SONY

HD COLOR CAMERA

HSC300RF
HSC100RF
HSC300R
HSC100R

Power HAD FX R SERIES

SERVICE MANUAL

1st Edition

⚠ 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ことがあります。
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 manual 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.

Model Name	Serial No.
HSC300R (UC): Kings Triax Connector	10001 and Higher
HSC300R (J): Tajimi Triax Connector	30001 and Higher
HSC300R (CED): Fischer Triax Connector	40001 and Higher
HSC300R (CED): LEMO Triax Connector	60001 and Higher
HSC300RF (UC): LEMO Optical Fiber Connector	10001 and Higher
HSC300RF (J): Tajimi Optical Fiber Connector	30001 and Higher
HSC300RF (CED): LEMO Optical Fiber Connector	40001 and Higher
HSC300RF (E): Tajimi Optical Fiber Connector	50001 and Higher
HSC100R (UC): Kings Triax Connector	10001 and Higher
HSC100R (J): Tajimi Triax Connector	30001 and Higher
HSC100R (CED): Fischer Triax Connector	40001 and Higher
HSC100R (CED): LEMO Triax Connector	60001 and Higher
HSC100RF (UC): LEMO Optical Fiber Connector	10001 and Higher
HSC100RF (J): Tajimi Optical Fiber Connector	30001 and Higher
HSC100RF (CED): LEMO Optical Fiber Connector	40001 and Higher
HSC100RF (E): Tajimi Optical Fiber Connector	50001 and Higher

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION

The use of optical instruments with this product will increase eye hazard.

CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

This HD color camera is classified as a CLASS 1 LASER PRODUCT.

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。

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.

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.

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.

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.

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.

HUOMIO

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

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

1. Service Overview

2. Replacement of Main Parts

3. Electrical Alignment

4. Digital Triax Transmission System Alignment

5. File System

6. Setup Menu

7. Spare Parts

8. Diagrams

Manual Structure

Purpose of this manual

This manual describes the information items that premise the service based on the block-level such as service overview, replacement of main parts, electrical alignment, file system, and setup menu assuming use of system and service engineers.

Related manuals

The following manual is provided for this unit in addition to this “Service Manual”.

- Operation Guide (Supplied with this unit)
- Operation Manual CD-ROM (Supplied with this unit)
  This manual contains information required to operate and use the unit.
- Factory Service Manual (Available on request)
  Parts list, circuit diagram, and board layouts of the unit are included to provide information required for part-level service.

Trademarks

Trademarks and registered trademarks used in this manual are follows.

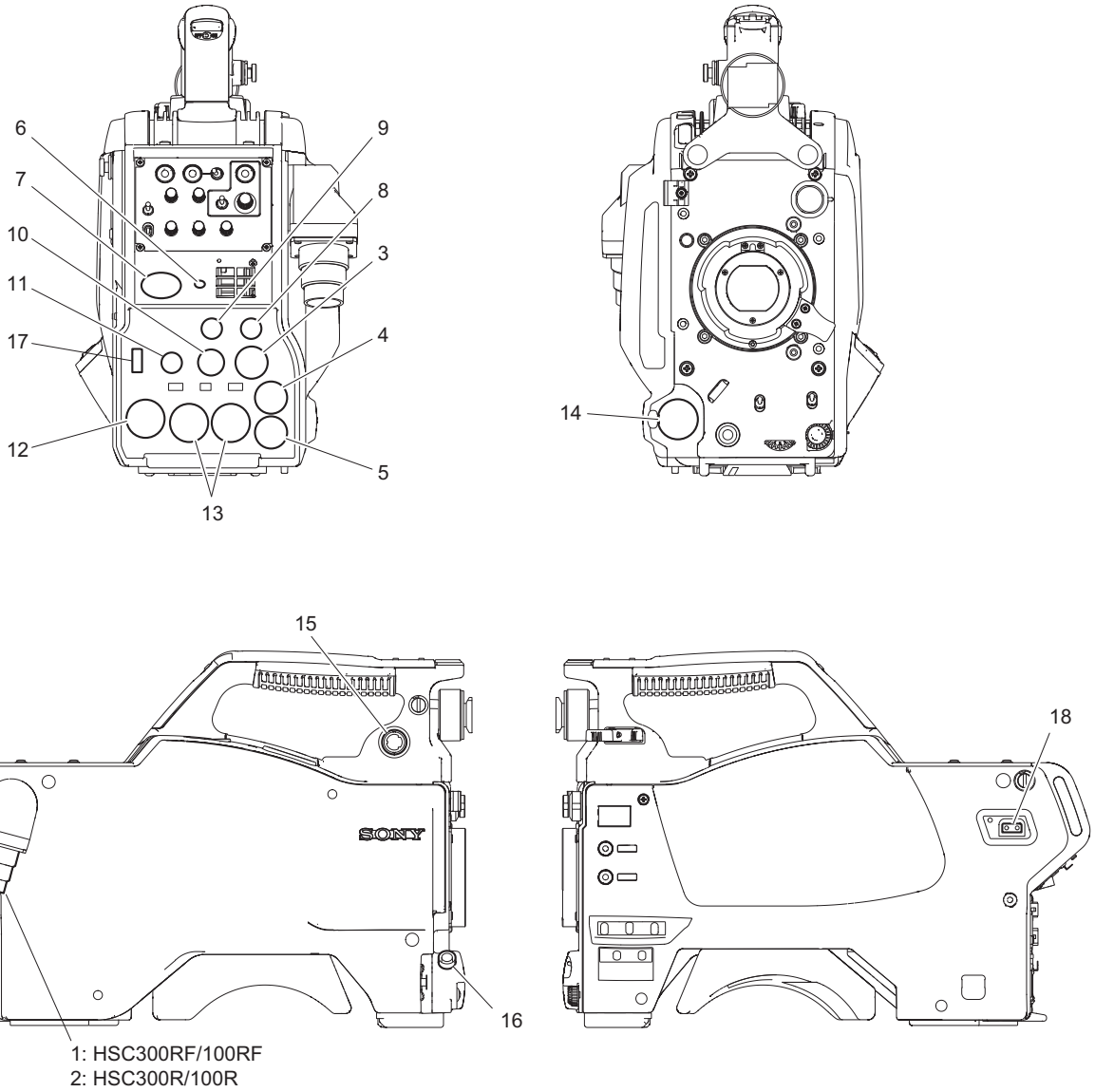
- FRAM is a registered trademark of Ramtron International Corporation.

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. Connectors and Cables

1-1-1. Connector Input/Output Signals



Input/Output Signals

1. CCU (HSC300RF/100RF)

BTA S-004A/005A/006A compliant,
1.4835 Gbps Serial
UC, CED: LEMO optical fiber connector
J, E: Tajimi optical fiber connector

2. CCU (HSC300R/100R)

UC: King triax connector
J: Tajimi triax connector
CED: Fischer triax connector, LEMO triax connector

3. PROMPTER/GENLOCK/RET

BNC type 75 Ω, 1.0 V p-p

4. TEST OUT

BNC type 75 Ω, 1.0 V p-p

5. SDI

HD SDI signal
BTA-S004 compliant

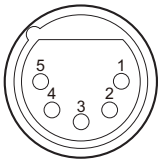
BNC type 75 Ω, 0.8 Vp-p

6. EARPHONE

Earphone φ3.5 mm stereo mini jack

7. INTERCOM

XLR 5-pin, Female



- External View -

(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	Intercom MIC (Y)	IN	• Carbon microphone: -20 dBu, unbalance • Dynamic microphone: -60 dBu, balance/unbalance • Manual: -20/-40/-60 dBu, balance/unbalance)
2	Intercom MIC (X)	IN	
3	GND	—	GND
4	Intercom Left	OUT	11 dBu (VR max, 250 Ω load)
5	Intercom Right	OUT	

8. REMOTE

8-pin, Female

- External View -

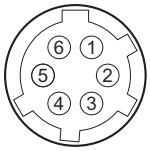
No.	Signal	I/O	Specifications
1	• TX (X): for RCP • TX1 (+): for TRUNK (RS-422A)	OUT	• SERIAL DATA OUT: for RCP • TRUNK DATA OUT: for RS-422A
2	• TX (Y): for RCP • TX1 (–): for TRUNK (RS-422A)	OUT	

Continued

No.	Signal	I/O	Specifications
3	• RX (X): for RCP • RX1 (+): for TRUNK (RS-422A)	IN	• SERIAL DATA IN: for RCP • TRUNK DATA IN: for RS-422A
4	• RX (Y): for RCP • RX1 (–): for TRUNK (RS-422A)	IN	
5	TX-GND	—	GND for TX
6	UNREG-OUT	OUT	UNREG +10.5 V to +17 V dc, 200 mA (max)
7	UNREG-GND	—	GND for UNREG-OUT
8	RCP-PIX: for RCP	OUT	75 Ω, 1.0 V p-p (SD Video)
	CHASSIS GND: for TRUNK (RS-422A)	—	CHASSIS GND

9. RET CTRL

6-pin, Female

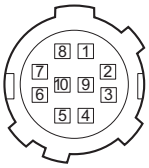


- External View -

No.	Signal	I/O	Specifications
1	INCOM MIC-ON/OFF: for UC, J ENG: for CED, E	IN	Zi ≧ 10 KΩ ON: GND OFF: OPEN
2	NC: for UC, J PROD: for CED, E	IN	• UC, J: No connection • CED, E: Zi ≧ 10 KΩ ON: GND OFF: OPEN
3	GND	—	—
4	RET 3-ON/OFF	IN	Zi ≧ 10 KΩ ON: GND OFF: OPEN
5	RET 1-ON/OFF	IN	
6	RET 2-ON/OFF	IN	

10. TRACKER

10-pin, Female

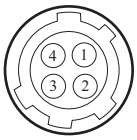


- External View -

No.	Signal	I/O	Specifications
1	TRACKER LEFT	OUT	TRACKER RECEIVE/ PGM –20 dBu unbalanced
2	GND (TALK)	—	GND for TRACKER TALK
3	GND (RECEIVE/ PGM/TALLY)	—	GND for RECEIVE/PGM/ TALLY
4	TRACKER RIGHT	OUT	TRACKER RECEIVE/ PGM –20 dBu unbalanced
5	UNREG	OUT	+12 V (+10.5 to +17.0 V)
6	GND (UNREG)	—	GND for UNREG
7	TRACKER TALK (X)	IN	TRACKER TALK 0 dBu/ –20 dBu, High impedance balanced
8	TRACKER TALK (Y)	IN	
9	G TALLY	OUT	ON: GND OFF: High impedance (Open collector)
10	R TALLY	OUT	ON: GND OFF: High impedance (Open collector)

11. DC OUT

4-pin, Female

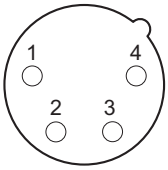


- External View -

No.	Signal	I/O	Specifications
1	UNREG GND	—	GND for UNREG-OUT
2	NC	—	No connection
3	NC	—	No connection
4	UNREG	OUT	+10.5 to 17 V dc, 500 mA (max)

12. DC IN

XLR 4-pin, Male

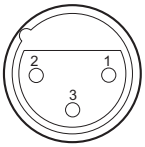


- External View -

No.	Signal	I/O	Specifications
1	EXT_DC (C)	—	GND for DC (+)
2	NC	—	No connection
3	NC	—	No connection
4	EXT_DC (H)	IN	+10.5 V to 17 V dc

13. AUDIO IN CH1/CH2

XLR 3-pin, Female



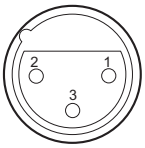
- External View -

(0 dBu = 0.775 Vrms)

No.	Signal	I/O	Specifications
1	AUDIO CH1/CH2 (G)	—	–60 dBu, –50 dBu, –40 dBu, –30 dBu, –20 dBu, LINE (0 dBu) selectable, balanced
2	AUDIO CH1/CH2 (X)	IN	
3	AUDIO CH1/CH2 (Y)	IN	

14. FRONT MIC

XLR 3-pin, Female



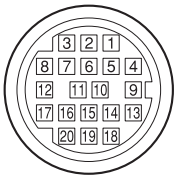
- External View -

(0 dBu = 0.775 Vrms)

No.	Signal	I/O	Specifications
1	MIC 1 (G)	—	–60 dBu, –50 dBu, –40 dBu, –30 dBu, –20 dBu selectable, balanced
2	MIC 1 (X)	IN	
3	MIC 1 (Y)	IN	

15. VF

20-pin, Female



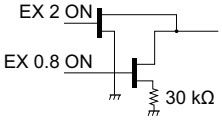
- External View -

No.	Signal	I/O	Specifications
1	S-DATA	IN/ OUT	TTL level
2	NC	—	No connection
3	NC	—	No connection
4	SCK	OUT	TTL level
5	NC	—	No connection
6	NC	—	No connection
7	NC	—	No connection
8	G TALLY	OUT	ON : 5 V OFF : GND
9	NC	—	No connection
10	NC	—	No connection
11	NC	—	No connection
12	Y VIDEO	OUT	1.0 V p-p, Zo = 75 Ω
13	VIDEO GND	—	GND for VIDEO
14	Pb VIDEO	OUT	±0.35 V p-p, Zo = 75 Ω
15	Pr VIDEO	OUT	±0.35 V p-p, Zo = 75 Ω
16	NC	—	No connection
17	R TALLY	OUT	ON : 5 V OFF : GND
18	NC	—	No connection
19	UNREG GND	—	GND for UNREG
20	UNREG	OUT	+10.5 V to +17 V

16. LENS

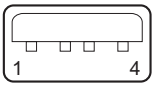
12-pin, Female

- External View -

No.	Signal	I/O	Specifications
1	RET VIDEO ENABLE	IN	• ENABLE: 0 V • DISABLE: +5 V or OPEN
2	VTR CTL	IN	• ENABLE: 0 V • DISABLE: +5 V or OPEN
3	GND	—	GND for UNREG
4	SERVO MA/AT	OUT	• AUTO: +5 V • MANU: 0 V or OPEN
5	IRIS POSI-TION	OUT	+3.4 V (F16) to +6.2 V (F2.8)
6	UNREG	OUT	+10.5 V to +17 V
7	IRIS POSI-TION	IN	+3.4 V (F16) to +6.2 V (F2.8)
8	IRIS AT/MA	OUT	• AUTO IRIS: 0 V • MANUAL IRIS: +5 V
9	EXTENDER ON/OFF	IN	• EX 2 ON: GND • EX 0.8 ON: 30 kΩ to GND • OFF: OPEN 
10	ZOOM POSI-TION	IN	• WIDE: 2 V • TELE: 7 V
11	FOCUS POSI (LENS RX)	IN	• ∞: 7 V • min.: 2 V
12	FOCUS POSI (LENS TX)	OUT	—

17. USB

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

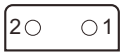


- External View -

No.	Signal	I/O	Specifications
1	VBUS	OUT	USB Vcc (+5 V)
2	D+	IN/ OUT	USB+
3	D–	IN/ OUT	USB–
4	GND	—	GND

18. DC OUT

2-pin, Female



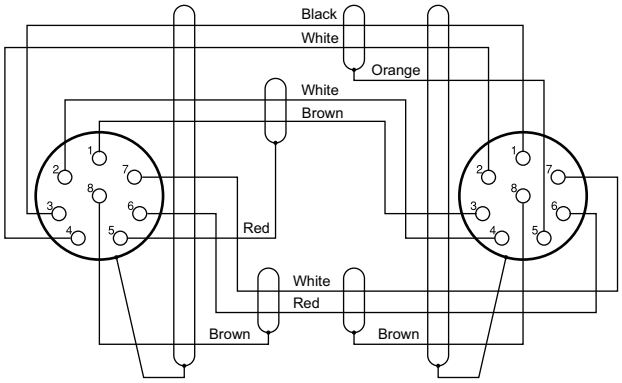
- External View -

Continued

No.	Signal	I/O	Specifications
1	LIGHT +12 V	OUT	+12 V dc, 2.5 A (max)
2	GND	—	GND for power

1-1-2. Wiring Diagrams for Cables

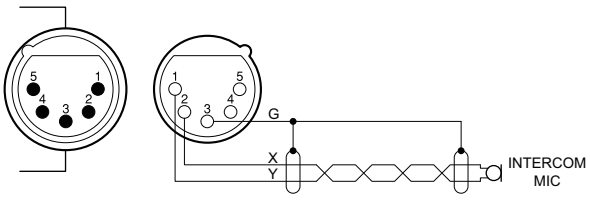
CCA-5 Cable (for REMOTE connector)



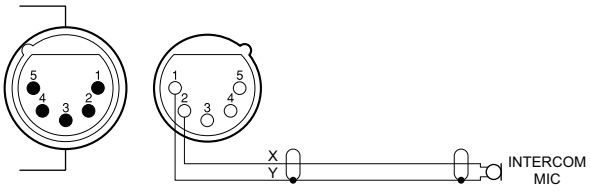
— 8P CONNECTOR (MALE) —
(WIRING SIDE)

INTERCOM MIC Cable

1. Balance (HEAD SET menu UNBAL: OFF)



2. Unbalance (HEAD SET menu UNBAL: ON)



1-1-3. Connection Connectors/Cables

Connection made with the connector panels during installation or service, should be made with the connectors/complete cable assemblies specified in the following list, or equivalent parts.

Connector Name	Connector/Cable
CCU: HSC300R/ 100R	• Fujikura φ8.5 mm • Fujikura φ14.5 mm • Belden 9232 φ13.2 mm
• TEST OUT • PROMPTER/ GENLOCK/RET • SDI (BNC type)	Plug, BNC (Part No.: 1-569-370-12) or 5C-FB coaxial cable/ Recommendation made by Fujikura
• AUDIO IN CH1/CH2 • FRONT MIC (XLR type 3-pin, Female)	XLR, 3-Pin Male (Part No.: 1-508-084-00) or ITT Cannon XLR-3-12C or equivalent
RET CTRL (6-pin, Female)	Plug, 6-Pin Male (Part No.: 1-560-078-00) or HIROSE HR10-7PA-6P or equivalent
DC OUT (4-pin, Female)	Plug, 4-Pin Male (Part No.: 1-566-425-11) or HIROSE HR10A-7P-4P or equivalent
DC OUT (2-pin, Female)	Power tap (OE) ANTONBAUER 33710 or equivalent
INTERCOM (XLR type 5-pin, Female)	XLR, 5-Pin Male (Part No.: 1-508-370-11) or ITT Cannon XLR-5-12C or equivalent
DC IN (XLR type 4-pin, Male)	XLR, 4-Pin Female (Part No.: 1-508-362-00) or ITT Cannon XLR-4-11C or equivalent, or Cable assembly (Part No.: 1-551-577-00) (supplied with AC-550)
REMOTE (8-pin, Female)	• Plug, 8-Pin Male (Part No.: 1-766-848-11) or CCA-5 cable assembly (CCA-5-10 (10 m) /CCA-5-3 (3 m)) (optional)*1*2 • REMOTE cable (Part No.: 1-783-372-11) (supplied with RMB-170, 10 m)*1*2*3
TRACKER (10-pin, Female)	Connector, Round Type 10-Pin (Part No.: 1-506-522-12) or HIROSE HR10A-10P-10P or equivalent

1-1-4. Note in Connecting CCU Connector

Tip

This section is required for HSC300RF/100RF. This section is not required for HSC300R/100R.

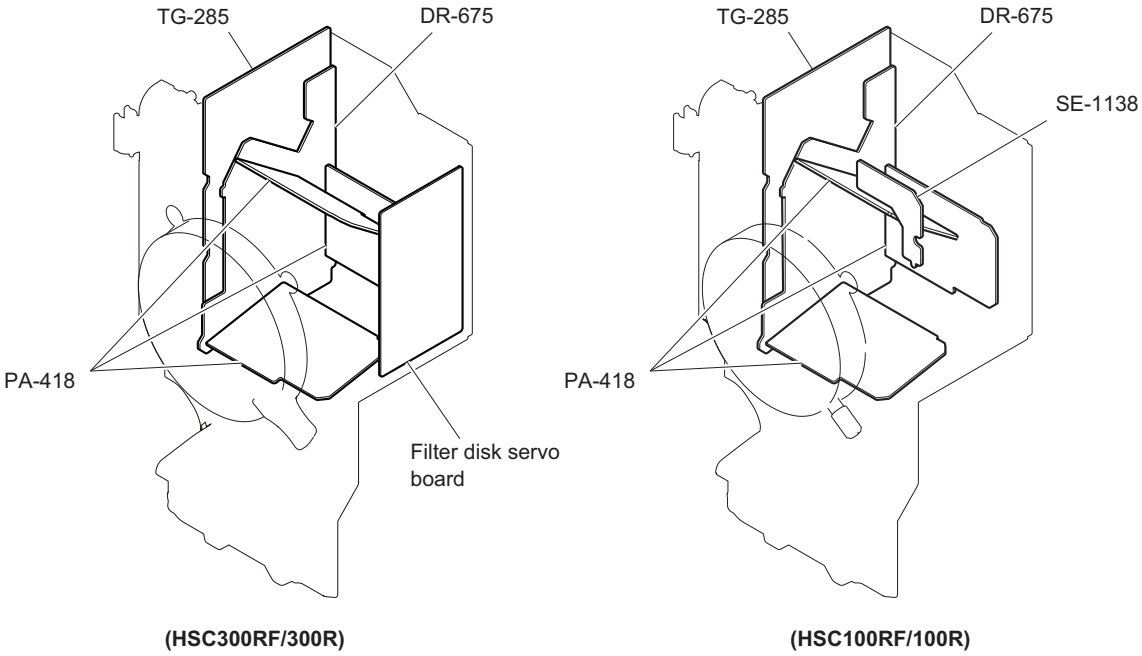
*1: If using a cable of length different from a standard product, contact your local Sony Sales Office/Service Center.
*2: The pin 8 of CCA-5 cable is GND (ground). The pin 8 of REMOTE cable is not GND (ground).
*3: Use of REMOTE cable enables to monitor video signals. (The pin 8 is available for the video signal line.) The down-converted SD signal is output.

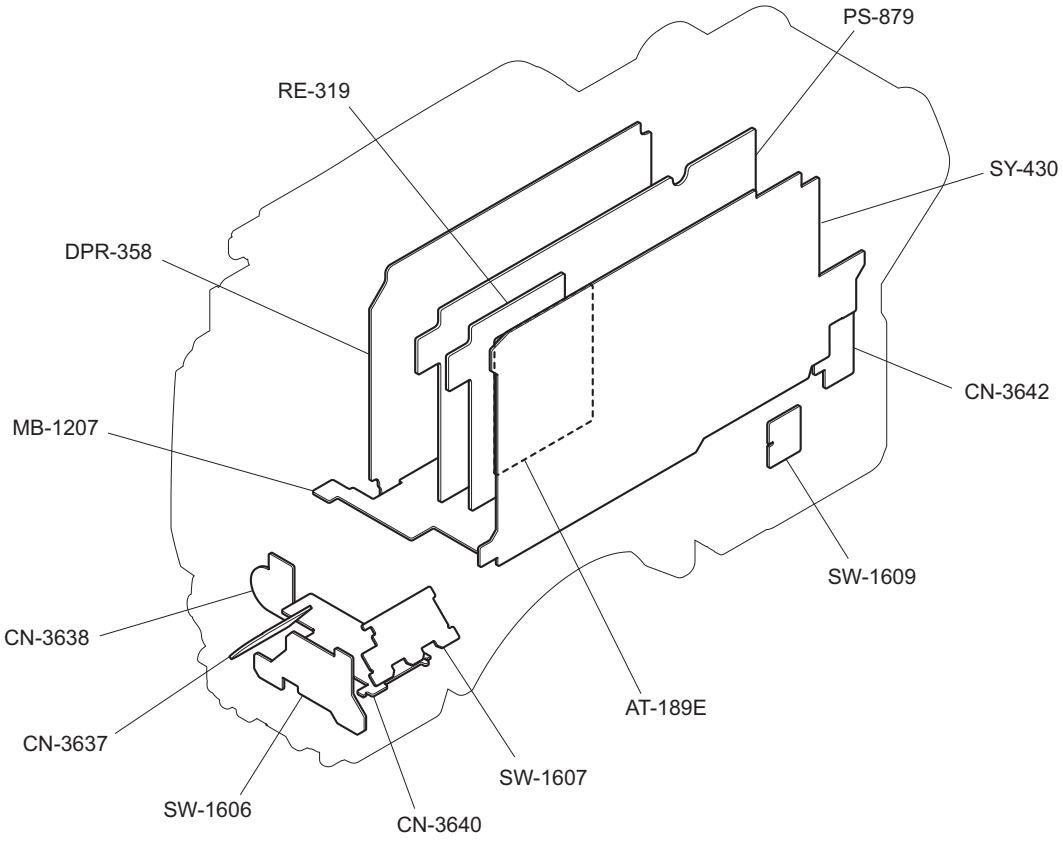
It is recommendable to clean the optical contact portions mentioned below before connecting this unit to the camera control unit.

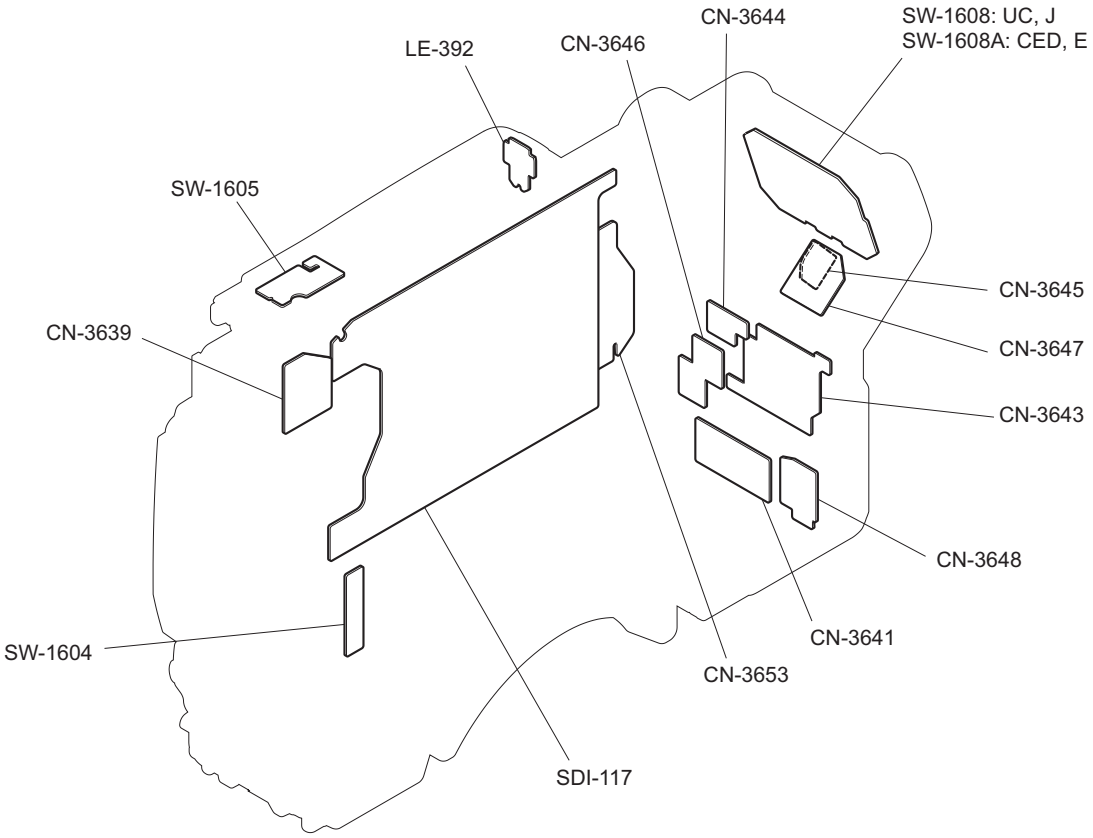
- CCU connector of this unit
- CAMERA connector of the camera control unit
- Optical/Electrical cable

For details on a cleaning method, refer to “1-7. Cleaning of Connector/Cable”.

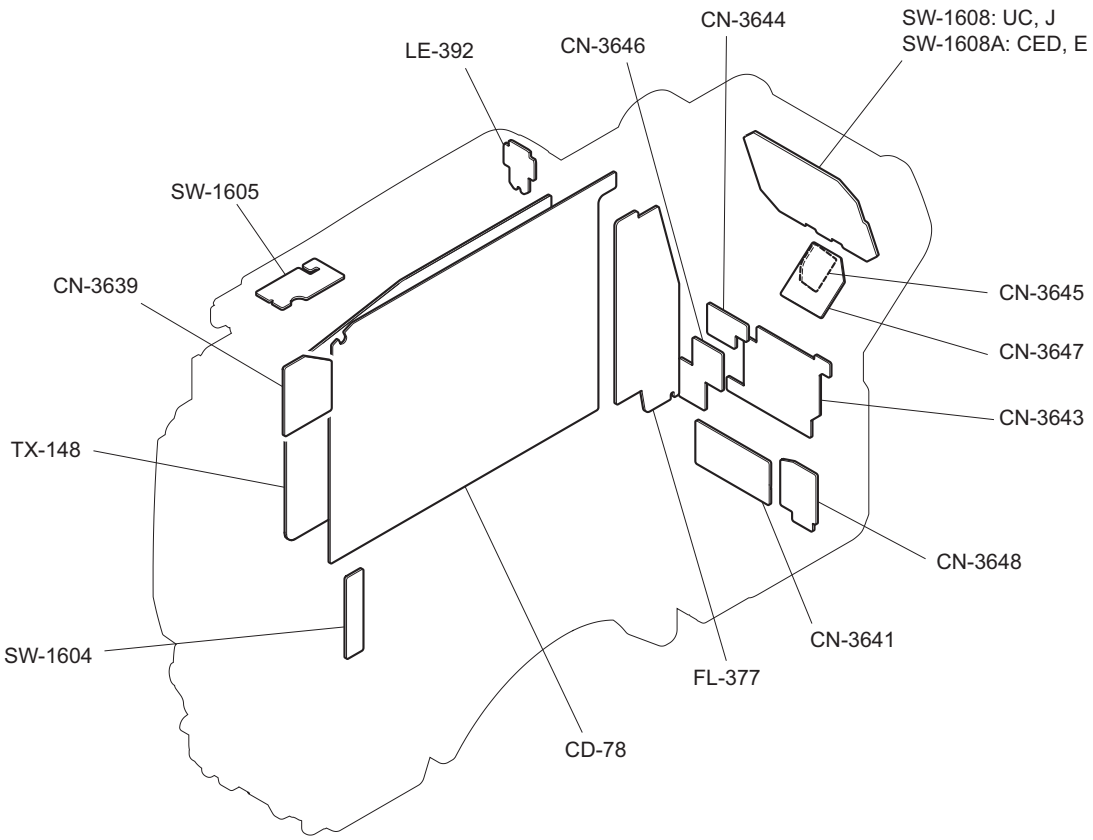
1-2. Location of Printed Circuit Boards







(HSC300RF/100RF)



(HSC300R/100R)

1-3. Circuit Description

1-3-1. Optical System (OHB Block)

PA-418 Board

This board consists of a CCD drive H driver and a sample-hold IC, performs correlated double sampling for signals from the CCD and outputs them differentially. The sample-hold IC adjusts sensitivity.

DR-675 Board

This board consists of a CCD, a buffer for CCD and sample-hold IC drive pulses and CCD V driver circuit.

TG-285 Board

This board consists of the following circuits.

- A PLD that generates CCD and sample-hold IC drive pulses and a video amplifier
- A circuit to lock and synchronize the INT PLL H signal generated by the PLD with the PLL H signals sent from the DPR-358 board

The adjustment data and the defect correction data of the CCD block are stored in EEPROM (IC019).

1-3-2. Signal Processing/Transmission System

DPR-358 Board

This board converts analog R/G/B signals that are input from the CCD block to digital signals, and camera process processing and enhanced processing such as Knee and Gamma processing are performed for the digital signals in the camera signal processor LSI (IC301).
Then the digital signals are down-converted to SD signals and signals for the viewfinder are generated by the subsequent PLD (IC2002).
Output digital signals are sent to the SDI-117 board (HSC300RF/100RF) or the CD-78 board (HSC300R/100R) and are then transmitted to the camera control unit.
The board contains the A/D converter for the analog return signal, the D/A converter for an analog video, and the generator of the reference clock signal.

SDI-117 Board (HSC300RF/100RF)

The main-line video signal that multiplexes audio signal and command on the DPR-358 board is converted to a serial optical signal by the parallel/serial converter and the electrical/optical converter. Then the converted serial optical signal is sent to the camera control unit.
Furthermore, this board converts the serial optical signal that is sent from the camera control unit to a parallel electrical signal.
Then the prompter video signal, audio signal and command that are multiplexed with the return video are separated from each other, and each signal is sent to the DPR-358 board.

CN-3653 Board (HSC300RF/100RF)

This board relays DC power voltage (+180 V) from the camera control unit through a fiber cable, and sends the DC power voltage to the PS-879 board (power block assembly) as the power of the main unit.

CD-78 Board (HSC300R/100R)

The main-line video signal that is input from the DPR-358 board is encoded by the encoder, and the encoded signal is sent to the OFDM modulator IC.
The OFDM modulator IC multiplexes this main-line video signal, the audio signal from the SY-430 board, and the command signal. This multiplexed signal is modulated to 2-channel signal and is then converted to an analog signal. This analog signal is sent to TX-148 board.
Furthermore, the CD-78 board receives the stream signal demodulated by OFDM from the TX-148 board and separates the stream signal to return video signal, prompter signal, intercom audio signal, and command signal.
The prompter signal is decoded to baseband signal by the decoder, and the baseband signal is sent to the SY-430 board.
The audio signal and the command signal are sent to the SY-430 board.

TX-148 Board (HSC300R/100R)

The video signal and the audio signal that are modulated by OFDM on the CD-78 board are sent through the MPX filter to the FL-377 board.
The RF return and prompter signals sent from the camera control unit are sent through MPX filter to the demodulator IC. The RF signals are demodulated by the OFDM demodulator IC, and are then sent to the CD-78 board.

FL-377 Board (HSC300R/100R)

The RF signal and the DC voltage (+180 V) sent from the camera control unit with the TRIAX cable are separated from each other.
The separated RF signal is sent to the MPX filter on the RX-148 board with the coaxial cable.
The DC power voltage (+180 V) is sent to the PS-879 board (power block assembly) as the power voltage for the unit.

1-3-3. System Control System

SY-430 Board

This board consists of control circuits, a synchronizing separator circuit, a video amplifier, and an audio circuit.
The FRAM (IC404, IC405) retains system setup data, paint data, and other data.

Control system

The CPU on the AT-189E board controls external inputs/outputs and internal devices of the unit via the PLD (IC1001). This PLD has the following functions.

- 700 protocol communication between this unit and the REMOTE connector on the camera control unit
- Parallel communication with the DPR-358 board, SDI-117 board, and CD-78 board
- I²C communication and 3-wire serial communication with the CCD block
- I²C communication with the viewfinder
- I²C communication with the front panel, rear panel, and intercom panel
- Signal input from the two rotary encoders (front and rear)
- Tally output to the handle and TRACKER connector

- Input of potentiometer values, lens iris value, and zoom position value to the A/D converter
- D/A converter output for lens iris control
- Fan rotation detection and board temperature monitoring

Video system

This board contains a synchronizing separator circuit for genlock and viewfinder/ test output/prompter video amplifier functions.
The same connector is used for prompter output, gunlock, and return input.
When the camera control unit is connected, this connector is used for prompter output to output the prompter (VBS) signal from the SDI-117 board (HSC300RF/100RF) or the CD-78 board (HSC300R/100R).
In the standalone mode, this connector is used for genlock input to send the TEMP-H and TEMP-F signals (generated in the synchronizing separator circuit) to the DPR-358 board.

Audio system

This board contains input/output amplifiers, A/D converters, and D/A converters for the microphone, intercom, earphone, and tracker.
The MIC 1 IN connector can be selectively used as front microphone or AUDIO IN (CH1).
Only the AUDIO IN connector supports LINE level input. This AUDIO IN connector is provided with +48 V phantom power supply but does not support AB POWER.

AT-189E Board

This board consists of the CPU (IC200) for the system control and a peripheral device.
This CPU operate by the main program written in the flash memory (IC401).
As for this CPU, it provides with the interface of USB2.0. Storing/reading the setting data and the upgrade are possible according to USB drive.

LE-392 Board

This board contains handle tally LEDs (red, green) and a tally switch.

CN-3637 Board

This board contains a LENS connector.

CN-3638 Board

This board contains a front microphone (MIC 1 IN) connector (XLR 3-pin, female).

CN-3639 Board

This board contains a VF connector.

CN-3640 Board

This board contains two I²C I/O ports ICs of lens control block, front control block, inside control block and assignable control block.

CN-3641 Board

This board contains two AUDIO IN connectors (XLR 3-pin, female) on the connector panel.

CN-3642 Board

This board contains a USB connector (USB2.0, Type A 4-pin).

CN-3643 Board

This board contains the following switches and connectors.

- Three AUDIO IN switching switches
- RET CTRL connector (round 6-pin)
- TRACKER connector (round 10-pin)
- DC OUT connector (round 4-pin)

CN-3644 Board

This board contains a REMOTE connector (round 8-pin).

CN-3645 Board

This board contains an EARPHONE connector (φ3.5 mm stereo mini jack).

CN-3646 Board

This board contains a TEST OUT connector (BNC type) and a PROMPTER/GEN LOCK/RET IN connector (BNC type).

CN-3647 Board

This board contains an INTERCOM connector (XLR 5-pin, female).

CN-3648 Board

This board contains a DC IN connector (XLR 4-pin, male).

SW-1604 Board

This board contains two ASSINABLE switches on the inside panel.

SW-1605 Board

This board contains two switches (RET, INCOM) on the handle.

SW-1606 Board

This board contains three switches on the front panel, a potentiometer, and a rotary encoder for setting menu operation.

SW-1607 Board

This board contains five switches (GAIN, DCC, WHITE, MENU, DISPLAY) on the inside panel.

SW-1608/1608A Board

This board contains seven switches on the intercom panel, potentiometers (CED and E models: five potentiometers/UC and J: three potentiometers), and a rotary encoder for setting menu operation.

SW-1609 Board

This board contains a CAM POWER switch.

1-3-4. Power Supply System

PS-879 Board

Inputs are two systems that are 38 Vdc to 180 Vdc supplied by the camera control unit and 10.5 Vdc to 17 Vdc supplied by the external DC power supply unit.
Output power voltages are as follows.

- +14 V for viewfinder power
- +14 V for lens and remote control panel power
- +13.5 V for standby power
- +14 V, +5.5 V and +3.7 V for others

When +38 V is supplied from the camera control unit, +13.5 V and -5.5 V for standby voltages are output.
When +180 V is supplied from the camera control unit, all voltages are output.
When supplied from external DC power supply, all voltages are output.

RE-319 Board

This board is a small board connected with connector CN5007 on the PS-879 board, and output power voltages are as follows.

- +24 V, +15.8 V, +6.7 V and -9.5 V for camera control unit power

- -5.5 V for standby power
- +14 V for fan power
- -5.5 V for others

MB-1207 Board

This is the motherboard of the unit, which contains interface with each board, inductors for power filters of each board, capacitors, a positive-characteristic thermistor to prevent overcurrent, and a fuse.
The model information such as the serial number etc. is stored in EEPROM (IC2).

1-4. Notes on Replacement of Parts and Circuit Board

1-4-1. Description on EEPROM Data

The table below gives the stored data of EEPROM (FRAM) on every printed circuit board.

Board	Ref. No.	Stored Data
TG-285	IC019	CCD adjustment data, RPN compensation data
SY-430	IC404, IC405	Paint data etc.
MB-1207	IC2	Model information data

- When replacing the board is needed, remove the IC attached to the former board and replace it to the new board.
- The EEPROM is the storing data inherent in the board.
  The part number listed in "7. Spare Parts" is for EEPROM which is not programmed. If replacement is needed, contact your local Sony Sales Office/Service Center.

1-4-2. Adjustment and Setting Required when Replacing the SY-430 Board

Camera setting status and files are stored in the SY-430 board. When the SY-430 board is replaced, contents of the reference file, scene file, lens file, and operator file are lost. Store these files in a USB drive and then replace the SY-430 board.
The content of the OHB file stored in the OHB assembly is not lost.

Procedure

1. Store the reference file, scene file, and operator file in a USB drive.
   - Reference file (Refer to "5-5. Reference File")
   - Scene file (Refer to "5-4. Scene File")
   - Operator file (Refer to "5-2. Operator File")
2. Replace the SY-430 board. (Refer to "2-9. SY-430 Board/AT-189 Board")
3. Upgrade the software to the latest version. (Refer to "1-9. Upgrading Software Programs")
4. Execute REFERENCE (ALL) on the FILE CLEAR page of the FILE menu. (Refer to "5-5. Reference File")

   Note

   Unless REFERENCE (ALL) is executed, the intercom operation panel may not function correctly.

5. Execute STORE FILE on the REFERENCE page of the FILE menu. (Refer to "5-5. Reference File")
6. Execute the auto-adjustment. (Refer to "3-2. Automatic Adjustment")
7. Load the reference file, scene file, and operator file stored in the USB drive in step 1.
   - Reference file (Refer to "5-5. Reference File")
   - Scene file (Refer to "5-4. Scene File")
   - Operator file (Refer to "5-2. Operator File")
8. Execute AUTO LEVEL on the AUTO SETUP page of the MAINTENANCE menu.
9. When "AT-NG" is displayed on the SERIAL NO. page of the SERVICE menu, execute the STORE FILE. (Refer to "6-2. SERVICE Menu")

1-4-3. Adjustment and Setting Required when Replacing the OHB Assembly

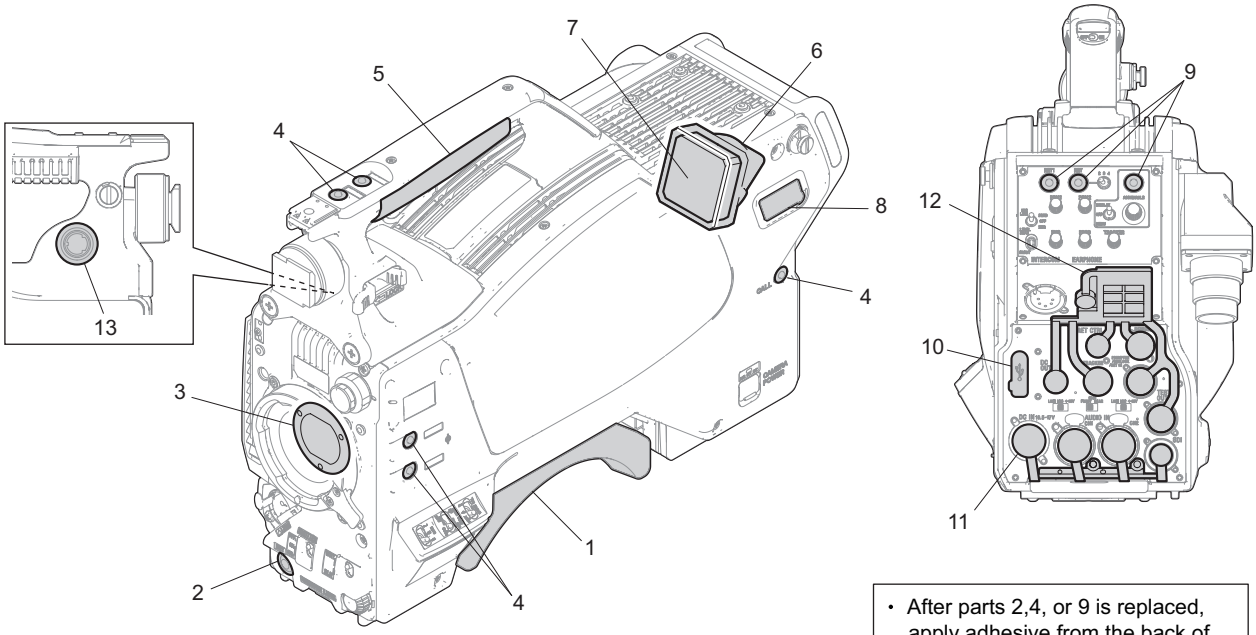
Procedure

1. Replace the OHB assembly.
   - HSC300RF/300R: Refer to "2-4-1. CCD Unit (HSC300R/300RF)"
   - HSC100RF/100F: Refer to "2-4-2. CCD Unit (HSC100R/100RF)"
2. When "OHB-NG" is displayed on the SERIAL NO. page of the SERVICE menu, execute the STORE FILE. (Refer to "6-2. SERVICE Menu")

1-5. Periodic Maintenance and Inspection

1-5-1. Recommended Replacement Parts

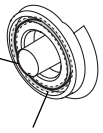
This section describes the recommended replacement parts and recommended replacement time.



- After parts 2,4, or 9 is replaced, apply adhesive from the back of the panel as shown in the figure.

(Example)

2 SS SW cover



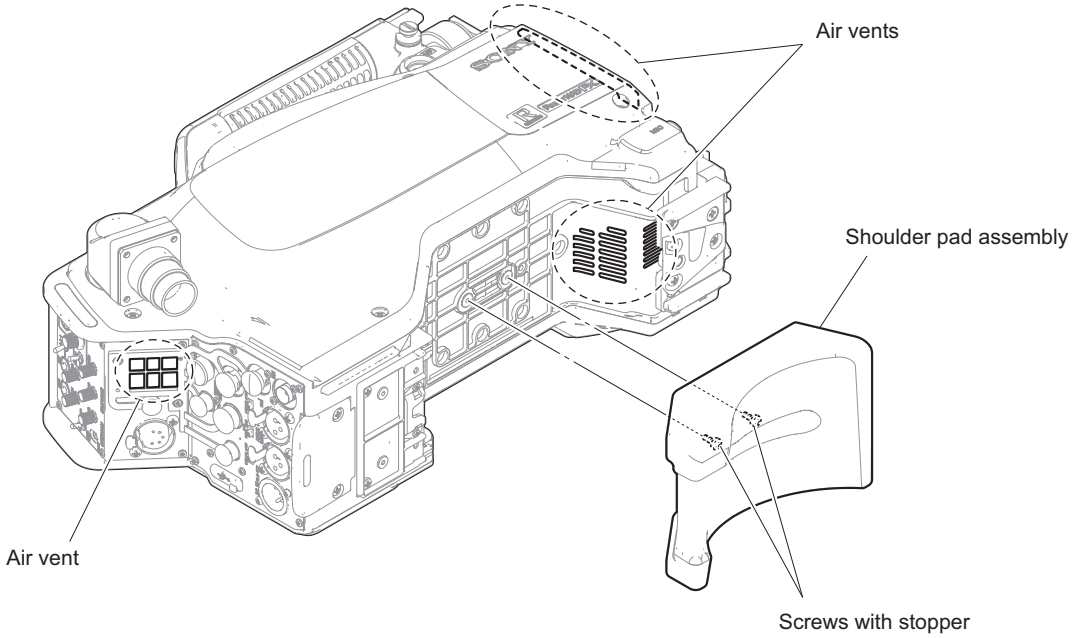
Apply adhesive

No.	Name	Part No.	Recommended Replacement Timing
1	Shoulder Pad Assembly	A-8286-163-C	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
	Shoulder Pad Assembly (Optional)	A-8286-346-A	
2	SS SW Cover	4-138-681-01	
3	Optical Filter Unit	1-788-764-21: HSC300RF/300R 1-788-765-21: HSC100RF/100R	It can become nebulous (in transparent and whitened) with elapse of time. Then it will not meet it the required characteristics. Replace it as needed.
4	SW Cover	4-138-542-01	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
5	Grip	4-138-676-01	
6	FAN Duct	4-138-686-11	
7	DC Fan (40 square)	⚠ 1-787-899-11	
8	DC OUT Connector Cap	4-415-079-01	
9	SW Cover	4-138-682-01	
10	USB Cap	4-478-730-01	
11	Rear Connector Cap (2)	4-138-675-02	
12	Rear Connector Cap (1)	4-138-674-02	
13	VF Packing	3-710-024-02	

1-5-2. Cleaning the Air Vents

Clogging of dust or foreign matters may cause a temperature increase inside the camera, which may result in a failure.
Clean the air vents every two or three months.

1. Loosen the two screws with stopper, and remove the shoulder pad assembly.
2. Remove dust on the air vent areas with a vacuum cleaner.



1-6. Replacing Lithium Battery

1-6-1. Note on Replacement of Lithium Battery

A lithium battery is mounted on the SY-430 board to back up the real time clock (RTC). If a battery comes to the lifetime, then RTC stops. Therefore, the battery must be replaced.

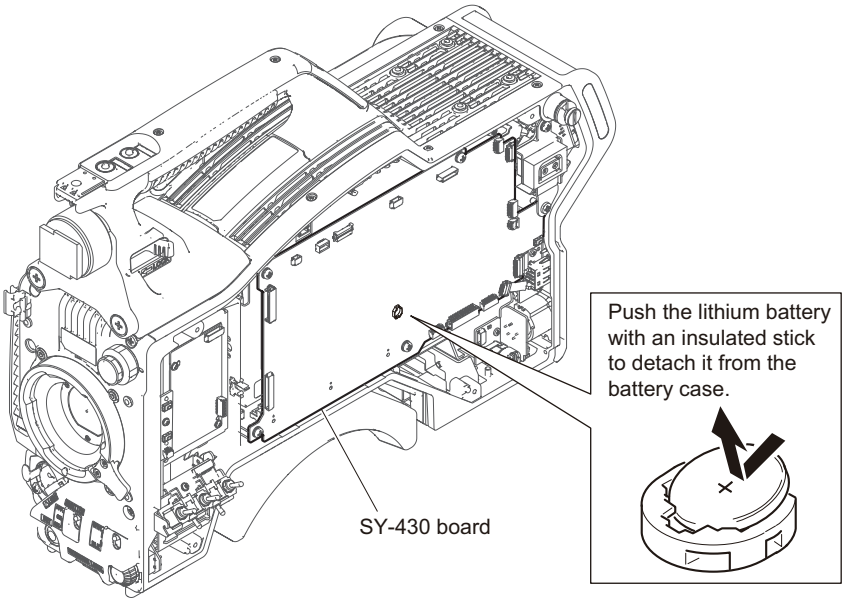
- SY-430 board/Lithium secondary battery (ML621 (U)): Sony Part No. ⚠ 1-756-134-15

CAUTION

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.

1-6-2. Replacing Procedure

1. Remove the four screws and remove the inside panel assembly. (Refer to "2-1. Inside Panel")
2. Replace the lithium secondary battery (ML621 (U)) on SY-430 board.



Note

Be sure to use an insulating stick to remove the lithium secondary battery (ML621 (U)).

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

1-7. Cleaning of Connector/Cable

Tip

This section is required for HSC300RF/100RF. This section is not required for HSC300R/100R.

The photo receptive condition of the optical connector can be checked at CABLE CONDITION indicator of the front panel of the camera control unit.

- When lit in green: Normal (–17 dBm and higher)
- When lit in yellow: Normal (–17 to –20 dBm)
- When lit in red: Abnormal (Less than –20 dBm)

When lit in red, be sure to clean the optical contact portions.

