	VF ON	IN
9	SDAT	I/O
10	UNREG (+11 V to 17 V)	OUT
11	UNREG (+11 V to 17 V)	OUT
12	GND	—
13	GND	—
14	GND	—
15	LVDS 1+	OUT
16	LVDS 2+	OUT
17	LVDS 3+	OUT
18	LVDS CLK+	OUT
19	LVDS 4+	OUT
20	LVDS 5+	OUT
21	SDI	OUT
22	SCLK	OUT
23	UNREG (+11 V to 17 V)	OUT
24	UNREG (+11 V to 17 V)	OUT
25	GND	—
26	SHIELD GND	—

1-5. Functions of Onboard Switches and LEDs

1-5-1. RE-326 Board



RE-326 BOARD (A side)

Ref. No.	Name	Description	Normal state
D109	BATT operation indicator	Lit while the unit is operating with BATT power. Not lit with EXT_DC power.	—
D110	Overvoltage/low-voltage protection indicator	Lights when UREG voltage lowers below 10.5 V or rises above 18.6 V, and the camera unit is shut down.	Unlit
D111	EXT_DC operation indicator	Lit while the unit is operating with EXT_DC power (not lit with BATT power).	—
D113	Shut Down indicator	Blinks (at 1 Hz intervals) when a shutdown signal is generated due to abnormal load, then the camera unit is shut down.	Unlit
S107	PLD forced ON switch	When this switch is turned on, power is supplied to the PLD to forcibly operate it (for reprogramming, debug, etc.)	OFF

1-6. Note for Replacement of IC or Board

This section explains the necessary setups required when replacing ICs or parts.

- When any of the following boards is replaced, upgrade the firmware version.
All data are written at once when upgrading the firmware version. (Refer to “ ”.)

Board Name	Ref. No.
AU-360	IC800
DCP-67	IC503
DPR-362	IC0703, IC2200, IC2500, IC3101, IC3102, IC3704, IC4400, IC4602, IC4903, IC5002
FP-208	IC302, IC404, IC503
HPR-53	IC800, IC801
TG-287	IC104

- When the following board is replaced, upgrade the firmware version alone. (Refer to “ ”.)

Board Name	Ref. No.
WM	U11

- Adjusted values are stored in the following boards and parts. The values need to be readjusted when they are replaced.

Board Name	Ref. No.
TG-287 *1	IC008
DPR-362	IC703 (The same data are stored in the IC008 on the TG-287 board), IC2002, IC3101, IC3102, IC4400, X2000
WM	U12

- Service of PA-422/423/424 boards

The PA-422/423/424 boards cannot be replaced on the board-level service or part-level service. If parts become defective, replace the entire CCD block.

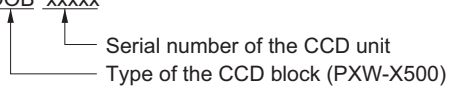
*1: The adjusted values for the CCD block are stored in the TG-287 board.

1-7. Description of CCD Block Number

All of the CCD units have their unique ID numbers. This number is called the CCD block number indicating the type of the CCD block and serial number.

The label indicating the CCD block number is attached inside of each CCD unit.

Example) OOB xxxxx



1-8. Replacing Lithium Battery

The FP-208 board (inside panel assembly) is equipped with the lithium battery for time of the internal clock.

If the message “Backup Battery End Please Change” appears in the LCD monitor or viewfinder, this battery must be exchanged.

After replacing it, refer to “Using the Unit for the First Time” of the operating instructions, and set the date and time of the internal clock.

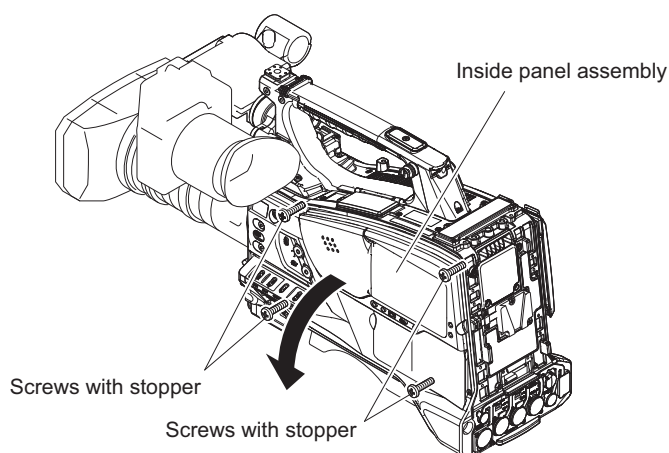
Part No.	Name	Usage
△ 1-528-174-72	Lithium Battery (CR2032 type)	For internal clock

Replacing procedure

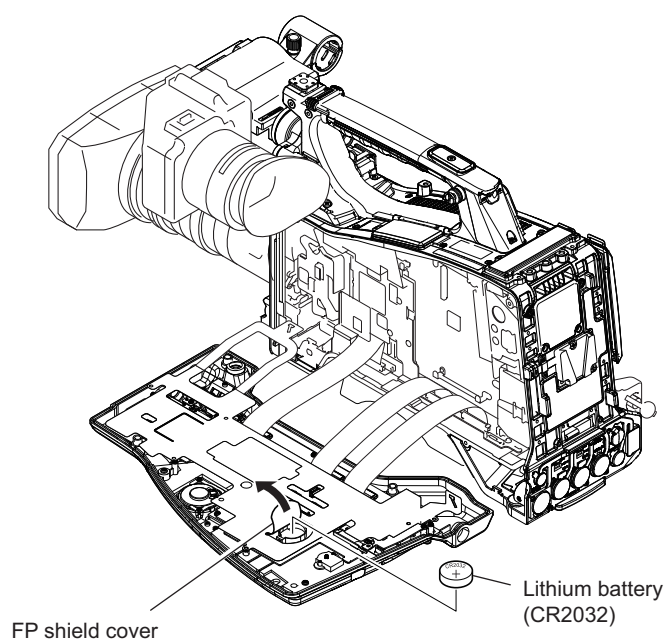
Note

In replacing, ensure that the battery is installed with “+” and “-” poles connected to the correct terminals. Improper connection may cause an explosion or leakage of fluid, resulting in injury or damage to surrounding properties.

1. Loosen the four screws with stopper and remove the inside panel.



2. Turn over the FP shield cover and replace the lithium battery (CR2032) on the FP-208 board.



3. Attach the inside panel assembly by reversing the steps of removal.

4. Set the date and time of the internal clock. (Refer to the operating instructions)

1-9. Fixtures/Measuring Equipment List

1-9-1. Fixtures

Part No.	Name	Usage/Note
Commercially available	Grayscale chart	Reflective type (16 : 9), Camera adjustment on market
Commercially available	Star chart	Reflective type, Camera adjustment on market
J-6394-080-A	Grayscale chart	Transparent type (16 : 9), Camera adjustment on market
J-6029-140-B	Pattern box PTB-500	Camera adjustment
Commercially available	Mini USB cable	For firmware version-upgrade
J-6325-110-A	Bit for torque driver (M1.4)	For tightening screw
J-6325-380-A	Bit for torque driver (M2)	For tightening screw
J-6323-430-A	Bit for torque driver (M3)	For tightening screw
J-6326-120-A	Hexagon bit (For torque screwdriver) (size 1.5)	For tightening screw
J-6325-400-A	Torque driver (3 kgf • cm) (0.3N • m)	For tightening screw
J-6252-510-A	Torque driver (6 kgf • cm) (0.6N • m)	For tightening screw
J-6252-520-A	Torque driver (10 kgf • cm) (1.0N • m)	For tightening screw
7-600-002-52	ThreeBond (TB-1401B)	For preventing screw from being loosened
Commercially available	Loctite (408)	Instant adhesives
Commercially available	BOX driver (Width across 4 mm)	For tightening hexagonal support

1-9-2. Measuring Equipment

Use the calibrated equipment or equivalent as listed below for the adjustments.

Equipment	Model name
AC adapter	SONY AC-DN10/DN2B
Oscilloscope	TEKTRONIX TDS3054 or equivalent (150 MHz or more)
HD waveform monitor	TEKTRONIX WFM8300 or equivalent
Frequency counter	Advantest TR5821AK or equivalent
Digital voltmeter	Advantest TR6845 or equivalent
Color monitor	SONY LMD-A240/A220/A170 or equivalent
Luminance meter	Konica Minolta LS-110 or equivalent

1-10. Circuit Protection Parts

1-10-1. Fuse

WARNING

The fuse is critical parts to safe operation. Replace the components with Sony parts whose part number appear in the manual published by Sony. If the components are replaced by any parts other than the specified ones, this may cause a fire or electric shock.

CAUTION

If fuse is replaced while the main power is kept on, this may cause electric shock.

Before replacing fuse, not only turn off the POWER switch but also remove the power cable that is connected to the DC IN connector.

This unit is equipped with fuse. Any an excessive current flow due to abnormality inside the equipment, the fuse blow. If a fuse blows, turn off the main power of the equipment once and inspect inside of the equipment and remove the cause of excessive current. After that, replace the fuse.

Board Name	Ref. No.	Name	Part No.
RE-326	F100, F101	Fuse (15 A /65 V)	△ 1-576-566-21

1-10-2. Circuit Protection Element

This unit is equipped with positive-characteristic thermistors (power thermistors) as circuit protection elements.

The positive-characteristic thermistor limits the electric current flowing through the circuit as the internal resistance increases when an excessive current flows or when the ambient temperature increases.

If the positive-characteristic thermistor works, turn off the main power of the unit and inspect the internal circuit of the unit. After the cause of the fault is eliminated and the positive-characteristic thermistor is cooled down, turn on the main power again. The unit works normally. It takes about one minute to cool down the positive-characteristic thermistor after the main power is turned off.

Board Name	Ref. No.	Part No.	Holding current
CN-3737	TH1	△ 1-802-108-11	1.50 A/20°C
RE-326	TH001, TH600, TH601	△ 1-771-845-21	200mA/20°C
	TH200, TH502	△ 1-802-063-21	1.10 A/20°C
	TH500, TH501	△ 1-802-108-11	1.50 A/20°C

1-11. Lead-free Solder

All boards mounted in this unit use lead-free solder. Be sure to use lead-free solder when repairing the boards of this unit. A lead free mark (LF) indicating that the solder contains no lead is printed on each board. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



: LEAD FREE MARK

Note

- The lead-free solder melts at a temperature about 40 °C higher than the ordinary solder, therefore, it is recommended to use the soldering iron having a temperature regulator.
- The ordinary soldering iron can be used but the iron tip has to be applied to the solder joint for a slightly longer time. The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful.

1-12. Firmware Upgrade

1-12-1. Firmware Upgrade

Refer to the version update procedure supplied with the update package file.

For how to obtain the update package file, contact your local Sony Sales Office/Service Center.

1-13. Electrical Adjustment

When making electrical adjustment, contact your local Sony Sales Office/Service Center.

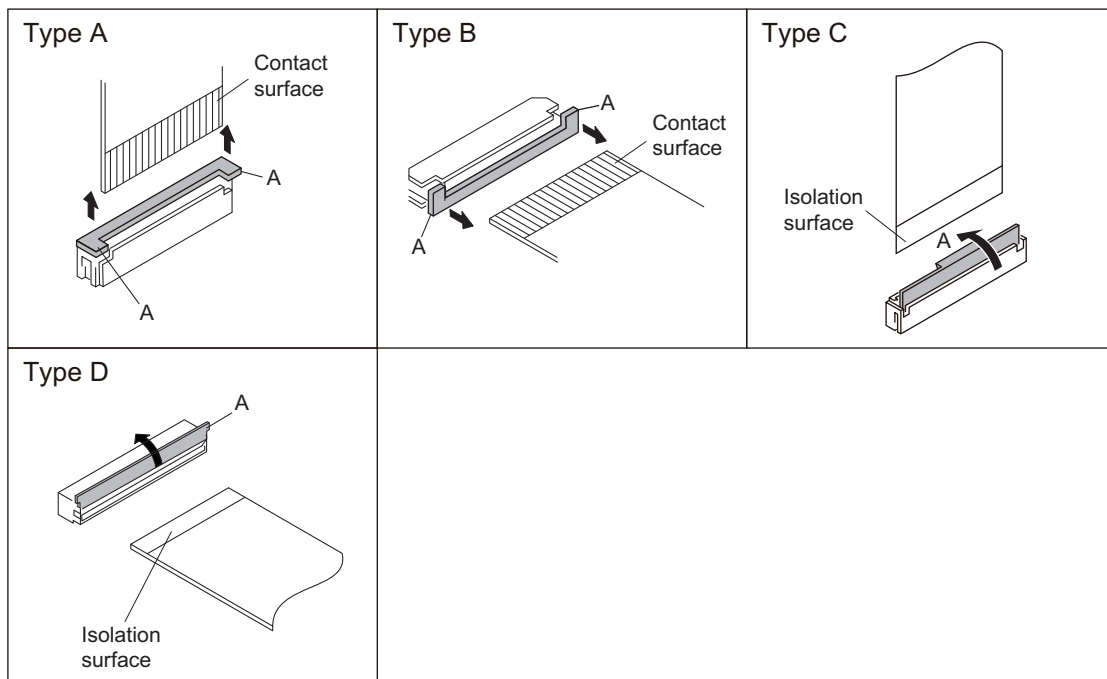
1-14. Flexible Card Wire and Fine-Wire Coaxial Cable

1-14-1. Disconnecting/Connecting Flexible Card Wire

Note

- Be very careful not to fold flexible card wires. Life of flexible card wire will be significantly shortened if it is folded.
- Each flexible card wire has conductive side and insulated side. If the flexible card wire is connected in the wrong orientation of the conductive side and the insulated side, the circuit will not function.
- Insert the flexible card wire straight.
- Check that the conductive side of the flexible card wire is not contaminated.

Type A to D



Disconnecting

1. Turn off the power.
2. Slide or lift up the portion A in the direction of the arrow to unlock and pull out the flexible card wire.

Connecting

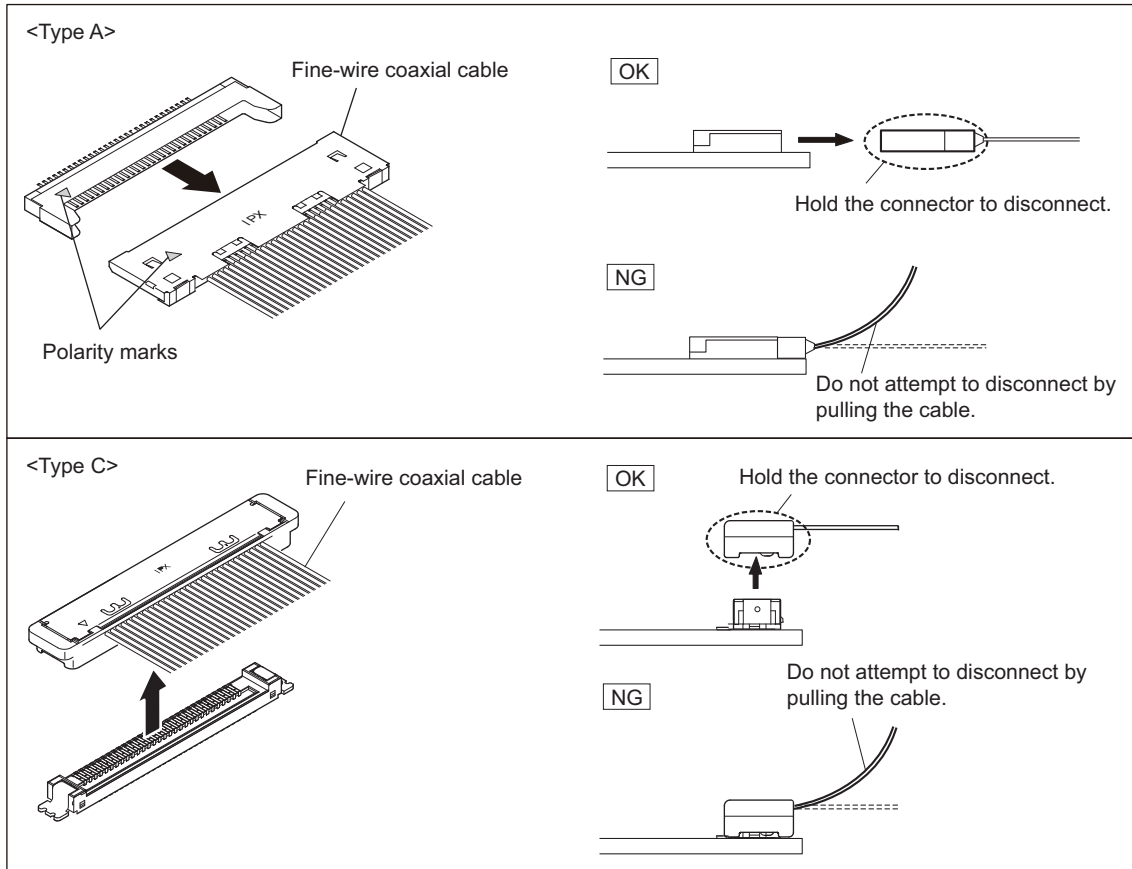
1. Slide or lift up the portion A in the direction of the arrow and securely insert the flexible card wire into the deep end of the connector.
2. Return the portion A to its original position and lock the connector.

1-14-2. Disconnecting/Connecting Fine-Wire Coaxial Cable

Note

- Be very careful when handling the fine-wire coaxial cable so that fine wires are not disconnected.
- When disconnecting the fine-wire coaxial cable, be sure to hold the connector. Do not attempt to pull the cable.

- Check that the contact surface of the fine-wire coaxial cable connector is free from dirt or dust.



Disconnecting

1. Hold the connector and disconnect the fine-wire coaxial cable horizontally or vertically.

Connecting

1. Hold the connector and connect the fine-wire coaxial cable horizontally or vertically while matching the polarity marks.

1-15. Periodic Maintenance and Inspection

1-15-1. Periodic Check/Replacement Parts List

This table does not describe the guarantee period of each part.

The replacement period of each part is changed according to the environment and condition.

Part to Be Replaced	Part No.	Check/Replacement Period
Lithium battery (CR2032)	△ 1-528-174-72	When the warning message is displayed on LCD monitor/viewfinder screen.
DC fan (30 square)	△ 1-855-292-11	About 5 years Tip The total operating time is displayed with the Hours Meter in the System menu. For details, refer to the operating instructions.
Battery terminal (battery adapter)	1-820-459-21	About 5 years Tip The total operating time is displayed with the Hours Meter in the System menu. For details, refer to the operating instructions.

1-15-2. Notes on Replacement of the Battery Terminal

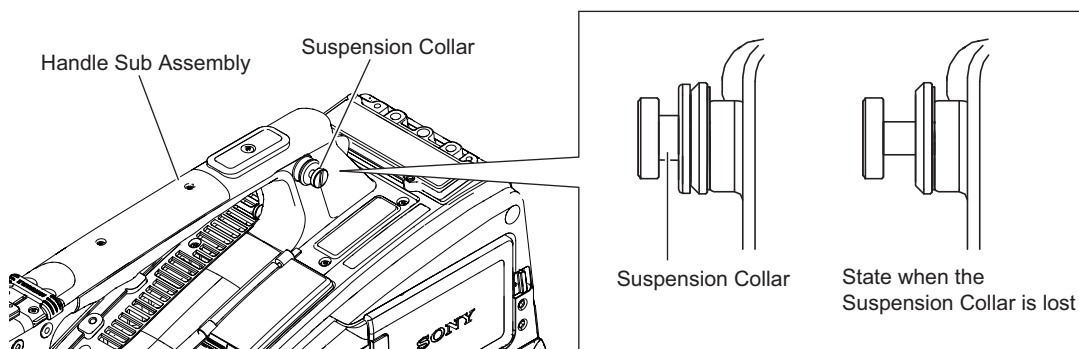
The battery connector in this unit is consumable parts. Replace every about 5 years.

If the terminal of connector is deformed or bends due to vibrations or shock, or if the surface of the terminal corrodes due to long-term outside use or other similar use, the unit may malfunction.

Replace the battery terminal immediately if the terminal is deformed or bends, or if the surface color changes.

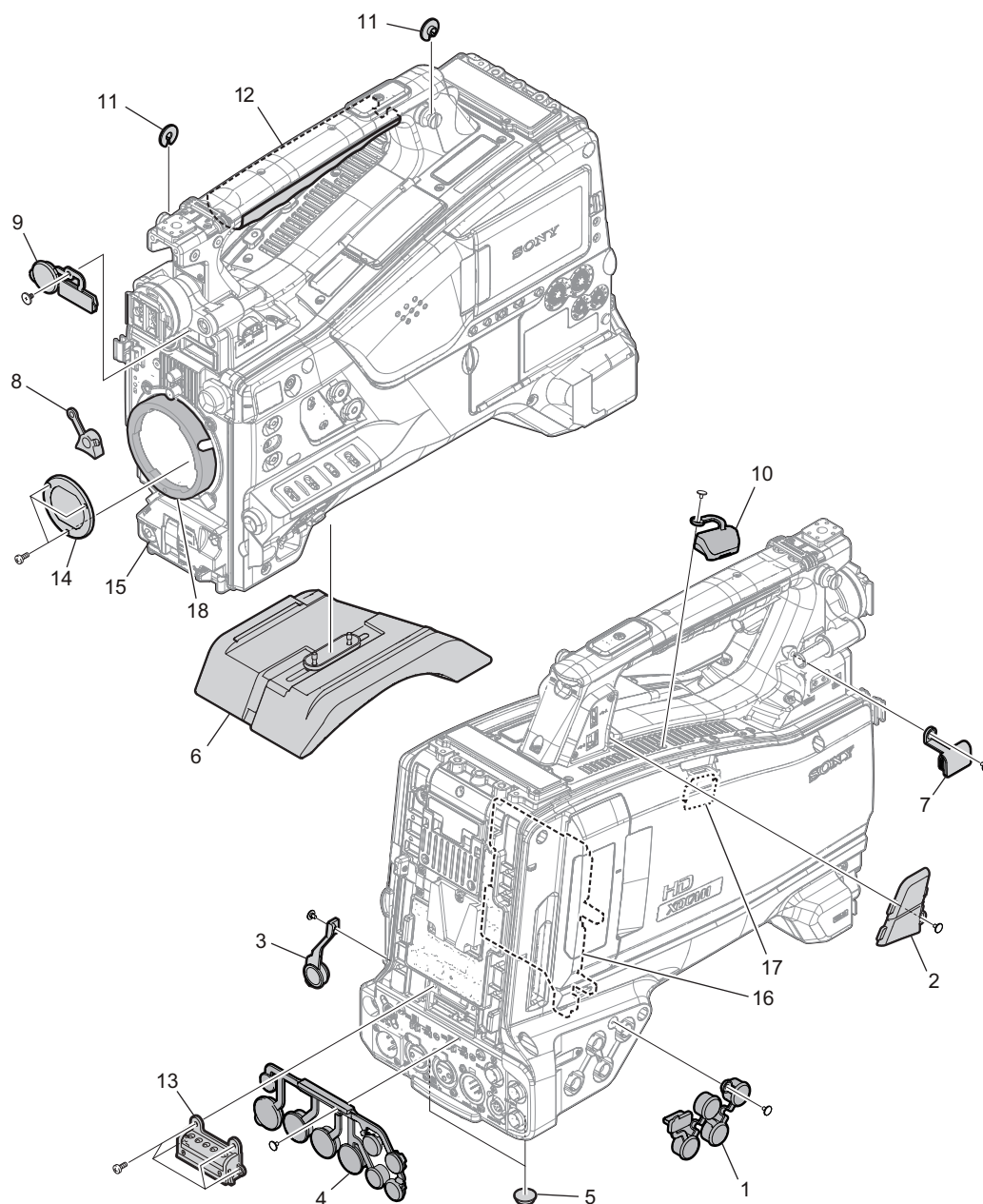
1-15-3. Precaution on Hanging Bracket of Handle

- If the Suspension Collar of the Hanging Bracket is deteriorated (abraded or damaged or lost);
→Replace the Suspension Collar (3-654-615-02).
- If the Hanging Bracket itself is deformed or becomes loose;
→Replace the Handle Sub Assembly (A-2061-149-A).



1-15-4. Recommended Replacement Parts

This section describes the recommended replacement parts and recommended replacement time.



ID	Part Name	Part No.	Recommended Replacement Timing
1	BNC cap	4-168-993-01	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
2	Cap (USB2)	4-264-451-01	
3	Headphone Jack Cover	4-168-991-01	
4	Drop Protection Cover (XLR)	4-545-527-01	
5	Rubber Foot	3-723-097-01	
6	Shoulder Pad Assembly	A-1752-736-B	
7	Cap (Light Connector)	4-168-996-01	
8	Lens Mount Holder	3-796-982-03	
9	Connector Cap	4-169-085-02	
10	Cover (NON DONGLE)	4-545-572-01	
11	Suspension Collar	3-654-615-02	
12	Grip	4-168-997-02	
13	Battery Connector	A-1968-119-A	

Continued

ID	Part Name	Part No.	Recommended Replacement Timing
14	Optical Filter Unit	1-788-765-21	It can become nebulous (intransparent and whitened) with elapse of time. Then it will not meet the required characteristics. Replace it as needed.
15	VTR start Button	3-986-632-02	Replace every about 3 years, or check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.*1
16	EC-82 board	A-2052-066-A	Replace every 5 years.
17	CN-3722 board	A-2057-508-A	Replace every 5 years.
18	Bayonet Ling	3-790-043-11	Replace every 5 years.

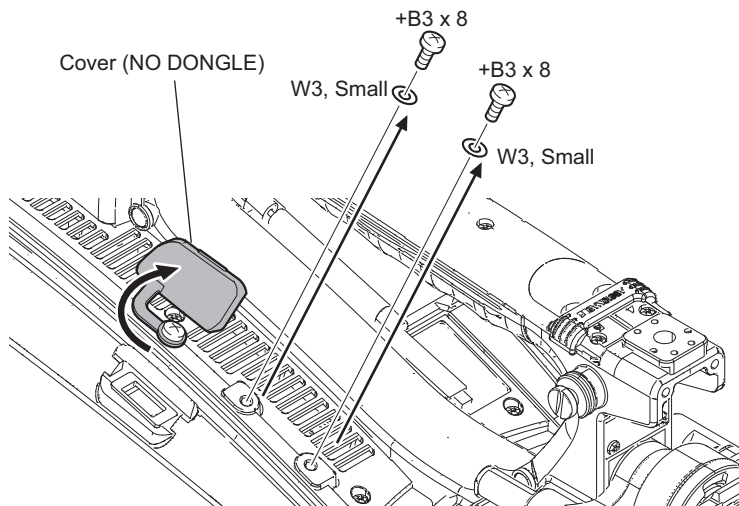
*1: When the part is replaced, apply the instant adhesive (Loctite 408 or equivalent) to the whole area of the flange from the back side with care not to ooze out to cosmetic surface.

1-16. Installation of the Guard

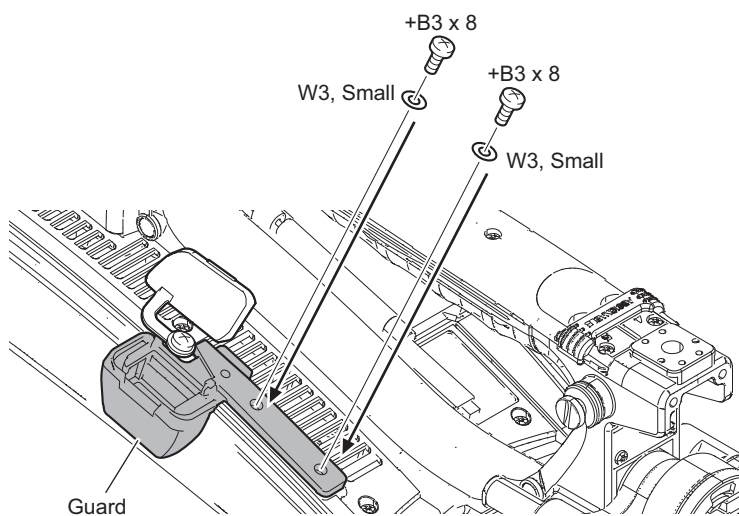
Install the guard (accessory) as the following.

Installing Procedure

1. Open the cover (NO DONGLE).
2. Remove the two screws and the two washers from the main body.



3. Install the guard.
4. Install the two washers, and tighten the two screws.



Section 2

Replacement of Main Parts

2-1. General Information for Parts Replacement

2-1-1. Basic Knowledge

Flexible card wire

When connecting flexible card wires, connect them firmly referring to [“1-14-1. Disconnecting/Connecting Flexible Card Wire Type A to D Disconnecting”](#).

Fine-wire coaxial cable

When connecting fine-wire coaxial cables, connect them firmly referring to [“1-14-2. Disconnecting/Connecting Fine-Wire Coaxial Cable”](#).

2-1-2. Tightening Torque

Torque driver and screw tightening torque

General screws are used in this unit. Be sure to use a torque driver and tighten screws to the specified tightening torque.

Tightening torque

M1.7: $0.19 \pm 0.01 \text{ N}\cdot\text{m}$

M2: $0.2 \pm 0.01 \text{ N}\cdot\text{m}$

M2.6: $0.53 \pm 0.07 \text{ N}\cdot\text{m}$

M3: $0.8 \pm 0.12 \text{ N}\cdot\text{m}$

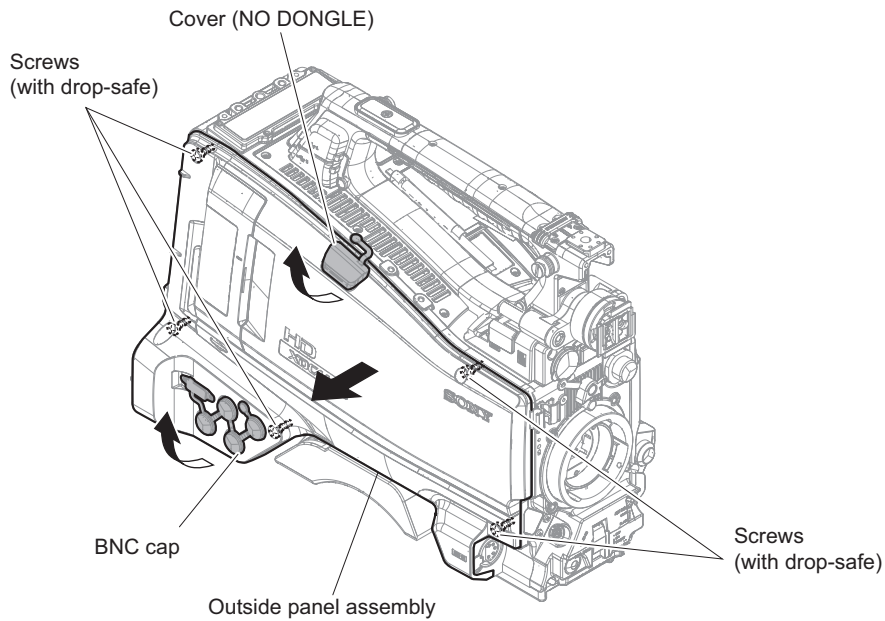
Tip

- When using the torque driver with the notation of $\text{cN}\cdot\text{m}$, interpret it as follows.
Example: $0.8 \text{ N}\cdot\text{m} = 80 \text{ cN}\cdot\text{m}$
- Since small screws are used in the unit, they may fall into the unit when they are removed and installed. To prevent screws from falling, it is recommended that the bit of each torque driver be magnetized to a degree that prevents screws from falling.

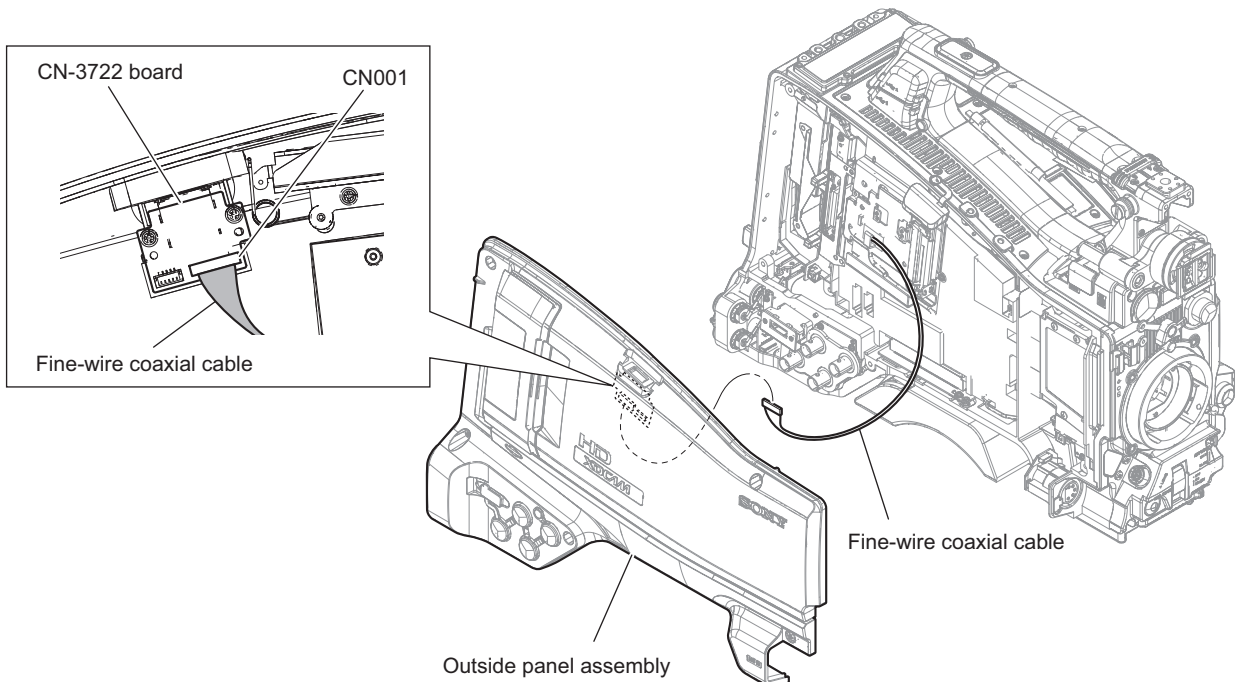
2-2. Outside Panel Assembly

Procedure

1. Draw the outside panel assembly.
 - (1) Open the cover (NO DONGLE) and the BNC cap.
 - (2) Loosen the five screws (with drop-safe) of the outside panel assembly, and draw the outside panel assembly.



2. Disconnect the fine-wire coaxial cable from the connector (CN001) on the CN-3722 board, and then remove the outside panel assembly.



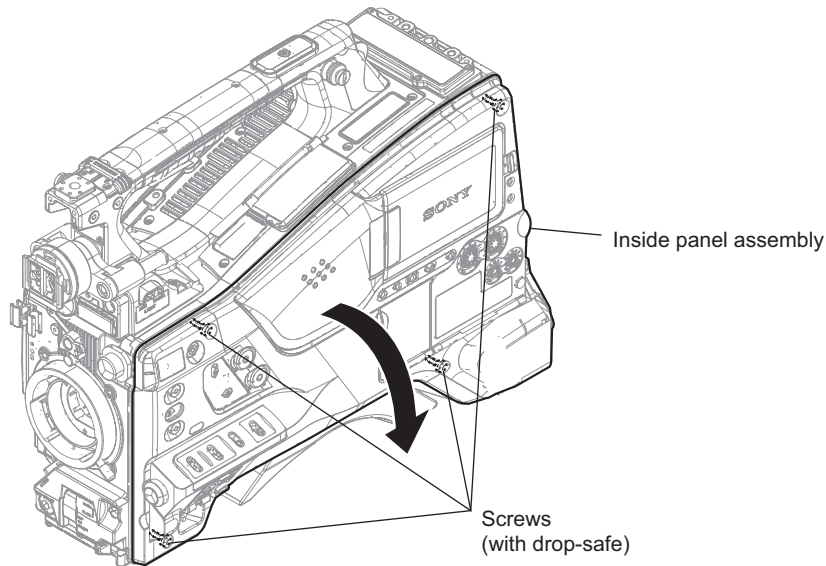
3. Install the removed parts by reversing the steps of removal.

2-3. Inside Panel Section

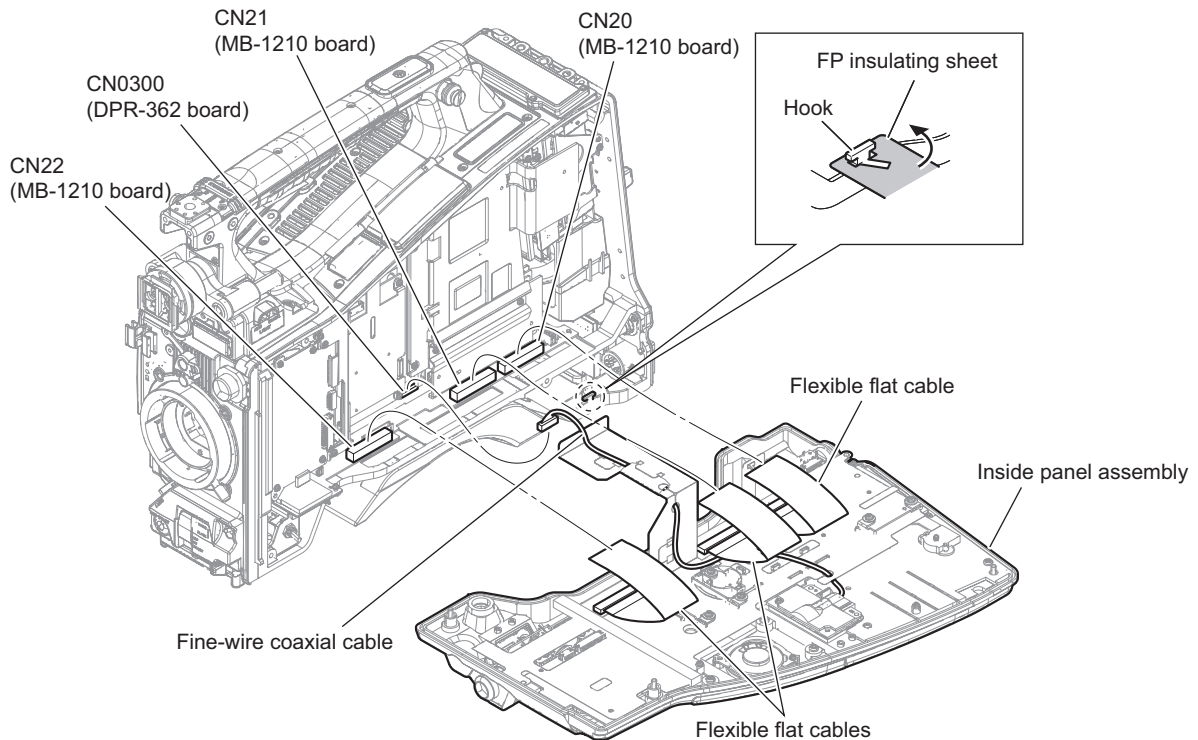
2-3-1. Inside Panel Assembly

Procedure

1. Loosen the four screws (with drop-safe) of the inside panel assembly, and open the inside panel assembly.



2. Remove the inside panel assembly.
 - (1) Disconnect the three flexible flat cables from the connectors (CN20, CN21, CN22) on the MB-1210 board.
 - (2) Disconnect the fine-wire coaxial cable from the connector (CN0300) on the DPR-362 board.
 - (3) Release the FP insulating sheet from the hook on the main frame, and remove the inside panel assembly.



3. Install the removed parts by reversing the steps of removal.

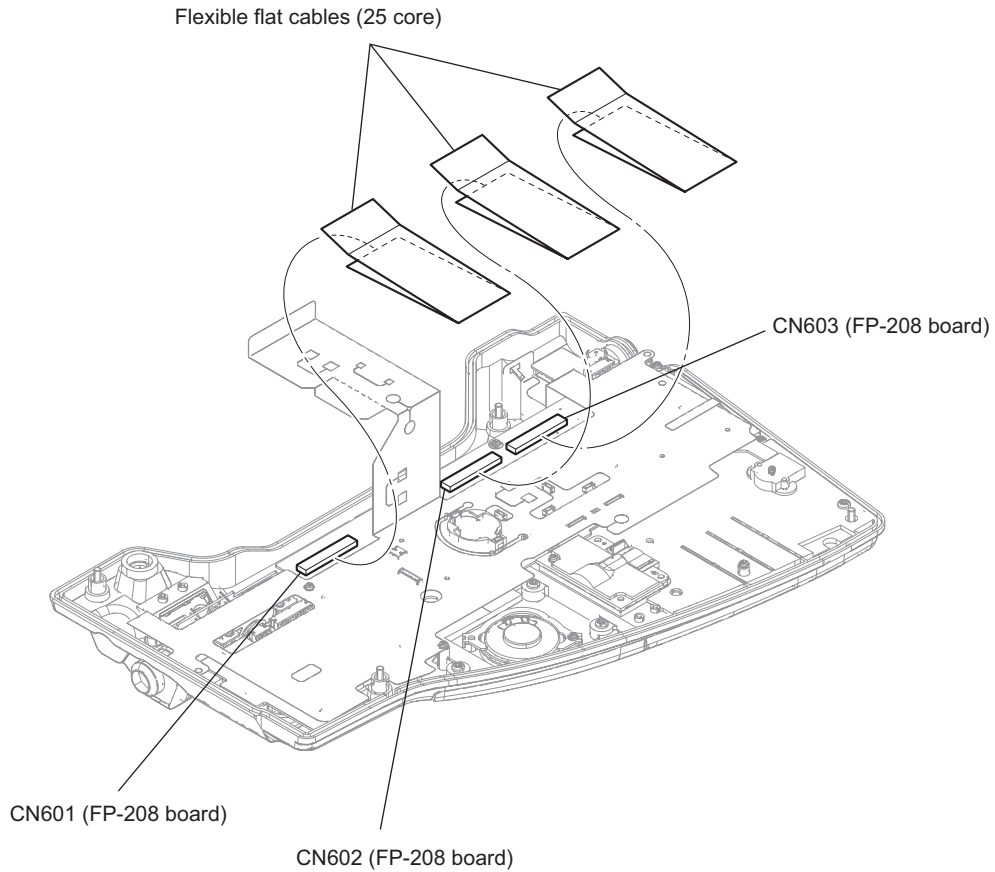
2-3-2. FP-208 Board

Preparation

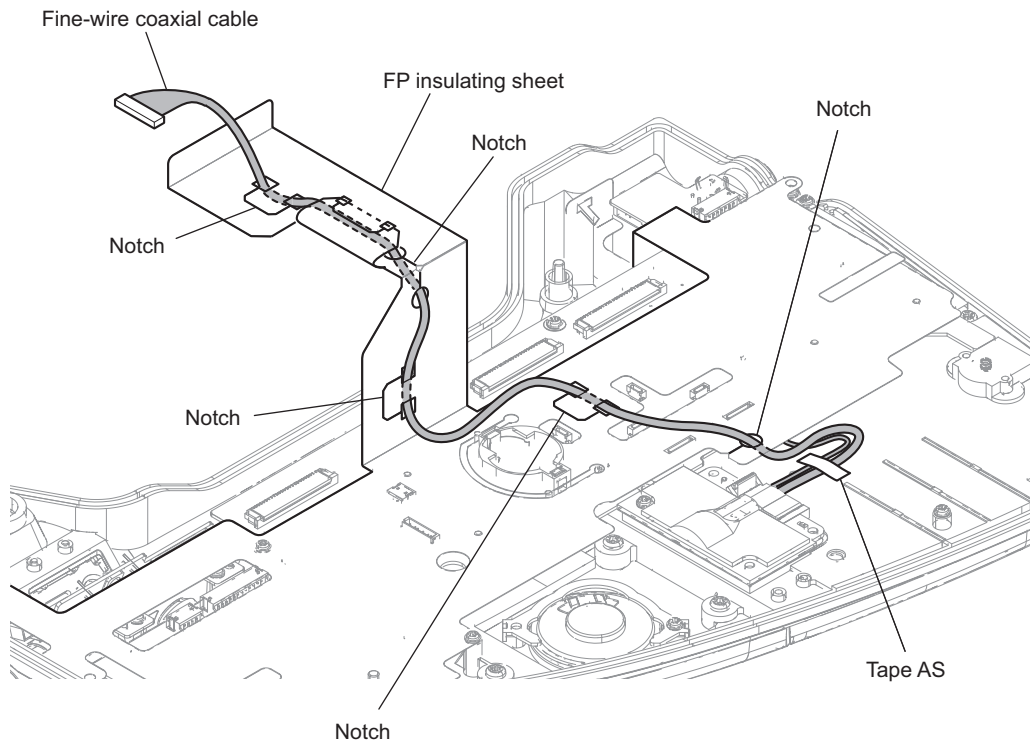
1. Remove the inside panel assembly.(Refer to [“2-3-1. Inside Panel Assembly”](#))

Procedure

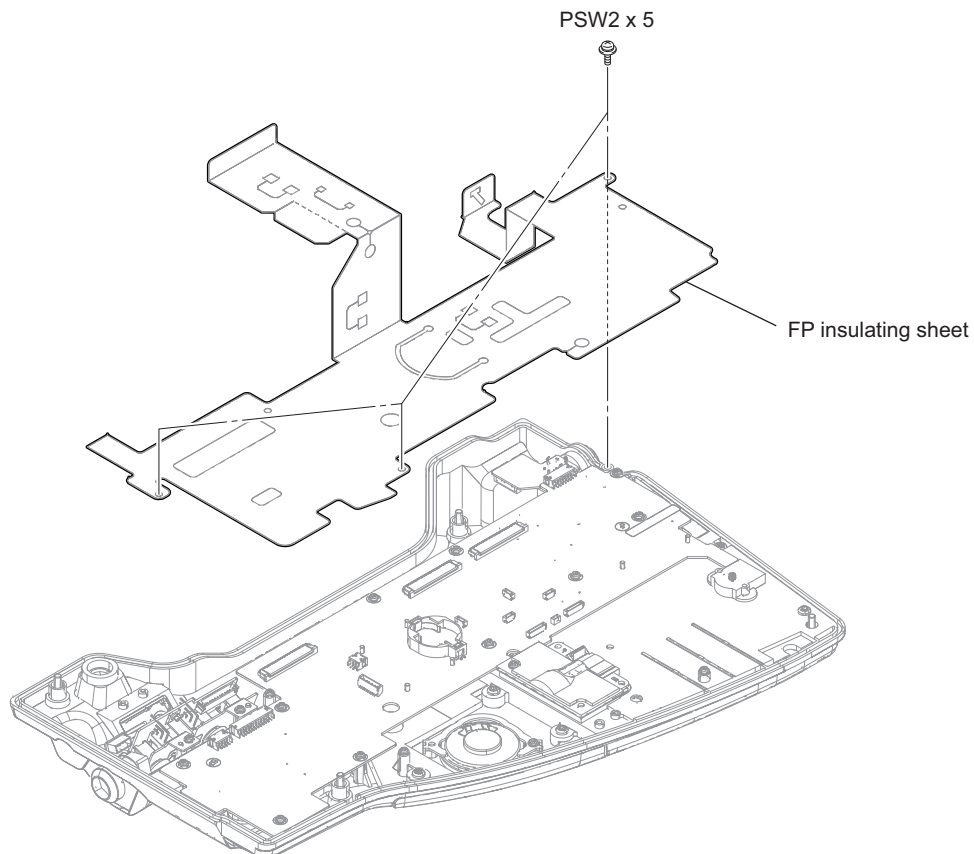
1. Disconnect the three flexible flat cables from the three connectors (CN601, CN602, CN603) on the FP-208 board.



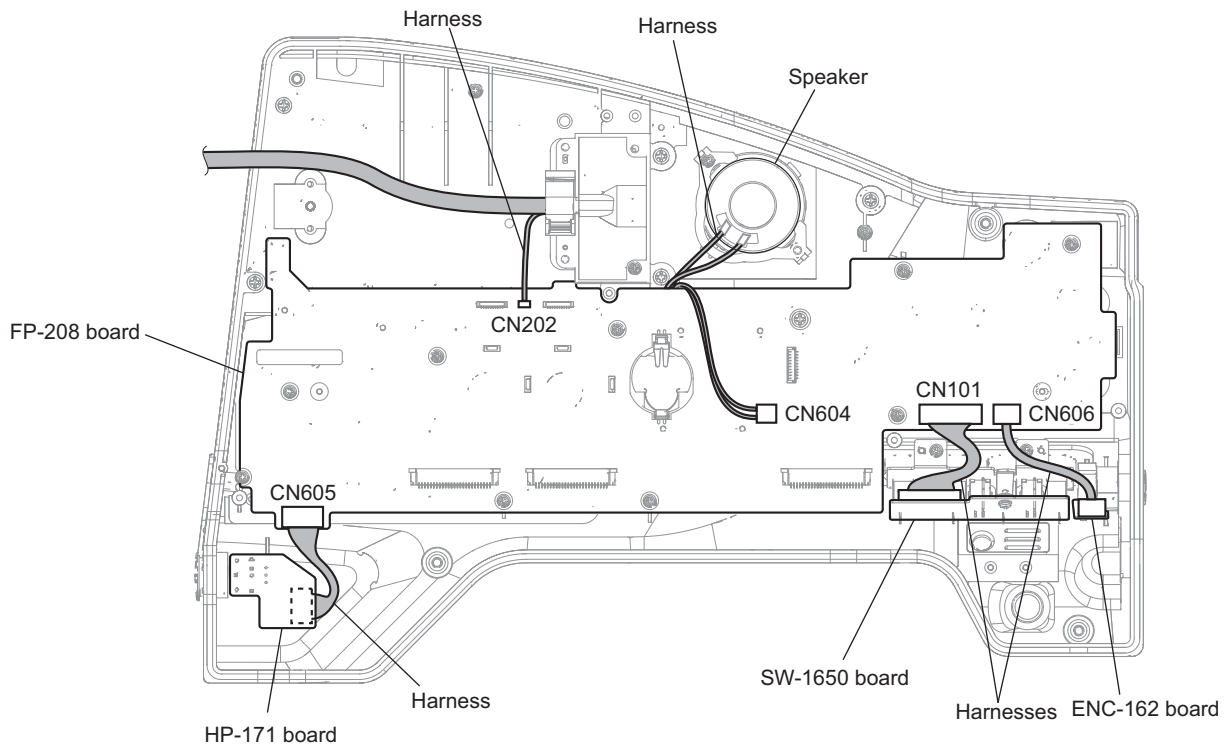
2. Release the fixing of the fine-wire coaxial cable.
 - (1) Release the fine-wire coaxial cable from the five notches of the FP insulating sheet.
 - (2) Remove the tape AS.



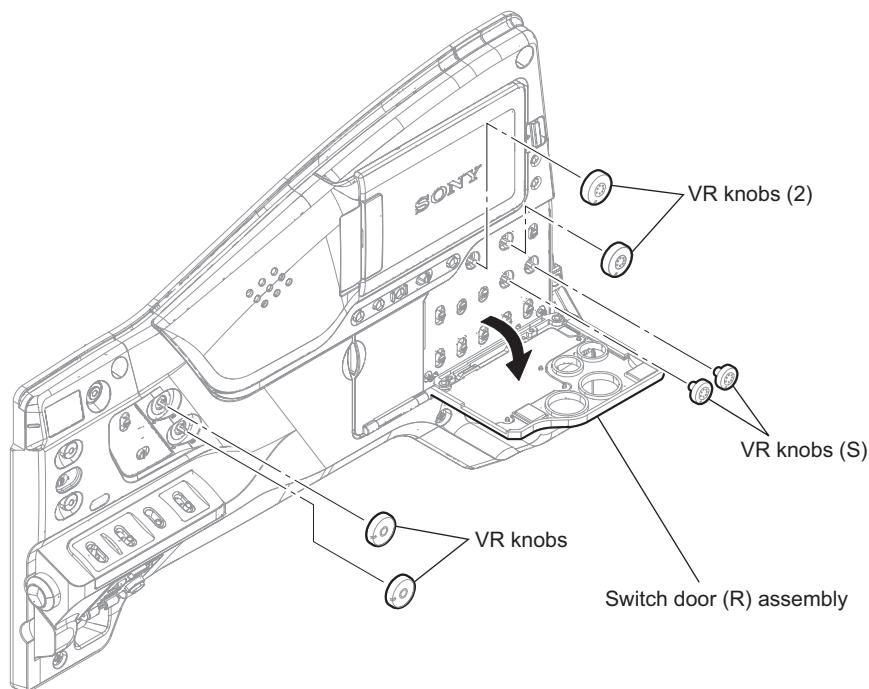
3. Remove the three screws to detach the FP insulating sheet.



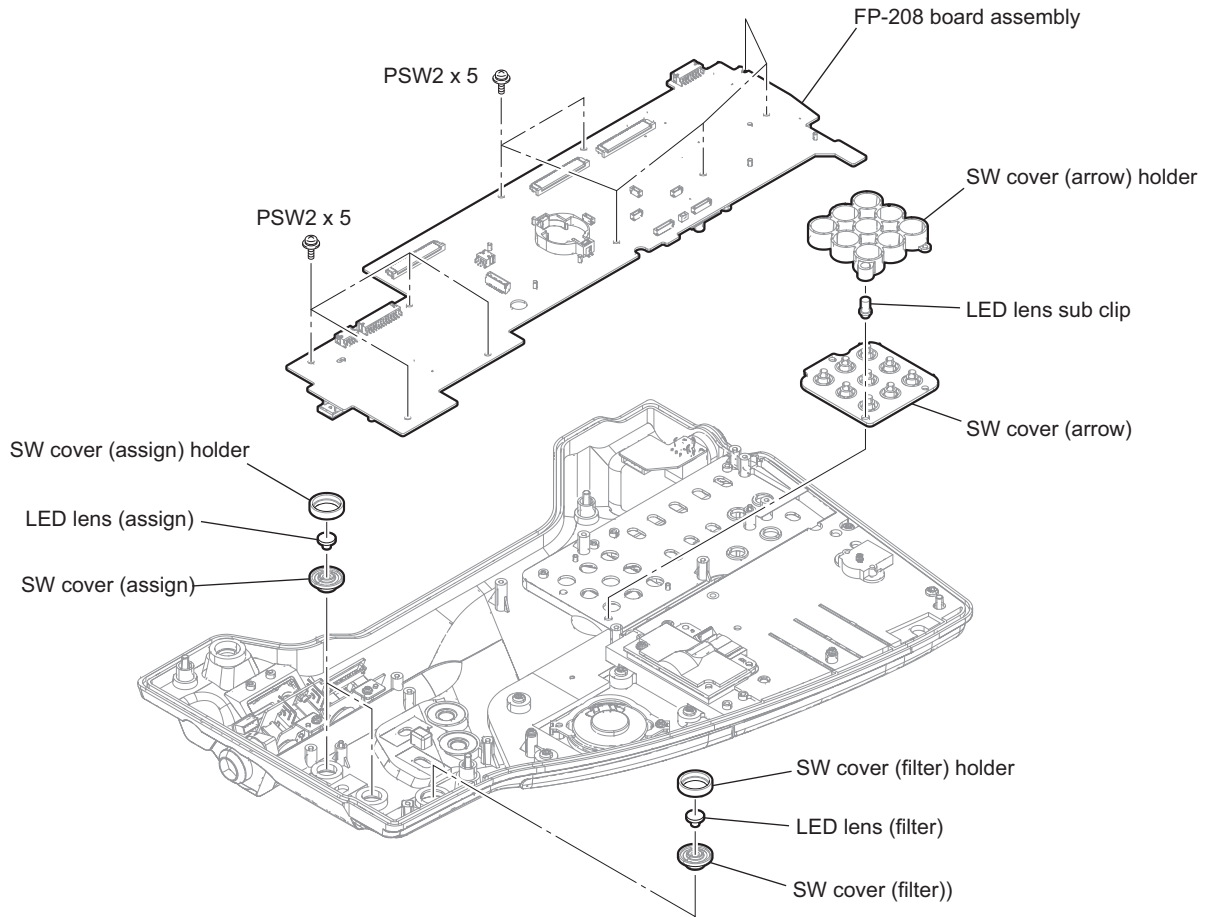
4. Disconnect the five harnesses from the five connectors (CN101, CN202, CN604, CN605, CN606) on the FP-208 board.



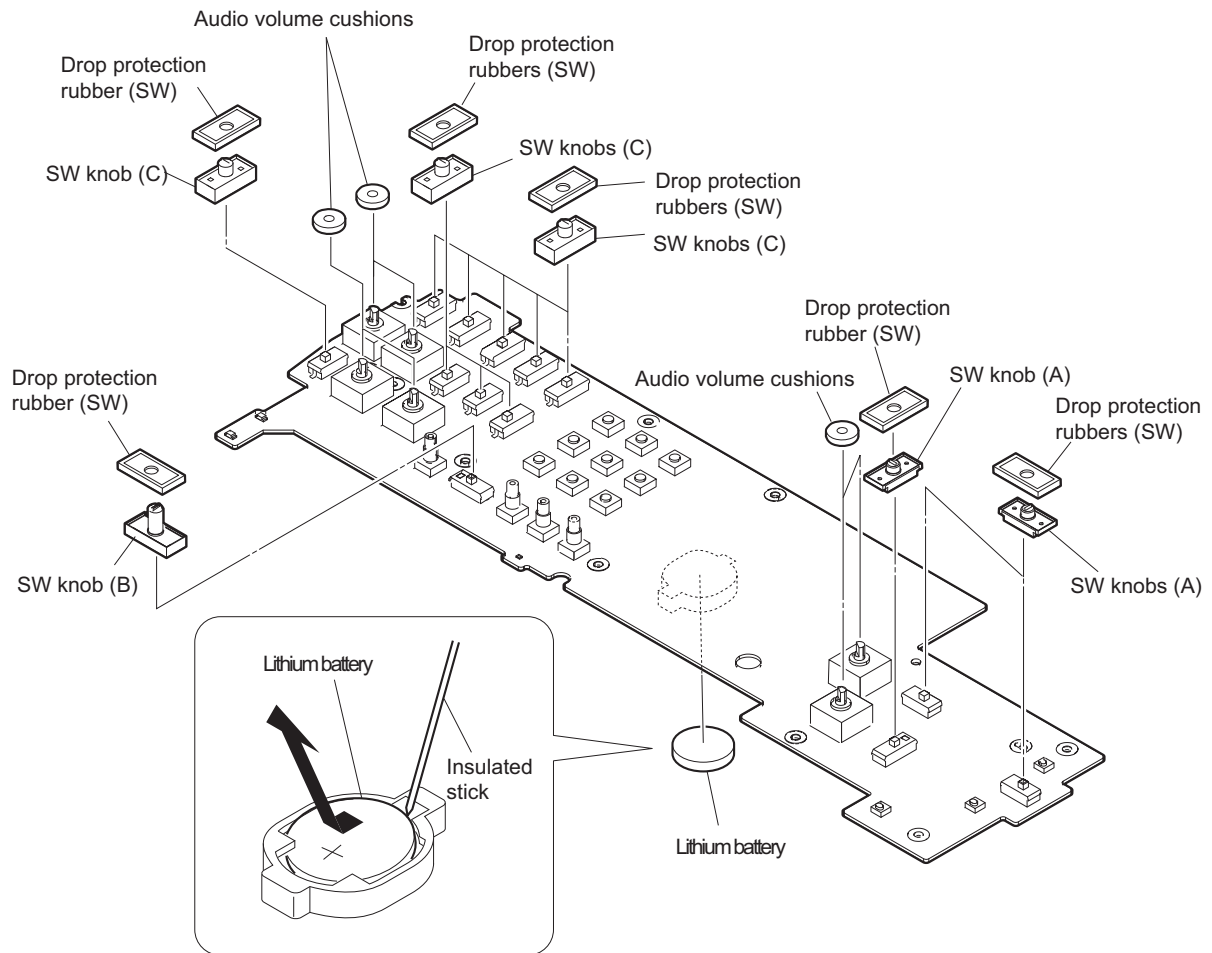
5. Remove the knobs.
 - (1) Remove the two VR knobs.
 - (2) Open the switch door (R) assembly.
 - (3) Remove the two VR knobs (2).
 - (4) Remove the two VR knobs (S).



6. Remove the FP-208 board assembly.
- (1) Remove the ten screws to detach the FP-208 board assembly.
 - (2) Remove the two SW cover (assign) holders, two LED lens (assign), two SW covers (assign), SW cover (filter) holder, LED lens (filter), SW cover (filter), SW cover (arrow) holder, LED lens sub clip, and SW cover (arrow) that were pressed by the FP-208 board assembly.



7. Remove the six audio volume cushions, 13 drop protection rubbers (SW), nine SW knobs (C), SW knob (B), and three SW knobs (A) from the FP-208 board.



Note

When installing the lithium battery, not to mistake the orientation of the lithium battery.

8. Install the removed parts by reversing the steps of removal.

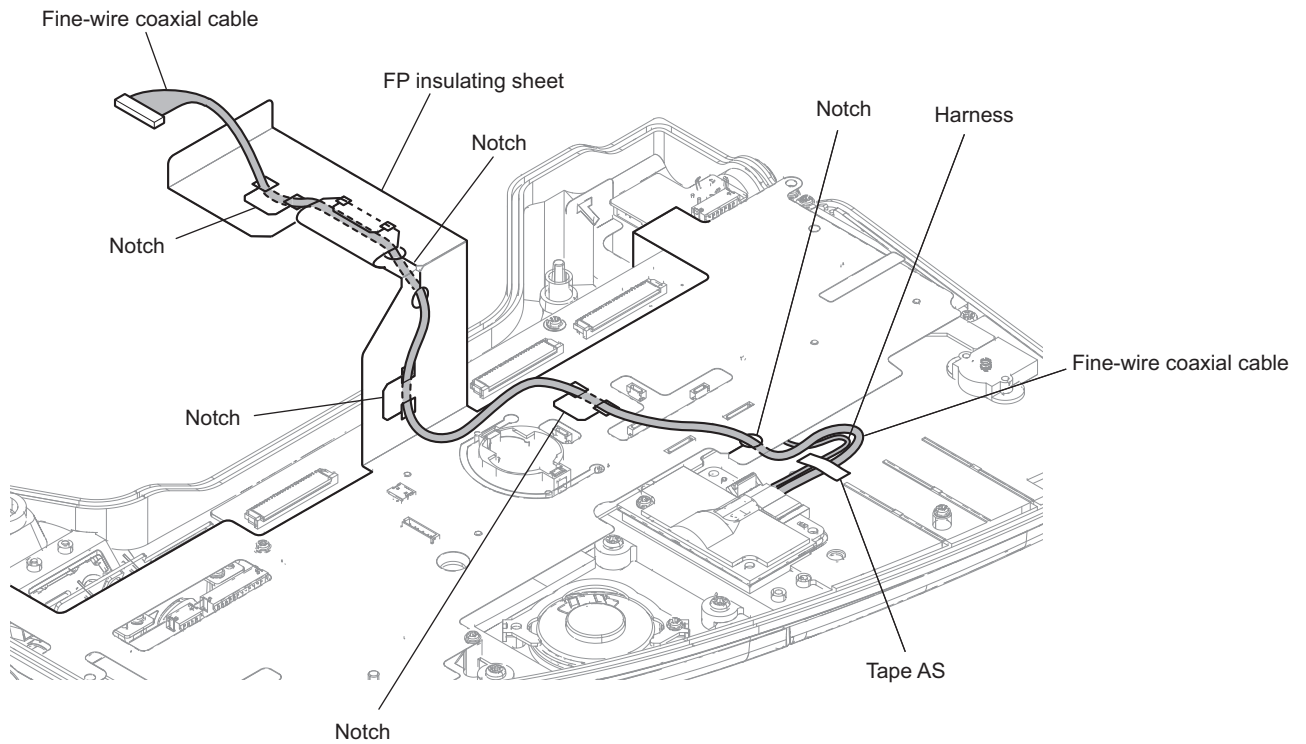
2-3-3. LCD Assembly

Preparation

1. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)

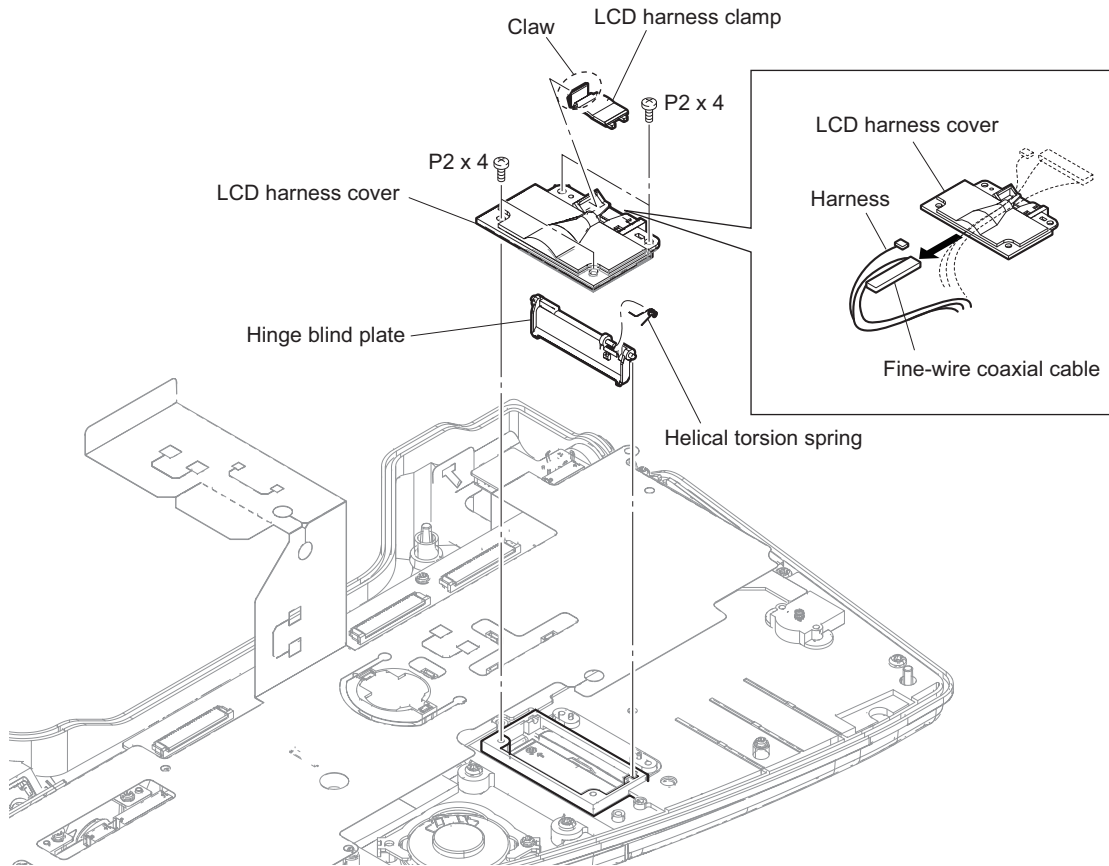
Procedure

1. Release the fixing of the fine-wire coaxial cable and the harness.
 - (1) Release the fine-wire coaxial cable from the five notches of the FP insulating sheet.
 - (2) Remove the tape AS.

