SONY

CAMERA CONTROL UNIT

HDCU3500
HDCU5500

UHB TRANSMISSION BOARD KIT
HKCU-FB50

SINGLE MODE FIBER EXTENSION KIT
HKCU-SM50

ST 2110 INTERFACE KIT
HKCU-SFP50

RECORDING OPTION
HKCU-REC55

INSTALLATION MANUAL

1st Edition (Revised 1)

Corrected on February 6, 2020

⚠ 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.
HDCU3500/L (SY): LEMO Optical Fiber Connector	10001and Higher
HDCU3500/T (SY): Tajimi Optical Fiber Connector	30001 and Higher
HDCU3500//UL (SY): LEMO Optical Fiber Connector	100001 and Higher
HDCU5500/L (SY): LEMO Optical Fiber Connector	10001and Higher
HDCU5500/T (SY): Tajimi OpticalFiber Connector	30001 and Higher
HDCU5500//UL (SY): LEMO Optical Fiber Connector	100001 and Higher

Attention-when the product is installed in Rack:

1. **Prevention against overloading of branch circuit**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

2. **Providing protective earth**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please confirm that the outlet is provided with a suitable protective earth connection.

3. **Internal air ambient temperature of the rack**
   When this product is installed in a rack, please make sure that the internal air ambient temperature of the rack is within the specified limit of this product.

4. **Prevention against achieving hazardous condition due to uneven mechanical loading**
   When this product is installed in a rack, please make sure that the rack does not achieve hazardous condition due to uneven mechanical loading.

5. **Install the equipment while taking the operating temperature of the equipment into consideration**
   For the operating temperature of the equipment, refer to the specifications of the Operation Manual.

警告

万一，異常が起きた際に，お客様が電源をきることができるように，設置の際には，機器近くの固定配線内に専用遮断装置を設けるか，機器使用中に，容易に抜き差しできるコンセントに電源プラグを接続してください。

WARNING
When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, or connect the power cord to a socket-outlet which must be provided near the unit and easily accessible, so that the user can turn off the power in case a fault should occur.

WARNUNG
Beim Einbau des Geräts ist daher im Festkabel ein leicht zugänglicher Unterbrecher einzufügen, oder das Netzka-bel muß mit einer in der Nähe des Geräts befindlichen, leicht zugänglichen Wandsteckdose verbunden werden, damit sich bei einer Funktionsstörung die Stromversor-gung zum Gerät jederzeit unterbrechen läßt.

安全のために，周辺機器を接続する際は，過大電圧を持つ可能性があるコネクターを以下のポートに接続しないでください。
：LAN 端子
：NETWORK TRUNK 端子
上記のポートについては本書の指示に従ってください。

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to the following port(s).
: LAN connector
: NETWORK TRUNK connector
Follow the instructions for the above port(s).

For kundene i Norge

Dette utstyret kan kobles til et IT-strømfordelingssystem.

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Revision History

Section 1
Installation

1-1. Checking the Software Version

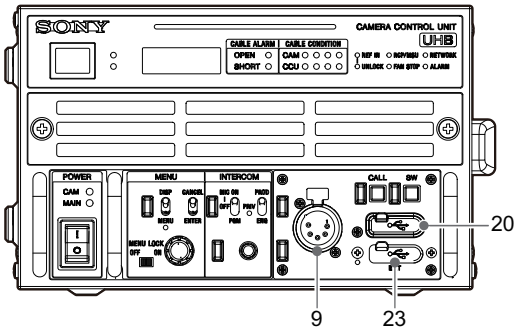
When connecting the peripheral equipment in the list below to this unit, be sure to check that the software version on each peripheral device is corresponding to the unit to be connected.
If the software version is lower than the specified below, be sure to perform upgrading the software.
If upgrading the software are required, contact your local Sony Sales Office/Service Center.

Peripheral equipment	Board name	Software version
HDC4300	AT-189	APP Ver. 1.60 and higher
HDC2500	AT-189	APP Ver. 3.30 and higher
BPU4000	AT-189	APP Ver. 4.20 and higher
BPU4800	AT-189L	APP Ver. 1.31 and higher
HDC4800	AT-189U	APP Ver. 1.30 and higher
MSU-1000/1500	MPU-150/151	MAIN Ver. 3.40 and higher
RCP-1000/1001	MPU-152	MAIN Ver. 2.50 and higher
RCP-1500/1501	MPU-153	MAIN Ver. 3.40 and higher
RCP-1530	MPU-153	MAIN Ver. 3.40 and higher
CNA-1	AT-189A	Ver. 2.00 and higher

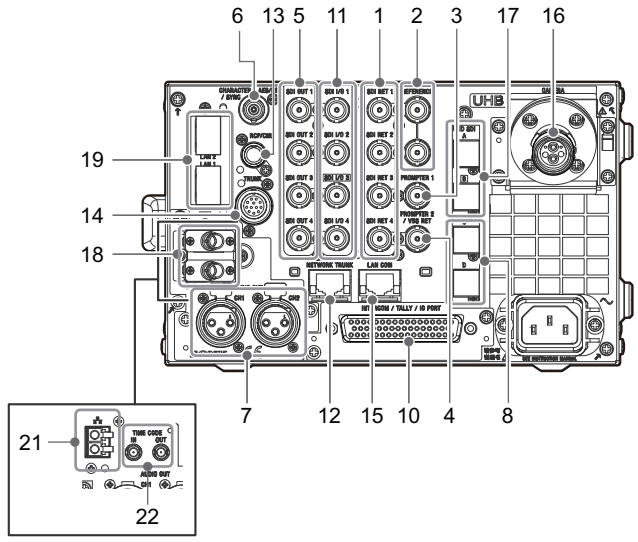
1-2. Connectors and Cables

1-2-1. Connector Specifications

Front Panel



Rear Panel



HKCU-REC55

Input connectors

1. SDI-RET 1 to 4

BNC type

- 3G-SDI: SMPTE ST 424/425 Level-A/B compliant
  0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967 Gbps
- HD-SDI: SMPTE ST 292 compliant
  0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps
- SD-SDI: SMPTE ST 259M compliant
  0.8 Vp-p, 75 Ω, 270 Mbps

2. REFERENCE

BNC type

- HD: SMPTE ST 274M compliant
  3-level sync, 0.6 Vp-p, 75 Ω
- SD: Black burst
  NTSC: 0.286 Vp-p, 75 Ω
  PAL: 0.3 Vpp, 75 Ω
  or NTSC (10 Field ID)

3. PROMPTER 1 (INPUT)

BNC type

- Analog signal, 1.0 Vp-p, 75Ω

4. PROMPTER 2/VBS-RET (INPUT)

BNC type

- Analog composite signal: 1.0 V p-p, 75 Ω

Output connectors

5. SDI OUT 1 to 4

BNC type

- 3G-SDI: SMPTE ST 424/425 Level-A/B compliant
  0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967Gbps
- HD-SDI: SMPTE ST 292 compliant
  0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps
- SD-SDI: SMPTE ST 259M compliant
  0.8 Vp-p, 75 Ω, 270 Mbps

3G-SDI/HD-SDI/SD-SDI selectable

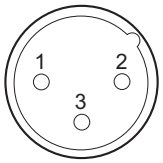
6. CHARACTER AES/EBU / SYNC

BNC type

- VBS, 1.0 Vp-p, 75 Ω

7. AUDIO OUT CH1, CH2

XLR 3-pin, Male



- External View -

(0 dBu = 0.775 Vrms)

No.	Signal	I/O	Specifications
1	MIC OUT (G)	—	+4 dBu/0 dBu/–20 dBu
2	MIC OUT (X)	O	
3	MIC OUT (Y)	O	

8. UHD SDI A, B (HKCU-FB50)

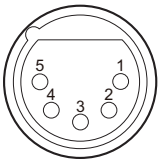
BNC type

- 12G SD: SMPTE ST2082 compliant
  0.8 Vp-p, 75 Ω, 11.88 Gbps/11.868 Gbps
- 6G-SDI: SMPTE ST2081 compliant
  0.8 Vp-p, 75 Ω, 5.940 Gbps/5.934 Gbps
- 3G-SDI: SMPTE ST 424/425 Level-A/B compliant
  0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967Gbps
- HD-SDI: SMPTE ST 292 compliant
  0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps

Input/Output connectors

9. INTERCOM

XLR 5-pin, Female



- External View -

(0 dBu = 0.775 V rms)

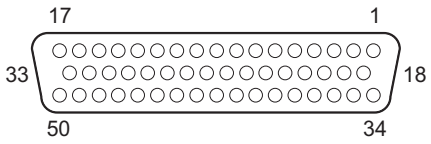
Note

When it is used with UNBALANCE, connect the GND of microphone to the pin 1.

No.	Signal	I/O	Specifications
1	INTERCOM MIC IN (Y)/ (GND)	I	−20 dBu (CARBON) −40 dBu (ECM) −60 dBu (DYNAMIC. BALANCE/UNBALANCE)
2	INTERCOM MIC IN (X)	I	
3	GND	—	GND
4	INTERCOM L OUT	O	—
5	INTERCOM R OUT	O	—

10. INTERCOM / TALLY / IO PORT

D-sub 50-pin, Female



- External View -

No.	Signal	I/O	Specifications
1	+5.0 V_OUT	O	Max. 250 mA
2	G TALLY OUT	O	ON (GND): Max. 30 mA IN
3	R TALLY OUT	O	ON (GND): Max. 30 mA IN
4	TALLY OUT	O	R/G/Y TALLY OUT ON (GND): Max. 30 mA IN
5	GND	—	—
6	GND	—	—
7	GPIO5	I/O	AUX3
8	R_TALLY (X)_ IN	I	(H), SHORT (L), OPEN
9	G_TALLY (X)_ IN	I	(H), SHORT (L), OPEN
10	Y_TALLY (X)_ IN	I	(H), SHORT (L), OPEN
11	ENG (X)_OUT	O	ENG SYSTEM RECEIVE 0 dBu BALANCED
12	ENG (X)_IN	I	ENG SYSTEM TALK 0 dBu BALANCED
13	PROD (X)_OUT	O	PROD SYSTEM RECEIVE 0 dBu BALANCED
14	PROD (X)_IN	I	PROD SYSTEM TALK 0 dBu BALANCED
15	PGM1 (X)_IN	I	–20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
16	PGM2 (X)_IN	I	–20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
17	PGM3 (X)_IN	I	–20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
18	LENS EXTENDER OUT	O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
19	CALL OUT	O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)

Continued

No.	Signal	I/O	Specifications
20	GPIO8	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
21	GPIO9	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
22	GPIO10	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
23	GPIO11	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
24	R_TALLY (Y)_ IN	I	(H), SHORT (L), OPEN
25	G_TALLY (Y)_ IN	I	(H), SHORT (L), OPEN
26	Y_TALLY (Y)_ IN	I	(H), SHORT (L), OPEN
27	ENG (Y)_OUT	O	ENG SYSTEM RECEIVE 0 dBu BALANCED
28	ENG (Y)_IN	I	ENG SYSTEM TALK 0 dBu BALANCED
29	PROD (Y)_OUT	O	PROD SYSTEM RECEIVE 0 dBu BALANCED
30	PROD (Y)_IN	I	PROD SYSTEM TALK 0 dBu BALANCED
31	PGM1 (Y)_IN	I	–20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
32	PGM2 (Y)_IN	I	–20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
33	PGM3 (Y)_IN	I	–20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
34	GND	—	GND for +5.0 V_ OUT
35	PREVIEW_OUT	O	ON (GND): Max. 30 mA IN
36	MIC1_GAIN_ CTRL2/ RECALL2_G	I/O	Refer to “Specification when MIC-REMOTE is selected” and “Specification when WF-REMOTE is selected”.
37	MIC1_GAIN_ CTRL1/ RECALL3_B	I/O	
38	MIC1_GAIN_ CTRL0/ RECALL1_R	I/O	
39	MIC1_GAIN_ ON/RECALL4_ SEQ	I/O	
40	MIC2_GAIN_ ON/RECALL8_ G+B	I/O	
41	ASPECT_REMOTE (MIC2_ GAIN_CTRL2)/ RECALL5_ENC	I/O	
42	ASPECT_CTRL1 (MIC2_GAIN_ CTRL1)/ RECALL6_R+B	I/O	
43	ASPECT_CTRL2 (MIC2_GAIN_ CTRL0)/ RECALL7_R+G/ (CNS MODE)	I/O	
44	ENG (G)	—	GND for ENG
45	GND	—	—
46	PROD (G)	—	GND for PROD
47	GND	—	—
48	PGM1 (G)_IN	—	GND for PGM1
49	PGM2 (G)_IN	—	GND for PGM2
50	PGM3 (G)_IN	—	GND for PGM3

Continued

“MIC REMOTE” or “WF REMOTE” is selectable from IF SETTING (M01) of the MAINTENANCE menu.

Specification when MIC-REMOTE is selected

When MIC REMOTE is set by MODE (S07) of the Service menu, functions of No. 36 to 43 pins are allocated as follows. (For the Service menu, refer to the service manual.)

No.	Setting value		
	MIC1&2	MIC1, 2	MIC+ NETWORK
36	MIC1/2 GAIN	MIC1 GAIN	MIC1/2 GAIN
37			
38			
41	ASPECT CONT	MIC2 GAIN	—
42			
43			CNS MODE

- MIC1&2 is selected
  MIC can be selected by combinations of No. 39 and 40 pins. Furthermore, CHU MIC GAIN can be set by combinations of No. 36 to 38 pins.

MIC select

No.	Specifications			
	MIC1/2	MIC1 only	MIC2 only	INTER-NAL SET
39 (MIC1)	L	L	H	H
40 (MIC2)	L	H	L	H

CHU MIC GAIN select

No.	Specifications				
	60 dB	50 dB	40 dB	30 dB	20 dB
36 (CONT 2)	H	H	H	H	L
37 (CONT 1)	H	H	L	L	H
38 (CONT 0)	H	L	H	L	H

The SD output video signal ASPECT can be set by combinations of No. 41 to 43 pins.

ASPECT control

No.	Specifications				
	OFF	SQ	EC	INT	LB
41 (AS-PECT)	H	L	L	L	L
42 (CONT1)	—	L	H	L	H
43 (CONT2)	—	H	H	L	L

- MIC1&2 is selected
  MIC can be selected by combinations of No. 39 and 40 pins. Furthermore, MIC1 can be set by combinations of No. 36 to 38 pins, and CHU MIC GAIN can be set by combinations of No. 41 to 43 pins.

MIC select

No.	Specifications			
	MIC1/2	MIC1 only	MIC2 only	INTER-NAL SET
39 (MIC1)	L	L	H	H
40 (MIC2)	L	H	L	H

CHU MIC GAIN select (MIC1)

No.	Specifications				
	60 dB	50 dB	40 dB	30 dB	20 dB
36 (CONT 2)	H	H	H	H	L
37 (CONT 1)	H	H	L	L	H
38 (CONT 0)	H	L	H	L	H

CHU MIC GAIN select (MIC2)

No.	Specifications				
	60 dB	50 dB	40 dB	30 dB	20 dB
41 (CONT 2)	H	H	H	H	L
42 (CONT 1)	H	H	L	L	H
43 (CONT 0)	H	L	H	L	H

- MIC+NETWORK is selected
  MIC can be selected by combinations of No. 39 and 40 pins. Furthermore, CHU MIC GAIN can be set by combinations of No. 36 to 38 pins.

MIC select

No.	Specifications			
	MIC1/2	MIC1 only	MIC2 only	INTER-NAL SET
39 (MIC1)	L	L	H	H
40 (MIC2)	L	H	L	H

CHU MIC GAIN select

No.	Specifications				
	60 dB	50 dB	40 dB	30 dB	20 dB
36 (CONT 2)	H	H	H	H	L
37 (CONT 1)	H	H	L	L	H
38 (CONT 0)	H	L	H	L	H

CNS MODE can be set by the No. 43 pin level.