When lit in yellow, cleaning is recommended.

The attenuation of the photo-receptive level may cause transmission error. Clean optical contact portions proceeding as follows.

The optical contact portion exist in the optical connector on the camera or camera control unit, and in the optical/electrical cables.

1-7-1. When the Optical Connector Cleaner (Commercially Available) is Available

Fixtures

- Optical connector cleaner (commercially available)
  - Product name: CLETOP ®
  - 14100402 or 14100403 (stick type) or equivalent
  - 14100402: 2.0 mm
  - 14100403: 2.0/2.5 mm double ended

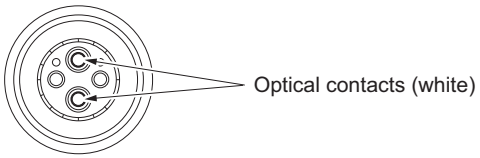
Tip

- Alcohol is not necessary during cleaning.
- Number of possible wipes is one cleaning per a piece. Do not reuse it.

Cleaning Procedure

Male connector

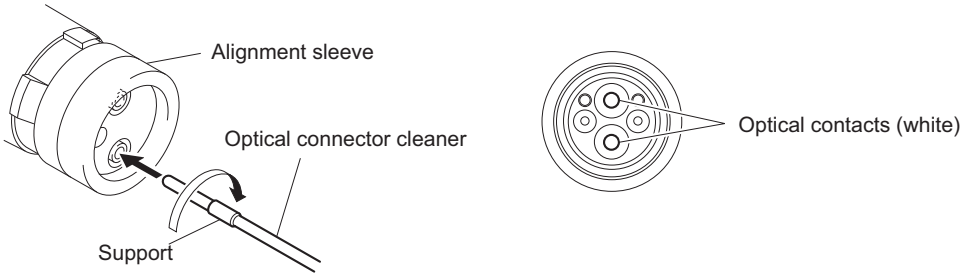
Clean the tip of the white optical contacts using the optical connector cleaner.



Female connector

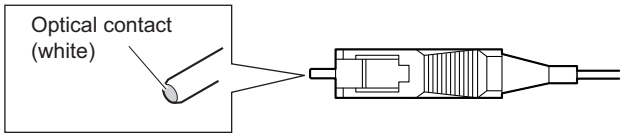
1. Insert the optical connector cleaner straight.
2. Apply sufficient pressure (approximately 600 g to 700 g) to ensure that the optical contact is a little depressed.

3. While pressing the optical connector cleaner against the tip of the optical contact, rotate the optical connector cleaner by 4 to 5 turns clockwise. Holding the optical connector cleaner at around its support facilitates to apply the pressure.



Connector

Clean the tip of the white optical contacts using the optical connector cleaner.



1-7-2. When the Optical Connector Cleaner (Commercially Available) is not Available (Connectors/Cables of LEMO)

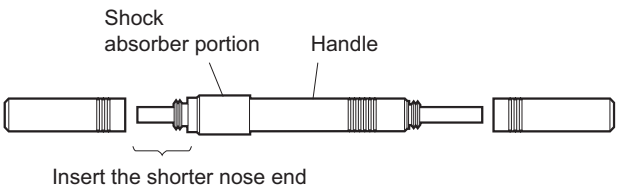
Clean the LEMO connectors and cables using the following procedure.

Fixtures

- Alignment sleeve remover HC-001 (for female connector)
  Sony Part No. : J-6480-010-A or DCC.91.312.5LA manufactured by LEMO, or equivalent

  Note

  Insert the shorter nose end when removing/installing the alignment sleeve. Grasp not the shock absorber portion of the remover but the handle in use.



- Alcohol (commercially available)
- Cotton swabs (commercially available)

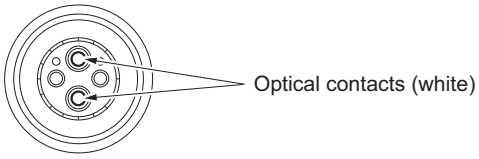
  Note

  Use a cotton swab whose diameter is about 4 mm. If a cotton swab whose diameter exceeds 5 mm is used, the cotton swab cannot be inserted into the end of the connector and the tip of the optical contact cannot be cleaned.

Cleaning Procedure

Male connector

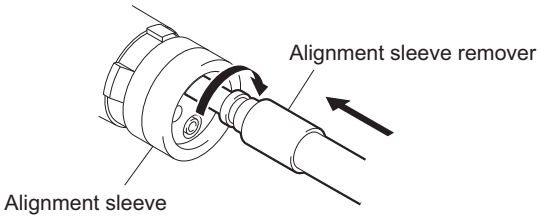
Clean the tip of the white optical contacts with a cotton swab moistened with alcohol.



Female connector

The optical contacts for female connector are in an unexposed state. In cleaning, it is necessary to be exposed by removing the alignment sleeve in advance. Proceed as follows.

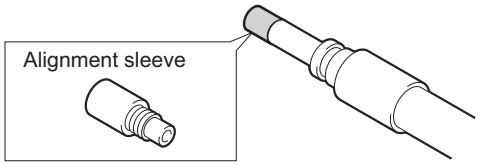
1. Insert the alignment sleeve remover into the alignment sleeve in the straight line and turn it clockwise



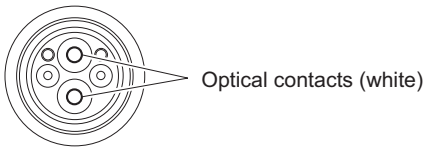
2. When the turn stops, pull out the remover in the straight line forcedly.

Note

The alignment sleeve can be removed/reinstalled with the sleeve itself attached to the tip of the remover. Great care should be taken so as not to lose or damage the alignment sleeve.
Alignment sleeve: Sony Part No. : 9-980-074-01



3. Clean the tip of the white optical contacts with a cotton swab moistened with alcohol.



4. Insert the remover with the alignment sleeve attached to its tip, and push it until it clicks.
5. Rotate the remover counterclockwise to install the alignment sleeve, and extract the remover.

1-7-3. When the Optical Connector Cleaner (Commercially Available) is not Available (Tajimi Electronics Co., Ltd.)

Clean the connectors and cables of Tajimi Electronics using the following procedure.

Fixtures

- Alcohol (commercially available)

- Cotton swabs (commercially available)

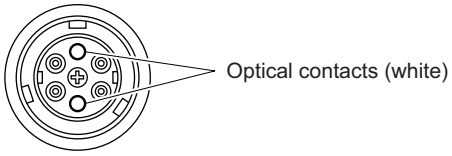
  Note

  Use a cotton swab whose diameter is about 4 mm. If a cotton swab whose diameter exceeds 5 mm is used, the cotton swab cannot be inserted into the end of the connector and the tip of the optical contact cannot be cleaned.

Cleaning Procedure

Male connector

Clean the tip of the white optical contacts with a cotton swab moistened with alcohol.



Female connector

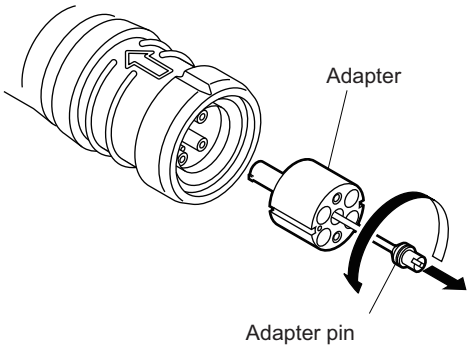
The optical contacts for female connector are in an unexposed state. In cleaning, it is necessary to be exposed by removing the adapter in the connector in advance. Proceed as follows.

1. Loosen the adapter pin at the center of the connector counterclockwise with a screwdriver.

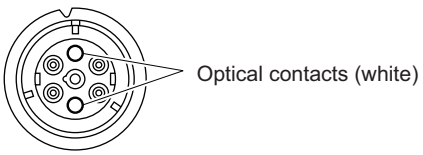
   Tip

   If there is no screwdriver, use the plate attached to the connector cap.

2. Pull the adapter pin out of the connector in the arrow direction.



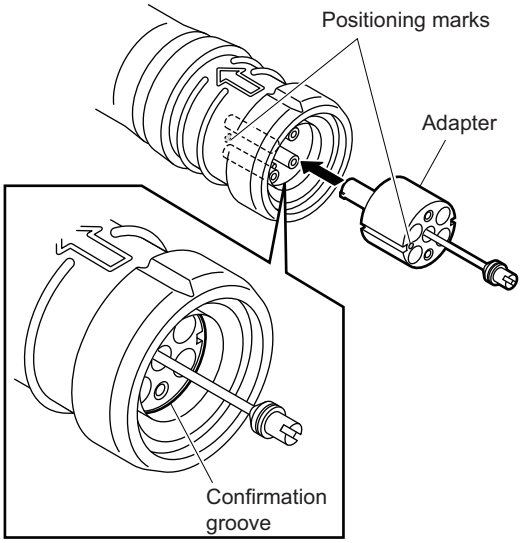
3. Clean the white optical contacts with a cotton swab moistened with alcohol.



4. Match the positioning marks of the adapter and the connector, and then push the adapter into the connector.

   Note

   Push the adapter until the confirmation groove comes in sight as shown in the figure.



5. Tighten the adapter pin clockwise until being lightly fixed.

   Note

   Do not fully tighten the adapter pin. (Extent where adapter pin is lightly fixed)

1-7-4. When the Optical Connector Cleaner (Commercially Available) is not Available (Connector)

Fixtures

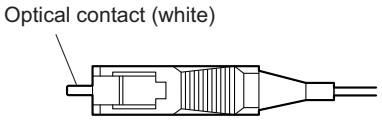
- Alcohol (commercially available)
- Cotton swabs (commercially available)

  Note

  Use a cotton swab whose diameter is about 4 mm. If a cotton swab whose diameter exceeds 5 mm is used, the cotton swab cannot be inserted into the end of the connector and the tip of the optical contact cannot be cleaned.

Cleaning Procedure

Clean the tip of the white optical contacts with a cotton swab moistened with alcohol.



1-8. Fixtures/Measuring Equipments List

1-8-1. Fixtures

Part No.	Name	Usage/Note
J-6029-140-B	Pattern box PTB-500	Camera adjustment
J-6323-430-A	Torque screwdriver's bit (M3)	Screw tightening
J-6325-110-A	Torque screwdriver's bit (M1.4)	Screw tightening
J-6325-380-A	Torque screwdriver's bit (M2)	Screw tightening
J-6325-400-A	Torque screwdriver (3 kg•cm) (0.3 N•m)	Screw tightening
J-6252-510-A	Torque screwdriver (6 kg•cm) (0.6 N•m)	Screw tightening
J-6252-520-A	Torque screwdriver (12 kg•cm) (1.2 N•m)	Screw tightening
J-6326-120-A	Hexagon bit (For torque screwdriver) (size 1.5)	Screw tightening
J-6394-080-A	Grayscale chart	Transparent type (16 : 9), Camera adjustment
J-6480-010-A	Alignment sleeve remover HC-001	For Female connector, DCC.91.312.5LA manufactured by LEMO or equivalent
J-7120-950-A	Chart adapter	Adapter that installs ITE test chart (16 : 9) 310 × 200 in PTB-500 (pattern box)
J-7120-960-A	ITE STANDARD TEST CHART	ITE high-definition resolution chart (16 : 9)
J-7120-970-A	ITE STANDARD TEST CHART	ITE high-definition grayscale chart (γ = 0.45) (16 : 9)
J-7120-980-A	ITE STANDARD TEST CHART	ITE high-definition inmega cycle chart (16 : 9)
J-7121-210-A	Connector remover	Disconnecting coaxial cables
7-600-002-52	Locking compound (TB-1401B)	Inhibits loosening of screws
Commercially available	Loctite (408)	Instant adhesives
Commercially available	Grayscale chart	Reflective type (16 : 9), Camera adjustment
Commercially available	Star chart	Reflective type, Camera adjustment
Commercially available	USB drive	Upgrading software, writing and rewriting the PLD internal data
Commercially available	TRIAX cable 50 m, 100 m, 200 m, 300 m, 400 m: φ8.5 mm	TRIAX transmission system adjustment

1-8-2. Measuring Equipments

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

Equipment	Name
Oscilloscope	Tektronix TDS460A or equivalent
HD waveform monitor	LEADER ELECTRONICS LV5150DA, LV5152DA or equivalent
Frequency counter	Advantest TR5821AK or equivalent
Digital voltmeter	Advantest TR6845 or equivalent
HD color monitor	Sony BVM-D20F1J/D14H5J or equivalent
Luminance meter	Konica Minolta LS-110 or equivalent
Spectrum analyzer	Advantest R3131A or equivalent
Signal generator	Tektronix TSG130A or equivalent
FM signal generator	Rohde & Schwarz SMHU58 or equivalent

1-9. Upgrading Software Programs

Software programs stored in the ROM (IC401) on the AT-189E board is upgraded by using a USB drive.
The software programs include camera application and operating system (OS), which is independently upgraded.
Use the following procedures to upgrade the software programs.

1-9-1. Upgrading Camera Application

Equipment Required

USB drive (commercially available)

Tip

For recommended USB drive, refer to “Using a USB Drive” in the operation manual.

Preparation

Copy the camera application update data to the USB drive using the following procedure.

Note

For how to obtain the version update data file (hsc300r_app.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HSC300R
2. Copy the version update data file “hsc300r_app.pkg” to the directory created.

Procedure

1. Connect the USB drive that contains the version update program to the USB connector of this unit.
2. Turn on the power of the unit.
3. Display the “ROM VERSION” page of the DIAGNOSIS menu.
4. Confirm that the cursor “?” is displayed to the left of page number, and then press the ENTER button long.

   Note

   The page to which “?” is displayed by the model is different.
   - HSC300R/100R: “?” is displayed in the left of D02.
   - HSC300RF/100RF: “?” is displayed in the left of D03.

5. Updatable items become selectable. Select “CAMERA APP” and then press the ENTER button.
6. A message “VERSION UP OK?” appears. Select “YES.”
7. The unit restarts automatically and the version update starts.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.
8. Turn off and on the power of the unit and confirm that the version has been updated on the “ROM VERSION” page of the DIAGNOSIS menu.

1-9-2. Upgrading OS

Equipment Required

USB drive (commercially available)

Tip

For recommended USB drive, refer to “Using a USB Drive” in the operation manual.

Preparation

Copy the OS update data to the USB drive using the following procedure.

Note

For how to obtain the version update data file (hsc300r_os.pkg), contact your local Sony Sales Office/Service Center.

1. Copy the OS update data to the USB drive using the following procedure.
   /MSSONY/PRO/CAMERA/HSC300R
2. Copy the version update data file “hsc300r_os.pkg” to the directory created.

Procedure

1. Connect the USB drive that contains the version update program to the USB connector of this unit.
2. Turn on the power of the unit.
3. Display the “ROM VERSION” page of the DIAGNOSIS menu.
4. Confirm that the cursor “?” is displayed to the left of page number, and then press the ENTER button long.

   Note

   The page to which “?” is displayed by the model is different.
   - HSC300R/100R: “?” is displayed in the left of D02.
   - HSC300RF/100RF: “?” is displayed in the left of D03.

5. Updatable items become selectable. Select “OS” and then press the ENTER button.
6. A message “VERSION UP OK?” appears. Select “YES.”
7. The unit restarts automatically and the version update starts.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.
8. Turn off and on the power of the unit and confirm that the version has been updated on the “ROM VERSION” page of the DIAGNOSIS menu.

1-10. PLD

This unit uses the PLD (Programmable Logic Device) that supports USB drive to write and rewrite the internal data.
If the part listed below needs to be replaced or to be upgraded, contact your local Sony Sales Office/Service Center.

Note

The part number of PLD (or ROM for PLD) in which data is not written yet, is shown in "7. Spare Parts".
Therefore, if part replacement is required, write the data by the following procedure.
In the case of the PLD type that runs on the program stored in external ROM, data needs not to be written only by replacing the part if the specific PLD only is defective.

1-10-1. Corresponding PLD

PLD (Ref. No./Board Name)	File Name
IC201/TG-285 IC202/TG-285*1	hsc300r_tg.pkg
IC1001/SY-430 IC1102/SY-430 *2	hsc300r_sy.pkg
IC2002/DPR-358 IC702/DPR-358 *3	hsc300r_dpr.pkg
IC301/SDI-117 IC302/SDI-117 *4	hsc300r_sdi.pkg
IC701/CD-78 IC1002/CD-78 *5	hsc300r_cd1.pkg
IC1401/CD-78 IC1403/CD-78 *6	hsc300r_cd2.pkg

1-10-2. Upgrading PLD Data

Equipment Required

USB drive (commercially available)

Tip

For recommended USB drive, refer to "Using a USB Drive" in the operation manual.

Preparation

Copy the PLD update data to the USB drive using the following procedure.

Note

For how to obtain the version update data file (hsc300r_tg.pkg, hsc300r_sy.pkg, hsc300r_dpr.pkg, hsc300r_sdi.pkg, hsc300r_cd1.pkg, hsc300r_cd2.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HSC300R
2. Copy the PLD version update data file to be updated to the directory created.

*1: IC202/TG-285 is the ROM for IC201/TG-285.
*2: IC1102/SY-430 is the ROM for IC1001/SY-430.
*3: IC702/DPR-358 is the ROM for IC2002/DPR-358.
*4: IC302/SDI-117 is the ROM for IC301/SDI-117.
*5: IC1002/CD-78 is the ROM for IC701/CD-78.
*6: IC1403/CD-78 is the ROM for IC1401/CD-78.

Procedure

1. Connect the USB drive that contains the version update program.
2. Turn on the power of the unit.
3. Display the “ROM VERSION” page of the DIAGNOSIS menu.
4. Confirm that the cursor “?” is displayed to the left of page number, and then press the ENTER button long.

   Note

   The page to which “?” is displayed by the model is different.
   - HSC300R/100R: “?” is displayed in the left of D02.
   - HSC300RF/100RF: “?” is displayed in the left of D03.

5. Updatable items become selectable. Select the PLD to be upgraded and then press the ENTER button.
6. A message “VERSION UP OK?” appears. Select “YES.”
7. The unit restarts automatically and the version update starts.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.
8. Turn off and on the power of the unit and confirm that the version has been updated on the “ROM VERSION” page of the DIAGNOSIS menu.

1-11. Forced Version Update

If the version of program or data cannot be updated from the ROM VERSION page of the DIAGNOSIS menu, the software or PLD data version can be updated by the “forced version update.”

1-11-1. Forced Version Update of Software or PLD Data

Equipment Required

USB drive (commercially available)

Tip

For recommended USB drive, refer to “Using a USB Drive” in the operation manual.

Preparation

Copy the software or PLD data version update data file to the USB drive using the following procedure.

Note

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

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HSC300R
2. Copy the version update data file to be updated to the directory created.

   Note

   Do not copy software or PLD data that is not to be updated.

Procedure

1. Connect the USB drive that contains the version update program.
2. Turn on the power of the unit while pressing the RET button on the front of the unit and the rotary encoder on the front of the unit.
   The version of each version update data file copied in the USB drive is updated.

   Tip

   The version update progress status is displayed on the viewfinder.
3. Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.
4. Turn off and on the power of the unit and confirm that the version has been updated on the “ROM VERSION” page of the DIAGNOSIS menu.

1-12. Intercom Settings

Since there are several types and usages of the headset for intercom, make appropriate settings for each type.

1-12-1. Talk (Microphone) Settings

Check characteristics of the microphone attached to the headset and make settings by the menu of the unit. Microphone sensitivity, power supply method, balanced/unbalanced input can be set.

General Carbon Microphone

1. Set INTERCOM MIC on the HEAD SET page of the OPERATION menu to “CARBON”.
   Microphone sensitivity, power supply method, balanced/unbalanced input are automatically set.

General Dynamic Microphone

1. Set INTERCOM MIC on the HEAD SET page of the OPERATION menu to “DYNAMIC”.
2. Set “UNBAL” on the HEAD SET page according to the microphone.
   Microphone sensitivity and power supply method are automatically set.

Other Microphones

1. Set INTERCOM MIC on the HEAD SET page of the OPERATION menu to “MANUAL”.
2. Set the following items on the HEAD SET page according to the microphone to be used.
   - LEVEL (microphone sensitivity)
   - POWER (power supply method)
   - UNBAL (balanced/unbalanced input)

1-12-2. Receive (Headphone) Settings

Headphone operation varies depending on the headset connection.
The following description is provided when the right ear is connected to Pin 5 of the intercom connector and the left ear is connected to Pin 4 of the intercom connector.

In the Case of Dual-type Headphone to Listen the Same Sound with Both Ears or Single-type Headphone

1. Set “INTERCOM RECEIVE SELECT” on the INTERCOM page of the OPERATION menu to “MIX”. The same sound is output from right and left.

In the Case of Dual-type Headphone to Listen Different Right and Left Sound

1. Set “INTERCOM RECEIVE SELECT” on the INTERCOM page of the OPERATION menu to “SEPARATE”.
2. Set channels (left, right, and both) of items INTERCOM, PGM1, PGM2, and TRACKER on the INTERCOM page.

To Adjust the Volume of Your Voice

1. Set volume in SIDE TONE on the INTERCOM page of the OPERATION menu.

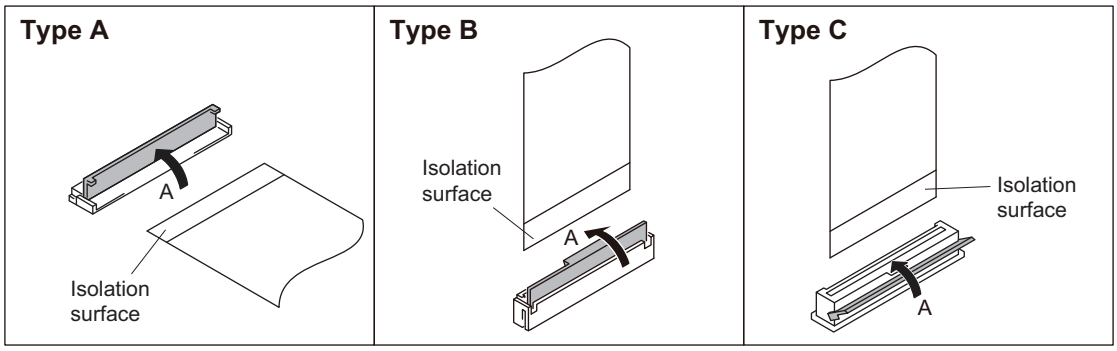
1-13. Flexible Card Wire and Coaxial Cable

1-13-1. Connecting/Disconnecting 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 conductor side and insulated side. If the flexible card wire is connected in the wrong orientation of the conductor side and the insulated side, the circuit will not function.
- Insert the flexible card wire straight.
- Check that the conductive surface of the flexible card wire is not contaminated.

Type A to C



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. Insert the flexible card wire firmly as far as it will go with the insulating surface facing upward.
2. Close the latch of the connector in the direction of arrow B to lock the flexible card wire.

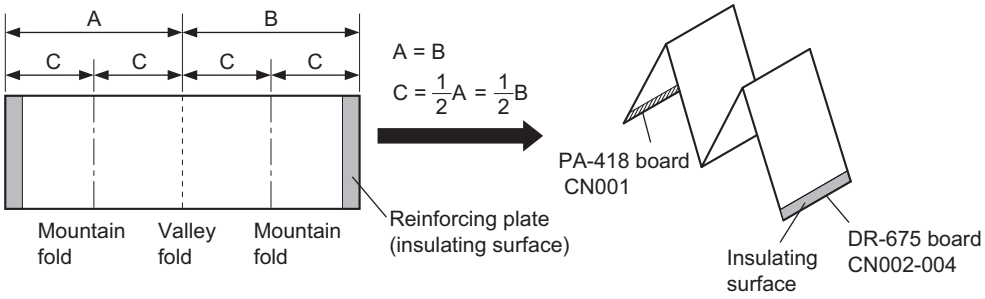
1-13-2. Forming Flexible Card Wire

Before installing a new flexible card wire for repair, fold it by hand according to the following figures.

Note

Never fold it back after being formed once.

- PA-418 board CN001 ↔ DR-675 board CN002
- PA-418 board CN001 ↔ DR-675 board CN003
- PA-418 board CN001 ↔ DR-675 board CN004



1-13-3. Connecting/Disconnecting Coaxial Cable

Type A

Note

Be sure to observe the disconnecting and connecting procedures below to prevent wire disconnection or poor contact.

Fixtures

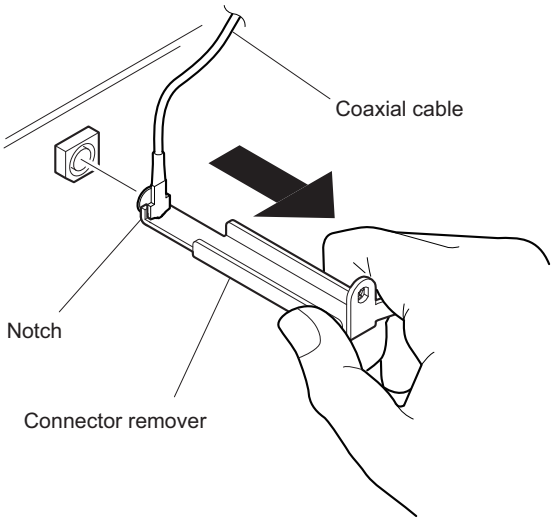
- Connector remover (Part No: J-7121-210-A)

Disconnecting

1. Fit the notch at the end of the connector remover into the connector of a coaxial cable, and pull the connector remover straight.

   Note

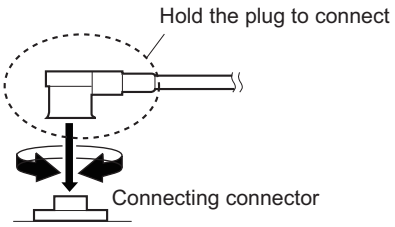
   - Insert the notch of the connector remover from the opposite side of the cable of the coaxial cable.
   - Do not attempt to pull the cable.



Connecting

1. Hold the plug of the coaxial cable.

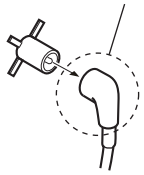
2. Push the plug perpendicularly to the connector while slightly turning the plug clockwise and counterclockwise.



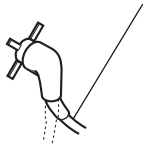
Type B

Disconnecting

OK Hold the plug to remove.



NG Do not attempt to remove by pulling the cable.

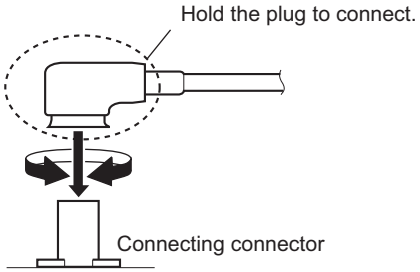


1. Hold the plug of coaxial cable.
2. Pull out the coaxial cable in the direction arrow.

Note

Be sure to hold the plug when disconnecting the coaxial cable. Do not pull the cable.

Connecting

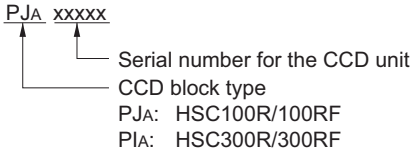


1. Hold the plug of coaxial cable.
2. Connect the coaxial cable perpendicularly to the connector. Push the plug into the connector while turning it clockwise and counterclockwise several times.

1-14. Description of CCD Block Number

Every OHB assembly has its own ID number called CCD block number. It shows the CCD block type and serial number for the CCD block.
The CCD block number label is put in the OHB assembly.

Example: PJA xxxxx



1-15. Circuit Protection Parts

1-15-1. Fuses

WARNING

Fuses are essential parts for safe operation. Be sure to use the parts specified in this manual. Replacing a fuse with an unspecified one may cause fire or electric shock.

CAUTION

Replacing any fuse is replaced while power is supplied to the unit may cause electric shock. Before replacing any fuse, turn off the POWER switch and also disconnect the battery pack and the cable from the DC IN connector.

This unit is equipped with fuses. The fuses blow if overcurrent flows in the unit due to an abnormality, In that case, turn off the power of the unit, inspect inside of the unit, and then remove the cause of the overcurrent. After that, replace the defective parts.

Board Name	Ref. No.	Address	Part No.	Part Name/Rating
PS-879	F101	E2 (Side A)	⚠ 1-523-181-11	Fuse (SMD) 3.15 A/600 V
	F102	E3 (Side A)	⚠ 1-523-181-11	Fuse (SMD) 3.15 A/600 V
	F3001	D3 (Side A)	⚠ 1-576-566-21	Fuse (SMD) 15 A/65 V
	R153	D1 (Side A)	⚠ 1-246-193-11	Square type fuse resistor 10 Ω, 0.063 W
	R244	D2 (Side A)	⚠ 1-246-193-11	Square type fuse resistor 10 Ω, 0.063 W
	R245	D2 (Side A)	⚠ 1-246-193-11	Square type fuse resistor 10 Ω, 0.063 W
	R246	D2 (Side A)	⚠ 1-246-193-11	Square type fuse resistor 10 Ω, 0.063 W
	R247	D2 (Side A)	⚠ 1-246-193-11	Square type fuse resistor 10 Ω, 0.063 W

1-15-2. 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.	Address	Part No.	Hold Current
CN-3643	THP1	— (Side A)	⚠ 1-802-108-11	1.50 A/20 °C
	THP2	— (Side A)	⚠ 1-802-108-11	1.50 A/20 °C
MB-1207	THP1	— (Side A)	⚠ 1-802-108-11	1.50 A/20 °C
	THP2	— (Side A)	⚠ 1-802-108-11	1.50 A/20 °C
	THP3	— (Side A)	⚠ 1-802-108-11	1.50 A/20 °C
	THP4	— (Side A)	⚠ 1-802-108-11	1.50 A/20 °C

Continued

Board Name	Ref. No.	Address	Part No.	Hold Current
	THP5	— (Side A)	⚠ 1-806-615-21	0.50 A/20 °C
PS-879	THP101	C1 (Side A)	⚠ 1-802-108-11	1.50 A/20 °C
RE-319	THP601	B3 (Side A)	⚠ 1-806-615-21	0.50 A/20 °C
	THP602	A1 (Side B)	⚠ 1-803-353-21	0.14 A/20 °C
	THP603	B1 (Side B)	⚠ 1-803-615-21	0.50 A/20 °C
	THP604	A3 (Side B)	⚠ 1-803-615-21	0.50 A/20 °C
	THP605	B3 (Side B)	⚠ 1-803-615-21	0.50 A/20 °C
	THP606	A3 (Side A)	⚠ 1-802-063-21	1.10 A/20 °C
SY-430	THP1	B3 (Side A)	⚠ 1-802-063-21	1.10 A/20 °C
	THP101	D3 (Side A)	⚠ 1-803-615-21	0.50 A/20 °C
	THP102	D2 (Side B)	⚠ 1-803-615-21	0.50 A/20 °C
	THP103	D2 (Side B)	⚠ 1-803-615-21	0.50 A/20 °C

1-16. 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

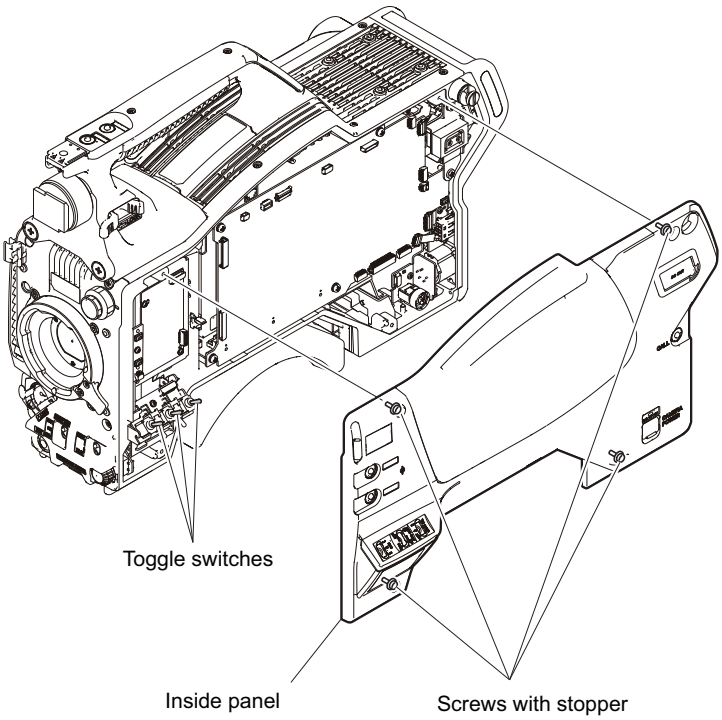
- The lead-free solder melts at a temperature about 40 °C higher than the ordinary solder, therefore, it is recommended to use the soldering iron having a temperature regulator.
- The ordinary soldering iron can be used but the iron tip has to be applied to the solder joint for a slightly longer time.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

Section 2
Replacement of Main Parts

2-1. Inside Panel

Procedure

1. Loosen the four screws with stopper to detach the inside panel.



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

Note

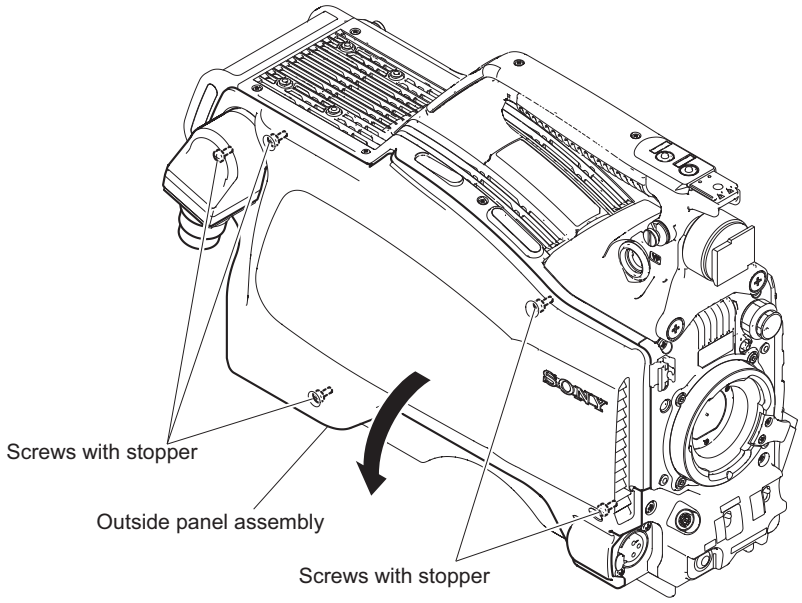
Turn all the toggle switches to the front side, and then attach the inside panel.

2-2. Outside Panel Section (TRIAX)

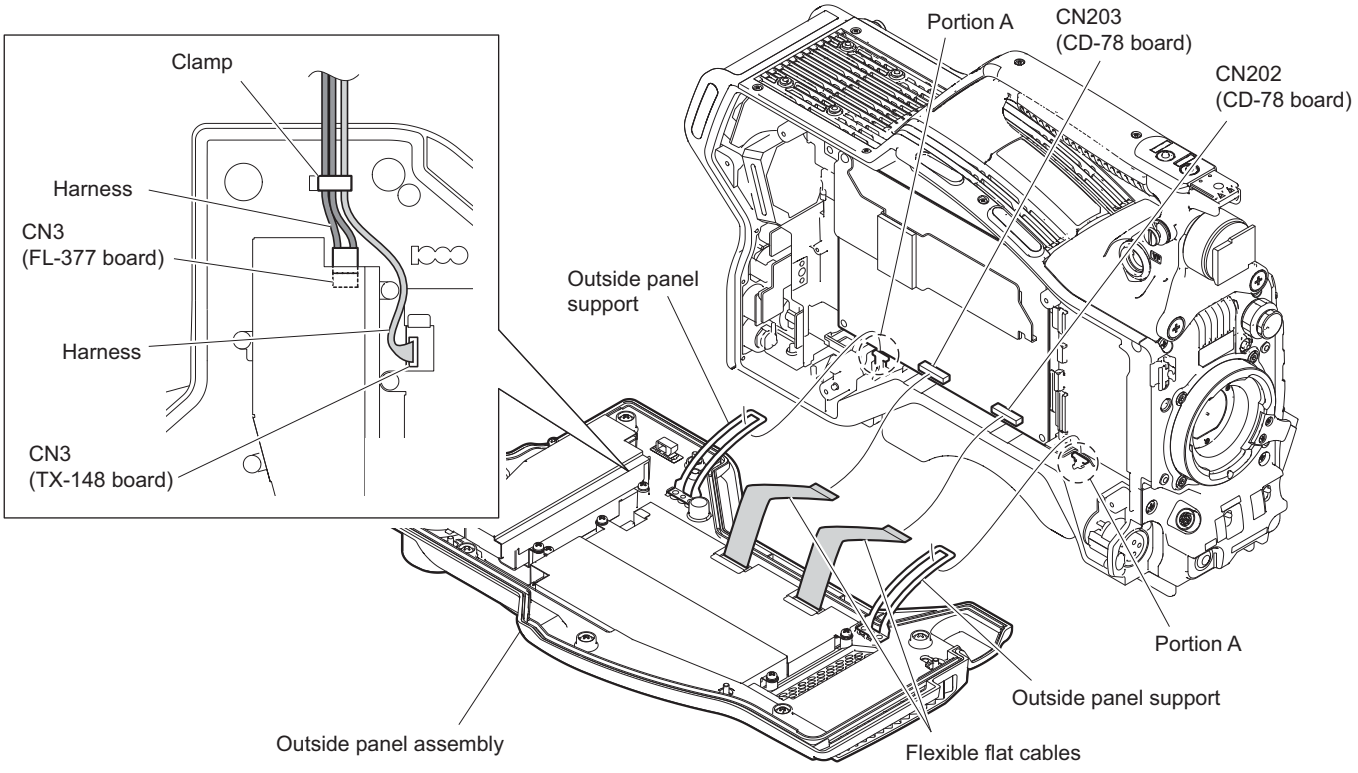
2-2-1. Outside Panel Assembly (TRIAX)

Procedure

1. Loosen the five screws with stopper and open the outside panel assembly in the arrow direction.



2. Disconnect the two flexible flat cables from the two connectors (CN202, CN203) on the CD-78 board.
3. Open the clamp.
4. Disconnect the harness from the connector (CN3) on the TX-148 board.
5. Disconnect the harness from the connector (CN3) on the FL-377 board.
6. Remove the two outside panel supports from the portions A and remove the outside panel assembly.



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

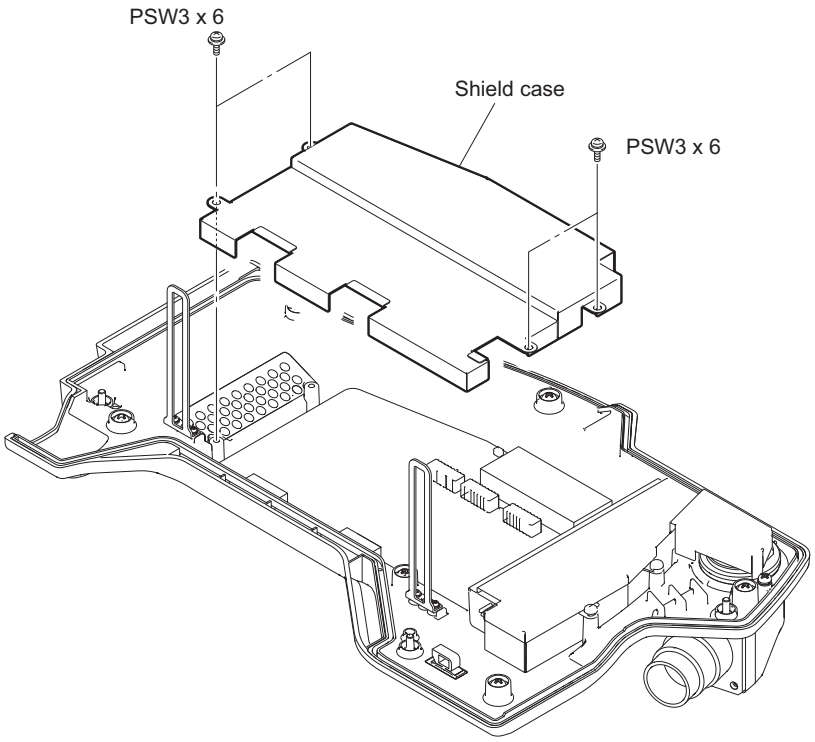
2-2-2. TX-148 Board (TRIAX)

Preparation

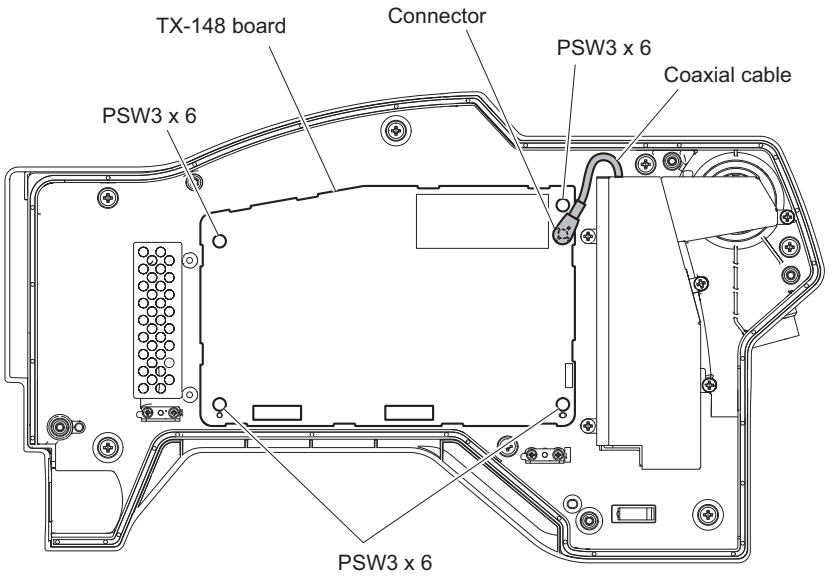
1. Remove the outside panel assembly. (Refer to"2-2-1. Outside Panel Assembly (TRIAX)")

Procedure

1. Remove the four screws to detach the shield case.



2. Disconnect the coaxial cable from the connector on the TX-148 board.
3. Remove the four screws to detach the TX-148 board.



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

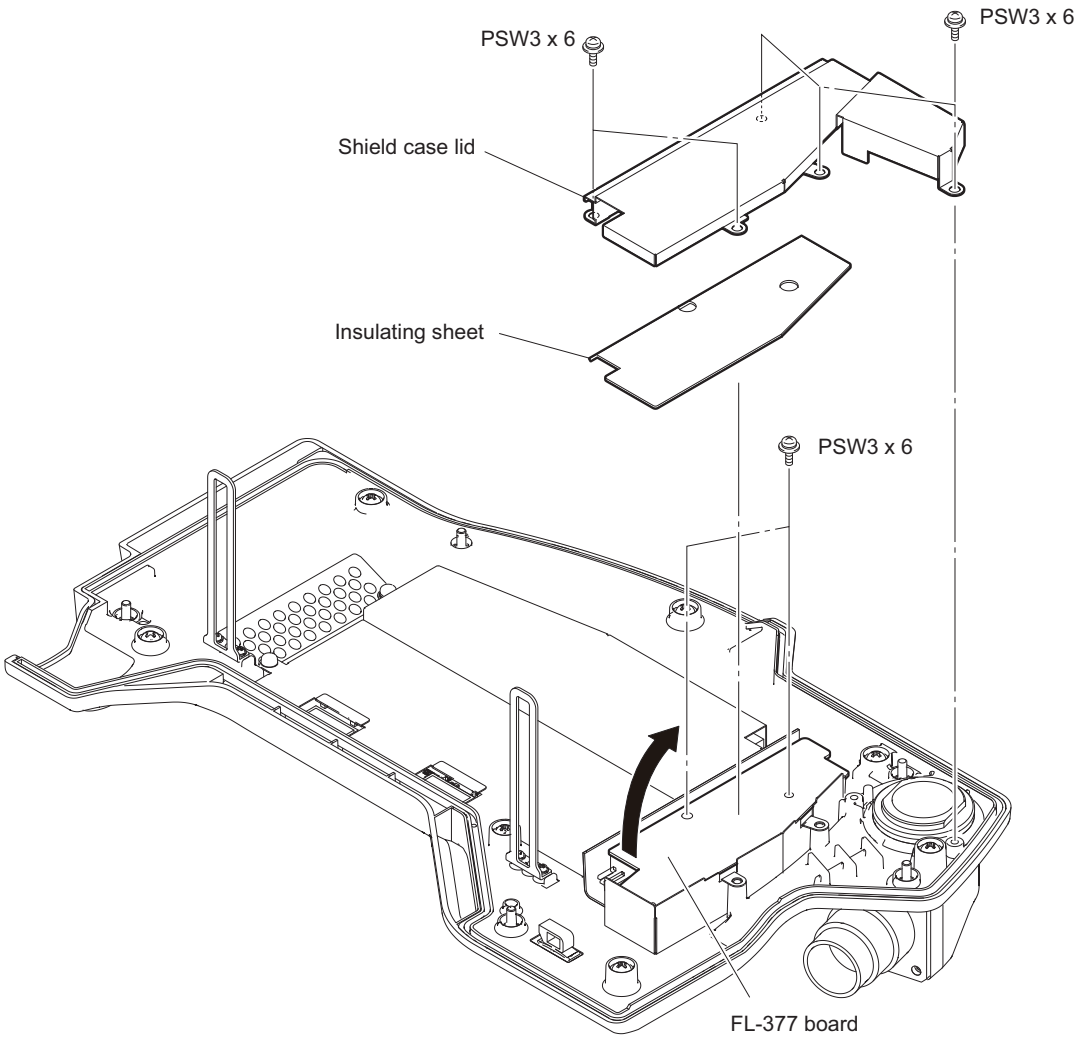
2-2-3. FL-377 Board/TRIAX CN Assembly (TRIAX)

Preparation

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

Procedure

1. Remove the five screws to detach the shield case lid.
2. Remove the insulating sheet.
3. Remove the two screws to open the FL-377 board in the direction of the arrow.

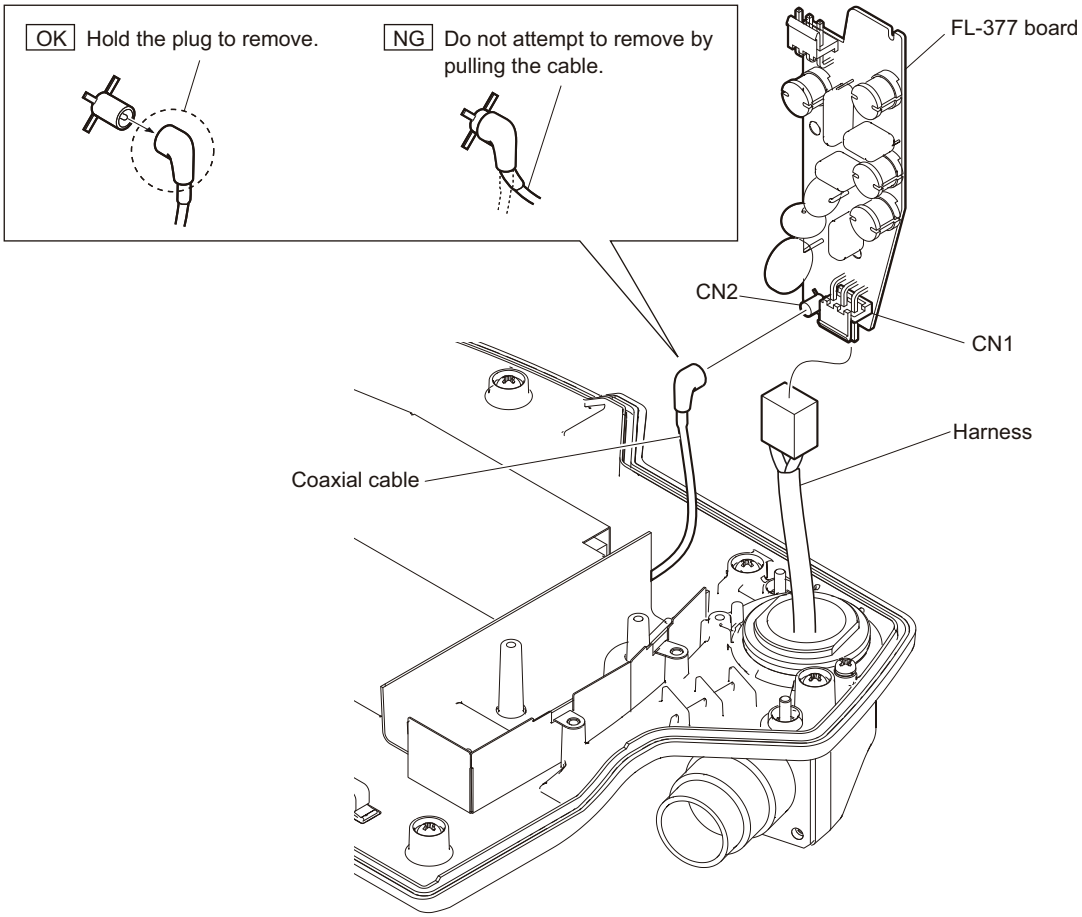


4. Disconnect the coaxial cable from the connector (CN2) on the FL-377 board.

5. Disconnect the harness from the connector (CN1) on the FL-377 board.

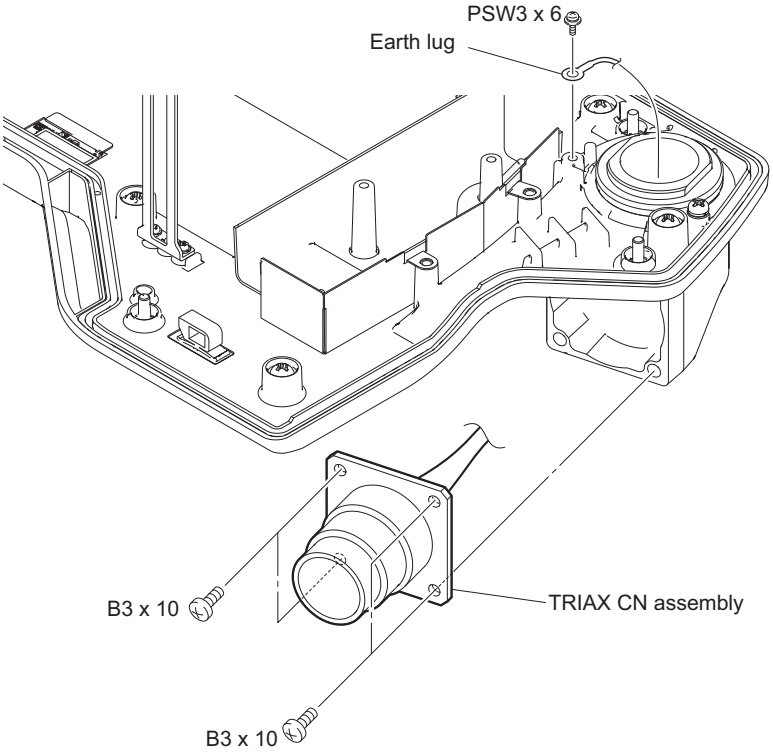
Note

Be sure to hold the plug when disconnecting the coaxial cable. Do not pull the cable.