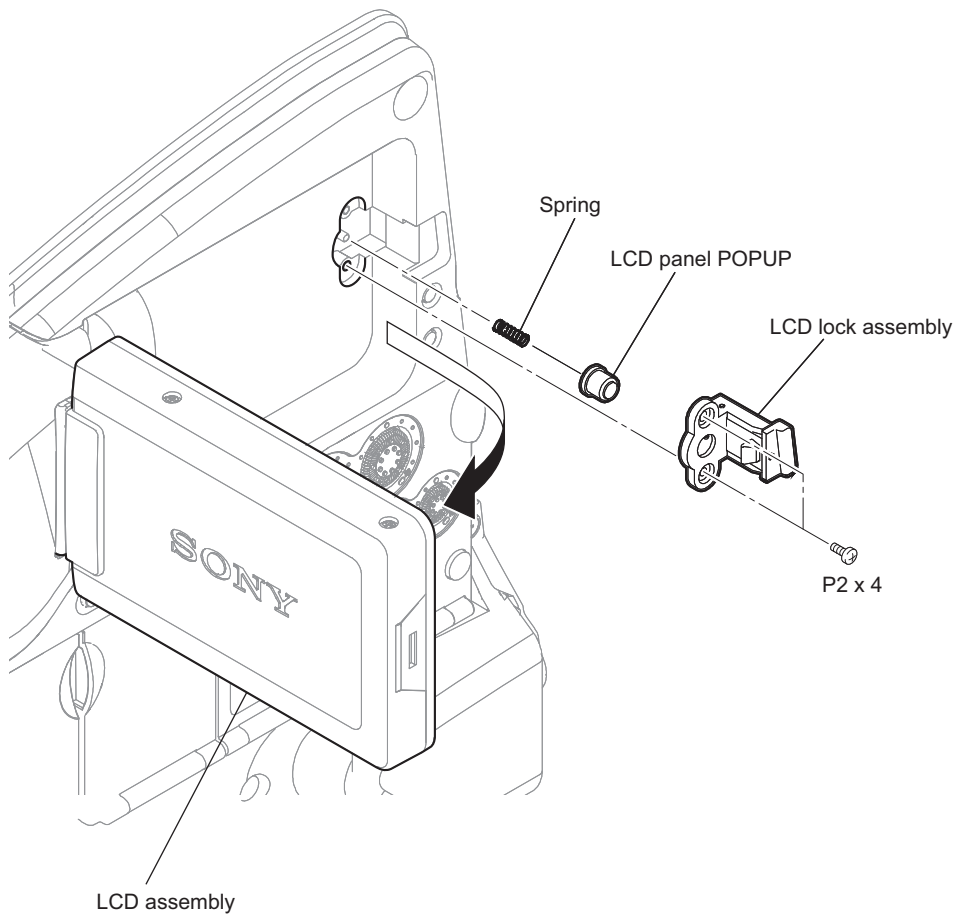


2. Remove the LCD harness cover.

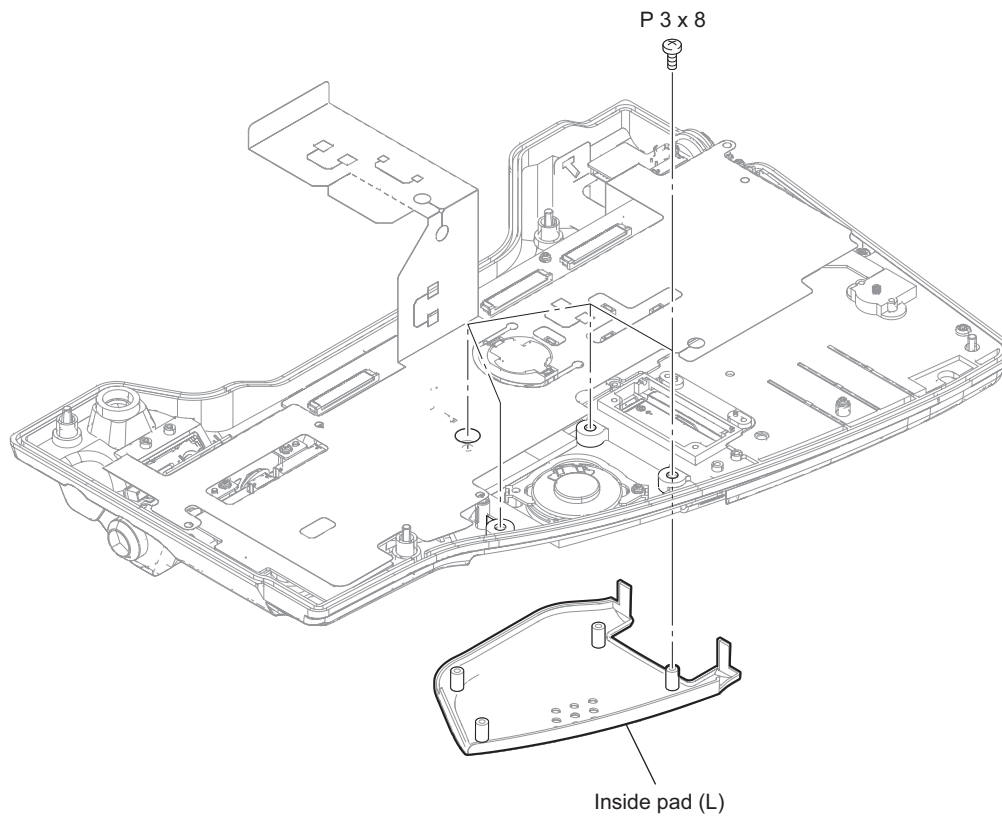
- (1) Release the claw to detach the LCD harness clamp.
- (2) Remove the four screws to detach the LCD harness cover.
- (3) Release the fine-wire coaxial cable and the harness from the hole of the LCD harness cover.
- (4) Remove the hinge blind plate and helical torsion spring.



3. Remove the two screws to detach the LCD lock assembly, LCD panel POPUP, and spring.

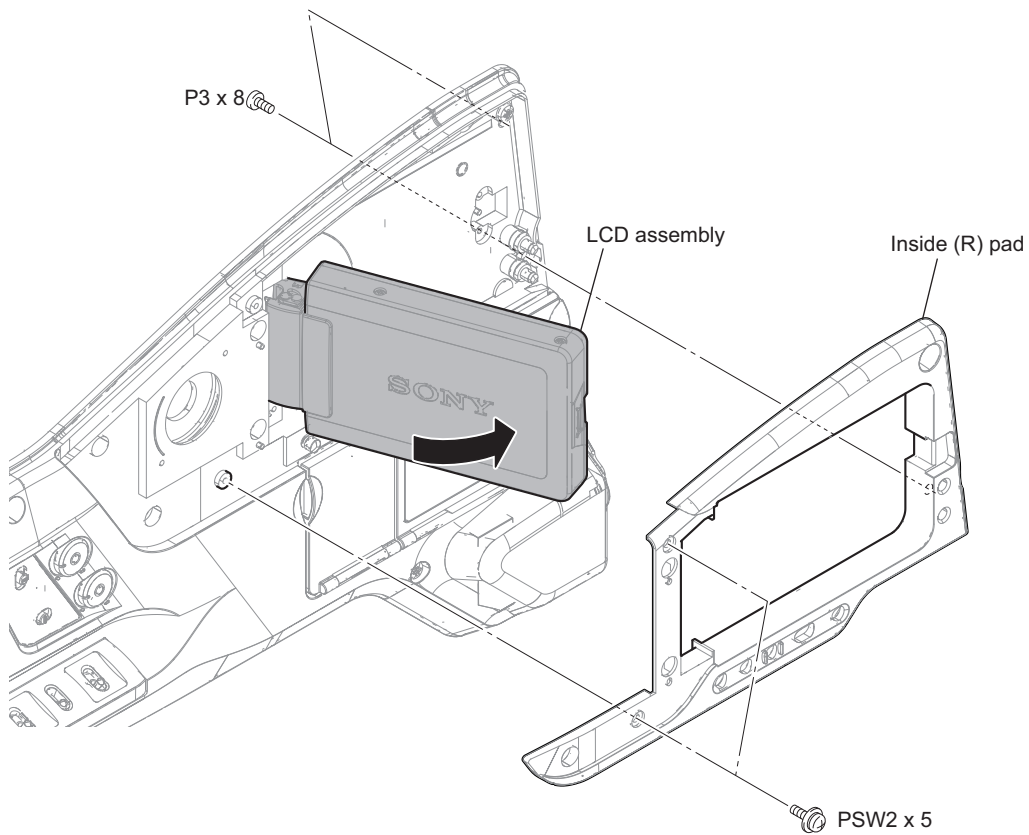


4. Remove the four screws, and remove the inside pad (L).

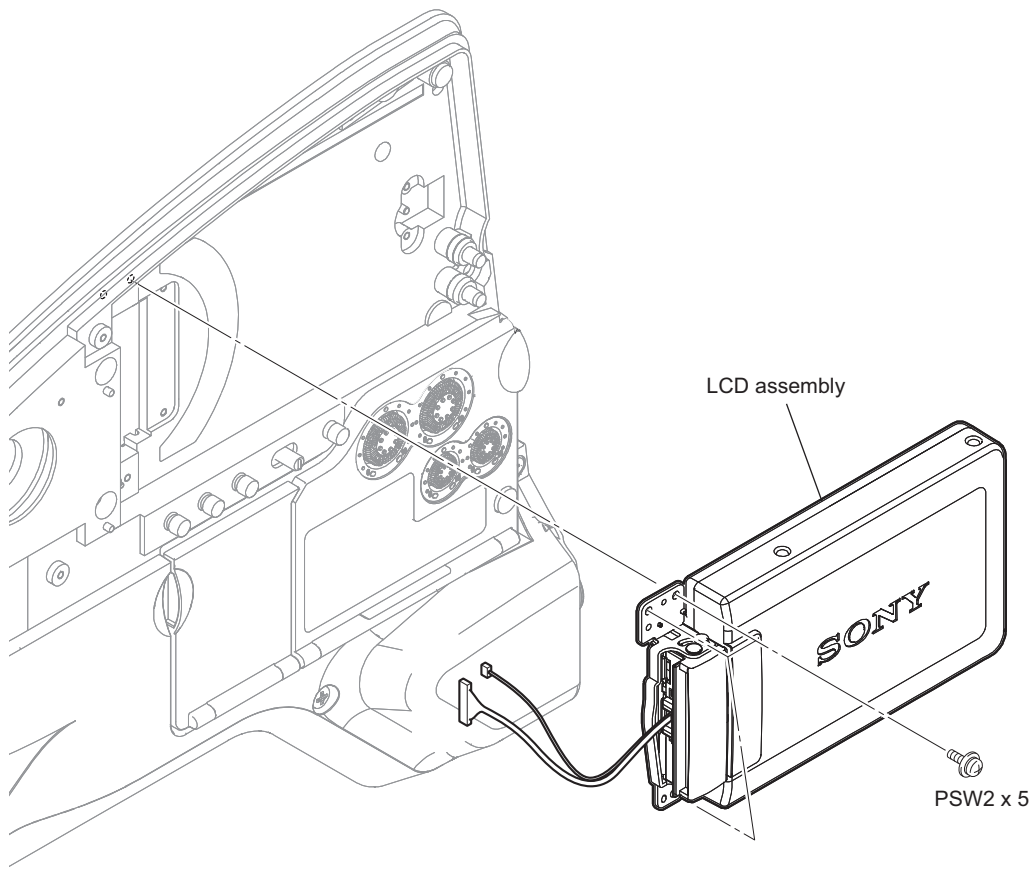


5. Remove the inside (R) pad.

- (1) Turn the LCD assembly as shown in the figure.
- (2) Remove the two screws (PSW2 x 5) and the two screws (P3 x 8), and remove the inside (R) pad.



6. Remove the three screws to detach the LCD assembly.



7. Install the removed parts by reversing the steps of removal.

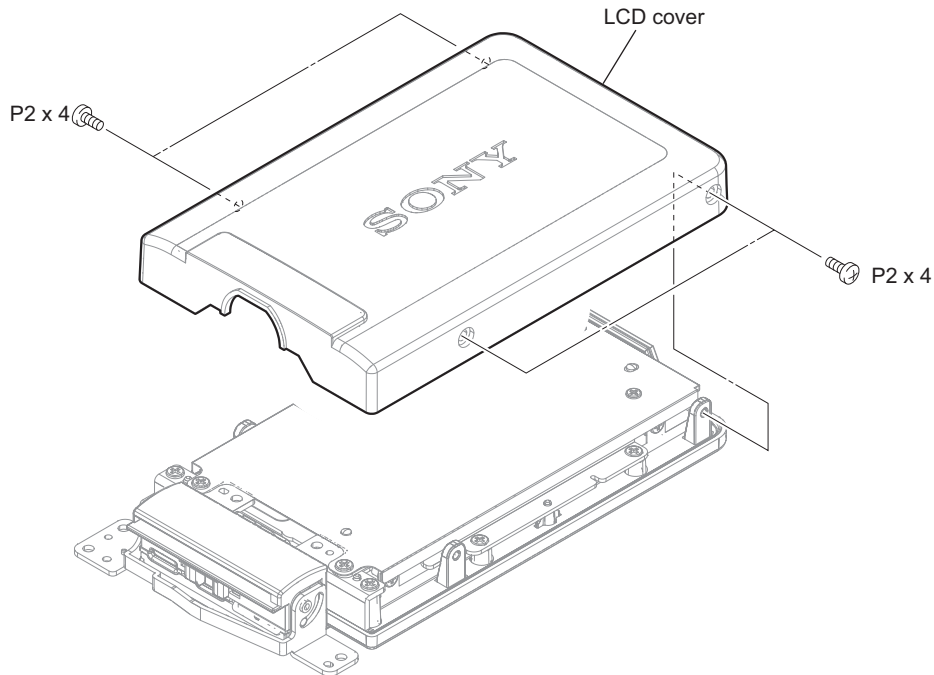
2-3-4. 3.5 inch LCD Assembly

Preparation

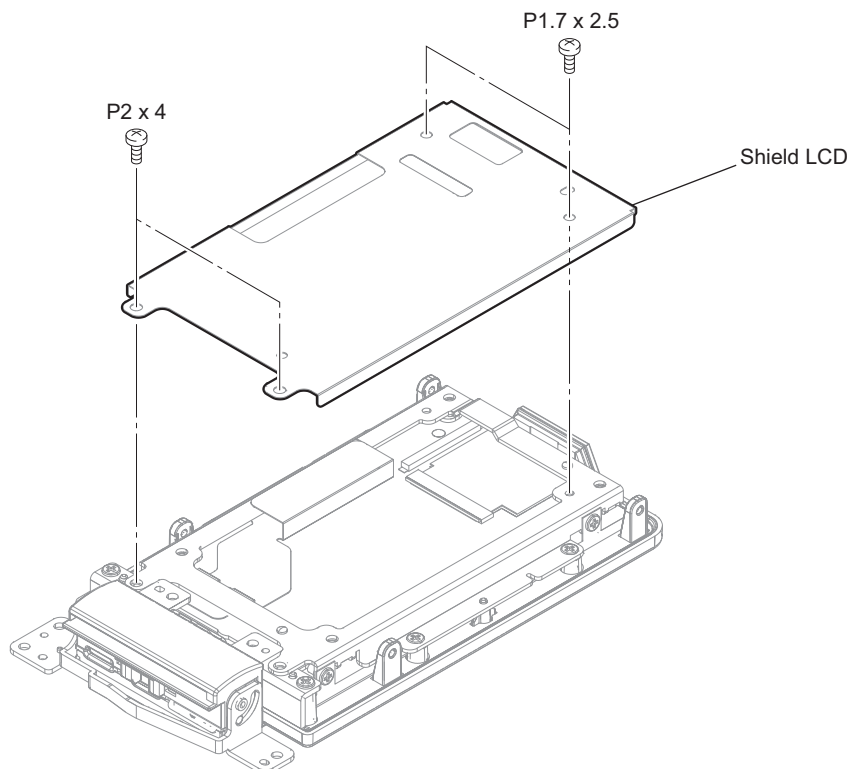
1. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
2. Remove the LCD assembly. (Refer to “2-3-3. LCD Assembly”)

Procedure

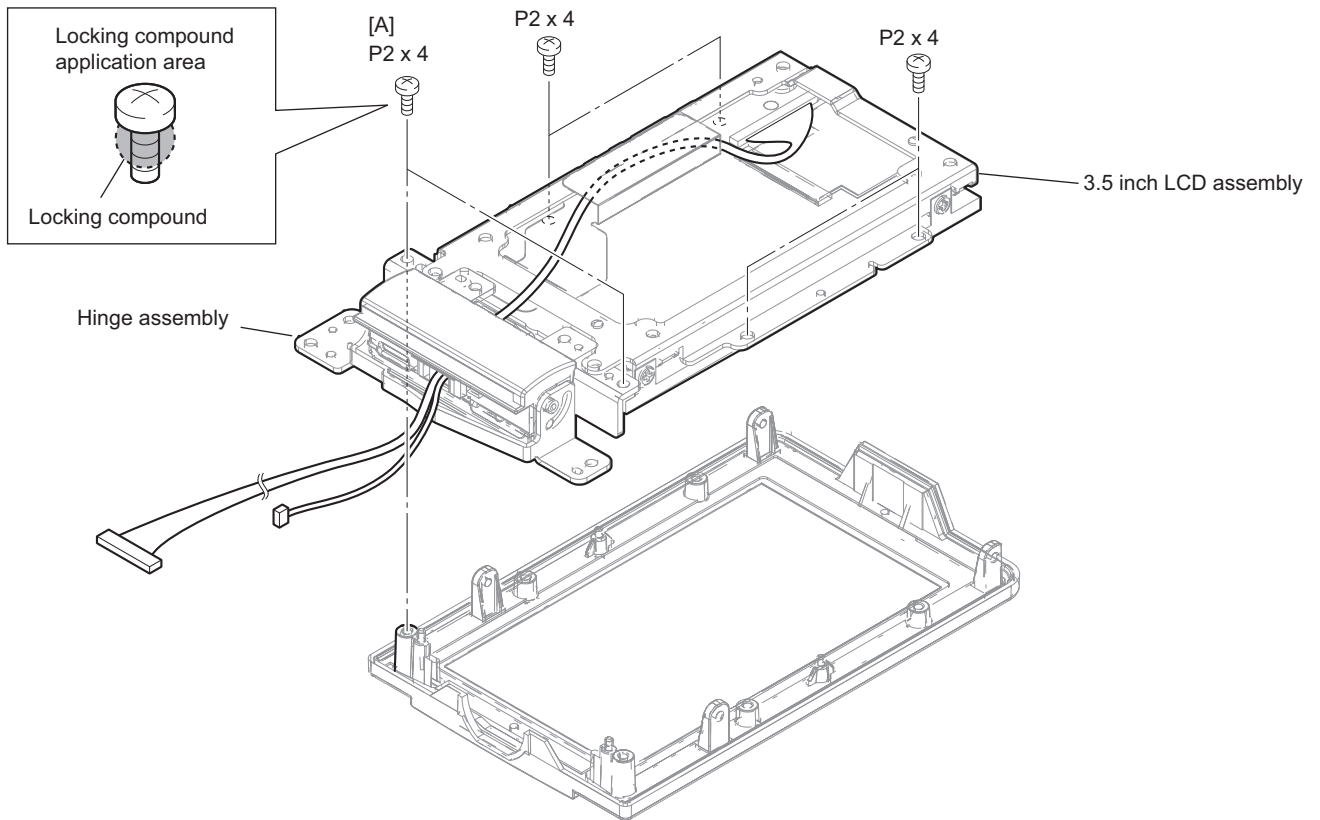
1. Remove the four screws to detach the LCD cover.



2. Remove the two screws (P2 x 4) and the two screws (P1.7 x 2.5), and remove the shield LCD.



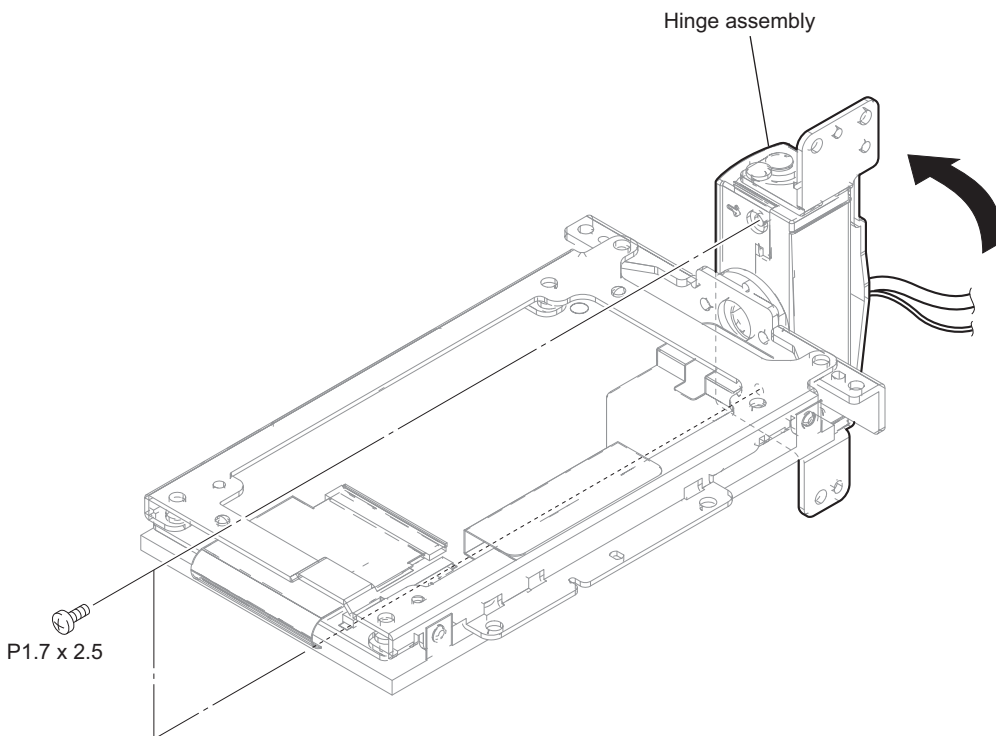
3. Remove the six screws, and remove the hinge assembly and the 3.5 inch LCD assembly.



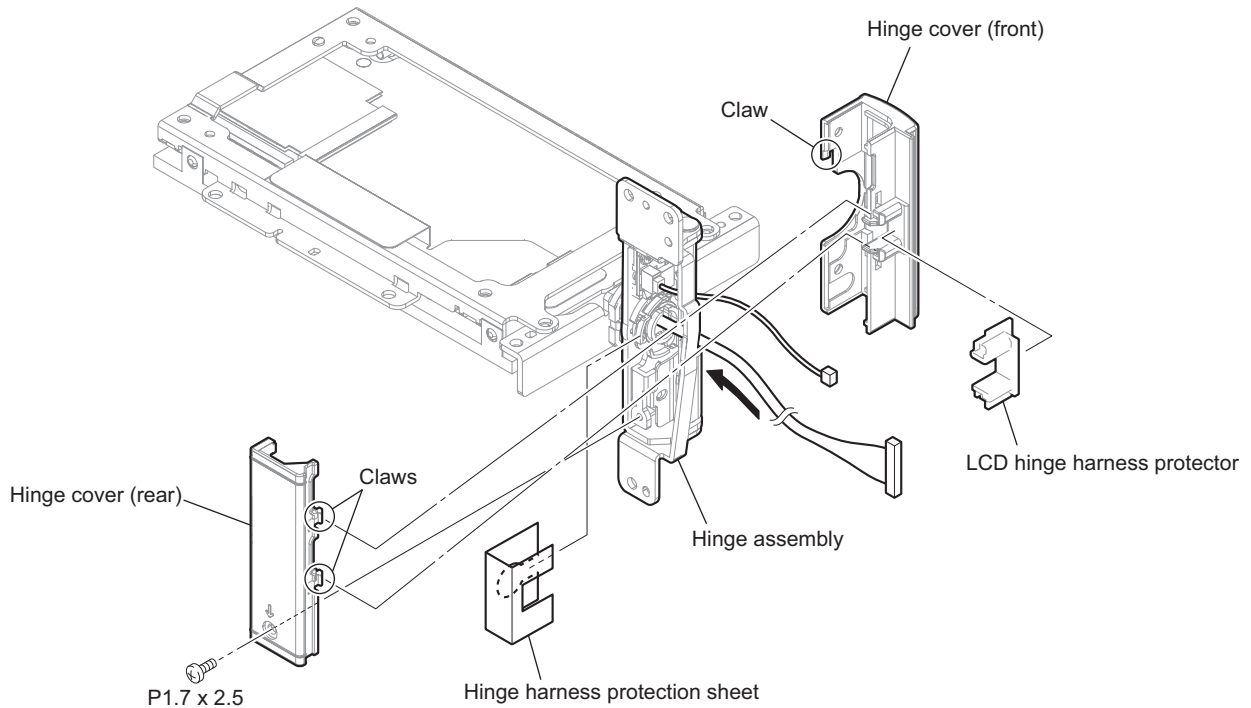
Note

When installing the two screws [A], apply locking compound (about rice grain quantity) to them.

4. Turn the hinge assembly, and remove the two screws.

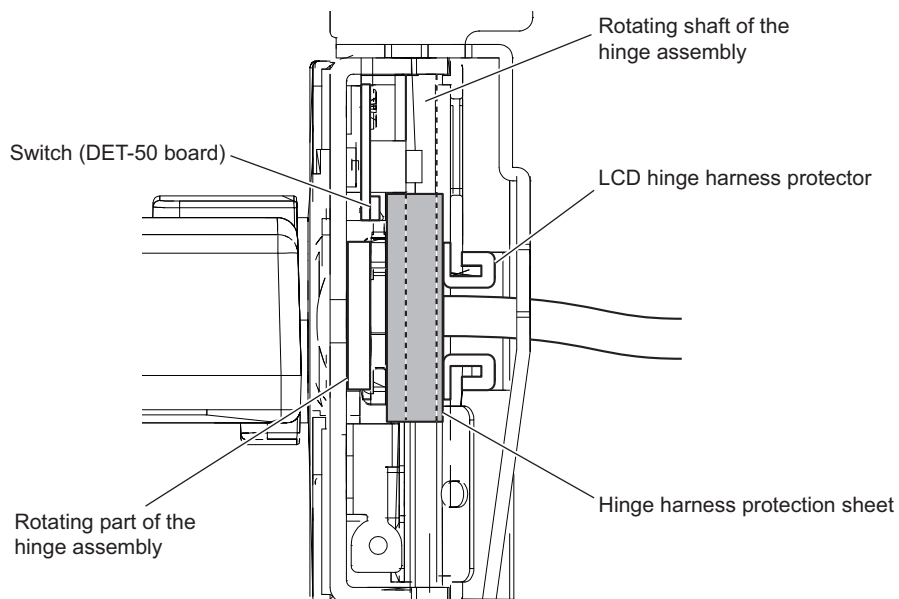


5. Remove the hinge covers.
 - (1) Remove the screw.
 - (2) Release the three claws, and remove the hinge cover (rear), the hinge cover (front) and the LCD hinge harness protector.
 - (3) Remove the hinge harness protection sheet.

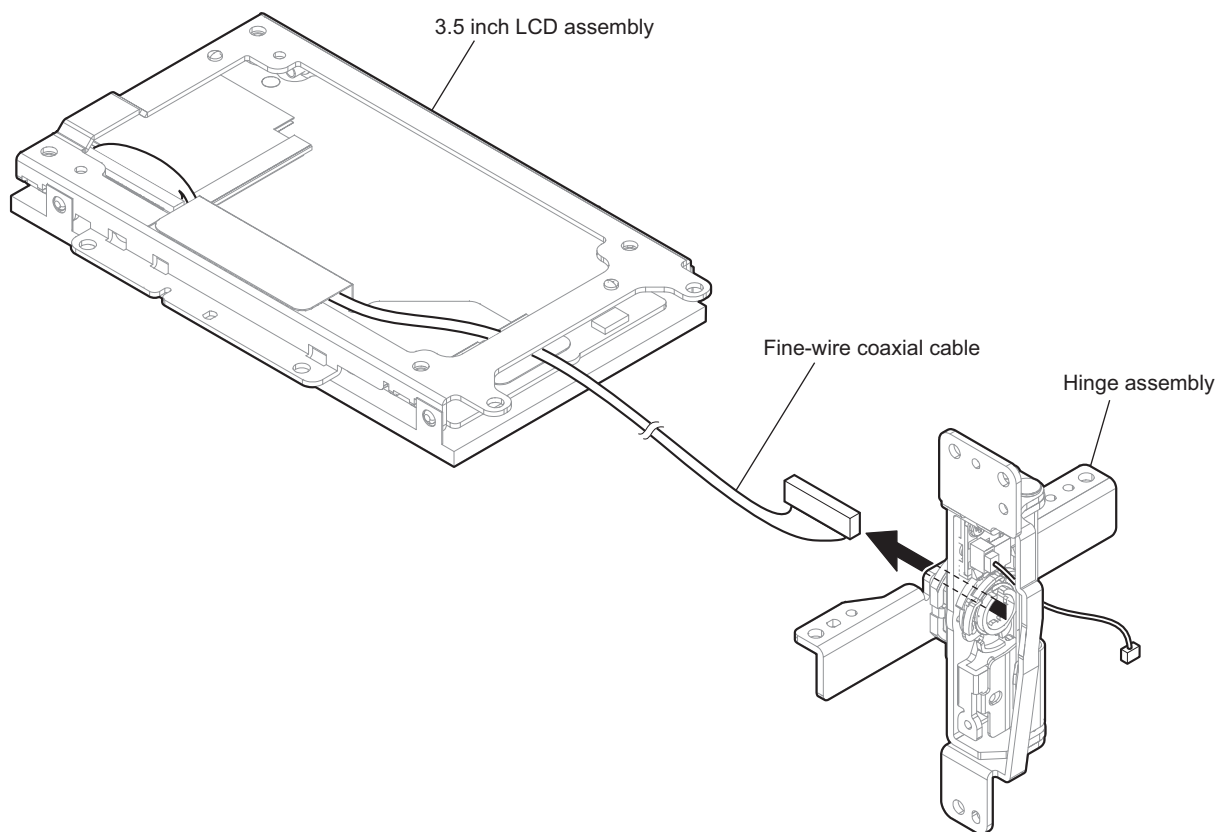


Note

When installing the hinge harness protection sheet, install it to inside between the switch (DET-50 board) and LCD hinge harness protector.



6. Release the fine-wire coaxial cable from the hinge assembly, remove the 3.5 inch LCD assembly.



7. Install the removed parts by reversing the steps of removal.

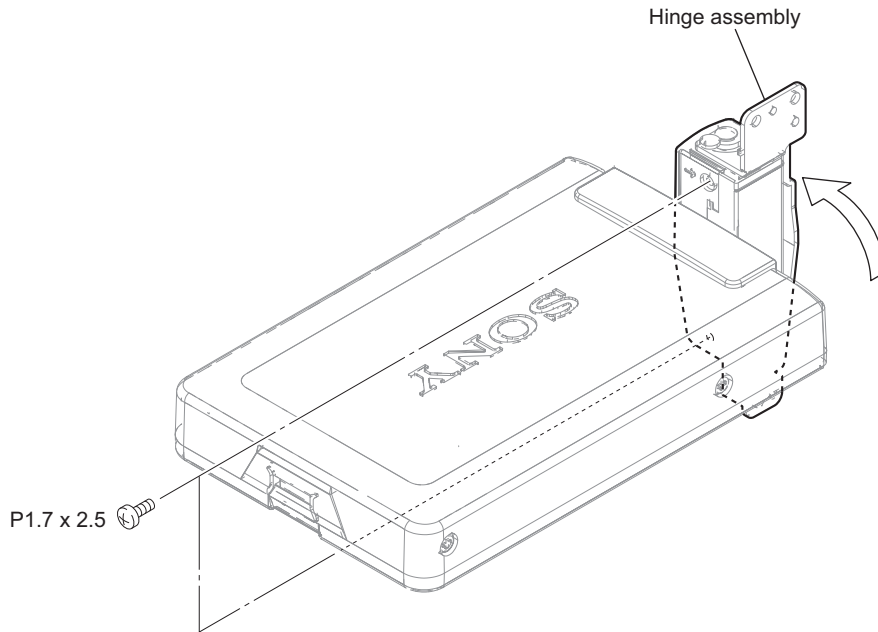
2-3-5. DET-50 Board

Preparation

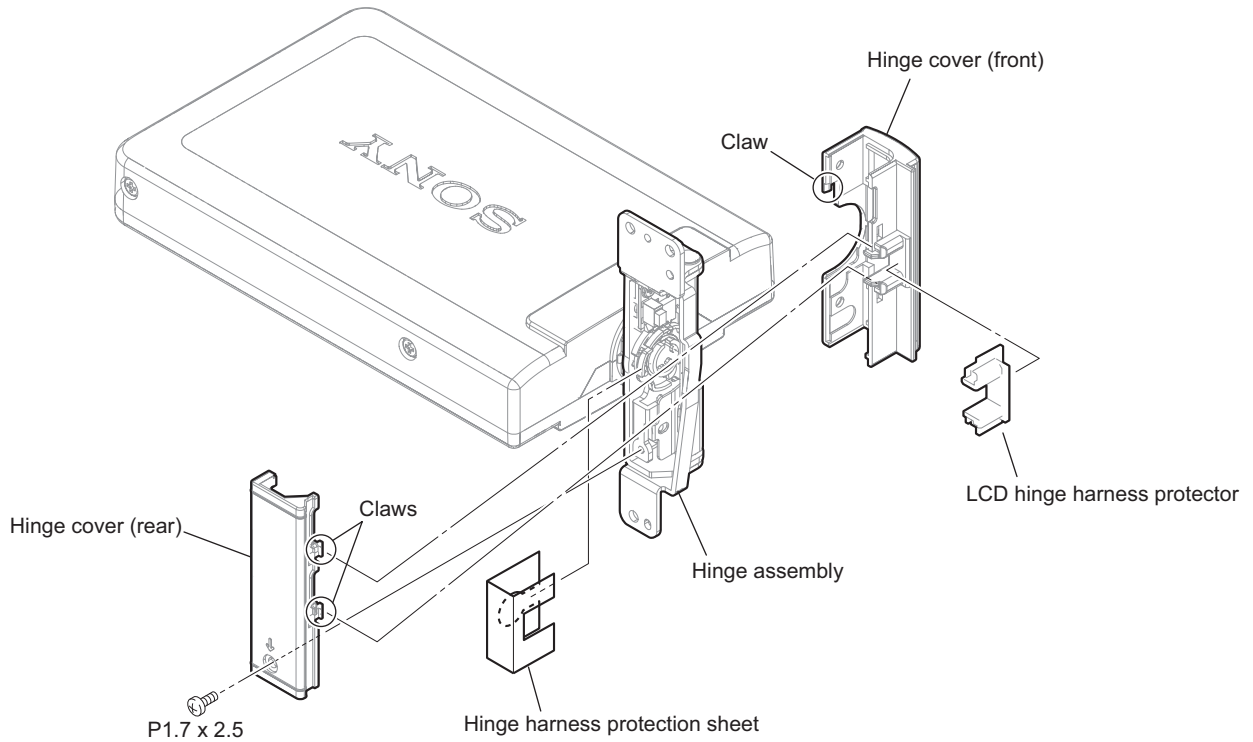
1. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
2. Remove the LCD assembly. (Refer to “2-3-3. LCD Assembly”)

Procedure

1. Turn the hinge assembly, and remove the two screws.

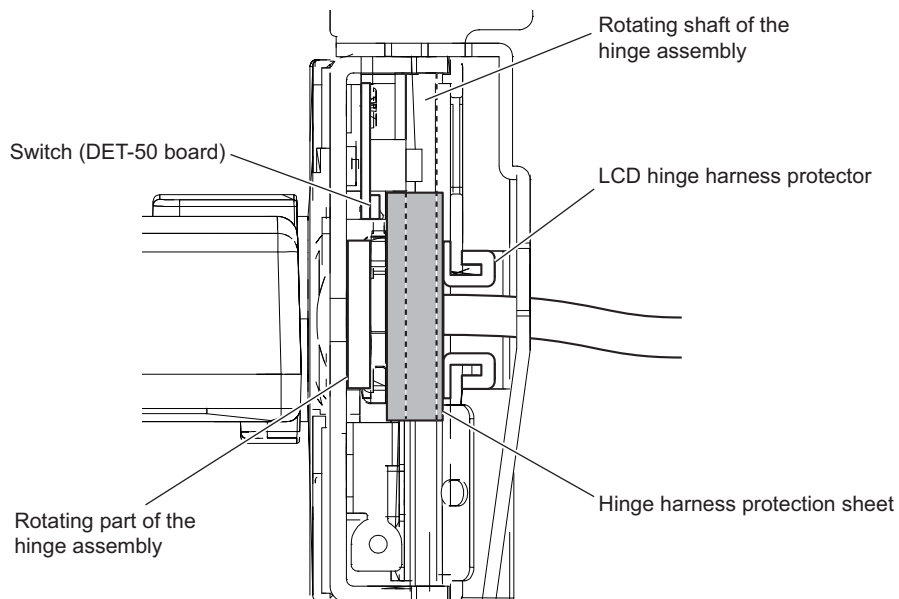


2. Remove the hinge covers.
 - (1) Remove the screw.
 - (2) Release the three claws and remove the hinge cover (rear), the hinge cover (front) and the LCD hinge harness protector.
 - (3) Remove the hinge harness protection sheet.

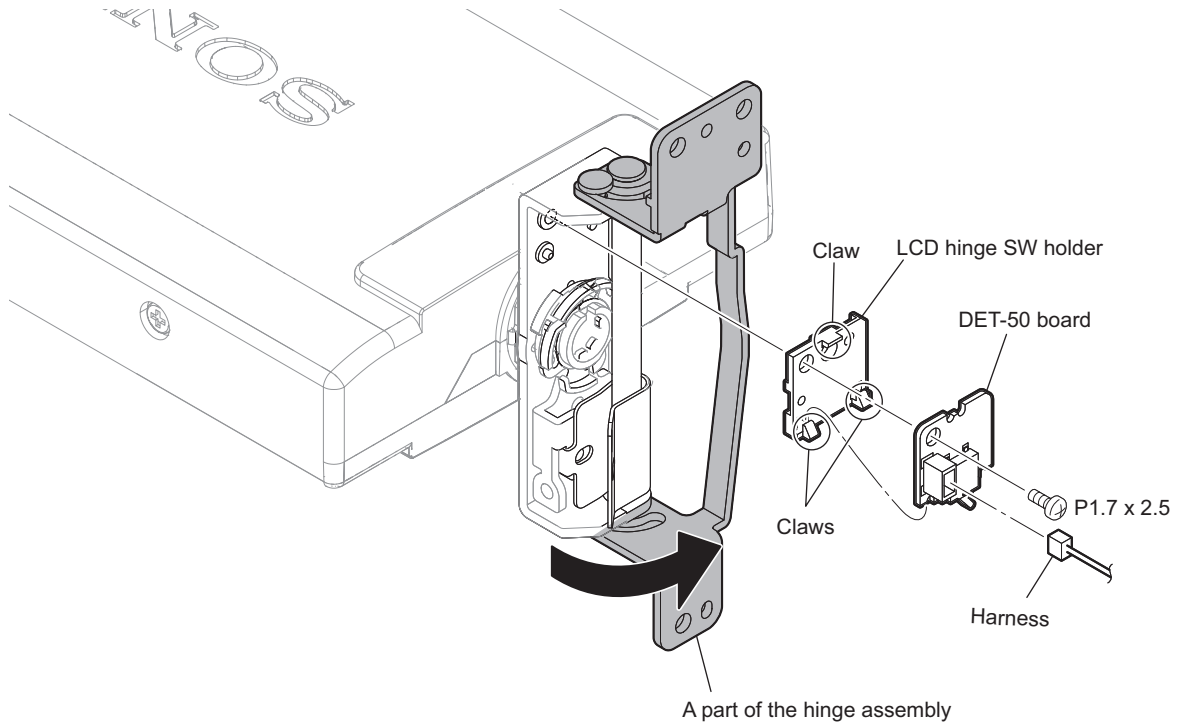


Note

When installing the hinge harness protection sheet, install it to inside between the switch (DET-50 board) and LCD hinge harness protector.



3. Remove the DET-50 board.
 - (1) Turn the A part of the hinge assembly.
 - (2) Disconnect the harness from the connector on the DET-50 board.
 - (3) Remove the screw, and remove the DET-50 board and the LCD hinge SW holder.
 - (4) Release the three claws, and remove the DET-50 board from the LCD hinge SW holder.



4. Install the removed parts by reversing the steps of removal.

2-4. Front Section

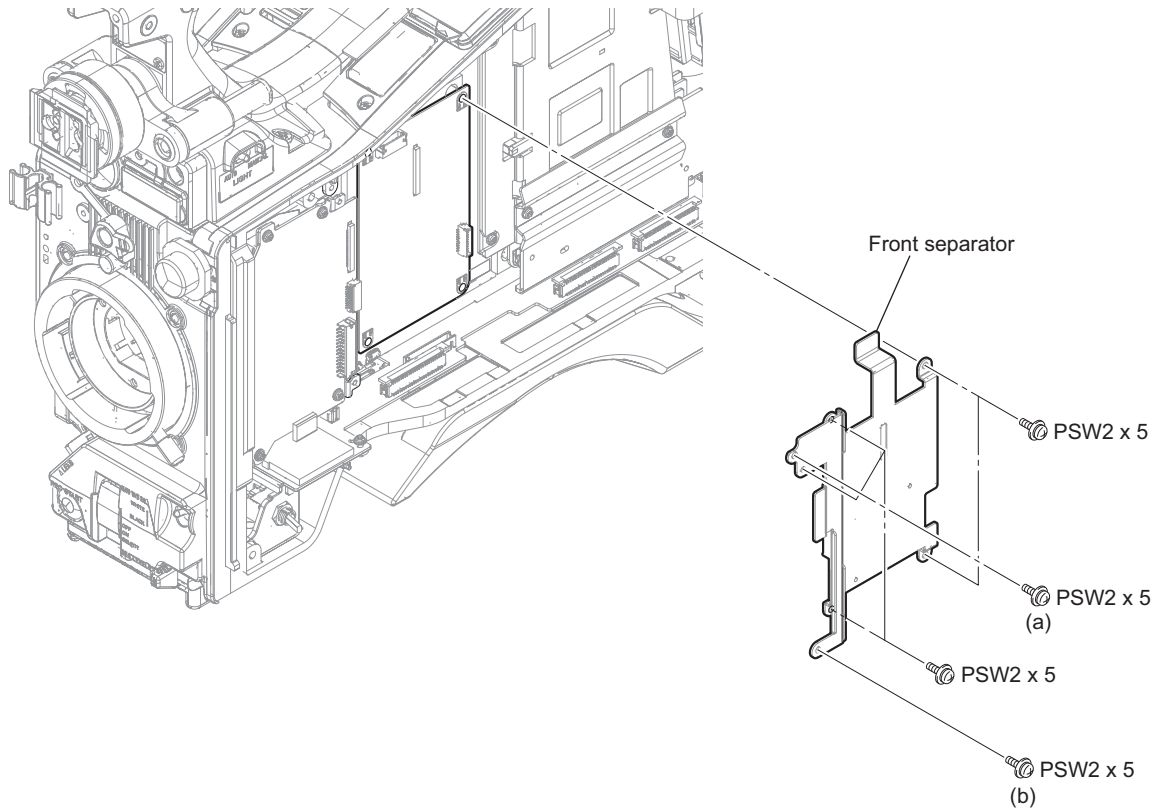
2-4-1. Front Assembly

Preparation

1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)

Procedure

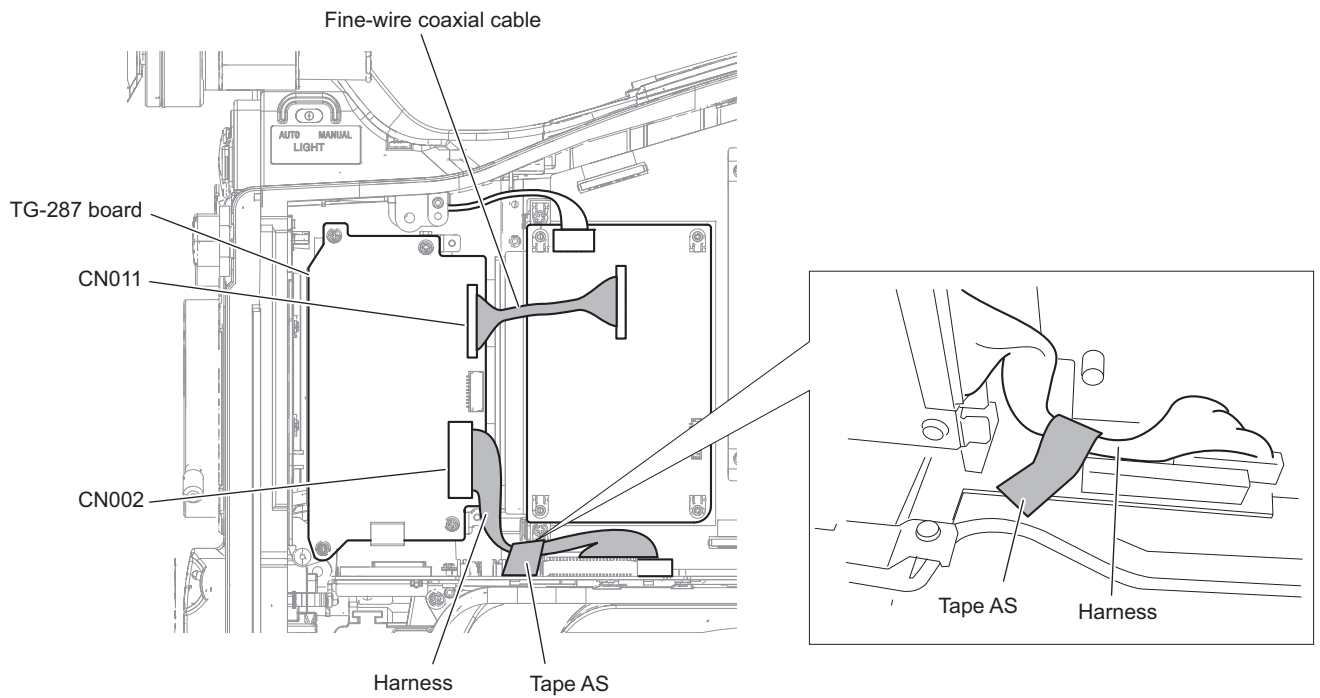
1. Remove the seven screws to detach the front separator.



Note

When installing the front separator, tighten the screws in order of (a), (b) and others.

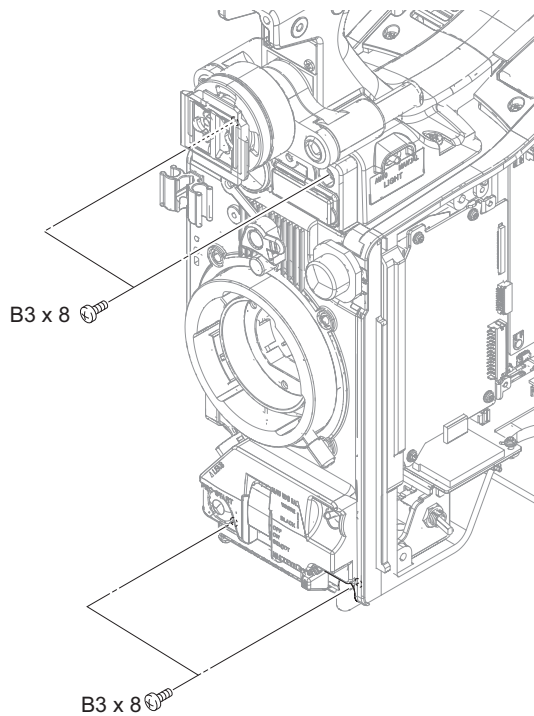
2. Disconnect the harness and the fine-wire coaxial cable.
 - (1) Remove the tape AS.
 - (2) Disconnect the fine-wire coaxial cable from the connector (CN011) on the TG-287 board.
 - (3) Disconnect the harness from the connector (CN002) on the TG-287 board.



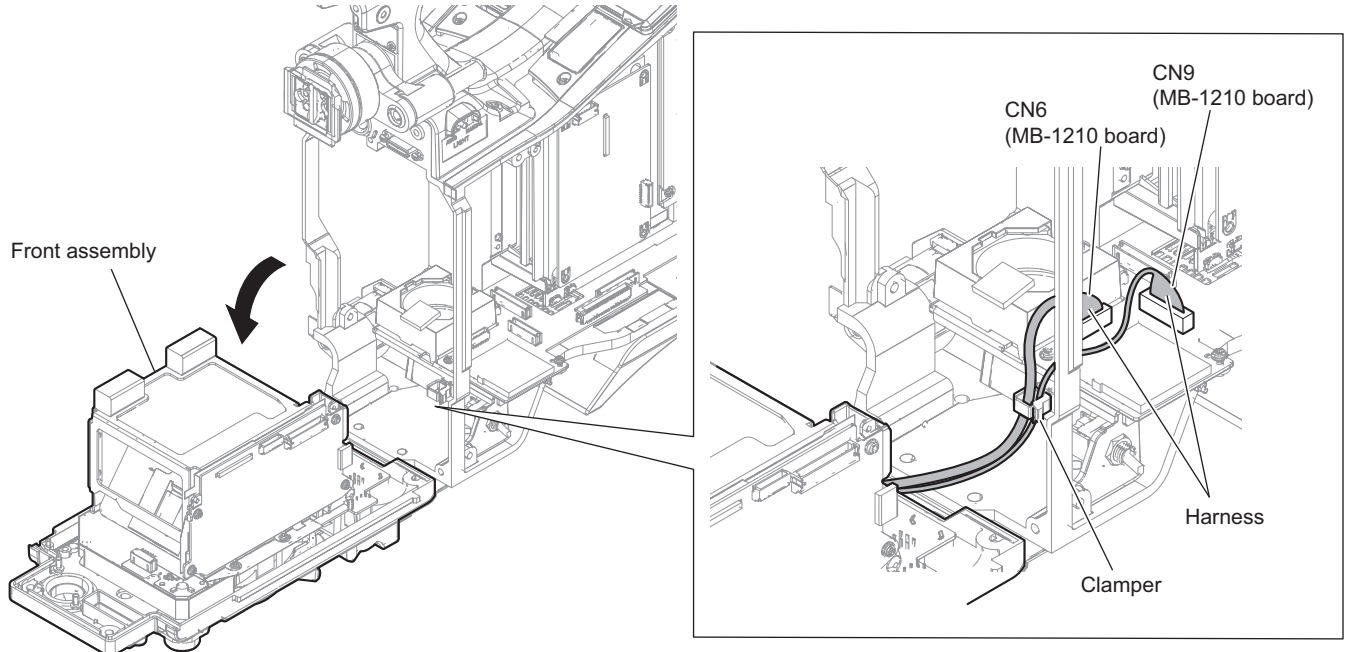
Note

When installing the tape AS, fixing the harness as shown in the figure.

3. Remove the four screws.



4. Remove the front assembly.
- (1) Open the front assembly.
 - (2) Release the two harnesses from the clamber.
 - (3) Disconnect the two harnesses from the two connectors (CN6, CN9) on the MB-1210 board, and remove the front assembly.



5. Install the removed parts by reversing the steps of removal.

2-4-2. CCD Block Assembly

Note

Hexagonal wrenches (Width across : 1.5 mm, 2.5 mm) are necessary as tools.

Preparation

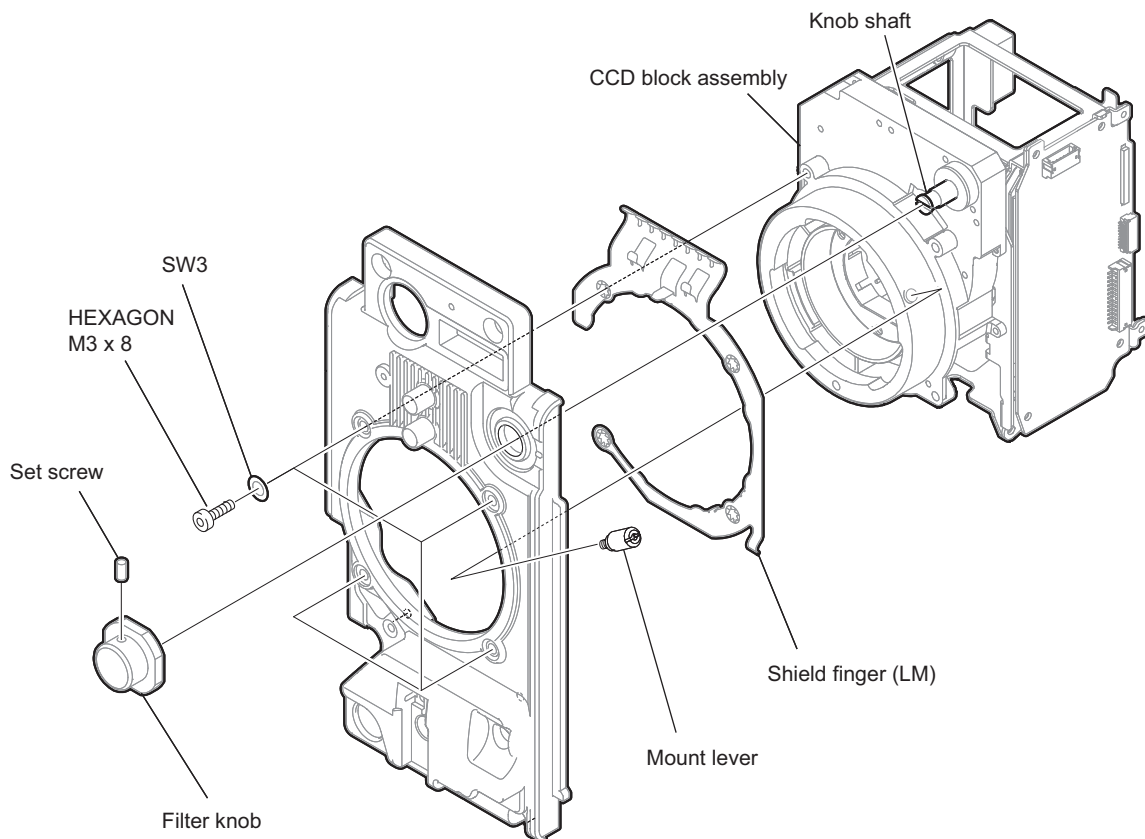
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
3. Remove the front assembly. (Refer to “2-4-1. Front Assembly”)

Removing Procedure

1. Remove the CCD block assembly.
 - (1) Remove the set screw and remove the filter knob from the knob shaft.
 - (2) Remove the mount lever.
 - (3) Remove the four hexagon socket head bolts and four spring washers, and remove the CCD block assembly and the shield finger (LM).

Note

Do not directly touch shield finger (LM). Be careful not to get hurt with the edges when handling them.

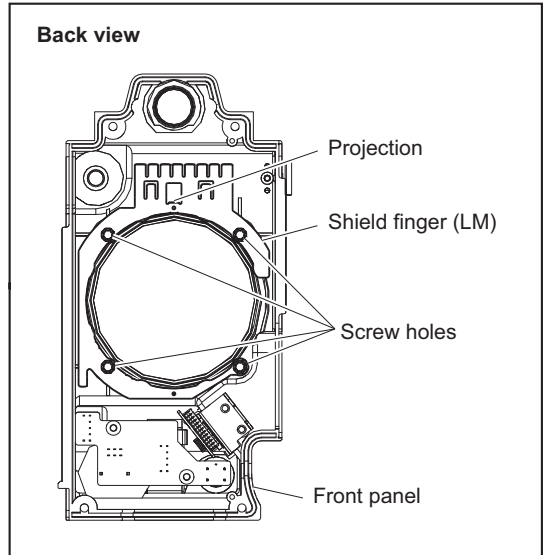
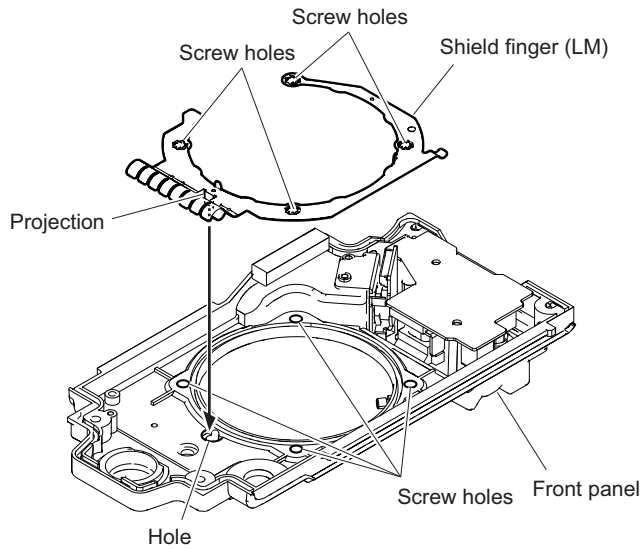


Installing Procedure

2. Install the shield finger (LM) to the front panel.
 - (1) Insert the projection of the shield finger (LM) to the hole of the front panel.
 - (2) Align the four screw holes of the shield finger (LM) with the four screw holes of the front panel.

Note

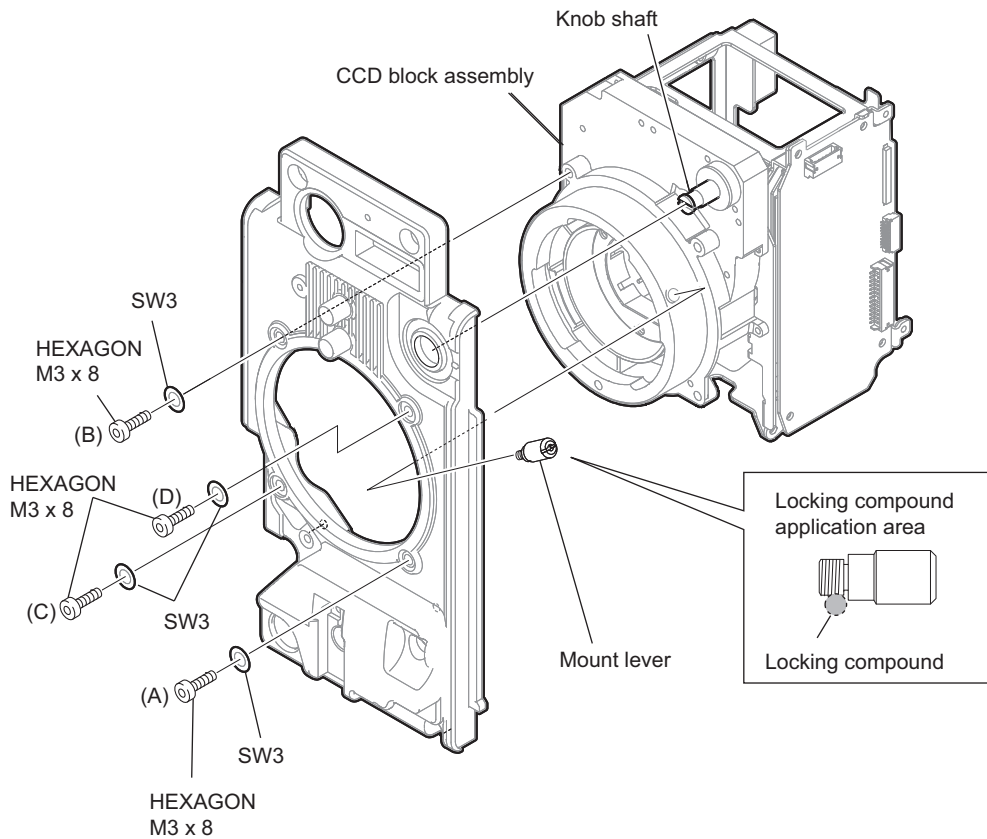
Do not directly touch shield finger (LM). Be careful not to get hurt with the edges when handling them.



3. Install the CCD block assembly.
 - (1) Install the CCD block assembly to the front panel.
 - (2) Tighten the four hexagon socket head bolts and four spring washers in the order of (A) to (D).
 - (3) Apply the locking compound on the thread of the mount lever, and install the mount lever.

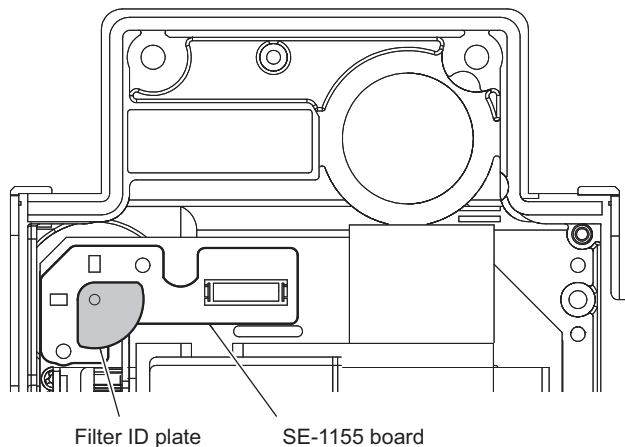
Note

When installing the CCD block, be careful so that the optical axis does not tilt (misaligned) due to a play. If a picture on the monitor screen tilts, loosen the screws of the CCD block and adjust the installation so that the picture becomes horizontal.



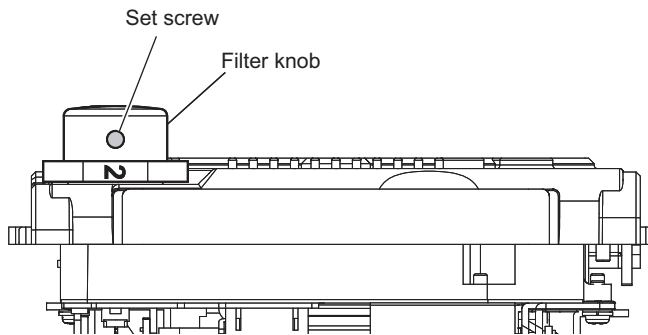
4. Turn the knob shaft and set the filter ID plate on the SE-1155 board to the orientation as shown in the figure.

Back view



5. Set the filter knob at a position where a number “2” faces up and secure it with a set screw.

Top view



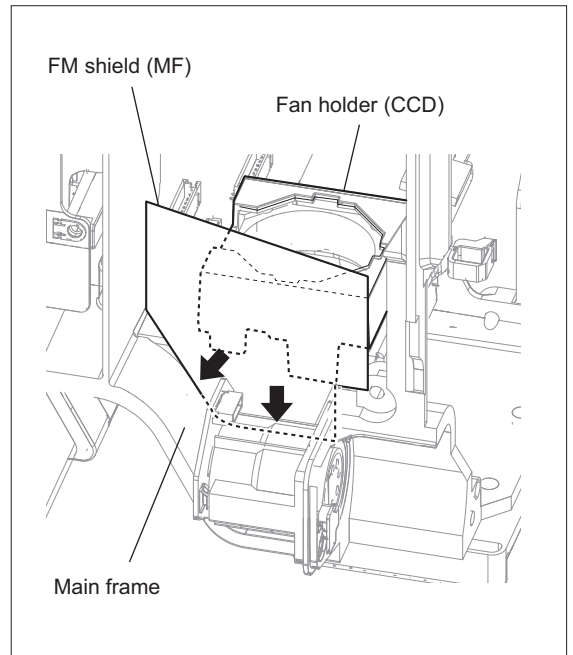
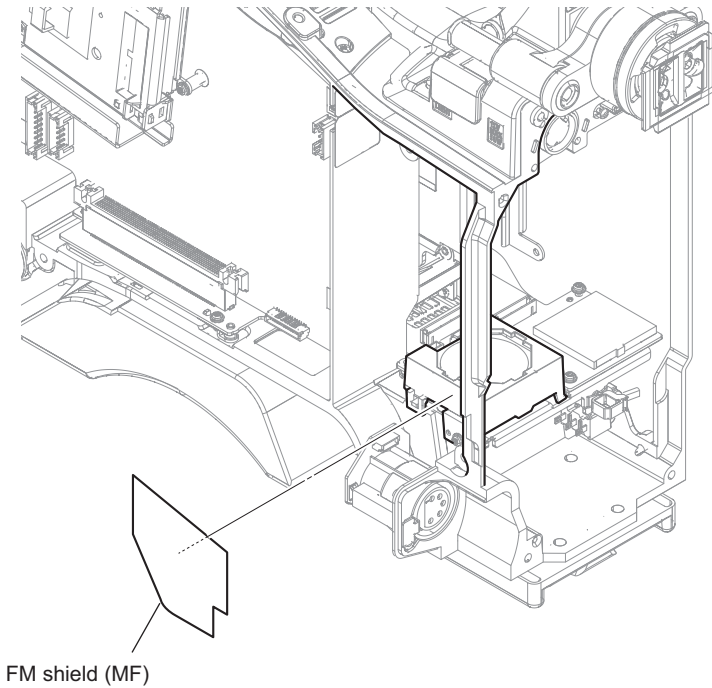
2-5. DC Fan (30 Square)

Preparation

1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
3. Remove the front assembly. (Refer to “2-4-1. Front Assembly”)

Procedure

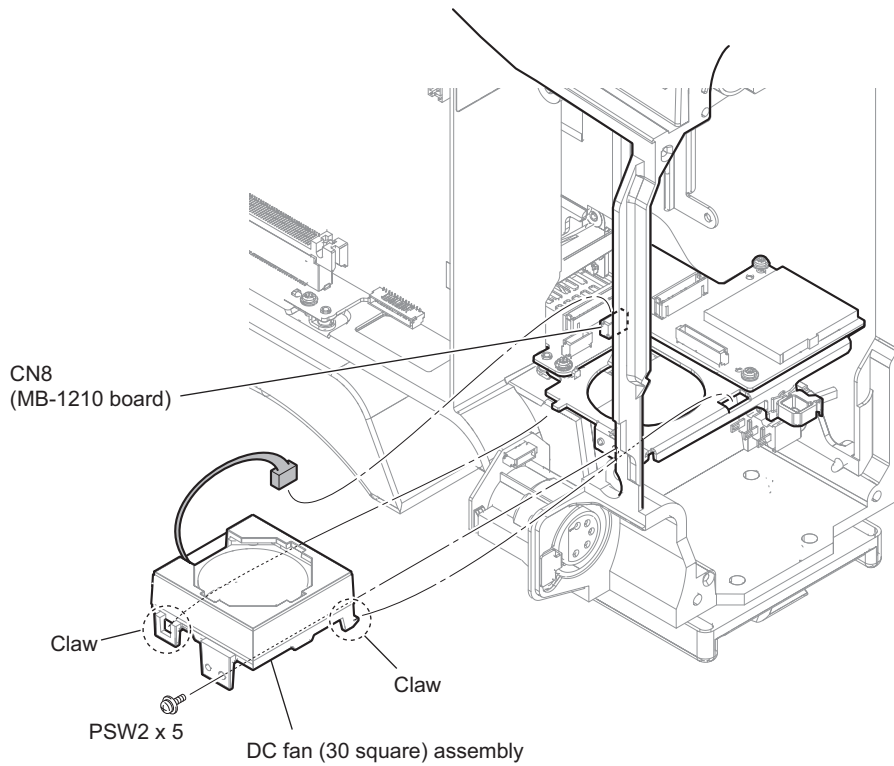
1. Remove the FM shield (MF).