CNS mode select

No. 43	CONT
H	INTERNAL SET (MCS or BRIDGE or LEGACY selectable)
L	Forcibly legacy

Specification when WF-REMOTE is selected

No.	Signal	I/O	Specifications
36	RECALL2_G	O	LOW ACTIVE
37	RECALL3_B	O	
38	RECALL1_R	O	
39	RECALL4_ SEQ	O	
40	RECALL8_G +B	O	
41	RECALL5_ ENC	O	
42	RECALL6_R +B	O	
43	RECALL7_R +G	O	

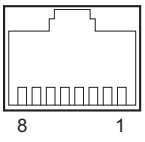
11. SDI I/O 1～4 (INPUT/OUTPUT)

BNC type

- 3G-SDI: SMPTE ST 424/425 Level-A/B compliant
  0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967Gbps
- HD-SDI: SMPTE ST 292 compliant
  0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps
- SD-SDI: SMPTE ST 259M compliant
  0.8 Vp-p, 75 Ω, 270 Mbps

12. NETWORK TRUNK

8-pin, RJ-45, 10Base-T/100Base-TX/1000Base-TX



- External View -

No.	Signal	I/O	Specifications
1	TRD 0 (+)	I/O	Transmitted/Received Data 0 (+)
2	TRD 0 (–)	I/O	Transmitted/Received Data 0 (–)
3	TRD 1 (+)	I/O	Transmitted/Received Data 1 (+)
4	TRD 2 (+)	I/O	Transmitted/Received Data 2 (+)
5	TRD 2 (–)	I/O	Transmitted/Received Data 2 (–)
6	TRD 1 (–)	I/O	Transmitted/Received Data 1 (–)
7	TRD 3 (+)	I/O	Transmitted/Received Data 3 (+)
8	TRD 3 (–)	I/O	Transmitted/Received Data 3 (–)

13. RCP/CNU

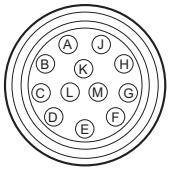
8-pin, Female

- External View -

No.	Signal	I/O	Specifications
1	TX (+)	O	SERIAL DATA OUT
2	TX (–)	O	
3	RX (+)	I	SERIAL DATA IN
4	RX (–)	I	
5	TX GND	—	GND for TX
6	POWER (+) OUT	O	RCP POWER, +30 V
7	POWER (–) OUT	O	GND for POWER
8	VIDEO (X)	O	75 Ω, 1.0 V p-p

14. TRUNK

12-pin, Female

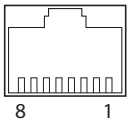


- External View -

No.	RS422A		RS232C		Specifications
	Signal	I/O	Signal	I/O	
A	TX1 (–)	O	—	—	TRUNK Data out
B	TX1 (+)	O	—	—	
C	NC	—	NC	—	No connection
D	TX0 (+)	O	TX1	O	TRUNK Data out
E	TX0 (–)	O	TX0	O	
F	RX0 (–)	I	RX0	I	TRUNK Data in
G	RX0 (+)	I	RX1	I	
H	RX1 (+)	I	—	—	
J	RX1 (–)	I	—	—	
K	GND	—	GND	—	GND for command
L	NC	—	NC	—	No connection
M	NC	—	NC	—	No connection

15. LAN COM

8-pin, RJ-45, 10Base-T/100Base-TX



- External View -

No.	Signal	I/O	Specifications
1	TXD (+)	O	Transmitted Data (+)
2	TXD (–)	O	Transmitted Data (–)
3	RXD (+)	I	Received Data (+)
4	NC	—	No connection
5	NC	—	No connection
6	RXD (–)	I	Received Data (–)
7	NC	—	No connection
8	NC	—	No connection

16. CAMERA

Optical fiber connector

17. UHD SDI C, D (HKCU-FB50)

BNC type

- 12G SD: SMPTE ST2082 compliant
  0.8 Vp-p, 75 Ω, 11.88 Gbps/11.868 Gbps
- 6G-SDI: SMPTE ST2081 compliant
  0.8 Vp-p, 75 Ω, 5.940 Gbps/5.934 Gbps
- 3G-SDI: SMPTE ST 424/425 Level-A/B compliant
  0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967Gbps
- HD-SDI: SMPTE ST 292 compliant
  0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps

18. CAMERA SMF IN/OUT (HKCU-SM50)

ST connector for single-mode fiber cables

Transmission signal: IN (CAMERA → CCU)

- Camera Video
- Audio (MIC)
- HD-TRUNK
- NETWORK TRUNK
- RS422A/RS232C

Transmission signal: OUT (CCU → CAMERA)

- Return Video
- Prompter Video
- Audio (PGM)
- NETWORK TRUNK
- RS422A/RS232C

19. LAN1, 2 (HKCU-SFP50)

SFP+: 10.3125 Gbps

SFP28: 25.78125 Gbps

20. USB

USB Type-A type

USB 2.0 compliant (500 mA)

21. NETWORK (FTP) (HKCU-REC55)

LC type

SFP+: 10GBASE-SR

22. TIME CODE IN/OUT (HKCU-REC55)

DIN type

- TIME CODE IN: Input impedance 1 kΩ, Input amplitude 0.5 to 5.0 Vp-p
- TIME CODE OUT: Output impedance 50 Ω or less, rise and fall time 10-90 %, 40 ±10 us

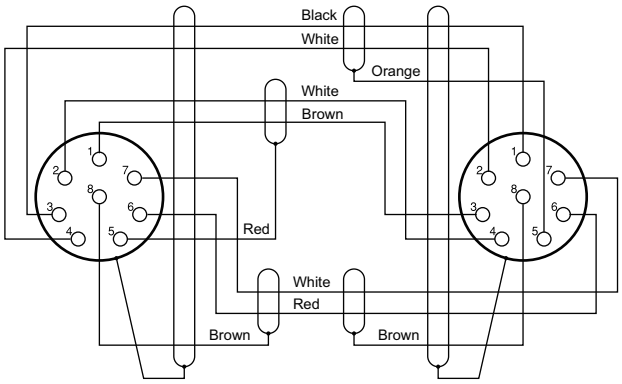
23. USB (HKCU-REC55)

USB Type-A type

USB 3.1 Gen1 compliant (900 mA)

1-2-2. Wiring Diagrams for Cables

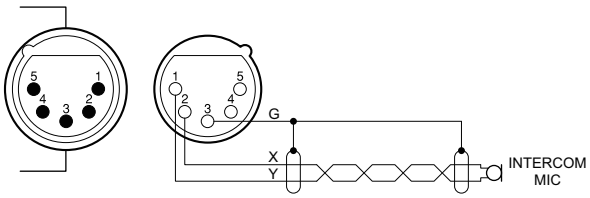
CCA-5 Cable (for RCP/CNU connector)



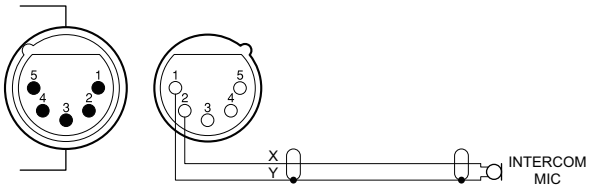
— 8P CONNECTOR (MALE) —
(WIRING SIDE)

INTERCOM MIC Cable

1. Balance (BALANCE in MIC TYPE menu)



2. Unbalance (UNBALANCE in MIC TYPE menu)



1-2-3. Connectors and 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	Connectors and Cables
CAMERA (LEMO)	LEMO PUW. 3K. 93C. TLCC96
CAMERA (Tajimi Electronics Co.,Ltd.)	Tajimi Electronics Co.,Ltd. OPS2402-R
• REFERENCE IN (INPUT) • REFERENCE OUT (OUTPUT) • CHARACTER/ AES/EBU (OUTPUT) • PROMPTER 1 (INPUT) • PROMPTER 2/ VBS-RET (INPUT) (BNC type)	1-564-742-11 PLUG, BNC or BB Cable assembly (1.5 m, optional)
• SDI OUT1 to 4 (OUTPUT) • SDI RET1 to 4 (INPUT) • SDI I/O1 to 4 (IN/OUT) (BNC type)	1-569-370-12 PLUG, BNC/5C-FB coaxial cable (Fujikura products recommended)
AUDIO OUT CH1, CH2 (3P, Male)	1-508-083-xx XLR 3P Female or CANNON XLR-3-11C equivalent
INTERCOM (5P, Female)	1-508-370-11 XLR 5P, Male or CANNON XLR-5-12C equivalent
RCP/CNU (8P, Female)	1-766-848-11 PLUG, 8P Male or CCA cable assembly (optional), CCA-5-10 (10 m), CCA-5-3 (3 m)
• LAN-COM • NETWORK TRUNK (8P, RJ-45)	LAN cable (commercially available, shield type, category 5 or higher)
INTERCOM/ TALLY/IO PORT	1-566-358-11 D-SUB 50P, Male or JAE DDU-50PF-F0 equivalent
UHD SDIA to D	L-5.5CUHD coaxial cable (Canare Electric Co., Ltd. products recommended)
NETWORK (FTP) (LC type)	Optical fiber cable (commercially available) 10GBASE-SR, multi mode optical fiber (OM3)
• TIME CODE IN • TIME CODE OUT (DIN type)	DIN cable (commercially available) Canare Electric Co., Ltd. products recommended

Continued

1-2-4. Note in Connecting CAMERA Connector

It is recommended to clean the optical contact portions mentioned below before connecting this unit to the camera.
For details on a cleaning method, refer to Service Manual.

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

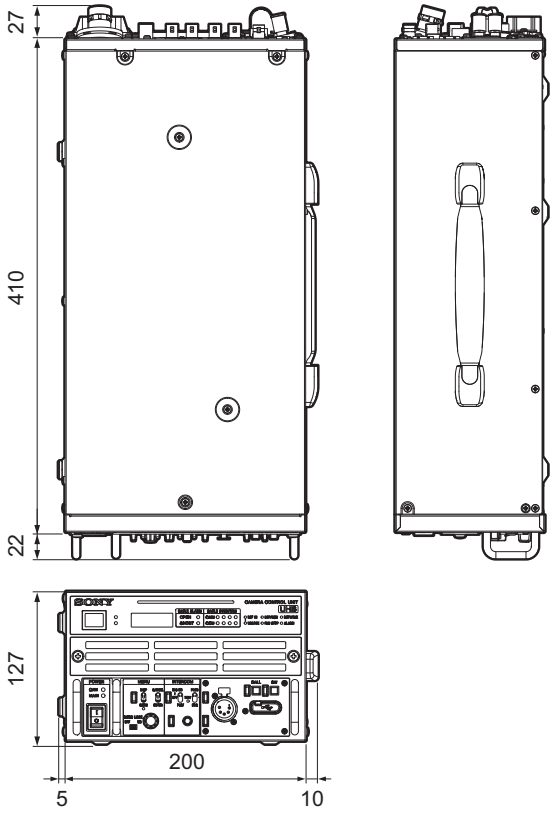
1-3. Power Cord

To get a power cord, please contact your local Sony Sales Office/Service Center.

WARNING

- Use the approved Power Cord (3-core mains lead)/Appliance Connector/Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
- Use the Power Cord (3-core mains lead)/Appliance Connector/Plug conforming to the proper ratings (Voltage, Ampere).
- Never use an damaged power cord.

1-4. Outside Dimensions



Unit : mm

1-5. Installation of Each Option

1-5-1. HKCU-FB50

HKCU-FB50 is an option of HDCU3500.

Parts packed in HDCU-FB50

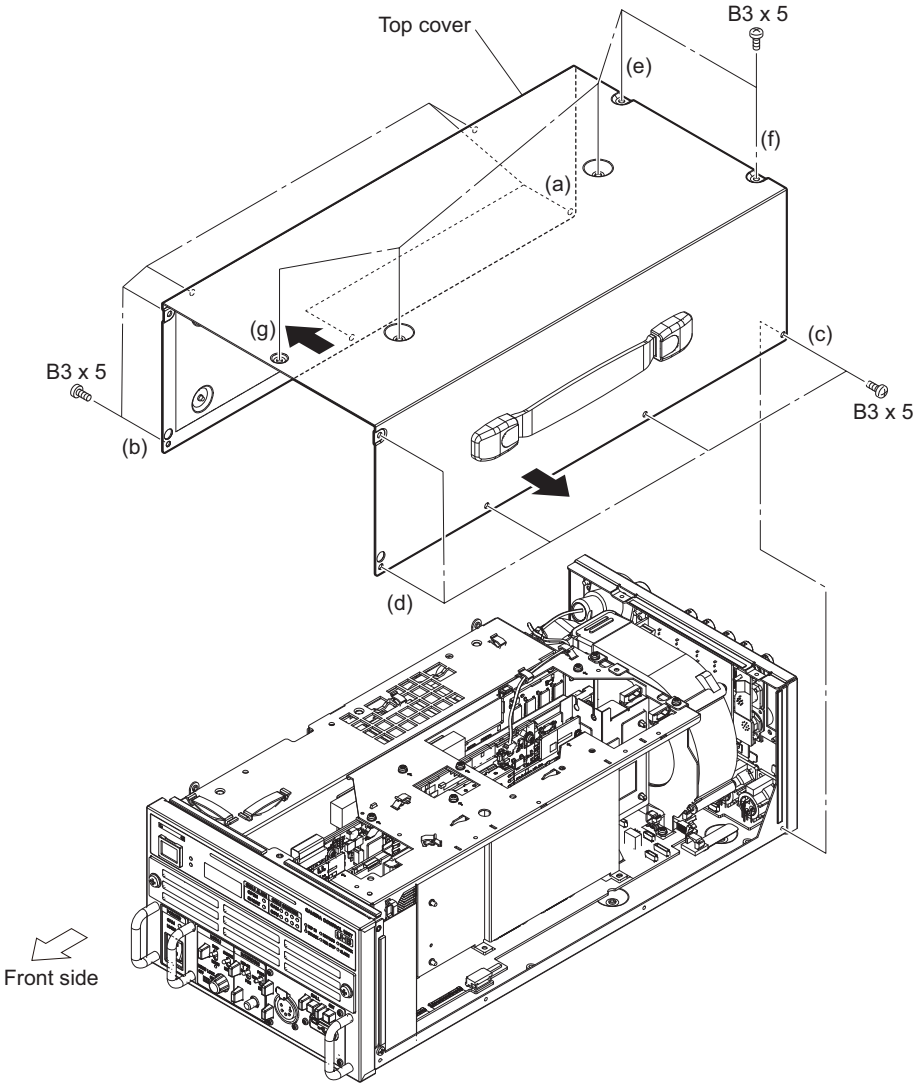
- TX-167B board assembly: 1 pc
- UHB label: 2 pcs
- Optical module (SFP+): 1 pc

Procedure

1. Remove the 16 screws, and then remove the top

Tip

When removing the top cover, slightly extend it in the directions of the arrows.



Note

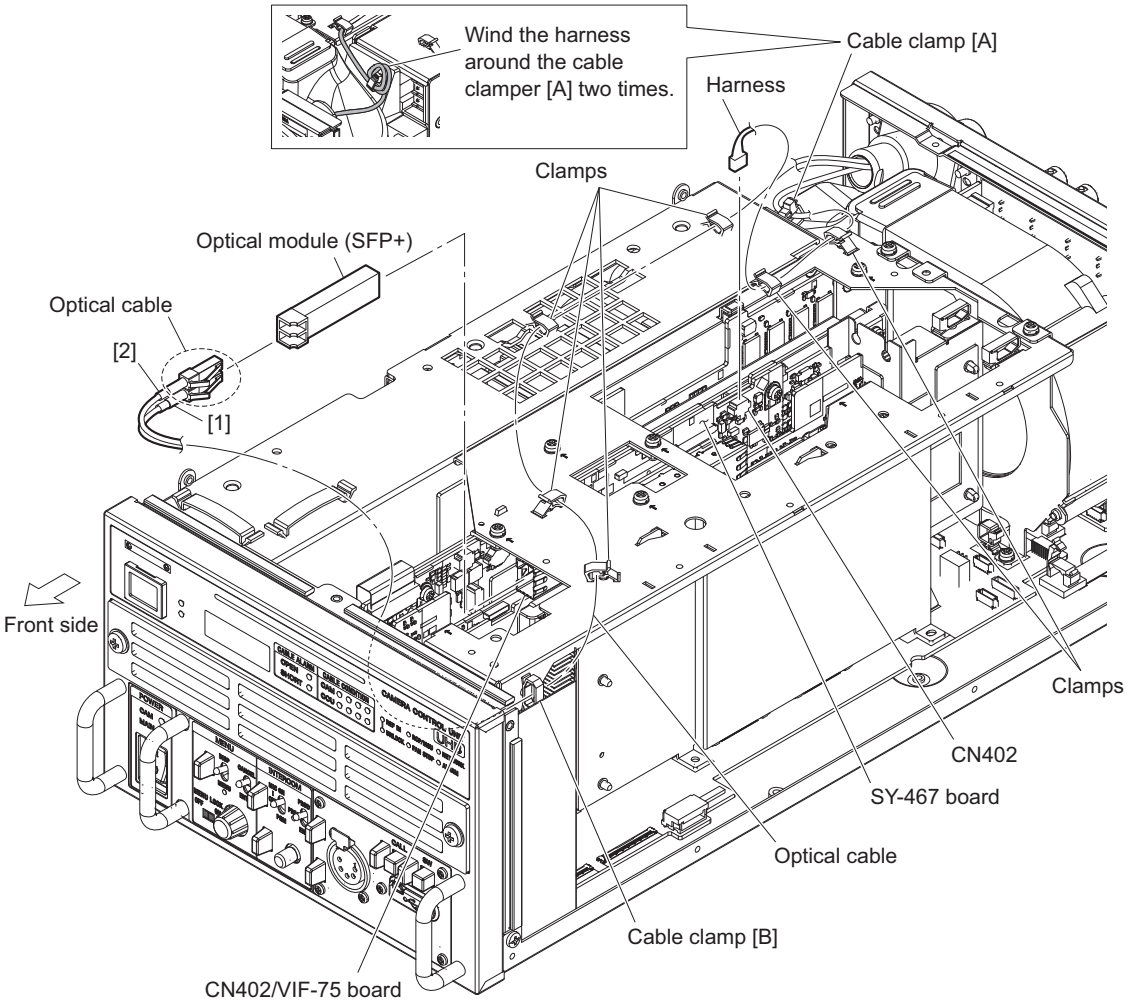
When attaching the top cover, tighten the screws in the following sequence: (a) to (g) and others.

2. Disconnect the optical cable.

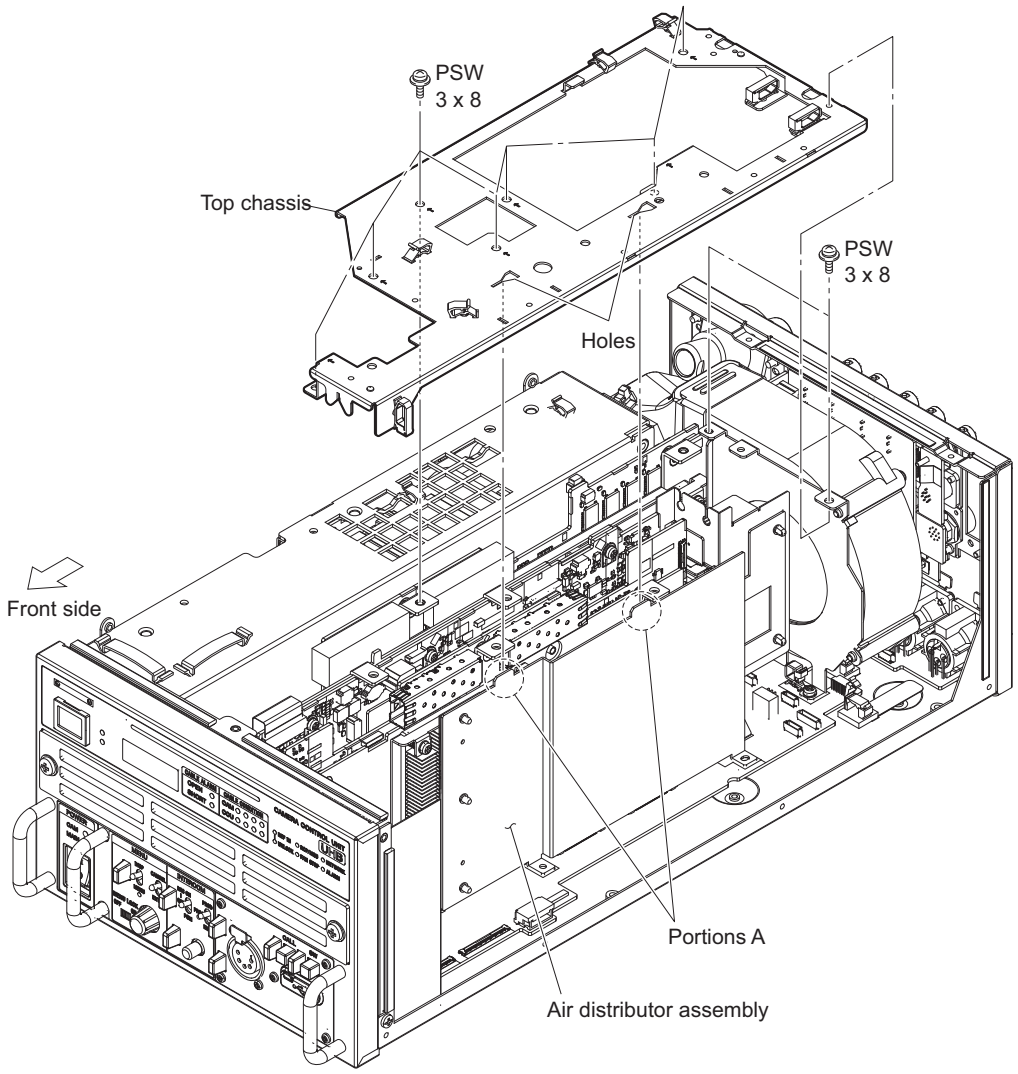
Note

Do not pull the optical cable strongly or bend them so as not to damage them.