6. Remove the screw (PSW3 x 6) to detach the earth lug.

7. Remove the four screws (B3 x 10) to detach the TRIAX CN assembly.



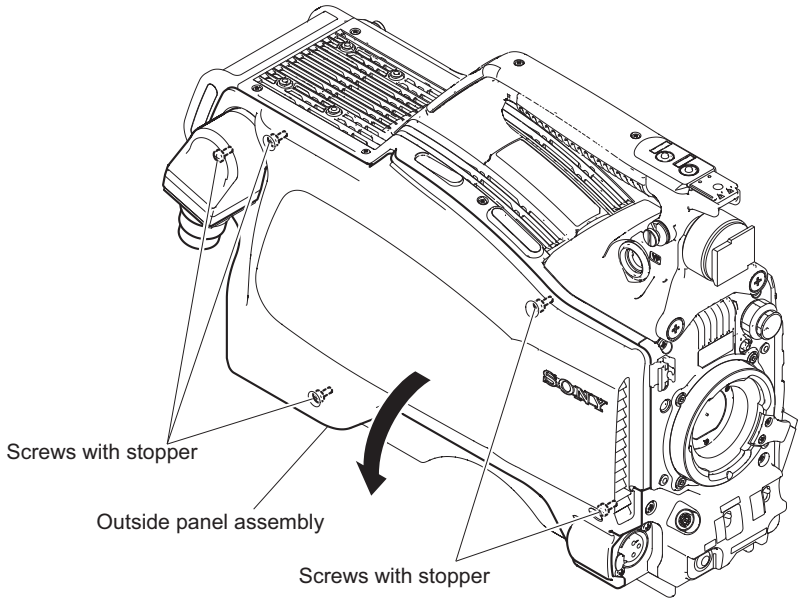
8. Install the removed parts by reversing the steps of removal.

2-3. Outside Panel Section (Fiber)

2-3-1. Outside Panel Assembly (Fiber)

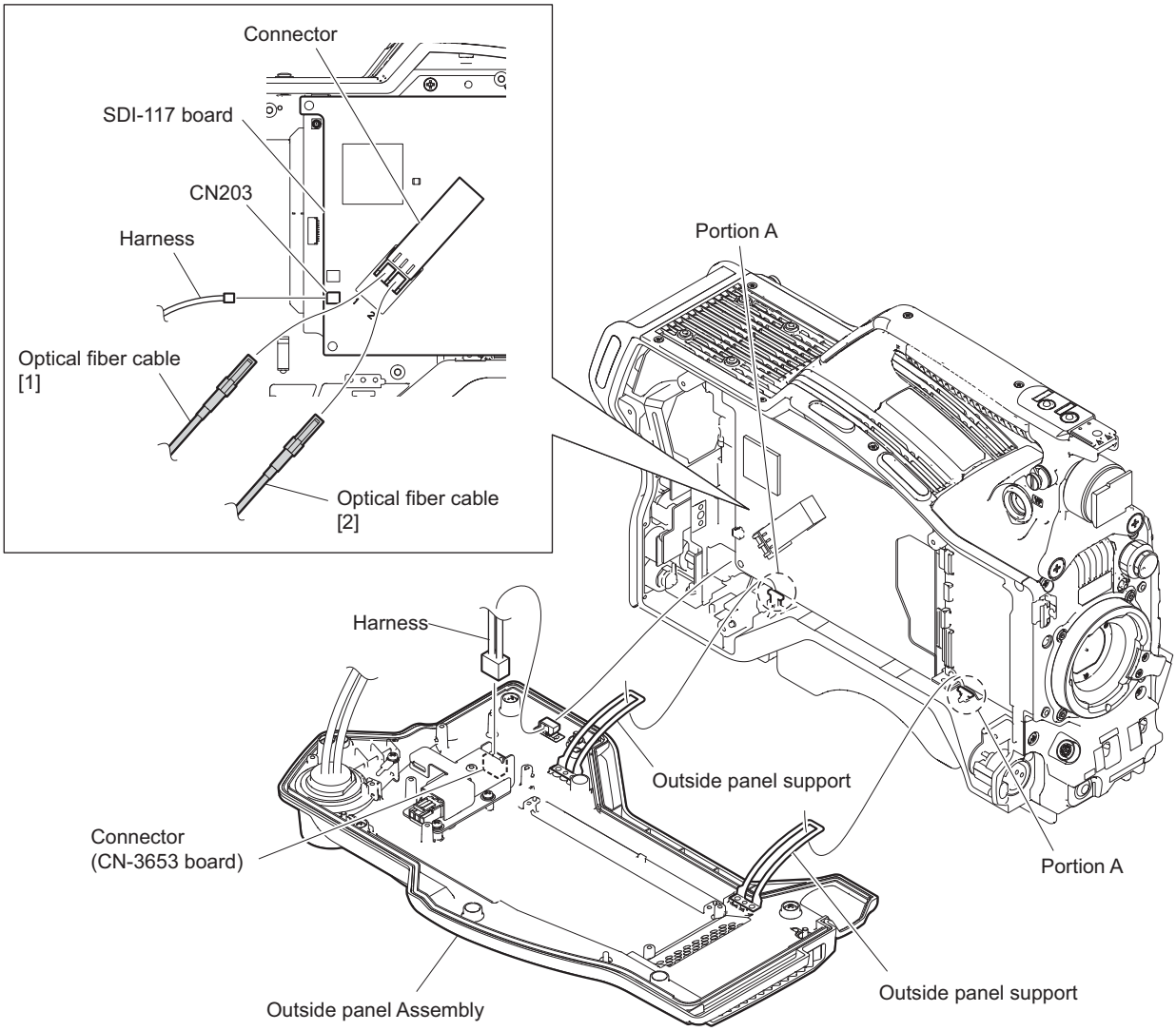
Procedure

1. Loosen the five screws with stopper and open the outside panel assembly in the direction of the arrow.



2. Disconnect the two optical fiber cables from the connectors on the SDI-117 board.
3. Disconnect the harness from the connector (CN203) on the SDI-117 board.
4. Disconnect the harness from the connector on the CN-3653 board.

5. Remove the two outside panel supports from the portions A and remove the outside panel assembly.



Note

- When reconnecting the optical fiber cables, check their numbers [1],[2] and connect them correctly and securely insert the optical fiber cables to the end of respective connectors.
- After the optical fiber cable is unplugged, cover the tip of the optical fiber cable assembly with a cap or the like to prevent adhesion of dust and foreign objects.

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

2-4. CCD Section

2-4-1. CCD Unit (HSC300R/300RF)

Note

Do not replace the CCD unit with the power turned on.
Before replacing the CCD unit, be sure to turn off the power switch and disconnect the TRIAX/optical fiber cable or the cable connected to the DC IN connector.

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"

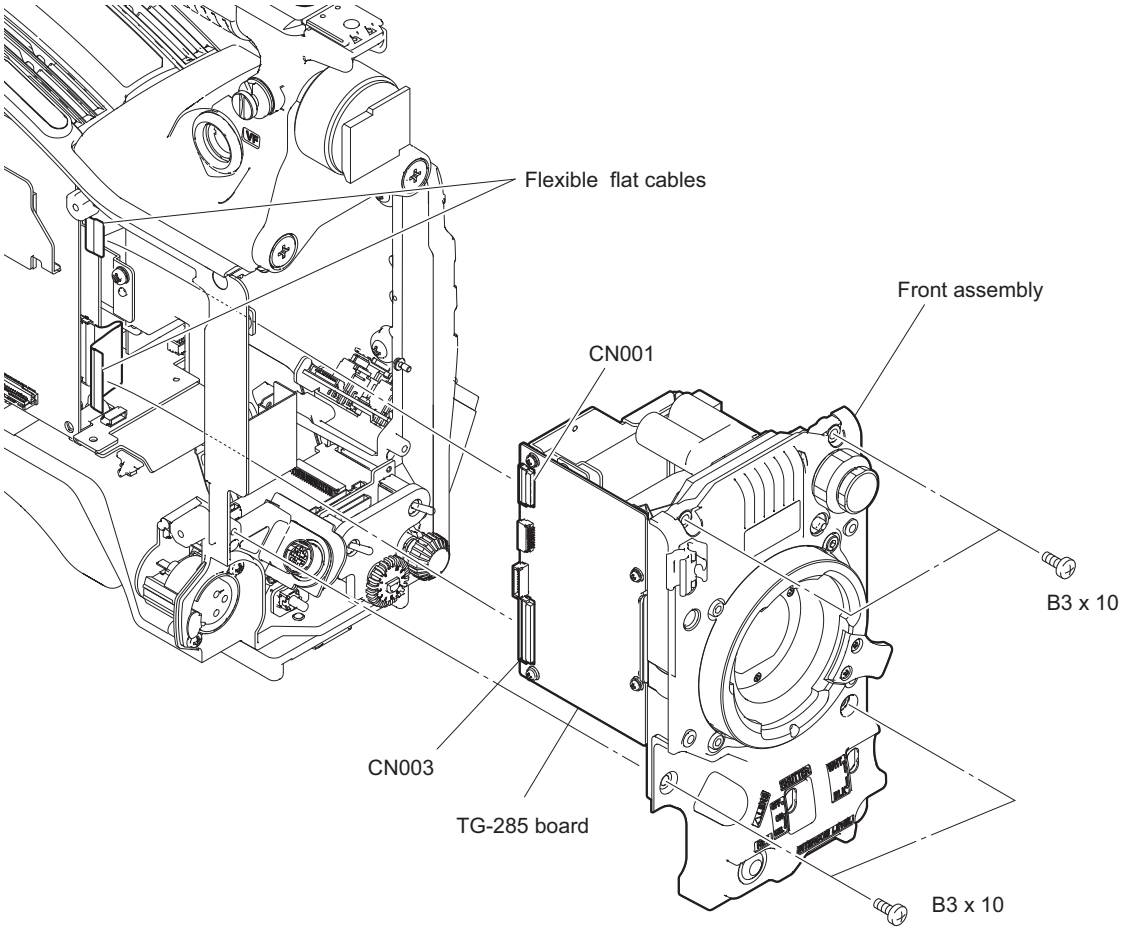
Procedure

1. Disconnect the two flexible flat cables from the two connectors (CN001, CN003) on the TG-285 board.

   Note

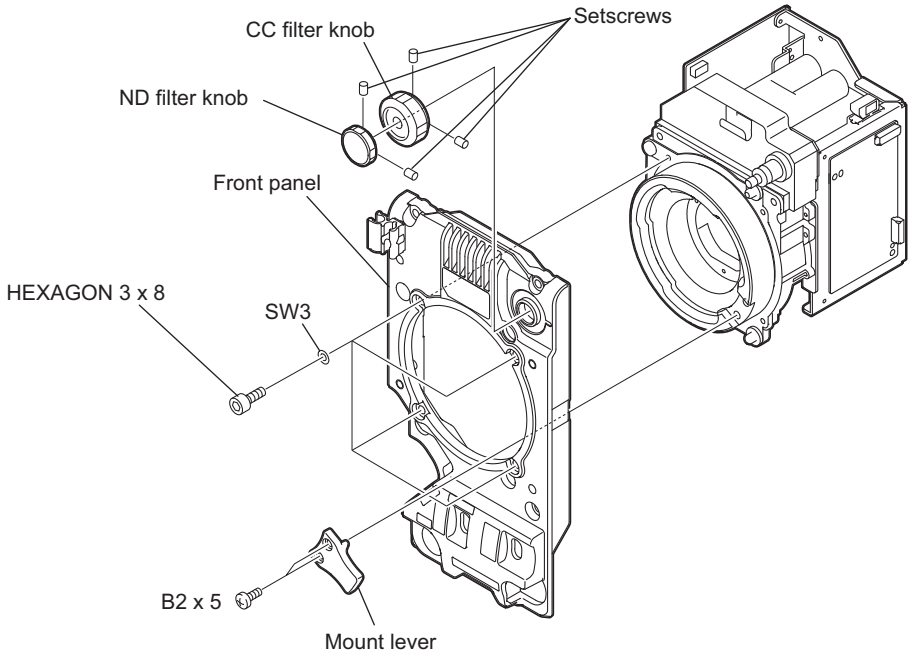
   Be careful not to bend the flexible flat cable. This shortens the wire life.

2. Remove the four screws to detach the front assembly.



3. Remove the two screws to detach the mount lever.
4. Loosen the two setscrews to detach the ND filter knob.
5. Loosen the two setscrews to detach the CC filter knob.

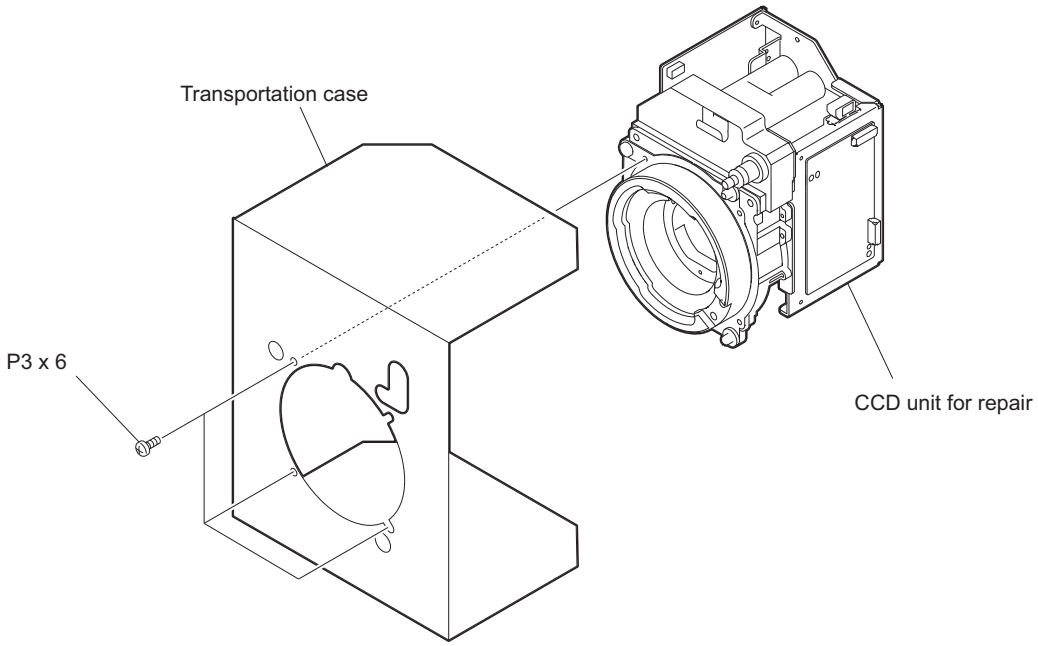
6. Remove the four hexagon cap screws and four spring washers to detach the front panel.



Note

Apply threadlocker to the setscrews, then tighten them.

7. Remove the three screws and remove the transportation case from the CCD unit for repair (option).



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

Work after replacement

Perform the following after the CCD unit is replaced.

- Refer to"3-3. Electrical Alignment"
- Refer to"3-6. RPN Compensation"
- Refer to"5-7. OHB File"

2-4-2. CCD Unit (HSC100R/100RF)

Note

Do not replace the CCD unit with the power turned on.
Before replacing the CCD unit, be sure to turn off the power switch and disconnect the TRIAX/optical fiber cable or the cable connected to the DC IN connector.

Preparation

1. Remove the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"

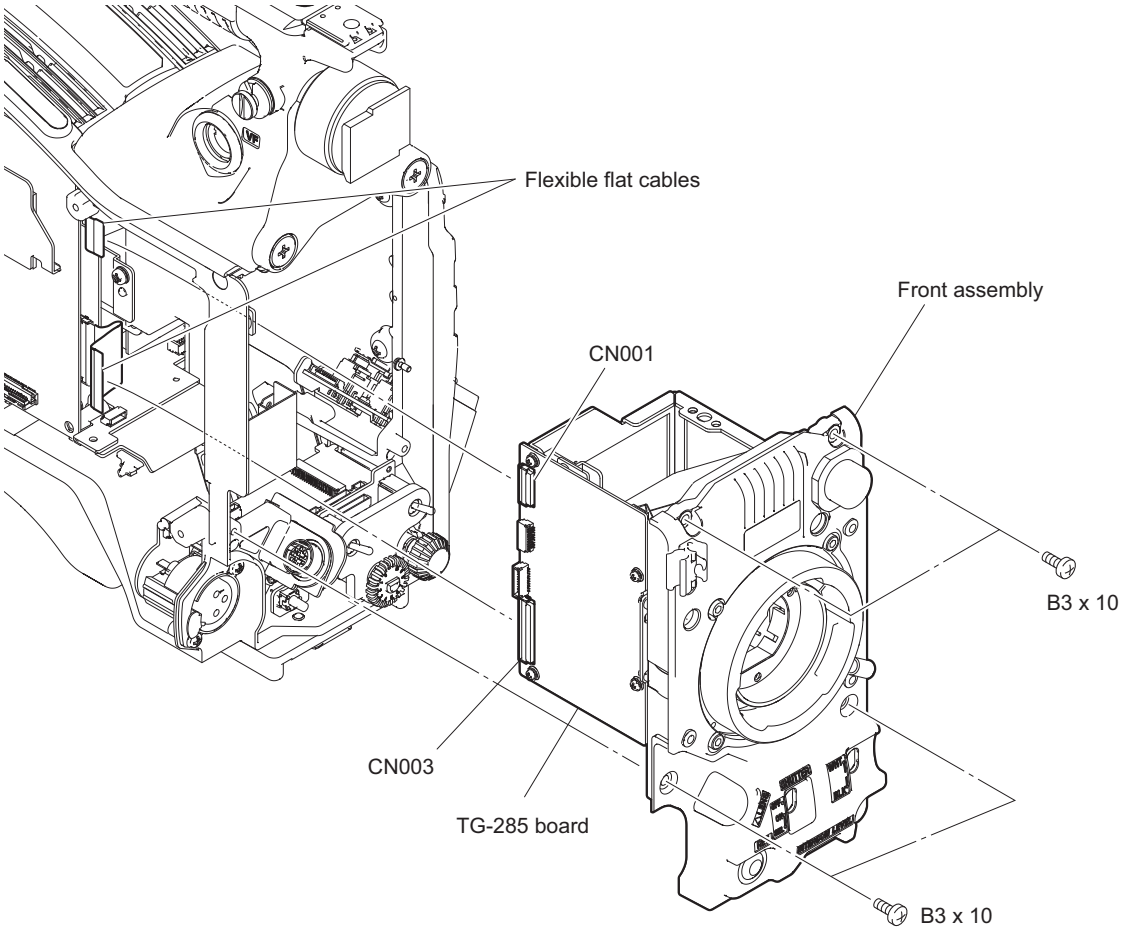
Procedure

1. Disconnect the two flexible flat cables from the two connectors (CN001, CN003) on the TG-285 board.

   Note

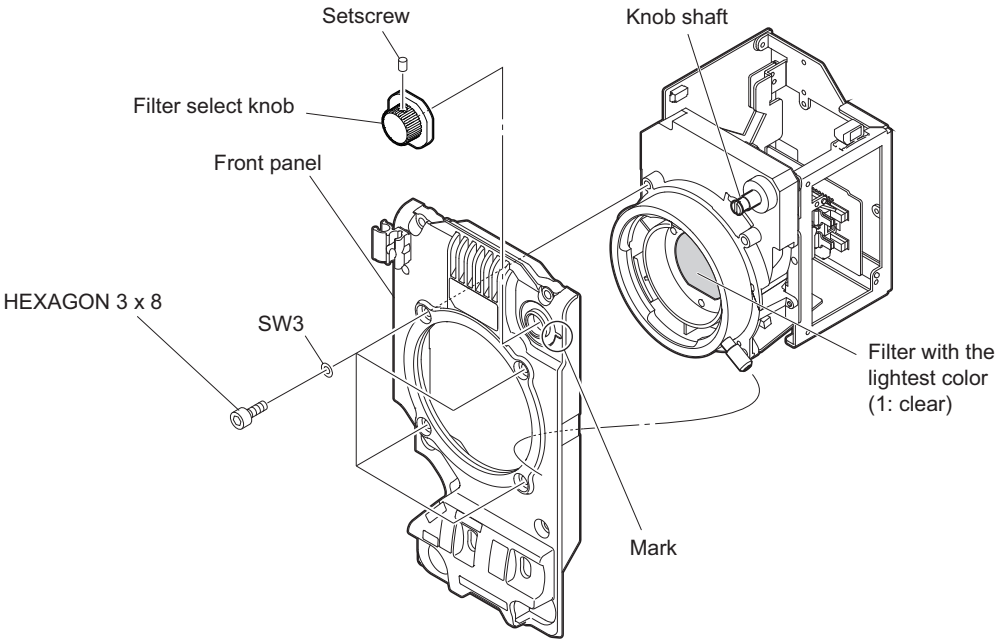
   Be careful not to bend the flexible card wire. This shortens the wire life.

2. Remove the four screws to detach the front assembly.



3. Loosen the setscrew to detach the filter select knob.

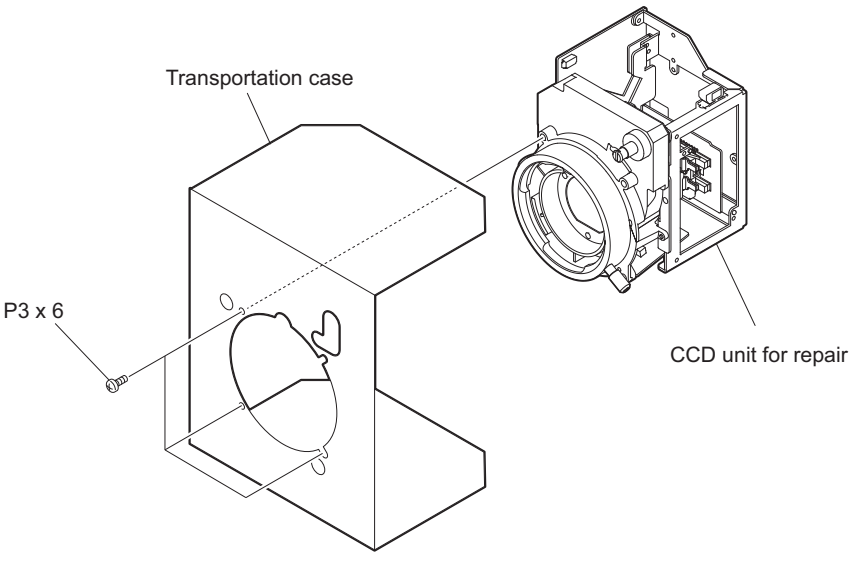
4. Remove the four hexagon cap screws and the four spring washers to detach the front panel.



Note

- Attach the filtr select knob using the following steps.
  (1) Turn the knob shaft to a position where the filter with the lightest color (1: clear) appears when viewed from the lens mount section.
  (2) Match the filter select knob number 1 with the mark on the front panel, and secure the knob with a setscrew.
- Apply threadlocker to the setscrew, then tighten them.

5. Remove the three screws and remove the transportation case from the CCD unit for repair (option).



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

Work after replacement

Perform the following after the CCD unit is replaced.

- Refer to"3-3. Electrical Alignment"
- Refer to"3-6. RPN Compensation"
- Refer to"5-7. OHB File"

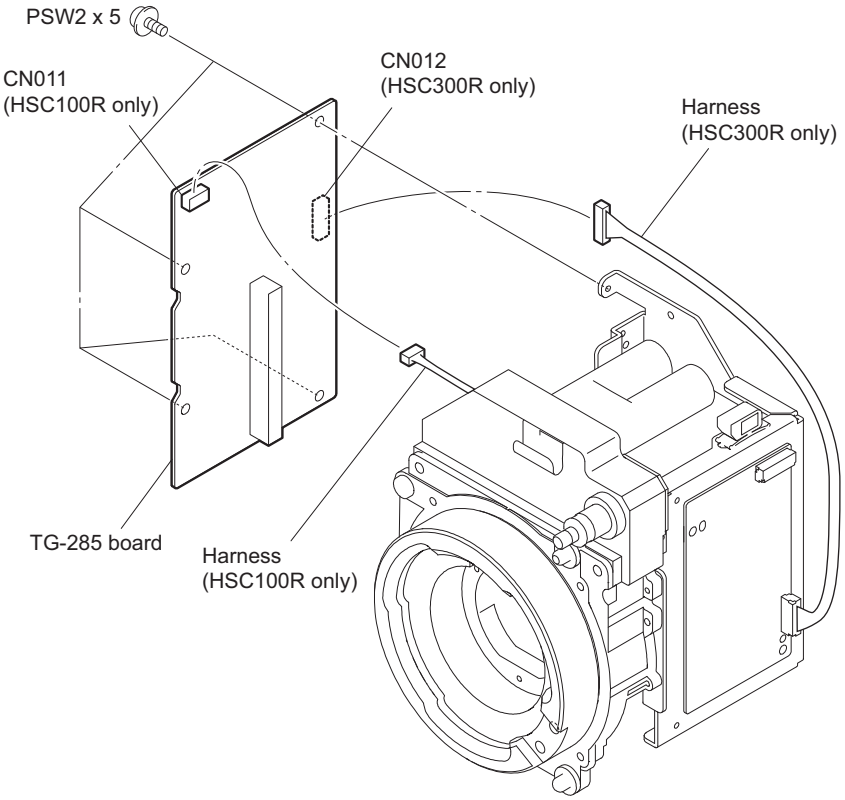
2-4-3. TG-285 Board

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
2. Remove the CCD unit.
   - HSC300R/300RF: Refer to"2-4-1. CCD Unit (HSC300R/300RF)"
   - HSC100R/100RF: Refer to"2-4-2. CCD Unit (HSC100R/100RF)"

Procedure

1. Disconnect the harness from the connector (CN012) on the TG-285 board. (HSC300R only)
2. Disconnect the harness from the connector (CN011) on the TG-285 board. (HSC100R only)
3. Remove the four screws to detach the TG-285 board.



4. Install the removed parts by reversing the steps of removal.
5. Perform "Actions to Be Taken during Board Replacement and after Board Replacement/Repair". (Refer to "1-4. Notes on Replacement of Parts and Circuit Board")

2-4-4. DR-675 Board

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
2. Remove the CCD unit.
   - HSC300R/300RF: Refer to"2-4-1. CCD Unit (HSC300R/300RF)"
   - HSC100R/100RF: Refer to"2-4-2. CCD Unit (HSC100R/100RF)"
3. Remove the TG-285 board. (Refer to"2-4-3. TG-285 Board")

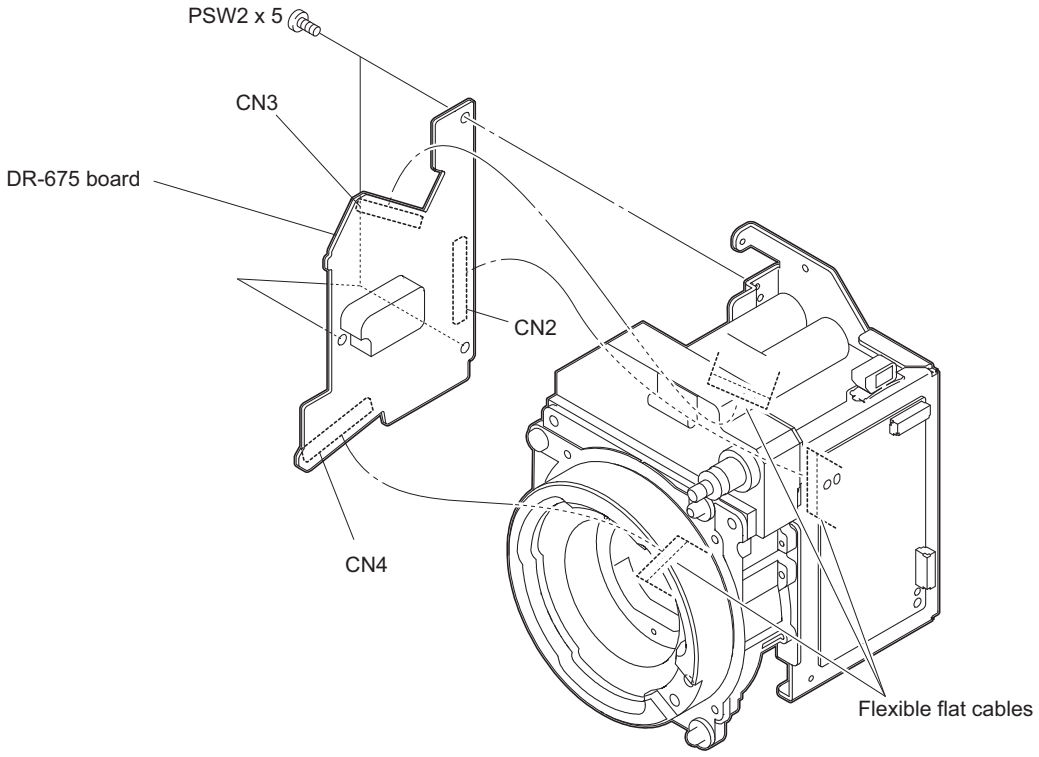
Procedure

1. Disconnect the three flexible flat cables from the three connectors (CN2, CN3, CN4) on the DR-675 board.

   Note

   Be careful not to bend the flexible flat cable. This shortens the wire life.

2. Remove the three screws to detach the DR-675 board.



3. Install the removed parts by reversing the steps of removal.
4. Perform "Actions to Be Taken during Board Replacement and after Board Replacement/Repair". (Refer to "1-4. Notes on Replacement of Parts and Circuit Board")

2-4-5. Filter Servo Board/Filter Disk (HSC300R/300RF)

Note

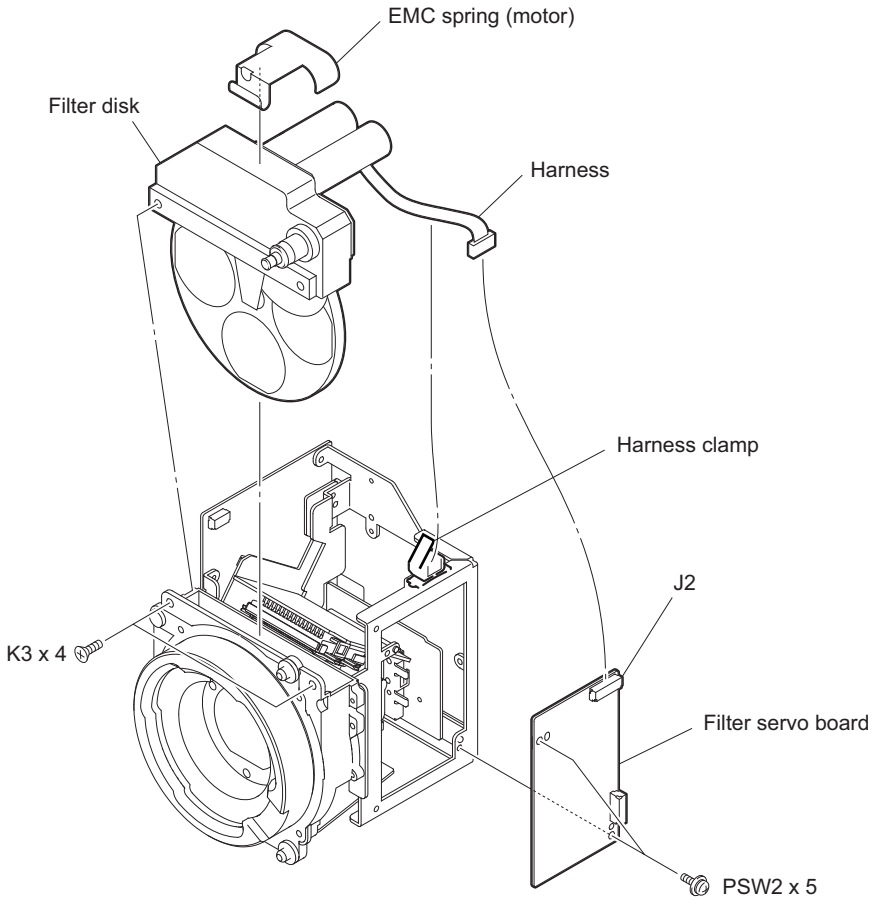
When replacing the filter servo board, replace the filter disk unit with the filter servo board contained.

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
2. Remove the CCD unit. (Refer to"2-4-1. CCD Unit (HSC300R/300RF)")

Procedure

1. Open the filter clamp.
2. Disconnect the harness from the connector (J2) on the filter servo board.
3. Remove the two screws (PSW2 x 5) to detach the filter servo board.
4. Remove the two screws (K3 x 4) to detach the filter disk.
5. Remove the EMC spring (motor).



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

2-4-6. PA-418 Board

Note

The PA-418 board is not a spare part. When replacing the PA-418 board, replace the CCD unit with the PA-418 board contained.

Tip

This unit uses three PA-418 boards (for channels R, G, and B). The following describes the procedure of removing the PA-418 board of channel G as an example.

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
2. Remove the CCD unit.
   - HSC300R/300RF: Refer to"2-4-1. CCD Unit (HSC300R/300RF)"
   - HSC100R/100RF: Refer to"2-4-2. CCD Unit (HSC100R/100RF)"
3. Remove the TG-285 board. (Refer to"2-4-3. TG-285 Board")
4. Remove the DR-675 board. (Refer to"2-4-4. DR-675 Board")
5. Remove the filter servo board. (Refer to"2-4-5. Filter Servo Board/Filter Disk (HSC300R/300RF)")

Procedure

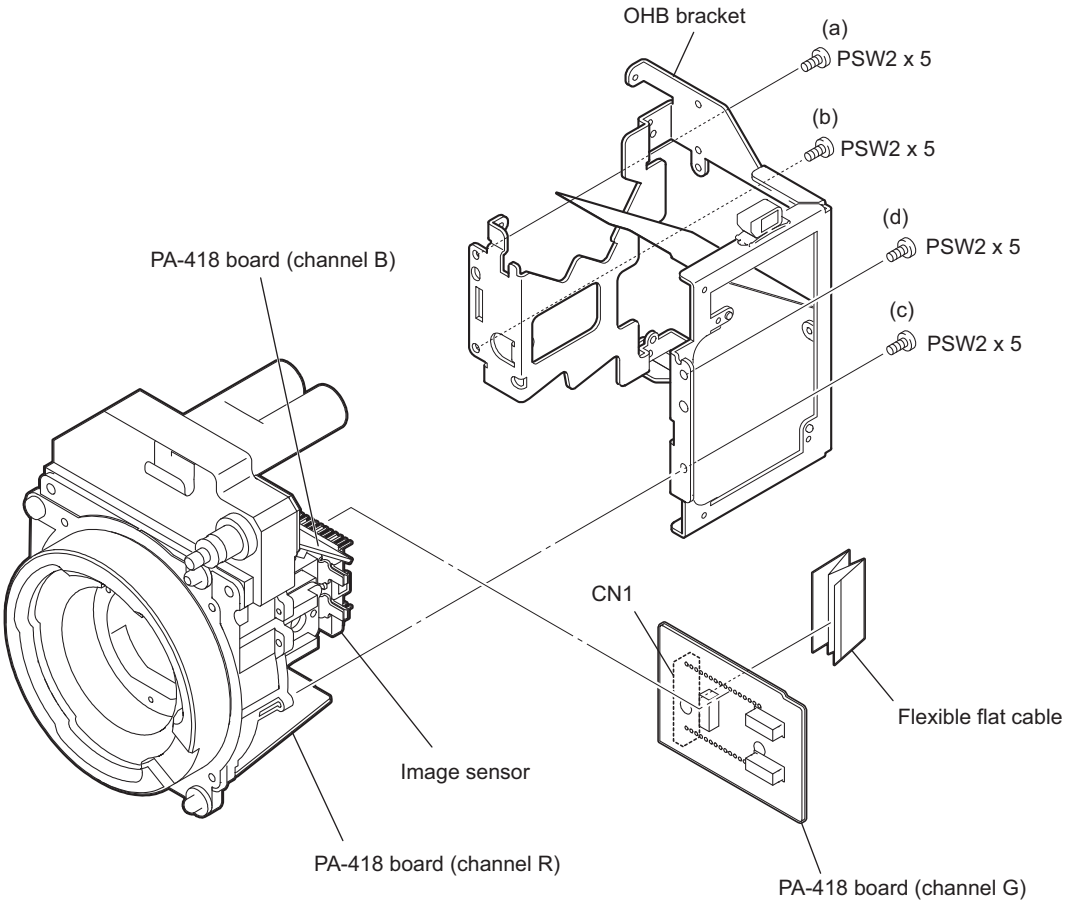
1. Disconnect the flexible flat cable wire from the connector (CN1) on the PA-418 board (channel G).

   Note

   Be careful not to bend the flexible flat cable. This shortens the wire life.

2. Remove the four screws to detach the OHB bracket.

3. Unsolder the pins of the image sensor to detach the PA-418 board (channel G).



Note

- Connect the flexible flat cable to the connector on the PA-418 board, before soldering the PA-418 board.
- When installing the OHB bracket, tighten screws (a) to (d) in alphabetical order.

4. Install the removed parts by reversing the steps of removal.
5. Perform "Actions to Be Taken during Board Replacement and after Board Replacement/Repair". (Refer to "1-4. Notes on Replacement of Parts and Circuit Board")

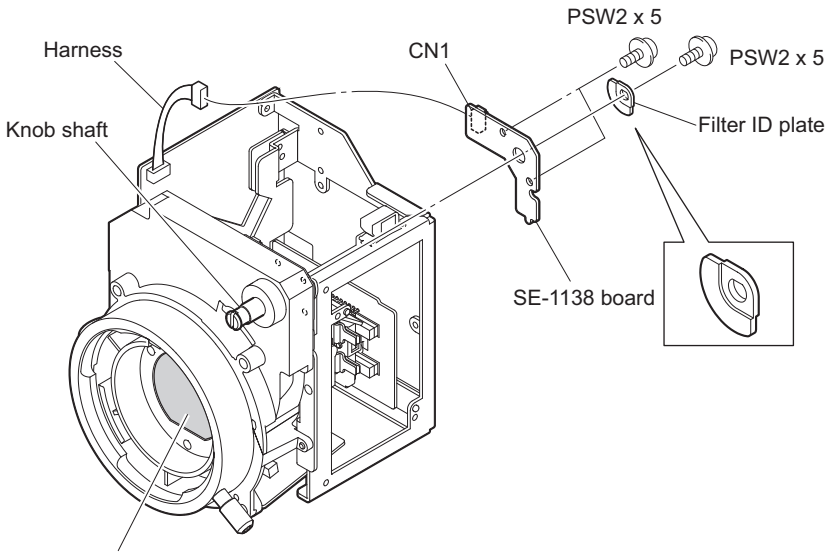
2-4-7. SE-1138 Board (HSC100R/100RF)

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
2. Remove the CCD unit. (Refer to"2-4-2. CCD Unit (HSC100R/100RF)")

Procedure

1. Disconnect the harness from the connector (CN1) on the SE-1138 board.
2. Remove the three screws to detach the filter ID plate and the SE-1138 board.



Note

When installing the SE-1138 board, turn the knob shaft to a position where the filter with the lightest color (1: clear) appears when viewed from the lens mount section.

3. Install the removed parts by reversing the steps of removal.
4. Perform "Actions to Be Taken during Board Replacement and after Board Replacement/Repair". (Refer to "1-4. Notes on Replacement of Parts and Circuit Board")

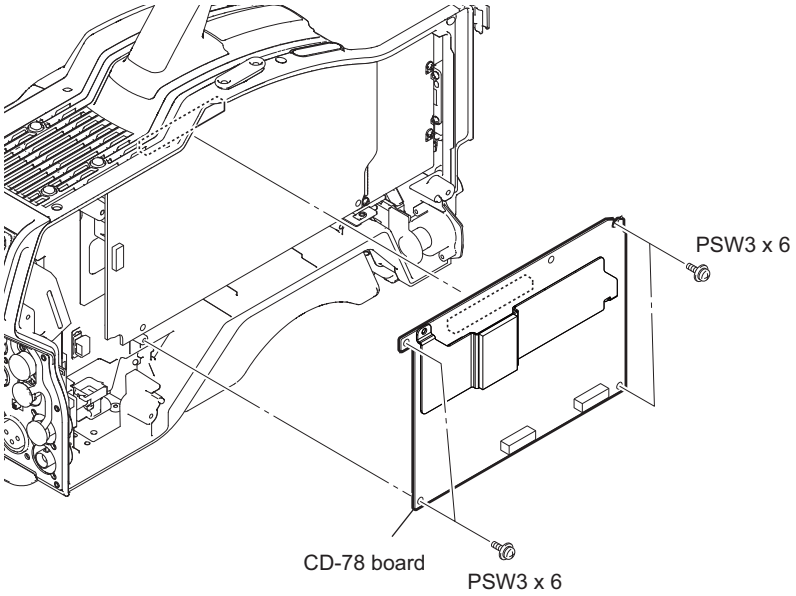
2-5. CD-78 Board (HSC300R/100R)

Preparation

1. Open the outside panel assembly. (Refer to"2-2-1. Outside Panel Assembly (TRIAX)")

Procedure

1. Remove the four screws to detach the CD-78 board.



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

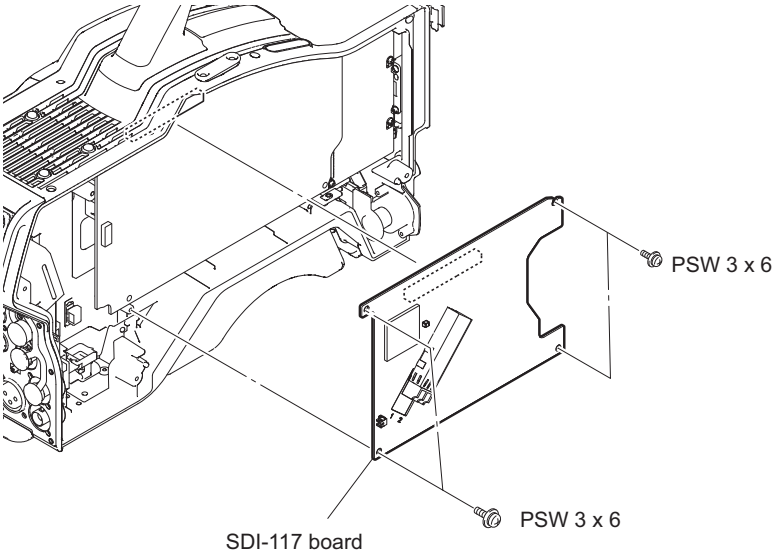
2-6. SDI-117 Board (HSC300RF/100RF)

Preparation

1. Open the outside panel assembly. (Refer to"2-3-1. Outside Panel Assembly (Fiber)")

Procedure

1. Remove the four screws to detach the SDI-117 board.



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

2-7. DPR-358 Board

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
2. Remove the CD -78 board. (HSC300R/100R) (Refer to"2-5. CD-78 Board (HSC300R/100R)")
3. Remove the SDI-117 board. (HSC300RF/100RF) (Refer to"2-6. SDI-117 Board (HSC300RF/100RF)")

Procedure

1. Disconnect the two flexible flat cables from the two connectors (CN001, CN003) on the TG-285 board.

   Note

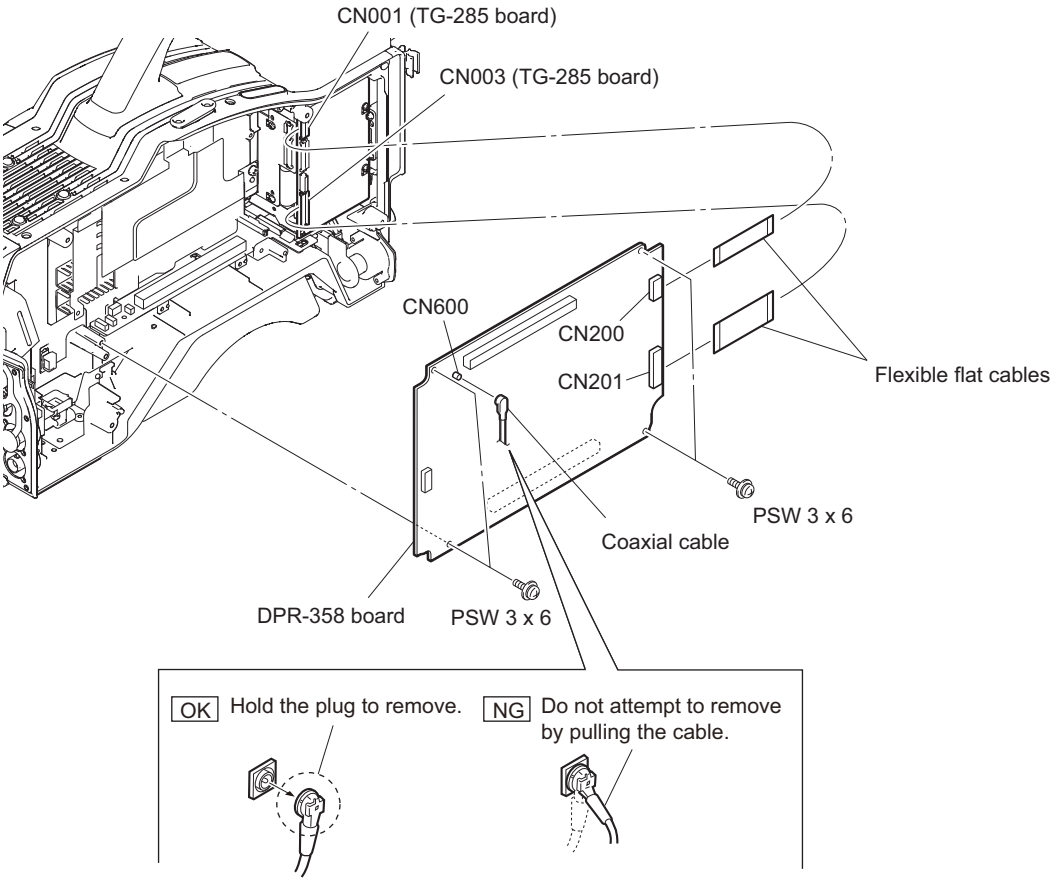
   Be careful not to bend the flexible flat cable. This shortens the wire life.

2. Disconnect the coaxial cable from the connector (CN600) on the DPR-358 board.

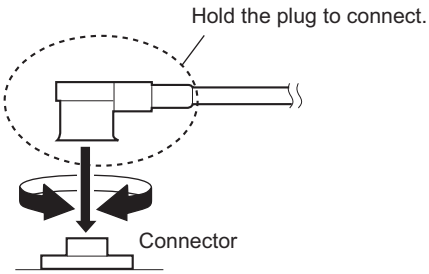
   Note

   Be sure to hold the plug when disconnecting the coaxial cable. Do not pull the cable.

3. Remove the four screws to detach the DPR-358 board.
4. Disconnect the two flexible flat cables from the two connectors (CN200, CN201) on the DPR-358 board.



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



Note

Hold the plug of the coaxial cable, and connect it perpendicularly to the connector. Push the plug into the connector while turning it clockwise and counterclockwise several times.

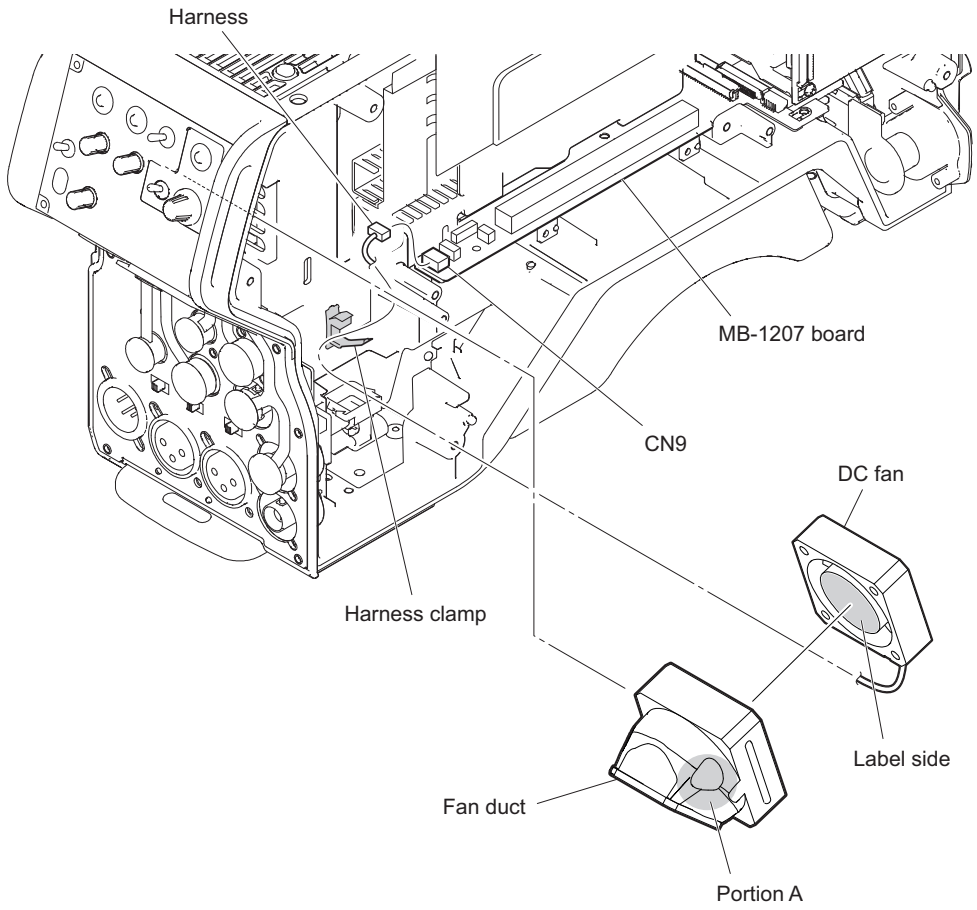
2-8. DC Fan

Preparation

1. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
2. Remove the CD -78 board. (HSC300R/100R) (Refer to"2-5. CD-78 Board (HSC300R/100R)")
3. Remove the SDI-117 board. (HSC300RF/100RF) ("2-6. SDI-117 Board (HSC300RF/100RF)")
4. Remove the DPR-358 board. (Refer to"2-7. DPR-358 Board")

Procedure

1. Disconnect the harness from the connector (CN9) on the MB-1207 board.
2. Open the harness clamp and release the harness.
3. Remove the fan duct and DC fan while pressing portion A of the fan duct.
4. Remove the DC fan from the fan duct.