Note

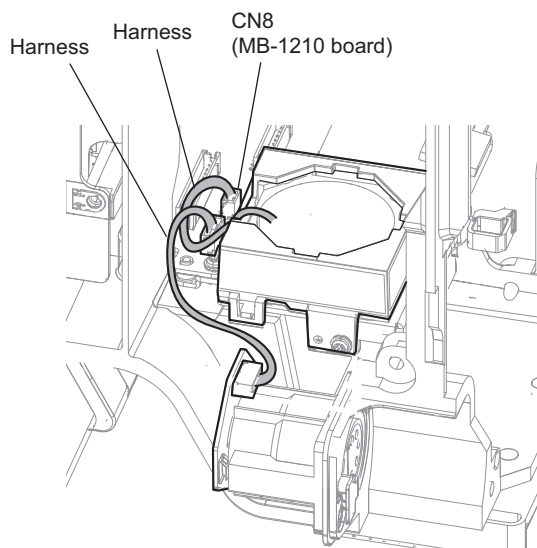
When installing the FM shield (MF), press the lower edge of the FM shield (MF) against the main frame in the direction of the arrow.

2. Remove the DC fan (30 square) assembly.
 - (1) Disconnect the harness from the connector (CN8) on the MB-1210 board.
 - (2) Remove the screw.
 - (3) Release the two claws, and remove the DC fan (30 square).

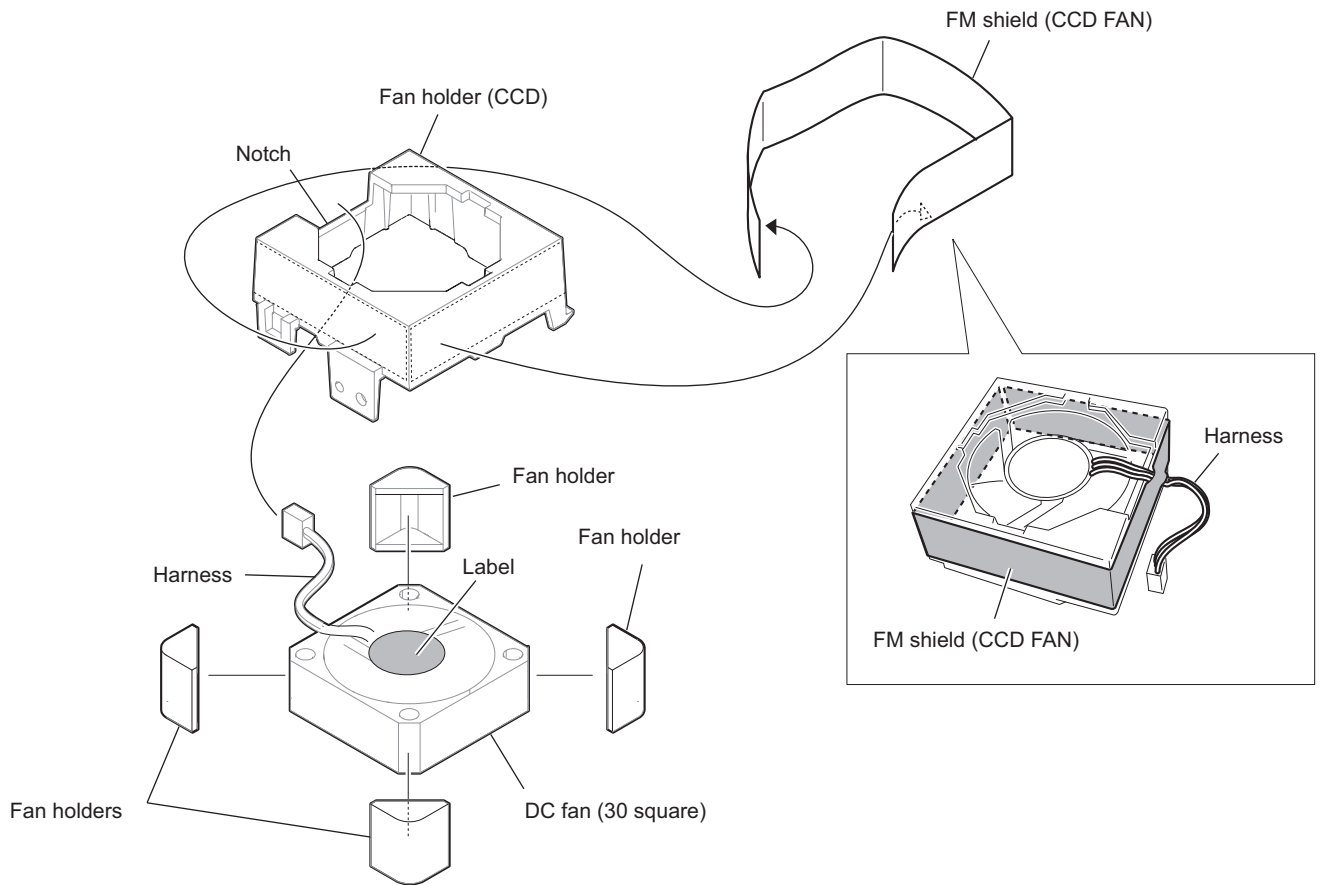


Note

When installing the harness, arrange the harnesses as shown in the figure.



3. Remove the DC fan (30 square).
- (1) Remove the FM shield (CCD FAN).
 - (2) Remove the fan holder (CCD).
 - (3) Remove the four fan holders.



Note

Pay attention to the following when installing the fan holder (CCD).

- Pay attention to the position of label of the DC fan (30 square).
- Align the notch of the fan holder (CCD) with the harness of the DC fan (30 square).
- Fold the harness by the FM shield (CCD FAN).

4. Install the removed parts by reversing the steps of removal.

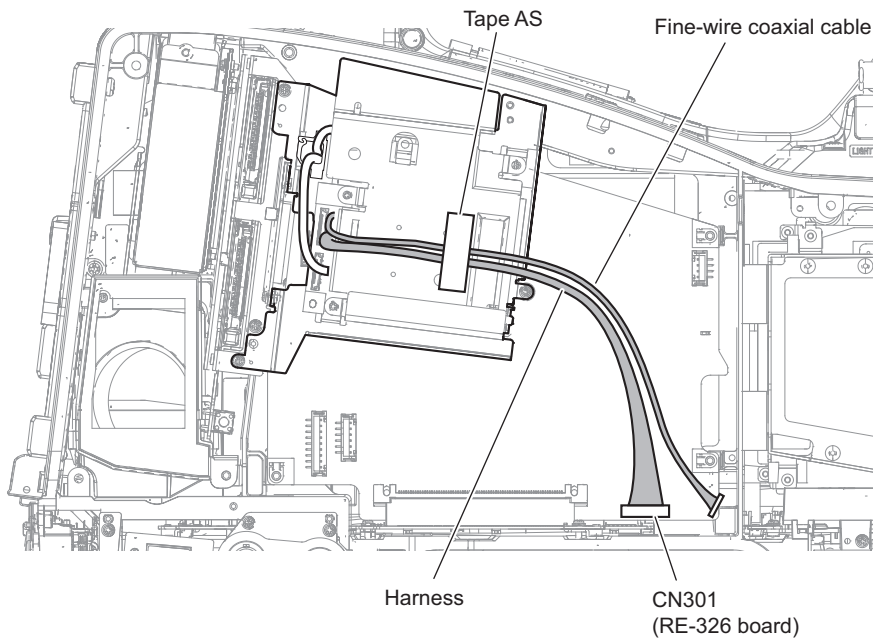
2-6. Wi-Fi Module/SD-58 Board

Preparation

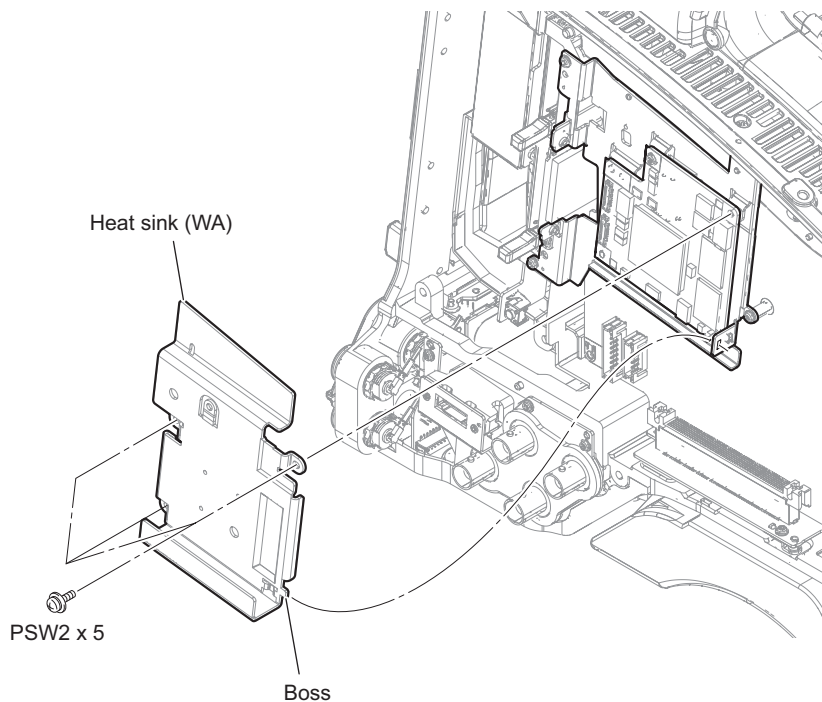
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)

Procedure

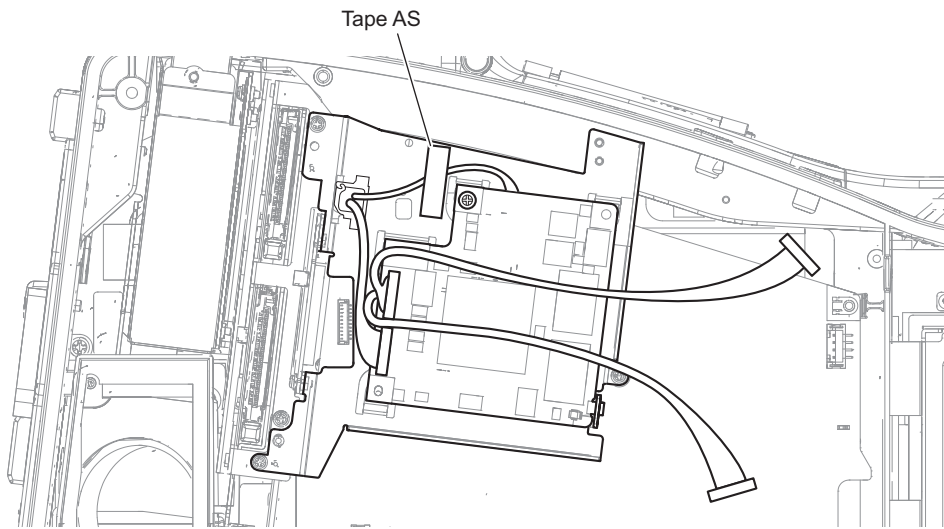
1. Remove the tape AS, disconnect the fine-wire coaxial cable and the harness.
 - (1) Disconnect the harness from the connector (CN301) on the RE-326 board.
 - (2) Remove the tape AS, and release the fine-wire coaxial cable and the harness.



2. Remove the heat sink (WA).
 - (1) Remove the three screws.
 - (2) Remove the heat sink (WA), while releasing the boss from the hole.

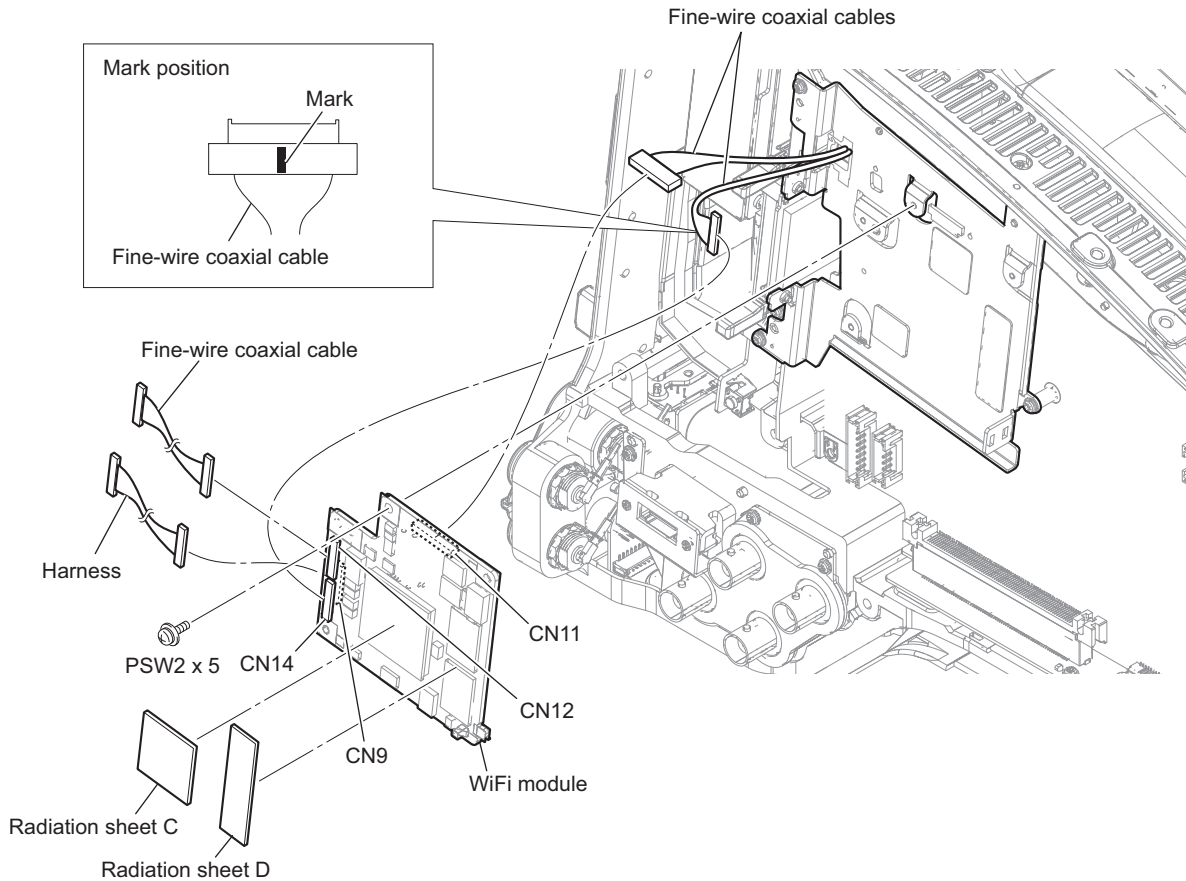


3. Remove the tape AS.



4. Remove the Wi-Fi module.

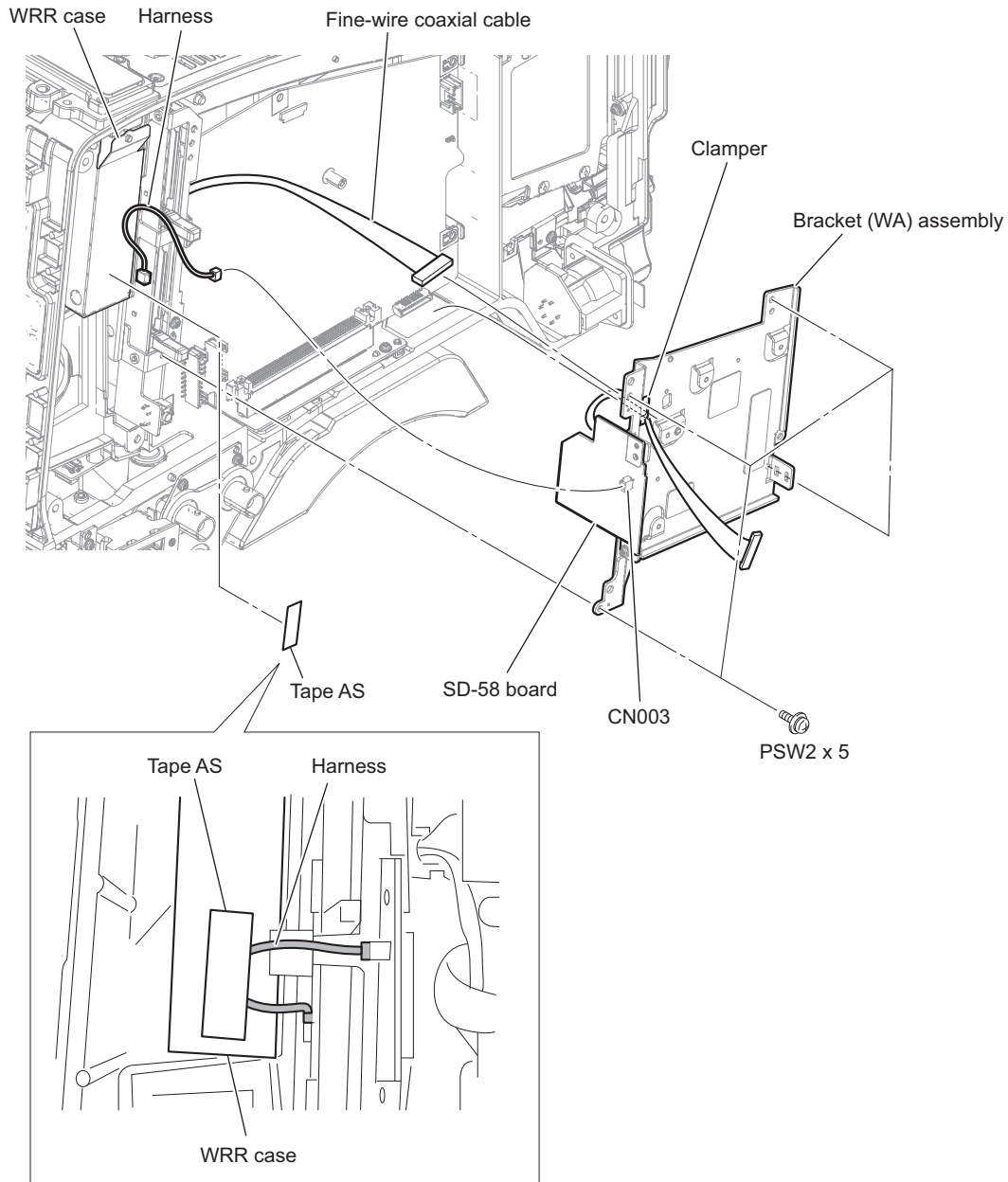
- (1) Disconnect the two fine-wire coaxial cables from the two connectors (CN12, CN14) on the Wi-Fi module.
- (2) Remove the screw, and draw the Wi-Fi module.
- (3) Disconnect the fine-wire coaxial cable from the connector (CN11) on the Wi-Fi module, and remove the Wi-Fi module.
- (4) Disconnect the harness from the connector (CN9) on the Wi-Fi module.
- (5) Remove the radiation sheets C and D.



Note

When connecting the fine-wire coaxial cable, connect the fine-wire coaxial cable which is marked to the connector (CN14).

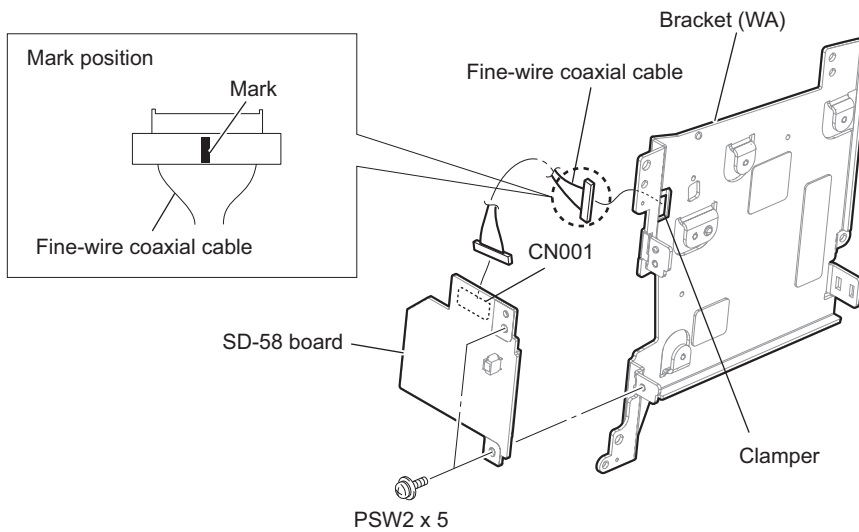
5. Remove the bracket (WA) assembly.
- (1) Remove the tape AS.
 - (2) Disconnect the harness from the connector (CN003) on the SD-58 board.
 - (3) Remove the four screws.
 - (4) Release the fine-wire coaxial cable from the clamber, and remove the bracket (WA) assembly.



Note

When installing the tape AS, arrange the harness as shown in the figure.

6. Remove the SD-58 board.
- (1) Disconnect the fine-wire coaxial cable from the connector (CN001) on the SD-58 board.
 - (2) Release the fine-wire coaxial cable from the clumper.
 - (3) Remove the two screws to detach the SD-58 board.



Note

Pay attention to the following when connecting the fine-wire coaxial cable.

- Connect the connector portion which is not marked of one of the two to the connector (CN001) on the SD-58 board.
- When the fine-wire coaxial cable is replaced, mark at the connector portion of one of the two.

7. Install the removed parts by reversing the steps of removal.

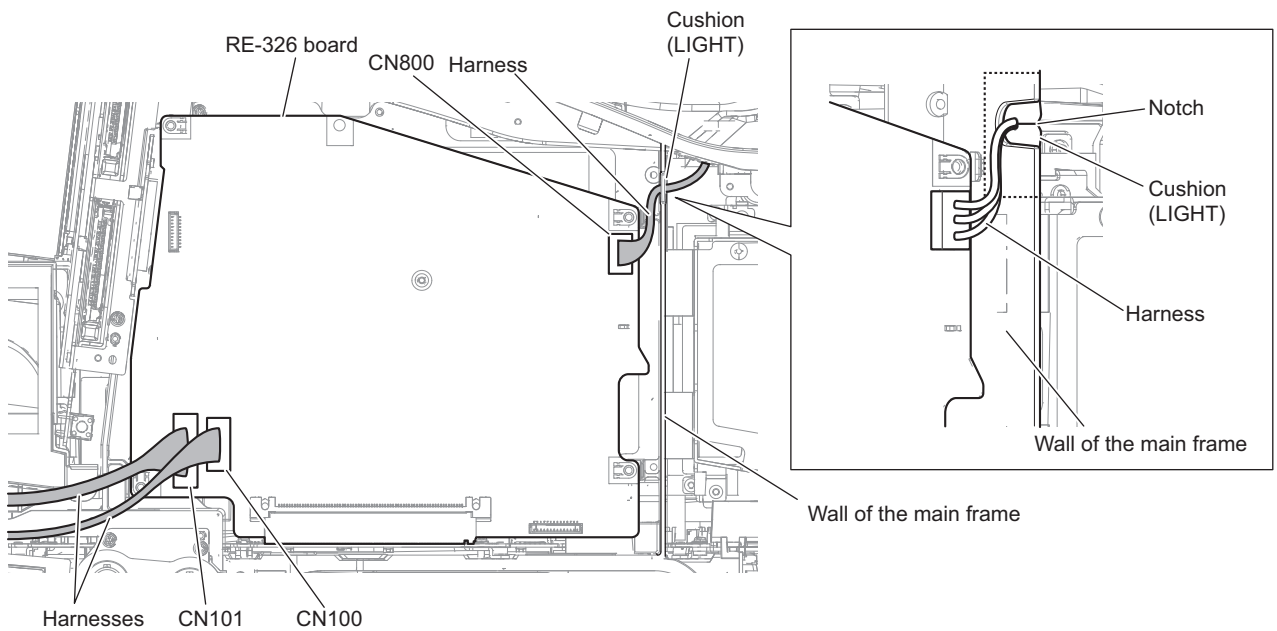
2-7. RE-326 Board

Preparation

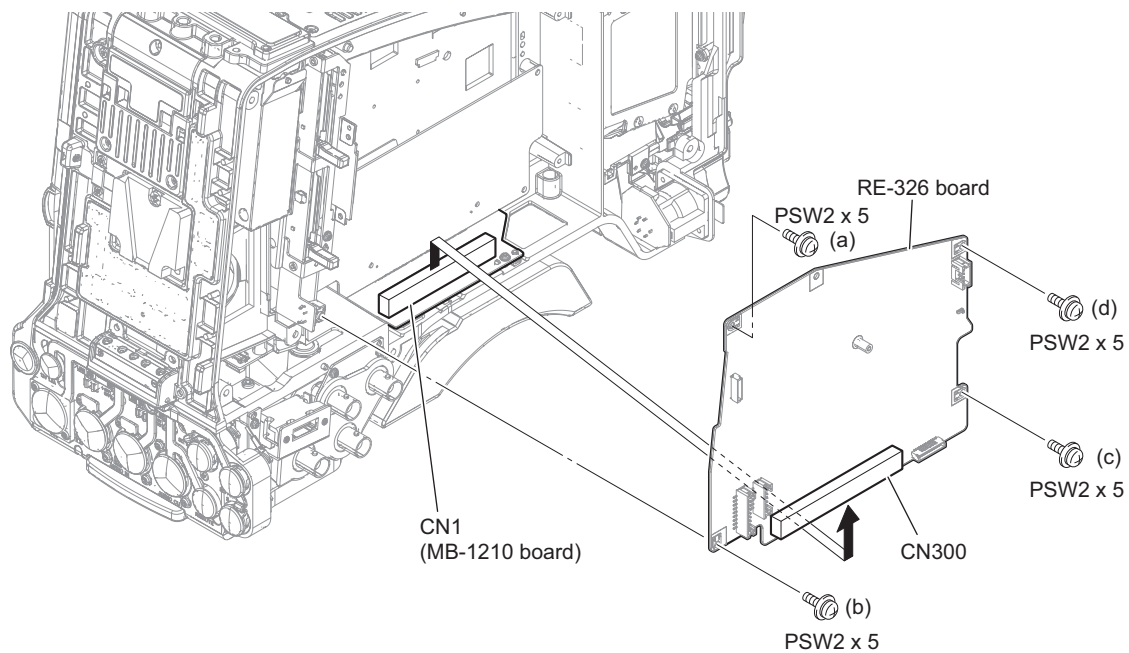
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)

Procedure

1. Disconnect the harnesses.
 - (1) Release the harness from the notch of the cushion (LIGHT).
 - (2) Disconnect the three harnesses from the three connectors (CN100, CN101, CN800) on the RE-326 board.



2. Remove the four screws, and disconnect the RE-326 board from the connector (CN1) on the MB-1210 board.



Note

When installing the RE-326 board, tighten the screws in the order of (a) to (d).

3. Install the removed parts by reversing the steps of removal.

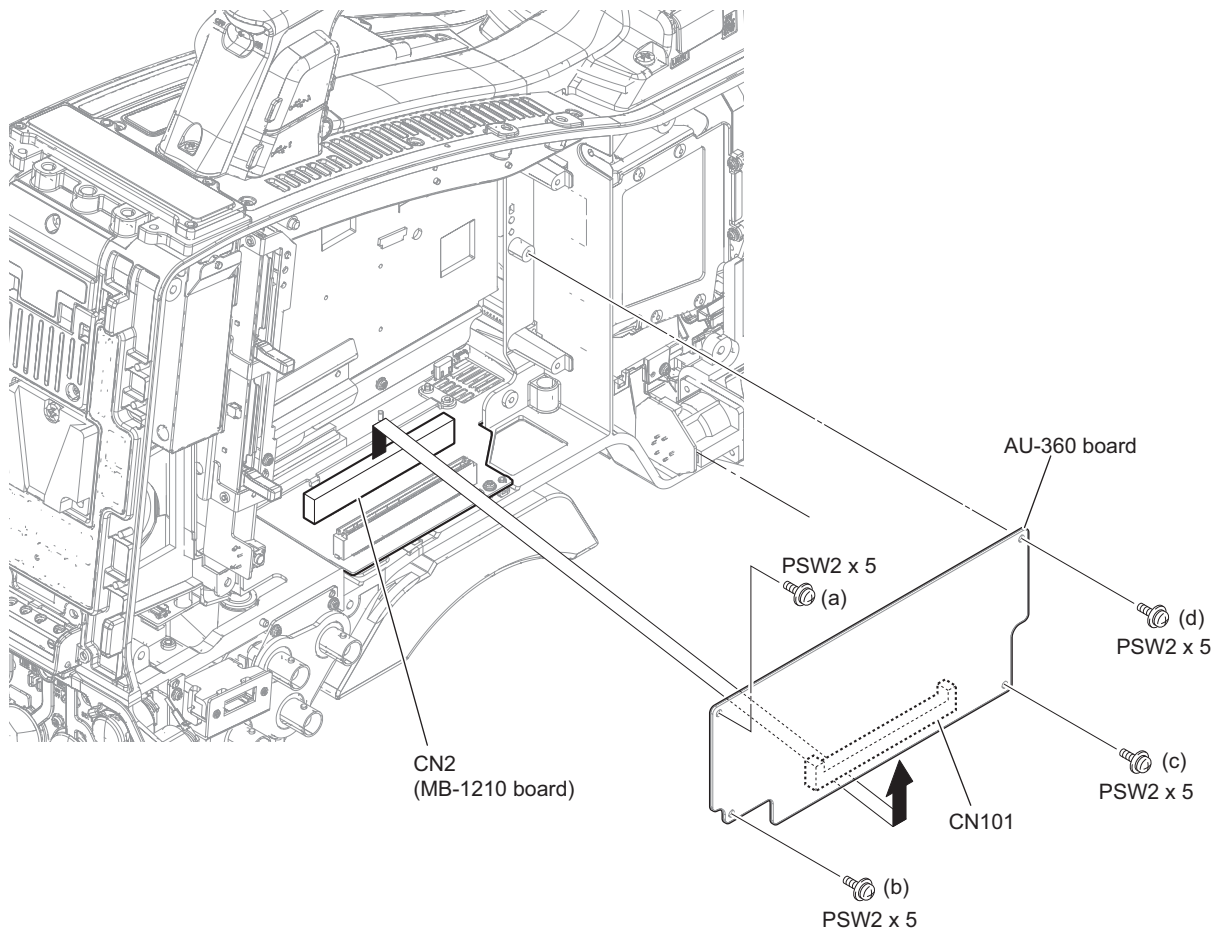
2-8. AU-360 Board

Preparation

1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the RE-326 board. (Refer to “2-7. RE-326 Board”)

Procedure

1. Remove the four screws, and disconnect the AU-360 board from the connector (CN2) on the MB-1210 board.



Note

When installing the AU-360 board, tighten the screws in the order of (a) to (d).

2. Install the removed parts by reversing the steps of removal.

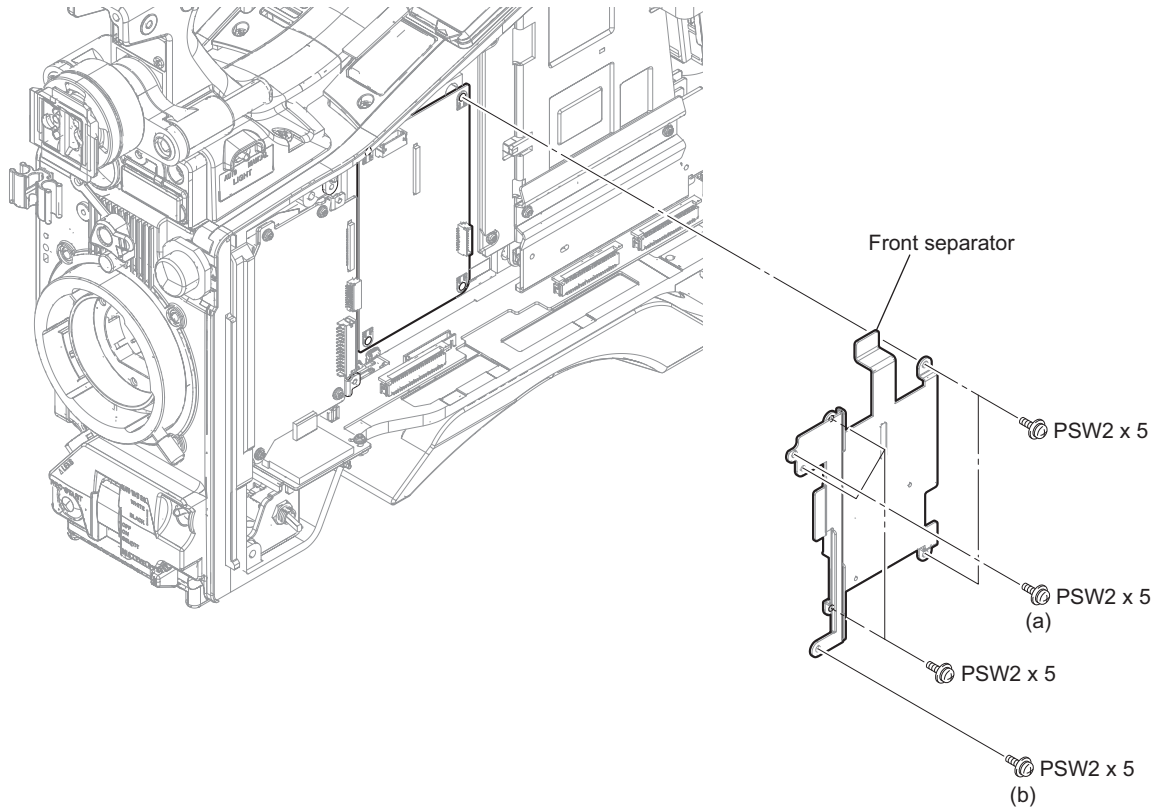
2-9. DCP-67 Board

Preparation

1. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)

Procedure

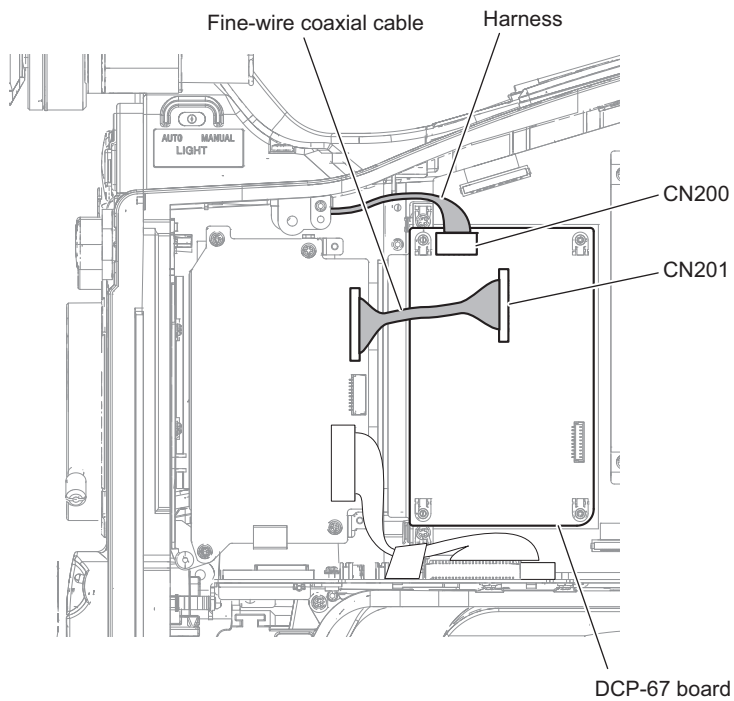
1. Remove the seven screws to detach the front separator.



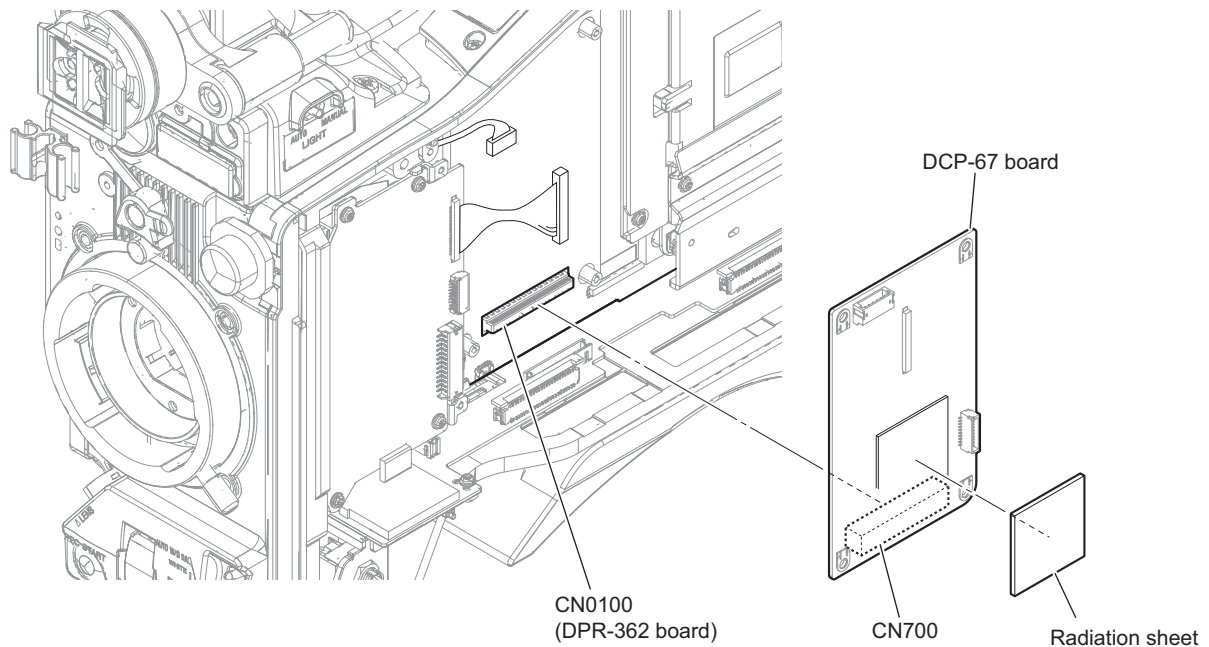
Note

When installing the front separator, tighten the screws in the order of (a), (b) and others.

2. Disconnect the harness and the fine-wire coaxial cable.
 - (1) Disconnect the harness from the connector (CN200) on the DCP-67 board.
 - (2) Disconnect the fine-wire coaxial cable from the connector (CN201) on the DCP-67 board.



3. Remove the DCP-67 board.
 - (1) Disconnect the DCP-67 board from the connector (CN100) on the DPR-362 board.
 - (2) Remove the radiation sheet.



4. Install the removed parts by reversing the steps of removal.

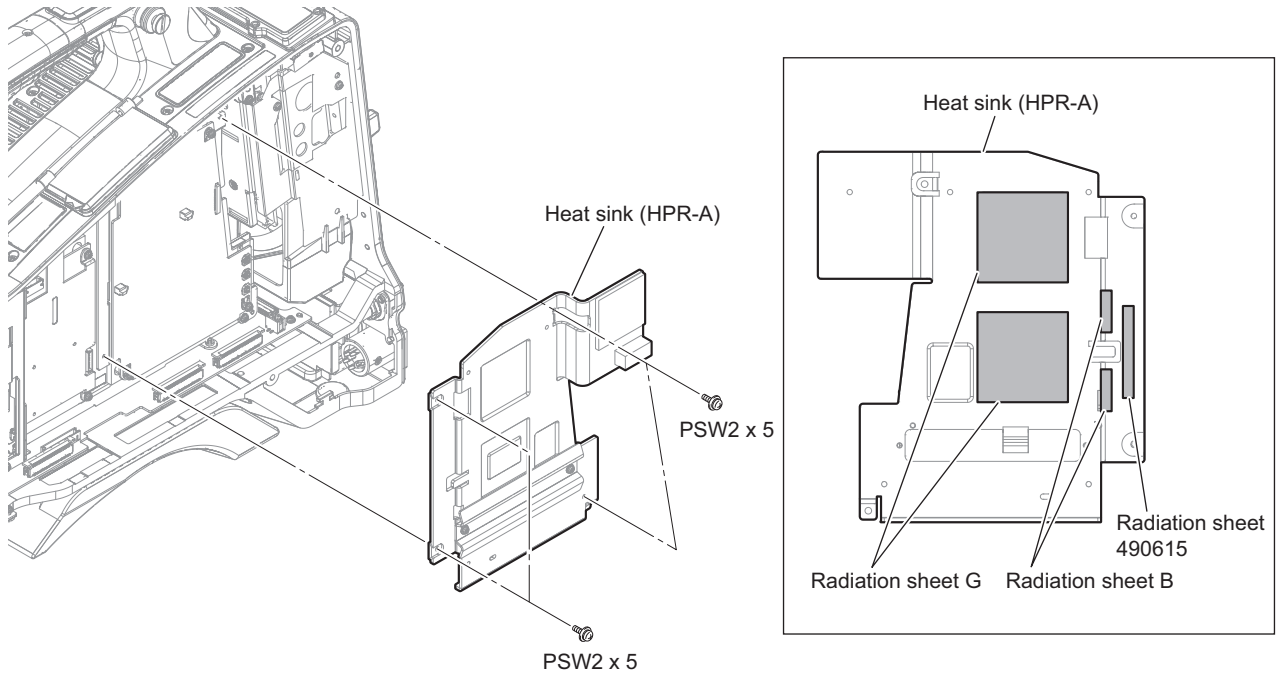
2-10. HPR-53 Board

Preparation

1. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)

Procedure

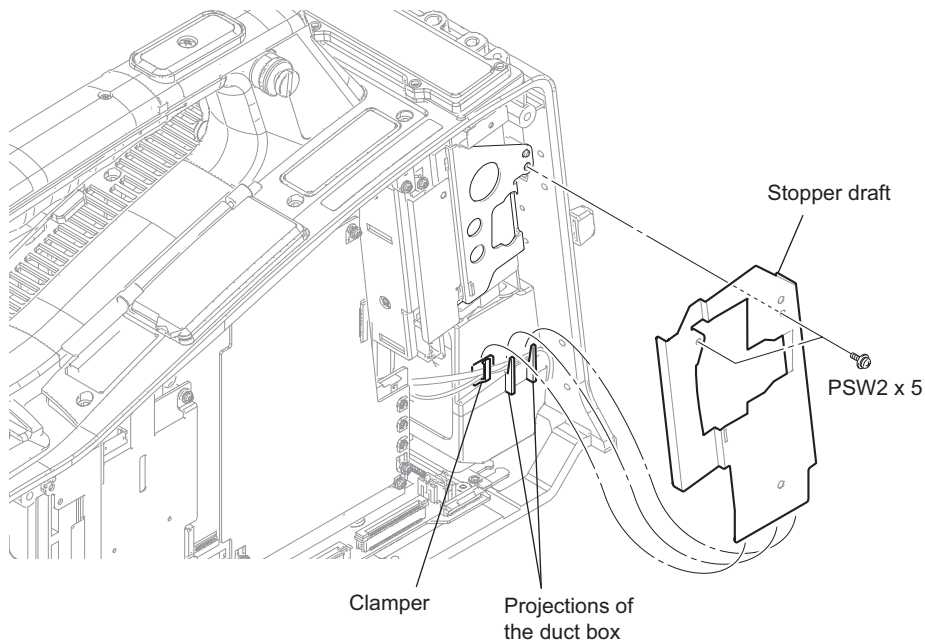
1. Remove the four screws to detach the heat sink (HPR-A).



Note

In the case of dropping of the radiation sheet G, the radiation sheet B and the radiation sheet 490615, attach their parts to the heat sink (HPR-A) as shown in the figure.

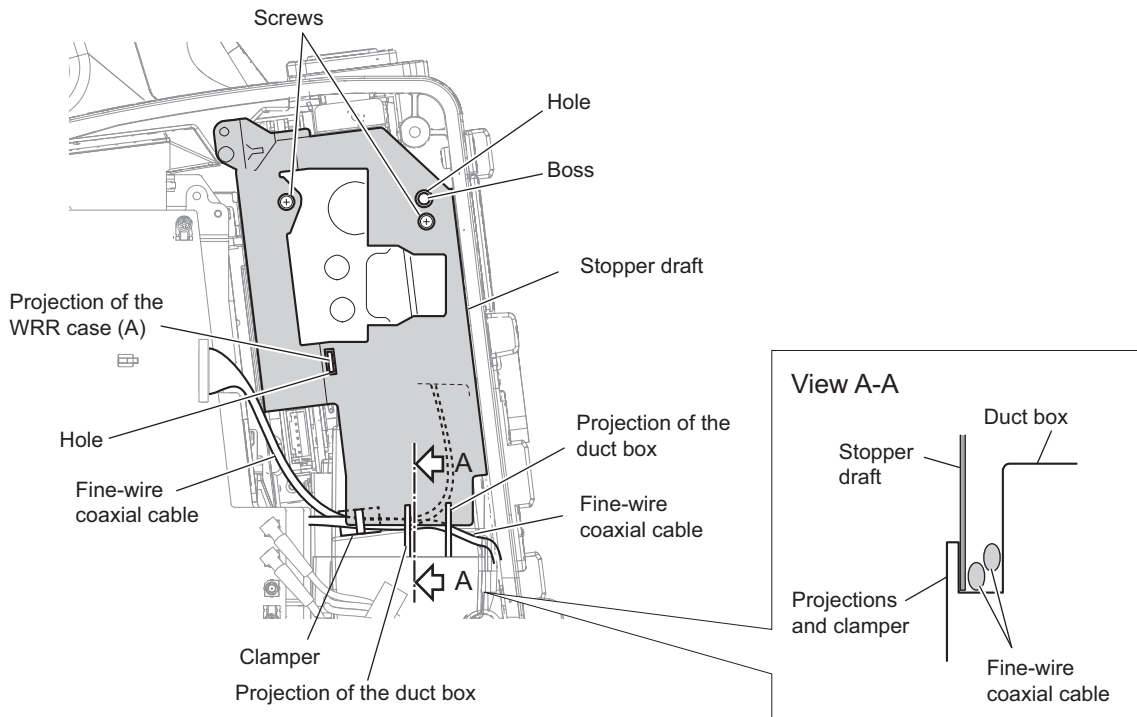
2. Remove the stopper draft.
 - (1) Remove the four screws.
 - (2) Remove the stopper draft from the clumper and projections of the duct box.



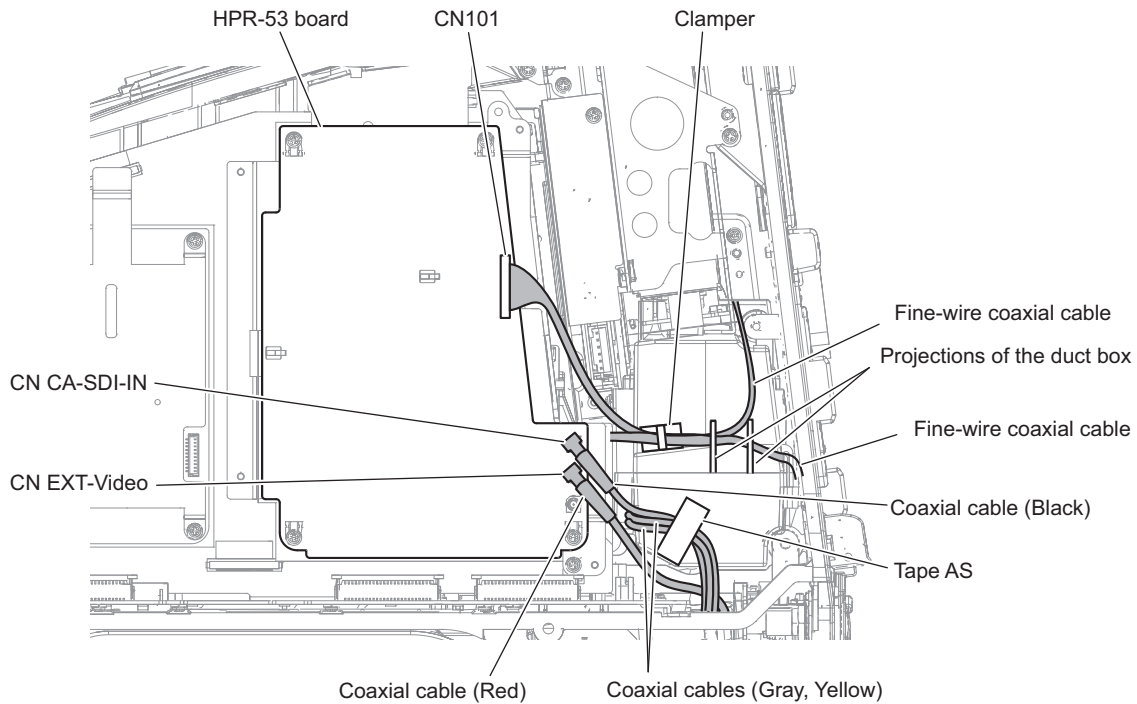
Note

Pay attention to the following when installing the stopper draft.

- Insert the stopper draft into the clumper and the projections of the duct box to cover the fine-wire coaxial cables.
- Align the boss with the hole, and align the projection of the WRR case (A) with the hole.



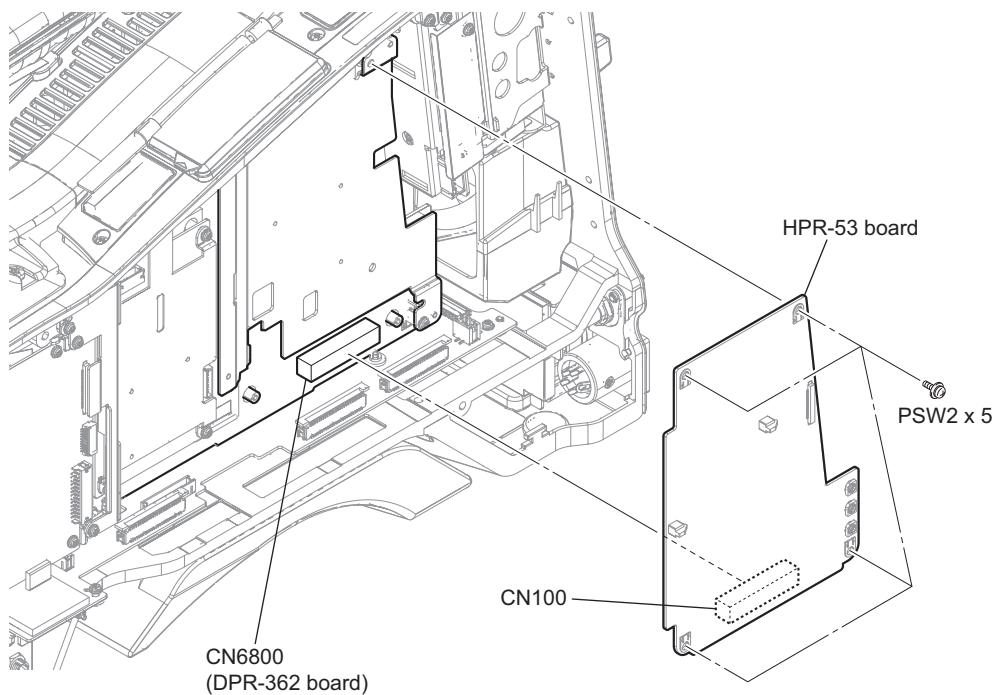
3. Disconnect the fine-wire coaxial cable and the coaxial cables.
- (1) Remove the tape AS.
 - (2) Remove the fine-wire coaxial cable from the clumper and projections of the duct box.
 - (3) Disconnect the fine-wire coaxial cable from the connector (CN101) on the HPR-53 board.
 - (4) Disconnect the two coaxial cables from the two connectors (CN CA-SDI-IN, CN EXT-Video) on the HPR-53 board.



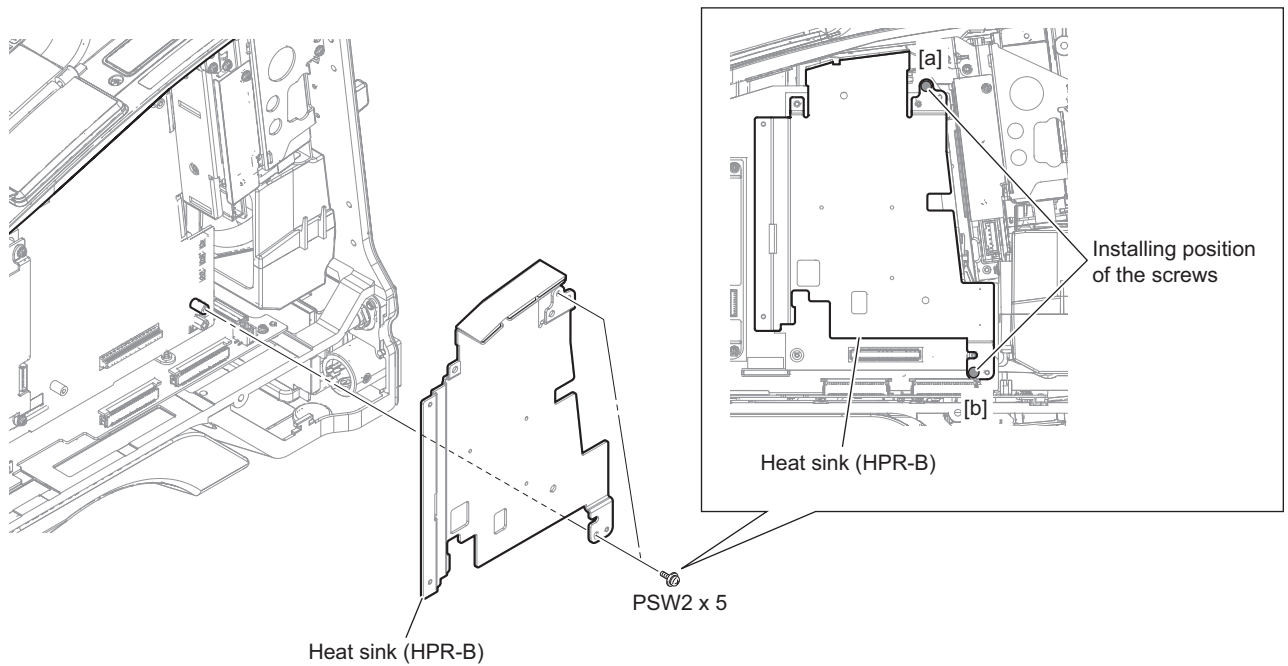
Note

- When connecting the coaxial cables, connect the coaxial cables to correct connectors.
- When connecting the fine-wire coaxial cable, pass them through the clumper and the projections of the duct box as shown above.
- When installing the tape AS, fix the coaxial cables as shown in the figure.

4. Remove the four screws, and disconnect the HPR-53 board from the connector (CN6800) on the DPR-362 board.



5. Remove the two screws to detach the heat sink (HPR-B).



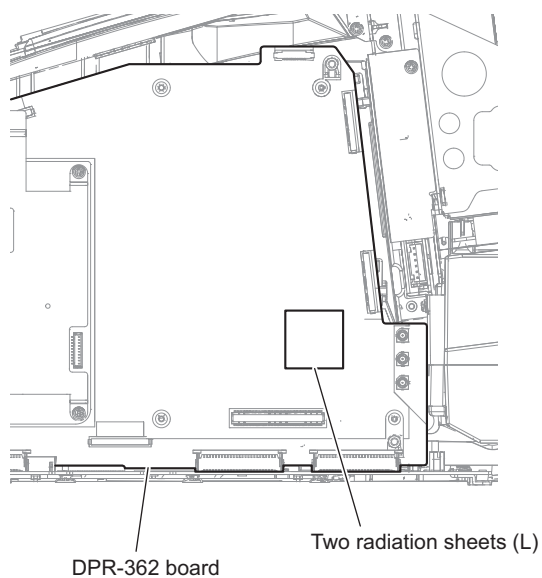
Note

Pay attention to the following when installing the heat sink (HPR-B).

- Pay attention to the installing position of the screws.
- Tighten the screws in the order of (a) to (b).

Note

In the case of dropping the two radiation sheets (L), attach their sheets at the location as shown in the following figure.



6. Install the removed parts by reversing the steps of removal.

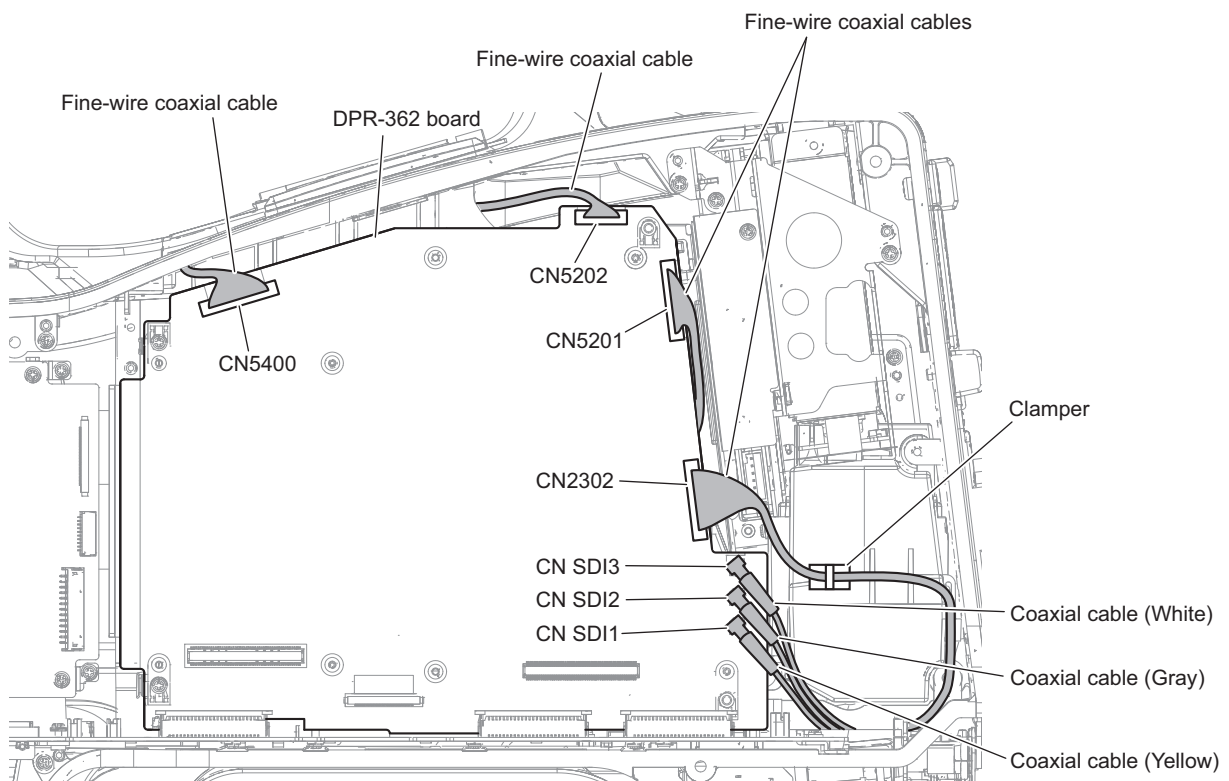
2-11. DPR-362 Board

Preparation

1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the DCP-67 board. (Refer to “2-9. DCP-67 Board”)
5. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)

Procedure

1. Disconnect the fine-wire coaxial cables and the coaxial cables.
 - (1) Release the fine-wire coaxial cable from the clamper.
 - (2) Disconnect the four fine-wire coaxial cables from the four connectors (CN2302, CN5201, CN5202, CN5400) on the DPR-362 board.
 - (3) Disconnect the three coaxial cables from the three connectors (CN SDI1, CN SDI2, CN SDI3) on the DPR-362 board.

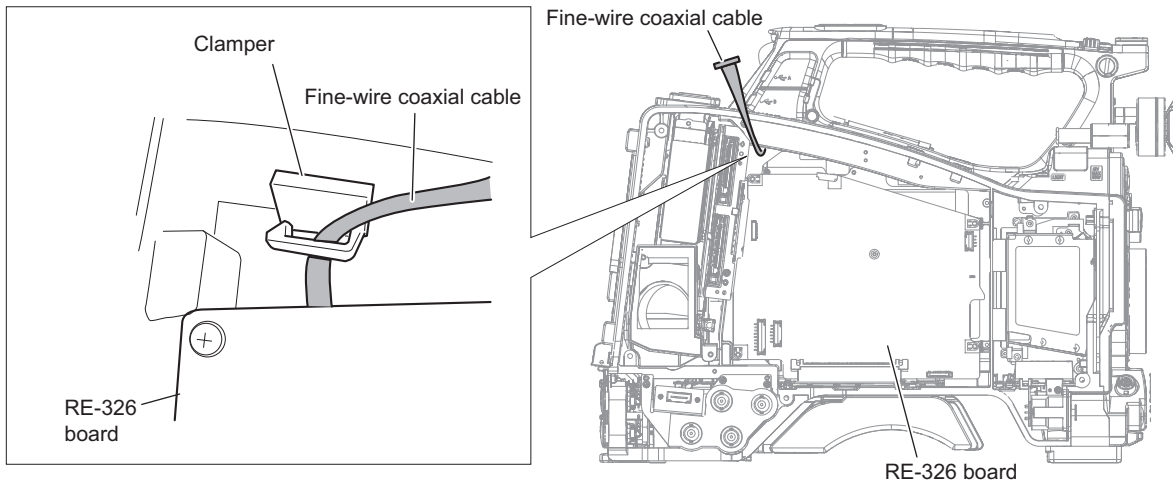


Note

When connecting the coaxial cables, connect the coaxial cables to correct connectors.

2. Release the fine-wire coaxial cable from the clumper.

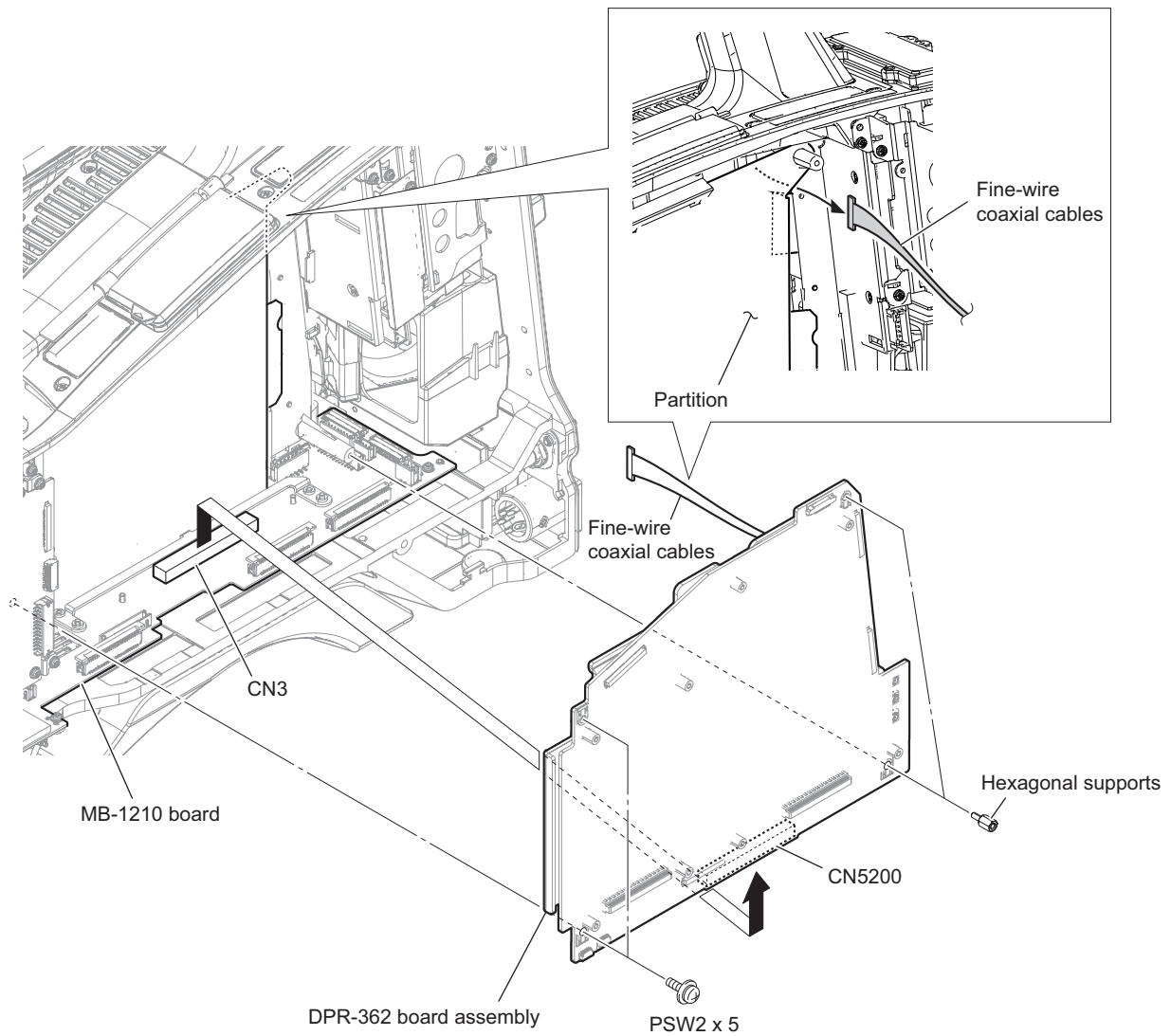
Outside side



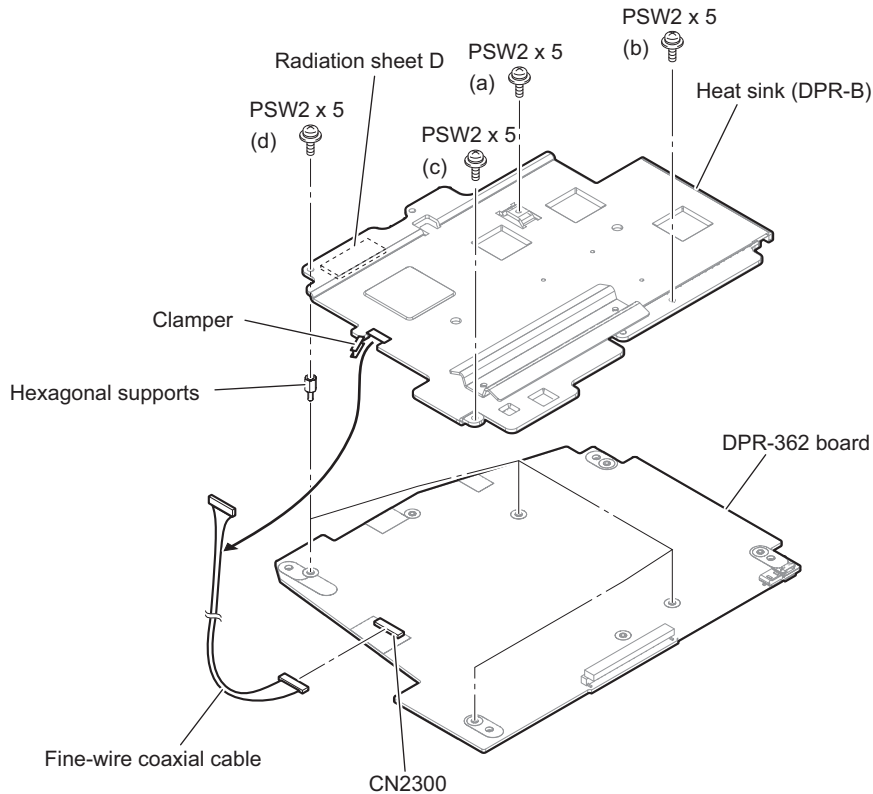
Note

When fixing the fine-wire coaxial cable to the clumper, pass the fine-wire coaxial cable into the clumper and draw out it to outside.