(1) Disconnect the harness from the connector (CN402) on the SY-467 board.
(2) Open the cable clamp [A], and then remove the harness from the two clamps.
(3) Open the cable clamp [B], and then remove the optical cable from the four clamps.
(4) Pull out the two optical cable from the optical module (SFP+).
(5) Disconnect the optical module (SFP+) from the connector (CN403) on the VIF-75 board.



3. Remove the nine screws, and then remove the top chassis.



Note

When attaching the top chassis, insert two portions A of the air distributor assembly into the two holes of the top chassis.

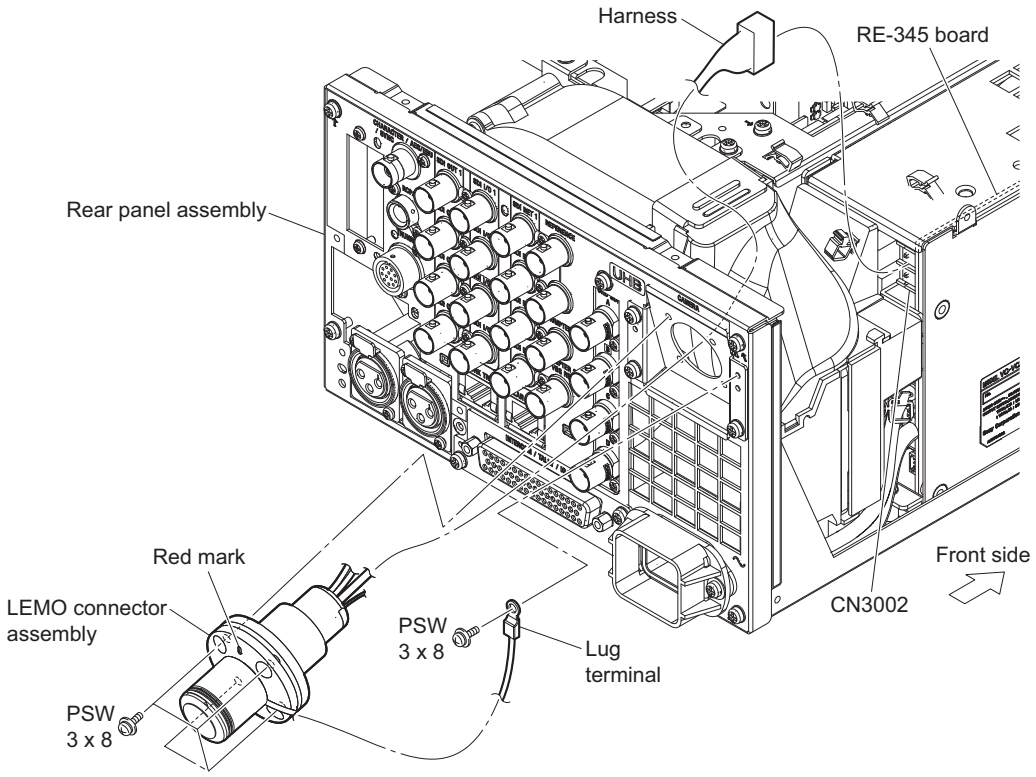
4. Remove the LEMO connector assembly or TAJIMI connector assembly.

LEMO connector assembly

(1) Disconnect the harness from the connector (CN3002) on the RE-345 board.

(2) Remove the screw, and then remove the lug terminal.

(3) Remove the four screws, and then remove the LEMO connector assembly.



Note

- When attaching the LEMO connector assembly, install it with the red mark up.
- When attaching the LEMO connector assembly, secure the connector assembly temporarily using the four screws, then fully tighten them.

TAJIMI connector assembly

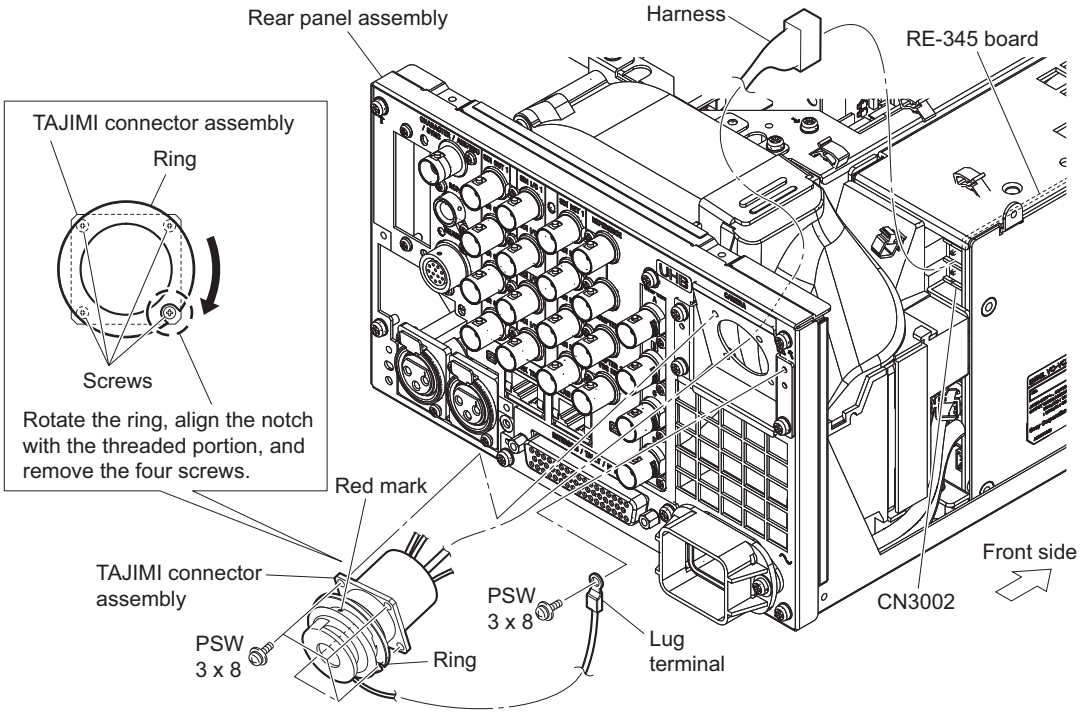
(1) Disconnect the harness from the connector (CN3002) on the RE-345 board.

(2) Remove the screw, and then remove the lug terminal.

(3) Remove the four screws, and then remove the TAJIMI connector assembly.

Tip

Align the notch of the ring with the screw position and remove the screws.

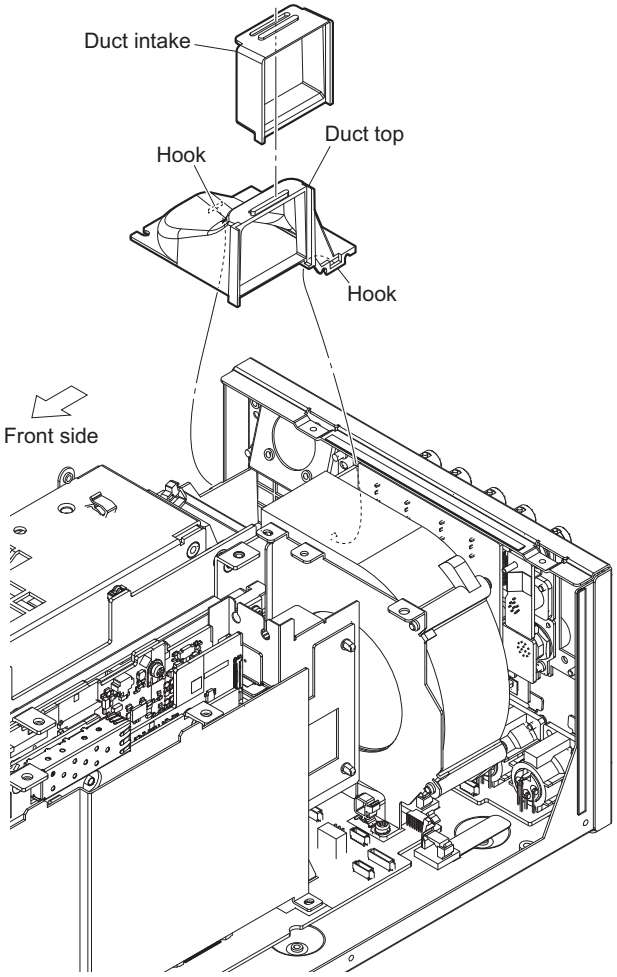


Note

- When attaching the TAJIMI connector assembly, install it with the red mark up.
- When attaching the TAJIMI connector assembly, secure the connector assembly temporarily using the four screws, then fully tighten them.

5. Remove the duct intake.

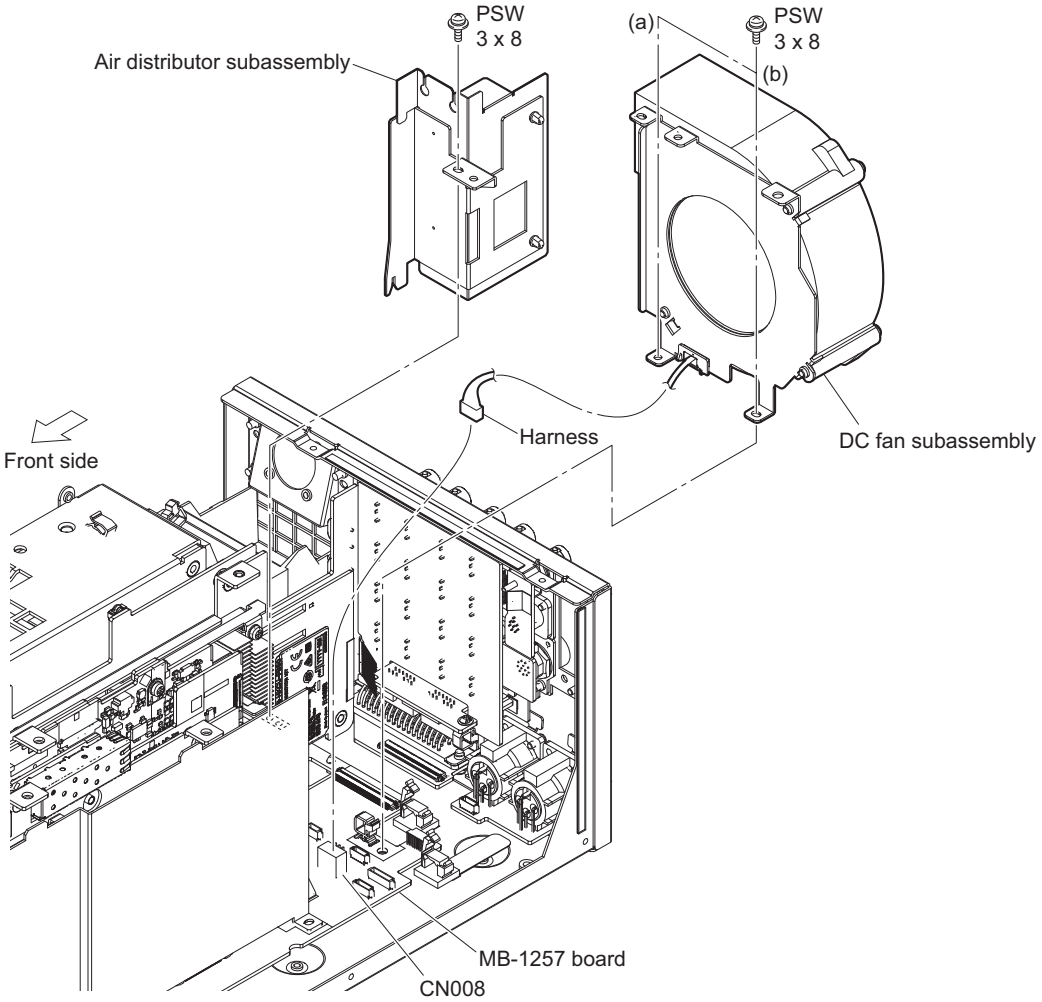
6. Remove the two hooks, and then remove the duct top.



Note

When attaching the DC fan subassembly, tighten the screws in the following sequence: (a), (b).

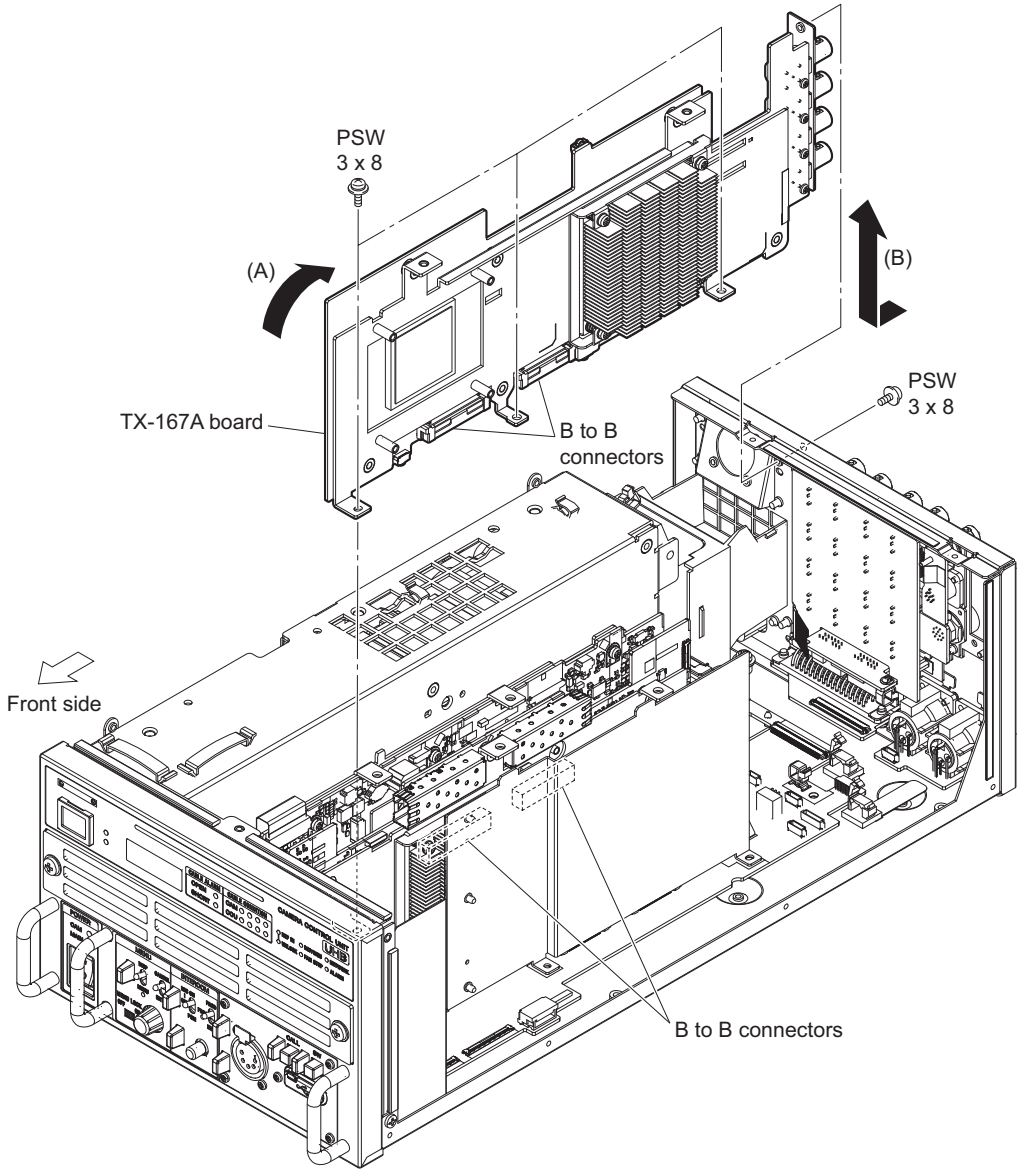
7. Remove the DC fan subassembly.
   (1) Remove the screw, and then remove the air distributor subassembly.
   (2) Disconnect the harness from the connector (CN008) on the MB-1257 board.
   (3) Remove the two screws, and then remove the DC fan subassembly.