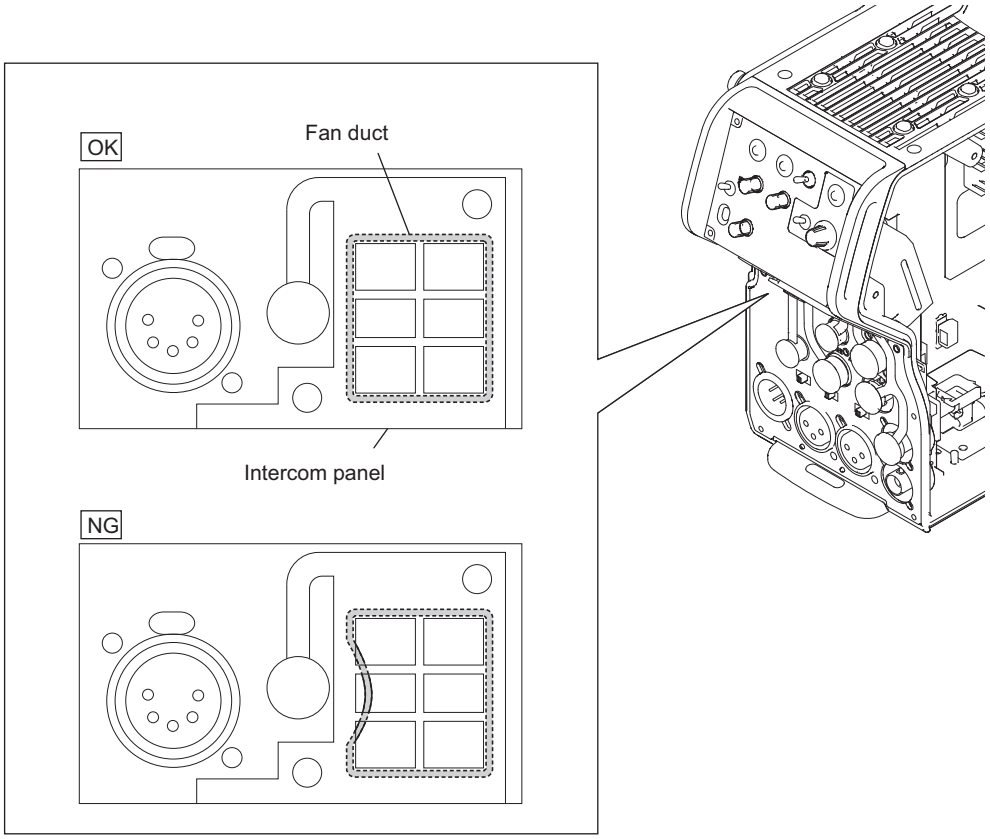
Note

- Be careful of the orientation of the label side and the harness when installing the new DC fan.

5. Install a new DC fan by reversing the steps above.

Note

- Attach the fan duct to the intercom panel properly so as not to block the vent hole.



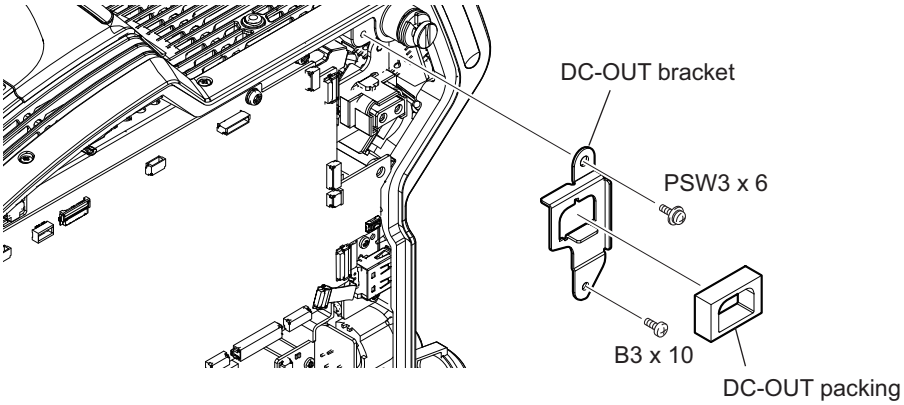
2-9. SY-430 Board/AT-189 Board

Preparation

1. Remove the inside panel assembly. (Refer to"2-1. Inside Panel")

Procedure

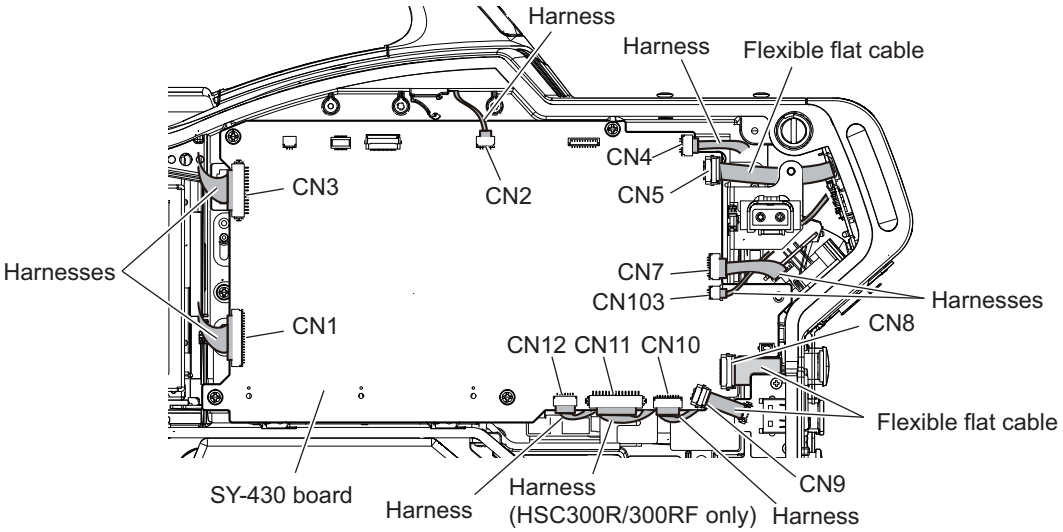
1. Remove the DC-OUT packing.
2. Remove the two screws (PSW3 x 6, B3 x 10) to detach the DC-OUT bracket.



3. Disconnect the eight harnesses from the eight connectors (CN1, CN2, CN3, CN4, CN7, CN10, CN12, CN103) on the SY-430 board.
4. Disconnect the harness from the connector (CN11) on the SY-430 board. (HSC300R/300RF only)
5. Disconnect the three flexible flat cables from the three connectors (CN5, CN8, CN9) on the SY-430 board.

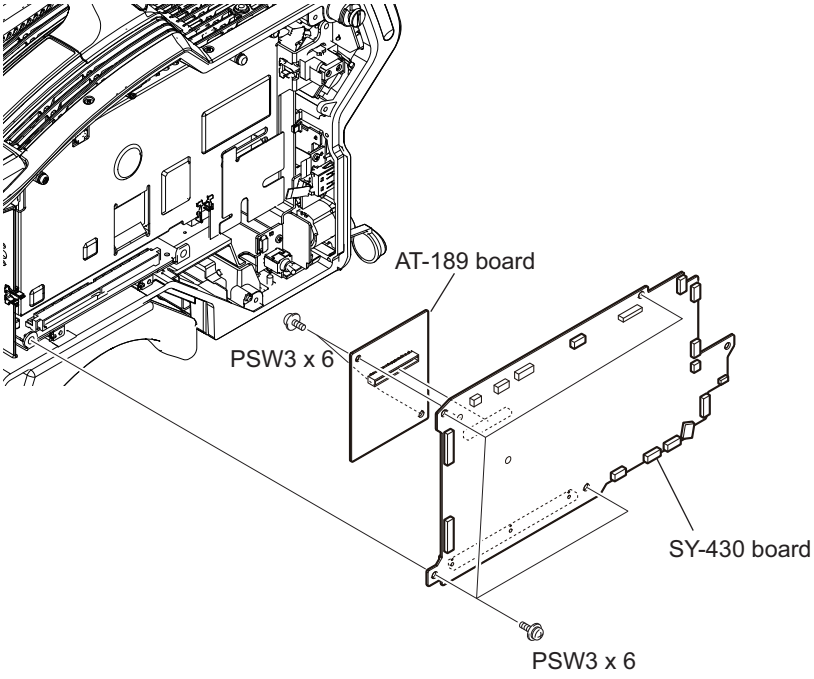
Note

Be careful not to bend the flexible flat cable. This shortens the wire life.



6. Remove the four screws (PSW3 x 6) to detach the SY-430 board.

7. Remove the two screws to detach the AT-189 board.



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

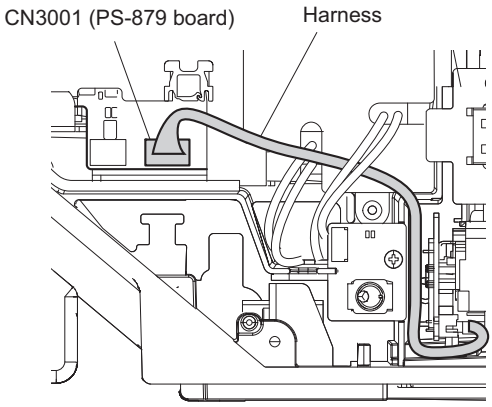
2-10. Power Supply Assembly

Preparation

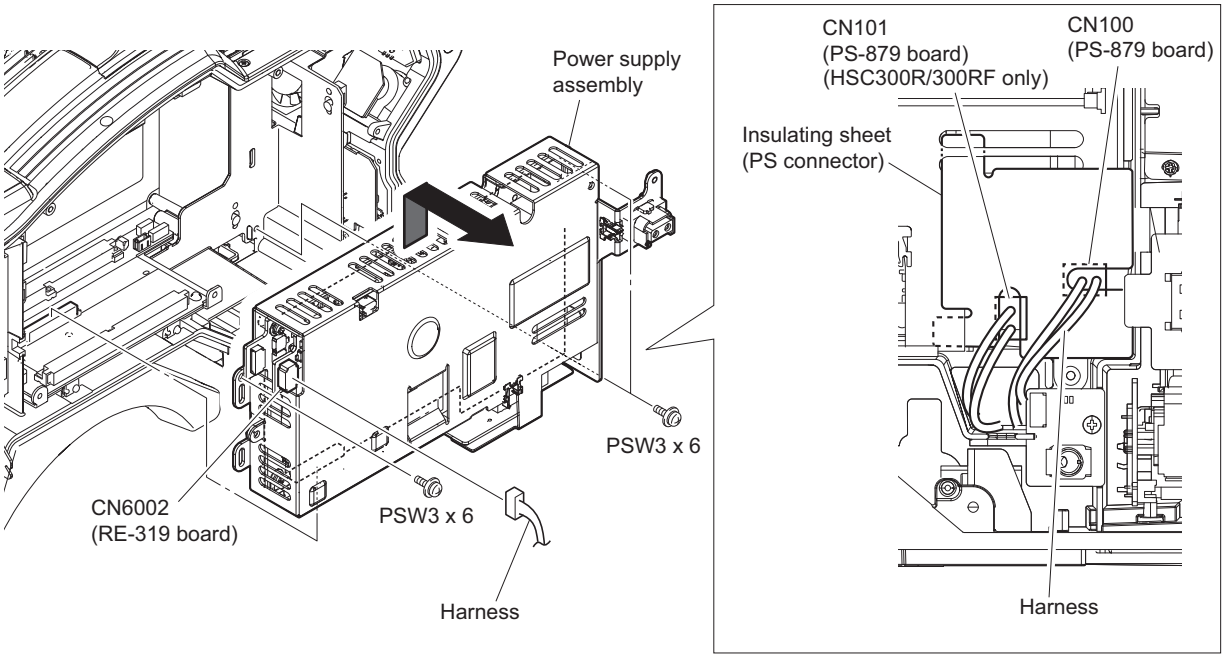
1. Remove the inside panel assembly. (Refer to"2-1. Inside Panel")
2. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
3. Remove the SY-430 board. (Refer to"2-9. SY-430 Board/AT-189 Board")

Procedure

1. Disconnect the harness from the connector (CN3001) on the PS-879 board.



2. Remove the insulating sheet (PS connector).
3. Disconnect the harness from the connector (CN6002) on the RE-319 board.
4. Disconnect the harness from the connector (CN100) on the PS-879 board.
5. Disconnect the harness from the connector (CN101) on the PS-879 board. (HSC300R/300RF only)
6. Remove the three screws and remove the power supply assembly in the direction of the arrow.



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

2-11. MB-1207 Board

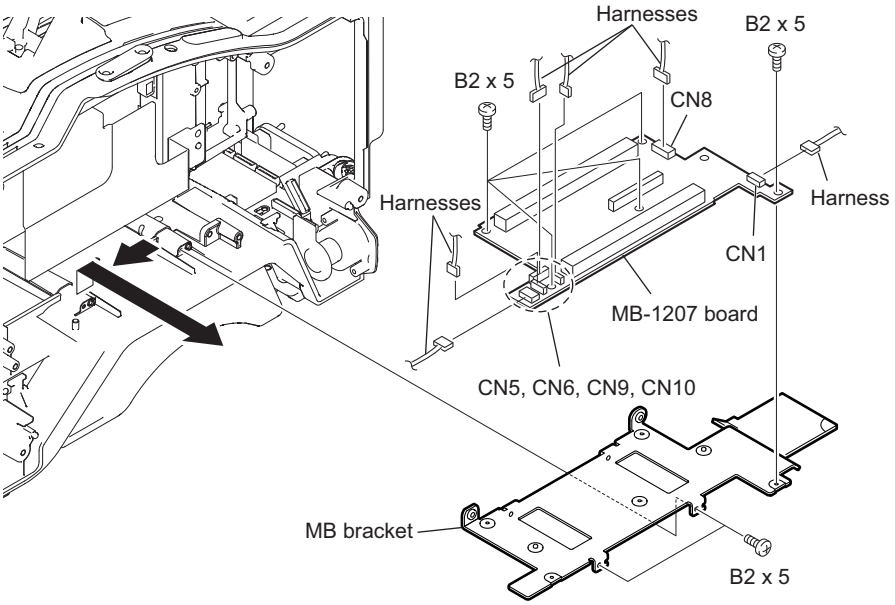
Preparation

1. Remove the inside panel. (Refer to"2-1. Inside Panel")
2. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"
3. Remove the front assembly. (Refer to"2-4-1. CCD Unit (HSC300R/300RF)")
4. Remove the CD-78 board. (HSC300R/100R) (Refer to"2-5. CD-78 Board (HSC300R/100R)")
5. Remove the SDI-117 board. (HSC300RF/100RF) (Refer to"2-6. SDI-117 Board (HSC300RF/100RF)")
6. Remove the DPR-358 board. (Refer to"2-7. DPR-358 Board")
7. Remove the SY-430 board. (Refer to"2-9. SY-430 Board/AT-189 Board")
8. Remove the power supply assembly. (Refer to"2-10. Power Supply Assembly")

Procedure

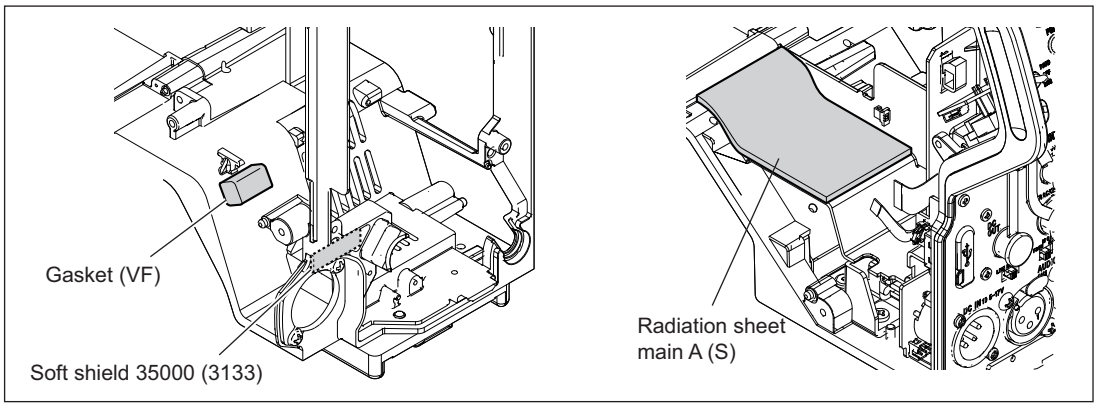
1. Disconnect the six harnesses from the six connectors (CN1, CN5, CN6, CN8, CN9, CN10) on the MB-1207 board.
2. Remove the two screws and remove the MB bracket in the direction of the arrow.

3. Remove the five screws to detach the MB-1207 board.



Note

- When installing the MB bracket, comfirm that the soft shield 3500 (3133), gasket (VF) and the radiation sheet main A (S) are attached.



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

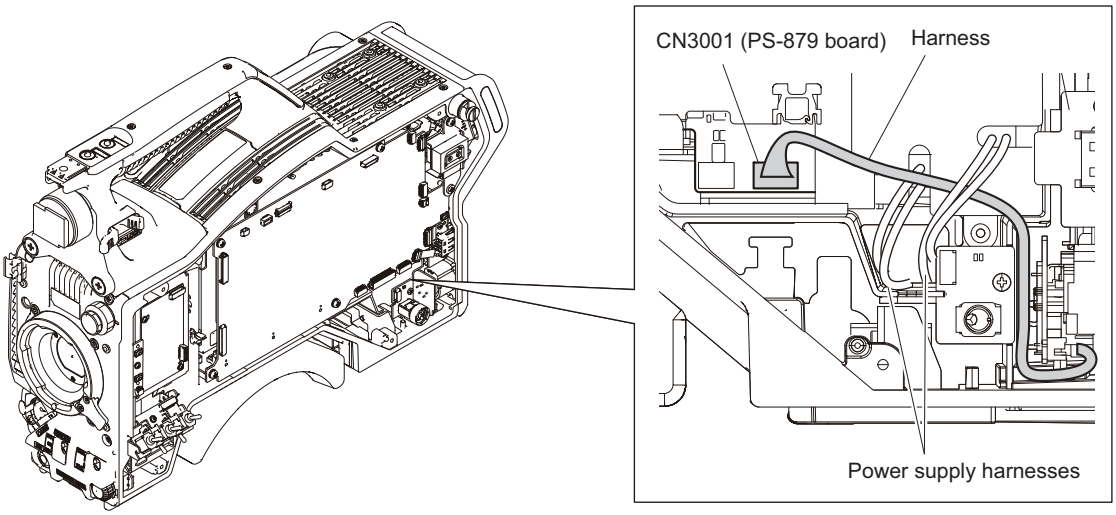
2-12. Connector Panel

Preparation

1. Remove the inside panel assembly. (Refer to"2-1. Inside Panel")
2. Open the outside panel assembly.
   - HSC300R/100R: Refer to"2-2-1. Outside Panel Assembly (TRIAX)"
   - HSC300RF/100RF: Refer to"2-3-1. Outside Panel Assembly (Fiber)"

Procedure

1. Disconnect the harness from the connector (CN3001) on the PS-879 board.



Note

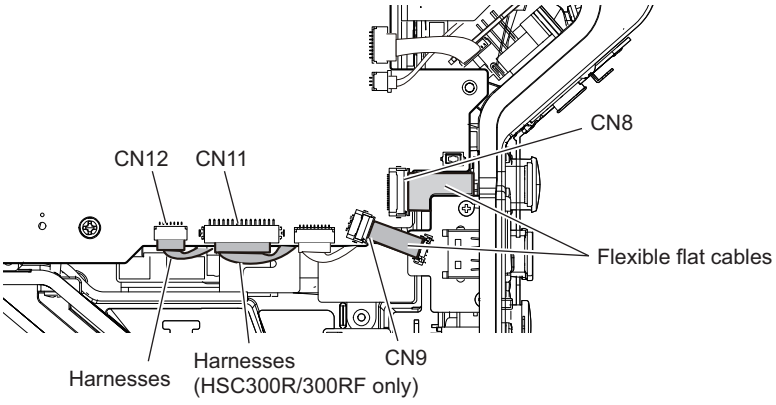
- When installing the connector panel assembly, arrange the harness as shown in the figure.

2. Disconnect the two flexible flat cables from the two connectors (CN8, CN9) on the SY-430 board.

Note

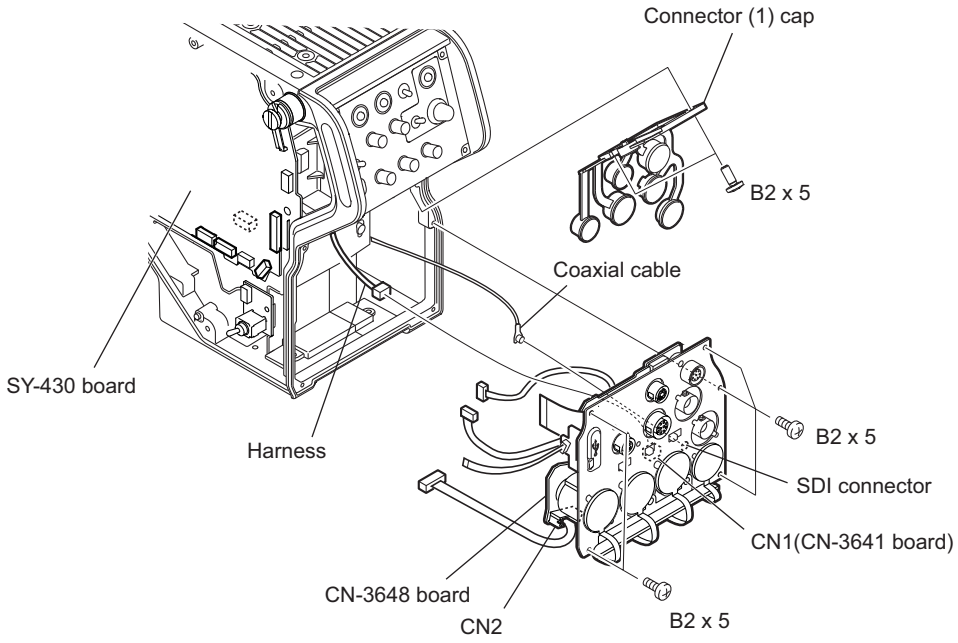
Be careful not to bend the flexible flat cable. This shortens the wire life.

3. Disconnect the harness from the connector (CN12) on the SY-430 board.
4. Disconnect the harness from the connector (CN11) on the SY-430 board. (HSC300R/300RF only)



5. Disconnect the coaxial cable from the SDI connector.
6. Remove the two screws to detach the connector (1) cap.
7. Remove the five screws and draw the connector panel.

8. Disconnect the harness from the connector (CN1) on the CN-3641 board.



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

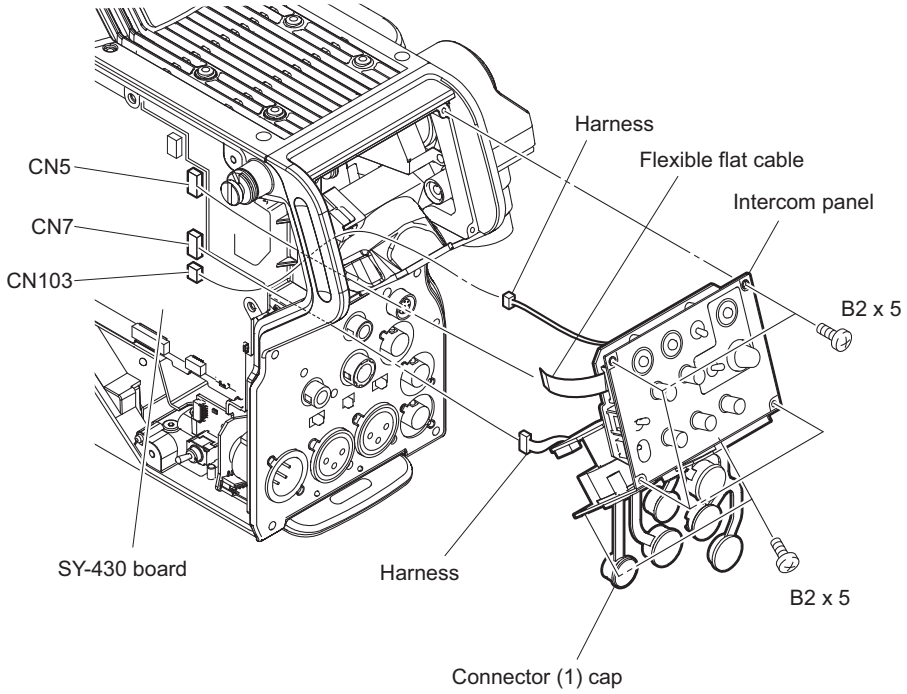
2-13. Intercom Panel

Preparation

1. Remove the inside panel assembly. (Refer to"2-1. Inside Panel")

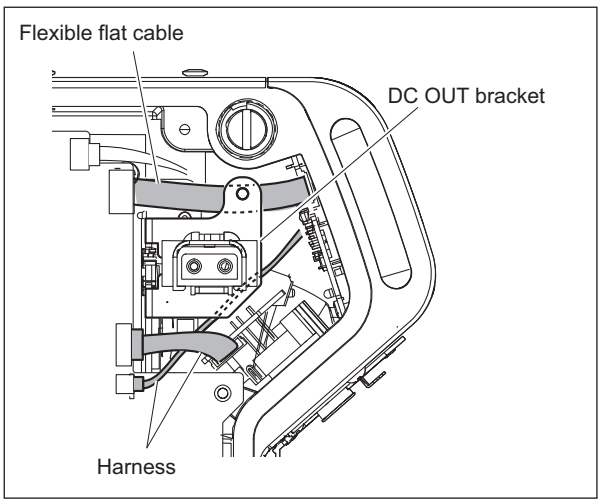
Procedure

1. Disconnect the flexible flat cable from the connector (CN5) on the SY-430 board.
2. Disconnect the two harnesses from the two connectors (CN7, CN103) on the SY-430 board.
3. Open the connector (1) cap.
4. Remove the six screws and draw the intercom panel.



Note

- When installing the intercom panel assembly, arrange the harness as shown in the figure.



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

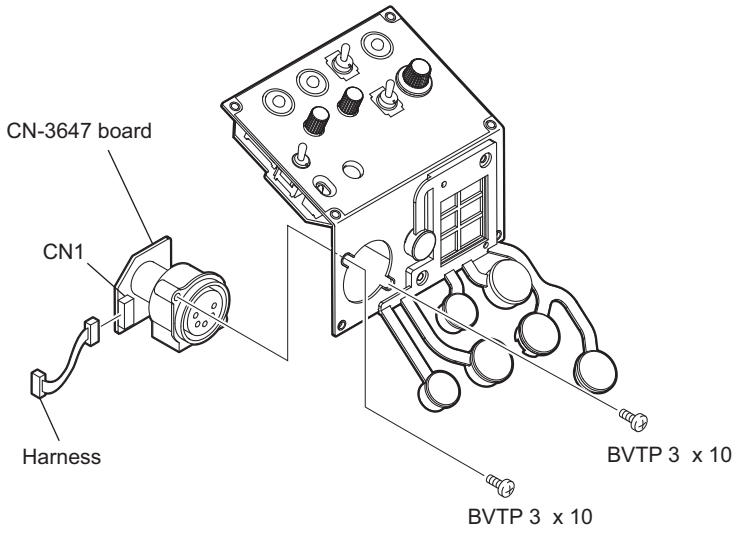
2-14. CN-3647 Board/SW-1608A Board

Preparation

1. Remove the inside panel assembly. (Refer to"2-1. Inside Panel")
2. Remove the intercom panel. (Refer to"2-13. Intercom Panel")

Procedure

1. Disconnect the harness from the connector (CN1) on the CN-3647 board.
2. Remove the two screws to detach the CN-3647 board.

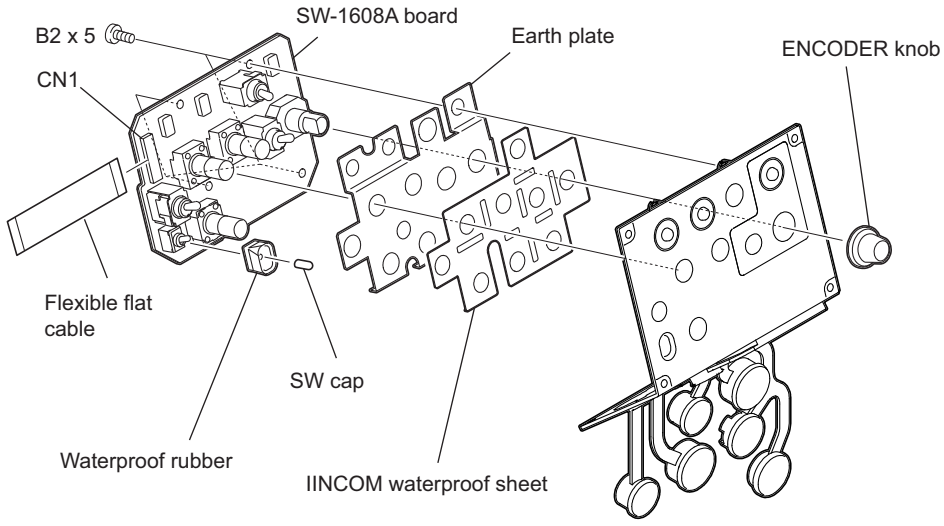


3. Remove the ENCODER knob.
4. Remove the four screws to detach the SW-1608A board.
5. Disconnect the flexible flat cable from the connector (CN1) on the SW-1608A board.

Note

Be careful not to bend the flexible flat cable. This shortens the wire life.

6. SW-1608A 基板から以下の部品を取り外す。
   - INCOM waterproof sheet
   - Earth plate
   - Switch cap
   - Waterproof rubber



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

Section 3
Electrical Alignment

When any board of this unit is repaired or replaced, perform electrical adjustments as this section.

Note

- Perform the "3-4. Video System Level Adjustment" according to the system that the customer uses.
- Master setup unit MSU-1000 and other equipment/fixtures are used for electrical adjustments of the unit. Refer to "3-1-8. Adjustment Items and Setup Menu Items" when using the camera setup menu for electrical adjustments without using MSU-1000.

3-1. Preparations

3-1-1. Equipment Required

Measuring Equipment

- HD waveform monitor: Leader Electronics LV5150DA, Leader Electronics LV5152DA (multi format) or equivalent
- HD color monitor: Sony BVM-D20F1J/BVM-D14H5J or equivalent
- Oscilloscope: Tektronix TDS460A or equivalent

Related Equipment

- Master setup unit: Sony MSU-1000/1500
- HD camera control unit: Sony HSCU300RF/300R
- HD viewfinder: Sony HDVF-200/C35W
- Lens: Canon HJ18 or equivalent

Fixtures

- Pattern box PTB-500: Sony Part No. J-6029-140-B
- Grayscale chart (16 : 9 transparent type): Sony Part No. J-6394-080-A
- Grayscale chart (16 : 9 reflective type): Commercially available

3-1-2. Precautions on Adjustments

- Turn on the external main power switch before starting adjustments, and warm up the unit for about 10 minutes.
- All measuring equipment must have been calibrated.
- Periodic maintenance must have been conducted for the pattern box.
- "3-1-7. Initial Settings" must have been completed.

3-1-3. File Data at Adjustment

The file structure of the adjustment data of this unit is as follows.

- Lens file is used for compensating the deviation generated by switching the lens extender from OFF to ON and for compensating the difference in the characteristics between lenses. This file is stored in the camera. For electrical adjustments, mount the lens that is actually used.
- The reference file stores the custom paint data adjusted by the video engineer. This file is stored in the camera and USB drive. Therefore, store this data in the USB drive first before starting adjustment, and clear this data from the USB drive after adjustment.
- OHB file is used for adjustment for the CCD block maintenance. This file is stored in the camera.

3-1-4. Handling the Grayscale Chart

It is preferable to use an 89.9%-reflective grayscale chart for electrical adjustments.
If a reflective chart is not available, use a calibrated pattern box and a transparent grayscale chart for adjustments.
Before beginning adjustment, set the illumination of the light source (or the luminous intensity on the chart surface) properly proceeding as follows and set the color temperature to 3200 K exactly by adjusting light.

Information on the Reflective Grayscale Chart (16 : 9)

Recommended chart

The reflective grayscale chart (16 : 9) is commercially available.
Product name: Reflective grayscale chart
Supplier: MURAKAMI COLOR RESEARCH LABORATORY

Handling precautions

- Do not touch the chart's surface with bare hands.
- Do not subject the surface to dirt or scratches.
- Do not prolonged exposure to sunlight.
- Protect the chart from excessive moisture or harmful gas.
- Avoid resting articles against the case.
- When the chart is not used for a long period and is stored, open the case and dry the chart for about an hour once or twice a month.

Replacement period when the chart is used as the reference

The reflective grayscale chart should be replaced every two years if it used as the reference. Because the chart deteriorates with time and proper adjustment cannot be achieved.
Replacement period varies depending on the chart storage condition.

Setting Illumination (When the Reflective Chart is Used)

Measuring equipment

Illuminance meter: Calibrated

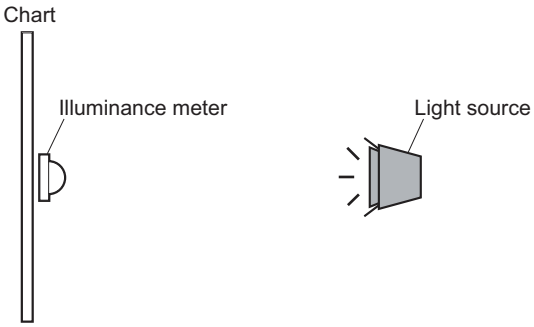
Procedure

1. Turn on the light source and warm up for about 30 minutes.

2. Place the illuminance meter on the chart surface. Adjust the position and angle of the light source so that the whole surface of the chart is evenly 2000 lx.

   Note

   Light the chart from almost the same direction and height as the camera to shoot the chart.



Setting Luminous Intensity (When the Transparent Chart is Used)

Measuring equipment

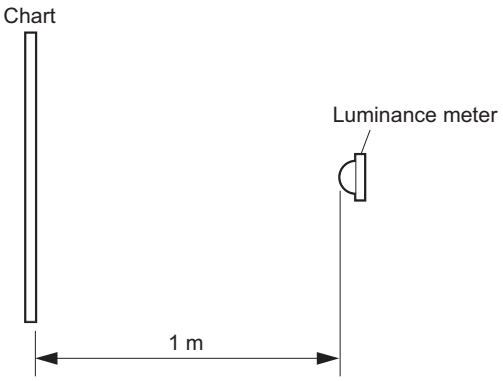
Luminance meter: Konica Minolta LS-110 or equivalent. Calibrated

Procedure

1. Light the pattern box and warm up for about 30 minutes.
2. Place the pattern box where the chart is not exposed to light, such as a darkroom.
   (Or cover the pattern box with a cover whose inside is painted in black.)
3. Fix the luminance meter facing straight to the chart at a distance of 1 m from it.
4. Adjust the luminance control of the pattern box so that the white portion in the center of the chart is 573 ±6 cd/m^2.

   Tip

   This corresponds to the luminous intensity on the 89.9%-reflective chart at 2000 lx.



3-1-5. Setup Menu

Some of adjustments given in this section use the setup menu. The setup menu consists of the following menus.
In addition, there is a TOP menu indicating the entire configuration of menu items.

- USER menu
- USER MENU CUSTOMIZE menu
- OPERATION menu
- PAINT menu

- MAINTENANCE menu
- FILE menu
- DIAGNOSIS menu
- SERVICE menu

For some adjustments, the setup menu operation is described as follows.
Example: When the AUTO SETUP page of MAINTENANCE menu is selected from the TOP menu and AUTO LEVEL is performed.
MENU: MAINTENANCE
PAGE: AUTO SETUP
ITEM: AUTO LEVEL

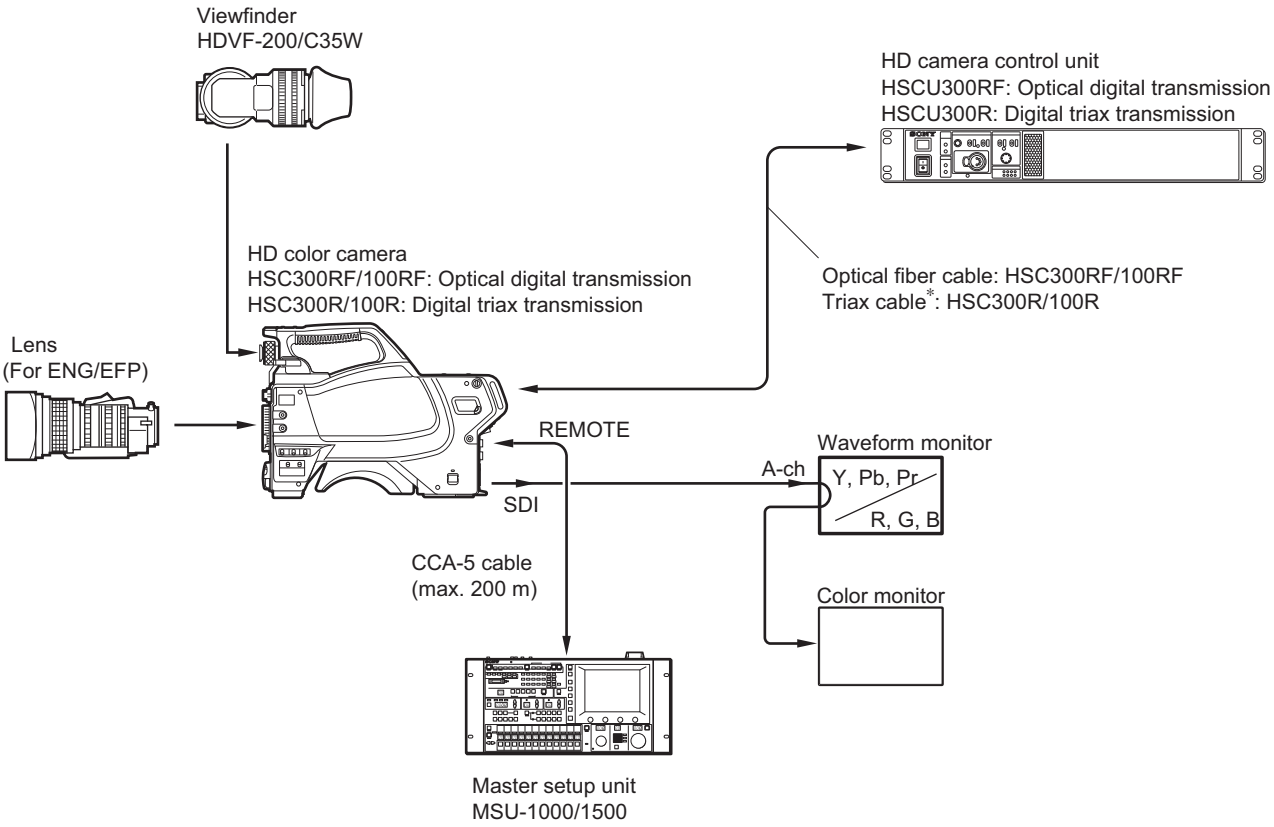
How to Display the SERVICE Menu

Set the DISPLAY switch to “MENU” while pressing the ASSIGNABLE 1 switch and the rotary encoder.

How to Change the Setting Values

Perform the following to enter or cancel the setting value of items, which can be changed by turning the rotary encoder.
To enter the setting value: Press the rotary encoder.
After the setting value is entered, the setting cannot be canceled.

3-1-6. Connection of Equipment



∗: Transmittable cable attenuation: 3.6 to 64 dB (100 MHz)

Tip

When Fujikura φ8.5 mm cable is used → 50 to 900 m

3-1-7. Initial Settings

Note

This section describes the adjustment procedures using MSU-1000.

When Adjusting Using the MSU-1000 Control Panel

Set each button as follows.

- Power supply and signal switching block
  - ALL button → OFF (dark)
  - CAM PW button → ON (lit)
  - VF PW button → ON (lit)
  - TEST 1 button → OFF (dark)
  - TEST 2 button → OFF (dark)
  - BARS button → OFF (dark)
  - CLOSE button → ON (lit)

- Camera/CCU circuit ON/OFF block
  - KNEE OFF button → OFF (lit)
  - DETAIL OFF button → OFF (lit)
  - MATRIX OFF button → OFF (lit)
  - AUTO KNEE button → OFF (dark)
  - SKIN DETAIL button → OFF (dark)
- Others
  - GAMMA OFF button → ON (dark)
  - MASTER GAIN → 0 (0 dB)
  - ON button (shutter control block) → OFF (dark)
- Filter position
  - ND filter → 1 (CLEAR)

When Adjusting Using the Setup Menu

Set each item and the switch, etc. as follows.

- PAINT menu

Page	Setting Item	Initial Setting
SW STATUS	FLARE	ON
	GAMMA	ON
	BLK GAM	OFF
	KNEE	OFF
	WHT CLIP	OFF
	DETAIL	ON
	LVL DEP	ON
	SKIN DTL	OFF
	MATRIX	OFF
VIDEO LEVEL	TEST	OFF

- Inside panel
  - GAIN switch → L (0 dB)
  - AUTO/AUTO KNEE switch → CAM/OFF
  - WHITE BAL switch → PRST
- Front panel
  - SHUTTER switch → OFF
- Filter position
  - ND filter → 1 (CLEAR)

3-1-8. Adjustment Items and Setup Menu Items

Refer to the following tables when using the camera setup menu for electrical adjustments without using MSU-1000. These tables list camera menu items corresponding to adjustment items of MSU-1000.

PAINT Menu (PAINT Button/MSU-1000 → ON (lit))

Menu Item of MSU-1000			Menu Item of Camera		
Menu	Sub Menu	Adjustment Item	MENU	PAGE	ITEM

Continued

Menu Item of MSU-1000			Menu Item of Camera		
Black		R/G/B	PAINT	VIDEO LEVEL	BLACK R/G/B/M
		Master			
Flare		R/G/B			FLARE R/G/B/M
		Master			
Detail	1/3	Level		DETAIL 1	LEVEL
		Limiter			LIMITER [M]
		Crispening			CRISP
		Level Dep			LVL DEP
	2/3	H/V Ratio			HV RATIO
	3/3	W Limiter			LIMITER WHT
		B Limiter			LIMITER BLK
Gamma	Gamma	R/G/B		GAMMA	LEVEL R/G/B/M
		Master			
Knee	Knee Point	R/G/B		KNEE	POINT R/G/B/M
		Master			
	Knee Slope	R/G/B			SLOPE R/G/B/M
		Master			
White Clip		R/G/B		WHITE CLIP	WHT CLP
		Master			

FILE Menu (FILE Button/MSU-1000 → ON (lit))

Menu Item of MSU-1000		Menu Item of Camera		
Menu	Sub Menu	MENU	PAGE	ITEM
Ref File	Ref Store	FILE	REFERENCE	STORE FILE
Lens File	Lens Store		LENS FILE	STORE FILE
OHB File	OHB Store		OHB FILE	STORE FILE

MAINTENANCE Menu (MAINTENANCE Button/MSU-1000 → ON (lit))

Menu Item of MSU-1000				Menu Item of Camera		
Menu	Secondary Menu	Sub Menu	Adjustment Item	MENU	PAGE	ITEM
Camera	White Shading	R/G/B	H SAW	MAINTENANCE	WHITE SHADING	H SAW R/G/B
			H PARA			H PARA R/G/B
			V SAW			V SAW R/G/B
			V PARA			V PARA R/G/B
Lens	Auto Iris Settings		Level		AUTO IRIS	IRIS LEVEL
			APL Ratio			APL RATIO
	V Mod Saw		R/G/B	PAINT	VIDEO LEV-EL	V MOD R/G/B/M
			Master			

3-2. Automatic Adjustment

3-2-1. Execute the Automatic Adjustment

1. Operate the control panel of MSU-1000.
   1) Press the LEVEL button (AUTO SETUP block) → ON (lit)
   2) Press the START/BREAK button (AUTO SETUP block) → ON (lit)

   Tip

   When performing automatic adjustment using the menu of the camera, set the setup menu as follows.
   MENU: MAINTENANCE
   PAGE: AUTO SETUP
   ITEM: AUTO LEVEL

2. When the adjustment is completed, a message “Completed” appears.

3-3. Electrical Alignment

3-3-1. Clamp Level Adjustment between Channel A and Channel B (Black Offset Adjustment)

Preparation

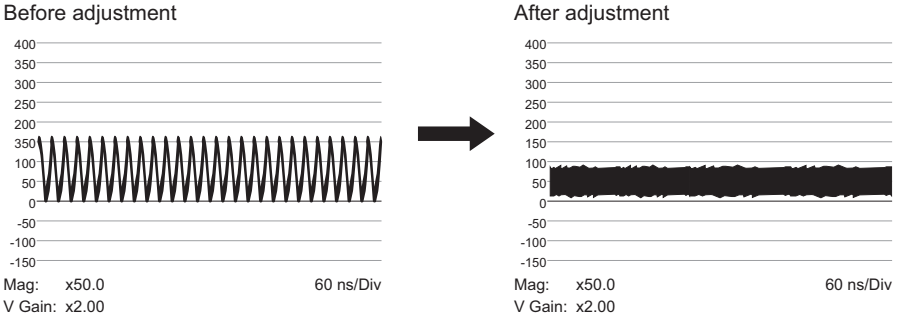
- Menu setting
  MENU: MAINTENANCE
  PAGE: SDI OUT
  ITEM: SDI OUT: MAIN
- Setting for MSU-1000
  KNEE OFF button → OFF (lit)
  DETAIL OFF button → OFF (lit)
  LVL DEP OFF button → OFF (lit)
  GAMMA OFF button → ON (dark)
  MATRIX OFF button → OFF (lit)
  MASTER GAIN → 12
  IRIS → CLOSE

Adjustment Procedure

1. Set in the SERVICE menu as shown below.
   MENU: SERVICE
   PAGE: OHB_ADJ1
   ITEM: FILTER: OFF
   ITEM: MONITOR SEL: R
2. The following item is adjusted by the SERVICE menu, and adjust parameters to equalize clamp levels between channels.
   MENU: SERVICE
   PAGE: OHB_ADJ1
   ITEM: DC_ADJ_B [R]

   Note

   If the pedestal level is low and the adjustment is not easy, raise the black level by MASTER BLACK to level that makes the adjustment easy.



3. Make adjustment for the G and B channels in the same way.
4. Execute file storing for each format.
   MENU: SERVICE
   PAGE: OHB_ADJ1
   ITEM: STORE FILE

3-3-2. Black Set Adjustment

Preparation

- Setting for MSU-1000
  CLOSE button → ON (lit)
  MASTER GAIN → 12

Adjustment Procedure

1. Open the following items with SERVICE menu.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: BLK SET [R], [G], [B]
2. Adjust this using the waveform monitor so that the pedestal level of each channel becomes equal within a range of -3 to +12 dB.
3. Set the value to the value adjusted in step 2, and execute file storing for each format.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: STORE FILE

3-3-3. Sensitivity Adjustment

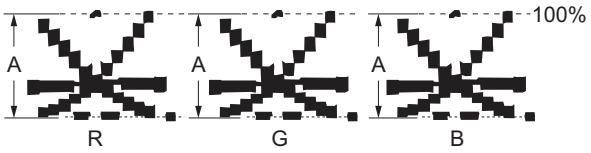
Preparation

- Setting for MSU-1000
  CLOSE button → OFF (dark)
  GAMMA OFF button → OFF (lit)
  MASTER GAIN → 0
  DETAIL OFF button → OFF (lit)
- Turn ON (lighting) the TEST 1 button to display the TEST SAW waveform, and check that the amplitude is 700 mV using the waveform monitor.
  If the amplitude is not 700 mV, check that WHITE [R], [G], [B] values are zero.
  MENU: SERVICE
  PAGE: WHITE SHADING
  ITEM: WHITE [R], [G], [B]
  Then turn OFF (light off) the TEST 1 button.
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- - F10 (1080 59.94i)
  - F11 (1080 50i)

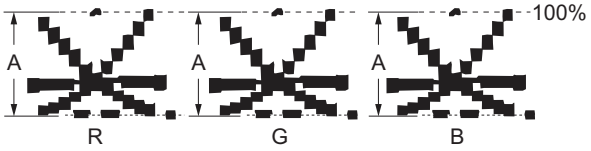
  Use a lens with a transmittance equivalent to Canon HJ18.

Adjustment Procedure

1. Open the SERVICE menu, and adjust the item so that the specification is satisfied.
   MENU: SERVICE
   PAGE: OHB_ADJ1
   ITEM: GAIN_CONT [R], [G], [B]
   Specification: A = 700 mV



2. Execute file storing.
   MENU: SERVICE
   PAGE: OHB_ADJ1
   ITEM: STORE FILE
3. Open the SERVICE menu, and adjust the item so that the specification is satisfied.
   MENU: SERVICE
   PAGE: WHITE SHADING
   ITEM: WHITE [R], [G], [B]
   Specification: A = 700 mV



4. Execute file storing.
   MENU: SERVICE
   PAGE: WHITE SHADING
   ITEM: STORE FILE
5. Set the value to the value adjusted in steps 1 and 3, and execute file storing for each format.

3-3-4. V-SUB Adjustment

Preparation

- Setting for MSU-1000
  MASTER GAIN → 0
  DETAIL OFF button → OFF (lit)
  AUTO KNEE button → OFF (lit)
  MATRIX OFF button → OFF (lit)
  GAMMA OFF button → OFF (lit)
  ON button (shutter control block) → OFF (dark)
- Filter position
  ND filter → 1 (CLEAR)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: Released

Adjustment Procedure

1. Open the SERVICE menu, and adjust the item so that the specification is satisfied.
   MENU: SERVICE
   PAGE: OHB_ADJ2
   ITEM:
   - V-SUB [R], [G], [B]
   - TEST MODE: ON

   Specification:

Format	R	G	B
1080/59.94i (50i)	450 mV	450 mV	370 mV
1080/59.94P (50P)	435 mV	450 mV	220 mV
1080/59.97PsF (25PsF)	415 mV	400 mV	185 mV

2. Execute file storing.
   MENU: SERVICE
   PAGE: OHB_ADJ2
   ITEM: STORE FILE
3. Set the setting of MSU-1000 or the menu of this unit.
   - Setting for MSU-1000
     ON button (shutter control block) → ON (lit)
     SHUTTER SPEED → 1/500
   - Setting for this unit
     MENU: SERVICE
     PAGE: OHB_ADJ2
     ITEM: SHUTTER: ON
     ITEM: SHUT_SPEED: 1/500
4. Input the same value as the value adjusted according to step 1, and execute file storing.
   MENU: SERVICE
   PAGE: OHB_ADJ2
   ITEM: STORE FILE
5. Make the following settings if the MSU-1000 is used.
   ON button (shutter control block) → OFF (dark)
6. Set the value to the value adjusted in step 1, and do steps 2 to 5.
7. Return the TEST MODE setting to OFF if this unit is used.

3-3-5. Black Shading Adjustment

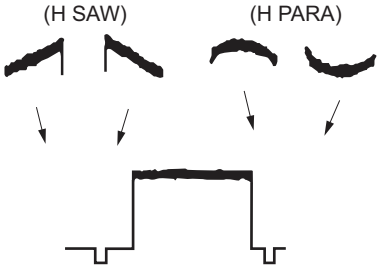
Preparation

- Setting for MSU-1000
  CLOSE button → ON (lit)
  GAMMA OFF button → OFF (lit)
  MASTER GAIN → 12
  MASTER BLACK → 30

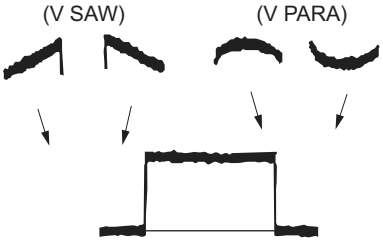
Adjustment Procedure

1. Open the following items with SERVICE menu.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: H SAW, H PARA, V SAW, V PARA [R], [G], [B]
2. Adjust this so that the R channel becomes as flat as possible.
   (Check this in the mode of V: FIELD, H: LINE.)