3. Remove the DPR-362 board assembly.
- (1) Remove the two screws and the two hexagonal supports, and disconnect the DPR-362 board assembly from the connector (CN3) on the MB-1210 board.
 - (2) Pull out the fine-wire coaxial cable from the gap in the partition.



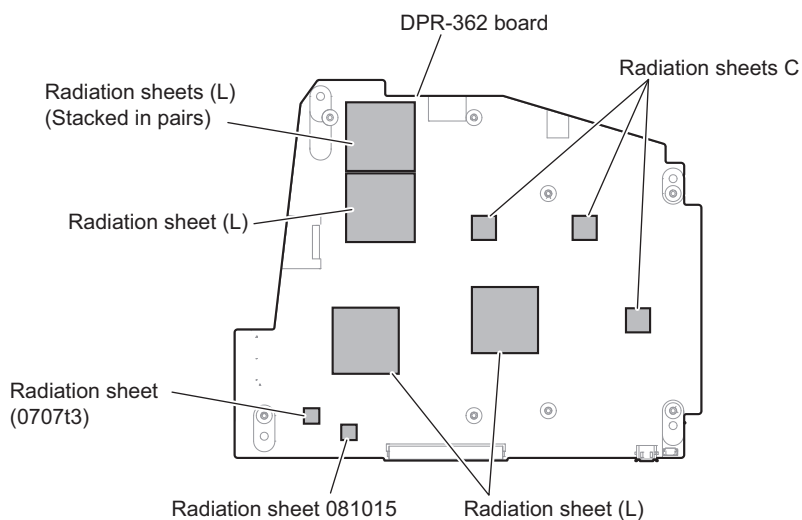
4. Remove the heat sink (HPR-B).
 - (1) Remove the four screws to detach the heat sink (DPR-B).
 - (2) Release the fine-wire coaxial cable from the clumper.
 - (3) Disconnect the fine-wire coaxial cable from the connector (CN2300) on the DPR-362 board.
 - (4) Remove the four hexagonal supports.



Note

Pay attention to the following when installing the heat sink (DPR-B).

- Tighten the screws in the order of (a) to (d).
- In the case of dropping the radiation sheet, the radiation sheet C, radiation sheet 081015 and the radiation sheets (L), attach their sheets at the location as shown in the following figure.



5. Install the removed parts by reversing the steps of removal.

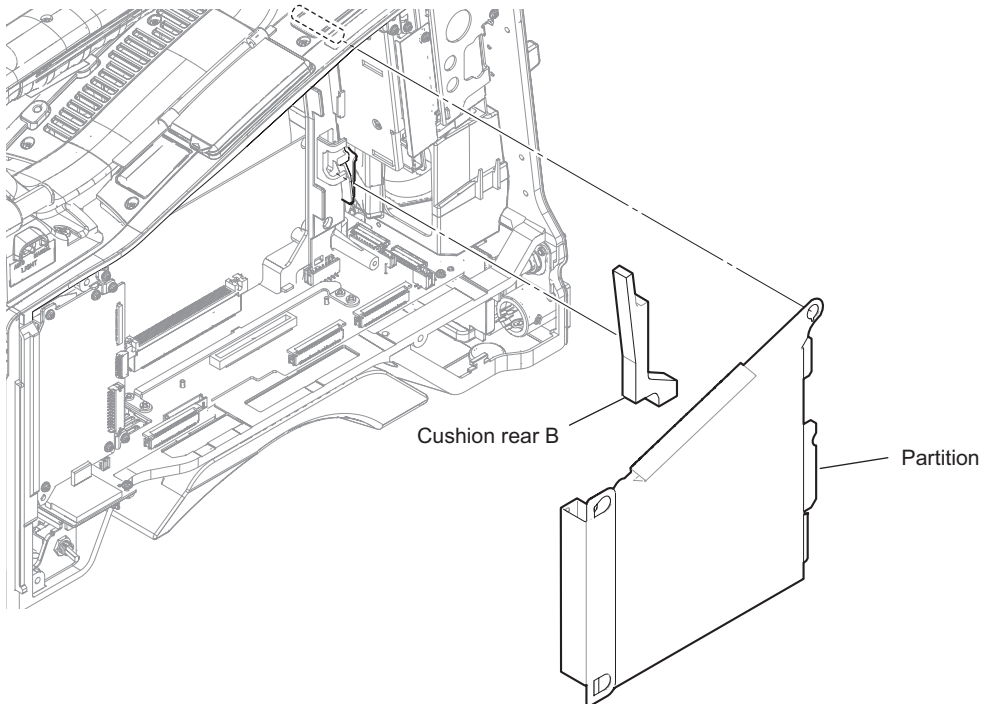
2-12. Partition/Cushion Rear B

Preparation

1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the DCP-67 board. (Refer to “2-9. DCP-67 Board”)
5. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)
6. Remove the DPR-362 board. (Refer to “2-11. DPR-362 Board”)

Procedure

1. Remove the partition and cushion rear B.

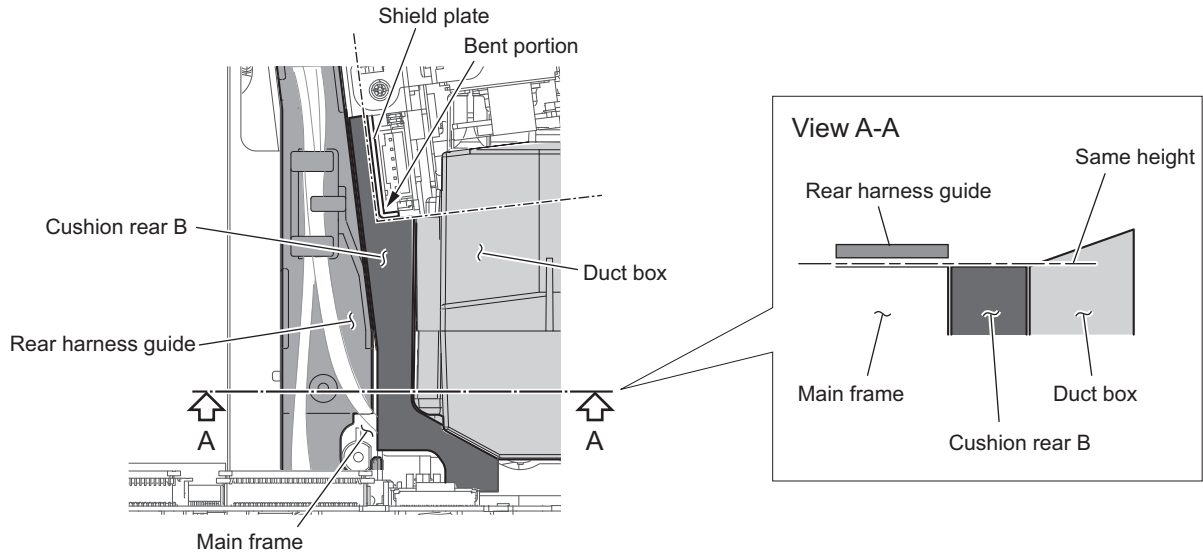


2. Install the removed parts by reversing the steps of removal.

Note

Pay attention to the following when installing the cushion rear B.

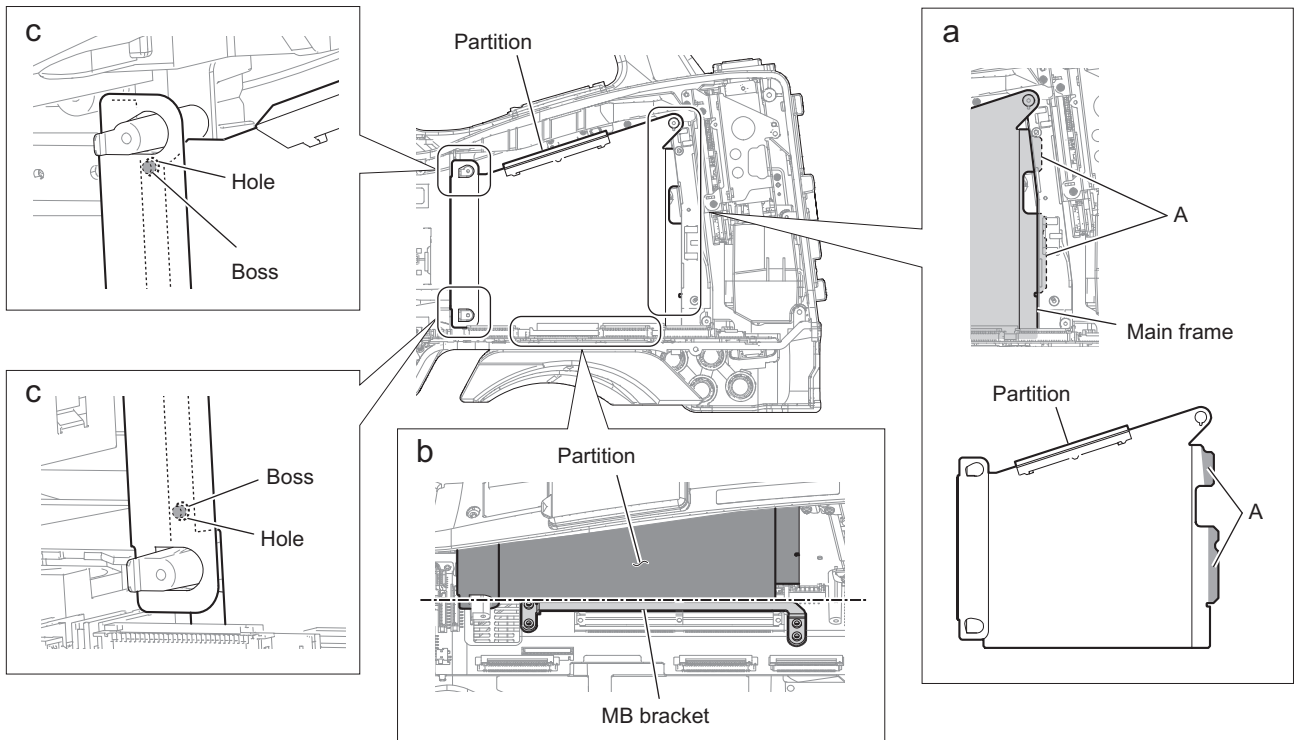
- Align the bent portion of the shield plate with the cushion rear B as shown below.
- Push the cushion rear B so that the main frame, duct box, and the cushion rear B become the same height.



Note

Pay attention to the following when installing the partition.

- Insert portion A of the partition into the outside of the main frame. (Refer to Figure a.)
- Push the partition so that it comes to the outside of the MB bracket (A). (Refer to Figure b.)
- Align the two bosses of the main frame with the two holes of the partition. (Refer to Figure c.)



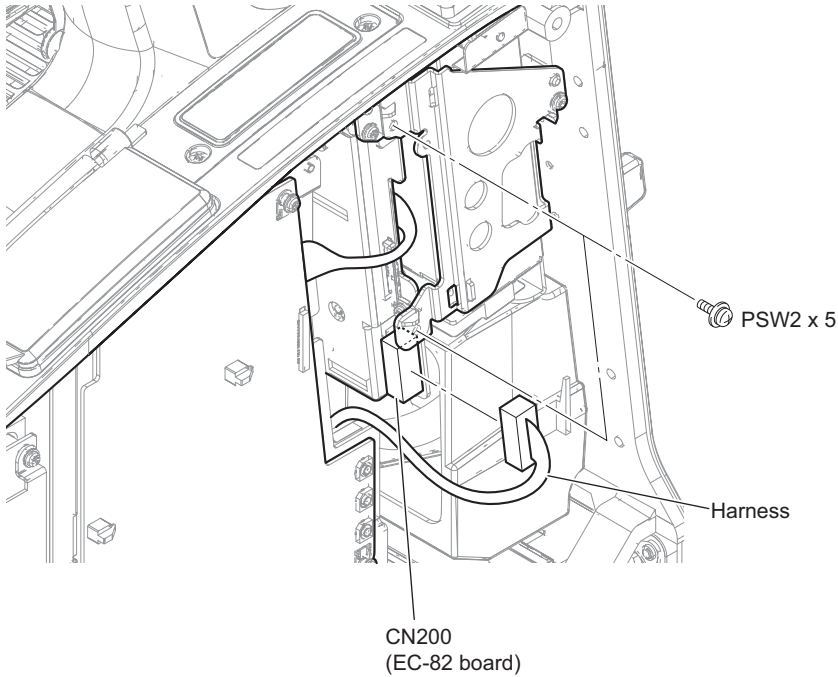
2-13. EC-82 Board

Preparation

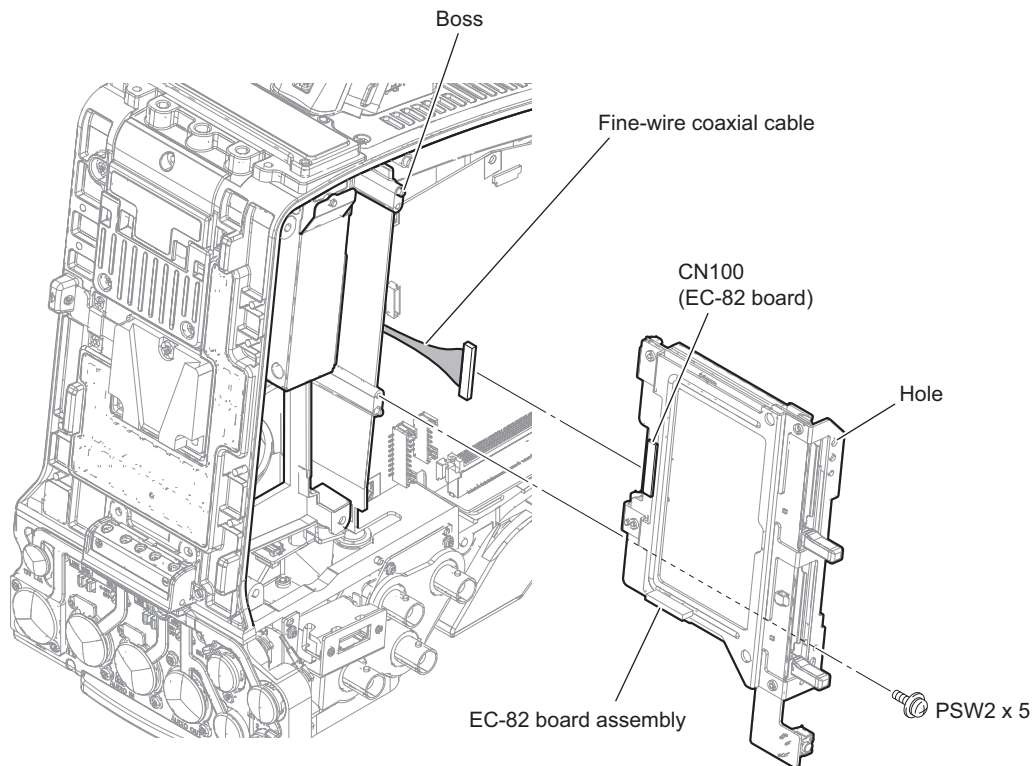
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the heat sink (HPR-A). (Refer to “2-10. HPR-53 Board”)

Procedure

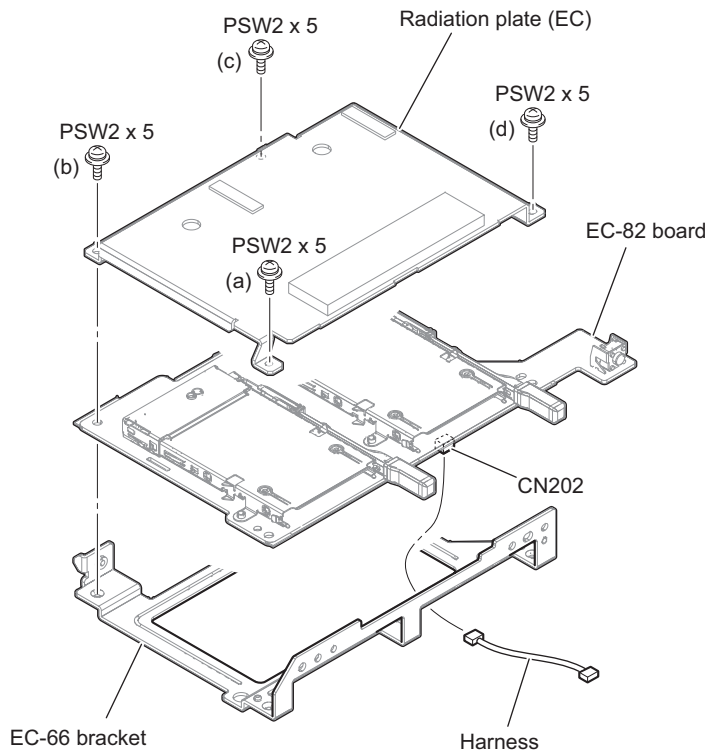
1. Remove the two screws, and disconnect the harness from the connector (CN200) on the EC-82 board.



2. Remove the EC-82 board assembly.
 - (1) Remove the screw, and draw the EC-82 board assembly.
 - (2) Disconnect the fine-wire coaxial cable from the connector (CN100) on the EC-82 board.



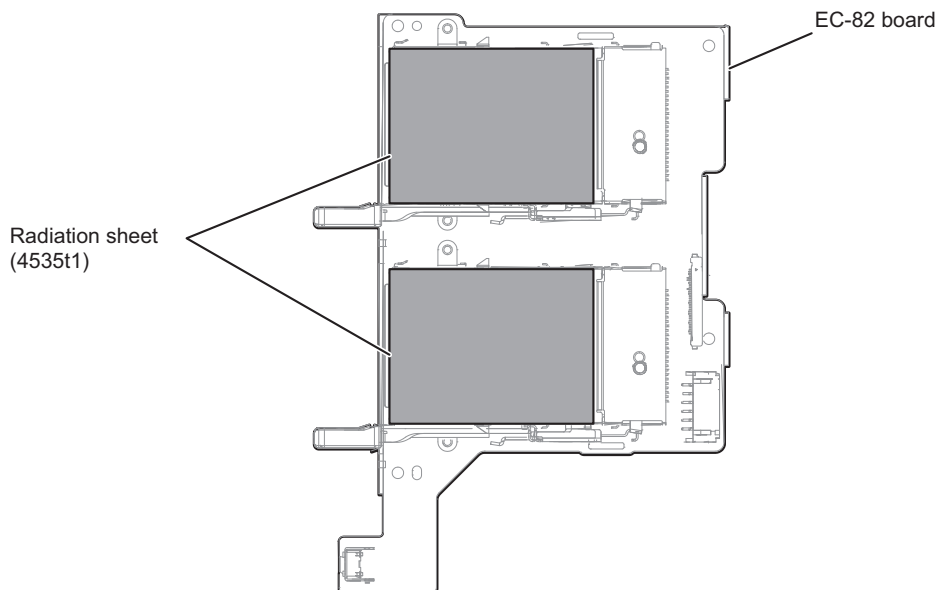
3. Remove the EC-82 board.
 - (1) Remove the four screws to detach the radiation plate (EC) and the EC-66 bracket.
 - (2) Disconnect the harness from the connector (CN202) on the EC-82 board.



Note

Pay attention to the following when installing the radiation plate (EC).

- Tighten the screws in the order of (a) to (d).
- In the case of dropping the two radiation sheets (4535t1), attach their sheets at the location as shown in the following figure.



4. Install the removed parts by reversing the steps of removal.

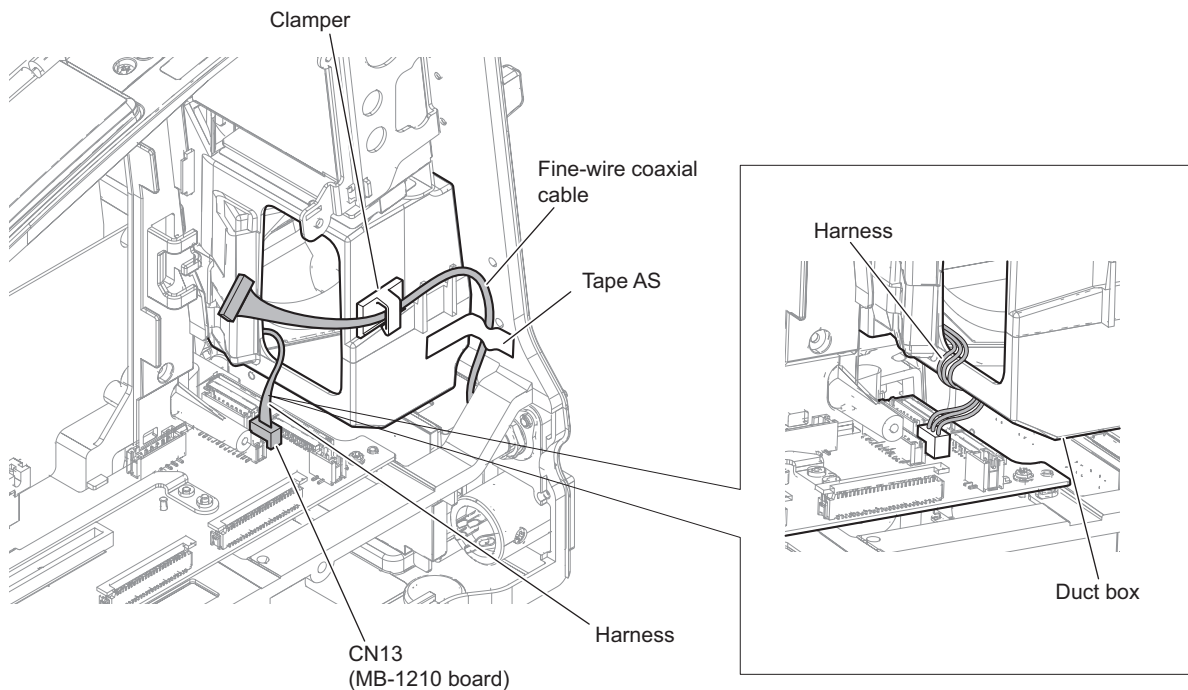
2-14. DC Fan (40 Square)

Preparation

1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the DCP-67 board. (Refer to “2-9. DCP-67 Board”)
5. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)
6. Remove the DPR-362 board. (Refer to “2-11. DPR-362 Board”)
7. Remove the EC-82 board. (Refer to “2-13. EC-82 Board”)

Procedure

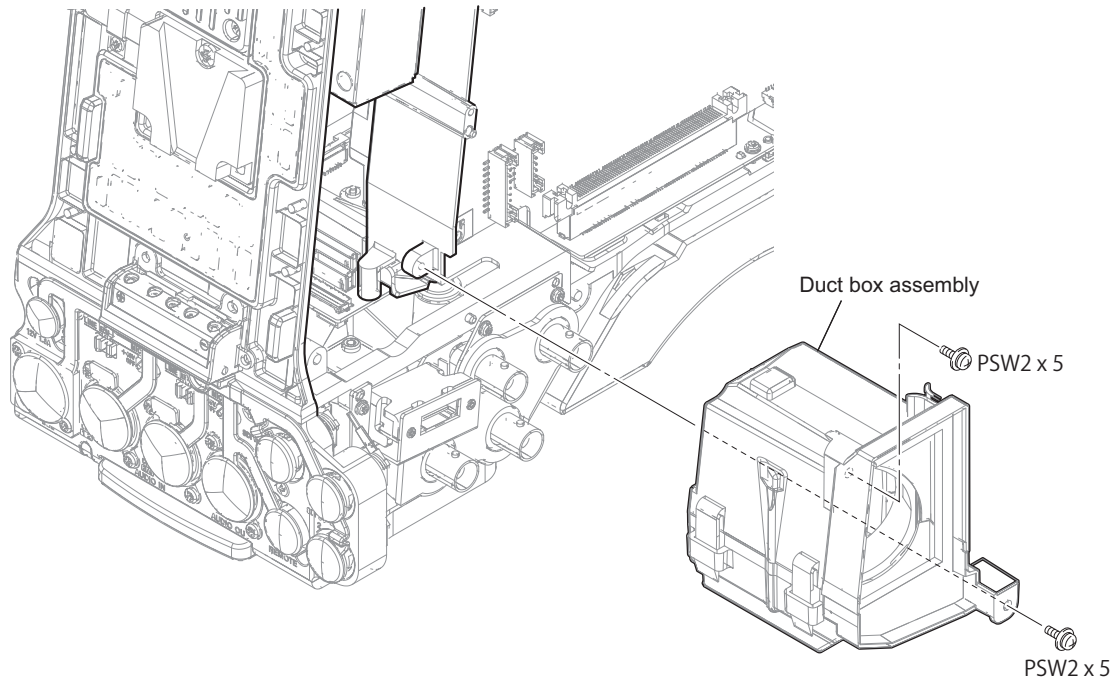
1. Release the fine-wire coaxial cable from the clamber, and disconnect the harness.
 - (1) Remove the tape AS.
 - (2) Release the fine-wire coaxial cable from the clamber.
 - (3) Disconnect the harness from the connector (CN13) on the MB-1210 board.



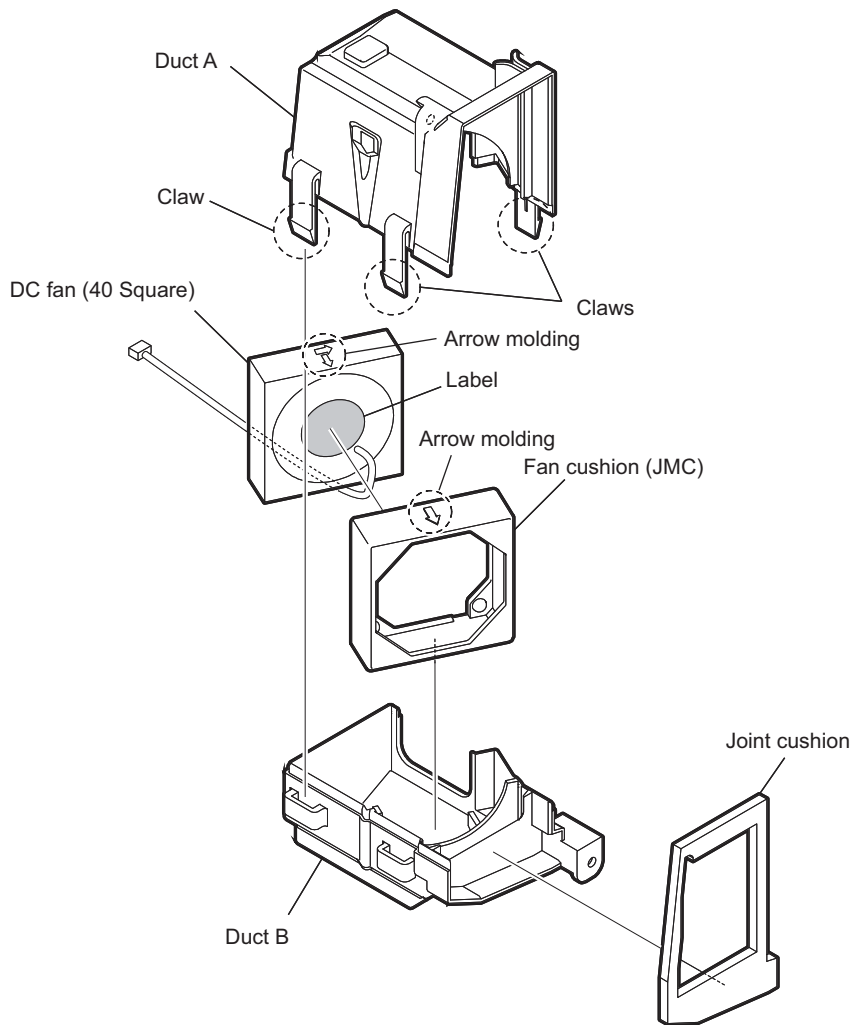
Note

When connecting the harness, arrange the harness under the duct box as shown in the figure.

2. Remove the two screws, and draw the duct box assembly.

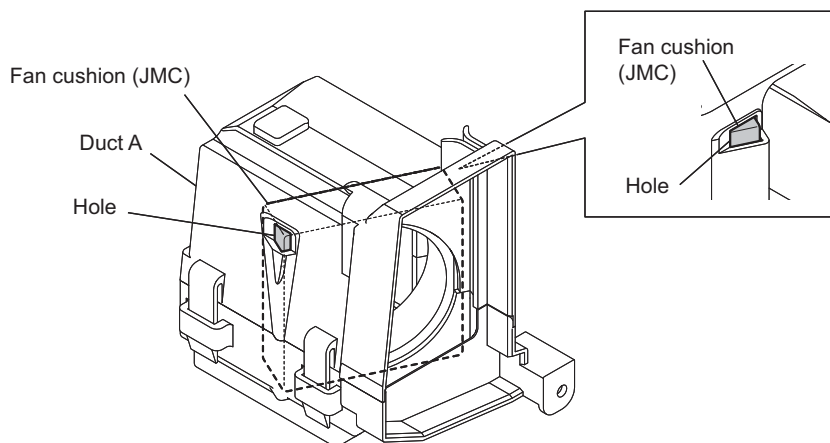


3. Remove the DC fan (40square).
 - (1) Remove the joint cushion.
 - (2) Remove the four claws to detach the duct A.
 - (3) Remove the DC fan (40 square) from the fan cushion (JMC).



Note

- Confirm the corner of the fan cushion (JMC) in two places looks from the hole of duct A as shown in the figure.
- Confirm the direction of the label of DC fan (40 square) and the position of the arrow molding. Confirm the position of the arrow molding on the fan cushion (JMC).



4. Install the removed parts by reversing the steps of removal.

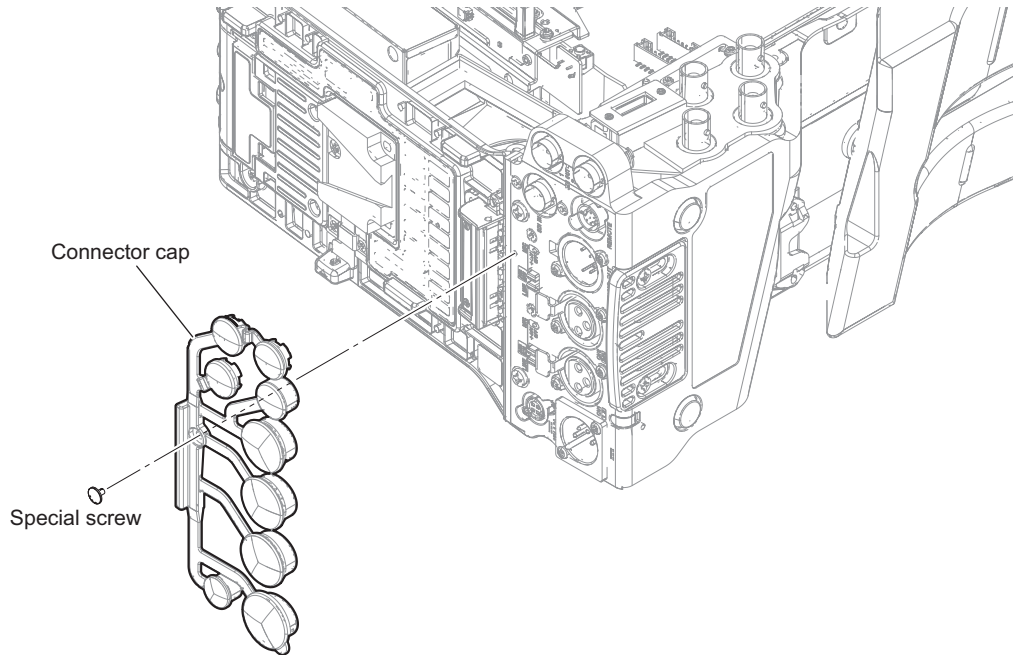
2-15. IO-275 Board, DIF-232 Board

Preparation

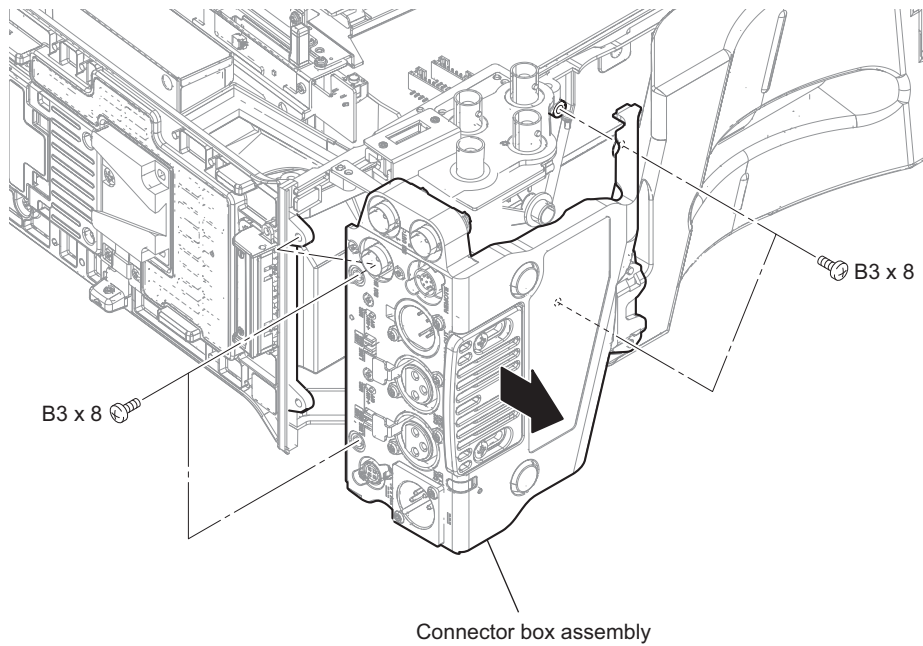
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)

Procedure

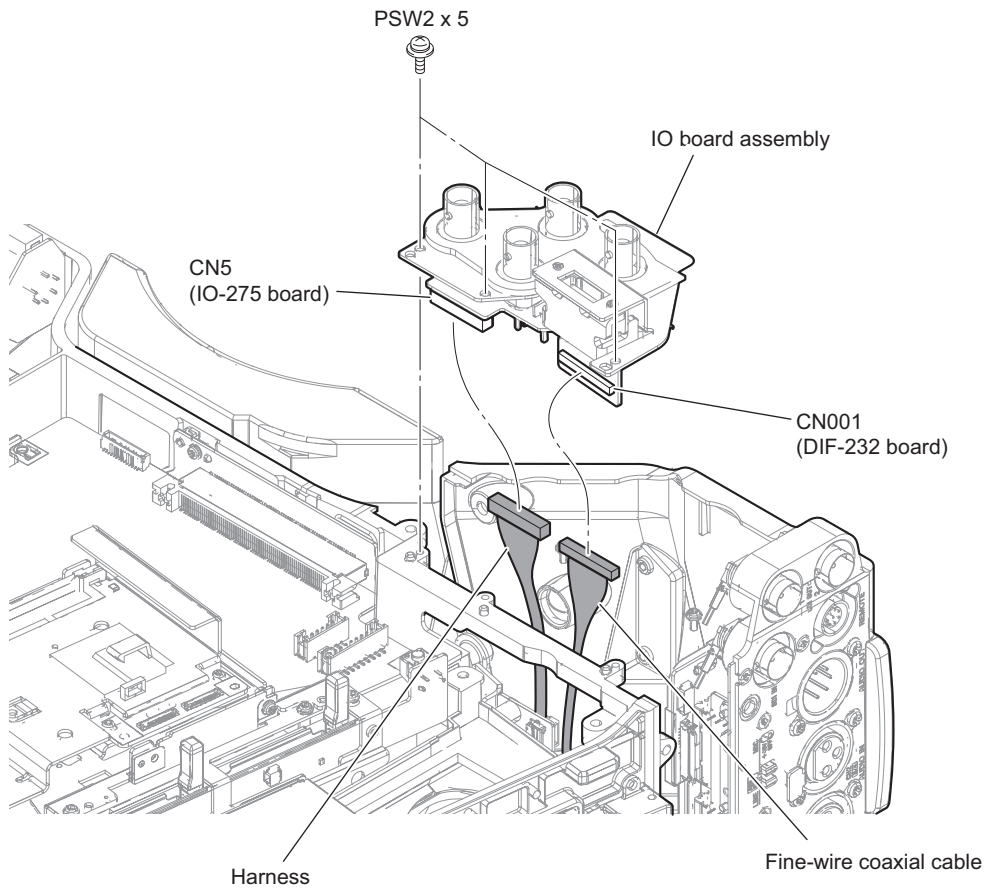
1. Remove the screw to detach the connector cap.



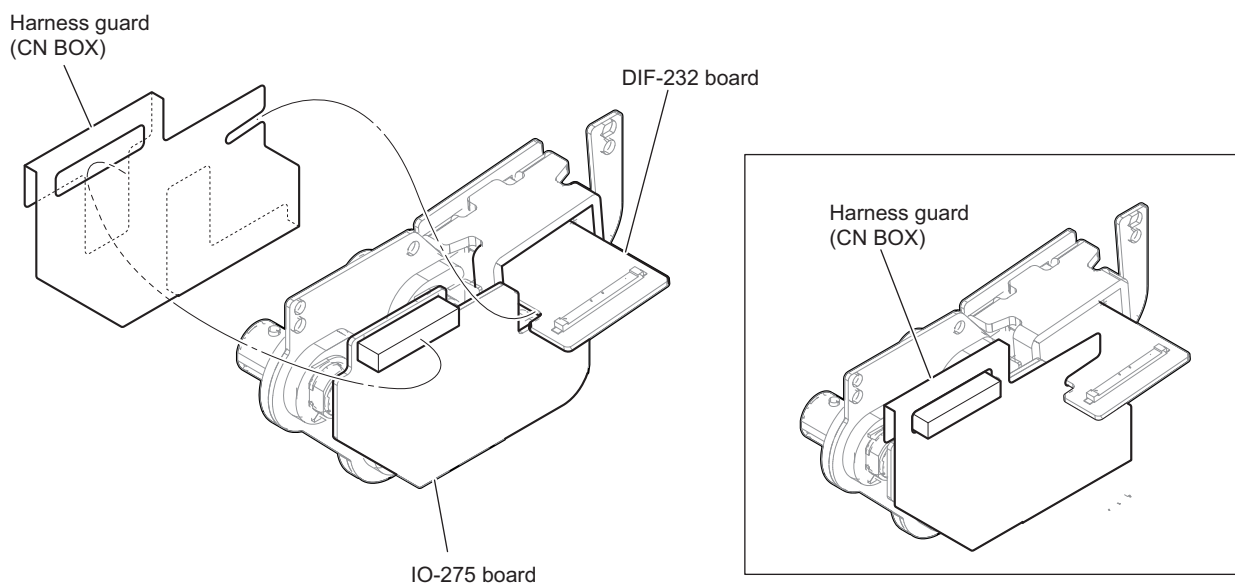
2. Remove the four screws, and draw the connector box assembly in the direction of the arrow.



3. Remove the IO board assembly.
 - (1) Remove the three screws, and pull up the IO board assembly.
 - (2) Disconnect the harness from the connector (CN5) on the IO-275 board.
 - (3) Disconnect the fine-wire coaxial cable from the connector (CN001) on the IO-275 board, and remove the IO board assembly.



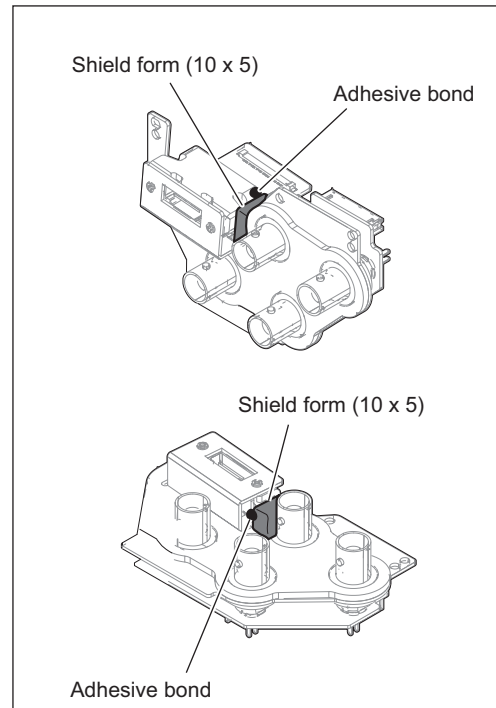
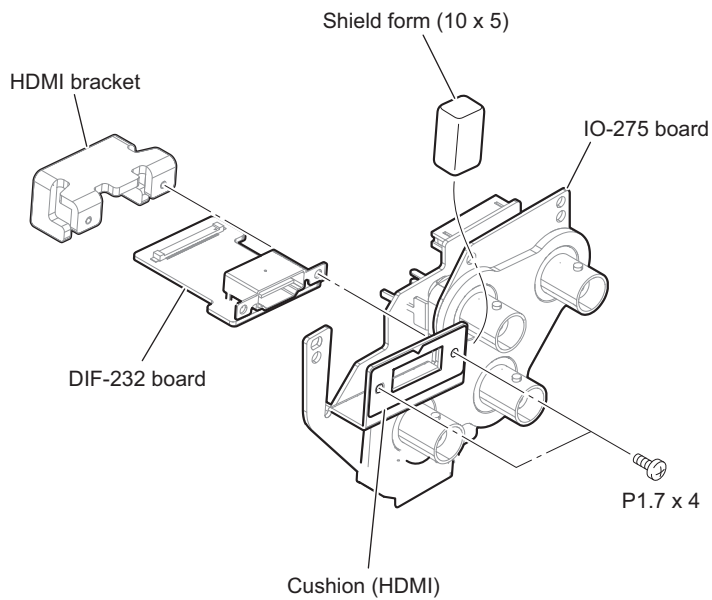
4. Remove the harness guard (CN BOX).



Note

When installing the harness guard (CN BOX), install it as shown in the figure.

5. Remove the IO-275 board and the DIF-232 board.
 - (1) Remove the two screws.
 - (2) Remove the DIF-232 board and the HDMI bracket from the IO-275 board.
 - (3) Remove the cushion (HDMI) and shield form (10x5) from the IO-275 board.



Note

When installing the shield form (10x5), apply the adhesive bond at the locations as shown in the figure.

6. Install the removed parts by reversing the steps of removal.

2-16. Connector Box Section

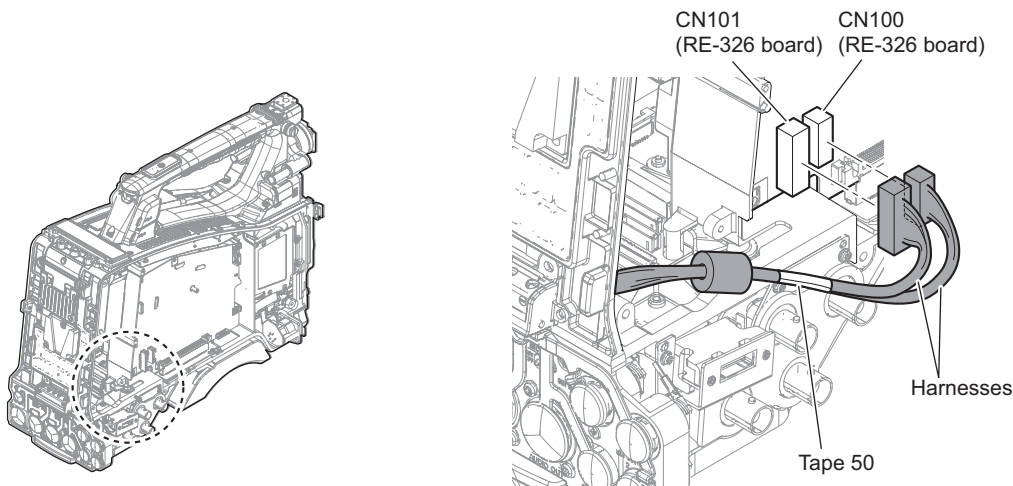
2-16-1. Connector Box Assembly

Preparation

1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the DCP-67 board. (Refer to “2-9. DCP-67 Board”)
5. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)
6. Remove the DPR-362 board. (Refer to “2-11. DPR-362 Board”)
7. Remove the EC-82 board. (Refer to “2-13. EC-82 Board”)
8. Remove the duct box assembly. (Refer to “2-14. DC Fan (40 Square)”)

Procedure

1. Disconnect the harnesses.
 - (1) Disconnect the two harnesses from the two connectors (CN100, CN101) on the RE-326 board.
 - (2) Remove the Tape 50.

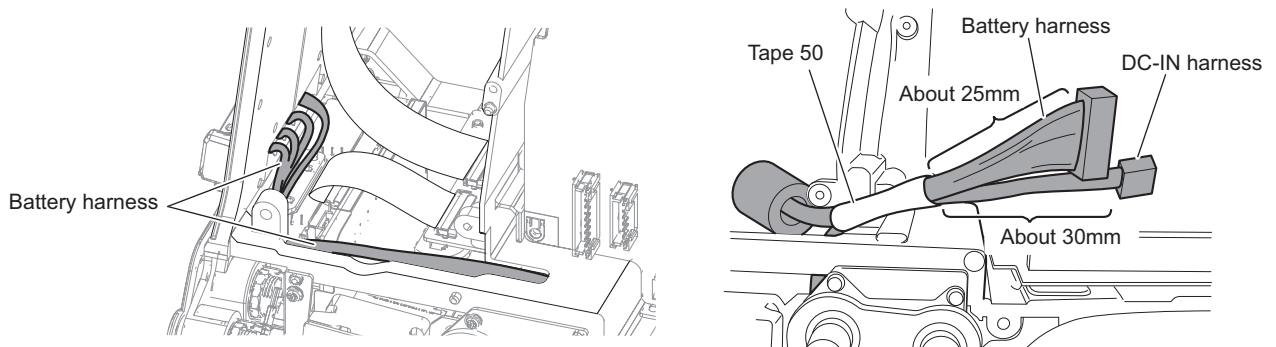


Note

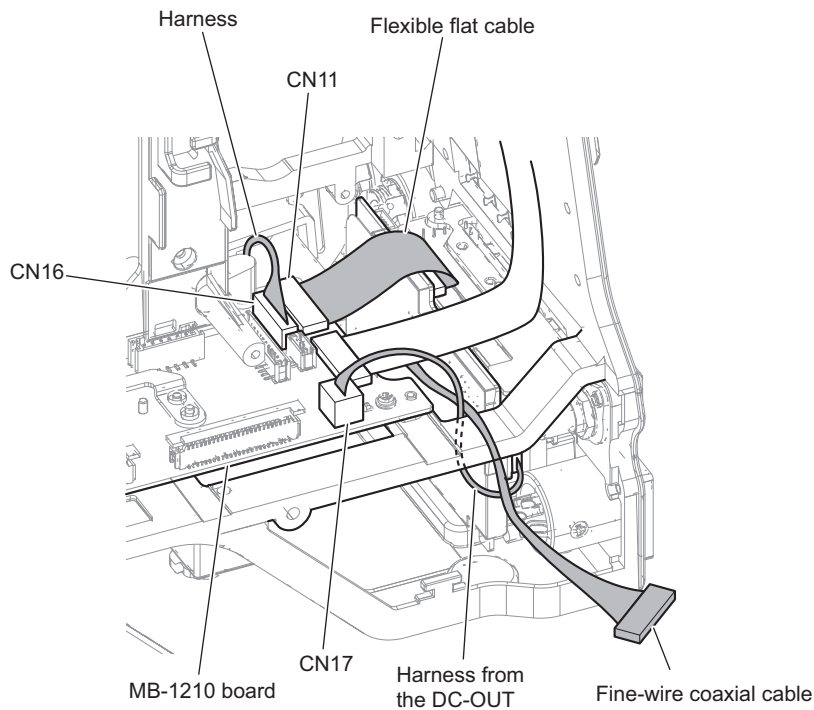
When installing the tape 50, install it at the location as shown in the following figure.

Note

When connecting the harnesses, arrange the harnesses as shown in the following figure.



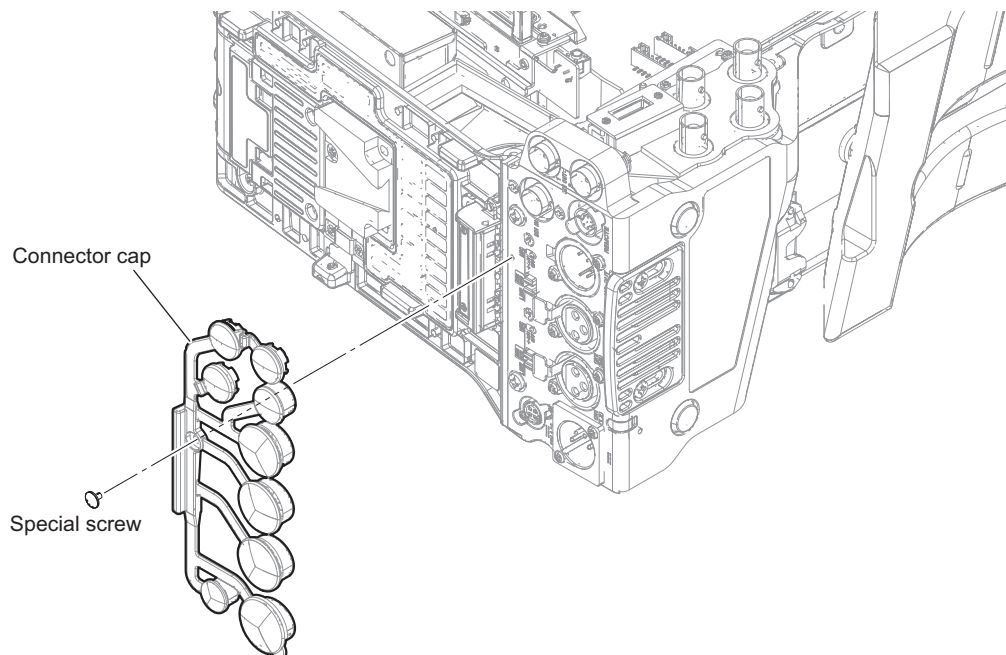
2. Disconnect the harnesses and the flexible flat cable.
 - (1) Disconnect the two harnesses from the two connectors (CN16, CN17) on the MB-1210 board.
 - (2) Disconnect the flexible flat cable from the connector (CN11) on the MB-1210 board.



Note

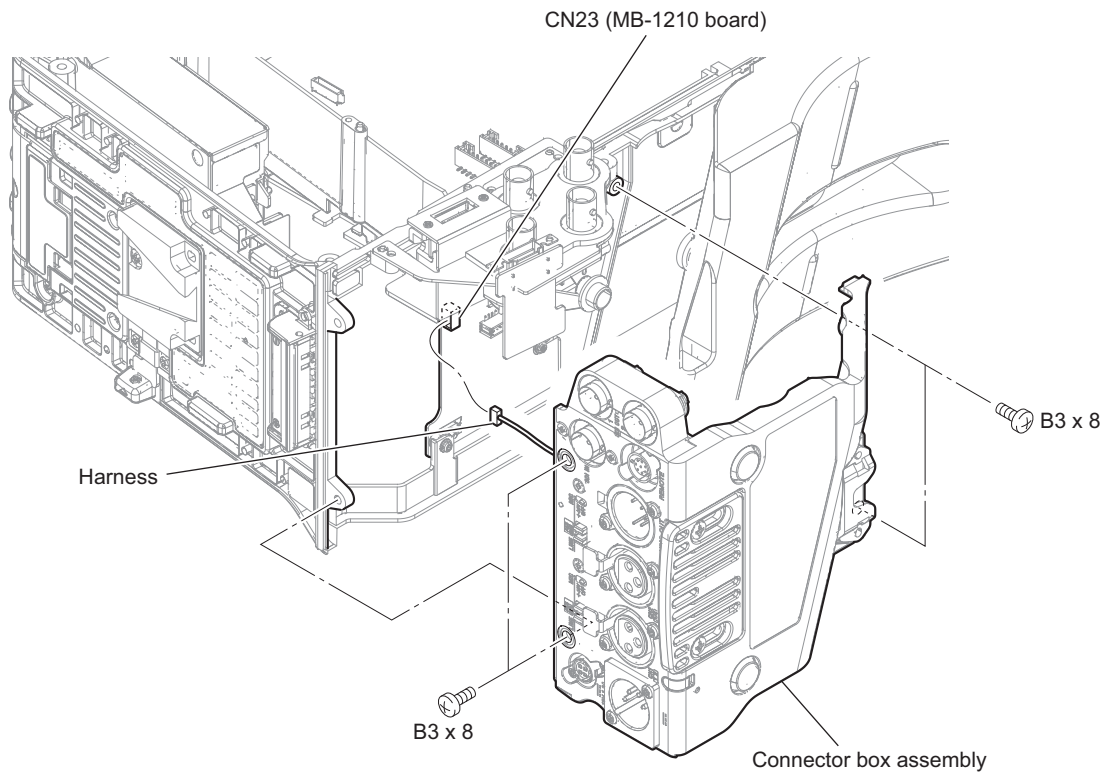
When connecting the harnesses and flexible flat cable, arrange the fine-wire coaxial cable as shown in the figure.

3. Remove the screw to detach the connector cap.



4. Remove the connector box assembly.

- (1) Remove the four screws, and draw the connector box assembly.
- (2) Disconnect the harness from the connector (CN23) on the MB-1210 board, and remove the connector box assembly.



5. Install the removed parts by reversing the steps of removal.

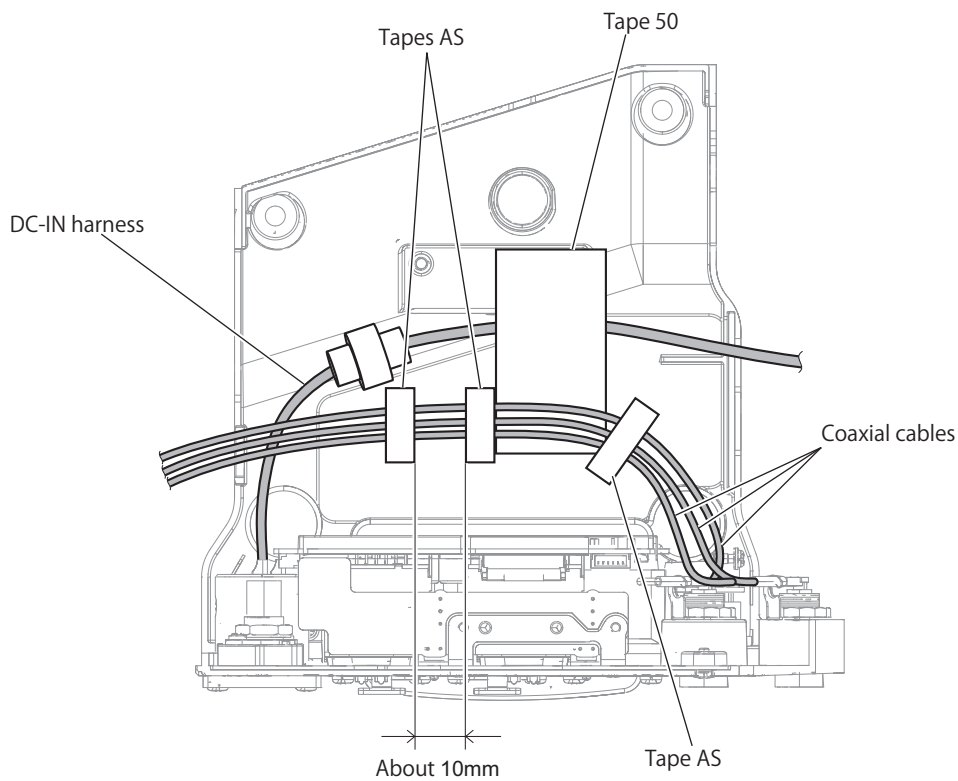
2-16-2. SW-1632 Board, AXM-52 Board

Preparation

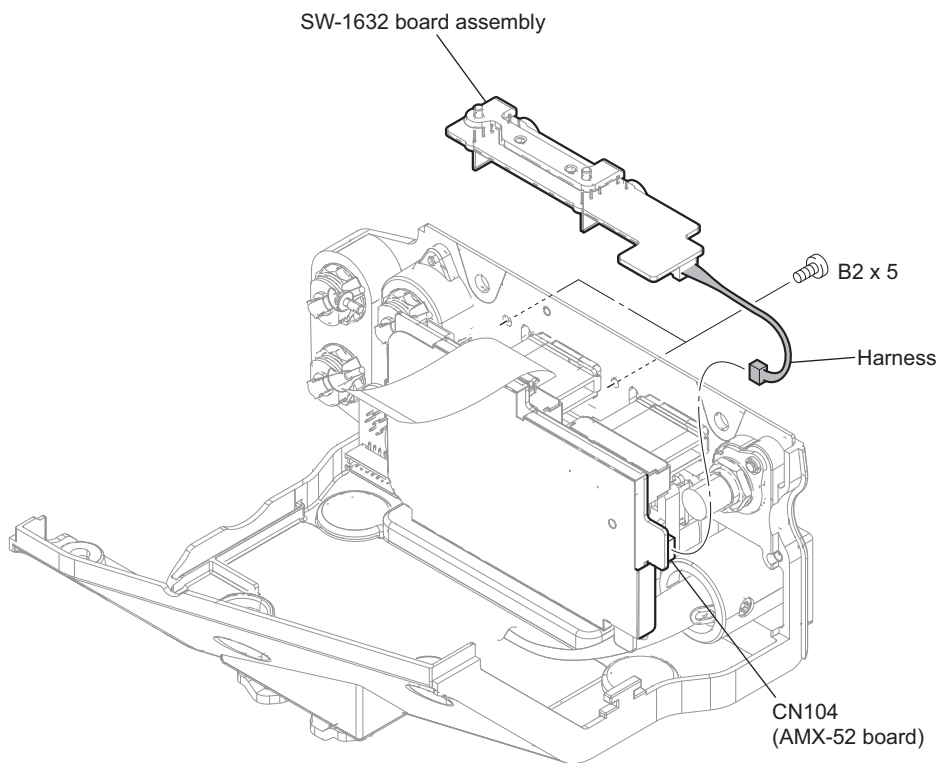
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
4. Remove the DCP-67 board. (Refer to “2-9. DCP-67 Board”)
5. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)
6. Remove the DPR-362 board. (Refer to “2-11. DPR-362 Board”)
7. Remove the EC-82 board. (Refer to “2-13. EC-82 Board”)
8. Remove the duct box assembly . (Refer to “2-14. DC Fan (40 Square)”)
9. Remove the connector box assembly . (Refer to “2-16-1. Connector Box Assembly”)

Procedure

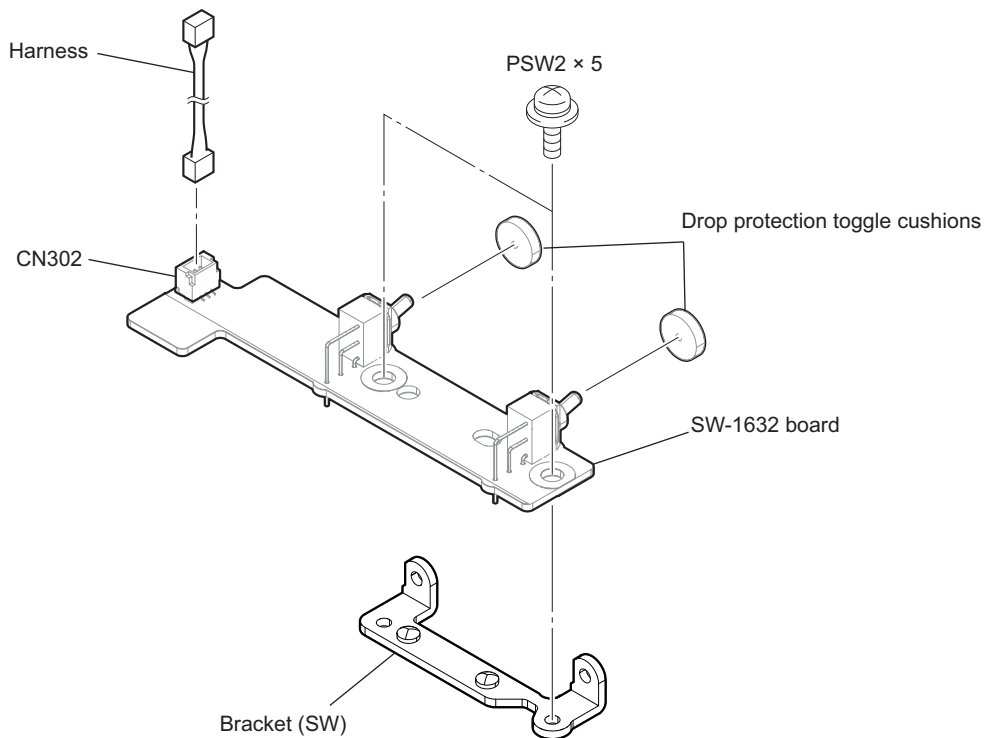
1. Remove the tape 50 and the three tapes AS, and release the DC-IN harness and the three coaxial cables.



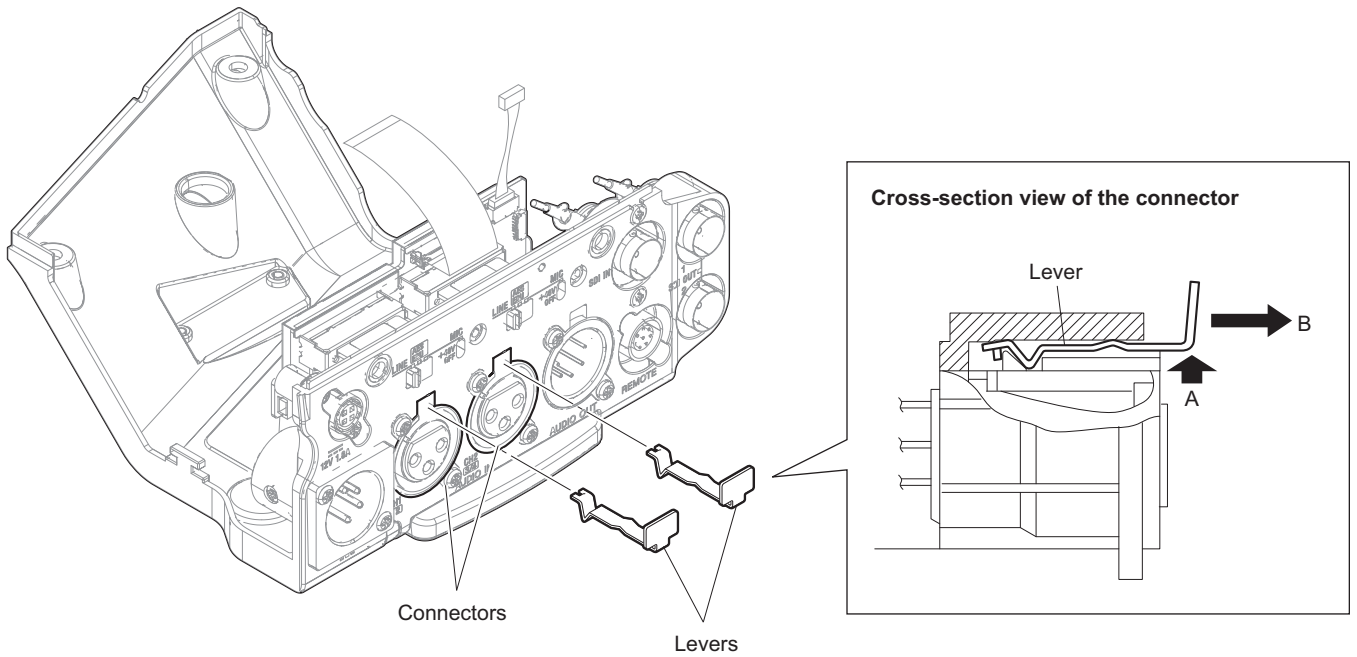
2. Remove the SW-1632 board assembly.
 - (1) Disconnect the harness from the connector (CN104) on the AXM-52 board.
 - (2) Remove the two screws to detach the SW-1632 board assembly.