Note

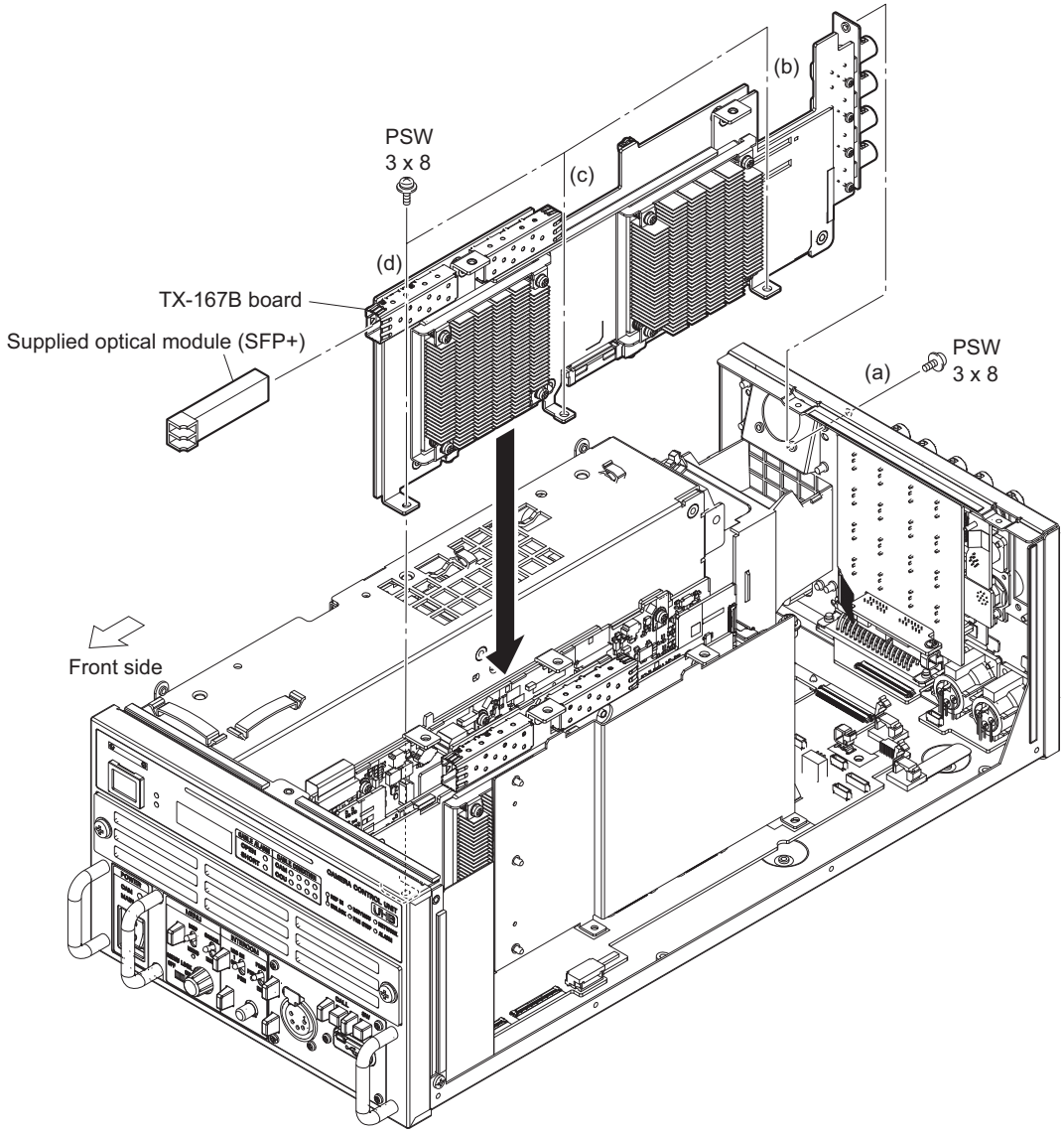
When attaching the DC fan subassembly, tighten the screws in the following sequence: (a), (b).

8. Remove the TX-167A board.
   (1) Remove the four screws, and then slightly pull up the TX-167A board in the direction of the arrow (A) to disconnect the B to B connectors.
   (2) Remove the TX-167A board in the direction of the arrow (B).



9. Install the TX-167B board with the four screws.

10. Attach the supplied optical module (SFP+).



Note

When installing the TX-167B board, tighten the screws in the following sequence: (a) to (d).

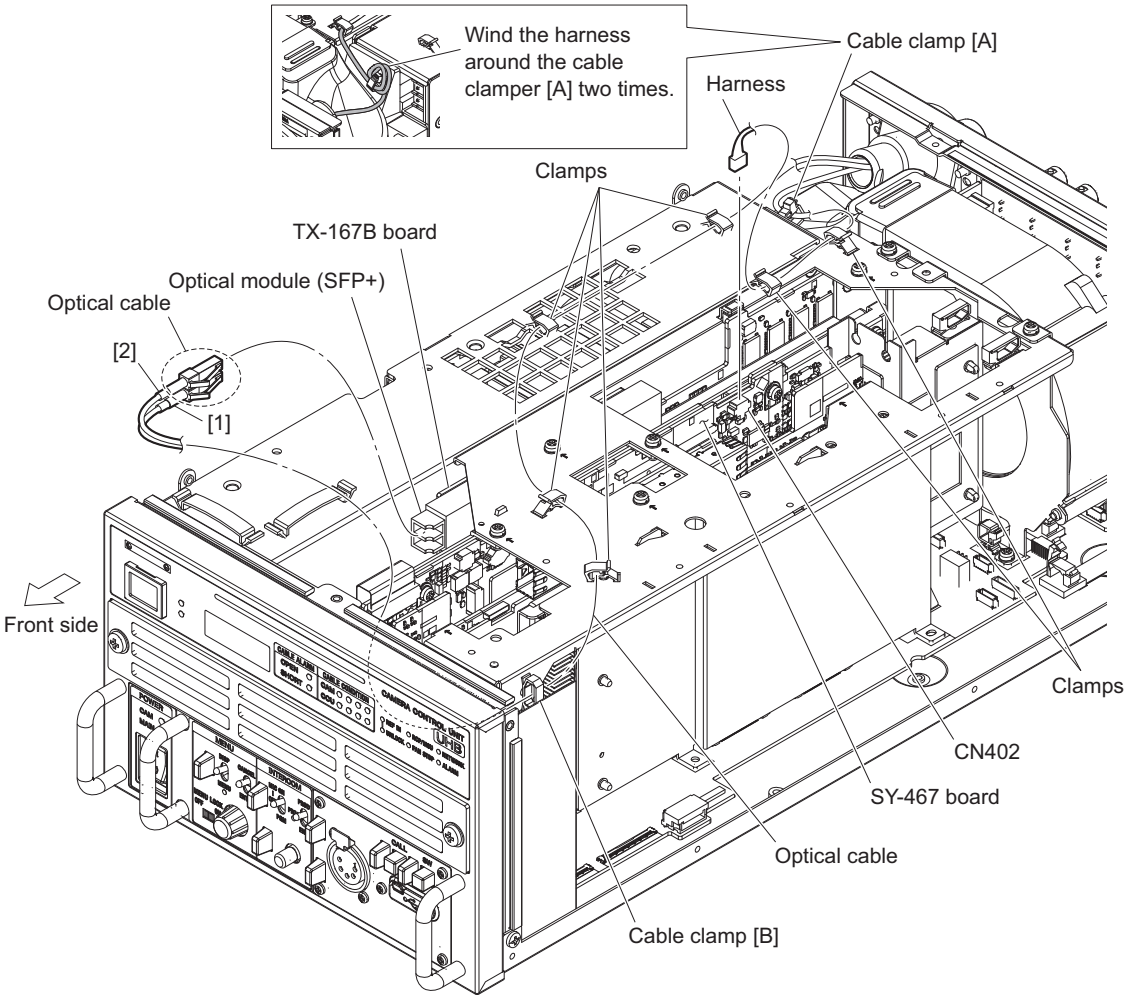
11. Assemble this unit in the reverse order of steps 3 to 7.

12. Connect the optical cable.

Note

Do not pull the optical cable strongly or bend them so as not to damage them.

(1) Connect the optical cable to the optical module (SFP+) on the TX-167B board.
(2) Open the four clamps and cable clamp [B], and then fix the optical cable.
(3) Open the two clamps and cable clamp [A], and then fix the harness.
(4) Connect the harness to the connector (CN402) on the SY-467 board.

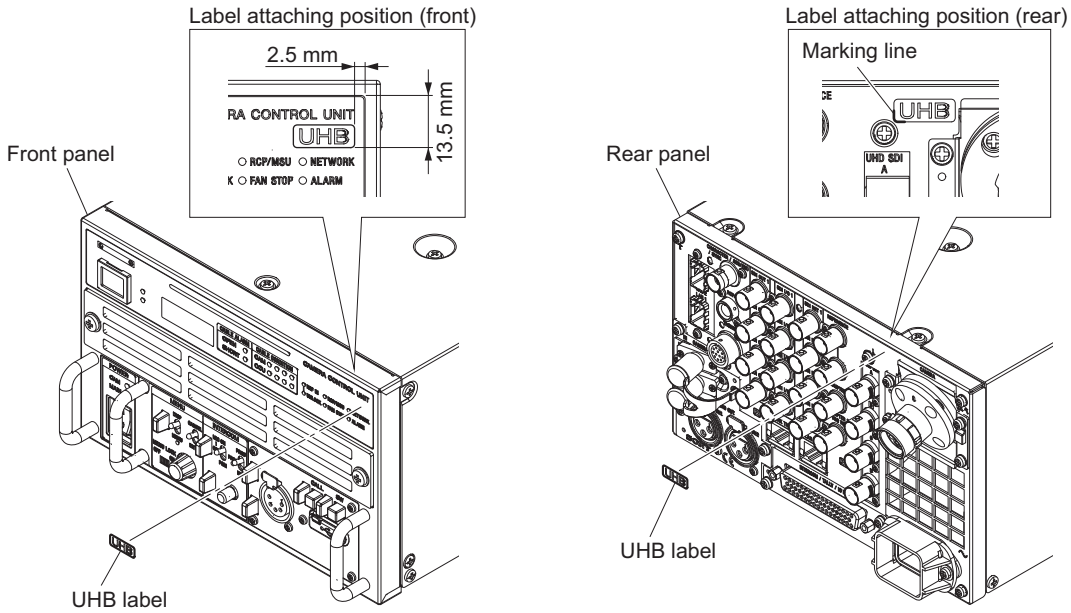


Note

- When attaching the optical cable, be careful not to mistake the connector.
- The connection destination of HDCU3500 is different from that of HKCU-FB50. When connecting them, be careful not to connect to the wrong destination.
- When connecting the harness, wind the harness around the cable clamper [A] two times.

13. Attach the top cover. (Refer to step 1.)

14. Attach the UHB label to each upper portion of the front panel and the rear panel.



1-5-2. HKCU-SFP50

Tip

It is recommended to replace the removed screws with the supplied screws.

- Screw (P2.6 x 5): 2 pcs

Parts packed in HKCU-SFP50

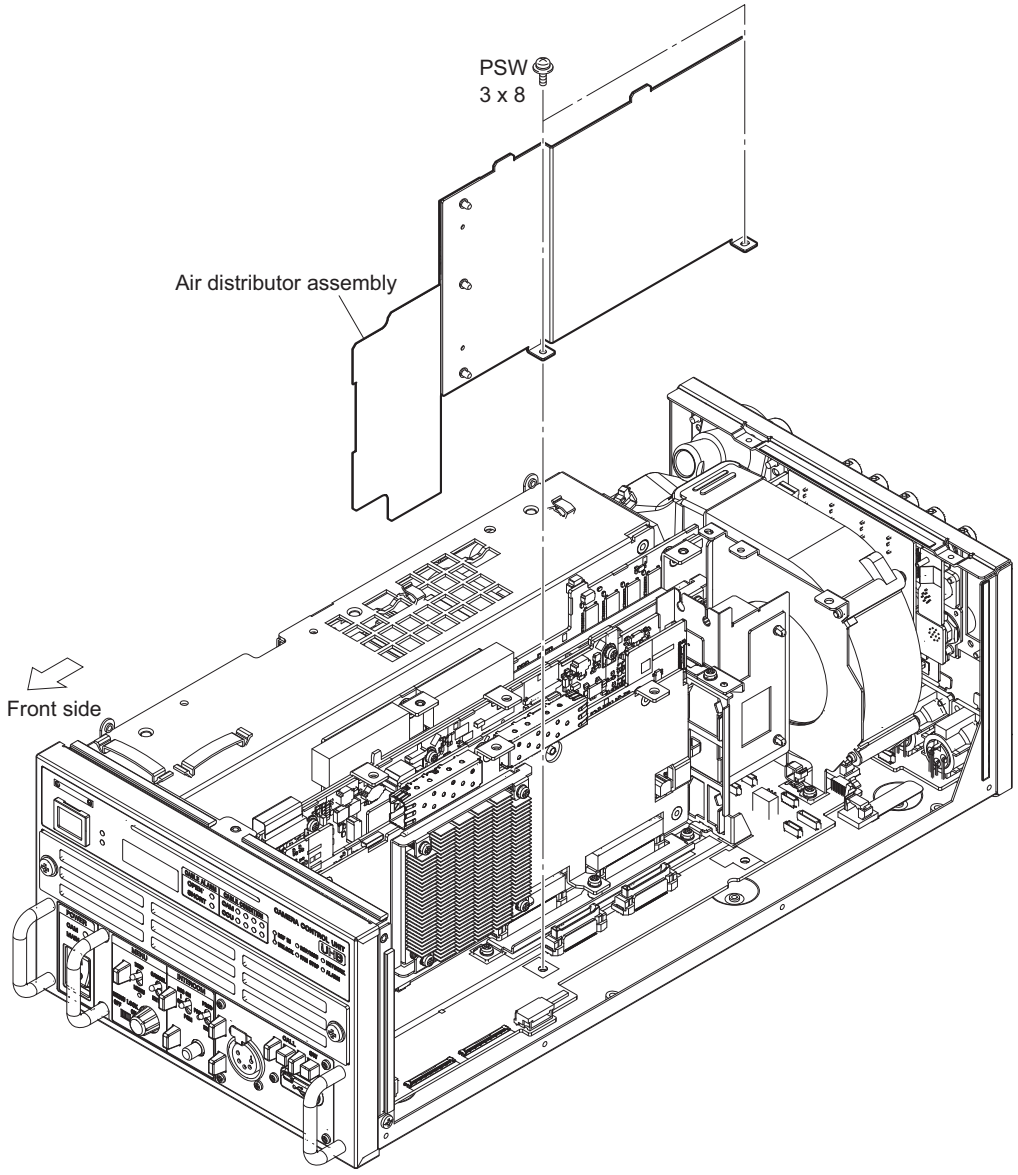
- NET-37 board assembly: 1 pc
- NET bracket: 1 pc
- Coaxial cable with connector (SS-M) 20P: 1 pc
- Fine-wire coaxial cable (CA60-155-11): 2 pcs
- Harness (SLOT POWER): 1 pc
- Nylon rivet: 3 pcs
- Cover sheet (fiber): 2 pcs
- Air distributor F (NET): 1 pc
- Screw (P2.6 x 5): 2 pcs
- Screw (PSW3 x 8):: 6 pcs

Preparation

1. Remove the top cover. (Refer to step 1 in “1-5-1. HKCU-FB50”.)
2. Remove the optical cable. (Refer to step 2 in “1-5-1. HKCU-FB50”.)
3. Remove the top chassis. (Refer to step 3 in “1-5-1. HKCU-FB50”.)

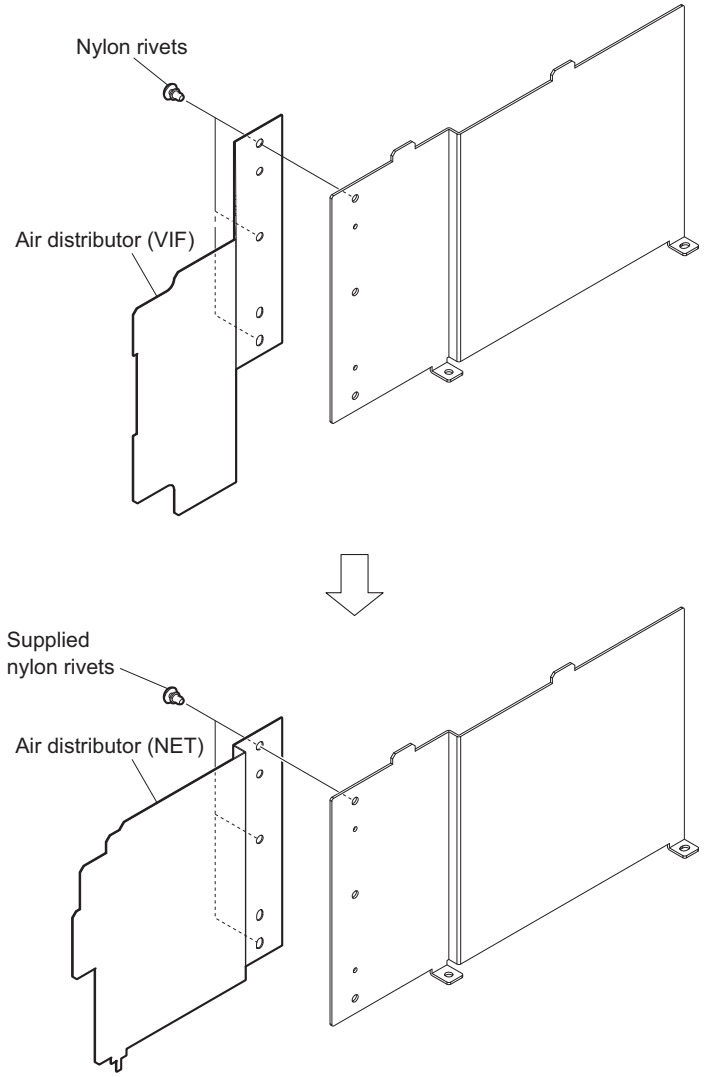
Procedure

1. Remove the two screws, and then remove the air distributor assembly.



2. Remove the three nylon rivets, and then remove the air distributor (VIF).

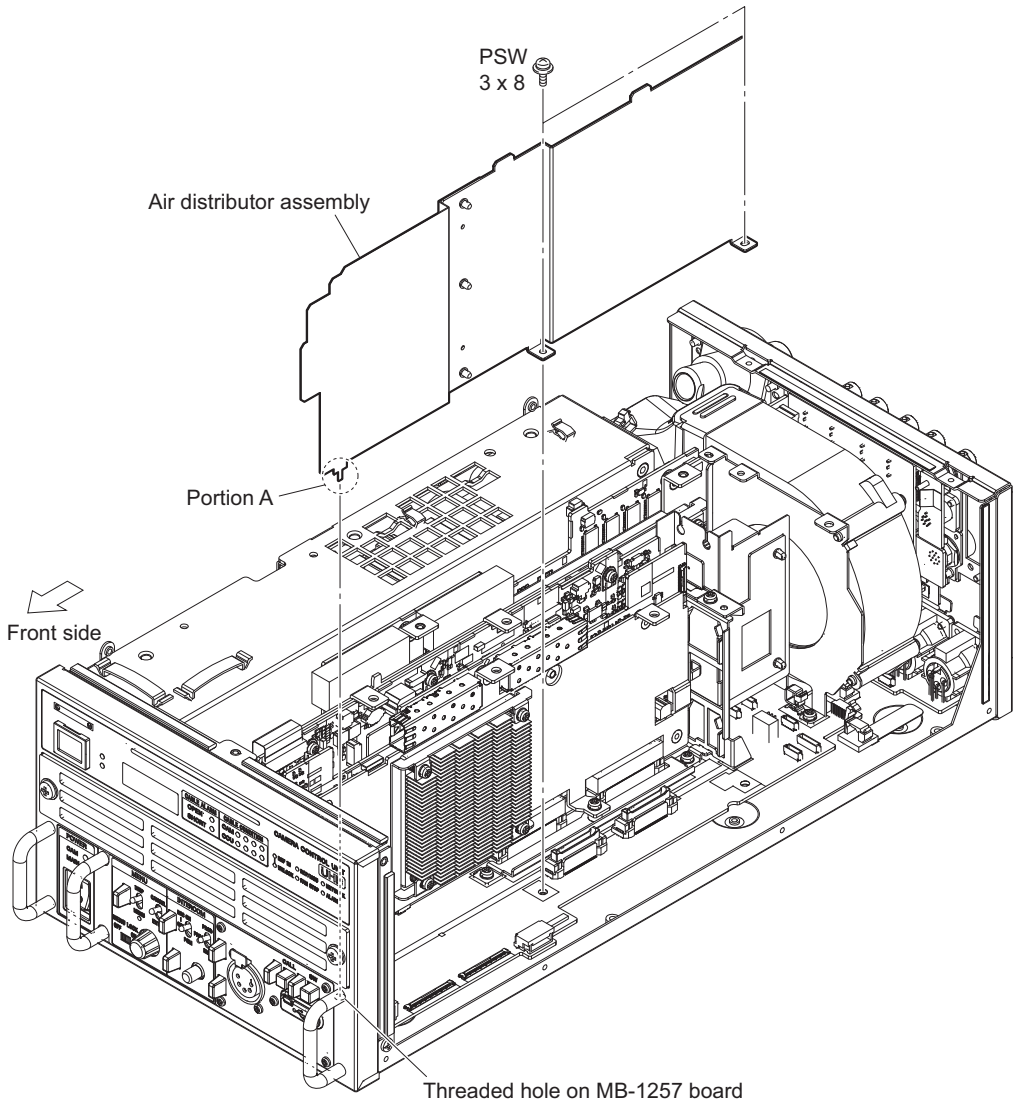
3. Attach the air distributor (NET) with the supplied three nylon rivets.