H: LINE



V: FIELD



3. Make the same adjustment for channels G and B.
4. Execute file storing for each format.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: STORE FILE

3-3-6. White Shading Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Full-white pattern

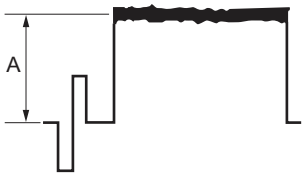
Note

When performing the white shading adjustment, make sure that the unevenness of pattern, luminance, iris and zoom of lens conditions are proper. If not, proper adjustment cannot be obtained.

Preparation

- Setting for MSU-1000
  KNEE OFF button → OFF (lit)
- Shoot the full-white pattern so that it is aligned with the under scanned monitor frame.

- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.

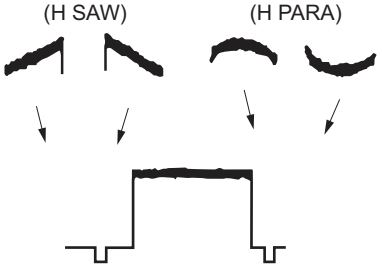


- Lens focus: ∞
- Lens extender/shrinker: ×2, ×0.8 → OFF
- Set the camera setup menu as follows.
  MENU: OPERATION
  PAGE: LENS FILE
  ITEM: FILE
  Select the file in accordance with the lens attached. If there is no appropriate file, select NO OFFSET, then change the name of lens with MSU.

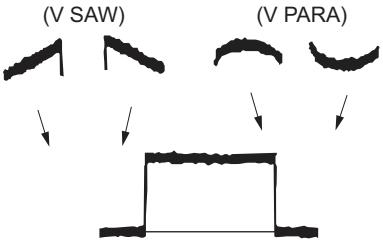
Adjustment Procedure

1. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)
2. If the shading is monitored, adjust it with menu control of MSU-1000.
   1) MAINTENANCE button → ON (lit)
   2) Touch panel operation: [Camera] → [White Shading] → [R]
3. Adjust this so that the R channel becomes as flat as possible.
   (Check this in the mode of V: FIELD, H: LINE.)

H: LINE



V: FIELD



4. Make the same adjustment for channels G and B.
5. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)

OHB File Store

1. Operate the menu of MSU-1000.
   1) FILE button → ON (lit)
   2) Touch panel operation: [OHB File] → [OHB Store] → [Store]

Adjustment for Lens Extender/Shrinker

When the WHITE or shading of V is out of alignment by using the lens extender or lens shrinker, perform the following lens adjustment after the completion of OHB file store.

1. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)
2. In the status of lens extender (×1), perform the lens file store with MSU-1000 menu operation.
   1) FILE button → ON (lit)
   2) Touch panel operation: [Lens File] → [Lens Store] → [Store]
3. Set the lens extender or the lens shrinker to the following settings.
   - Lens extender (×2) → ON
   - Lens shrinker (×0.8) → ON
4. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)
5. Operate the menu of MSU-1000.
   1) MAINTENANCE button → ON (lit)
   2) Touch panel operation: [Lens] → [V Mod Saw]

   Adjustment item: R, G, B

   Specification: Set the V modulation correction value as required.
6. Execute the lens file store with MSU-1000 menu operation.
   1) FILE button → ON (lit)
   2) Touch panel operation: [Lens File] → [Lens Store] → [Store]
7. Return the setting of lens extender or lens shrinker.
   - Lens extender (×2) → OFF
   - Lens shrinker (×0.8) → OFF

3-4. Video System Level Adjustment

Note

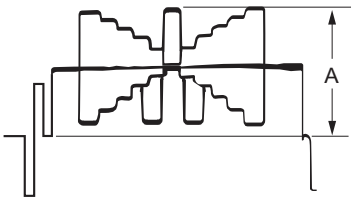
Perform the video system level adjustment according to the system that the customer uses.

3-4-1. H/V Ratio Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

Preparation

- Setting for MSU-1000
  DETAIL OFF button → ON (dark)
  KNEE OFF button → OFF (lit)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.



Adjustment Procedure

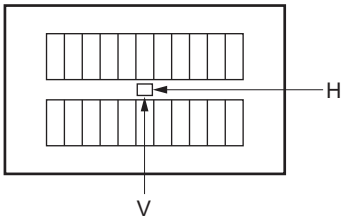
1. Operate the menu of MSU-1000.

   Note

   Customer's settings must be restored after the adjustment. Write down the customer's settings.

   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Detail] → [1/3]
      Set each item as follows:
      - Level → 99
      - Limiter → 0
      - Crispening → –99
      - Level Dep → 99
2. Operate the menu of MSU-1000.
   Touch panel operation: (Page 1) → [Detail] → [2/3]

3. Adjust the H/V Ratio adjustment, a ratio between H and V detail amounts (white) to be added shall be equal.



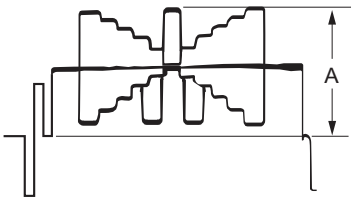
4. Change the settings to the recorded customer's settings.

3-4-2. Detail Level Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

Preparation

- Setting for MSU-1000
  DETAIL OFF button → ON (dark)
  KNEE OFF button → OFF (lit)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.



Adjustment Procedure

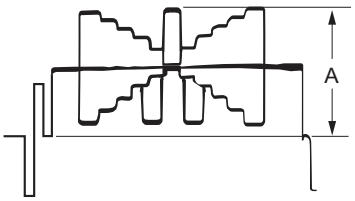
1. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Detail] → [1/3]
2. Adjust the detail level to be added to each step of the grayscale to the desired level.

3-4-3. Crispening Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

Preparation

- Setting for MSU-1000
  DETAIL OFF button → ON (dark)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.



Adjustment Procedure

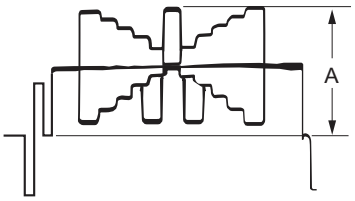
1. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)
2. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Detail] → [1/3]
3. Set Crispening to -99 once, and turn slowly for increment until the noise at the black level of the waveform just decreases. Or adjust for the desired level.

3-4-4. Level Dependent Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

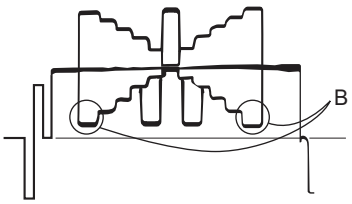
Preparation

- Setting for MSU-1000
  DETAIL OFF button → ON (dark)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.



Adjustment Procedure

1. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Detail] → [1/3] → [Level Dep]
2. Set Level Dep to -99 once, and turn slowly for increment until spikes at portions B just decrease. Or adjust for the desired level.



Note

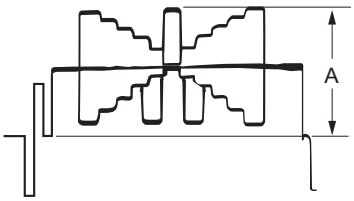
After adjustment is completed, be sure to perform "3-4-1. H/V Ratio Adjustment".

3-4-5. Detail Clip Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

Preparation

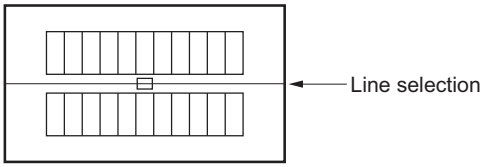
- Setting for MSU-1000
  DETAIL OFF button → ON (dark)
  KNEE OFF button → OFF (lit)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.



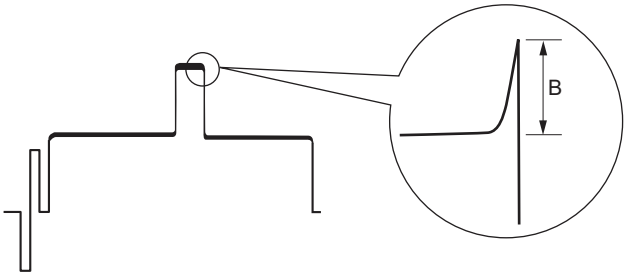
Adjustment Procedure

1. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)

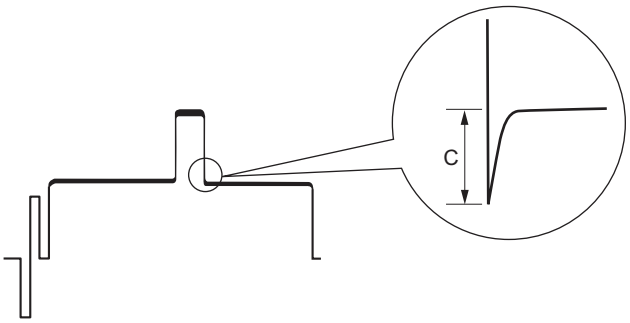
2. Make a line selection at the center white portion of the grayscale chart.



3. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Detail] → [3/3]
4. Adjust the W Limiter so that the edge at portion B to the desired clip level.



5. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Detail] → [3/3]
6. Adjust the B Limiter so that the edge at portion C to the desired clip level.



3-4-6. Auto-iris Adjustment

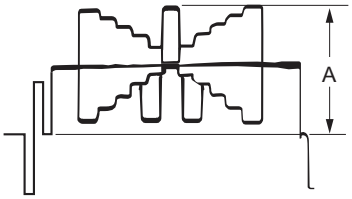
Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

Preparation

- Setting for MSU-1000
  AUTO IRIS button → ON (lit)
  KNEE OFF button → OFF (lit)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.

Adjustment Procedure

1. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)
2. Operate the menu of MSU-1000.
   1) MAINTENANCE button → ON (lit)
   2) Touch panel operation: [Lens] → [Auto Iris Settings]
3. Adjust the APL ratio adjustment, set the auto-iris operation mode as required.
   (It can be set between the average and the peak value of video signal.)
   99 → average
   -99 → peak value
4. Set the auto-iris by the adjustment item Level to meet the specification below.
   Specification: A = 700 ±7 mV



3-4-7. Pedestal Level Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector

Preparation

- Setting for MSU-1000
  CLOSE button → ON (lit)

Adjustment Procedure

1. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Black]
2. Adjust the levels A to desired level for R, G and B respectively.
   To adjust all levels for R, G and B simultaneously, adjust them using Master.
   (Reference value: A = 21 mV)

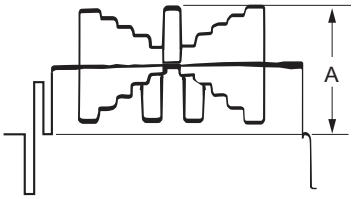
3-4-8. Flare Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector

Object: Grayscale chart

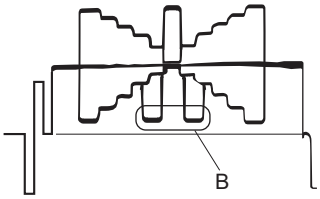
Preparation

- Setting for MSU-1000
  DETAIL OFF button → ON (dark)
  KNEE OFF button → OFF (lit)
  MATRIX OFF button → OFF (lit)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.



Adjustment Procedure

1. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Flare]
2. Adjust the levels B to desired level for R, G and B respectively.
   Or adjust the levels of other channels to the lowest level B of a channel.



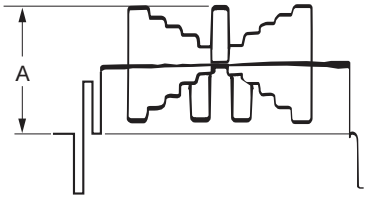
3-4-9. Gamma Correction Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

Preparation

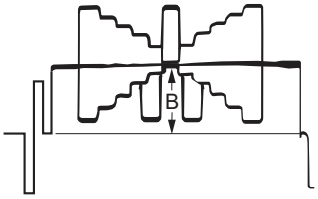
- Setting for MSU-1000
  KNEE OFF button → OFF (lit)
  GAMMA OFF button → ON (dark)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.

- Lens iris: A = 700 ±20 mV



Adjustment Procedure

1. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)
2. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 2) → [Gamma]
3. Adjust the levels B to desired level for R, G and B respectively.
   To adjust all levels for R, G and B simultaneously, adjust them using Master.



3-4-10. Knee Point/Knee Slope Adjustment

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector

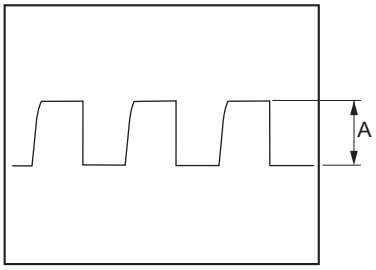
Preparation

- Setting for MSU-1000
  MASTER GAIN → 6
  TEST 1 button → ON (lit)
  KNEE OFF button → ON (dark)

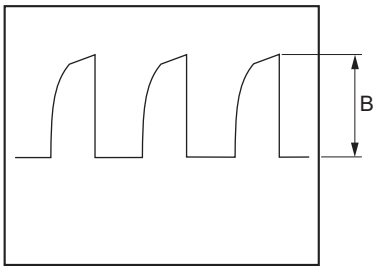
Adjustment Procedure

1. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [Knee] → [Knee Slope]
2. Set the Master adjustment to +99.
3. Operate the menu of MSU-1000.
   Touch panel operation: (Page 1) → [Knee] → [Knee Point]

4. Adjust the levels A to desired level for R, G and B respectively.
   To adjust all levels for R, G and B simultaneously, adjust them using Master.
   (Reference value: A = 686 mV (98% of factory setting))



5. Operate the menu of MSU-1000.
   Touch panel operation: (Page 1) → [Knee] → [Knee Slope]
6. Adjust the levels B to desired level for R, G and B respectively.
   To adjust all levels for R, G and B simultaneously, adjust them using Master.
   (Reference value: B = 735 mV (factory setting))



Setting after Adjustment

- Setting for MSU-1000
  MASTER GAIN → 0
  TEST 1 button → OFF (dark)
  KNEE OFF button → OFF (lit)

3-4-11. White Clip Level Adjustment

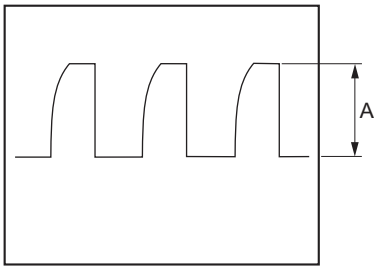
Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector

Preparation

- Setting for MSU-1000
  MASTER GAIN → 12
  TEST 1 button → ON (lit)

Adjustment Procedure

1. Operate the menu of MSU-1000.
   1) PAINT button → ON (lit)
   2) Touch panel operation: (Page 1) → [White Clip]
2. Adjust the levels A to desired level for R, G and B respectively.
   To adjust all levels for R, G and B simultaneously, adjust them using Master.
   (Reference value: A = 756 mV)



Setting after Adjustment

- Setting for MSU-1000
  MASTER GAIN → 0
  TEST 1 button → OFF (dark)

3-4-12. File Store

After adjustments described in "3-4. Video System Level Adjustment" are completed, be sure to execute the reference file store.

Reference File Store

1. Operate the menu of MSU-1000.
   1) FILE button → ON (lit)
   2) Touch panel operation: [Ref File] → [Ref Store] → [Store]
2. When the reference file entry is completed, a message "Completed" appears.

3-5. ND Offset Adjustment

3-5-1. White Balance Compensation

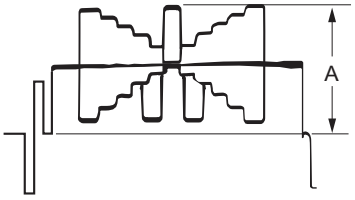
Note

When the filter disk unit or the TG-285 board is replaced, the correction of white balance is required. Proceed as follows.

Equipment: Waveform monitor (R, G, B)
Test Point: SDI connector
Object: Grayscale chart

Preparation

- Setting for MSU-1000
  AUTO IRIS button → ON (lit)
- Shoot the grayscale chart so that the chart frame is aligned with the under scanned monitor frame.
- Lens iris: A = 600 ±20 mV (F4 to F5.6)
  If the lens aperture is greater than F5.6, adjust the light amount with the shutter.



Adjustment Procedure

1. Operate the control panel of MSU-1000.
   FILTER CONTROL button → ON (lit)
2. Operate the control panel of MSU-1000, and select the ND filter 1.
   ND1 button → ON (lit)
3. Operate the control panel of MSU-1000, and perform the automatic white balance adjustment.
   WHITE button → ON (lit)
4. After the automatic white balance adjustment is completed, switch the filter to ND filters 2 to 4, and execute the automatic white balance adjustment for each. At that time, set the GAIN for each ND filter as follows.
   - MASTER GAIN setting of MSU-1000
     - ND filter 2: 6 dB
     - ND filter 3: 12 dB
     - ND filter 4: 12 dB

OHB File Store

1. Operate the menu of MSU-1000.
   1) FILE button → ON (lit)
   2) Touch panel operation: [OHB File] → [OHB Store] → [Store]
2. When the store operation is completed, a message “OHB File Stored” appears.

Setting after Adjustment

Setting for MSU-1000
MASTER GAIN → 0

3-6. RPN Compensation

Notes

- The residual point noise (RPN) of the CCD is automatically compensated with the automatic compensation (APR) function usually during the automatic black balance adjustment (ABB). If the RPN still remains after the APR is executed, perform the manual RPN compensation adjustment.
- If any RPN still remains after the RPN compensation adjustment, handle it according to the flowchart.

3-6-1. Automatic Compensation (APR)

When an RPN is detected in the screen, perform the automatic black balance adjustment (ABB) and remove the RPN with the APR function.

Automatic Black Balance Adjustment (ABB)

1. Press the AUTO W/B BAL switch to the BLK side (lower).
2. When the adjustment is completed, a message “ABB: OK” appears.

Note

- RPNs of only one channel (R, G, or B) can be detected and compensated with one-time APR. To scan these three channels, be sure to perform the ABB three times.
- The log of the address data of RPNs that have been compensated is updated each time the APR is performed. RPNs that are not detected with the APR function five times in a row, they are excluded from the scope of compensation and their data is deleted.

3-6-2. Manual RPN Compensation Adjustment

The manual RPN compensation adjustment uses the SERVICE menu. For how to change the setting value, refer to “6-1-1. How to Display the SERVICE Menu/ How to Change the Setting Values”.
Open the MANUAL RPN [S03] page of the SERVICE menu.

```
<MANUAL RPN>      S03 TOP

 RPN CH SELECT   :      R
 RPN CURSOR      :    OFF
 CURSOR H POS.   :   1008
 CURSOR V POS.   :    576
 CURSOR JUMP     :   CURR
 RPN WIDTH       :      1
 RECORD RPN      :   EXEC
 DELETE RPN      :   EXEC
 MONITOR SEL     :  YPbPr
```

Preparation

Automatic Black Balance Adjustment (ABB)

1. Press the AUTO W/B BAL switch to the BLK side (lower).
2. When the adjustment is completed, a message “ABB: OK” appears.

Adjustment Procedure

Note

Points that are adjacent laterally and diagonally to already compensated RPNs cannot be compensated.

1. Select the channel (R, G, or B) to be compensated.
   ITEM: RPN CH SELECT → R, G, B
2. Adjust the H and V values and set the cross cursor center at the target RPN.
   When the cursor is placed accurately at the RPN position, the RPN is compensated.

   Note

   Some RPNs seem to have been compensated even if the cursor is placed off the RPNs by one line or one pixel. Before proceeding to step 3, shift the cursor by one line or one pixel and check that the compensation position is correct.
   ITEM: RPN CURSOR → ON
   ITEM: CURSOR H POS.
   ITEM: CURSOR V POS.

   Tip

   One click of the rotary encoder is equivalent to one-pixel shift.
   On the other hand, the cursor moves by two clicks of the rotary encoder because the cursor has a size of two pixels.
3. Press the rotary encoder and record the RPN data (correction value).
   ITEM: RECORD RPN → EXEC
4. A message “RECORD DATA OK? YES → NO” appears.
   Check that the RPN has disappeared and then select “YES” with turning the rotary encoder.
5. Press the rotary encoder. A message “COMPLETE!” appears and the RPN compensation starts.

   Tip

   If a compensation pixel has been wrongly recorded, delete the RPN data.
   ITEM: DELETE RPN → EXEC
6. Repeat steps 2 to 5 to compensate other RPNs.
   If any RPN still remains after this manual adjustment, handle it according to the flowchart in “3-6-5. RPN Compensation Flowchart”.

Setting after Adjustment

ITEM: RPN CURSOR → OFF

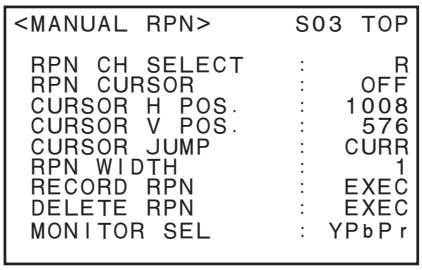
3-6-3. Procedures to be Taken when the RPN Compensation Fails

When the RPN compensation is not successful even after the manual RPN compensation adjustment was made, the following causes are possible.

- An adjacent wrong position was compensated.
- The compensation failed due to the influence of other RPNs.
- The RPN with a very large level has an extent over one pixel that was made in the signal generation process.

Checking Correction Points

1. Open the MANUAL RPN [S03] page of the SERVICE menu.



2. Set RPN CURSOR to ON.
   ITEM: RPN CURSOR → ON
3. Check whether there are any compensated pixels close to the pixel to be compensated with the CURSOR JUMP function.

   Tip

   Correction points can be checked effectively by placing the cursor in advance close to the pixel to be compensated by using CURSOR H POS. and CURSOR V POS..
   - When the target pixel is above the cursor position,
     ITEM: CURSOR JUMP → PREV
   - When the target pixel is under the cursor position,
     ITEM: CURSOR JUMP → NEXT

4. When the cursor stopped at a position near the target pixel:
   1) Delete the data because the data is recorded so as to compensate the pixel at the cursor position.
      ITEM: DELETE RPN → EXEC
   2) A message “DELETE DATA OK? YES → NO” appears. Select YES with the rotary encoder and then press the rotary encoder.

      Note

      Appearance of an RPN next to the pixel to be compensated means that adjacent RPNs exit. If an RPN appears in the diagonal direction, the RPN cannot be compensated. In this case, the CCD or the CCD block must be replaced. For more information, contact your local Sony Sales Office/Service Center.

   3) If nothing has changed, change the compensation position.
      Move the cursor horizontally or vertically to check whether the RPN can be compensated.
   4) When the RPN has been successfully compensated, record the data.
      ITEM: RECORD RPN → EXEC
   5) A message “RECORD DATA OK? YES → NO” appears. Select YES with the rotary encoder and then press the rotary encoder.
   6) A message “COMPLETE!” appears and the data is recorded.

      Note

      When two RPNs are vertically adjacent to each other, record the data at the position where one RPN can be compensated.
      Then shift the cursor vertically by 1 at the same horizontal address and check whether the other RPN can becompensated.
      When the other RPN has been successfully compensated, record the data of the RPN.
      When two RPNs are horizontally adjacent to each other, move the cursor to the position where the left RPN can be compensated. Next, set RPN WIDTH to 2 and record the data, and then check whether these RPNs can be successfully compensated.
      If the RPN compensation failed, delete the data.
      Increase RPN WIDTH to 3, 4, ..., and select a value that allows the best compensation.
      For an RPN that has a horizontal extent (smear), increase RPN WIDTH from 1 to 2, 3, 4, ..., and select a value that allows the best compensation.

3-6-4. Performing Automatic RPN Detection Effectively

Preparation

- Lens iris→ CLOSE
- Setting for MSU-1000
  BARS button → OFF (dark)
  SHUTTER button → OFF (dark)

Procedure

1. Open the RPN MANAGE [S04] page of the SERVICE menu.

```
<RPN MANAGE>      S04 TOP

 RPN ALL PRESET   : EXEC
 AUTO CONCEAL     : EXEC
 APR AT ABB       : ON
```

2. Only perform the APR of RPNs.
   ITEM: AUTO CONCEAL → EXEC

   Tip

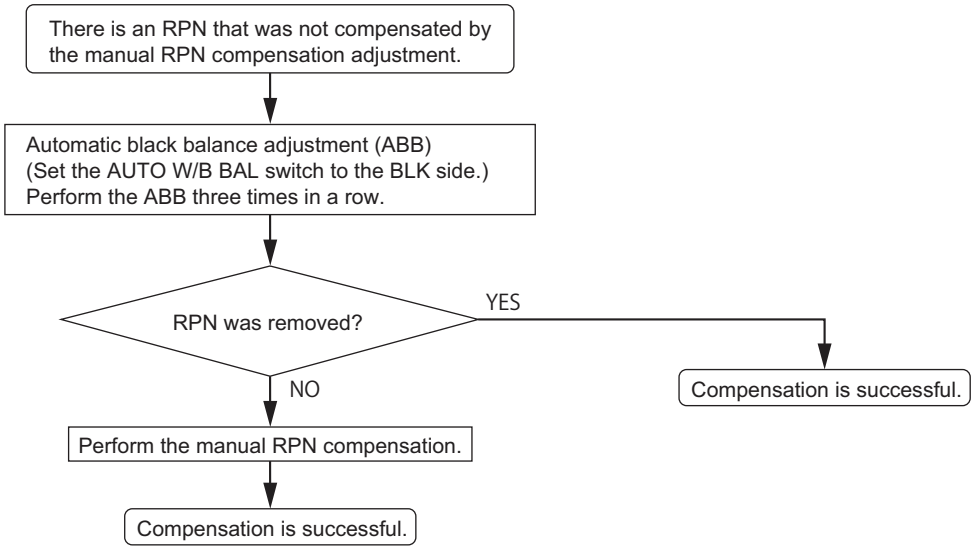
   RPNs of three channels are automatically detected at the same time through this operation.

   Note

   If AUTO CONCEAL is executed with a wrong switch setting, delete all the recorded data. Make these settings and execute AUTO CONCEAL carefully so that the RPN compensated data is not deleted completely.
   ITEM: RPN ALL PRESET → EXEC

3-6-5. RPN Compensation Flowchart

If any RPN still remains after the manual RPN compensation adjustment, handle the RPN according to the following flowchart.



Section 4
Digital Triax Transmission System Alignment

Tip

Adjustment of the digital triax transmission system is required for HSC300R/100R. This adjustment is not required for HSC300RF/100RF.

4-1. Preparations

4-1-1. Equipment Required

Measuring Equipment

- Frequency counter: Advantest TR5821AK or equivalent
- Oscilloscope: Tektronix TDS460A or equivalent
- FM signal generator: Rohde & Schwarz SMHU58 or equivalent

4-1-2. Precautions on Adjustments

- All measuring equipment must have been calibrated.

4-2. 1.4-MHz Modulation Circuit Adjustment

4-2-1. Frequency Adjustment

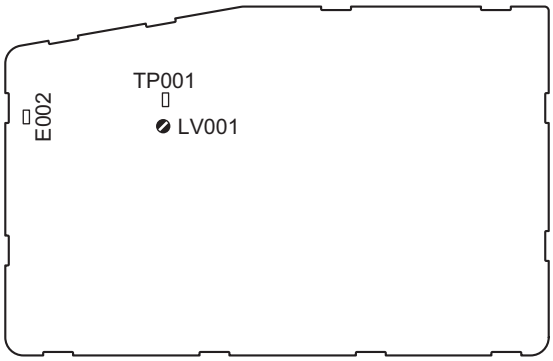
Preparation

- Supply the DC IN connector with external power (+12 V).
- Set the CAMERA POWER switch to EXT.
- Disconnect the INTERCOM connector.

Adjustment Procedure

1. Connect the frequency counter to the following terminals on the TX-148 board.
   Test Point: TP001
   GND: E002
2. Adjust the LV001 on the TX-148 board so that the frequency counter shows 1.4 ±0.001 MHz.

Measuring Point/Adjusting Point



TX-148 board (Side A)

4-3. Demodulation Circuit Adjustment

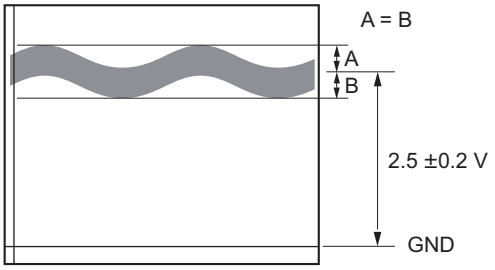
4-3-1. Tuning Adjustment

Preparation

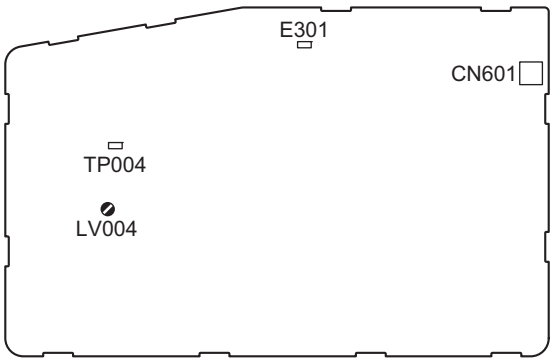
- Supply the DC IN connector with external power (+12 V).
- Set the CAMERA POWER switch to EXT.
- Disconnect the coaxial cable from the connector CN601 on the TX-148 board, and connect the FM signal generator to CN601. Input the following FM signal from the FM signal generator.
  - Carrier: 1.0MHz
  - AF: 1 kHz
  - Dev: ±3 kHz
  - RF level: -15 dBm

Adjustment Procedure

1. Connect the oscilloscope to the following terminals on the TX-148 board.
   Test Point: TP004
   GND: E301
2. Adjust the LV004 on the TX-148 board so that the DC level becomes 2.5 ±0.2 V.



Measuring Point/Adjusting Point



TX-148 board (Side A)

Section 5
File System

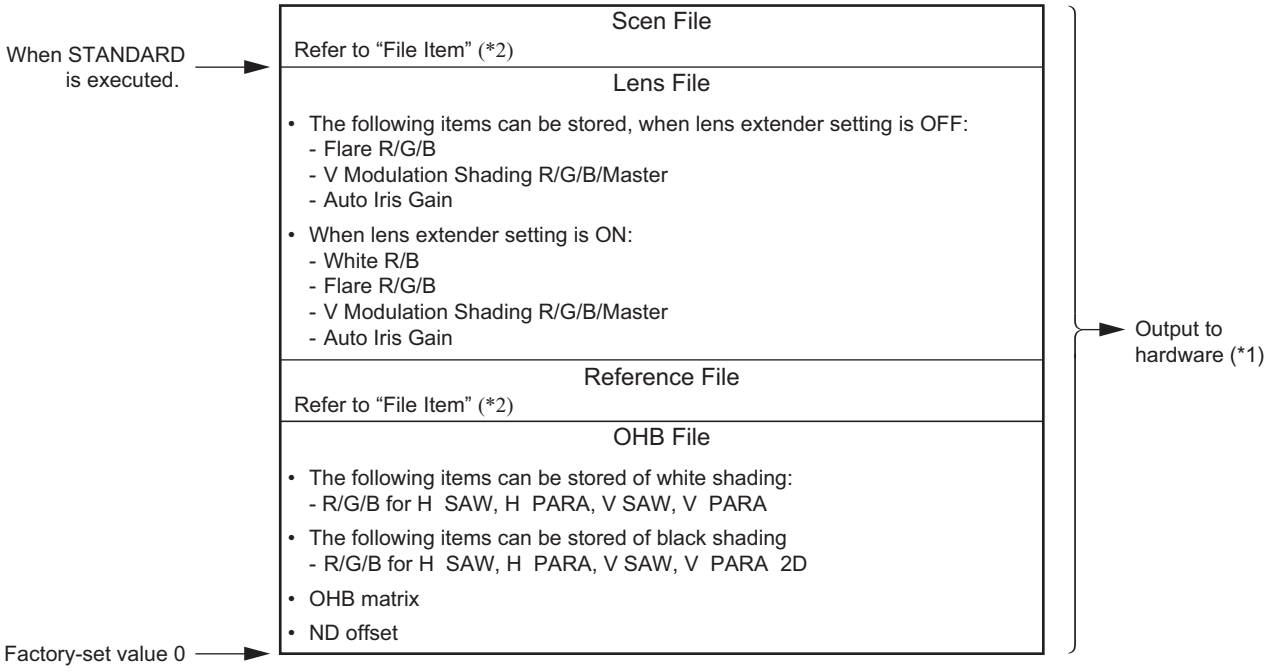
This unit is equipped with the file systems for managing data.
In this section, the menu operations are described as follows.
Example: When executing WRITE (CAM → USB) on the OPERATOR FILE page of the OPERATION menu
[OPERATION] → [OPERATOR FILE] → [WRITE (CAM → USB)]
As for the details on the setup menu, refer to "6. Setup Menu".

5-1. File Structure

The following six types of files are available. As for the items to be stored in each file, refer to "5-8. File Items" .

1. Operator File (Refer to "5-2. Operator File".)
   Stores the items displayed on the viewfinder and switch settings for camera operator. This file can be stored in a USB drive, yet video data (paint data) cannot be stored.
2. Preset Operator File (Refer to "5-3. Preset Operator File")
   Stores the factory settings of Operator File.
   This file can be stored in the camera, yet video data (paint data) cannot be stored.
3. Scene File (Refer to "5-4. Scene File")
   Stores the temporary video setting data according to the scene. This file can be stored in the camera and a USB drive.
4. Reference File (Refer to "5-5. Reference File")
   Stores the custom paint data adjusted by the video engineer. This file can be stored in the camera and a USB drive.
5. Lens File (Refer to "5-6. Lens File")
   Used for compensation of the deviation which is generated by switching the lens extender from OFF to ON and for compensation of the difference in the characteristics between lenses. This file is stored in the camera.
6. OHB File (Refer to "5-7. OHB File")
   Used for adjustment of the CCD block maintenance. This file can be stored in the camera.

5-1-1. Structure of Paint Related Files



(*1): The additional data of each file is sent to each circuit in the unit.

(*2): For items that can be stored in the scene file and the reference file, refer to “5-8. File Items”.

5-2. Operator File

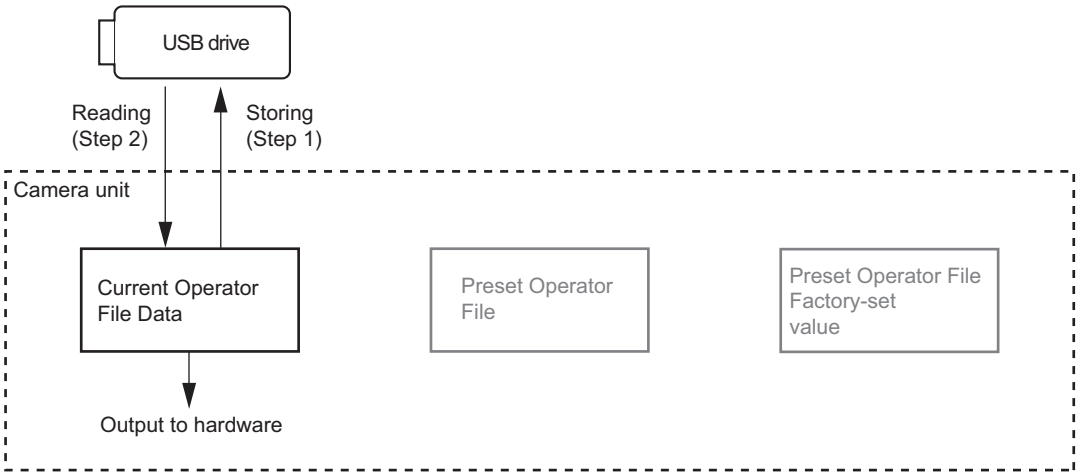
The operator file can be stored and read in the camera.
Use the setup menu to store the operator file in and read the operator file from the USB memory.

Note

- Operator file data stored in the USB drive cannot be read when the power is just turned ON.
- The current operator file data is retained even when the power is turned off.

5-2-1. Operator File Operation

Outline Figure of Operation



Storing

Reference: Refer to step 1 of “Outline Figure of Operation”.

Using OPERATION Menu of This Unit

Stores the current status in the USB drive.
[OPERATION] → [OPERATOR FILE] → [WRITE (CAM → USB)]

Reading

Reference: Refer to step 2 of “Outline Figure of Operation”.

Using OPERATION Menu of This Unit

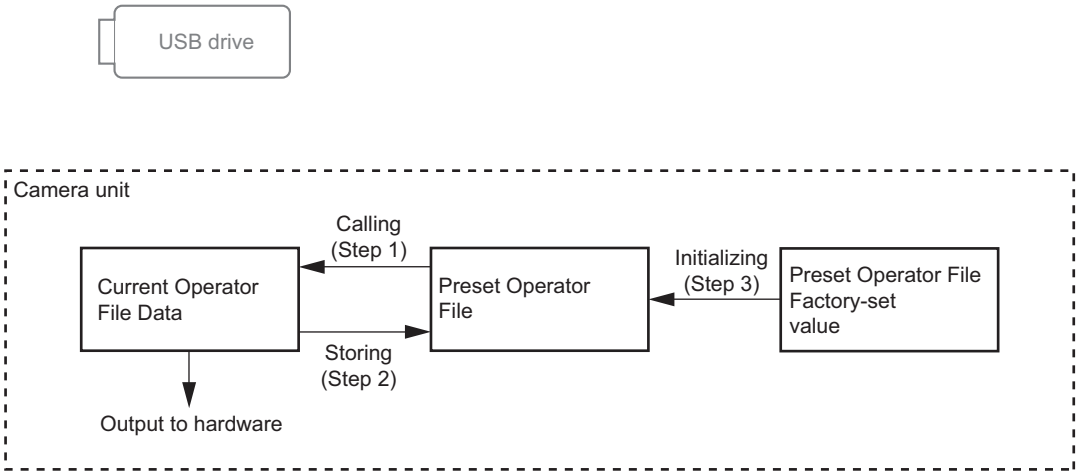
Reads the operator file stored in the USB drive to the camera.
[OPERATION] → [OPERATOR FILE] → [READ (USB → CAM)]

5-3. Preset Operator File

Preset Operator File can be stored data in the camera. Data is called and stored using the setup menu. Items to be stored as Preset Operator File are the same as Operator File.

5-3-1. Preset Operator File Operation

Outline Figure of Operation



Calling

Reference: Refer to step 1 of “Outline Figure of Operation”.

Using OPERATION Menu of This Unit

Calls the preset operator file stored in the camera as the current operator file.
[OPERATION] → [OPERATOR FILE] → [PRESET]

Storing

Reference: Refer to step 2 of “Outline Figure of Operation”.

Using FILE Menu of This Unit

Stores the current operator file as the preset operator file.
[FILE] → [OPERATOR FILE] → [STORE PRESET FILE]

Initializing

Reference: Refer to step 3 of “Outline Figure of Operation”.

Using FILE Menu of This Unit

Introduce preset operator file from the factory settings.
[FILE] → [FILE CLEAR] → [PRESET OPERATOR]

5-4. Scene File

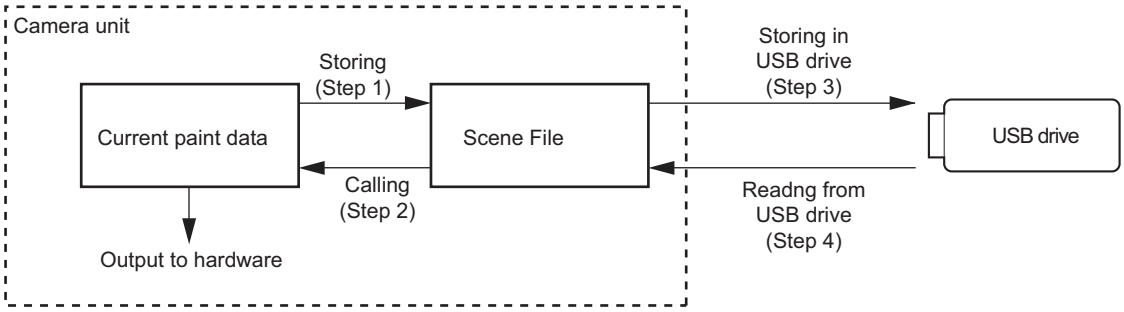
Scene files can be stored in the camera and USB drive.
Scene files can also be stored in the USB drive if the master setup unit (MSU) is used. For details, refer to the MSU operation manual.
Data is stored and called using the setup menu or MSU.
Scene files can be copied between cameras using the USB drive.

Note

Scene Files are files for storing the differences from the Reference File. Therefore, when the Reference File is changed, output of the Scene File item corresponding to the item changed in the Reference File also varies.

5-4-1. Scene File Operation

Outline Figure of Operation



Storing

Reference: Refer to step 1 of “Outline Figure of Operation”.

Using PAINT Menu of This Unit

1. Change the scene file item to the desired value.
2. Select the scene file number [1] to [5] to be stored.
   [PAINT] →[SCENE FILE] → [STORE] → [1] ～ [5]

With MSU (Master Setup Unit)

1. Change the scene file item to the desired value.
2. Press the STORE button in the functional operation area on the operation panel.
3. Press the scene file number button in the functional operation area on the operation panel.

Calling and Clearing the Call

Reference: Refer to step 2 of “Outline Figure of Operation”.

Using PAINT Menu of This Unit

Select the scene file number to be called on the SCENE FILE page.
[PAINT] →[SCENE FILE] → [1] ～ [5]
A file currently being called is indicated with its file number highlighted. Select the number again to cancel the call and resume the previous status.

With MSU (Master Setup Unit)

When the number button of the scene file you want to call is pressed and lit while the STORE button on the operation panel is not lit, the scene file of the number is called. Repressing the number button cancels calling of the scene file and the state before calling is restored.

Storing the Scene File to the USB Drive

Reference: Refer to step 3 of “Outline Figure of Operation”.

Using PAINT Menu of This Unit

Stores the scene file stored in the camera to the USB drive.
[PAINT] → [SCENE FILE] → [WRITE (CAM → USB)]

Reading the Scene File from the USB Drive

Reference: Refer to step 4 of “Outline Figure of Operation”.

Using PAINT Menu of This Unit

Reads the scene file stored in the USB drive to the camera.
[PAINT] → [SCENE FILE] → [READ (USB → CAM)]

Note

Scene File data stored in the USB drive cannot be read when the power is just turned on.

5-5. Reference File

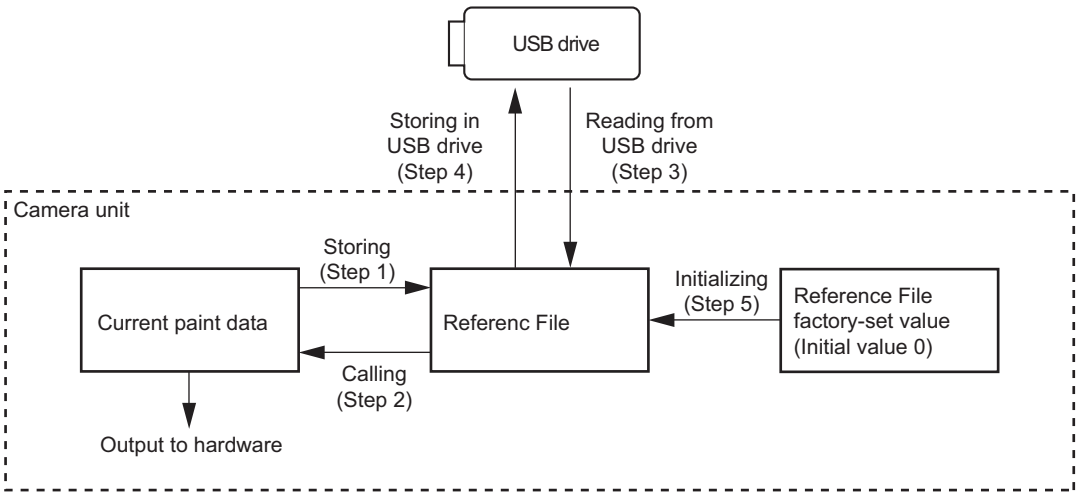
Reference files can be stored in the camera and USB drive.
Reference files can also be stored in the memory stick if the master setup unit (MSU) is used. For details, refer to the MSU operation manual.
Data is stored and called using the setup menu or MSU.
Reference files can be copied between cameras using the USB drive.

Note

Reference File stores the differential data taking the factory-setting as 0. Therefore, initializing the Reference File brings the settings to the same status at the factory setting. If Lens File or OHB File retains the data, they need to be initialized as well.
To initialize data, use the setup menu. You can select all file items or only specified items to initialize.

5-5-1. Reference File Operation

Outline Figure of Operation



Storing

Reference: Refer to step 1 of “Outline Figure of Operation”.

Using FILE Menu of This Unit

Reference file is stored in the camera and the numerical data is displayed as 0. (Excluding some items. Refer to “5-8. File Items”.)
[FILE] → [REFERENCE] → [STORE FILE]

With MSU (Master Setup Unit)

1. Press the FILE button in the functional operation area on the operation panel.
2. Select [Reference] → [Reference Store] by the menu operation.
   Reference file is stored in the camera and the numerical data is displayed as 0. (Excluding some items. Refer to “5-8. File Items”)

Calling

Reference: Refer to step 2 of “Outline Figure of Operation”. Refer to “5-1-1. Structure of Paint Related Files”.

Using PAINT Menu of This Unit

Temporary paint (values of each item) and selection of scene file are reset, and the state when the reference file was stored is resumed.
[PAINT] → [SCENE FILE] → [STANDARD]

With MSU (Master Setup Unit)

Pressing the STANDARD button in the camera/panel control area on the operation panel restores the state when the reference file was stored.

Reading the Reference File from the USB Drive

Reference: Refer to step 3 of “Outline Figure of Operation”.

Using FILE Menu of This Unit

Reference File data stored in the camera can be changed by reading the Reference File data stored in the USB drive.
[FILE] → [REFERENCE] → [READ (USB → CAM)]

Note

Reference file data stored in the USB drive cannot be read when the power is just turned on.

Storing the Reference File in the USB Drive

Reference: Refer to step 4 of “Outline Figure of Operation”.

Using FILE Menu of This Unit

Stores the reference file stored in the camera to the USB drive.
[FILE] → [REFERENCE] → [WRITE (CAM → USB)]

Initializing All File Items

Reference: Refer to step 5 of “Outline Figure of Operation”.

Using FILE Menu of This Unit

Re-set the reference file to the factory settings (default value: 0).
[FILE] → [FILE CLEAR] → [REFERENCE (ALL)]

5-6. Lens File

The Lens File stores the differential data from the Reference File.
Lens File stores the data to compensate the differences of the white shading, flare balance, and white balance, which occur when the lens extender is set to ON. It also stores the minimum f-stop value and name of the lens. These adjustment data are stored in the camera.
Lens File data of up to 16 files can be stored for a lens that is not compatible with serial communication and Lens File data of up to 25 files can be stored for a lens compatible with serial communication.
The adjustment data can be called by selecting a Lens File.

Note

Before creating the Lens File, perform the necessary adjustments by using the lens usually used and register the Reference File.

5-6-1. Lens File Operation

Adjusting the Lens File Data

Using a lens that is not compatible with serial communication

1. Mount the lens and select the file with the same name as the mounted lens from the setup menu. If no file with the same name as the lens exists, select NO OFFSET.
   [FILE] → [LENS FILE] → [No.] (Select a lens number)
2. Set the lens name and minimum f-stop value.
3. Set the lens extender to OFF.
4. Shoot the white pattern, and fine-adjust it with V modulation R/G/B/Master so that the video level is around 80% (560 mV) with the lens iris set around F4 and the zoom control in the center of the ring.
   [PAINT] → [VIDEO LEVEL] → [V MOD R/G/B/M]
5. Adjust the white balance and flare balance with the grayscale chart.
6. Zoom the lens and adjust the center marker to a position at which the object does not deviate.

   Note

   The center marker position is stored in the Lens File immediately after the position is aligned.
   Note that the center marker position is not stored when Lens File Store is executed.

7. Execute Lens File Store.
   [FILE] → [LENS FILE] → [STORE FILE]
8. Set the lens extender to ON and repeat steps 4 to 7.

For lens compatible with serial communication

1. Check that the lens number is No. 17.
2. Also check that the name of the lens and minimum f-stop value.

3. Turn on the dynamic shading.

   Note

   If using the lens compatible with serial communication with the dynamic shading turned on, you do not require the V modulation adjustment. Adjust the white shading or V modulation only when the deviation occurs. In this case, the data will not be stored in the Lens File.

   - Automatic white shading adjustment:
     Shoot the white pattern so that the video level is around 80% (560 mV).
     [MAINTENANCE] → [WHITE SHADING] → [AUTO WHITE SHADING]
     Or adjust the R/G/B/ white shading V SAW, V PARA, H SAW, and H PARA.
     [MAINTENANCE] → [WHITE SHADING] → [V SAW R/G/B], [V PARA R/G/B], [H SAW R/G/B], [H PARA R/G/B]
   - V modulation adjustment:
     Shoot the white pattern, and fine-adjust it with V modulation R/G/B/Master so that the video level is around 80% (560 mV) with the lens iris set around F4 and the zoom control in the center of the ring.
     [PAINT] → [VIDEO LEVEL] → [V MOD R/G/B/M]
4. Set the lens extender to OFF.
5. Adjust the white balance and flare balance with the grayscale chart.
6. Zoom the lens and adjust the center marker to a position at which the object does not deviate.

   Note

   The center marker position is stored in the Lens File immediately after the position is aligned, and is not stored when Lens File Store is executed.

7. Execute Lens File Store.
   [FILE] → [LENS FILE] → [STORE FILE]
8. Set the lens extender to ON and repeat steps 5 to 7.

Calling

Using OPERATION Menu of This Unit

Calls the lens file stored in the camera.
[FILE] → [LENS FILE] → [No.]

5-7. OHB File

OHB File is used to store the adjustment values specific to the CCD block.
OHB File data is stored in the camera.