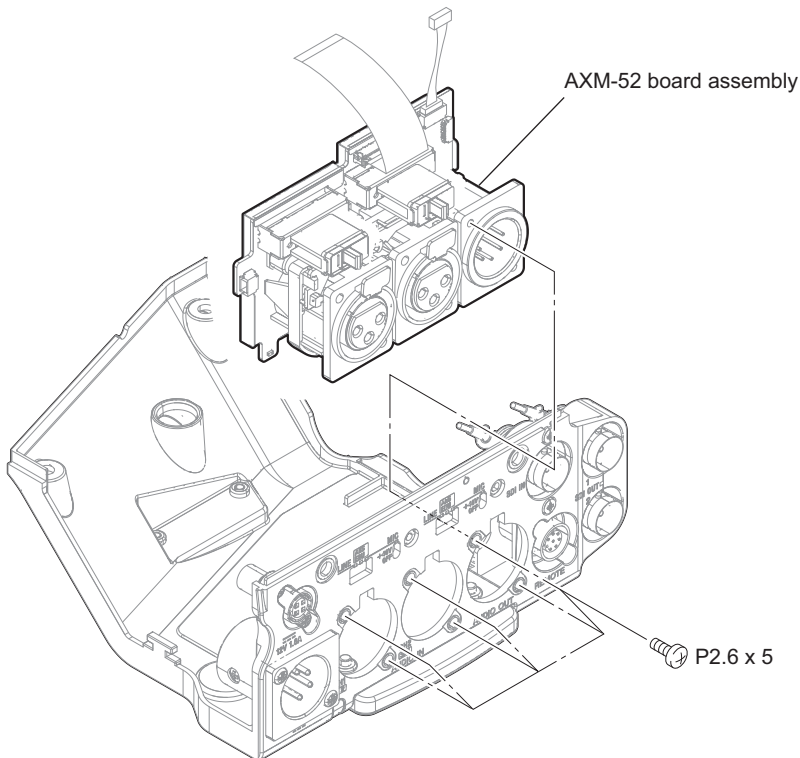
3. Remove the SW-1632 board.
 - (1) Disconnect the harness from the connector (CN302) on the SW-1632 board.
 - (2) Remove the two drop protection toggle cushions.
 - (3) Remove the two screws to detach the bracket (SW).



4. Strongly pull the lever in the direction of arrow B while pushing the it in the direction of arrow A, to remove the lever.

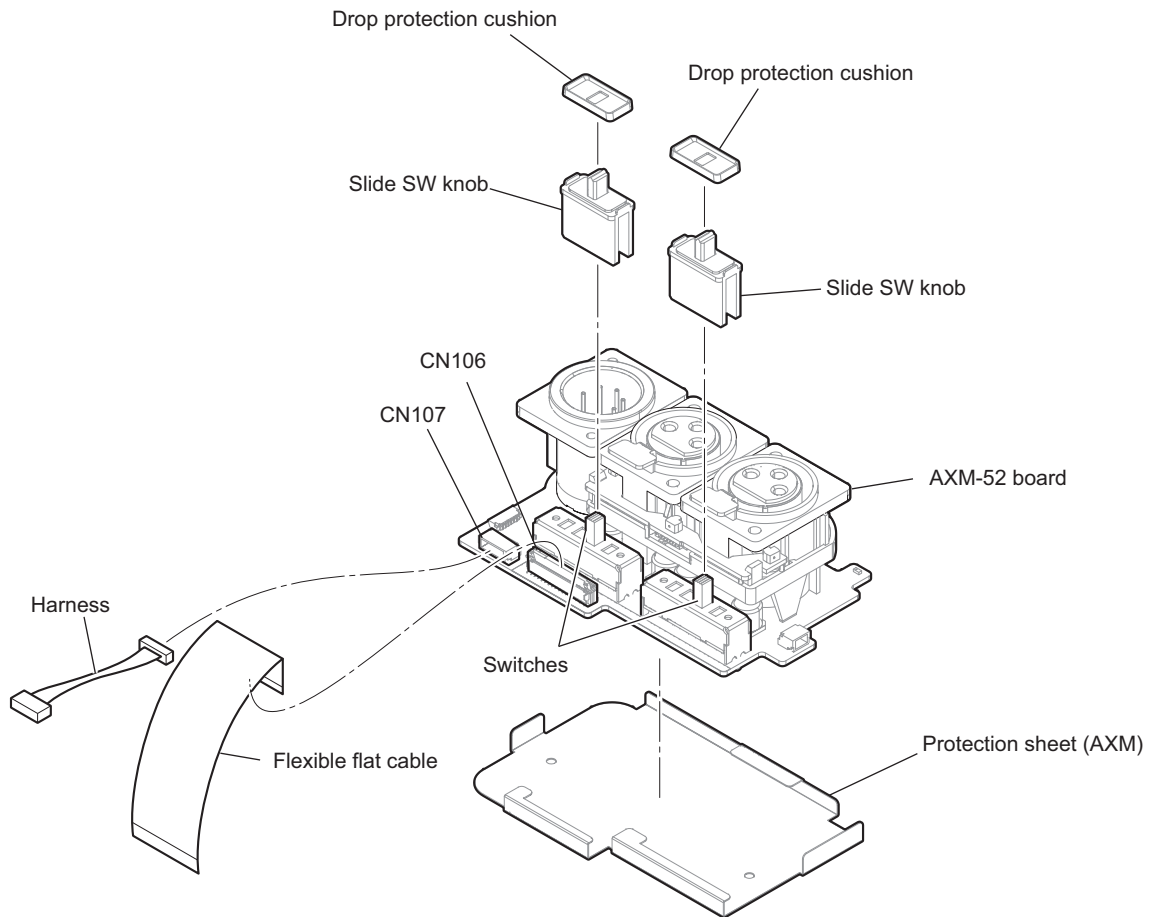


5. Remove the six screws to detach the AXM-52 board assembly.



6. Remove the AXM-52 board.

- (1) Disconnect the flexible flat cable from the connector (CN106) on the AXM-52 board.
- (2) Disconnect the harness from the connector (CN107) on the AXM-52 board.
- (3) Remove the protection sheet (AXM).
- (4) Remove the two drop protection cushions and the two slide SW knobs from the two switches on the AXM-52 board.



7. Install the removed parts by reversing the steps of removal.

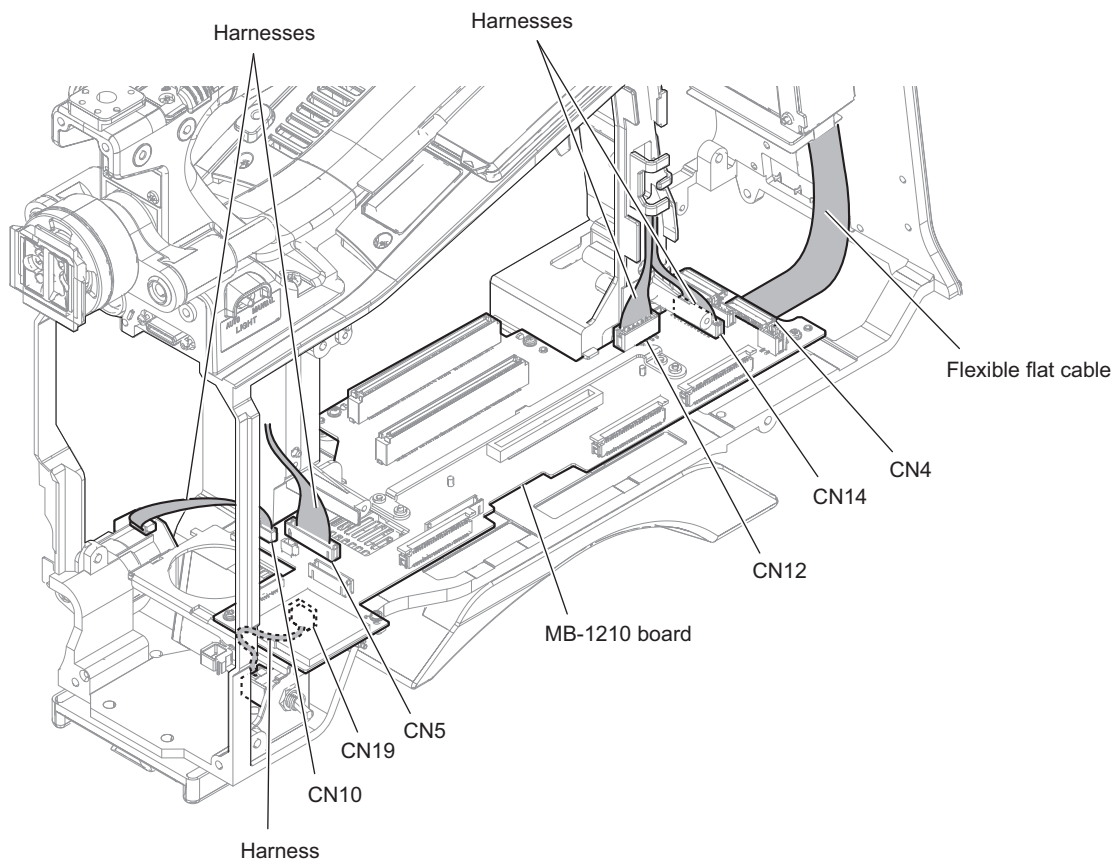
2-17. MB-1210 Board

Preparation

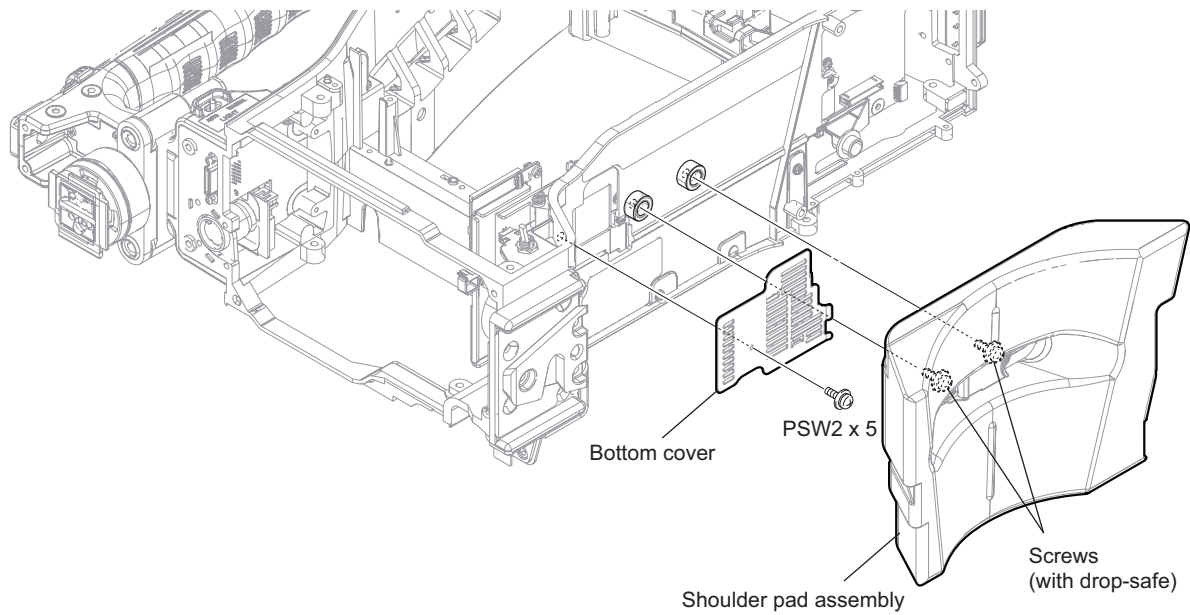
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the bracket (WA) assembly. (Refer to “2-6. Wi-Fi Module/SD-58 Board”)
3. Remove the RE-326 board. (Refer to “2-7. RE-326 Board”)
4. Remove the AU-360 board. (Refer to “2-8. AU-360 Board”)
5. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
6. Remove the front assembly. (Refer to “2-4-1. Front Assembly”)
7. Remove the DC fan (30 square). (Refer to “2-5. DC Fan (30 Square)”)
8. Remove the DCP-67 board. (Refer to “2-9. DCP-67 Board”)
9. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)
10. Remove the DPR-362 board. (Refer to “2-11. DPR-362 Board”)
11. Remove the partition. (Refer to “2-12. Partition/Cushion Rear B”)
12. Remove the EC-82 board. (Refer to “2-13. EC-82 Board”)
13. Remove the duct box assembly. (Refer to “2-14. DC Fan (40 Square)”)
14. Remove the IO board assembly. (Refer to “2-15. IO-275 Board, DIF-232 Board”)
15. Remove the connector box assembly. (Refer to “2-16-1. Connector Box Assembly”)

Procedure

1. Disconnect the harnesses and flexible flat cable.
 - (1) Disconnect the five harnesses from the five connectors (CN5, CN10, CN12, CN14, CN19) on the MB-1210 board.
 - (2) Disconnect the flexible flat cable from the connector (CN4) on the MB-1210 board.

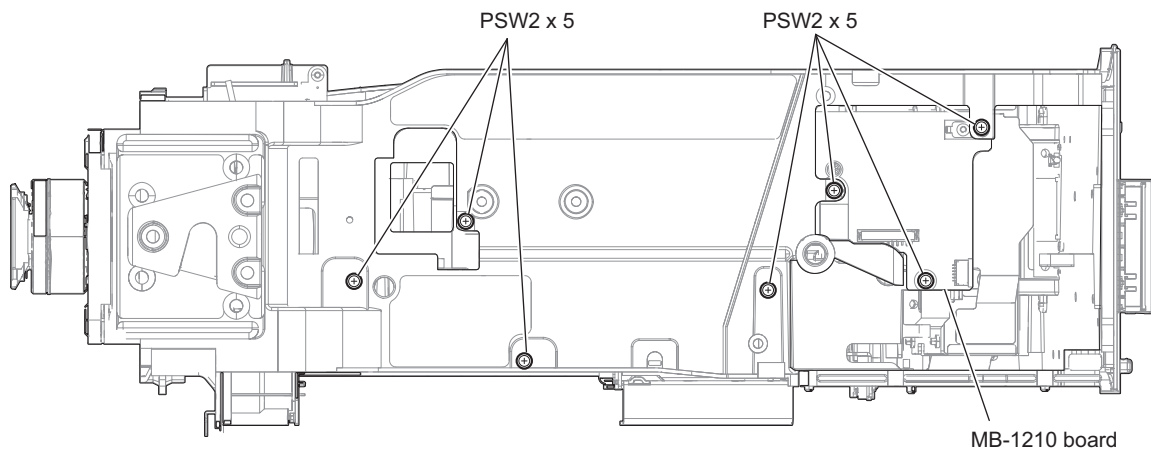


2. Remove the shoulder pad assembly and the bottom cover.
 - (1) Loosen the two screws (with drop-safe) and remove the shoulder pad assembly.
 - (2) Remove the screw to detach the bottom cover.

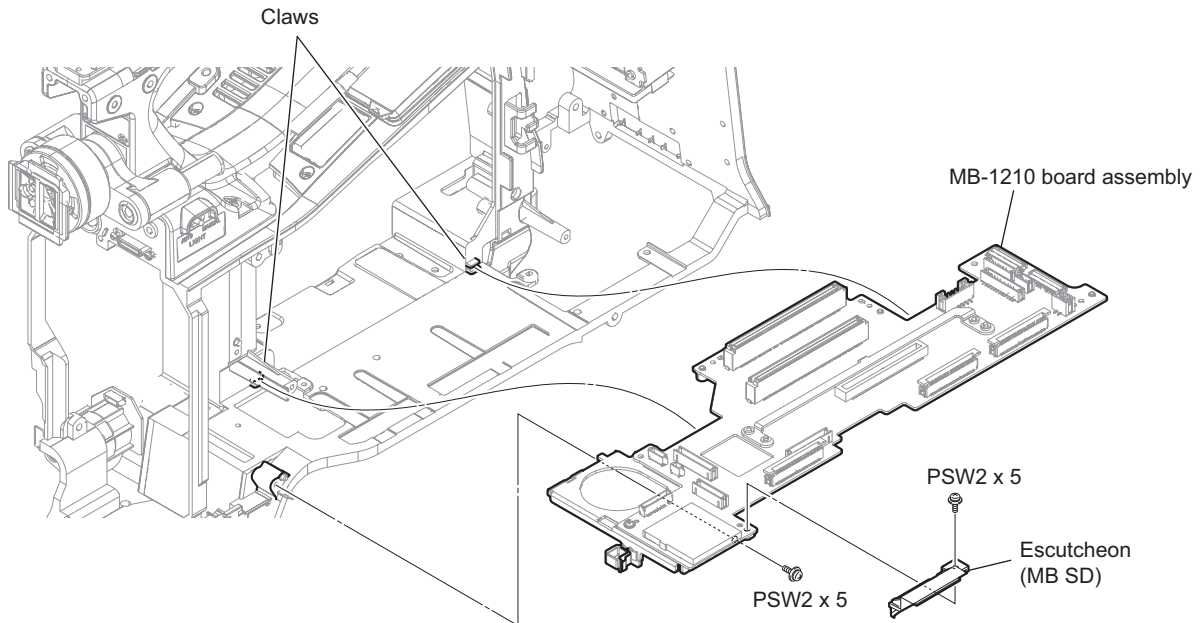


3. Remove the seven screws.

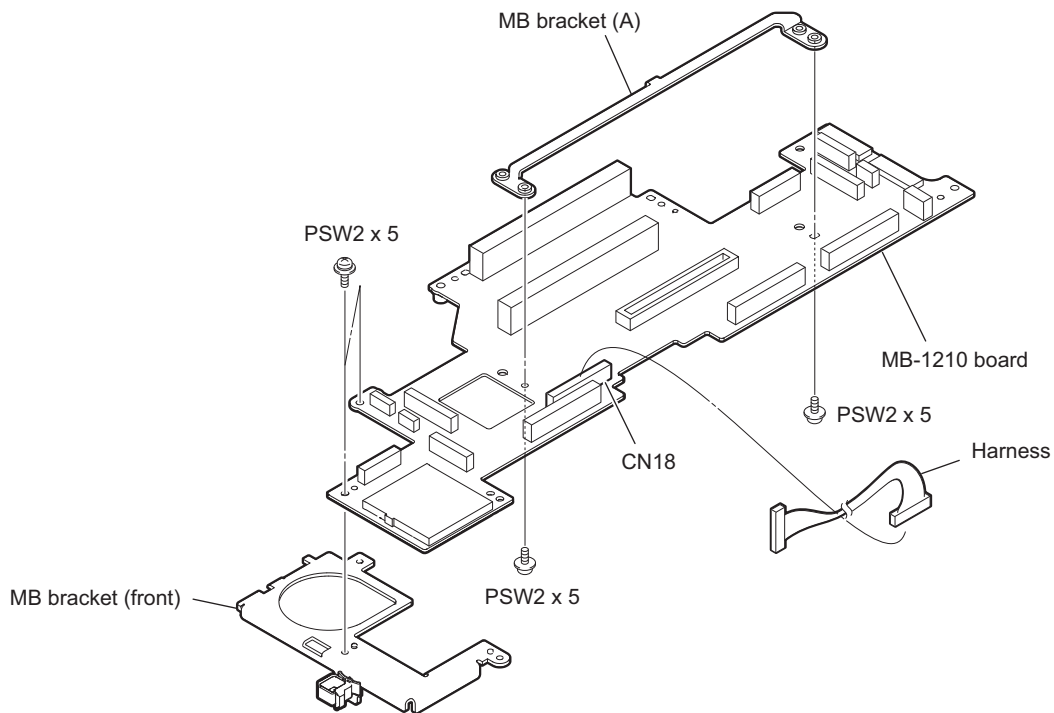
Bottom view



4. Remove the MB-1210 board assembly.
 - (1) Remove the screw to detach the escutcheon (MB SD).
 - (2) Remove the screw.
 - (3) Release the two claws to detach the MB-1210 board assembly.



5. Remove the MB-1210 board.
 - (1) Disconnect the harness from the connector (CN18) on the MB-1210 board.
 - (2) Remove the two screws to detach the MB bracket (front).
 - (3) Remove the two screws to detach the MB bracket (A).

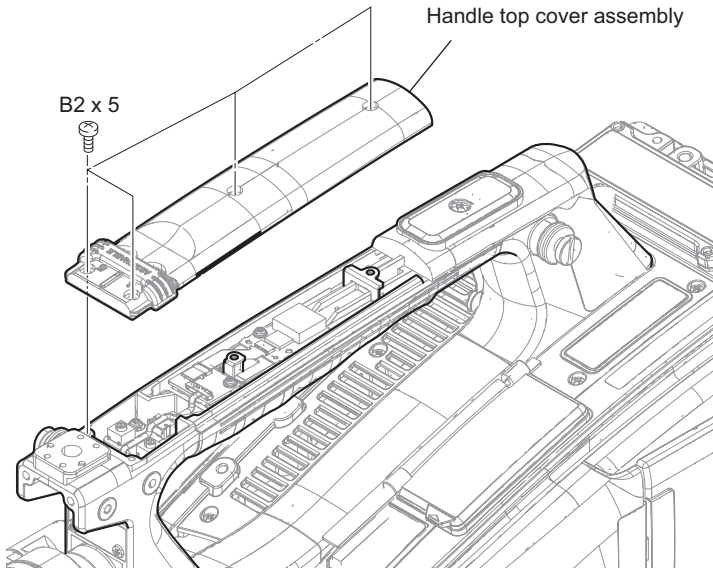


6. Install the removed parts by reversing the steps of removal.

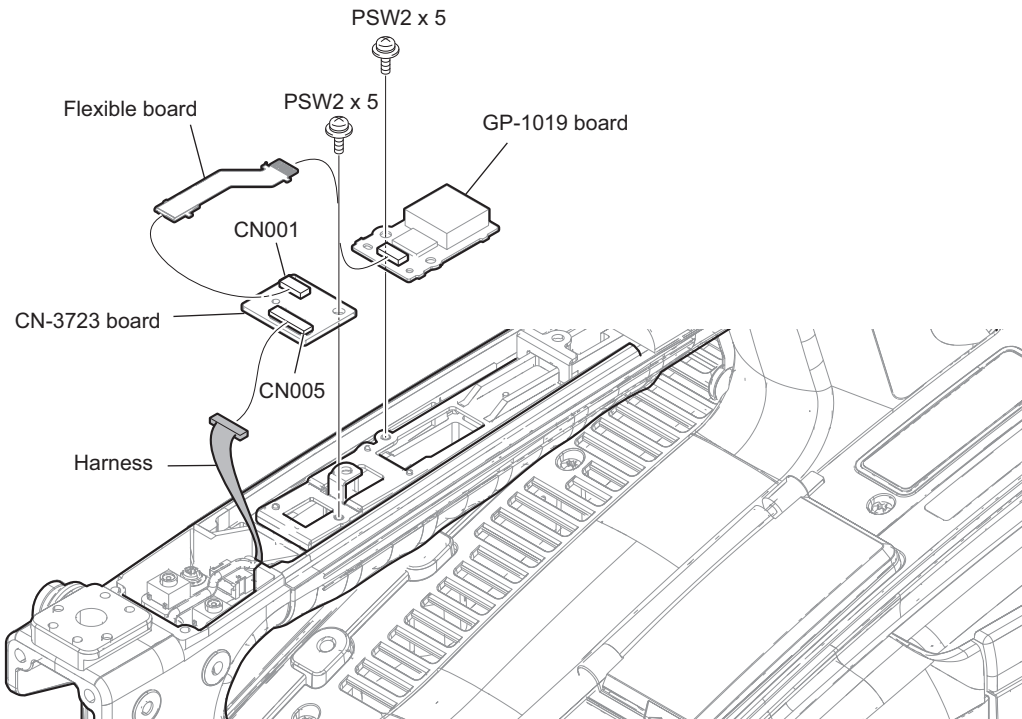
2-18. GP-1019 Board, CN-3723 Board

Procedure

1. Remove the four screws to detach the handle top cover assembly.



2. Remove the GP-1019 board and the CN-3723 board.
 - (1) Disconnect the flexible board from the connector on the GP-1019 board.
 - (2) Remove the screw to detach the GP-1019 board.
 - (3) Disconnect the harness from the connector (CN005) on the CN-3723 board.
 - (4) Disconnect the flexible board the connector (CN001) on the CN-3723 board.
 - (5) Remove the screw to detach the CN-3723 board.

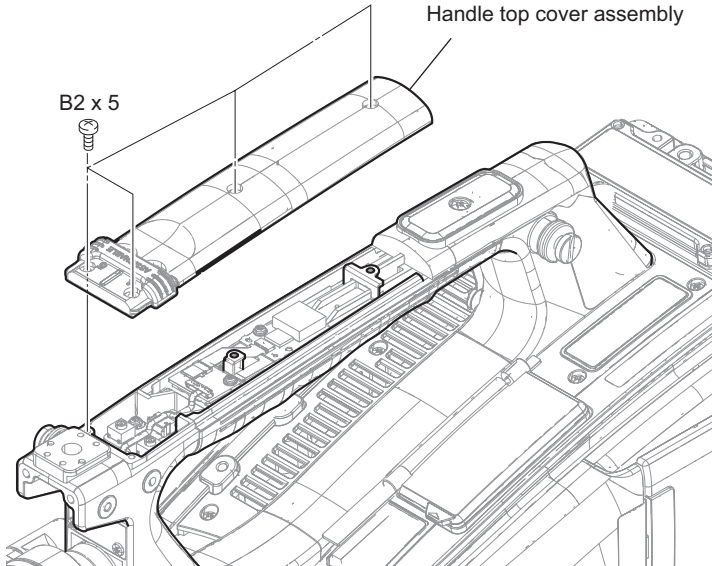


3. Install the removed parts by reversing the steps of removal.

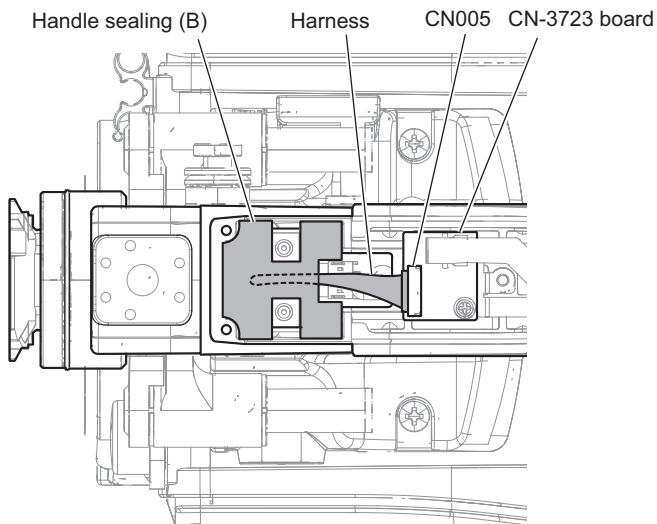
2-19. SW-1652 Board

Procedure

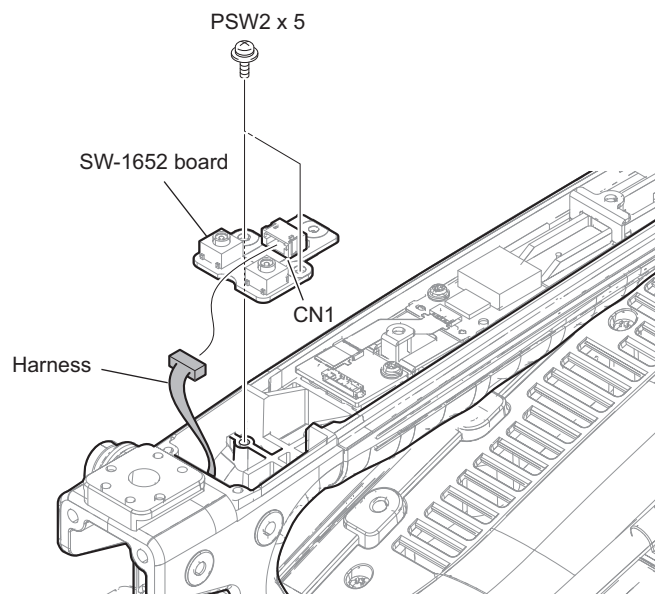
1. Remove the four screws to detach the handle top cover assembly.



2. Remove the handle sealing (B), and disconnect the harness.
 - (1) Remove the handle sealing (B).
 - (2) Disconnect the harness from the connector (CN005) on the CN-3723 board.



3. Remove the SE-1652 board.
 - (1) Disconnect the harness from the connector (CN1) on the SE-1652 board.
 - (2) Remove the two screws to detach the SE-1652 board.

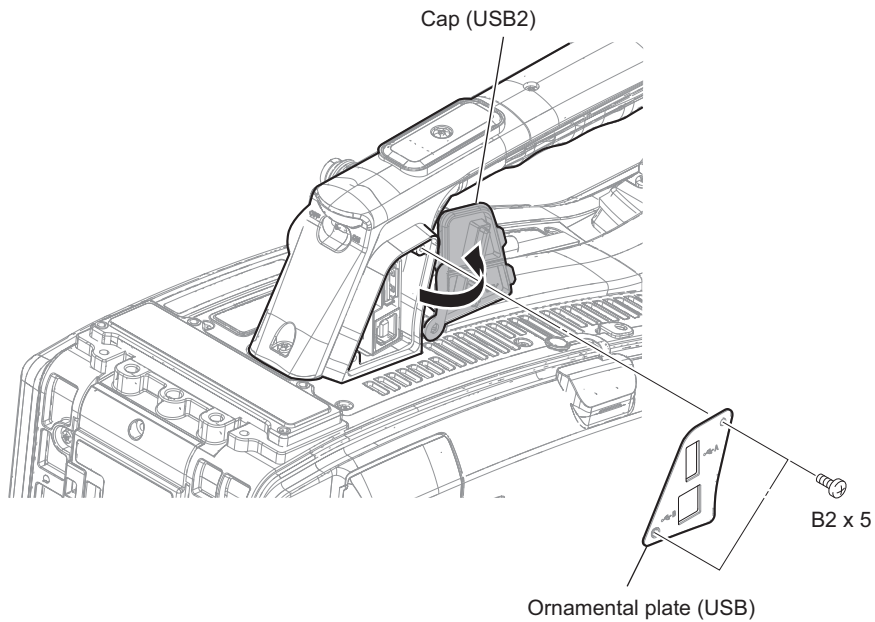


4. Install the removed parts by reversing the steps of removal.

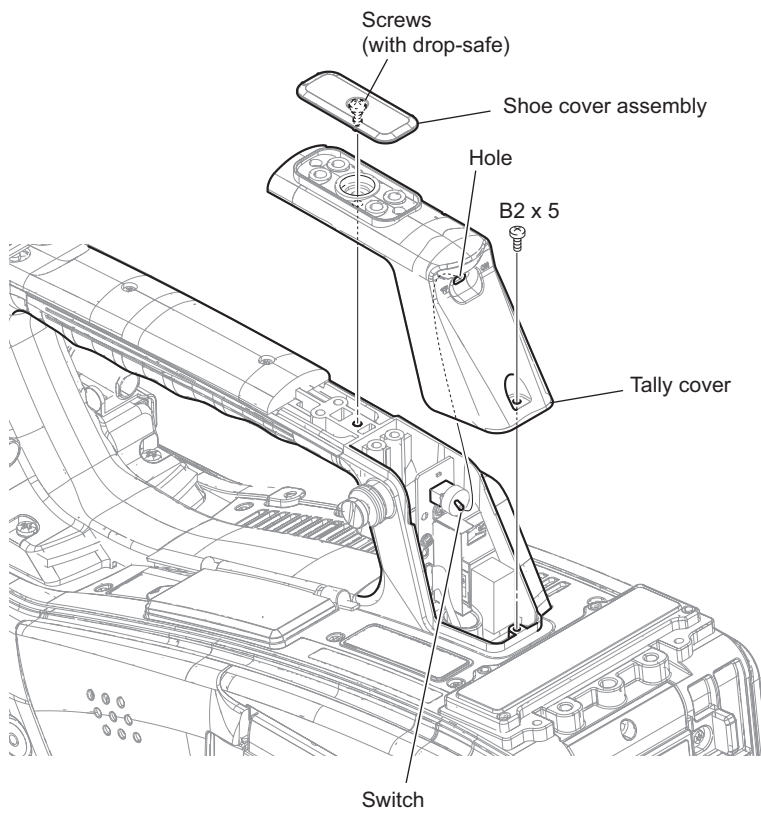
2-20. LED-529 Board

Procedure

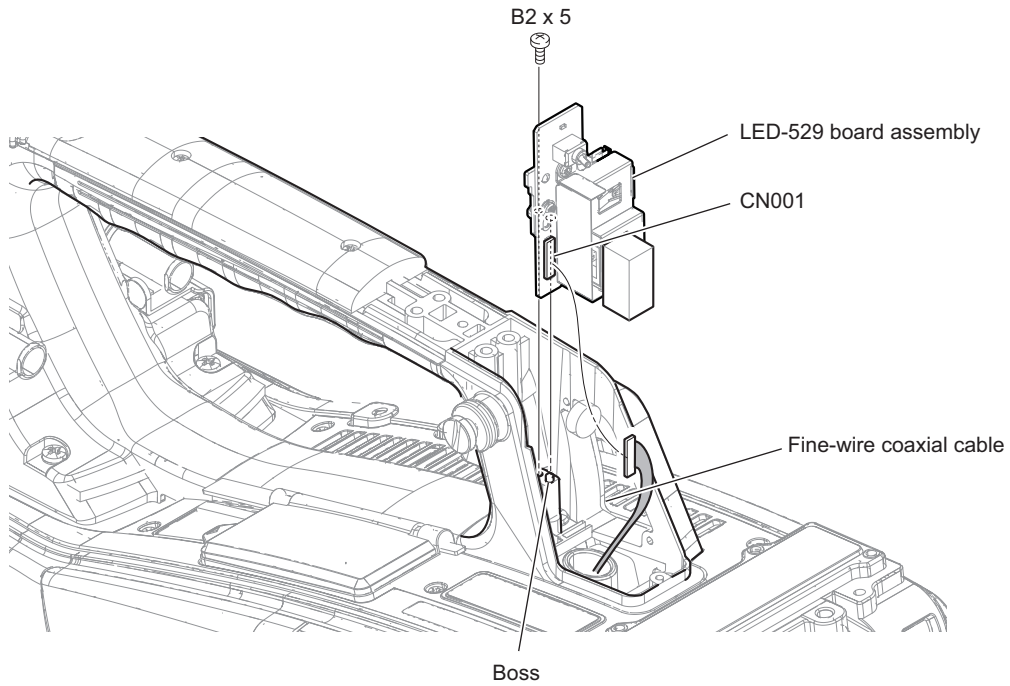
1. Remove the ornamental plate (USB).
 - (1) Open the cap (USB2).
 - (2) Remove the two screws to detach the ornamental plate (USB).



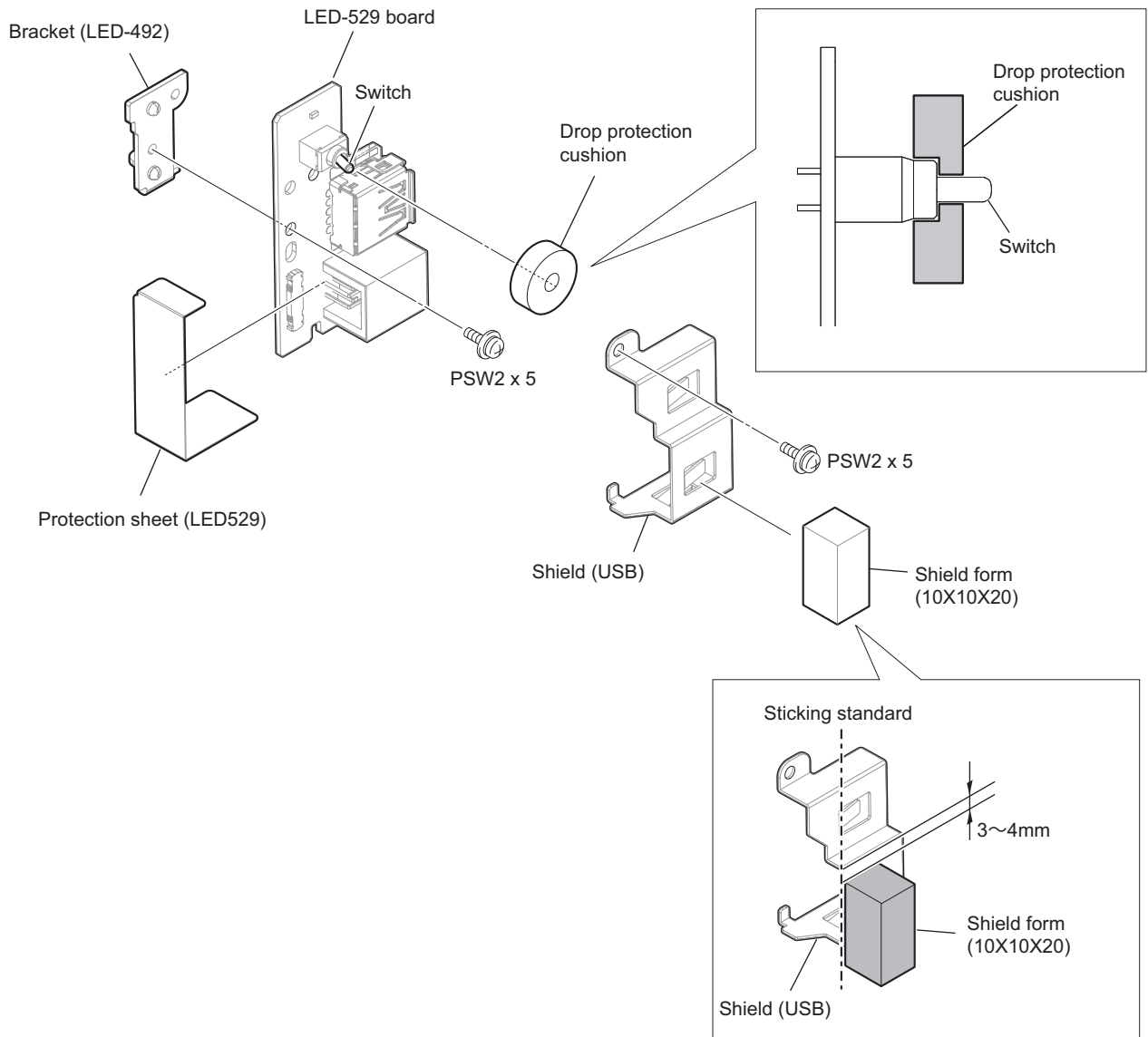
2. Remove the shoe cover assembly and tally cover.
 - (1) Loosen the screw (with drop-safe) and remove the shoe cover assembly.
 - (2) Remove the screw.
 - (3) Remove the tally cover, while avoiding the switch.



3. Remove the LED-529 board assembly.
 - (1) Remove the screw.
 - (2) Release the boss, and pull up the LED-529 board assembly.
 - (3) Disconnect the fine-wire coaxial cable from the connector (CN001) on the LED-529 board, and remove the LED-529 board assembly.



4. Remove the LED-529 board.
 - (1) Remove the shield form (10X10X20).
 - (2) Remove the protection sheet (LED529).
 - (3) Remove the drop protection cushion from the switch on the LED-529 board.
 - (4) Remove the screw to detach the shield (USB).
 - (5) Remove the screw to detach the bracket (LED-492).



Note

Install the drop protection cushion to the toggle switch as shown in the figure.

Note

Install the shield form (10X10X20) to the shield (USB) as shown in the figure.

5. Install the removed parts by reversing the steps of removal.

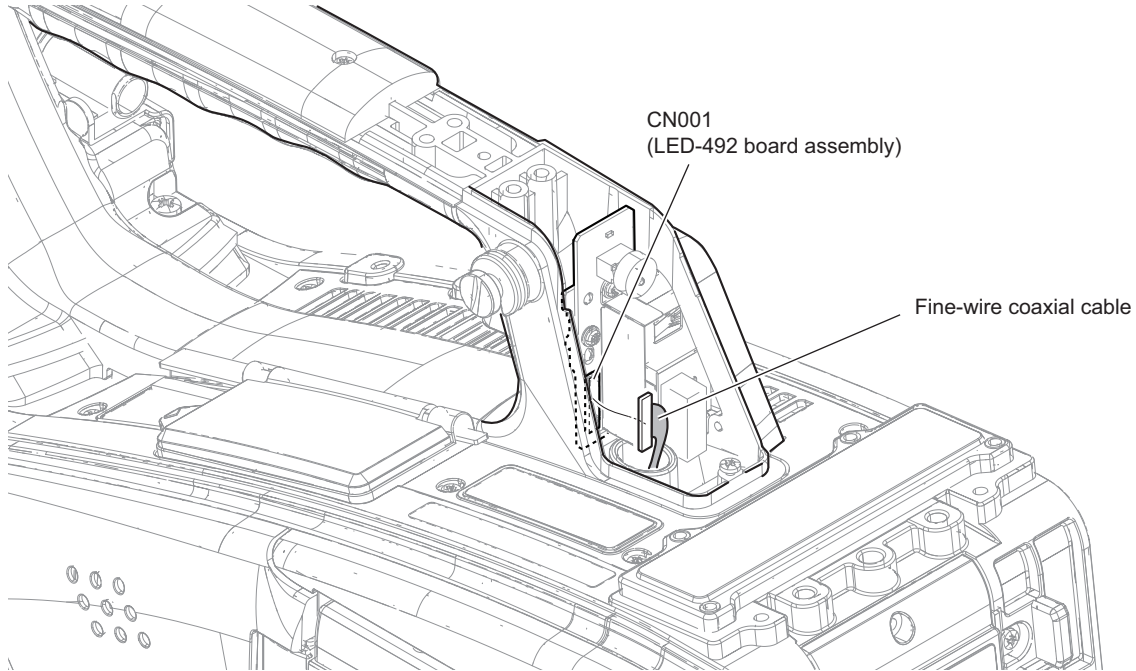
2-21. Handle Assembly

Preparation

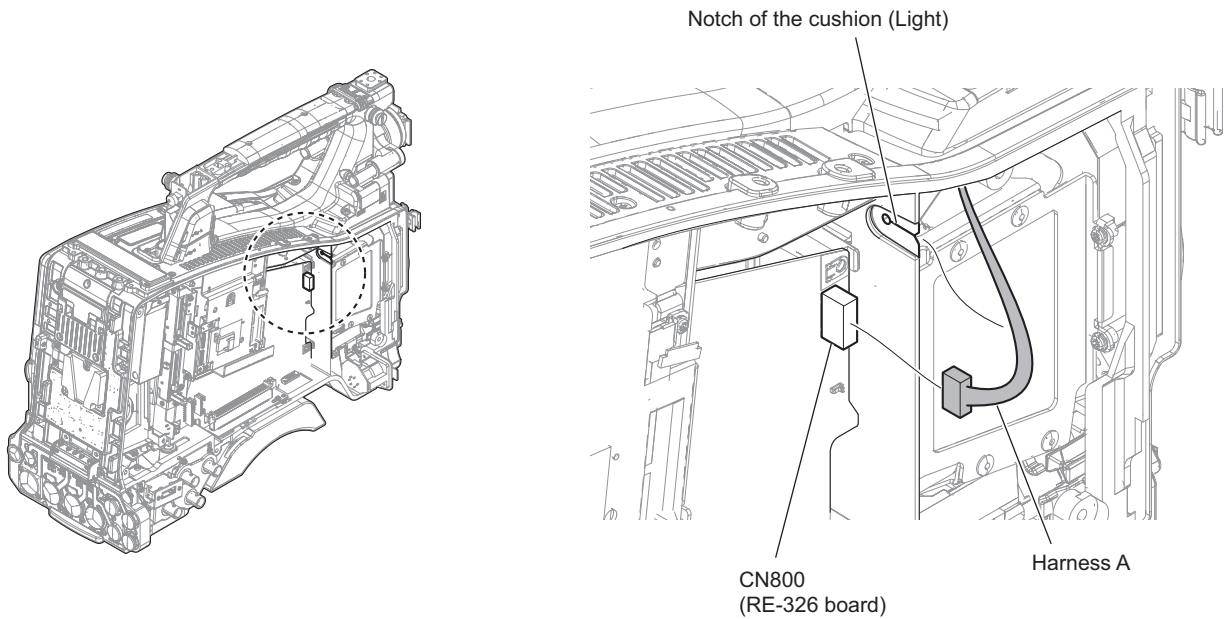
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the tally cover. (Refer to “2-20. LED-529 Board”)

Procedure

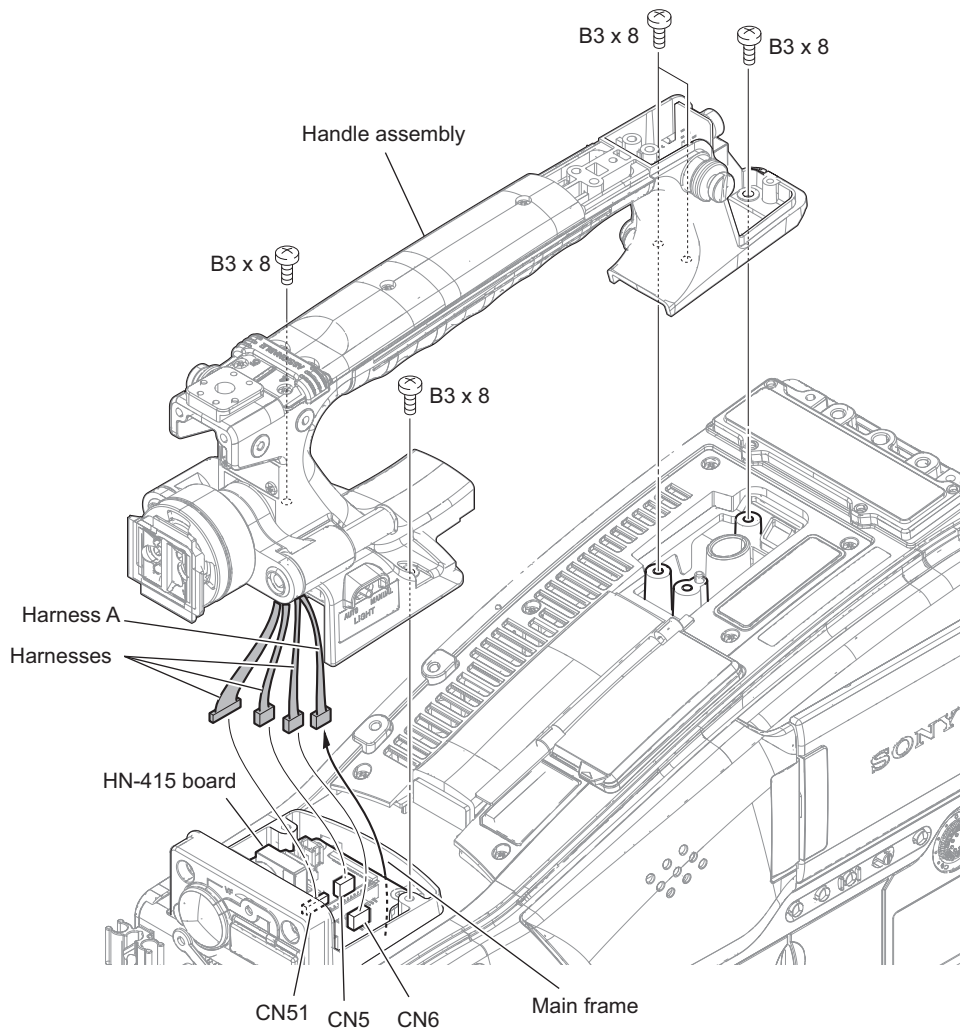
1. Disconnect the fine-wire coaxial cable from the connector (CN001) on the LED-492 board.



2. Disconnect the harness A.
 - (1) Disconnect the harness A from the connector (CN800) on the RE-326 board.
 - (2) Release the harness A from the notch of the cushion (Light).



3. Remove the handle assembly.
- (1) Remove the five screws.
 - (2) Pull up the handle assembly.
 - (3) Disconnect the three harness from the three connectors (CN5, CN6, CN51) on the HN-415 board.
 - (4) Draw out the harness A from space between the HN-415 board and the main frame, and remove the handle assembly.



4. Install the removed parts by reversing the steps of removal.

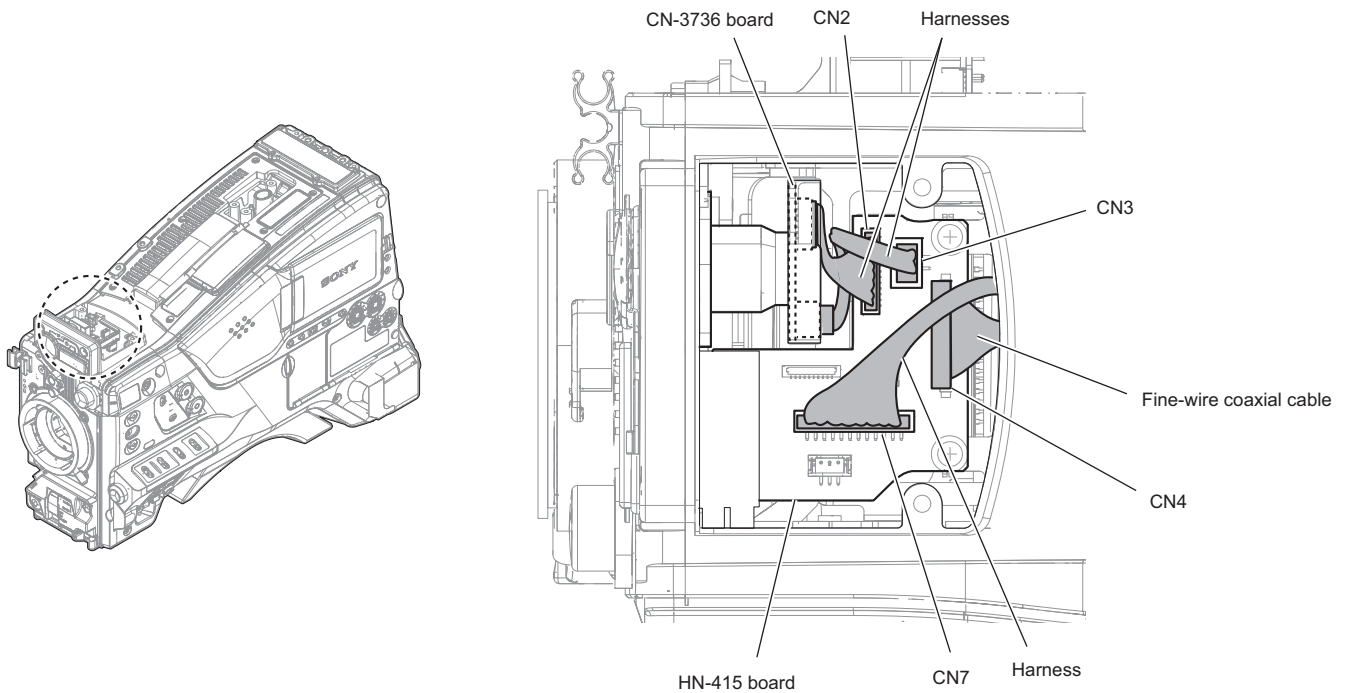
2-22. HN-415 Board

Preparation

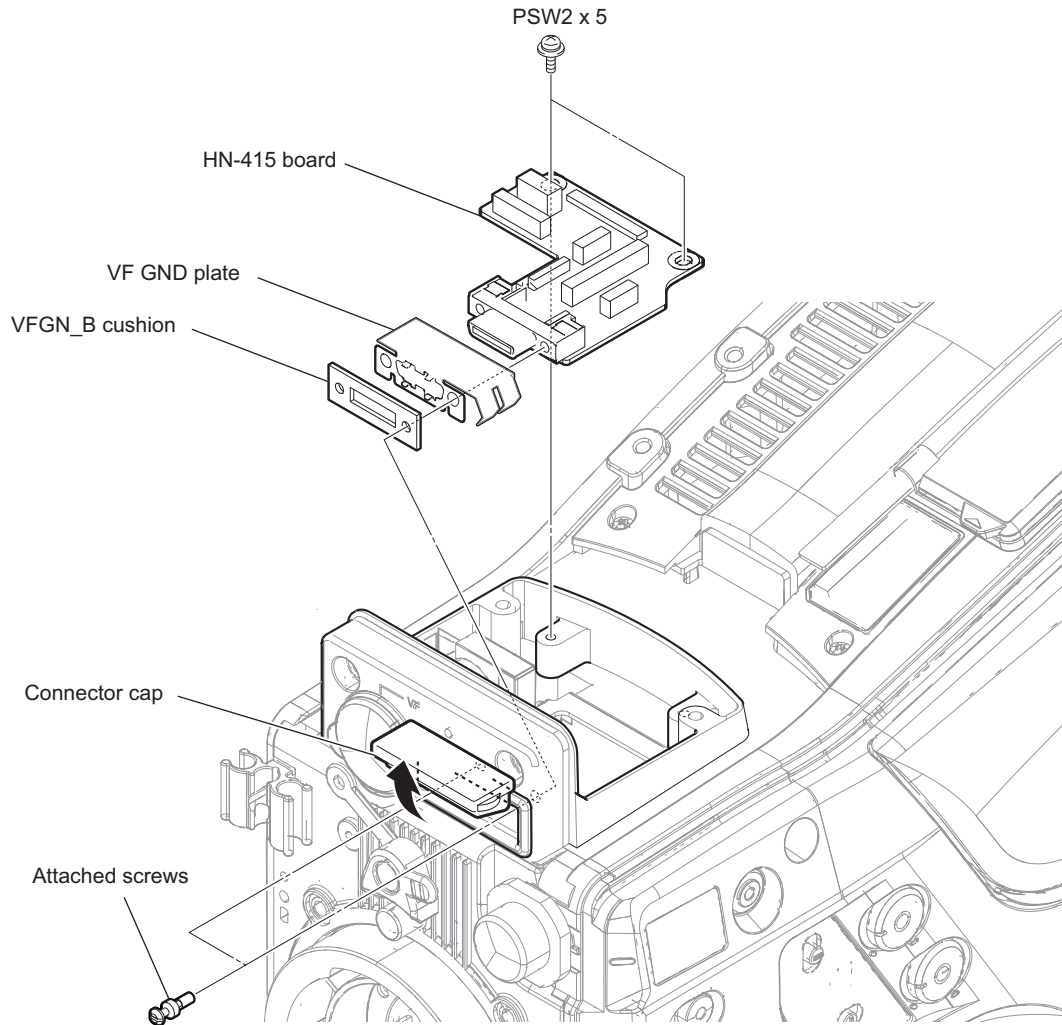
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the tally cover. (Refer to “2-20. LED-529 Board”)
3. Remove the handle assembly. (Refer to “2-21. Handle Assembly”)

Procedure

1. Disconnect the harnesses and the fine-wire coaxial cable.
 - (1) Disconnect the three harnesses from the three connectors (CN2, CN3, CN7) on the HN-415 board.
 - (2) Disconnect the fine-wire coaxial cable from the connector (CN4) on the HN-415 board.



2. Remove the HN-415 board.
 - (1) Open the connector cap, and remove the two attached screws.
 - (2) Remove the two screws (PSW2 x 5) to detach the HN-415 board, the VF GND plate and the VFGN_B cushion.
 - (3) Remove the VF GND plate and the VFGN_B cushion from the HN-415 board.



3. Install the removed parts by reversing the steps of removal.

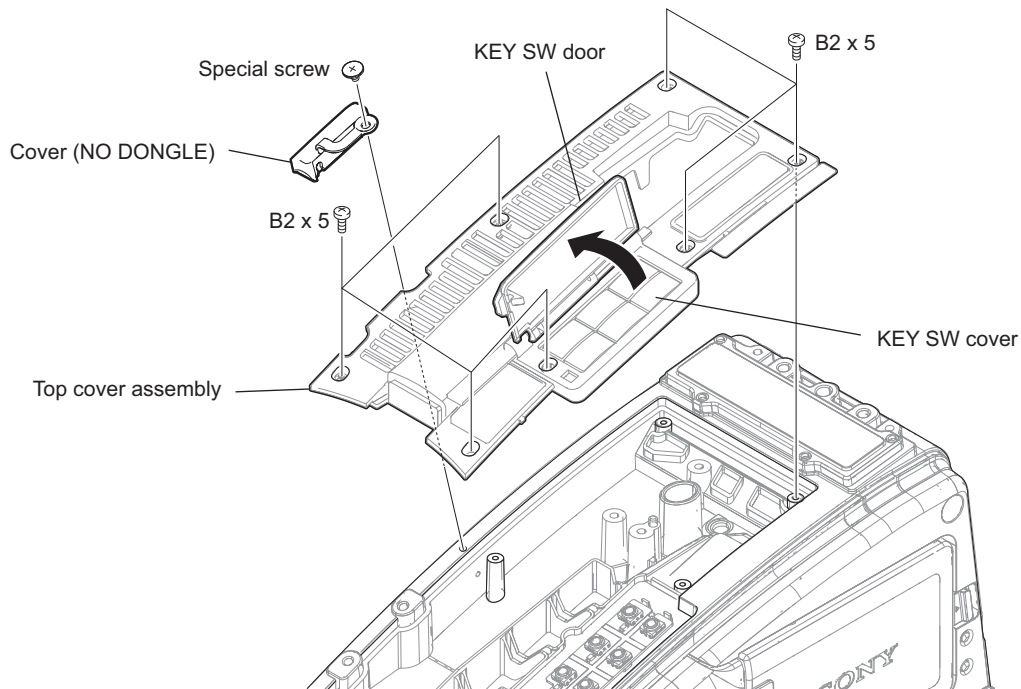
2-23. KY-736 Board

Preparation

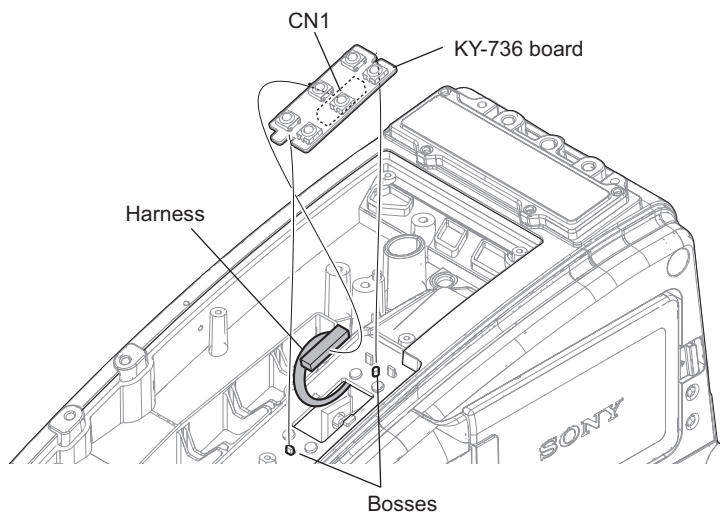
1. Remove the outside panel assembly. (Refer to “2-2. Outside Panel Assembly”)
2. Remove the tally cover. (Refer to “2-20. LED-529 Board”)
3. Remove the handle assembly. (Refer to “2-21. Handle Assembly”)

Procedure

1. Remove the top cover assembly.
 - (1) Remove the special screw to detach the cover (NO DONGLE).
 - (2) Open the KEY SW door.
 - (3) Remove the seven screws to detach the top cover assembly and the KEY SW cover.



2. Remove the KY-736 board.
 - (1) Pull up the KY-736 board from the two bosses.
 - (2) Disconnect the harness from the connector (CN1) on the KY-736 board, and remove the KY-736 board.



3. Install the removed parts by reversing the steps of removal.

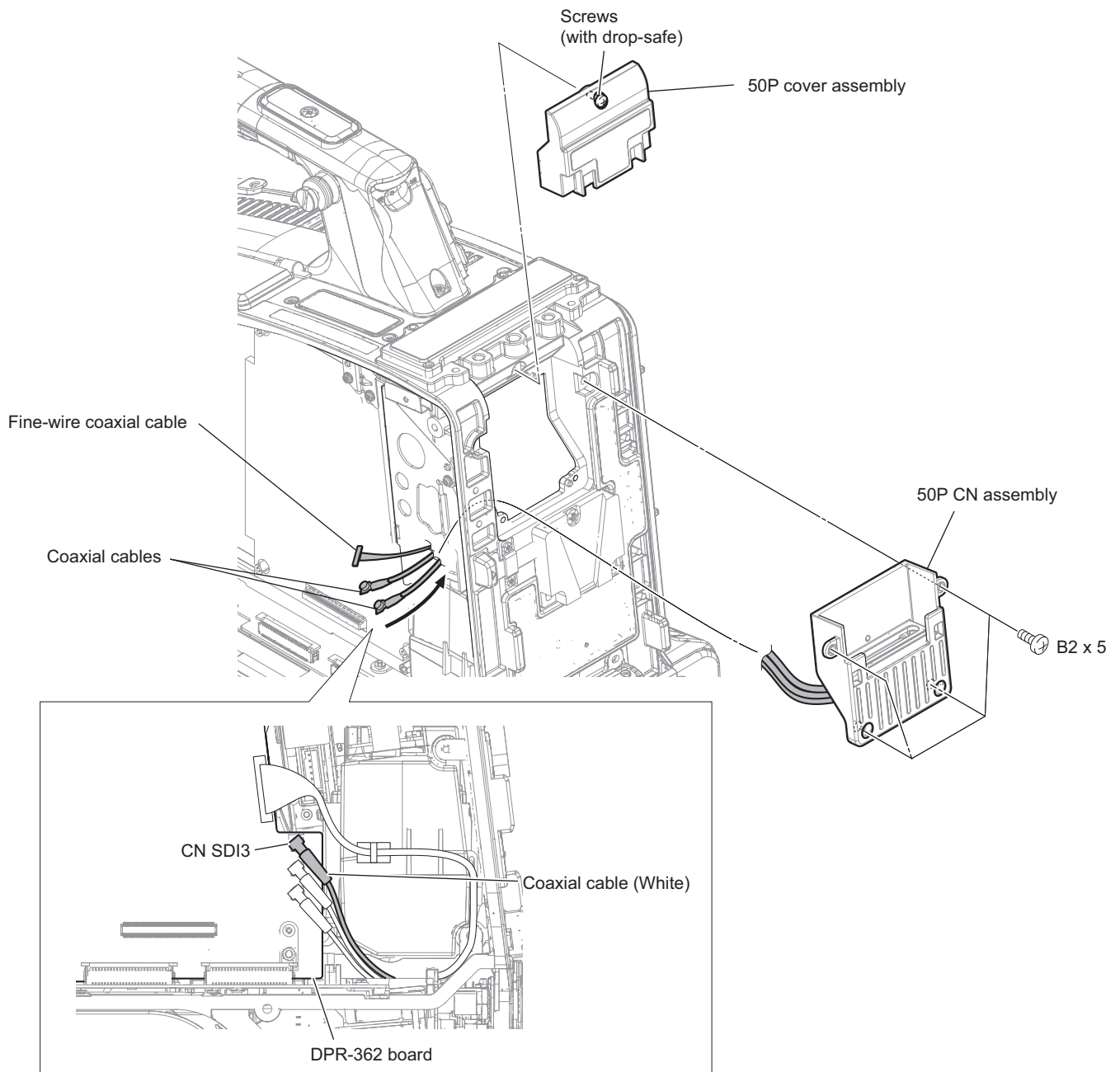
2-24. CI-50 Board

Preparation

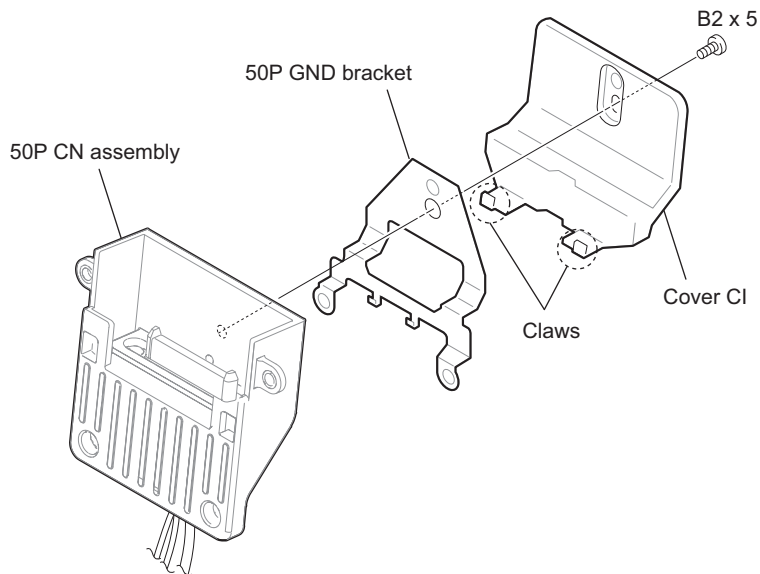
1. Remove the inside panel assembly. (Refer to “2-3-1. Inside Panel Assembly”)
2. Remove the HPR-53 board. (Refer to “2-10. HPR-53 Board”)

Procedure

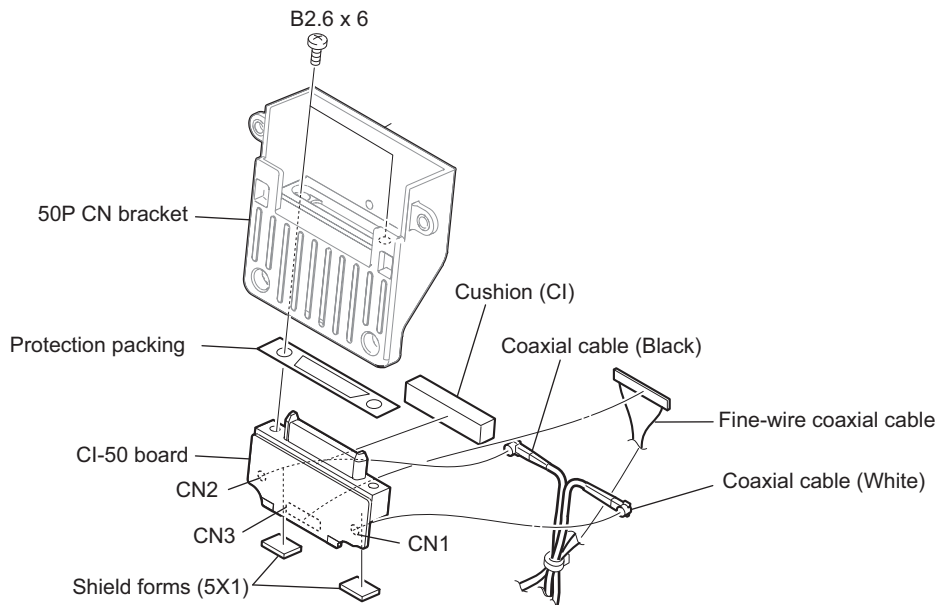
1. Remove the 50P cover assembly and the 50P CN assembly.
 - (1) Loosen the screw (with drop-safe) to detach the 50P cover assembly.
 - (2) Disconnect the coaxial cable (white) from the connector (CN SDI3) on the DPR-362 board.
 - (3) Remove the four screws (B2 x5).
 - (4) Draw out the two coaxial cables and the fine-wire coaxial cable, and remove the 50P CN assembly.