4. Attach the air distributor assembly with the two screws removed in step 1.

Note

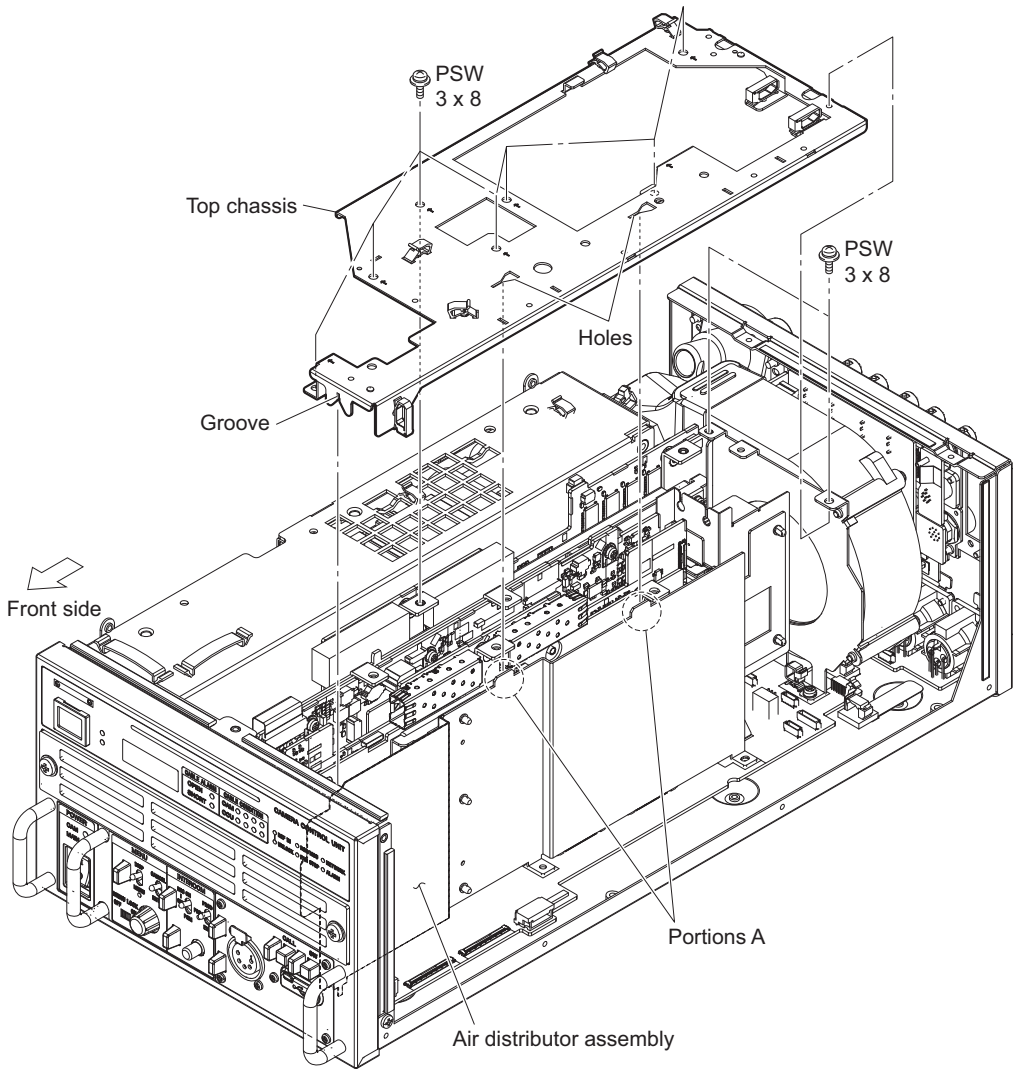
Insert portion A of the straightening plate assembly into the threaded hole on the MB-1257 board.



5. Attach the optical cable and top chassis. (Refer to step 2 and 3 in "1-5-1. HKCU-FB50".)

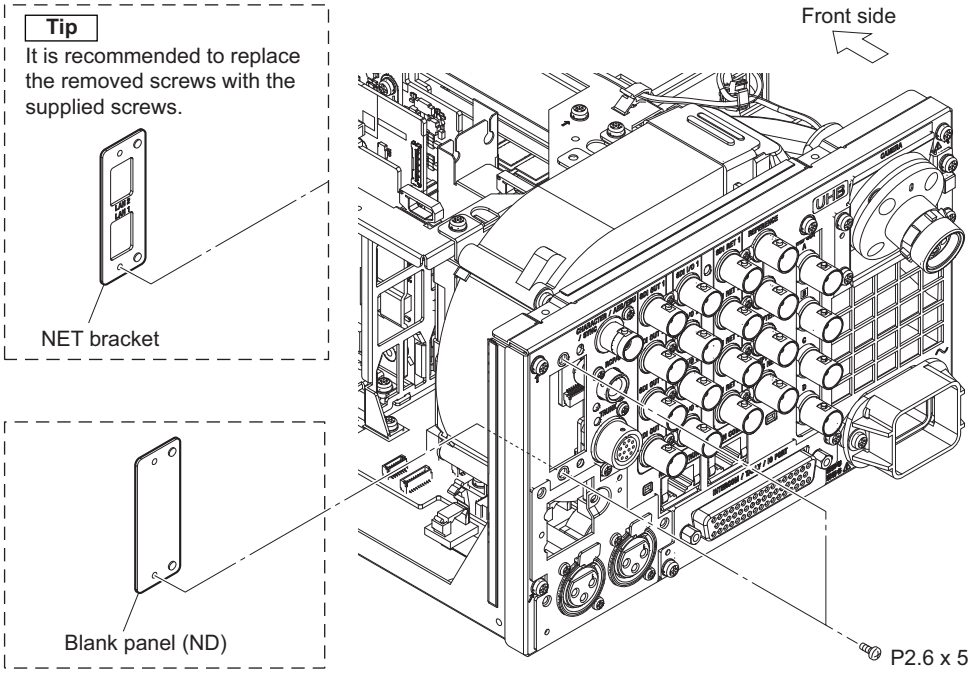
Note

- When attaching the top chassis, insert the groove of the upper chassis into the air distributor assembly.
- When attaching the top chassis, insert the two A portions of groove of the air distributor assembly into the two holes of the top chassis.

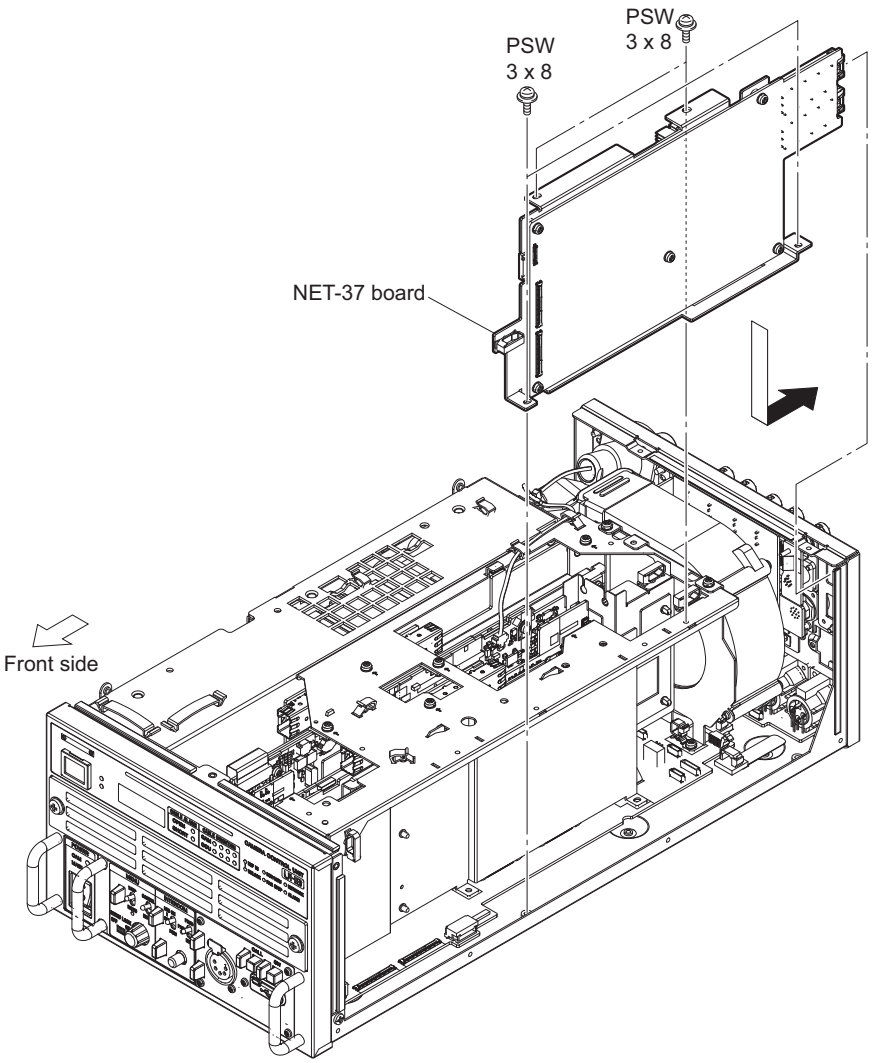


6. Remove the two screws (P2.6 x 5), then remove the blank panel (ND).

7. Attach the NET bracket with the supplied two screws (P2.6 x 5).



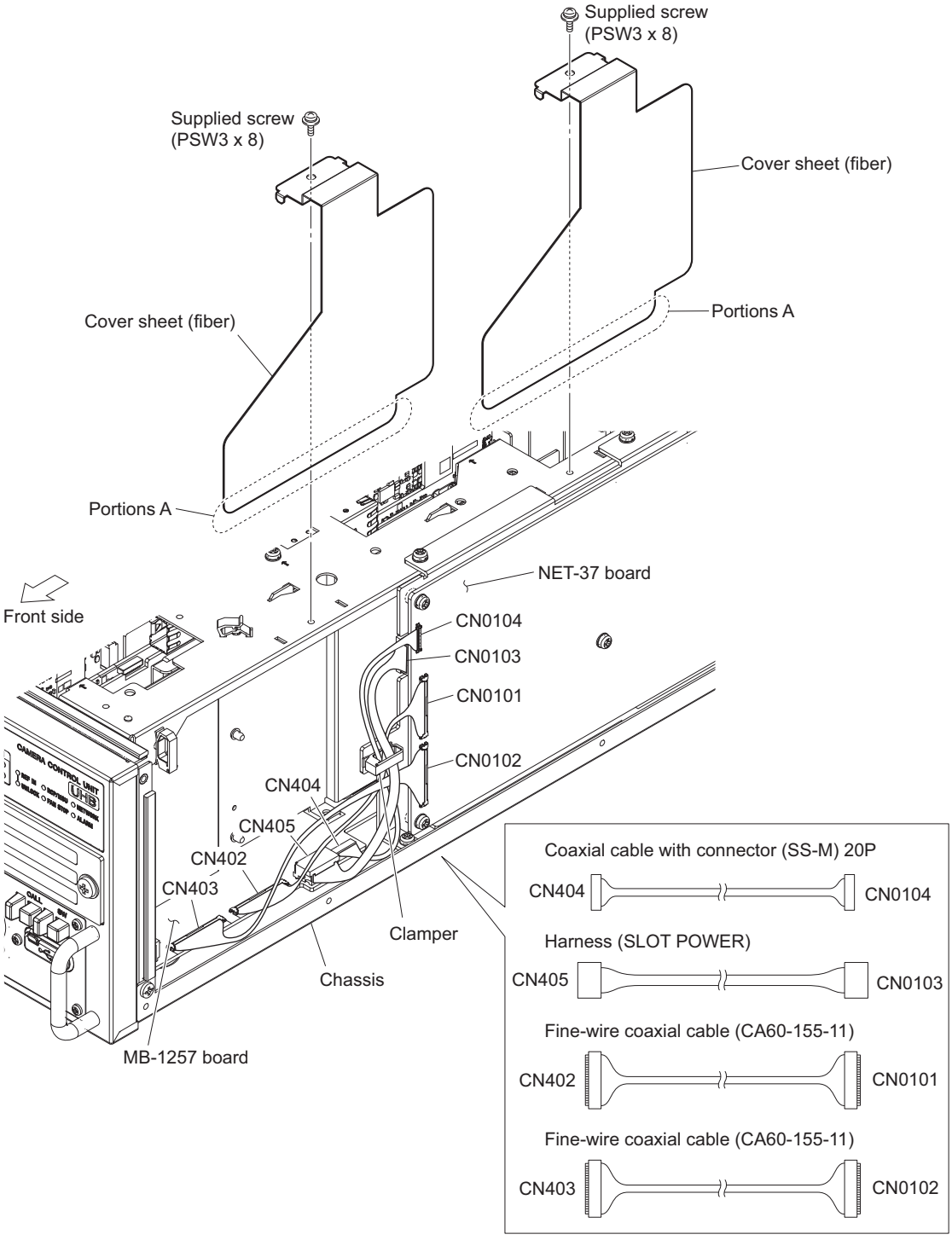
8. Install the NET-37 board in the direction of the arrow and secure it with the four screws.



9. Connect the cables and attach the cover sheet (fiber).
   (1) Connect the coaxial cable (SS-M) 20P with connector to the connector (CN0104) on the NET-37 board and the connector (CN404) on the MB-1257 board.
   (2) Connect the two fine-wire coaxial cables (CA60-155-11) to the connectors (CN0101 and CN0102) on the NET-37 board and the connectors (CN402 and CN403) on the MB-1257 board.
   (3) Connect the harness (SLOT POWER) to the connector (CN103) on the NET-37 board and the connector (CN405) on the MB-1257 board.
   (4) Attach the two cover sheets (fiber) with the two supplied screws.

Note

Insert portions A of the cover sheets (fibers) into the inside of the chassis.



10. Assemble this unit.

1-5-3. HKCU-SM50

Parts packed in HKCU-SM50

- Optical module: 1 pc
- SC-LC optical fiber cable: 1 pc
- SMF panel assembly: 1 pc
- Cover sheet (fiber): 1 pc
- Screw (PSW3 x 8): 1 pc

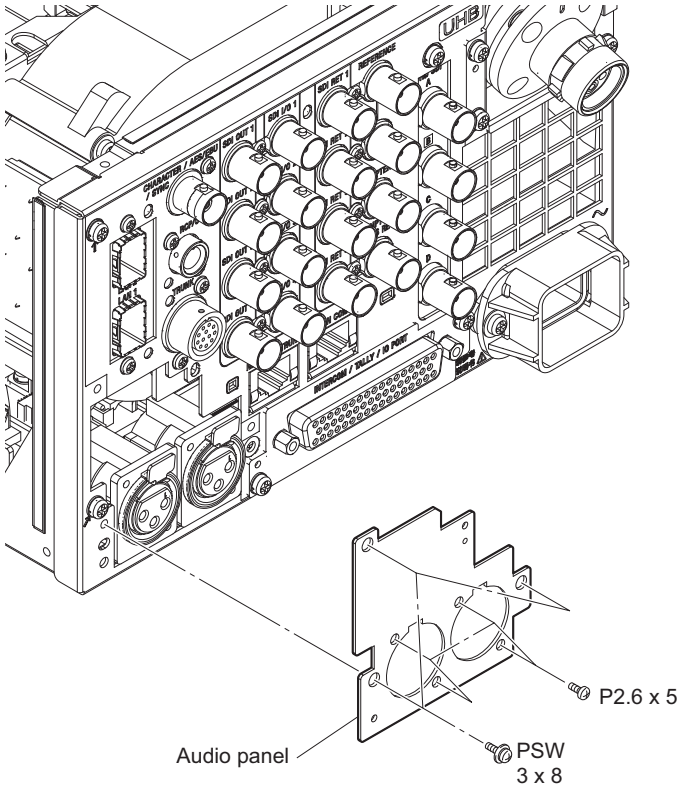
[Note]
This list is the components required to install HKCU-SM50 on this unit.