5-7-1. OHB File Operation

Adjusting and Storing

Using FILE/MAINTENANCE Menu of This Unit

1. Calls the reference file stored in the camera.
   [FILE] → [REFERENCE] → [STANDARD]
2. Perform the automatic black shading adjustment.
   [MAINTENANCE] → [BLACK SHADING] → [AUTO BLACK SHADING]
   Repeat this operation 3 times or more.
   When adjustment is not completed correctly, adjust the black shading automatically again.
   Or adjust the black shading V SAW, V PARA, H SAW, and H PARA on R/G/B respectively.
   [MAINTENANCE] → [BLACK SHADING] → [V SAW R/G/B], [V PARA R/G/B], [H SAW R/G/B] , [H PARA R/G/B]
3. Perform the automatic black balance adjustment.
   [MAINTENANCE] → [AUTO SETUP] → [AUTO BLACK]
4. Perform the automatic white shading adjustment.
   Shoot the white pattern so that the video level is around 80% (560 mV).
   [MAINTENANCE] → [WHITE SHADING] → [AUTO WHITE SHADING]
   Repeat this operation 3 times or more.
   When adjustment is not completed correctly, adjust the white shading automatically again.
   Or adjust the white shading V SAW, V PARA, H SAW, and H PARA on R/G/B respectively.
   [MAINTENANCE] → [WHITE SHADING] → [V SAW R/G/B], [V PARA R/G/B], [H SAW R/G/B] , [H PARA R/G/B]
5. Adjust the ND offset for all of ND filter 1 to ND filter 4.
   1) Select 4 with the ND filter knob, and shoot the white pattern so that the video level is 50% (350 mV) or more.
   2) Select 1 with the ND filter knob, and adjust the lens iris so that the video level is 80 to 50% (560 to 350 mV), and then perform the automatic white balance adjustment.
   3) Select 2 with the ND filter knob, and adjust in the same manner as step 2).
   4) Select 3 with the ND filter knob, and adjust in the same manner as step 2).
   5) Select 4 with the ND filter knob, and adjust in the same manner as step 2).
6. Perform the OHB matrix adjustment.
   [MAINTENANCE] → [OHB MATRIX] → [OHB MATRIX: ON]

   Note

   Perform this adjustment only when it is necessary to adjust a slight difference in color reproduction.

7. Execute the OHB File store.
   [FILE] → [OHB FILE] → [STORE FILE]

With MSU (Master Setup Unit)

1. Press the STANDARD button in the camera/panel control area on the operation panel (ON: lit).
2. Press the FILE button in the menu operation area on the operation panel (ON: lit).

3. Perform the automatic black shading adjustment.
   [OHB] → [Auto B Shading]
   Repeat this operation 3 times or more.
   When adjustment is not completed correctly, adjust the black shading automatically again.
   Or adjust the black shading V SAW, V PARA, H SAW, and H PARA on R/G/B respectively.
   [OHB] → [Adjusting] → [Black Shading] → [R/G/B] → [V SAW], [V PARA], [H SAW] , [H PARA]
4. Perform the automatic black balance adjustment.
   Press the BLACK button in the camera/panel control area on the operation panel (ON: lit).
   Or select [OHB] → [Auto Black] by the menu operation.
5. Perform the automatic white shading adjustment.
   Shoot the white pattern so that the video level is around 80% (560 mV).
   [OHB] → [Auto W Shading]
   Repeat this operation 3 times or more.
   When adjustment is not completed correctly, adjust the white shading automatically again.
   Or adjust the white shading V SAW, V PARA, H SAW, and H PARA on R/G/B respectively.
   [OHB] → [Adjusting] → [White Shading] → [R/G/B] → [V SAW], [V PARA], [H SAW] , [H PARA]
6. Adjust the ND offset for all of ND filter 1 to ND filter 4.
   1) Select 4 with the ND filter knob, and shoot the white pattern so that the video level is 50% (350 mV) or more.
   2) Select 1 with the ND filter knob, and adjust the lens iris so that the video level is 80 to 50% (560 to 350 mV), and then perform the automatic white balance adjustment.
   3) Perform the automatic white shading adjustment.
      Press the WHITE button in the camera/panel control area on the operation panel (ON: lit).
      Or select [OHB] → [Auto White] by the menu operation.
   4) Select 2 with the ND filter knob, and adjust in the same manner as step 2) to 3).
   5) Select 3 with the ND filter knob, and adjust in the same manner as step 2) to 3).
   6) Select 4 with the ND filter knob, and adjust in the same manner as step 2) to 3).
7. Perform the OHB matrix adjustment.
   [OHB] → [Adjusting] →[Matrix]
   Change the adjustment display by pressing the button 1, 2 of sub menu, and adjust the value of the OHB matrix.

   Note

   Perform this adjustment only when it is necessary to adjust a slight difference in color reproduction.

8. Execute the OHB File store.
   [OHB] → [OHB Store] → [Store]

5-8. File Items

You can save the data that is set with the setup menu in files.
This section lists the destination files in which the respective setting data can be stored.
This section also shows the indication mode (absolute or relative) of each setting and the default settings when the unit was shipped from the factory.

Description on symbols

○: When executing each file store, it indicates items that can be stored in the file. (If ON or OFF is described in the list, the setting is stored as it is.)
×: Setting is not stored in the file.
—: Unstorable because of a menu of temporary operation etc.

Function	Switch Item	Analog Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
GAIN	Master Gain Select		○	○	×	×	×	–3 dB to +12 dB
Iris		IRIS	×	×	×	×	×	
	Auto Iris on		○	○	×	×	×	
		Level	○	○	×	×	×	
		APL	○	○	×	×	×	
		Gain	○	○	○	×	×	
		Over ride	×	×	×	×	×	
	Detect Pattern		○	○	×	×	×	
	Close		×	OFF	×	×	×	
Shutter	Shutter ON		○	OFF	×	×	×	
	Shutter Select		○	×	×	×	×	
ECS	ECS ON		○	OFF	×	×	×	
		ECS Frequency	○	×	×	×	×	
Black Shading		Black Shading H Saw-R	×	×	×	×	○	
		Black Shading H Saw-G	×	×	×	×	○	
		Black Shading H Saw-B	×	×	×	×	○	
		Black Shading V Saw-R	×	×	×	×	○	
		Black Shading V Saw-G	×	×	×	×	○	
		Black Shading V Saw-B	×	×	×	×	○	
		Black Shading H Para-R	×	×	×	×	○	
		Black Shading H Para-G	×	×	×	×	○	
		Black Shading H Para-B	×	×	×	×	○	
		Black Shading V Para-R	×	×	×	×	○	
		Black Shading V Para-G	×	×	×	×	○	
		Black Shading V Para-B	×	×	×	×	○	

Continued

Function	Switch Item	Analog Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
	Auto Black Shading		×	×	×	×	×	
Black set		Black Set-R	×	×	×	×	○	
		Black Set-G	×	×	×	×	○	
		Black Set-B	×	×	×	×	○	
Test	Test1 on (TEST SAW)		×	×	×	×	×	
	Test2 ON		×	×	×	×	×	
	Test2 Mode 3step/10step		×	×	×	×	×	
Optical filter	Filter1 (ND)		○	×	×	×	×	
	Filter2 (CC)		○	×	×	×	×	
	Filter Remote/Local		×	×	×	×	×	
5600k	5600K ON		○	OFF	×	×	×	
White Shading		White Shading H Saw-R	×	×	×	×	○	
		White Shading H Saw-G	×	×	×	×	○	
		White Shading H Saw-B	×	×	×	×	○	
		White Shading V Saw-R	×	×	×	×	○	
		White Shading V Saw-G	×	×	×	×	○	
		White Shading V Saw-B	×	×	×	×	○	
		White Shading H Para-R	×	×	×	×	○	
		White Shading H Para-G	×	×	×	×	○	
		White Shading H Para-B	×	×	×	×	○	
		White Shading V Para-R	×	×	×	×	○	
		White Shading V Para-G	×	×	×	×	○	
		White Shading V Para-B	×	×	×	×	○	
	Auto White Shading		×	×	×	×	×	
V Modulation	V Mod Shading OFF		×	ON	×	×	×	
		Mod Shading V Saw-R	×	×	○	×	×	
		Mod Shading V Saw-G	×	×	○	×	×	
		Mod Shading V Saw-B	×	×	○	×	×	
		Master V Mod Saw	×	×	○	×	×	

Continued

Function	Switch Item	Analog Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
	Dynamic Shading Compensation ON		×	×	×	×	×	
White		White-R	○	○	OFFSET	×	OFFSET	
		White-G	○	○	×	×	×	
		White-B	○	○	OFFSET	×	OFFSET	
		color temp	—	—	—	—	—	
		balance	—	—	—	—	—	
		Master White Gain	×	×	×	×	×	
	Auto White Balance		×	×	×	×	×	
Flare	Flare OFF		○	ON	×	×	×	
		Flare-R	○	○	○	×	×	
		Flare-G	○	○	○	×	×	
		Flare-B	○	○	○	×	×	
		Master Flare	○	○	×	×	×	
Black		Master Black	○	○	×	×	×	
		Black-R	○	○	×	×	×	
		Black-G	○	○	×	×	×	
		Black-B	○	○	×	×	×	
	Auto Black Balance		×	×	×	×	×	
Detail	Detail Off		○	ON	×	×	×	
		Detail Level	○	○	×	×	×	
		Detail Limiter	○	○	×	×	×	
		Detail White Limiter	○	○	×	×	×	
		Detail Black Limiter	○	○	×	×	×	
		Detail Crispening	○	○	×	×	×	
		H Detail Frequency	○	○	×	×	×	
		Mix Ratio	○	○	×	×	×	
	DTL H/V mode		×	○	×	×	×	
	V DTL control mode		×	○	×	×	×	
		Detail H/V Ratio	○	○	×	×	×	
	Level Dep. Off		○	○	×	×	×	
		Detail Level Depend	○	○	×	×	×	
	Knee Aparture On		○	○	×	×	×	
		Knee Aparture	○	○	×	×	×	

Continued

Function	Switch Item	Analog Item	SCENE File	REFER-ENCE File	LENS File	OPERA-TOR File	OHB File	Note
Skin Detail	Skin DTL On		○	○	×	×	×	
	Skin gate ON		×	×	×	×	×	
	Skin gate (CCU)		×	×	×	×	×	
	Skin Detail Auto Hue (ch1)		×	×	×	×	×	
	Skin Detail Auto Hue (ch2)		×	×	×	×	×	
	Skin Detail Auto Hue (ch3)		×	×	×	×	×	
	Skin 1 On		ON	ON	×	×	×	
	Skin 1 Gate On		×	×	×	×	×	
		Skin 1 Level	○	○	×	×	×	
		Skin 1 Phase	○	○	×	×	×	
		Skin 1 Width	○	○	×	×	×	
		Skin 1 Sat	○	○	×	×	×	
	Skin 2 On		○	○	×	×	×	
	Skin 2 Gate On		×	×	×	×	×	
		Skin 2 Level	○	○	×	×	×	
		Skin 2 Phase	○	○	×	×	×	
		Skin 2 Width	○	○	×	×	×	
		Skin 2 Sat	○	○	×	×	×	
	Skin 3 On		○	○	×	×	×	
	Skin 3 Gate On		×	×	×	×	×	
		Skin 3 Level	○	○	×	×	×	
		Skin 3 Phase	○	○	×	×	×	
		Skin 3 Width	○	○	×	×	×	
		Skin 3 Sat	○	○	×	×	×	
Matrix	Matrix Off		○	○	×	×	×	
	Preset Matrix on		○	○	×	×	×	
	Preset Matrix Sel		○	○	×	×	×	
	User Matrix on		○	○	×	×	×	
		R-G	○	○	×	×	×	
		R-B	○	○	×	×	×	
		G-R	○	○	×	×	×	
		G-B	○	○	×	×	×	
		B-R	○	○	×	×	×	
		B-G	○	○	×	×	×	
	Multi Matrix On		○	○	×	×	×	
		gate	×	×	×	×	×	
		Phase select	×	×	×	×	×	

Continued

Function	Switch Item	Analog Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
		Hue	○	○	×	×	×	
		Saturation	○	○	×	×	×	
	Adaptive Matrix On		○	○	×	×	×	
Saturation	saturation on		○	○	×	×	×	
		saturation	○	○	×	×	×	
OHB matrix	OHB Matrix On		×	○	×	×	×	
		Phase select	×	×	×	×	×	
		Hue	×	×	×	×	○	
		Saturation	×	×	×	×	○	
Black Gamma	Black Gamma On		○	○	×	×	×	
		R Black Gamma	○	○	×	×	×	
		G Black Gamma	○	○	×	×	×	
		B Black Gamma	○	○	×	×	×	
		M Black Gamma	○	○	×	×	×	
	Black Gamma (RGB) Range		○	○	×	×	×	
Low key saturation	Low Key Saturation ON		○	○	×	×	×	
	Range		○	○	×	×	×	
		Low Key Saturation level	○	○	×	×	×	
Gamma	Gamma Off		○	ON	×	×	×	
	Gamma Category Select		○	○	×	×	×	
	STANDARD Gamma Table Select		○	○	×	×	×	
	HYPER Gamma Table Select		○	○	×	×	×	
	Step Gamma (0.90 ～ 0.35)		○	○	×	×	×	
		R Gamma	○	○ (RGB mode)	×	×	×	
		G Gamma	○	○	×	×	×	
		B Gamma	○	○ (RGB mode)	×	×	×	
		M Gamma	○	○	×	×	×	
Knee	Knee Off		○	○	×	×	×	
		R Knee point	○	○	×	×	×	
		G Knee point	○	○	×	×	×	
		B Knee point	○	○	×	×	×	
		M Knee point	○	○	×	×	×	

Continued

Function	Switch Item	Analog Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
		R Knee Slope	○	○	×	×	×	
		G Knee Slope	○	○	×	×	×	
		B Knee Slope	○	○	×	×	×	
		M Knee Slope	○	○	×	×	×	
	Knee Max On		×	OFF	×	×	×	
	Knee Saturation on		○	○	×	×	×	
		Knee saturation	○	○	×	×	×	
	Auto Knee (DCC) on		○	○	×	×	×	
		Auto Knee Point Limit	○	○	×	×	×	
		Auto Knee Slope	○	○	×	×	×	
White Clip	White Clip Off		○	ON	×	×	×	
		M White Clip	○	○	×	×	×	
Mono Color	Mono Color On		○	OFF	_	_	_	Connected with CCU only
		Mono Color Saturation	○	○	_	_	_	Connected with CCU only
		Mono Color Hue	○	○	_	_	_	Connected with CCU only
SD Detail	SD Detail Off		○	○	_	_	_	Connected with CCU only
		SD Detail Level	○	○	_	_	_	Connected with CCU only
		SD Detail Limiter	○	○	_	_	_	Connected with CCU only
		SD Detail White Limiter	○	○	_	_	_	Connected with CCU only
		SD Detail Black Limiter	○	○	_	_	_	Connected with CCU only
		SD Detail Crispening	○	○	_	_	_	Connected with CCU only
		SD H Detail Frequency	○	○	_	_	_	Connected with CCU only
		SD Detail H/V Ratio	○	○	_	_	_	Connected with CCU only

Continued

Function	Switch Item	Analog Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
		SD Detail Level Depend	○	○	_	_	_	Connected with CCU only
		SD Detail Comb	○	○	_	_	_	Connected with CCU only
Cross Color Reduce	Cross Color Reduce Off		○	○	_	_	_	Connected with CCU only
		Cross Color Reduce Level	○	○	_	_	_	Connected with CCU only
		Cross Color Reduce Coring	○	○	_	_	_	Connected with CCU only
SD Matrix	SD Matrix Off		○	○	_	_	_	Connected with CCU only
	SD Preset Matrix On		○	○	_	_	_	Connected with CCU only
	SD User Matrix On		○	○	_	_	_	Connected with CCU only
		R-G	○	○	_	_	_	Connected with CCU only
		R-B	○	○	_	_	_	Connected with CCU only
		G-R	○	○	_	_	_	Connected with CCU only
		G-B	○	○	_	_	_	Connected with CCU only
		B-R	○	○	_	_	_	Connected with CCU only
		B-G	○	○	_	_	_	Connected with CCU only
	SD Multi Matrix On		○	○	_	_	_	Connected with CCU only
		Phase select	×	×	_	_	_	Connected with CCU only
		Hue	○	○	_	_	_	Connected with CCU only
		Saturation	○	○	_	_	_	Connected with CCU only
SD Gamma	SD Gamma Off		○	ON	_	_	_	Connected with CCU only

Continued

Function	Switch Item	Analog Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
		SD M Gamma	○	○	_	_	_	Connected with CCU only
Level auto set up	level auto set up		×	×	×	×	×	
	White Setup Mode		×	×	×	×	×	
File	Standard		—	—	—	—	—	
	reference file store		—	—	—	—	—	
	reference store to USB drive		—	—	—	—	—	
	reference recall from USB drive		—	—	—	—	—	
	Scene file recall		—	—	—	—	—	
	Scene file store		—	—	—	—	—	
	Scene file store to USB drive		—	—	—	—	—	
	Scene file recall from USB drive		—	—	—	—	—	
	Lens file recall		—	—	—	—	—	
	Lens file store		—	—	—	—	—	
	OHB file store		—	—	—	—	—	
Format	1080 59.94i		—	—	—	—	—	
	1080 29.97PsF		—	—	—	—	—	
	1080 50i		—	—	—	—	—	
	1080 25PsF		—	—	—	—	—	
	720 59.94P		—	—	—	—	—	
	720 50P		—	—	—	—	—	
Digital extender	digital extender on		×	×	×	×	×	

Menu	Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
USER MENU customize		—	—	—	○	—	
VF DISPLAY	EX	—	—	—	○	—	
	ZOOM	—	—	—	○	—	
	DISP	—	—	—	○	—	
	FOCUS	—	—	—	○	—	
	ND	—	—	—	○	—	
	CC	—	—	—	○	—	
	5600K	—	—	—	○	—	
	IRIS	—	—	—	○	—	
	WHITE	—	—	—	○	—	

Continued

Menu	Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
	D.EXT	—	—	—	○	—	
	GAIN	—	—	—	○	—	
	SHUTTER	—	—	—	○	—	
	BATT	—	—	—	○	—	
	RETURN	—	—	—	○	—	
	TALK	—	—	—	○	—	
	MESSAGE	—	—	—	○	—	
! IND	ND	—	—	—	○	—	
	CC	—	—	—	○	—	
	WHITE	—	—	—	○	—	
	5600K	—	—	—	○	—	
	GAIN	—	—	—	○	—	
	SHUTTER	—	—	—	○	—	
	FAN	—	—	—	○	—	
	EXT	—	—	—	○	—	
	FORMAT	—	—	—	○	—	
VF MARKER	MARKER	—	—	—	○	—	
	LEVEL	—	—	—	○	—	
	CENTER	—	—	—	○	—	
	SAFETY ZONE	—	—	—	○	—	
	EFFECT	—	—	—	○	—	
	ASPECT	—	—	—	○	—	
	MASK	—	—	—	○	—	
	SAFETY	—	—	—	○	—	
VF DETAIL	VF DETAIL	—	—	—	○	—	
	CRISP	—	—	—	○	—	
	FREQUENCY	—	—	—	○	—	
	FLICKER	—	—	—	○	—	
	AREA	—	—	—	○	—	
	ZOOM LINK	—	—	—	○	—	
	COLOR DE-TAIL	—	—	—	○	—	
	PEAK COLOR	—	—	—	○	—	
	CHROMA LEVEL	—	—	—	○	—	
FOCUS AS-SIST	INDICATOR	—	—	—	○	—	
	MODE	—	—	—	○	—	
	LEVEL	—	—	—	○	—	
	GAIN	—	—	—	○	—	
	OFFSET	—	—	—	○	—	
	AREA MAK-ER	—	—	—	○	—	
	SIZE	—	—	—	○	—	
	POSITION	—	—	—	○	—	
	POSITION H	—	—	—	○	—	
	POSITION V	—	—	—	○	—	

Continued

Menu	Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
ZEBRA	ZEBRA	—	—	—	○	—	
	ZEBRA1 LEVEL	—	—	—	○	—	
	WIDTH	—	—	—	○	—	
	ZEBRA2 LEVEL	—	—	—	○	—	
CURSOR	CURSOR	—	—	—	○	—	
	LEVEL	—	—	—	○	—	
	BOX/CROSS	—	—	—	○	—	
	H POSITION	—	—	—	○	—	
	V POSITION	—	—	—	○	—	
	WIDTH	—	—	—	○	—	
	HEIGHT	—	—	—	○	—	
BOX MEMORY	BOX MEMORY	—	—	—	○	—	
	H POSI	—	—	—	○	—	
	V POSI	—	—	—	○	—	
	WIDTH	—	—	—	○	—	
	HEIGHT	—	—	—	○	—	
VF OUT	VF OUT	—	—	—	○	—	
	RET MIX VF	—	—	—	○	—	
	MIX DIRECTION	—	—	—	○	—	
	MIX VF MODE	—	—	—	○	—	
	MIX VF LEVEL	—	—	—	○	—	
	CHARACTER LEVEL	—	—	—	○	—	
SWITCH ASSIGN1	GAIN [L]	—	—	—	○	—	
	GAIN [M]	—	—	—	○	—	
	GAIN [H]	—	—	—	○	—	
	ASSIGNABLE1	—	—	—	○	—	
	ASSIGNABLE2	—	—	—	○	—	
	RE.ROTATION	—	—	—	○	—	
SWITCH ASSIGN2	LENS VTR S/S	—	—	—	○	—	
	FRONT RET	—	—	—	○	—	
	HANDLE SW1	—	—	—	○	—	
	HANDLE SW2	—	—	—	○	—	
	ZOOM SPEED	—	—	—	○	—	
HEADSET MIC	INTERCOM	—	—	—	○	—	
	LEVEL	—	—	—	○	—	
	POWER	—	—	—	○	—	
	UNBAL	—	—	—	○	—	

Continued

Menu	Item	SCENE File	REFERENCE File	LENS File	OPERATOR File	OHB File	Note
INTERCOM	INTERCOM RECEIVE SELECT	—	—	—	○	—	
	INTERCOM	—	—	—	○	—	
	PGM1	—	—	—	○	—	
	PGM2	—	—	—	○	—	
	TRACKER	—	—	—	○	—	
	SIDE TONE	—	—	—	○	—	
TRACKER	TRACKER RECEIVE SELECT	—	—	—	○	—	
	INTERCOM	—	—	—	○	—	
	PGM1	—	—	—	○	—	
	PGM2	—	—	—	○	—	
EARPHONE	EARPHONE RECEIVE SELECT	—	—	—	○	—	
	INTERCOM	—	—	—	○	—	
	PGM1	—	—	—	○	—	
	PGM2	—	—	—	○	—	
	TRACKER	—	—	—	○	—	

Section 6
Setup Menu

6-1. Overview of Setup Menu

Some of adjustments given in this section use the setup menu. The setup menu consists of the following menus.
Besides there is a TOP menu indicating the entire configuration of menu items.

- USER menu
- USER MENU CUSTOMIZE menu
- OPERATION menu
- PAINT menu
- MAINTENANCE menu
- FILE menu
- DIAGNOSIS menu
- SERVICE menu

In this section, describes the setup menu operation as follows.
For example: When AUTO LEVEL in AUTO SETUP page of MAINTENANCE menu is performed:
MENU: MAINTENANCE
PAGE: AUTO SETUP
ITEM: AUTO LEVEL

6-1-1. How to Display the SERVICE Menu/ How to Change the Setting Values

How to Display the SERVICE Menu

Set the DISPLAY switch to “MENU” while pressing the ASSIGNABLE 1 switch and the rotary encoder.

How to Change the Setting Values

To enter or cancel the setting value of items, which can be changed by turning the rotary encoder, proceed as follows.
To enter the setting value: Press the rotary encoder.
To cancel the setting value: Before pressing the rotary encoder, press the STATUS/CANCEL switch toward the “CANCEL” side.
After the setting value is entered, the setting cannot be canceled.

6-1-2. Settable Special Functions

The following functions are made available by settings in the SERVICE menu. Note that they are limited functions.
In addition, settings of the number of scene files and setting of the resume of filter position are available.
Refer to the description in “6-2. SERVICE Menu”.

When an Autofocus Lens is Used

When an auto focus lens of Fujinon or Canon is used, a focal area marker and a focusing indicator can be displayed on the viewfinder.

Note

However, there are the following restrictions.

- When AF DISPLAY is set to ON, the EFFECT display cannot be used. Instead of the EFFECT display, you can select 100% of the SAFETY ZONE display that usually cannot be selected.

- If “Digital extender” is used, the area marker is not displayed correctly.

Procedure

1. Set AF DISPLAY in “SETUP” in the SERVICE menu to ON.
   The focusing indicator appears according to the area marker display switch of the lens. The area marker is a rectangular frame in which auto focus is detected.
2. “AF” is added to “VF DISPLAY” in the OPERATION menu. When this “AF” is set to ON, the focusing indicator appears.
   Focusing indicator:
   ▲ Front focus
   ■ Focal point
   ▼ Rear focus

6-2. SERVICE Menu

This unit is provided with the SERVICE menu that is useful for maintenance and adjustment of the camera.
The menu content is displayed on the viewfinder.
For how to display the SERVICE menu, refer to "6-1-1. How to Display the SERVICE Menu/ How to Change the Setting Values".

6-2-1. SERVICE Menu List

Menu Page No.	Menu Page Name	Remarks	Reference Page
S01	SET UP	Scene files number setting, Focal area marker and a focusing indicator displaying, Resume setting of filter position, Lens communications setting	page 6-3
S02	CC FILTER	Color temperature conversion filter setting	page 6-4
S03	MANUAL RPN	Manual RPN compensation	page 6-4
S04	RPN MANAGE	RPN automatic detection	page 6-5
S05	OHB-ADJ1	Sensitivity adjustment	page 6-5
S06	OHB-ADJ2	V-SUB adjustment	page 6-5
S07	BLACK SHADING	Black shading adjustment	page 6-6
S08	WHITE SHADING	White shading adjustment	page 6-6
S09	OHB MATRIX	OHB matrix adjustment	page 6-6
S10	TRACKER	Tracker connector setting	page 6-7
S11	SERIAL NO.	Model name displaying, Serial number displaying	page 6-7
S12	OPTION	Gain extend, Chroma filter characteristic setting	page 6-7
S13	OFDM MONITOR	State of triax transmission displaying **Tip** The adjustment is applied to HSC300R/100R.	page 6-8

6-2-2. Description of SERVICE Menu

Tip

The display screen appearing in this section shows the factory settings.

SET UP

```
<SET UP>              S01  TOP
 SCENE FILE TYPE  :       5

 AF DISPLAY       :     OFF
 FILTER RESUME    :     OFF

 LENS IF MODE     :    AUTO
```

SCENE FILE TYPE

Setting of the number of scene files that a camera can have. A number of 5 or 32 can be set.

Note

Note that, when the number of scene files is changed from 32 to 5, the data of the sixth and the following scene files are lost.

AF DISPLAY

When an auto focus lens is used, a focal area marker and a focusing indicator can be displayed on the viewfinder. For details, refer to "When an Autofocus Lens is Used".

FILTER RESUME

When the FILTER LOCAL button is set to ON and OFF in these cameras, the filter position of camera operates as follows by setting the FILTER RESUME.

ON: Filter position before the FILTER LOCAL button is set to ON.

OFF: Filter position is not changed.

LENS IF MODE

When a lens that is able to communicate with a camera through the serial interface, the interface mode can be changed forcibly to the parallel interface.

AUTO: Sets an interface automatically.

PARA: Sets a parallel interface forcibly.

CC FILTER

```
<CC FILTER>          S02 TOP

 A:   3200K
 B:   3200K
 C:   4300K
 D:   6300K
```

When the CC filter is replaced with a nonstandard color temperature conversion filter, change this setting. However, when the CC filter is replaced with a filter without color temperature conversion, such as cross filter, set 3200K. This setting is a reference for color temperature display and the color temperature control function.

MANUAL RPN

```
<MANUAL RPN>         S03 TOP

 RPN CH SELECT   :      R
 RPN CURSOR      :    OFF
 CURSOR H POS.   :   1008
 CURSOR V POS.   :    576
 CURSOR JUMP     :   CURR
 RPN WIDTH       :      1
 RECORD RPN      :   EXEC
 DELETE RPN      :   EXEC
 MONITOR SEL     :  YPbPr
```

The MANUAL RPN menu is used for manual RPN compensation. For details, refer to "3-6-2. Manual RPN Compensation AdjustmentPreparation".

RPN MANAGE

```
<RPN MANAGE>      S04 TOP

 RPN ALL PRESET   :   EXEC
 AUTO CONCEAL     :   EXEC
 APR AT ABB       :     ON
```

The RPN MANAGE menu is used for RPN compensation setting and management. For details, refer to "3-6-4. Performing Automatic RPN Detection EffectivelyPreparation".

OHB_ADJ1

```
<OHB_ADJ1>        S05 TOP
 1080-59.94i
             [R]  [G]  [B]
 GAIN_CONT: 80   80   80
 DC_ADJ_B : 7F   7F   7F
 DC_ADJ_C : 7F   7F   7F
 FILTER   :  ON
 MONITOR SEL: YPbPr
 STORE FILE : EXEC
```

The OHB_ADJ1 menu is used for adjustment of the CCD block. For details, refer "3-3-3. Sensitivity Adjustment Preparation".

OHB_ADJ2

```
<OHB_ADJ2>        S06 TOP
 1080-59.94i
             [R]  [G]  [B]
 V-SUB   :   80   80   80
 TEST MODE   :  OFF
 STORE FILE  :  EXEC

 SHUTTER     :  OFF
 SHUT_SPEED  :  1/500

 MONITOR SEL:   YPbPr
```

The OHB_ADJ2 menu is used for adjustment of the CCD block. For details, refer "3-3-4. V-SUB Adjustment Preparation".

BLACK SHADING

```
<BLACK SHADING>  S07 TOP
          1080-59.94i
         [R]  [G]  [B]
 V SAW  : 00   00   00
 V PARA : FF   FF   FF
 H SAW  : FF   01   01
 H PARA : FD   FE   FE
 BLK SET: 04   04   04
  OFFSET: 00   00   00
 GAIN:  0dB
  MONITOR SEL: YPbPr
  STORE FILE:   EXEC
```

The BLACK SHADING menu is used for adjustment of the black shading. For details, refer to the sections below.

- "3-3-1. Clamp Level Adjustment between Channel A and Channel B (Black Offset Adjustment)"
- "3-3-2. Black Set Adjustment"
- "3-3-5. Black Shading Adjustment"

WHITE SHADING

```
<WHITE SHADING>  S08 TOP
            [R]  [G]  [B]
 V SAW  :  →00   00   00
 V PARA :   00   00   00
 H SAW  :   00   00   00
 H PARA :   00   FE   00
 WHITE  :    0    0    0

  STORE FILE:   EXEC
  COLOR_TEMP_SEL: 3200K
```

The WHITE SHADING menu is used for adjustment of the white shading. For details, refer to "3-3-3. Sensitivity Adjustment Preparation".

OHB MATRIX

```
<OHB MATRIX>     S09 TOP
 PHASE:00       ALL CLEAR
 HUE   :00
 SAT   :00

 STORE FILE   : EXEC
 MATRIX       : OFF
 PRESET       : --
              : --
 USER MATRIX  : --
 MULTI MATRIX: --
```

The OHB MATRIX menu is used for adjustment of the OHB matrix. Use this menu only when it is necessary to adjust a slight differences in color reproduction between CCD blocks.

TRACKER

```
<TRACKER>          S10 TOP
 INPUT LEVEL     :   0dBu
  TALK LEVEL     :   0dBu

 OUTPUT LEVEL    :   0dBu
        L-CH     : -20dBu
        R-CH     : -20dBu
```

The TRACKER menu is used for the Tracker connector input/output level setting.

SERIAL NO.

Tip

The display screen is the case of serial number 10001 of HSC300R.

```
<SERIAL NO.>       S11 TOP
 MODEL: HSC300R
 NO.  : 10001

 DEST: UC
 OHB TYPE: OPTION BASIC
 STORE FILE: EXEC
```

The SERIAL NO. menu is used setting the current model name, serial number, destination and the OHB type.

OPTION

```
<OPTION>           S12 TOP
 GAIN EXTEND   :      OFF
 CHROMA FILTER :     FULL
```

GAIN EXTEND

When GAIN EXTEND is set to “ON”, the master gain is extended up to + 36 dB.
When it is set to “OFF”, the master gain is extended to + 12 dB.

CHROMA FILTER

Chroma filter characteristic setting.

OFDM MONITOR

```
<OFDM MONITOR>    S13 TOP
FREQ  RSSI   STEP   AGC   SNR
F7    2.18   ULOW   0.95  26.5
F8    2.17   ULOW   0.90  25.7
F9    2.09   ULOW   0.95  25.6

      VITB
F7    034A
F8    0230
F9    03DF
RF    DETECT   TH    DETECT
```

Item	Description
F7	86 MHz
F8	96 MHz
F9	106 MHz
RSSI of F7 to F9	0.0 V to 3.3 V: Receive signal detection output voltage
STEP of F7 to F9	U_L/Low/Mid/Hi: Step gain amplifier operating status
AGC of F7 to F9	0.20 V to 3.27 V: AGC amplifier control voltage
SNR of F7 to F9	S/N measurement value of the OFDM demodulation IC input signal
VITB of F7 to F9	OFDM signal reception status
RF	NO/DET: RF signal detection status
TH	Synchronizing signal detection status

Section 7
Spare Parts

7-1. 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

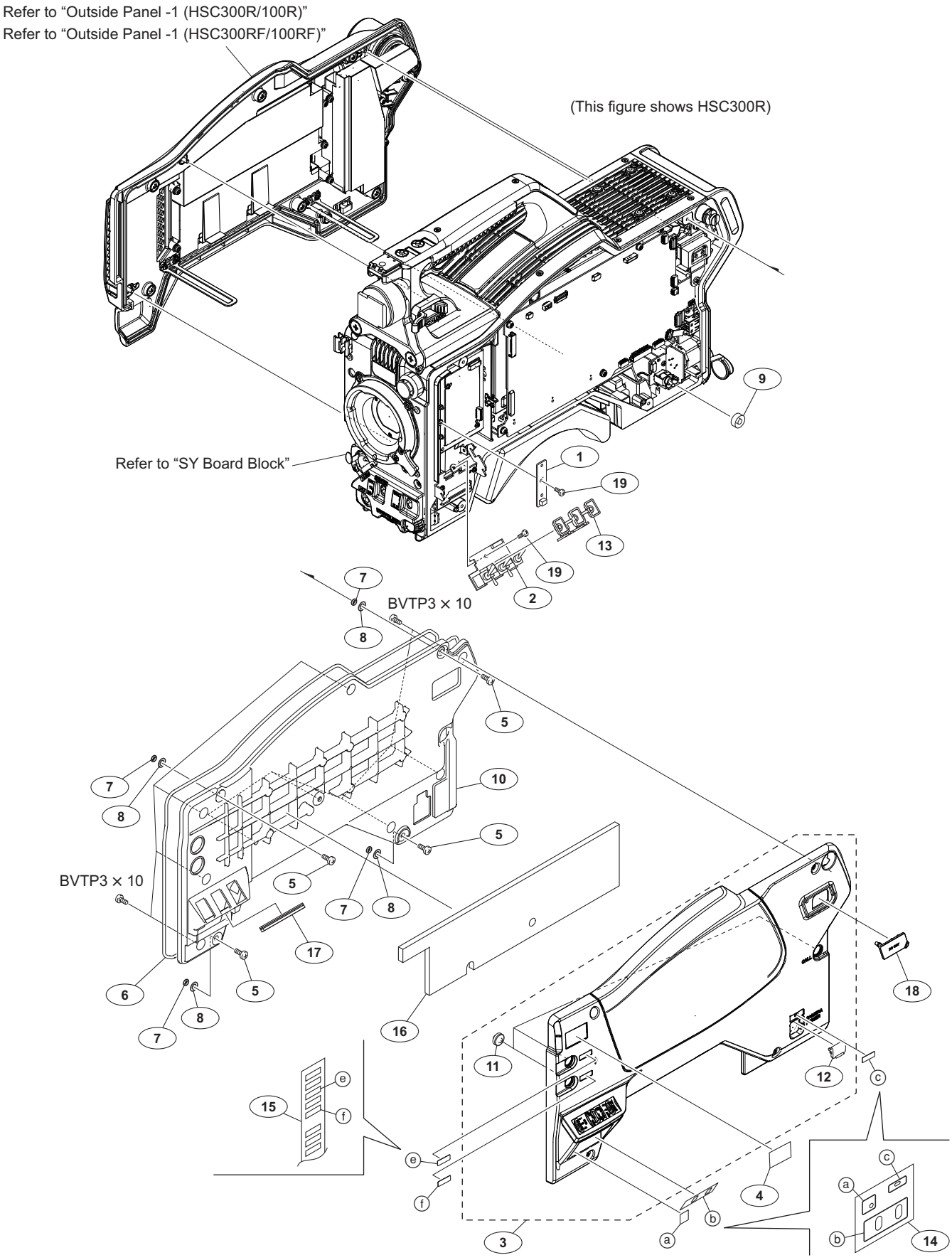
部品表の SP（Supply code）欄に "o" で示される部品は在庫していないことがあり，納期が長くなることがあります。

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。

7-2. Exploded Views

Inside Panel

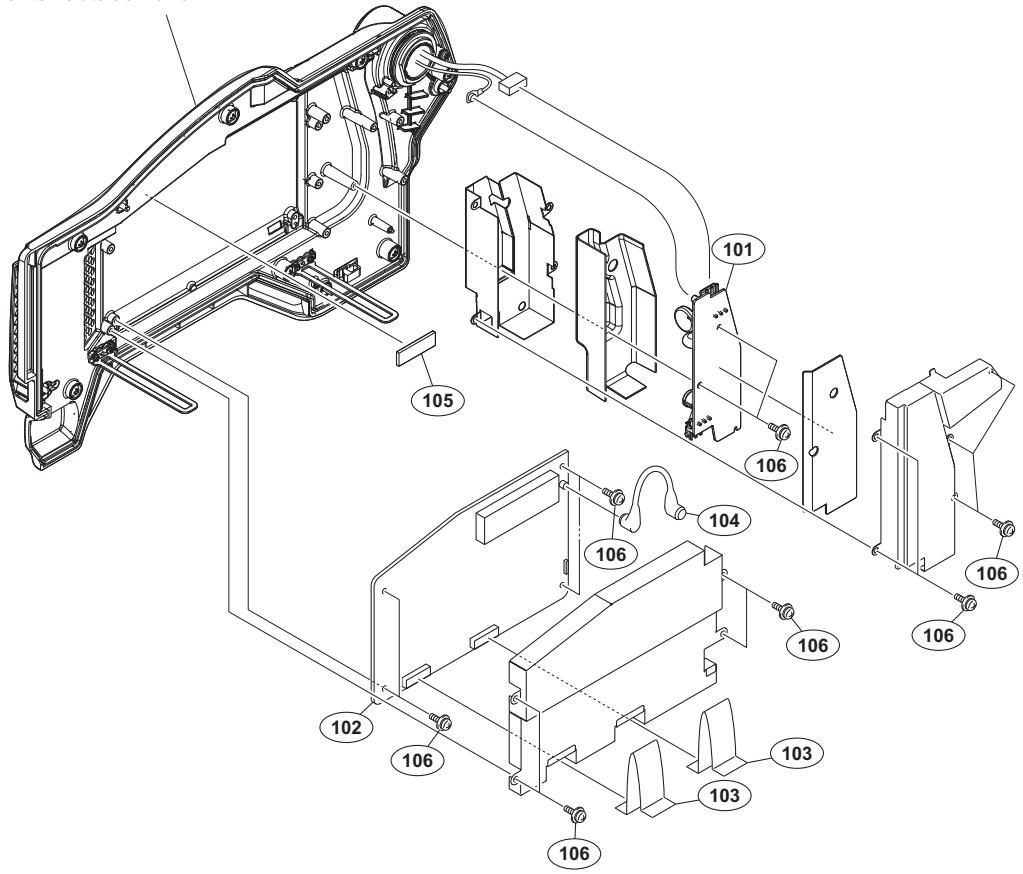


Inside Panel

No.	Part No.	SP	Description
1	A-1946-172-A	s	MOUNTED CIRCUIT BOARD, SW-1604
2	A-1946-175-A	s	MOUNTED CIRCUIT BOARD, SW-1607
3	X-2588-914-1	s	COVER ASSY (TYPE R), IN SIDE
4	3-182-055-11	s	LABEL (1), FILTER (HSC300R/ 300RF)
	3-868-600-02	s	LABEL,FILTER (HSC100R/100RF)
5	3-603-679-02	s	STAINLESS SCREW +B3X10
6	3-624-455-01	s	TUBE,SHIELD
7	3-672-250-01	s	RING (M2.6), O
8	3-701-439-11	s	WASHER
9	3-870-137-02	s	CAP, DROP PROTECTION
10	⚠ 4-138-533-02	s	PANEL,INSIDE
11	4-138-542-01	s	COVER, SW
12	4-138-673-02	s	LID, POWER SW
13	4-138-719-01	s	RUBBER, DROP PROTECTION
14	4-138-726-01	s	SHEET, INSIDE(MULTI)
15	4-138-727-01	s	LABEL(HANDLE)
16	4-138-735-01	s	CUSHION (LARGE)
17	4-138-737-01	s	CUSHION (SMALL)
18	4-415-079-01	s	CAP, CONNECTOR(DC OUT)
19	4-654-273-02	s	ACE (M2), LOCK [M2X5]
	7-685-647-79	s	SCREW +BVTP 3X10 TYPE2 TT(B)

Outside Panel-1 (HSC300R/100R)

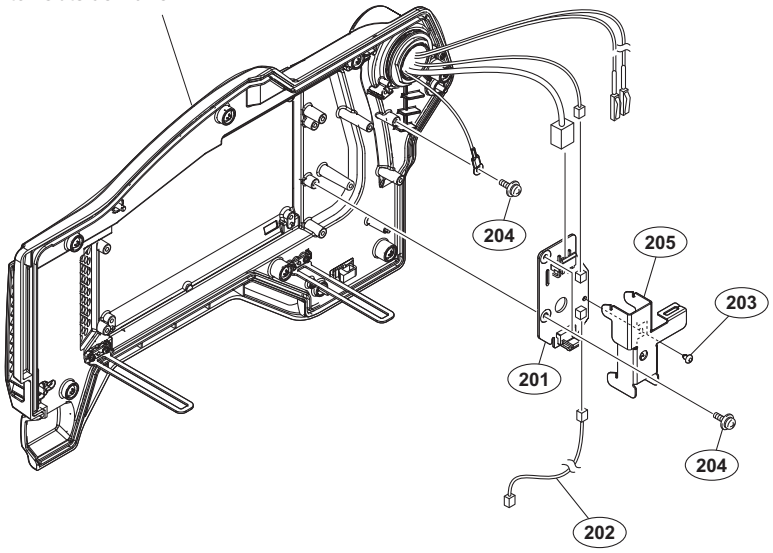
Refer to “Outside Panel -2”



No.	Part No.	SP	Description
101	A-1969-373-A	s	MOUNTED CIRCUIT BOARD, FL-377
102	A-1969-517-A	s	MOUNTED CIRCUIT BOARD, TX-148
103	1-833-470-21	s	CABLE, FLEXIBLE FLAT (33P)
104	1-836-686-11	s	CABLE, CONNECTOR WITH COAXIAL
105	4-275-213-01	s	RADIATION SHEET B
106	4-382-854-51	s	SCREW (M3X6), P, SW (+)

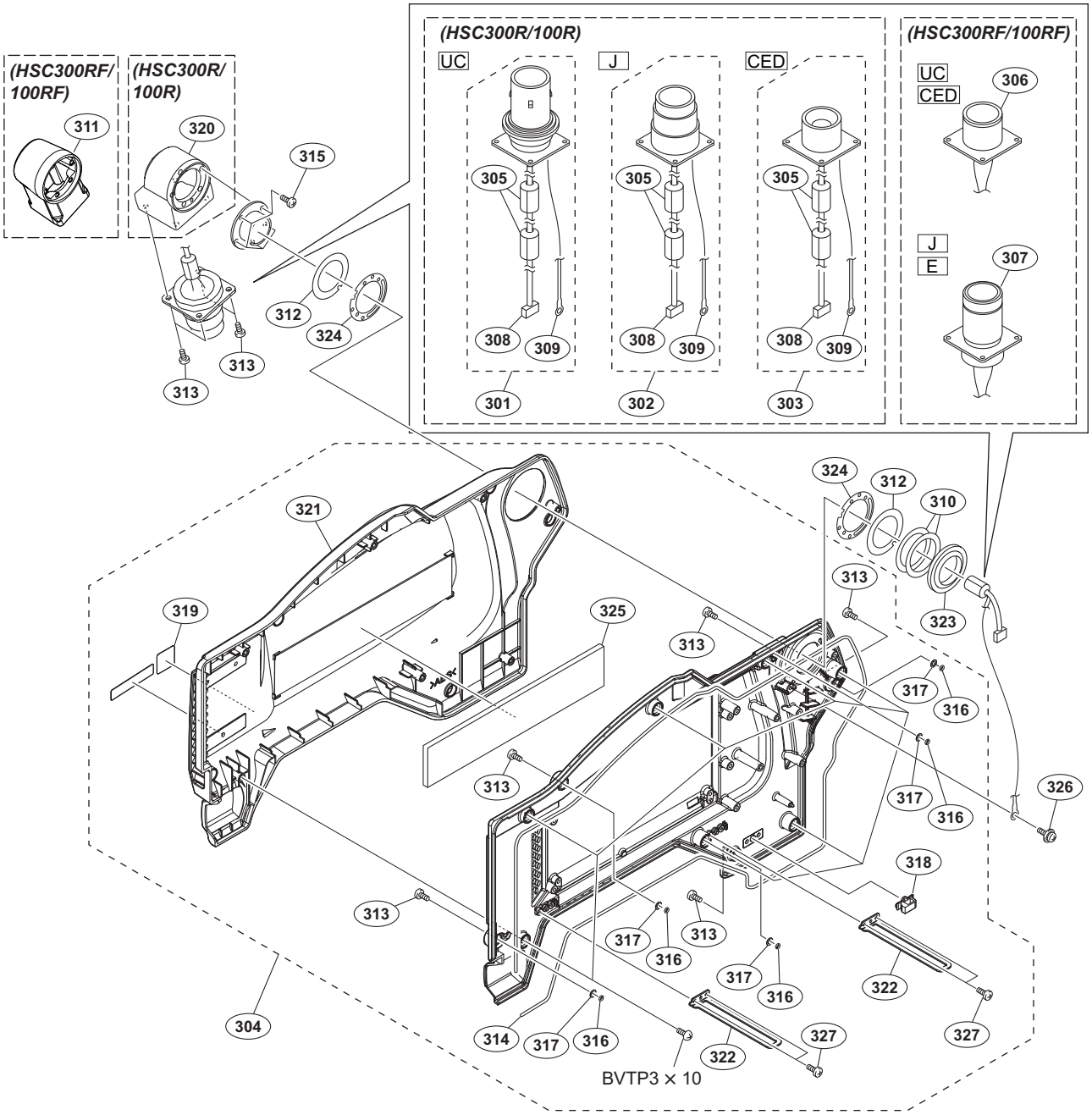
Outside Panel-1 (HSC300RF/100RF)

Refer to “Outside Panel -2”



No.	Part No.	SP	Description
201	A-1969-374-A	s	MOUNTED CIRCUIT BOARD, CN-3653
202	1-969-852-11	s	HARNESS, SUB(CCU SENCE(SDI))
203	2-279-715-21	s	RIVET, NYLON
204	4-382-854-51	s	SCREW (M3X6), P, SW (+)
205	⚠ 4-477-369-01	s	INSULATING SHEET (CN-3653)

Outside Panel-2

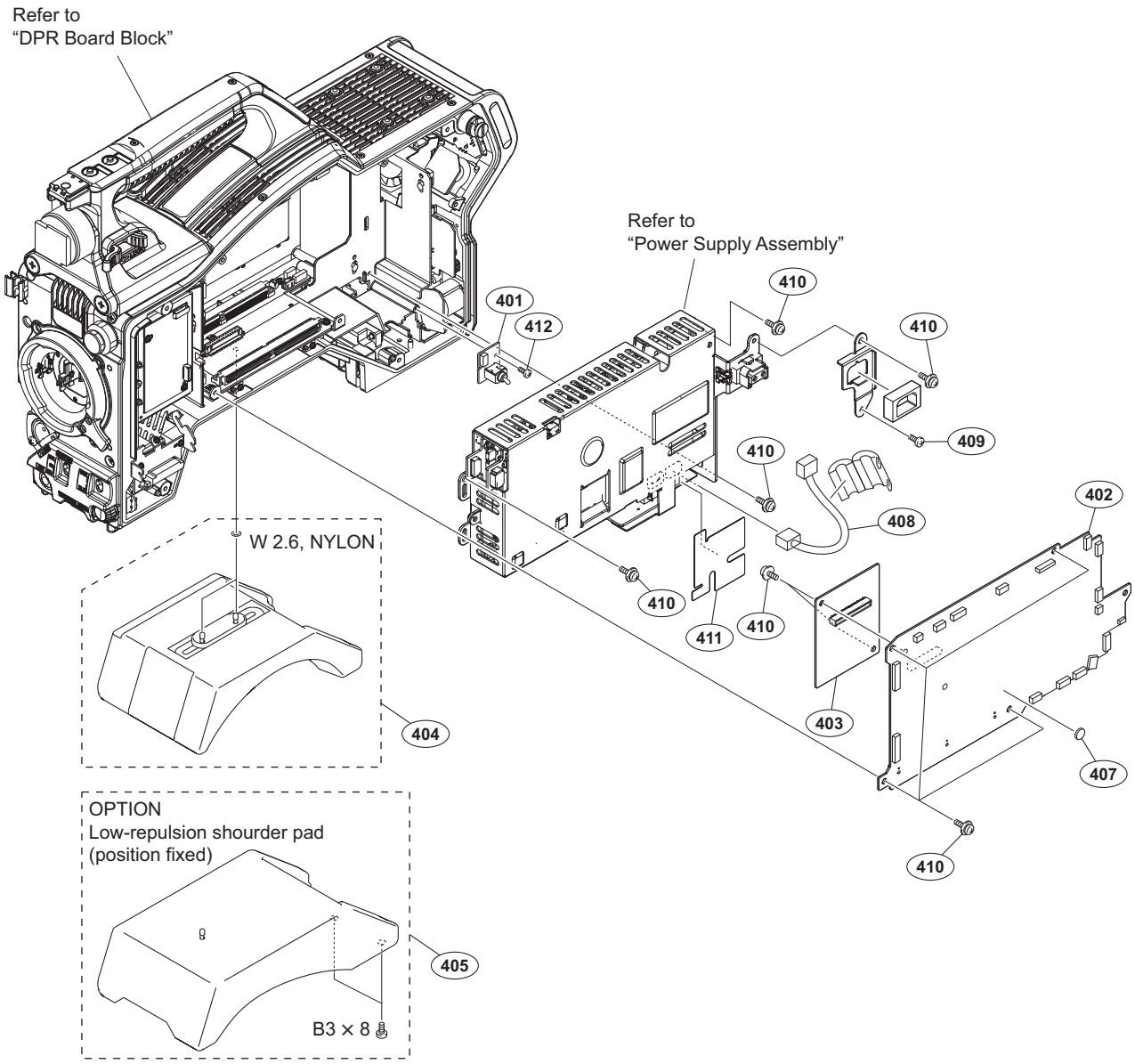


No.	Part No.	SP	Description
301	A-1705-805-A	s	TRIAX CN (K) ASSY (HSC300R:UC/ 100R:UC)
302	A-1705-819-A	s	TRIAX CN (T) ASSY (HSC300R:J/ 100R:J)
303	A-1705-822-A	s	TRIAX CN (F) ASSY (HSC300R:CED/ 100R:CED (FISCHER))
	A-1999-292-A	s	TRIAX CONNECTOR (L) ASSY (HSC300R:CED/100R:CED (LEMO))
304	A-1972-041-A	s	PANEL SUB ASSY, OUTSIDE
305	1-500-082-21	s	CLAMP, SLEEVE FERRITE (HSC300R/ 100R)
306	1-839-826-11	s	OPTICAL MULTI CABLE ASSEMBLY-M (HSC300RF:UC, CED/100RF:UC, CED)
307	1-839-827-11	s	OPTICAL MULTI CABLE ASSEMBLY (HSC300RF:J, E/100RF:J, E)
308	1-966-622-11	s	SUB HARNESS (TRIAX-CAM) (HSC300R/100R)
309	1-966-623-11	s	SUB HARNESS (EARTH LUG) (HSC300R/100R)
310	3-176-525-01	o	WASHER, SPRING
311	3-602-404-14	s	HOUSING, CONNECTOR (HSC300RF/ 100RF)
312	3-602-464-02	s	WASHER, CONDUCTIVE
313	3-603-679-02	s	STAINLESS SCREW +B3X10
314	3-624-455-01	s	TUBE,SHIELD
315	3-637-901-11	s	SCREW M2.6X5
316	3-672-250-01	s	RING (M2.6), O
317	3-701-439-11	s	WASHER
318	3-853-802-01	s	CLAMP,REUSE
319	4-137-565-01	s	LABEL, R SERIES
320	4-138-537-01	s	BOX, TRIAX (HSC300R/100R)
321	A-1972-041-A	s	PANEL SUB ASSY, OUTSIDE
322	4-138-680-01	s	SUPPORT, OUTSIDE PANEL