2. Remove the cover CI and the 50P GND bracket.
 - (1) Remove the screw.
 - (2) Release the two claws to detach the cover CI and the 50P GND bracket.



3. Remove the CI-50 board.
 - (1) Disconnect the fine-wire coaxial cable from the connector (CN3) on the CI-50 board.
 - (2) Disconnect the two coaxial cables from the two connectors (CN1, CN2) on the CI-50 board.
 - (3) Remove the two screws to detach the CI-50 board and the protection packing.
 - (4) Remove the shield form (5X1) and the two cushions (CI) from the CI-50 board.



Note

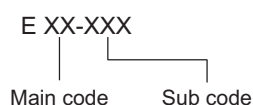
When connecting the coaxial cables, connect the coaxial cables to correct connectors.

4. Install the removed parts by reversing the steps of removal.

Section 3

Error Code

When an error is detected in the unit, the error code is displayed on the viewfinder and the LCD monitor.
An error code consists of a 2-digit main code and a 3-digit sub code.



Group of Main Codes

- 91: An error between host CPU and peripheral devices interface
- 92: An error of synchronization system detection
- 95: An error of video/audio signal processing devices interface
- A0: An error of system by software originating

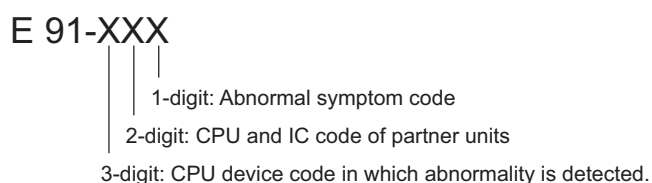
For details of sub codes, refer to respective “Main Code xx”.

If Multiple Errors Occur Simultaneously

The highest-priority error is displayed. When a higher-priority error is cleared, the following-priority error code is displayed.

3-1. Main Code 91

When interface (between CPU and peripheral devices) errors are detected, the following error codes are displayed.



CPU Device Code in which Abnormality is Detected (3-digit Sub Code)

3-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)

CPU and IC code of Partner Units (2-digit Sub Code)

When detecting with EMMA (IC4200: DPR-362 board) (When the 3-digit of the sub code is “1”):

2-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)
4	DARWIN: Power controller IC5002 (DPR-362 board)
5	GMON: Monitor FPGA IC2301 (DPR-362 board)
6	ETC: Interface FPGA IC100 (HPR-53 board)
7	Audio block
8	VF VINE: IC4903 (DPR-362 board)
9	KEY VINE: IC302 (FP-208 board)

Continued

2-digit Sub Code	Description
A	Sub display module
B	USB module
C	Wi-Fi module
D	GPS module
E	GMON: Monitor FPGA IC2301 (DPR-362 board)
F	GMON: Monitor FPGA IC2301 (DPR-362 board)

When detecting with DIABLO (IC2900: DPR-362 board) (When the 3-digit of the sub code is “2”):

2-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)
4	NATH: MPEG2 video codec IC1500 (DPR-362 board)
5	BEAUNE: XAVC video codec IC1100 (DPR-362 board)

When detecting with ROSETTA (IC0100: DPR-362 board) (When the 3-digit of the sub code is “3”):

2-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)
4	VUP CPLD: IC2200 (DPR-362 board)
5	GMON: Monitor FPGA IC2301 (DPR-362 board)
6	ETC: Interface FPGA IC100 (HPR-53 board)
7	Audio block
8	ADV7320: Digital video encoder IC0403 or IC2700 (DPR-362 board)
9	MN864716: HDMI encoder IC001 (DIF-232 board)
A	Lens interface
B	EXT interface
C	GMON (700P): Monitor FPGA IC2301 (DPR-362 board)
D	ETC (EQ DRIVE): Interface FPGA IC100 (HPR-53 board)
E	Imager block
F	ETC: Interface FPGA IC100 (HPR-53 board)

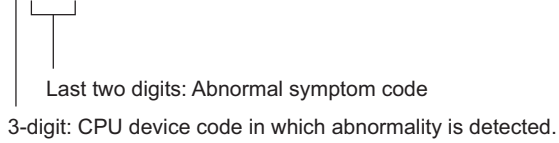
Abnormal Symptom Code (1-digit Sub Code)

1-digit Sub Code	Description
0	Error of communication between CPU and peripheral devices (or interface hardware error) (Two or more causes or irregularity is included.)
3	Data parity error or data verify error between CPU and peripheral devices
5	Communication between CPU and peripheral devices is not completed in the specified time period.
7	Failure of flash memory configuration
8	Communication error of flash memory (or eMMC)
9	Communication error of EEPROM
A	Communication error of SDRAM
B	Communication error of recording media
C	Error of temperature sensor
D	Communication error of RTC

3-2. Main Code 92

When synchronization system errors are detected, the following error codes are displayed.

E 92-XXX



CPU Device Code in which Abnormality is Detected (3-digit Sub Code)

3-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)

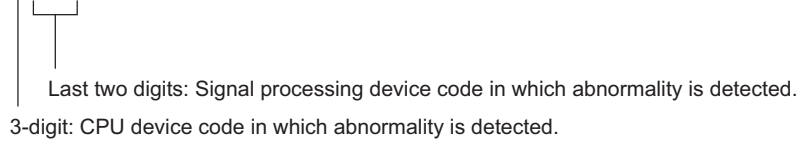
Abnormal Symptom Code (Last Two Digits Sub Code)

Last Two Digits Sub Code	Description
01	Error of reference frame pulse
02	Communication error of RTC (Real Time Clock) IC4600 (DPR-362 board)
03	Communication error of reference clock generator IC2002 (DPR-362 board)
04	Interrupt signal "VFSYNC_A to C" does not come.
05	Interrupt signal "VFSYNC_A to C" does not come.
06	Interrupt signal "VFSYNC_A to C" does not come.

3-3. Main Code 95

When video/audio signal processing devices interface errors are detected, the following error codes are displayed.

E 95-XXX



CPU Device Code in which Abnormality is Detected (3-digit Sub Code)

3-digit Sub Code	Description
1	EMMA: Application processor IC4200 (DPR-362 board)
2	DIABLO: Media processor IC2900 (DPR-362 board)
3	ROSETTA: Video signal processor IC0100 (DPR-362 board)

Signal Processing Device Code in which Abnormality is Detected (Last Two Digits Sub Code)

Last Two Digits Sub Code	Description
01	DIABLO (IC2900/DPR-362 board) GIF error
02	DIABLO (IC2900/DPR-362 board) codec error
03	DIABLO (IC2900/DPR-362 board) multiplexer error
04	DIABLO (IC2900/DPR-362 board) media interface error
05	BEAUNE (IC1100/DPR-362 board) fatal error
06	BEAUNE (IC1100/DPR-362 board) internal operation error
07	BEAUNE (IC1100/DPR-362 board) error (warning)
08	NATH (IC1500/DPR-362 board) error (caution)
09	NATH (IC1500/DPR-362 board) error (exception)
0A	VBS error in LVCMOS communication path (DIABLO to NATH)
0B	VBS error in LVCMOS communication (NATH to DIABLO)
11	Image sensor block internal error
12	Communication error (Image sensor to ROSETTA)
13	Communication error (ETC to ROSETTA)
14	Communication error (BEAUNE to ROSETTA)
15	Communication error (ROSETTA to GMON)
16	Communication error (ROSETTA to ETC)
17	Communication error (ROSETTA to viewfinder)
18	Audio DSP register error, communication timeout
19	-
20	SHEDAX to Flash Memory Boot error (IC503/DCP-67 board)
21	SHEDAX to Flash Memory Verify error (IC503/DCP-67 board)
22	TGX to Flash Memory Verify error (IC104/TG-287 board)
23	Communication error (ROSETTA to wireless audio receiver)
24	Wireless DSP to SD Card Memory Verify error (U11/WM board)

3-4. Main Code A0

When errors of the system of the software originating are detected, the following error codes are displayed.

E A0-000

3-5. Main Code 01

When Diablo and Curie (IC1000/HPR-53 board) interface is abnormal, the following error codes are displayed.

E01-035

Section 4

SERVICE Menu

4-1. Service Menu List

4-1-1. Description of SERVICE Menu

Menu Item	Submenu Item	Choice (Default Setting)	Factory Default Setting	Function
CCD Adjustment	R CCD Gain	-99 to +99	±0	Adjusts R channel CCD sensitivity.
	G CCD Gain	-99 to +99	±0	Adjusts G channel CCD sensitivity.
	B CCD Gain	-99 to +99	±0	Adjusts B channel CCD sensitivity.
	DC Offset Adjustment	Execute/Cancel	Cancel	Adjust DC dispersion of each channel.
	Gain Offset Adjustment	Execute/Cancel	Cancel	Adjust Gain dispersion of each channel.
	R V SUB	9.0 V to 18.0 V (0.1 V step)	14.0 V	Sets R channel CCD V substrate voltage value.
	G V SUB	9.0 V to 18.0 V (0.1 V step)	14.0 V	Sets G channel CCD V substrate voltage value.
	B V SUB	9.0 V to 18.0 V (0.1 V step)	14.0 V	Sets B channel CCD V substrate voltage value.
	R CCD H Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts R channel CCD registration (H direction).
	R CCD V Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts R channel CCD registration (V direction).
	B CCD H Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts B channel CCD registration (H direction).
	B CCD V Regi	-0.100 % to 0.1 % (0.002 % step)	0.00%	Adjusts B channel CCD registration (V direction).
White Shading	Channel Select	Red/Green/Blue	Red	Adjust white shading. Select a channel. (The H Saw, H Para, V Saw, and V Para values change to the current values of the selected channel.)
	White H Saw	-99 to +99	±0	White shading H Saw correction amount adjustment
	White H Para	-99 to +99	±0	White shading H Para correction amount adjustment
	White V Saw	-99 to +99	±0	White shading V Saw correction amount adjustment
	White V Para	-99 to +99	±0	White shading V Para correction amount adjustment
	White Saw/ Para	On/Off	On	White shading correction On/Off
Black Shading	Channel Select	Red/Green/Blue	Red	Adjust black shading. Select a channel. (The H Saw, H Para, V Saw, and V Para values change to the current values of the selected channel.)
	Black H Saw	-99 to +99	±0	Black shading H Saw correction amount adjustment
	Black H Para	-99 to +99	±0	Black shading H Para correction amount adjustment
	Black V Saw	-99 to +99	±0	Black shading V Saw correction amount adjustment
	Black V Para	-99 to +99	±0	Black shading V Para correction amount adjustment
	Black Saw/Para	On/Off	On	Black shading correction On/Off

Continued

Menu Item	Submenu Item	Choice (Default Setting)	Factory Default Setting	Function
	Master Black	-99 to +99	±0	Set the black level of master.
	Master Gain (TMP)	-6dB/-3dB/0dB/3dB/6dB/9dB/12dB/18dB/24dB/30dB/36dB/42dB	0 dB	Select the master gain value.
Auto Shading	Auto White Shading	Execute/Cancel	Cancel	Executes the auto white shading function.
	Reset White Shading	Execute/Cancel	Cancel	Return to default value.
	Auto Black Shading	Execute/Cancel	Cancel	Executes the auto black shading function.
	Reset Black Shading	Execute/Cancel	Cancel	Return to default value.
	Master Gain (TMP)	-6dB/-3dB/0dB/3dB/6dB/9dB/12dB/18dB/24dB/30dB/36dB/42dB	0 dB	Select the master gain value.
Flare	R Flare	-99 to +99	±0	Adjustment for services of the R-channel flare correction.
	G Flare	-99 to +99	±0	Adjustment for services of the G-channel flare correction.
	B Flare	-99 to +99	±0	Adjustment for services of the B-channel flare correction.
RPN	APR	Execute/Cancel	Cancel	Execute the auto fault correction (Auto pixel noise reduction).
	Channel	R/G/B	R	Select and display the channel (color) of the RPN correction.
	Cursor	On/Off	Off	Turns On or Off the RPN correction point indicator cursor.
	Cursor H Position	1 to 1950	975	Displays and move the horizontal address of the RPN correction point indicator cursor.
	Cursor V Position	1 to 1094	547	Displays and move the vertical address of the RPN correction point indicator cursor.
	Cursor Next	—	—	Moves the RPN correction point indicator cursor to the next RPN point.
	Cursor Prev	—	—	Moves the RPN correction point indicator cursor to the previous RPN point.
	Record	Execute/Cancel	Cancel	Registers the RPN.
	Delete	Execute/Cancel	Cancel	Deletes the RPN.
	Reset	Execute/Cancel	Cancel	Deletes all the RPN that are registered after shipment from the factory.
Knee	Blue Knee Saturation	0/-1/-2/-3/-4	0	Weaken the Blue Knee Saturation effective, Blue Fringe is made inconspicuous.
VCO Adjustment	Clock Out Select	On/Off	Off	Outputs the master-clock from the TEST OUT connector.
	Clock Frequency	-99 to +99	±0	Master-clock frequency adjustment.
Fan Control	Fan Control Mode	Normal/Max/Min/Off	Normal	Fan control mode setting.
Service Reset*1	Reset	—	—	Re-sets all settings of the Service menu to the factory default.
Factory Reset	Reset	Execute/Cancel	Cancel	Execute a factory reset.
Password Reset	Reset	Execute/Cancel	Cancel	Execute a password reset.
Information	Serial Number	xxxxxx (Display only)	(Display only)	Shows the serial number
	Imager Temperature	xx°C (Display only)	(Display only)	Displays the temperature of the image sensor

Continued

*1: In Ver. Up2.0 and later versions, the Service Reset menu is added.

Menu Item	Submenu Item	Choice (Default Setting)	Factory Default Setting	Function
	Main Board Temperature	xx°C (Display only)	(Display only)	Displays the internal temperature (around main board)
	Net-Func Log Dump	Execute/Cancel	Cancel	Save the log of the Wireless Module
	Log Dump	Execute/Cancel	Cancel	Records the error log to media
Version 1	Package	x.xx_xxxx (Display only)	(Display only)	Displays the package version number.
	EMMA	xx.xx (Display only)	(Display only)	Displays the device (EMMA) version.
	DiabloL	xx.xx (Display only)	(Display only)	Displays the device (DiabloL) version.
	DiabloT	xx.xx (Display only)	(Display only)	Displays the device (DiabloT) version.
	Rosetta	xx.xx (Display only)	(Display only)	Displays the device (Rosetta) version.
	NATH	xx.xx (Display only)	(Display only)	Displays the device (NATH) version.
	Beaune	xx.xx (Display only)	(Display only)	Displays the device (Beaune) version.
Version 2	VUP3	xx.xx (Display only)	(Display only)	Displays the device (VUP3) version.
	GMON	xx.xx (Display only)	(Display only)	Displays the device (GMON) version.
	AUDI	xx.xx (Display only)	(Display only)	Displays the device (AUDI) version.
	ETC	xx.xx (Display only)	(Display only)	Displays the device (ETC) version.
	JKLX	xx.xx (Display only)	(Display only)	Displays the device (JKLX) version.
Version 3	Darwin	xx.xx (Display only)	(Display only)	Displays the device (Darwin) version.
	ExVine	xx.xx (Display only)	(Display only)	Displays the device (ExVine) version.
	VFVine	xx.xx (Display only)	(Display only)	Displays the device (VFVine) version.
	KYVine	xx.xx (Display only)	(Display only)	Displays the device (KYVine) version.
	SHDX	xx.xx (Display only)	(Display only)	Displays the device (SHDX) version.
	TGX	xx.xx (Display only)	(Display only)	Displays the device (TGX) version.
	WM	xx.xx (Display only)	(Display only)	Displays the device (WM) version.

4-2. Description of Menu

4-2-1. Basic Menu Operation

Basic menu operation

Set the MENU ON/OFF switch to ON or press the MENU button to enable the menu mode.

Note

If the unit is in the FOCUS MAGNIFICATION mode, no menu operation is enabled. Press the FOCUS MAGNIFICATION button to reset the FOCUS MAGNIFICATION mode.

1. Set the MENU ON/OFF switch to ON or press the MENU button.
The menu mode is activated.
2. Turn the MENU knob or press the arrow buttons to set the cursor at the item you want to set.
3. Press the MENU button or SET button.

To exit the menu mode

Set the MENU ON/OFF switch to OFF or press the MENU button again.
The menu mode is reset and the unit returns to the normal shooting mode.

4-2-2. Service Menu

Service menu types

Menu name	Description
SERVICE	Parameter adjustment, operation about RPN correction, display of unit information.

4-2-3. How to Display the Service Menu

1. Set the MENU ON/OFF switch to ON to display the menu mode screen. (Refer to “[4-2-1. Basic Menu Operation](#)”)
2. Set the cursor at the Hours Meter item of the Maintenance menu.
3. Depress the MENU ON/OFF switch while pressing the MENU knob and Assign 1 button simultaneously.
The service menu is displayed in menu list.

Tip

Once the service menu is displayed, it is displayed only by pressing the MENU button unless power is turned off.

Note

When the service menu is displayed by only pressing the MENU button, do not perform the operation of file menu.
(The items in save and load may not be able correctly.)

4-3. Description of SERVICE Menu

4-3-1. SERVICE Menu

The service menu allows parameter adjustment (such as correction of individual differences of image pickup device and lens) that varies from unit to unit.

CCD Adjustment

The CCD Adjustment menu allows the CCDs and their peripheral circuits to be adjusted and set.

R/G/B CCD GAIN

The R CCD GAIN, G CCD GAIN, and B CCD GAIN submenus are used to adjust the R/G/B CCD sensitivity. Adjust the CCD sensitivity so that the video output becomes white (color difference level = 0) when White is set to Preset and a white subject is shot under a black body illumination with a color temperature of 3200 K.

DC Offset Adjustment

After lens is closed, when one of carrier leak is bigger about G-ch, B-ch or R-ch, and execute. Adjusts automatically so that the carrier leak becomes minimum.

GAIN Offset Adjustment

After CCDE becomes 100 % with clear chart, when one of carrier leak is bigger about G-ch, B-ch or R-ch, and execute. Adjusts automatically so that the carrier leak becomes minimum.

R/G/B VSUB

The R VSUB, G VSUB, and B VSUB submenus are used to set the V substrate voltage value of the R, G, and B CCDs. Usually set the V substrate voltage to the voltage specified for each CCD image pickup device.

R/B CCD Regi

The R CCD Regi and B CCD Regi submenus are used to adjust the deviation of registration in R and B channels to the G channel. Only horizontal centering is adjustable.

CCD Gain Adjustment

Note

- Use a reflective chart (reflectance: 89.9%) for this adjustment wherever possible.
- If a 16:9 chart cannot be prepared, use a 4:3 chart and shoot it so that the horizontal width is aligned with the underscanned monitor frame.

Equipment/tools

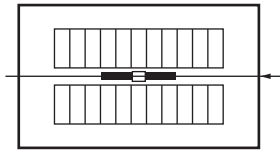
- Oscilloscope
- Waveform monitor
- Grayscale chart (16:9)

Preparation

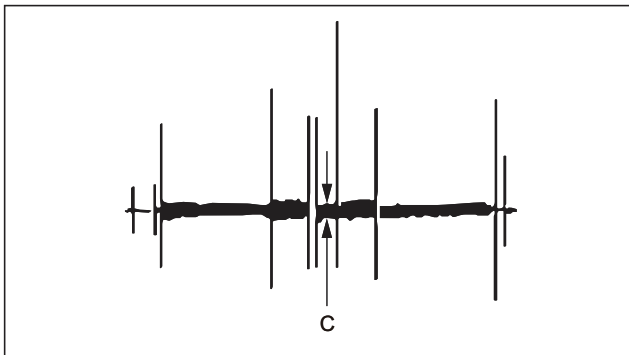
1. Connect a waveform monitor to the unit.
2. OUTPUT/DCC switch (inside panel) → CAM
3. WHITE BAL switch (inside panel) → PRST
4. Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.

Adjustment procedure:

1. AUTO W/B BAL switch (front panel) → BLACK
(Execute black balance auto adjustment.)
2. Make the following settings with the menu.
MENU : MAINTENANCE
PAGE : Preset White
ITEM : Color Temp <P> : 3200 K
ITEM : Color Temp Balance <P> : ± 0
MENU : PAINT
PAGE : Switch Status
ITEM : Gamma → Off
ITEM : Detail → Off
3. Select line at the center with the waveform monitor.



4. Set the waveform monitor to the CHROMA mode.
5. Measuring equipment: Waveform monitor
Adjusting point: Make the following adjustments with the menu.
MENU : SERVICE
PAGE : CCD adjustment
ITEM : R CCD GAIN
ITEM : B CCD GAIN
Specification: Adjust the CCD gain alternately to minimize carrier leak C.



Settings after adjustment

- Make the following settings with the menu.
MENU : PAINT
PAGE : Switch Status
ITEM : Gamma → On
ITEM : Detail → On

White Shading Adjustment

The white Shading menu enables the adjustment of the horizontal and vertical Saw correction level and parabola correction level.

Note

- The White Shading adjustment cannot be executed for the correct adjustment values if the object pattern has non-uniformity or if other conditions such as lens iris setting and zoom setting are not correctly satisfied.
- Use a full white pattern for the White Shading adjustment having uniform brightness over the entire area.
- If a full white pattern having uniform brightness over the entire area is not available, do not execute the G-channel White shading adjustment. Instead of it, execute the White shading adjustment in the way of aligning the R-channel waveform and the B-channel waveform to the waveform of G-channel.

White Saw/Para

The White Saw/Para menu can be used to turn White Shading correction On or Off. The White Saw/Para is turned On automatically when the power is turned On.

Channel Sel

The Channel Sel menu enables selection of the channel (G-ch or B-ch or R-ch) to execute the H Saw, H Para, V Saw, and V Para white shading adjustments on.

When the Channel Sel menu selects any other channel, the displays of the H Saw, H Para, V Saw, and V Para setup values are changed to the current setup values of the channel selected by the Channel Sel menu. The changes are reflected on the H Saw, H Para, V Saw, and V Para setup values.

White H Saw

The H Saw menu enables the horizontal Saw white shading correction (linear increase and decrease) level.

White H Para

The H Para menu enables the horizontal Parabola white shading correction (sensitivity correction at the horizontal center with respect to both ends) level.

White V Saw

The V Saw menu enables the vertical Saw white shading correction (linear increase and decrease) level.

White V Para

The V Para menu enables the vertical Parabola white shading correction (sensitivity correction at the vertical center with respect to both ends) level.

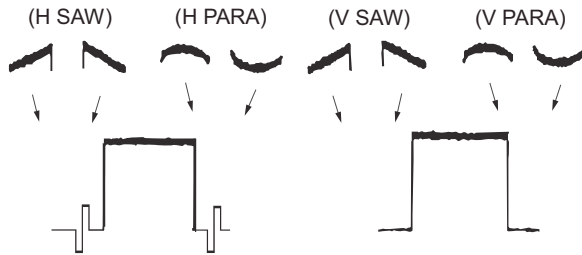
White shading adjustment method**Preparation**

1. Connect an HD waveform monitor to the SDI OUT terminal.
2. HD waveform monitor setting: RGB mode
3. Focus: ∞
4. Shoot an all white pattern over the entire frame of monitor screen.

Adjustment Procedure

1. Adjust lens iris until white level becomes approximately 80%.
2. If the lens iris value is larger than F5.6, adjust the incoming light intensity by using electronic shutter for the lens iris setting of smaller than F5.6.

- Adjust H Saw, H Para, V Saw and V Para for the respective channels of G-ch, B-ch and R-ch until waveform on the waveform monitor becomes flat.



Black Shading Adjustment

The Black Shading menu enables the adjustment of the horizontal and vertical Saw correction level and parabola correction level.

Black Saw/Para

The Black Saw/Para menu can be used to turn Black Shading correction On or Off. The Black Saw/Para is turned On automatically when the power is turned On.

Channel Sel

The Channel Select menu enables selection of the channel (G-ch or B-ch or R-ch) to execute the H Saw, H Para, V Saw, and V Para black shading adjustments on.

When the Channel Select menu selects any other channel, the displays of the H Saw, H Para, V Saw, and V Para setup values are changed to the current setup values of the channel selected by the Channel Select menu. The changes are reflected on the H Saw, H Para, V Saw, and V Para setup values.

Black H Saw

The H Saw menu enables the horizontal Saw black shading correction (linear increase and decrease) level.

Black H Para

The H Para menu enables the horizontal Parabola black shading correction (black level correction at the horizontal center with respect to both ends) level.

Black V Saw

The V Saw menu enables the vertical Saw black shading correction (linear increase and decrease) level.

Black V Para

The V Para menu enables the vertical Parabola black shading correction (black level correction at the vertical center with respect to both ends) level.

Master Black

Master black level is set.

Master Gain (TMP)

Master gain value is selected.

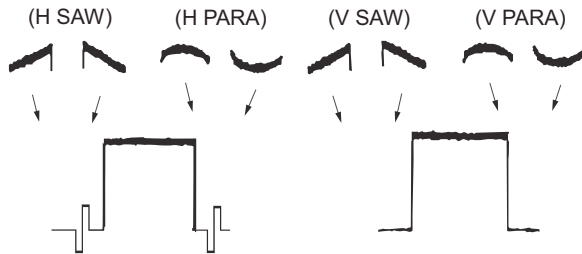
Black Shading Adjustment Method Preparation

- Connect an HD waveform monitor to the SDI OUT terminal.
- HD waveform monitor setting: RGB mode

3. Lens iris: CLOSE

Adjustment Procedure

1. Adjust GAIN and BLK level for easy viewing to observe.
2. Adjust H Saw, H Para, V Saw and V Para for the respective channels of G-ch, B-ch and R-ch until waveform on the waveform monitor becomes flat.



Auto Shading Adjustments

The Auto Shading menu can execute auto-shading (auto-adjustment of shading correction).

Auto White Shading

When Auto White Shading is selected, "Execute" and "Cancel" appear. When "Execute" is selected, auto white shading is executed.

When the CANCEL/PRST/ESCAPE switch is set to CANCEL while auto white shading is in execution, the auto white shading is suspended and the state before execution of auto white shading is restored.

When the auto white shading ends successfully, "OK" appears. If the auto white shading fails, "NG" and the cause appear for three seconds.

Reset White Shading

When Reset White Shading is selected, "Execute" and "Cancel" appear. When "Execute" is selected, the auto-white shading result is reset to the default value.

Auto Black Shading

When Auto Black Shading is selected, "Execute" and "Cancel" appear. When "Execute" is selected, auto-black shading is executed.

When the CANCEL/PRST/ESCAPE switch is set to CANCEL while auto-black shading is in execution, the auto-black shading is suspended and the state before execution of auto-black shading is restored.

When the auto-black shading ends successfully, "OK" appears. If the auto-black shading fails, "NG" and the cause appear for three seconds.

Reset Black Shading

When Reset Black Shading is selected, "Execute" and "Cancel" appear. When "Execute" is selected, the auto-black shading result is reset to the default value.

Master Gain (TMP)

When Master Gain (TMP) is selected, gain can be increased temporarily so that the auto-white shading and auto-black shading execution results can be monitored in this menu.

The gain value set here is negated by pressing the GAIN switch or executing AWB, ABB, or AGC.

Flare Adjustment

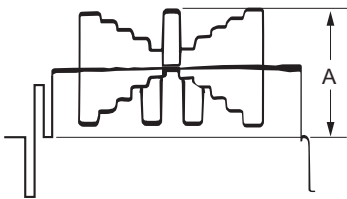
The Flare adjustment menu enables flare compensation for the respective channels of G-channel, B-channel and R-channel.

Preparation

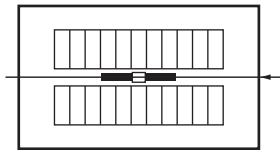
1. Connect an HD waveform monitor to the SDI OUT terminal.
2. HD waveform monitor setting: RGB mode
3. Shoot a gray-scale chart to fill the entire screen of the picture frame and execute the white balance.
4. Set the Knee to the Auto or Off.

Adjustment Procedure

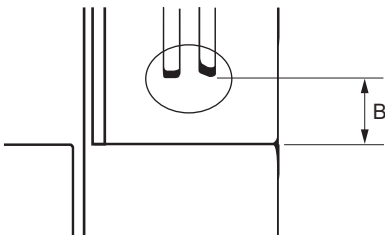
1. Adjust lens iris until white level (portion A) becomes approximately 100%. After that, open the lens iris by two stops.



2. Select waveform of the signal at the center of grayscale signal on a waveform monitor.



3. Adjust R Flare, G Flare and B Flare until the black levels on both sides of the center white in all of the R, G and B channels to a unity level.
(Align black level all channels to that of the channel having the lowest black level.)



Notes

- The flare adjustment can be performed only when there is a correct grayscale chart.
- When there is no correct grayscale chart, adjust the values of R Flare, G Flare and B Flare to ± 0 .

RPN Menu

The RPN menu enables various operations such as manual registration, deletion and automatic detection of the RPN compensation point.

Execution of APR (Auto Pixel Registration)

- In APR, white point auto detection and register about RPN (Residual Point Noise) correction by concealment can be executed.
- When APR is selected, "Execute" and "Cancel" appear. When "Execute" is selected, APR is executed.

- Detected RPN by APR adds to correction target.
- APR is executed by following operations.
Start from [Service] menu
Execute from [Maintenance] menu
During auto black balance execution
- APR is not executed by following condition. Change the setting.
During recording
Displaying the color bar
Displaying the test saw signal
[Rec Format] in operation menu [Format] is [SStP SR-Lite] (Before Ver.Up2.0)
- RPN setting can be performed by input picture that is only imaging screen of camera. Followings need change the setting.
During playback
Displaying the thumbnail
During external input (Pool Feed)

Manual register of RPN

- Correction target RPN by concealment can also be manually registered and deleted one by one.
When the following conditions apply to even one, the correction point is not correctly recognized, a button does gray out.
Op Setting of [Rec Format] in operation menu [Format] is
1080i format
720P format
DVCAM format
MPEG IMX 50 format (Ver.Up2.0)
Setting of [Slow & Quick] in operation menu [Rec Function] is
[On]
Setting of [Output Format] in operation menu [Input/Output] is
Including 1280 x 720P
Including 720x486i
Including 720x480i
Including 720x576i

Note

When APR is executed during the cross-hairs cursor displayed, APR is failed and not corrected.
Hide the cross-hairs cursor and execute.

Channel Setting

The Channel menu enables selection of the channel (Rch or G-ch or B-ch) to execute Record of RPN pixel on, in the manual registration of RPN.

When the RPN cursor is moved to an already-registered RPN correction point by the Cursor Next or Cursor Prev operation, the correction mode selected for the RPN point is displayed automatically.

Cursor Setting

The Cursor menu enables turning On or Off the crosshair cursor display indicating the RPN correction position in the manual registration of RPN.

When the Cursor menu is turned On, the crosshair cursor indicating the RPN correction position is displayed superimposed on the video signal.

Signal of the pixel located at the center of the crosshair cursor is replaced by black.

The Cursor setting is always turned Off when the power is turned On.

Cursor H Position Setting

The Cursor H Position menu enables the user to change the horizontal position of the RPN point within the effective period of video signal in the manual registration of RPN.

When the RPN cursor (indicating the location of a RPN pixel to register) is moved to an already-registered RPN correction point by the Cursor Next or Cursor Prev operation, the display automatically switches to the numeric value of the horizontal position of the RPN point.

Cursor V Position Setting

The Cursor V Position menu enables the user to change the vertical position of the RPN point within the effective period of video signal in the manual registration of RPN.

When the RPN cursor (indicating the location of a RPN pixel to register) is moved to an already-registered RPN correction point by the Cursor Next or Cursor Prev operation, the display automatically switches to the numeric value of the vertical position of the RPN point.

Operating Cursor Next

The Cursor Next menu enables the user to move the RPN cursor position to the next already-registered RPN correction point after the present position in the ascending order of the addresses during the manual registration of RPN. (If multiple RPN positions have the same address in the ascending order of the Cursor V Position, the RPN cursor moves in the ascending order of the Cursor H Position.)

Operating Cursor Prev

The Cursor Prev menu enables the user to move the RPN cursor position to the next already-registered RPN correction point after the present position in the descending order of the addresses during the manual registration of RPN. (If multiple RPN positions have the same address in the descending order of the Cursor V Position, the RPN cursor moves in the descending order of the Cursor H Position.)

Executing Record

The Record menu enables the manual registration of RPN.

When Record menu is selected, the Execute and Cancel appear. Selecting Execute starts the registration of RPN.

RPN manual registration procedure

1. Set [Rec Format] in Operation menu [Format] to 1080P format.
2. Set the lens iris to CLOSE.
3. Adjust GAIN and Black Level to the settings that facilitate viewing the RPN position on a monitor screen.
4. Set Channel to the RPN color that is going to be registered.
5. Set Cursor to On.
6. Move the crosshair cursor to the RPN that is going to be registered by using Cursor H Position and Cursor V Position. (When the crosshair cursor is moved on top of the desired RPN, the RPN becomes invisible.)
7. Execute the Record.

Executing Delete

The Delete menu enables manual deletion of RPN.

When the Delete menu is executed, the RPN registration of a pixel at an address specified by the Cursor H Position and Cursor V Position is deleted from RPN data.

When the Delete menu is selected, the Execute and Cancel appear. Selecting Execute starts deletion of RPN.

Executing Reset

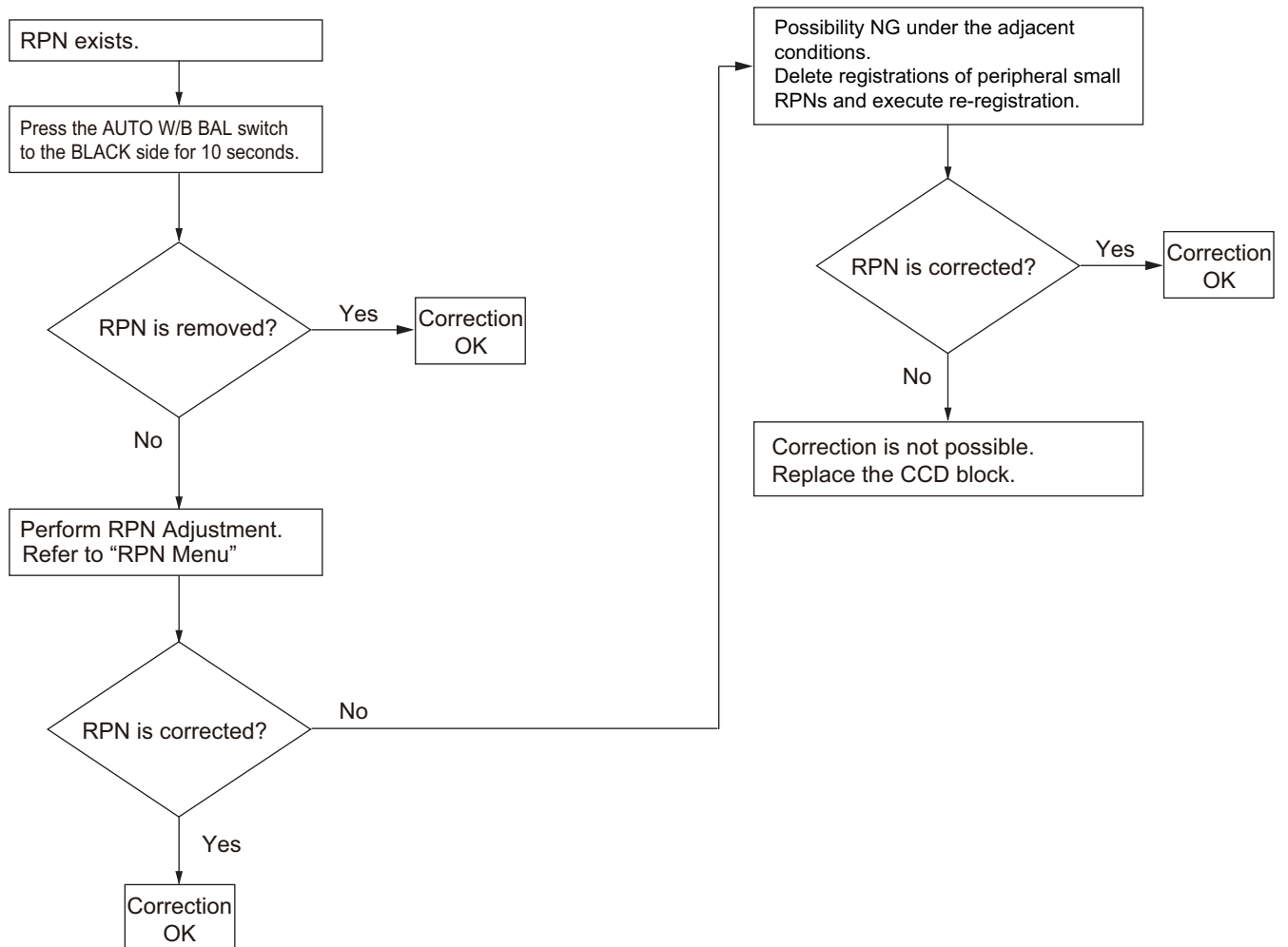
The Reset menu enables the user to delete the RPN correction point data that is registered by Auto Detect and Auto Black Balance after the equipment is shipped from the factory.

The RPN data that is registered at the factory and the RPN data is manually registered cannot be deleted by the Reset.

When the Reset menu is selected, the Execute and Cancel choices appear. Selecting Execute starts reset of RPN.

RPN Correction Procedure

The RPN correction procedure is shown below.



Knee Adjustment

Weaken Blue Knee Station effective, Blue Fringe is made inconspicuous.
Blue Fringe is the most made inconspicuous at "-4".

VCO Adjustment

The VCO Adjustment menu allows adjustment of VCO frequency.

Clock Out Select

Set the Clock Out Select to ON, master clock signal can be output to VIDEO OUT connector.

Clock Frequency

The Clock Frequency setting allows adjustment of the 27 MHz master clock frequency.

Adjusting VCO

Preparation

Connect a frequency counter to the VIDEO OUT connector.

Adjustment procedure

1. Check that a signal of the specification below is output from the VIDEO OUT connector.
 - Condition: Adjust VCO one hour after power-on.
 - Specification: 27 MHz (upper limit: +100 Hz, lower limit: -100 Hz)
2. When the VCO does not meet this specification, change the setting of clock frequency so that the specification is obtained.
If the specification is obtained, press the MENU button to confirm the setting.

Fan Control Setting

The internal fan of the unit is automatically controlled by detecting the internal temperature. The fan operation can be confirmed with fan control menu.

- Normal : Mode(default) according to menu setting of [Maintenance]/[Fan Control]
- Max : Drive at maximum rotation speed (forcibly On)
- Min : Drive at fixed low speed rotation
- Off : Stop the fan

Service Reset

This item resets all settings of the Service menu to the factory default.

When the external-input recording (pool-feeding) function is in use, Service Reset is disabled.

Factory Preset

The Factory Preset menu is used to return all settings to the default values. While Factory Preset is in execution, a message "Factory Preset/Executing" appears. When a message "Factory Preset/Power Off> On" appears after execution of Factory Preset, turn on the power again.

When the external-input recording (pool-feeding) function is in use, Factory Reset is disabled.

Password Reset

When the software key in software option is installed, in case input password of this time became missing. All installed software key password is reset to "0000".

INFORMATION Menu

The Information menu is used to display the information and status of the unit.

Displaying the Serial Number

Selecting Serial Number of the Information menu display the serial number of the unit.

Displaying Internal Temperature

The internal temperature of the unit can be monitored by Imager Temperature and Main Board Temperature of the Information menu.

- Imager Temperature: Internal temperature of the imager board
- Main Board Temperature: Internal temperature of the DPR-362 board

Executing Log Dump

Executing Log Dump acquires the error log information and saves it to the active, writable media.

Select Log Dump under the INFORMATION menu, and execute it with Execute. The process is complete when “Dump OK” is displayed as a result. Do not remove the media until this message appears.

Executing Net-Func Log Dump

Executing Net-Func Log Dump save log data in the wireless module to the media in the SD memory card (Proxy) for Proxy data recording. Select Net-Func Log Dump under the INFORMATION menu, and execute it. The display of executing is [Executing...], do not pull out the media.

Note

In case the followings, [Dump OK] is displayed, but Log is not recorded.

- If SD memory card is wright protected.
- SD memory card has no empty.

Version Menu

The Version 1 - 3 menu is used to check the firmware versions and IC versions of the unit.

Version 1 Menu

- Package: Firmware version
- EMMA: IC4400 (DPR-362 board) version
- DiabloL: IC3101, IC3102 (DPR-362 board) version
- DiabloT: IC3101, IC3102 (DPR-362 board) version
- Rosetta: IC0703 (DPR-362 board) version
- NATH: IC1500 (DPR-362 board) version
- Beaune: IC1100 (DPR-362 board) version

Note

The version of Beaune is displayed when only recording format is XAVC-L or XAVC-I.

Version 2 Menu

- VUP3: IC2200 (DPR-362 board) version
- GMON: IC2500 (DPR-362 board) version
- AUDI: IC800 (AU-360 board) version
- ETC: IC800, IC801 (HPR-53 board) version
- JKLX: IC503 (FP-208 board) version

Note

When loading the version 2, camera EE picture may flash.

If camera EE picture flashes, turn off and on the power of the unit, enter the service menu, perform the adjustment avoid scroll to version 2 section.

Version 3 Menu

- Darwin: IC5002 (DPR-362 board) version
- ExVine: IC404 (FP-208 board) version
- VFVine: IC4903 (DPR-362 board) version
- KYVine: IC302 (DPR-362 board) version
- SHDX: IC503 (DCP-67 board) version
- TGX: IC103 (TG-287 board) version

- WM: U11 (WM board) version

Note

Version (Ver up 2.0 before) may be displayed by mistake. Check the proxy recording/wireless LAN connection function (WM) by Maintenance→Version →Net-Func Version.

Section 5

FILE Menu

5-1. FILE Menu Configuration

In this unit, data adjusted by the SERVICE menu can be stored as files in the unit and an SD card inserted in the UTILITY SD card slot. These files include USER files, ALL files, USER MENU ITEM files, SCENE files, REFERENCE file, and LENS files.

USER file

This file is used to store customized USER menu setting items and set data. Up to 64 USER files can be stored in an SD card inserted in the UTILITY SD card slot.

ALL file

This file stores setup data of all menus. Up to 64 files can be stored in an SD card inserted in the UTILITY SD card slot. By storing this file in an SD card after adjustment of the first unit is completed, the second and subsequent units can be immediately set up to the same adjustment status by reading the SD card data.

SCENE file

This file is used to store set values adjusted according to shooting scenes. Up to 5 ALL files can be stored in the internal memory, and up to 64 ALL files can be stored in an SD card inserted in the UTILITY SD card slot.

By storing values that were set according to specific scenes during rehearsal in a SCENE file and calling the file during the performance, the same situation as rehearsal can be recreated.

REFERENCE file

This file is used to store set values that are to be reference values when executing SCENE FILE STANDARD. Only one REFERENCE file can be stored in an SD card inserted in the UTILITY SD card slot.

LENS file

This file is used to store set data (flare, white shading, and auto iris gain) that corrects lens-specific characteristics. Up to 32 LENS files can be stored in the internal memory, and up to 64 LENS files can be stored in an SD card inserted in the UTILITY SD card slot.

User Menu Item file

This file is used to store only setting items except for customized USER menu set data. Up to 64 User Menu Item files can be stored in an SD card inserted in the UTILITY SD card slot.

5-2. Data Structure

Menus are grouped into USER menu, OPERATION menu, PAINT menu, MAINTENANCE menu, and FILE menu. Each menu has data of USER layer (not USER menu), PRESET layer, and DEFAULT layer.

- USER layer: A data layer that varies with menu operation (actual setup data)
- PRESET layer: A data layer registered as standard setting (standard setup data)
- DEFAULT layer: A data layer containing factory adjusted values and fixed values (default values (fixed))

Menu Data Structure	USER	OPERATION	PAINT	MAINTENANCE	FILE
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data	Actual Setup Data	Actual Setup Data
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data	Standard Setup Data	Standard Setup Data
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)

Absolute value data is stored in the USER layer, PRESET layer, and DEFAULT layer, and the data in the highest USER layer becomes actual setup data.

Difference in analog data between USER layer and PRESET layer is displayed in menus.

When REFERENCE LOAD is executed, menu display varies with the PRESET layer data, but values to be set actually remain unchanged.

5-3. USER File

An USER File menu consists of the following.

- Load SD Card
- Save SD Card
- File ID
- Recall User Preset
- Store User Preset
- Clear User Preset
- Load Customize Data
- Load White Data

5-3-1. Load SD Card

This item is used to call the user file stored in the SD card inserted in the UTILITY SD card slot.

Data to be called differs depending on the Load Customize Data setting and the User Load White setting.

- When Load Customize Data is Off:
The set values of the USER menu are replaced with the set values stored in the user file (but the menu configuration remains unchanged).
- When Load Customize Data is On:
The USER menu is replaced with the configuration and set values stored in the user file.
- When User Load White is Off:
White balance data is not read even if the user file is called.
- When User Load White is On:
White balance data is read.

5-3-2. Save SD Card

This item is used to store the current USER menu configuration, set values, and the current white balance data as a user file in the SD card inserted in the UTILITY SD card slot.

5-3-3. File ID

A name of up to 16 characters can be given to a user file.

After the file name has been set, press the MENU knob several times or move the cursor to SET with the arrow keys and press the MENU button to execute this menu.

5-3-4. Recall User Preset

Return the set values (“actual set values” of the USER layer) registered in the USER menu to preset values (“standard set values” of the PRESET layer).

5-3-5. Store User Preset

This item stores set values (“actual settings” of the PRESET layer) of a menu item registered in the User menu as preset values (“standard settings” of the PRESET layer).

5-3-6. Clear User Preset

Return the set values (“actual set values” of the USER layer) registered in the USER menu and the preset values (“standard set values” of the PRESET layer) to the values set at factory shipping (“default values (fixed)” of the DEFAULT layer).

5-3-7. Load Customize Data

When calling the user file, select whether to read the menu configuration and set values (On) or read only the menu set values (Off).

5-3-8. Load White Data

When calling the user file, select whether to read the white balance data (On) or not (Off).

5-4. ALL File

An ALL File menu consists of the following.

- Load SD Card
- Save SD Card
- File ID
- All Preset
- Store All Preset
- Clear All Preset
- 3Sec Clear Preset

5-4-1. Load SD Card

This item is used to call the file stored in the SD card inserted in the UTILITY SD card slot.

Menu Data Structure	OPERATION	PAINT	MAINTENANCE	FILE	
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data	Actual Setup Data	SD card inserted in the UTILITY SD card slot
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data	Standard Setup Data	
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	

Select “Execute” and execute it. A file list box appears.

Select files you want to load from the list box and press the MENU button to execute this item.

5-4-2. Save SD Card

This item is used to store USER layer data and PRESET layer data of all menu items as a file in the SD card inserted in the UTILITY SD card slot.

Menu Data Structure	OPERATION	PAINT	MAINTENANCE	FILE	
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data	Actual Setup Data	SD card inserted in the UTILITY SD card slot
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data	Standard Setup Data	
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	

Select “Execute” and execute it. A file list box appears.

Select a directory from the list box and press the MENU button to execute this item.

If a directory that contains one or more files is selected, the files are overwritten and saved.

5-4-3. File ID

A name consisting of up to 16 characters can be given to each file.

After the file name has been set, press the MENU knob several times or move the cursor to SET with the arrow keys and press the MENU button to execute this menu.

5-4-4. All Preset

This menu item is used to restore the standard setup data saved in the PRESET layer for all menu items.

Menu Data Structure	OPERATION	PAINT	MAINTENANCE	FILE
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data	Actual Setup Data
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data	Standard Setup Data
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)

5-4-5. Store All Preset

This menu item is used to store actual setup data of all menu items (set in the USER layer) in the PRESET layer as standard setup data.

Menu Data Structure	OPERATION	PAINT	MAINTENANCE	FILE
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data	Actual Setup Data
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data	Standard Setup Data
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)

5-4-6. Clear All Preset

This menu item is used to restore factory set values (default values (fixed)) for all menu items.

The standard setup data saved in the PRESET layer is also set back to the factory set values (default values (fixed)).

Menu Data Structure	OPERATION	PAINT	MAINTENANCE	FILE
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data	Actual Setup Data
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data	Standard Setup Data
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)

5-4-7. 3Sec Clear Preset

Pressing the CANCEL/PRST/ESCAPE switch to the CANCEL/PRST side for three seconds enables or disabled the function to clear preset values for each item.

5-5. SCENE File

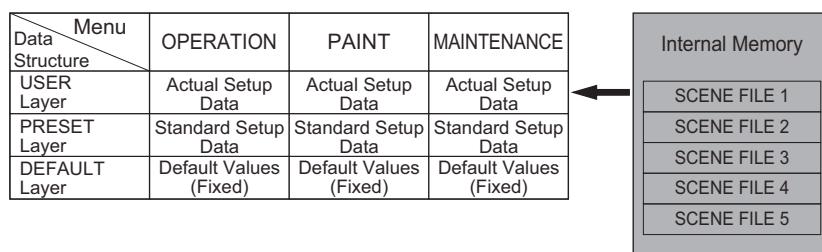
An SCENE File menu consists of the following.

- Recall Internal Memory
- Store Internal Memory
- Load SD Card
- Save SD Card
- File ID
- Scene White Data

5-5-1. Recall Internal Memory

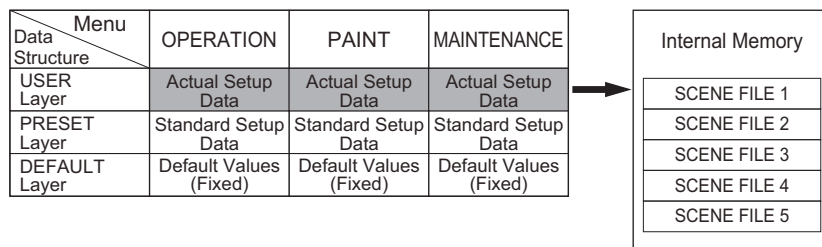
This menu item is used to select one of the five SCENE files saved in the internal memory and load the file.

The actual setup data of relevant items of the SCENE file changes.



5-5-2. Store Internal Memory

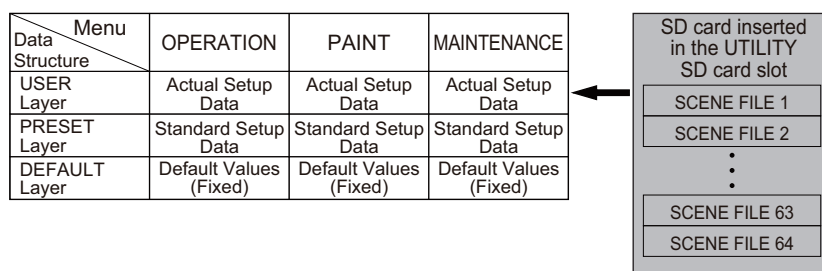
This menu item is used to store the actual setup data of relevant items of the SCENE file in the internal memory.



5-5-3. Load SD Card

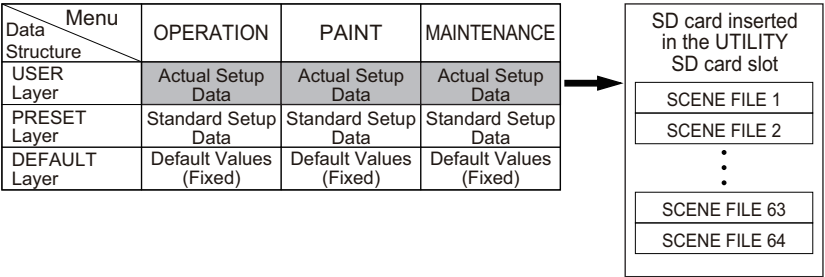
This item is used to select one file from 64 SCENE files stored in the SD card inserted in the UTILITY SD card slot, and then call the selected file.

The actual setup data of relevant items of the SCENE file changes.



5-5-4. Save SD Card

This item is used to store actual set values of relevant items in SCENE files in the SD card inserted in the UTILITY SD card slot.



5-5-5. File ID

A name consisting of up to 16 characters can be given to each file.

After the file name has been set, press the MENU knob several times or move the cursor to SET with the arrow keys and press the MENU button to execute this menu.

5-6. REFERENCE File

An REFERENCE File menu consists of the following.

- Store Reference
- Clear Reference
- Load Reference (SD Card)
- Save Reference (SD Card)
- File ID

5-6-1. Store Reference

This menu item is used to store the standard setup data of relevant items of the REFERENCE file.

Menu Data Structure	OPERATION	PAINT	MAINTENANCE
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)

5-6-2. Clear Reference

This menu item is used to restore factory set values (default values (fixed)) for relevant items of the REFERENCE file.
The standard setup data saved in the PRESET layer is also set back to the factory set values (default values (fixed)).

Menu Data Structure	OPERATION	PAINT	MAINTENANCE
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)

5-6-3. Load Reference (SD Card)

This menu item is used to load REFERENCE files saved in the SD card inserted in the UTILITY SD cardslot.
The standard setup data of relevant items of the REFERENCE file changes.

Menu Data Structure	OPERATION	PAINT	MAINTENANCE
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)

SD card inserted in the UTILITY SD card slot

5-6-4. Save Reference (SD Card)

This item is used to store standard set values of the relevant item in the REFERENCE file in the SD card inserted in the UTILITY SD card slot.

Menu Data Structure	OPERATION	PAINT	MAINTENANCE	
USER Layer	Actual Setup Data	Actual Setup Data	Actual Setup Data	
PRESET Layer	Standard Setup Data	Standard Setup Data	Standard Setup Data	SD card inserted in the UTILITY SD card slot
DEFAULT Layer	Default Values (Fixed)	Default Values (Fixed)	Default Values (Fixed)	

5-6-5. File ID

A name of up to 16 characters can be given to a user file.

After the file name has been set, press the MENU knob several times or move the cursor to SET with the arrow keys and press the MENU button to execute this menu.

5-7. LENS File

An LENS File menu consists of the following.

- Display Mode
- Recall Internal Memory
- Store Internal Memory
- Load SD Card
- Save SD Card
- File ID
- File Source
- Clear Lens Offset
- Lens Auto Recall
- Lens Serial Number
- Lens Name
- Lens Manufacturer
- Master V Modulation
- Lens Center H
- Lens Center V
- R Flare
- G Flare
- B Flare
- White Offset R
- White Offset B
- Shading Ch Select
- Shading H SAW
- Shading H PARA
- Shading V SAW
- Shading V PARA

5-7-1. Display Mode

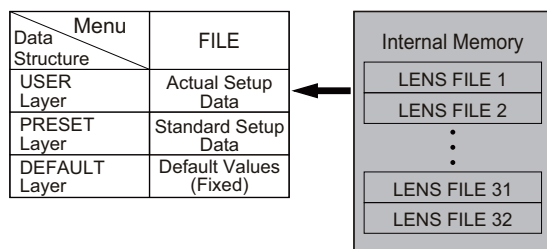
This menu item is used to store the actual setup data of relevant items of the LENS file in the SxS memory card.

- Model Name
- Lens ID

5-7-2. Recall Internal Memory

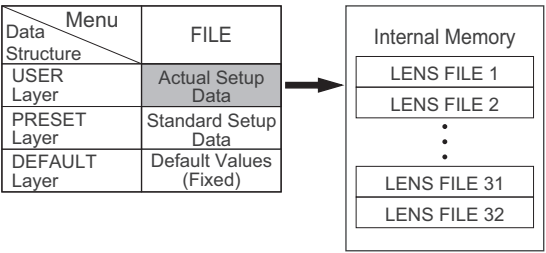
This menu item is used to select one of the 32 LENS files saved in the internal memory and load the file.

The actual setup data of relevant items of the LENS file changes.



5-7-3. Store Internal Memory

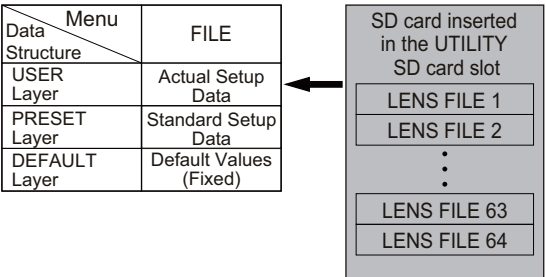
This menu item is used to store the actual setup data of relevant items of the LENS file in the internal memory.



5-7-4. Load SD Card

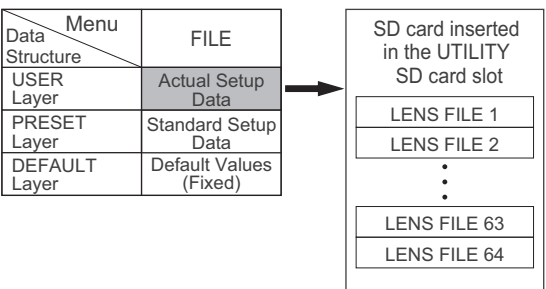
This item is used to select one file from 64 LENS files stored in the SD card inserted in the UTILITY SD card slot, and then call the selected file.

The actual setup data of relevant items of the LENS file changes.



5-7-5. Save SD Card

This menu item is used to store the actual setup data of relevant items of the LENS file in the SD card inserted in the UTILITY SD cardslot.



5-7-6. File ID

A name consisting of up to 16 characters can be given to each file.

When file name setting is completed, move the cursor to SET with the arrow key and press the MENU button to execute this item.

5-7-7. File Source

This menu item is used to display the number of the selected LENS file.

5-7-8. Clear Lens Offset

This menu item is used to clear LENS files.

5-7-9. Lens Auto Recall

This menu item is used to load the corresponding LENS file when a serial number communication compatible lens is attached.

- Off: This function is not used.
- On: LENS file corresponding to the model name is loaded and the file data is reflected.
- S.Number:
 - For lenses that allow serial number communication, the LENS file corresponding to the model name and serial number is loaded and the file data is reflected.
 - For lenses that do not allow serial number communication, the LENS file corresponding to the model name is loaded. (same as the case when this item is set to On)

5-7-10. Lens Serial Number

This menu item is used to display the serial number of the attached lens that allows serial number communication. When a lens that does not allow serial number communication, a message “No Support” appears.

5-7-11. Lens Name

This menu item is used to display the model name of the attached lens that allows serial number communication. When a lens that does not allow serial number communication, a message “No Support” appears.

5-7-12. Lens Manufacturer

This menu item is used to display the lens manufacturer name of the attached lens that allows serial number communication.

When a lens that does not allow serial number communication, a message “No Support” appears.

5-7-13. Master V Modulation

This menu item is used to set the correction data of the vertical SAW shading in the LENS file.

(This shading correction data has three types of data independently when the extender is On, shrinker is On, and both are Off.)

5-7-14. Lens Center H/V

This menu item is used to set the center marker horizontal and vertical positions in the LENS file.

(This horizontal/vertical position set data has three types of data independently when the extender is On, shrinker is On, and both are Off.)

5-7-15. R/G/B Flare

This menu item is used to set R/G/B flare levels that are unique to each lens in the LENS file.

(This R/G/B flare level set data has three types of data independently when the extender is On, shrinker is On, and both are Off.)

5-7-16. White Offset R/B

This menu item is used to set the R/B white balance correction data in the LENS file.

(This R/B white balance correction data has three types of data independently when the extender is On, shrinker is On, and both are Off.)

5-7-17. Shading Ch Select, Shading H SAW/PARA, Shading V SAW/PARA

These menu items are used to set white shading correction data that are unique to each lens.

- Select channels (R/G/B) you want to change the correction data.
- Set the SAW white shading correction data in the horizontal and vertical directions and the parabolic white shading correction data using the Lens R/G/B H Saw/Para and Lens R/G/B V Saw/Para menu items.

(This correction data has three types of data independently when the extender is On, shrinker is On, and both are Off.)

5-8. Specific Save Items

5-8-1. White Gain

ALL file

Item to be executed	State after execution
Load SD Card	All white gain values (User layer and Preset layer) are rewritten to All file values.
Save SD Card	All white gain values (User layer and Preset layer) are stored in the All file.
All Preset	White gain values of the User layer are rewritten to respective standard setting values.
Store All Preset	The preset white gain value that was set in Preset White of the MAINTENANCE menu is stored as a PRESET layer value (= REFERENCE file value).
Clear All Preset	All white gain values (User layer and Preset layer) are rewritten to factory set values.

SCENE file

Item to be executed	State after execution
Recall Internal Memory	The white gain value according to the WHITE BAL switch position during execution is rewritten to the internal memory value of the Scene file.
Store Internal Memory	The white gain value according to the WHITE BAL switch position during execution is stored.
Load SD Card	The white gain value according to the WHITE BAL switch position during execution is rewritten to the SD card value of the Scene file.
Save SD Card	The white gain value according to the WHITE BAL switch position during execution is stored.
Execute Standard ^{*1}	In versions before Ver. Up2.0, 27 white gain values of the User layer during execution are rewritten to initial values. In Ver. Up2.0 and later versions, only 9 memory data values of the WHITE BAL switch position during execution are rewritten to Preset layer values.

REFERENCE file

Item to be executed	State after execution
Store Reference	When the WHITE BAL switch is set to A or B, white gain values of A and B are stored in the REFERENCE file (Preset layer). When the WHITE BAL switch is set to PRST, nothing is stored. When the WHITE BAL switch is set to PRST, nothing is stored.
Clear Reference	When the WHITE BAL switch is set to A, the R/B GAIN value of A (User layer and Preset layer) is re-set to the factory set value. The PRESET WHITE R/B GAIN value is re-set to the factory set value regardless of the WHITE BAL switch setting.
Load Reference(SD Card)	White gain values of A and B (Preset layer) are updated to the values in the Reference file.
Save Reference(SD Card)	White gain values of A and B (Preset layer) are stored in the Reference file.

5-8-2. Master Gain

The master gain value is not stored in the REFERENCE file or the SCENE file. (Even if the REFERENCE file or the SCENE file is called, the master gain remains unchanged.)

- While the unit is operating independently, the saved value cannot be read because the hardware switch takes precedence.
- While a remote controller is connected, the master gain value can be read from each file and the value is retained until it is modified (even after power-off).
- When RM-B150 is connected, master gain value is read or saved according to the hardware switch.

*1: When File→Scene File→Scene White Data is On, Standard is executed.

5-8-3. Shutter

- SHUTTER ON/OFF, ECS frequency, SLS frame count, and SHUTTER SEL values can be saved in a SCENE file.
- The ECS frequency and the SHUTTER SEL value can be read during single operation. Read values are retained even after power is turned off.
- The stored SHUTTER ON/OFF value cannot be read because the hardware switch takes precedence.
While a remote controller is connected, however, SHUTTER ON/OFF value, ECS frequency, and SHUTTER SEL value can be read. Read values are retained even after power is turned off.
- The following shutter values are stored in the All file and are then read.
 - Shutter On/Off
 - [Mode] of Operation menu [Shutter]
 - Shutter speed at the time when [Mode] of Operation menu [Shutter] is [Speed]
 - Opening angle at the time when [Mode] of Operation menu [Shutter] is [Angle]
 - Frequency at the time of ECS
 - Selected item (Shutter or ECS)
 - [Setting] of Operation menu [Slow Shutter]
 - [Number of Frames] of Operation menu [Slow Shutter]

5-9. Setup Menu List

Data that was set with setup menus can be written to files.

This section describes a list of all items of setup menus, which shows what file types can store each item.

Symbol

○: Storable

×: Unstorable

Unstorable because of temporary operation, etc.

Default: Not stored in the Reference file. Executing Reference File in the File menu stores the value in the Reference layer as an initial value of the User layer.