Preparation

1. Remove the top cover. (Refer to step 1 in "1-5-1. HKCU-FB50".)

Procedure

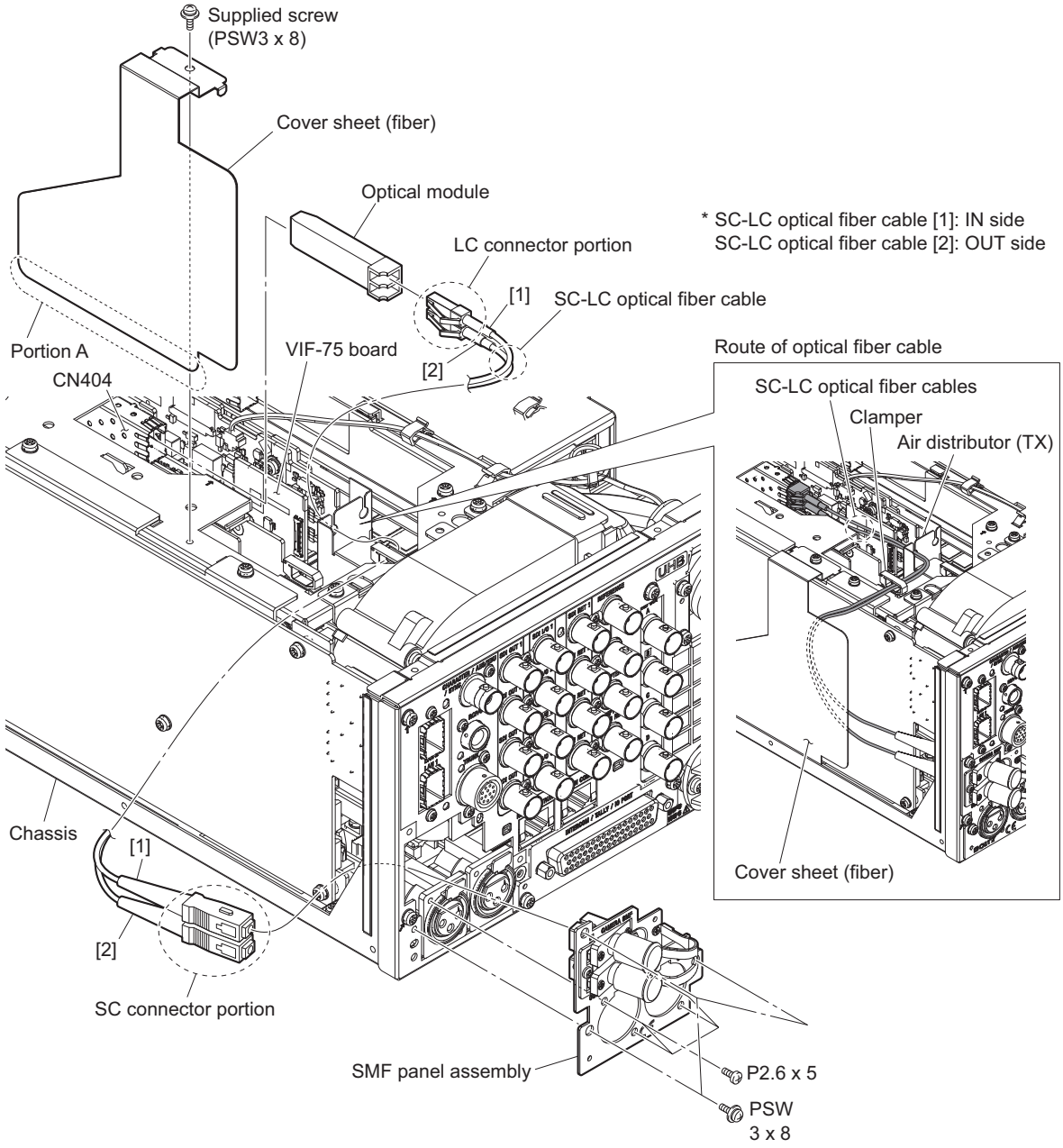
1. Remove the three screws (PSW3 x 8) and four screws (P2.6 x 5), then remove the audio panel.



2. Attach the SMF panel assembly and cover sheet (fiber).
   (1) Attach the SMF panel assembly with the three screws (PSW3 x 8) and the four screws (P2.6 x 5).
   (2) Connect the two SC-LC optical fiber cables to the SMF panel assembly.
   (3) Connect the SC-LC optical fiber cables to the optical module, and then connect it to the connector (CN404) on the VIF-75 board.
   (4) Attach the cover sheet (fiber) with the supplied screw screw (PSW3 x 8).

Note

Insert portion A of the cover sheet (fiber) into the inside of the chassis.



Note

- When connecting the SC-LC optical fiber cables, refer to the number indicated on the board.
- Route the connected optical fiber cables as shown in the illustration.
- Check that the connected optical fiber cable is located inside of the cover sheet (fiber).

3. Assemble this unit.

1-5-4. HKCU-REC55

The HKCU-REC55 is an option for the HDCU3500/HDCU5500.

Component parts of HKCU-REC55

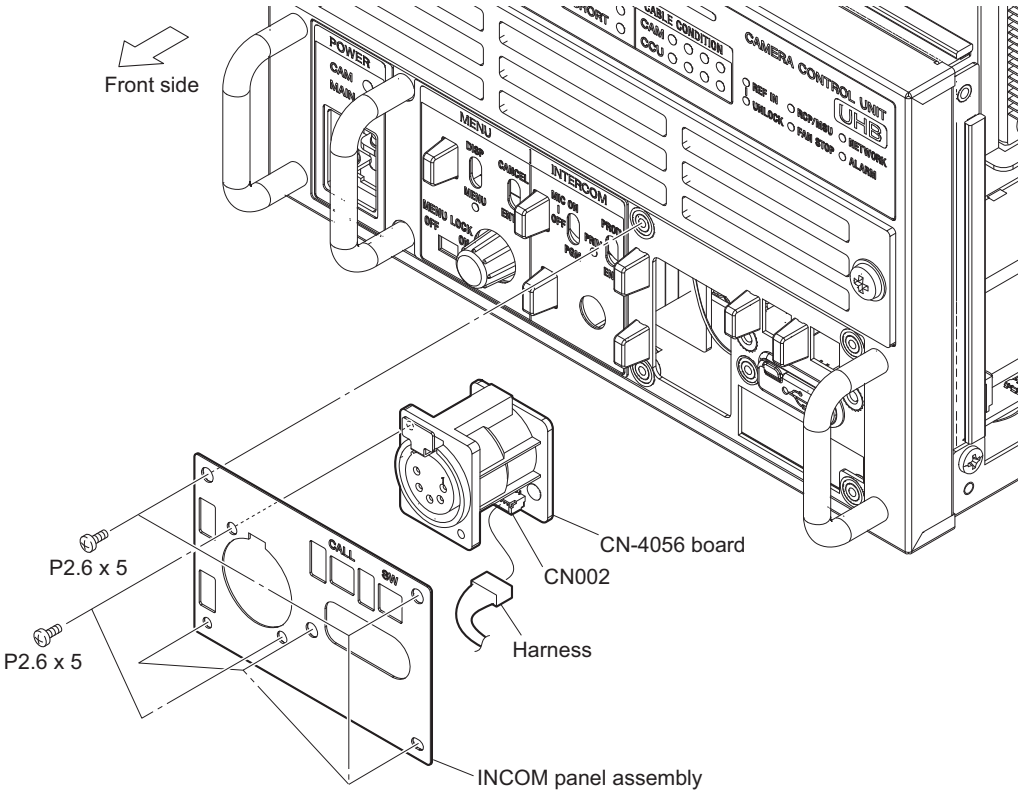
- ENC assembly: 1 pc
- Audio panel (REC) assembly: 1 pc
- INCOM-REC panel assembly: 1 pc
- IF-1371 board assembly: 1 pc
- Optical module (SFP+): 1 pc
- LC optical fiber cable: 1 pc
- Harness (HANDLE): 1 pc
- Fine-wire coaxial cable: 1 pc
- Cover sheet (fiber) : 1 pc
- Current plate (MDC) : 1 pc
- USB cap: 1 pc
- Screw (PSW3 x 8): 7 pcs
- Screw (P2.6 x 5): 2 pcs

Preparation

1. Remove the top cover. (Refer to step 1 in "1-5-1. HKCU-FB50")
2. Remove the optical cable. (Refer to step 2 in "1-5-1. HKCU-FB50")
3. Remove the top chassis. (Refer to step 3 in "1-5-1. HKCU-FB50")
4. Remove the current plate assembly. (Refer to step 1 in "1-5-2. HKCU-SFP50")

Procedure

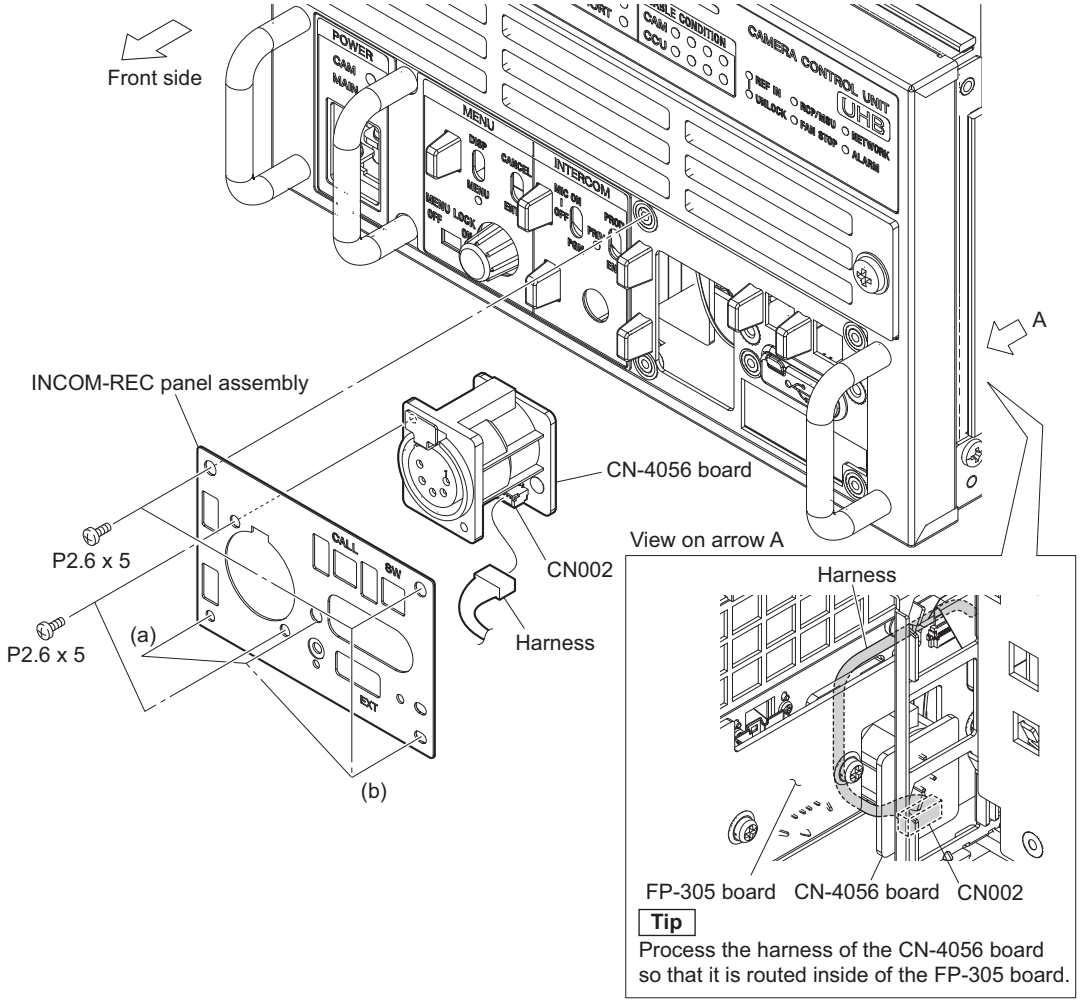
1. Remove the CN-4056 board.
   (1) Remove the five screws, then remove the INCOM panel assembly.
   (2) Disconnect the harness from the connector (CN002) on the CN-4056 board.
   (3) Remove the two screws, then remove the CN-4056 board.



2. Attach the INCOM-REC panel assembly.
   (1) Attach the CN-4056 board to the INCOM-REC panel assembly with the two screws.
   (2) Connect the harness to the connector (CN002) on the CN-4056 board.
   (3) attach the INCOM-REC panel assembly with the five screws.

Note

- When attaching the INCOM-REC panel assembly, attach it so that the harness is routed inside of the FP-305 board.
- When attaching the INCOM-REC panel assembly, tighten the screws in the order of (a), (b), and other screws.

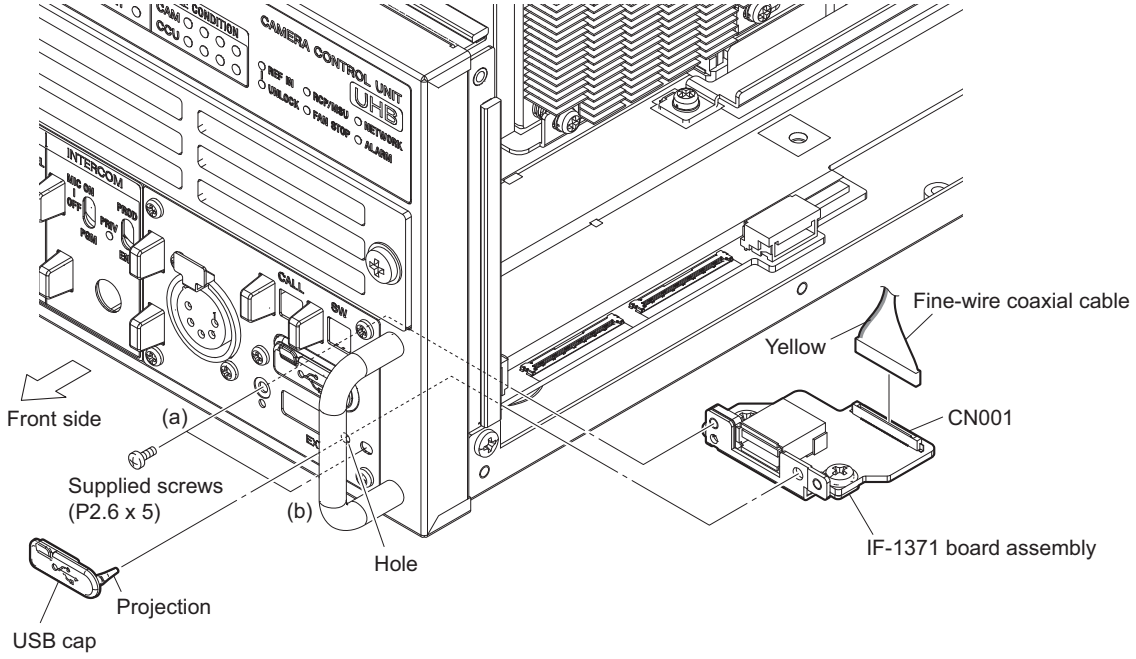


3. Attach the IF-1371 board assembly and the USB cap.
   (1) Connect the supplied fi ne-wire coaxial cable to the connector (CN001) on the IF-1371 board assembly.
   (2) Attach the IF-1371 board assembly with the supplied two screws.

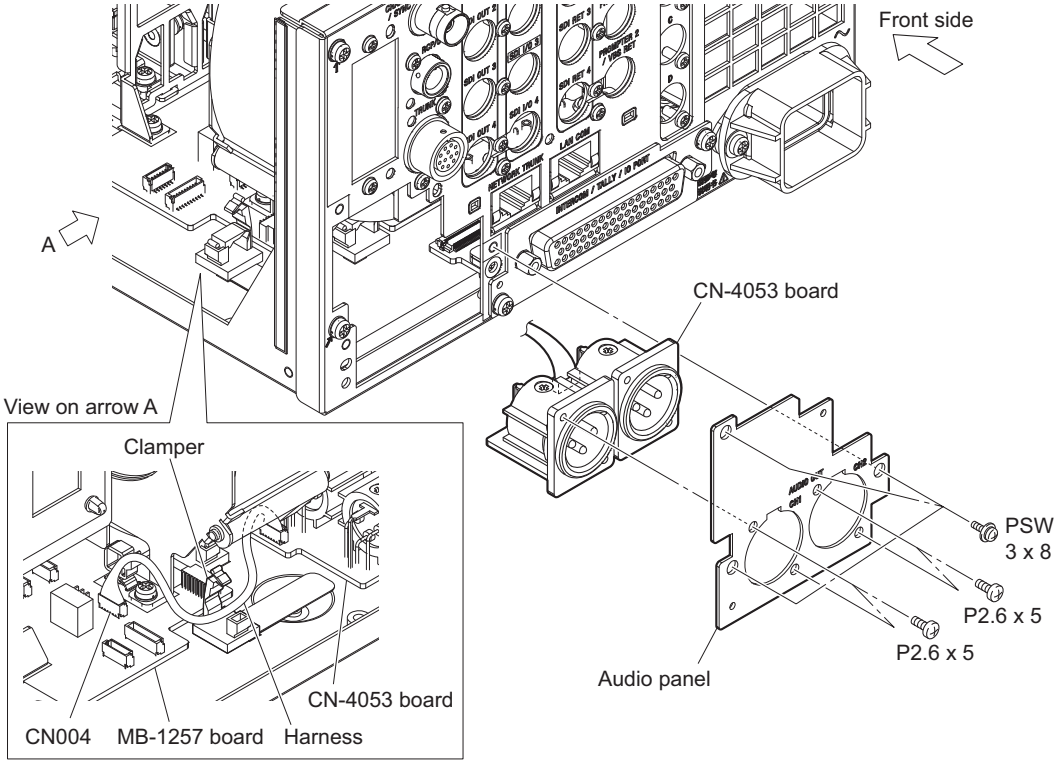
   Note

   When attaching the IF-1371 board assembly, tighten the screws in the order of (a), (b).

   (3) Push in the projection of the USB cap to the hole.