Outside Panel-2

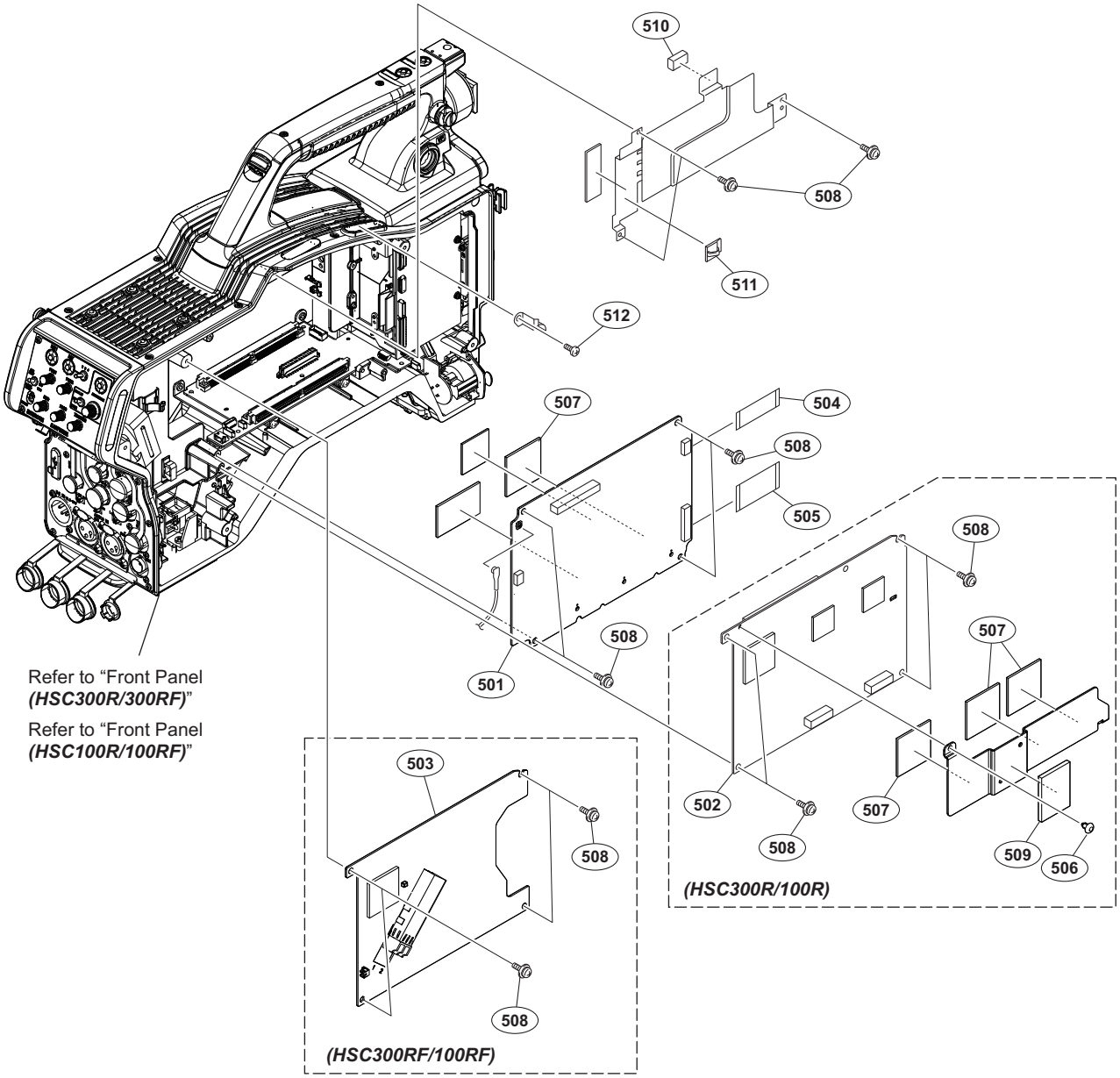
No.	Part No.	SP	Description
323	4-138-689-01	s	SHAFT, ROTARY(TRIAX)
324	4-138-707-01	s	WASHER, TRIAX(2)
325	4-138-738-01	s	CUSHION, OUTSIDE
326	4-382-854-51	s	SCREW (M3X6), P, SW (+)
327	4-654-273-02	s	ACE (M2), LOCK [M2X5]
	7-685-647-79	s	SCREW +BVTP 3X10 TYPE2 TT(B)

SY Board Block



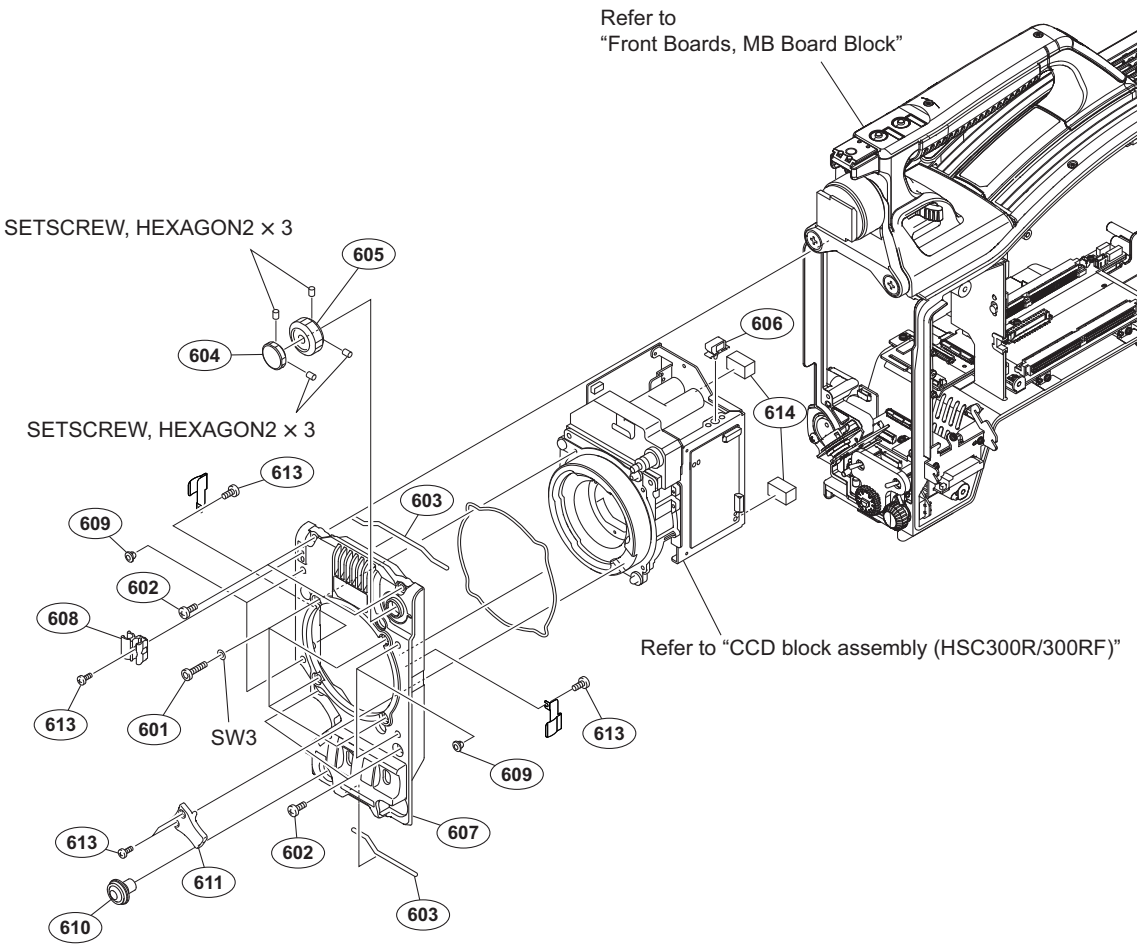
No.	Part No.	SP	Description
401	A-1946-177-A	s	MOUNTED CIRCUIT BOARD, SW-1609
402	A-1969-512-A	s	MOUNTED CIRCUIT BOARD, SY-430
403	A-1974-764-A	s	MOUNTED CIRCUIT BOARD, AT-189E
404	A-8286-163-C	s	PAD ASSY,SHOULDER
405	A-8286-346-A	s	PAD ASSY,SHOULDER
407	⚠ 1-756-134-15	s	BATTERY, LITHIUM (SECONDARY)
408	1-969-850-11	s	SUB HARNESS(POWER IN(PS))
409	3-603-679-02	s	STAINLESS SCREW +B3X10
410	4-382-854-51	s	SCREW (M3X6), P, SW (+)
411	⚠ 4-477-763-01	s	INSULATING SHEET(PS CONNECTOR)
412	4-654-273-02	s	ACE (M2), LOCK [M2X5]
	7-682-548-09	s	SCREW +B 3X8

DPR Board Block



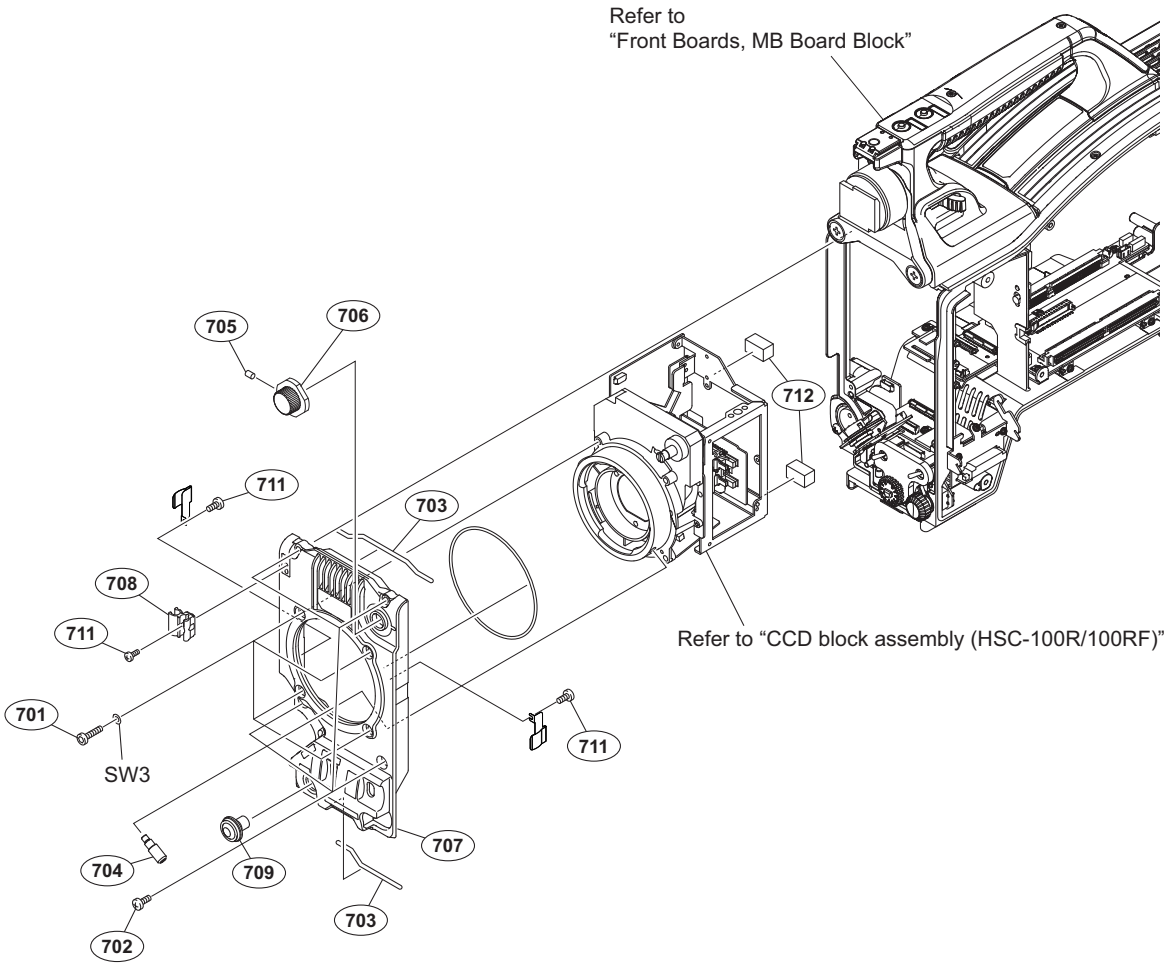
No.	Part No.	SP	Description
501	A-1969-513-A	s	MOUNTED CIRCUIT BOARD, DPR-358
502	A-1969-514-A	s	MOUNTED CIRCUIT BOARD, CD-78
503	A-1969-515-A	s	MOUNTED CIRCUIT BOARD, SDI-117
504	1-831-104-11	s	CABLE, FLEXIBLE FLAT (24 CORE)
505	1-831-124-11	s	CABLE, FLEXIBLE FLAT (45 CORE)
506	2-279-715-21	s	RIVET, NYLON
507	⚠ 2-586-173-01	s	SHEET A, RADIATION
508	4-382-854-51	s	SCREW (M3X6), P, SW (+)
509	⚠ 4-409-534-01	s	SHEET, PS CASE THERMAL
510	4-119-228-01	s	GASKET (VF) S
511	4-137-924-01	s	CLAMP (PJ-15B), CABLE
512	4-654-273-02	s	ACE (M2), LOCK [M2X5]

Front Panel (HSC300R/300RF)



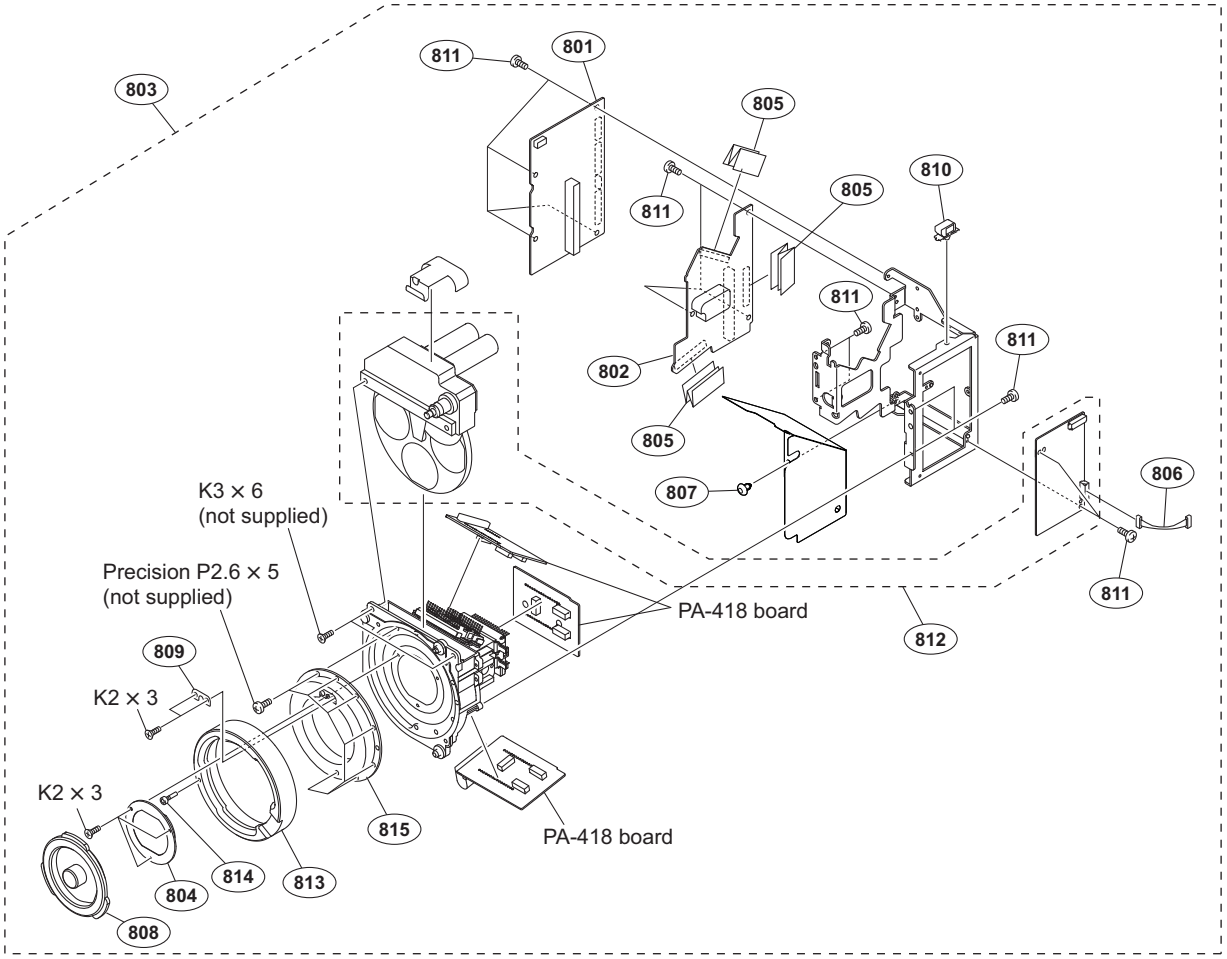
No.	Part No.	SP	Description
601	2-623-773-11	s	BOLT (M3X8), STAINLESS
602	3-603-679-02	s	STAINLESS SCREW +B3X10
603	3-624-455-01	s	TUBE,SHIELD
604	3-679-670-03	s	KNOB,FILTER(ND)
605	3-679-671-11	s	KNOB,FILTER(CC)
606	3-853-802-01	s	CLAMP,REUSE
607 ⚠	4-138-534-01	s	PANEL, FRONT (2S)
608	4-138-678-01	s	CLAMP, CABLE
609	4-138-679-01	s	SCREW, BLIND
610	4-138-681-01	s	COVER, SS SW
611	4-138-685-01	s	LEVER, MOUNT
613	4-654-273-02	s	ACE (M2), LOCK [M2X5]
614	4-119-228-01	s	GASKET (VF)
	7-621-732-09	s	SET-SCT HEX. 2X3 WP
	7-623-208-22	s	SW 3,TYPE 2

Front Panel (HSC100R/100RF)



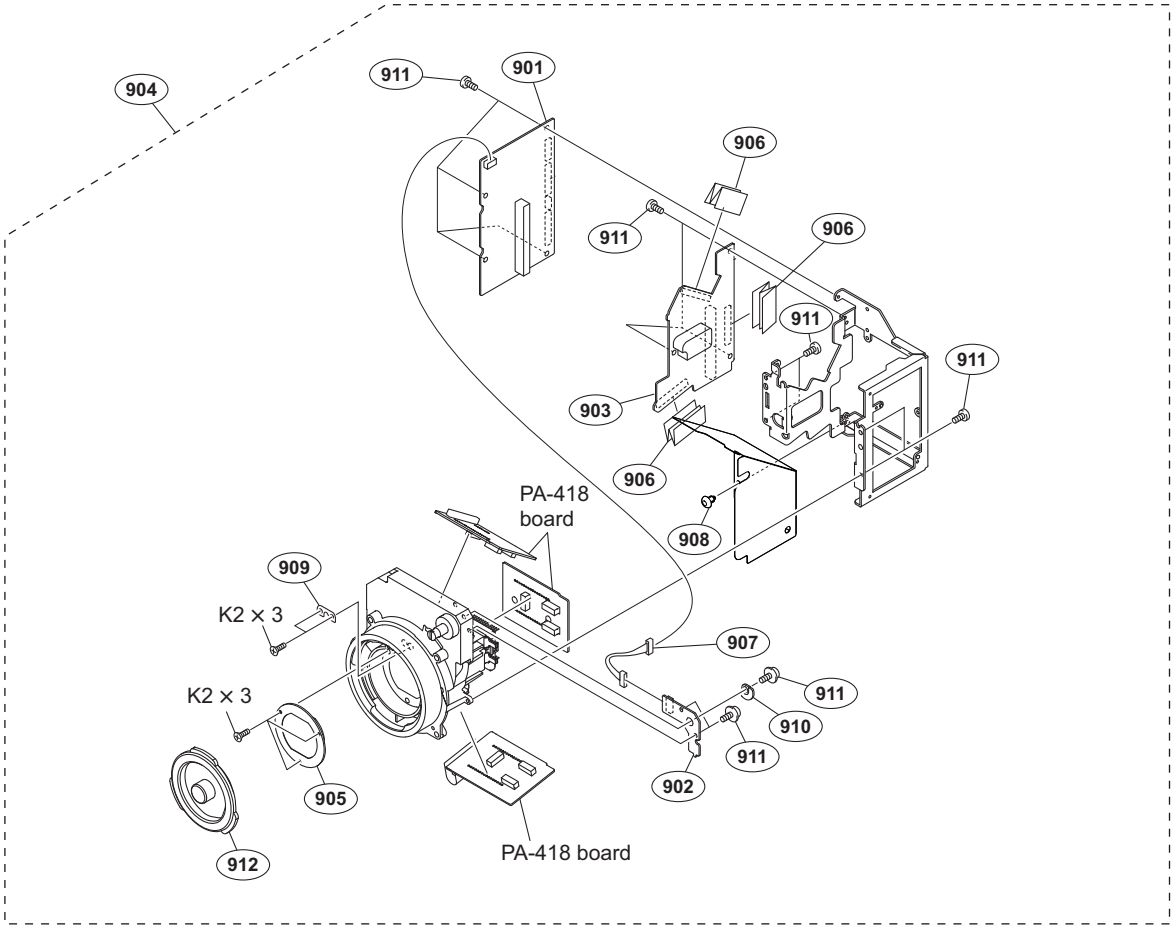
No.	Part No.	SP	Description
701	2-623-773-11	s	BOLT (M3X8), STAINLESS
702	3-603-679-02	s	STAINLESS SCREW +B3X10
703	3-624-455-01	s	TUBE,SHIELD
704	3-678-629-04	s	LEVER, MOUNT
705	3-701-505-01	s	SET SCREW, DOUBLE POINT 3X3
706	3-710-054-01	s	KNOB, FILTER
⚠ 707	4-138-444-02	s	PANEL, FRONT (1M)
708	4-138-678-01	s	CLAMP, CABLE
709	4-138-681-01	s	COVER, SS SW
711	4-654-273-02	s	ACE (M2), LOCK [M2X5]
712	4-119-228-01	s	GASKET (VF)
	7-623-208-22	s	SW 3,TYPE 2

CCD Block Assembly (HSC300R/300RF)



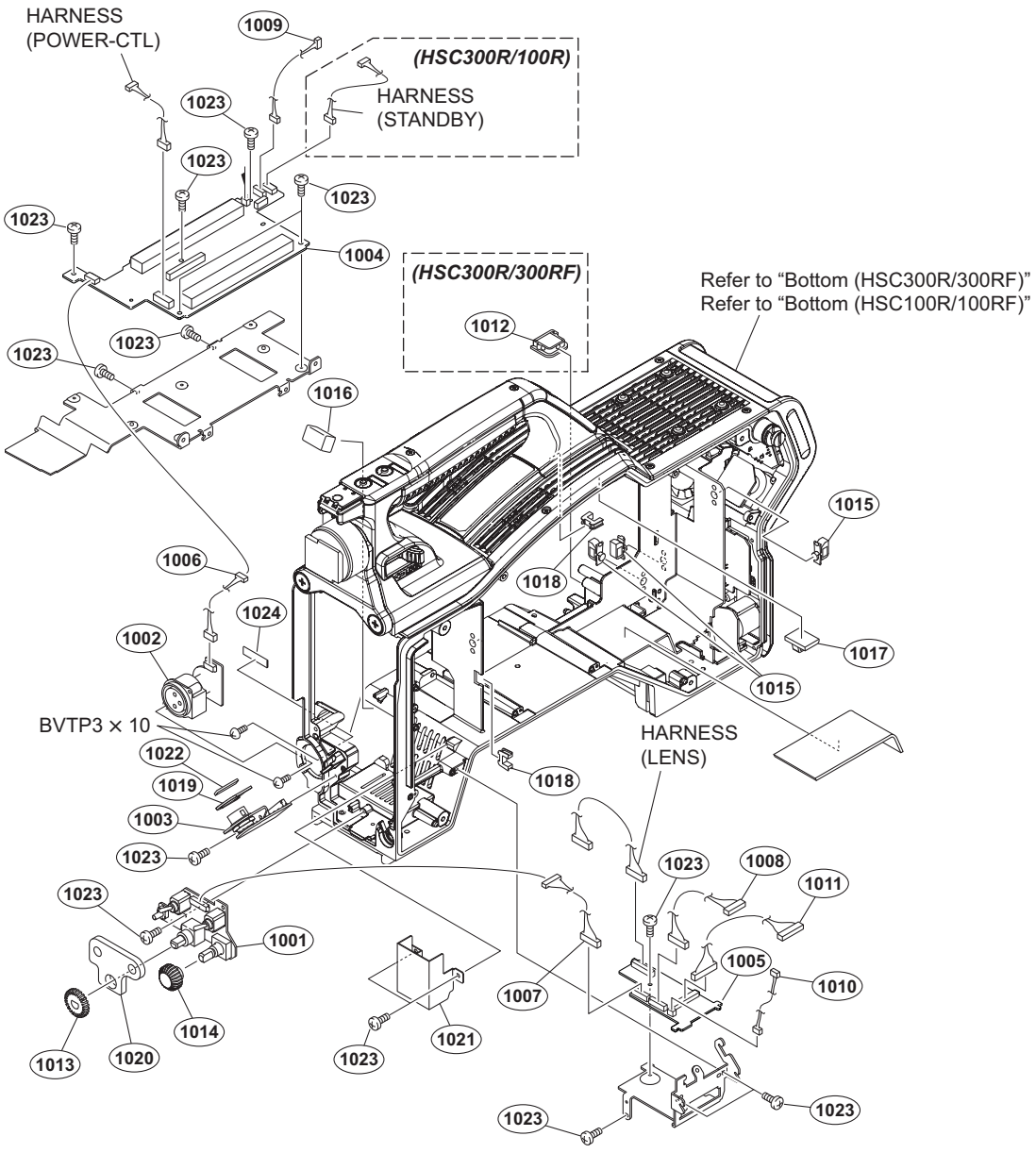
No.	Part No.	SP	Description
801	A-1969-516-A	s	MOUNTED CIRCUIT BOARD, TG-285
802	A-1969-520-A	s	MOUNTED CIRCUIT BOARD, DR-675
803	A-1974-801-A	s	CCD BLOCK ASSY (RP)
804	1-788-764-21	s	FILTER UNIT, OPTICAL
805	1-829-549-11	s	CABLE, FLEXIBLE FLAT (50 CORE)
806	1-969-851-11	s	SUB HARNESS(FILTER DISK)
807	2-279-715-21	s	RIVET, NYLON
808	3-699-048-01	s	CAP, MOUNT
809	3-776-897-02	s	GUIDE PLATE
810	3-853-802-01	s	CLAMP,REUSE
811	2-640-315-02	s	SCREW (M2X5), SMALL +P, SW
812	9-885-131-66	s	FD UNIT/CPJ-MS-42
813	9-885-131-67	s	BAYONET RING/CPJ-MS-42
814	9-885-131-68	s	DRIVING PIN/CPJ-MS-42
815	9-885-131-69	s	SLEEP BACK MOUNT/CPJ-MS-42
	7-627-452-18	s	SCREW,PRECISION +K 2X3

CCD Block Assembly (HSC100R/100RF)



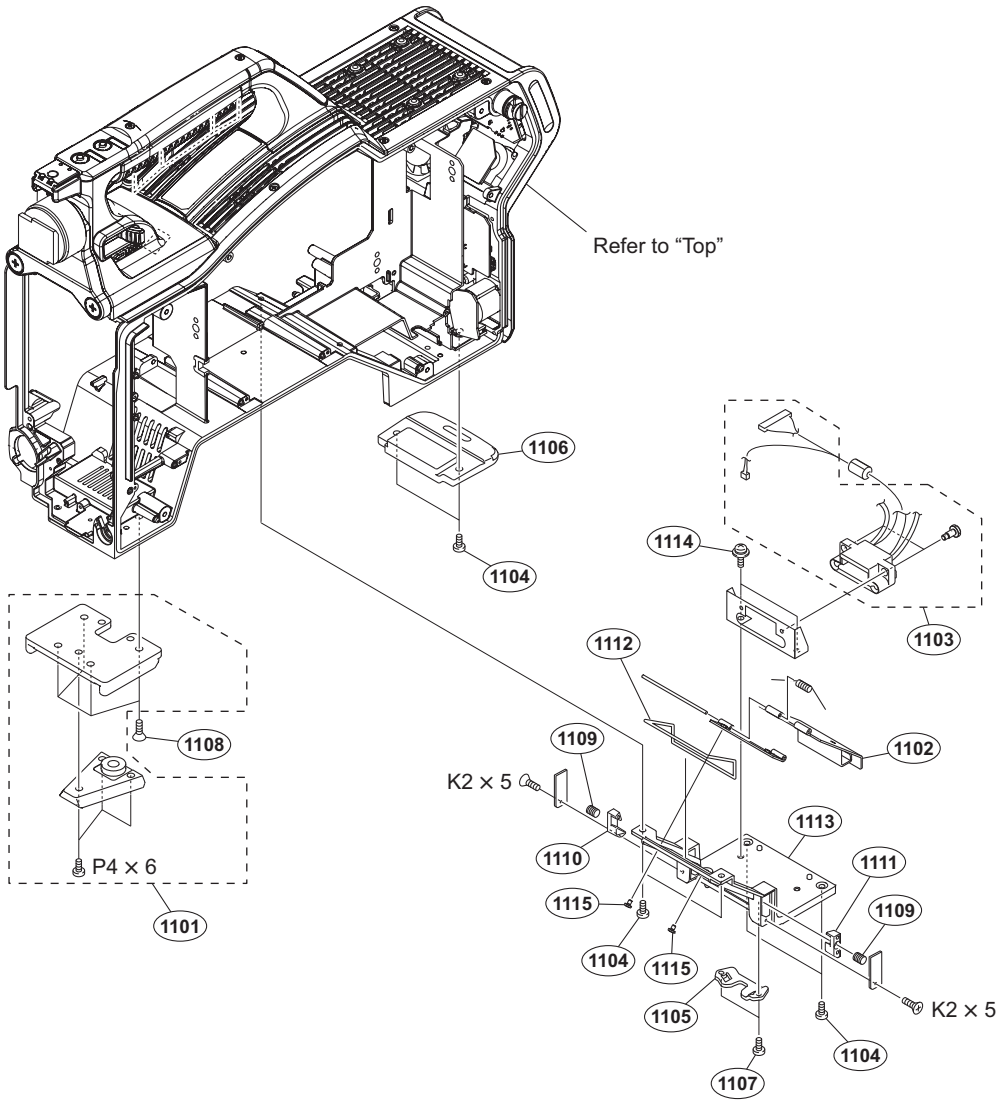
No.	Part No.	SP	Description
901	A-1969-516-A	s	MOUNTED CIRCUIT BOARD, TG-285
902	A-1969-519-A	s	MOUNTED CIRCUIT BOARD, SE-1138
903	A-1969-520-A	s	MOUNTED CIRCUIT BOARD, DR-675
904	A-1974-805-A	s	CCD BLOCK ASSY (RP)
905	1-788-765-21	s	FILTER UNIT, OPTICAL
906	1-829-549-11	s	CABLE, FLEXIBLE FLAT (50 CORE)
907	1-963-930-11	s	HARNESS, SUB (BI-PA)
908	2-279-715-21	s	RIVET, NYLON
909	3-776-897-02	s	GUIDE PLATE
910	4-138-446-01	s	PLATE, FILTER ID (S)
911	2-640-315-02	s	SCREW (M2X5), SMALL +P, SW
912	3-699-048-01	s	CAP, MOUNT
	7-627-452-18	s	SCREW,PRECISION +K 2X3

Front Boards, MB Board Block



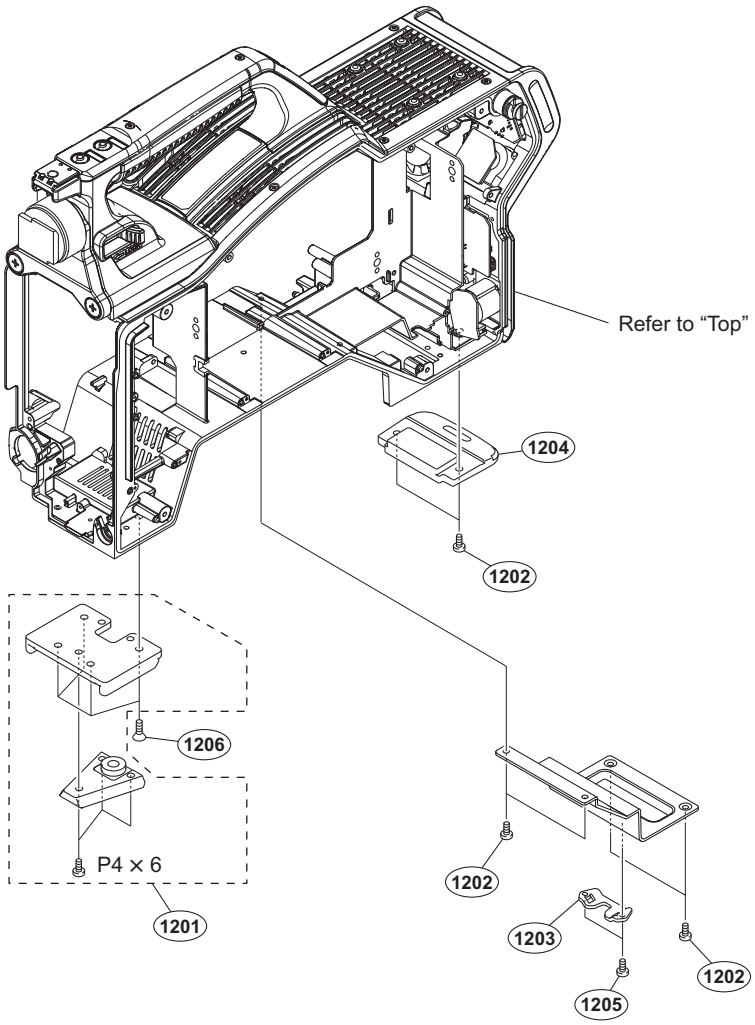
No.	Part No.	SP	Description
1001	A-1946-174-A	s	MOUNTED CIRCUIT BOARD, SW-1606
1002	A-1969-392-A	s	MOUNTED CIRCUIT BOARD, CN-3638
1003	A-1969-393-A	s	MOUNTED CIRCUIT BOARD, CN-3637
1004	A-1969-394-A	s	MOUNTED CIRCUIT BOARD, MB-1207
1005	A-1969-396-A	s	MOUNTED CIRCUIT BOARD, CN-3640
1006	1-966-584-11	s	HARNESS, SUB (FRONT-MIC)
1007	1-966-586-11	s	HARNESS, SUB (FRONT)
1008	1-966-587-11	s	HARNESS, SUB (INSIDE)
1009	1-966-592-11	s	HARNESS, SUB (POWER-SW)
1010	1-966-597-11	s	HARNESS, SUB (ASSIGNABLE)
1011	1-969-848-12	s	SUB HARNESS(FRONT CTL)
1012	2-433-598-01	s	HOLDER (LT-11U), WIRE (HSC300R/300RF)
1013	3-679-679-05	s	KNOB,VR(AUDIO)
1014	3-692-111-02	s	KNOB,RE
1015	3-853-802-01	s	CLAMP,REUSE
1016	4-119-228-01	s	GASKET (VF)
1017	4-137-924-01	s	CLAMP (PJ-15B), CABLE
1018	4-137-926-01	s	SADDLE (LES-0505), EDGE
1019	4-138-732-01	s	CUSHION, LENS CN
1020	4-138-733-02	s	CUSHION, FRONT SW
1021	4-178-936-01	s	AIR FLOW SHEET
1022	4-299-766-01	s	GASKET (1.5X3), SHIELD
1023	4-654-273-02	s	ACE (M2), LOCK [M2X5]
1024	3-990-217-01	s	SOFT SHIELD 3500 (3133)
	7-685-647-79	s	SCREW +BVTP 3X10 TYPE2 TT(B)

Bottom (HSC300R/300RF)



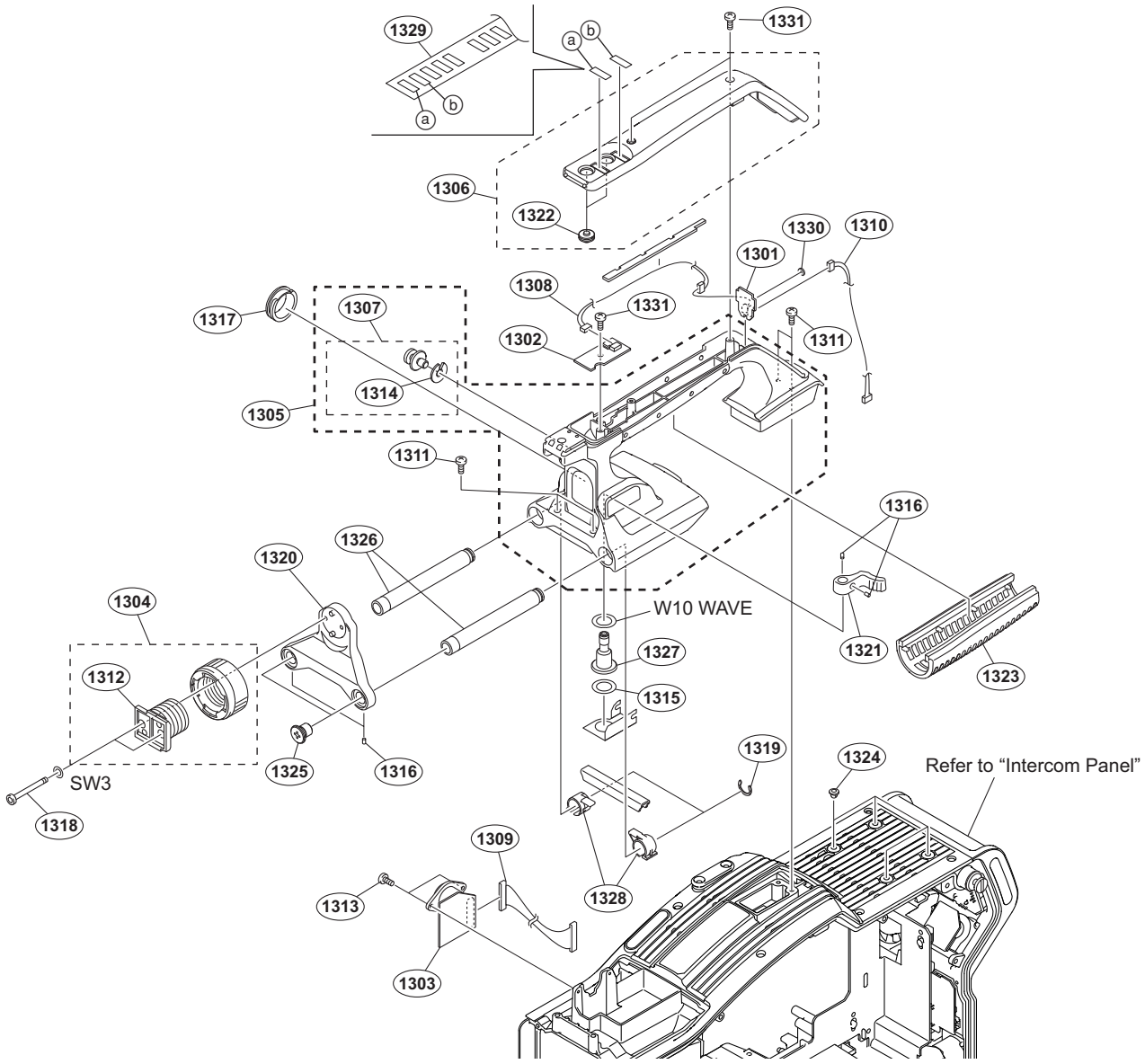
No.	Part No.	SP	Description
1101	A-8279-993-D	s	SHOE(D)ASSY,V
1102	X-3704-670-2	s	HOT DOOR
1103	1-966-598-11	s	HARNESS, SUB (BUILDUP)
1104	3-603-679-02	s	STAINLESS SCREW +B3X10
1105	3-626-781-03	s	STOPPER
1106	3-626-960-02	s	GUARD,TAIL
1107	3-637-901-11	s	SCREW M2.6X5
1108	3-729-072-02	s	SCREW, +K (4X8)
1109	3-872-522-02	s	SPRING,COMPRESSION(STOPPER)
1110	3-872-550-02	s	STOPPER(R),HOT DOOR
1111	3-872-551-02	s	STOPPER(L),HOT DOOR
1112	3-872-573-02	s	WATER PROTECT(HOT DOOR)
1113	4-295-666-01	s	BASE, HOT SHOE
1114	4-382-854-51	s	SCREW (M3X6), P, SW (+)
1115	4-654-273-02	s	ACE (M2), LOCK [M2X5]
	7-621-555-30	s	SCREW +K 2X5
	7-682-160-09	s	SCREW +P 4X6

Bottom (HSC100R/100RF)



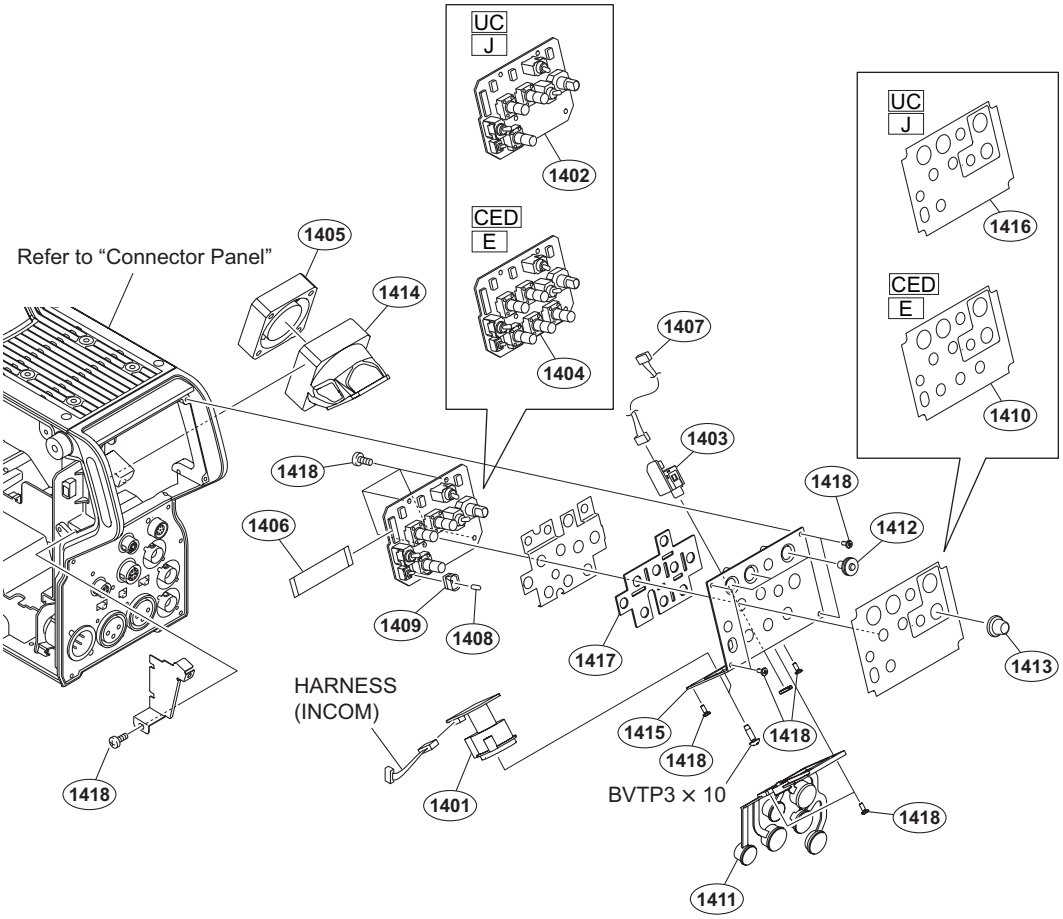
No.	Part No.	SP	Description
1201	A-8279-993-D	s	SHOE(D)ASSY,V
1202	3-603-679-02	s	STAINLESS SCREW +B3X10
1203	3-626-781-03	s	STOPPER
1204	3-626-960-02	s	GUARD,TAIL
1205	3-637-901-11	s	SCREW M2.6X5
1206	3-729-072-02	s	SCREW, +K (4X8)
	7-682-160-09	s	SCREW +P 4X6

Top



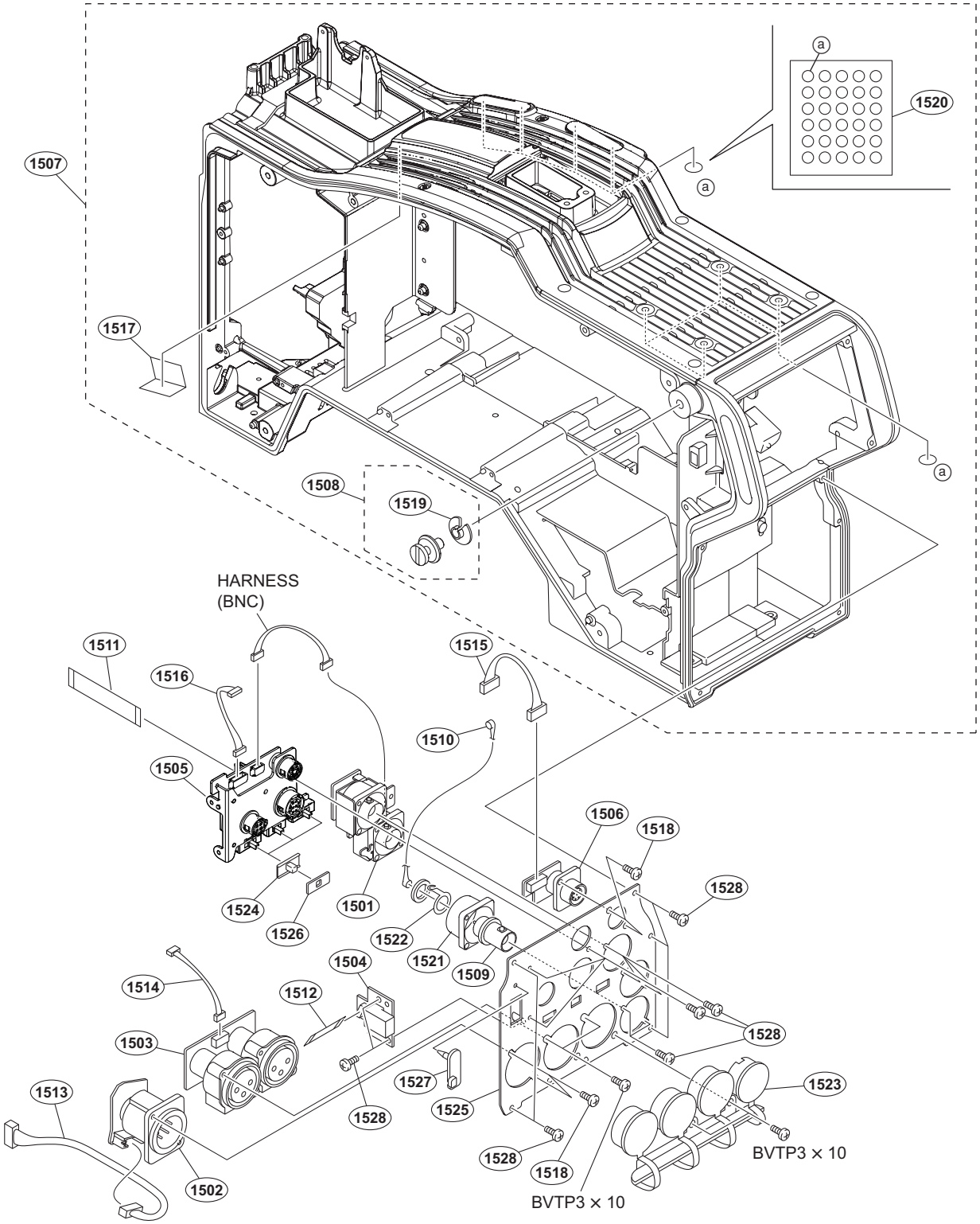
No.	Part No.	SP	Description
1301	A-1946-171-A	s	MOUNTED CIRCUIT BOARD, LE-392
1302	A-1946-173-A	s	MOUNTED CIRCUIT BOARD, SW-1605
1303	A-1969-395-A	s	MOUNTED CIRCUIT BOARD, CN-3639
1304	A-8278-412-J	s	SHOE ASSY,VF
1305	X-2348-333-1	s	SUB ASSY, HANDLE
1306	X-2348-338-1	s	COVER ASSY, HANDLE
1307	X-3710-037-1	s	SUSPENSION ASSY (C)
1308	1-966-589-11	s	HARNESS, SUB (HANDLE-SW)
1309	1-969-847-11	s	SUB HARNESS(VF)
1310	1-969-849-11	s	SUB HARNESS(HANDLE TALLY)
1311	3-603-679-02	s	STAINLESS SCREW +B3X10
1312	3-627-853-07	s	SHOE,SLIDE
1313	3-637-901-11	s	SCREW M2.6X5
1314	3-654-615-02	s	COLLAR, SUSPENSION
1315	3-701-447-11	s	WASHER, 10
1316	3-701-505-01	s	SET SCREW, DOUBLE POINT 3X3
1317	3-710-024-02	s	PACKING, VF
1318	3-711-765-01	s	BOLT (M3), HEXAGON SOCKET
1319	4-138-139-01	s	STOP RING 9, TYPE-CE
1320	4-138-535-01	s	PLATE, VF SHOE
1321	4-138-536-01	s	LEVER, LOCK
1322	4-138-542-01	s	COVER, SW
1323	4-138-676-01	s	GRIP
1324	4-138-679-01	s	SCREW, BLIND
1325	4-138-691-01	s	SCREW, PIPE CAP
1326	4-138-692-02	s	PIPE, VF SLIDE
1327	4-138-693-01	s	SCREW, VF SLIDE LOCK
1328	⚠ 4-138-694-01	s	LOCK, VF SLIDE
1329	4-138-727-01	s	LABEL(HANDLE)
1330	4-138-742-01	s	CUSHION, HANDLE TALLY
1331	4-654-273-02	s	ACE (M2), LOCK [M2X5]
	7-623-208-22	s	SW 3,TYPE 2
	7-623-710-57	s	WASHER 10, WAVE TYPE