5-9-1. USER Menu

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
Edit User Menu	—	○	×	×	×
Add Item	—	—	—	—	—
Customize Reset	Reset	—	—	—	—
—	Delete	—	—	—	—
	Move	—	—	—	—
	Edit Sub Item	—	—	—	—

5-9-2. OPERATION Menu

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
Format	Frequency	○	×	×	×
	Rec Format	○	×	×	×
	Aspect Ratio (SD)	○	×	×	×
	Audio Length (IMX)	○	×	×	×
Format Media	Media(A)	—	—	—	—
	Media(B)	—	—	—	—
	SD Card(Utility)	—	—	—	—
	SD Card(Proxy)	—	—	—	—
Input/Output	Output Format	○	×	×	×
	Source Select	○	×	×	×
	SDI Out1 Output	○	×	×	×
	SDI Out2 Output	○	×	×	×
	HDMI Output	○	×	×	×
	SDI Out2/HDMI Super	○	×	×	×
	Video Out Super	○	×	×	×
	Down Converter	○	×	×	×
	Wide ID	○	×	×	×
	Wide Mode(Ext.)	○	×	×	×
Super Impose	Super(VF Display)	○	×	×	×

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
	Super(Menu)	○	×	×	×
	Super(Marker)	○	×	×	×
LCD	LCD Color	○	×	×	×
	LCD Marker&Zebra	○	×	×	×
Rec Function	Slow & Quick Motion	○	×	×	×
	Frame Rate	○	×	×	×
	Clip Continuous Rec	○	×	×	×
	Picture Cache Rec	○	×	×	×
	Cache Rec Time	○	×	×	×
	Interval Rec	×	×	×	×
	Number of Frames	○	×	×	×
	Interval Time	○	×	×	×
	Pre-Lighting	○	×	×	×
	Simul Rec	○	×	×	×
Proxy Recording Mode	Setting	○	×	×	×
	Size	○	×	×	×
	Frame Rate	—	—	—	—
	Bit Rate	—	—	—	—
	Audio Channel	○	×	×	×
Assignable Switch	<0>	○	×	×	×
	<1>	○	×	×	×
	<2>	○	×	×	×
	<3>	○	×	×	×
	<4>	○	×	×	×
	<5>	○	×	×	×
	Lens RET	○	×	×	×
	Color Temp.	○	×	×	×
	Zoom Speed	○	×	×	×
VF Setting	Color	○	×	×	×
	Color Mode	○	×	×	×
	Peaking Type	○	×	×	×
	Peaking Frequency	○	×	×	×
	Peaking Color	○	×	×	×
	VF Detail Level	○	×	×	×
Marker	Setting	○	×	×	×
	Color	○	×	×	×
	Center Marker	○	×	×	×
	Safety Zone	○	×	×	×
	Safety Area	○	×	×	×
	Aspect Marker	○	×	×	×
	Aspect Select	○	×	×	×
	Aspect Mask	○	×	×	×
	Aspect Safety Zone	○	×	×	×
	Aspect Safety Area	○	×	×	×
	100% Marker	○	×	×	×
	User Box	○	×	×	×

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
	User Box Width	○	×	×	×
	User Box Height	○	×	×	×
	User Box H Position	○	×	×	×
	User Box V Position	○	×	×	×
Gain Switch	Gain<L>	○	×	×	×
	Gain<M>	○	×	×	×
	Gain<H>	○	×	×	×
	Gain <Turbo>	○	×	×	×
	Shockless Gain	○	×	×	×
Auto Iris	Iris Override	○	×	×	×
	Mode	○	×	×	×
	Level	○	×	×	×
	Speed	○	×	×	×
	Clip High light	○	×	×	×
	Detect Window	○	×	×	×
	Detect Window Indication	×	×	×	×
	Iris APL Ratio	○	×	×	×
	Iris Var Width	○	×	×	×
	Iris Var Height	○	×	×	×
	Iris Var H Position	○	×	×	×
	Iris Var V Position	○	×	×	×
Zebra	Zebra Select	○	×	×	×
	Zebra1 Level	○	×	×	×
	Zebra1 Aperture Level	○	×	×	×
	Zebra2 Level	○	×	×	×
Display On/Off	Video Level Warning	○	×	×	×
	Shutter Setting	○	×	×	×
	ND Filter Position	○	×	×	×
	Gain Setting	○	×	×	×
	Rec /Play Status	○	×	×	×
	Color Temp.	○	×	×	×
	Frame Rate / Interval	○	×	×	×
	Battery Remain	○	×	×	×
	Timecode	○	×	×	×
	Audio Level Meter	○	×	×	×
	Media Status	○	×	×	×
	SD Card(Utility)	○	×	×	×
	Focus Position	○	×	×	×
	Iris Position	○	×	×	×
	Zoom Position	○	×	×	×
	Extender	○	×	×	×
	ALAC	○	×	×	×
	AE Mode	○	×	×	×
	White Balance Mode	○	×	×	×
	CC5600K	○	×	×	×
	Rec Format	○	×	×	×

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
	Gamma	○	×	×	×
	Timecode Lock	○	×	×	×
	Network Condition	○	×	×	×
	Proxy Status	○	×	×	×
	NW Client Mode Status	○	×	×	×
	Streaming Status	○	×	×	×
	GPS	○	×	×	×
	Video Signal Monitor	○	×	×	×
	Clip Name	○	×	×	×
	Focus Assist Indicator	○	×	×	×
	Focus Area Marker	○	×	×	×
	Lens Info	○	×	×	×
	WRR RF Level	○	×	×	×
	Clip Number	○	×	×	×
"!LED	Gain <!>	○	×	×	×
	Shutter <!>	○	×	×	×
	White Preset <!>	○	×	×	×
	ATW Run <!>	○	×	×	×
	Extender <!>	○	×	×	×
	Filter <!>	○	×	×	×
	Iris Override <!>	○	×	×	×
White Setting	White Switch	○	×	×	×
	Shockless White	○	×	×	×
	ATW Speed	○	×	×	×
	AWB Fixed Area	○	×	×	×
	Filter White Memory	○	×	×	×
Offset White	Offset White<A>	○	×	×	×
	Warm Cool <A>	○	×	×	×
	Warm Cool Balance<A>	○	×	×	×
	Offset White 	○	×	×	×
	Warm Cool 	○	×	×	×
	Warm Cool Balance	○	×	×	×
Shutter	Mode	○	○	×	×
Slow Shutter	Setting	○	○	×	×
	Number of Frames	○	○	×	×
Time Zone	Time Zone	○	×	×	×
Clip	Clip Naming	○	×	×	×
	Title Prefix	○	×	×	×
	Number Set	×	×	×	×
Update Media	Media(A)	—	—	—	—
	Media(B)	—	—	—	—
GPS	GPS	○	×	×	×
Planning Metadata	Load Media(A)	—	—	—	—
	Load Media(B)	—	—	—	—
	Properties	—	—	—	—
	Clear Memory	—	—	—	—

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
	Clip Name Disp	○	×	×	×

5-9-3. PAINT Menu

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
Switch Status	Gamma	○	○	×	Default
	Black Gamma	○	○	×	○
	Matrix	○	○	×	○
	Knee	○	○	×	○
	White Clip	○	○	×	Default
	Detail	○	○	×	Default
	Aperture	○	○	×	Default
	Flare	○	○	×	Default
	Test Saw	○	×	×	×
White	Color Temp <A>	○	○	×	○
	Color Temp Balance <A>	○	○	×	○
	R Gain <A>	○	○	×	○
	B Gain <A>	○	○	×	○
	Color Temp 	○	○	×	○
	Color Temp Balance 	○	○	×	○
	R Gain 	○	○	×	○
	B Gain 	○	○	×	○
Black	Master Black	○	○	×	○
	R Black	○	○	×	○
	B Black	○	○	×	○
Flare	Setting	○	○	×	Default
	Master Flare	○	○	×	○
	R Flare	○	○	×	○
	G Flare	○	○	×	○
	B Flare	○	○	×	○
Gamma	Setting	○	○	×	Default
	Step Gamma	○	○	×	○
	Master Gamma	○	○	×	○
	R Gamma	○	○	×	○
	G Gamma	○	○	×	○
	B Gamma	○	○	×	○
	Gamma Category	○	○	×	○
	Gamma Select	○	○	×	○
Black Gamma	Setting	○	○	×	○
	Range	○	○	×	○
	Master Black Gamma	○	○	×	○
Knee	Setting	○	○	×	○
	Point	○	○	×	○
	Slope	○	○	×	○

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
	Knee Saturation	○	○	×	○
	Knee Saturation Level	○	○	×	○
White Clip	Setting	○	○	×	Default
	Level	○	○	×	○
Detail(HD)	Setting	○	○	×	Default
	Level	○	○	×	○
	H/V Ratio	○	○	×	○
	Crispening	○	○	×	○
	Level Depend	○	○	×	○
	Level Depend Level	○	○	×	○
	Frequency	○	○	×	○
	Knee Aperture	○	○	×	○
	Knee Aperture Level	○	○	×	○
	Limit	○	○	×	○
	White Limit	○	○	×	○
	Black Limit	○	○	×	○
	V Black Limit	○	○	×	○
	V Detail Creation	○	○	×	○
Detail(SD)	Setting	○	○	×	Default
	Level	○	○	×	○
	H/V Ratio	○	○	×	○
	Crispening	○	○	×	○
	Level Depend	○	○	×	○
	Level Depend Level	○	○	×	○
	Frequency	○	○	×	○
	Knee Aperture	○	○	×	○
	Knee Aperture Level	○	○	×	○
	Limit	○	○	×	○
	White Limit	○	○	×	○
	Black Limit	○	○	×	○
	V Black Limit	○	○	×	○
	V Detail Creation	○	○	×	○
	Cross Color Suppress	○	○	×	○
Aperture	Setting	○	○	×	Default
	Level	○	○	×	○
Skin Detail	Setting	○	○	×	○
	Area Detection	—	—	—	—
	Area Indication	×	×	×	×
	Level	○	○	×	○
	Saturation	○	○	×	○
	Hue	○	○	×	○
	Width	○	○	×	○
Matrix	Setting	○	○	×	○
	Adaptive Matrix	○	○	×	○
	Preset Matrix	○	○	×	○
	Preset Select	○	○	×	○

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
	User Matrix	○	○	×	○
	Level	○	○	×	○
	Phase	○	○	×	○
	User Matrix R-G	○	○	×	○
	User Matrix R-B	○	○	×	○
	User Matrix G-R	○	○	×	○
	User Matrix G-B	○	○	×	○
	User Matrix B-R	○	○	×	○
	User Matrix B-G	○	○	×	○
Multi Matrix	Setting	○	○	×	○
	Area Indication	×	×	×	×
	Color Detection	—	—	—	—
	Reset	—	—	—	—
	Axis	×	×	×	×
	Hue	○	○	×	○
	Saturation	○	○	×	○
V Modulation	Setting	○	×	×	Default
	Master V Modulation	○	○	×	Default
	R V Modulation	○	○	×	Default
	G V Modulation	○	○	×	Default
	B V Modulation	○	○	×	Default
Low Key Saturation	Setting	○	○	×	○
	Level	○	○	×	○
	Range	○	○	×	○
Saturation Mode	Saturation Mode	○	○	×	○
	Knee Saturation	○	○	×	○
	Black Gamma	○	○	×	○
	Low Key Saturation	○	○	×	○
Noise Suppression	Setting	○	○	×	○
	Level	○	○	×	○

5-9-4. THUMBNAIL Menu

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
Display Clip Properties	—	—	—	—	—
Set Index Picture	—	—	—	—	—
Thumbnail View	Essence Mark Thumbnail	—	—	—	—
	Clip Thumbnail	—	—	—	—
Set Shot Mark	Add Shot Mark1	—	—	—	—
	Delete Shot Mark1	—	—	—	—
	Add Shot Mark2	—	—	—	—
	Delete Shot Mark2	—	—	—	—
Set Clip Flag	Add OK	—	—	—	—
	Add NG	—	—	—	—

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
	Add KEEP	—	—	—	—
	Delete Clip Flag	—	—	—	—
Lock/Unlock Clip	Select Clip	—	—	—	—
	Lock All Clips	—	—	—	—
	Unlock All Clips	—	—	—	—
Copy Clip	Select Clip	—	—	—	—
	All Clips	—	—	—	—
Delete Clip	Select Clip	—	—	—	—
	All Clips	—	—	—	—
Filter Clips	OK	—	—	—	—
	NG	—	—	—	—
	KEEP	—	—	—	—
	None	—	—	—	—
Customize View	Thumbnail Caption	○	○	×	×

5-9-5. MAINTENANCE Menu

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
White Shading	Channel Select	○	×	×	Default
	White H Saw	×	×	×	×
	White H Para	×	×	×	×
	White V Saw	×	×	×	×
	White V Para	×	×	×	×
	White Saw/ Para	○	×	×	Default
Black Shading	Channel Select	○	×	×	Default
	Black H Saw	×	×	×	×
	Black H Para	×	×	×	×
	Black V Saw	×	×	×	×
	Black V Para	×	×	×	×
	Black Saw/Para	○	×	×	Default
	Master Black	○	○	×	○
	Master Gain (TMP)	—	—	—	—
Battery	Near End:Info Battery	○	×	×	×
	End:Info Battery	○	×	×	×
	Near End:Sony Battery	○	×	×	×
	End:Sony Battery	○	×	×	×
	Near End:Other Battery	○	×	×	×
	End:Other Battery	○	×	×	×
	Detected Battery	—	—	—	—
DC Voltage Alarm	DC Low Voltage1	○	×	×	×
	DC Low Voltage2	○	×	×	×
Audio	Front MIC Select	○	×	×	×
	Rear XLR Auto	○	×	×	×
	Front MIC CH1 Ref	○	×	×	×

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
	Front MIC CH2 Ref	○	×	×	×
	Rear MIC CH1 Ref	○	×	×	×
	Rear MIC CH2 Ref	○	×	×	×
	Line Input Ref	○	×	×	×
	Min Alarm Volume	○	×	×	×
	Speaker Attenuate	○	×	×	×
	Headphone Out	○	×	×	×
	Reference Level	○	×	×	×
	Reference Out	○	×	×	×
	CH1&2 AGC Mode	○	×	×	×
	CH3&4 AGC Mode	○	×	×	×
	AGC Spec	○	×	×	×
	Limiter Mode	○	×	×	×
	Output Limiter	○	×	×	×
	CH1 Wind Filter	○	×	×	×
	CH2 Wind Filter	○	×	×	×
	CH3 Wind Filter	○	×	×	×
	CH4 Wind Filter	○	×	×	×
	1kHz Tone on Color Bars	○	×	×	×
	MIC CH1 Level	○	×	×	×
	MIC CH2 Level	○	×	×	×
	Rear1/WRR Level	○	×	×	×
	Rear2/WRR Level	○	×	×	×
	Audio CH3 Level	○	×	×	×
	Audio CH4 Level	○	×	×	×
WRR Setting	WRR Valid CH Sel	○	×	×	×
	WRR CH Select	×	×	×	×
	WRR Delay Comp	○	×	×	×
	TX	—	—	—	—
	TX Audio Peak	—	—	—	—
	TX Input Level	—	—	—	—
	TX ATT Level	—	—	—	—
	TX LCF Frequency	—	—	—	—
	TX System Delay	○	×	×	×
Timecode	TC Out	○	×	×	×
	DF/NDF	○	×	×	×
	LTC UBIT	○	×	×	×
	Counter Display	○	×	×	×
Essence Mark	Find Mode	○	×	×	×
Camera Config	HD SDI Remote I/F	○	×	×	×
	Color Bars Select	○	×	×	×
	User Menu Only	○	×	×	×
	RM Common Memory	○	×	×	×
	RM Rec Start	○	×	×	×
	SET Key on Thumbnail	○	×	×	×
	ALAC	○	×	×	×

Continued

Menu Item	Submenu Item		ALL	SCENE	LENS	REFER- ENCE
Preset White	Color Temp <P>		○	×	×	×
	Color Temp BAL <P>		○	×	×	×
	R Gain <P>		○	×	×	×
	B Gain <P>		○	×	×	×
	AWB Enable <P>		×	×	×	×
White Filter	ND Filter C.Temp		○	×	×	×
	ND FLT C.Temp<1>		○	×	×	×
	ND FLT C.Temp<2-4>		○	×	×	×
	Electrical CC<A>		○	×	×	×
	Electrical CC		○	×	×	×
	Electrical CC<C>		○	×	×	×
	Electrical CC<D>		○	×	×	×
DCC Adjust	DCC Function Select		○	×	×	×
	DCC D Range		○	×	×	×
	DCC Point		○	×	×	×
	DCC Gain		○	×	×	×
	DCC Delay Time		○	×	×	×
	DCC Peak Filter		○	×	×	×
Genlock	Genlock		○	×	×	×
	Reference		—	—	—	—
Auto Shading	Auto Black Shading		—	—	—	—
	Reset Black Shading		—	—	—	—
	Master Gain (TMP)		—	—	—	—
APR	APR		—	—	—	—
	Reset		—	—	—	—
Basic Authentication	User Name		×	×	×	×
	Password		×	×	×	×
Network	Setting		○	×	×	×
	Channel		○	×	×	×
	SSID & Password		—	—	—	—
	WPS		—	—	—	—
	Device Name		—	—	—	—
	IP Address		—	—	—	—
	Subnet Mask		—	—	—	—
	MAC Address		—	—	—	—
	Regenerate Password		—	—	—	—
	Wired LAN Remote		—	—	—	—
Network Client Mode	Setting		○	×	×	×
	Detail Settings	CCM Address	○	×	×	×
		CCM Port	○	×	×	×
		User Name	×	×	×	×
		Password	×	×	×	×
File Transfer	File Transfer		—	—	—	—
Streaming	Setting		×	×	×	×
	Preset Select		○	×	×	×
	Preset1	Size	○	×	×	×

Continued

Menu Item	Submenu Item		ALL	SCENE	LENS	REFER- ENCE
		Bit Rate	○	×	×	×
		Type	○	×	×	×
		Destination Address	○	×	×	×
		Destination Port	○	×	×	×
	Preset2	Size	○	×	×	×
		Bit Rate	○	×	×	×
		Type	○	×	×	×
		Destination Address	○	×	×	×
		Destination Port	○	×	×	×
	Preset3	Size	○	×	×	×
		Bit Rate	○	×	×	×
		Type	○	×	×	×
		Destination Address	○	×	×	×
		Destination Port	○	×	×	×
	Audio Channel		○	×	×	×
Clock Set	Date Mode		○	×	×	×
	12H/24H		○	×	×	×
	Date		—	—	—	—
	Time		—	—	—	—
Language	Select		○	×	×	×
Hours Meter	Hours (System)		—	—	—	—
	Hours (Reset)		—	—	—	—
	Reset		—	—	—	—
Network Reset	Reset		—	—	—	—
Fan Control	Setting		○	×	×	×
VF Display Setting	Chara/Marker Brightness		○	×	×	×
Option	Type		—	—	—	—
	Install Option		—	—	—	—
	Remove Option		—	—	—	—
Version	Number		—	—	—	—
	Version Up		—	—	—	—
	Net-Func Version Number		—	—	—	—
	Net-Func Ver.Up		—	—	—	—

5-9-6. FILE Menu

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
User Menu Item	Load SD Card	—	—	—	—
	Save SD Card	—	—	—	—
	File ID	×	×	×	×
User File	Load SD Card	—	—	—	—
	Save SD Card	—	—	—	—
	File ID	×	×	×	×
	Recall User Preset	—	—	—	—

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFER- ENCE
	Store User Preset	—	—	—	—
	Clear User Preset	—	—	—	—
	Load Customize Data	○	×	×	×
	Load White Data	○	×	×	×
All File	Load SD Card	—	—	—	—
	Save SD Card	—	—	—	—
	File ID	○	×	×	×
	All Preset	—	—	—	—
	Store All Preset	—	—	—	—
	Clear All Preset	—	—	—	—
	3Sec Clear Preset	×	×	×	×
Scene File	Recall Internal Memory	—	—	—	—
	Store Internal Memory	—	—	—	—
	Load SD Card	—	—	—	—
	Save SD Card	—	—	—	—
	File ID	×	○	×	×
	Scene White Data	○	×	×	×
Reference File	Store Reference	—	—	—	—
	Clear Reference	—	—	—	—
	Load Reference(SD Card)	—	—	—	—
	Save Reference(SD Card)	—	—	—	—
	File ID	×	×	×	○
Lens File	Display Mode	×	×	×	×
	Recall Internal Memory	—	—	—	—
	Store Internal Memory	—	—	—	—
	Load SD Card	—	—	—	—
	Save SD Card	—	—	—	—
	File ID	×	×	○	×
	File Source	—	—	—	—
	Clear Lens Offset	—	—	—	—
	Lens Auto Recall	○	×	×	×
	Lens Serial Number	—	—	—	—
	Lens Name	—	—	—	—
	Lens Manufacturer	—	—	—	—
	Master V Modulation	×	×	○	×
	Lens Center H	×	×	○	×
	Lens Center V	×	×	○	×
	R Flare	×	×	○	×
	G Flare	×	×	○	×
	B Flare	×	×	○	×
	White Offset R	×	×	○	×
	White Offset B	×	×	○	×
	Shading Ch Select	○	×	×	×
	Shading H SAW	×	×	○	×
	Shading H PARA	×	×	○	×
	Shading V SAW	×	×	○	×

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
	Shading V PARA	×	×	○	×
User Gamma	Current Settings	—	—	—	—
	Load SD Card	—	—	—	—
	Reset	—	—	—	—

5-9-7. SERVICE Menu

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
CCD Adjustment	R CCD Gain	×	×	×	×
	G CCD Gain	×	×	×	×
	B CCD Gain	×	×	×	×
	DC Offset Adjustment	—	—	—	—
	Gain Offset Adjustment	—	—	—	—
	R V SUB	×	×	×	×
	G V SUB	×	×	×	×
	B V SUB	×	×	×	×
	R CCD H Regi	×	×	×	×
	R CCD V Regi	×	×	×	×
	B CCD H Regi	×	×	×	×
	B CCD V Regi	×	×	×	×
White Shading	Channel Select	×	×	×	×
	White H Saw	×	×	×	×
	White H Para	×	×	×	×
	White V Saw	×	×	×	×
	White V Para	×	×	×	×
	White Saw/ Para	×	×	×	×
Black Shading	Channel Select	×	×	×	×
	Black H Saw	×	×	×	×
	Black H Para	×	×	×	×
	Black V Saw	×	×	×	×
	Black V Para	×	×	×	×
	Black Saw/Para	×	×	×	×
	Master Black	○	○	×	○
	Master Gain (TMP)	—	—	—	—
Auto Shading	Auto White Shading	—	—	—	—
	Reset White Shading	—	—	—	—
	Auto Black Shading	—	—	—	—
	Reset Black Shading	—	—	—	—
	Master Gain (TMP)	—	—	—	—
Flare	R Flare	×	×	×	×
	G Flare	×	×	×	×
	B Flare	×	×	×	×
RPN	APR	—	—	—	—
	Channel	×	×	×	×

Continued

Menu Item	Submenu Item	ALL	SCENE	LENS	REFERENCE
	Cursor	×	×	×	×
	Cursor H Position	×	×	×	×
	Cursor V Position	×	×	×	×
	Cursor Next	—	—	—	—
	Cursor Prev	—	—	—	—
	Record	—	—	—	—
	Delete	—	—	—	—
	Reset	—	—	—	—
Knee	Blue Knee Saturation	×	×	×	×
VCO Adjustment	Clock Out Select	×	×	×	×
	Clock Frequency	×	×	×	×
Fan Control	Fan Control Mode	×	×	×	×
Service Reset	Reset	—	—	—	—
Factory Reset	Reset	—	—	—	—
Password Reset	Reset	—	—	—	—
Information	Serial Number	×	×	×	×
	Imager Temperature	×	×	×	×
	Main Board Temperature	×	×	×	×
	Log Dump	×	×	×	×
	Net-Func Log Dump	×	×	×	×
Version 1	Package	×	×	×	×
	EMMA	×	×	×	×
	DiabloL	×	×	×	×
	DiabloT	×	×	×	×
	Rosetta	×	×	×	×
	NATH	×	×	×	×
	Beaune	×	×	×	×
Version 2	VUP3	×	×	×	×
	GMON	×	×	×	×
	AUDI	×	×	×	×
	ETC	×	×	×	×
	JKLX	×	×	×	×
Version 3	Darwin	×	×	×	×
	ExVine	×	×	×	×
	VFVine	×	×	×	×
	KYVine	×	×	×	×
	SHDX	×	×	×	×
	TGX	×	×	×	×
	WM	×	×	×	×

Section 6

Spare Parts

6-1. Note on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked △ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.

3. Stock of Parts

Parts marked with “o” at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Harness

Harnesses with no part number are not registered as spare parts.

1. 安全重要部品

△警告

△印のついた部品は安全性を維持するために重要な部品です。したがって、交換する時は必ず指定の部品を使ってください。

2. 部品の共通化

ソニーから供給する補修用部品は、セットに使われているものと異なることがあります。これは部品の共通化、改良等によるものです。

3. 部品の在庫

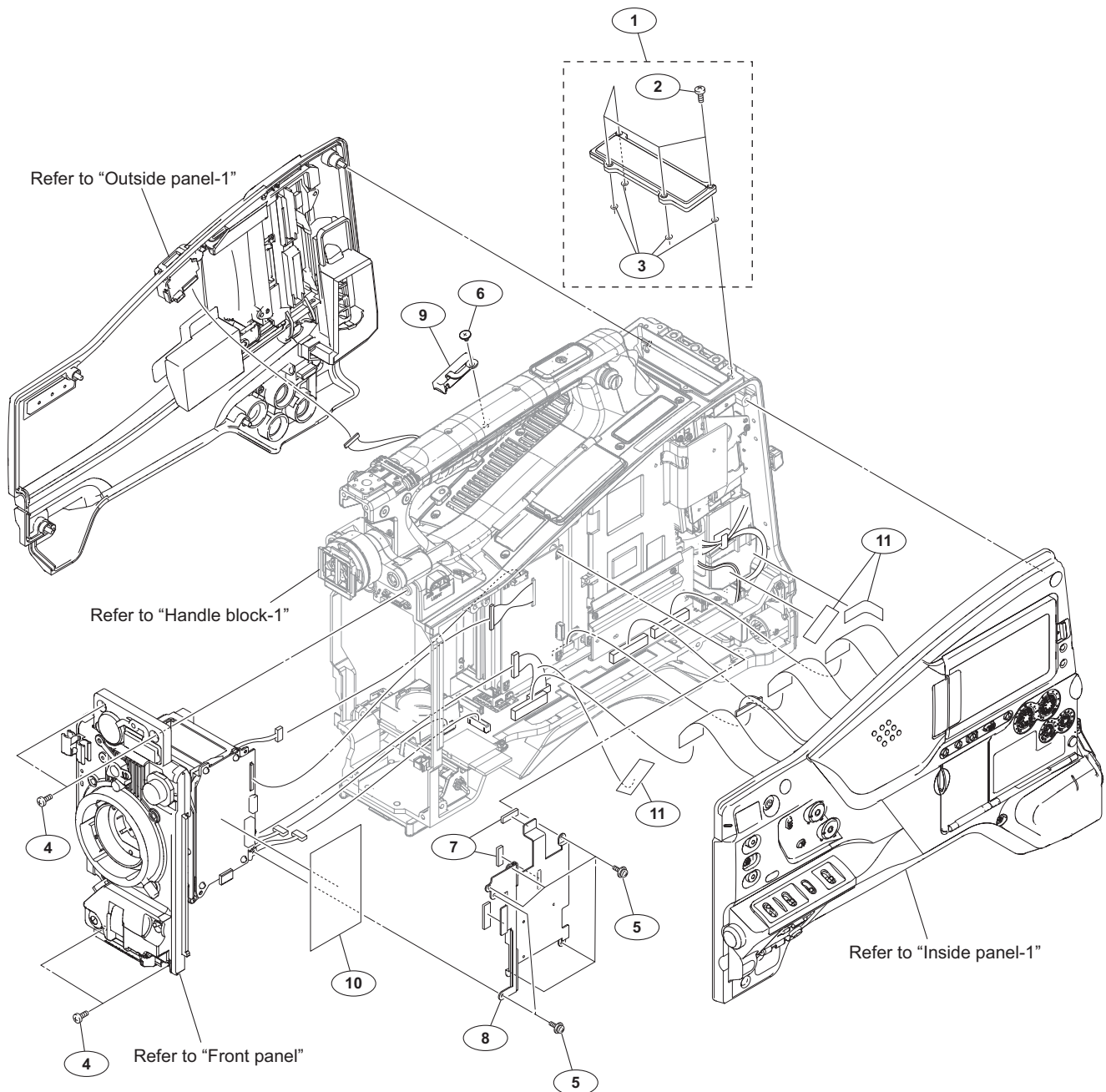
部品表の SP (Supply code) 欄に “o” で示される部品は在庫していないことがあります。納期が長くなる場合があります。

4. ハーネス

部品番号の記載されていないハーネスは、サービス部品として登録されていません。

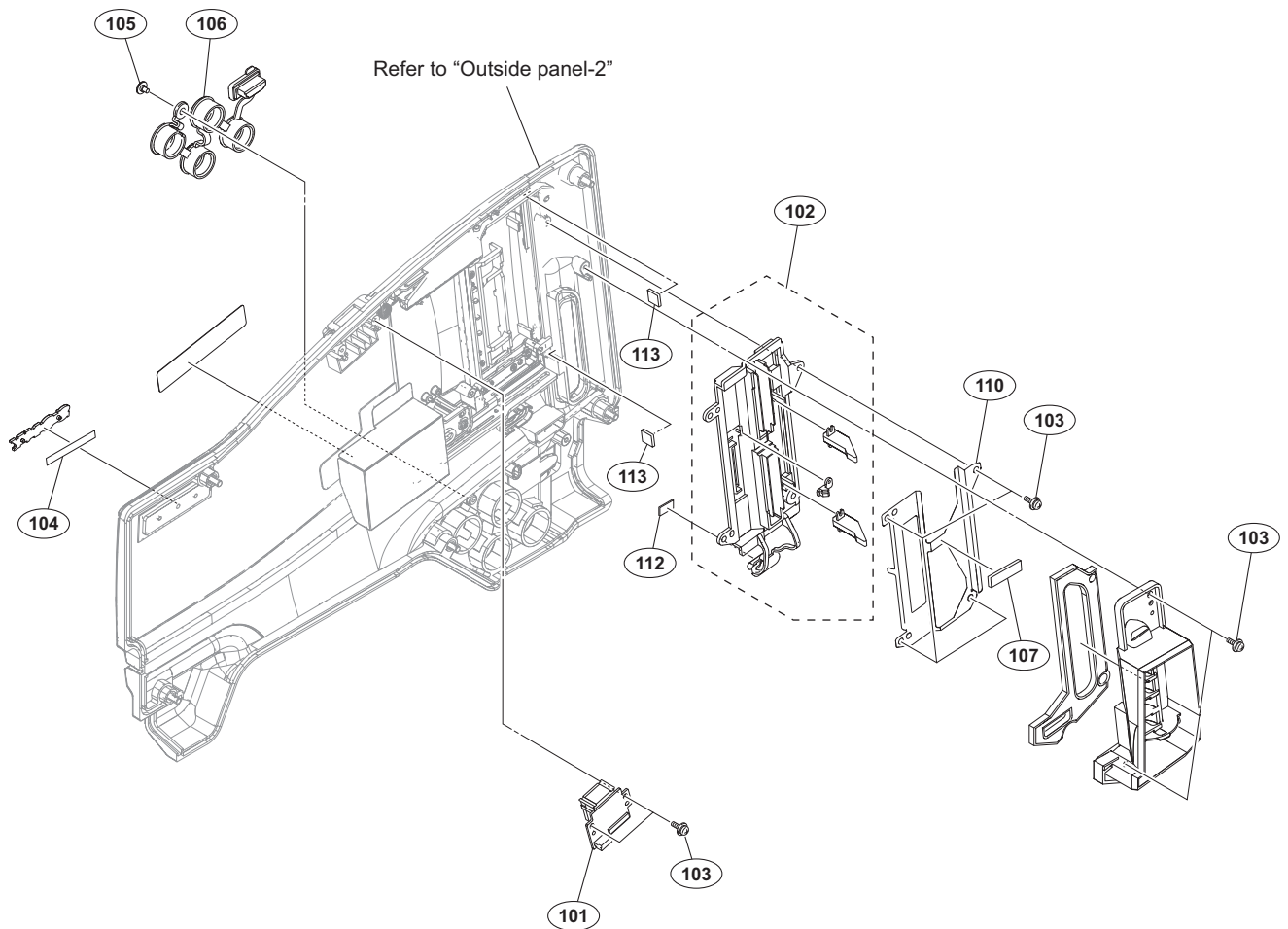
6-2. Exploded Views

Overall



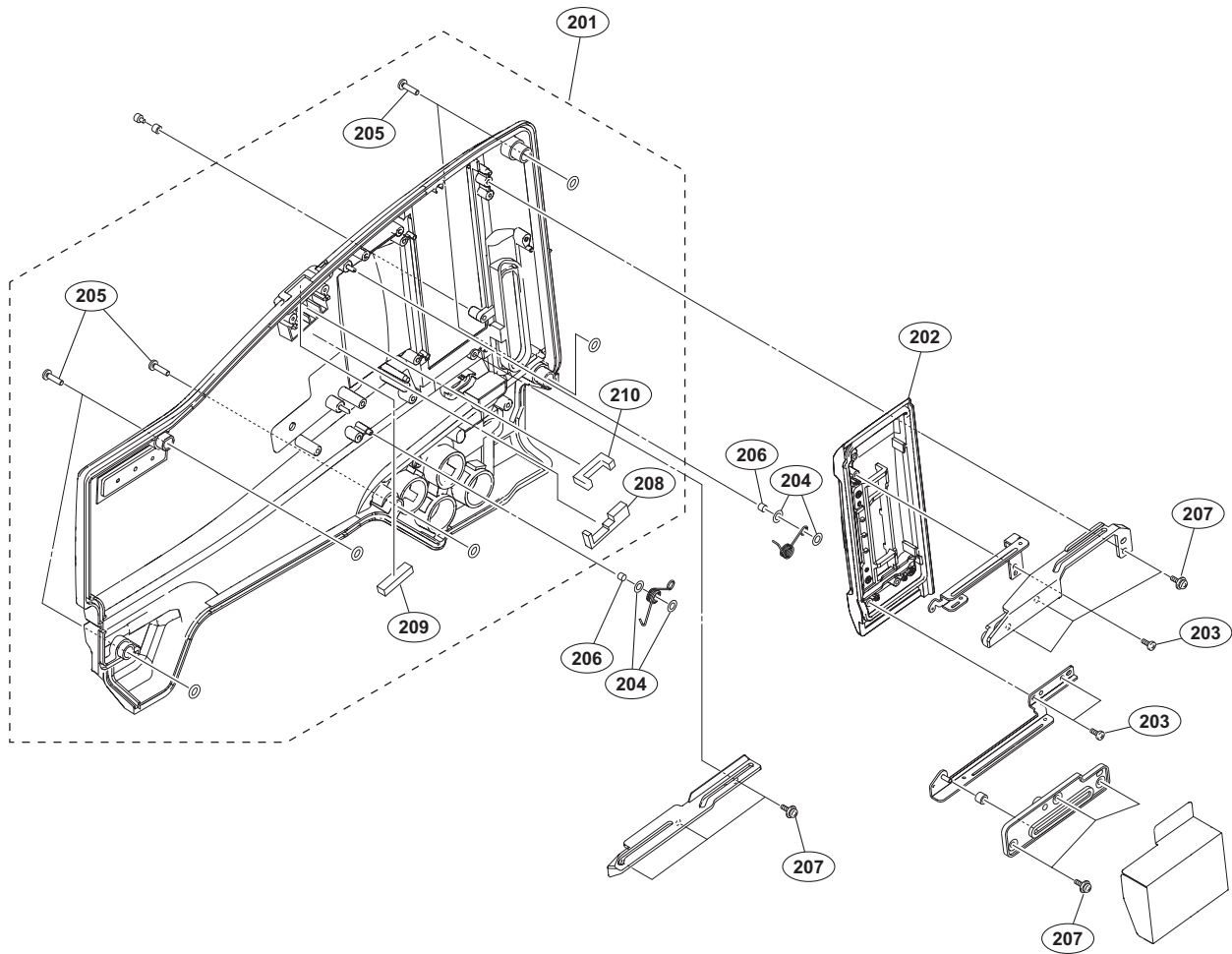
No.	Part No.	SP Description
1	A-2061-139-A s	PLATE (WRR) ASSY, BLIND
2	3-294-192-02 s	+P M2.6X10
3	3-742-004-01 s	RING, NYLON
4	3-742-074-13 s	SCREW (+B 3X8)
5	3-855-938-01 s	SCREW [+PSW 2x5]
6	3-965-077-02 s	SCREW, SPECIAL (M2) [M2x2.4]
7	4-265-547-01 s	GASKET UA
8	4-545-523-01 s	SEPARATOR, FRONT
9	4-545-572-01 s	COVER (NO DONGLE)
10	4-549-570-01 s	SHEET (70X40), MG09
11	4-446-014-01 s	TAPE AS (2040)

Outside-1



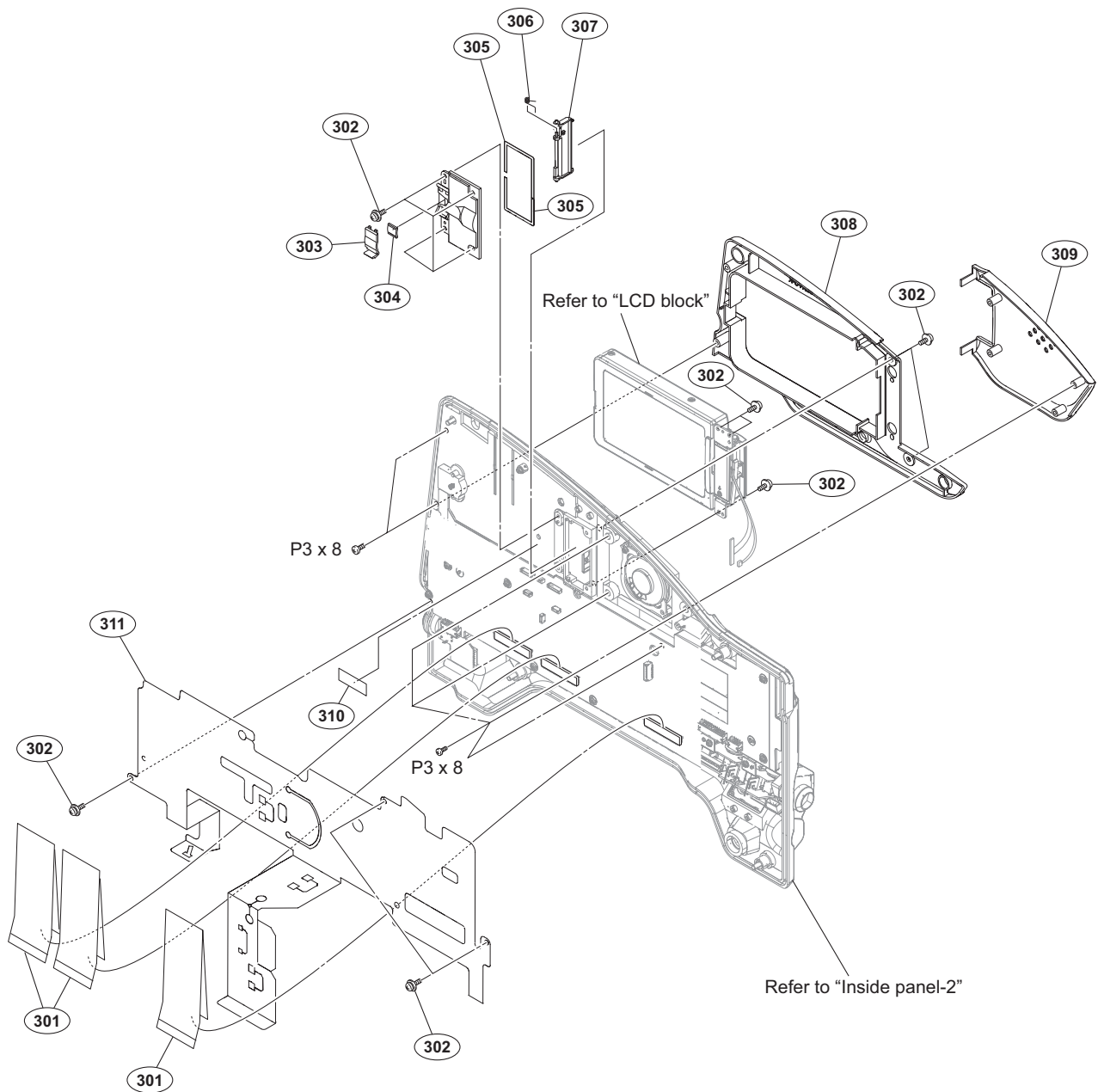
No.	Part No.	SP Description
101	A-2057-508-A	s MOUNTED CIRCUIT BOARD, CN-3722
102	X-2590-311-1	s ESCUTCHEON (EC) ASSY
103	3-855-938-01	s SCREW [+PSW 2x5]
104	3-870-153-11	s SHEET (4.5X30), ADHESIVE
105	3-965-077-02	s SCREW, SPECIAL (M2) [M2x2.4]
106	4-168-993-01	s CAP, BNC
107	4-281-496-01	s GASKET , PRISM BLOCK
110	4-545-569-01	s PLATE, SLOT SHIELD
112	4-549-831-01	s SPACER (ESCUTCHEON)
113	4-558-874-01	s STOPPER (OPEN) 2

Outside-2



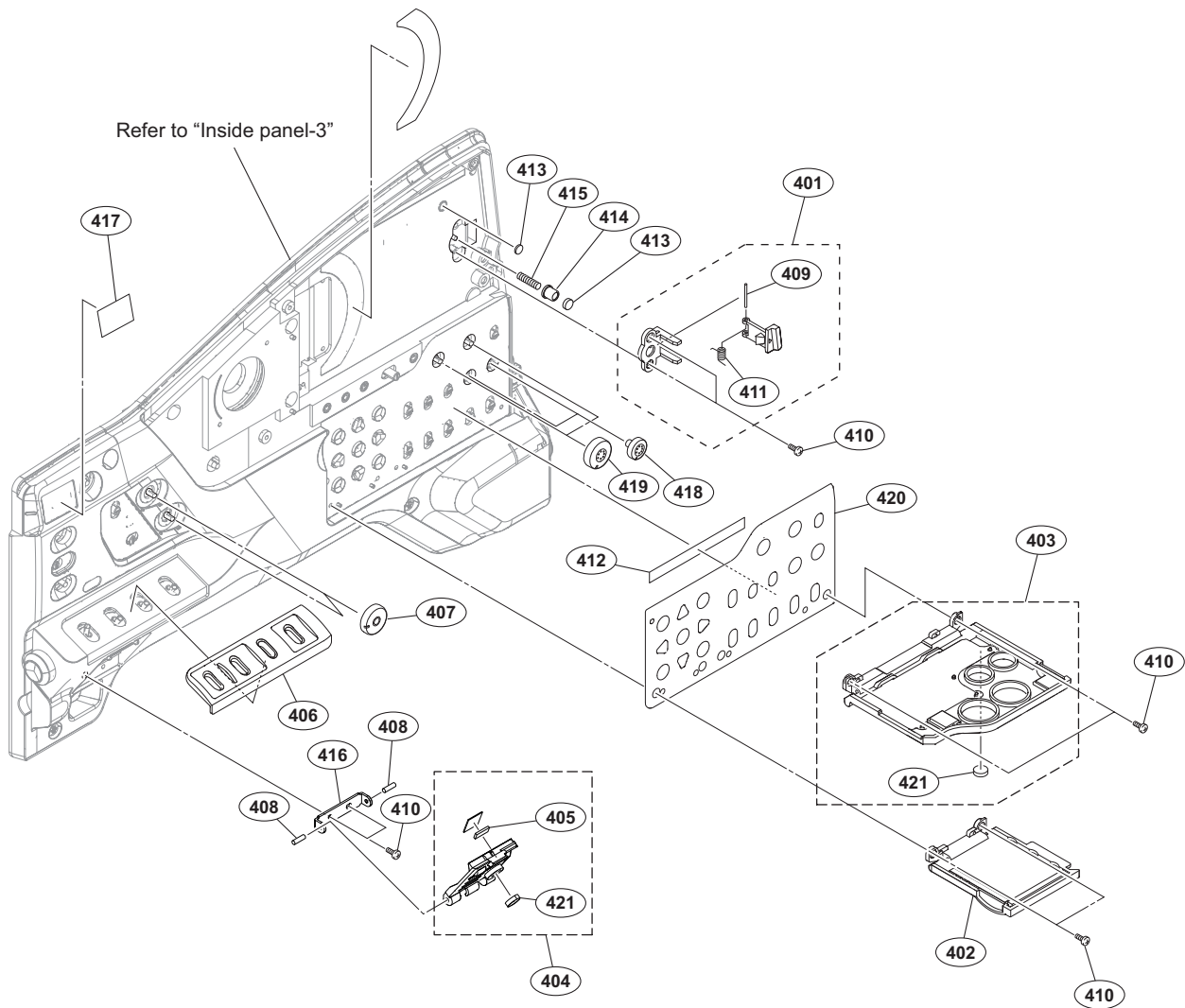
No.	Part No.	SP Description
201	A-2061-159-A s	PANEL SUB ASSY, OUTSIDE
202	A-2061-160-A s	LID ASSY, SLOT
203	3-080-206-21 s	SCREW, TAPPING, P2
204	3-223-464-01 s	SPACER (SLIDER)
205	3-603-680-02 s	STAINLESS SCREW +B3X12
206	3-657-841-31 s	SPACER (2X2.5)
207	3-855-938-01 s	SCREW [+PSW 2x5]
208	4-545-566-01 s	SHEET (USB), WP
209	4-562-622-01 s	SHEET (S), WP
210	4-562-623-01 s	SHEET (L), WP

Inside Panel-1



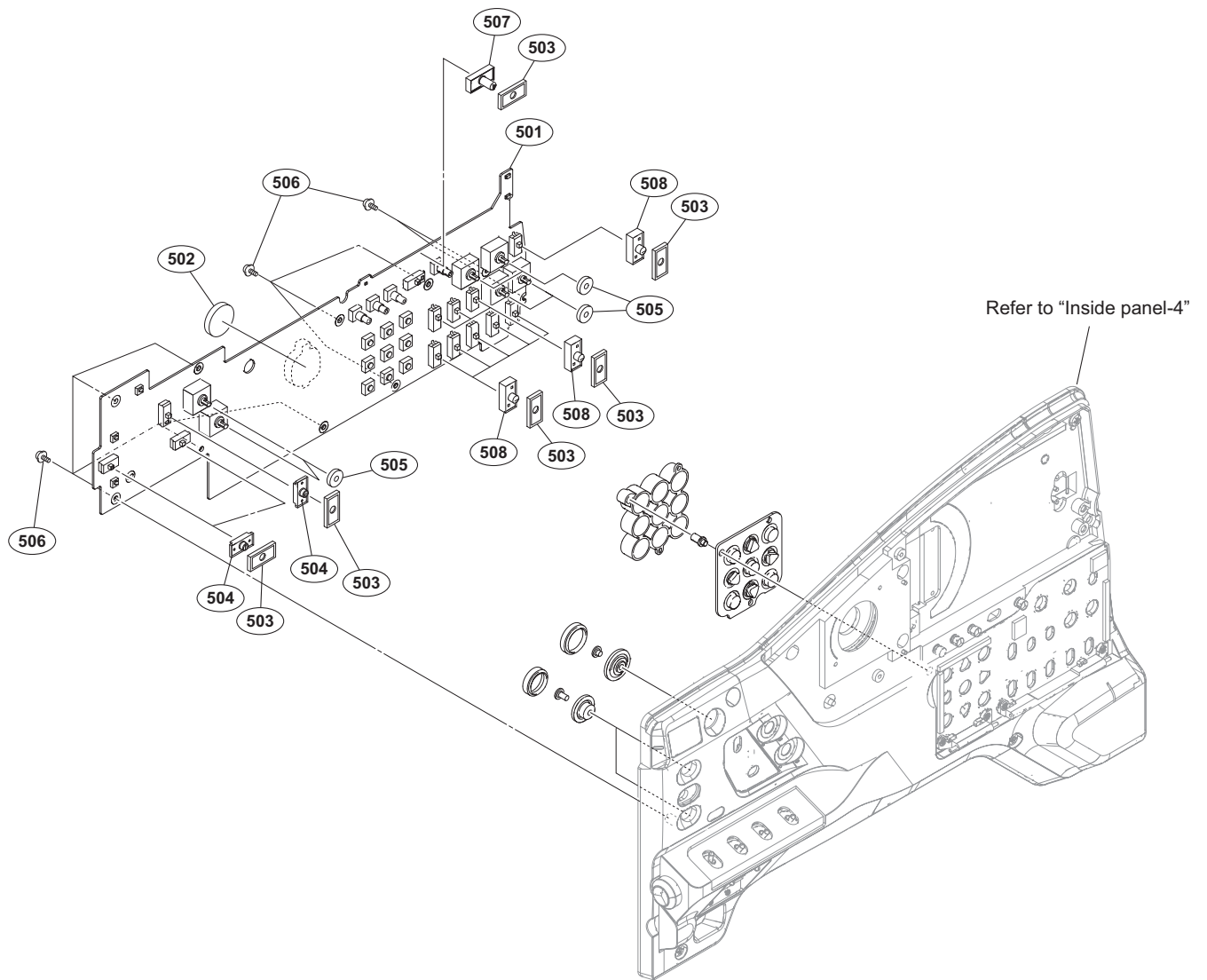
No.	Part No.	SP Description
301	1-837-294-11 s	CABLE, FLEXIBLE FLAT (25 CORE)
302	3-855-938-01 s	SCREW [+PSW 2x5]
303	3-868-599-01 s	CLAMP HARNESS LCD
304	3-868-991-11 s	SHEEL HARNESS LCD
305	3-870-138-11 s	SHEET, HARNESS DROP PROTECTION
306	3-870-139-01 s	SPRING, HELICAL TORSION
307	4-264-413-01 s	PLATE BLIND, HING
308	4-264-414-11 s	PAD, INSIDE(R)
309	4-264-430-01 s	PAD(L), INSIDE
310	4-446-014-01 s	TAPE AS (2040)
311	4-545-555-01 s	INSULATING SHEET, FP
	7-685-146-11 s	SCREW +P 3X8 TYPE2 NON-SLIT

Inside Panel-2



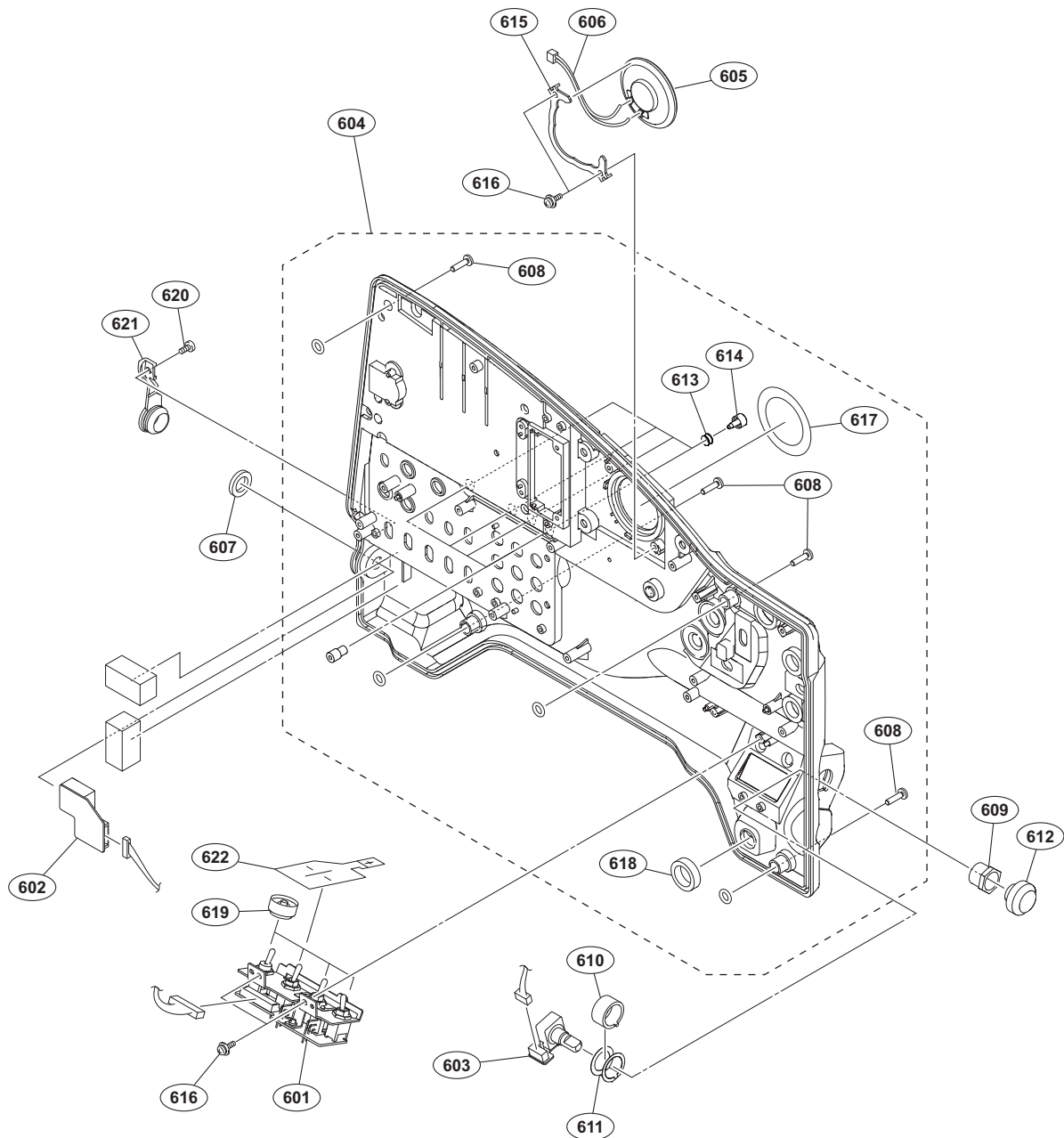
No.	Part No.	SP Description
401	A-1799-766-A	s LCD LOCK ASSY
402	A-2061-154-A	s DOOR (L) ASSY, SWITCH
403	A-2061-155-A	s DOOR (R) ASSY, SWITCH
404	A-2061-156-A	s DOOR ASSY, MENU
405	1-471-483-11	s MAGNET, LCD
406	3-629-768-52	s ORNAMENTAL PLATE(3),SW,CAMERA
407	3-680-219-03	s KNOB,VR
408	3-703-357-03	s PIN, PARALLEL (DIA. 1.6X6)
409	3-703-575-01	s PIN (DIA. 1.2), PARALLEL
410	3-719-381-02	s SCREW (M2X4)
411	3-869-457-01	s SPRING TORSION
412	3-879-092-01	s SHEET, SW PANEL
413	3-969-387-01	s FOOT, RUBBER
414	4-264-412-01	s LCD PANEL POPUP
415	4-264-416-01	s SPRING, COMPRESSION
416	4-467-510-01	s HINGE, MENU DOOR
417	4-468-152-01	s LABEL, FILTER INDICATION
418	4-472-861-01	s VR KNOB (S)
419	4-472-862-01	s VR KNOB (2)
420	4-562-472-01	s PLATE, SW ORNAMENTAL
421	4-644-879-11	s FOOT (B-2)

Inside Panel-3



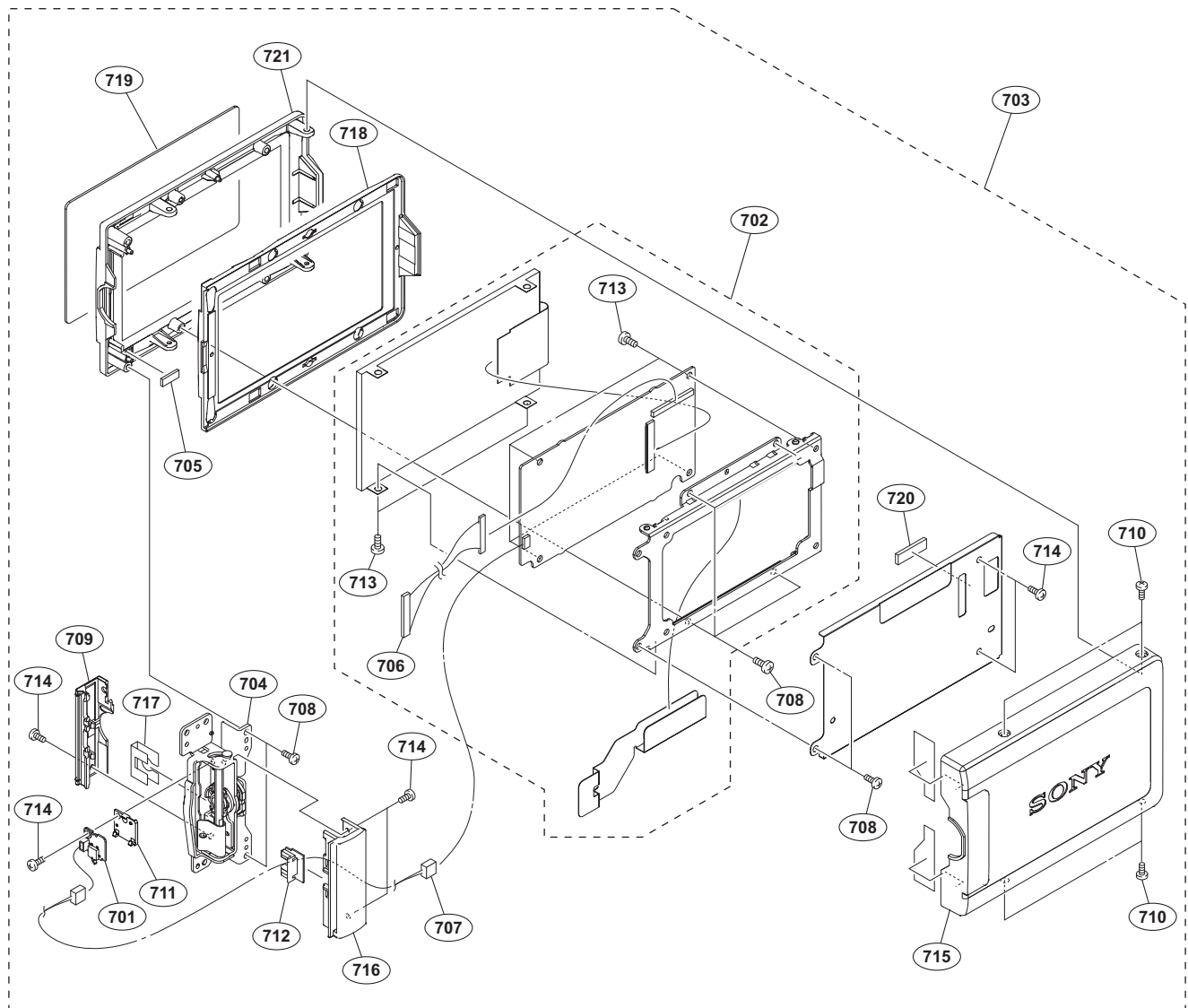
No.	Part No.	SP Description
501	A-2058-611-A s	MOUNTED CIRCUIT BOARD, FP-208
502	1-528-174-72 s	BATTERY, LITHIUM (CR2032 TYPE)
503	3-796-995-01 s	DROP PROTECTION (SW)
504	3-796-996-03 s	KNOB (A), SW
505	3-797-016-11 s	CUSHION VOLUME AUDIO
506	3-855-938-01 s	SCREW [+PSW 2x5]
507	4-472-863-01 s	KNOB (B), SWITCH
508	4-472-864-01 s	KNOB (C), SWITCH

Inside Panel-4



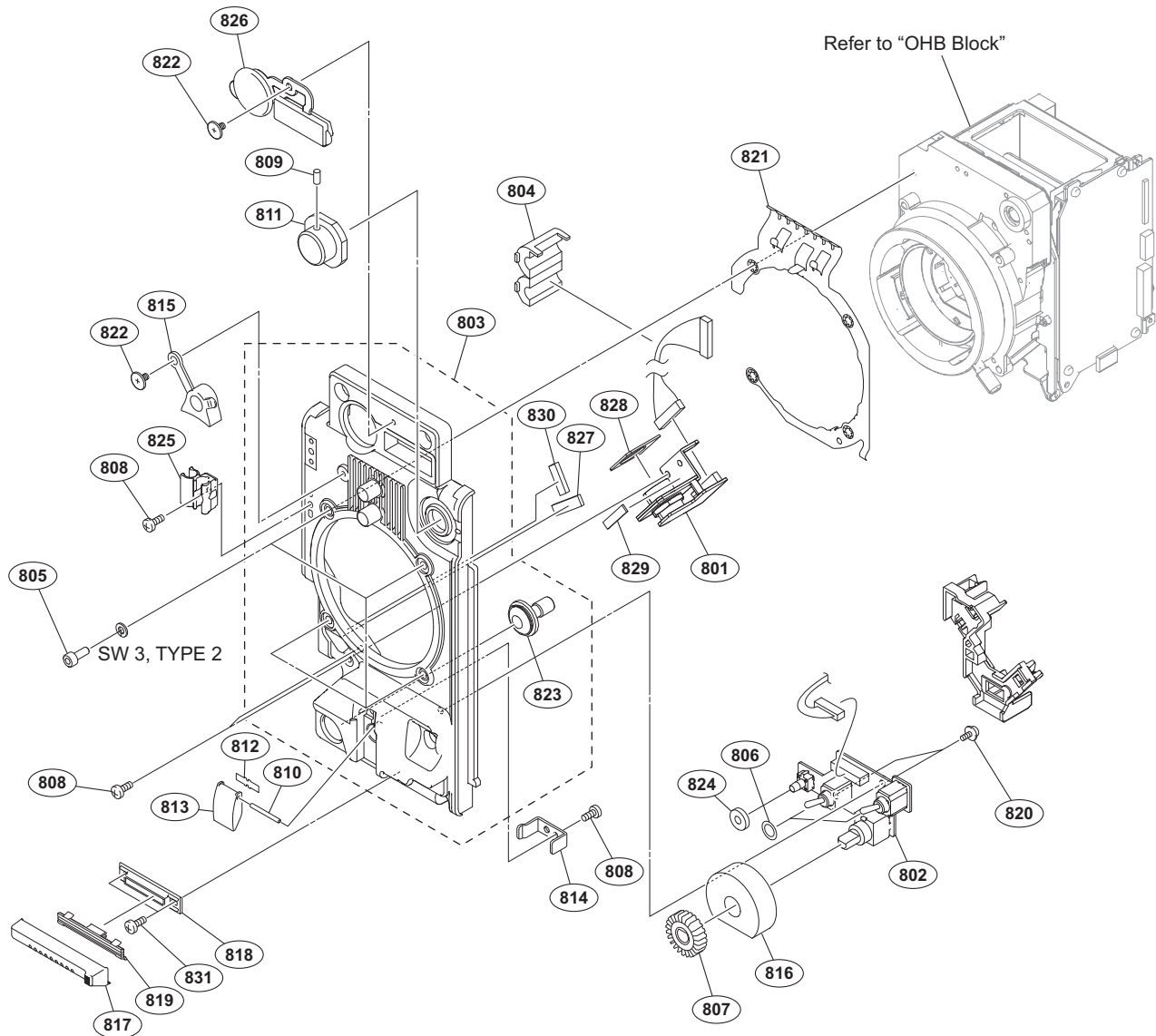
No.	Part No.	SP Description	No.	Part No.	SP Description
601	A-2054-873-A	s MOUNTED CIRCUIT BOARD, SW-1650	619	3-870-137-02	s CAP, DROP PROTECTION
602	A-2054-875-A	s MOUNTED CIRCUIT BOARD, HP-171	620	3-965-077-02	s SCREW, SPECIAL (M2) [M2x2.4]
603	A-2054-876-A	s MOUNTED CIRCUIT BOARD, ENC-162	621	4-168-991-01	s COVER, HEADPHONE JACK
604	A-2061-153-A	s PANEL SUB ASSY, INSIDE	622	4-435-386-01	s SW CONDUCTIVITY SHEET
605	1-503-293-12	s SPEAKER			
606	1-967-045-12	s HARNESS, SUB (SPEAKER)			
607	3-061-234-01	s NUT (M6X0.5)			
608	3-603-680-02	s STAINLESS SCREW +B3X12			
609	3-629-446-04	s SLEEVE(ENC2)			
610	3-629-447-03	o SLEEVE(ENC1)			
611	3-647-917-02	s PLATE,EARTH			
612	3-692-111-02	s KNOB,RE			
613	3-724-758-02	s RUBBER (PUSH), DROP PROTECTION			
614	3-797-073-01	s RES,SW PUSE			
615	3-797-084-01	s HOLDER SPEAKER			
616	3-855-938-01	s SCREW [+PSW 2x5]			
617	3-868-597-11	s SHEET(SP),DROP PROTECTION			
618	3-870-098-11	s CUSHION, POWER SWITCH			

LCD Block



No.	Part No.	SP Description
701	A-1786-301-A	s MOUNTED CIRCUIT BOARD, DET-50
702	A-2061-551-A	s 3.5 INCH LCD ASSY
703	A-2069-071-A	s LCD ASSY (RP)
704	X-2560-679-1	s HINGE ASSY
705	1-471-483-11	s MAGNET, LCD
706	1-967-538-11	s HARNESS (LCD)
707	1-970-224-11	s SUB HARNESS (DET)
708	3-056-233-21	s SCREW (M2), LOCK ACE, P2 [P2x4]
709	3-060-694-11	s COVER (REAR), HINGE
710	3-719-381-02	s SCREW (M2X4)
711	3-870-082-01	s LCD HINGE SW HOLDER
712	3-870-088-01	s PROTECTOR, LCD HINGE HARNESS
713	3-964-010-32	s SCREW (M2), 0 PART-NO. P2 MAIN [P2x2.5]
714	3-989-735-11	s SCREW (M1.7), LOCK ACE, P2 [P1.7x2.5]
715	4-264-420-01	s COVER, LCD
716	4-264-422-01	s (FRONT) COVER HINGE
717	4-300-095-11	s SHEET, HINGE HARNESS PROTECTION
718	4-540-345-01	s LCD SEALING
719	4-540-346-01	s LCD WINDOW
720	4-549-568-01	s GASKET (T3X5X15)
721	4-558-188-01	s BEZEL, LCD

Front Block



No.	Part No.	SP Description
-----	----------	----------------

801	A-2054-862-A	s MOUNTED CIRCUIT BOARD, CN-3737
802	A-2054-863-A	s MOUNTED CIRCUIT BOARD, SW-1651
803	A-2061-145-A	s PANEL SUB ASSY, FRONT
804	1-500-082-11	o CLAMP, SLEEVE FERRITE
805	2-623-773-11	s BOLT (M3X8), STAINLESS

806	3-312-823-02	s PACKING, KNOB
807	3-624-135-01	s KNOB, VR (AUDIO)
808	3-637-901-11	s SCREW M2.6X5
809	3-701-505-01	s SET SCREW, DOUBLE POINT 3X3
810	3-703-357-05	s PIN, PARALLEL (DIA. 1.6X8)

811	3-710-054-01	s KNOB, FILTER
812	3-742-066-11	o SPRING, SHUTTER
813	3-742-067-06	s LID, SHUTTER
814	3-796-965-01	s BRACKET, SHUTTER
815	3-796-982-03	s HOLDER, LENS MOUNT

816	3-797-080-01	s DROP PROTECTION (MIC VR)
817	3-854-361-01	s GUARD VOLUME FRONT
818	3-854-362-01	s HOLDER GUARD
819	3-854-363-01	s SLIDER
820	3-855-938-01	s SCREW [+PSW 2x5]

821	3-879-494-02	s FINGER (LM), SHIELD
822	3-965-077-02	s SCREW, SPECIAL (M2) [M2x2.4]
823	3-986-632-02	s BUTTON, VTR START