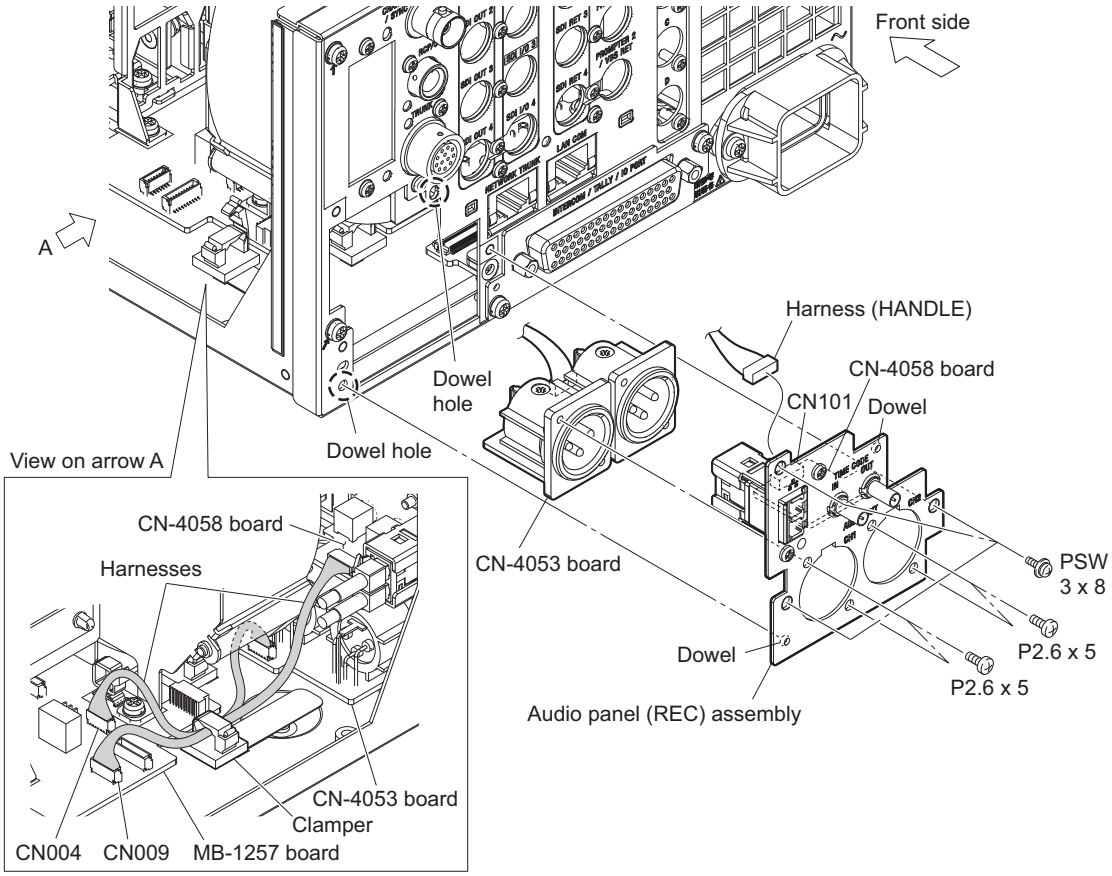
4. Remove the CN-4053 board.
   (1) Open the clamper, then remove the harness.
   (2) Disconnect the harness from the connector (CN004) on the MB-1257 board.
   (3) Remove the three screw (PSW3x8), then remove the audio panel assembly.
   (4) Remove the four screws (P2.6x5), then remove the CN-4053 board.



5. Attach the audio panel (REC) assembly.
   (1) Attach the CN-4053 board to the audio panel (REC) assembly with the four screws (P2.6x5).
   (2) Connect the supplied harness (HANDLE) to the connector (CN101) on the audio panel (REC) assembly.
   (3) Attach the audio panel (REC) assembly with the three screws (PSW3x8).
   (4) Connect the two harnesses to the connectors (CN004 and CN009) on the MB-1257 board.
   (5) Secure the harness removed in (1) in step 5 and the harness (HANDLE) with the clamper.

Note

When attaching the audio panel (REC) assembly, align the two dowels.



6. Attach the ENC assembly.

(1) Secure the ENC assembly with the supplied three screws.

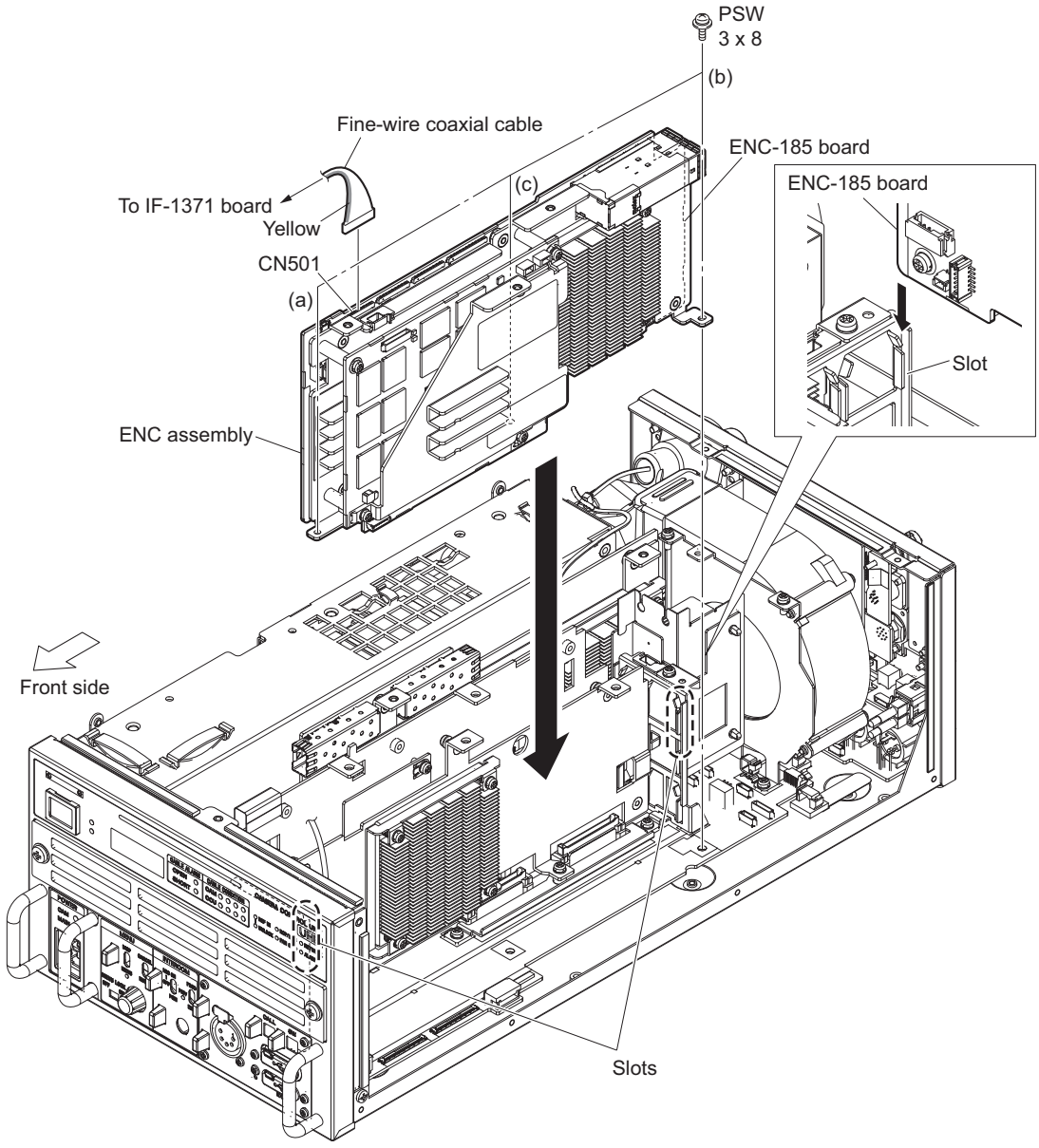
Note

When attaching the ENC assembly, tighten the screws in the order of (a), (b), (c).

Tip

Insert the edges of the ENC-185 board into the two slots of the board guide.

(2) Connect the fine-wire coaxial cable connected from the IF-1371 board assembly to the connector (CN501) on the ENC-185 board.



7. Attach the supplied optical module (SFP+) and the top chassis.

(1) Attach the supplied optical module (SFP+) to the connector (CN401) on the ENC-185 board.

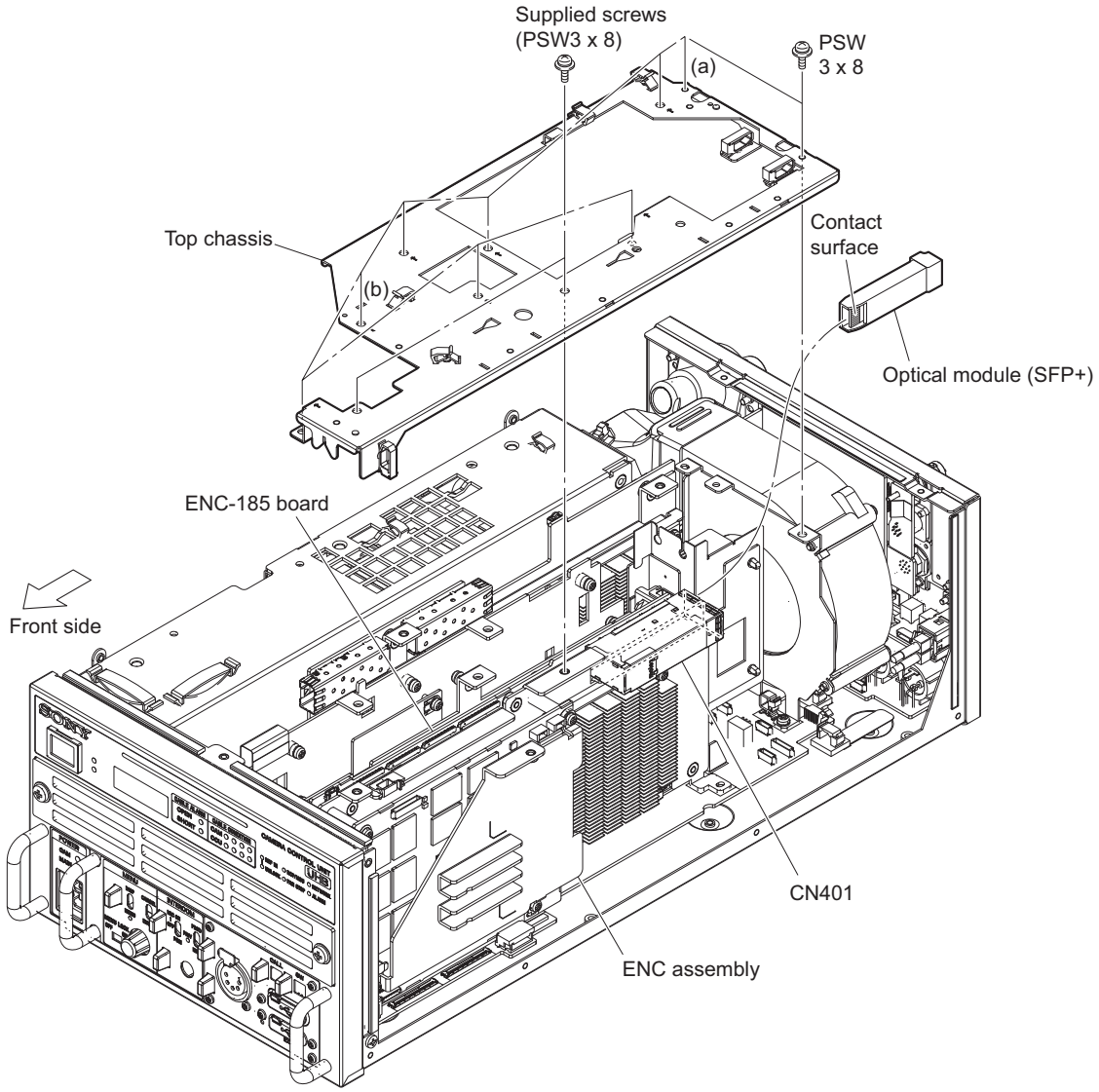
Note

When attaching the optical module (SFP+), pay attention to the direction in which it is attached.

(2) Attach the top chassis with the nine screws and two supplied screws.

Tip

When attaching the top chassis, tighten the screws in the order of (a), (b), and other screws.



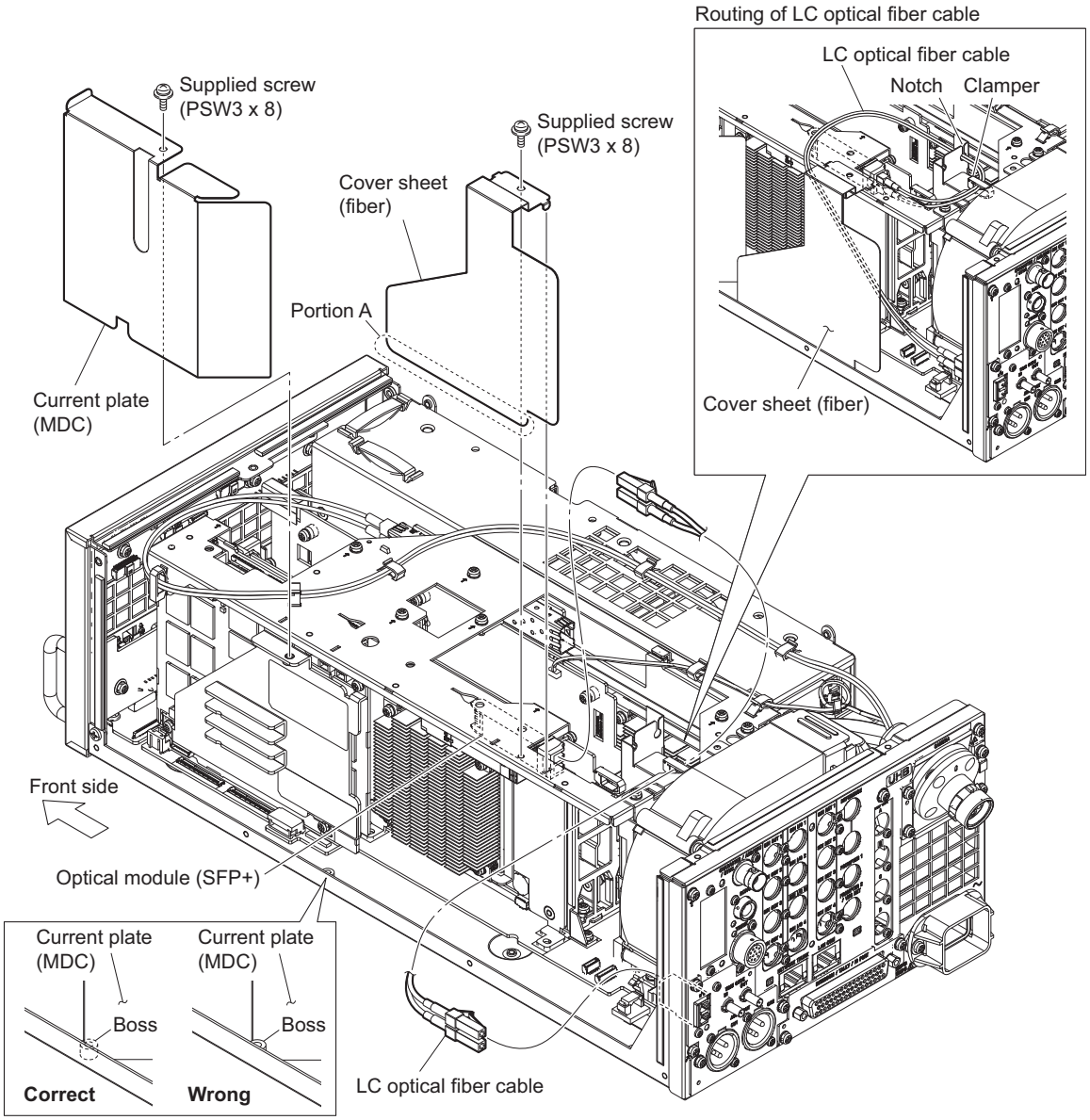
8. Attach the cover sheet (fiber) and the current plate (MDC)
   (1) Secure the optical cable with the cable clamp. (Refer to (3) and (4) in step 2 in "1-5-1. HKCU-FB50")
   (2) Connect the harness. (Refer to (1) and (2) in step 2 in "1-5-1. HKCU-FB50")
   (3) Connect the LC optical fiber cable to the optical module (SFP+) attached to the ENC-185 board.
   (4) Attach the cover sheet (fiber) with the supplied screw.
   (5) Attach the current plate (MDC) with the supplied screw.

Note

Insert the portion A of the cover sheet (fiber) into the inside of the chassis.

Tip

Route the LC optical fiber cable as shown in the illustration, then secure it with the clamper and the notch.

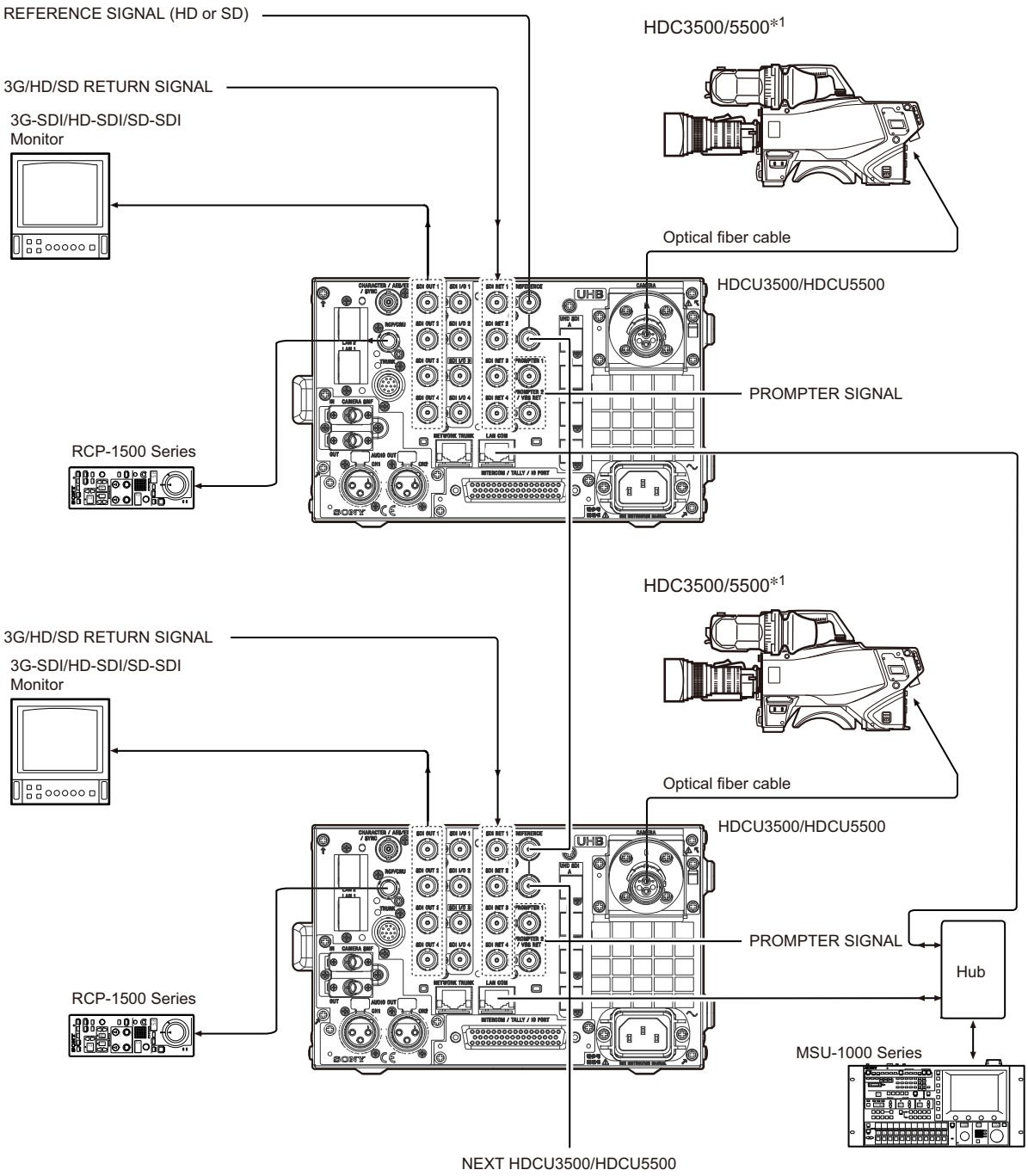


9. Attach the top cover. (Refer to step 1 in "1-5-1. HKCU-FB50")

Section 2
System Setup

2-1. System Connection

2-1-1. Connection Example



*1: HKCU-FB50 is required to connect the HDC5500 to the HDCU3500.