Intercom Panel



No.	Part No.	SP	Description
1401	A-1946-169-A	s	MOUNTED CIRCUIT BOARD, CN-3647
1402	A-1946-176-A	s	MOUNTED CIRCUIT BOARD, SW-1608 (UC/J)
1403	A-1969-391-A	s	MOUNTED CIRCUIT BOARD, CN-3645
1404	A-1974-765-A	s	MOUNTED CIRCUIT BOARD, SW-1608A (CED/E)
1405	⚠ 1-787-899-11	s	FAN, DC (40 SQUARE)
1406	1-831-103-11	s	CABLE, FLEXIBLE FLAT (15 CORE)
1407	1-969-845-11	s	SUB HARNESS (EARPHONE)
1408	3-869-842-01	s	CAP,SW
1409	3-903-660-01	s	DROP PROTECTION,TOGGLE
1410	4-138-449-01	s	SHEET, INCOM (CED/E)
1411	4-138-674-02	s	CAP, CONNECTOR (1)
1412	4-138-682-01	s	SW COVER
1413	4-138-683-02	s	KNOB, ENCODER
1414	4-138-686-11	s	DUCT, FAN
1415	4-138-699-02	s	PANEL, INCOM
1416	4-138-725-01	s	SHEET, INCOM(N) (UC/J)
1417	4-138-736-01	s	SHEET, WATER PROOF INCOM
1418	4-654-273-02	s	ACE (M2), LOCK [M2X5]
	7-685-647-79	s	SCREW +BVTP 3X10 TYPE2 TT(B)

Connector Panel

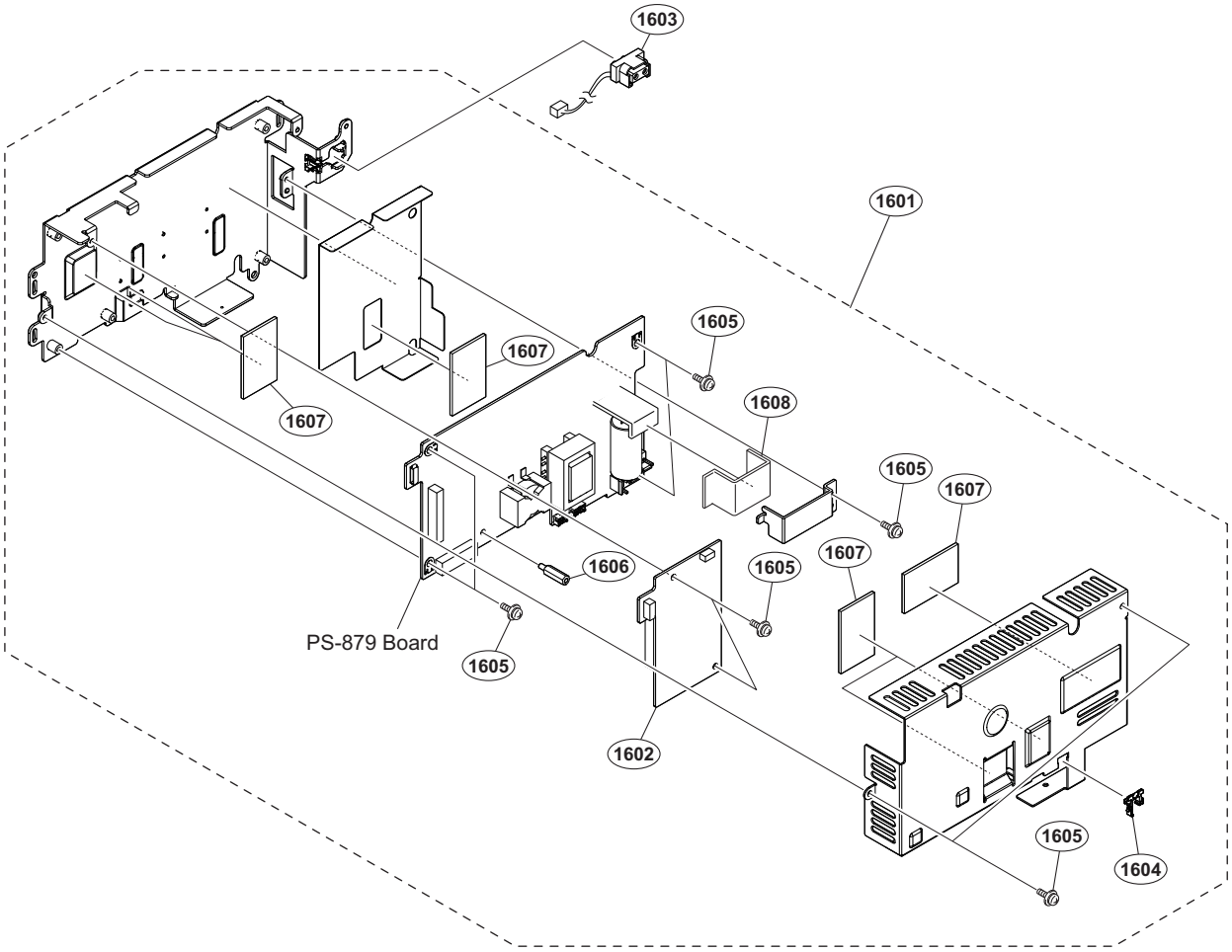


No.	Part No.	SP	Description
1501	A-1946-168-A	s	MOUNTED CIRCUIT BOARD, CN-3646
1502	A-1946-170-A	s	MOUNTED CIRCUIT BOARD, CN-3648
1503	A-1969-387-A	s	MOUNTED CIRCUIT BOARD, CN-3641
1504	A-1969-388-A	s	MOUNTED CIRCUIT BOARD, CN-3642
1505	A-1969-389-A	s	MOUNTED CIRCUIT BOARD, CN-3643
1506	A-1969-390-A	s	MOUNTED CIRCUIT BOARD, CN-3644
1507	X-2348-331-3	s	SUB ASSY, MAIN CHASSIS
1508	X-3710-037-1	s	SUSPENSION ASSY (C)
1509	1-784-240-11	s	CONVERTER, COAXIAL CONNECTOR
1510	1-829-055-11	s	CABLE ASSEMBLY, COAXIAL
1511	1-831-088-11	s	CABLE, FLEXIBLE FLAT (20 CORE)
1512	1-836-689-11	s	CABLE, FLEXIBLE FLAT (10 CORE)
1513	1-968-146-11	s	HARNESS, SUB (EXT DC IN)
1514	1-968-153-11	s	HARNESS, SUB (MIC)
1515	1-968-154-11	s	HARNESS, SUB (REMOTE)
1516	1-969-846-11	s	SUB HARNESS(UNREG)
1517	2-678-968-01	o	TAPE AS (1215)

Connector Panel

No.	Part No.	SP	Description
1518	3-637-901-11	s	SCREW M2.6X5
1519	3-654-615-02	s	COLLAR, SUSPENSION
1520	3-796-946-03	s	TAPE(A)
1521	3-863-319-01	s	BRACKET BNC
1522	4-136-517-01	s	WASHER, BNC COAXIAL FIXED
1523	4-138-675-02	s	CAP, CONNECTOR (2)
1524	4-138-687-01	s	COVER, SLIDE SWITCH
1525	⚠ 4-138-698-11	s	PANEL, MIC
1526	4-138-731-01	s	SHEET,WATER PROOF SW
1527	4-478-730-01	s	CAP, USB
1528	4-654-273-02	s	ACE (M2), LOCK [M2X5]
	7-685-647-79	s	SCREW +BVTP 3X10 TYPE2 TT(B)

Power Supply Assembly



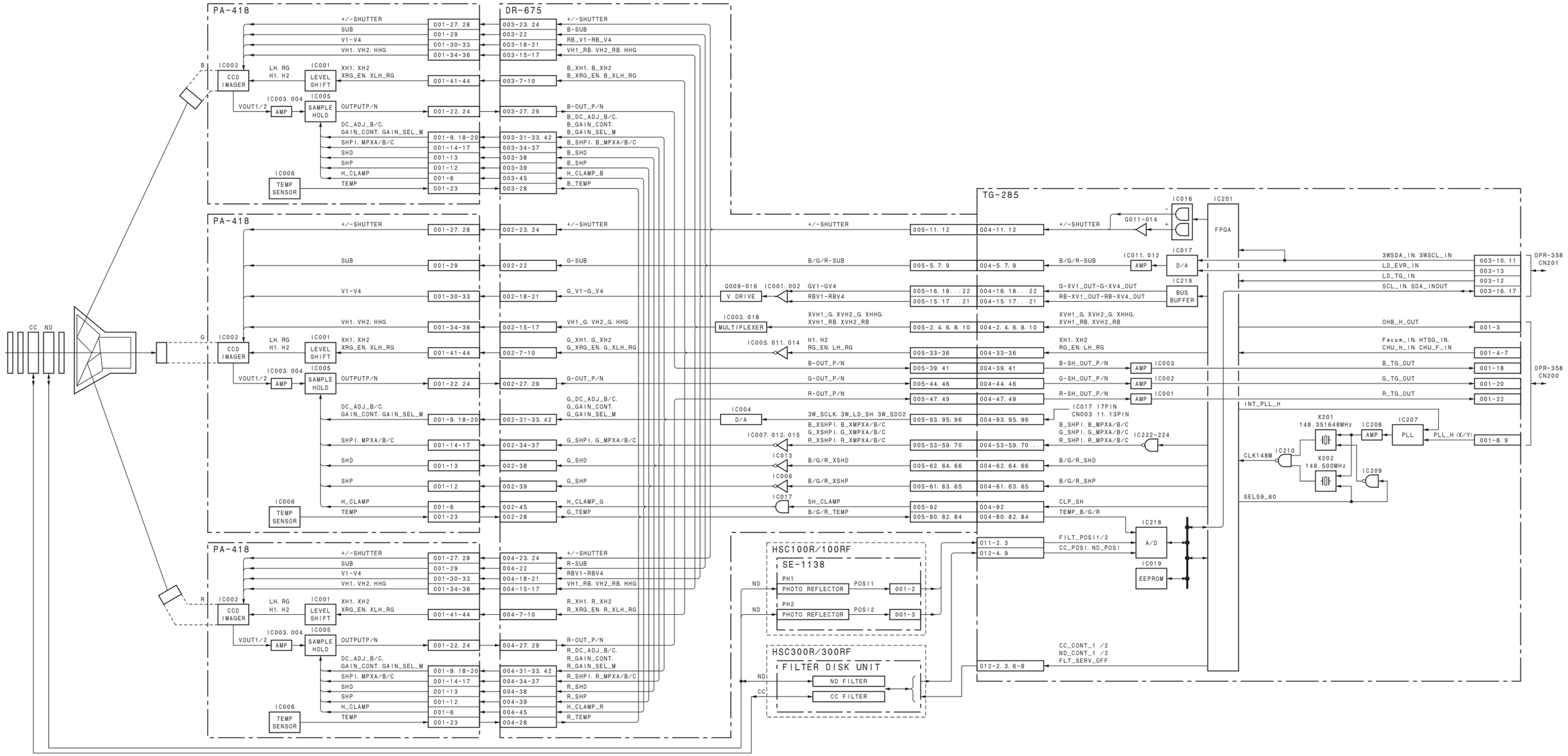
No.		Part No.	SP	Description
1601	⚠	A-1972-028-A	s	POWER SUPPLY ASSY
1602		A-1980-228-A	s	MOUNTED CIRCUIT BOARD, RE-319
1603		1-968-160-11	s	HARNESS, SUB (DC-OUT)
1604		4-137-926-01	s	SADDLE (LES-0505), EDGE
1605		4-382-854-51	s	SCREW (M3X6), P, SW (+)
1606		4-415-279-01	s	SUPPORT (3SQ-16), HEXAGON
1607	⚠	4-477-764-01	s	SHEET (T2) 28X45, RADIATION
1608	⚠	4-477-765-01	s	SHEET (T2) 25X78, RADIATION

7-3. Supplied Accessories

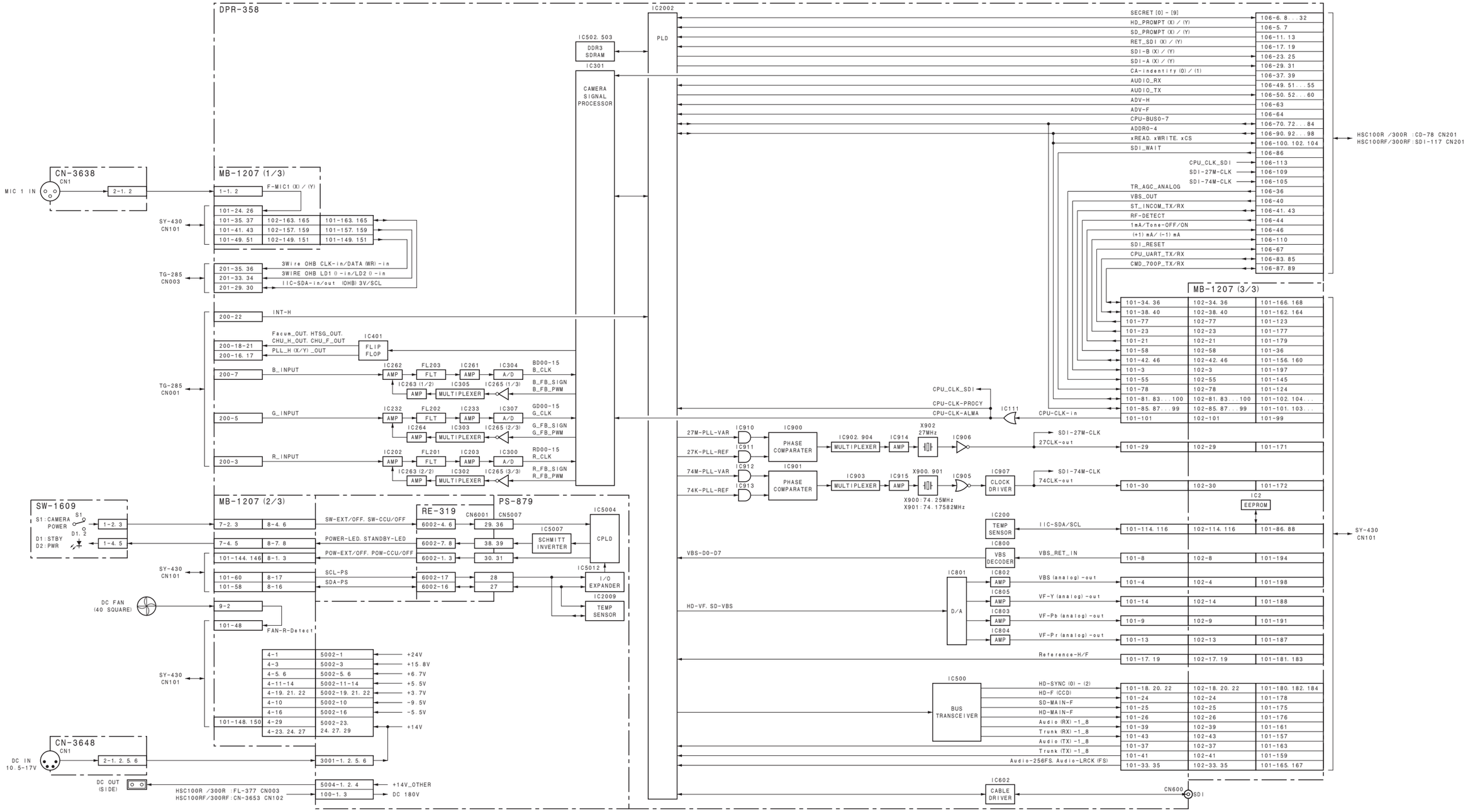
Q'ty	Part No.	SP	Description
2pcs	3-603-679-02	s	STAINLESS SCREW +B3X10
1pc	3-704-295-01	o	BAG, PROTECTION (550X500)
1pc	3-764-889-01	o	CHART, ADJUSTMENT (HSC100R/100RF)
1pc	4-138-677-01	s	BRACKET, BELT
1pc	4-138-758-01	s	CLAMP BELT, CABLE
1pc	⚠ 4-479-626-01	s	CD-ROM PACK

Section 8
Diagrams

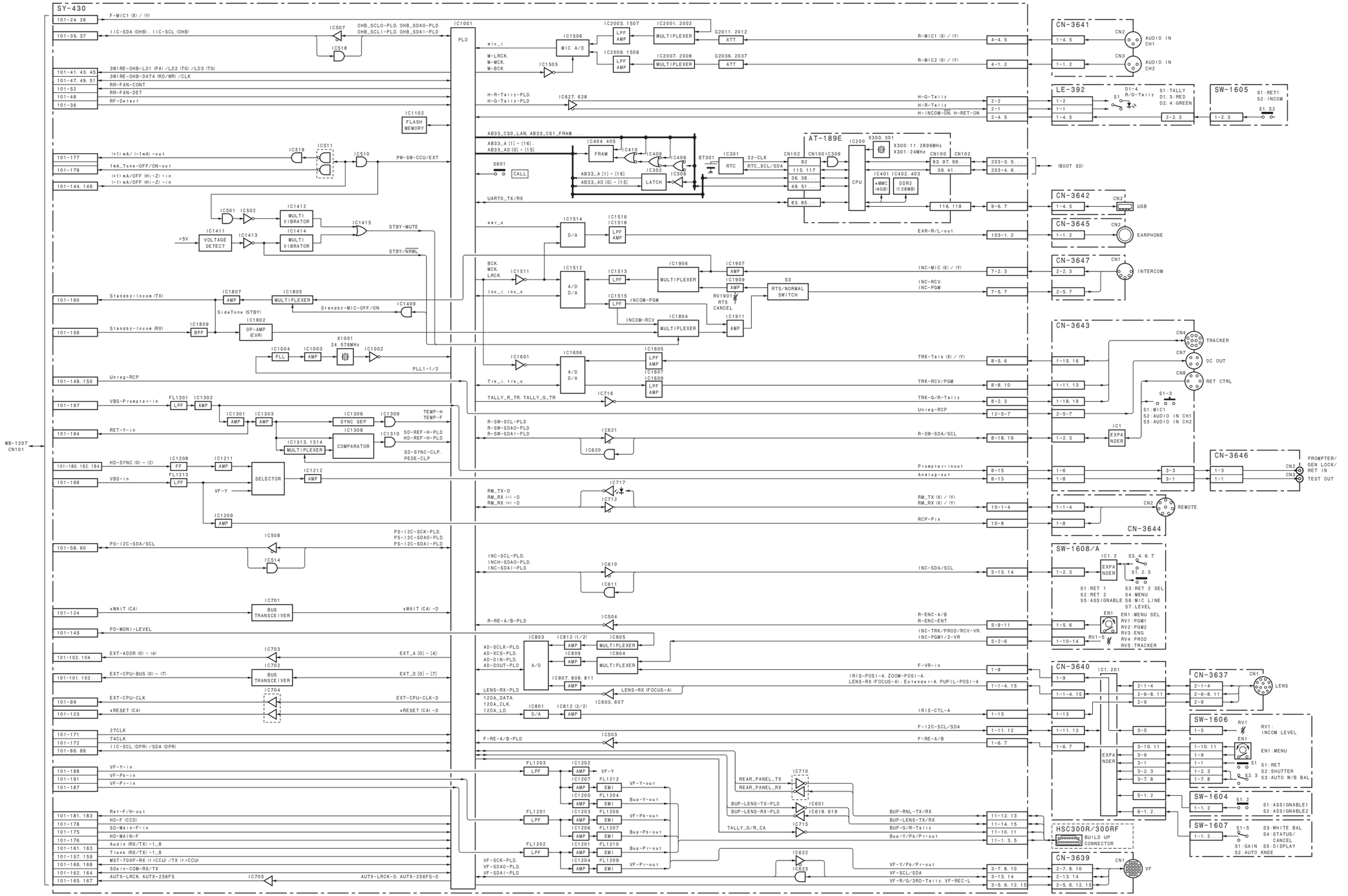
Overall (1/5)



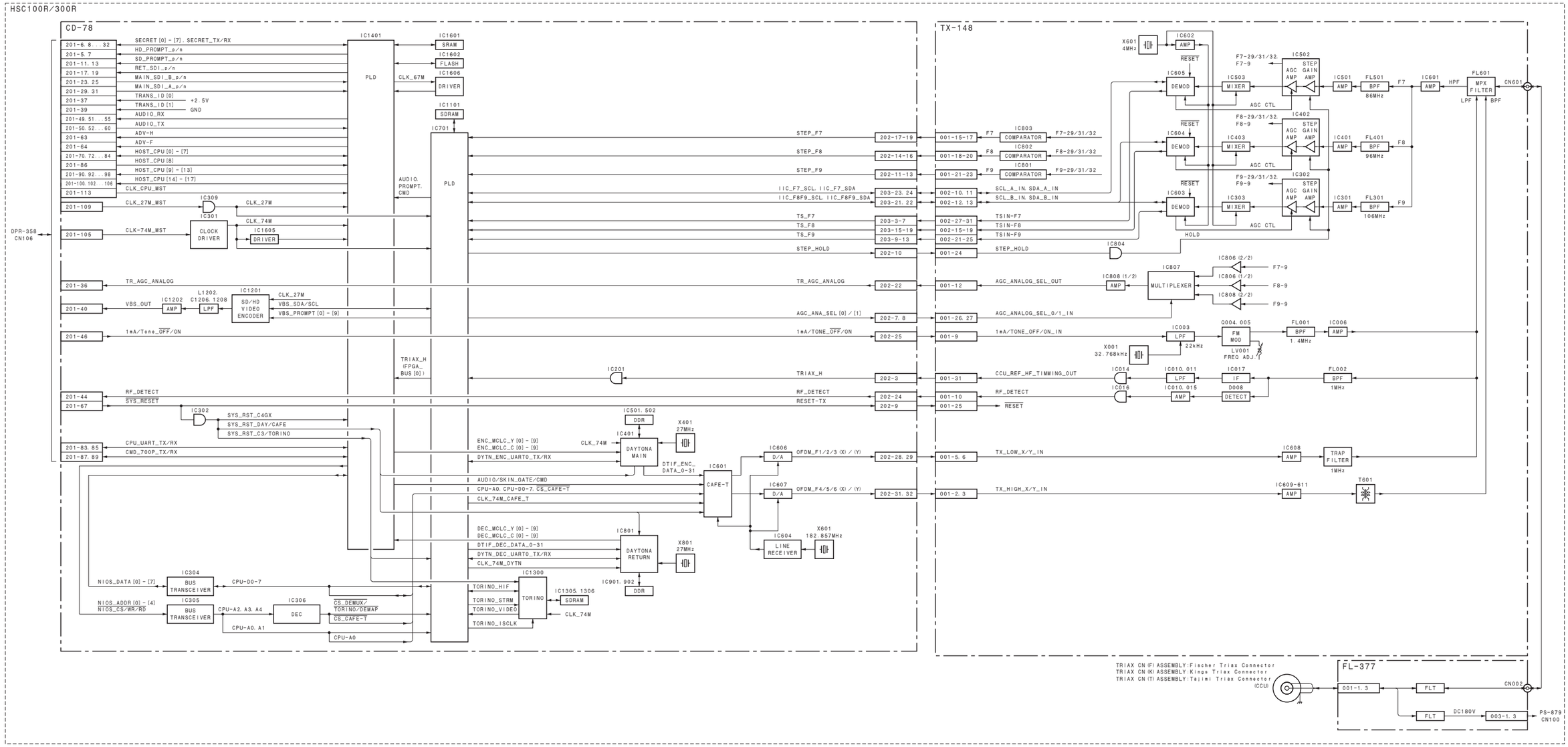
Overall (2/5)


DPR-358
IC2002
PLD
IC502. 503
DDR3 SDRAM
IC301
CAMERA SIGNAL PROCESSOR
SECRET [0] - [9]
HD_PROMPT (X) / (Y)
SD_PROMPT (X) / (Y)
RET_SDI (X) / (Y)
SDI-B (X) / (Y)
SDI-A (X) / (Y)
CA-indentify (0) / (1)
AUDIO_RX
AUDIO_TX
ADV-H
ADV-F
CPU-BUS0-7
ADDR0-4
xREAD. xWRITE. xCS
SDI_WAIT
CPU_CLK_SDI
SDI-27M-CLK
SDI-74M-CLK
TR_AGC_ANALOG
VBS_OUT
ST_INCOM_TX/RX
RF-DETECT
1mA/Tone-OFF/ON
(+1) mA/ (-1) mA
SDI_RESET
CPU_UART_TX/RX
CMD_700P_TX/RX
HSC100R /300R :CD-78 CN201
HSC100RF/300RF:SDI-117 CN201
CN-3638
CN1
MIC 1 IN
2-1. 2
MB-1207 (1/3)
1-1. 2
F-MIC1 (X) / (Y)
SY-430 CN101
101-24. 26
101-35. 37
102-163. 165
101-163. 165
101-41. 43
102-157. 159
101-157. 159
101-49. 51
102-149. 151
101-149. 151
TG-285 CN003
201-35. 36
201-33. 34
201-29. 30
3Wire OHB CLK-in/DATA (WR) -in
3WIRE OHB LD1 (0) -in/LD2 (0) -in
IIC-SDA-in/out (OHB) 3V/SCL
200-22
INT-H
Facum_OUT. HTSG_OUT. CHU_H_OUT. CHU_F_OUT
PLL_H (X/Y) _OUT
IC401
FLIP FLOP
200-18-21
200-16. 17
TG-285 CN001
200-7
B_INPUT
IC262
AMP
FL203
FLT
IC261
AMP
IC304
A/D
BD00-15
B_CLK
IC263 (1/2)
AMP
IC305
MULTIPLEXER
IC265 (1/3)
B_FB_SIGN
B_FB_PWM
200-5
G_INPUT
IC232
AMP
FL202
FLT
IC233
AMP
IC307
A/D
GD00-15
G_CLK
IC264
AMP
IC303
MULTIPLEXER
IC265 (2/3)
G_FB_SIGN
G_FB_PWM
200-3
R_INPUT
IC202
AMP
FL201
FLT
IC203
AMP
IC300
A/D
RD00-15
R_CLK
IC263 (2/2)
AMP
IC302
MULTIPLEXER
IC265 (3/3)
R_FB_SIGN
R_FB_PWM
CPU_CLK_SDI
CPU-CLK-PROCY
CPU-CLK-ALMA
IC111
CPU-CLK-in
27M-PLL-VAR
27K-PLL-REF
74M-PLL-VAR
74K-PLL-REF
IC910
IC911
IC912
IC913
IC900
IC901
PHASE COMPARATER
IC902. 904
IC903
MULTIPLEXER
IC914
IC915
AMP
X902 27MHz
X900. 901
X900:74. 25MHz
X901:74. 17582MHz
IC906
IC907
CLOCK DRIVER
SDI-27M-CLK
27CLK-out
SDI-74M-CLK
74CLK-out
MB-1207 (3/3)
101-34. 36
102-34. 36
101-166. 168
101-38. 40
102-38. 40
101-162. 164
101-77
102-77
101-123
101-23
102-23
101-177
101-21
102-21
101-179
101-58
102-58
101-36
101-42. 46
102-42. 46
101-156. 160
101-3
102-3
101-197
101-55
102-55
101-145
101-78
102-78
101-124
101-81. 83. . . 100
102-81. 83. . . 100
101-102. 104. . .
101-85. 87. . . 99
102-85. 87. . . 99
101-101. 103. . .
101-101
102-101
101-99
101-29
102-29
101-171
101-30
102-30
101-172
IC2
EEPROM
IC200
TEMP SENSOR
IIC-SDA/SCL
101-114. 116
102-114. 116
101-86. 88
SY-430 CN101
IC800
VBS DECODER
VBS-D0-D7
VBS_RET_IN
101-8
102-8
101-194
IC801
D/A
IC802
IC805
IC803
IC804
AMP
VBS (analog) -out
VF-Y (analog) -out
VF-Pb (analog) -out
VF-Pr (analog) -out
HD-VF. SD-VBS
101-4
102-4
101-198
101-14
102-14
101-188
101-9
102-9
101-191
101-13
102-13
101-187
Reference-H/F
101-17. 19
102-17. 19
101-181. 183
IC500
BUS TRANSCEIVER
HD-SYNC (0) - (2)
HD-F (CCD)
SD-MAIN-F
HD-MAIN-F
Audio (RX) -1_8
Trunk (RX) -1_8
Audio (TX) -1_8
Trunk (TX) -1_8
Audio-256FS. Audio-LRCK (FS)
101-18. 20. 22
102-18. 20. 22
101-180. 182. 184
101-24
102-24
101-178
101-25
102-25
101-175
101-26
102-26
101-176
101-39
102-39
101-161
101-43
102-43
101-157
101-37
102-37
101-163
101-41
102-41
101-159
101-33. 35
102-33. 35
101-165. 167
IC602
CABLE DRIVER
CN600
SDI
SW-1609
S1
S1:CAMERA POWER
D1. 2
D1:STBY
D2:PWR
1-2. 3
1-4. 5
7-2. 3
8-4. 6
7-4. 5
8-7. 8
101-144. 146
8-1. 3
SW-EXT/OFF. SW-CCU/OFF
POWER-LED. STANDBY-LED
POW-EXT/OFF. POW-CCU/OFF
MB-1207 (2/3)
RE-319
CN6001
CN5007
6002-4. 6
29. 36
6002-7. 8
38. 39
6002-1. 3
30. 31
IC5007
SCHMITT INVERTER
IC5004
CPLD
IC5012
I/O EXPANDER
IC2009
TEMP SENSOR
PS-879
SCL-PS
SDA-PS
6002-17
6002-16
28
27
SY-430 CN101
101-60
8-17
101-58
8-16
DC FAN (40 SQUARE)
9-2
101-48
FAN-R-Detect
4-1
5002-1
+24V
4-3
5002-3
+15. 8V
4-5. 6
5002-5. 6
+6. 7V
4-11-14
5002-11-14
+5. 5V
4-19. 21. 22
5002-19. 21. 22
+3. 7V
4-10
5002-10
-9. 5V
4-16
5002-16
-5. 5V
101-148. 150
4-29
4-23. 24. 27
5002-23. 24. 27. 29
+14V
CN-3648
CN1
DC IN 10. 5-17V
2-1. 2. 5. 6
3001-1. 2. 5. 6
DC OUT (SIDE)
HSC100R /300R :FL-377 CN003
HSC100RF/300RF:CN-3653 CN102
5004-1. 2. 4
+14V_OTHER
100-1. 3
DC 180V

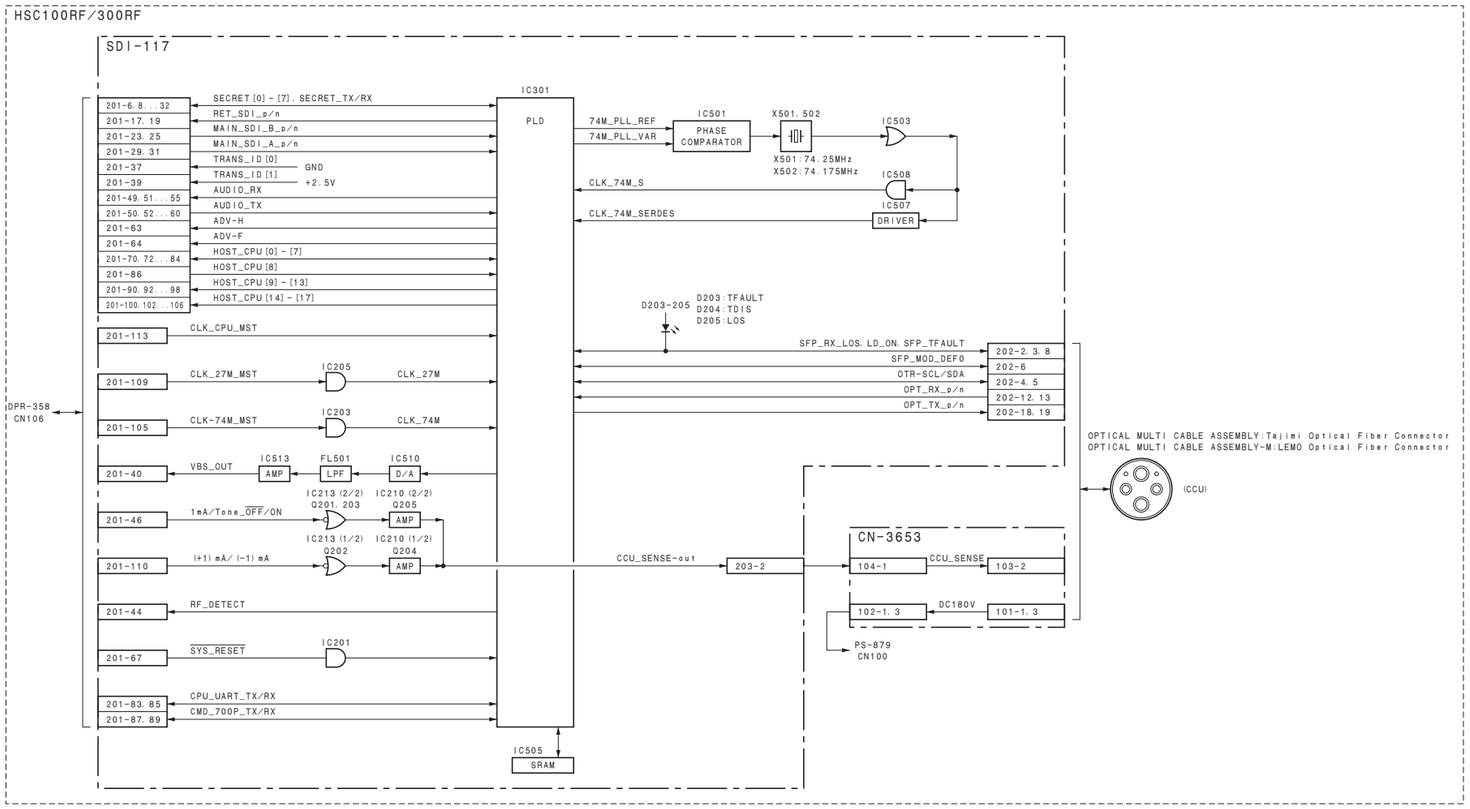
Overall (3/5)


SY-430
F-MIC1 (X) / (Y)
IIC-SDA (OHB), IIC-SCL (OHB)
3WIRE-OHB-LD1 (PA) /LD2 (TG) /LD3 (TG)
3WIRE-OHB-DATA (RD/WR) /CLK
RR-FAN-CONT
RR-FAN-DET
RF-Detect
PW-SW-CCU/EXT
1mA_Tone-OFF/ON-out
(+1) mA/OFF (Hi-Z) -in
(-1) mA/OFF (Hi-Z) -in
STBY-MUTE
STBY/NRML
Standby-Incom (TX)
Standby-Incom (RX)
SideTone (STBY)
Standby-MIC-OFF/ON
Unreg-RCP
VBS-Prompter-in
RET-Y-in
HD-SYNC (O) - (2)
VBS-in
PS-I2C-SDA/SCL
xWAIT (CA)
PD-MONI-LEVEL
EXT-ADDR (0) - (4)
EXT-CPU-BUS (0) - (7)
EXT-CPU-CLK
xRESET (CA)
27CLK
74CLK
IIC-SCL (DPR) /SDA (DPR)
VF-Y-in
VF-Pb-in
VF-Pr-in
Ref-F/H-out
HD-F (CCD)
SD-Main-F-in
HD-MAIN-F
Audio (RX/TX) -1_8
Trunk (RX/TX) -1_8
MST-700P-RX (trCCU) /TX (trCCU)
50pin-COM-RX/TX
AUTX-LRCK, AUTX-256FS
AUTX-LRCK-D, AUTX-256FS-D
MB-1207 CN101
IC1001 PLD
IC1102 FLASH MEMORY
IC1506 MIC A/D
IC1505
IC2003, 1507 LPF AMP
IC2001, 2002 MULTIPLEXER
IC2009, 1509 LPF AMP
IC2007, 2008 MULTIPLEXER
Q2011, 2012 ATT
Q2036, 2037 ATT
IC627, 628
IC404, 405 FRAM
IC410
IC408
IC406
IC302 LATCH
IC306
BT301
IC301 RTC
32-CLK
RTC_SCL/SDA
AT-189E
IC200 CPU
X300, 301
X300: 11.2896MHz
X301: 24MHz
IC401 IC402, 403 DDR2 (128MB)
eMMC (4GB)
S601 CALL
UART0_TX/RX
ear_o
IC1514 D/A
IC1516 IC1518 LPF AMP
EAR-R/L-out
BCK, MCK, LRCK
Inc_i, inc_o
IC1512 A/D D/A
IC1511
IC1513 LPF
IC1515 LPF
INCOM-PGM
INCOM-RCV
IC1906 MULTIPLEXER
IC1907 AMP
IC1909 AMP
RV1901 RTS CANCEL
IC1804 MULTIPLEXER
IC1911 AMP
S3 RTS/NORMAL SWITCH
INC-MIC (X) / (Y)
INC-RCV, INC-PGM
IC1807 AMP
IC1805 MULTIPLEXER
IC1409
IC1809 BPF
IC1802 OP-AMP (EVR)
X1001 24.576MHz
IC1004 PLL
IC1003 AMP
IC1002
PLL1-1/2
IC1601
IC1606 A/D D/A
IC1605 LPF AMP
IC1607
IC1608 LPF AMP
Trk_i, trk_o
TALLY_R_TR, TALLY_G_TR
IC716
TRK-Talk (X) / (Y)
TRK-RCV/PGM
TRK-G/R-Tally
Unreg-RCP
FL1301 LPF
IC1302 AMP
IC1301 AMP
IC1303 AMP
IC1306 SYNC SEP
IC1309
TEMP-H
TEMP-F
IC1308 COMPARATOR
IC1310
IC1313, 1314 MULTIPLEXER
SD-REF-H-PLD
HD-REF-H-PLD
SD-SYNC-CLP, PEDE-CLP
R-SW-SCL-PLD
R-SW-SDAO-PLD
R-SW-SDAI-PLD
IC621
IC620
R-SW-SDA/SCL
IC1208 FF
IC1211 AMP
FL1213 LPF
VF-Y
SELECTOR
IC1212 AMP
IC1209 AMP
Prompter-in/out
Analog-out
RM_TX-D
RM_RX (-) -D
RM_RX (+) -D
IC717
IC712
RM_TX (X) / (Y)
RM_RX (X) / (Y)
RCP-Pix
IC508
IC514
PS-I2C-SCK-PLD, PS-I2C-SDAO-PLD, PS-I2C-SDAI-PLD
INC-SCL-PLD, INCH-SDAO-PLD, INC-SDAI-PLD
IC610
IC611
INC-SDA/SCL
IC701 BUS TRANSCEIVER
IC504
R-RE-A/B-PLD
R-ENC-A/B
R-ENC-ENT
INC-TRK/PROD/RCV-VR, INC-PGM1/2-VR
IC703
IC702
IC704
EXT_A (0) - (4)
EXT_D (0) - (7)
EXT-CPU-CLK-D
xRESET (CA) -D
IC803 A/D
IC812 (1/2) AMP
IC805 MULTIPLEXER
IC809 AMP
IC804 MULTIPLEXER
IC807, 808, 811 AMP
AD-SCLK-PLD, AD-XCS-PLD, AD-DIN-PLD, AD-DOUT-PLD
LENS-RX-PLD
12DA_DATA, 12DA_CLK, 12DA_LD
IC603, 607
LENS-RX (FOCUS-A)
IC801 D/A
IC812 (2/2) AMP
F-VR-in
IRIS-POSI-A, ZOOM-POSI-A, LENS-RX (FOCUS-A), Extender-A, PUPIL-POSI-A
IRIS-CTL-A
F-I2C-SCL/SDA
F-RE-A/B
IC503
F-RE-A/B-PLD
FL1203 LPF
IC1202 AMP
VF-Y
IC1207 AMP
FL1212 EMI
VF-Y-out
IC1205 AMP
FL1204 EMI
Bup-Y-out
FL1201 LPF
IC1203 AMP
FL1206 EMI
VF-Pb-out
IC1206 AMP
FL1207 EMI
Bup-Pb-out
FL1202 LPF
IC1201 AMP
FL1210 EMI
Bup-Pr-out
IC1204 AMP
FL1209 EMI
VF-Pr-out
VF-SCK-PLD, VF-SDAO-PLD, VF-SDAI-PLD
REAR_PANEL_TX
REAR_PANEL_RX
IC710
IC601
IC618, 619
IC715
TALLY_G/R_CA
BUP-RNL-TX/RX
BUP-LENS-TX/RX
BUP-G/R-Tally
Bup-Y/Pb/Pr-out
IC622
IC623
VF-Y/Pb/Pr-out
VF-SCL/SDA
VF-R/G/3RD-Tally, VF-REC-L
CN-3641
CN2 AUDIO IN CH1
CN3 AUDIO IN CH2
LE-392
S1 R/G-Tally
D1-4 R/G-Tally
S1: TALLY
D1, 3: RED
D2, 4: GREEN
SW-1605
S1: RET1
S2: INCOM
S1, S2
(BOOT SD)
CN-3642
CN2 USB
CN-3645
CN2 EARPHONE
CN-3647
CN1 INTERCOM
CN-3643
CN4 TRACKER
CN7 DC OUT
CN6 RET CTRL
S1-3
S1: MIC1
S2: AUDIO IN CH1
S3: AUDIO IN CH2
EXPANDER
CN-3646
CN2 PROMPTER/ GEN LOCK/ RET IN
CN3 TEST OUT
CN-3644
CN2 REMOTE
SW-1608/A
S3_4, 6, 7
S1, 2, 5
S1: RET 1
S2: RET 2
S5: ASSIGNABLE
S3: RET 2 SEL
S4: MENU
S6: MIC LINE
S7: LEVEL
EN1
EN1: MENU SEL
RV1: PGM1
RV2: PGM2
RV3: ENG
RV4: PROD
RV5: TRACKER
RV1-5
CN-3640
CN-3637
CN1 LENS
SW-1606
RV1
RV1: INCOM LEVEL
EN1
EN1: MENU
S1
S2, 3
S1: RET
S2: SHUTTER
S3: AUTO W/B BAL
SW-1604
S1, 2
S1: ASSIGNABLE1
S2: ASSIGNABLE2
SW-1607
S1-5
S3: WHITE BAL
S4: STATUS/ CANCEL
S5: DISPLAY
S1: GAIN
S2: AUTO KNEE
HSC300R/300RF
BUILD UP CONNECTOR
CN-3639
CN1 VF

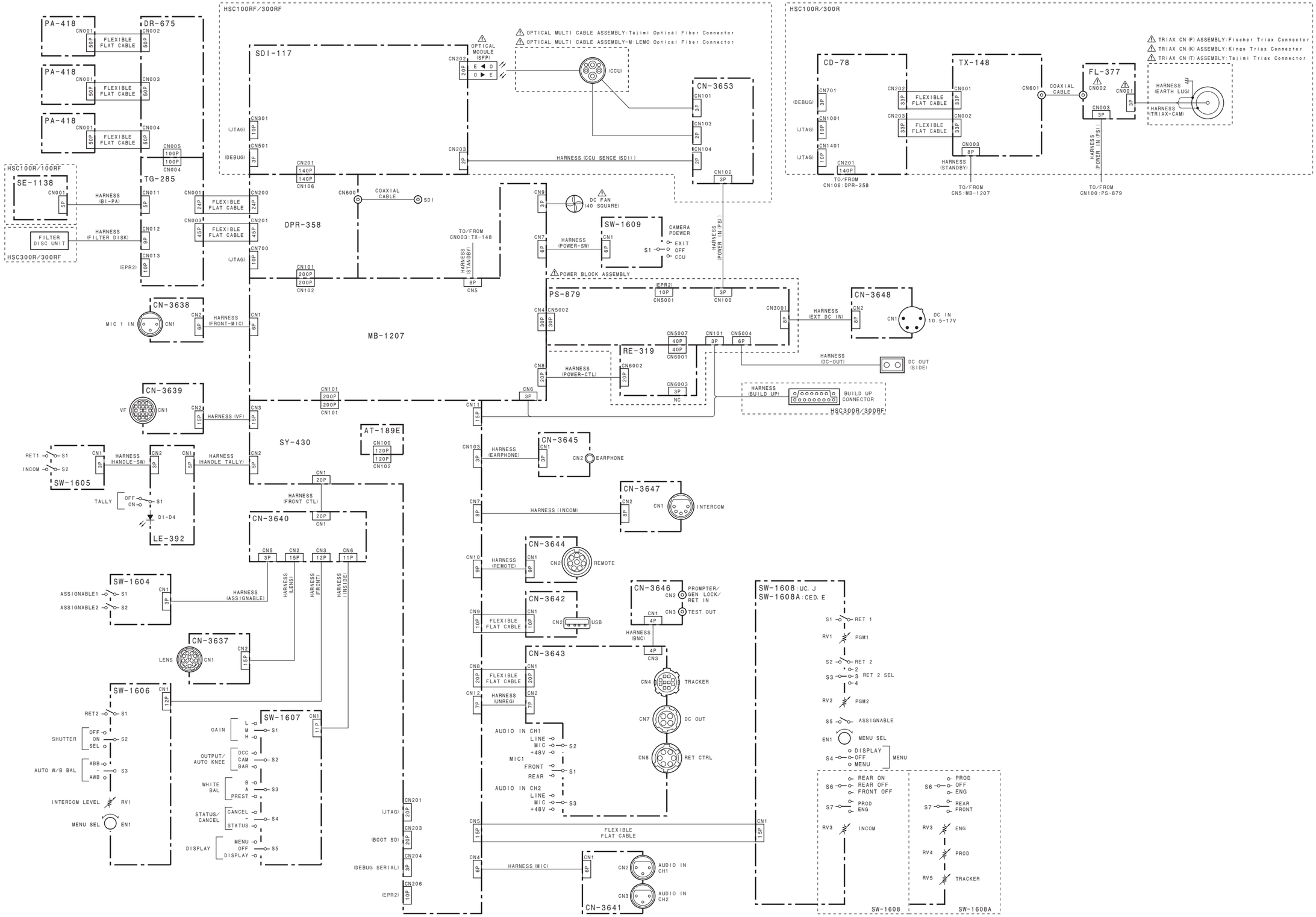
Overall (4/5)


HSC100R/300R
CD-78
TX-148
PLD
SRAM
FLASH
DRIVER
SDRAM
CLOCK DRIVER
SD/HD VIDEO ENCODER
DAYTONA MAIN
DAYTONA RETURN
CAFE-T
TORINO
DEC
BUS TRANSCEIVER
LINE RECEIVER
DEMOD
MIXER
STEP AGC GAIN AMP
COMPARATOR
MULTIPLEXER
MPX FILTER
FM MOD
TRAP FILTER
DETECT
FL-377
DPR-358 CN106
TRIAX CN (F) ASSEMBLY : Fischer Triax Connector
TRIAX CN (K) ASSEMBLY : Kings Triax Connector
TRIAX CN (T) ASSEMBLY : Tajimi Triax Connector
(CCU)

Overall (5/5)


HSC100RF/300RF
SDI-117
IC301
PLD
201-6, 8...32
201-17, 19
201-23, 25
201-29, 31
201-37
201-39
201-49, 51...55
201-50, 52...60
201-63
201-64
201-70, 72...84
201-86
201-90, 92...98
201-100, 102...106
SECRET [0] - [7], SECRET_TX/RX
RET_SDI_p/n
MAIN_SDI_B_p/n
MAIN_SDI_A_p/n
TRANS_ID [0]
TRANS_ID [1]
GND
+2.5V
AUDIO_RX
AUDIO_TX
ADV-H
ADV-F
HOST_CPU [0] - [7]
HOST_CPU [8]
HOST_CPU [9] - [13]
HOST_CPU [14] - [17]
74M_PLL_REF
74M_PLL_VAR
IC501
PHASE COMPARATOR
X501, 502
X501:74.25MHz
X502:74.175MHz
IC503
IC508
IC507
DRIVER
CLK_74M_S
CLK_74M_SERDES
D203-205
D203:TFAULT
D204:TDIS
D205:LOS
SFP_RX_LOS, LD_ON, SFP_TFAULT
SFP_MOD_DEF0
OTR-SCL/SDA
OPT_RX_p/n
OPT_TX_p/n
202-2, 3, 8
202-6
202-4, 5
202-12, 13
202-18, 19
OPTICAL MULTI CABLE ASSEMBLY:Tajimi Optical Fiber Connector
OPTICAL MULTI CABLE ASSEMBLY-M:LEMO Optical Fiber Connector
(CCU)
DPR-358
CN106
201-113
CLK_CPU_MST
201-109
CLK_27M_MST
IC205
CLK_27M
201-105
CLK-74M_MST
IC203
CLK_74M
201-40
VBS_OUT
IC513
AMP
FL501
LPF
IC510
D/A
201-46
1mA/Tone_OFF/ON
IC213 (2/2)
Q201, 203
IC210 (2/2)
Q205
AMP
201-110
(+1) mA/ (-1) mA
IC213 (1/2)
Q202
IC210 (1/2)
Q204
AMP
CCU_SENSE-out
203-2
CN-3653
104-1
CCU_SENSE
103-2
102-1, 3
DC180V
101-1, 3
PS-879
CN100
201-44
RF_DETECT
201-67
SYS_RESET
IC201
201-83, 85
201-87, 89
CPU_UART_TX/RX
CMD_700P_TX/RX
IC505
SRAM

Frame Wiring



HSC300RF (UC)
HSC300RF (CED)
HSC300RF (E)
HSC300RF (J)
HSC100RF (UC)
HSC100RF (CED)
HSC100RF (E)
HSC100RF (J)
HSC300R (UC)
HSC300R (CED)
HSC300R (J)
HSC100R (UC)
HSC100R (CED)
HSC100R (J) J, E

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