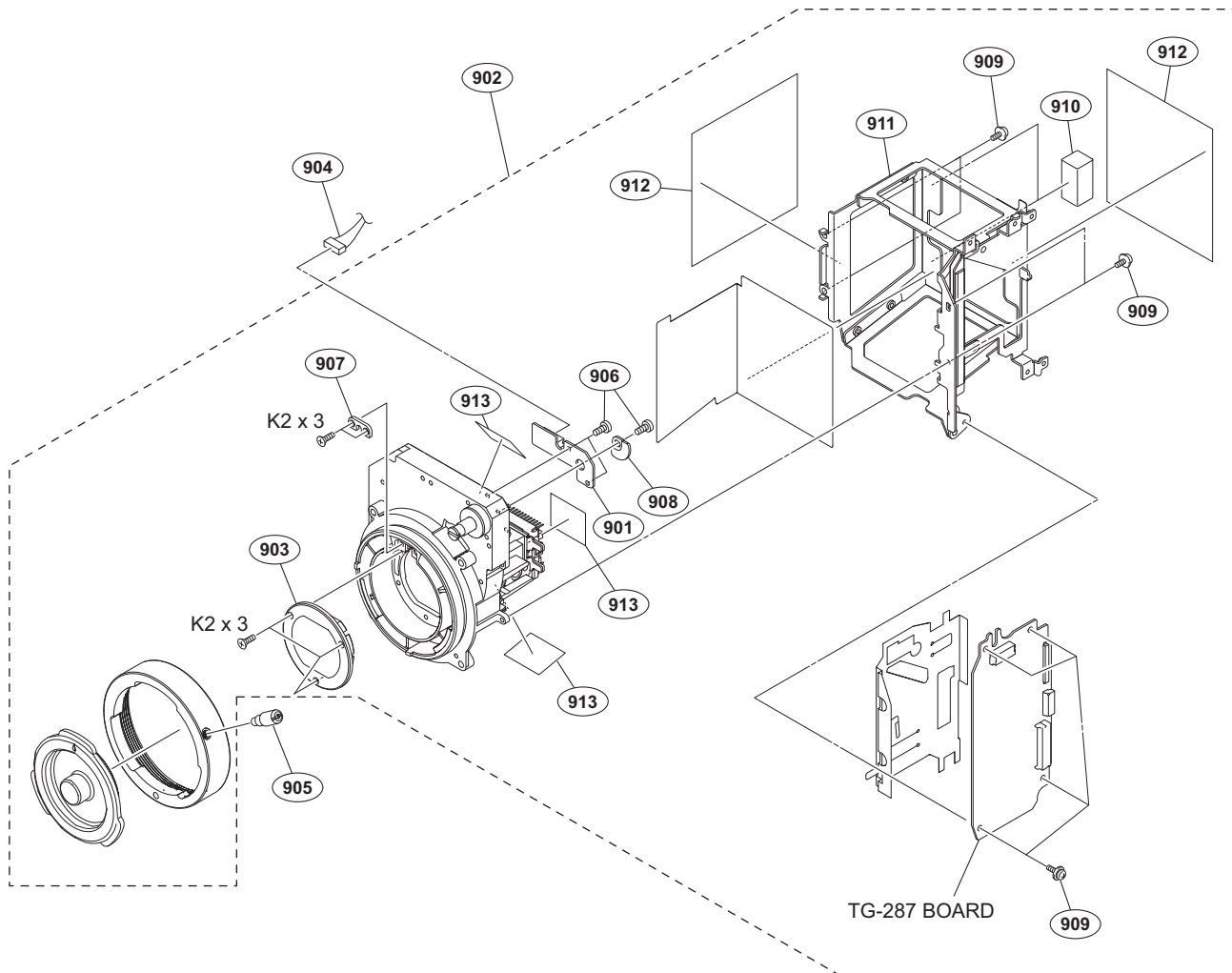
No.	Part No.	SP Description
-----	----------	----------------

824	3-990-897-11	s CUSHION REC (SW)
825	4-138-678-01	s CLAMP, CABLE
826	4-169-085-02	s CAP, CONNECTOR
827	4-433-494-02	s GASKET (F), MAIN
828	4-468-156-01	s CUSHION, DROP PROTECTION CONNEC
829	4-468-157-01	s CUSHION, DROP PROTECTION 2
830	4-549-568-01	s GASKET (T3X5X15)

831	4-654-273-02	s ACE (M2), LOCK [B2x5]
-----	--------------	-------------------------

	7-623-208-22	s SW 3, TYPE 2
--	--------------	----------------

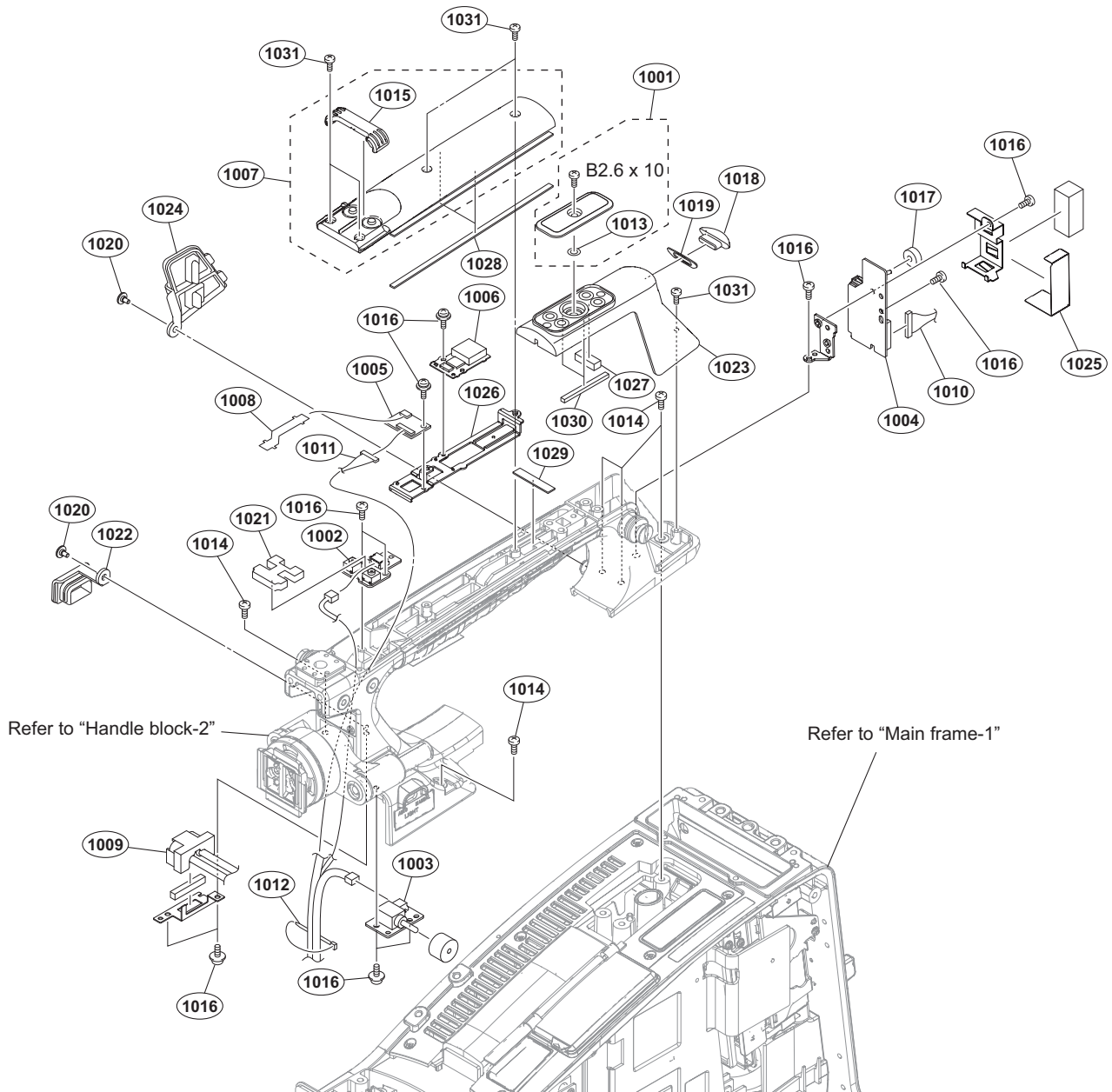
OHB Block



No.	Part No.	SP Description
901	A-2057-590-A	s MOUNTED CIRCUIT BOARD, SE-1155
902	A-2069-065-A	s CCD BLOCK ASSY (RP)
903	1-788-765-21	s FILTER UNIT, OPTICAL
904	1-967-049-11	s HARNESS, SUB (SE)
905	3-678-629-04	s LEVER, MOUNT
906	3-729-076-11	s SCREW (+B) (2X4)
907	3-776-897-02	s GUIDE PLATE
908	3-854-378-01	s PLATE, FILTER ID
909	3-855-938-01	s SCREW [+PSW 2x5]
910	4-119-228-01	s GASKET (VF)
911	4-264-432-01	s CHB CASE
912	4-549-569-01	s SHEET (70X60), MG10
913	4-478-477-01	s MG SHEET (30X30)

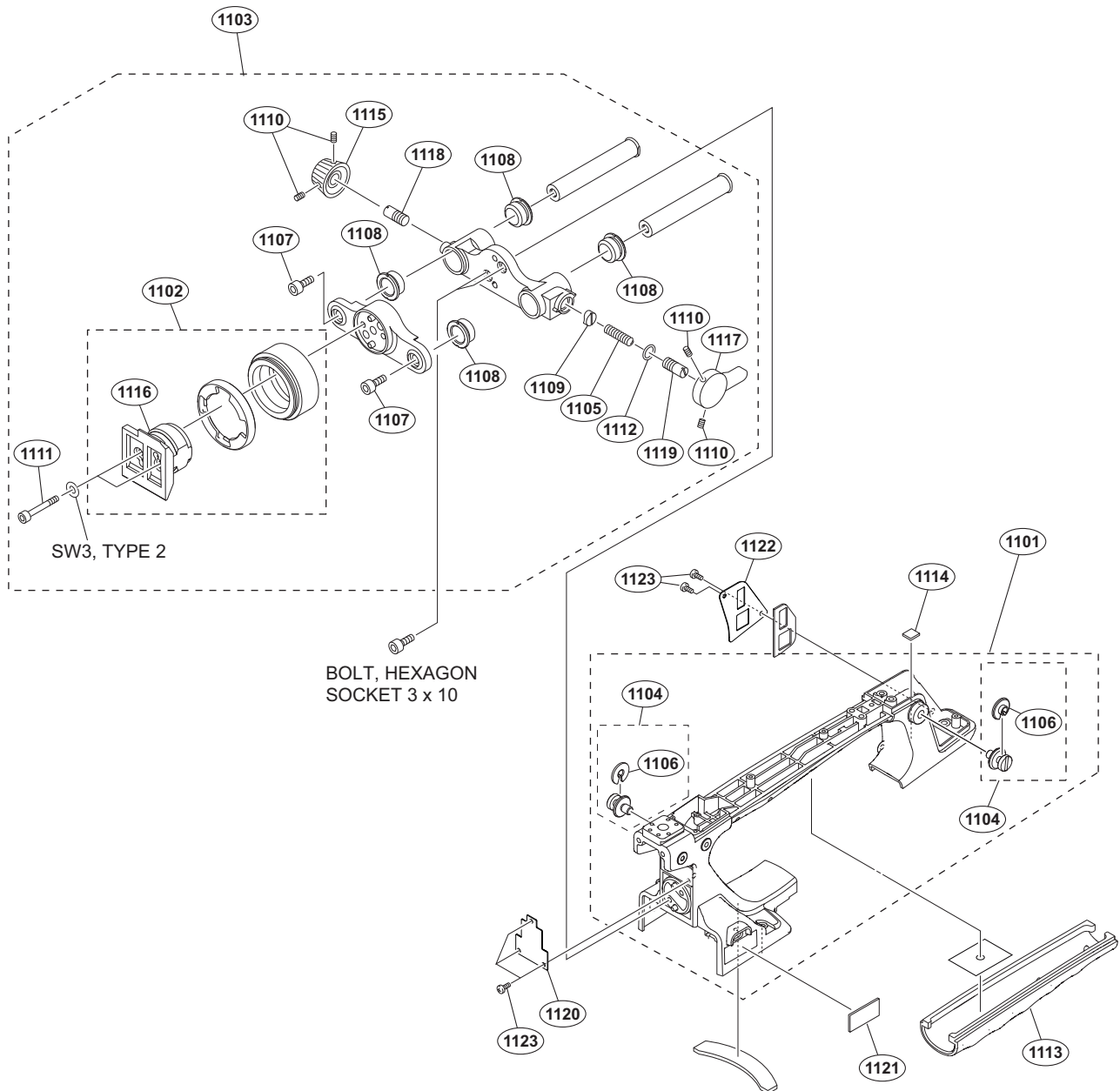
7-627-452-18 s SCREW, PRECISION +K 2X3

Handle Block-1



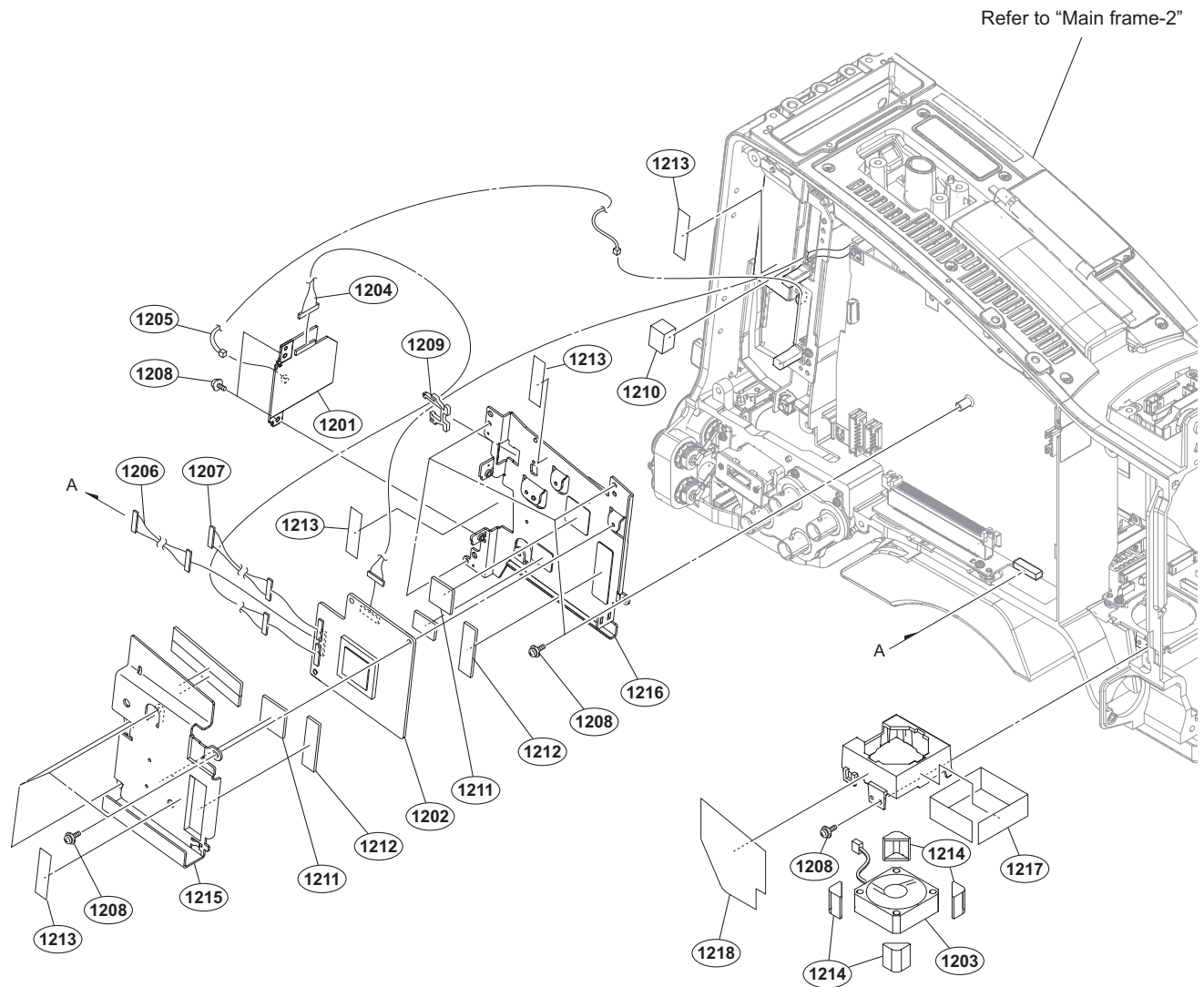
No.	Part No.	SP Description	No.	Part No.	SP Description
1001	A-1106-989-A	s COVER ASSY, SHOE	1020	3-965-077-02	s SCREW, SPECIAL (M2) [M2x2.4]
1002	A-2054-864-A	s MOUNTED CIRCUIT BOARD, SW-1652	1021	4-000-665-01	s SEALING (B), HANDLE
1003	A-2054-865-A	s MOUNTED CIRCUIT BOARD, SW-1653	1022	4-168-996-01	s CAP (LIGHT CONNECTOR)
1004	A-2054-870-A	s MOUNTED CIRCUIT BOARD, LED-529	1023	4-168-998-02	s COVER, TALLY
1005	A-2057-509-A	s MOUNTED CIRCUIT BOARD, CN-3723	1024	4-264-451-01	s CAP (USB2)
1006	A-2059-048-A	s MOUNTED CIRCUIT BOARD, GP-1019	1025	4-545-528-01	s SHEET (LED529), PROTECTION
1007	X-2541-837-4	s COVER ASSY, HANDLE (TOP)	1026	4-545-545-01	s BRACKET (GPS)
1008	1-893-019-11	s FP-2231 FLEXIBLE PWB	1027	4-549-673-01	s CUSHION (TAC)
1009	1-967-028-11	s HARNESS, SUB (LIGHT)	1028	4-549-672-01	s CUSHION (HTC A)
1010	1-967-783-11	s HARNESS (COAXIAL CABLE)	1029	4-549-674-01	s CUSHION (H MID)
1011	1-970-443-11	s SUB HARNESS (GPS)	1030	4-549-937-01	s CUSHION (HTC B)
1012	3-337-402-01	o BAND, BINDING	1031	4-654-273-02	s ACE (M2), LOCK [B 2x5]
1013	3-742-004-01	s RING, NYLON		7-621-775-50	s SCREW +B 2.6X10
1014	3-742-074-13	s SCREW (+B 3X8)			
1015	3-805-990-01	s HANDLE TOP COVER LID			
1016	3-855-938-01	s SCREW [+PSW 2x5]			
1017	3-868-631-01	s CUSHION, DROP PROTECTION			
1018	3-870-241-02	s COVER, LAMP			
1019	3-870-243-02	s SEAL, LAMP COVER			

Handle Block-2



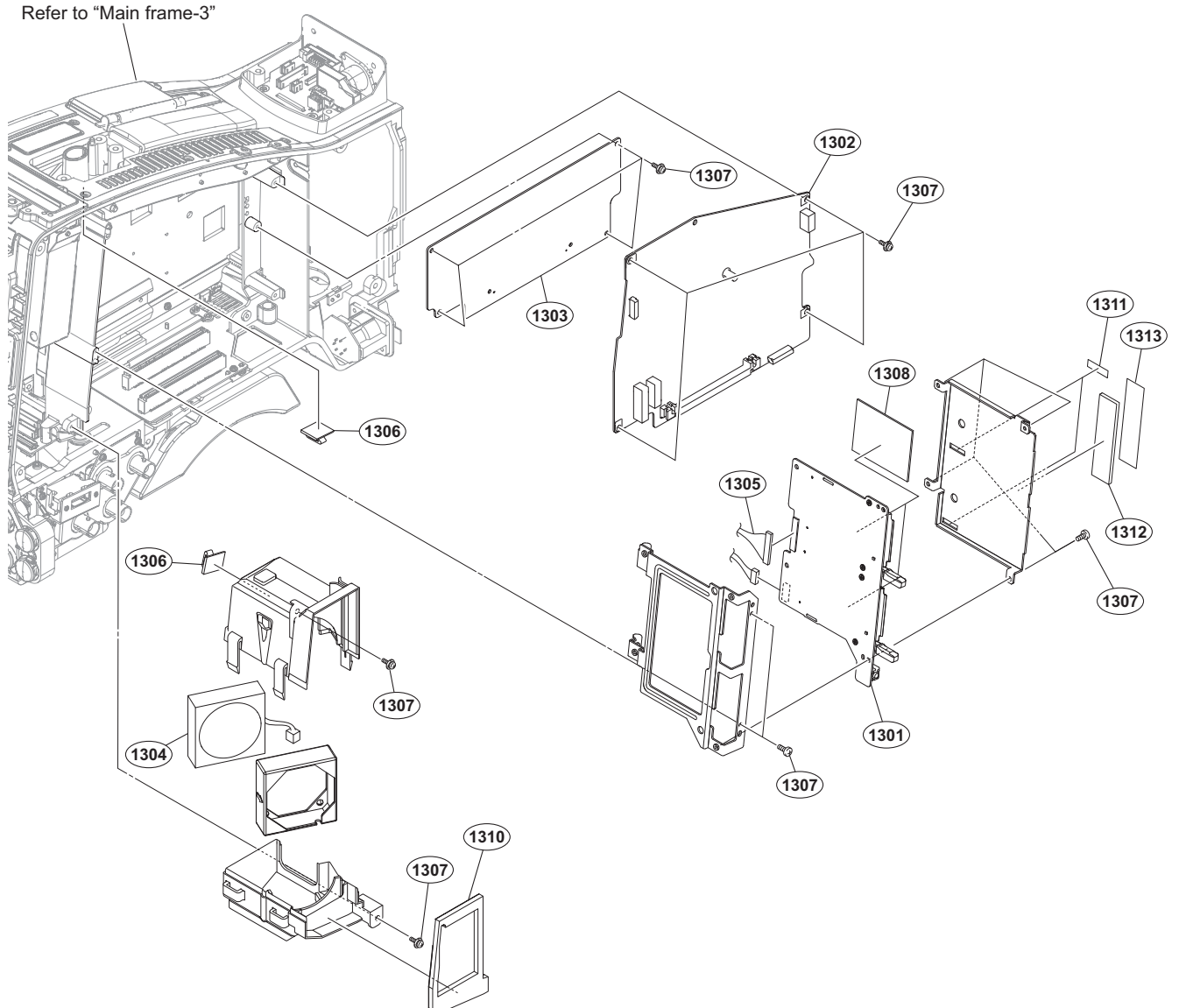
No.	Part No.	SP Description	No.	Part No.	SP Description
1101	A-2061-149-A	s HANDLE SUB ASSY	1120	4-562-473-01	COVER, FRONT
1102	A-2065-043-A	s SHOE ASSY,VF			
1103	A-2065-046-A	s SLIDE ASSY,VF	1121	4-562-474-01	PLATE (LIGHT SW), ORNAMENTAL
1104	X-3710-037-1	s SUSPENSION ASSY (C)	1122	4-562-475-01	PLATE (USB), ORNAMENTAL
1105	3-612-822-01	s SPRING,COMPRESSION	1123	4-654-273-02	s ACE (M2), LOCK [B 2x5]
1106	3-654-615-02	s COLLAR, SUSPENSION			
1107	3-657-705-91	s BOLT (M4X8), HEXAGON HOLE	7-623-208-22	s SW 3,TYPE 2	
1108	3-679-684-01	o REST,ARM	7-683-405-04	s BOLT,HEXAGON SOCKET 3X10	
1109	3-679-702-01	o CUSION,STOPPER			
1110	3-701-507-01	s SET SCREW, DOUBLE POINT,(M3X5)			
1111	3-711-765-01	s BOLT (M3), HEXAGON SOCKET			
1112	3-895-622-01	s RING (DIA. 5), O			
1113	4-168-997-02	s GRIP			
1114	4-446-005-12	s GASKET MAIN L			
1115	4-549-633-01	s KNOB, LOCK			
1116	4-558-057-01	s SHOE,SLIDE			
1117	4-558-058-01	s LEVER, LOCK			
1118	4-558-190-01	s LOCK,SCREW			
1119	4-559-455-01	s PIN, STOPPER			

Main Frame-1



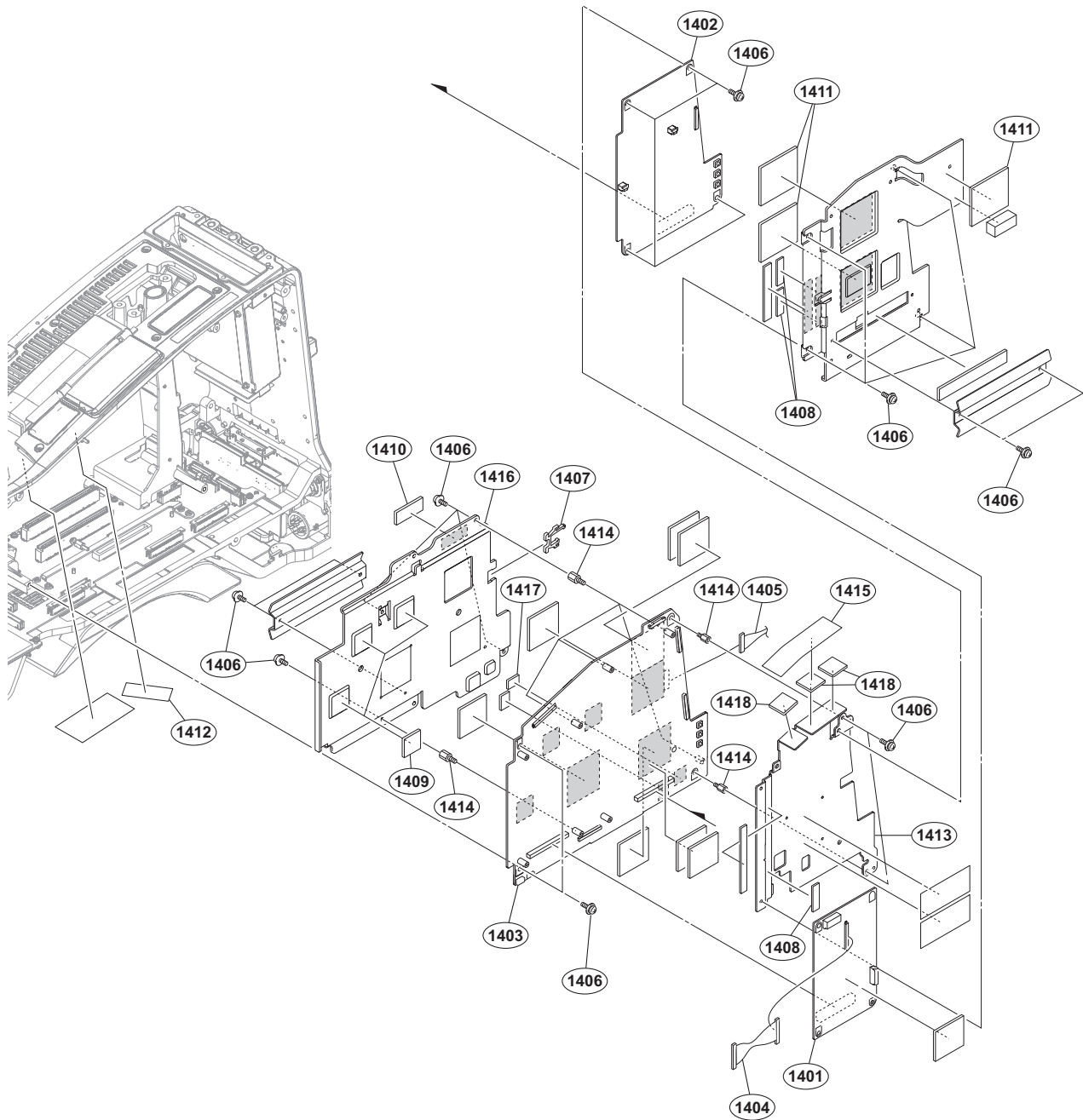
No.	Part No.	SP Description
1201	A-2057-507-A s	MOUNTED CIRCUIT BOARD, SD-58
1202	A-2063-702-B s	BOARD, WM COMPLETE PC(RP)
1203	⚠ 1-855-292-11 s	FAN, DC (30 SQUARE)
1204	1-963-577-61 s	HARNESS (COAXIAL CABLE)
1205	1-970-442-11 s	SUB HARNESS (EC-SD)
1206	1-970-444-11 s	SUB HARNESS (WA_POWER2)
1207	1-970-445-11 s	HARNESS (CN-WA)
1208	3-855-938-01 s	SCREW [+PSW 2x5]
1209	4-137-926-01 s	SADDLE (LES-0505), EDGE
1210	4-284-134-11 s	GASKET (B)
1211	4-427-951-02 s	RADIATION SHEET C
1212	4-427-952-02 s	RADIATION SHEET D
1213	4-446-014-01 s	TAPE AS (2040)
1214	4-458-849-01 s	FAN HOLDER
1215	4-545-524-01 s	HEAT SINK (WA)
1216	4-545-534-01 s	BRACKET (WA)
1217	4-547-233-01 s	FM SHIELD (CCD FAN)
1218	4-547-234-01 s	FM SHIELD (MF)

Main Frame-2



No.	Part No.	SP Description
1301	A-2057-066-A s	MOUNTED CIRCUIT BOARD, EC-82
1302	A-2058-419-A s	MOUNTED CIRCUIT BOARD, RE-326
1303	A-2061-111-A s	MOUNTED CIRCUIT BOARD, AU-360
1304	▲ 1-855-024-11 s	FAN, DC (40 SQUARE)
1305	1-967-037-11 s	HARNESS (DPR-EC)
1306	3-257-200-01 s	CLAMP, CORD
1307	3-855-938-01 s	SCREW [+PSW 2x5]
1308	4-165-223-01 o	SHEET (4535T1), RADIATION
1310	4-468-131-01 s	CUSHION, JOINT
1311	4-468-147-01 s	SHEET (EC)
1312	4-545-551-01 s	SHEET (SXS-MF), RADIATION
1313	4-545-552-01 s	SHEET (SXS-MF), SLIDE

Main Frame-3



No. Part No. SP Description

1401 A-2063-283-A s MOUNTED CIRCUIT BOARD, DCP-67
 1402 A-2063-284-A s MOUNTED CIRCUIT BOARD, HPR-53
 1403 A-2063-285-A s MOUNTED CIRCUIT BOARD, DPR-362
 1404 1-967-533-11 s HARNESS (TG-DCP)
 1405 1-970-445-11 s HARNESS (CN-WA)

1406 3-855-938-01 s SCREW [+PSW 2x5]
 1407 4-137-926-01 s SADDLE (LES-0505), EDGE
 1408 4-427-950-02 s RADIATION SHEET B
 1409 4-427-951-02 s RADIATION SHEET C
 1410 4-427-952-02 s RADIATION SHEET D

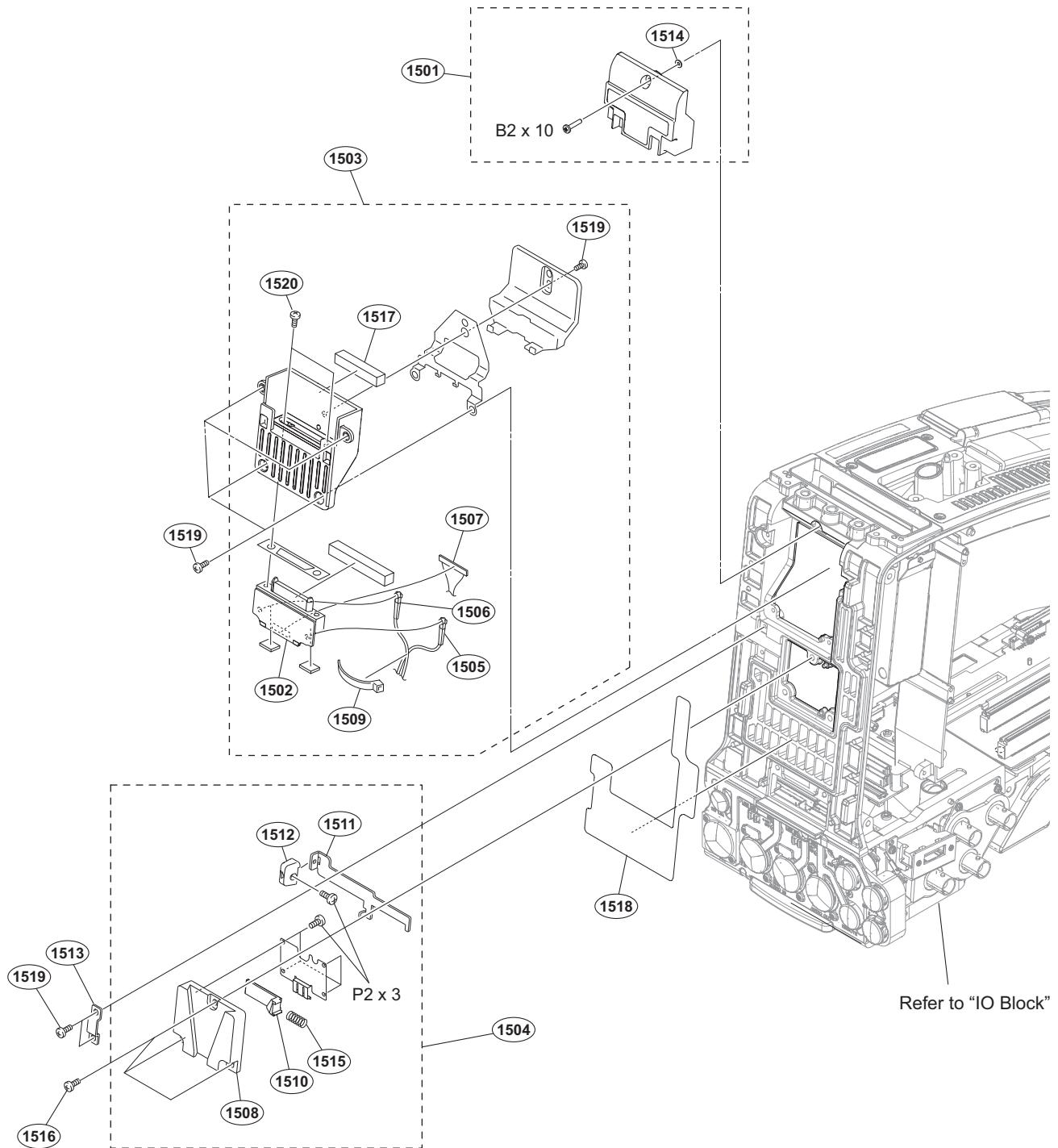
1411 4-427-955-02 s RADIATION SHEET G
 1412 4-446-014-01 s TAPE AS (2040)
 1413 4-545-521-01 s HEAT SINK (HPR-B)
 1414 4-545-526-01 s SPACER (BSB-2005_5E)
 1415 4-545-529-01 s SHEET (HPR-B), SLIDE

1416 4-545-533-01 s HEAT SINK (DPR-B)

No. Part No. SP Description

1417 4-558-398-01 s SHEET (0707T3), RADIATION
 1418 4-558-873-01 s SHEET (2.5 (12X12)), RADIATION

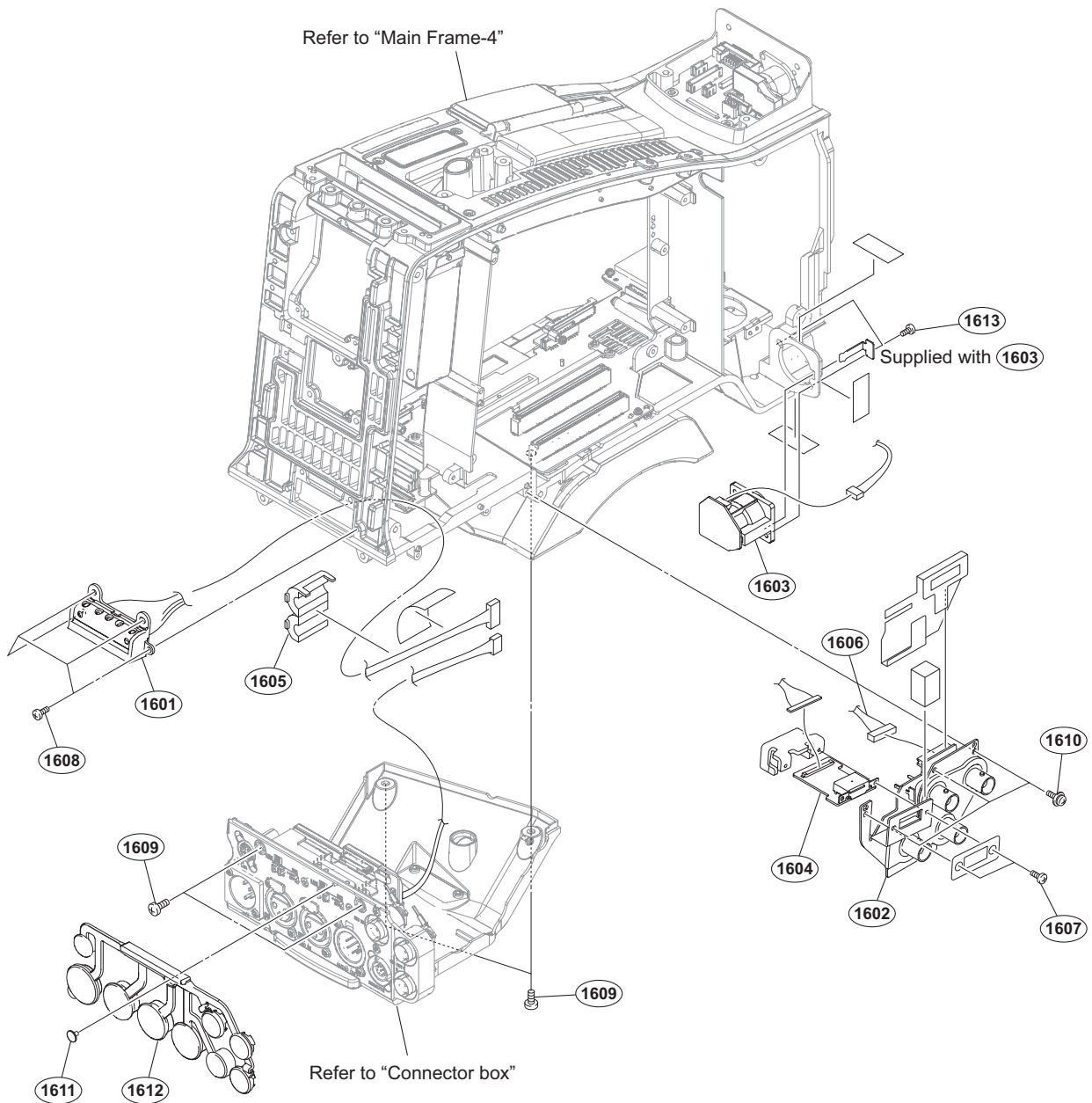
Rear Block



No.	Part No.	SP Description
1501	A-1787-923-A s	50P COVER ASSY
1502	A-2061-110-A s	MOUNTED CIRCUIT BOARD, CI-50
1503	A-2061-138-A s	50P CN ASSY
1504	A-8279-091-D s	MOUNT ASSY,V
1505	1-829-055-11 s	CABLE ASSEMBLY, COAXIAL [White]
1506	1-830-737-11 s	CABLE ASSEMBLY, COAXIAL [Black]
1507	1-967-537-11 s	HARNESS(CI)
1508	3-616-721-02 o	MOUNT (2),V
1509	3-671-893-01 s	CLAMP (LOW TYPE)
1510	3-679-687-02 s	LOCK,SLIDE
1511	3-679-688-03 s	LEVER,RELEASE
1512	3-680-952-02 o	KNOB,RELEASE LEVER
1513	3-697-119-03 s	RETAINER

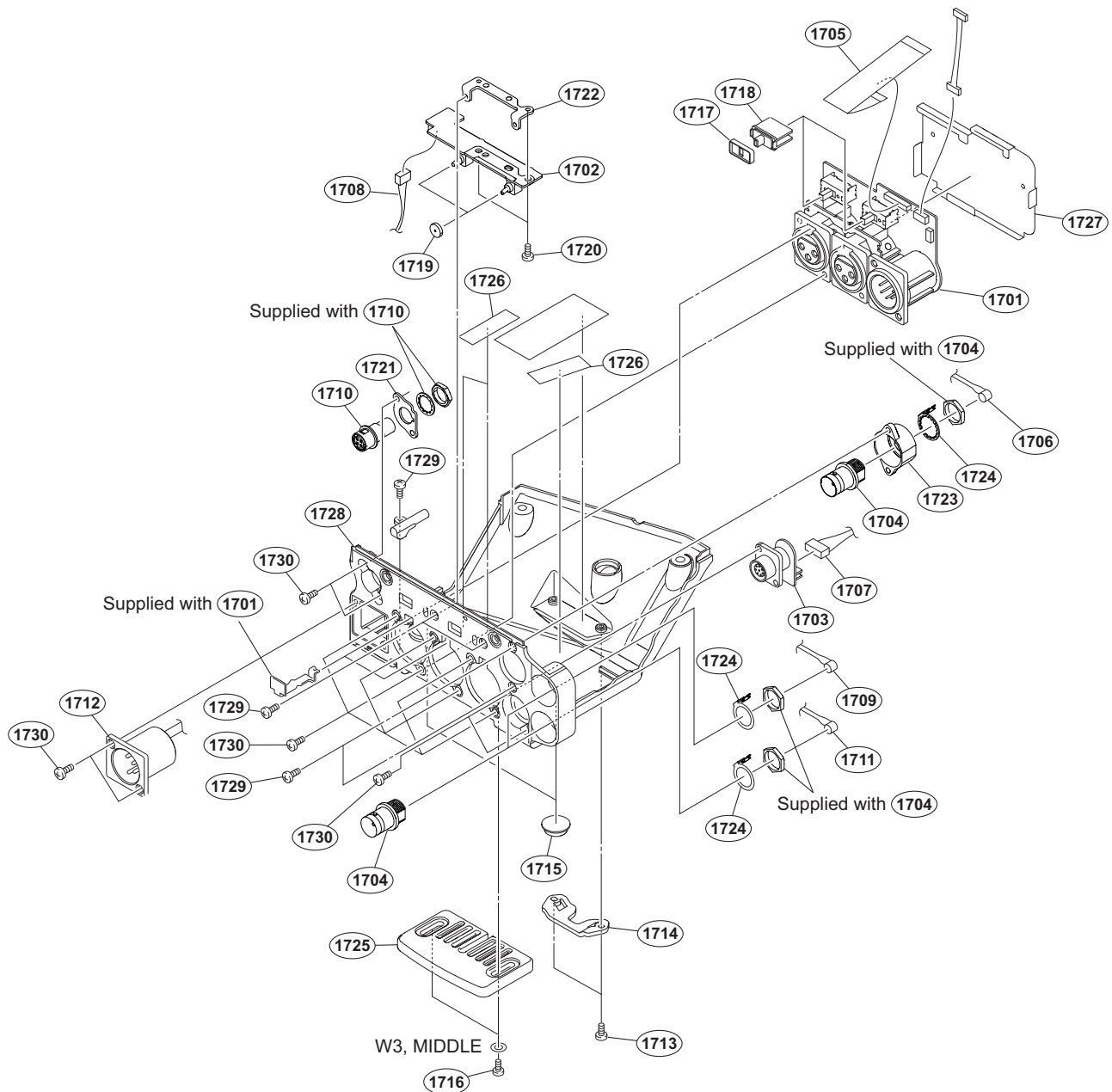
No.	Part No.	SP Description
1514	3-701-436-21 s	WASHER, POLYETHYLENE
1515	3-704-964-01 s	SPRING,COMPRESSION
1516	3-742-074-13 s	SCREW (+B 3X8)
1517	4-129-038-01 s	FOAM (MOF), SHIELD
1518	4-468-130-01 s	SHEET, REAR
1519	4-654-273-02 s	ACE (M2), LOCK [B 2x5]
1520	4-674-315-01 s	SCREW (M2.6X6)
	7-621-772-50 s	SCREW +B 2X10
	7-627-553-38 s	SCREW,PRECISION +P 2X3

IO Block



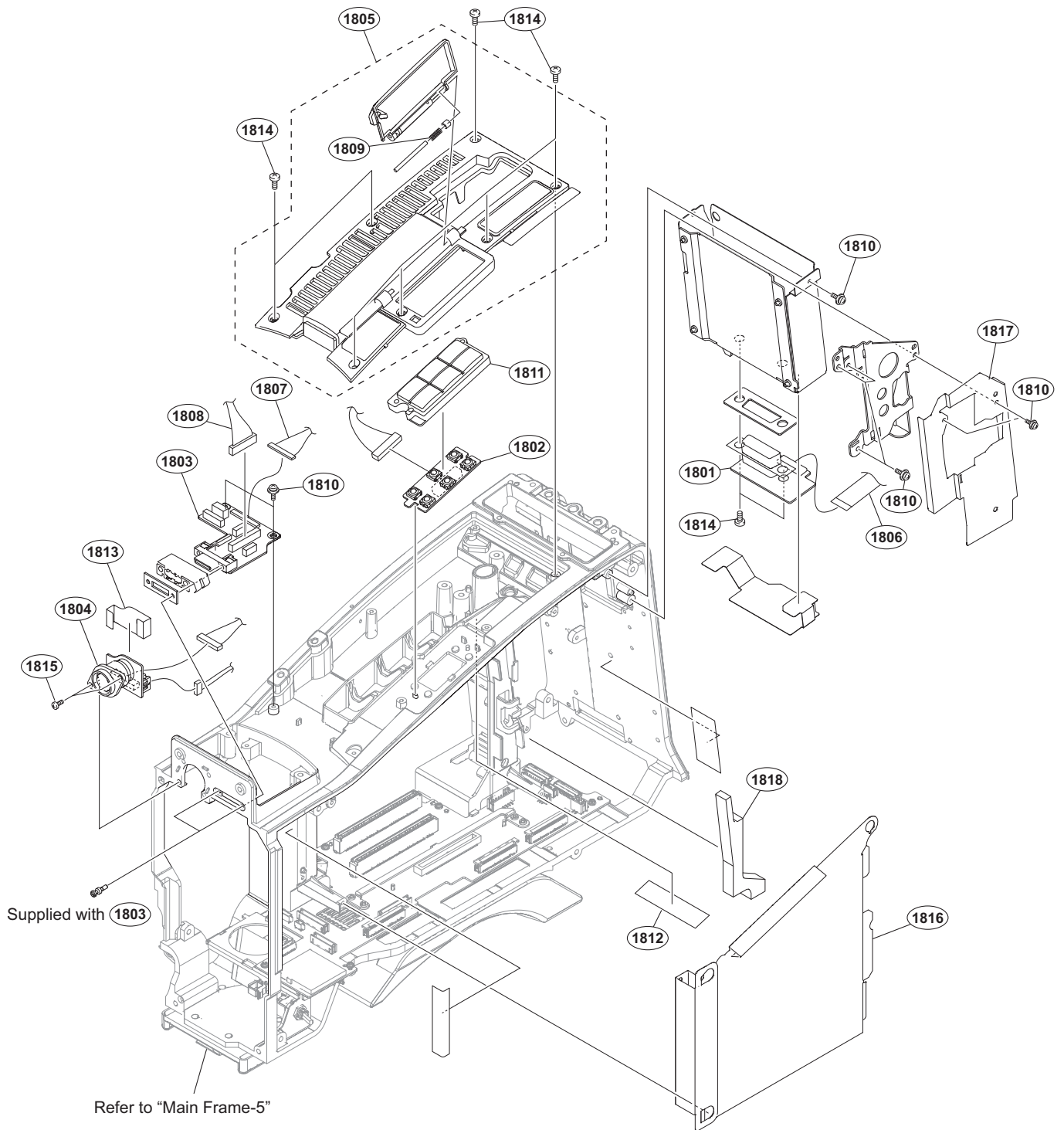
No.	Part No.	SP Description
1601	A-1968-119-A s	BATTERY HARNESS ASSY
1602	A-2054-866-A s	MOUNTED CIRCUIT BOARD, IO-275
1603	A-2058-420-A s	MOUNTED CIRCUIT BOARD, CN-3738
1604	A-2063-286-A s	MOUNTED CIRCUIT BOARD, DIF-232
1605	1-500-082-11 o	CLAMP, SLEEVE FERRITE
1606	1-970-440-11 s	SUB HARNESS (IO)
1607	2-635-562-31 s	SCREW(M1.7) [P 1.7x4]
1608	3-694-181-03 s	TYPE1,AROCK PRECISION +P2.6X5
1609	3-742-074-13 s	SCREW (+B 3X8)
1610	3-855-938-01 s	SCREW [+PSW 2x5]
1611	3-965-077-02 s	SCREW, SPECIAL (M2) [M2x2.4]
1612	4-545-527-01 s	CAP, CN, REAR
1613	4-674-315-01 s	SCREW (M2.6X6)

Connector Box



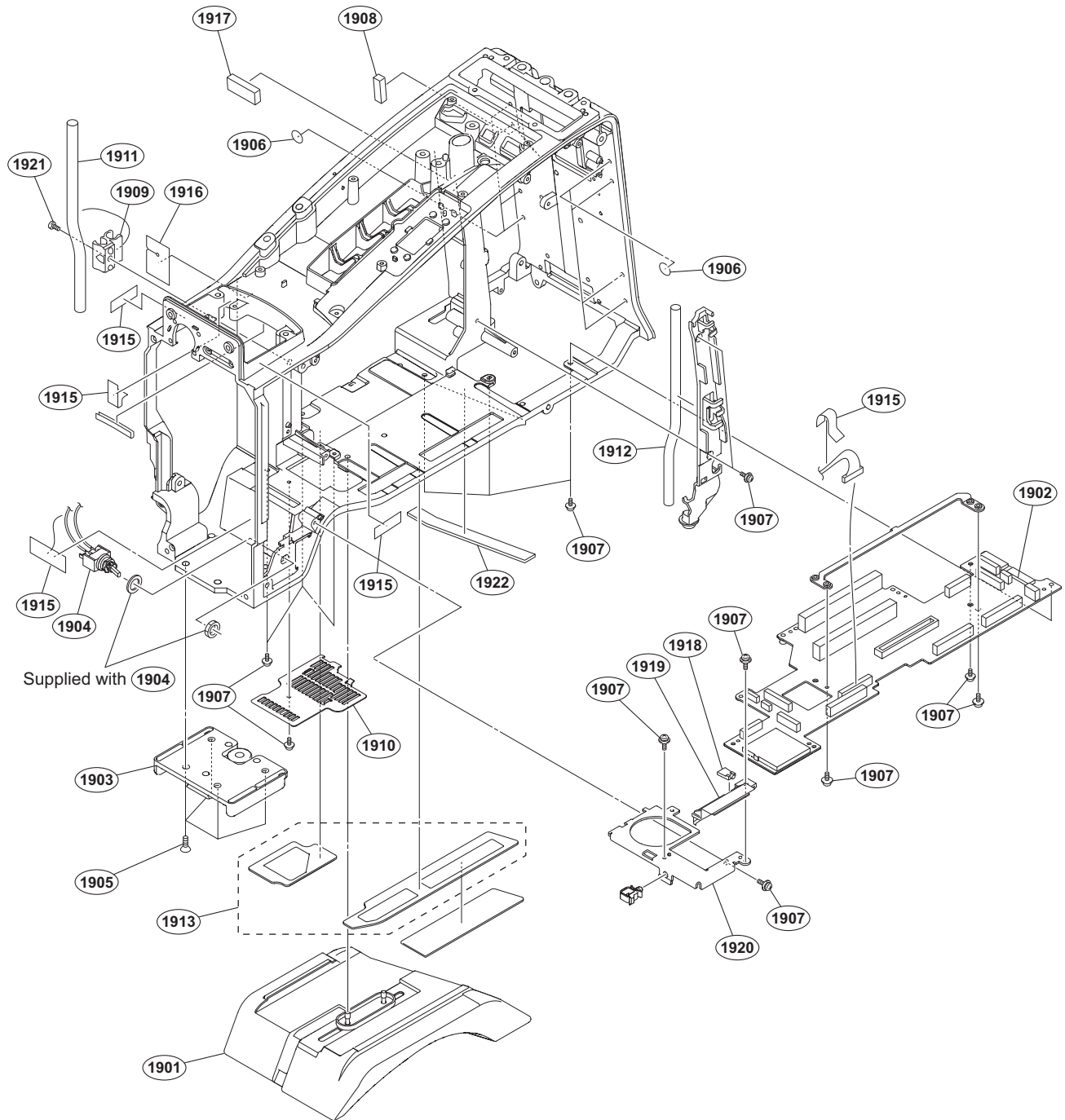
No.	Part No.	SP Description	No.	Part No.	SP Description
1701	A-2057-067-A s	MOUNTED CIRCUIT BOARD, AXM-52	1716	3-742-074-13 s	SCREW (+B 3X8)
1702	A-2057-510-A s	MOUNTED CIRCUIT BOARD, SW-1632	1717	3-796-985-02 s	CUSHION, DROP PROTECTION
1703	A-2058-421-A s	MOUNTED CIRCUIT BOARD, RM-246	1718	3-796-986-02 s	KNOB, SLIDE SW
1704	1-784-240-11 s	CONVERTER, COAXIAL CONNECTOR	1719	3-796-993-11 s	CUSHION DROP PROTECTION TOGGLE
1705	1-837-296-11 s	CABLE, FLEXIBLE FLAT (30 CORE)	1720	3-855-938-01 s	SCREW (+PSW 2x5]
1706	1-837-331-11 s	CABLE ASSY, COAXIAL (HDSOI) [Red]	1721	3-870-176-02 s	BRACKET (DC OUT)
1707	1-967-026-12 s	HARNESS, SUB (RM)	1722	3-870-177-01 s	BRACKET (SW)
1708	1-970-438-11 s	SUBHARNESS (AXM-SW)	1723	3-991-412-01 s	BRACKET, BNC(S)
1709	1-970-439-11 s	COAXIALCABLE (DPR-HD/SDI_OUT1) [Yellow]	1724	4-136-517-01 s	WASHER, BNC COAXIAL FIXED
1710	1-970-441-11 s	SUB HARNESS (DC OUT)	1725	4-176-668-01 s	BOTTOM GUARD
1711	1-970-449-11 s	COAXIALCABLE (DPR-HD/SDI_OUT2) [Blue]	1726	4-446-014-01 s	TAPE AS (2040)
1712	1-970-499-11 s	SUBHARNESS (DC-IN)	1727	4-545-544-01 s	SHEET (AXM), PROTECTION
1713	3-364-941-01 s	SCREW (+B) (2.6X5), NYLOK	1728	4-545-554-01 s	BOX, CONNECTOR
1714	3-626-781-03 s	STOPPER	1729	4-654-273-02 s	ACE (M2), LOCK [B 2x5]
1715	3-723-097-01 o	FOOT, RUBBER	1730	4-674-315-01 s	SCREW (M2.6X6)
				7-688-003-12 s	W 3, MIDDLE

Main Frame-4



No.	Part No.	SP Description	No.	Part No.	SP Description
1801	A-2054-861-A	s MOUNTED CIRCUIT BOARD, RX-136	1812	4-488-383-01	s TAPE (13X50) //C
1802	A-2054-867-A	s MOUNTED CIRCUIT BOARD, KY-736	1813	4-545-550-01	s SHEET, CN3736
1803	A-2054-868-A	s MOUNTED CIRCUIT BOARD, HN-415	1814	4-654-273-02	s ACE (M2), LOCK [B 2x5]
1804	A-2054-872-A	s MOUNTED CIRCUIT BOARD, CN-3736	1815	4-674-315-01	s SCREW (M2.6X6)
1805	A-2061-152-A	s COVER ASSY, TOP	1816	4-573-670-01	s PARTITION
1806	1-837-297-11	s CABLE, FLEXIBLE FLAT (30 CORE)	1817	4-573-848-01	s STOPPER DRAFT
1807	1-967-683-11	s HARNESS (HDMI)	1818	4-573-849-01	s CUSHION REAR B
1808	1-970-446-11	s SUB HARNESS (MB-HN)			
1809	3-234-710-01	o SPRING (OPEN), COMPRESSION COIL			
1810	3-855-938-01	s SCREW [+PSW 2x5]			
1811	4-169-111-01	s KEYSW COVER			

Main Frame-5



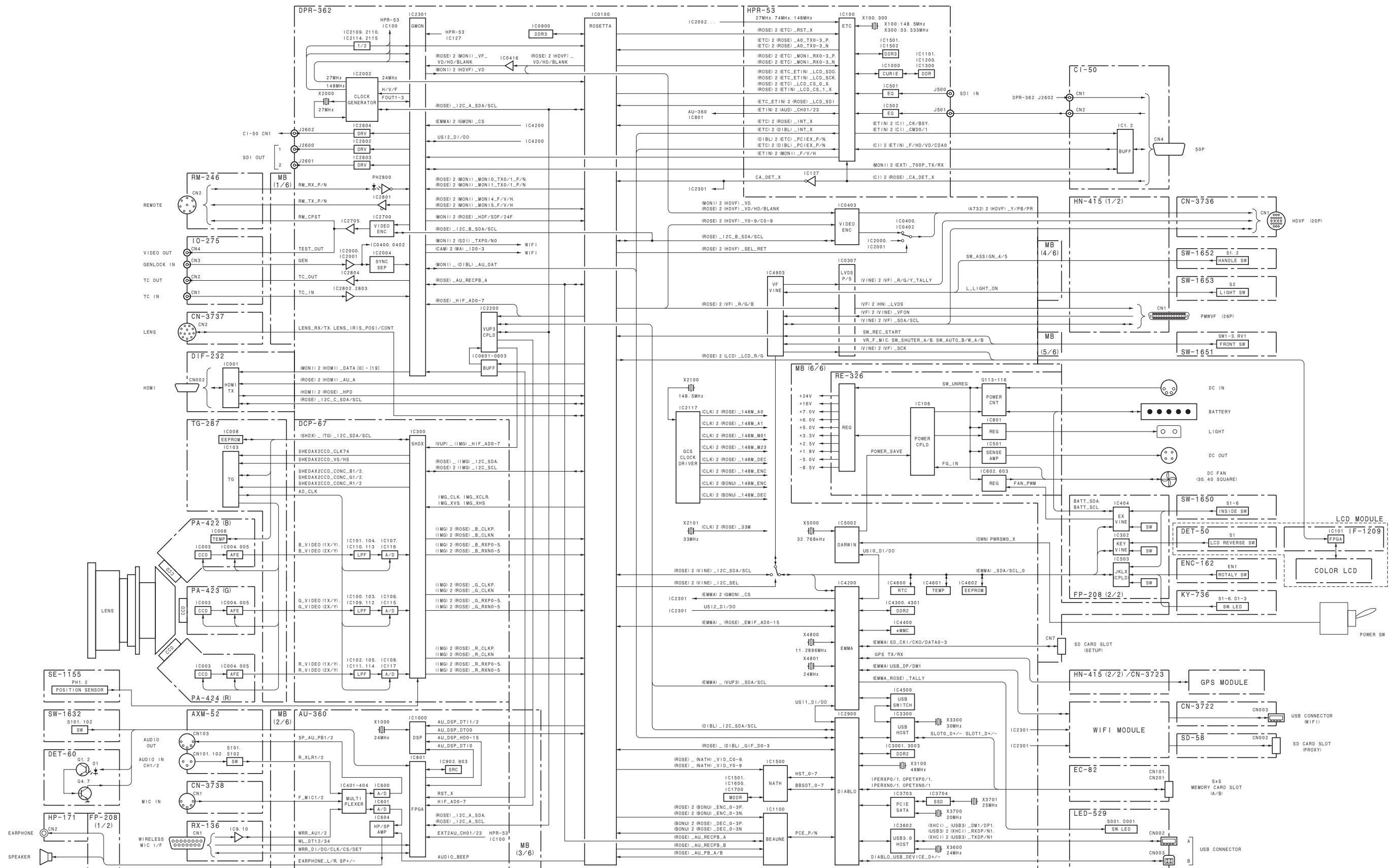
No.	Part No.	SP Description
1901	A-1752-736-B s	SHOULDER PAD ASSY
1902	A-2058-423-A s	MOUNTED CIRCUIT BOARD, MB-1210
1903	A-8279-993-D s	SHOE(D) ASSY, V
1904	1-967-041-12 s	HARNESS, SUB (POWER SW)
1905	3-729-072-02 s	SCREW, +K (4X8)
1906	3-796-946-03 s	TAPE (A)
1907	3-855-938-01 s	SCREW [+PSW 2x5]
1908	4-000-497-02 s	FOAM (ILI), SHIELD
1909	4-138-678-01 s	CLAMP, CABLE
1910	4-168-987-02 s	COVER BOTTOM
1911	4-169-108-21 s	TUBE, DRAIN
1912	4-169-108-31 s	TUBE, DRAIN
1913	4-169-114-03 s	MESH, BOTTOM
1915	4-446-014-01 s	TAPE AS (2040)

No.	Part No.	SP Description
1916	4-468-127-01 s	CUSHION (LIGHT)
1917	4-468-137-02 s	FOAM (10X6), SHIELD
1918	4-545-547-01 s	LIGHT GUIDE (MB SD)
1919	4-545-549-01 s	ESCUTCHEON (MB SD)
1920	4-545-553-01 s	MB BRACKET (FRONT)
1921	4-674-315-01 s	SCREW (M2.6X6)
1922	4-468-138-02 s	FOAM (7X2), SHIELD

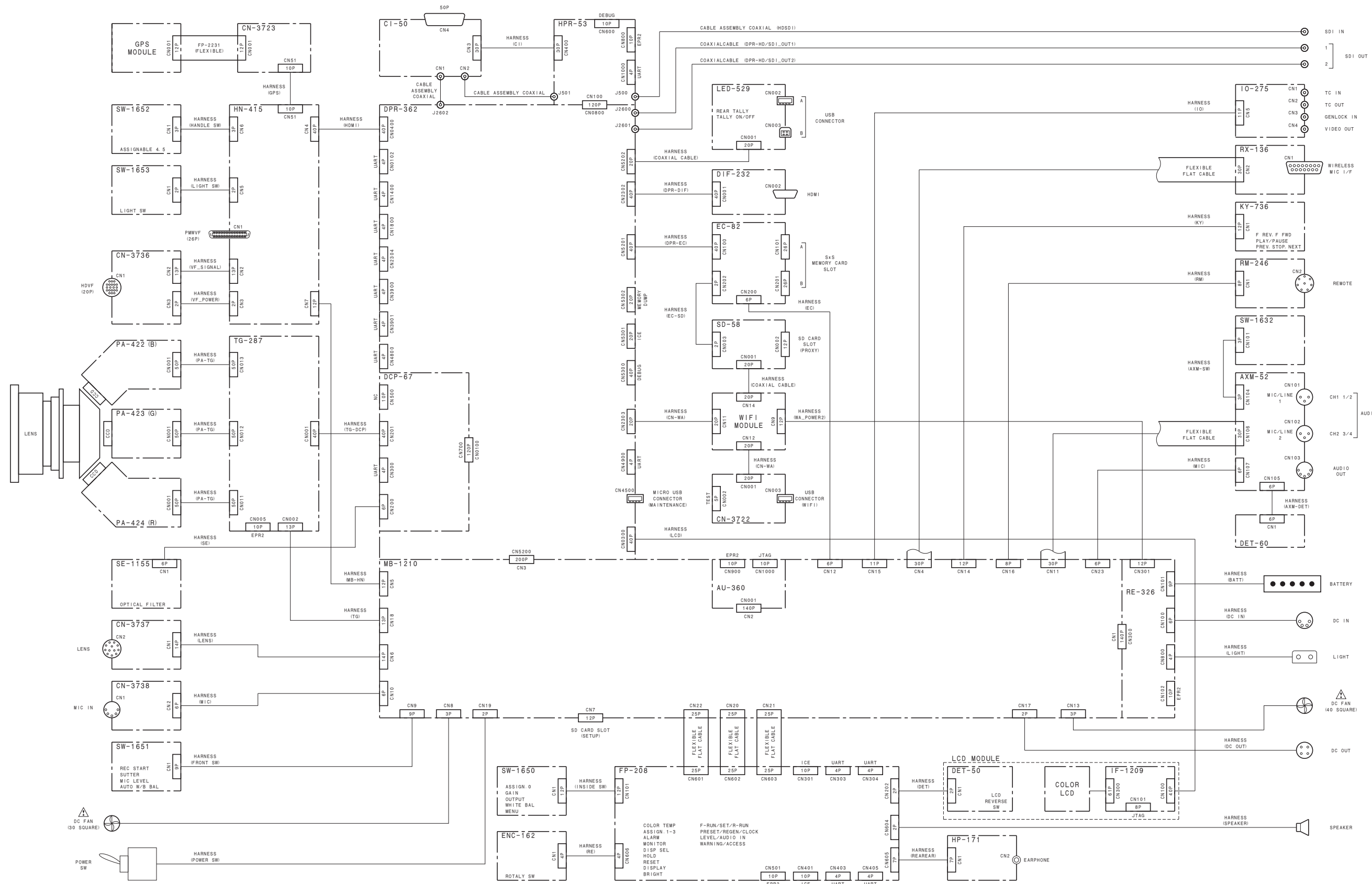
6-3. Supplied Accessories

Q'ty	Part No.	SP Description
1pc	A-6772-374-C	s BELT ASSY, SHOULDER
1pc	X-2546-633-1	s KIT,COLD SHOE
1pc	1-845-063-11	s LAN MODULE, WIRELESS (IFU-WLM3)
1pc	3-080-203-31	s SCREW (M2), LOCK ACE, P2
1pc	3-688-754-11	s SPRING
1pc	3-688-755-13	s SHOE, ACCESSORY
1pc	3-704-295-01	o BAG, PROTECTION (550X500)
2pcs	4-279-469-01	s CAP (USB), WATERPROOF
1pc	△ 4-545-573-01	s GUIDE, OPERATION
1pc	△ 4-545-574-01	s CD-ROM (OPERATION MANUAL)
1pc	4-559-711-01	s WIFI GUARD

Overall



Frame Wiring



Revision History

Date	History	Contents
2014. 11	Official Release 9-878-582-01	—
2015. 10	Revised-1 9-878-582-02	• Modifications: 1-4. Connector Input/Output Signals, 1-12. Firmware Upgrade 2-10. HPR-53 Board, 2-12. Partition/Cushion Rear B, 2-17. MB-1210 Board 4-1-1. Description of SERVICE Menu, 4-3-1. SERVICE Menu 6-2. Exploded Views, Main Frame-3, Main Frame-4 • Additions: 5. FILE Menu