2-2. Setting the System Formats

2-2-1. Setting the Multi-Format

Sets the format of the signal that is output from the unit.
Normally the format is set from the MSU connected outside or from MULTI FORMAT (S05) of the SYSTEM OPERATION menu in this unit.

2-2-2. Setting the Reference Input

Normally the format is set from the MSU connected outside or from GENLOCK PHASE (S04) of the SYSTEM OPERATION menu in this unit.

2-3. Audio System

2-3-1. Setting the Intercom System

Two independent intercom lines (producer line and engineer line) are selectable and available in this unit.
This unit supports 4 WIRE, RTS, and Clear-Com intercom systems. Make settings of the menus according to the system to be used.

Selecting Intercom System

Select an intercom system (4WIRE, RTS or CLEAR COM) for each of the engineer line and producer line according to the system to be used. Then, select the number of intercom line systems (1CH or 2CH).

Note

When SYSTEM INTERFACE in INTERCOM (A03) of the AUDIO/INTERCOM menu is set to RTS/CLEAR COM, be sure to connect the unit to the RTS or Clear-Com system. Failure to do so will cause the output to oscillate and adversely affect the surrounding circuit.

Selecting producer line

AUDIO/INTERCOM menu → INTERCOM (A03) → PRODUCER

Selecting engineer line

AUDIO/INTERCOM menu → INTERCOM (A03) → ENGINEER

Selecting intercom line channel

Connect the intercom line to the producer line of the unit and make the following settings.

Tip

Factory setting: 2CH

- 1CH
  AUDIO/INTERCOM menu → INTERCOM (A03) → INTERCOM CH:1CH

  Tip

  The intercom line is always connected to the producer line regardless of the settings of the INCOM PROD/ENG switch of the and the INTERCOM switch on the front panel of the unit.

- 2CH
  AUDIO/INTERCOM menu → INTERCOM (A03) → INTERCOM CH:2CH

Adjusting RTS Cancellation (RTS/Clear-Com)

When the RTS or Clear-Com system is used, adjust the sidetone cancellation amount using the following procedure.

1. Set the SIDE TONE in FRONT INTERCOM (A04) of the AUDIO/INTERCOM menu to 0.
2. Set the INTERCOM switch on the front panel to PROD.
3. While speaking to the headset microphone, adjust SIDE TONE CANCEL in INTERCOM (A03) of the AUDIO/INTERCOM menu so that the voice heard from the headset becomes minimum.
4. Set the INTERCOM switch on the front panel to ENG.
5. While speaking to the headset microphone, adjust SIDE TONE CANCEL in INTERCOM (A03) of the AUDIO/INTERCOM menu so that the voice heard from the headset becomes minimum.
6. Reset the value of SIDE TONE in FRONT INTERCOM (A04) of the CCU CONFIGURATION menu to the previous value.

Setting Headset Microphone

Setting intercom microphone

Set the INTERCOM MIC in FRONT INTERCOM (A04) of the AUDIO/INTERCOM menu according to the microphone type of the headset to be connected to the INTERCOM connector on the front panel.

- CARBON:
  When using a carbon microphone (power supplied, 20 dB gain)
- ECM:
  When using a electric condenser microphone (power supplied, 40 dB gain)
- DYNAMIC:
  When using a dynamic microphone (no power supplied, 60 dB gain) (Factory setting)

Adjusting the side tone level

Adjust the sidetone volume of the headset connected to the INTERCOM connector on the front panel with SIDE TONE in FRONT INTERCOM (A04) of the AUDIO/INTERCOM menu according to the headset to be used.

Setting PGM Audio Signal Input Level

Set the PGM1 INPUT and PGM2 INPUT in FRONT INTERCOM (A04) of the AUDIO/INTERCOM menu to –20 dBu , 0 dBu, or +4 dBu according to each level of audio 1 and 2 of the system.

Tip

Factory setting: 0 dBu

Selecting PGM Audio Signal

Select the PGM audio signal of the headset connected to the INTERCOM connector on the front panel to user's preference level with PGM SELECT in FRONT INTERCOM (A04) of the AUDIO/INTERCOM menu.

- PGM 1: To select PGM1 (Factory setting)
- PGM1 + PGM2: To select PGM1 and PGM2 mixed
- PGM2: To select PGM2

Adjusting PGM Audio Signal Mixing Volume

Adjust the PGM audio signal mixing volume of the headset connected to the INTERCOM connector on the front panel to user's preference level with PGM1 LEVEL/PGM2 LEVEL in FRONT INTERCOM (A04) of the AUDIO/INTERCOM menu.

Selecting an Intercom LINE to be Connected to the INTERCOM Connector

Select the intercom line to be connected to the INTERCOM connector on the front panel as follows with the INTERCOM switch.

- When connecting to the producer line:
  Set the INTERCOM switch to PROD.
- When connecting to the engineer line:
  Set the INTERCOM switch to ENG.
- When connecting only a camera:
  Set the INTERCOM switch to PRIV.
  When this position is set, the intercom from outside is cut and the system consists of the intercom and camera.

Note

When INTERCOM CH in INTERCOM (A03) of the AUDIO/INTERCOM menu is set to 1CH, the INTERCOM switch on the front panel of this unit and the camera are fixed to the producer line regardless of the setting.

2-3-2. Microphone Setting

This unit can receive two independent microphone lines (MIC1 and MIC2) from the video camera HDC2000 series and output them.

Remote Controlling Microphone Input Amplifier Gain

Remote control using the menu setting

When the MIC REMOTE connector on the rear panel is open or pins 8 (MIC1) and 15 (MIC2) of the MIC REMOTE connector are at a high level, Adjusting the CAM MIC GAIN with MIC GAIN (A01) of the AUDIO/INTERCOM menu.
Setting values: 20, 30, 40, 50, 60 dB (Factory setting: 60 dB)

Adjusting the microphone input gain using the MIC REMOTE connector

The microphone input amplifier gain control is enabled or disabled by pins 8 and 15 of the MIC REMOTE connector on the rear panel.
Furthermore, the microphone input amplifier gain can be set by pins 5 to 7 and 12 to 14.
When MIC/WF REMOTE in REAR I/F (S04) of the SYSTEM CONFIG menu is set to MIC REMOTE, the MIC1 gain and MIC2 gain can be set by pins 5 to 7 and the microphone input amplifier gain can be set at the same time.

Setting the microphone input control of the video camera

Pin No.		Microphone connector	
8	**15**	**MIC IN CH-1**	**MIC IN CH-2**
L	L	ON	ON
L	H	ON	OFF
H	L	OFF	ON
H	H	Set with CAM MIC GAIN of MIC/AUDIO (C05)	

Setting the microphone input gain of the video camera

Pin No.			Gain
7	**6**	**5**	
H	H	H	60 dB
L	H	H	50 dB
H	L	H	40 dB
L	L	H	30 dB
H	H	L	20 dB

Pin No.			Gain
14	**13**	**12**	
H	H	H	60 dB
L	H	H	50 dB
H	L	H	40 dB
L	L	H	30 dB
H	H	L	20 dB

H: +5 V or open
L: GND
Input resistance: 100 kΩ +5 V pull-up

Adjusting AUDIO Phase

When the AUDIO signal phase is ahead of the video signal phase to be used, adjust the microphone signal phase with DELAY in AUDIO OUT (A02) of the AUDIO/INTERCOM menu.
0 to 3840 FS (Factory setting: 0 Fs)

Setting AUDIO Output Level

Set the AUDIO outputs (AUDIO CH1 and AUDIO CH2) with ANALOG OUT CH1 LEVEL/CH2 LEVEL in AUDIO OUT (A01) of the AUDIO/INTERCOM menu according to each signal level.
–20 dBu, 0 dBu, or +4 dBu (Factory setting: 0 dB)

2-4. System Settings

2-4-1. Tally System Setting

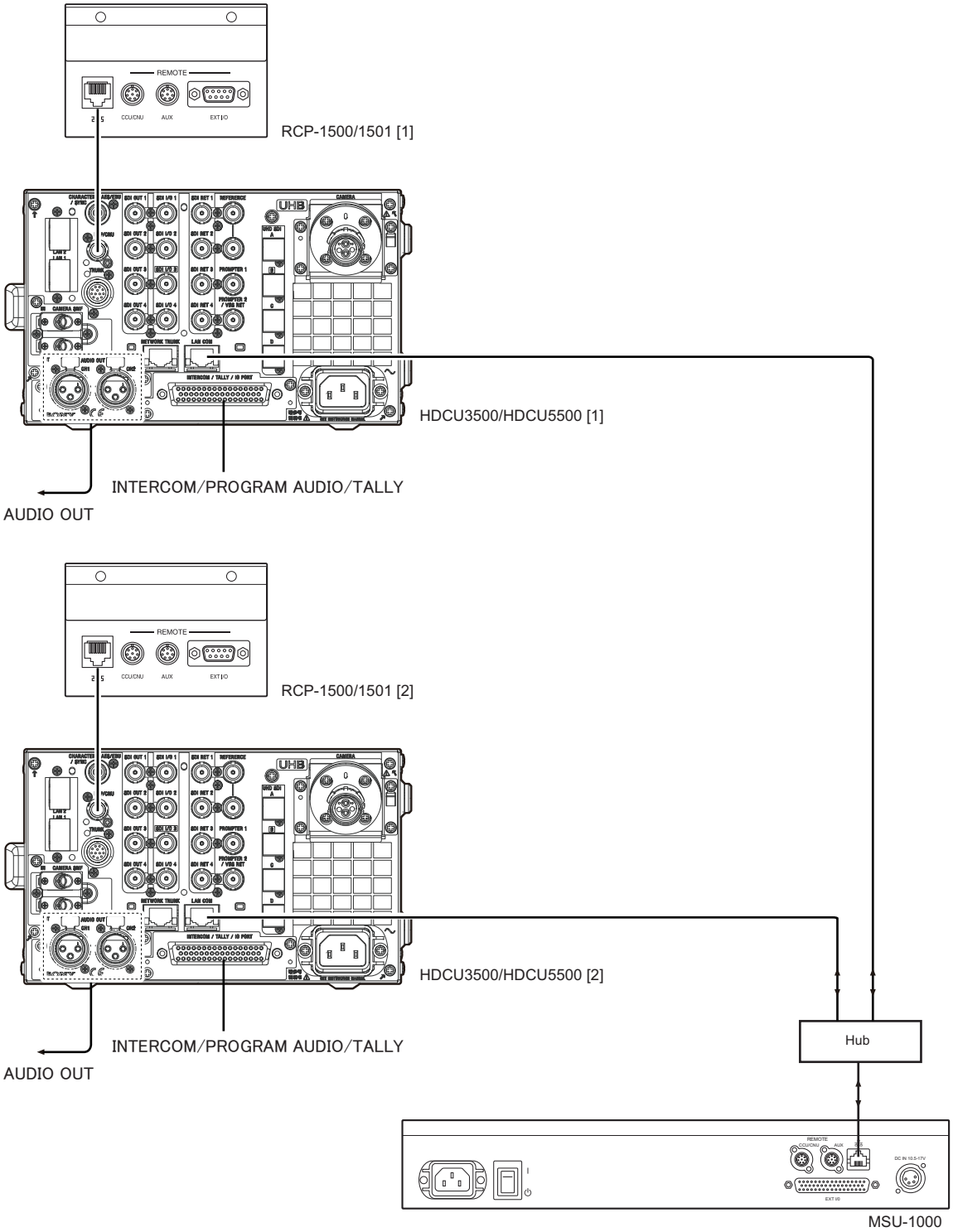
This unit supports red tally, green tally, and yellow tally systems, and also supports contact supply.

- Contact supply: CONTACT

2-4-2. CCU Number Setting

Set the camera number with CNS SETTING (N02) of the NETWORK menu.

2-4-3. Connecting the Control, Intercom, Tally and Audio Signals



2-5. Video Signal System

Video signals of this unit and the equipment used for the HDC5500 (HDCU5500 only), HDC3500/3100, HDC2000 series camera system were adjusted to the specified levels in the factory shipping process. Before starting operation, check the signal levels between equipment and adjust them, if necessary. Some adjustments can be performed using the maintenance menu of the MSU-1000/1500 besides using the control or switches on the board. Perform the basic adjustments on the board and perform the fine adjustments on the maintenance menu.

2-5-1. Input/Output Signal Selection

Select a signal of the input/output terminal signal on the rear panel according to the video system to be implemented.

2-5-2. Signal Phase Adjustment

Adjust signal phases of the unit. Before starting this adjustment, input the following sync signals to the unit and equipment used.

- This unit
  REFERENCE connector
  HD tri-level sync signal: 0.6 Vp-p
  or
  Black burst signal: 40 IRE (0.3 Vp-p)
  (SMPTE318M (10F-BB) is also acceptable.)

Adjusting Sync Signal Phase

Adjust the sync signal phase so that the output signal phase matches the reference signal phase by using the SYSTEM CONFIG menu. The phase can also be adjusted using the maintenance menu of MSU-1000/1500

Adjustment Procedure

Select an external sync signal type from the SYSTEM CONFIG menu.
SYSTEM CONFIG menu → GENLOCK (S04) → GENLOCK
HD: HD tri-level sync
SD: BB (black burst) signal

When HD is selected

1. Make coarse adjustment of the H phase by COARSE of GENLOCK (S04) and make fine adjustment by H STEP.

When SD is selected

1. Make coarse adjustment of the H phase by COARSE of GENLOCK (S04) and make fine adjustment by H STEP.

2-5-3. Aspect Ratio Setting for Down-Conversion

With this unit or MSU-1000/1500, this system enables switching of aspect ratio in accordance with various systems for the HD-SD down-conversion.
Set the aspect ratio with the MIC REMOTE connector on the rear panel or with S05:SD ASPECT of the SYSTEM OPERATION menu. It can also be set using the maintenance menu of MSU-1000/1500.
The following four aspect ratio modes are selectable in this system.

Squeeze	Converts the HD video signal to SD signal with an aspect ratio of 16 : 9 unchanged (16 : 9)
Edge crop	Crops 4 : 3 video part from the HD video signal and converts it to SD signal (4 : 3)
Letterbox	Fits the HD video signal with an aspect ratio of 16 : 9 into a 4 : 3 monitor frame and converts it to SD signal (4 : 3) (Black level is inserted above and below the picture.)

Setting Aspect Ratio with the MIC REMOTE Connector

Note

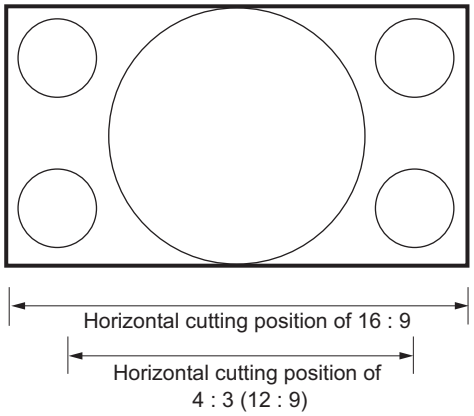
If MIC REMOTE in MODE (S07) of the SERVICE menu is set to MIC1 or MIC2, the ASPECT REMOTE signal from the MIC REMOTE connector is disabled.

1. Set the DSUB-50 in REAR I/F (S03) of the SYSTEM CONFIG menu to WF-REMOTE.
2. Set pin 12 (ASPECT REMOTE ON/OFF) of the MIC REMOTE connector on the rear panel to low level.
3. Set pins 13 (ASPECT CTL CONT1) and 14 (ASPECT CTL CONT2) of the MIC REMOTE connector according to the aspect ratio to be converted.

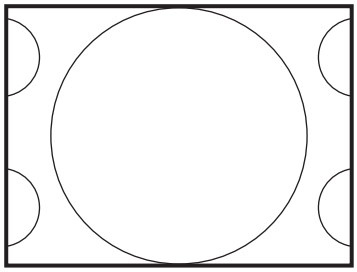
Pin 13 (ASPECT CTL CONT1)	Pin 14 (ASPECT CTL CONT2)	Aspect ratio
L	H	Squeeze (16 : 9)
H	H	Edge crop (4 : 3)
L	L	Set with S05:SD ASPECT of SYSTEM OPERATION menu
H	L	Letterbox (4 : 3)

Examples of Display

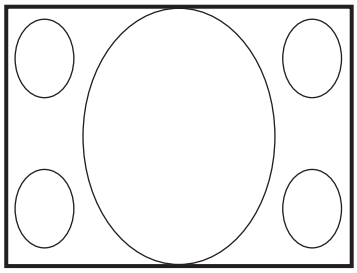
16 : 9 picture (picture from camera)



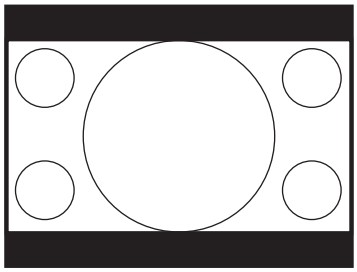
Picture whose aspect ratio is converted (SD output)



Edge-crop
CROP POSITION can be changed.



Squeeze
The 16 : 9 ratio picture is output in the SD format without changing the ratio.



Letter box (16 : 9)
The 16 : 9 ratio picture is inserted into the 4 : 3 ratio picture without changing the ratio and is output in the SD format.

2-5-4. RETURN Input Signal

Set the format of the return signal to be input to the RET1, RET2, RET3 and RET4 connector using the maintenance menu of MSU-1000/1500 or S07: RETURN SETUP in the SYSTEM OPERATION menu of this unit.

Tip

When required, either of the PROMPTER connectors can be assigned for the fourth return video input (RET4), exclusively for analog VBS signals.

Revision History

Date	History	Contents
2019. 5	1st Edition 9-932-692-01	—
2019. 12	Revised-1 9-932-692-02	Added the models: HKCU-REC55 • **Modifications:** 1-2-1. Connector Specifications, 1-2-3. Connectors and Cables • **Additions:** 1-5-4. HKCU-REC55

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